



City of Fort Lupton

REGULAR MEETING AGENDA

Tuesday, November 16, 2021

7:00 PM

130 South McKinley Avenue

Zo Stieber, Mayor

Shannon Rhoda, Ward 1

Chris Ceretto, Ward 2

Mike Sanchez, Ward 3

David Crespín, Ward 1

Tommy Holton, Ward 2

Bruce Fitzgerald, Ward 3

You may join in person or join remotely by registering at:

<https://attendee.gotowebinar.com/register/8202213119026433036>

Pledge of Allegiance

Call to Order

Roll Call

Persons to Address Council - This portion of the Agenda is provided to allow members of the audience to present comments to the City Council. The City Council may not respond to your comments this evening, rather they may take your comments and suggestions under advisement or your question may be directed to the appropriate staff member for follow-up. Please limit the time of your comments to three (3) minutes - Mayor Stieber

Approval of Agenda

Review of Accounts Payables

a. November 16, 2021 Accounts Payable

Consent Agenda - Consent Agenda items are considered to be routine and will be enacted by one motion and vote. There will be no separate discussion of Consent Agenda items unless a Councilmember so requests, in which case the item may be removed/moved from the Consent Agenda.

a. November 2, 2021 City Council Meeting Minutes

b. AM 2021-186 Approving a Resolution Ratifying the Appointment of Joyce Smock to the Board of Trustees of the High Plains Library District for a Term Beginning January 1, 2022 and Ending December 31, 2025

c. AM 2021-187 A Resolution Approving the Criminal History Record Information (CHRI) Policy for Proper Access, Use and Dissemination Procedures for the City Clerk's Office

d. Second Reading Ordinance 2021-1130 An Ordinance Setting a Public Hearing for November 2, 2021, for the Purpose of Amending Chapter 18 Building Regulations of the Fort Lupton Municipal Code and Adopting by Reference the International Building Code of the International Code Council 2018 Edition; The National Electrical Code of the National Fire Protection Association (NFPA), Current State Adopted Edition; International Mechanical Code of the International Code Council, 2018 Edition; International Plumbing Code of the International Code Council, 2018 Edition; International Fire Code of the International Code Council, 2018 Edition; International Fuel Gas Code of the International Code Council, 2018 Edition; International Property

Maintenance Code of the International Code Council, 2018 Edition; International Existing Building Code of the International Code Council, 2018 Edition; International Residential Code of the International Code Council, 2018 Edition; International Energy Conservation Code of the International Code Council, 2018 Edition; International Swimming Pool and Spa Code, 2018 Edition

- e. Second Reading Ordinance 2021-1131 Adopt Ordinance 2021-1131 Initially Zoning Land Known as the Pearson Park Change of Zone, Legally Described in Exhibit A, to the 'P' Parks & Open Space Zone District
- f. Second Reading Ordinance 2021-1132 Adopt Ordinance 2021-1132 Initially Zoning Land Known as the WWTP Change of Zone, Legally Described in Exhibit A, to the 'A' Agricultural Zone District
- g. AM 2021-193 Approving the Quadient Trifold and Inserter Machine Lease Agreement for \$126.82 a Month for 60 Months to be Paid from the General Fund
- h. AM 2021-195 Approving Resolution 2021-XXX to Opt Out Uncompensated Elected and/or Appointed Officials from the Workers' Compensation Policy and Add Them and Other City Volunteers to the Volunteer Accident Medical Plan (VAMP) for the 2022 Policy Year for the Amount of \$372.00

Public Hearings - Public Hearings allow members of the audience to present comments and questions to the City Council on the item being presented. Comments and questions may be limited to three (3) minutes- Mayor Stieber

- a. Withdrawal of the Proposed Revisions to 16-62(e), Article III of Chapter 16 of the Fort Lupton Municipal Code

Action Memorandum

- a. AM 2021-194 Approve a Resolution Accepting the Murata Farms Final Plat and Final PUD Plan for Filing No. 1
- b. AM 2021-189 Replacement Pump at the North Lift Station From Water Technology Group for \$23,500.00 Allocated from the Utility Fund
- c. AM 2021-190 Authorize Water Technology Group to Rebuild Pump 3 from the South Lift Station for \$9,495.00
- d. AM 2021-191 Update City Retirement Plan Documents and Increase the Employer and Employee Contribution for Sworn Police Officers from 9.7% to 10.2% for an Estimated Total of \$10,918 for 2022

- e. AM 2021-192 Approving an Agreement with CliftonLarsonAllen to Provide Implementation Services for the new GASB87 Requirements for an Amount Not to Exceed \$17,000 to be Paid from the General Fund

Staff Reports

Mayor/Council Reports

Future City Events

- a. November 16, 2021 Upcoming Events

Adjourn



City of Fort Lupton

Check Report

By Check Number

Date Range: 11/03/2021 - 11/16/2021

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Post Date	Payable Description	Discount Amount	Payable Amount	
Bank Code: Golf Course-Golf Course						
000044	AGFINITY INC	11/09/2021	Regular	0.00	3,160.68	84795
160132	Invoice	11/01/2021	GOLF-FUEL-MAINT	0.00	2,119.45	
160133	Invoice	11/01/2021	GOLF-FUEL-MAINT	0.00	1,041.23	
000160	BREAKTHRU BEVERAGE GROUP	11/09/2021	Regular	0.00	446.08	84796
341605572	Invoice	11/01/2021	GOLF-BEVERAGES-PRO SHOP	0.00	446.08	
000206	CENTURYLINK	11/09/2021	Regular	0.00	56.62	84797
184B OCT21	Invoice	11/01/2021	GOLF-PHONE SERVICES-MAINT	0.00	56.62	
000230	CINTAS FIRST AID & SAFETY	11/09/2021	Regular	0.00	444.59	84798
0D51662240	Invoice	11/01/2021	GOLF-KITCHEN SYSTEM AIR TEST-PRO SHOP	0.00	444.59	
000239	CITY OF FORT LUPTON	11/09/2021	Regular	0.00	27.03	84799
FIN2021321	Invoice	11/02/2021	GOLF-SEP21 POSTAGE-PRO SHOP	0.00	27.03	
000241	CITY OF FT LUPTON-UTIL INVOICE	11/09/2021	Regular	0.00	23,456.75	84800
110249001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-Golf	0.00	325.60	
110252001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-Golf	0.00	22,973.16	
110252101 OCT21	Invoice	11/01/2021	Water/Sewer Bill-Golf	0.00	114.89	
770214501 OCT21	Invoice	11/01/2021	Water/Sewer Bill-Golf	0.00	43.10	
002723	EAGLE ROCK COMPANY OF COLO	11/09/2021	Regular	0.00	351.75	84801
8291617	Invoice	11/01/2021	GOLF-BEVERAGES-PRO SHOP	0.00	351.75	
000567	HIGH COUNTRY BEVERAGE CORP	11/09/2021	Regular	0.00	571.10	84802
W-6093727	Invoice	11/01/2021	GOLF-BEVERAGES-PRO SHOP	0.00	571.10	
000944	REPUBLIC NATIONAL DISTRIBUTING CO LLC	11/09/2021	Regular	0.00	177.28	84803
6346262	Invoice	11/01/2021	GOLF-BEVERAGES-PRO SHOP	0.00	137.33	
6346263	Invoice	11/01/2021	GOLF-BEVERAGES-PRO SHOP	0.00	39.95	
000999	SHAMROCK FOODS COMPANY	11/09/2021	Regular	0.00	1,221.55	84804
23818379	Invoice	11/01/2021	GOLF-FOOD-PRO SHOP	0.00	1,221.55	
001022	SOUTHERN GLAZER'S OF CO	11/09/2021	Regular	0.00	302.22	84805
2649489	Invoice	11/01/2021	GOLF-BEVERAGES-PRO SHOP	0.00	302.22	
001052	SWIRE COCA-COLA, USA	11/09/2021	Regular	0.00	238.08	84806
24908200278	Invoice	11/01/2021	GOLF-BEVERAGES-PRO SHOP	0.00	238.08	
001301	AAA AUTO PARTS INC	11/16/2021	Regular	0.00	51.96	84807
127089	Invoice	11/02/2021	GOLF-HOSE-MAINT	0.00	51.96	
000024	ACE HARDWARE OF FORT LUPTON	11/16/2021	Regular	0.00	242.49	84808
90286	Invoice	11/01/2021	GOLF-KEY SET/BATTERIES-PRO SHOP	0.00	39.94	
91104	Invoice	11/01/2021	GOLF-FASTENERS-MAINT	0.00	15.12	
91293	Invoice	11/01/2021	GOLF-PAINT-MAINT	0.00	16.34	
91409	Invoice	11/01/2021	GOLF-GARDEN TOOLS-MAINT	0.00	77.97	
91455	Invoice	11/02/2021	GOLF-PARTS-MAINT	0.00	6.98	
91462	Invoice	11/02/2021	GOLF-LIGHT BULBS-MIANT	0.00	15.18	
91498	Invoice	11/04/2021	GOLF-LIGHT BULBS-PRO SHOP	0.00	9.99	
91528	Invoice	11/06/2021	GOLF-SURGE PROTECTOR-PRO SHOP	0.00	44.99	
91537	Invoice	11/07/2021	GOLF-NOZZLE GUN-PRO SHOP	0.00	15.98	
000048	AIRGAS USA LLC	11/16/2021	Regular	0.00	15.73	84809
9983911346	Invoice	11/01/2021	GOLF-CYLINDER RENTAL-MAINT	0.00	15.73	

Check Report

Date Range: 11/03/2021 - 11/16/2021

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Post Date	Payable Description	Discount Amount	Payable Amount	
000239	CITY OF FORT LUPTON	11/16/2021	Regular	0.00	30,780.52	84810
FIN2021324	Invoice	11/05/2021	GOLF-PAYROLL EXPENSE 10/16-10/29/21 PA...	0.00	30,780.52	
002723	EAGLE ROCK COMPANY OF COLO	11/16/2021	Regular	0.00	192.97	84811
35890003	Credit Memo	11/01/2021	GOLF-EMPTY KEG-PRO SHOP	0.00	-50.00	
35890030	Credit Memo	11/01/2021	GOLF-EMPTY KEG-PRO SHOP	0.00	-102.00	
7956440	Invoice	11/01/2021	GOLF-BEVERAGES-PRO SHOP	0.00	115.46	
8008160	Invoice	11/01/2021	GOLF-BEVERAGES-PRO SHOP	0.00	28.05	
8306298	Invoice	11/08/2021	GOLF-BEVERAGES-PRO SHOP	0.00	86.00	
8306300	Invoice	11/08/2021	GOLF-BEVERAGES-PRO SHOP	0.00	115.46	
000487	FORT LUPTON PACK & SHIP	11/16/2021	Regular	0.00	163.74	84812
61293	Invoice	11/01/2021	GOLF-GOLF CLUBS RETURN-PRO SHOP	0.00	163.74	
000567	HIGH COUNTRY BEVERAGE CORP	11/16/2021	Regular	0.00	331.80	84813
W-6097998	Invoice	11/08/2021	GOLF-BEVERAGES-PRO SHOP	0.00	331.80	
000735	LL JOHNSON DISTRIBUTING	11/16/2021	Regular	0.00	1,255.87	84814
1139359-00	Invoice	11/01/2021	GOLF-IRRIGATION SERVICE-MAINT	0.00	600.00	
1864308-00	Invoice	11/01/2021	GOLF-LIGHT KIT-MAINT	0.00	554.00	
1868070-00	Invoice	11/01/2021	GOLF-FILTER/OIL-MAINT	0.00	101.87	
000862	O'REILLY AUTO PARTS	11/16/2021	Regular	0.00	119.99	84815
4489-333943	Invoice	11/01/2021	GOLF-POWER INVERTER-MAINT	0.00	119.99	
000913	POTESTIO BROTHERS EQUIPMENT	11/16/2021	Regular	0.00	537.78	84816
9082K	Invoice	11/01/2021	GOLF-CARBURETOR-MAINT	0.00	396.93	
9161K	Invoice	11/04/2021	GOLF-FUEL PUMP-MAINT	0.00	140.85	
001052	SWIRE COCA-COLA, USA	11/16/2021	Regular	0.00	174.48	84817
14348214024	Invoice	11/05/2021	GOLF-BEVERAGES-PRO SHOP	0.00	174.48	
001137	UNITED POWER	11/16/2021	Regular	0.00	3,113.69	84818
1194602 NOV21	Invoice	11/01/2021	United Power	0.00	648.90	
1195001 NOV21	Invoice	11/01/2021	United Power	0.00	2,281.92	
1195701 NOV21	Invoice	11/01/2021	United Power	0.00	134.55	
19595600 NOV21	Invoice	11/01/2021	United Power	0.00	24.75	
6601202 NOV21	Invoice	11/01/2021	United Power	0.00	23.57	

Bank Code Golf Course Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	49	24	0.00	67,434.75
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	49	24	0.00	67,434.75

Check Report

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Vendor Number	Vendor Name		Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Post Date	Payable Description		Discount Amount	Payable Amount	
Bank Code: Pooled Cash-Pooled Cash							
	Void		11/05/2021	Regular	0.00	0.00	70468
	Void		11/05/2021	Regular	0.00	0.00	70469
	Void		11/05/2021	Regular	0.00	0.00	70470
	Void		11/05/2021	Regular	0.00	0.00	70471
	Void		11/05/2021	Regular	0.00	0.00	70472
	Void		11/05/2021	Regular	0.00	0.00	70473
	Void		11/05/2021	Regular	0.00	0.00	70474
	Void		11/05/2021	Regular	0.00	0.00	70475
	Void		11/05/2021	Regular	0.00	0.00	70476
	Void		11/05/2021	Regular	0.00	0.00	70477
	Void		11/05/2021	Regular	0.00	0.00	70478
	Void		11/05/2021	Regular	0.00	0.00	70479
	Void		11/05/2021	Regular	0.00	0.00	70480
	Void		11/05/2021	Regular	0.00	0.00	70481
	Void		11/05/2021	Regular	0.00	0.00	70482
	Void		11/05/2021	Regular	0.00	0.00	70483
	Void		11/05/2021	Regular	0.00	0.00	70484
	Void		11/05/2021	Regular	0.00	0.00	70485
	Void		11/05/2021	Regular	0.00	0.00	70486
	Void		11/05/2021	Regular	0.00	0.00	70487
	Void		11/05/2021	Regular	0.00	0.00	70488
	Void		11/05/2021	Regular	0.00	0.00	70489
	Void		11/05/2021	Regular	0.00	0.00	70490
	Void		11/05/2021	Regular	0.00	0.00	70491
	Void		11/05/2021	Regular	0.00	0.00	70492
	Void		11/05/2021	Regular	0.00	0.00	70493
	Void		11/05/2021	Regular	0.00	0.00	70494
	Void		11/05/2021	Regular	0.00	0.00	70495
	Void		11/05/2021	Regular	0.00	0.00	70496
	Void		11/05/2021	Regular	0.00	0.00	70497
	Void		11/05/2021	Regular	0.00	0.00	70498
	Void		11/05/2021	Regular	0.00	0.00	70499
	Void		11/05/2021	Regular	0.00	0.00	70500
	Void		11/05/2021	Regular	0.00	0.00	70501
	Void		11/05/2021	Regular	0.00	0.00	70502
	Void		11/05/2021	Regular	0.00	0.00	70503
	Void		11/05/2021	Regular	0.00	0.00	70504
	Void		11/05/2021	Regular	0.00	0.00	70505
	Void		11/05/2021	Regular	0.00	0.00	70506
	Void		11/05/2021	Regular	0.00	0.00	70507
	Void		11/05/2021	Regular	0.00	0.00	70508
001301	AAA AUTO PARTS INC		11/09/2021	Regular	0.00	235.52	70509
124118	Invoice	10/01/2021	UF-LOADER REPAIR UNIT #32-W LINES		0.00	25.47	
124819	Invoice	10/05/2021	GF-EQUIPMENT MAINTENANCE-STREETS		0.00	163.20	
125326	Invoice	10/11/2021	GF-HOSE FITTINGS-STREETS		0.00	46.85	
000031	ADAMSON POLICE PRODUCTS		11/09/2021	Regular	0.00	428.04	70510
INV364106	Invoice	10/13/2021	GF-UNIFORMS-CODE		0.00	428.04	
000037	ADVANCED URGENT CARE AND OCC MED		11/09/2021	Regular	0.00	105.00	70511
72327	Invoice	11/02/2021	GF- HEP B VACCINE-HR		0.00	105.00	
002729	AVITUS TECHNOLOGY SERVICES		11/09/2021	Regular	0.00	85.50	70512
28699	Invoice	11/01/2021	Support thru AvitusGroup for ProofPoint		0.00	85.50	
001820	BADGER METER		11/09/2021	Regular	0.00	27,182.58	70513
1467825	Invoice	11/01/2021	UF-METERS AND ACCESSORIES		0.00	26,136.00	
80084818	Invoice	11/01/2021	UF-BEACON SERVICES-W LINES		0.00	1,046.58	
002600	BEARCOM		11/09/2021	Regular	0.00	344.00	70514

Check Report

Date Range: 11/03/2021 - 11/16/2021

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Post Date	Payable Description	Discount Amount	Payable Amount	
5262443	Invoice	10/01/2021	GF-RADAR REPAIR-PD	0.00	344.00	
002835	BRANDING BY BRE	11/09/2021	Regular	0.00	2,750.00	70515
1059	Invoice	11/01/2021	GF-SOCIAL MEDIA MANAGEMENT-CITY ADM	0.00	2,750.00	
000171	BROWNS HILL ENGINEERING & CONTROLS	11/09/2021	Regular	0.00	30,631.00	70516
22095	Invoice	10/28/2021	UF-SCADA UPGRADE -WATER	0.00	30,631.00	
002853	BUCKEYE CLEANING CENTER	11/09/2021	Regular	0.00	893.11	70517
90363545	Invoice	10/14/2021	CPR-JANITORIAL SUPPLIES-COM CTR	0.00	226.06	
90364665	Invoice	10/20/2021	CPR-JANITORIAL SUPPLIES-COM CTR	0.00	667.05	
000241	CITY OF FT LUPTON-UTIL INVOICE	11/09/2021	Regular	0.00	59,441.34	70518
110035001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	1,607.05	
110221001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	383.65	
110222001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	655.75	
110251001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	621.49	
330025001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	333.85	
330031001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	1,321.45	
330045001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	158.26	
330092001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	27,252.04	
330166001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	224.29	
330920000 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	34.66	
550055501 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	167.70	
550057001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	525.79	
550057601 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	1,849.50	
550057701 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	12,234.52	
660092001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	346.75	
770109501 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	34.65	
770116501 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	165.02	
770229001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	389.05	
770229501 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	1,672.52	
770229601 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	36.21	
770231101 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	34.65	
990004001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	143.44	
990004101 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	110.54	
990005001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	250.55	
990006001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	108.04	
990007001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	236.76	
990008001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	102.23	
990132001 OCT21	Invoice	11/01/2021	Water/Sewer Bill-City	0.00	8,440.93	
001949	CIVIL RESOURCES LLC	11/09/2021	Regular	0.00	2,800.00	70519
19-305.01.15	Invoice	11/01/2021	UF-LAGOON MINING ENGINEERING WWTP	0.00	2,800.00	
001526	CLEAR WATER SOLUTIONS INC	11/09/2021	Regular	0.00	5,820.00	70520
6451	Invoice	11/01/2021	UF-AWI Act Risk & Resilience Assessment-W...	0.00	5,820.00	
000268	COLORADO ANALYTICAL LAB	11/09/2021	Regular	0.00	46.00	70521
211007103	Invoice	10/08/2021	UF-WATER TESTING-W LINES	0.00	46.00	
002651	COLORADO COMMUNITY MEDIA	11/09/2021	Regular	0.00	294.52	70522
38895	Invoice	10/22/2021	GF-PUBLIC NOTICE-CITY CL	0.00	96.48	
39552	Invoice	10/29/2021	GF-PUBLIC NOTICE-FINANCE	0.00	198.04	
000307	COMCAST CABLE COMM, LLC	11/09/2021	Regular	0.00	529.10	70523
0117309 OCT21	Invoice	11/01/2021	REC-CABLE/MUSIC	0.00	254.25	
0147405 OCT21	Invoice	11/01/2021	CPR-PHONE/INTERNET-COM CTR	0.00	175.90	
0159244 NOV21	Invoice	11/01/2021	GF-NOV21 FAX & INTOXILIZER-PD	0.00	98.95	
000388	DIGETEK, LLC	11/09/2021	Regular	0.00	3,000.00	70524
7464	Invoice	10/27/2021	GF-Digeteks (20hrs) Support-IT	0.00	3,000.00	

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Payable #	Payable Type	Post Date	Payable Description	Discount Amount	Payable Amount	
001089	ERGOMED	11/09/2021	Regular	0.00	310.00	70525
7533112	Invoice	11/01/2021	GF-PRE EMPLOYMENT FEES-HR	0.00	310.00	
002655	FRONT RANGE LANDFILL INC	11/09/2021	Regular	0.00	4,161.00	70526
62706	Invoice	11/01/2021	GF-TRASH VOUCHER REDEMPTION-LEGIS	0.00	4,161.00	
002902	KEN GIESE	11/09/2021	Regular	0.00	250.00	70527
110221	Invoice	11/02/2021	GF-FIELD OF HONOR BAGPIPES-COM EVENTS	0.00	250.00	
000714	LEGACY SCHOOL OF DANCE LLC	11/09/2021	Regular	0.00	918.75	70528
102621	Invoice	10/26/2021	REC-DANCE LESSONS	0.00	918.75	
000735	LL JOHNSON DISTRIBUTING	11/09/2021	Regular	0.00	823.68	70529
1139531-00	Invoice	11/01/2021	GF-PARTS-PARKS	0.00	823.68	
000776	MB AUTO SALES & SALVAGE	11/09/2021	Regular	0.00	310.00	70530
100521	Invoice	10/05/2021	GF-ROAD CLEANUP/TIRE REPAIR-PD	0.00	310.00	
000859	NORTHWEST PARKWAY LLC	11/09/2021	Regular	0.00	14.35	70531
11998633	Invoice	11/01/2021	GF-TOLL FEES-PD	0.00	14.35	
000869	OPERATIONS MANAGEMENT INT	11/09/2021	Regular	0.00	120,324.80	70532
351230-22-12	Invoice	12/01/2021	UF-OMI MONTHLY BILLING	0.00	120,324.80	
000862	O'REILLY AUTO PARTS	11/09/2021	Regular	0.00	654.53	70533
4489-323134	Invoice	10/01/2021	GF-VEHICLE REPAIR-PW SHOP	0.00	54.99	
4489-323710	Credit Memo	10/01/2021	GF-VEHICLE REPAIR-PW SHOP	0.00	-54.99	
4489-325236	Invoice	10/01/2021	GF-ELGIN SWEEPER REPAIR UNIT #17-STREE...	0.00	207.41	
4489-325238	Invoice	10/01/2021	GF-AIR COMPRESSOR REPAIR-PW SHOP	0.00	17.97	
4489-327411	Invoice	10/01/2021	UF-GLASS CLEANER-W LINES	0.00	31.43	
4489-327456	Invoice	10/01/2021	GF-GLASS CLEANER-PW SHOP	0.00	26.94	
4489-327841	Invoice	10/01/2021	UF-BATTERY FOR UNIT #36-W LINES	0.00	321.48	
4489-330451	Invoice	10/04/2021	UF-HYDRAULIC VALVE EXERCISER-W LINES	0.00	49.30	
000896	PETTY CASH-FINANCE	11/09/2021	Regular	0.00	42.11	70534
11321	Invoice	11/03/2021	GF-REIMBURSE POP FUND USED OCT21	0.00	42.11	
000901	PLAINS EAST MECHANICAL SERVICES LLC	11/09/2021	Regular	0.00	3,466.51	70535
3304-1110	Invoice	10/27/2021	REC-GYM RTU REPAIR	0.00	2,140.10	
3305-111	Invoice	10/27/2021	CPR-REPAIR LENOX-COM CTR	0.00	1,326.41	
002265	QUADIENT FINANCE USA INC	11/09/2021	Regular	0.00	380.00	70536
7446 OCT21	Invoice	10/27/2021	GF-SEP21 POSTAGE RECHARGES	0.00	380.00	
002901	SAMANTHA BARKUS	11/09/2021	Regular	0.00	1,374.39	70537
110321	Invoice	11/03/2021	UF-1005 HOOVER SEWER BACKUP-SEWER	0.00	1,374.39	
001735	SCHOOL DISTRICT 27J	11/09/2021	Regular	0.00	125.00	70538
102521	Invoice	10/25/2021	UF-SHANE LEFFORGE CDL TEST	0.00	125.00	
001035	STANDARD INSURANCE CO.	11/09/2021	Regular	0.00	5,642.81	70539
00 759761 0001 ...	Invoice	11/01/2021	LI, AD&D, LTD, STD Ins Prem	0.00	5,642.81	
001624	STATE OF COLORADO	11/09/2021	Regular	0.00	3,939.10	70540
7267-22	Invoice	10/26/2021	UF-BILL PRINTING/LATE NOTICES-UB	0.00	2,508.79	
8598-22	Invoice	10/27/2021	UF-BILL PRINTING ENVELOPES-UB	0.00	1,430.31	
001105	TOSHIBA FINANCIAL SERVICES	11/09/2021	Regular	0.00	283.52	70541
455936781	Invoice	11/02/2021	GF-BASEMENT COPIER LEASE/SURCHARGE-IT	0.00	283.52	
001120	TRUDILIGENCE LLC	11/09/2021	Regular	0.00	587.68	70542
43286	Invoice	11/01/2021	GF-PRE EMPLOYMENT SCREENS-HR	0.00	587.68	
001149	UTILITY NOTIFICATION CENTER	11/09/2021	Regular	0.00	287.76	70543
221100623	Invoice	11/01/2021	SSTX-OCT21 RTL TRANSMISSIONS-STREETS	0.00	287.76	

Check Report

Date Range: 11/03/2021 - 11/16/2021

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Post Date	Payable Description	Discount Amount	Payable Amount	
002889	VALLEY HEATING & AIR CONDITIONING	11/09/2021	Regular	0.00	7,561.81	70544
21-46745	Invoice	10/29/2021	parks building HVAC	0.00	7,561.81	
001156	VERIZON WIRELESS SVCS LLC	11/09/2021	Regular	0.00	4,404.44	70545
9891552416	Invoice	11/01/2021	Verizon Bill	0.00	4,404.44	
001174	WAGNER EQUIPMENT CO.	11/09/2021	Regular	0.00	1,069.99	70546
AGC003654	Invoice	10/01/2021	GF-GRADER UNIT #42 REPAIR-STREETS	0.00	562.60	
AGC081677	Invoice	10/01/2021	GF-GRADER UNIT #42 REPAIR-STREETS	0.00	74.84	
AGC110941	Invoice	10/01/2021	UF-LOADER UNIT #32 REPAIR-W LINES	0.00	432.55	
001963	WASTE CONNECTIONS OF COLO, INC	11/09/2021	Regular	0.00	170.57	70547
5699510	Invoice	11/01/2021	GF-OCT21 TRASH SERVICE-PW	0.00	170.57	
001212	WILLIAMS AND WEISS CONSULTING	11/09/2021	Regular	0.00	3,525.00	70548
1593	Invoice	11/02/2021	2021 WATER ENGINEERING	0.00	3,525.00	
001224	XCEL ENERGY-GAS	11/09/2021	Regular	0.00	617.68	70549
754340790	Invoice	11/01/2021	Xcel Gas Bill	0.00	617.68	
002906	BADGE2BADGE	11/12/2021	Regular	0.00	150.00	70550
110421	Invoice	11/04/2021	GF-FIELD OF HONOR PRESENTER-COM EVEN...	0.00	150.00	
002907	MICHAEL WILLIAMS	11/12/2021	Regular	0.00	150.00	70551
11421	Invoice	11/04/2021	GF-FIELD OF HONOR PRESENTER-COM EVEN...	0.00	150.00	
002905	AARON ENCINIA SR	11/16/2021	Regular	0.00	175.00	70552
2006752	Invoice	11/01/2021	REC-ROOM RENTAL REFUND	0.00	175.00	
000034	ADT SECURITY SYSTEM	11/16/2021	Regular	0.00	127.49	70553
50576495 NOV21	Invoice	11/01/2021	CPR-SECURITY MONITORING-COM CTR	0.00	127.49	
000040	AFLAC	11/16/2021	Regular	0.00	1,966.10	70554
699033	Invoice	10/12/2021	GF-SUPPLEMENTAL INS FOR OCT21	0.00	1,966.10	
001293	AMAZON.COM	11/16/2021	Regular	0.00	186.86	70555
13FX-D11P-R3Q4	Invoice	11/05/2021	Amazon Purchases	0.00	186.86	
002137	APPLIED CONCEPT, INC	11/16/2021	Regular	0.00	165.00	70556
392699	Invoice	11/01/2021	GF-RADAR REPAIR-PD	0.00	165.00	
002903	ARCHIVESOCIAL INC	11/16/2021	Regular	0.00	5,988.00	70557
19273	Invoice	11/08/2021	Archive Social Media	0.00	5,988.00	
000108	AUSMUS LAW FIRM PC	11/16/2021	Regular	0.00	1,200.00	70558
7350	Invoice	11/05/2021	GF-PROSECUTION SERVICES-COURT	0.00	1,200.00	
002600	BEARCOM	11/16/2021	Regular	0.00	667.50	70559
5277209	Invoice	11/01/2021	GF-IGNITION SECURITY REPAIR-PD	0.00	125.00	
5285582	Invoice	11/04/2021	GF-SEAT BELT RETRACTOR-PD	0.00	542.50	
001908	CENTURA HEALTH	11/16/2021	Regular	0.00	256.78	70560
102521	Invoice	11/01/2021	GF-VENIPUNCTURES-PD	0.00	256.78	
000250	CO ASSOC OF CHIEFS OF	11/16/2021	Regular	0.00	480.00	70561
3223	Invoice	11/01/2021	GF-PRE EMPLOYMENT-HR	0.00	480.00	
002651	COLORADO COMMUNITY MEDIA	11/16/2021	Regular	0.00	71.88	70562
40336	Invoice	11/05/2021	GF-PUBLIC NOTICE	0.00	71.88	
000306	COMCAST BUSINESS	11/16/2021	Regular	0.00	2,210.30	70563
133390927	Invoice	11/01/2021	GF-NOV21 INTERNET SERVICE	0.00	2,210.30	
000307	COMCAST CABLE COMM, LLC	11/16/2021	Regular	0.00	391.20	70564
0116038 NOV21	Invoice	11/01/2021	REC-NOV21 PHONE SERVICE	0.00	218.47	
6460163725 NOV...	Invoice	11/01/2021	Comcast Acct 8497 60 646 0163725	0.00	172.73	

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Date Range: 11/03/2021 - 11/16/2021

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Post Date	Payable Description	Discount Amount	Payable Amount	
002581	COUNTRY TRUCK & AUTO LLC	11/16/2021	Regular	0.00	788.47	70565
12490	Invoice	11/01/2021	GF-VEHICLE REPAIR-PD	0.00	788.47	
000431	EMPLOYERS COUNCIL SERVICES, INC	11/16/2021	Regular	0.00	1,400.00	70566
394346	Invoice	11/01/2021	GF-HEMPEL TRAINING-PD	0.00	1,400.00	
000454	FARIS MACHINERY COMPANY	11/16/2021	Regular	0.00	11.93	70567
SVC13699	Invoice	11/01/2021	GF-FINANCE CHARGES-STREETS	0.00	11.93	
000487	FORT LUPTON PACK & SHIP	11/16/2021	Regular	0.00	45.42	70568
61072	Invoice	11/01/2021	GF-SHIPMENT TO DEVIN FERREY	0.00	15.58	
61290	Invoice	11/01/2021	GF-SHIPMENT-IT	0.00	29.84	
002011	FRONT RANGE LUMBER COMPANY	11/16/2021	Regular	0.00	514.48	70569
15410/2	Invoice	11/01/2021	CPR-BACK STEP REPAIR-ATHL	0.00	514.48	
001881	HALO BRANDED SOLUTIONS INC	11/16/2021	Regular	0.00	26.72	70570
2021000077561	Invoice	11/01/2021	GF-SHIPPING FOR CITY JACKETS-LEGIS	0.00	26.72	
002674	HAYES POZNANOVIC KORVER, LLC	11/16/2021	Regular	0.00	8,999.00	70571
43438	Invoice	10/04/2021	WST-SEP21 LEGAL FEES-WATER	0.00	3,936.50	
43627	Invoice	11/04/2021	WSTX-OCT21 LEGAL FEES-WATER	0.00	5,062.50	
002910	KRONKS ROADSIDE ASSISTANCE	11/16/2021	Regular	0.00	625.00	70572
21-02380	Invoice	11/01/2021	GF-TOW/IMPOUND-PD	0.00	625.00	
000698	L.G. EVERIST, INC	11/16/2021	Regular	0.00	297.90	70573
575929	Invoice	11/09/2021	UF-SQUEEGEE-W LINES	0.00	297.90	
000716	LEONARD B. MEDOFF, Ph.D.	11/16/2021	Regular	0.00	700.00	70574
101621	Invoice	11/01/2021	GF-PRE EMPLOYMENT EVALUATIONS-PD	0.00	700.00	
000756	MARI PENA	11/16/2021	Regular	0.00	147.06	70575
11521	Invoice	11/05/2021	GF-CMCA MILEAGE REIMBURSEMENT-CITY CL	0.00	147.06	
002909	MIKAYLA NORBY	11/16/2021	Regular	0.00	300.00	70576
INV0001	Invoice	11/01/2021	GF-HALLOWEEN PAINTED BOARDS-COM EV...	0.00	300.00	
000865	OFFICE DEPOT	11/16/2021	Regular	0.00	519.77	70577
194320561001	Invoice	11/01/2021	GF-TONER-PW SHOP	0.00	134.29	
204387014001	Invoice	11/01/2021	GF-INK-COURT	0.00	152.92	
206497096001	Invoice	11/01/2021	GF-FEBREEZE-ADMIN	0.00	5.99	
206498723001	Invoice	11/01/2021	GF-BATTERIES/INK-PARKS	0.00	226.57	
000862	O'REILLY AUTO PARTS	11/16/2021	Regular	0.00	84.93	70578
4489-320160	Invoice	11/01/2021	GF-ANTIFREEZE-STREETS	0.00	84.93	
001998	PEAK PERFORMANCE COPIER AND SUPPLY INC	11/16/2021	Regular	0.00	8,900.00	70579
62732	Invoice	11/08/2021	Laserfiche Renewal	0.00	8,900.00	
001943	PINNACOL ASSURANCE	11/16/2021	Regular	0.00	131.02	70580
20644948	Invoice	10/14/2021	GF-WORK COMP INS DEDUCTIBLES-MISC	0.00	131.02	
001643	PROCEDURE INC	11/16/2021	Regular	0.00	33,646.14	70581
1962	Invoice	11/08/2021	GF-OCT21 PERMIT/INSPECTION FEES-PLANN...	0.00	33,646.14	
002493	QUADIENT LEASING USA INC	11/16/2021	Regular	0.00	433.59	70582
N9127255	Invoice	11/05/2021	GF-QRTLY LEASE PAYMENT-ADMIN	0.00	433.59	
000932	R & M SERVICES	11/16/2021	Regular	0.00	1,341.23	70583
10618	Invoice	11/01/2021	GF-VEHICLE MAINTENANCE-PD	0.00	66.63	
10619	Invoice	11/01/2021	GF-VEHICLE REPAIR-PD	0.00	255.95	
10620	Invoice	11/01/2021	GF-TIRE REPAIR-PD	0.00	15.00	
10621	Invoice	11/01/2021	GF-VEHICLE MAINTENANCE-PD	0.00	79.62	
10623	Invoice	11/01/2021	GF-TIRE REPLACEMENT-PD	0.00	756.80	
10625	Invoice	11/01/2021	GF-VEHICLE MAINTENANCE-CODE	0.00	90.62	

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Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Post Date	Payable Description	Discount Amount	Payable Amount	
10626	Invoice	11/01/2021	GF-VEHICLE MAINTENANCE-PD	0.00	76.61	
001420	STORMWIND LLC	11/16/2021	Regular	0.00	3,900.00	70584
38827	Invoice	11/08/2021	Renewal of 3 Ultimate Access Training Licen...	0.00	3,900.00	
002816	THE CIRCUIT CLERK	11/16/2021	Regular	0.00	200.00	70585
004	Invoice	11/02/2021	GF-MARIJUANA LICENSING CONSULT-MISC	0.00	200.00	
001101	TODD HODGES DESIGN LLC	11/16/2021	Regular	0.00	7,973.75	70586
3366	Invoice	11/08/2021	GF-PLANNING SRVCS 10/25-11/7/21-PLANN...	0.00	7,973.75	
001104	TOSHIBA BUSINESS SOLUTIONS	11/16/2021	Regular	0.00	172.50	70587
2059565	Invoice	11/01/2021	GF-PRESENTATION BOND-PLANNING	0.00	172.50	
001126	TYLER TECHNOLOGIES	11/16/2021	Regular	0.00	476.00	70588
130-124181	Invoice	11/01/2021	GF-MAINTENANCE-PD	0.00	476.00	
001137	UNITED POWER	11/16/2021	Regular	0.00	34,314.25	70589
10553102 NOV21	Invoice	11/04/2021	United Power	0.00	22.51	
1195501 NOV21	Invoice	11/04/2021	United Power	0.00	1,989.71	
1195603 NOV21	Invoice	11/04/2021	United Power	0.00	56.95	
1196401 NOV21	Invoice	11/04/2021	United Power	0.00	33.82	
1207701 NOV21	Invoice	11/04/2021	United Power	0.00	21.05	
1223101 NOV21	Invoice	11/04/2021	United Power	0.00	20.00	
1240301 NOV21	Invoice	11/04/2021	United Power	0.00	196.21	
1241801 NOV21	Invoice	11/04/2021	United Power	0.00	330.70	
1241903 NOV21	Invoice	11/04/2021	United Power	0.00	152.69	
1276101 NOV21	Invoice	11/04/2021	United Power	0.00	697.56	
1279801 NOV21	Invoice	11/04/2021	United Power	0.00	24.72	
1295501 NOV21	Invoice	11/04/2021	United Power	0.00	57.87	
1296101 NOV21	Invoice	11/04/2021	United Power	0.00	64.79	
1299501 NOV21	Invoice	11/04/2021	United Power	0.00	112.00	
1302801 NOV21	Invoice	11/04/2021	United Power	0.00	1,535.43	
1302901 NOV21	Invoice	11/04/2021	United Power	0.00	121.83	
1316801 NOV21	Invoice	11/04/2021	United Power	0.00	762.33	
1322501 NOV21	Invoice	11/04/2021	United Power	0.00	5,975.09	
1360303 NOV21	Invoice	11/04/2021	United Power	0.00	32.31	
13842400 NOV21	Invoice	11/04/2021	United Power	0.00	51.86	
14427100 NOV21	Invoice	11/04/2021	United Power	0.00	143.86	
15232500 NOV21	Invoice	11/04/2021	United Power	0.00	22.13	
17149700 NOV21	Invoice	11/04/2021	United Power	0.00	58.54	
17761600 NOV21	Invoice	11/04/2021	United Power	0.00	20.02	
17868800 NOV21	Invoice	11/04/2021	United Power	0.00	20.00	
18057500 NOV21	Invoice	11/04/2021	United Power	0.00	562.20	
18498400 NOV21	Invoice	11/04/2021	United Power	0.00	159.22	
18762100 NOV21	Invoice	11/04/2021	United Power	0.00	54.94	
19545100 NOV21	Invoice	11/04/2021	United Power	0.00	424.51	
20040100NOV21	Invoice	11/04/2021	United Power	0.00	239.40	
21675200 NOV21	Invoice	11/04/2021	United Power	0.00	132.80	
21675300 NOV21	Invoice	11/04/2021	United Power	0.00	73.38	
22185901 NOV21	Invoice	11/04/2021	United Power	0.00	30.20	
3399301 NOV21	Invoice	11/04/2021	United Power	0.00	52.13	
6612303 NOV21	Invoice	11/04/2021	United Power	0.00	21.07	
6779701 NOV21	Invoice	11/04/2021	United Power	0.00	6,392.41	
704901 NOV21	Invoice	11/04/2021	United Power	0.00	8,398.07	
7225800 NOV21	Invoice	11/04/2021	United Power	0.00	20.08	
726705 NOV21	Invoice	11/04/2021	United Power	0.00	20.00	
7280200 NOV21	Invoice	11/04/2021	United Power	0.00	21.79	
733101 NOV21	Invoice	11/04/2021	United Power	0.00	237.85	
762901 NOV21	Invoice	11/04/2021	United Power	0.00	47.18	
803908 NOV21	Invoice	11/04/2021	United Power	0.00	4,272.17	

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Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Post Date	Payable Description	Discount Amount	Payable Amount	
8976200 NOV21	Invoice	11/04/2021	United Power	0.00	630.87	
	Void	11/16/2021	Regular	0.00	0.00	70590
001963	WASTE CONNECTIONS OF COLO, INC	11/16/2021	Regular	0.00	578.69	70591
5699509	Invoice	11/01/2021	Waste Connections	0.00	117.64	
5699511	Invoice	11/01/2021	Waste Connections	0.00	304.31	
5699512	Invoice	11/01/2021	Waste Connections	0.00	57.01	
5699513	Invoice	11/01/2021	Waste Connections	0.00	99.73	
000119	BANK OF COLORADO	11/05/2021	Bank Draft	0.00	5,880.58	DFT0001832
INV0001064	Invoice	11/05/2021	HSA DISTRIBUTION	0.00	5,880.58	
000119	BANK OF COLORADO	11/05/2021	Bank Draft	0.00	515.83	DFT0001833
INV0001065	Invoice	11/05/2021	HSA DISTRIBUTION	0.00	515.83	
001416	VALIC_1	11/05/2021	Bank Draft	0.00	30,092.92	DFT0001834
INV0001066	Invoice	11/05/2021	VALIC - 457(b) \$ Contributions	0.00	30,092.92	
001265	IRS	11/05/2021	Bank Draft	0.00	52,075.58	DFT0001835
INV0001067	Invoice	11/05/2021	Federal Withholding	0.00	52,075.58	
001418	CO DEPARTMENT OF REVENUE	11/05/2021	Bank Draft	0.00	8,818.08	DFT0001836
INV0001068	Invoice	11/05/2021	CO Withholding	0.00	8,818.08	
000465	FIRE & POLICE PENSION ASC	11/05/2021	Bank Draft	0.00	1,749.31	DFT0001838
110521	Invoice	11/05/2021	GF-FPPA PAYMENT FOR PAYROLL 11/5/21-PD	0.00	1,749.31	

Bank Code Pooled Cash Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	186	82	0.00	416,545.15
Manual Checks	0	0	0.00	0.00
Voided Checks	0	42	0.00	0.00
Bank Drafts	6	6	0.00	99,132.30
EFT's	0	0	0.00	0.00
	192	130	0.00	515,677.45

All Bank Codes Check Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	235	106	0.00	483,979.90
Manual Checks	0	0	0.00	0.00
Voided Checks	0	42	0.00	0.00
Bank Drafts	6	6	0.00	99,132.30
EFT's	0	0	0.00	0.00
	241	154	0.00	583,112.20

Fund Summary

Fund	Name	Period	Amount
600	GOLF ENTERPRISE FUND	11/2021	67,434.75
999	POOLED CASH/CONSOLIDATED CASH	11/2021	515,677.45
			583,112.20

**RECORD OF PROCEEDINGS
FORT LUPTON CITY COUNCIL/ENTERPRISE BOARDS
November 2, 2021**

The City Council of the City of Fort Lupton met in a regular session at the City Complex, 130 South McKinley Avenue, the regular meeting place of the City Council, on Tuesday, November 2, 2021. Due to the COVID-19 virus, the meeting was held with remote access provided through GoToWebinar. Mayor Zo Stieber called the meeting to order at 7:00 p.m. and invited everyone to join her in the Pledge of Allegiance.

ROLL CALL

Mari Peña, City Clerk, called the roll. Those present were Mayor Zo Stieber and Councilmembers Shannon Rhoda, Chris Ceretto, Tommy Holton, Michael Sanchez, and Bruce Fitzgerald. Councilmember David Crespín participated remotely through GoToWebinar.

Also present were City Administrator, Chris Cross, City Clerk, Mari Peña, City Attorney, Andy Ausmus, Police Chief, John Fryar, Planning Director, Todd Hodges, Finance Director, Leann Perino and Public Works Director Roy Vestal.

PERSONS TO ADDRESS COUNCIL

Chief, John Fryar, presented on the achievements of Police Officer Garrett Hackett.

APPROVAL OF AGENDA

It was moved by Tommy Holton and seconded by Bruce Fitzgerald to approve the Agenda as presented. Motion passed unanimously on roll call vote.

REVIEW OF ACCOUNTS PAYABLES

Council reviewed the November 2, 2021, payables; there were no questions or comments from the Mayor or Council.

CONSENT AGENDA

It was moved by Michael Sanchez and seconded by Tommy Holton to approve the Agenda as presented with the following items: October 16, 2021 City Council Special Meeting Minutes, October 19, 2021 City Council Meeting Minutes, Authorize the City Administrator to Execute an Agreement with Smartnet to Host a Leica Geosystems Global Navigation Satellite System on City Property (AM 2021-172), Approve Mayor's Signature for Letter of Support for the Highway 52 Planning and Environmental Linkages Study (PEL) and Access Control Plan (ACP) Study (AM 2021-175), Authorization for Mayor to Sign an Indemnification Agreement Between Peerless Tire Co., City of Fort Lupton and the Fort Lupton Housing Authority (AM 2021-177), Authorize the Mayor's Signature to the Jacobs Contract Amendment 2 (AM 2021-178), Approval to Authorize the Mayor to Sign Resolution Adopting the Weld County Multi-Jurisdictional Hazard Mitigation Plan (AM 2021-180), and Approving a Resolution Accepting the City of Fort Lupton Participate in the Opioids Settlement (AM 2021-181). Motion passed unanimously on roll call vote.

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PUBLIC HEARING

AM 2021-182 Approve a Resolution Accepting the Cottonwood Greens PUD Preliminary Plat & Preliminary PUD Plan for Filing No. 4

Mayor Stieber opened the public hearing at 7:08 p.m. Alyssa Knutson, the City Planner, provided a presentation on the Cottonwood Greens PUD Preliminary Plat and Preliminary PUD Plan for Filing No. 4. All notification requirements have been met. Representation, Kristen, provided a presentation virtually.

Council asked if this was a metro development. Alyssa Knutson confirmed that it was.

Mayor Stieber asked if anyone from the public wished to speak for or against the proposal. Hearing none, Mayor Stieber closed the public hearing at 7:18 p.m.

It was moved by Chris Ceretto and seconded by Bruce Fitzgerald to approve Resolution 2021R064 APPROVE A RESOLUTION ACCEPTING THE COTTONWOOD GREENS PUD PRELIMINARY PLAT & PRELIMINARY PUD PLAN FOR FILING NO.4. Motion passed on a roll call vote with 6 ‘yes’ votes and 1 ‘no’ vote by Shannon Rhoda.

AM 2021-183 Adopting an Ordinance Amending Chapter 18 Building Regulations of the Fort Lupton Municipal Code and Adopting by Reference the 2018 International Building and Fire Codes and Enacting a New Section for the International Swimming Pool and Spa Code

Mayor Stieber opened the public hearing at 7:19 p.m. Todd Hodges, Planning Director, provided a presentation on the 2018 Building and Fire Codes. Taw Tamlin, Fire Marshall, and Jose Gonzales, with Pro Code, were present to answer any questions.

Mayor Stieber asked if anyone from the public wished to speak for or against the proposal. Hearing none, Mayor Stieber closed the public hearing at 7:21 p.m.

It was moved by Bruce Fitzgerald and seconded by Tommy Holton to adopt Ordinance 2021-1132 AN ORDINANCE AMENDING CHAPTER 18 BUILDING REGULATIONS OF THE FORT LUPTON MUNICIPAL CODE AND ADOPTING BY REFERENCE THE 2018 INTERNATIONAL BUILDING AND FIRE CODES AND ENACTING A NEW SECTION FOR THE INTERNATIONAL SWIMMING POOL AND SPA CODE. Motion passed unanimously on a roll call vote.

ACTION MEMORANDUM

AM 2021-184 Approve a Resolution Accepting the Cottonwood Greens PUD Final Plat and Final PUD Plan for Filing No. 4

The applicant, Arbor Capital Partners, LLC, has applied for approval of a Final Plat and Final PUD Plan for the City Council’s consideration for Filing No. 4 of the Cottonwood Greens PUD

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Subdivision. The Final Plat and Final PUD Plan is located north and adjacent to 9th Street and approximately 0.29 miles west of County Road 31 in Fort Lupton. The proposal is for a single-family attached residential subdivision on 16.22 acres, more or less, that will include 137 townhomes, as well as common areas and interconnecting trails.

Alyssa Knutson, the City Planner, provided a presentation on the Cottonwood Greens PUD Final Plat and Final PUD Plan for Filing No. 4. Staff recommended approval. Representatives were present to answer any questions.

It was moved by Tommy Holton and seconded by Chris Ceretto to approve Resolution 2021R065 APPROVE A RESOLUTION ACCEPTING THE COTTONWOOD GREENS PUD FINAL PLAT AND FINAL PUD PLAN FOR FILING NO.4. Motion passed on a roll call vote with 6 'yes' votes and '1' no vote by Shannon Rhoda.

AM 2021-171 Approving the Agreement for Municipal Planning Services with Todd Hodges Design, LLC as the Planner for the City of Fort Lupton for a Two (2) Year Term

Todd Hodges Design has been providing Interim Planning Director services for the City of Fort Lupton since March of 2010. This action is an amendment to allow for planning services through Todd Hodges Design, LLC and defines compensation for the principal and associates. Todd Hodges Design, LLC has been critical in directing the planning and building department through growth periods and has assisted in the economic development of the City.

This action is an amendment with a two year extension to November 2, 2023. The agreement defines compensation for Todd Hodges Design, LLC Principal and Associate billing rates.

It was moved by Chris Ceretto and seconded by Bruce Fitzgerald to approve the agreement for Municipal Planning Services with Todd Hodges Design, LLC as the Planner for the City of Fort Lupton for a two (2) year term. Motion passed unanimously on roll call vote.

AM 2021-173 Approve the Purchase and Installation of a HVAC Unit for the Aquatics Area of the Recreation Center from Innovative Mechanical Solution for an Amount not to Exceed \$285,717.00

The HVAC Unit (an Innovative) above the pool, for a number of years has required a considerable number of repairs. We have budgeted for this replacement for the past four years. A number of years ago, the unit had a cracked heat exchanger and we were able to pull it out and have it welded and repaired. At that time, we were told that they had no idea how long it would last but when or if it broke again it would not be fixable. Our internal maintenance department as well as our outside HVAC group that works on our units indicated to us that it looks like we are working on borrowed time. We are looking to replace this unit with the same type of system as it is compatible with our aquatic area. This is a very specialized system as pools have extremely difficult environments. The mechanical design of our pool was designed to work with this system. If we bring in another system it would require a complete overhaul of the mechanical systems in the pool area. Our pool environment has been very good. Many outside vendors that have come into our aquatics area, constantly comment on how good our air

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quality is. This unit delivers the same air quality and works with all of our current controls. It also allows for a quicker turn around and a minimal shut down of the pool would be required as it will utilize the existing foot print and connections. Even if we are able to order the unit today there is an 18 to 20 week turn around on the getting the unit here. Also, steel prices are constantly rising and the quoted price is only good until the end of November. Innovative Mechanical Solutions is a sole supplier of this unit in our area.

Monty Schuman, Recreation Director, provided a presentation on the purchase and installation of a HVAC unit for the aquatics area for the Recreation Center.

Council asked questions regarding the budget, repair, and warranty. Monty Schuman stated that money has been budgeted for about four years, repair will be 18-20 weeks out, and the warranty is a standard one-year.

It was moved by Tommy Holton and seconded by Bruce Fitzgerald to approve the purchase and installation of a HVAC unit for the aquatics area of the recreation center from Innovative Mechanical Solutions for an amount not to exceed \$285,717.00. Motion passed unanimously on roll call vote.

AM 2021-174 Award Contract to Burns & McDonnell Engineering Company, Inc. for \$1,897,540.00 for Design and Permitting of Metro Lift Station and Pipeline Project from the Utility Fund

The City received an extension to June 2024 of our Colorado Water Quality Control Act discharge permit for the Wastewater Treatment Plant.

Council approved pursuit of the METRO connection option on April 20, 2021 with AM2021-066. The City has determined that entering into an agreement with the Metro Wastewater Reclamation District's (MWRD) Regional Northern Treatment Plant may be a preferred alternative to expanding the City's Wastewater Treatment Plant (WWTP). The Metro District Board of Director's Resolution NO. 0721-B7.f was approved on July 20, 2021, which determined that the District could feasibly serve the City.

The request for Qualifications (RFQ) was advertised on August 13, 2021. A Pre-proposal meeting was held at City Hall on August 27, 2021. The proposal deadline for submittal was September 10, 2021. Five firms submitted qualifications. The selection committee included Leann Perino, Jake Freier, Jon Mays, Brad Schutt, and Al Paquet. All submittals were graded by each committee member based on the selection criteria and weighted per the proposed criteria. Each member's firm ranking was also tallied by score preference of 1 to 5. Phone interviews were conducted by our Jacobs (CH2M) representatives and scored. Burns and McDonnell was selected as the most qualified firm.

Work is scheduled to begin immediately. This agreement covers all requirements to evaluate, design and receive permitting compliance with CPH&E.

Roy Vestal, Public Works Director, provided a presentation on the Burns & McDonnell

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Engineering Company, Inc. contract for design and permitting of Metro Lift station and Pipeline Project.

It was moved by Bruce Fitzgerald and seconded by Chris Ceretto to award contract to Burns & McDonnell Engineering Company, Inc. for \$1,897,540.00 for Design and Permitting of Metro Lift Station and Pipeline Project from the Utility Fund. Motion passed on a roll call vote with 5 'yes' votes and 2 'no' votes by Shannon Rhoda and Tommy Holton.

AM 2021-176 Approve Changes to Employee Benefit Plans for a Total Cost of \$1,108,124.55 per Year

The following employee insurance benefits are currently on a policy year that runs from January 1st to December 31st. The various benefits up for renewal are

- Medical
- Health Reimbursement Arrangement (HRA)
- Vision
- Employee Assistance Program (EAP)
- Dental
- Flexible Spending Accounts
- COBRA Administration

The following benefits are not up for renewal:

- Group life and accidental death and dismemberment (AD&D)
- Voluntary life and accidental death and dismemberment (AD&D)
- Group long-term disability (LTD)
- Voluntary short-term disability (STD)

Costs for all benefits have been included in the totals at the end.

The City marketed the medical benefit for the 2022 plan year through our benefits broker, GBS Benefits. The City received quotes from our current provider, Humana, and several insurance carriers for different types of products, fully insured options and level funded options.

After negotiating options, Humana has offered a 9.5% total increase. Staff is recommending that the City stay with Humana for several reasons including, 1) the option that is less expensive does not offer the same benefits, 2) the disruption associated with changing carriers is significant and 3) the other options do not include a robust wellness program like we currently have. In staying with the Humana, the medical benefits will remain the same.

The health plan represents the majority of the benefit costs for the City. Based on current enrollment, the total cost for the plan will be \$994,179.36 for 2022, an increase of \$86,289.72 over 2021 costs, based on current enrollment.

Staff is proposing that Council consider a benefit enhancement in increasing the cost share percentage for the employee and dependent premiums. This will help to make Fort Lupton's benefits more competitive compared to other governmental entities, which will aid in employee

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retention and recruitment.

The premium cost share for the PPO plan:

	City portion	Employee portion
Employee only	85%	15%
Dependents	50%	50%

The premium cost share for the HDHP/HSA plan is as follows:

	City portion	Employee portion
Employee only	85% + \$50	15% - \$50 discount
Dependents	50% + \$75	50% - \$75 discount

It is important to distinguish that HDHP/HSA plan participants often have higher out of pocket expenses, so they are not necessarily receiving a richer benefit than PPO plan participants. In addition to the premium share, the City contributes \$100 per month to the employee's HSA and \$150 per month to the HSA if they are covering dependents

Staff is proposing a change as follows:

	City portion	Employee portion
Employee only	87%	13%
Dependents	55%	55%

The premium cost share for the HDHP/HSA plan is as follows:

	City portion	Employee portion
Employee only	87% + \$50	13% - \$50 discount
Dependents	55% + \$75	55% - \$75 discount

Staff is not proposing any change to the HSA contribution.

Based on the new premiums for 2022, by tier this is equivalent to the following:

	City portion	Monthly cost	Employee portion	Monthly cost
Employee only	87.00%	\$561.62	13.00%	\$ 83.92
Employee + spouse	71.40%	\$899.26	28.60%	\$360.18
Employee + child(ren)	72.35%	\$861.27	27.65%	\$329.10
Employee + family	66.45%	\$1,198.93	33.55%	\$605.34

By tier, this is equivalent to the following:

	City portion	Monthly cost	Employee portion	Monthly cost
Employee only	95.14%	\$ 584.63	4.86%	\$ 29.88
Employee + spouse	77.66%	\$ 931.04	22.34%	\$267.86

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Employee + child(ren)	78.97%	\$ 894.87	21.03%	\$238.28
Employee + family	70.82%	\$1,216.30	29.18%	\$501.24

The result of these changes is that the City will be absorbing the entirety of the cost increase for 2022 plus \$6,829.71 for a total of \$93,119.43. More detail on this change is illustrated in the cost share alternatives attachment.

HEALTH REIMBURSEMENT ARRANGEMENT – NATIONAL BENEFIT SERVICES (NBS):

NBS has not increased the rates for the administration of the plan. The cost will continue to be \$3.05 per covered employee per month. Based on current enrollment, the total estimated cost for the plan will be \$3,220.80 for 2022. This does not include the cost of HRA reimbursements. The benefits will remain the same.

HUMANA – VISION INSURANCE:

The City marketed the vision benefit for the 2022 plan year through our benefits broker, GBS Benefits. The City received quotes from our current provider, Humana, and several insurance carriers. After evaluating the options, staff is recommending that the City change carriers to Ameritas. They are offering a 7.36% decrease over our current rates. Based on current enrollment, the total estimated cost for the plan will be \$9,336.00 for 2022. There is a benefit enhancement to lower the copay for vision exams in 2022.

HUMANA – EMPLOYEE ASSISTANCE PROGRAM:

There is an increase from Humana for the EAP rates. This benefit is available to all full-time and part-time employees. The cost is changing from \$0.66 per employee per month to \$0.70 per employee per month, an increase of 6.06%. The total annual cost, based on current enrollment, is equivalent to \$739.20 per year. There are no changes to the benefits for 2022. The City did review other options, but staff is recommending staying with Humana since this benefit often pairs with the medical plan and the cost is modest.

HUMANA – DENTAL INSURANCE:

The City marketed the vision benefit for the 2022 plan year through our benefits broker, GBS Benefits. The City received quotes from our current provider, Humana, and several insurance carriers. After evaluating the options, staff is recommending that the City change carriers to Ameritas. They are offering a 9.99% decrease over our current rates. They also offer a larger network of providers. Based on current enrollment, the total estimated cost for the plan will be \$65,100.48 for 2022. There are no changes to the benefits for 2022.

FLEXIBLE SPENDING ACCOUNTS (FSA) – NATIONAL BENEFIT SERVICES (NBS):

NBS has not increased the rates for the administration of the plans. The administrative costs for the FSA plans have not changed. The cost will be \$3.05 per covered employee per month plus monthly and annual fees for the use of flexible spending account cards. Based on current enrollment, the total estimated cost for the plan will be \$928.20 for 2022. The benefits will remain the same.

COBRA ADMINISTRATION – GBS BENEFITS

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There are no administrative costs for COBRA Administration, as this is handled as a value-added service by our employee benefits broker, GBS Benefits.

Laura Howe, Human Resources Director, provided a presentation on the employee benefit plan.

Council asked questions about employee satisfaction and complaints of the current plan. Laura Howe discussed feedback from the Police Department survey regarding insurance and personal anecdotes told by employees.

It was moved by Chris Ceretto and seconded by Bruce Fitzgerald to approve changes to employee benefit plans for a total cost of \$1,108,124.55 per year. The motion passed unanimously on a roll call vote.

AM 2021-179 Authorize the City Administrator to Accept a Proposal From Dig Deep to Provide Grant Seeking Services for the City of Fort Lupton for an Amount of \$5,000.00 per Month

Dig Deep has presented a proposal for services for grant seeking efforts that would provide opportunities for the city to secure additional funding sources for major projects. The City placed a RFP and received 3 proposals. A committee of four staff reviewed the proposals. The top proposal from the committee was Dig Deep and they outscored the other two proposals on the following criteria:

1. Thoroughness, quality and conciseness of submittal.
2. Project understanding and approach for accomplishing the City's objectives.
3. Qualification of project manager and project team, and proven ability to complete projects of similar scope.
4. Proposed cost of services.
5. References from past and present clients.

The purpose for this RFQ was to find companies that could assist the city in securing and finding grants/loan interest loans. Dig Deep has helped numerous municipalities in these endeavors. They do specialize in major capital projects including water, public works and park projects.

The scoring by the majority of the committee was:

Dig Deep 90

Public Advisory Group 75

Clear Communications Services 55

Monty Schuman, Recreation Director, provided a presentation on the proposal from Dig Deep to provide grant seeking services.

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Council asked questions about projects and reports or updates on the benefit to the City. Monty Schuman stated that Dig Deep specializes in water.

It was moved by Bruce Fitzgerald and seconded by Chris Ceretto to authorize the City Administrator to accept a proposal from Dig Deep to provide grant seeking services for the City of Fort Lupton for an amount of \$5,000.00 per month. The motion passed unanimously on a roll call vote.

AM 2021-185 Approving Resolution 2021Rxxx Establishing the Fee Schedule for Regulated Marijuana

The Ordinance for regulated marijuana will go into effect on November 12, 2021. Pursuant to Section 6-360 of the Ordinance the following fees shall be set by Resolution: "In addition to application, renewal and an annual operating fee, the city shall impose administrative fees for services, which include the transfer of ownership, background investigations, change of business manager, modification of premises, change of location, change of corporate structure, change of financier, zoning verification, duplicate license, temporary permit, change of trade name, change of class of license, with all such fees to be established by resolution of city council."

The fees are necessary due to staff time in review of applications and enforcement actions for marijuana businesses and to assure the costs associated with protecting the health, safety, order, comfort, convenience and general welfare of the residents.

Mari Peña, City Clerk, provided a presentation on the fee schedule for regulated marijuana.

It was moved by Michael Sanchez and seconded by Tommy Holton to approve Resolution 2021R066 APPROVING RESOLUTION 2021R066 ESTABLISHING THE FEE SCHEDULE FOR REGULATED MARIJUANA. The motion passed unanimously on a roll call vote.

INFORMATION MEMORANDUM

IM 2021-005 Complete an Employee Opinion Survey for the Cost of \$2,900.00-4,600.00

When the City created its 2019-2020 Strategic Plan, one of the sections stated the following:

Recruitment and retention of great staff goes a long way in keeping the City at its best. Training is a critical piece of this philosophy. The evaluation of conditions will be accomplished with employee surveys. This survey input will also help in the plan development of key areas of compensation, staffing levels and succession planning.

The operational challenges of COVID-19 caused staff to postpone the completion of an employee survey in 2020. There has been some activity in 2021, however.

The Police Department completed an employee survey in Spring 2021. The survey provided excellent feedback and has motivated the staff to carefully review the department's challenges and implement solutions. Completing the employee opinion survey Citywide will help the staff

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focus on employee retention and improving the employee experience, which will serve the mission of providing municipal services that build an exceptional community.

Human Resources received three proposals at the following costs:

Vendor	Price
Employers Council	\$2,590
Newmeasures	\$8,750
Gallup	\$7,565

Employers Council is less expensive, in part, because the City did a survey with them in 2021 and they have offered a discount because the City did a survey with them this year. Employers Council did a good job in compiling the results and educating staff on the results.

Since the total expense is less than \$5,000, under the City's Purchasing Policy, this item is not required to come before Council. The cost will be covered under the contractual services budget for the Human Resources Department and City Administrator's budget.

Staff will provide a summary of results to Council after the survey is completed.

Laure Howe, Human Resources Director, provided a presentation on the employee survey. Laura stated that the actual cost will be \$2,590.

IM 2021-006 Increase Processing Fees Assessed on all Court Credit Card Payments

November 2019 the Fort Lupton City Council approved AM 2019-221 amending the agreement with Tyler Technologies. The AM authorized Global Payments to be the credit/debit card processor for court payments made online and in-person. Global Payments' compensation is from the processing fees made by the customers. The City's responsibility is for equipment maintenance costs.

December 2020 Council approved AM 2020-194 changing the responsibility for the online portal fee of \$2.50 per transaction from the customer to the City. There was no change of responsibility of the card-processing fees.

An analysis in 2019 set the fee at 3.21%, administratively. From January to September 2020, the Court processed \$95,436.85 in fines, costs and card fees. For the same timeframe in 2021, the Court has processed \$191,294.65; a 49.5% increase in usage. Based upon updated analysis, the processing fee is rising from 3.21% to 3.95%. The primary reasons for increase is due to usage and soaring processing fees.

Jeanelle Andersen, Court Administrator, was present to answer any questions.

IM 2021-007 Increase of New Public Library Facility Budget

Approval of an increase to the new public library facility budget of \$750,000. This will increase

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the Capital Request in the 2022 budget “New Library Building” from 7,100,000 to 7,850,000 and total cost of the new library facility from 8,850,000 to 9,600,000. This increase in the budget will come exclusively from the Library’s budget reserves and will not affect future operating costs. A contract with the construction company with a set construction budget will come to City Council at a later date once the design process is completed and approved.

Kate Merrell, Assistant Director of the Library, presented on the increase to the budget for the new public library.

STAFF

Mari Peña, City Clerk, discussed the report of hard liquor being sold at Safeway. It was actually a fermented malt beverage and Safeway was not in violation.

Chris Cross, City Administrator, reported on the success of the Haunted Hay Ride and other events being held at the Historic Fort.

MAYOR/COUNCIL REPORTS

Councilmember Bruce Fitzgerald reported on the success of the Trunk-or-Treat event.

Councilmember Michael Sanchez thanked Mayor Zo Stieber and Councilmember Bruce Fitzgerald for attending National First Responder’s Day.

Mayor Zo Stieber reported that Councilmembers Chris Ceretto and Bruce Fitzgerald helped put up lights on the bridge to Pearson Park as Field of Honor approaches, on November 13, 2021.

FUTURE CITY EVENTS

November 5-19, 2021	Art Show at the Library
November 9, 2021	Town Hall Meeting, 130 S. McKinley Ave. 6:30 p.m.
November 10-13, 2021	Field of Honor, Pearson Park 11 a.m. - 7p.m.
November 11, 2021	City Hall Closed in Observance of Veteran’s Day
November 13, 2021	Field of Honor Formal Ceremony, Pearson Park 1:00 p.m.
November 16, 2021	City Council Meeting, 130 S. McKinley Ave. 7:00 p.m.
November 23, 2021	Town Hall Meeting, 130 S. McKinley Ave. 6:30 p.m.
November 27, 2021	Small Business Saturday

ADJOURNMENT

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The meeting adjourned at 7:51 p.m.

Submitted by,

Maricela Peña, City Clerk

Approved by City Council

Zo Stieber, Mayor

DRAFT

CITY OF FORT LUPTON CITY COUNCIL



Shannon Rhoda, Ward 1
Chris Ceretto, Ward 2
Michael Sanchez, Ward 3

Zo Stieber, Mayor

David Crespín, Ward 1
Tommy Holton, Ward 2
Bruce Fitzgerald, Ward 3

AM 2021-186

A RESOLUTION RATIFYING THE APPOINTMENT OF JOYCE SMOCK TO THE BOARD OF TRUSTEES OF THE HIGH PLAINS LIBRARY DISTRICT FOR A TERM BEGINNING JANUARY 1, 2022 AND ENDING DECEMBER 31, 2025

I. **Agenda Date:** Council Meeting – November 16, 2021

II. **Attachments:**

- a. Resolution 2020-0xx.
- b. Application

III. **Summary Statement:**

The selection/nomination Committee has chosen to put forth the following names for the High Plains Library District. The nominee has been chosen for a four (4) term from January 1, 2022 thru December 31, 2025:

Region 6: Joyce Smock

IV. **Submitted by:** _____
Chris Cross, City Administrator

V. **Finance Reviewed** _____
Finance Director

VI. **Approved for Presentation:** _____
City Administrator

VII. **Attorney Reviewed** _____ Approved _____ Pending Approval

VIII. **Certification of Council Approval:** _____
City Clerk _____ Date _____

IX. Detail of Issue/Request:

The selection/nomination Committee has chosen to put forth the following names for the High Plains Library District. The nominee has been chosen for a four (4) term from January 1, 2022 thru December 31, 2025:

Region 6: Joyce Smock

The candidate would be ratified with one vote which will provide High Plains Library District with a board to conduct business. This ratification of appointments need to be voted on by the Establishing Bodies of the High Plains Library District within 60 days, per the District's Bylaws.

X. Legal/Political Considerations:

N/A

XI. Alternatives/Options:

1. Ratify the nominees as presented
2. Not ratify the nominees as presented

XII. Financial Considerations:

None.

XIII. Staff Recommendation:

Staff recommends ratification of the candidate for the High Plains Library District.

RESOLUTION NO. 2021Rxx

A RESOLUTION RATIFYING THE APPOINTMENT OF JOYCE SMOCK TO THE BOARD OF TRUSTEES OF THE HIGH PLAINS LIBRARY DISTRICT FOR A TERM BEGINNING JANUARY 1, 2022 AND ENDING DECEMBER 31, 2025

WHEREAS, the Board of Trustees of the City of Fort Lupton, Colorado, pursuant to Colorado State Statutes governing statutory Towns and the Ordinances of the City of Fort Lupton, is vested with the authority of administering the affairs of the City of Fort Lupton, Colorado, and

WHEREAS, the High Plains Library District ("HPLD") has been created by action of eight "Establishing Bodies", namely, the Town of Ault, the Town of Eaton, the City of Evans, the City of Fort Lupton, the City of Greeley, the Town of Hudson, the RE-8 School District Board of Education, the Weld County Board of County Commissioners, all of the State of Colorado, and

WHEREAS, the High Plains Library District Board of Trustees is comprised of seven trustee seats, one of which is currently up for replacement, and

WHEREAS, C.R.S. § 24-90-108(2)(c), provides that the Establishing Bodies have authority to ratify trustees recommended for appointment to the High Plains Library Board of Trustees, and

WHEREAS, pursuant to C.R.S. § 24-90-108(2)(c), recommendation of replacement library trustees must be made by a committee held for that purpose, and

WHEREAS, pursuant to that Joint Motion and Stipulation to Approve Settlement and Dismiss Remaining Claims entered into by the Establishing Bodies and ordered by the Court in Weld County District Court Case No. 2014 CV 30358, a trustee selection committee (the "Committee") met on October 22, 2021 to interview trustee candidates, and

WHEREAS, on October 22, 2021, the Committee voted by majority vote to recommend the following individual for appointment to the High Plains Library District Board of Trustees, for the term lengths specified below:

REGION 6: Briggsdale, Galetton, Grover, Kersey, New Raymer, Stoneham

Joyce Smock, 4-year term, 2022-2025

WHEREAS, the above-named individual appears to be qualified to serve as a trustee on the High Plains Library District Board of Trustees and represent adequately the various interests within the High Plains Library District.

NOW THEREFORE BE IT RESOLVED that the Fort Lupton City Council of the city of Fort Lupton, Colorado, ratify the appointment of Joyce Smock to serve as Region 6 Trustee on the High Plains Library district Board of Trustees for a 4-year term beginning January 1, 2022 – December 31, 2025.

APPROVED AND PASSED BY A MAJORITY VOTE OF THOSE ELECTED TO THE CITY COUNCIL THIS 16th DAY OF NOVEMBER 2021.

City of Fort Lupton, Colorado

Zo Stieber, Mayor

Attest:

Maricela Peña, City Clerk

Approved as to form:

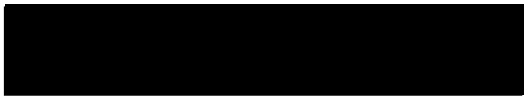
Andy Ausmus, City Attorney



Formstack Submission For: **Board of Trustees Application 2022**

Submitted at 08/26/21 10:56 AM

Date/Time:	Aug 25, 2021
Name:	Joyce Smock
Home Address:	[REDACTED]
Business Address :	Same as above [REDACTED]
Phone:	[REDACTED]
Email:	[REDACTED]
School District:	Pawnee RE-12
Birth Date:	[REDACTED]
Profession, Occupation/Employer, Titles:	Retired educator--having taught business and computers in Laramie County School District #2, Pine Bluffs, WY and Wiggins School District RE-50J, Wiggins, CO.
Civic/Professional Affiliations, Offices, Activities:	Committees: HPLD Board Region 6 19th Judicial District Court Judge Selection Committee Weld County Board of Health Weld County Planning Commission Weld County Council Gillet Fund

Education:	Over 16 years
Highest Degree:	Masters in Vocational Education , 1990, Colorado State University
Please confirm you are applying for the following::	Region 6 - New Raymer, Kersey, Grover
State the qualities you feel you could bring to the Library Board:	I am willing to listen with an open mind, and help make decisions based on factual information. Having been in education for many years, I can look at the situation or problem from several viewpoints. I believe in being fiscally responsible whether it is personal or involves a governing board.
Please use the space below for additional comments, length of residency in Weld County, particular activities or background relevant to appointment, etc. :	I have lived in north central Weld County all my life, and can bring a rural agricultural viewpoint to the board.
Are you a member of another library board? If so, which one? :	No
Please list two references:	

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CITY OF FORT LUPTON CITY COUNCIL



Shannon Rhoda, Ward 1
Chris Ceretto, Ward 2
Michael Sanchez, Ward 3

Zo Stieber, Mayor

David Crespín, Ward 1
Tommy Holton, Ward 2
Bruce Fitzgerald, Ward 3

AM 2021-187

A RESOLUTION APPROVING THE CRIMINAL HISTORY RECORD INFORMATION (CHRI) POLICY FOR PROPER ACCESS, USE AND DISSEMINATION PROCEDURES FOR THE CITY CLERKS OFFICE

I. **Agenda Date:** Council Meeting – November 16, 2021

II. **Attachments:**

- a. Resolution 2021-0xx.
- b. Policy

III. **Summary Statement:**

The intent of the policy is to ensure the protection of the Criminal Justice Information (CJI) and its subset of Criminal History Record Information (CHRI).

The City Clerk is authorized to access Criminal History Record Information (“CHRI”) to investigate the qualifications of:

- Liquor license applicants and liquor licensees under Colorado Revised Statute (C.R.S.) Section 44-3-307.
- Marijuana license applicants and marijuana licensees under C.R.S. Section 44-10-307
- Solicitor/Peddler License applicants under C.R.S. 24-72-304

IV. **Submitted by:** _____
Mari Peña, City Clerk

V. **Finance Reviewed** _____
Finance Director

VI. **Approved for Presentation:** _____
City Administrator

VII. **Attorney Reviewed** _____ Approved _____ Pending Approval

VIII. **Certification of Council Approval:** _____
City Clerk _____ Date _____

IX. Detail of Issue/Request:

The intent of the policy is to ensure the protection of the Criminal Justice Information (CJI) and its subset of Criminal History Record Information (CHRI). The scope of this policy applies to any authorized personnel who accesses records obtained from the CBI-CJIS (Colorado Bureau of Investigations-Criminal Justice Information Services) Systems in response to fingerprint-based background check for investigating the qualifications of applicants/licensees. The City accesses CHRI for the purposes stated through the CBI-provided solution referred to as the Secure Document Delivery System ("SDDS").

The SDDS system is the system that allows for the City Clerk to receive background information through fingerprints for liquor, solicitor/peddler, and marijuana licenses.

X. Legal/Political Considerations:

XI. Alternatives/Options:

XII. Financial Considerations:

XIII. Staff Recommendation:

Staff seeks approval.

RESOLUTION NO. 2021Rxxx

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FORT LUPTON
ADOPTING THE CRIMINAL HISTORY RECORD INFORMATION (“CHRI”) POLICY.**

WHEREAS, The City of Fort Lupton City Clerk’s Office accesses records obtained from the CBI-CJIS (Colorado Bureau of Investigations-Criminal Justice Information Services) Systems in response to fingerprint-based background check for investigating the qualifications of applicants/licenseses; and

WHEREAS, the policies and procedures contained in Title 5 United States Code Section 552 and 552a; 28 Code of Federal Regulations: Public Law 92-544; state statutes; the CJIS Security Policy; and the National Crime Prevention and Privacy Compact (Compact Council) mandates the Federal Bureau of Investigation (FBI) and the Colorado Bureau of Investigation (CBI) to assess the performance of agencies reference the use, continual maintenance, dissemination, confidentiality and security of criminal history information for noncriminal justice purposes; and

WHEREAS, CBI and FBI will conduct an audit at least once every three years with the objective to verify adherence to CBI and FBI policies and regulations.

NOW THEREFORE BE IT RESOLVED that the City of Fort Lupton City Council hereby adopt the Criminal History Record Information (“CHRI”) Policy to ensure the protection of the Criminal Justice Information (CJI) and its subset of Criminal History Record Information (CHRI).

**APPROVED AND ADOPTED BY THE FORT LUPTON CITY COUNCIL THIS 16th DAY
OF NOVEMBER 2021.**

City of Fort Lupton

Zo Stieber, Mayor

Attest:

Maricela Pena, City Clerk

Approved as to form:

Andy Ausmus, City Attorney

Criminal History Record Information (CHRI) Proper Access, Use and Dissemination Procedures for the City Clerk's Office

Purpose

The intent of the following policies is to ensure the protection of the Criminal Justice Information (CJI) and its subset of Criminal History Record Information (CHRI).

The City is authorized to access Criminal History Record Information ("CHRI") to investigate the qualifications of:

- Liquor license applicants and liquor licensees under Colorado Revised Statute (C.R.S.) Section 44-3-307.
- Marijuana license applicants and marijuana licensees under C.R.S. Section 44-10-307
- Solicitor/Peddler License applicants under C.R.S. 24-72-304

The purpose of this Policy is to address the use, maintenance, dissemination, confidentiality and security of CHRI for this noncriminal justice purpose by the City of Fort Lupton (the "City").

Scope

The scope of this policy applies to any authorized personnel who accesses records obtained from the CBI-CJIS (Colorado Bureau of Investigations-Criminal Justice Information Services) Systems in response to fingerprint-based background check for investigating the qualifications of applicants/licensees. The City accesses CHRI for the purposes stated through the CBI-provided solution referred to as the Secure Document Delivery System ("SDDS").

Policies

A. Authorized Personnel

1. CHRI for Licensing Purposes shall be accessed by and provided to authorized personnel only.
2. Authorized personnel shall be reviewed and updated by the Terminal Agency Coordinator "TAC" as needed.
3. Authorized personnel shall receive security awareness training within six (6) months of hiring/handling of CHRI and every two years thereafter. Security awareness training will cover areas specified in the CJIS Security Policy at a minimum.
4. Authorized personnel for CHRI for Licensing Purposes are:
 - i. City Clerk

(a) The City Clerk shall serve as the Terminal Agency Coordinator (TAC), the Local Agency Security Officer (LASO), the SDDS Administrator, and the Billing Contact, if applicable, for CHRI for Liquor Licensing, Marijuana Licensing and Solicitor/Peddler Licensing purposes.

ii. The Assistant to City Clerk/Court.

iii. The Court Administrator.

B. Acceptable Use

1. This Policy may be amended from time to time. In the event of conflict or ambiguity with other policies, the City Clerk will determine the appropriate application of the policies for Licensing Purposes.
2. Applicants are referred to the Colorado Applicant Background Services (CABS) program site for submission of background check fingerprints.
3. As part of the fingerprint process, the City must provide applicants with a Privacy Statement outlining the City's authority for collecting the applicant's information, that the applicant's fingerprints will be used to check the national criminal history records of the FBI, and how the information will be used, retained, and shared. The City must obtain a signed acknowledgement from each applicant documenting the applicant's receipt of the foregoing documents (the "Applicant's Acknowledgement").
4. CHRI may only be used for Licensing Purposes as set forth in Colorado Revised Statutes.
5. CHRI may not be disseminated outside the receiving departments, related agencies, or other authorized entities.
6. CHRI may not be forwarded to other organizations/agencies for use in separate, unrelated applications.
7. If an applicant's fingerprint background check reveals a CHRI record, authorized personnel will promptly notify the applicant in writing to the applicant's mailing address or email address provided in the application that a record exists ("Notice"). The applicant will be given thirty (30) days from the date of the Notice to obtain a change, correction, or update of his or her CHRI or to decline to do so. The applicant's license application may not be denied based on the CHRI until the expiration of said 30-day period.

C. Media and Physical Protection

1. Authorized personnel with access to the SDDS shall have unique credentials.
2. SDDS results shall be reviewed at least monthly.
3. CHRI received from the SDDS erroneously shall not be opened. Authorized personnel shall immediately contact CBI to report any erroneously delivered CHRI.

4. CHRI shall only be accessed on City-owned computers secured from the public. Remote access is strictly prohibited. Remote access is any temporary access to an agency's information system by a user (or an information system) communicating temporarily through an external, non-agency controlled network (e.g., the Internet).
5. The City Clerk shall be primarily responsible for obtaining CHRI for purposes set above from the SDDS. However, in the City Clerk's absence, other authorized personnel with the appropriate level of security awareness training may obtain CHRI for said purposes from the SDDS.
6. Upon receipt of an email from the SDDS website indicating that a CHRI record is available, authorized personnel shall: review the record immediately from the SDDS website to determine if the record should be printed. If the record is to be printed, it shall be printed to a secure printer. The printed CHRI shall be placed in a sealed envelope marked "Confidential".
7. The authorized personnel shall utilize its findings as part of the subject license application process.
8. CHRI shall not be stored electronically. CHRI that is kept in physical (printed) form shall be stored in a locked cabinet in the office of the Court Administrator.
9. Computers that have been used to print CHRI shall not be released from the City's control until the equipment has been sanitized and all stored information has been cleared.
10. CHRI shall be viewed only by authorized personnel. CHRI shall not be left on computer screens where unauthorized personnel or other persons might view it.
11. The following activities are prohibited:
 - i. Unauthorized access and copying of SDDS.
 - ii. Revealing of SDDS account passwords by authorized personnel to others.
 - iii. Allowing an unauthorized person to use an authorized person's SDDS account.
 - iv. Disclosure of data in a way that violates applicable policy, procedures, or relevant regulations or law, including C.R.S. 44-3-307, 44-10-307, 24-72-304, CCJRA and CORA.

D. Retention

1. CHRI and the Applicant's Acknowledgement shall be retained and destroyed in accordance with the Colorado Municipal Records Retention Manual. Physical media shall be destroyed by shredding or incineration. The disposal or destruction shall be witnessed or carried out by the authorized personnel.

E. Incident Response

1. Authorized personnel must report any media or physical security incidents to the TAC.
2. The TAC will report any incidents involving misuse or allegations of misuse of CHRI to the CBI.
3. Violation of any of the requirements contained in the CJIS Security Policy or Title 28, Part 20, CFR, by any authorized personnel will result in suitable disciplinary action, up to and including loss of access privileges, civil and criminal prosecution and/or termination.
4. Upon reporting of an incident, the TAC will review the incident and identify weaknesses associated with the incident. Corrective action must be taken to insure the incident does not recur.

Security Incident Response Form

Date of Report: _____

Name of Person Reporting the Incident: _____

Date of Incident: _____

Points of Contact (Include Phone/Email): _____

Location of Incident: _____

Incident Description: _____

Systems Affected: _____

Method of Detection: _____

Actions Taken/Resolution: _____

Copies to:

ORDINANCE NO. 2021-1130

INTRODUCED BY: CHRIS CERETTO

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF FORT LUPTON, COLORADO, SETTING A PUBLIC HEARING FOR NOVEMBER 2, 2021, FOR THE PURPOSE OF AMENDING CHAPTER 18 BUILDING REGULATIONS OF THE FORT LUPTON MUNICIPAL CODE AND ADOPTING BY REFERENCE THE INTERNATIONAL BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, 2018 EDITION; THE NATIONAL ELECTRICAL CODE OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), CURRENT STATE ADOPTED EDITION; INTERNATIONAL MECHANICAL CODE OF THE INTERNATIONAL CODE COUNCIL, 2018 EDITION; INTERNATIONAL PLUMBING CODE OF THE INTERNATIONAL CODE COUNCIL, 2018 EDITION; INTERNATIONAL FIRE CODE OF THE INTERNATIONAL CODE COUNCIL, 2018 EDITION; INTERNATIONAL FUEL GAS CODE OF THE INTERNATIONAL CODE COUNCIL, 2018 EDITION; INTERNATIONAL PROPERTY MAINTENANCE CODE OF THE INTERNATIONAL CODE COUNCIL, 2018 EDITION; INTERNATIONAL EXISTING BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, 2018 EDITION; INTERNATIONAL RESIDENTIAL CODE OF THE INTERNATIONAL CODE COUNCIL, 2018 EDITION; INTERNATIONAL ENERGY CONSERVATION CODE OF THE INTERNATIONAL CODE COUNCIL, 2018 EDITION, INTERNATIONAL SWIMMING POOL AND SPA CODE, 2018 EDITION

INTRODUCED, READ, AND PASSED ON FIRST READING, AND ORDERED PUBLISHED this 5th day of October 2021.

PUBLISHED in the Fort Lupton Press the 13th day of October 2021.

FINALLY READ BY TITLE ONLY, PASSED AND ORDERED PUBLISHED BY TITLE ONLY this 16th day of November 2021.

PUBLISHED BY TITLE ONLY the 24th day of November 2021.

EFFECTIVE (after publication) the 24th day of December 2021

City of Fort Lupton, Colorado

Zo Stieber, Mayor

Attest:

Maricela Peña, City Clerk

Approved as to form:

Andy Ausmus, City Attorney

ORDINANCE NO. 2021-1131

INTRODUCED BY: TOMMY HOLTON

ADOPT ORDINANCE 2021-1131 INITIALLY ZONING LAND KNOWN AS THE PEARSON PARK CHANGE OF ZONE, LEGALLY DESCRIBED IN EXHIBIT A, TO THE 'P' PARKS & OPEN SPACE ZONE DISTRICT.

INTRODUCED, READ, AND PASSED ON FIRST READING, AND ORDERED PUBLISHED this 19th day of October 2021.

PUBLISHED in the Fort Lupton Press the 27th day of October 2021.

FINALLY READ BY TITLE ONLY, PASSED AND ORDERED PUBLISHED BY TITLE ONLY this 16th day of November 2021.

PUBLISHED BY TITLE ONLY the 24th day of November 2021.

EFFECTIVE (after publication) the 24th day of December 2021.

CITY OF FORT LUPTON, COLORADO

Zo Stieber, Mayor

ATTEST:

Maricela Peña, City Clerk
Approved as to form:

Andy Ausmus, City Attorney

EXHIBIT A

LOT 1, PEARSON PARK SUBDIVISION LOCATED IN A PORTION OF THE EAST HALF OF THE NORTHWEST QUARTER OF SECTION 6, TOWNSHIP 1 NORTH, RANGE 66 WEST, OF THE 6TH PRINCIPAL MERIDIAN, CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO.

ORDINANCE NO. 2021-1132

INTRODUCED BY: BRUCE FITZGERALD

ADOPT ORDINANCE 2021-1132 INITIALLY ZONING LAND KNOWN AS THE WWTP CHANGE OF ZONE, LEGALLY DESCRIBED IN EXHIBIT A, TO THE 'A' AGRICULTURAL ZONE DISTRICT.

INTRODUCED, READ, AND PASSED ON FIRST READING, AND ORDERED PUBLISHED this 19th day of October 2021.

PUBLISHED in the Fort Lupton Press the 27th day of October 2021.

FINALLY READ BY TITLE ONLY, PASSED AND ORDERED PUBLISHED BY TITLE ONLY this 16th day of November 2021.

PUBLISHED BY TITLE ONLY the 24th day of November 2021.

EFFECTIVE (after publication) the 24th day of December 2021.

CITY OF FORT LUPTON, COLORADO

Zo Stieber, Mayor

ATTEST:

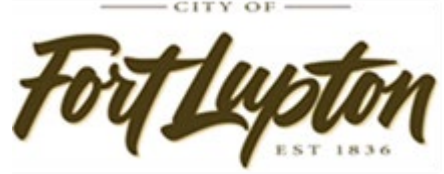
Maricela Peña, City Clerk
Approved as to form:

Andy Ausmus, City Attorney

EXHIBIT A

LOT 2, PEARSON PARK SUBDIVISION LOCATED IN THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 31, TOWNSHIP 2 NORTH, RANGE 66 WEST, AND A PORTION OF THE EAST HALF OF THE NORTHWEST QUARTER OF SECTION 6, TOWNSHIP 1 NORTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO.

CITY OF FORT LUPTON CITY COUNCIL



Shannon Rhoda, Ward 1
Chris Ceretto, Ward 2
Mike Sanchez, Ward 3

Zo Stieber, Mayor

David Crespín, Ward 1
Tommy Holton, Ward 2
Bruce Fitzgerald Ward 3

AM 2021-193

APPROVING THE QUADIENT TRIFOLD & INSERTER MACHINE LEASE AGREEMENT FOR \$126.82 A MONTH FOR 60 MONTHS TO BE PAID FROM OF THE GENERAL FUND

I. **Agenda Date:** Council Meeting – November 16, 2021

II. **Attachments:** a. Quadient Lease Documents

III. **Summary Statement:**

Lease a machine that will fold documents, insert them into envelopes and seal the envelopes.

IV. **Submitted by:** _____
Leann Perino, Finance Director

V. **Finance Reviewed** _____
Finance Director

VI. **Approved for Presentation:** _____
City Administrator

VII. **Attorney Reviewed** _____ Approved _____ Pending Approval

VIII. **Certification of Council Approval:** _____
City Clerk Date

IX. Detail of Issue/Request:

The City has a machine that over 17 years old. It no longer inserts documents into envelopes.

The finance department has prints 210-260 accounts payable checks a month and 300-380 payroll checks per month. We fold the payment advice on the machine but stuff the checks the envelopes and seal them by hand. This takes 4-6 hours a week in finance time.

The machine will be available for all departments to use.

X. Legal/Political Considerations:

None

XI. Alternatives/Options:

Do not lease the machine.

XII. Financial Considerations:

The annual expense of the lease payments will be \$1,528.84 and will come out of the services line item in the general fund's finance department.

XIII. Staff Recommendation:

Approve the lease agreement with Quadient Leasing

Customer

Organization	CITY OF FORT LUPTON		
DBA			
Address	130 S MCKINLEY AVE		
City State Zip	FORT LUPTON	CO	80621-1343
Phone	(720) 466-6120	Fax	

Purchase Order - Lease

NASPO/ValuePoint Contract #: ADSP0 16-169901

and / or

State Participating Addendum (PA) #:

2018-011 (CO)

Vendor

Company Name	Quadient Leasing USA Inc. FEDERAL ID# 94-2388882		
Attention	Government Sales	DUNS# 150836872	
Address	478 Wheelers Farms Rd		
City State Zip	Milford	CT	06461
Phone	(866) 448-0045	Fax	(203) 301-2600

Ship To

Organization	CITY OF FORT LUPTON		
Attention	Leann Perino		
Address	130 S MCKINLEY AVE		
City State Zip	FORT LUPTON	CO	80621-1343
Phone	(720) 466-6120	Email	lperino@fortlupton.org

P.O. Number	P.O. Date	Requisitioner	Shipped Via	F.O.B. Point	Terms
			Ground	Destination	Quarterly Invoicing

QTY	Unit	Description	Unit Price	Total
60	Months	Lease Payment	\$126.82	\$7,609.20

Lease payment specified above for products listed below includes, as applicable, reduced price equipment maintenance to reflect first year free, meter rental, meter resets, postal rate changes, software license/support/subscription fees, delivery, installation, and operator training.

Products

QTY	Product ID	Description
1	DS40ITRIFOLD	DS40i TriFold Kit
1	DS40I	DS40i Folder Insertor

- 1) Order is governed under the terms and conditions of the NASPO/ValuePoint Master Price Agreement Contract Number ADSP016-169901. Enter this order in accordance with the prices, terms, delivery method, and specifications listed above.

- 2) Payments will be sent to:
 Quadient Leasing USA Inc.
 Dept 3682
 PO Box 123682
 Dallas TX 75312-3682

- 3) Send all correspondence to;
 Quadient Leasing USA Inc.
 478 Wheelers Farms Rd
 Milford CT 06461

 Authorized by

 Date

 Print Name

 Title

DS-40i

Folder Inserter

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quodient
Because connections matter.

Simplify Your Document Process

A smart, versatile solution to meet your mailing needs

Communicating with customers is an essential part of your business. That is why a fast and efficient mailing process is essential. The DS-40i folder inserter introduces an automated process that takes mail processing from hours to minutes. Manual processes take time and resources that could be better focused on more valuable tasks.

With the DS-40i, your automated process will reduce costs and allow you to reinvest your resources in a new way to engage with your customers and enhance the customer experience.

User-Friendly System

The DS-40i includes an intuitive 5-inch color touch screen for easy operation. With the incorporated wizard-based software, you can easily program, adjust settings and run your jobs, letting the software guide you each step of the way.



Design Versatility

Ten times faster than the manual process, the DS-40i's proven reliability and ease-of-use will allow you to complete jobs quickly and efficiently. Its office-friendly design provides easy accessibility to the entire paper path.

Flexible Document Feeding

The DS-40i accepts a wide variety of documents, such as invoices, statements, inserts and envelopes. With double feeding detection, you can rest assured that each envelope has the correct number of documents. Give your communications a professionally finished look and feel by choosing one of the three folding choices: letter fold, single fold or double parallel fold.

Business Impact



Revenue Growth

Speeds invoice processing and payment time



Risk Mitigation

Ensures each envelope has the correct number of documents



Customer Engagement

Improves the quality and process of customer communications



Expense Control

Reduces operating costs through process automation

DS-40i



1. Document Feeder

Two document feeders and one insert feeder provide ease-of-use, increased productivity and document processing versatility.



3. Large Catch Tray

Neatly stacks completed mailpieces for easy collection.



2. Touch Screen Display

Integrated 5-inch color touch screen with wizard-based instructions for easy and intuitive operation.



4. Insert & BRE Feeder

Easily include Business Reply Envelopes or small marketing inserts.

Specifications

Processing speed	Up to 1,350 envelopes/hour
5" Color touch screen	Standard
Job memory	Up to 15 programmable jobs
Document feeders	2
Insert/BRE feeder	1
Document feeder capacity	100 sheets (20 lb.)
Insert/BRE feeder capacity	100
Envelope feeder capacity	100
Folding capacity	Up to 5 sheets
Fold types	Letter, single, double parallel, no fold △ ∠ ◀ —
WiFi enabled	Standard
Remote diagnostics/assistance/control	Standard
Document height	7" - 14"
Document width	5.6" - 8.9"
Document weight	18 - 30 lb.
Insert/BRE height	3.5" - 5.9"
Insert/BRE width	5.6" - 8.9"
Insert weight	20 - 62 lb.
BRE weight	19 - 30 lb.
Envelope height	4.1" - 6.5"
Envelope width	8.8" - 9.5" (standard 6" x 9.5", #10)

Options

Tri-fold kit	Available
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System Dimensions

Length x Depth x Height

DS-40i without catch tray	26" x 17" x 22"
Weight	81 lbs.

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Quadient maintains a network of offices across the country to provide local customer support and trained technicians who are ready to assist you. You can be confident that when you need knowledgeable support or expert service, the point-of-contact will be a Quadient office in your area consisting of a team of local professionals.

About Quadient

Quadient is the driving force behind the world's most meaningful customer experiences. By focusing on four key solution areas including Customer Experience Management, Business Process Automation, Mail-related Solutions, and Parcel Locker Solutions, Quadient helps simplify the connection between people and what matters. Quadient supports hundreds of thousands of customers worldwide in their quest to create relevant, personalized connections and achieve customer experience excellence. Quadient is listed in compartment B of Euronext Paris (QDT) and belongs to the SBF 120 index.

For more information about Quadient, visit quadient.com.

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CITY OF FORT LUPTON CITY COUNCIL



Shannon Rhoda, Ward 1
Chris Ceretto, Ward 2
Michael Sanchez, Ward 3

Zo Stieber, Mayor

David Crespín, Ward 1
Tommy Holton, Ward 2
Bruce Fitzgerald, Ward 3

AM 2021-195

APPROVING RESOLUTION 2021-XXX TO OPT OUT UNCOMPENSATED ELECTED AND/OR APPOINTED OFFICIALS FROM THE WORKERS' COMPENSATION POLICY AND ADD THEM AND OTHER CITY VOLUNTEERS TO THE VOLUNTEER ACCIDENT MEDICAL PLAN (VAMP) FOR THE 2022 POLICY YEAR FOR THE AMOUNT OF \$372.00

I. **Agenda Date:** Council Meeting – Date, 2021

II. **Attachments:**

- a. Resolution 2021-0xx.
- b. Letter from CIRSA dated October 26, 2021

III. **Summary Statement:**

This request is to opt out and exclude all uncompensated elected and/or appointed public officials of the City of Fort Lupton from the workers' compensation policy and add them to the Volunteer Accident Medical Plan (VAMP). This policy change does not affect Council Members. Also, this request is for VAMP coverage for all City volunteers.

IV. **Submitted by:** _____
Laura Howe, HR Director

V. **Finance Reviewed** _____
Finance Director

VI. **Approved for Presentation:** _____
City Administrator

VII. **Attorney Reviewed** _____ Approved _____ Pending Approval

VIII. **Certification of Council Approval:** _____
City Clerk

_____ Date

IX. Detail of Issue/Request:

The City of Fort Lupton's uncompensated officials and volunteers have not been included on the Workers' Compensation (WC) insurance policy for most years since 2001. The City's uncompensated officials are not required to be covered by Workers' Compensation (WC) insurance, if the required application is made with the state.

Generally, those individuals covered by WC are compensated employee and paid elected officials. CIRSA offers the Volunteer Accident Medical Plan (VAMP) policy as an optional coverage for volunteers who are not compensated for their time while serving on a City board or committee. This coverage also covers other volunteers with the City. The benefits covered are detailed on page 4 of the CIRSA letter.

Under the State of Colorado Workers' Compensation Statutes, if an Unpaid Board member incurred an injury, the City would be subjected to its \$500 per claim deductible, as well as the State's regulations for payment of any and all virtually "unlimited" payouts related to the claim for expenses accrued.

Any possible payouts, per claim, are limited under the VAMP policy verses having higher limitations under the WC policy. Also, under the WC policy, the City runs the risk of having premium increases for WC coverage, as those premiums are based on basic coverage plus the "risk" of the entity as a whole. If there were a WC claim which reached a high level of experience, it will affect the City's risk rating and will be reflected in the overall premium to be paid for WC coverage. By having the VAMP policy available for uncompensated officials, the City will minimize its WC risk possibility.

VAMP also provides some cover to the City should one of its volunteers be injured while volunteering for the City, though it does not prohibit a volunteer from pursuing action against the City.

X. Legal/Political Considerations:

Not Applicable.

XI. Alternatives/Options:

There is only one alternative, per State and Federal Law, which is to include the City of Fort Lupton's uncompensated elected and/or appointed officials in the City's Workers' Compensation Insurance Policy. There is no alternative coverage for volunteers.

XII. Financial Considerations:

The City of Fort Lupton expects to have a total 150 volunteers and no mounted rangers covered by the Volunteer Accident Medical Plan (VAMP) for a cost of \$372.00 for 2022. The cost is \$2.48 per volunteer and \$6.39 per Colorado Mounted Ranger. Workers Compensation and the Volunteer Accident Medical Plan premiums are included in the 2022 budget in the General fund for all volunteers and uncompensated elected officials.

XIII. Staff Recommendation:

Approve the AM and Resolution to opt out uncompensated elected and/or appointed officials from the Workers' Compensation Policy and place them on the Volunteer Accident Medical Plan (VAMP) for the 2022 Policy year. This action will also cover other City volunteers.

RESOLUTION NO. 2021-XXX

A RESOLUTION PROVIDING THAT CERTAIN ELECTED AND/OR APPOINTED OFFICIALS OF THE CITY OF FORT LUPTON SHALL BE DEEMED NOT TO BE “EMPLOYEES” WITHIN THE MEANING OF THE WORKERS’ COMPENSATION LAWS.

WHEREAS, C.R.S. Section 8-40-202(1)(a)(I)(B) permits the City of Fort Lupton to opt not to include certain officials under the City of Fort Lupton’s workers’ compensation coverage; and

WHEREAS, such officials must not receive any compensation for service rendered as such, other than reimbursement of actual expenses; and

WHEREAS, said option may be exercised as to any category or combination of categories of such officials; and

WHEREAS, said option may be exercised for any policy year by the City Council by the filing of a statement with the Division of Workers’ Compensation of the Colorado Department of Labor and Employment not less than 45 days before the start of the policy year for which the option is to be exercised;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Fort Lupton:

Section 1. *Effective with the policy year starting on January 1, 2022, the following categories of elected and/or appointed officials who receive no compensation for service rendered as such, other than reimbursement of actual expenses, shall be excluded from the definition of an “employee” for purposes of workers’ compensation coverage, and shall not be covered under the City of Fort Lupton’s workers’ compensation coverage:*

- a. Board of Adjustment*
- b. Cemetery Committee*
- c. Culture Parks Recreation and Museum Committee*
- d. Finance Committee*
- e. Golf Committee*
- f. Historic Preservation Board*
- g. Library Board*
- h. Planning Commission*
- i. Public Safety Committee*
- j. Senior Citizen Committee*
- k. Special Projects Committee*
- l. Fort Lupton Urban Renewal Authority*

Section 2. *The City of Fort Lupton’s City Clerk shall transmit a copy of the resolution to each official who is a member of the bodies identified in Section 1 above.*

Section 3. *The City of Fort Lupton shall transmit a copy of this resolution to Pinnacol Assurance and to the Division of Workers’ Compensation of the Colorado Department of Labor and Employment.*

**APPROVED AND ADOPTED BY THE FORT LUPTON CITY COUNCIL THIS 16th DAY OF
NOVEMBER 2021.**

City of Fort Lupton, Colorado

Zo Stieber, Mayor

Attest:

Mari Pena
City Clerk

Approved as to form:

Andy Ausmus, City Attorney

October 26, 2021

Leann Perino, Finance Director
City of Fort Lupton
130 South McKinley
Fort Lupton, CO 80621

SUBJECT: Volunteer Accident Medical Plan 2022 Program Plan Information and Data Collection Form

Dear Leann:

Enclosed are the plan information and data collection form documents pertaining to the 2022 Volunteer Accident Medical Plan (VAMP). Coverage is placed through a master program specially designed and negotiated for CIRSA with Wellfleet Insurance Company.

The 2022 VAMP rates are \$2.48 per volunteer (including uncompensated elected/appointed officials, when not covered by workers' compensation) and \$6.39 per volunteer unsworn rangers and/or patrol (i.e. Colorado Mounted Rangers). Your final 2022 premium is subject to audit. The rates are effective from January 1, 2022 through December 31, 2022.

The Plan Information provides a general summary of the coverages. All coverages are governed by the terms, conditions, exclusions, and limitations stated in the applicable coverage documents. **The enclosed Plan Information summary should not be relied on as a substitute for review of those documents.** If the enclosed information is not adequate for you to make a decision about participating in the coverage for 2022, please do not hesitate to contact your underwriting representative.

YOUR RECORD KEEPING OBLIGATIONS:

Your entity must keep a record of the individuals to be covered by the VAMP policy. **VAMP coverage will apply only to those individuals for whom the records are kept and only for the location, tasks or duties as described in those records.**

Your entity is required to keep records showing the individual's name, their position or activity, approximate number of hours worked, dates of service, description of duties and their volunteer status (i.e. volunteer or volunteer unsworn rangers and/or patrol). We cannot guarantee coverage if this information is not maintained.

Upon your acceptance of this coverage for 2022, we will forward a packet with a sample registration and roster form, with instructions, to you. The forms will be needed when completing the 2022 audit in January, 2023.

THE AGREEMENT:

Attached is an Data Collection Form for your entity's participation in the 2022 VAMP Program. You may purchase this coverage at any time during the year. **However, CIRSA must receive your acceptance letter at least two (2) working days prior to the effective date of coverage.** Your 2022 invoice will be based on the deposit information you provide.



This coverage is optional. Your entity is not required to purchase this coverage.

For coverage effective January 1, 2022, please return the Data Collection Form no later than Tuesday, November 23, 2021.

Sincerely,



Catherine A. Wegman
Underwriting Representative

Enclosures



BLANKET ACCIDENT INSURANCE DATA COLLECTION
VAMP POLICY NO. SPR0-50571-609
EFFECTIVE DATE: 1/1/2022

Entity: City of Fort Lupton Department/Program Name: _____

Completed by/Title: _____ Phone Number: _____ Effective Date of Coverage: _____

Accident Medical Expense PRIMARY:

Maximum Benefit Amount (per Injury): \$50,000
Deductible Amount (per Injury): \$ 0
Benefit Period: 52 Weeks

Accidental Death Benefit: \$10,000

Accidental Dismemberment Benefit

Principal Sum: \$10,000

Aggregate Limit: \$250,000

Catastrophic Cash Benefit: \$25,000

Name of position or activity	Approximate number of hours per day or week per volunteer	Description of task or duties performed or assigned	Approximate number of volunteers** per year

Deposit Premium Computations:

*Total number of volunteers:	Rate: \$2.48	Total: \$
*Total number of uncompensated elected appointed officials:	Rate: \$2.48	Total: \$
*Total number of volunteer unsworn rangers and/or patrol:	Rate: \$6.39	Total: \$

****PLEASE SEE ENCLOSED PLAN INFORMATION FOR ELIGIBILITY REQUIREMENTS**

Total Premium: \$ _____

Deposit Premiums will be adjusted by year-end audit based on actual usage of the program.

____ By submission of this application to CIRSA, the entity listed above hereby acknowledges and accepts the deposit premium and hereby requests the binding of this coverage with Wellfleet Insurance Company.

____ The entity above rejects binding of this coverage for 2022.

Signature: _____ Date of Request: _____
(Signature be that of Mayor, Manager or Clerk)

***If additional pages of the application are used, please remember to include the additional numbers of participants in the computations for the total premium.**

This is NOT a bill. An invoice will be sent January 1, 2022.

2022 VOLUNTEER ACCIDENT MEDICAL COVERAGE PLAN (Optional)

Coverage: This optional coverage provides medical and accidental death and dismemberment (AD&D) coverage for non-statutory volunteers and volunteer unsworn rangers and/or patrol (i.e. Colorado Mounted Rangers) who are not covered by the Colorado Workers' Compensation Act and who do not receive monetary remuneration. Coverage is offered to both Property/Casualty and Workers' Compensation Pool members.

Uncompensated elected and appointed officials may also be eligible for this coverage if the member has met the filing requirements of the Division of Workers' Compensation and is not providing Workers' Compensation coverage for them.

Limits:	Accidental Death Benefit Amount:	\$ 10,000
	Accidental Dismemberment Benefit, Maximum Amount:	\$ 10,000
	Accidental Medical Expense Benefit (Primary):	\$ 50,000
	Dental Maximum (Per Tooth Per Accident):	\$ 250
	Aggregate Limit Per Occurrence:	\$ 250,000
	Catastrophic Cash (lump sum), Maximum Benefit:	\$ 25,000

Deductible: This plan has no deductible.

Premium Billing: A deposit premium will be billed effective the date your entity begins coverage under the policy. The deposit premium will be adjusted at the year-end audit based on actual participation members. Mid-year billings will be done if there is an addition of 15 or more participants to the program. All other additions will be adjusted at the year-end audit.

Record Keeping: Your entity is required to maintain registration or roster forms listing covered individuals throughout the year. These forms are to be used to determine your year-end audit actual participation numbers and to certify an individual is an individual covered by this policy should a claim occur. Please make sure each volunteer is listed only once on the registration or roster forms. Each individual volunteer or volunteer unsworn rangers and/or patrol must be listed on either a registration or roster form for coverage to apply. Sample registration or roster forms will be provided to assist you in this process.



Claims: Wellfleet Insurance Company administers the claims. Claim forms will be provided. Injured persons should be directed to the physician of their choice. Attach bills for medical expenses being claimed to the completed claim form and send directly to:

Wellfleet Insurance Company
1500 Main Street, 10th Floor
PO Box 15369
Springfield, MA 01115

Fax: (413) 733-4612
Attention: Claims Department

Email: customerservice@wellfleetinsurance.com

If you have any questions regarding claims, please call Wellfleet at (800) 633-7867.

This information is provided only as a general summary of the coverages that apply or are available to CIRSA members. All coverages are governed by the terms, conditions, exclusions, and limits stated in the applicable coverage documents. **This summary should not be relied on as a substitute for review of those documents.**





To: City Council
From: Alyssa Knutson, AICP, Planner II
CC: Todd Hodges, Planning Director; Andy Ausmus, City Attorney
Date: November 9, 2021
Subject: Withdrawal of the Proposed Revisions to 16-62(e), Article III of Chapter 16 of the Fort Lupton Municipal Code

Staff is requesting a cancellation of the scheduled public meeting for the proposed revisions to 16-62(e), Article III of Chapter 16 of the Fort Lupton Municipal Code. After discussion with the City Attorney, it has been determined additional information is required prior to moving forward with the proposed revisions.

CITY OF FORT LUPTON CITY COUNCIL



Shannon Rhoda, Ward 1
Chris Ceretto, Ward 2
Michael Sanchez, Ward 3

Zo Stieber, Mayor

David Crespín, Ward 1
Tommy Holton, Ward 2
Bruce Fitzgerald, Ward 3

AM 2021-194

APPROVE A RESOLUTION ACCEPTING THE MURATA FARMS PUD FINAL PLAT AND FINAL PUD PLAN FOR FILING NO. 1.

I. **Agenda Date:** Council Meeting – November 16, 2021

- II. **Attachments:**
- a. Proposed Resolution
 - b. Land Use Application & Project Description
 - c. Final Plat & Final PUD Plan
 - d. Landscape Plan Drawings
 - e. Development Reports & Traffic Studies
 - f. Construction Drawings
 - g. Referral Responses

III. **Summary Statement:**

The applicant, JEhome LLC for Coronado West, and owner M-J Perri Company, have applied for approval of a Final Plat and Final PUD Plan for the City Council's consideration for the Murata Farms Subdivision Filing No. 1. The Final Plat and Final PUD Plan is located south and adjacent to State Highway 52 and west and adjacent to South College Avenue (County Road 29 ½) in Fort Lupton. The proposal is for a mixed use residential and commercial subdivision on 72.7 acres, more or less, that will include 180 single family detached residential lots, as well as future development tracts for paired homes, townhomes and commercial.

IV. **Submitted by:** _____
City Planner

V. **Finance Reviewed** _____
Finance Director

VI. **Approved for Presentation:** _____
City Administrator

VII. **Attorney Reviewed** _____ Approved _____ Pending Approval

VIII. **Certification of Council Approval:** _____
City Clerk _____ Date _____

IX. Detail of Issue/Request:

The applicant, JHome LLC for Coronado West, and owner M-J Perri Company, have applied for approval of a Final Plat and Final PUD Plan for the City Council's consideration for the Murata Farms Subdivision Filing No. 1. The Final Plat and Final PUD Plan is located south and adjacent to State Highway 52 and west and adjacent to South College Avenue (County Road 29 ½) in Fort Lupton. The proposal is for a mixed use residential and commercial subdivision on 72.7 acres, more or less, that will include 180 single family detached residential lots, as well as future development tracts for paired homes, townhomes and commercial.

Additional information on this application can be found in the attached Staff Report and other supportive documents. Other submittal documents may not be included with this packet, but can be available for review upon request.

X. Legal/Political Considerations:

The final plat and PUD plan is being reviewed under the final plat provisions of the Subdivision Regulations of the Fort Lupton Municipal Code. Section 17-23 states that a final plat is to be reviewed by Council, and does not require Planning Commission review. The Code requires that a subdivision improvements agreement be submitted by the applicant for review by the City Attorney and City Council. A subdivision improvements agreement has been addressed in the conditions of approval included on the proposed resolution.

This is the final step in the major subdivision process. The first step is approval of a sketch plat (reviewed and approved on April 21, 2020), and the second step is approval of the preliminary plat and preliminary PUD plan (reviewed and approved on July 6, 2021).

Notifications are not required for a final plat; however, referral agencies were provided with the submittal documents for review. All referral comments received are enclosed with this Action Memorandum.

The subdivision is currently zoned PUD Planned Unit Development. The zoning permits commercial, neighborhood and residential uses. The Comprehensive Plan supports the proposed development, which is designated as Single Family Attached and Commercial General land use types. The proposed development also includes Single Family Detached housing, which is consistent with surrounding land use types on the Comprehensive Plan. The proposed use complies with the current zoning and comprehensive plan designation.

XI. Alternatives/Options:

The City Council has the following options for each request:

- a) Approve the proposed resolution.*
- b) Approve the proposed resolution with conditions.*
- c) Continue the meeting for additional information or further study.*
- d) Deny the proposed resolution.*

XII. Financial Considerations:

All applicable land use application fees have been paid and a fee deposit has been submitted to cover costs related to the application.

XIII. Staff Recommendation:

Staff recommends conditional approval of Murata Farms Final Plat and Final PUD Plan for Filing No. 1.

RESOLUTION NO. 2021R0xx

A RESOLUTION OF THE CITY COUNCIL OF FORT LUPTON APPROVING THE MURATA FARMS FINAL PLAT AND FINAL PUD PLAN FOR FILING NO. 1 SUBMITTED BY JEHOME LLC FOR CORONADO WEST TO CREATE A MIXED USE RESIDENTIAL AND COMMERCIAL SUBDIVISION LOCATED IN THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4, TOWNSHIP 1 NORTH, RANGE 66 WEST OF THE 6TH P.M., CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO.

WHEREAS, JEhome LLC for Coronado West (“Applicant”) has applied for approval of the Murata Farms Final Plat and Final PUD Plan for Filing No. 1 (the “Application”) for a residential subdivision to include 180 single-family detached homes and future development tracts; and

WHEREAS, pursuant to Section 16-45(c)(3) of the Fort Lupton Zoning Regulations, PUD development plan applications shall be processed in the same manner as set forth in the Fort Lupton Subdivision Regulations; and

WHEREAS, the Fort Lupton City Council held a public hearing on November 16, 2021, for the purpose of reviewing the Murata Farms Final Plat and Final PUD Plan; and

WHEREAS, after review of the Application, and consideration of staff comments, Applicant’s presentation, and any public input, the City Council finds that the Application is in conformance with the Colorado Revised Statutes, City codes and policies, and Comprehensive Plan adopted by the City; and

NOW THEREFORE BE IT RESOLVED that the Fort Lupton City Council reviewed the plans and supporting documentation, all referral comments and any citizen input in response to this application. Based upon review of the applicable policies and goals in the Fort Lupton Comprehensive Plan, review of the Subdivision and Zoning Regulations, an analysis of referral comments and facts presented on this date, the City Council hereby recommends approval of the Murata Farms Final Plat and Final PUD Plan located in the North Half of the Southwest Quarter of Section 4, Township 1 North, Range 66 West of the 6th P.M., City of Fort Lupton, County of Weld, State of Colorado with the following conditions:

- I. Prior to recording the Final Plat:
 - A. The title of the Final Plat shall be updated to include the Project No. LUP2021-0028 and Plan No. FPL2021-0005.
 - B. Any redlines provided by City staff shall be made to the Final Plat maps.
 - C. Submit cash-in-lieu or transfer appropriate water shares for the filings being recorded.
 - D. Written evidence shall be provided to show that the comments from United Power have been adequately addressed.

- E. Written evidence shall be provided to show that the comments from Xcel Energy (Public Service Company) have been adequately addressed.
- F. Written evidence shall be provided to show that any comments from the Public Works Director have been adequately addressed.
- G. Applicant shall finalize a subdivision improvements agreement for review by City staff and approval by City Council.
- H. Applicant shall provide information concerning any existing surface use agreements and provide details of how the agreements have been addressed on the design of the development.
- I. The following note shall be added to the Final Plat and Final PUD Plan map:
 - 1. Unless specifically modified by a PUD plan, all provisions of the City's Code and adopted standards and specifications shall apply within PUD Districts.
 - 2. At the time of platting, future filings shall finalize PUD development standards for approval by City Council.
- I. Prior to the start of construction:
 - A. Applicant shall address the comments received from the Division of Water Resources.
 - B. Applicant shall address the comments received from Kerr McGee.
- II. The Final Plat shall be recorded within three (3) years of approval.

APPROVED AND PASSED BY A MAJORITY VOTE OF THOSE ELECTED TO THE CITY COUNCIL OF THE CITY OF FORT LUPTON, COLORADO THIS 16th DAY OF NOVEMBER 2021.

City of Fort Lupton, Colorado

Zo Stieber, Mayor

Attest:

Maricela Peña, City Clerk

Approved as to form:

Andy Ausmus, City Attorney



**MURATA FARMS FINAL PLAT & FINAL PUD PLAN FOR FILING NO. 1
STAFF REPORT
PROJECT NO. LUP2021-0028 / PLAN NOS. FPL2021-0005 & PUD2021-0004**

PROJECT DESCRIPTION

Project No.: LUP2021-0028 Plan Nos.: FPL2021-0005 & PUD2021-0004

Project Name: Murata Farms Final Plat & Final PUD Plan for Filing No. 1

Applicant's Name: JHome LLC for Coronado West ("Applicant") & Perri M-J Company ("Owner")

Location of Request:

The site consists of a parcel of land west and adjacent to County Road 29 ½, and south and adjacent to Highway 52 in Fort Lupton (the "Property"). The Property is located in the North Half of the Southwest Quarter of Section 4, Township 1 North, Range 66 West of the Sixth Principal Meridian, City of Fort Lupton, County of Weld, State of Colorado.



Nature of Request:

The Applicant has submitted a request for a final plat and final PUD plan for a mixed use subdivision that will consist of 180 single family detached homes, as well as future development tracts for planned paired homes, townhomes, and commercial development at the northwest corner of the site. These additional phases will require separate platting approval by the Planning Commission and City Council.

Site Size: 72.712 acres, more or less.

Zone District: PUD Planned Unit Development.

Proposed Use: Mixed use subdivision that will consist of 180 single family detached homes, as well as future development tracts for planned paired homes, townhomes, and commercial development at the northwest corner of the site.

Existing Use: Vacant with some oil and gas facilities.

Hearing Dates: City Council – November 16, 2021 at 7:00 PM.

Hearing Location: Fort Lupton City Hall – Council Chambers, 130 S. McKinley Ave., Fort Lupton, Colorado, with an option to attend virtually via GoToWebinar.

Staff Recommendation: Approval with conditions, as shown on the proposed resolution.

SUMMARY OF PREVIOUS APPLICATIONS

In 2002, the City Council approved the Murata Farms Annexation and Initial Zoning to 'PUD' Planned Unit Development.

On April 7, 2020, the Fort Lupton City Council approved the Sketch Plat for this project as part of the City's major subdivision process. Finally, on July 6, 2021, City Council approved the Preliminary Plat and Preliminary PUD Plan.

APPLICATION PROCESS

The Applicant is requesting approval of a final plat and PUD plan for Filing No. 1 of the Murata Farms Subdivision. Pursuant to Section 16-45(c)(3) of the Fort Lupton Municipal Code (FLMC), except as specifically provided in said Section, states PUD plan applications shall be processed in the same manner as set forth in this Code for major subdivisions, including all preapplication conferences, sketch PUD plan, preliminary PUD plan and final PUD plan applications, public hearings and recording with the County Clerk and Recorder.

Section 17-23 states that a final plat is to be reviewed by City Council at a public meeting. A final plat does not require Planning Commission review. The Code requires that a subdivision improvements agreement be submitted by the applicant for review by the City Attorney and City Council. A subdivision improvements agreement has been addressed in the conditions of approval included on the proposed resolution.

This is the final step in the major subdivision process. The first step is approval of a sketch PUD plat (reviewed and approved on April 7, 2020), and the second step is approval of the preliminary PUD plat (reviewed and approved on July 6, 2021). Future phases for development of remaining tracts will require separate platting approval.

NOTIFICATION REQUIREMENTS

Notifications are not required for a final plat, however referral agencies were provided with the submittal documents for review. All referral comments received are enclosed with this Action Memorandum.

CONFORMANCE WITH CITY STANDARDS, REGULATIONS AND POLICIES

The area is zoned PUD Planned Unit Development with commercial, neighborhood and residential uses permitted. The objective of a PUD is to provide for the planning and development of substantial tracts of land, suitable in location and character for the uses proposed, as unified and integrated entities in accordance with detailed development plans.

Approval of a PUD Plan is being reviewed concurrently with the Preliminary Plat. All development within a PUD zone district must be in accordance with a PUD plan. PUD plans shall contain unique district regulations that apply to the PUD zone district. All provisions of the City's Code and adopted standards and specifications shall apply within PUD zone districts, unless specifically modified in the PUD plan. Deviations from the City's standards are noted on the Final PUD Plan map.

CONFORMANCE WITH THE COMPREHENSIVE PLAN

Section 16-45 – PUD Planned Unit Development District

- a) The Planned Unit Development (PUD) Provisions contained herein are intended to provide for the planning and development of substantial tracts of land, suitable in location and character for the uses proposed, as unified and integrated entities in accordance with detailed development plans.

This application is for Filing No. 1 of the Murata Farms Subdivision, which is a 72.712 acre, more or less, subdivision that includes 180 detached single family homes, as well as future tracts for paired homes, townhomes, as well as a commercial portion in the northeast corner of the subdivision. Staff believes that this development meets the intent of the PUD zoning regulations, as detailed in the enclosed submittal materials, as well as below.

- (1) PUD permit requirements. All development within a PUD District must be in accordance with an approved PUD plan. No building or development permits shall be issued within a PUD District unless they are in conformance with an approved PUD plan for that District.

A final PUD plan is being reviewed concurrently with this final plat on November 16, 2021.

- (2) PUD plan format and content, general. In accordance with this Section, PUD plans shall contain unique district regulations that apply to specific parcels of land within a PUD District, including permitted and special uses, lot sizes, bulk, density, general layout, architectural guidelines and location of and standards for public facilities and amenities, and any design standards that vary from the City of Fort Lupton Standards and Specifications for the Design and Construction of Public Improvements. Unless specifically modified by a PUD plan, all provisions of the City's Code and adopted standards and specifications shall apply within PUD Districts. PUD plans shall be in the same general format as required for subdivision plats.

A PUD plan has been submitted for the proposed development, and is laid out in the Final PUD Plan map.

- (3) PUD plan process, general. All PUD plan applications shall be submitted and processed simultaneously with the subdivision applications for the property. PUD plan and subdivision

applications may also be processed concurrently with the proposed amendment to the Official Zoning Map, creating a PUD District. Except as specifically provided in this Section, PUD plan applications shall be processed in the same manner as set forth in this Code for major subdivisions, including all preapplication conferences, sketch PUD plan, preliminary PUD plan applications, public hearings and recording with the County Clerk and Recorder.

These requirements have been met. The City has a general land use application. A sketch PUD plan was approved by City Council in April 7, 2020, and the PUD plan and preliminary PUD plat was approved on July 6, 2021. This is the final step in the PUD Plan process. An amendment to the Official Zoning Map was not required for this application, because PUD zoning was already in place for the proposed uses prior to this application.

- (4) Maintenance of private facilities. The owner shall establish an organization for the ownership and maintenance of any approved private streets and/or common open space areas unless other adequate arrangements for the ownership and maintenance thereof are provided in a manner acceptable to the City.

The conditions of approval listed in the proposed Resolution require that a subdivision improvements agreement be submitted for approval by City Council prior to recording the Final Plat maps. These items will address the ownership and maintenance of streets and open space within the subdivision.

- (5) PUD size. Unless specifically waived by the City Council, the area included in a PUD plan must be at least ten (10) acres in size.

This development is over ten (10) acres, and therefore meets this requirement.

- (6) Approval. Approval of a final PUD plan by the City Council shall be by ordinance.

A final PUD plan is submitted concurrently with the Final Plat for Filing No. 1 for consideration by City Council with the existing resolution. The PUD zoning was completed by Ordinance with the annexation and zoning of the entire Murata Farms PUD in 2002.

- b) Intent. PUD provisions are intended to further the following objectives:

- (1) To permit and encourage innovative design and high quality, master-planned urban developments on large parcels of land.
- (2) To permit greater flexibility in the application of zoning and development standards and greater freedom in providing a mix of land uses in the development of a balanced community.
- (3) To preserve critical environmental resources, provide above-average open space and recreational amenities, include exceptional design and provide greater efficiency in the layout and provision of roads, utilities and other infrastructure.
- (4) To provide flexibility in land planning and development, resulting in amenable relationships between buildings and ancillary uses, and permitting more intensive use of land where well-related open space and recreational facilities are integrated into overall design.

(5) To encourage unity and diversity in land development, resulting in convenient and harmonious groupings of uses, structures and common facilities, varied type design and layout of housing and other buildings and appropriate relationships of open spaces to intended uses and structures.

(6) To encourage unified and planned development of a site, with or without customary subdivision into single lots, and without specific application of the district regulations as provided for individual lots, subject to the regulations set forth herein.

(7) To provide for and encourage the preservation and enhancement of desirable natural landscape and other features unique to a development site.

(8) To provide reasonable standards and criteria by which the specific proposals for a PUD can be evaluated.

(9) To provide a procedure which can relate the design and layout of unified residential, commercial or industrial developments to the particular site and demand for such development in a manner consistent with the preservation of property values within established residential areas.

With respect to Section 16-45(d)(1)-(9) above, staff finds that the proposed final PUD plat substantively meets the intent of this subsection. The development is part of the overall Murata Farms PUD Subdivision, which will provide a variety of residential types (attached and detached), as well as a commercial corner, thus providing a higher diversity of housing project within the City for a variety of demographics. The development will include a trail system to connect to the larger trail system of the City's Proposed Trail Map. Staff believes that this residential development meets the intent of the PUD Zone District.

c) General location and planning requirements.

(1) Relation to major transportation system. PUD districts shall be located with respect to major streets and highways or other transportation facilities to be directly accessible without creating traffic on minor streets in residential areas outside such district.

The project will have access off of South College Avenue (County Road 29 ½) from State Highway 52, which will be built out into a collector street according to the City's transportation plan. It will also build out S. Gerry Avenue (County Road 29), another collector on the City's transportation plan. S. Gerry Avenue will connect to the built out roadway being constructed by Mountain Sky Subdivision directly to the south, and also align with Coyote Creek Drive to the north. The subdivision will also provide a connection to Silverado Lane in Appel Farms. Staff finds that the proposed development provides important connections to neighboring subdivisions, while also providing connections to collector streets to meet this objective.

(2) Relation to public utilities and community facilities. PUD districts shall be located in relation to public utilities and community facilities and services, either existing or to be available by the time development reaches the stage where they will be required, so that such facilities can be provided at reasonable cost and with reasonable efficiency.

Utilities are located near the Property, and it is able to be served. Additional information on this is included in the submittal documents received from the Applicant. Staff finds that the development meets this objective.

- (3) Relation to general pattern of urban development. PUD districts shall be planned and located in general compliance with the Comprehensive Plan and shall relate to the major elements of the urban pattern, including housing, commercial facilities and principal places of employment, by physical proximity of major streets so as to provide for the convenience and amenity of residents of the community and to reduce general traffic congestion by a close relationship between origins and destinations.

The Future Land Use Map designates this area as Single Family Detached land use. This designation allows for neighborhoods of predominately single-family detached homes on individual lots. This can consist of a variety of development types, including higher density homes within the City's urban core and planned subdivisions within the residential growth areas. The proposed subdivision complies with this land use designation. The northeastern portion of the property is designated for Commercial General, and the planned development for this corner is commercial.

In addition, the project is located near already developed portions of the City, including being directly south and adjacent to Highway 52 and the Coyote Creek Golf Course. The development is also adjacent to other residential developments within the City to the west and south. This proximity to current development contributes to the convenience for future residents of the development.

- d) Physical character of the site. The site shall be suitable for the development proposed without hazards to structures, occupants or any property from probability of flooding on the site or on adjacent lands, from erosion or deposition of eroded material on adjacent lands, from subsidence of the soils or from other dangerous conditions. Soil, groundwater level, drainage and topography shall be appropriate to both the kind and pattern of use intended.

The project is not located within a floodplain. In addition, a Phase III Drainage Report was submitted with the submittal materials for review by the Public Works Director. Staff finds that the development meets this objective.

- e) Site planning; external relationships.

- (1) Vehicular access. Entrances and exits for vehicles shall be designed to encourage smooth traffic flow with minimum hazards to passing traffic or to traffic entering or leaving the development. Merging or turnout lanes may be required where anticipated traffic flows from or to the PUD indicate the need for such lanes. In no case shall streets within a PUD district connect to streets outside the district in such a way as to encourage use of any minor streets for through traffic.

A traffic impact study was previously submitted with the preliminary plat application materials for review by the City Engineer. The City Engineer accepted that traffic study during the preliminary plat review. In addition, the Fire District was included as a referral

for the project and has provided a referral response at the preliminary plat phase to address any concerns. The City Engineer is working with the applicant on a subdivision improvements agreement, which will address any infrastructure needed to address traffic impacts. Staff finds that the development meets this objective.

- (2) Perimeter setback and screening. If topographical or other barriers do not provide adequate buffer between the PUD and adjacent uses, structures on the perimeter of the PUD shall be set back a distance equal to the minimum setback requirement of the adjoining district, or shall be permanently screened by fences, walls or plantings as required to sufficiently protect the privacy and amenity of adjacent uses, to protect the planned development from potentially adverse external influences such as a major street or highway and, as necessary, to make transition from adjoining district.

The proposed residential uses are compatible to adjacent uses; in addition, an overall landscaping plan was submitted with the application materials that includes perimeter landscaping surrounding the site.

f) Modifications of subdivision regulations.

- (1) The improvements required under the subdivision regulations, including streets, storm drainage, sanitary sewerage and potable water systems, shall be provided in each PUD.

The Applicant is working with the City Engineer to finalize a subdivision improvements agreement prior to construction. A draft is included in the application materials. This agreement will go before City Council for approval prior to recording the final plat for Filing No. 1. In addition, the Property is located within a metro district, which will assist with the development of these improvements.

- (2) The requirements and standards for the construction of streets and utilities set forth in the City of Fort Lupton Standards and Specifications for the Design and Construction of Public Improvements shall be subject to modification where the plan and program for a PUD make adequate provision for vehicular and pedestrian access and circulation, recreation, utility and service needs of the tract when fully developed and occupied, and also provide such covenants, easements or other legal documents and provisions as will assure conformity to and successful implementation of the plan. Such modifications shall be contained within the PUD plan, subject to approval by the City Council.

The Applicant is working with the City Engineer to finalize these improvements prior to construction.

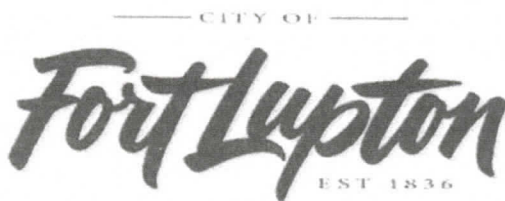
REFERRALS

Referrals were provided to the list below. Any comments received are enclosed with the Planning Commission packet.

City Attorney	Police Chief	Public Works Director
---------------	--------------	-----------------------

Building Inspector	Recreation Manager	Golf Course Manager
Water Treatment Plant Manager	GIS Specialist	Fort Lupton Fire Protection District
CDOT	Division of Water Resources	United Power
Comcast	CenturyLink	Xcel Energy
Postmaster	Weld County Department of Planning	Weld County School District RE-8
Weld County GIS	Fulton Ditch Company	Western Midstream

For more information on this development, please refer to the City Council packet provided. Additional documents are available for review at the Fort Lupton City Hall.



Planning & Building

130 S. McKinley Avenue
Fort Lupton, CO 80621

Phone: 303.857.6694
Fax: 303.857.0351

www.fortluptonco.gov

Project No. _____

Land Use Application Form

A. CONTACT INFORMATION

- 1) Property Owner Name: Perry L Murata, President and Glenice Tani, Treasurer
 Company: PERRI M-J COMPANY
 Phone: 720-505-0733 / 303-857-4823 Email: plmurata@comcast.net / glenicetani7@gmail.com
 Address: 7215 S Himalaya Way Centennial, CO / 14286 HIGHWAY 52 FORT LUPTON, CO 806218223
 Preferred method of contact? Email: ☒ Phone: ☐ Mail: ☐
- 2) Representative Name: Eric Eckberg JHome LLC John Cork, Coronado West
 Company: JHome LLC for Coronado West
 Phone: 303-472-6720 / 480-820-0977 Email: eric@jehome / jcork@coronadowest.com
 Address: 2696 S Colorado Blvd #320 Denver Co 80222 / 8655 S Priest Drive Tempe AZ 85284
 Preferred method of contact? Email: ☒ Phone: ☐ Mail: ☐
- 3) Billing Contact (where invoices should be directed to): Eric Eckberg c/o John Cork
 Billing Company: Coronado West (John Cork)
 Phone: 303-472-672 / 480-820-0977 Email: eric@jehome / jcork@coronadowest.com
 Address: 2696 S Colorado Blvd #320 Denver Co 80222 / 8655 S Priest Drive Tempe AZ 85284

B. SITE DESCRIPTION

Site Address: 14284 HIGHWAY 52 FORT LUPTON
 Parcel Number: 147104000069
 Existing Zone Classification: PUD Proposed Zone Classification: PUD
 Water Type: Municipal Name: Ft Lupton
 Sewage Type: Municipal District Name or Location Hauled to: Ft Lupton

C. APPLICATION TYPE (CHECK ALL THAT APPLY)

- | | | |
|--|--|---|
| ☐ Sketch Plat | ☐ Administrative Site Plan | ☐ PUD Plan (Preliminary & Final) |
| ☐ Preliminary Plat | ☐ Special Use Permit | ☐ Variance |
| ☒ Final Plat | ☐ Oil & Gas Permit | ☐ Administrative Variance |
| ☐ Minor Subdivision | ☐ Annexation & Initial Zone | ☐ Appeal |
| ☐ Amended Plat | ☐ Change of Zone | ☐ Other: _____ |
| ☐ Site Plan | ☐ Comp Plan Amendment | |

Project No. _____

D. PROJECT DESCRIPTION

Project Name: Murata Farms Filing 1

Please provide a short description of the proposed project in the space provided below:

A final plat for the first two phases of Murata Farms development. This plat includes 180 single family detached residential lots and supporting infrastructure including roads, utility and drainage improvements.

E. REQUIRED DOCUMENTS

For an application to be considered complete, and for planning staff to begin review and schedule any applicable public hearings, this Land Use Application Form must be fully completed and all required attachments included. Planning staff will review the application for completeness and will provide notice to the representative and/or owner whether the application has been deemed complete.

F. CERTIFICATIONS

Representative Certification

By signing this application, I attest that I am acting with the knowledge and consent of all owners of the property that is the subject of this application, and that I have been designated to act as the representative for the project described in this land use application. I further certify that all information submitted with this application is true and accurate to the best of my knowledge.

Representative: _____

Date: 8/19/21

Owner Certification

I hereby certify that I am the legal owner of record of the property that is the subject of this application. I hereby authorize the representative listed on this application, if any, to communicate directly with City officials and to submit documentation and information regarding this application on my behalf.

Owner: _____

Date: 8/19/2021

PRESIDENT
MI-PEARL COMPANY

For Office Use Only

Received Date: _____

If the application is not complete, state reasons why it is incomplete:

Deemed Complete Date: _____

Fees Submitted: _____

Escrow Submitted: _____

Instructions for Submitting the Land Use Application Form

DEFINITIONS

Words in the singular include the plural and words in the plural include the singular.

Application refers to the official submittal to the City of Fort Lupton's Planning Department for review of the proposed land use development identified in the land use application form. The application includes the form, all materials submitted for review of the project, including those documents required under the Land Use Regulations of the Municipal Code, and any additional information provided.

Project refers to the land use development identified on the land use application form and application materials.

Property refers to the land that is being proposed for development as described in the land use application form and application materials.

A. CONTACT INFORMATION

- 1) Provide contact information for all owners of any property that is the subject of the application. If the contact information for all property owners will not fit on the space provided, submit a separate sheet for the additional owners.
- 2) Provide contact information for all persons, firms or businesses that are authorized by the owners identified in Section A(1) to work on the land use application, including, but not limited to, discussing the project, submitting application materials, and attending meeting and hearings. If the contact information for all representatives will not fit on the space provided, submit a separate sheet for the additional representatives.
- 3) Provide contact and mailing information for the person that should receive all invoices for the project. If this person changes at any time, contact the Planning Department immediately to update this information.

B. SITE DESCRIPTION

Provide all information requested. Parcel numbers and address information may be found at the Weld County Property Portal at <https://www.co.weld.co.us/maps1/propertyportal/>. Current zoning can be found at <http://www.fortlupton.org/405/Zoning>.

C. APPLICATION TYPE

Select the land use application that is applicable to the project. If there are multiple land use application types being submitted to run concurrently, select all that apply. The land use application types will be identified during the required pre-application meeting. If you have any questions about this, please contact the Planning Department at 303.857.6694 or planningdept@fortlupton.org.

D. PROJECT DESCRIPTION

Please select a project name that will be referenced throughout the project and a description of what the project entails. If you need more space for the project description, please attach a separate sheet.

E. REQUIRED DOCUMENTS

Required documents will be discussed during the pre-application meeting with the Planning Department. If any documents are missing, the acceptance of the application may be delayed until the submittal is complete.

F. CERTIFICATIONS

Representative Certification. Provide the signature of all authorized representatives in this section.

Owner Certification. Provide the signature of all owners of properties included in the application in this section.

For any other questions, please contact the Planning Department at 303.857.6694 or planningdept@fortlupton.org.

Murata Farms

Final Plat - Final PUD Narrative

October 14, 2021

1. Team

Developer/Applicant

Eric Eckberg
Coronado West
2696 S. Colorado Blvd., #320
Denver, CO 80222
303-472-6720
eric@jehome.com

Civil Engineer

Travis Frazier, PE
Redland
1500 West Canal Court
Littleton, CO 80120
720-283-6783 Ext. 126
tfrazier@redland.com

Landscape Architect

Karen Henry, PLA
Henry Design Group, Inc.
1501 Wazee Street, #1-C
Denver, CO 80202
303-446-2368
khenry@henrydesigngroup.com

2. Location and Property Description

The 72.71-acre property is located at the southwest corner of Hwy. 52 and WCR 29-1/2. More particularly described as being in a portion of the North One-Half of the Southwest One-Quarter of Section 4, Township 1 North, Range 66 West of the 6th Principal Meridian, Weld County, Colorado.

3. Adjacent Land Uses

North: Highway 52 and the Coyote Creek residential subdivision and Golf Course
South: The Mountain Sky residential subdivision
East: S. College Avenue and the proposed Taylor Annexation subdivision
West: Appel residential subdivision

4. Site Features

The site is a gently rolling farm field comprising of crops and weeds. Existing vegetation includes indigenous trees and shrubs adjacent to the existing structures, along the Fulton Ditch and access roads to the well sites. A segment of the Fulton Ditch parallels Hwy. 52 in the eastern half of the site. Two well sites with appurtenances are on the property. The well within proposed Lot 2 Block 14 has been plugged and abandoned. As such, a pocket park is proposed on this site. An active well remains in the northern portion within Tract N. Another existing well is located off-site to the southwest of the

property. The required well setbacks will remain. A 30-foot-wide pipeline easement traverses the site in a north-south direction connecting the two operating well sites. The pipeline easement will remain in place as an open space trail corridor. The existing structures will be removed from the site.

Soil Type. The NRCS soil survey indicates that the soil on site is primarily sandy loams. The northern region of the property includes Olney Loams with Grades ranging from 1 to 5% with the majority of the site being under 3% for slope. The southeastern corner of the site includes an Otero Sandy loam with typical grades below 3%. The southwest corner of the site includes Vona Sandy Loams with grades typically below 3%. These soil types are generally rated in Wind Erodibility Group 3 which has a higher susceptibility for wind erosion.

Geologic Characteristics. Refer to attached Geotechnical report "Preliminary Geotechnical Investigation Murata Farms (Muraco Subdivision) Southwest of Highway 52 and County Road 29 ½" By CTL Thompson dated October 31, 2019.

5. Zoning

The property was zoned Planned Unit Development (PUD) for a mix of neighborhood commercial, office and residential uses concurrent with the Annexation of the property. As indicated in the Annexation Agreement, the PUD is for agriculture and residential purposes consistent with the current use of the land. These land uses are permitted until such time a PUD Plan is approved for the property. The proposed Final Plat/PUD indicates the proposed uses satisfying the requirement of the Annexation Agreement thereby allowing for the development of Murata Farms for a mixture of uses including single family detached residential, paired homes, townhomes, parks, trails, open space and commercial and office uses.

6. Proposed Land Uses

The Final Plat/PUD proposes a total of 180 Single Family Detached homes and future development tracts. Lot 3 Block 14 is 7.29 acres and is proposed 58 Paired Homes. Lot 2 Block 14 is 5.13 acres and is proposed for 61 Townhomes. Lot 1 Block 14 is 2.52 acres and is planned for Commercial development. The commercial site is located at the Southwest corner of Highway 52 and WCR 29-1/2. The development will include four pocket parks

and a system of open space/greenway trail corridors for a total of 13.43 acres of parks and open space.

7. Compliance with the Ft. Lupton Comprehensive Plan and Plans and Design Standards

The proposed development integrates the goals set out in the Town Comprehensive Plan in the following ways:

Growth and Development. The proposed development is designed to provide connections at pre-determined locations to the existing and proposed adjacent neighborhoods. In addition, the layout provides continuous, direct, convenient, and safe pedestrian trails in open space corridors between the proposed parks, residences, and the neighborhood commercial area.

The site is well situated for both housing and a commercial corner per the Comprehensive Plan. The plan also provides for diversity in housing types for the community. The commercial site is positioned to take advantage of the WCR 29-1/2 frontage and proximity to Aims Community College.

Transportation and Mobility. Murata Farms provides a safe and efficient transportation network that accommodates pedestrians, vehicles and bicycles. The main entrance is located along Highway 52 at S. Gerry Street which is in alignment with Coyote Creek Drive to the north. This collector street continues south providing future access to the Mountain Sky neighborhood. Local street access is also provided from this collector to Silverado Lane to the West. Secondary access is from WCR 29-1/2 (S. College Ave.). Meadowlark Parkway, a collector street meanders through the site in an east/west direction providing a connection to S. Gerry Street and S. College Ave. This through collector street will provide convenient access to local streets internal to the neighborhoods for vehicles, bicycles, and pedestrians alike. The proposed neighborhood is planned as a pedestrian oriented and walkable community with on-street sidewalks and off-street trail connections throughout the community providing connections to future adjacent neighborhoods and the planned Regional Trail along the Fulton Ditch.

Parks, Open Space and Environmental Features. The proposed parks, open space and trails within the development will provide high quality recreational opportunities for neighborhood residents and create connections to future

neighborhoods and uses beyond the project boundaries. The proposed neighborhood complies with the Parks and Trails Master Plan, as follows:

- a. A portion of the Fulton Ditch Trail will be constructed providing for a connection to the proposed Trailhead at the corner of S. College Avenue and HWY 52.
- b. Connector Trails will be provided along Hwy. 52 and S. College Avenue providing for connections to the Trailhead, the Fulton Ditch Trail, and the Fort Lupton Trail west of the neighborhood.
- c. Neighborhood Trails will provide connectivity to the Connector Trails.
- d. Sidewalks will be provided where off-street trails are not available to ensure connectivity to adjacent neighborhood.

A proposed Trails Map is provided in the Final Plat/PUD Plan set.

The neighborhood feature is provided by a park at the southeast corner of the intersection of the two collector streets providing good visibility and access. Two additional pocket parks are located within the single-family neighborhoods and are interconnected by open space/greenway Neighborhood trail corridors. One additional pocket park is proposed in the future paired home and townhome neighborhoods.

Public Facilities and Services. The proposed development is a logical extension of the City of Fort Lupton public services without placing additional burdens on existing residents and businesses. Infrastructure will be provided as necessary to meet the requirements of the Comprehensive Plan and/or the Land Use Code.

8. Public Land Dedication

Public land dedication for parks and open space is provided in accordance with the Fort Lupton's Subdivision regulations as follows:

REQUIRED PARK & OPEN SPACE

10 Acres per 1,000 Residents = 8.665 Acres

3 Residents per SFD & Paired Home dwelling unit (238 x 3 = 714 Residents)

2.5 Residents per SFA & MF dwelling unit (61 x 2.5 = 152.5 Residents)

The following Tract Table indicates which tracts are intended to meet the Park and Open Space requirements for Murata Farms.

TRACT TABLE						
TRACXT	AREA (SF)	AREA(AC)	USE	OWNED BY/ MAINTAINED BY	OPEN SPACE / PARK CREDIT	NO CREDIT
TRACT A	24,051	0.552	LANDSCAPING	METRO DISTRICT		0.552
TRACT B	7,700	0.177	LANDSCAPING	METRO DISTRICT	0.177	
TRACT C	7,700	0.177	LANDSCAPING	METRO DISTRICT	0.177	
TRACT D	7,628	0.175	LANDSCAPING	METRO DISTRICT	0.175	
TRACT E	72,242	1.658	LANDSCAPING	METRO DISTRICT	1.658	
TRACT F	3,477	0.080	LANDSCAPING	METRO DISTRICT		0.080
TRACT G	10,837	0.249	LANDSCAPING	METRO DISTRICT	0.249	
TRACT H	9,083	0.209	PARK	METRO DISTRICT	0.209	
TRACT I	11,803	0.271	LANDSCAPING	METRO DISTRICT		0.271
TRACT J	91,398	2.098	DETENTION	METRO DISTRICT		2.098
TRACT K	52,126	1.197	PARK	METRO DISTRICT	1.197	
TRACT L	2,436	0.056	ALLEY	METRO DISTRICT		0.056
TRACT M	3,941	0.090	LANDSCAPING	METRO DISTRICT	0.090	
TRACT N	257,403	5.909	OPENSACE	METRO DISTRICT	4.380	1.529
TRACT O	7,170	0.165	LANDSCAPING	METRO DISTRICT		0.165
TRACT P	808	0.019	LANDSCAPING	METRO DISTRICT		0.019
TRACT Q	11,863	0.272	LANDSCAPING	METRO DISTRICT	0.272	
TRACT R	3,610	0.083	LANDSCAPING	METRO DISTRICT		0.083
TRACT S	3,075	0.071	LANDSCAPING	METRO DISTRICT		0.071
TOTAL	588,351	13.507			8.58	4.92

9. Utility Service

Stormwater Drainage. A Final Drainage Report has been prepared in compliance with the City of Fort Lupton Criteria and is included with the application. The proposed drainage design includes expansion of the Mountain Sky detention and water quality pond for peak flow attenuation for minor and major event flows. The plan also anticipates that the existing Fulton Ditch will not be impacted with additions stormwater runoff from the proposed development.

Evidence of Adequate Water Supply. The City of Fort Lupton will provide domestic water in conjunction with the development agreement that will be negotiated with the Final Plat.

Looped connectivity will be provided at a stub connection in Silverado Lane at the western edge of the property and in S. College Avenue to the east.

Hydrant testing in the area indicates that residual pressures under 1300 gpm flow conditions generally maintain 68 psi. Development of this site will include similar fire flow demands which indicates that the area water system can support demands on the system.

Evidence of Adequate Sewer Service. The City of Fort Lupton will provide sanitary sewer service in conjunction with the development agreement that will be negotiated with the Final Plat.

Sanitary Sewer service is available at the southwest corner of the site with an existing manhole located in the extension of the future S. College Avenue.

Conversations with the City include a discussion about a 12" sewer main located at the southwest corner of the site which will serve as the sewer outfall for the site. A final evaluation of the impact on the downstream system will be developed in conjunction with the City as anticipated loads on the system are presented.

10. Public Services.

- a. Life Safety. Fire and Police Protection and Law enforcement for the property would be provided by the Fort Lupton Police Department. It is not anticipated that there would be special security needs or a specific need for additional officers. Fire protection for the property would be provided by Fort Lupton Fire Department. It is not anticipated that the project would pose special fire hazards. Fire prevention requirements, fire detection, fire lanes, emergency access, etc. will be provided as required by code.
- b. Schools. The project is within the Weld RE-8 School District. The applicant will work with the District to identify and address any impacts of this project.
- c. Recreation and Open Space. The project will include park amenities, including open spaces and trails, and active and passive recreation.

11. Traffic Statement

Site development is proposed in compliance with the Fort Lupton Transportation Plan from June 2018. The site is currently served by Highway 52 and Weld County Road 29 ½ (S. College Avenue). Highway 52 is currently a 2-lane paved

road section that is planned for a future four lane arterial road. The minimum required right of way for Highway 52 is 120 feet in accordance with the City of Fort Lupton 4-lane major Arterial section.

Weld County Road 29 ½ (S. College Avenue) is currently a dirt road planned as an urban collector. The City of Fort Lupton typical ROW section for a four lane Major Collector is 110 feet. This is consistent with what Mountain Sky provided to the south. The developer will dedicate the required half right of way for each of these roadways in conjunction with Final Plat approval.

S. Gerry Street will access Hwy. 52 at the Coyote Creek Drive intersection. This collector street will intersect with Meadowlark Parkway, the proposed east/west collector street. The north/south collector will provide a connection into the Mountain Sky Neighborhood and local street access at Silverado Lane to the west. The Meadowlark Parkway will access S. College Avenue and provide local street access to the proposed neighborhoods both north and south of the collector. The connections to surrounding Arterial Roadways have been designed to disperse traffic evenly within the development. A full Traffic Impact Study was provided with this Preliminary Plat/Preliminary PUD application.

12. Commercial Mineral Deposits

There are currently oil & gas facilities within the property but there are no known commercial mineral deposits on-site.

13. Cultural and Historical

A preliminary search of the History Colorado Office of Archaeology and Historic Preservation. The report indicates there may be one survey located within the Section 4 but the exact located has not been determined, the report is attached.

14. Phasing

The development is proposed in five phases. Trails and parks included in the phase boundaries will be constructed with that phase. The project will generally develop in phases from the east progressing to the west. Phase 1 will include the eastern half of the single family lots from East College Avenue to the north south trail corridor, comprising of 95 lots. Phase 2 will be the balance

of the single- family lots, 85, from the north south trail corridor to the Appel subdivision. Phase 3 will be the paired home parcel; Phase 4 will be the townhome parcel and Phase 5 will be the commercial parcel.

It is anticipated that construction will commence upon completion of the entitlement and permitting process. The initial phase of development will include the necessary infrastructure to serve phase 1. Development will continue based on market demand.

A Phasing Plan is provided in the Final Plat/PUD Plan set.

MURATA FARMS FILING NO. 1
A PART OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4,
TOWNSHIP 1 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO.
72.712 ACRES - 183 LOTS - 19 TRACTS

DESCRIPTION

A PARCEL OF LAND BEING A PORTION OF LOT B, RECORDED EXEMPTION NO. 1471-04-3-RE 879, RECORDED AT RECEPTION NO. 02065102 IN THE RECORDS OF THE CLERK & RECORDER OF WELD COUNTY, COLORADO, SITUATED IN THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4, TOWNSHIP 1 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF FORT LUPTON, SAID COUNTY AND STATE, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 4, WHENCE THE NORTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 4 BEARS, NORTH 89°17'03" EAST, A DISTANCE OF 2,647.89 FEET, WITH ALL BEARINGS HEREON REFERENCED TO THIS LINE;

THENCE SOUTH 81°43'55"EAST, A DISTANCE OF 320.19 FEET TO A LINE 50.00 FEET SOUTH OF AND PARALLEL WITH SAID NORTH LINE, SAID POINT ALSO BEING THE POINT OF BEGINNING;

THENCE ALONG SAID PARALLEL LINE, NORTH 89°17'03" EAST, A DISTANCE OF 2,301.18 FEET TO A LINE 30.00 FEET WEST OF AND PARALLEL WITH THE EAST LINE OF SAID SOUTHWEST QUARTER;

THENCE ALONG SAID PARALLEL LINE, SOUTH 00°12'11" EAST, A DISTANCE OF 1,275.35 FEET TO THE SOUTHRLY BOUNDARY OF SAID LOT B;

THENCE ALONG THE BOUNDARY OF SAID LOT B, THE FOLLOWING FOUR (4) COURSES:

- 1.SOUTH 89°15'27" WEST, A DISTANCE OF 2,619.99 FEET TO THE SOUTHWEST CORNER OF SAID LOT B;
- 2.NORTH 00°06'50" WEST, A DISTANCE OF 726.59
- 3.NORTH 89°17'07" EAST, A DISTANCE OF 316.82 FEET;
- 4.NORTH 00°06'50" WEST, A DISTANCE OF 550.00 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 72.712 ACRES, (3,167,346 SQUARE FEET), MORE OR LESS.

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT WE CORONADO WEST, LLC, A DELAWARE LIMITED LIABILITY COMPANY, BEING THE SOLE OWNERS OF THE LAND DESCRIBED HEREIN, HAVE CAUSED SAID LAND TO BE LAID OUT AND PLATTED UNDER THE NAME OF MURATA FARMS FILING NO. 1, AND DO HEREBY DEDICATE TO THE CITY OF FORT LUPTON AND ITS LICENSEES FOR PUBLIC USE FOREVER ALL STREETS, ALLEYS AND UTILITY EASEMENTS AS INDICATED HEREON. IN COMPLIANCE WITH THE CITY OF FORT LUPTON SUBDIVISION REGULATIONS AND BY CONTRACTUAL AGREEMENT, THE LANDOWNERS SHALL BEAR ALL EXPENSES INVOLVED IN IMPROVEMENTS.

IN WITNESS WHEREOF, WE HAVE HEREUNTO SET OUR HANDS AND SEALS THIS DAY OF , 20.

STATE OF COLORADO,)
COUNTY OF) SS.
THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY
ON THIS DAY OF , 20.
WITNESS MY HAND AND SEAL.
MY COMMISSION EXPIRES
NOTARY PUBLIC

OWNER

BY:CORONADO WEST, LLC, A DELAWARE LIMITED LIABILITY COMPANY

NOTARY CERTIFICATE

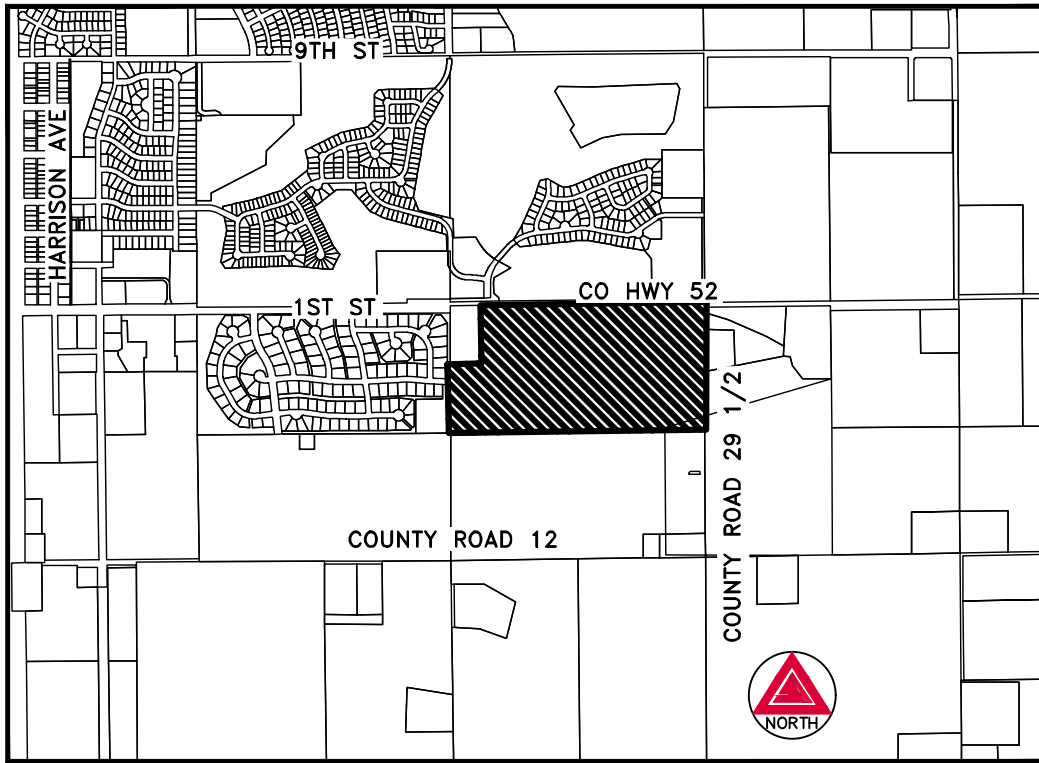
STATE OF COLORADO)
COUNTY OF) SS.
THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY
THIS DAY OF , 20. WITNESS MY HAND SEAL.
MY COMMISSION EXPIRES
NOTARY PUBLIC

BASIS OF BEARINGS

BEARINGS SHOWN HEREON ARE GRID BEARINGS DERIVED FROM GPS OBSERVATION BASED UPON THE COLORADO COORDINATE SYSTEM OF 1983 NORTH ZONE (NAD 83, 2011) REFERENCED TO THE NORTH LINE OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4, TOWNSHIP 1 NORTH, RANGE 66 WEST, SIXTH PRINCIPAL MERIDIAN BEING MONUMENTED AS SHOWN HEREON, TAKEN TO BEAR NORTH 89°17'03" EAST, A DISTANCE OF 2647.89 FEET.

FLOOD ZONE

THE SUBJECT PROPERTY SHOWN HEREIN LIES WITHIN OTHER AREAS - ZONE X, AREAS OF MINIMAL FLOOD HAZARD, AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP INDEX NO. 08123C2110E, MAP REVISED JANUARY 20, 2016 (PANEL NOT PRINTED).



VICINITY MAP

SCALE 1" = 2,000'

WATER CERTIFICATION

I HEREBY CERTIFY THAT ALL REQUIRED WATER RIGHTS HAE BEEN TRANSFERRED TO THE CITY OF FORT LUPTON.

CITY ADMINISTRATOR

CITY ENGINEER'S APPROVAL

APPROVED THIS DAY OF , 20.

CITY ENGINEER

PLANNING COMMISSION RECOMMENDATION

RECOMMENDED THIS DAY OF , 20, BY RESOLUTION NO.

CHAIRPERSON, FORT LUPTON PLANNING COMMISSION

MAYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT A PLAT OF THE ABOVE-DESCRIBED PROPERTY WAS APPROVED BY RESOLUTION NO. OF THE CITY OF FORT LUPTON PASSED AND ADOPTED ON THE DAY OF , A.D., 20 AND THAT THE MAYOR OF THE CITY OF FORT LUPTON, AS AUTHORIZED BY SAID RESOLUTION ON BEHALF OF THE CITY OF FORT LUPTON, HEREBY ACKNOWLEDGES AND ADOPTS THE SAID PLAT UPON WHICH THIS CERTIFICATE IS ENDORSED FOR ALL PURPOSES INDICATED THEREON.

ATTEST:

MAYOR

CITY CLERK (SEAL)

CITY ADMINISTRATOR'S APPROVAL

APPROVED THIS DAY OF , 20.

CITY ADMINISTRATOR

CITY WATER AND SEWER DEPARTMENT APPROVAL

APPROVED THIS DAY OF , 20.

DIRECTOR OF PUBLIC WORKS

GENERAL NOTES

- 1. RIGHT-OF-WAY FOR INGRESS AND EGRESS FOR SERVICE AND EMERGENCY VEHICLES IS GRANTED OVER, ACROSS, ON AND THROUGH ANY AND ALL PRIVATE ROADS, WAYS, AND FIRE LANES NOW OR HEREAFTER ESTABLISHED ON THE DESCRIBED PROPERTY. THE SAME ARE HEREBY DESIGNATED AS FIRE LANES AND EMERGENCY AND SERVICE VEHICLE ROADS, AND SHALL BE POSTED "NO PARKING - FIRE LANE".
- 2. THE EASEMENT AREA WITHIN EACH LOT OR TRACT IS TO BE CONTINUOUSLY MAINTAINED BY THE OWNER OF THE LOT OR TRACT EXCEPTING THE EASEMENT HOLDER FROM SUCH RESPONSIBILITY. ANY STRUCTURES INCONSISTENT WITH THE USE GRANTED IN THE EASEMENT ARE PROHIBITED.
- 3. LOTS 1 THROUGH 3, BLOCK 14, ARE RESERVED FOR FUTURE DEVELOPMENT.
- 4. DISTANCES ON THIS PLAT ARE GROUND DISTANCES EXPRESSED IN U.S. SURVEY FEET AND DECIMALS THEREOF. A U.S. SURVEY FOOT IS DEFINED AS EXACTLY 1200/3937 METERS.
- 5. LAND TITLE GUARANTEE COMPANY TITLE COMMITMENT ORDER NO. ABC25165205-4 WITH AN EFFECTIVE DATE OF MAY 7, 2021 AT 5:00 P.M. WAS RELIED UPON FOR RECORD INFORMATION REGARDING EASEMENT(S) AND ENCUMBRANCES(S). THIS SURVEY DOES NOT REPRESENT A TITLE SEARCH BY AZTEC CONSULTANTS, INC. TO DETERMINE OWNERSHIP, RIGHT(S)-OF-WAY, EASEMENT(S), OR OTHER MATTERS OF PUBLIC RECORD.
- 6. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT(S) OR LAND BOUNDARY MONUMENT(S), OR ACCESSORY COMMITS A CLASS TWO MISDEMEANOR PURSUANT TO 18-4-508 CRS.

OWNER'S APPROVAL

KNOWN ALL MEN BY THESE PRESENTS, THAT WE CORONADO WEST, LLC BEING THE SOLE OWNERS OF THE LAND DESCRIBED HEREIN, AND ARE ALL OF THE MORTGAGEES AND HOLDERS OF LIENS UPON THE PROPERTY, AND EACH AND ALL HEREBY CONSENT TO THIS PLAT AND JOIN THE CONVEYANCE AND DEDICATION OF ALL STREETS, ROADS, ALLEYS, EASEMENTS, PUBLIC WAYS AND PLACES SHOWN HEREON.

IN WITNESS WHEREOF, WE HAVE HEREUNTO SET OUR HANDS AND SEALS THIS DAY OF , 20.

STATE OF COLORADO)
COUNTY OF WELD) SS.
THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY
THIS DAY OF , 20. WITNESS MY HAND SEAL.

MY COMMISSION EXPIRES

NOTARY PUBLIC

SURVEYOR'S CERTIFICATE

I, MICHAEL J. NOFFSINGER, A DULY REGISTERED LAND SURVEYOR THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT OF MURATA FARMS FILING NO. 1 WAS PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT THIS PLAT HAS BEEN PREPARED IN COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO AT THE TIME OF THIS SURVEY AND WITHIN MY CONTROL, AND IS ACCURATE TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

MICHAEL J. NOFFSINGER
COLORADO LICENSED PROFESSIONAL LAND SURVEYOR, NO. 38367
FOR AND ON BEHALF OF AZTEC CONSULTANTS, INC.

NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

NOTICE: PER THE STATE OF COLORADO BOARD OF LICENSURE FOR ARCHITECTS, PROFESSIONAL ENGINEERS, AND PROFESSIONAL LAND SURVEYORS RULE 1.6.B.2 THE WORD "CERTIFY" AS USED HEREON MEANS AN EXPRESSION OF PROFESSIONAL OPINION AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED. THE SURVEY REPRESENTED HEREON HAS BEEN PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH APPLICABLE STANDARDS OF PRACTICE AND IS BASED UPON MY KNOWLEDGE, INFORMATION AND BELIEF.

SURVEYOR'S IMPROVEMENT CERTIFICATE

I HEREBY CERTIFY THAT, ON THE DATE SHOWN, A FIELD SURVEY WAS CONDUCTED UNDER MY SUPERVISION OF THE ABOVE DESCRIBED PROPERTY, AND THAT ALL BUILDING IMPROVEMENTS, EASEMENTS AND RIGHTS-OF-WAY IN EVIDENCE OR KNOWN TO ME ARE CORRECTLY SHOWN ON THE ABOVE PLAT. I FURTHER CERTIFY THAT THERE ARE NO ENCROACHMENTS BY AND/OR ON THIS PROPERTY, UNLESS OTHERWISE NOTED.

MICHAEL J. NOFFSINGER
COLORADO LICENSED PROFESSIONAL LAND SURVEYOR, NO. 38367
FOR AND ON BEHALF OF AZTEC CONSULTANTS, INC.

WELD COUNTY CLERK AND RECORDER'S CERTIFICATE

THIS PLAT WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF WELD COUNTY AT M. ON THE DAY OF , 20.
RECEPTION NO.
WELD COUNTY CLERK AND RECORDER
BY: DEPUTY

 300 East Mineral Ave., Suite 1 Littleton, Colorado 80122 Phone: (303) 713-1898 Fax: (303) 713-1897 www.aztecconsultants.com	DEVELOPER CORONADO WEST		DATE OF PREPARATION:	07-19-2021
	8655 S. PRIEST DRIVE TEMPE, AZ 85285 (303) 285-1110		SCALE:	N/A
	AzTec Proj. No.: 54821-30 Drawn By: GLW		SHEET 1 OF 7	

MURATA FARMS FILING NO. 1
A PART OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4,
TOWNSHIP 1 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO.
72.712 ACRES – 183 LOTS – 19 TRACTS

LAND SUMMARY CHART			
TYPE	AREA (S.F.)	AREA (AC.)	% OF TOTAL AREA
LOTS	1,866,749	42.852	58.93%
TRACTS	588,351	13.509	18.58%
PUBLIC ROW	712,246	16.351	22.49%
TOTAL	3,167,346	72.712	100%

TRACT TABLE				
TRACT	AREA (SQ.FT)	AREA (AC ±)	USE	OWNED BY / MAINTAINED BY
TRACT A	24,051	0.552	LANDSCAPING	METRO DISTRICT
TRACT B	7,700	0.177	LANDSCAPING	METRO DISTRICT
TRACT C	7,700	0.177	LANDSCAPING	METRO DISTRICT
TRACT D	7,628	0.175	LANDSCAPING	METRO DISTRICT
TRACT E	72,242	1.658	LANDSCAPING	METRO DISTRICT
TRACT F	3,477	0.080	LANDSCAPING	METRO DISTRICT
TRACT G	10,837	0.249	LANDSCAPING	METRO DISTRICT
TRACT H	9,083	0.209	LANDSCAPING	METRO DISTRICT
TRACT I	11,803	0.271	LANDSCAPING	METRO DISTRICT
TRACT J	91,398	2.098	DETENTION	METRO DISTRICT
TRACT K	52,126	1.197	PARK	METRO DISTRICT
TRACT L	2,436	0.056	LANDSCAPING	METRO DISTRICT
TRACT M	3,941	0.090	LANDSCAPING	METRO DISTRICT
TRACT N	257,403	5.909	OPENSOURCE	METRO DISTRICT
TRACT O	7,170	0.165	LANDSCAPING	METRO DISTRICT
TRACT P	808	0.019	LANDSCAPING	METRO DISTRICT
TRACT Q	11,863	0.272	LANDSCAPING	METRO DISTRICT
TRACT R	3,610	0.083	LANDSCAPING	METRO DISTRICT
TRACT S	3,075	0.071	LANDSCAPING	METRO DISTRICT

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CH. BEAR.	CH. DIST.
C1	25°50'31"	50.00'	22.55'	S13°48'16"W	22.36'
C2	25°50'31"	50.00'	22.55'	N13°48'16"E	22.36'
C3	11°24'28"	265.00'	52.76'	S06°35'15"W	52.68'
C4	8°20'26"	530.00'	77.15'	S86°01'58"E	77.08'
C5	90°00'00"	50.00'	78.54'	N45°12'11"W	70.71'
C6	90°00'00"	50.00'	78.54'	N44°47'49"E	70.71'
C7	15°18'15"	325.00'	86.81'	N40°26'19"E	86.55'
C8	73°23'54"	20.00'	25.62'	S11°23'29"W	23.90'
C9	90°00'00"	35.00'	54.98'	N45°12'11"W	49.50'
C10	90°00'00"	35.00'	54.98'	N44°47'49"E	49.50'
C11	0°45'17"	1975.00'	26.01'	S00°10'28"W	26.01'
C12	17°47'24"	325.00'	100.91'	N09°46'43"E	100.51'
C13	11°06'31"	275.00'	53.32'	S06°26'16"W	53.23'
C14	1°05'12"	2025.00'	38.40'	S00°20'25"W	38.40'
C15	12°18'07"	325.00'	69.78'	S07°02'05"W	69.65'
C16	0°06'37"	692.50'	1.33'	N40°48'57"E	1.33'
C17	9°48'55"	470.00'	80.52'	S84°53'22"W	80.42'
C18	11°32'38"	455.00'	91.67'	S84°02'20"W	91.52'
C19	14°41'35"	325.00'	83.34'	N07°32'58"W	83.12'
C20	10°58'07"	470.00'	89.98'	S64°44'31"W	89.84'
C21	12°41'50"	455.00'	100.83'	S65°35'37"W	100.63'
C22	14°41'35"	275.00'	70.52'	N07°32'58"W	70.33'
C23	23°35'07"	325.00'	133.78'	N11°59'44"W	132.84'
C24	27°27'43"	275.00'	131.81'	N76°03'58"E	130.55'
C25	37°39'13"	175.00'	115.01'	S71°22'34"E	112.95'
C26	18°51'27"	300.00'	98.74'	S10°18'44"W	98.29'

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CH. BEAR.	CH. DIST.
C27	14°41'35"	300.00'	76.93'	N07°32'58"W	76.72'
C28	33°50'01"	270.00'	159.44'	N69°28'54"W	157.13'
C29	33°50'11"	330.00'	194.88'	N69°28'49"W	192.06'
C30	33°50'07"	300.00'	177.16'	N69°28'51"W	174.60'
C31	52°20'47"	175.00'	159.88'	S63°37'26"W	154.38'
C32	52°20'47"	225.00'	205.56'	S63°37'26"W	198.49'
C33	52°20'47"	200.00'	182.72'	S63°37'26"W	176.43'
C34	30°32'22"	300.00'	159.90'	N15°28'22"W	158.02'
C35	3°25'12"	650.00'	38.80'	N39°09'39"E	38.79'
C36	30°32'22"	530.00'	282.50'	S74°31'38"W	279.17'
C37	19°56'38"	530.00'	184.49'	N80°13'51"W	183.56'
C38	12°39'43"	300.00'	66.30'	S07°12'53"W	66.16'
C39	19°56'38"	470.00'	163.60'	N80°13'51"W	162.78'
C40	37°39'13"	225.00'	147.87'	S71°22'34"E	145.22'
C41	41°42'23"	325.00'	236.57'	N68°56'38"E	231.38'
C42	21°40'18"	425.00'	160.75'	S19°46'31"E	159.80'
C43	29°41'23"	375.00'	194.32'	S15°02'52"E	192.15'
C44	48°17'37"	275.00'	231.79'	N23°56'38"E	224.99'
C45	48°17'37"	325.00'	273.94'	N23°56'38"E	265.90'
C46	47°12'25"	275.00'	226.58'	N24°29'13"E	220.22'
C47	25°55'59"	425.00'	192.36'	S77°14'11"E	190.72'
C48	23°13'11"	375.00'	151.97'	S75°52'47"E	150.94'
C49	90°00'00"	60.00'	94.25'	N44°47'49"E	84.85'
C50	90°00'00"	60.00'	94.25'	N45°12'11"W	84.85'
C51	1°05'12"	2000.00'	37.93'	S00°20'25"W	37.93'

LINE TABLE		
LINE	BEARING	LENGTH
L1	S44°39'35"E	21.01'
L2	S00°53'01"W	30.22'
L3	N56°07'33"E	22.00'
L4	N56°07'33"E	29.02'
L5	N64°16'12"W	67.48'
L6	S73°35'50"W	22.25'
L7	S48°05'26"W	35.04'
L8	N38°57'21"W	20.00'
L9	S44°47'49"W	21.21'
L10	S45°12'11"E	21.21'
L11	S45°12'11"E	21.21'
L12	S44°47'49"W	21.21'
L13	N45°12'11"W	21.21'
L14	N45°16'37"E	21.39'
L15	N22°08'13"W	22.25'
L16	N61°38'53"E	20.04'
L17	S28°20'42"E	22.32'
L18	S45°34'51"W	20.92'
L19	S70°15'32"E	16.02'
L20	N27°52'32"W	22.16'

LINE TABLE		
LINE	BEARING	LENGTH
L21	N06°41'32"E	26.64'
L22	N41°26'36"E	24.23'
L23	N89°47'49"E	63.18'
L24	N44°47'49"E	21.21'
L25	N83°47'44"E	21.71'
L26	N40°52'15"E	73.68'
L27	N32°05'09"E	20.47'
L28	N89°47'49"E	138.32'
L29	S45°12'11"E	21.21'
L30	S81°28'26"E	19.11'
L31	N17°04'25"E	22.23'
L32	N61°52'40"W	20.47'
L33	S44°47'49"W	21.21'
L34	N45°12'11"W	21.21'
L35	S44°47'49"W	21.21'
L36	N47°06'00"W	26.88'
L37	N14°34'30"E	20.77'
L38	S45°12'11"E	21.21'
L39	S07°32'57"E	21.21'
L40	N45°12'11"W	21.21'

LINE TABLE		
LINE	BEARING	LENGTH
L41	N44°47'49"E	21.21'
L42	N08°53'38"W	21.71'
L43	N55°21'59"E	21.78'
L44	S81°11'07"E	28.39'
L45	S70°34'52"E	20.71'
L46	S44°47'49"W	21.21'
L47	S82°27'03"W	21.21'
L48	S05°54'02"E	20.59'
L49	S52°32'57"E	21.87'
L50	S86°23'54"E	7.09'
L51	S52°32'57"E	21.87'
L52	N80°40'54"E	20.55'
L53	S00°42'53"E	20.00'
L54	S89°17'07"W	1.17'
L55	N81°11'07"W	28.39'
L56	N37°44'13"W	21.78'
L57	N19°44'28"E	7.83'
L58	N35°51'54"W	2.12'

 AzTEC CONSULTANTS, INC.	300 East Mineral Ave., Suite 1 Littleton, Colorado 80122 Phone: (303) 713-1898 Fax: (303) 713-1897 www.aztecconsultants.com	DEVELOPER CORONADO WEST		DATE OF PREPARATION:	07-19-2021
				SCALE:	N/A
	AzTec Proj. No.: 54821-30	Drawn By: GLW	8655 S. PRIEST DRIVE TEMPE, AZ 85285 (303) 285-1110		SHEET 2 OF 7

MURATA FARMS FILING NO. 1

A PART OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4,
TOWNSHIP 1 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO.
72.712 ACRES - 183 LOTS - 19 TRACTS



MONUMENT SYMBOL LEGEND

- SECTION CORNER MONUMENT AS DESCRIBED
- 1 SET 18" NO. 5 REBAR WITH 1-1/4" ORANGE PLASTIC CAP STAMPED "AZTEC PLS 38367"
- 1 FOUND NO. 4 REBAR - BENT - NO CAP
- 2 FOUND NO. 5 REBAR WITH 1-1/4" RED PLASTIC CAP STAMPED "LS 30462"
- 3 FOUND NO. 5 REBAR WITH 1-1/4" RED PLASTIC CAP STAMPED "ALPHA ENG LS 12330"
- ROW RIGHT-OF-WAY
- U.E. UTILITY EASEMENT
- ## BLOCK NUMBER
- S.E. SANITARY EASEMENT



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Littleton, Colorado 80122
Phone: (303) 713-1898
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www.aztecconsultants.com

Aztec Proj. No.: 54821-30

Drawn By: GLW

DEVELOPER
CORONADO WEST

8655 S. PRIEST DRIVE
TEMPE, AZ 85285
(303) 285-1110

DATE OF PREPARATION: 07-19-2021

SCALE: 1" = 100'

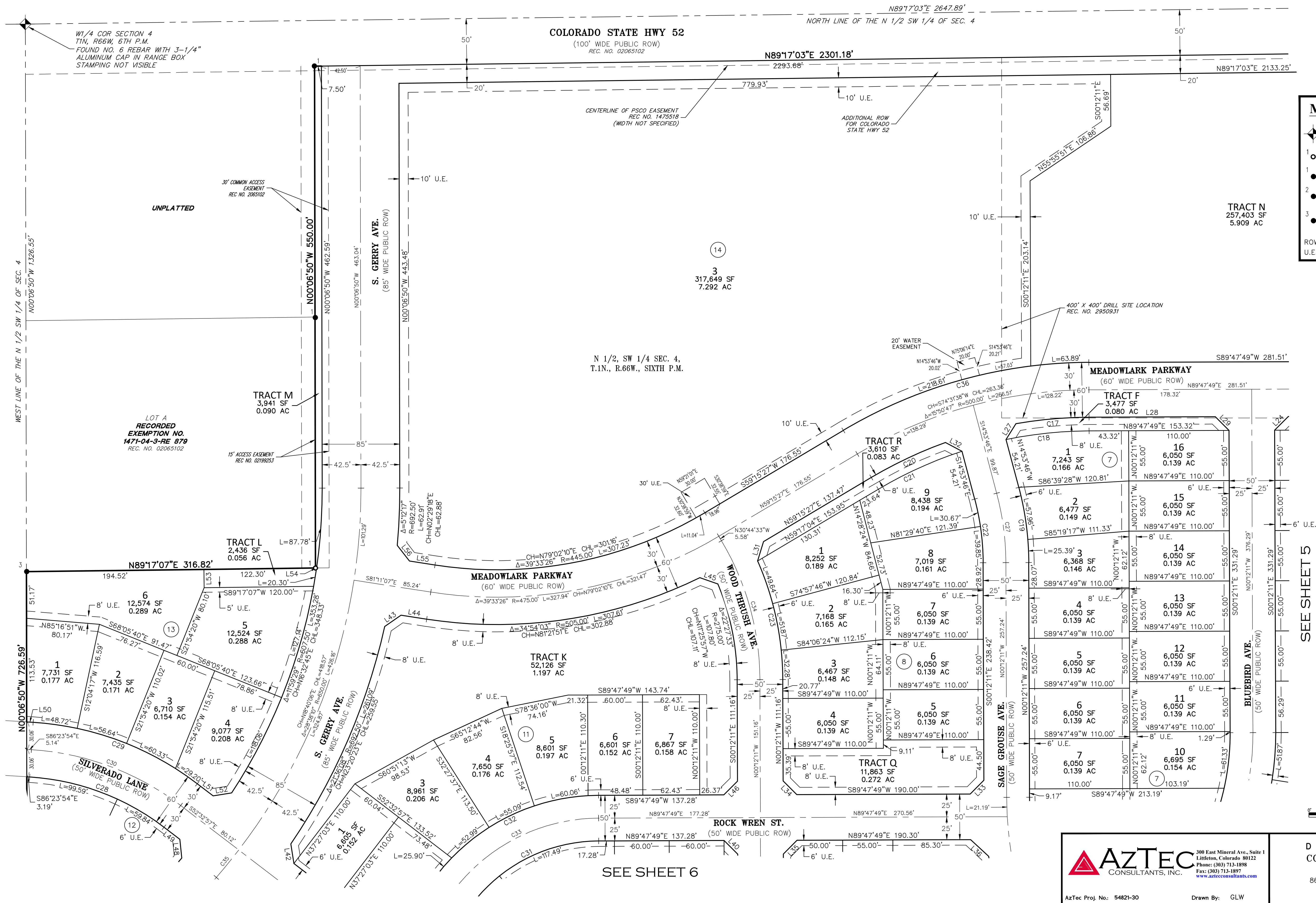
SHEET 3 OF 7

FOR REVIEW

FOR AND ON BEHALF OF
AZTEC CONSULTANTS, INC.

MURATA FARMS FILING NO. 1

A PART OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4,
TOWNSHIP 1 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO.
72.712 ACRES - 183 LOTS - 19 TRACTS

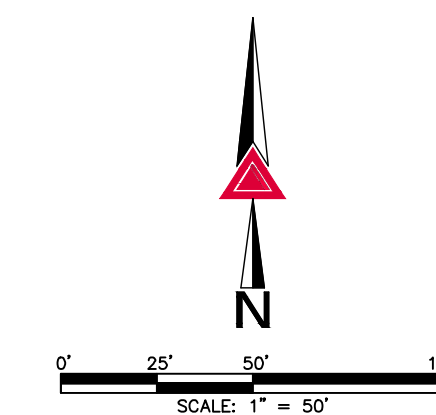


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- ROW RIGHT-OF-WAY BLOCK NUMBER
U.E. UTILITY EASEMENT S.E. SANITARY EASEMENT

SEE SHEET 2
FOR LINE
AND CURVE
TABLES

SEE SHEET 5



FOR REVIEW

FOR AND ON BEHALF OF
AZTEC CONSULTANTS, INC.

AZTEC
CONSULTANTS, INC.

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AzTec Proj. No.: 54821-30 Drawn By: GLW

DEVELOPER
CORONADO WEST

8655 S. PRIEST DRIVE
TEMPE, AZ 85285
(303) 285-1110

DATE OF PREPARATION:	07-19-2021
SCALE:	1" = 50'
SHEET	4 OF 7

MURATA FARMS FILING NO. 1

A PART OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4,
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72.712 ACRES - 183 LOTS - 19 TRACTS

COLORADO STATE HWY 52

(100' WIDE PUBLIC ROW)
REC. NO. 02065102

CENTERLINE OF PSCO EASEMENT
REC. NO. 1475518
(WIDTH NOT SPECIFIED)

ADDITIONAL ROW
FOR COLORADO
STATE HWY 52

C1/4 COR SECTION 4
T1N, R66W, 6TH P.M.
FOUND NO. 6 REBAR WITH
3-1/4" ALUMINUM CAP
STAMPED "1995 LS 13155"

$\Delta=90^{\circ}30'46''$
 $R=50.00'$
 $L=78.99'$
 $CH=N45^{\circ}27'34''W$
 $CHL=71.03'$

TRACT N
257,403 SF
5.909 AC

TRACT N
257,403 SF
5.909 AC

30' PIPELINE EASEMENT
REC. NO. 3002202

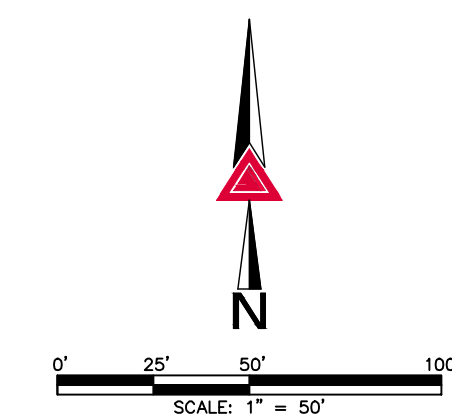
20' ACCESS EASEMENT
REC. NO. 2950931

400' X 400' DRILL SITE
LOCATION
REC. NO. 2950931

MONUMENT SYMBOL LEGEND

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- ROW RIGHT-OF-WAY
- U.E. UTILITY EASEMENT
- S.E. SANITARY EASEMENT
- BLOCK NUMBER

SEE SHEET 2
FOR LINE
AND CURVE
TABLES



FOR REVIEW

FOR AND ON BEHALF OF
AZTEC CONSULTANTS, INC.

SEE SHEET 7



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AzTec Proj. No.: 54821-30

Drawn By: GLW

DEVELOPER
CORONADO WEST

8655 S. PRIEST DRIVE
TEMPE, AZ 85285
(303) 285-1110

DATE OF PREPARATION: 07-19-2021

SCALE: 1" = 50'

SHEET 5 OF 7

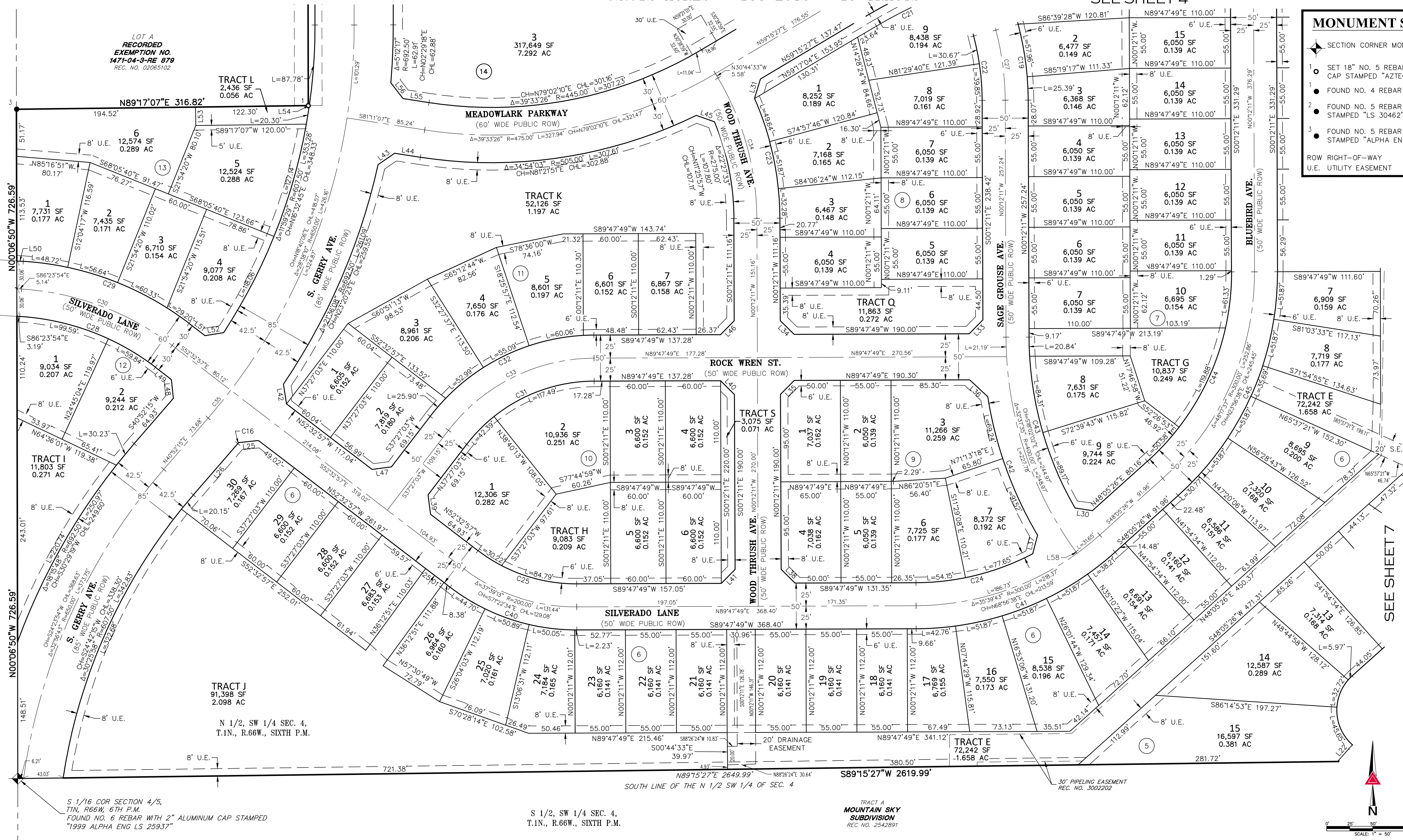
MURATA FARMS FILING NO. 1

A PART OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4,
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72.712 ACRES - 183 LOTS - 19 TRACTS

SEE SHEET 4

SEE SHEET 4



MONUMENT SYMBOL LEGEND

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- BLOCK NUMBER

SEE SHEET 2
FOR LINE
AND CURVE
TABLES

SEE SHEET 7

FOR REVIEW

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DEVELOPER
CORONADO WEST

8655 S. PRIEST DRIVE
TEMPE, AZ 85285
(303) 285-1110

DATE OF PREPARATION:	07-19-2021
SCALE:	1" = 50'
SHEET 6 OF 7	

MURATA FARMS FILING NO. 1

A PART OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4,
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72.712 ACRES - 183 LOTS - 19 TRACTS

SEE SHEET 5

SEE SHEET 5



MONUMENT SYMBOL LEGEND

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SEE SHEET 2
FOR LINE
AND CURVE
TABLES

FOR REVIEW

C-S 1/16 COR SECTION 4, T1N, R66W, 6TH P.M.
FOUND NO. 6 REBAR WITH 3-1/4" ALUMINUM
CAP STAMPED "MOLLENHAUER 2006 PLS 36580"

 AZtec Proj. No.: 54821-30 Drawn By: GLW	300 East Mineral Ave., Suite 1 Littleton, Colorado 80122 Phone: (303) 713-1898 Fax: (303) 713-1897 www.aztecconsultants.com	DEVELOPER CORONADO WEST	DATE OF PREPARATION: 07-19-2021
	8655 S. PRIEST DRIVE TEMPE, AZ 85285 (303) 285-1110	SCALE: 1" = 50'	T = 50'
	SHEET 7 OF 7		

MURATA FARMS FINAL PUD

A PLAT OF A PARCEL OF LAND IN THE CITY OF FORT LUPTON, COLORADO
LOCATED IN THE NORTH ½ OF THE SOUTHWEST ¼, SECTION 4, T1 N, R66 W OF THE 6TH P.M.

COVER SHEET

PROJECT NO. LUP2021-0012 & PLAN NO. PPL2021-0002

LEGAL DESCRIPTION

A PLAT OF A PARCEL OF LAND IN THE CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO
LOCATED IN THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4, TOWNSHIP 1 NORTH, RANGE 66
WEST OF THE 6TH PRINCIPAL MERIDIAN AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

LOT B OF RECORDED EXEMPTION NUMBER 1471-04-3-RE 879 RECORDED AUGUST 14, 1986 UNDER RECEPTION NO.
2065102, BEING A PORTION OF THE FOLLOWING DESCRIBED PROPERTY:

THE NORTH ONE-HALF OF THE SOUTHWEST ONE-QUARTER OF SECTION 4, TOWNSHIP 1 NORTH, RANGE 66 WEST
OF THE 6TH PRINCIPAL MERIDIAN, WELD COUNTY, COLORADO,

EXCEPT THOSE PORTIONS CONVEYED IN DEED RECORDED DECEMBER 4, 1989 UNDER RECEPTION NO. 02199253
AND EXCEPT THE NORTH 50.00 FEET AND THE EAST 30.00 FEET THEREOF, RESERVED FOR STATE AND COUNTY
ROAD R.O.W.

CONTAINING AN AREA OF 72.712 ACRES, (3,167,346 SQUARE FEET), MORE OR LESS.

BASIS OF BEARINGS

BASIS OF BEARINGS BEARINGS SHOWN HEREON ARE GRID BEARINGS DERIVED FROM GPS OBSERVATION BASED
UPON THE COLORADO COORDINATE SYSTEM OF 1983 NORTH ZONE (NAD 83, 2011) REFERENCED TO THE NORTH
LINE OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4, TOWNSHIP 1 SOUTH, RANGE 66 WEST,
SIXTH PRINCIPAL MERIDIAN BEING MONUMENTED AS SHOWN HEREON, TAKEN TO BEAR NORTH 89°17'03" EAST, A
DISTANCE OF 2647.89 FEET.

FLOOD ZONE

THE SUBJECT PROPERTY SHOWN HEREIN LIES WITHIN OTHER AREAS - ZONE X, AREAS OF MINIMAL FLOOD
HAZARD, AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP INDEX NO.
08123C2110E, MAP REVISED JANUARY 20, 2016 (PANEL NOT PRINTED).

LAND USE SUMMARY CHART			
TYPE	AREA (S.F.)	AREA (AC.)	% OF TOTAL AREA
LOTS	1,866,749	42.852	58.93%
TRACTS	588,351	13.509	18.58%
PUBLIC ROW	712,246	16.351	22.49%
TOTAL	3,167,346	72.712	100%

REQUIRED OPEN SPACE DEDICATION:
10 AC / 1000 POPULATION =
180 SFD = 5.40 AC
FUTURE RESIDENTIAL (58 PAIRED
& 61 TOWNHOMES) = 3.26 AC
PROVIDED OPEN SPACE DEDICATION: 8.66 AC

TRACT TABLE						
TRACTX	AREA (SF)	AREA(AC)	USE	OWNED BY/ MAINTAINED BY	OPEN SPACE / PARK CREDIT	NO CREDIT
TRACT A	24,051	0.552	LANDSCAPING	METRO DISTRICT		0.552
TRACT B	7,700	0.177	LANDSCAPING	METRO DISTRICT	0.177	
TRACT C	7,700	0.177	LANDSCAPING	METRO DISTRICT	0.177	
TRACT D	7,628	0.175	LANDSCAPING	METRO DISTRICT	0.175	
TRACT E	72,242	1.658	LANDSCAPING	METRO DISTRICT	1.658	
TRACT F	3,477	0.080	LANDSCAPING	METRO DISTRICT		0.080
TRACT G	10,837	0.249	LANDSCAPING	METRO DISTRICT	0.249	
TRACT H	9,083	0.209	PARK	METRO DISTRICT	0.209	
TRACT I	11,803	0.271	LANDSCAPING	METRO DISTRICT		0.271
TRACT J	91,398	2.098	DETENTION	METRO DISTRICT		2.098
TRACT K	52,126	1.197	PARK	METRO DISTRICT	1.197	
TRACT L	2,436	0.056	ALLEY	METRO DISTRICT		0.056
TRACT M	3,941	0.090	LANDSCAPING	METRO DISTRICT	0.090	
TRACT N	257,403	5.909	OPENSACE	METRO DISTRICT	4.380	1.529
TRACT O	7,170	0.165	LANDSCAPING	METRO DISTRICT		0.165
TRACT P	808	0.019	LANDSCAPING	METRO DISTRICT		0.019
TRACT Q	11,863	0.272	LANDSCAPING	METRO DISTRICT	0.272	
TRACT R	3,610	0.083	LANDSCAPING	METRO DISTRICT		0.083
TRACT S	3,075	0.071	LANDSCAPING	METRO DISTRICT		0.071
TOTAL	588,351	13.507			8.58	4.92

PROJECT TEAM

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LANDSCAPE ARCHITECT/PLANNER

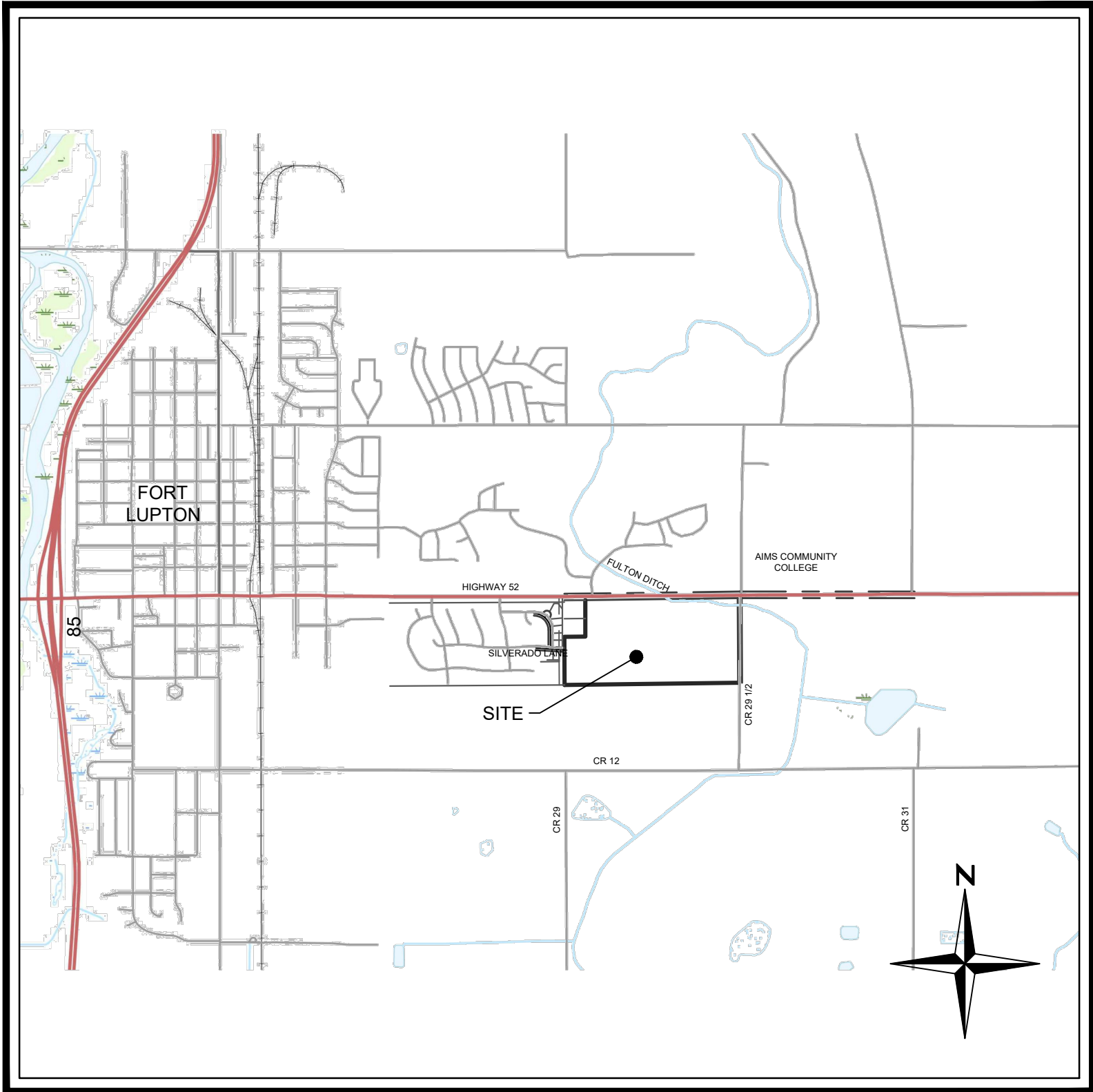
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VICINITY MAP

SCALE: 1" = 2000'

USE / STANDARD	MURATA FARMS PUD	CITY OF FORT LUPTON – R-2 RESIDENTIAL DISTRICT MEDIUM DENSITY
Single Family Residential		
Permitted Land Uses	Single Family Detached	NA
Maximum Number of Dwelling Units	180	
Minimum Lot Size	5,000 SF	6,000 SF
Minimum Lot Frontage at front property line	30-feet	30-feet
Maximum Building Height	35-feet	35-feet
Setbacks		
Front		
-to face of garage door (2)	20 feet	25 feet
-to structure and porch (non- garage side)	12 feet	
Side		
Rear	5-feet	5-feet
Corner Side	15-feet	20-feet
	10-feet	20-feet
Setbacks adjacent to Arterial and Collector Streets		
Rear yard setback adjacent to S. College Avenue and Highway 52	20-feet	
Side yard setback adjacent to Meadowlark Parkway where there is an intervening landscape tract	10-feet	
Rear yard setback adjacent to Meadowlark Parkway where there is an intervening landscape tract	10-feet	
Maximum Building Height	35-feet	35-feet
Minimum Floor Area	900 SF	750 SF two story/900 SF Ranch / 750 SF Tri-level

DIMENSIONAL STANDARDS NOTES

- AS MEASURED FROM BACK OF SIDEWALK ON A PUBLIC STREET RIGHT-OF-WAY OR EDGE OF PAVEMENT ON A PRIVATE DRIVE/ALLEY (TRACT L).
- ACCESSORY USES/STRUCTURES SHALL MEET THE REQUIREMENTS OF THE FORT LUPTON MUNICIPAL CODE.
- PERMITTED ENCROACHMENTS INTO BUILDING SETBACKS:
 - ARCHITECTURAL FEATURES INCLUDING BUT NOT LIMITED TO EAVES, BAY WINDOWS, CHIMNEYS, ENTERTAINMENT CENTERS, BRICK LEDGES, CANTILEVERS, COUNTERFORTS, CORNICES, CANOPIES, WING WALLS AND LIKE ARCHITECTURAL FEATURES MAY ENCROACH INTO THE REQUIRED SETBACKS A MAXIMUM OF 24 INCHES.
 - WINDOW WELLS MAY ENCROACH INTO REQUIRED SETBACKS A MAXIMUM OF 36 INCHES
 - UNENCLOSED OR UNCOVERED PATIOS LESS THAN 30 INCHES ABOVE GRADE MAY ENCROACH INTO BUILDING SETBACKS TO WITHIN FIVE (5) FEET OF THE REAR LOT LINE AND TWO (2) FEET WITHIN A SIDE LOT LINE.
 - ENCROACHMENTS MAY NOT EXTEND INTO EASEMENTS WITHOUT WRITTEN APPROVAL FROM THE EASEMENT HOLDER.
- ALL SETBACKS ARE MEASURED TO THE BUILDING FOUNDATION.

PUD NOTES

- THESE PUD STANDARDS SHALL BE IN PLACE FOR DEVELOPMENT OF ALL PHASES OF THIS PRELIMINARY PUD PLAN. UNLESS OTHER STANDARDS ARE APPROVED FOR THE FUTURE.
- AT THE TIME OF PLATTING, PUD DEVELOPMENT STANDARDS FOR FUTURE PHASES 3-5 INCLUDING THE PAIRED HOMES, SINGLE FAMILY ATTACHED/TOWNHOMES AND COMMERCIAL DEVELOPMENT SHALL BE PROVIDED AND APPROVED BY CITY COUNCIL.
- UNLESS SPECIFICALLY MODIFIED BY A PUD PLAN, ALL PROVISIONS OF THE CITY'S CODE AND ADOPTED STANDARDS AND SPECIFICATIONS SHALL APPLY WITHIN PUD DISTRICTS

MURATA FARMS PUD SINGLE FAMILY DETACHED ZONE DISTRICT NOTES

- INTENT, THE MURATA FARMS PLANNED UNIT DEVELOPMENT (PUD) IS A 72.71- ACRE MIXED-USE NEIGHBORHOOD. THE PUD WILL PROVIDE AN ATTRACTIVE LIVING AND WORKING ENVIRONMENT USING INNOVATIVE SITE PLANNING AND DESIGN TECHNIQUES THAT RESPOND TO THE EXISTING SITE CONDITIONS AND EXISTING ADJACENT LAND USES. THE PUD IS INTENDED TO MEET THE GOALS OF THE CITY OF FORT LUPTON PUD DISTRICT AS STATED IN THE CITY'S MUNICIPAL CODE AND COMPREHENSIVE PLAN.

THE PUD WILL ALLOW FOR A VARIETY OF RESIDENTIAL HOUSING TYPES ATTRACTIVE TO A VARIETY OF HOUSEHOLDS. HOUSING MAY INCLUDE SINGLE FAMILY DETACHED HOMES, PAIRED HOMES AND SINGLE FAMILY ATTACHED OR TOWNHOMES.

THE PUD ALSO PROVIDES FOR A MIXTURE OF RETAIL AND SERVICE COMMERCIAL AND BUSINESSES LOCATED ALONG THE FRONTAGE OF HIGHWAY-52.

FEATURES OF THE PUD INCLUDE:

- AN INTERCONNECTED PUBLIC STREET SYSTEM THAT IS BICYCLE AND PEDESTRIAN FRIENDLY. TRAILS ARE PROVIDED IN ALL GREEN COURT/OPEN SPACE AREAS. HOMES FACING THE PUBLIC STREETS AND GREEN COURTS WILL HAVE INTERESTING ELEVATIONS, THEREBY ENHANCING THE PEDESTRIAN EXPERIENCE.
- COMMON OPEN SPACE AND A POCKET PARK PROVIDE AREAS FOR PASSIVE AND ACTIVE RECREATIONAL OPPORTUNITIES.
- CONDITIONS, COVENANTS, AND RESTRICTIONS WILL BE PROVIDED TO ENSURE COHESIVE ARCHITECTURE AND LANDSCAPING THROUGHOUT THE NEIGHBORHOOD.

- DEFINITIONS. REFER TO CHAPTER 16, SECTION 16-5 OF THE FORT LUPTON MUNICIPAL CODE AND SECTION 11 - DEFINITIONS OF THE RESIDENTIAL DESIGN STANDARDS.

- MURATA FARMS NEIGHBORHOOD FEATURE. THE NEIGHBORHOOD FEATURE IS PROPOSED AS THE DEVELOPED PARK LOCATED AT THE SOUTHEAST CORNER OF THE TWO INTERSECTION COLLECTOR STREETS. THE PARK SHALL BE MAINTAINED BY THE HOA AS A PUBLIC PARK AND CONTAINS A RANGE OF IMPROVEMENTS INCLUDING A MULTIPLE-USE TURF AREA, PLAYGROUND, WALKING PATH, PLAZAS, PAVILION WITH PICNIC TABLES, BENCHES, AND OTHER SIMILAR FEATURES FOR VARIOUS AGE GROUPS TO ENJOY. THE NEIGHBORHOOD FEATURE PARK IS ACCESSIBLE TO THE PUBLIC THROUGH CONNECTIONS TO PLANNED AND EXISTING TRAILS ADJACENT TO THE SUBDIVISION. THE PARK THAT SATISFIES THE REQUIREMENT FOR A NEIGHBORHOOD FEATURE SHALL BE CREDITED AGAINST THE NEIGHBORHOOD PARK LAND DEDICATION REQUIREMENTS AND IMPROVEMENTS TO SUCH PARK SHALL BE CREDITED AGAINST AND NOT TO EXCEED THE PARK DEVELOPMENT FEES SET FORTH IN SECTION III.C. OF THE RESIDENTIAL DESIGN STANDARDS.

- PUBLIC LAND DEDICATION.

A PUBLIC LAND DEDICATION FOR PARKS AD OPEN SPACE SHALL BE DETERMINED AT FINAL PLAT/FINAL PUD PLAN AND SHALL BE BASED ON THE NUMBER OF DWELLING UNITS INCLUDED IN THE FINAL PLAT. LAND CREDITED FOR DEDICATION INCLUDE:

- INTERNAL TRAIL CORRIDORS
- POCKET PARKS
- NEIGHBORHOOD FEATURE
- FULTON DITCH REGIONAL TRAIL CORRIDOR
- INTERNAL PARKS AND OPEN SPACE SHALL BE MAINTAINED BY THE HOA/METRO DISTRICT

VARIATIONS TO THE RESIDENTIAL DESIGN STANDARDS

- LANDSCAPE BUFFER. A LANDSCAPE BUFFER 30-FEET IN WIDTH SHALL BE PROVIDED ALONG HIGHWAY-52 IN THE PAIRED HOME AND SINGLE FAMILY ATTACHED AREA AS MEASURED FROM THE EDGE OF RIGHT-OF-WAY.
- PERIMETER FENCES.

- A SOLID PERIMETER FENCE A MAXIMUM OF SIX-FEET (6) IN HEIGHT IS PERMITTED ALONG THE REAR AND SIDE LOT LINES ADJACENT TO HIGHWAY-52 AND S. COLLEGE AVENUE. THE FENCE SHALL BE BUFFERED WITH LANDSCAPING ON THE STREET SIDE OF THE FENCE.
- LOT LINE FENCING ADJACENT TO OPEN SPACE CORRIDORS AND POCKET PARKS SHALL BE OPEN RAIL A MAXIMUM FORTY-TWO (42) INCHES IN HEIGHT. A WIRE MESH GRID ON THE LOT SIDE OF THE FENCE IS PERMITTED FOR PET ENCLOSURE.

- LOT VARIATION. LOT VARIATIONS SHALL BE PROVIDED WITHIN MURATA FARMS AS FOLLOWS. NO MINIMUM OR MAXIMUM NUMBER OF ANY LOT SIZE IS REQUIRED.

SINGLE FAMILY DETACHED LOT SIZES:

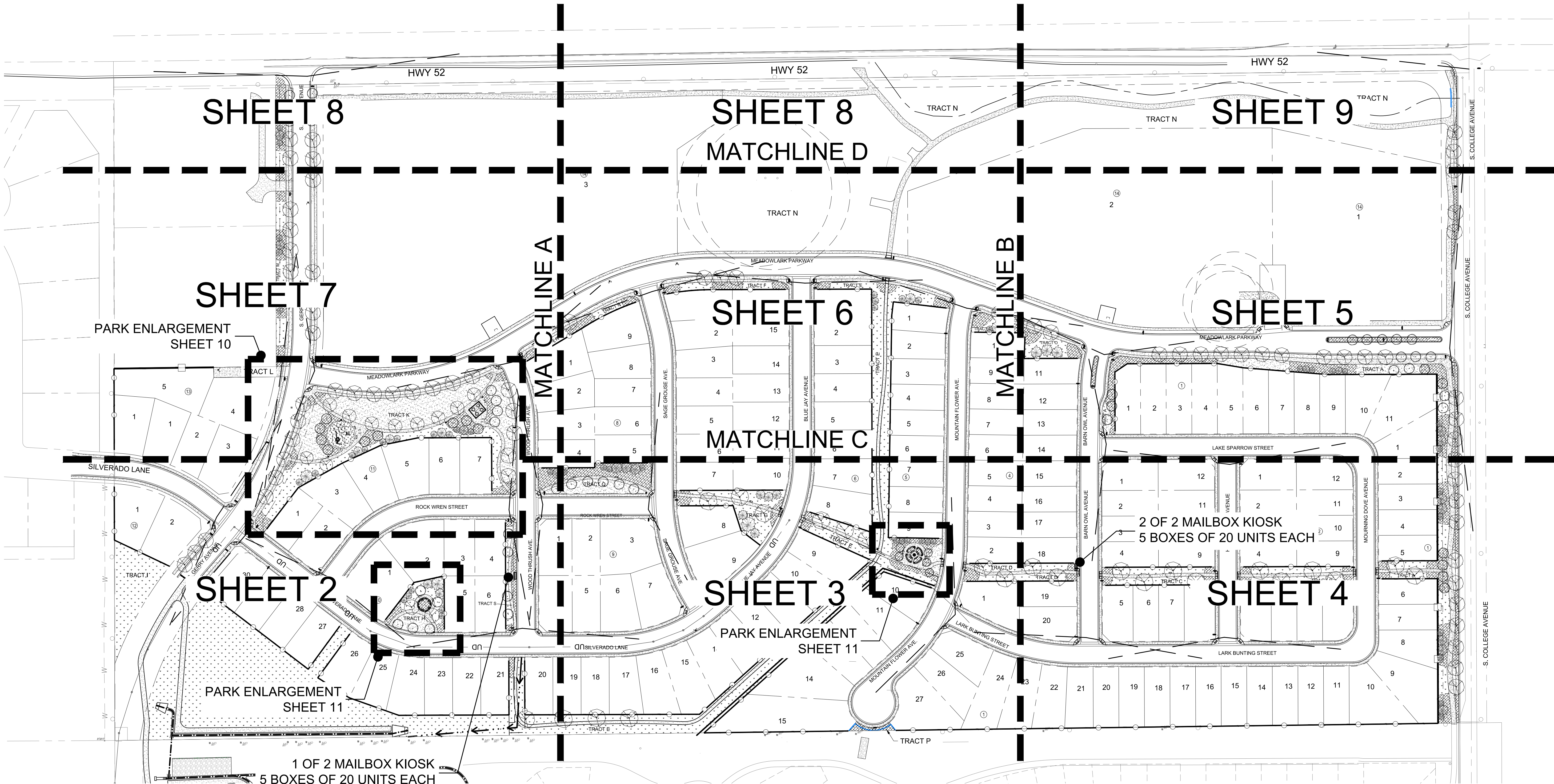
- 5,250 SQUARE FEET
- 6,050 SQUARE FEET
- 6,600 SQUARE FEET

- SINGLE FAMILY DETACHED RESIDENTIAL

- GARAGE DOOR SHALL NOT COMPRISE MORE THAN FORTY-SEVEN (47) PERCENT OF THE FRONT FAÇADE OF THE PRINCIPAL DWELLING STRUCTURE FOR TWO-CAR GARAGES NOR MORE THAN FIFTY-FIVE (55) PERCENT FOR THREE-CAR GARAGES.
- ALTERNATE LOADED GARAGES ARE ENCOURAGED BUT NOT REQUIRED.
- AT LEAST 20% OF ALL STREET FACING GARAGES SHALL BE RECESSED A MINIMUM OF 4 FEET BEHIND THE FRONT FAÇADE OF THE STRUCTURE OR COVERED PORCH.
- AN ADDITIONAL 25 % OF ALL STREET FACING GARAGES SHALL BE RECESSED A MINIMUM OF 2 FEET BEHIND THE FRONT FAÇADE OF THE STRUCTURE OR COVERED PORCH.
- AT LEAST 40% OF THE HOMES WITHIN MARATA FARMS SHALL INCORPORATE A COVERED FRONT PORCH WHICH IS A MINIMUM OF SIX (6) FEET IN DEPTH WITH A MINIMUM SIZE OF 48 SQUARE FEET.
- MIX OF ROOF COLORS: WHERE ASPHALT SHINGLES ARE USED THREE (3) DISTINCT ROOF COLORS ARE REQUIRED TO BE DISPERSED THROUGHOUT THE NEIGHBORHOOD.

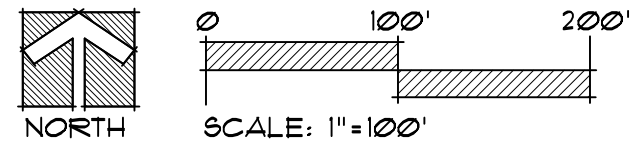
BENCHMARK

NGS BENCHMARK 4907 (AZTEC #4907A). DISK ON PIPE LOCATED ON THE
SOUTH SIDE 9TH STREET 175' MORE OR LESS EAST OF MAIN ST.
ELEVATION = **4908.22 (NAVD88)**



NOTES

- Other than various grasses and forbes, existing vegetation is non-existent; therefore, preservation of existing vegetation shall not be required.
- The site does not contain any known endangered species, archaeological or historic areas. Also, no floodplains, wetlands or geologic hazards have been mapped on the site.
- It is the responsibility of the Developer and their Contractors to build the project according to approved plans and details, and in accordance with current Town of Fort Lupton Landscape Standards and Specifications. Field changes to these plans are to be approved by the Town of Fort Lupton prior to any work. Field conditions that conflict with or jeopardize the longevity of the proposed improvements shall be brought to the attention of the Town for resolution. Failure to bring such matters to the Town's attention or to obtain approval of remedial measures will in no way relieve the Developer/Contractor of their obligation to resolve the matter to the satisfaction of the Town of Fort Lupton.
- It will be the responsibility of the Developer to replace all dead plant material and/or re-sod or seed turf areas that are not established during the warranty period established by the Development Agreement for this project.
- Proposed park and open space areas will be private and maintained at homeowners expense by a mandatory metro district.
- All plant material shall carry a warranty for a period of not less than 1 year after acceptance of the project by the owner. Warranty shall be a one-time replacement that includes plant material and labor costs.
- All landscape areas and plant material shall be watered by an automatic irrigation system. Drip irrigation is to be provided to shrub areas; turf area heads are to be installed so as to provide head to head coverage. Temporary irrigation shall be provided to native grass areas for establishment in order to assist in complying with the re-vegetation standards.
- All areas disturbed by construction shall be adequately re-vegetated so as not to leave any bare ground.
- Each front yard shall contain at least 1 deciduous tree. Final locations of trees shall be based upon driveways and utility service lines.
- No tree or shrub will be planted within 3 feet of a fire hydrant. Trees shall be planted with the top most root in the root ball 3" to 5" higher than the finished landscape grade. This includes trees that are set on slopes. Set root ball on undisturbed soil. Trees where the trunk flare is not visible shall be rejected. Do not cover the root ball with soil.
- Soil preparation under all areas to be seeded, sodded or otherwise planted shall include topsoil and/or organic matter (compost or aged manure) and shall be added at a rate of 3 cubic yards per 1 thousand square feet and tilled into the soil to a depth of 6"
- Organic mulch shall be used within 1 foot of all shrubs and ornamental grasses, as well as around trees in a 6 foot diameter ring. Remaining areas of planting beds shall contain 1-1/2 inch western river rock. All planting beds require a pre-emburgent treatment before mulching.
- All shrub beds shall be mulched with rock cobble mulch 1" - 2" in size, placed over a suitable weed barrier fabric. Minimum depth of mulch shall be 3 inches. All shrub bed areas shall be separated from sod areas by steel edging material.
- Sod within parks shall be Turf Master TM EnviroTurf. All other sod, including ROW lawns shall be Turf Master TM Nature's Prairie.
- All fencing shall be as indicated on the landscape plans and details.



SHEET INDEX	
1	OVERALL SHEET INDEX
2 - 8	LANDSCAPE PLAN
9	LANDSCAPE PLAN & PLANTING DETAILS
10-11	PARK PLAN ENLARGEMENTS
12	FENCE PLAN
13	TYPICAL LOT LANDSCAPE LAYOUT
14	PLANT LIST & NOTES
15	SITE DETAILS

MURATA FARMS
FINAL LANDSCAPE PLAN
FORT LUPTON, COLORADO

LANDSCAPE
SHEET INDEX

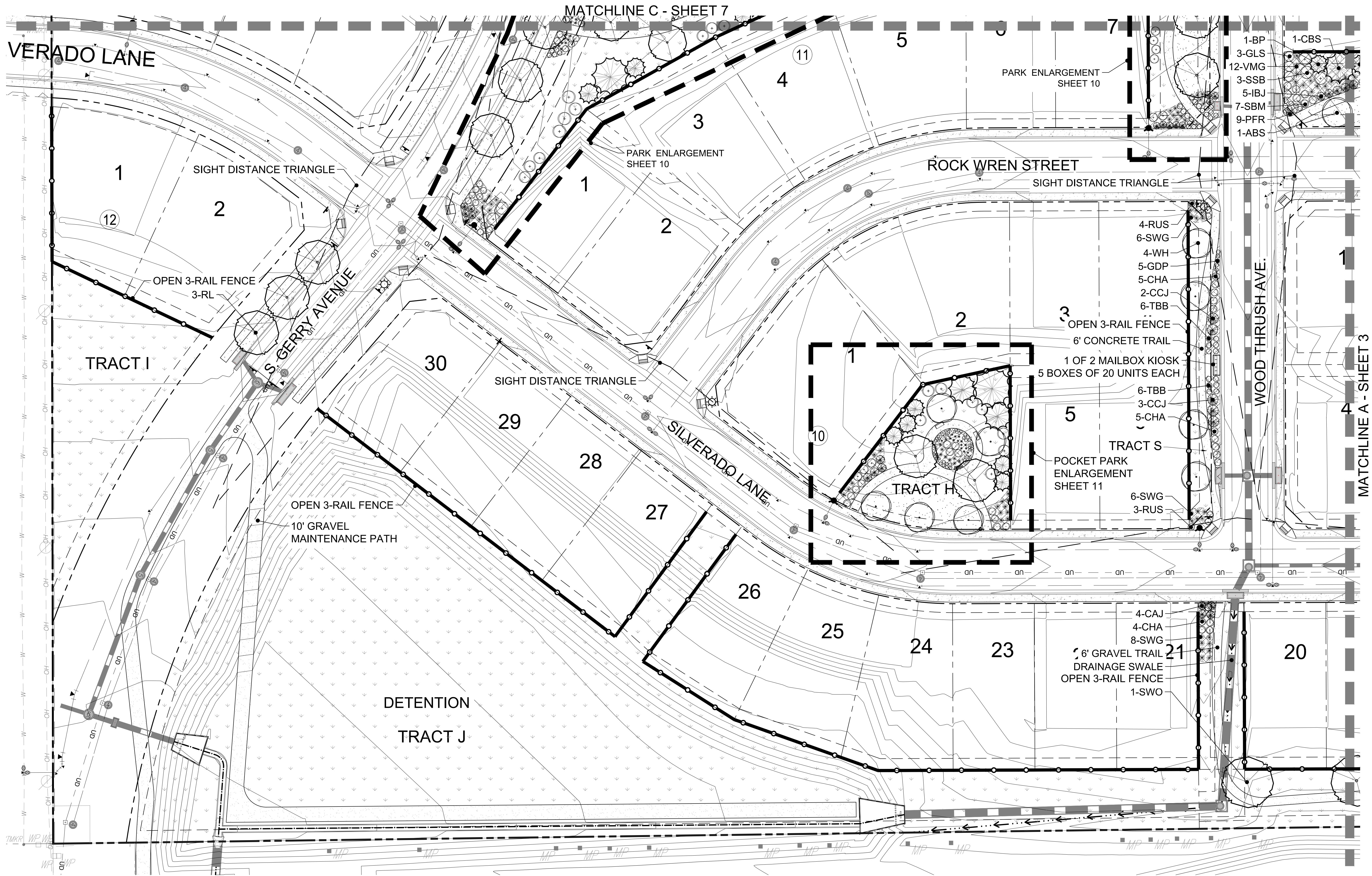
1 of 15

LANDSCAPE ARCHITECT / PLANNER:
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design
group
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303.444.2348 • henydesigngroup.com

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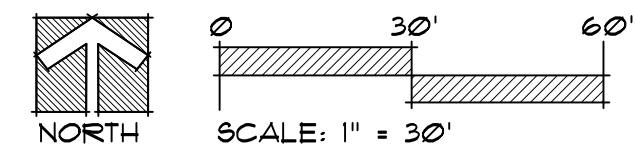
APPLICANT:
CORONADO
WEST
Coronado West, LLC
8655 S. Priest Drive
Tempe, AZ 85284

NOTES	
DATE	NO.
8-20-2021	1
9-14-2021	2



LEGEND

DECIDUOUS TREE	EVERGREEN TREE	SOD	NATIVE GRASS	PRIVACY FENCE	STREET LIGHT
ORNAMENTAL TREE	MULCH PLANTING BED	PLAYGROUND MULCH	STEEL LANDSCAPE EDGER	OPEN 3-RAIL FENCE	FIRE HYDRANT
			SIGHT DISTANCE TRIANGLE		



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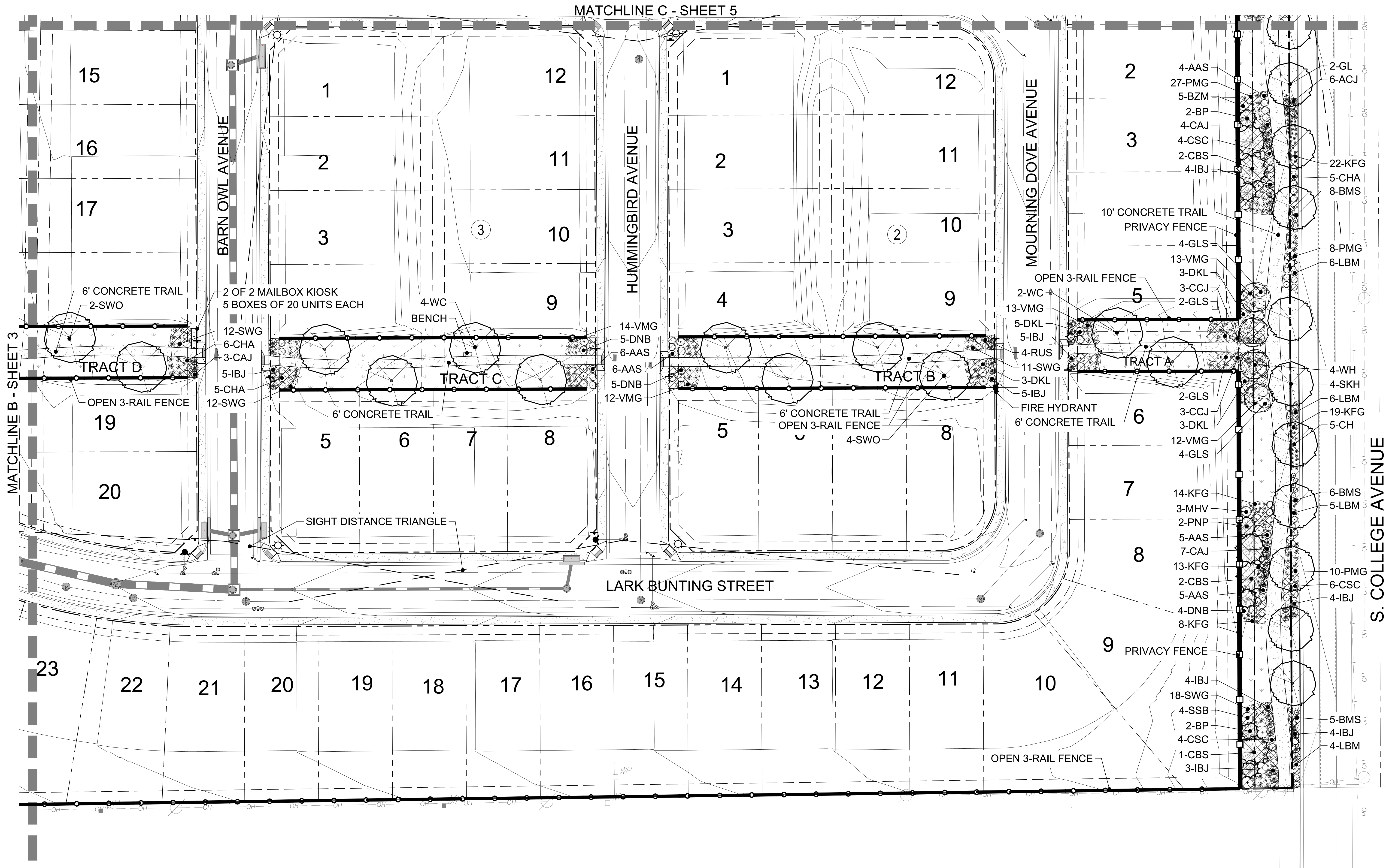
APPLICANT:

 CORONADO WEST
 Coronado West, LLC
 8655 S. Priest Drive
 Tempe, AZ 85284

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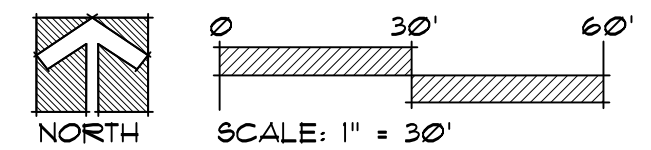
MURATA FARMS
FINAL LANDSCAPE PLAN
FORT LUPTON, COLORADO

SHEET
 LANDSCAPE PLAN
 2 of 15



LEGEND

- | | | | | | |
|-----------------|--------------------|------------------|-------------------------|-------------------|--------------|
| DECIDUOUS TREE | EVERGREEN TREE | SOD | NATIVE GRASS | PRIVACY FENCE | STREET LIGHT |
| ORNAMENTAL TREE | MULCH PLANTING BED | PLAYGROUND MULCH | STEEL LANDSCAPE EDGER | OPEN 3-RAIL FENCE | FIRE HYDRANT |
| | | | SIGHT DISTANCE TRIANGLE | | |



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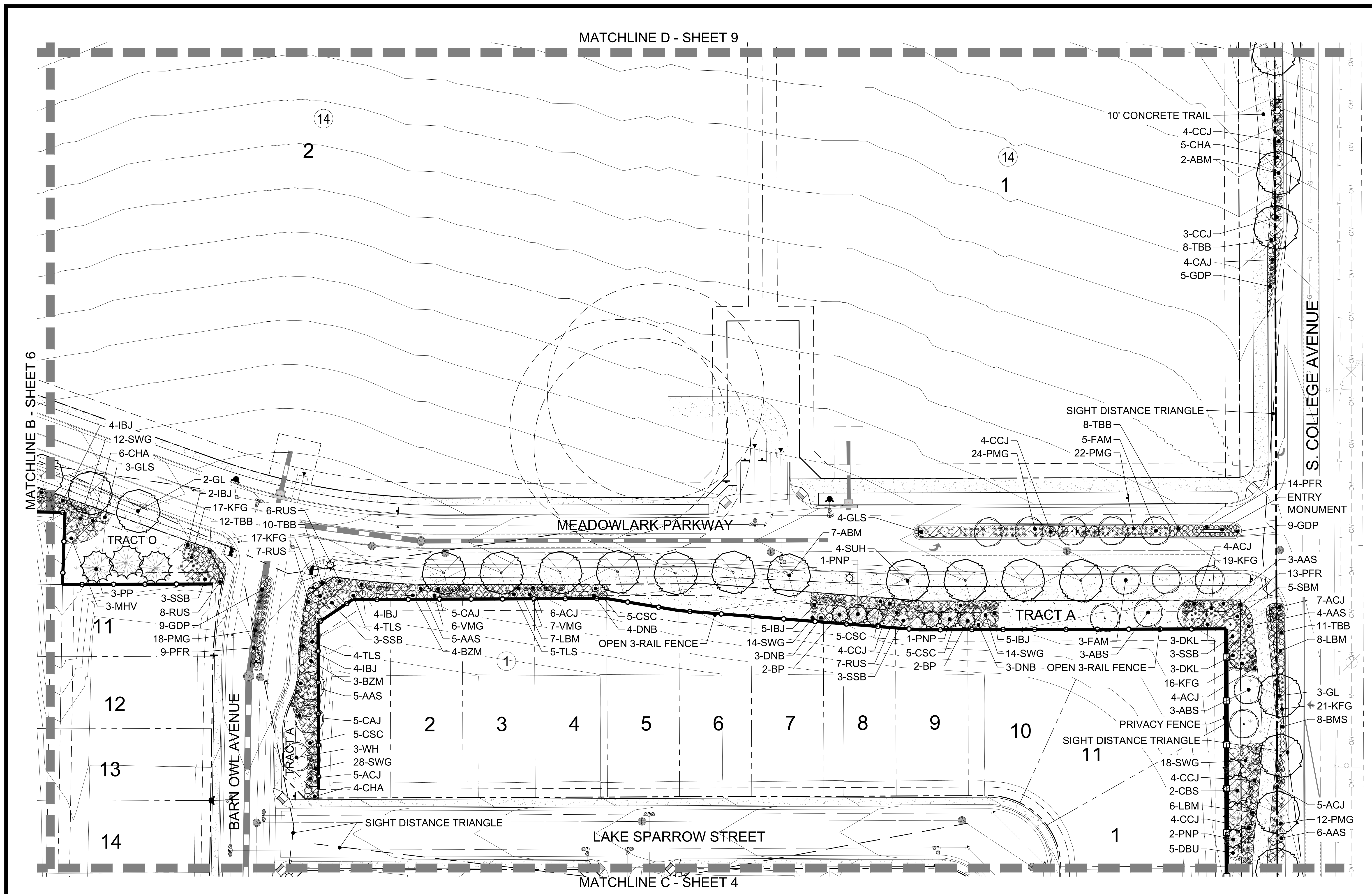
APPLICANT:
CORONADO WEST
Coronado West, LLC
8655 S. Priest Drive
Tempe, AZ 85284

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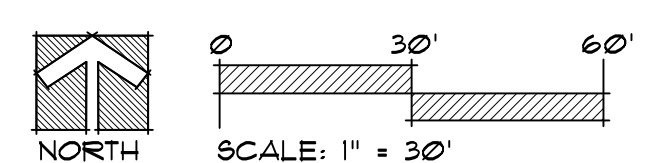
MURATA FARMS
FINAL LANDSCAPE PLAN
FORT LUPTON, COLORADO

SHEET
LANDSCAPE PLAN
4 of 15



LEGEND

- DECIDUOUS TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- SOD
- MULCH PLANTING BED
- NATIVE GRASS
- PLAYGROUND MULCH
- PRIVACY FENCE
- OPEN 3-RAIL FENCE
- STEEL LANDSCAPE EDGER
- SIGHT DISTANCE TRIANGLE
- STREET LIGHT
- FIRE HYDRANT



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NOTES

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MURATA FARMS

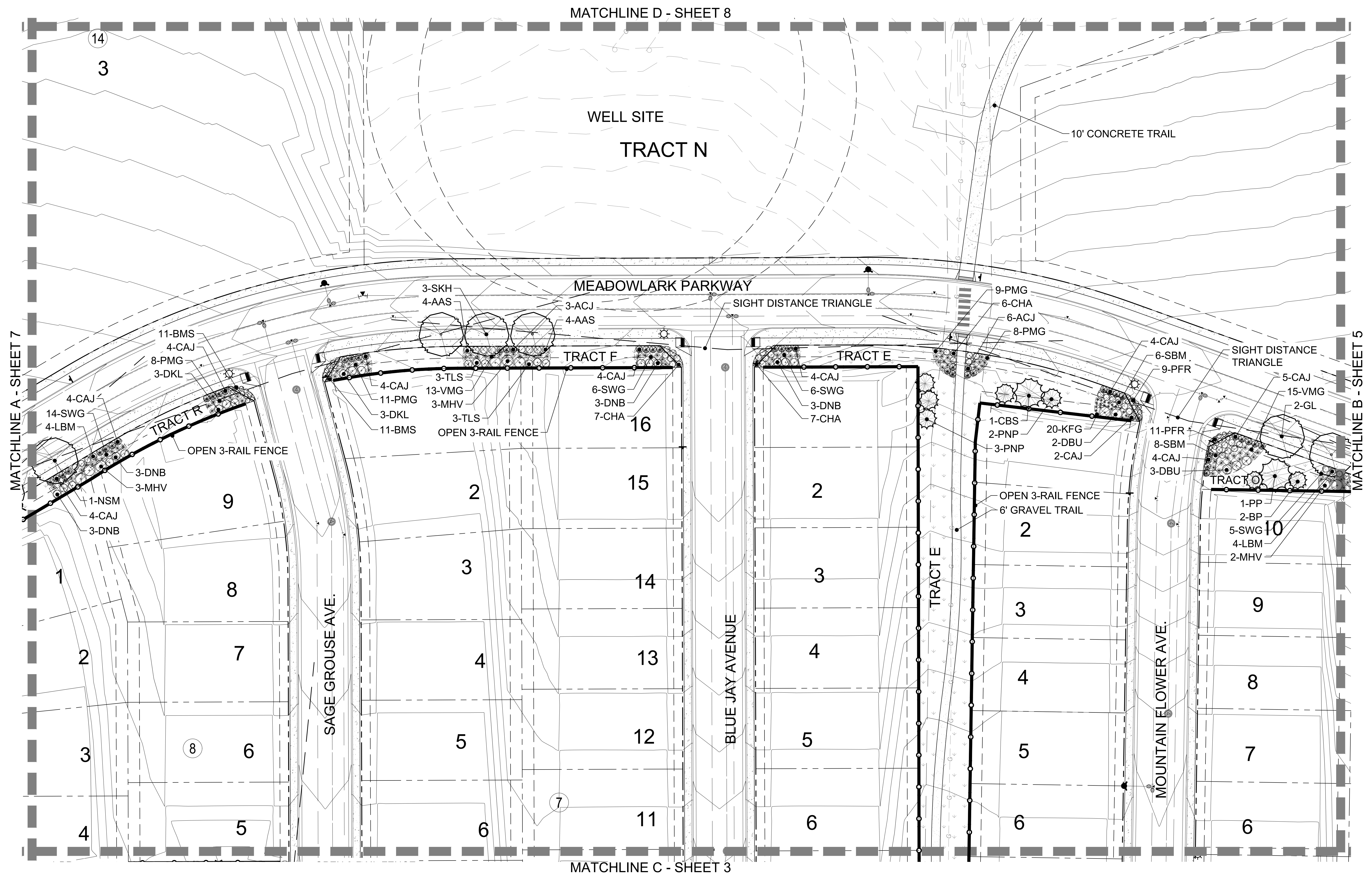
FINAL LANDSCAPE PLAN

FORT LUPTON, COLORADO

SHEET

LANDSCAPE PLAN

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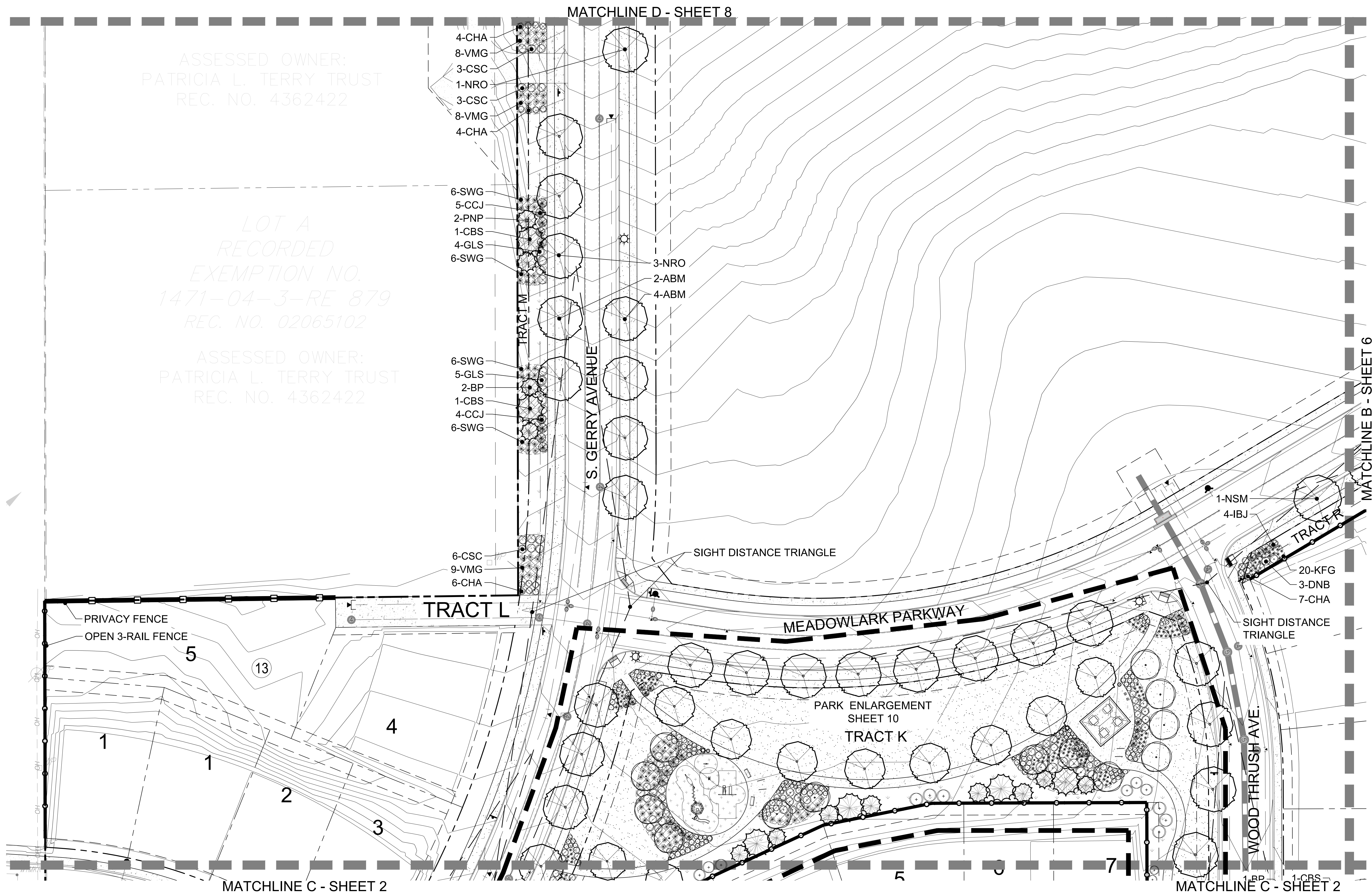


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9-14-2021	2	

**MURATA FARMS
FINAL LANDSCAPE PLAN
FORT LUPTON, COLORADO**

LANDSCAPE
PLAN

6 of 15



ASSESSED OWNER:
PATRICIA L. TERRY TRUST
REC. NO. 4362422

LOT A
RECORDED
EXEMPTION NO.
1471-04-3-RE 879
REC. NO. 02065102

ASSESSED OWNER:
PATRICIA L. TERRY TRUST
REC. NO. 4362422

LEGEND

DECIDUOUS TREE

ORNAMENTAL TREE

EVERGREEN TREE

MULCH PLANTING BED

NATIVE GRASS

PLAYGROUND MULCH

PRIVACY FENCE

OPEN 3-RAIL FENCE

STEEL LANDSCAPE EDGER

SIGHT DISTANCE TRIANGLE

STREET LIGHT

FIRE HYDRANT

SOD

MULCH PLANTING BED

NORTH

SCALE: 1" = 30'

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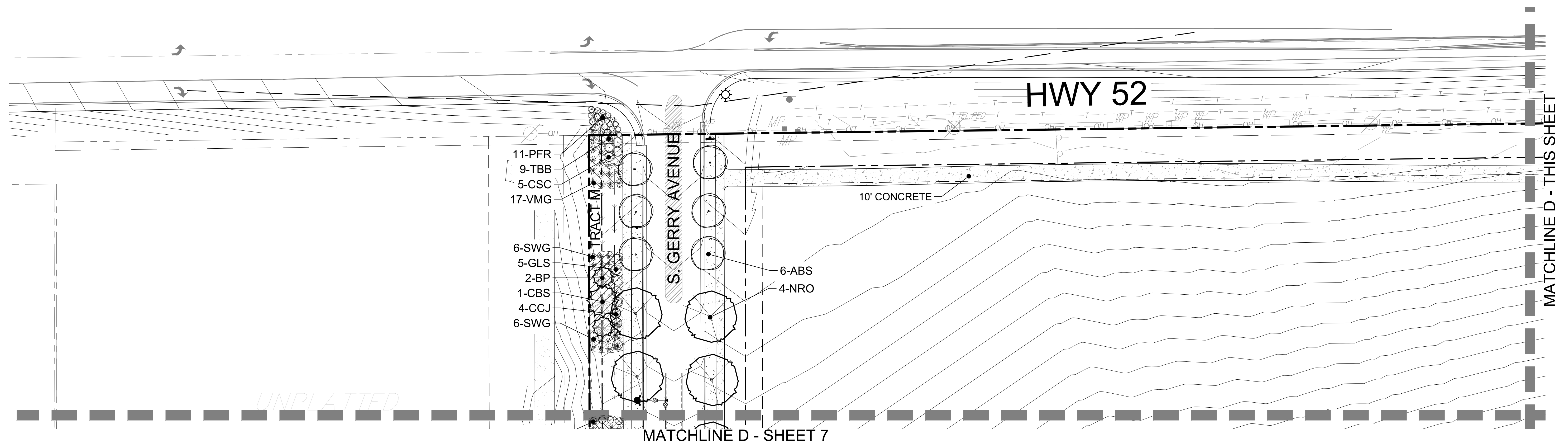
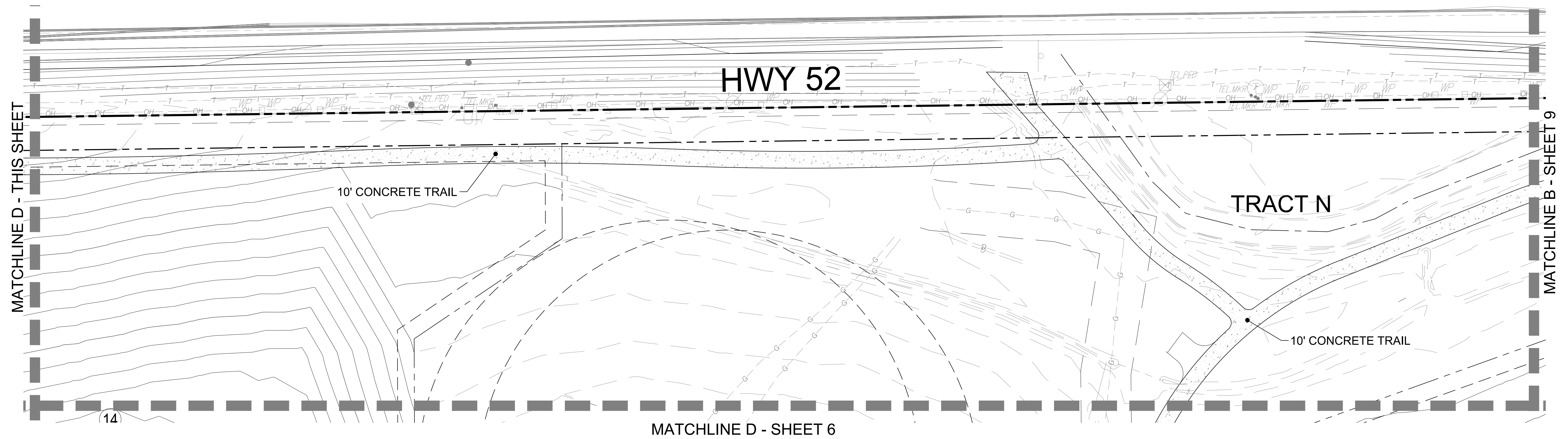
APPLICANT:
 CORONADO WEST
Coronado West, LLC
8655 S. Priest Drive
Tempe, AZ 85284

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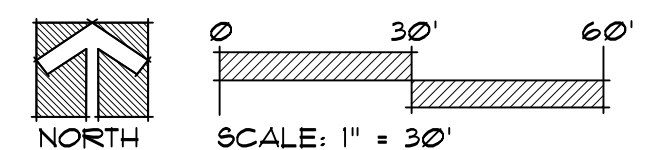
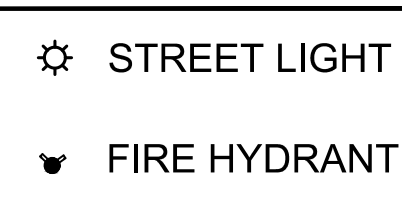
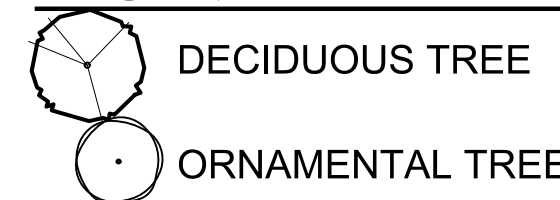
MURATA FARMS
FINAL LANDSCAPE PLAN
FORT LUPTON, COLORADO

LANDSCAPE PLAN

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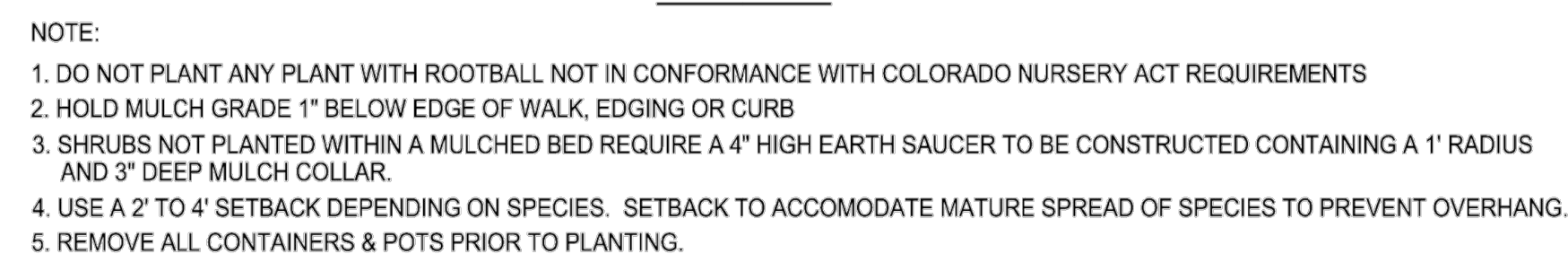
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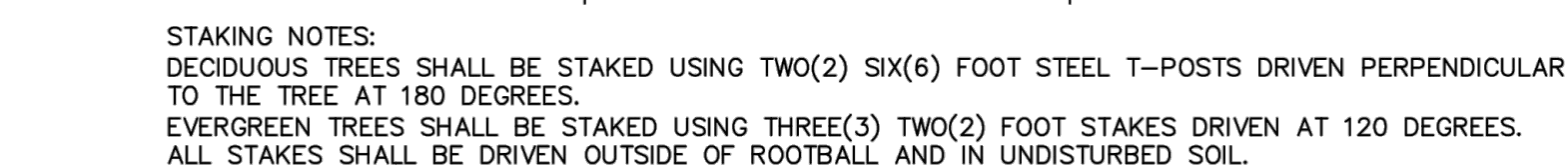
**MURATA FARMS
FINAL LANDSCAPE PLAN
FORT LUPTON, COLORADO**

LANDSCAPE
PLAN

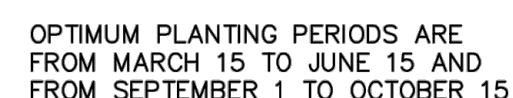
3 of 15



NOT TO SCALE



NOT TO SCALE



EDGER, MULCHES & SOIL PREPARATION

NOT TO SCALE



MATCHLINE D - SHEET 5

 DECIDUOUS TREE
 EVERGREEN TREE

TRACT N

HWY 52

TRACT N

10' CONCRETE TRAIL

5-GDP
3-TBB
4-CAJ
3-ABM

S. COLLEGE AVENUE

FR
AJ
GDP

NOTES

[illegible]

MURATA FARMS
FINAL LANDSCAPE PLAN
FORT LUPTON, COLORADO

SHEET

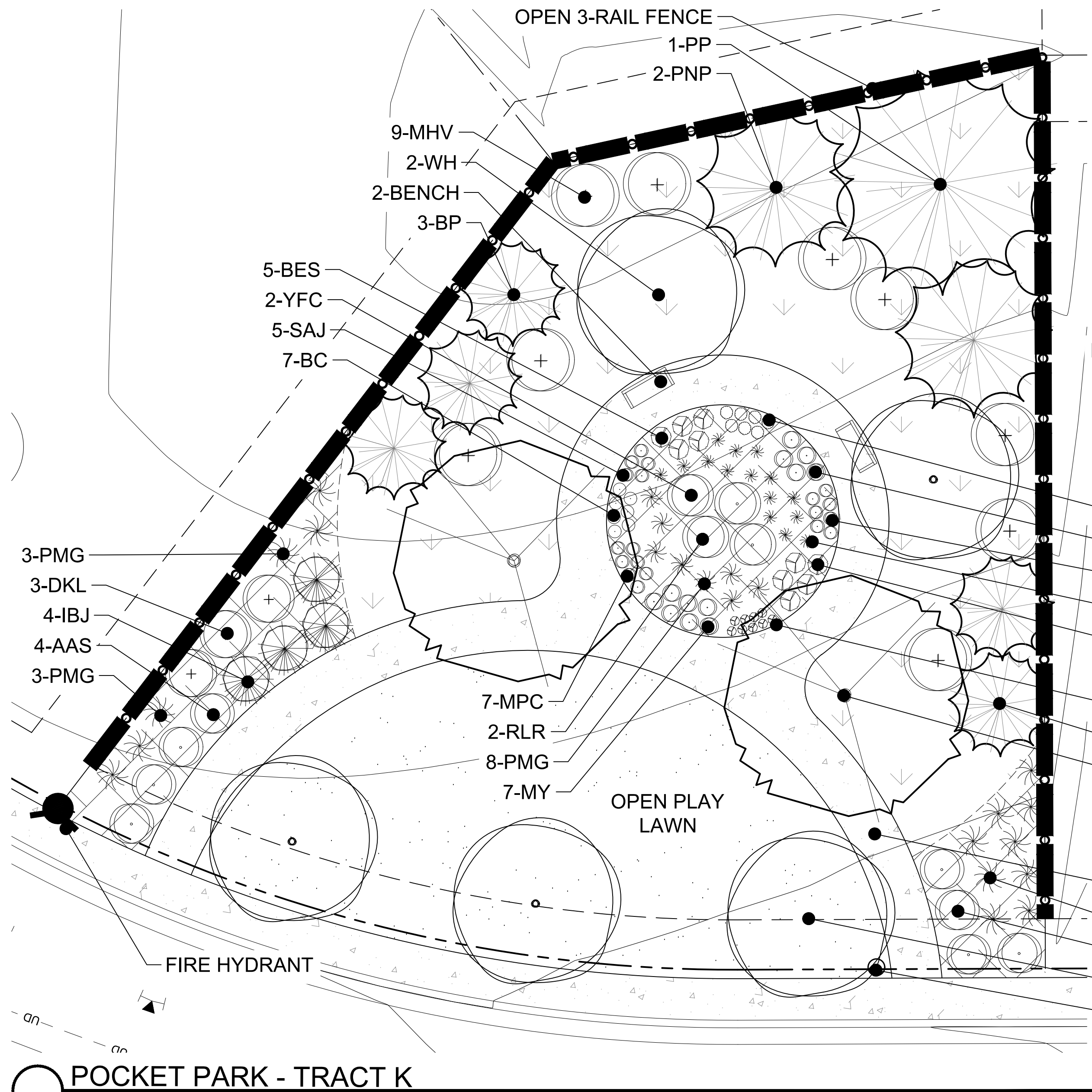
LANDSCAPE
PLAN

9 of 15

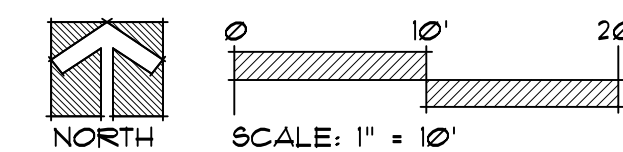
Redland
WHERE GREAT PLACES BEGIN
720.263.5783 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

APPLICANT: **CORONADO WEST** ENGINEER: **CW**

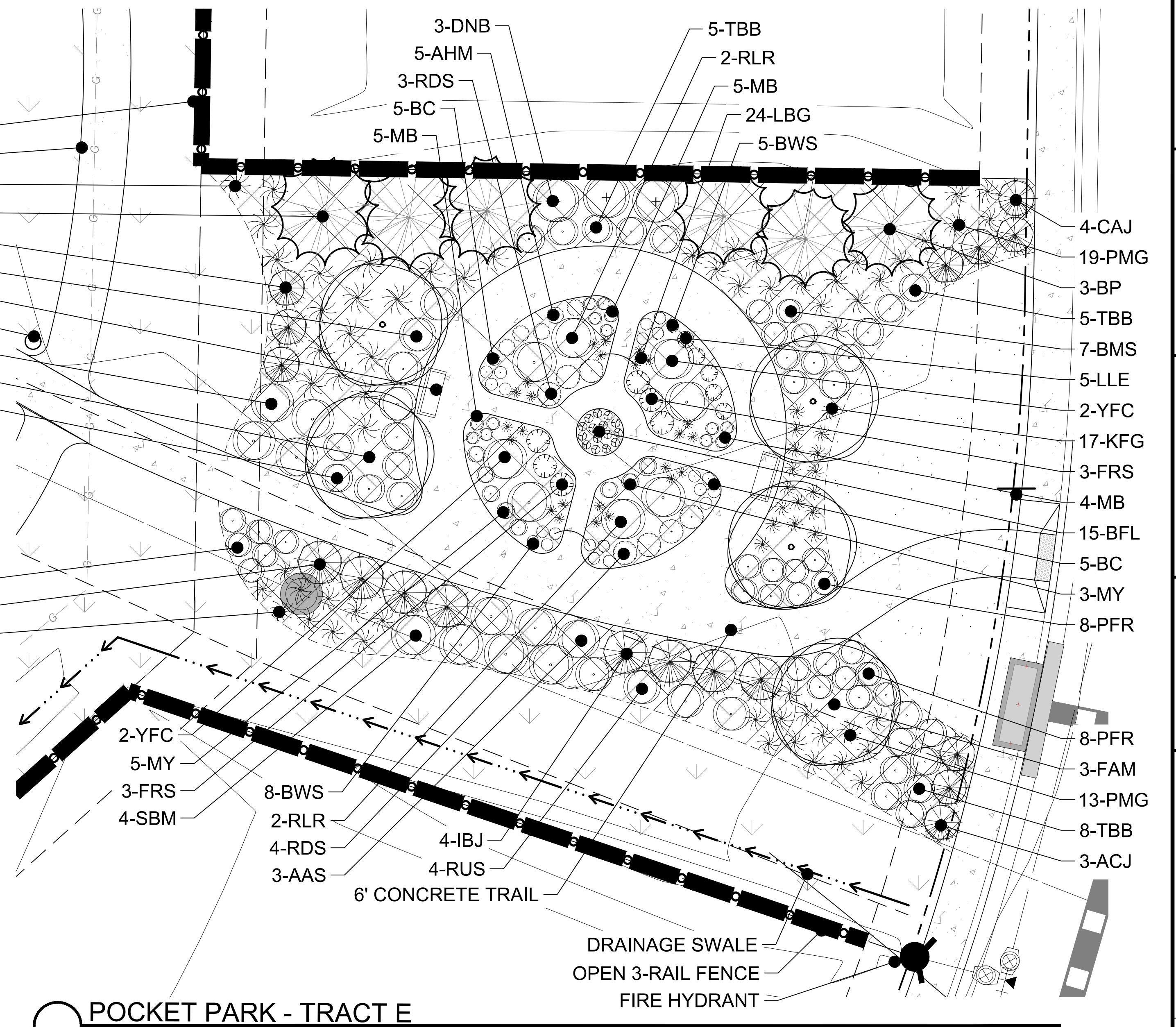
CW Coronado West, LLC
8655 S. Priest Drive
Tempe, AZ 85284



POCKET PARK - TRACT K
BUTTERFLY GARDEN



- OPEN 3-RAIL FENCE
- 6' GRAVEL TRAIL
- 19-VMG
- 3-PNP
- 3-CAJ
- 4-RUS
- 2-BENCH
- DOG WASTE STATION
- 4-CSC
- 2-FAM
- 6-TBB
- 7-BWS
- 5-MY
- 7-COO
- 15-LBG
- 5-BES
- 9-BFL
- 2-BP
- 2-SUH
- 6' CONCRETE TRAIL
- 9-PMG
- 4-AAS
- 3-ABS
- DOG WASTE STATION



POCKET PARK - TRACT E
COLORADO BLOOMS GARDEN



LEGEND

- DECIDUOUS TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- SOD
- MULCH PLANTING BED
- NATIVE GRASS
- PLAYGROUND MULCH
- PRIVACY FENCE
- OPEN 3-RAIL FENCE
- STEEL LANDSCAPE EDGER
- SIGHT DISTANCE TRIANGLE
- STREET LIGHT
- FIRE HYDRANT

LANDSCAPE ARCHITECT / PLANNER:
henry design group
Landscape Architecture • Planning • Horticulture
1501 W. 10th Street Suite 100 • Denver, Colorado 80202
303.444.2348 • henydesigngroup.com

Redland
WHERE GREAT PLACES BEGIN
7300 E. 17th Avenue
Denver, Colorado 80231
303.444.2348 • redland.com

ENGINEER:
Coronado West
Coronado West, LLC
8655 S. Priest Drive
Tempe, AZ 85284

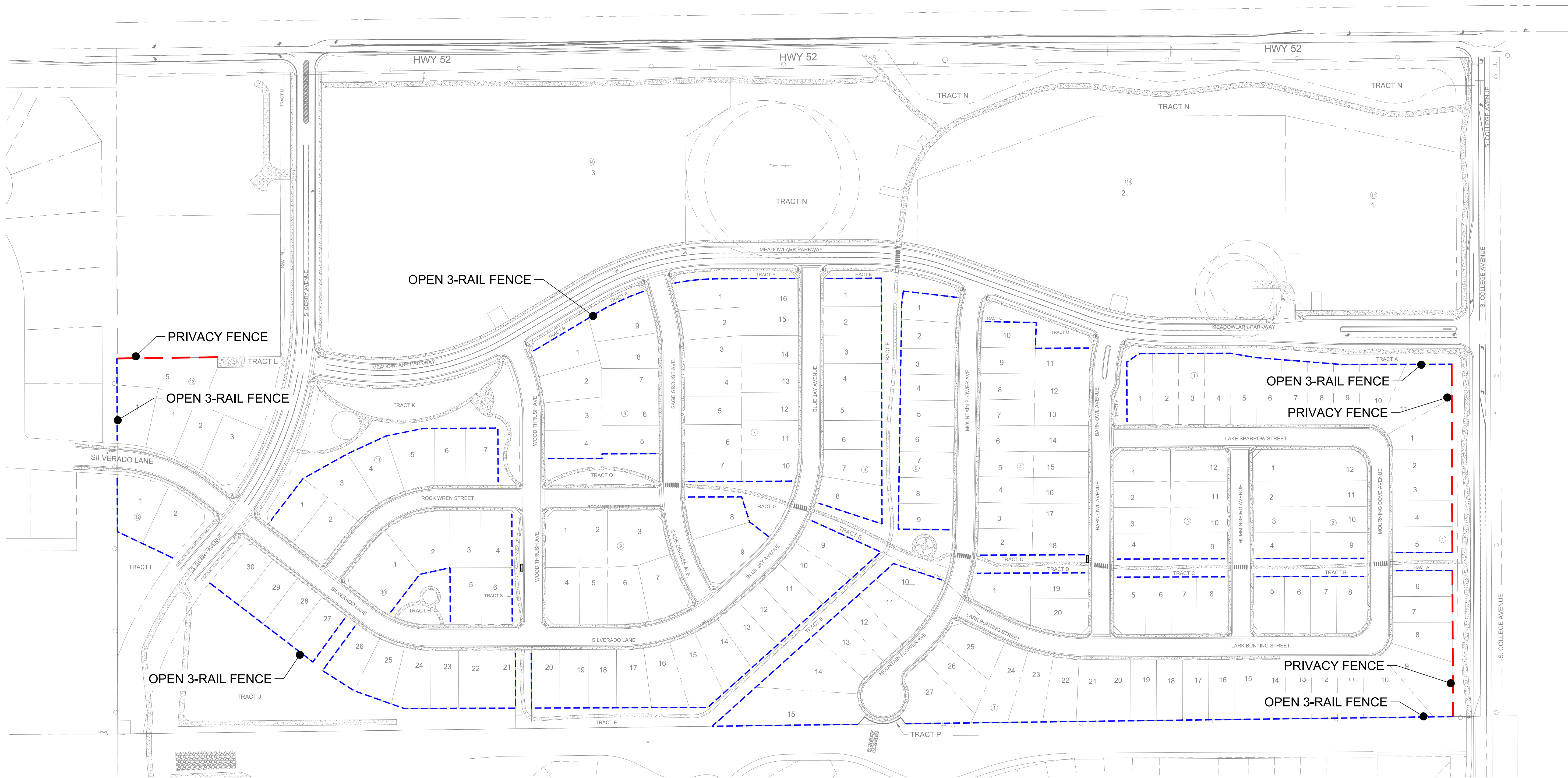
APPLICANT:
Coronado West
Coronado West, LLC
8655 S. Priest Drive
Tempe, AZ 85284

NOTES

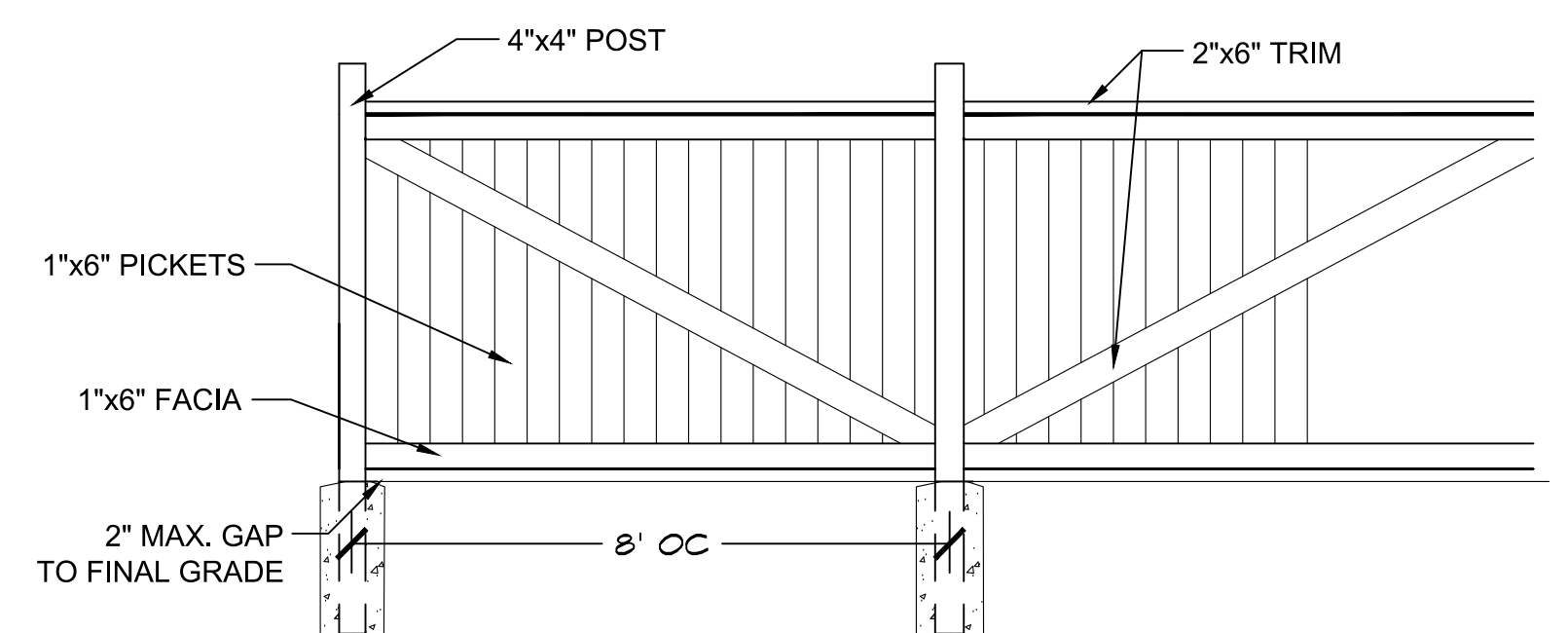
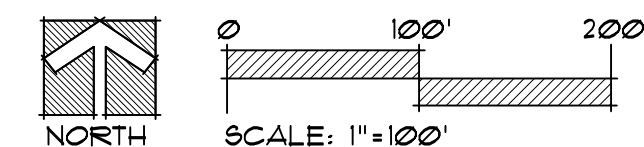
DATE NO.
8-20-2021 1
9-14-2021 2

MURATA FARMS
FINAL LANDSCAPE PLAN
FORT LUPTON, COLORADO

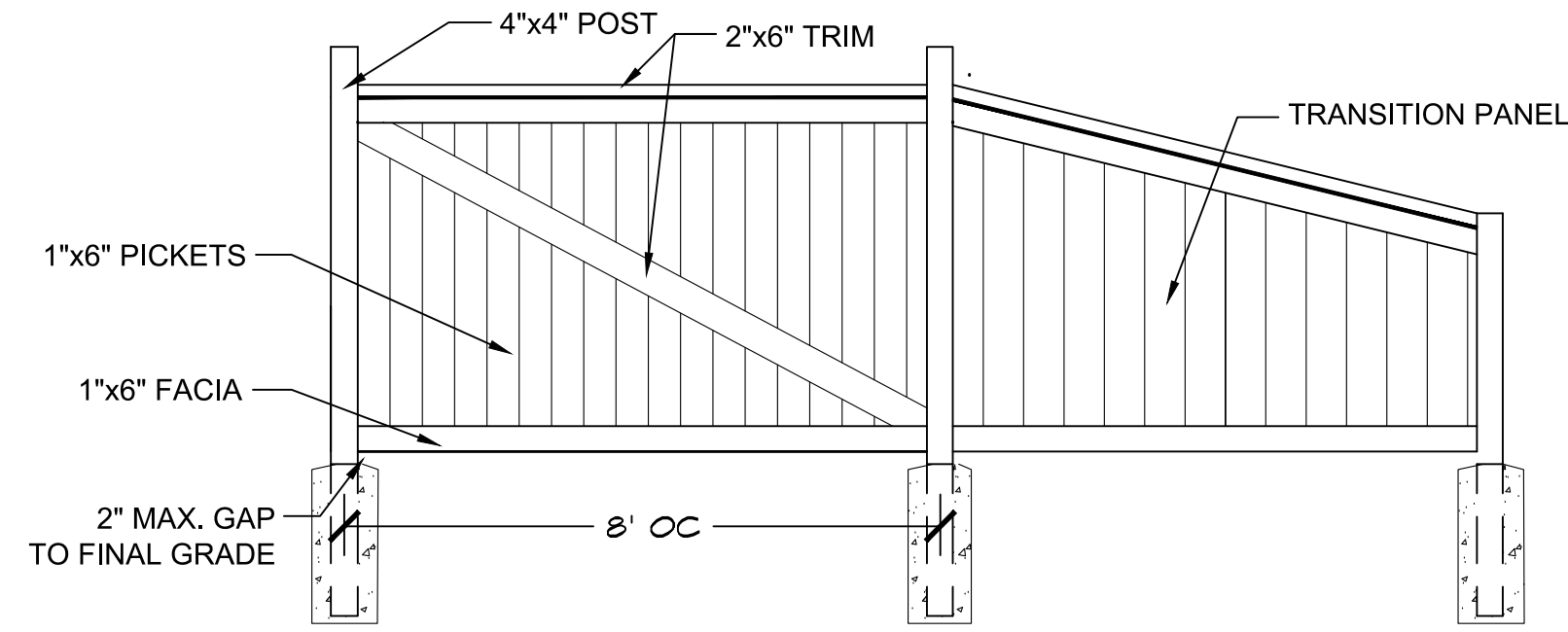
SHEET
POCKET PARK
ENLARGEMENTS
11 of 15



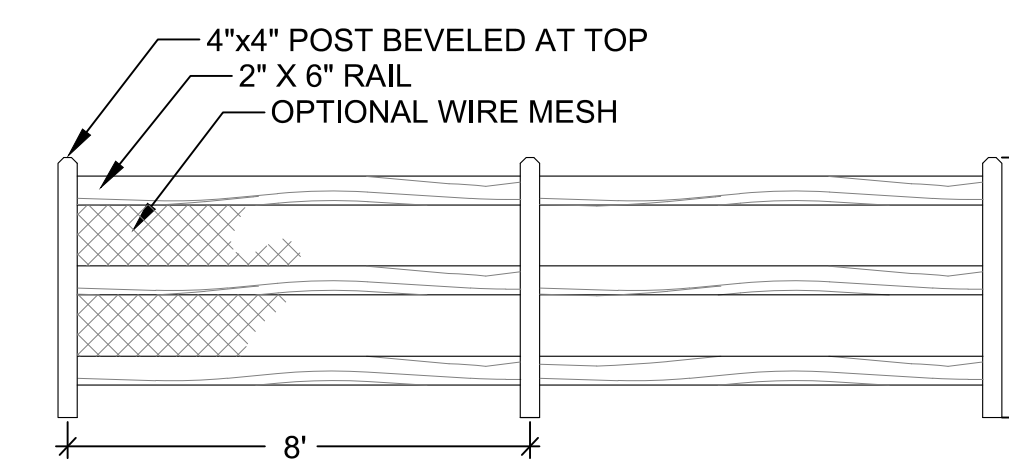
--- PRIVACY FENCE
--- OPEN 3-RAIL FENCE



○ **PRIVACY FENCE**
WOOD
Wood shall be stained to complement the primary color of the homes within the neighborhood.



○ **TRANSITION FROM PRIVACY FENCE TO OPEN RAIL**
WOOD

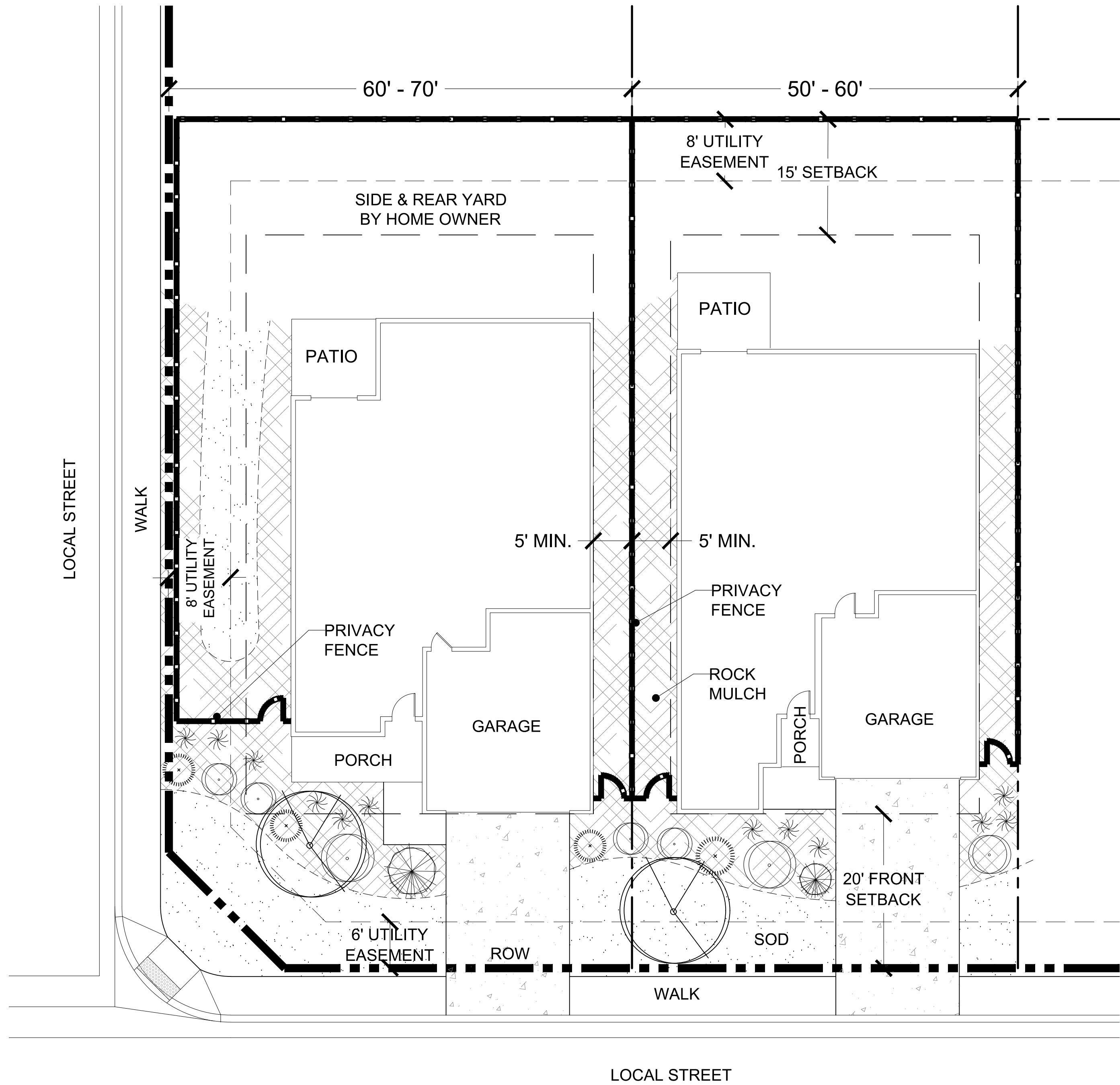


○ **OPEN 3-RAIL FENCE**
WOOD
Wood shall be stained to complement the primary color of the homes within the neighborhood.

NO.	DATE	NOTES
1	8-20-2021	
2	9-14-2021	

NO.	DATE	NOTES
1	8-20-2021	
2	9-14-2021	

MURATA FARMS
FINAL LANDSCAPE PLAN
FORT LUPTON, COLORADO



TYPICAL LOT FRONT YARD LANDSCAPE

SCALE: 1" = 10'

TYPICAL SINGLE FAMILY RESIDENTIAL LOT LANDSCAPE

The developer or assigns (builder) shall provide:

- One deciduous or ornamental tree for every lot frontage.
- Front yard landscaping and automatic irrigation system for the front yard setback of each home.
- A minimum of 50% live material between the front of the house and the curb unless approved by the town.
- Turf areas shall be Turf Master TM Nature's Prairie.

The homeowner shall:

- Install remainder of yard and is encouraged to plant additional trees, shrubs and flowers using xeriscape principles and the general provisions set forth in town regulations. Turf within rear and side yards is discouraged, except for corner lots where side yard turf shall be no more than 35% of the side area. Turf shall be a minimum of 10 feet from building foundations.
- Plant all turf areas with drought tolerant grass varieties, such as turf type tall fescue (dwarf hybrids) mix. Any turf mix containing bluegrass varieties shall contain a maximum of 25% bluegrass, i.e. 75% to 90% fescue, 25% to 10% bluegrass.
- Maintain the yard and landscaping within the adjacent road right-of-way, in accordance with town regulations.

MURATA FARMS FINAL LANDSCAPE PLAN FORT LUPTON, COLORADO

SHEET
TYPICAL
LOT LANDSCAPE
LAYOUTS

13 of 15

APPLICANT:
CORONADO WEST
Coronado West, LLC
8655 S. Priest Drive
Tempe, AZ 85284

ENGINEER:
Redland
WHERE GREAT PLACES BEGIN
730.383.4780
100 West Colorado Street
REDLAND.COM

LANDSCAPE ARCHITECT / PLANNER:
henry design group
Landscape Architecture • Planning • Entitlements
1501 W. 14th Street Suite 100, Denver, Colorado 80202
303.444.2318 • henrydesigngroup.com

PLANT LIST

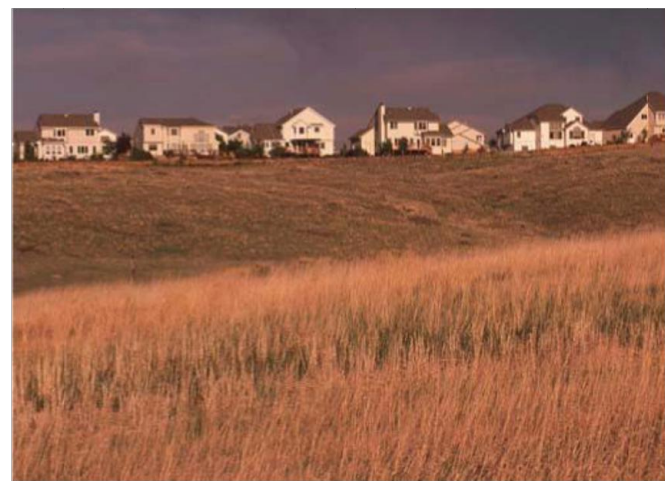
QUANTITY	SYMBOL	COMMON NAME	SCIENTIFIC NAME	MATURE SIZE (HxW)	SIZE	WATER USE
SHADE TREES						
15	ABM	AUTUMN BLAZE MAPLE	ACER X FREEMANII 'AUTUMN BLAZE'	45' x 35'	2.0" CAL.	MODERATE
9	CH	COMMON HACKBERRY	CELTIS OCCIDENTALIS	55' x 45'	2.0" CAL.	LOW
9	GL	GREENSPIRE LINDEN	TILIA CORDATA GREENSPIRE	35' x 30'	2.0" CAL.	LOW
9	NRO	NORTHERN RED OAK	QUERCUS RUBRA	50' x 50'	2.0" CAL.	MODERATE
10	NSM	NORWEGIAN SUNSET MAPLE	ACER PLATANOIDES 'NORWEGIAN SUNSET'	30' x 35'	2.0" CAL.	MODERATE
9	RL	REDMOND LINDEN	TILIA AMERICANA 'REDMOND'	45' x 35'	2.0" CAL.	MODERATE
14	SUH	SHADEMASTER HONEYLOCUST	GLEDITSIA TRIACANTHOS VAR INERMIS SHADEMASTER	45' x 35'	2.0" CAL.	MODERATE
11	SKH	SKYLINE HONEYLOCUST	GLEDITSIA TRIACANTHOS INERMIS 'SKYLINE'	35' x 30'	2.0" CAL.	LOW
16	SWO	SWAMP WHITE OAK	QUERCUS BICOLOR	50' x 50'	2.0" CAL.	LOW
9	WC	WESTERN CATALPA	CATALPA SECIOSA	50' x 40'	2.0" CAL.	MODERATE
ORNAMENTAL TREES						
26	ABS	AUTUMN BRILLIANCE SERVICEBERRY	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	15' x 15'	1.5" CAL.	MODERATE
21	FAM	FLAME AMUR MAPLE	ACER GINNALA 'FLAME'	18' x 18'	1.5" CAL.	MODERATE
13	WH	WASHINGTON HAWTHORN	CRATAEGUS PHAENPYRUM	25' x 20'	1.5" CAL.	MODERATE
EVERGREEN TREES						
15	CBS	COLORADO BLUE SPRUCE	PICEA PUNGENS 'GLAUCA'	45' x 20'	6'	MODERATE
32	BP	BOSNIAN PINE	PINUS HELDREICHII	20' x 12'	6'	MODERATE
29	PNP	PINON PINE	PINUS EDULIS	25' x 15'	6'	LOW
10	PP	PONDEROSA PINE	PINUS PONDEROSA	70' x 35'	6'	LOW
SHRUBS						
75	AAS	AUTUMN AMBER SUMAC	RHUS TRILOBATA 'AUTUMN AMBER'	2' x 5'	5 GALLON	LOW
78	ACJ	ALPINE CARPET JUNIPER	JUNIPERUS COMMUNIS 'ALPINE CARPET'	0.5' x 3'	5 GALLON	LOW
102	BMS	BLUE MIST SPIREA	CARYOPTERIS X CLANDONENSIS 'BLUE MIST'	3' x 3'	5 GALLON	LOW
20	BZM	BLIZZARD MOCKORANGE	PHILADELPHUS LEWISII 'BLIZZARD'	7' x 7'	5 GALLON	LOW
92	CAJ	COMPACT ANDORRA JUNIPER	JUNIPERUS 'ANDORRA COMPACT'	1.5' x 4'	5 GALLON	LOW
47	CCJ	CALGARY CARPET JUNIPER	JUNIPERUS SABINA 'CALGARY CARPET'	1.5' x 7'	5 GALLON	LOW
87	CHA	HANCOCK CORALBERRY	SYMPHORICARPOS x CHENAULTII 'HANCOCK'	2' x 4'	5 GALLON	MODERATE
71	CSC	CREEPING WESTERN SAND CHERRY	PRUNUS BESSEYI PAWNEE BUTTES	1.5' x 5'	5 GALLON	LOW
19	DBU	DWARF BURNING BUSH	EUONYMUS ALATUS 'COMPACTUS'	7' x 7'	5 GALLON	MODERATE
35	DKL	DWARF KOREAN LILAC	SYRINGA MEYERI 'PALIBIN'	5' x 5'	5 GALLON	LOW
47	DNB	DWARF NINEBARK	PHYSOCARPUS OPULIFOLIUS 'NANUS'	5' x 5'	5 GALLON	MODERATE
99	GDP	GOLD DROP POTENTILLA	POTENTILLA FRUTICOSA 'GOLD DROP'	2.5' x 2.5'	5 GALLON	MODERATE
43	GLS	DWARF FRAGRANT SUMAC	RHUS AROMATICA 'GRO-LOW'	2.5' x 6'	5 GALLON	LOW
92	IBJ	ICEE BLUE JUNIPER	JUNIPERUS HORIZONTALIS 'MONBER'	0.5' x 6'	5 GALLON	LOW
86	LBM	LENA BROOM	CYTISUS x 'LENA'	2' x 3'	5 GALLON	LOW
25	MHV	MOHICAN VIBURNUM	VIBURNUM LANTANA 'MOHICAN'	7' x 7'	5 GALLON	LOW
6	RLR	RED LEAVED ROSE	ROSA GLAUCA	6' x 5'	5 GALLON	MODERATE
156	PFR	PINK FLOWER CARPET ROSE	ROSA FLOWER CARPET PINK	2' x 2'	5 GALLON	MODERATE
76	RUS	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	3.5' x 3.5'	5 GALLON	LOW
57	SBM	SNOWBELLE MOCKORANGE	PHILADELPHUS x 'SNOWBELLE'	3.5' x 3.5'	5 GALLON	MODERATE
35	SSB	SASKATOON SERVICEBERRY	AMELANCHIER ALNIFOLIA	7' x 7'	5 GALLON	MODERATE
255	TBB	TURKESTON BURNING BUSH	EUONYMUS NANA TURKESTANICUS	2.5' x 3.5'	5 GALLON	MODERATE
26	TLS	THREE LEAF SUMAC	RHUS TRILOBATA	4' x 4'	5 GALLON	LOW
6	YFC	YELLOW FLOWERING CURRANT	RIBES AUREUM	5' x 5'	5 GALLON	MODERATE

PLANT LIST

QUANTITY	SYMBOL	COMMON NAME	SCIENTIFIC NAME	MATURE SIZE (HxW)	SIZE	WATER USE
PERENNIALS						
5	AHM	AVA'S HUMMINGBIRD MINT	AGASTACHE 'AVA'	3' x 2'	1 GALLON	LOW
20	BC	BLUE CATMINT	NEPETA FAASSENII 'SELECT BLUE'	1.5' x 1.5'	1 GALLON	LOW
10	BES	BLACK EYED SUSAN	RUDBECKIA FULGIDA 'GOLDSTRUM'	2' x 2'	1 GALLON	LOW
20	BFL	BLANKET FLOWER	GAILARDIA GRANDIFLORA 'ARIZONA SUN'	1' x 1'	1 GALLON	LOW
19	BWS	BLUE WOOLLY SPEEDWELL	VERONICA PECTINATA	1.5' x 1.5'	1 GALLON	LOW
7	COO	CASCADING ORNAMENTAL OREGANO	ORIGANUM LIBANOTICUM	1.5' x 1.5'	1 GALLON	LOW
6	FRS	FILIGRAN RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA 'FILIGRAN'	3' x 3'	1 GALLON	LOW
5	LLE	LARGE LEAFED LAMBS EAR	STACHYS BYZANTINA 'HELEN VON STEIN'	2' x 2'	1 GALLON	LOW
8	MB	MEADOW BLAZINGSTAR	LIATRIS LIGULISTYLUS	3' x 1.5'	1 GALLON	LOW
7	MPC	MAGNUS PURPLE CONEFLOWER	ECHINACEA PURPUREA 'MAGNUST'	2' x 2'	1 GALLON	LOW
20	MY	MOONSHINE YARROW	ACHILLEA 'MOONSHINE'	2' x 2'	1 GALLON	LOW
355	KFG	FEATHER REED GRASS	CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER'	4' x 2'	1 GALLON	MODERATE
39	LBG	LITTLE BLUESTEM GRASS	SCHIZACHYRIUM SCOPARIUM 'THE BLUES'	3' x 1.5'	1 GALLON	LOW
7	RDS	RASPBERRY DELIGHT HYBRID BUSH SAGE	SALVIA 'RASPBERRY DELIGHT'	3' x 3'	1 GALLON	LOW
255	PMG	PURPLE MAIDEN GRASS	MISCANTHUS SINENSIS PURPURASCENS	3.5' x 3.5'	1 GALLON	LOW
5	SAJ	SEDUM AUTUMN JOY	SEDUM X 'AUTUMN JOY'	1.5' x 1.5'	1 GALLON	MODERATE
285	SWG	SWITCH GRASS	PANICUM VIRGATUM	3' x 5'	1 GALLON	LOW
227	VMG	VARIEGATED MAIDEN GRASS	MISCANTHUS SINENSIS 'VARIEGATUS'	4.5' x 3.5'	1 GALLON	MODERATE

LOW GROW NATIVE SEED MIX

A mixture of perennial, cool season, drought tolerant, grasses suitable for areas where mowing is difficult or not desirable. It grows an average of 8-12 inches a year with normal rain fall in the Intermountain region and the Desert Southwest. This mix is a great soil stabilizer. Our wildflower mixes are very compatible with this mix.



Characteristics:

- Grows 8-12 inches tall
- Requires little to no maintenance
- Grows well in elevations up to 10,000 ft

Seeding Rate:

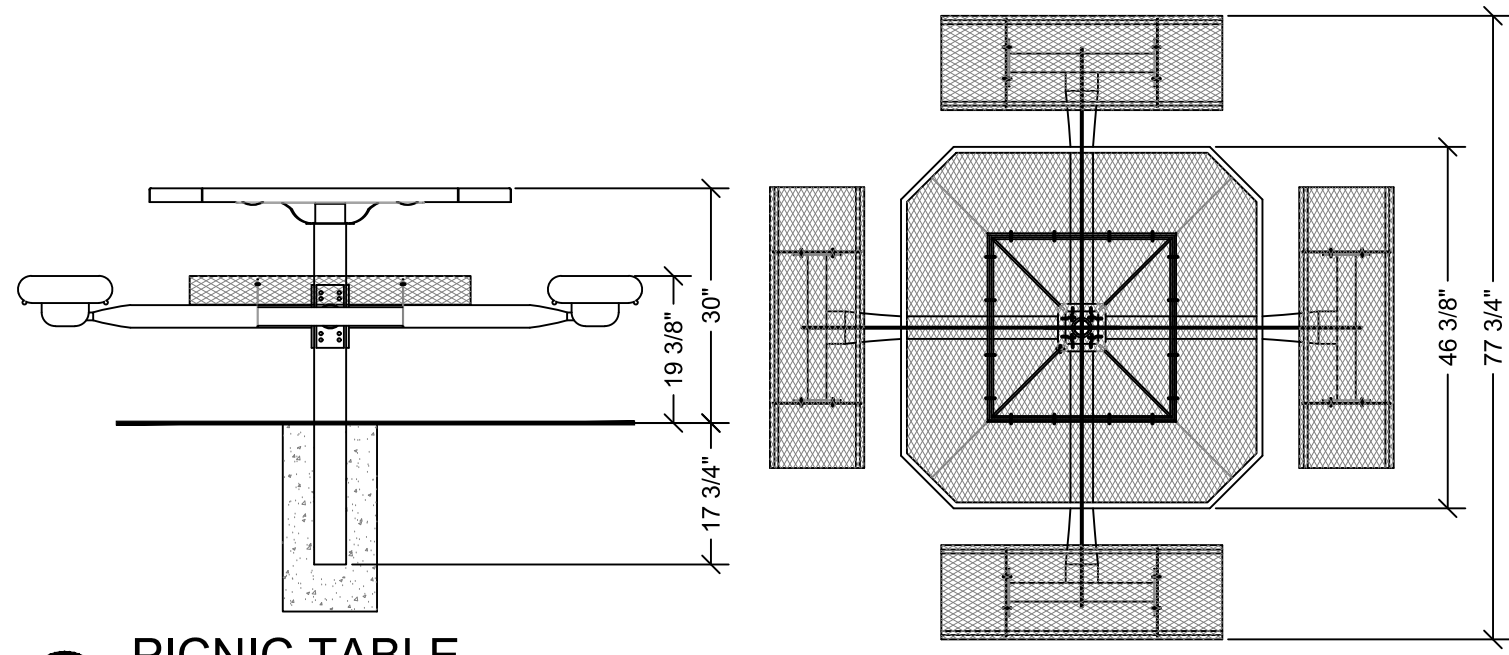
- 
- New Seeding
 Dryland: 20-25 lbs/acre
 Irrigated: 40 lbs/acre
- Overseeding
 Dryland: 10-15 lbs/acre
 Irrigated: 20 lbs/acre

Mix contains:

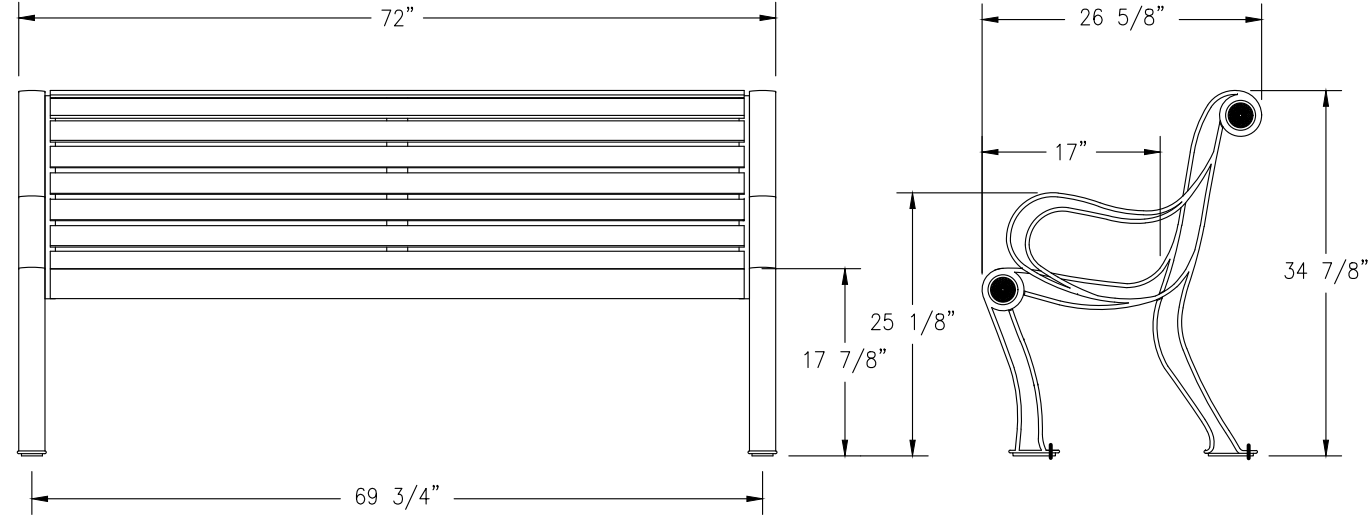
- 30% **Ephraim Crested Wheatgrass**
Slightly rhizomatous bunchgrass with germination in 14-21 days.
Drought resistant and winter hardy with a deep root system making it an excellent soil binder. Crested wheatgrass is well adapted to stabilization of disturbed soils and does well on a variety of soil types.
- 25% **Sheep Fescue**
Bunchgrass with germination in 14-21 days.
Well adapted to most soil conditions and is great for soil erosion control and low maintenance mixtures.
- 20% **Perennial Rye**
Bunchgrass with germination in 5-10 days.
One of the most widely used grasses and is adaptable to a wide variety of soils and climate conditions. It has a leafy head and fine stem.
- 15% **Chewings Fescue**
Bunchgrass with germination in 7-21 days.
Fine fescue that is shade tolerant and requires little water. Persists in dry soils and infertile soils.
- 10% **Canada Bluegrass**
Sod-forming grass with germination in 14-21 days.
Resistant to drought and some salinity. It is used to reclaim disturbed area such as gravel pits cut roads, roadsides, and mines.

SEEDING INSTALLATION

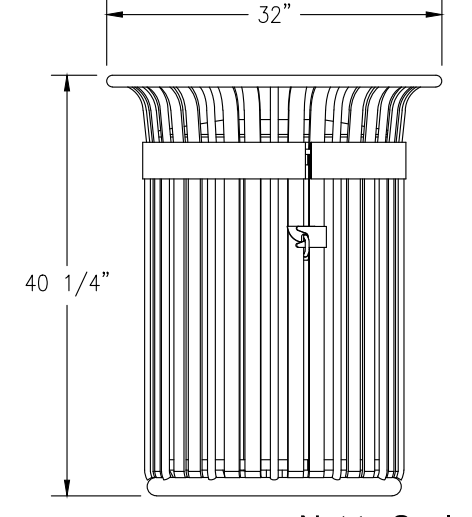
1. Non-irrigated native seed grass to be crimped at time of installation to facilitate growth.
2. All brands furnished shall be free from such noxious seeds as Russian or Canadian Thistle, Coarse Fescue, European Bindweed, Johnson Grass, Knap Weed and Leafy Spurge.
3. The seeder shall furnish to the owner (or contractor) a signed statement certifying that the seed furnished is from a lot that has been tested by a recognized laboratory. Seed which has become wet, moldy, or otherwise damaged in transit or in storage will not be acceptable. Seed tickets shall be provided to the Town upon request.
4. If the seed available on the market does not meet the minimum purity and germination percentages specified, the installer must compensate for a lesser percentage of purity or germination by furnishing sufficient additional seed to equal the specified product. The tags from the seed mixes must be approved by the town prior to application.
5. The formula used for determining the quantity of pure live seed (pls) shall be (pounds of seed) x (purity) x (germination) = pounds or pure live seed (pls).
6. Permanent seed mix shall be used unless otherwise approved by the town. The use of temporary nursery crop in permanent and low grow mixes is prohibited.
7. All areas to be seeded shall have native topsoil spread to a depth of at least 6 inches (loose depth).
8. Soil amendments shall be in compliance with the Town's landscape regulations. Minimum soil amendments shall be 3 cubic yards of organic matter per 1,000 square feet of seeded areas, and shall be tilled to a minimum depth of 6 inches.
9. Soil is to be thoroughly loosened (tilled) to a depth of at least 6 inches prior to seeding. The top 6 inches of the seed bed shall be free of rocks greater than 4 inches and soil clods greater than 2 inches. Seeding over any compacted areas that haven't been thoroughly loosened shall be rejected. Seed beds shall be free of weeds.
10. If the installer demonstrates to the town that it is not possible to drill seed, seed is to be uniformly broadcast at two times the drilled rate, then lightly harrowed to provide a seed depth of approximately 1/4 inch. then rolled to compact, then mulched as specified above.
11. Seeding shall be completed within 30 days of initial exposure or 7 days after grading is substantially complete in a given area (as defined by the town). This may require multiple mobilizations for seeding.



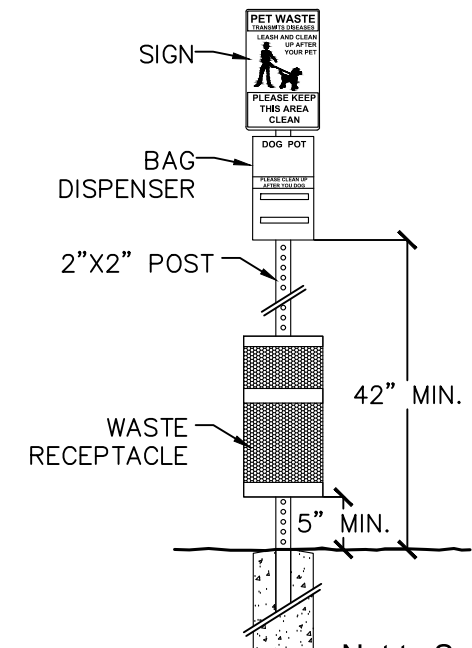
PICNIC TABLE
MANUFACTURER: WABASH VALLEY
MODEL: SG235D/SG230D INGROUND
COLOR: DARK GREEN



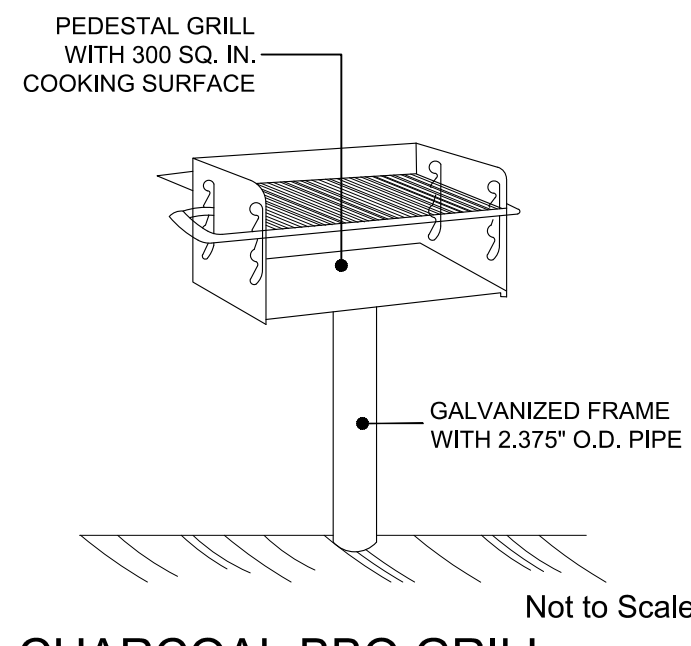
BENCH
MANUFACTURER: WABASH VALLEY
MODEL: BU1119C
COLOR: DARK GREEN



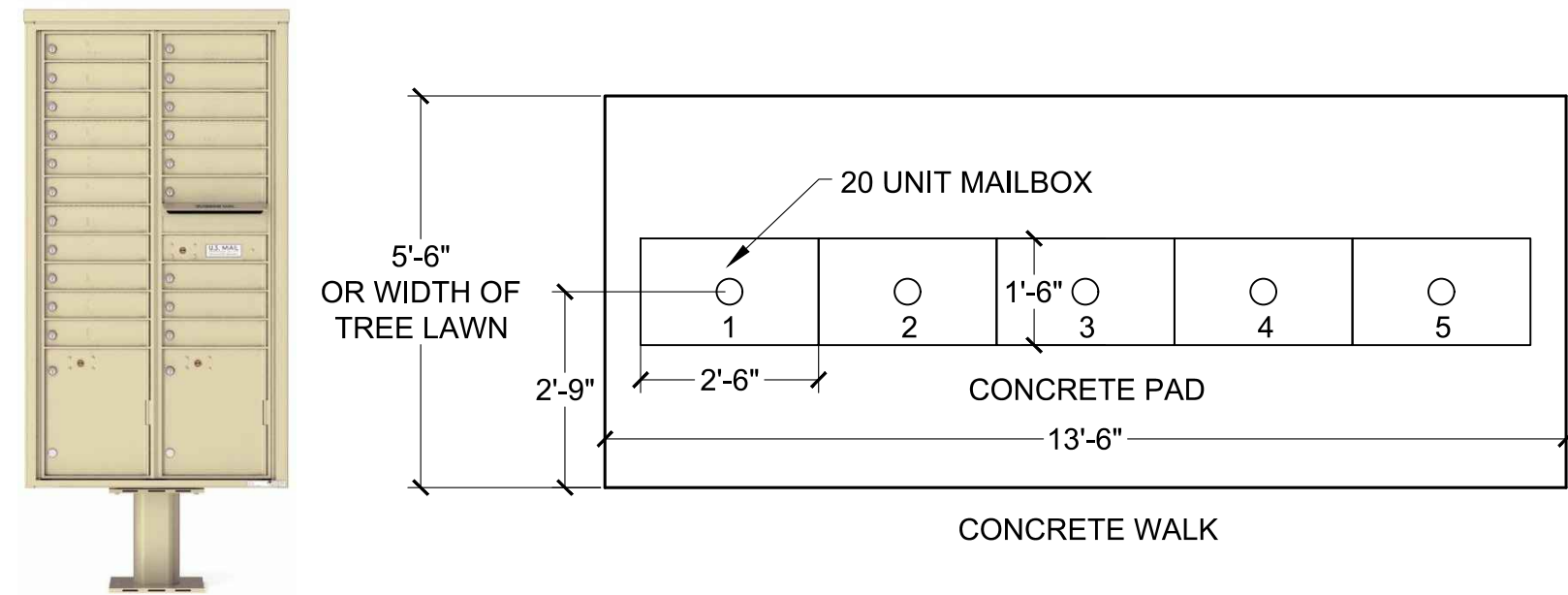
TRASH RECEPTACLE
MANUFACTURER: WABASH VALLEY
MODEL: TJ3F43I
COLOR: DARK GREEN



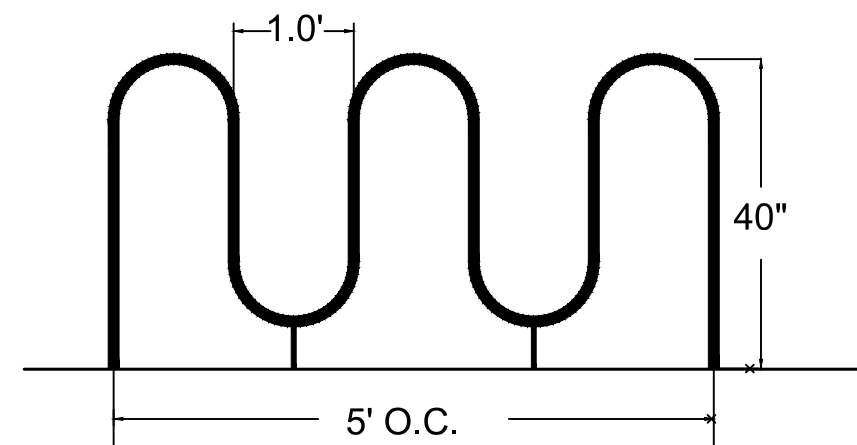
DOG WASTE STATION
COLOR: DARK GREEN



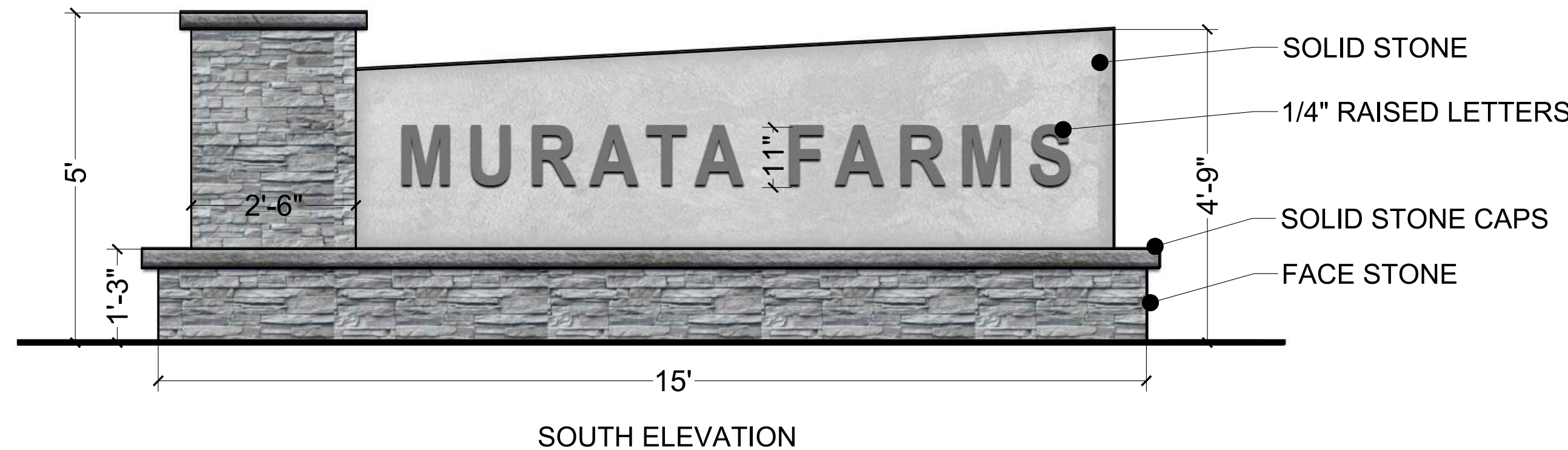
CHARCOAL BBQ GRILL
MANUFACTURER: DUMOR
MODEL: 21-00
COLOR: BLACK



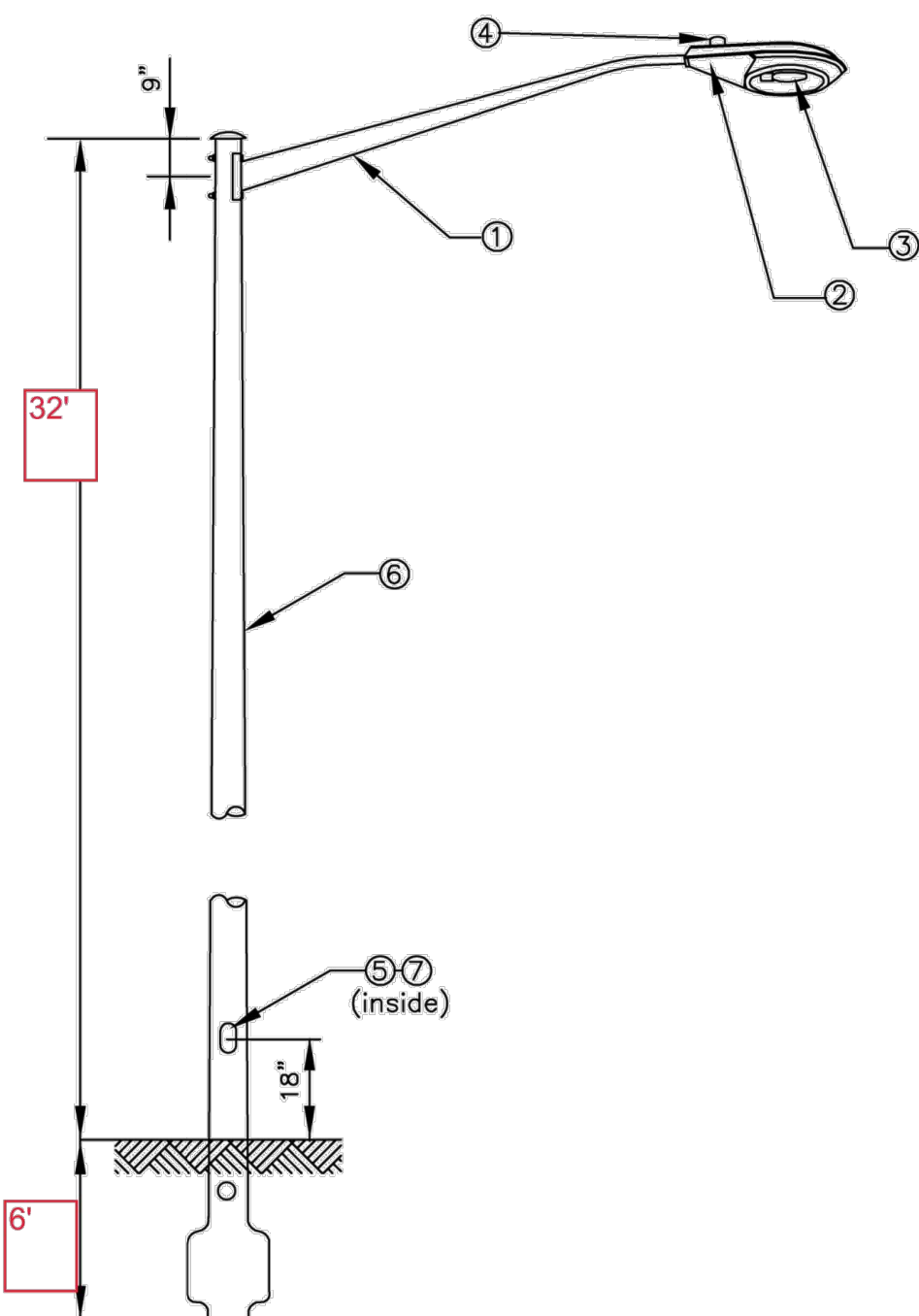
MAILBOX CLUSTER



BICYCLE RACK
MANUFACTURER: WABASH VALLEY
MODEL: BRK538I
COLOR: DARK GREEN



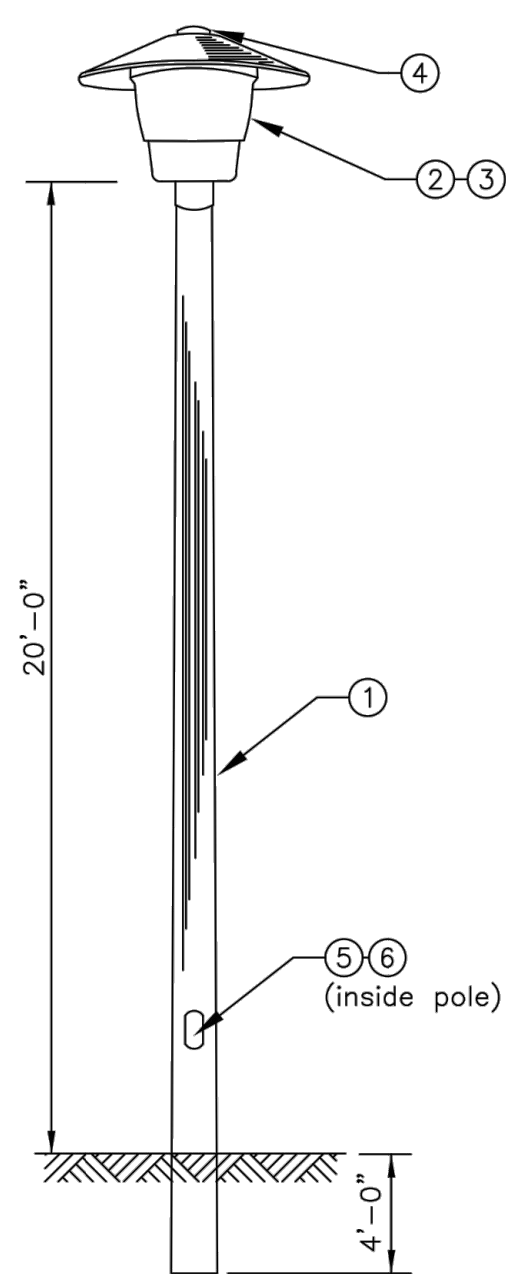
ENTRY MONUMENT
LOCATED WITHIN MEDIAN AT S. COLLEGE AVE. & MEADOWLARK PKWY.
SIGN TO BE TWO SIDED WITH LETTERS ON EACH SIDE.



ITEM	QTY	MATERIAL	ITEM	QTY	MATERIAL
1	1	10' Arm	5	1	Fuseholder, In-line, #12-8 AWG
2	1	Luminaire, LED	6	1	Light pole, Fiberglass, 45'
3	1	Lamp, LED	7	1	Fuse, Tube-Type, Sec. - 10 Amp
4	1	Photoelectric Eye			

REVISIONS	
DATE	BY
08/02	HWB
General Revision	
UNITED POWER, INC. P.O. BOX 929 • BRIGHTON, CO. 80601	
ENG. APPROVAL:	DATE:
OPER. APPROVAL:	DATE:
DWN BY: H. Ross	
ISSUED BY:	
ISSE DT:	
FIBERGLASS LIGHTPOLE WITH 250W LUMINAIRE	
M26-250F	

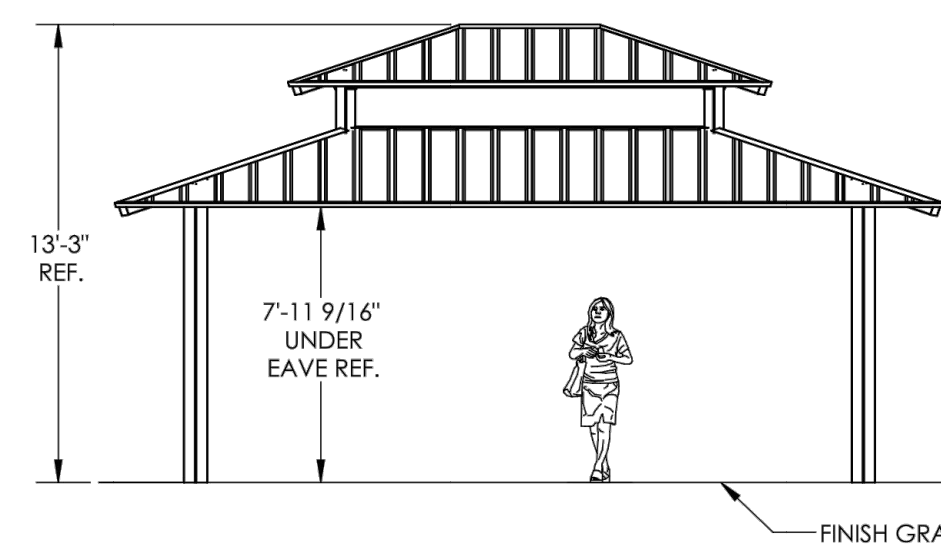
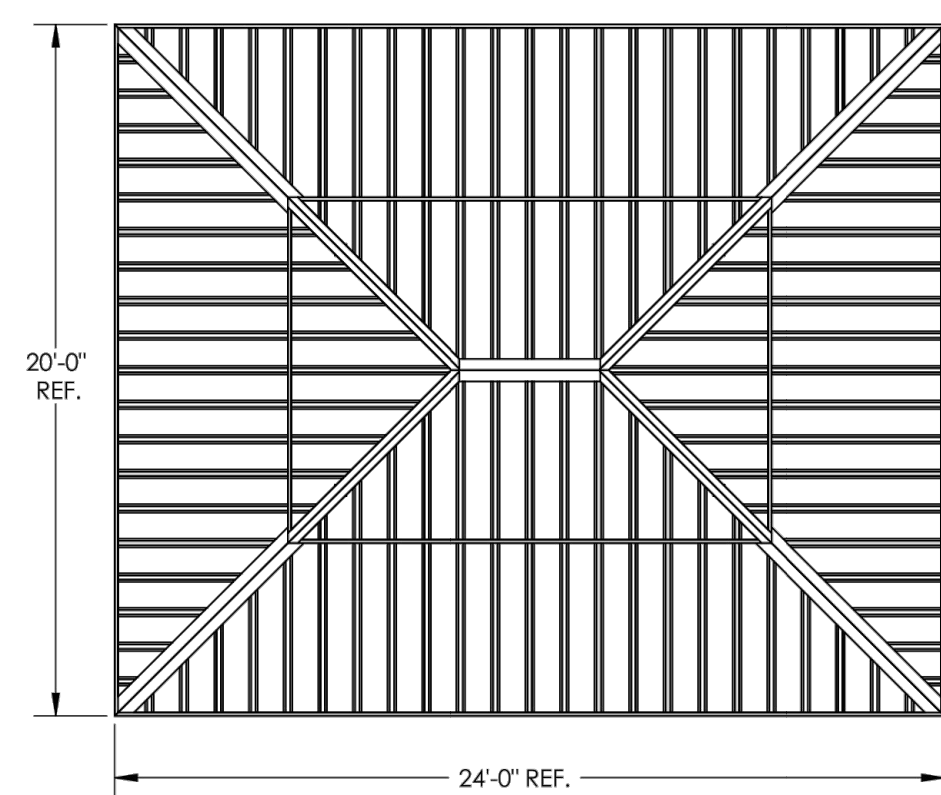
STREET LIGHT
ALL LIGHTING WITHIN THE SUBDIVISION SHALL BE DOWNCAST AND NOT SPILL ONTO ADJACENT PROPERTIES.



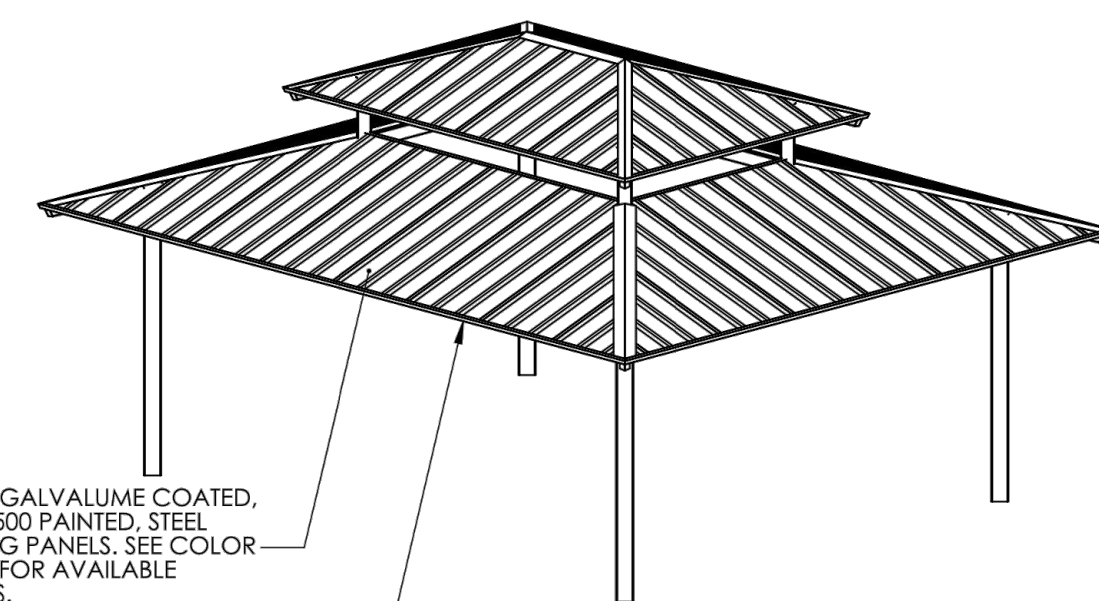
ITEM	QTY	MATERIAL	ITEM	QTY	MATERIAL
1	1	Fiberglass Light Pole, 24'			
2	1	Luminaire, 100W, HPS			
3	1	Lamp HPS, 100W.			
4	1	Photoelectric Eye.			
5	1	Fuse Assembly, Sec - 10 amp			

REVISIONS	
DATE	BY
08/02	HWB
General Revision	
UNITED POWER, INC. P.O. BOX 929 • BRIGHTON, CO. 80601	
ENG. APPROVAL:	DATE:
OPER. APPROVAL:	DATE:
DWN BY: H. Ross	
ISSUED BY:	
ISSE DT:	
100W ORNAMENTAL LIGHT ON FIBERGLASS POLE	
M26-100C	

PARK PEDESTRIAN LIGHT
ALL LIGHTING WITHIN THE SUBDIVISION SHALL BE DOWNCAST AND NOT SPILL ONTO ADJACENT PROPERTIES.



SHELTER - 20' x 24'
POLIGON, MODEL: MARQUEE 20X24
COLORS: ROOF - TUDOR BROWN, POSTS - SURREY BEIGE



24 GA., GALVALUME COATED, KYNAR 500 PAINTED, STEEL ROOFING PANELS. SEE COLOR MATRIX FOR AVAILABLE COLORS.

ROOFING TRIM IS COLOR MATCHED TO ROOF. EAVE CHANNEL TRIM IS REINFORCED WITH 18 GA. GALVANIZED INNER CHANNEL FOR ADDITIONAL EAVE SUPPORT.

DATE	NO.	NOTES
8-20-2021	1	
9-14-2021	2	

MURATA FARMS FILING NO. 1

CIVIL CONSTRUCTION DOCUMENTS

PARCEL IDENTIFICATION

LOCATED IN THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4, TOWNSHIP 1 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO.

COVER SHEET

LEGAL DESCRIPTION

PER LAND TITLE GUARANTEE COMPANY COMMITMENT ORDER NO. ABC25165205, WITH AN EFFECTIVE DATE OF 05/07/2019 AT 5:00 P.M.

LOT B OF RECORDED EXEMPTION NUMBER 1471-04-3-RE 879 RECORDED AUGUST 14, 1986 UNDER RECEPTION NO. 2065102, BEING A PORTION OF THE FOLLOWING DESCRIBED PROPERTY:

THE NORTH ONE-HALF OF THE SOUTHWEST ONE-QUARTER OF SECTION 4, TOWNSHIP 1 NORTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN, WELD COUNTY, COLORADO,

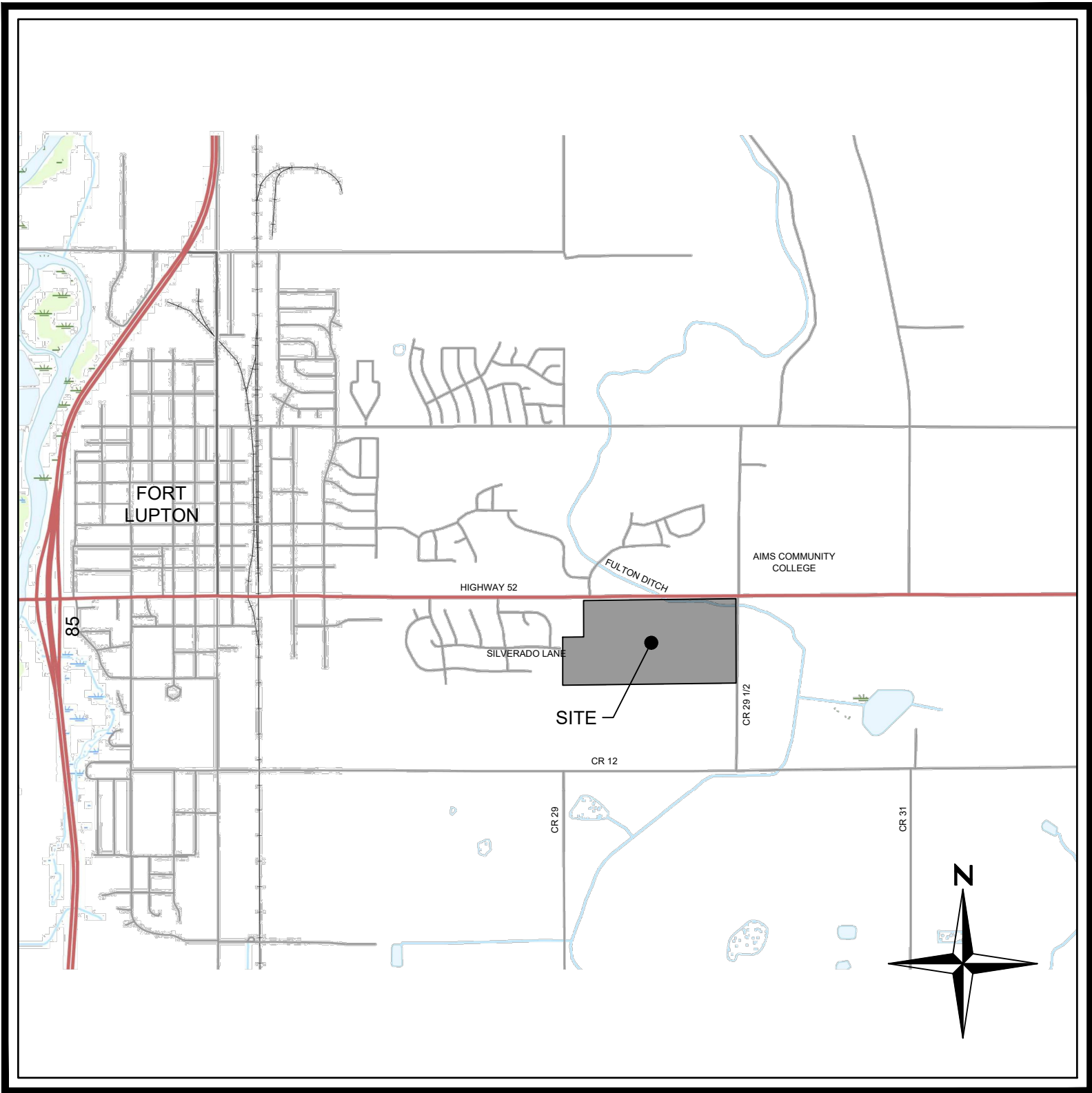
EXCEPT THOSE PORTIONS CONVEYED IN DEED RECORDED DECEMBER 4, 1989 UNDER RECEPTION NO. 02199253 AND EXCEPT THE NORTH 50.00 FEET AND THE EAST 30.00 FEET THEREOF, RESERVED FOR STATE AND COUNTY ROAD R.O.W.

BASIS OF BEARINGS

BASIS OF BEARINGS BEARINGS SHOWN HEREON ARE GRID BEARINGS DERIVED FROM GPS OBSERVATION BASED UPON THE COLORADO COORDINATE SYSTEM OF 1983 NORTH ZONE (NAD 83, 2011) REFERENCED TO THE NORTH LINE OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 4, TOWNSHIP 1 SOUTH, RANGE 66 WEST, SIXTH PRINCIPAL MERIDIAN BEING MONUMENTED AS SHOWN HEREON, TAKEN TO BEAR NORTH 89°17'03" EAST, A DISTANCE OF 2647.89 FEET.

FLOOD ZONE

FLOOD ZONE THE SUBJECT PROPERTY SHOWN HEREIN LIES WITHIN OTHER AREAS - ZONE X, AREAS OF MINIMAL FLOOD HAZARD, AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP INDEX NO. 08123C2110E, MAP REVISED JANUARY 20, 2016 (PANEL NOT PRINTED).



VICINITY MAP
SCALE: 1" = 2000'

PROJECT TEAM

CIVIL ENGINEER

REDLAND
1500 W. CANAL CT.
LITTLETON, CO 80120
720.283.6783 voice
CONTACT: TRAVIS FRAZIER, P.E.

OWNER / DEVELOPER

CORONADO WEST
8655 S. PRIEST DRIVE
TEMPE, AZ 85285
303.285.1110 voice
CONTACT: ERIC ECKBERG

LANDSCAPE ARCHITECT/PLANNER

HENRY DESIGN GROUP
1501 WAZEE ST SUITE 1-C
DENVER, CO 80202
303.446.2368 voice
CONTACT: KAREN HENRY, PLA

TRAFFIC ENGINEER

FOX TUTTLE HERNANDEZ
TRANSPORTATION GROUP
P.O. BOX 19768
BOULDER, CO 80308
303.652.3571 voice
CONTACT: EMILY GROSS, PE

SURVEYOR

AZTEC COSNULTANTS, INC
300 E MINERAL AVE #1
LITTLETON, CO 80122
303. 713.18981 VOICE
CONTACT: MIKE NOFFSINGER, PLS

BENCHMARK

NGS BENCHMARK 4907 (AZTEC #4907A). DISK ON PIPE LOCATED ON THE SOUTH SIDE 9TH STREET 175' MORE OR LESS EAST OF MAIN ST.
ELEVATION = **4908.22 (NAVD88)**

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C10.8	ESC DETAILS
C10.9	ESC DETAILS
C10.10	ESC DETAILS

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

COVER SHEET

SHEET

C1.0



720.283.4793 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

PROJECT CONTROL/BENCHMARK:

PRIMARY PROJECT BENCHMARK:

LOCAL SITE BENCHMARK:

ALL ELEVATIONS SHOWN ON THESE PLANS ARE REFERENCED TO THE PROJECT BENCHMARK. HORIZONTAL CONTROL, INCLUDING THE BASIS OF BEARING, SHALL BE IN ACCORDANCE WITH THE FINAL SUBDIVISION PLAT FOR THIS PROJECT.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING THE PROJECT BENCHMARK AND OTHER SURVEY MONUMENTS AND SHALL HAVE A REGISTERED LAND SURVEYOR TIE OUT AND RESET ANY PROPERTY CORNERS OR SECTION CORNERS PLANNED TO BE DISTURBED BY CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ANY INADVERTENTLY DISTURBED OR DAMAGED MONUMENTS AND SHALL HAVE THEM REESTABLISHED AND REPLACED BY A REGISTERED LAND SURVEYOR.

3. THE CONTRACTOR SHALL COMPLY, AND PERFORM WORK IN ACCORDANCE, WITH THE REQUIREMENTS OF THE GEOTECHNICAL (SOILS) REPORT(S) PREPARED FOR THIS PROJECT. GEOTECHNICAL INFORMATION FOR THIS PROJECT IS BASED ON THE REPORT (add report title, date, and author). IN THE EVENT OF A DISCREPANCY BETWEEN THE GEOTECHNICAL REQUIREMENTS AND JURISDICTIONAL REQUIREMENTS, THE MORE STRINGENT REQUIREMENT SHALL BE FOLLOWED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND GEOTECHNICAL ENGINEER IN THE EVENT THAT A DISCREPANCY OCCURS.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE SERVICES OF A QUALIFIED TESTING LABORATORY TO PERFORM ALL COMPACTION TESTING, ASPHALT TESTING, CONCRETE TESTING, AND ANY OTHER TESTING AS MAY BE REQUIRED TO COMPLETE THE WORK. TESTING RESULTS MUST BE SUBMITTED FOR ALL PHASES OF THIS PROJECT PER THE APPLICABLE GOVERNING AGENCIES REQUIREMENTS.

5. THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE (1) SET OF "REDLINED" PRINTS OF THE CONSTRUCTION PLANS. THE "REDLINED" PRINTS SHALL BE KEPT CURRENT TO ACCURATELY REPRESENT THE DIMENSIONS AND LOCATIONS OF ALL WORK PERFORMED BY THE CONTRACTOR. THE CONTRACTOR MUST PRESENT THE "REDLINED" PRINTS TO THE ENGINEER (REDLAND) TIMELY UPON COMPLETION OF EACH PHASE OF THE WORK.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROMPTLY NOTIFYING THE ENGINEER OF ANY PROBLEMS OR POTENTIAL PROBLEMS IN CONFORMING TO THE DESIGN LINE AND GRADE FOR ANY ELEMENT OF THE CONSTRUCTION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROMPTLY NOTIFYING THE ENGINEER OF SITE CONDITIONS THAT DIFFER FROM THOSE SHOWN ON THE APPROVED PLANS.

7. IN THE EVENT THE CONTRACTOR ALLOWS, AUTHORIZES, APPROVES OR CONSTRUCTS ITEMS THAT DIFFER FROM THE APPROVED PLANS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, WITHOUT WRITTEN APPROVAL BY THE ENGINEER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LIABILITY ARISING FROM SUCH CHANGES.

8. THE CONTRACTOR SHALL PERFORM ALL WORK ACCORDING TO ALL CITY, COUNTY, STATE AND FEDERAL SAFETY AND HEALTH REGULATIONS. IN PARTICULAR, THE TRENCHING AND OPEN EXCAVATION OPERATIONS SHALL COMPLY WITH ALL CURRENT O.S.H.A. REGULATORY REQUIREMENTS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, AND ANY OTHER NEEDED ACTION TO PROTECT THE LIFE, HEALTH AND SAFETY OF THE PUBLIC AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOB SITE CONDITIONS THROUGHOUT THE DURATION OF CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROTECTION OF PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED ONLY TO WORKING HOURS. THE CONTRACTOR SHALL DEFEND INDEMNIFY AND HOLD THE OWNER, THE ENGINEER AND THE GOVERNING JURISDICTION HARMLESS FOR ANY AND ALL LIABILITY, IN CONNECTION WITH THE PERFORMANCE OF WORK, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, THE ENGINEER OR THE GOVERNING JURISDICTION.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE, PASSABLE ACCESS TO PRIVATE PROPERTIES ADJACENT TO THE WORK THROUGHOUT THE PERIOD OF CONSTRUCTION.

12. THE TYPE, SIZE, LOCATION, AND NUMBER OF UNDERGROUND UTILITIES ARE APPROXIMATE WHERE SHOWN ON THE PLANS AND WERE TAKEN FROM RECORDS OF THE CONTROLLING AGENCIES AND/OR FROM MARKINGS IN THE FIELD BY AN AGENCY AND/OR UTILITY LOCATING CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR COMPLETENESS OR ACCURACY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK AND PARTICIPATE IN THE RESOLUTION OF ANY CONFLICTS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

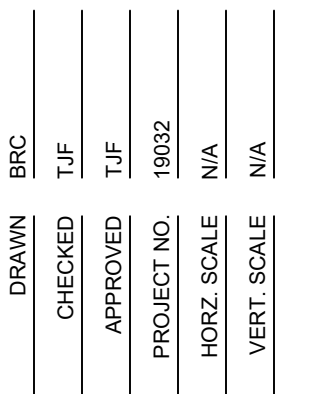
13. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO FOR THE LOCATION OF UNDERGROUND GAS, ELECTRIC AND COMMUNICATION UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION (CALL 811 OR 1-800-922-1987). THE CONTRACTOR SHALL ALSO NOTIFY OTHER APPLICABLE UTILITY COMPANIES TO OBTAIN FIELD LOCATES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

- THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO COORDINATE SCHEDULES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY RELOCATIONS WITH THE APPROPRIATE UTILITY COMPANY.
15. TEMPORARY EROSION CONTROL MEASURES SHALL BE PROVIDED BY THE CONTRACTOR DURING CONSTRUCTION AS IDENTIFIED IN THE EROSION CONTROL AND/OR STORMWATER MANAGEMENT PLANS. MAINTENANCE OF ONSITE DRAINAGE AND EROSION CONTROL FACILITIES DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE REMOVAL OF TEMPORARY EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. HOWEVER, REMOVALS SHALL NOT OCCUR UNTIL THE GOVERNING JURISDICTION HAS GIVEN APPROVAL TO REMOVE ANY OF THE MEASURES.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING NEARBY PUBLIC OR PRIVATE STREETS OF MUD AND DEBRIS, DUE TO CONSTRUCTION ACTIVITIES, ON A DAILY BASIS OR AS DIRECTED BY GOVERNING JURISDICTION PERSONNEL.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF ANY DAMAGED EXISTING IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, PAVEMENT, CURB AND GUTTER, SIDEWALK, LANDSCAPING, IRRIGATION, SIGNAGE, STRIPING, AND UTILITIES.
18. ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE STATE OF COLORADO PERMITTING PROCESS FOR "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY." FOR INFORMATION, CONTACT THE COLORADO DEPARTMENT OF HEALTH, WATER QUALITY CONTROL DIVISION, WQCD-PE-B2, 4300 CHERRY DRIVE SOUTH, DENVER, COLORADO, 80248-1530, ATTENTION: PERMITS AND ENFORCEMENT SECTION. PHONE (303) 692-3590.
19. IF DEWATERING IS TO BE USED TO INSTALL UTILITIES OR CONSTRUCT IMPROVEMENTS, A STATE CONSTRUCTION DEWATERING DISCHARGE PERMIT IS REQUIRED IF DISCHARGE IS INTO A STORM SEWER, CHANNEL, IRRIGATION DITCH, OR ANY WATERS OF THE UNITED STATES.
20. THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES THE APPROPRIATE EDITION OF THE GOVERNING JURISDICTION DESIGN AND CONSTRUCTION STANDARDS, ONE SET OF APPROVED CONSTRUCTION PLANS, THE STORMWATER MANAGEMENT PLAN, AND ALL REQUIRED PERMITS.
21. ALL STREET, SANITARY SEWER, STORM SEWER AND WATERLINE CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE APPLICABLE GOVERNING LOCAL AGENCY CURRENT AT THE DATE OF CONSTRUCTION PLAN APPROVAL. FOR ELEMENTS OF WORK NOT COVERED BY LOCAL AGENCY STANDARDS AND SPECIFICATIONS, ALL CONSTRUCTION SHALL CONFORM TO THE APPROPRIATE EDITION OF THE STANDARDS AND SPECIFICATIONS OF THE COLORADO DEPARTMENT OF TRANSPORTATION, THE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT, AND INDUSTRY STANDARDS AS APPLICABLE. REQUIREMENTS OF THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, THE ENVIRONMENTAL PROTECTION AGENCY AND THE U.S. ARMY CORPS OF ENGINEERS, SHALL ALSO BE FOLLOWED AS THEY RELATE TO THE WORK.
22. THE CONTRACTOR SHALL PROVIDE AND IMPLEMENT A "TRAFFIC CONTROL PLAN" RELATED TO ALL CONSTRUCTION ACTIVITIES FOR THIS PROJECT. ALL TRAFFIC CONTROL DEVICES, STRIPING, AND SIGNING SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
23. ALL STATIONING IS ON CENTERLINE UNLESS OTHERWISE NOTED. CENTERLINE, RIGHTS-OF-WAY (R.O.W.), PROPERTY LINE, AND EASEMENT DIMENSIONS ARE FOR REFERENCE ONLY. REFER TO THE FINAL SUBDIVISION PLAT FOR PROJECT HORIZONTAL CONTROL.
24. ALL ELEVATIONS IN PLAN VIEW ARE ALONG FLOWLINE UNLESS OTHERWISE NOTED. WHERE SHOWN, "TC" REPRESENTS TOP-OF-CURB ELEVATION ALONG CURB AND GUTTER OR BACK-OF-WALK ELEVATION ALONG COMBINATION CURB, GUTTER AND WALK.
25. CROSS PANS ARE 8-FEET IN WIDTH UNLESS OTHERWISE NOTED.
26. WATER MAIN LENGTHS ARE FROM CENTER OF FITTING (EXCLUDING GATE VALVES) TO CENTER OF FITTING UNLESS OTHERWISE NOTED.
27. STORM AND SANITARY SEWER MAIN LENGTHS ARE FROM CENTER OF STRUCTURE/MANHOLE TO CENTER OF STRUCTURE/MANHOLE. SANITARY SEWER AND STORM SEWER MANHOLES ARE 4-FOOT DIAMETER UNLESS OTHERWISE NOTED.
28. STORM INLET STATIONING/OFFSET REFERENCE IS AT THE INTERSECTION OF FLOWLINE AND THE CENTER OF STRUCTURE.
29. STORM INLETS LOCATED ALONG CURB SHALL BE CONSTRUCTED WITH TOP OF BOX AT SAME GRADE AS EXTENDED TOP-OF-CURB GRADE, UNLESS OTHERWISE NOTED.
30. THE CLIENT, CONTRACTOR AND SUB-CONTRACTOR SHOULD IMMEDIATELY NOTIFY THE CONSULTANT OF ANY CONDITIONS OF THE PROJECT THAT THEY BELIEVE DO NOT COMPLY WITH THE CURRENT STATE OF THE ADA AND/OR FHAA.

	PROPERTY LINE
	R.O.W.
	LOT LINE
	EASEMENT LINE
	SECTION LINE
	ROAD CENTERLINE
	EDGE OF PAVEMENT
	CURB AND GUTTER
	CONCRETE
	FENCE
	RETAINING WALL
	WATER LINE
	RAW WATER LINE
	NON-POTABLE WATER LINE
	IRRIGATION LINE
	SANITARY SEWER
	STORM SEWER
	ELECTRIC LINE
	GAS LINE
	TELEPHONE LINE
	FIBER OPTICS LINE
	OVERHEAD ELECTRIC LINE
	CABLE TELEVISION
	CONTOUR MAJOR
	CONTOUR MINOR
	100YR FLOOD PLAIN
	FEMA FLOOD PLAIN
	FLOOD HAZARD AREA DELINEATION
	WATERS OF THE U.S.

	PROPERTY LINE
	R.O.W.
	LOT LINE
	SETBACK
	EASEMENT
	ROAD CENTERLINE
	CURB AND GUTTER (CATCH)
	CURB AND GUTTER (SPILL)
	SIDEWALK
	STORM SEWER
	SANITARY SEWER
	TRENCH DRAIN
	WATER LINE
	IRRIGATION LINE
	NONPOTABLE WATER LINE
	RAW WATER LINE
	INLET
	FLARED END SECTION
	WATER BEND
	WATER CROSS
	WATER TEE
	WATER REDUCER
	WATER VALVE
	FIRE HYDRANT
	PLUG/CAP
	SANITARY SEWER SERVICE (* INDICATES NON-TYPICAL LOCATION)
	WATER SERVICE (* INDICATES NON-TYPICAL LOCATION)
	UTILITY CROSSING
	UNDERDRAIN w/ SIZE (IN.)
	RETAINING WALL
	CONTOUR MAJOR
	CONTOUR MINOR
	SPOT ELEVATION
	SLOPE ARROW (4:1 MAX UNLESS NOTED OTHERWISE)
	LIMITS OF CONSTRUCTION / SAWCUT
	PEDESTRIAN ACCESSIBLE ROUTE
	LOT TYPE
	LINE OF SIGHT
	OVER FLOW ARROW

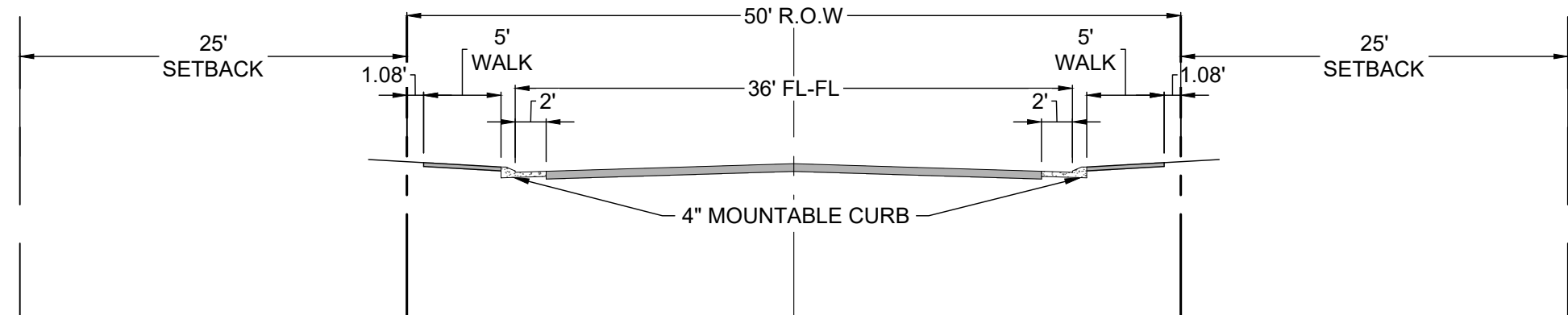
ABC	AGGREGATE BASE COARSE
ARV	AIR RELEASE VALVE
BB MH	BOX BASE MANHOLE
BC	BUILDING CORNER
BFE	BASEMENT FLOOR ELEVATION
B.O.P.	BOTTOM OF PIPE (ELEVATION)
BW	BOTTOM OF WALL
CATV	CABLE TELEVISION
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
D.E.	DRAINAGE EASEMENT
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	DOMESTIC WATER
E	EAST
EC	END CURVE RETURN
EG	EXISTING GRADE/GROUND
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
ESMT	EASEMENT
EX.	EXISTING
FFE	FINISH FLOOR ELEVATION
FG	FINISH GRADE
FL	FLOWLINE
FM	FORCE MAIN
FO	FIBER OPTIC
G.E.	GAS EASEMENT
GB	GRADE BREAK
GFE	GARAGE FINISH FLOOR
GM	GAS METER
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HIGH POINT
IBV	INLINE BUTTERFLY VALVE
INV	INVERT (ELEVATION)
IRR	IRRIGATION
L	LEFT
LF	LINEAR FEET/FOOT
LP	LOW POINT
MAX	MAXIMUM
ME	MATCH EXISTING
MH	MANHOLE
MIN	MINIMUM
N	NORTH
PC	POINT ON CURVE
PCC	POINT OF COMPOUND CURVE
PCR	POINT OF CURVE RETURN
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVE
PROP.	PROPOSED
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS OR RIGHT
R.O.W.	RIGHT OF WAY
RCP	REINFORCED CONCRETE PIPE
S	SOUTH
S.D.M.E.	SIDEWALK, DRAINAGE, AND MAINTENANCE EASEMENT
S.M.E.	SIDEWALK AND MAINTENANCE EASEMENT
S.W.E.	SIDEWALK EASEMENT
SD	STORM DRAIN
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STM	STORMWATER
STM MH	STORMWATER MANHOLE
TBC	TOP BACK OF CURB
TBW	TOP BACK OF WALK
TC	TOP OF CURB
TOF	TOP OF FOUNDATION
T.O.P.	TOP OF PIPE (ELEVATION)
TW	TOP OF WALL
TYP	TYPICAL
U.E.	UTILITY EASEMENT
VC	VERTICAL CURVE
W	WEST
WL	WATERLINE
WM	WATER METER
WV	WATER VALVE

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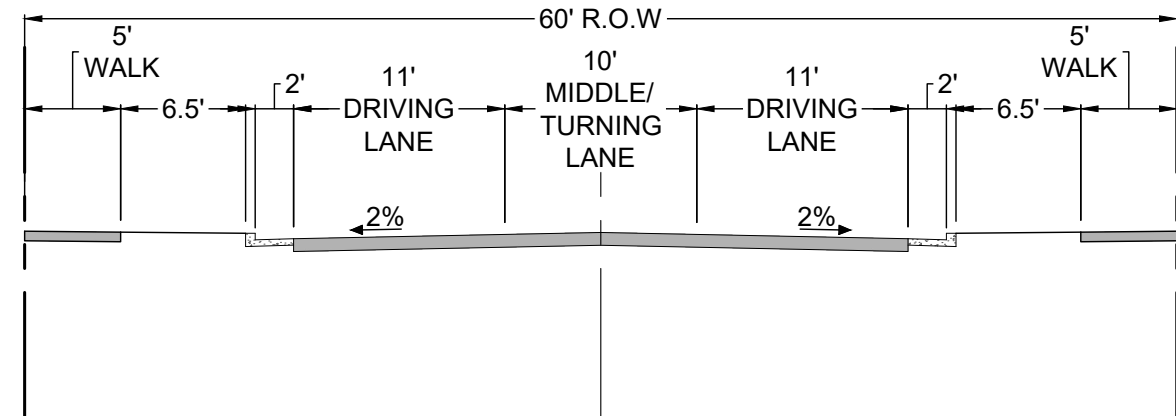
GENERAL NOTES

C1.1

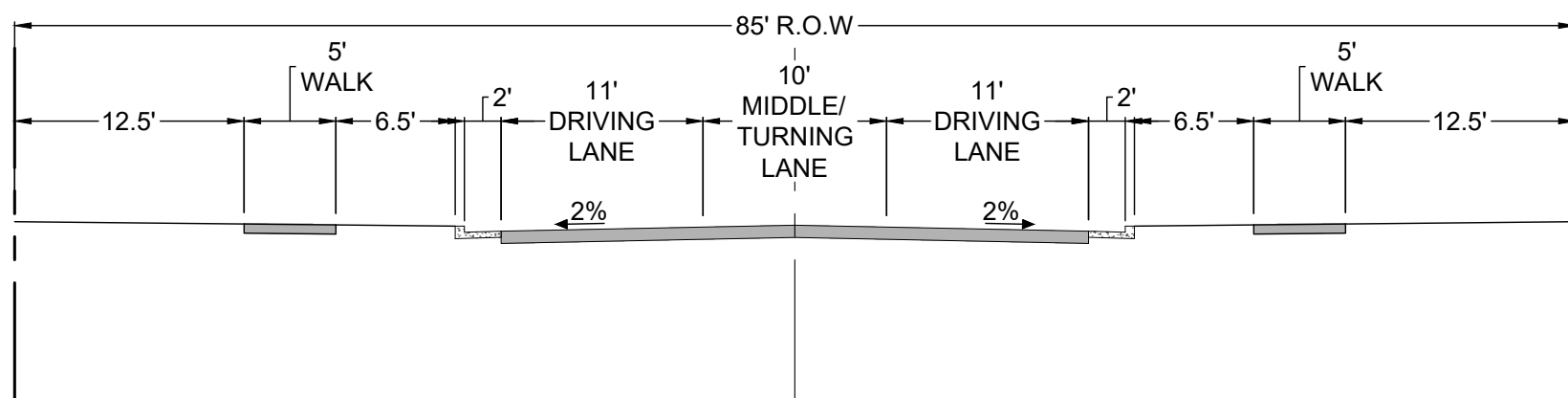
I:\2019\19032 - Murata Farms\CADD\Sheet Sets\Construction Drawings\19032 - Cover Sheet.dwg Tab: 19032 - TEMPLATES & SECTIONS Aug 20, 2021 - 1:13pm bbalzer



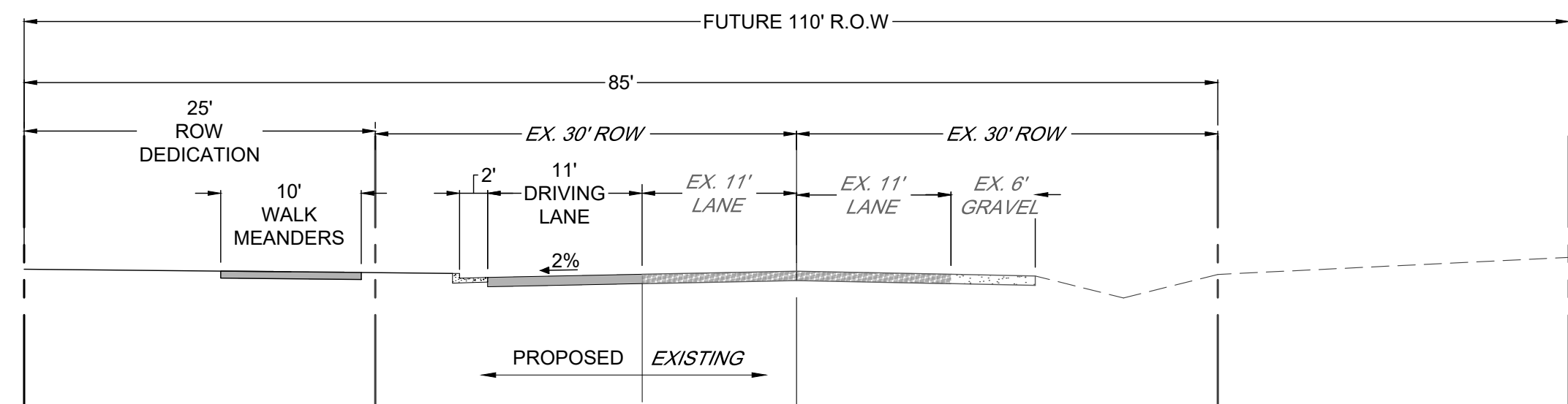
LOCAL RESIDENTIAL



60' R.O.W COLLECTOR

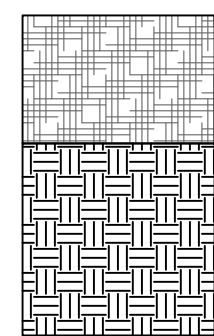
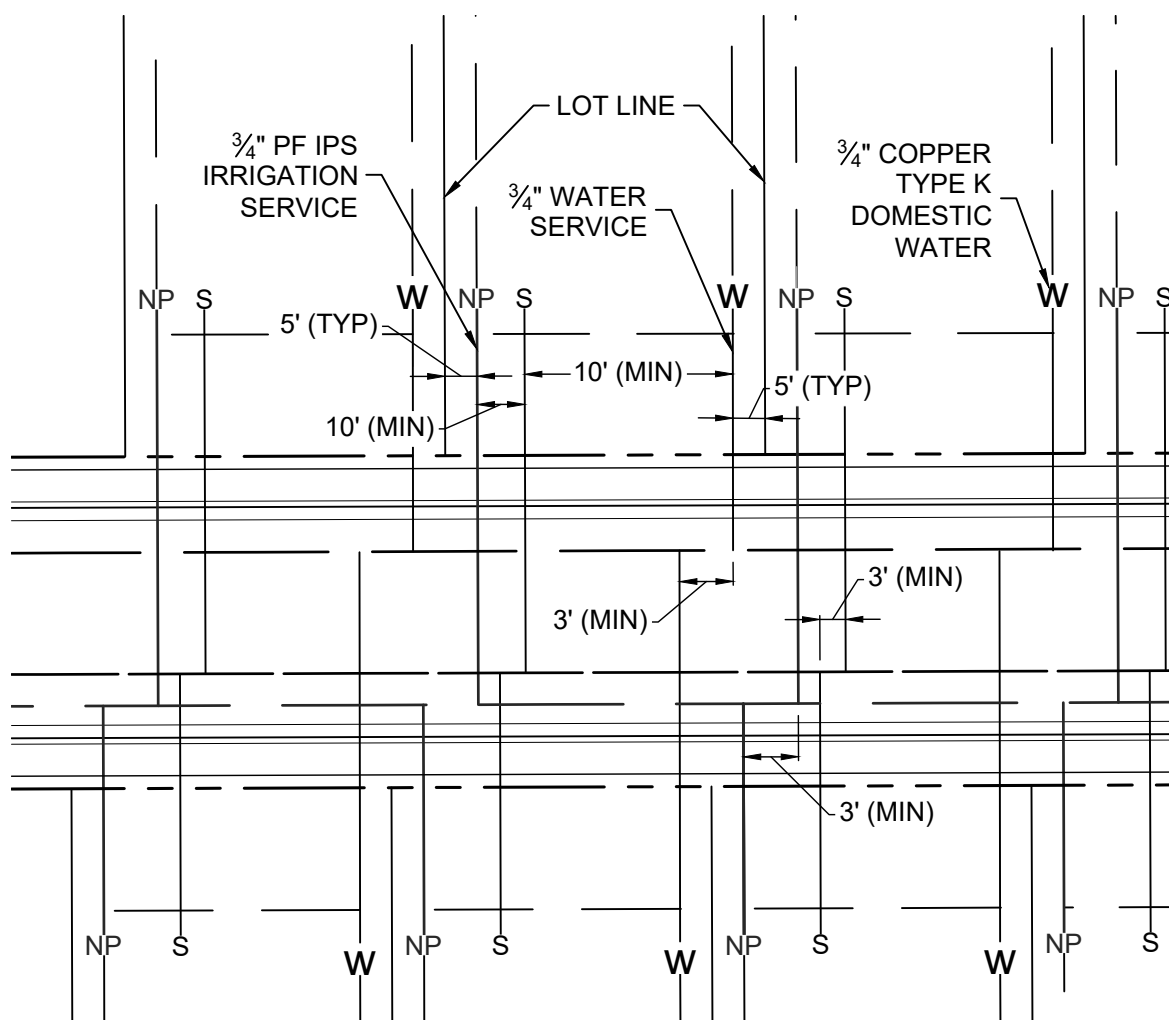


85' R.O.W COLLECTOR



COUNTY ROAD 29 $\frac{1}{2}$
1" = 10'

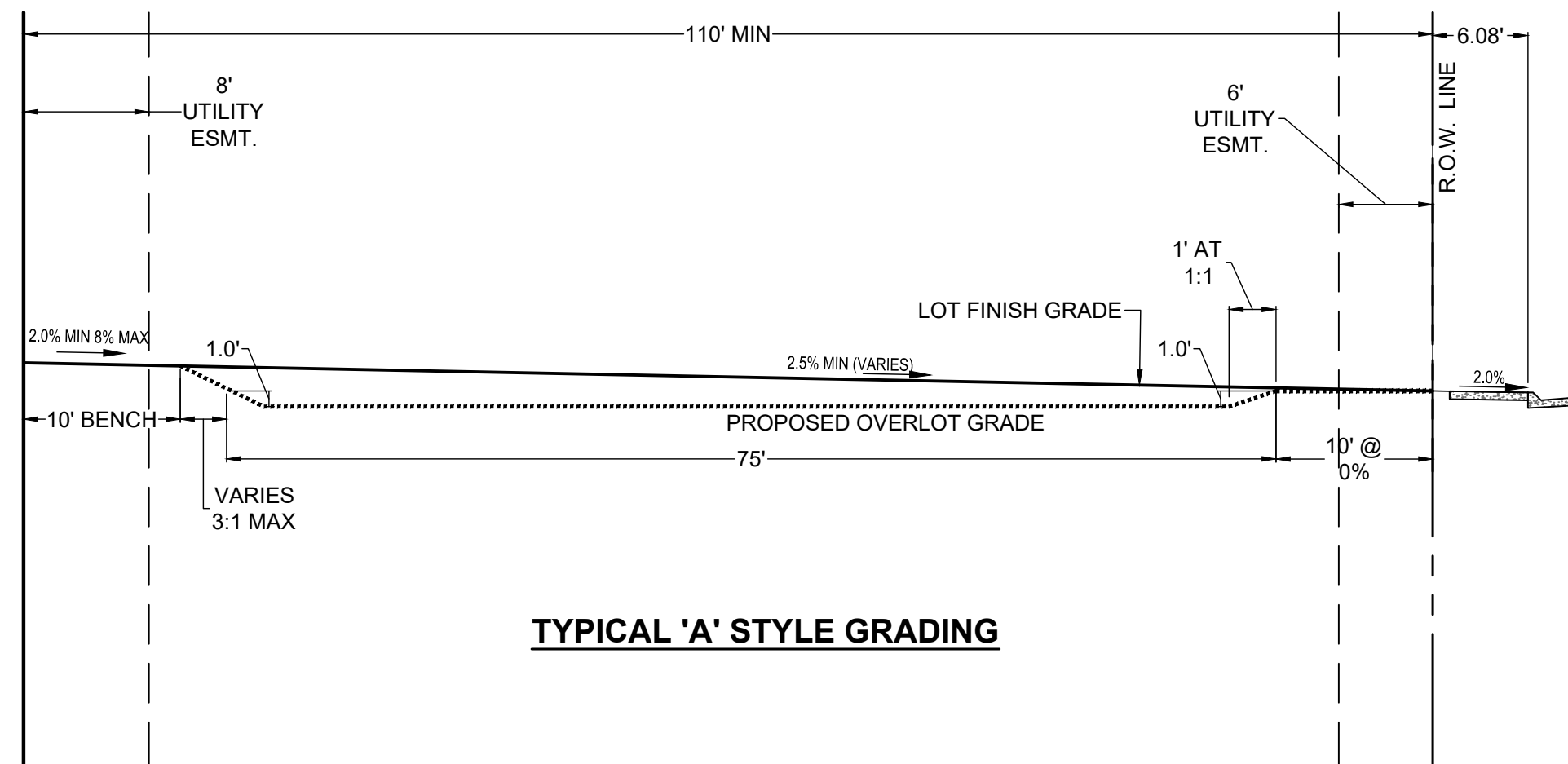
TYPICAL SINGLE FAMILY SERVICE DETAIL



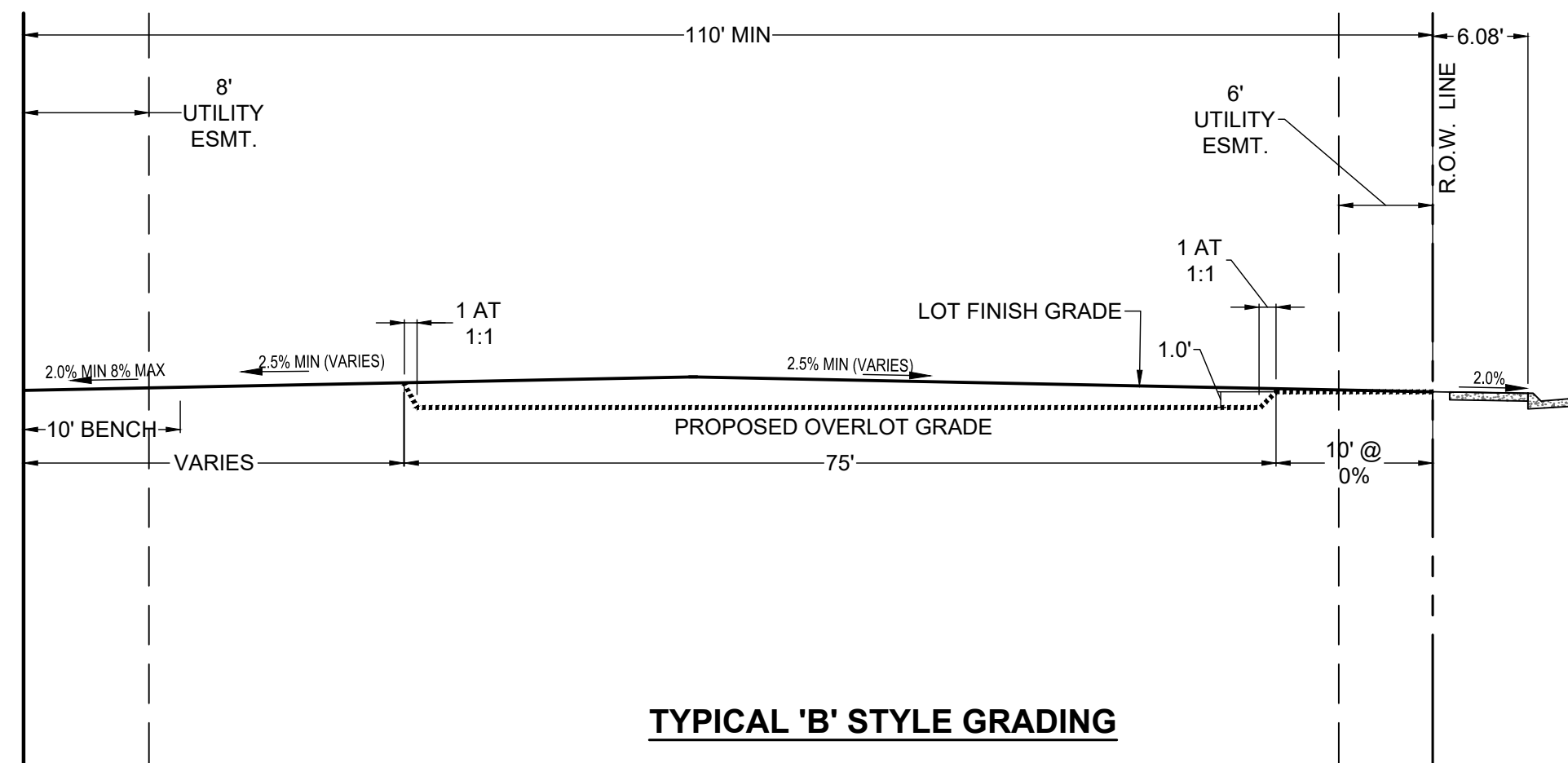
TYPICAL ON-SITE ASPHALT PAVEMENT
SECTIONS

NOTE: THESE SECTIONS ARE PRELIMINARY. REFER TO NOTE 1
ABOVE.
ALL PAVEMENT SHALL MEET CCOB STANDARDS

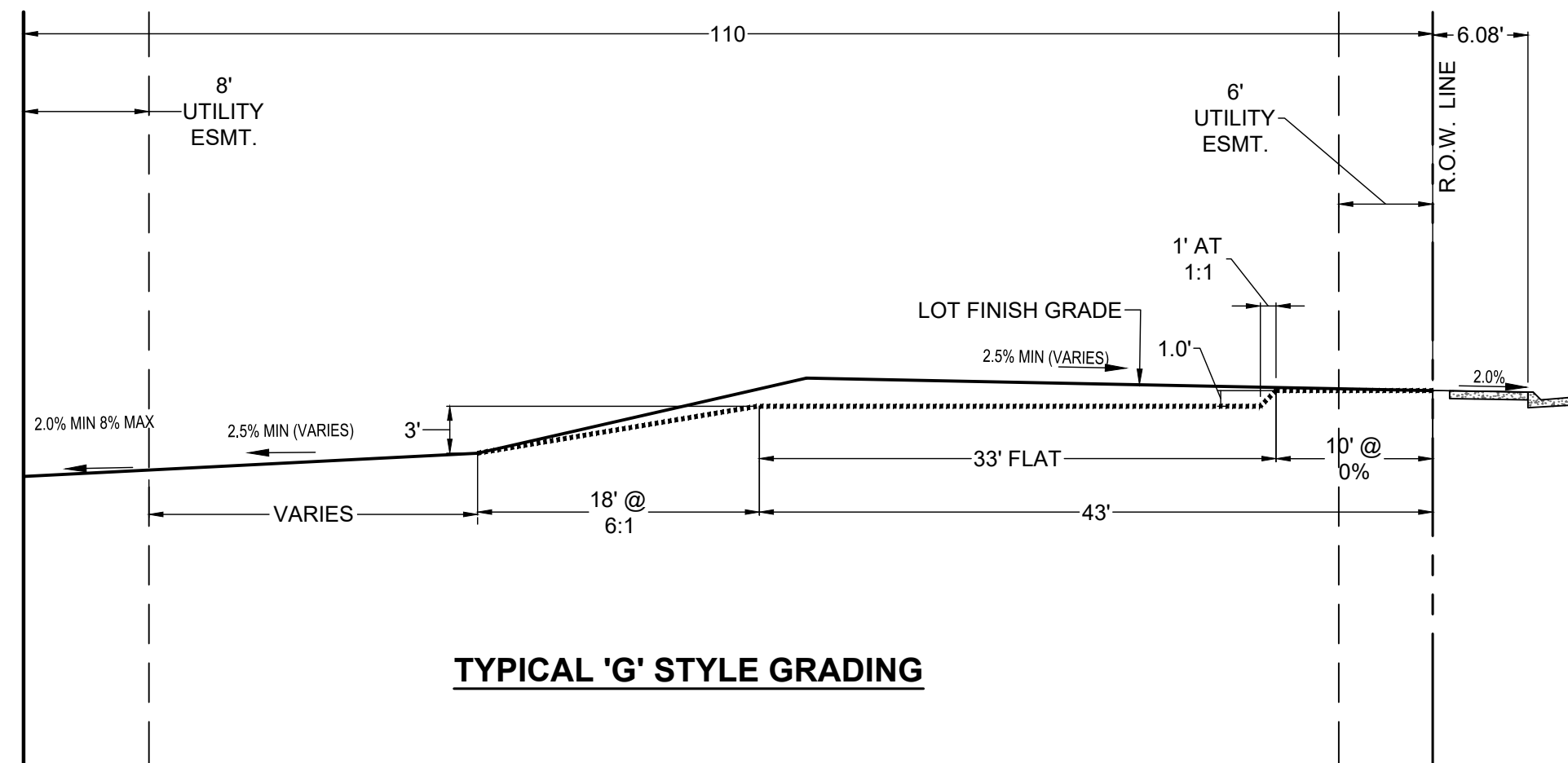
- NOTES:
- ROADWAY PAVEMENT SECTIONS ARE PER THE PRELIMINARY GEOTECHNICAL INVESTIGATION MURATA FARMS PROJECT BY CTL THOMPSON ON OCTOBER 31, 2015. THE RECOMMENDATIONS PROVIDED IN THAT REPORT ARE PRELIMINARY. CONTRACTOR TO SUBMIT A FINAL PAVEMENT DESIGN REPORT FOR CITY OF FORT LUPTON ENGINEER APPROVAL FOLLOWING INSTALLATION OF UTILITIES AND PRIOR TO PLACEMENT OF SUBGRADE, ROADBASE AND ASPHALT (INCLUDING CURB AND GUTTER).



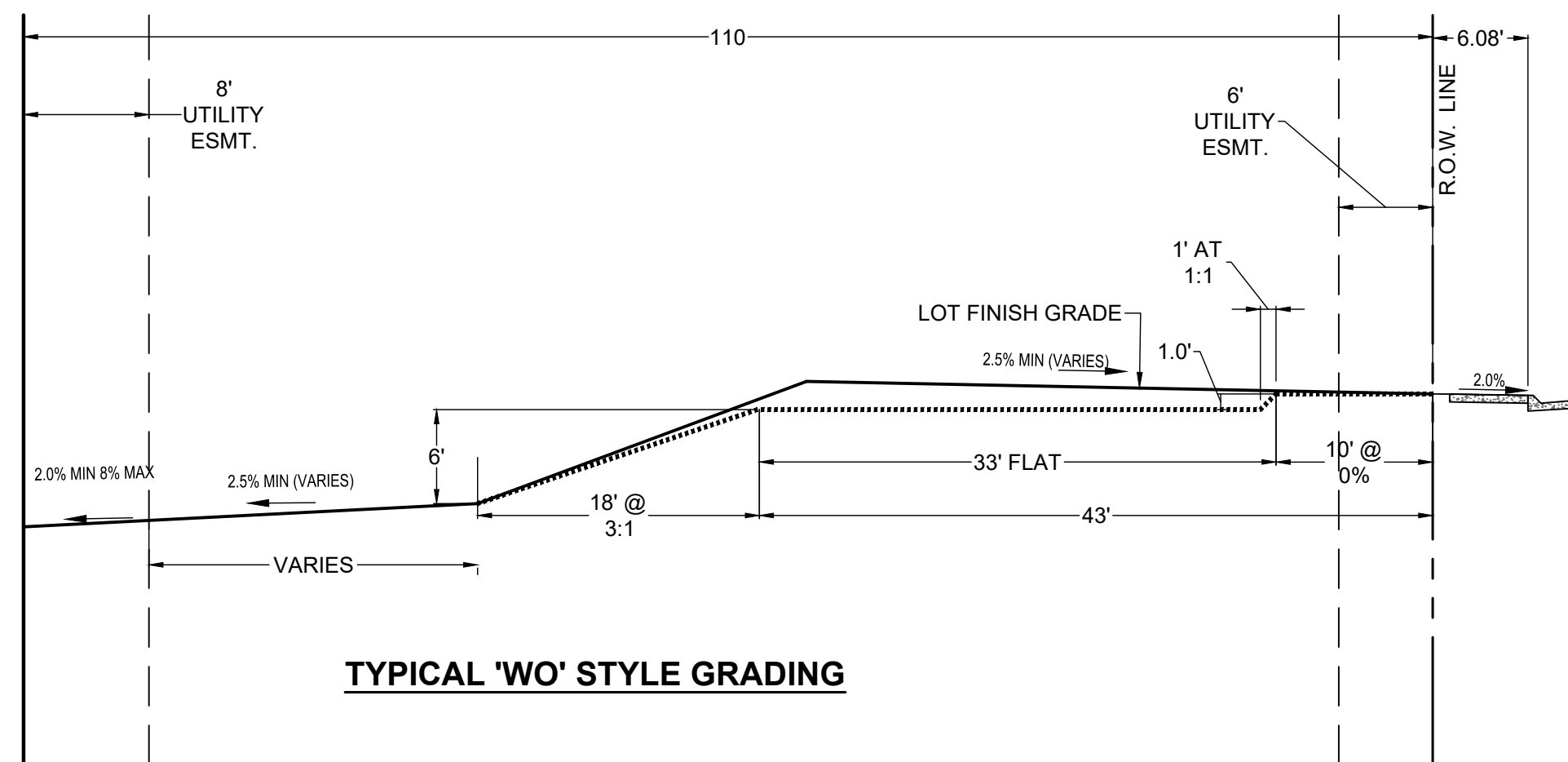
TYPICAL 'A' STYLE GRADING



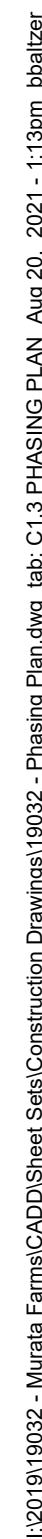
TYPICAL 'B' STYLE GRADING



TYPICAL 'G' STYLE GRADING



TYPICAL 'WO' STYLE GRADING



PROPERTY LINE

R.O.W.

LOT LINE

SETBACK

EASEMENT

ROAD CENTERLINE

CURB AND GUTTER

SIDEWALK

STORM SEWER

SANITARY SEWER

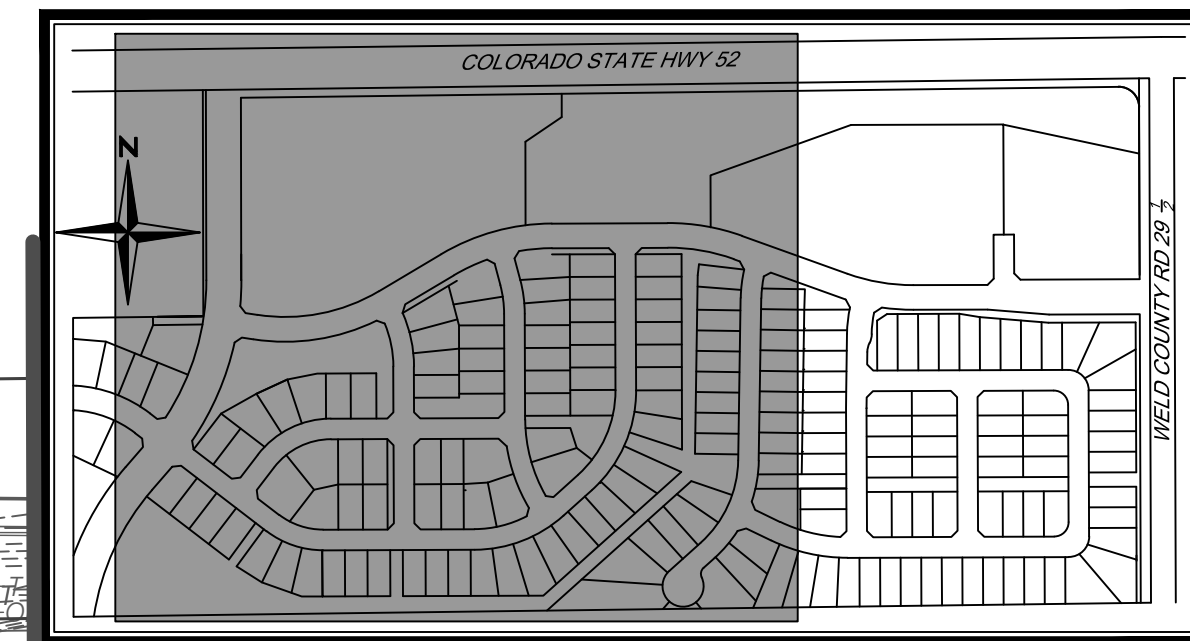
TRENCH DRAIN

WATER LINE

1. ALL PHASES NEED TO PROVIDE ADEQUATE FIRE ACCESS AND UTILITY SERVICE AND LOOPING.
2. NON POTABLE SYSTEM SOURCE IS IN COLLEGE AVE (WCR 29 1/2). AS A RESULT NON-POTABLE SYSTEM WILL NEED A TEMPORARY INTERCONNECT OR WILL NOT BE ACTIVE UNTIL PHASE 2 IS COMPLETE.

	25	65' WIDE LOT (PHASE 1)
	58	55' WIDE LOT (PHASE 1)
TOTAL	83	UNITS
	97	50' WIDE LOT (PHASE 2)
TOTAL	180	UNITS





KEYMAP
N.T.S

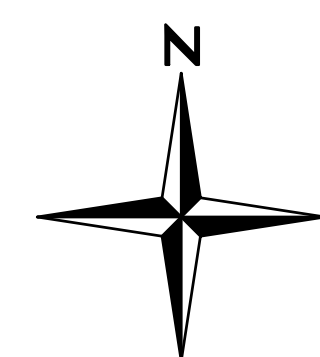
EXISTING LEGEND

	PROPERTY LINE
	R.O.W.
	LOT LINE
	EASEMENT LINE
	SECTION LINE
	ROAD CENTERLINE
	EDGE OF PAVEMENT
	CURB AND GUTTER
	CONCRETE
	FENCE
	RETAINING WALL
	WATER LINE
	SANITARY SEWER
	STORM SEWER
	ELECTRIC LINE
	GAS LINE
	TELEPHONE LINE
	FIBER LINE
	OVERHEAD ELECTRIC LINE
	CABLE TELEVISION
	TO BE DEMOLISHED OR REMOVED

NOTES:

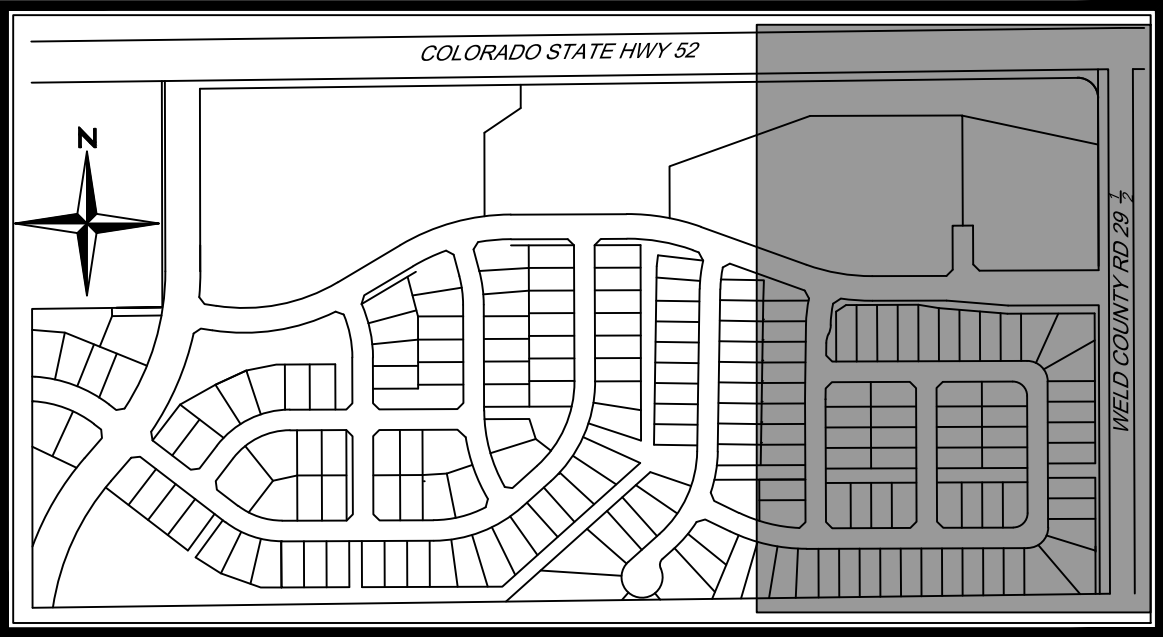
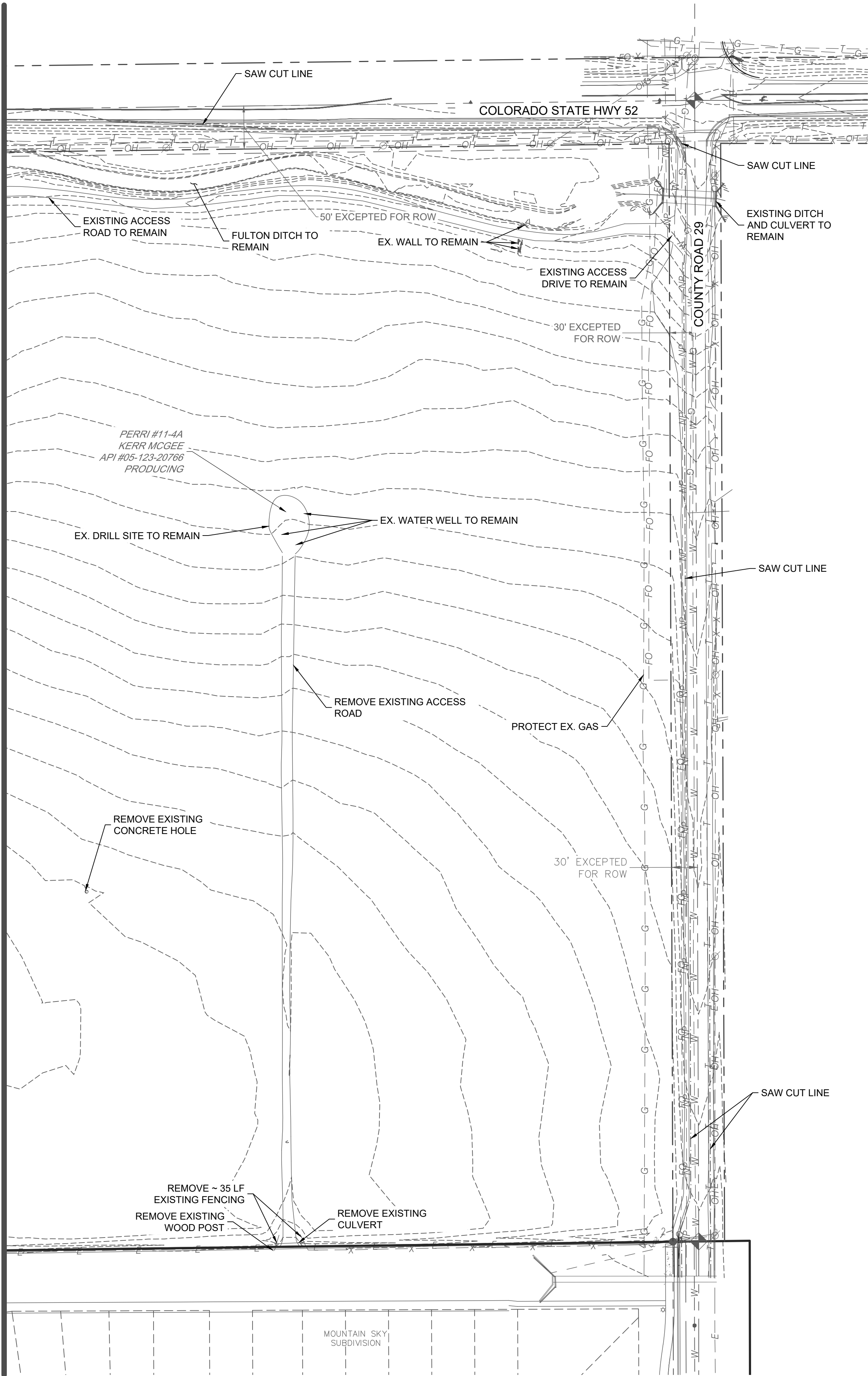
1. REMOVAL LIMITS FOR UTILITY INSTALLATION ARE APPROXIMATE. CONTRACTOR TO DETERMINE ACTUAL LIMITS BASED UPON FIELD CONDITIONS.
2. REFER TO THESE PLANS FOR UTILITY IMPROVEMENTS AND NEW LOCATIONS
3. CONTRACTOR TO DEMO AND REMOVE ALL SERVICES INCLUDING WATER, SEWER, GAS, ELECTRIC, CABLE ETC TO EXISTING RESIDENCES, EXCEPT RESIDENCES TO REMAIN.
4. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF DRY UTILITY REMOVAL AND REPLACEMENT. THIS PLAN IS BASED UPON SURVEY INFORMATION PROVIDED BY AZTEC CONSULTANTS. FIELD WORK WAS COMPLETED ON 11/12/19 AND 7/21/2021.
5. REFER TO LANDSCAPE PLANS FOR TREE REMOVAL AND REPLACEMENT
6. ADDITIONAL UTILITIES OR ENCUMBRANCES MAY EXIST. CONTRACTOR TO FIELD NOTIFY ENGINEER OF ADDITIONAL ITEMS ENCOUNTERED.
7. CONTRACTOR IS RESPONSIBLE FOR VERIFYING SERVICES CONNECTED TO EXISTING MAINS. EXISTING RESIDENTS SHOULD NOT BE WITHOUT SERVICE FOR LONGER THAN 24 HOURS.

REMOVE ~ 210 LF FENCE & POSTS
REMOVE ~ 415 LF ELECTRIC LINE
REMOVE ~ 3186 LF TELEPHONE LINE
REMOVE ~ 70 LF OVERHEAD ELECTRIC LINE
REMOVE ~ 25 LF GAS LINE



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MATCHLINE
SEE SHEET NO. C2.1



KEYMAP
N.T.S

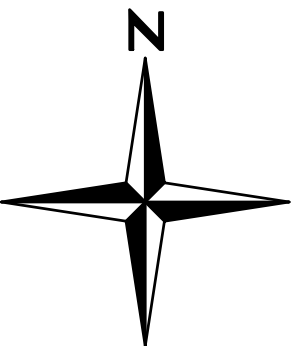
EXISTING LEGEND

	PROPERTY LINE
	R.O.W.
	LOT LINE
	EASEMENT LINE
	SECTION LINE
	ROAD CENTERLINE
	EDGE OF PAVEMENT
	CURB AND GUTTER
	CONCRETE
	FENCE
	RETAINING WALL
	WATER LINE
	SANITARY SEWER
	STORM SEWER
	ELECTRIC LINE
	GAS LINE
	TELEPHONE LINE
	FIBER LINE
	OVERHEAD ELECTRIC LINE
	CABLE TELEVISION
	TO BE DEMOLISHED OR REMOVED

NOTES:

- REMOVAL LIMITS FOR UTILITY INSTALLATION ARE APPROXIMATE. CONTRACTOR TO DETERMINE ACTUAL LIMITS BASED UPON FIELD CONDITIONS.
- REFER TO THESE PLANS FOR UTILITY IMPROVEMENTS AND NEW LOCATIONS
- CONTRACTOR TO DEMO AND REMOVE ALL SERVICES INCLUDING WATER, SEWER, GAS, ELECTRIC, CABLE ETC TO EXISTING RESIDENCES. EXCEPT RESIDENCES TO REMAIN.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF DRY UTILITY REMOVAL AND REPLACEMENT. THIS PLAN IS BASED UPON SURVEY INFORMATION PROVIDED BY AZTEC CONSULTANT'S. FIELD WORK WAS COMPLETED ON 11/12/19 AND 7/21/2021.
- REFER TO LANDSCAPE PLANS FOR TREE REMOVAL AND REPLACEMENT
- ADDITIONAL UTILITIES OR ENCUMBRANCES MAY EXIST. CONTRACTOR TO FIELD NOTIFY ENGINEER OF ADDITIONAL ITEMS ENCOUNTERED.
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REMOVE ~ 210 LF FENCE & POSTS
REMOVE ~ 415 LF ELECTRIC LINE
REMOVE ~ 3186 LF TELEPHONE LINE
REMOVE ~ 70 LF OVERHEAD ELECTRIC LINE
REMOVE ~ 25 LF GAS LINE



0 40 80 160
SCALE: 1" = 80'

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

DEMOLITION PLAN

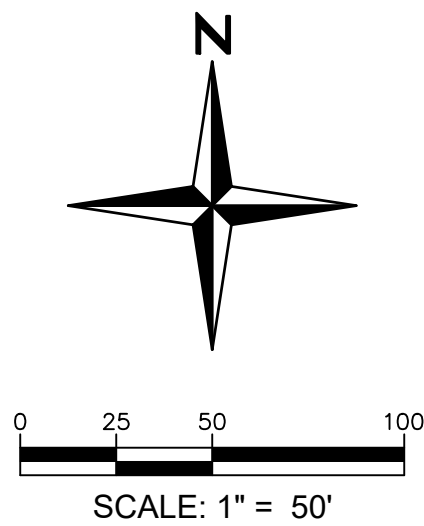
SHEET

C2.2

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1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

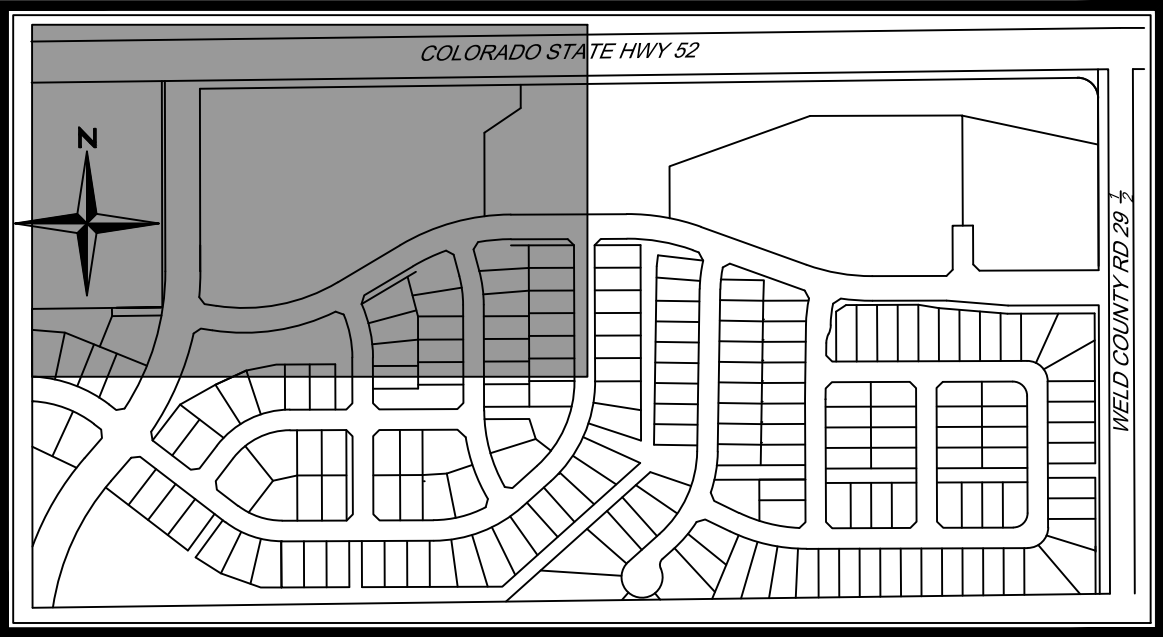
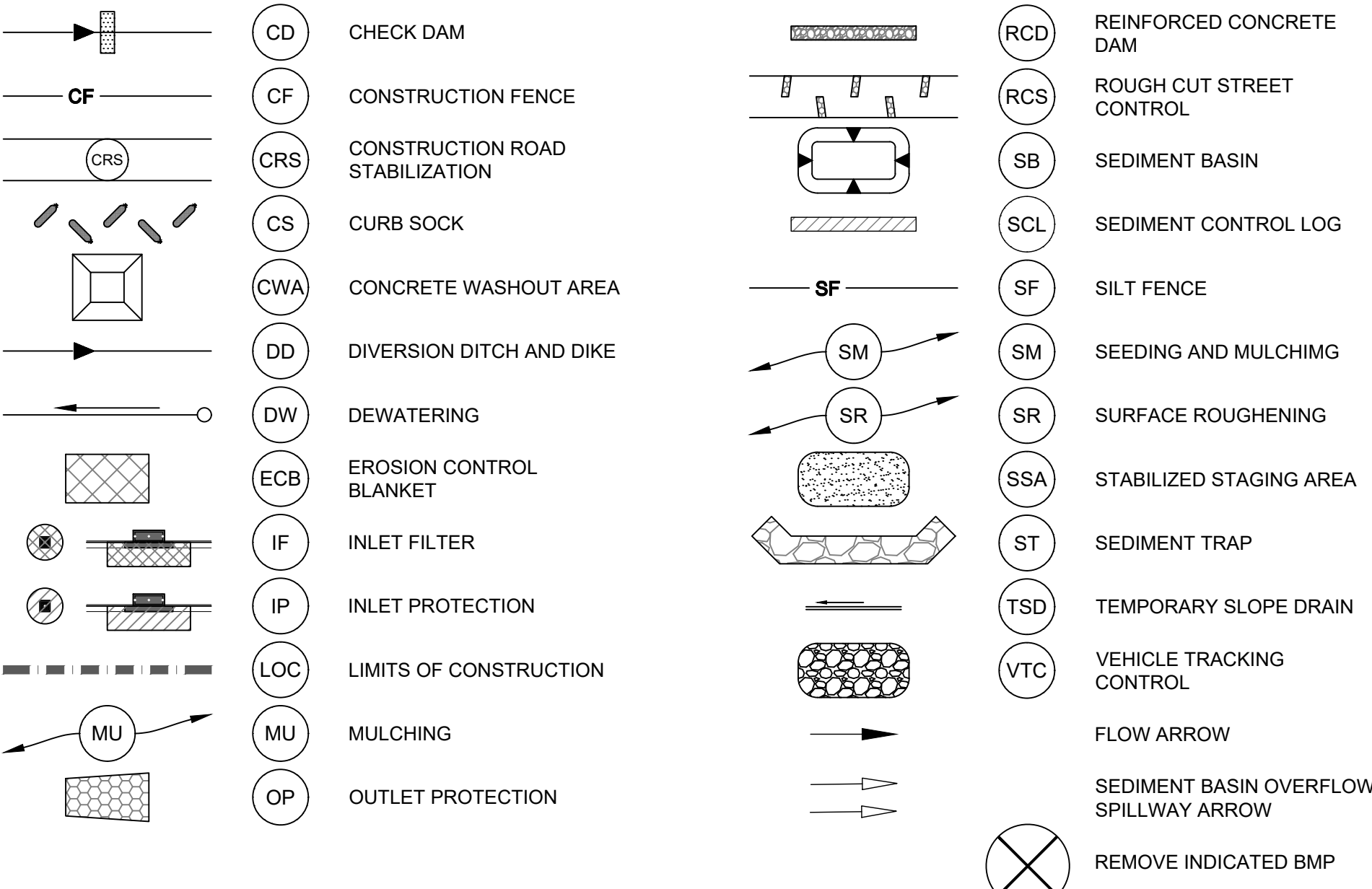
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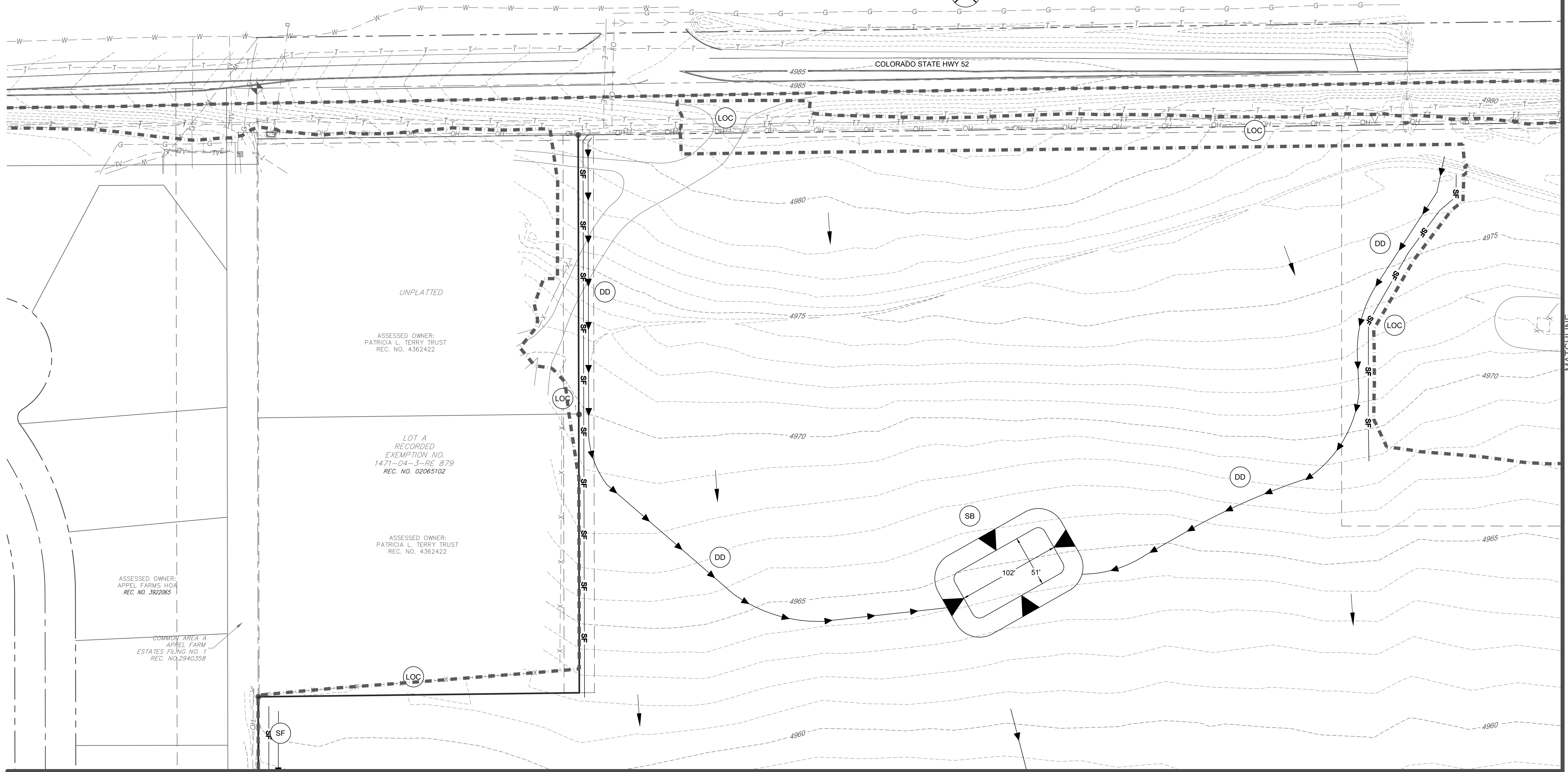
EROSION CONTROL NOTES:

1. ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
2. GRADES SHOWN FOR ROADS, TRACTS AND OPEN SPACE ARE FINISHED GRADE.
3. CONTRACTOR TO COORDINATE ALL REMOVAL AND/OR RELOCATION OF EXISTING DRY UTILITIES WITH THE APPROPRIATE PUBLIC SERVICE PROVIDERS.
4. CONTRACTOR TO REMOVE AND DISPOSE OF ALL MATERIALS DEMOLISHED INCLUDING BUT NOT LIMITED TO ASPHALT, CONCRETE, PIPES, POLES AND ANY OTHER MATERIALS DUE TO THE INSTALLATION OF PROPOSED IMPROVEMENTS.
5. CONTRACTOR TO LOCATE STABILIZED STORAGE AREA, TRASH, AND TEMPORARY TOILETS AND MARK THEM ON THIS PLAN.

EROSION CONTROL LEGEND



KEYMAP
N.T.S.



SEE SHEET NO. C3.2

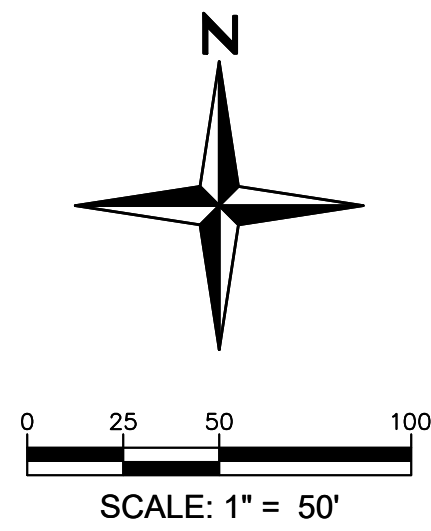
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
INITIAL EROSION CONTROL PLAN

SHEET

C3.1



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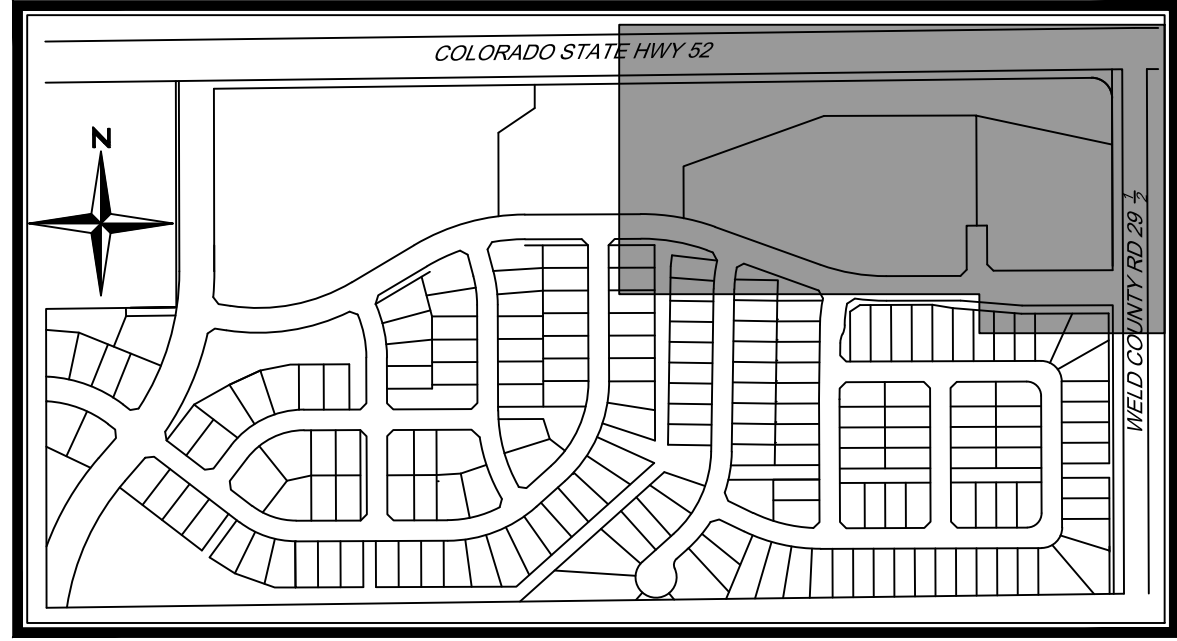


EROSION CONTROL NOTES:

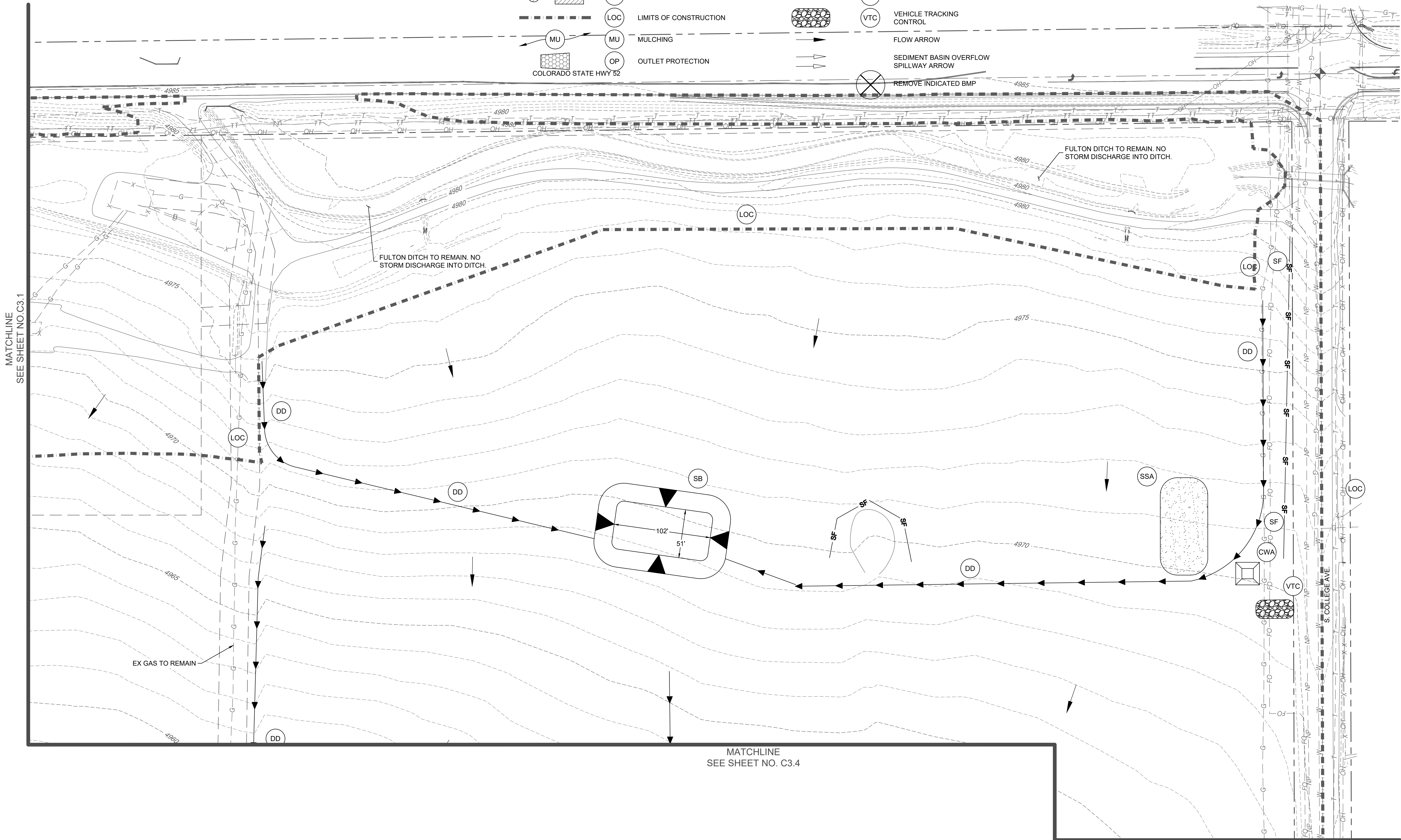
1. ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
2. GRADES SHOWN FOR ROADS, TRACTS AND OPEN SPACE ARE FINISHED GRADE.
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5. CONTRACTOR TO LOCATE STABILIZED STORAGE AREA, TRASH, AND TEMPORARY TOILETS AND MARK THEM ON THIS PLAN.

EROSION CONTROL LEGEND

	CD	CHECK DAM		PS	PERMANENT SEEDING
	CF	CONSTRUCTION FENCE		RCD	REINFORCED CONCRETE DAM
	CRS	CONSTRUCTION ROAD STABILIZATION		RCS	ROUGH CUT STREET CONTROL
	CS	CURB SOCK		SB	SEDIMENT BASIN
	CWA	CONCRETE WASHOUT AREA		SCL	SEDIMENT CONTROL LOG
	DD	DIVERSION DITCH AND DIKE		SF	SILT FENCE
	DW	DEWATERING		SM	SEEDING AND MULCHING
	ECB	EROSION CONTROL BLANKET		SR	SURFACE ROUGHENING
	IF	INLET FILTER		SSA	STABILIZED STAGING AREA
	IP	INLET PROTECTION		ST	SEDIMENT TRAP
	LOC	LIMITS OF CONSTRUCTION		TSD	TEMPORARY SLOPE DRAIN
	MU	MULCHING		VTC	VEHICLE TRACKING CONTROL
	OP	OUTLET PROTECTION			
					FLOW ARROW
					SEDIMENT BASIN OVERFLOW SPILLWAY ARROW
					REMOVE INDICATED BMP



KEYMAP
N.T.S



MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
INITIAL EROSION CONTROL PLAN

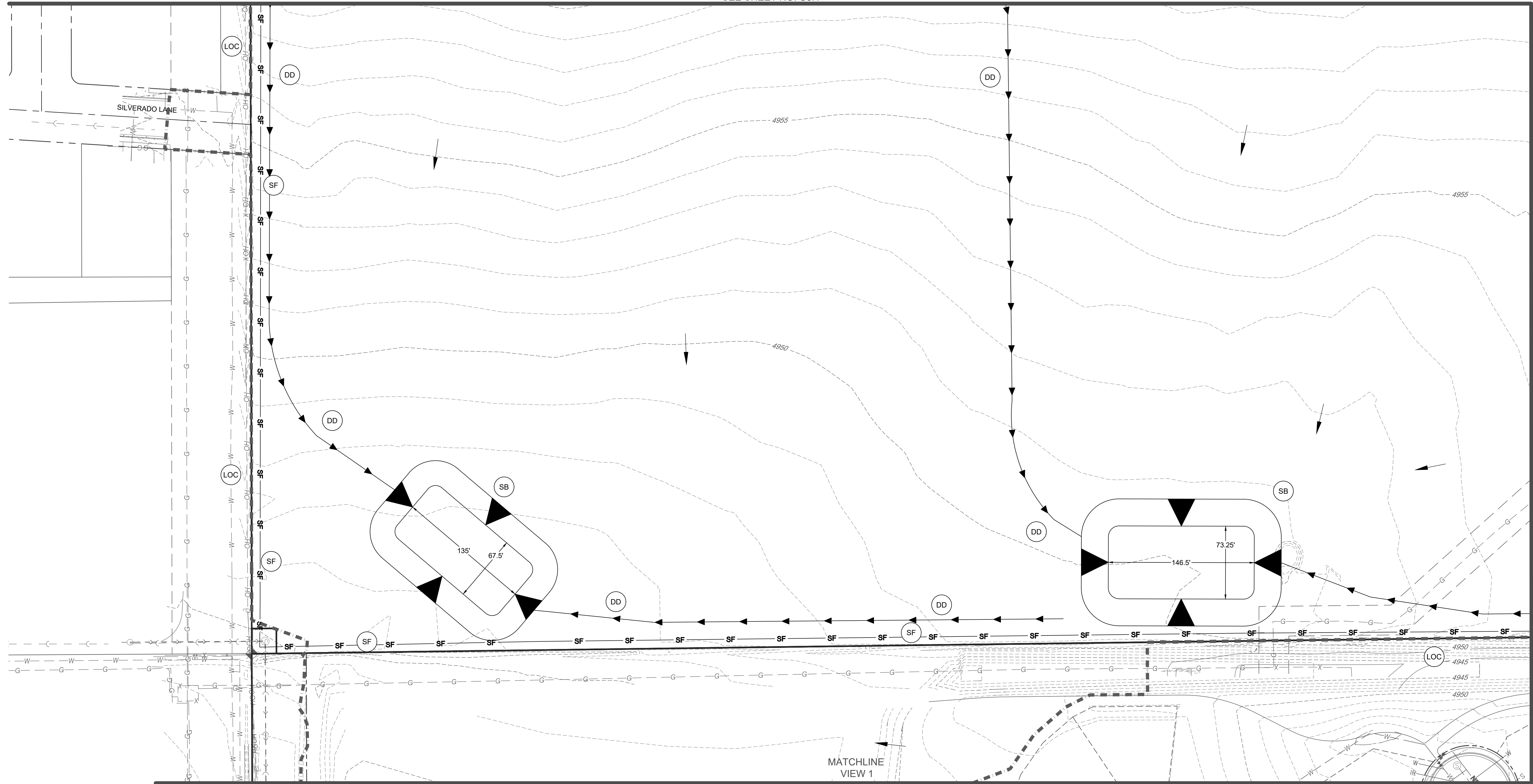
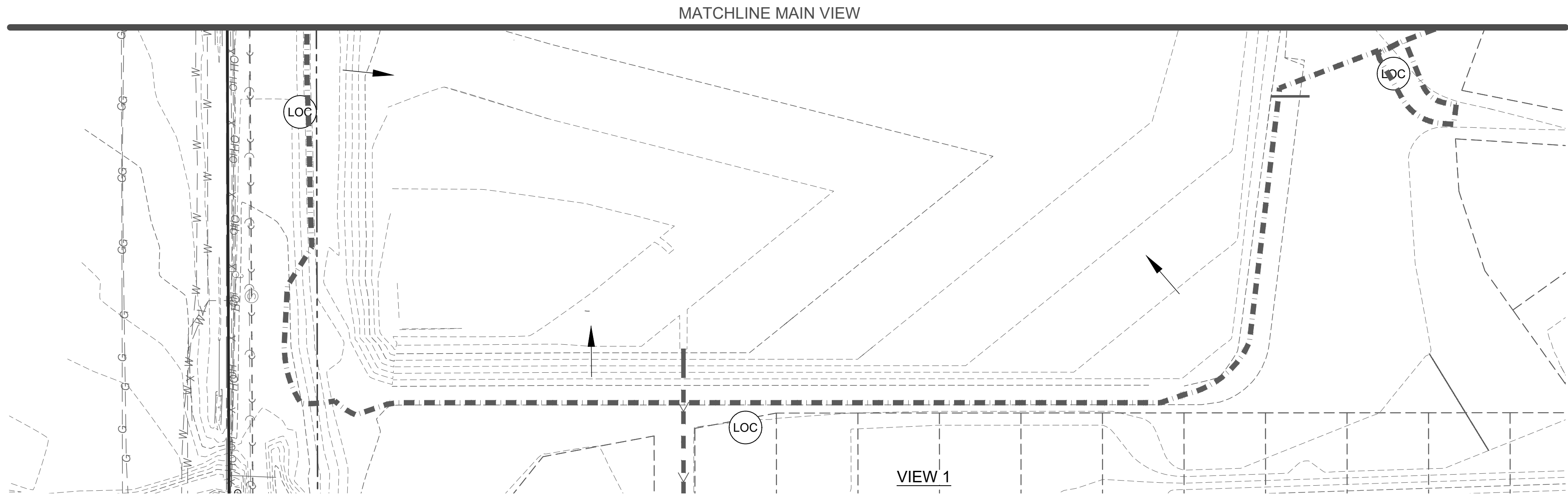
SHEET
C3.2

DATE	NO.	NOTES

DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	N/A
VERT. SCALE	N/A

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MATCHLINE
SEE SHEET NO. C3.4

DATE	NO.	NOTES	DRAWN	BRC
			CHECKED	TJF
			APPROVED	TJF
			PROJECT NO.	19032
			HORIZ SCALE	N/A
			VERT SCALE	N/A

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

INITIAL EROSION CONTROL PLAN

SHEET

C3.3



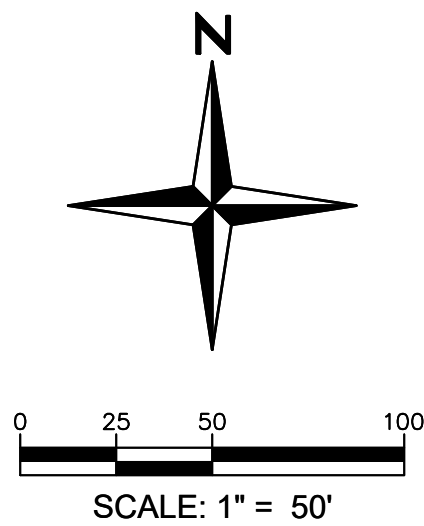
Redland

WHERE GREAT PLACES BEGIN

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1500 West Canal Court
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120 of 724

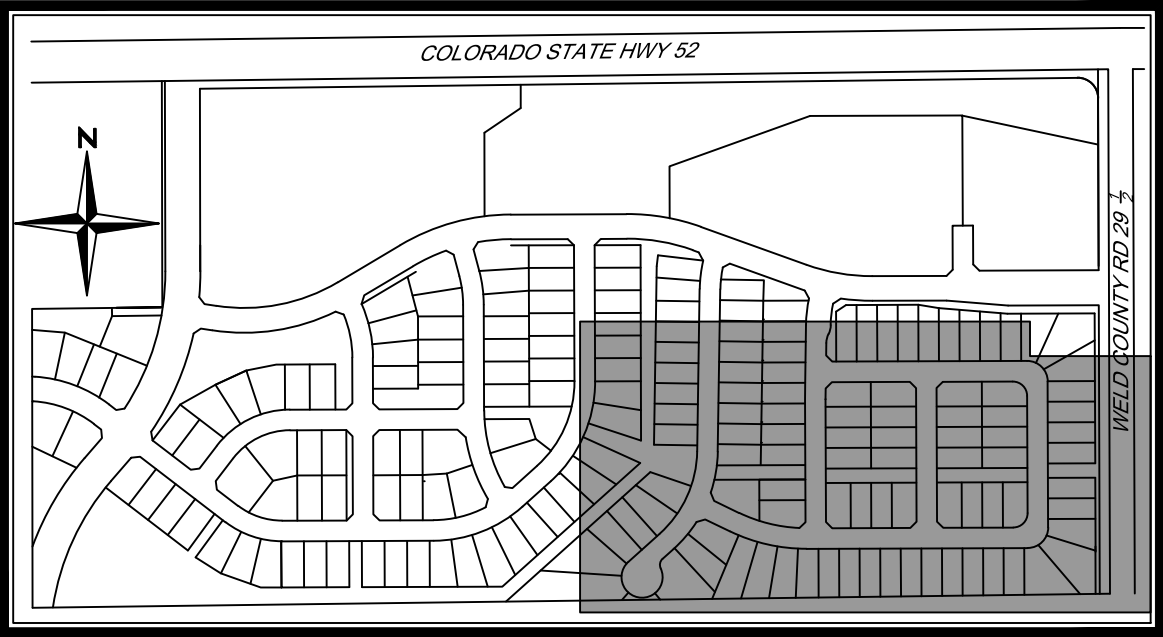
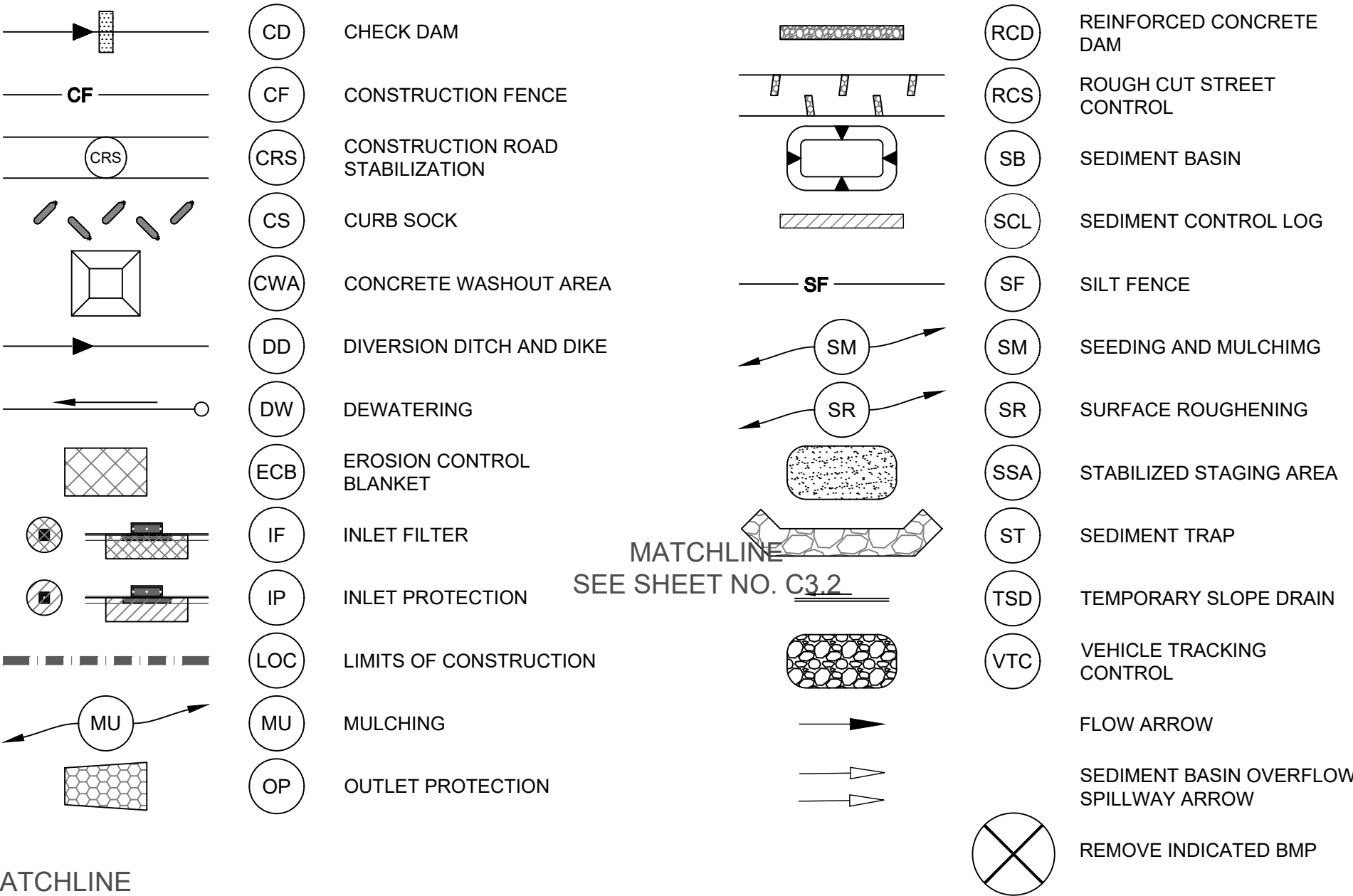
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EROSION CONTROL NOTES:

1. ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
2. GRADES SHOWN FOR ROADS, TRACTS AND OPEN SPACE ARE FINISHED GRADE.
3. CONTRACTOR TO COORDINATE ALL REMOVAL AND/OR RELOCATION OF EXISTING DRY UTILITIES WITH THE APPROPRIATE PUBLIC SERVICE PROVIDERS.
4. CONTRACTOR TO REMOVE AND DISPOSE OF ALL MATERIALS DEMOLISHED INCLUDING BUT NOT LIMITED TO ASPHALT, CONCRETE, PIPES, POLES AND ANY OTHER MATERIALS DUE TO THE INSTALLATION OF PROPOSED IMPROVEMENTS.
5. CONTRACTOR TO LOCATE STABILIZED STORAGE AREA, TRASH, AND TEMPORARY TOILETS AND MARK THEM ON THIS PLAN.

EROSION CONTROL LEGEND



KEYMAP
N.T.S



DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ SCALE	N/A
VERT SCALE	N/A

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
INITIAL EROSION CONTROL PLAN

SHEET

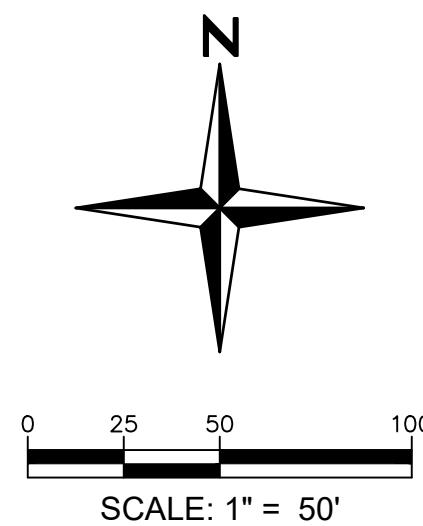
C3.4

CUT 117,500 CY
FILL 123,800 CY
IMPORT 6,300 CY

1. ALL SLOPES ARE 4:1 UNLESS OTHERWISE NOTED

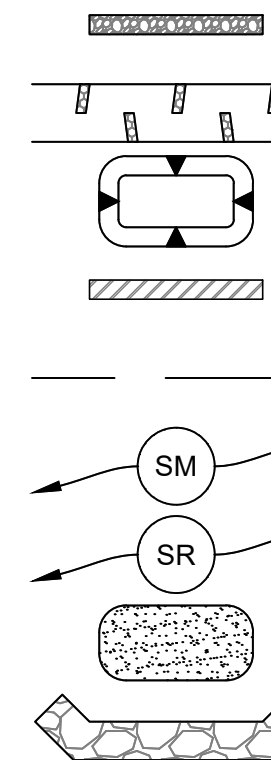
2. SEE SHEET C1.2 - TEMPLATES & SECTIONS FOR OVERLAP TEMPLATES
3. GRADES SHOWN FOR TRACTS AND ROADS ARE FINISHED GRADE.
4. EARTHWORK QUANTITIES ARE APPROXIMATE IN NATURE ONLY AND DO NOT INCLUDE ADJUSTMENTS FACTORS INCLUDING BUT NOT LIMITED TO SHRINK, SWELL, TOPSOIL STRIPPING. QUANTITIES ARE NOT SEPARATED FROM THE ABOVE UNADJUSTED EARTHWORK QUANTITIES.
5. SHADED BMP'S INSTALLED AS SHOWN ON THE INITIAL EROSION CONTROL PLAN SHALL BE LEFT IN PLACE UNLESS OTHERWISE NOTED
6. THE INTERIM EROSION CONTROL PLAN SHALL BE IN PLACE DURING CONSTRUCTION AND UNTIL VEGETATION IS ESTABLISHED UNLESS OTHERWISE NOTED.
7. STREET SWEEPING SHALL BE REQUIRED ON ALL STREETS BOTH ONSITE AND OFFSITE IF MATERIAL IS TRACKED ONTO THE PAVEMENT SURFACE.
8. CONCRETE WASHOUT SHALL BE LOCATED A MINIMUM OF 100' FROM ANY DRAINAGE CONVEYANCE SYSTEM, WATERBODY, WELL AND/OR DRINKING WATER SOURCE. CONCRETE WASHOUT SHALL BE LINED IF THIS IS NOT FEASIBLE.

THE SITE SHALL ONLY BE ACCESSED AT ENTRY POINTS WHERE VTC HAS BEEN INSTALLED. NO OTHER ACCESS POINTS SHALL BE PERMITTED.



Know what's **below**.
Call before you dig.

	CD	CHECK DAM
	CF	CONSTRUCTION FENCE
	CRS	CONSTRUCTION ROAD STABILIZATION
	CS	CURB SOCK
	CWA	CONCRETE WASHOUT AREA
	DD	DIVERSION DITCH AND DIKE
	DW	DEWATERING
	ECB	EROSION CONTROL BLANKET
	IF	INLET FILTER
	IP	INLET PROTECTION
	LOC	LIMITS OF CONSTRUCTION
	MU	MULCHING
	OP	OUTLET PROTECTION
	PS	PERMANENT SEEDING

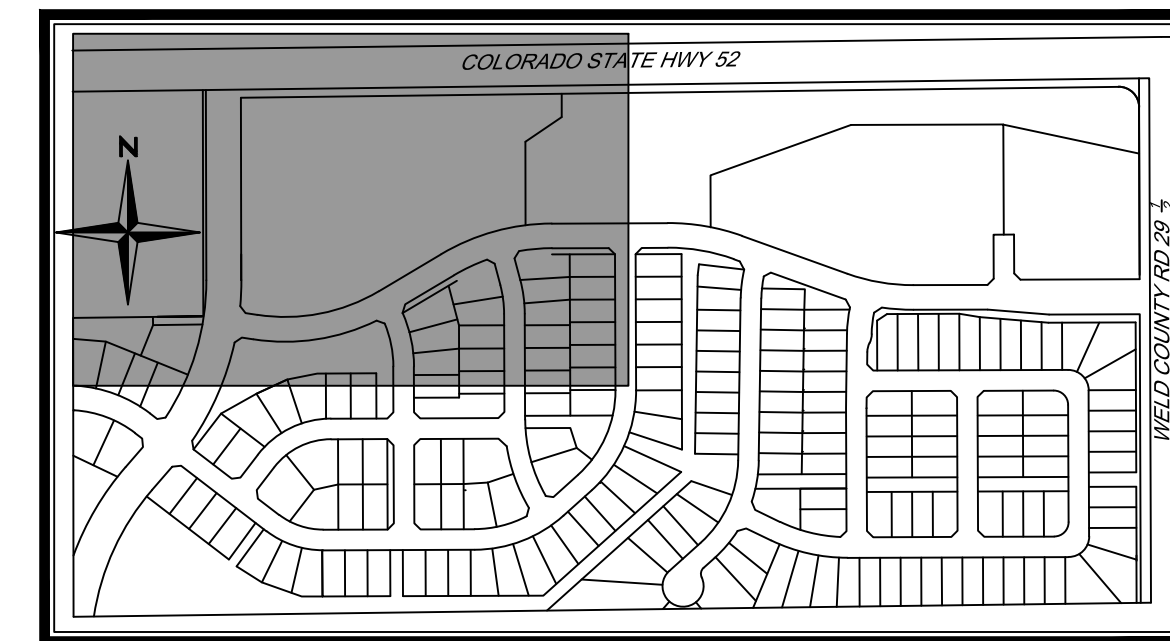


- | | |
|---|--|
|  | REINFORCED CONCRETE DRAIN |
|  | ROUGH CUT STREET CONTROL |
|  | SEDIMENT BASIN |
|  | SEDIMENT CONTROL LOG |
|  | SILT FENCE |
|  | SEEDING AND MULCHING |
|  | SURFACE ROUGHENING |
|  | STABILIZED STAGING AREA |
|  | SEDIMENT TRAP |
|  | TEMPORARY SLOPE DRAIN |
|  | VEHICLE TRACKING CONTROL |
| | FLOW ARROW |
| | SEDIMENT BASIN OVERFLOW SPILLWAY ARROW |
|  | REMOVE INDICATED BMP |

— . — . — . — CUT-FILL LINE



MATCHLINE
SEE SHEET NO. C3.7



KEYMAP
N.T.S

MATCHLINE
SEE SHEET NO. C3.6

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

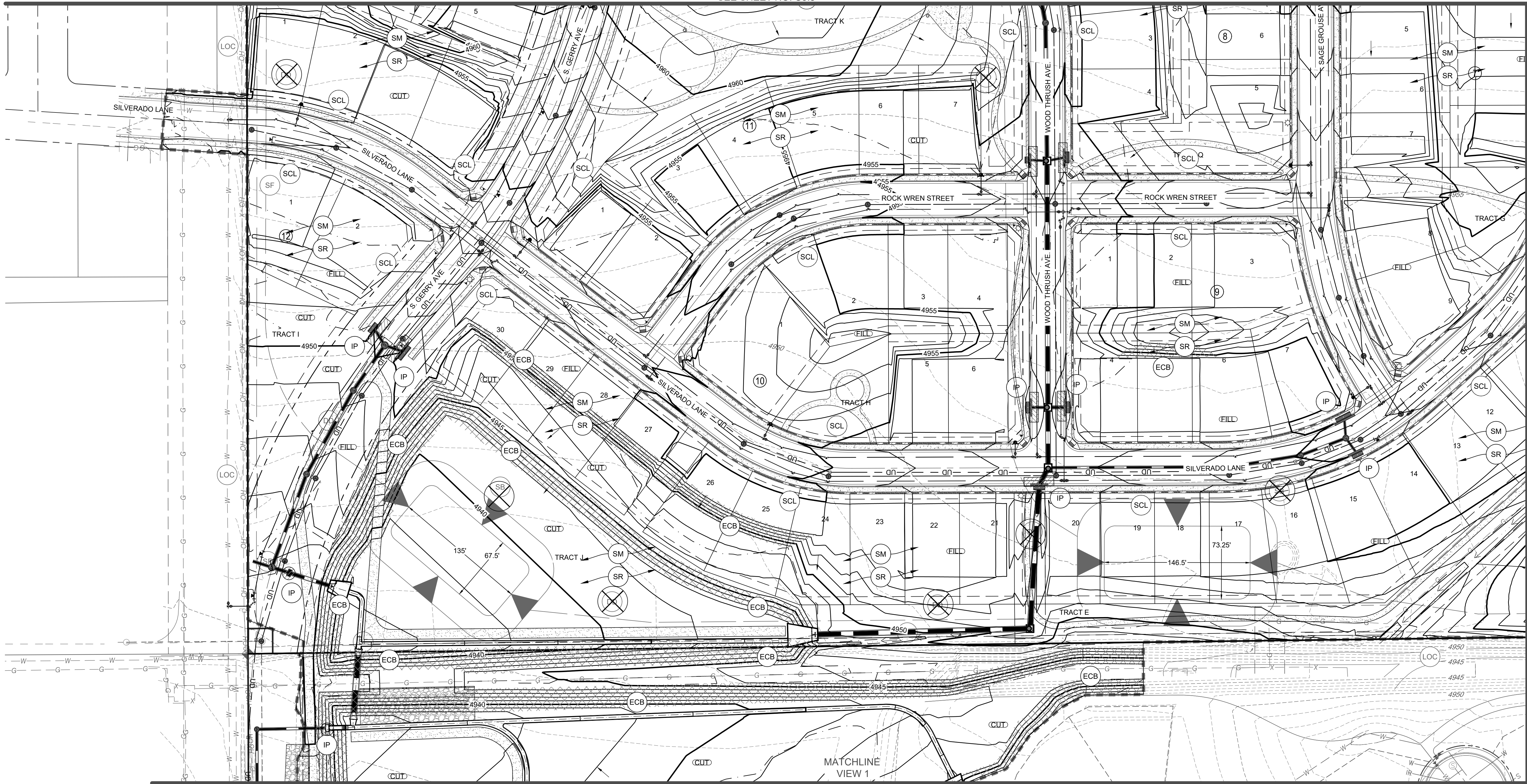
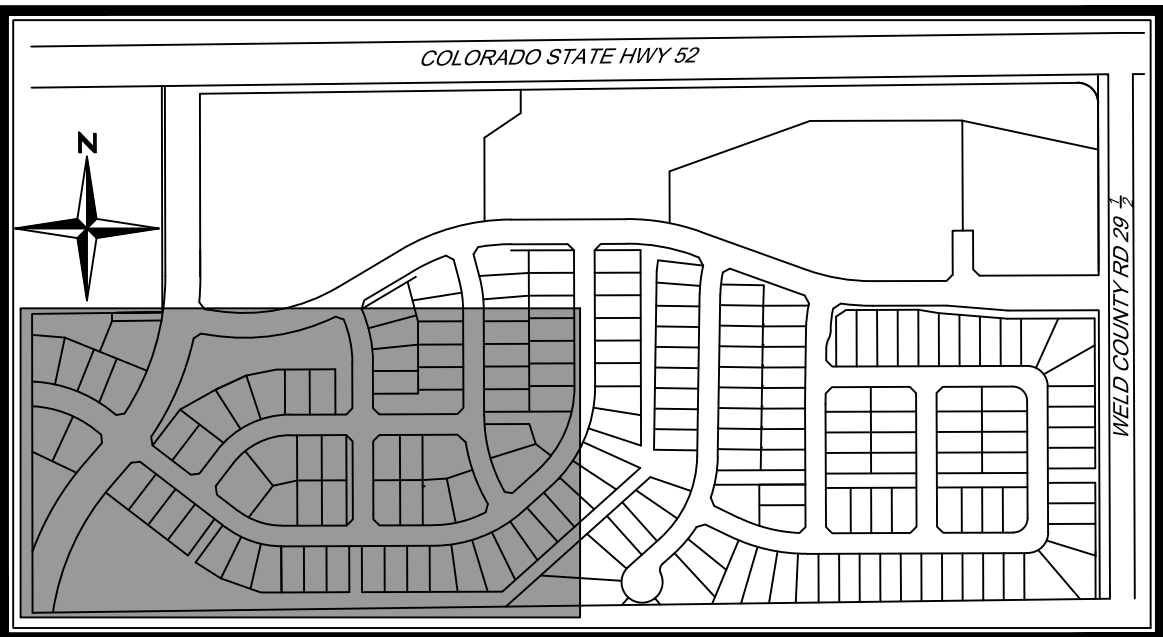
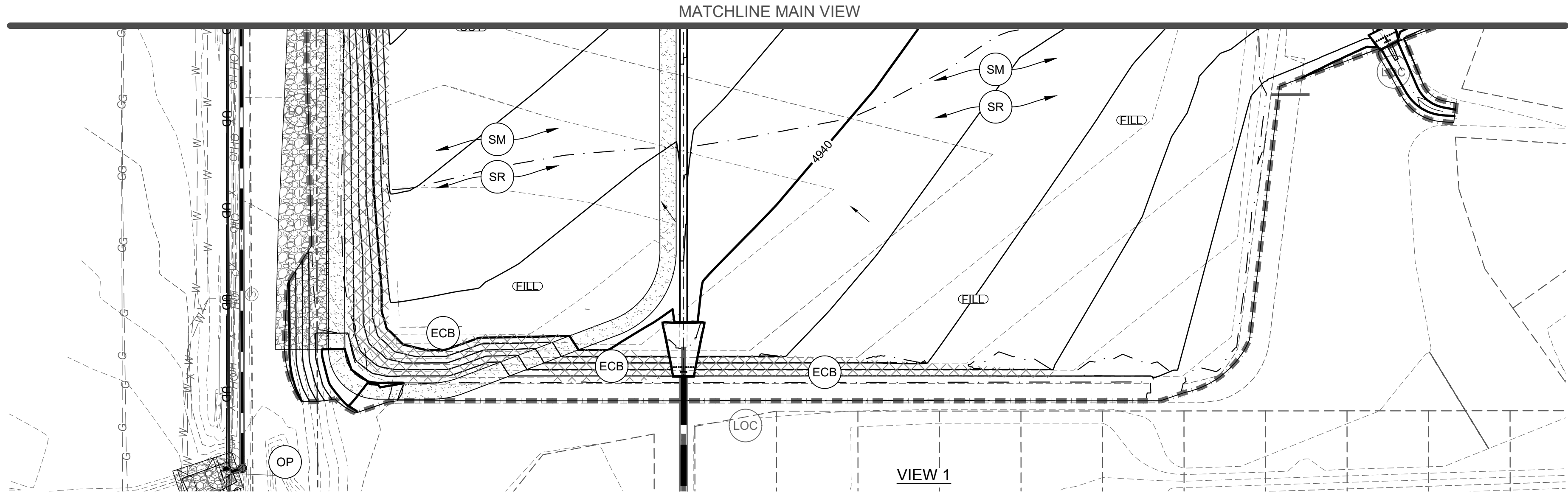
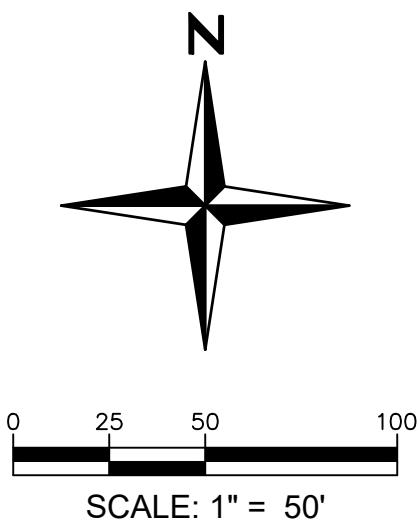
INTERIM EROSION CONTROL PLAN

C3.5

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Littleton, Colorado 80120
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MATCHLINE
SEE SHEET NO. C3.4

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
INTERIM EROSION CONTROL PLAN

DATE	NO.	NOTES

DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	N/A
VERT. SCALE	N/A

SHEET
C3.7

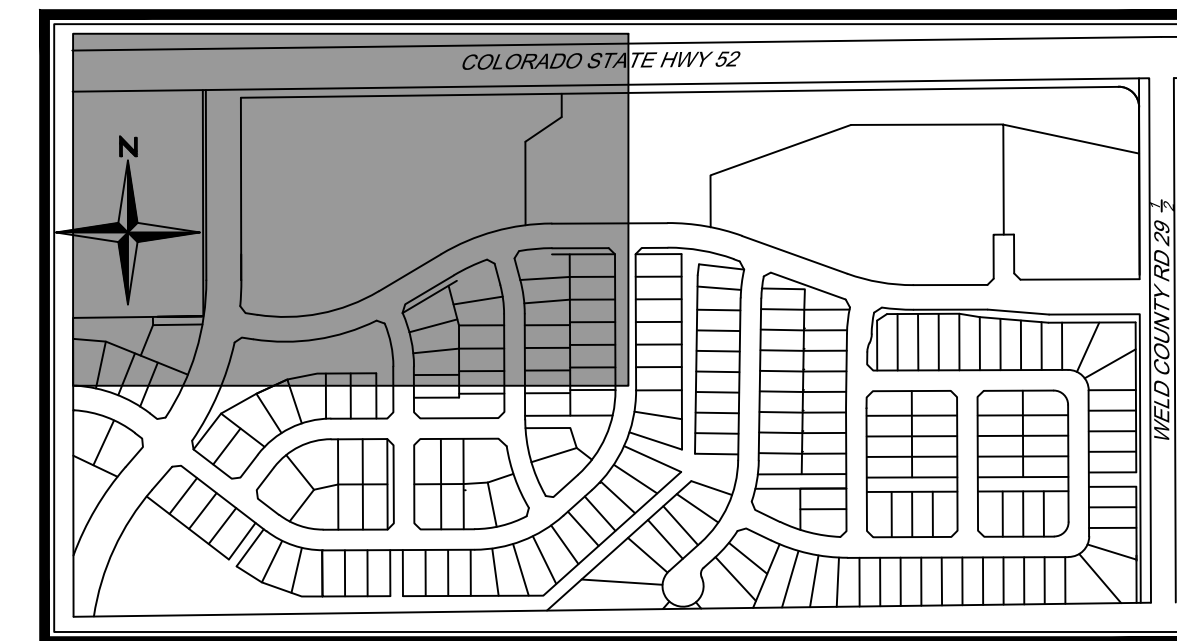
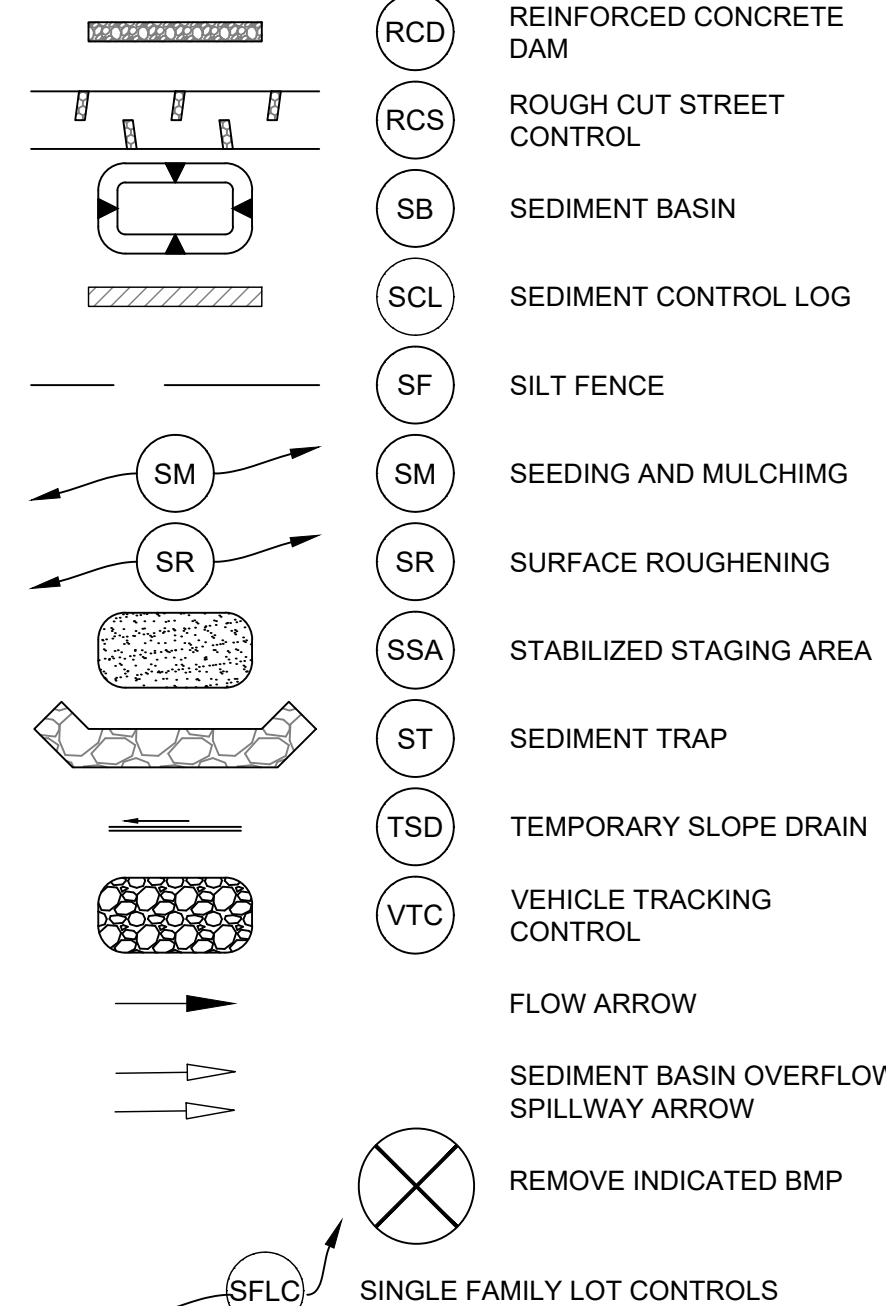
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WHERE GREAT PLACES BEGIN

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1500 West Canal Court
Littleton, Colorado 80120
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1. ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
2. GRADES SHOWN FOR ROADS, TRACTS AND OPEN SPACE AREAS ARE FINISHED GRADE.
3. ANY SLOPE 4:1 OR STEEPER SHALL BE PROTECTED WITH EROSION CONTROL BLANKET.
4. ACCESS AND UTILITY SERVICE TO EXISTING LIFT STATION TO BE UNINTERRUPTED. IF ACCESS OR SERVICE INTERRUPTIONS ARE NECESSARY CONTRACTOR MUST COORDINATE WITH KEN CARYL RANCH WATER AND SANITATION DISTRICT.
5. CONTRACTOR TO LOCATE STABILIZED STORAGE AREA, TRASH, AND TEMPORARY TOILETS AND MARK THEM ON THIS PLAN.
6. ADDITIONAL BMPs MAY BE NECESSARY AND SHOULD BE ADDED AND SHOWN ON THIS PLAN.
7. ONCE UPSTREAM AREAS ARE FULLY STABILIZED BMPs CAN BE REMOVED.
8. REFER TO LANDSCAPE PLANS FOR PERMANENT LANDSCAPING.

	CD	CHECK DAM
	CF	CONSTRUCTION FENCE
	CRS	CONSTRUCTION ROAD STABILIZATION
	CS	CURB SOCK
	CWA	CONCRETE WASHOUT AREA
	DD	DIVERSION DITCH AND DIKE
	DW	DEWATERING
	ECB	EROSION CONTROL BLANKET
	IF	INLET FILTER
	IP	INLET PROTECTION
	LOC	LIMITS OF CONSTRUCTION
	MU	MULCHING
	OP	OUTLET PROTECTION
	PS	PERMANENT SEEDING / LANDSCAPING



KEYMAP
N.T.S



MATCHLINE
SEE SHEET NO. C3.11

MATCHLINE
SEE SHEET NO. C3.2

DATE	NO.	NOTES
		DRAWN BRC
		CHECKED T/JF
		APPROVED T/JF
		PROJECT NO. 19032
		HORIZ SCALE N/A
		VERT SCALE N/A

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENT

FINAL EROSION CONTROL PLAN

SHEET

C3.9



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I:\2019\19032 - Murata Farms\CAD\Sheet Sets\Construction Drawings\19032 - Final Erosion Control Plan.dwg Job: C3.10 FINAL EROSION CONTROL PLAN Aug 20, 2021 1:17pm bballtzer

02550100

SCALE: 1" = 50'

811

Know what's below.
Call before you dig.

EROSION CONTROL NOTES:

- ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
- GRADES SHOWN FOR ROADS, TRACTS AND OPEN SPACE AREAS ARE FINISHED GRADE.
- ANY SLOPE 4:1 OR STEEPER SHALL BE PROTECTED WITH EROSION CONTROL BLANKET.
- ACCESS AND UTILITY SERVICE TO EXISTING LIFT STATION TO BE UNINTERRUPTED. IF ACCESS OR SERVICE INTERRUPTIONS ARE NECESSARY CONTRACTOR MUST COORDINATE WITH KEN CARYL RANCH WATER AND SANITATION DISTRICT.
- CONTRACTOR TO LOCATE STABILIZED STORAGE AREA, TRASH, AND TEMPORARY TOILETS AND MARK THEM ON THIS PLAN.
- ADDITIONAL BMPs MAY BE NECESSARY AND SHOULD BE ADDED AND SHOWN ON THIS PLAN.
- ONCE UPSTREAM AREAS ARE FULLY STABILIZED BMPs CAN BE REMOVED.
- REFER TO LANDSCAPE PLANS FOR PERMANENT LANDSCAPING.

EROSION CONTROL LEGEND

CD

CHECK DAM

CF

CONSTRUCTION FENCE

CRS

CONSTRUCTION ROAD STABILIZATION

CS

CURB SOCK

CWA

CONCRETE WASHOUT AREA

DD

DIVERSION DITCH AND DIKE

DW

DEWATERING

ECB

EROSION CONTROL BLANKET

IF

INLET FILTER

IP

INLET PROTECTION

LOC

LIMITS OF CONSTRUCTION

MU

MULCHING

OP

OUTLET PROTECTION

PS

PERMANENT SEEDING / LANDSCAPING

RCD

REINFORCED CONCRETE DAM

RCS

ROUGH CUT STREET CONTROL

SB

SEDIMENT BASIN

SCL

SEDIMENT CONTROL LOG

SF

SILT FENCE

SM

SEEDING AND MULCHING

SR

SURFACE ROUGHENING

SSA

STABILIZED STAGING AREA

ST

SEDIMENT TRAP

TSD

TEMPORARY SLOPE DRAIN

VTC

VEHICLE TRACKING CONTROL

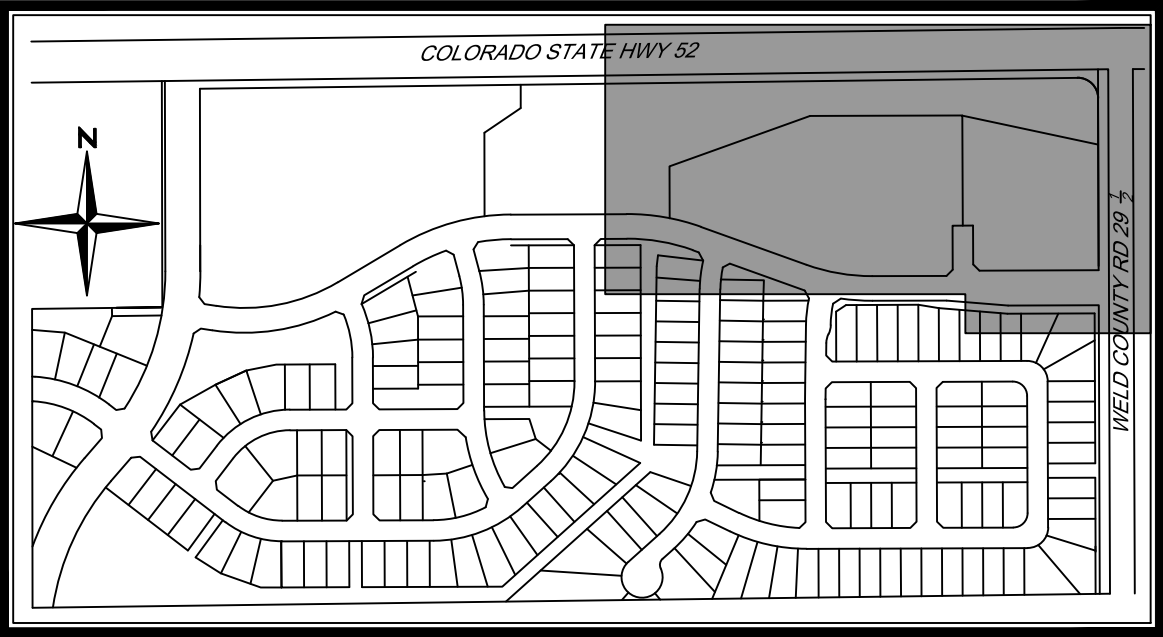
FLOW ARROW

SEDIMENT BASIN OVERFLOW SPILLWAY ARROW

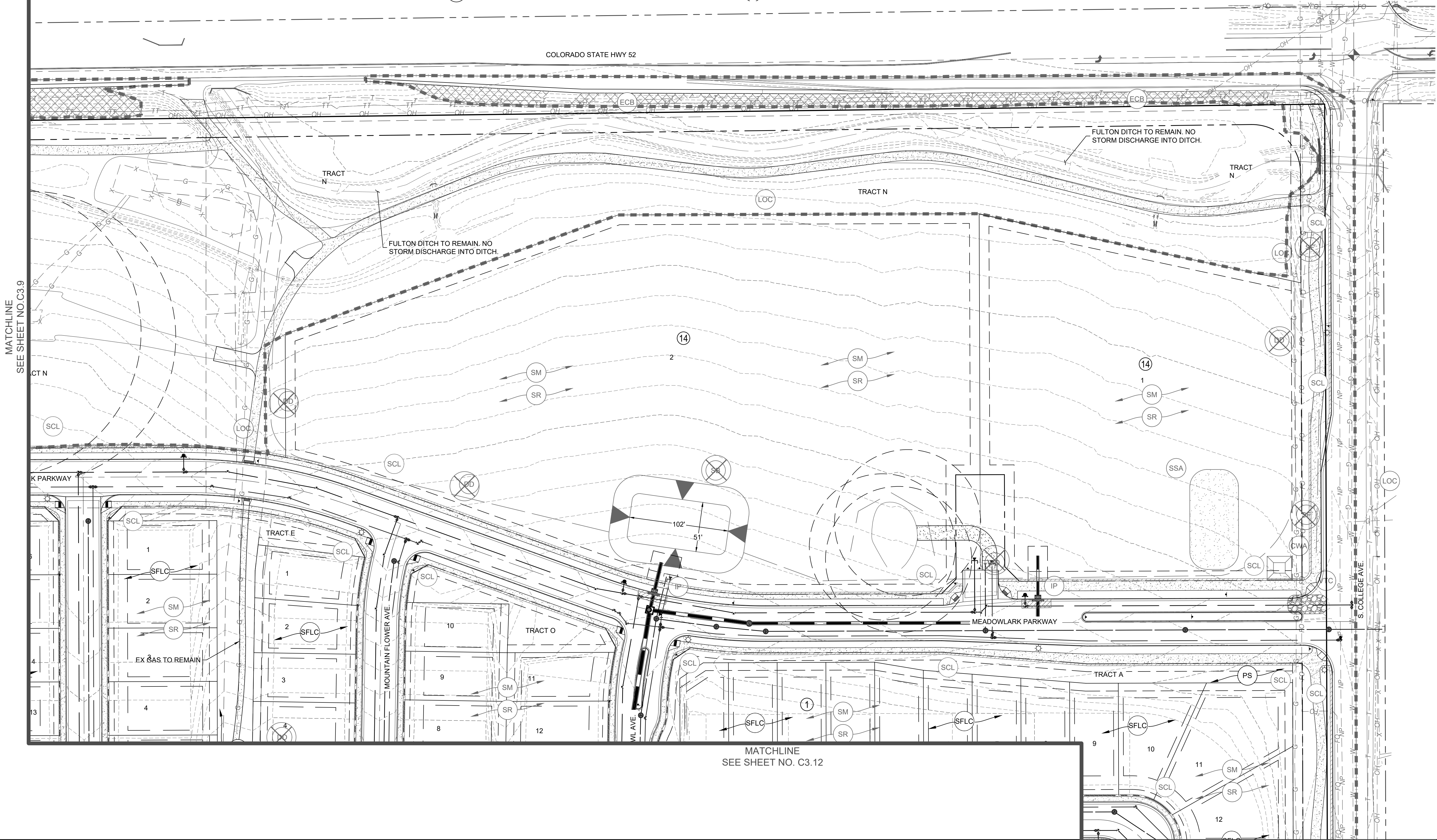
REMOVE INDICATED BMP

SFLC

SINGLE FAMILY LOT CONTROLS



KEYMAP
N.T.S.



MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
FINAL EROSION CONTROL PLAN

SHEET

C3.10

Redland

WHERE GREAT PLACES BEGIN

770.283.4793 Office
1500 West Canal Court
Littleton, Colorado 80120

REDLAND.COM

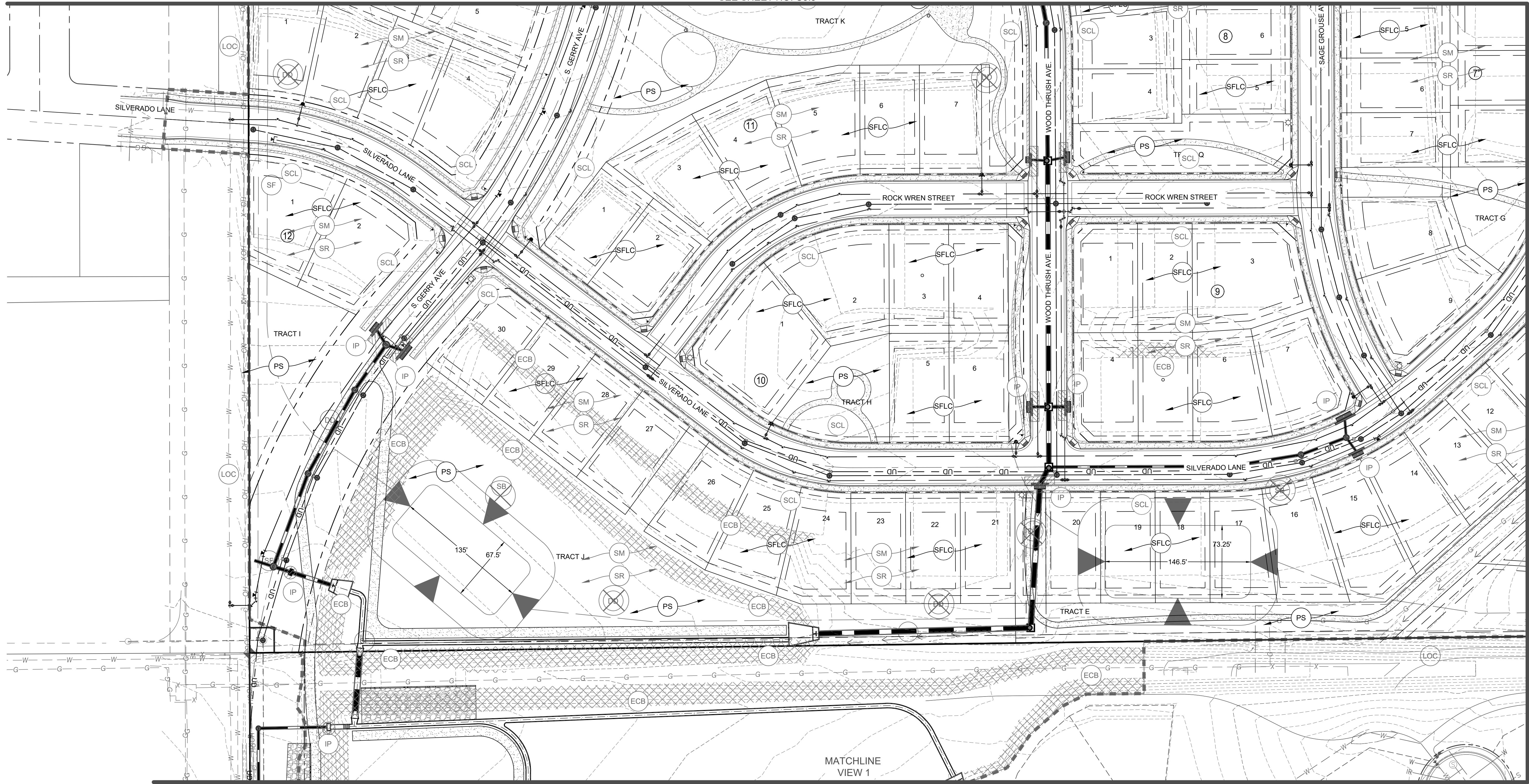
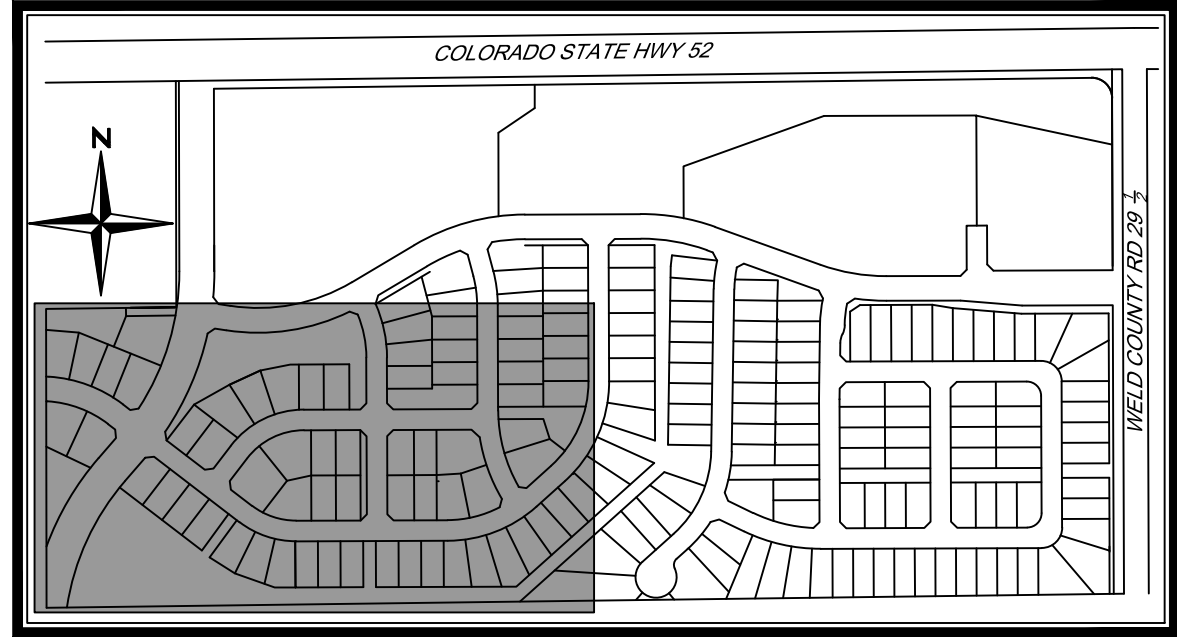
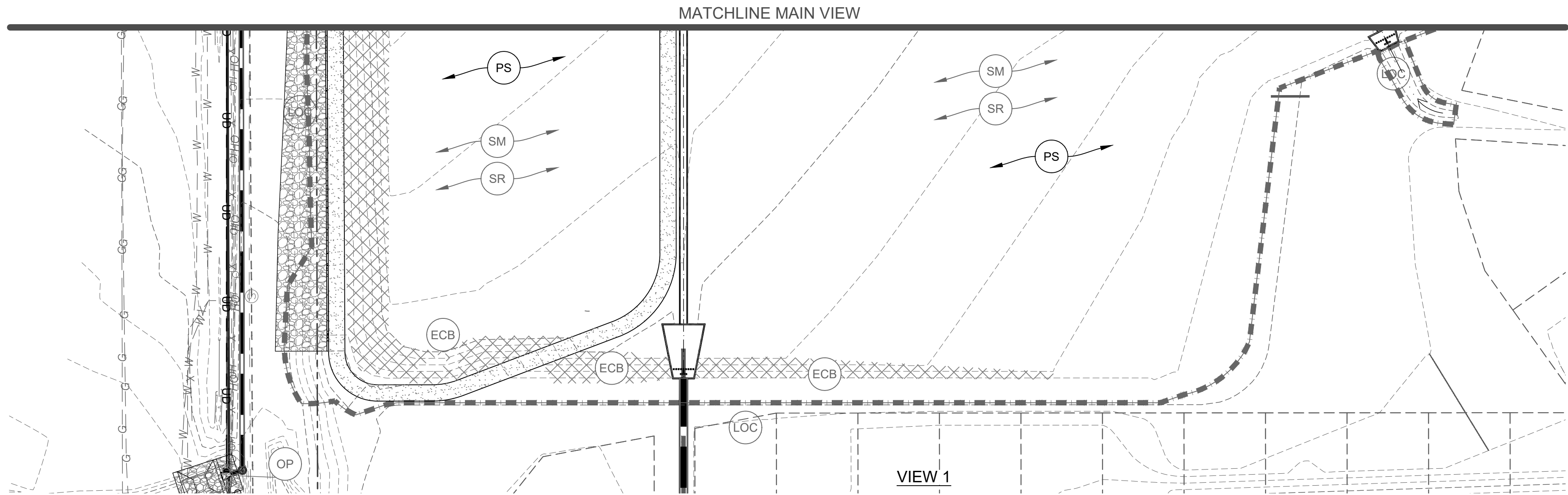
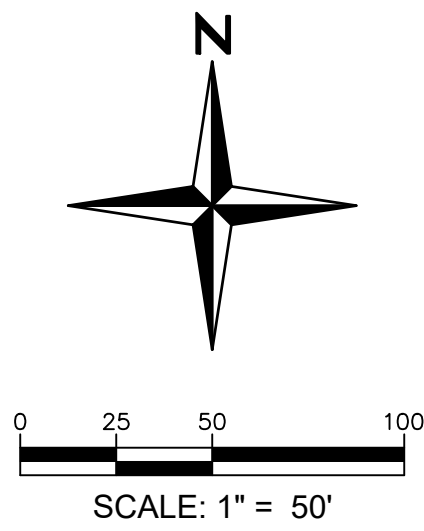
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APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	N/A
VERT. SCALE	N/A

NOTES

DATE

NO.

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MATCHLINE
SEE SHEET NO. C3.12

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
FINAL EROSION CONTROL PLAN

SHEET

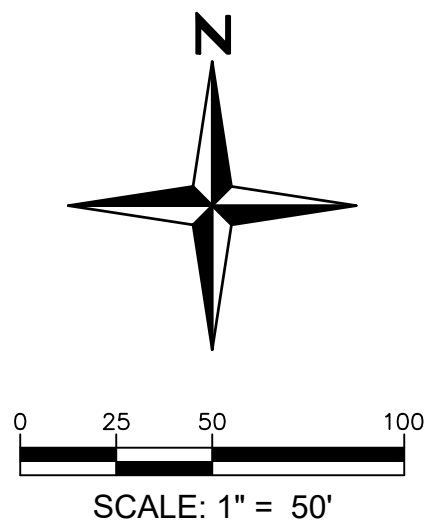
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DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	N/A
VERT. SCALE	N/A

NOTES

DATE

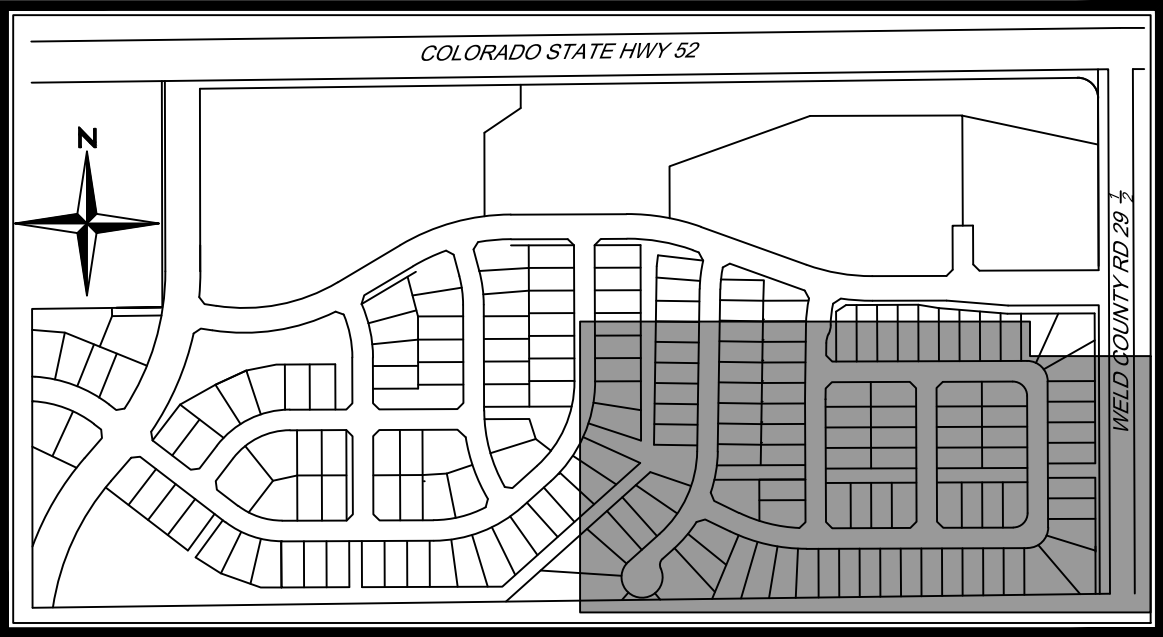
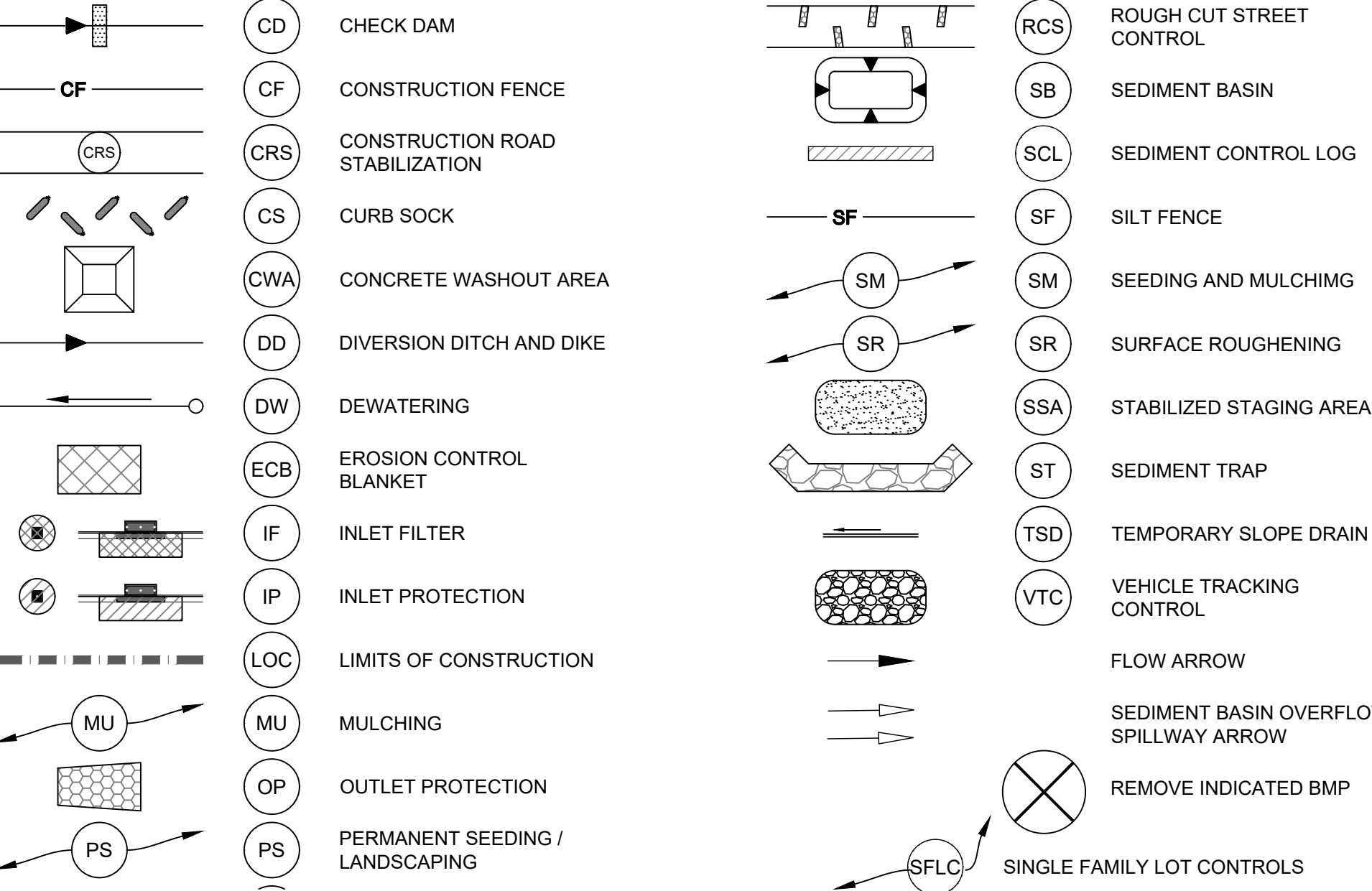
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EROSION CONTROL NOTES:

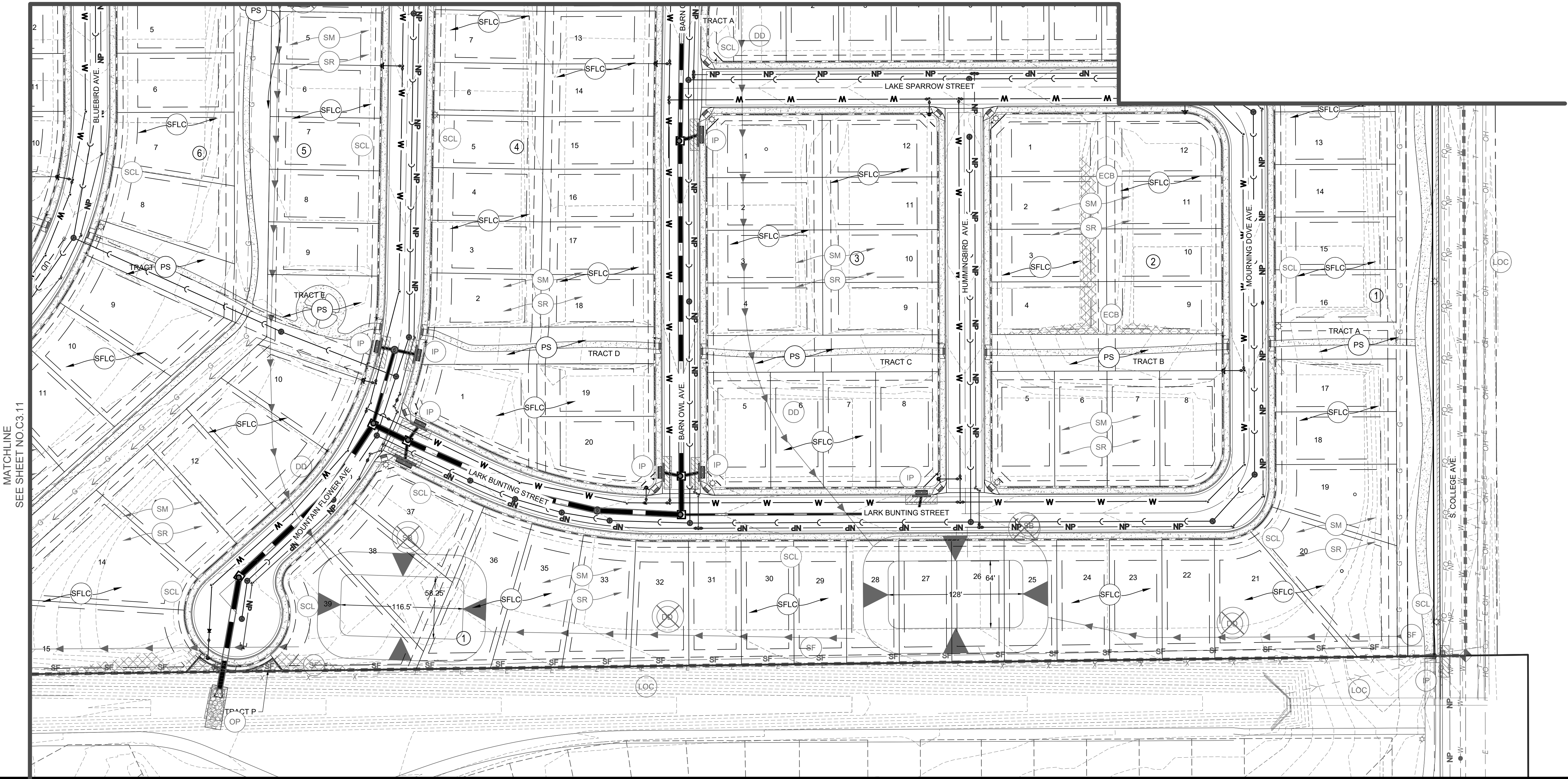
1. ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
2. GRADES SHOWN FOR ROADS, TRACTS AND OPEN SPACE AREAS ARE FINISHED GRADE.
3. ANY SLOPE 4:1 OR STEEPER SHALL BE PROTECTED WITH EROSION CONTROL BLANKET.
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7. ONCE UPSTREAM AREAS ARE FULLY STABILIZED BMPs CAN BE REMOVED.
8. REFER TO LANDSCAPE PLANS FOR PERMANENT LANDSCAPING.

EROSION CONTROL LEGEND



KEYMAP
N.T.S

MATCHLINE
SEE SHEET NO. C3.10



MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
FINAL EROSION CONTROL PLAN

SHEET
C3.12

DATE	NO.	NOTES

DRAWN	BRC

CHECKED	TJF

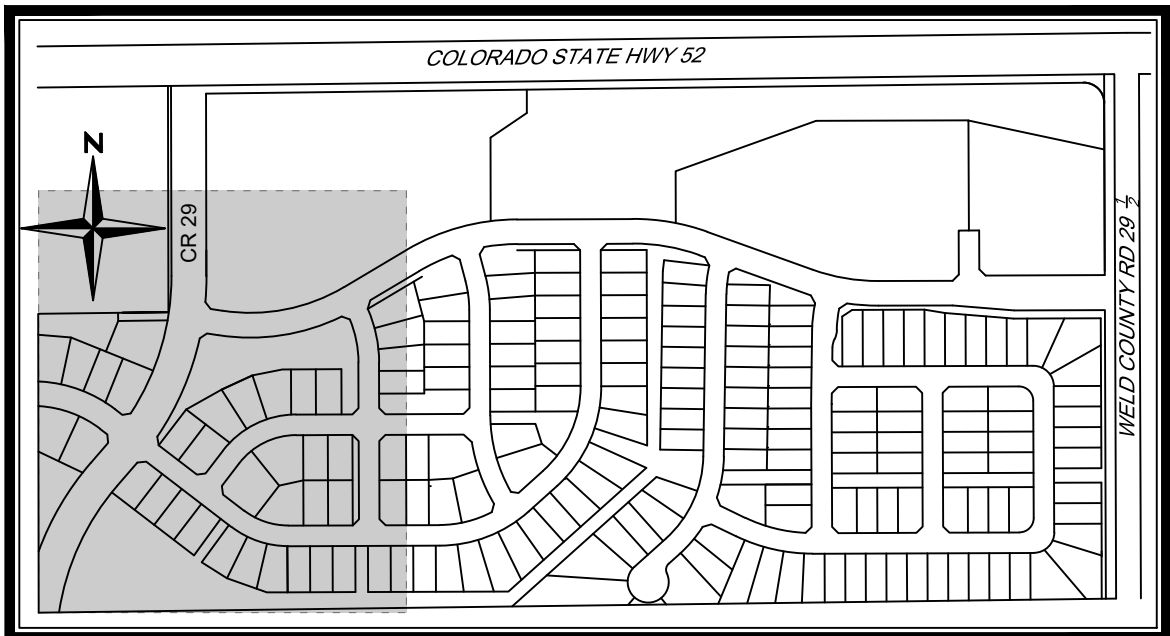
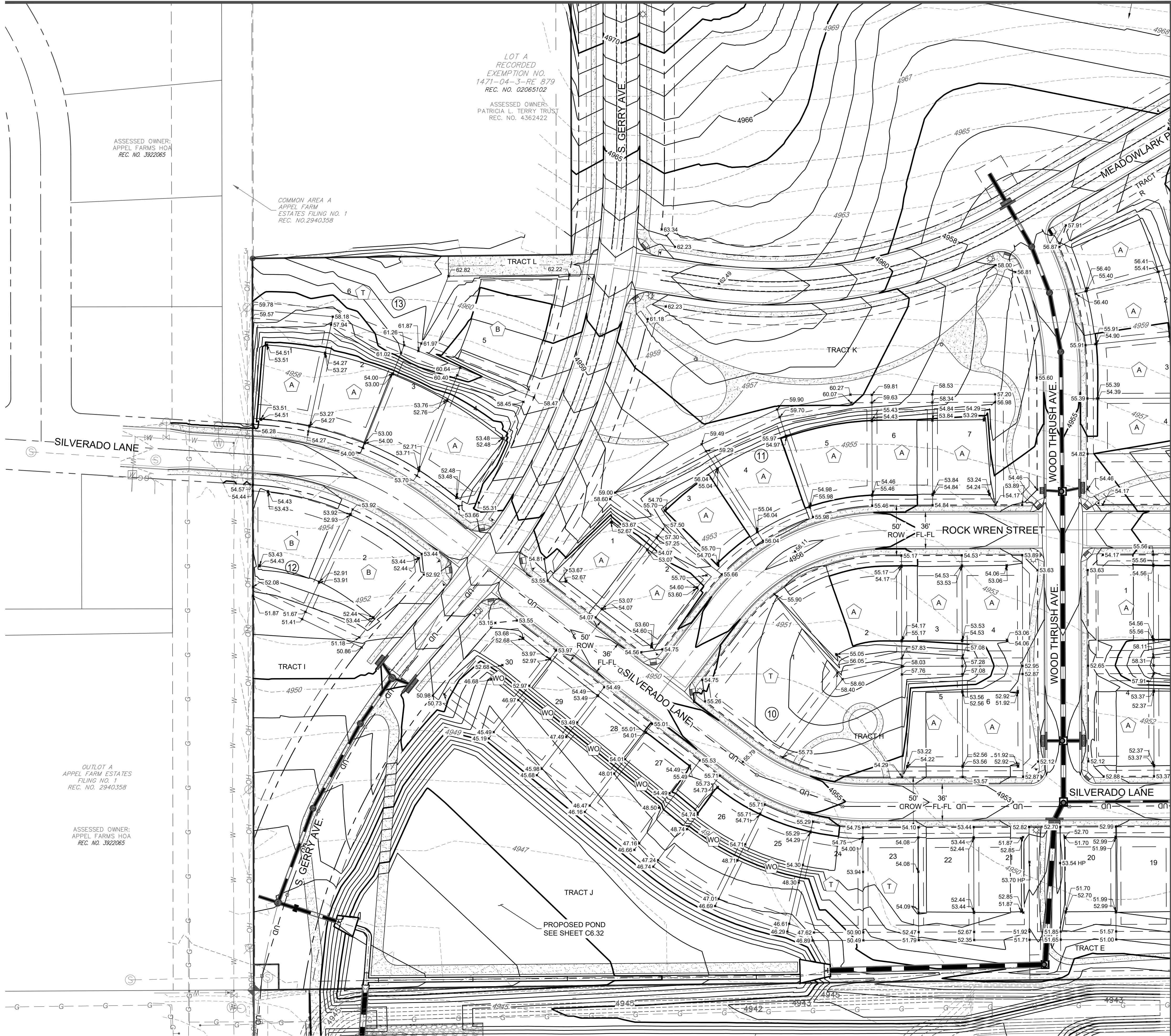
APPROVED	TJF

PROJECT NO.	19032
HORIZ. SCALE	N/A
VERT. SCALE	N/A

Redland
WHERE GREAT PLACES BEGIN
7700 283rd Ave. Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM



REFERENCE LINE SEE SHEET C4.5



KEYMAP
N.T.S

NOTES:

1. ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
2. GRADES SHOWN FOR ROADS, TRACTS AND OPEN SPACE AREAS ARE FINISHED GRADE.
3. REFER TO MOUNTAIN SKY FILING NO 1 PLANS FOR WCR 29 1/2 GRADING AND REGIONAL CHANNEL.
4. SEE SHEET C1.2 FOR LOT TEMPLATES

LEGEND

- 5281 --- EXISTING MINOR CONTOUR
- 5280 --- EXISTING MAJOR CONTOUR
- 5281 --- PROPOSED MINOR CONTOUR
- 5280 --- PROPOSED MAJOR CONTOUR
- PROPOSED STORM SEWER LINE
- PROPOSED MANHOLE
- PROPOSED BOX BASE MANHOLE
- PROPOSED INLET
- PROPOSED FLARED END SECTION
- △ TYPE "A" LOT GRADING
- △ TYPE "B" LOT GRADING
- △ TYPE "T" LOT GRADING
- △ TYPE "WO" LOT GRADING

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
OVERLOT GRADING PLAN

SHEET

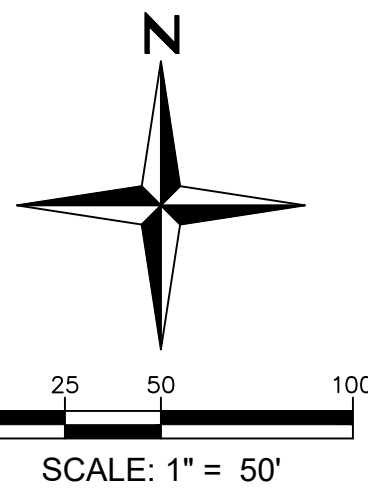
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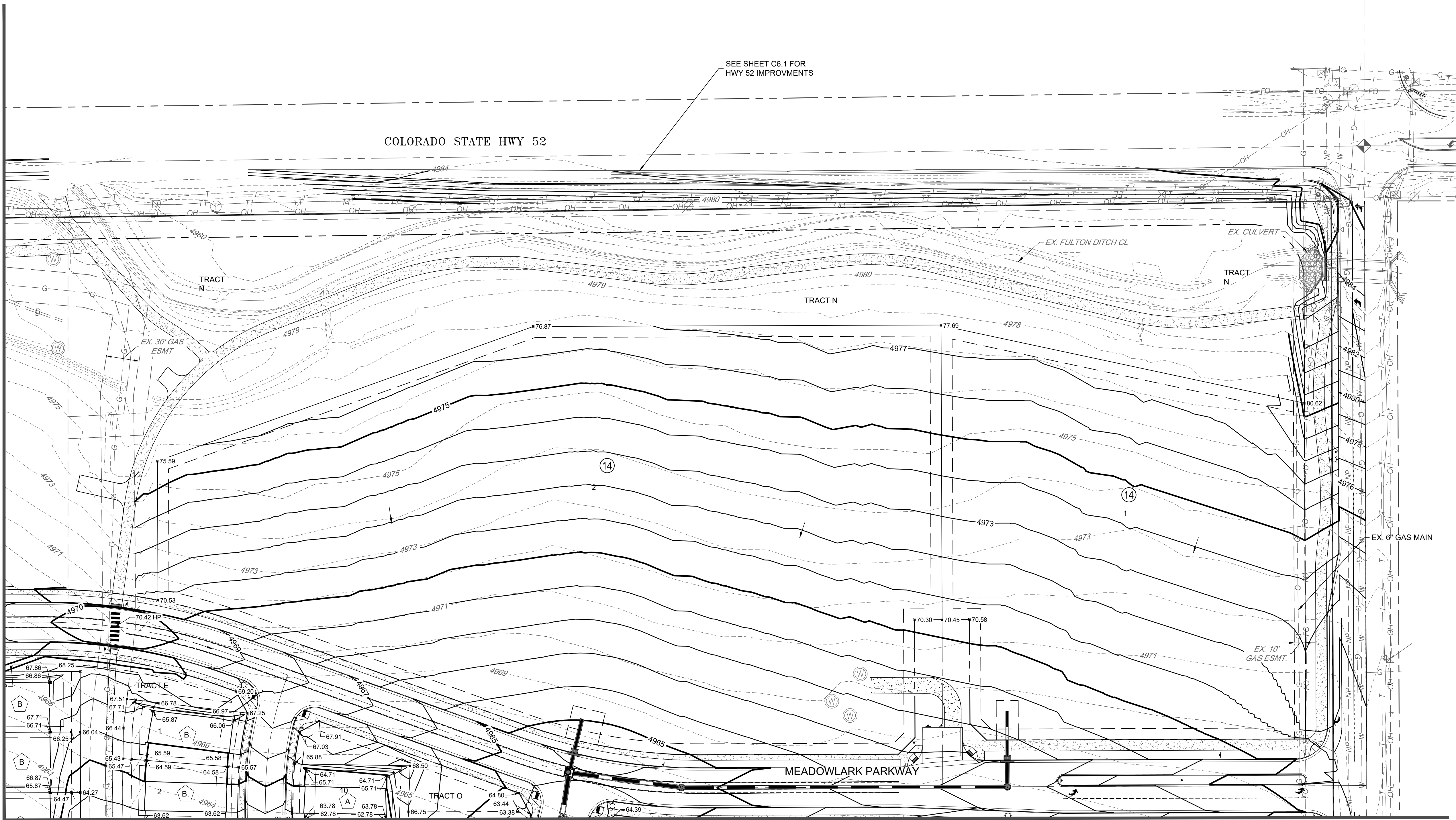
1. ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
2. GRADES SHOWN FOR ROADS, TRACTS AND OPEN SPACE AREAS ARE FINISHED GRADE.
3. REFER TO MOUNTAIN SKY FILING NO 1 PLANS FOR WCR 29 ½ GRADING AND REGIONAL CHANNEL.
4. SEE SHEET C1.2 FOR LOT TEMPLATES

	EXISTING MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED STORM SEWER LINE
	PROPOSED MANHOLE
	PROPOSED BOX BASE MANHOLE
	PROPOSED INLET
	PROPOSED FLARED END SECTION
	TYPE "A" LOT GRADING
	TYPE "B" LOT GRADING
	TYPE "T" LOT GRADING
	TYPE "WO" LOT GRADING

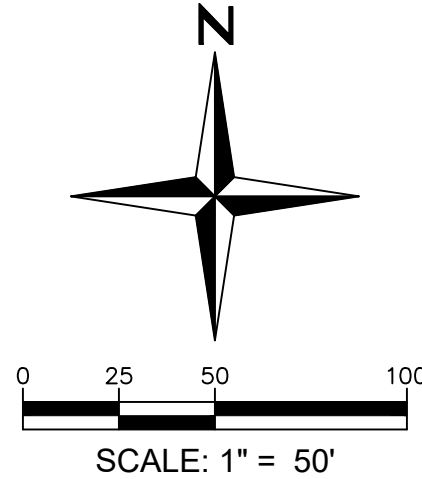


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REFERENCE LINE SEE SHEET C4.5



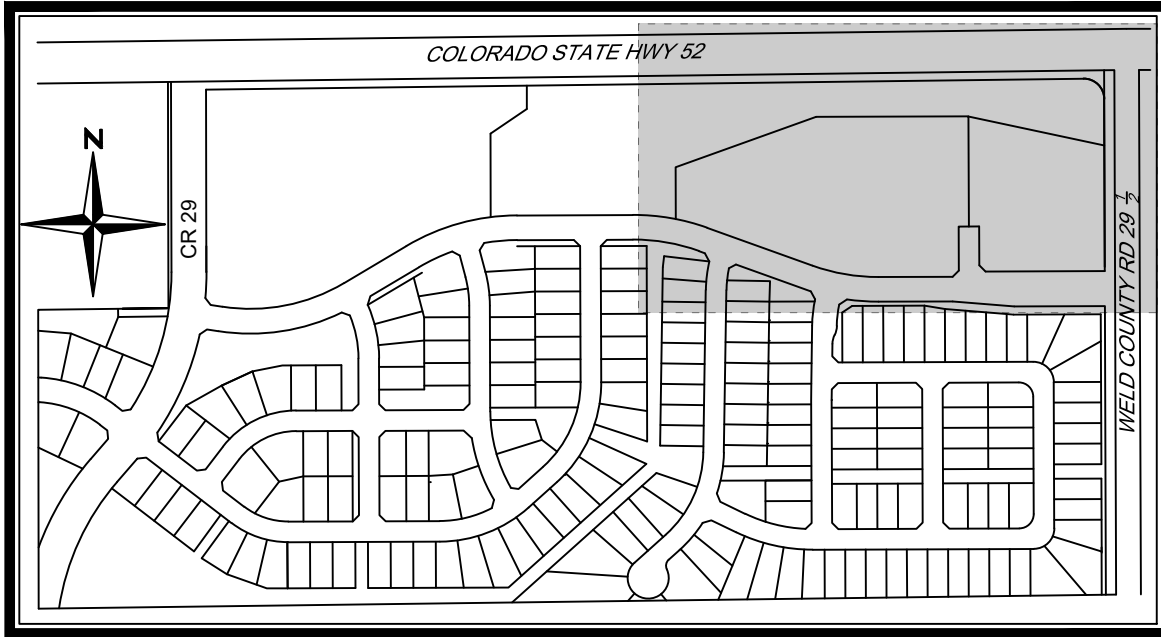
REFERENCE LINE SEE SHEET C4.3



LEGEND	
	EXISTING MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED STORM SEWER LINE
	PROPOSED MANHOLE
	PROPOSED BOX BASE MANHOLE
	PROPOSED INLET
	PROPOSED FLARED END SECTION
	TYPE "A" LOT GRADING
	TYPE "B" LOT GRADING
	TYPE "T" LOT GRADING
	TYPE "WO" LOT GRADING

NOTES:

1. ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
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3. REFER TO MOUNTAIN SKY FILING NO 1 PLANS FOR WCR 29 ½ GRADING AND REGIONAL CHANNEL.
4. SEE SHEET C1.2 FOR LOT TEMPLATES



KEYMAP
N.T.S

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

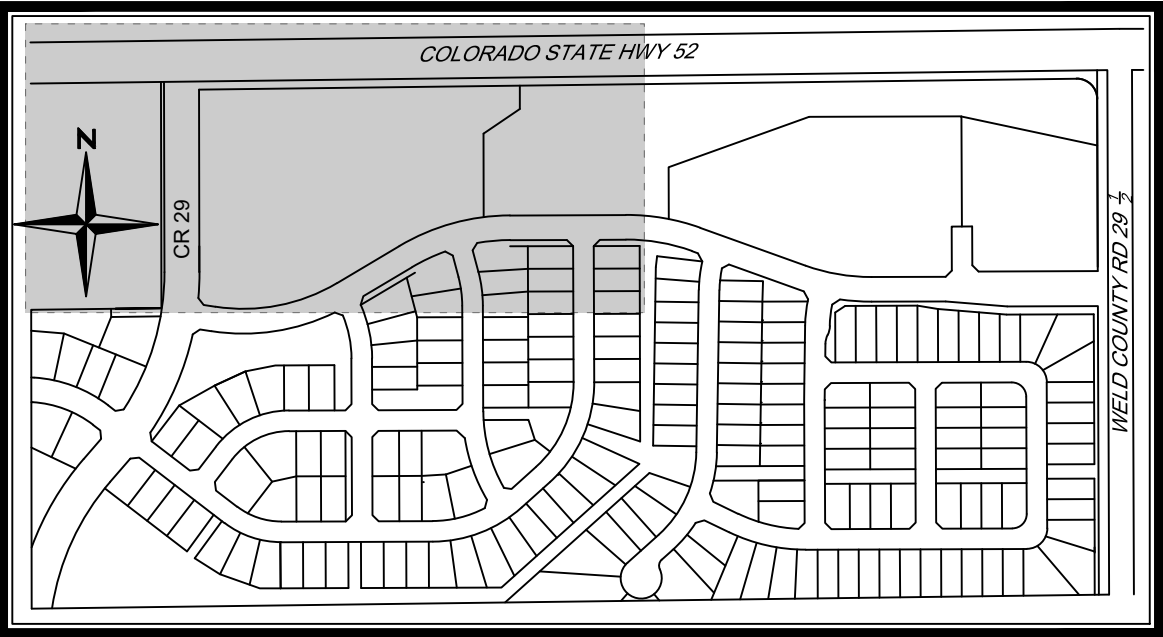
OVERLOT GRADING PLAN

SHEET

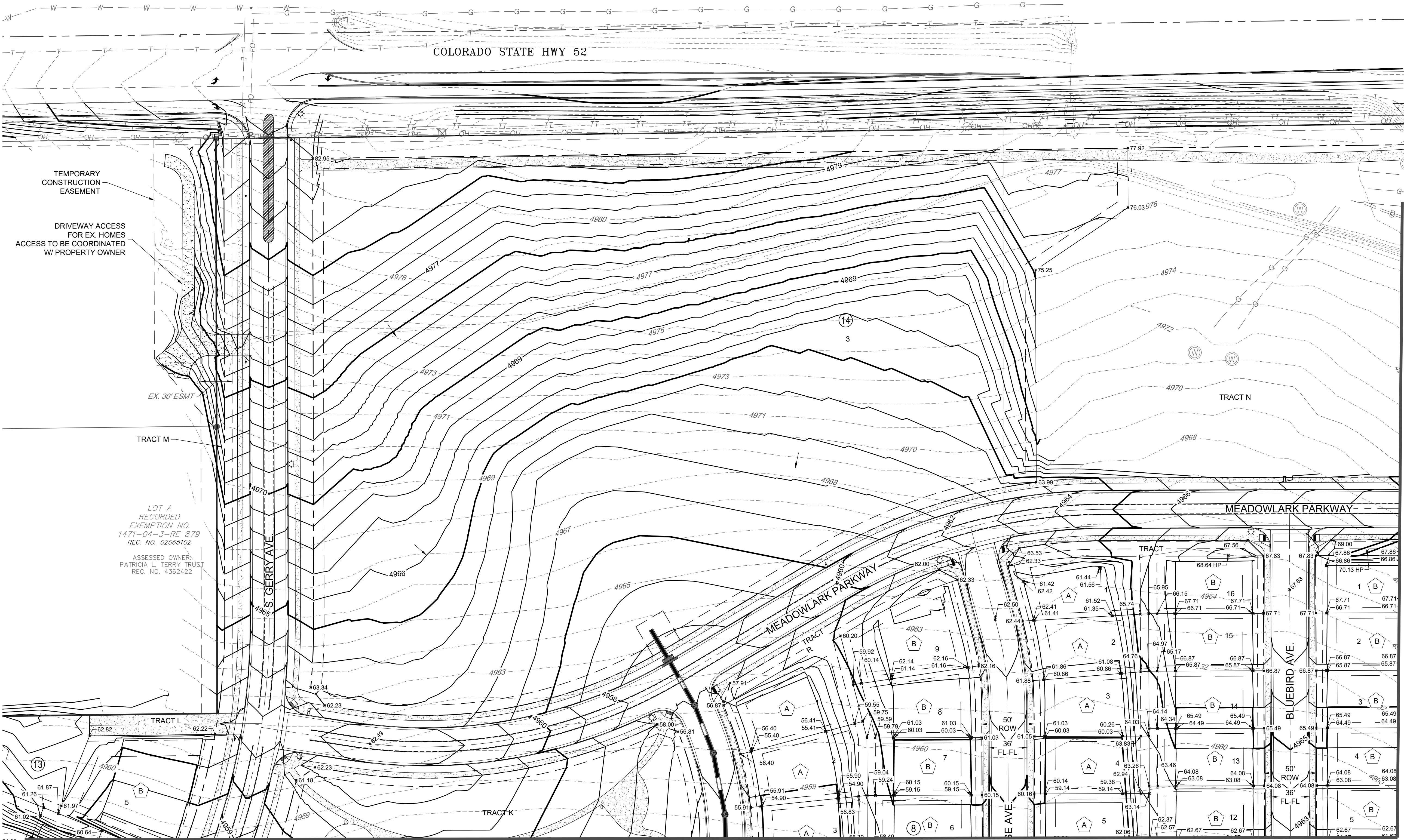
C4.4

LEGEND	
	EXISTING MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED STORM SEWER LINE
	PROPOSED MANHOLE
	PROPOSED BOX BASE MANHOLE
	PROPOSED INLET
	PROPOSED FLARED END SECTION
	TYPE "A" LOT GRADING
	TYPE "B" LOT GRADING
	TYPE "T" LOT GRADING
	TYPE "WO" LOT GRADING

- NOTES:
1. ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
 2. GRADES SHOWN FOR ROADS, TRACTS AND OPEN SPACE AREAS ARE FINISHED GRADE.
 3. REFER TO MOUNTAIN SKY FILING NO 1 PLANS FOR WCR 29 ½ GRADING AND REGIONAL CHANNEL.
 4. SEE SHEET C1.2 FOR LOT TEMPLATES



KEYMAP
N.T.S



REFERENCE LINE SEE SHEET C4.4

REFERENCE LINE SEE SHEET C4.1

**Redland**
WHERE GREAT PLACES BEGIN

7700 283, 4793 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

DATE	NO.	NOTES

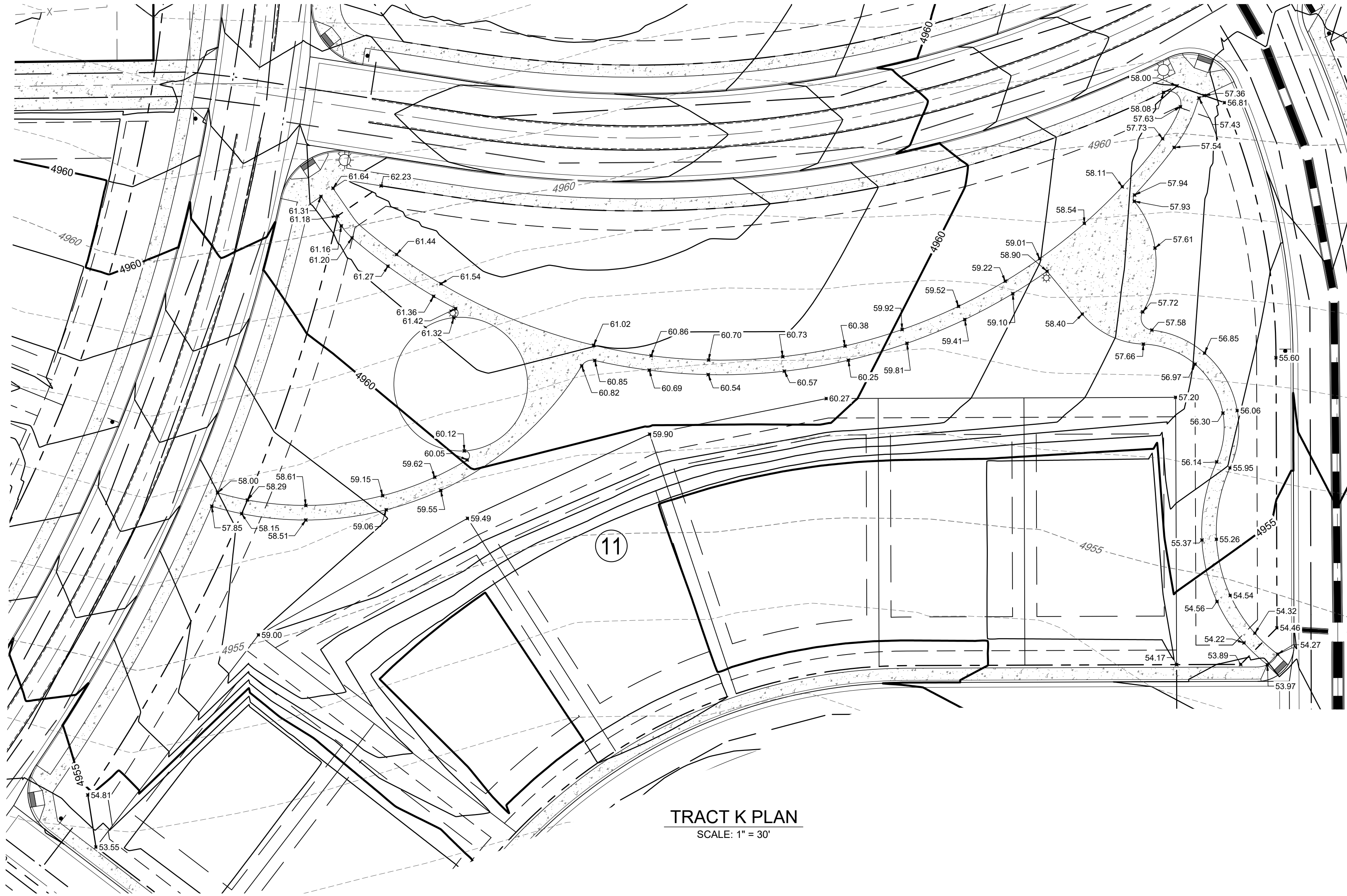
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CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	
VERT. SCALE	

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
OVERLOT GRADING PLAN

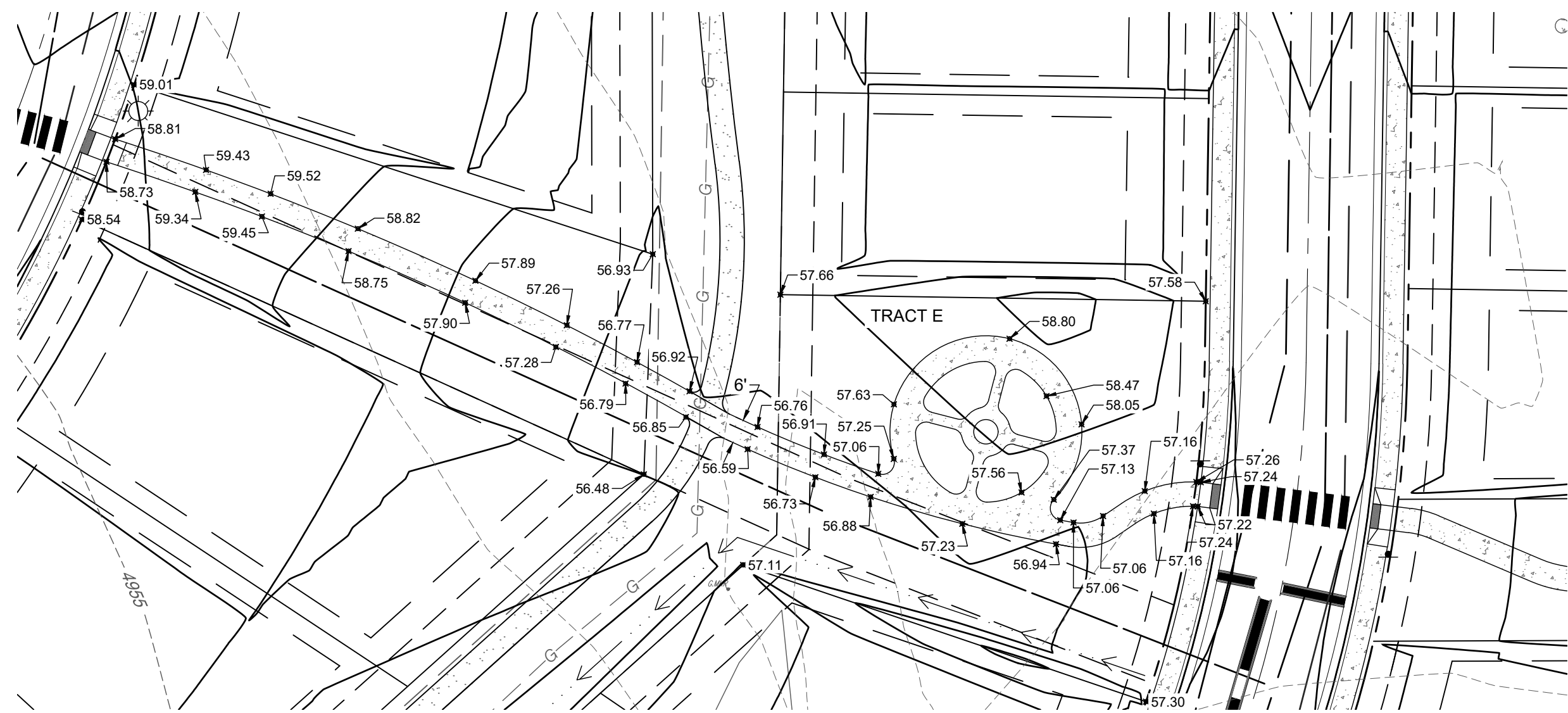
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C4.5

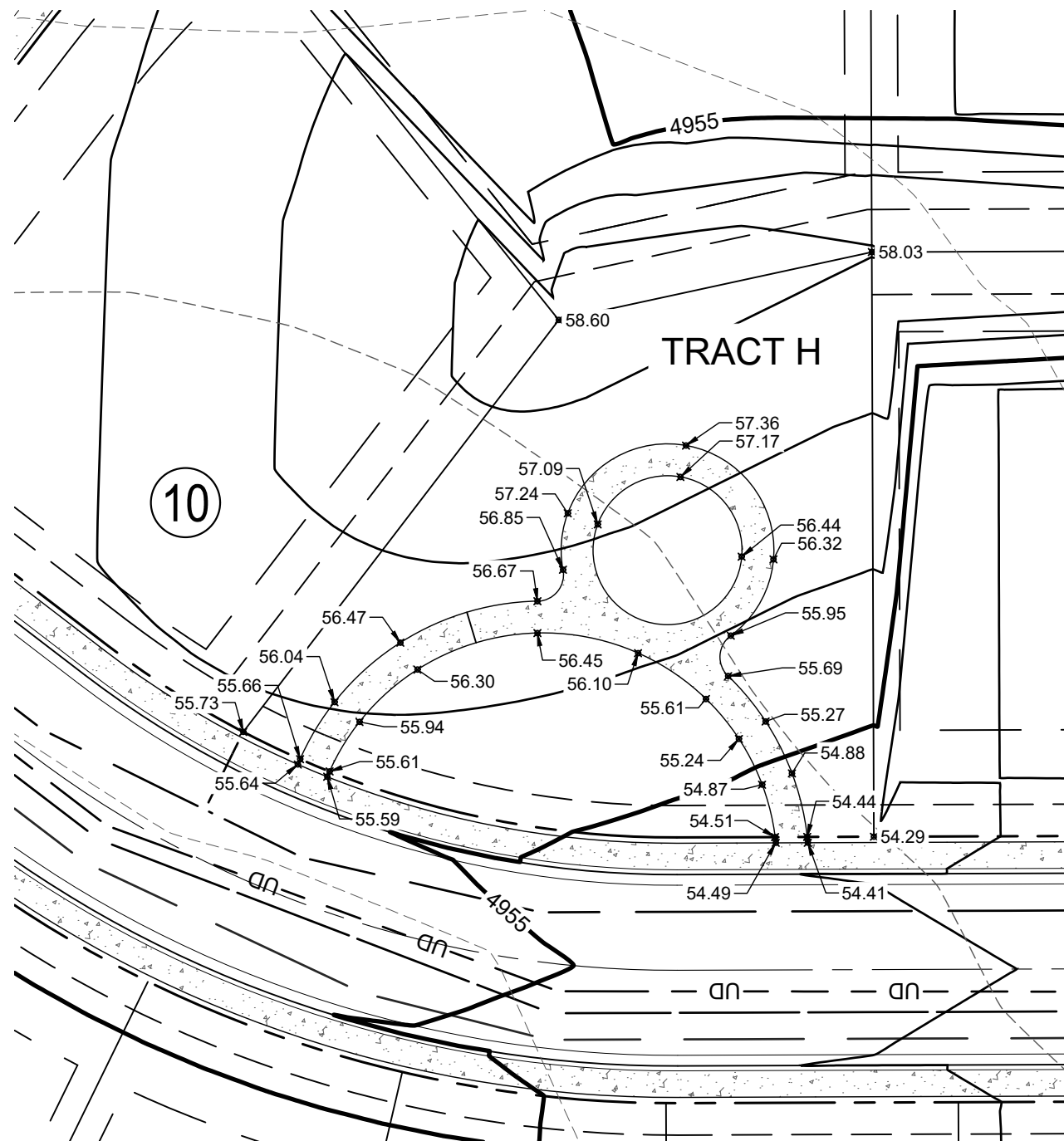
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TRACT K PLAN
SCALE: 1" = 30'



TRACT E PLAN
SCALE: 1" = 30'



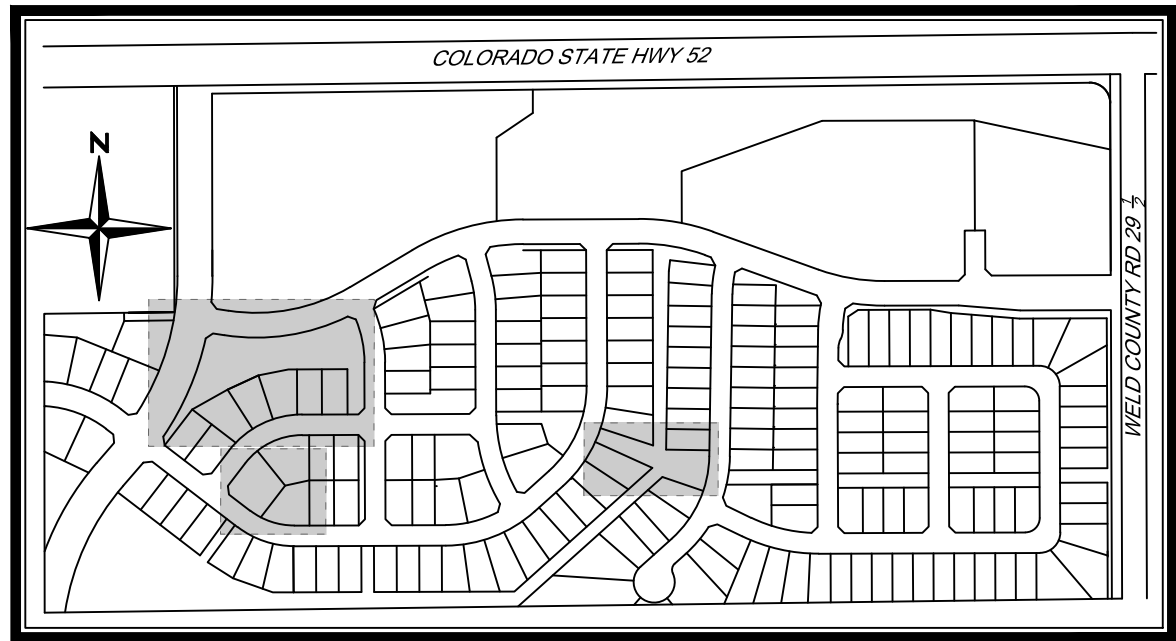
TRACT H PLAN
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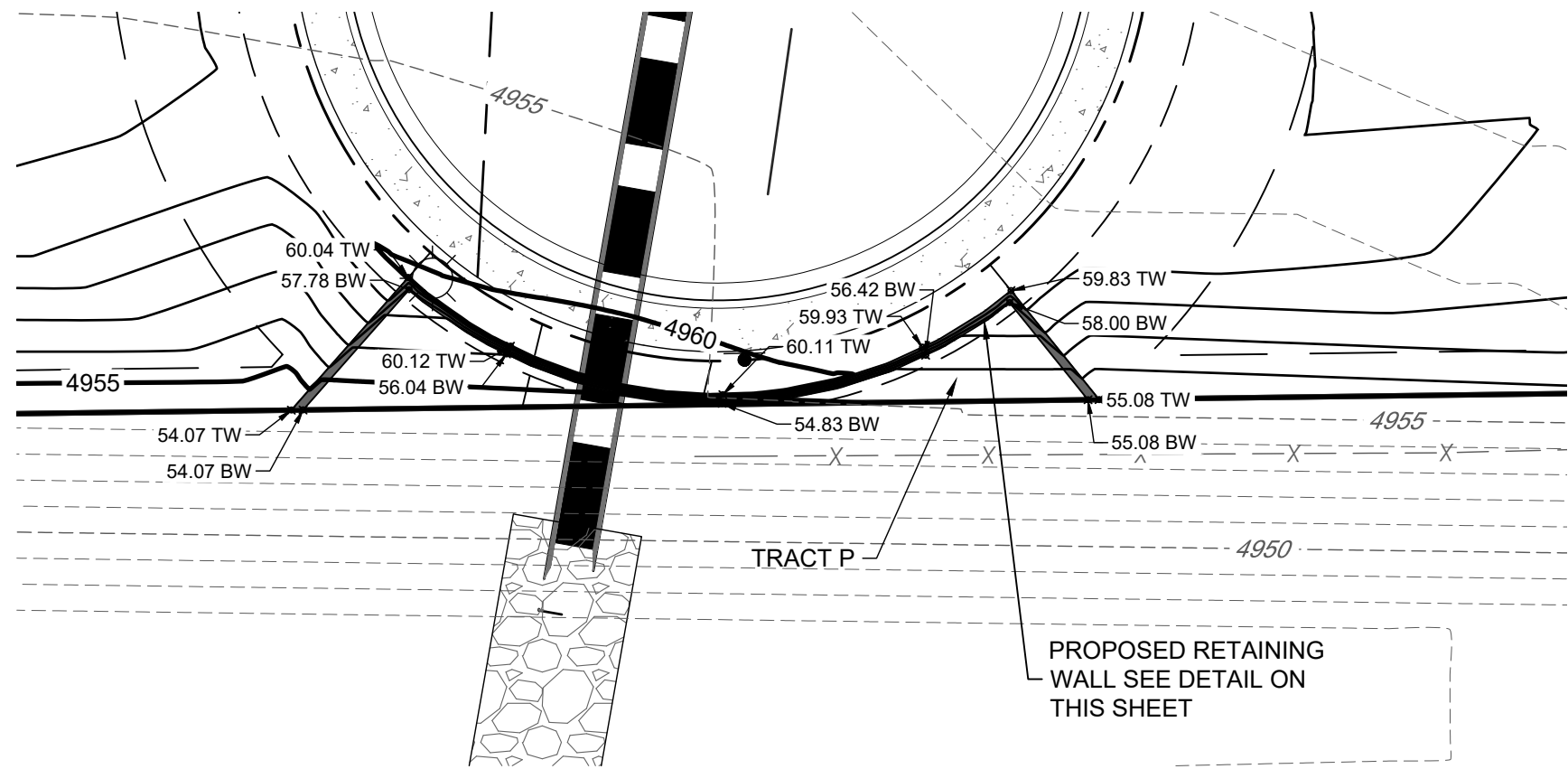
1. ALL SLOPES ARE MAXIMUM OF 4H:1V UNLESS OTHERWISE NOTED.
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3. REFER TO MOUNTAIN SKY FILING NO 1 PLANS FOR WCR 29 1/2 GRADING AND REGIONAL CHANNEL.
4. SEE SHEET C1.2 FOR LOT TEMPLATES

LEGEND

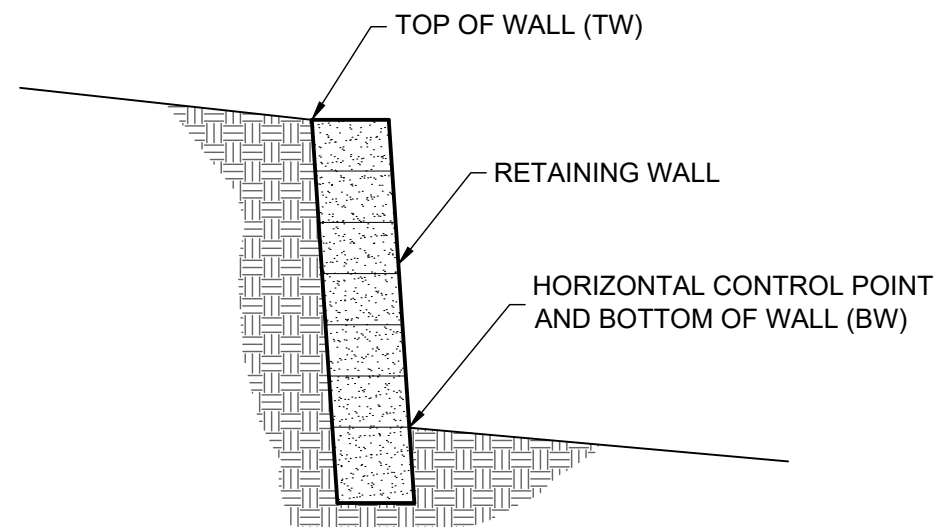
- 5281--- EXISTING MINOR CONTOUR
- 5280--- EXISTING MAJOR CONTOUR
- - -5281- - - PROPOSED MINOR CONTOUR
- - -5280- - - PROPOSED MAJOR CONTOUR
- PROPOSED STORM SEWER LINE
- PROPOSED MANHOLE
- PROPOSED BOX BASE MANHOLE
- PROPOSED INLET
- △ PROPOSED FLARED END SECTION
- A TYPE "A" LOT GRADING
- B TYPE "B" LOT GRADING
- T TYPE "T" LOT GRADING
- WO TYPE "WO" LOT GRADING



KEYMAP
N.T.S



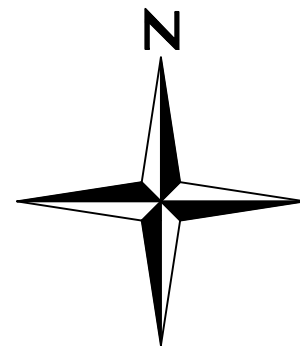
RETAINING WALL PLAN
SCALE: 1" = 20'



RETAINING WALL NOTES:

1. CONTRACTOR TO PROVIDE STRUCTURAL DESIGN AND SHOP DRAWINGS FOR RETAINING WALL.
2. LEVELING COURSE, BACK OF WALL DRAINAGE AND SLOPE TIES TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATION/STRUCTURAL DETAILS.
3. WALLS GREATER THAN 48" REQUIRE A BUILDING PERMIT
4. WALLS GREATER THAN 30" REQUIRE A HANDRAIL

RETAINING WALL DETAIL
N.T.S.



MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
OVERLOT GRADING PLAN TRACT

SHEET

C4.6

DRAWN	ERC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	
VERT. SCALE	

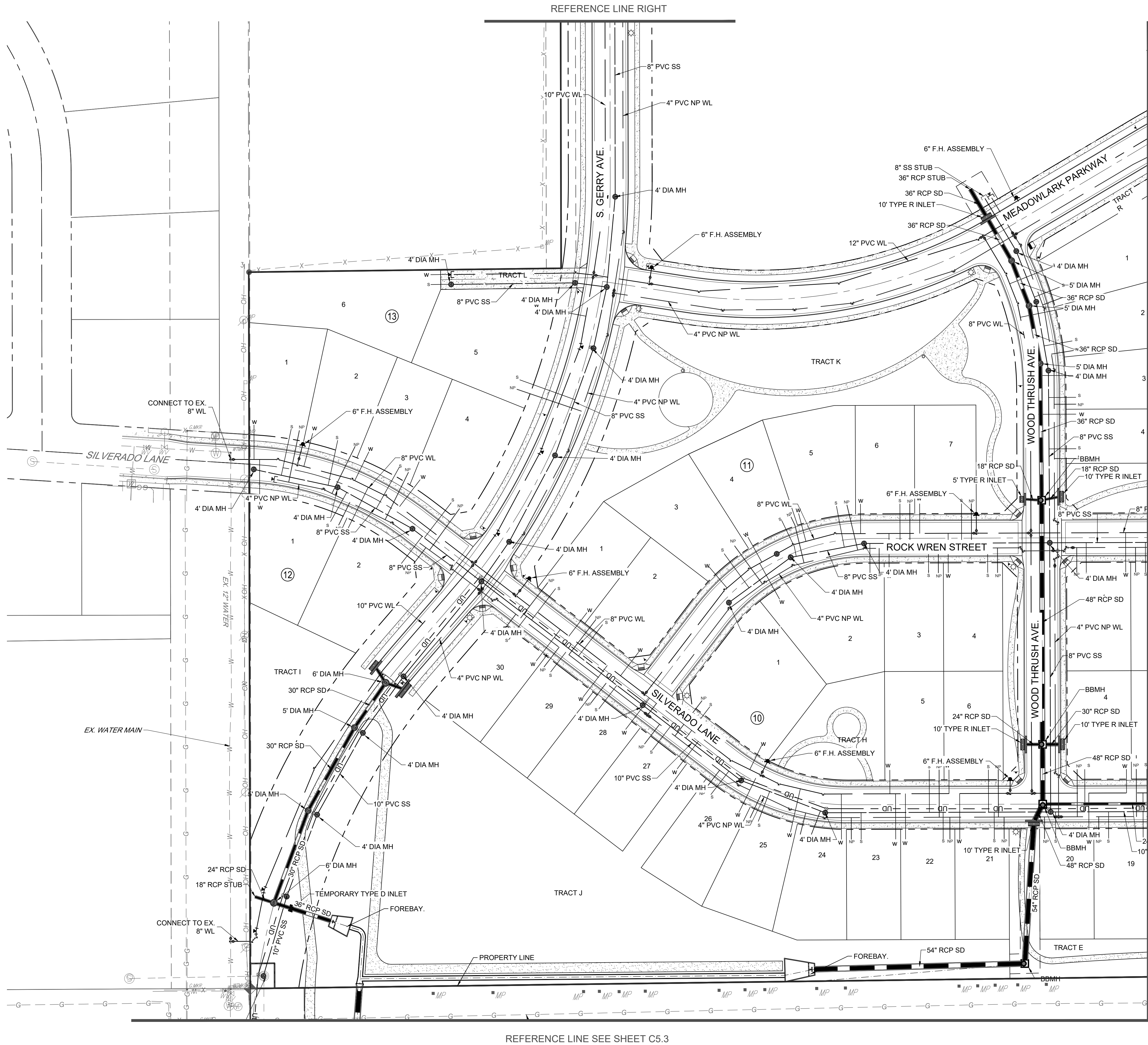
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DATE

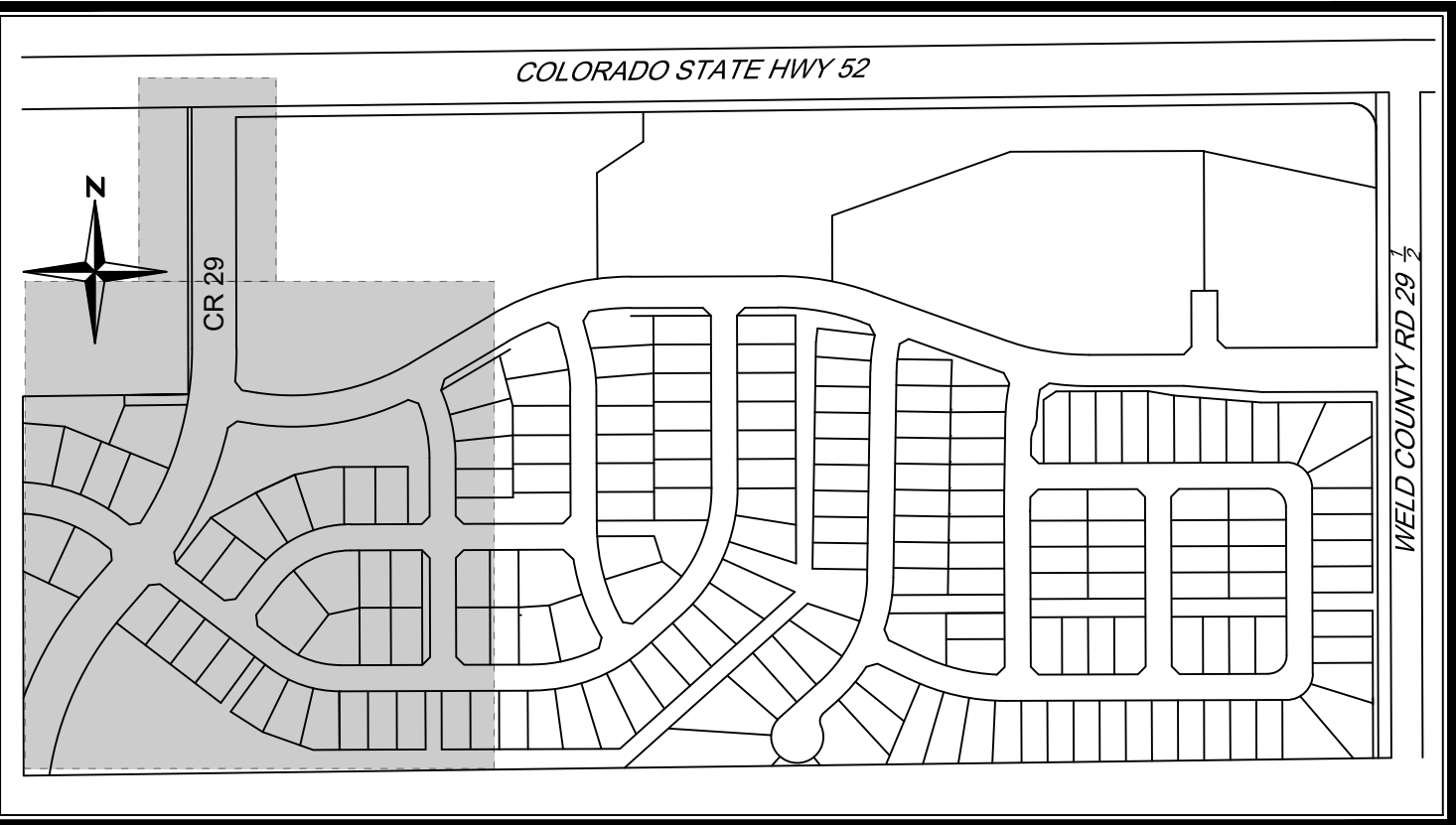
NO.

Redland
WHERE GREAT PLACES BEGIN
7700 283rd Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

1:2019/19032 - Murata Farms/CADD/Sheet/Construction Drawings/19032 - Utility Plan.dwg tab: C5.0 UTILITY PLAN Aug 20, 2021 - 1:20pm balizer



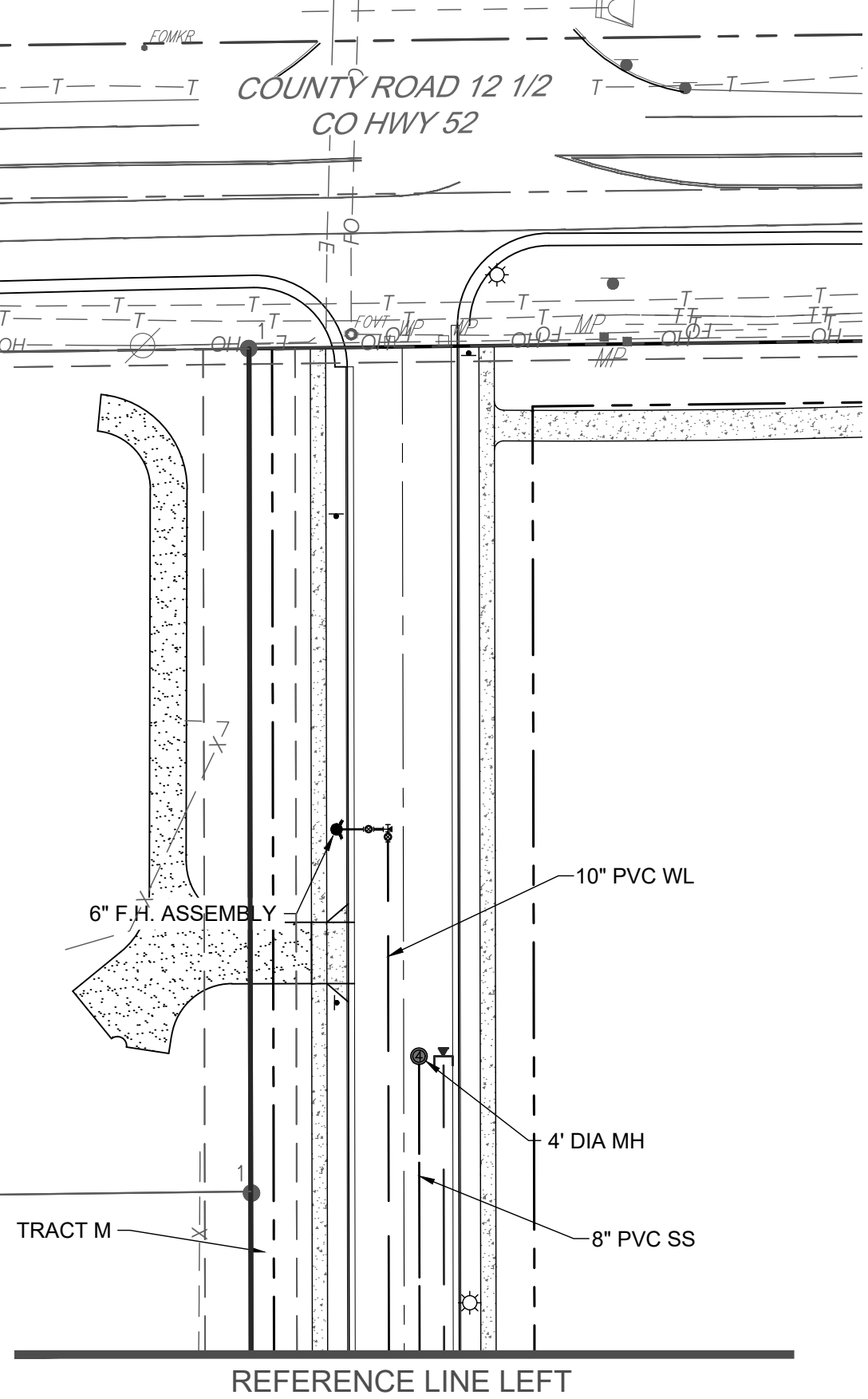
REFERENCE LINE SEE SHEET C5.1



- NOTES:
1. WATER LINE APPURTENANCES ARE SHOWN FOR GRAPHIC REPRESENTATION ONLY AND DO NOT REFLECT ACTUAL SIZE (TYP.)
 2. NO STRUCTURE OR APPURTENANCE ASSOCIATED WITH WET UTILITY INSTALLATION MAY BE LOCATED WITHIN THE CURB, GUTTER, AT THE LIP OF GUTTER OR IN CROSSPANS.
 3. MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 10-FEET BETWEEN WATER MAINS AND SANITARY SEWER MAINS AND 5-FEET BETWEEN IRRIGATION WATER AND SEWER MAINS.

UTILITY LEGEND

- OH — EXISTING OVERHEAD ELECTRIC
- G — EXISTING GAS
- FO — EXISTING FIBER OPTIC
- SC — EXISTING STORM CULVERT
- SS — EXISTING SANITARY SEWER LINE
- W — EXISTING WATER LINE
- — PROPOSED SANITARY SEWER LINE
- — PROPOSED WATER LINE
- — PROPOSED STORM SEWER LINE
- PROPOSED MANHOLE
- — PROPERTY LINE
- — PROPOSED RIGHT OF WAY LINE
- — PROPOSED LOT LINE
- — PROPOSED EASEMENT



MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

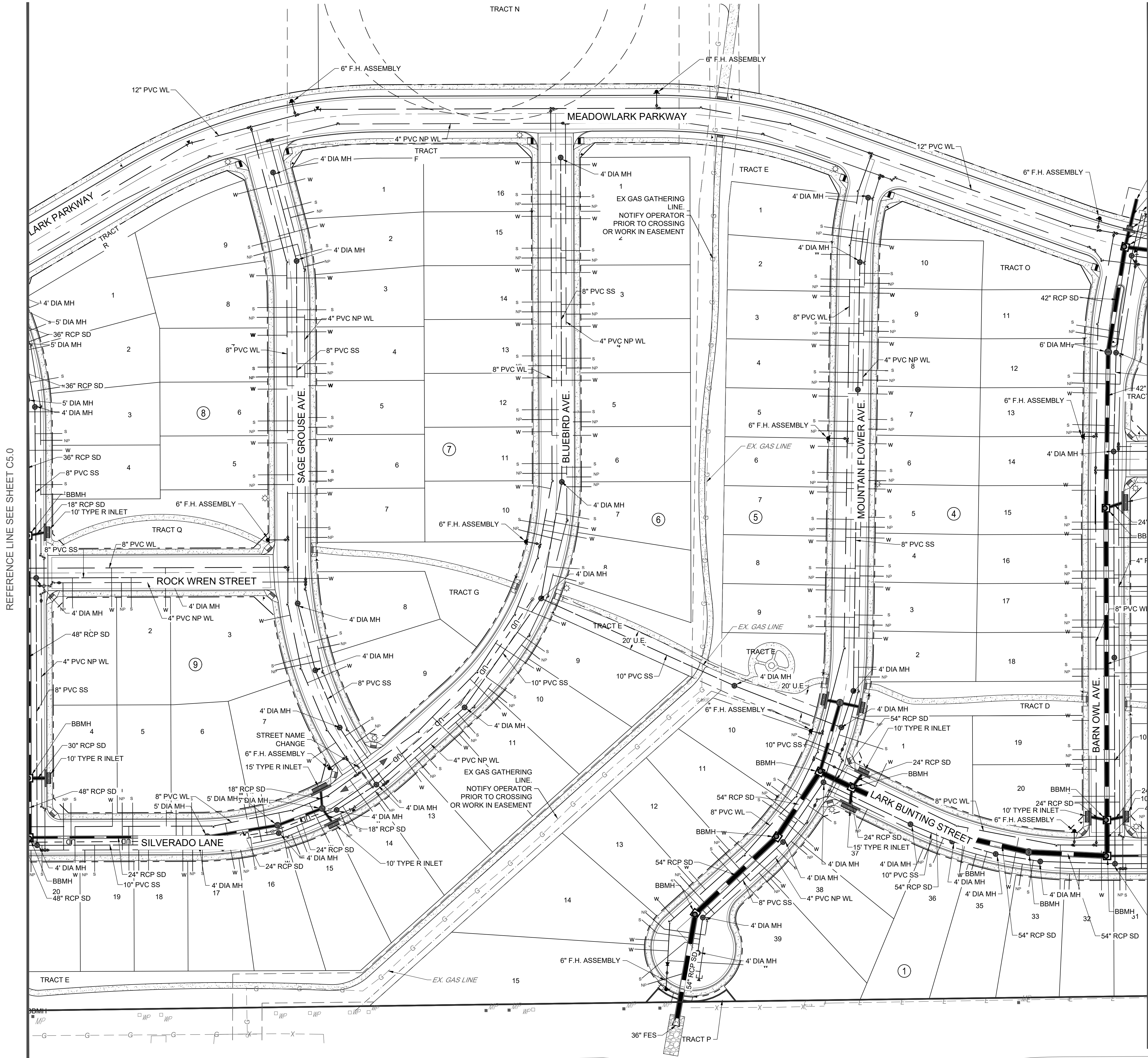
UTILITY PLAN

SHEET

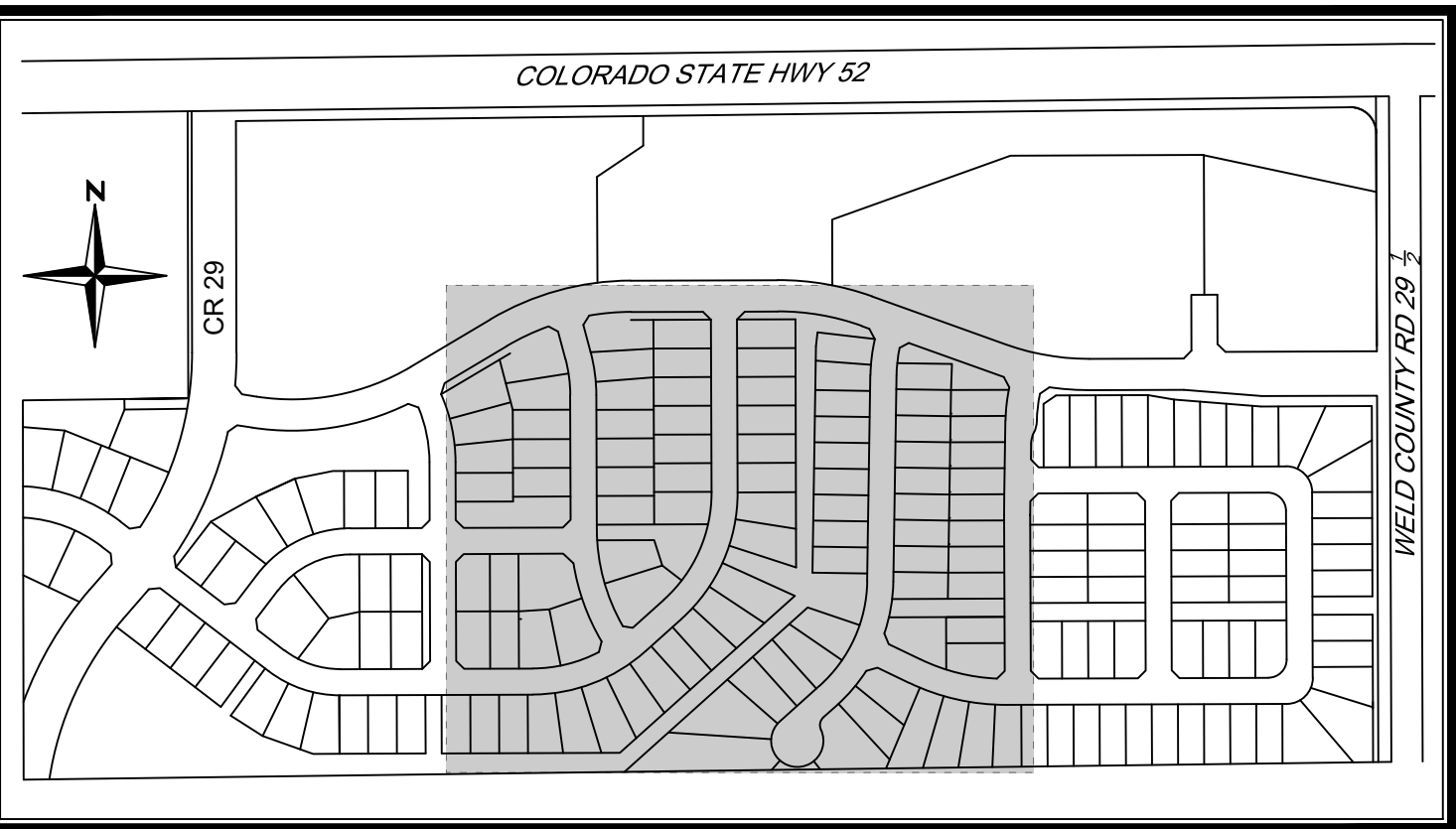
C5.0

Redland
WHERE GREAT PLACES BEGIN
770.383.4793 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

1:2019/19032 - Murata Farms/CADD/Sheet Sets/Construction Drawings/19032 - Utility Plan.dwg tab: C5.1 UTILITY PLAN Aug 20, 2021 - 1:21pm bbalizer



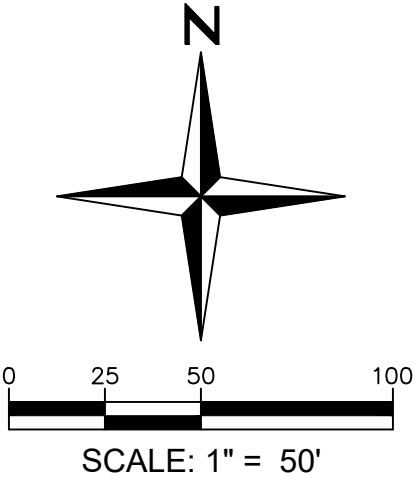
REFERENCE LINE SEE SHEET C5.2



- NOTES:
1. WATER LINE APPURTENANCES ARE SHOWN FOR GRAPHIC REPRESENTATION ONLY AND DO NOT REFLECT ACTUAL SIZE (TYP.)
 2. NO STRUCTURE OR APPURTENANCE ASSOCIATED WITH WET UTILITY INSTALLATION MAY BE LOCATED WITHIN THE CURB, GUTTER, AT THE LIP OF GUTTER OR IN CROSSPANS.
 3. MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 10-FOET BETWEEN WATER MAINS AND SANITARY SEWER MAINS AND 5-FOET BETWEEN IRRIGATION WATER AND SEWER MAINS.

UTILITY LEGEND

- OH — EXISTING OVERHEAD ELECTRIC
- G — EXISTING GAS
- FO — EXISTING FIBER OPTIC
- — EXISTING STORM CULVERT
- SS — EXISTING SANITARY SEWER LINE
- W — EXISTING WATER LINE
- — PROPOSED SANITARY SEWER LINE
- — PROPOSED WATER LINE
- — PROPOSED STORM SEWER LINE
- PROPOSED MANHOLE
- — PROPERTY LINE
- — PROPOSED RIGHT OF WAY LINE
- — PROPOSED LOT LINE
- — PROPOSED EASEMENT



MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

SHEET

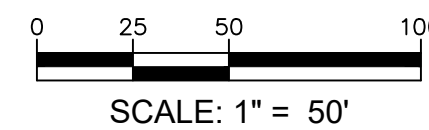
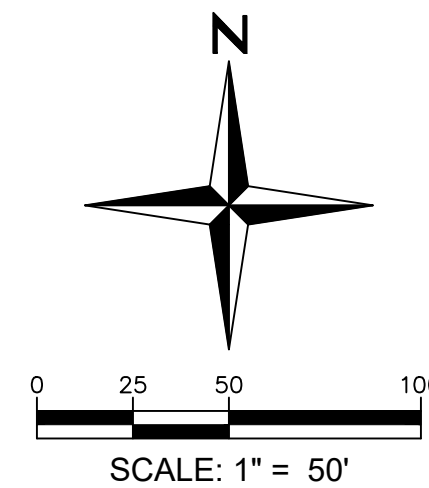
UTILITY PLAN

C5.1



	EXISTING OVERHEAD ELECTRIC
	EXISTING GAS
	EXISTING FIBER OPTIC
	EXISTING STORM CULVERT
	EXISTING SANITARY SEWER LINE
	EXISTING WATER LINE
	PROPOSED SANITARY SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM SEWER LINE
	PROPOSED MANHOLE
	PROPERTY LINE
	PROPOSED RIGHT OF WAY LINE
	PROPOSED LOT LINE
	PROPOSED EASEMENT

1. WATER LINE APPURTENANCES ARE SHOWN FOR GRAPHIC REPRESENTATION ONLY AND DO NOT REFLECT ACTUAL SIZE (TYP.)
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3. MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 10-FEET BETWEEN WATER MAINS AND SANITARY SEWER MAINS AND 5-FEET BETWEEN IRRIGATION WATER AND SEWER MAINS.



MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
UTILITY PLAN

KATA FARMS FILING NO. CONSTRUCTION DOCU **UTILITY PLAN**

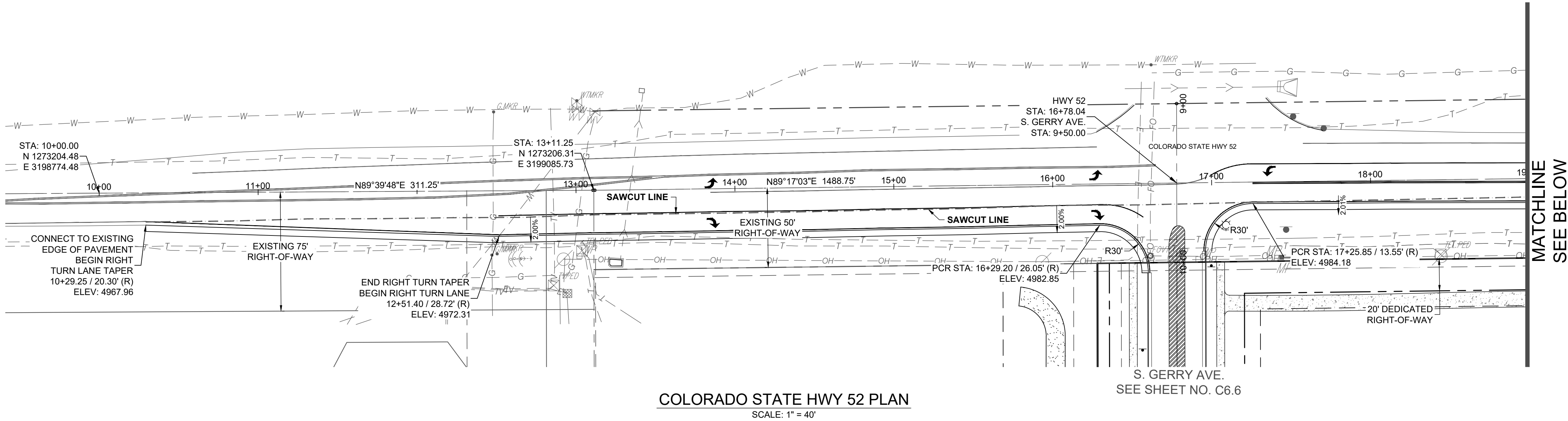
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DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORZ. SCALE	
VERT. SCALE	

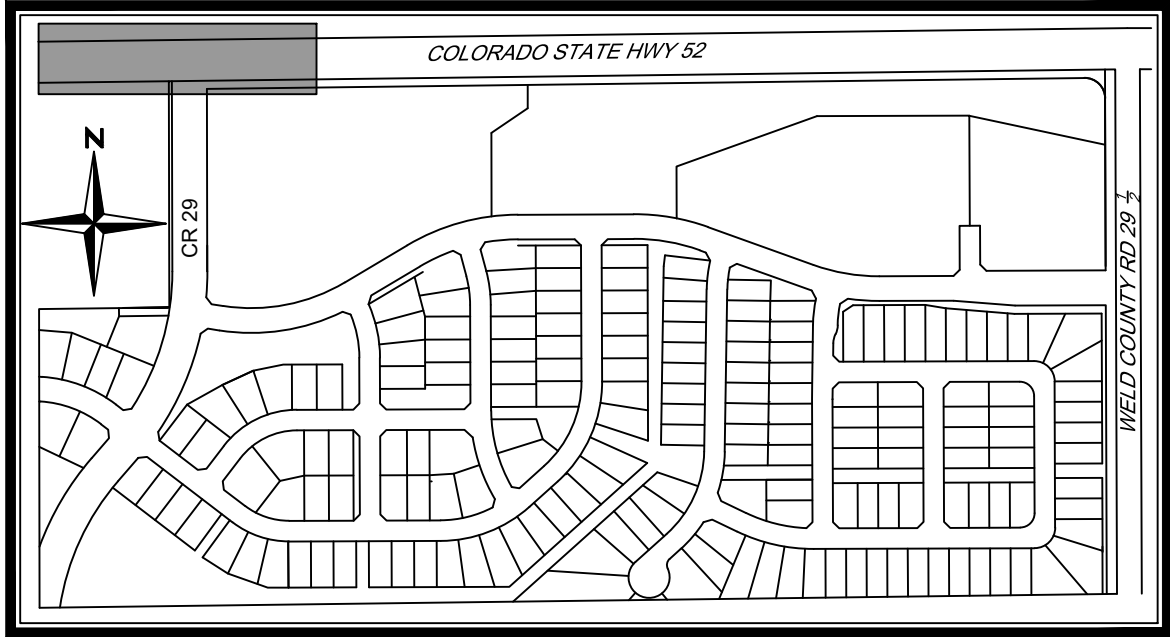
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Redland
WHERE GREAT PLACES BEGIN
720.283.6783 Office
1500 West Canal Court
Littleton, Colorado 80120

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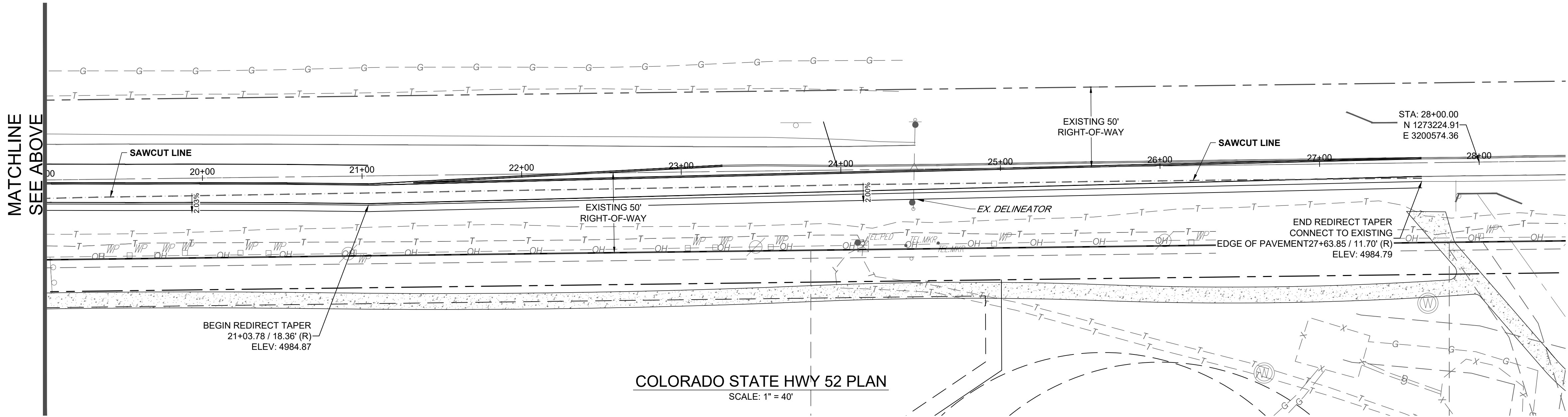
COLORADO STATE HWY 52 PLAN
SCALE: 1" = 40'



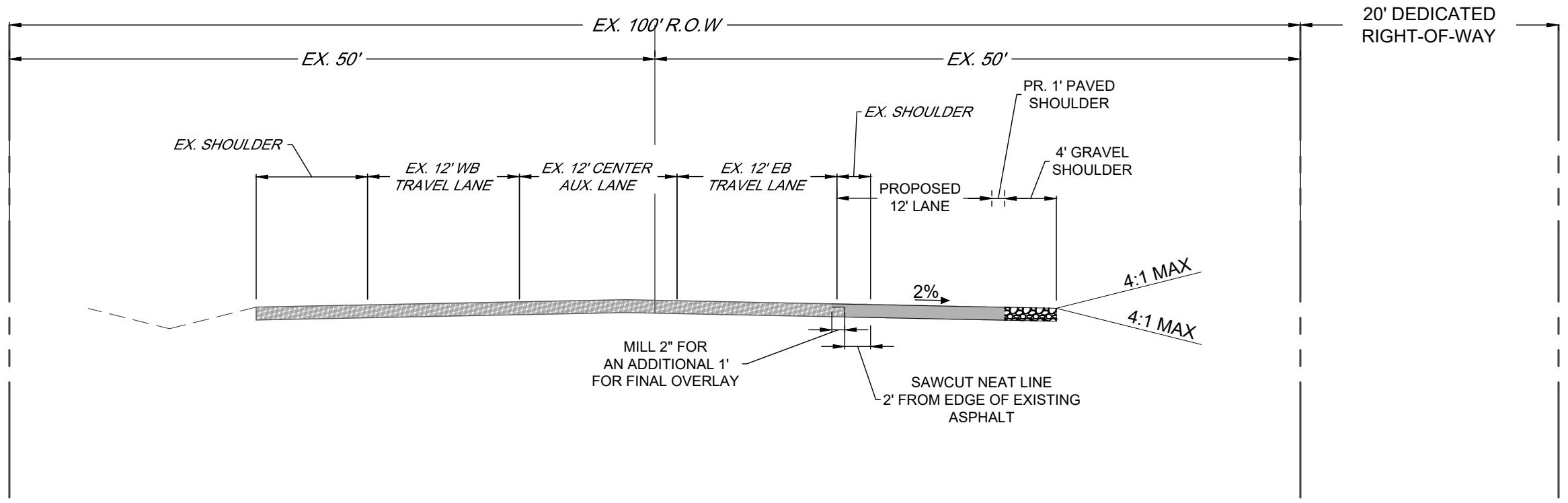
KEYMAP
N.T.S

NOTES

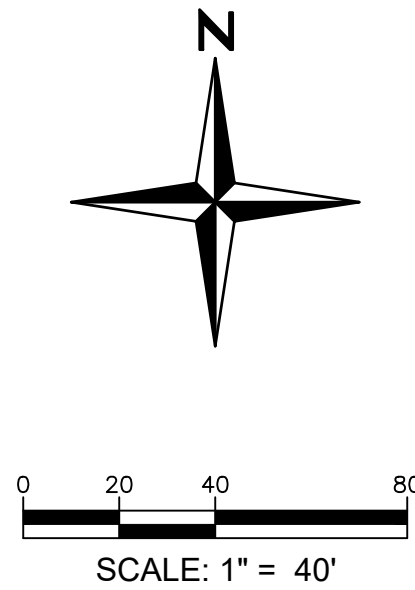
- REFER TO SHEET C1.2 FOR TYPICAL STREET SECTIONS.
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COLORADO STATE HWY 52 PLAN
SCALE: 1" = 40'



STATE HIGHWAY 52
1" = 10'



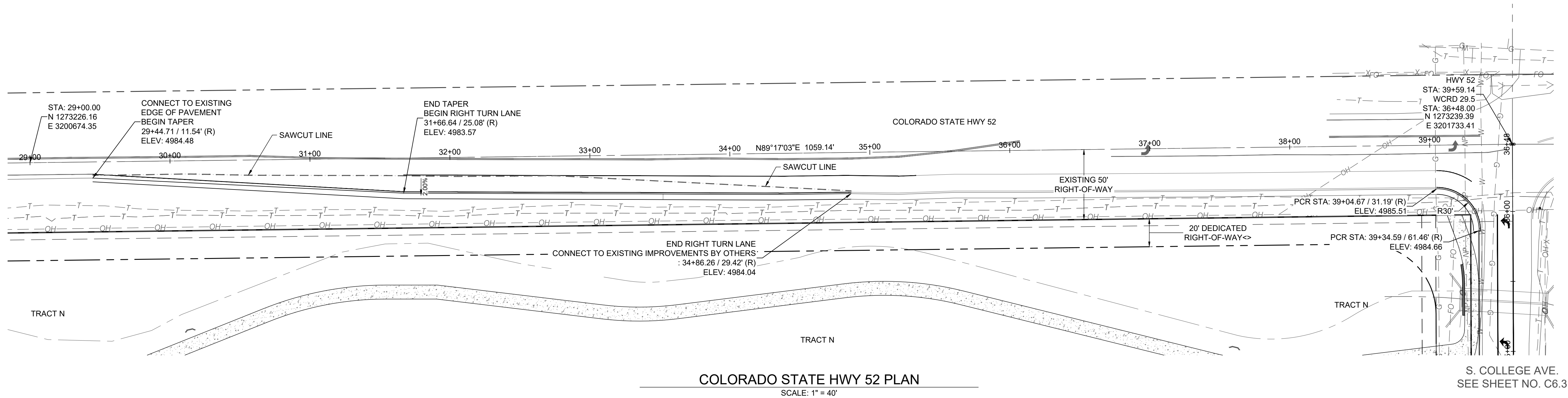
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CIVIL CONSTRUCTION DOCUMENTS
COLORADO STATE HWY 52

SHEET

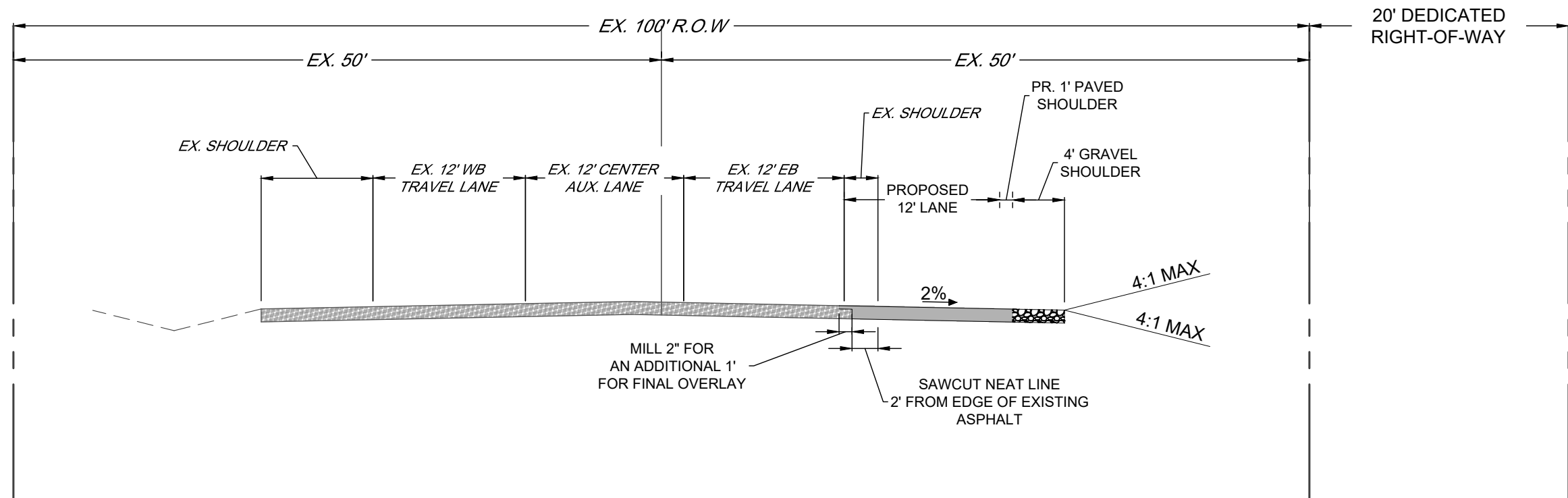
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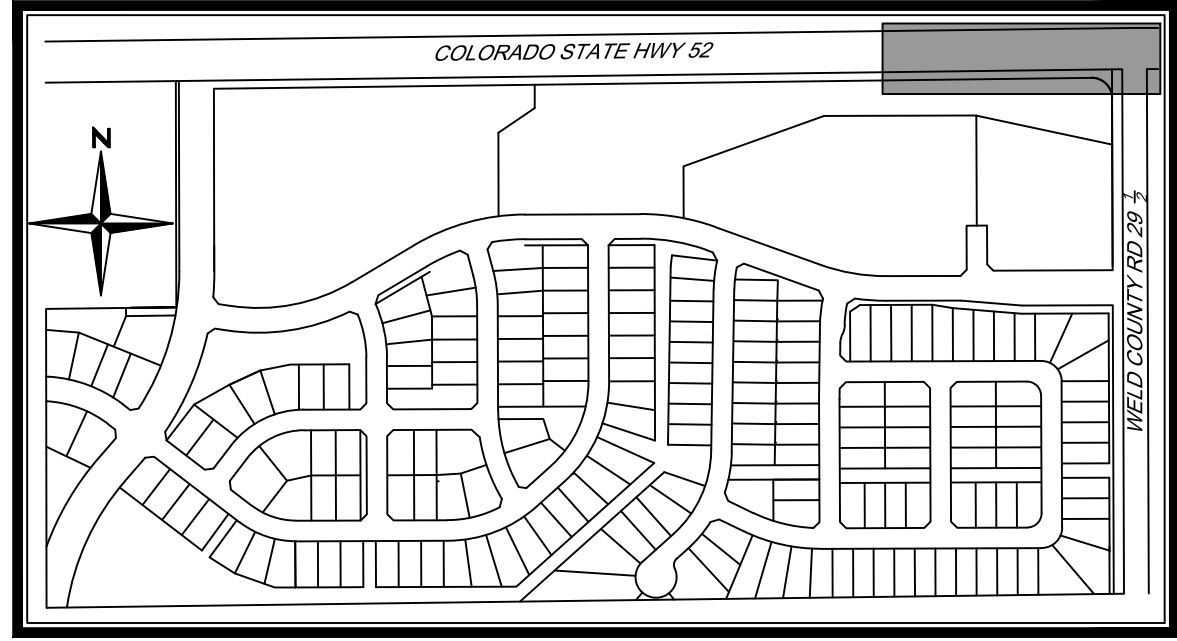
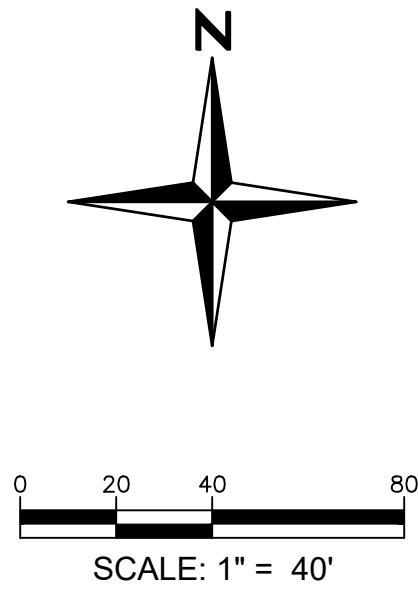
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COLORADO STATE HWY 52 PLAN
SCALE: 1" = 40'



STATE HIGHWAY 52
1" = 10'



KEYMAP
N.T.S

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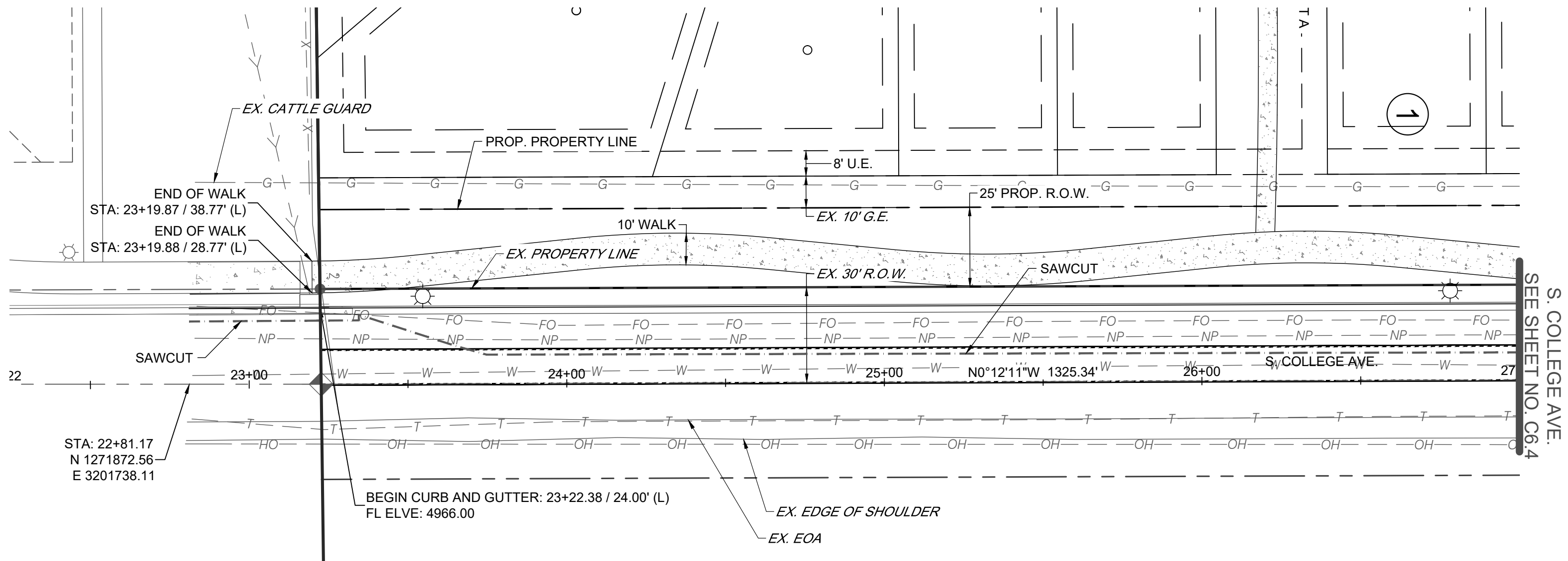
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

COLORADO STATE HWY 52

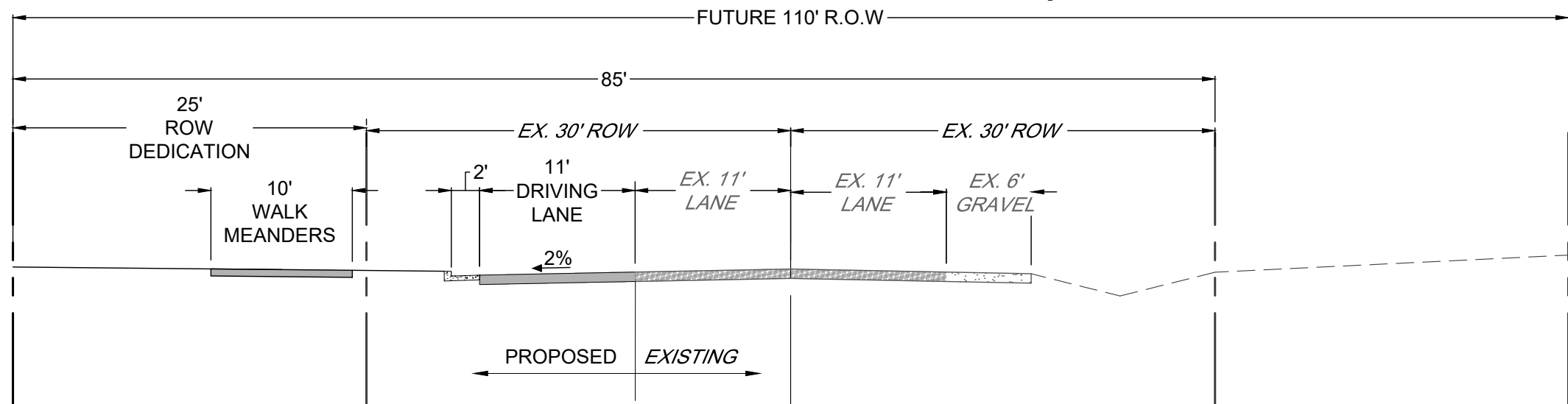
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C6.2

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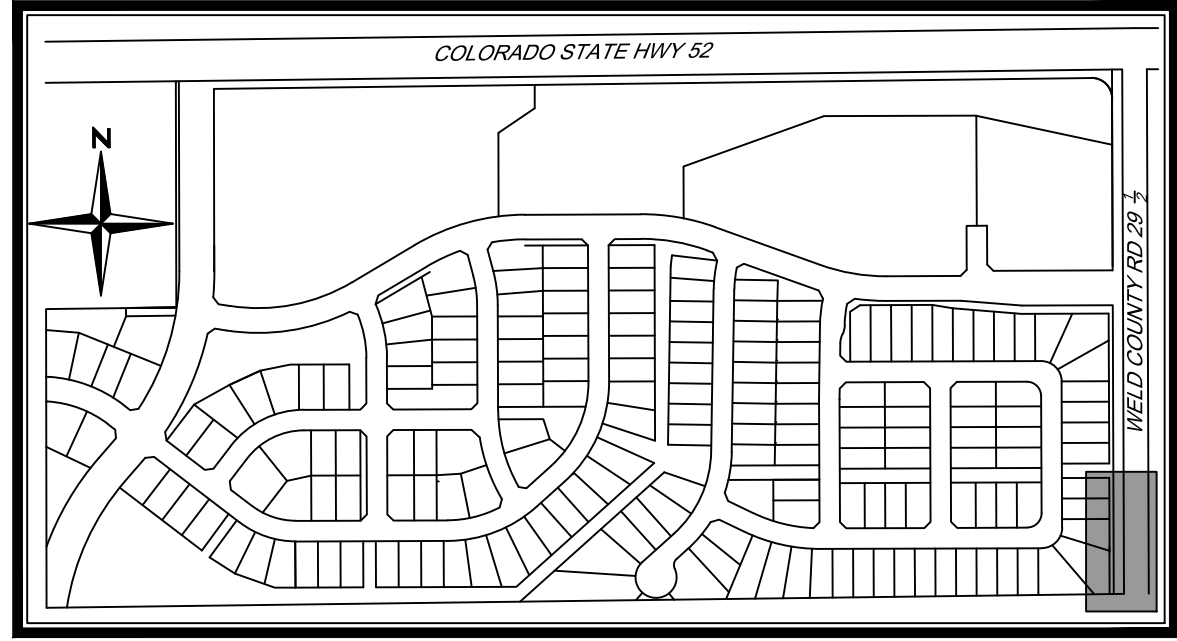
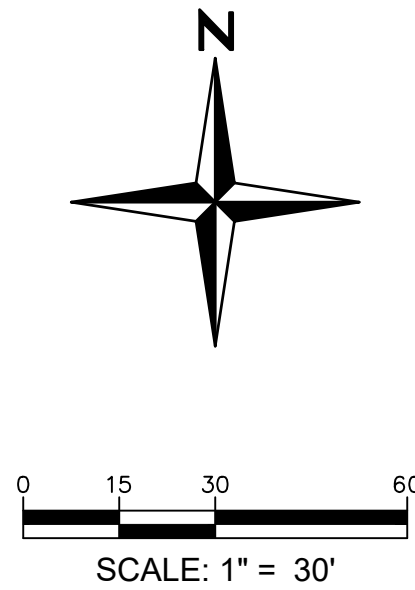
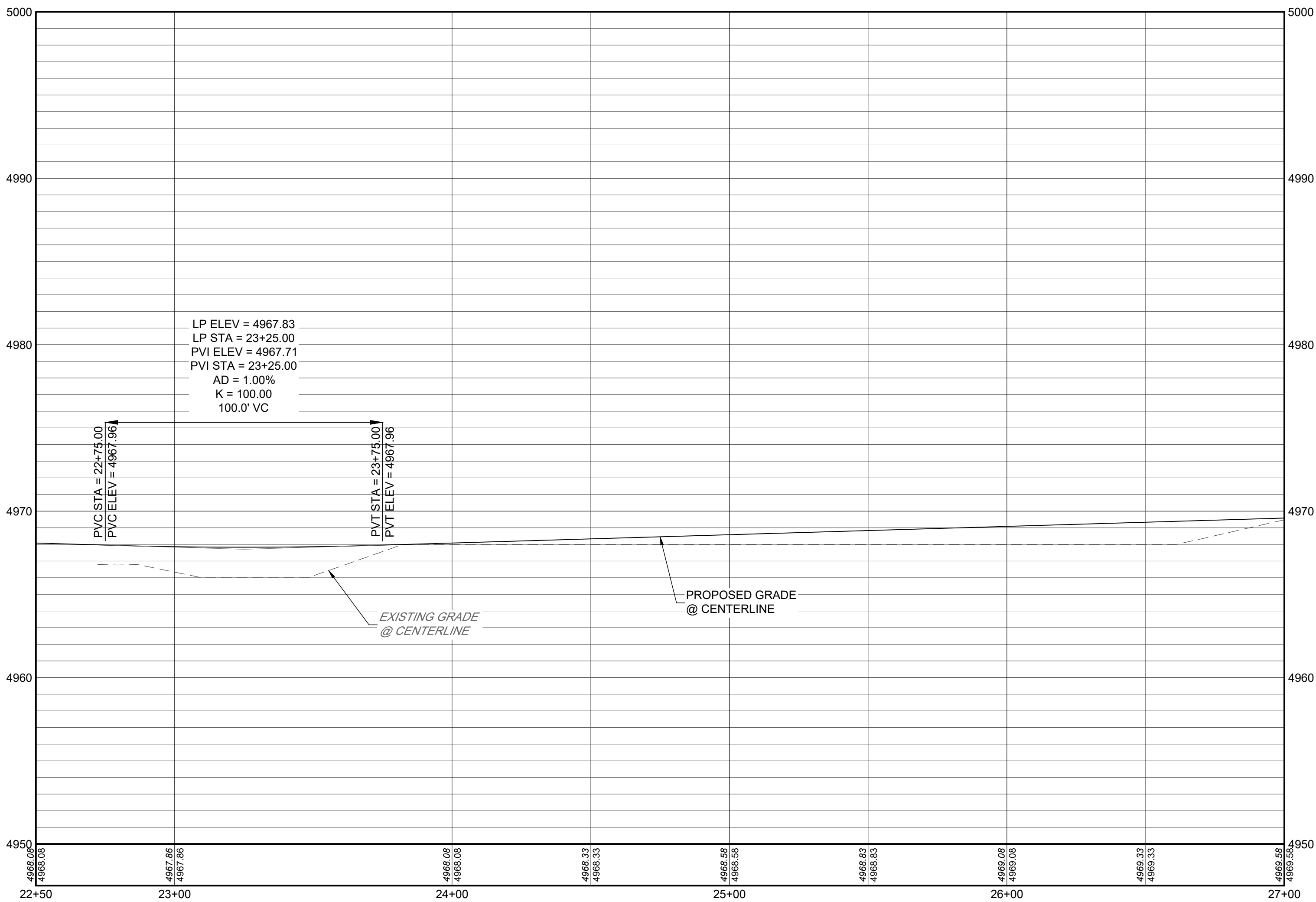


S. COLLEGE AVE. PLAN
SCALE: 1" = 30'



S. COLLEGE AVE. PROFILE
H: 1" = 30'
V: 1" = 5'

COUNTY ROAD 29 1/2
1" = 10'



KEYMAP
N.T.S.

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

S. COLLEGE AVE.

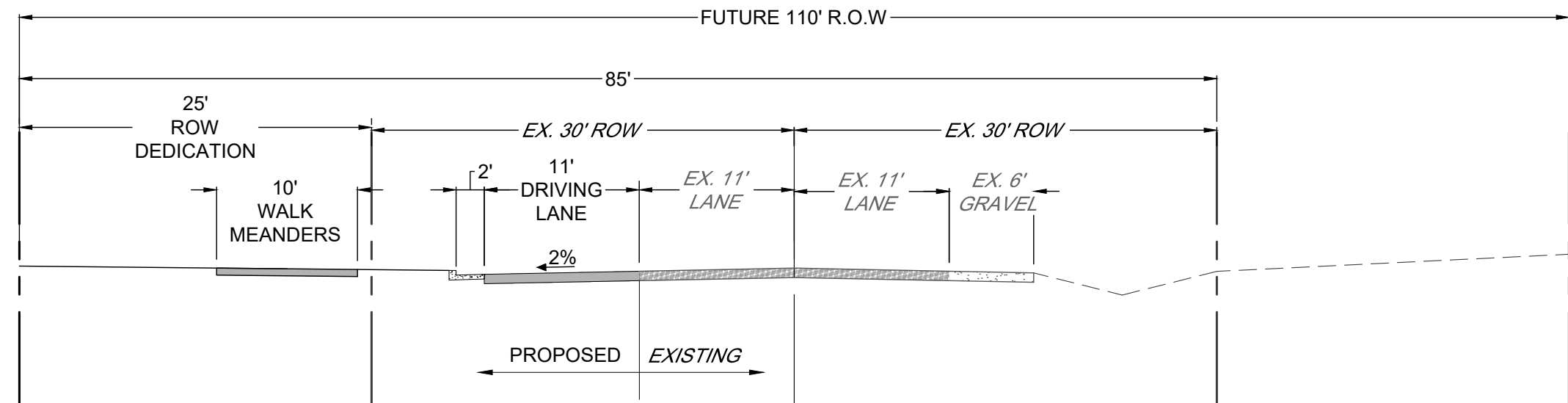
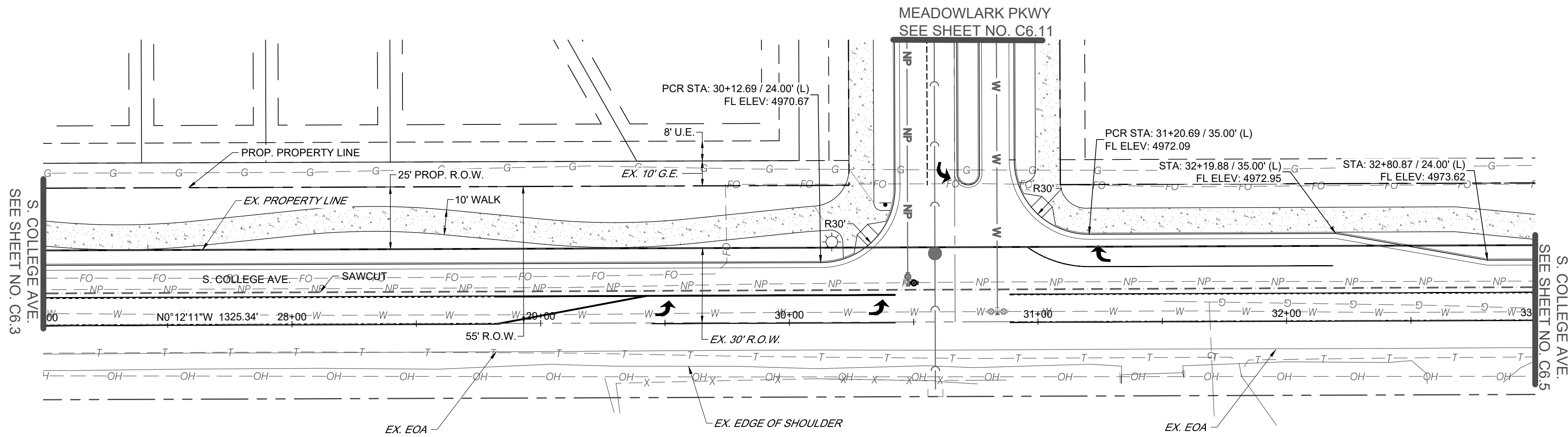
SHEET

C6.3



7700 283 4793 Office
1500 West Canal Court
Littleton, Colorado 80120
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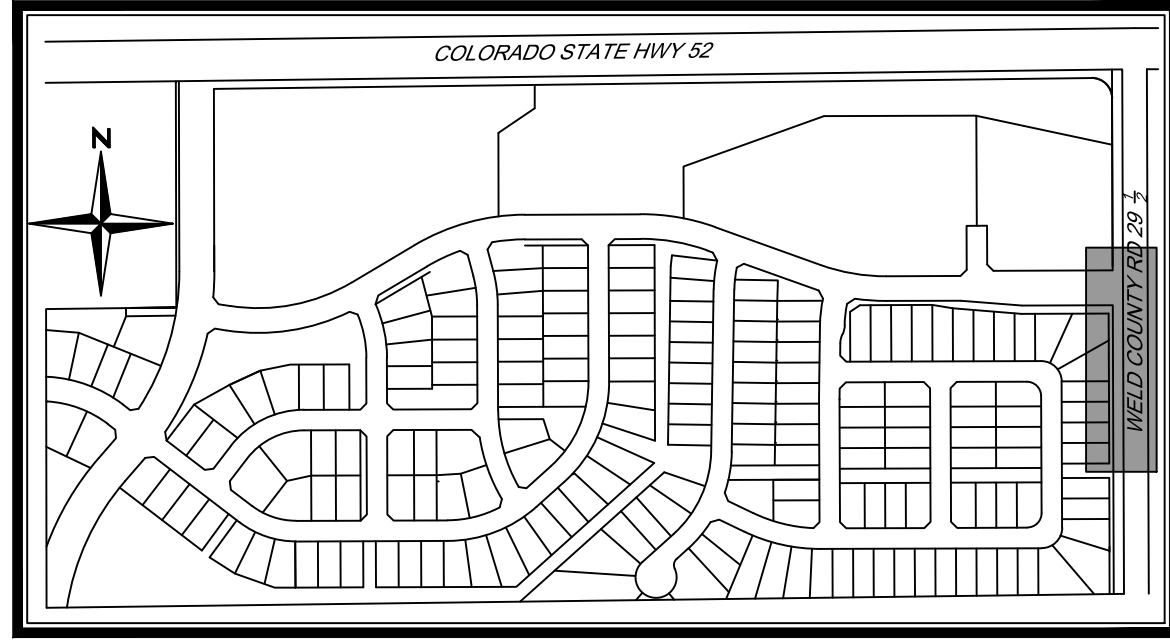
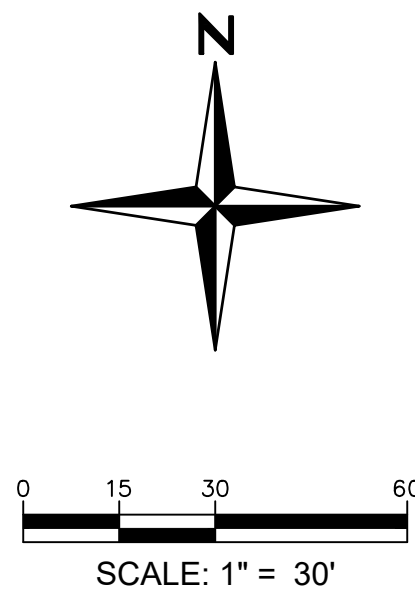
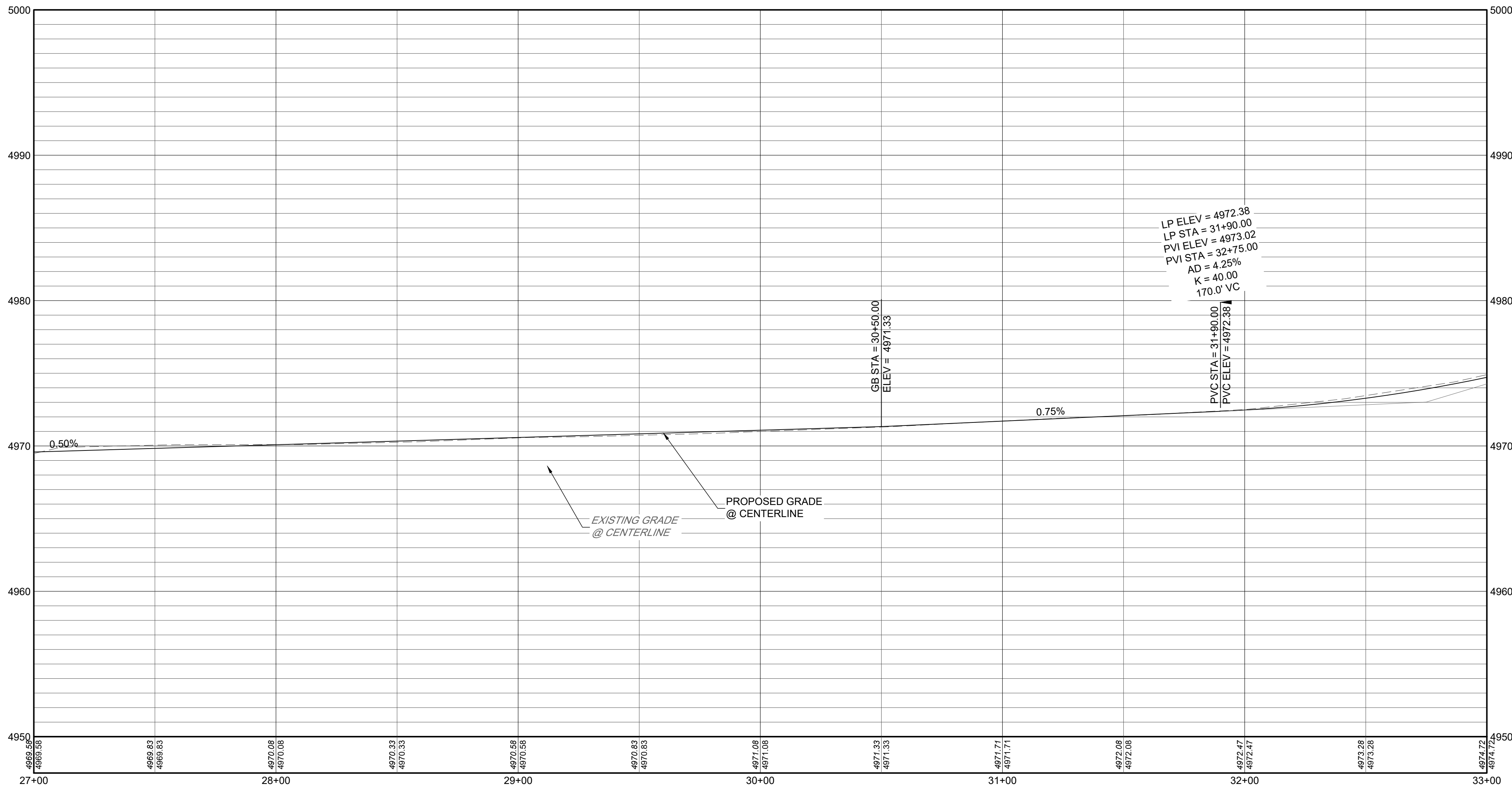
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COUNTY ROAD 29 1/2
1" = 10'

S. COLLEGE AVE. PLAN
SCALE: 1" = 30'

S. COLLEGE AVE. PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

S. COLLEGE AVE.

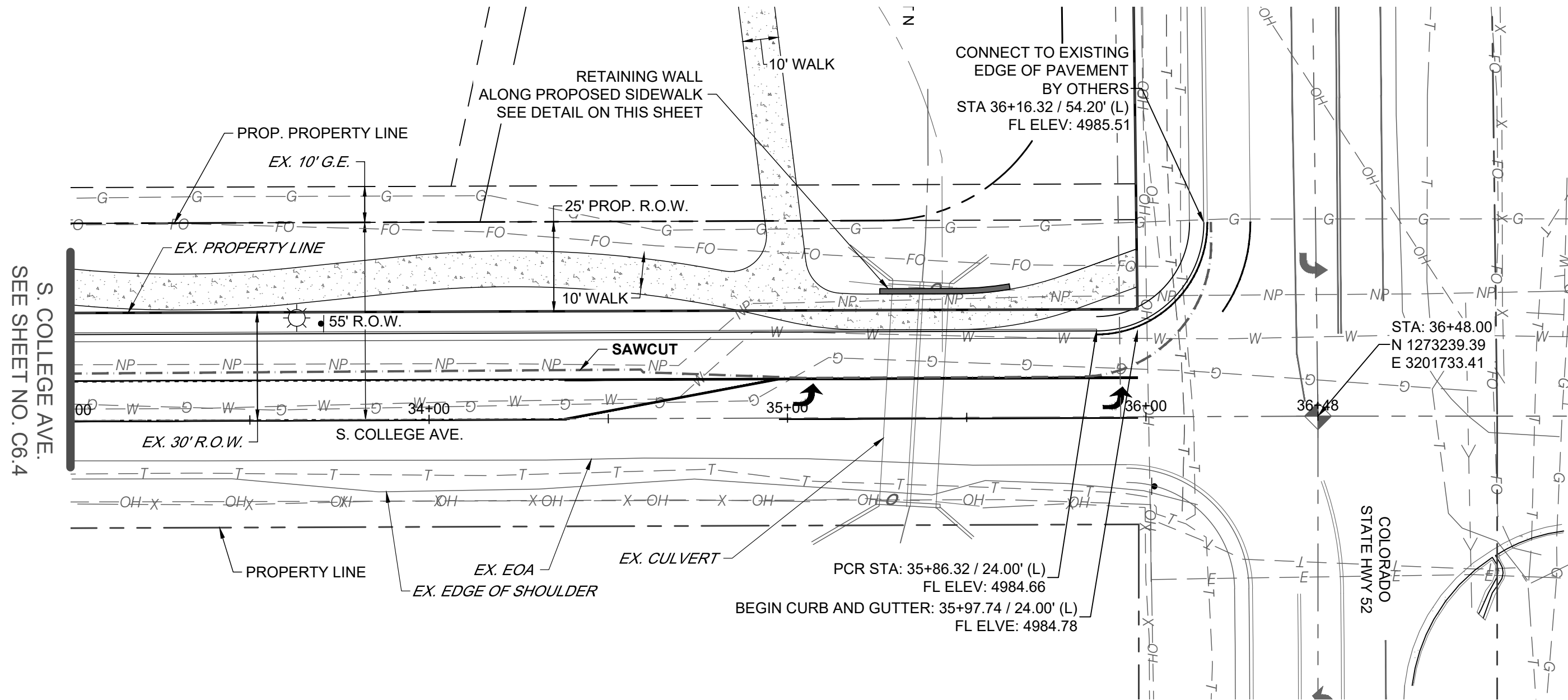
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C6.4



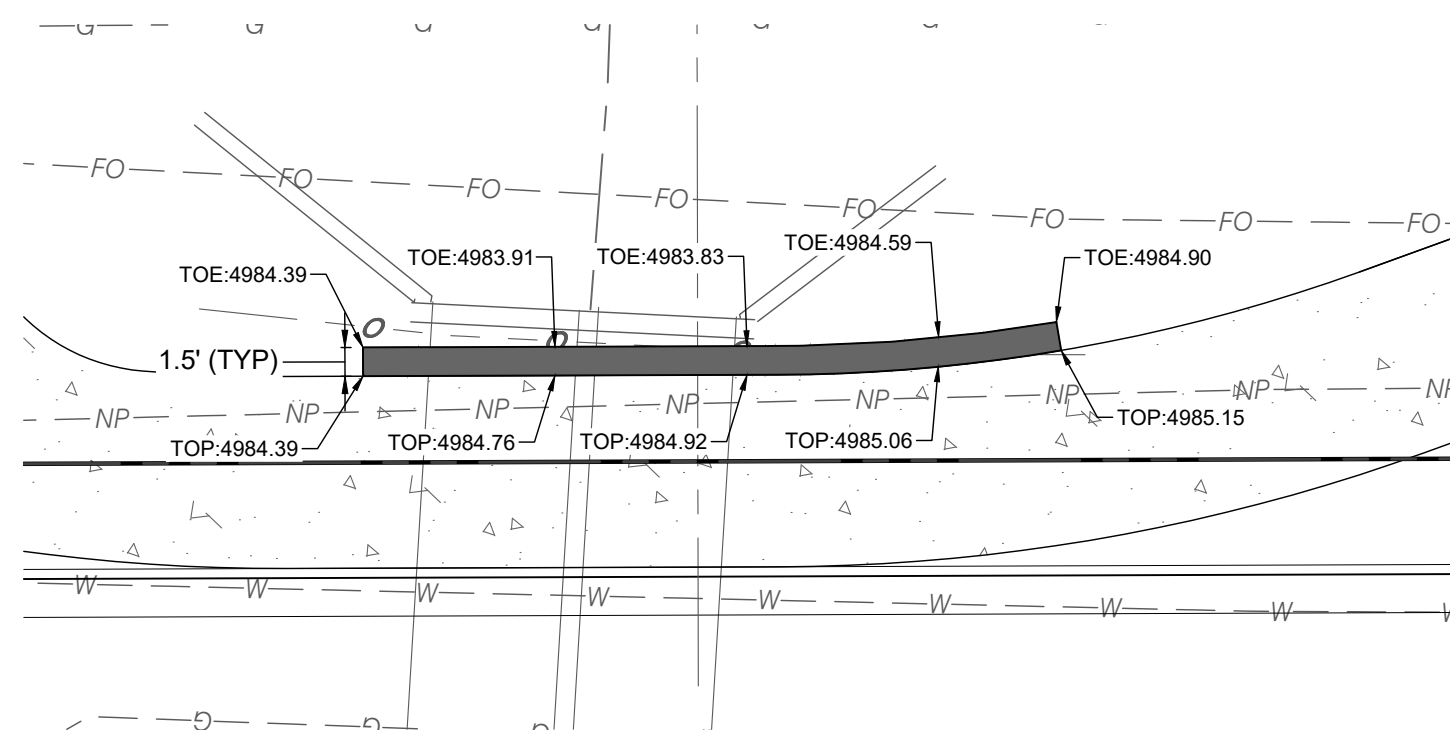
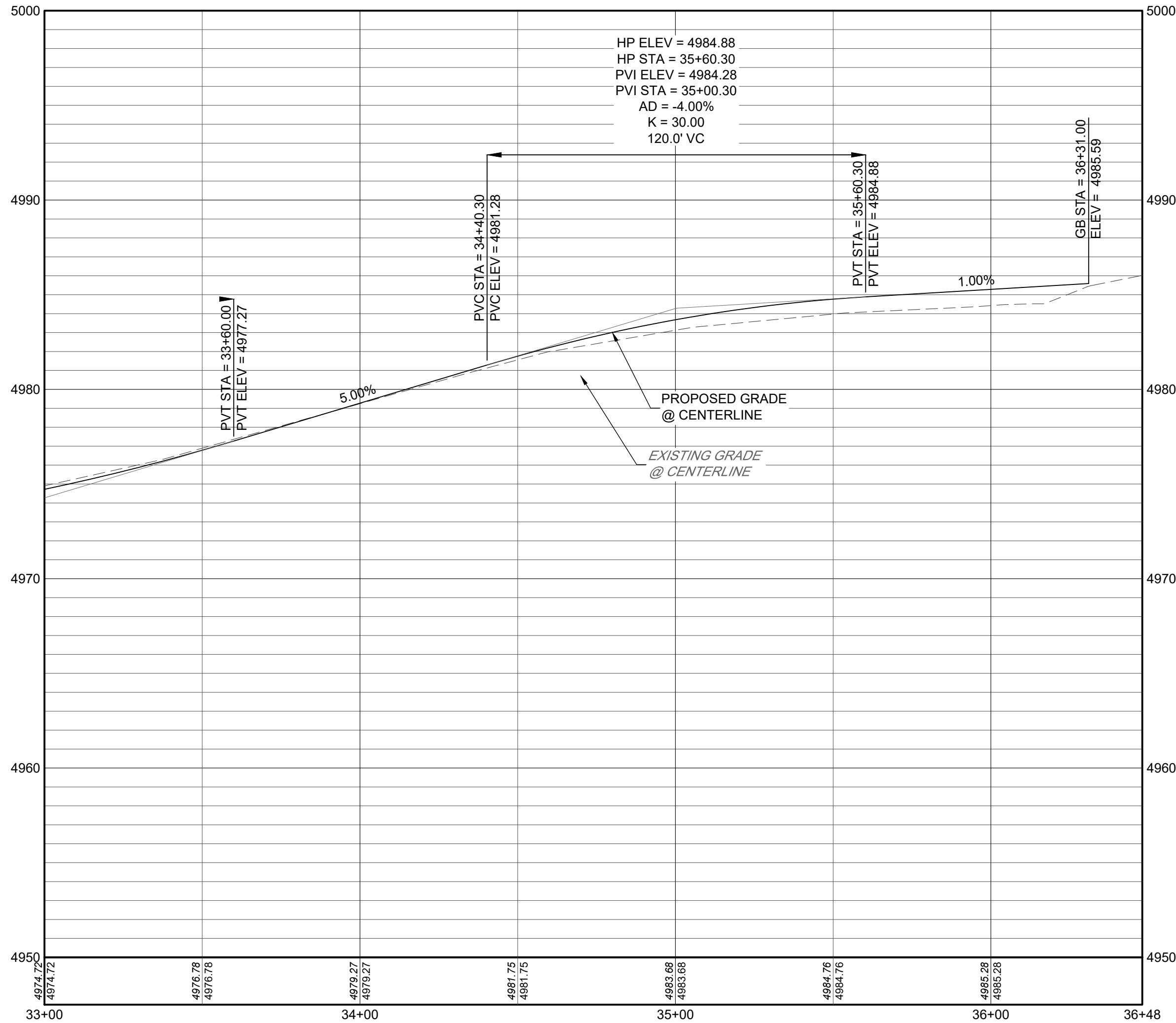
7700 283 4793 Office
1500 West Canal Court
Littleton, Colorado 80120
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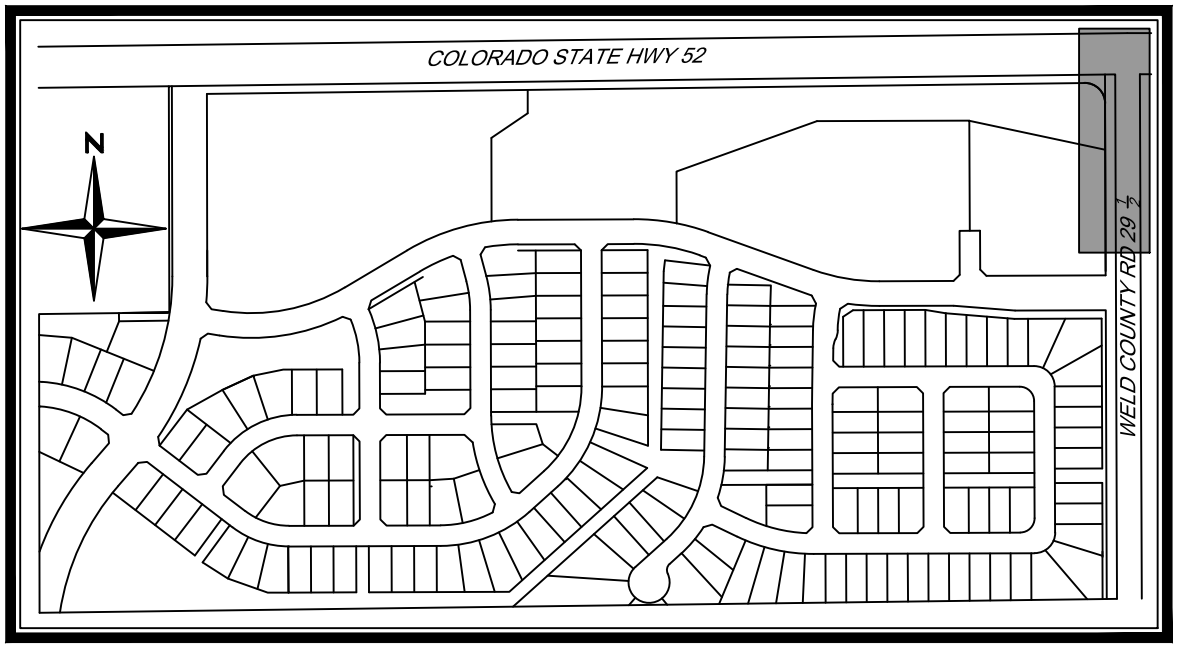


S. COLLEGE AVE. PLAN
SCALE: 1" = 30'

S. COLLEGE AVE. PROFILE
H: 1" = 30'
V: 1" = 5'



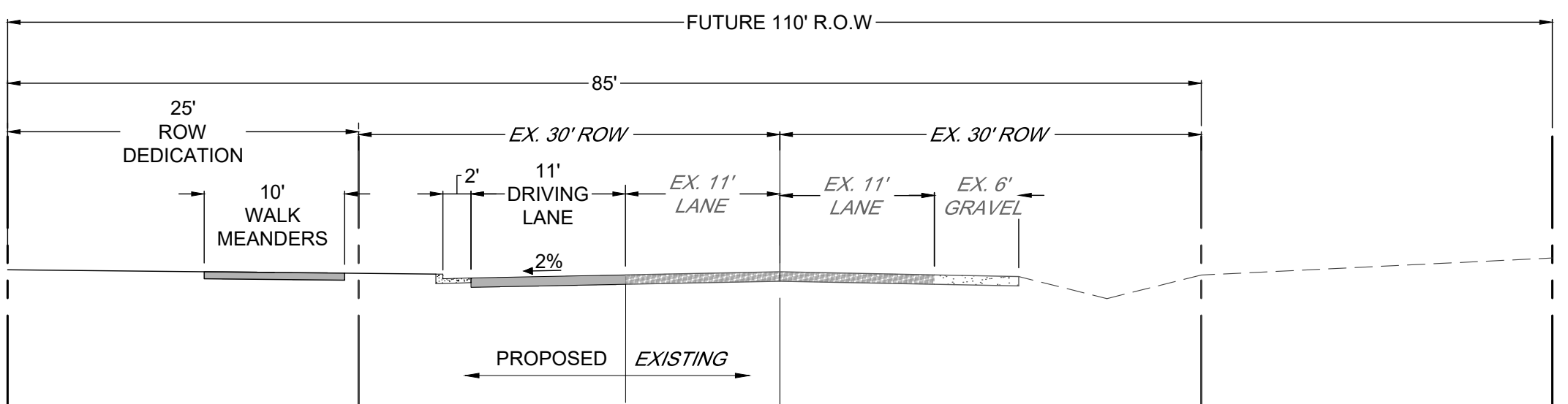
RETAINING WALL PLAN
SCALE: 1" = 10'



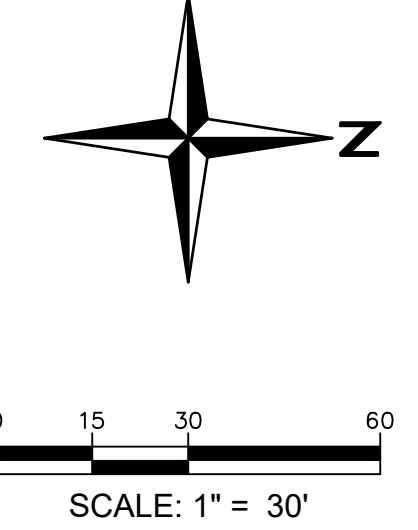
KEYMAP
N.T.S.

NOTES

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COUNTY ROAD 29 1/2
1" = 10'



MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

S. COLLEGE AVE.

SHEET

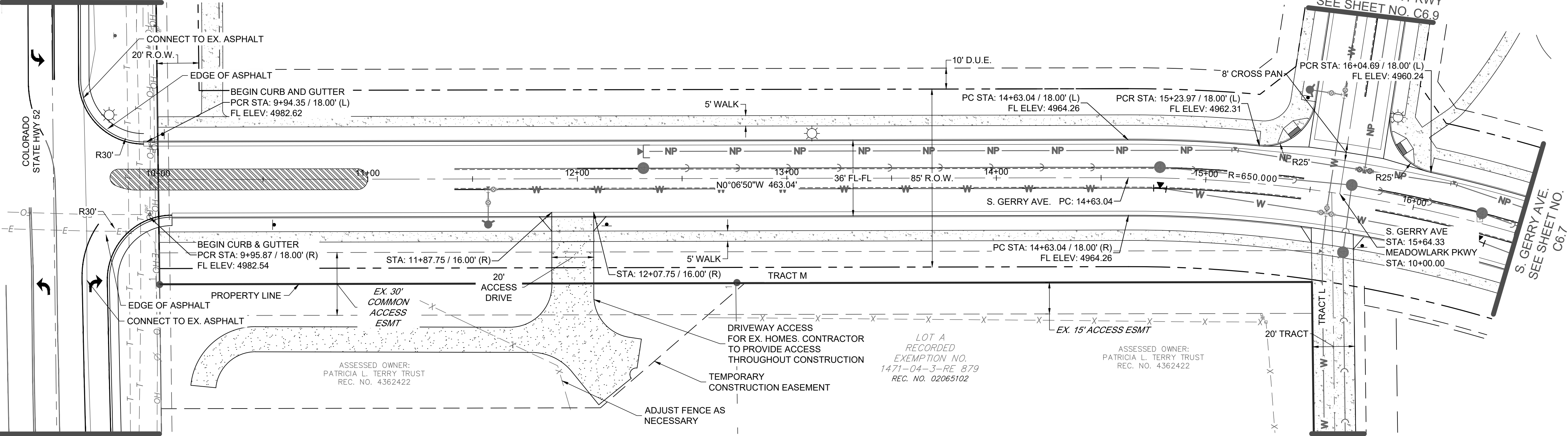
C6.5



WHERE GREAT PLACES BEGIN
7700 283rd Office
1500 West Canal Court
Littleton, Colorado 80120
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COLORADO STATE HWY 52
SEE SHEET NO. C6.1

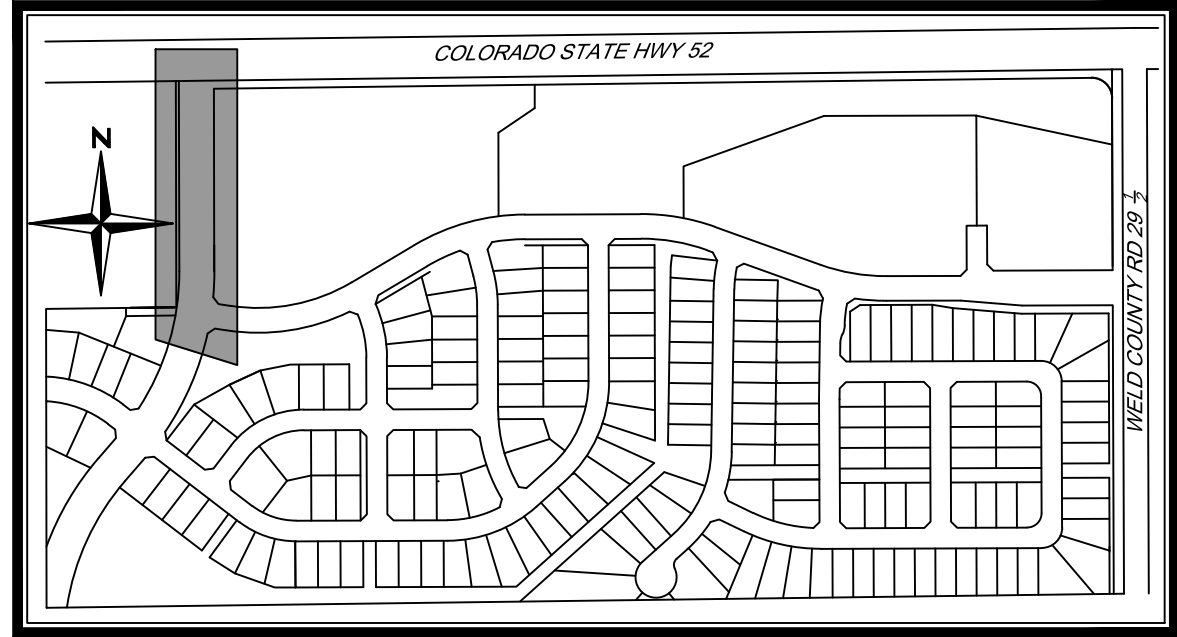
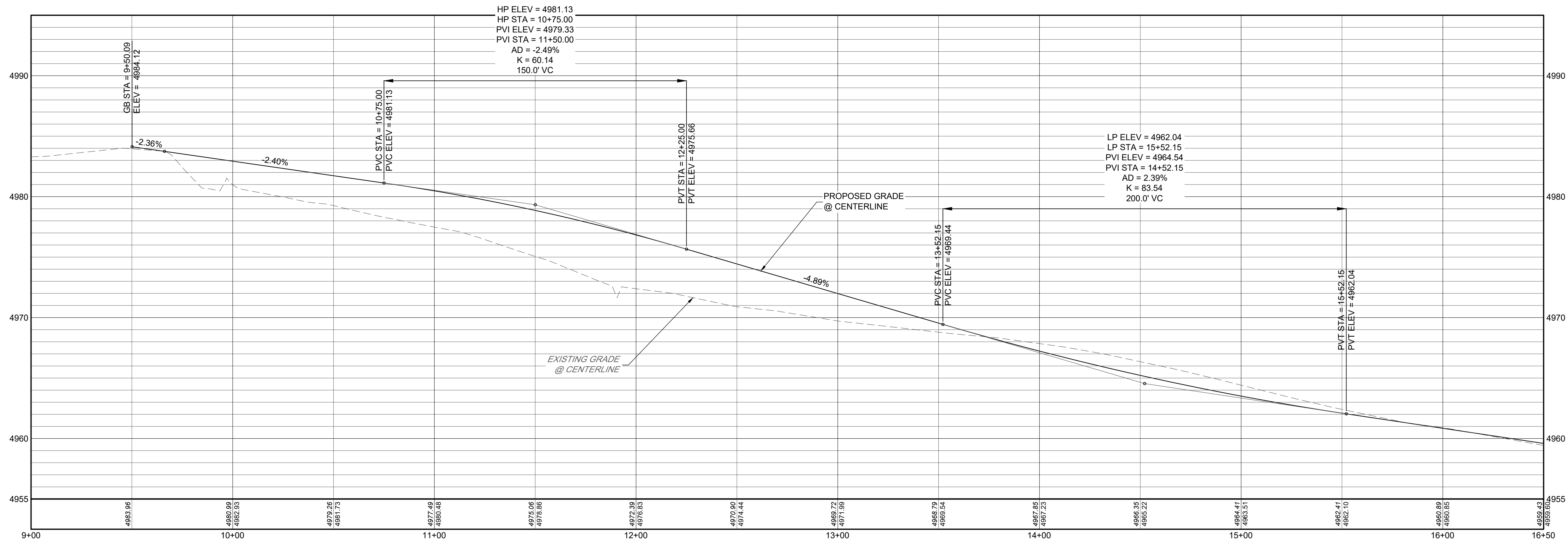


S. GERRY AVE. PLAN

SCALE: 1" = 30'

S. GERRY AVE. PROFILE

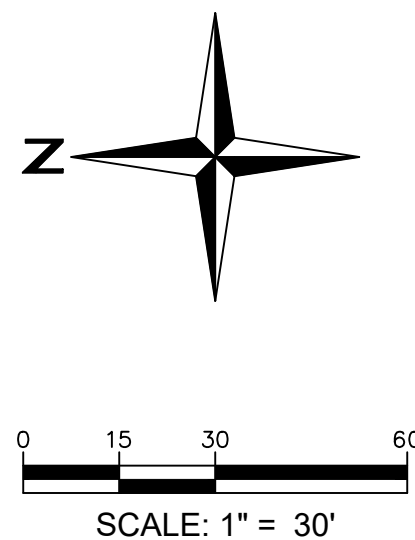
H: 1" = 30'
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KEYMAP
N.T.S

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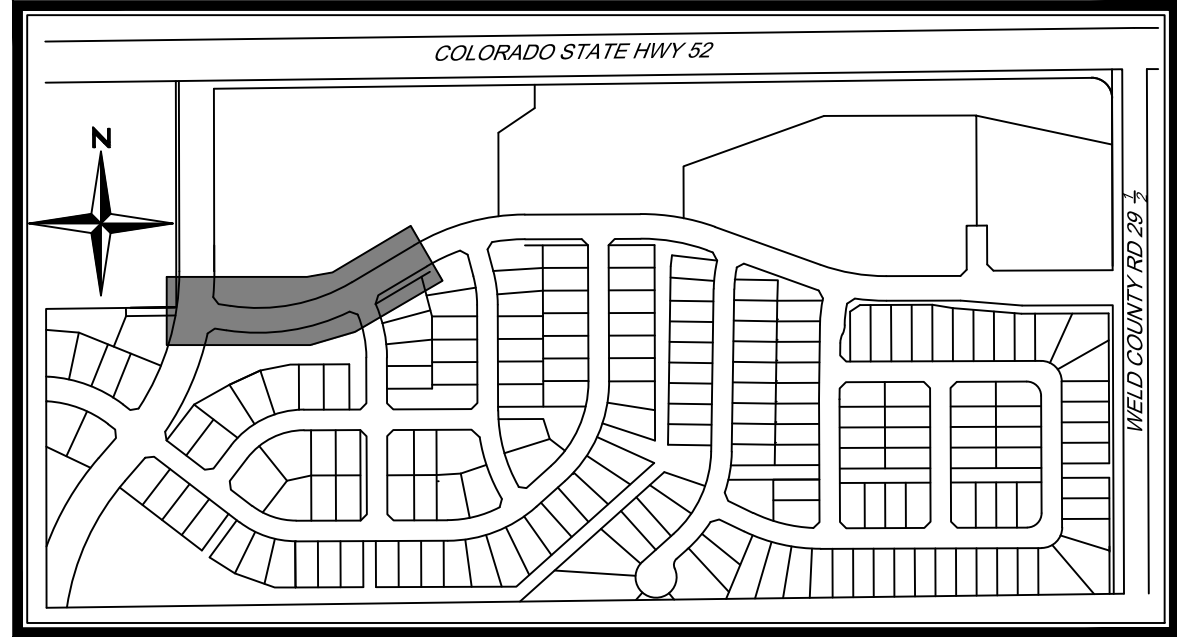
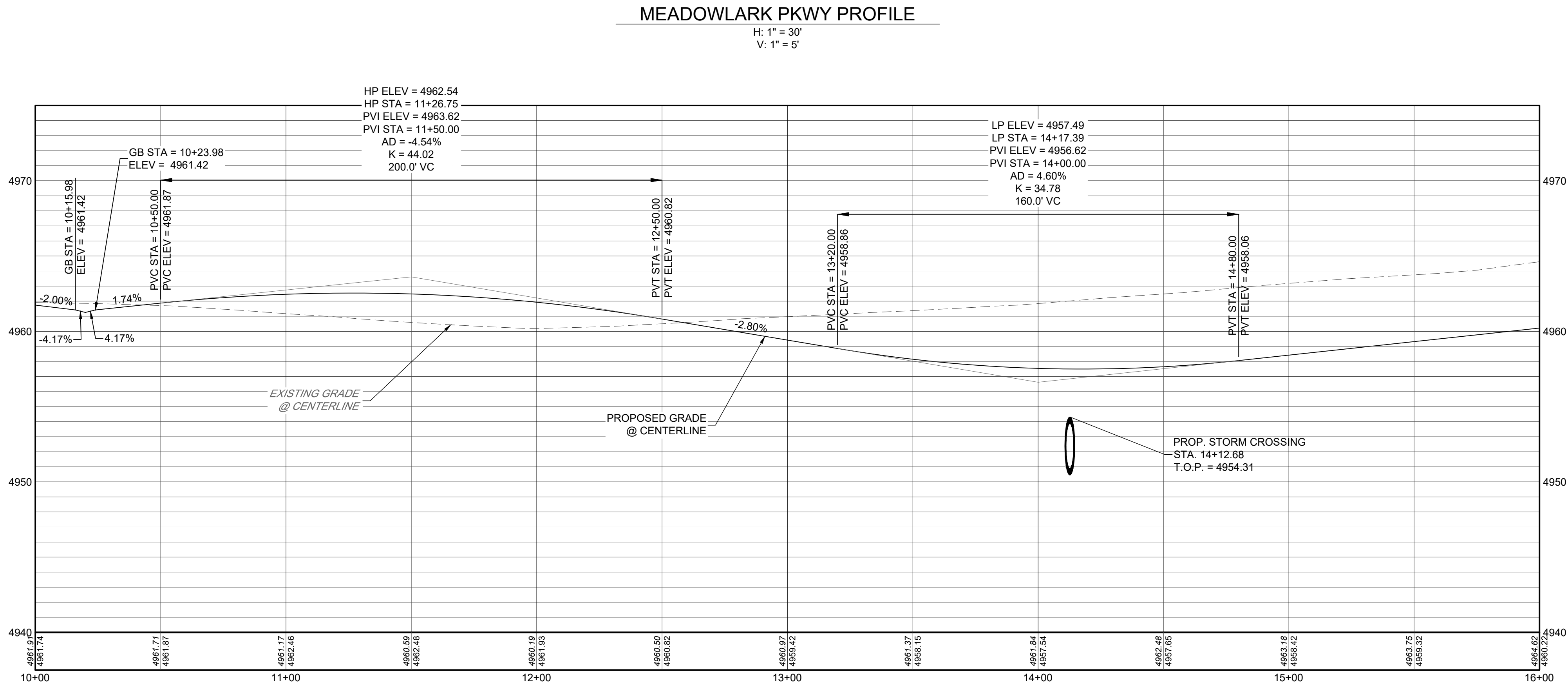
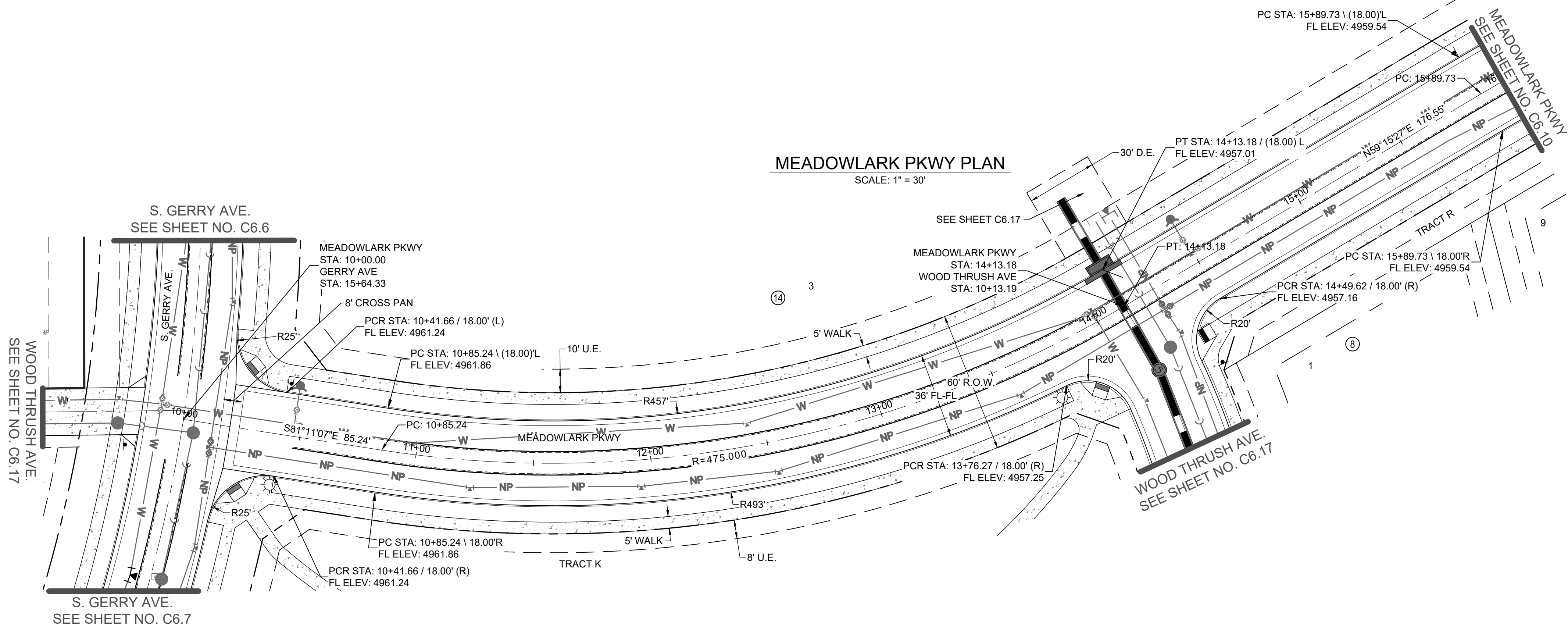
S. GERRY AVE.

SHEET

C6.6



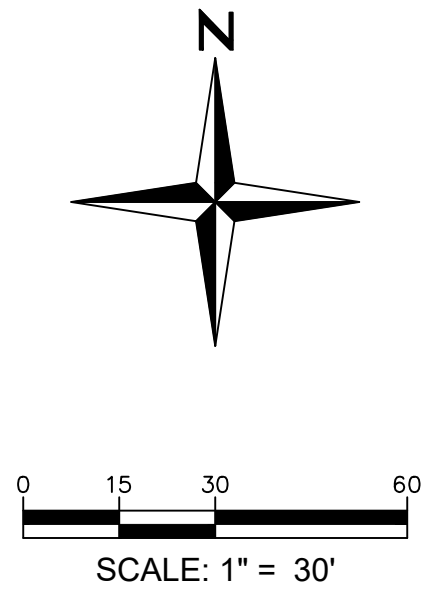
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KEYMAP
N.T.S

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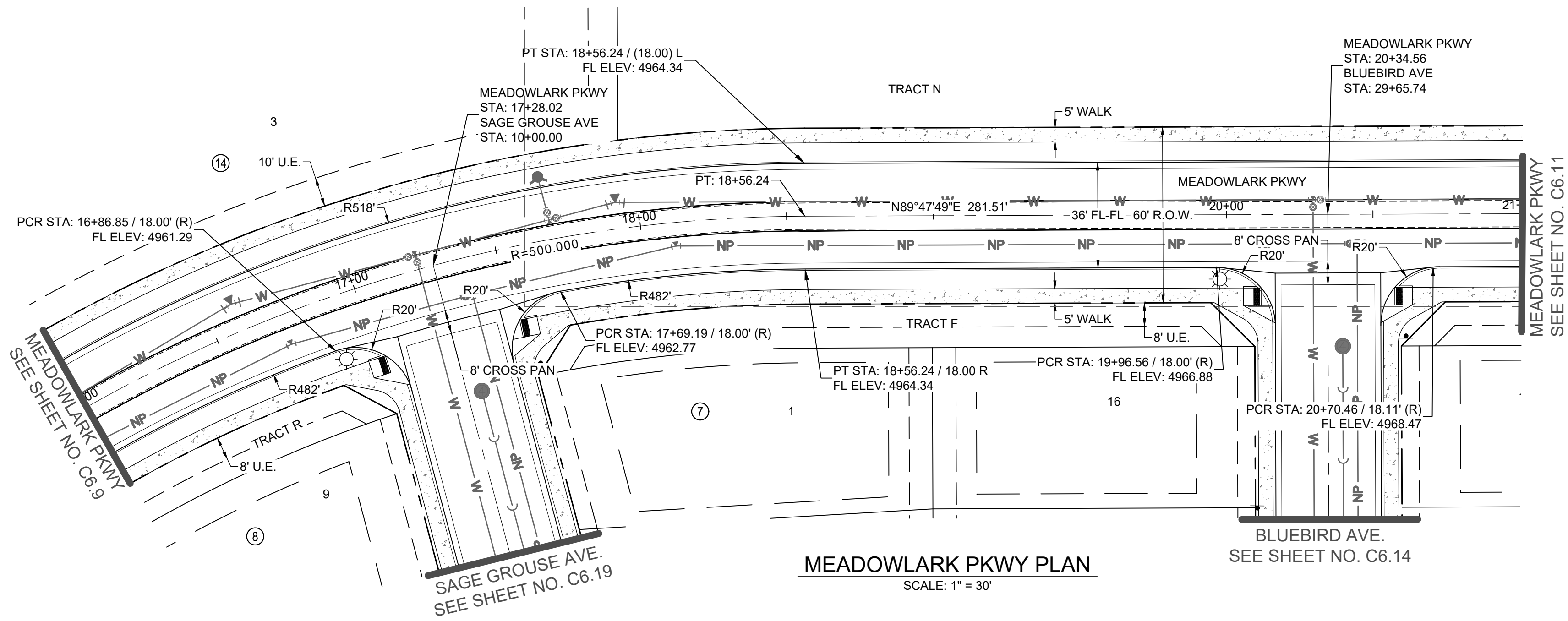
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
MEADOWLARK PKWY

SHEET

C6.8

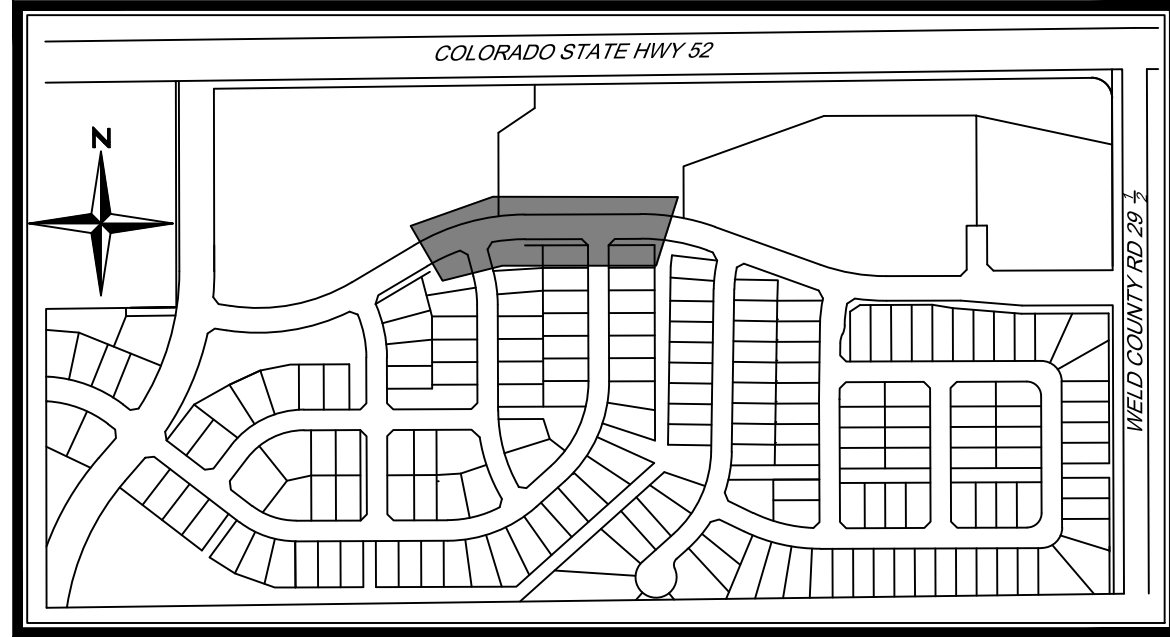
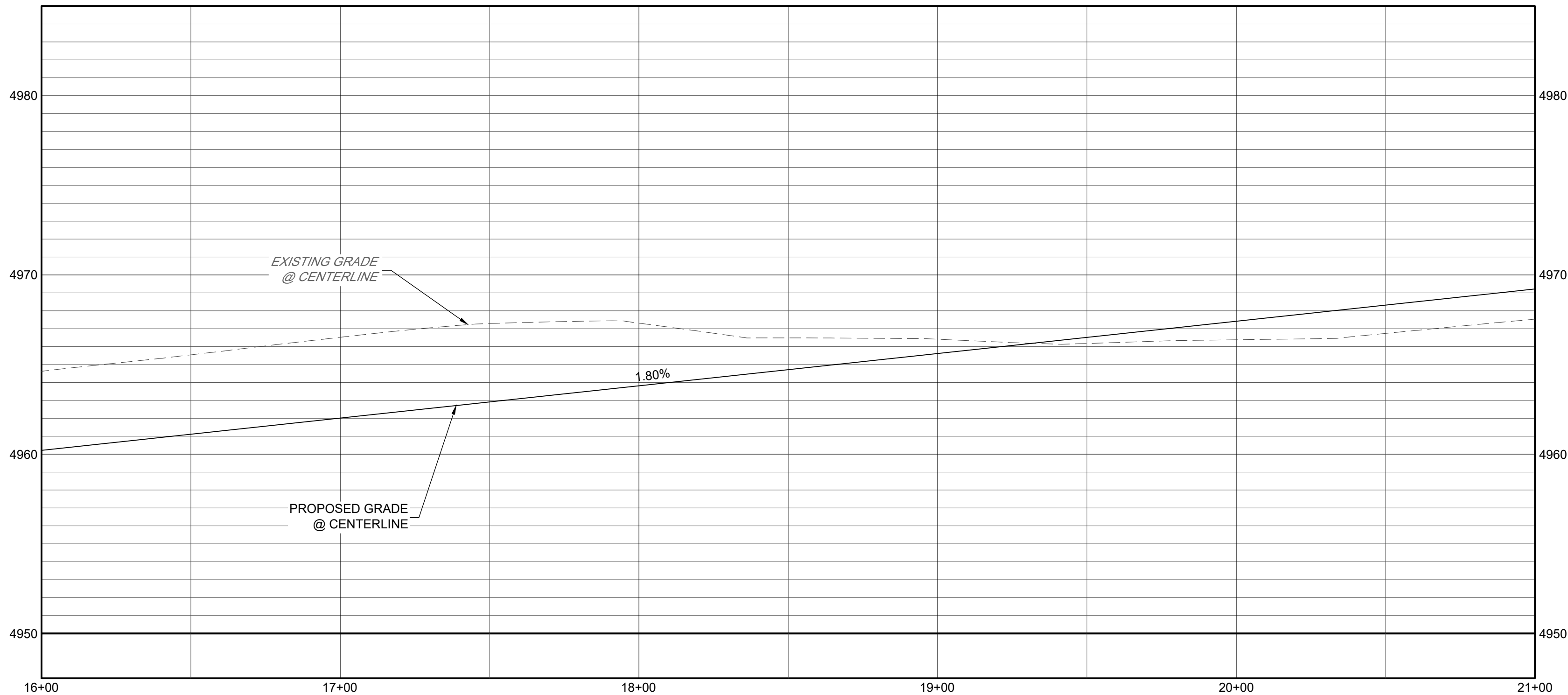


I:\2019\19032 - murata farms\CADD\sheet sets\construction drawings\19032 - Street B - P&P.dwg tab: C6.9 MEADOWLARK PKWY Aug 20, 2021 - 1:00pm ekoski



MEADOWLARK PKWY PROFILE

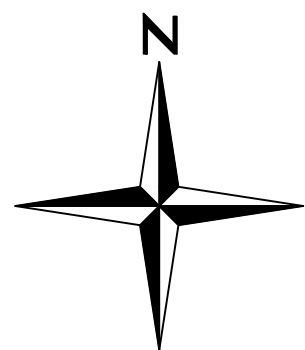
H: 1" = 50'
V: 1" = 5'



KEYMAP
N.T.S

NOTES

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0 15 30 60
SCALE: 1" = 30'



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1500 West Canal Court
Littleton, Colorado 80120
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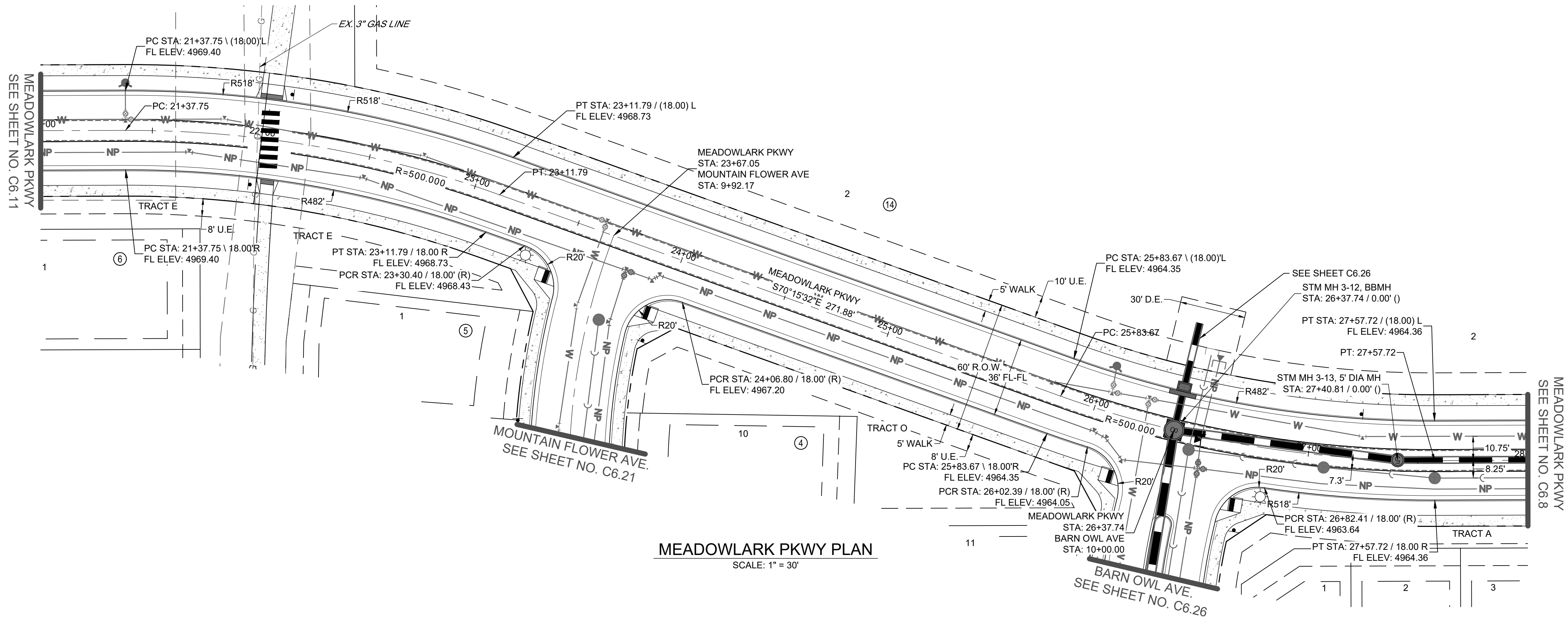
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

MEADOWLARK PKWY

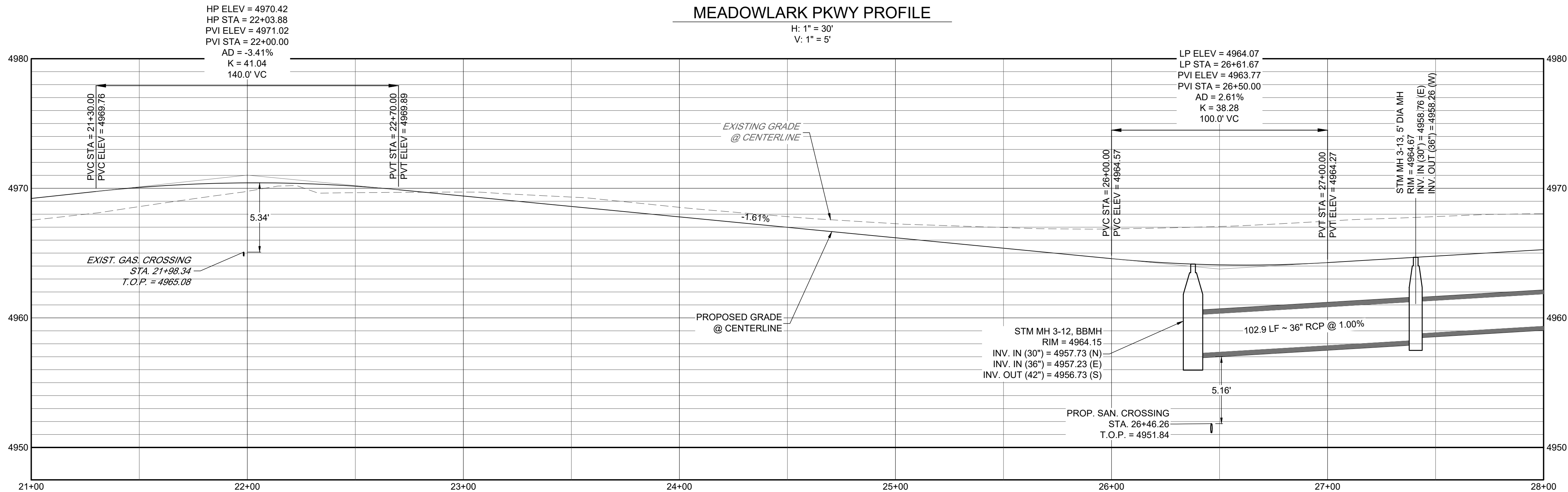
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C6.9

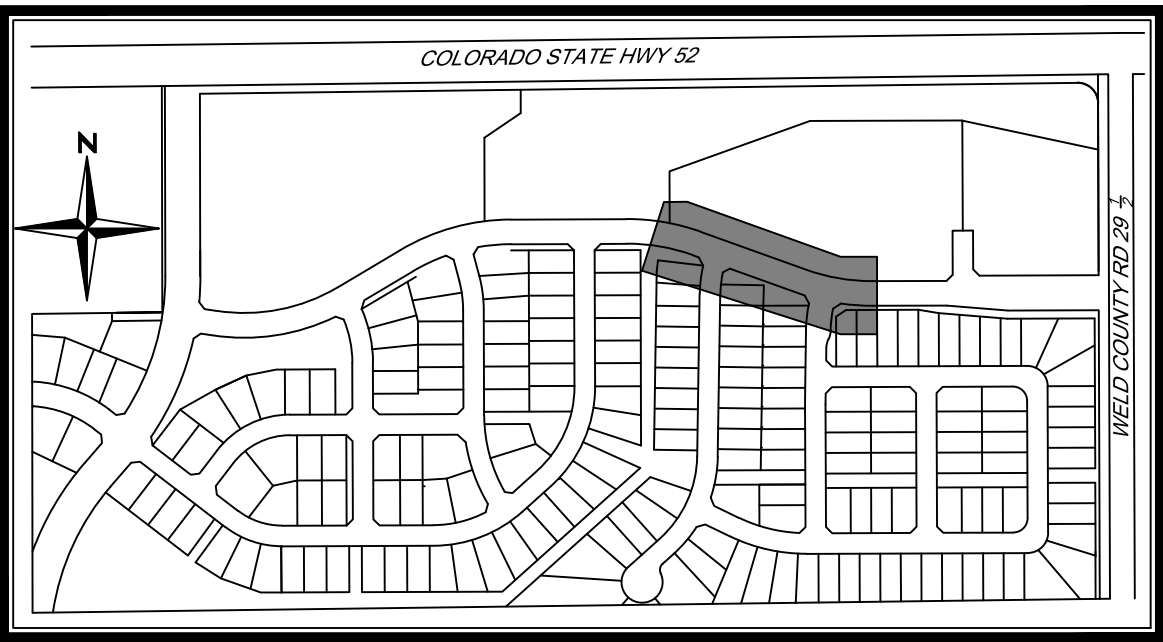
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MEADOWLARK PKWY PLAN
SCALE: 1" = 30'



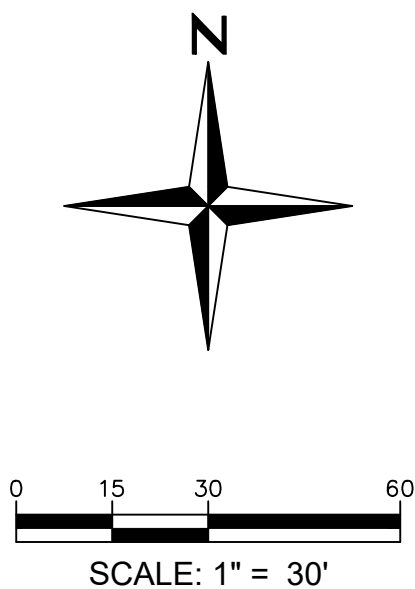
MEADOWLARK PKWY PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

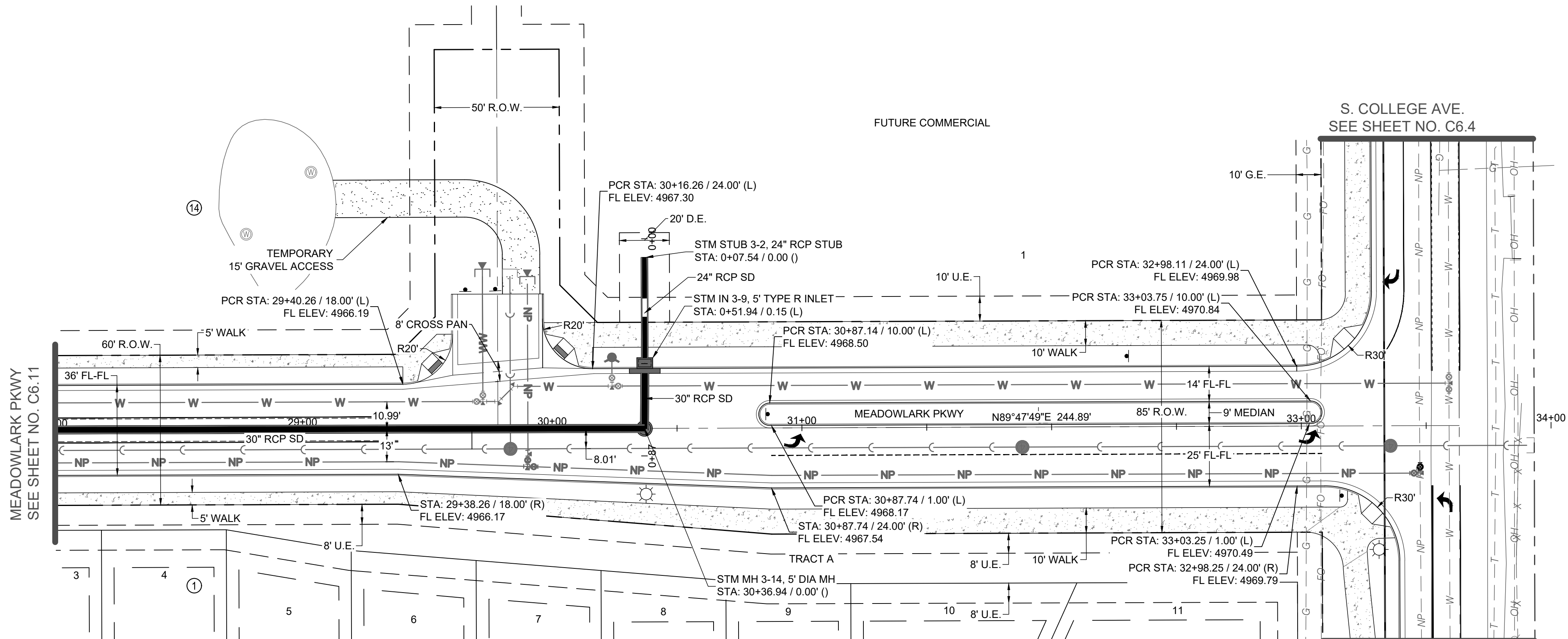
MEADOWLARK PKWY

SHEET

C6.10

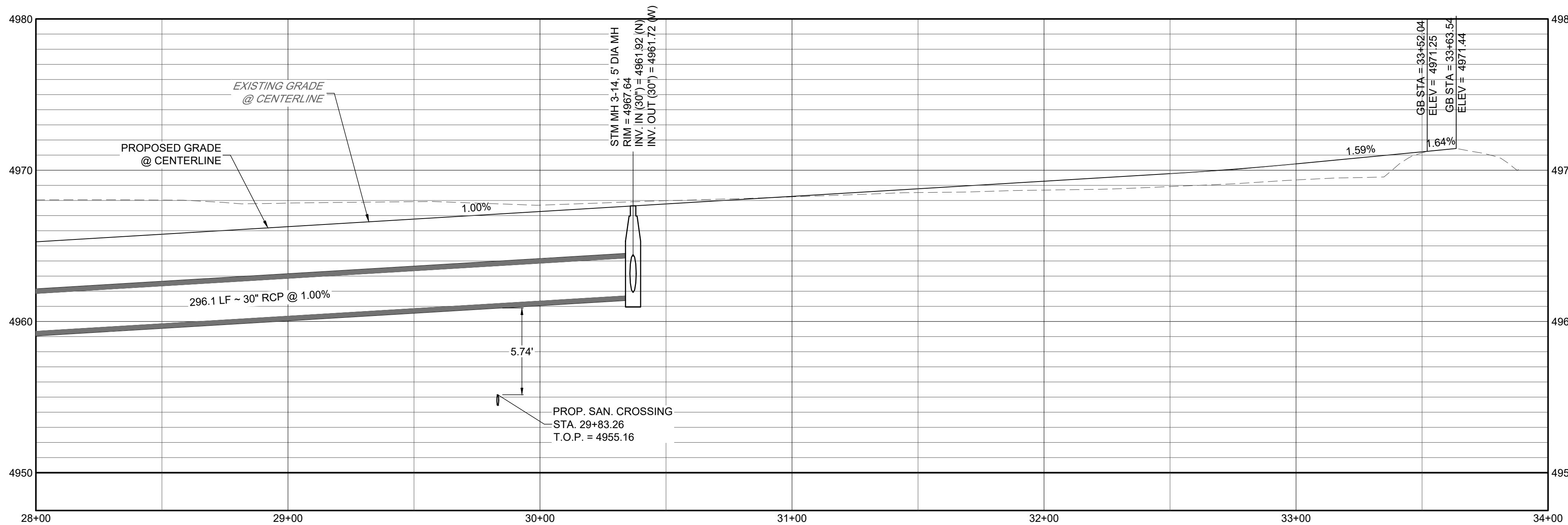


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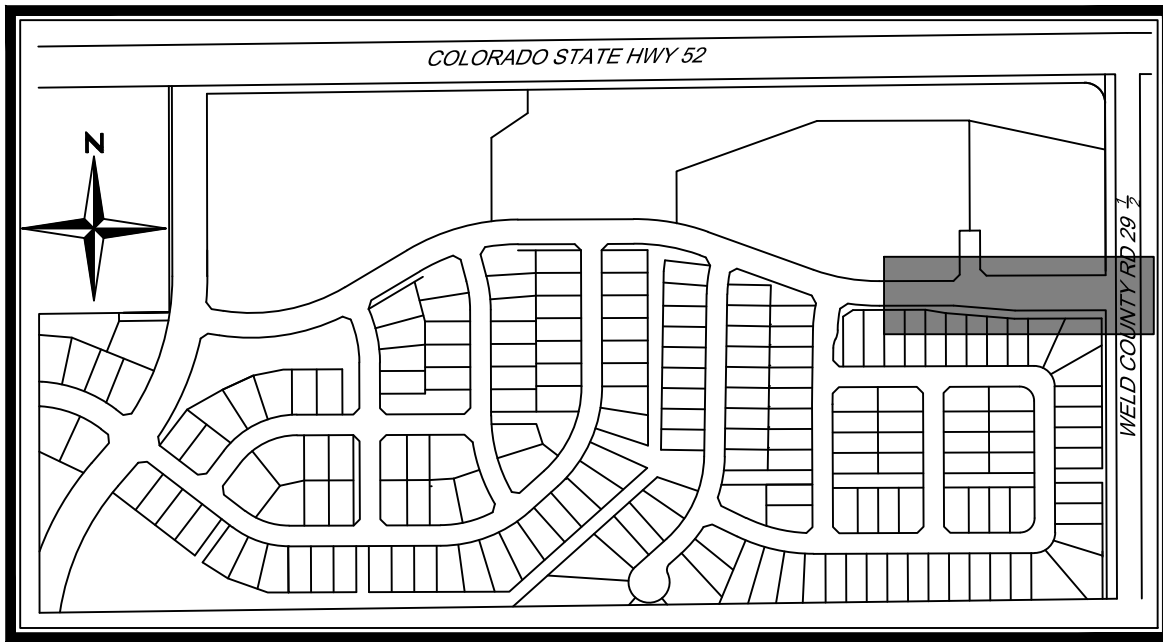
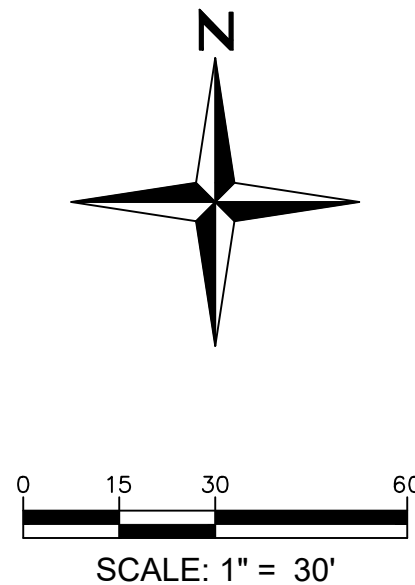
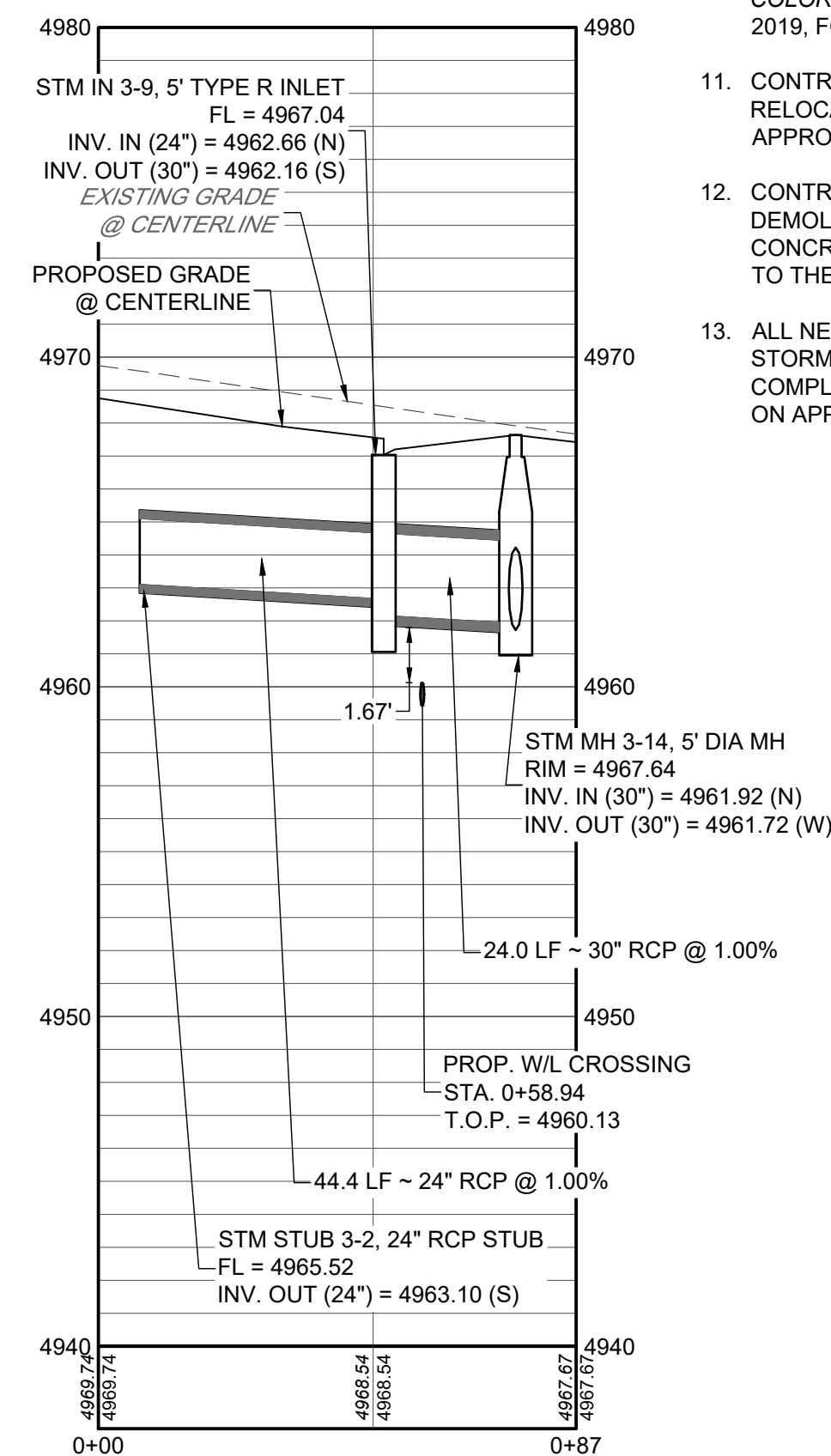


MEADOWLARK PKWY PLAN
SCALE: 1" = 30'

MEADOWLARK PKWY PROFILE
H: 1" = 30'
V: 1" = 5'



STM STUB 3-2 - STM MH 3-14 PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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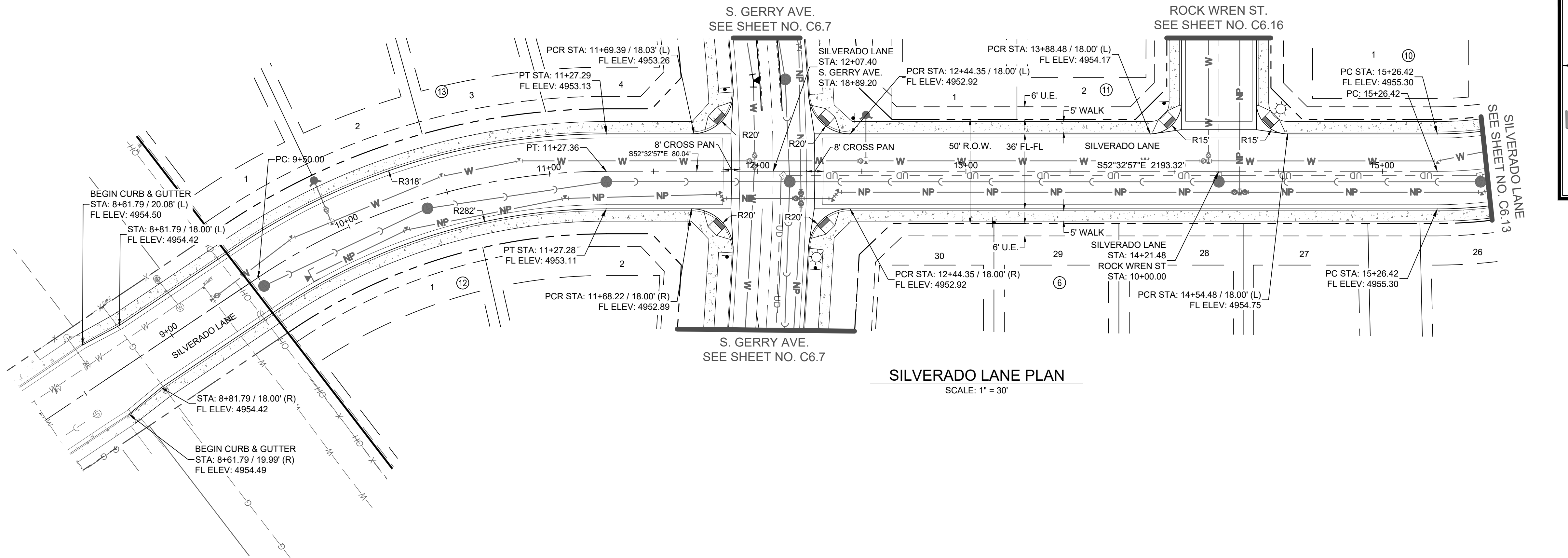
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
MEADOWLARK PKWY

SHEET

C6.11



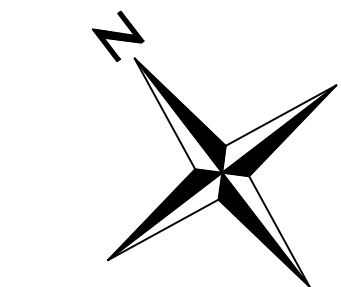
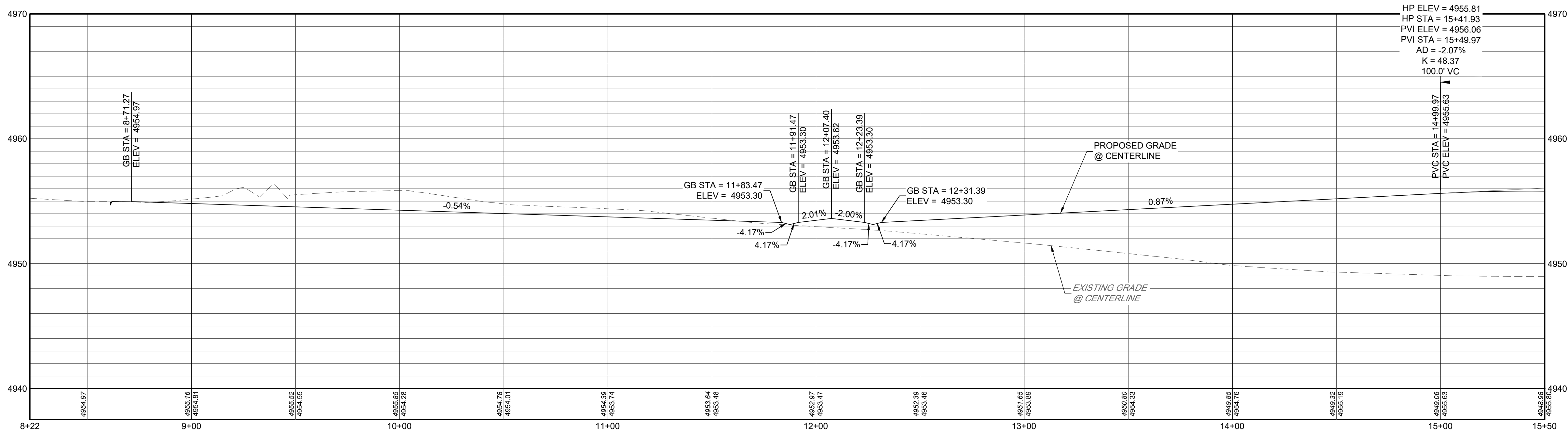
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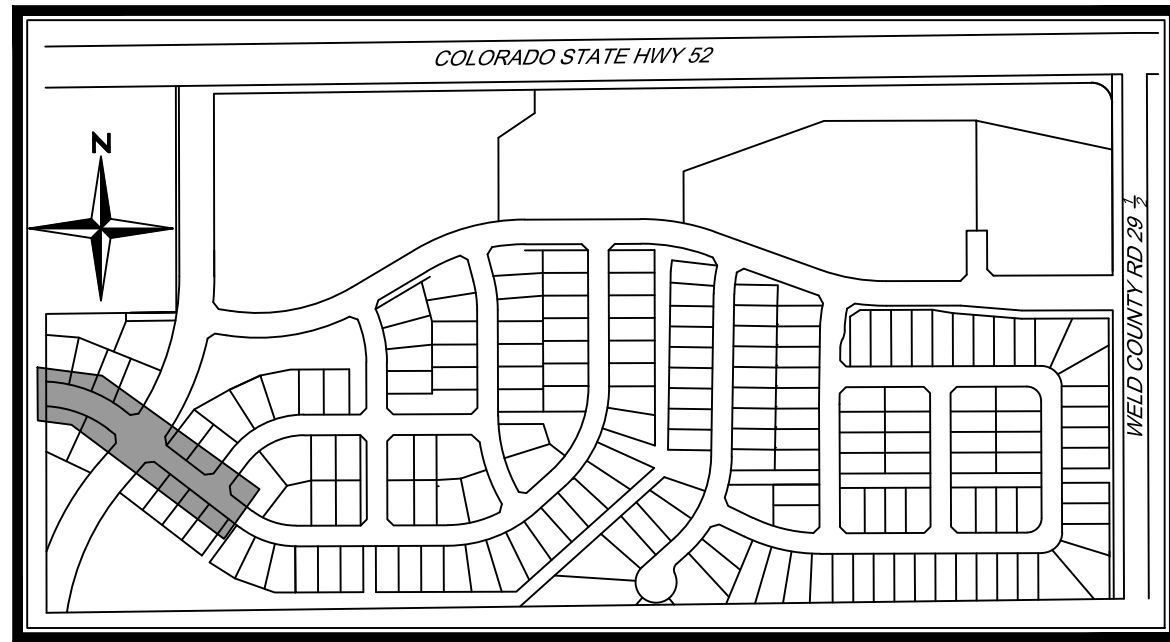
SILVERADO LANE PLAN
SCALE: 1" = 30'

SILVERADO LANE PROFILE

H: 1" = 30'
V: 1" = 5'



0 15 30 60
SCALE: 1" = 30'



KEYMAP
N.T.S

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

SILVERADO LANE

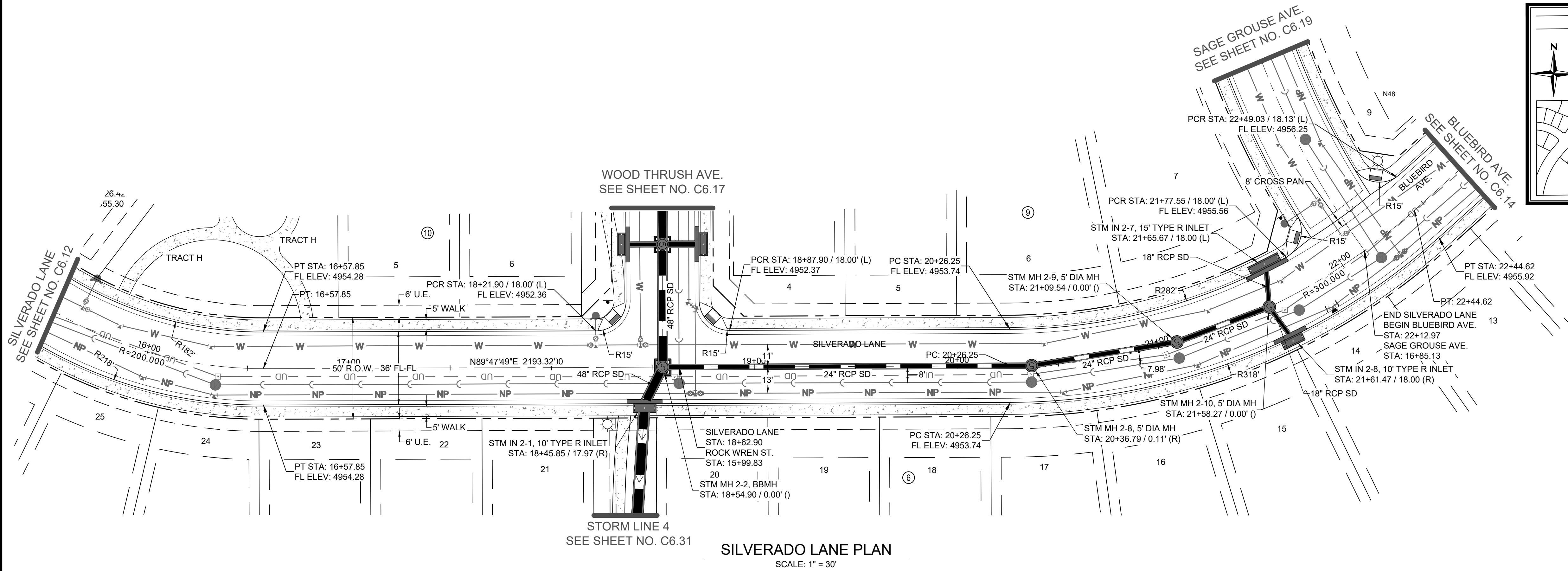
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C6.12



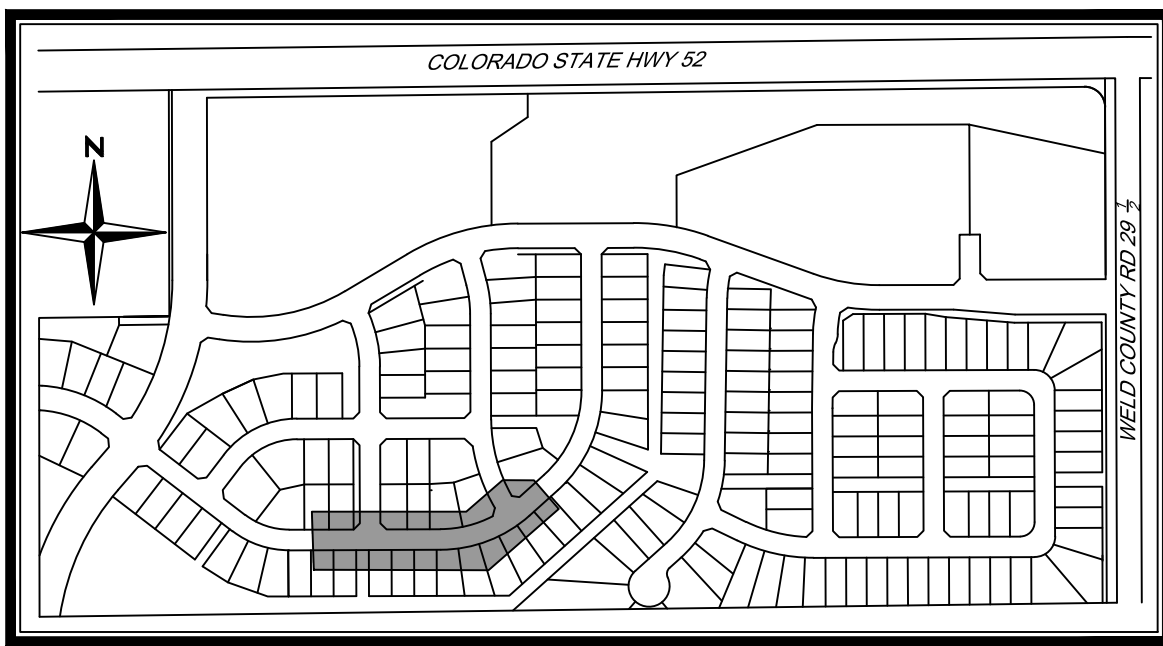
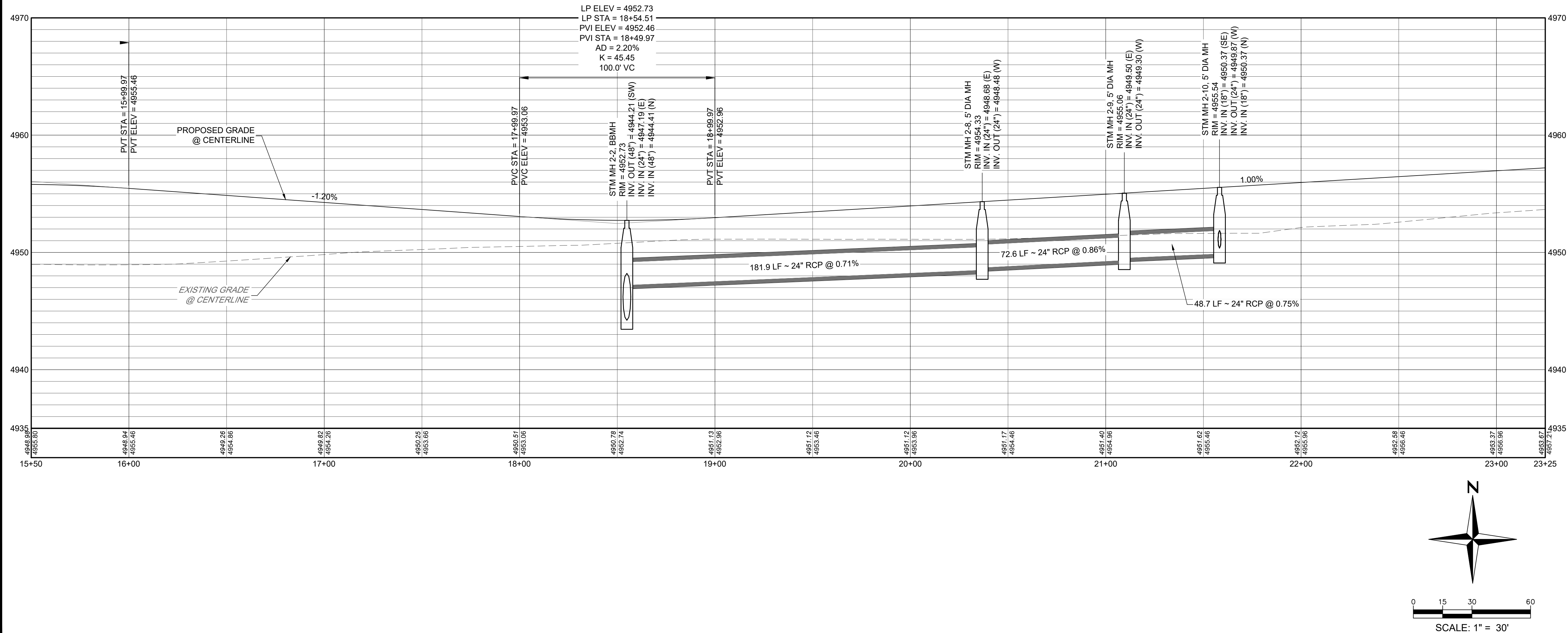
700.283.4793 Office
1500 West Canal Court
Littleton, Colorado 80120
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I:\2019\19032 - murata farms\CADD\sheet sets\Construction drawings\19032 - Street C - P&P.dwg tab: C6.13 SILVERADO LANE Aug 20, 2021 - 3:24pm bconnell



SILVERADO LANE PLAN
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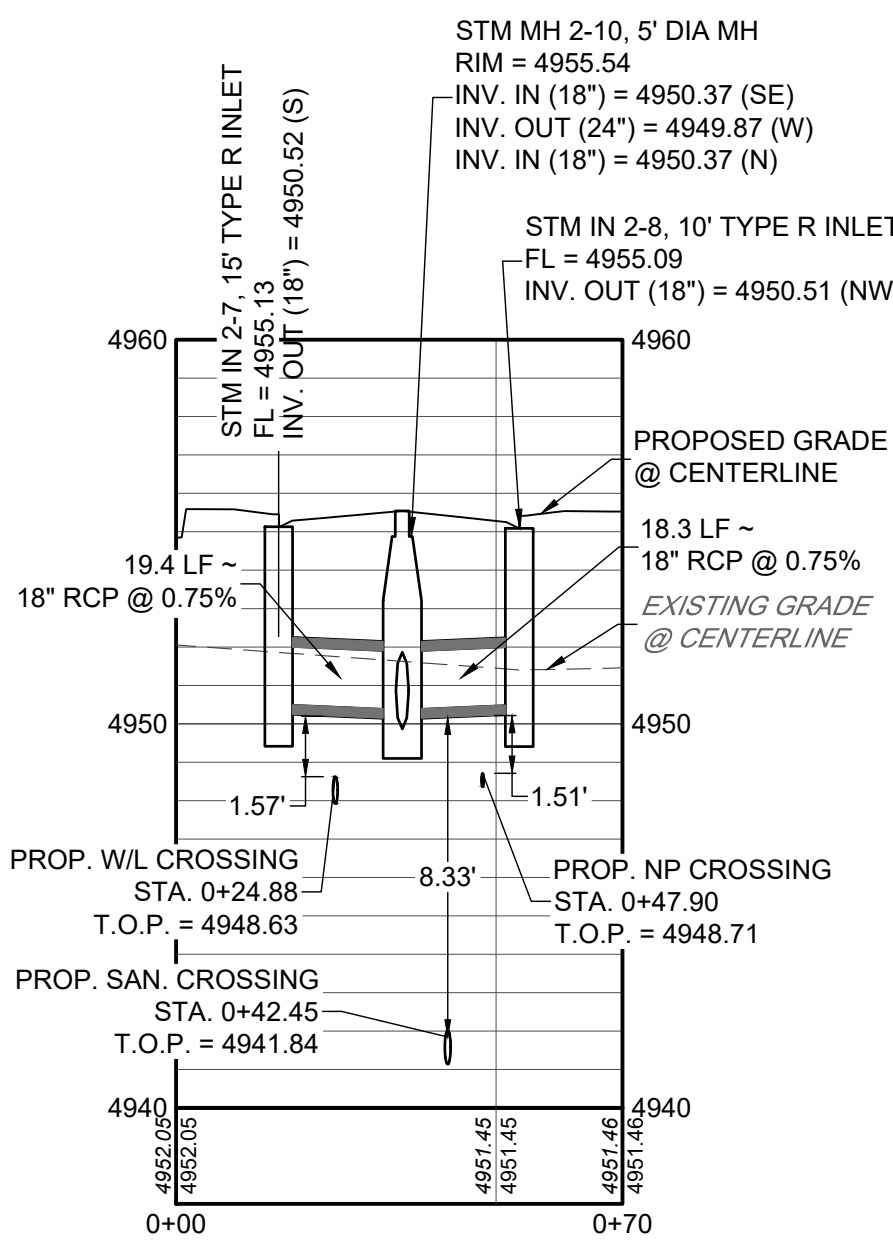
SILVERADO LANE PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
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STM IN 2-7 - STM IN 2-10 PROFILE
H: 1" = 30'
V: 1" = 5



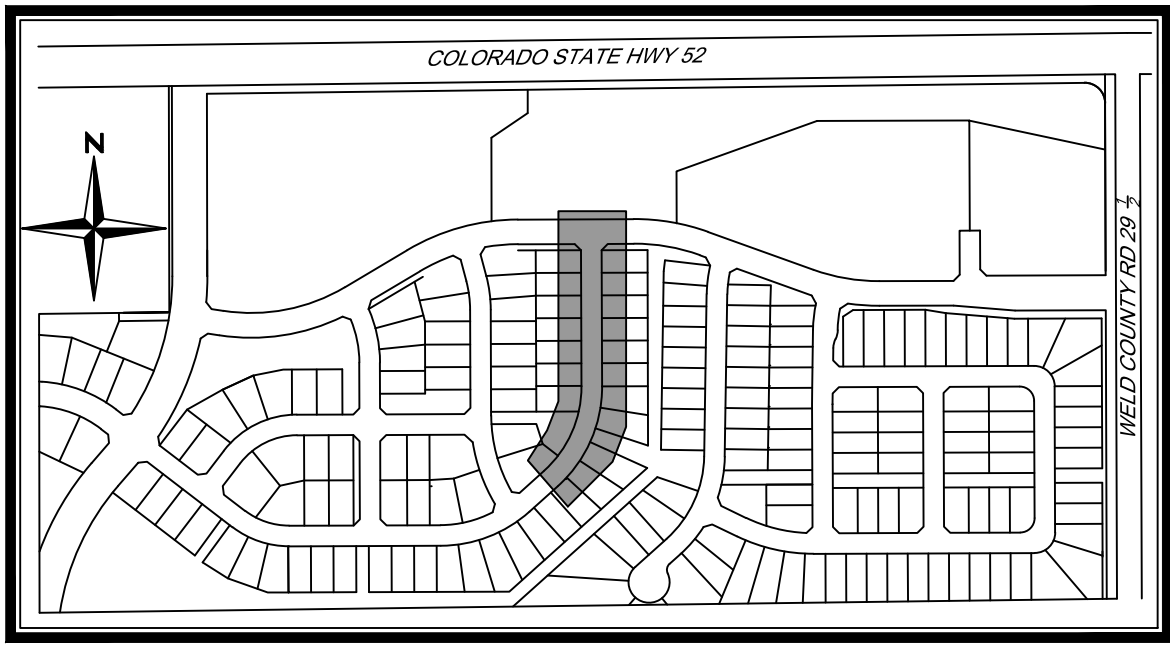
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

SILVERADO LANE

SHEET

C6.13

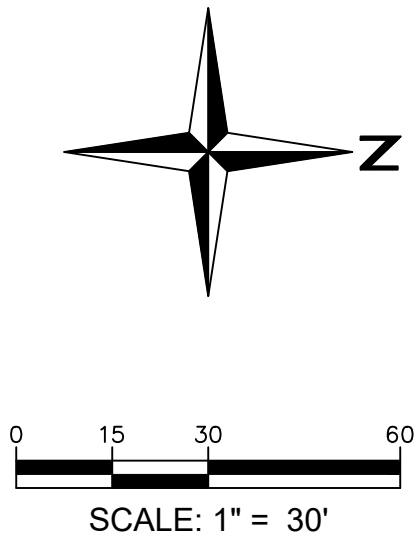




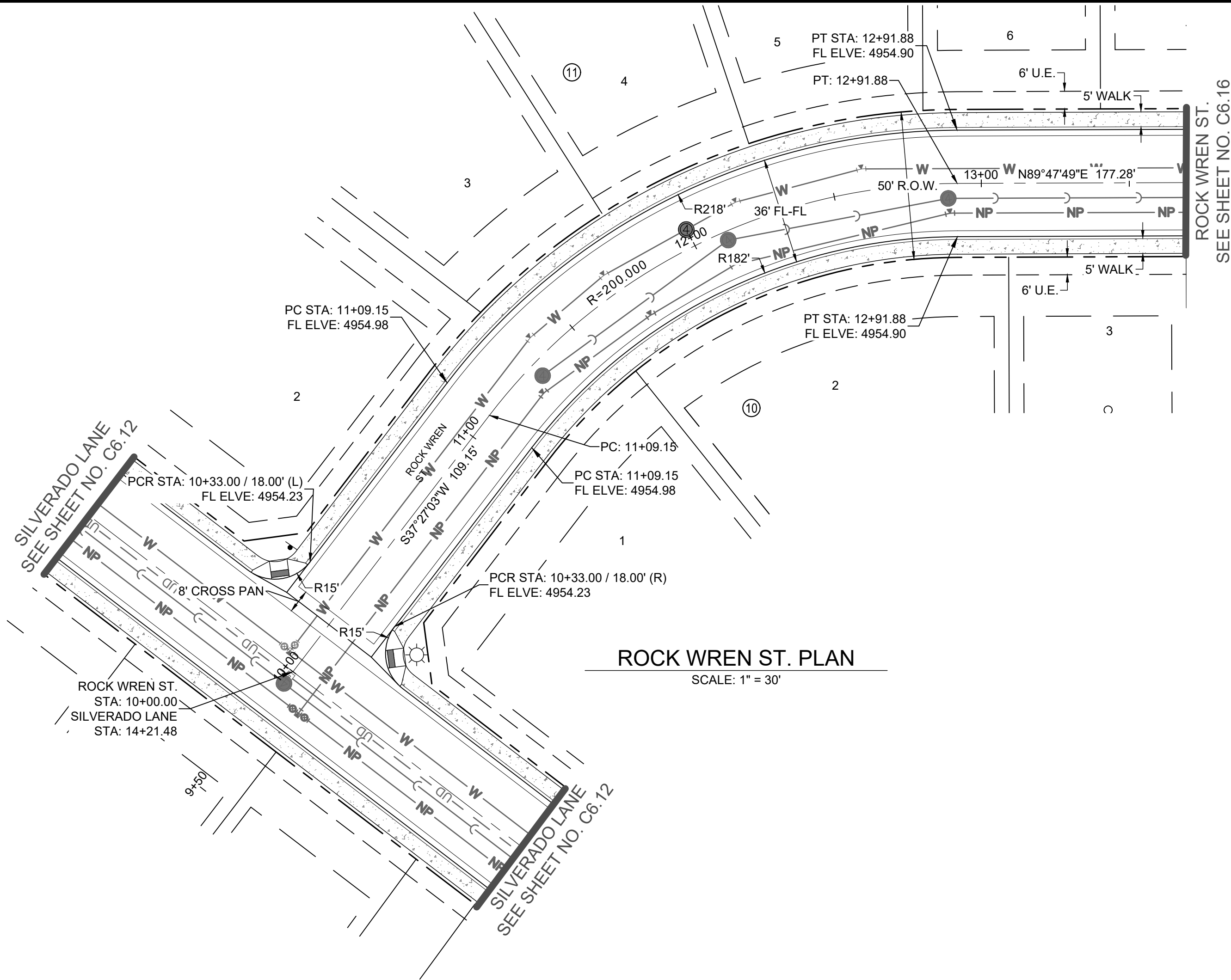
KEYMAP
N.T.S

NOTES

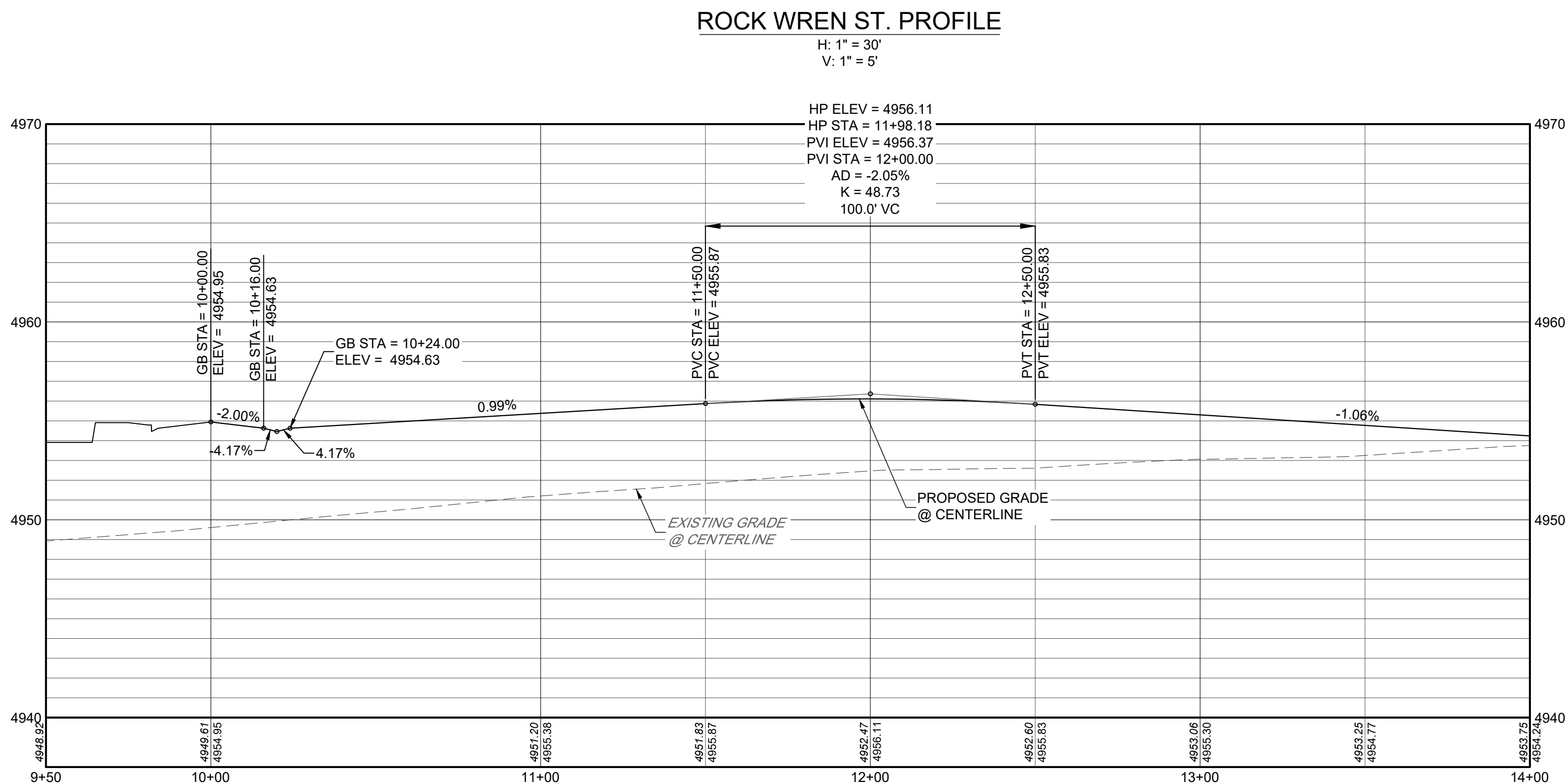
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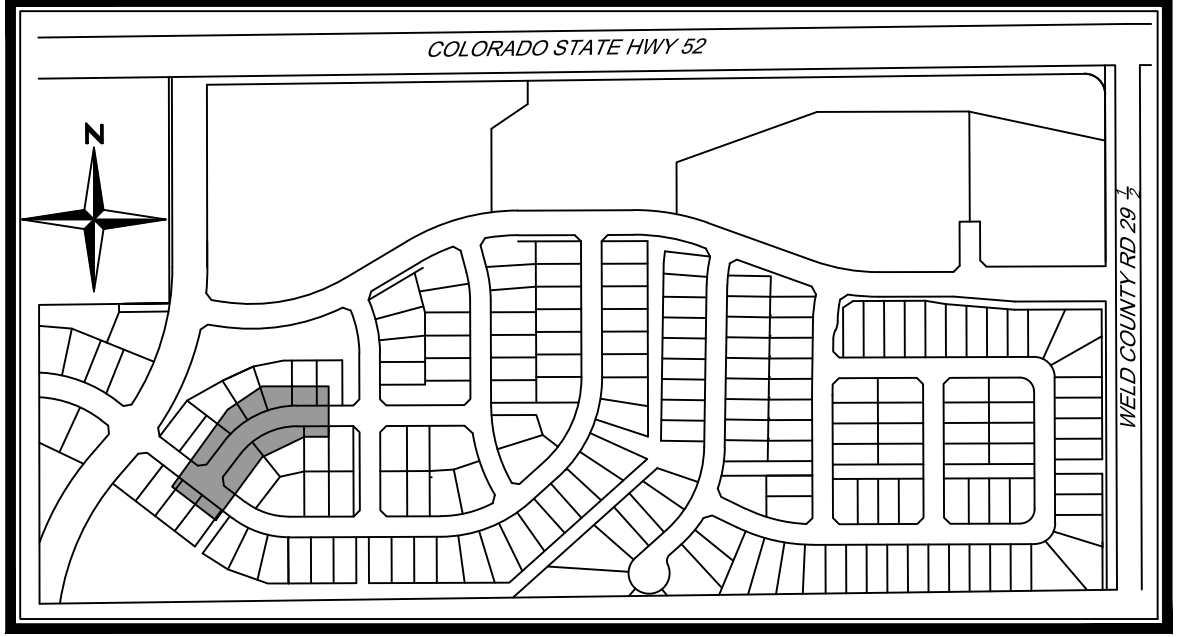
I:\2019\19032 - murata_farms\CADD\sheet_sets\construction drawings\19032 - Street D - P&P.dwg tab: C6.15 ROCK WREN ST. Aug 20, 2021 - 1:03pm ekoski



ROCK WREN ST. PLAN
SCALE: 1" = 30'



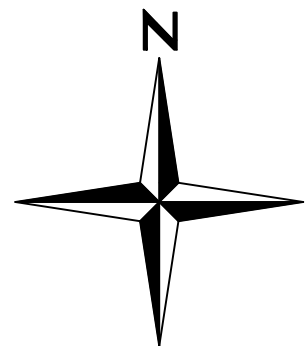
ROCK WREN ST. PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S.

NOTES

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0 15 30 60
SCALE: 1" = 30'

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

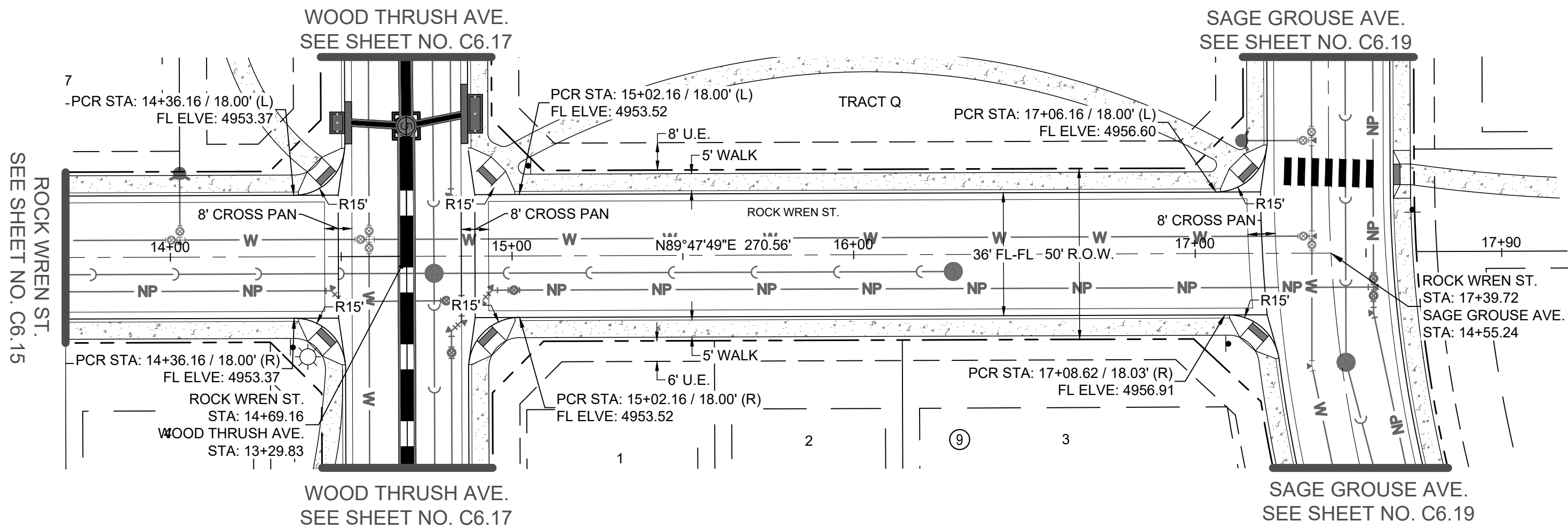
ROCK WREN ST.

SHEET

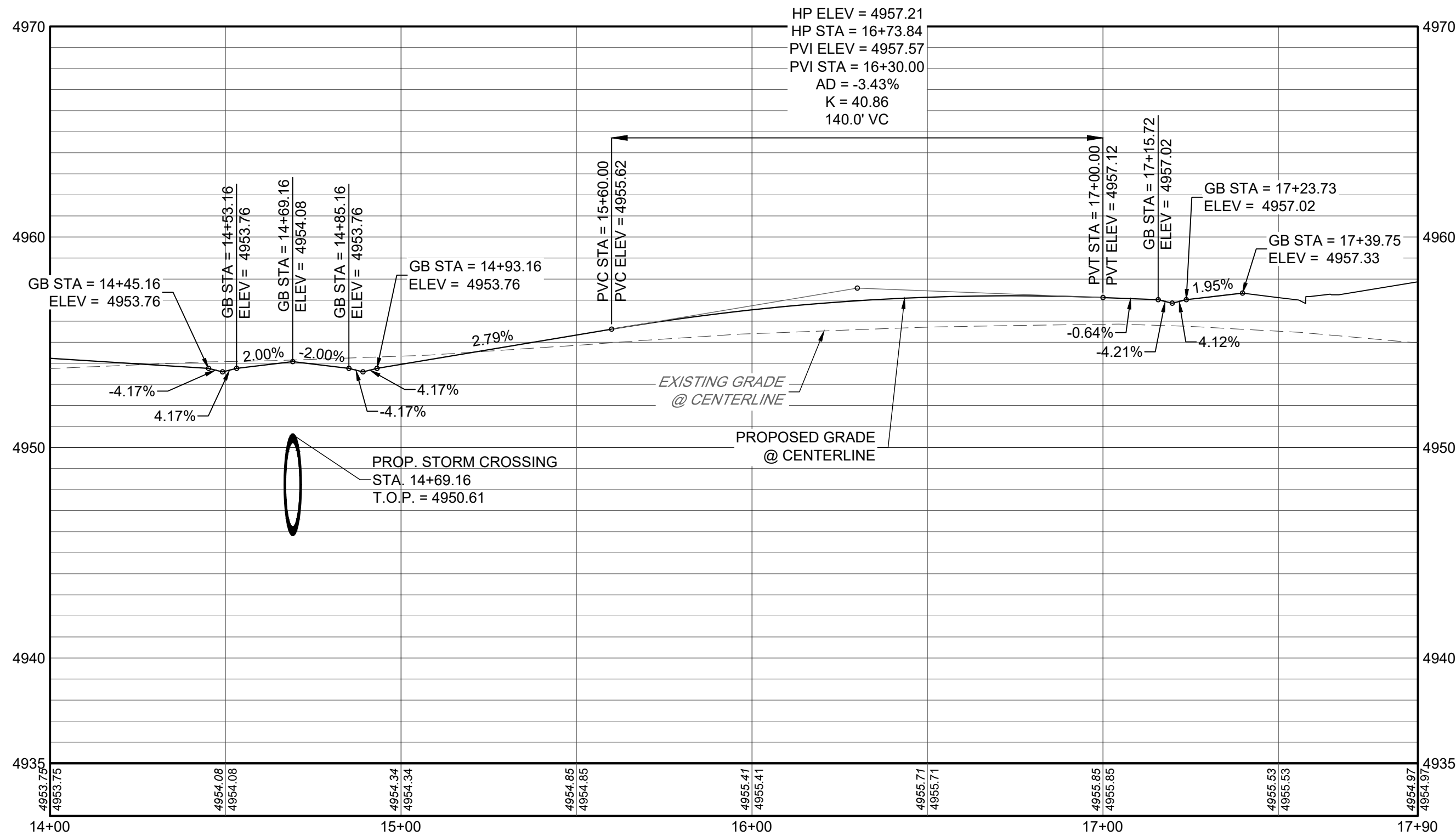
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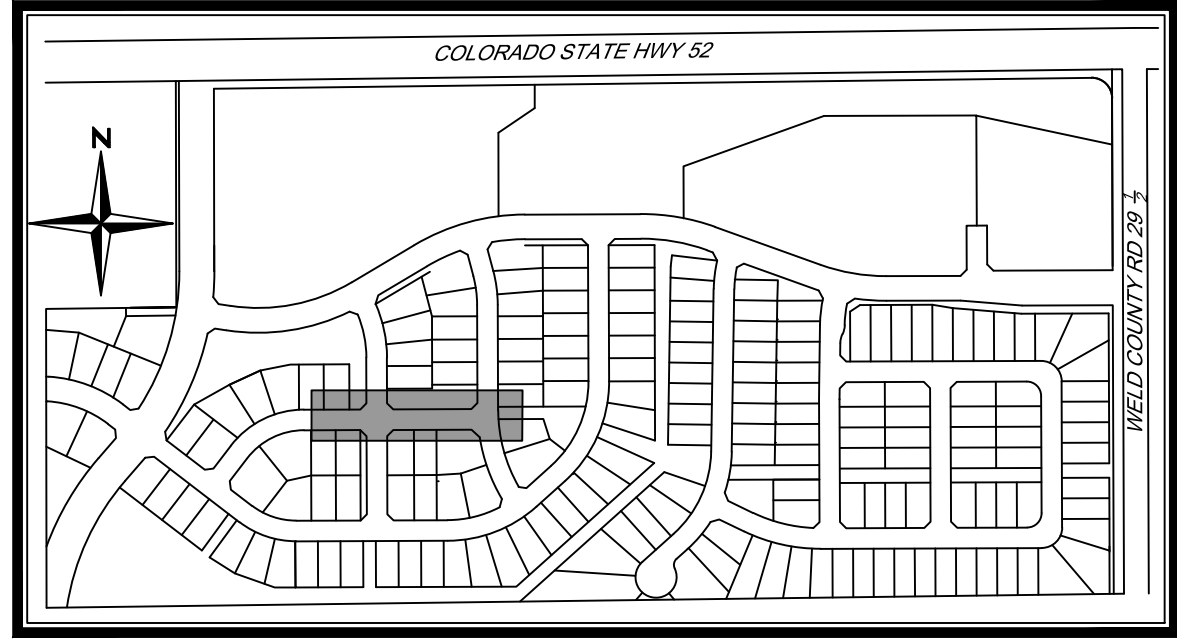
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ROCK WREN ST. PLAN
SCALE: 1" = 30'



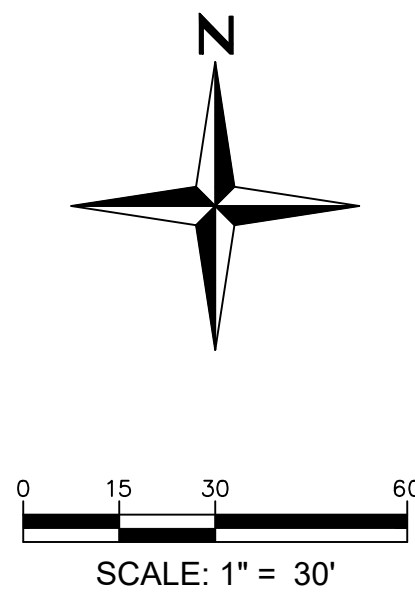
ROCK WREN ST. PROFILE
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

ROCK WREN ST.

SHEET

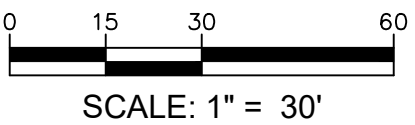
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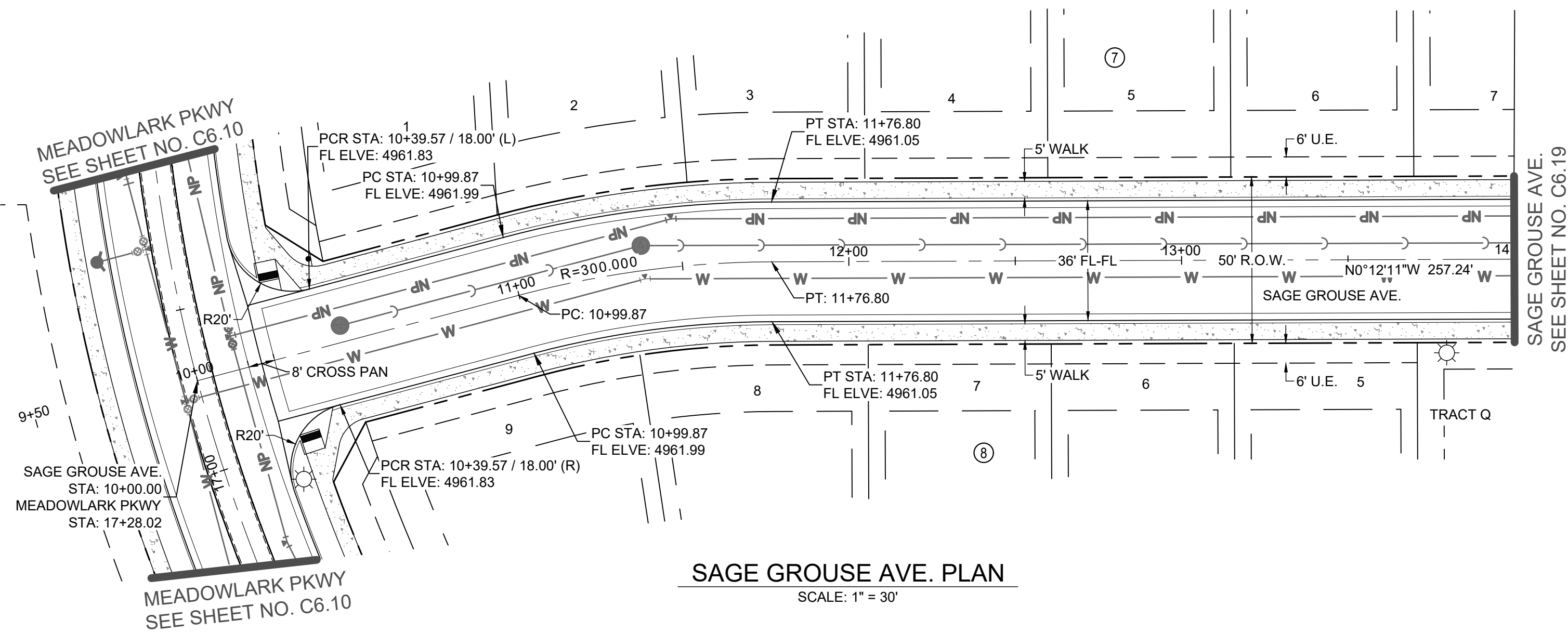
REDLAND.COM



SCALE: 1" = 30'

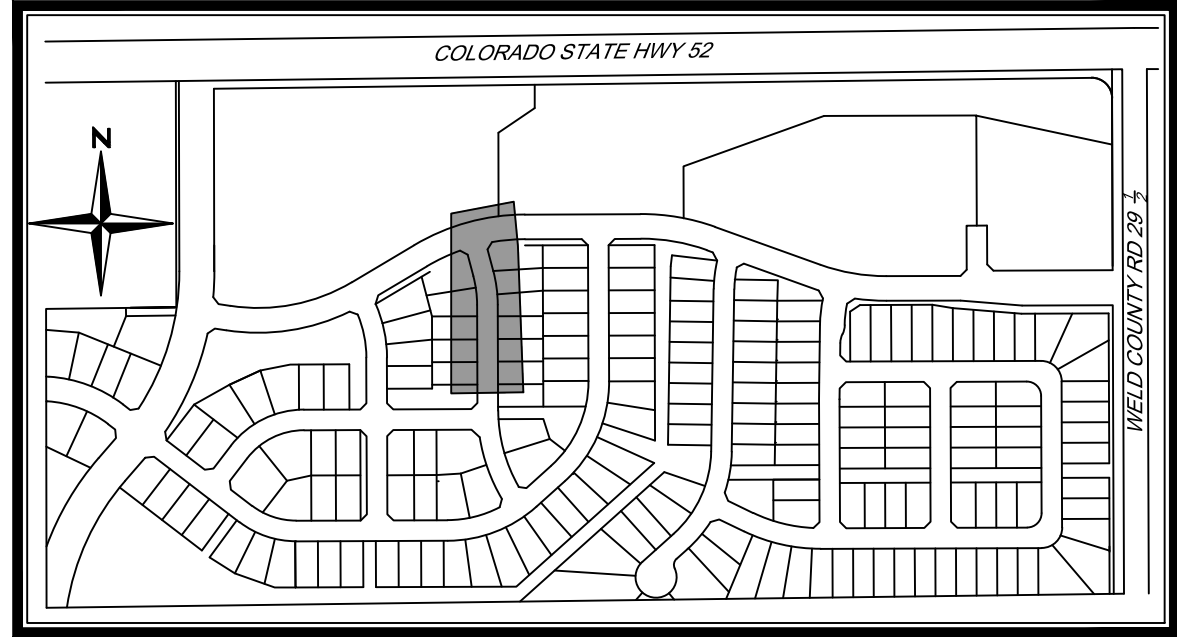
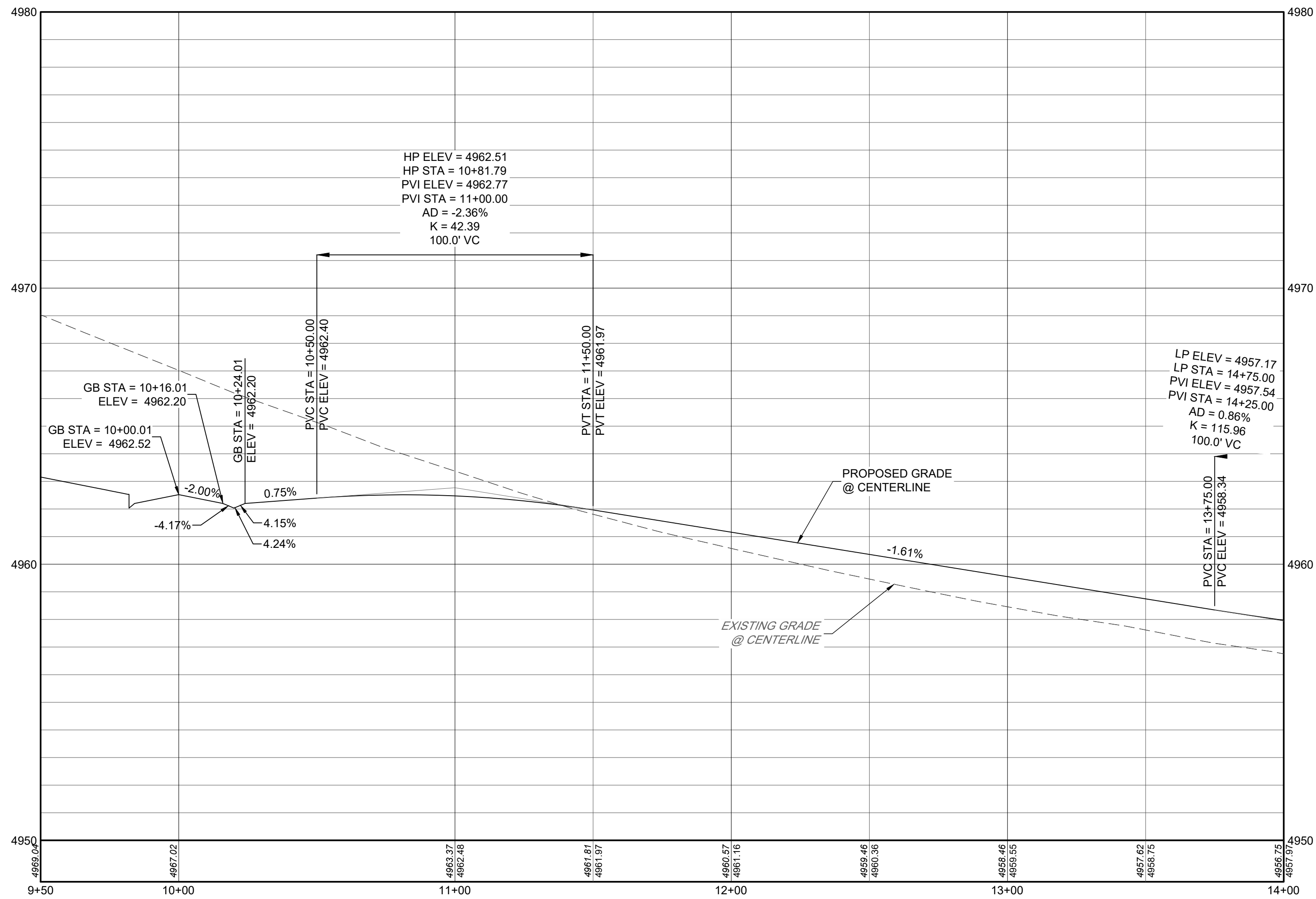


I:\2019\19032 - murata farms\CADD\sheet_sets\construction drawings\19032 - Street F - P&P.dwg tab: C6.18 SAGE GROUSE AVE. Aug 20, 2021 - 1:05pm ekoski



SAGE GROUSE AVE. PROFILE

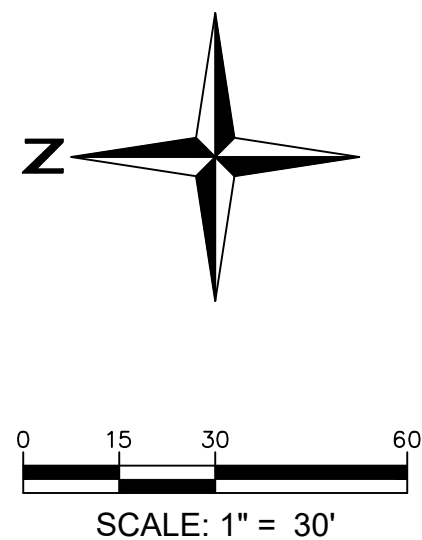
H: 1" = 30'
V: 1" = 5'



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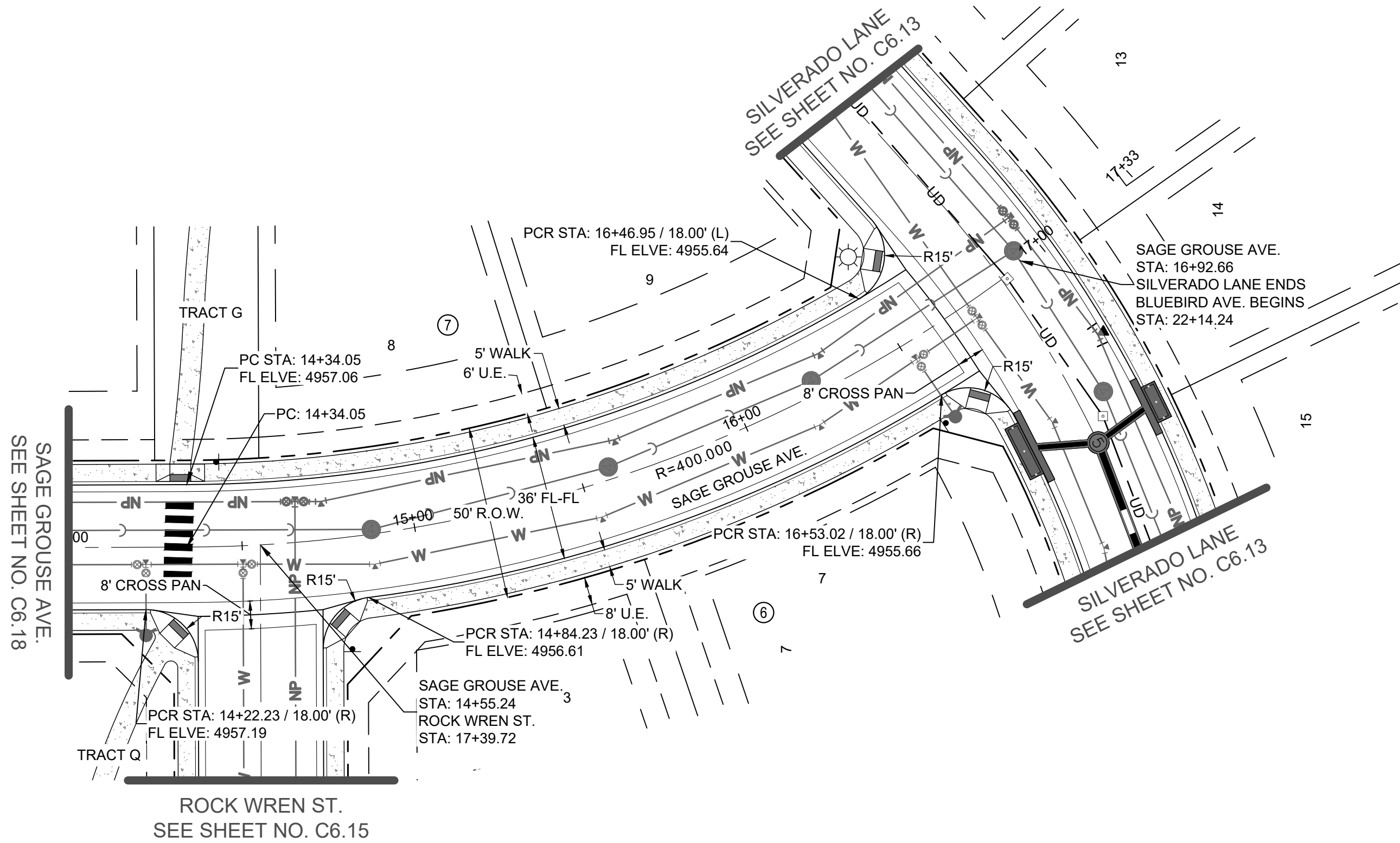
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

SAGE GROUSE AVE.

SHEET

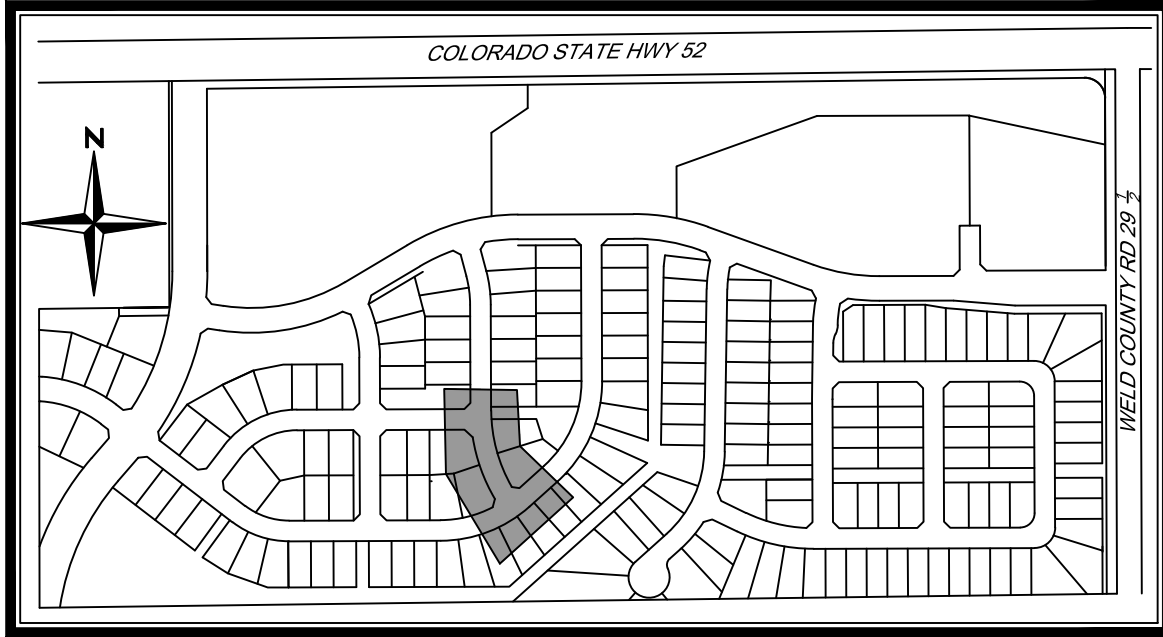
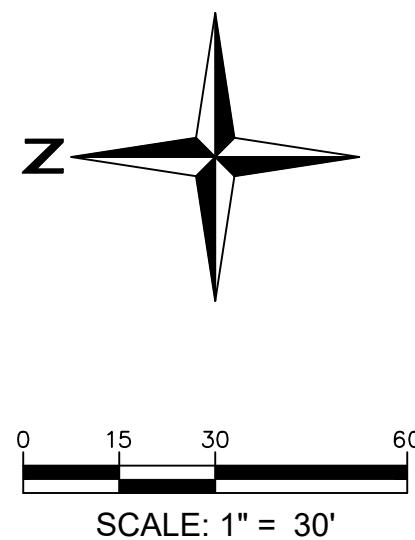
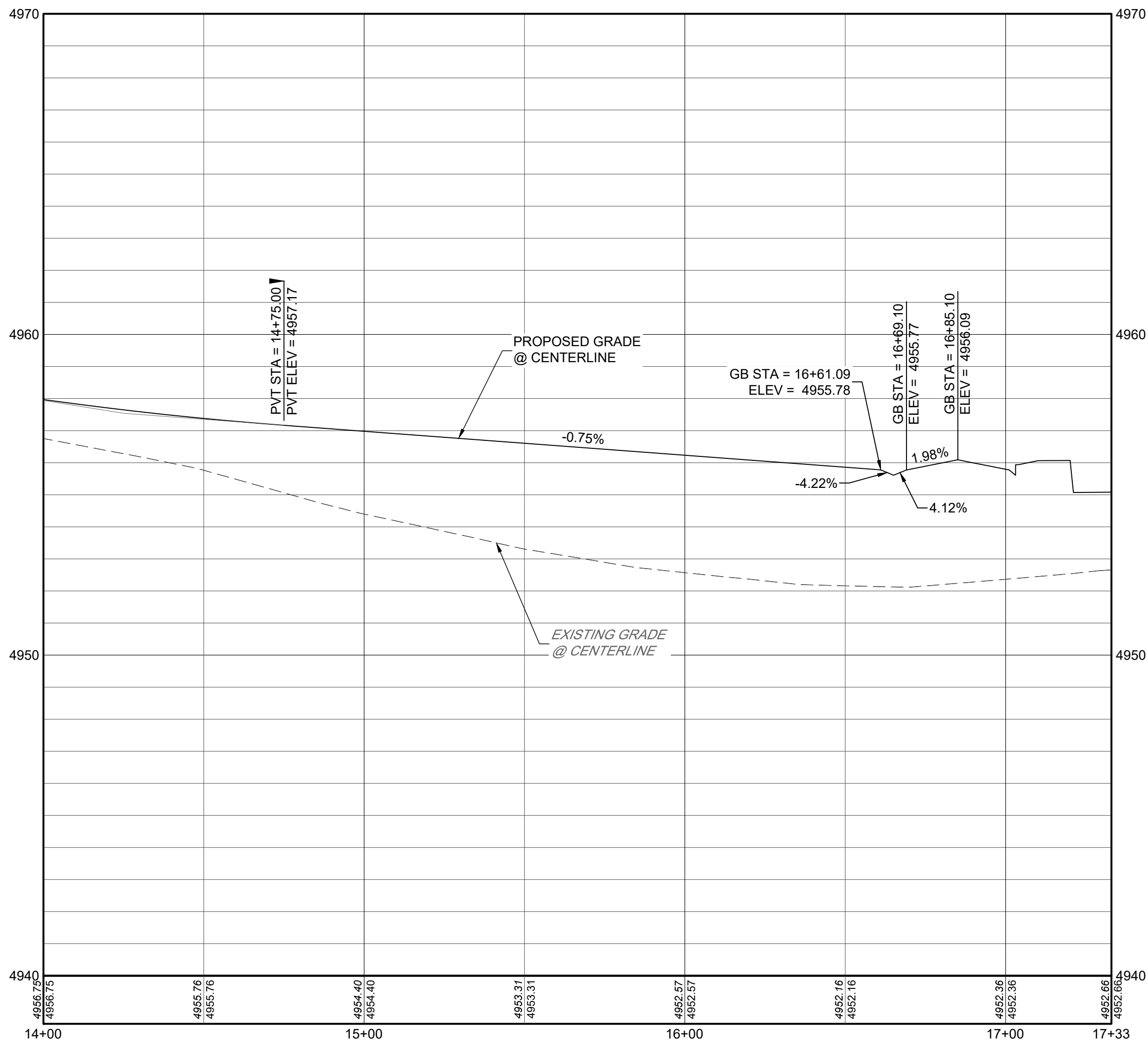
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SAGE GROUSE AVE. PLAN
SCALE: 1" = 30'

SAGE GROUSE AVE. PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

SAGE GROUSE AVE.

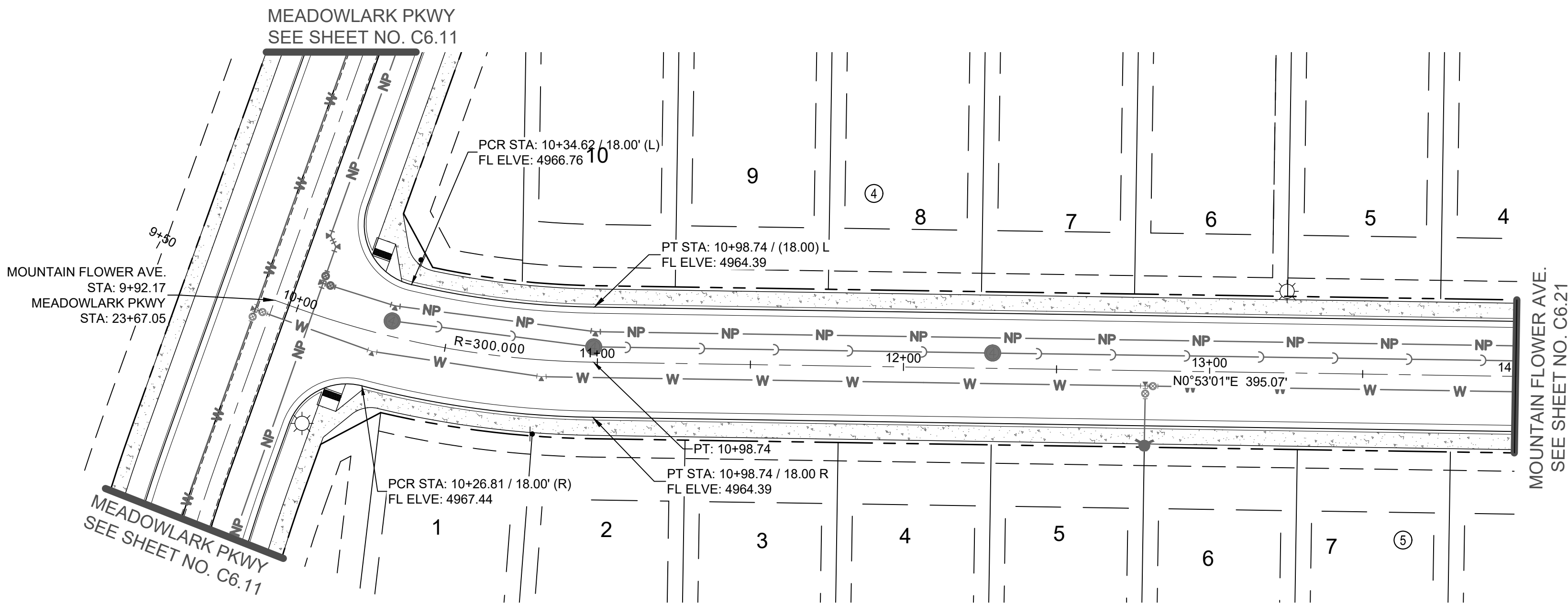


WHERE GREAT PLACES BEGIN
7700 283rd Office
1500 West Canal Court
Littleton, Colorado 80120
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SHEET

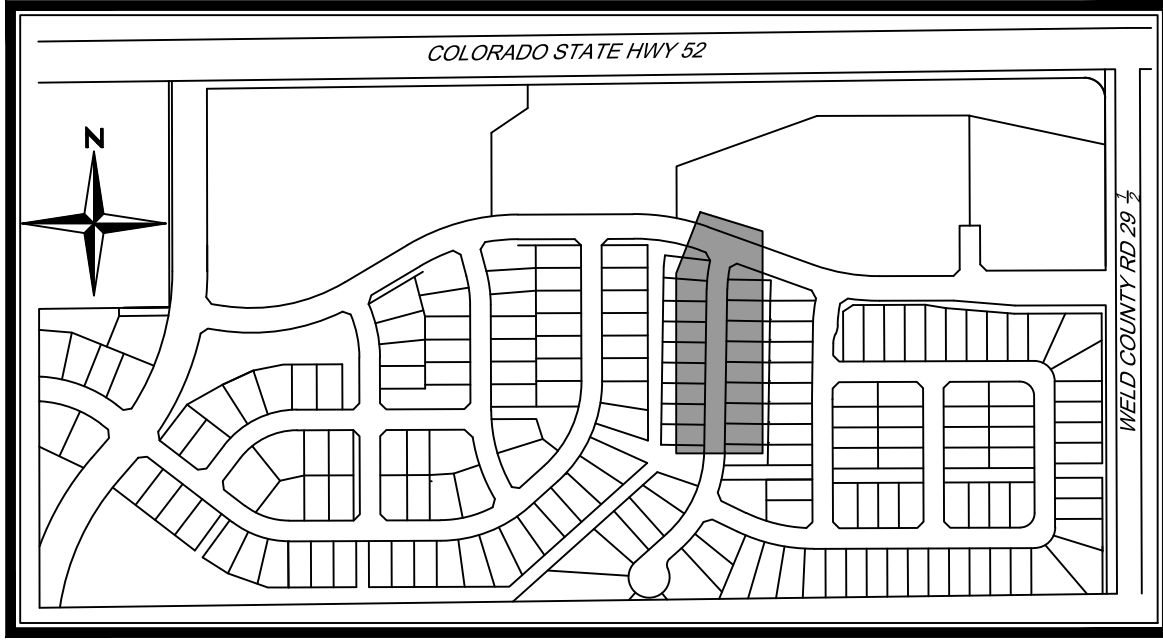
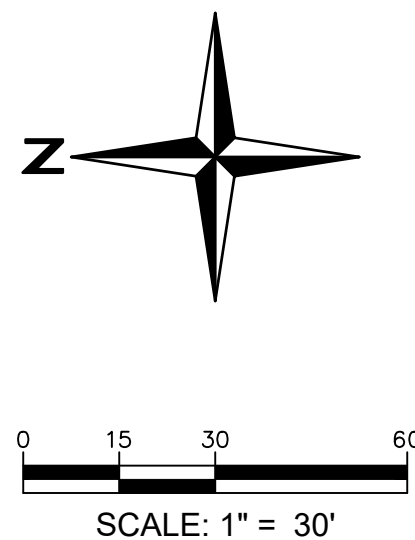
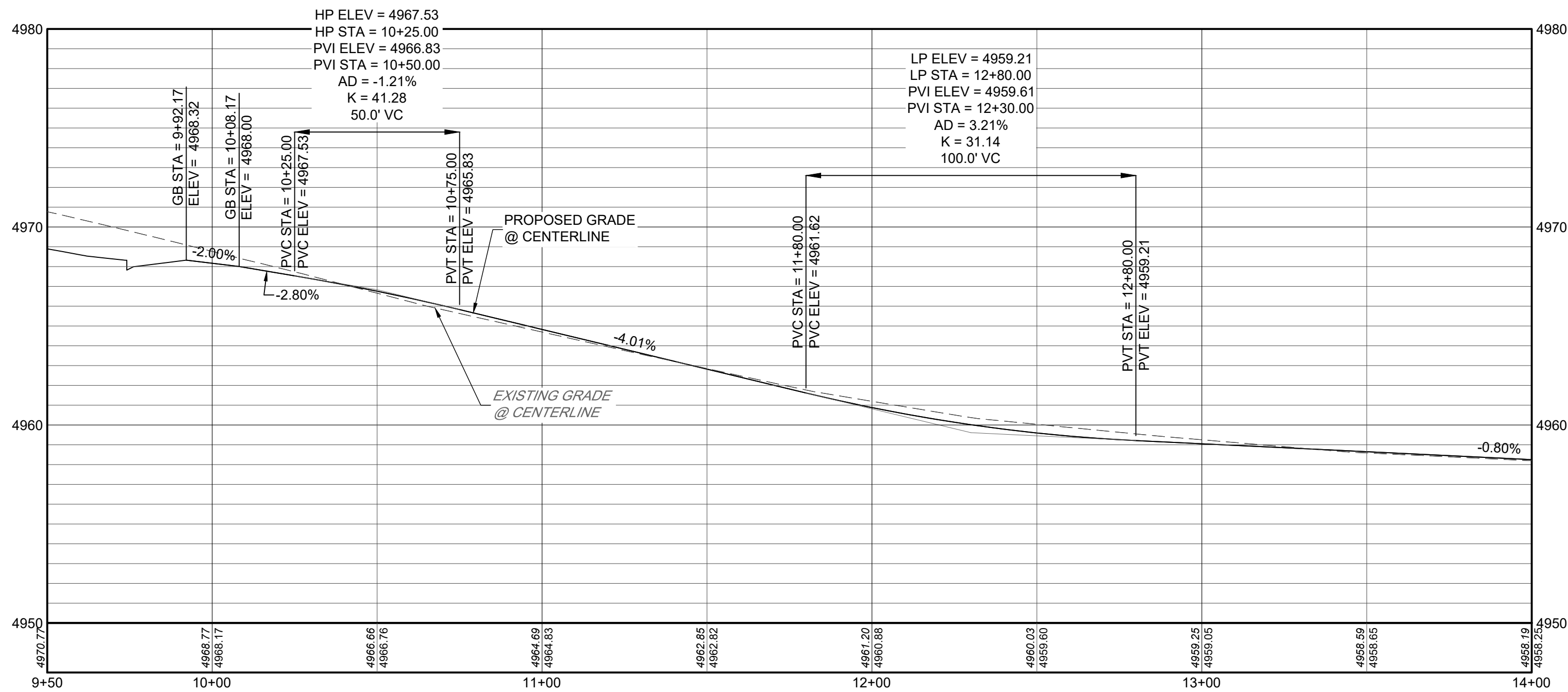
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I:\2019\19032 - murata farms\CADD\sheet sets\construction drawings\19032 - Street C - P&P.dwg tab: C6.21 MOUNTAIN FLOWER AVE. Aug 20, 2021 - 1:06pm eksaki



MOUNTAIN FLOWER AVE. PLAN
SCALE: 1" = 30'

MOUNTAIN FLOWER AVE. PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

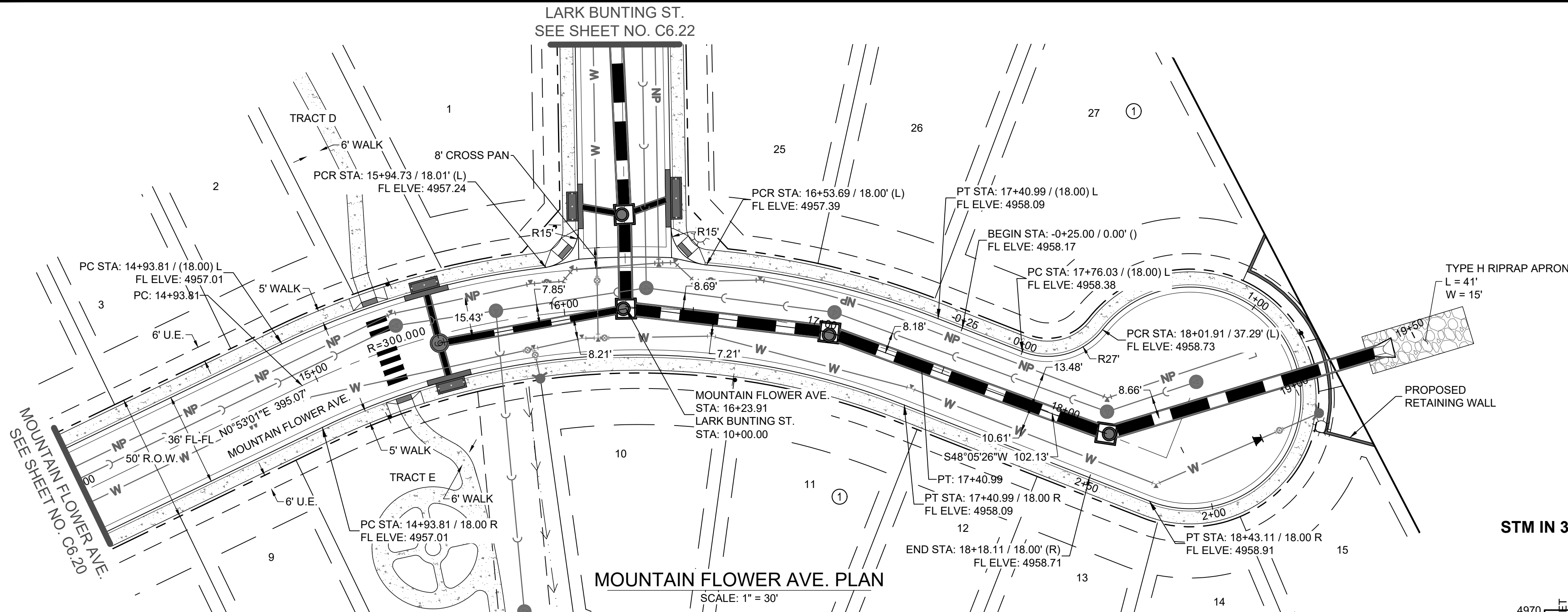
MOUNTAIN FLOWER AVE.

SHEET

C6.20

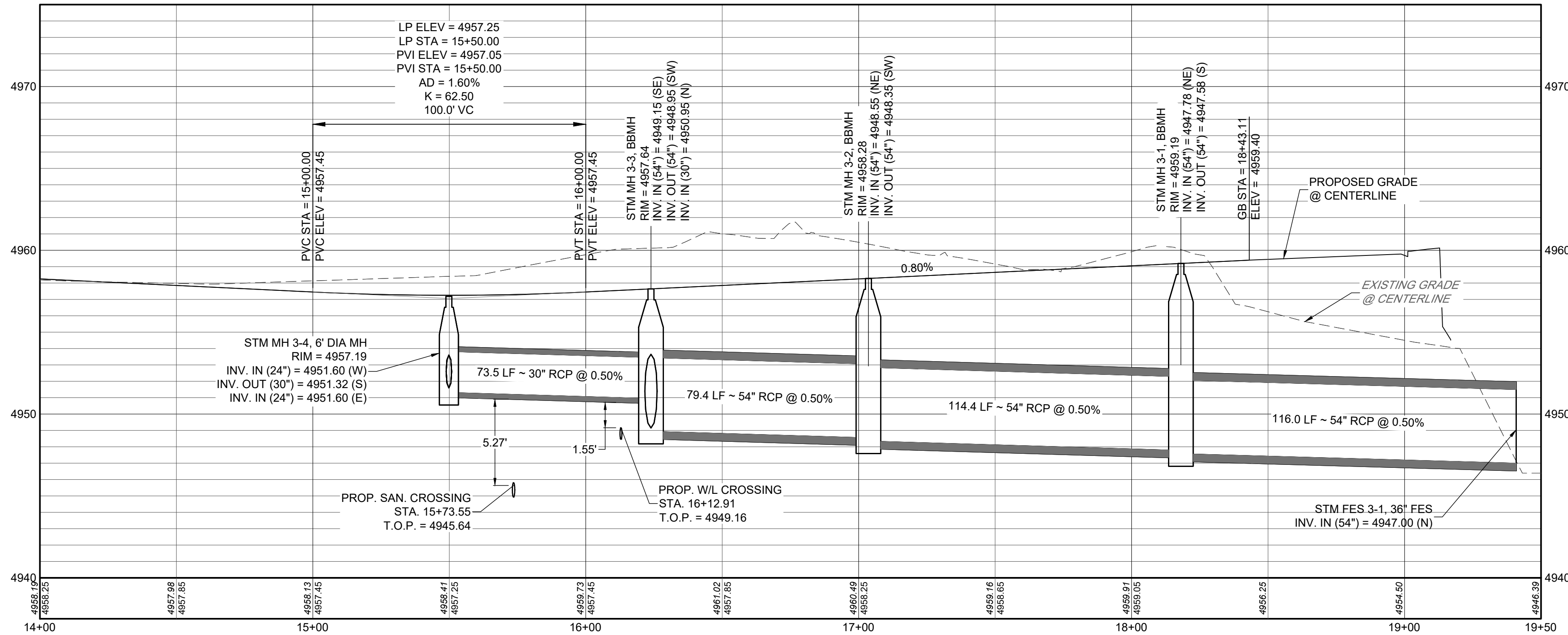


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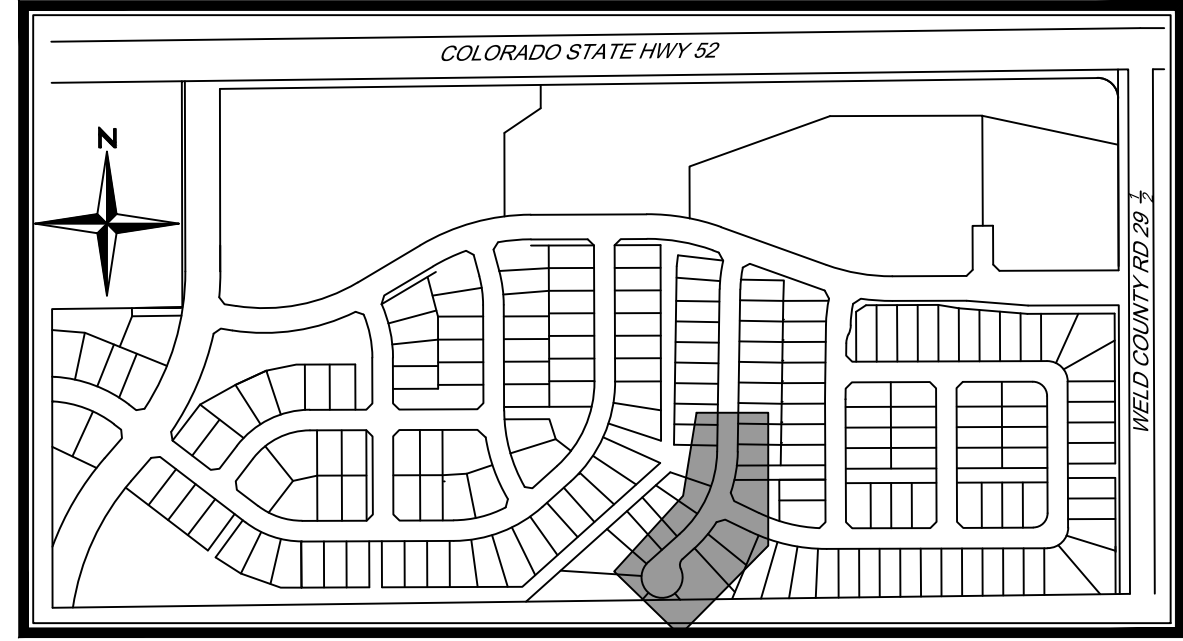
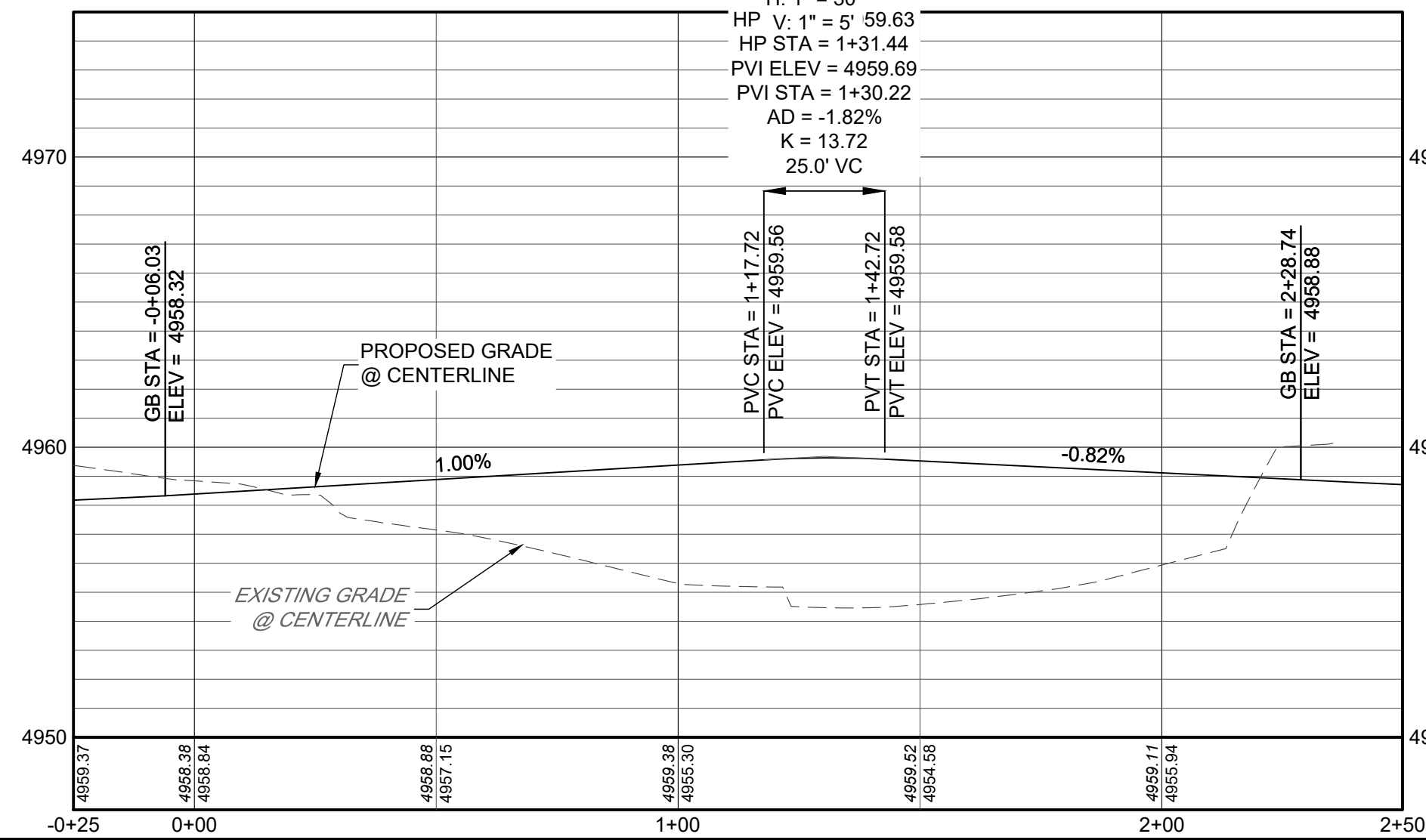


MOUNTAIN FLOWER AVE. PROFILE

H: 1" = 30'
V: 1" = 5'



MOUNTAIN FLOWER AVE. CUL-DE-SAC PROFILE

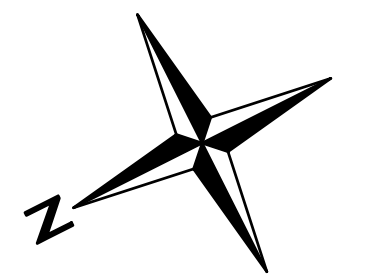
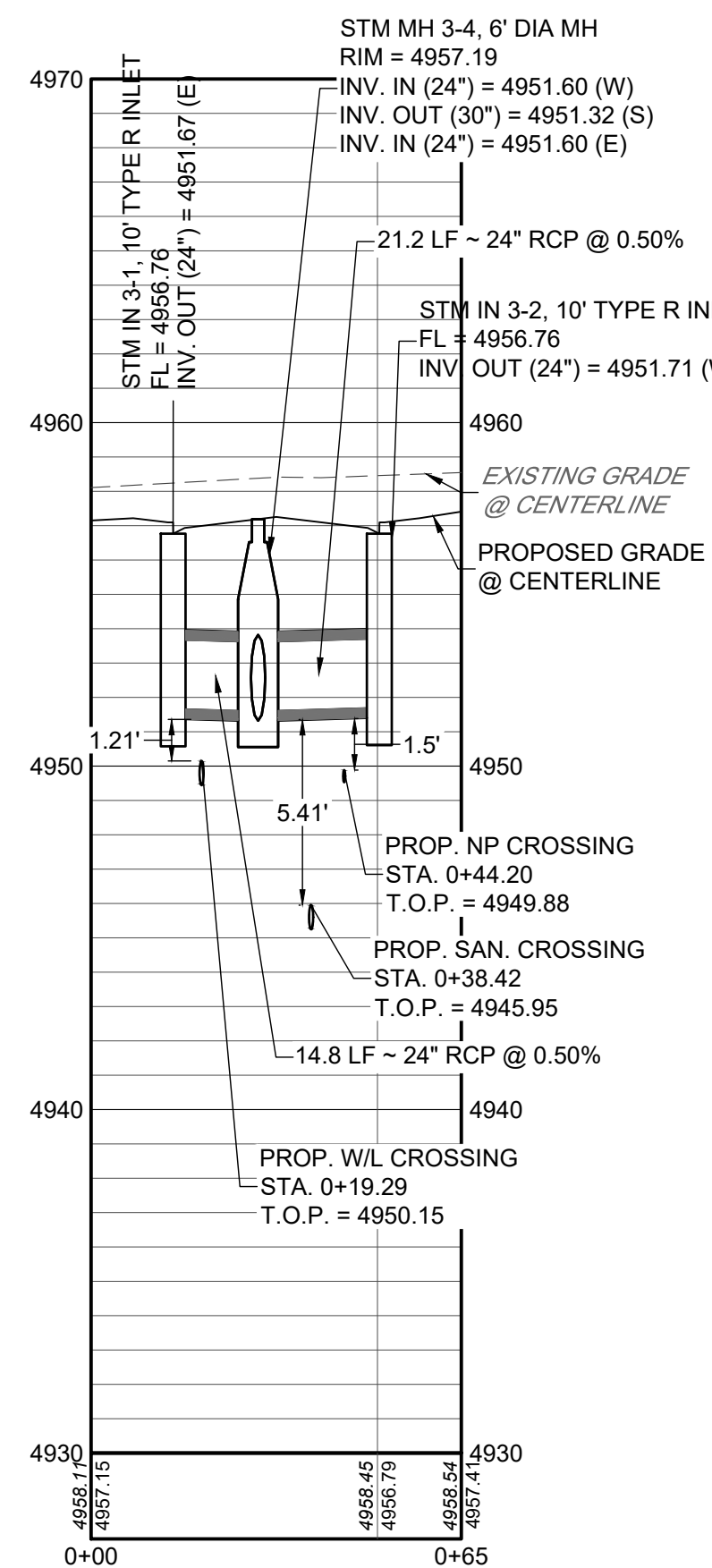


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STM IN 3-1 - STM IN 3-2 PROFILE
H: 1" = 30'
V: 1" = 5'



0 15 30 60
SCALE: 1" = 30'

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

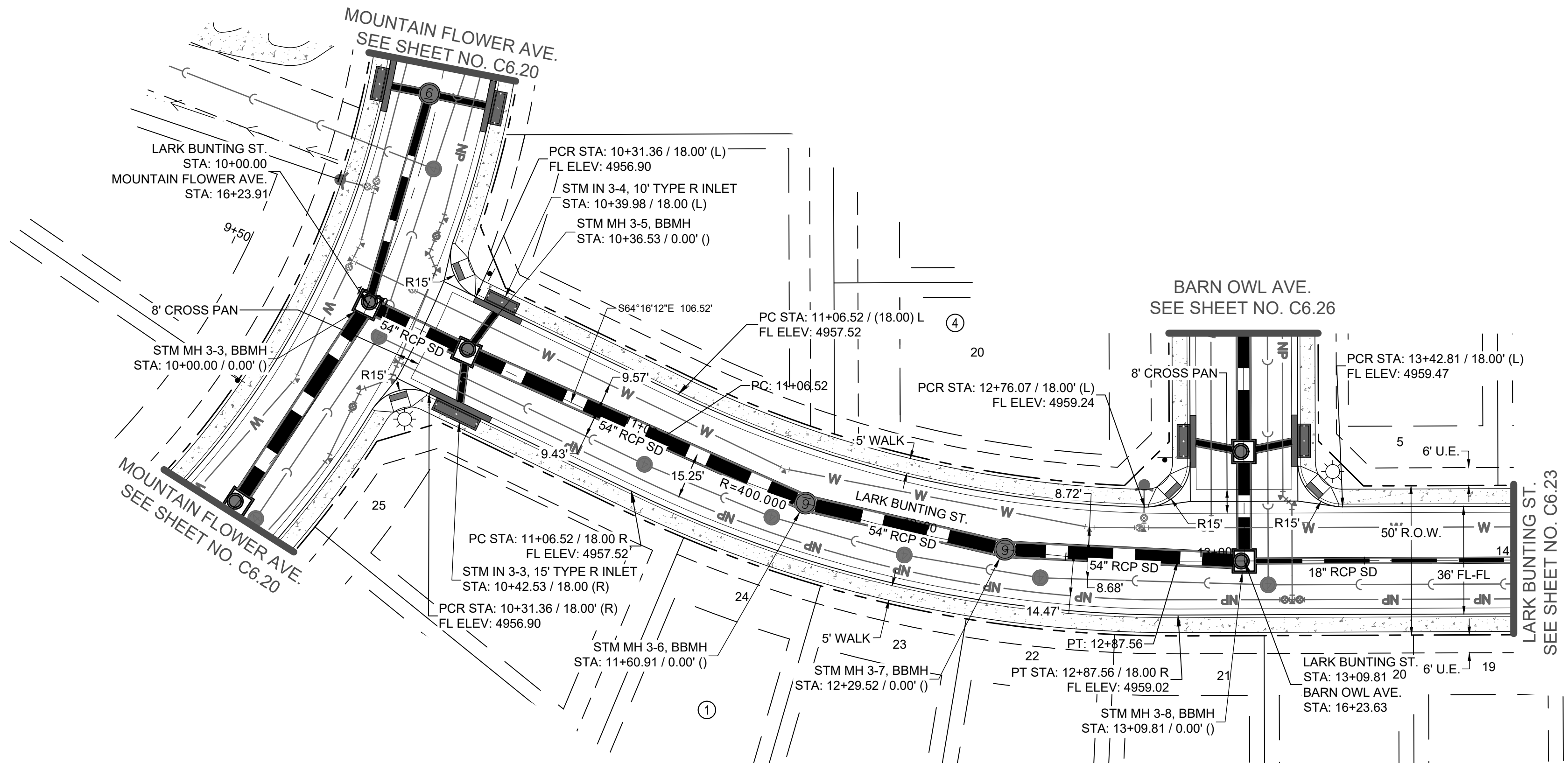
MOUNTAIN FLOWER AVE.

SHEET

C6.21



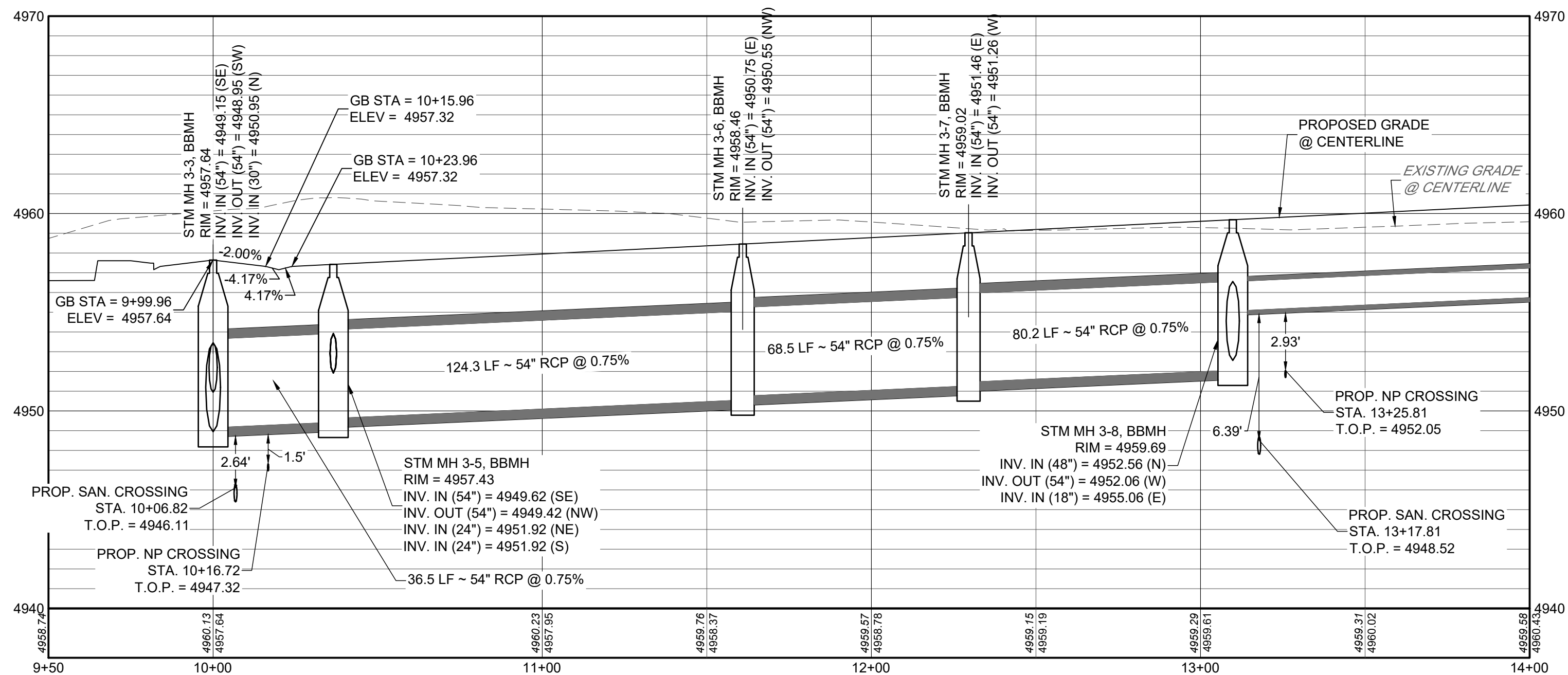
I:\2019\19032 - murata farms\CADD\sheet sets\Construction drawings\19032 - Street H - P&P.dwg tab: C6.22 LARK BUNTING ST. Aug 20, 2021 1:08pm ekoski



LARK BUNTING ST. PLAN
SCALE: 1" = 30'

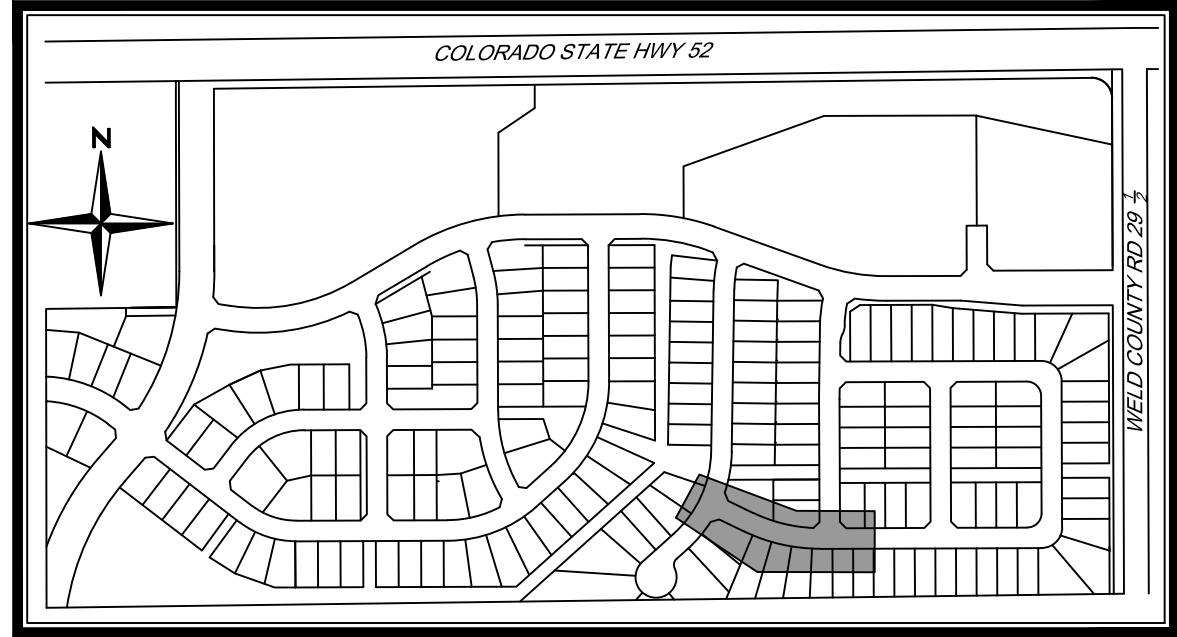
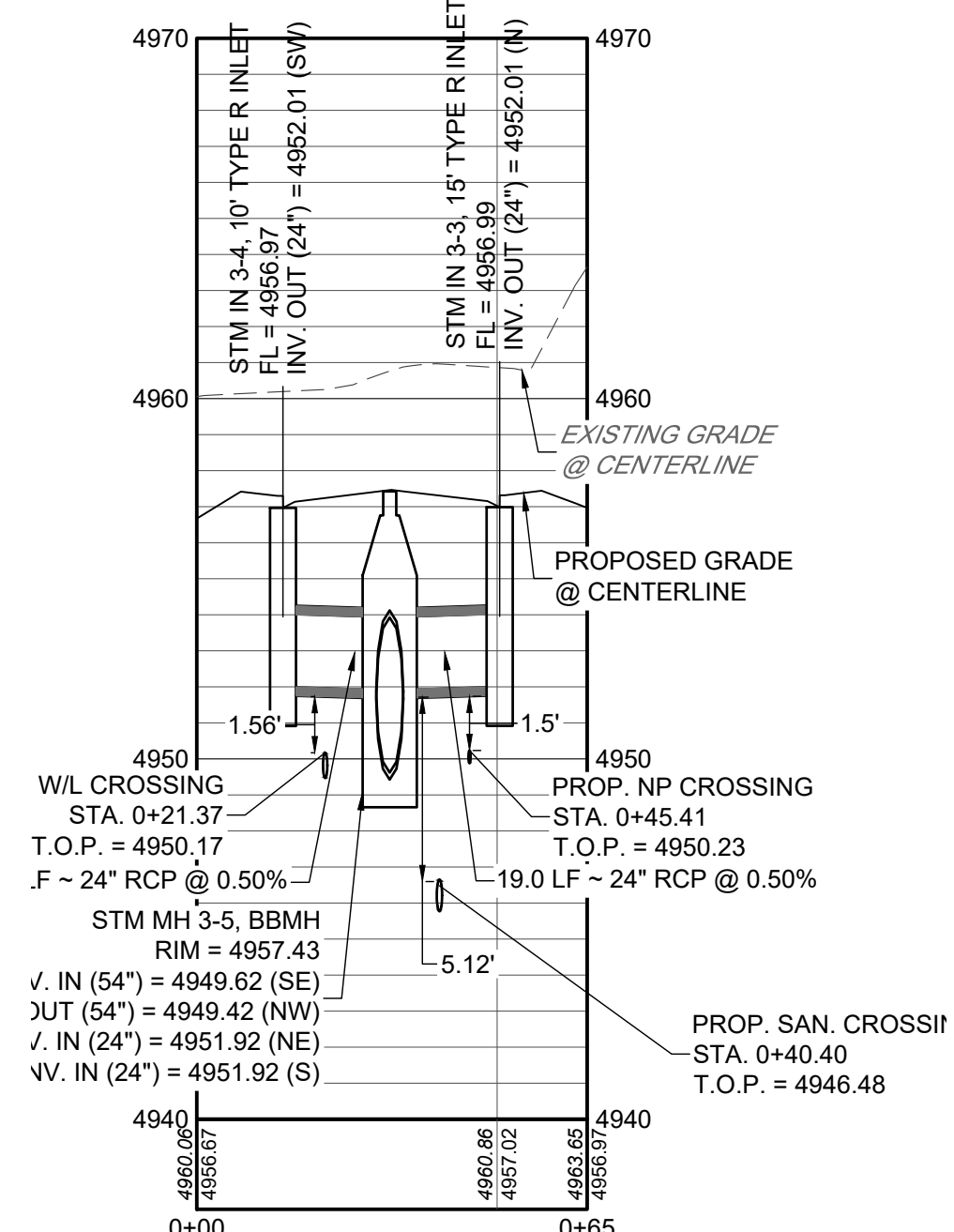
LARK BUNTING ST. PROFILE

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V: 1" = 5'



STM IN 3-4 - STM IN 3-3 PROFILE

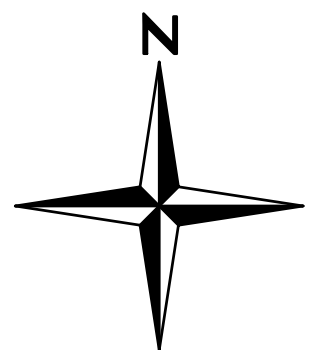
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0 15 30 60
SCALE: 1" = 30'

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

LARK BUNTING ST.

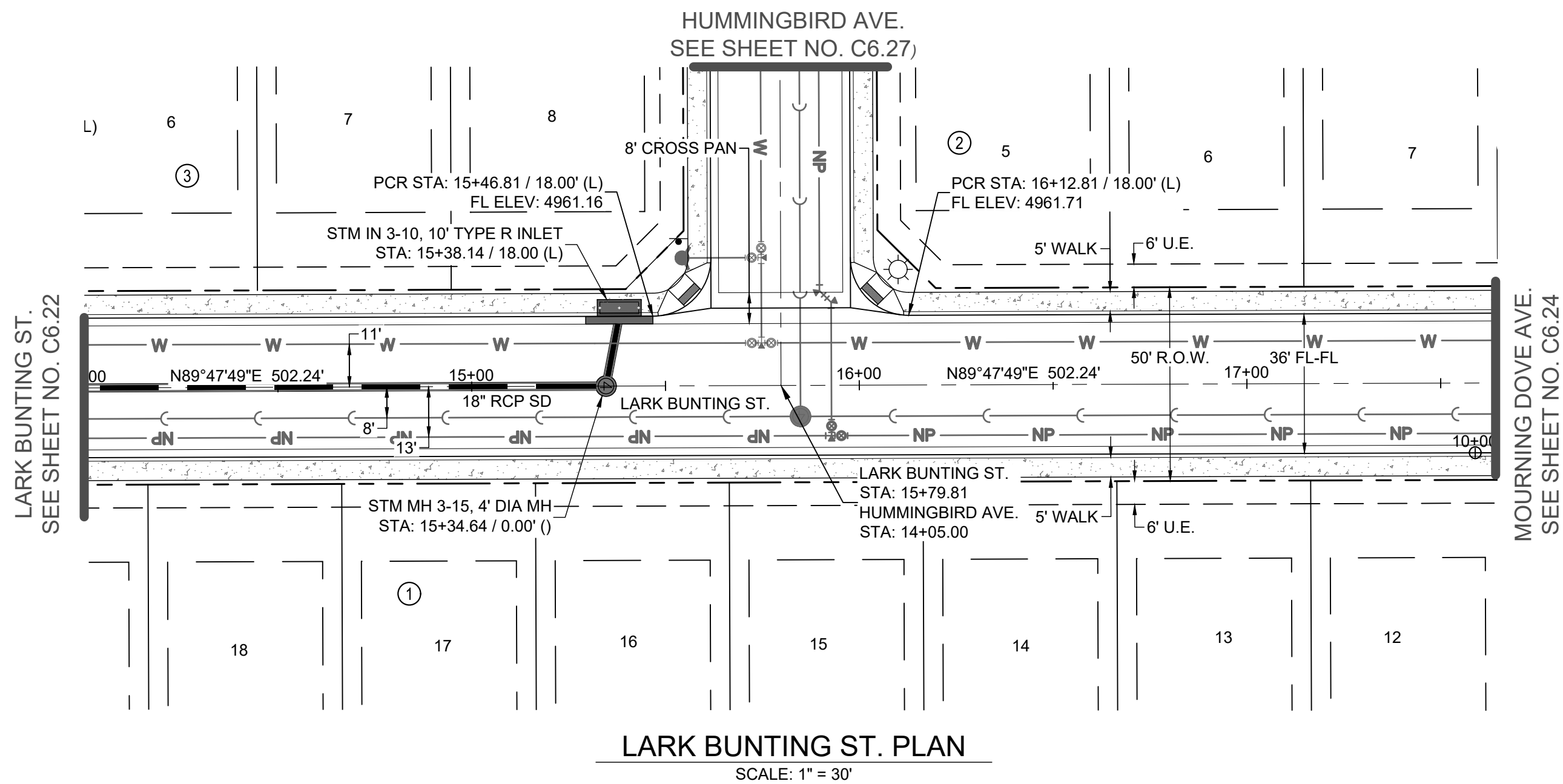
SHEET

C6.22



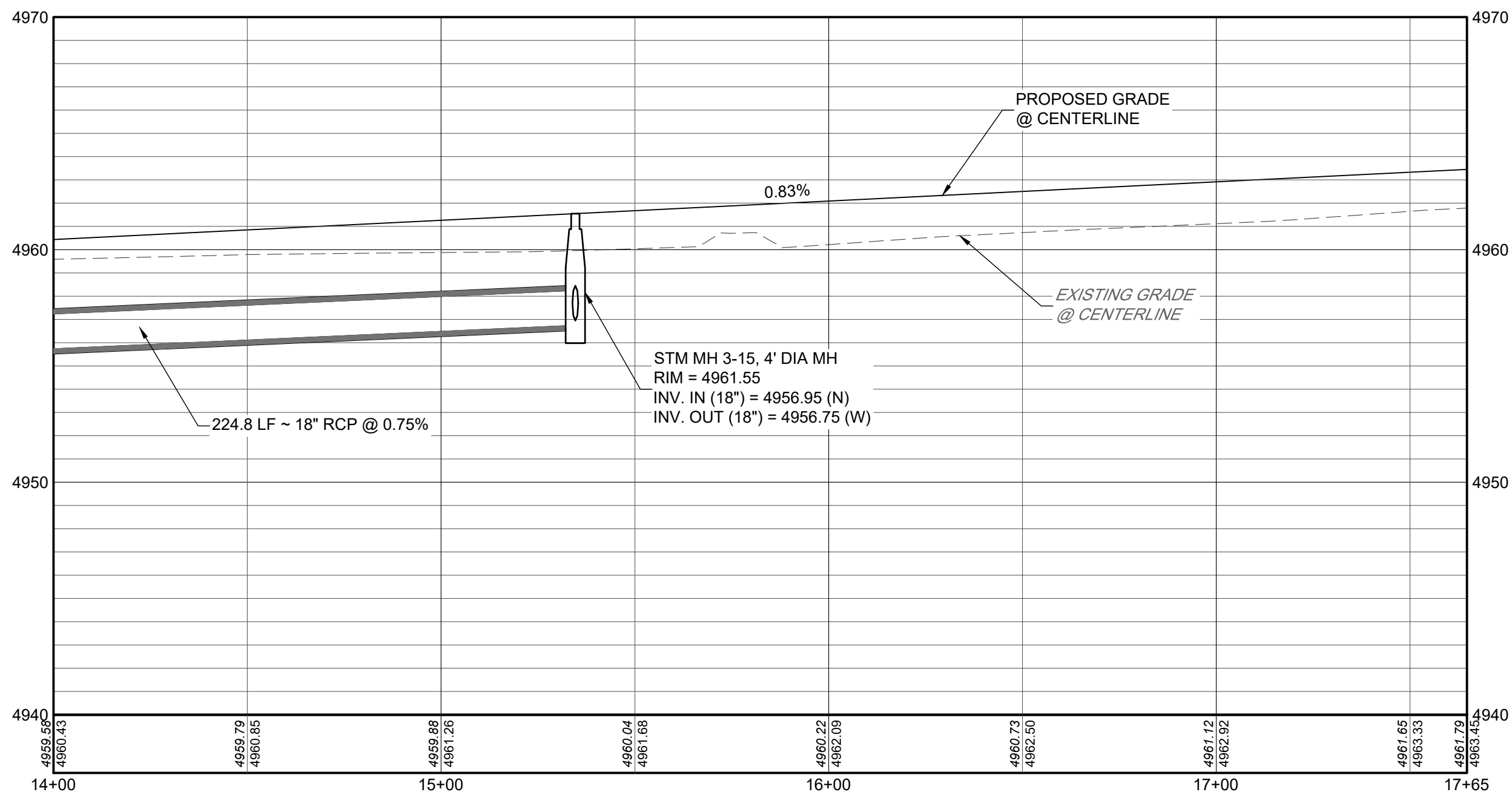
720.283.4793 Office
1500 West Canal Court
Littleton, Colorado 80120
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I:\2019\19032 - murata farms\CADD\sheet sets\Construction drawings\19032 - Street H - P&P.dwg tab: C6.23 LARK BUNTING ST. Aug 20, 2021 - 1:08pm ekooki



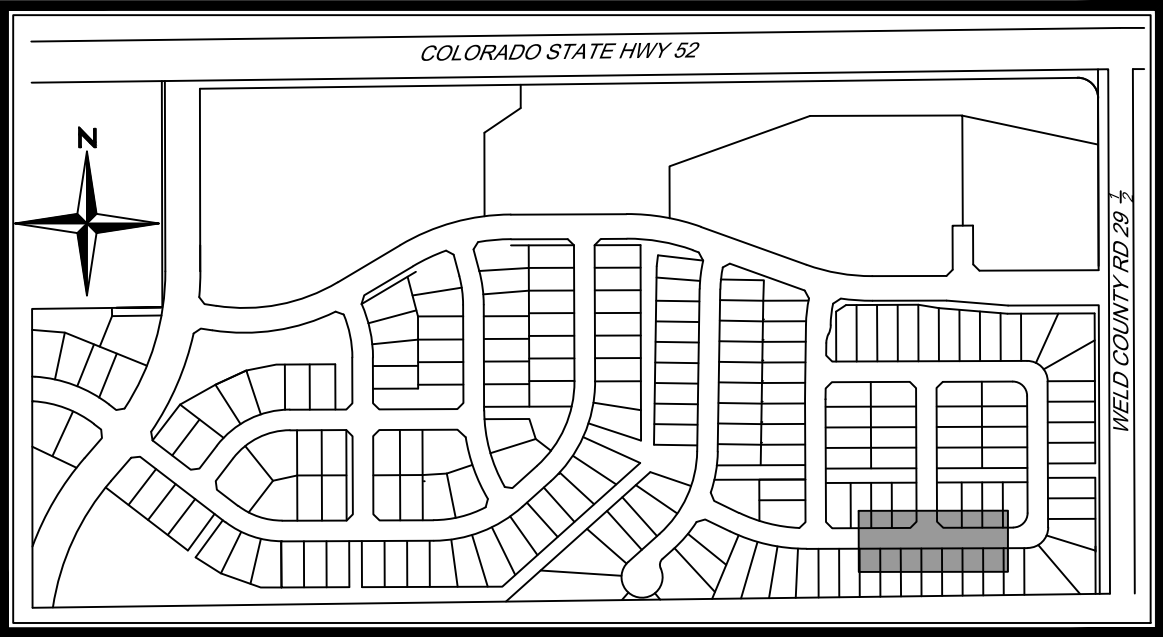
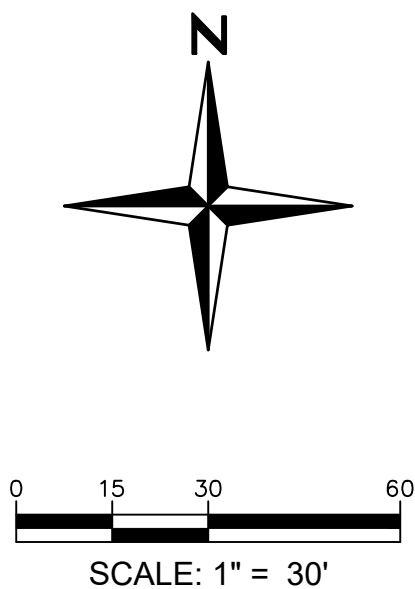
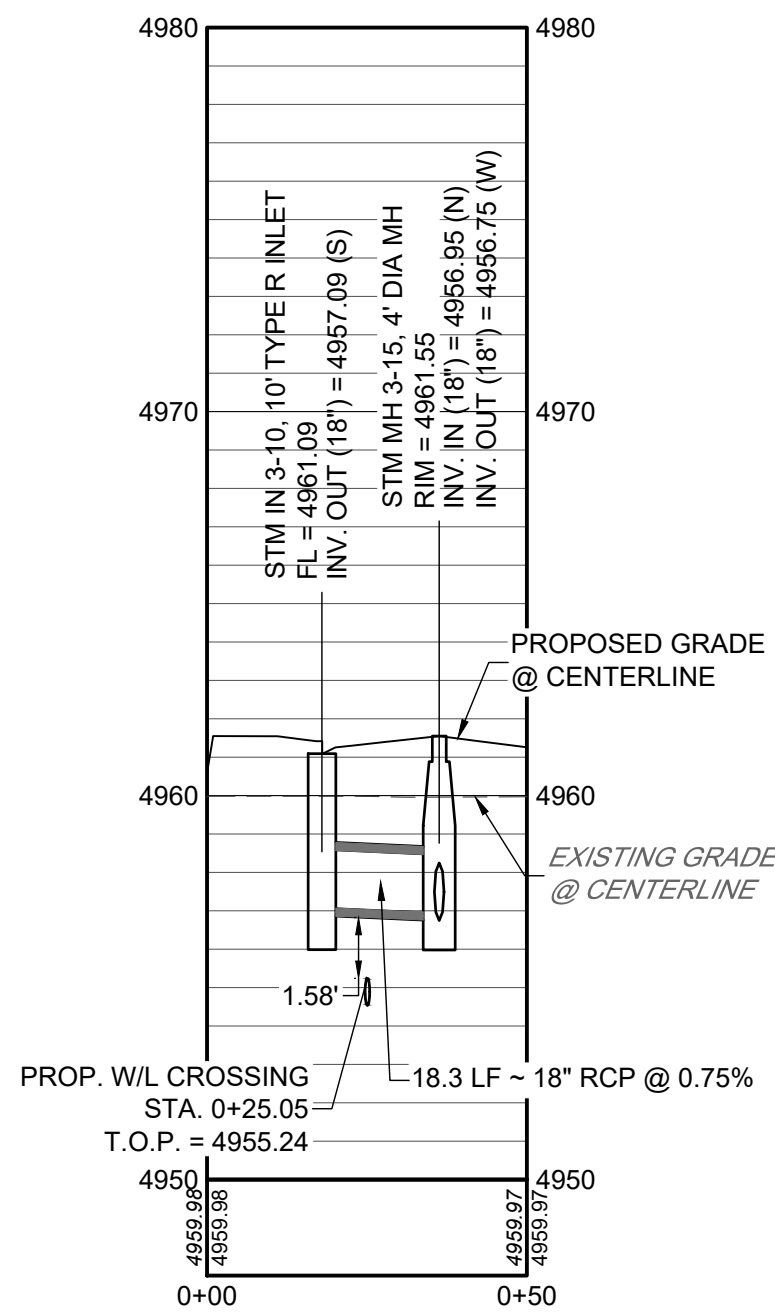
LARK BUNTING ST. PROFILE

H: 1" = 30'
V: 1" = 5'



STM IN 3-10 - STM MH 3-15 PROFILE

H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

NOTES

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

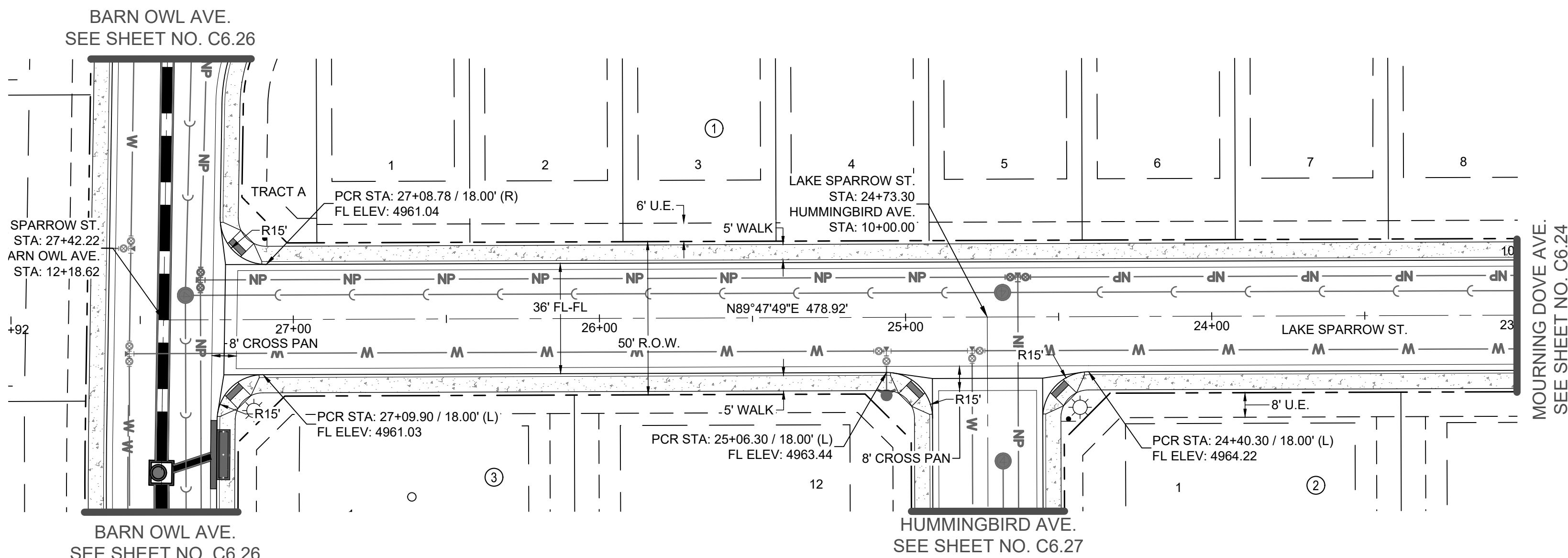
HUMMINGBIRD AVE.

SHEET

C6.23

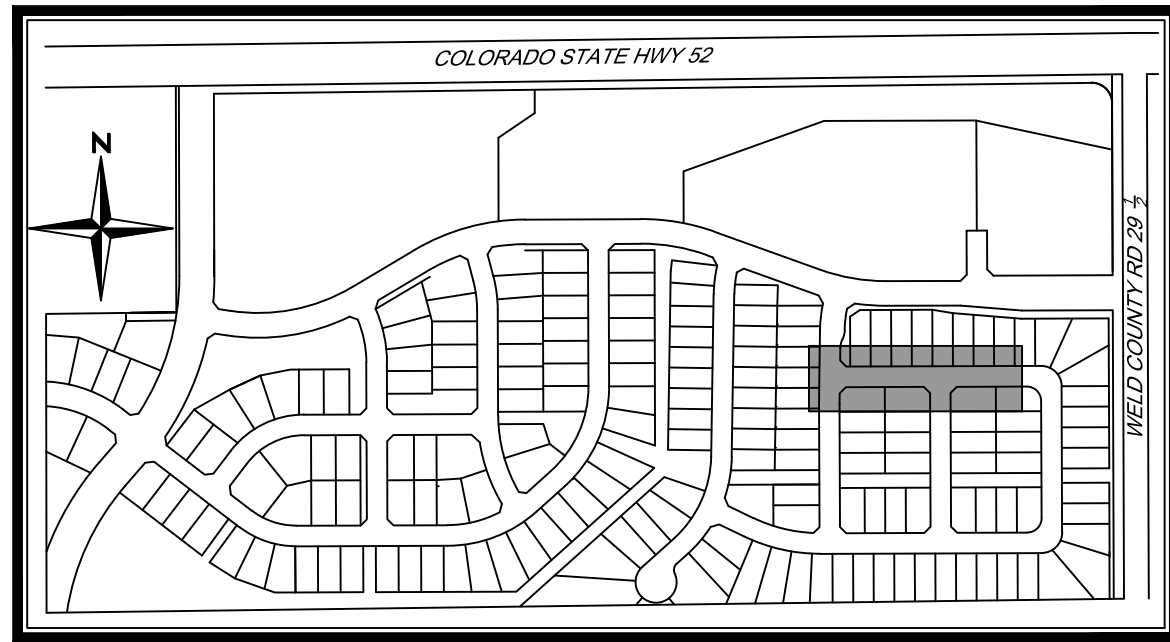
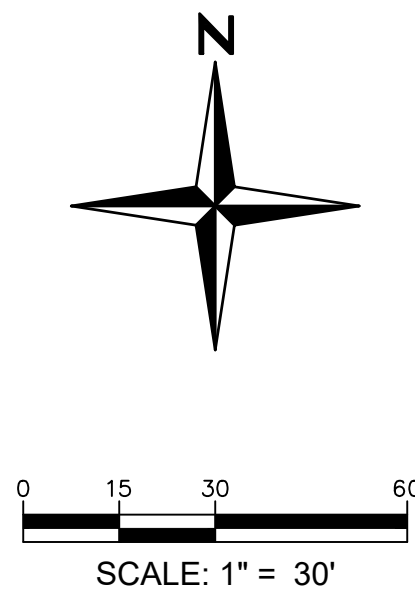
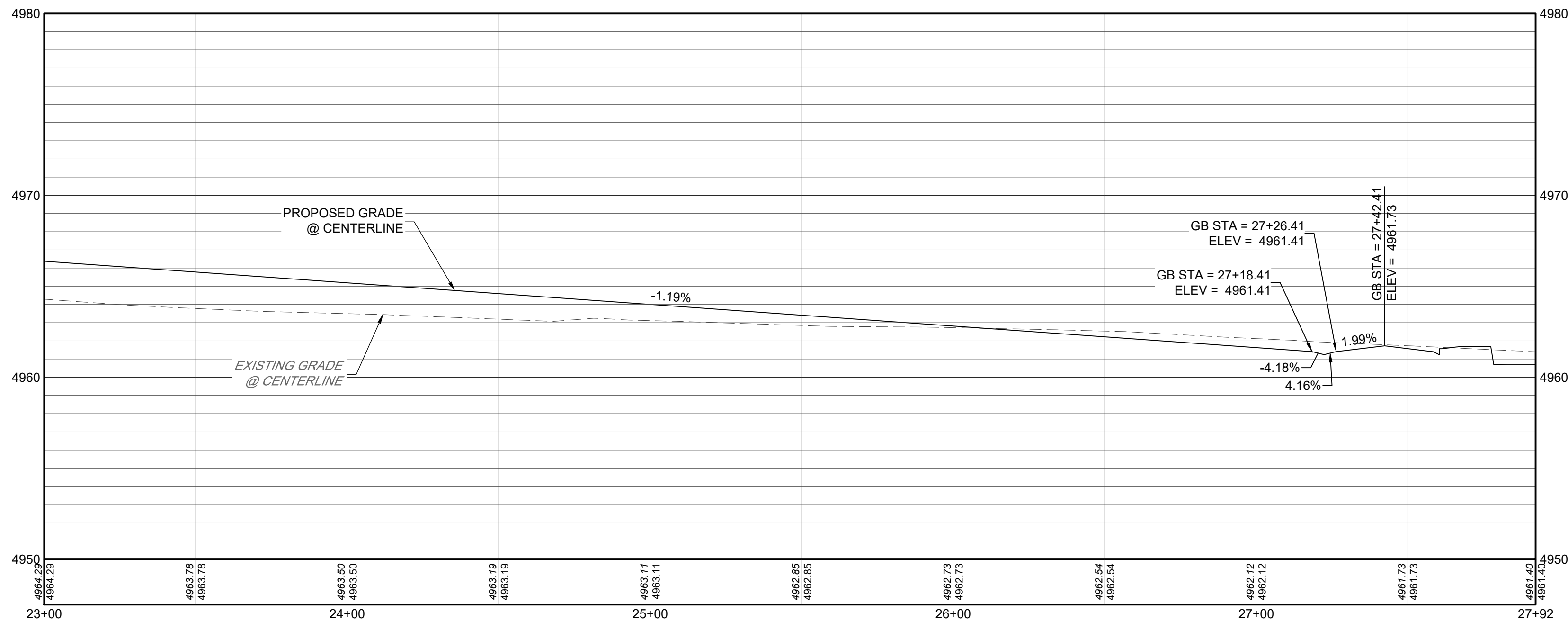


I:\2019\19032 - murata farms\CADD\sheet sets\Construction drawings\19032 - Street H - P&P.dwg tab: C6.25 LAKE SPARROW ST. Aug 20, 2021 - 1:08pm ekaski



LAKE SPARROW ST. PLAN
SCALE: 1" = 30'

LAKE SPARROW ST. PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

LAKE SPARROW ST.

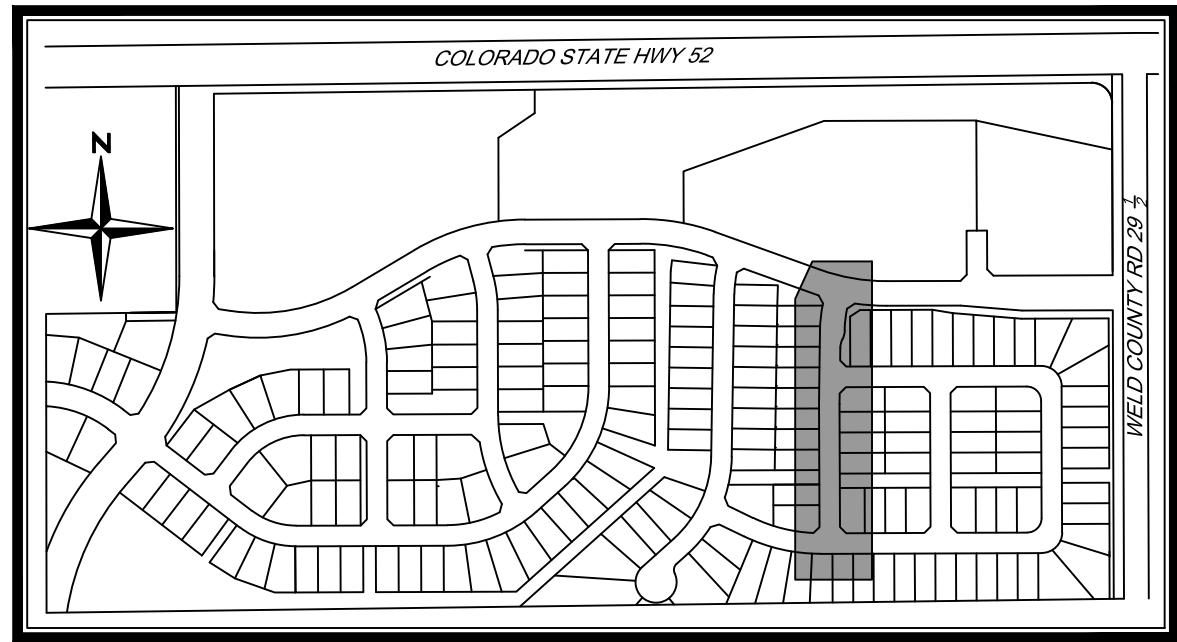
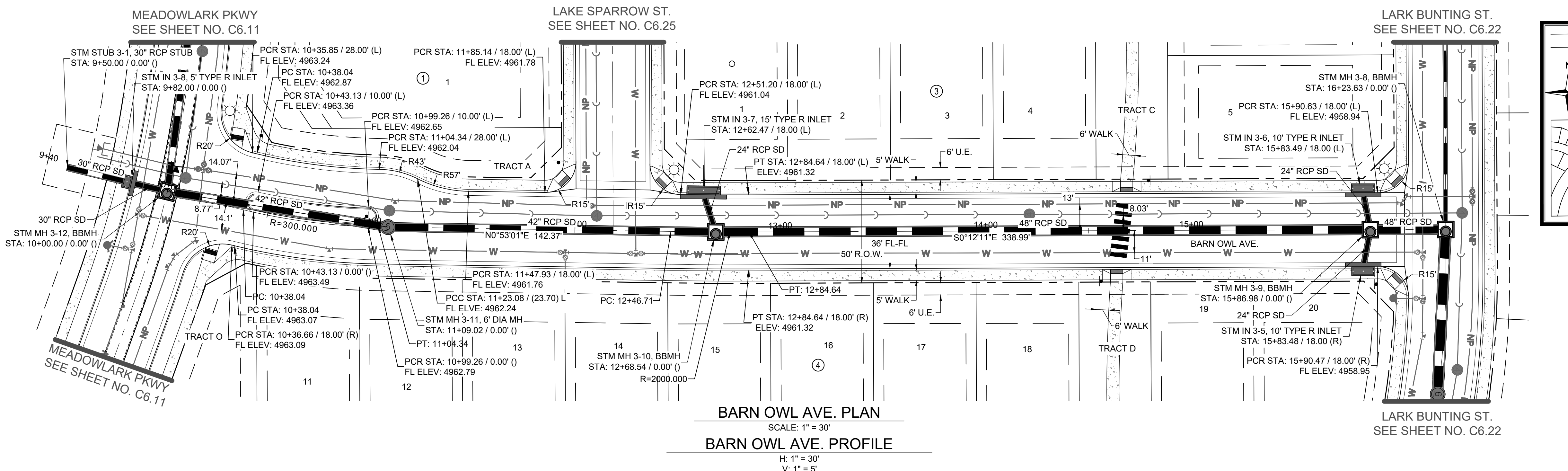
SHEET

C6.25



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I:\2019\19032 - murata farms\CADD\sheet sets\Construction drawings\19032 - Street - 1:09pm ekoski

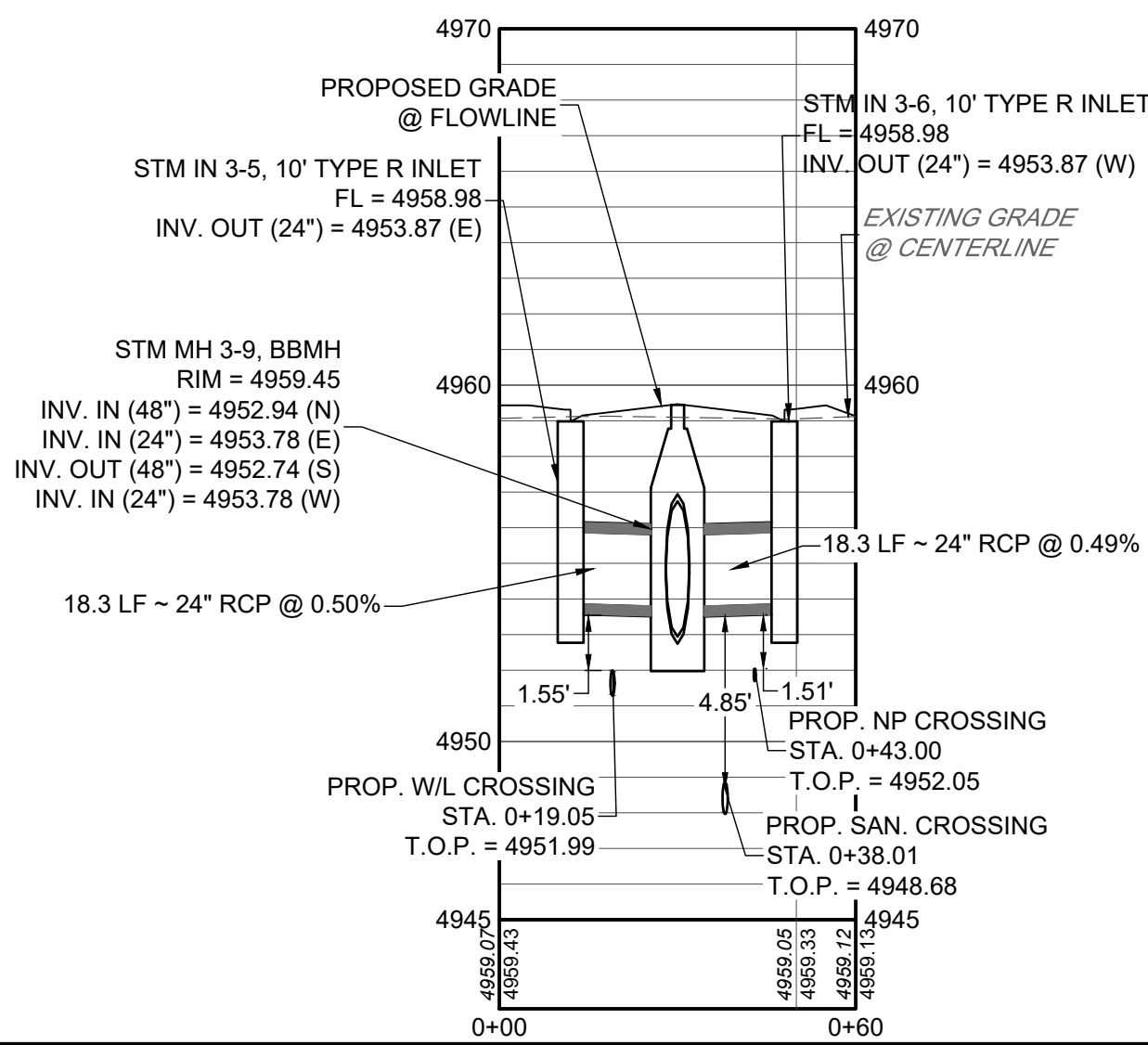


KEYMAP
N.T.S

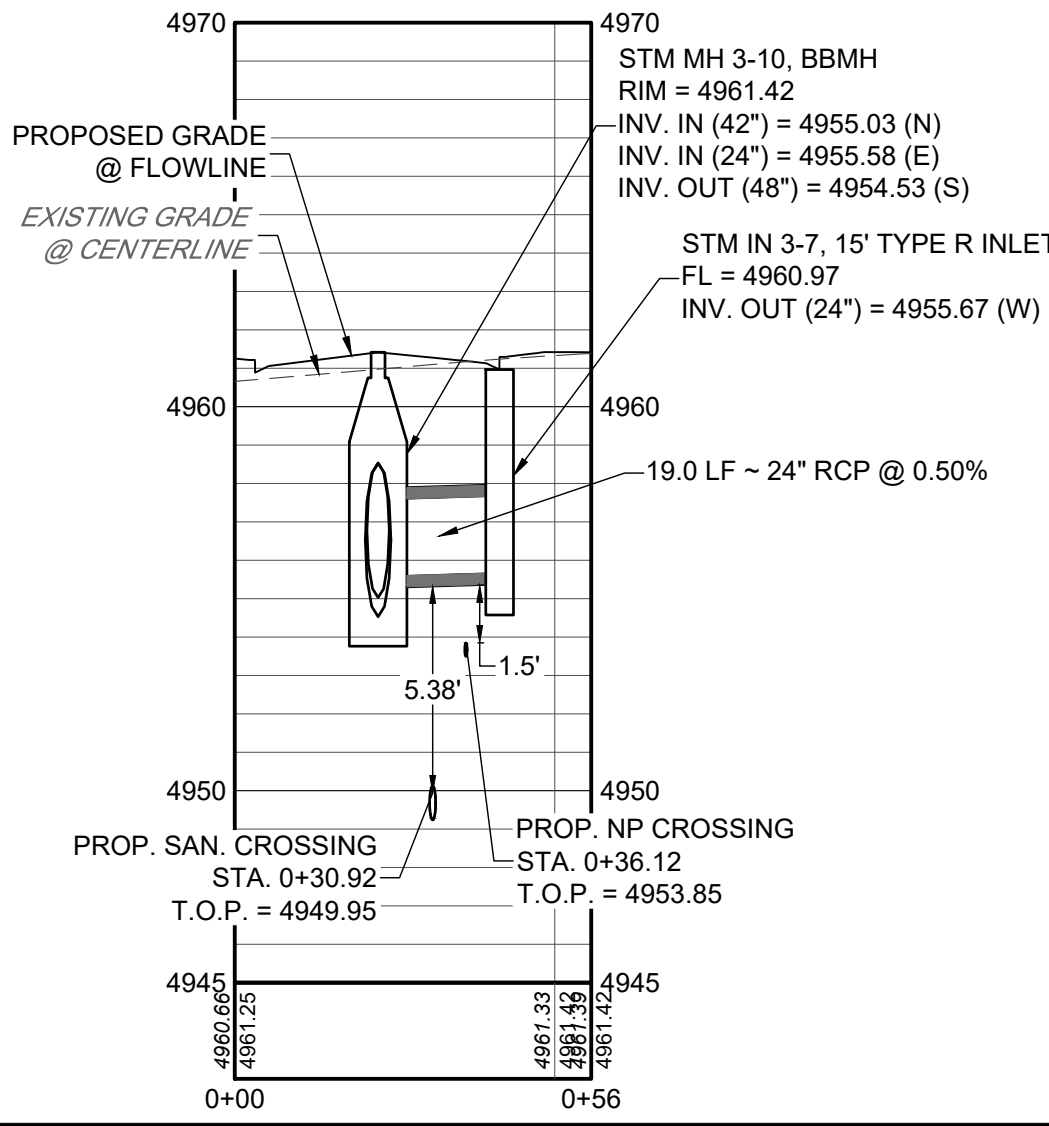
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STM IN 3-5 - STM IN 3-6 PROFILE
H: 1" = 30'
V: 1" = 5'



STM MH 3-10 - STM IN 3-7 PROFILE
H: 1" = 30'
V: 1" = 5'



MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

BARN OWL AVE.

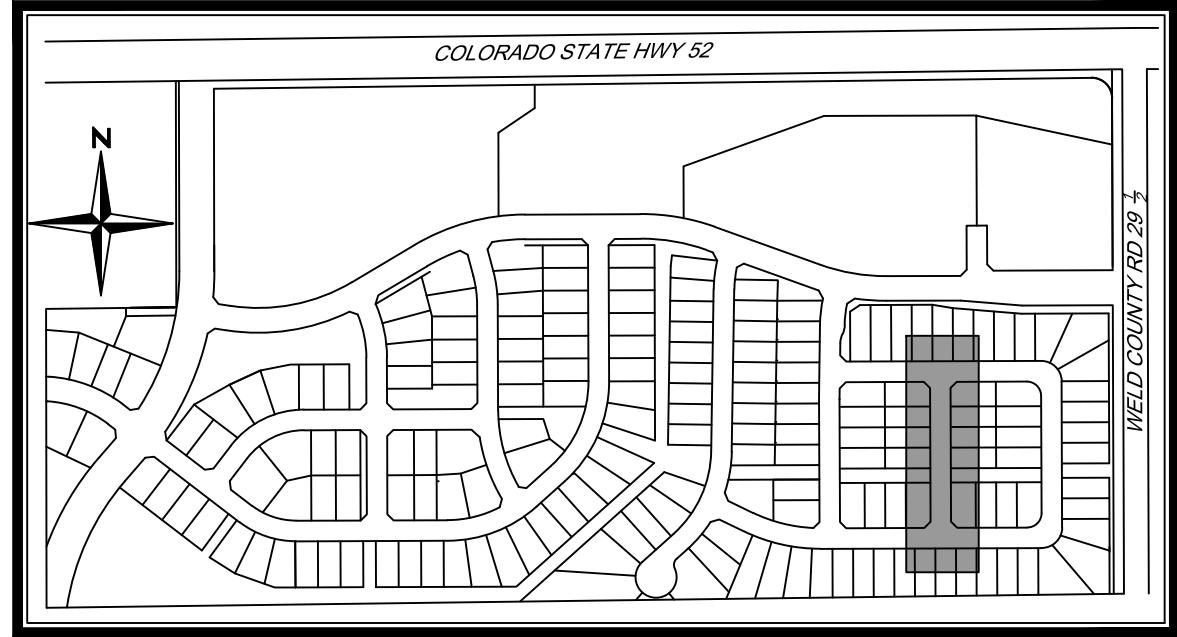
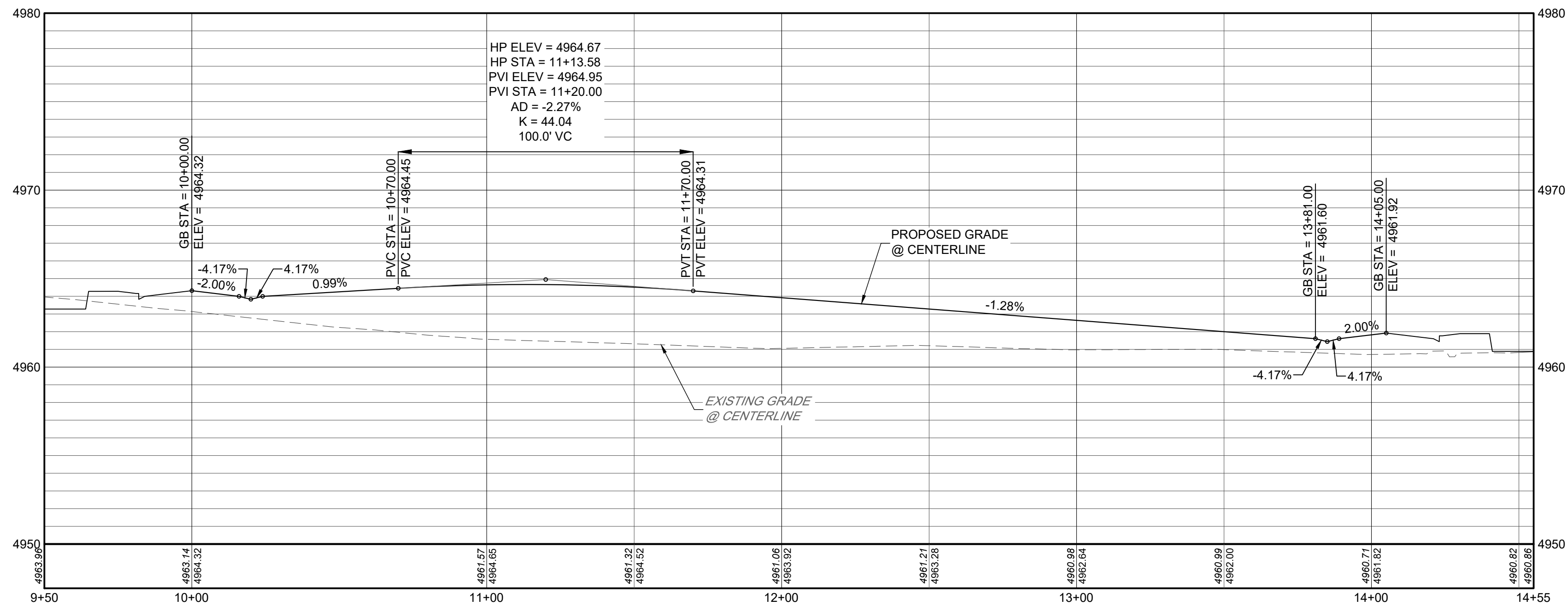
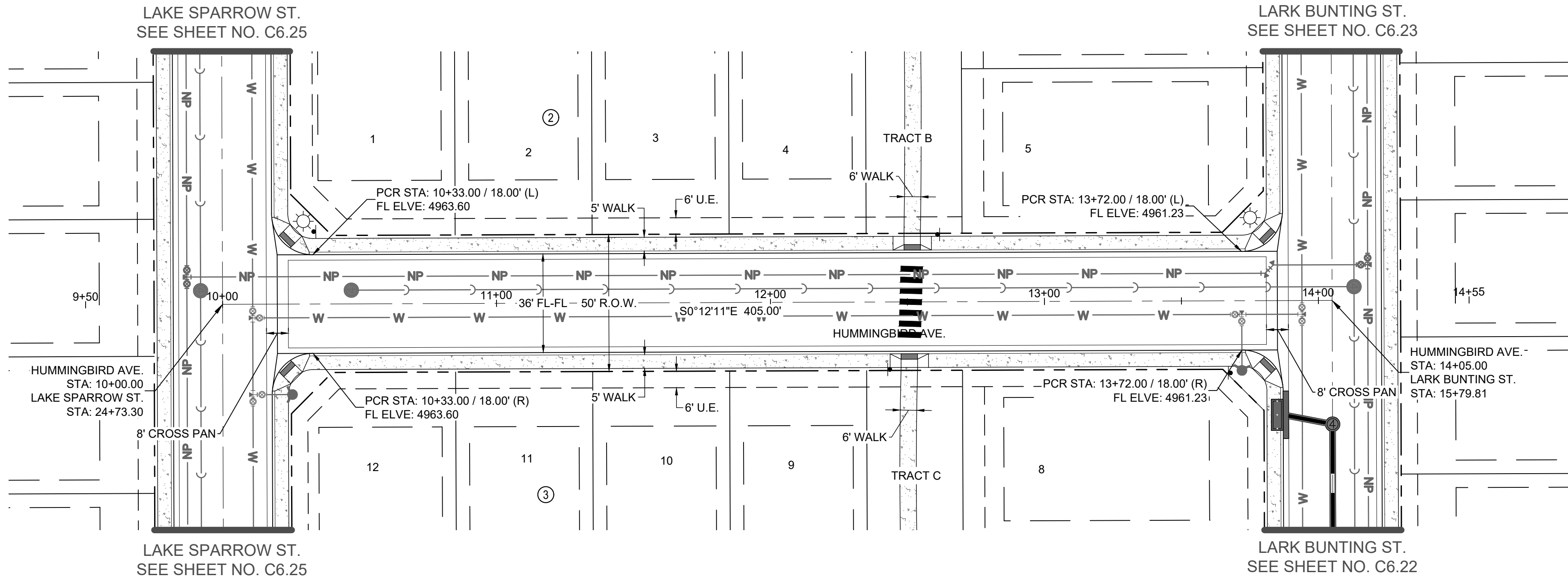
SHEET

C6.26



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Littleton, Colorado 80120
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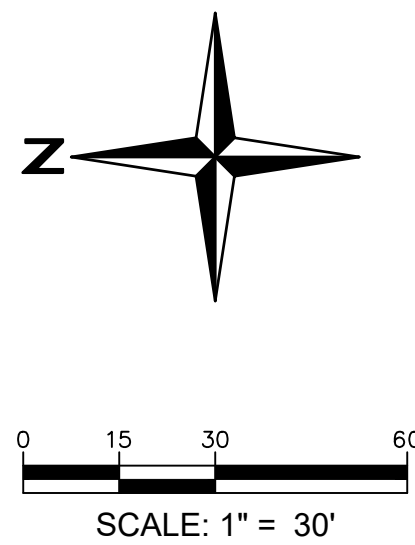
I:\2019\19032 - murata farms\CADD\sheet sets\construction drawings\19032 - Street J - P&S.dwg tab: C6.27 HUMMINGBIRD AVE. Aug 20, 2021 - 1:10pm ekoski



KEYMAP
N.T.S

NOTES

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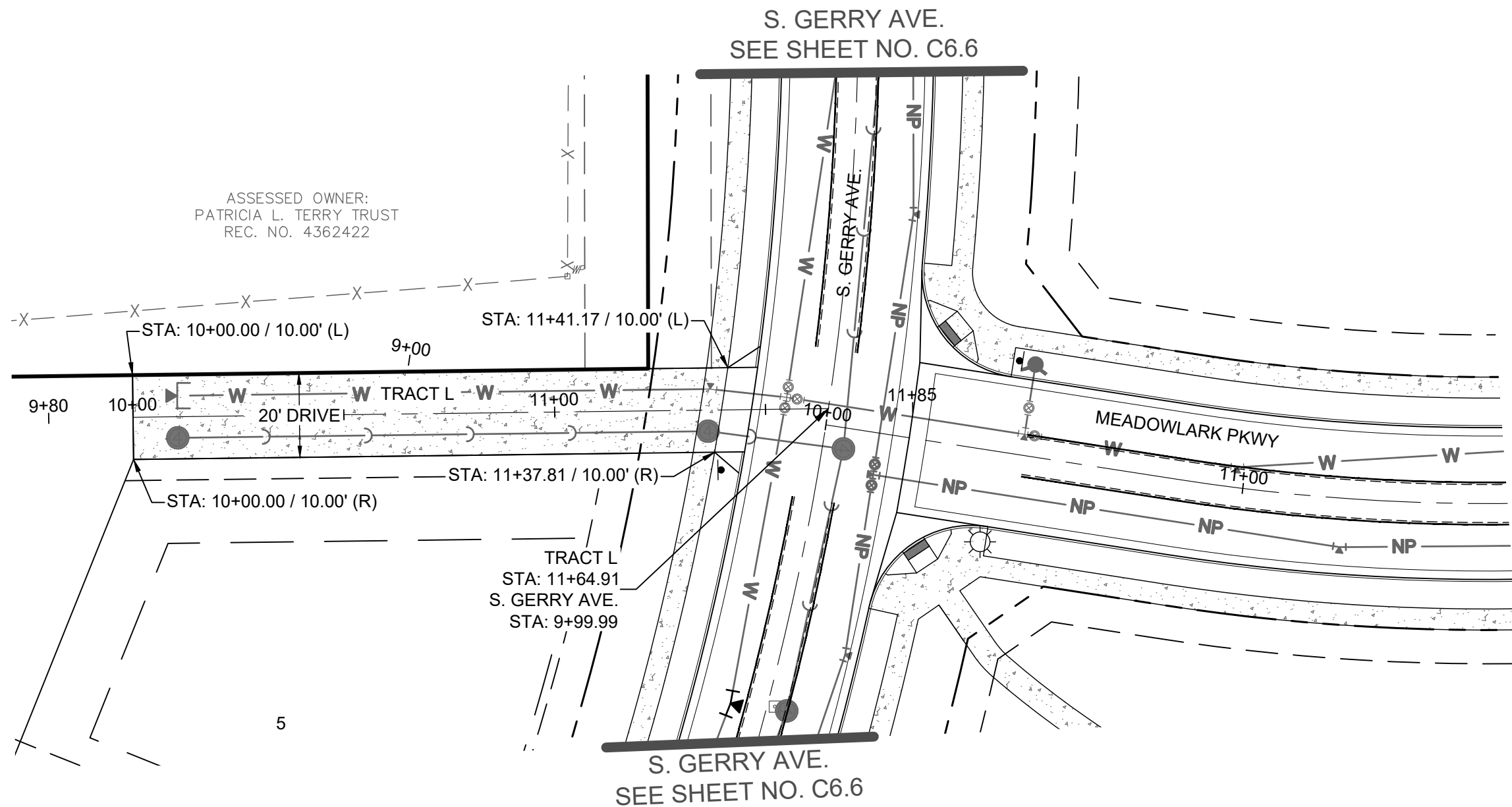
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
HUMMINGBIRD AVE.

SHEET

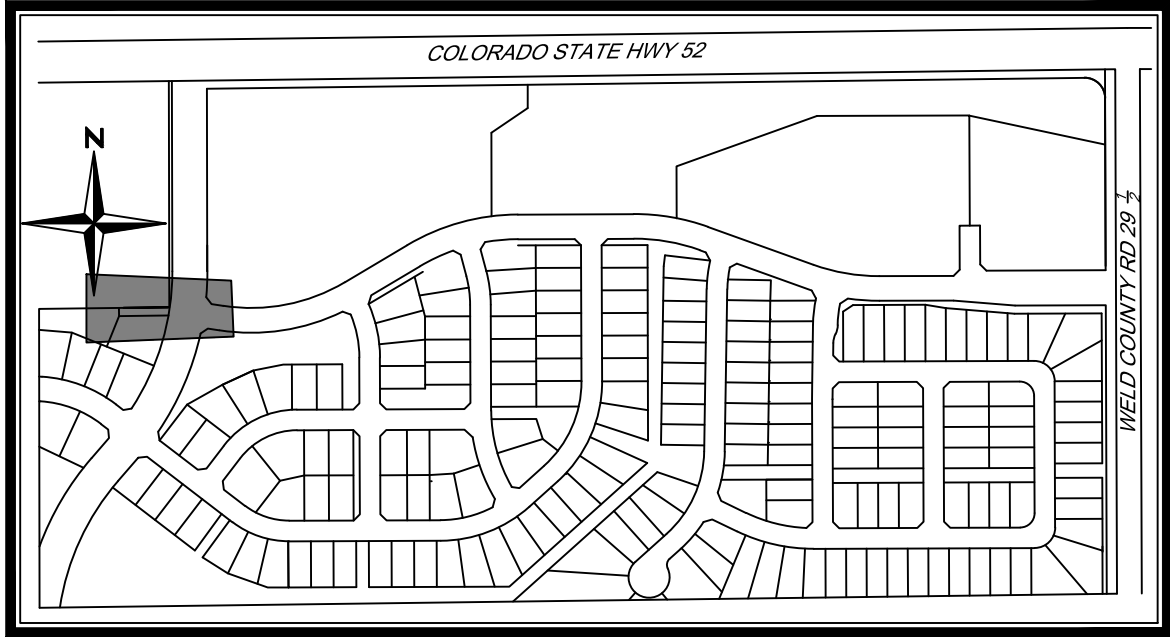
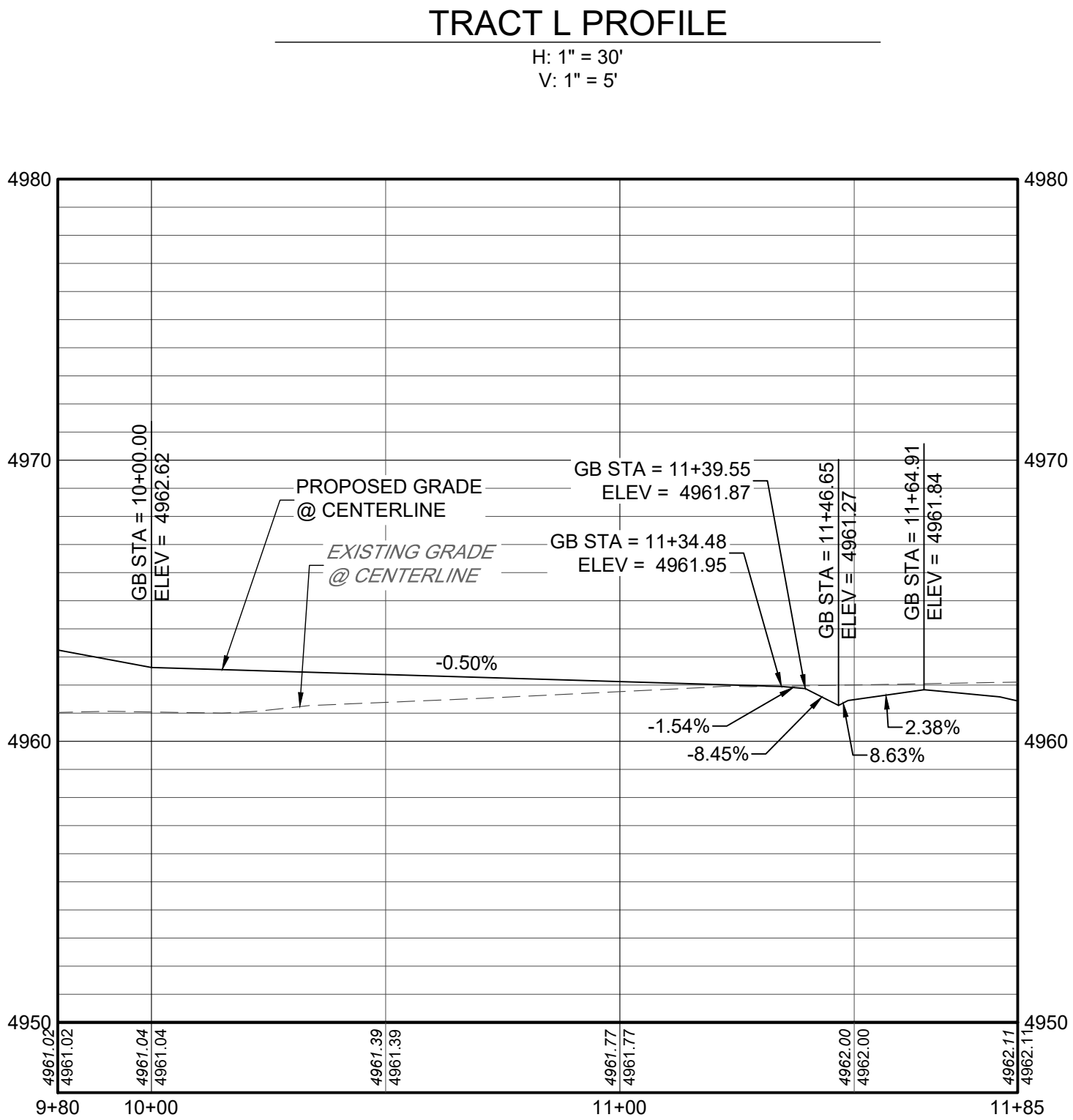
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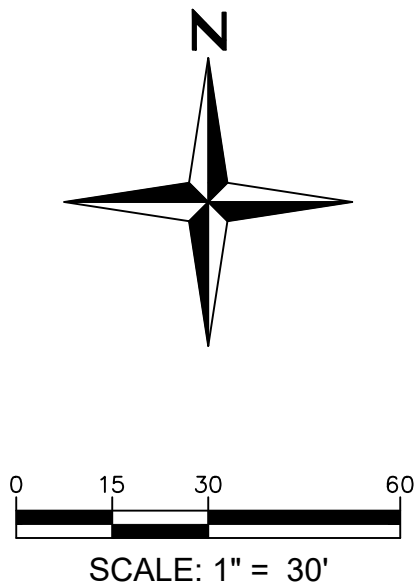
TRACT L PLAN
SCALE: 1" = 30'



KEYMAP
N.T.S

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

TRACT L

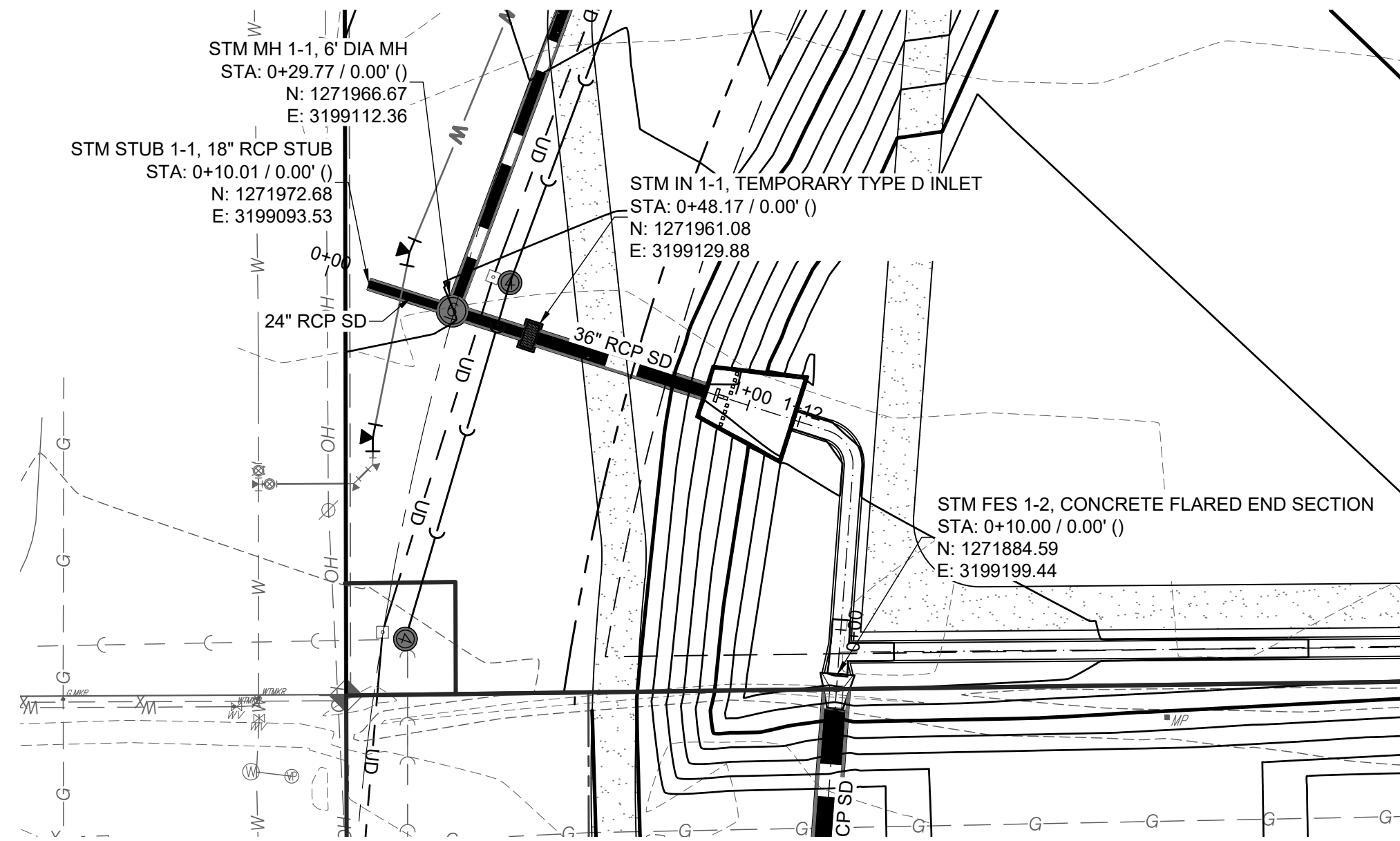
SHEET

C6.28



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I:\2019\19032 - murata farms\CADD\sheet sets\Construction drawings\19032 - Storm Lines - P&P.dwg Job: C6.29 STORM LINE 1 & POND EQUALIZER P&P Aug 20, 2021 - 1:12pm ekoski

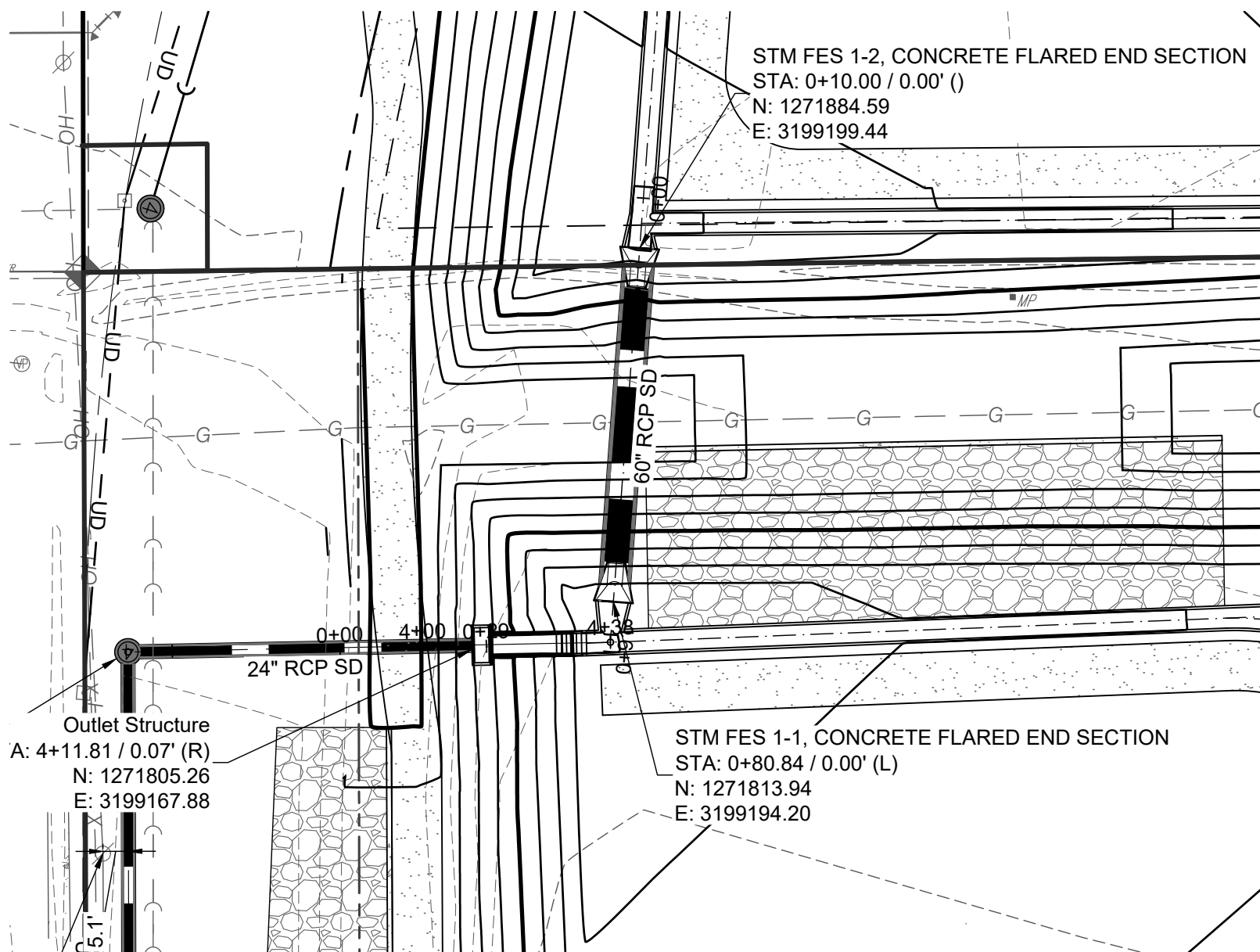
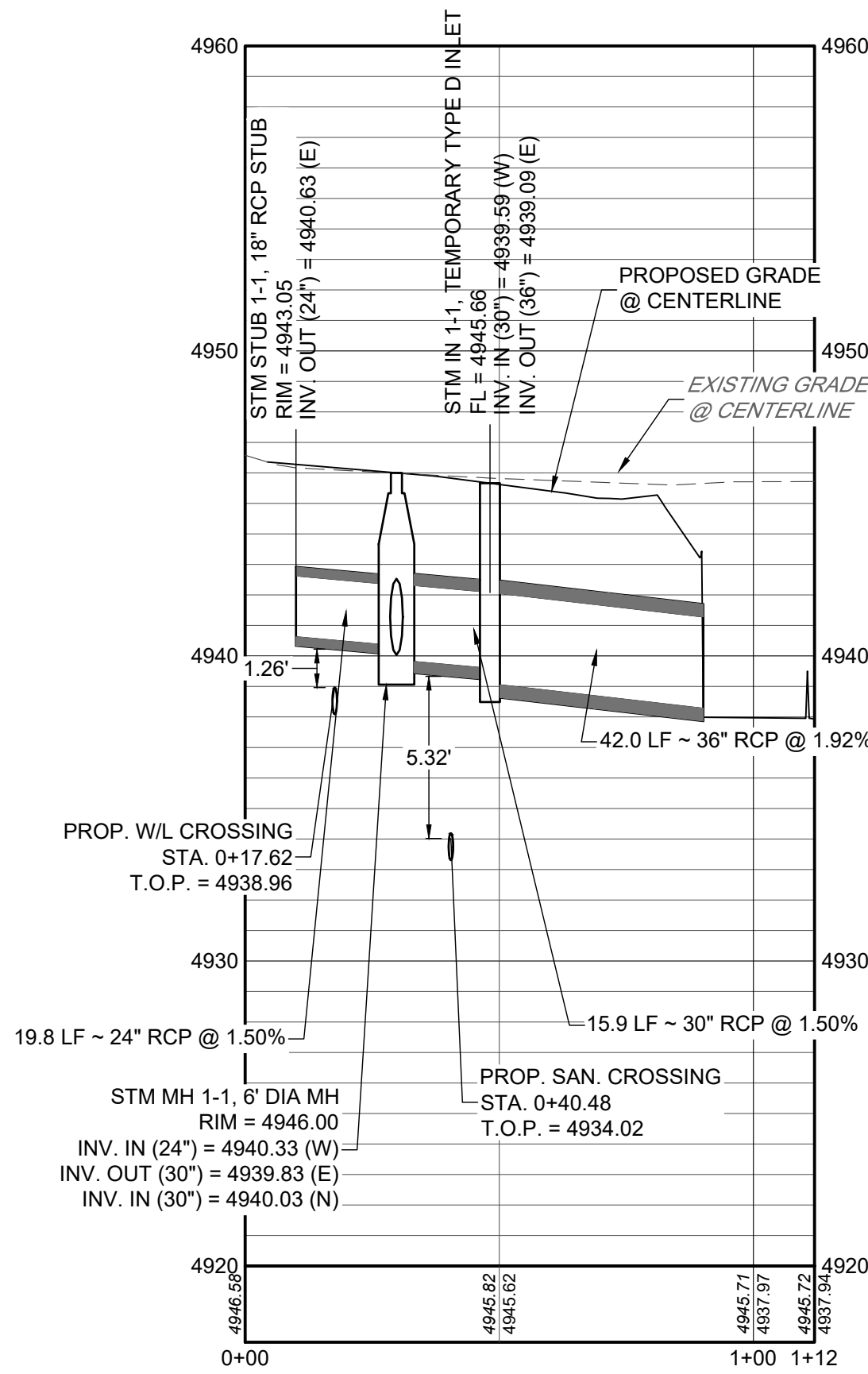


STORM LINE 1 PLAN

SCALE: 1" = 30'

STORM LINE 1 PROFILE

H: 1" = 30'
V: 1" = 5'

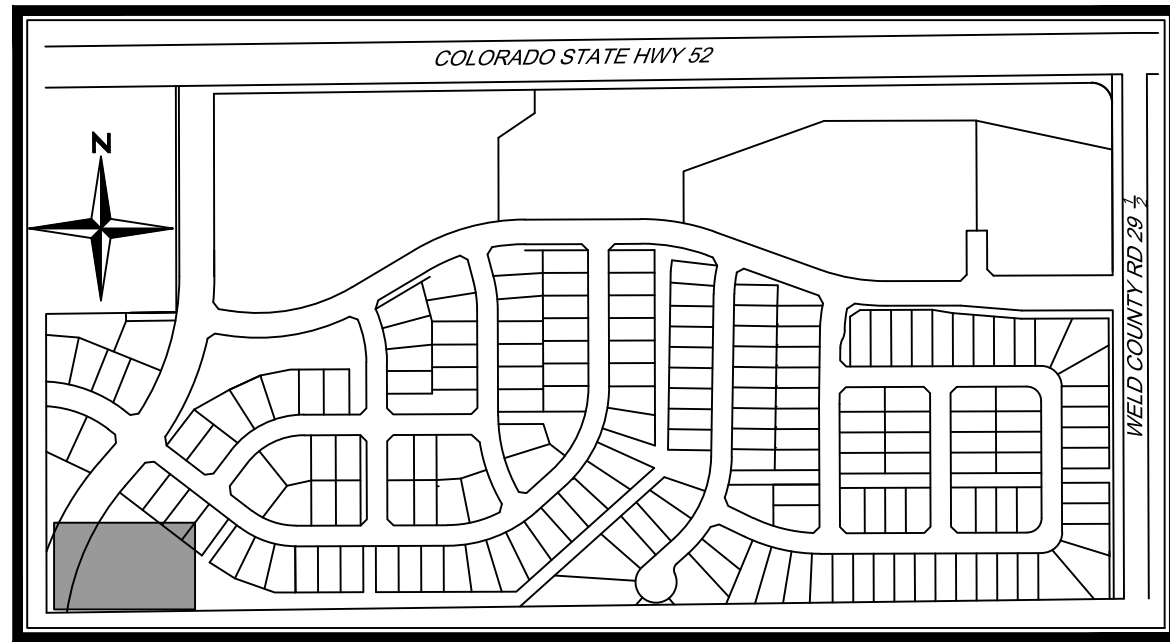
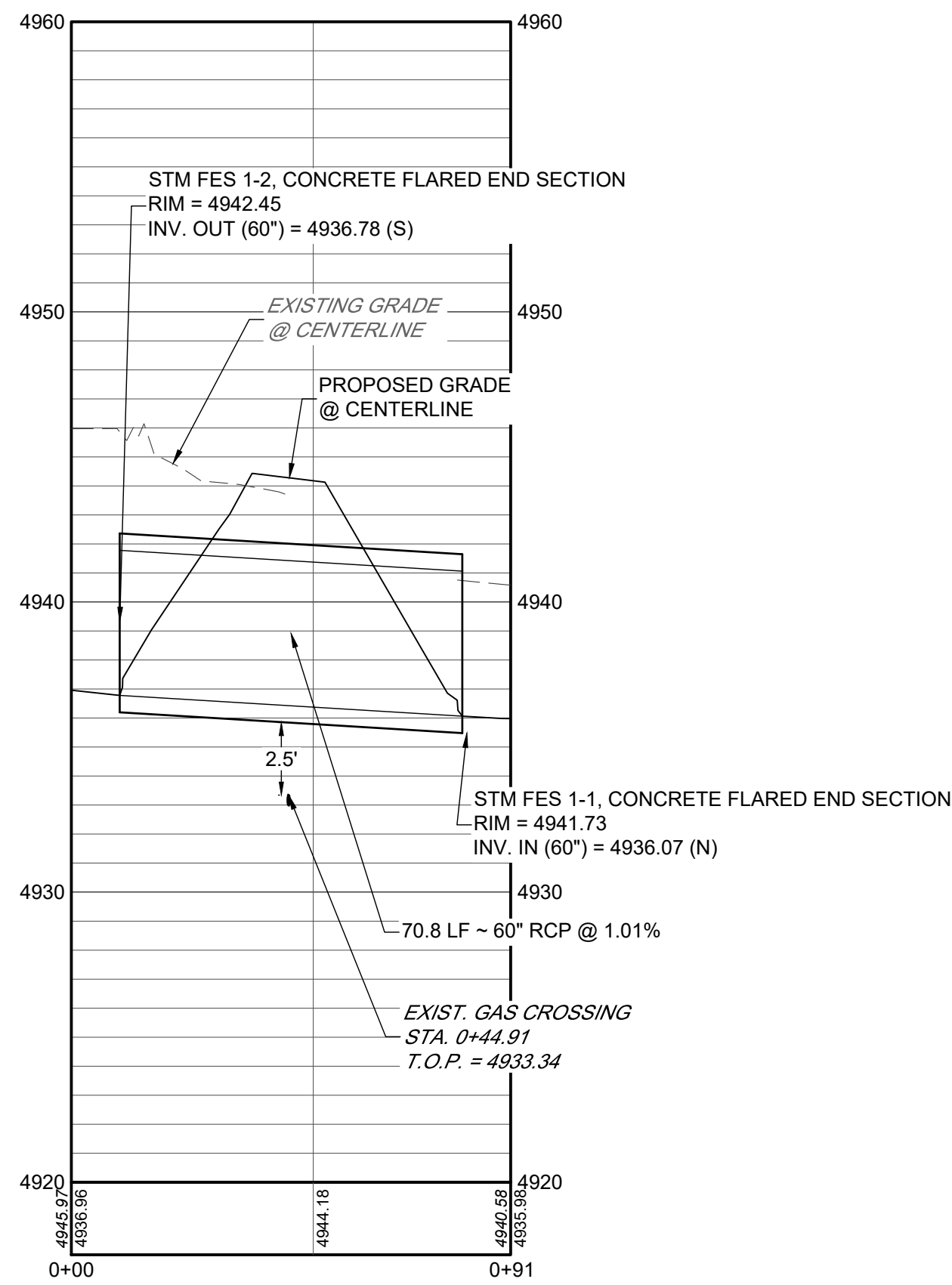


POND EQUALIZER PLAN

SCALE: 1" = 30'

POND EQUALIZER PIPE PROFILE

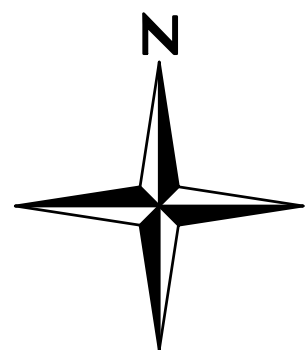
H: 1" = 30'
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KEYMAP
N.T.S

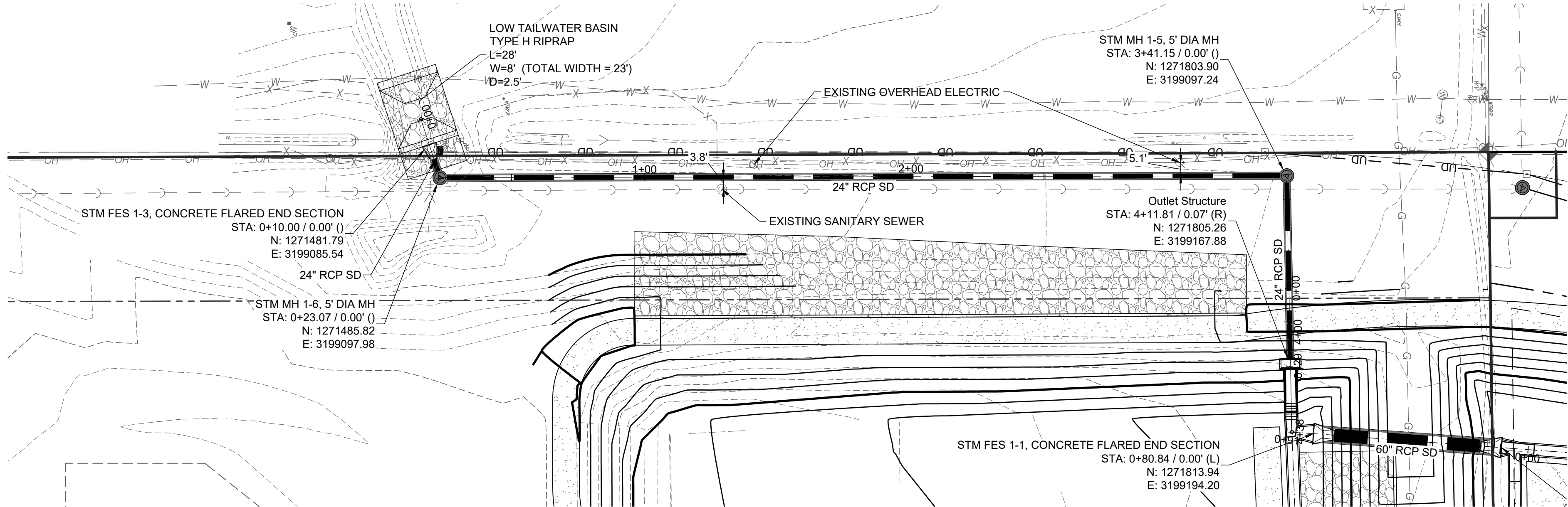
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0 15 30 60
SCALE: 1" = 30'

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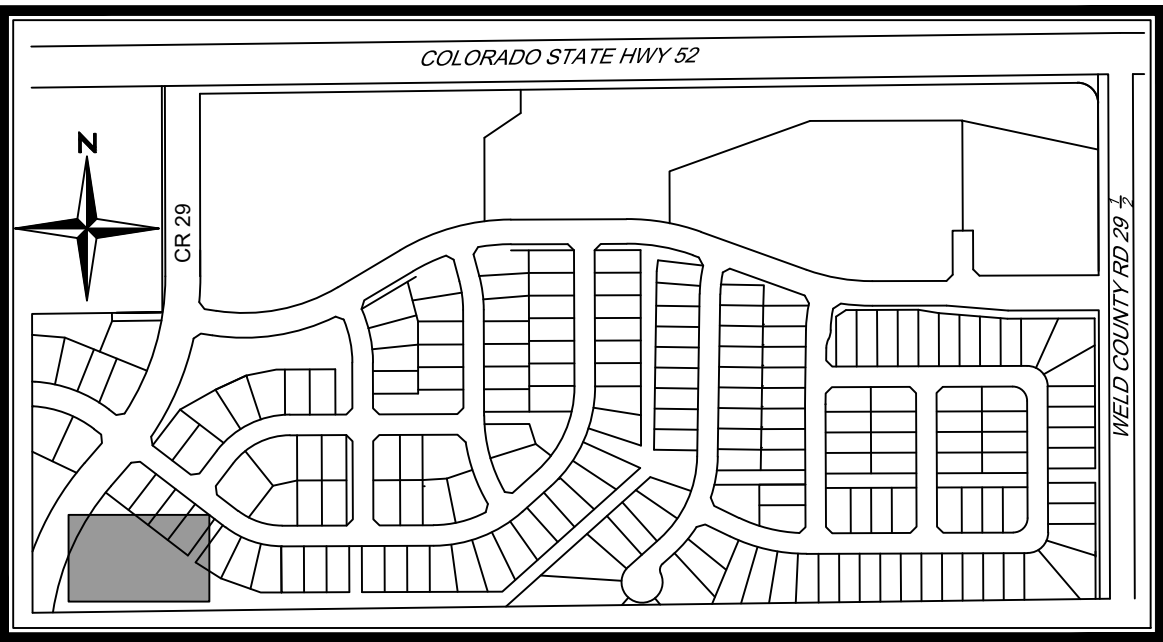
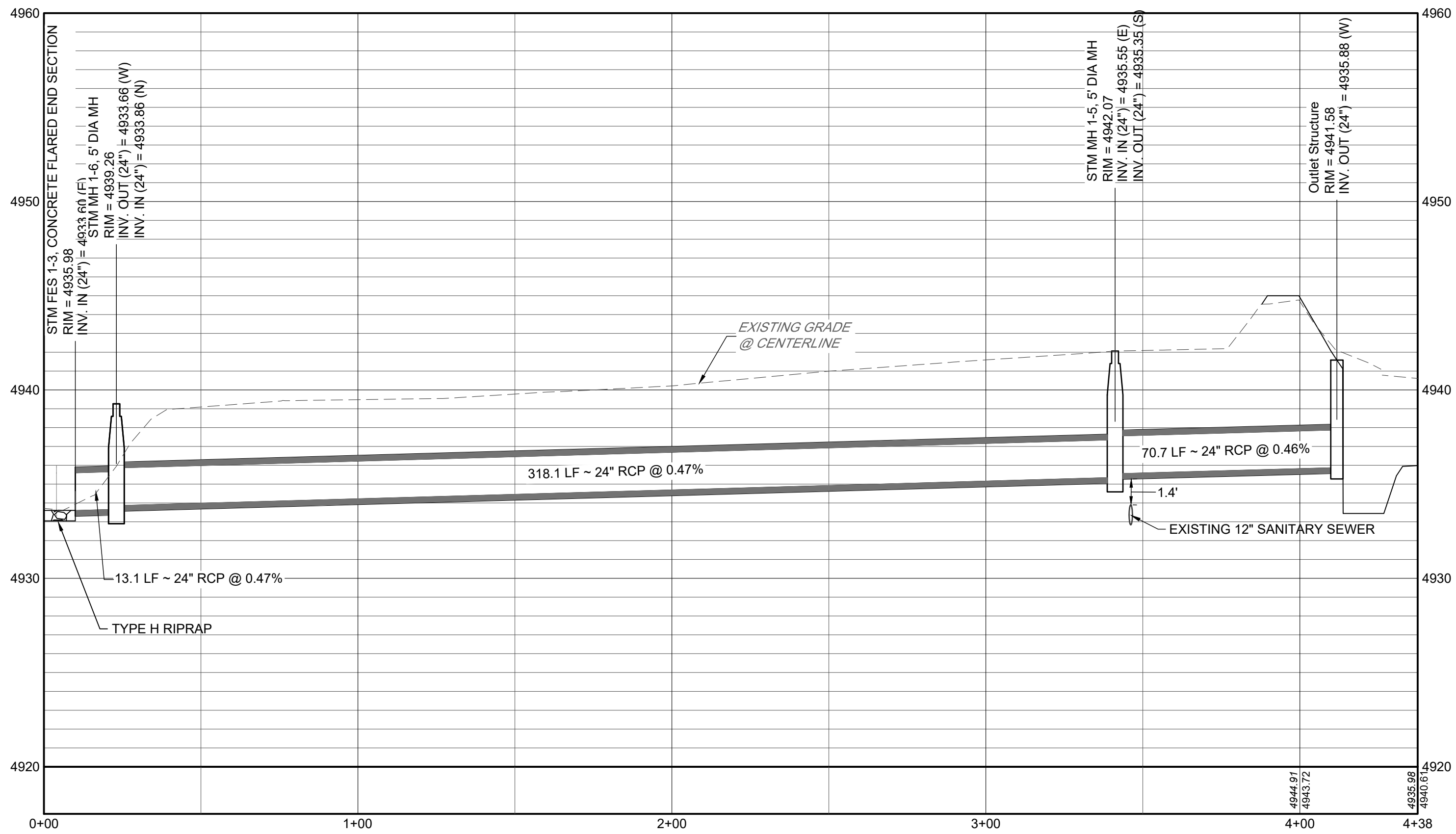


POND OUTFALL PLAN

SCALE: 1" = 30'

POND OUTFALL PROFILE

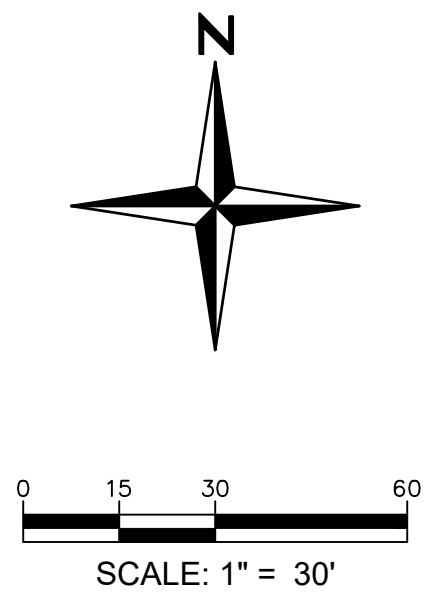
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

NOTES

- REFER TO SHEET C1.2 FOR TYPICAL STREET SECTIONS.
- ALL STATIONING IS CENTERLINE STATIONING UNLESS OTHERWISE NOTED. CENTERLINE AND R.O.W. DIMENSIONS ARE FOR REFERENCE ONLY. REFER TO THE FINAL SUBDIVISION PLAT FOR HORIZONTAL CONTROL.
- ALL ELEVATIONS IN PLAN VIEW ARE FLOWLINE ELEVATIONS UNLESS OTHERWISE NOTED.
- STORM INLET STATIONING/OFFSET REFERENCE IS AT THE INTERSECTION OF FLOWLINE AND THE CENTER OF THE STRUCTURE.
- STORM INLETS LOCATED ALONG CURBS SHALL BE CONSTRUCTED WITH TOP OF BOX AT SAME GRADE AS EXTENDED CURB UNLESS OTHERWISE NOTED.
- FOR ALL PUBLIC ROADWAY AND UTILITY IMPROVEMENTS, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE LATEST EDITION OF THE FORT LUPTON DEVELOPMENT STANDARDS AND REGULATIONS PRIOR TO CONSTRUCTION, AND KEEPING THE CONSTRUCTION PLANS AND THE STANDARDS AND REGULATIONS ON THE JOB SITE AT ALL TIMES.
- ALL STORM SEWER PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED.
- ALL FLOWLINE ALONG CURB RAMPS SHALL HAVE A MINIMUM CROSS SLOPE OF 0.5% TO FACILITATE DRAINAGE AND AVOID STANDING WATER AND ICE.
- PIPE JOINTS SHALL BE WATERTIGHT AND FLEXIBLE GASKET JOINTS, BOTH BETWEEN PIPE SECTIONS AND AT MANHOLES. PIPE JOINTS SHALL CONSIST OF RESILIENT CONNECTIONS COMPLYING WITH THE REQUIREMENTS OF ASTM C-443 OR ASTM C-923, AS APPROPRIATE.
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

POND OUTFALL P&P

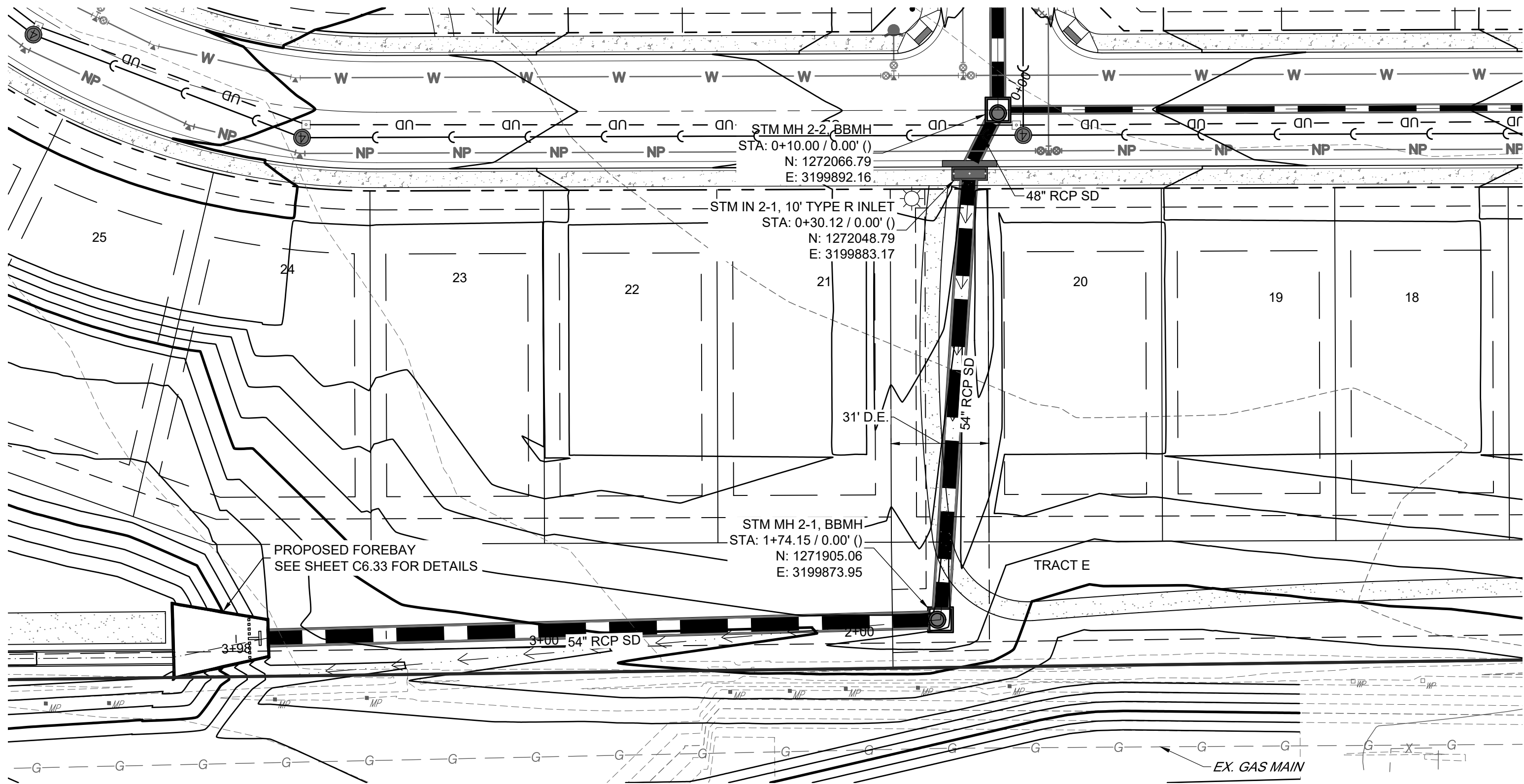
SHEET

C6.30



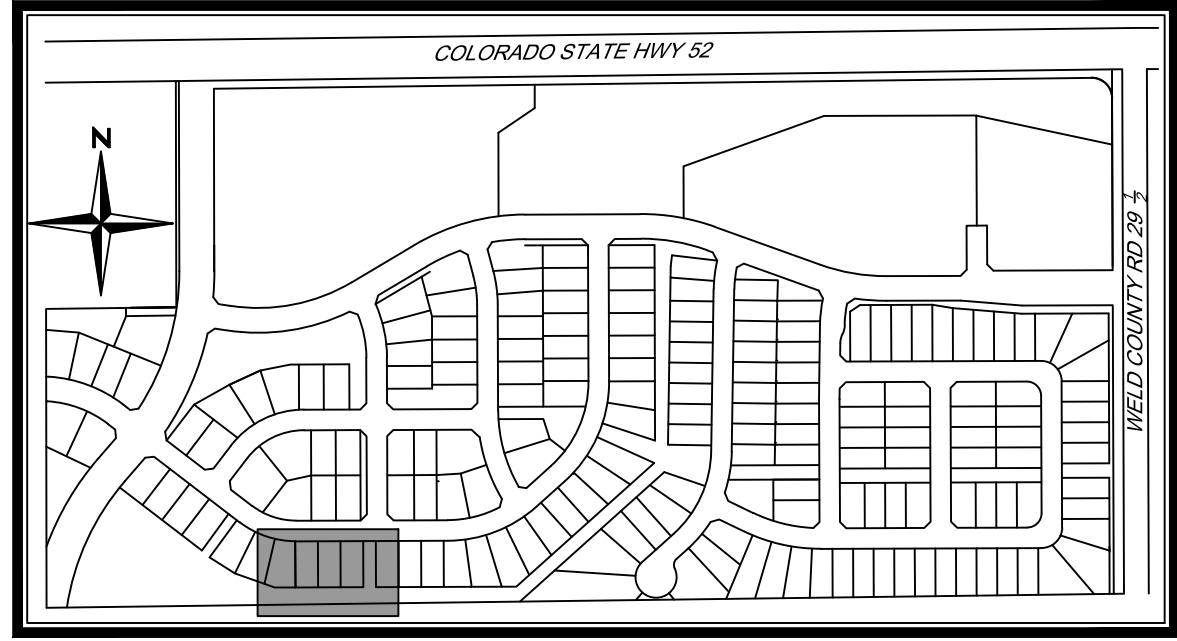
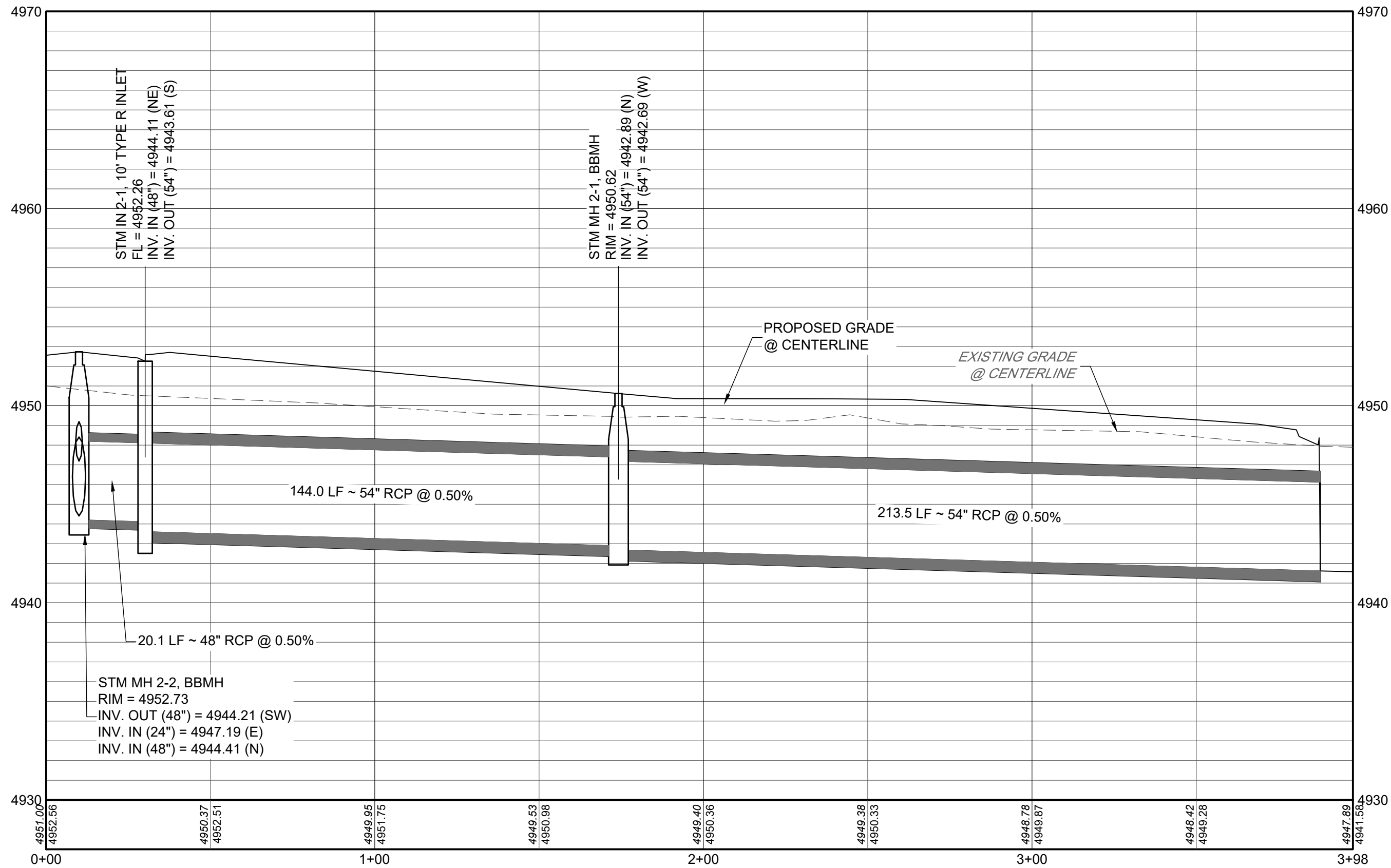
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1500 West Canal Court
Littleton, Colorado 80120
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STORM LINE 4 PLAN
SCALE: 1" = 30'

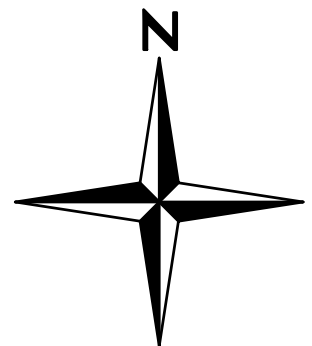
STORM LINE 4 PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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0 15 30 60
SCALE: 1" = 30'

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

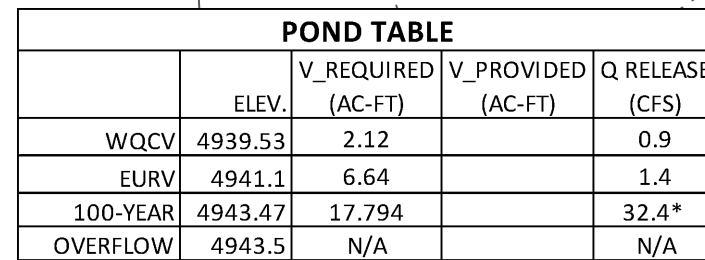
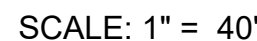
STORM LINE 4 P&P

SHEET

C6.31

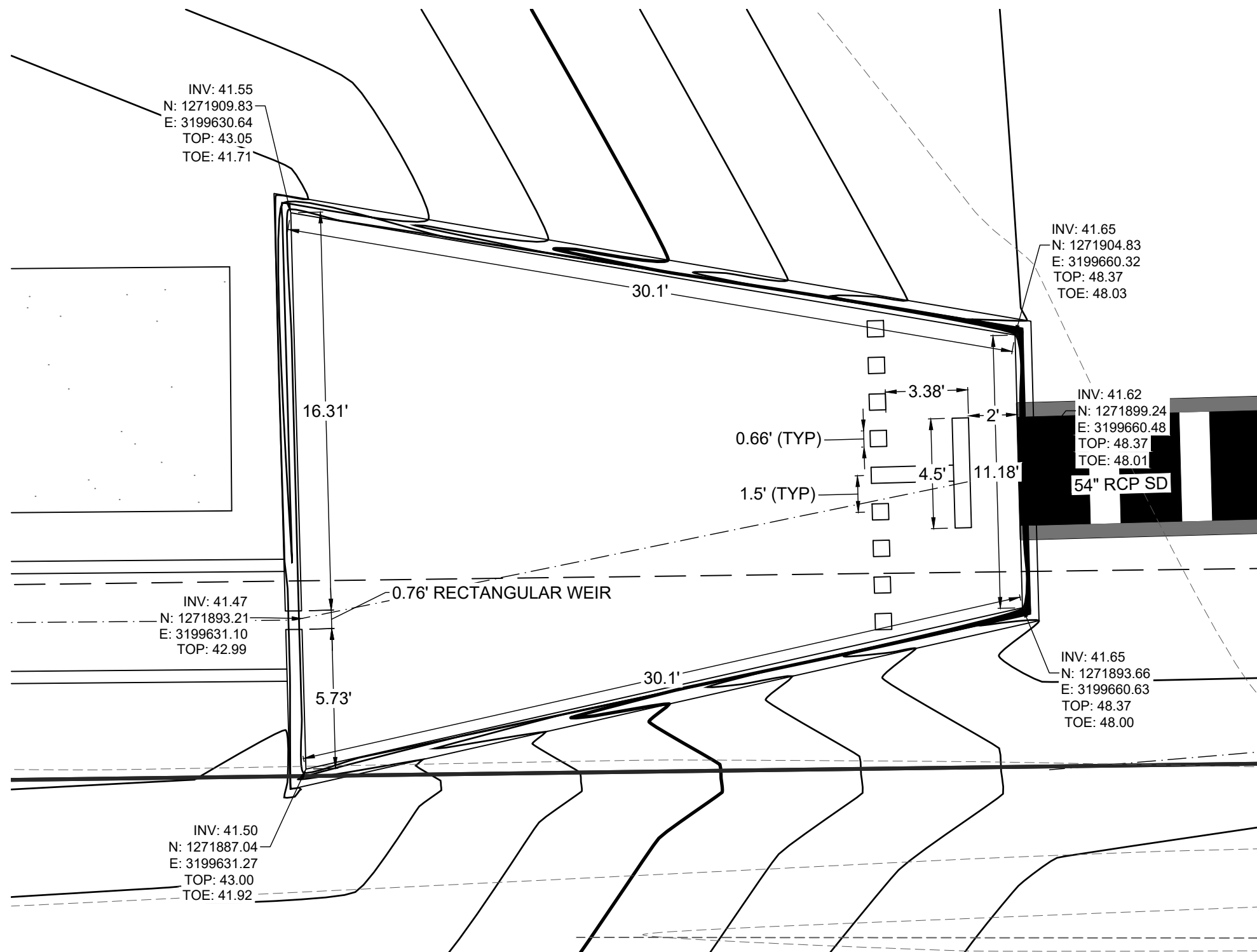


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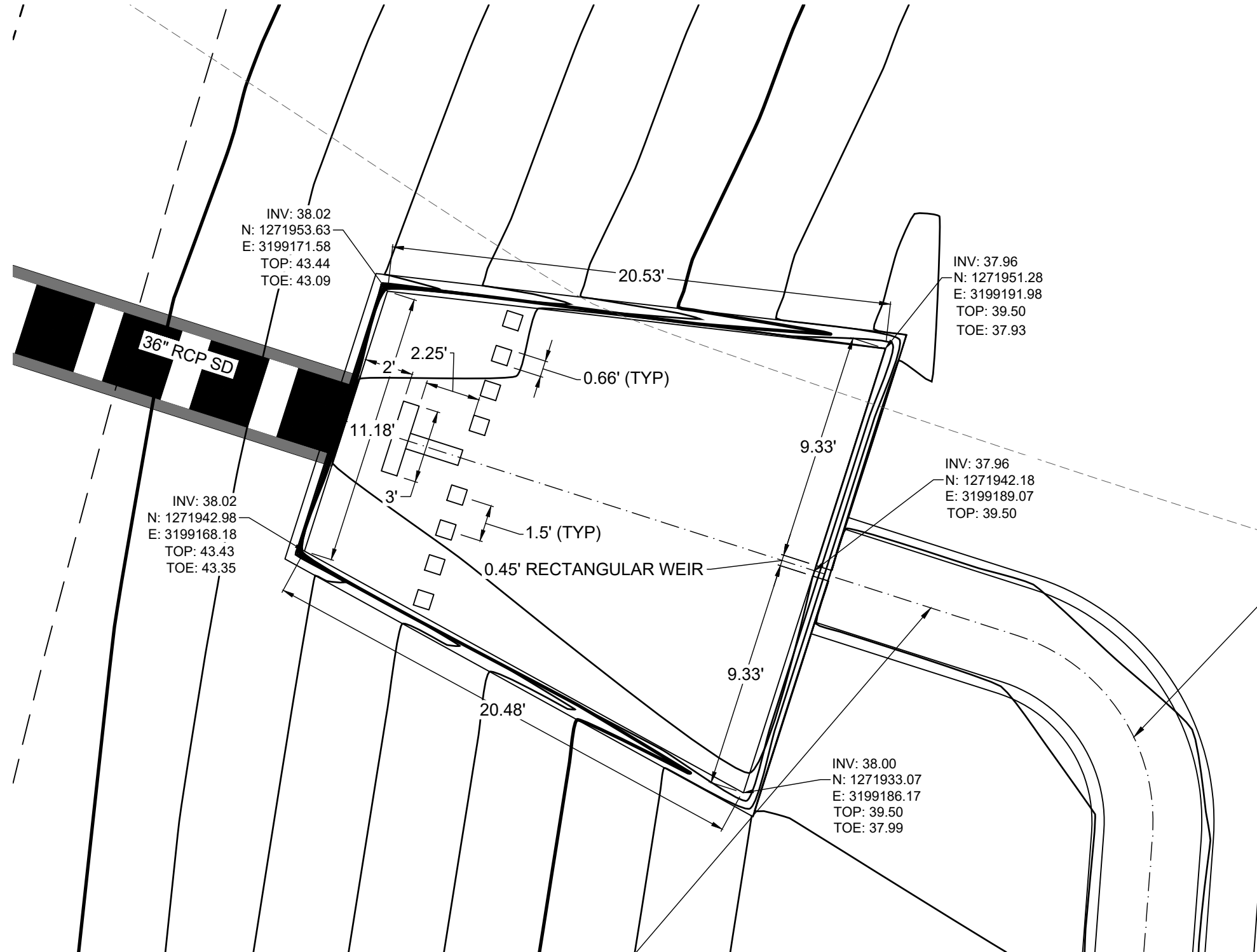


POND TABLE				
	ELEV.	V_REQUIRED (AC-FT)	V_PROVIDED (AC-FT)	Q_RELEASE (CFS)
WQCV	4939.53	2.12		0.9
EURV	4941.1	6.64		1.4
100-YEAR	4943.47	17.794		32.4 *
OVERFLOW	4943.5	N/A		N/A

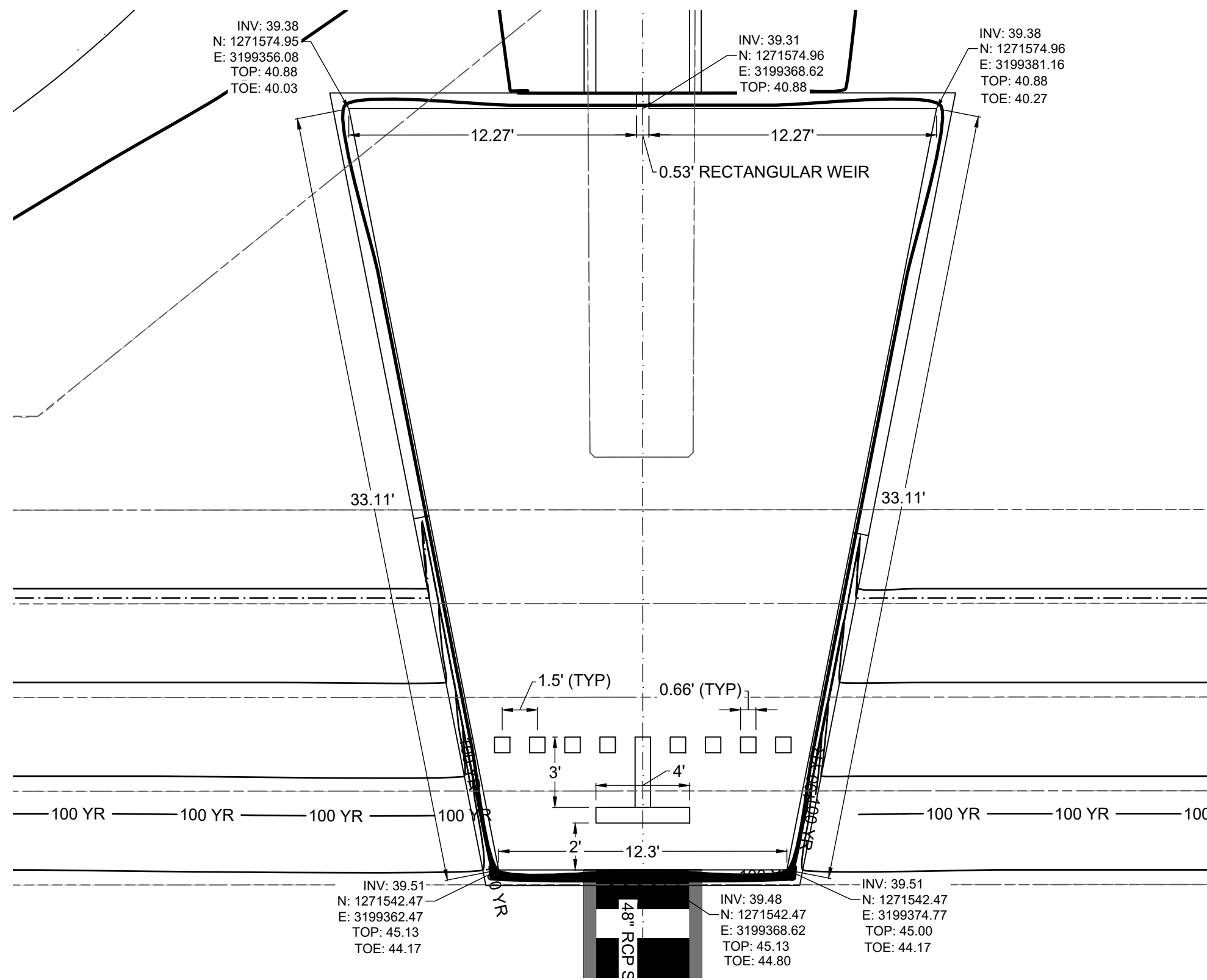
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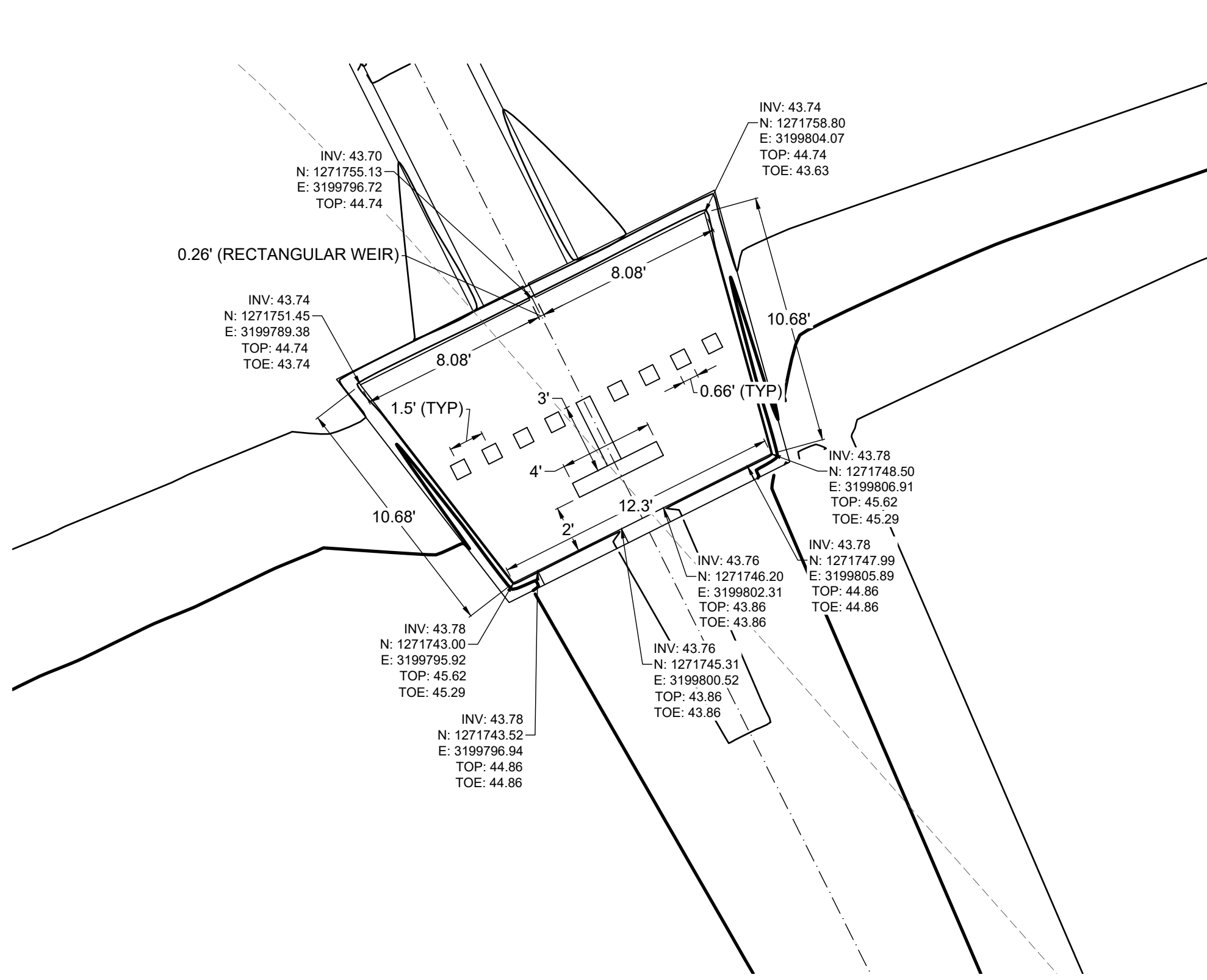
FOREBAY 1 PLAN
SCALE: 1" = 5'
D=18" MIN



FOREBAY 2 PLAN
SCALE: 1" = 5'
D=18" MIN

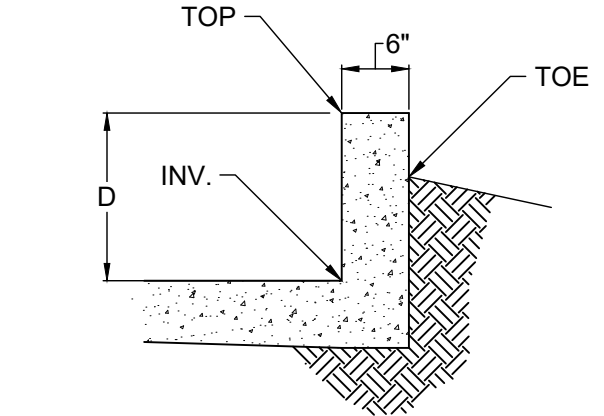


FOREBAY 3 PLAN
SCALE: 1" = 5'
D=18" MIN

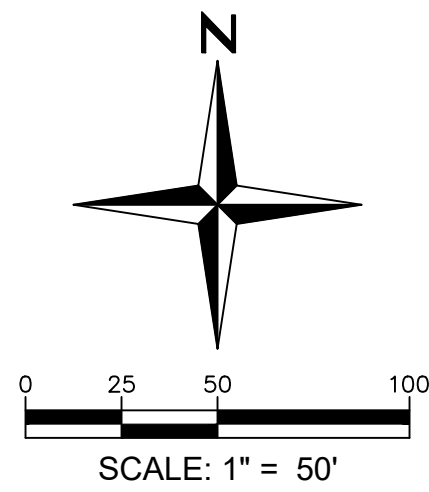


FOREBAY 4 PLAN
SCALE: 1" = 5'
D=12" MIN

NOTE: CONTRACTOR TO SUPPLY STRUCTURAL SHOP DRAWINGS FOR FOREBAYS, ENERGY DISSIPATORS, HEADWALLS AND WINGWALLS.



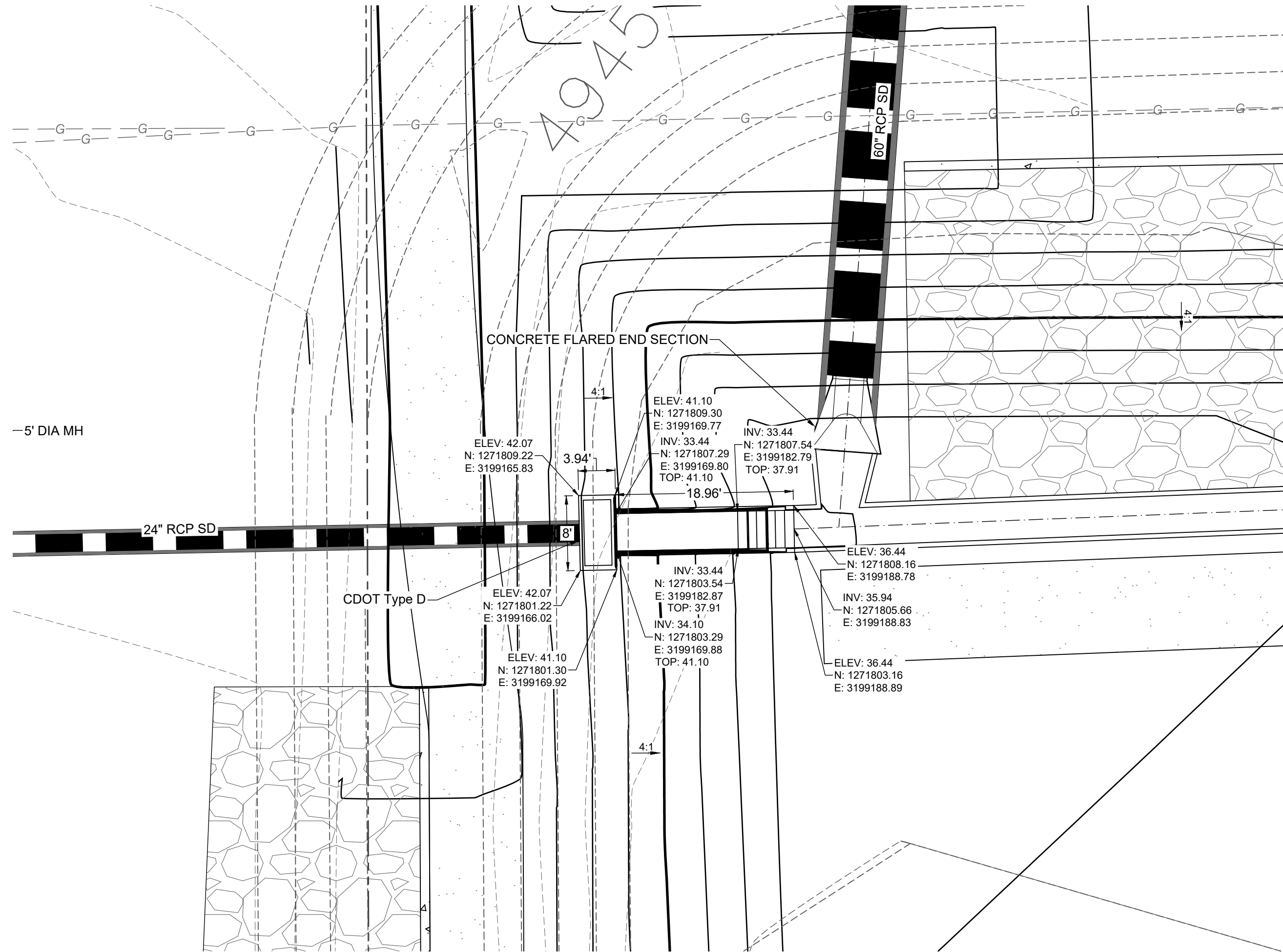
FOREBAY WALL SECTION
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
FOREBAY DETAILS

SHEET
C6.33

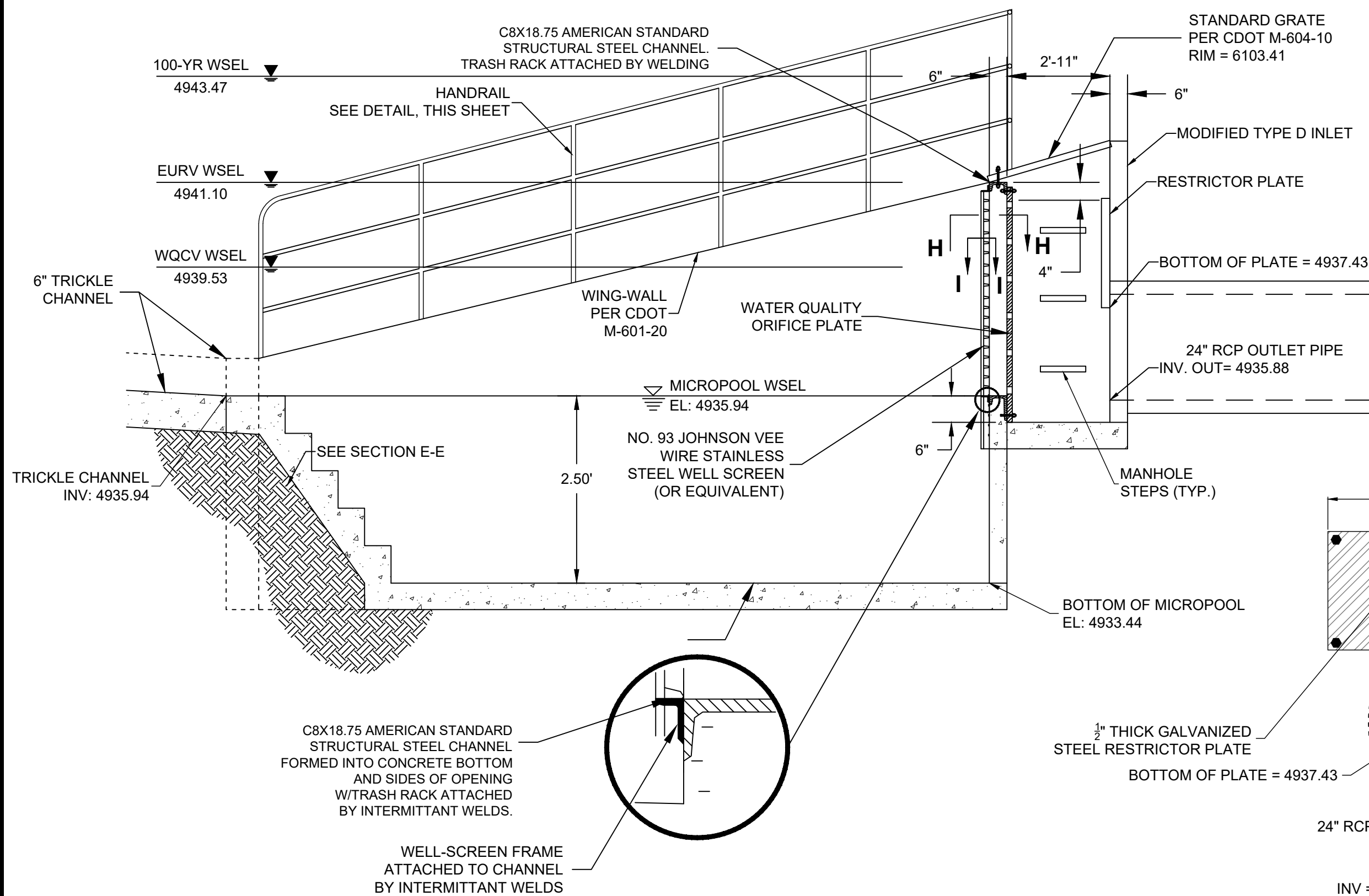
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**POND OUTLET STRUCTURE
PLAN VIEW**

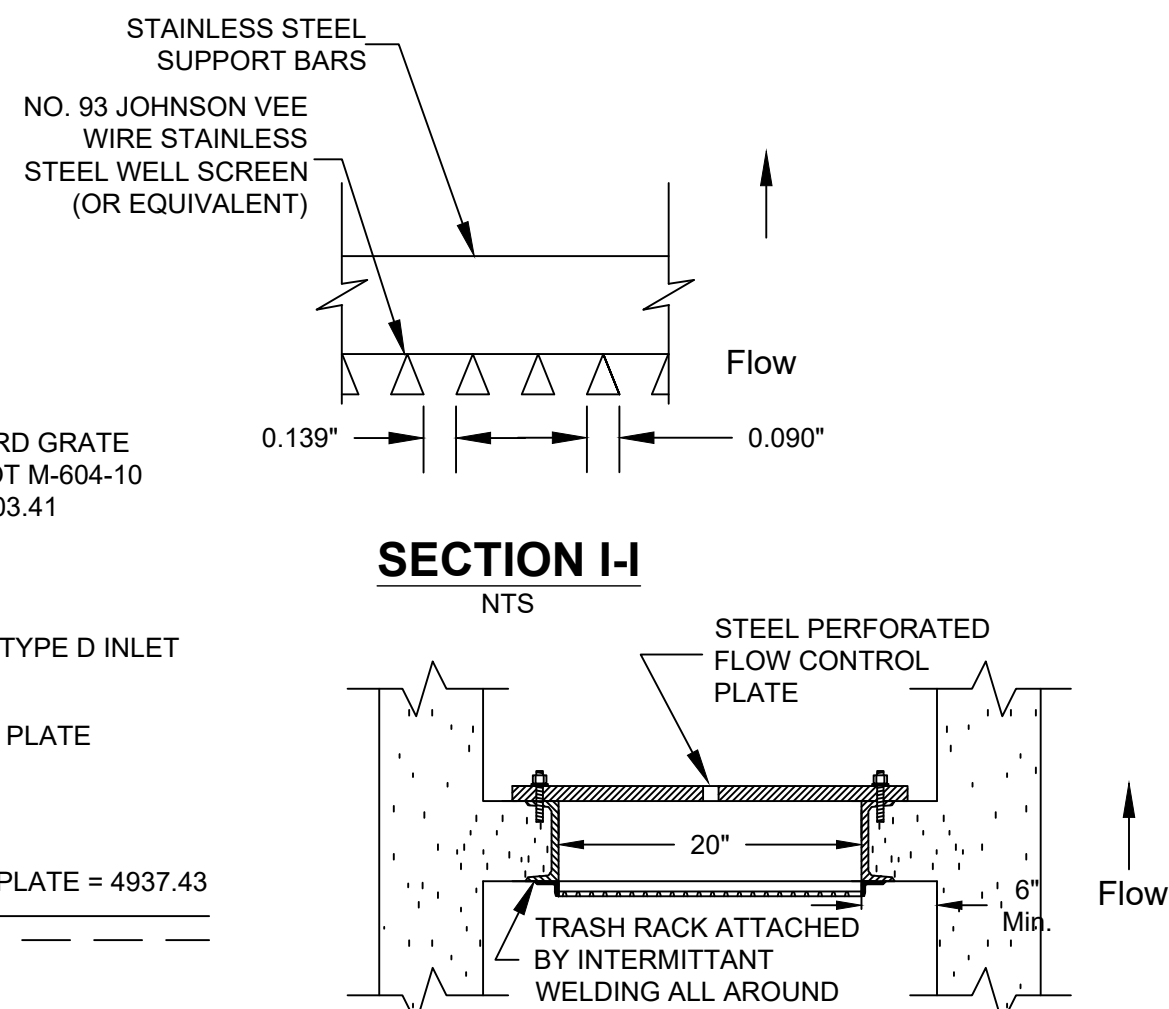
SCALE: 1" = 10'

NOTE: CONTRACTOR TO SUPPLY STRUCTURAL SHOP DRAWINGS
FOR FOREBAY AND WINGWALLS



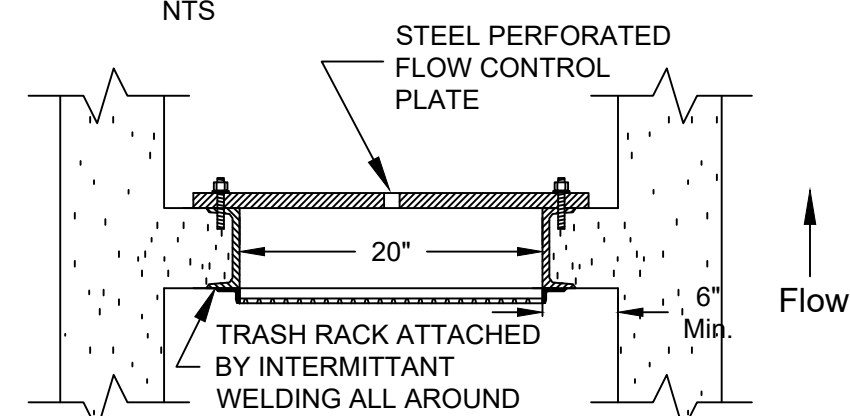
**OUTLET STRUCTURE
SECTION D-D**

NTS



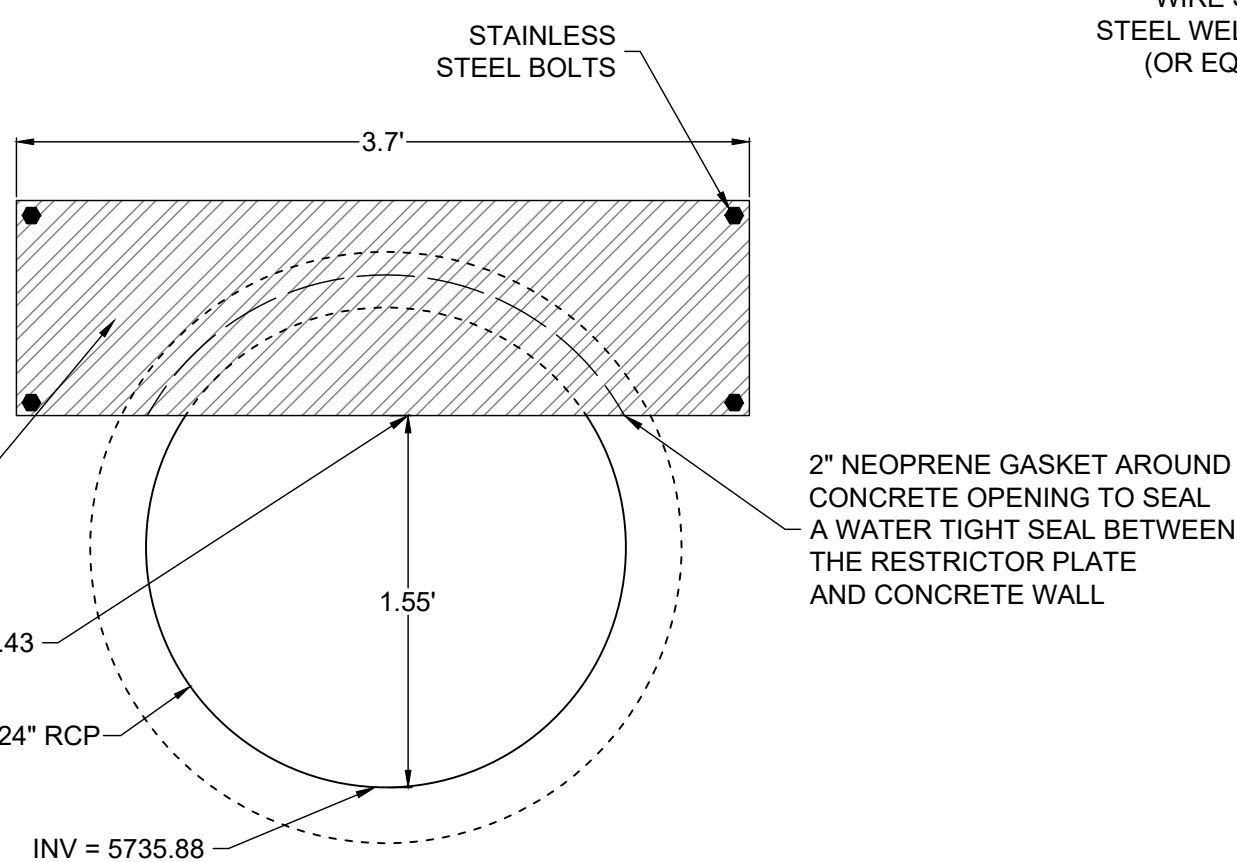
SECTION I-I

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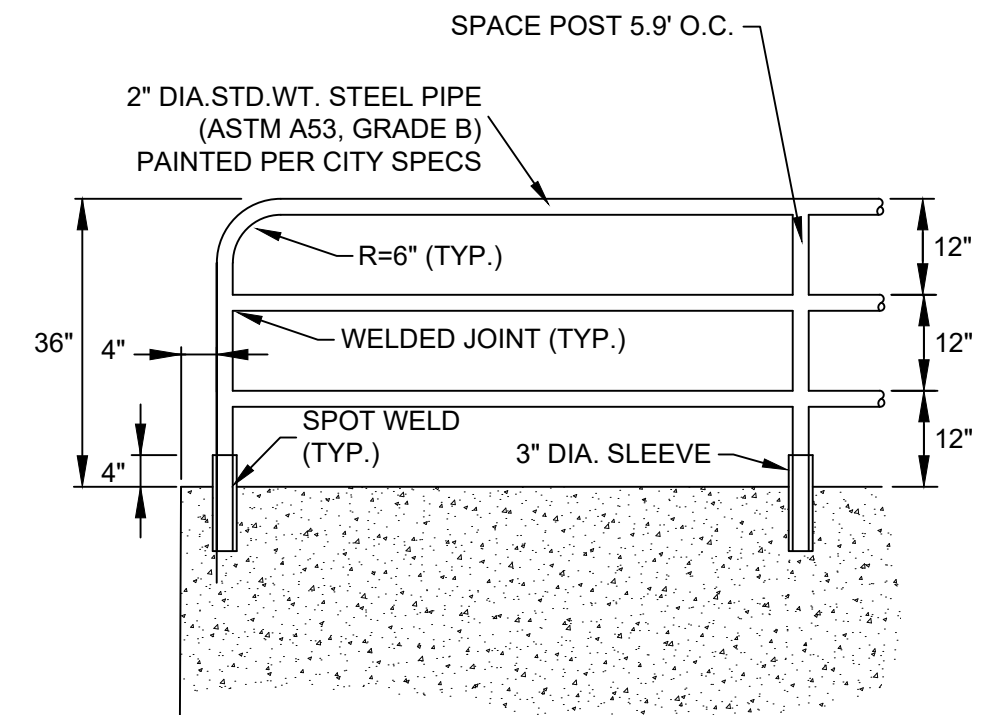
SECTION H-H PLAN VIEW

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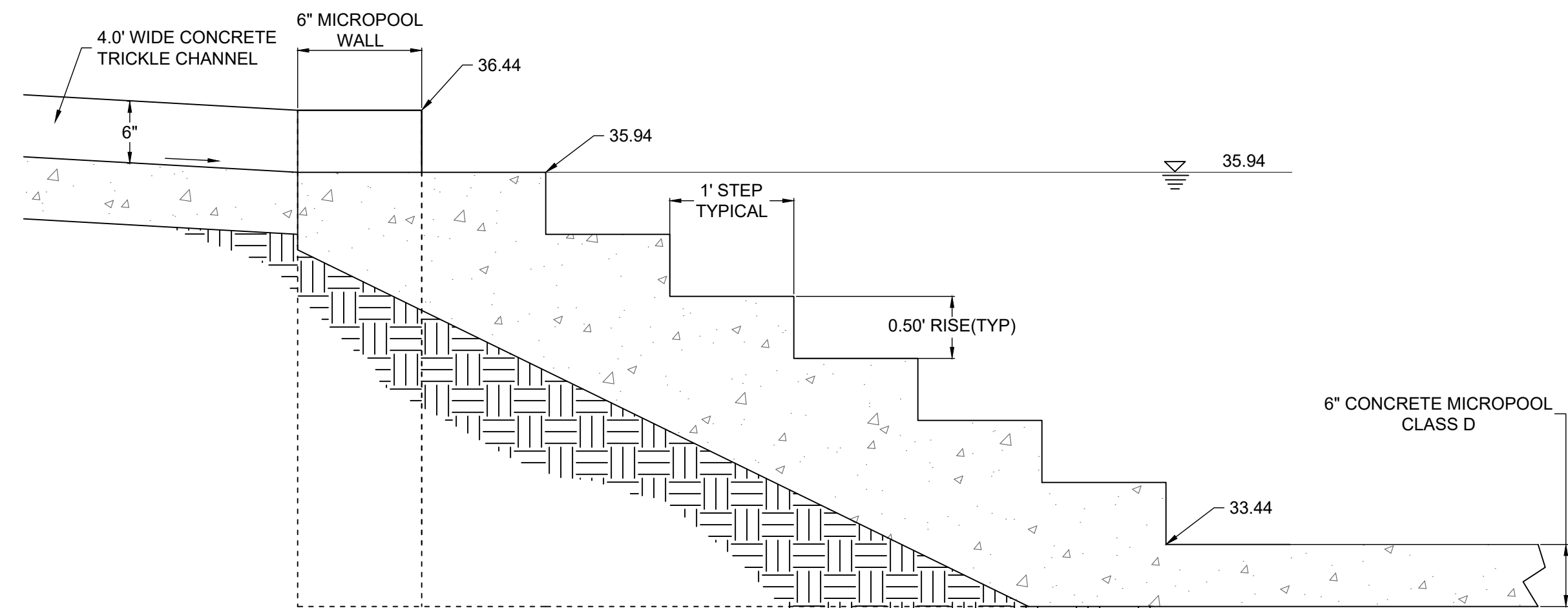


**100-YR STEEL RESTRICTOR
PLATE DETAIL**

NTS

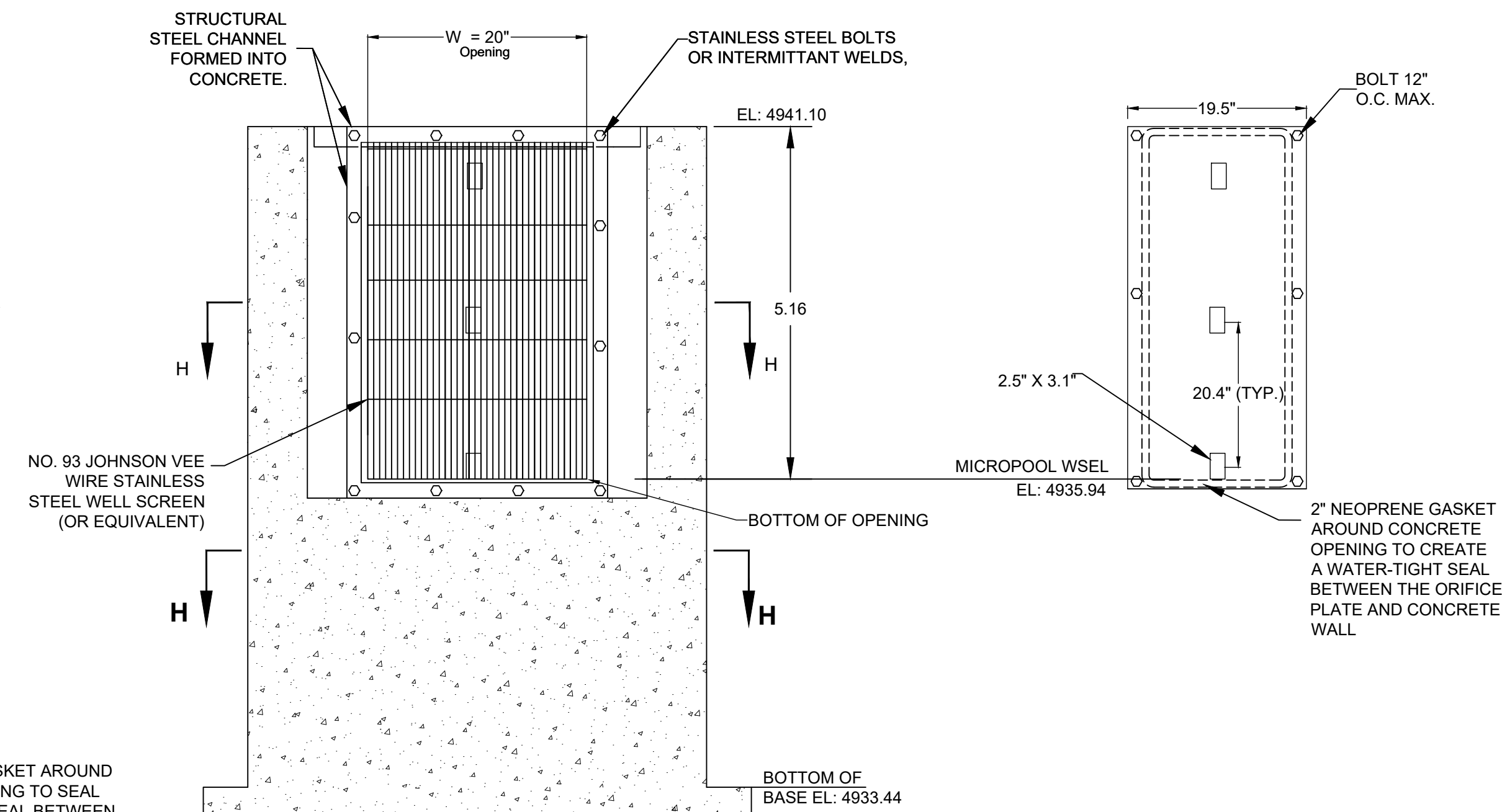


HANDRAIL DETAIL



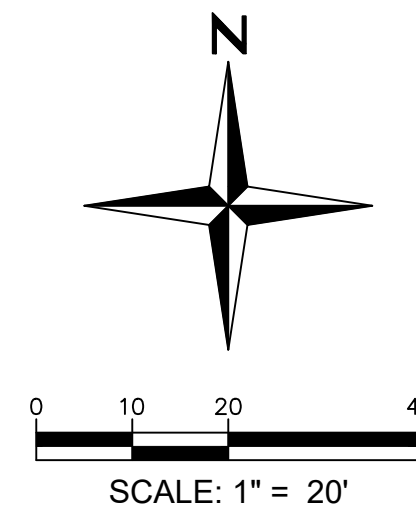
**STAIR DETAIL
SECTION E-E**

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**WATER QUALITY ORFICE
PLATE DETAIL**

NTS



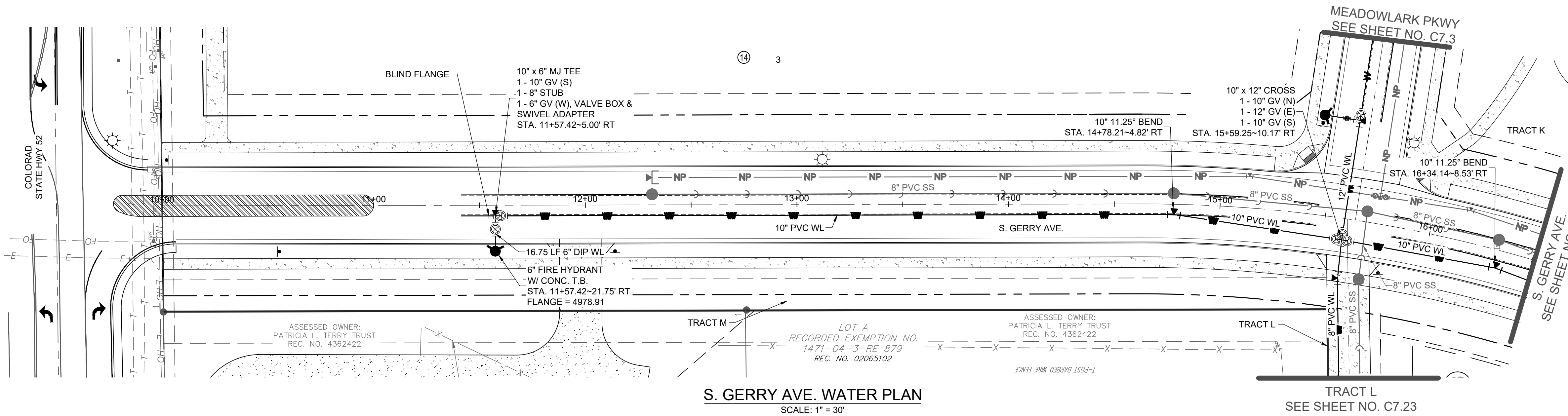
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

POND DETAILS

SHEET

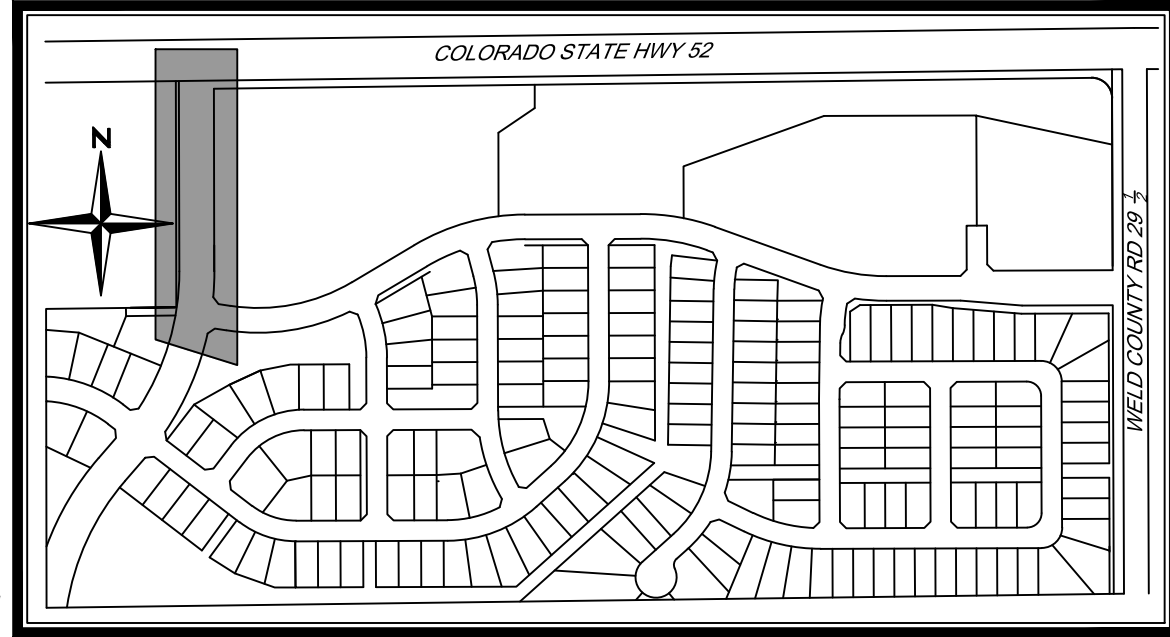
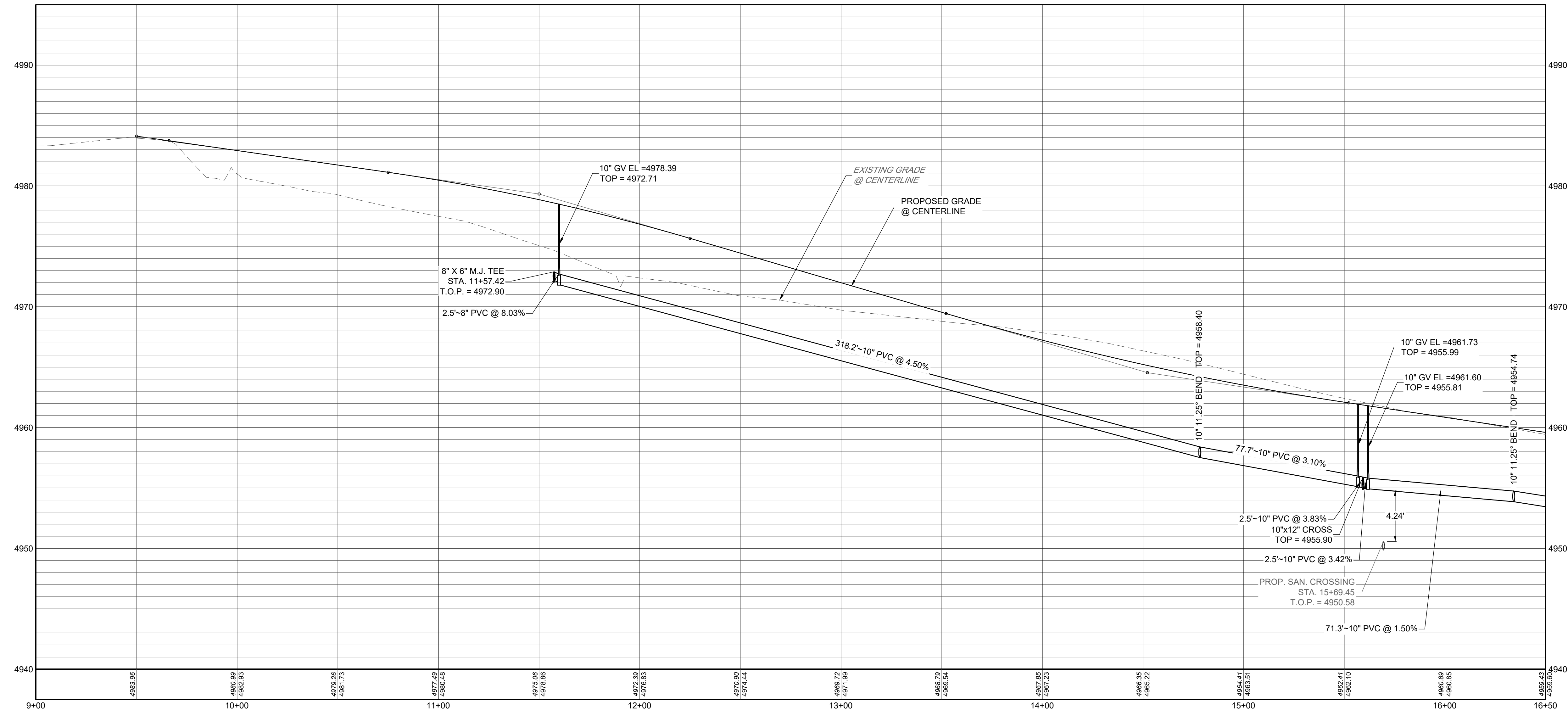
C6.34

I:\2019\19032 - murata farms\CAAD\sheet sets\Construction drawings\Water Pnp\19032 - Street A - WaterP&P.dwg Lab: C7.1 S. GERRY AVE. WATER P&P Aug 20, 2021 -- 1:18pm aksaki



S. GERRY AVE. WATER PROFILE

H: 1" = 30'
V: 1" = 5'



NOTES:

1. ALL STATIONING IS ON CENTERLINE UNLESS OTHERWISE NOTED. CENTERLINE AND R.O.W. DIMENSIONS ARE FOR REFERENCE ONLY, REFER TO THE FINAL SUBDIVISION PLAT FOR HORIZONTAL CONTROL.
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4. ALL WATER LINES SHALL HAVE A MINIMUM BURY DEPTH OF 5.0' TO THE TOP OF PIPE UNLESS OTHERWISE NOTED.
5. ALL VALVES AND FITTINGS MUST BE POLY WRAPPED
6. NO VALVES SHALL BE INSTALL IN CROSS PANS OR UNDER CURB AND GUTTER.
7. ALL PVC PIPE SHALL MEET THE REQUIREMENTS OF AWWA SPECIFICATION C-900-07, POLYVINYLCHLORIDE PRESSURE PIPE AND FABRICATED FITTINGS (4" - 12"), AND SHALL BE PRESSURE CLASS 305 PSI(DR 14), OR AWWA C-905-08, POLYVINYL CHLORIDE PRESSURE PIPE AND FABRICATED FITTINGS (14" - 48"), AND SHALL BE PRESSURE CLASS 235 PSI (DR 18).
8. ALL PVC WATER MAINS SHALL BE LOCATABLE, VIA A 12 GAUGE TRACER WIRE TAPED TO THE TOP OF PIPE AND LOOPED TO EACH HYDRANT AND A CATHODIC PROTECTION BOX.

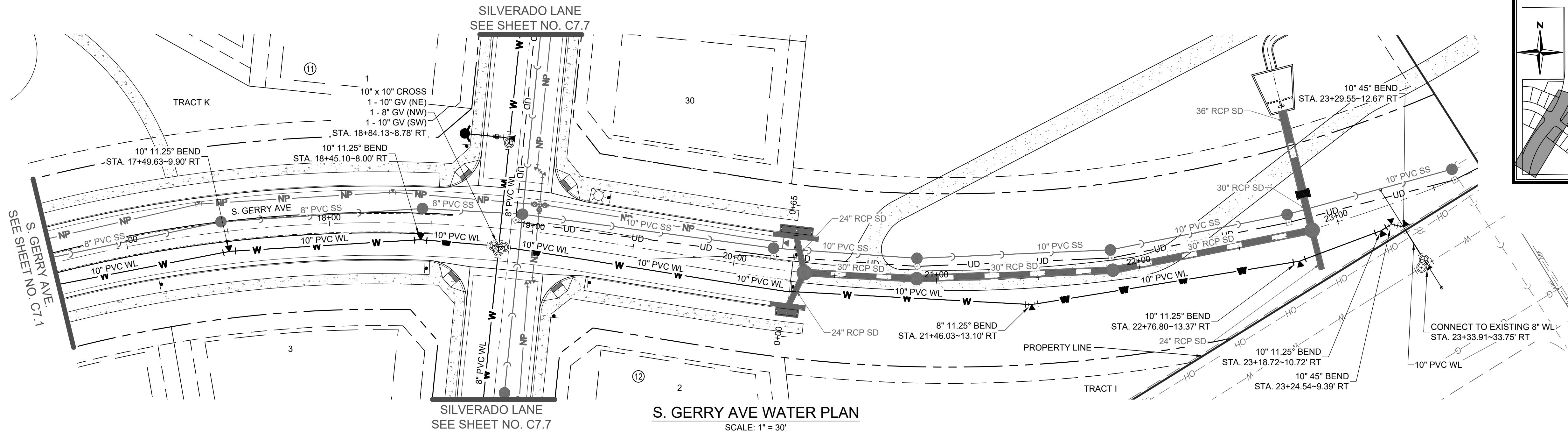
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
S. GERRY AVE. WATER P&P

SHEET

C7.1

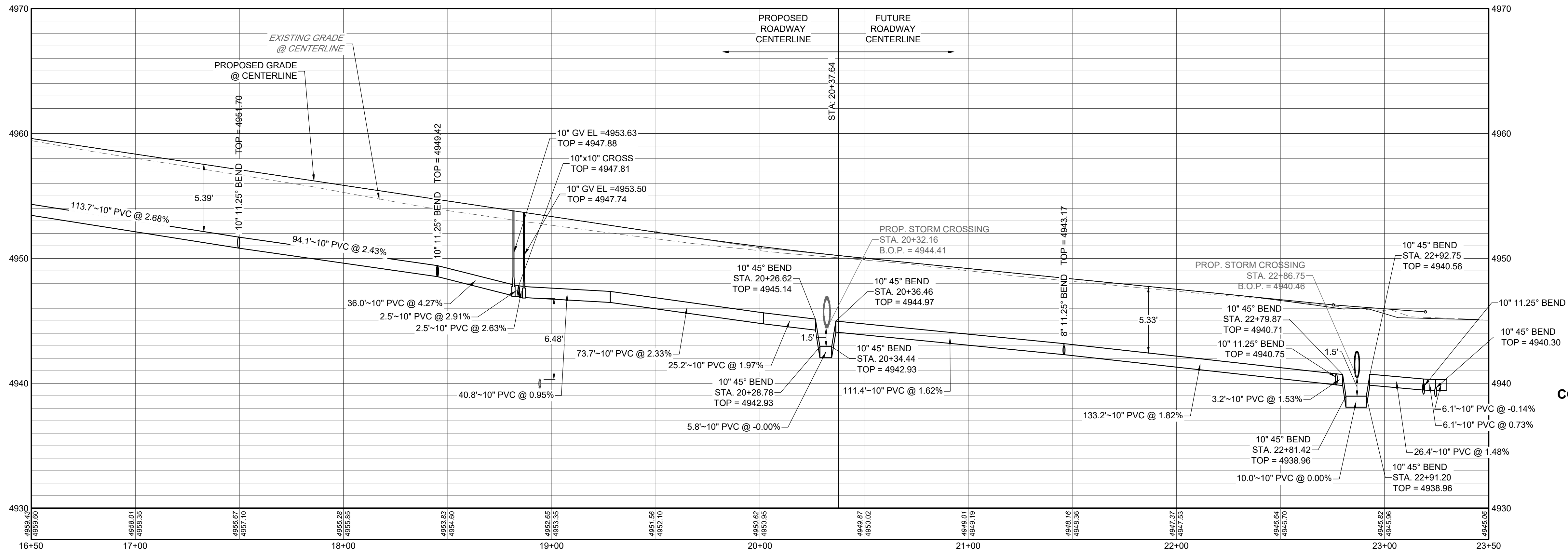


I:\2019\19032 - murata farms\CADD\sheet sets\Construction drawings\Water P&P\19032 - Street A - WaterP&P.dwg Lab: C7.2 S. GERRY AVE. WATER P&P Aug 20, 2021 - 1:19pm mskaki

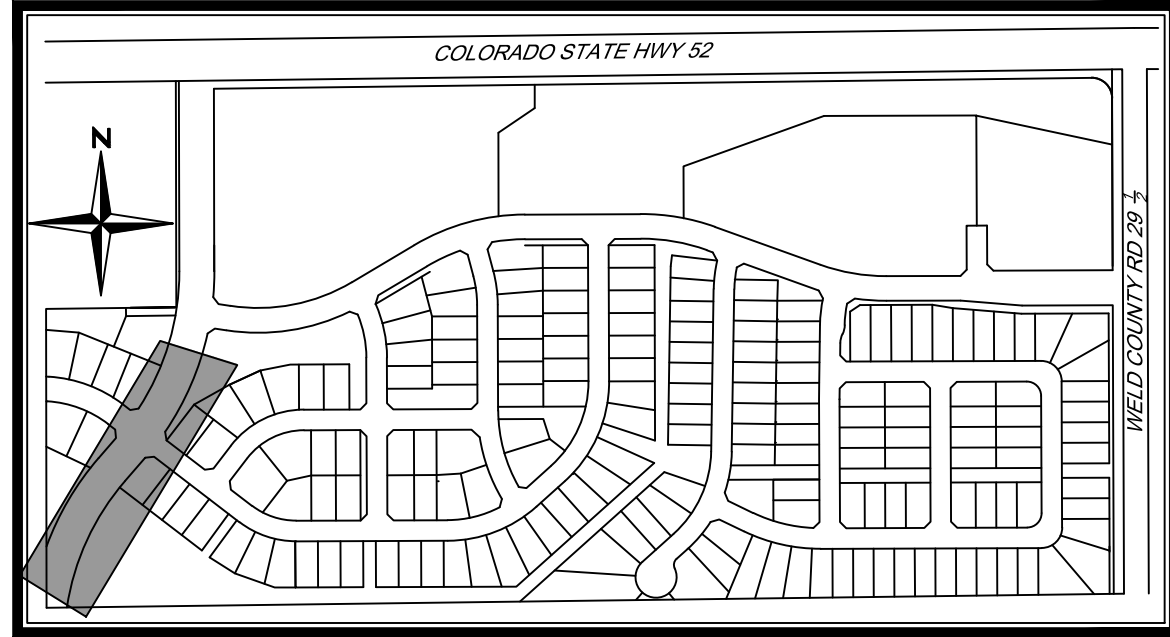
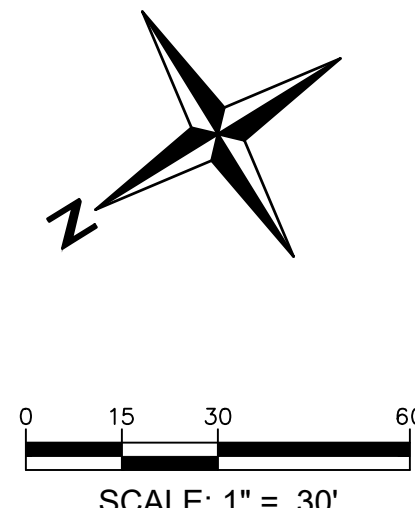
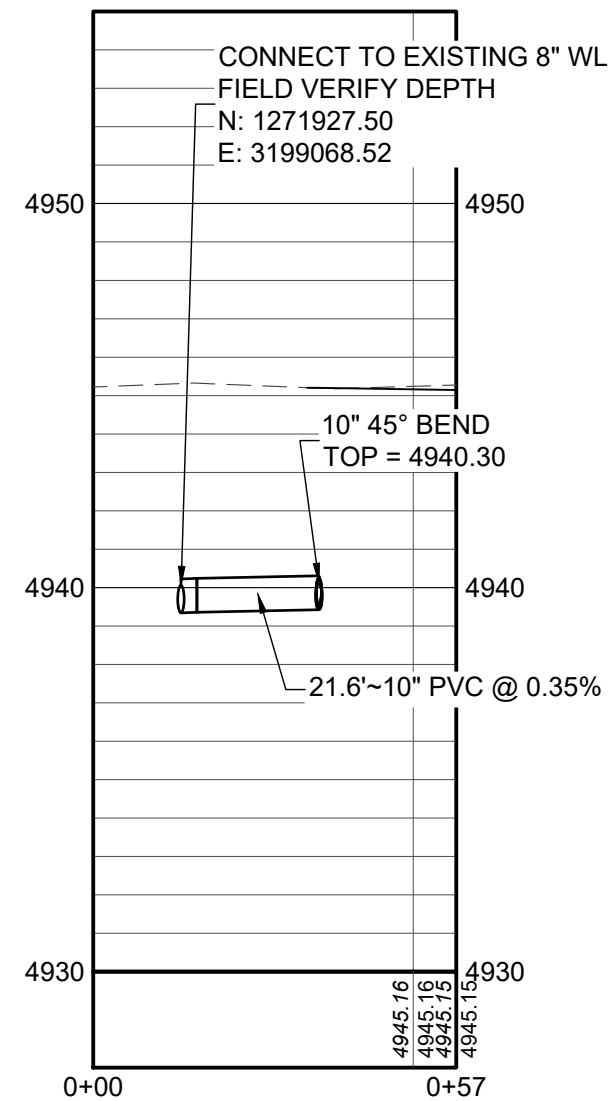


S. GERRY AVE WATER PLAN
SCALE: 1" = 30'

S. GERRY AVE WATER PROFILE
H: 1" = 30'
V: 1" = 5'



CONNECT TO EX WATER LINE PROFILE
H: 1" = 30'
V: 1" = 5'



NOTES:

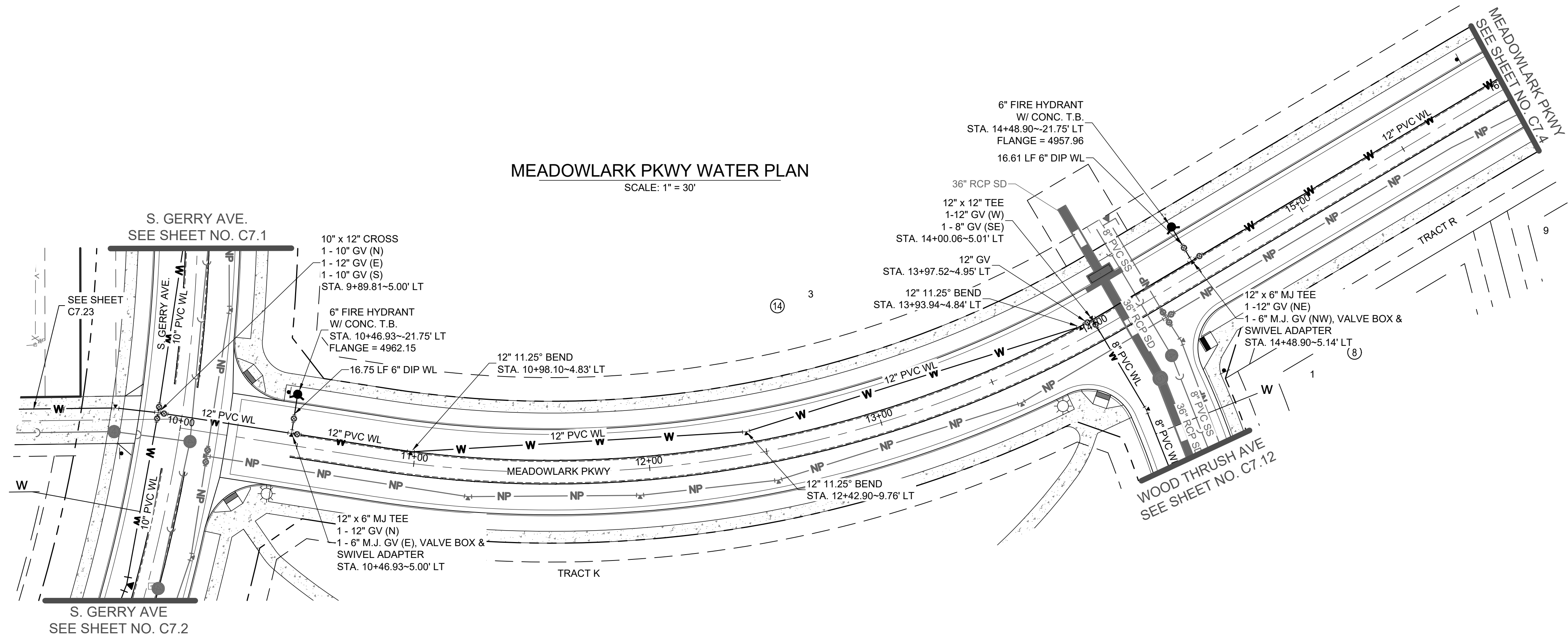
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
S. GERRY AVE. WATER P&P

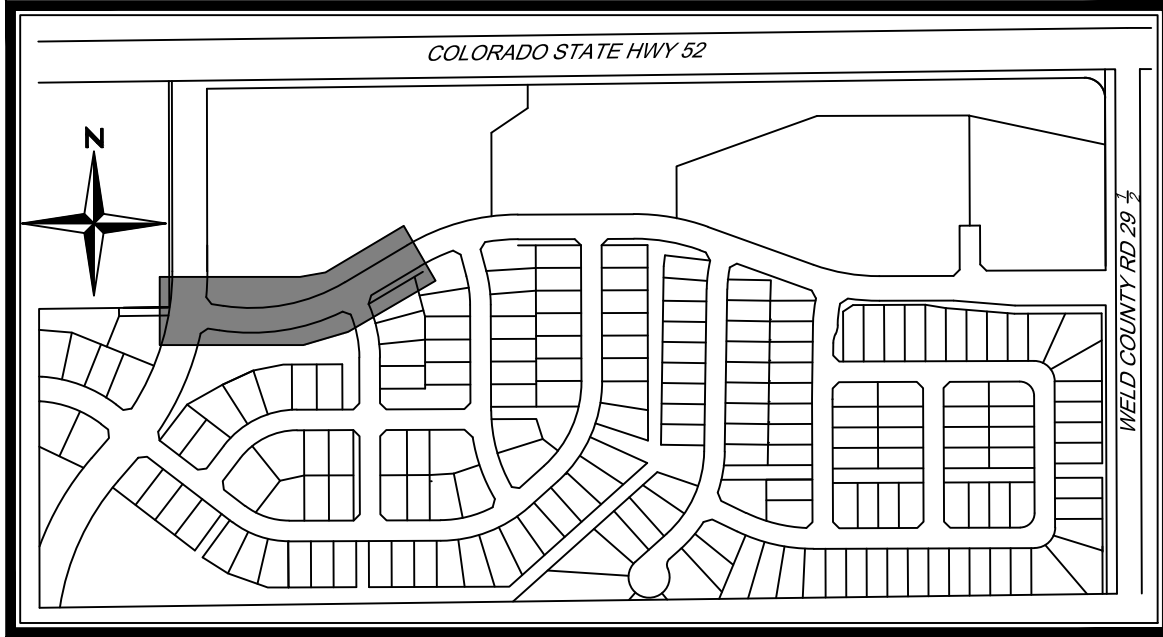
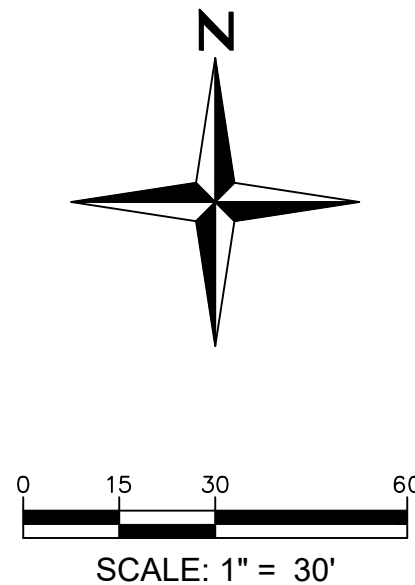
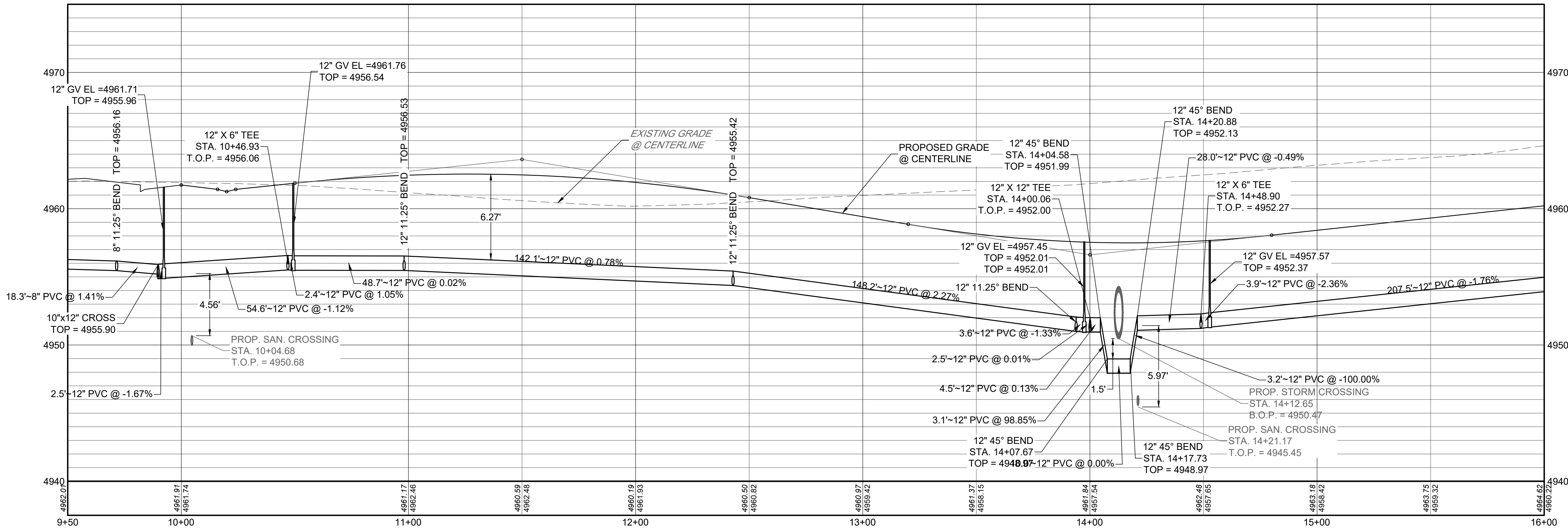
SHEET
C7.2



I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\Water P&P\19032 - Street B - WaterP&P.dwg Tab: C7.3 MEADOWLARK PKWY WATER P&P Aug 20, 2021 - 1:20pm ekaski



MEADOWLARK PKWY WATER PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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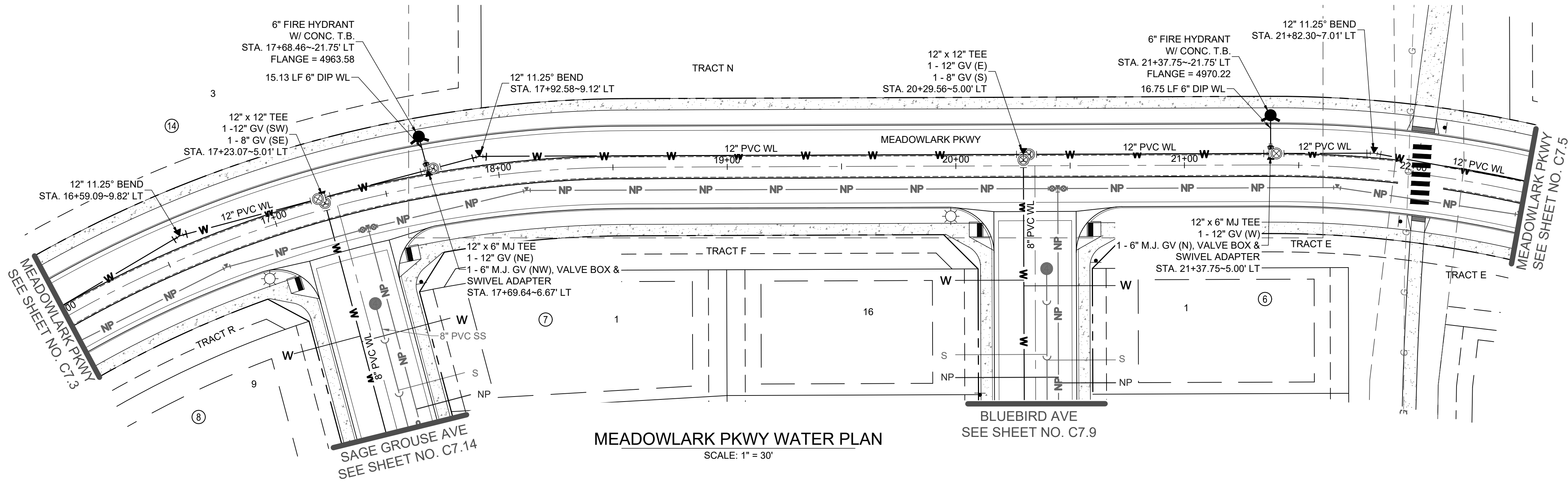
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
MEADOWLARK PKWY WATER P&P

SHEET

C7.3

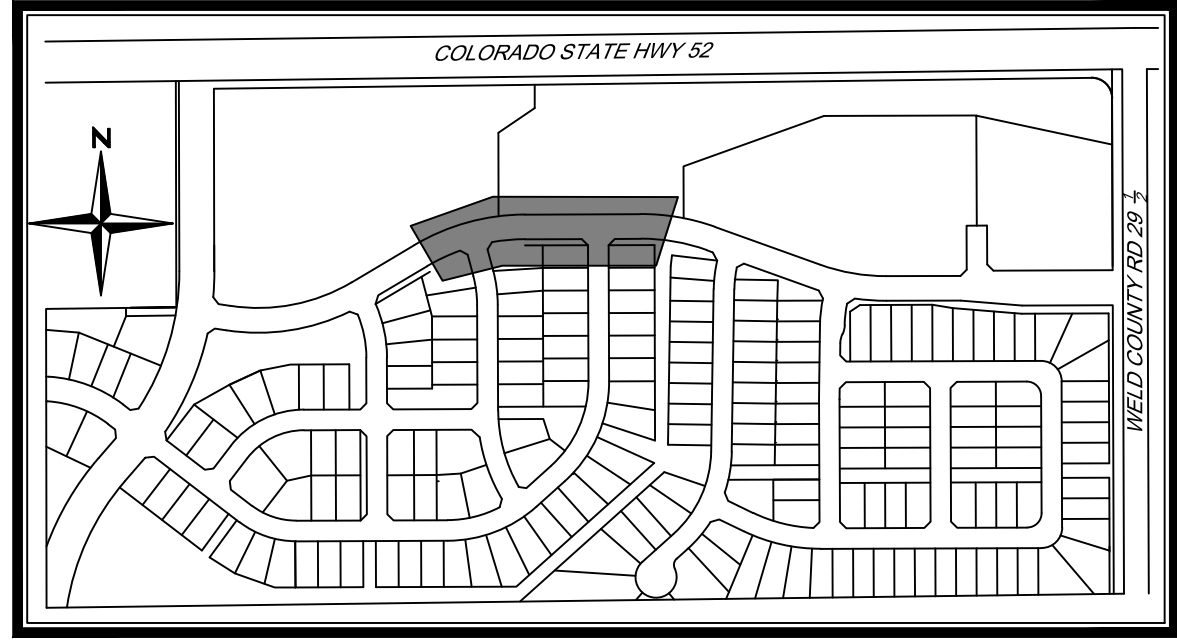
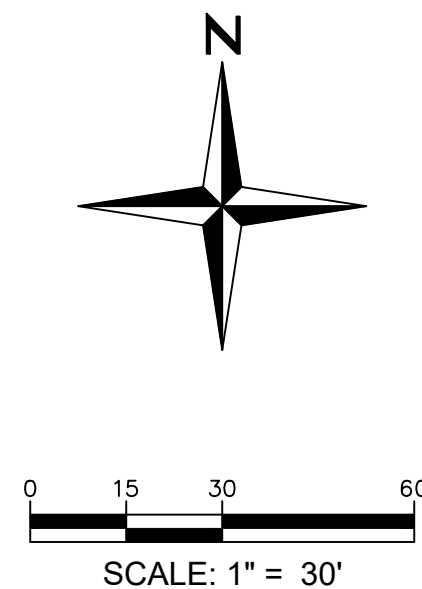
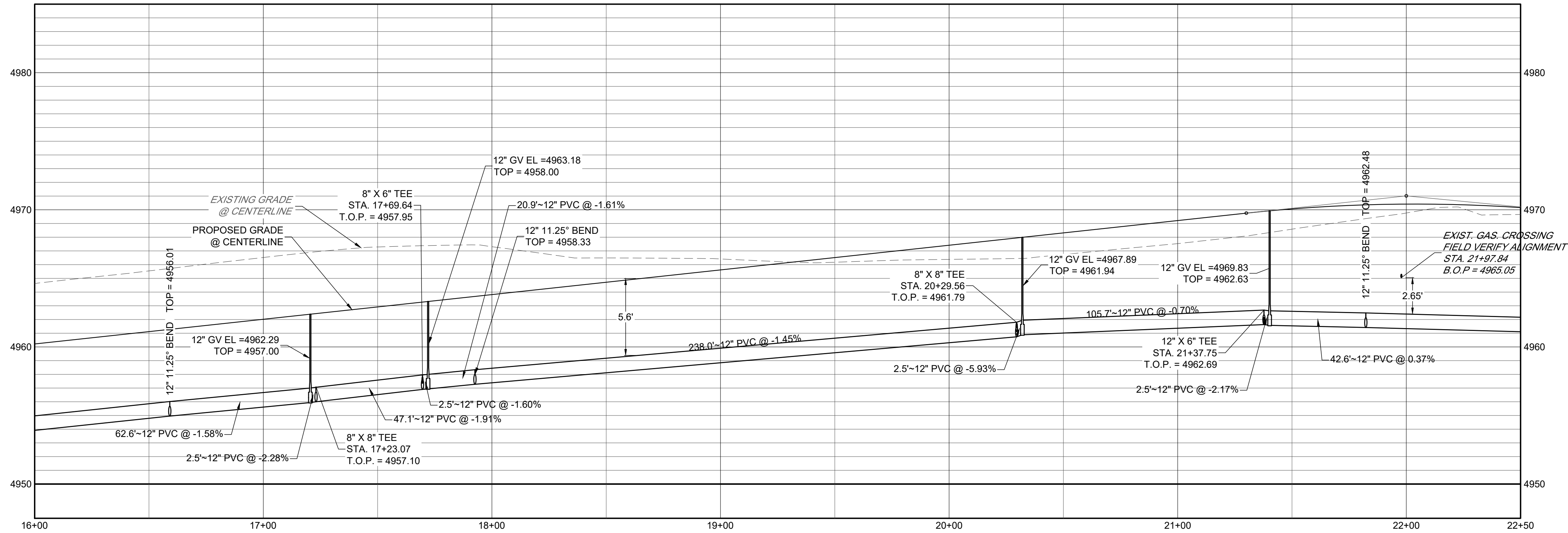


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MEADOWLARK PKWY WATER PLAN
SCALE: 1" = 30'

MEADOWLARK PKWY WATER PROFILE
H: 1" = 50'
V: 1" = 5'



KEYMAP
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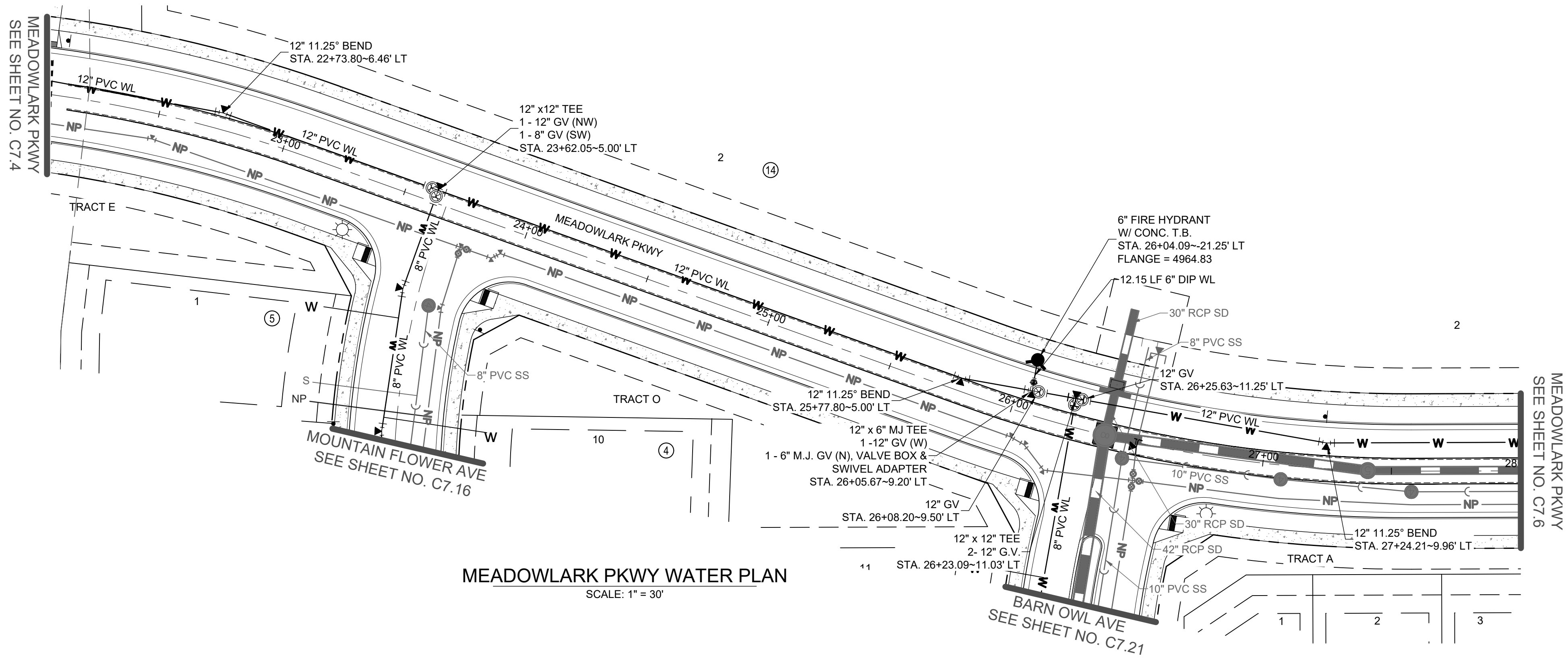
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
MEADOWLARK PKWY WATER P&P

SHEET

C7.4



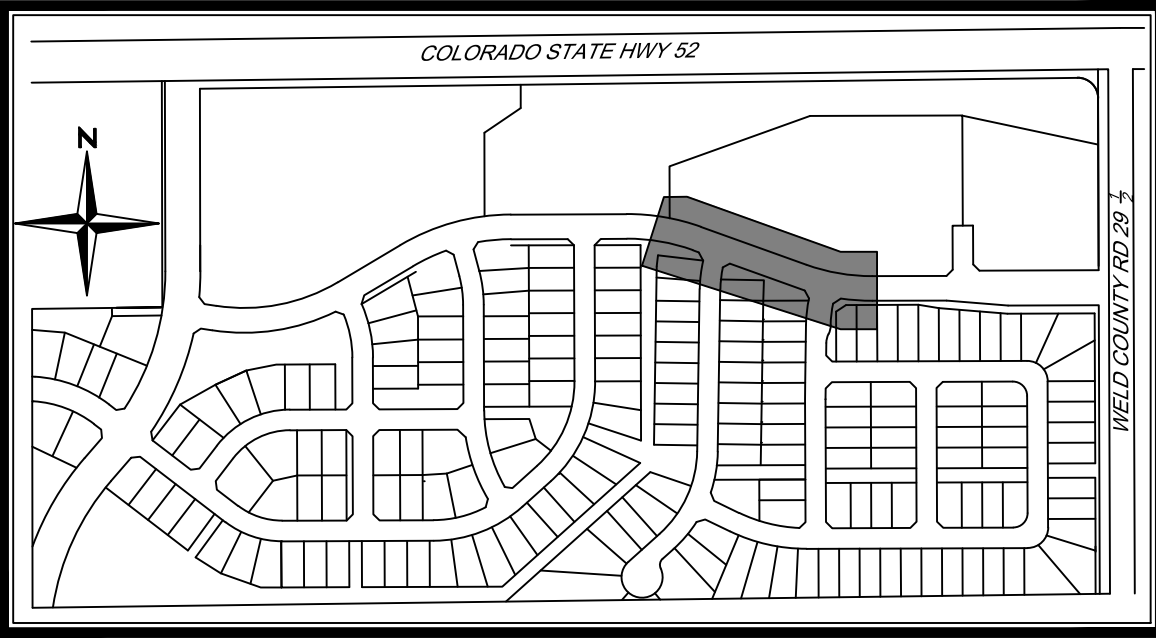
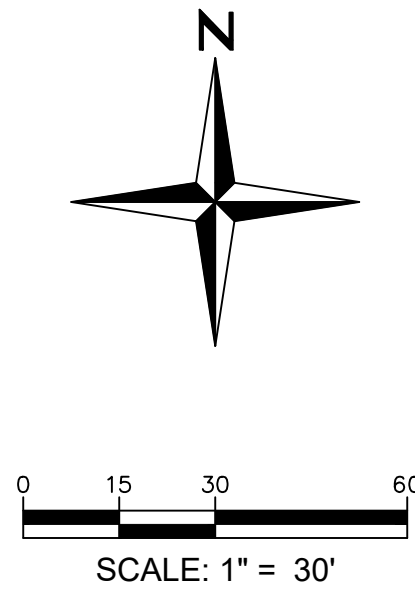
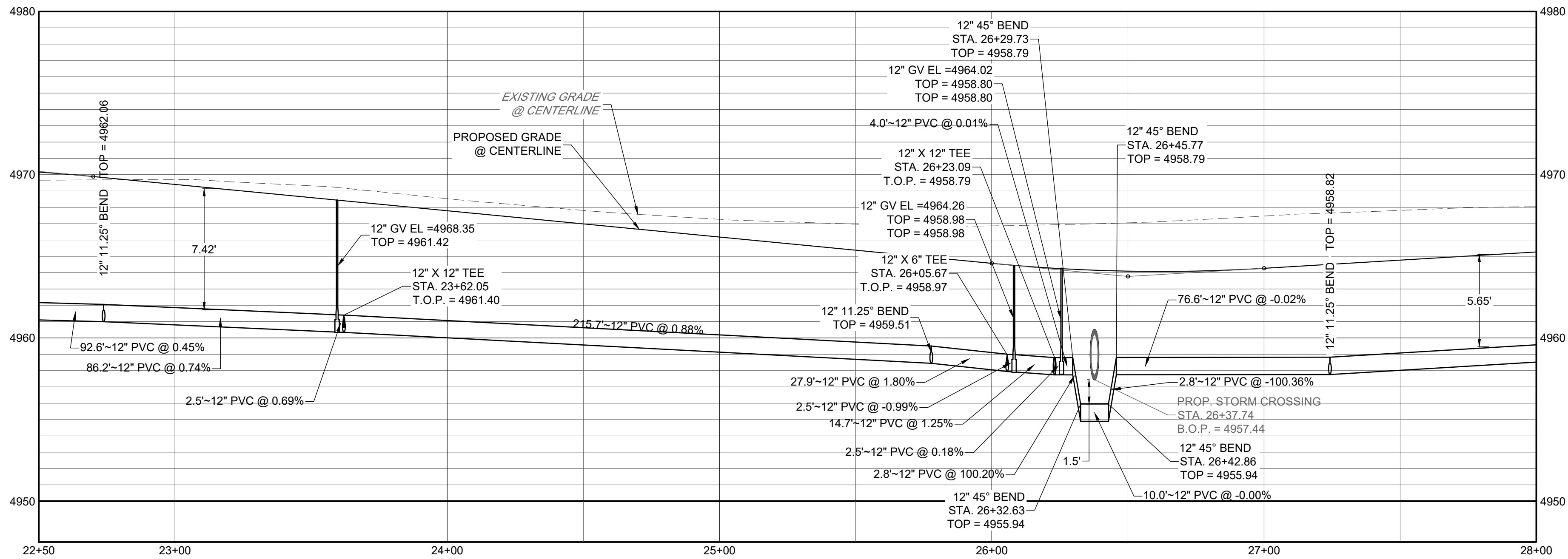
I:\2019\19032 - murata farms\CADD\sheet sets\Construction drawings\Water P&P\19032 - Street B - WaterP&P.dwg Tab: C7.5 MEADOWLARK PKWY WATER P&P Aug 20, 2021 - 3:32pm bconnell



MEADOWLARK PKWY WATER PLAN
SCALE: 1" = 30'

MEADOWLARK PKWY WATER PROFILE

H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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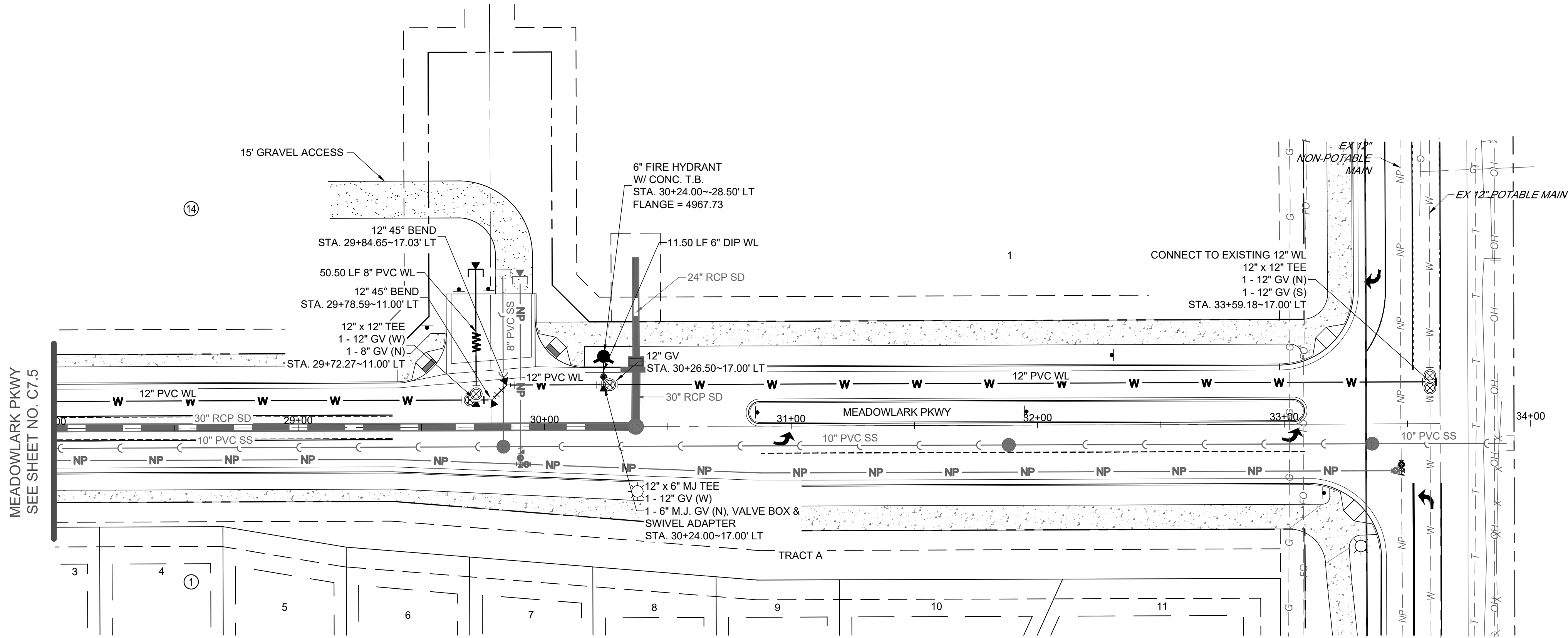
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CIVIL CONSTRUCTION DOCUMENTS
MEADOWLARK PKWY WATER P&P

SHEET

C7.5

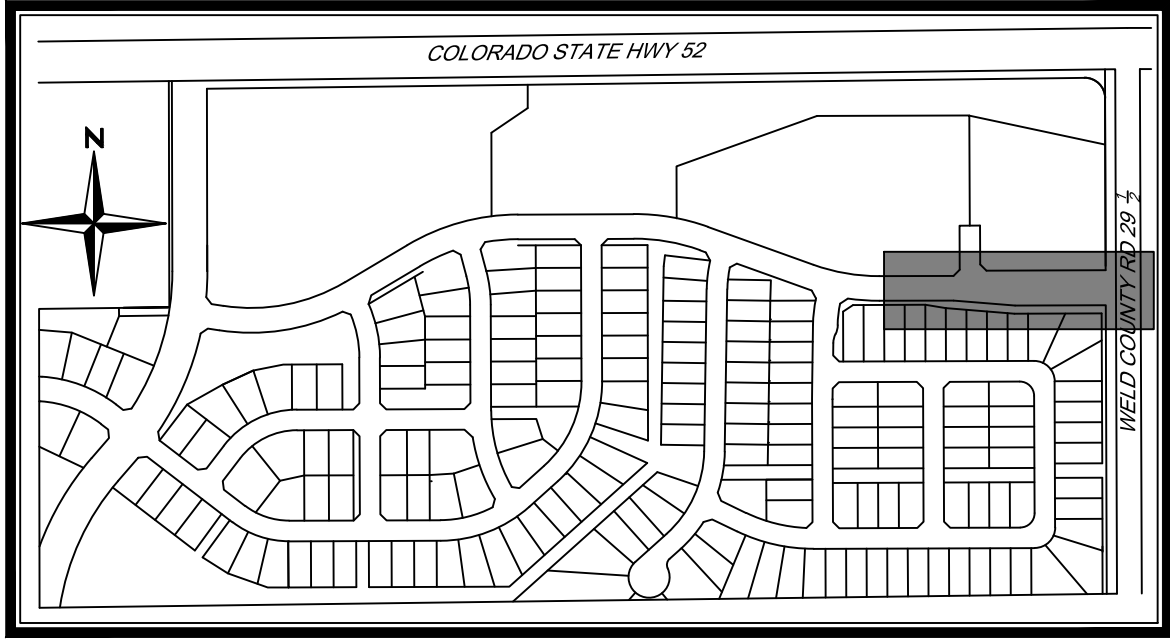
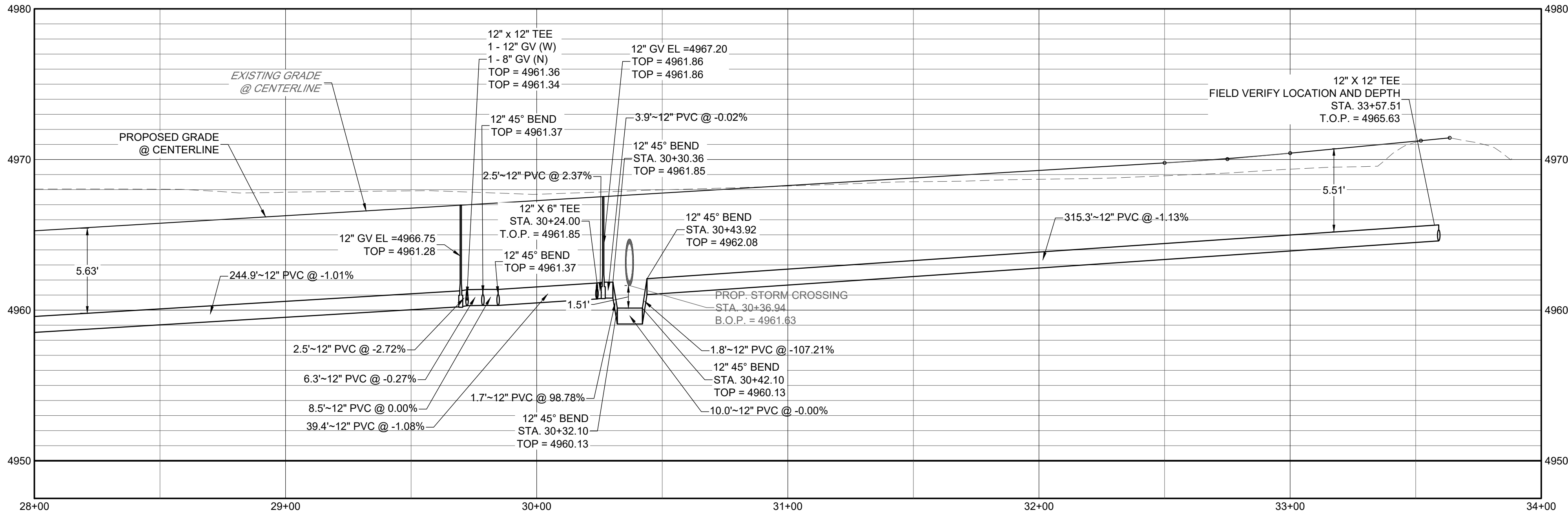


I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\Water P&P\19032 - Street B - WaterP&P.dwg Tab: C7.6 MEADOWLARK PKWY WATER P&P Aug 20, 2021 - 1:21pm ekoski



MEADOWLARK PKWY WATER PLAN
SCALE: 1" = 30'

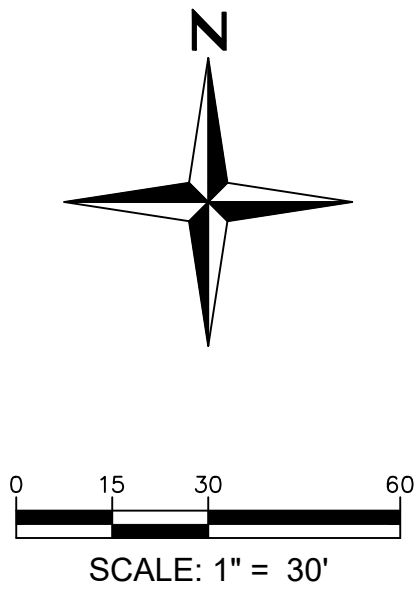
MEADOWLARK PKWY WATER PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
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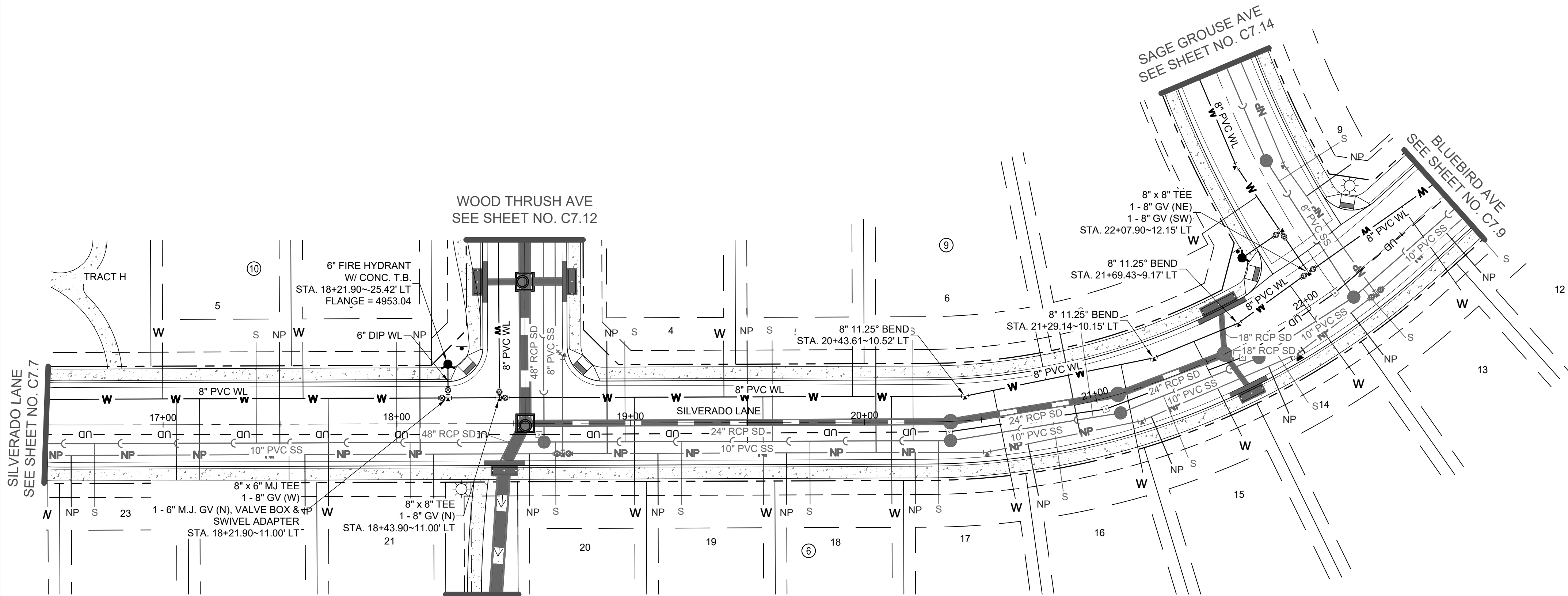
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CIVIL CONSTRUCTION DOCUMENTS
MEADOWLARK PKWY WATER P&P

SHEET

C7.6

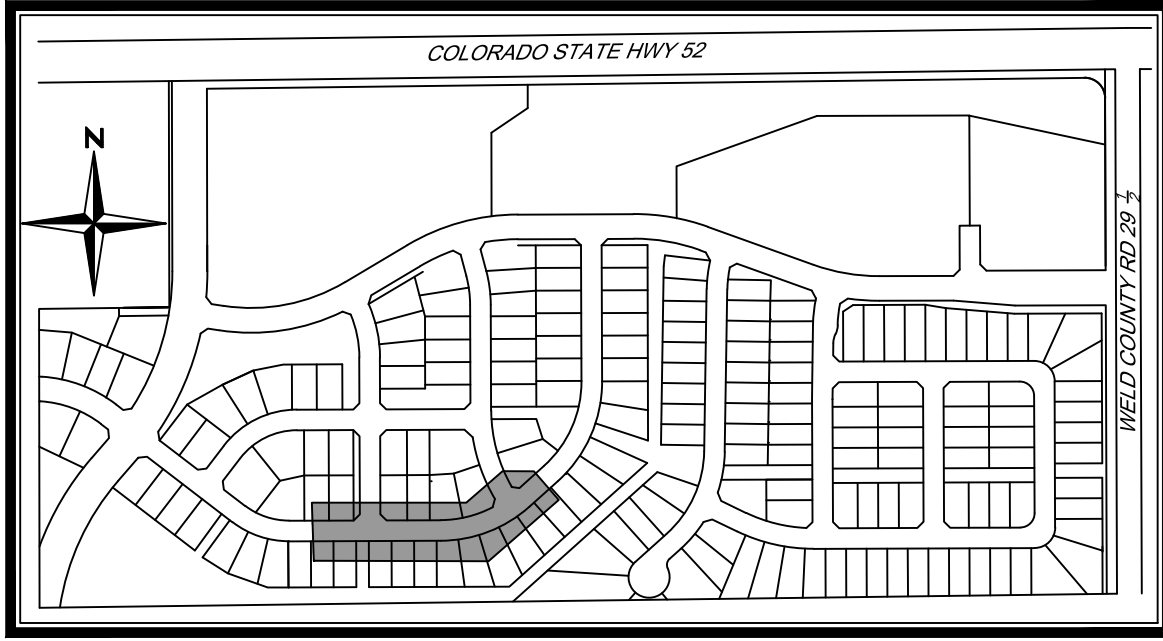
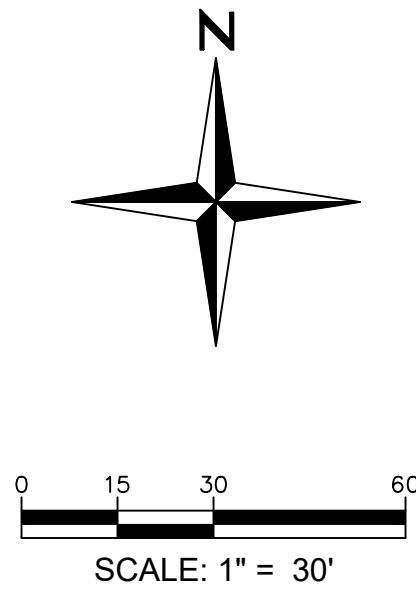
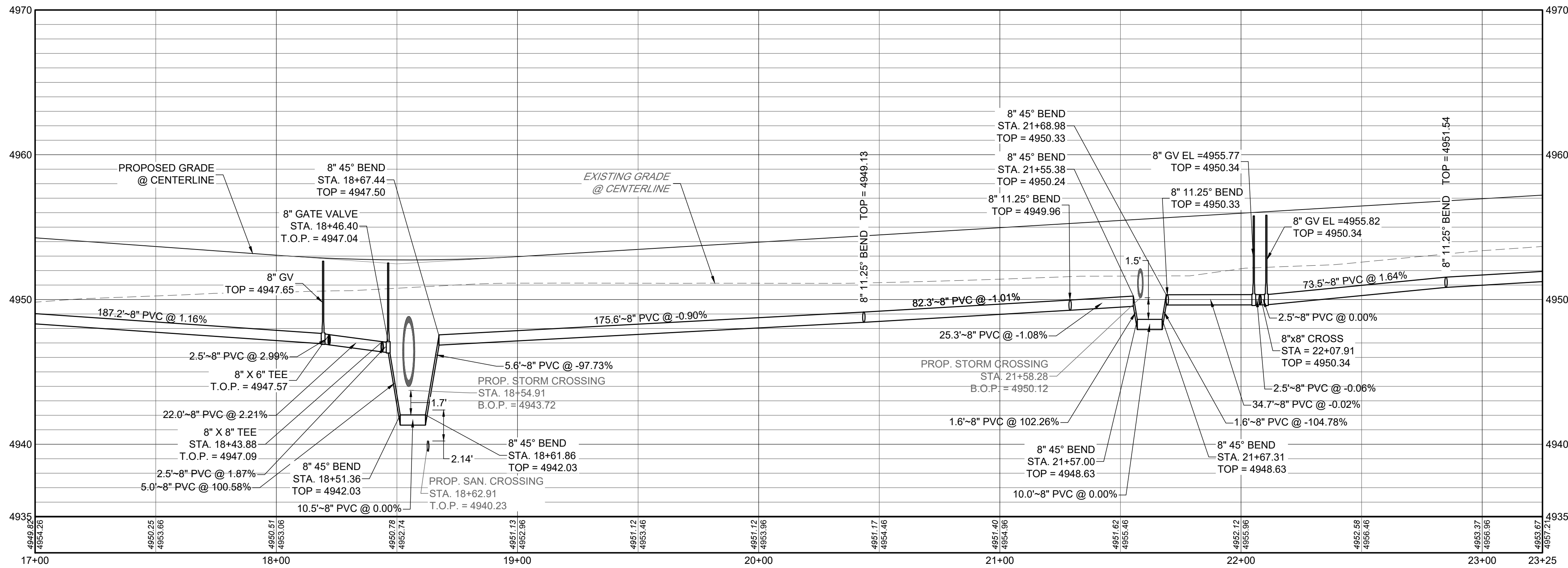


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SILVERADO LANE WATER PLAN
SCALE: 1" = 30'

SILVERADO LANE WATER PROFILE
H: 1" = 30'
V: 1" = 5'



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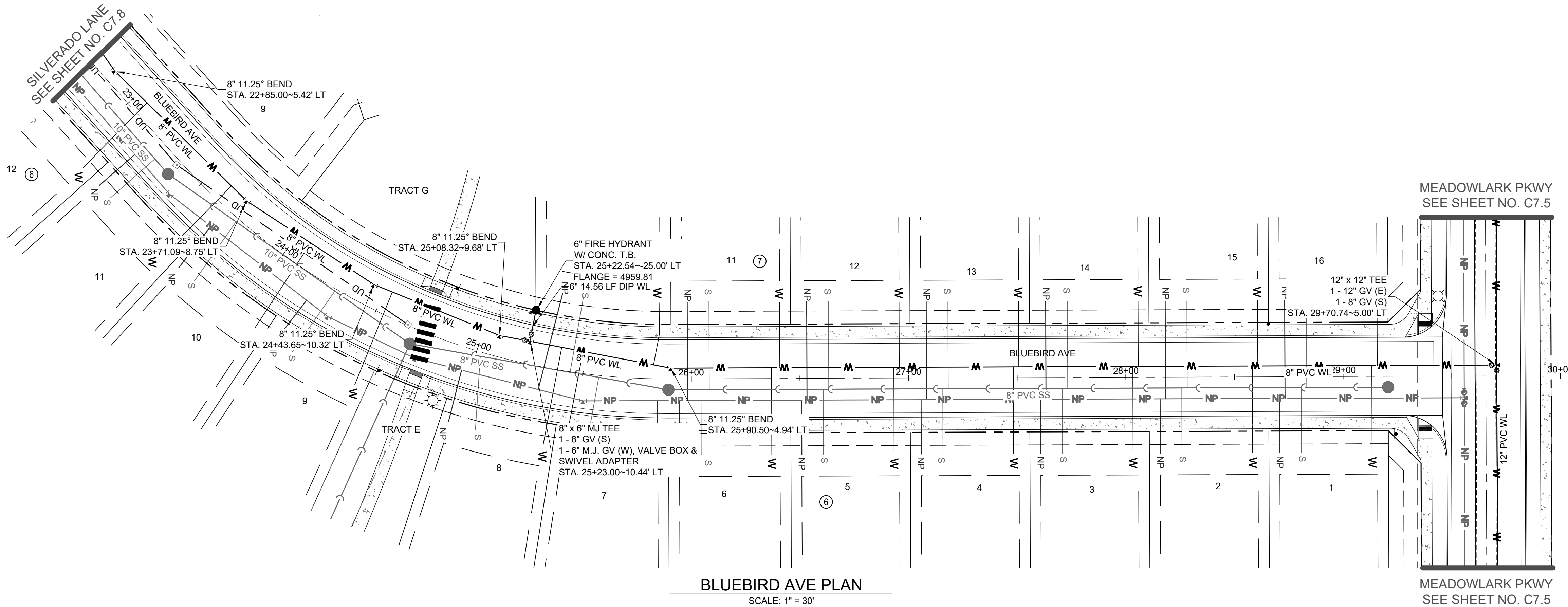
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CIVIL CONSTRUCTION DOCUMENTS
SILVERADO LANE WATER P&P

SHEET

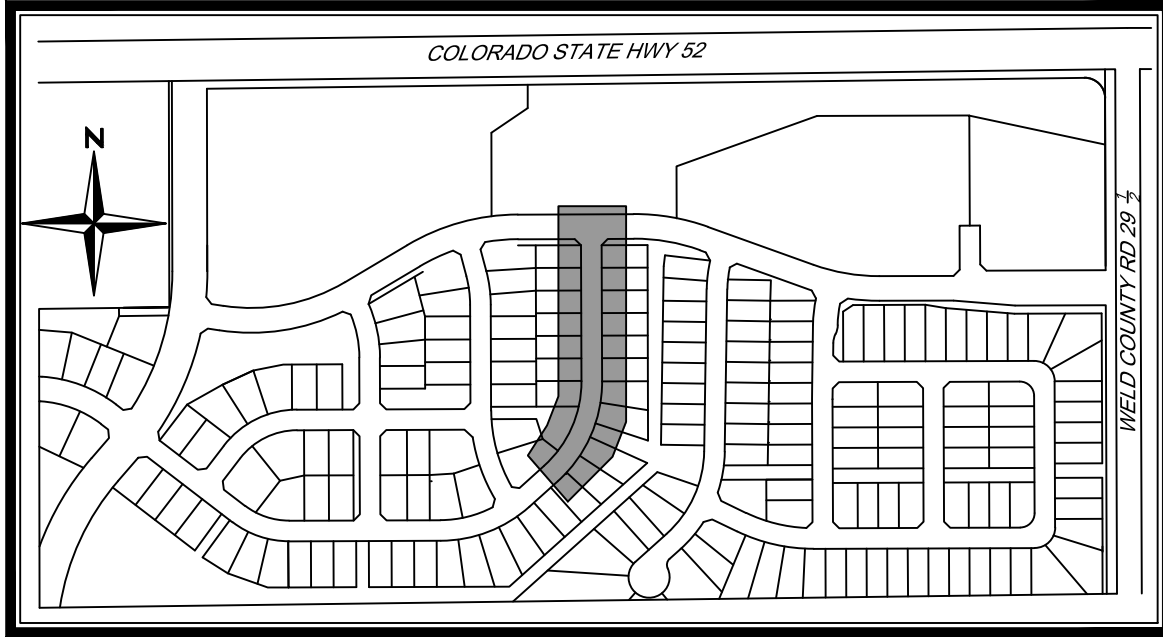
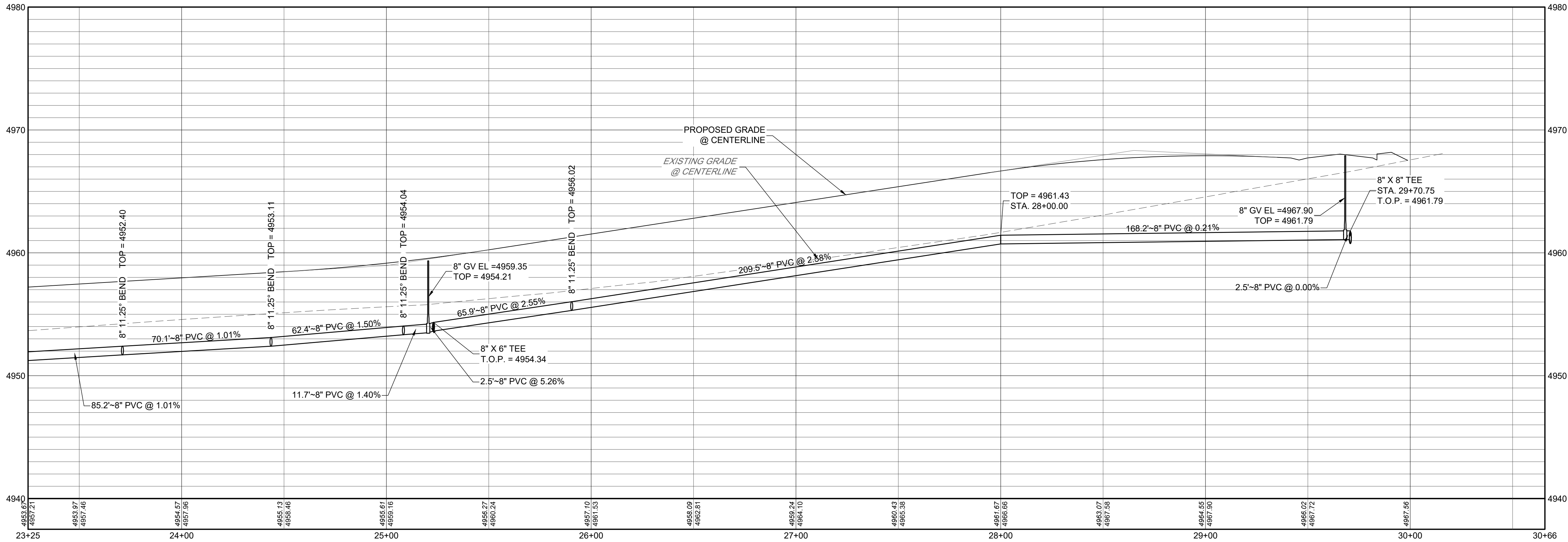
C7.8



I:\2019\19032 - murata farms\CADD\sheet sets\Construction drawings\Water P&P\C7.9 BLUEBIRD AVE. WATER P&P.dwg tab: C7.9 BLUEBIRD AVE. WATER P&P Aug 20, 2021 - 1:22pm ekoski

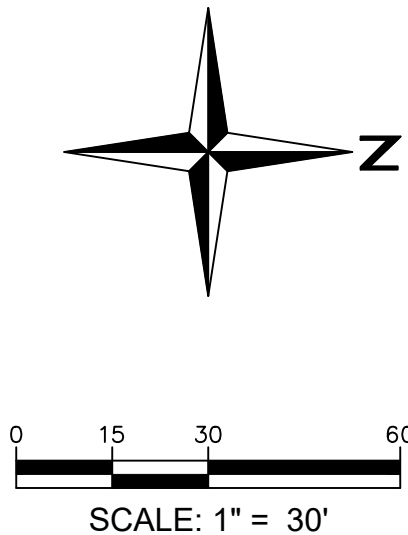


BLUEBIRD AVE PROFILE
H: 1" = 30'
V: 1" = 5'



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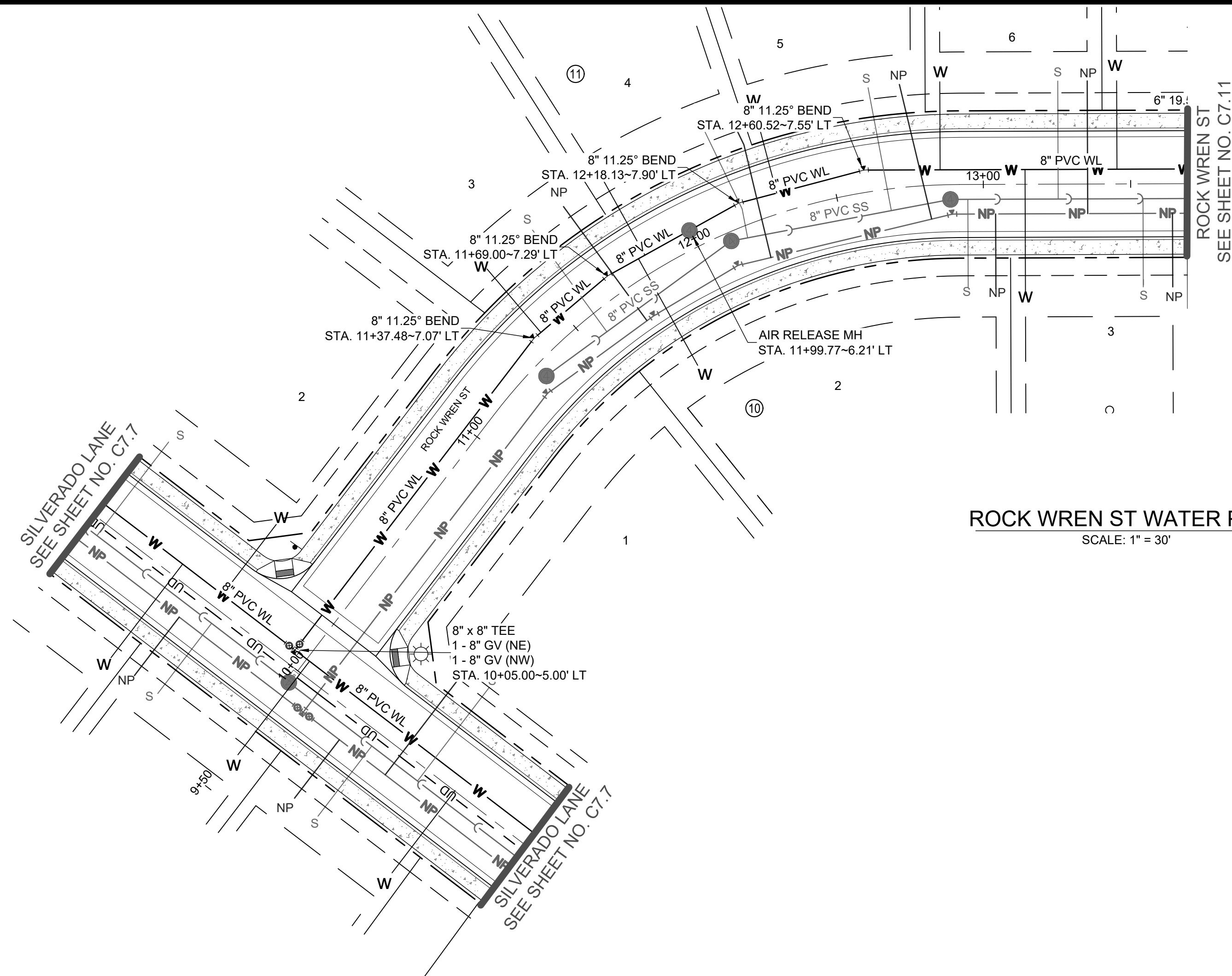
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CIVIL CONSTRUCTION DOCUMENTS
BLUEBIRD AVE. WATER P&P

SHEET

C7.9

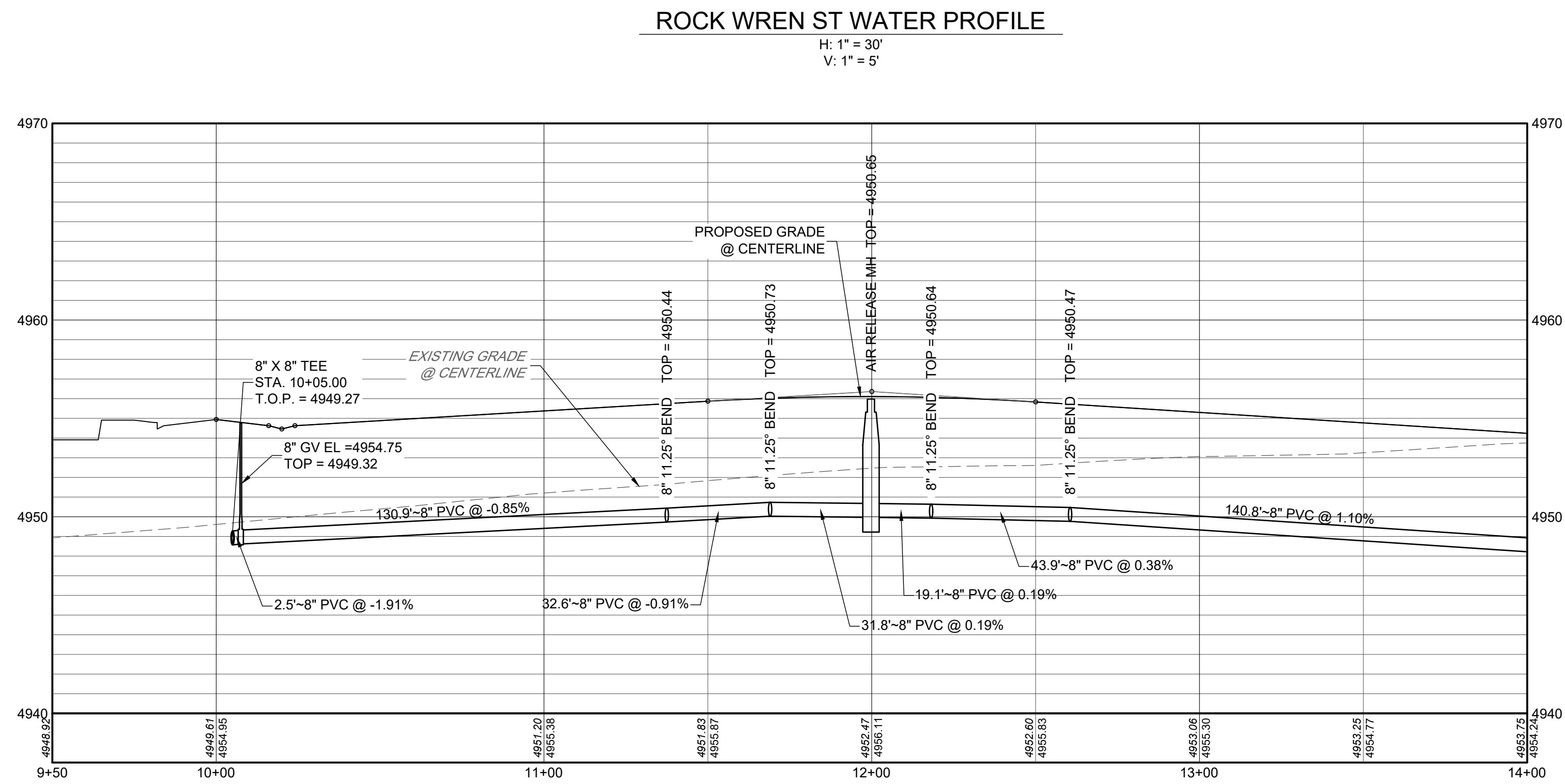


700.282.4793 Office
1500 West Canal Court
Littleton, Colorado 80120
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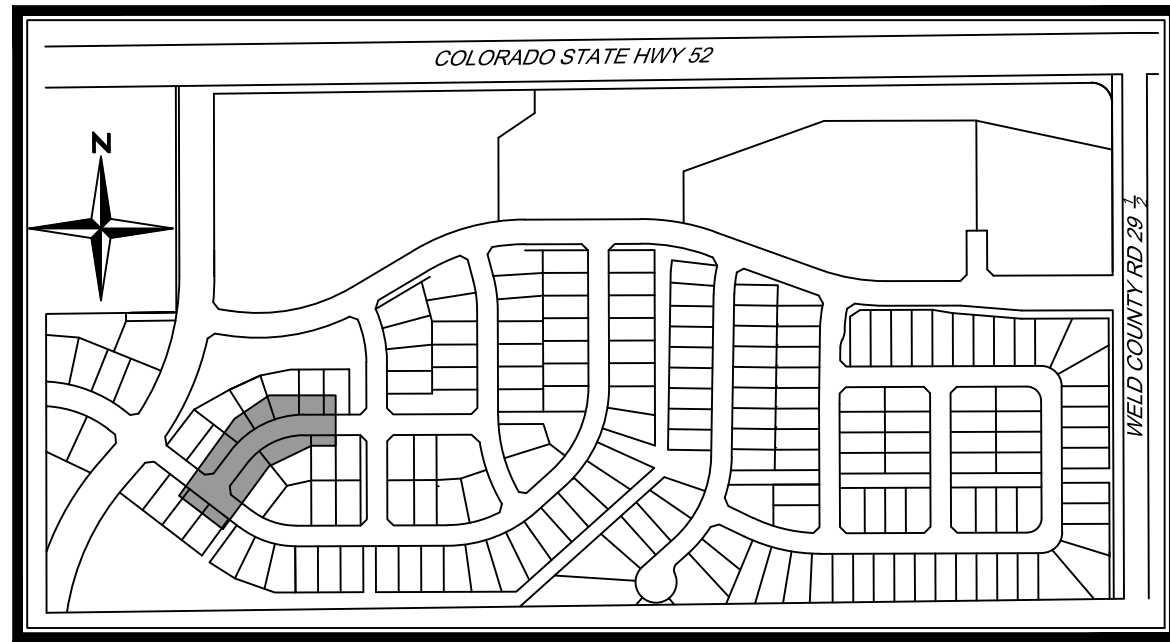
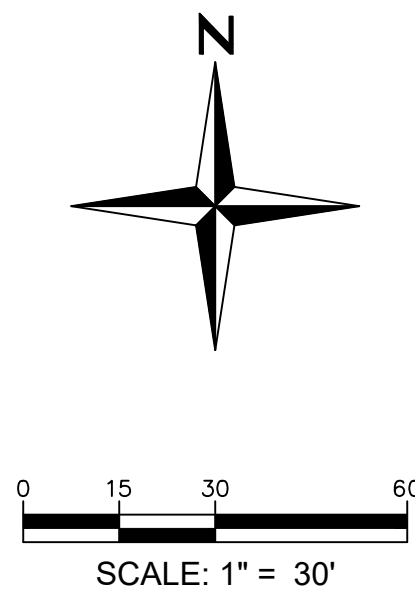


ROCK WREN ST WATER PLAN

SCALE: 1" = 30'



ROCK WREN ST WATER PROFILE

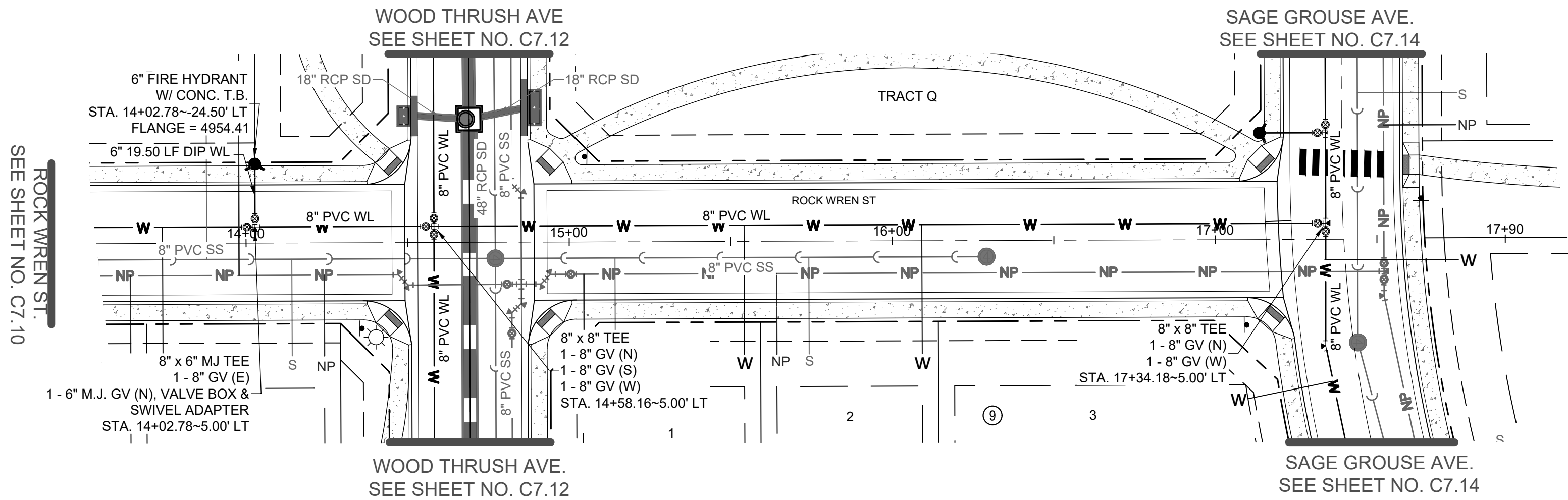


KEYMAP
N.T.S

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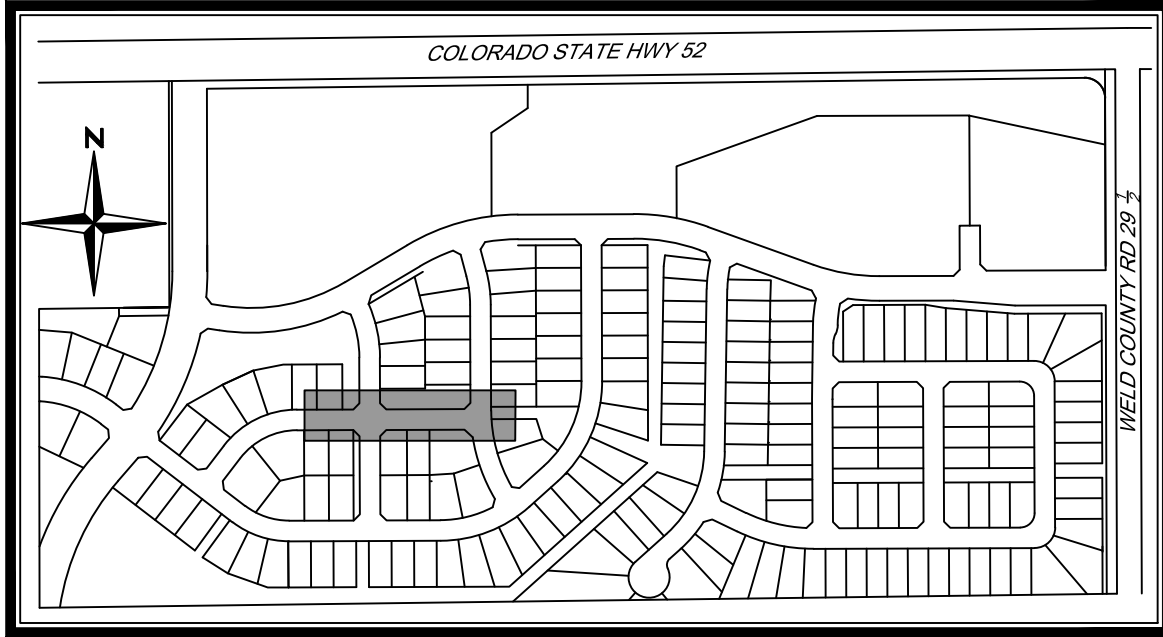
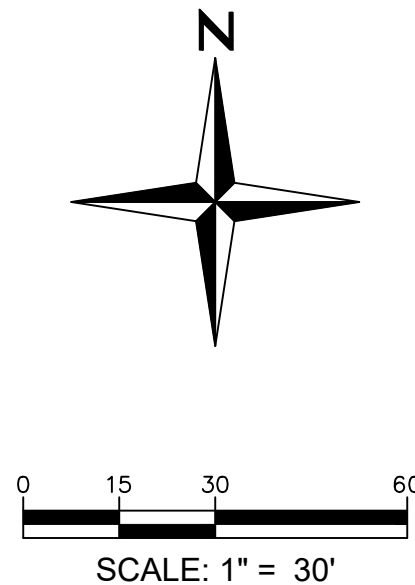
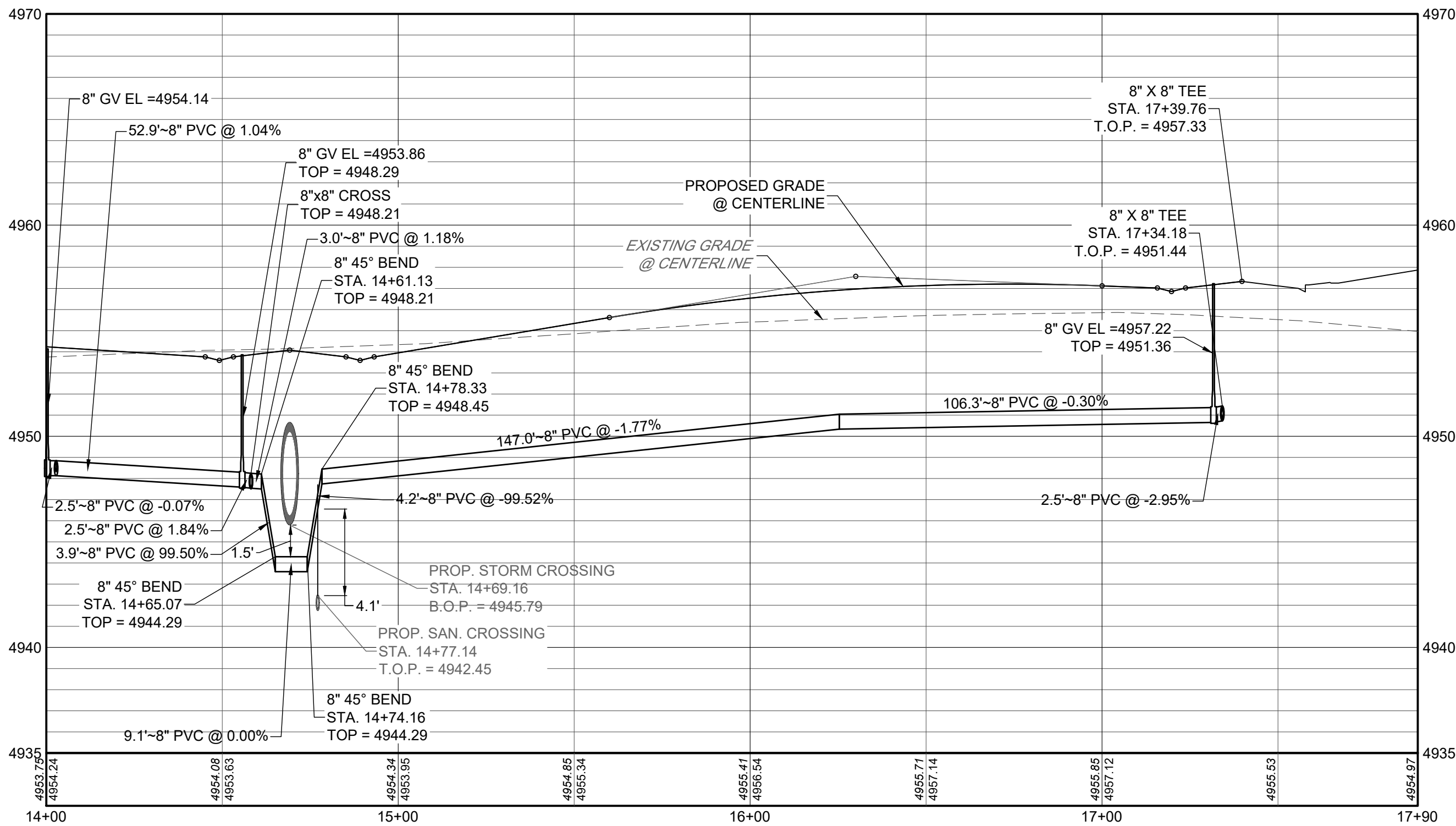
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I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\Water P&P\C7.11 ROCK WREN ST WATER P&P.dwg Lib: C7.11 ROCK WREN ST WATER P&P Aug 20, 2021 - 1:23pm eksaki



ROCK WREN ST. WATER PLAN
SCALE: 1" = 30'

ROCK WREN ST. WATER PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

NOTES:

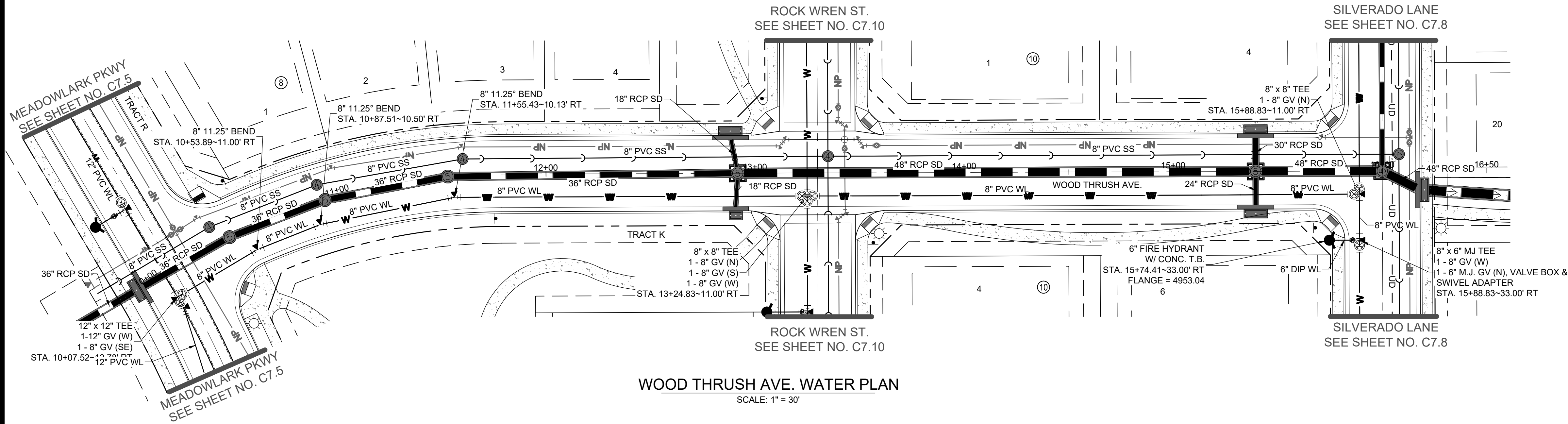
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
ROCK WREN ST WATER P&P

SHEET
C7.11

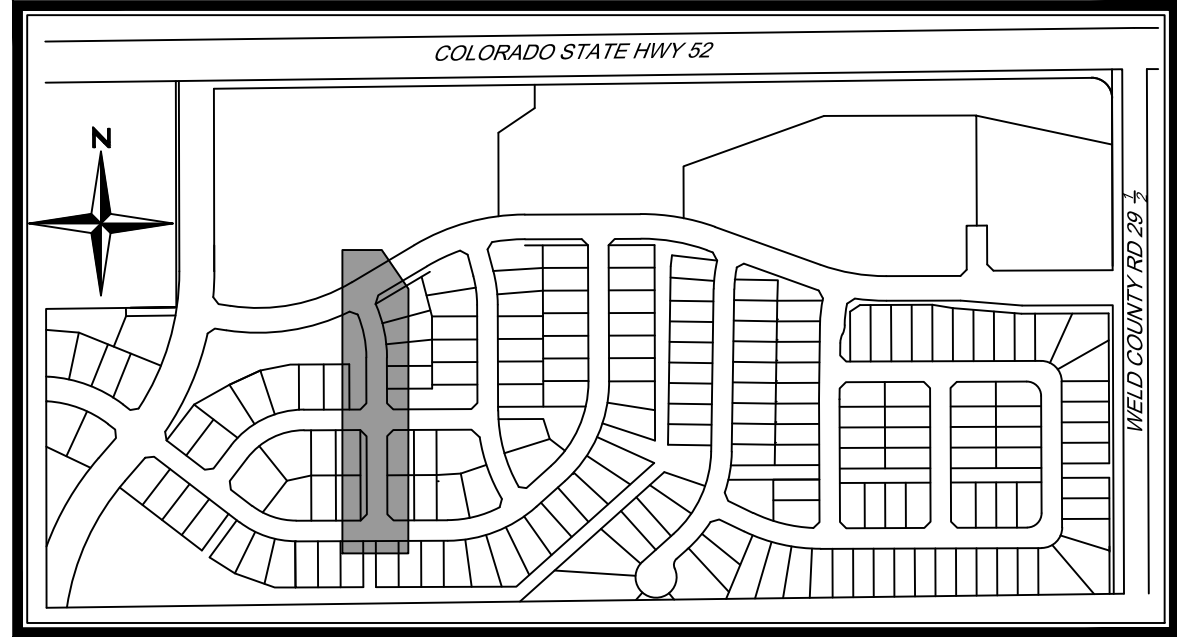
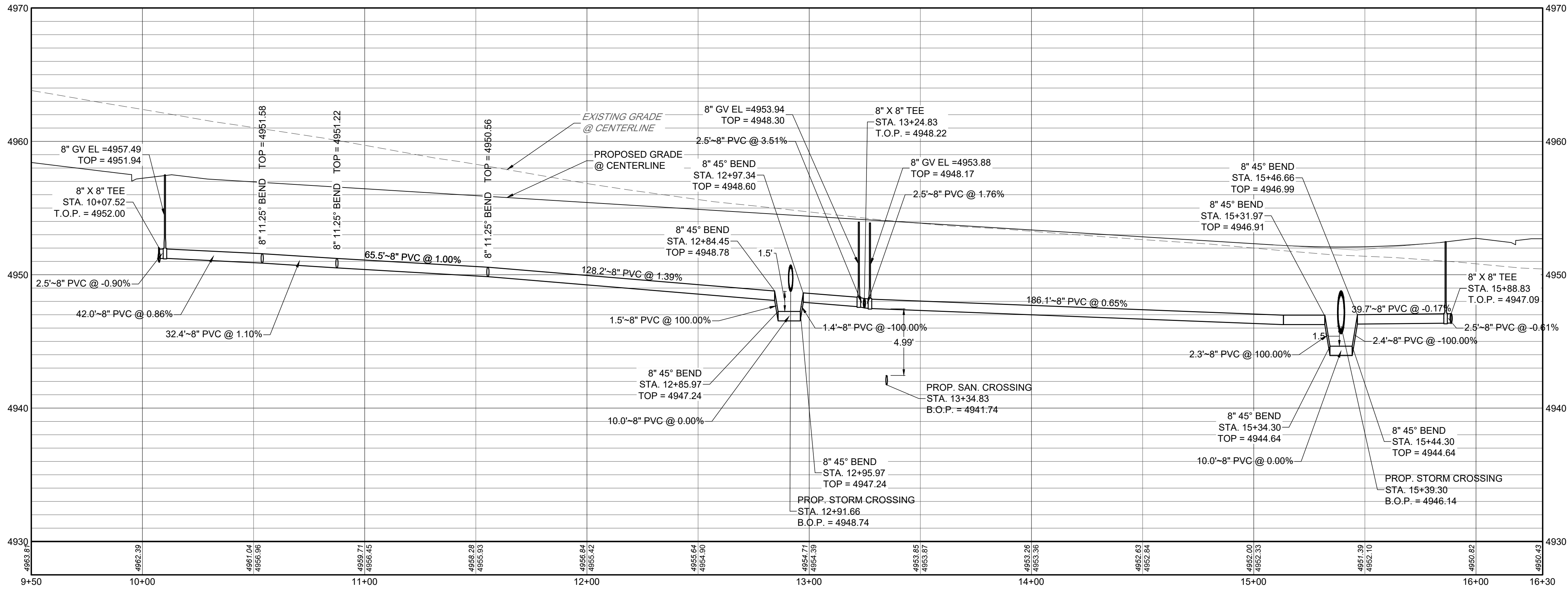


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WOOD THRUSH AVE. WATER PROFILE

H: 1" = 30'
V: 1" = 5'



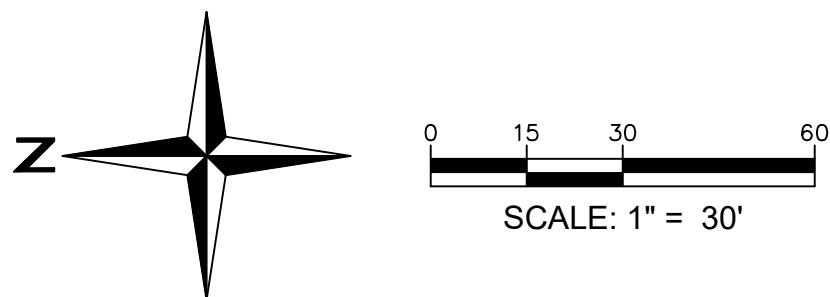
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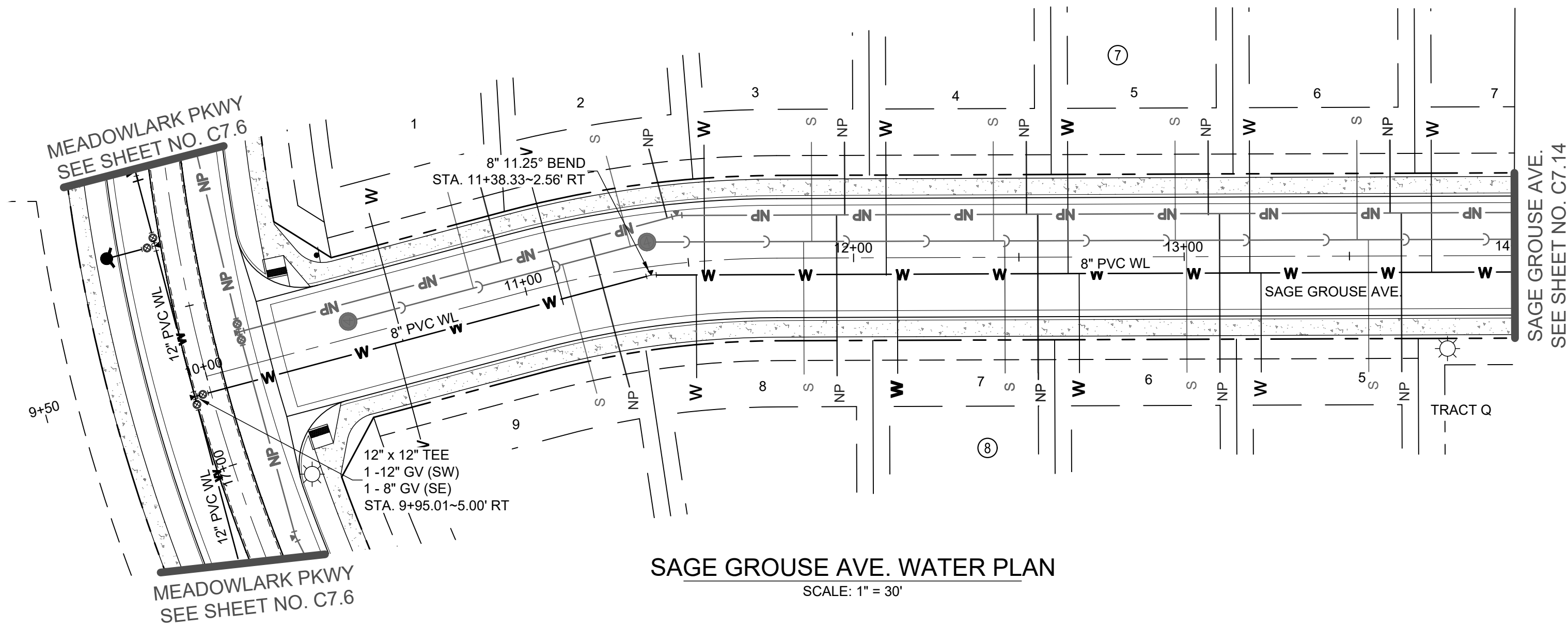
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CIVIL CONSTRUCTION DOCUMENTS
WOOD THRUSH AVE. WATER P&P

SHEET

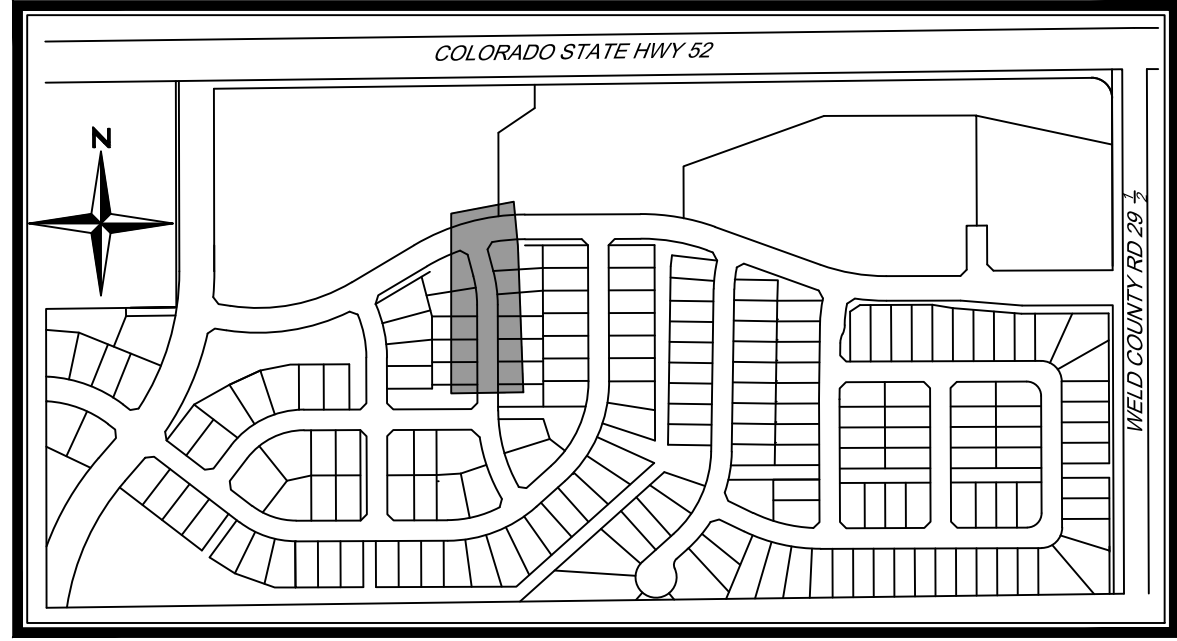
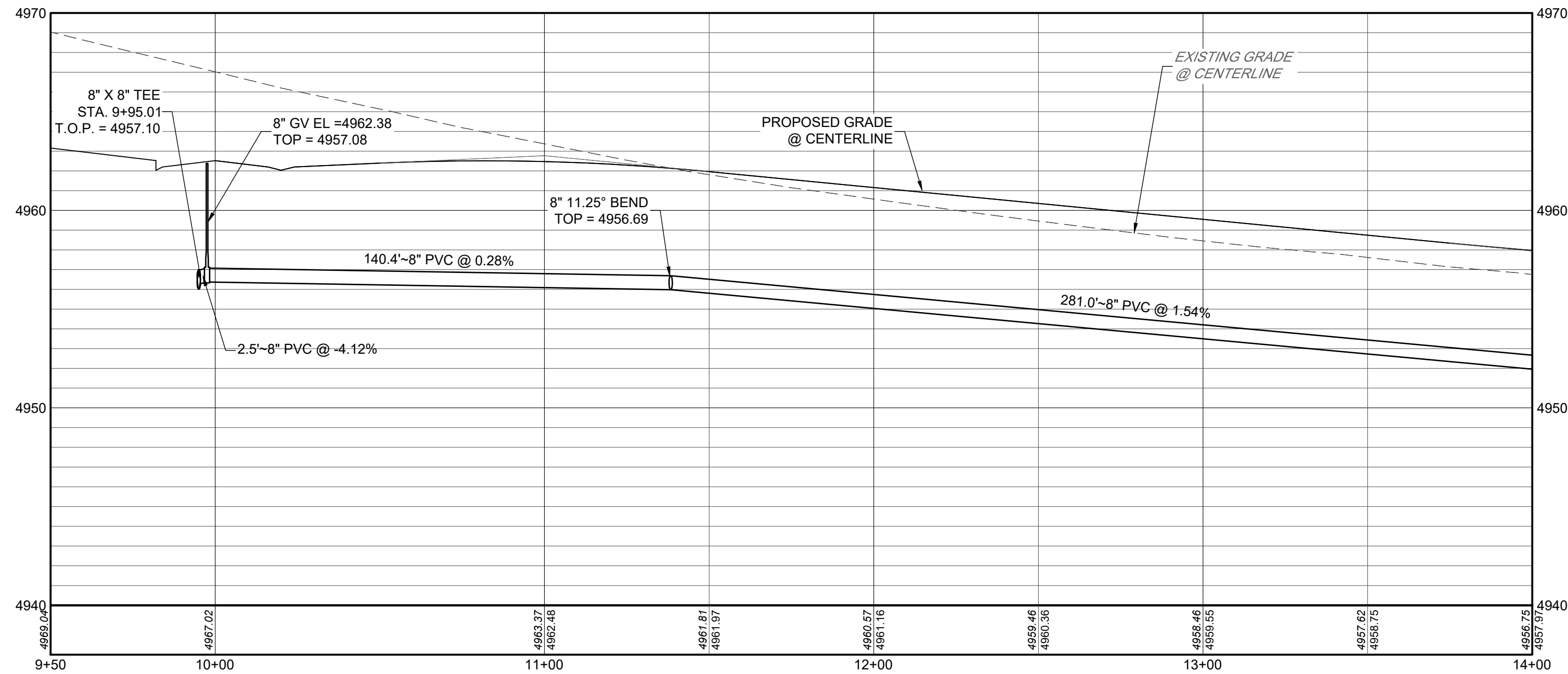
C7.12



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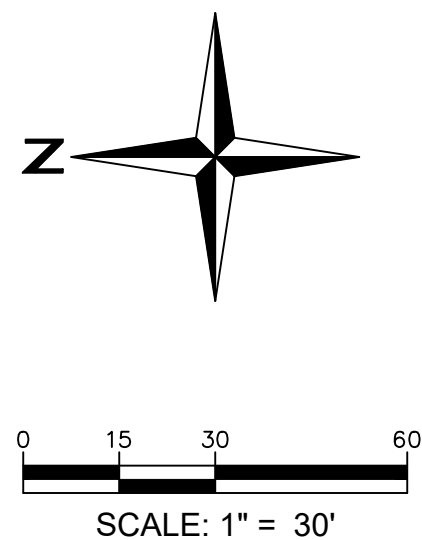
SAGE GROUSE AVE. WATER PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
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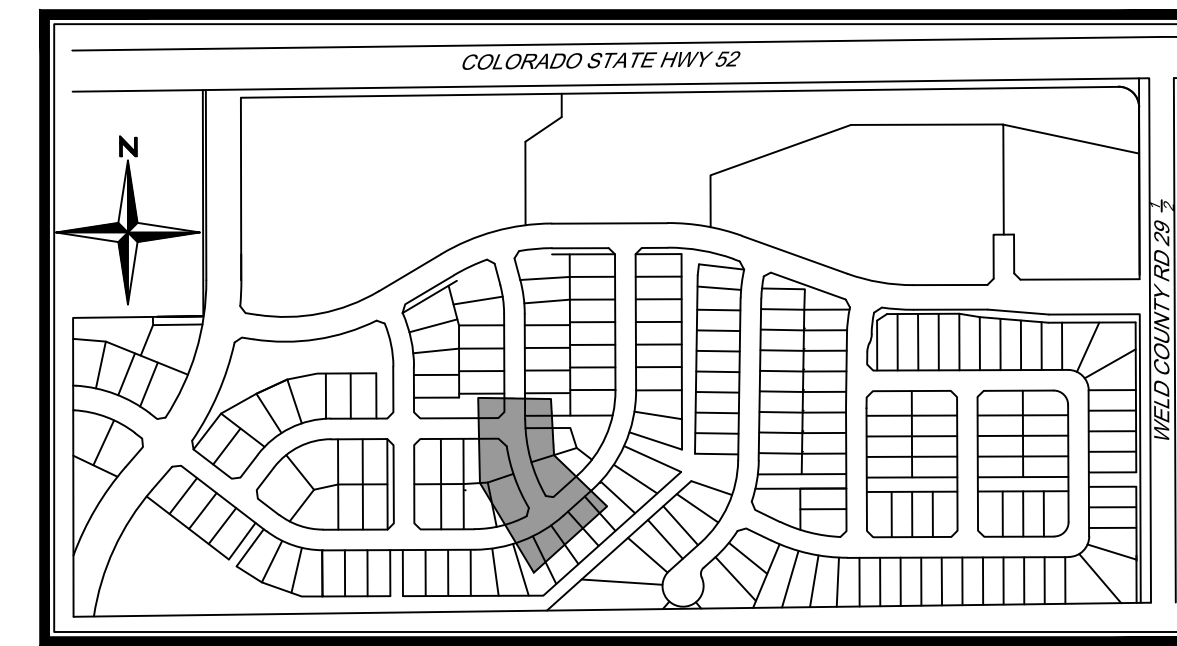
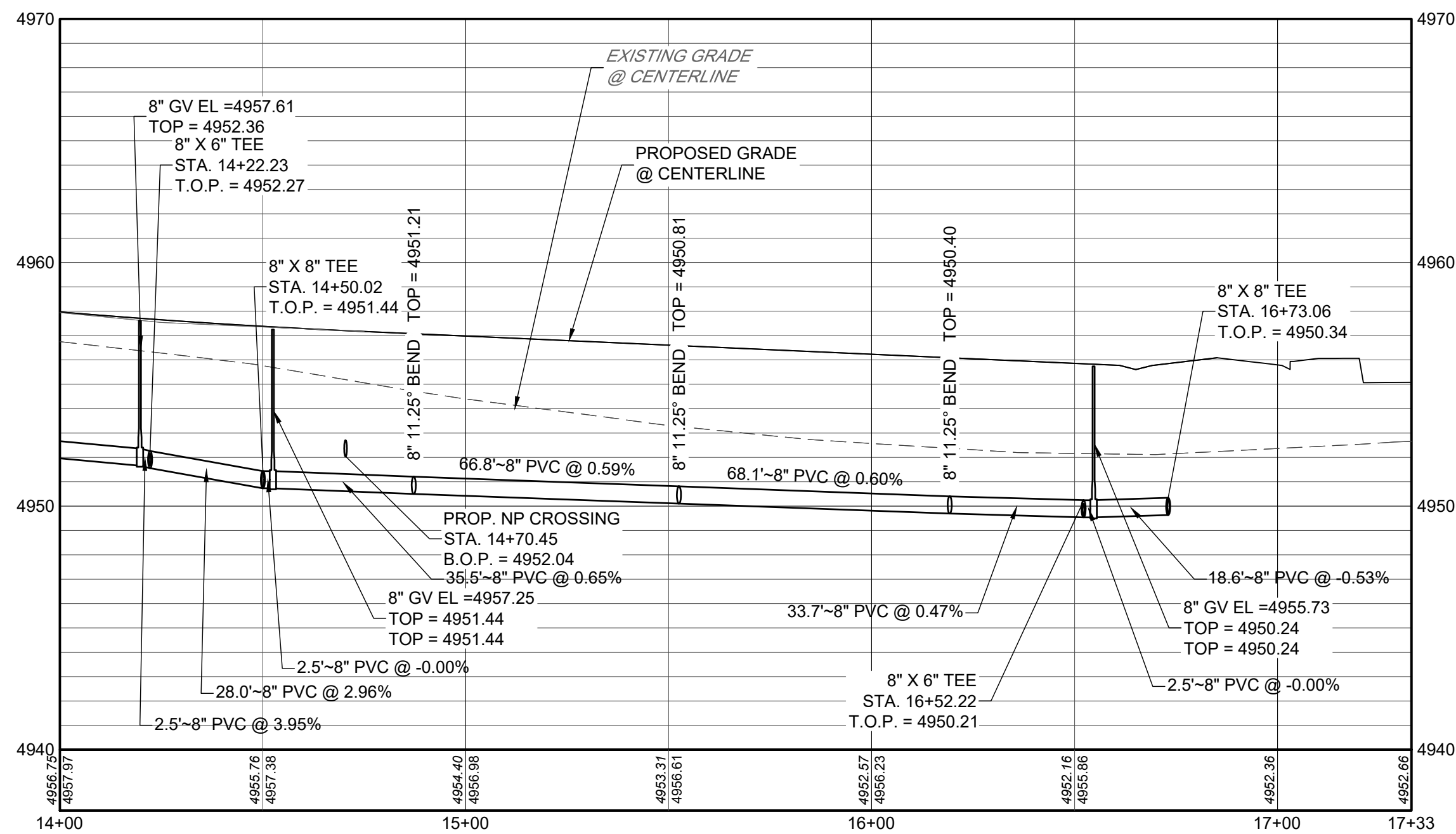
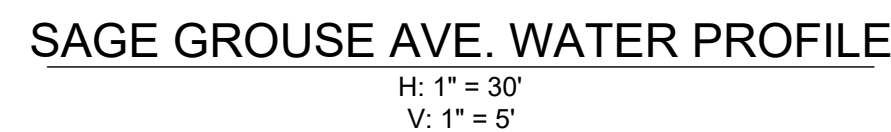
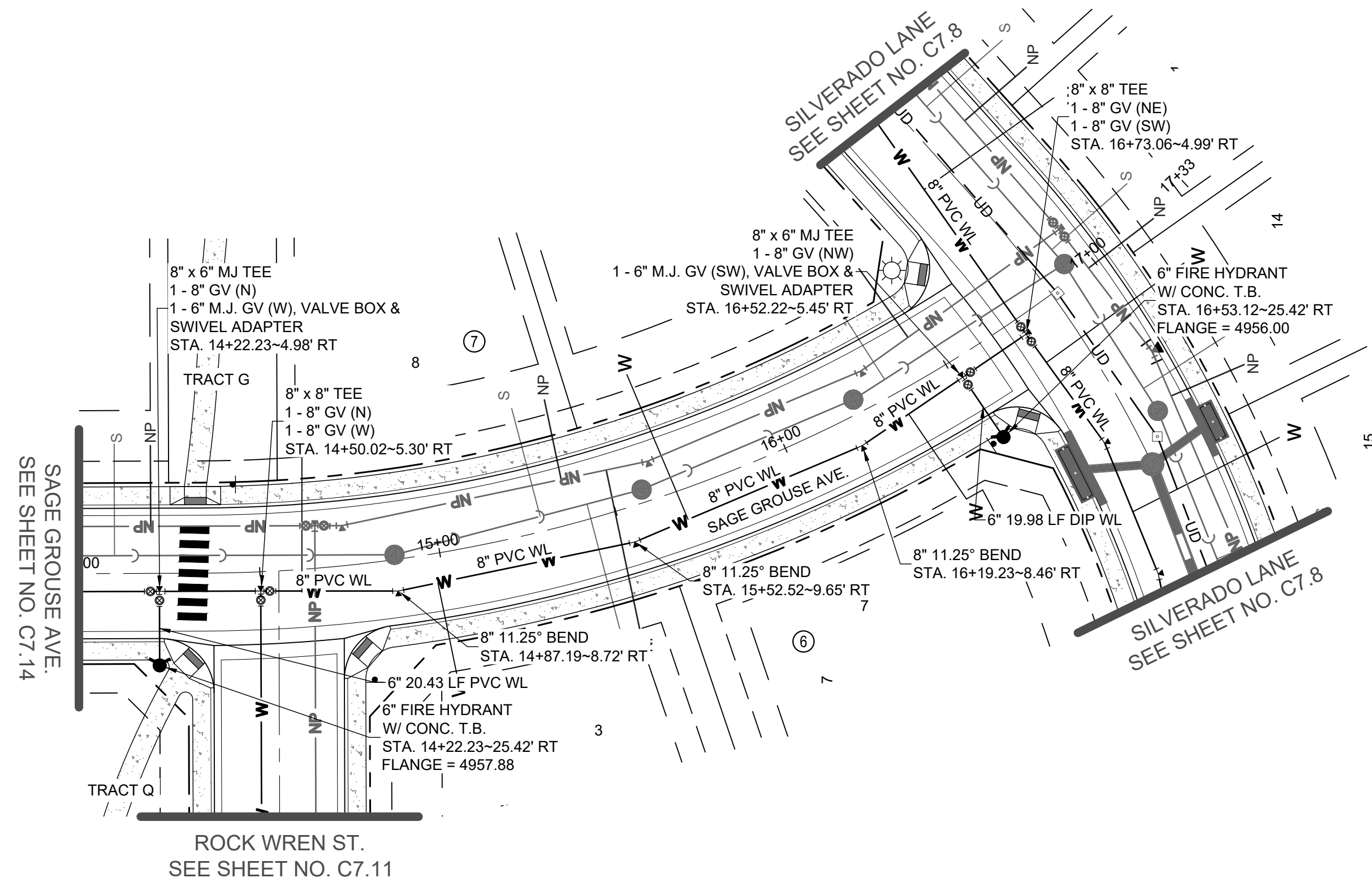


MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
SAGE GROUSE AVE. WATER P&P

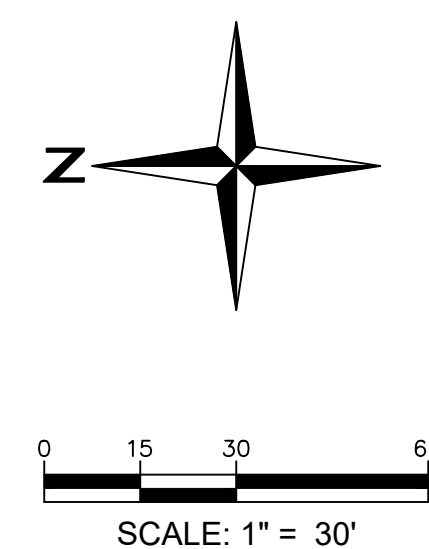
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C7.13

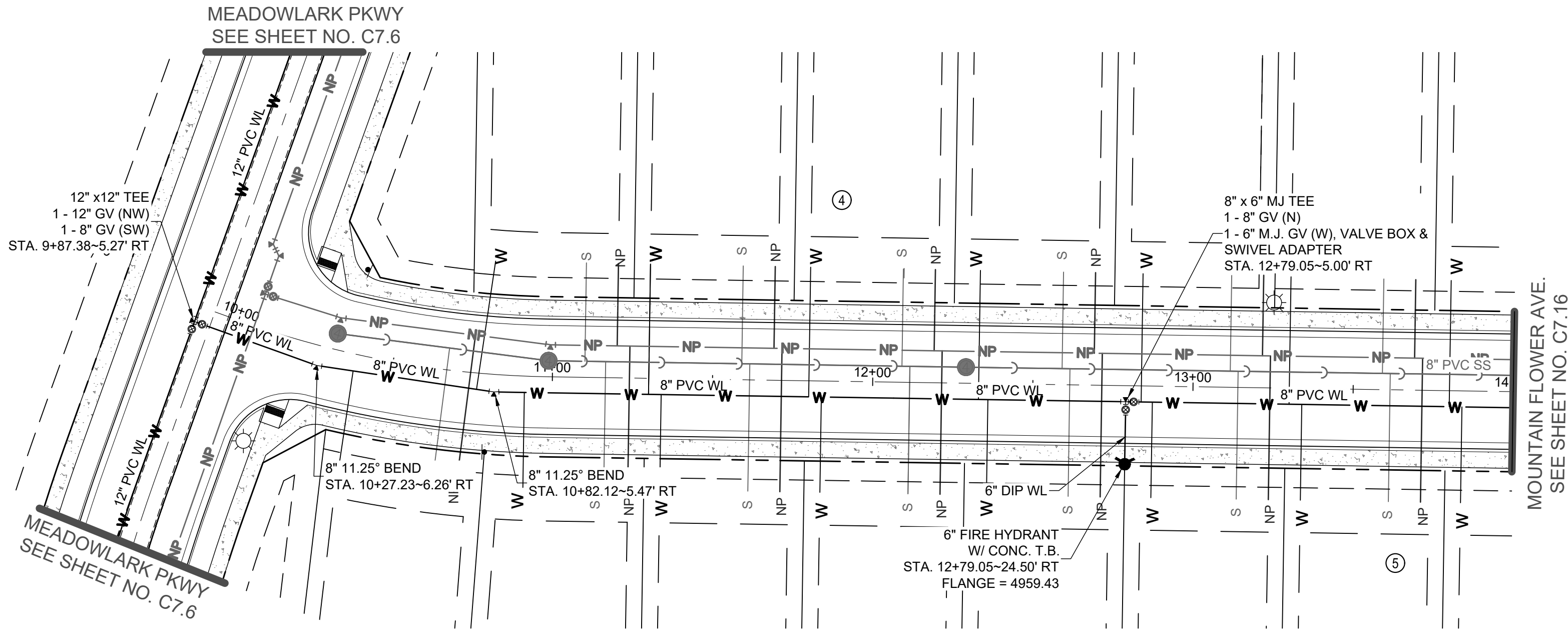




- # NOTES:
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 4. ALL WATER LINES SHALL HAVE A MINIMUM BURY DEPTH OF 5' 0" TO THE TOP OF PIPE UNLESS OTHERWISE NOTED.
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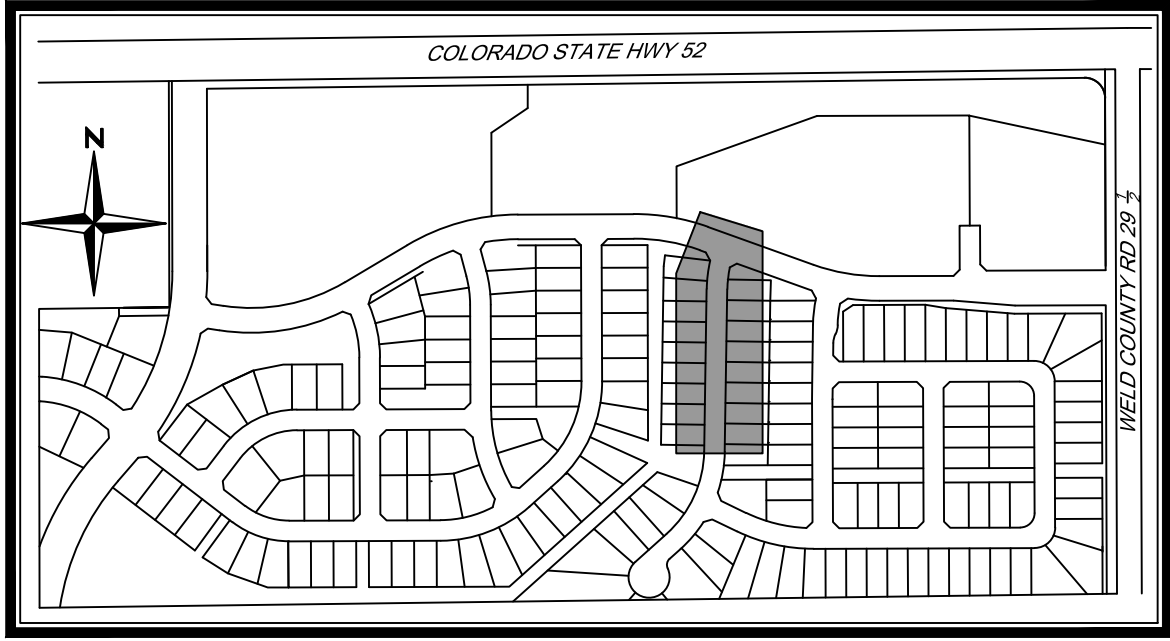
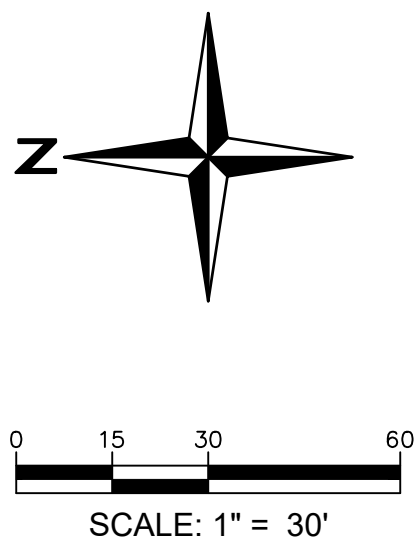
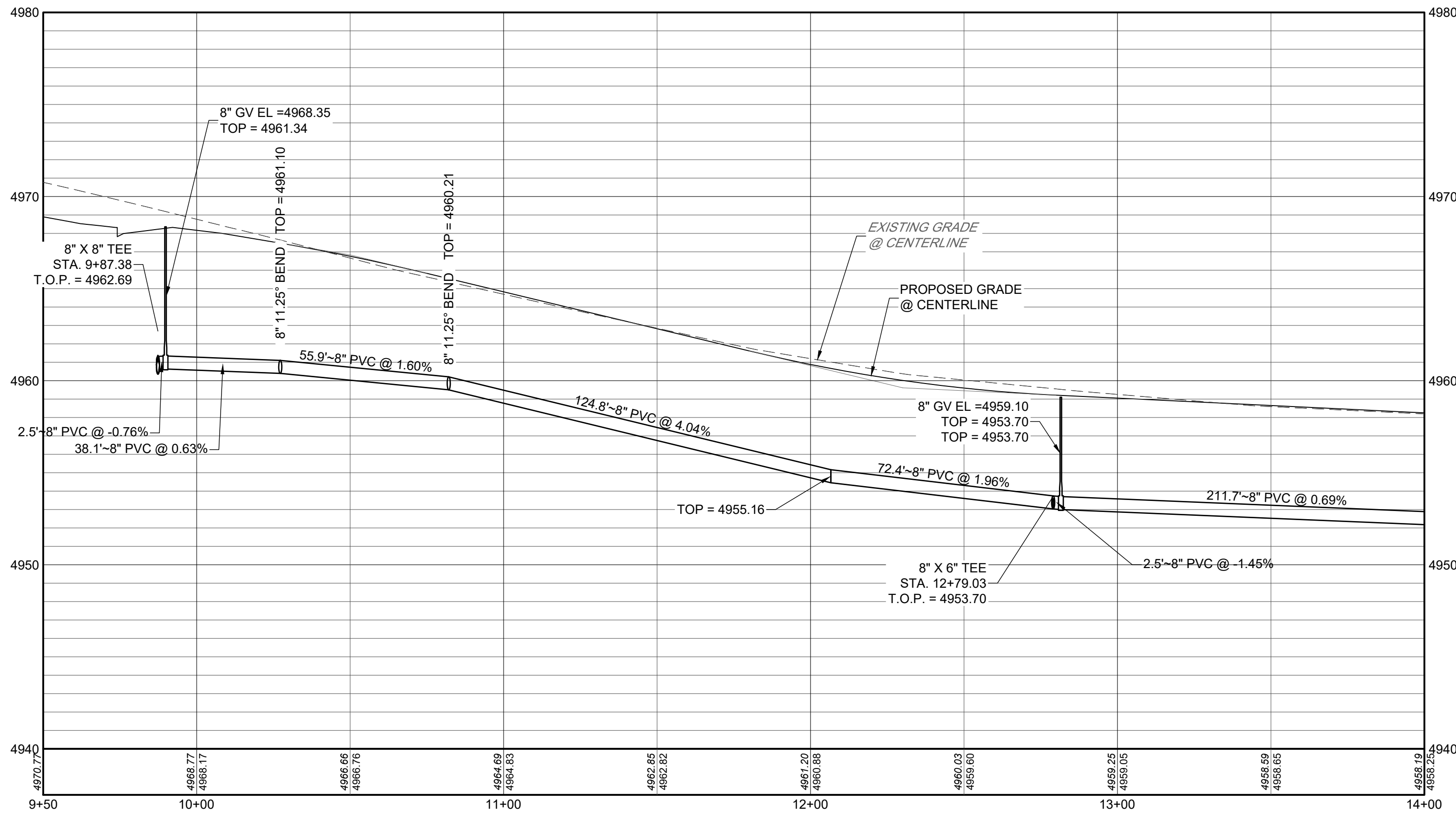


I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\Water P&P\C7.16 MOUNTAIN FLOWER AVE. WATER P&P.dwg Lib: C7.15 MOUNTAIN FLOWER AVE. WATER P&P Aug. 20, 2021 - 1:25pm ekaki



MOUNTAIN FLOWER AVE. WATER PLAN
SCALE: 1" = 30'

MOUNTAIN FLOWER AVE. WATER PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
MOUNTAIN FLOWER AVE. WATER P&P

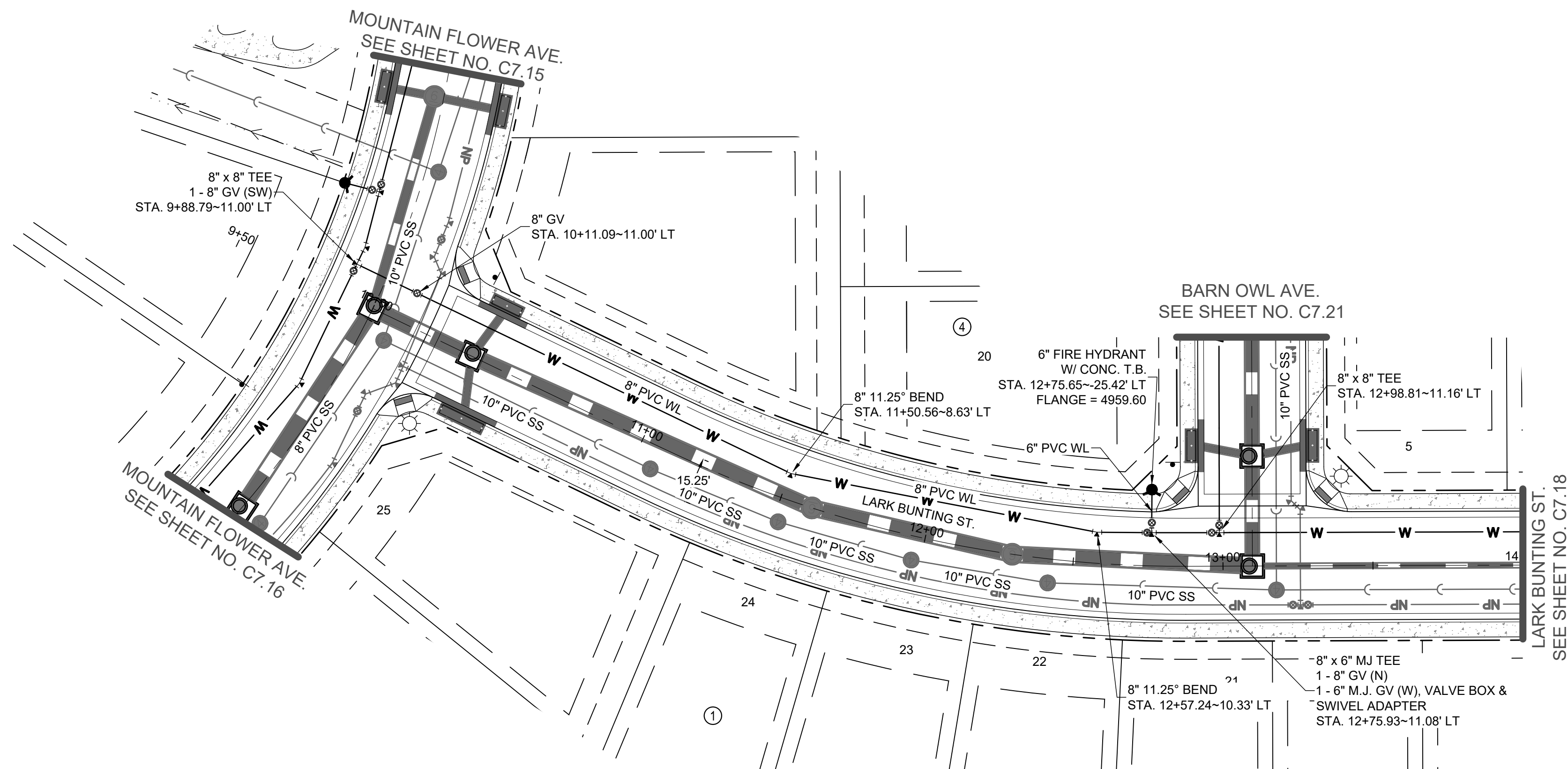
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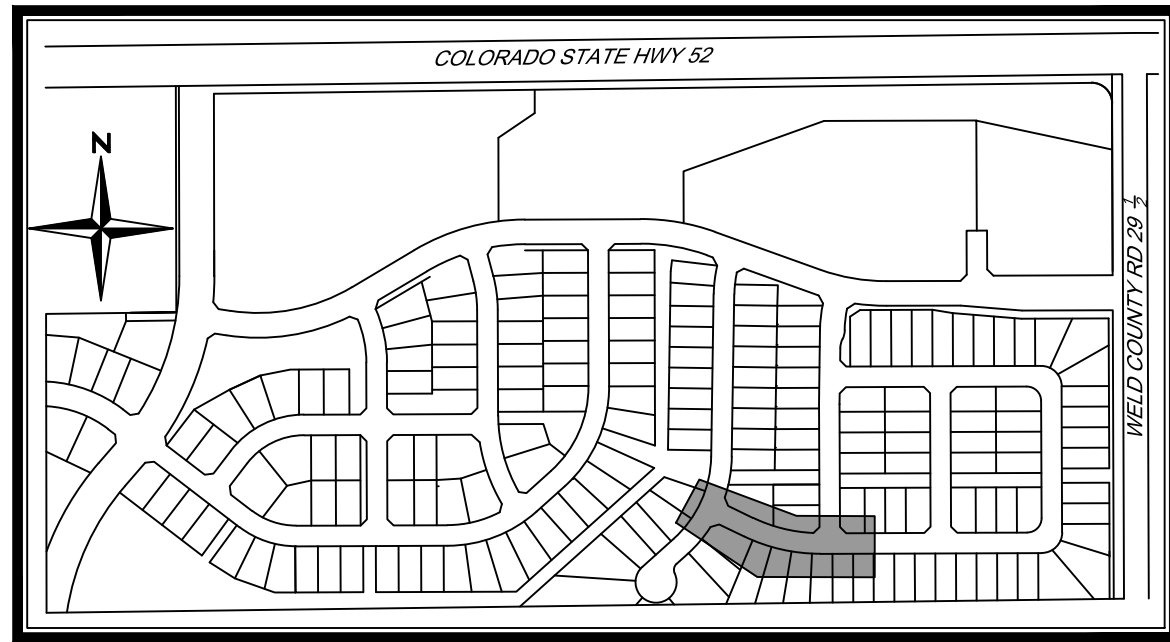
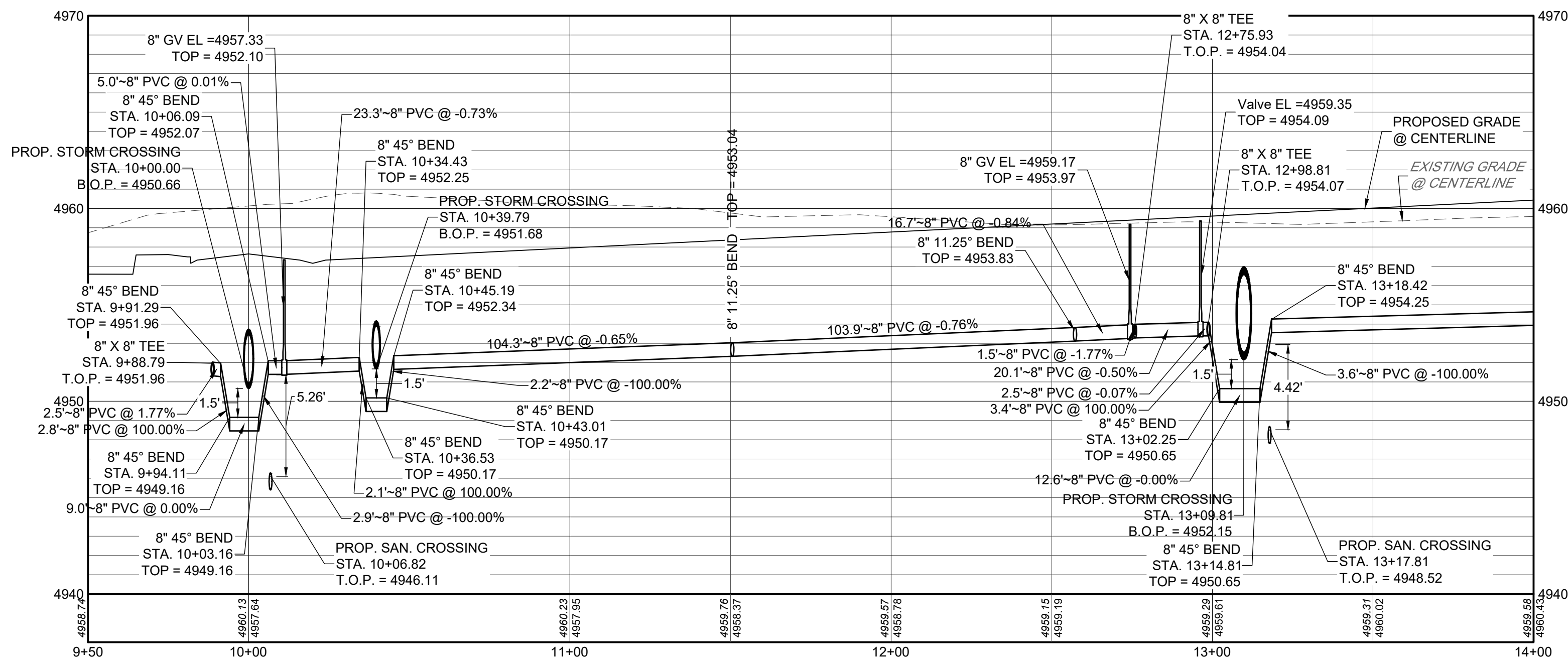
720.282.4793 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\Water P&P\C7.20 LAKE SPARROW ST. WATER P&P.dwg tab: C7.17 LARK BUNTING ST. WATER P&P Aug 20, 2021 1:26pm akaski



LARK BUNTING ST. WATER PLAN
SCALE: 1" = 30'

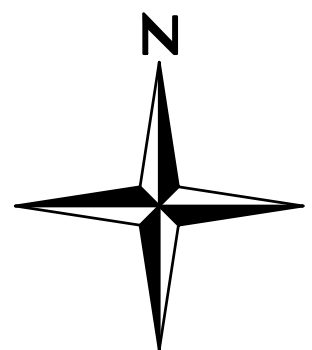
LARK BUNTING ST. WATER PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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0 15 30 60
SCALE: 1" = 30'

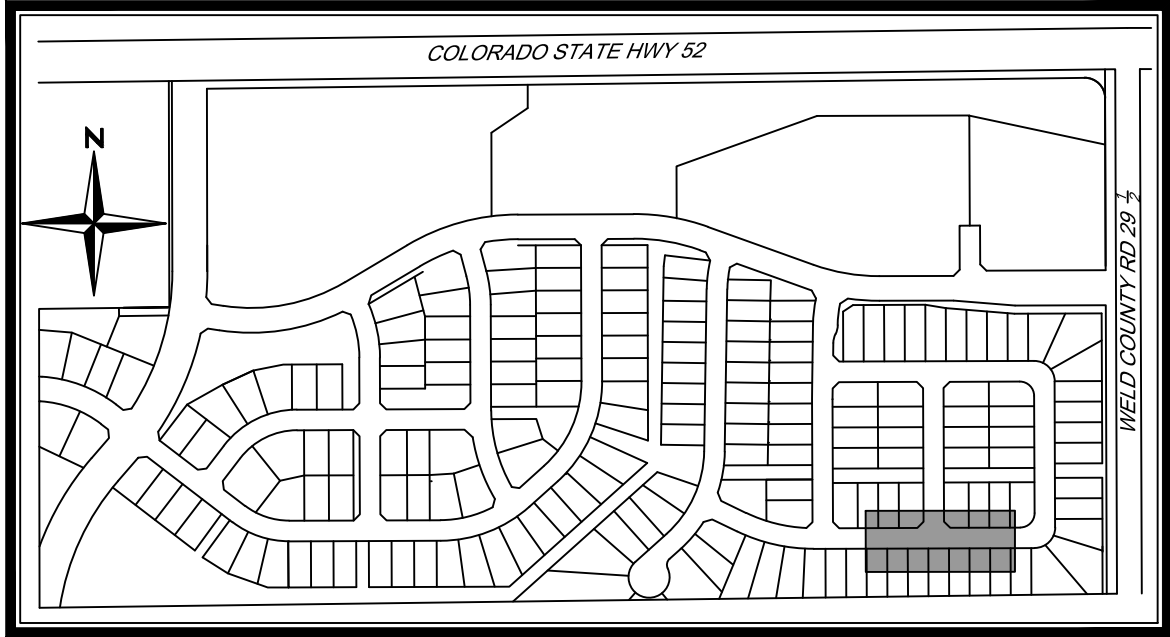
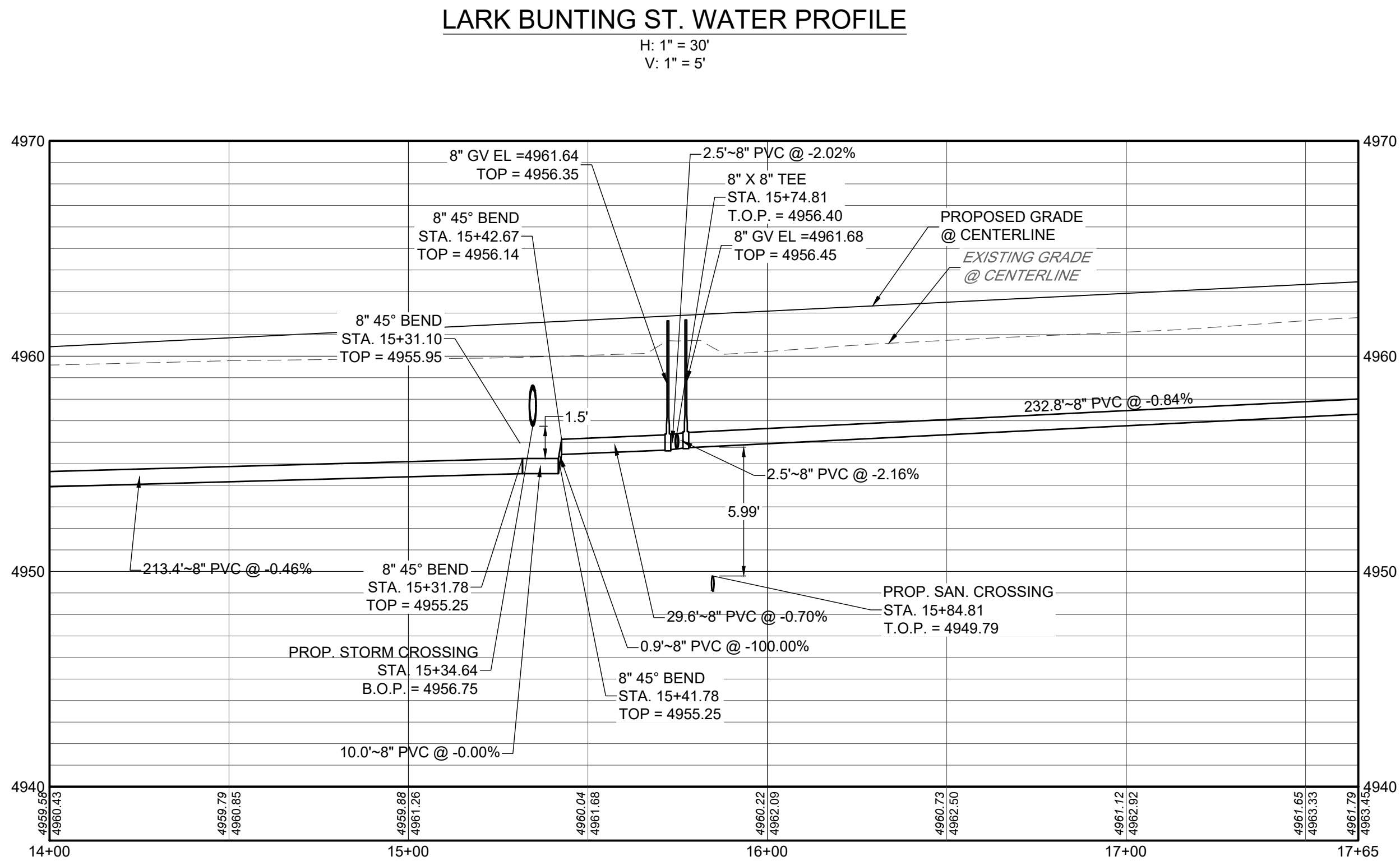
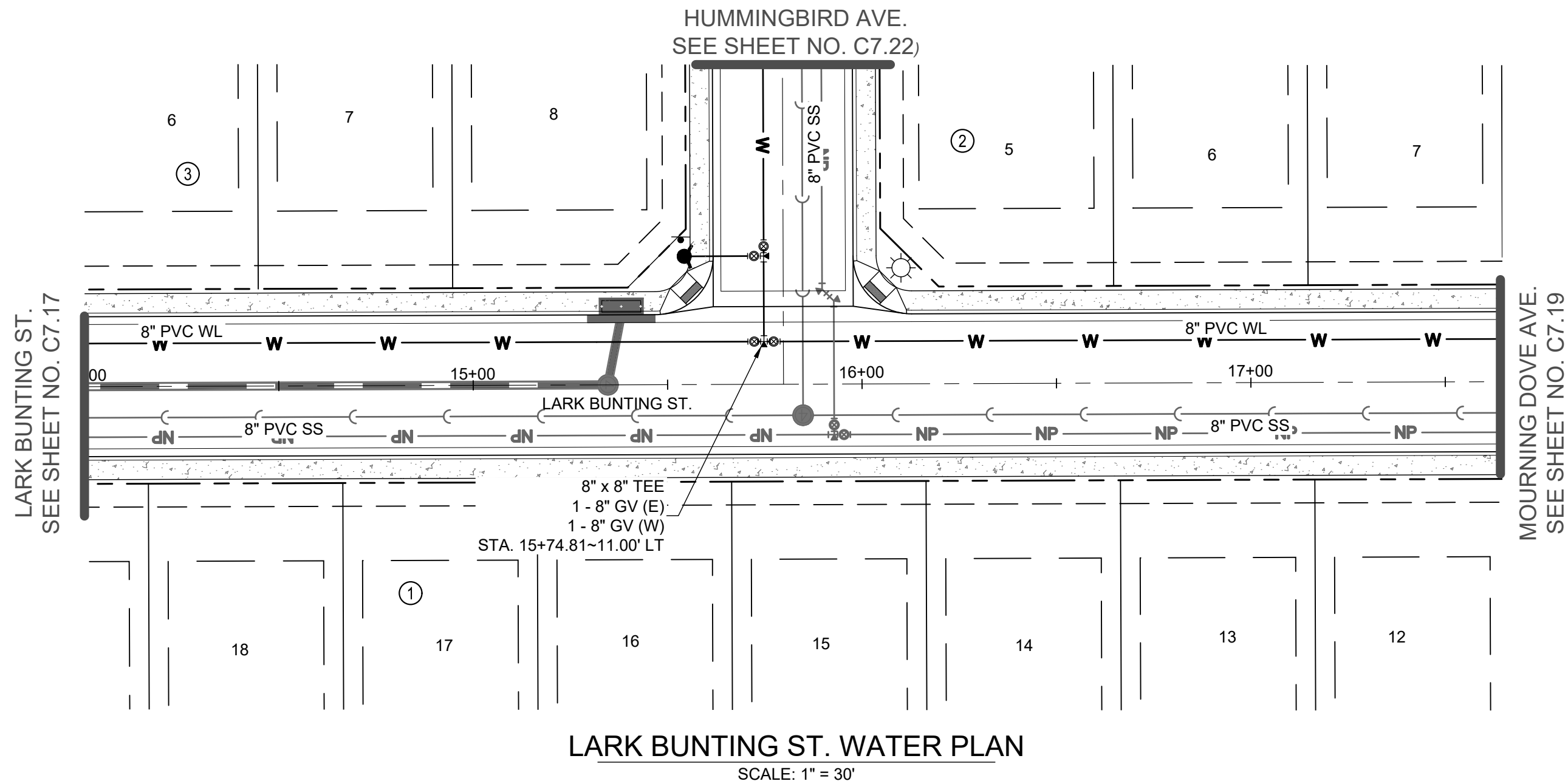


MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
LARK BUNTING ST. WATER P&P

SHEET

C7.17

I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\Water P&P\C7.20 LAKE SPARROW ST. WATER P&P.dwg tab: C7.18 STREET H P&P Aug 20, 2021 - 1:27pm ekcsaki

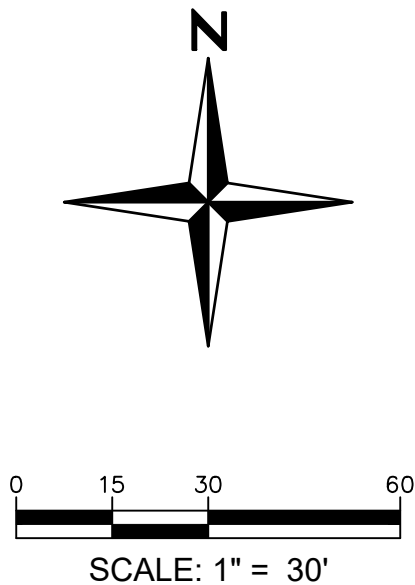


KEYMAP

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MURATA FARMS FILING NO. 1

CIVIL CONSTRUCTION DOCUMENTS

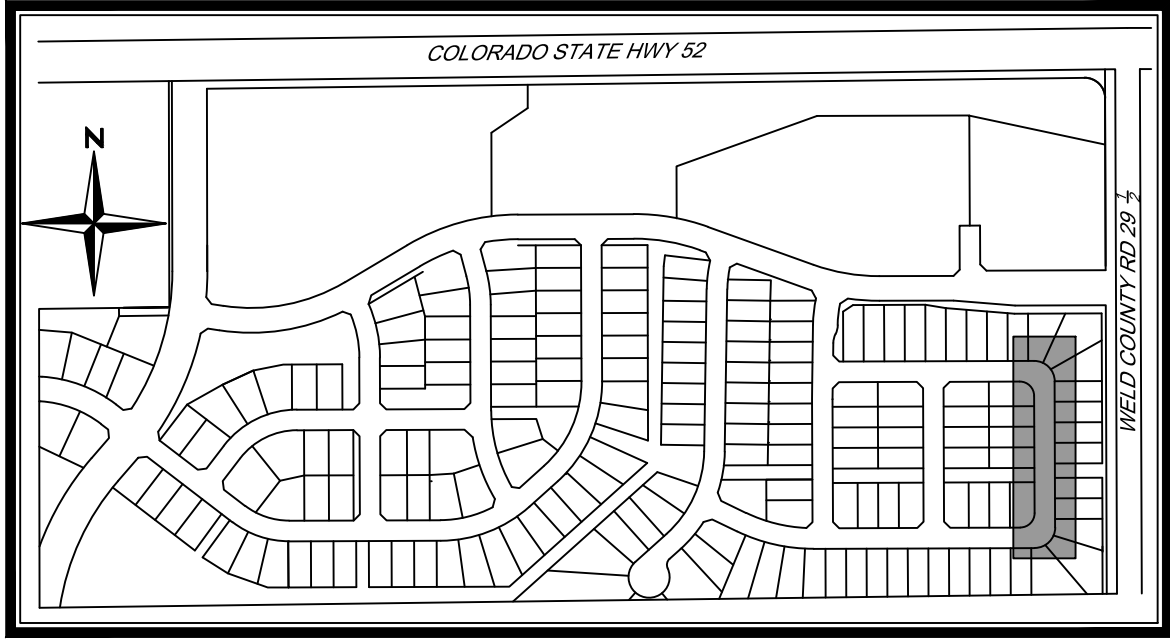
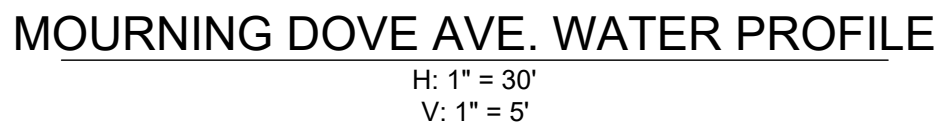
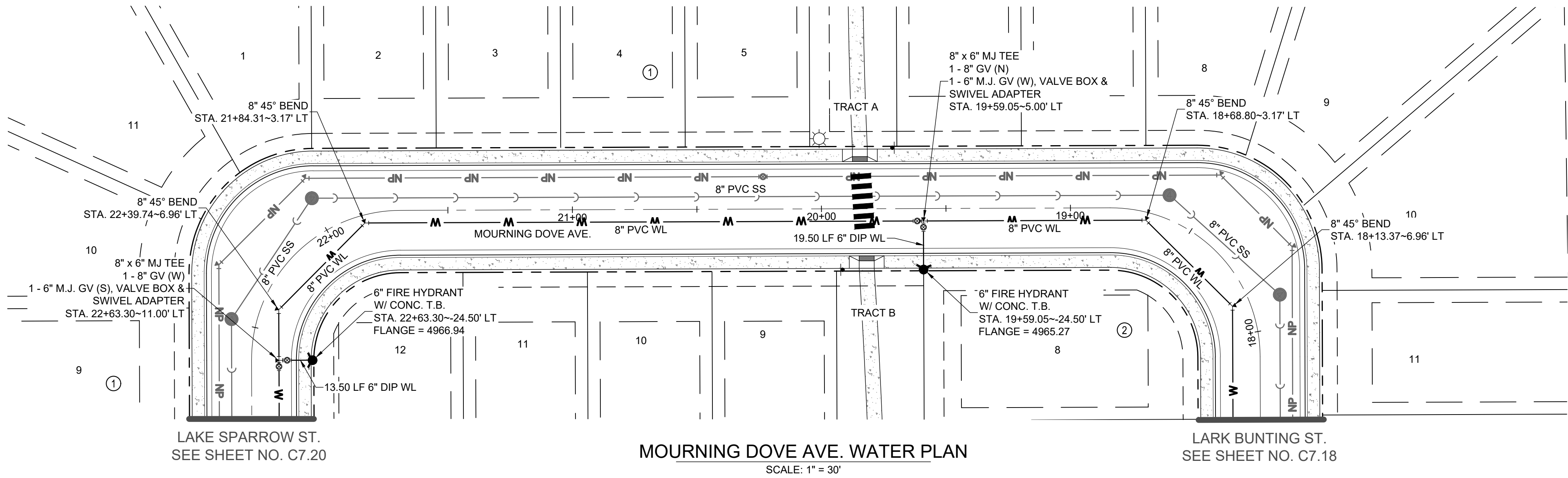
LARK BUNTING ST. WATER P&P

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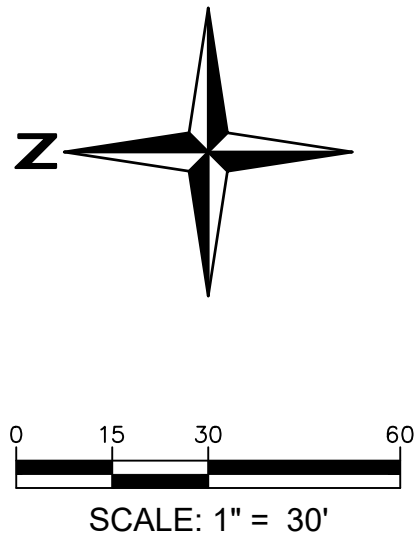
C7.18



I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\Water P&P\C7.20 LAKE SPARROW ST. WATER P&P.dwg tab: C7.19 MOURNING DOVE AVE. WATER P&P Aug 20, 2021 1:27pm ekaski



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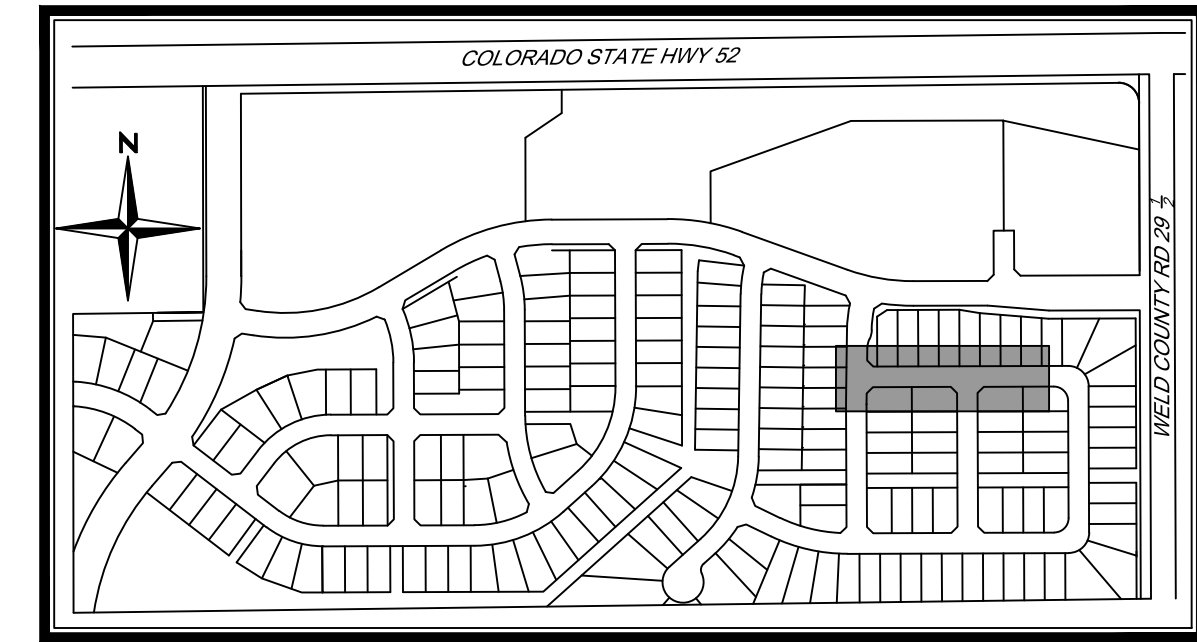
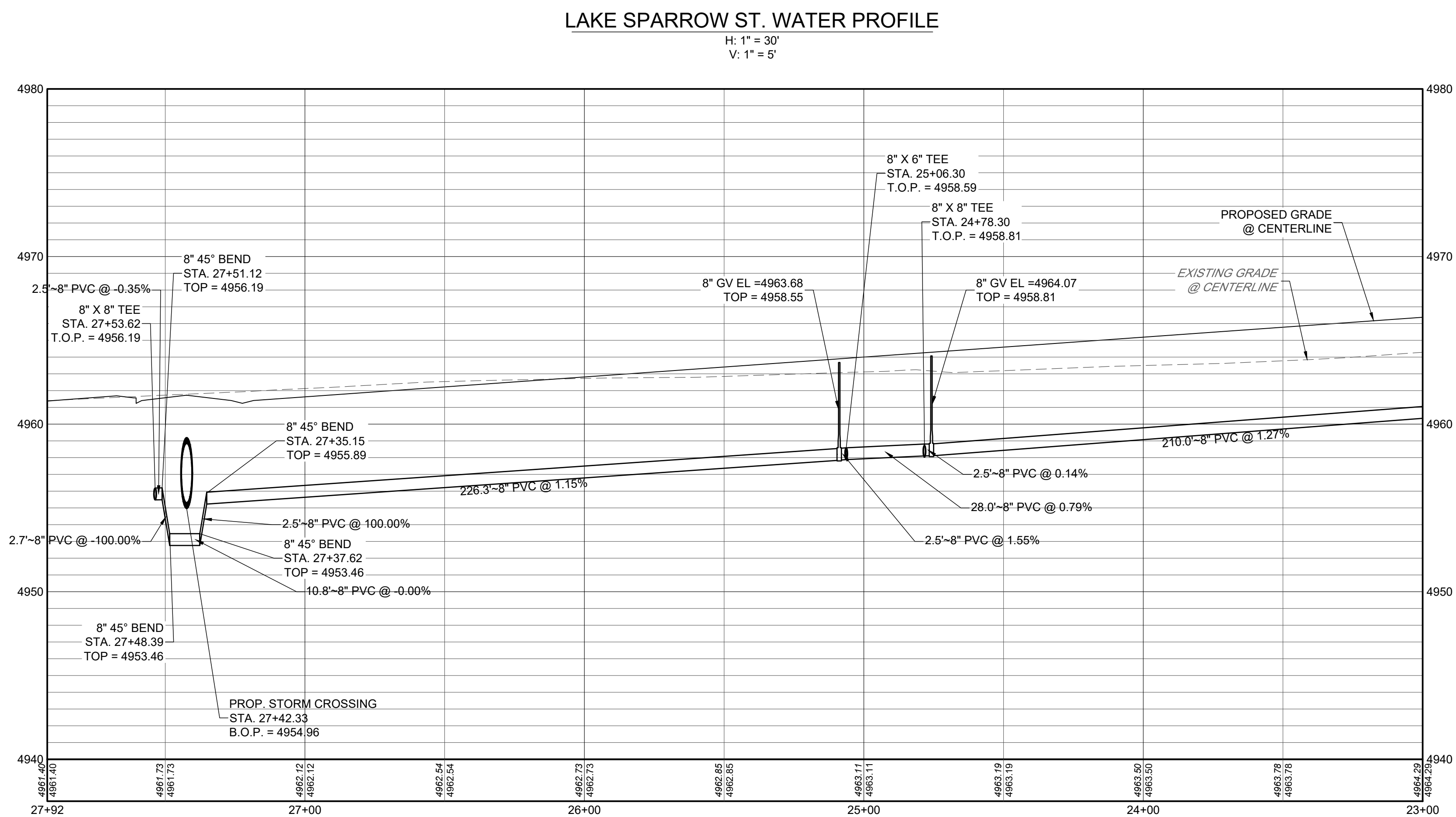
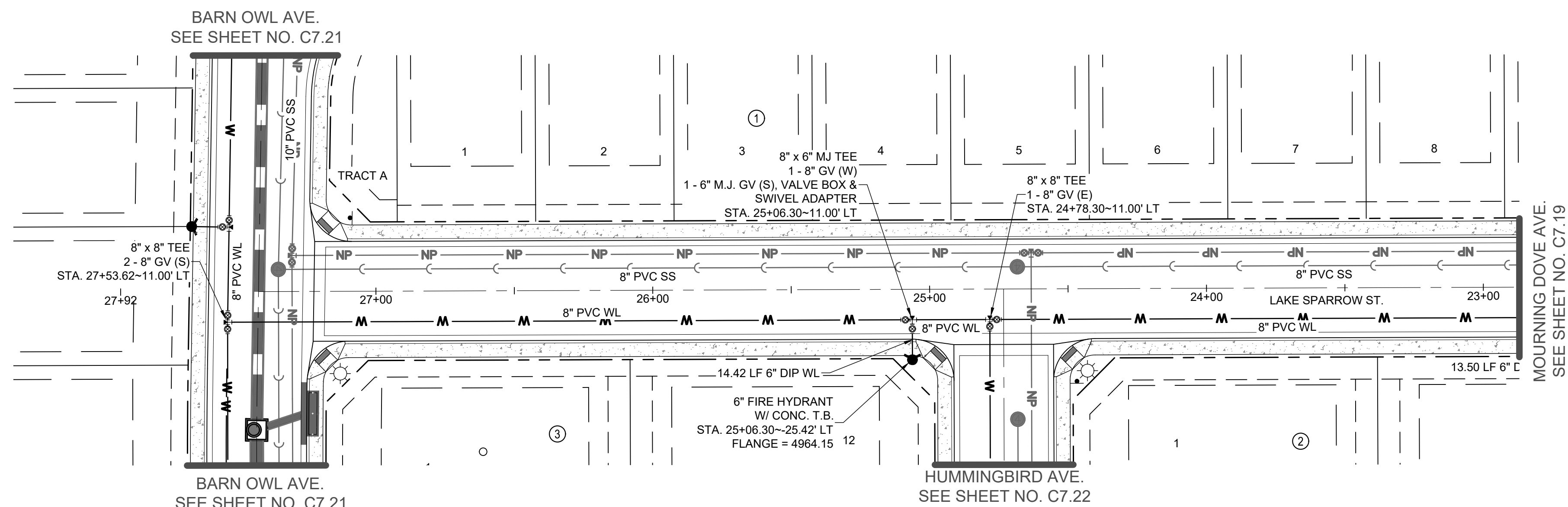


MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
MOURNING DOVE AVE. WATER P&P

SHEET

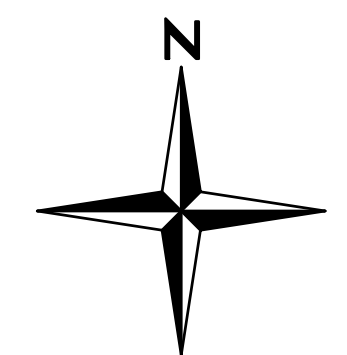
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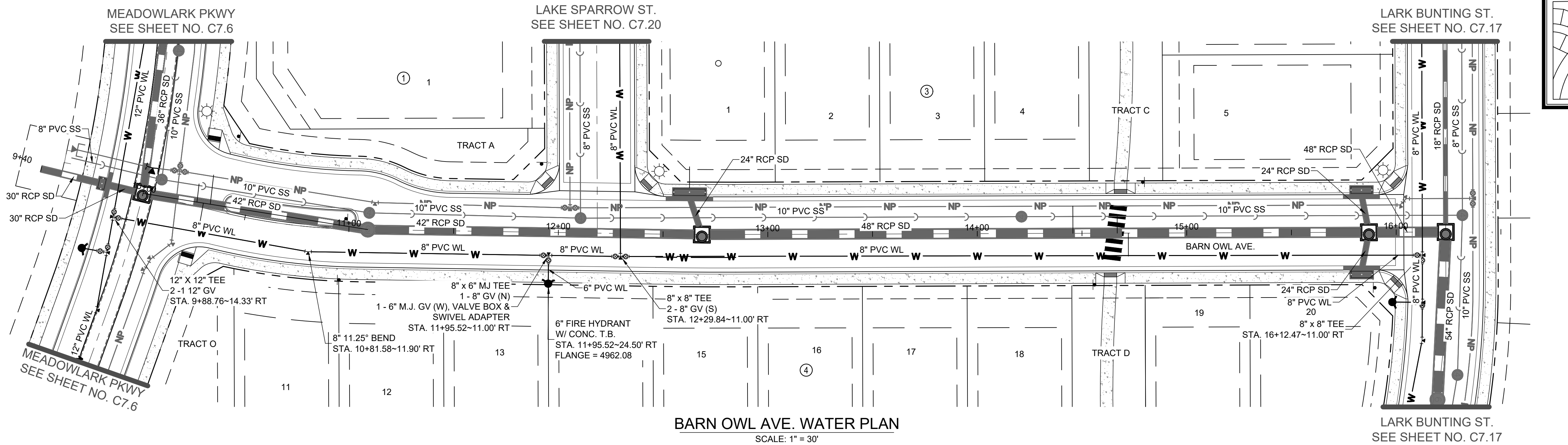


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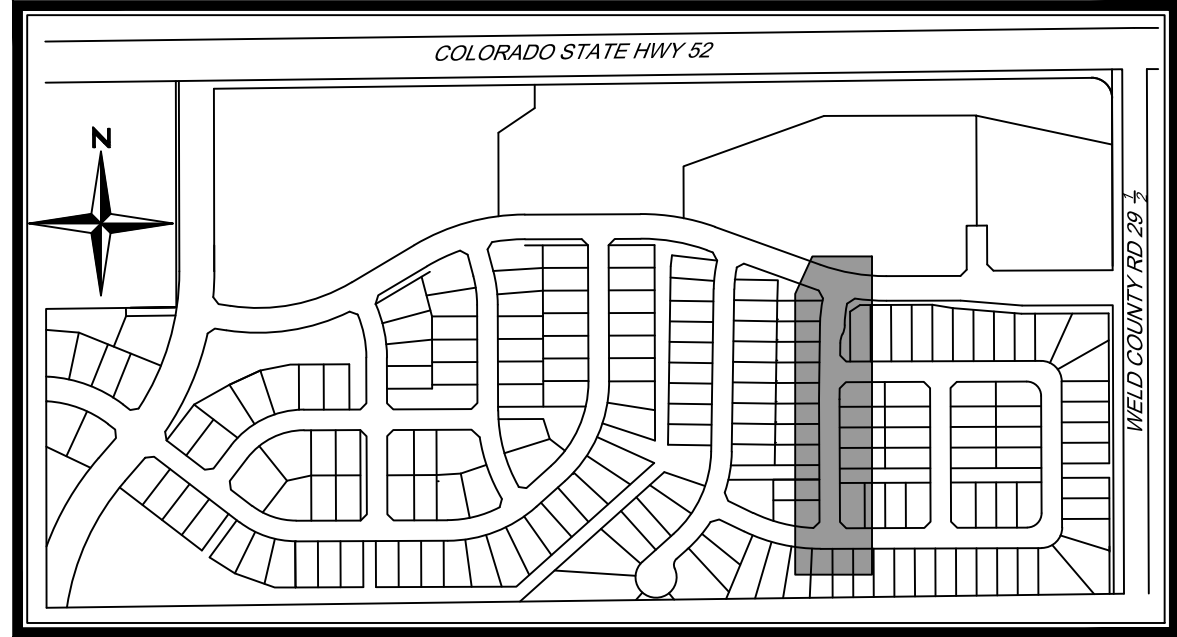
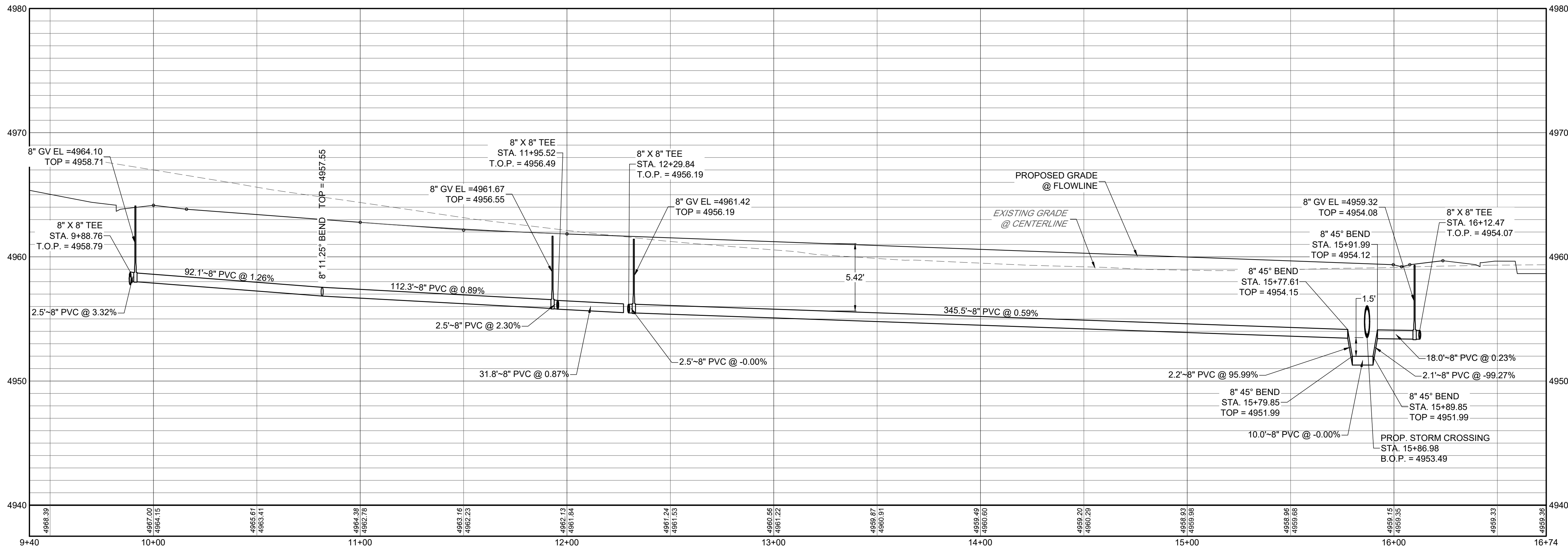
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I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\Water P&P\C7.21 BARN OWL AVE. WATER P&P.dwg tabs: C7.21 BARN OWL AVE. WATER P&P Aug 20, 2021 - 1:28pm ekaski



BARN OWL AVE. WATER PROFILE
H: 1" = 30'
V: 1" = 5'



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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
BARN OWL AVE. WATER P&P

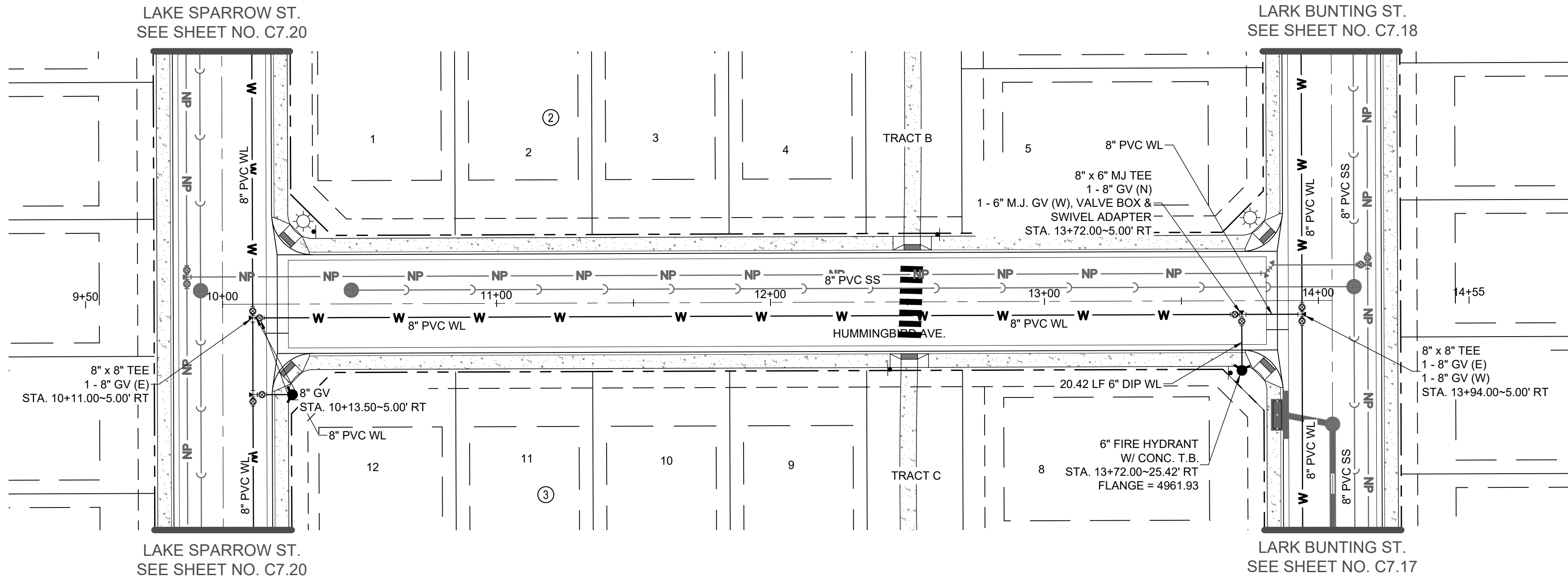
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DRAWN	BRC
CHECKED	T.J.F.
APPROVED	T.J.F.
PROJECT NO.	19032
HORIZ. SCALE	1" = 30'
VERT. SCALE	1" = 5'

DATE	NO.	NOTES

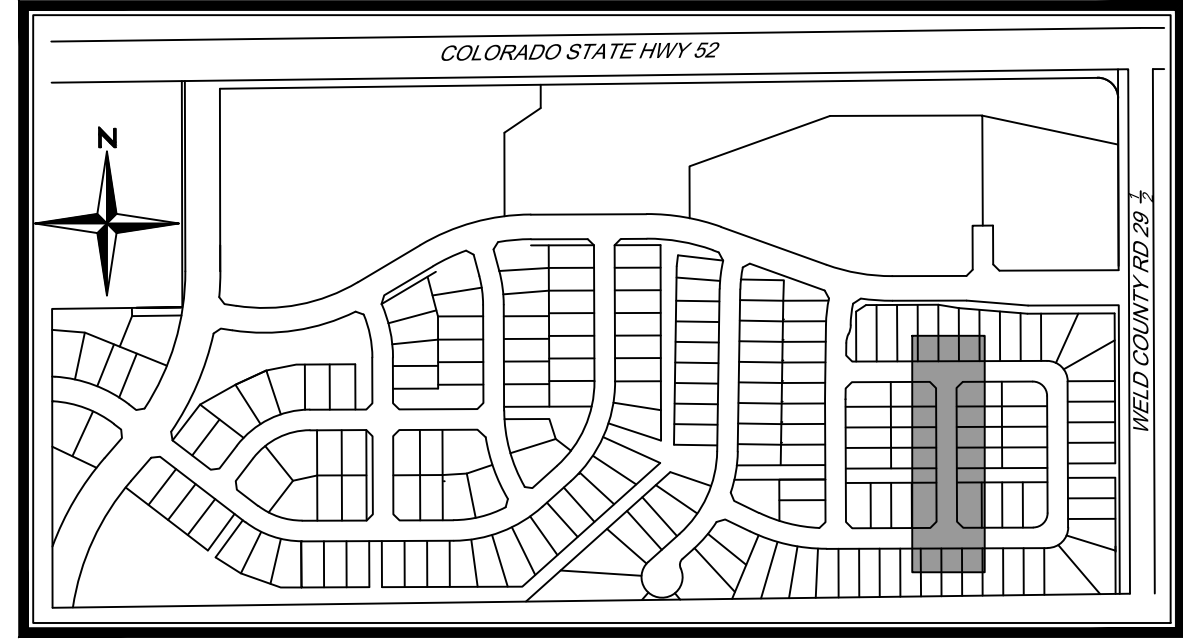
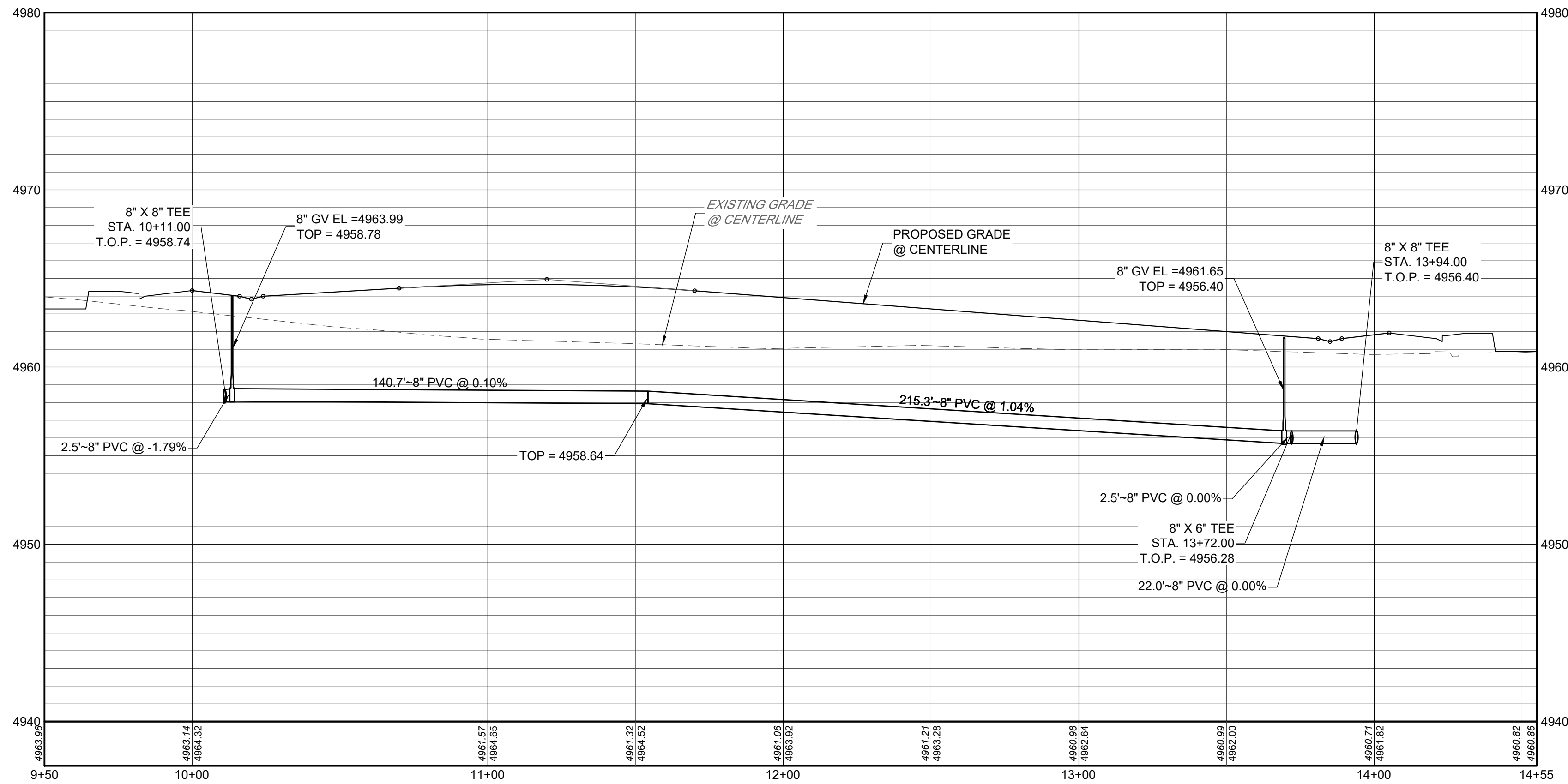
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HUMMINGBIRD AVE. WATER PLAN
SCALE: 1" = 30'

HUMMINGBIRD AVE. WATER PROFILE

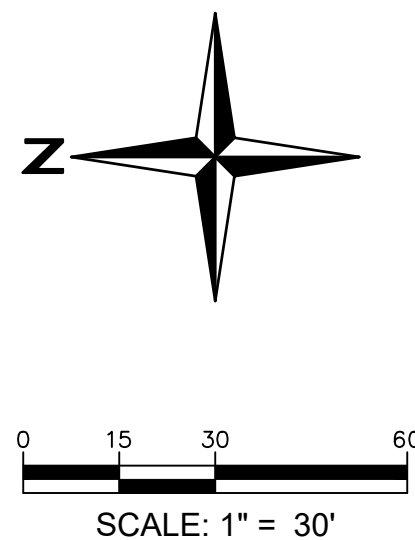
H: 1" = 30'
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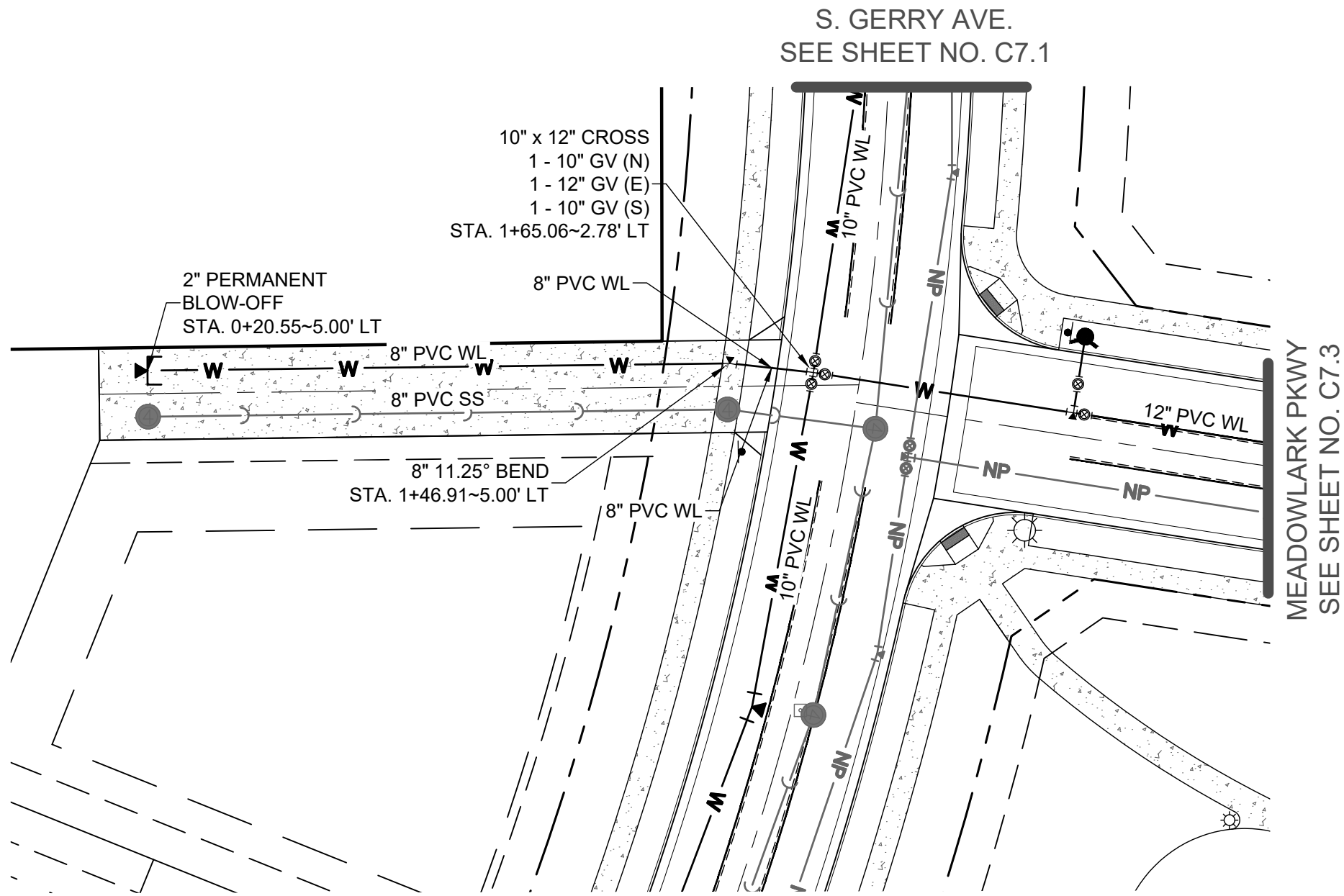
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CIVIL CONSTRUCTION DOCUMENTS
HUMMINGBIRD AVE. WATER P&P

SHEET

C7.22



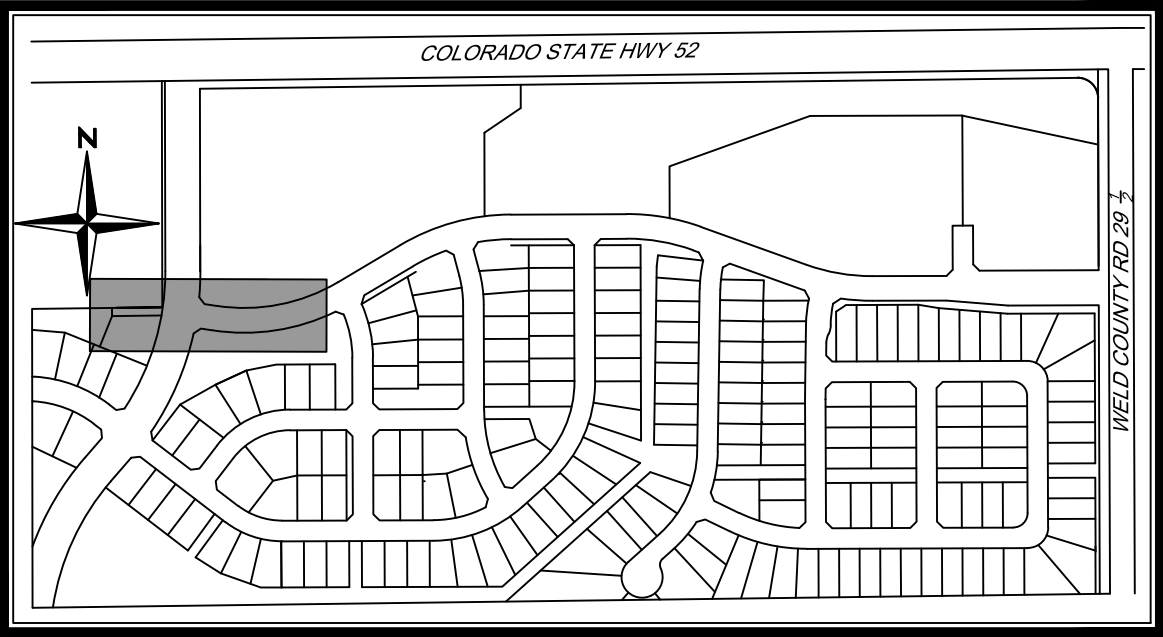
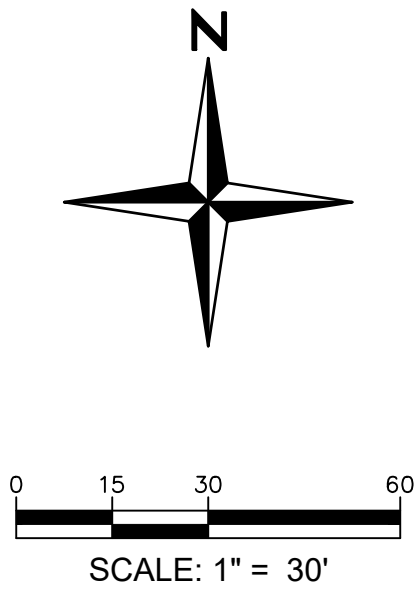
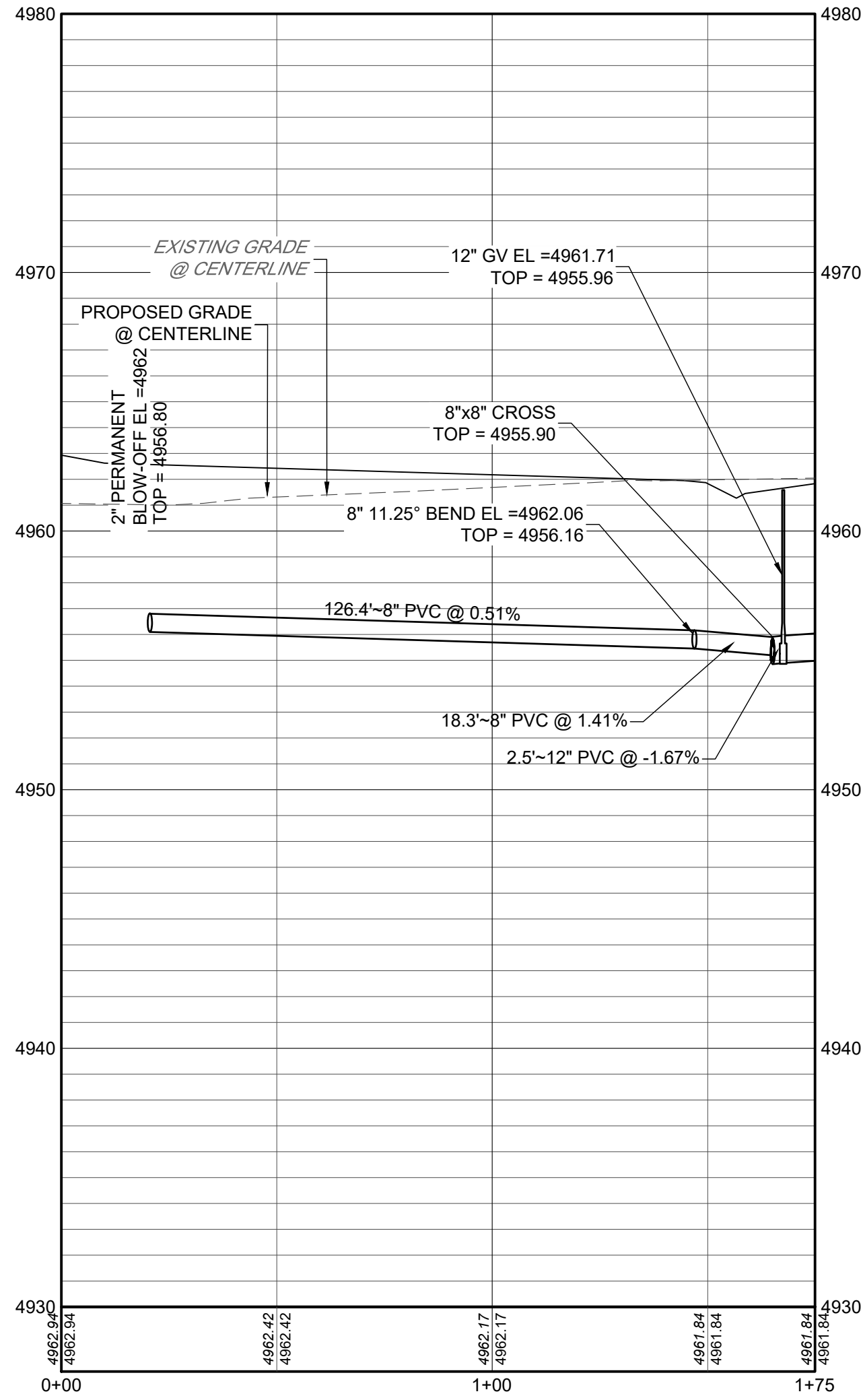
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HUMMINGBIRD AVE. WATER PLAN
SCALE: 1" = 30'

HUMMINGBIRD AVE. WATER PROFILE

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4. ALL WATER LINES SHALL HAVE A MINIMUM BURY DEPTH OF 5.0' TO THE TOP OF PIPE UNLESS OTHERWISE NOTED.
5. ALL VALVES AND FITTINGS MUST BE POLY WRAPPED
6. NO VALVES SHALL BE INSTALL IN CROSS PANS OR UNDER CURB AND GUTTER.
7. ALL PVC PIPE SHALL MEET THE REQUIREMENTS OF AWWA SPECIFICATION C-900-07, POLYVINYLCHLORIDE PRESSURE PIPE AND FABRICATED FITTINGS (4" - 12"), AND SHALL BE PRESSURE CLASS 305 PSI(DR 14), OR AWWA C-905-08, POLYVINYL CHLORIDE PRESSURE PIPE AND FABRICATED FITTINGS (14" -48"), AND SHALL BE PRESSURE CLASS 235 PSI (DR 18).
8. ALL PVC WATER MAINS SHALL BE LOCATABLE, VIA A 12 GAUGE TRACER WIRE TAPED TO THE TOP OF PIPE AND LOOPED TO EACH HYDRANT AND A CATHODIC PROTECTION BOX.

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

TRACT L WATER P&P

SHEET

C7.23

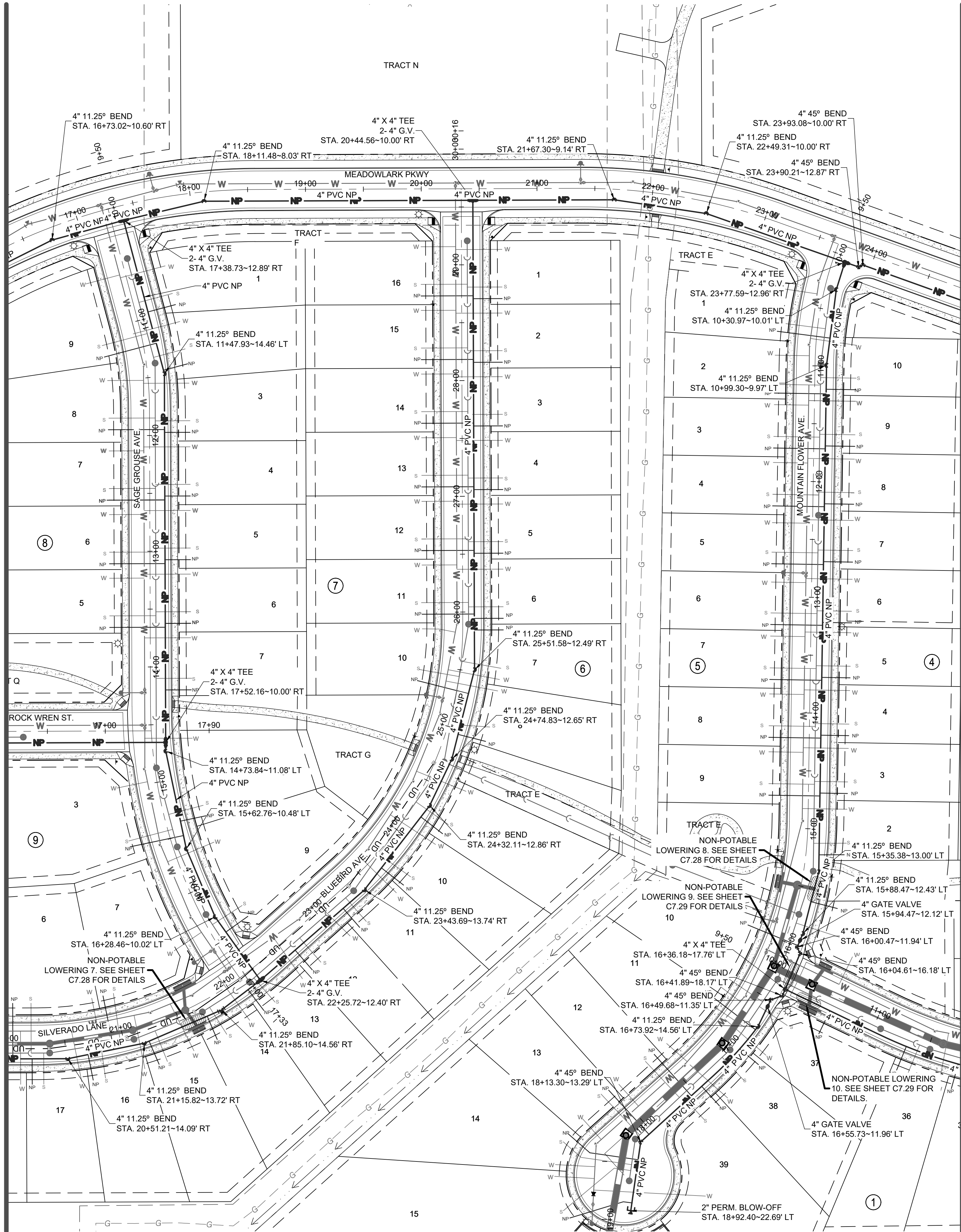


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1500 West Canal Court
Littleton, Colorado 80120

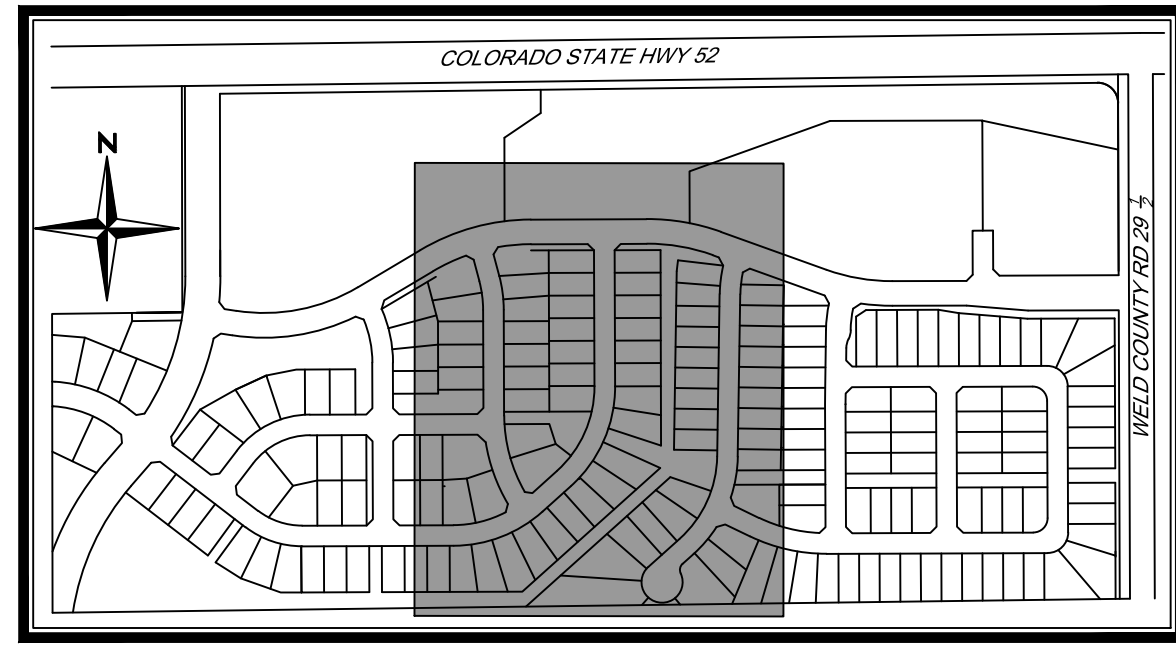
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MATCH LINE
SEE SHEET NO. C7.24



NON-POTABLE WATER PLAN
SCALE: 1" = 50'



KEYMAP
N.T.S

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5. ALL NON POTABLE PIPE SHALL BE PURPLE.
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7. ALL VALVES AND FITTINGS MUST BE POLY WRAPPED
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
NON-POTABLE WATER PLAN

SHEET
C7.25



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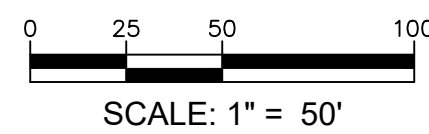
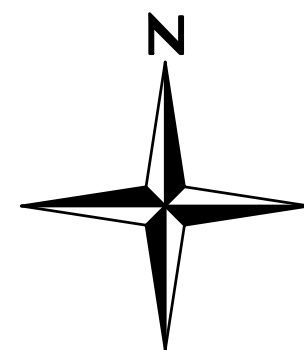
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CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	1" = 50'
VERT. SCALE	1" = 5'

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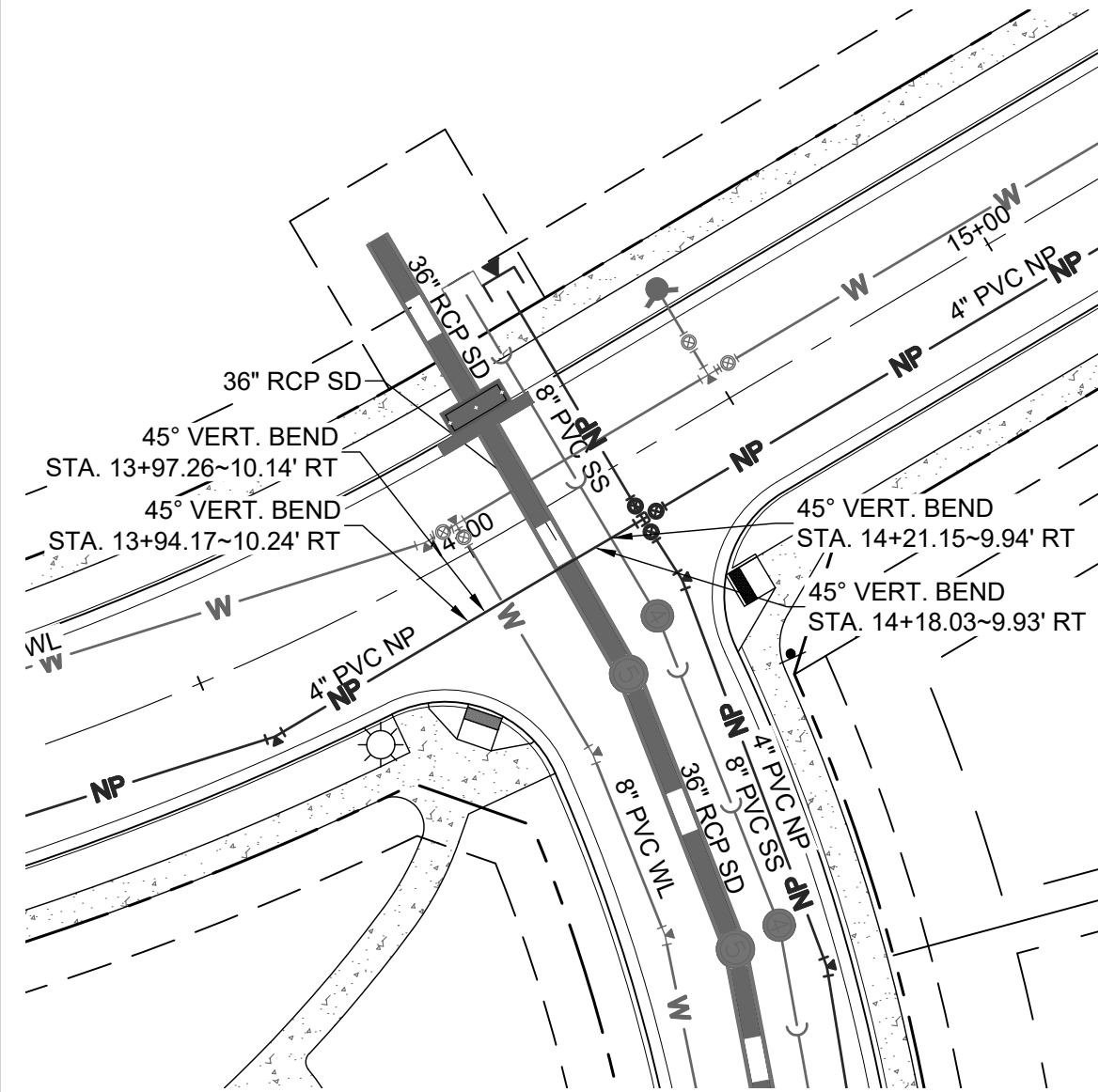
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CIVIL CONSTRUCTION DOCUMENTS
NON-POTABLE WATER PLAN

SHEET

C7.26

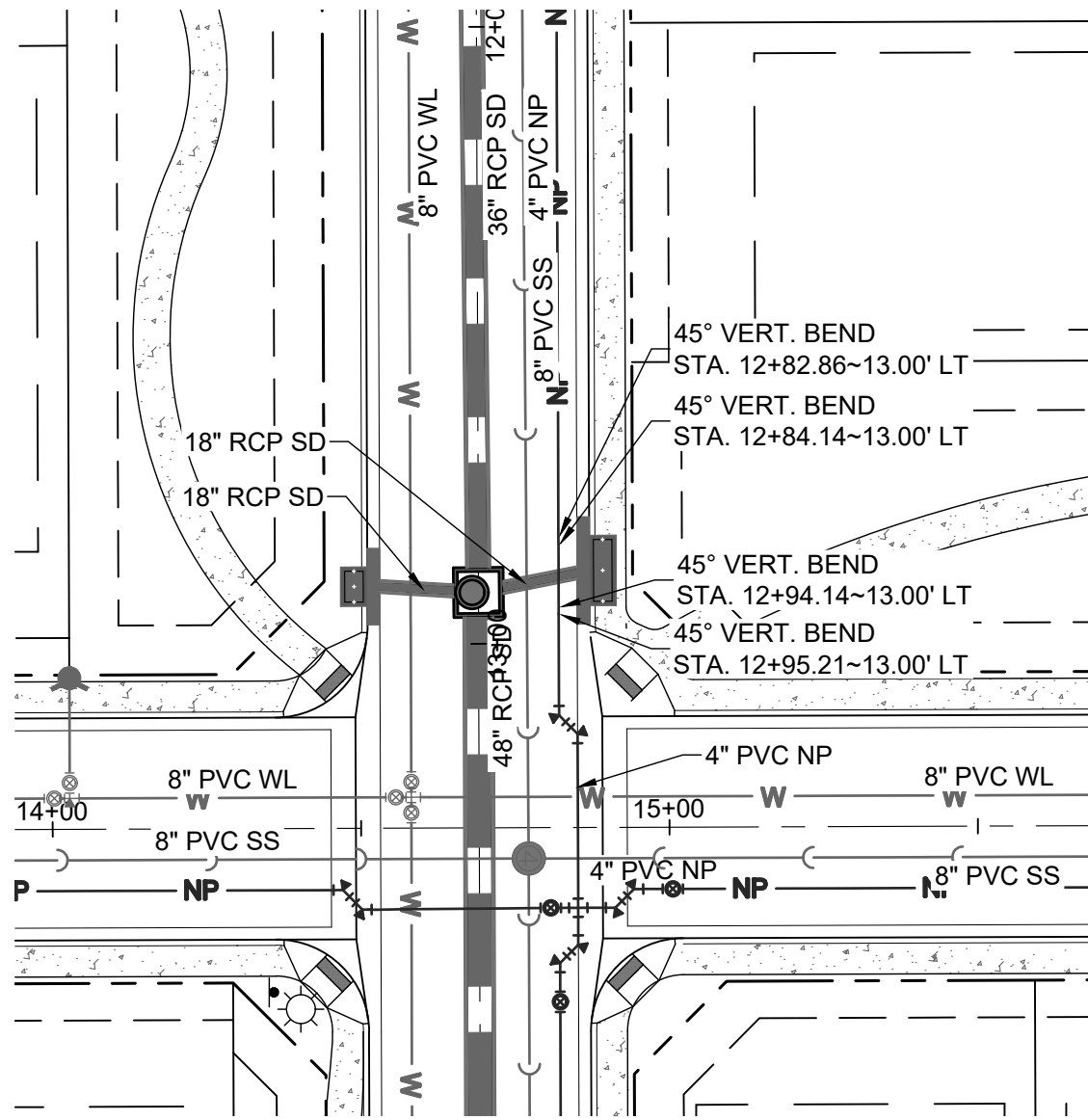
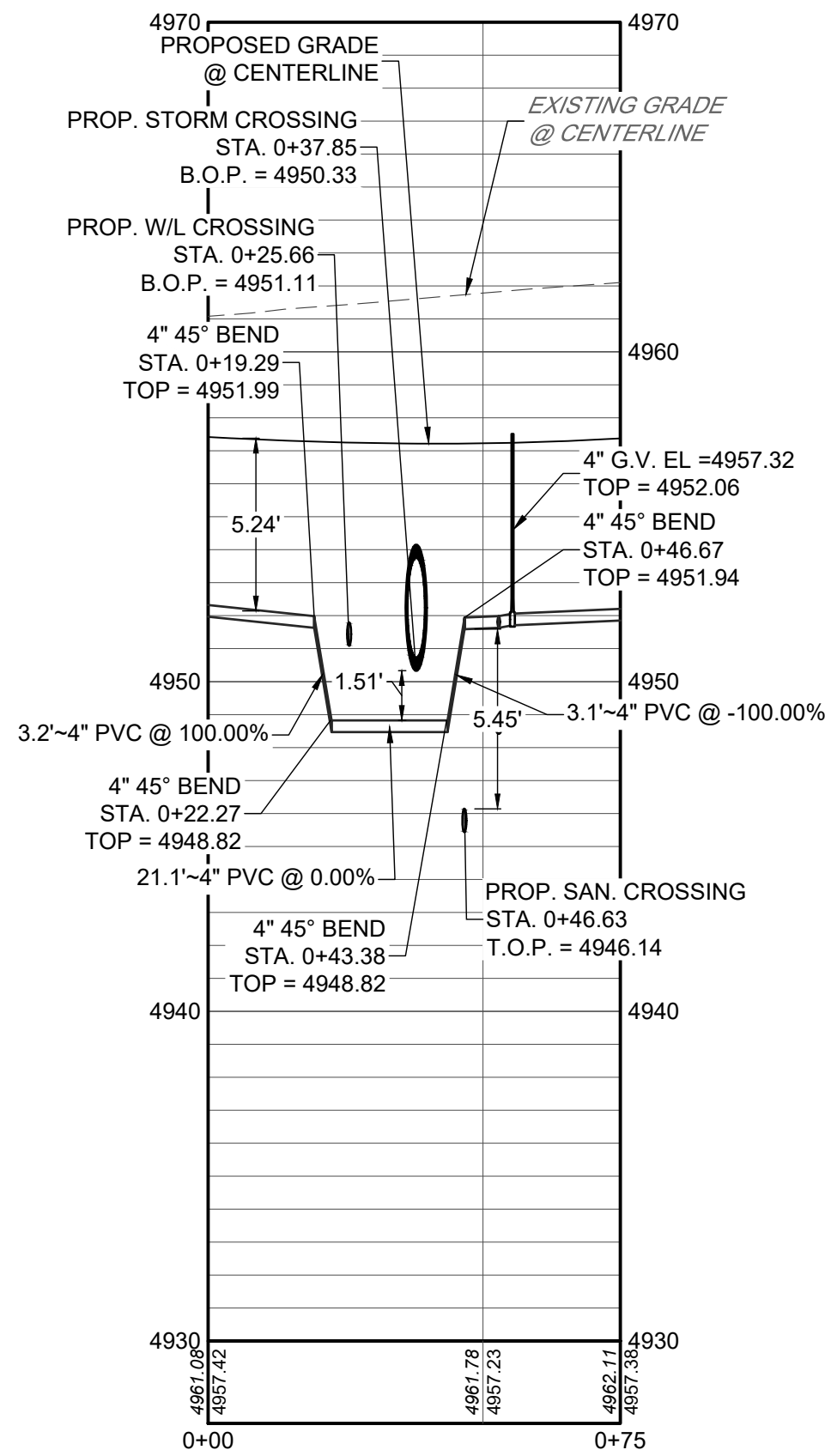


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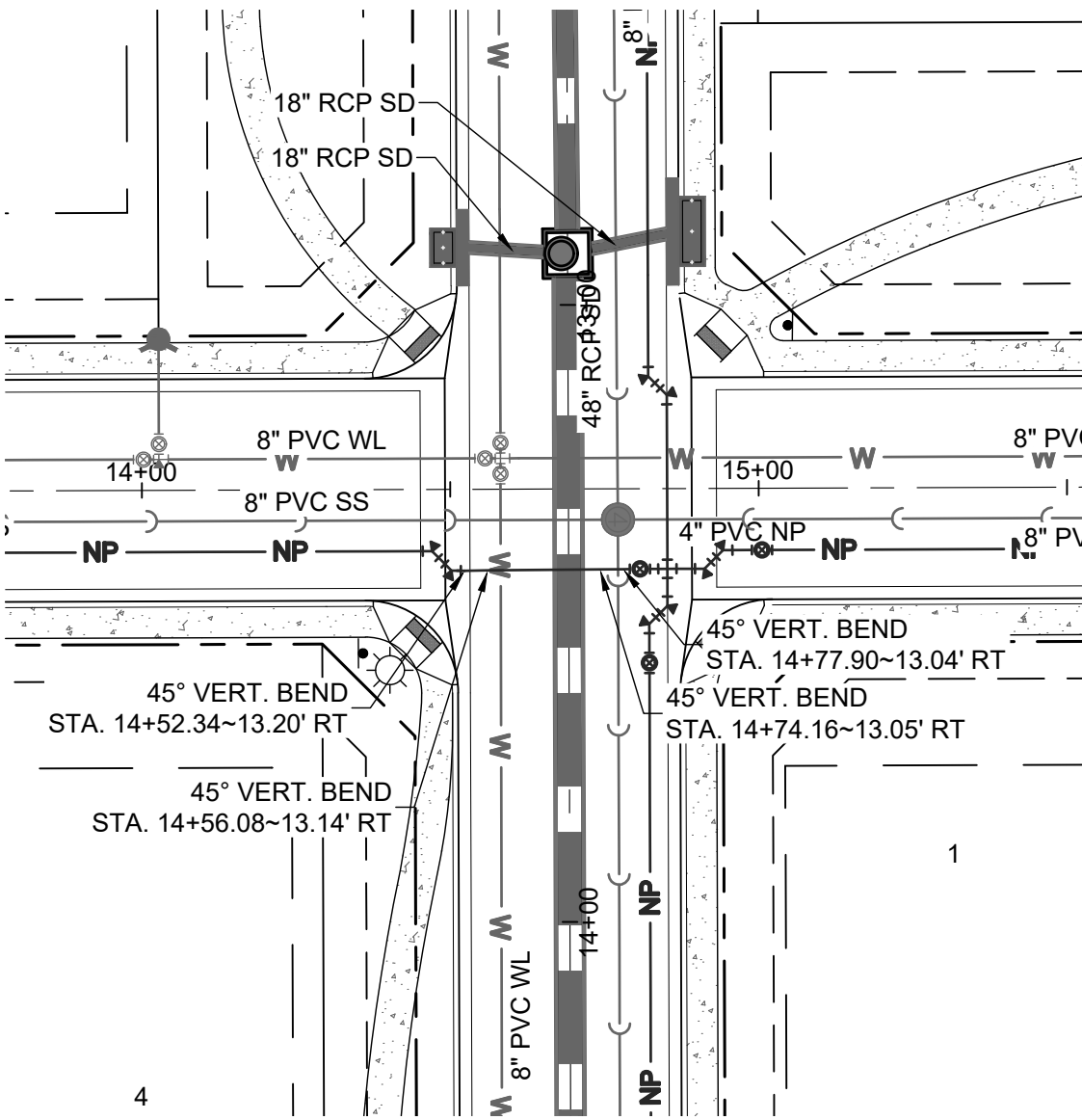
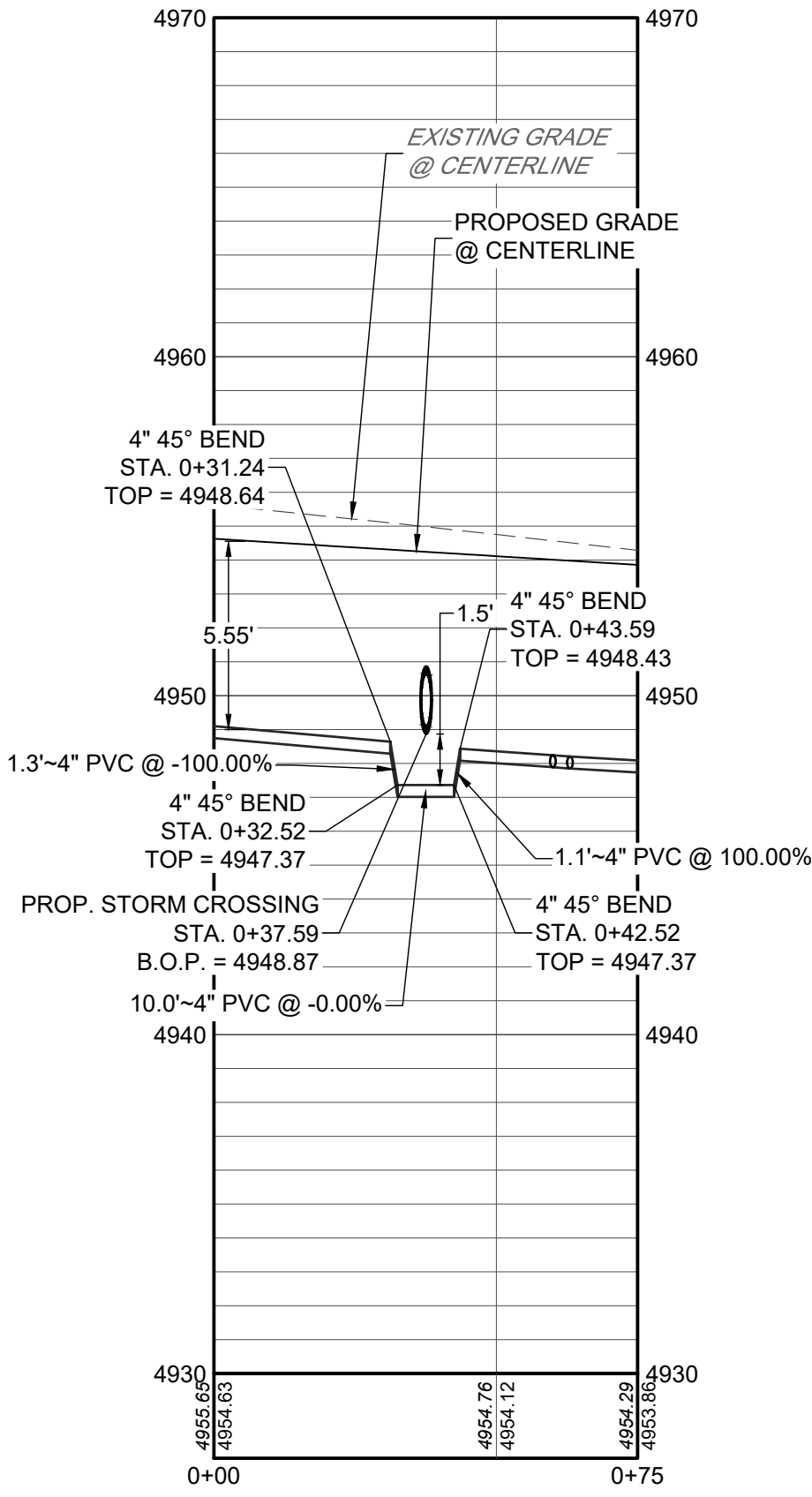
NON-POTABLE LOWERING 1 PLAN
SCALE: 1" = 30'

NON-POTABLE LOWERING 1 PROFILE
H: 1" = 30'
V: 1" = 5'



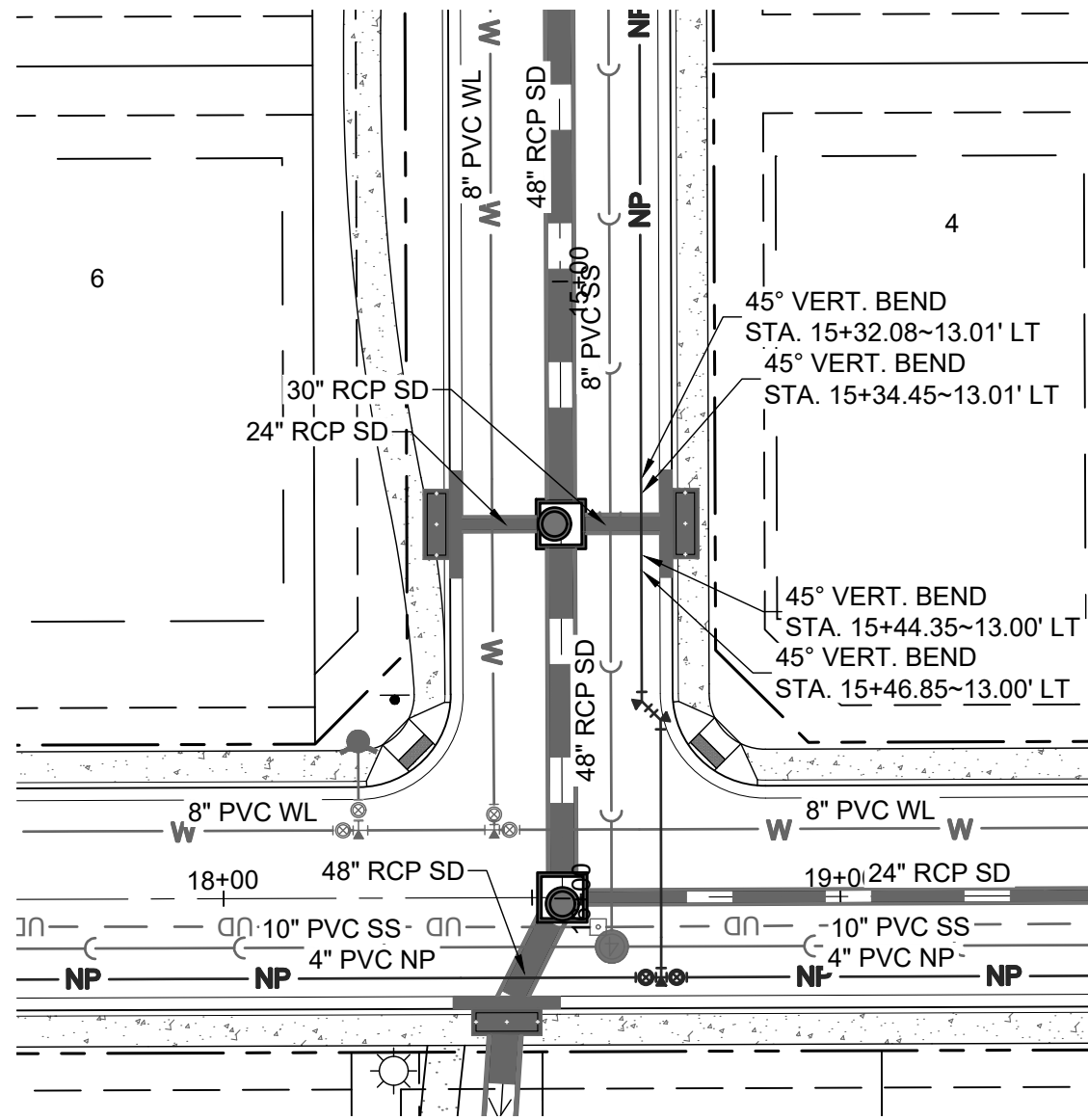
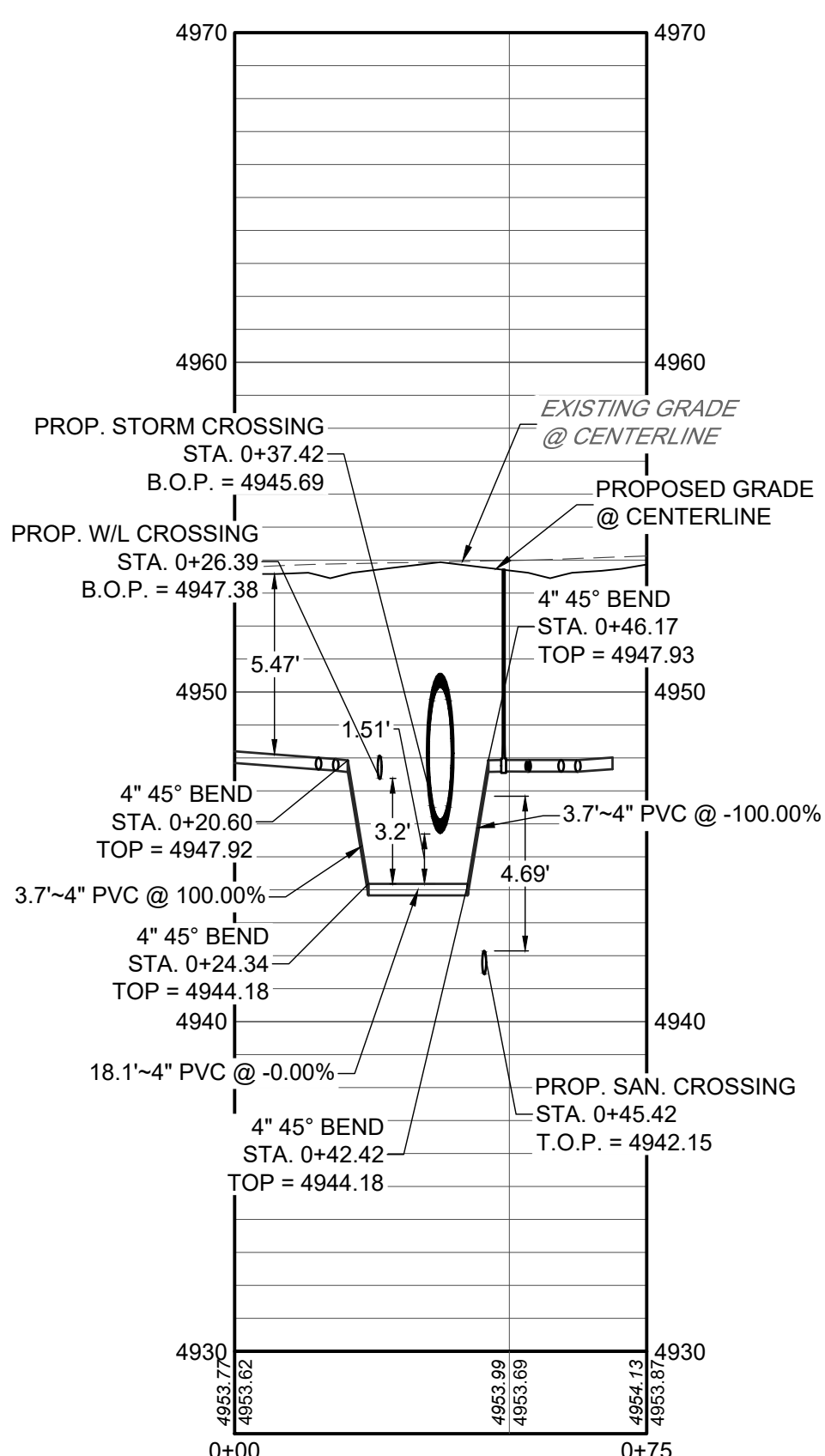
NON-POTABLE LOWERING 2 PLAN
SCALE: 1" = 30'

NON-POTABLE LOWERING 2 PROFILE
H: 1" = 30'
V: 1" = 5'



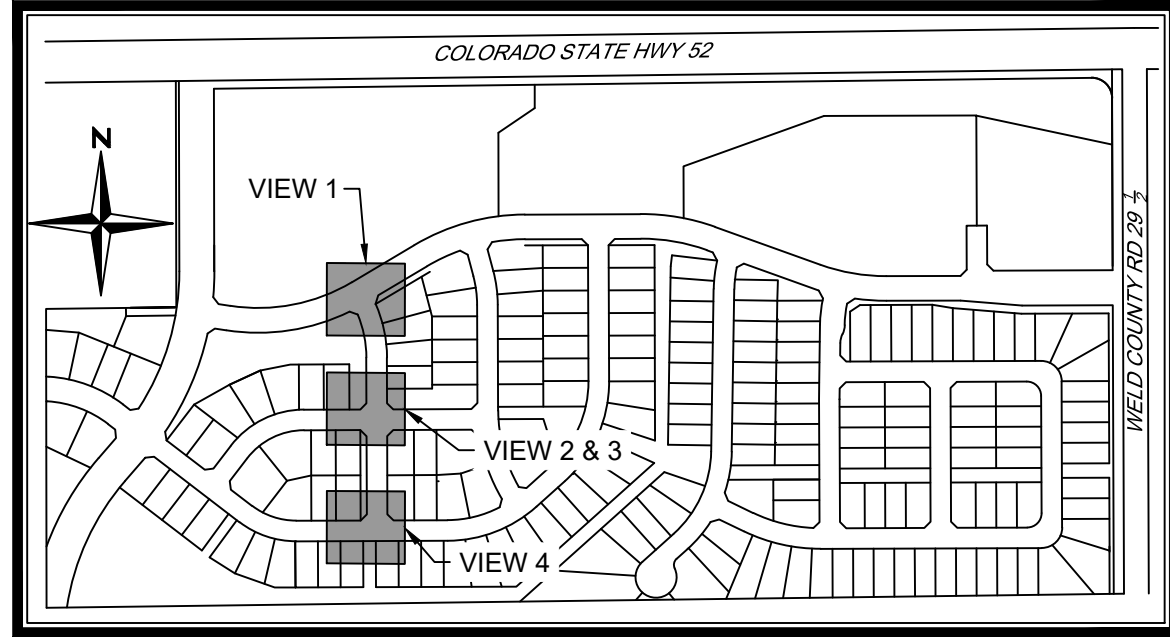
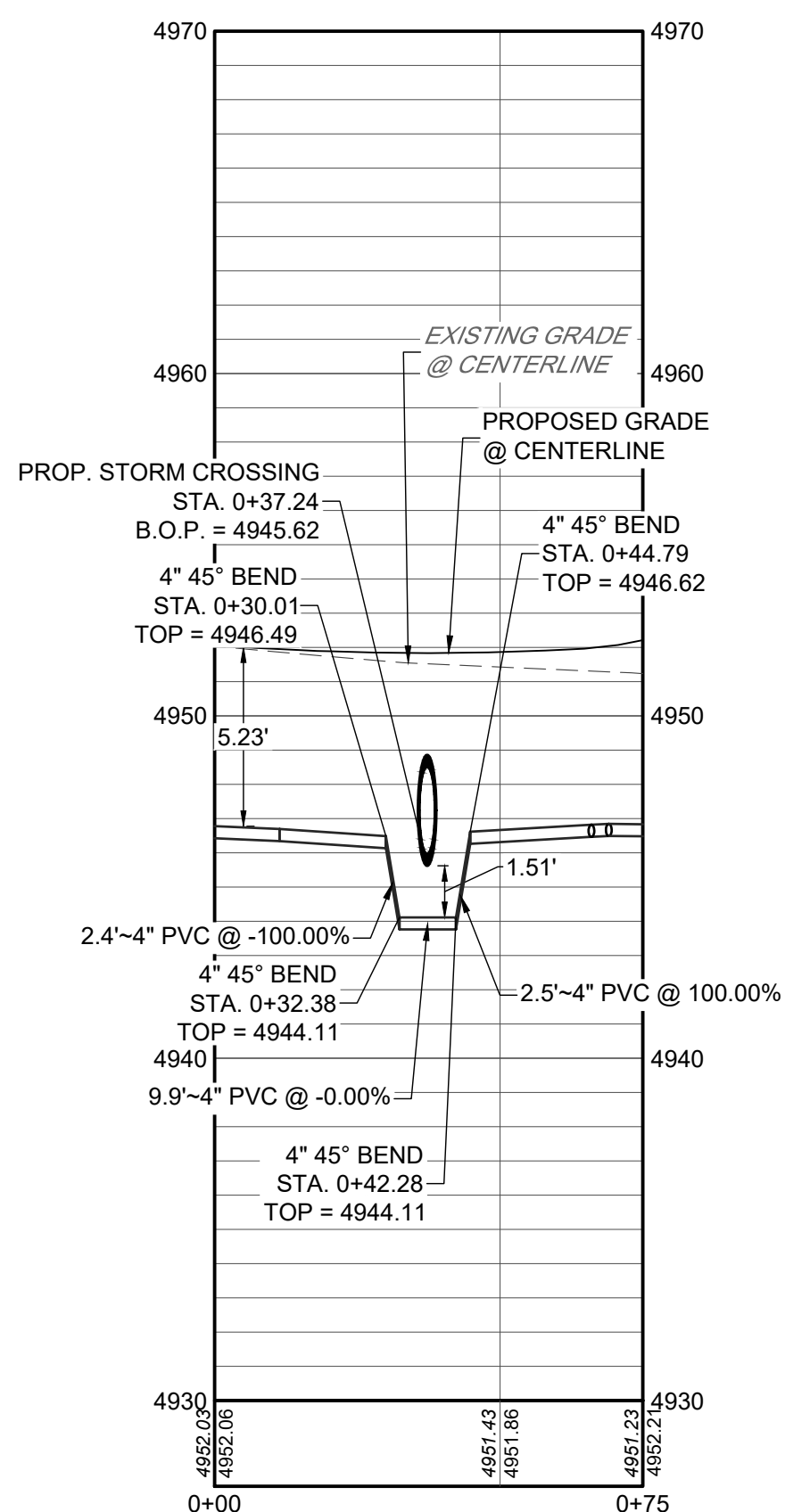
NON-POTABLE LOWERING 3 PLAN
SCALE: 1" = 30'

NON-POTABLE LOWERING 3 PROFILE
H: 1" = 30'
V: 1" = 5'



NON-POTABLE LOWERING 4 PLAN
SCALE: 1" = 30'

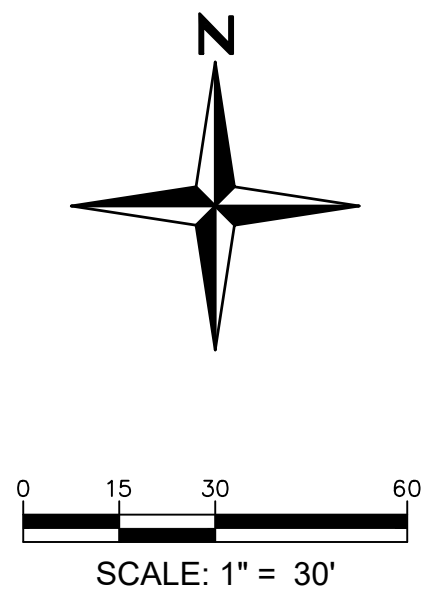
NON-POTABLE LOWERING 4 PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
NON-POTABLE LOWERINGS

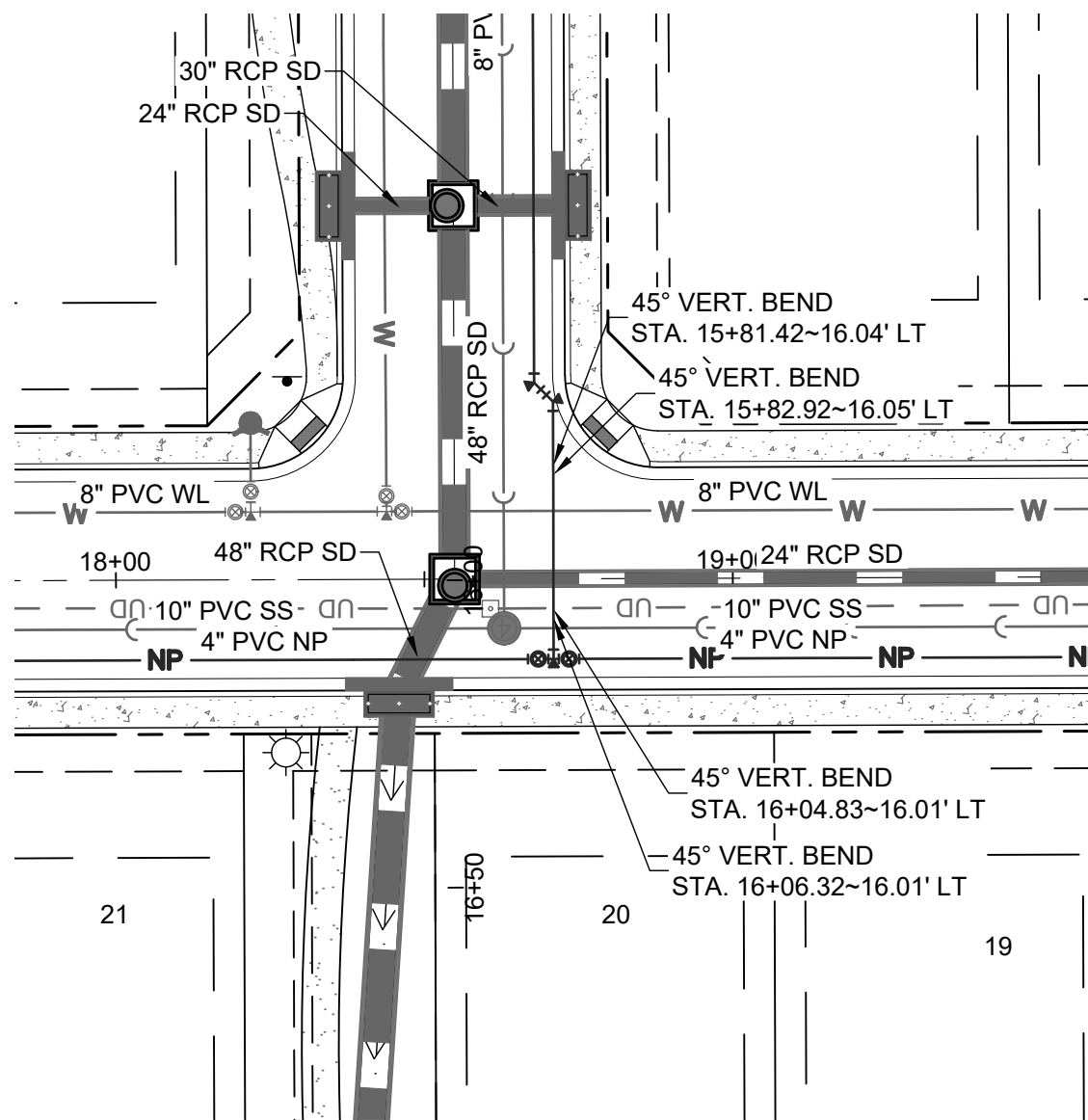
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C7.27

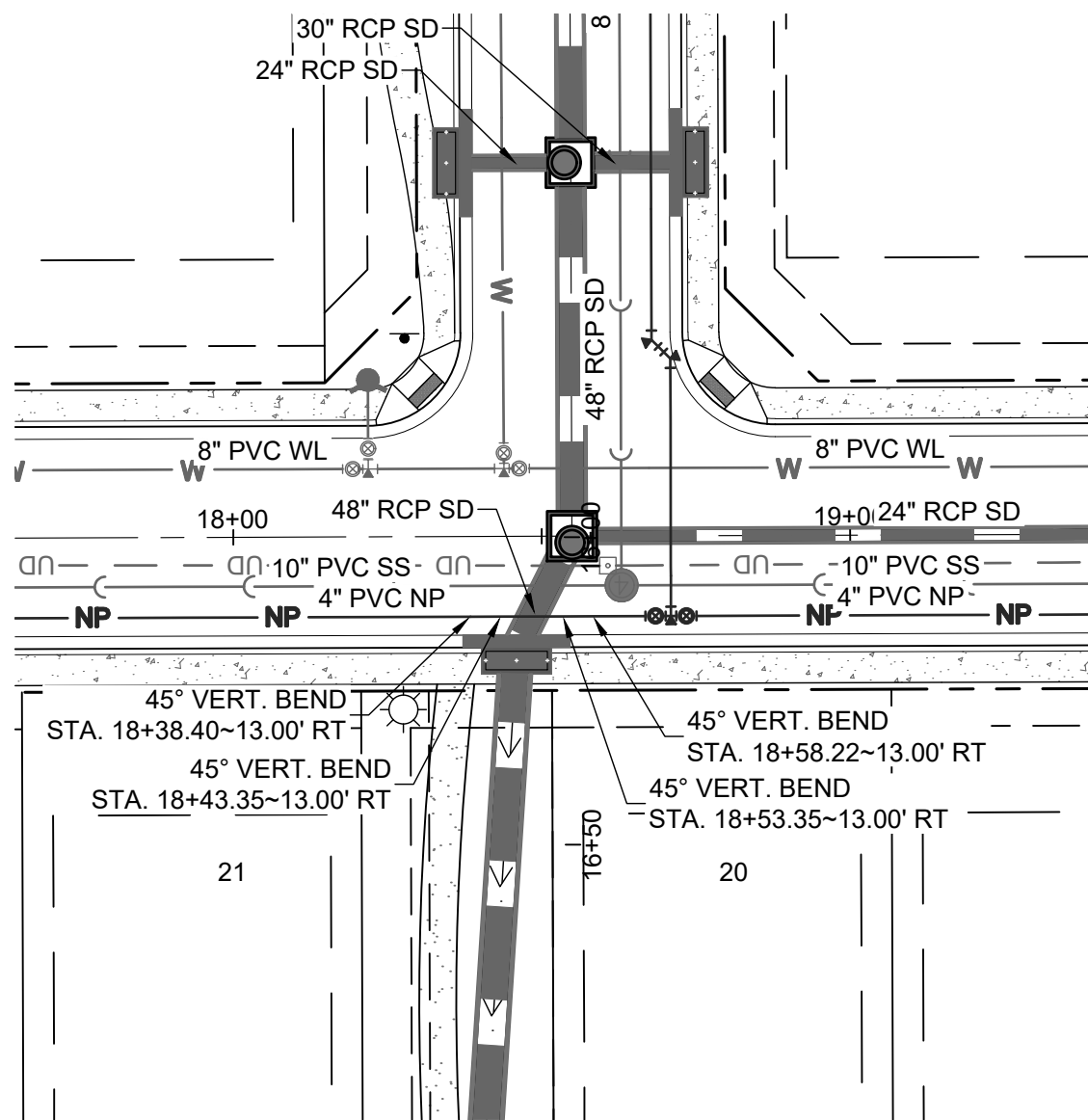


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Littleton, Colorado 80120
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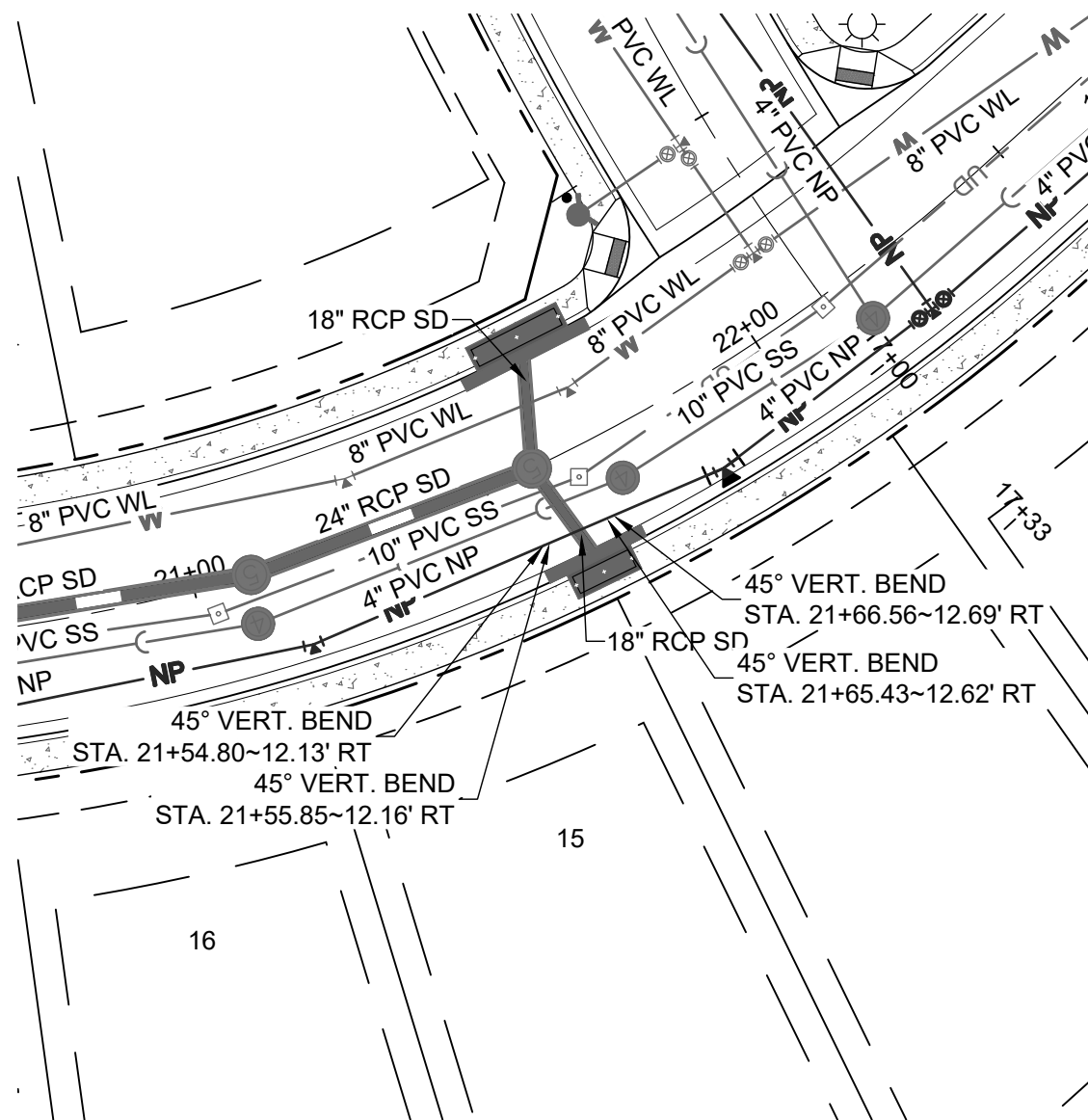
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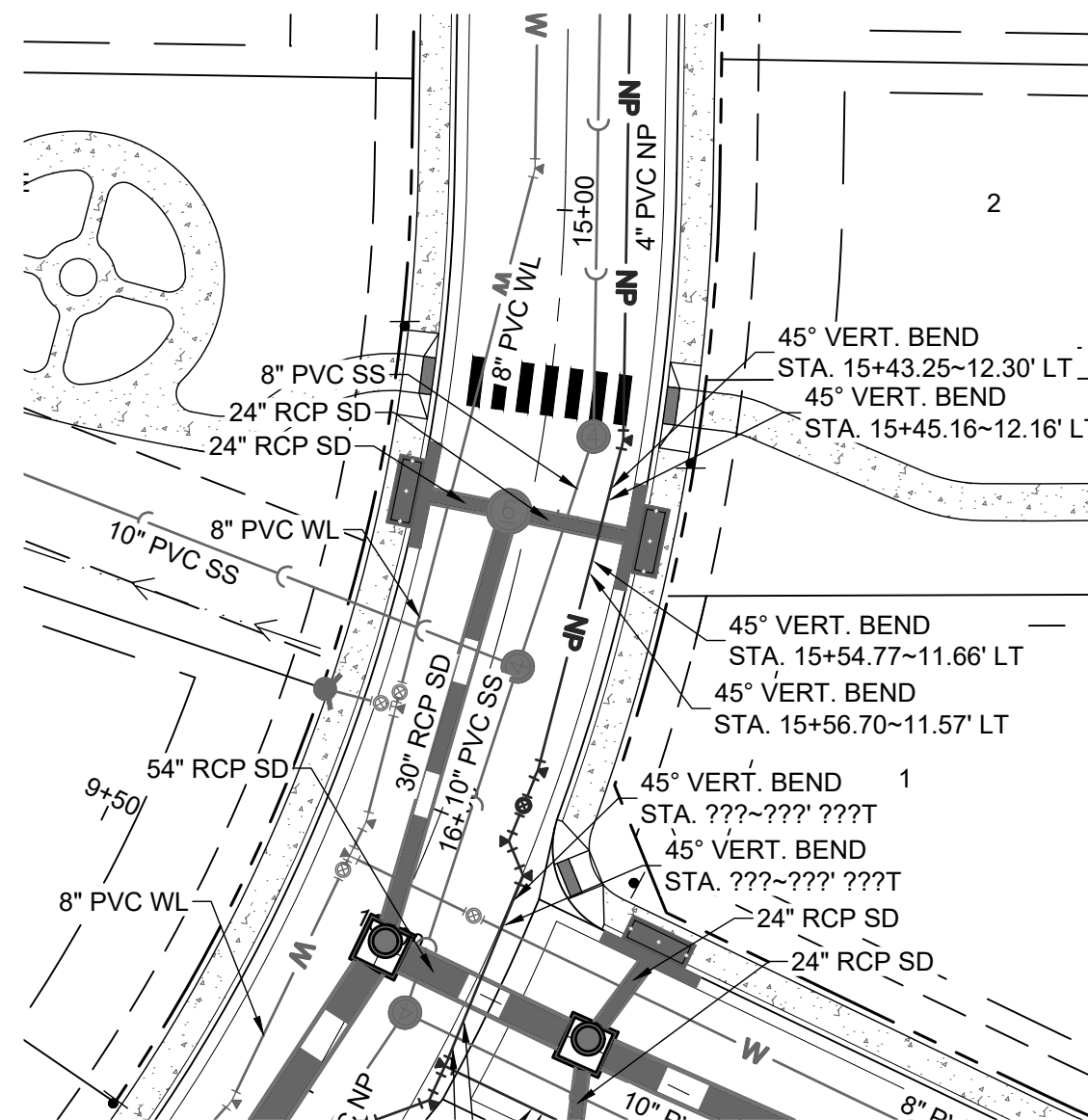
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SCALE: 1" = 30'



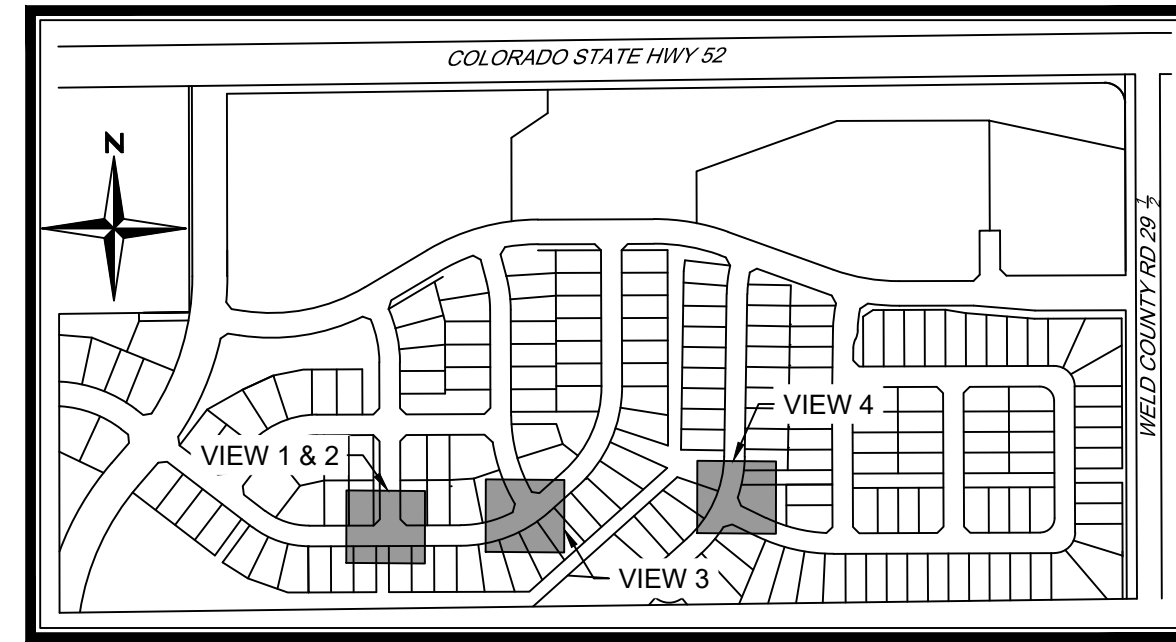
NON-POTABLE LOWERING 6 PLAN
SCALE: 1" = 30'



NON-POTABLE LOWERING 7 PLAN
SCALE: 1" = 30'



NON-POTABLE LOWERING 8 PLAN
SCALE: 1" = 30'

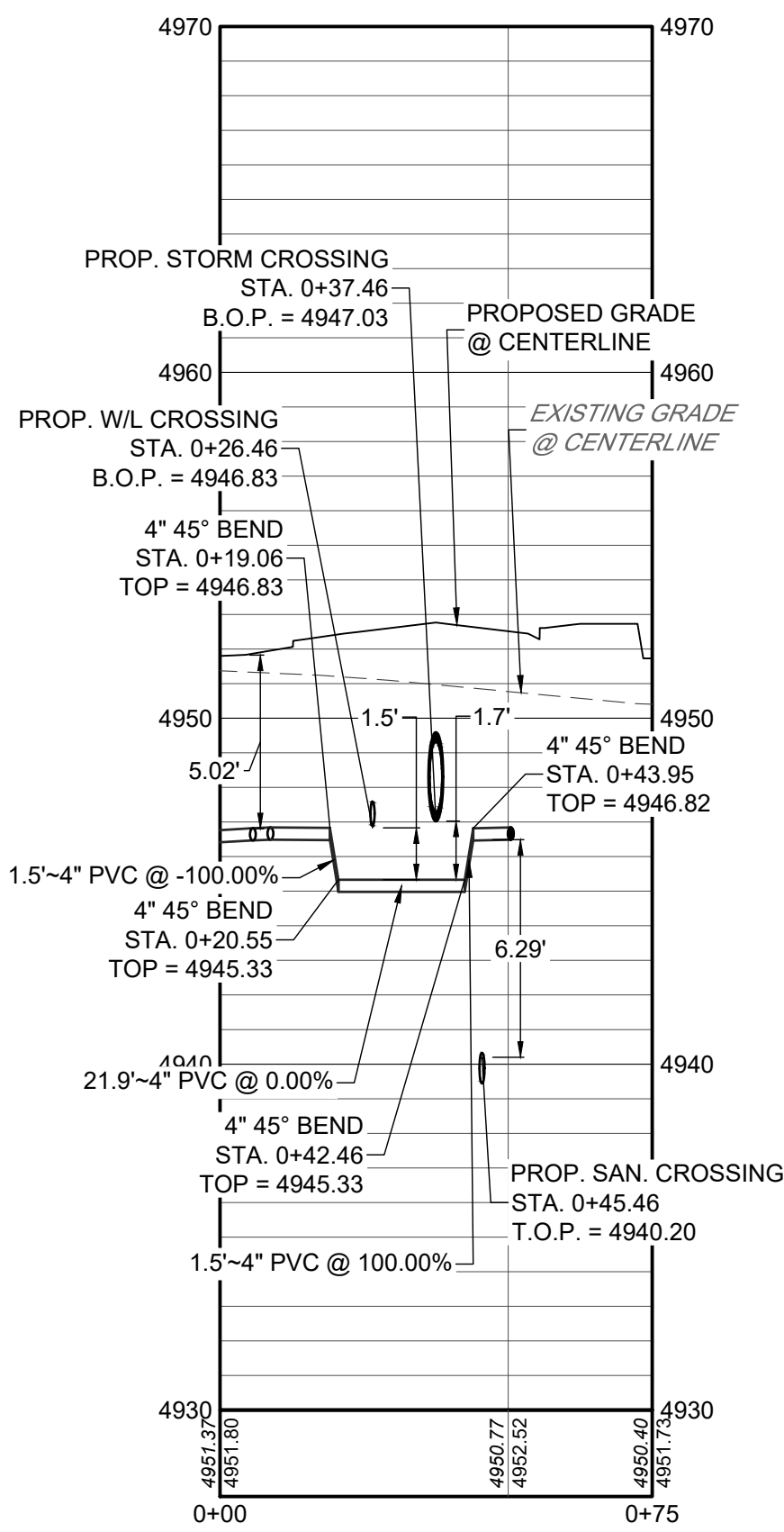


KEYMAP
N.T.S

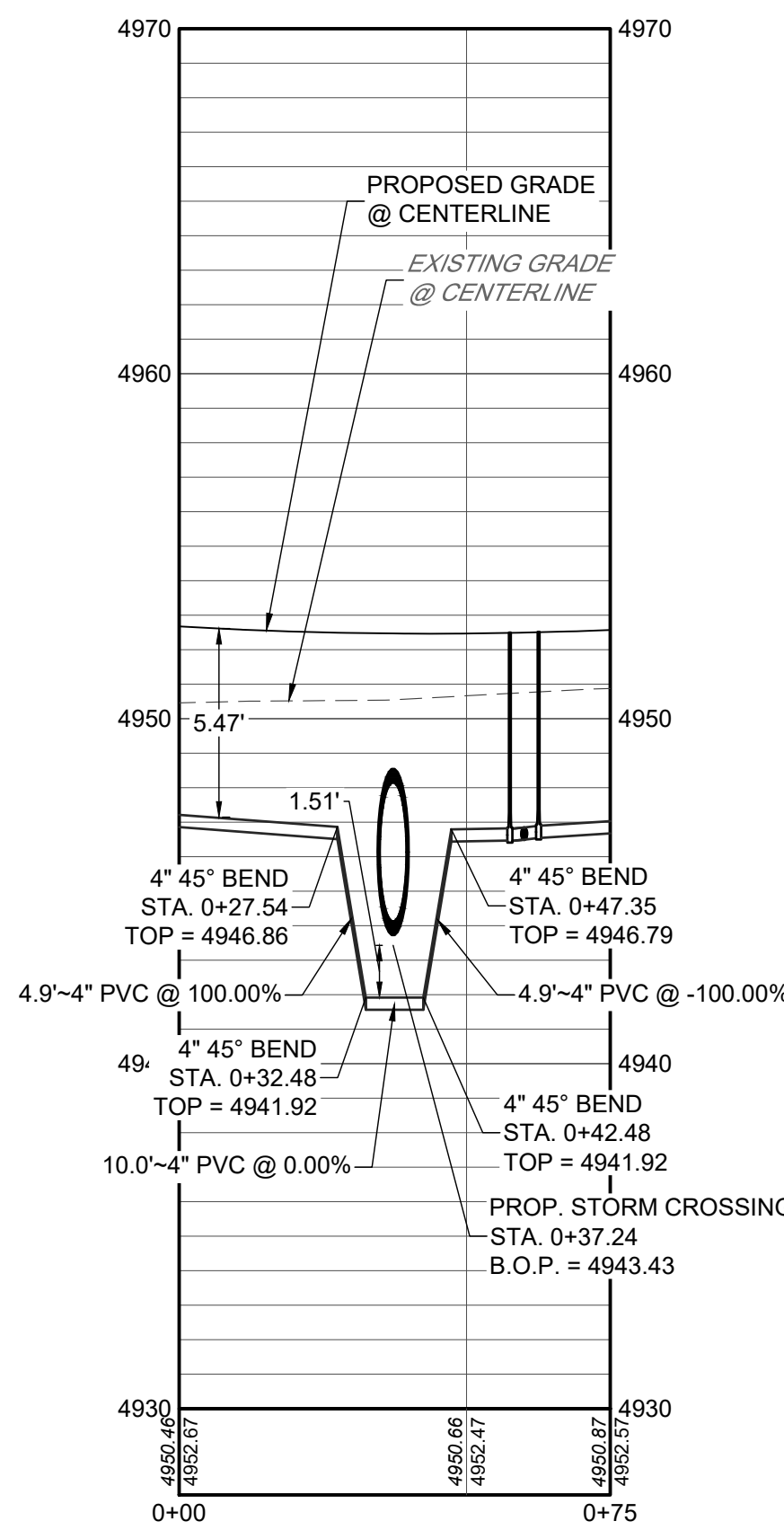
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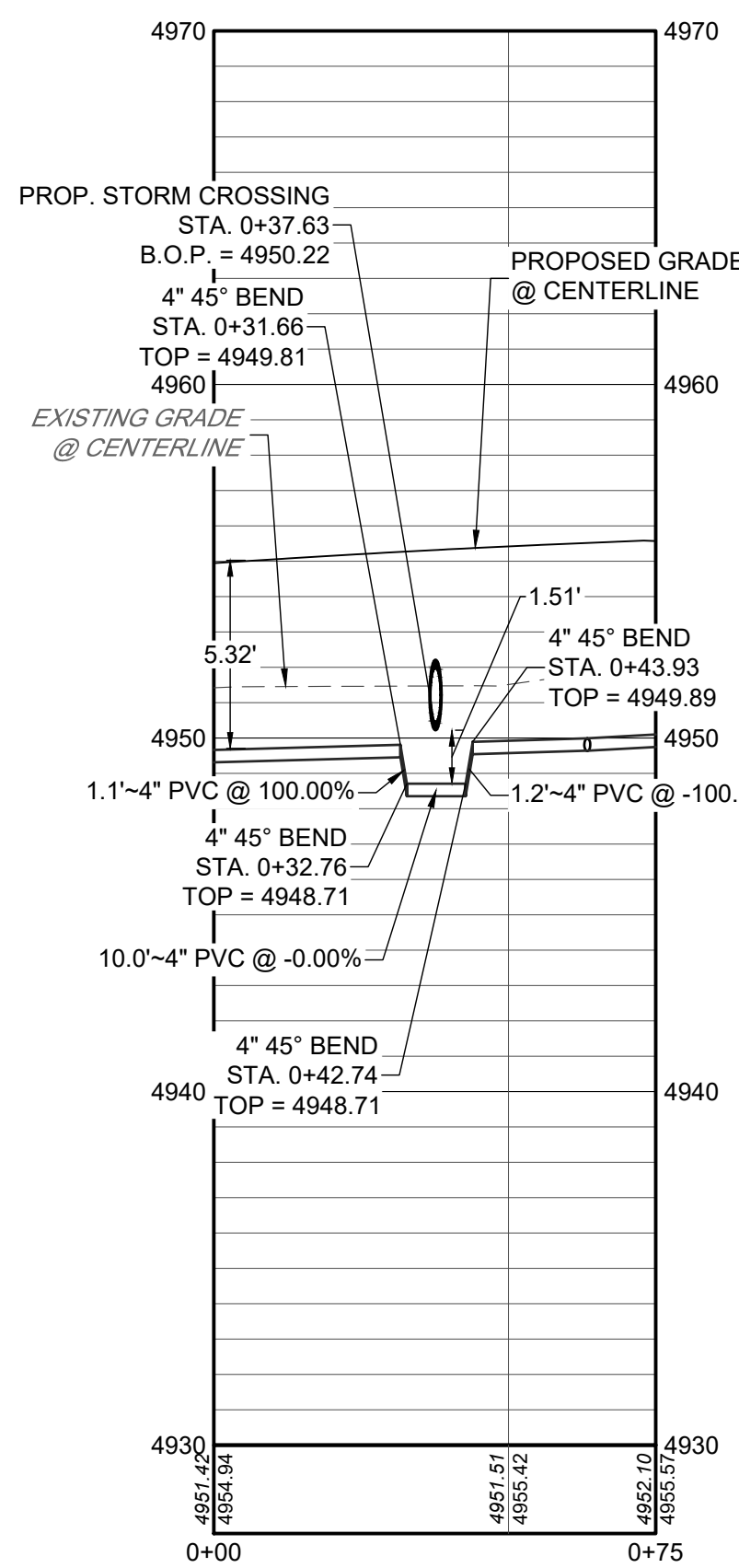
NON-POTABLE LOWERING 5 PROFILE
H: 1" = 30'
V: 1" = 5'



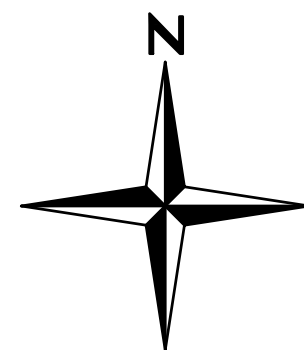
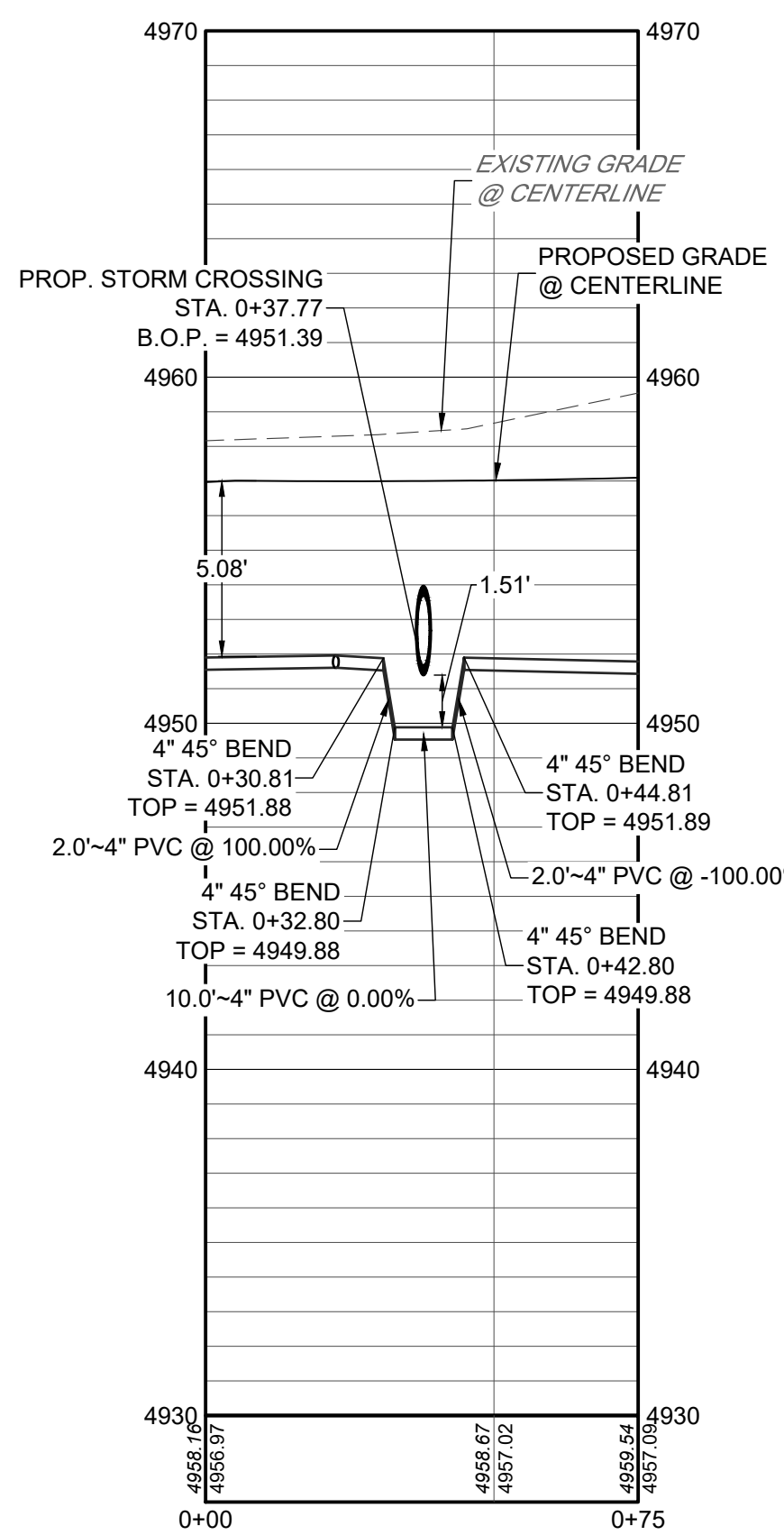
NON-POTABLE LOWERING 6 PROFILE
H: 1" = 30'
V: 1" = 5'



NON-POTABLE LOWERING 7 PROFILE
H: 1" = 30'
V: 1" = 5'



NON-POTABLE LOWERING 8 PROFILE
H: 1" = 30'
V: 1" = 5'



0 25 50 100
SCALE: 1" = 50'

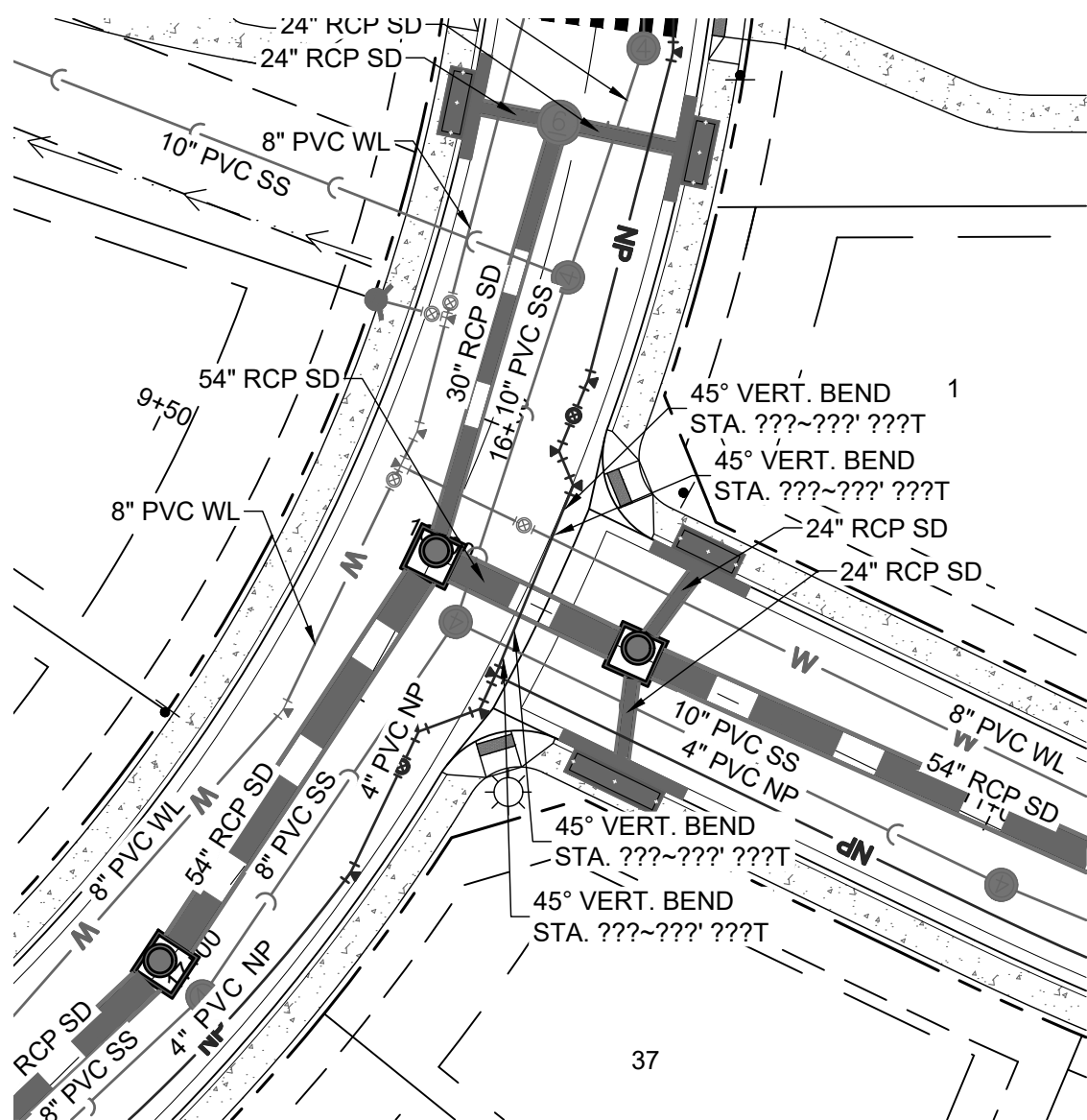
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
NON-POTABLE LOWERINGS

SHEET

C7.28

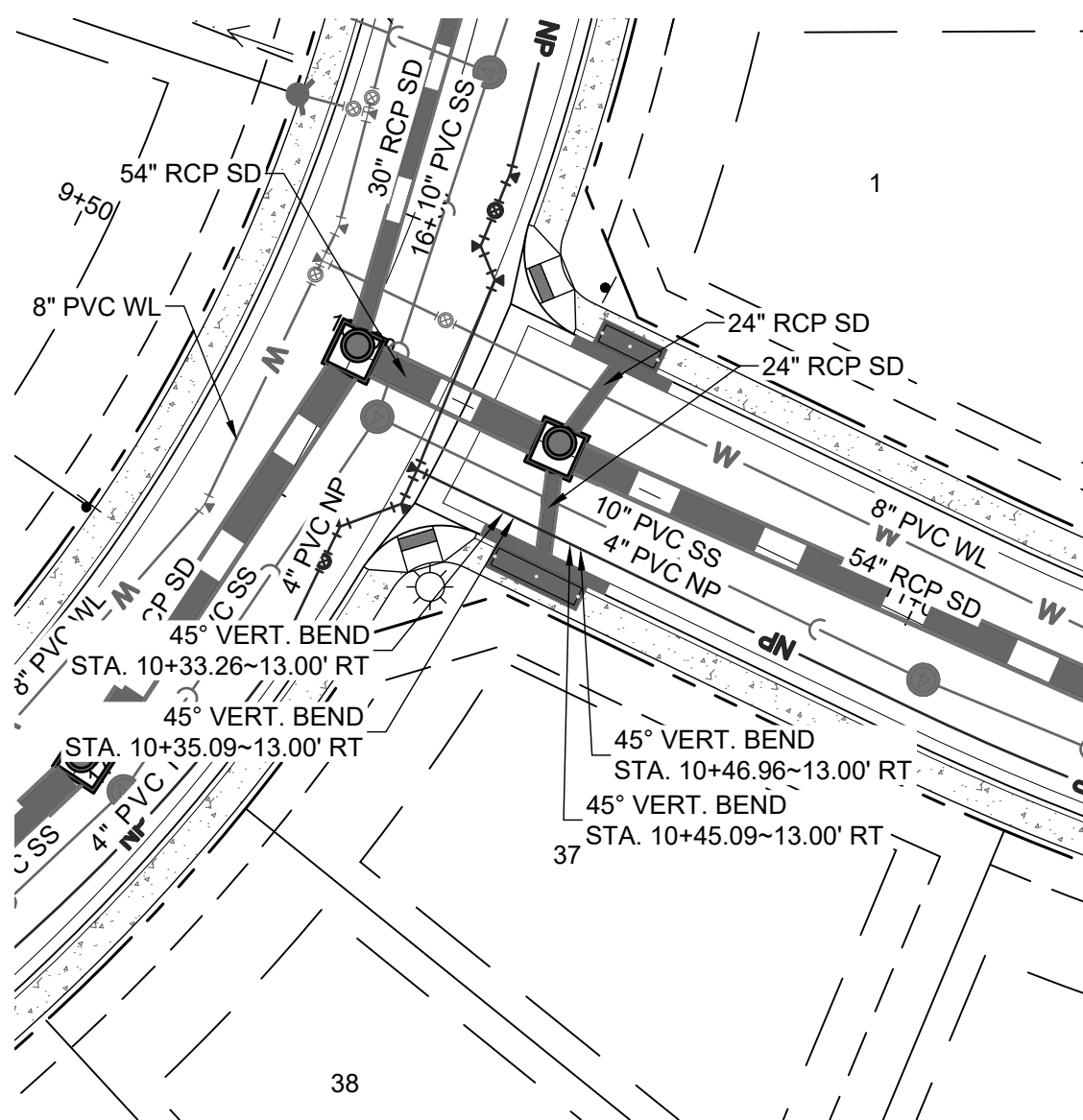
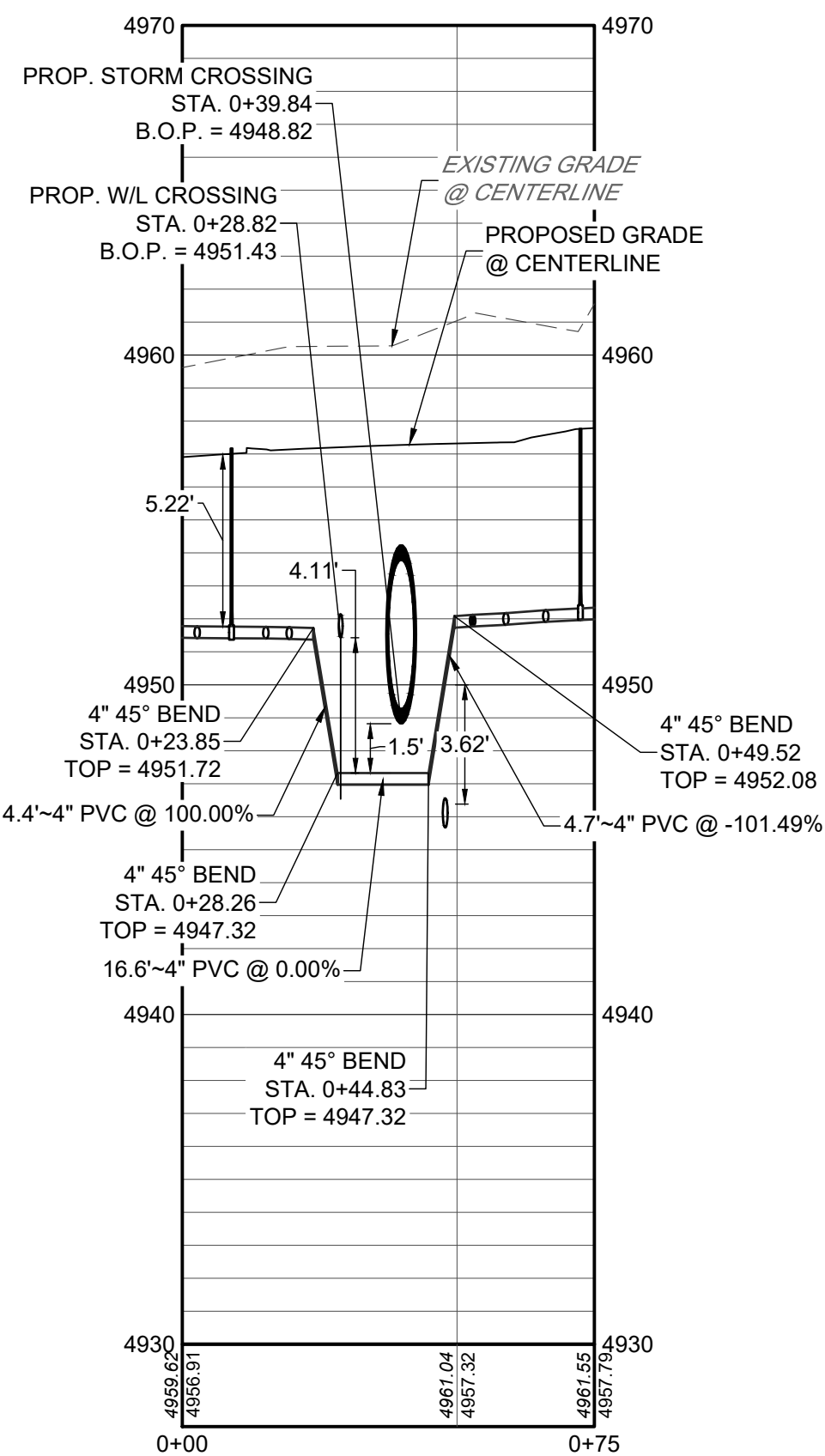


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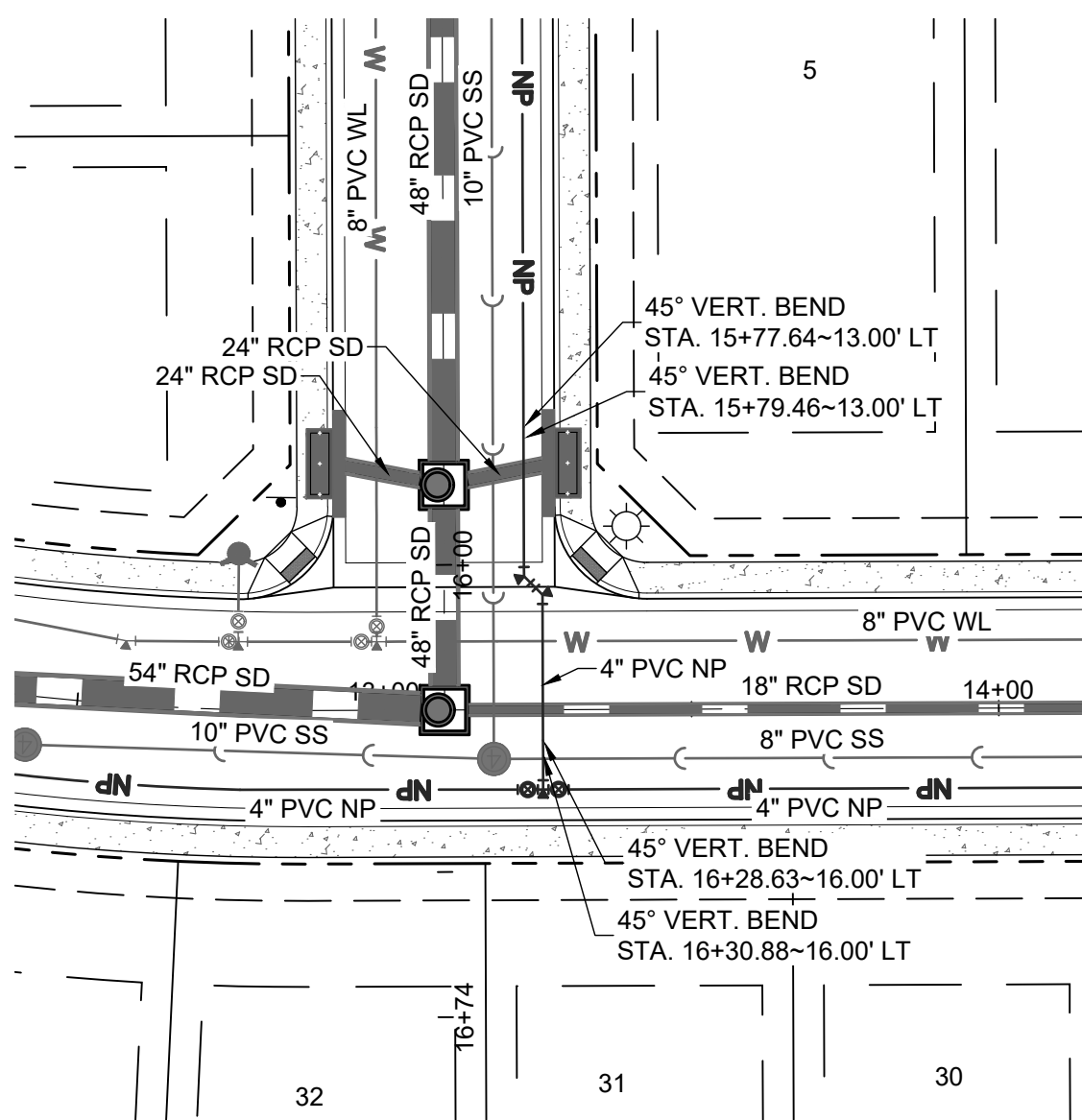
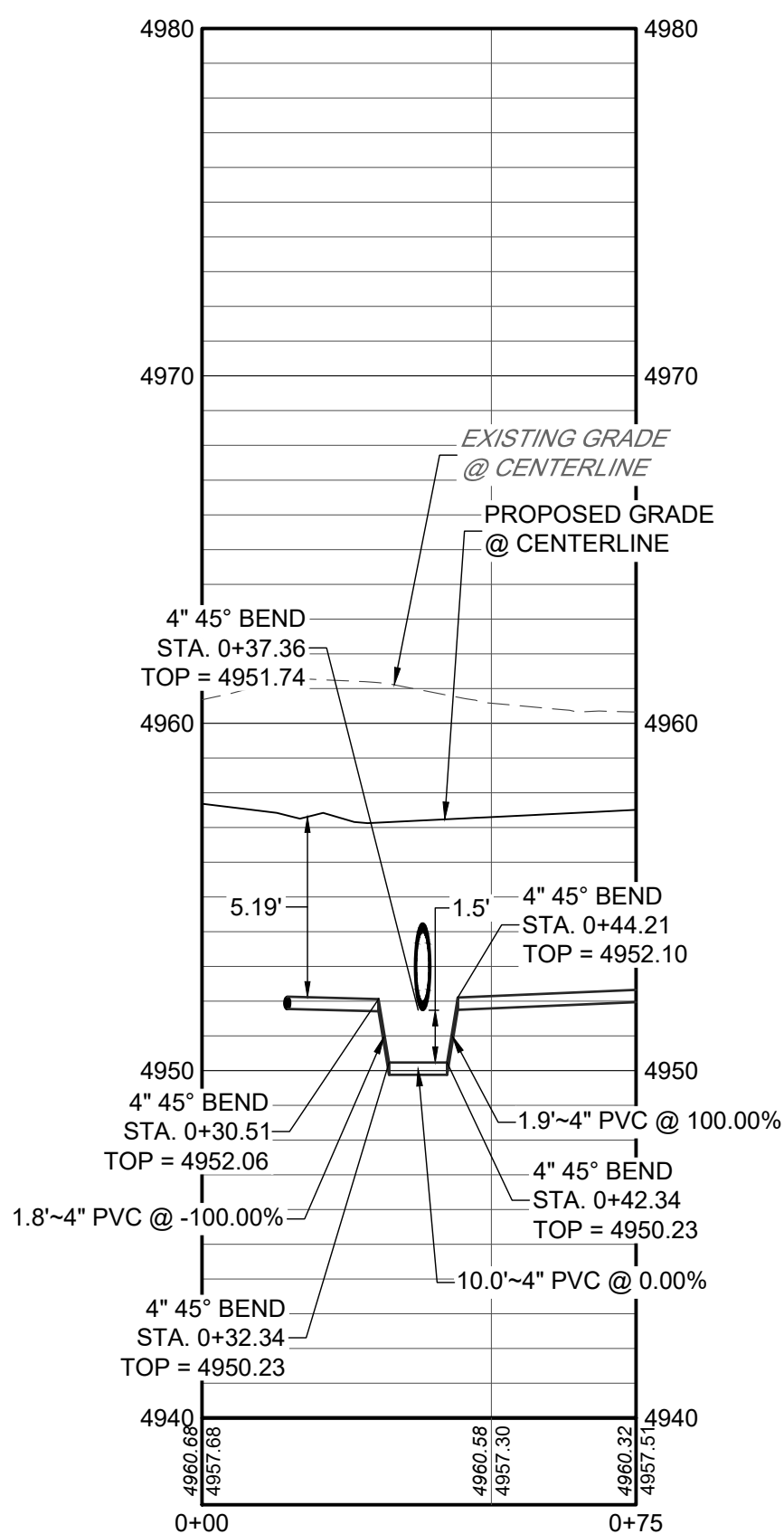
NON-POTABLE LOWERING 9 PLAN
SCALE: 1" = 30'

NON-POTABLE LOWERING 9 PROFILE
H: 1" = 30'
V: 1" = 5'



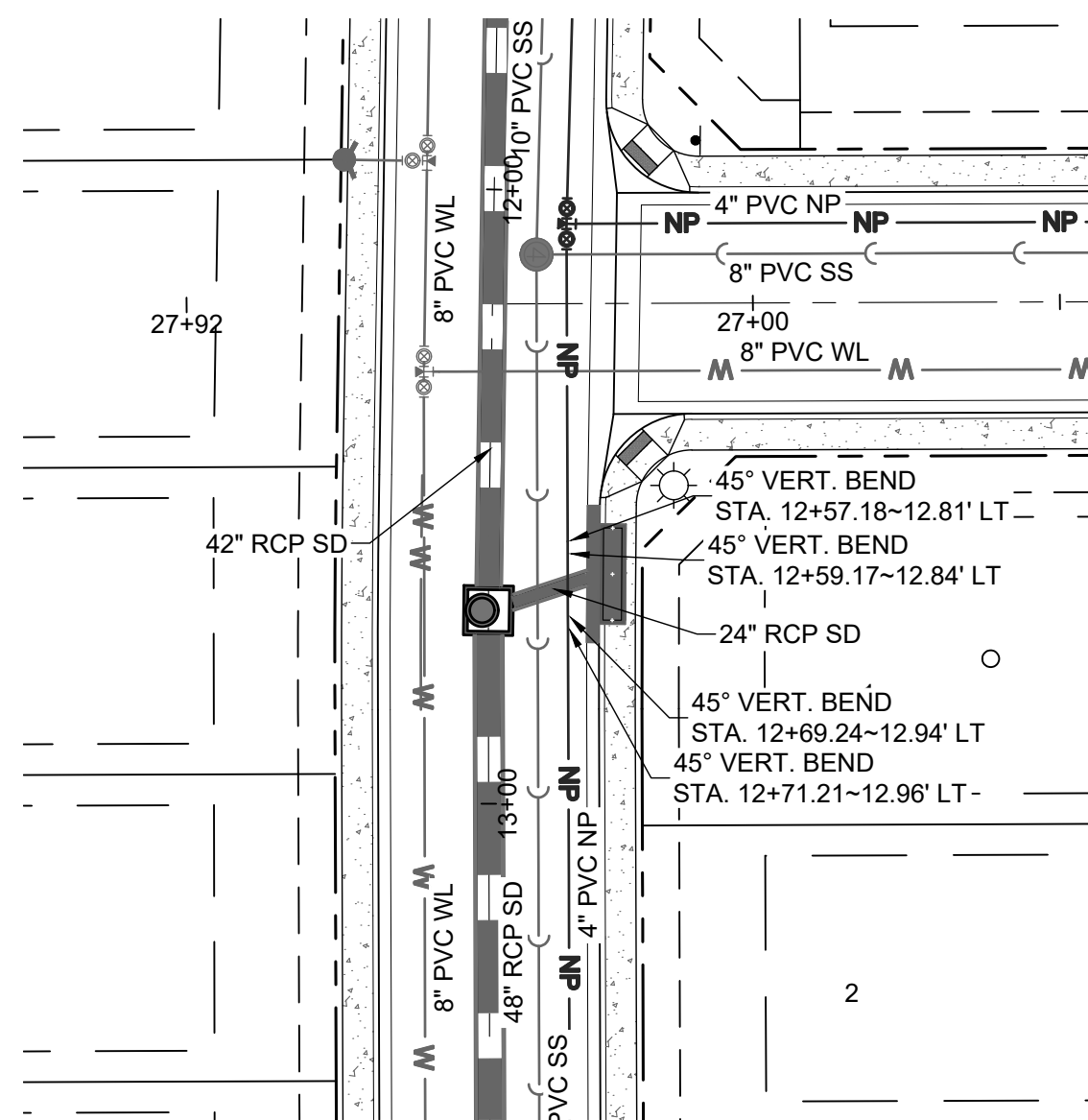
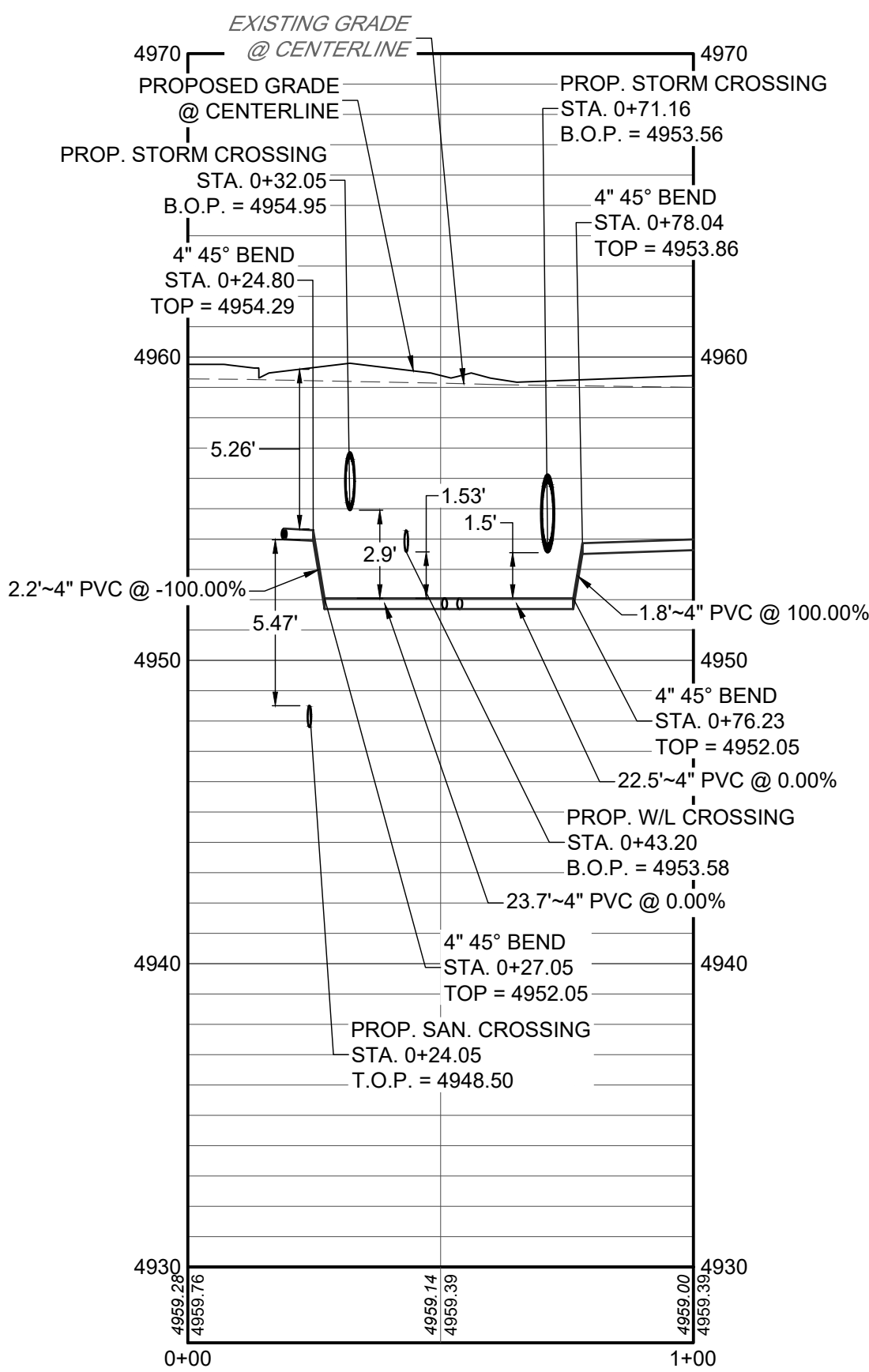
NON-POTABLE LOWERING 10 PLAN
SCALE: 1" = 30'

Non-Potable Lowering 10 PROFILE
H: 1" = 30'
V: 1" = 5'



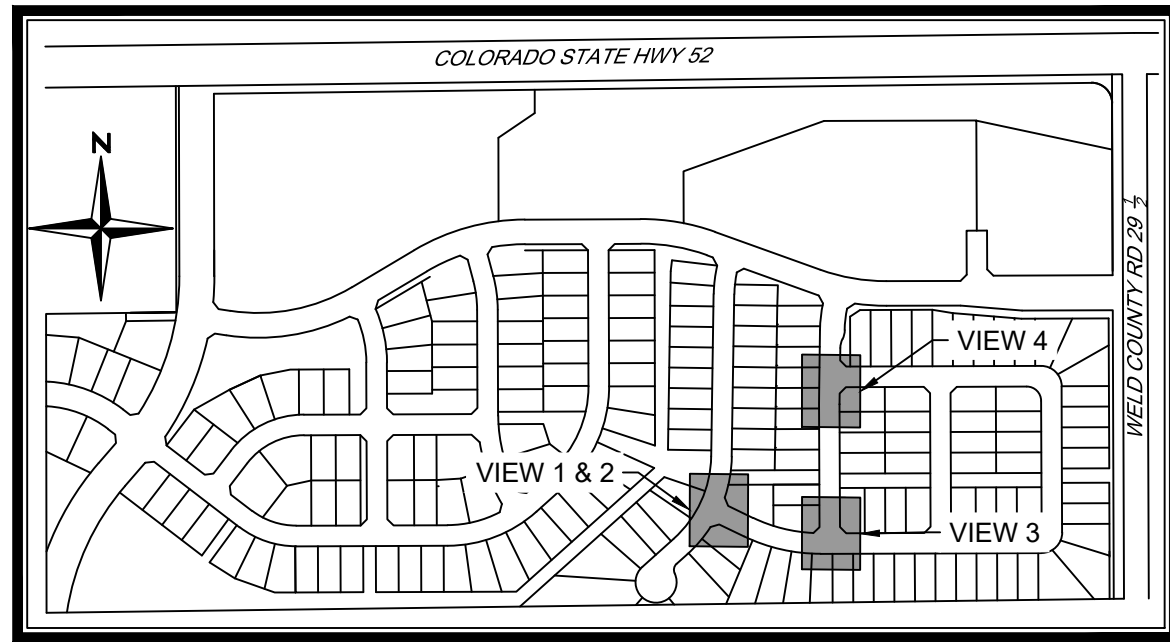
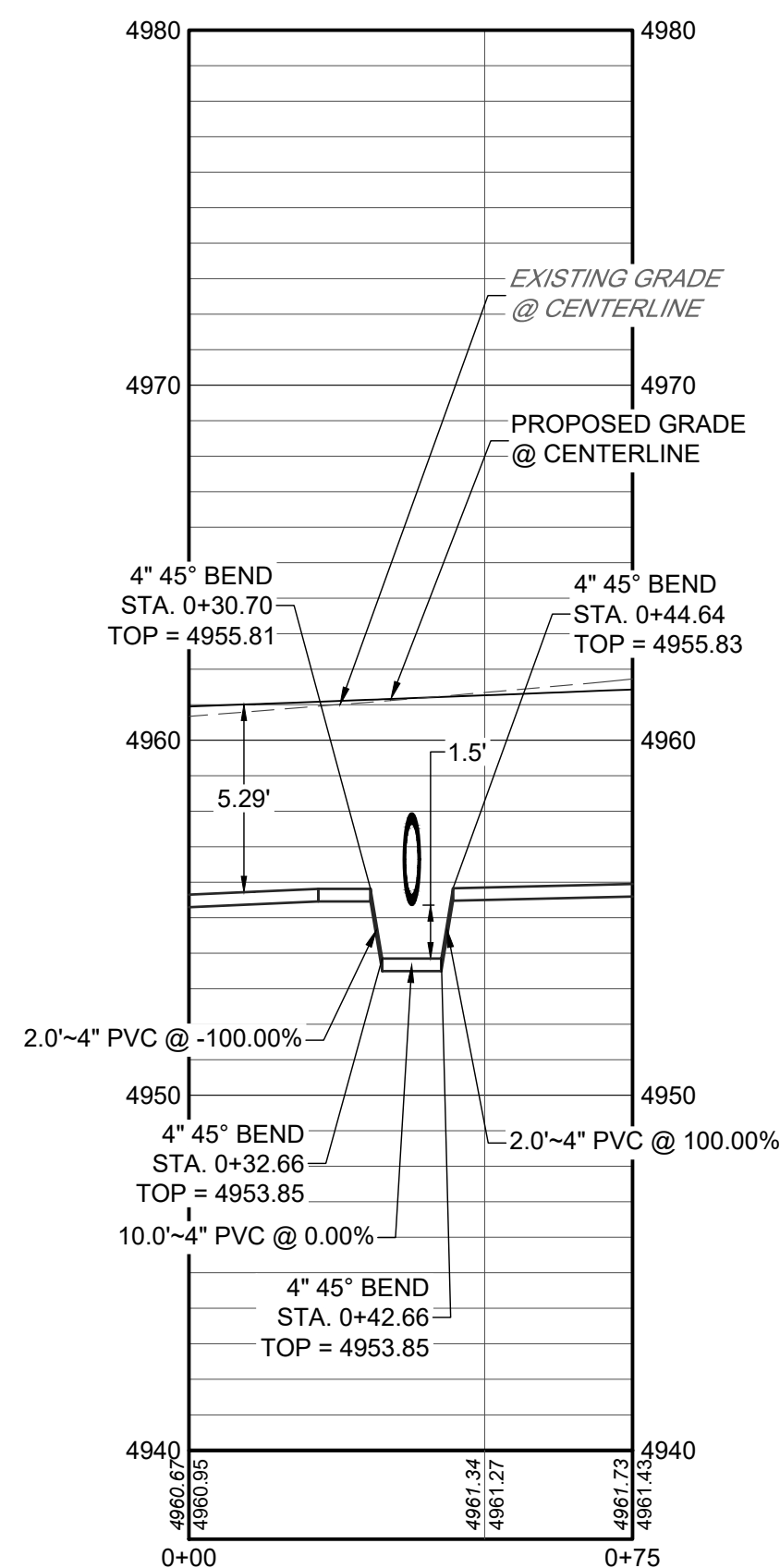
NON-POTABLE LOWERING 11 PLAN
SCALE: 1" = 30'

NON-POTABLE LOWERING 11 PROFILE
H: 1" = 30'
V: 1" = 5'



NON-POTABLE LOWERING 12 PLAN
SCALE: 1" = 30'

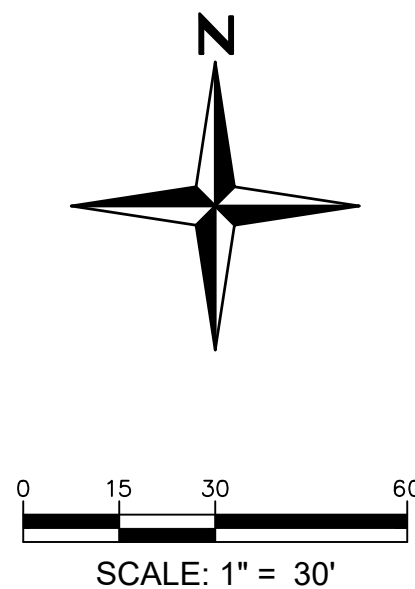
NON-POTABLE LOWERING 12 PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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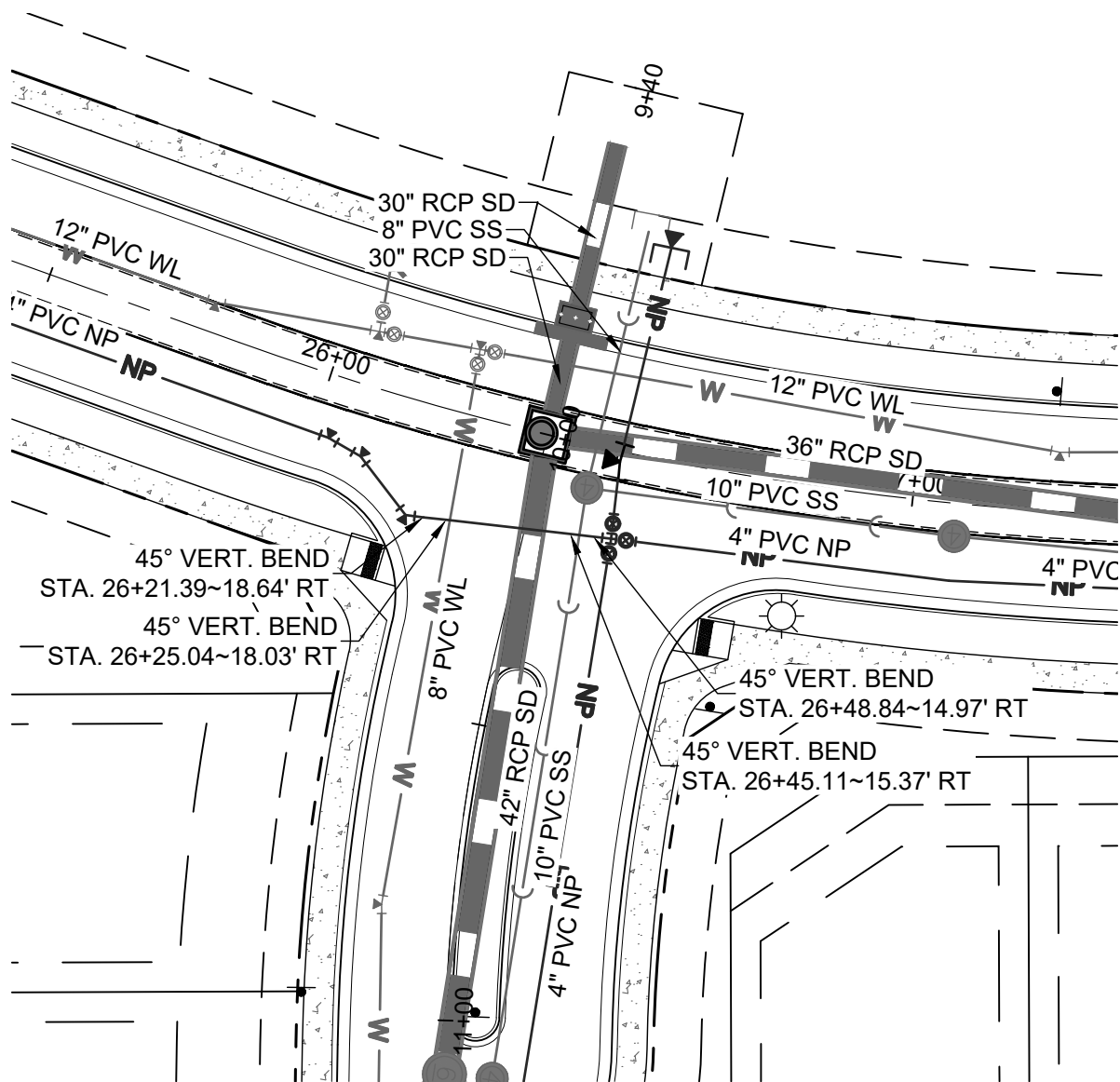
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
NON-POTABLE LOWERINGS

SHEET

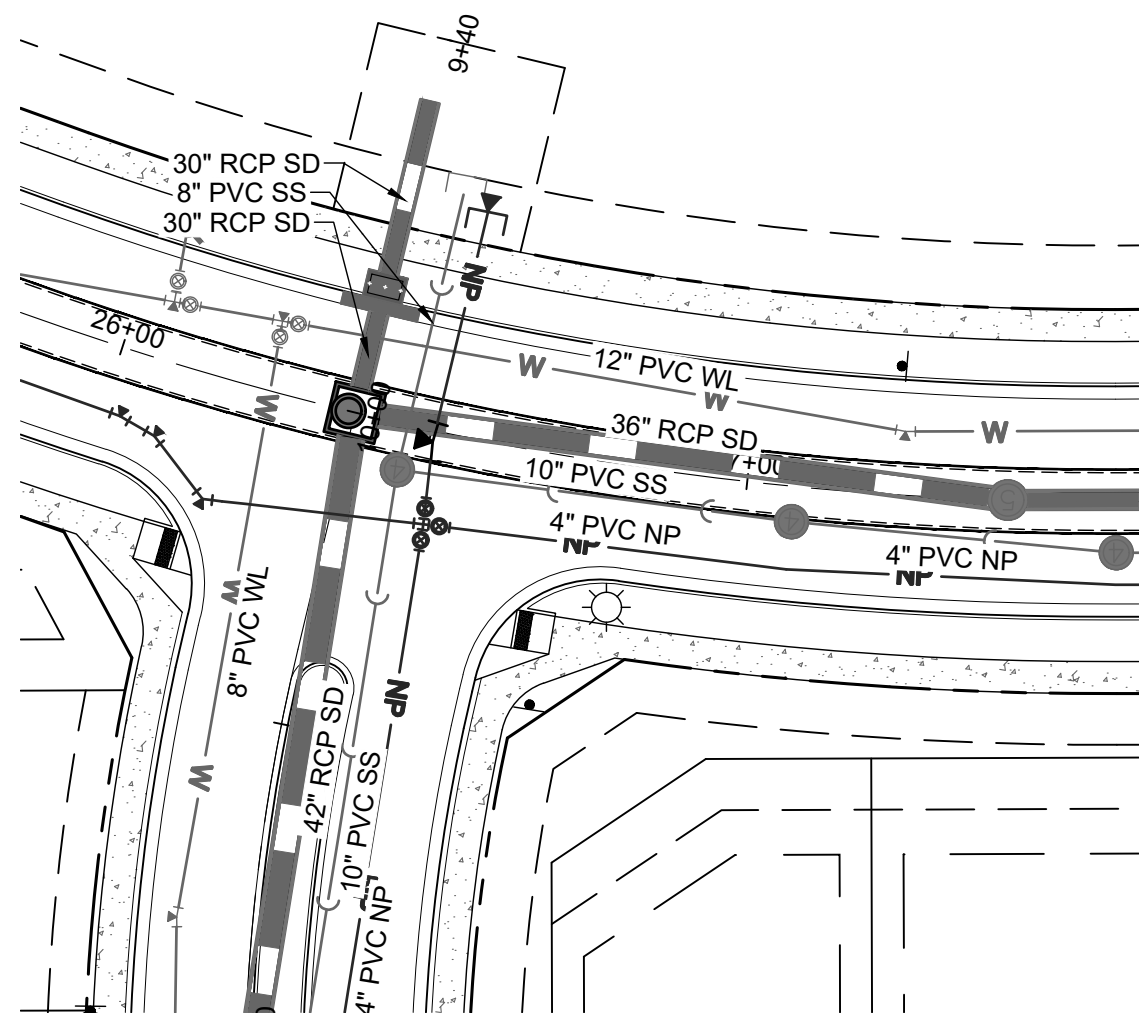
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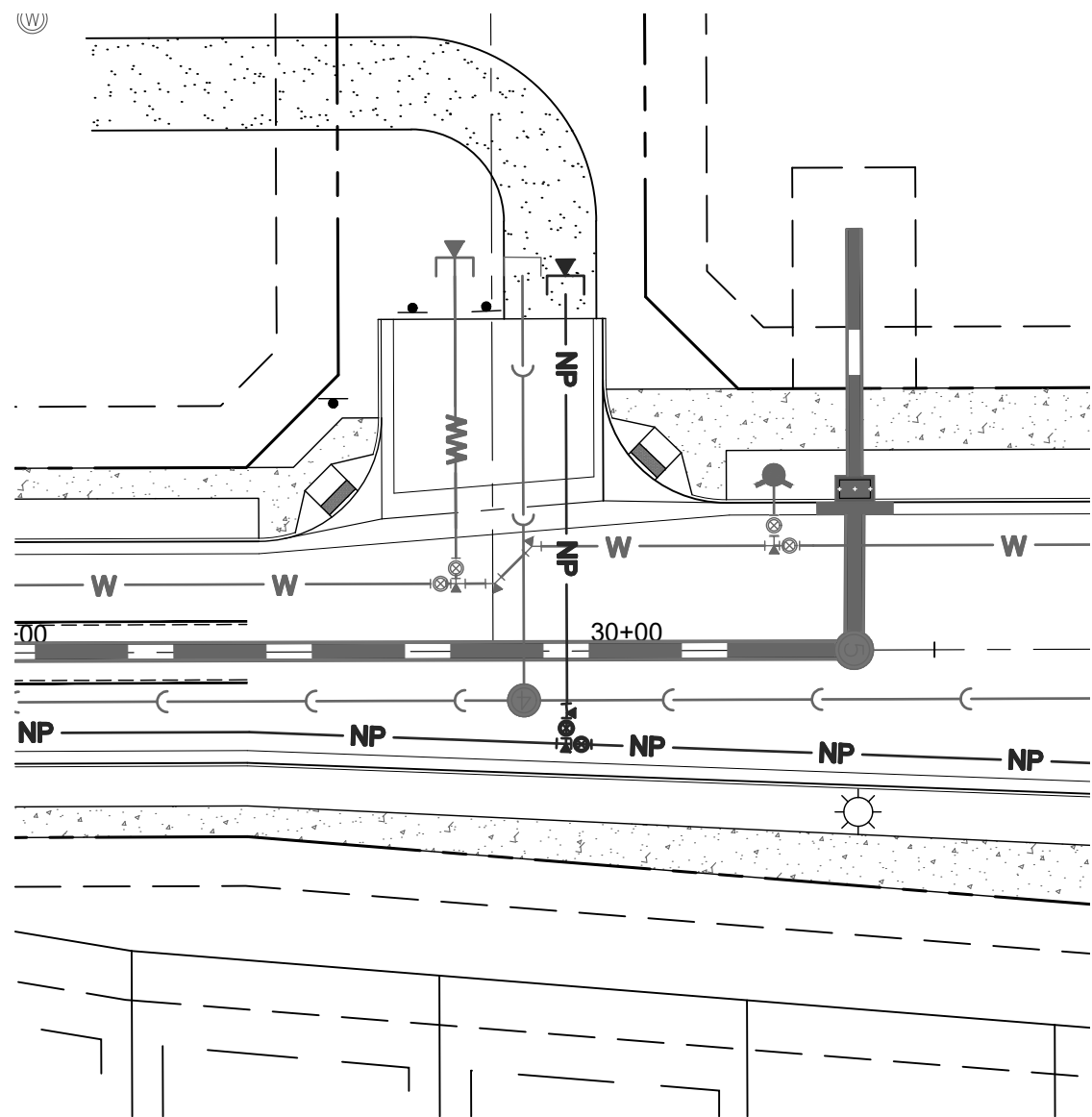
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NON-POTABLE LOWERING 13 PLAN
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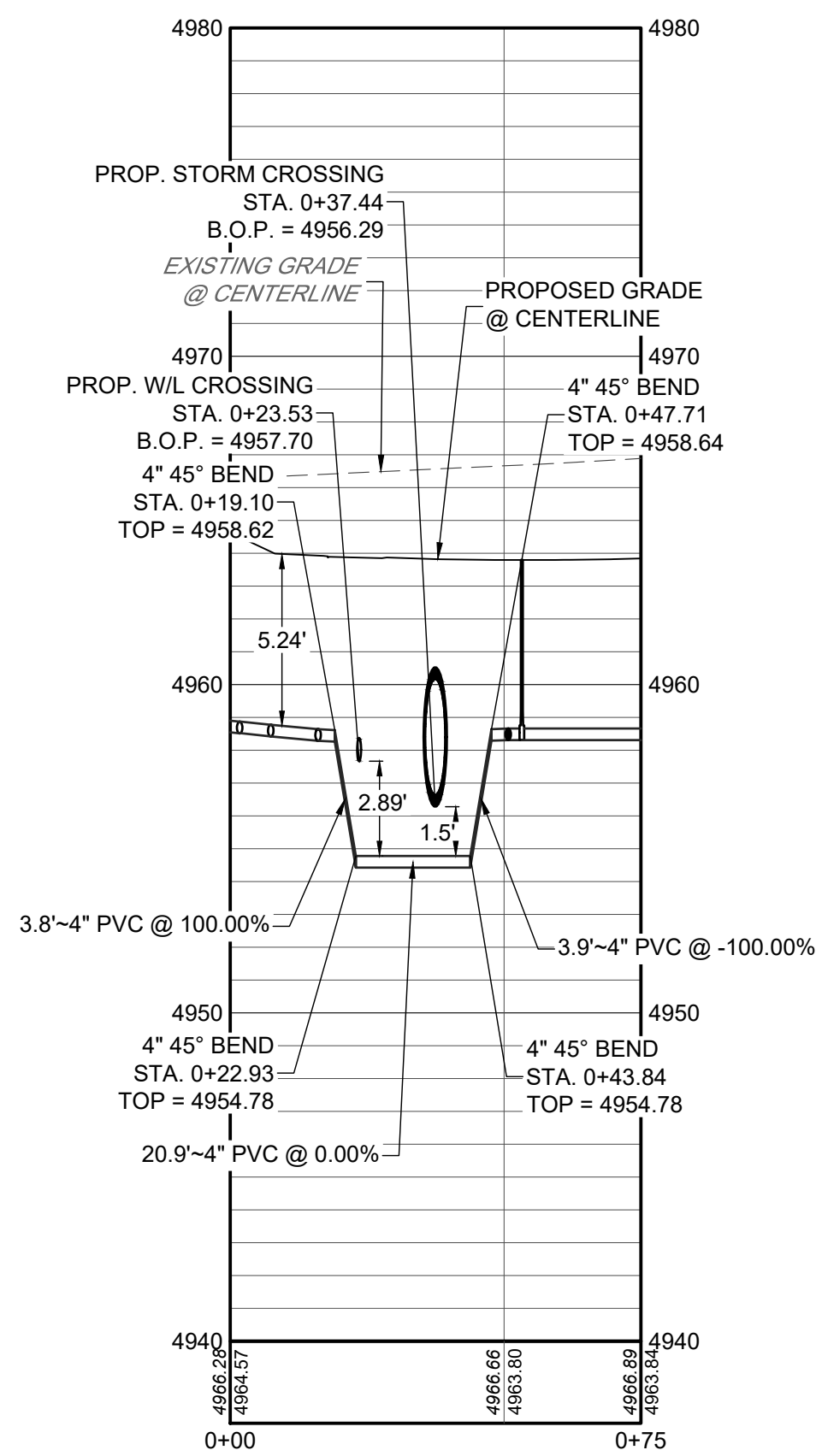


NON-POTABLE LOWERING 14 PLAN
SCALE: 1" = 30'

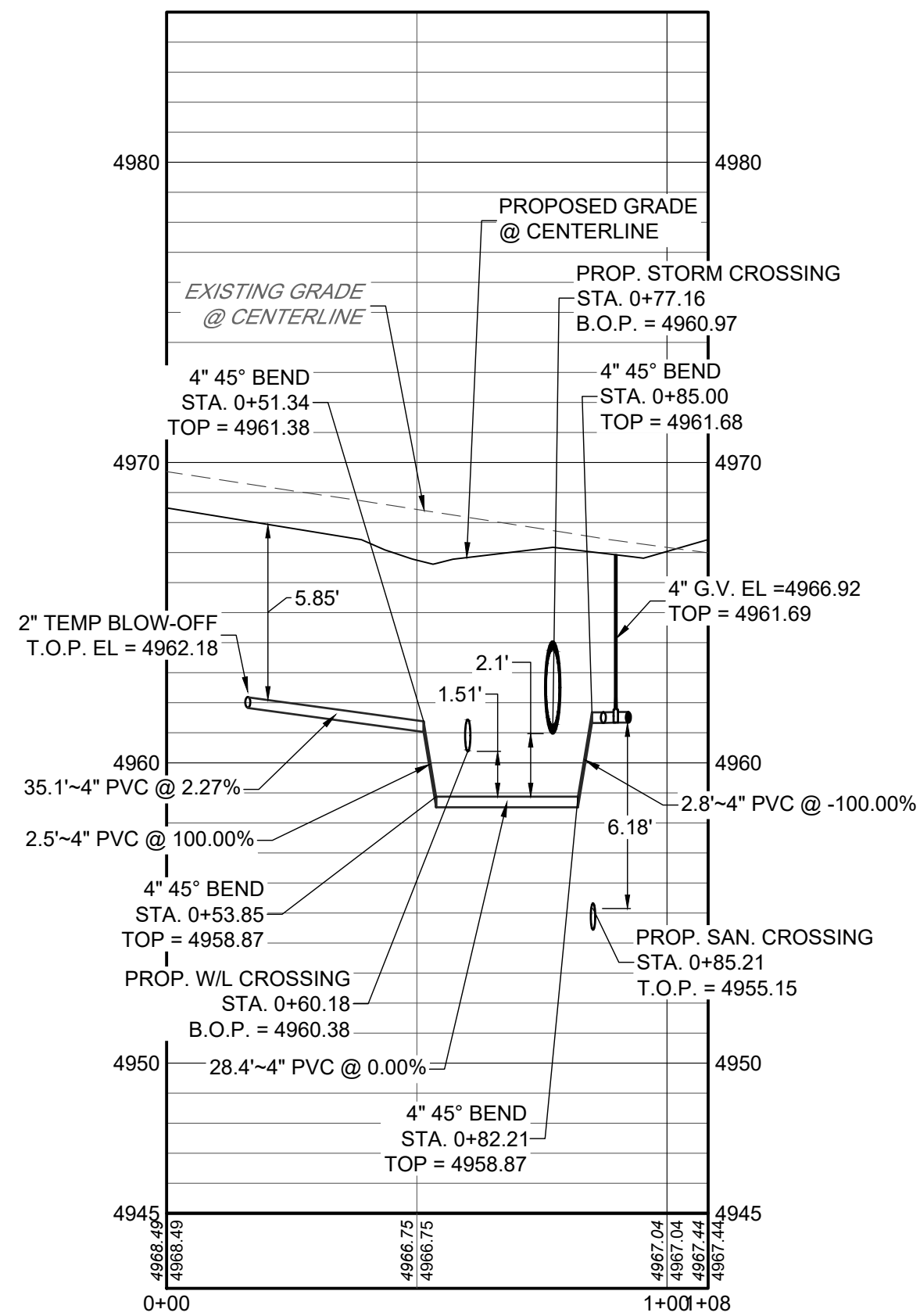


NON-POTABLE LOWERING 15 PLAN
SCALE: 1" = 30'

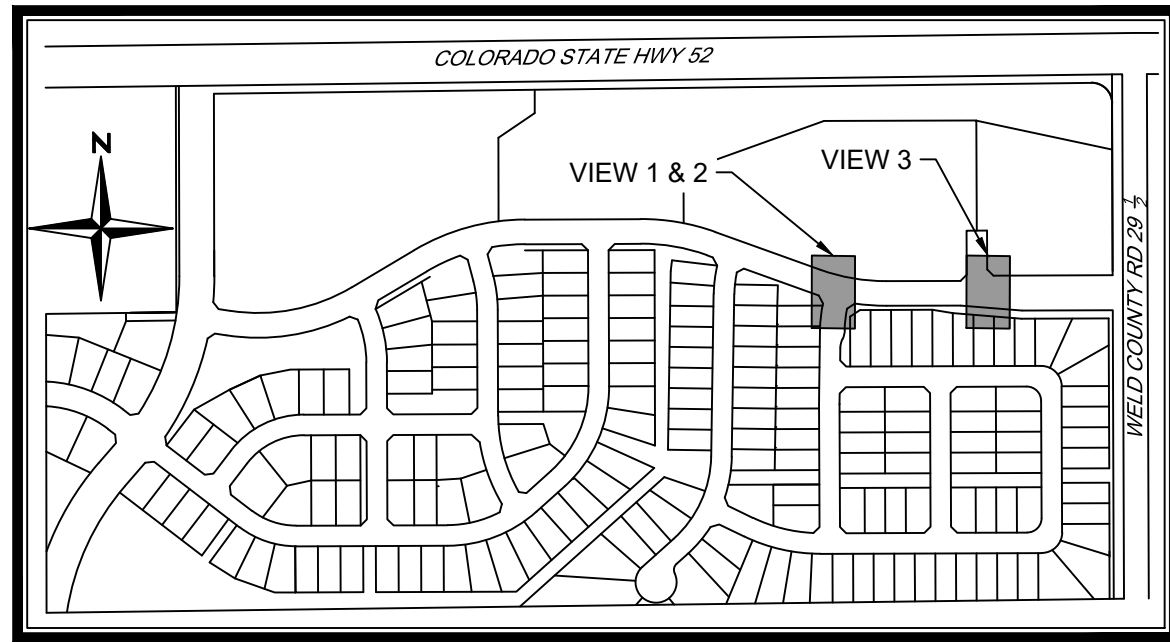
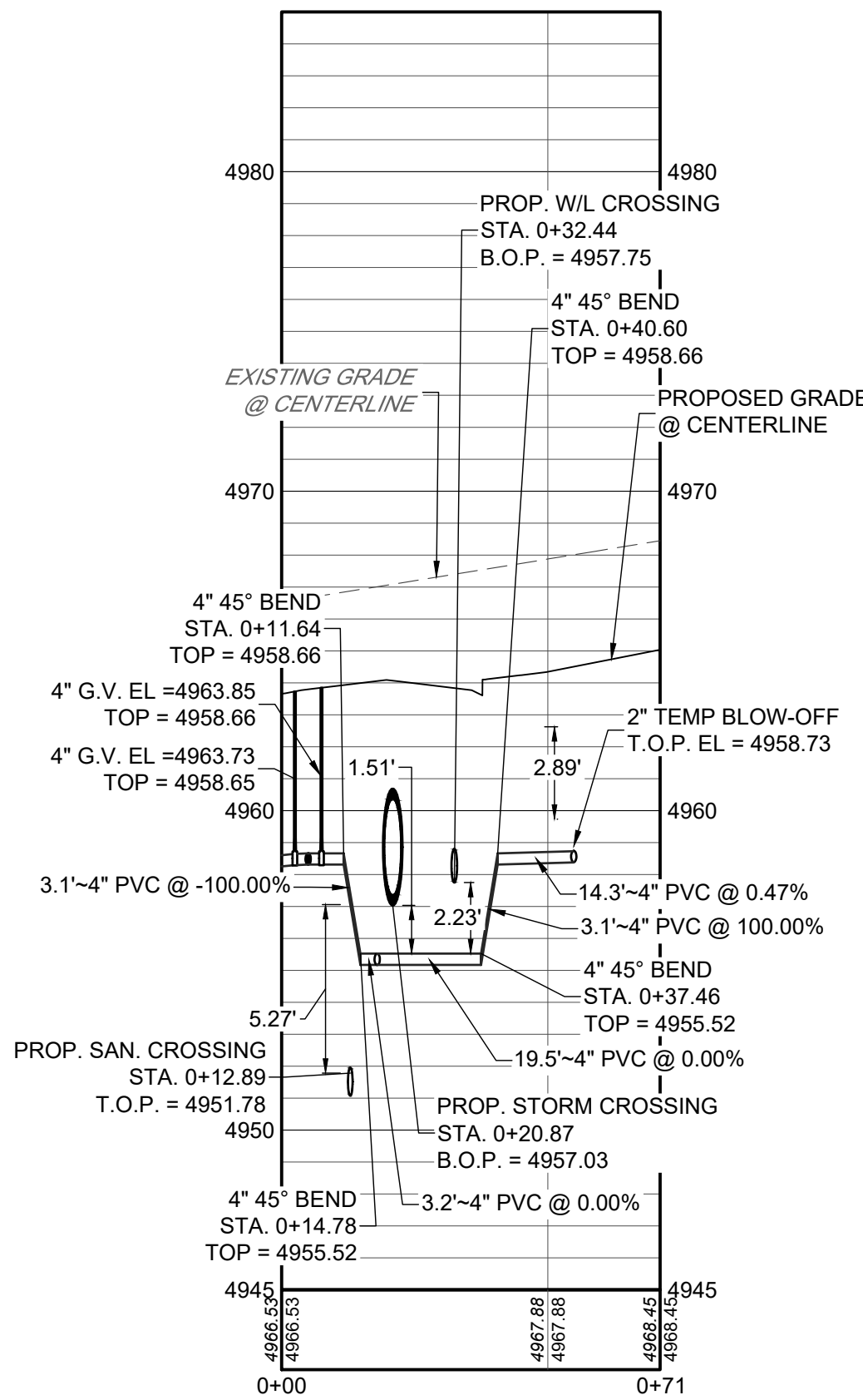
NON-POTABLE LOWERING 13 PROFILE
H: 1" = 30'
V: 1" = 5



NON-POTABLE LOWERING 14 PROFILE
H: 1" = 30'
V: 1" = 5



NON-POTABLE LOWERING 15 PROFILE
H: 1" = 30'
V: 1" = 5



KEYMAP
N.T.S

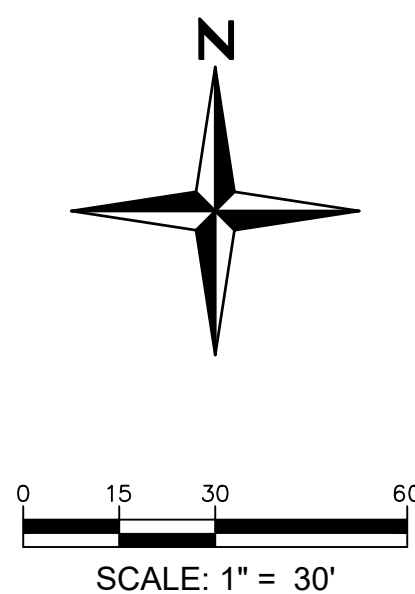
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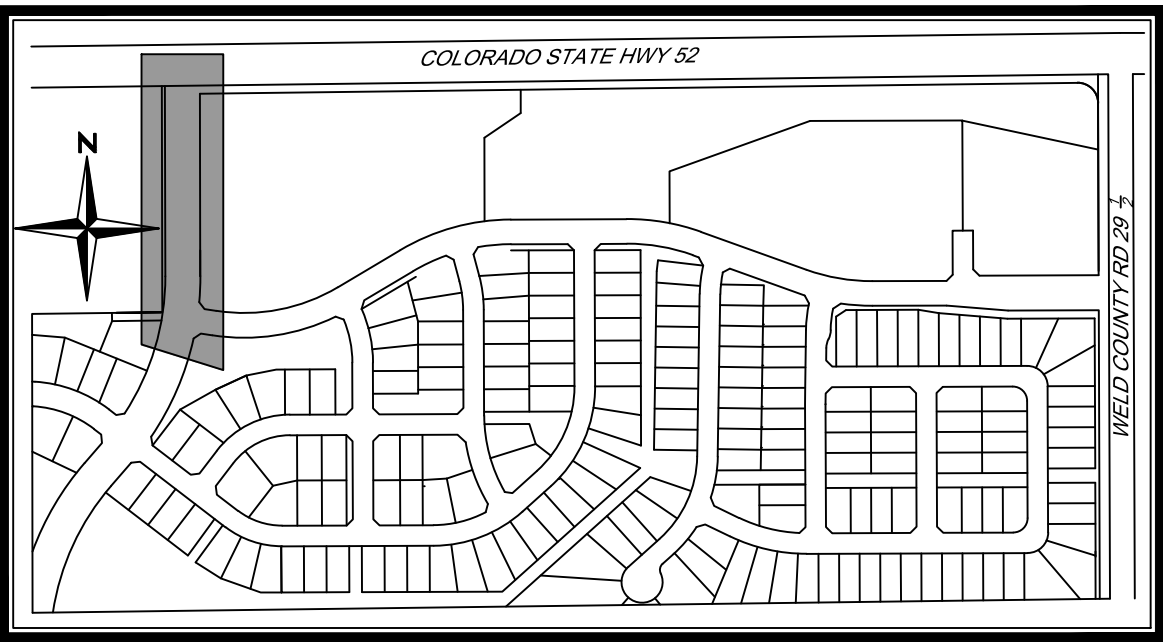
- ALL STATIONING IS ON CENTERLINE UNLESS OTHERWISE NOTED. CENTERLINE AND R.O.W. DIMENSIONS ARE FOR REFERENCE ONLY, REFER TO THE FINAL SUBDIVISION PLAT FOR HORIZONTAL CONTROL.
- WATER MAIN LENGTHS ARE FROM CENTER OF FITTING (EXCLUDING GATE VALVES) TO CENTER OF FITTING UNLESS OTHERWISE NOTED.
- FOR WATER IMPROVEMENTS, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE LATEST EDITION OF FORT LUPTON ENGINEERING STANDARDS PRIOR TO CONSTRUCTION, AND KEEPING THE CONSTRUCTION PLANS AND THE ENGINEERING STANDARDS ON THE JOB SITE AT ALL TIMES.
- ALL WATER LINES SHALL HAVE A MINIMUM BURY DEPTH OF 5.0' TO THE TOP OF PIPE UNLESS OTHERWISE NOTED.
- ALL NON POTABLE PIPE SHALL BE PURPLE.
- ALL VALVE BOXES SHALL BE MARKED NON-POTABLE OR IRRIGATION.
- ALL VALVES AND FITTINGS MUST BE POLY WRAPPED
- NO VALVES SHALL BE INSTALL IN CROSS PANS OR UNDER CURB AND GUTTER.
- ALL PVC PIPE SHALL MEET THE REQUIREMENTS OF AWWA SPECIFICATION C-900-07, POLYVINYLCHLORIDE PRESSURE PIPE AND FABRICATED FITTINGS (4" - 12"), AND SHALL BE PRESSURE CLASS 305 PSI(DR 14), OR AWWA C-905-08, POLYVINYL CHLORIDE PRESSURE PIPE AND FABRICATED FITTINGS (14" -48"), AND SHALL BE PRESSURE CLASS 235 PSI (DR 18)
- ALL PVC WATER MAINS SHALL BE LOCATABLE, VIA A 12 GAUGE TRACER WIRE TAPED TO THE TOP OF PIPE AND LOOPED TO EACH HYDRANT AND A CATHODIC PROTECTION BOX.

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
NON-POTABLE LOWERINGS

SHEET

C7.30



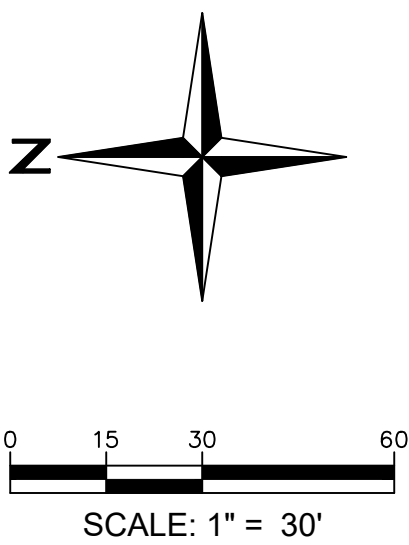
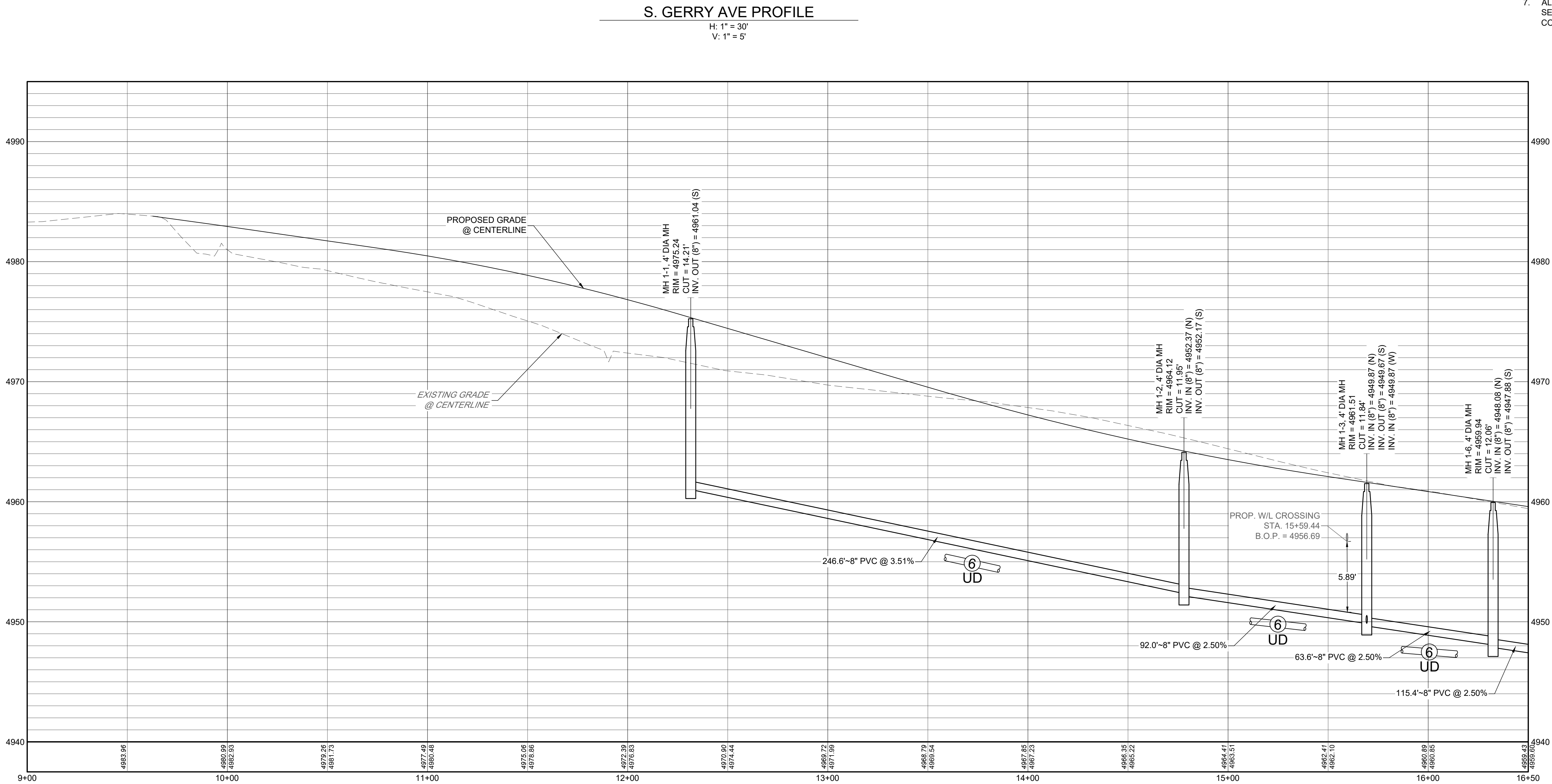


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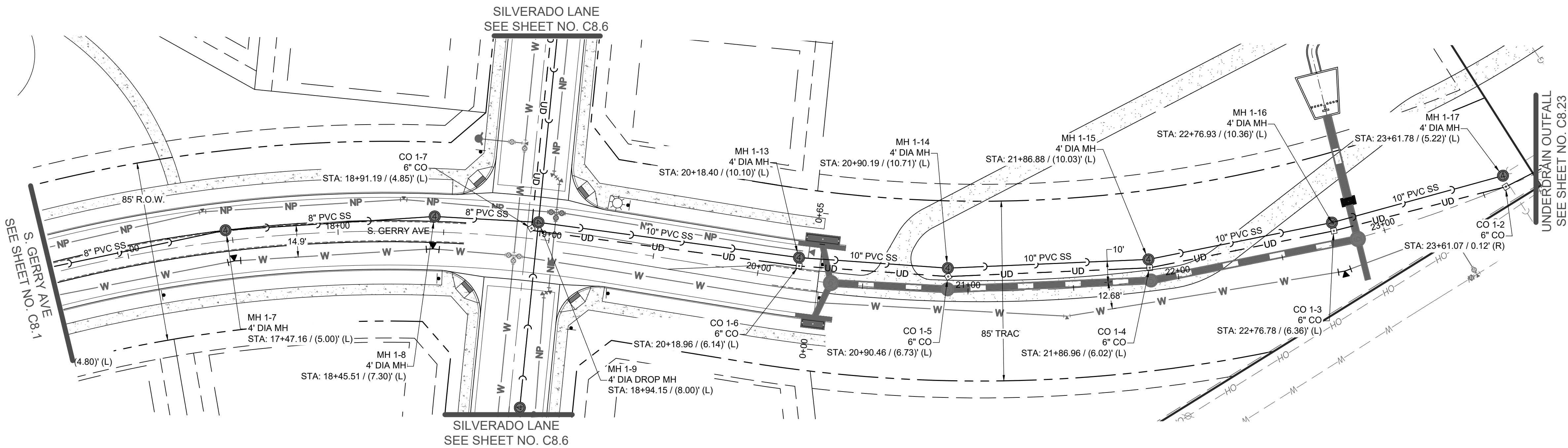
N.T.S

NOTES:

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2. REFER TO SHEETS C10.1 - C10.2 FOR SANITARY SEWER DETAILS.
3. ALL SANITARY SEWER LINES SHALL BE SDR 26 PVC OR APPROVED EQUAL.
4. REFER TO FINAL PLAT FOR RIGHT-OF-WAY AND CENTERLINE DIMENSION, AND HORIZONTAL CONTROL.
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6. REFER TO SHEETS GEOTECHNICAL STUDY FOR UNDERDRAIN DETAILS
7. ALL NEWLY INSTALLED UNDERGROUND UTILITIES, INCLUDING SANITARY SEWER AND SERVICES, MUST BE ELECTRONICALLY LOCATABLE IN COMPLIANCE WITH STATE STATUTE.



I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\SANITARY\19032 - Street A SANITARY P&P.dwg tab: C8.2 S. GERRY AVE SANITARY P&P Aug 20, 2021 - 1:36pm ekoski

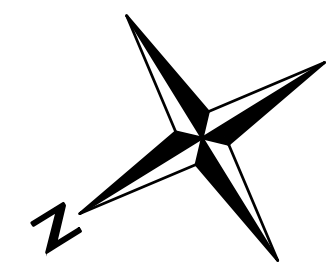
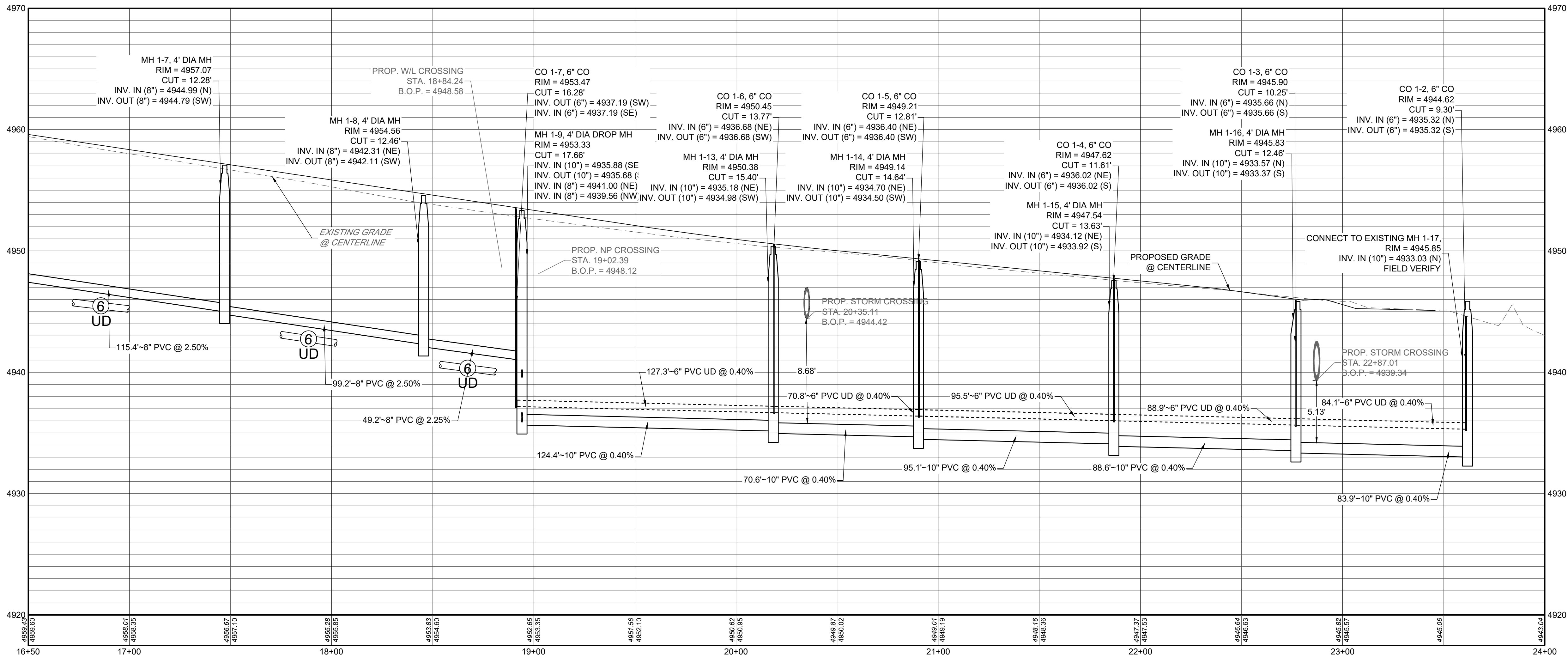


S. GERRY AVE PLAN

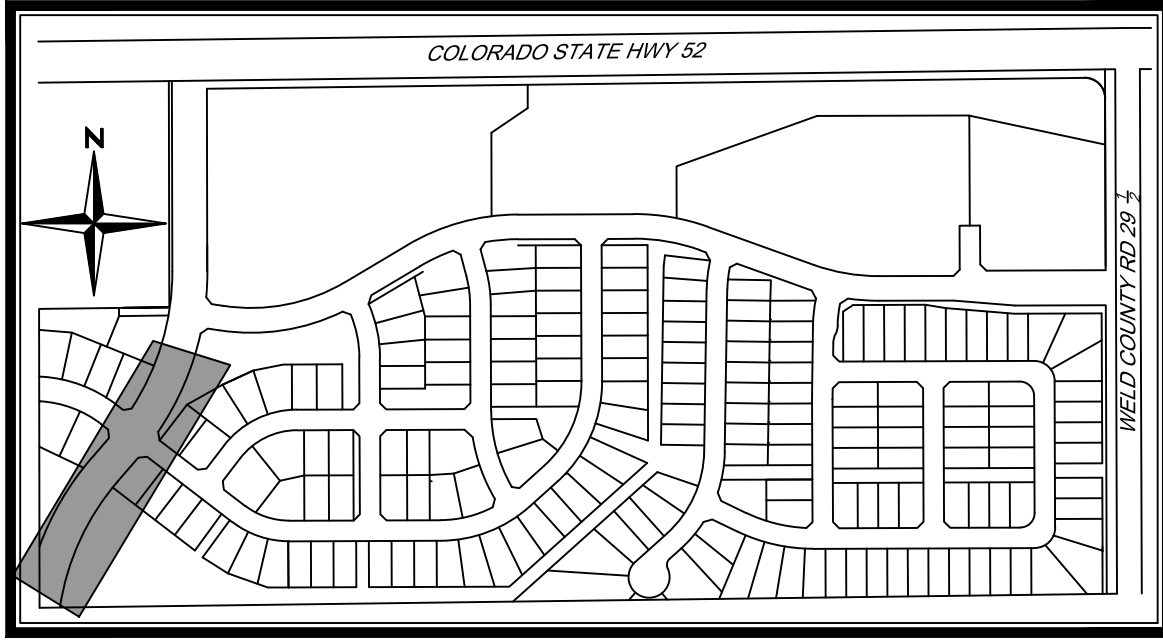
SCALE: 1" = 30'

S. GERRY AVE PROFILE

H: 1" = 30'
V: 1" = 5'



0 15 30 60
SCALE: 1" = 30'



KEYMAP
N.T.S

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
S. GERRY AVE SANITARY P&P

SHEET

C8.2

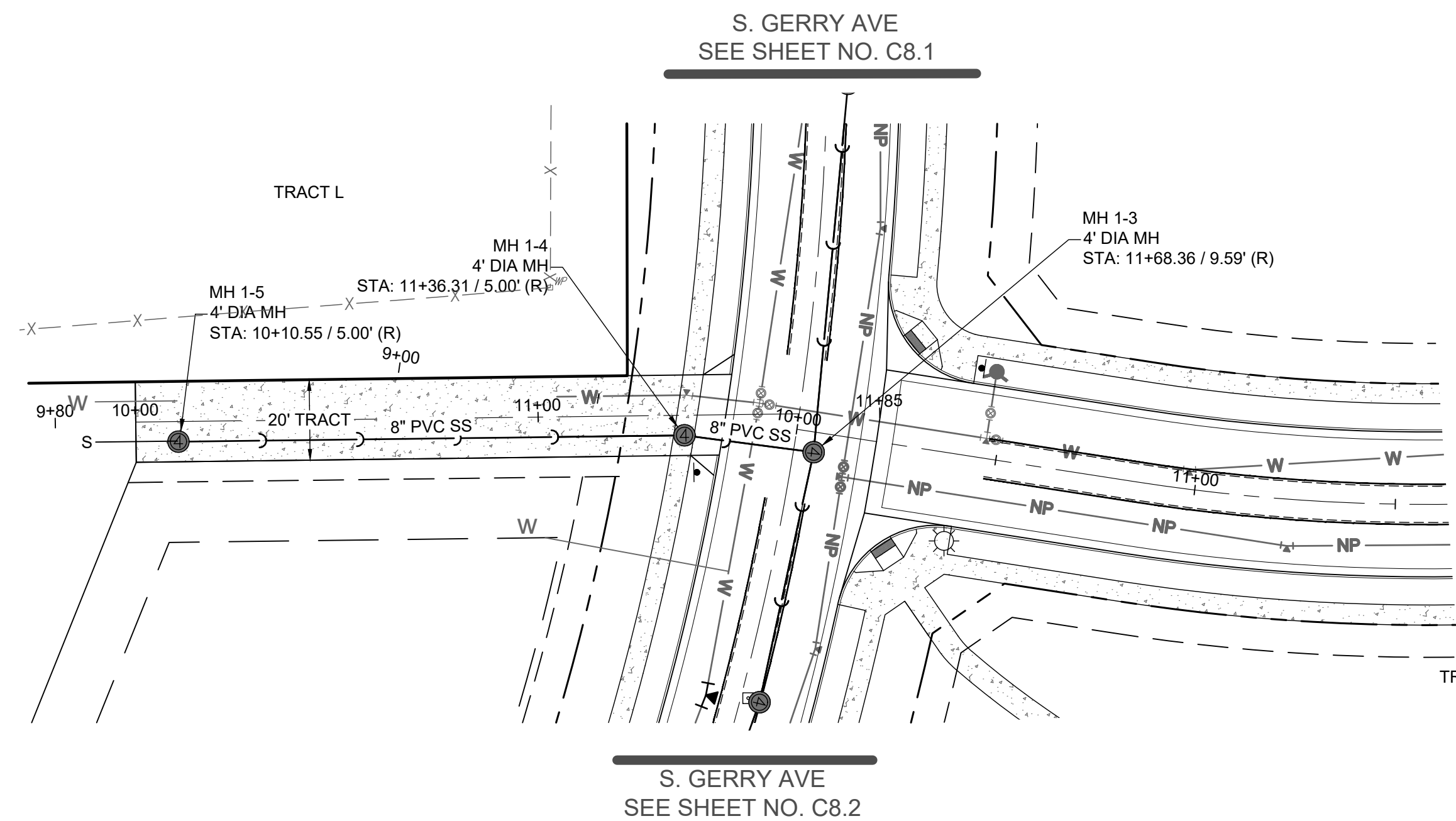


DRAWN	BRC
CHECKED	TJF
APPROVED	
PROJECT NO.	19032
HORIZ. SCALE	1" = 30'
VERT. SCALE	1" = 5'

NOTES

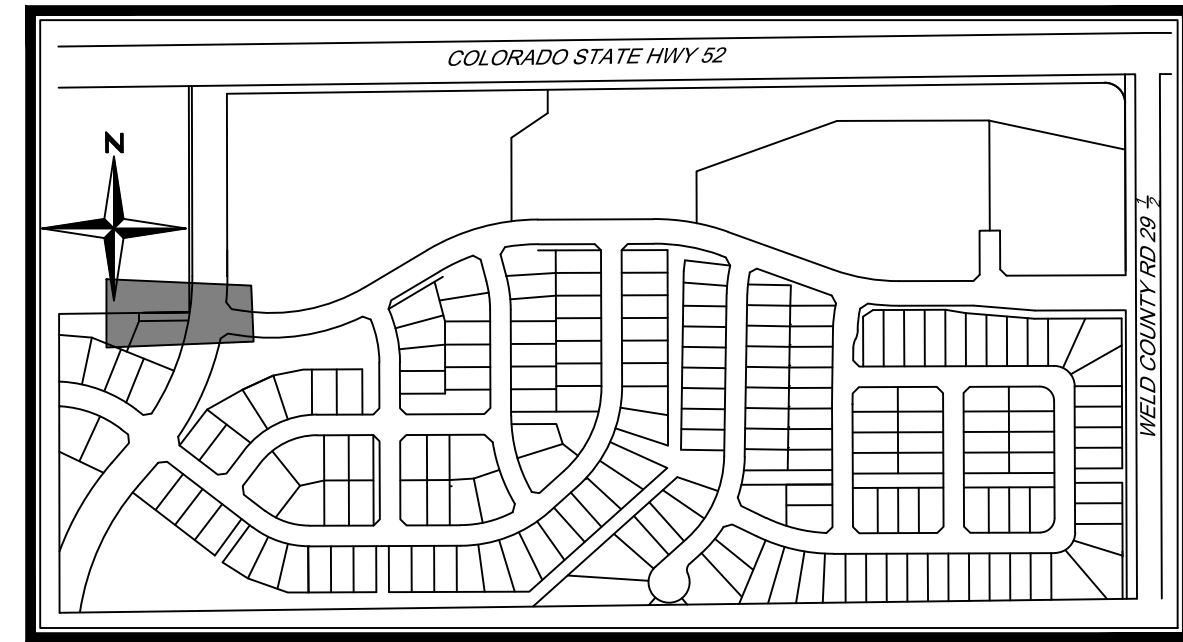
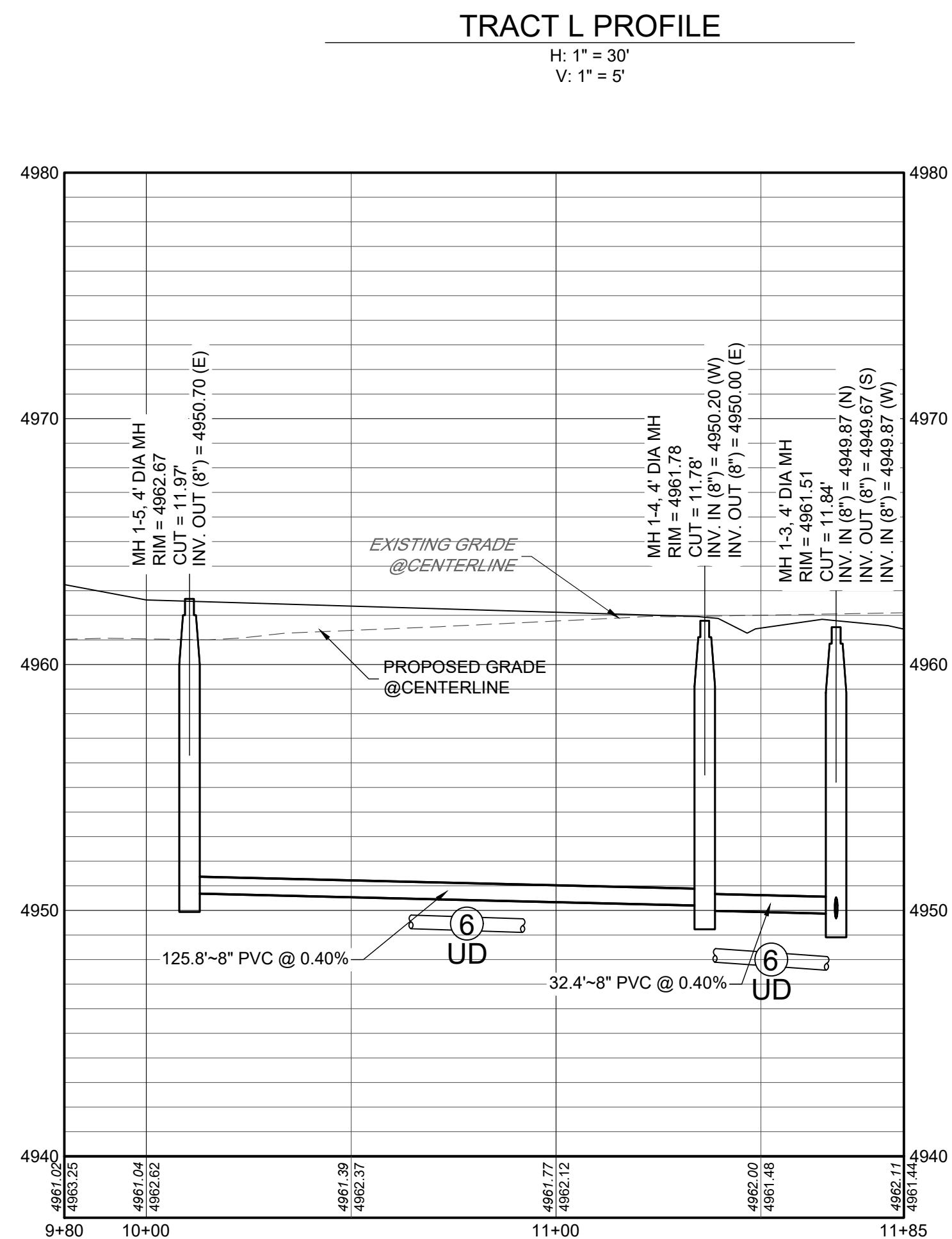
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TRACT L PLAN

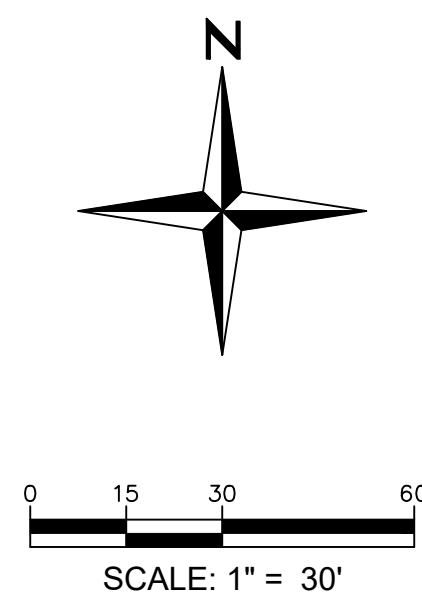
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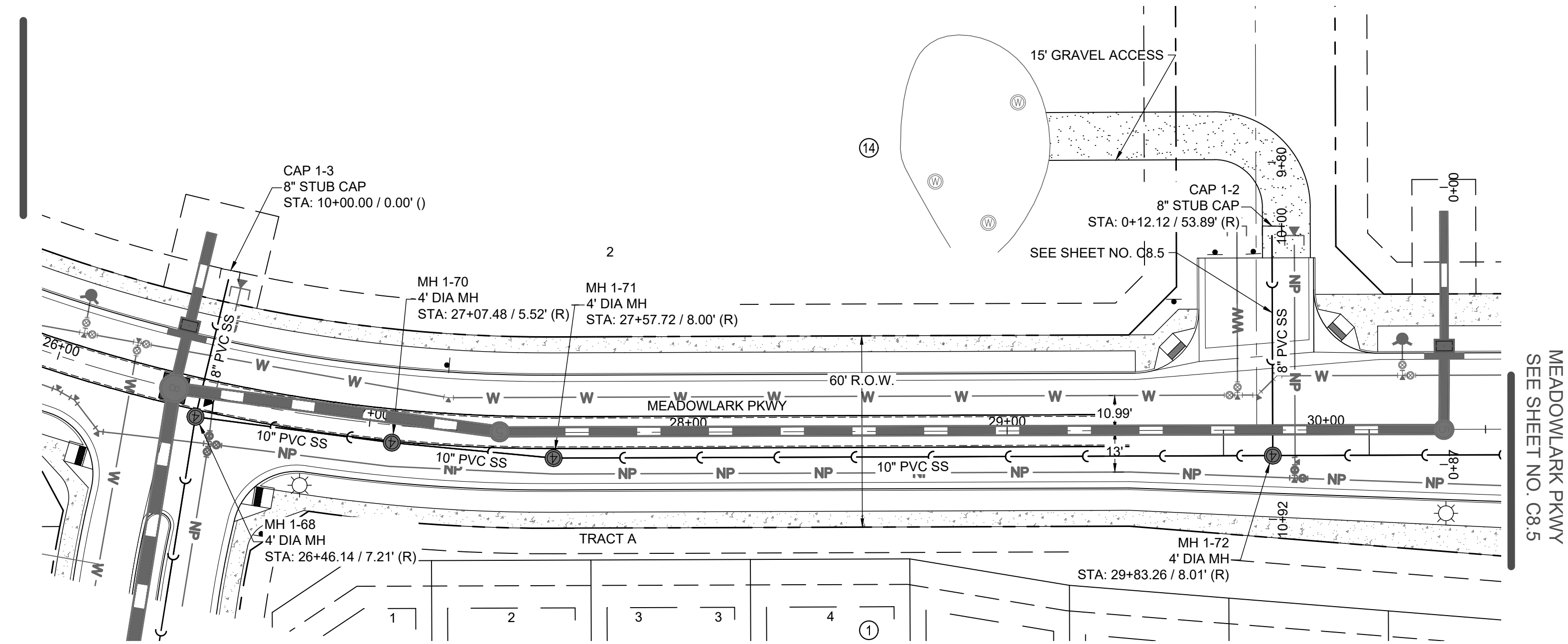


KEYMAP
N.T.S

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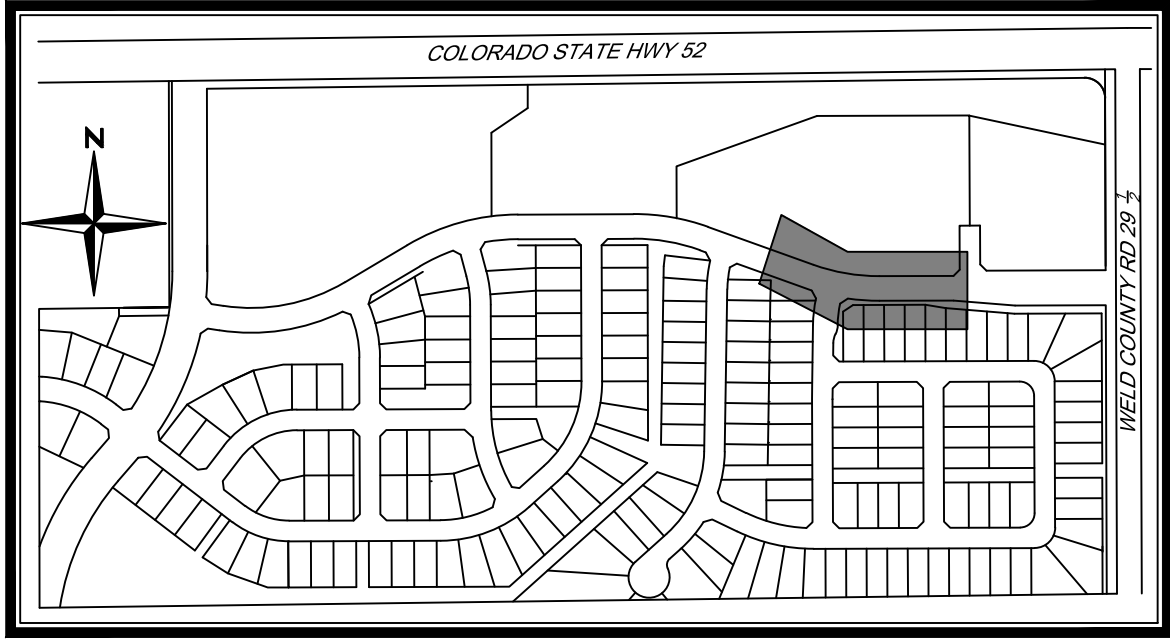
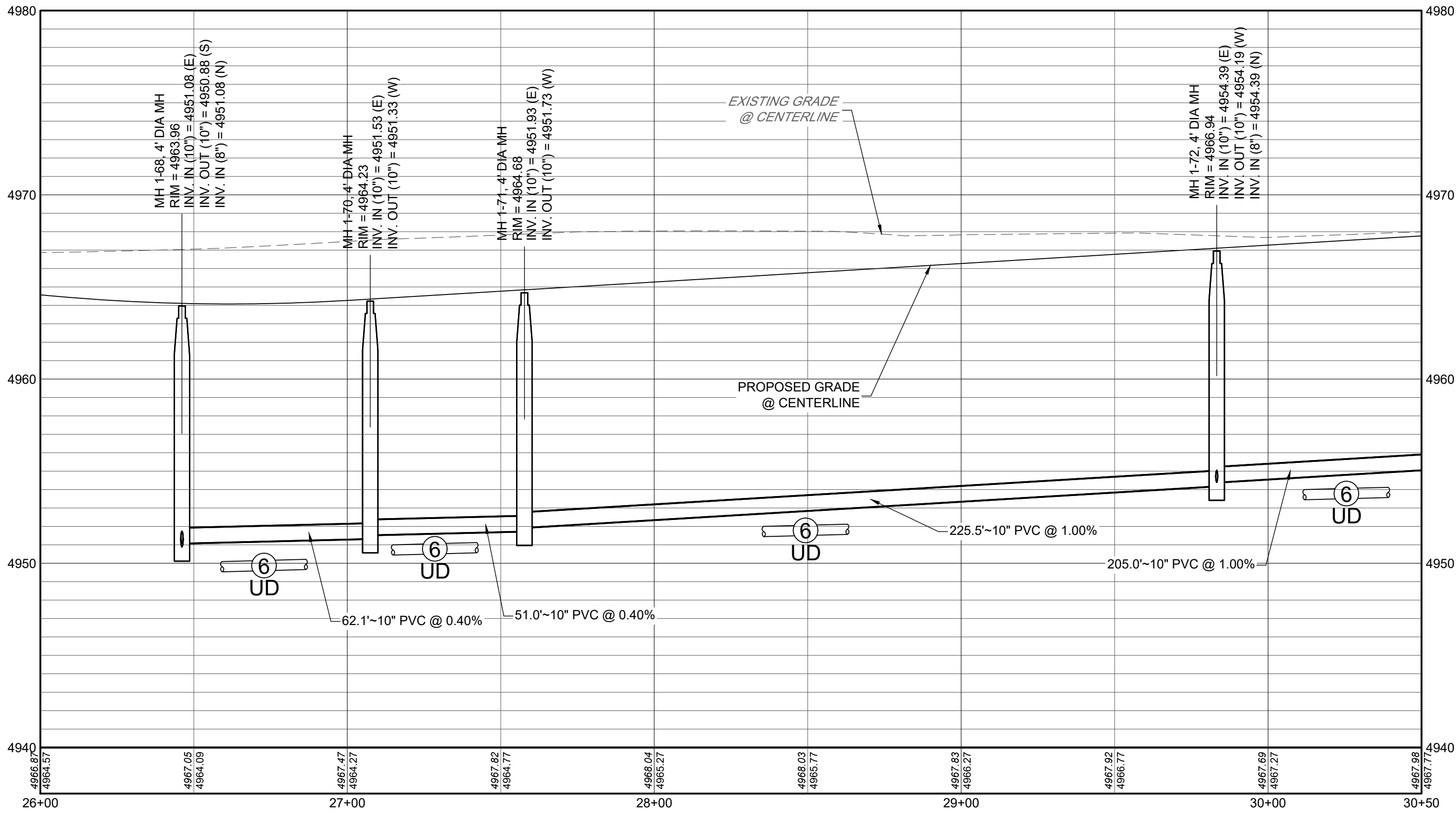




MEADOWLARK PKWY PLAN
SCALE: 1" = 30'

MEADOWLARK PKWY PROFILE

H: 1" = 50'
V: 1" = 5'



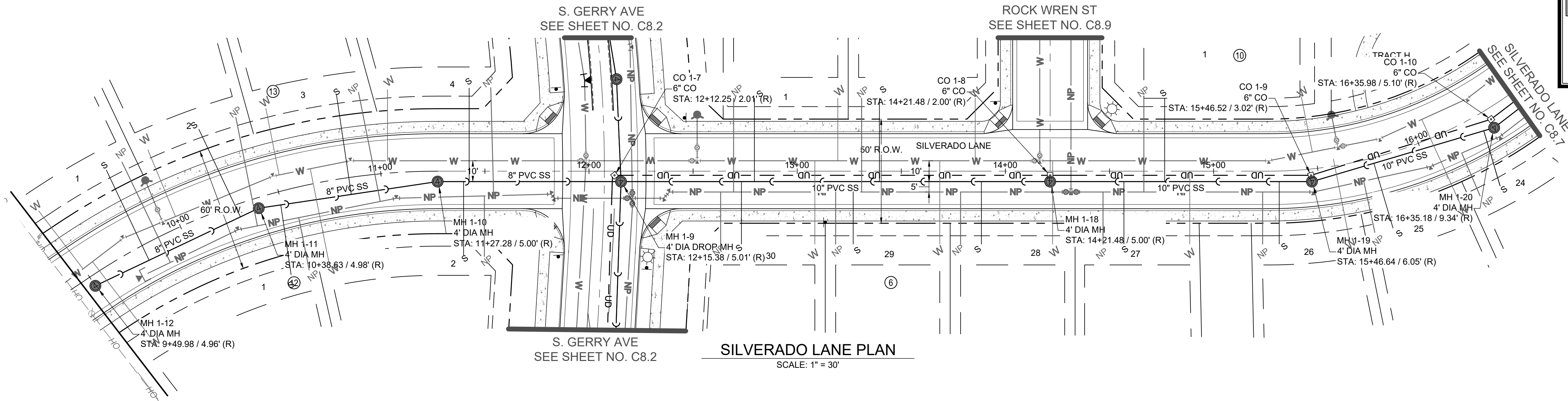
KEYMAP
N.T.S.

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DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	1" = 30'
VERT. SCALE	1" = 5'

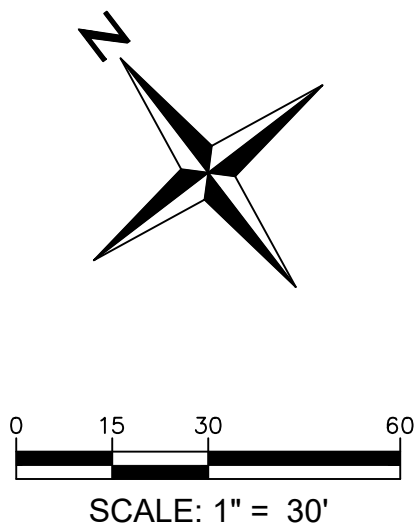
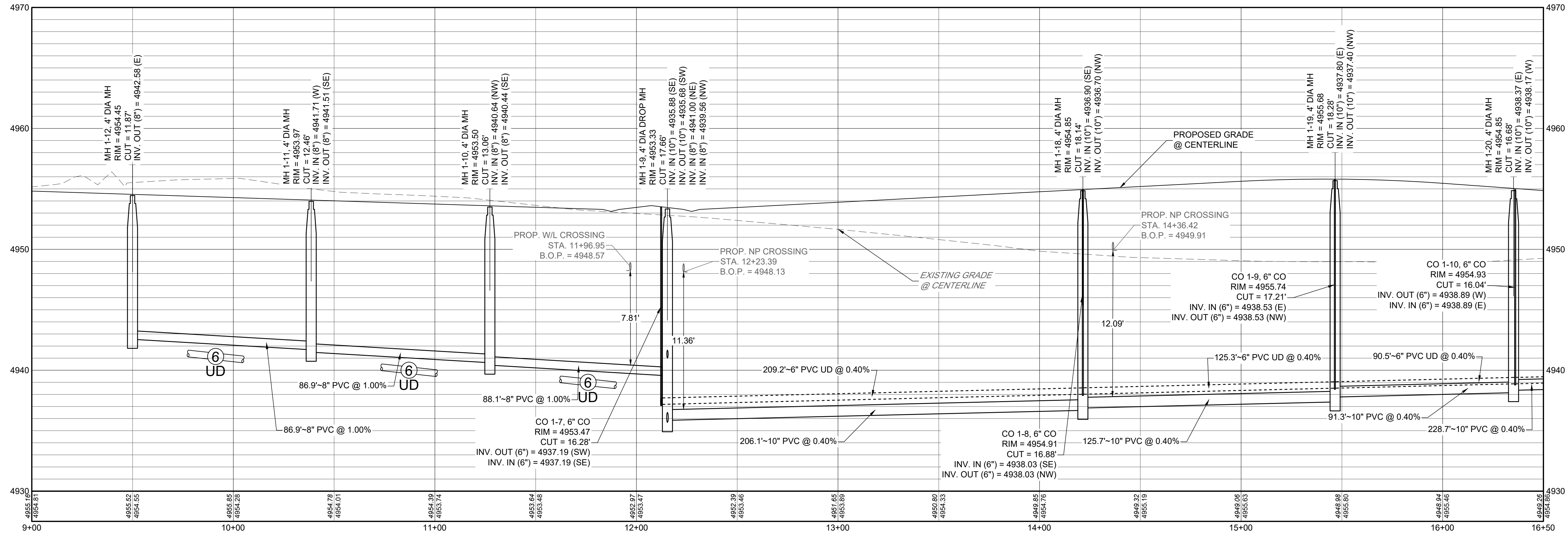
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SILVERADO LANE PLAN
SCALE: 1" = 30'

SILVERADO LANE PROFILE

H: 1" = 30'
V: 1" = 5'



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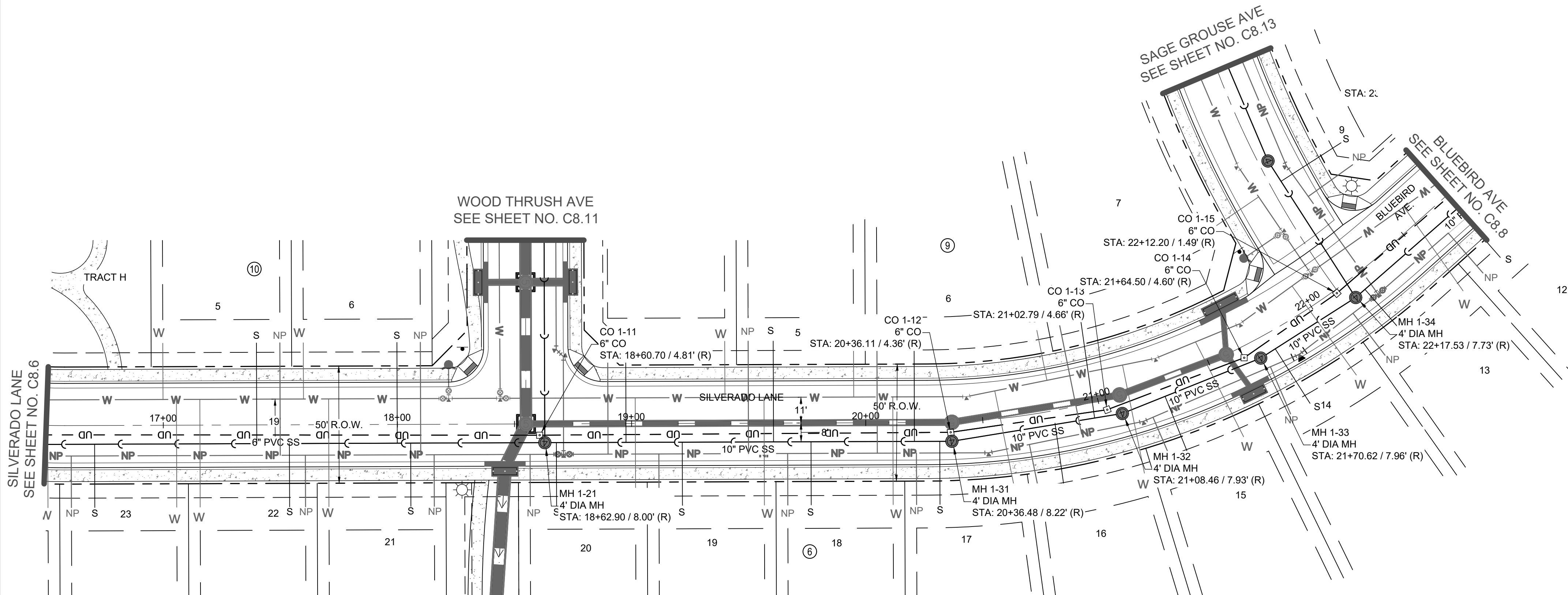
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CIVIL CONSTRUCTION DOCUMENTS
SILVERADO LANE SANITARY P&P

SHEET

C8.6

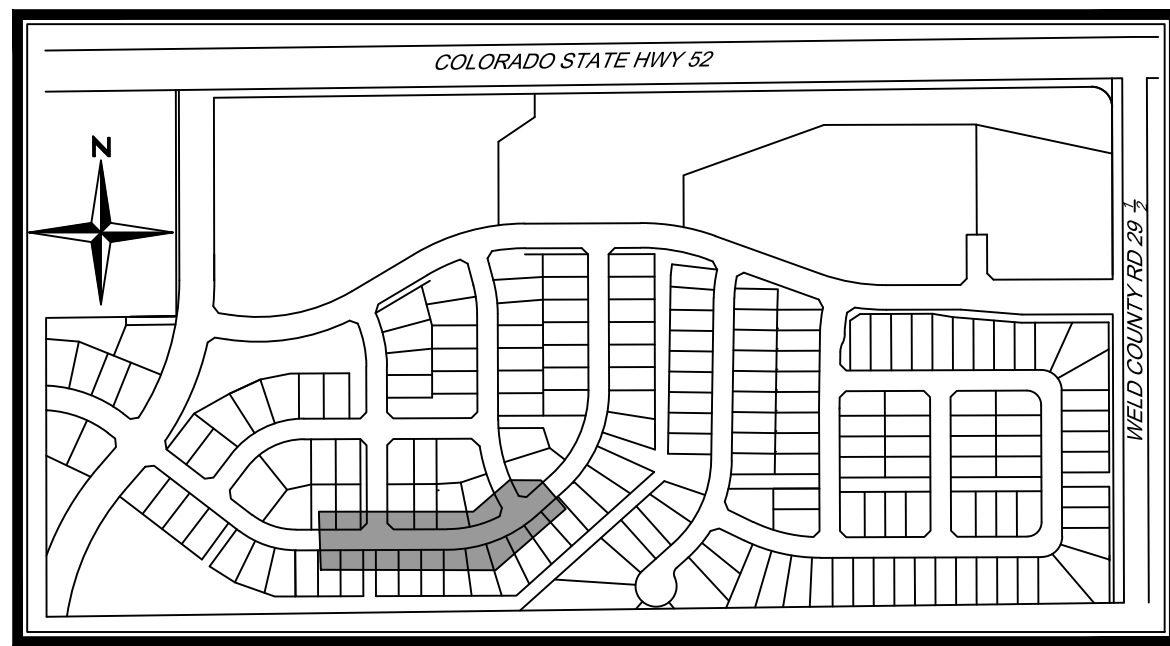
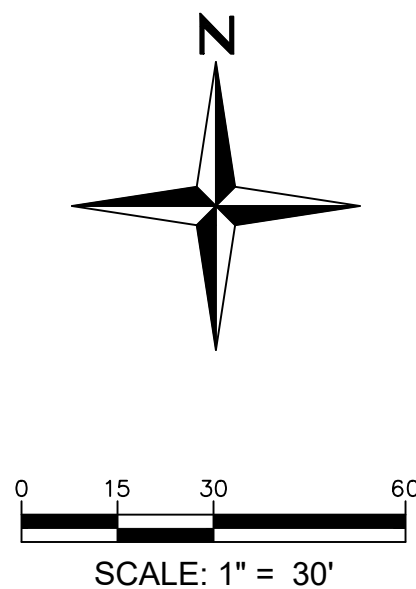
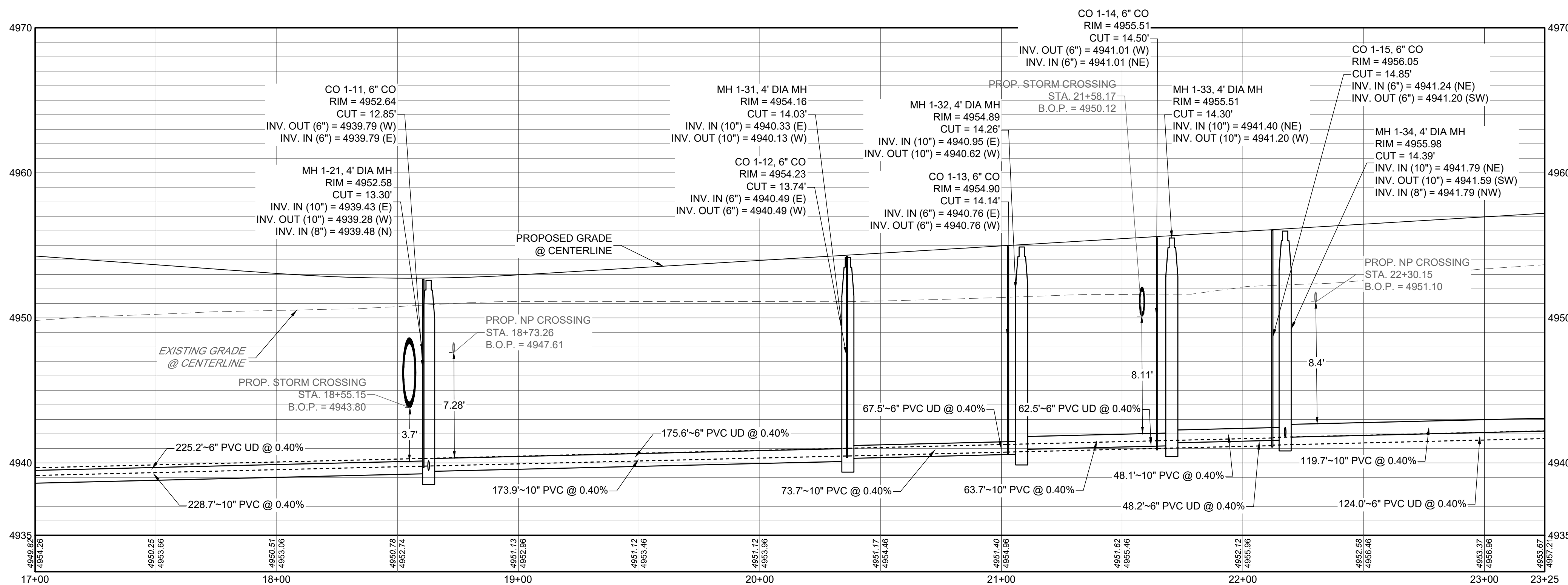


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SILVERADO LANE PLAN
SCALE: 1" = 30'

SILVERADO LANE PROFILE
H: 1" = 30'
V: 1" = 5'



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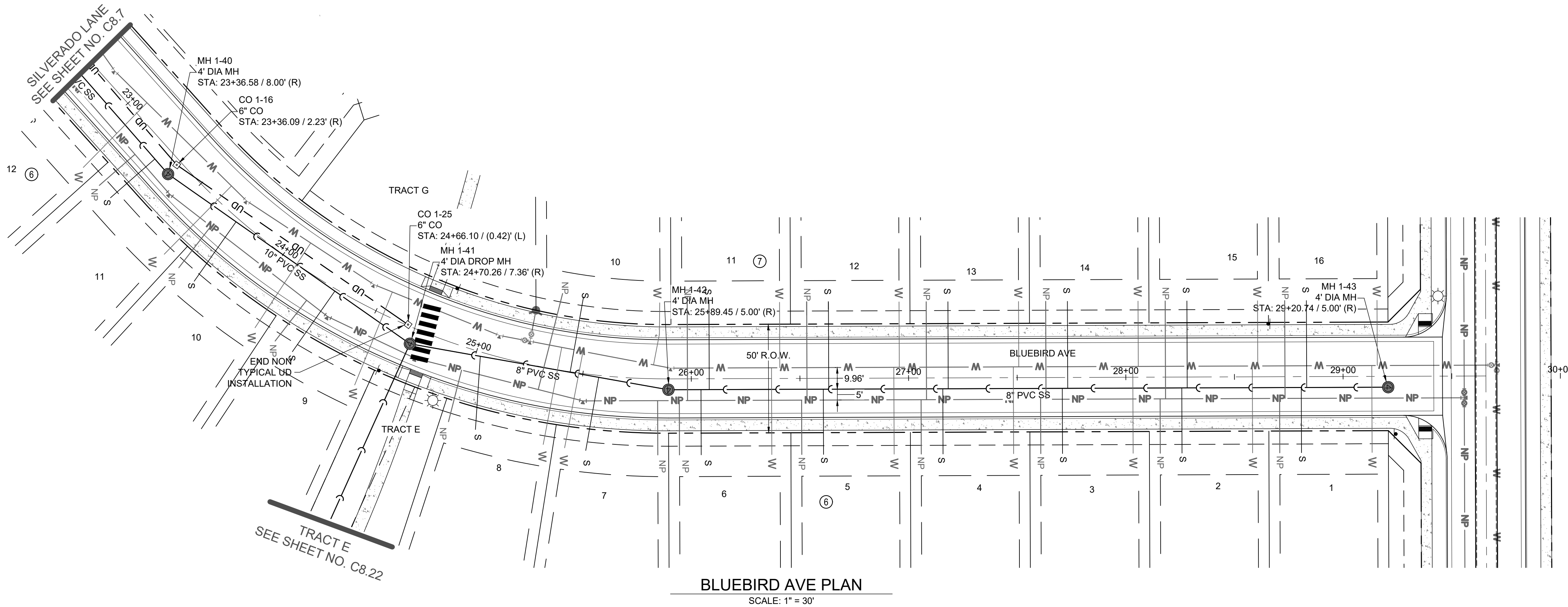
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CIVIL CONSTRUCTION DOCUMENTS
SILVERADO LANE SANITARY P&P

SHEET

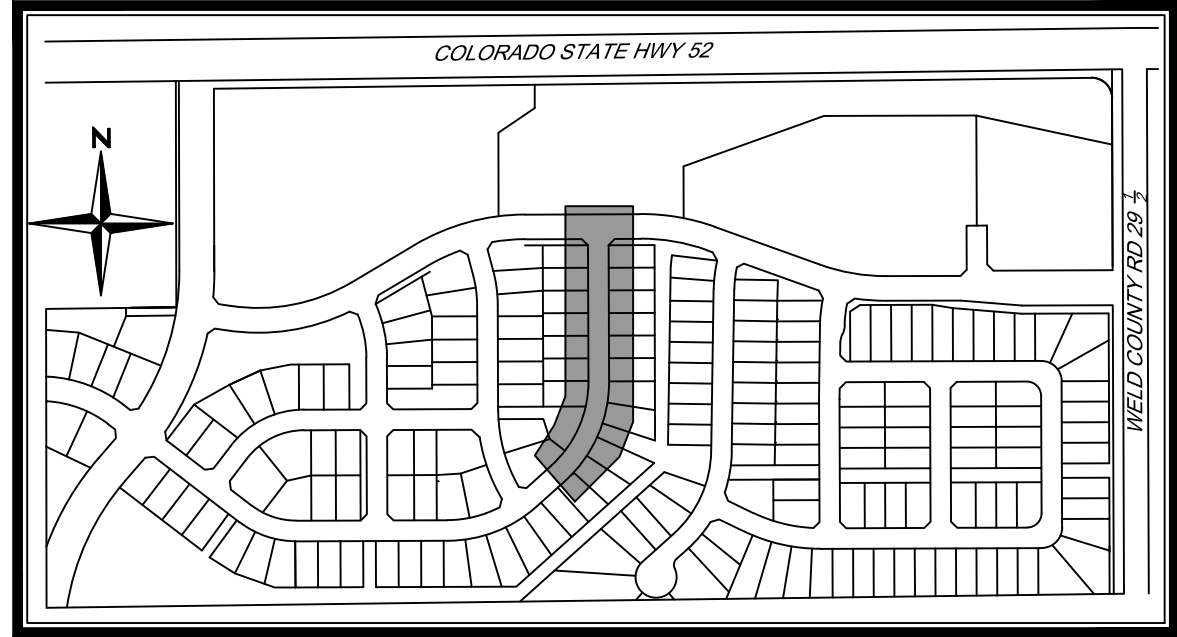
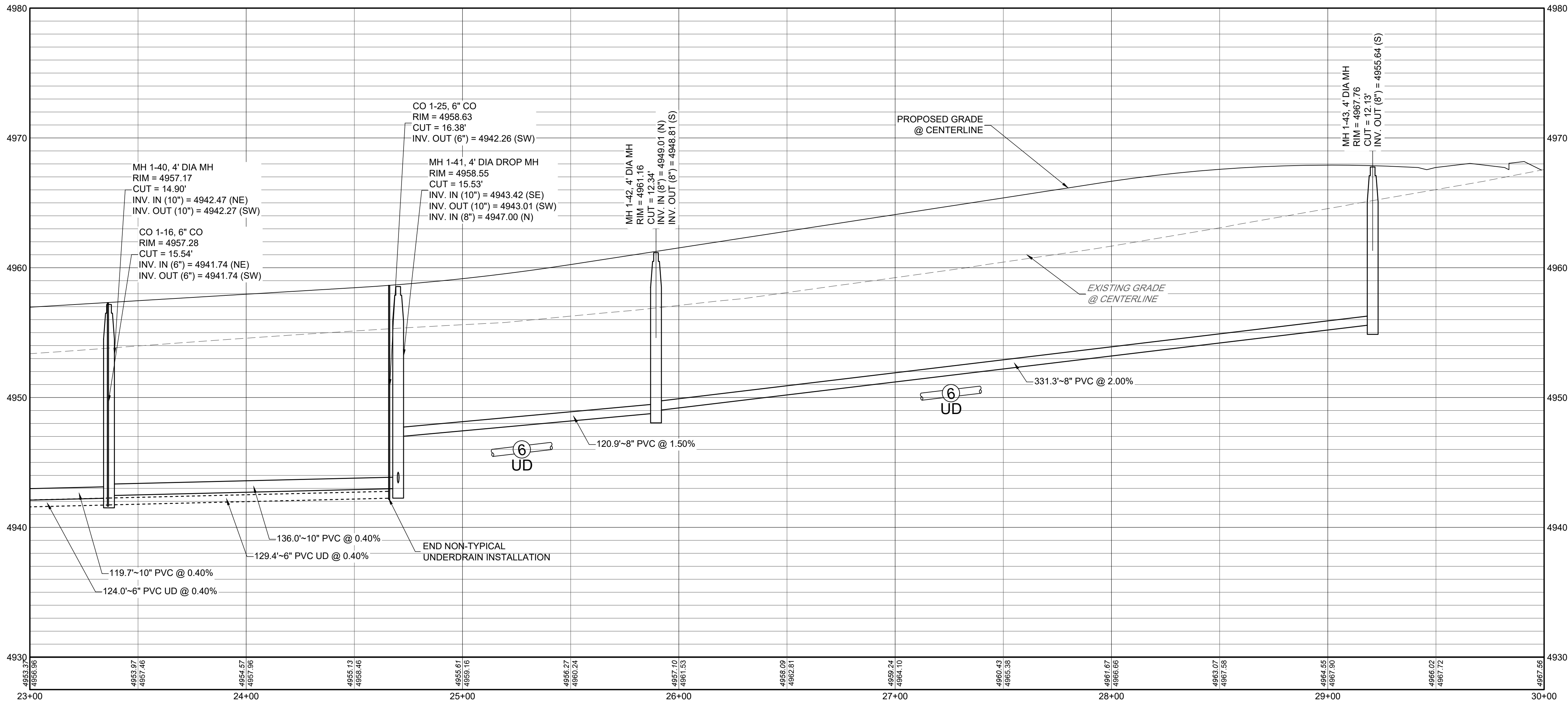
C8.7



I:\2019\19032 - murata farms\CADD\sheet_sets\construction drawings\SANITARY\19032 - STREET C SANITARY P&P.dwg Job: C8.8 BLUEBIRD AVE SANITARY P&P Aug 20, 2021 1:39pm ekoski



BLUEBIRD AVE PROFILE
H: 1" = 30'
V: 1" = 5'



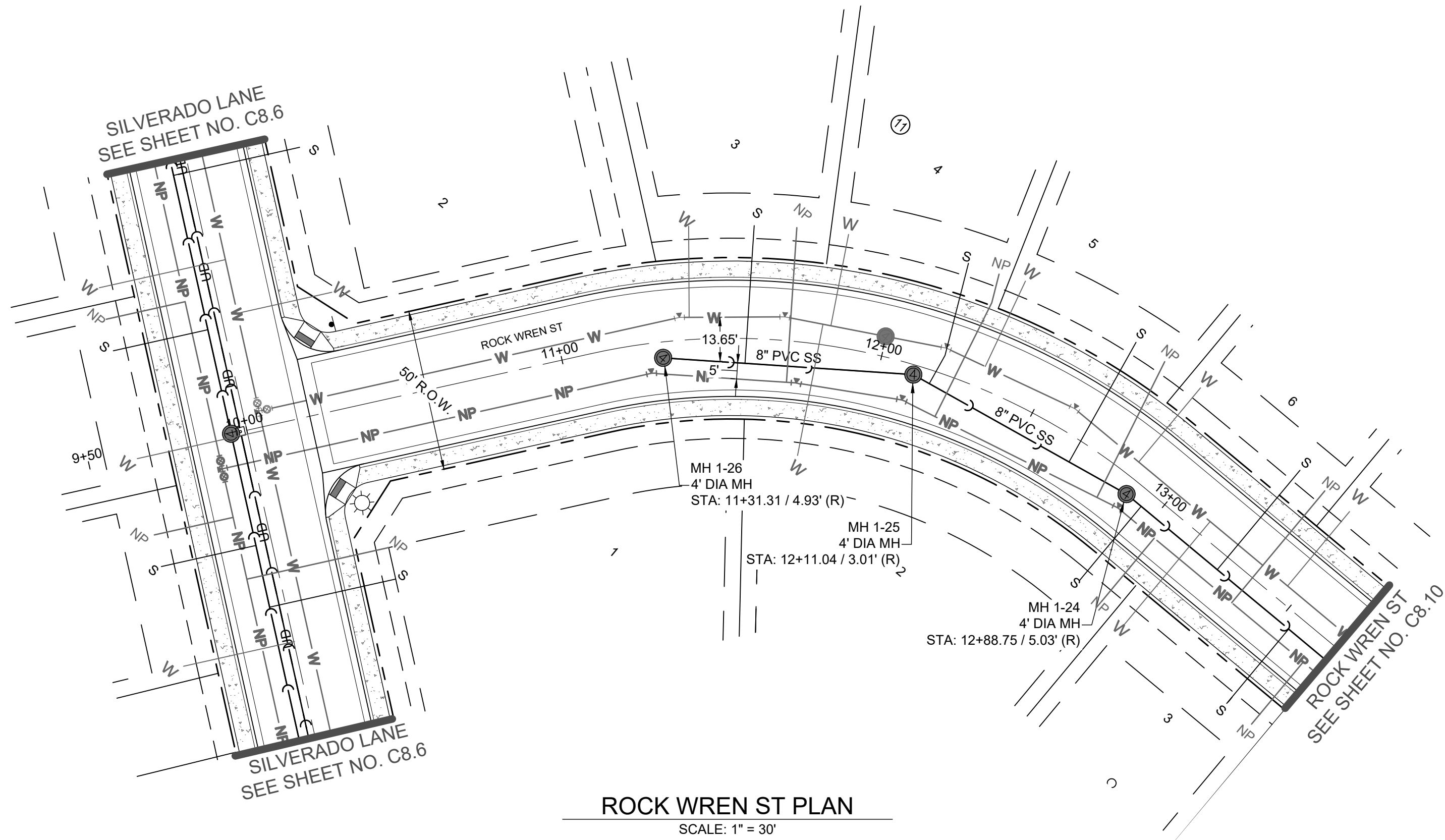
- NOTES:
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
BLUEBIRD AVE SANITARY P&P

SHEET
C8.8



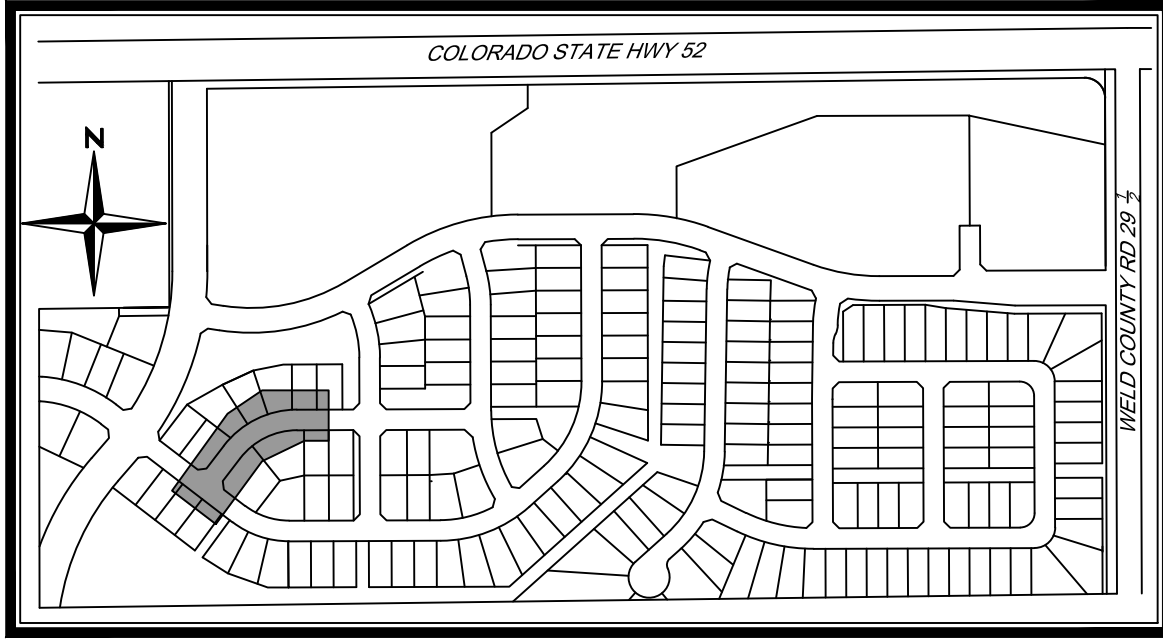
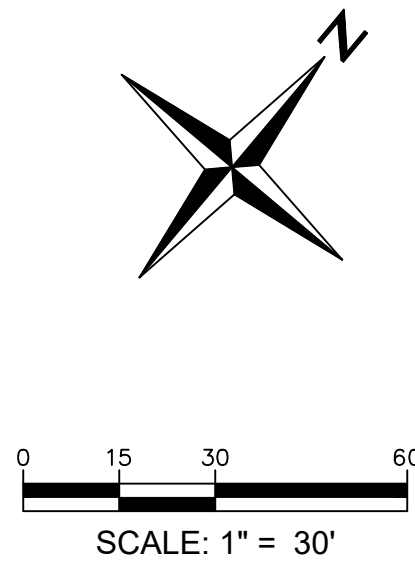
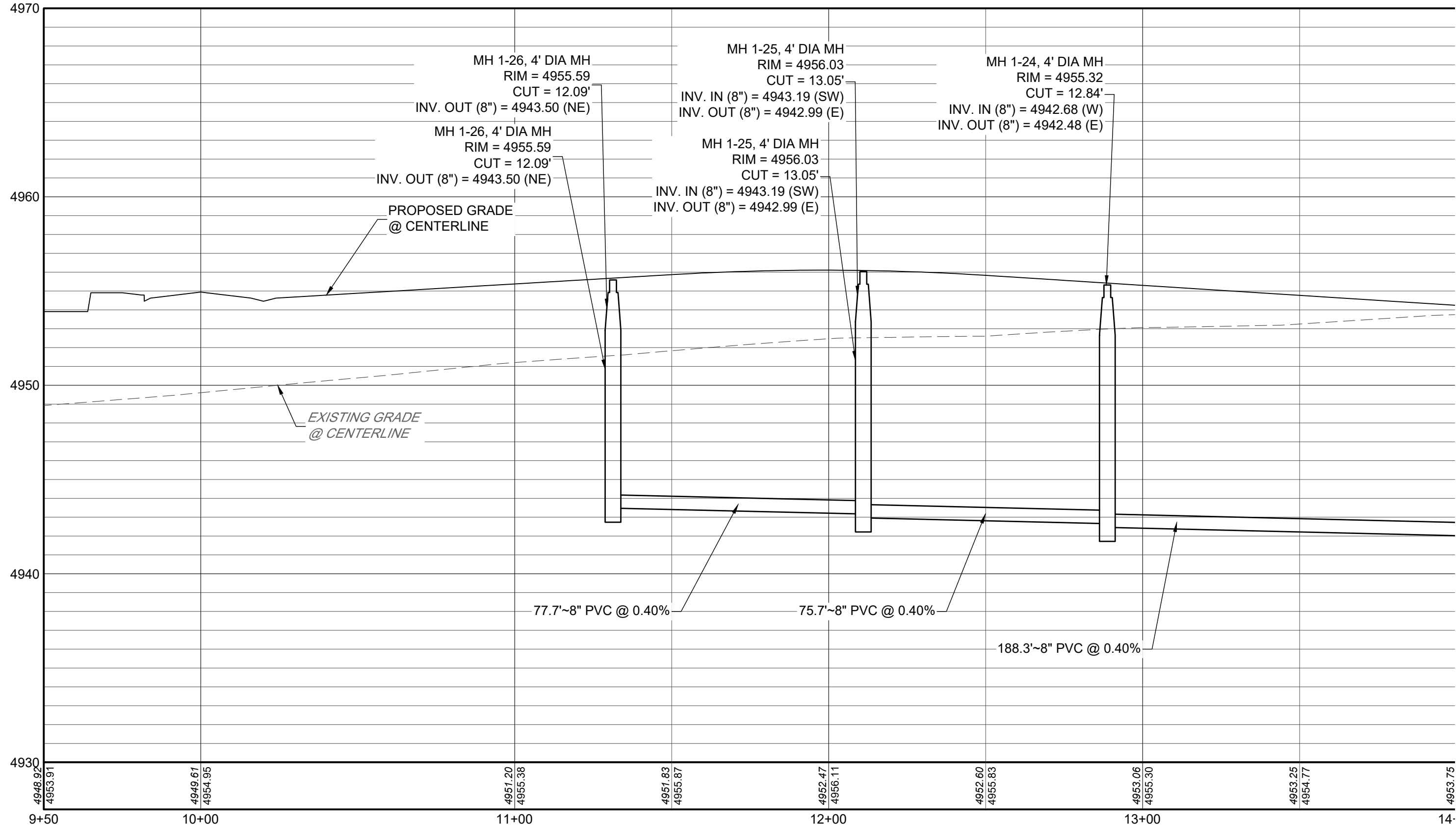
I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\SANITARY\19032 - STREET D SANITARY P&P.dwg Lib: C8.9 ROCK WREN ST SANITARY P&P Aug 20, 2021 -- 1:40pm ekoski



ROCK WREN ST PLAN
SCALE: 1" = 30'

ROCK WREN ST PROFILE

H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

NOTES:

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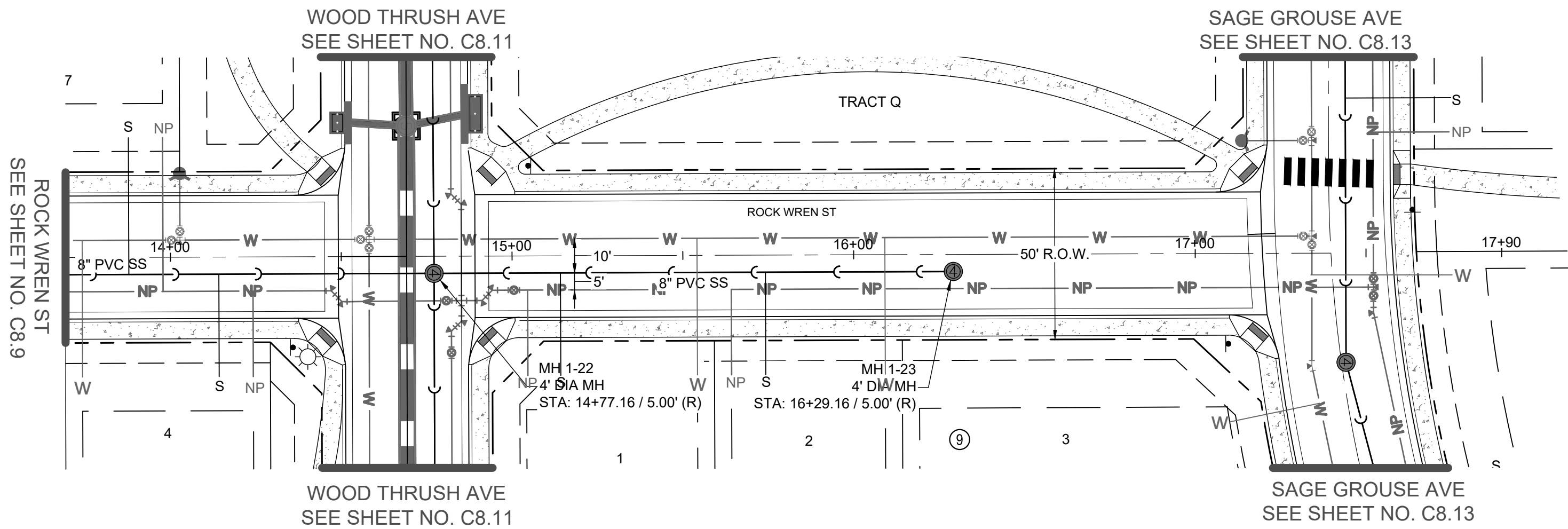
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CIVIL CONSTRUCTION DOCUMENTS
ROCK WREN ST SANITARY P&P

SHEET

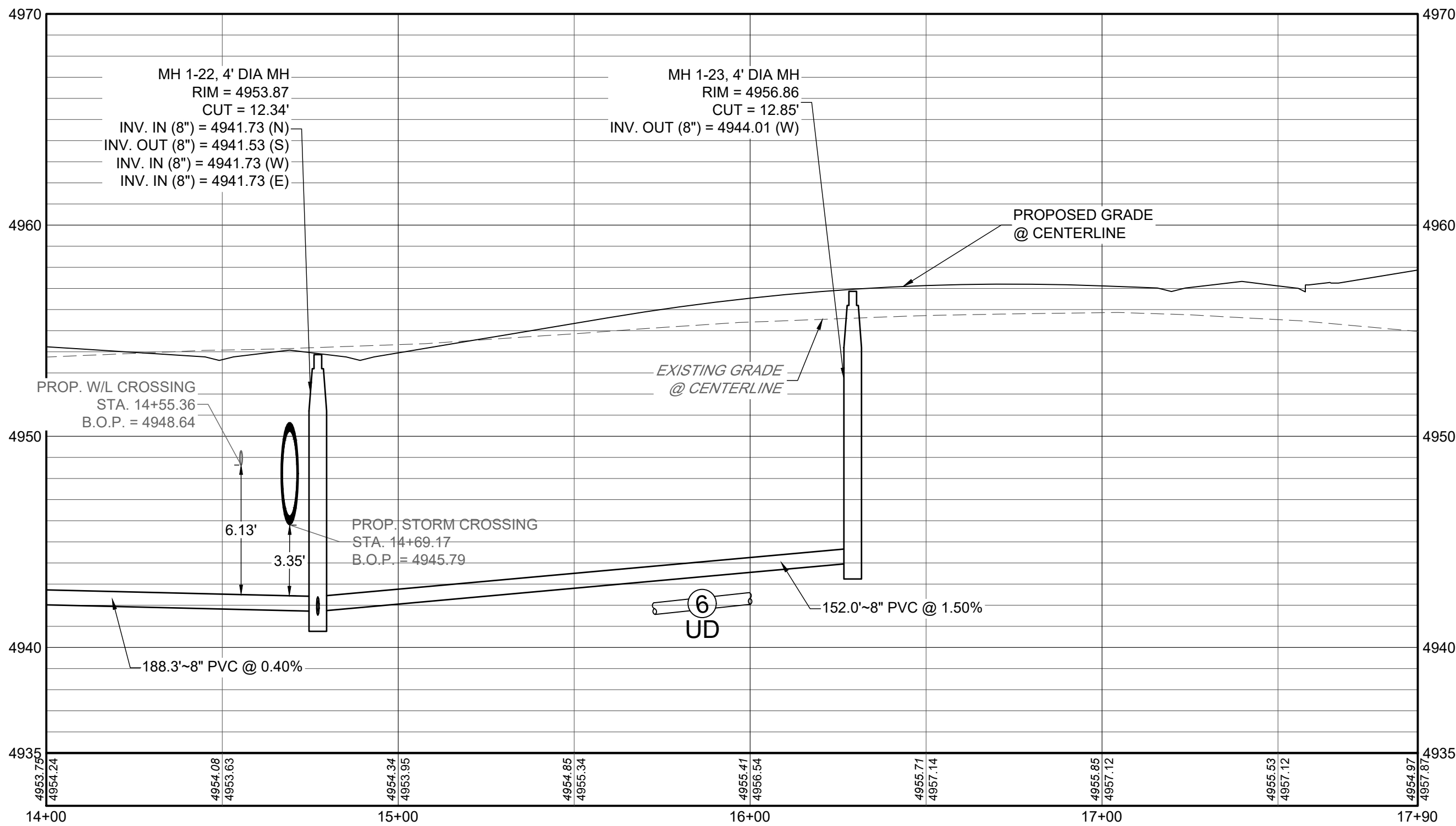
C8.9



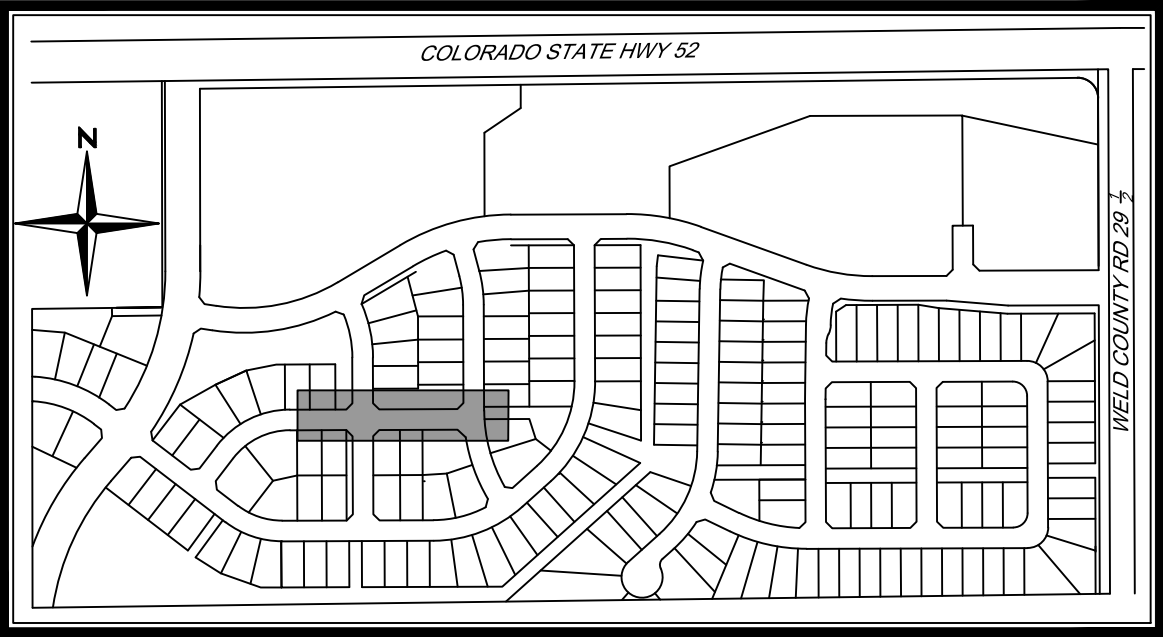
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ROCK WREN ST PLAN
SCALE: 1" = 30'



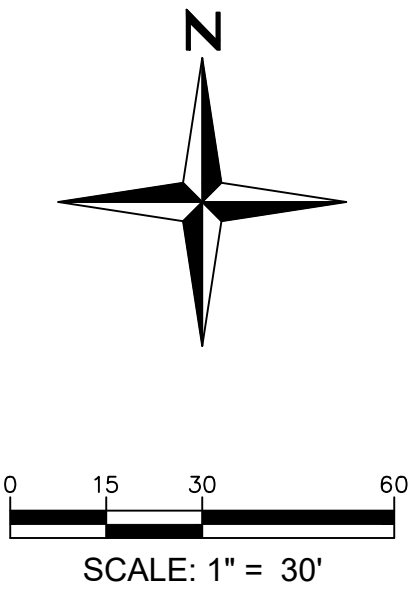
ROCK WREN ST PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S.

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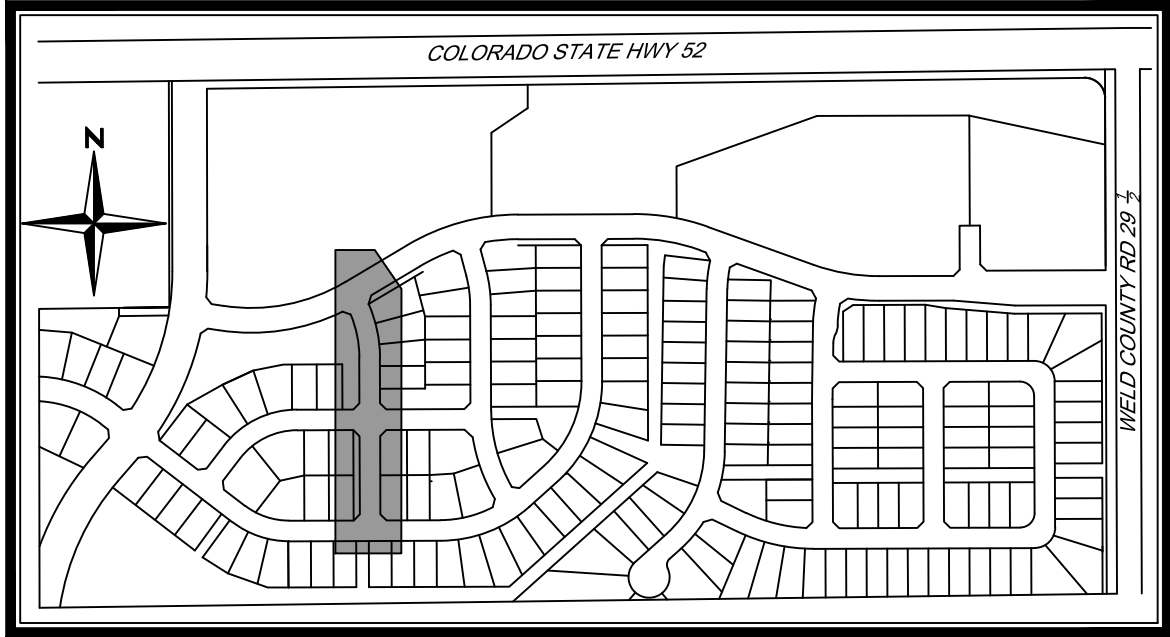
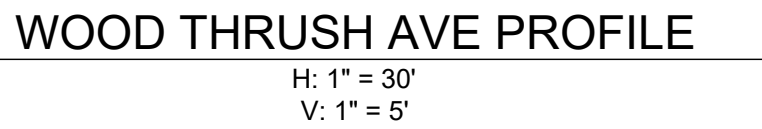
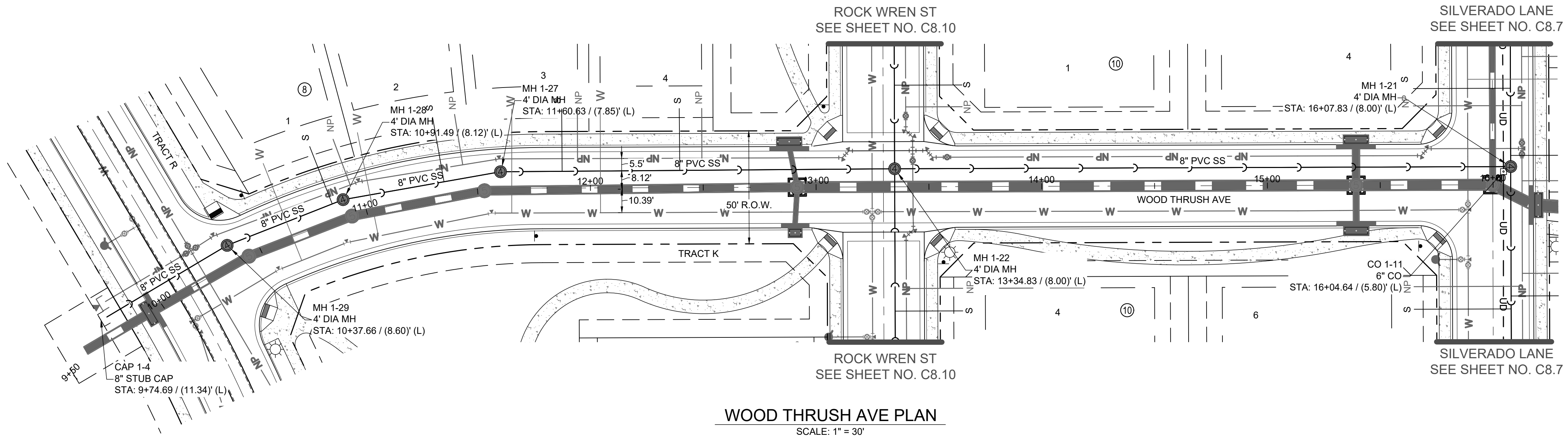
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CIVIL CONSTRUCTION DOCUMENTS
ROCK WREN ST SANITARY P&P

SHEET

C8.10



I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\SANITARY\19032 - STREET E. SANITARY P&P.dwg Lab. C8.11 WOOD THRUSH AVE SANITARY P&P Aug 20, 2021 - 1:41pm ekoski



NOTES:

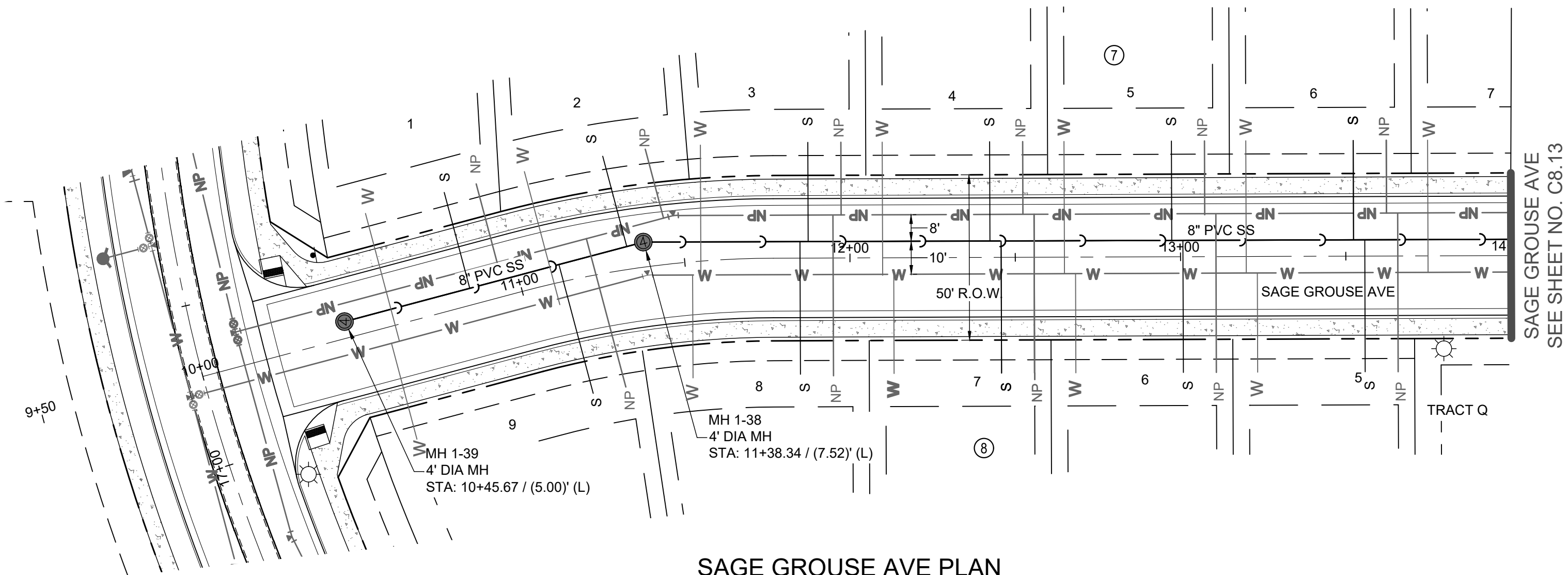
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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
WOOD THRUSH AVE SANITARY P&P

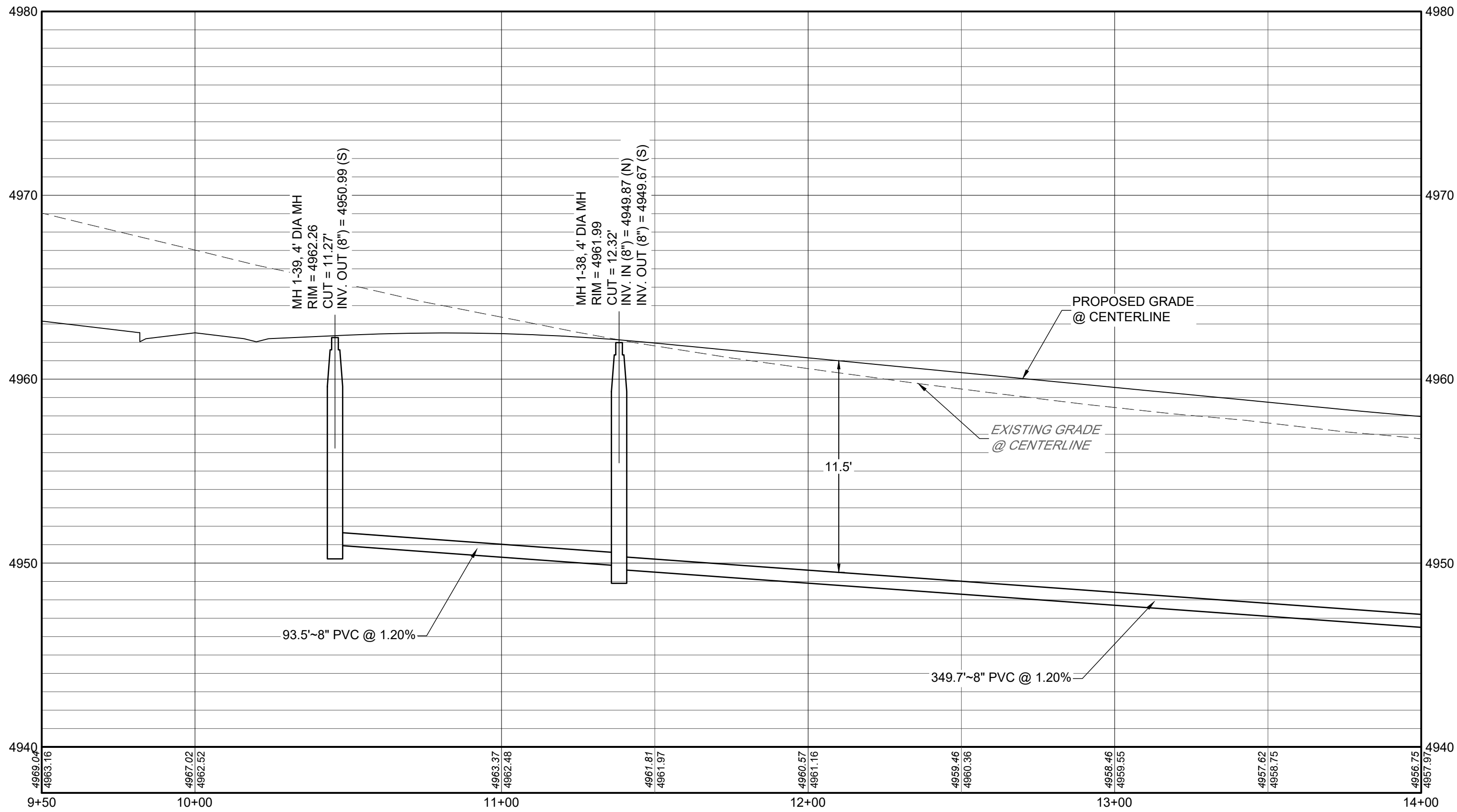
SHEET
C8.11



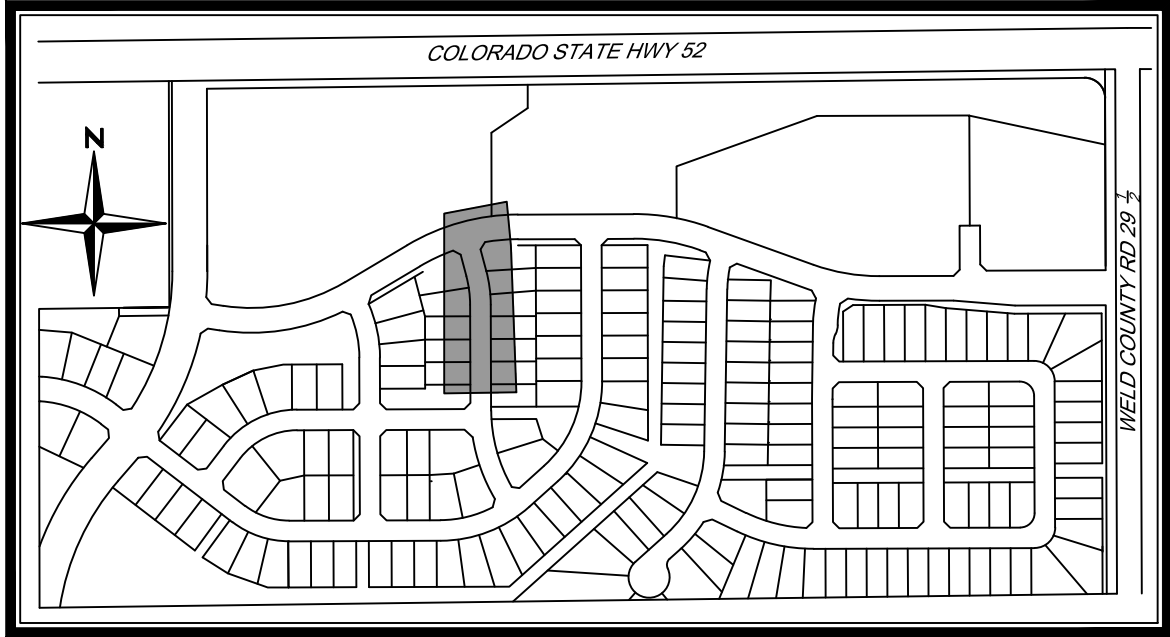
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SAGE GROUSE AVE PLAN
SCALE: 1" = 30'



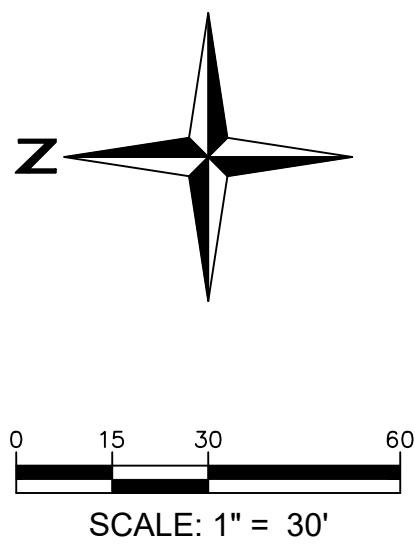
SAGE GROUSE AVE PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S.

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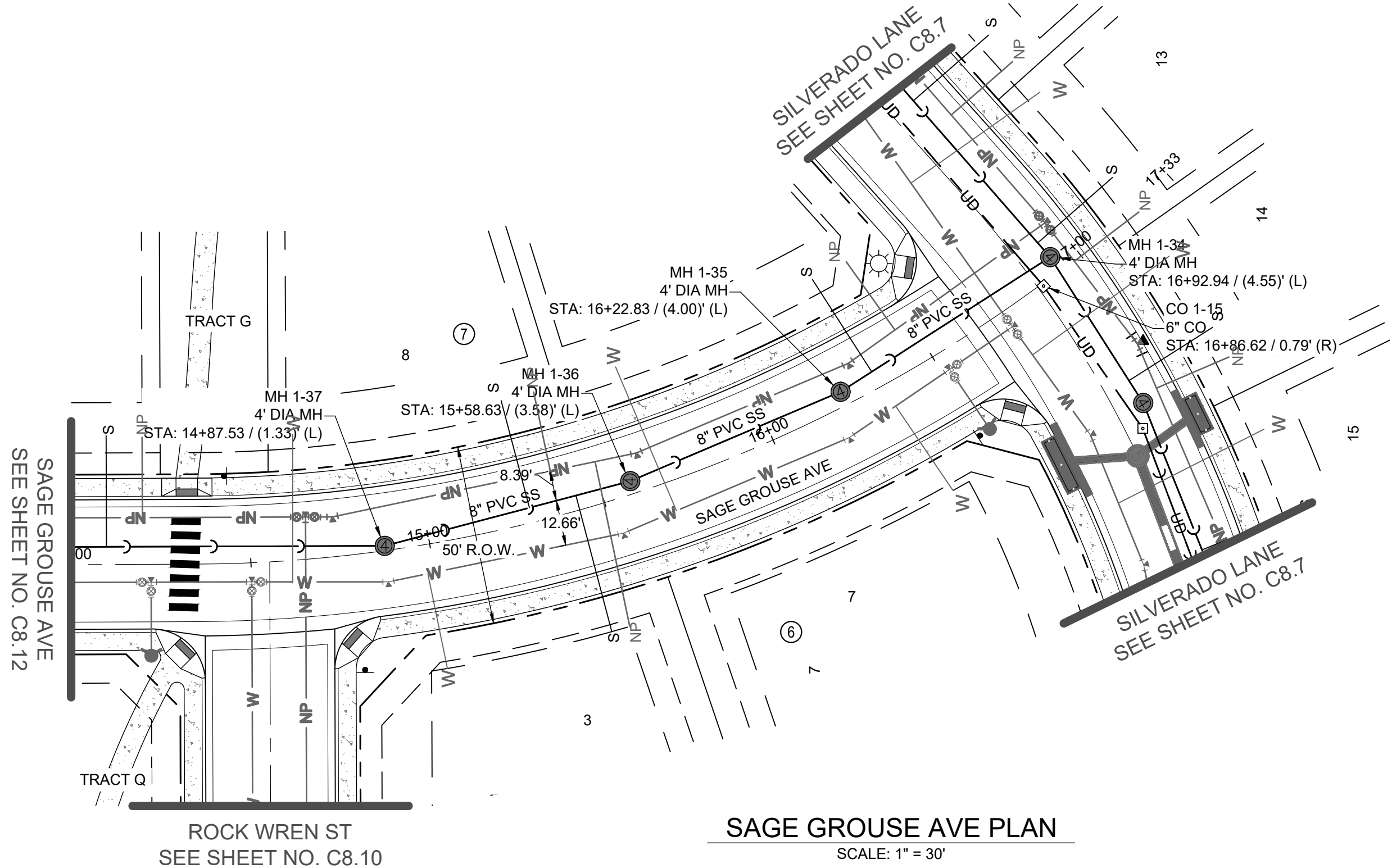


MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
SAGE GROUSE AVE SANITARY P&P

SHEET

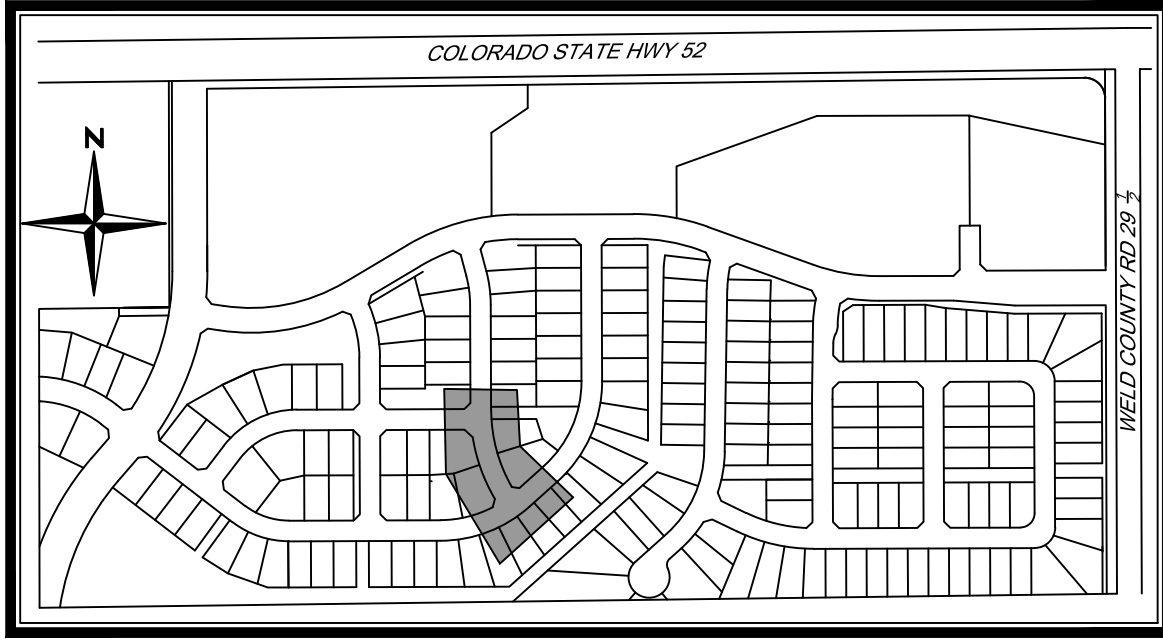
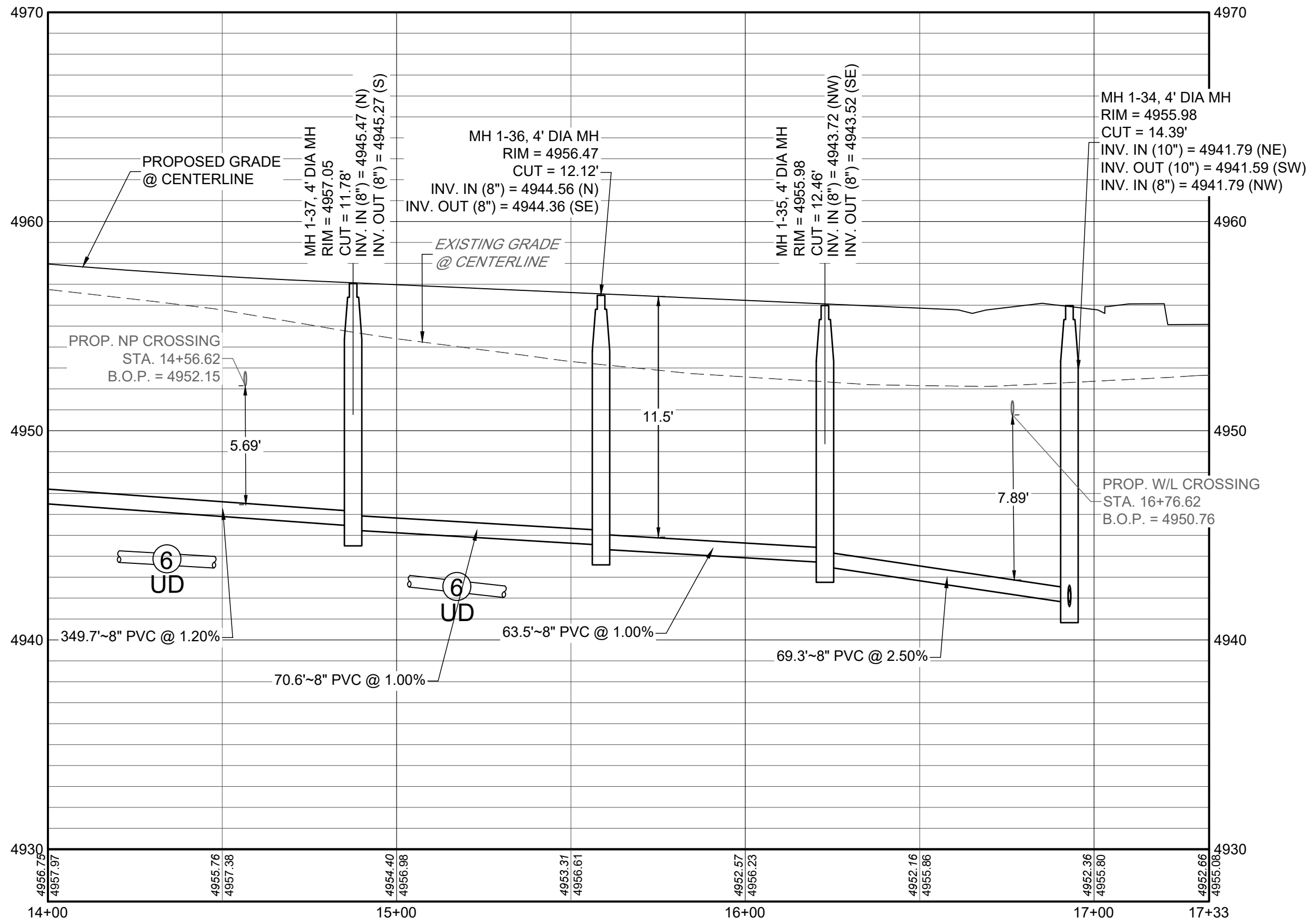
C8.12





SAGE GROUSE AVE PROFILE

H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S.

NOTES:

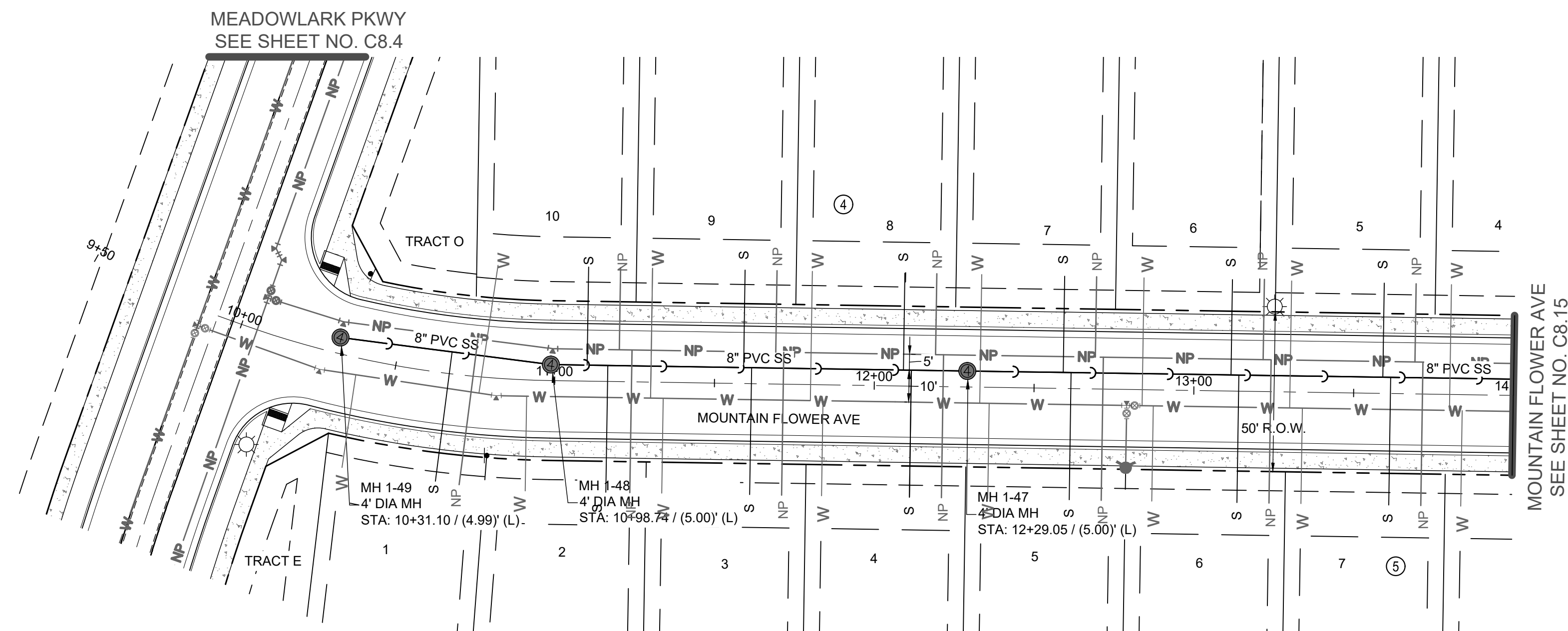
1. ALL STATIONING IS CENTERLINE OF STREET UNLESS OTHERWISE NOTED ON PLANS.
2. REFER TO SHEETS C10.1 - C10.2 FOR SANITARY SEWER DETAILS.
3. ALL SANITARY SEWER LINES SHALL BE SDR 26 PVC OR APPROVED EQUAL.
4. REFER TO FINAL PLAT FOR RIGHT-OF-WAY AND CENTERLINE DIMENSION, AND HORIZONTAL CONTROL.
5. LOTS DENOTED WITH AN *** INDICATE A LOT THAT HAS ATYPICAL SANITARY SEWER SERVICE LAYOUT.
6. REFER TO SHEETS GEOTECHNICAL STUDY FOR UNDERDRAIN DETAILS.
7. ALL NEWLY INSTALLED UNDERGROUND UTILITIES, INCLUDING SANITARY SEWER AND SERVICES, MUST BE ELECTRONICALLY LOCATABLE IN COMPLIANCE WITH STATE STATUTE.

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
SAGE GROUSE AVE SANITARY P&P

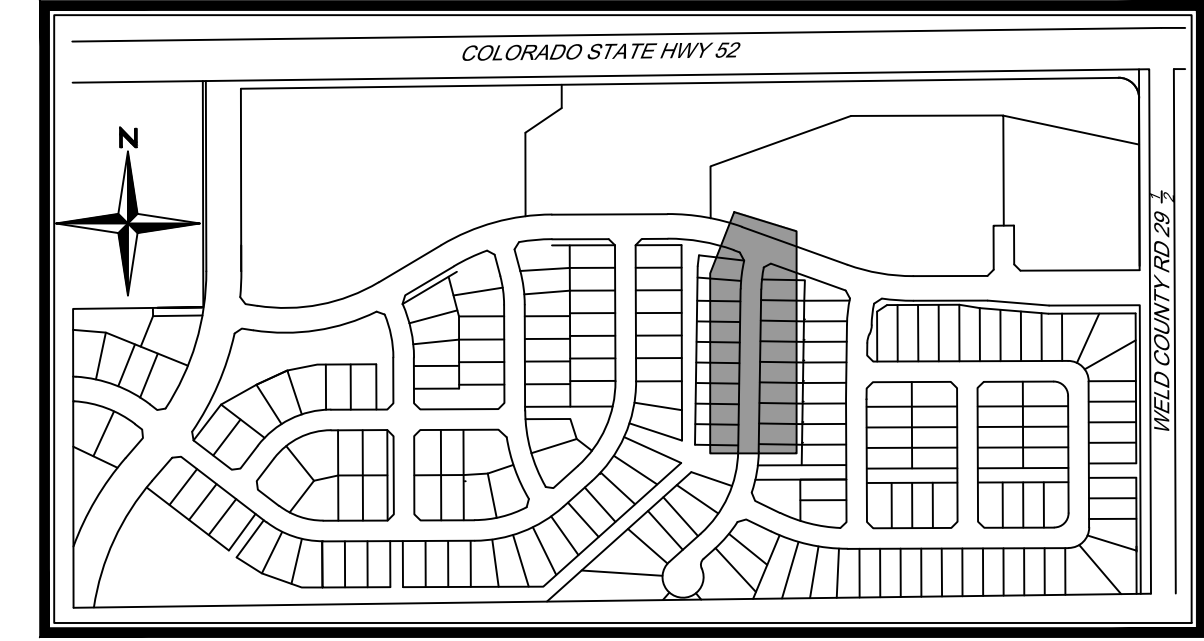
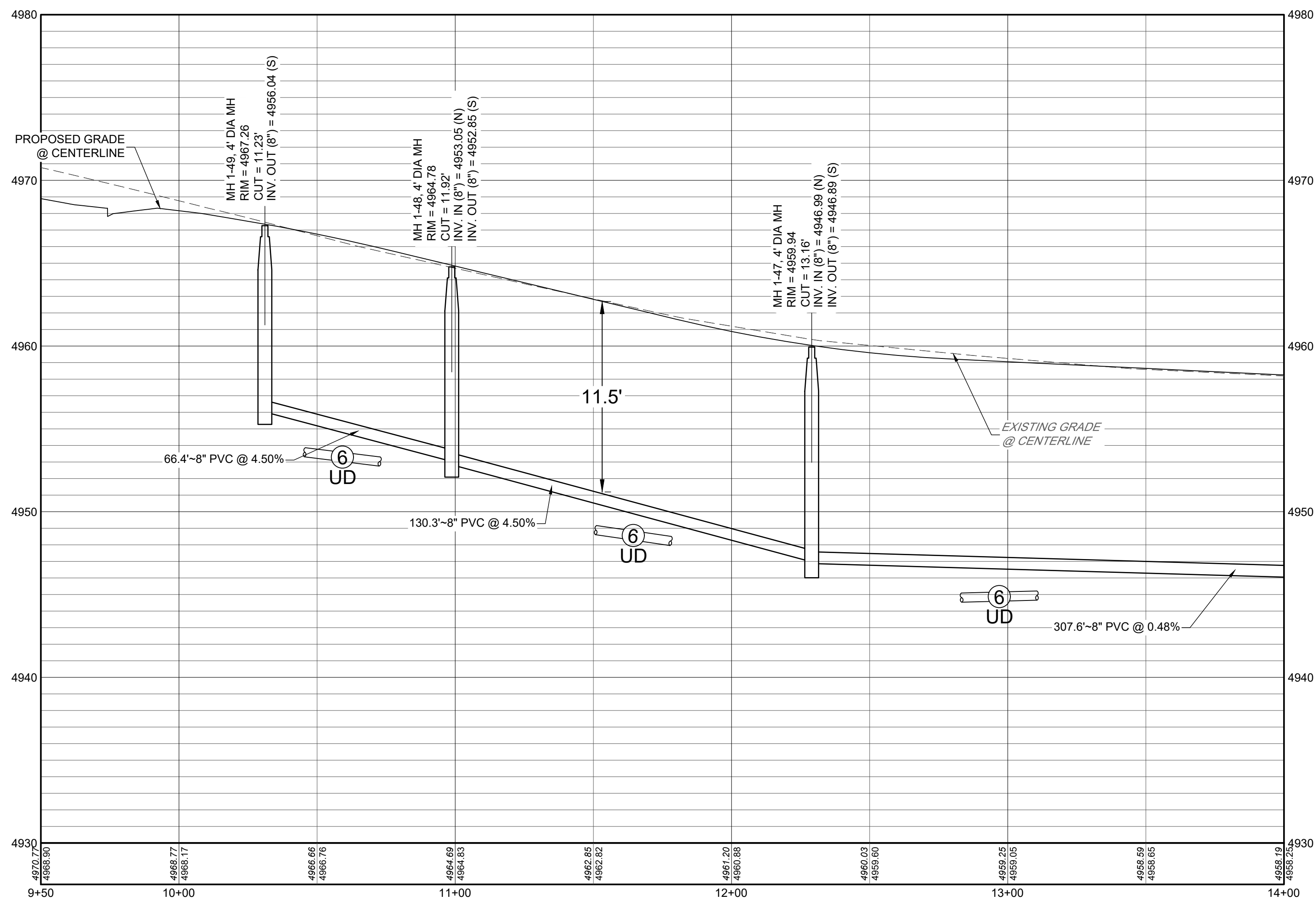
SHEET

C8.13



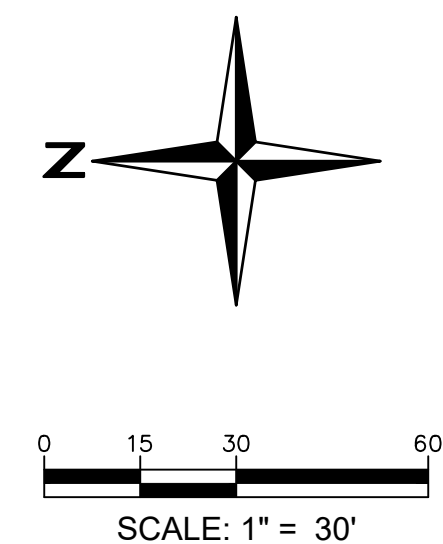


MOUNTAIN FLOWER AVE PLAN
SCALE: 1" = 30'

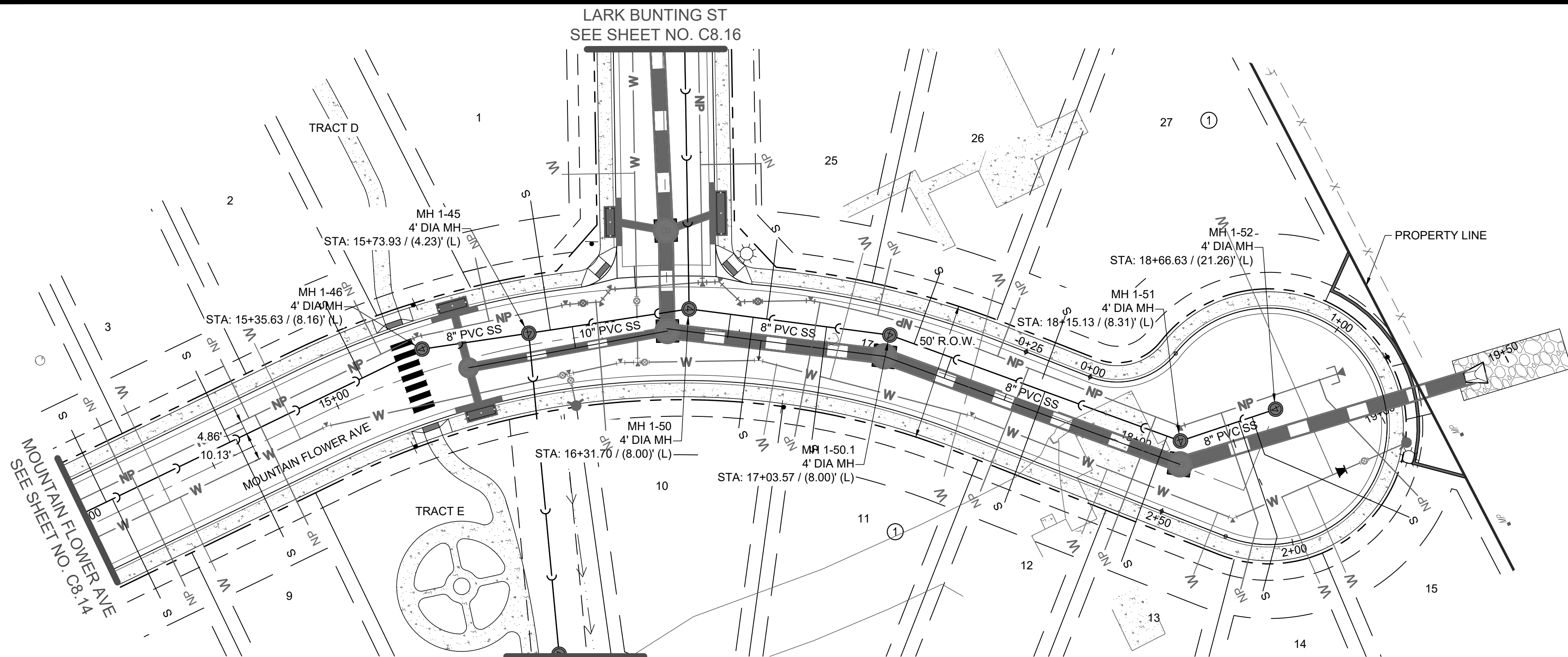


- NOTES:

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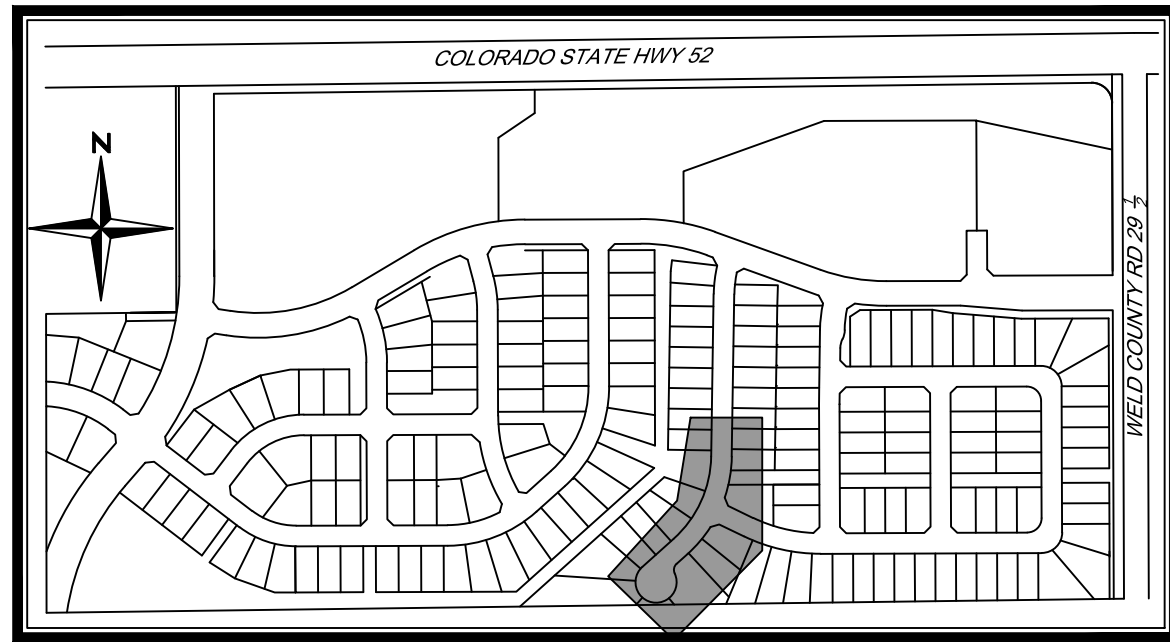
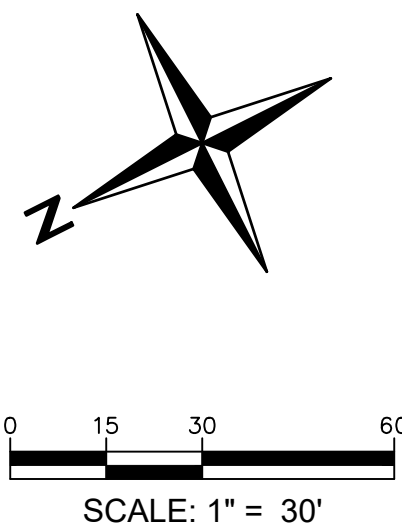
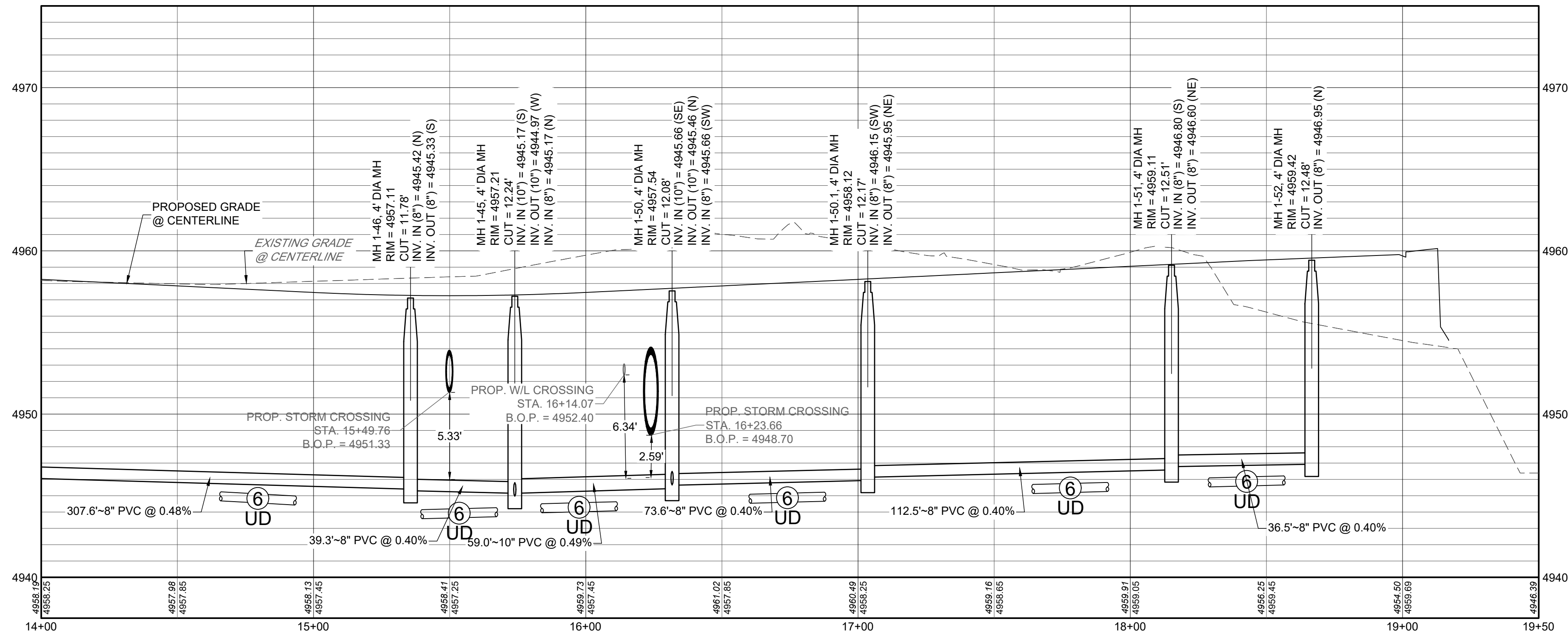
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MOUNTAIN FLOWER AVE PLAN
SCALE: 1" = 30'

MOUNTAIN FLOWER AVE PROFILE

H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

NOTES:

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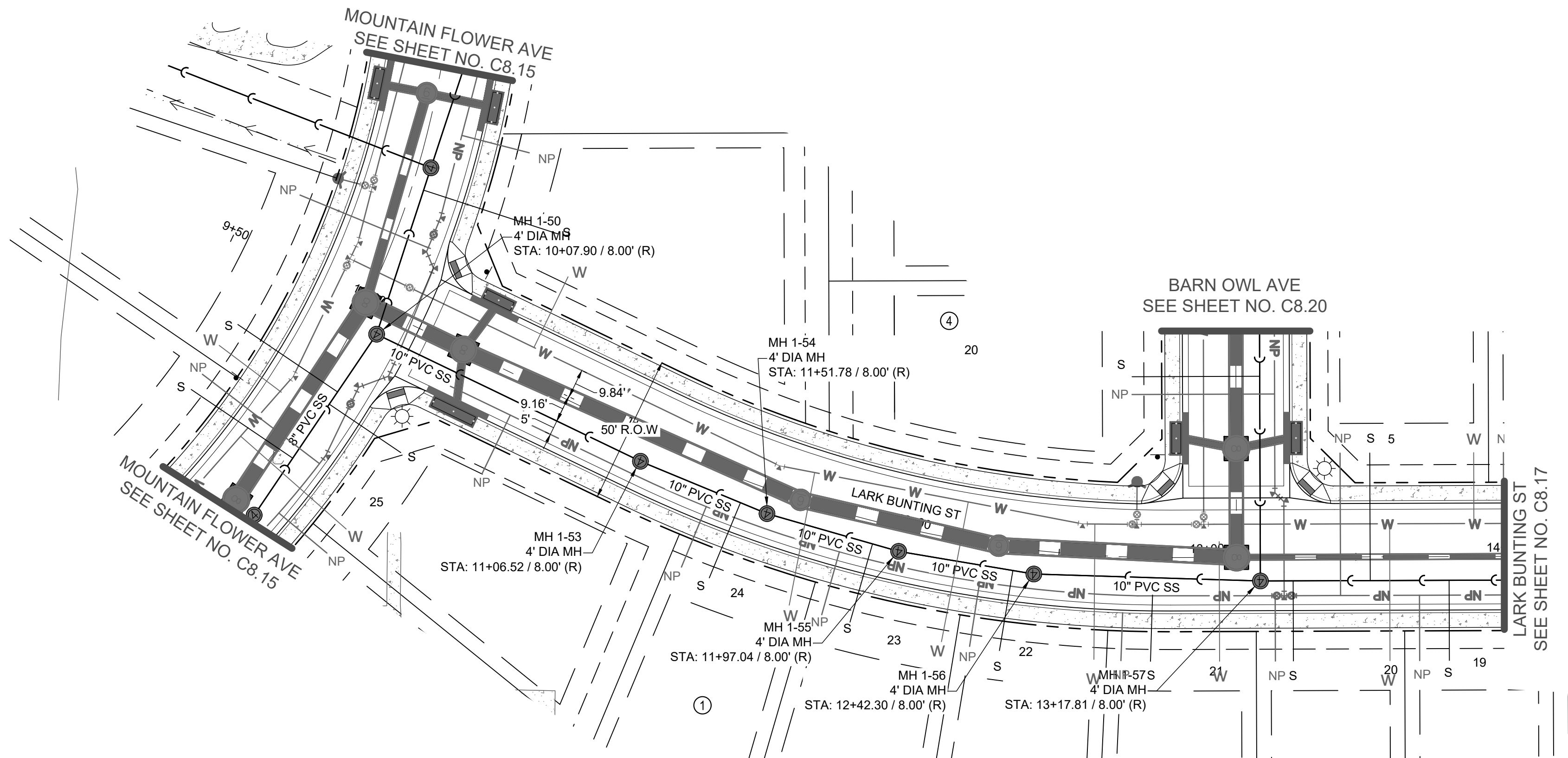
MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
MOUNTAIN FLOWER AVE SANITARY P&P

SHEET

C8.15



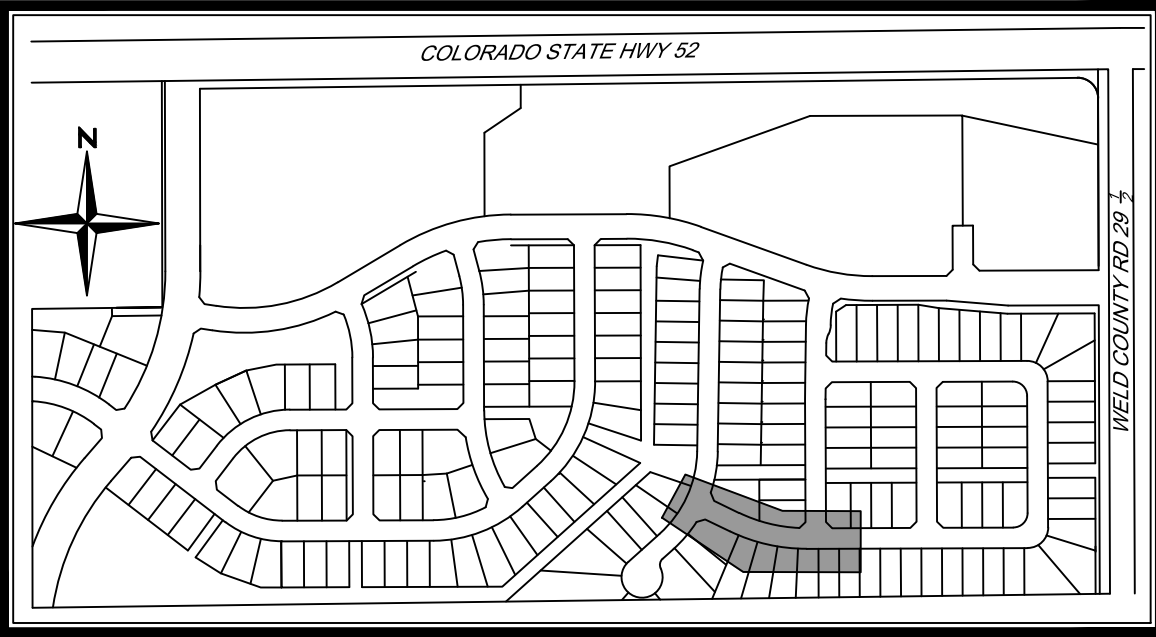
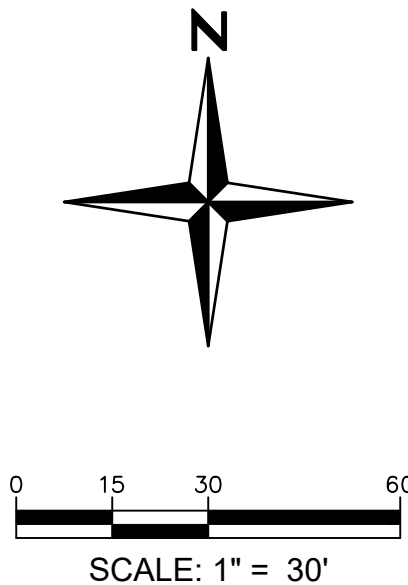
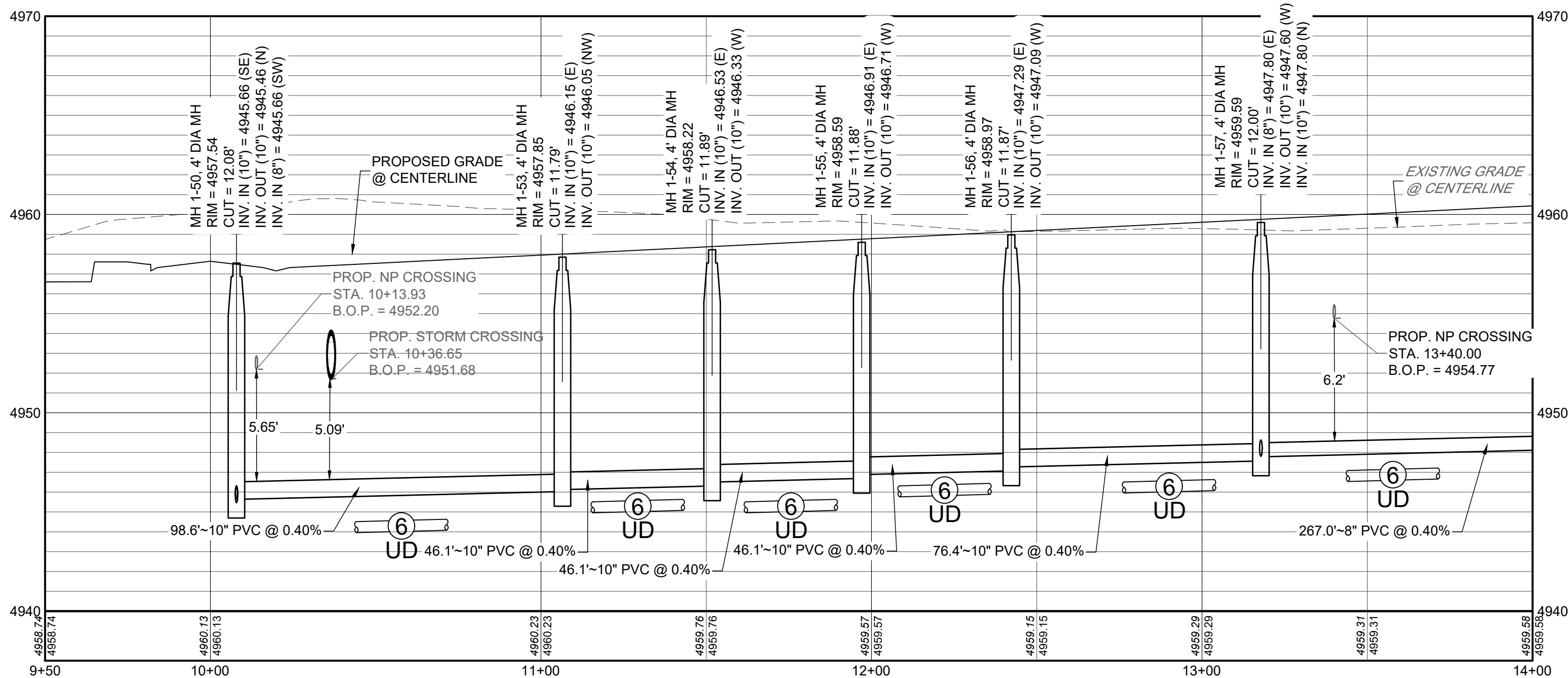
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LARK BUNTING ST PLAN
SCALE: 1" = 30'

LARK BUNTING ST PROFILE

H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
LARK BUNTING ST SANITARY P&P

SHEET

C8.16



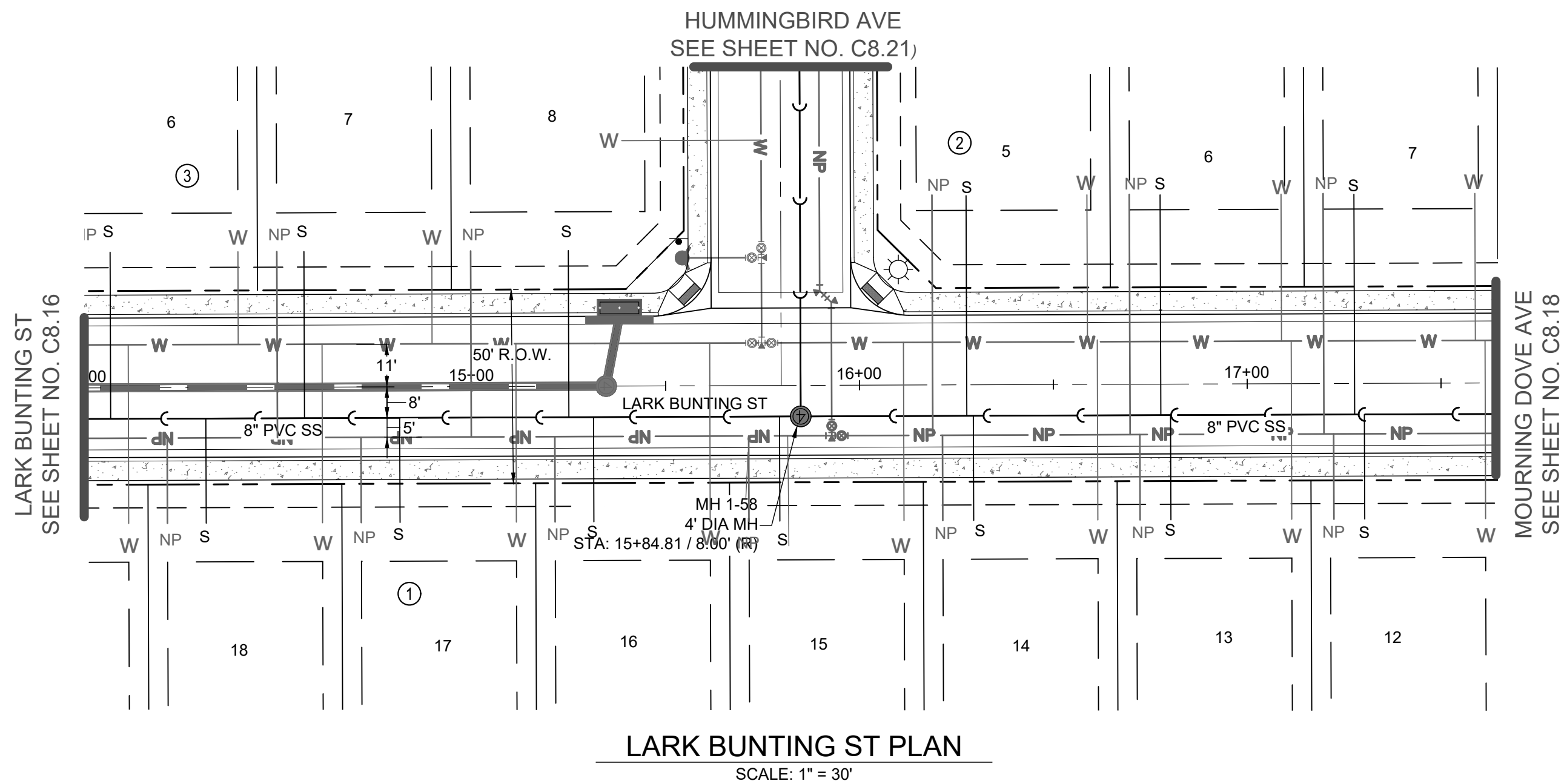
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CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	1" = 30'
VERT. SCALE	1" = 5'

NOTES

DATE

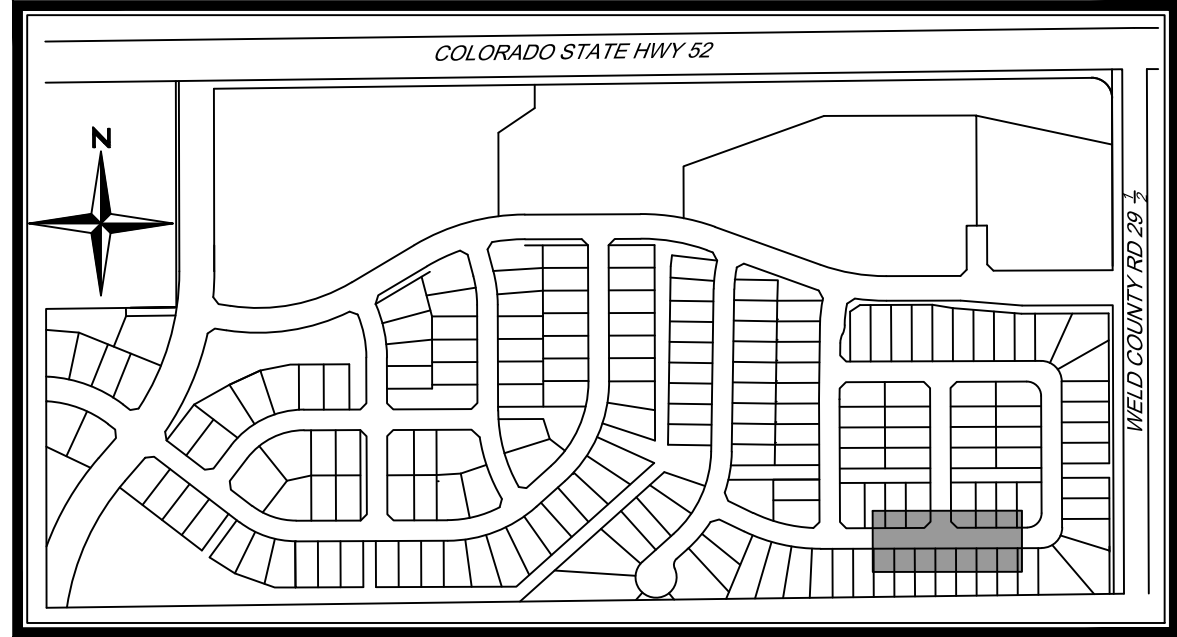
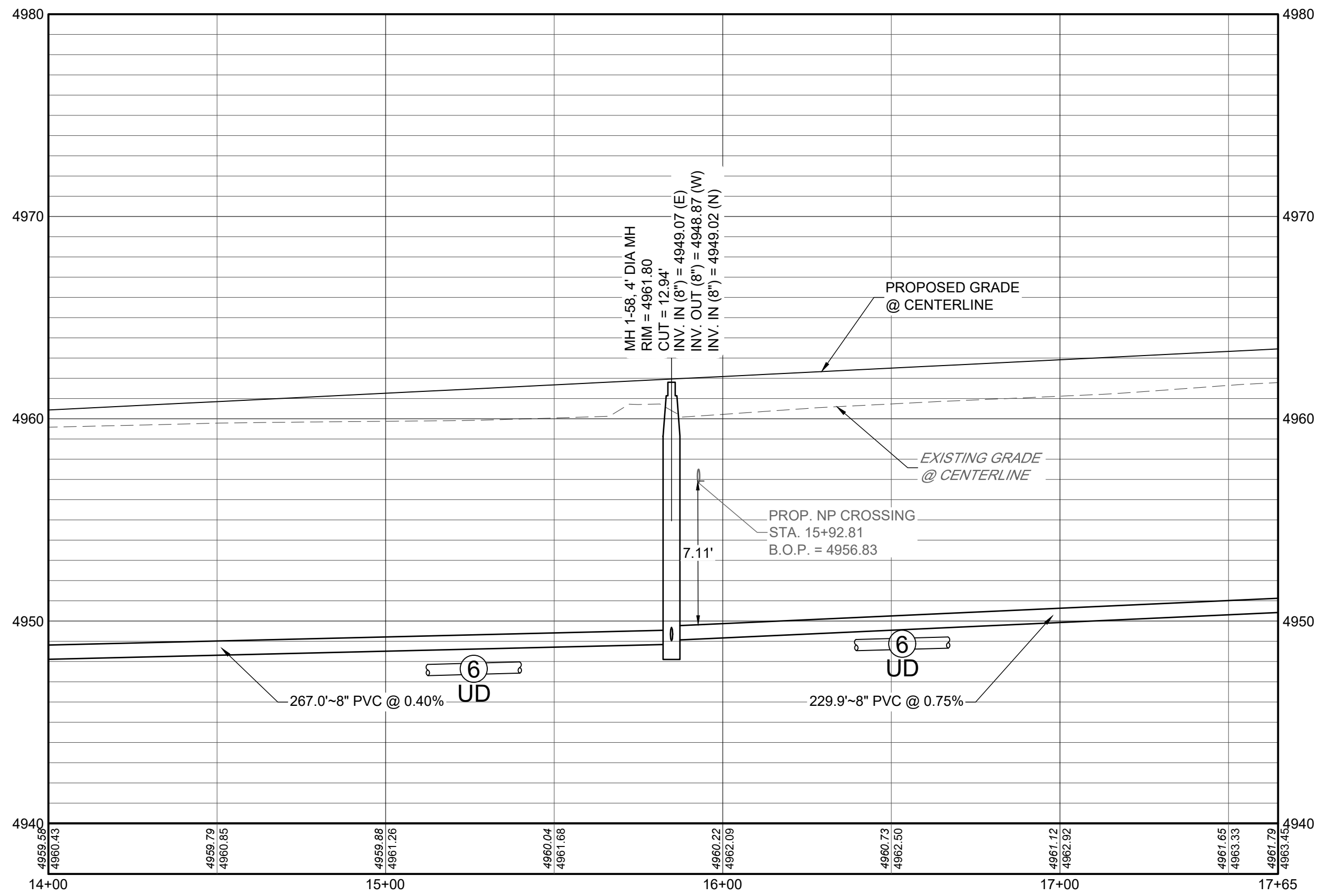
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LARK BUNTING ST PROFILE

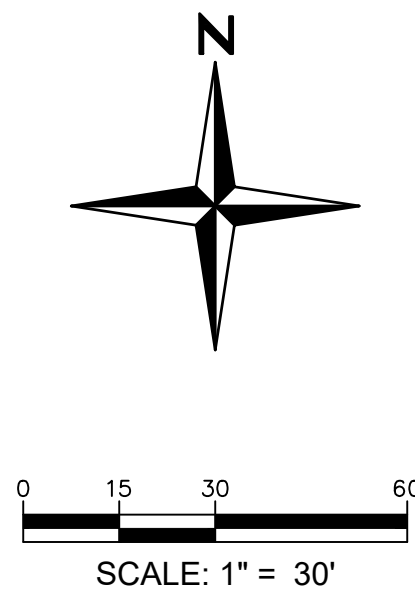
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S.

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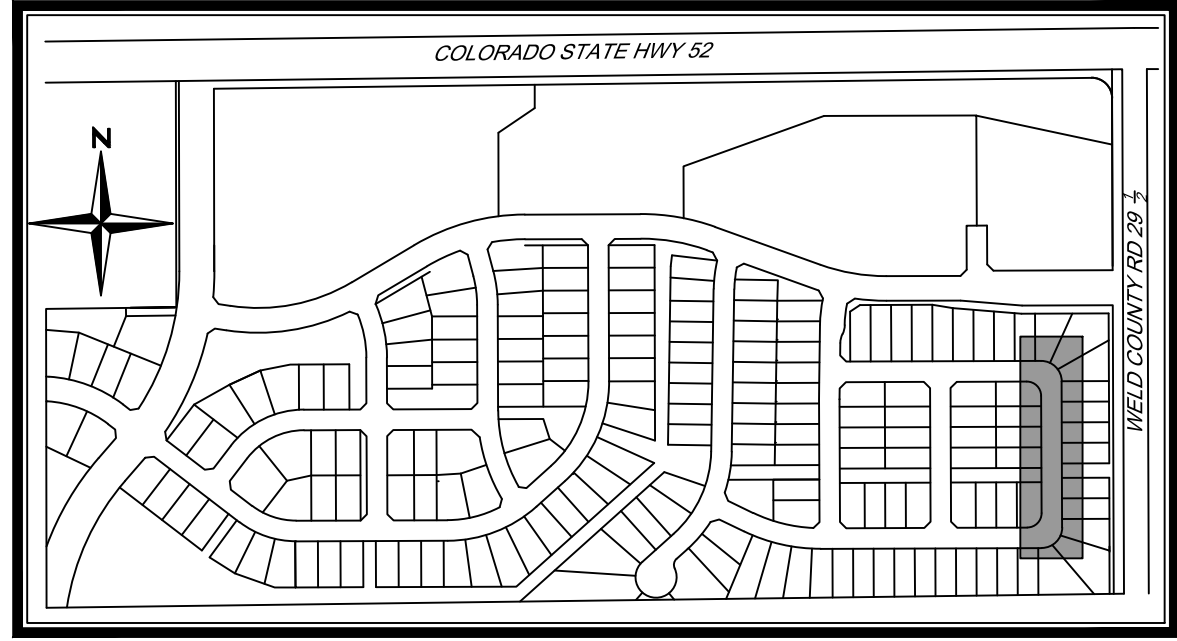
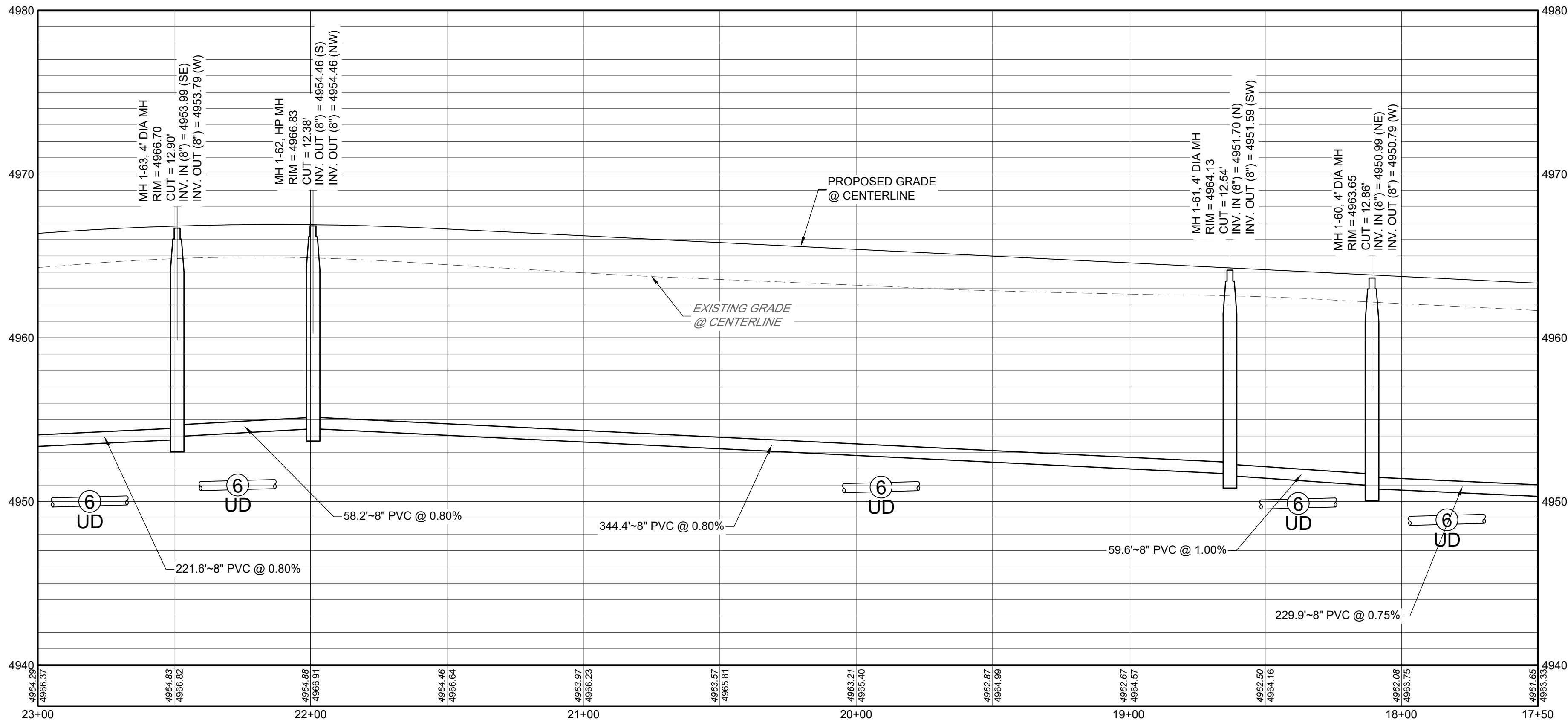
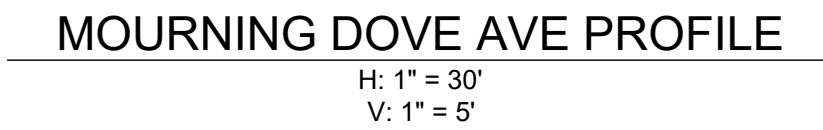
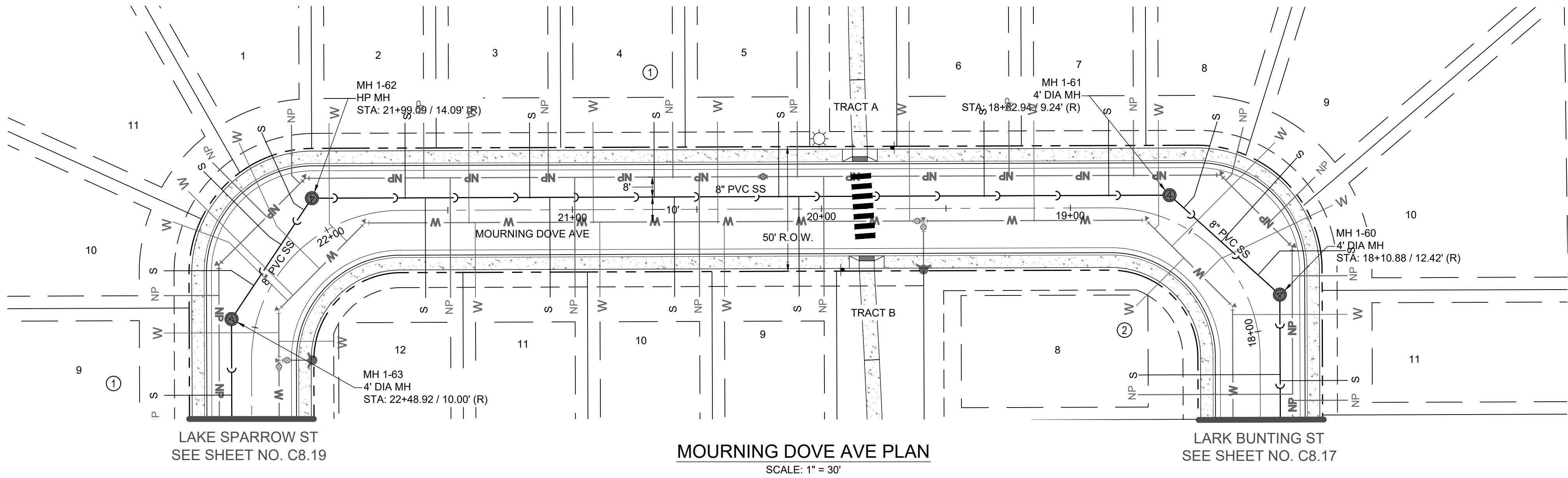
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CIVIL CONSTRUCTION DOCUMENTS
LARK BUNTING ST SANITARY P&P

SHEET

C8.17

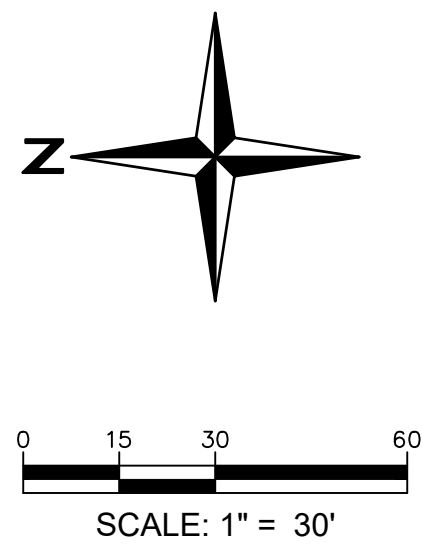


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NOTES:

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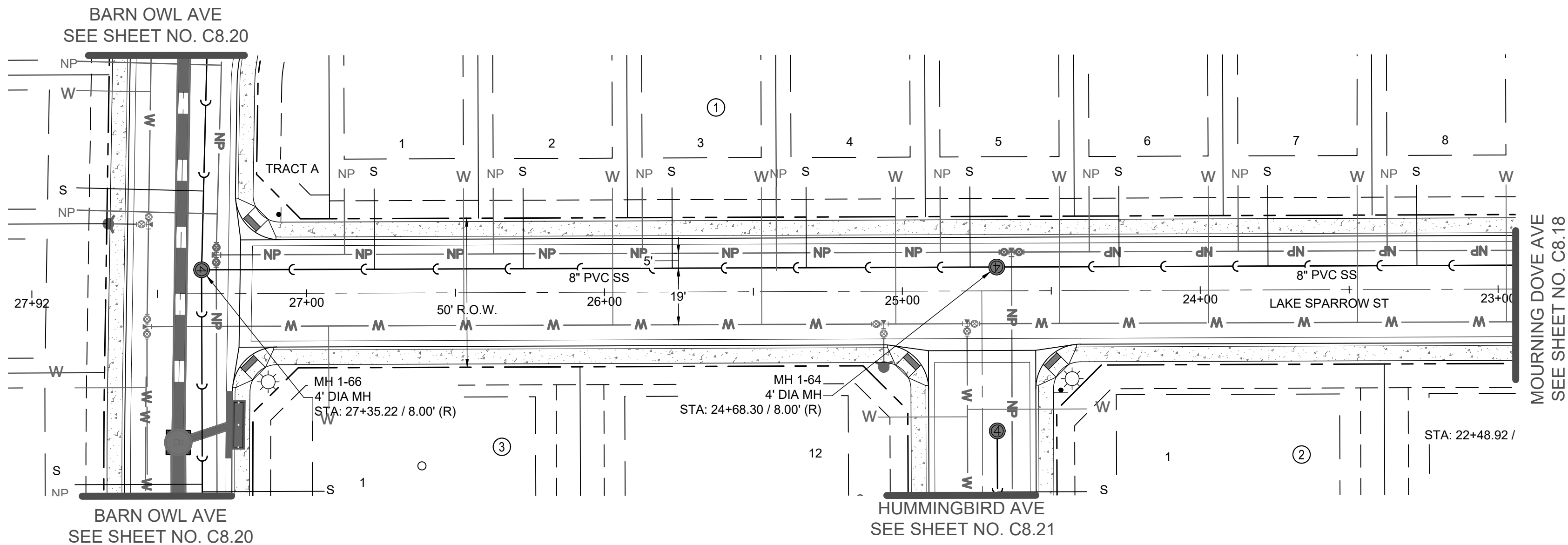
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MOURNING DOVE AVE SANITARY P&P

SHEET

C8.18

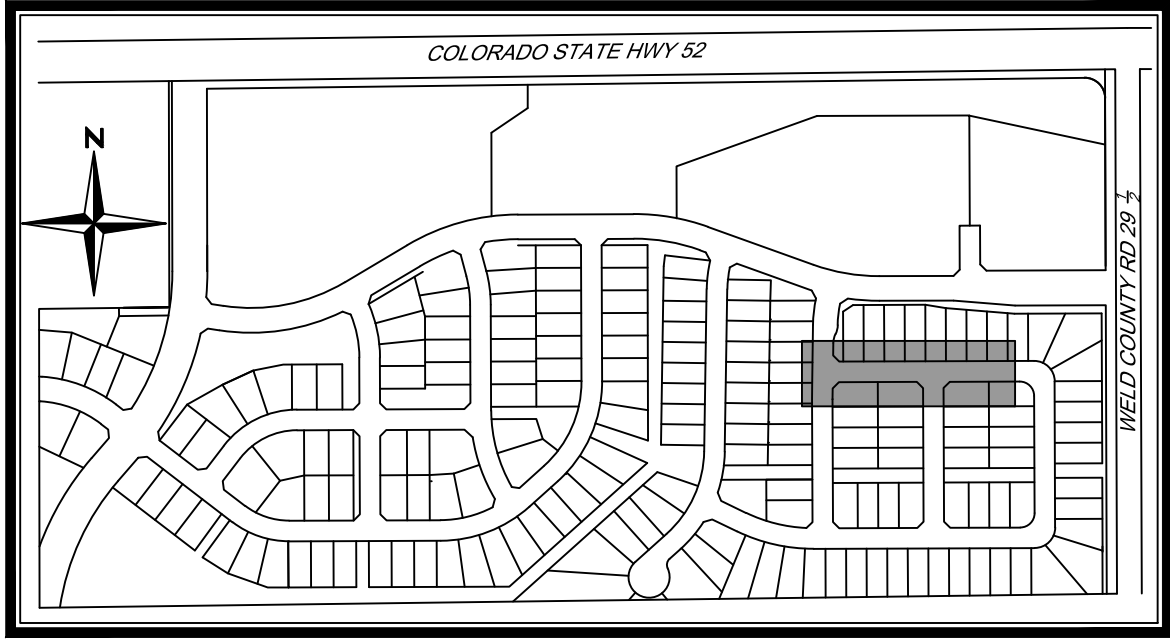
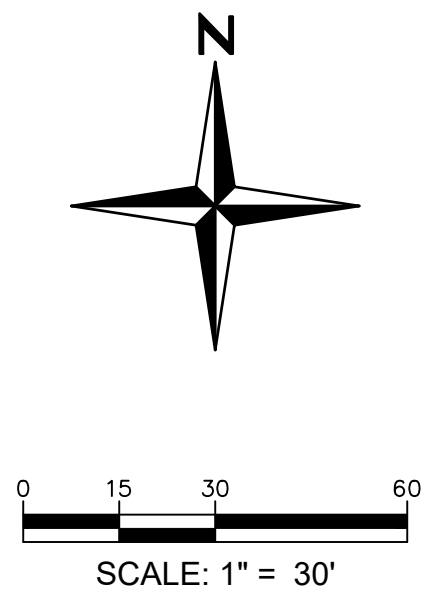
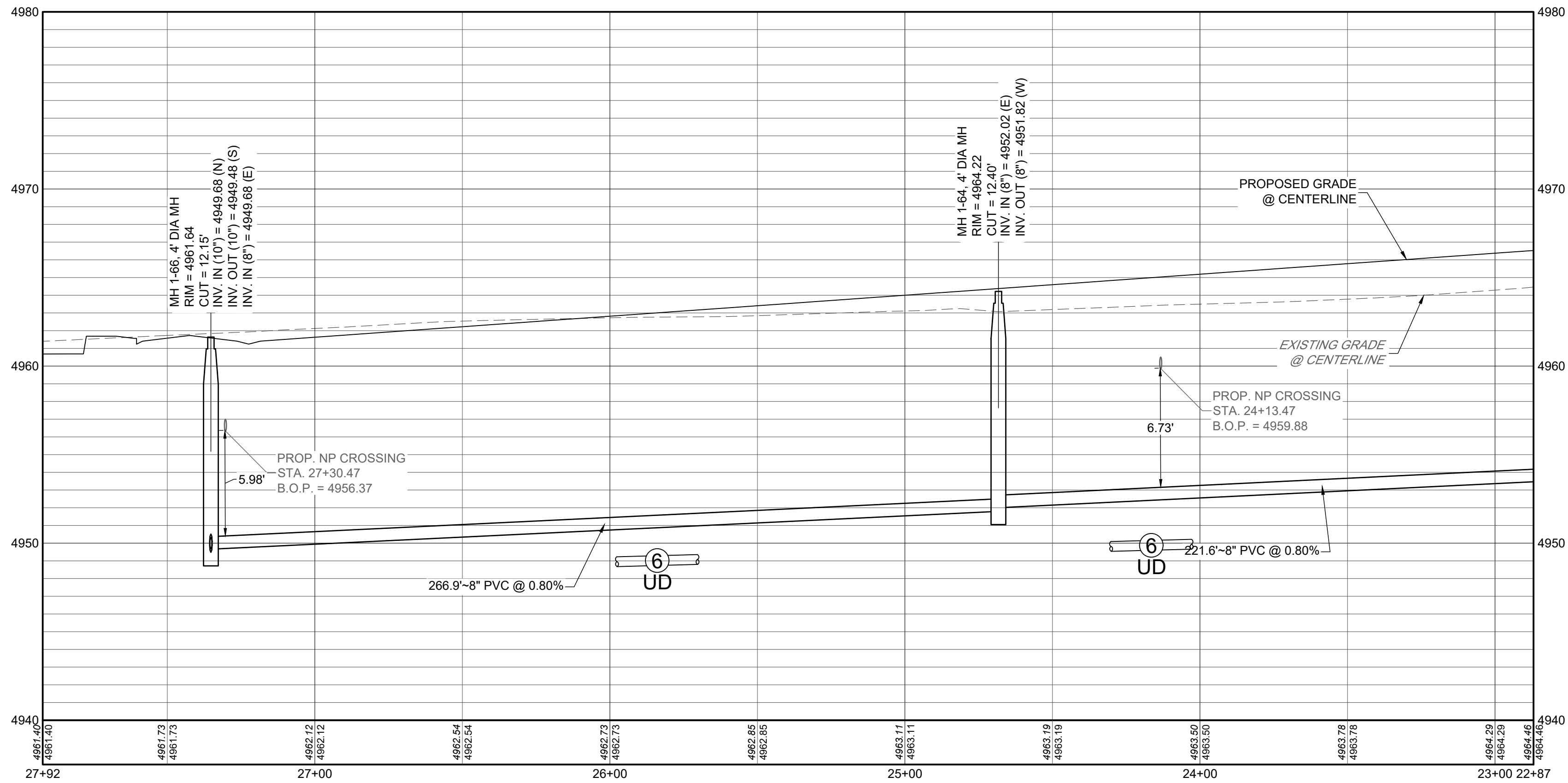


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LAKE SPARROW ST PLAN
SCALE: 1" = 30'

LAKE SPARROW ST PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

NOTES:

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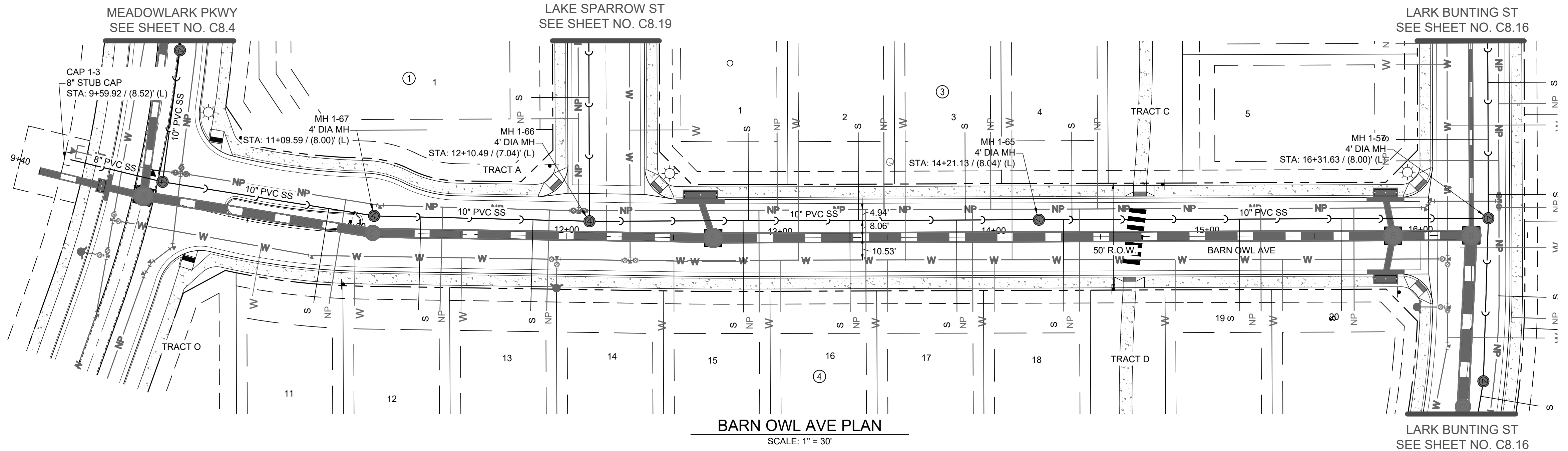
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CIVIL CONSTRUCTION DOCUMENTS
LAKE SPARROW ST SANITARY P&P

SHEET

C8.19



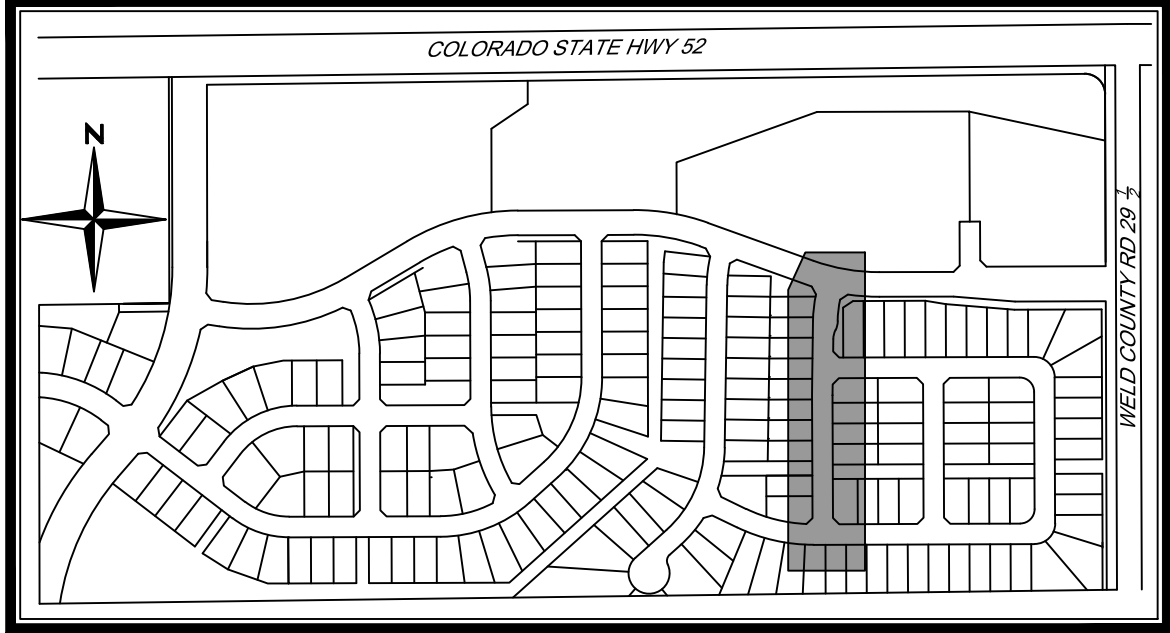
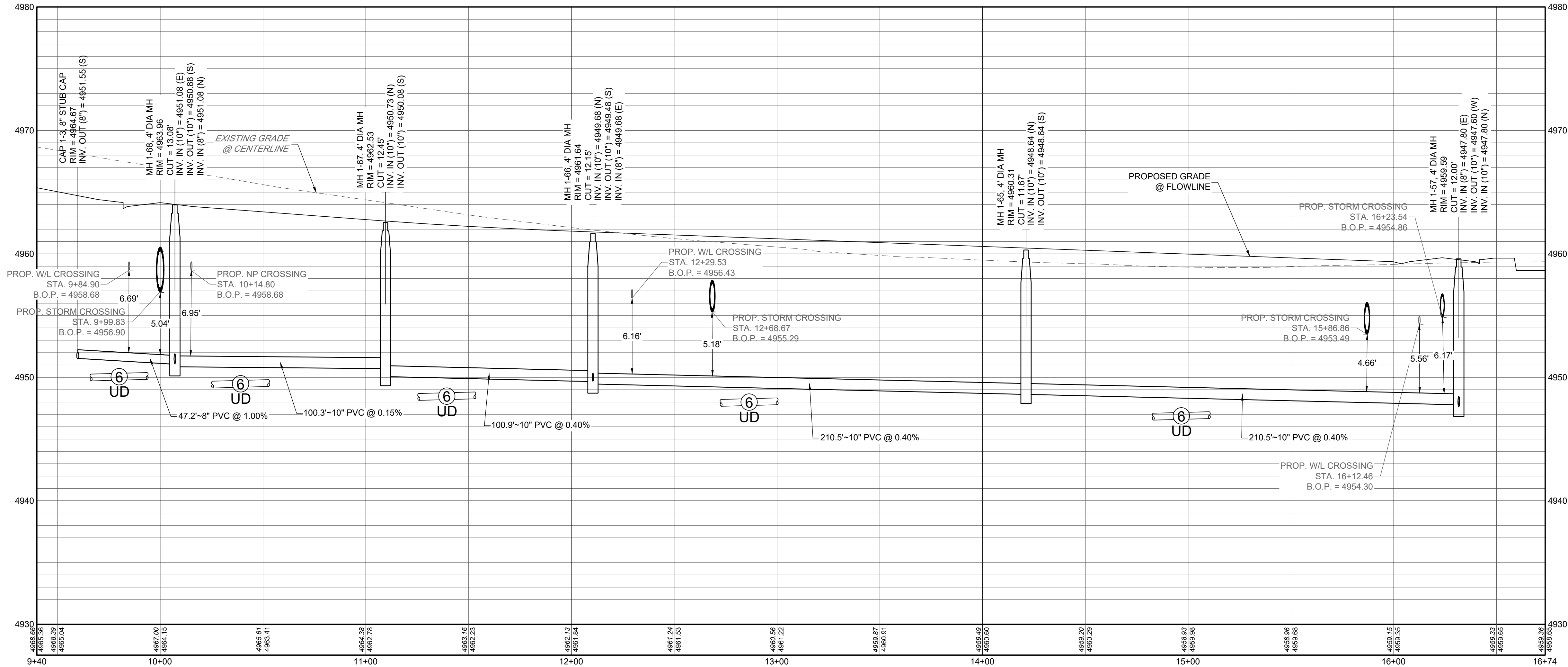
I:\2019\19032 - murata farms\CADD\sheet_sets\Construction drawings\SANITARY\19032 - STREET 1 SANITARY P&P.dwg tbb: C8.20 BARN OWL AVE SANITARY P&P Aug. 20, 2021 - 1:45pm ekaski



BARN OWL AVE PLAN
SCALE: 1" = 30'

BARN OWL AVE PROFILE

H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

NOTES:

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
BARN OWL AVE SANITARY P&P

SHEET

C8.20



7700 283 4793 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

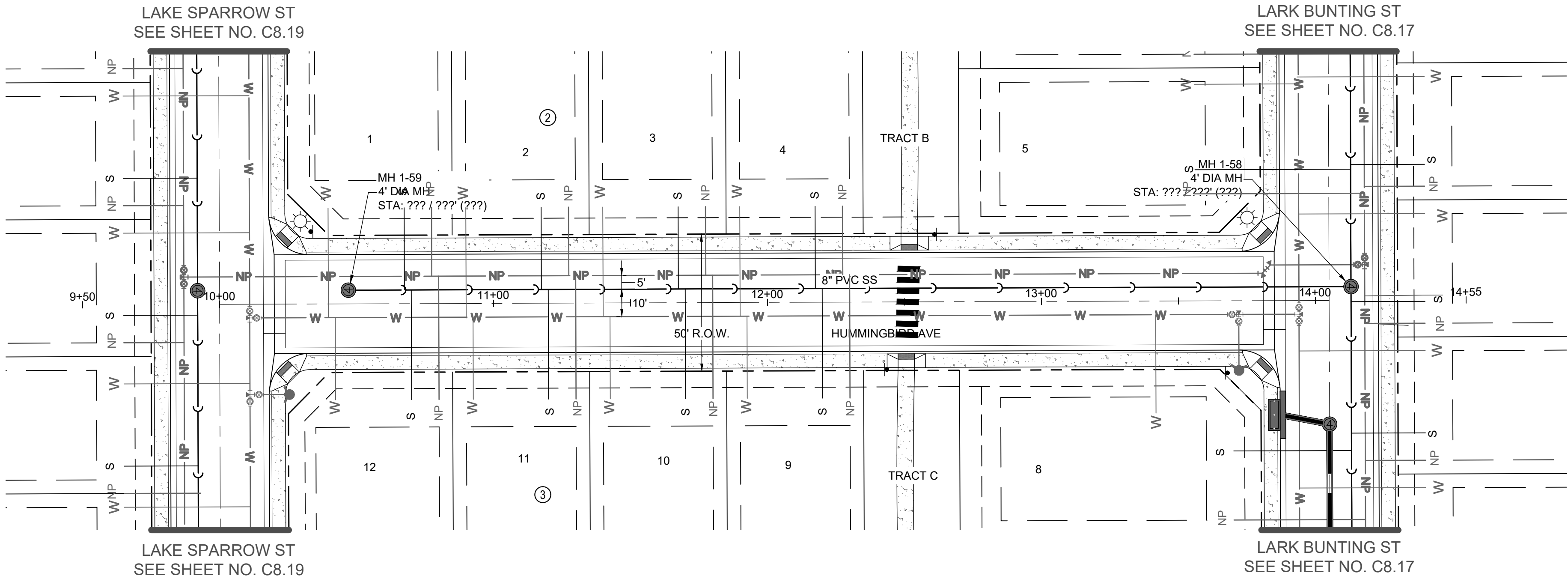
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CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	1" = 30'
VERT. SCALE	1" = 5'

NOTES

DATE

NO.

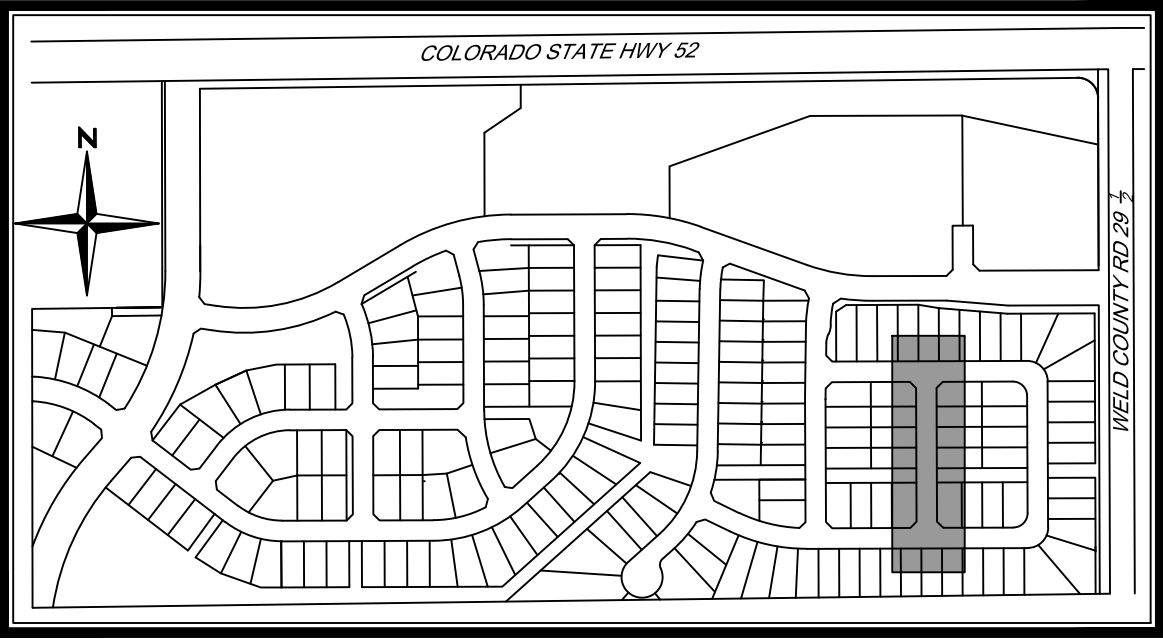
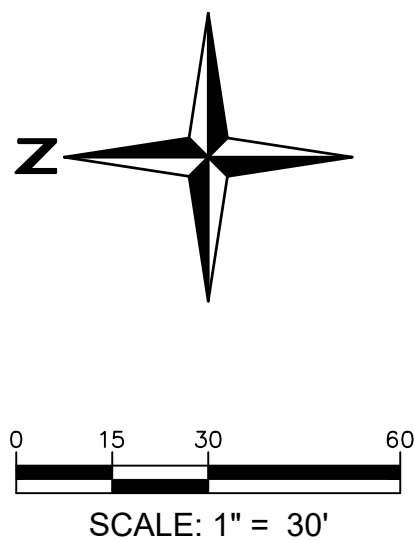
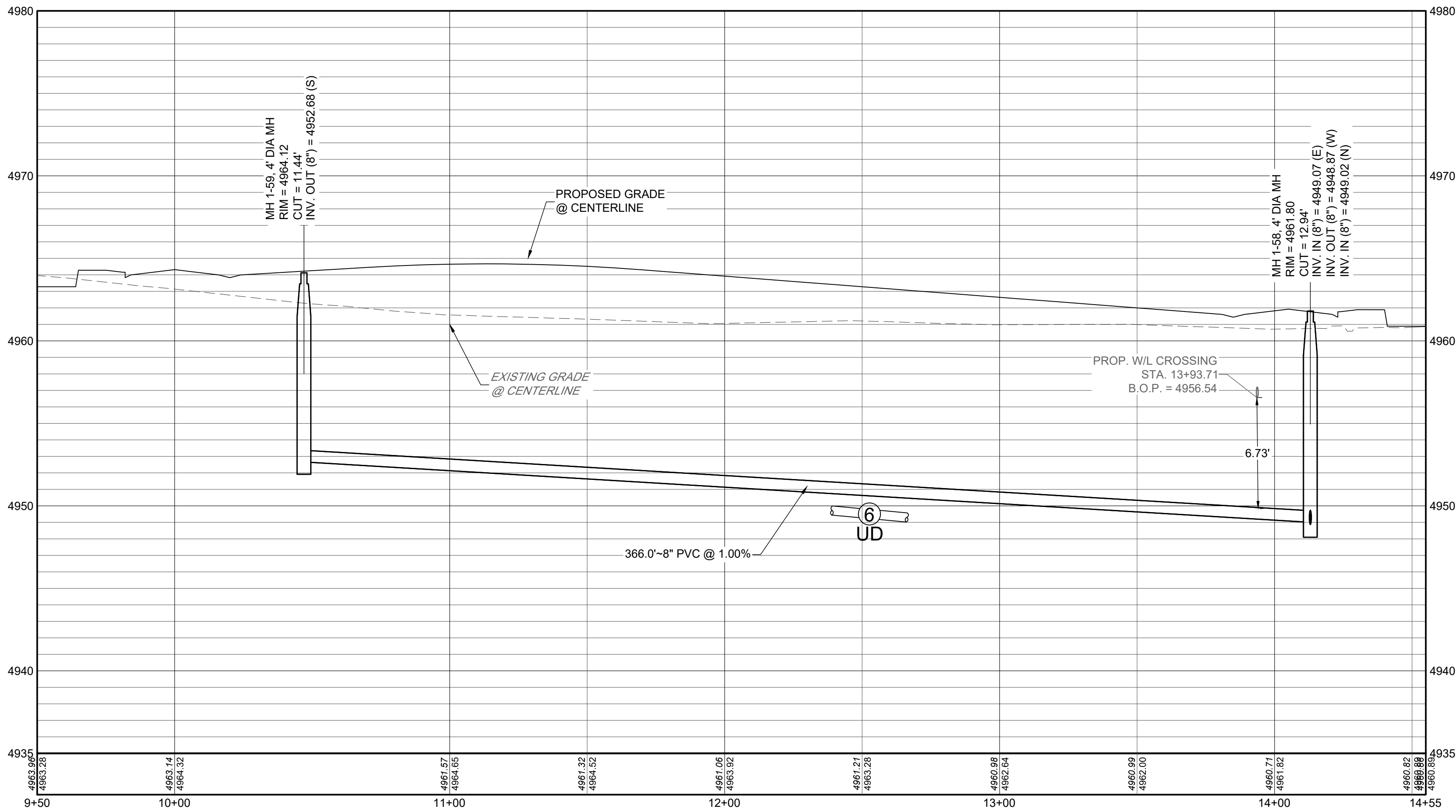
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HUMMINGBIRD AVE. PLAN
SCALE: 1" = 30'

HUMMINGBIRD AVE. PROFILE

H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S

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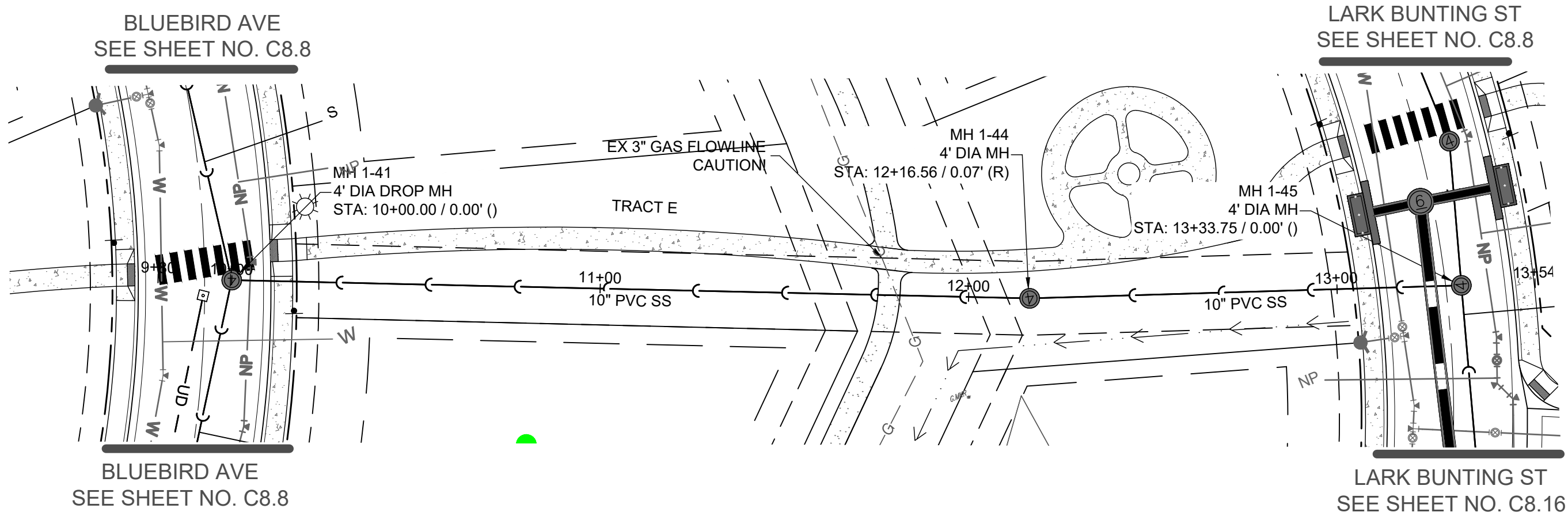
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CIVIL CONSTRUCTION DOCUMENTS
HUMMINGBIRD AVE SANITARY P&P

SHEET

C8.21

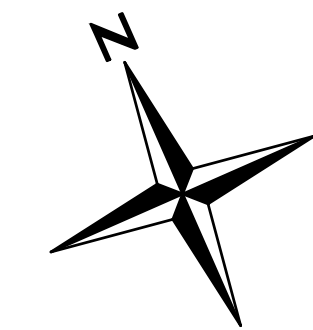
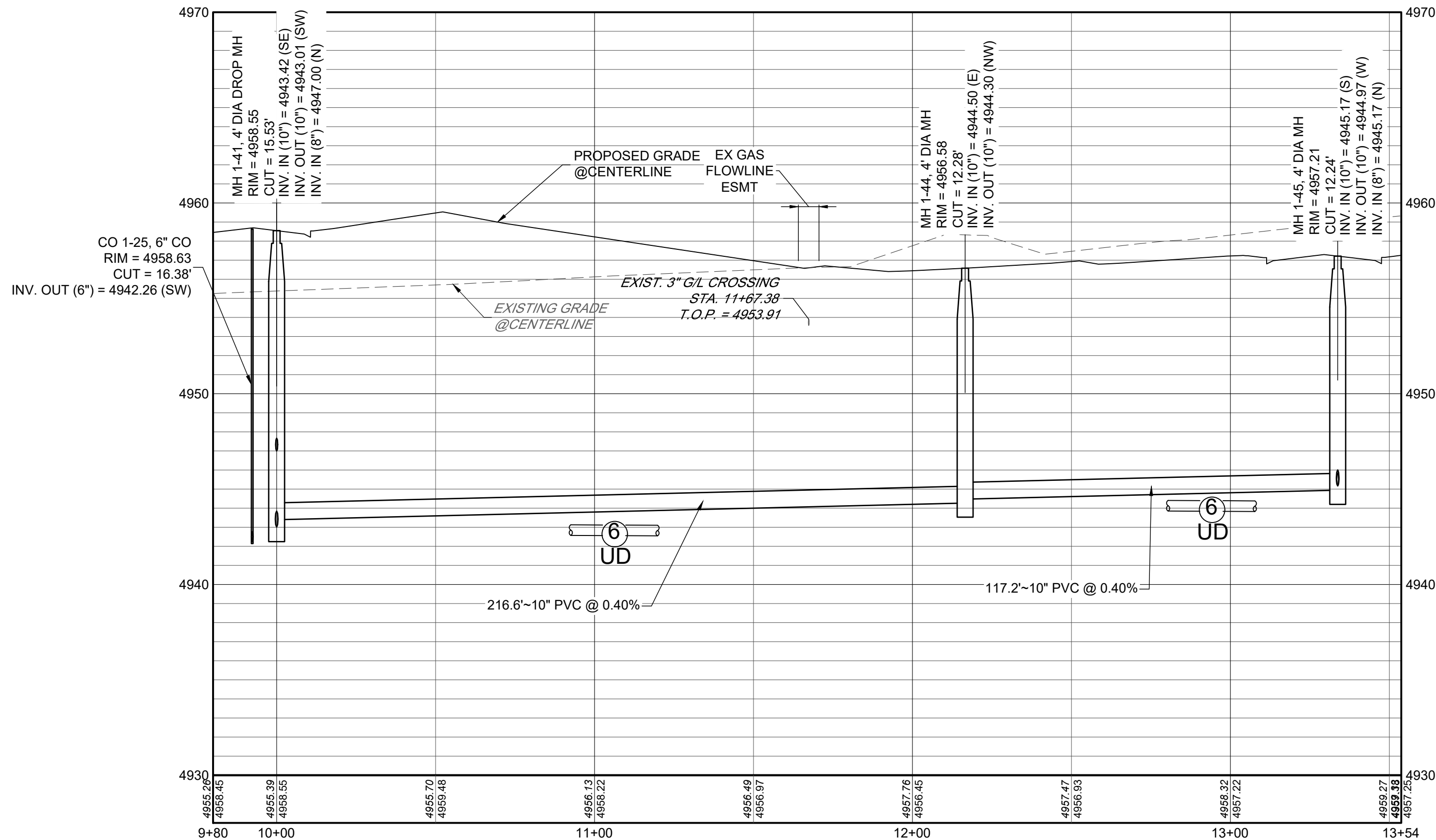


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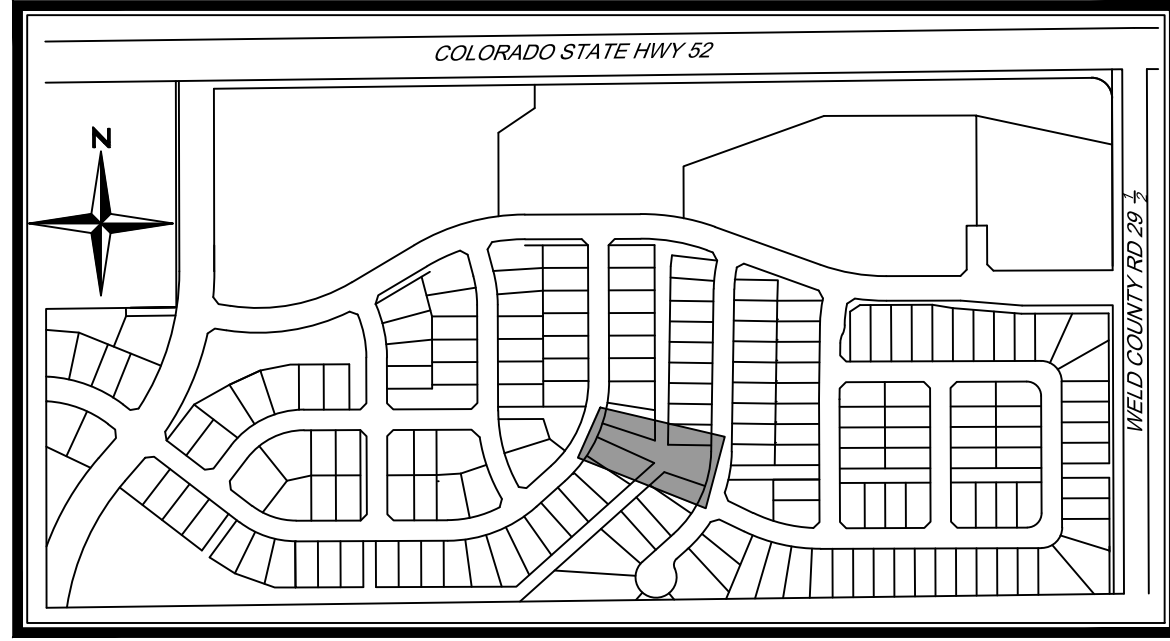


TRACT E PLAN
SCALE: 1" = 30'

TRACT E PROFILE
H: 1" = 30'
V: 1" = 5'



0 15 30 60
SCALE: 1" = 30'



KEYMAP
N.T.S

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

TRACT E SANITARY P&P

SHEET

C8.22



720.283.4793 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

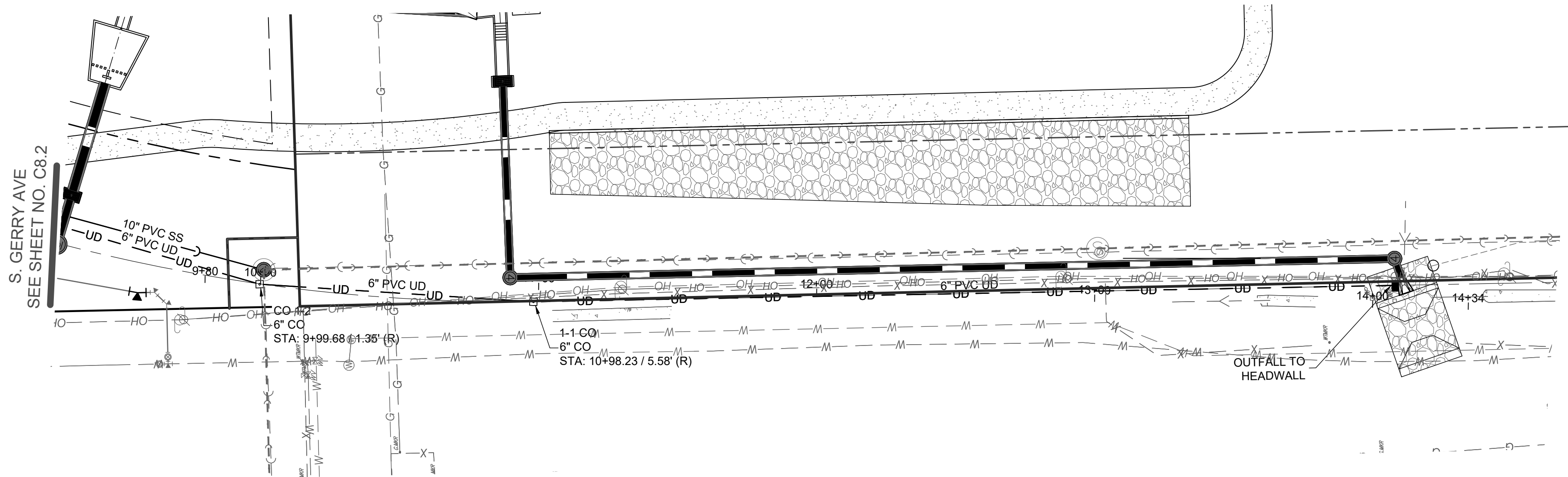
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PROJECT NO.	19032
HORIZ. SCALE	1" = 30'
VERT. SCALE	1" = 5'

NOTES

DATE

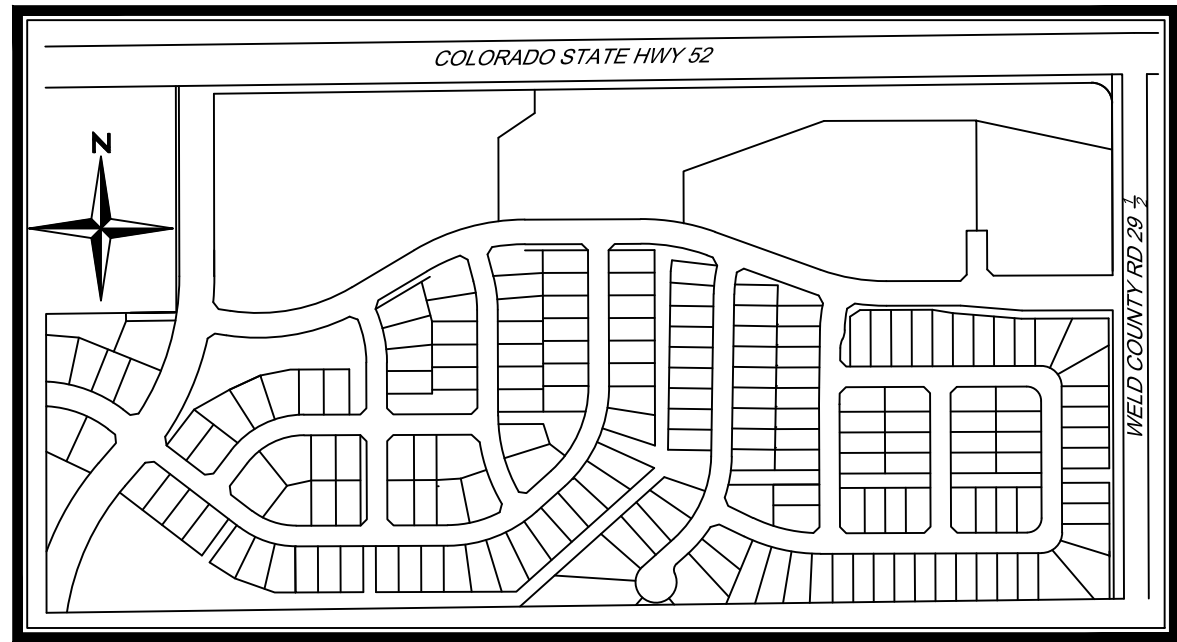
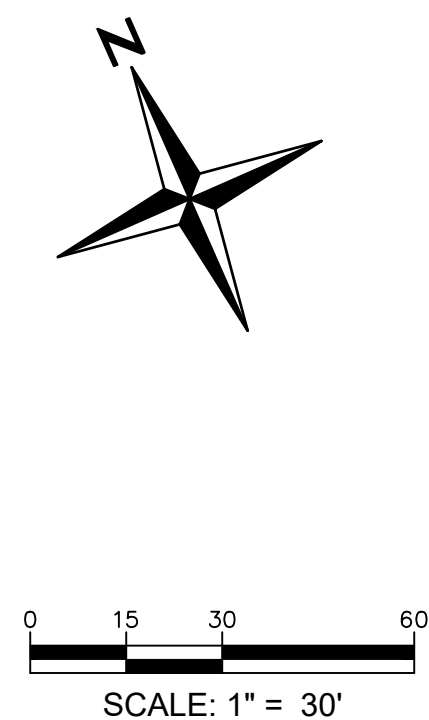
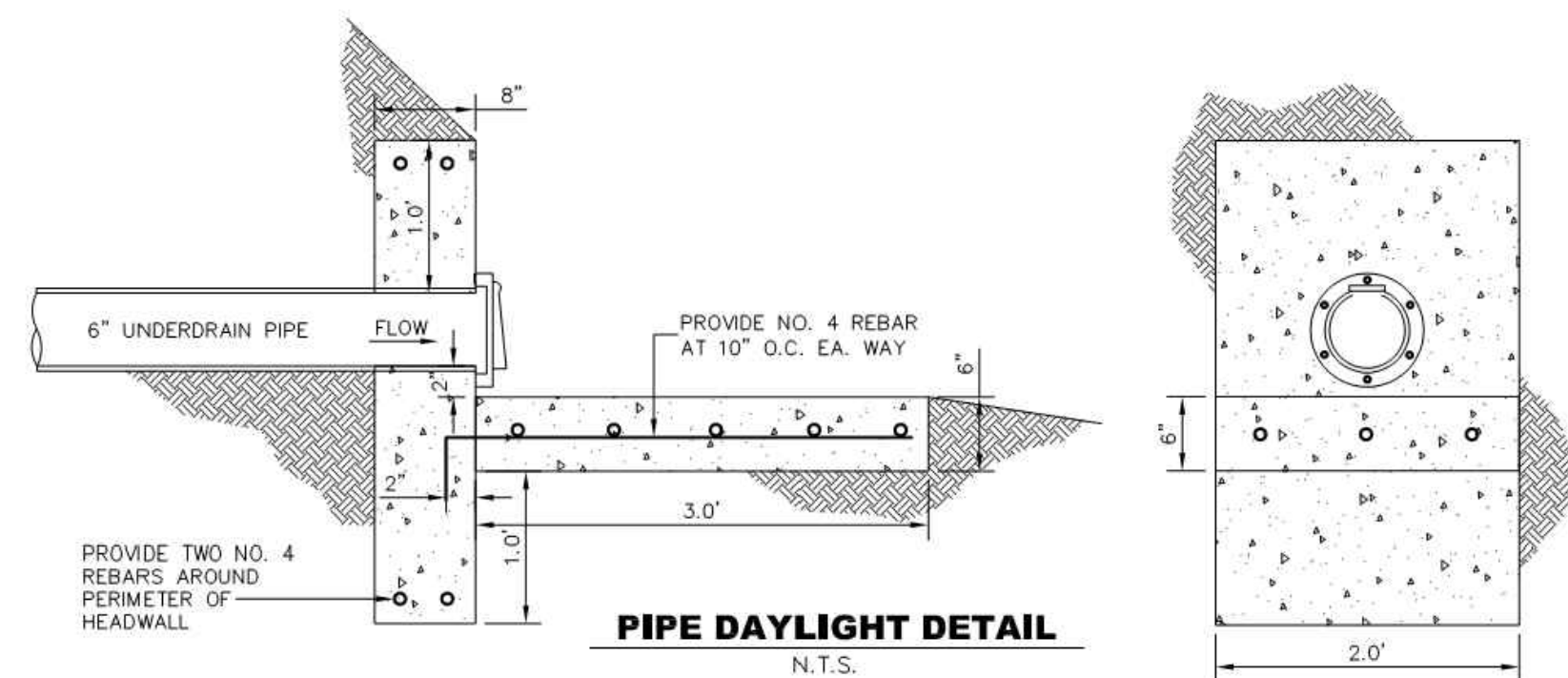
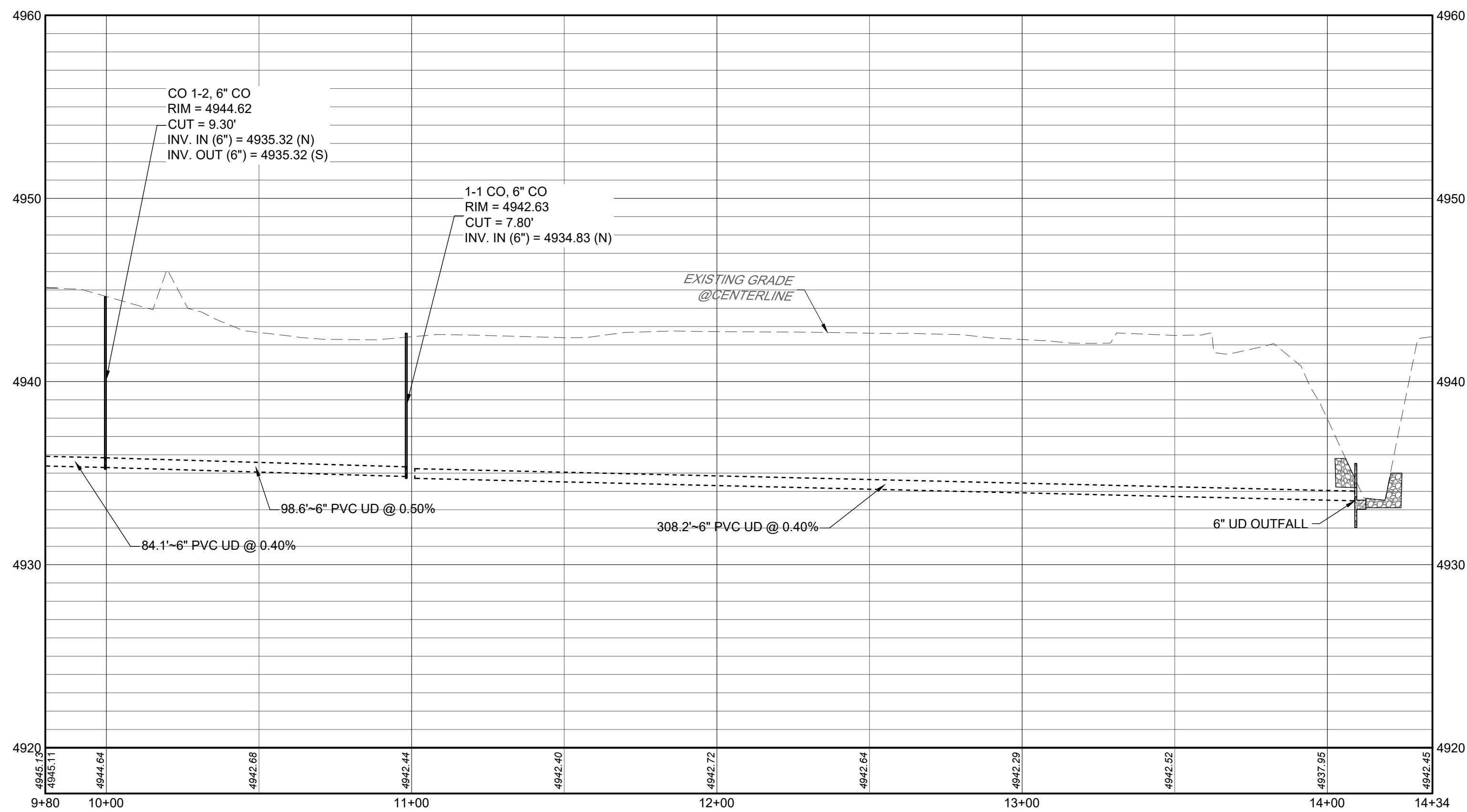
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UNDERDRAIN OUTFALL PLAN
SCALE: 1" = 30'

UNDERDRAIN OUTFALL PROFILE
H: 1" = 30'
V: 1" = 5'



KEYMAP
N.T.S.

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
UNDERDRAIN OUTFALL P&P

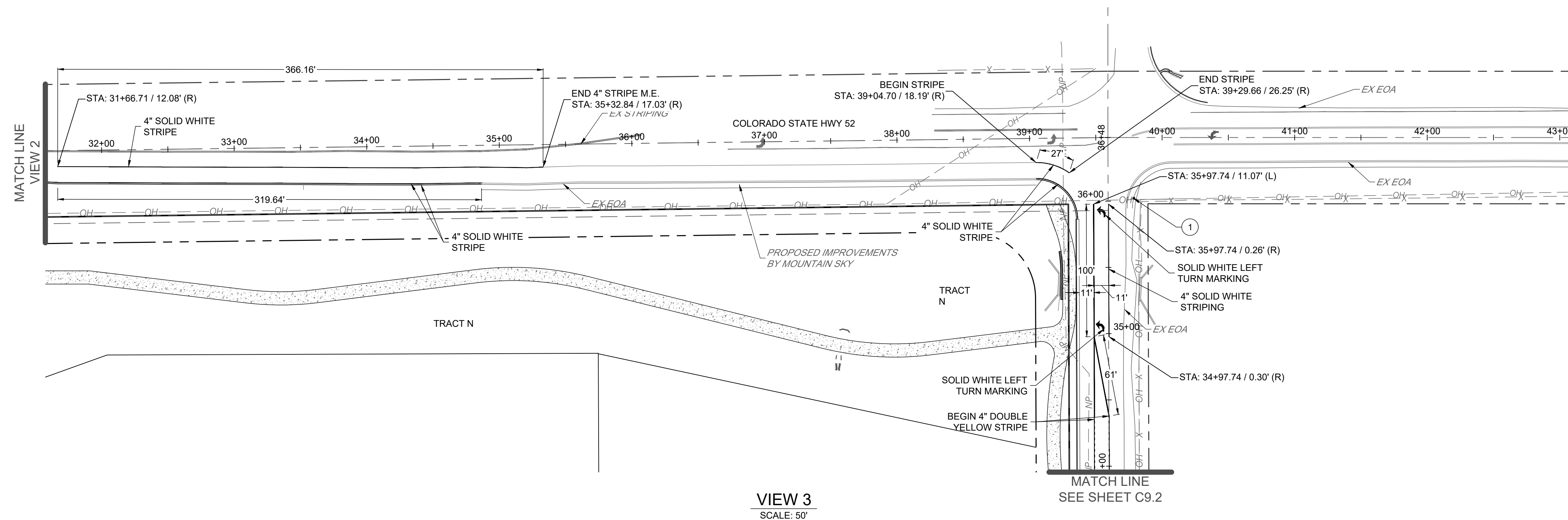
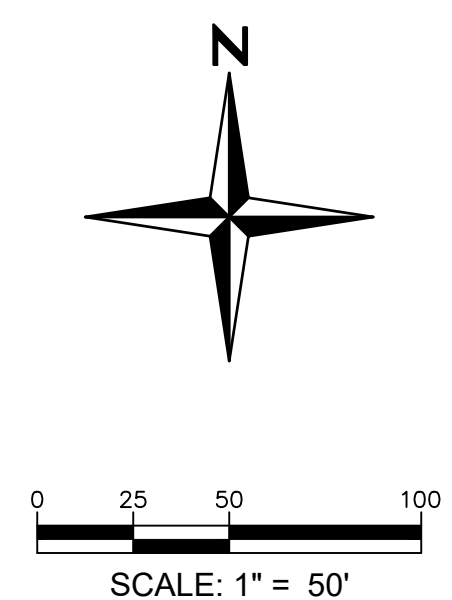
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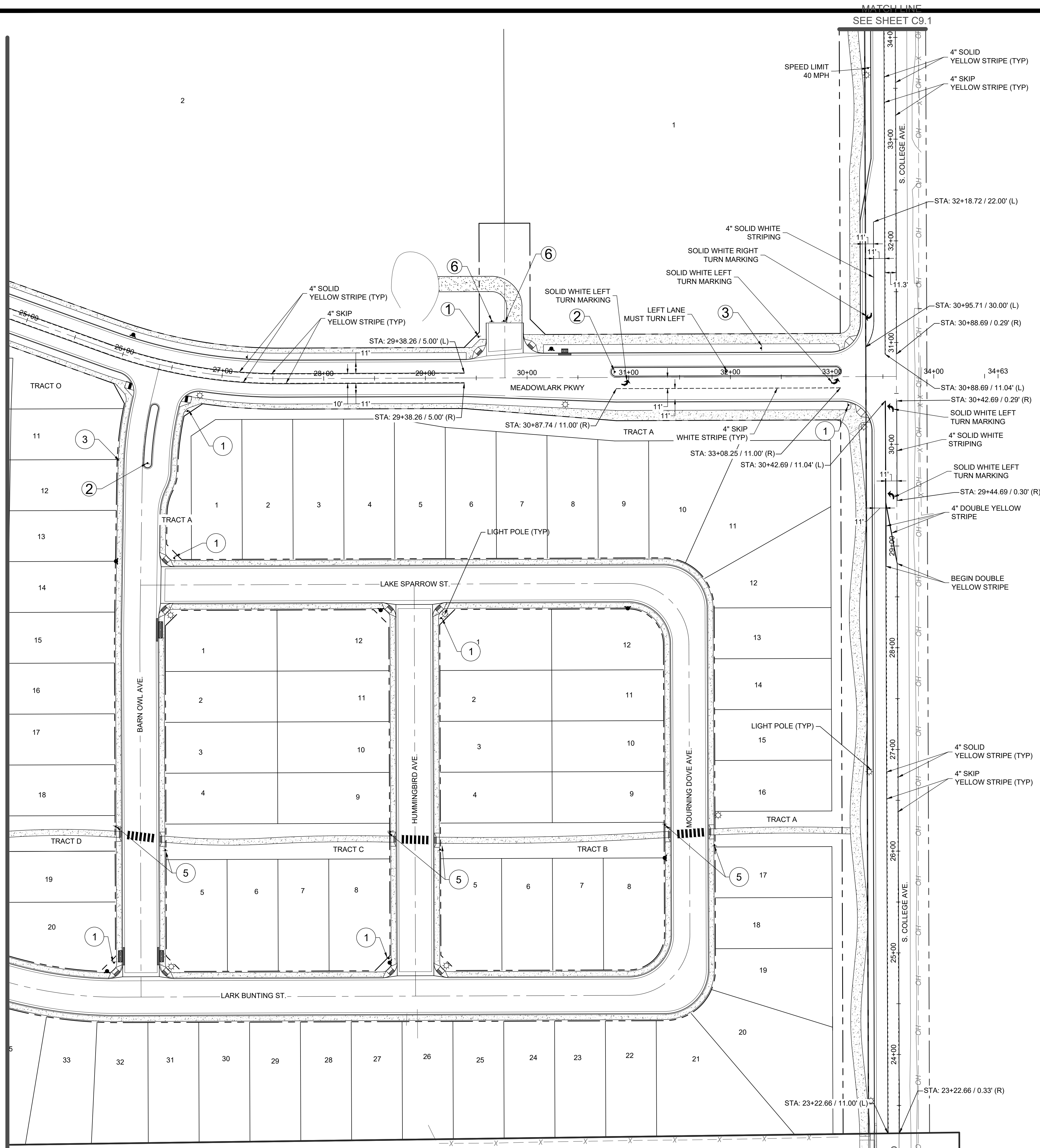


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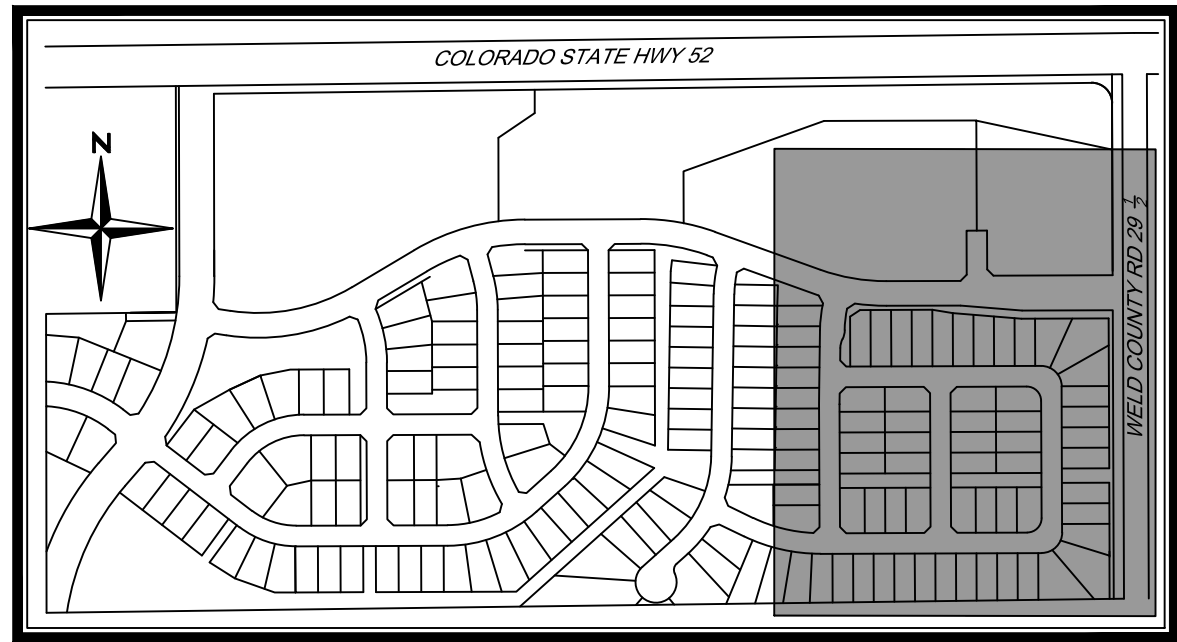


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MATCH LINE
SEE SHEET C9.3



MATCH LINE
SEE SHEET C9.1

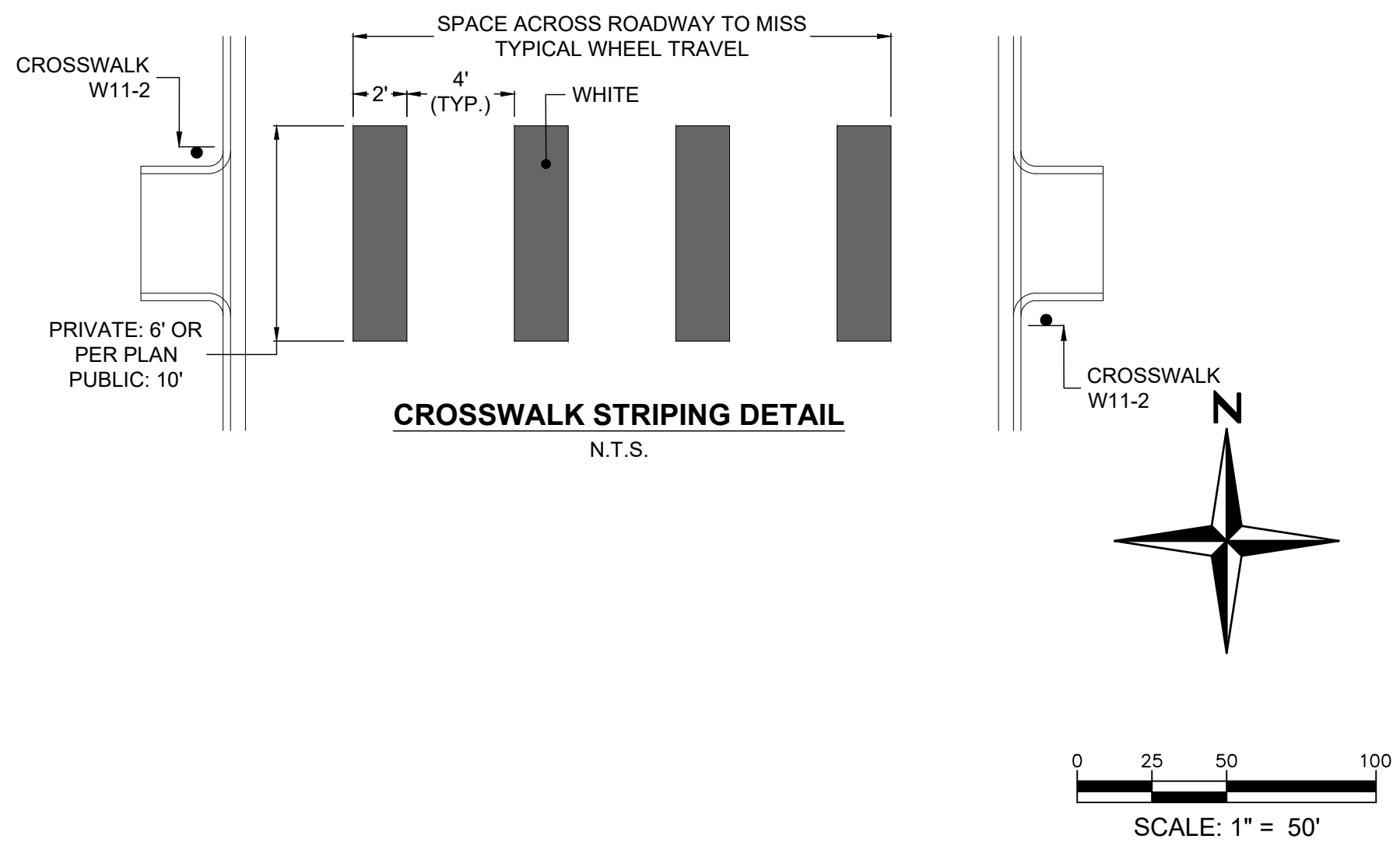


KEYMAP
N.T.S

- NOTE:
1. ALL SIGNS AND MARKINGS SHALL CONFORM TO MUTCD
 2. ALL CROSS WALK STRIPING SHALL BE OUTSIDE THE WHEEL PATH.
 3. ALL REMOVALS SHALL BE BY HYDROBLASTING PROVIDED THAT THE PAVEMENT SURFACE SHALL NOT BE MATERIALLY DAMAGED. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THE SHALL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS.

SIGNAGE LEGEND

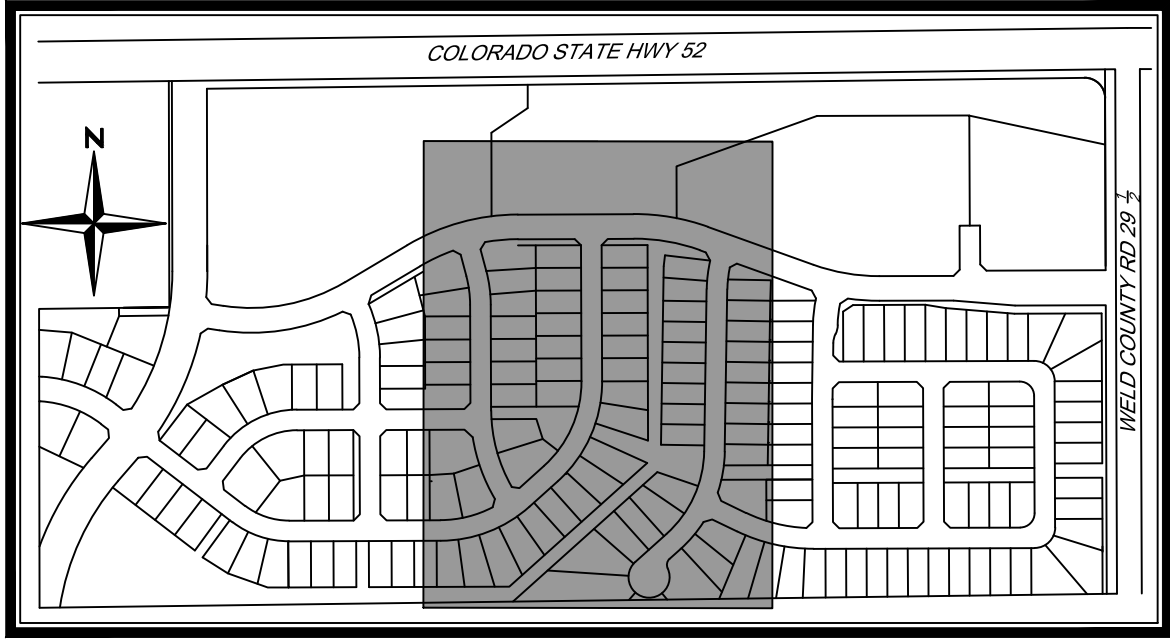
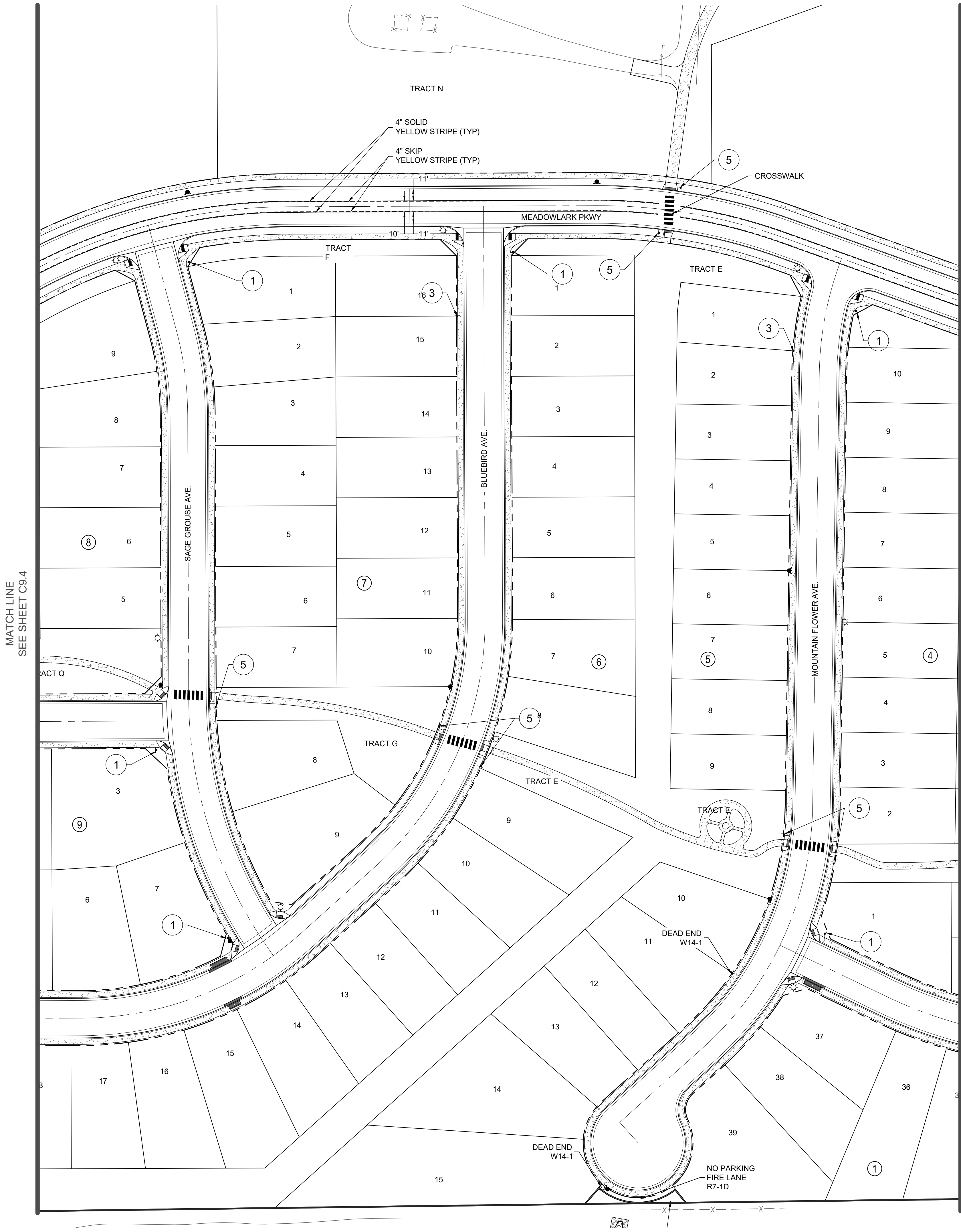
- 1 STOP R1-1
- 2 R4-8
- 3 SPEED LIMIT 25 R2-1
- 4 RIGHT LANE MUST TURN RIGHT R3-7R
- 5 W11-2
- 6 OM4-3 END OF ROADWAY MARKER



MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
STRIPING AND SIGNAGE

SHEET
C9.2

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KEYMAP
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SIGNAGE LEGEND

- 1

R1-1
- 2

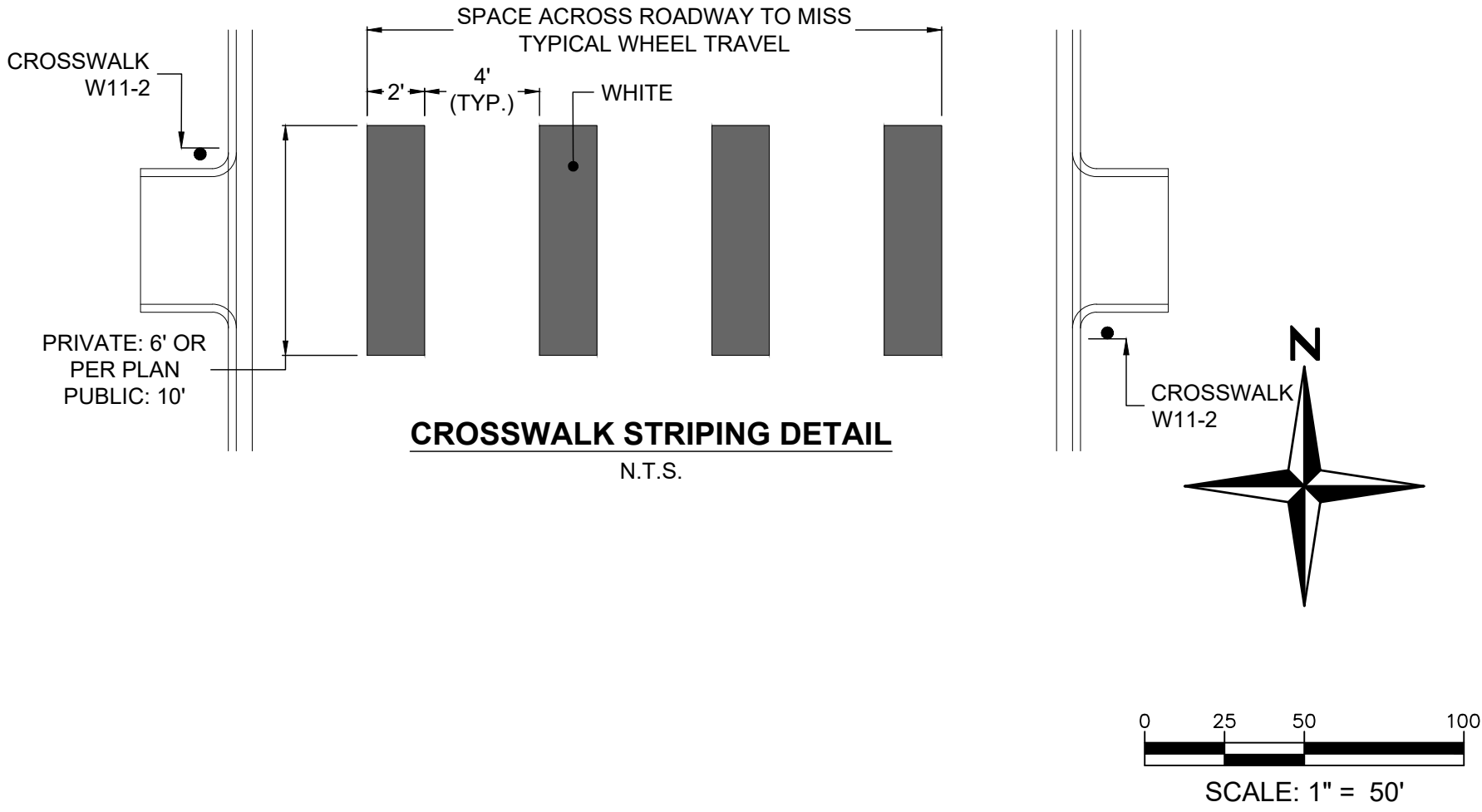
R4-8
- 3

R2-1
- 4

R3-7R
- 5

W11-2
- 6

OM4-3
END OF ROADWAY MARKER



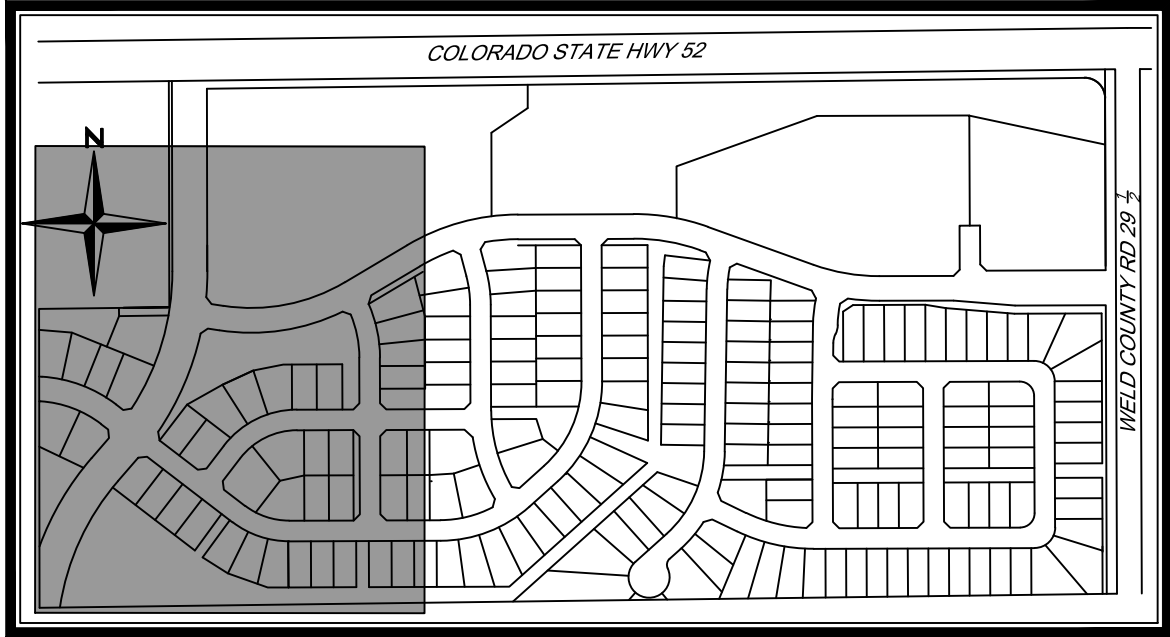
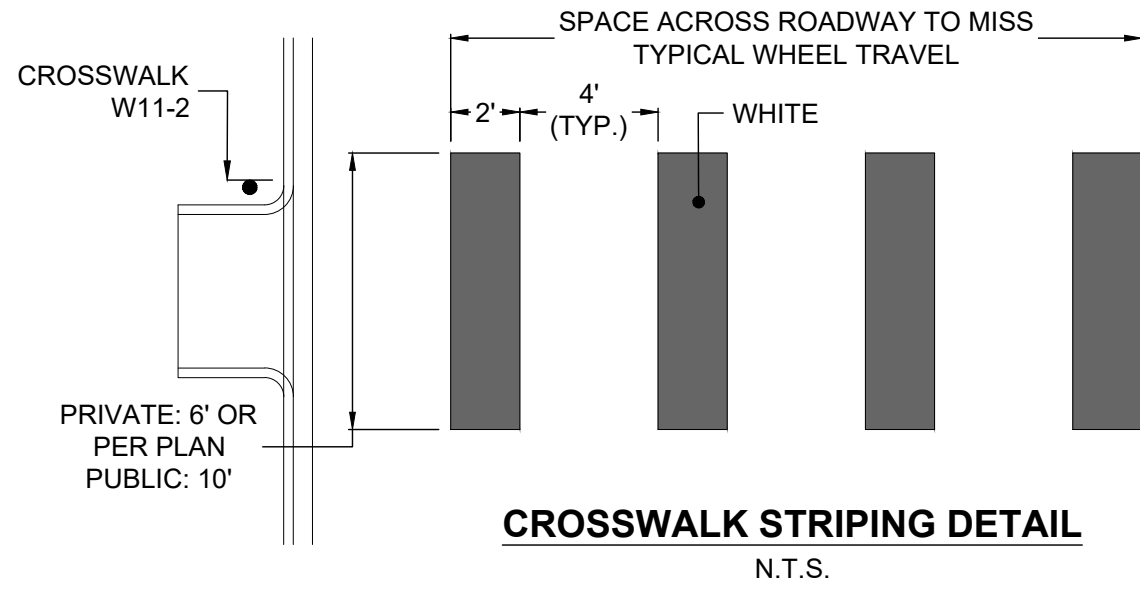
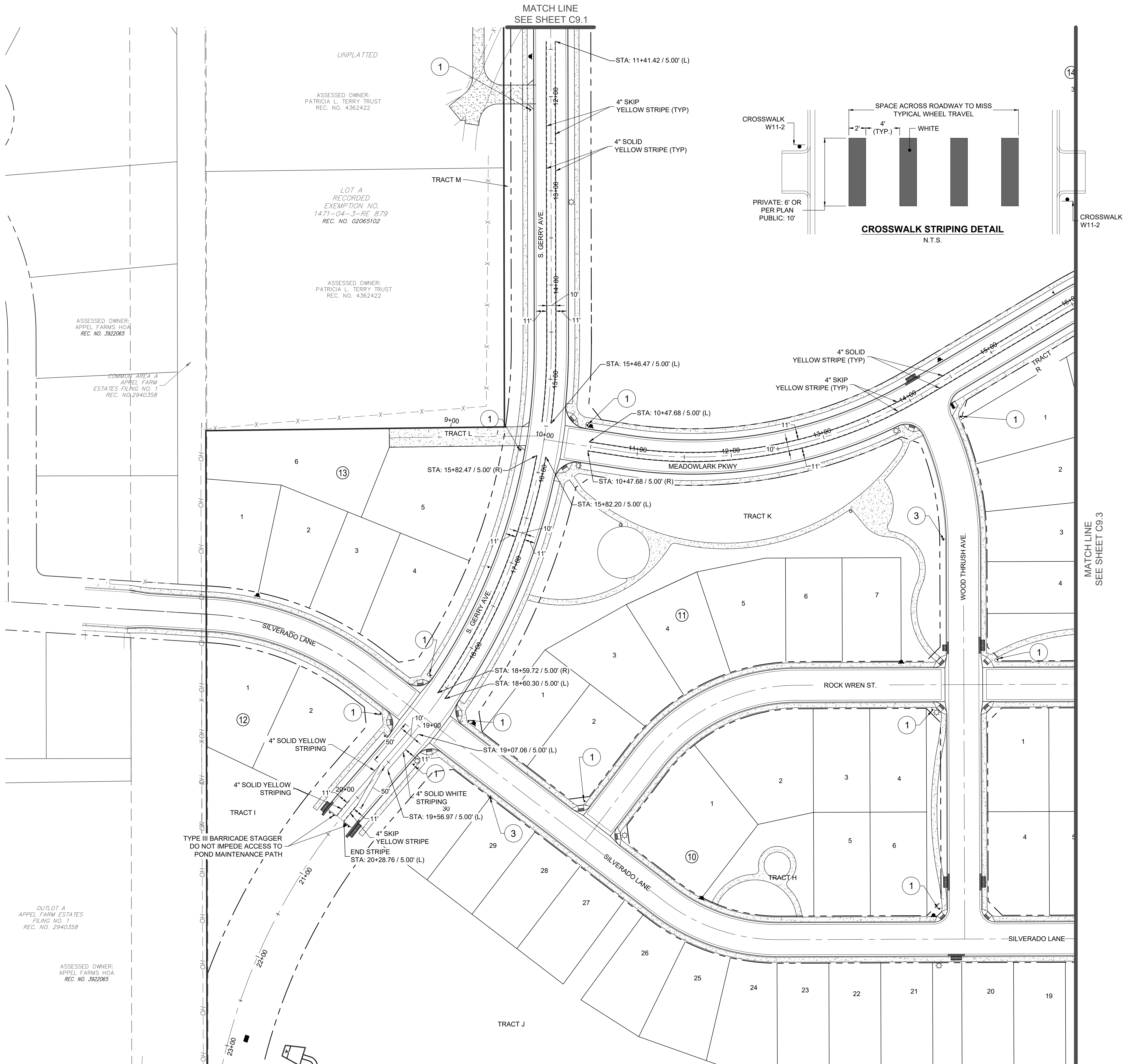
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CIVIL CONSTRUCTION DOCUMENTS

STRIPING AND SIGNAGE

SHEET

C9.3

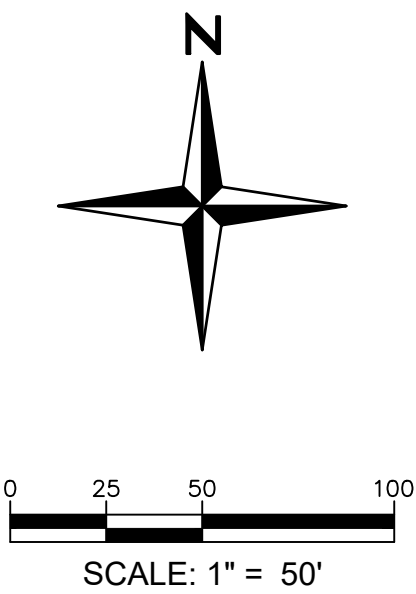
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- NOTE:
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SIGNAGE LEGEND

- 1 STOP R1-1
- 2 R4-8
- 3 SPEED LIMIT 25 R2-1
- 4 RIGHT LANE MUST TURN RIGHT R3-7R
- 5 W11-2
- 6 OM4-3 OF ROADWAY MARKER

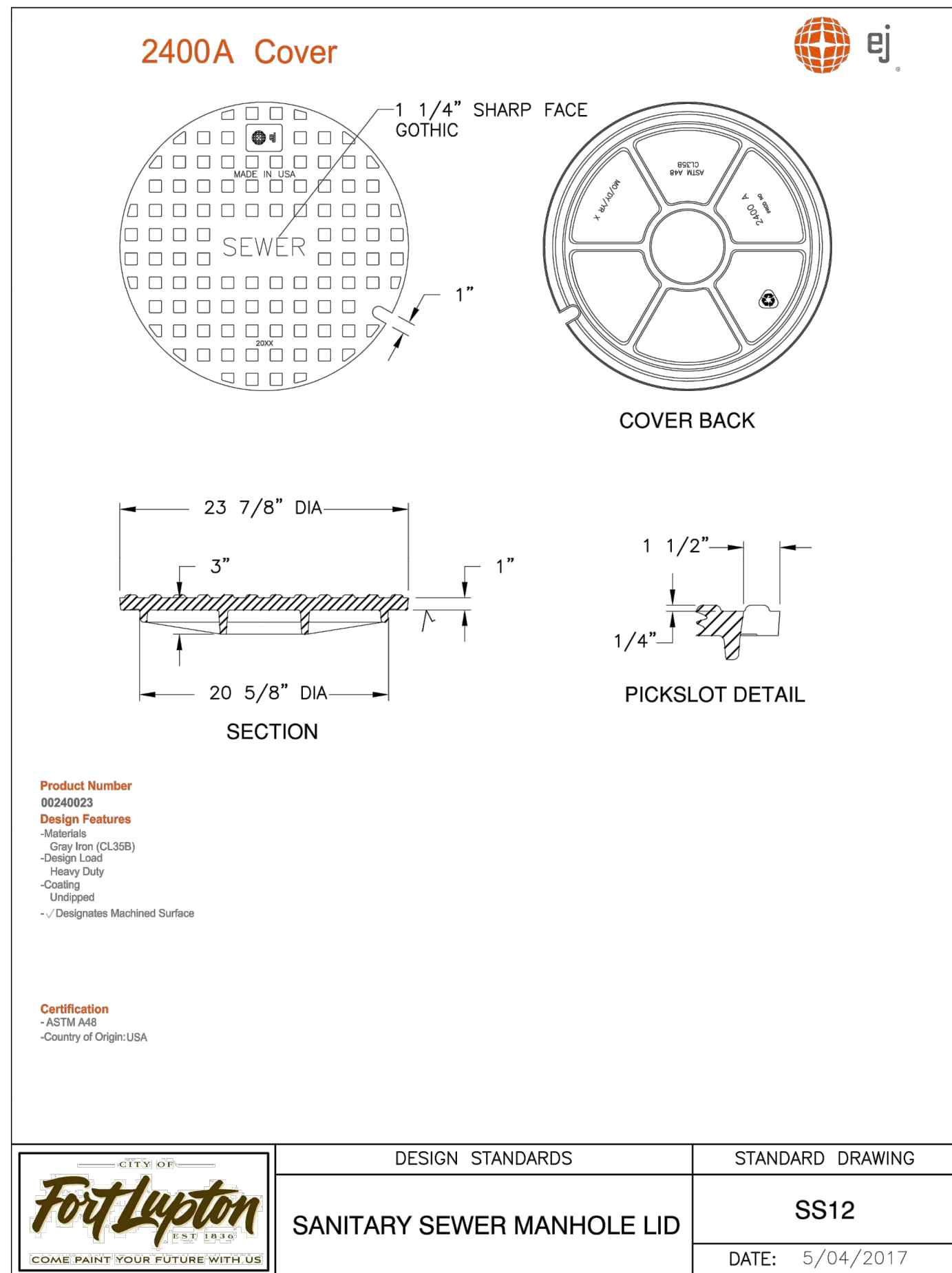
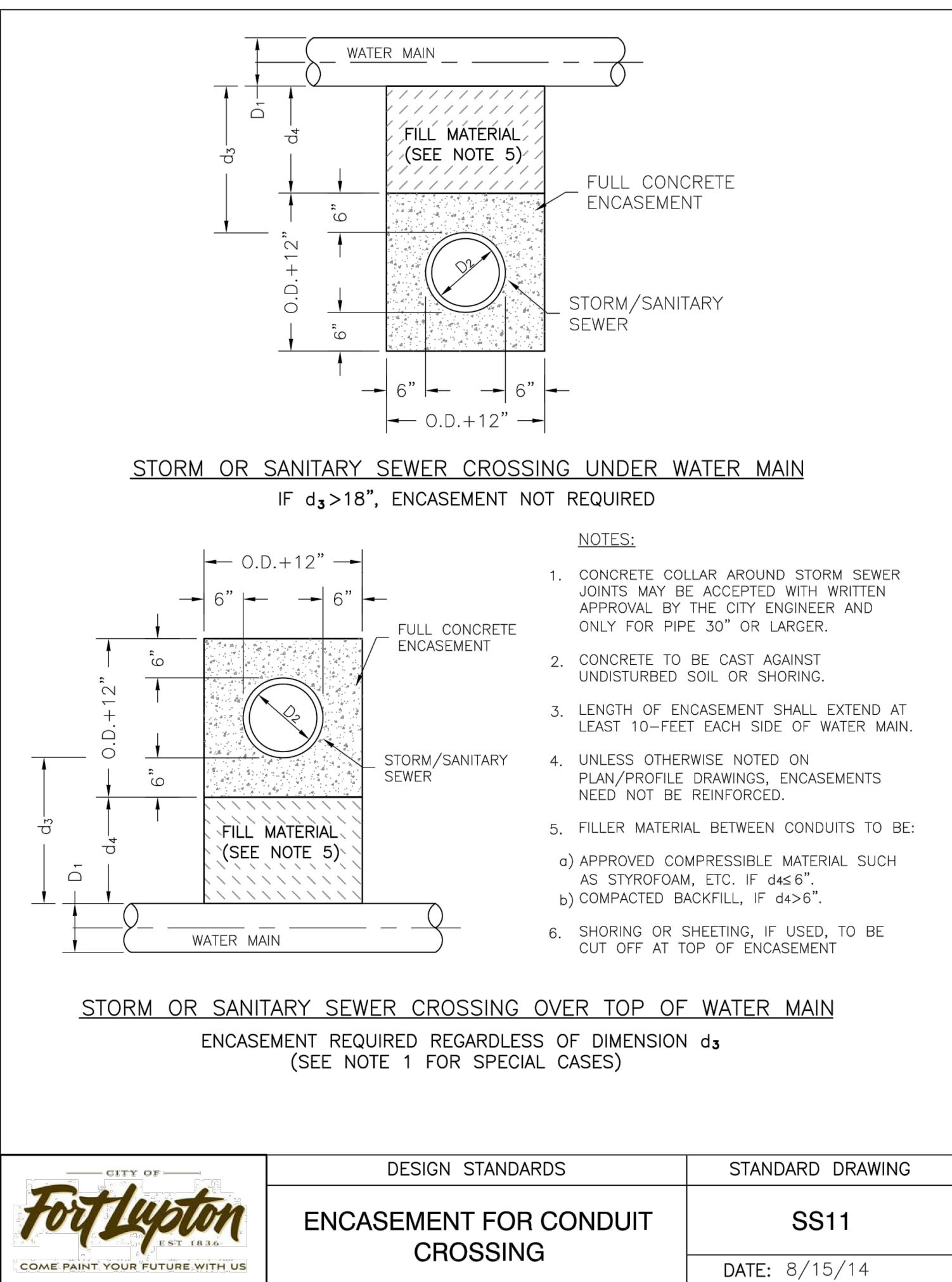
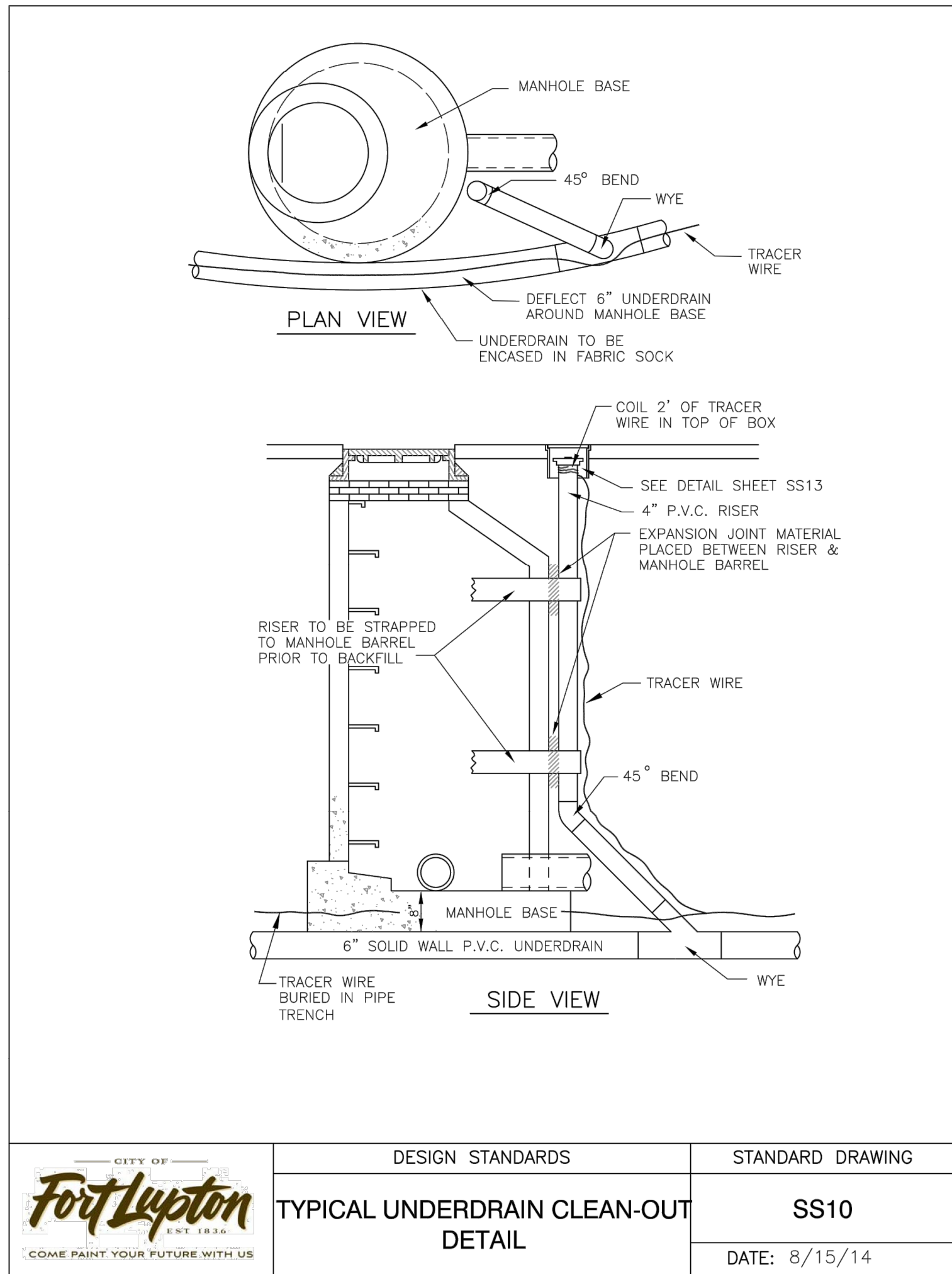
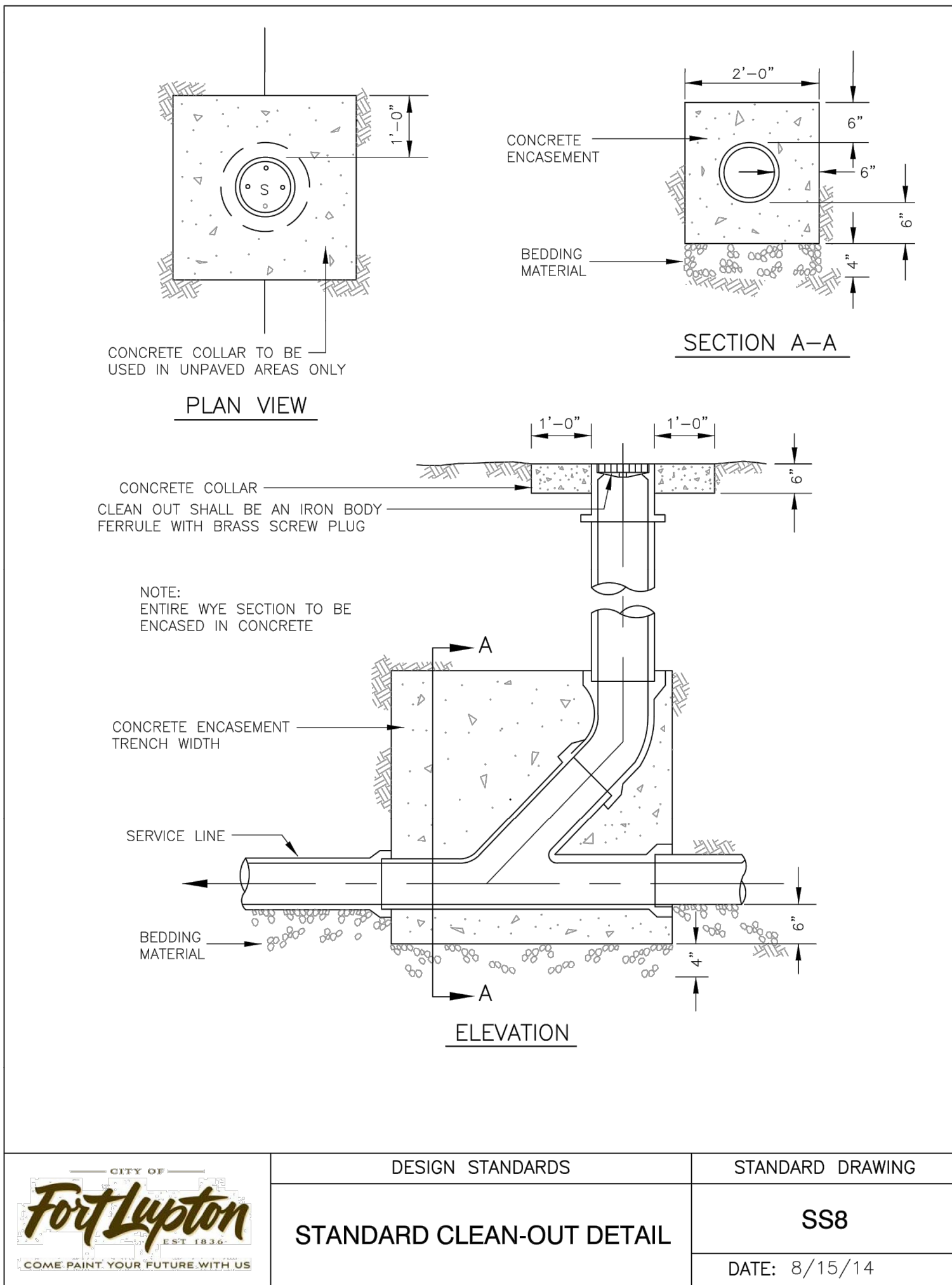
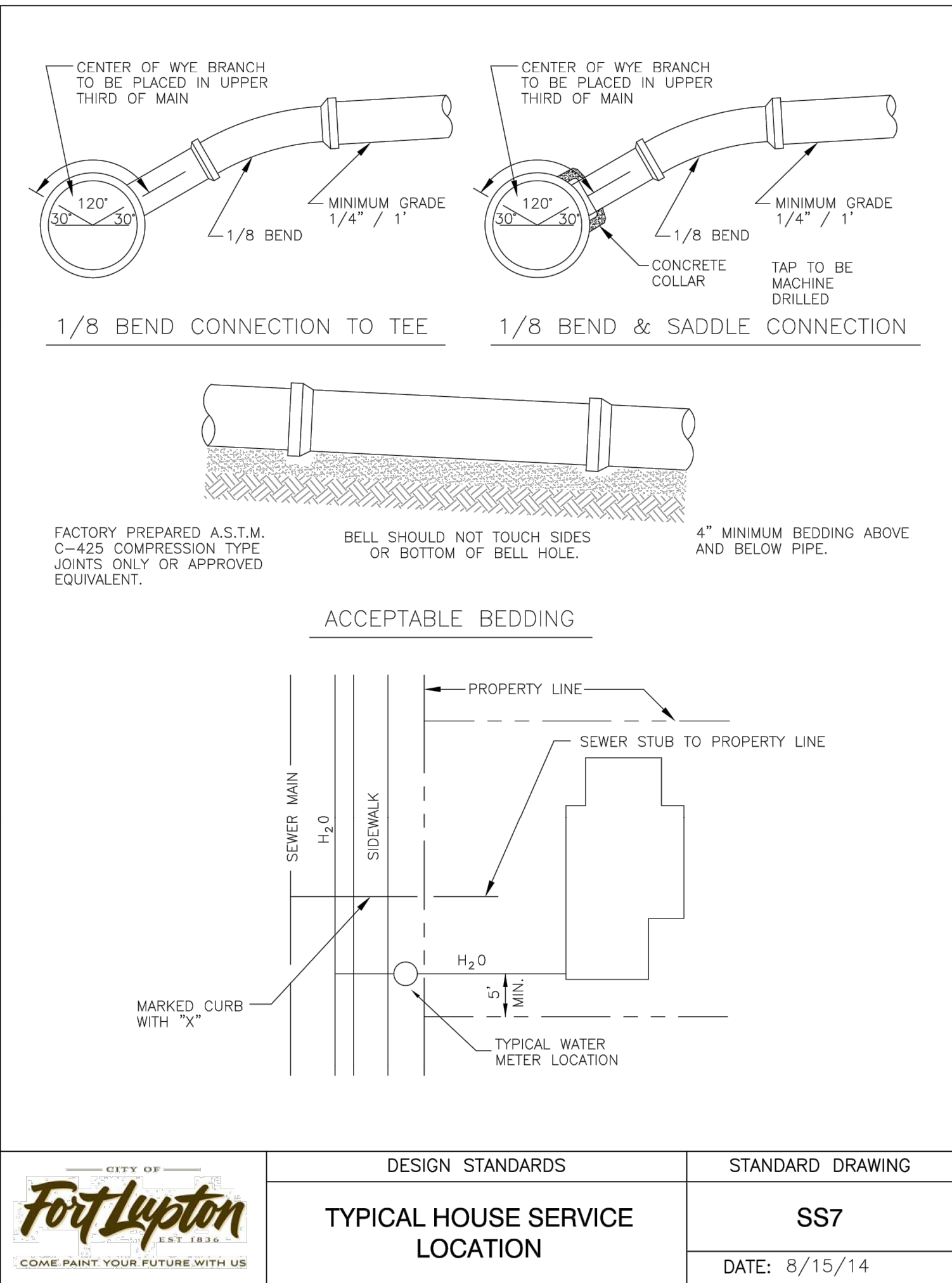


MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS
STRIPING AND SIGNAGE

SHEET
C9.4



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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

SANITARY DETAILS

SHEET

C10.2

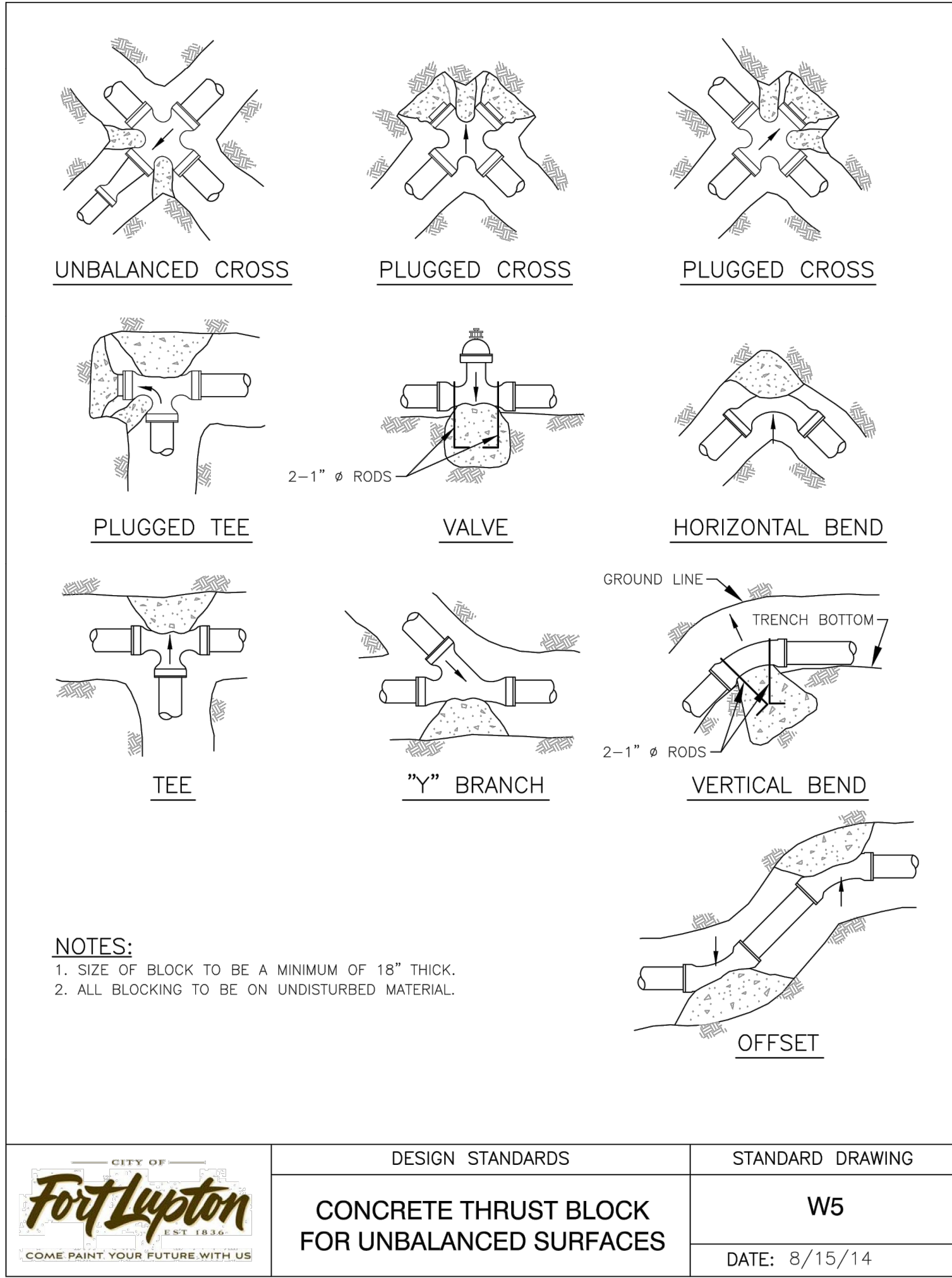
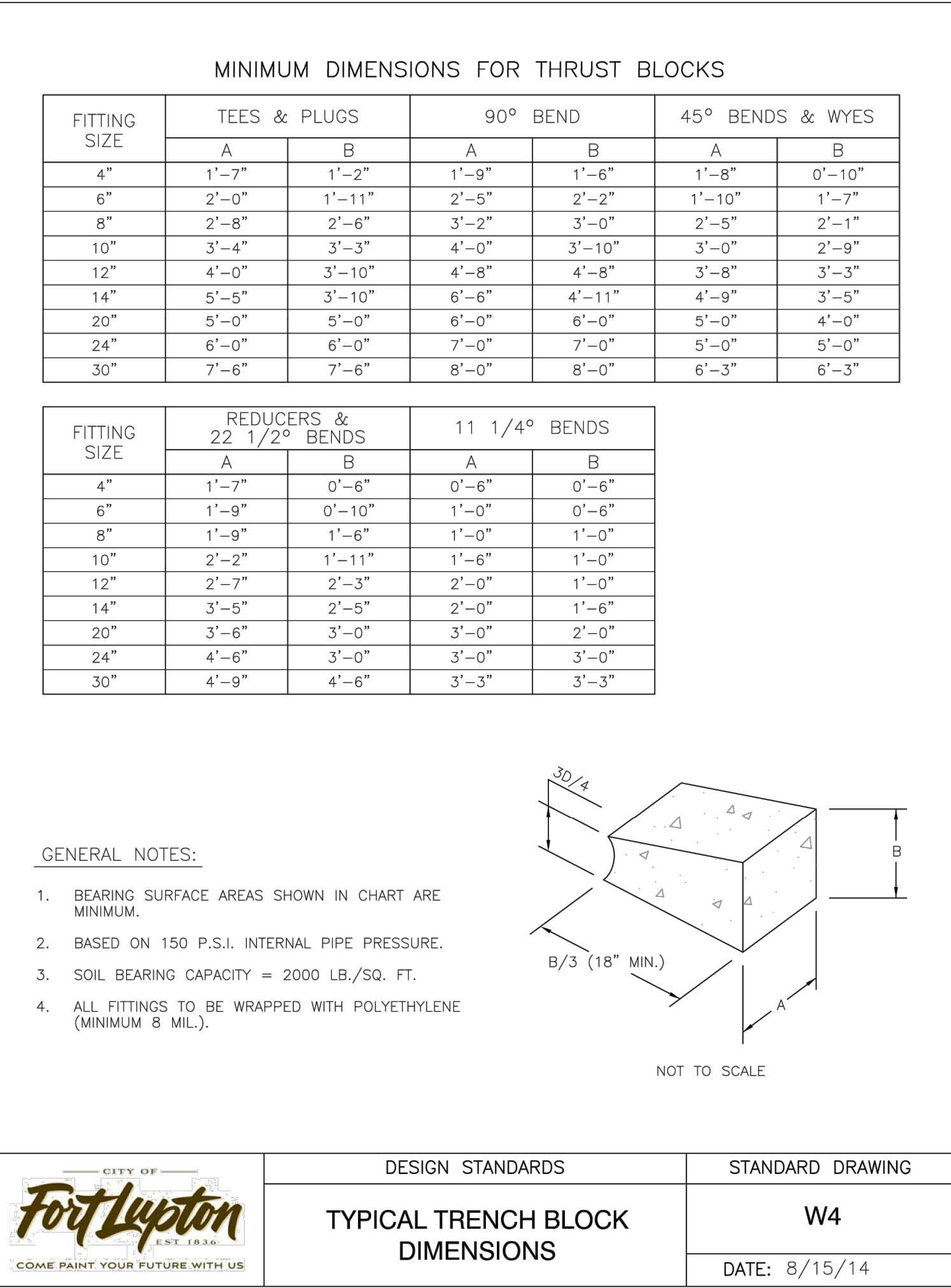
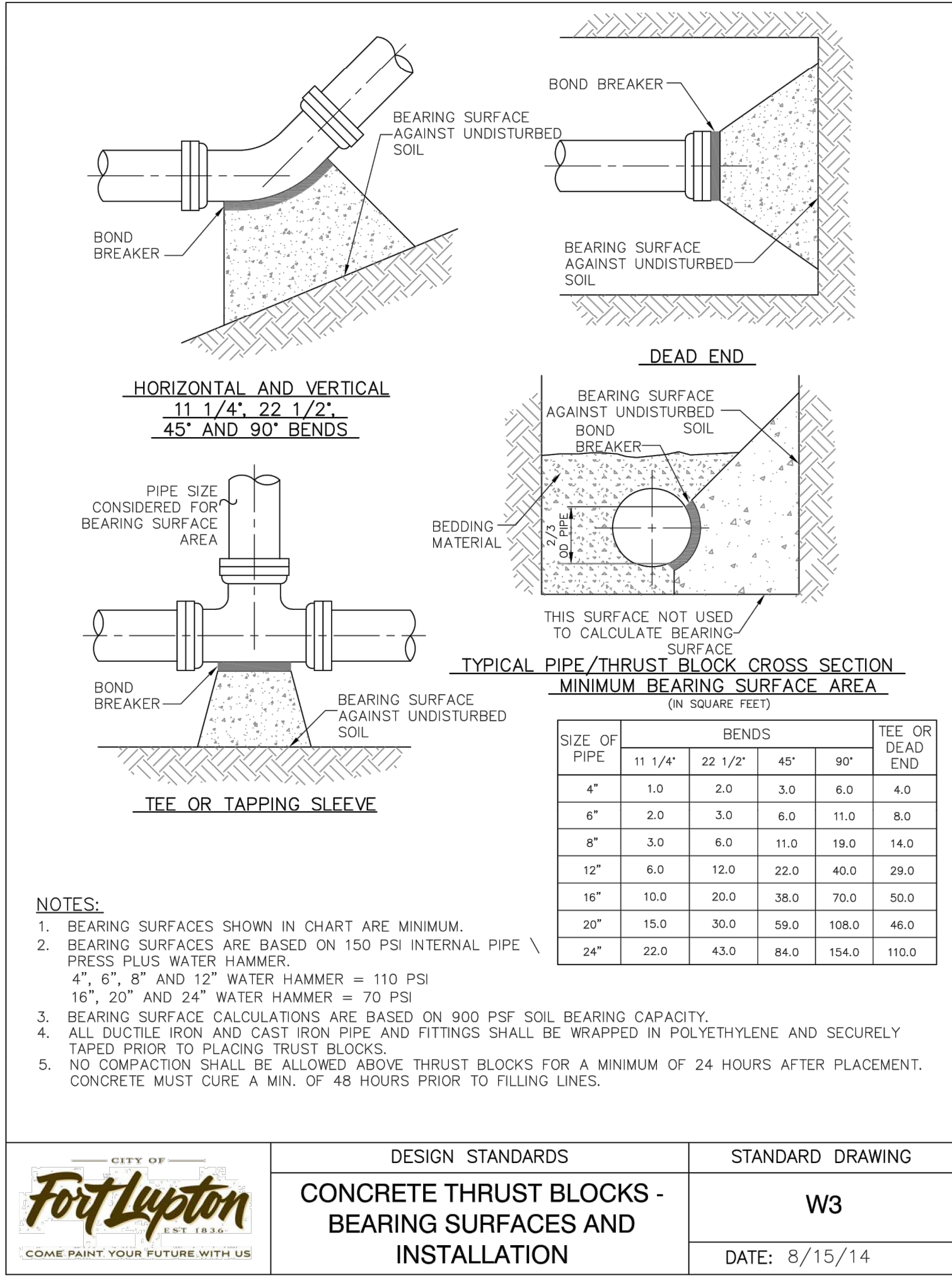
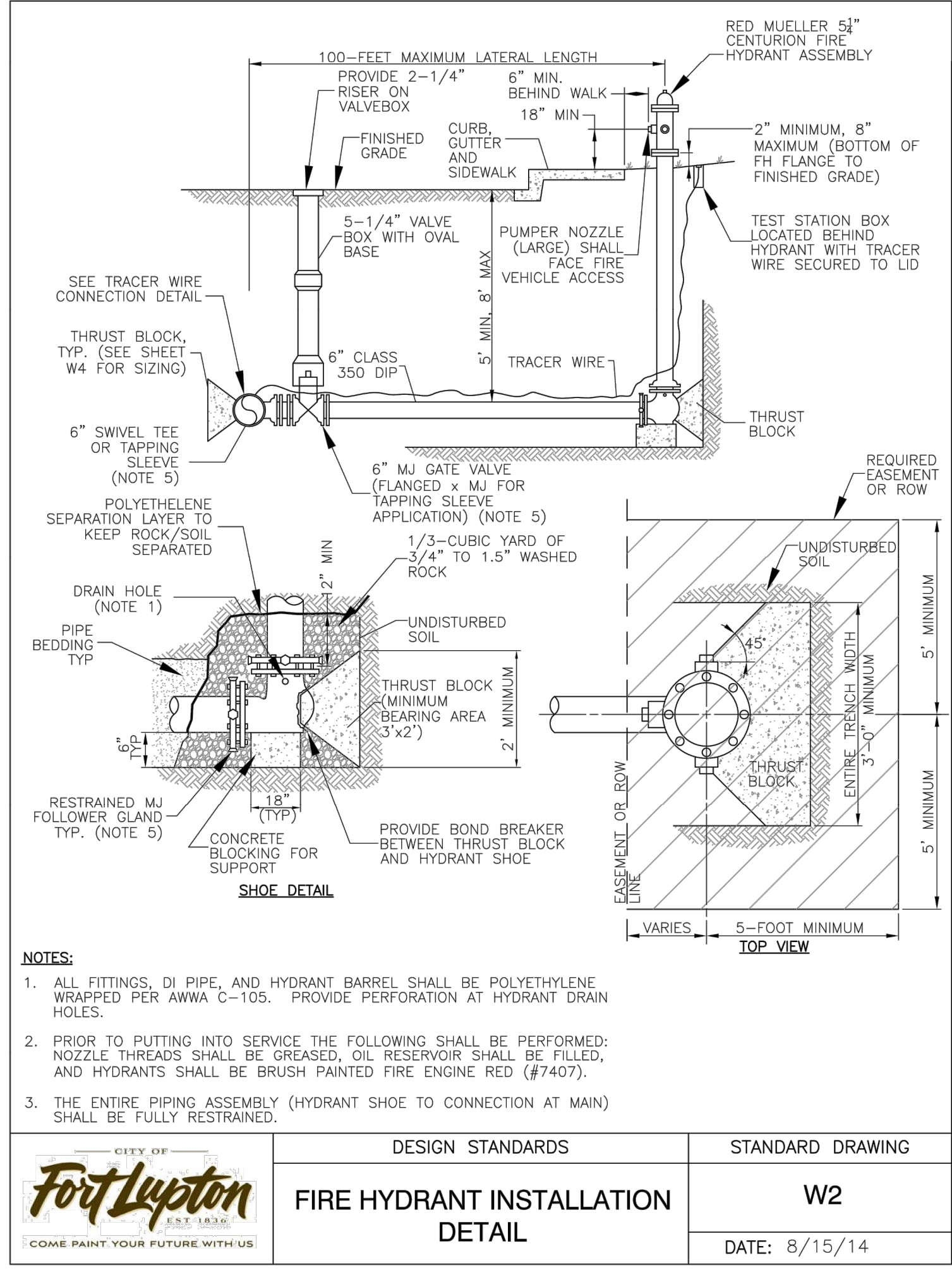
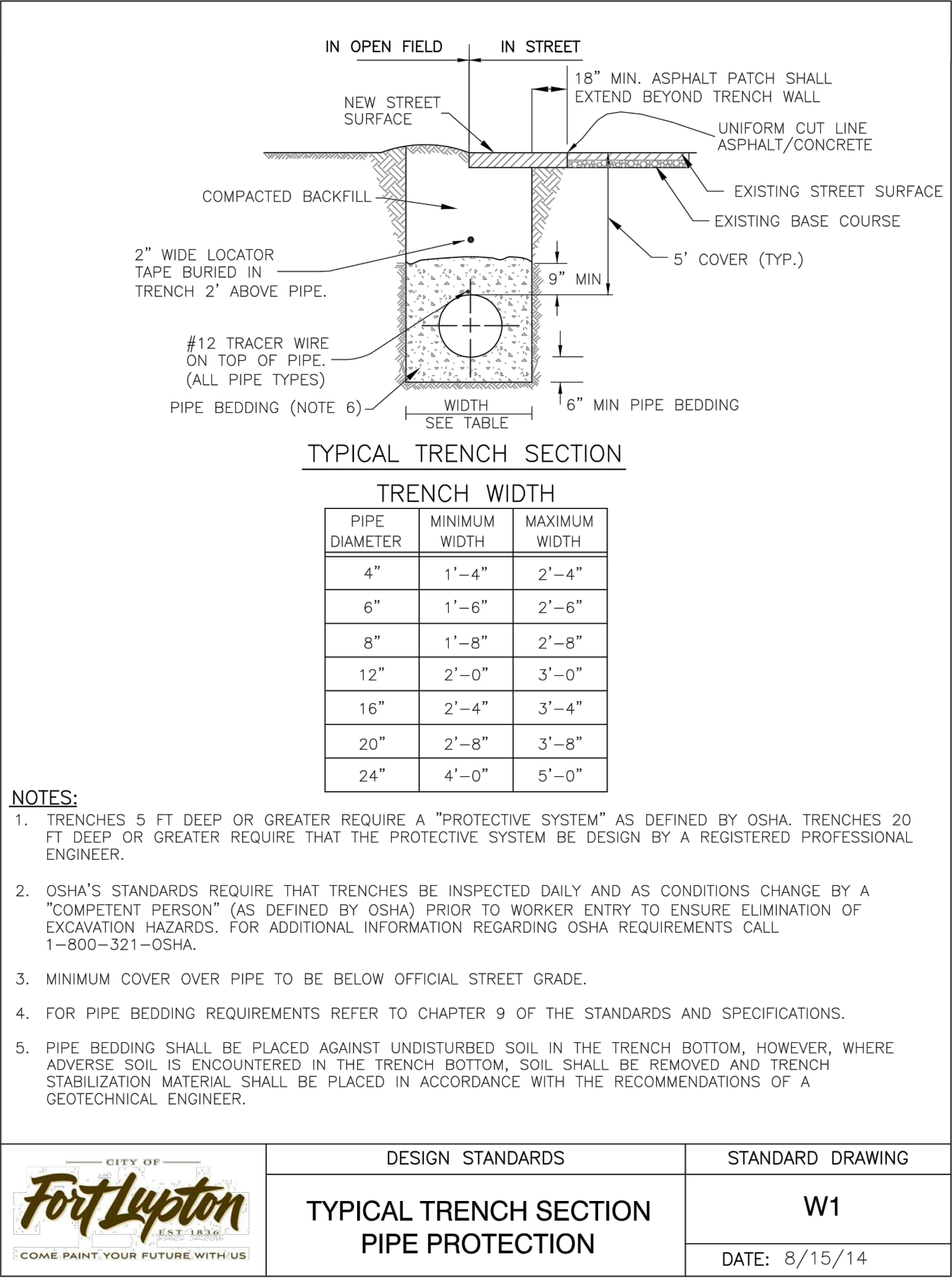
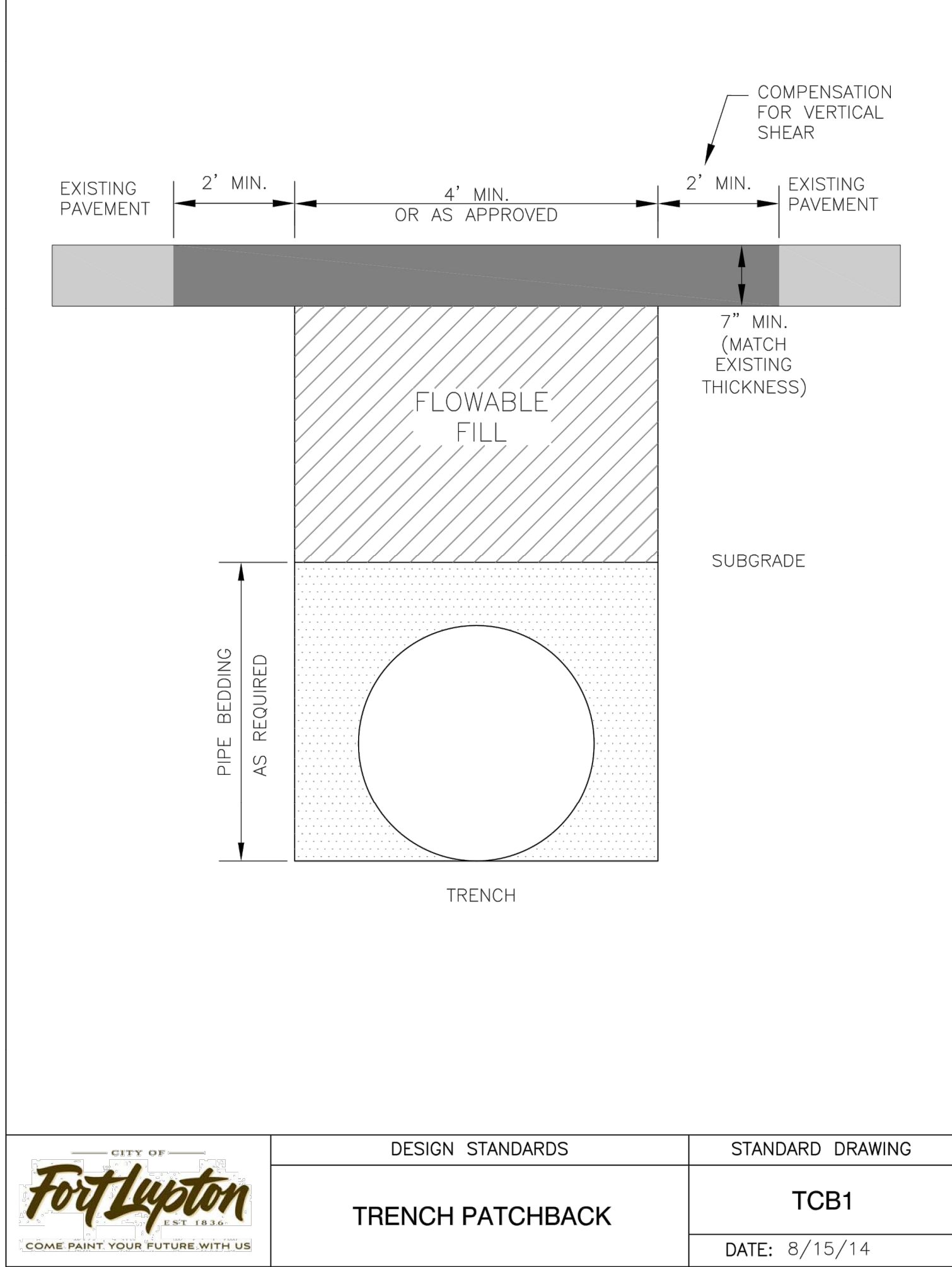
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CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	1" = 30'
VERT. SCALE	1" = 5'

NOTES

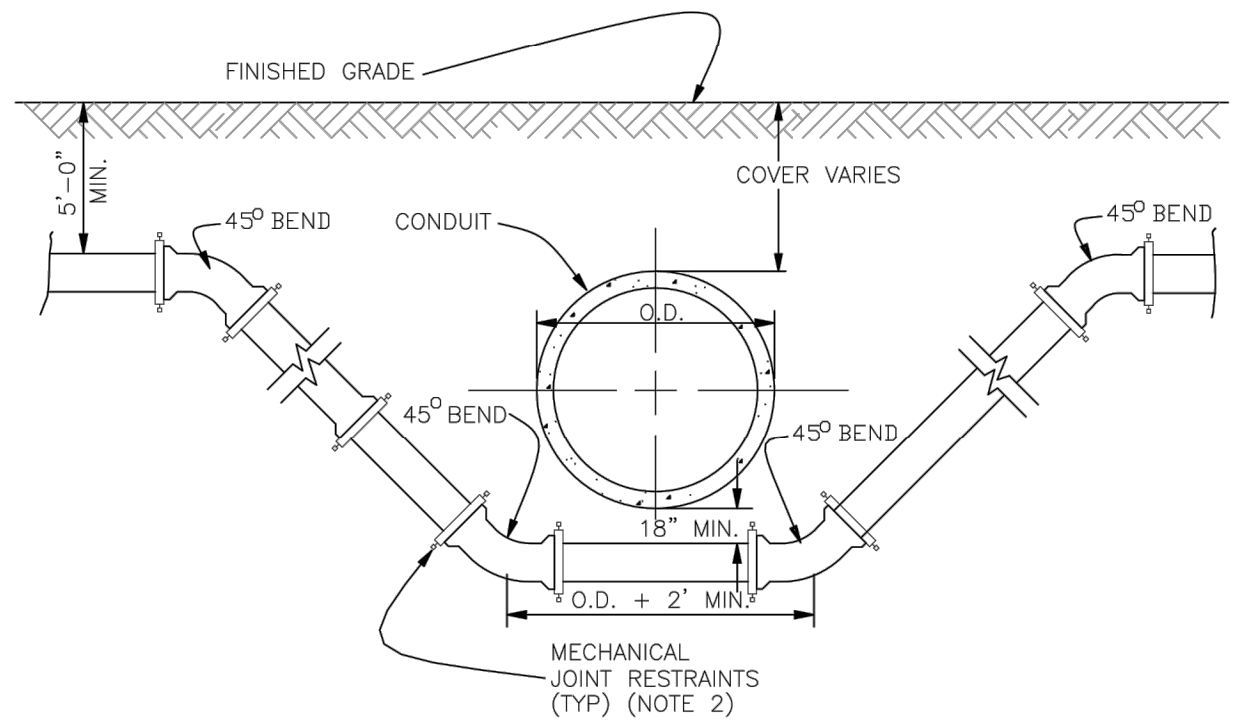
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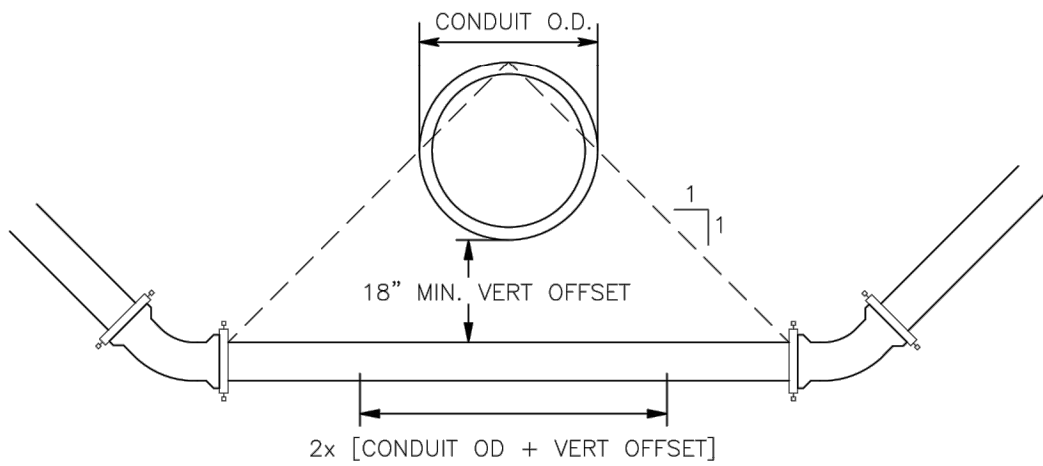


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NOTES:

- SEWER LINES CROSSING ABOVE WATER MAINS SHALL BE PVC C900 PRESSURE PIPE AND EXTEND 9' EACH SIDE OF CROSSING (MIN.).
- MECHANICAL JOINT RESTRAINTS SHALL BE PROVIDED AT ALL JOINTS IN THE LOWERING AND FOR THE SPECIFIED DISTANCE BACK FROM THE LOWERING AS DESIGNED BY THE ENGINEER OF RECORD.
- WATER MAINS CROSSING CULVERTS THAT ARE EXPOSED TO THE ELEMENTS SHOULD BE EVALUATED FOR FREEZE POTENTIAL.
- A BORED CROSSING MAY BE REQUIRED FOR THE WATERMAIN.
- CATHODIC PROTECTION MAY BE REQUIRED FOR THE DUCTILE IRON WATER MAINS AS SPECIFIED BY THE ENGINEER.



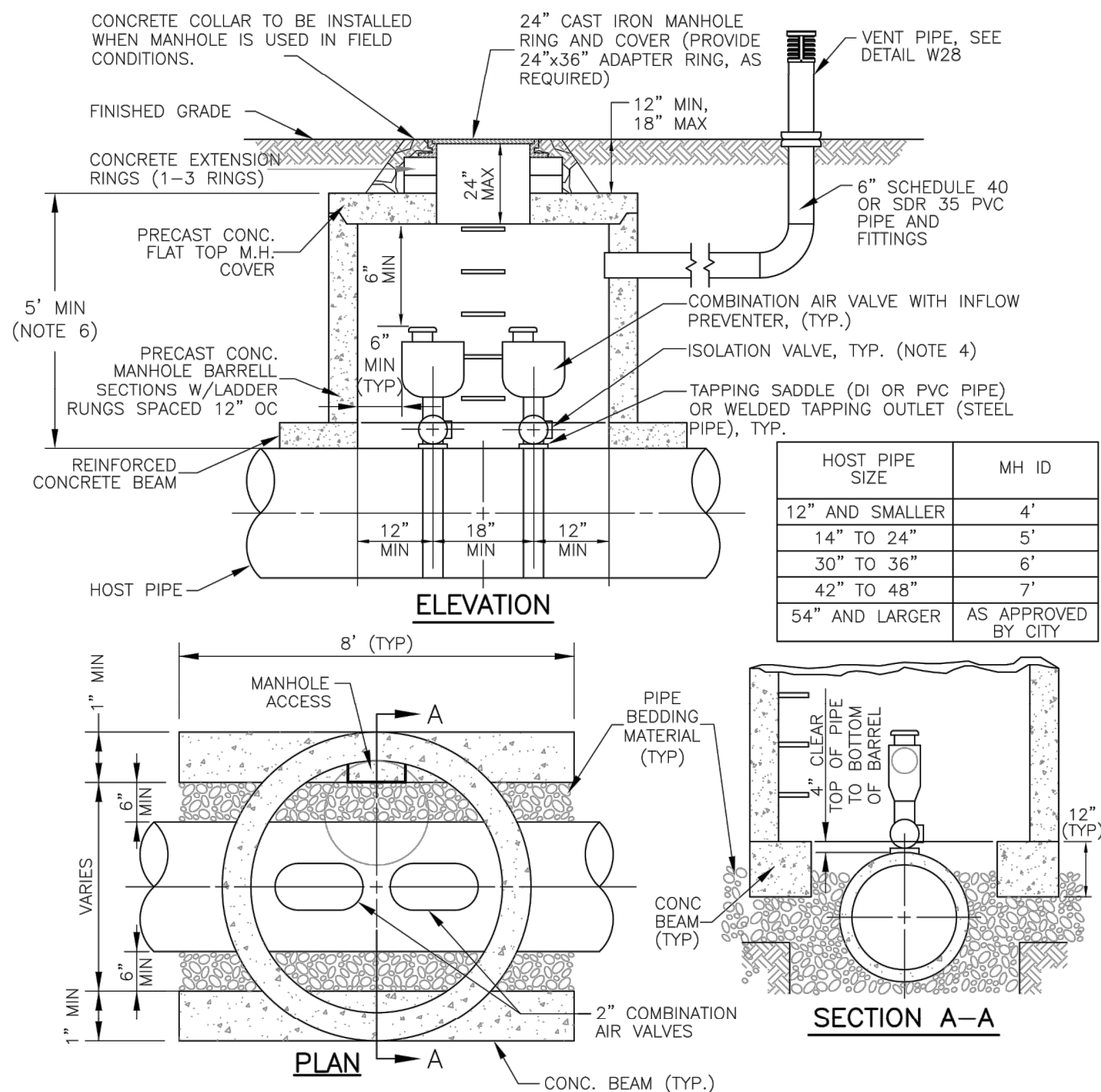
DESIGN STANDARDS

CONDUIT CROSSING

STANDARD DRAWING

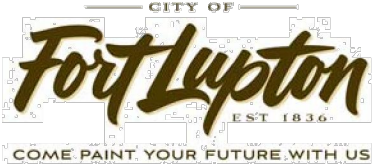
W18

DATE: 8/15/14



NOTES:

- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF VAULT LAYOUT AND FITTINGS FOR APPROVAL BY THE CITY ENGINEER.
- AIR VALVES SHALL BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- FOR APPROVED MANUFACTURER'S AND MODEL NUMBERS OF FITTINGS, REFER TO CHAPTER 3 OF THE ENGINEERING STANDARDS.
- ISOLATION VALVES SHALL BE FULL PORT BRONZE BALL STYLE WITH HAND LEVER. TWO INCH VALVES SHALL BE CORPORATION TYPE AND THREE INCH AND LARGER VALVES SHALL INCORPORATE FLANGE FITTINGS TO MATE WITH FLANGED AIR VALVES.
- ALL COMPONENTS OF MANHOLE STRUCTURE SHALL MEET AASHTO H20 LOAD RATING.
- CHECK HEIGHT OF AIR VALVE AND ASSOC. PLUMBING AND ENSURE PROPER CLEARANCES FROM VAULT PRIOR TO ESTABLISHING HOST PIPE DEPTH.



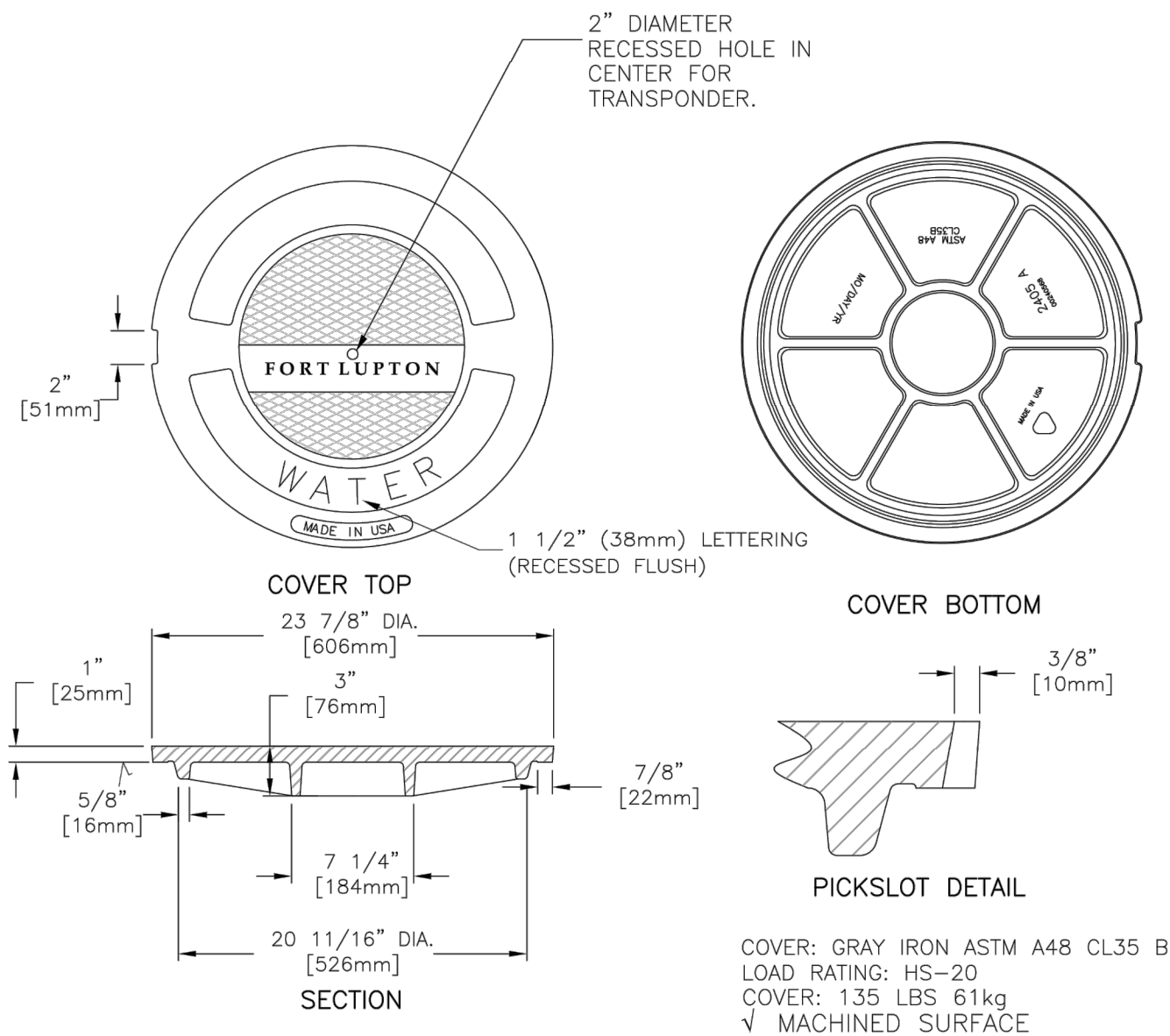
DESIGN STANDARDS

COMBINATION AIR VALVE
INSTALLATION

STANDARD DRAWING

W19

DATE: 8/15/14



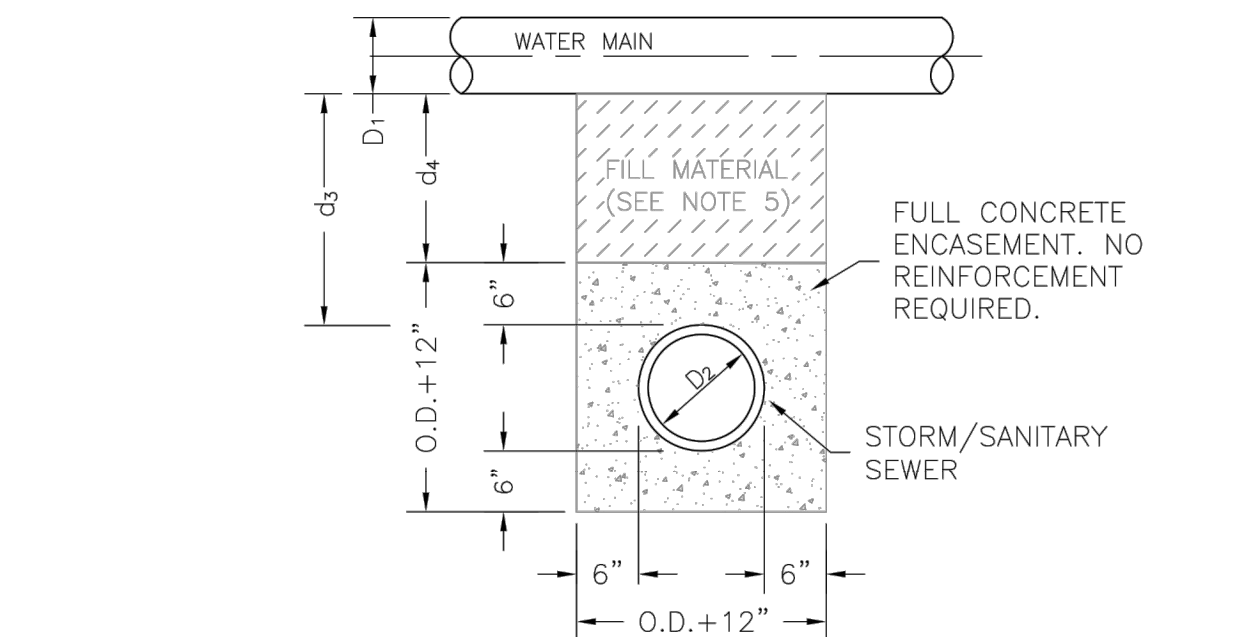
DESIGN STANDARDS

WATER VAULT LID

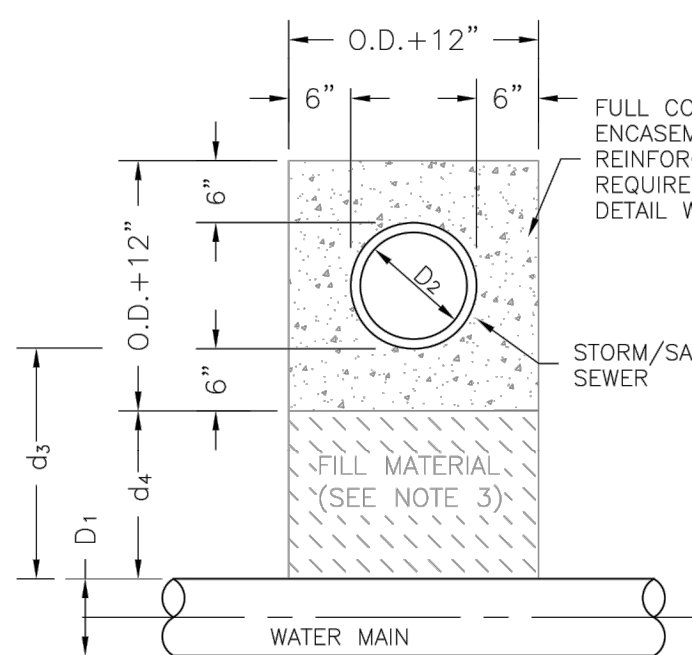
STANDARD DRAWING

W24

DATE: 8/15/14



STORM OR SANITARY SEWER CROSSING UNDER WATER MAIN
IF $d_3 > 18"$ AN ENCASEMENT IS NOT REQUIRED



STORM OR SANITARY SEWER CROSSING OVER TOP OF WATER MAIN
REINFORCED ENCASEMENT REQUIRED REGARDLESS OF DIMENSION d_3

NOTES:

- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING.
- LENGTH OF ENCASEMENT SHALL EXTEND AT LEAST 9- FEET EACH SIDE OF WATER MAIN.
- FILLER MATERIAL BETWEEN CONDUITS TO BE APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC. IF $d_4 \leq 6"$, COMPACTED BACKFILL, IF $d_4 > 6"$.
- SHORING OR SHEETING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT
- A REINFORCED ENCASEMENT IS REQUIRED FOR ALL CONDUITS CROSSING OVER WATERMAINS BUT ENCASEMENTS ARE NOT REQUIRED TO BE REINFORCED IF CROSSING UNDER WATERMAINS.

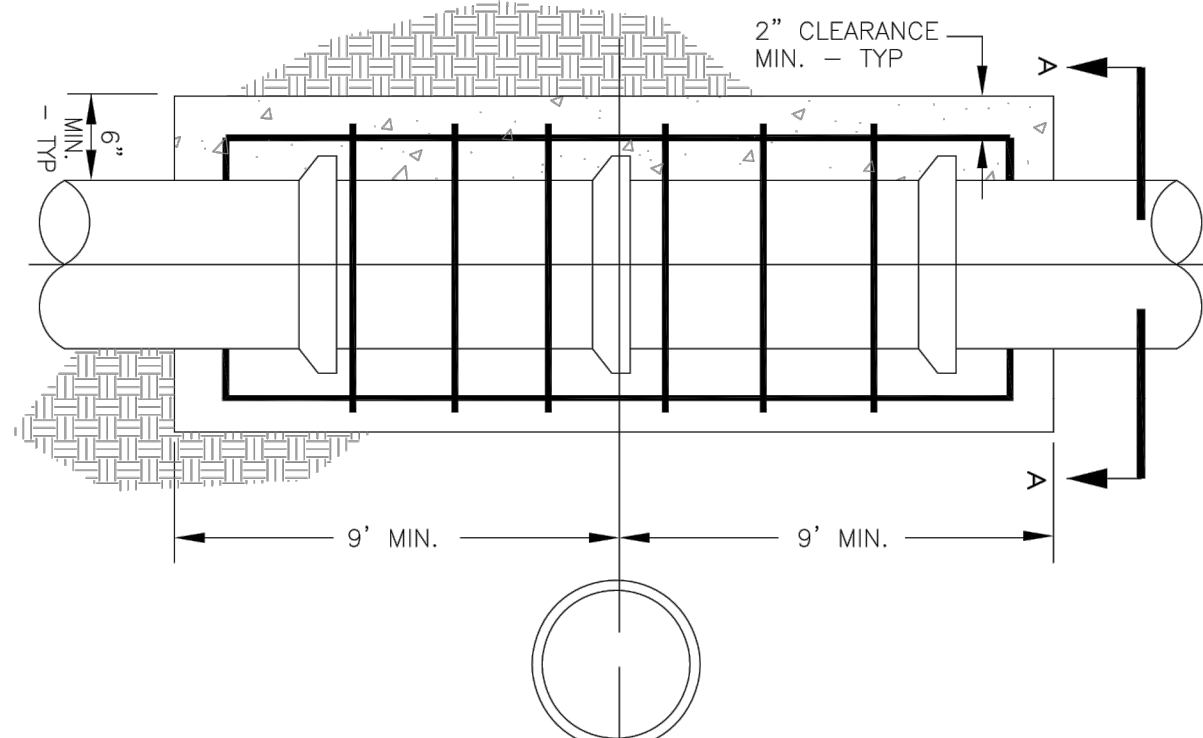


DESIGN STANDARDS
ENCASEMENT FOR CONDUIT
CROSSING

STANDARD DRAWING

W26

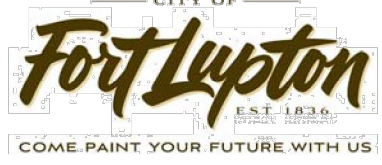
DATE: 8/15/14



#4 @ 12" (TYP)

2" CLEARANCE
MIN - TYP
PIPE O.D. + 4"
(TYP. EACH LEG)
SECTION A - A

PIPE I.D.	NO. OF LONGITUDINAL BARS & LOCATION	
6" TO 8"	4 - #4 BARS	1 EACH CORNER
10" TO 18"	8 - #4 BARS	3 EACH SIDE
21" TO 33"	12 - #4 BARS	4 EACH SIDE
36"	16 - #4 BARS	5 EACH SIDE



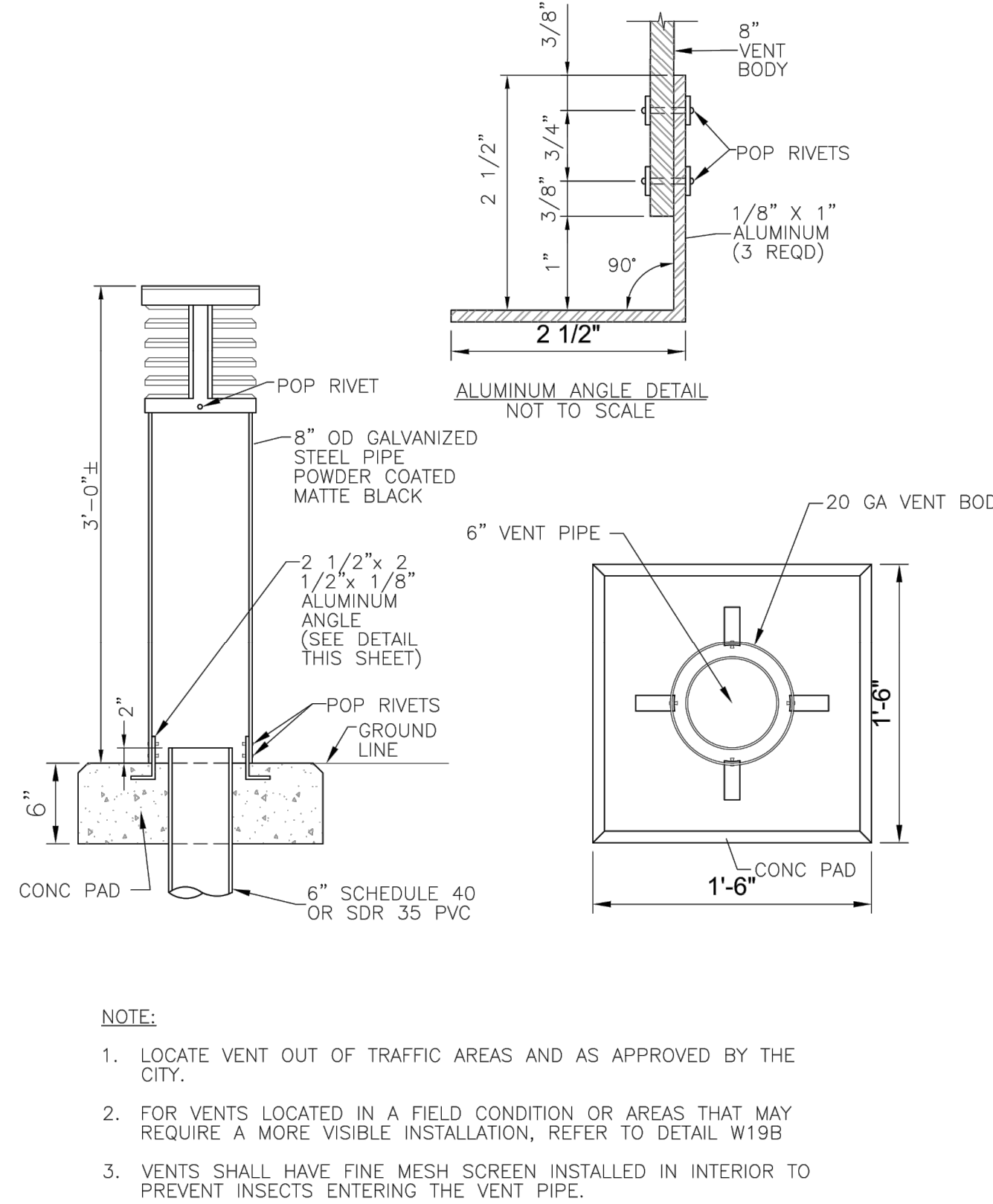
DESIGN STANDARDS

CONCRETE ENCASEMENT
REINFORCEMENT DETAIL

STANDARD DRAWING

W27

DATE: 8/15/14



NOTE:

- LOCATE VENT OUT OF TRAFFIC AREAS AND AS APPROVED BY THE CITY.
- FOR VENTS LOCATED IN A FIELD CONDITION OR AREAS THAT MAY REQUIRE A MORE VISIBLE INSTALLATION, REFER TO DETAIL W19B
- VENTS SHALL HAVE FINE MESH SCREEN INSTALLED IN INTERIOR TO PREVENT INSECTS ENTERING THE VENT PIPE.



DESIGN STANDARDS

VAULT VENT DETAIL

STANDARD DRAWING

W28

DATE: 8/15/14

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

WATER DETAILS

SHEET

C10.5



DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ SCALE	1" = 30'
VERT SCALE	1" = 5'

NOTES

DATE

NO



	DESIGN STANDARDS	STANDARD DRAWING
	STANDARD SIDEWALK CHASE DETAIL	R14 DATE: 8/15/14



 CITY OF Fort Lupton EST. 1836 COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	CHASE DRAIN DETAILS	R15
		DATE: 8/15/14

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TITLE	KEY	SYMBOL
CHECK DAM	CD	
CONSTRUCTION ROAD STABILIZATION	CRS	
CURB SOCK INLET PROTECTION	CS	
CONCRETE WASHOUT AREA	CWA	
DIVERSION DITCH AND DIKE, TEMPORARY	DD	
DIVERSION CHANNEL, TEMPORARY	DV	
DEWATERING	DW	
EROSION CONTROL BLANKET	ECB	
INLET FILTER	IF	
STORM DRAIN INLET PROTECTION	IP	
MULCHING	MU	

	DESIGN STANDARDS	STANDARD DRAWING
	MAP SYMBOLS	EC1
	DATE: 8/15/14	

	DESIGN STANDARDS	STANDARD DRAWING
	SINGLE FAMILY EROSION CONTROL PLAN	EC4
	DATE: 8/15/14	

NOTE: EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES AS DIRECTED BY THE CITY

EROSION LOG AND BLANKET BARRIER
RESIDENTIAL INSTALLATION

TITLE	KEY	SYMBOL
OUTLET PROTECTION	OP	
PAVED FLUME	PF	
PERMANENT SEEDING	PS	
REINFORCED CONCRETE DAM	RCD	
ROUGH CUT STREET CONTROL	RCS	
SEDIMENT BASIN	SB	
STRAW BALE BARRIER	SBB	
SILT FENCE	SF	
SURFACE ROUGHENING	SR	

	DESIGN STANDARDS	STANDARD DRAWING
	MAP SYMBOLS	EC2
	DATE: 8/15/14	

	DESIGN STANDARDS	STANDARD DRAWING
	INLET GRAVEL FILTER - SUMP	EC5
	DATE: 8/15/14	

INLET PROTECTION INSTALLATION NOTES:

1. INLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF CONSTRUCTING THE INLET.
2. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
3. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
4. GRAVEL SOCKS SHALL BE PLACED AROUND THE CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED IN ACCORDANCE WITH THE ROCK SOCK DESIGN DETAIL.

TITLE	KEY	SYMBOL
STABILIZED STAGING AREA	SSA	
SEDIMENT TRAP	ST	
SEDIMENT LOG	SCL	
TERRACING	TER	
TEMPORARY SEEDING	TS	
TEMPORARY STREAM CROSSING CULVERT/BRIDGE TYPE	TSC C	
TEMPORARY STREAM CROSSING FORD TYPE	TSC F	
TEMPORARY SLOPE DRAIN	TSD	
VEHICLE TRACKING CONTROL	VTC	
VEHICLE TRACKING CONTROL WITH WASH RACK	WR	

	DESIGN STANDARDS	STANDARD DRAWING
	MAP SYMBOLS	EC3
	DATE: 8/15/14	

	DESIGN STANDARDS	STANDARD DRAWING
	ON GRADE INLET PROTECTION	EC 6
	DATE: 8/15/14	

NOTES:

- 1) SOCKS WILL BE USED UPGRADIENT OF THE INLET AND FLUSH WITH THE CURB.
- 2) NO LESS THAN TWO 10 INCH DIAMETER SOCKS MUST BE USED IN SEQUENCE, SPACED NO MORE THAN FIVE FEET APART. NO LESS THAN SIX SOCKS SHALL BE USED IF THE 4 INCH SOCK IS USED, ALSO SPACED AT NO MORE THAN 5 FEET APART.
- 3) ALIGN AT 30 DEGREES FROM PERPENDICULAR, OPPOSITE THE DIRECTION OF FLOW (SEE DETAIL 2).
- 4) EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES AS DIRECTED BY THE CITY.

MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

ESC DETAILS

SHEET

C10.8

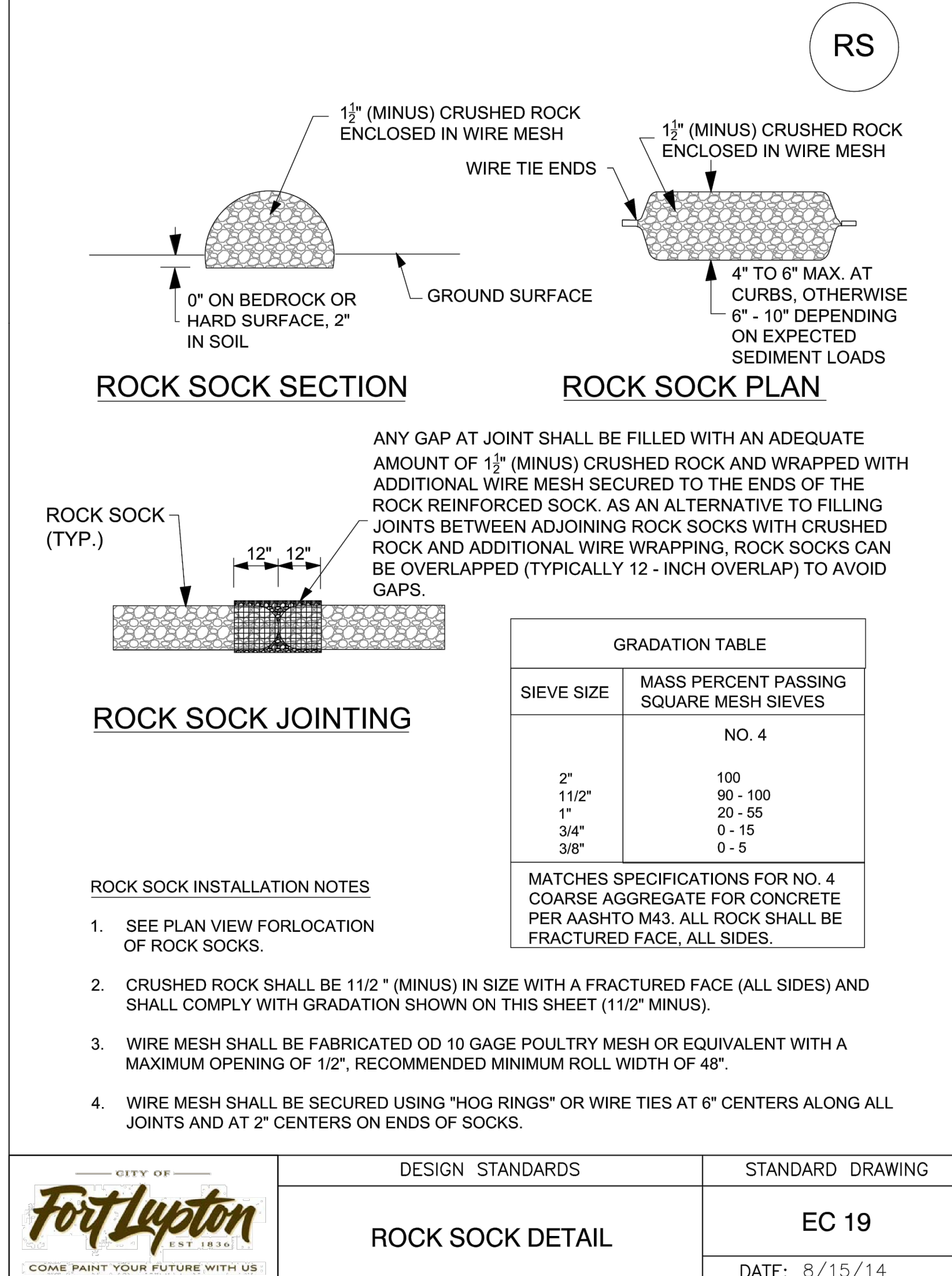
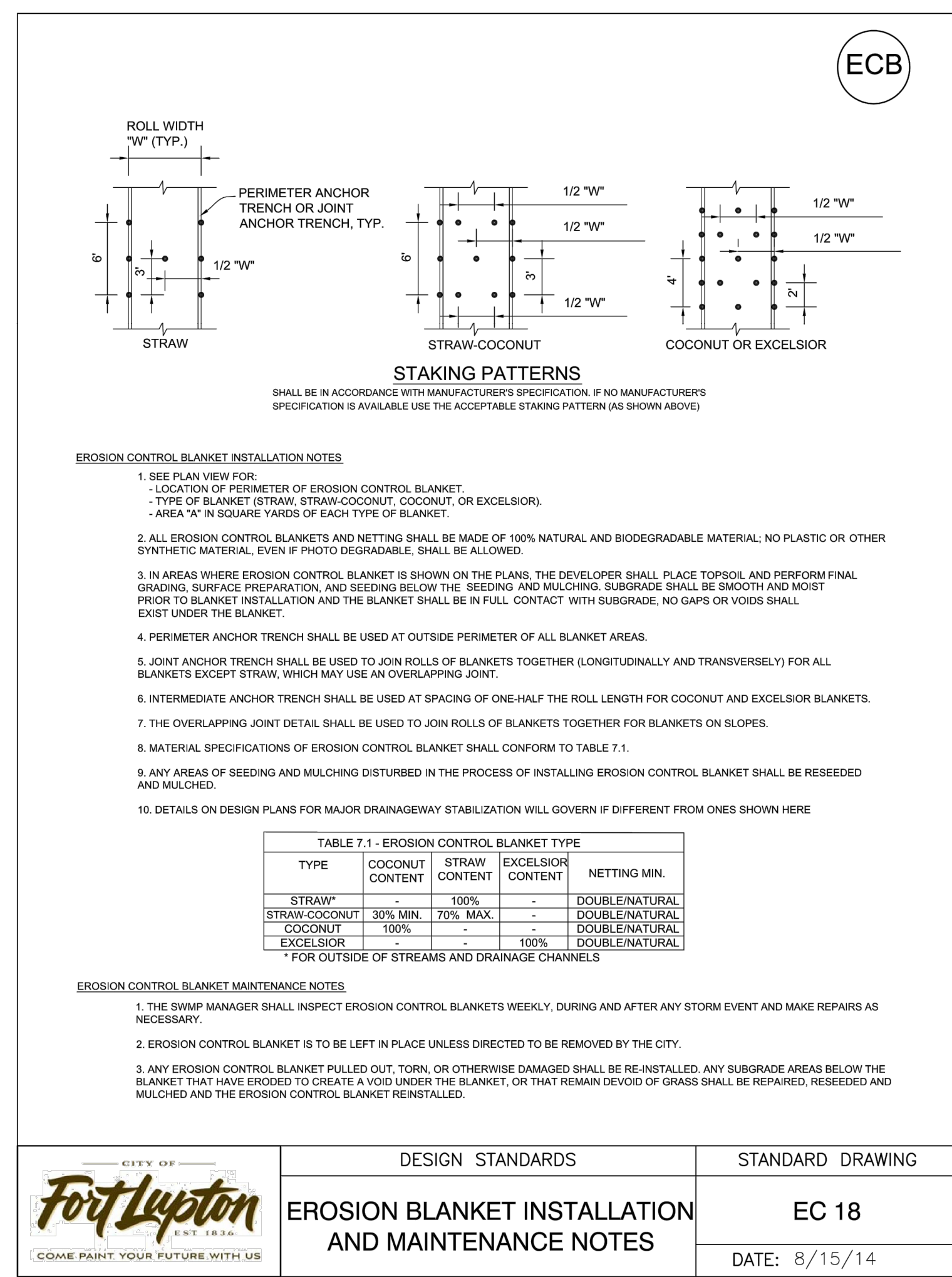
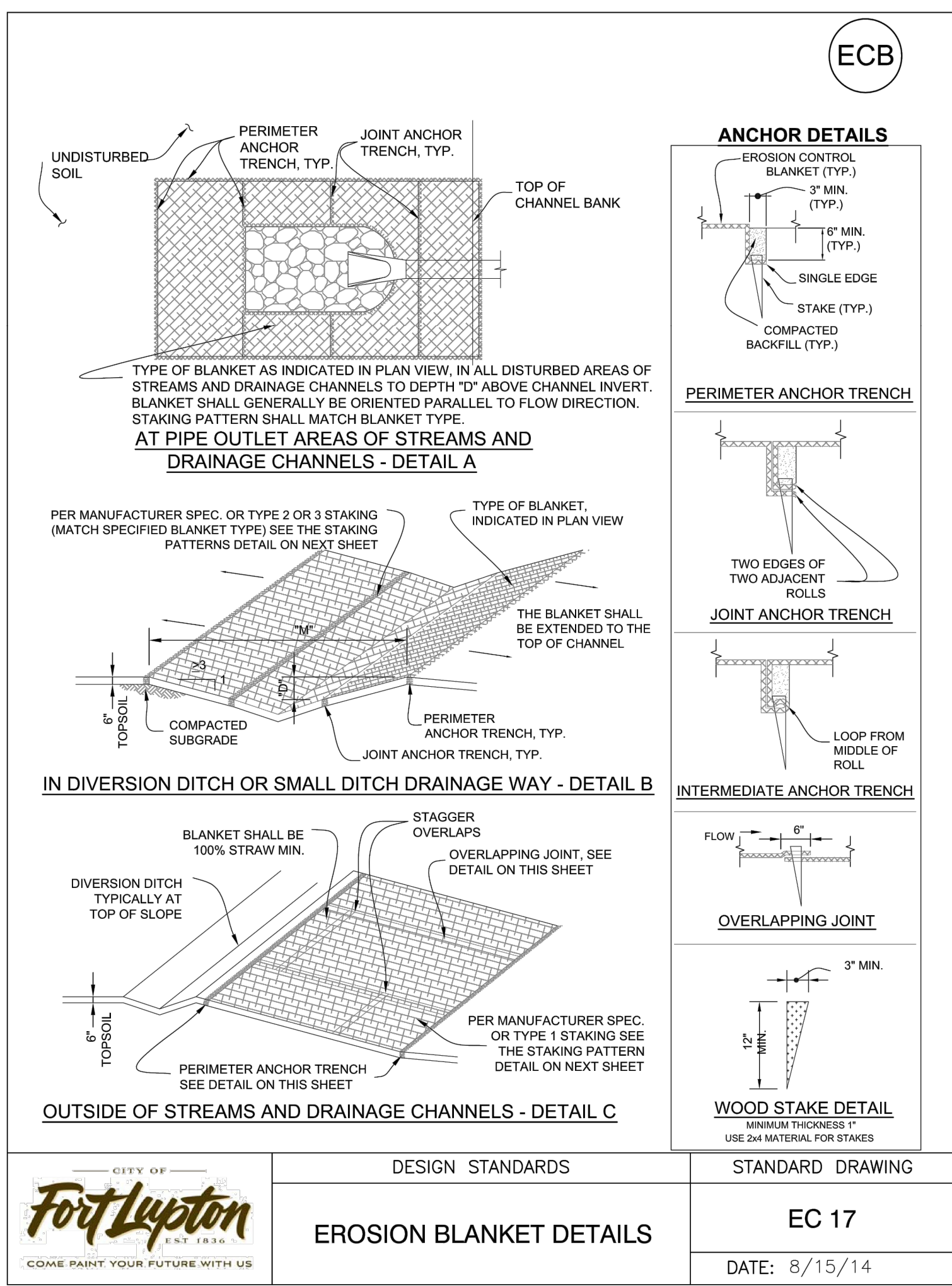
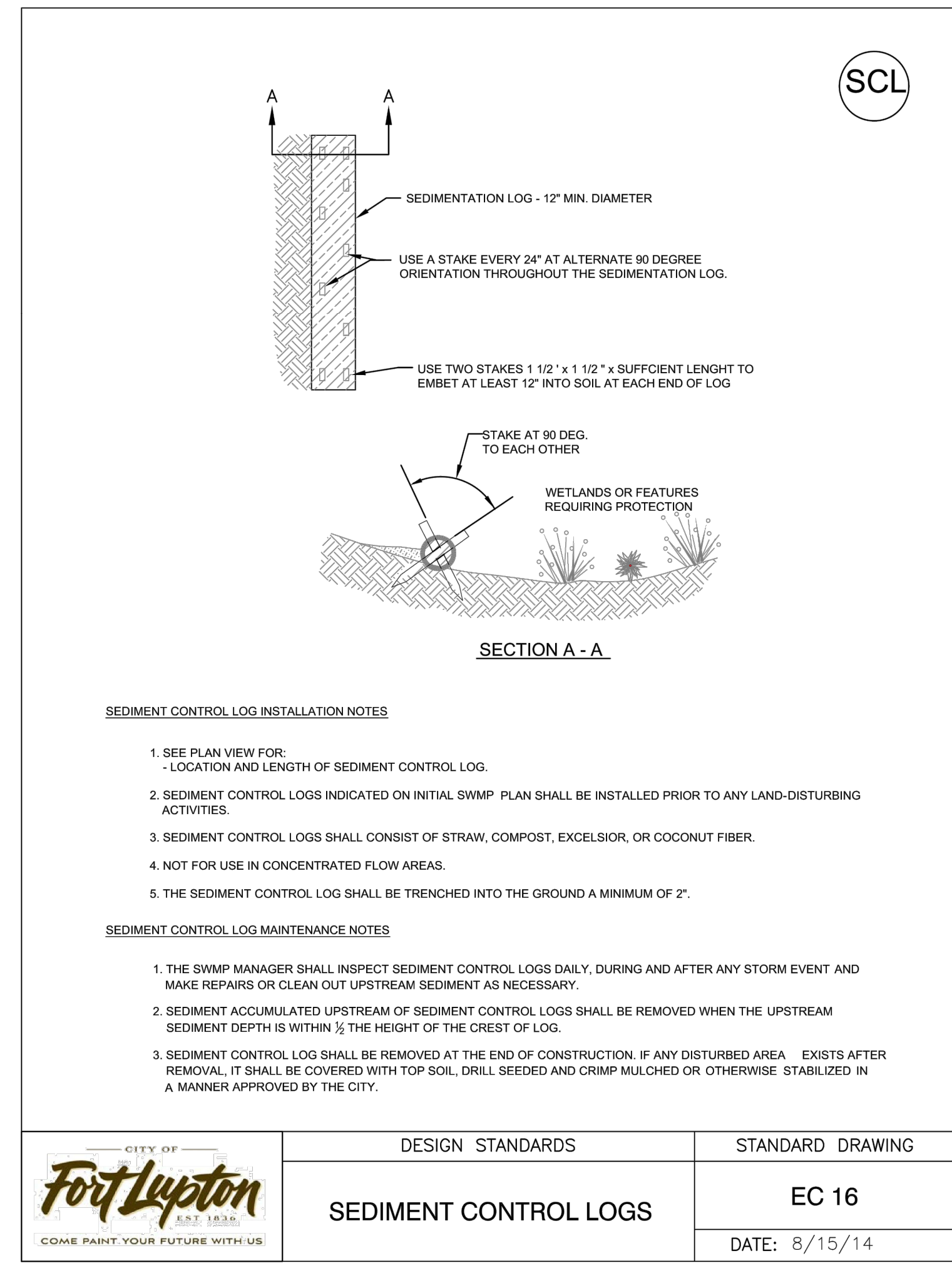
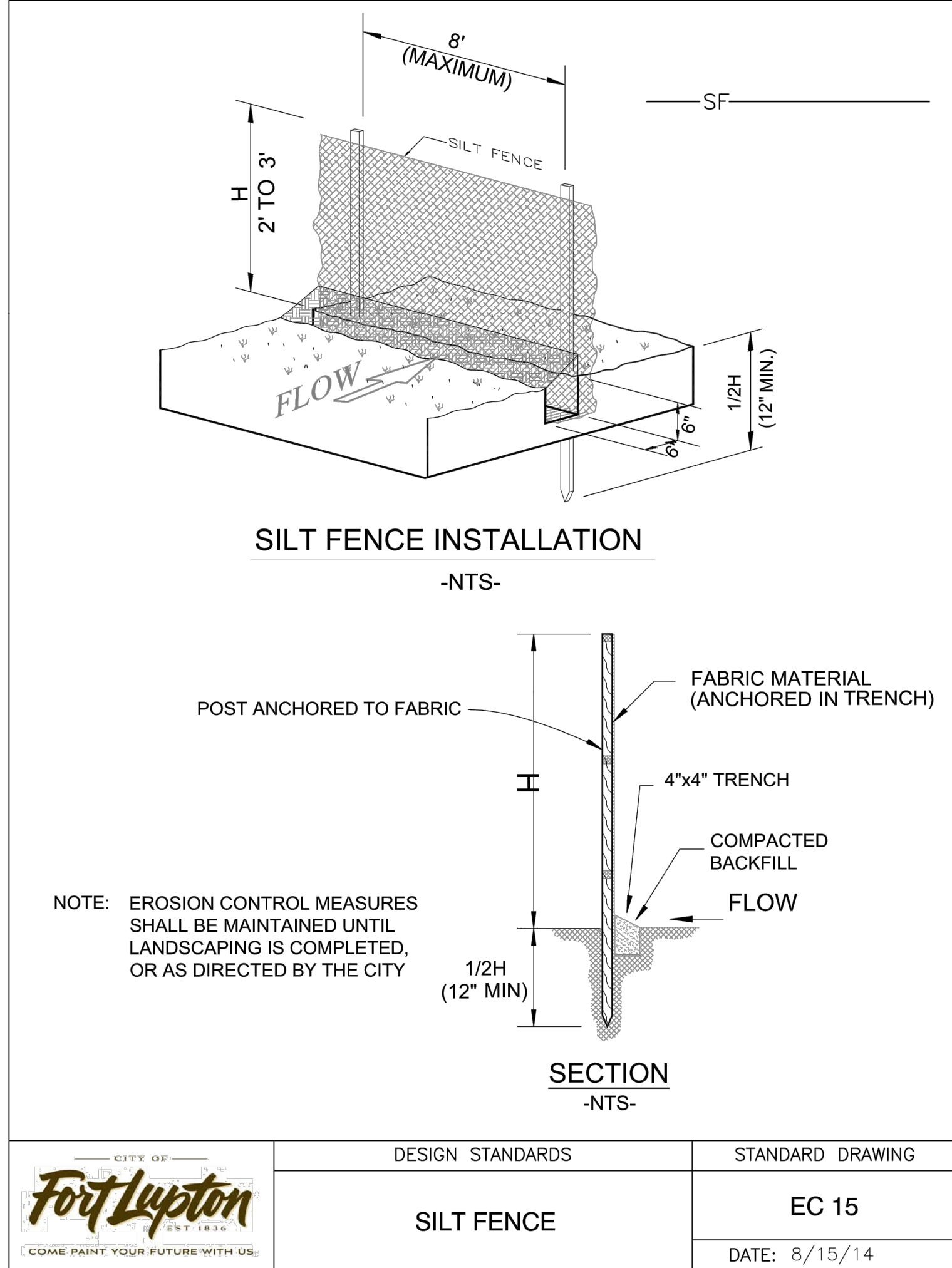
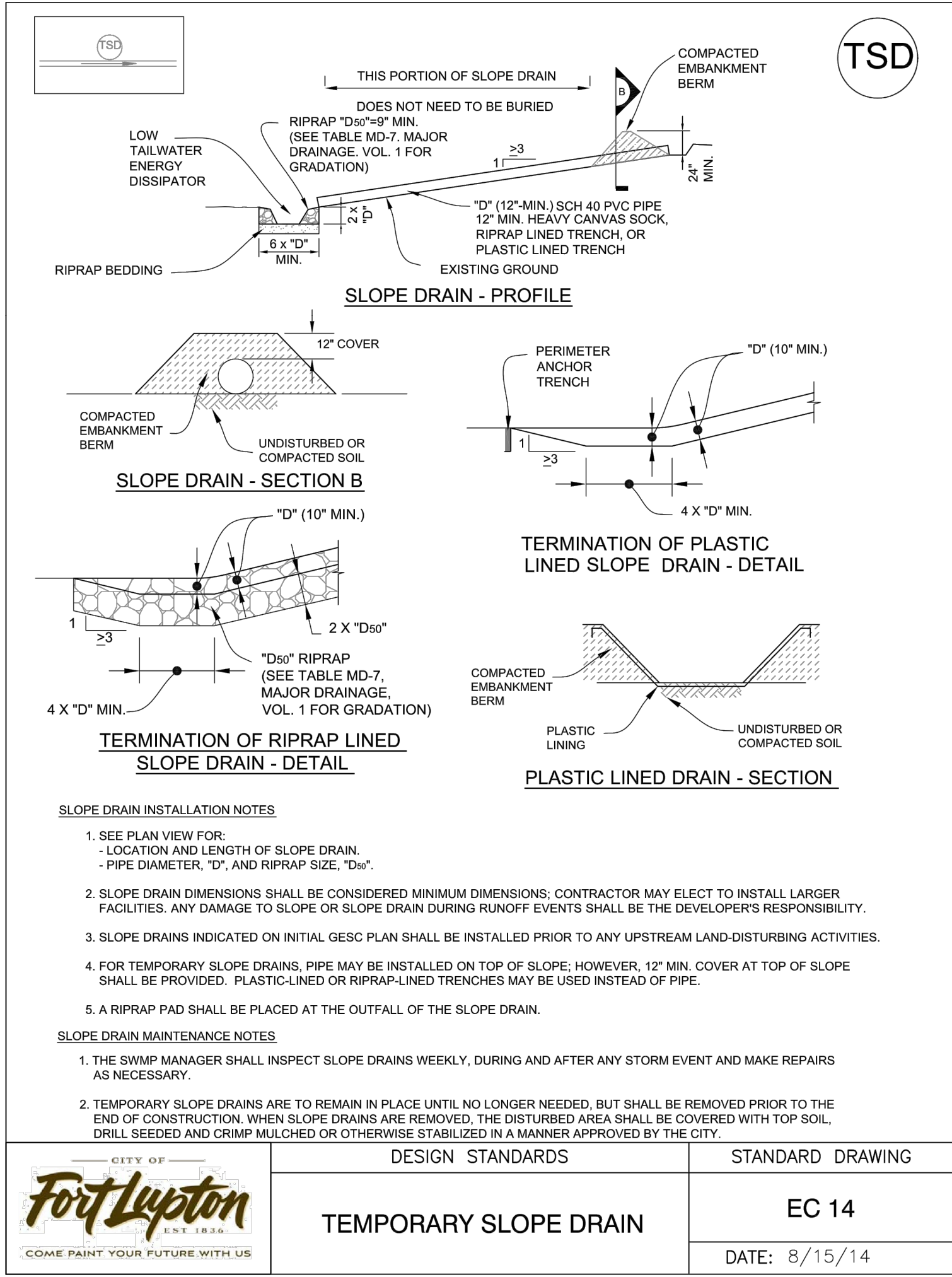
DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032
HORIZ. SCALE	N/A
VERT. SCALE	N/A

NOTES

DATE

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MURATA FARMS FILING NO. 1
CIVIL CONSTRUCTION DOCUMENTS

SHEET

C10.10

Redland
WHERE GREAT PLACES BEGIN
720.282.4783 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

ESC DETAILS

Phase III Drainage Report

Murata Farms Filing No. 1

Prepared for:

Coronado West
8655 S. Priest Dr,
Tempe, AZ 85284
(303) 285-1110 voice
Contact: Eric Eckberg

Prepared by:



August 20, 2021
Project No. 19032

ENGINEER'S CERTIFICATION/STANDARD STATEMENT 1

I hereby affirm that this report and plan for the Phase III drainage design of the development, Murata Farms Filing No. 1, was prepared by me (or under my direct supervision) in accordance with the provisions of the City of Fort Lupton Storm Drainage Design and Technical Criteria for the owners thereof. I understand that the City of Fort Lupton does not and will not assume liability for drainage facilities designed by others. I am also aware of the provisions of the City CODE as it pertains to the City's review.

Travis Frazier, P.E.
Registered Professional Engineer
State of Colorado No. 45342

OWNER'S CERTIFICATION/STANDARD STATEMENT 2

Coronado West hereby affirms that the drainage facilities for the development, Murata Farms Filing No. 1, shall be constructed according to the design presented in this report. I understand that the City of Fort Lupton does not and will not assume liability for drainage facilities designed and/or certified by my engineer. I understand that the City of Fort Lupton reviews drainage plans but cannot, on behalf Coronado West and/or their successors and/or assigns assume future liability for improper design. I am also aware of the provisions of the City CODE as it pertains to the City's review.

Name of Developer/Owner

Authorized Signature/Title

Table of Contents

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Site Description	4
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Introduction

INTRODUCTION

This drainage report presents an analysis for the proposed storm drainage system and patterns of Murata Farms Filing No. 1, hereafter referred to as the Site.

Site Location

The Site is located in the northern section of the southwest quarter of Section 4, Township 1 North, Range 66 West of the 6th Principal Meridian, City of Fort Lupton and County of Weld, Colorado. The Site is located to the south of County Road 12 1/2, also known as Colorado Highway 52 and west of County Road 29 1/2. To the west of the site is an existing development of Appel Farms. To the south of the site is the Mountain Sky Filing No. 1 development.

Site Description

The existing site encompasses approximately 72.71 acres and is largely undeveloped with the exception of existing farm buildings and existing oil wells. The site generally slopes from north to south. There is an existing detention pond off-site in the southwest corner and directly south of the project on the eastern half lies a drainage channel. The existing Fulton Irrigation Ditch crosses the northeast corner of the site. The site is actively being farmed at the time of this report.

Proposed Project Description

The property is proposed to be a planned residential development which will include single family homes, townhomes, a commercial lot and park areas. A total of 180 single family residential units will be constructed with the project. Runoff from the site will be treated in a full-spectrum detention pond.

Flood Hazard and Drainage Studies Relevant to the Site

The site is contained within FIRM Map No. 08123C2110E, with a revised date of January 20, 2016.

The site lies entirely within Zone X.

Soil Type

The NRCS soil survey indicates that the soil on site is primarily sandy loams, whose hydrologic soil group is Type B. A soil map has been included in the appendix for reference.

Historic Drainage System

The existing site is primarily farmland. Historically, the site flows from North to South at a slope of 2.6%. South of the existing site is the development known as Mountain Sky which has a drainage swale along Mountain Sky's northern edge. The Site partially drains into the swale and into the existing pond as well.

Proposed Drainage System and Basins

Criteria

This report has been prepared in accordance with the *City of Fort Lupton Storm Drainage Design and Technical Criteria* and the *Urban Drainage and Flood Control District Criteria Manual*.

The hydrologic design was computed using the Rational Method as defined by Mile High Flood District. The 5-year storm was used as the minor storm event, while the 100-year storm was used as the major event. The one-hour point rainfall depth used for the 5-year storm was 1.11 inches and 2.71 inches for the 100-year event. The Rational Method was used to analyze fully developed conditions. Roads interior to the site are designed to use mountable curb whereas the major east to west road on the northern end of the site and the road running north to south of the west end of the site is vertical curb.

Erosion control shall be utilized throughout the site. BMP's shall be installed and maintained during the project duration per Urban Drainage Flood Control District and *City of Fort Lupton Storm Drainage Design and Technical Criteria*.

Runoff / Proposed Basin Description

Major Basins

The proposed development has been divided into six Major Basins. Major Basins A, B and C (majority of the site) will be captured and treated in a full spectrum detention pond and released at the historic rate. These Major Basins have an overall imperviousness of 54%. Major Basins D and OS (offsite) will follow historic flow patterns.

Sub-basins

Basin A

Basin A consists of single-family lots, parks and roadways primarily along the central half of the site. Basin A will be collected by on-site storm sewer and routed to the full-spectrum detention pond.

Basin A1 (5.41 Acres)

Basin A1 is half of a road section of Colorado State Highway 52 and the area surrounding an existing well setback. Flows from Basin A1 will reach Design Point A1 and will spill over the curb into Basin A2 where the flow will follow the gutter and be routed to a 10' Type R Inlet in a sump condition. Approximately 1.0 cfs in the minor storm and 12.4 cfs of the major storm will be routed to the inlet through A2. This basin has an overall imperviousness of 13%.

$$C_5 = 0.09 \quad C_{100} = 0.49$$

$$Q_5 = 1.0 \text{ CFS} \quad Q_{100} = 12.4 \text{ CFS}$$

Basin A2 (0.75 Acres)

Basin A2 consists of a road section, adjacent sidewalk, and tree lawn. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R Inlet in a sump condition at Design Point A2. This basin has an overall imperviousness of 76%.

$$C_5 = 0.64 \quad C_{100} = 0.78$$

$$Q_5 = 1.7 \text{ CFS} \quad Q_{100} = 5.0 \text{ CFS}$$

Basin A3 (7.29 Acres)

Basin A3 consists of future single-family attached lots, associated road, and landscape. Flows will sheet flow and collect into a 36" RCP storm stub located at Design Point A3. This basin has been designed for the future full buildout and has an overall imperviousness of 75%.

$$C_5 = 0.63 \quad C_{100} = 0.78$$

$$Q_5 = 13.9 \text{ CFS} \quad Q_{100} = 42.1 \text{ CFS}$$

Basin A4 (1.88 Acres)

Basin A4 consists of single-family detached lots, park areas and associated roads and landscape. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 5' Type R inlet in an on-grade condition located at Design Point B4. Approximately 0.1 cfs of the minor storm and 4.0 cfs of the major storm will bypass to Basin A6. This basin has an overall imperviousness of 48%.

$$C_5 = 0.38 \quad C_{100} = 0.65$$

$$Q_5 = 1.8 \text{ CFS} \quad Q_{100} = 7.5 \text{ CFS.}$$

Basin A5 (2.36 Acres)

Basin A5 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in an on-grade condition located at Design Point A5. Approximately 3.0 cfs of the major storm will bypass to Basin A7. This basin has an overall imperviousness of 57%.

$$C_5 = 0.47 \quad C_{100} = 0.69$$

$$Q_5 = 2.9 \text{ CFS} \quad Q_{100} = 10.5 \text{ CFS.}$$

Basin A6 (1.54 Acres)

Basin A6 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in a sump condition located at Design Point A6. This basin has an overall imperviousness of 50%.

$$C_5 = 0.40 \quad C_{100} = 0.66$$

$$Q_5 = 1.7 \text{ CFS} \quad Q_{100} = 6.9 \text{ CFS.}$$

Basin A7 (1.50 Acres)

Basin A7 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in a sump condition located at Design Point A7. This basin has an overall imperviousness of 59%.

$$C_5 = 0.48 \quad C_{100} = 0.70$$

$$Q_5 = 2.2 \text{ CFS} \quad Q_{100} = 7.8 \text{ CFS}$$

Basin A8 (0.96 Acres)

Basin A8 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 15' Type R on-grade inlet located at Design Point A8. Basin A8A and A9 also flow directly to this inlet. Of these combined inlet flows, approximately 5.8 cfs of the major storm from Basin A8 will bypass to Basin A7. This basin has an overall imperviousness of 63%.

$$C_5 = 0.52 \quad C_{100} = 0.72$$

$$Q_5 = 1.4 \text{ CFS} \quad Q_{100} = 4.8 \text{ CFS}$$

Basin A8A (2.30 Acres)

Basin A8A consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter, combine with runoff from Basin A9, and be conveyed to Design Point 8 via a cross pan. A Channel Report is included in the Appendix showing the design flow to this cross pan is less than the capacity of the cross pan. This basin has an overall imperviousness of 50%.

$$C_5 = 0.41 \quad C_{100} = 0.66$$

$$Q_5 = 2.3 \text{ CFS} \quad Q_{100} = 9.1 \text{ CFS}$$

Basin A9 (1.15 Acres)

Basin A9 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter, combine with runoff from Basin A8a, and they will be collected into a 15' Type R on-grade inlet located at Design Point A8. A Channel Report is included in the Appendix showing the design flow to this cross pan is less than the capacity of the cross pan. This basin has an overall imperviousness of 54%.

$$C_5 = 0.44 \quad C_{100} = 0.68$$

$$Q_5 = 1.5 \text{ CFS} \quad Q_{100} = 5.5 \text{ CFS}$$

Basin A10 (1.48 Acres)

Basin A10 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in an on-grade condition located at Design Point A10. Approximately 1.0 cfs of the major storm from Basin A10 will be routed to a 10' Type R Inlet in a sump condition at Design Point A11 This basin has an overall imperviousness of 57%.

$$C_5 = 0.47 \quad C_{100} = 0.7$$

$$Q_5 = 2.0 \text{ CFS} \quad Q_{100} = 7.1 \text{ CFS}$$

Basin A11 (1.22 Acres)

Basin A11 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in a sump condition located at Design Point A11. This basin has an overall imperviousness of 59%. An emergency overflow path has been provided below the inlet in case the system shall fail, runoff will still be conveyed to the extended detention basin.

$$C_5 = 0.48 \quad C_{100} = 0.70$$

$$Q_2 = 1.8 \text{ CFS} \quad Q_{100} = 6.3 \text{ CFS}$$

Basin A12 (4.35 Acres)

Basin A12 consists of single-family detached lots, landscape areas, and walks. Flows will sheet flow and collect into a grass swale within Basin A12. The flows will channel along the grass swale down to Design Point A12 where they will flow collect into a swale and be conveyed to the existing regional channel to the south on the Mountain Sky development property and ultimately to the extended detention basin. This basin has an overall imperviousness of 34%.

$$C_5 = 0.27 \quad C_{100} = 0.59$$

$$Q_5 = 2.9 \text{ CFS} \quad Q_{100} = 15.5 \text{ CFS}$$

Basin B

Basin B consists of single-family lots, and roadways primarily along the eastern half of the site. Basin B will be collected by on-site storm sewer and routed to the existing regional channel along the southern edge of the Site and ultimately to the extended detention basin.

Basin B1 (5.13 Acres)

Basin B1 consists of future single-family attached lots, park areas and associated roads, alleys and landscape. Flows will sheet flow and collect where they will be collected into a 30" RCP Storm Stub. This basin has been designed for the future full buildout and has an overall imperviousness of 75%.

$$C_5 = 0.63 \quad C_{100} = 0.78$$

$$Q_5 = 11.4 \text{ CFS} \quad Q_{100} = 34.4 \text{ CFS}$$

Basin B2 (2.52 Acres)

Basin B2 consists of future commercial. Flows will sheet flow and collect where they will be collected into a 24" RCP Storm Stub. This basin has been designed for the future full buildout and has an overall imperviousness of 90%.

$$C_5 = 0.77 \quad C_{100} = 0.85$$

$$Q_5 = 7.2 \text{ CFS} \quad Q_{100} = 19.4 \text{ CFS}$$

Basin B3 (1.03 Acres)

Basin B3 consists of a road section, adjacent sidewalk to it, and tree lawn. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 5' Type R Inlet in an on-grade condition at Design Point B3. Approximately 0.3 cfs of the minor storm and 3.4 cfs of the major storm will bypass the inlet and carry over to Basin B4. This basin has an overall imperviousness of 67%.

$$C_5 = 0.55 \quad C_{100} = 0.74$$

$$Q_5 = 2.0 \text{ CFS} \quad Q_{100} = 6.4 \text{ CFS}$$

Basin B4 (0.60 Acres)

Basin B4 consists of a road section, adjacent sidewalk to it, and tree lawn. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 5' Type R Inlet in a sump condition at Design Point B4. This basin has an overall imperviousness of 72%.

$$C_5 = 0.60 \quad C_{100} = 0.77$$

$$Q_5 = 1.3 \text{ CFS} \quad Q_{100} = 4.1 \text{ CFS}$$

Basin B5 (1.82 Acres)

Basin B5 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in a sump condition located at Design Point B5. This basin has an overall imperviousness of 58%. An emergency swale is proposed in the open space tract adjacent to this lowpoint inlet to provide a means of conveyance to the detention basin should the storm sewer system fail.

$$C_5 = 0.47 \quad C_{100} = 0.70$$

$$Q_5 = 2.5 \text{ CFS} \quad Q_{100} = 8.9 \text{ CFS}$$

Basin B6 (2.71 Acres)

Basin B6 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in a sump condition located at Design Point B6. Should the storm sewer become clogged Basin B6 will overtop the roadway crown to Basin B5 and then be conveyed via an emergency overflow swale to the detention basin. This basin has an overall imperviousness of 53%.

$$C_5 = 0.43 \quad C_{100} = 0.67$$

$$Q_5 = 3.2 \text{ CFS} \quad Q_{100} = 12.1 \text{ CFS}$$

Basin B7 (1.26 Acres)

Basin B7 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in an on-grade condition located at Design Point B7. Approximately 0.5 cfs of the major storm will bypass to Basin B15. This basin has an overall imperviousness of 60%.

$$C_5 = 0.49 \quad C_{100} = 0.71$$

$$Q_5 = 1.7 \text{ CFS} \quad Q_{100} = 5.9 \text{ CFS}$$

Basin B8 (0.80 Acres)

Basin B8 consists of a road section, adjacent sidewalk to it, and tree lawn. Flows will sheet flow and collect in the on-site curb and gutter where they will combine with flows from Basin B9 and conveyed to Design Point B10 via a cross pan. Calculations are provided in the Appendix showing the capacity of the street at Design Point B8 as well as the capacity of the crosspan when Basins B8 and B9 combine. This basin has an overall imperviousness of 77%.

$$C_5 = 0.65 \quad C_{100} = 0.79$$

$$Q_5 = 1.7 \text{ CFS} \quad Q_{100} = 5.0 \text{ CFS}$$

Basin B9 (2.23 Acres)

Basin B9 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected at Design Point B9, combining with runoff from Basin B8 after which the flows will enter a cross pan and go into the Inlet at Design Point B10. This basin has an overall imperviousness of 47%.

$$C_5 = 0.37 \quad C_{100} = 0.64$$

$$Q_5 = 2.0 \text{ CFS} \quad Q_{100} = 8.4 \text{ CFS}$$

Basin B10 (0.72 Acres)

Basin B10 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 15' Type R inlet in an on-grade condition located at Design Point B10. Basins AB8 and B9 also contribute directly to this inlet; the included UD-Inlet spreadsheet for this Design Point shows that the street is over capacity. However, it is only locally overcapacity directly at the

inlet; the addition of runoff from Basins B8 and B9 puts the street over capacity. Capacities of the roadway and crossspan just upstream of Design Point B10 are shown to not be exceeded during the minor nor major storm. Approximately 5.0 cfs of the major storm will bypass to Basin B11. This basin has an overall imperviousness of 73%.

$$C_5 = 0.61 \quad C_{100} = 0.77$$

$$Q_5 = 1.4 \text{ CFS} \quad Q_{100} = 4.3 \text{ CFS}$$

Basin B11(1.57 Acres)

Basin B11 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R on-grade inlet located at Design Point B11. Approximately 3.3 cfs of the major storm will bypass to Basin B15. This basin has an overall imperviousness of 48%.

$$C_5 = 0.39 \quad C_{100} = 0.65$$

$$Q_5 = 1.4 \text{ CFS} \quad Q_{100} = 5.9 \text{ CFS}$$

Basin B12 (2.48 Acres)

Basin B12 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in an on-grade condition located at Design Point B12. Approximately 3.7 cfs of the major storm will bypass to Basin B15. This basin has an overall imperviousness of 56%.

$$C_5 = 0.46 \quad C_{100} = 0.69$$

$$Q_5 = 3.2 \text{ CFS} \quad Q_{100} = 11.6 \text{ CFS}$$

Basin B13 (3.78 Acres)

Basin B13 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 15' Type R on-grade located at Design Point B13. Approximately 2.7 cfs of the major storm will bypass to Basin B6. This basin has an overall imperviousness of 53%.

$$C_5 = 0.43 \quad C_{100} = 0.67$$

$$Q_5 = 3.7 \text{ CFS} \quad Q_{100} = 14.1 \text{ CFS}$$

Basin B14 (1.27 Acres)

Basin B14 consists of single-family detached lots. Flows will sheet flow to the swale to the south of the Site and ultimately be conveyed to the extended detention basin. This basin has an overall imperviousness of 45%.

$$C_5 = 0.36 \quad C_{100} = 0.64$$

$$Q_5 = 1.0 \text{ CFS} \quad Q_{100} = 4.4 \text{ CFS}$$

Basin B15 (0.65 Acres)

Basin B15 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R on-grade located at Design Point B15. Approximately 3.6 cfs of the major storm will bypass to Basin B6. This basin has an overall imperviousness of 66%.

$$C_5 = 0.55 \quad C_{100} = 0.74$$

$$Q_5 = 1.2 \text{ CFS} \quad Q_{100} = 3.9 \text{ CFS}$$

Basin C

Basin C consists of single-family lots, and roadways primarily along the western edge of the site. Basin C will be collected by on-site storm sewer and routed to the full-spectrum detention pond.

Basin C1 (1.63 Acres)

Basin C1 consists of the collector roadway, a portion of State Highway 52 that drains in to the site, park area, walks, road, and associated landscape area. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected at Design Point C1 after which the flows will enter a cross pan and go into the Inlet at Design Point C3. This basin has an overall imperviousness of 21%.

$$C_5 = 0.38 \quad C_{100} = 0.65$$

$$Q_5 = 2.8 \text{ CFS} \quad Q_{100} = 8.1 \text{ CFS}$$

Basin C2 (2.96 Acres)

Basin C2 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in a sump condition located at Design Point C2. The inlet has been designed as a sump, with earthen berm until such time as the roadway is extended. This inlet will then act as an on-grade structure; corresponding calculations are included in the Appendix. This basin has an overall imperviousness of 54%.

$$C_5 = 0.44 \quad C_{100} = 0.68$$

$$Q_5 = 3.1 \text{ CFS} \quad Q_{100} = 11.5 \text{ CFS}$$

Basin C2A (0.60 Acres)

Basin C2 consists of single-family detached lots, associated landscape area, and road for the offsite area within the Appel Farms development. Flows will sheet flow and collect in the on-site curb and gutter where they combine with flows from Basin C2 and will be ultimately collected into a 10' Type R inlet in a sump condition located at Design Point C2. This basin has an overall imperviousness of 54%.

$$C_5 = 0.44 \quad C_{100} = 0.68$$

$$Q_5 = 0.6 \text{ CFS} \quad Q_{100} = 2.3 \text{ CFS}$$

Basin C3 (2.07 Acres)

Basin C3 consists of single-family detached lots, associated landscape area, and road. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a 10' Type R inlet in a sump condition located at Design Point C3. The inlet has been designed as a sump, with earthen berm until such time as the roadway is extended. This inlet will then act as an on-grade structure; corresponding calculations are included in the Appendix. This basin has an overall imperviousness of 58%.

$$C_5 = 0.47 \quad C_{100} = 0.70$$

$$Q_5 = 2.8 \text{ CFS} \quad Q_{100} = 10.0 \text{ CFS}$$

Basin C4 (0.32 Acres)

Basin C4 consists of future roadway and landscape area. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into a temporary Type D inlet located at Design Point C4. It is assumed that this would become a 10' Type D inlet when the road is developed. This basin has an overall imperviousness of 77%.

$$C_5 = 0.64 \quad C_{100} = 0.79$$

$$Q_5 = 0.8 \text{ CFS} \quad Q_{100} = 2.3 \text{ CFS}$$

Basin C5 (0.69 Acres)

Basin C5 consists of future roadway and single family rear yards. Flows will sheet flow and collect in the on-site curb and gutter where they will be collected into an 24" Storm Stub at

design point C5. It is assumed that an on-grade Type R inlet will be constructed at this point at such time that the roadway is extended. This basin has an overall imperviousness of 38%.

$$C_5 = 0.30 \quad C_{100} = 0.60$$

$$Q_5 = 0.5 \text{ CFS} \quad Q_{100} = 2.7 \text{ CFS}$$

Basin C6 (2.92 Acres)

Basin C6 consists of single-family detached lots and landscape area. Flows will sheet flow directly into the full-spectrum detention pond. This basin has an overall imperviousness of 14%.

$$C_5 = 0.10 \quad C_{100} = 0.49$$

$$Q_5 = 0.6 \text{ CFS} \quad Q_{100} = 7.3 \text{ CFS}$$

Basin D

Basin D consists of the existing roadway (S. College Avenue, WCR 29 1/2) as well as widening and curb, sidewalk and landscaping that runs along the eastern edge of the Site. Basin D will flow to an existing 5' Type R inlet at the south end of the site that was constructed with the Mountain Sky improvements. The inlet discharges to the regional swale and is conveyed to the detention pond.

Basin D1 (0.89 Acres)

Basin D1 consists of the western half of Weld County Road 29 1/2, proposed walk, and associated landscaping. Runoff will sheet flow and collect in the curb and gutter where they will be collected in an existing, offsite Type R inlet. This basin has an overall imperviousness of 61%. The inlet was sized to account for the widening improvements to WCR 29 1/2 associated with the Mountain Sky development. The existing runoff from these improvements are shown in the Final Drainage report and originate from Drainage Basin F1, with a Q_5 of 1.2 cfs and a Q_{100} of 2.9 cfs. These offsite flows have been added to the runoff from Basin D1 to show the existing inlet has adequate capacity.

$$C_5 = 0.47 \quad C_{100} = 0.71$$

$$Q_5 = 1.1 \text{ CFS} \quad Q_{100} = 4.5 \text{ CFS}$$

Off-site Basins

The off-site basins consist of portions of the project that will discharge off-site and typically follow historic drainage patterns. Portions of these basins are considered undeveloped because the areas will not be developed with this project or they match the historical

imperviousness of the area. The Fulton Irrigation Ditch along the northern end of the site will not have any flows directed towards the ditch. There is no proposed development on the north side of the ditch.

Basin OS-B1 (0.97 Acres)

Basin OS-B1 consists of a native seeded area north of Basin B1. Flows will sheet flow onto Basin B1. This basin has an overall imperviousness of 15%.

$$C_5 = 0.11 \quad C_{100} = 0.50$$

$$Q_5 = 0.3 \text{ CFS} \quad Q_{100} = 4.4 \text{ CFS}$$

Basin OS-B2 (0.49 Acres)

Basin OS-B2 consists of a landscaping area north of Basin B2. Flows will sheet flow onto Basin B2. This basin has an overall imperviousness of 16%.

$$C_5 = 0.12 \quad C_{100} = 0.50$$

$$Q_5 = 0.1 \text{ CFS} \quad Q_{100} = 2.0 \text{ CFS}$$

Proposed Full-Spectrum Detention Area

The Site will utilize a full-spectrum extended detention basin (EDB) for on-site water quality and detention requirements. The proposed storm infrastructure will capture the runoff from Basins A, B, C and D and route them to the pond. Tributary basins make up approximately 71.91 acres with an imperviousness of 54%.

The proposed EDB will modify an existing pond located south of the site in the Mountain Sky Subdivision. This pond, as discussed in the Mountain Sky Drainage Report, has a restricted release rate to the 5-year storm due to lack of downstream infrastructure. The proposed pond will be sized for both developments and will release at the 10-year historical release rate. The improvements to the existing pond will include additional volume, outlet structure, micropool, trickle channels, forebays and an emergency overflow, which have been designed to account for both the Mountain Sky and Murata Farms developments. Additional forebays are proposed on the existing Mountain Sky discharge points to the regional pond; one for an existing pipe discharge and one for an existing rip rap lined channel. The pond will have a total volume of approximately 17.79 ac-ft below the emergency spillway elevation. It was sized using the Mile High Flood District spreadsheet MHFD-Detention_v4.03. There will be a 4' concrete channel at the bottom of the pond for low flows from both the Murata and Mountain Sky developments. The pond has been sized for Water Quality, Excess Urban Runoff Volume and 100-year detention. Excess Urban Runoff Volume is defined as the difference between the developed condition runoff volume and the pre-development volume. Orifice

plates will keep the 100-year release rate below historical runoff for the site. See Appendix for detention calculations.

There is an existing offsite basin OS-N, as described in the Mountain Sky Drainage Report, consisting of 825 acres that flows into the Mountain Sky Subdivision. This flow is routed through Mountain Sky in a channel and into the proposed pond. The original Mountain Sky design had the channel bypassing the pond. However, with the additional storage volume required for the Murata Farms runoff as well as existing oil and gas facilities in the area, it was decided, after consulting with various team members of both developments, as well as City staff, that the channel should be routed through the pond. This flow will be routed through the pond but was not factored in to the water quality treatment or storage volume designs. The emergency overflow will be sized to convey this offsite flow.

An existing gas main splits the detention pond. An equalizer pipe and emergency spillway are proposed to ensure equilibrium between to two detention areas.

The pond will outfall, per the Mountain Sky Drainage Report, to the property to the west.

The pond and the outlet structure shall be owned and maintained by the Murata Farms Metropolitan District. The pond and outlet structure will have maintenance access from the northwest corner of the pond.

Water Quality Enhancement Best Management Practices

The pond discussed in the previous section has been designed in accordance with the *City of Fort Lupton Storm Drainage and Technical Criteria*, and the *MHFD Urban Storm Drainage Criteria Manual Volumes 1, 2 and 3*. The pond was designed to detain the Excess Urban Runoff Volume and the 100-year Detention Volume.

Conclusion

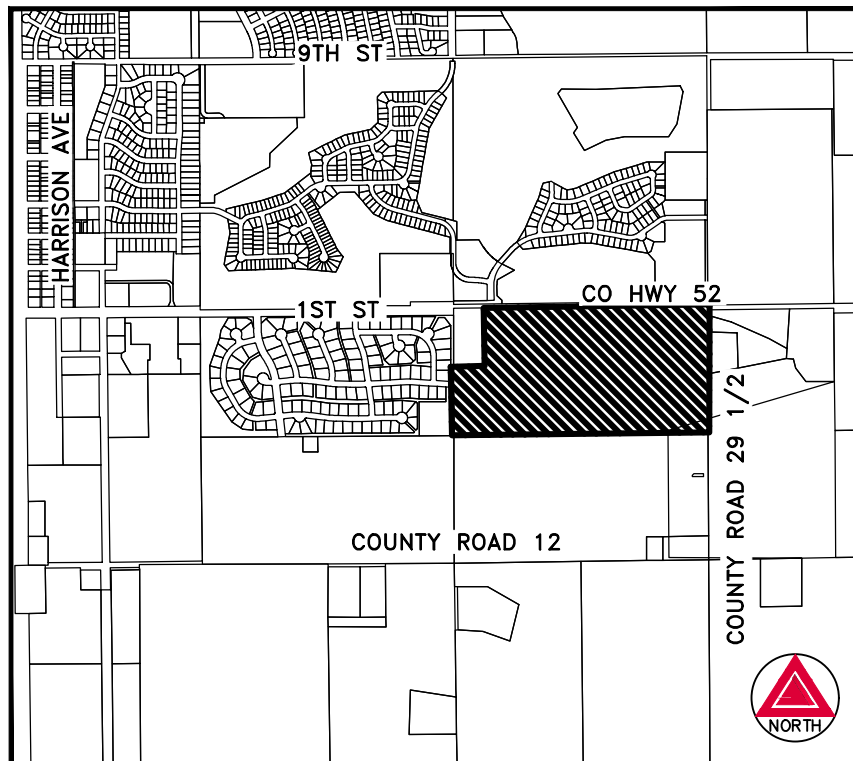
The Site will follow existing drainage patterns towards a full spectrum detention pond located in the southwestern corner of the Site that is to be resized to accommodate the increased flow rates. The flows from the detention pond are to be released at the historical 10-year rate as there is no formal down-stream infrastructure. The existing channel along the southern edge of the site will be used as a drainage channel for Basins B and D that will continue to release into the detention pond. Since the proposed pond will be releasing at the historic 10-year release rate, there will be no negative downstream impacts.

References

REFERENCES

- 1. City of Fort Lupton Storm Drainage Design and Technical Criteria.*
- 2. Urban Drainage and Flood Control District, Denver, Colorado, Urban Storm Drainage Criteria Manual, Volume 1-3, latest online addition.*
- 3. Mountain Sky Subdivision, – Filing No. 1 with +/- 45 Residential Lots, Final Drainage Report, prepared by Calibre Engineering Inc. and dated June, 2016.*

Appendix A - Vicinity Map, FIRM Map, Soils Map



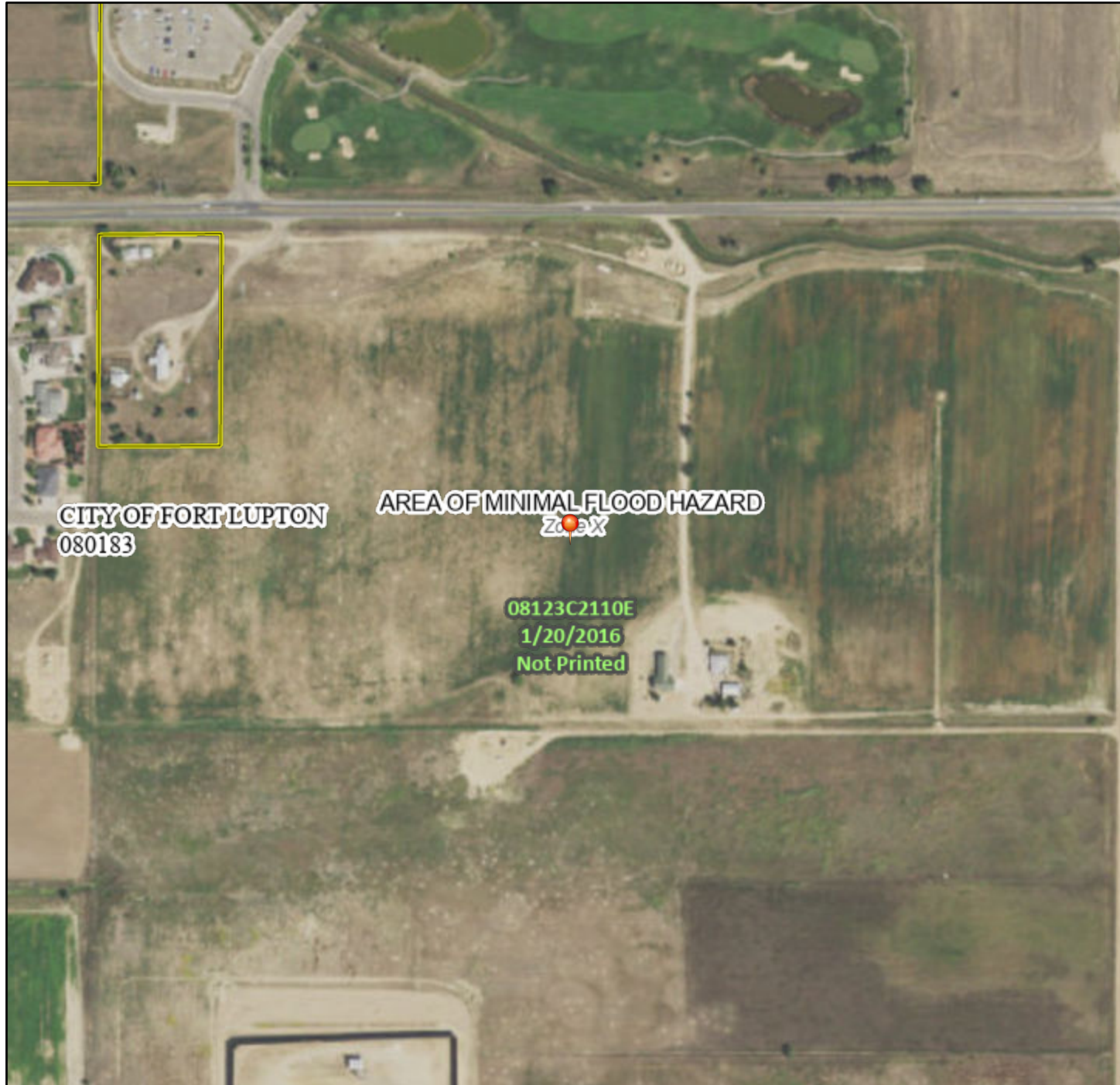
VICINITY MAP

SCALE 1" = 2,000'

National Flood Hazard Layer FIRMette



104°47'33"W 40°4'54"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

104°46'56"W 40°4'27"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
OTHER FEATURES		Coastal Transect
		Base Flood Elevation Line (BFE)
OTHER FEATURES		Limit of Study
		Jurisdiction Boundary
OTHER FEATURES		Coastal Transect Baseline
		Profile Baseline
OTHER FEATURES		Hydrographic Feature
		Digital Data Available
MAP PANELS		No Digital Data Available
		Unmapped



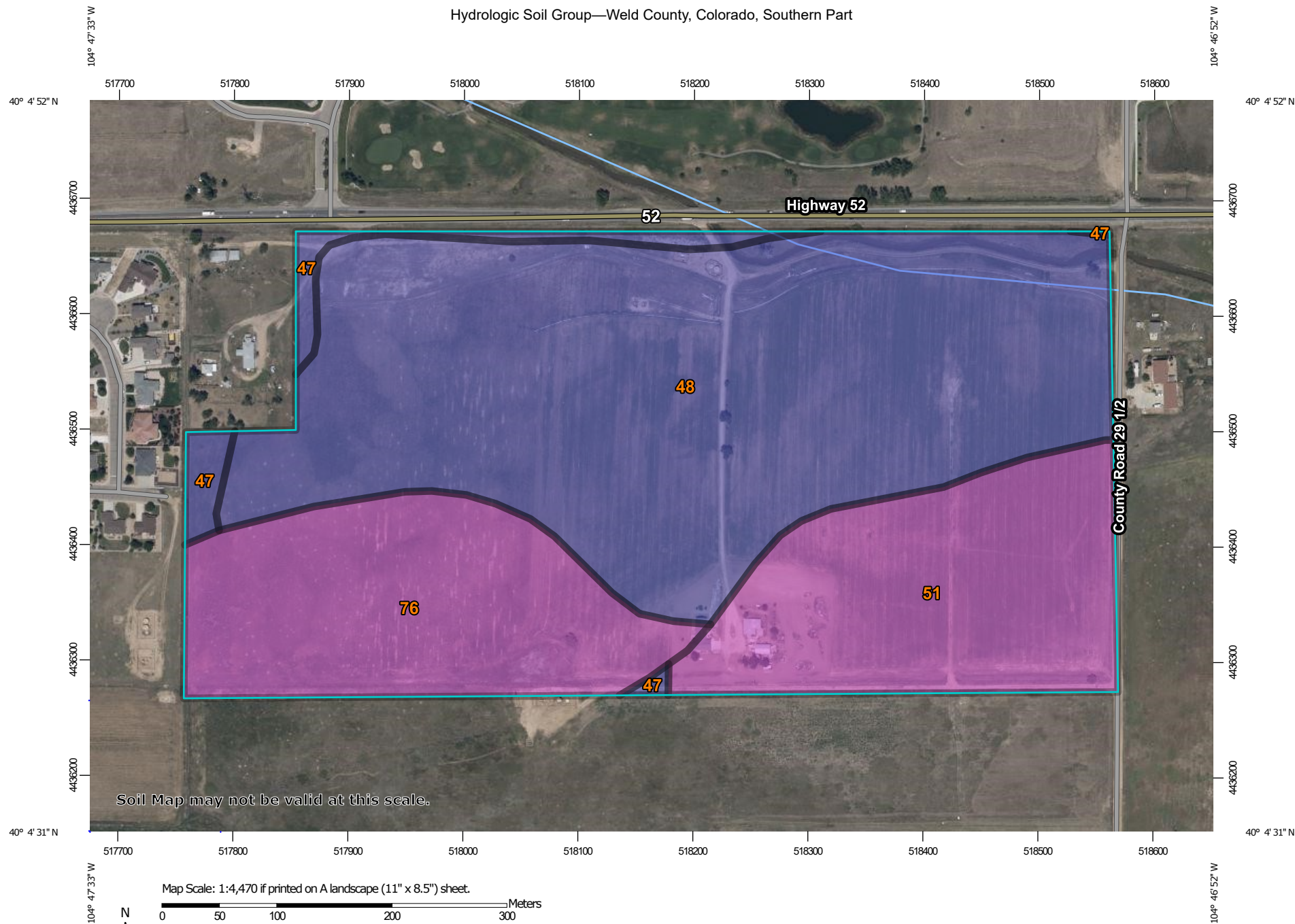
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **2/22/2021 at 4:28 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Hydrologic Soil Group—Weld County, Colorado, Southern Part



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

1/19/2021
Page 1 of 4
Page 262 of 724

MAP LEGEND**Area of Interest (AOI)**
 Area of Interest (AOI)
Soils**Soil Rating Polygons**

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Lines

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Points

-  A
-  A/D
-  B
-  B/D

-  C
-  C/D
-  D
-  Not rated or not available

Water Features
 Streams and Canals
Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background
 Aerial Photography
MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 19, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 19, 2018—Aug 10, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
47	Olney fine sandy loam, 1 to 3 percent slopes	B	2.3	3.0%
48	Olney fine sandy loam, 3 to 5 percent slopes	B	43.6	57.0%
51	Otero sandy loam, 1 to 3 percent slopes	A	15.2	19.9%
76	Vona sandy loam, 1 to 3 percent slopes	A	15.3	20.1%
Totals for Area of Interest			76.4	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix B - Hydrologic Calculation



SF-1
RUNOFF COEFFICIENTS - DEVELOPED

PROJECT NUMBER: 19032
CALCULATED BY: BRB
CHECKED BY: TJF

DATE: 8/16/2021

LAND USE:	Paved Area	Park Area	Landscape Area	SF Detached Area	SF Attached Area	Alley / Commercial/ Walk Area
IMPERVIOUS %	100%	10%	2%	45%	75%	90%

Calculations assume Type C soils per NRCS

OVERALL SITE STUDY AREA

DESIGN BASIN	DESIGN POINT	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	TOTAL AREA (AC)	Cd(2)	Cd(5)	Cd(10)	Cd(100)	Impervious %
A1	A1	0.52		4.80			0.09	5.41	0.08	0.09	0.16	0.49	13%
A2	A2	0.45		0.17			0.13	0.75	0.61	0.64	0.67	0.78	76%
A3	A3					7.29		7.29	0.60	0.63	0.66	0.78	75%
A4	A4	0.37	0.69		0.58		0.19	1.83	0.35	0.38	0.44	0.65	48%
A5	A5	0.66	0.19	0.21	1.13		0.17	2.36	0.44	0.47	0.52	0.69	57%
A6	A6	0.34		0.33	0.81		0.06	1.54	0.37	0.40	0.46	0.66	50%
A7	A7	0.32		0.02	1.08		0.08	1.50	0.45	0.48	0.53	0.70	59%
A8	A8	0.31	0.06	0.04	0.47		0.08	0.96	0.49	0.52	0.57	0.72	63%
A8A	A8A	0.27		0.14	1.80		0.08	2.30	0.38	0.41	0.46	0.66	50%
A9	A9	0.28		0.20	0.59		0.08	1.15	0.41	0.44	0.49	0.68	54%
A10	A10	0.32		0.08	0.99		0.10	1.48	0.44	0.47	0.52	0.70	57%
A11	A11	0.27		0.04	0.83		0.09	1.22	0.45	0.48	0.53	0.70	59%
A12	A12	0.00	0.00	1.32	2.82		0.21	4.35	0.24	0.27	0.33	0.59	34%
BASIN A		4.11	0.94	7.35	11.10	7.29	1.36	32.14	0.37	0.40	0.46	0.66	50%
		12.8%	2.9%	22.9%	34.5%	22.7%	4.2%	100.0%					
B1	B1					5.13		5.13	0.60	0.63	0.66	0.78	75%
B2	B2						2.52	2.52	0.74	0.77	0.79	0.85	90%
B3	B3	0.52		0.33			0.18	1.03	0.52	0.55	0.60	0.74	67%
B4	B4	0.35		0.16			0.09	0.60	0.58	0.60	0.64	0.77	72%
B5	B5	0.47		0.19	1.04		0.13	1.82	0.44	0.47	0.53	0.70	58%
B6	B6	0.45		0.21	1.92		0.13	2.71	0.40	0.43	0.49	0.67	53%
B7	B7	0.34		0.09	0.73		0.09	1.26	0.46	0.49	0.54	0.71	60%
B8	B8	0.49		0.17			0.14	0.80	0.62	0.65	0.68	0.79	77%
B9	B9	0.23		0.27	1.68		0.06	2.23	0.34	0.37	0.43	0.64	47%
B10	B10	0.32		0.01	0.32		0.07	0.72	0.58	0.61	0.65	0.77	73%
B11	B11	0.15		0.14	1.21		0.06	1.57	0.36	0.39	0.45	0.65	48%
B12	B12	0.52		0.20	1.58		0.17	2.48	0.43	0.46	0.51	0.69	56%
B13	B13	0.56		0.21	2.84		0.17	3.78	0.40	0.43	0.48	0.67	53%
B14	B14			0.01	1.26			1.27	0.33	0.36	0.42	0.64	45%
B15	B15	0.22		0.02	0.36		0.05	0.65	0.52	0.55	0.59	0.74	66%
BASIN B		4.62	0.00	2.01	12.94	5.13	3.86	28.57	0.48	0.51	0.56	0.72	62%
		16.2%	0.0%	7.1%	45.3%	18.0%	13.5%	100.0%					
C1	C1	0.53	0.40	0.48			0.22	1.63	0.35	0.38	0.44	0.65	47%
C2	C2	0.69		0.47	1.58		0.23	2.96	0.41	0.44	0.50	0.68	54%
C2A	C2	0.14		0.09	0.32		0.05	0.60	0.41	0.44	0.50	0.68	54%
C3	C3	0.51		0.17	1.27		0.12	2.07	0.44	0.47	0.52	0.70	58%
C4	C4	0.21		0.07			0.04	0.32	0.62	0.64	0.68	0.79	77%
C5	C5	0.15		0.36	0.14		0.04	0.69	0.27	0.30	0.36	0.60	38%
C6	C6			2.13	0.79			2.92	0.08	0.10	0.17	0.49	14%
BASIN C		2.23	0.40	3.77	4.11	0.00	0.68	11.19					43%
		19.9%	3.6%	33.7%	36.7%	0.0%	6.1%	100.0%					
D1	D1	0.39		0.34			0.16	0.89	0.47	0.50	0.55	0.71	61%
BASIN D		0.39	0.00	0.34	0.00	0.00	0.16	0.89					61%
		43.8%	0.0%	38.2%	0.0%	0.0%	18.0%	100.0%					
OVERALL STUDY AREA		10.96	1.34	13.13	28.15	12.42	5.90	71.91	0.41	0.44	0.49	0.68	54%
		15.2%	1.9%	18.3%	39.1%	17.3%	8.2%	100.0%					
OS-B1	OS-B1			0.83			0.14	0.97	0.09	0.11	0.18	0.50	15%
OS-B2	OS-B2			0.41			0.08	0.49	0.10	0.12	0.19	0.50	16%
OffSite - OS BASINS		0.00	0.00	1.24	0.00	0.00	0.22	1.46	0.09	0.11	0.18	0.50	15%
		0.0%	0.0%	84.9%	0.0%	0.0%	15.1%	100.0%					



STANDARD FORM SF-2 - DEVELOPED
Time of Concentration

DATE: 8/16/2021

CALCULATED BY: BKB
CHECKED BY: TJF

SUB-BASIN DATA			INITIAL TIME (T _i)			TRAVEL TIME (T _t)						t _c CHECK (URBANIZED BASINS)				FINAL t _c		
DESIGN BASIN (1)	AREA Ac (2)	C _s (3)	LENGTH Ft* (4)	SLOPE % (5)	T _i Min. (6)	LENGTH Ft. (7)	SLOPE % (8)	C _t (9)	Land Surface (10)	VEL fps (11)	T _t Min. (12)	COMP. t _c (13)	TOTAL LENGTH (14)	T _c =(26-17t) ^{0.5} + 60(14t+9)S _v ^{-1/2} (15)	Min.	C10	C100	
A1	5.41	0.09	25	2.0%	7.3	1100	1.2%	7.0	Short Pasture/Lawn	0.8	23.9	31.2	1125	25.1	25.1	0.16	0.49	
A2	0.75	0.64	10	2.0%	2.1	760	1.8%	20.0	Paved Areas	2.7	4.7	6.8	770	13.7	6.8	0.67	0.78	
A3	7.29	0.63	100	4.4%	5.3	390	4.4%	7.0	Short Pasture/Lawn	1.5	4.4	9.7	490	13.5	9.7	0.66	0.78	
A4	1.83	0.38	100	2.0%	10.4	570	1.7%	20.0	Paved Areas	2.6	3.6	14.1	670	18.5	14.1	0.44	0.65	
A5	2.36	0.47	50	2.0%	6.5	1,050	1.5%	20.0	Paved Areas	2.4	7.1	13.7	1100	17.4	13.7	0.52	0.69	
A6	1.54	0.40	60	2.0%	7.9	450	0.8%	20.0	Paved Areas	1.8	4.2	12.1	510	18.2	12.1	0.46	0.66	
A7	1.50	0.48	60	2.0%	7.0	380	1.2%	20.0	Paved Areas	2.2	2.9	9.9	440	16.5	9.9	0.53	0.70	
A8	0.96	0.52	60	2.0%	6.6	590	1.1%	20.0	Paved Areas	2.1	4.7	11.2	650	16.0	11.2	0.57	0.72	
A8A	2.30	0.41	150	2.6%	11.3	575	1.1%	20.0	Paved Areas	2.1	4.6	15.9	725	18.1	15.9	0.46	0.66	
A9	1.15	0.44	60	2.0%	7.4	610	1.8%	20.0	Paved Areas	2.7	3.8	11.2	670	17.4	11.2	0.49	0.68	
A10	1.48	0.47	60	2.0%	7.1	690	1.7%	20.0	Paved Areas	2.6	4.4	11.5	750	16.9	11.5	0.52	0.70	
A11	1.22	0.48	60	2.0%	6.9	360	0.9%	20.0	Paved Areas	1.9	3.2	10.1	420	16.5	10.1	0.53	0.70	
A12	4.35	0.27	20	1.7%	5.7	1,140	1.7%	15.0	Grassed Waterway	2.0	9.7	15.4	1160	21.3	15.4	0.33	0.59	
Total A	32.14	0.40	300	6.0%	12.2	1,183	1.7%	20.0	Paved Areas	2.6	7.6	19.8	1483	17.7	17.7	0.46	0.66	
B1	5.13	0.63	80	3.4%	5.1	260	3.4%	20.0	Paved Areas	3.7	1.2	6.3	340	13.4	6.3	0.66	0.78	
B2	2.52	0.77	80	2.7%	3.9	260	2.5%	20.0	Paved Areas	3.2	1.4	5.3	340	10.9	5.3	0.79	0.85	
B3	1.03	0.55	10	2.0%	2.5	780	2.2%	20.0	Paved Areas	3.0	4.4	6.9	790	15.3	6.9	0.60	0.74	
B4	0.60	0.60	10	2.0%	2.3	450	1.3%	20.0	Paved Areas	2.3	3.3	5.6	460	14.2	5.6	0.64	0.77	
B5	1.82	0.47	60	2.0%	7.0	610	1.5%	20.0	Paved Areas	2.4	4.2	11.2	670	16.8	11.2	0.53	0.70	
B6	2.71	0.43	100	2.0%	9.8	510	1.9%	20.0	Paved Areas	2.8	3.1	12.8	610	17.5	12.8	0.49	0.67	
B7	1.26	0.49	60	2.0%	6.8	770	1.2%	20.0	Paved Areas	2.2	5.9	12.7	830	16.7	12.7	0.54	0.71	
B8	0.80	0.65	10	2.0%	2.1	840	1.3%	20.0	Paved Areas	2.3	6.1	8.2	850	13.7	8.2	0.68	0.79	
B9	2.23	0.37	175	2.5%	13.0	500	1.2%	20.0	Paved Areas	2.2	3.8	16.8	675	18.7	16.8	0.43	0.64	
B10	0.72	0.61	60	2.0%	5.5	430	1.2%	20.0	Paved Areas	2.2	3.3	8.8	490	14.1	8.8	0.65	0.77	
B11	1.57	0.39	180	2.0%	13.9	310	0.5%	20.0	Paved Areas	1.4	3.7	17.5	490	18.3	17.5	0.45	0.65	
B12	2.48	0.46	50	2.0%	6.6	580	0.8%	20.0	Paved Areas	1.8	5.4	12.0	630	17.3	12.0	0.51	0.69	
B13	3.78	0.43	200	2.0%	13.8	1,200	1.0%	20.0	Paved Areas	2.0	10.0	23.8	1400	18.5	18.5	0.48	0.67	
B14	1.27	0.36	100	2.0%	10.8	830	1.0%	7.0	Short Pasture/Lawn	0.7	19.8	30.6	930	19.5	19.5	0.42	0.64	
B15	0.65	0.55	60	2.0%	6.2	200	2.0%	20.0	Paved Areas	2.8	1.2	7.4	260	14.9	7.4	0.59	0.74	
C1	1.63	0.38	20	2.0%	4.7	900	3.2%	20.0	Paved Areas	3.6	4.2	8.9	920	18.6	8.9	0.44	0.65	
C2	2.96	0.44	300	2.0%	16.6	1,050	3.2%	20.0	Paved Areas	3.6	4.9	21.4	1350	17.5	17.5	0.50	0.68	
C2A	0.60	0.44	300	2.0%	16.6	1,200	1.2%	20.0	Paved Areas	2.2	9.1	25.7	1500	18.1	18.1	0.50	0.68	
C3	2.07	0.56	100	2.0%	7.8	500	1.2%	20.0	Paved Areas	2.2	3.8	11.6	600	16.8	11.6	0.52	0.70	
C4	0.32	0.64	10	2.0%	2.1	250	1.7%	20.0	Paved Areas	2.6	1.6	3.7	260	13.2	5.0	0.68	0.79	
C5	0.69	0.30	100	2.0%	11.7	250	1.3%	20.0	Paved Areas	2.3	1.8	13.5	350	19.9	13.5	0.36	0.60	
C6	2.92	0.10	50	2.0%	10.3	660	1.9%	7.0	Short Pasture/Lawn	1.0	11.4	21.7	710	24.3	21.7	0.17	0.49	
D1	0.89	0.50	10	2.0%	2.8	700	0.5%	20.0	Paved Areas	1.4	8.2	11.0	710	16.9	11.0	0.55	0.71	
OS-B1	0.97	0.11	20	5.0%	4.8	5	5.0%	7.0	Short Pasture/Lawn	1.6	0.1	4.8	25	23.5	5.0	0.18	0.50	
OS-B2	0.49	0.12	20	1.2%	7.6	1	1.2%	7.0	Short Pasture/Lawn	0.8	0.0	7.6	21	23.2	7.6	0.19	0.50	
Overall Study Area	71.91	0.44	300	3.0%	14.6	1,785	1.7%	20.0	Paved Areas	2.6	11.4	26.0	2085	18.6	18.6	0.49	0.68	

* L = 500' max for non-urban land uses and 300' max for urban land uses



PROJECT NUMBER: 19032
CALCULATED BY: BRB
CHECKED BY: TJF

STANDARD FORM SF-3 - DEVELOPED
STORM DRAINAGE DESIGN - RATIONAL METHOD 5 YEAR EVENT

P₁ (1-Hour Rainfall), 1.11

DATE: 8/16/2021

STORM LINE	DESIGN POINT	DIRECT RUNOFF							TOTAL RUNOFF				STREET		PIPE			TRAVEL TIME			REMARKS
		DESIGN BASIN	AREA (AC)	RUNOFF COEFF C5	t _c (min)	C*A(ac)	I (in/hr)	Q (cfs)	t _c (min)	S(C*A) (ac)	I (in/hr)	Q (cfs)	SLOPE (%)	STREET FLOW(cfs)	DESIGN FLOW(cfs)	SLOPE (%)	PIPE SIZE (in)	LENGTH (ft)	VELOCITY (fps)	t (min)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
	A1	A1	5.41	0.09	25.12	0.50	1.93	0.97													
	A2	A2	0.75	0.64	6.84	0.48	3.44	1.66													
	A3	A3	7.29	0.63	9.70	4.58	3.04	13.93													
	A4	A4	1.83	0.38	14.07	0.70	2.60	1.82													
	A5	A5	2.36	0.47	13.66	1.10	2.63	2.90													
	A6	A6	1.54	0.40	12.06	0.62	2.78	1.72													
	A7	A7	1.50	0.48	9.87	0.72	3.02	2.17													
	A8	A8	0.96	0.52	11.25	0.50	2.86	1.42													
	A8A	A8A	2.30	0.41	15.87	0.94	2.45	2.30													
	A9	A9	1.15	0.44	11.23	0.51	2.87	1.45													
	A10	A10	1.48	0.47	11.50	0.70	2.84	1.98													
	A11	A11	1.22	0.48	10.11	0.59	2.99	1.76													
	A12	A12	4.35	0.27	15.44	1.16	2.49	2.89													
	B1	B1	5.13	0.63	6.31	3.23	3.52	11.37													
	B2	B2	2.52	0.77	5.29	1.93	3.71	7.17													
	B3	B3	1.03	0.55	6.89	0.57	3.43	1.96													
	B4	B4	0.60	0.60	5.57	0.36	3.66	1.33													
	B5	B5	1.82	0.47	11.20	0.86	2.87	2.48													
	B6	B6	2.71	0.43	12.83	1.16	2.71	3.15													
	B7	B7	1.26	0.49	12.69	0.62	2.72	1.69													
	B8	B8	0.80	0.65	8.21	0.52	3.23	1.68													
	B9	B9	2.23	0.37	16.77	0.83	2.39	1.99													
	B10	B10	0.72	0.61	8.80	0.44	3.15	1.38													
	B11	B11	1.57	0.39	17.51	0.61	2.34	1.43													
	B12	B12	2.48	0.46	11.99	1.14	2.79	3.18													
	B13	B13	3.78	0.43	18.53	1.62	2.27	3.69													
	B14	B14	1.27	0.36	19.45	0.45	2.22	1.01													
	B15	B15	0.65	0.55	7.41	0.36	3.35	1.19													
	C1	C1	1.63	0.38	8.87	0.62	3.14	1.96													
	C2	C2	2.96	0.44	17.49	1.31	2.34	3.07													
	C2A	C2A	0.60	0.44	18.12	0.27	2.30	0.61													
	C3	C3	2.07	0.47	11.60	0.98	2.83	2.77													
	C4	C4	0.32	0.64	5.00	0.21	3.76	0.78													
	C5	C5	0.69	0.30	13.53	0.20	2.64	0.54													
	C6	C6	2.92	0.10	21.70	0.29	2.09	0.60													
	D1	D1	0.89	0.50	11.01	0.45	2.89	1.29													
	OS-B1	OS-B1	0.97	0.11	5.00	0.10	3.76	0.39													
	OS-B2	OS-B2	0.49	0.12	7.59	0.06	3.32	0.20													
Total at Design Point A2 (A1 & A2)	A1								25.1	0.98	1.93	1.9									
Total at Design Point A4 (A4, A6)	A4								14.1	1.32	2.60	3.4									
INLET C3 (Basin C1, C3)	C3								11.6	1.60	2.83	4.5									



PROJECT NUMBER: 19032
CALCULATED BY: BRB
CHECKED BY: TJF

STANDARD FORM SF-3 - DEVELOPED
STORM DRAINAGE DESIGN - RATIONAL METHOD 100 YEAR EVENT

P₁ (1-Hour Rainfall), 2.71

DATE: 8/16/2021

STORM LINE	DESIGN POINT	DIRECT RUNOFF							TOTAL RUNOFF				STREET		PIPE			TRAVEL TIME			REMARKS
		DESIGN BASIN	AREA (AC)	RUNOFF COEFF C ₁₀₀	t _c (min)	C* ₁₀₀ (ac)	I (in/hr)	Q (cfs)	t _c (min)	S(C* ₁₀₀) (ac)	I (in/hr)	Q (cfs)	SLOPE (%)	STREET FLOW(cfs)	DESIGN FLOW(cfs)	SLOPE (%)	PIPE SIZE (in)	LENGTH (ft)	VELOCITY (fps)	t _t (min)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
	A1	A1	5.41	0.49	25.12	2.63	4.71	12.4													
	A2	A2	0.75	0.78	6.84	0.59	8.39	5.0													
	A3	A3	7.29	0.78	9.70	5.68	7.42	42.1													
	A4	A4	1.83	0.65	14.07	1.19	6.34	7.5													
	A5	A5	2.36	0.69	13.66	1.64	6.42	10.5													
	A6	A6	1.54	0.66	12.06	1.02	6.79	6.9													
	A7	A7	1.50	0.70	9.87	1.05	7.37	7.8													
	A8	A8	0.96	0.72	11.25	0.69	6.99	4.8													
	A8A	A8A	2.30	0.66	15.87	1.52	5.99	9.1													
	A9	A9	1.15	0.68	11.23	0.78	7.00	5.5													
	A10	A10	1.48	0.70	11.50	1.03	6.93	7.1													
	A11	A11	1.22	0.70	10.11	0.86	7.30	6.3													
	A12	A12	4.35	0.59	15.44	2.55	6.07	15.5													
	Total A	Total A	32.14	0.66	17.68	21.23	5.68	120.5													
	B1	B1	5.13	0.78	6.31	3.99	8.61	34.4													
	B2	B2	2.52	0.85	5.29	2.14	9.05	19.4													
	B3	B3	1.03	0.74	6.89	0.76	8.37	6.4													
	B4	B4	0.60	0.77	5.57	0.46	8.93	4.1													
	B5	B5	1.82	0.70	11.20	1.27	7.00	8.9													
	B6	B6	2.71	0.67	12.83	1.83	6.61	12.1													
	B7	B7	1.26	0.71	12.69	0.89	6.64	5.9													
	B8	B8	0.80	0.79	8.21	0.63	7.89	5.0													
	B9	B9	2.23	0.64	16.77	1.44	5.83	8.4													
	B10	B10	0.72	0.77	8.80	0.55	7.70	4.3													
	B11	B11	1.57	0.65	17.51	1.03	5.71	5.9													
	B12	B12	2.48	0.69	11.99	1.71	6.80	11.6													
	B13	B13	3.78	0.67	18.53	2.55	5.55	14.1													
	B14	B14	1.27	0.64	19.45	0.81	5.41	4.4													
	B15	B15	0.65	0.74	7.41	0.48	8.18	3.9													
	C1	C1	1.63	0.65	8.87	1.06	7.68	8.1													
	C2	C2	2.96	0.68	17.49	2.02	5.71	11.5													
	C2	C2A	0.60	0.68	18.12	0.41	5.61	2.3													
	C3	C3	2.07	0.70	11.60	1.44	6.90	10.0													
	C4	C4	0.32	0.79	5.00	0.25	9.19	2.3													
	C5	C5	0.69	0.60	13.53	0.42	6.45	2.7													
	C6	C6	2.92	0.49	21.70	1.43	5.10	7.3													
	D1	D1	0.89	0.71	11.01	0.63	7.05	4.5													
	OS-B1	OS-B1	0.97	0.50	5.00	0.48	9.19	4.4													
	OS-B2	OS-B2	0.49	0.50	7.59	0.25	8.11	2.0													
Overall Study A		Overall Study Area		71.91	0.68	18.57	48.80	5.54	270.3												
Total at Design Point A2 (A2 & A3)		A2							25.1	3.22	4.71	15.2									
INLET A6 (Basin A2, A6)									11.5	6.71	6.93	46.4									

Appendix C - Hydraulic Calculations

DRAINAGE BASIN A

Version 4.06 Released August 2018

INLET MANAGEMENT

Worksheet Protected

INLET NAME	STM IN 2-6 (BASIN A2)	STM IN 2-4 (BASIN A4)	STM IN 2-5 (BASIN A5)	STM IN 2-2 (BASIN A6)	STM IN 2-3 (BASIN A7)	STM IN 2-7 (BASIN A8)
Site Type (Urban or Rural)	URBAN	URBAN	URBAN	URBAN	URBAN	URBAN
Inlet Application (Street or Area)	STREET	STREET	STREET	STREET	STREET	STREET
Hydraulic Condition	In Sump	On Grade	On Grade	In Sump	In Sump	On Grade
Inlet Type	CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening

USER-DEFINED INPUT

User-Defined Design Flows

Minor Q_{known} (cfs)	2.7	1.8	2.9	1.7	2.2	1.4
Major Q_{known} (cfs)	17.4	7.5	10.5	6.9	7.8	4.8

Bypass (Carry-Over) Flow from Upstream

Receive Bypass Flow from:	No Bypass Flow Received	No Bypass Flow Received	No Bypass Flow Received	STM IN 2-4 (BASIN A4)	User-Defined	User-Defined
Minor Bypass Flow Received, Q_b (cfs)	0.0	0.0	0.0	0.1	0.0	3.8
Major Bypass Flow Received, Q_b (cfs)	0.0	0.0	0.0	4.0	8.8	14.6

Watershed Characteristics

Subcatchment Area (acres)						
Percent Impervious						
NRCS Soil Type						

Watershed Profile

Overland Slope (ft/ft)						
Overland Length (ft)						
Channel Slope (ft/ft)						
Channel Length (ft)						

Minor Storm Rainfall Input

Design Storm Return Period, T_r (years)						
One-Hour Precipitation, P_1 (inches)						

Major Storm Rainfall Input

Design Storm Return Period, T_r (years)						
One-Hour Precipitation, P_1 (inches)						

CALCULATED OUTPUT

Minor Total Design Peak Flow, Q (cfs)	2.7	1.8	2.9	1.8	2.2	5.2
Major Total Design Peak Flow, Q (cfs)	17.4	7.5	10.5	10.9	16.6	19.4
Minor Flow Bypassed Downstream, Q_b (cfs)	N/A	0.1	0.0	N/A	N/A	0.0
Major Flow Bypassed Downstream, Q_b (cfs)	N/A	4.0	3.0	N/A	N/A	5.8

Minor Storm (Calculated) Analysis of Flow Time

C	N/A	N/A	N/A	N/A	N/A	N/A
C_s	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Velocity, V_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Flow Velocity, V_t	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Time, T_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Travel Time, T_t	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Time of Concentration, T_c	N/A	N/A	N/A	N/A	N/A	N/A
Regional T_c	N/A	N/A	N/A	N/A	N/A	N/A
Recommended T_c	N/A	N/A	N/A	N/A	N/A	N/A
T_c selected by User	N/A	N/A	N/A	N/A	N/A	N/A
Design Rainfall Intensity, I	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Local Peak Flow, Q_p	N/A	N/A	N/A	N/A	N/A	N/A

Major Storm (Calculated) Analysis of Flow Time

C	N/A	N/A	N/A	N/A	N/A	N/A
C_s	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Velocity, V_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Flow Velocity, V_t	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Time, T_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Travel Time, T_t	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Time of Concentration, T_c	N/A	N/A	N/A	N/A	N/A	N/A
Regional T_c	N/A	N/A	N/A	N/A	N/A	N/A
Recommended T_c	N/A	N/A	N/A	N/A	N/A	N/A
T_c selected by User	N/A	N/A	N/A	N/A	N/A	N/A
Design Rainfall Intensity, I	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Local Peak Flow, Q_p	N/A	N/A	N/A	N/A	N/A	N/A

DRAINAGE BASIN A

Version 4.06 Released August 2018

INLET MANAGEMENT

Worksheet Protected

INLET NAME	BASIN A9	STM IN 2-8 (BASIN A10)	STM IN 2-1 (BASIN A11)	BASIN A8A
Site Type (Urban or Rural)	URBAN	URBAN	URBAN	URBAN
Inlet Application (Street or Area)	STREET	STREET	STREET	STREET
Hydraulic Condition	On Grade	On Grade	In Sump	On Grade
Inlet Type		CDOT Type R Curb Opening	CDOT Type R Curb Opening	

USER-DEFINED INPUT

User-Defined Design Flows				
Minor Q_{known} (cfs)	1.5	2.0	1.8	2.3
Major Q_{known} (cfs)	5.5	7.1	6.3	9.1
Bypass (Carry-Over) Flow from Upstream				
Receive Bypass Flow from:	No Bypass Flow Received	No Bypass Flow Received	STM IN 2-8 (BASIN A10)	No Bypass Flow Received
Minor Bypass Flow Received, Q_b (cfs)	0.0	0.0	0.0	0.0
Major Bypass Flow Received, Q_b (cfs)	0.0	0.0	1.0	0.0
Watershed Characteristics				
Subcatchment Area (acres)				
Percent Impervious				
NRCS Soil Type				
Watershed Profile				
Overland Slope (ft/ft)				
Overland Length (ft)				
Channel Slope (ft/ft)				
Channel Length (ft)				
Minor Storm Rainfall Input				
Design Storm Return Period, T_r (years)				
One-Hour Precipitation, P_1 (inches)				
Major Storm Rainfall Input				
Design Storm Return Period, T_r (years)				
One-Hour Precipitation, P_1 (inches)				

CALCULATED OUTPUT

Minor Total Design Peak Flow, Q (cfs)	1.5	2.0	1.8	2.3
Major Total Design Peak Flow, Q (cfs)	5.5	7.1	7.3	9.1
Minor Flow Bypassed Downstream, Q_b (cfs)		0.0	N/A	
Major Flow Bypassed Downstream, Q_b (cfs)		1.0	N/A	
Minor Storm (Calculated) Analysis of Flow T				
C	N/A	N/A	N/A	N/A
C_s	N/A	N/A	N/A	N/A
Overland Flow Velocity, V_i	N/A	N/A	N/A	N/A
Channel Flow Velocity, V_t	N/A	N/A	N/A	N/A
Overland Flow Time, T_i	N/A	N/A	N/A	N/A
Channel Travel Time, T_t	N/A	N/A	N/A	N/A
Calculated Time of Concentration, T_c	N/A	N/A	N/A	N/A
Regional T_c	N/A	N/A	N/A	N/A
Recommended T_c	N/A	N/A	N/A	N/A
T_c selected by User	N/A	N/A	N/A	N/A
Design Rainfall Intensity, I	N/A	N/A	N/A	N/A
Calculated Local Peak Flow, Q_p	N/A	N/A	N/A	N/A
Major Storm (Calculated) Analysis of Flow T				
C	N/A	N/A	N/A	N/A
C_s	N/A	N/A	N/A	N/A
Overland Flow Velocity, V_i	N/A	N/A	N/A	N/A
Channel Flow Velocity, V_t	N/A	N/A	N/A	N/A
Overland Flow Time, T_i	N/A	N/A	N/A	N/A
Channel Travel Time, T_t	N/A	N/A	N/A	N/A
Calculated Time of Concentration, T_c	N/A	N/A	N/A	N/A
Regional T_c	N/A	N/A	N/A	N/A
Recommended T_c	N/A	N/A	N/A	N/A
T_c selected by User	N/A	N/A	N/A	N/A
Design Rainfall Intensity, I	N/A	N/A	N/A	N/A
Calculated Local Peak Flow, Q_p	N/A	N/A	N/A	N/A

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

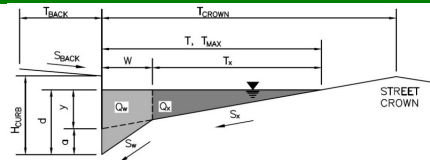
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 2-6 (BASIN A2)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Depth Criterion

$T_{BACK} = 18.5$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 6.00$ inches
 $T_{CROWN} = 18.5$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.000$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm
$T_{MAX} =$	12.0	18.0
$d_{MAX} =$	6.0	8.0

inches

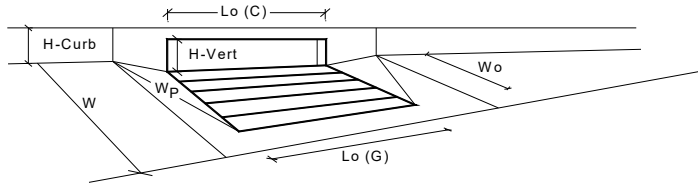
$Q_{allow} =$

Minor Storm	Major Storm
SUMP	SUMP

cfs

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



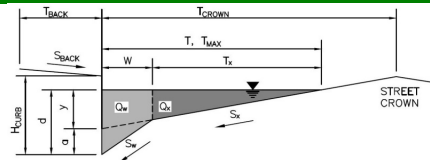
Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type = CDOT Type R Curb Opening			
Local Depression (additional to continuous gutter depression 'a' from above)		a _{local} =	3.00	3.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =	2	2	
Water Depth at Flowline (outside of local depression)		Ponding Depth =	6.0	8.0	inches
Grate Information			MINOR	MAJOR	☒ Override Depths
Length of a Unit Grate		L _o (G) =	N/A	N/A	feet
Width of a Unit Grate		W _o =	N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)		A _{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		C _l (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		C _w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		C _o (G) =	N/A	N/A	
Curb Opening Information			MINOR	MAJOR	
Length of a Unit Curb Opening		L _o (C) =	5.00	5.00	feet
Height of Vertical Curb Opening in Inches		H _{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches		H _{throat} =	6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)		Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		W _p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		C _l (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		C _w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		C _o (C) =	0.67	0.67	
Low Head Performance Reduction (Calculated)			MINOR	MAJOR	
Depth for Grate Midwidth		d _{Grate} =	N/A	N/A	ft
Depth for Curb Opening Weir Equation		d _{Curb} =	0.33	0.50	ft
Combination Inlet Performance Reduction Factor for Long Inlets		RF _{Combination} =	0.57	0.75	
Curb Opening Performance Reduction Factor for Long Inlets		RF _{Curb} =	0.93	1.00	
Grated Inlet Performance Reduction Factor for Long Inlets		RF _{Grate} =	N/A	N/A	
Total Inlet Interception Capacity (assumes clogged condition)			MINOR	MAJOR	
		Q _a =	10.5	19.3	cfs
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)		Q _{PEAK REQUIRED} =	2.7	17.4	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: **Murata Farms Filing No. 1**

Inlet ID: **STM IN 2-4 (BASIN A4)**

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 7.0$ ft

$S_{BACK} = 0.020$ ft/ft

$n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches

$T_{CROWN} = 18.0$ ft

$W = 2.00$ ft

$S_x = 0.020$ ft/ft

$S_w = 0.083$ ft/ft

$S_o = 0.008$ ft/ft

$n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	4.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Spread Criterion

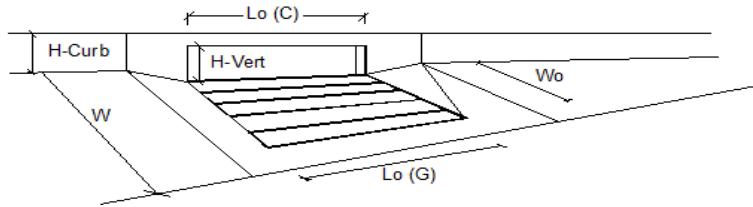
	Minor Storm	Major Storm	
$Q_{allow} =$	3.7	15.1	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)	MINOR	MAJOR
Type of Inlet	CDOT Type R Curb Opening	
Local Depression (additional to continuous gutter depression 'a')	5.0	5.0
Total Number of Units in the Inlet (Grate or Curb Opening)	1	1
Length of a Single Unit Inlet (Grate or Curb Opening)	5.00	5.00
Width of a Unit Grate (cannot be greater than W, Gutter Width)	N/A	N/A
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	N/A	N/A
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	0.10	0.10
Street Hydraulics: OK - Q < Allowable Street Capacity		
Total Inlet Interception Capacity	1.7	3.5
Total Inlet Carry-Over Flow (flow bypassing inlet)	0.1	4.0
Capture Percentage = Q_i/Q_o =	94	47

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

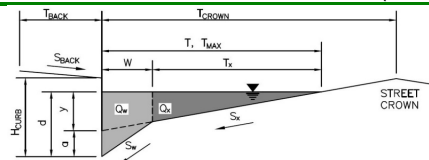
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 2-5 (BASIN A5)



Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

T_{BACK}	7.0	ft
S_{BACK}	0.020	ft/ft
n_{BACK}	0.013	

H_{CURB}	4.00	inches
T_{CROWN}	18.0	ft
W	2.00	ft
S_x	0.020	ft/ft
S_W	0.083	ft/ft
S_o	0.008	ft/ft
n_{STREET}	0.013	

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)	
---	--

	Minor Storm	Major Storm	
T_{MAX} =	12.0	18.0	ft
d_{MAX} =	4.0	6.0	inches

check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion

MAJOR STORM Allowable Capacity is based on Spread Criterion

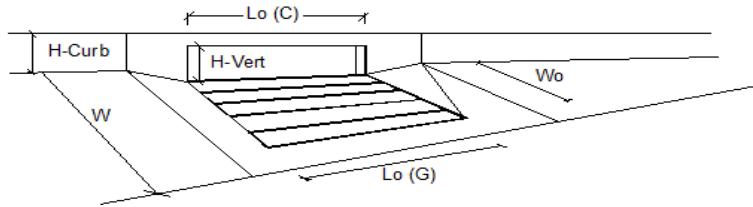
	Minor Storm	Major Storm	
$Q_{allow} =$	3.7	15.1	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)	MINOR	MAJOR
Type of Inlet	CDOT Type R Curb Opening	
Local Depression (additional to continuous gutter depression 'a')	5.0	5.0 inches
Total Number of Units in the Inlet (Grate or Curb Opening)	2	2
Length of a Single Unit Inlet (Grate or Curb Opening)	5.00	5.00 ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)	N/A	N/A ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	N/A	N/A
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	0.10	0.10
Street Hydraulics: OK - Q < Allowable Street Capacity		
Total Inlet Interception Capacity	2.9	7.5 cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)	0.0	3.0 cfs
Capture Percentage = Q_i/Q_o =	100	71 %

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

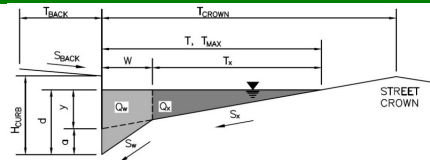
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 2-2 (BASIN A6)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Depth Criterion

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.000$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm
$T_{MAX} =$	12.0	18.0
$d_{MAX} =$	4.0	6.0

☐ ☐

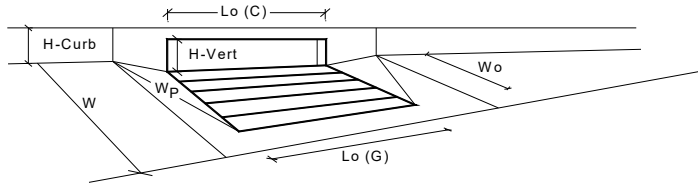
$Q_{allow} =$

Minor Storm	Major Storm
SUMP	SUMP

cfs

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)	MINOR	MAJOR	
Type of Inlet	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)	5.00	5.00	inches
Number of Unit Inlets (Grate or Curb Opening)	2	2	
Water Depth at Flowline (outside of local depression)	6.0	8.0	inches
Grate Information			☒ Override Depths
Length of a Unit Grate	N/A	N/A	feet
Width of a Unit Grate	N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)	N/A	N/A	
Curb Opening Information			
Length of a Unit Curb Opening	5.00	5.00	feet
Height of Vertical Curb Opening in Inches	6.00	6.00	inches
Height of Curb Orifice Throat in Inches	6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)	0.67	0.67	
Low Head Performance Reduction (Calculated)			
Depth for Grate Midwidth	N/A	N/A	ft
Depth for Curb Opening Weir Equation	0.33	0.50	ft
Combination Inlet Performance Reduction Factor for Long Inlets	0.57	0.75	
Curb Opening Performance Reduction Factor for Long Inlets	0.93	1.00	
Grated Inlet Performance Reduction Factor for Long Inlets	N/A	N/A	
Total Inlet Interception Capacity (assumes clogged condition)			
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)	10.5	20.4	cfs
Q PEAK REQUIRED	1.8	10.9	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

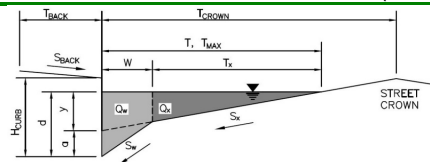
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 2-3 (BASIN A7)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Depth Criterion

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.000$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm
$T_{MAX} =$	12.0	18.0
$d_{MAX} =$	4.0	8.0

inches

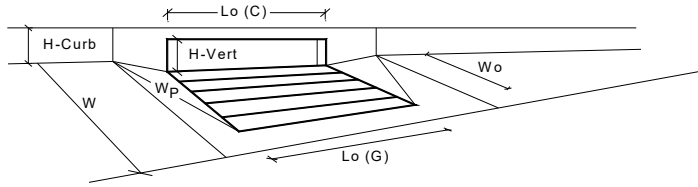
$Q_{allow} =$

	Minor Storm	Major Storm
	SUMP	SUMP

cfs

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type = CDOT Type R Curb Opening			
Local Depression (additional to continuous gutter depression 'a' from above)		a _{local} =	5.00	5.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =	2	2	
Water Depth at Flowline (outside of local depression)		Ponding Depth =	6.0	8.0	inches
Grate Information			MINOR	MAJOR	☒ Override Depths
Length of a Unit Grate		L _o (G) =	N/A	N/A	feet
Width of a Unit Grate		W _o =	N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)		A _{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		C _l (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		C _w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		C _o (G) =	N/A	N/A	
Curb Opening Information			MINOR	MAJOR	
Length of a Unit Curb Opening		L _o (C) =	5.00	5.00	feet
Height of Vertical Curb Opening in Inches		H _{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches		H _{throat} =	6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)		Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		W _p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		C _l (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		C _w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		C _o (C) =	0.67	0.67	
Low Head Performance Reduction (Calculated)			MINOR	MAJOR	
Depth for Grate Midwidth		d _{Grate} =	N/A	N/A	ft
Depth for Curb Opening Weir Equation		d _{Curb} =	0.33	0.50	ft
Combination Inlet Performance Reduction Factor for Long Inlets		RF _{Combination} =	0.57	0.75	
Curb Opening Performance Reduction Factor for Long Inlets		RF _{Curb} =	0.93	1.00	
Grated Inlet Performance Reduction Factor for Long Inlets		RF _{Grate} =	N/A	N/A	
Total Inlet Interception Capacity (assumes clogged condition)			MINOR	MAJOR	
		Q _a =	10.5	20.4	cfs
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)		Q _{PEAK REQUIRED} =	2.2	16.6	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

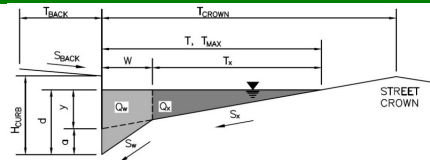
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 2-7 (BASIN A8)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.010$ ft/ft
 $n_{STREET} = 0.013$

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	6.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Spread Criterion

MAJOR STORM Allowable Capacity is based on Spread Criterion

	Minor Storm	Major Storm	
$Q_{allow} =$	5.8	16.8	cfs

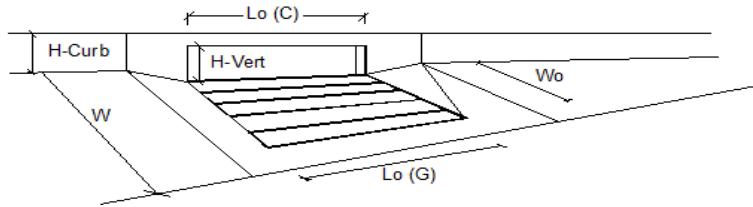
Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

WARNING: MAJOR STORM max. allowable capacity is less than the design flow given on sheet 'Inlet Management'

Warning 02

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')		a _{LOCAL} =	5.0	5.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)		No =	3	3	
Length of a Single Unit Inlet (Grate or Curb Opening)		L _o =	5.00	5.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)		W _o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)		C _r G =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)		C _r C =	0.10	0.10	
Street Hydraulics: WARNING: Q > ALLOWABLE Q FOR MAJOR STORM					
Total Inlet Interception Capacity		Q =	5.2	13.6	cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)		Q _b =	0.0	5.8	cfs
Capture Percentage = Q _i /Q _o =		C% =	100	70	%

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

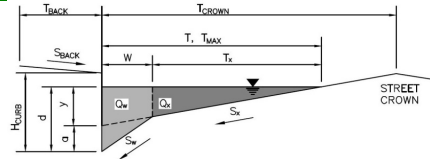
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

BASIN A8A

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.008$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	4.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Spread Criterion

$Q_{allow} =$

	Minor Storm	Major Storm	
	3.6	14.6	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

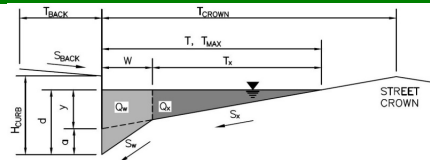
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

BASIN A9

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.010$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	4.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Spread Criterion

$Q_{allow} =$

	Minor Storm	Major Storm	
	4.2	16.8	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

Wednesday, Jul 21 2021

A8A Cross Pan

User-defined

Invert Elev (ft) = 4955.61
Slope (%) = 1.00
N-Value = Composite

Calculations

Compute by: Q vs Depth
No. Increments = 10

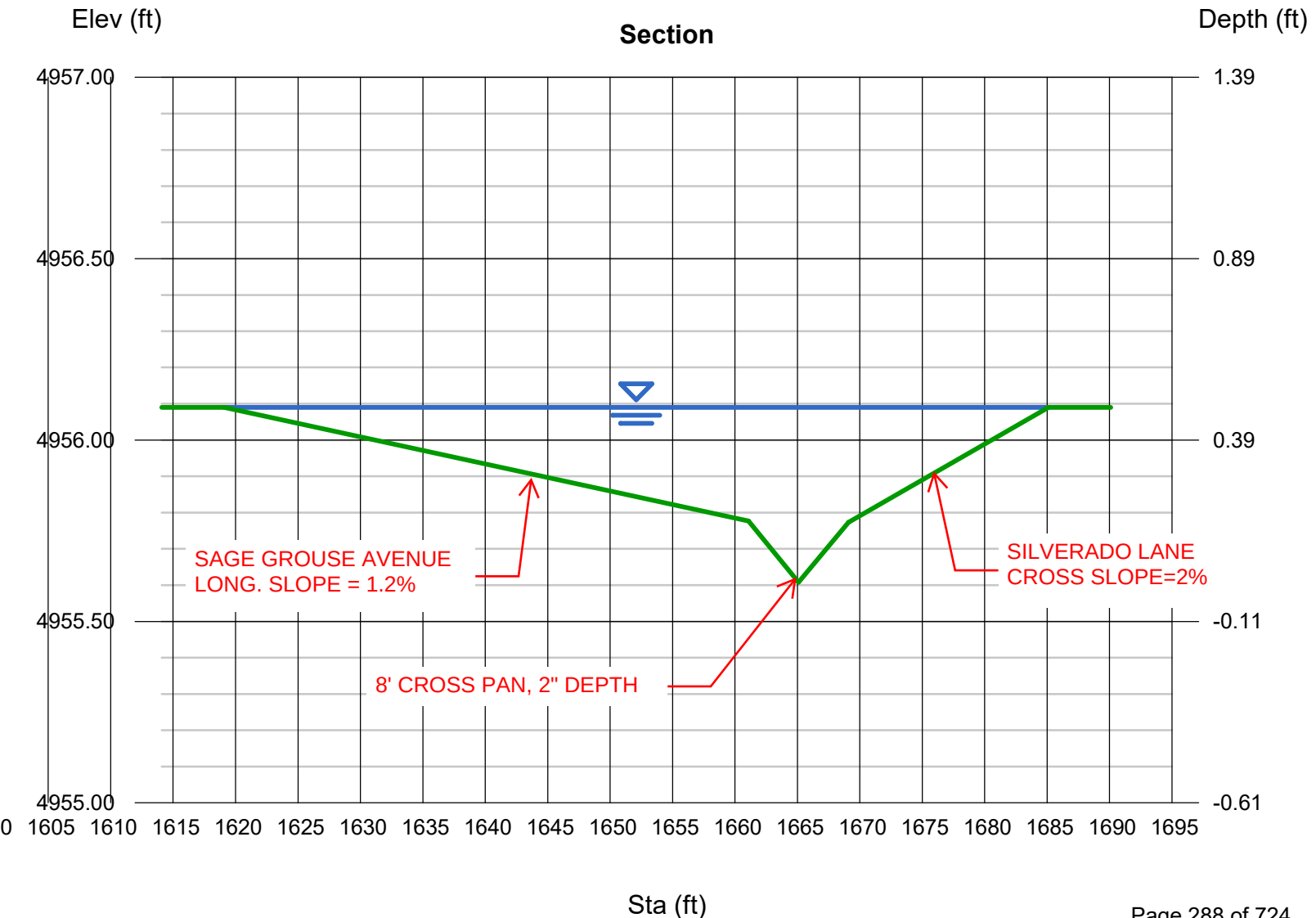
Highlighted

Depth (ft) = 0.48
Q (cfs) = 45.93
Area (sqft) = 12.30
Velocity (ft/s) = 3.73
Wetted Perim (ft) = 66.02
Crit Depth, Yc (ft) = 0.48
Top Width (ft) = 66.01
EGL (ft) = 0.70

(Sta, El, n)-(Sta, El, n)...

(1619.09, 4956.09)-(1661.09, 4955.78, 0.013)-(1665.09, 4955.61, 0.013)-(1669.10, 4955.77, 0.013)-(1685.10, 4956.09, 0.013)

DRAINAGE BASIN A8A AND A9 COMBINED FLOWS
MINOR: 2.3 CFS + 1.5 CFS = 3.8 CFS
MAJOR: 9.1 CFS + 5.5 CFS = 14.6 CFS



ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

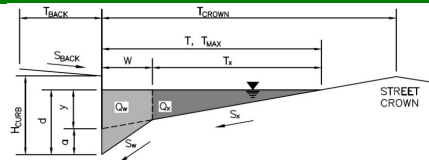
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 2-8 (BASIN A10)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.010$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	4.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Spread Criterion

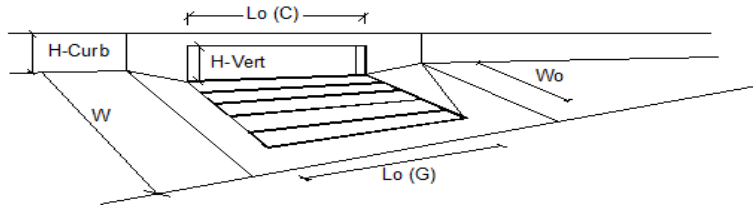
	Minor Storm	Major Storm	
$Q_{allow} =$	4.2	16.8	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')		a_{LOCAL} =	5.0	5.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)		No =	2	2	
Length of a Single Unit Inlet (Grate or Curb Opening)		L_o =	5.00	5.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)		W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)		$C_F G$ =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)		$C_F C$ =	0.10	0.10	
Street Hydraulics: OK - $Q < \text{Allowable Street Capacity}$			MINOR	MAJOR	
Total Inlet Interception Capacity		Q =	2.0	6.1	cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)		Q_b =	0.0	1.0	cfs
Capture Percentage = Q_i/Q_o =		$C\%$ =	100	86	%

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

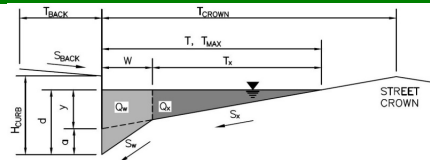
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 2-1 (BASIN A11)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

MINOR STORM Allowable Capacity is based on Depth Criterion

MAJOR STORM Allowable Capacity is based on Depth Criterion

T_{BACK} = 7.0 ft
 S_{BACK} = 0.020 ft/ft
 n_{BACK} = 0.013

H_{CURB} = 4.00 inches
 T_{CROWN} = 18.0 ft
 W = 2.00 ft
 S_x = 0.020 ft/ft
 S_w = 0.083 ft/ft
 S_o = 0.000 ft/ft
 n_{STREET} = 0.013

	Minor Storm	Major Storm
T_{MAX} =	12.0	18.0
d_{MAX} =	6.0	8.0



Q_{allow} =

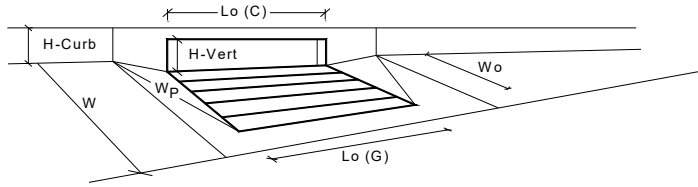
	Minor Storm	Major Storm
	SUMP	SUMP

cfs

Warning 02

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR		
Type of Inlet	CDOT Type R Curb Opening	Type =		CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)		a _{local} =		5.00	5.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =		2	2	
Water Depth at Flowline (outside of local depression)		Ponding Depth =		6.0	8.0	inches
Grate Information						☒ Override Depths
Length of a Unit Grate		L _o (G) =		N/A	N/A	feet
Width of a Unit Grate		W _o =		N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)		A _{ratio} =		N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		C _l (G) =		N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		C _w (G) =		N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		C _o (G) =		N/A	N/A	
Curb Opening Information						
Length of a Unit Curb Opening		L _o (C) =		5.00	5.00	feet
Height of Vertical Curb Opening in Inches		H _{vert} =		6.00	6.00	inches
Height of Curb Orifice Throat in Inches		H _{throat} =		6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)		Theta =		63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		W _p =		2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		C _l (C) =		0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		C _w (C) =		3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		C _o (C) =		0.67	0.67	
Low Head Performance Reduction (Calculated)						
Depth for Grate Midwidth		d _{Grate} =		N/A	N/A	ft
Depth for Curb Opening Weir Equation		d _{Curb} =		0.33	0.50	ft
Combination Inlet Performance Reduction Factor for Long Inlets		RF _{Combination} =		0.57	0.75	
Curb Opening Performance Reduction Factor for Long Inlets		RF _{Curb} =		0.93	1.00	
Grated Inlet Performance Reduction Factor for Long Inlets		RF _{Grate} =		N/A	N/A	
Total Inlet Interception Capacity (assumes clogged condition)						
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)		Q _a =		10.5	20.4	cfs
		Q _{PEAK REQUIRED} =		1.8	7.3	cfs

Channel Report

Basin A11 Emergency Swale

Trapezoidal

Bottom Width (ft)	= 2.00
Side Slopes (z:1)	= 4.00, 4.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 100.00
Slope (%)	= 1.60
N-Value	= 0.035

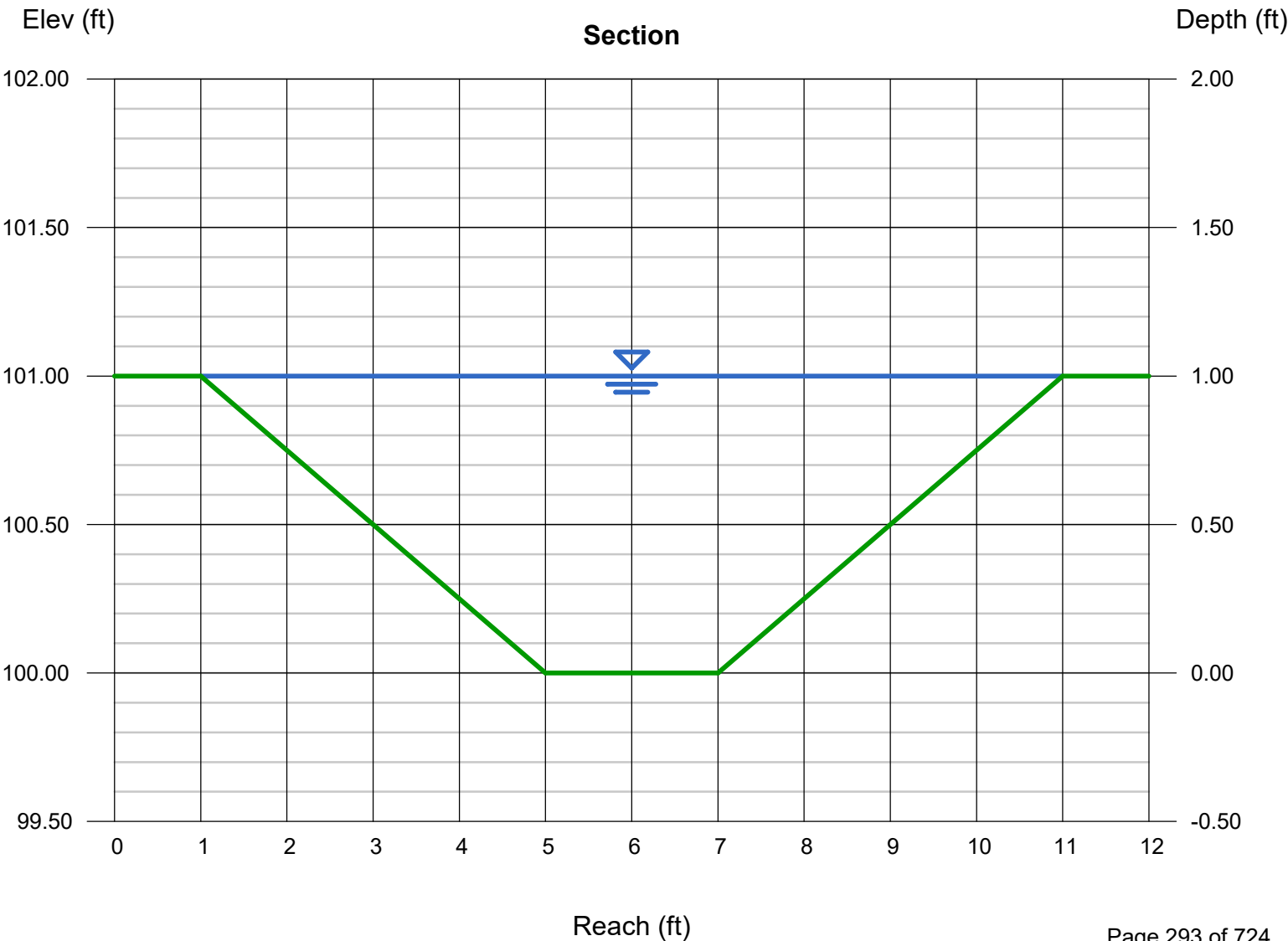
Highlighted

Depth (ft)	= 1.00
Q (cfs)	= 22.55
Area (sqft)	= 6.00
Velocity (ft/s)	= 3.76
Wetted Perim (ft)	= 10.25
Crit Depth, Yc (ft)	= 0.93
Top Width (ft)	= 10.00
EGL (ft)	= 1.22

Calculations

Compute by:	Q vs Depth
No. Increments	= 10

ASSUME INLETS 2-1 (BASIN A11), 2-2 (BASIN A6) AND
2-3 (BASIN A7) ARE CLOGGED
Q100= 6.3+6.9+7.8 = 21 CFS



DRAINAGE BASIN B

Version 4.06 Released August 2018

INLET MANAGEMENT

Worksheet Protected

INLET NAME	STM IN 3-9 (BASIN B3)	STM IN 3-8 (BASIN B4)	Basin B8 Check	STM IN 3-7 (BASIN A8, A9, 10)	STM IN 3-10 (BASIN B12)	STM IN 3-6 (BASIN B11)
Site Type (Urban or Rural)	URBAN	URBAN	URBAN	URBAN	URBAN	URBAN
Inlet Application (Street or Area)	STREET	STREET	STREET	STREET	STREET	STREET
Hydraulic Condition	On Grade	In Sump	On Grade	On Grade	On Grade	On Grade
Inlet Type	CDOT Type R Curb Opening	CDOT Type R Curb Opening		CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening

USER-DEFINED INPUT

User-Defined Design Flows

Minor Q_{known} (cfs)	2.0	1.3	1.7	5.1	3.2	1.4
Major Q_{known} (cfs)	6.4	4.1	5.0	17.7	11.6	5.9

Bypass (Carry-Over) Flow from Upstream

Receive Bypass Flow from:	No Bypass Flow Received	STM IN 3-9 (BASIN B3)	No Bypass Flow Received	User-Defined	User-Defined	STM IN B-17
Minor Bypass Flow Received, Q_b (cfs)	0.0	0.3	0.0		0.0	0.0
Major Bypass Flow Received, Q_b (cfs)	0.0	3.4	0.0		0.0	5.0

Watershed Characteristics

Subcatchment Area (acres)						
Percent Impervious						
NRCS Soil Type						

Watershed Profile

Overland Slope (ft/ft)						
Overland Length (ft)						
Channel Slope (ft/ft)						
Channel Length (ft)						

Minor Storm Rainfall Input

Design Storm Return Period, T_r (years)						
One-Hour Precipitation, P_1 (inches)						

Major Storm Rainfall Input

Design Storm Return Period, T_r (years)						
One-Hour Precipitation, P_1 (inches)						

CALCULATED OUTPUT

Minor Total Design Peak Flow, Q (cfs)	2.0	1.6	1.7	5.1	3.2	1.4
Major Total Design Peak Flow, Q (cfs)	6.4	7.5	5.0	17.7	11.6	10.9
Minor Flow Bypassed Downstream, Q_b (cfs)	0.3	N/A		0.0	0.0	0.0
Major Flow Bypassed Downstream, Q_b (cfs)	3.4	N/A		5.0	3.7	3.3

Minor Storm (Calculated) Analysis of Flow Time

C	N/A	N/A	N/A	N/A	N/A	N/A
C_s	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Velocity, V_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Flow Velocity, V_t	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Time, T_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Travel Time, T_t	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Time of Concentration, T_c	N/A	N/A	N/A	N/A	N/A	N/A
Regional T_c	N/A	N/A	N/A	N/A	N/A	N/A
Recommended T_c	N/A	N/A	N/A	N/A	N/A	N/A
T_c selected by User	N/A	N/A	N/A	N/A	N/A	N/A
Design Rainfall Intensity, I	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Local Peak Flow, Q_p	N/A	N/A	N/A	N/A	N/A	N/A

Major Storm (Calculated) Analysis of Flow Time

C	N/A	N/A	N/A	N/A	N/A	N/A
C_s	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Velocity, V_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Flow Velocity, V_t	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Time, T_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Travel Time, T_t	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Time of Concentration, T_c	N/A	N/A	N/A	N/A	N/A	N/A
Regional T_c	N/A	N/A	N/A	N/A	N/A	N/A
Recommended T_c	N/A	N/A	N/A	N/A	N/A	N/A
T_c selected by User	N/A	N/A	N/A	N/A	N/A	N/A
Design Rainfall Intensity, I	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Local Peak Flow, Q_p	N/A	N/A	N/A	N/A	N/A	N/A

DRAINAGE BASIN B

Version 4.06 Released August 2018

INLET MANAGEMENT

Worksheet Protected

INLET NAME	STM IN 3-5 (BASIN B7)	STM IN 3-2 (BASIN B6)	STM IN 3-3 (BASIN B13)	STM IN 3-1 (BASIN B5)	Inlet D1	STM IN 3-4 (BASIN B15)
Site Type (Urban or Rural)	URBAN	URBAN	URBAN	URBAN	URBAN	URBAN
Inlet Application (Street or Area)	STREET	STREET	STREET	STREET	STREET	STREET
Hydraulic Condition	On Grade	In Sump	On Grade	In Sump	In Sump	On Grade
Inlet Type	CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening

USER-DEFINED INPUT

User-Defined Design Flows						
Minor Q_{known} (cfs)	1.7	3.2	3.7	2.5	1.1	1.2
Major Q_{known} (cfs)	5.9	12.1	14.1	8.9	4.5	3.9
Bypass (Carry-Over) Flow from Upstream						
Receive Bypass Flow from:	No Bypass Flow Received	User-Defined	No Bypass Flow Received	No Bypass Flow Received	No Bypass Flow Received	User-Defined
Minor Bypass Flow Received, Q_b (cfs)	0.0	0.0	0.0	0.0	0.0	0.0
Major Bypass Flow Received, Q_b (cfs)	0.0	6.3	0.0	0.0	0.0	7.5
Watershed Characteristics						
Subcatchment Area (acres)						
Percent Impervious						
NRCS Soil Type						
Watershed Profile						
Overland Slope (ft/ft)						
Overland Length (ft)						
Channel Slope (ft/ft)						
Channel Length (ft)						
Minor Storm Rainfall Input						
Design Storm Return Period, T_r (years)						
One-Hour Precipitation, P_1 (inches)						
Major Storm Rainfall Input						
Design Storm Return Period, T_r (years)						
One-Hour Precipitation, P_1 (inches)						

CALCULATED OUTPUT

Minor Total Design Peak Flow, Q (cfs)	1.7	3.2	3.7	2.5	1.1	1.2
Major Total Design Peak Flow, Q (cfs)	5.9	18.4	14.1	8.9	4.5	11.4
Minor Flow Bypassed Downstream, Q_b (cfs)	0.0	N/A	0.0	N/A	N/A	0.0
Major Flow Bypassed Downstream, Q_b (cfs)	0.5	N/A	2.7	N/A	N/A	3.6
Minor Storm (Calculated) Analysis of Flow T						
C	N/A	N/A	N/A	N/A	N/A	N/A
C_s	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Velocity, V_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Flow Velocity, V_t	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Time, T_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Travel Time, T_t	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Time of Concentration, T_c	N/A	N/A	N/A	N/A	N/A	N/A
Regional T_c	N/A	N/A	N/A	N/A	N/A	N/A
Recommended T_c	N/A	N/A	N/A	N/A	N/A	N/A
T_c selected by User	N/A	N/A	N/A	N/A	N/A	N/A
Design Rainfall Intensity, I	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Local Peak Flow, Q_p	N/A	N/A	N/A	N/A	N/A	N/A
Major Storm (Calculated) Analysis of Flow T						
C	N/A	N/A	N/A	N/A	N/A	N/A
C_s	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Velocity, V_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Flow Velocity, V_t	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Time, T_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Travel Time, T_t	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Time of Concentration, T_c	N/A	N/A	N/A	N/A	N/A	N/A
Regional T_c	N/A	N/A	N/A	N/A	N/A	N/A
Recommended T_c	N/A	N/A	N/A	N/A	N/A	N/A
T_c selected by User	N/A	N/A	N/A	N/A	N/A	N/A
Design Rainfall Intensity, I	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Local Peak Flow, Q_p	N/A	N/A	N/A	N/A	N/A	N/A

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

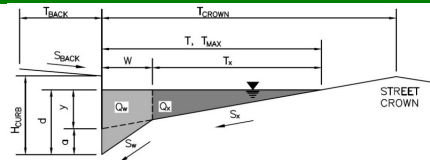
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 3-9 (BASIN B3)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 18.5$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 6.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.015$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	6.0	8.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Spread Criterion

MAJOR STORM Allowable Capacity is based on Spread Criterion

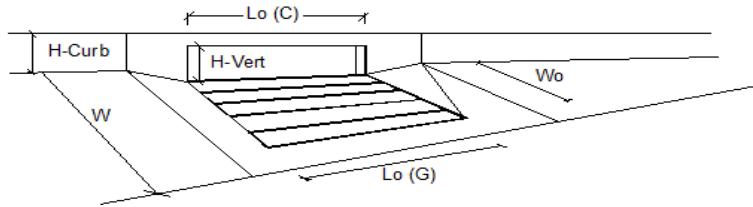
	Minor Storm	Major Storm	
$Q_{allow} =$	7.1	18.9	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')		a_{LOCAL} =	3.0	3.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)		No =	1	1	
Length of a Single Unit Inlet (Grate or Curb Opening)		L_o =	5.00	5.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)		W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)		$C_F G$ =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)		$C_F C$ =	0.10	0.10	
Street Hydraulics: OK - $Q < Q_{allowable}$ Street Capacity.			MINOR	MAJOR	
Total Inlet Interception Capacity		Q =	1.7	3.0	cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)		Q_b =	0.3	3.4	cfs
Capture Percentage = Q_i/Q_o =		$C\%$ =	84	47	%

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

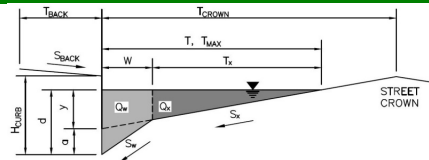
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 3-8 (BASIN B4)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Depth Criterion

$T_{BACK} = 18.5$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 6.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.000$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm
$T_{MAX} =$	12.0	18.0
$d_{MAX} =$	4.0	6.0

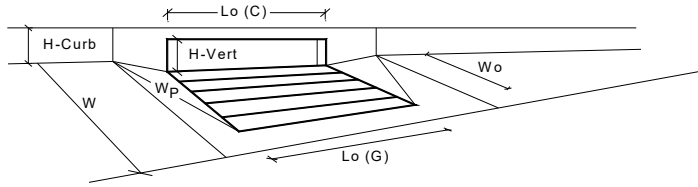
$Q_{allow} =$

Minor Storm	Major Storm
SUMP	SUMP

 cfs

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)		a _{local} =	3.00	3.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =	1	1	
Water Depth at Flowline (outside of local depression)		Ponding Depth =	6.0	8.0	inches
Grate Information			MINOR	MAJOR	☒ Override Depths
Length of a Unit Grate		L _o (G) =	N/A	N/A	feet
Width of a Unit Grate		W _o =	N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)		A _{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		C _l (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		C _w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		C _o (G) =	N/A	N/A	
Curb Opening Information			MINOR	MAJOR	
Length of a Unit Curb Opening		L _o (C) =	5.00	5.00	feet
Height of Vertical Curb Opening in Inches		H _{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches		H _{throat} =	6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)		Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		W _p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		C _l (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		C _w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		C _o (C) =	0.67	0.67	
Low Head Performance Reduction (Calculated)			MINOR	MAJOR	
Depth for Grate Midwidth		d _{Grate} =	N/A	N/A	ft
Depth for Curb Opening Weir Equation		d _{Curb} =	0.33	0.50	ft
Combination Inlet Performance Reduction Factor for Long Inlets		RF _{Combination} =	0.77	1.00	
Curb Opening Performance Reduction Factor for Long Inlets		RF _{Curb} =	1.00	1.00	
Grated Inlet Performance Reduction Factor for Long Inlets		RF _{Grate} =	N/A	N/A	
Total Inlet Interception Capacity (assumes clogged condition)			MINOR	MAJOR	
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)		Q _a =	5.4	9.3	cfs
		Q _{PEAK REQUIRED} =	1.6	7.5	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

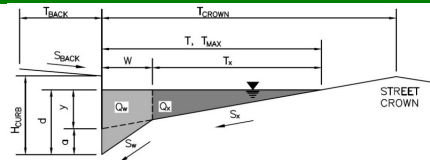
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 3-1 (BASIN B5)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Depth Criterion

T_{BACK} = 7.0 ft
 S_{BACK} = 0.020 ft/ft
 n_{BACK} = 0.013

H_{CURB} = 4.00 inches
 T_{CROWN} = 18.0 ft
 W = 2.00 ft
 S_x = 0.020 ft/ft
 S_w = 0.083 ft/ft
 S_o = 0.000 ft/ft
 n_{STREET} = 0.013

	Minor Storm	Major Storm
T_{MAX}	12.0	18.0
d_{MAX}	4.0	8.0

☐ ☐

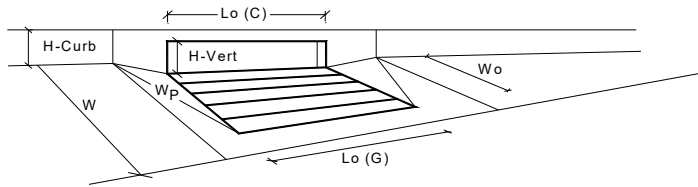
Q_{allow} =

Minor Storm	Major Storm
SUMP	SUMP

 cfs

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR		
Type of Inlet	CDOT Type R Curb Opening	Type =		CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)		a _{local} =		5.00	5.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =		2	2	
Water Depth at Flowline (outside of local depression)		Ponding Depth =		6.0	8.0	inches
Grate Information						☒ Override Depths
Length of a Unit Grate		L _o (G) =		N/A	N/A	feet
Width of a Unit Grate		W _o =		N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)		A _{ratio} =		N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		C _l (G) =		N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		C _w (G) =		N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		C _o (G) =		N/A	N/A	
Curb Opening Information						
Length of a Unit Curb Opening		L _o (C) =		5.00	5.00	feet
Height of Vertical Curb Opening in Inches		H _{vert} =		6.00	6.00	inches
Height of Curb Orifice Throat in Inches		H _{throat} =		6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)		Theta =		63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		W _p =		2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		C _l (C) =		0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		C _w (C) =		3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		C _o (C) =		0.67	0.67	
Low Head Performance Reduction (Calculated)						
Depth for Grate Midwidth		d _{Grate} =		N/A	N/A	ft
Depth for Curb Opening Weir Equation		d _{Curb} =		0.33	0.50	ft
Combination Inlet Performance Reduction Factor for Long Inlets		RF _{Combination} =		0.57	0.75	
Curb Opening Performance Reduction Factor for Long Inlets		RF _{Curb} =		0.93	1.00	
Grated Inlet Performance Reduction Factor for Long Inlets		RF _{Grate} =		N/A	N/A	
Total Inlet Interception Capacity (assumes clogged condition)						
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)		Q _a =		10.5	20.4	cfs
		Q _{PEAK REQUIRED} =		2.5	8.9	cfs

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

Friday, Jul 30 2021

Basin B5 Emergency Swale

Trapezoidal

Bottom Width (ft) = 6.00
Side Slopes (z:1) = 4.00, 4.00
Total Depth (ft) = 1.00
Invert Elev (ft) = 100.00
Slope (%) = 1.10
N-Value = 0.035

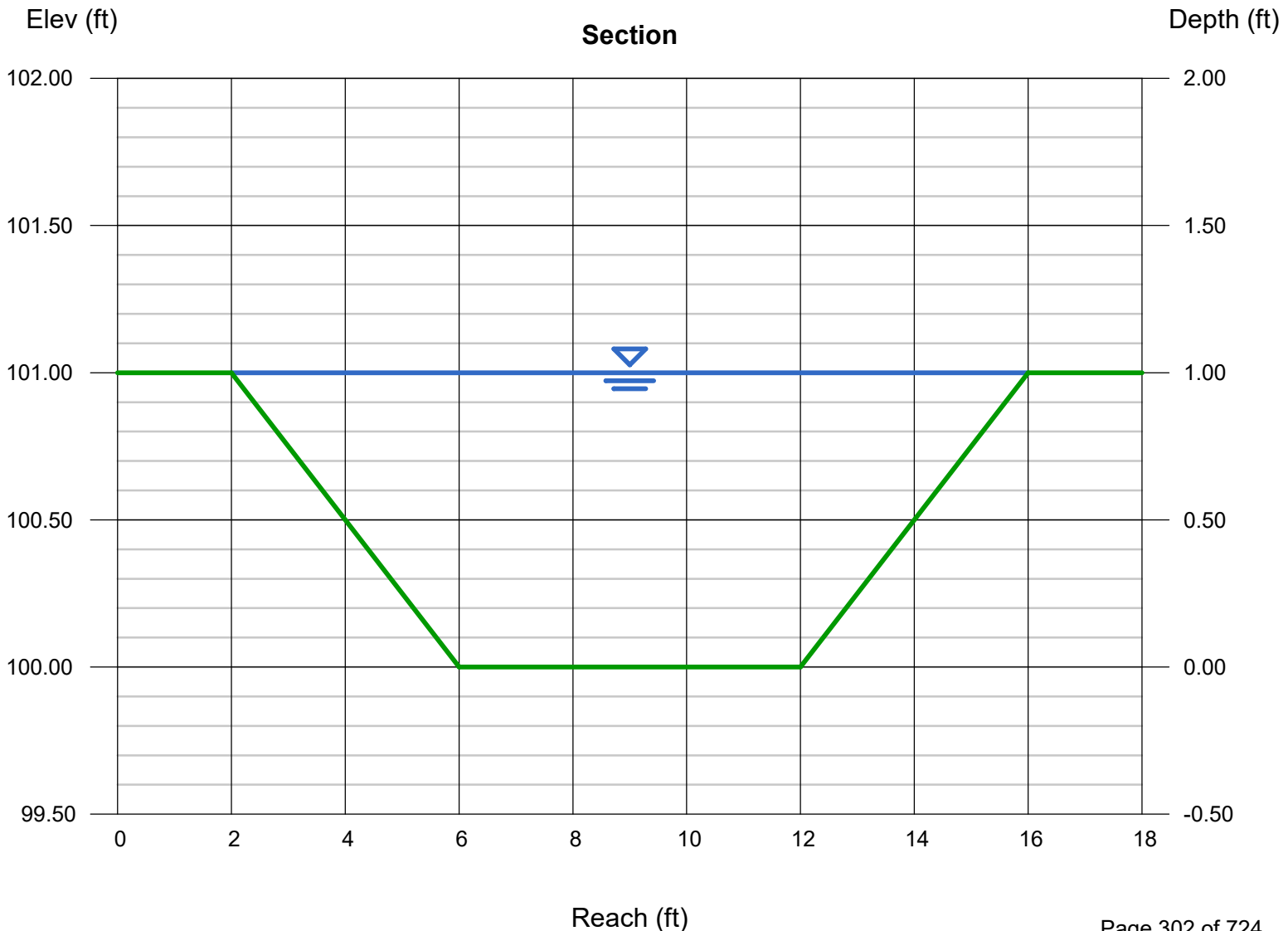
Highlighted

Depth (ft) = 1.00
Q (cfs) = 35.17
Area (sqft) = 10.00
Velocity (ft/s) = 3.52
Wetted Perim (ft) = 14.25
Crit Depth, Yc (ft) = 0.85
Top Width (ft) = 14.00
EGL (ft) = 1.19

Calculations

Compute by: Q vs Depth
No. Increments = 10

ASSUME INLETS 3-1 (BASIN B5) AND 3-2 (BASIN B6)
ARE CLOGGED
 $Q_{100} = 8.9 + 12.1 = 21 \text{ CFS}$



ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

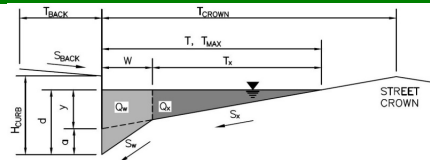
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 3-2 (BASIN B6)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Depth Criterion

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.000$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm
$T_{MAX} =$	12.0	18.0
$d_{MAX} =$	4.0	8.0

☐ ☐

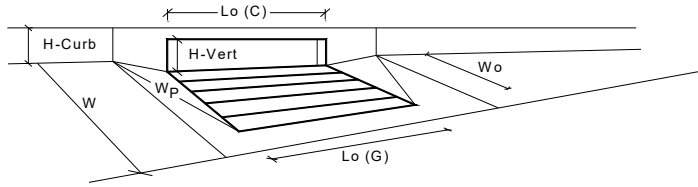
$Q_{allow} =$

Minor Storm	Major Storm
SUMP	SUMP

cfs

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)		a _{local} =	5.00	5.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =	2	2	
Water Depth at Flowline (outside of local depression)		Ponding Depth =	6.0	8.0	inches
Grate Information			MINOR	MAJOR	☒ Override Depths
Length of a Unit Grate		L _o (G) =	N/A	N/A	feet
Width of a Unit Grate		W _o =	N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)		A _{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		C _l (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		C _w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		C _o (G) =	N/A	N/A	
Curb Opening Information			MINOR	MAJOR	
Length of a Unit Curb Opening		L _o (C) =	5.00	5.00	feet
Height of Vertical Curb Opening in Inches		H _{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches		H _{throat} =	6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)		Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		W _p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		C _l (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		C _w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		C _o (C) =	0.67	0.67	
Low Head Performance Reduction (Calculated)			MINOR	MAJOR	
Depth for Grate Midwidth		d _{Grate} =	N/A	N/A	ft
Depth for Curb Opening Weir Equation		d _{Curb} =	0.33	0.50	ft
Combination Inlet Performance Reduction Factor for Long Inlets		RF _{Combination} =	0.57	0.75	
Curb Opening Performance Reduction Factor for Long Inlets		RF _{Curb} =	0.93	1.00	
Grated Inlet Performance Reduction Factor for Long Inlets		RF _{Grate} =	N/A	N/A	
Total Inlet Interception Capacity (assumes clogged condition)			MINOR	MAJOR	
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)		Q _a =	10.5	20.4	cfs
		Q _{PEAK REQUIRED} =	3.2	18.4	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

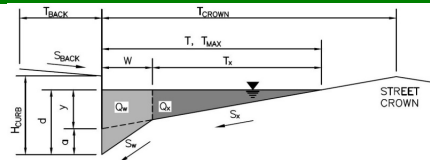
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 3-5 (BASIN B7)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.006$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	4.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Spread Criterion

$Q_{allow} =$

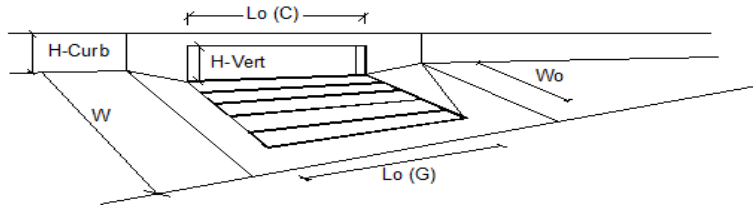
	Minor Storm	Major Storm	
	3.2	13.0	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)	MINOR	MAJOR
Type of Inlet	CDOT Type R Curb Opening	
Local Depression (additional to continuous gutter depression 'a')	5.0	5.0
Total Number of Units in the Inlet (Grate or Curb Opening)	2	2
Length of a Single Unit Inlet (Grate or Curb Opening)	5.00	5.00
Width of a Unit Grate (cannot be greater than W, Gutter Width)	N/A	N/A
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	N/A	N/A
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	0.10	0.10
Street Hydraulics: OK - Q < Allowable Street Capacity		
Total Inlet Interception Capacity	1.7	5.4
Total Inlet Carry-Over Flow (flow bypassing inlet)	0.0	0.5
Capture Percentage = Q_i/Q_o =	100	91

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

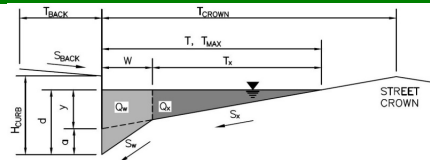
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

Basin B8 Check

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.006$ ft/ft
 $n_{STREET} = 0.013$

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	4.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Spread Criterion

$Q_{allow} =$

Minor Storm	Major Storm	
3.2	13.0	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

Tuesday, Jul 20 2021

Cross Pan

User-defined

Invert Elev (ft) = 4961.25
Slope (%) = 0.60
N-Value = Composite

Calculations

Compute by: Q vs Depth
No. Increments = 10

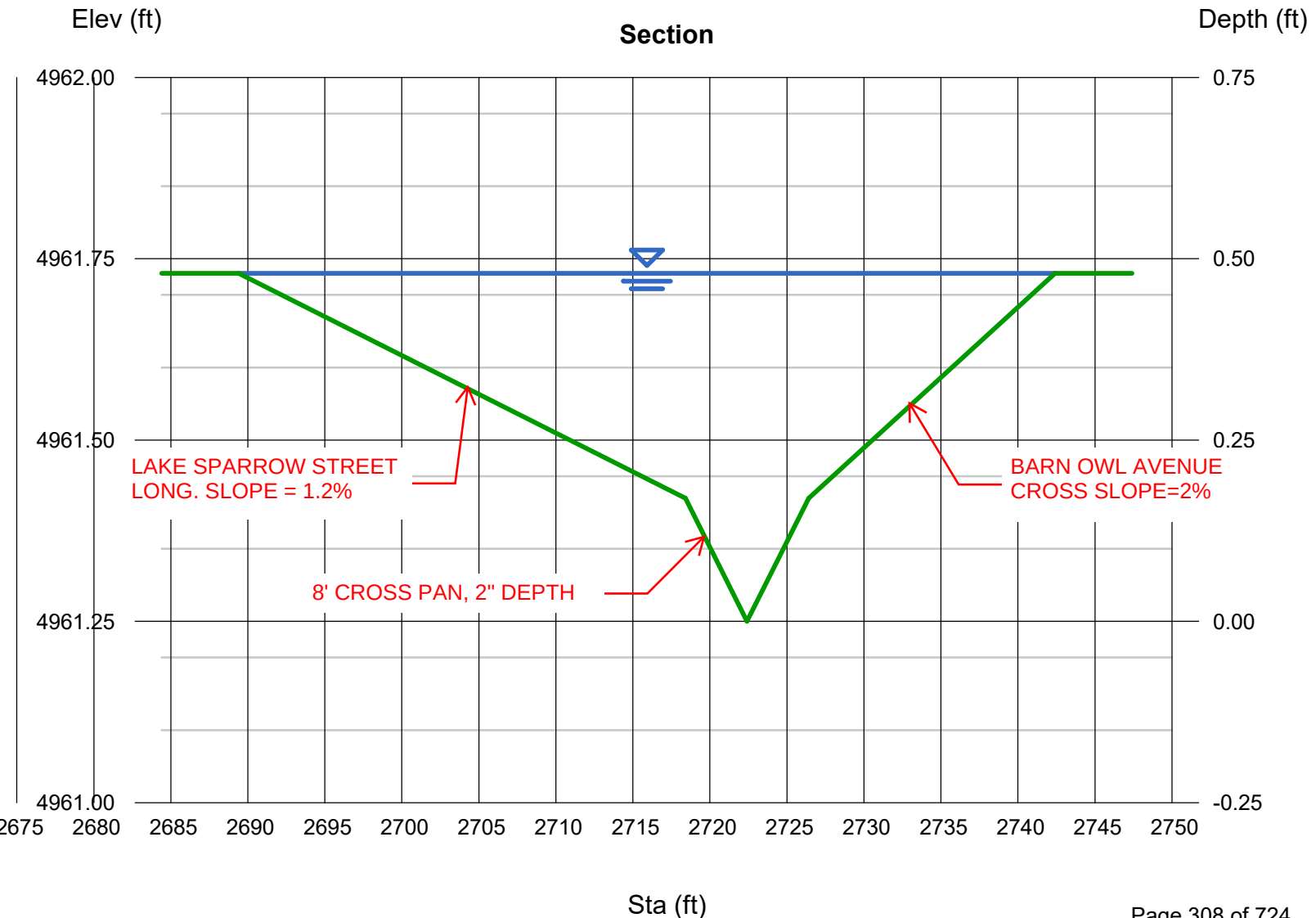
Highlighted

Depth (ft) = 0.48
Q (cfs) = 29.84
Area (sqft) = 10.14
Velocity (ft/s) = 2.94
Wetted Perim (ft) = 53.01
Crit Depth, Yc (ft) = 0.48
Top Width (ft) = 53.00
EGL (ft) = 0.61

(Sta, El, n)-(Sta, El, n)...

(2689.41, 4961.73)-(2718.41, 4961.42, 0.013)-(2722.41, 4961.25, 0.013)-(2726.41, 4961.42, 0.013)-(2742.41, 4961.73, 0.013)

DRAINAGE BASE B8 AND B9 COMBINED FLOWS
MINOR: 1.7 CFS + 2.0 CFS = 3.7 CFS
MAJOR: 5.0 CFS + 8.4 CFS = 13.4 CFS



ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

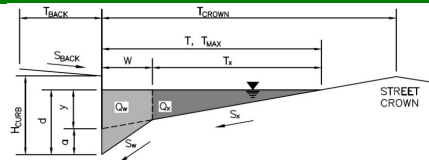
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 3-7 (BASIN A8, A9, 10)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.006$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	6.0	12.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Spread Criterion

MAJOR STORM Allowable Capacity is based on Spread Criterion

$Q_{allow} =$

Minor Storm	Major Storm	
4.5	13.0	cfs

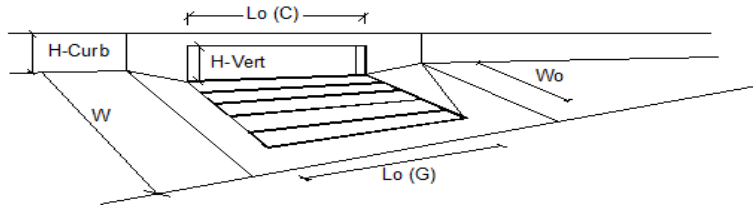
WARNING: MINOR STORM max. allowable capacity is less than the design flow given on sheet 'Inlet Management'

WARNING: MAJOR STORM max. allowable capacity is less than the design flow given on sheet 'Inlet Management'

Warning 02

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)	CDOT Type R Curb Opening	MINOR	MAJOR
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening
Local Depression (additional to continuous gutter depression 'a')		$a_{LOCAL} =$	5.0 5.0 inches
Total Number of Units in the Inlet (Grate or Curb Opening)		No =	3 3
Length of a Single Unit Inlet (Grate or Curb Opening)		$L_o =$	5.00 5.00 ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)		$W_o =$	N/A N/A ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)		$C_F G =$	N/A N/A
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)		$C_F C =$	0.10 0.10
Street Hydraulics: WARNING: Q > ALLOWABLE Q FOR MINOR & MAJOR STORM			
Total Inlet Interception Capacity		Q =	5.1 12.7 cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)		$Q_b =$	0.0 5.0 cfs
Capture Percentage = $Q_i/Q_o =$		C% =	99 72 %

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

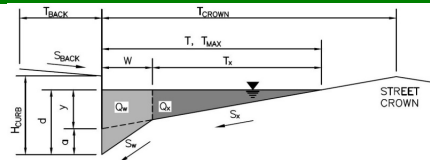
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 3-6 (BASIN B11)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.006$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	4.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion

MAJOR STORM Allowable Capacity is based on Spread Criterion

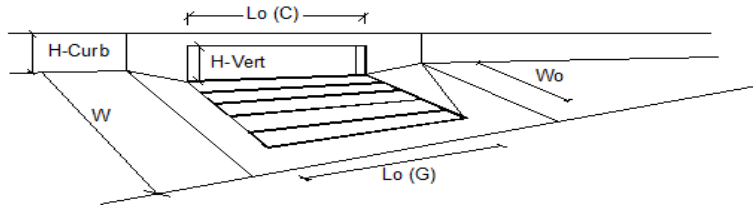
	Minor Storm	Major Storm	
$Q_{allow} =$	3.2	13.0	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)	MINOR	MAJOR
Type of Inlet	CDOT Type R Curb Opening	
Local Depression (additional to continuous gutter depression 'a')	5.0	5.0
Total Number of Units in the Inlet (Grate or Curb Opening)	2	2
Length of a Single Unit Inlet (Grate or Curb Opening)	5.00	5.00
Width of a Unit Grate (cannot be greater than W, Gutter Width)	N/A	N/A
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	N/A	N/A
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	0.10	0.10
Street Hydraulics: OK - Q < Allowable Street Capacity		
Total Inlet Interception Capacity	1.4	7.5
Total Inlet Carry-Over Flow (flow bypassing inlet)	0.0	3.3
Capture Percentage = Q_i/Q_o =	100	69

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

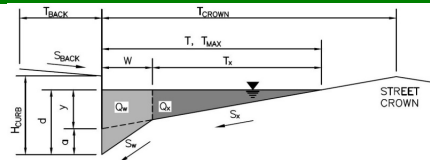
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 3-10 (BASIN B12)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.008$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	4.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Spread Criterion

$Q_{allow} =$

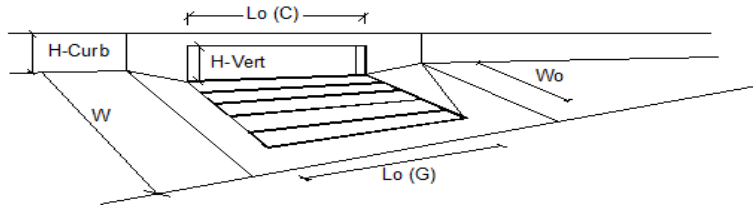
Minor Storm	Major Storm	
3.7	15.1	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)	MINOR	MAJOR
Type of Inlet	CDOT Type R Curb Opening	
Local Depression (additional to continuous gutter depression 'a')	5.0	5.0 inches
Total Number of Units in the Inlet (Grate or Curb Opening)	2	2
Length of a Single Unit Inlet (Grate or Curb Opening)	5.00	5.00 ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)	N/A	N/A ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	N/A	N/A
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	0.10	0.10
Street Hydraulics: OK - $Q < \text{Allowable Street Capacity}$		
Total Inlet Interception Capacity	3.2	7.9 cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)	0.0	3.7 cfs
Capture Percentage = Q_i/Q_o =	100	68 %

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

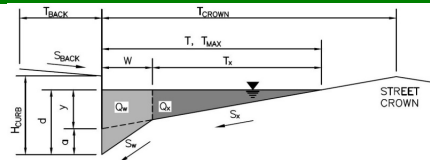
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 3-3 (BASIN B13)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.008$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	4.0	12.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Spread Criterion

$Q_{allow} =$

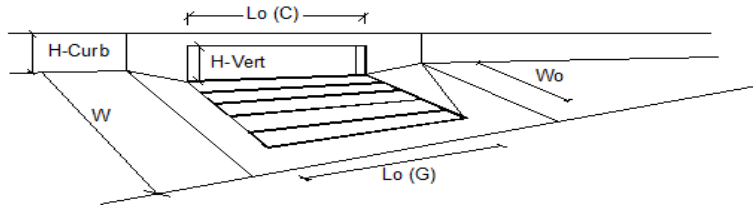
Minor Storm	Major Storm	
3.7	15.1	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)	MINOR	MAJOR
Type of Inlet	CDOT Type R Curb Opening	
Local Depression (additional to continuous gutter depression 'a')	5.0	5.0 inches
Total Number of Units in the Inlet (Grate or Curb Opening)	3	3
Length of a Single Unit Inlet (Grate or Curb Opening)	5.00	5.00 ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)	N/A	N/A ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	N/A	N/A
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	0.10	0.10
Street Hydraulics: OK - $Q < \text{Allowable Street Capacity}$	MINOR	MAJOR
Total Inlet Interception Capacity	Q = 3.7	11.4 cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)	Q _b = 0.0	2.7 cfs
Capture Percentage = Q_i/Q_o =	C% = 100	81 %

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

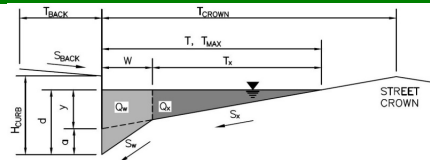
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

Inlet D1

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Depth Criterion

$T_{BACK} =$ 33.0 ft
 $S_{BACK} =$ 0.010 ft/ft
 $n_{BACK} =$ 0.013

$H_{CURB} =$ 6.00 inches
 $T_{CROWN} =$ 24.0 ft
 $W =$ 2.00 ft
 $S_x =$ 0.020 ft/ft
 $S_w =$ 0.083 ft/ft
 $S_o =$ 0.000 ft/ft
 $n_{STREET} =$ 0.013

	Minor Storm	Major Storm
$T_{MAX} =$	12.0	18.0
$d_{MAX} =$	6.0	8.0

☐ ☐

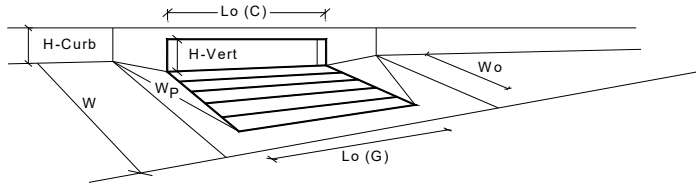
$Q_{allow} =$

Minor Storm	Major Storm
SUMP	SUMP

 cfs

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)		a _{local} =	3.00	3.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =	1	1	
Water Depth at Flowline (outside of local depression)		Ponding Depth =	6.0	8.0	inches
Grate Information			MINOR	MAJOR	☒ Override Depths
Length of a Unit Grate		L _o (G) =	N/A	N/A	feet
Width of a Unit Grate		W _o =	N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)		A _{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		C _l (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		C _w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		C _o (G) =	N/A	N/A	
Curb Opening Information			MINOR	MAJOR	
Length of a Unit Curb Opening		L _o (C) =	5.00	5.00	feet
Height of Vertical Curb Opening in Inches		H _{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches		H _{throat} =	6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)		Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		W _p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		C _l (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		C _w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		C _o (C) =	0.67	0.67	
Low Head Performance Reduction (Calculated)			MINOR	MAJOR	
Depth for Grate Midwidth		d _{Grate} =	N/A	N/A	ft
Depth for Curb Opening Weir Equation		d _{Curb} =	0.33	0.50	ft
Combination Inlet Performance Reduction Factor for Long Inlets		RF _{Combination} =	0.77	1.00	
Curb Opening Performance Reduction Factor for Long Inlets		RF _{Curb} =	1.00	1.00	
Grated Inlet Performance Reduction Factor for Long Inlets		RF _{Grate} =	N/A	N/A	
Total Inlet Interception Capacity (assumes clogged condition)			MINOR	MAJOR	
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)		Q _a =	5.4	9.3	cfs
		Q _{PEAK REQUIRED} =	2.3	7.4	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

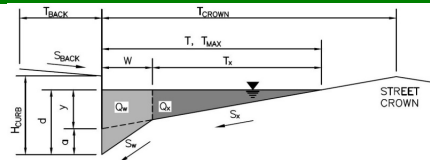
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Murata Farms Filing No. 1

Inlet ID:

STM IN 3-4 (BASIN B15)

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 4.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.008$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	4.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Spread Criterion

$Q_{allow} =$

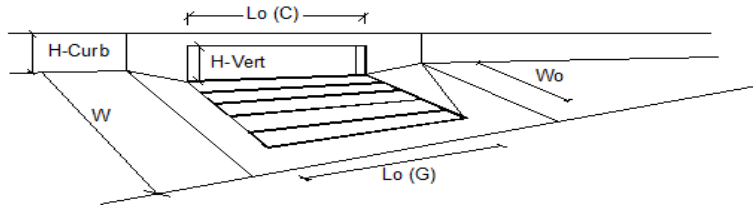
	Minor Storm	Major Storm	
	3.7	15.1	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)	MINOR	MAJOR
Type of Inlet	CDOT Type R Curb Opening	
Local Depression (additional to continuous gutter depression 'a')	5.0	5.0
Total Number of Units in the Inlet (Grate or Curb Opening)	2	2
Length of a Single Unit Inlet (Grate or Curb Opening)	5.00	5.00
Width of a Unit Grate (cannot be greater than W, Gutter Width)	N/A	N/A
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	N/A	N/A
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	0.10	0.10
Street Hydraulics: OK - Q < Allowable Street Capacity		
Total Inlet Interception Capacity	1.2	7.8
Total Inlet Carry-Over Flow (flow bypassing inlet)	0.0	3.6
Capture Percentage = Q_i/Q_o =	100	68

DRAINAGE BASIN C

Version 4.06 Released August 2018

INLET MANAGEMENT

Worksheet Protected

INLET NAME	STM IN 1-2 (BASIN C3) INT	STM IN 1-1 (BASIN C4) INT	STM IN 1-3 (BASIN C2) INT	STM IN 1-2 (BASIN C3)	BASIN C5	STM IN 1-3 (BASIN C2)
Site Type (Urban or Rural)	URBAN	URBAN	URBAN	URBAN	URBAN	URBAN
Inlet Application (Street or Area)	STREET	STREET	STREET	STREET	STREET	STREET
Hydraulic Condition	In Sump	In Sump	In Sump	On Grade	On Grade	On Grade
Inlet Type	CDOT Type R Curb Opening	CDOT Type C Grate	CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening	CDOT Type R Curb Opening

USER-DEFINED INPUT

User-Defined Design Flows

Minor Q_{known} (cfs)	4.5	1.3	3.7	4.5	0.5	3.7
Major Q_{known} (cfs)	17.3	5.0	13.8	17.3	2.7	13.8

Bypass (Carry-Over) Flow from Upstream

Receive Bypass Flow from:	No Bypass Flow Received	No Bypass Flow Received	No Bypass Flow Received	No Bypass Flow Received	STM IN 1-3 (BASIN C2)	No Bypass Flow Received
Minor Bypass Flow Received, Q_b (cfs)	0.0	0.0	0.0	0.0	0.0	0.0
Major Bypass Flow Received, Q_b (cfs)	0.0	0.0	0.0	0.0	5.8	0.0

Watershed Characteristics

Subcatchment Area (acres)						
Percent Impervious						
NRCS Soil Type						

Watershed Profile

Overland Slope (ft/ft)						
Overland Length (ft)						
Channel Slope (ft/ft)						
Channel Length (ft)						

Minor Storm Rainfall Input

Design Storm Return Period, T_r (years)						
One-Hour Precipitation, P_1 (inches)						

Major Storm Rainfall Input

Design Storm Return Period, T_r (years)						
One-Hour Precipitation, P_1 (inches)						

CALCULATED OUTPUT

Minor Total Design Peak Flow, Q (cfs)	4.5	1.3	3.7	4.5	0.6	3.7
Major Total Design Peak Flow, Q (cfs)	17.3	5.0	13.8	17.3	8.5	13.8
Minor Flow Bypassed Downstream, Q_b (cfs)	N/A	N/A	N/A	0.0	0.0	0.0
Major Flow Bypassed Downstream, Q_b (cfs)	N/A	N/A	N/A	4.9	0.4	5.8

Minor Storm (Calculated) Analysis of Flow Time

C	N/A	N/A	N/A	N/A	N/A	N/A
C_s	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Velocity, V_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Flow Velocity, V_t	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Time, T_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Travel Time, T_t	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Time of Concentration, T_c	N/A	N/A	N/A	N/A	N/A	N/A
Regional T_c	N/A	N/A	N/A	N/A	N/A	N/A
Recommended T_c	N/A	N/A	N/A	N/A	N/A	N/A
T_c selected by User	N/A	N/A	N/A	N/A	N/A	N/A
Design Rainfall Intensity, I	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Local Peak Flow, Q_p	N/A	N/A	N/A	N/A	N/A	N/A

Major Storm (Calculated) Analysis of Flow Time

C	N/A	N/A	N/A	N/A	N/A	N/A
C_s	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Velocity, V_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Flow Velocity, V_t	N/A	N/A	N/A	N/A	N/A	N/A
Overland Flow Time, T_i	N/A	N/A	N/A	N/A	N/A	N/A
Channel Travel Time, T_t	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Time of Concentration, T_c	N/A	N/A	N/A	N/A	N/A	N/A
Regional T_c	N/A	N/A	N/A	N/A	N/A	N/A
Recommended T_c	N/A	N/A	N/A	N/A	N/A	N/A
T_c selected by User	N/A	N/A	N/A	N/A	N/A	N/A
Design Rainfall Intensity, I	N/A	N/A	N/A	N/A	N/A	N/A
Calculated Local Peak Flow, Q_p	N/A	N/A	N/A	N/A	N/A	N/A

INLET MANAGEMENT

Worksheet Protected

INLET NAME	STM IN 1-1 (BASIN C4)
Site Type (Urban or Rural)	URBAN
Inlet Application (Street or Area)	STREET
Hydraulic Condition	On Grade
Inlet Type	CDOT Type R Curb Opening

USER-DEFINED INPUT**User-Defined Design Flows**

Minor Q_{known} (cfs)	0.8
Major Q_{known} (cfs)	2.3

Bypass (Carry-Over) Flow from Upstream

Receive Bypass Flow from:	STM IN 1-2 (BASIN C3)
Minor Bypass Flow Received, Q_b (cfs)	0.0
Major Bypass Flow Received, Q_b (cfs)	4.9

Watershed Characteristics

Subcatchment Area (acres)	
Percent Impervious	
NRCS Soil Type	

Watershed Profile

Overland Slope (ft/ft)	
Overland Length (ft)	
Channel Slope (ft/ft)	
Channel Length (ft)	

Minor Storm Rainfall Input

Design Storm Return Period, T_r (years)	
One-Hour Precipitation, P_1 (inches)	

Major Storm Rainfall Input

Design Storm Return Period, T_r (years)	
One-Hour Precipitation, P_1 (inches)	

CALCULATED OUTPUT

Minor Total Design Peak Flow, Q (cfs)	0.8
Major Total Design Peak Flow, Q (cfs)	7.2
Minor Flow Bypassed Downstream, Q_b (cfs)	0.0
Major Flow Bypassed Downstream, Q_b (cfs)	0.1

Minor Storm (Calculated) Analysis of Flow T

C	N/A
C_s	N/A
Overland Flow Velocity, V_i	N/A
Channel Flow Velocity, V_t	N/A
Overland Flow Time, T_i	N/A
Channel Travel Time, T_t	N/A
Calculated Time of Concentration, T_c	N/A
Regional T_c	N/A
Recommended T_c	N/A
T_c selected by User	N/A
Design Rainfall Intensity, I	N/A
Calculated Local Peak Flow, Q_p	N/A

Major Storm (Calculated) Analysis of Flow T

C	N/A
C_s	N/A
Overland Flow Velocity, V_i	N/A
Channel Flow Velocity, V_t	N/A
Overland Flow Time, T_i	N/A
Channel Travel Time, T_t	N/A
Calculated Time of Concentration, T_c	N/A
Regional T_c	N/A
Recommended T_c	N/A
T_c selected by User	N/A
Design Rainfall Intensity, I	N/A
Calculated Local Peak Flow, Q_p	N/A

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

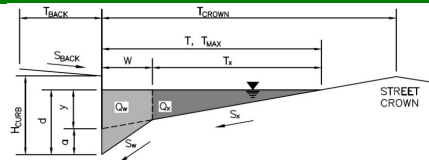
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Enter Your Project Name Here

Inlet ID:

STM IN 1-2 (BASIN C3) INT

**Gutter Geometry (Enter data in the blue cells)**

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

MINOR STORM Allowable Capacity is based on Depth Criterion**MAJOR STORM** Allowable Capacity is based on Depth Criterion

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 6.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.000$ ft/ft
 $n_{STREET} = 0.013$

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	6.0	8.0	inches

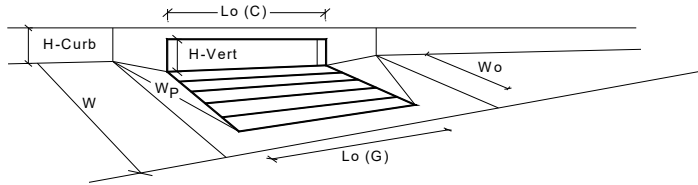
☐ ☐

$Q_{allow} =$

	Minor Storm	Major Storm	
	SUMP	SUMP	cfs

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)	MINOR	MAJOR	
Type of Inlet	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)	3.00	3.00	inches
Number of Unit Inlets (Grate or Curb Opening)	2	2	
Water Depth at Flowline (outside of local depression)	9.0	9.0	inches
Grate Information	MINOR	MAJOR	☒ Override Depths
Length of a Unit Grate	N/A	N/A	feet
Width of a Unit Grate	N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)	N/A	N/A	
Curb Opening Information	MINOR	MAJOR	
Length of a Unit Curb Opening	5.00	5.00	feet
Height of Vertical Curb Opening in Inches	6.00	6.00	inches
Height of Curb Orifice Throat in Inches	6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)	0.67	0.67	
Low Head Performance Reduction (Calculated)	MINOR	MAJOR	
Depth for Grate Midwidth	N/A	N/A	ft
Depth for Curb Opening Weir Equation	0.58	0.58	ft
Combination Inlet Performance Reduction Factor for Long Inlets	0.85	0.85	
Curb Opening Performance Reduction Factor for Long Inlets	1.00	1.00	
Grated Inlet Performance Reduction Factor for Long Inlets	N/A	N/A	
Total Inlet Interception Capacity (assumes clogged condition)	MINOR	MAJOR	
Q_a	22.2	22.2	cfs
Q_{PEAK REQUIRED}	4.5	17.3	cfs

Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)

INTERIM CONDITION TYPE D INLET IN 1' SUMP/SWALE

Version 4.06 Released August 2018

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

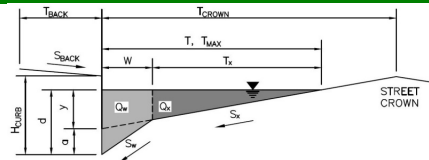
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Enter Your Project Name Here

Inlet ID:

STM IN 1-1 (BASIN C4) INT



Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

$T_{BACK} = 12.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 6.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_W = 0.083$ ft/ft
 $S_0 = 0.000$ ft/ft
 $n_{STREET} = 0.013$

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	6.0	8.0	inches

MINOR STORM Allowable Capacity is based on Depth Criterion

MAJOR STORM Allowable Capacity is based on Depth Criterion

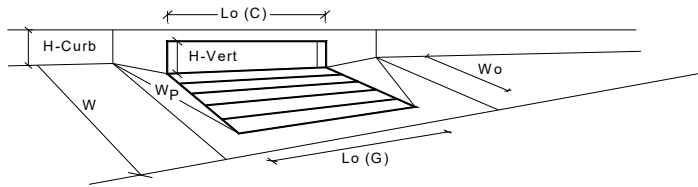
$Q_{allow} =$

Minor Storm	Major Storm
SUMP	SUMP

 cfs

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Warning 5

Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type C Grate	Type =	CDOT Type C Grate		
Local Depression (additional to continuous gutter depression 'a' from above)		a _{local} =	0.00	0.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =	2	2	
Water Depth at Flowline (outside of local depression)		Ponding Depth =	12.0	12.0	inches
Grate Information			MINOR	MAJOR	☒ Override Depths
Length of a Unit Grate		L _o (G) =	2.92	2.92	feet
Width of a Unit Grate		W _o =	2.92	2.92	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)		A _{ratio} =	0.70	0.70	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		C _l (G) =	0.50	0.50	
Grate Weir Coefficient (typical value 2.15 - 3.60)		C _w (G) =	2.41	2.41	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		C _o (G) =	0.67	0.67	
Curb Opening Information			MINOR	MAJOR	
Length of a Unit Curb Opening		L _o (C) =	N/A	N/A	feet
Height of Vertical Curb Opening in Inches		H _{vert} =	N/A	N/A	inches
Height of Curb Orifice Throat in Inches		H _{throat} =	N/A	N/A	inches
Angle of Throat (see USDCM Figure ST-5)		Theta =	N/A	N/A	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		W _p =	N/A	N/A	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		C _l (C) =	N/A	N/A	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		C _w (C) =	N/A	N/A	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		C _o (C) =	N/A	N/A	
Low Head Performance Reduction (Calculated)			MINOR	MAJOR	
Depth for Grate Midwidth		d _{Grate} =	0.879	0.879	ft
Depth for Curb Opening Weir Equation		d _{Curb} =	N/A	N/A	ft
Combination Inlet Performance Reduction Factor for Long Inlets		RF _{Combination} =	N/A	N/A	
Curb Opening Performance Reduction Factor for Long Inlets		RF _{Curb} =	N/A	N/A	
Grated Inlet Performance Reduction Factor for Long Inlets		RF _{Grate} =	1.00	1.00	
Total Inlet Interception Capacity (assumes clogged condition)			MINOR	MAJOR	
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)		Q _a =	12.2	12.2	cfs
		Q _{PEAK REQUIRED} =	1.3	5.0	cfs

Warning 5: The width of unit is greater than the gutter width.

Version 4.06 Released August 2018

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: Enter Your Project Name Here

Inlet ID: STM IN 1-3 (BASIN C2) INT

Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Check boxes are not applicable in SUMP conditions

MINOR STORM Allowable Capacity is based on Depth Criterion

MAJOR STORM Allowable Capacity is based on Depth Criterion

TBACK = 18.5 ft

SBACK = 0.020 ft/ft

nBACK = 0.013

HCURB = 6.00 inches

TCROWN = 18.0 ft

W = 2.00 ft

Sx = 0.020 ft/ft

SW = 0.083 ft/ft

So = 0.000 ft/ft

nSTREET = 0.013

Minor Storm

Major Storm

TMAX = 12.0 16.0 ft

dMAX = 6.0 8.0 inches

☐

☐

Minor Storm

Major Storm

Qallow = SUMP SUMP cfs

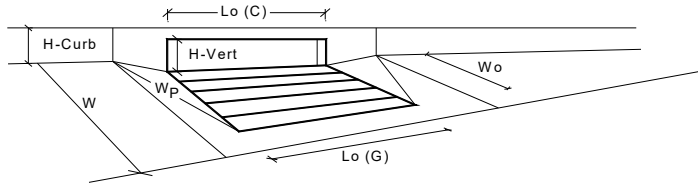
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INTERIM CONDITION
TYPE R INLET ON DEAD END
ROAD, 1' BERM TO CREATE SUMP

INLET IN A SUMP OR SAG LOCATION

Version 4.06 Released August 2018



Design Information (Input)	MINOR	MAJOR
Type of Inlet	CDOT Type R Curb Opening	
Local Depression (additional to continuous gutter depression 'a' from above)	3.00	3.00
Number of Unit Inlets (Grate or Curb Opening)	2	2
Water Depth at Flowline (outside of local depression)	9.0	9.0
Grate Information		
Length of a Unit Grate	N/A	N/A
Width of a Unit Grate	N/A	N/A
Area Opening Ratio for a Grate (typical values 0.15-0.90)	N/A	N/A
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)	N/A	N/A
Grate Weir Coefficient (typical value 2.15 - 3.60)	N/A	N/A
Grate Orifice Coefficient (typical value 0.60 - 0.80)	N/A	N/A
Curb Opening Information		
Length of a Unit Curb Opening	5.00	5.00
Height of Vertical Curb Opening in Inches	6.00	6.00
Height of Curb Orifice Throat in Inches	6.00	6.00
Angle of Throat (see USDCM Figure ST-5)	63.40	63.40
Side Width for Depression Pan (typically the gutter width of 2 feet)	2.00	2.00
Clogging Factor for a Single Curb Opening (typical value 0.10)	0.10	0.10
Curb Opening Weir Coefficient (typical value 2.3-3.7)	3.60	3.60
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)	0.67	0.67
Low Head Performance Reduction (Calculated)		
Depth for Grate Midwidth	N/A	N/A
Depth for Curb Opening Weir Equation	0.58	0.58
Combination Inlet Performance Reduction Factor for Long Inlets	0.85	0.85
Curb Opening Performance Reduction Factor for Long Inlets	1.00	1.00
Grated Inlet Performance Reduction Factor for Long Inlets	N/A	N/A
Total Inlet Interception Capacity (assumes clogged condition)		
Inlet Capacity IS GOOD for Minor and Major Storms(>Q PEAK)	22.2	22.2
Q PEAK REQUIRED	3.7	13.8

Version 4.06 Released August 2018

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

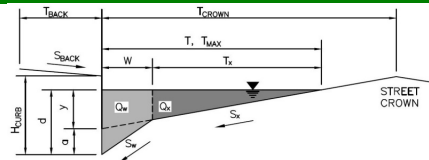
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Enter Your Project Name Here

Inlet ID:

STM IN 1-2 (BASIN C3)



Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 6.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_W = 0.083$ ft/ft
 $S_0 = 0.020$ ft/ft
 $n_{STREET} = 0.013$

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	6.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Spread Criterion

MAJOR STORM Allowable Capacity is based on Spread Criterion

$Q_{allow} =$

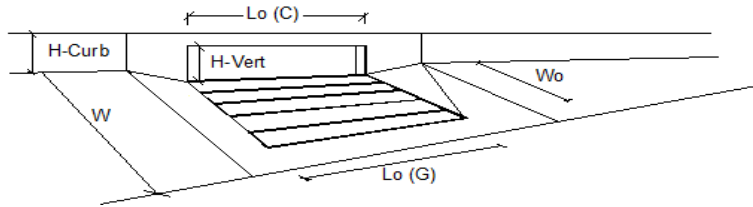
Minor Storm	Major Storm	
8.2	21.8	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')		a _{LOCAL} =	3.0	3.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)		No =	3	3	
Length of a Single Unit Inlet (Grate or Curb Opening)		L _o =	5.00	5.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)		W _o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)		C _F G =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)		C _F C =	0.10	0.10	
Street Hydraulics: OK - Q < Allowable Street Capacity			MINOR	MAJOR	
Total Inlet Interception Capacity		Q =	4.5	12.4	cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)		Q _b =	0.0	4.9	cfs
Capture Percentage = Q _i /Q _o =		C% =	100	72	%

Version 4.06 Released August 2018

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

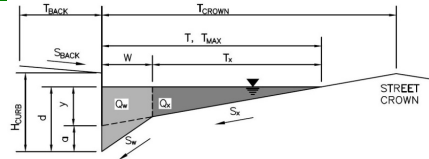
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Enter Your Project Name Here

Inlet ID:

BASIN C5



Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

$T_{BACK} = 7.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 6.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.017$ ft/ft
 $n_{STREET} = 0.013$

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	6.0	12.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Spread Criterion

MAJOR STORM Allowable Capacity is based on Spread Criterion

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

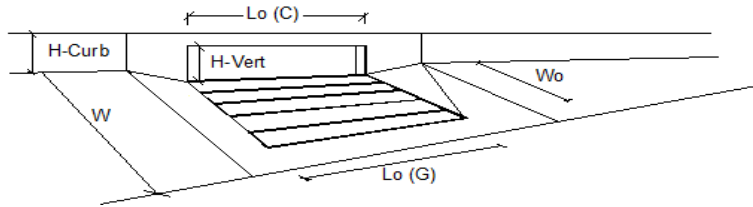
Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

$Q_{allow} =$

Minor Storm	Major Storm	
7.6	20.1	cfs

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')		a_{LOCAL} =	3.0	3.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)		No =	3	3	
Length of a Single Unit Inlet (Grate or Curb Opening)		L_o =	5.00	5.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)		W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)		$C_F G$ =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)		$C_F C$ =	0.10	0.10	
Street Hydraulics: OK - $Q < \text{Allowable Street Capacity}$			MINOR	MAJOR	
Total Inlet Interception Capacity		Q =	0.6	8.0	cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)		Q_b =	0.0	0.4	cfs
Capture Percentage = Q_i/Q_o =		$C\%$ =	100	95	%

Version 4.06 Released August 2018

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

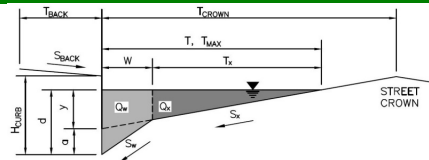
(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project:

Enter Your Project Name Here

Inlet ID:

STM IN 1-3 (BASIN C2)



Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb

Side Slope Behind Curb (leave blank for no conveyance credit behind curb)

Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

Height of Curb at Gutter Flow Line

Distance from Curb Face to Street Crown

Gutter Width

Street Transverse Slope

Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)

Street Longitudinal Slope - Enter 0 for sump condition

Manning's Roughness for Street Section (typically between 0.012 and 0.020)

$T_{BACK} = 12.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

$H_{CURB} = 6.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_w = 0.083$ ft/ft
 $S_o = 0.020$ ft/ft
 $n_{STREET} = 0.013$

Max. Allowable Spread for Minor & Major Storm

Max. Allowable Depth at Gutter Flowline for Minor & Major Storm

Allow Flow Depth at Street Crown (leave blank for no)

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	6.0	6.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Spread Criterion

MAJOR STORM Allowable Capacity is based on Spread Criterion

$Q_{allow} =$

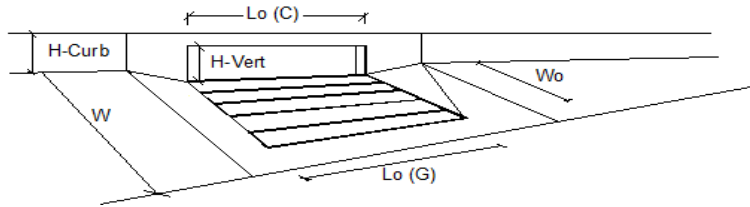
Minor Storm	Major Storm	
8.2	21.8	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



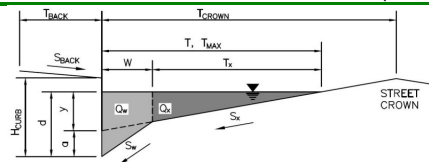
Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')		a_{LOCAL} =	3.0	3.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)		No =	2	2	
Length of a Single Unit Inlet (Grate or Curb Opening)		L_o =	5.00	5.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)		W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)		$C_F G$ =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)		$C_F C$ =	0.10	0.10	
Street Hydraulics: OK - $Q < \text{Allowable Street Capacity}$			MINOR	MAJOR	
Total Inlet Interception Capacity		Q =	3.7	8.0	cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)		Q_b =	0.0	5.8	cfs
Capture Percentage = Q_i/Q_o =		$C\%$ =	99	58	%

Version 4.06 Released August 2018

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: Enter Your Project Name Here
Inlet ID: STM IN 1-1 (BASIN C4)



Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)

$T_{BACK} = 12.0$ ft
 $S_{BACK} = 0.020$ ft/ft
 $n_{BACK} = 0.013$

Height of Curb at Gutter Flow Line
Distance from Curb Face to Street Crown
Gutter Width
Street Transverse Slope
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)
Street Longitudinal Slope - Enter 0 for sump condition
Manning's Roughness for Street Section (typically between 0.012 and 0.020)

$H_{CURB} = 6.00$ inches
 $T_{CROWN} = 18.0$ ft
 $W = 2.00$ ft
 $S_x = 0.020$ ft/ft
 $S_W = 0.083$ ft/ft
 $S_0 = 0.017$ ft/ft
 $n_{STREET} = 0.013$

Max. Allowable Spread for Minor & Major Storm
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm
Allow Flow Depth at Street Crown (leave blank for no)

	Minor Storm	Major Storm	
$T_{MAX} =$	12.0	18.0	ft
$d_{MAX} =$	6.0	12.0	inches
	☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Spread Criterion
MAJOR STORM Allowable Capacity is based on Spread Criterion

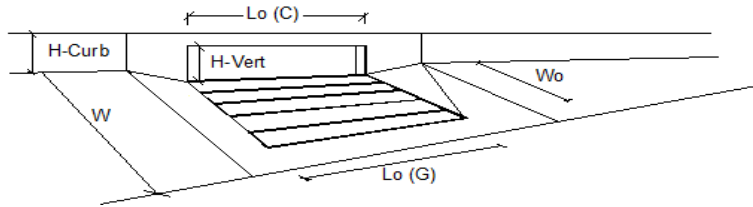
	Minor Storm	Major Storm	
$Q_{allow} =$	7.6	20.1	cfs

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'
Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

FUTURE FULL BUILDOUT,
REMOVE INTERIM TYPE D AND
REPLACE WITH 15' TYPE R

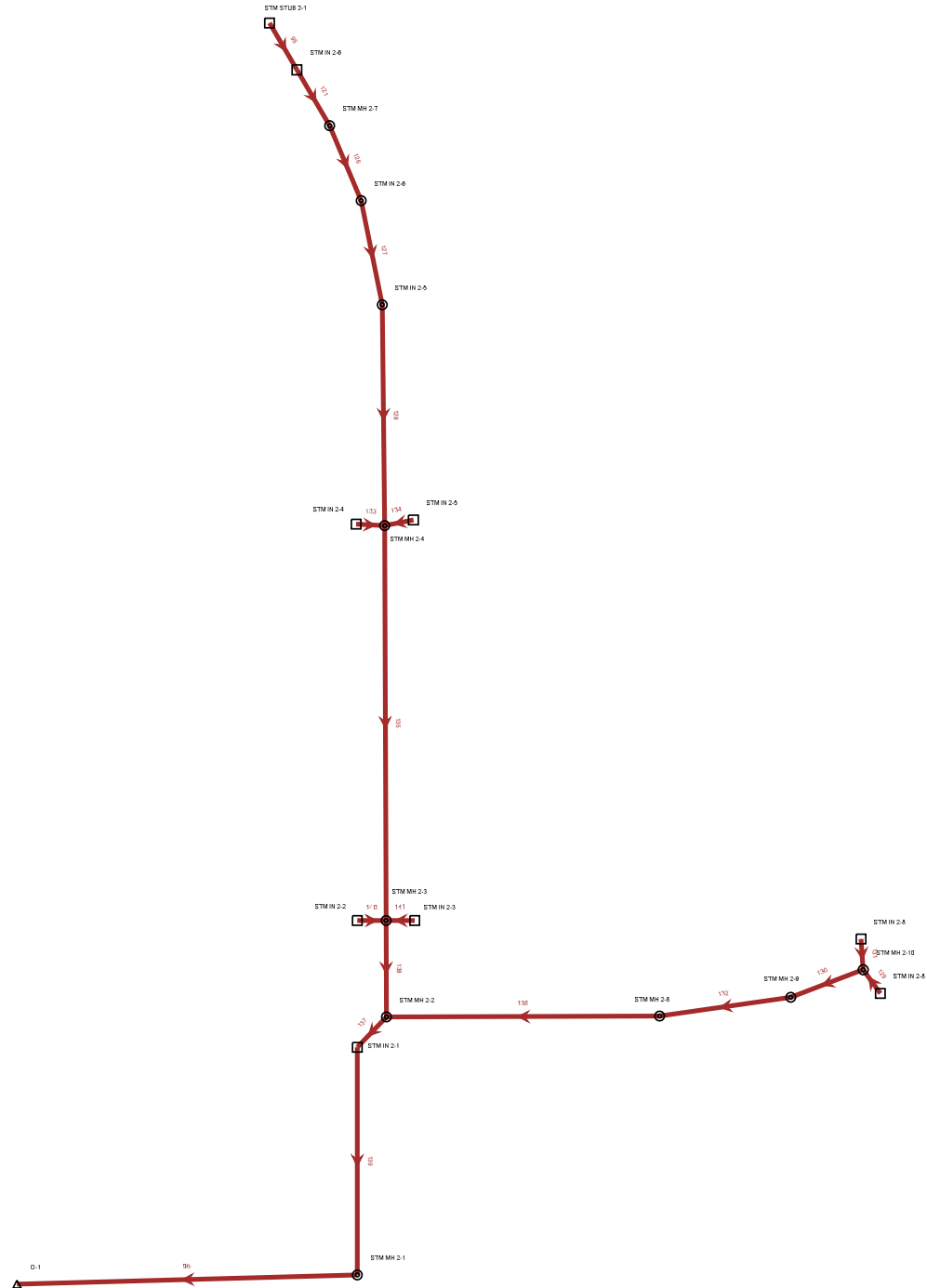
INLET ON A CONTINUOUS GRADE

Version 4.06 Released August 2018



Design Information (Input)		MINOR		MAJOR	
Type of Inlet	CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')		a _{LOCAL} =	3.0	3.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)		No =	3	3	
Length of a Single Unit Inlet (Grate or Curb Opening)		L _o =	5.00	5.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)		W _o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)		C _F G =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)		C _F C =	0.10	0.10	
Street Hydraulics: OK - Q < Allowable Street Capacity			MINOR	MAJOR	
Total Inlet Interception Capacity		Q =	0.8	7.1	cfs
Total Inlet Carry-Over Flow (flow bypassing inlet)		Q _b =	0.0	0.1	cfs
Capture Percentage = Q _i /Q _o =		C% =	100	99	%

DRAINAGE BASIN A



DRAINAGE BASIN A - MINOR STORM

FlexTable: Conduit Table

ID	Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Manning's n	Velocity (ft/s)	Flow (cfs)	Capacity (Full Flow) (cfs)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
95	STM STUB 2-1	STM IN 2-6	4,951.54	4,951.20	0.010	36.0	0.013	7.45	13.90	66.69	4,952.73	4,952.65	4,953.17	4,952.91
96	STM MH 2-1	O-1	4,942.70	4,941.63	0.005	54.0	0.013	7.23	34.20	139.04	4,944.38	4,943.15	4,945.00	4,943.96
121	STM IN 2-6	STM MH 2-7	4,951.10	4,950.69	0.010	36.0	0.013	7.83	16.60	66.69	4,952.40	4,952.04	4,952.89	4,952.49
126	STM MH 2-7	STM IN 2-6	4,950.49	4,949.98	0.010	36.0	0.013	7.83	16.60	66.69	4,951.79	4,951.33	4,952.29	4,951.78
127	STM IN 2-6	STM IN 2-5	4,949.78	4,949.11	0.010	36.0	0.013	7.83	16.60	66.69	4,951.08	4,950.46	4,951.57	4,950.91
128	STM IN 2-5	STM MH 2-4	4,948.91	4,947.54	0.010	36.0	0.013	7.81	16.60	66.42	4,950.22	4,948.56	4,950.71	4,949.51
129	STM IN 2-8	STM MH 2-10	4,950.22	4,950.08	0.007	18.0	0.013	4.13	2.00	9.10	4,951.16	4,951.16	4,951.20	4,951.19
130	STM MH 2-10	STM MH 2-9	4,949.87	4,949.51	0.007	24.0	0.013	5.76	7.20	19.59	4,950.83	4,950.35	4,951.20	4,950.86
131	STM IN 2-8	STM MH 2-10	4,950.23	4,950.08	0.007	18.0	0.013	5.32	5.20	9.10	4,951.10	4,951.16	4,951.47	4,951.39
132	STM MH 2-9	STM MH 2-8	4,949.31	4,948.69	0.007	24.0	0.013	5.76	7.20	19.59	4,950.27	4,949.53	4,950.63	4,950.04
133	STM IN 2-4	STM MH 2-4	4,949.17	4,948.99	0.010	18.0	0.013	4.37	1.70	10.49	4,949.66	4,949.40	4,949.84	4,949.69
134	STM IN 2-5	STM MH 2-4	4,949.17	4,948.99	0.010	18.0	0.013	5.04	2.90	10.41	4,949.82	4,949.54	4,950.06	4,949.92
135	STM MH 2-4	STM MH 2-3	4,946.50	4,944.64	0.007	48.0	0.013	7.38	21.20	124.39	4,947.85	4,946.50	4,948.35	4,946.71
136	STM MH 2-8	STM MH 2-2	4,948.49	4,947.20	0.007	24.0	0.013	5.76	7.20	19.59	4,949.44	4,948.04	4,949.81	4,948.55
137	STM MH 2-2	STM IN 2-1	4,943.94	4,943.81	0.005	48.0	0.013	7.18	32.40	101.56	4,945.63	4,945.67	4,946.27	4,946.17
138	STM MH 2-3	STM MH 2-2	4,944.44	4,944.14	0.005	48.0	0.013	6.70	25.20	101.56	4,946.23	4,946.27	4,946.57	4,946.48
139	STM IN 2-1	STM MH 2-1	4,943.61	4,942.90	0.005	54.0	0.013	7.23	34.20	139.04	4,945.29	4,944.87	4,945.91	4,945.28
140	STM IN 2-2	STM MH 2-3	4,947.03	4,946.94	0.005	24.0	0.013	3.37	1.80	16.00	4,947.49	4,947.39	4,947.66	4,947.57
141	STM IN 2-3	STM MH 2-3	4,946.53	4,946.44	0.005	30.0	0.013	3.48	2.20	29.00	4,947.01	4,946.91	4,947.18	4,947.09

DRAINAGE BASIN A - MINOR STORM

FlexTable: Manhole Table

Label	Elevation (Rim) (ft)	Elevation (Invert in 1) (ft)	Elevation (Invert in 2) (ft)	Elevation (Invert in 3) (ft)	Elevation (Invert Out) (ft)	Headloss Coefficient (Standard)	Hydraulic Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)	Flow (Total Out) (cfs)
STM MH 2-7	4,957.12	4,950.69	(N/A)	(N/A)	4,950.49	0.500	4,951.79	4,952.04	4,952.49	4,952.29	16.60
STM IN 2-6	4,956.60	4,949.98	(N/A)	(N/A)	4,949.78	0.500	4,951.08	4,951.33	4,951.78	4,951.57	16.60
STM IN 2-5	4,955.91	4,949.11	(N/A)	(N/A)	4,948.91	0.500	4,950.22	4,950.46	4,950.91	4,950.71	16.60
STM MH 2-10	4,955.55	4,950.08	4,950.08	(N/A)	4,949.87	0.900	4,950.83	4,951.16	4,951.39	4,951.20	7.20
STM MH 2-9	4,955.07	4,949.51	(N/A)	(N/A)	4,949.31	0.500	4,950.27	4,950.45	4,950.96	4,950.63	7.20
STM MH 2-4	4,954.48	4,947.54	4,948.99	4,948.99	4,946.50	1.000	4,947.85	4,948.35	4,949.30	4,948.35	21.20
STM MH 2-8	4,954.23	4,948.69	(N/A)	(N/A)	4,948.49	0.500	4,949.44	4,949.62	4,950.14	4,949.81	7.20
STM MH 2-3	4,952.09	4,944.64	4,946.94	4,946.44	4,944.44	0.800	4,946.23	4,946.50	4,946.71	4,946.57	25.20
STM MH 2-1	4,950.63	4,942.90	(N/A)	(N/A)	4,942.70	0.800	4,944.17	4,944.61	4,944.99	4,944.72	34.20
STM MH 2-2	4,952.74	4,947.20	4,944.14	(N/A)	4,943.94	1.000	4,945.63	4,946.27	4,946.48	4,946.27	32.40

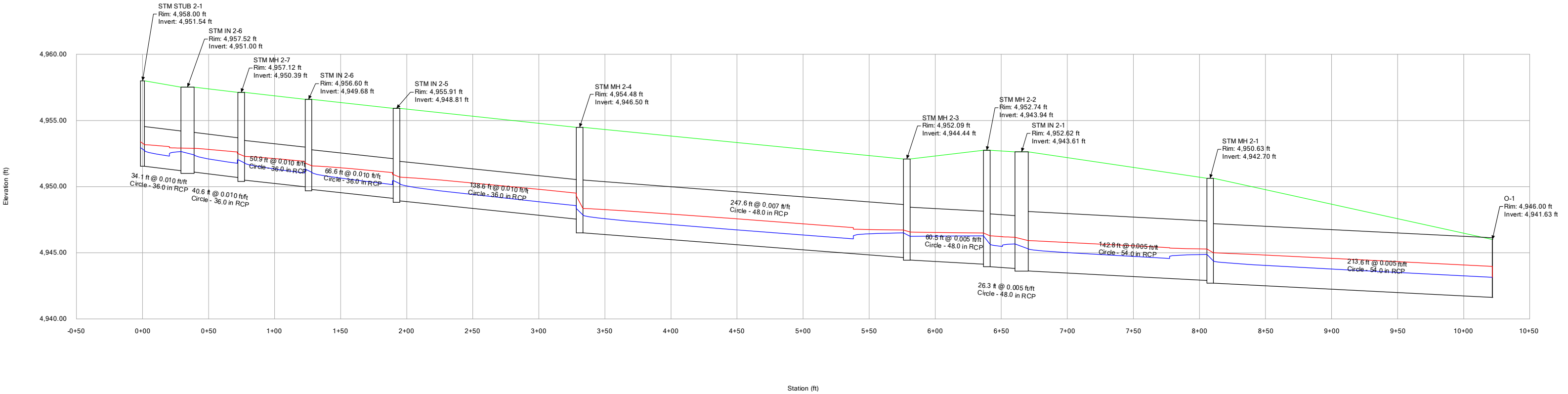
DRAINAGE BASIN A - MINOR STORM

FlexTable: Catch Basin Table

Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Headloss Coefficient (Standard)	Flow (Total Out) (cfs)	Elevation (Invert in 1) (ft)	Elevation (Invert Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
STM IN 2-2	4,951.93	4,947.03	0.500	1.80	(N/A)	4,947.03	4,947.58	4,947.49	4,947.74	4,947.66
STM IN 2-3	4,951.93	4,946.53	0.500	2.20	(N/A)	4,946.53	4,947.10	4,947.01	4,947.27	4,947.18
STM IN 2-8	4,955.43	4,950.12	0.500	2.00	(N/A)	4,950.22	4,951.18	4,951.16	4,951.23	4,951.20
STM IN 2-8	4,955.46	4,950.13	0.500	5.20	(N/A)	4,950.23	4,951.29	4,951.10	4,951.65	4,951.47
STM IN 2-4	4,954.33	4,948.76	0.500	1.70	(N/A)	4,949.17	4,949.75	4,949.66	4,949.93	4,949.84
STM IN 2-5	4,954.33	4,948.67	0.500	2.90	(N/A)	4,949.17	4,949.94	4,949.82	4,950.19	4,950.06
STM STUB 2-1	4,958.00	4,951.54	0.500	13.90	(N/A)	4,951.54	4,952.95	4,952.73	4,953.39	4,953.17
STM IN 2-6	4,957.52	4,951.00	0.500	16.60	4,951.20	4,951.10	4,952.65	4,952.40	4,952.91	4,952.89
STM IN 2-1	4,952.62	4,943.61	0.600	34.20	4,943.81	4,943.61	4,945.42	4,945.09	4,946.19	4,945.64

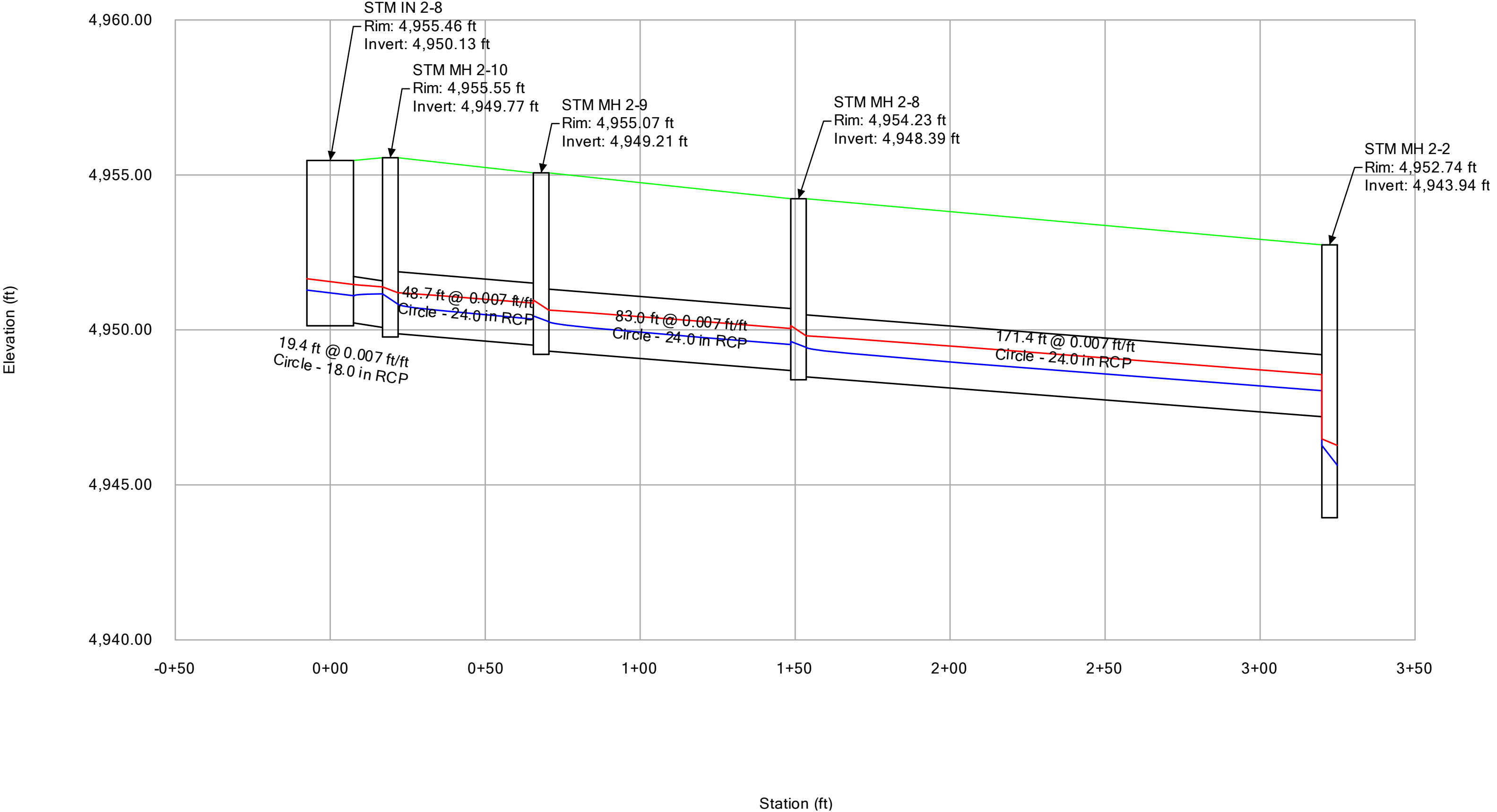
DRAINAGE BASIN A - MINOR STORM

Profile Report
Engineering Profile - Profile - 1 (Murata Basin A.stsw)

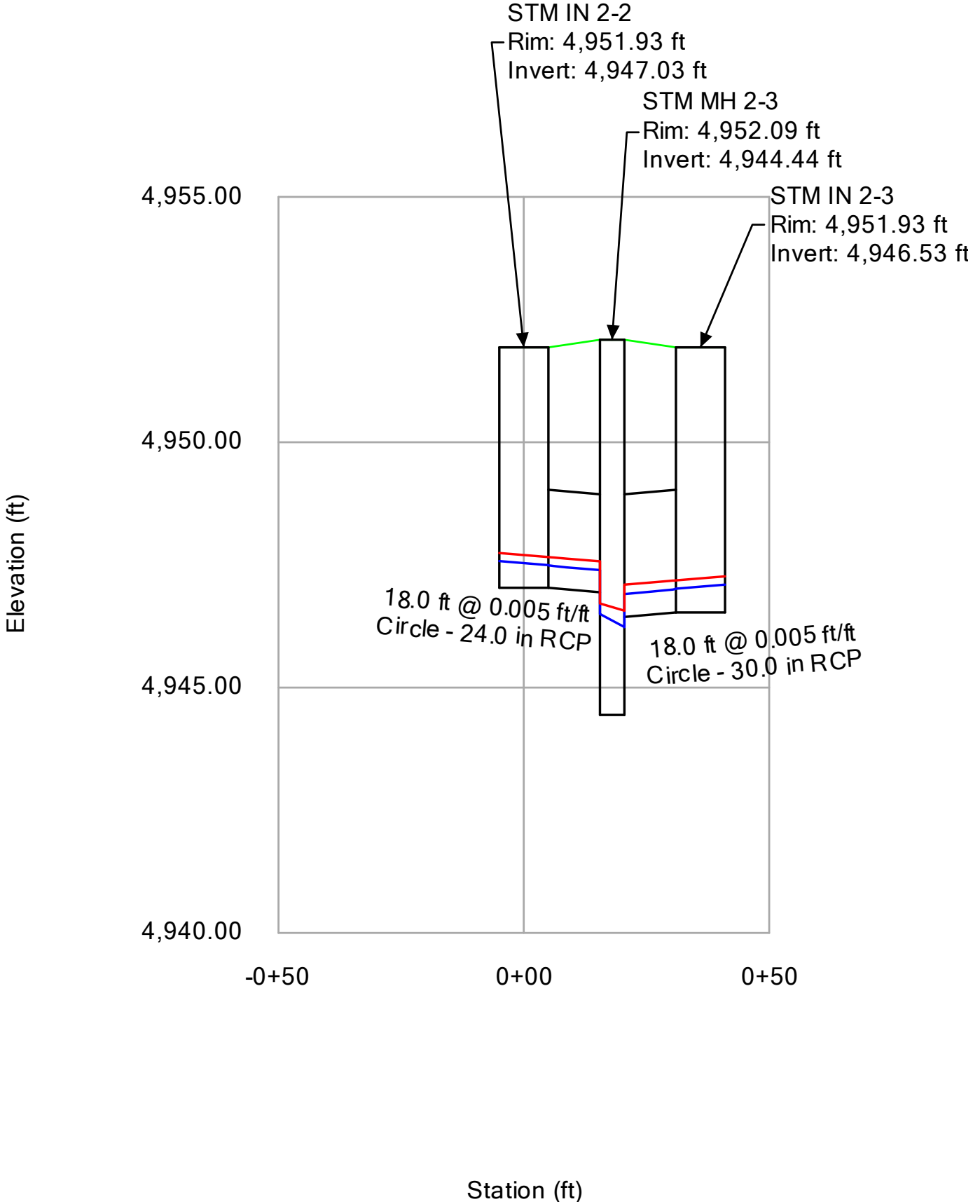


Profile Report

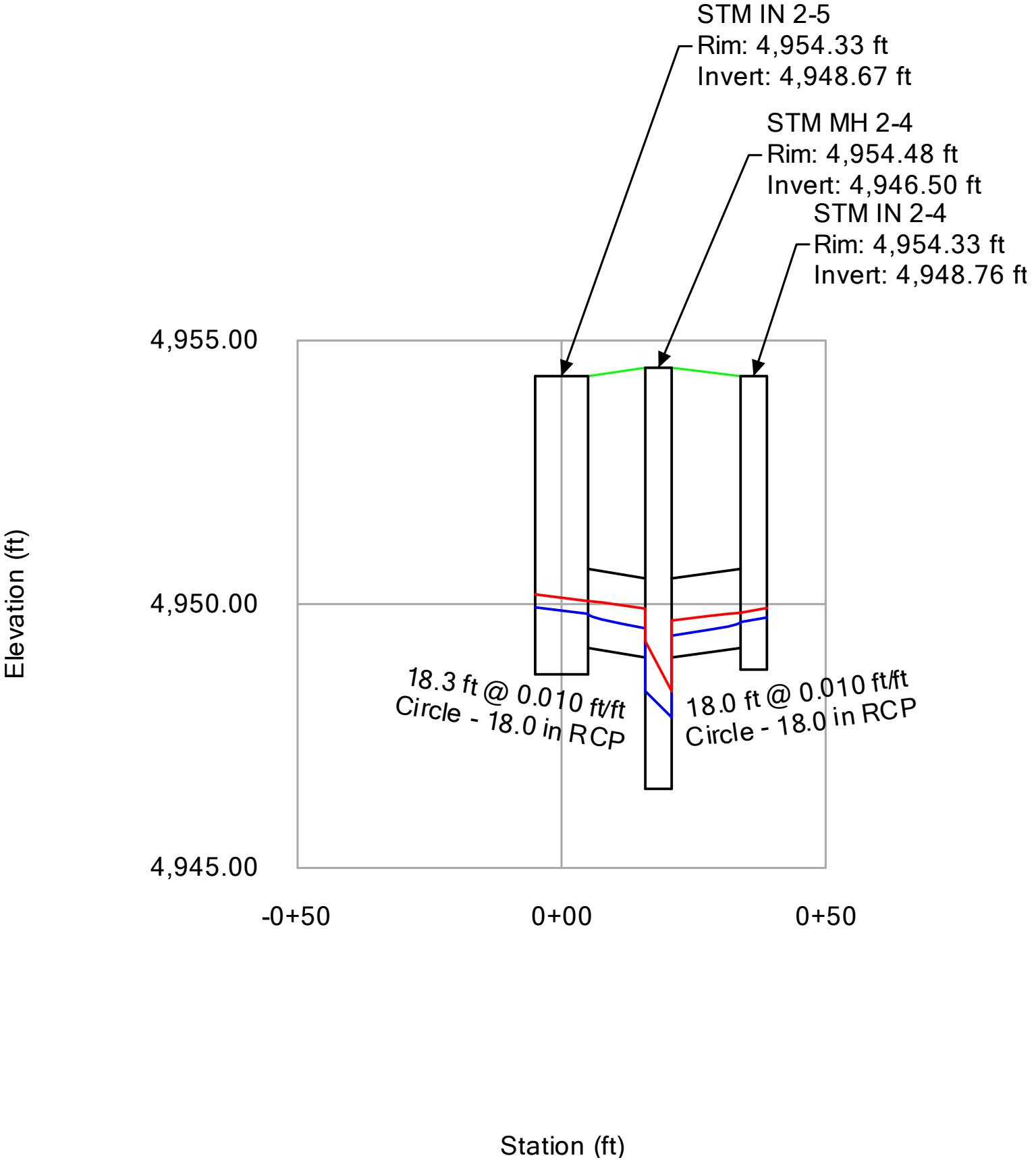
Engineering Profile - Profile - 2 (Murata Basin A.stsw)



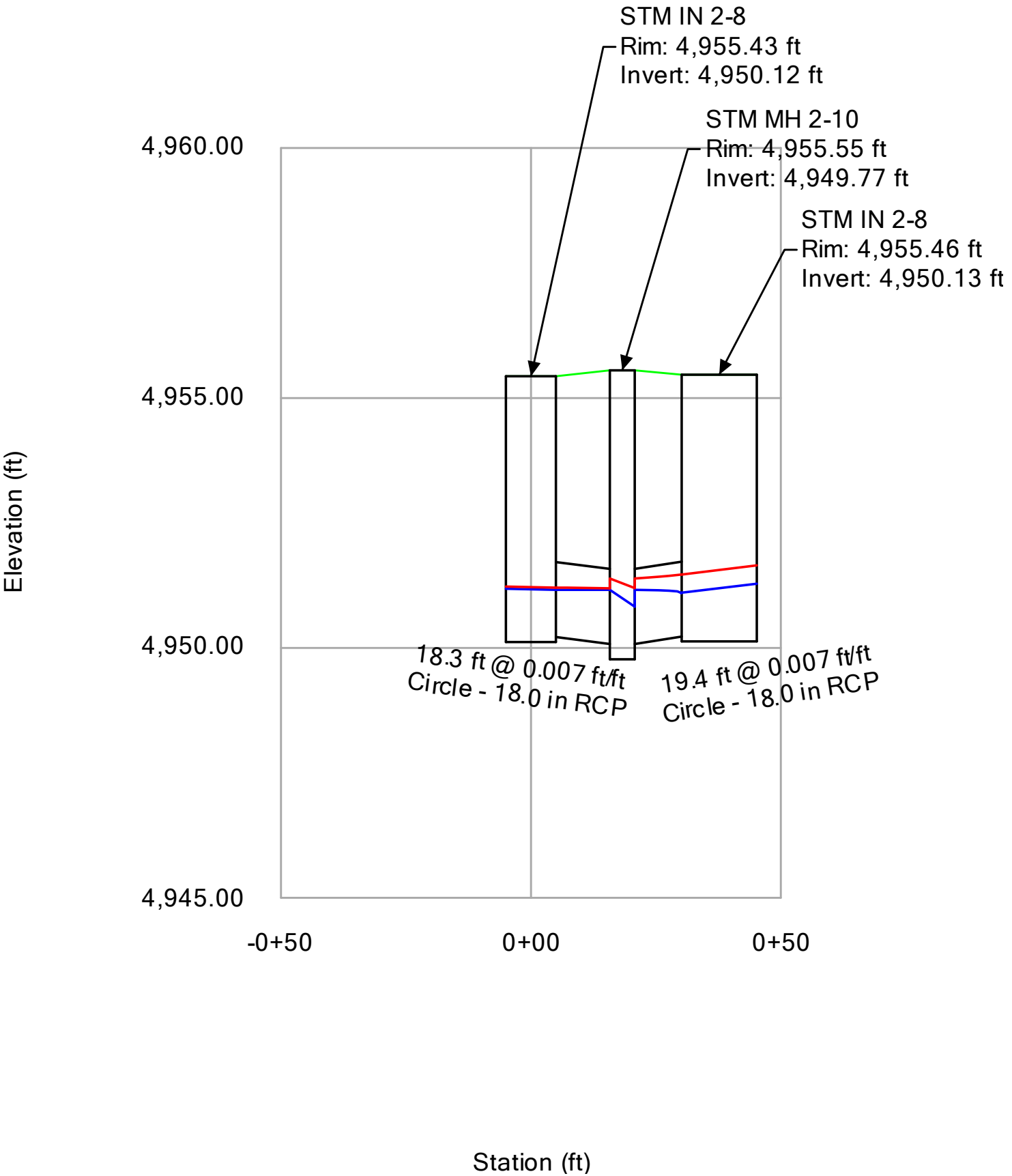
Profile Report
Engineering Profile - Profile - 3 (Murata Basin A.stsw)



Profile Report
Engineering Profile - Profile - 4 (Murata Basin A.stsw)



Profile Report
Engineering Profile - Profile - 5 (Murata Basin A.stsw)



DRAINAGE BASIN A - MAJOR STORM

FlexTable: Conduit Table

ID	Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Manning's n	Velocity (ft/s)	Flow (cfs)	Capacity (Full Flow) (cfs)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
95	STM STUB 2-1	STM IN 2-6	4,951.54	4,951.20	0.010	36.0	0.013	5.96	42.10	66.69	4,956.67	4,956.53	4,957.22	4,957.08
96	STM MH 2-1	O-1	4,942.70	4,941.63	0.005	54.0	0.013	9.89	125.00	139.04	4,946.03	4,944.92	4,947.55	4,946.48
121	STM IN 2-6	STM MH 2-7	4,951.10	4,950.69	0.010	36.0	0.013	8.42	59.50	66.69	4,955.98	4,955.66	4,957.08	4,956.76
126	STM MH 2-7	STM IN 2-6	4,950.49	4,949.98	0.010	36.0	0.013	8.42	59.50	66.69	4,955.11	4,954.70	4,956.21	4,955.80
127	STM IN 2-6	STM IN 2-5	4,949.78	4,949.11	0.010	36.0	0.013	8.42	59.50	66.69	4,954.15	4,953.62	4,955.25	4,954.72
128	STM IN 2-5	STM MH 2-4	4,948.91	4,947.54	0.010	36.0	0.013	8.42	59.50	66.42	4,953.07	4,951.97	4,954.17	4,953.07
129	STM IN 2-8	STM MH 2-10	4,950.22	4,950.08	0.007	18.0	0.013	3.45	6.10	9.10	4,953.37	4,953.30	4,953.55	4,953.49
130	STM MH 2-10	STM MH 2-9	4,949.87	4,949.51	0.007	24.0	0.013	6.27	19.70	19.59	4,952.75	4,952.38	4,953.36	4,953.00
131	STM IN 2-8	STM MH 2-10	4,950.23	4,950.08	0.007	18.0	0.013	7.70	13.60	9.10	4,953.63	4,953.30	4,954.55	4,954.22
132	STM MH 2-9	STM MH 2-8	4,949.31	4,948.69	0.007	24.0	0.013	6.27	19.70	19.59	4,952.08	4,951.45	4,952.69	4,952.06
133	STM IN 2-4	STM MH 2-4	4,949.17	4,948.99	0.010	18.0	0.013	1.98	3.50	10.49	4,951.99	4,951.97	4,952.05	4,952.03
134	STM IN 2-5	STM MH 2-4	4,949.17	4,948.99	0.010	18.0	0.013	4.24	7.50	10.41	4,952.06	4,951.97	4,952.34	4,952.25
135	STM MH 2-4	STM MH 2-3	4,946.50	4,944.64	0.007	48.0	0.013	5.61	70.50	124.39	4,951.48	4,950.88	4,951.97	4,951.37
136	STM MH 2-8	STM MH 2-2	4,948.49	4,947.20	0.007	24.0	0.013	6.27	19.70	19.59	4,951.14	4,949.84	4,951.75	4,950.46
137	STM MH 2-2	STM IN 2-1	4,943.94	4,943.81	0.005	48.0	0.013	9.37	117.70	101.56	4,948.48	4,948.30	4,949.84	4,949.67
138	STM MH 2-3	STM MH 2-2	4,944.44	4,944.14	0.005	48.0	0.013	7.80	98.00	101.56	4,950.13	4,949.84	4,951.07	4,950.79
139	STM IN 2-1	STM MH 2-1	4,943.61	4,942.90	0.005	54.0	0.013	9.89	125.00	139.04	4,947.66	4,947.25	4,948.73	4,948.23
140	STM IN 2-2	STM MH 2-3	4,947.03	4,946.94	0.005	24.0	0.013	3.47	10.90	16.00	4,950.92	4,950.88	4,951.11	4,951.07
141	STM IN 2-3	STM MH 2-3	4,946.53	4,946.44	0.005	30.0	0.013	3.38	16.60	29.00	4,950.91	4,950.88	4,951.09	4,951.06

DRAINAGE BASIN A - MAJOR STORM

FlexTable: Manhole Table

Label	Elevation (Rim) (ft)	Elevation (Invert in 1) (ft)	Elevation (Invert in 2) (ft)	Elevation (Invert in 3) (ft)	Elevation (Invert Out) (ft)	Headloss Coefficient (Standard)	Hydraulic Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)	Flow (Total Out) (cfs)
STM MH 2-7	4,957.12	4,950.69	(N/A)	(N/A)	4,950.49	0.500	4,954.96	4,955.51	4,956.61	4,956.06	59.50
STM IN 2-6	4,956.60	4,949.98	(N/A)	(N/A)	4,949.78	0.500	4,954.00	4,954.55	4,955.65	4,955.10	59.50
STM IN 2-5	4,955.91	4,949.11	(N/A)	(N/A)	4,948.91	0.500	4,952.92	4,953.47	4,954.57	4,954.02	59.50
STM MH 2-10	4,955.55	4,950.08	4,950.08	(N/A)	4,949.87	0.900	4,952.60	4,953.15	4,954.07	4,953.21	19.70
STM MH 2-9	4,955.07	4,949.51	(N/A)	(N/A)	4,949.31	0.500	4,951.93	4,952.23	4,952.84	4,952.54	19.70
STM MH 2-4	4,954.48	4,947.54	4,948.99	4,948.99	4,946.50	1.000	4,951.33	4,951.82	4,952.92	4,951.82	70.50
STM MH 2-8	4,954.23	4,948.69	(N/A)	(N/A)	4,948.49	0.500	4,950.99	4,951.30	4,951.91	4,951.60	19.70
STM MH 2-3	4,952.09	4,944.64	4,946.94	4,946.44	4,944.44	0.800	4,949.97	4,950.73	4,951.22	4,950.92	98.00
STM MH 2-1	4,950.63	4,942.90	(N/A)	(N/A)	4,942.70	0.800	4,945.56	4,946.77	4,947.88	4,947.08	125.00
STM MH 2-2	4,952.74	4,947.20	4,944.14	(N/A)	4,943.94	1.000	4,948.33	4,949.69	4,950.30	4,949.69	117.70

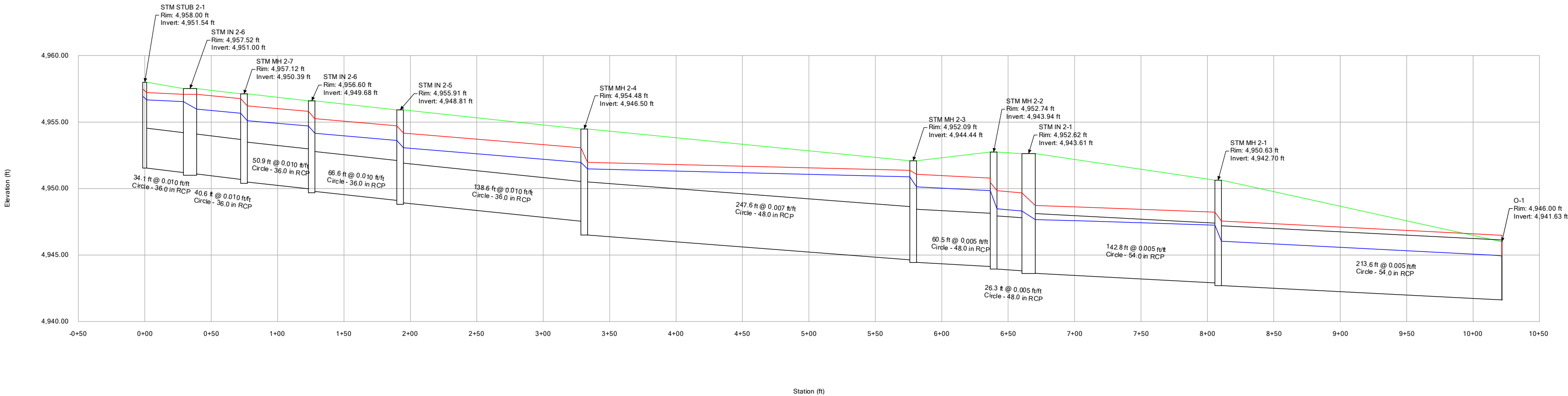
DRAINAGE BASIN A - MAJOR STORM

FlexTable: Catch Basin Table

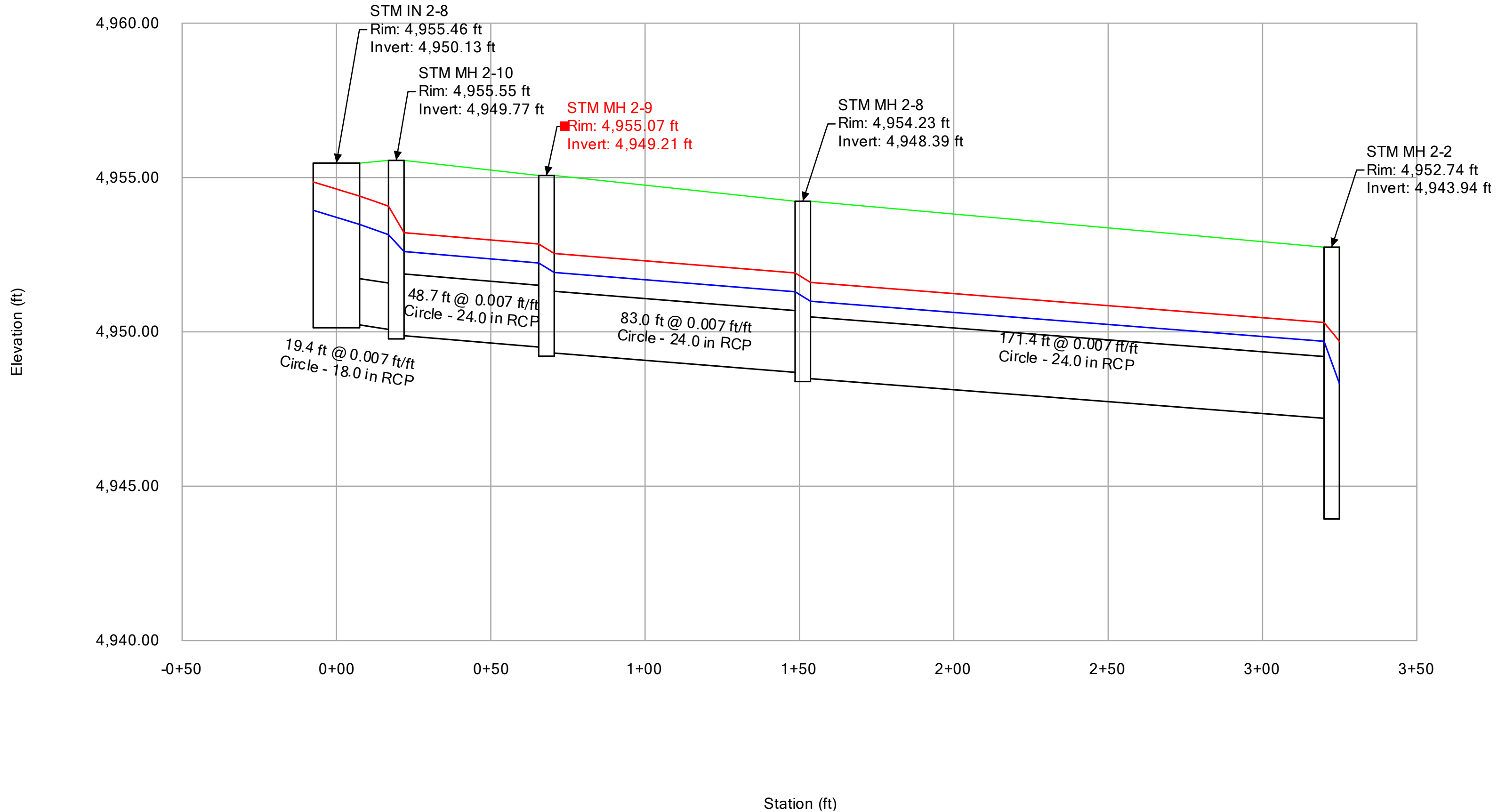
Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Headloss Coefficient (Standard)	Flow (Total Out) (cfs)	Elevation (Invert in 1) (ft)	Elevation (Invert Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
STM IN 2-2	4,951.93	4,947.03	0.500	10.90	(N/A)	4,947.03	4,950.87	4,950.77	4,951.05	4,950.96
STM IN 2-3	4,951.93	4,946.53	0.500	16.60	(N/A)	4,946.53	4,950.85	4,950.76	4,951.03	4,950.94
STM IN 2-8	4,955.43	4,950.12	0.500	6.10	(N/A)	4,950.22	4,953.31	4,953.21	4,953.49	4,953.40
STM IN 2-8	4,955.46	4,950.13	0.500	13.60	(N/A)	4,950.23	4,953.94	4,953.48	4,954.86	4,954.40
STM IN 2-4	4,954.33	4,948.76	0.500	3.50	(N/A)	4,949.17	4,951.87	4,951.84	4,951.93	4,951.90
STM IN 2-5	4,954.33	4,948.67	0.500	7.50	(N/A)	4,949.17	4,952.05	4,951.91	4,952.33	4,952.19
STM STUB 2-1	4,958.00	4,951.54	0.500	42.10	(N/A)	4,951.54	4,956.79	4,956.52	4,957.34	4,957.07
STM IN 2-6	4,957.52	4,951.00	0.500	59.50	4,951.20	4,951.10	4,956.38	4,955.83	4,956.93	4,956.93
STM IN 2-1	4,952.62	4,943.61	0.600	125.00	4,943.81	4,943.61	4,948.15	4,947.49	4,949.52	4,948.59

DRAINAGE BASIN A - MAJOR STORM

Profile Report
Engineering Profile - Profile - 1 (Murata Basin A.stsw)

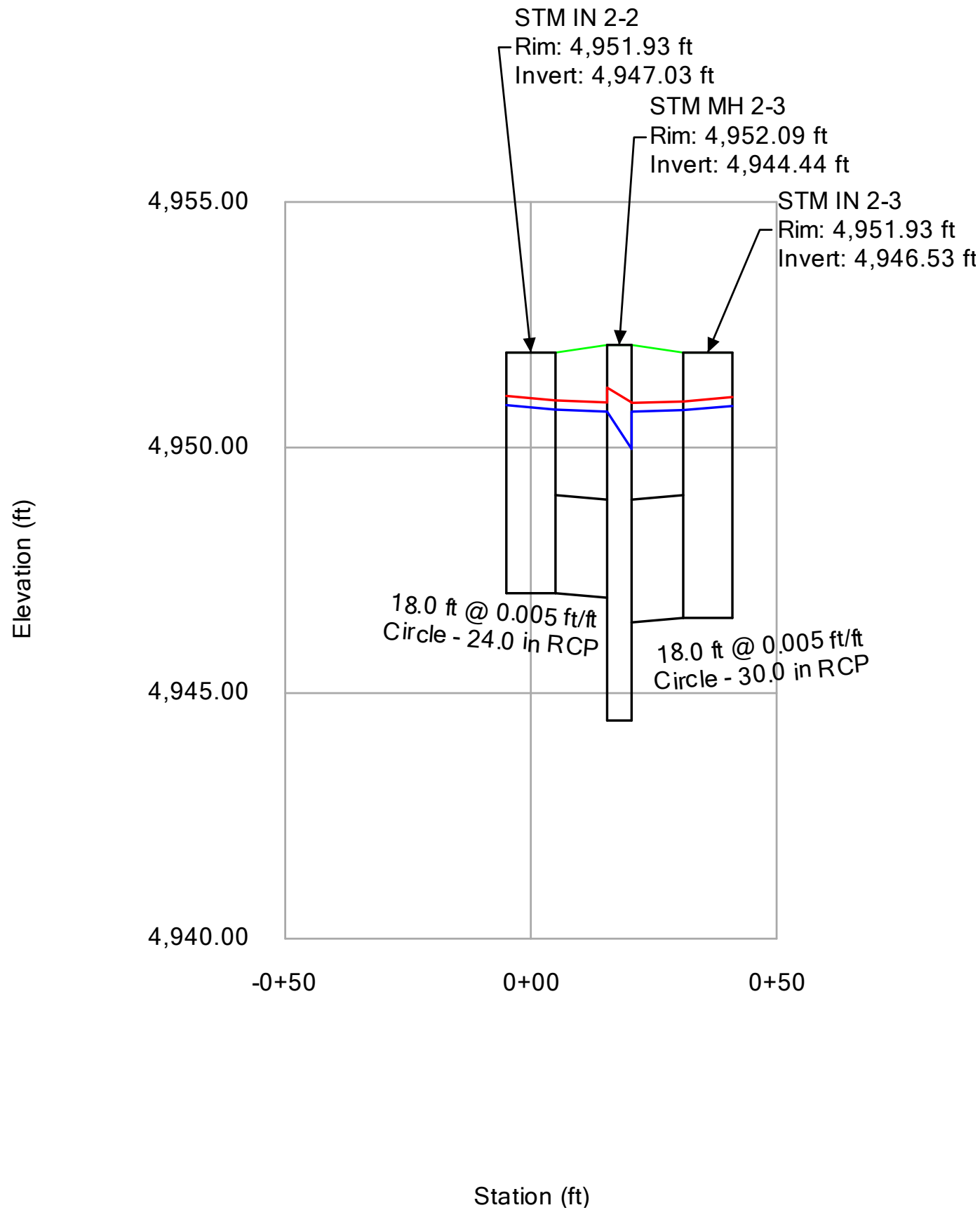


Profile Report
Engineering Profile - Profile - 2 (Murata Basin A.stsw)

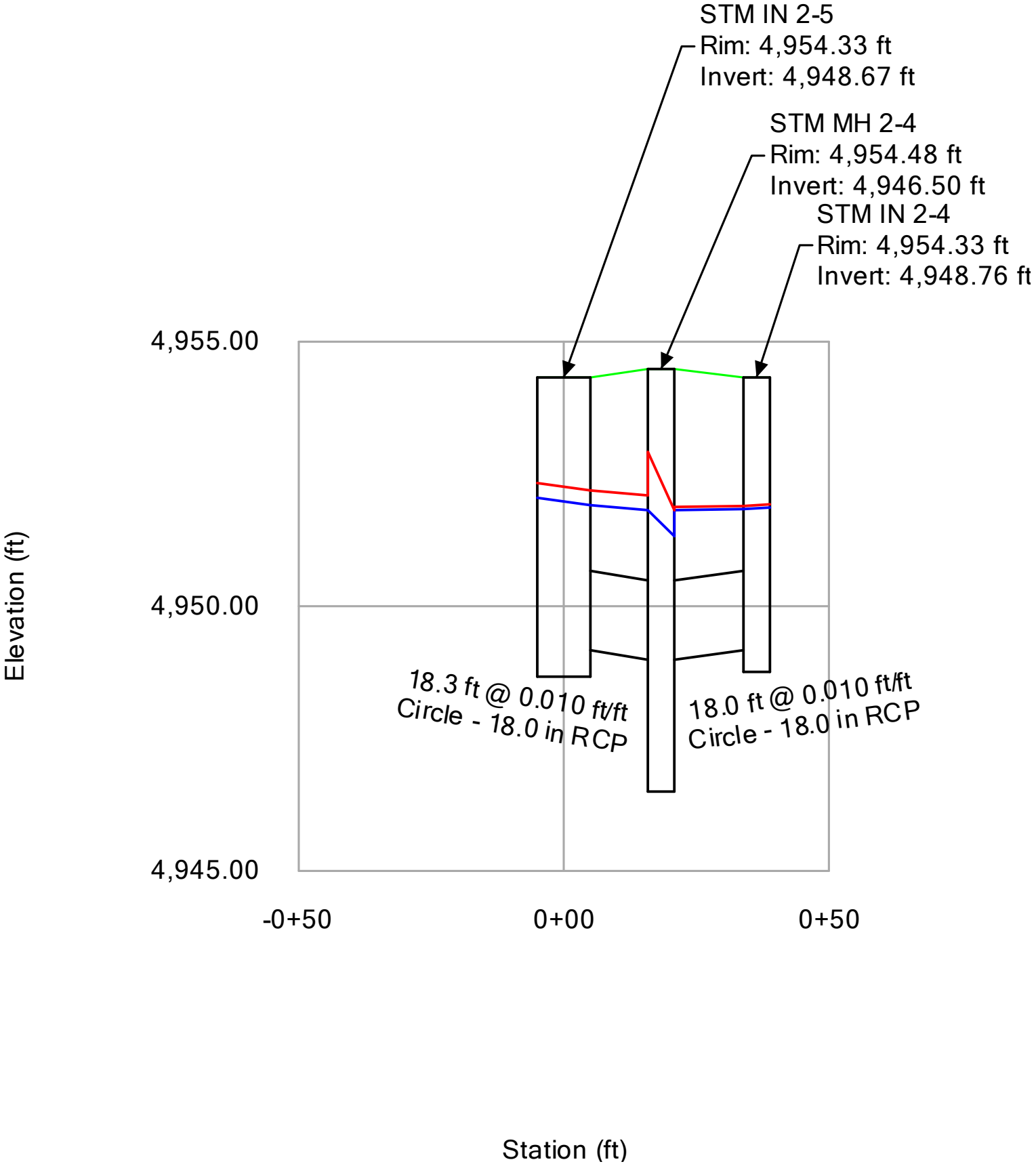


Profile Report

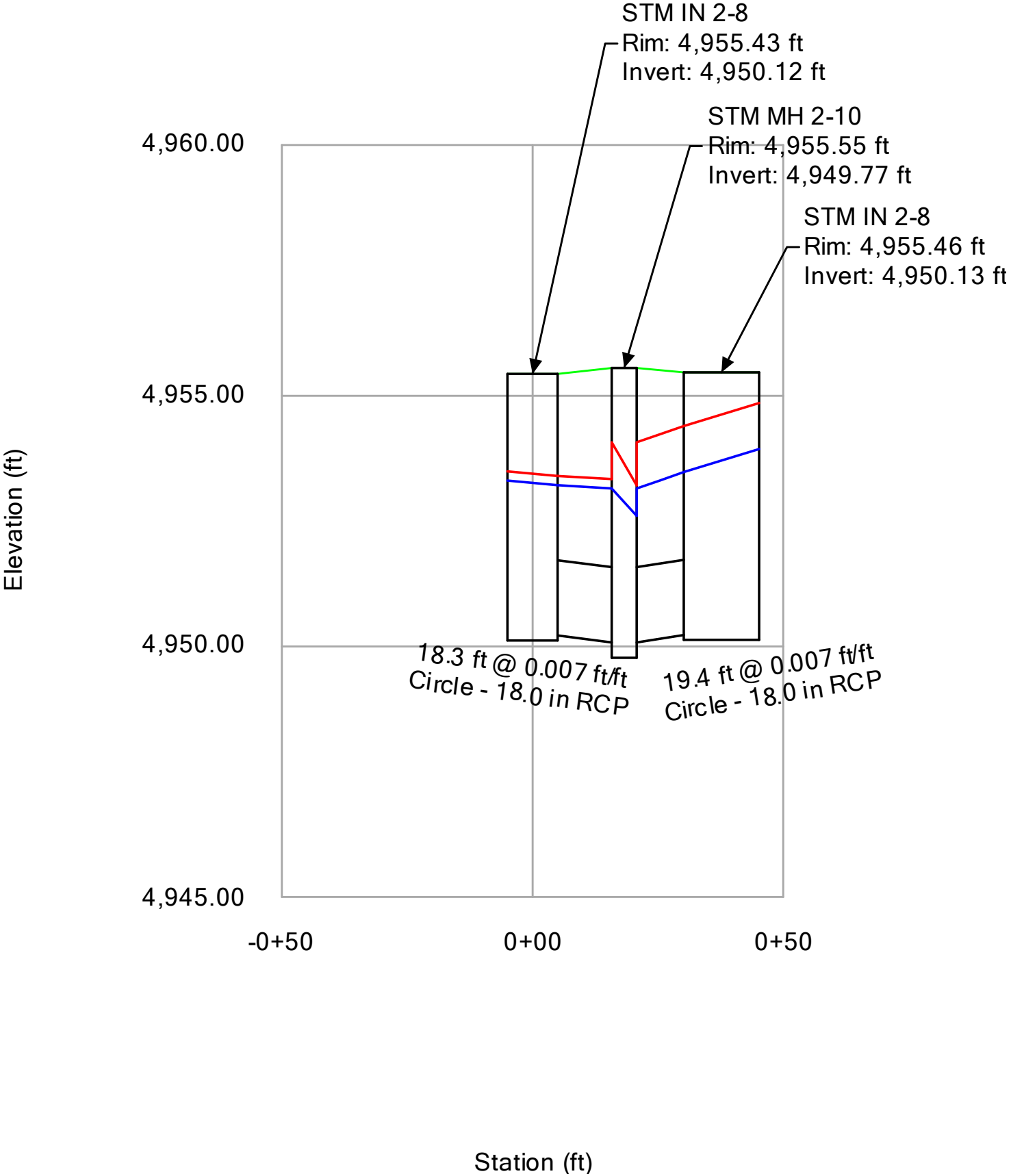
Engineering Profile - Profile - 3 (Murata Basin A.stsw)



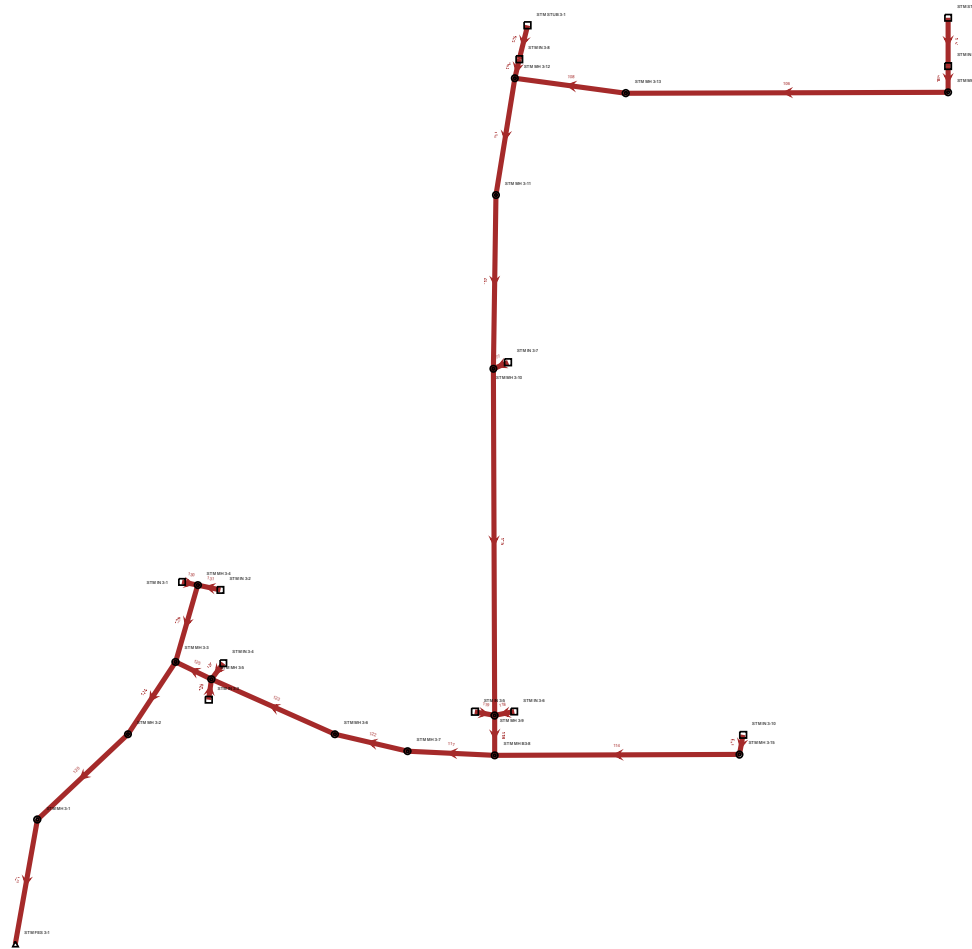
Profile Report
Engineering Profile - Profile - 4 (Murata Basin A.stsw)



Profile Report
Engineering Profile - Profile - 5 (Murata Basin A.stsw)



DRAINAGE BASIN B



DRAINAGE BASIN B - MINOR STORM

FlexTable: Conduit Table

ID	Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Manning's n	Velocity (ft/s)	Flow (cfs)	Capacity (Full Flow) (cfs)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
105	STM IN 3-9	STM MH 3-14	4,962.16	4,961.92	0.010	30.0	0.013	6.70	9.00	41.01	4,963.16	4,963.02	4,963.53	4,963.31
106	STM MH 3-14	STM MH 3-13	4,961.72	4,958.76	0.010	30.0	0.013	6.70	9.00	41.01	4,962.72	4,959.76	4,963.09	4,960.13
107	STM STUB 3-2	STM IN 3-9	4,963.10	4,962.66	0.010	24.0	0.013	6.40	7.30	22.51	4,964.06	4,963.45	4,964.43	4,964.07
108	STM MH 3-13	STM MH 3-12	4,958.26	4,957.23	0.010	36.0	0.013	6.58	9.00	66.73	4,959.21	4,958.55	4,959.55	4,958.69
109	STM STUB 3-1	STM IN 3-8	4,958.18	4,958.02	0.005	30.0	0.013	5.57	11.50	29.00	4,959.32	4,959.27	4,959.75	4,959.61
110	STM IN 3-8	STM MH 3-12	4,957.82	4,957.73	0.005	30.0	0.013	5.76	13.10	29.00	4,959.04	4,958.91	4,959.51	4,959.42
111	STM MH 3-12	STM MH 3-11	4,956.73	4,956.19	0.005	42.0	0.013	6.51	22.10	70.91	4,958.17	4,957.70	4,958.72	4,958.18
112	STM MH 3-11	STM MH 3-10	4,955.99	4,955.03	0.006	42.0	0.013	6.98	22.10	78.04	4,957.43	4,956.48	4,957.98	4,957.02
113	STM IN 3-10	STM MH 3-15	4,956.69	4,956.55	0.008	18.0	0.013	4.73	3.20	9.18	4,957.37	4,957.17	4,957.63	4,957.51
114	STM MH 3-15	STM MH B3-8	4,956.35	4,954.66	0.008	18.0	0.013	4.70	3.20	9.11	4,957.03	4,955.27	4,957.29	4,955.62
115	STM MH 3-10	STM MH 3-9	4,954.53	4,952.94	0.005	48.0	0.013	6.84	27.20	101.49	4,956.07	4,954.99	4,956.65	4,955.26
116	STM MH 3-9	STM MH B3-8	4,952.74	4,952.56	0.005	48.0	0.013	7.01	30.30	100.66	4,954.37	4,954.08	4,954.99	4,954.82
117	STM MH B3-8	STM MH 3-7	4,952.06	4,951.46	0.007	54.0	0.013	8.31	33.50	170.08	4,953.72	4,953.23	4,954.33	4,953.75
118	STM IN 3-6	STM MH 3-9	4,953.88	4,953.79	0.005	24.0	0.013	3.10	1.40	15.78	4,954.99	4,954.99	4,955.00	4,954.99
119	STM IN 3-5	STM MH 3-9	4,953.88	4,953.79	0.005	24.0	0.013	3.30	1.70	15.92	4,954.99	4,954.99	4,955.00	4,955.00
120	STM MH 3-2	STM MH 3-1	4,948.35	4,947.78	0.005	54.0	0.013	7.75	44.10	138.78	4,950.27	4,949.86	4,950.99	4,950.44
121	STM MH 3-1	STM FES 3-1	4,947.58	4,947.01	0.005	54.0	0.013	7.71	44.10	137.82	4,949.50	4,948.76	4,950.22	4,949.68
122	STM MH 3-7	STM MH 3-6	4,951.26	4,950.75	0.007	54.0	0.013	8.30	33.50	169.64	4,952.92	4,952.52	4,953.53	4,953.04
123	STM MH 3-6	STM MH 3-5	4,950.55	4,949.62	0.007	54.0	0.013	8.31	33.50	170.10	4,952.21	4,951.87	4,952.82	4,952.15
124	STM MH 3-3	STM MH 3-2	4,948.95	4,948.55	0.005	54.0	0.013	7.78	44.10	139.54	4,950.87	4,950.63	4,951.59	4,951.21
125	STM MH 3-5	STM MH 3-3	4,949.42	4,949.15	0.007	54.0	0.013	8.60	38.40	169.06	4,951.20	4,951.37	4,951.87	4,951.75
126	STM MH 3-4	STM MH 3-3	4,951.11	4,950.75	0.005	30.0	0.013	4.59	5.70	29.00	4,951.90	4,951.50	4,952.19	4,951.83
128	STM IN 3-4	STM MH 3-5	4,951.85	4,951.76	0.005	24.0	0.013	2.99	1.20	16.00	4,952.23	4,952.13	4,952.36	4,952.27
129	STM IN 3-3	STM MH 3-5	4,951.85	4,951.76	0.005	24.0	0.013	4.14	3.70	16.00	4,952.53	4,952.41	4,952.77	4,952.68
130	STM IN 3-1	STM MH 3-4	4,951.68	4,951.61	0.005	24.0	0.013	3.71	2.50	16.00	4,952.23	4,952.16	4,952.43	4,952.36
131	STM IN 3-2	STM MH 3-4	4,951.72	4,951.61	0.005	24.0	0.013	3.98	3.20	16.00	4,952.34	4,952.22	4,952.57	4,952.46
177	STM IN 3-7	STM MH 3-10	4,955.67	4,955.58	0.006	24.0	0.013	4.88	5.10	17.74	4,956.47	4,956.48	4,956.76	4,956.69

DRAINAGE BASIN B - MINOR STORM

FlexTable: Manhole Table

Label	Elevation (Rim) (ft)	Elevation (Invert in 1) (ft)	Elevation (Invert in 2) (ft)	Elevation (Invert in 3) (ft)	Elevation (Invert Out) (ft)	Headloss Coefficient (Standard)	Hydraulic Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)	Flow (Total Out) (cfs)
STM MH 3-14	4,967.83	4,961.92	(N/A)	(N/A)	4,961.72	0.800	4,962.72	4,963.02	4,963.31	4,963.09	9.00
STM MH 3-13	4,964.73	4,958.76	(N/A)	(N/A)	4,958.26	0.500	4,959.21	4,959.38	4,959.75	4,959.55	9.00
STM MH 3-12	4,964.16	4,957.23	4,957.73	(N/A)	4,956.73	0.700	4,958.17	4,958.55	4,958.69	4,958.72	22.10
STM MH 3-11	4,962.68	4,956.19	(N/A)	(N/A)	4,955.99	0.500	4,957.43	4,957.70	4,958.18	4,957.98	22.10
STM MH 3-15	4,961.60	4,956.55	(N/A)	(N/A)	4,956.35	0.600	4,957.03	4,957.19	4,957.53	4,957.29	3.20
STM MH 3-10	4,961.44	4,955.03	4,955.58	(N/A)	4,954.53	0.700	4,956.07	4,956.48	4,957.02	4,956.65	27.20
STM MH B3-8	4,959.75	4,954.66	4,952.56	(N/A)	4,952.06	0.700	4,953.72	4,954.15	4,954.89	4,954.33	33.50
STM MH 3-9	4,959.51	4,952.94	4,953.79	4,953.79	4,952.74	1.000	4,954.37	4,954.99	4,955.00	4,954.99	30.30
STM MH 3-1	4,959.20	4,947.78	(N/A)	(N/A)	4,947.58	0.500	4,949.50	4,949.86	4,950.44	4,950.22	44.10
STM MH 3-7	4,959.09	4,951.46	(N/A)	(N/A)	4,951.26	0.500	4,952.92	4,953.23	4,953.75	4,953.53	33.50
STM MH 3-6	4,958.52	4,950.75	(N/A)	(N/A)	4,950.55	0.500	4,952.21	4,952.52	4,953.04	4,952.82	33.50
STM MH 3-2	4,958.29	4,948.55	(N/A)	(N/A)	4,948.35	0.500	4,950.27	4,950.63	4,951.21	4,950.99	44.10
STM MH 3-3	4,957.65	4,949.15	4,950.75	(N/A)	4,948.95	0.700	4,950.87	4,951.37	4,951.75	4,951.59	44.10
STM MH 3-5	4,957.50	4,949.62	4,951.76	4,951.76	4,949.42	1.000	4,951.20	4,951.87	4,952.15	4,951.87	38.40
STM MH 3-4	4,957.20	4,951.61	4,951.61	(N/A)	4,951.11	0.900	4,951.90	4,952.16	4,952.36	4,952.19	5.70

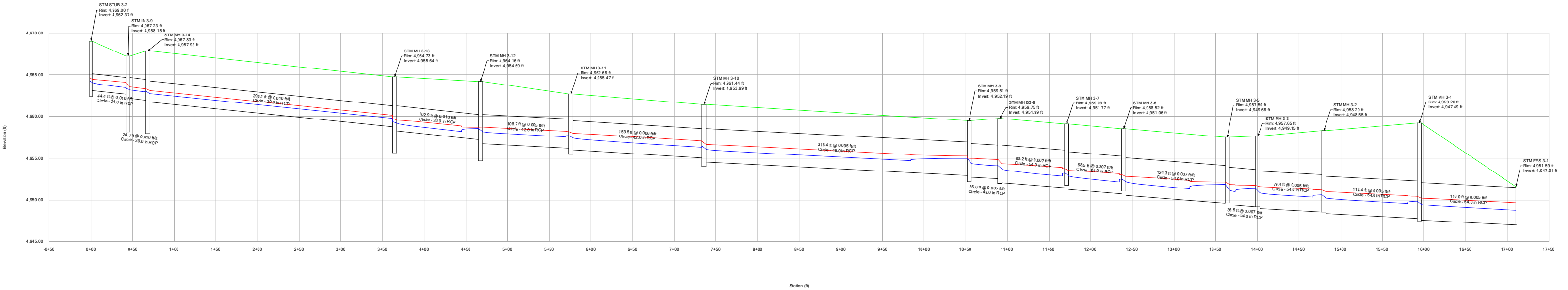
DRAINAGE BASIN B - MINOR STORM

FlexTable: Catch Basin Table

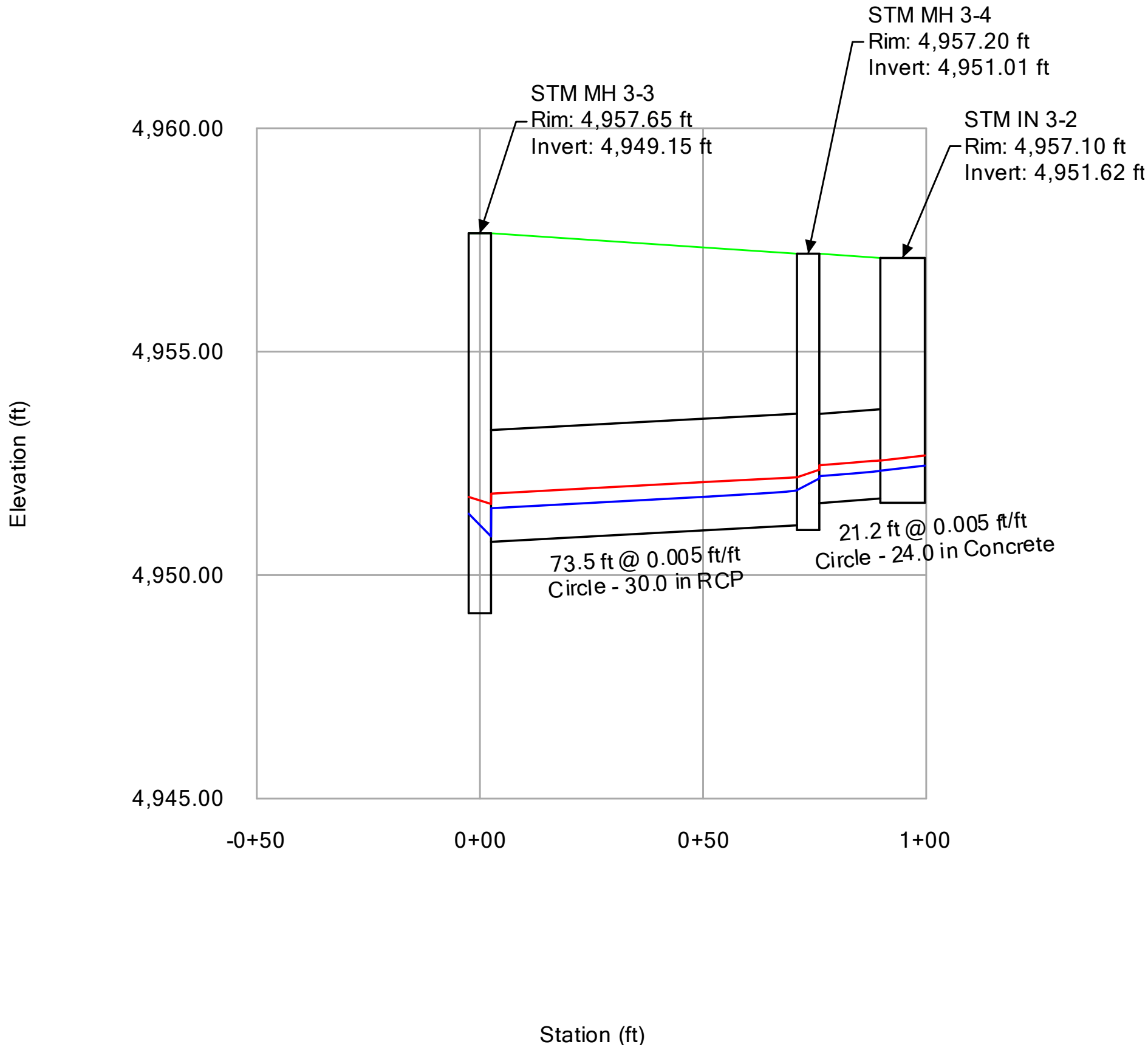
Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Headloss Coefficient (Standard)	Flow (Total Out) (cfs)	Elevation (Invert in 1) (ft)	Elevation (Invert Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
STM IN 3-8	4,964.18	4,956.80	0.500	13.10	4,958.02	4,957.82	4,959.27	4,959.04	4,959.61	4,959.51
STM STUB 3-1	4,965.00	4,957.26	0.500	11.50	(N/A)	4,958.18	4,959.53	4,959.32	4,959.97	4,959.75
STM IN 3-9	4,967.23	4,958.15	0.500	9.00	4,962.66	4,962.16	4,963.35	4,963.16	4,963.96	4,963.53
STM STUB 3-2	4,969.00	4,962.37	0.500	7.30	(N/A)	4,963.10	4,964.25	4,964.06	4,964.62	4,964.43
STM IN 3-7	4,961.32	4,955.67	0.500	5.10	(N/A)	4,955.67	4,956.61	4,956.47	4,956.91	4,956.76
STM IN 3-6	4,959.37	4,953.78	0.500	1.40	(N/A)	4,953.88	4,954.99	4,954.99	4,955.00	4,955.00
STM IN 3-5	4,959.37	4,953.78	0.500	1.70	(N/A)	4,953.88	4,954.99	4,954.99	4,955.01	4,955.00
STM IN 3-10	4,961.44	4,956.10	0.500	3.20	(N/A)	4,956.69	4,957.50	4,957.37	4,957.76	4,957.63
STM IN 3-4	4,957.37	4,951.75	0.500	1.20	(N/A)	4,951.85	4,952.30	4,952.23	4,952.43	4,952.36
STM IN 3-3	4,957.39	4,951.75	0.500	3.70	(N/A)	4,951.85	4,952.65	4,952.53	4,952.90	4,952.77
STM IN 3-2	4,957.10	4,951.62	0.500	3.20	(N/A)	4,951.72	4,952.45	4,952.34	4,952.68	4,952.57
STM IN 3-1	4,957.10	4,951.58	0.500	2.50	(N/A)	4,951.68	4,952.33	4,952.23	4,952.53	4,952.43

DRAINAGE BASIN B - MINOR STORM

Profile Report
Engineering Profile - Profile - 1 (Murata Basin B.stsw)



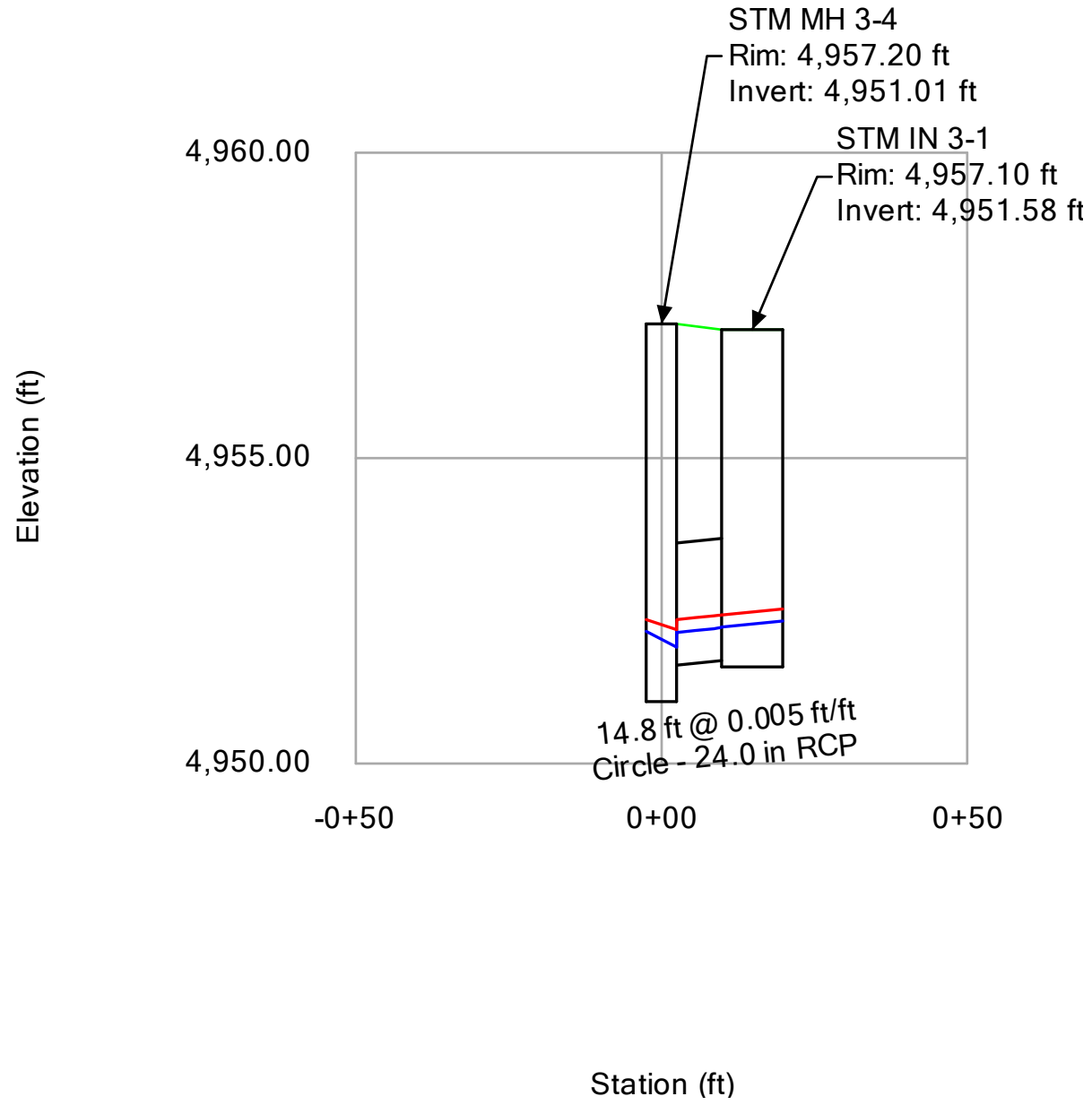
Profile Report
Engineering Profile - Profile - 2 (Murata Basin B.stsw)



DRAINAGE BASIN B - MINOR STORM

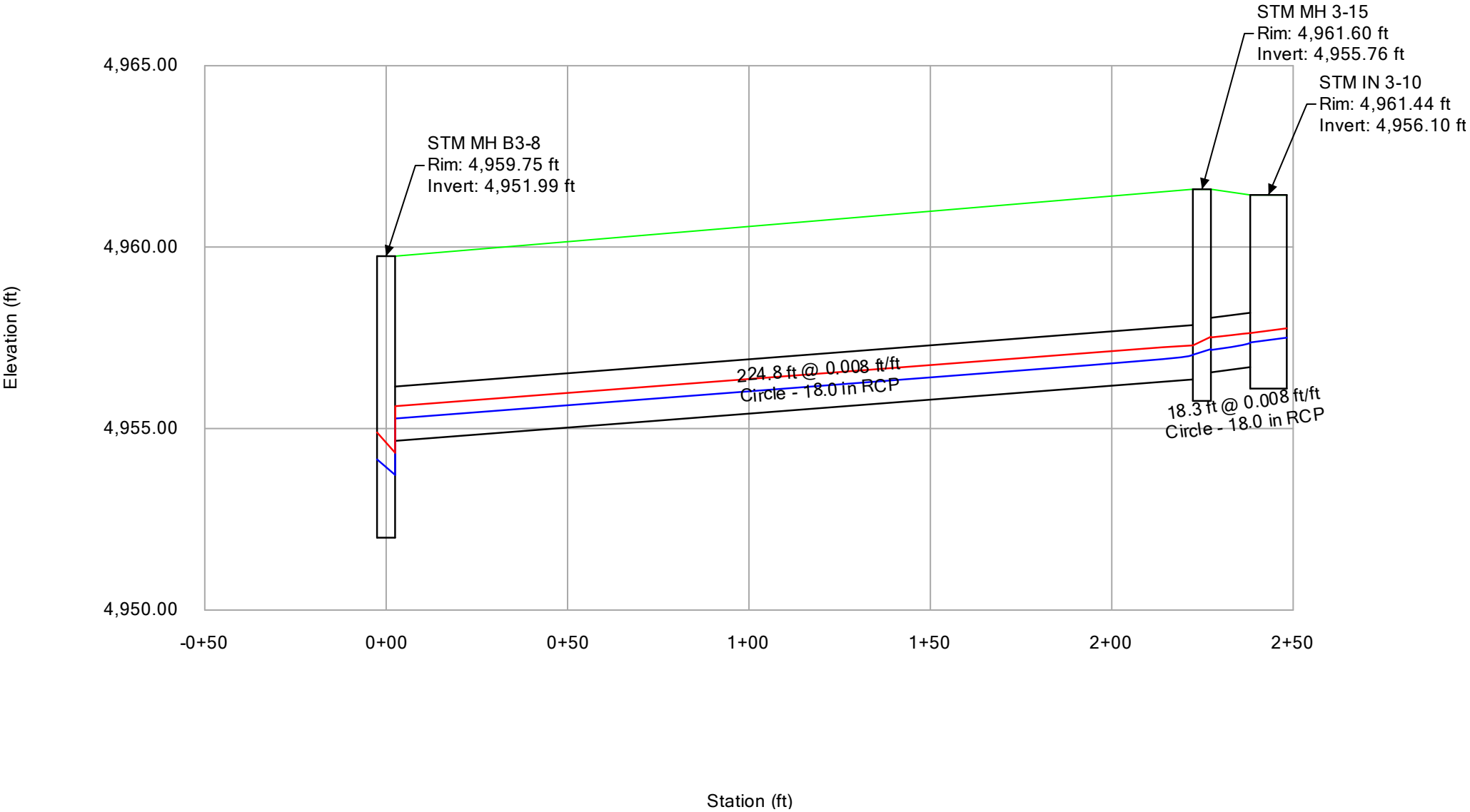
Profile Report

Engineering Profile - Profile - 3 (Murata Basin B.stsw)



DRAINAGE BASIN B - MINOR STORM

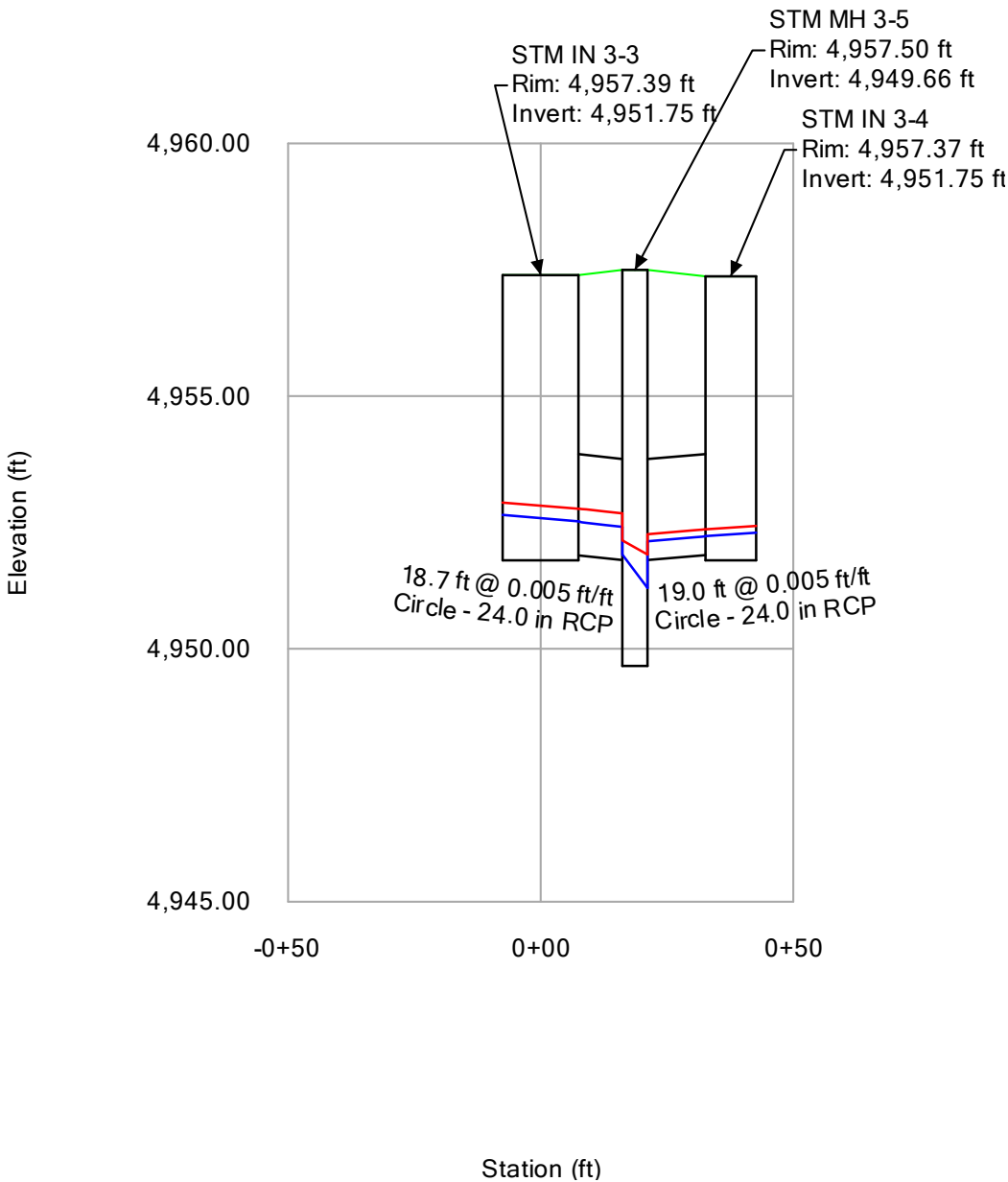
Profile Report
Engineering Profile - Profile - 4 (Murata Basin B.stsw)



DRAINAGE BASIN B - MINOR STORM

Profile Report

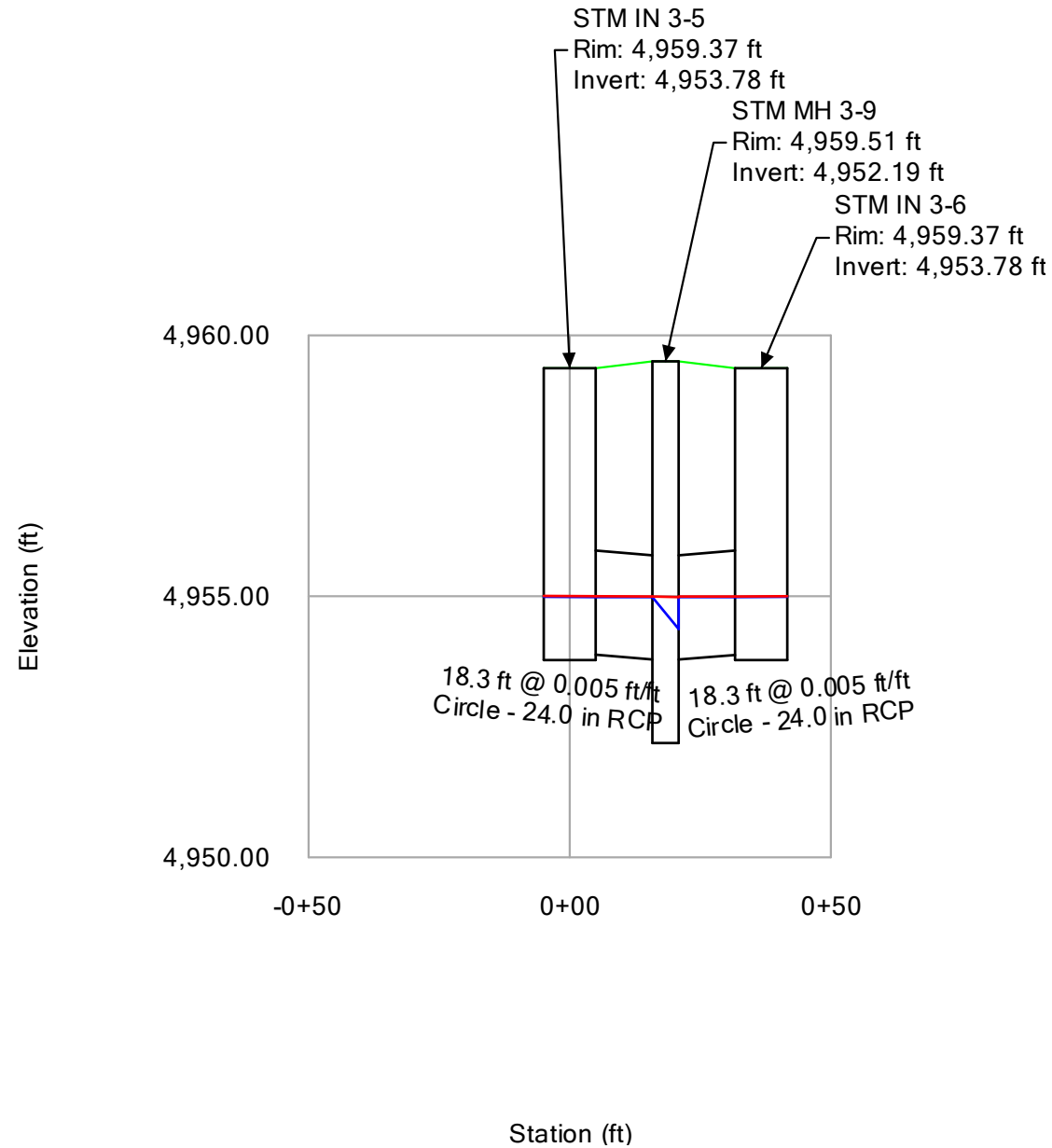
Engineering Profile - Profile - 5 (Murata Basin B.stsw)



DRAINAGE BASIN B - MINOR STORM

Profile Report

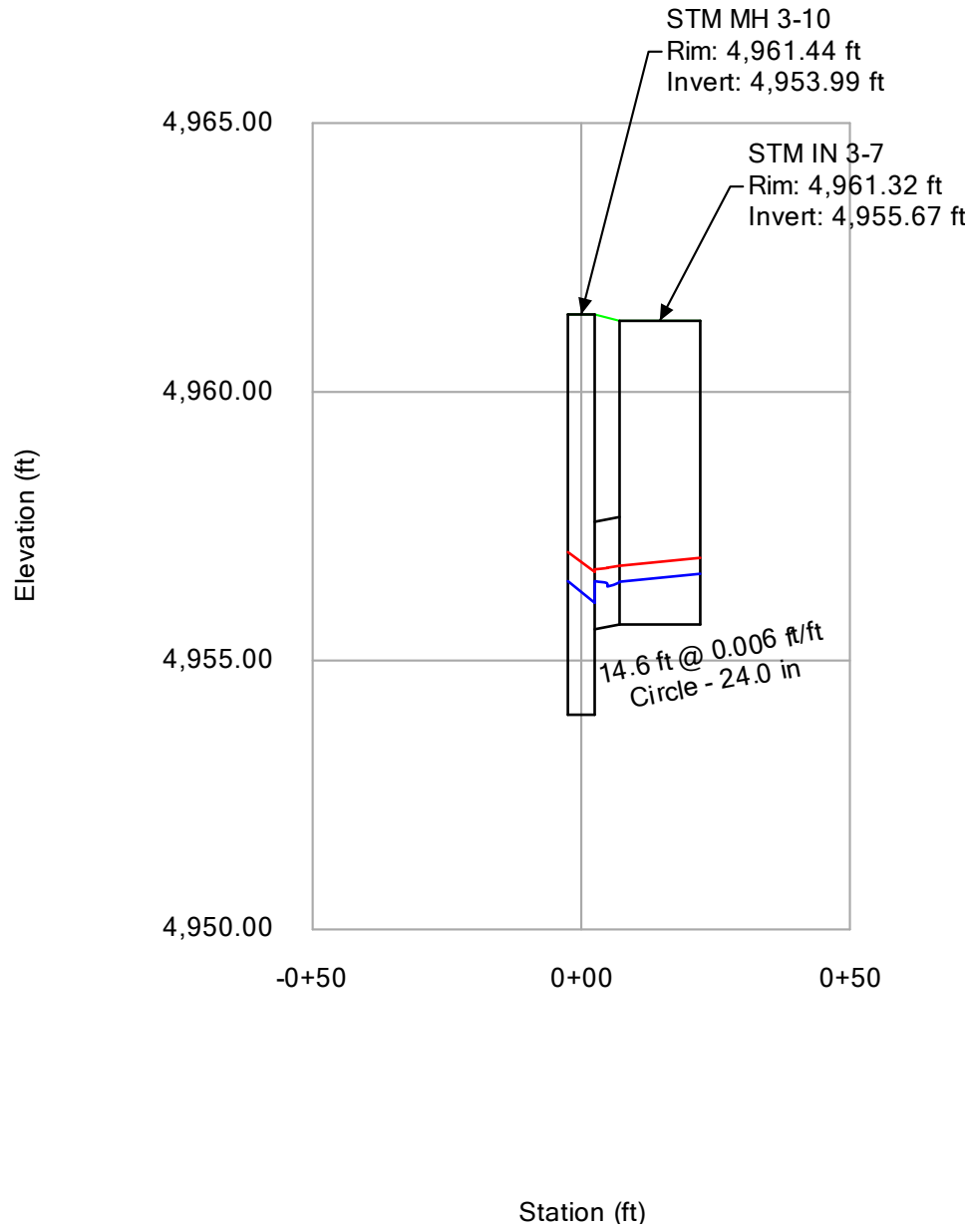
Engineering Profile - Profile - 6 (Murata Basin B.stsw)



DRAINAGE BASIN B - MINOR STORM

Profile Report

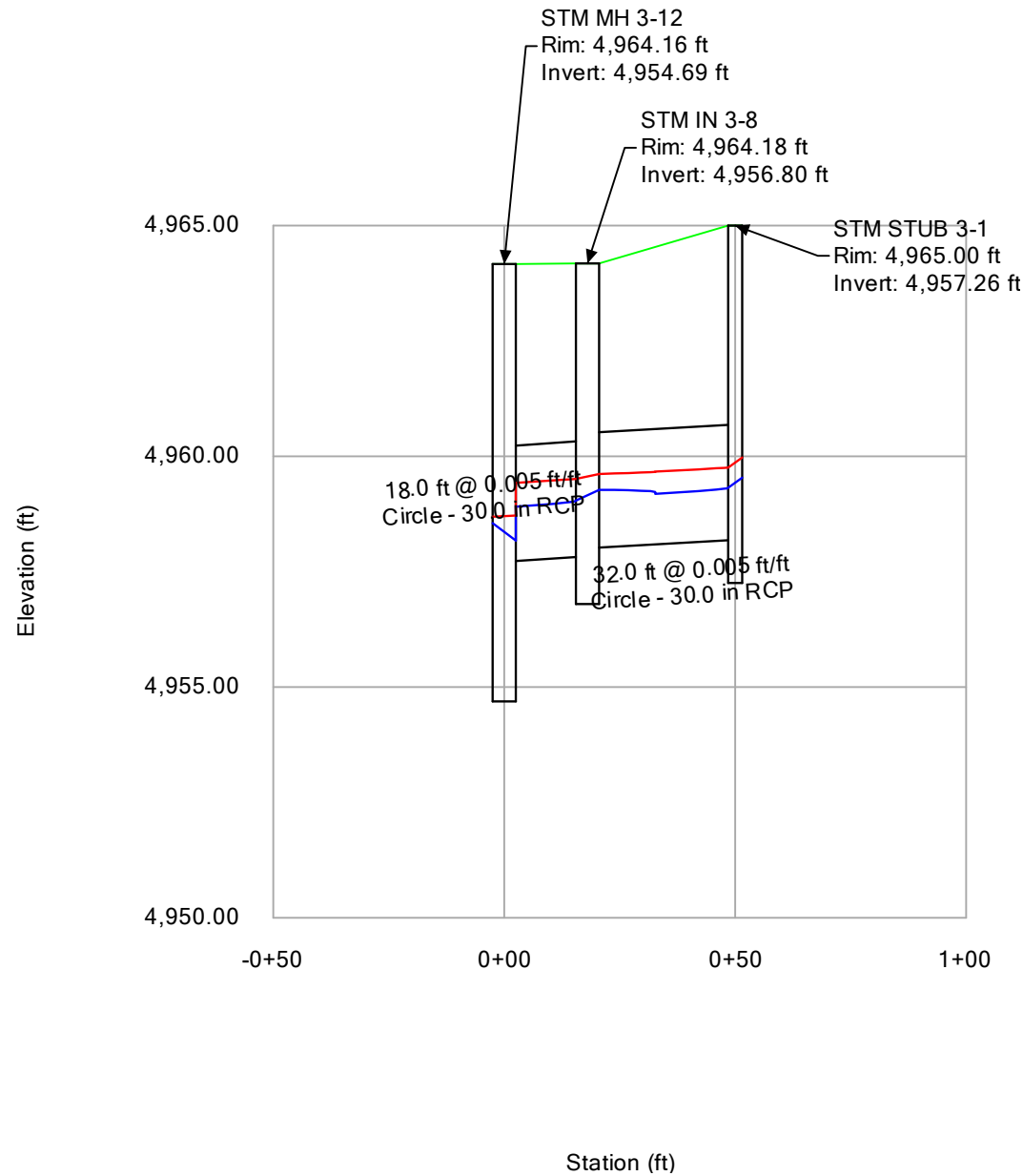
Engineering Profile - Profile - 7 (Murata Basin B.stsw)



DRAINAGE BASIN B - MINOR STORM

Profile Report

Engineering Profile - Profile - 8 (Murata Basin B.stsw)



DRAINAGE BASIN B - MAJOR STORM

FlexTable: Conduit Table

ID	Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Manning's n	Velocity (ft/s)	Flow (cfs)	Capacity (Full Flow) (cfs)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
105	STM IN 3-9	STM MH 3-14	4,962.16	4,961.92	0.010	30.0	0.013	8.64	23.50	41.01	4,963.81	4,963.95	4,964.54	4,964.42
106	STM MH 3-14	STM MH 3-13	4,961.72	4,958.76	0.010	30.0	0.013	8.64	23.50	41.01	4,963.37	4,962.43	4,964.10	4,962.78
107	STM STUB 3-2	STM IN 3-9	4,963.10	4,962.66	0.010	24.0	0.013	8.12	20.50	22.51	4,964.72	4,964.17	4,965.60	4,965.18
108	STM MH 3-13	STM MH 3-12	4,958.26	4,957.23	0.010	36.0	0.013	3.32	23.50	66.73	4,962.34	4,962.21	4,962.51	4,962.39
109	STM STUB 3-1	STM IN 3-8	4,958.18	4,958.02	0.005	30.0	0.013	7.25	35.60	29.00	4,963.25	4,963.01	4,964.07	4,963.83
110	STM IN 3-8	STM MH 3-12	4,957.82	4,957.73	0.005	30.0	0.013	8.78	43.10	29.00	4,962.41	4,962.21	4,963.61	4,963.41
111	STM MH 3-12	STM MH 3-11	4,956.73	4,956.19	0.005	42.0	0.013	6.92	66.60	70.91	4,961.69	4,961.22	4,962.44	4,961.96
112	STM MH 3-11	STM MH 3-10	4,955.99	4,955.03	0.006	42.0	0.013	6.92	66.60	78.04	4,960.84	4,960.15	4,961.59	4,960.89
113	STM IN 3-10	STM MH 3-15	4,956.69	4,956.55	0.008	18.0	0.013	4.47	7.90	9.18	4,959.32	4,959.21	4,959.63	4,959.52
114	STM MH 3-15	STM MH B3-8	4,956.35	4,954.66	0.008	18.0	0.013	4.47	7.90	9.11	4,959.03	4,957.75	4,959.34	4,958.06
115	STM MH 3-10	STM MH 3-9	4,954.53	4,952.94	0.005	48.0	0.013	6.31	79.30	101.49	4,959.71	4,958.74	4,960.33	4,959.36
116	STM MH 3-9	STM MH B3-8	4,952.74	4,952.56	0.005	48.0	0.013	7.34	92.20	100.66	4,957.90	4,957.75	4,958.74	4,958.59
117	STM MH B3-8	STM MH 3-7	4,952.06	4,951.46	0.007	54.0	0.013	6.29	100.10	170.08	4,957.32	4,957.12	4,957.94	4,957.73
118	STM IN 3-6	STM MH 3-9	4,953.88	4,953.79	0.005	24.0	0.013	2.39	7.50	15.78	4,958.76	4,958.74	4,958.85	4,958.83
119	STM IN 3-5	STM MH 3-9	4,953.88	4,953.79	0.005	24.0	0.013	1.72	5.40	15.92	4,958.75	4,958.74	4,958.80	4,958.79
120	STM MH 3-2	STM MH 3-1	4,948.35	4,947.78	0.005	54.0	0.013	9.22	146.60	138.78	4,952.97	4,952.33	4,954.29	4,953.65
121	STM MH 3-1	STM FES 3-1	4,947.58	4,947.01	0.005	54.0	0.013	9.76	146.60	137.82	4,951.58	4,951.00	4,953.08	4,952.50
122	STM MH 3-7	STM MH 3-6	4,951.26	4,950.75	0.007	54.0	0.013	6.29	100.10	169.64	4,956.81	4,956.63	4,957.42	4,957.25
123	STM MH 3-6	STM MH 3-5	4,950.55	4,949.62	0.007	54.0	0.013	6.29	100.10	170.10	4,956.32	4,956.00	4,956.94	4,956.62
124	STM MH 3-3	STM MH 3-2	4,948.95	4,948.55	0.005	54.0	0.013	9.22	146.60	139.54	4,954.07	4,953.63	4,955.39	4,954.95
125	STM MH 3-5	STM MH 3-3	4,949.42	4,949.15	0.007	54.0	0.013	7.50	119.30	169.06	4,955.13	4,954.99	4,956.00	4,955.87
126	STM MH 3-4	STM MH 3-3	4,951.11	4,950.75	0.005	30.0	0.013	5.56	27.30	29.00	4,955.32	4,954.99	4,955.80	4,955.47
128	STM IN 3-4	STM MH 3-5	4,951.85	4,951.76	0.005	24.0	0.013	2.48	7.80	16.00	4,956.02	4,956.00	4,956.12	4,956.10
129	STM IN 3-3	STM MH 3-5	4,951.85	4,951.76	0.005	24.0	0.013	3.63	11.40	16.00	4,956.05	4,956.00	4,956.25	4,956.20
130	STM IN 3-1	STM MH 3-4	4,951.68	4,951.61	0.005	24.0	0.013	2.83	8.90	16.00	4,955.77	4,955.75	4,955.90	4,955.87
131	STM IN 3-2	STM MH 3-4	4,951.72	4,951.61	0.005	24.0	0.013	5.86	18.40	16.00	4,955.89	4,955.75	4,956.42	4,956.28
177	STM IN 3-7	STM MH 3-10	4,955.67	4,955.58	0.006	24.0	0.013	4.04	12.70	17.74	4,960.19	4,960.15	4,960.45	4,960.40

DRAINAGE BASIN B - MAJOR STORM

FlexTable: Manhole Table

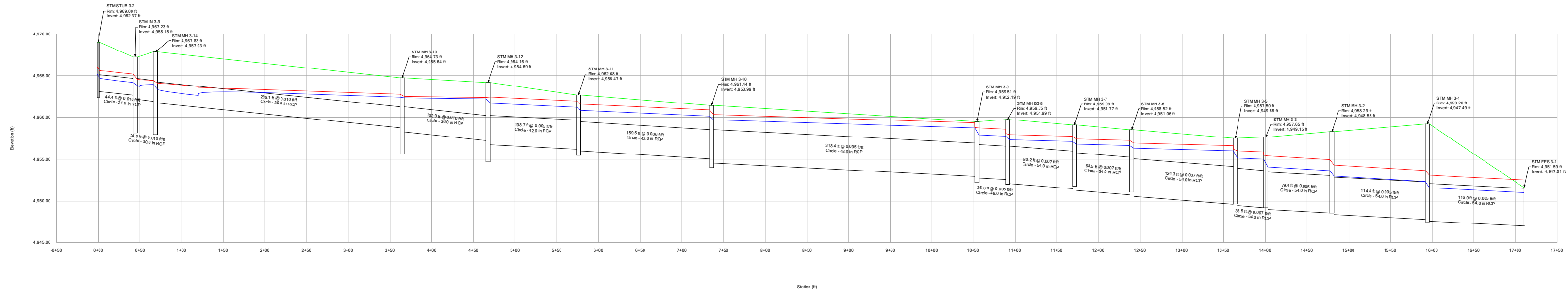
Label	Elevation (Rim) (ft)	Elevation (Invert in 1) (ft)	Elevation (Invert in 2) (ft)	Elevation (Invert in 3) (ft)	Elevation (Invert Out) (ft)	Headloss Coefficient (Standard)	Hydraulic Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)	Flow (Total Out) (cfs)
STM MH 3-14	4,967.83	4,961.92	(N/A)	(N/A)	4,961.72	0.800	4,963.37	4,963.95	4,964.42	4,964.10	23.50
STM MH 3-13	4,964.73	4,958.76	(N/A)	(N/A)	4,958.26	0.500	4,962.34	4,962.43	4,962.78	4,962.51	23.50
STM MH 3-12	4,964.16	4,957.23	4,957.73	(N/A)	4,956.73	0.700	4,961.69	4,962.21	4,962.39	4,962.44	66.60
STM MH 3-11	4,962.68	4,956.19	(N/A)	(N/A)	4,955.99	0.500	4,960.84	4,961.22	4,961.96	4,961.59	66.60
STM MH 3-15	4,961.60	4,956.55	(N/A)	(N/A)	4,956.35	0.600	4,959.03	4,959.21	4,959.52	4,959.34	7.90
STM MH 3-10	4,961.44	4,955.03	4,955.58	(N/A)	4,954.53	0.700	4,959.71	4,960.15	4,960.89	4,960.33	79.30
STM MH B3-8	4,959.75	4,954.66	4,952.56	(N/A)	4,952.06	0.700	4,957.32	4,957.75	4,958.06	4,957.94	100.10
STM MH 3-9	4,959.51	4,952.94	4,953.79	4,953.79	4,952.74	1.000	4,957.90	4,958.74	4,958.79	4,958.74	92.20
STM MH 3-1	4,959.20	4,947.78	(N/A)	(N/A)	4,947.58	0.500	4,951.58	4,952.33	4,953.65	4,953.08	146.60
STM MH 3-7	4,959.09	4,951.46	(N/A)	(N/A)	4,951.26	0.500	4,956.81	4,957.12	4,957.73	4,957.42	100.10
STM MH 3-6	4,958.52	4,950.75	(N/A)	(N/A)	4,950.55	0.500	4,956.32	4,956.63	4,957.25	4,956.94	100.10
STM MH 3-2	4,958.29	4,948.55	(N/A)	(N/A)	4,948.35	0.500	4,952.97	4,953.63	4,954.95	4,954.29	146.60
STM MH 3-3	4,957.65	4,949.15	4,950.75	(N/A)	4,948.95	0.700	4,954.07	4,954.99	4,955.47	4,955.39	146.60
STM MH 3-5	4,957.50	4,949.62	4,951.76	4,951.76	4,949.42	1.000	4,955.13	4,956.00	4,956.20	4,956.00	119.30
STM MH 3-4	4,957.20	4,951.61	4,951.61	(N/A)	4,951.11	0.900	4,955.32	4,955.75	4,956.28	4,955.80	27.30

DRAINAGE BASIN B - MAJOR STORM

FlexTable: Catch Basin Table

Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Headloss Coefficient (Standard)	Flow (Total Out) (cfs)	Elevation (Invert in 1) (ft)	Elevation (Invert Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
STM IN 3-8	4,964.18	4,956.80	0.500	43.10	4,958.02	4,957.82	4,963.01	4,962.41	4,963.83	4,963.61
STM STUB 3-1	4,965.00	4,957.26	0.500	35.60	(N/A)	4,958.18	4,963.66	4,963.25	4,964.48	4,964.07
STM IN 3-9	4,967.23	4,958.15	0.500	23.50	4,962.66	4,962.16	4,964.17	4,963.81	4,965.19	4,964.54
STM STUB 3-2	4,969.00	4,962.37	0.500	20.50	(N/A)	4,963.10	4,965.16	4,964.72	4,966.04	4,965.60
STM IN 3-7	4,961.32	4,955.67	0.500	12.70	(N/A)	4,955.67	4,960.32	4,960.19	4,960.57	4,960.45
STM IN 3-6	4,959.37	4,953.78	0.500	7.50	(N/A)	4,953.88	4,958.81	4,958.76	4,958.89	4,958.85
STM IN 3-5	4,959.37	4,953.78	0.500	5.40	(N/A)	4,953.88	4,958.77	4,958.75	4,958.82	4,958.80
STM IN 3-10	4,961.44	4,956.10	0.500	7.90	(N/A)	4,956.69	4,959.47	4,959.32	4,959.78	4,959.63
STM IN 3-4	4,957.37	4,951.75	0.500	7.80	(N/A)	4,951.85	4,956.07	4,956.02	4,956.17	4,956.12
STM IN 3-3	4,957.39	4,951.75	0.500	11.40	(N/A)	4,951.85	4,956.15	4,956.05	4,956.35	4,956.25
STM IN 3-2	4,957.10	4,951.62	0.500	18.40	(N/A)	4,951.72	4,956.16	4,955.89	4,956.69	4,956.42
STM IN 3-1	4,957.10	4,951.58	0.500	8.90	(N/A)	4,951.68	4,955.83	4,955.77	4,955.96	4,955.90

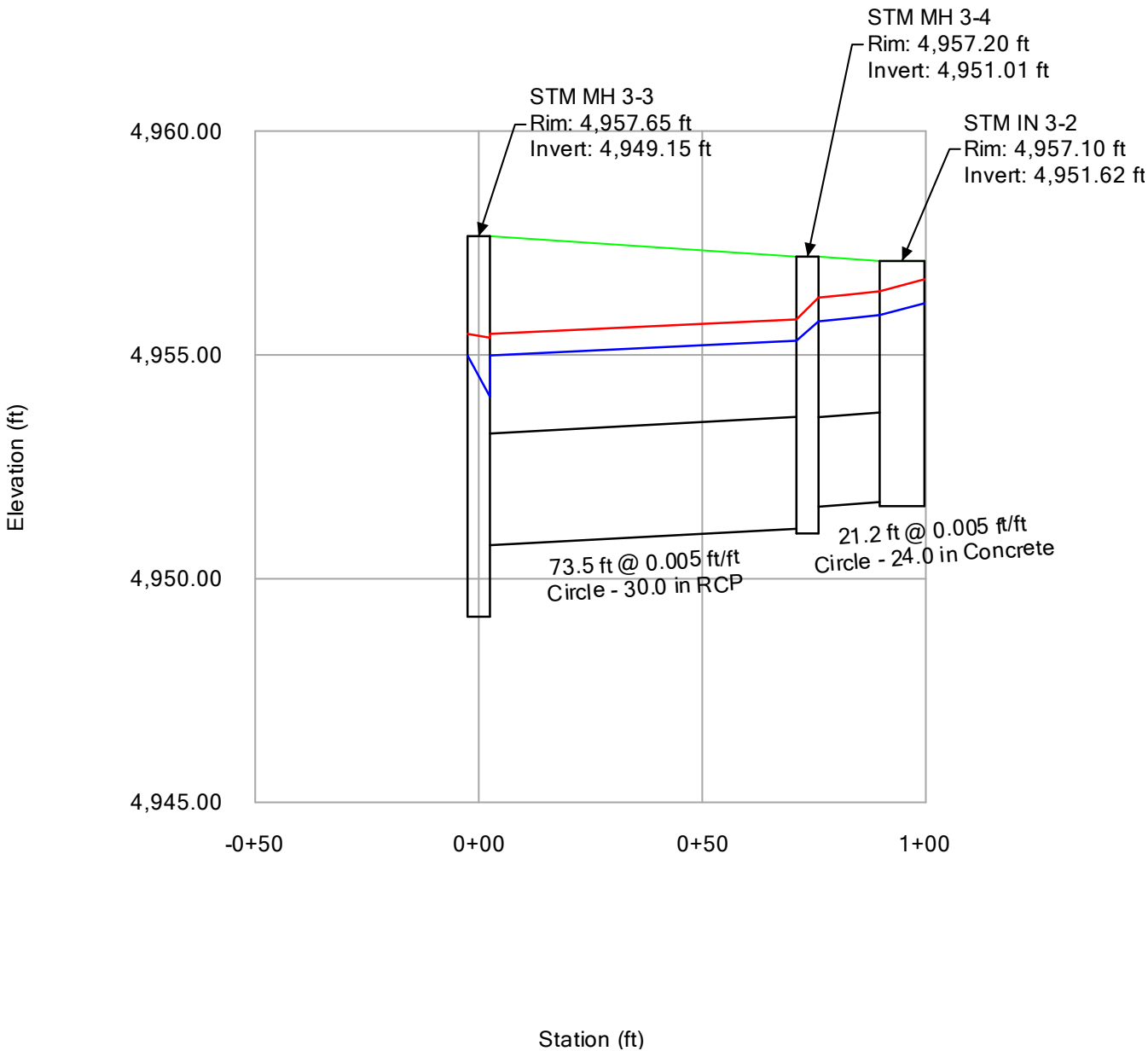
Profile Report
Engineering Profile - Profile - 1 (Murata Basin B.stsw)



DRAINAGE BASIN B - MAJOR STORM

Profile Report

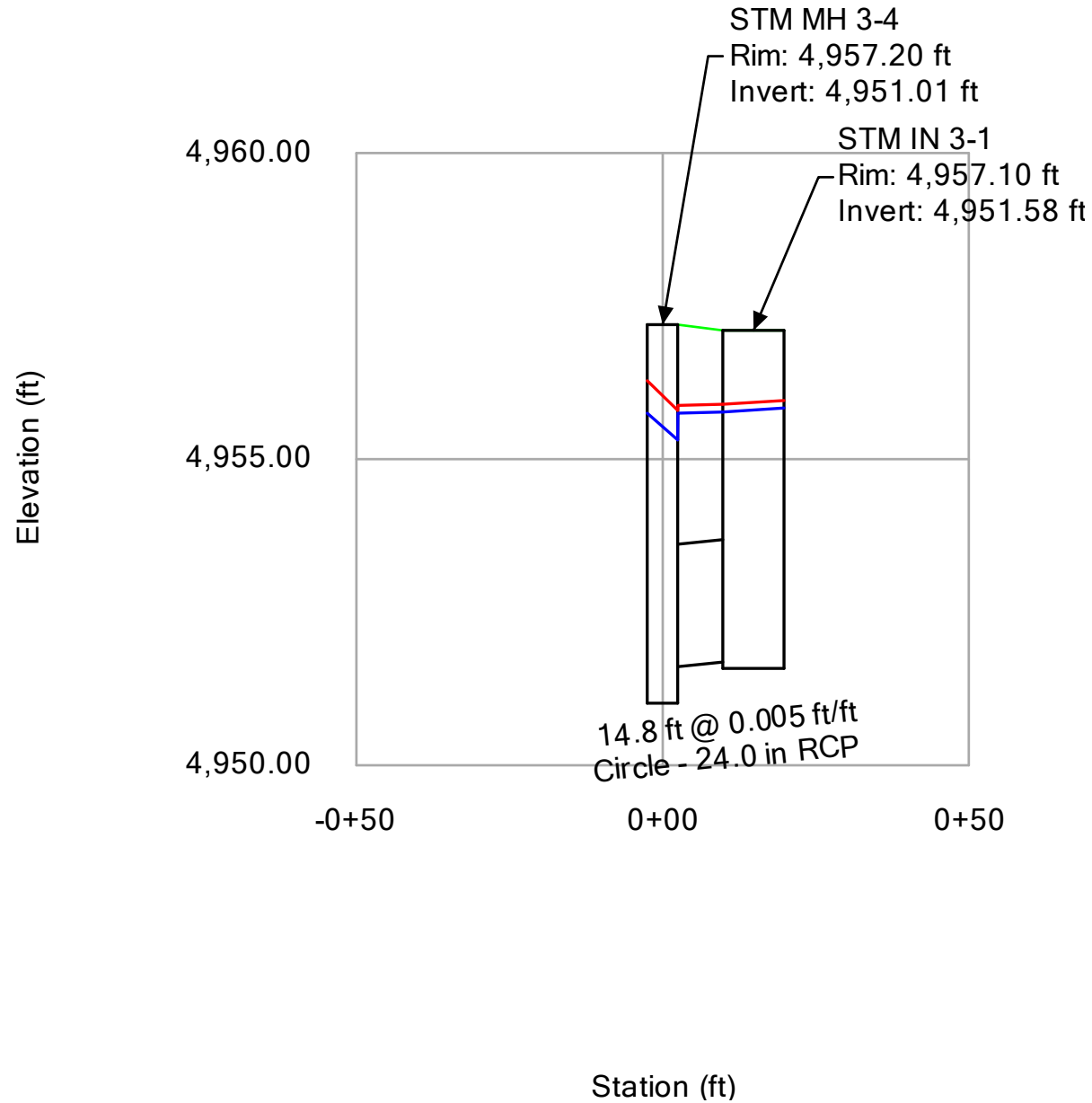
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DRAINAGE BASIN B - MAJOR STORM

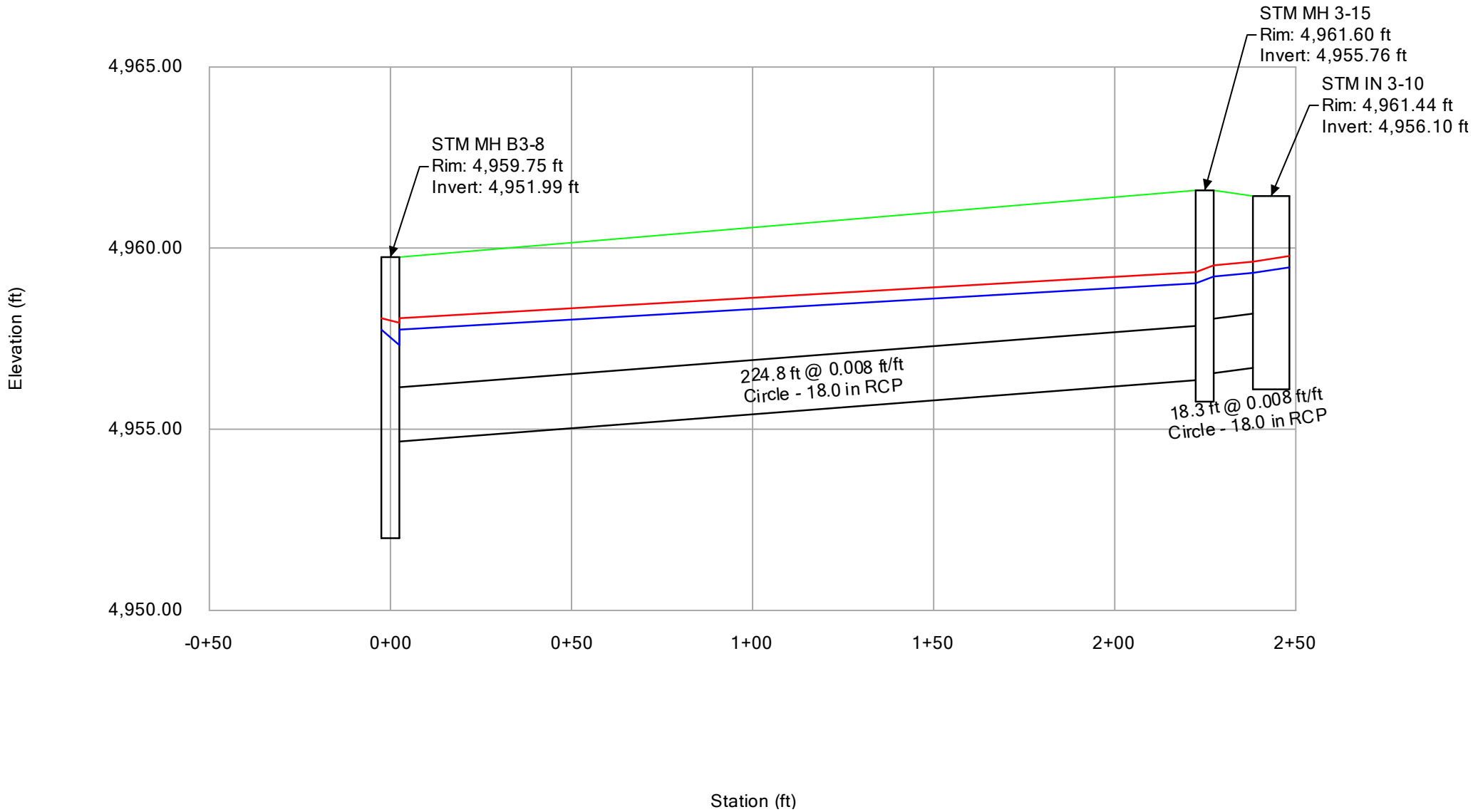
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Engineering Profile - Profile - 3 (Murata Basin B.stsw)



DRAINAGE BASIN B - MAJOR STORM

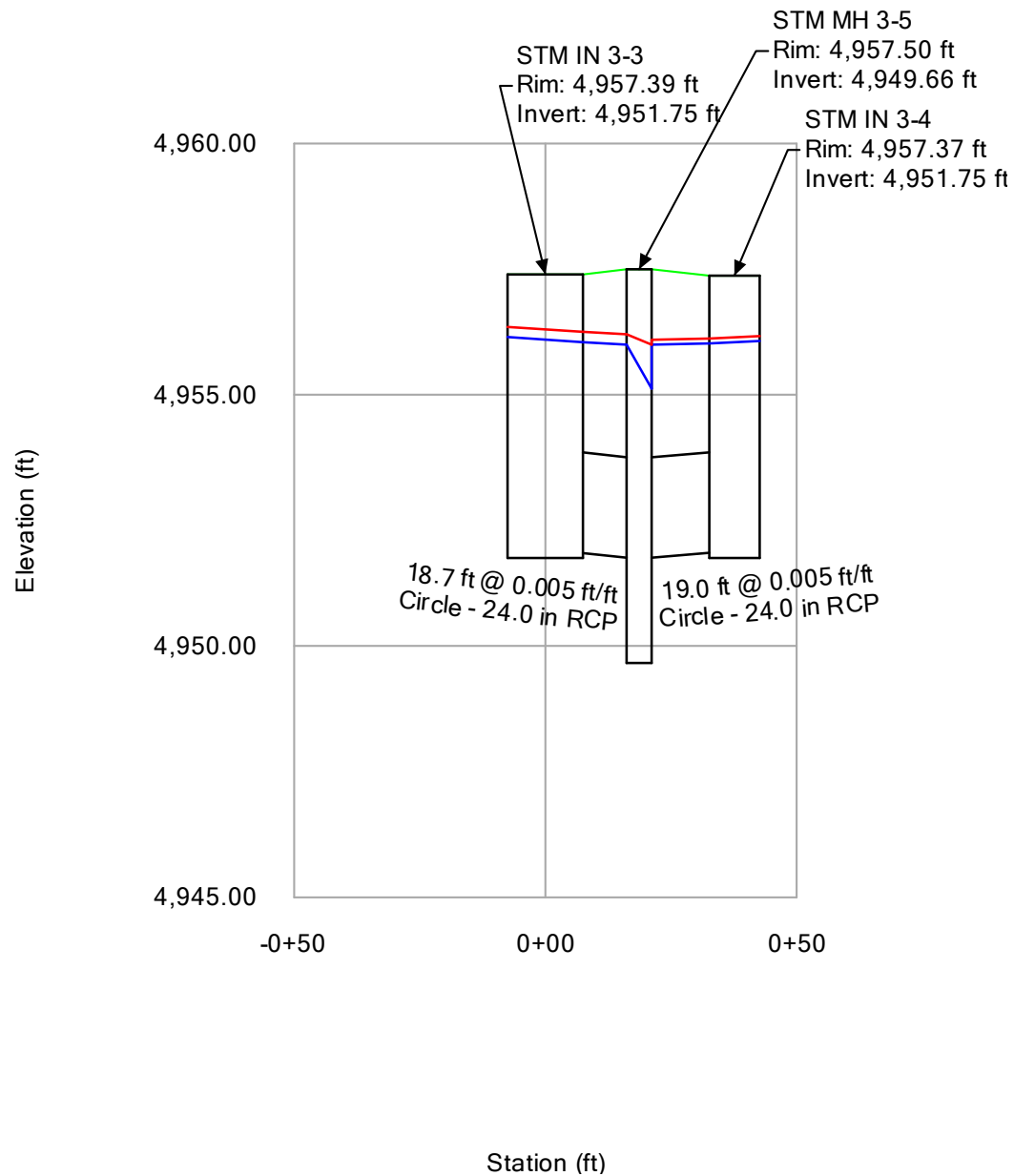
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DRAINAGE BASIN B - MAJOR STORM

Profile Report

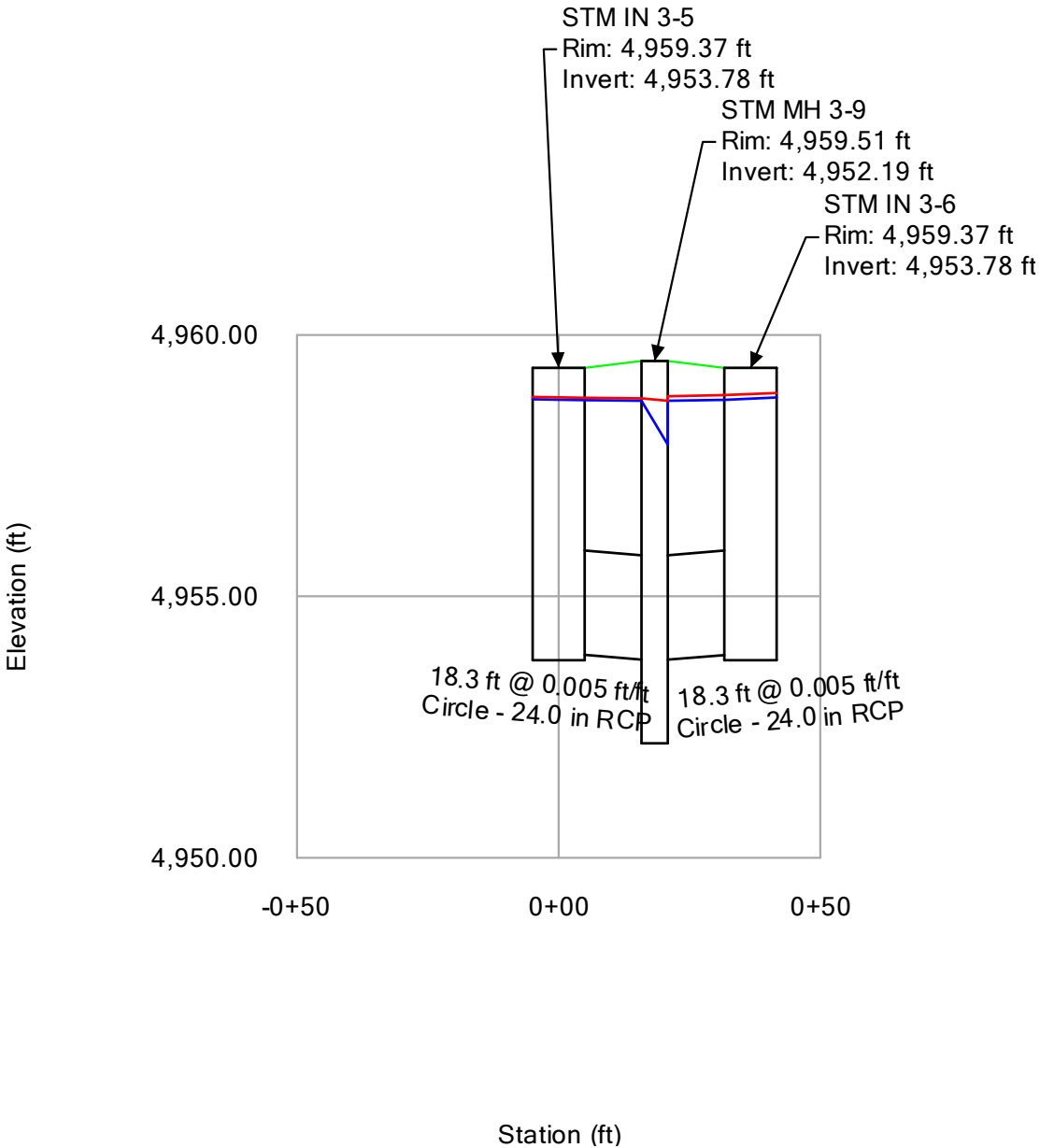
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DRAINAGE BASIN B - MAJOR STORM

Profile Report

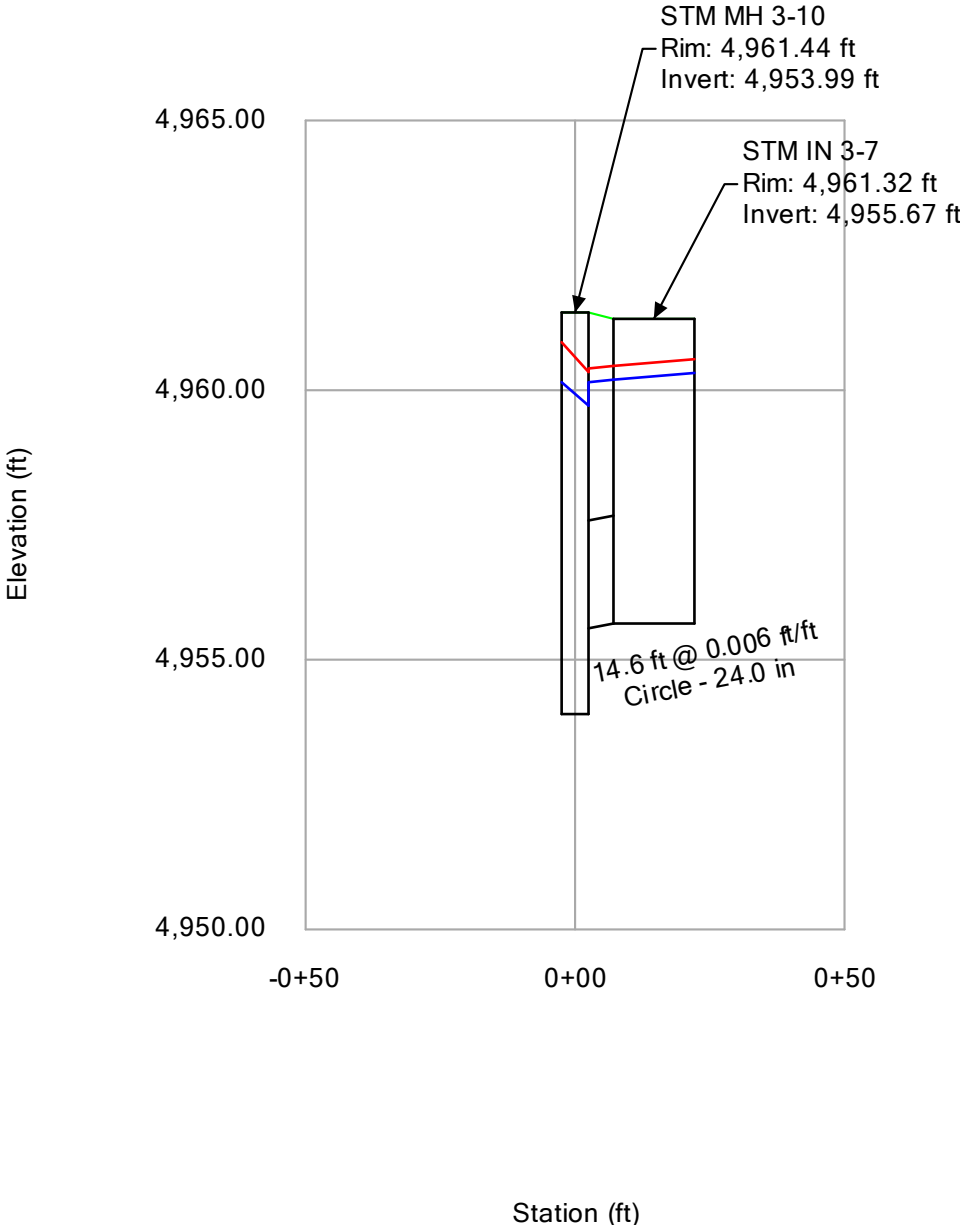
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DRAINAGE BASIN B - MAJOR STORM

Profile Report

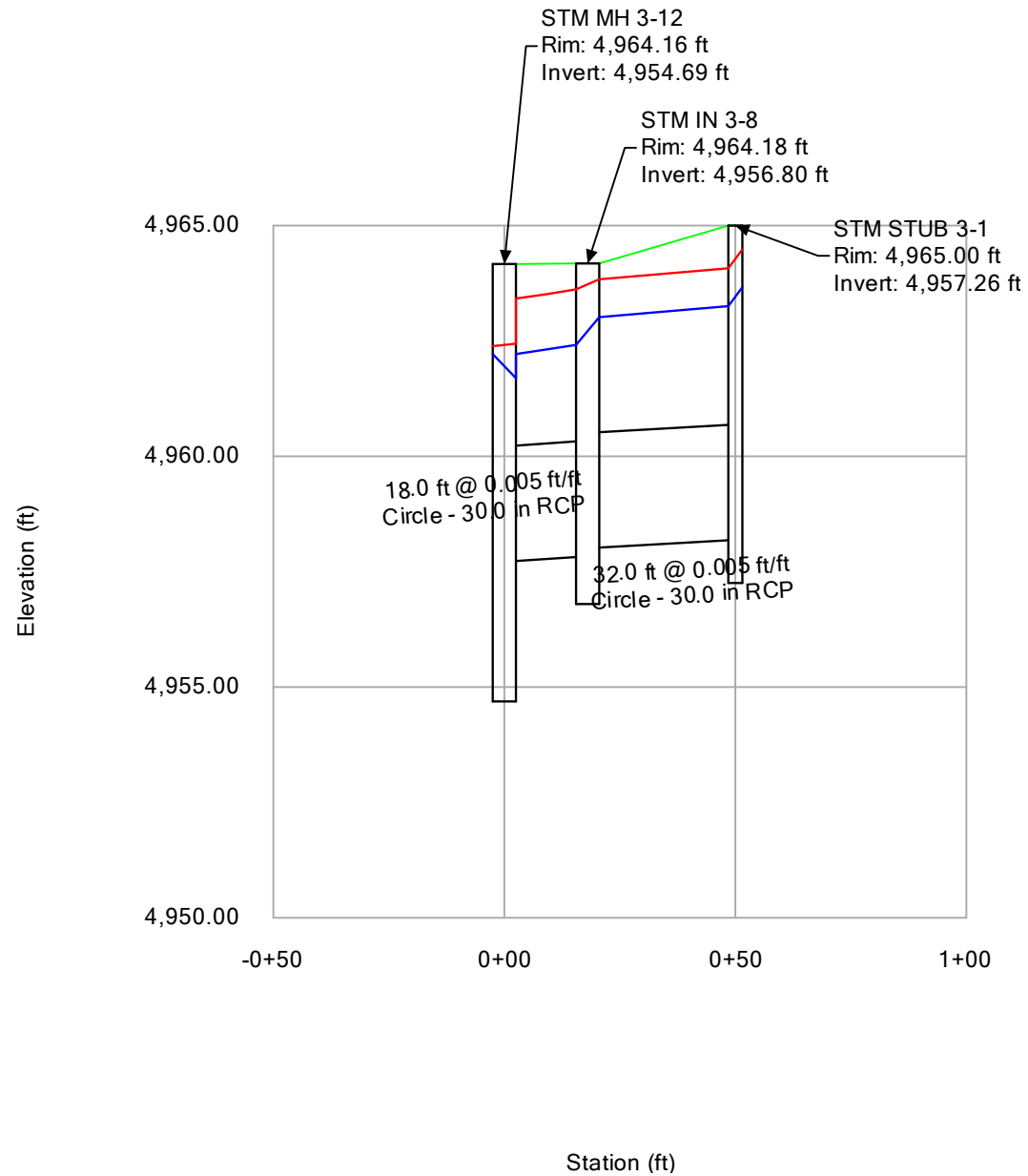
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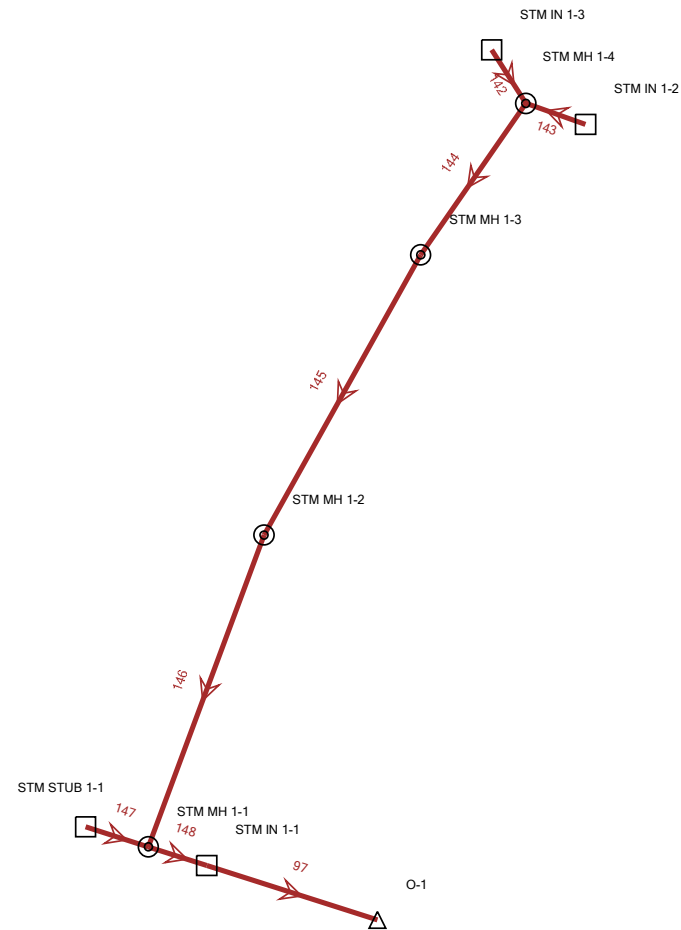
DRAINAGE BASIN B - MAJOR STORM

Profile Report

Engineering Profile - Profile - 8 (Murata Basin B.stsw)



DRAINAGE BASIN C



DRAINAGE BASIN C - MINOR STORM

FlexTable: Conduit Table

ID	Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Manning's n	Velocity (ft/s)	Flow (cfs)	Capacity (Full Flow) (cfs)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
97	STM IN 1-1	O-1	4,939.10	4,938.29	0.015	36.0	0.013	7.84	10.00	81.68	4,942.01	4,942.00	4,942.04	4,942.03
142	STM IN 1-3	STM MH 1-4	4,944.71	4,944.42	0.015	24.0	0.013	6.13	3.70	27.70	4,945.38	4,945.49	4,945.63	4,945.56
143	STM IN 1-2	STM MH 1-4	4,944.71	4,944.42	0.015	24.0	0.013	6.49	4.50	27.70	4,945.45	4,945.49	4,945.73	4,945.60
144	STM MH 1-4	STM MH 1-3	4,944.22	4,943.39	0.015	30.0	0.013	7.54	8.20	50.23	4,945.17	4,944.09	4,945.53	4,944.92
145	STM MH 1-3	STM MH 1-2	4,943.19	4,941.74	0.015	30.0	0.013	7.54	8.20	50.23	4,944.14	4,942.42	4,944.49	4,943.31
146	STM MH 1-2	STM MH 1-1	4,941.54	4,940.04	0.015	30.0	0.013	7.54	8.20	50.23	4,942.49	4,942.07	4,942.84	4,942.13
147	STM STUB 1-1	STM MH 1-1	4,940.34	4,940.04	0.015	24.0	0.013	3.38	0.50	27.70	4,942.07	4,942.07	4,942.07	4,942.07
148	STM MH 1-1	STM IN 1-1	4,939.84	4,939.60	0.015	30.0	0.013	7.67	8.70	50.23	4,942.03	4,942.03	4,942.08	4,942.08

DRAINAGE BASIN C - MINOR STORM

FlexTable: Manhole Table

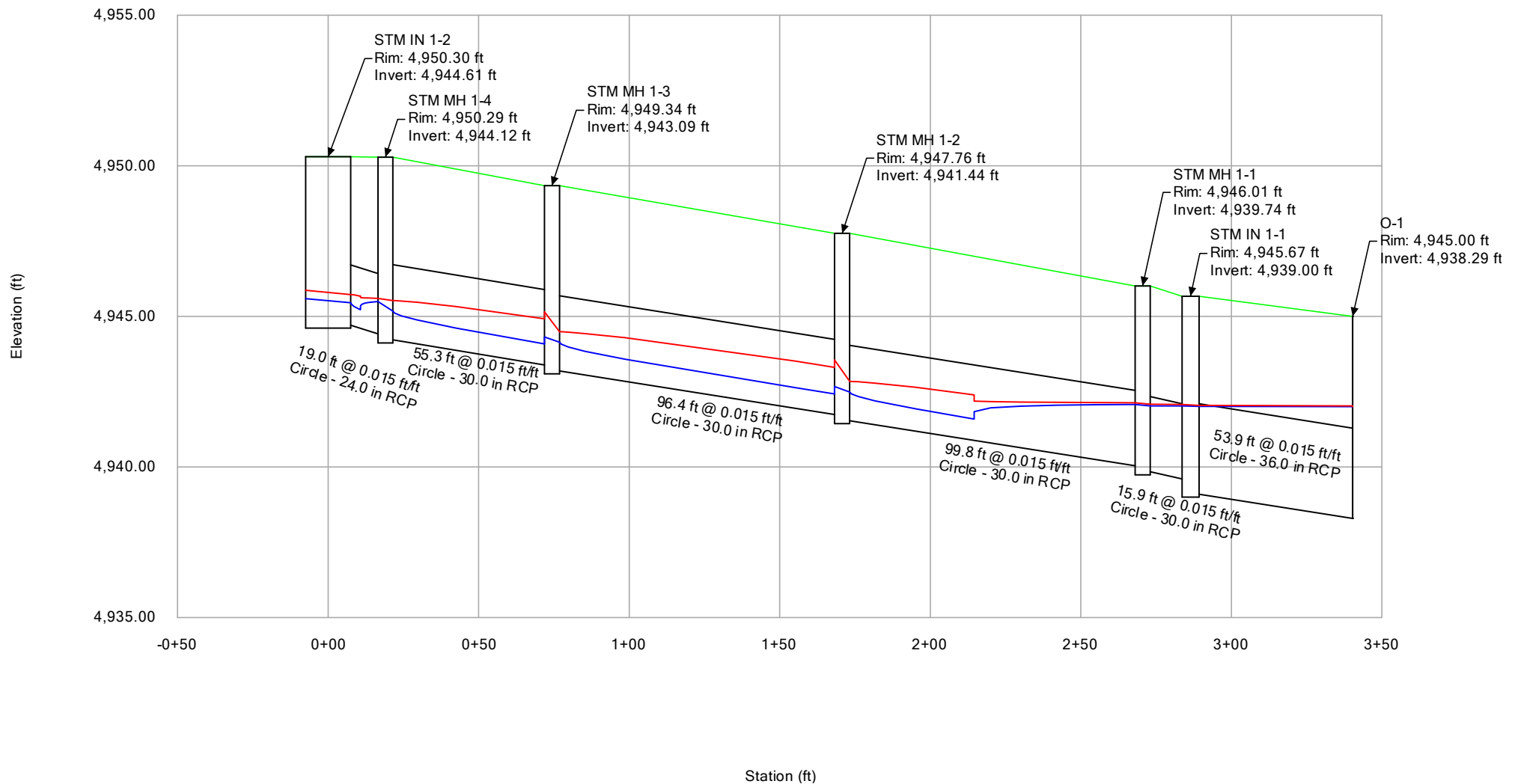
Label	Elevation (Rim) (ft)	Elevation (Invert in 1) (ft)	Elevation (Invert in 2) (ft)	Elevation (Invert in 3) (ft)	Elevation (Invert Out) (ft)	Headloss Coefficient (Standard)	Hydraulic Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)	Flow (Total Out) (cfs)
STM MH 1-4	4,950.29	4,944.42	4,944.42	(N/A)	4,944.22	0.900	4,945.17	4,945.49	4,945.60	4,945.53	8.20
STM MH 1-3	4,949.34	4,943.39	(N/A)	(N/A)	4,943.19	0.500	4,944.14	4,944.31	4,945.15	4,944.49	8.20
STM MH 1-2	4,947.76	4,941.74	(N/A)	(N/A)	4,941.54	0.500	4,942.49	4,942.67	4,943.55	4,942.84	8.20
STM MH 1-1	4,946.01	4,940.04	4,940.04	(N/A)	4,939.84	0.800	4,942.03	4,942.07	4,942.13	4,942.08	8.70

DRAINAGE BASIN C - MINOR STORM

FlexTable: Catch Basin Table

Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Headloss Coefficient (Standard)	Flow (Total Out) (cfs)	Elevation (Invert in 1) (ft)	Elevation (Invert Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
STM IN 1-3	4,950.34	4,944.61	0.500	3.70	(N/A)	4,944.71	4,945.50	4,945.38	4,945.75	4,945.63
STM IN 1-2	4,950.30	4,944.61	0.500	4.50	(N/A)	4,944.71	4,945.59	4,945.45	4,945.86	4,945.73
STM STUB 1-1	4,942.76	4,940.34	0.500	0.50	(N/A)	4,940.34	4,942.07	4,942.07	4,942.07	4,942.07
STM IN 1-1	4,945.67	4,939.00	0.500	10.00	4,939.60	4,939.10	4,942.03	4,942.01	4,942.08	4,942.04

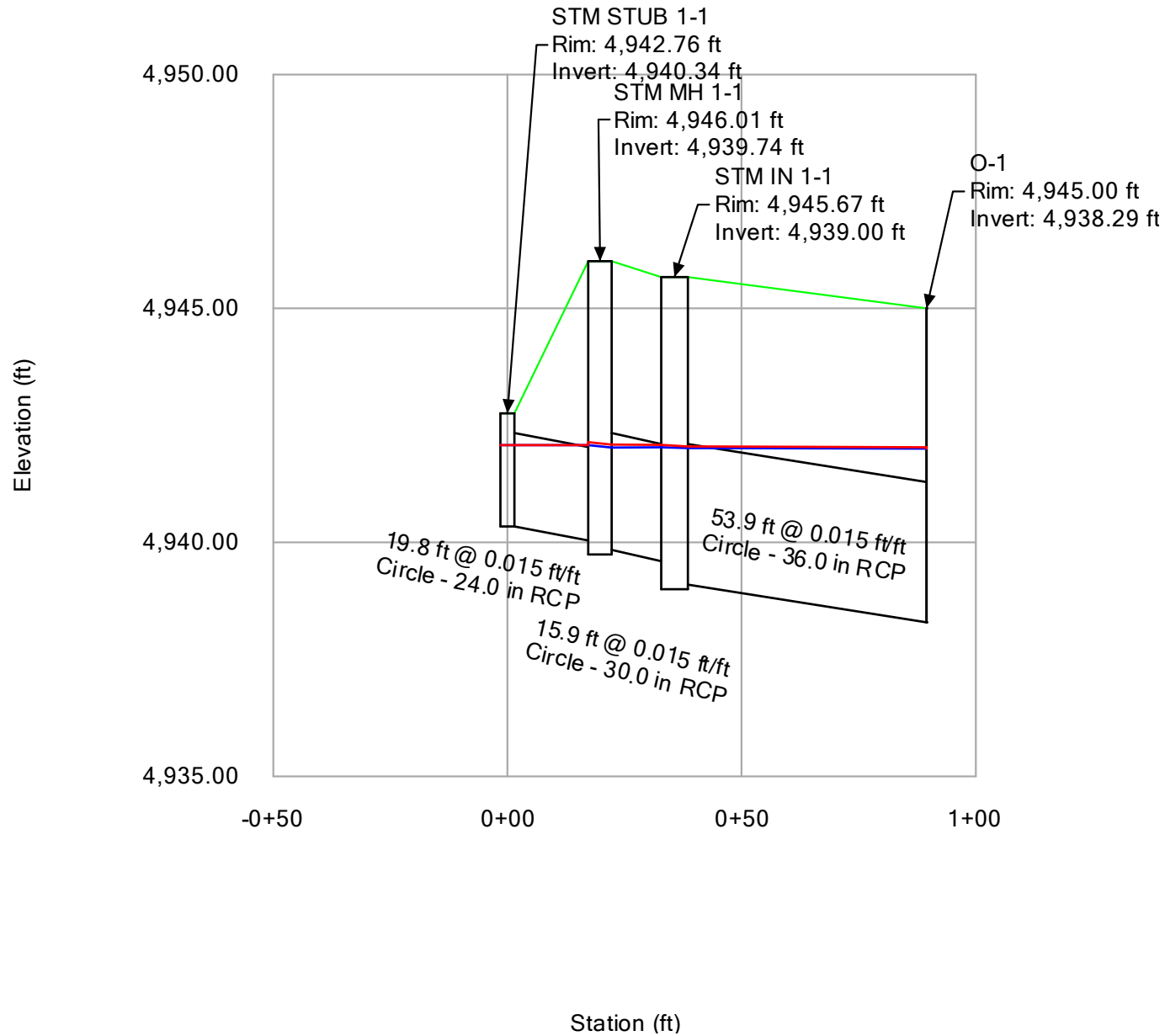
Profile Report **Engineering Profile - Profile - 1 (Murata Basin C.stsw)**



DRAINAGE BASIN C - MINOR STORM

Profile Report

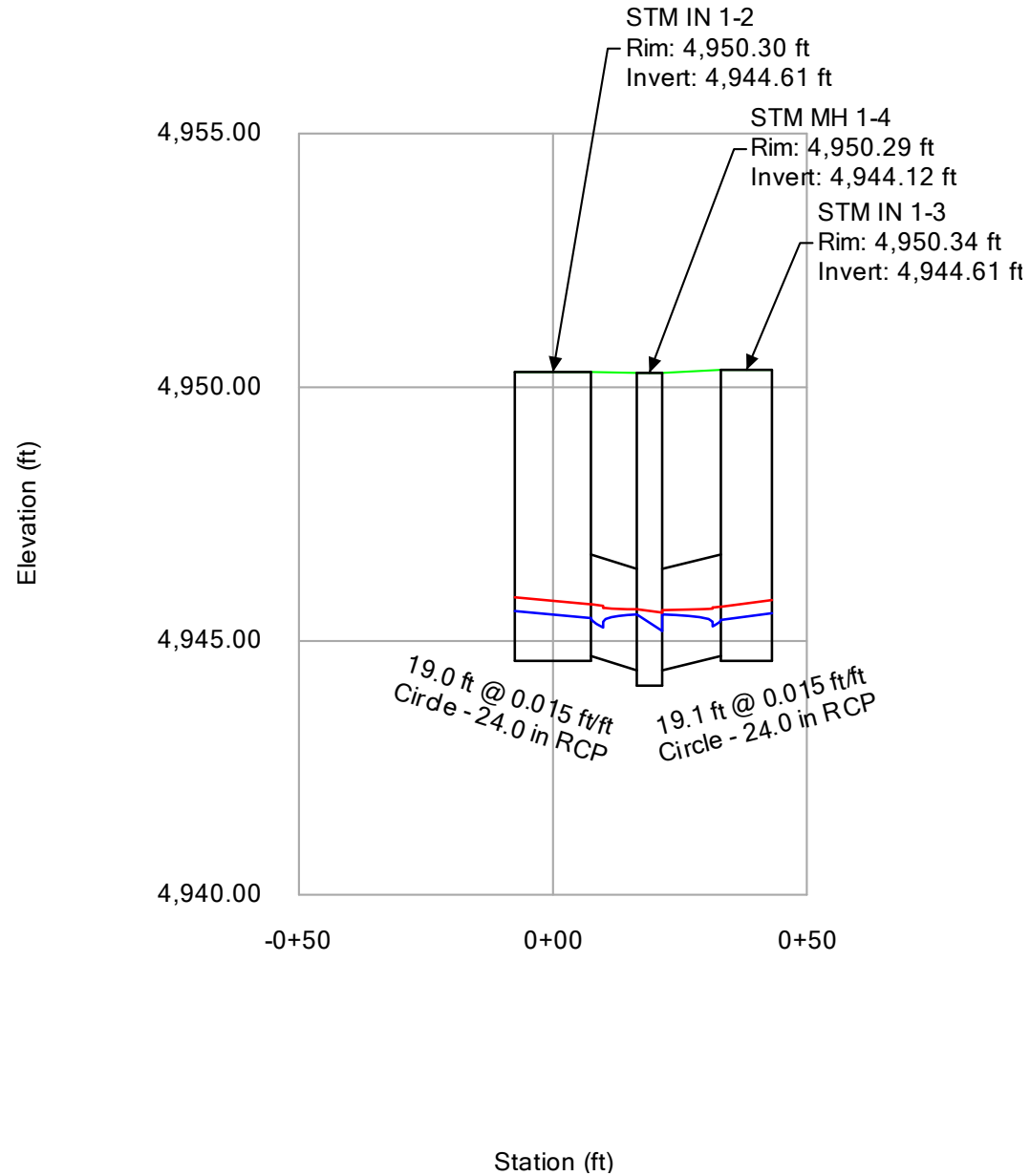
Engineering Profile - Profile - 2 (Murata Basin C.stsw)



DRAINAGE BASIN C - MINOR STORM

Profile Report

Engineering Profile - Profile - 3 (Murata Basin C.stsw)



DRAINAGE BASIN C - MAJOR STORM

FlexTable: Conduit Table

ID	Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Manning's n	Velocity (ft/s)	Flow (cfs)	Capacity (Full Flow) (cfs)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
97	STM IN 1-1	O-1	4,939.10	4,938.29	0.015	36.0	0.013	5.49	38.80	81.68	4,944.18	4,944.00	4,944.65	4,944.47
142	STM IN 1-3	STM MH 1-4	4,944.71	4,944.42	0.015	24.0	0.013	4.39	13.80	27.70	4,947.82	4,947.75	4,948.12	4,948.04
143	STM IN 1-2	STM MH 1-4	4,944.71	4,944.42	0.015	24.0	0.013	5.51	17.30	27.70	4,947.86	4,947.75	4,948.33	4,948.22
144	STM MH 1-4	STM MH 1-3	4,944.22	4,943.39	0.015	30.0	0.013	6.34	31.10	50.23	4,947.18	4,946.87	4,947.81	4,947.49
145	STM MH 1-3	STM MH 1-2	4,943.19	4,941.74	0.015	30.0	0.013	6.34	31.10	50.23	4,946.55	4,946.00	4,947.18	4,946.62
146	STM MH 1-2	STM MH 1-1	4,941.54	4,940.04	0.015	30.0	0.013	6.34	31.10	50.23	4,945.69	4,945.11	4,946.31	4,945.74
147	STM STUB 1-1	STM MH 1-1	4,940.34	4,940.04	0.015	24.0	0.013	0.86	2.70	27.70	4,945.12	4,945.11	4,945.13	4,945.13
148	STM MH 1-1	STM IN 1-1	4,939.84	4,939.60	0.015	30.0	0.013	6.89	33.80	50.23	4,944.52	4,944.42	4,945.26	4,945.15

DRAINAGE BASIN C - MAJOR STORM

FlexTable: Manhole Table

Label	Elevation (Rim) (ft)	Elevation (Invert in 1) (ft)	Elevation (Invert in 2) (ft)	Elevation (Invert in 3) (ft)	Elevation (Invert Out) (ft)	Headloss Coefficient (Standard)	Hydraulic Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)	Flow (Total Out) (cfs)
STM MH 1-4	4,950.29	4,944.42	4,944.42	(N/A)	4,944.22	0.900	4,947.18	4,947.75	4,948.22	4,947.81	31.10
STM MH 1-3	4,949.34	4,943.39	(N/A)	(N/A)	4,943.19	0.500	4,946.55	4,946.87	4,947.49	4,947.18	31.10
STM MH 1-2	4,947.76	4,941.74	(N/A)	(N/A)	4,941.54	0.500	4,945.69	4,946.00	4,946.62	4,946.31	31.10
STM MH 1-1	4,946.01	4,940.04	4,940.04	(N/A)	4,939.84	0.800	4,944.52	4,945.11	4,945.74	4,945.26	33.80

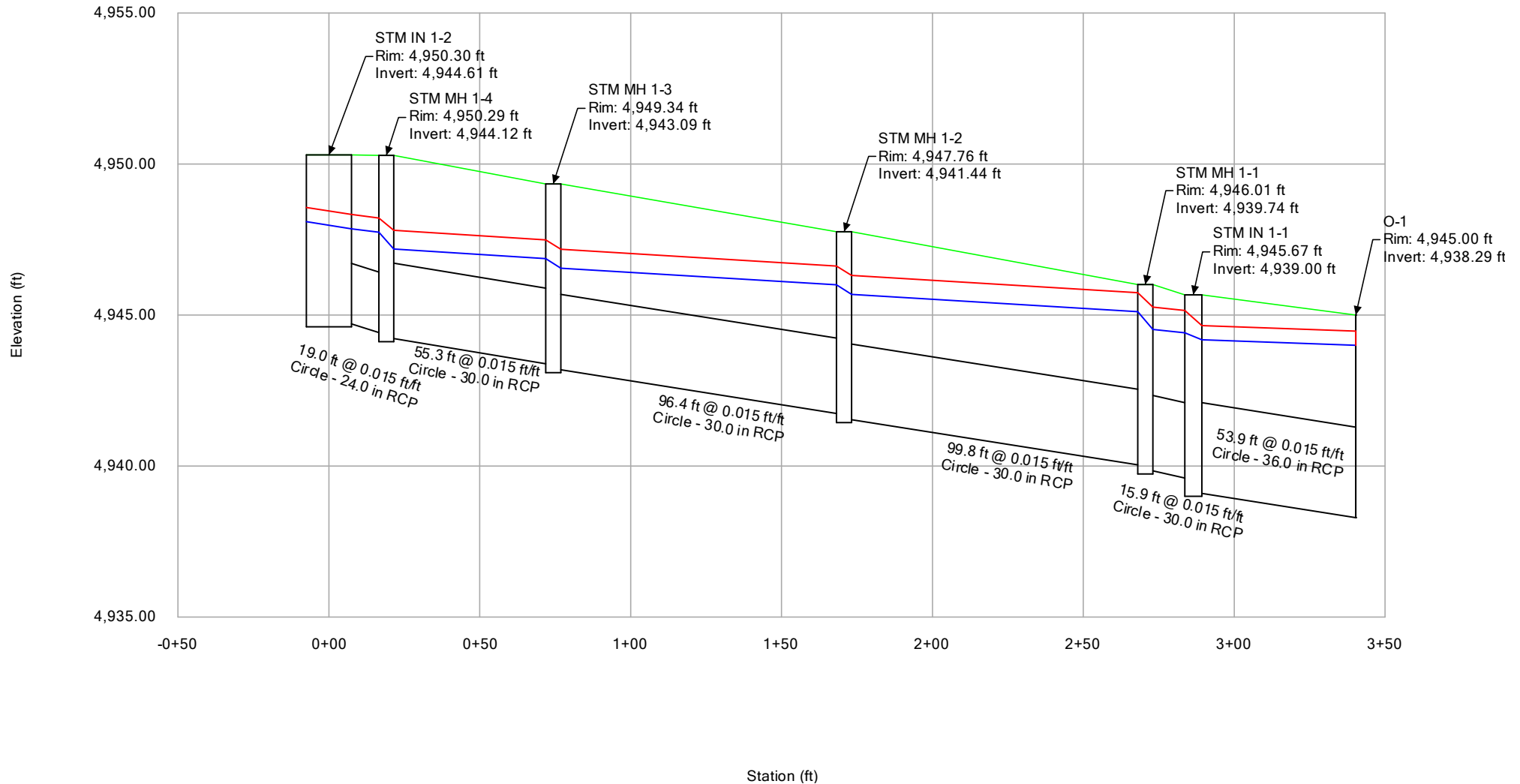
DRAINAGE BASIN C - MAJOR STORM

FlexTable: Catch Basin Table

Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Headloss Coefficient (Standard)	Flow (Total Out) (cfs)	Elevation (Invert in 1) (ft)	Elevation (Invert Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
STM IN 1-3	4,950.34	4,944.61	0.500	13.80	(N/A)	4,944.71	4,947.97	4,947.82	4,948.27	4,948.12
STM IN 1-2	4,950.30	4,944.61	0.500	17.30	(N/A)	4,944.71	4,948.09	4,947.86	4,948.56	4,948.33
STM STUB 1-1	4,942.76	4,940.34	0.500	2.70	(N/A)	4,940.34	4,942.76	4,942.76	4,942.77	4,942.77
STM IN 1-1	4,945.67	4,939.00	0.500	38.80	4,939.60	4,939.10	4,944.42	4,944.18	4,945.15	4,944.65

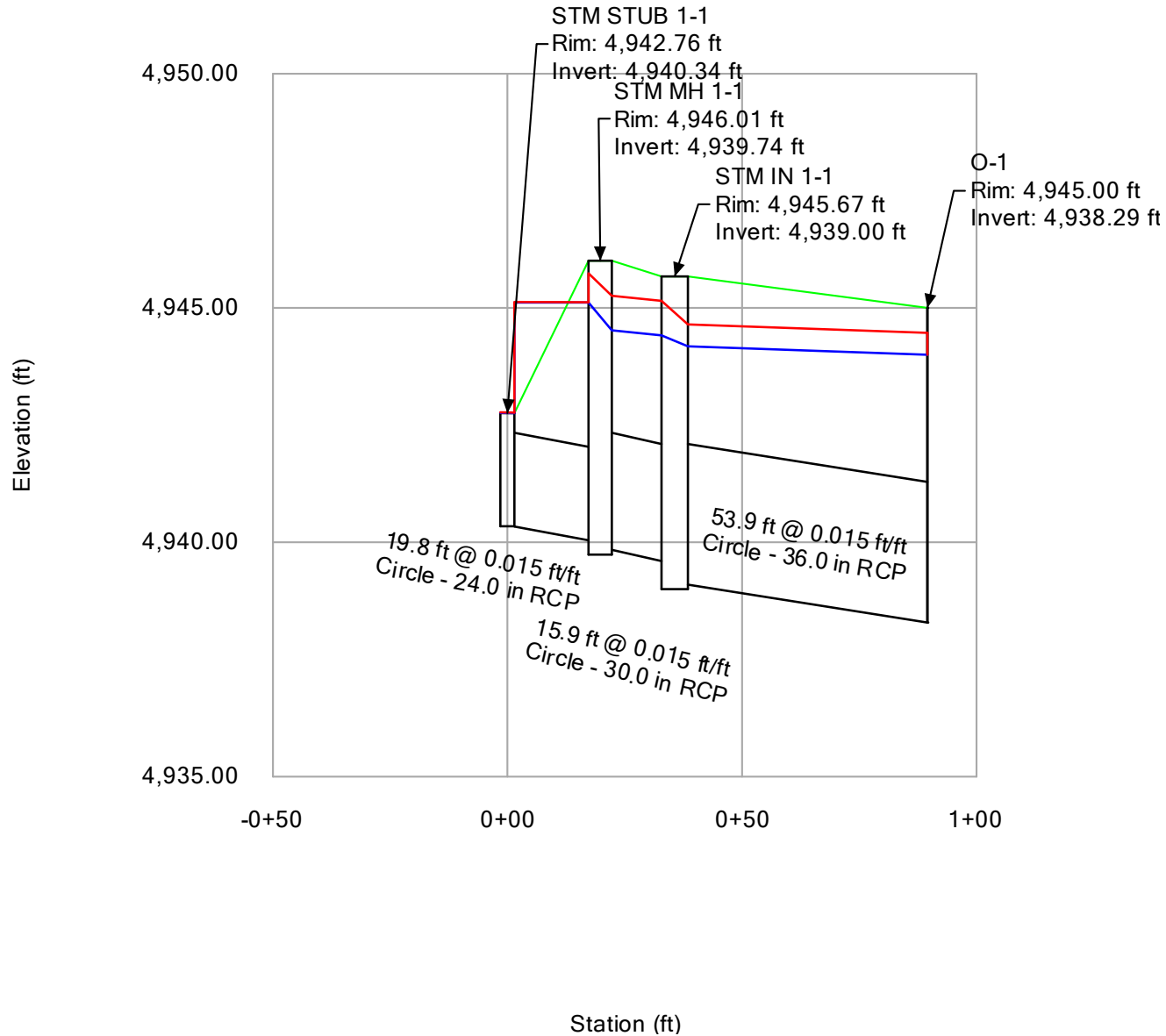
DRAINAGE BASIN C - MAJOR STORM

Profile Report Engineering Profile - Profile - 1 (Murata Basin C.stsw)



DRAINAGE BASIN C - MAJOR STORM

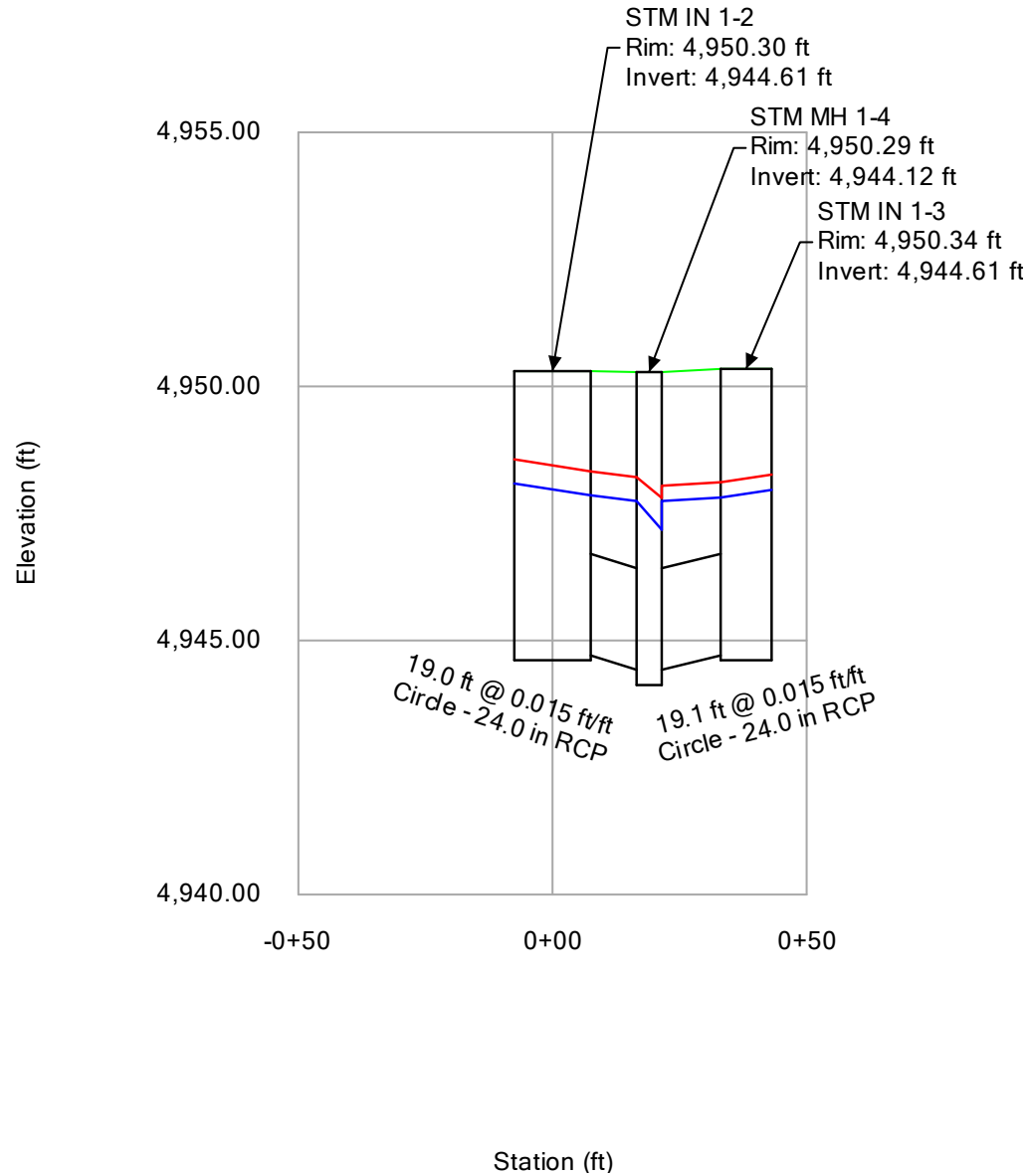
Profile Report Engineering Profile - Profile - 2 (Murata Basin C.stsw)



DRAINAGE BASIN C - MAJOR STORM

Profile Report

Engineering Profile - Profile - 3 (Murata Basin C.stsw)



3.2.1 Riprap Apron

This section addresses the use of riprap for erosion protection downstream of conduit and culvert outlets. Refer to the *Open Channels* chapter for additional information on applications for and placement of riprap. Those criteria will be useful in design of erosion protection for conduit outlets. When incorporating a drop into the outfall use Figure 9-40 or 9-41.

Rock Size

The procedure for determining the required riprap size downstream of a conduit outlet is in Section 3.2.3.

Configuration of Riprap Apron

Figure 9-34 illustrates typical riprap protection of culverts at conduit outlets.

Extent of Protection

The length of the riprap protection downstream from the outlet depends on the degree of protection desired. If it is necessary to prevent all erosion, the riprap must extend until the velocity decreases to an acceptable value. The acceptable major event velocity is set at 5 ft/sec for non-cohesive soils and at 7 ft/sec for erosion resistant soils. The rate at which the velocity of a jet from a conduit outlet decreases is not well known. The procedure recommended here assumes the rate of decrease in velocity is related to the angle of lateral expansion, θ , of the jet. The velocity is related to the expansion factor, $(1/(2\tan\theta))$, which can be determined directly using Figure 9-35 or Figure 9-36, by assuming that the expanding jet has a rectangular shape:

$$L_p = \left(\frac{1}{2 \tan \theta} \right) \left(\frac{A_t}{Y_t} - W \right) \quad \text{Equation 9-11}$$

Where:

L_p = length of protection (ft) 26.9 FT (PROPOSED LENGTH IS ~41' TO EXTEND UP OPPOSITE SIDE OF CHANNEL)

W = width of the conduit (ft, use diameter for circular conduits) 4.5' or 54" RCP

Y_t = tailwater depth (ft) ASSUME 1.5'. 100 YEAR STORM CHANNEL DEPTH IS 3'. RECEIVING CHANNEL TIME OF CONCENTRATION IS MUCH LONGER THAN ONSITE

θ = the expansion angle of the culvert flow 10.3

and:

$$A_t = \frac{Q}{V} \quad \text{Equation 9-12}$$

Where:

Q = design discharge (cfs) 150 CFS

V = the allowable non-eroding velocity in the downstream channel (ft/sec) 7 FPS PER MOUNTAIN SKY CHANNEL DESIGN

A_t = required area of flow at allowable velocity (ft²) 21.43 SQUARE FEET

In certain circumstances, Equation 9-11 may yield unreasonable results. Therefore, in no case should L_p be less than $3H$ or $3D$, nor does L_p need to be greater than $10H$ or $10D$ whenever the Froude parameter, $Q/WH^{1.5}$ or $Q/D^{2.5}$, is less than 8.0 or 6.0, respectively. Whenever the Froude parameter is greater than these maximums, increase the maximum L_p required by $\frac{1}{4} D_c$ or $\frac{1}{4} H$ for circular or rectangular (box) culverts, respectively, for each whole number by which the Froude parameter is greater than 8.0 or 6.0, respectively.

Once L_p has been determined, the width of the riprap protection at the furthest downstream point should be verified. This dimension is labeled “T” on Figure 9-34. The first step is to solve for θ using the results from Figure 9-35 or 9-36:

$$\theta = \tan^{-1} \left(\frac{1}{2(\text{ExpansionFactor})} \right) = 10.3 \quad \text{Equation 9-13}$$

Where:

Expansion Factor = determined using Figure 9-35 or 9-36 2.75

T is then calculated using the following equation:

$$T = 2(L_p \tan \theta) + W \quad 14.3 \text{ FT} \quad \text{Equation 9-14}$$

Multiple Conduit Installations

The procedures outlined in this section can be used to design outlet erosion protection for multi-barrel culvert installations by replacing the multiple barrels with a single hydraulically equivalent hypothetical rectangular conduit. The dimensions of the equivalent conduit may be established as follows:

1. Distribute the total discharge, Q , among the individual conduits. Where all the conduits are hydraulically similar and identically situated, the flow can be assumed to be equally distributed; otherwise, the flow through each barrel must be computed.
2. Compute the Froude parameter $Q_i/D_{ci}^{2.5}$ (circular conduit) or $Q_i/W_iH_i^{1.5}$ (rectangular conduit), where the subscript i indicates the discharge and dimensions associated with an individual conduit.
3. If the installation includes dissimilar conduits, select the conduit with the largest value of the Froude parameter to determine the dimensions of the equivalent conduit.
4. Make the height of the equivalent conduit, H_{eq} , equal to the height, or diameter, of the selected individual conduit.
5. The width of the equivalent conduit, W_{eq} , is determined by equating the Froude parameter from the selected individual conduit with the Froude parameter associated with the equivalent conduit, $Q/W_{eq}H_{eq}^{1.5}$.

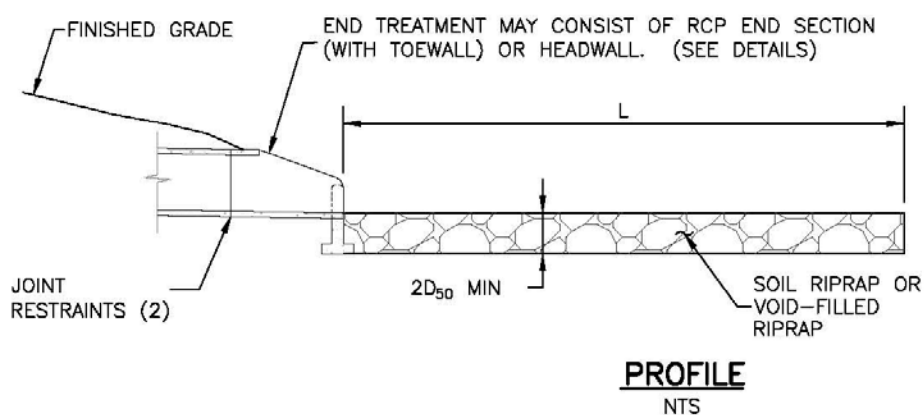
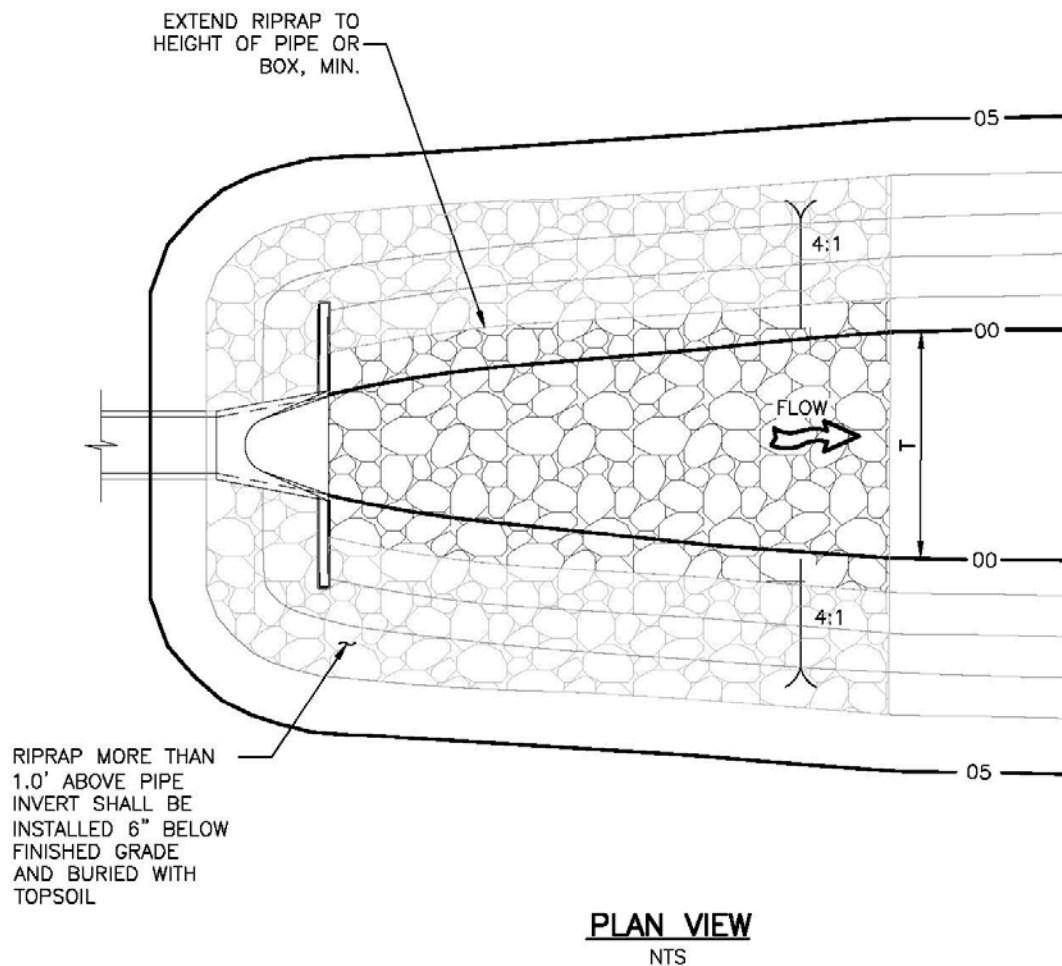


Figure 9-34. Riprap apron detail for culverts in-line with the channel

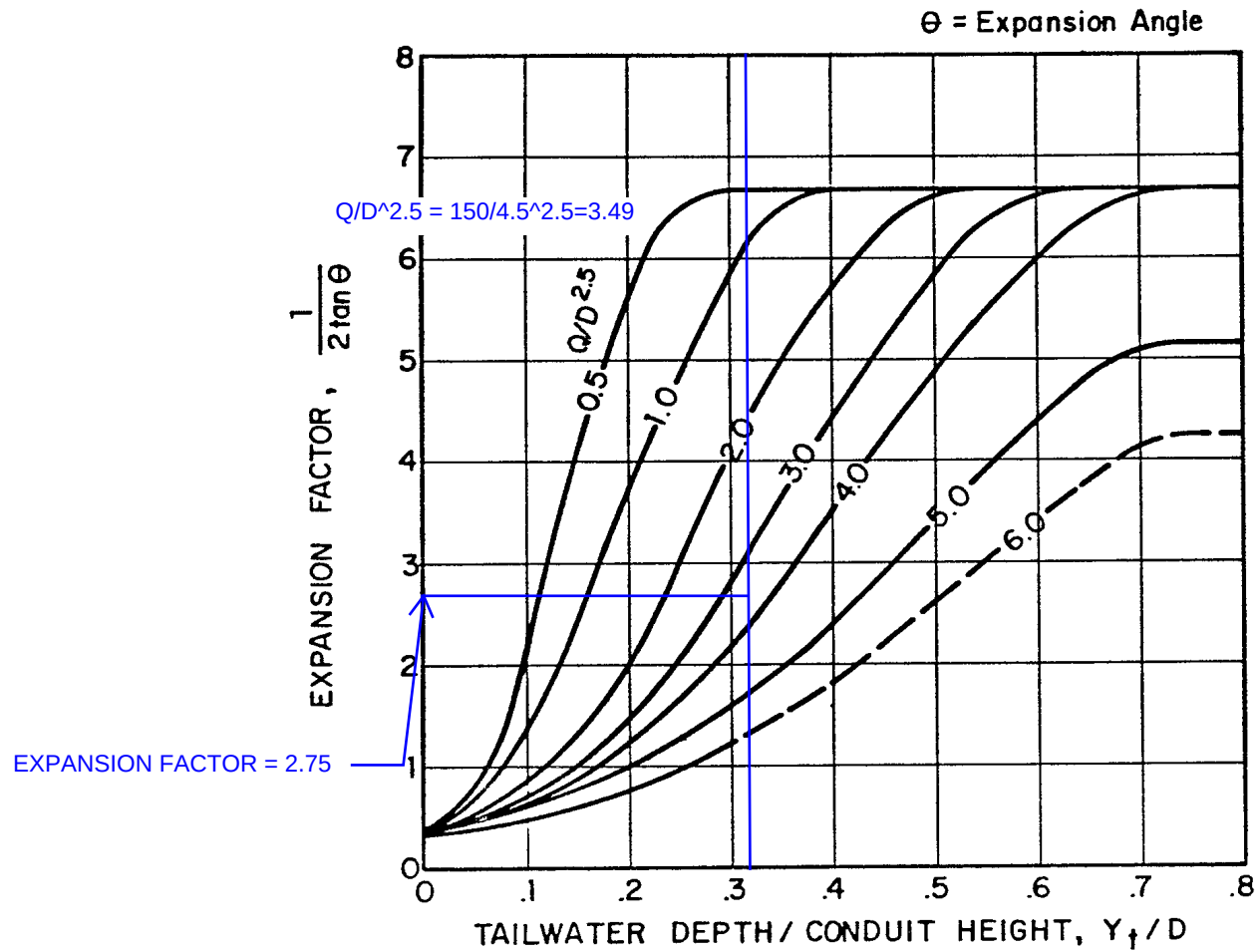


Figure 9-35. Expansion factor for circular conduits

$$H_a = \frac{(H + Y_n)}{2}$$

Equation 9-19

Where the maximum value of H_a shall not exceed H , and:

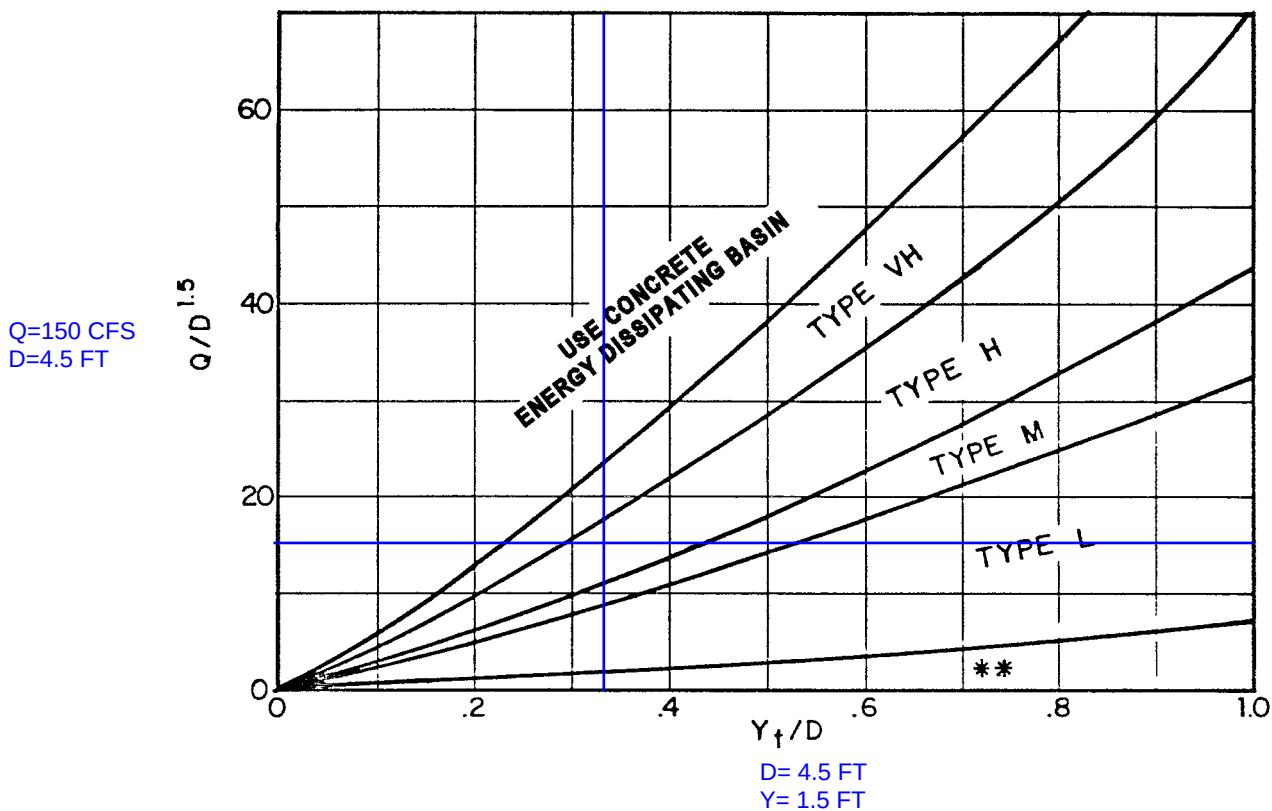
D_a = parameter to use in place of D in Figure 9-38 when flow is supercritical (ft)

D_c = diameter of circular culvert (ft)

H_a = parameter to use in place of H in Figure 9-39 when flow is supercritical (ft)

H = height of rectangular culvert (ft)

Y_n = normal depth of supercritical flow in the culvert (ft)



Use D_a instead of D whenever flow is supercritical in the barrel.

** Use Type L for a distance of $3D$ downstream.

Figure 9-38. Riprap erosion protection at circular conduit outlet (valid for $Q/D^{2.5} \leq 6.0$)

3.2.2 Low Tailwater Basin

The design of low tailwater riprap basins is necessary when the receiving channel may have little or no flow or tailwater at time when the pipe or culvert is in operation. Figure 9-37 provides a plan and profile view of a typical low tailwater riprap basin.

By providing a low tailwater basin at the end of a storm drain conduit or culvert, the kinetic energy of the discharge dissipates under controlled conditions without causing scour at the channel bottom.

Low tailwater is defined as being equal to or less than $\frac{1}{3}$ of the height of the storm drain, that is:

$$y_t \leq \frac{D}{3} \quad \text{or} \quad y_t \leq \frac{H}{3}$$

ASSUME LOW TAILWATER (0.5') AS REGIONAL POND IS INTERCEPTING THE MAJORITY OF THE RUNOFF TO THIS CHANNEL

Where:

y_t = tailwater depth at design flow (feet)

D = diameter of circular pipe (feet)

H = height of rectangular pipe (feet)

Rock Size

The procedure for determining the required riprap size downstream of a conduit outlet is in Section 3.2.3.

After selecting the riprap size, the minimum thickness of the riprap layer, T , in feet, in the basin is defined as:

$$T = 2D_{50}$$

SEE FIGURE 9-38, TYPE H RIP RAP, D50 = 18", THICKNESS = 36"

Equation 9-15

Basin Geometry

Figure 9-37 includes a layout of a standard low tailwater riprap basin with the geometry parameters provided. The minimum length of the basin (L) and the width of the bottom of the basin ($W1$) are provided in a table at the bottom of Figure 9-37. All slopes in the low tailwater basin shall be 3(H):1(V), minimum.

Other Design Requirements

Extend riprap up the outlet embankment slope to the mid-pipe level, minimum. It is recommended that riprap that extends more than 1 foot above the outlet pipe invert be installed 6 inches below finished grade and buried with topsoil.

Provide pipe end treatment in the form of a pipe headwall or a flared-end section headwall. See Section 3.1 for options.

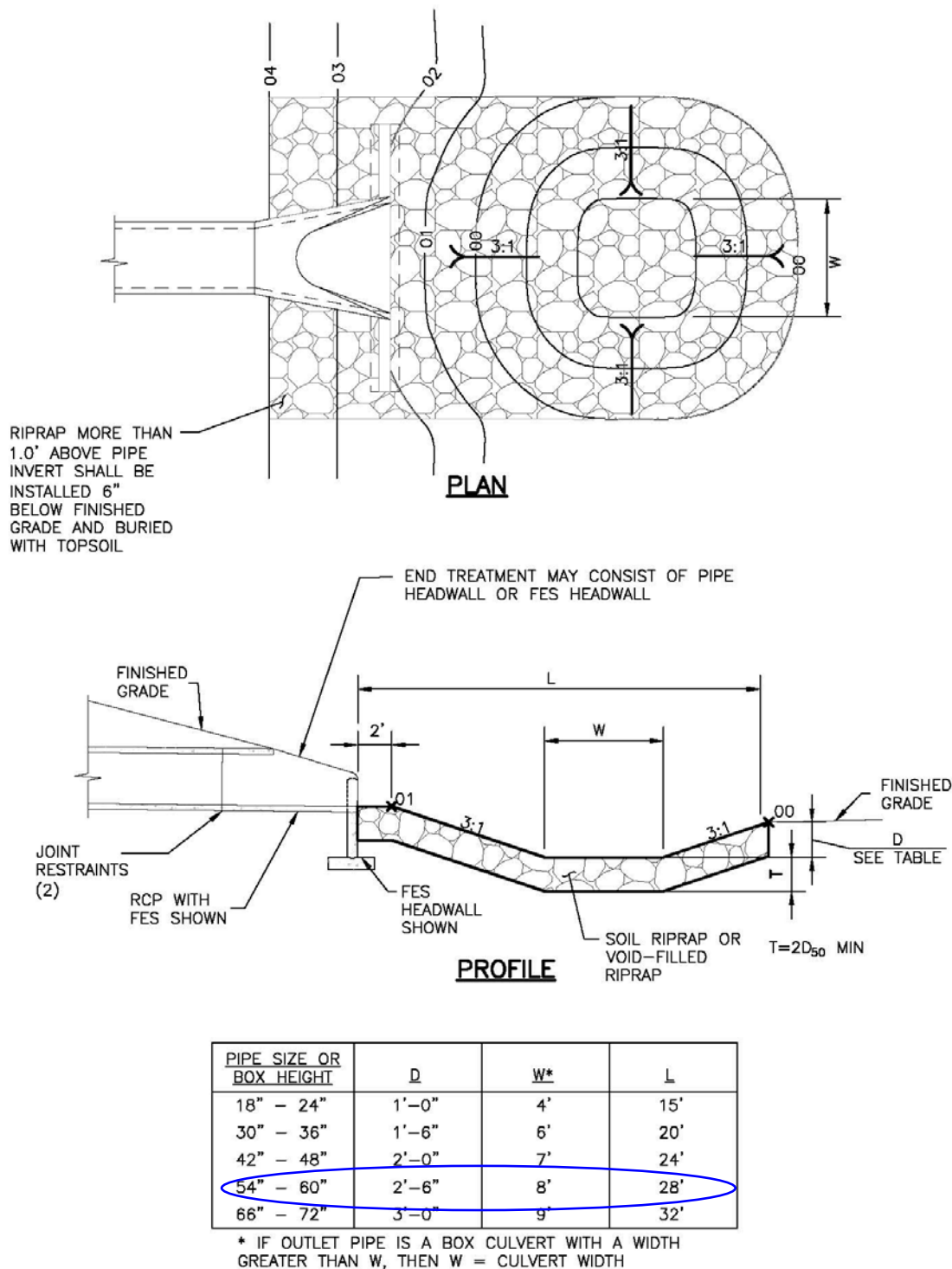


Figure 9-37. Low tailwater riprap basin

3.2.3 Rock Sizing for Riprap Apron and Low Tailwater Basin

Scour resulting from highly turbulent, rapidly decelerating flow is a common problem at conduit outlets. The following section summarizes the method for sizing riprap protection for both riprap aprons (Section 3.2.1) and low tailwater basins (Section 3.2.2).

Use Figure 9-38 to determine the required rock size for circular conduits and Figure 9-39 for rectangular conduits. Figure 9-38 is valid for $Q/D_c^{2.5}$ of 6.0 or less and Figure 9-39 is valid for $Q/WH^{1.5}$ of 8.0 or less. The parameters in these two figures are:

1. $Q/D^{1.5}$ or $Q/WH^{0.5}$ in which Q is the design discharge in cfs, D_c is the diameter of a circular conduit in feet, and W and H are the width and height of a rectangular conduit in feet.
2. Y_t/D_c or Y_t/H in which Y_t is the tailwater depth in feet, D_c is the diameter of a circular conduit in feet, and H is the height of a rectangular conduit in feet. In cases where Y_t is unknown or a hydraulic jump is suspected downstream of the outlet, use $Y_t/D_t = Y_t/H = 0.40$ when using Figures 9-38 and 9-39.
3. The riprap size requirements in Figures 9-38 and 9-39 are based on the non-dimensional parametric Equations 9-16 and 9-17 (Steven, Simons, and Watts 1971 and Smith 1975).

Circular culvert:

$$d_{50} = \frac{0.023Q}{Y_t^{1.2} D_c^{0.3}} \quad \text{Equation 9-16}$$

Rectangular culvert:

$$d_{50} = \frac{0.014H^{0.5}Q}{Y_t W} \quad \text{Equation 9-17}$$

These rock size requirements assume that the flow in the culvert is subcritical. It is possible to use Equations 9-16 and 9-17 when the flow in the culvert is supercritical (and less than full) if the value of D_c or H is modified for use in Figures 9-38 and 9-39. Note that rock sizes referenced in these figures are defined in the *Open Channels* chapter. Whenever the flow is supercritical in the culvert, substitute D_a for D_c and H_a for H , in which D_a is defined as:

$$D_a = \frac{(D_c + Y_n)}{2} \quad \text{Equation 9-18}$$

Where the maximum value of D_a shall not exceed D_c , and

$$H_a = \frac{(H + Y_n)}{2}$$

Equation 9-19

Where the maximum value of H_a shall not exceed H , and:

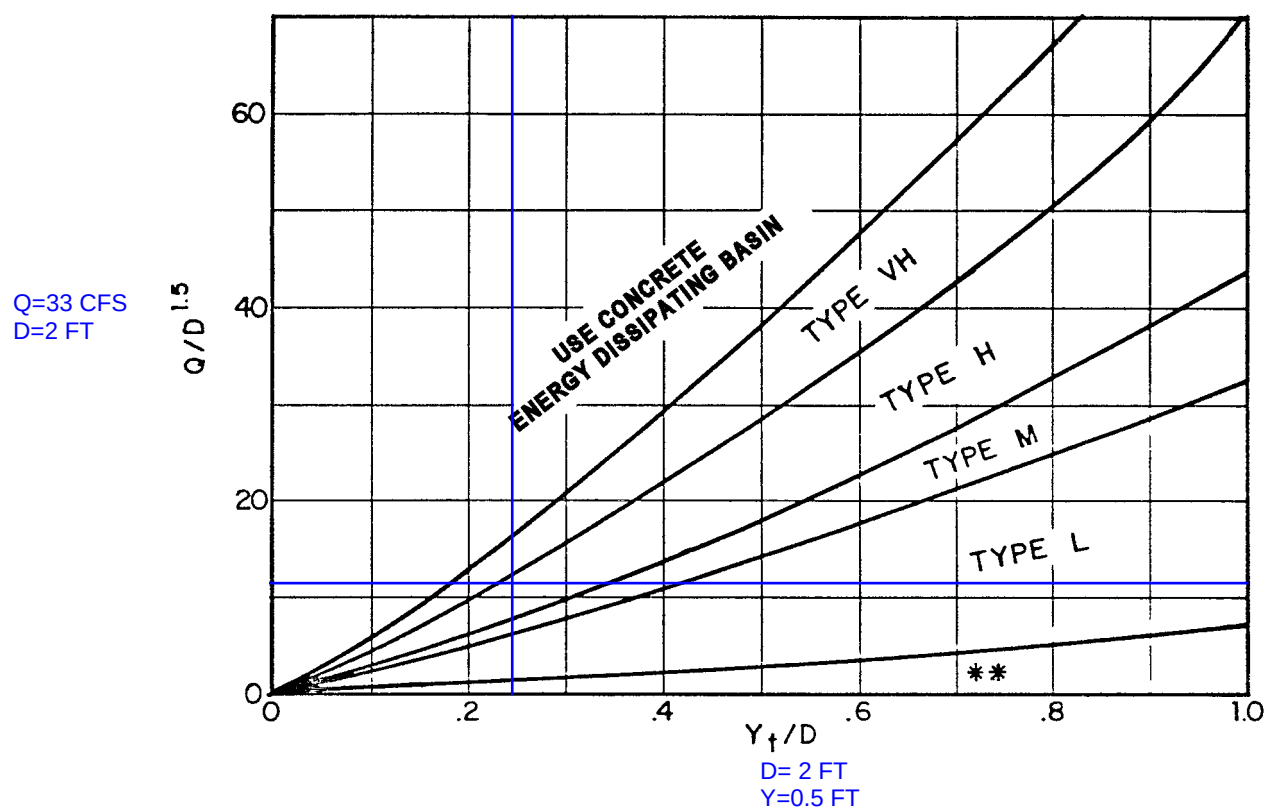
D_a = parameter to use in place of D in Figure 9-38 when flow is supercritical (ft)

D_c = diameter of circular culvert (ft)

H_a = parameter to use in place of H in Figure 9-39 when flow is supercritical (ft)

H = height of rectangular culvert (ft)

Y_n = normal depth of supercritical flow in the culvert (ft)



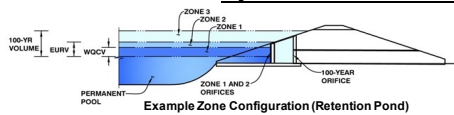
Use D_a instead of D whenever flow is supercritical in the barrel.

** Use Type L for a distance of $3D$ downstream.

Figure 9-38. Riprap erosion protection at circular conduit outlet (valid for $Q/D^{2.5} \leq 6.0$)

MHFD-Detention, Version 4.03 (May 2020)

Basin ID: Regional Detention Pond



Example Zone Configuration (Retention Pond)

Selected BMP Type =	EDB	
Watershed Area =	126.56	acres
Watershed Length =	2,755	ft
Watershed Length to Centroid =	1,235	ft
Watershed Slope =	0.013	ft/ft
Watershed Imperviousness =	47.90%	percent
Percentage Hydrologic Soil Group A =	38.2%	percent
Percentage Hydrologic Soil Group B =	61.8%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent
Target WQCV Drain Time =	40.0	hours
Location for 1-hr Rainfall Depths = User Input		

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

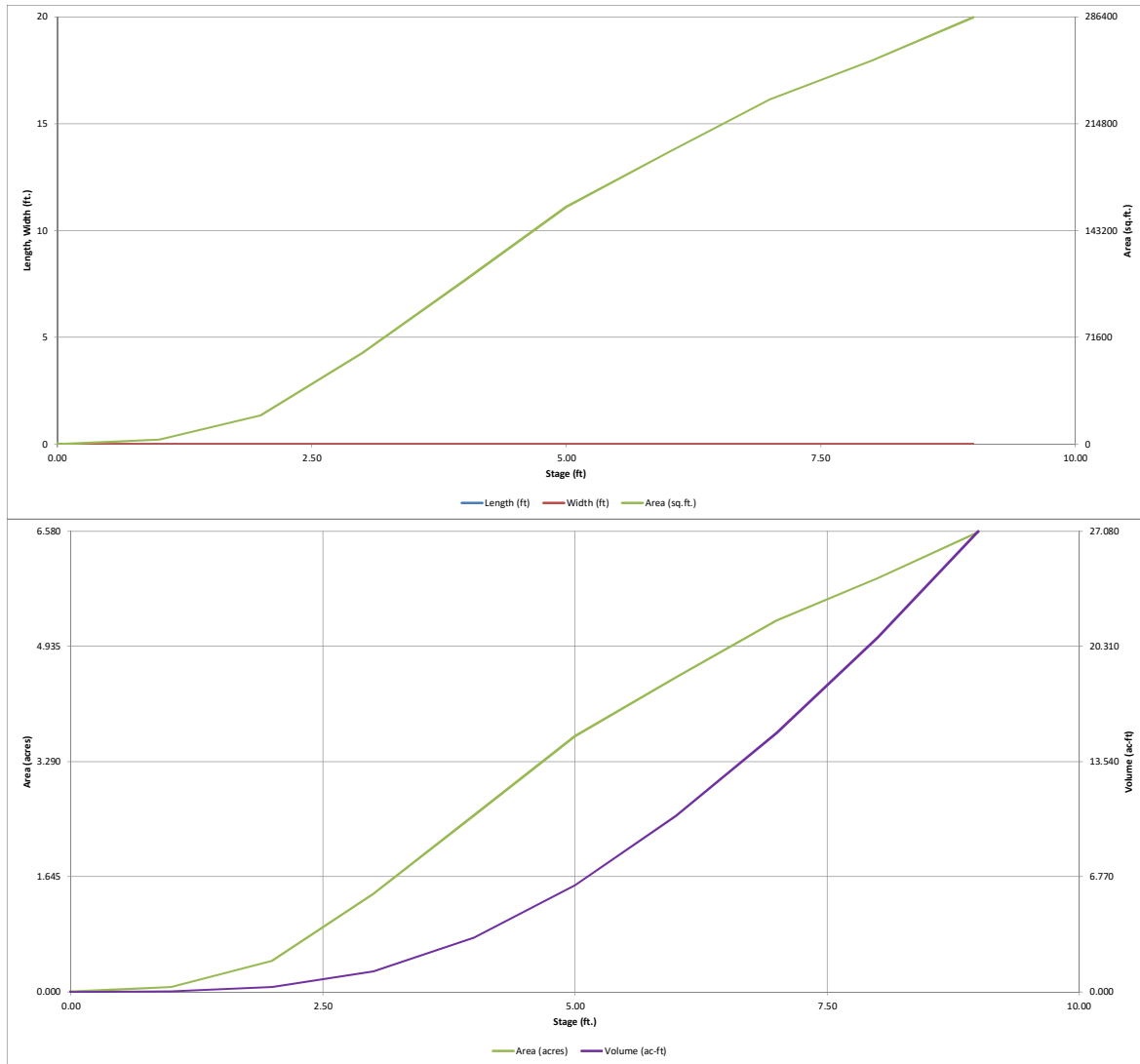
Water Quality Capture Volume (WQCV) =	2,116	acre-feet
Excess Urban Runoff Volume (EURV) =	6,630	acre-feet
2-yr Runoff Volume ($P_1 = 1$ in.) =	4,496	acre-feet
5-yr Runoff Volume ($P_1 = 1.42$ in.) =	7,204	acre-feet
10-yr Runoff Volume ($P_1 = 1.68$ in.) =	9,410	acre-feet
25-yr Runoff Volume ($P_1 = 1.69$ in.) =	10,246	acre-feet
50-yr Runoff Volume ($P_1 = 2.38$ in.) =	17,125	acre-feet
100-yr Runoff Volume ($P_1 = 2.71$ in.) =	21,211	acre-feet
500-yr Runoff Volume ($P_1 = 3.14$ in.) =	25,742	acre-feet
Approximate 2-yr Detention Volume =	3,942	acre-feet
Approximate 5-yr Detention Volume =	6,017	acre-feet
Approximate 10-yr Detention Volume =	7,901	acre-feet
Approximate 25-yr Detention Volume =	7,935	acre-feet
Approximate 50-yr Detention Volume =	10,649	acre-feet
Approximate 100-yr Detention Volume =	12,190	acre-feet

Zone 1 Volume (WQCV) =	2.115	acre-feet
Zone 2 Volume (EURV - Zone 1) =	4.514	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	5.560	acre-feet
Total Detention Basin Volume =	12.190	acre-feet
Initial Surge Volume (ISV) =	user	ft ³
Initial Surge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{total}) =	user	ft
Depth of Trickle Channel (H_{TC}) =	user	ft
Slope of Trickle Channel (S_{TC}) =	user	ft/ft
Slopes of Main Basin Bases (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	

Initial Surcharge Area (A_{S1})	=	user	ft ²
Surcharge Volume Length (L_{S1})	=	user	ft
Surcharge Volume Width (W_{S1})	=	user	ft
Depth of Basin Floor (H_{FLOOR})	=	user	ft
Length of Basin Floor (L_{FLOOR})	=	user	ft
Width of Basin Floor (W_{FLOOR})	=	user	ft
Area of Basin Floor (A_{FLOOR})	=	user	ft ²
Volume of Basin Floor (V_{FLOOR})	=	user	ft ³
Depth of Main Basin (H_{MAIN})	=	user	ft
Length of Main Basin (L_{MAIN})	=	user	ft
Width of Main Basin (W_{MAIN})	=	user	ft
Area of Main Basin (A_{MAIN})	=	user	ft ²
Volume of Main Basin (V_{MAIN})	=	user	ft ³
Calculated Total Basin Volume (V_{TOTAL})	=	user	acre-feet

Depth Increment =	
-------------------	--

Murata Farms Detention Final.xtsm. Basin

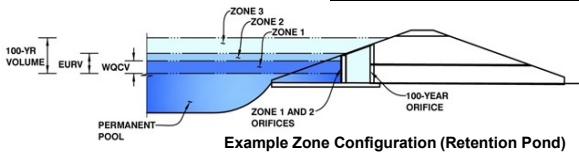


DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.03 (May 2020)

Project: Murata Farms

Basin ID: Regional Detention Pond



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	3.53	2.116	Orifice Plate
Zone 2 (EURV)	5.10	4.514	Orifice Plate
Zone 3 (100-year)	6.40	5.560	Weir&Pipe (Restrict)
Total (all zones)		12.190	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth = N/A ft (distance below the filtration media surface)
Underdrain Orifice Diameter = N/A inches

Calculated Parameters for Underdrain

Underdrain Orifice Area = N/A ft²
Underdrain Orifice Centroid = N/A feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Calculated Parameters for Plate

Invert of Lowest Orifice = 0.00 ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate = 5.10 ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing = 20.40 inches
Orifice Plate: Orifice Area per Row = 7.77 sq. inches (use rectangular openings)

WQ Orifice Area per Row = 5.396E-02 ft²
Elliptical Half-Width = N/A feet
Elliptical Slot Centroid = N/A feet
Elliptical Slot Area = N/A ft²

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.70	3.40					
Orifice Area (sq. inches)	7.77	7.77	7.77					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

Calculated Parameters for Vertical Orifice

Invert of Vertical Orifice = Not Selected N/A ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice = Not Selected N/A ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Diameter = Not Selected N/A inches

Vertical Orifice Area = Not Selected N/A ft²
Vertical Orifice Centroid = Not Selected N/A feet

User Input: Overflow Weir (Dropbox with Flat or Sloped Gate and Outlet Pipe OR Rectangular/Trapezoidal Weir (and No Outlet Pipe))

Calculated Parameters for Overflow Weir

Overflow Weir Front Edge Height, H_o = 5.10 ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length = 7.00 feet
Overflow Weir Gate Slope = 4.00 H:V
Horiz. Length of Weir Sides = 3.00 feet
Overflow Gate Open Area % = 70%
Debris Clogging % = 50%

Height of Gate Upper Edge, H_u = 5.85 ft
Overflow Weir Slope Length = 3.09 feet
Grate Open Area / 100-yr Orifice Area = 5.80
Overflow Gate Open Area w/o Debris = 15.15 ft²
Overflow Gate Open Area w/ Debris = 7.58 ft²

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

Depth to Invert of Outlet Pipe = 0.00 ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter = 24.00 inches
Restrictor Plate Height Above Pipe Invert = 18.60 inches

Outlet Orifice Area = 2.61 ft²
Outlet Orifice Centroid = 0.85 feet
Half-Central Angle of Restrictor Plate on Pipe = 2.15 radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Calculated Parameters for Spillway

Spillway Invert Stage = 7.50 ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length = 200.00 feet
Spillway End Slopes = 10.00 H:V
Freeboard above Max Water Surface = 0.30 feet

Spillway Design Flow Depth = 0.69 feet
Stage at Top of Freeboard = 8.49 feet
Basin Area at Top of Freeboard = 6.23 acres
Basin Volume at Top of Freeboard = 23.81 acre-ft

100 YEAR OUTFLOW IS EQUAL TO 10 YEAR HISTORIC FLOW

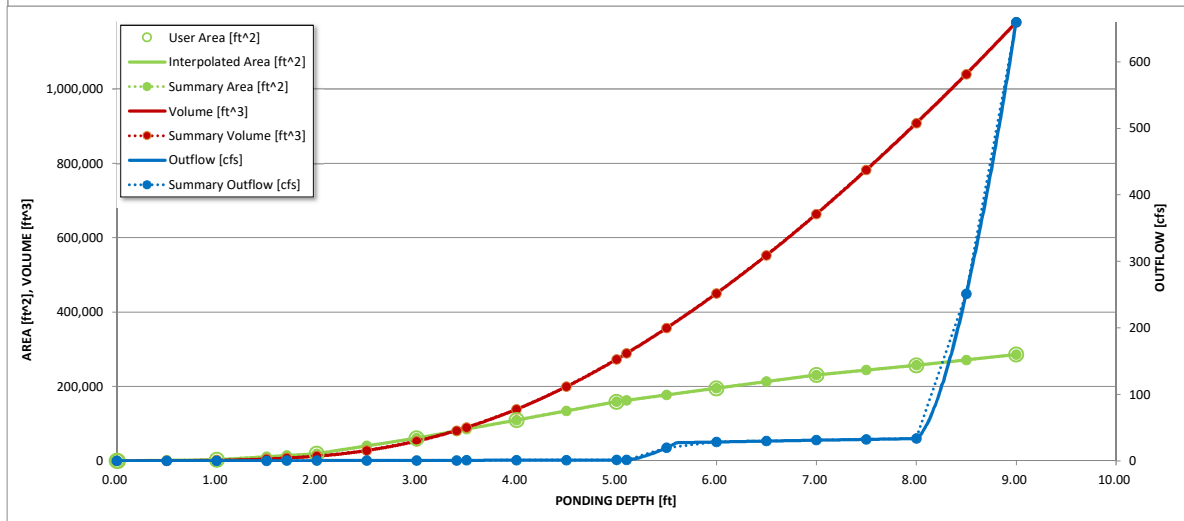
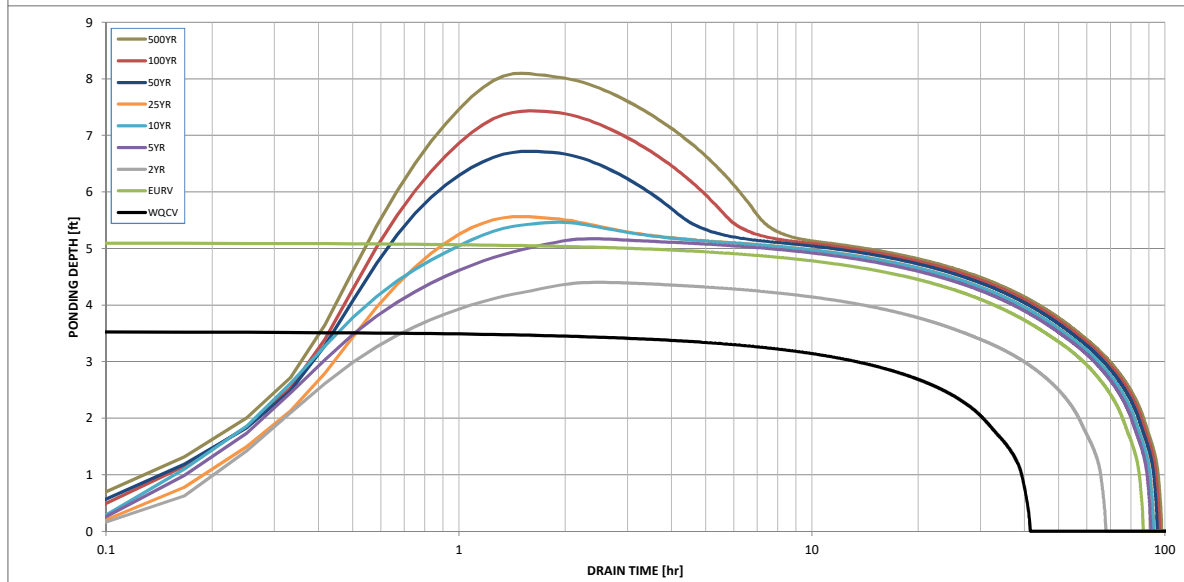
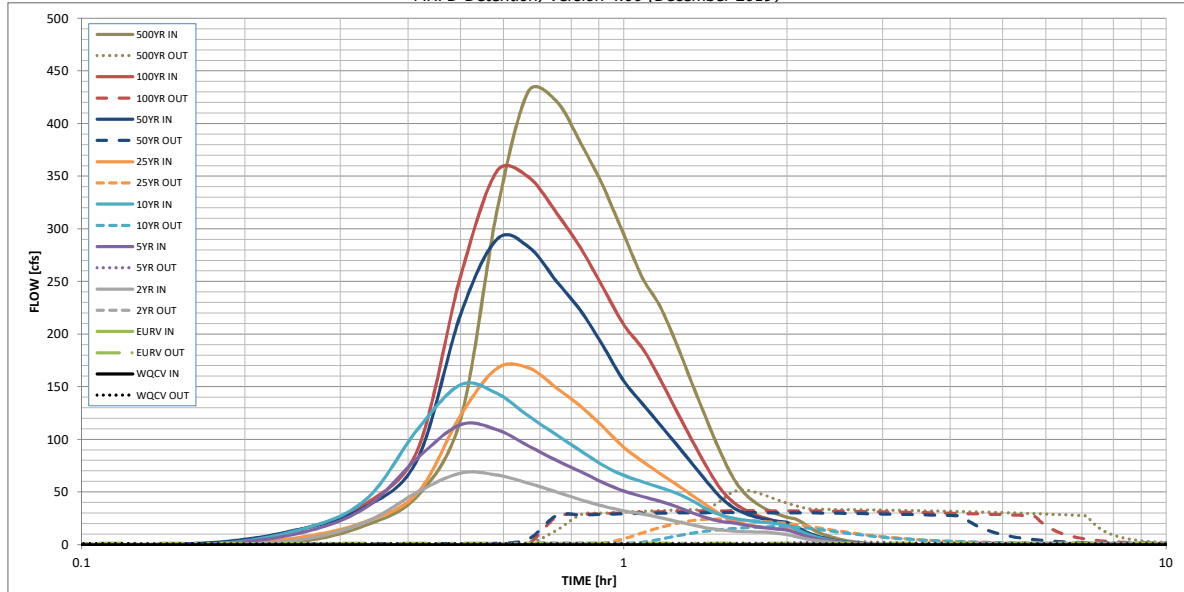
Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
Design Storm Return Period =	N/A	N/A	1.00	1.42	1.68	1.69	2.38	2.71	3.14
One-Hour Rainfall Depth (in) =	N/A	N/A	1.00	1.42	1.68	1.69	2.38	2.71	3.14
CUHP Runoff Volume (acre-ft) =	2.116	6.630	4.496	7.204	9.410	10.246	17.125	21.211	25.742
Inflow Hydrograph Volume (acre-ft) =	N/A	N/A	4.496	7.204	9.410	10.246	17.125	21.211	25.742
CUHP Predevelopment Peak Q (cfs) =	N/A	N/A	1.4	11.7	32.3	51.1	128.4	173.8	221.5
OPTIONAL Override Predevelopment Peak Q (cfs) =	N/A	N/A			32.3	33.3	34.3	36.0	
Predevelopment Unit Peak Flow, q (cfs/acre) =	N/A	N/A	0.01	0.09	0.26	0.26	0.27	0.28	1.75
Peak Inflow Q (cfs) =	N/A	N/A	68.0	114.1	152.0	168.0	290.2	355.0	430.7
Peak Outflow Q (cfs) =	0.9	1.4	1.2	1.7	7.1	9.8	30.6	32.4	126.6
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	0.1	0.2	0.3	0.9	0.9	0.6
Structure Controlling Flow =	Plate	Overflow Weir 1	Plate	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Spillway
Max Velocity through Gate 1 (fps) =	N/A	N/A	N/A	0.0	0.4	0.5	1.9	2.0	2.1
Max Velocity through Gate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours) =	38	78	62	83	88	88	86	85	83
Time to Drain 99% of Inflow Volume (hours) =	40	83	65	88	94	94	94	94	93
Maximum Ponding Depth (ft) =	3.53	5.10	4.40	5.18	5.63	5.77	6.78	7.47	7.79
Area at Maximum Ponding Depth (acres) =	1.99	3.74	2.97	3.80	4.18	4.29	5.13	5.59	5.77
Maximum Volume Stored (acre-ft) =	2.118	6.636	4.278	6.900	8.734	9.284	14.086	17.794	19.555

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Depotion, Version 4.00 (December 2019)



S-A-V-D Chart Axis Override	X-axis	Left Y-Axis	Right Y-Axis
minimum bound			
maximum bound			

DETENTION BASIN OUTLET STRUCTURE DESIGN

Outflow Hydrograph Workbook Filename: .\Outflow Hydrographs.xlsx

Inflow Hydrographs

The user can override the calculated inflow hydrographs from this workbook with inflow hydrographs developed in a separate program.

	SOURCE	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP
Time Interval	TIME	WQCV [cfs]	EURV [cfs]	2 Year [cfs]	5 Year [cfs]	10 Year [cfs]	25 Year [cfs]	50 Year [cfs]	100 Year [cfs]	500 Year [cfs]
5.00 min	0:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:10:00	0.00	0.00	0.00	0.00	0.00	0.00	1.47	0.87	2.65
	0:15:00	0.00	0.00	4.37	10.58	13.61	6.69	14.05	13.94	18.21
	0:20:00	0.00	0.00	21.24	34.95	42.31	21.96	35.84	38.85	46.59
	0:25:00	0.00	0.00	50.12	82.59	109.80	49.46	81.80	90.56	119.53
	0:30:00	0.00	0.00	68.01	114.06	151.96	123.08	218.92	255.34	317.06
	0:35:00	0.00	0.00	66.19	109.23	143.73	167.53	290.20	354.97	430.66
	0:40:00	0.00	0.00	58.41	93.79	122.26	167.98	283.03	349.36	421.67
	0:45:00	0.00	0.00	50.15	80.29	104.62	149.14	250.69	315.81	381.12
	0:50:00	0.00	0.00	42.65	69.24	89.04	131.21	221.80	281.36	339.75
	0:55:00	0.00	0.00	36.57	58.85	75.25	111.52	188.25	243.65	294.35
	1:00:00	0.00	0.00	32.14	50.92	65.84	92.35	155.31	208.80	253.00
	1:05:00	0.00	0.00	29.14	45.64	59.64	78.98	133.55	186.08	226.20
	1:10:00	0.00	0.00	25.70	41.27	54.30	67.45	113.76	157.00	190.75
	1:15:00	0.00	0.00	22.14	36.12	49.00	57.17	95.50	127.19	154.18
	1:20:00	0.00	0.00	18.90	30.51	42.12	47.09	77.48	99.72	120.37
	1:25:00	0.00	0.00	16.07	25.67	34.28	37.90	61.06	75.22	90.18
	1:30:00	0.00	0.00	14.03	22.43	28.55	29.42	46.06	54.65	65.22
	1:35:00	0.00	0.00	12.96	20.77	25.38	23.29	35.93	41.23	49.18
	1:40:00	0.00	0.00	12.47	18.88	23.41	19.74	30.01	33.45	39.79
	1:45:00	0.00	0.00	12.18	17.09	21.99	17.62	26.29	28.29	33.47
	1:50:00	0.00	0.00	11.99	15.81	21.00	16.24	23.80	24.77	29.14
	1:55:00	0.00	0.00	10.85	14.86	19.94	15.34	22.19	22.32	26.10
	2:00:00	0.00	0.00	9.52	13.84	18.26	14.75	21.10	20.58	23.95
	2:05:00	0.00	0.00	7.56	11.06	14.43	11.92	16.90	16.15	18.72
	2:10:00	0.00	0.00	5.63	8.13	10.54	8.71	12.26	11.65	13.48
	2:15:00	0.00	0.00	4.19	5.99	7.69	6.40	8.94	8.53	9.85
	2:20:00	0.00	0.00	3.09	4.39	5.61	4.70	6.54	6.28	7.25
	2:25:00	0.00	0.00	2.25	3.13	4.04	3.38	4.68	4.53	5.22
	2:30:00	0.00	0.00	1.60	2.18	2.87	2.39	3.30	3.20	3.68
	2:35:00	0.00	0.00	1.12	1.52	2.02	1.71	2.36	2.28	2.62
	2:40:00	0.00	0.00	0.74	1.03	1.36	1.18	1.61	1.56	1.78
	2:45:00	0.00	0.00	0.45	0.65	0.83	0.75	1.00	0.97	1.10
	2:50:00	0.00	0.00	0.23	0.36	0.44	0.41	0.54	0.52	0.58
	2:55:00	0.00	0.00	0.10	0.15	0.17	0.18	0.22	0.21	0.23
	3:00:00	0.00	0.00	0.03	0.04	0.04	0.04	0.04	0.03	0.03
	3:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.03 (May 2020)

Summary Stage-Area-Volume-Discharge Relationships

The user can create a summary S-A-V-D by entering the desired stage increments and the remainder of the table will populate automatically.

The user should graphically compare the summary S-A-V-D table to the full S-A-V-D table in the chart to confirm it captures all key transition points.

[illegible]

Design Procedure Form: Extended Detention Basin (EDB)

UD-BMP (Version 3.07, March 2018)

Sheet 1 of 3

Designer: **BRB**
 Company: **Redland**
 Date: **August 10, 2021**
 Project: **Murata Farms Filing No. 1**
 Location: **Forebay 1 - Basin A**

1. Basin Storage Volume

- A) Effective Imperviousness of Tributary Area, I_a
- B) Tributary Area's Imperviousness Ratio ($i = I_a / 100$)
- C) Contributing Watershed Area
- D) For Watersheds Outside of the Denver Region, Depth of Average Runoff Producing Storm
- E) Design Concept
(Select EURV when also designing for flood control)
- F) Design Volume (WQCV) Based on 40-hour Drain Time
($V_{DESIGN} = (1.0 * (0.91 * i^3 - 1.19 * i^2 + 0.78 * i) / 12 * Area)$)
- G) For Watersheds Outside of the Denver Region, Water Quality Capture Volume (WQCV) Design Volume
($V_{WQCV\ OTHER} = (d_6 * (V_{DESIGN} / 0.43))$)
- H) User Input of Water Quality Capture Volume (WQCV) Design Volume
(Only if a different WQCV Design Volume is desired)
- I) NRCS Hydrologic Soil Groups of Tributary Watershed
 i) Percentage of Watershed consisting of Type A Soils
 ii) Percentage of Watershed consisting of Type B Soils
 iii) Percentage of Watershed consisting of Type C/D Soils
- J) Excess Urban Runoff Volume (EURV) Design Volume
 For HSG A: $EURV_A = 1.68 * i^{1.28}$
 For HSG B: $EURV_B = 1.36 * i^{1.08}$
 For HSG C/D: $EURV_{C/D} = 1.20 * i^{1.08}$
- K) User Input of Excess Urban Runoff Volume (EURV) Design Volume
(Only if a different EURV Design Volume is desired)

$I_a = 50.0$ %

$i = 0.500$

Area = 32.140 ac

$d_6 =$ in

Choose One

- ☒ Water Quality Capture Volume (WQCV)
☐ Excess Urban Runoff Volume (EURV)

$V_{DESIGN} = 0.552$ ac-ft

$V_{DESIGN\ OTHER} =$ ac-ft

$V_{DESIGN\ USER} =$ ac-ft

HSG A = %

HSG B = %

HSG C/D = %

$EURV_{DESIGN} =$ ac-ft

$EURV_{DESIGN\ USER} =$ ac-ft

2. Basin Shape: Length to Width Ratio

(A basin length to width ratio of at least 2:1 will improve TSS reduction.)

L : W = 2.0 : 1

3. Basin Side Slopes

- A) Basin Maximum Side Slopes
(Horizontal distance per unit vertical, 4:1 or flatter preferred)

Z = 4.00 ft / ft

4. Inlet

- A) Describe means of providing energy dissipation at concentrated inflow locations:

Forebay to be provided at each outlet

5. Forebay

- A) Minimum Forebay Volume
($V_{MIN} = 3\%$ of the WQCV)

$V_{MIN} = 0.017$ ac-ft

- B) Actual Forebay Volume

$V_F = 0.017$ ac-ft

- C) Forebay Depth
($D_F = 18$ inch maximum)

$D_F = 18.0$ in

- D) Forebay Discharge

- i) Undetained 100-year Peak Discharge

$Q_{100} = 140.50$ cfs

- ii) Forebay Discharge Design Flow
($Q_F = 0.02 * Q_{100}$)

$Q_F = 2.81$ cfs

- E) Forebay Discharge Design

Choose One

- ☐ Berm With Pipe
☒ Wall with Rect. Notch
☐ Wall with V-Notch Weir

Flow too small for berm w/ pipe

- F) Discharge Pipe Size (minimum 8-inches)

Calculated $D_P =$ in

- G) Rectangular Notch Width

Calculated $W_N = 9.1$ in

Design Procedure Form: Extended Detention Basin (EDB)

UD-BMP (Version 3.07, March 2018)

Sheet 1 of 3

Designer: BRB
Company: Redland
Date: August 10, 2021
Project: Murata Farms Filing No. 1
Location: Forebay 2- Basin C

1. Basin Storage Volume

- A) Effective Imperviousness of Tributary Area, I_a
- B) Tributary Area's Imperviousness Ratio ($i = I_a / 100$)
- C) Contributing Watershed Area
- D) For Watersheds Outside of the Denver Region, Depth of Average Runoff Producing Storm
- E) Design Concept
(Select EURV when also designing for flood control)
- F) Design Volume (WQCV) Based on 40-hour Drain Time
($V_{DESIGN} = (1.0 * (0.91 * i^3 - 1.19 * i^2 + 0.78 * i) / 12 * Area)$)
- G) For Watersheds Outside of the Denver Region, Water Quality Capture Volume (WQCV) Design Volume
($V_{WQCV\ OTHER} = (d_b * (V_{DESIGN} / 0.43))$)
- H) User Input of Water Quality Capture Volume (WQCV) Design Volume
(Only if a different WQCV Design Volume is desired)
- I) NRCS Hydrologic Soil Groups of Tributary Watershed
 i) Percentage of Watershed consisting of Type A Soils
 ii) Percentage of Watershed consisting of Type B Soils
 iii) Percentage of Watershed consisting of Type C/D Soils
- J) Excess Urban Runoff Volume (EURV) Design Volume
 For HSG A: $EURV_A = 1.68 * i^{1.28}$
 For HSG B: $EURV_B = 1.36 * i^{1.08}$
 For HSG C/D: $EURV_{C/D} = 1.20 * i^{1.08}$
- K) User Input of Excess Urban Runoff Volume (EURV) Design Volume
(Only if a different EURV Design Volume is desired)

$I_a = 42.0$ %

$i = 0.420$

Area = 10.590 ac

$d_b =$ in

Choose One

- ☒ Water Quality Capture Volume (WQCV)
☐ Excess Urban Runoff Volume (EURV)

$V_{DESIGN} = 0.163$ ac-ft

$V_{DESIGN\ OTHER} =$ ac-ft

$V_{DESIGN\ USER} =$ ac-ft

HSG A = %

HSG B = %

HSG C/D = %

$EURV_{DESIGN} =$ ac-ft

$EURV_{DESIGN\ USER} =$ ac-ft

2. Basin Shape: Length to Width Ratio

(A basin length to width ratio of at least 2:1 will improve TSS reduction.)

L : W = 2.0 : 1

3. Basin Side Slopes

- A) Basin Maximum Side Slopes
(Horizontal distance per unit vertical, 4:1 or flatter preferred)

Z = 4.00 ft / ft

4. Inlet

- A) Describe means of providing energy dissipation at concentrated inflow locations:

Forebay to be provided at each outlet

5. Forebay

- A) Minimum Forebay Volume
($V_{MIN} = 2\%$ of the WQCV)

$V_{MIN} = 0.003$ ac-ft

- B) Actual Forebay Volume

$V_F = 0.011$ ac-ft

- C) Forebay Depth
($D_F = 18$ inch maximum)

$D_F = 18.0$ in

- D) Forebay Discharge

i) Undetained 100-year Peak Discharge

$Q_{100} = 45.70$ cfs

ii) Forebay Discharge Design Flow
($Q_F = 0.02 * Q_{100}$)

$Q_F = 0.91$ cfs

- E) Forebay Discharge Design

Choose One

- ☐ Berm With Pipe
☒ Wall with Rect. Notch
☐ Wall with V-Notch Weir

Flow too small for berm w/ pipe

- F) Discharge Pipe Size (minimum 8-inches)

Calculated $D_P =$ in

- G) Rectangular Notch Width

Calculated $W_N = 5.4$ in

Design Procedure Form: Extended Detention Basin (EDB)

UD-BMP (Version 3.07, March 2018)

Sheet 1 of 3

Designer: **BRB**
 Company: **Redland**
 Date: **August 10, 2021**
 Project: **Murata Farms Filing No. 1**
 Location: **Forebay 3 - Mountain Sky West**

1. Basin Storage Volume

- A) Effective Imperviousness of Tributary Area, I_a
- B) Tributary Area's Imperviousness Ratio ($i = I_a / 100$)
- C) Contributing Watershed Area
- D) For Watersheds Outside of the Denver Region, Depth of Average Runoff Producing Storm
- E) Design Concept
(Select EURV when also designing for flood control)
- F) Design Volume (WQCV) Based on 40-hour Drain Time
($V_{DESIGN} = (1.0 * (0.91 * i^3 - 1.19 * i^2 + 0.78 * i) / 12 * \text{Area})$)
- G) For Watersheds Outside of the Denver Region, Water Quality Capture Volume (WQCV) Design Volume
($V_{WQCV \text{ OTHER}} = (d_b * (V_{DESIGN} / 0.43))$)
- H) User Input of Water Quality Capture Volume (WQCV) Design Volume
(Only if a different WQCV Design Volume is desired)
- I) NRCS Hydrologic Soil Groups of Tributary Watershed
 i) Percentage of Watershed consisting of Type A Soils
 ii) Percentage of Watershed consisting of Type B Soils
 iii) Percentage of Watershed consisting of Type C/D Soils
- J) Excess Urban Runoff Volume (EURV) Design Volume
 For HSG A: $EURV_A = 1.68 * i^{1.28}$
 For HSG B: $EURV_B = 1.36 * i^{1.08}$
 For HSG C/D: $EURV_{C/D} = 1.20 * i^{1.08}$
- K) User Input of Excess Urban Runoff Volume (EURV) Design Volume
(Only if a different EURV Design Volume is desired)

$I_a = 38.0$ %

$i = 0.380$

Area = 48.020 ac

$d_b =$ in

Choose One

- ☒ Water Quality Capture Volume (WQCV)
☐ Excess Urban Runoff Volume (EURV)

$V_{DESIGN} = 0.698$ ac-ft

$V_{DESIGN \text{ OTHER}} =$ ac-ft

$V_{DESIGN \text{ USER}} =$ ac-ft

HSG A = %

HSG B = %

HSG C/D = %

$EURV_{DESIGN} =$ ac-ft

$EURV_{DESIGN \text{ USER}} =$ ac-ft

2. Basin Shape: Length to Width Ratio

(A basin length to width ratio of at least 2:1 will improve TSS reduction.)

L : W = 2.0 : 1

3. Basin Side Slopes

- A) Basin Maximum Side Slopes
(Horizontal distance per unit vertical, 4:1 or flatter preferred)

Z = 4.00 ft / ft

4. Inlet

- A) Describe means of providing energy dissipation at concentrated inflow locations:

Forebay to be provided at each outlet

5. Forebay

- A) Minimum Forebay Volume
($V_{MIN} = 3\%$ of the WQCV)
- B) Actual Forebay Volume
- C) Forebay Depth
($D_F = 18$ inch maximum)
- D) Forebay Discharge
 i) Undetained 100-year Peak Discharge
 ii) Forebay Discharge Design Flow
($Q_F = 0.02 * Q_{100}$)
- E) Forebay Discharge Design
- F) Discharge Pipe Size (minimum 8-inches)
- G) Rectangular Notch Width

$V_{MIN} = 0.021$ ac-ft

$V_F = 0.021$ ac-ft

$D_F = 18.0$ in

$Q_{100} = 71.50$ cfs

$Q_F = 1.43$ cfs

Choose One

- ☐ Berm With Pipe
☒ Wall with Rect. Notch
☐ Wall with V-Notch Weir

Flow too small for berm w/ pipe

Calculated $D_P =$ in

Calculated $W_N = 6.4$ in

Design Procedure Form: Extended Detention Basin (EDB)

UD-BMP (Version 3.07, March 2018)

Sheet 1 of 3

Designer: BRB
Company: Redland
Date: August 10, 2021
Project: Murata Farms Filing No. 1
Location: Forebay 4 - Mountain Sky East

1. Basin Storage Volume

- A) Effective Imperviousness of Tributary Area, I_a
- B) Tributary Area's Imperviousness Ratio ($i = I_a / 100$)
- C) Contributing Watershed Area
- D) For Watersheds Outside of the Denver Region, Depth of Average Runoff Producing Storm
- E) Design Concept
(Select EURV when also designing for flood control)
- F) Design Volume (WQCV) Based on 40-hour Drain Time
($V_{DESIGN} = (1.0 * (0.91 * i^3 - 1.19 * i^2 + 0.78 * i) / 12 * Area)$)
- G) For Watersheds Outside of the Denver Region, Water Quality Capture Volume (WQCV) Design Volume
($V_{WQCV\ OTHER} = (d_b * (V_{DESIGN} / 0.43))$)
- H) User Input of Water Quality Capture Volume (WQCV) Design Volume
(Only if a different WQCV Design Volume is desired)
- I) NRCS Hydrologic Soil Groups of Tributary Watershed
 i) Percentage of Watershed consisting of Type A Soils
 ii) Percentage of Watershed consisting of Type B Soils
 iii) Percentage of Watershed consisting of Type C/D Soils
- J) Excess Urban Runoff Volume (EURV) Design Volume
 For HSG A: $EURV_A = 1.68 * i^{1.28}$
 For HSG B: $EURV_B = 1.36 * i^{1.08}$
 For HSG C/D: $EURV_{C/D} = 1.20 * i^{1.08}$
- K) User Input of Excess Urban Runoff Volume (EURV) Design Volume
(Only if a different EURV Design Volume is desired)

$I_a = 40.0$ %

$i = 0.400$

Area = 2.560 ac

$d_b =$ in

Choose One

- ☒ Water Quality Capture Volume (WQCV)
☐ Excess Urban Runoff Volume (EURV)

$V_{DESIGN} = 0.038$ ac-ft

$V_{DESIGN\ OTHER} =$ ac-ft

$V_{DESIGN\ USER} =$ ac-ft

HSG A = %

HSG B = %

HSG C/D = %

$EURV_{DESIGN} =$ ac-ft

$EURV_{DESIGN\ USER} =$ ac-ft

2. Basin Shape: Length to Width Ratio

(A basin length to width ratio of at least 2:1 will improve TSS reduction.)

L : W = 2.0 : 1

3. Basin Side Slopes

- A) Basin Maximum Side Slopes
(Horizontal distance per unit vertical, 4:1 or flatter preferred)

Z = 4.00 ft / ft

4. Inlet

- A) Describe means of providing energy dissipation at concentrated inflow locations:

Forebay to be provided at each outlet

5. Forebay

- A) Minimum Forebay Volume
($V_{MIN} = 1\%$ of the WQCV)

$V_{MIN} = 0.000$ ac-ft

- B) Actual Forebay Volume

$V_F = 0.003$ ac-ft

- C) Forebay Depth
($D_F = 12$ inch maximum)

$D_F = 12.0$ in

- D) Forebay Discharge

i) Undetained 100-year Peak Discharge

$Q_{100} = 10.10$ cfs

ii) Forebay Discharge Design Flow
($Q_F = 0.02 * Q_{100}$)

$Q_F = 0.20$ cfs

- E) Forebay Discharge Design

Choose One

- ☐ Berm With Pipe
☒ Wall with Rect. Notch
☐ Wall with V-Notch Weir

Flow too small for berm w/ pipe

- F) Discharge Pipe Size (minimum 8-inches)

Calculated $D_P =$ in

- G) Rectangular Notch Width

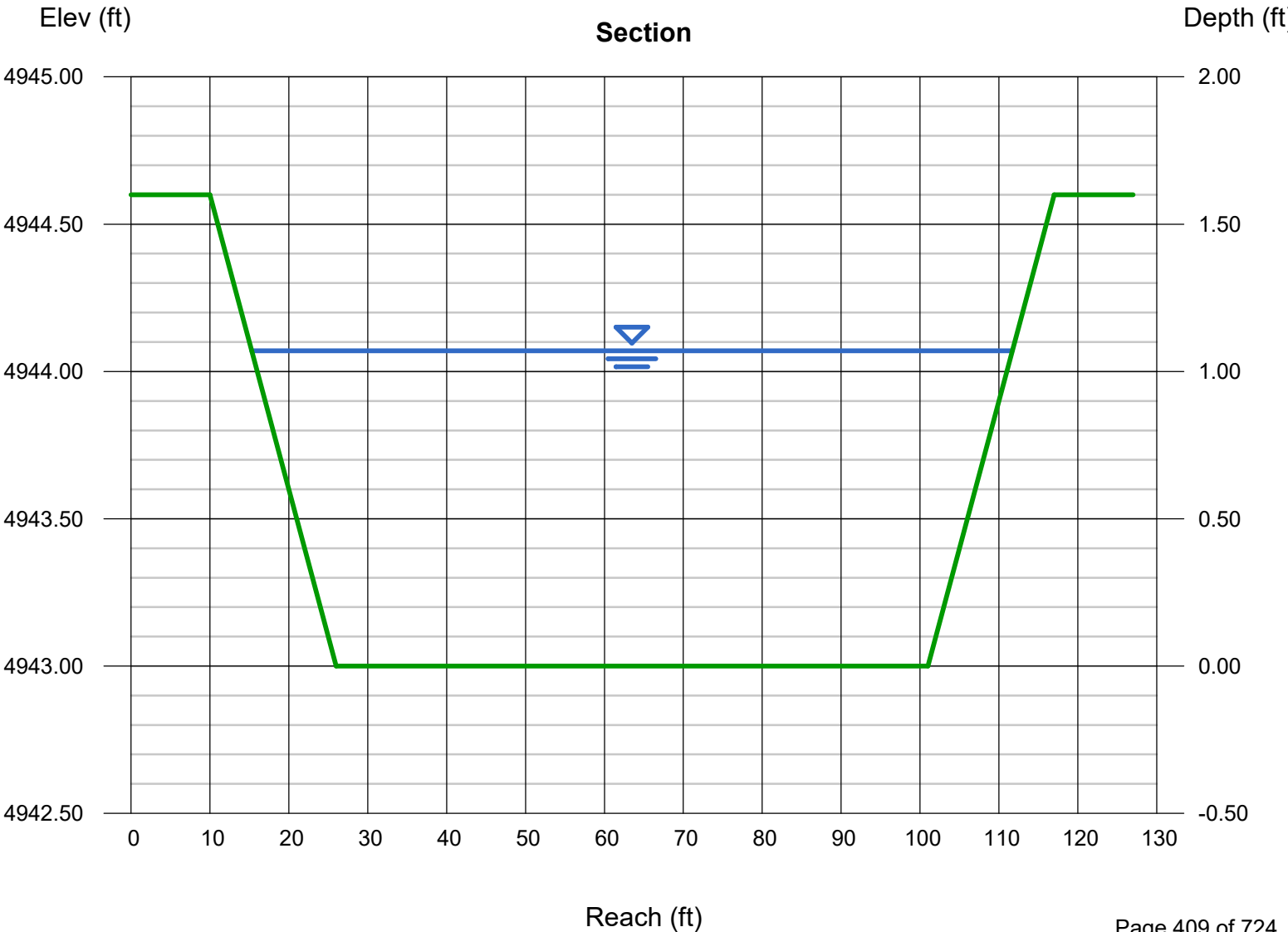
Calculated $W_N = 3.1$ in

Channel Report

Equalizer Spillway

Trapezoidal		Highlighted	
Bottom Width (ft)	= 75.00	Depth (ft)	= 1.07
Side Slopes (z:1)	= 10.00, 10.00	Q (cfs)	= 375.00
Total Depth (ft)	= 1.60	Area (sqft)	= 91.70
Invert Elev (ft)	= 4943.00	Velocity (ft/s)	= 4.09
Slope (%)	= 1.00	Wetted Perim (ft)	= 96.51
N-Value	= 0.035	Crit Depth, Yc (ft)	= 0.89
Calculations		Top Width (ft)	= 96.40
Compute by:	Known Q	EGL (ft)	= 1.33
Known Q (cfs)	= 375.00		

-100 YEAR POND INFLOW - BASIN A (140.5 CFS) + BASIN C (45.7 CFS) = 186.2 CFS
-CITY OF FORT LUPTON REQUIRES SPILLWAY TO BE SIZED FOR Q100 X 2 = 372.4 CFS



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

Monday, Aug 16 2021

Emergency Spillway

Trapezoidal

Bottom Width (ft) = 200.00
Side Slopes (z:1) = 10.00, 10.00
Total Depth (ft) = 1.50
Invert Elev (ft) = 4943.50
Slope (%) = 2.00
N-Value = 0.035

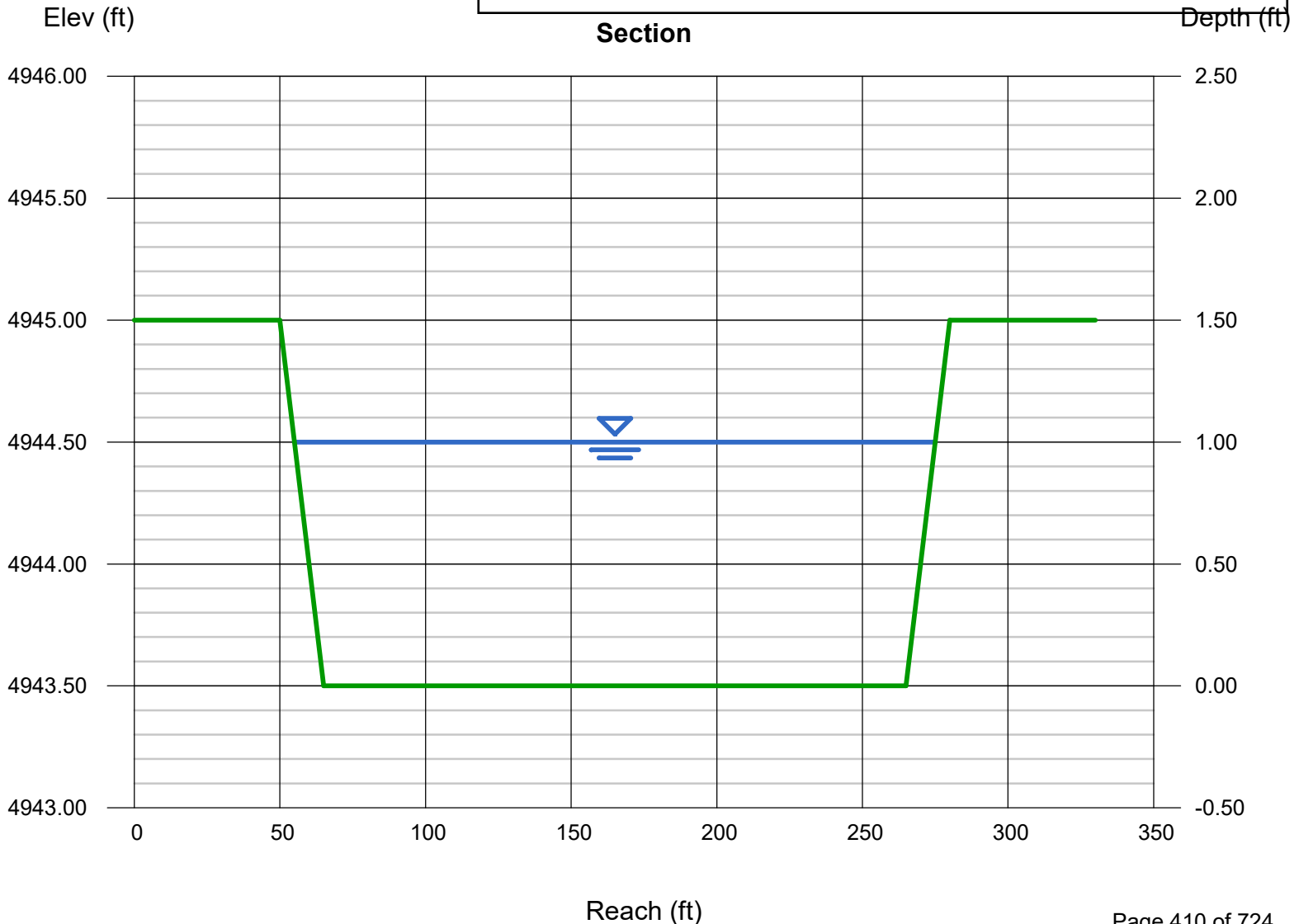
Highlighted

Depth (ft) = 1.00
Q (cfs) = 1,209
Area (sqft) = 210.00
Velocity (ft/s) = 5.76
Wetted Perim (ft) = 220.10
Crit Depth, Yc (ft) = 1.03
Top Width (ft) = 220.00
EGL (ft) = 1.52

Calculations

Compute by: Known Q
Known Q (cfs) = 1209.00

-100 YEAR POND INFLOW - MURATA (335 CFS) + MOUNTAIN SKY (230 CFS) + MOUNTAIN SKY BYPASS CHANNEL (643 CFS) = 1208 CFS
-CITY OF FORT LUPTON REQUIRES SPILLWAY TO BE SIZED FOR Q100 X 2. HOWEVER, THE RESULTING SPILLWAY SIZE WOULD NOT FIT THE POND EMBANKMENT WHEN CONSIDERING THE BYPASS CHANNEL. THEREFORE, THE SPILLWAY HAS BEEN SIZED FOR THE 100-YEAR STORM ONLY WITH THE FOLLOWING CONSIDERATIONS; THE POND IS OVERSIZED TO DETAIN PROPOSED PEAK FLOWS TO THE HISTORIC 10 YEAR OUTFLOWS AND THE BYPASS CHANNEL TIME OF CONCENTRATION WILL BE MUCH LARGER THAN THAT OF THE ONSITE AREAS SO IT IS MORE THAN LIKELY THAT THE PEAK FLOWS WILL NOT REACH THE POND AT THE SAME TIME. ADDITIONALLY, 1' OF FREEBOARD RELATIVE TO THE TOP OF BERM CANNOT BE ACHIEVED, ONLY 0.5' IS PROVIDED. IF THE BERM WOULD BE RAISED THERE WOULD BE BACKWATER ISSUES ON THE MOUNTAIN SKY LOTS, WHICH ARE ALREADY UNDER CONSTRUCTION.



Appendix D - Reference Documents

MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/- 45
RESIDENTIAL LOTS
FINAL DRAINAGE REPORT
Page 1 of 12

MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/-
45 RESIDENTIAL LOTS
FINAL DRAINAGE REPORT

JUNE 2016

For:

**Rokeh Consulting, LLC
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MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/- 45 RESIDENTIAL LOTS FINAL DRAINAGE REPORT

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APPENDICIES

- A. Maps and Exhibits
- B. Hydrologic Computations
- C. Hydraulic Computations
- D. Referenced Criteria

SCOPE

The purpose of this report is to determine the drainage infrastructure for the proposed project with +/- 45 Residential Lots and the detailed concept for the portion of the site which is being developed in Mountain Sky Subdivision, Filing No. 1 with +/- 45 Residential Lots. The scope of this report is limited to hydrologic and hydraulic calculations for the major tributary basins, on-site detention pond, on-site infrastructure for Filing No. 1 and a bypass channel for off-site flows which drain to and through the site along the north property line. The infrastructure within Filing No. 1 was sized to convey flows from the ultimate buildout condition for the Mountain Sky subdivision.

1.0 GENERAL LOCATION AND DESCRIPTION

1.1 Location

The project is located as follows:

- Within the southwest quarter of Section 4, Township 1 North, Range 66 West of the 6th Principal Meridian
- Adjacent to the southern and eastern perimeter of Fort Lupton's city limits
- North of Weld CR 12
- South of undeveloped land located south of State Highway 52
- East of Shortline Ditch (runoff from this site currently enters the ditch)
- West of CR 29 ½
- West of an existing levee which passes under W CR 12 and SH 52
- North and west of a single family home, south of a single family home and southeast of a housing sub-division
- See Vicinity Map located in Appendix A

1.2 Description of Property

The following are characteristics of the site:

- As currently platted, the parcel consists of 76.95 acres
- Anadarko will utilize 15.75 acres of the parcel for future oil/gas development which includes 1.25 acres of W CR12 and W CR 29 roads adjacent to the Anadarko Parcel
- Mountain Sky Subdivision proposes to utilize the remaining 61.2 acres of the parcel

MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/- 45 RESIDENTIAL LOTS FINAL DRAINAGE REPORT

Page 5 of 12

- Mountain Sky Subdivision, Filing No. 1 with +/- 45 Residential Lots will develop approximately 22 acres including an on-site detention/ water quality pond and a channel to bypass upstream offsite flows
- Site is existing farm land
- Site drains east to the west with existing ground slopes ranging between 1% and 4%
- Site contains soils predominantly in Hydrologic Group B, Sandy Plains (see Soils Map located in Appendix A)
- Roadside drainage ditches are located on the south side of the site adjacent to WCR 12
- An oil and gas well site located along the north property line
- The proposed land use for the site is primarily single family residential
- The project includes the development of land, roadways, parks and utilities within the site, as well as the construction of a drainage system which will include detention and water quality facilities to meet the City of Fort Lupton's onsite drainage requirements
- A Natural Resources Assessment was completed by ERO Resources Corporation on September 30, 2014 which stated ditches and wetland vegetation are potential waters of the U.S. but "because the ditches do not have a surface connection to a known water of the U.S., it is unlikely the Corps would take jurisdiction over the ditches; however, the Corp must make that determination."

2.0 DRAINAGE BASINS AND SUB-BASINS

2.1 Major Basin Description

- The project falls within the study area of the Master Drainage Plan of:
 - a) the *City of Fort Lupton Water, Wastewater and Storm Drainage Master Plan, Section 6 Storm Drainage System*
 - b) the *DRAFT copy of the City of Fort Lupton Comprehensive Plan* prepared by Clear Water Solutions, Inc.
- Storm runoff from the tributary basins generally flows east to west across the subject site
- Site runoff is ultimately conveyed to South Platte River via downstream ditches, streets, and storm sewer conveyance facilities

2.2 Sub-Basin Description

- According to the *Storm Drainage Master Plan*, the project site is located in the South Drainage Basin which included portions of sections 3, 4, and 5, T. 1N., R66W of 6th P.M.
- According to the *DRAFT copy of the City of Fort Lupton Comprehensive Plan, Section 8.0 STORM DRAINAGE SYSTEM* (a copy of pertinent sections of the *DRAFT* report is located in Appendix D), the project site is located within sub-basin S6. The project site received runoff from sub-basins S6.1 and S6.3 and portions of sub-basins S6.2 and S8 for a total of approximately 1700 acres

MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/- 45 RESIDENTIAL LOTS FINAL DRAINAGE REPORT

Page 6 of 12

- An existing irrigation ditch, Fulton Ditch, located east of the site running in a south-to-north direction, receives runoff from the South, East, and OS Basins. It is assumed that the ditch is running full and that all runoff from the basin flows over the ditch embankment continuing in a westerly direction towards the subject site
- Shortline Ditch, located immediately west of the proposed development, currently receives runoff from all five sub-basins, including the subject site
- Approximately 3 acres consisting of single-family residences, located southeasterly and offsite, historically flows northwesterly onto the proposed site
- The development is within FEMA Flood Insurance Rate Map panels 0802660981C, revised September 28, 1982, and 0802660982C, which is not available for printing. The project is located in Zone C and no mapped 100-year floodplains exist on the site. See FEMA Map Community Panel 080266 0981C in Appendix A
- There are no existing major irrigation facilities located on the Mountain Sky Subdivision, Filing No. 1 with +/- 45 Residential Lots property.
- The downstream drainage flow patterns are not anticipated to affect the development of Mountain Sky Subdivision, Filing No. 1 with +/- 45 Residential Lots

3.0 DRAINAGE DESIGN CRITERIA

3.1 Development Criteria References and Constraints

- Research was completed in an effort to obtain the DRAFT copy of the *City of Fort Lupton Comprehensive Plan, Section 8.0 STORM DRAINAGE SYSTEM*. The study is currently in progress and calculations are not available at this time
- *City of Fort Lupton Water, Wastewater and Storm Drainage Master Plan, Section 6 Storm Drainage System*, prepared by Rothberg, Tamburini & Winsor, Inc. in 1999, provided major basin and irrigation information as well as future concepts for the project area
- The *City of Fort Lupton Standards and Specifications for the Design and Construction of Public Improvements, 2014 Edition, Chapter 5 Storm Sewer System* provided local criteria
- The *City of Fort Lupton Storm Drainage Design and Technical Criteria (CRITERIA)* shall be the design criteria for the analysis and design of onsite storm drainage facilities
- The *Urban Drainage and Flood Control District's (UDFDC) Urban Storm Drainage Criteria Manual* was also used as a reference and guide for regional criteria
- The *Wastewater and Storm Drainage Master Plan, Section 6, South Drainage Basin* has proposed that all developments within the subject area of the City release storm water only at the 5-year historic level, including the storm generated by the 100-year event

MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/- 45
RESIDENTIAL LOTS
FINAL DRAINAGE REPORT

Page 7 of 12

3.2 Hydrologic Criteria

- Design rainfall is from *City of Fort Lupton Storm Drainage Design and Technical Criteria, Section 5 RAINFALL*

Event Occurrence	2 YR	5 YR	10 YR	50 YR	100 YR
1-hr. Rainfall Intensity (in/hr)	1.00	1.42	1.68	2.35	2.71

- Peak runoff rates for the final design of the Mountain Sky Subdivision, Filing No. 1 with +/- 45 Residential Lots utilize the Rational Method Procedure
- Offsite runoff calculations utilized CUHP/SWMM as presented in the *Mountain Sky Subdivision Preliminary Drainage Report*
- The 5-year storm is the minor event for the development
- The 100-year storm is the major event for the development

3.3 Hydraulic Criteria

- The capacities of existing downstream storm sewer pipes or natural drainage ways should not be impacted by this development once local detention and storm sewer water quality pond facilities are constructed
- Upstream-offsite drainage basin will require similar detention/W.Q. ponds to attenuate peak flows to the 5-year historic release rate
- CUHP/SWMM modeling was used in the *Preliminary Drainage Report* to determine the peak runoff to the proposed onsite bypass channel
- Imperviousness for the future Site Basin was determined at 40% by interpolating the runoff coefficients 5-yr $c=0.45$ and 100-yr $c=0.60$
- Per the City of Fort Lupton's CRITERIA, the FAA method for Minor and Major Storm Storage Volumes was utilized to determine onsite detention
- On-site detention design is based upon the 5-year and 100-year storm frequencies with a 5 year historic release rate
- From the *Wastewater and Storm Drainage Master Plan*, the release rate for the major storm of the on-site detention pond has been restricted to the 5-year historic storm peak flow as shown in the *Preliminary Drainage Report*
- The proposed outlet structure constructed during Filing No. 1 will be sized for final build-out conditions for the minor and major storms but the vertical water quality outlet pipe shall be resized and replaced as each filing is constructed
- Since the runoff from the surface area of the proposed bypass channel cannot be captured and treated in the on-site detention pond, the minor and major storm release rates have been reduced proportionally

3.4 Adaptations or Variations of Criteria

- Maximum design depth of ponding in the major storm is greater than the CRITERIA requirement of 5 feet since the major storm is being restricted to the 5-year release rate (maximum ponding depth of one foot is needed to meet the required detention ponding needs for the site)

MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/- 45 RESIDENTIAL LOTS FINAL DRAINAGE REPORT

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- Pond bottom sloped at 2% as opposed to CRITERIA's requirement of 3% slope (NOTE: could not achieve desired volume with the 3% criteria)

4.0 DRAINAGE FACILITY DESIGN

4.1 General Concept

- The proposed drainage system will continue to drain the project site from southeast to northwest following the existing drainage pattern
- As described in the *Preliminary Drainage Report*, it is not possible to create a regional detention pond on this site as proposed in the *Wastewater and Storm Drainage Master Plan*
- An on-site detention pond for the project and a bypass channel for offsite runoff considerations is being proposed for final buildout conditions to be installed during the construction of Mountain Sky Subdivision, Filing No. 1 with +/- 45 Residential Lots (NOTE: additional ponding and water quality facilities will need to be constructed within upstream reaches as land development occurs)
- Excerpts from referenced criteria and reports are included in Appendix D

4.2 Specific Details

Site Runoff

- Six offsite sub-basins will affect the development of the site
 - o OS-E, East Basin (east of site)
 - o OS-N, North Basin (north of site)
 - o OS, OS Basin (north of Highway 52)
 - o OS-S, South Basin (south of CR 12)
 - o OS-1, Tributary Area (single family homes southeast of site)
 - o OS-2, Future Oil/Gas Development by Anadarko Petroleum Corporation (southwest of site)
- CUHP/SWMM was used in the *Preliminary Drainage Report* to determine the runoff from the larger offsite basins. OS-E, OS-N, OS and OS-S
- Rational Method was used to determine the smaller off-site basins, OS-1 and OS-2
- The offsite basin area and contributing flow is summarized in the following table:

Basin Name	Area (acres)	5-YR Runoff (cfs)	100-YR Runoff (cfs)
OS-E	825	90	643
OS-N	78.4	24	138
OS	110	43	239
OS-S	616	88	603
OS-1	2.66	4.1	10.3
OS-2	13.38	6.1	38.8

MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/- 45 RESIDENTIAL LOTS FINAL DRAINAGE REPORT

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- Seven onsite basins:
 - o Basin A, developed portion of Filing No. 1
 - o Basin B, future filing south of Filing No. 1 draining to park area then pond
 - o Basin C, future filing west of Filing No. 1 draining overland to pond
 - o Basin D, future filing west of Basin C draining overland to pond
 - o Basin E, onsite detention pond area
 - o Basin F, onsite channel and drainage to channel to bypass detention pond
 - o Basin R, roadside areas along CR12 and CR29 ½
- The onsite sub-basin area and contributing flow is summarized in the following table:

Basin Name	Area (acres)	5-YR Runoff (cfs)	100-YR Runoff (cfs)
A1	2.81	3.7	9.5
A2	0.64	1.1	2.9
A3	3.17	4.5	11.4
A4	1.29	2.3	5.9
A5	0.93	1.7	4.2
B1	0.76	1.9	4.6
B2	3.42	6.2	15.7
B3	0.74	1.3	3.4
B4	1.50	1.4	5.0
B5	1.61	2.5	6.4
B6	2.96	5.0	12.8
B7	2.73	4.2	10.6
B8	1.99	2.9	7.3
B9	3.32	2.9	10.1
C1	1.24	2.3	5.8
C2	2.14	3.6	8.9
C3	1.41	2.3	5.8
C4	2.83	3.9	10.4
D1	1.45	2.7	7.0
D2	3.48	3.2	10.4
D3	1.14	1.9	4.8
D4	1.29	2.1	5.5
E1	0.39	0.8	2.0
E2	2.56	4.0	10.1
F1	0.48	1.2	2.9
F2	8.69	5.9	20.4
P1	6.38	11.7	28.2
R1	0.73	1.9	4.1

MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/- 45
RESIDENTIAL LOTS
FINAL DRAINAGE REPORT

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R2	0.79	1.7	4.1
R3	0.79	1.9	4.5
R4	0.48	1.3	3.1
R5	1.24	1.1	4.0

- Runoff from the onsite and offsite basins drains either directly or indirectly to the lowpoint of the site at DP34, totalling the above mentioned 1700 acres.
- Sub-basins OS-E, OS-N, OS and OS-S contribute off-site drainage as calculated in the *Mountain Sky Subdivision Preliminary Drainage Report* as displayed in the Overall Drainage Exhibit located in Appendix A of this report
- See Appendix B for composite c-factors, times of concentration and rational method calculations for Mountain Sky Subdivision, Filing No. 1 with +/- 45 Residential Lots

Street and Inlet Capacities

- Road capacities for CR29 ½, the entry drive from CR29 ½ and residential streets are enclosed is Appendix C
- Inlet capacity and carry-over calculations can be found in Appendix C

Storm Drain System

- The storm drainage system for Mountain Sky Subdivision, Filing No. 1 with +/- 45 Residential Lots will consist of storm sewer for onsite runoff, a bypass channel for offsite runoff, and culverts under CR29 ½ for the Fulton Ditch and runoff from off-site basin OS-E
- One flared end section (FES) will be installed at DP 25 which ties into one the two inlets (DP 26 and DP 27) not being utilized during this phase
- The FES at DP 25 will capture stormwater runoff from onsite undeveloped areas and route runoff to the pond for water quality and detention
- There will be a storm stub at the Filing No. 1 phase line at DP 17 that will also capture stormwater runoff from the onsite undeveloped areas from the southeastern portion of the site
- The onsite bypass channel is sized to carry the 100-yr undeveloped runoff from off-site basins as determined by the CUHP/SWMM model presented in the *Preliminary Drainage Report*
- Two culverts under CR29 ½ will be constructed during Filing No. 1 (culvert for Fulton Ditch and culvert for the Off-Site East Basin Drainage)
- Flows for the Fulton Ditch were not made available to Calibre – the culvert was sized to match the hydraulic capacity of the existing ditch section
- The Fulton Ditch culvert shall be sized for the current ditch cross section and slope
- The culvert for the OS-E basin runoff is sized to carry the 100-yr undeveloped flow as determined by the CUHP/SWMM model presented in the *Preliminary Drainage Report*

MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/- 45 RESIDENTIAL LOTS FINAL DRAINAGE REPORT

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Detention Pond

- The Detention Pond is being constructed for water quality and detention purposes for on-site basins only using the FAA method per the City of Fort Lupton's CRITERIA
- A 3-stage outlet structure and emergency overflow weir will be constructed in the pond (water quality, 5-year release and 100-yr release)
- A 5-year orifice will be constructed for final build-out conditions within the structure to release the 5-year developed runoff at the 5-year historic rate
 - o The release rate for the 100-yr runoff is restricted to 5-yr historic flow for captured stormwater by installing a restrictor plate in the outlet structure
 - o Even though the 5-year orifice will not be necessary since the restrictor plate is utilized to release runoff at the 5-year historic rate, it is being installed so the restrictor plate can be adjusted during future filing before final buildout conditions
- To avoid multiple modifications to the pond, it has been sized for the future buildout of the entire Mountain Sky Subdivision.
- During the construction of future filings, the water quality outlet pipe and restrictor plate will be replaced for interim conditions until full buildout conditions have been achieved
- Anadarko will be responsible for water quality and detention for their 15.7-acre parcel including half of CR 29 to their parcel. Runoff from Basin OS-2, (future development of Parcel F), will not be captured or treated for water quality
- The Mountain Sky Subdivision parcel consists of 61.2 acres (76.9 acres platted area less Anadarko's 15.7-acre parcel)
- The pond can only capture runoff from 55.25 acres due to grading restrictions related to the 6.4-acre grass-lined bypass channel (Note: 55.25 acres of captured runoff + 6.4 acres of bypass channel is greater than the 61.2-acre subdivision parcel due to capturing stormwater runoff from Basins OS-1, a developed single-family lot currently in use)
- The pond's release rate has been adjusted to reduce the runoff rate below the 5-year historic rate of 0.13 cfs/acre since runoff from the entire Mountain Sky Subdivision cannot be completely captured in the onsite detention pond
- See Appendix C for pond and outlet structure calculations

5.0 SUMMARY

5.1 Compliance with Standards

- This report is in general accordance with the *City of Fort Lupton Storm Drainage Design and Technical Criteria*
- This report is in general accordance, where applicable and not superseded by other criteria, to the *Urban Drainage and Flood Control District's Urban Storm Drainage Criteria Manual (USDCM)*

MOUNTAIN SKY SUBDIVISION, FILING NO. 1 WITH +/- 45
RESIDENTIAL LOTS
FINAL DRAINAGE REPORT

Page 12 of 12

- This report is in general accordance with FEMA; there are no known regulatory floodplains within the site boundary

5.2 Drainage Concept

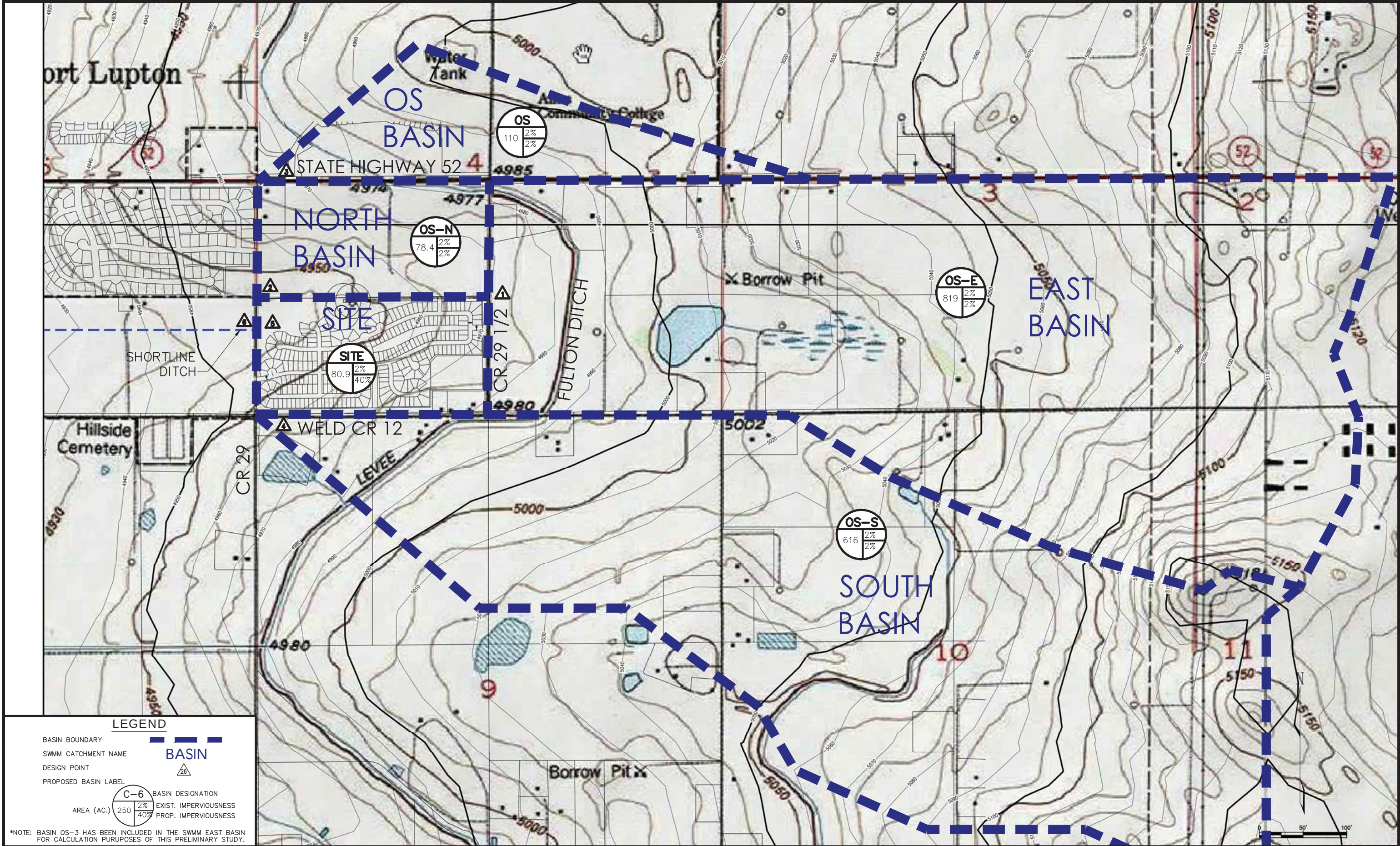
- Runoff from the site will be conveyed via onsite drainage swales, a street curb, gutter, and paving, and a storm sewer system to the proposed detention pond
- Runoff from off-site will be directed around or through the site via swales, ditches and channels to the Shortline Ditch which currently receives this upstream runoff
- During future development, it will be possible to pipe the runoff from the proposed channel in a southerly direction to connect to proposed storm sewer in CR12
- Downstream properties should not be affected by the development of the proposed site; the detention pond will provide the appropriate onsite detention to control the major and minor storm releases from the development

5.3 Standard Statement 1

The developer, vis contractual agreements with his consultant(s) is responsible for obtaining any and all permits, licenses, and any other documentation/correspondence that are necessary to address any additional issues such as wetlands, floodplains, irrigation facilities, groundwater dewatering, and protection of existing utilities. See Page 2 for Engineer's signed statement.

6.0 LIST OF REFERENCES

1. *City of Fort Lupton Storm Drainage Design and Technical Criteria (CRITERIA)*
2. DRAFT copy of the *City of Fort Lupton Comprehensive Plan, Section 8.0 STORM DRAINAGE SYSTEM*, prepared by Clear Water Solutions, Inc., 2014
3. *City of Fort Lupton Water, Wastewater and Storm Drainage Master Plan, Section 6 Storm Drainage System*, prepared by Rothberg, Tamburini & Winsor, Inc., 1999
4. *City of Fort Lupton Standards and Specifications for the Design and Construction of Public Improvements, 2014 Edition, Chapter 5 Storm Sewer System*
5. *Urban Storm Drainage Criteria Manual, Volumes 1, 2 & 3*, Urban Drainage Flood Control District



LEGEND

BASIN BOUNDARY

SWMM CATCHMENT NAME

DESIGN POINT

PROPOSED BASIN LABEL

C-6 BASIN DESIGNATION

AREA (AC.)

EXIST. IMPERVIOUSNESS

PROP. IMPERVIOUSNESS

*NOTE: BASIN OS-3 HAS BEEN INCLUDED IN THE SWMM EAST BASIN FOR CALCULATION PURPOSES OF THIS PRELIMINARY STUDY.

DATE	REVISION	DESCRIPTION
	1	
	2	
	3	
	4	
	5	
	6	

Drawing Name

110D.dwg

Job Number

Prepared For

ROKEH CONSULTING, LLC

Designer

TAW

Drafter

TAW

Checked

GVM

0 250 500 1000

1 inch = 500 ft. Horizontal

1 inch = 0 ft Vertical

NORTH

Calibre

Calibre Engineering, Inc.

9090 South Ridgeline Boulevard, Suite 105

Highlands Ranch, CO 80129 (303) 730-0434

www.calibre-engineering.com

Construction Management Civil Engineering Surveying

MOUNTAIN SKY SUBDIVISION

DRAINAGE ANALYSIS

OVERALL DRAINAGE MAP

Sheet

E-OD

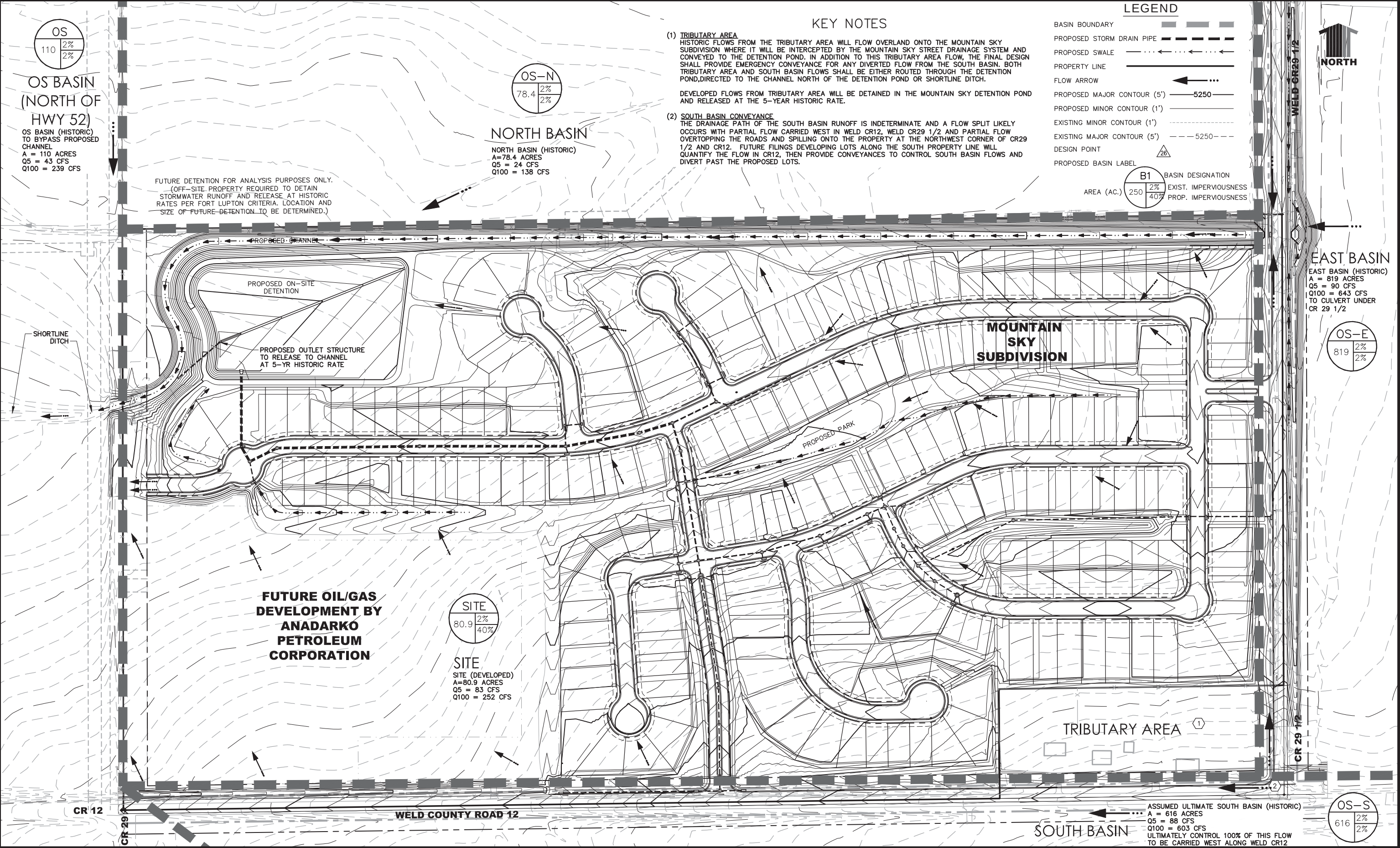
1 of 2

Date

23 FEBRUARY 2016

Page 422 of 724

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PLOT DATE: 2/19/2016 12:18 PM
PLOT BY: Tacey Wise
XREFS: W-PUT-Full Buildout, 10PPN, 10PUT, 10EUT, 10EPN, 10PCN, 10BASE.



DATE	REVISION	DESCRIPTION
	1	

Drawing Name	12DR-PR.dwg
Job Number	EQNX MTN SKY
Prepared For	EQUINOX LAND GROUP

Designer	TAW
Drafter	TAW
Checked	GLP

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MOUNTAIN SKY SUBDIVISION
DRAINAGE ANALYSIS
PROPOSED OVERALL SITE DRAINAGE

Sheet
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Date
23 FEBRUARY 2016
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OS BASIN
(NORTH OF
HWY 52)

OS BASIN (HISTORIC)
TO BYPASS PROPOSED
CHANNEL
A = 110 ACRES
Q5 = 43 CFS
Q100 = 239 CFS

FUTURE DETENTION FOR ANALYSIS PURPOSES ONLY.
(OFF-SITE PROPERTY REQUIRED TO DETAIN STORMWATER
RUNOFF AND RELEASE AT HISTORIC RATES PER FORT
LUPTON CRITERIA. LOCATION AND SIZE OF FUTURE
DETENTION TO BE DETERMINED BY OTHERS.)

NORTH BASIN

NORTH BASIN (HISTORIC)
A=78.4 ACRES
Q5 = 24 CFS
Q100 = 138 CFS

KEY NOTES

- (1) **TRIBUTARY AREA**
HISTORIC FLOWS FROM BASIN OS-1 WILL FLOW OVERLAND ONTO THE MOUNTAIN SKY SUBDIVISION WHERE IT WILL BE INTERCEPTED BY THE MOUNTAIN SKY STREET DRAINAGE SYSTEM AND CONVEYED TO THE DETENTION POND. IN ADDITION TO THIS TRIBUTARY AREA FLOW, THE FINAL DESIGN SHALL PROVIDE EMERGENCY CONVEYANCE FOR ANY DIVERTED FLOW FROM THE SOUTH BASIN. BOTH TRIBUTARY AREA AND SOUTH BASIN FLOWS SHALL BE EITHER ROUTED THROUGH THE DETENTION POND, DIRECTED TO THE CHANNEL NORTH OF THE DETENTION POND OR SHORTLINE DITCH.
- DEVELOPED FLOWS FROM TRIBUTARY AREA WILL BE DETAINED IN THE MOUNTAIN SKY DETENTION POND AND RELEASED AT THE 5-YEAR HISTORIC RATE.
- (2) **SOUTH BASIN CONVEYANCE**
THE DRAINAGE PATH OF SOUTH BASIN RUNOFF IS INDETERMINATE AND A FLOW SPLIT LIKELY OCCURS WITH PARTIAL FLOW CARRIED WEST IN WELD CR12, WELD CR29 1/2 AND PARTIAL FLOW OVERTOPPING THE ROADS AND SPILLING ONTO THE PROPERTY AT THE NORTHWEST CORNER OF CR29 1/2 AND CR12. FUTURE FILINGS DEVELOPING LOTS ALONG THE SOUTH PROPERTY LINE WILL QUANTIFY THE FLOW IN CR12, THEN PROVIDE CONVEYANCES TO CONTROL SOUTH BASIN FLOWS AND DIVERT PAST THE PROPOSED LOTS.

LEGEND

BASIN BOUNDARY
PROPOSED STORM DRAIN PIPE
PROPOSED SWALE
PROPERTY LINE
FLOW ARROW
PROPOSED MAJOR CONTOUR (5')
PROPOSED MINOR CONTOUR (1')
EXISTING MINOR CONTOUR (1')
EXISTING MAJOR CONTOUR (5')
DESIGN POINT
PROPOSED BASIN LABEL

BASIN DESIGNATION
5YR C-VALUE
100YR C-VALUE

AREA (AC.)
250
0.45
0.60



R1
0.73
.71
.81

EAST BASIN

EAST BASIN (HISTORIC)
A = 819 ACRES
Q5 = 90 CFS
Q100 = 643 CFS
TO CULVERT UNDER
CR 29 1/2

SHORTLINE
DITCH

PROPOSED ON-SITE
DETENTION

PROPOSED OUTLET STRUCTURE
TO RELEASE TO CHANNEL
AT 5-YR HISTORIC RATE

FUTURE OIL/GAS
DEVELOPMENT BY
ANADARKO
PETROLEUM
CORPORATION

NOTE:
NO DETENTION STORAGE FOR UNDEVELOPED
BASIN OS-2. FUTURE DEVELOPMENT OF THIS
SITE WILL REQUIRE A REDESIGN OF EXISTING
DETENTION POND OR THE DESIGN OF A NEW
DETENTION/WATER QUALITY POND FACILITY.

OS-2
13.38
.15
.50

MOUNTAIN
SKY
SUBDIVISION

TRIBUTARY AREA

SOUTH BASIN

ASSUMED ULTIMATE SOUTH BASIN (HISTORIC)
A = 616 ACRES
Q5 = 88 CFS
Q100 = 603 CFS
ULTIMATELY CONTROL 100% OF THIS FLOW
TO BE CARRIED WEST ALONG WELD CR12

PATH: P:\EQUINOX MTN SKY\CADD\CIVIL\DRN\20DR-P-OD.DWG
PLOT BY: Tyler Robinson PLOT DATE: 6/29/2016 3:01 PM
XREFS: W-PUT-Full Buildout, 10PPN, 10PUT, 10EUT, 10EPN, 10PCN, 10BASE.

DATE	REVISION	DESCRIPTION
	1	

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Job Number EQNX MTN SKY	Designer TAW	Drafter TAW
Prepared For EQUINOX LAND GROUP	Checked GLP	

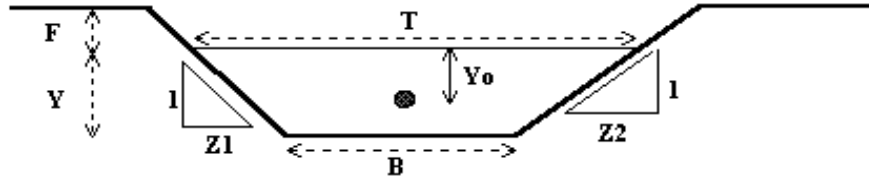
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MOUNTAIN SKY SUBDIVISION
DRAINAGE ANALYSIS
PROPOSED OVERALL SITE DRAINAGE

Sheet
P-OD
Date
12 FEBRUARY 2016

Critical Flow Analysis - Trapezoidal Channel

Project: **Mountain Sky Subdivision**
Channel ID: **Channel along North PL: 5-yr Storm**



Design Information (Input)

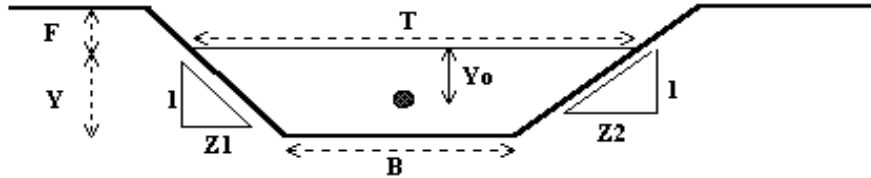
Bottom Width	B =	15.00	ft
Left Side Slope	Z1 =	3.00	ft/ft
Right Side Slope	Z2 =	3.00	ft/ft
Design Discharge	Q =	114.00	cfs

Critical Flow Condition (Calculated)

Critical Flow Depth	Y =	1.12	ft
Critical Flow Area	A =	20.56	sq ft
Critical Top Width	T =	21.72	ft
Critical Hydraulic Depth	D =	0.95	ft
Critical Flow Velocity	V =	5.54	fps
Froude Number	Fr =	1.00	
Critical Wetted Perimeter	P =	22.08	ft
Critical Hydraulic Radius	R =	0.93	ft
Critical (min) Specific Energy	Esc =	1.60	ft
Centroid on the Critical Flow Area	Yoc =	0.49	ft
Critical (min) Specific Force	Fsc =	1.86	kip

Normal Flow Analysis - Trapezoidal Channel

Project: **Mountain Sky Subdivision**
 Channel ID: **Channel along North PL: 100-year Storm**



Design Information (Input)

Channel Invert Slope	So =	0.0060	ft/ft
Manning's n	n =	0.035	
Bottom Width	B =	15.00	ft
Left Side Slope	Z1 =	3.00	ft/ft
Right Side Slope	Z2 =	3.00	ft/ft
Freeboard Height	F =	1.00	ft
Design Water Depth	Y =	4.27	ft

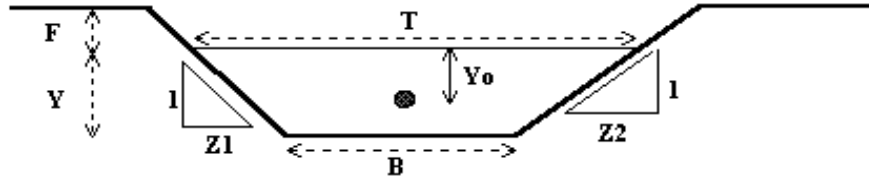
Normal Flow Condition (Calculated)

Discharge	Q =	781.05	cfs
Froude Number	Fr =	0.68	
Flow Velocity	V =	6.59	fps
Flow Area	A =	118.55	sq ft
Top Width	T =	40.59	ft
Wetted Perimeter	P =	41.97	ft
Hydraulic Radius	R =	2.82	ft
Hydraulic Depth	D =	2.92	ft
Specific Energy	Es =	4.94	ft
Centroid of Flow Area	Yo =	1.80	ft
Specific Force	Fs =	23.29	kip

Q = OS-E + OS-N
 Q = 643 + 138 cfs
 Q = 781 cfs
 Fr < 0.8
 V < 7 fps

Critical Flow Analysis - Trapezoidal Channel

Project: **Mountain Sky Subdivision**
Channel ID: **Channel along North PL: 100-yr Storm**



Design Information (Input)

Bottom Width	B =	15.00	ft
Left Side Slope	Z1 =	3.00	ft/ft
Right Side Slope	Z2 =	3.00	ft/ft
Design Discharge	Q =	722.87	cfs

Critical Flow Condition (Calculated)

Critical Flow Depth	Y =	3.31	ft
Critical Flow Area	A =	82.69	sq ft
Critical Top Width	T =	34.89	ft
Critical Hydraulic Depth	D =	2.37	ft
Critical Flow Velocity	V =	8.74	fps
Froude Number	Fr =	1.00	
Critical Wetted Perimeter	P =	35.97	ft
Critical Hydraulic Radius	R =	2.30	ft
Critical (min) Specific Energy	Esc =	4.50	ft
Centroid on the Critical Flow Area	Yoc =	1.22	ft
Critical (min) Specific Force	Fsc =	18.54	kip

Worksheet for OS-E Swale - 5YR Storm

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.00800	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	5.20	ft
Discharge	90.00	ft³/s

Results

Normal Depth	1.77	ft
Flow Area	18.66	ft²
Wetted Perimeter	16.42	ft
Hydraulic Radius	1.14	ft
Top Width	15.84	ft
Critical Depth	1.56	ft
Critical Slope	0.01347	ft/ft
Velocity	4.82	ft/s
Velocity Head	0.36	ft
Specific Energy	2.14	ft
Froude Number	0.78	
Flow Type	Subcritical	

Minor Storm
 Q = 90 cfs
 D = 1.77 ft
 V < 5 fps
 Fr < 0.8

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.77	ft
Critical Depth	1.56	ft
Channel Slope	0.00800	ft/ft

Worksheet for OS-E Swale - 100YR Storm

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.00800	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	5.20	ft
Discharge	321.50	ft³/s

Results

Normal Depth	3.22	ft
Flow Area	47.81	ft²
Wetted Perimeter	25.55	ft
Hydraulic Radius	1.87	ft
Top Width	24.51	ft
Critical Depth	2.97	ft
Critical Slope	0.01134	ft/ft
Velocity	6.73	ft/s
Velocity Head	0.70	ft
Specific Energy	3.92	ft
Froude Number	0.85	
Flow Type	Subcritical	

Major Storm
 $Q = 643/2$
 $Q = 321.5 \text{ cfs}$
 $D = 3.22 \text{ ft}$
 $V < 7 \text{ fps}$
 $Fr = 0.85$

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.22	ft
Critical Depth	2.97	ft
Channel Slope	0.00800	ft/ft



FULL BUILDOUT CONDITIONS

Design Area = 61.22 acres
 Actual Basin Area = 55.27 acres
 Weighted Runoff Coefficient C_s (5-year) = 0.45 Adjusted 5yr Release = 0.12 cfs / acre Actual Release Rate = Actual Area / Design Area * Design Release Rate
 Weighted Runoff Coefficient C_{100} (100-year) = 0.60 Adjusted 100yr Release = 0.12 cfs / acre Design Release Rate = 0.13 cfs / acre

DETENTION POND - FAA METHOD														
LOCATION: EQUINOX MTN SKY				CITY OF: CITY OF FORT LUPTON					DATE: 2/19/2016					
TIME (MIN)	RAINFALL INTENSITY (IN/HR)		C x A		INFLOW VOLUME (FT ³)		RELEASE RATE (CFS)		OUTFLOW VOLUME (FT ³)		REQUIRED VOLUME (FT ³)		REQUIRED VOLUME (AC-FT)	
	5YR	100YR	5 YR	100 YR	5 YR	100 YR	5 YR	100 YR	5YR	100YR	5 YR	100 YR	5 YR	100 YR
(1)	(2)	(2)	(3)	(3)	(4)	(4)	(5)	(5)	(6)	(6)	(7)	(7)	(8)	(8)
5	4.92	9.48	24.87	33.16	36,710	94,313	6.49	6.49	1,946	1,946	34,765	92,367	0.80	2.12
10	3.84	7.32	24.87	33.16	57,304	145,648	6.49	6.49	3,891	3,891	53,413	141,756	1.23	3.25
15	3.24	6.16	24.87	33.16	72,525	183,850	6.49	6.49	5,837	5,837	66,688	178,013	1.53	4.09
20	2.80	5.45	24.87	33.16	83,568	216,879	6.49	6.49	7,783	7,783	75,785	209,097	1.74	4.80
25	2.50	4.85	24.87	33.16	93,268	241,254	6.49	6.49	9,729	9,729	83,540	231,525	1.92	5.32
30	2.24	4.28	24.87	33.16	100,282	255,480	6.49	6.49	11,674	11,674	88,608	243,806	2.03	5.60
35	2.08	3.95	24.87	33.16	108,639	275,079	6.49	6.49	13,620	13,620	95,019	261,459	2.18	6.00
40	1.91	3.70	24.87	33.16	114,011	294,479	6.49	6.49	15,566	15,566	98,445	278,913	2.26	6.40
45	1.78	3.45	24.87	33.16	119,532	308,904	6.49	6.49	17,511	17,511	102,021	291,393	2.34	6.69
50	1.65	3.22	24.87	33.16	123,114	320,345	6.49	6.49	19,457	19,457	103,657	300,888	2.38	6.91
55	1.54	3.00	24.87	33.16	126,397	328,304	6.49	6.49	21,403	21,403	104,994	306,901	2.41	7.05
60	1.42	2.71	24.87	33.16	127,143	323,528	6.49	6.49	23,349	23,349	103,795	300,180	2.38	6.89

(4) = (3) x (2) x (1) x 60

(5) = allowable detention pond release rate

(6) = (5) x (1) x 60

(7) = (4) - (6)

Pond to be constructed for full build-out conditions
w/ reduced release rate, Volume = 7.05 ac-ft



FILING NO. 1

Design Area = 61.22 acres
 Actual Basin Area = 55.25 acres
 Weighted Runoff Coefficient C_5 (5-year) = 0.22 Adjusted 5yr Release = 0.12 cfs / acre Actual Release Rate = Actual Area / Design Area * Design Release Rate
 Weighted Runoff Coefficient C_{100} (100-year) = 0.52 Adjusted 100yr Release = 0.12 cfs / acre Design Release Rate = 0.13 cfs / acre

DETENTION POND - FAA METHOD														
LOCATION: EQUINOX MTN SKY					CITY OF: CITY OF FORT LUPTON					DATE: 2/19/2016				
TIME (MIN)	RAINFALL INTENSITY (IN/HR)		C x A		INFLOW VOLUME (FT³)		RELEASE RATE (CFS)		OUTFLOW VOLUME (FT³)		REQUIRED VOLUME (FT³)		REQUIRED VOLUME (AC-FT)	
	5YR	100YR	5 YR	100 YR	5 YR	100 YR	5 YR	100 YR	5YR	100YR	5 YR	100 YR	5 YR	100 YR
(1)	(2)	(2)	(3)	(3)	(4)	(4)	(5)	(5)	(6)	(6)	(7)	(7)	(8)	(8)
5	4.92	9.48	12.07	28.50	17,821	81,060	6.48	6.48	1,945	1,945	15,876	79,114	0.36	1.82
10	3.84	7.32	12.07	28.50	27,819	125,181	6.48	6.48	3,891	3,891	23,928	121,290	0.55	2.78
15	3.24	6.16	12.07	28.50	35,208	158,015	6.48	6.48	5,836	5,836	29,372	152,179	0.67	3.49
20	2.80	5.45	12.07	28.50	40,569	186,403	6.48	6.48	7,781	7,781	32,788	178,622	0.75	4.10
25	2.50	4.85	12.07	28.50	45,278	207,352	6.48	6.48	9,727	9,727	35,551	197,625	0.82	4.54
30	2.24	4.28	12.07	28.50	48,683	219,579	6.48	6.48	11,672	11,672	37,011	207,907	0.85	4.77
35	2.08	3.95	12.07	28.50	52,740	236,424	6.48	6.48	13,617	13,617	39,122	222,807	0.90	5.11
40	1.91	3.70	12.07	28.50	55,348	253,098	6.48	6.48	15,563	15,563	39,785	237,535	0.91	5.45
45	1.78	3.45	12.07	28.50	58,028	265,496	6.48	6.48	17,508	17,508	40,520	247,988	0.93	5.69
50	1.65	3.22	12.07	28.50	59,767	275,329	6.48	6.48	19,453	19,453	40,314	255,876	0.93	5.87
55	1.54	3.00	12.07	28.50	61,361	282,170	6.48	6.48	21,399	21,399	39,962	260,771	0.92	5.99
60	1.42	2.71	12.07	28.50	61,723	278,066	6.48	6.48	23,344	23,344	38,379	254,722	0.88	5.85

(4) = (3) x (2) x (1) x 60

(5) = allowable detention pond release rate

(6) = (5) x (1) x 60

(7) = (4) - (6)

Filing No. 1 required volume w/ reduced release rate, Volume = 5.99 ac-ft

FULL BUILDOUT CONDITIONS

PROJECT: EQUINOX MOUNTIAN SKY
SUBJECT: PROPOSED POND VOLUME

DATE: 2/19/2016
BY: TAW

Volume Equation:

$$Vol = 1/3h(A1+A2+(A1 \times A2)^{1/2})$$

V = Volume in cubic feet (cu-ft)
h = Contour Interval in feet (ft.)
A1,A2 = Area enclosed by successive
Contours in square feet (sq-ft)

Required Detention Volume:

Area =	55.27 acres	WQCV =	1.0 (0.91/ ³ - 1.19/ ² + 0.78/)
Imperviousness, / =	40%	WQ Design Volume =	(WQCV / 12 * Area * 1.2)
WQCV =	0.180 watershed inches	WQ Inv. In =	4937.52
WQ Design Volume =	0.99 ac-ft'		
V(5yr Stm)=	2.41 ac-ft		
V(100yr Stm)=	4.18 ac-ft	with release rate at 100yr Historic Rate Pond Height =	4.90 feet
V(100yr Stm)=	7.05 ac-ft	with release rate at 5yr Historic Rate Pond Height =	6.13 feet

Contour Elev. (ft.)	Area (sf)	Area (ac)	A1+A2 (ac)	(A1xA2) ^{1/2} (ac)	(A1+A2) + (A1xA2) ^{1/2} (ac)	h (ft)	h/3 (ft)	Volume (ac-ft)	Accumul. Volume (ac-ft)
4938	1437	0.03							0.00
			0.32	0.10	0.41	1.00	0.33	0.14	
4939	12395	0.28							0.14
			1.01	0.46	1.47	1.00	0.33	0.49	
4940	31816	0.73							0.63
			2.07	0.99	3.06	1.00	0.33	1.02	
4941	58520	1.34							1.65
			3.30	1.62	4.92	1.00	0.33	1.64	
4942	85057	1.95							3.29
			4.30	2.14	6.44	1.00	0.33	2.15	
4943	102229	2.35							5.44
			4.99	2.49	7.48	1.00	0.33	2.49	
4944	115081	2.64							7.93
			5.50	2.75	8.25	1.00	0.33	2.75	
4945	124433	2.86							10.68
			Water Quality Water Surface Elevation =				4941.46		
			Minor Storm Water Surface Elevation =				4942.42		
			Major Storm Water Surface Elevation =				4943.65		

FILING NO. 1 ONLY

PROJECT: EQUINOX MOUNTIAN SKY
SUBJECT: PROPOSED POND VOLUME

DATE: 2/19/2016
BY: TAW

Volume Equation:

$$Vol = 1/3h(A1+A2+(A1 \times A2)^{1/2})$$

V = Volume in cubic feet (cu-ft)
h = Contour Interval in feet (ft.)
A1,A2 = Area enclosed by successive
Contours in square feet (sq-ft)

Required Detention Volume:

Area = 55.25 acres
Imperviousness, / = 11%
WQCV = 0.072 watershed inches
WQ Design Volume = 0.40 ac-ft'
V(5yr Stm)= 0.92 ac-ft
V(100yr Stm)= 2.94 ac-ft
V(100yr Stm)= 5.99 ac-ft

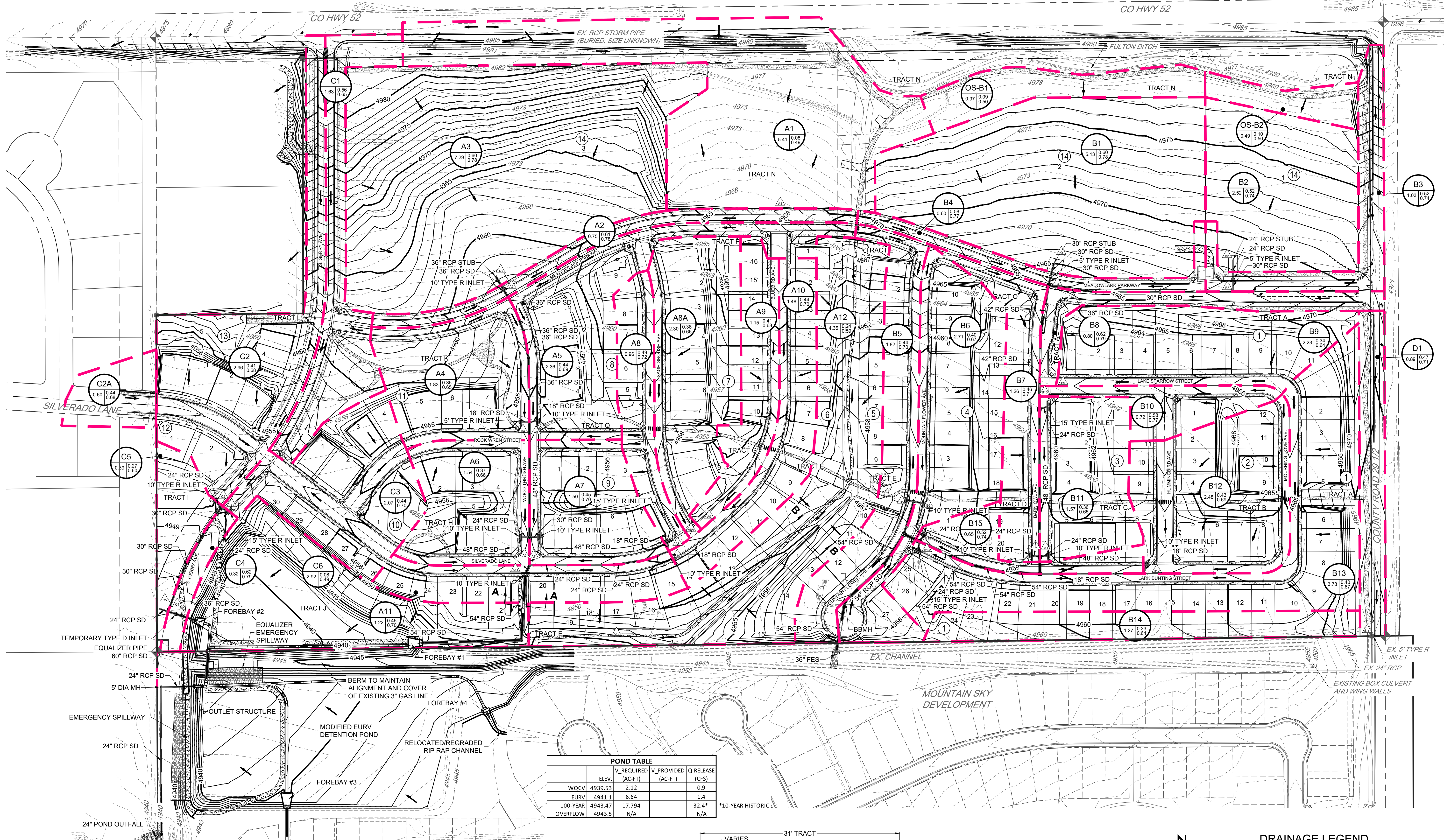
WQCV = $1.0 (0.91/3 - 1.19/2 + 0.78/)$
WQ Design Volume = $(WQCV / 12 * Area * 1.2)$
Inv. In = 4937.52

with release rate at 100yr Historic Rate Pond Height = 4.47 feet
with release rate at 5yr Historic Rate Pond Height = 5.70 feet

Contour Elev. (ft.)	Area (sf)	Area (ac)	A1+A2 (ac)	(A1x A2) ^{1/2} (ac)	(A1+A2) + (A1x A2) ^{1/2} (ac)	h (ft)	h/3 (ft)	Volume (ac-ft)	Accumul. Volume (ac-ft)
4938	1437	0.03							0.00
			0.32	0.10	0.41	1.00	0.33	0.14	
4939	12395	0.28							0.14
			1.01	0.46	1.47	1.00	0.33	0.49	
4940	31816	0.73							0.63
			2.07	0.99	3.06	1.00	0.33	1.02	
4941	58520	1.34							1.65
			3.30	1.62	4.92	1.00	0.33	1.64	
4942	85057	1.95							3.29
			4.30	2.14	6.44	1.00	0.33	2.15	
4943	102229	2.35							5.44
			4.99	2.49	7.48	1.00	0.33	2.49	
4944	115081	2.64							7.93
			5.50	2.75	8.25	1.00	0.33	2.75	
4945	124433	2.86							10.68
			Water Quality Water Surface Elevation =				4940.55		
			Minor Storm Water Surface Elevation =				4941.84		
			Major Storm Water Surface Elevation =				4943.22		

Appendix E - Drainage Maps

I:\2018\19032 - Murata Farms\Engineering Reports\19032 Drainage Plan.dwg Tab: Layout1 Aug 19, 2021 - 11:45am bballtzer



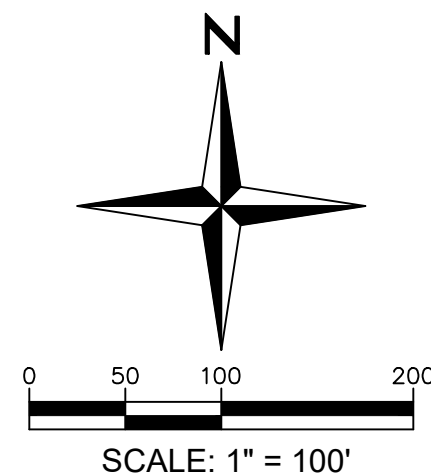
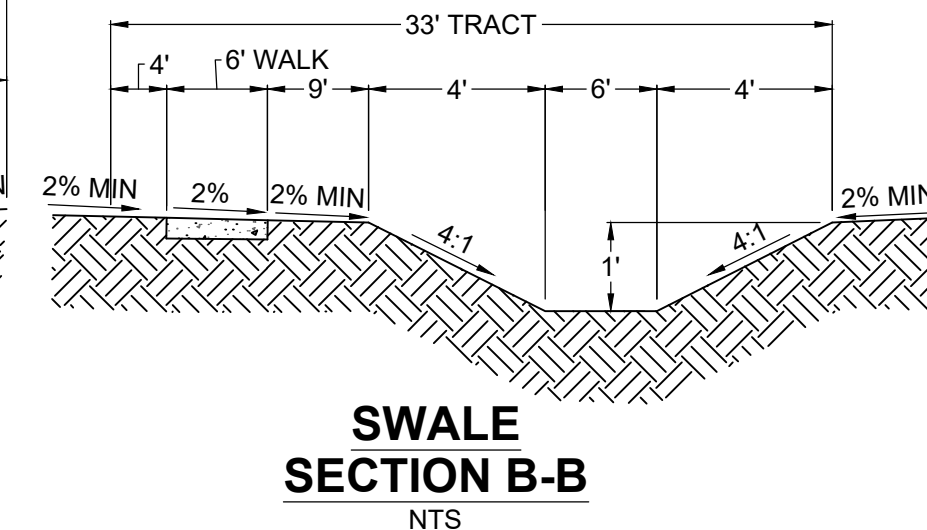
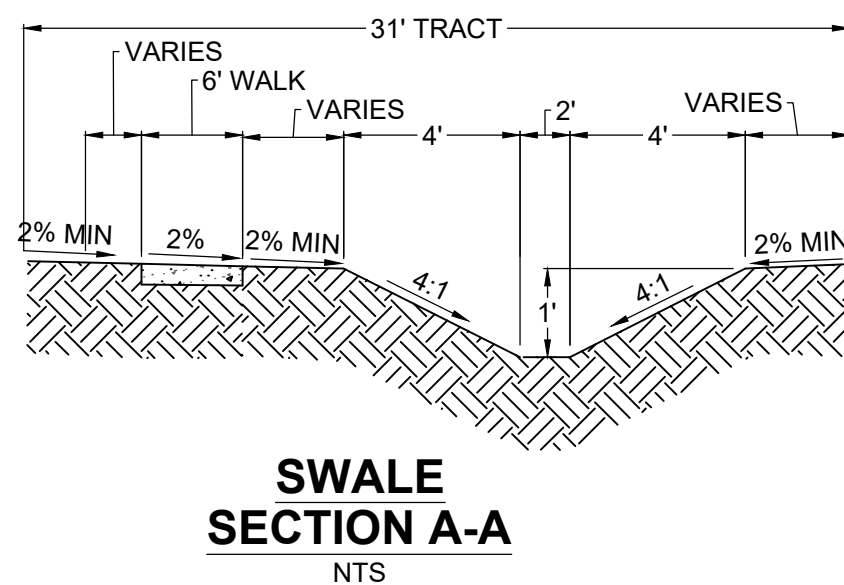
POND TABLE				
	ELEV.	V. REQUIRED (AC-FT)	V. PROVIDED (AC-FT)	Q. RELEASE (CFS)
WQCV	4939.53	2.12		0.9
EURV	4941.1	6.64		1.4
100-YEAR	4943.47	17.794		32.4*
OVERFLOW	4943.5	N/A		N/A

*10-YEAR HISTORIC

Basin Summary Table						
Basin	Area (AC)	Runoff Coefficients		Peak Flows (cfs)		
		C5	C100	I (%)	Q5	Q100
A1	5.41	0.08	0.49	13%	1.0	12.4
A2	0.75	0.61	0.78	76%	1.7	5.0
A3	7.29	0.60	0.78	75%	13.9	42.1
A4	1.83	0.35	0.65	48%	1.8	7.5
A5	2.36	0.44	0.69	57%	2.9	10.5
A6	1.54	0.37	0.66	50%	1.7	6.9
A7	1.50	0.45	0.70	59%	2.2	7.8
A8	0.96	0.49	0.72	63%	1.4	4.8
A8A	2.30	0.38	0.66	50%	2.3	9.1
A9	1.15	0.41	0.68	54%	1.5	5.5
A10	1.48	0.44	0.70	57%	2.0	7.1
A11	1.22	0.45	0.70	59%	1.8	6.3
A12	4.35	0.24	0.59	34%	2.9	15.5

Basin Summary Table						
Basin	Area (AC)	Runoff Coefficients		Peak Flows (cfs)		
		C5	C100	I (%)	Q5	Q100
B1	5.13	0.60	0.78	75%	11.4	34.4
B2	2.52	0.74	0.85	90%	7.2	19.4
B3	1.03	0.52	0.74	67%	2.0	6.4
B4	0.60	0.58	0.77	72%	1.3	4.1
B5	1.82	0.44	0.70	58%	2.5	8.9
B6	2.71	0.40	0.67	53%	3.2	12.1
B7	1.26	0.46	0.71	60%	1.7	5.9
B8	0.80	0.62	0.79	77%	1.7	5.0
B9	2.23	0.34	0.64	47%	2.0	8.4
B10	0.72	0.58	0.77	73%	1.4	4.3
B11	1.57	0.36	0.66	48%	1.4	5.9
B12	2.48	0.43	0.69	56%	3.2	11.6
B13	3.78	0.40	0.67	53%	3.7	14.1
B14	1.27	0.33	0.64	45%	1.0	4.4
B15	0.65	0.52	0.74	66%	1.2	3.9

Basin Summary Table						
Basin	Area (AC)	Runoff Coefficients		Peak Flows (cfs)		
		C5	C100	I (%)	Q5	Q100
C1	1.63	0.38	0.65	21%	2.8	8.1
C2	2.96	0.44	0.68	54%	3.1	11.5
C2A	0.60	0.44	0.68	54%	0.6	2.3
C3	2.07	0.47	0.70	58%	2.8	10.0
C4	0.32	0.64	0.79	77%	0.8	2.3
C5	0.69	0.30	0.60	38%	0.5	2.7
C6	2.92	0.10	0.49	14%	0.6	7.3
D1	0.89	0.50	0.71	61%	1.1	4.5
OS-B1	0.97	0.11	0.50	15%	0.3	4.4
OS-B2	0.49	0.12	0.50	16%	0.1	2.0



- DRAINAGE LEGEND**
- 5281 --- EXISTING MINOR CONTOUR
 - 5280 --- EXISTING MAJOR CONTOUR
 - 5281 --- PROPOSED MINOR CONTOUR
 - 5280 --- PROPOSED MAJOR CONTOUR
 - PROPOSED STORM SEWER LINE
 - PROPOSED BASIN BOUNDARY
 - A1 --- BASIN ID
 - 0.000 --- 5 YEAR C-VALUE
 - 0.000 --- 100 YEAR C-VALUE
 - 0.000 --- BASIN AREA (ACRES)
 - 00 --- PROPOSED DESIGN POINT
 - FLOW ARROW

MURATA FARMS

DRAINAGE PLAN

DNG

Redland
WHERE GREAT PLACES BEGIN
720.282.4783 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

DRAWN	BRB
CHECKED	TF
APPROVED	TF
PROJECT NO.	19032
HORIZ. SCALE	1" = 100'
VERT. SCALE	

NOTES

DATE	NO.	DESCRIPTION
8/20/21	1	FIRST FINAL PLAT SUBMITTAL

Final Utility Report

Murata Farms Filing No. 1

Prepared for:

Coronado West
8655 S. Priest Dr,
Tempe, AZ 85284
(303) 285-1110 voice
Contact: Eric Eckberg

Prepared by:



August 20, 2021
Project No. 19032

ENGINEER'S CERTIFICATION

"This Final Utility Report for the design of the Murata Farms Filing No. 1 development was prepared by me or under my direct supervision in accordance with the City of Fort Lupton's Standards and Specifications and acceptable professional practices of the industry. We acknowledge that the City of Fort Lupton's review of this Utility Study is only for general conformance with submittal requirements, current design criteria and standard engineering principles and practices. We are also aware of the provisions of the City Code of the City of Fort Lupton.

Travis Frazier, P.E.
Registered Professional Engineer
State of Colorado No. 45342

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General Location and Description

Introduction

This final utility report presents an analysis for the proposed water and sanitary sewer system needed for service to the Murata Farms Filing No. 1, hereafter referred to as the Site.

Site Location

The Site is located in the northern section of the southwest quarter of Section 4, Township 1 North, Range 66 West of the 6th Principal Meridian, City of Fort Lupton and County of Weld, Colorado. The Site is located to the south of County Road 12 1/2, also known as Colorado Highway 52 and west of County Road 29 1/2. To the west of the site is an existing development of Appel Farms. To the south of the site is the Mountain Sky Filing No. 1 development.

Site Description

The existing site encompasses approximately 72.71 acres and is largely undeveloped with the exception of existing farm buildings and existing oil wells. The site generally slopes from north to south. There is an existing detention pond off-site in the southwest corner and directly south of the project on the eastern half lies a drainage channel. The existing Fulton Irrigation Ditch crosses the northeast corner of the site. The site is actively being farmed at the time of this report.

Proposed Development

The property is proposed to be a planned residential development which will include single family homes, townhomes, duplexes, a commercial lot and park areas. A total of 180 single family residential units will be constructed with Phase 1 the project. Approximately 121 semi-detached and attached residential units as well as 2.5 acres of commercial area will be developed in future phases.

Sanitary Sewer System

Sewer Design Criteria

The sanitary sewer design criteria is based on City of Fort Lupton requirements as published in Chapter 4 of the Standards and Specifications Manual.

Sewer loading for residential sites is based on 70 gallons per capita per day as an average daily load and 2.90 people per unit.

The peak factor is 3.0.

Infiltration and inflow rates of 1000 gallons per day.

Fort Lupton criteria requires sewer hydraulics to be designed to handle the peak daily flow plus infiltration and inflow with a minimum peak velocity of 2 feet per second.

Due to the relatively flat topography of the site, a minimum pipe slope of 0.4% was used for the proposed 8" and 10" PVC sanitary sewer system.

Existing Sanitary Sewer

Sanitary sewer service for the site is located to the southwest of the Site. The existing 12" line flows to the west. The proposed sanitary sewer system will connect to a stub extending from an existing manhole.

Proposed Sanitary Sewer

The proposed sanitary sewer system includes a network of 8" and 10" diameter sewer pipe that is proposed within the public streets and open spaces. The site generally flows from north to south and east to west.

In addition to the site development, the capacity of the proposed system is evaluated to include approximately 79 acres of offsite area to the east of the Site. For the purpose of this analysis, we have assumed that future development of the offsite parcel will include a mix of residential and commercial development, in accordance with the City of Fort Lupton Comprehensive Plan, at an assumed density of five (5) du/acre for residential and 1000 gallons per acre for commercial. A 10" main is required to traverse the site to provide adequate service to this future development. A stub is provided to the east of County Road 29.5 (College Avenue) for future connection.

Sanitary Sewer Loading and Design Calculations

Sanitary Sewer Service is provided for a total of 180 detached residential dwelling units, 121 attached or semi-detached residential dwelling units, and a 2.5 acre commercial lot for neighborhood retail. Additional capacity is provided for an assumed 220 residential dwelling units and 35.5 acres of commercial on an offsite adjacent parcel. For the purpose of evaluation, the sewer system is evaluated with three basins identified as A, B, and C.

Basin A represents the central portion of the Site. Development will include 134 single family lots (detached and semi-detached).

Basin B represents the eastern portion of the Site. Development will include 159 single family lots (detached and attached) and 2.5 acres of commercial.

Basin C represents the western portion of the Site. Development in the basin includes 8 single family detached lots.

Published Criteria:

Calculated Peak flow rates from the development area and the future offsite parcel east of the development include a total of 394.39 gallons per minute, including the required Infiltration and Inflow.

Sewer System Performance:

The system performance is based on a sewer flow model developed using Haestad Software to evaluate system impact and flow parameters.

All analysis for the sanitary sewer were performed using a manning's coefficient of 0.015, as required by Chapter 4.14.02.(B) of the City's Standards and Specifications Manual. This assumption is reflective of the fact that the system is all Polyvinyl Chloride, (PVC) smooth wall pipe. This material would typically have a roughness coefficient of 0.011 under new conditions.

Summary:

This model has a total peak hour flow of 394.38 gpm. A 10" main is required for the Site to convey future flows from the east. When considering the additional flow, the lower portions of the system, directly above the connection to the existing sanitary sewer, reach a capacity of 57%, well below the industry standard of 80% full.

Flow Velocity

There are several areas within the system that are identified as operating under peak flow conditions at a velocity that is less than 2 fps. These areas are largely dependent on the limited availability of flow in the upper reaches of the main. The minimum velocity in the system is 0.7 fps with a comparative flow rate of 5.6 gpm. Pipe operational velocity generally approaches 1 fps at 7.0 gpm. This is also dependent on available pipe grade within the system.

An underdrain is proposed for the Site in order to mitigate potential impacts to foundations from changing groundwater conditions and potentially expansive soils. This system will be constructed in a common trench with the sanitary sewer and discharged to daylight below proposed detention pond to the southwest of the Site.

Domestic Water System

Existing Water System

Domestic water service for the site is provided through existing domestic water supply adjacent to the Site. This includes an 8" connection to the west in Silverado Lane, an 8" connection to the southwest and a 12" connection to the east in CR 29.5 (College Avenue). City staff have provided fire flow test data near these connection points which were used to establish system pressures for the proposed improvements.

Proposed Water System

The proposed domestic water system includes a network of 8", 10", and 12" water pipe that is constructed within the public streets of the Site.

The water system is sized to accommodate conveyance of max day and fire flow conditions while maintaining appropriate velocities. The system includes 8" pipe in most interior streets, a 10" line in the north-south road and a 12" line traversing the site east and west to reduce velocity under high flow conditions. The system also includes multiple connections to the existing water supply that will serve to balance pressures consistently across the site under high flow conditions.

Domestic Water Demand and Design Calculations

Domestic water demands are based on City of Fort Lupton. Chapter 3 of the City's Standards and Specifications Manual includes loading as noted in the table below

Land Type	Average Demand	Max day/Avg day	Peak hr./Avg day
Single Family Detached	200 GPD/capita	2.5	4.0
Single Family Attached	200 GPD/capita	2.5	4.0
Commercial	1400 GPD/ac	2.5	4.0

Fire flow demand is based on 1,500 gpm in the detached single-family areas and 3,500 gpm in the attached residential and commercial areas.

The system is designed to operate at pressures between 100 psi and 50 psi under static conditions with a minimum residual pressure of 30 psi under peak hour conditions and 20 psi under fire flow conditions.

The analysis of the water system was performed using EPA Net 2.2. The analysis was performed under five (5) fire flow conditions including Max Day Demand and one (1) Peak Hour scenario. Supply for the system was treated as a point source at the three connection points, described above, with a hydraulic head selected to simulate existing static pressure at locations close to the proposed extensions of the existing system.

A calibration model was developed to estimate available hydraulic head available to the operating the system. This modeling assumption yields pressure distributions consistent with the City Static testing in the area. The calibration model compares existing pressures as provided by the City and presented in the following table

Junction	published pressure	calculated pressure	Location
Connection 1	82 psi	88.6 psi	Silverado Lane
Connection 2	94 psi	94.3 psi	Southwest
Connection 3	98 psi	95.8 psi	CR 29.5 (College Ave)

The calibration model shows static pressures in the system ranging between 80.4 psi and 95.8 psi depending on the location in the system. The calibration model is developed using no demands on the system in order to establish a benchmark for pressurizing the system.

Peak hour flows are based on a distribution of flow at specific nodes in the system that are prorated for flow by relative location and number of units in the vicinity of a demand node. Under Peak Hour conditions, pressure in the system ranges between 80.6 psi and 94.6 psi. The maximum velocity for the on-site system is modeled at 6.9 fps.

Max Day and Fire Flow is evaluated under five fire flow conditions in this report. Two of the fire flow models evaluate flow in the high-density parcels along the north of the Site, assuming 3,500 gpm applied at two hydrant locations. Under these conditions residual pressure between models varies between 66.9 psi and 78.2 psi depending on the loading conditions in the model. With the 3500 gpm models, maximum velocity ranges between 7.6 ft/s to 8.5 ft/s. The City requires a maximum velocity of 7 ft/s. However, the pipes have been upsized to 12" in locations where these velocities occur and are below the industry standard of 10 ft/s.

For the single-family areas applying 1500 gpm low end residual pressure operates at 77.7 psi. Maximum velocity with the single-family fire flow is 7.6 fps. Again, these velocities occur along the main traveling east and west across the site, which is proposed to be 12" diameter.

The analysis of the system demonstrates that fire flow conditions are met with the lowest deliverable pressure occurring at the northern reaches of the site under the 3,500 gpm flow condition.

It should be noted that the model is developed with a skeleton system for the adjacent areas in order to simulate supply to various points of connection on site. This evaluation is not intended to provide a model demonstrating performance of the existing system that omits elements of internal looping and distribution to the adjacent area. As such, the calculations related to velocity and pressure in pipe segments at the proposed connection points are not considered in the performance of the system, but are used to model the distribution of supply water to the development.

Conclusion

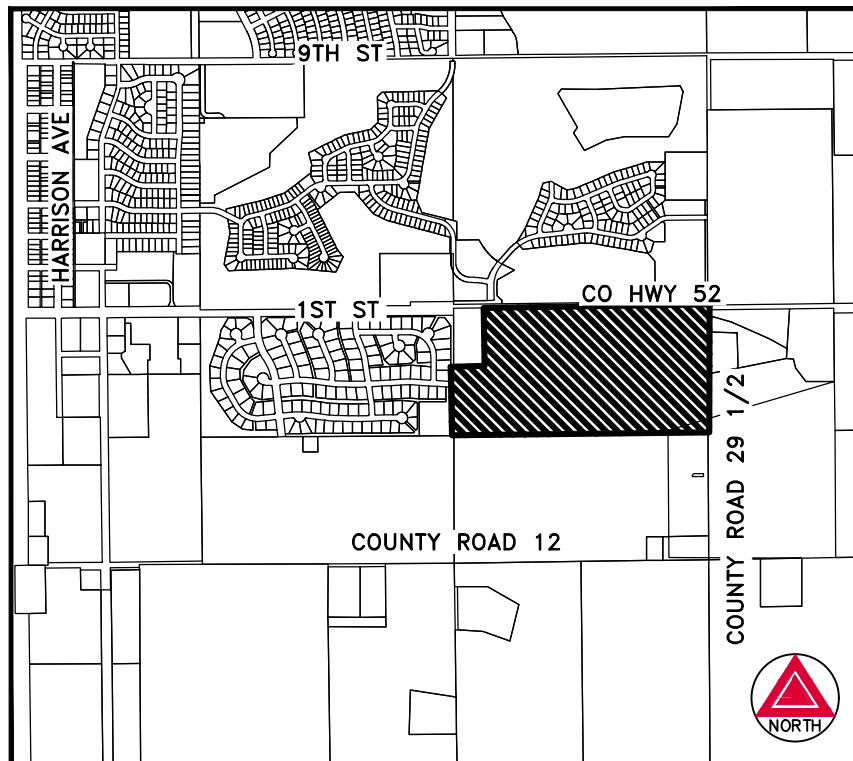
This Final Utility Report for Murata Farms Filing No. 1 demonstrates compliance with City of Fort Lupton standards and specifications. Water system demands are consistent with published criteria and associated planned development density. Design of the water system

demonstrates compliance with published operational requirements for the peak hour and max day plus fire flow conditions for the development. Design of the sewer system is consistent with published criterion for loading and operational parameters for maximum flow depths.

References

REFERENCES

- 1. City of Fort Lupton Standards and Specifications Manual.*

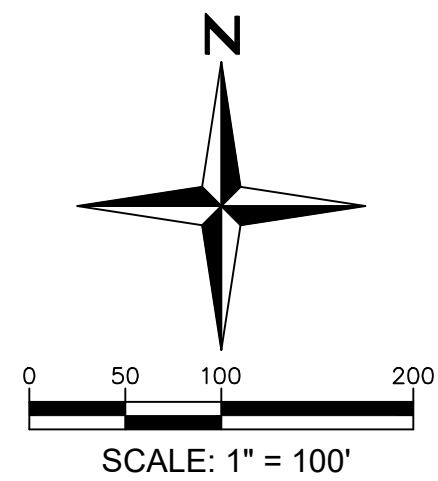
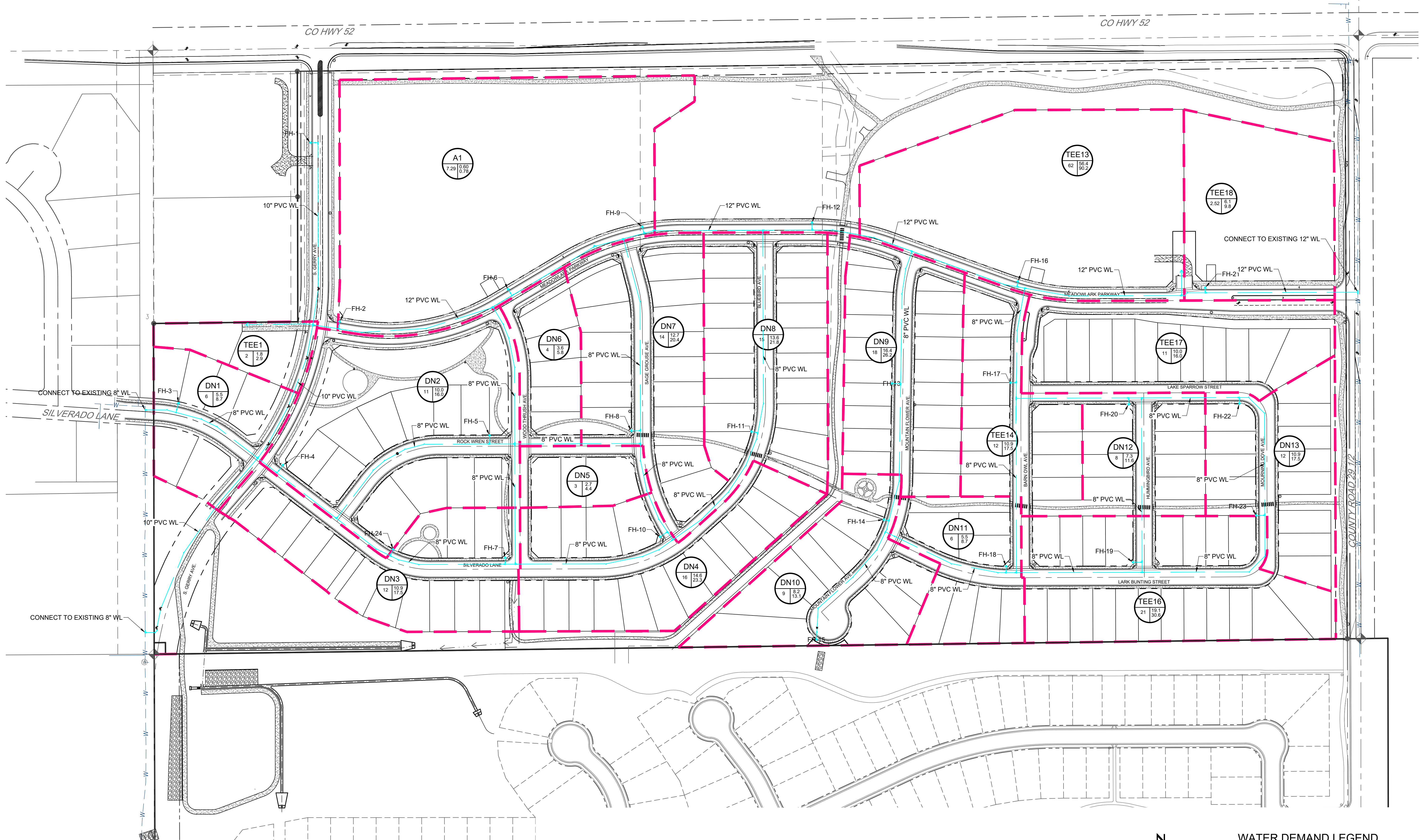


VICINITY MAP

SCALE 1" = 2,000'

Appendix B - Water System Calculations

I:\2019\19032 - Murata Farms\Engineering Reports\Utility Water\19032 Water Basin Map.dwg tab: Layout1 Aug 20, 2021 10:07am bbolster



WATER DEMAND LEGEND			
	PROPOSED WATER LINE		
	EXISTING WATER LINE		
	DEMAND NODE BOUNDARY		
	DEMAND NODE		
	MAX DAY FLOW (GPM)		
	PEAK HOUR (GPM)		
	DWELLING UNITS (ACRES FOR COMMERCIAL)		

MURATA FARMS

WATER DEMAND

SHEET

WAT

**Redland**
WHERE GREAT PLACES BEGIN

720.282.4753 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

DATE	NO.	NOTES	DRAWN	
			BRB	TF
8/20/21	1	FIRST FINAL PLAT SUBMITTAL	CHECKED	TF
			APPROVED	TF
			PROJECT NO.	19032
			HORIZ. SCALE	1" = 100'
			VERT. SCALE	

			Maximum Day Demand	Peak Hour Demand
Residential	200	GPD per capita	2.50	4.00
Commercial	1400	GPD per AC	2.50	4.00
Capita Per D.U.	2.62			
Fire Flow	1500	GPM	Single Family Residential	
Fire Flow	3500	GPM	Duplex and Commercial	

Demand Node	Dwelling Units	Commercial		Average Day (gpm)	Max Day (gpm)	Peak Hour (gpm)	Fire Flow 1	Fire Flow 2	Fire Flow 3	Fire Flow 4	Fire Flow 5
DN1	6			2.2	5.5	8.7					
DN2	11			4.0	10.0	16.0					
DN3	12			4.4	10.9	17.5					
DN4	16			5.8	14.6	23.3					
DN5	3			1.1	2.7	4.4					
DN6	4			1.5	3.6	5.8					
DN7	14			5.1	12.7	20.4					
DN8	15			5.5	13.6	21.8					
DN9	18			6.6	16.4	26.2					
DN10	9			3.3	8.2	13.1					
DN11	6			2.2	5.5	8.7					
DN12	8			2.9	7.3	11.6					
DN13	12			4.4	10.9	17.5					
TEE1	2			0.7	1.8	2.9					
TEE4	59			21.5	53.7	85.9					
TEE13	62			22.6	56.4	90.2					
TEE14	12			4.4	10.9	17.5					
TEE16	21			7.6	19.1	30.6					
TEE17	11			4.0	10.0	16.0					
TEE18		2.52		2.5	6.1	9.8					
FH-1				0.0	0.0	0.0					1750
FH-2				0.0	0.0	0.0		1750			1750
FH-3				0.0	0.0	0.0					
FH-4				0.0	0.0	0.0	750				
FH-5				0.0	0.0	0.0	750				
FH-6				0.0	0.0	0.0		1750			
FH-7				0.0	0.0	0.0					
FH-8				0.0	0.0	0.0					
FH-9				0.0	0.0	0.0					
FH-10				0.0	0.0	0.0					
FH-11				0.0	0.0	0.0					
FH-12				0.0	0.0	0.0					
FH-13				0.0	0.0	0.0					
FH-14				0.0	0.0	0.0					
FH-15				0.0	0.0	0.0					
FH-16				0.0	0.0	0.0				1750	
FH-17				0.0	0.0	0.0					
FH-18				0.0	0.0	0.0					
FH-19				0.0	0.0	0.0			750		
FH-20				0.0	0.0	0.0					
FH-21				0.0	0.0	0.0				1750	
FH-22				0.0	0.0	0.0					
FH-23				0.0	0.0	0.0			750		
FH-24				0.0	0.0	0.0					
	301	2.52		112.0	280.0	447.9	1500.0	3500.0	1500.0	3500.0	3500.0

MAX DAY DEMAND AND FIRE FLOW:
(1500 GPM AT FIRE HYDRANTS FH-4
AND FH-5, SOUTHWEST)



Network Table - Nodes

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
Junc FH1	4973.399	0.00	5152.76	77.72
Junc TEE1	4956.425	1.80	5152.76	85.07
Junc TEE2	4948.32	0.00	5151.44	88.01
Junc CONNECTION1	4949.27	0.00	5148.73	86.43
Junc TEE4	4952.25	53.70	5154.44	87.61
Junc FH6	4952.27	0.00	5155.04	87.86
Junc FH2	4956.45	0.00	5153.00	85.17
Junc TEE5	4948.67	0.00	5153.92	88.93
Junc FH5	4948.85	750.00	5152.96	88.44
Junc TEE3	4949.49	0.00	5152.56	87.99
Junc FH4	4948.11	750.00	5151.41	88.09
Junc CONNECTION2	4939.94	0.00	5153.19	92.40
Junc FH24	4950.28	0.00	5153.04	87.86
Junc FH7	4947.35	0.00	5153.91	89.50
Junc TEE6	4947.20	0.00	5153.98	89.60
Junc TEE9	4957.14	0.00	5158.23	87.13
Junc FH9	4957.82	0.00	5158.69	87.04
Junc FH12	4964.498	0.00	5162.23	85.68
Junc TEE10	4962.70	0.00	5161.32	86.06
Junc FH8	4952.34	0.00	5155.96	88.23
Junc TEE8	4952.078	0.00	5155.82	88.28
Junc FH10	4950.51	0.00	5155.86	88.98
Junc TEE7	4950.60	0.00	5155.86	88.94
Junc FH11	4954.128	0.00	5158.06	88.36
Junc TEE11	4959.06	0.00	5164.16	88.87

**MAX DAY DEMAND AND FIRE FLOW 1
(1500 GPM AT FIRE HYDRANTS FH-4
AND FH-5, SOUTHWEST)**

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
Junc FH13	4953.857	0.00	5164.47	91.26
Junc FH14	4951.828	0.00	5164.82	92.29
Junc TEE12	4952.092	0.00	5164.86	92.19
Junc FH15	4954.76	0.00	5164.86	91.03
Junc FH18	4953.92	0.00	5165.22	91.56
Junc TEE15	4954.119	0.00	5165.25	91.48
Junc TEE14	4956.266	10.90	5165.47	90.65
Junc FH17	4956.389	0.00	5165.54	90.63
Junc FH16	4959.060	0.00	5165.81	89.59
Junc TEE13	4958.870	56.40	5165.95	89.73
Junc TEE18	4961.405	6.10	5169.29	90.08
Junc FH21	4961.912	0.00	5169.83	90.09
Junc CONNECTION3	4966.181	0.00	5173.06	89.64
Junc FH20	4958.48	0.00	5165.36	89.64
Junc TEE17	4958.768	10.00	5165.35	89.51
Junc FH22	4961.272	0.00	5165.34	88.42
Junc FH23	4959.755	0.00	5165.32	89.07
Junc TEE16	4956.505	19.10	5165.30	90.47
Junc FH19	4956.342	0.00	5165.30	90.54
Junc FH3	4948.92	0.00	5149.33	86.84
Junc DN1	4948.372	5.50	5150.27	87.48
Junc DN2	4950.67	10.00	5152.77	87.57
Junc DN3	4948.857	10.90	5153.52	88.68
Junc DN4	4948.937	14.60	5155.00	89.29
Junc DN5	4951.42	2.70	5154.98	88.20
Junc DN6	4950.43	3.60	5154.20	88.29

MAX DAY DEMAND AND FIRE FLOW 1
(1500 GPM AT FIRE HYDRANTS FH-4
AND FH-5, SOUTHWEST)

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
Junc DN7	4956.819	12.70	5157.45	86.93
Junc DN8	4960.175	13.60	5159.72	86.46
Junc DN9	4954.71	16.40	5164.41	90.86
Junc DN10	4953.92	8.20	5164.86	91.40
Junc DN11	4952.96	5.50	5165.06	91.90
Junc DN12	4958.735	7.30	5165.33	89.52
Junc DN13	4960.41	10.90	5165.32	88.79
Resvr 1	5138.69	723.88	5138.69	0.00
Resvr 2	5192.56	-2070.08	5192.56	0.00
Resvr 3	5157.08	-433.71	5157.08	0.00

Network Table - Links

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 7	8	130	0.00	0.00	0.00
Pipe 8	8	130	-449.62	2.87	4.16
Pipe 9	8	130	-449.62	2.87	4.16
Pipe 10	8	130	-780.79	4.98	11.55
Pipe 11	8	130	-780.79	4.98	11.55
Pipe 12	10	130	-1303.24	5.32	10.06
Pipe 13	8	130	447.82	2.86	4.13
Pipe 15	8	130	723.88	4.62	10.04
Pipe 16	8	130	-433.71	2.77	3.89
Pipe 17	8	130	152.15	0.97	0.56
Pipe 18	8	130	-597.85	3.82	7.05
Pipe 20	8	130	-960.96	6.13	16.97
Pipe 21	8	130	-96.17	0.61	0.24
Pipe 22	8	130	407.79	2.60	3.47
Pipe 24	8	130	396.89	2.53	3.30
Pipe 26	8	130	83.87	0.54	0.20
Pipe 27	8	130	83.87	0.54	0.19
Pipe 29	8	130	-509.75	3.25	5.25
Pipe 32	10	130	-1303.24	5.32	10.06
Pipe 34	8	130	602.44	3.85	7.14
Pipe 35	12	130	-1919.28	5.44	8.48
Pipe 36	12	130	-1919.28	5.44	8.48
Pipe 38	12	130	-1708.02	4.85	6.83
Pipe 39	12	130	-1708.02	4.85	6.84
Pipe 40	12	130	-2063.98	5.86	9.70
Pipe 41	12	130	-2070.08	5.87	9.76
Pipe 42	12	130	-2070.08	5.87	9.75
Pipe 43	8	130	299.55	1.91	1.96
Pipe 44	8	130	299.55	1.91	1.96

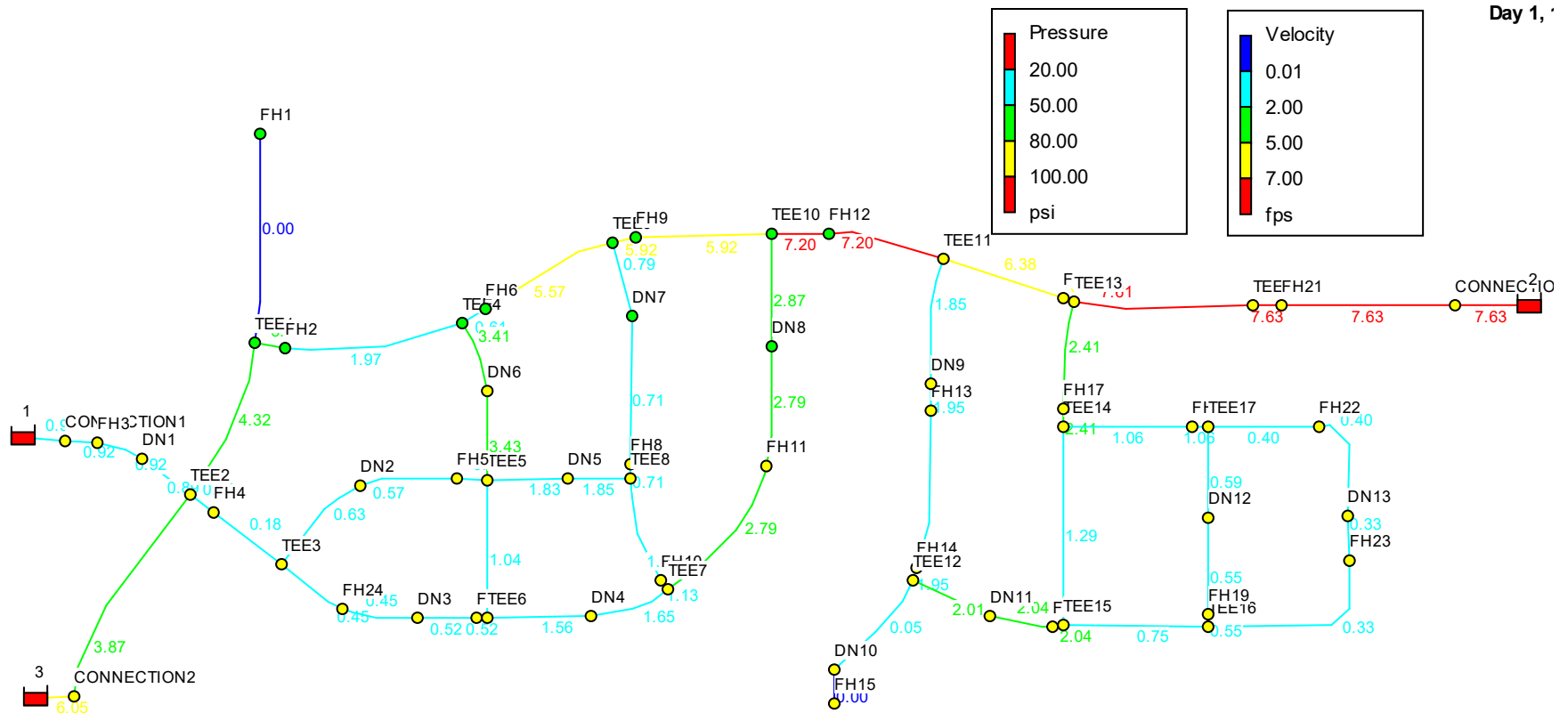
**MAX DAY DEMAND AND FIRE FLOW 1
(1500 GPM AT FIRE HYDRANTS FH-4
AND FH-5, SOUTHWEST)**

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 45	8	130	132.46	0.85	0.43
Pipe 46	8	130	132.46	0.85	0.43
Pipe 47	8	130	49.48	0.32	0.07
Pipe 49	8	130	38.58	0.25	0.04
Pipe 50	8	130	-65.68	0.42	0.11
Pipe 52	8	130	85.16	0.54	0.19
Pipe 53	8	130	241.35	1.54	1.33
Pipe 55	8	130	227.65	1.45	1.17
Pipe 56	8	130	227.65	1.45	1.18
Pipe 58	8	130	729.38	4.66	10.18
Pipe 59	8	130	723.88	4.62	10.04
Pipe 60	8	130	-200.96	1.28	0.94
Pipe 61	8	130	-210.96	1.35	1.02
Pipe 62	8	130	-396.89	2.53	3.30
Pipe 63	8	130	-407.79	2.60	3.47
Pipe 64	8	130	-503.96	3.22	5.13
Pipe 65	8	130	-518.56	3.31	5.41
Pipe 66	8	130	-590.93	3.77	6.89
Pipe 67	8	130	-593.63	3.79	6.95
Pipe 68	8	130	277.46	1.77	1.70
Pipe 69	8	130	273.86	1.75	1.66
Pipe 70	8	130	522.45	3.33	5.49
Pipe 71	8	130	509.75	3.25	5.24
Pipe 72	8	130	616.04	3.93	7.45
Pipe 73	8	130	602.44	3.85	7.15
Pipe 74	8	130	-211.25	1.35	1.03
Pipe 75	8	130	-227.65	1.45	1.18
Pipe 76	8	130	0.00	0.00	0.00
Pipe 77	8	130	-8.20	0.05	0.00
Pipe 78	8	130	235.85	1.51	1.26

MAX DAY DEMAND AND FIRE FLOW 1
(1500 GPM AT FIRE HYDRANTS FH-4
AND FH-5, SOUTHWEST)

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 79	8	130	-241.35	1.54	1.31
Pipe 80	8	130	72.98	0.47	0.14
Pipe 81	8	130	65.68	0.42	0.12
Pipe 82	8	130	49.48	0.32	0.07
Pipe 83	8	130	38.58	0.25	0.05
Pipe 2	8	130	433.71	2.77	3.89
Pipe 4	12	130	2070.08	5.87	9.75
Pipe 1	8	130	723.88	4.62	10.04
Pipe 3	8	130	156.20	1.00	0.59

MAX DAY DEMAND AND FIRE FLOW 2
(3500 GPM AT FIRE HYDRANTS FH-2
AND FH-6, NORTHWEST)



Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH1	0.00	5135.86	70.39
Junc TEE1	1.80	5135.86	77.75
Junc TEE2	0.00	5138.05	82.21
Junc CONNECTION1	0.00	5138.18	81.86
Junc TEE4	53.70	5136.14	79.68
Junc FH6	1750.00	5136.15	79.68
Junc FH2	1750.00	5135.70	77.67
Junc TEE5	0.00	5137.94	82.01
Junc FH5	0.00	5137.95	81.94
Junc TEE3	0.00	5138.05	81.70
Junc FH4	0.00	5138.05	82.30
Junc CONNECTION2	0.00	5140.56	86.93
Junc FH24	0.00	5138.07	81.37
Junc FH7	0.00	5138.10	82.65
Junc TEE6	0.00	5138.11	82.72
Junc TEE9	0.00	5138.59	78.62
Junc FH9	0.00	5139.04	78.52
Junc FH12	0.00	5143.16	77.42
Junc TEE10	0.00	5141.63	77.53
Junc FH8	0.00	5138.45	80.64
Junc TEE8	0.00	5138.44	80.75
Junc FH10	0.00	5138.60	81.50
Junc TEE7	0.00	5138.61	81.47
Junc FH11	0.00	5139.83	80.46
Junc TEE11	0.00	5146.40	81.17

MAX DAY DEMAND AND FIRE FLOW 2
(3500 GPM AT FIRE HYDRANTS FH-2
AND FH-6, NORTHWEST)

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH13	0.00	5146.94	83.66
Junc FH14	0.00	5147.56	84.81
Junc TEE12	0.00	5147.62	84.72
Junc FH15	0.00	5147.62	83.56
Junc FH18	0.00	5148.23	84.19
Junc TEE15	0.00	5148.28	84.13
Junc TEE14	10.90	5148.64	83.35
Junc FH17	0.00	5148.75	83.35
Junc FH16	0.00	5149.15	82.36
Junc TEE13	56.40	5149.37	82.54
Junc TEE18	6.10	5154.81	83.80
Junc FH21	0.00	5155.67	83.96
Junc CONNECTION3	0.00	5160.91	84.38
Junc FH20	0.00	5148.48	82.33
Junc TEE17	10.00	5148.46	82.19
Junc FH22	0.00	5148.43	81.10
Junc FH23	0.00	5148.40	81.74
Junc TEE16	19.10	5148.38	83.14
Junc FH19	0.00	5148.38	83.21
Junc FH3	0.00	5138.15	81.99
Junc DN1	5.50	5138.11	82.21
Junc DN2	10.00	5137.99	81.17
Junc DN3	10.90	5138.08	81.99
Junc DN4	14.60	5138.38	82.08
Junc DN5	2.70	5138.22	80.94
Junc DN6	3.60	5136.95	80.82

MAX DAY DEMAND AND FIRE FLOW 2
(3500 GPM AT FIRE HYDRANTS FH-2
AND FH-6, NORTHWEST)

Node ID	Demand GPM	Head ft	Pressure psi
Junc DN7	12.70	5138.54	78.74
Junc DN8	13.60	5140.74	78.24
Junc DN9	16.40	5146.84	83.25
Junc DN10	8.20	5147.62	83.93
Junc DN11	5.50	5147.96	84.49
Junc DN12	7.30	5148.42	82.19
Junc DN13	10.90	5148.41	81.46
Resvr 1	-144.32	5138.69	0.00
Resvr 2	-2688.48	5192.56	0.00
Resvr 3	-947.10	5157.08	0.00

Network Table - Links

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 7	8	130	0.00	0.00	0.00
Pipe 8	12	130	1055.88	3.00	2.81
Pipe 9	12	130	-694.12	1.97	1.29
Pipe 10	12	130	-213.28	0.61	0.15
Pipe 11	12	130	-1963.28	5.57	8.84
Pipe 12	12	130	-2087.53	5.92	9.90
Pipe 13	10	130	-1057.69	4.32	6.83
Pipe 15	8	130	-144.32	0.92	0.51
Pipe 16	10	130	-947.10	3.87	5.57
Pipe 17	8	130	28.23	0.18	0.03
Pipe 18	8	130	28.23	0.18	0.02
Pipe 20	8	130	88.73	0.57	0.21
Pipe 21	8	130	-162.91	1.04	0.63
Pipe 22	8	130	81.40	0.52	0.19
Pipe 24	8	130	70.50	0.45	0.13
Pipe 26	8	130	177.64	1.13	0.74
Pipe 27	8	130	177.64	1.13	0.74
Pipe 29	8	130	-111.55	0.71	0.31
Pipe 32	12	130	-2087.53	5.92	9.91
Pipe 34	8	130	436.55	2.79	3.94
Pipe 35	12	130	-2537.68	7.20	14.22
Pipe 36	12	130	-2537.68	7.20	14.22
Pipe 38	12	130	-2248.12	6.38	11.36
Pipe 39	12	130	-2248.12	6.38	11.35
Pipe 40	12	130	-2682.39	7.61	15.76
Pipe 41	12	130	-2688.48	7.63	15.83
Pipe 42	12	130	-2688.48	7.63	15.83
Pipe 43	8	130	377.87	2.41	3.01
Pipe 44	8	130	377.87	2.41	3.02

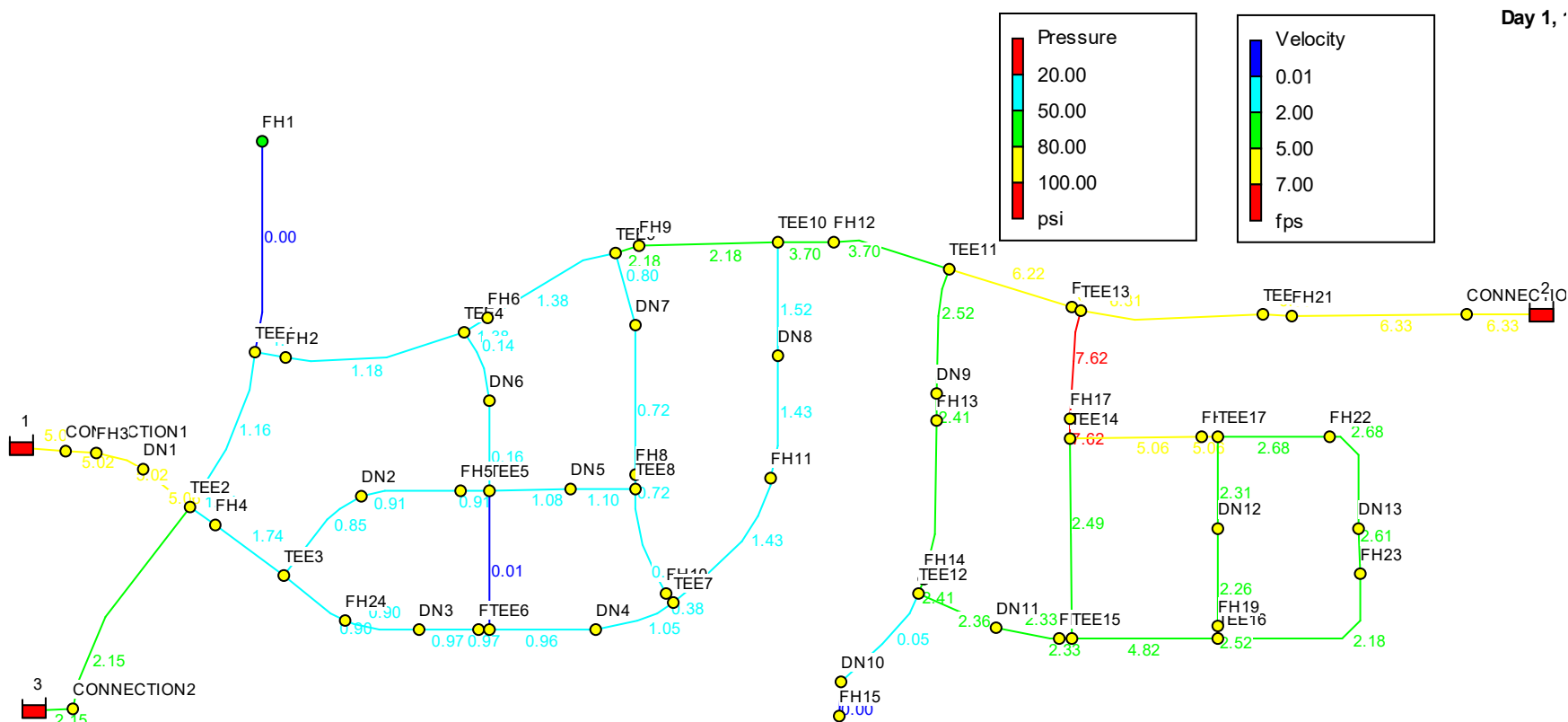
**MAX DAY DEMAND AND FIRE FLOW 2
(3500 GPM AT FIRE HYDRANTS FH-2
AND FH-6, NORTHWEST)**

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 45	8	130	165.32	1.06	0.65
Pipe 46	8	130	165.32	1.06	0.65
Pipe 47	8	130	62.31	0.40	0.11
Pipe 49	8	130	51.41	0.33	0.07
Pipe 50	8	130	-85.71	0.55	0.19
Pipe 52	8	130	118.02	0.75	0.35
Pipe 53	8	130	319.67	2.04	2.20
Pipe 55	8	130	305.97	1.95	2.03
Pipe 56	8	130	305.97	1.95	2.04
Pipe 58	8	130	-138.82	0.89	0.47
Pipe 59	8	130	-144.32	0.92	0.50
Pipe 60	8	130	98.73	0.63	0.25
Pipe 61	8	130	88.73	0.57	0.21
Pipe 62	8	130	-70.50	0.45	0.13
Pipe 63	8	130	-81.40	0.52	0.17
Pipe 64	8	130	-244.31	1.56	1.34
Pipe 65	8	130	-258.91	1.65	1.50
Pipe 66	8	130	-286.49	1.83	1.81
Pipe 67	8	130	-289.19	1.85	1.83
Pipe 68	8	130	-534.54	3.41	5.73
Pipe 69	8	130	-538.14	3.43	5.80
Pipe 70	8	130	124.25	0.79	0.39
Pipe 71	8	130	111.55	0.71	0.31
Pipe 72	8	130	450.15	2.87	4.17
Pipe 73	8	130	436.55	2.79	3.93
Pipe 74	8	130	-289.57	1.85	1.84
Pipe 75	8	130	-305.97	1.95	2.03
Pipe 76	8	130	0.00	0.00	0.00
Pipe 77	8	130	-8.20	0.05	0.00
Pipe 78	8	130	314.17	2.01	2.14

MAX DAY DEMAND AND FIRE FLOW 2
(3500 GPM AT FIRE HYDRANTS FH-2
AND FH-6, NORTHWEST)

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 79	8	130	-319.67	2.04	2.21
Pipe 80	8	130	93.01	0.59	0.22
Pipe 81	8	130	85.71	0.55	0.19
Pipe 82	8	130	62.31	0.40	0.11
Pipe 83	8	130	51.41	0.33	0.07
Pipe 1	8	130	144.32	0.92	0.51
Pipe 2	8	130	947.10	6.05	16.52
Pipe 4	12	130	2688.48	7.63	15.83
Pipe 3	8	130	201.65	1.29	0.94

MAX DAY DEMAND AND FIRE FLOW 3
(1500 GPM AT FIRE HYDRANTS FH-19
AND FH-23, SOUTHEAST)



Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH1	0.00	5153.81	78.17
Junc TEE1	1.80	5153.81	85.53
Junc TEE2	0.00	5153.55	88.93
Junc CONNECTION1	0.00	5150.40	87.15
Junc TEE4	53.70	5154.13	87.47
Junc FH6	0.00	5154.18	87.49
Junc FH2	0.00	5153.85	85.53
Junc TEE5	0.00	5154.13	89.03
Junc FH5	0.00	5154.10	88.94
Junc TEE3	0.00	5153.92	88.58
Junc FH4	0.00	5153.65	89.06
Junc CONNECTION2	0.00	5154.65	93.03
Junc FH24	0.00	5153.99	88.27
Junc FH7	0.00	5154.12	89.59
Junc TEE6	0.00	5154.13	89.66
Junc TEE9	0.00	5154.48	85.51
Junc FH9	0.00	5154.59	85.26
Junc FH12	0.00	5155.96	82.96
Junc TEE10	0.00	5155.24	83.43
Junc FH8	0.00	5154.33	87.52
Junc TEE8	0.00	5154.32	87.63
Junc FH10	0.00	5154.34	88.32
Junc TEE7	0.00	5154.35	88.28
Junc FH11	0.00	5154.70	86.91
Junc TEE11	0.00	5157.46	85.97

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH13	0.00	5156.53	87.82
Junc FH14	0.00	5155.61	88.30
Junc TEE12	0.00	5155.53	88.15
Junc FH15	0.00	5155.53	86.99
Junc FH18	0.00	5154.72	87.00
Junc TEE15	0.00	5154.65	86.89
Junc TEE14	10.90	5155.87	86.49
Junc FH17	0.00	5156.78	86.83
Junc FH16	0.00	5161.67	87.79
Junc TEE13	56.40	5162.02	88.02
Junc TEE18	6.10	5165.86	88.59
Junc FH21	0.00	5166.47	88.64
Junc CONNECTION3	0.00	5170.17	88.39
Junc FH20	0.00	5152.93	84.25
Junc TEE17	10.00	5152.56	83.97
Junc FH22	0.00	5151.79	82.55
Junc FH23	750.00	5150.72	82.75
Junc TEE16	19.10	5151.65	84.56
Junc FH19	750.00	5151.58	84.60
Junc FH3	0.00	5151.10	87.60
Junc DN1	5.50	5152.19	88.31
Junc DN2	10.00	5154.01	88.11
Junc DN3	10.90	5154.06	88.91
Junc DN4	14.60	5154.24	88.96
Junc DN5	2.70	5154.24	87.88
Junc DN6	3.60	5154.13	88.26

Node ID	Demand GPM	Head ft	Pressure psi
Junc DN7	12.70	5154.42	85.62
Junc DN8	13.60	5154.97	84.40
Junc DN9	16.40	5156.68	87.51
Junc DN10	8.20	5155.53	87.36
Junc DN11	5.50	5155.06	87.57
Junc DN12	7.30	5152.08	83.77
Junc DN13	10.90	5151.02	82.59
Resvr 1	786.50	5138.69	0.00
Resvr 2	-2229.92	5192.56	0.00
Resvr 3	-336.48	5157.08	0.00

Network Table - Links

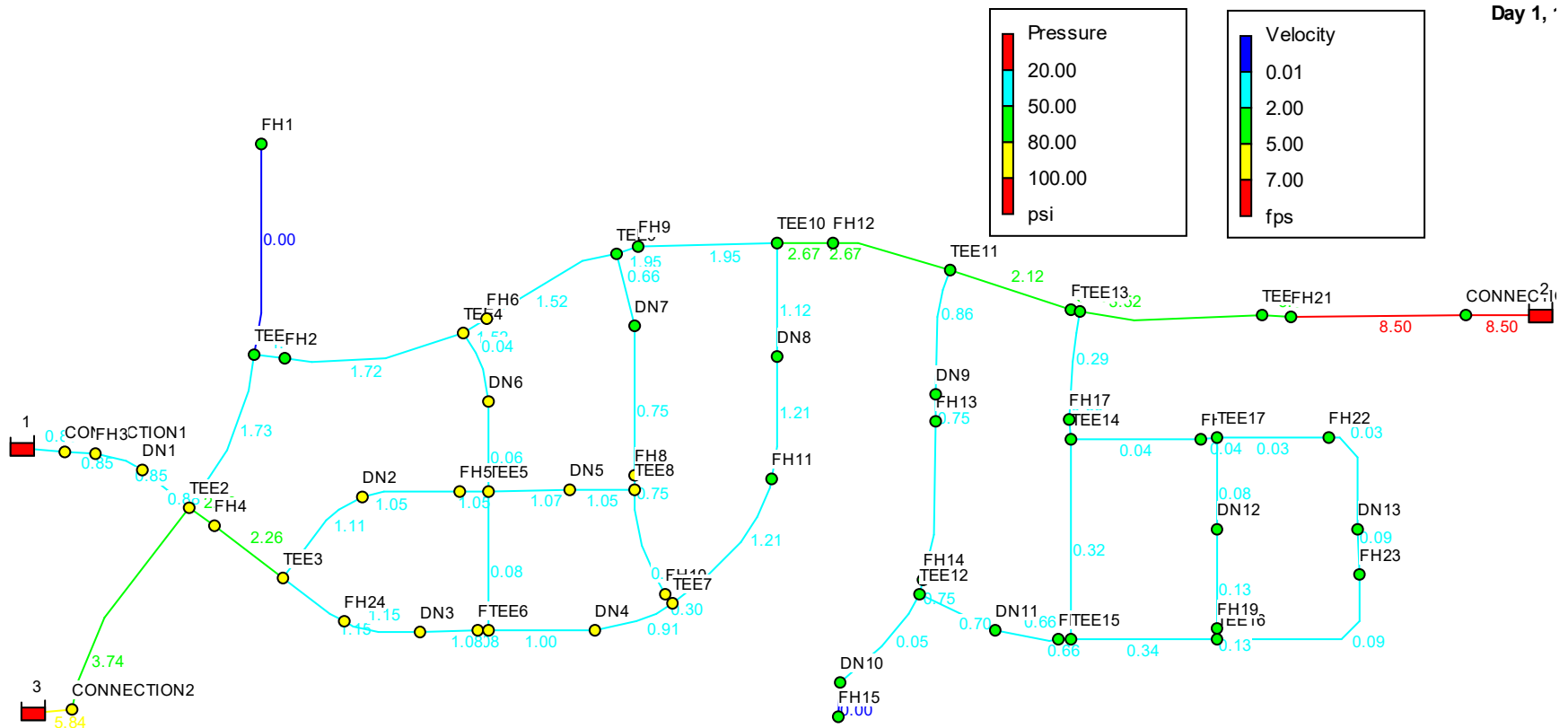
Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 7	8	130	0.00	0.00	0.00
Pipe 8	8	130	-184.22	1.18	0.80
Pipe 9	8	130	-184.22	1.18	0.80
Pipe 10	8	130	-215.73	1.38	1.06
Pipe 11	8	130	-215.73	1.38	1.07
Pipe 12	8	130	-340.91	2.18	2.49
Pipe 13	8	130	182.42	1.16	0.78
Pipe 15	8	130	786.50	5.02	11.71
Pipe 16	8	130	-336.48	2.15	2.43
Pipe 17	8	130	-273.10	1.74	1.65
Pipe 18	8	130	-273.10	1.74	1.65
Pipe 20	8	130	-142.41	0.91	0.50
Pipe 21	8	130	1.11	0.01	0.00
Pipe 22	8	130	151.60	0.97	0.56
Pipe 24	8	130	140.70	0.90	0.48
Pipe 26	8	130	59.52	0.38	0.11
Pipe 27	8	130	59.52	0.38	0.10
Pipe 29	8	130	-112.48	0.72	0.33
Pipe 32	8	130	-340.91	2.18	2.49
Pipe 34	8	130	224.61	1.43	1.15
Pipe 35	8	130	-579.12	3.70	6.64
Pipe 36	8	130	-579.12	3.70	6.64
Pipe 38	8	130	-973.84	6.22	17.39
Pipe 39	8	130	-973.84	6.22	17.37
Pipe 40	12	130	-2223.82	6.31	11.14
Pipe 41	12	130	-2229.92	6.33	11.19
Pipe 42	12	130	-2229.92	6.33	11.19
Pipe 43	8	130	1193.58	7.62	25.35
Pipe 44	8	130	1193.58	7.62	25.35

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 45	8	130	792.05	5.06	11.86
Pipe 46	8	130	792.05	5.06	11.85
Pipe 47	8	130	419.97	2.68	3.66
Pipe 49	8	130	-340.93	2.18	2.49
Pipe 50	8	130	395.22	2.52	3.26
Pipe 52	8	130	-755.25	4.82	10.86
Pipe 53	8	130	-364.62	2.33	2.83
Pipe 55	8	130	-378.32	2.41	3.03
Pipe 56	8	130	-378.32	2.41	3.02
Pipe 58	8	130	792.00	5.06	11.86
Pipe 59	8	130	786.50	5.02	11.71
Pipe 60	8	130	-132.41	0.85	0.43
Pipe 61	8	130	-142.41	0.91	0.49
Pipe 62	8	130	-140.70	0.90	0.48
Pipe 63	8	130	-151.60	0.97	0.56
Pipe 64	8	130	-150.49	0.96	0.55
Pipe 65	8	130	-165.09	1.05	0.65
Pipe 66	8	130	-169.30	1.08	0.68
Pipe 67	8	130	-172.00	1.10	0.70
Pipe 68	8	130	-22.18	0.14	0.01
Pipe 69	8	130	-25.78	0.16	0.02
Pipe 70	8	130	125.18	0.80	0.39
Pipe 71	8	130	112.48	0.72	0.32
Pipe 72	8	130	238.21	1.52	1.28
Pipe 73	8	130	224.61	1.43	1.15
Pipe 74	8	130	394.72	2.52	3.26
Pipe 75	8	130	378.32	2.41	3.02
Pipe 76	8	130	0.00	0.00	0.00
Pipe 77	8	130	-8.20	0.05	0.00
Pipe 78	8	130	-370.12	2.36	2.90

**MAX DAY DEMAND AND FIRE FLOW 3
(1500 GPM AT FIRE HYDRANTS FH-19
AND FH-23, SOUTHEAST)**

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 79	8	130	364.62	2.33	2.82
Pipe 80	8	130	362.08	2.31	2.79
Pipe 81	8	130	354.78	2.26	2.68
Pipe 82	8	130	419.97	2.68	3.66
Pipe 83	8	130	409.07	2.61	3.49
Pipe 1	8	130	-786.50	5.02	11.71
Pipe 2	8	130	336.48	2.15	2.43
Pipe 4	12	130	2229.92	6.33	11.19
Pipe 3	8	130	390.63	2.49	3.20

MAX DAY DEMAND AND FIRE FLOW 4
(3500 GPM AT FIRE HYDRANTS FH-16
AND FH-21, NORTHEAST)



Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH1	0.00	5138.84	71.69
Junc TEE1	1.80	5138.84	79.04
Junc TEE2	0.00	5139.24	82.73
Junc CONNECTION1	0.00	5139.12	82.26
Junc TEE4	53.70	5138.34	80.63
Junc FH6	0.00	5138.29	80.60
Junc FH2	0.00	5138.77	79.00
Junc TEE5	0.00	5138.34	82.19
Junc FH5	0.00	5138.38	82.12
Junc TEE3	0.00	5138.65	81.96
Junc FH4	0.00	5139.09	82.75
Junc CONNECTION2	0.00	5141.60	87.38
Junc FH24	0.00	5138.54	81.58
Junc FH7	0.00	5138.36	82.76
Junc TEE6	0.00	5138.34	82.82
Junc TEE9	0.00	5138.02	78.37
Junc FH9	0.00	5137.95	78.05
Junc FH12	0.00	5137.24	74.85
Junc TEE10	0.00	5137.54	75.76
Junc FH8	0.00	5138.15	80.51
Junc TEE8	0.00	5138.16	80.63
Junc FH10	0.00	5138.15	81.30
Junc TEE7	0.00	5138.15	81.26
Junc FH11	0.00	5137.89	79.62
Junc TEE11	0.00	5136.60	76.93

**MAX DAY DEMAND AND FIRE FLOW 4
(3500 GPM AT FIRE HYDRANTS FH-16
AND FH-21, NORTHEAST)**

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH13	0.00	5136.48	79.13
Junc FH14	0.00	5136.37	79.96
Junc TEE12	0.00	5136.36	79.84
Junc FH15	0.00	5136.36	78.69
Junc FH18	0.00	5136.28	79.02
Junc TEE15	0.00	5136.27	78.93
Junc TEE14	10.90	5136.25	77.99
Junc FH17	0.00	5136.24	77.93
Junc FH16	1750.00	5136.16	76.74
Junc TEE13	56.40	5136.23	76.85
Junc TEE18	6.10	5137.54	76.32
Junc FH21	1750.00	5137.75	76.19
Junc CONNECTION3	0.00	5144.15	77.11
Junc FH20	0.00	5136.25	77.03
Junc TEE17	10.00	5136.25	76.90
Junc FH22	0.00	5136.25	75.82
Junc FH23	0.00	5136.25	76.47
Junc TEE16	19.10	5136.25	77.88
Junc FH19	0.00	5136.25	77.95
Junc FH3	0.00	5139.15	82.43
Junc DN1	5.50	5139.19	82.68
Junc DN2	10.00	5138.50	81.39
Junc DN3	10.90	5138.43	82.14
Junc DN4	14.60	5138.23	82.02
Junc DN5	2.70	5138.24	80.95
Junc DN6	3.60	5138.34	81.42

MAX DAY DEMAND AND FIRE FLOW 4
(3500 GPM AT FIRE HYDRANTS FH-16
AND FH-21, NORTHEAST)

Node ID	Demand GPM	Head ft	Pressure psi
Junc DN7	12.70	5138.06	78.53
Junc DN8	13.60	5137.69	76.92
Junc DN9	16.40	5136.49	78.77
Junc DN10	8.20	5136.36	79.05
Junc DN11	5.50	5136.31	79.45
Junc DN12	7.30	5136.25	76.92
Junc DN13	10.90	5136.25	76.19
Resvr 1	132.61	5138.69	0.00
Resvr 2	-2997.92	5192.56	0.00
Resvr 3	-914.60	5157.08	0.00

Network Table - Links

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 7	8	130	0.00	0.00	0.00
Pipe 8	10	130	420.75	1.72	1.24
Pipe 9	10	130	420.75	1.72	1.24
Pipe 10	10	130	372.73	1.52	1.00
Pipe 11	10	130	372.73	1.52	0.99
Pipe 12	10	130	476.87	1.95	1.56
Pipe 13	10	130	-422.56	1.73	1.25
Pipe 15	8	130	132.61	0.85	0.44
Pipe 16	10	130	-914.60	3.74	5.22
Pipe 17	8	130	353.92	2.26	2.67
Pipe 18	8	130	353.92	2.26	2.67
Pipe 20	8	130	164.15	1.05	0.65
Pipe 21	8	130	-12.01	0.08	0.01
Pipe 22	8	130	-168.87	1.08	0.68
Pipe 24	8	130	-179.77	1.15	0.76
Pipe 26	8	130	-47.36	0.30	0.07
Pipe 27	8	130	-47.36	0.30	0.07
Pipe 29	8	130	116.83	0.75	0.35
Pipe 32	10	130	476.87	1.95	1.56
Pipe 34	8	130	-189.61	1.21	0.84
Pipe 35	10	130	652.88	2.67	2.80
Pipe 36	10	130	652.88	2.67	2.80
Pipe 38	10	130	518.84	2.12	1.83
Pipe 39	12	130	-1231.16	3.49	3.71
Pipe 40	12	130	-1241.82	3.52	3.79
Pipe 41	12	130	-1247.92	3.54	3.82
Pipe 42	12	130	-2997.92	8.50	19.36
Pipe 43	8	130	-45.74	0.29	0.06
Pipe 44	8	130	-45.74	0.29	0.05

**MAX DAY DEMAND AND FIRE FLOW 4
(3500 GPM AT FIRE HYDRANTS FH-16
AND FH-21, NORTHEAST)**

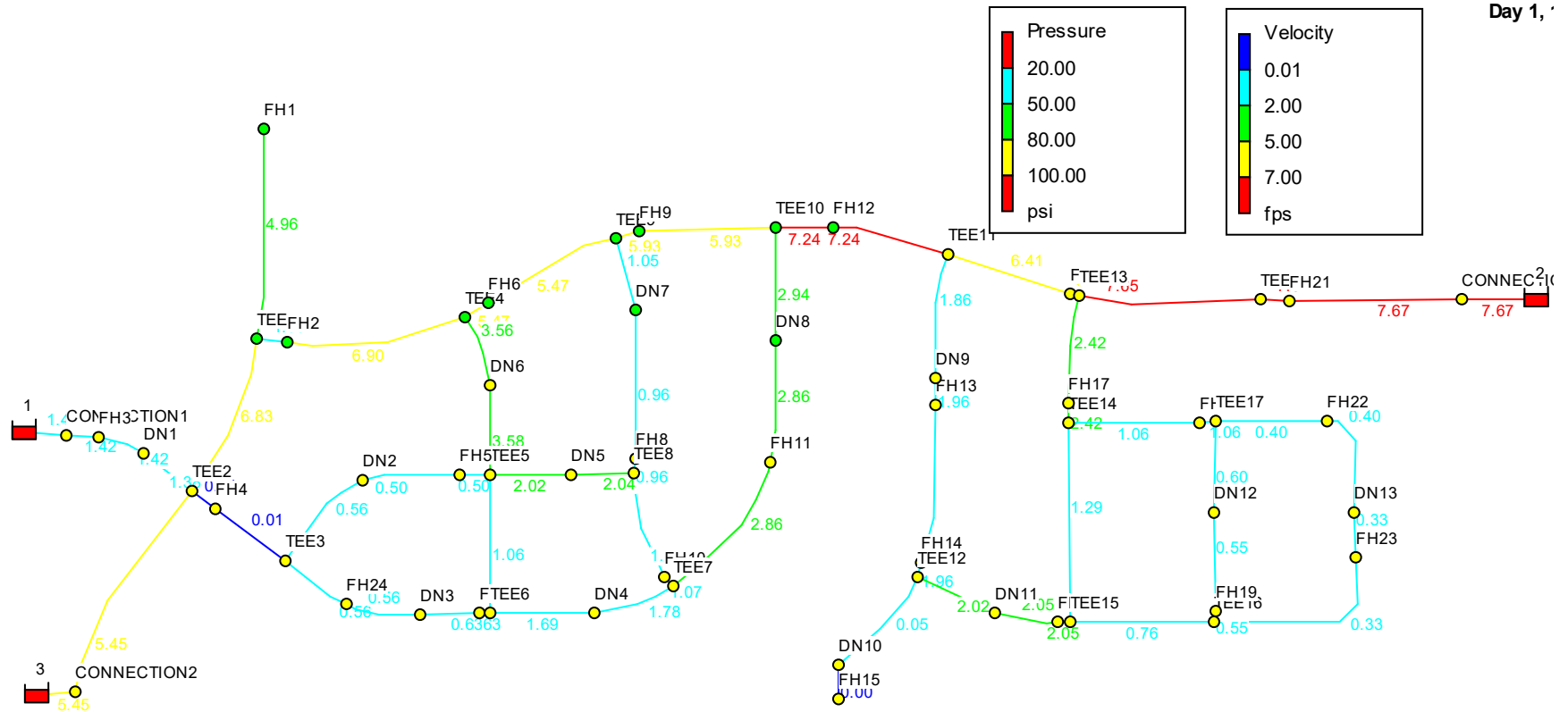
Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 45	8	130	-6.75	0.04	0.00
Pipe 46	8	130	-6.75	0.04	0.00
Pipe 47	8	130	-3.97	0.03	0.00
Pipe 49	8	130	-14.87	0.09	0.01
Pipe 50	8	130	20.08	0.13	0.02
Pipe 52	8	130	-54.05	0.34	0.08
Pipe 53	8	130	-103.94	0.66	0.28
Pipe 55	8	130	-117.64	0.75	0.36
Pipe 56	8	130	-117.64	0.75	0.35
Pipe 58	8	130	138.11	0.88	0.47
Pipe 59	8	130	132.61	0.85	0.43
Pipe 60	8	130	174.15	1.11	0.72
Pipe 61	8	130	164.15	1.05	0.64
Pipe 62	8	130	179.77	1.15	0.76
Pipe 63	8	130	168.87	1.08	0.68
Pipe 64	8	130	156.86	1.00	0.59
Pipe 65	8	130	142.26	0.91	0.49
Pipe 66	8	130	166.89	1.07	0.66
Pipe 67	8	130	164.19	1.05	0.64
Pipe 68	8	130	-5.68	0.04	0.00
Pipe 69	8	130	-9.28	0.06	0.00
Pipe 70	8	130	-104.13	0.66	0.28
Pipe 71	8	130	-116.83	0.75	0.34
Pipe 72	8	130	-176.01	1.12	0.73
Pipe 73	8	130	-189.61	1.21	0.84
Pipe 74	8	130	134.04	0.86	0.44
Pipe 75	8	130	117.64	0.75	0.34
Pipe 76	8	130	0.00	0.00	0.00
Pipe 77	8	130	-8.20	0.05	0.00
Pipe 78	8	130	-109.44	0.70	0.30

MAX DAY DEMAND AND FIRE FLOW 4
(3500 GPM AT FIRE HYDRANTS FH-16
AND FH-21, NORTHEAST)

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 79	8	130	103.94	0.66	0.28
Pipe 80	8	130	-12.78	0.08	0.01
Pipe 81	8	130	-20.08	0.13	0.01
Pipe 82	8	130	-3.97	0.03	0.00
Pipe 83	8	130	-14.87	0.09	0.01
Pipe 1	8	130	-132.61	0.85	0.43
Pipe 2	8	130	914.60	5.84	15.48
Pipe 4	12	130	2997.92	8.50	19.36
Pipe 3	8	130	-49.89	0.32	0.07

MAX DAY DEMAND AND FIRE FLOW 5
(3500 GPM AT FIRE HYDRANTS FH-1
AND FH-2, NORTHWEST SINGLE
FEED)

Day 1,



Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH1	1750.00	5127.77	66.89
Junc TEE1	1.80	5130.63	75.48
Junc TEE2	0.00	5137.27	81.87
Junc CONNECTION1	0.00	5137.57	81.59
Junc TEE4	53.70	5135.24	79.29
Junc FH6	0.00	5135.69	79.48
Junc FH2	1750.00	5130.70	75.50
Junc TEE5	0.00	5137.19	81.68
Junc FH5	0.00	5137.20	81.61
Junc TEE3	0.00	5137.27	81.37
Junc FH4	0.00	5137.27	81.96
Junc CONNECTION2	0.00	5143.43	88.17
Junc FH24	0.00	5137.30	81.04
Junc FH7	0.00	5137.36	82.33
Junc TEE6	0.00	5137.36	82.40
Junc TEE9	0.00	5138.05	78.39
Junc FH9	0.00	5138.50	78.29
Junc FH12	0.00	5142.65	77.19
Junc TEE10	0.00	5141.10	77.30
Junc FH8	0.00	5137.80	80.36
Junc TEE8	0.00	5137.79	80.47
Junc FH10	0.00	5137.93	81.21
Junc TEE7	0.00	5137.94	81.18
Junc FH11	0.00	5139.21	80.20
Junc TEE11	0.00	5145.92	80.96

**MAX DAY DEMAND AND FIRE FLOW 5
(3500 GPM AT FIRE HYDRANTS FH-1
AND FH-2, NORTHWEST SINGLE
FEED)**

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH13	0.00	5146.47	83.46
Junc FH14	0.00	5147.10	84.61
Junc TEE12	0.00	5147.15	84.52
Junc FH15	0.00	5147.15	83.36
Junc FH18	0.00	5147.77	84.00
Junc TEE15	0.00	5147.82	83.93
Junc TEE14	10.90	5148.18	83.16
Junc FH17	0.00	5148.29	83.15
Junc FH16	0.00	5148.70	82.17
Junc TEE13	56.40	5148.92	82.35
Junc TEE18	6.10	5154.41	83.63
Junc FH21	0.00	5155.29	83.79
Junc CONNECTION3	0.00	5160.58	84.23
Junc FH20	0.00	5148.02	82.13
Junc TEE17	10.00	5148.00	81.99
Junc FH22	0.00	5147.98	80.90
Junc FH23	0.00	5147.95	81.54
Junc TEE16	19.10	5147.92	82.94
Junc FH19	0.00	5147.93	83.01
Junc FH3	0.00	5137.50	81.71
Junc DN1	5.50	5137.39	81.90
Junc DN2	10.00	5137.23	80.84
Junc DN3	10.90	5137.33	81.66
Junc DN4	14.60	5137.67	81.78
Junc DN5	2.70	5137.52	80.64
Junc DN6	3.60	5136.12	80.46

MAX DAY DEMAND AND FIRE FLOW 5
(3500 GPM AT FIRE HYDRANTS FH-1
AND FH-2, NORTHWEST SINGLE
FEED)

Node ID	Demand GPM	Head ft	Pressure psi
Junc DN7	12.70	5137.96	78.49
Junc DN8	13.60	5140.17	77.99
Junc DN9	16.40	5146.37	83.04
Junc DN10	8.20	5147.15	83.73
Junc DN11	5.50	5147.50	84.29
Junc DN12	7.30	5147.96	81.99
Junc DN13	10.90	5147.96	81.26
Resvr 1	-221.87	5138.69	0.00
Resvr 2	-2703.47	5192.56	0.00
Resvr 3	-854.57	5157.08	0.00

Network Table - Links

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 7	12	130	-1750.00	4.96	7.15
Pipe 8	12	130	-681.72	1.93	1.25
Pipe 9	12	130	-2431.72	6.90	13.14
Pipe 10	12	130	-1928.00	5.47	8.55
Pipe 11	12	130	-1928.00	5.47	8.55
Pipe 12	12	130	-2091.75	5.93	9.95
Pipe 13	8	130	-1070.08	6.83	20.71
Pipe 15	8	130	-221.87	1.42	1.12
Pipe 16	8	130	-854.57	5.45	13.65
Pipe 17	8	130	0.86	0.01	0.00
Pipe 18	8	130	0.86	0.01	0.00
Pipe 20	8	130	77.91	0.50	0.16
Pipe 21	8	130	-166.53	1.06	0.66
Pipe 22	8	130	97.95	0.63	0.26
Pipe 24	8	130	87.05	0.56	0.20
Pipe 26	8	130	168.23	1.07	0.68
Pipe 27	8	130	168.23	1.07	0.67
Pipe 29	8	130	-151.05	0.96	0.55
Pipe 32	12	130	-2091.75	5.93	9.94
Pipe 34	8	130	447.31	2.86	4.12
Pipe 35	12	130	-2552.66	7.24	14.37
Pipe 36	12	130	-2552.66	7.24	14.38
Pipe 38	12	130	-2261.20	6.41	11.49
Pipe 39	12	130	-2261.20	6.41	11.50
Pipe 40	12	130	-2697.37	7.65	15.92
Pipe 41	12	130	-2703.47	7.67	15.99
Pipe 42	12	130	-2703.47	7.67	15.99
Pipe 43	8	130	379.76	2.42	3.04
Pipe 44	8	130	379.76	2.42	3.04

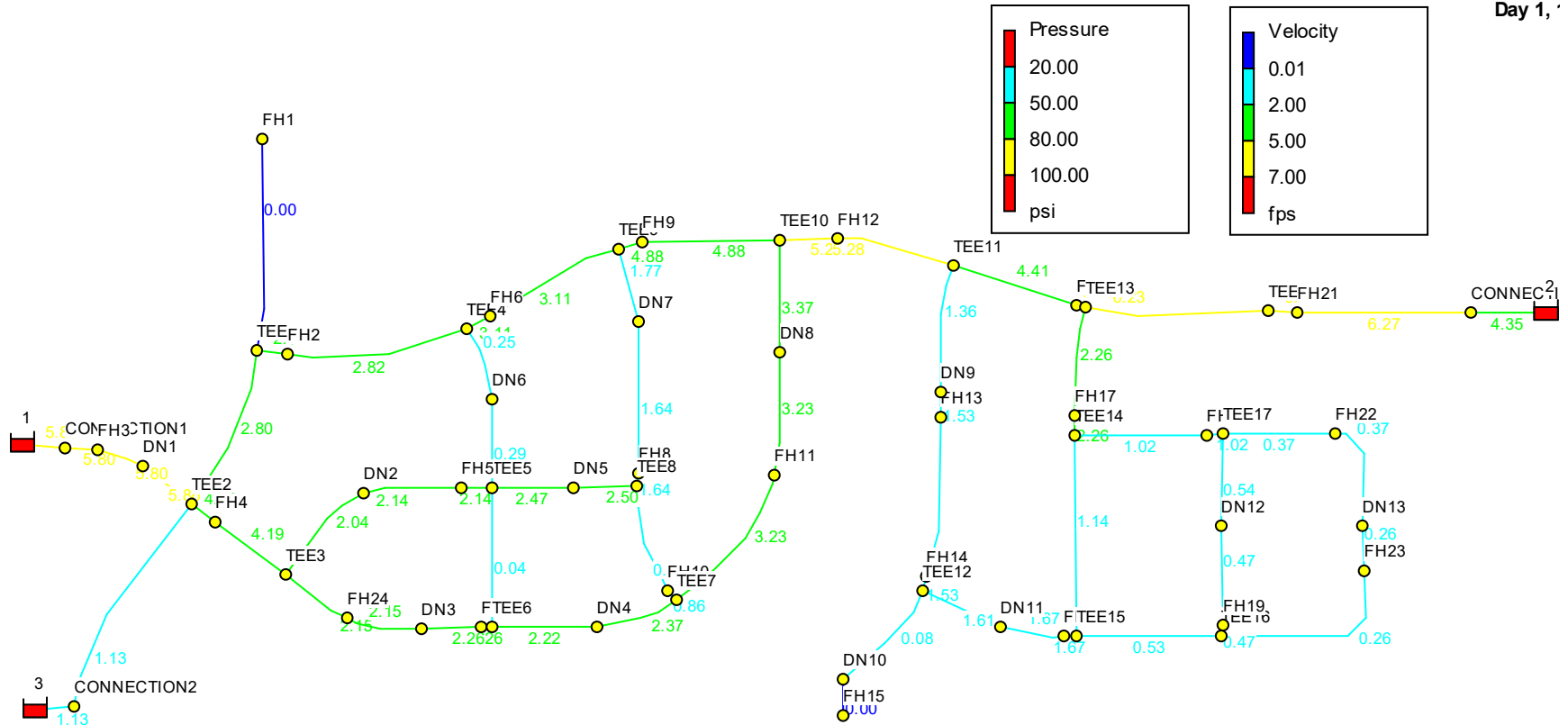
MAX DAY DEMAND AND FIRE FLOW 5
(3500 GPM AT FIRE HYDRANTS FH-1
AND FH-2, NORTHWEST SINGLE
FEED)

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 45	8	130	166.12	1.06	0.66
Pipe 46	8	130	166.12	1.06	0.65
Pipe 47	8	130	62.62	0.40	0.11
Pipe 49	8	130	51.72	0.33	0.08
Pipe 50	8	130	-86.20	0.55	0.21
Pipe 52	8	130	118.82	0.76	0.35
Pipe 53	8	130	321.56	2.05	2.25
Pipe 55	8	130	307.86	1.96	2.05
Pipe 56	8	130	307.86	1.96	2.06
Pipe 58	8	130	-216.37	1.38	1.07
Pipe 59	8	130	-221.87	1.42	1.12
Pipe 60	8	130	87.91	0.56	0.20
Pipe 61	8	130	77.91	0.50	0.16
Pipe 62	8	130	-87.05	0.56	0.20
Pipe 63	8	130	-97.95	0.63	0.25
Pipe 64	8	130	-264.48	1.69	1.56
Pipe 65	8	130	-279.08	1.78	1.72
Pipe 66	8	130	-316.59	2.02	2.17
Pipe 67	8	130	-319.29	2.04	2.21
Pipe 68	8	130	-557.42	3.56	6.19
Pipe 69	8	130	-561.02	3.58	6.26
Pipe 70	8	130	163.75	1.05	0.64
Pipe 71	8	130	151.05	0.96	0.55
Pipe 72	8	130	460.91	2.94	4.35
Pipe 73	8	130	447.31	2.86	4.12
Pipe 74	8	130	-291.46	1.86	1.86
Pipe 75	8	130	-307.86	1.96	2.05
Pipe 76	8	130	0.00	0.00	0.00
Pipe 77	8	130	-8.21	0.05	0.00
Pipe 78	8	130	316.06	2.02	2.16

**MAX DAY DEMAND AND FIRE FLOW 5
(3500 GPM AT FIRE HYDRANTS FH-1
AND FH-2, NORTHWEST SINGLE
FEED)**

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 79	8	130	-321.56	2.05	2.23
Pipe 80	8	130	93.50	0.60	0.23
Pipe 81	8	130	86.20	0.55	0.19
Pipe 82	8	130	62.62	0.40	0.11
Pipe 83	8	130	51.72	0.33	0.08
Pipe 1	8	130	221.87	1.42	1.12
Pipe 2	8	130	854.57	5.45	13.65
Pipe 4	12	130	2703.47	7.67	15.99
Pipe 3	8	130	202.75	1.29	0.95

Day 1, 1



Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH1	0.00	5159.42	80.60
Junc TEE1	2.90	5159.42	87.96
Junc TEE2	0.00	5158.15	90.92
Junc CONNECTION1	0.00	5154.01	88.71
Junc TEE4	85.90	5161.04	90.47
Junc FH6	0.00	5161.29	90.57
Junc FH2	0.00	5159.65	88.05
Junc TEE5	0.00	5161.06	92.03
Junc FH5	0.00	5160.92	91.89
Junc TEE3	0.00	5160.00	91.21
Junc FH4	0.00	5158.62	91.21
Junc CONNECTION2	0.00	5157.82	94.41
Junc FH24	0.00	5160.35	91.02
Junc FH7	0.00	5161.00	92.57
Junc TEE6	0.00	5161.06	92.66
Junc TEE9	0.00	5162.63	89.04
Junc FH9	0.00	5163.13	88.96
Junc FH12	0.00	5167.10	87.79
Junc TEE10	0.00	5166.04	88.11
Junc FH8	0.00	5161.97	90.83
Junc TEE8	0.00	5161.93	90.93
Junc FH10	0.00	5162.02	91.65
Junc TEE7	0.00	5162.03	91.61
Junc FH11	0.00	5163.63	90.78
Junc TEE11	0.00	5169.35	91.12

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH13	0.00	5169.67	93.51
Junc FH14	0.00	5170.06	94.56
Junc TEE12	0.00	5170.10	94.46
Junc FH15	0.00	5170.10	93.31
Junc FH18	0.00	5170.52	93.85
Junc TEE15	0.00	5170.55	93.78
Junc TEE14	17.50	5170.83	92.97
Junc FH17	0.00	5170.93	92.96
Junc FH16	0.00	5171.07	91.86
Junc TEE13	90.20	5171.48	92.13
Junc TEE18	9.80	5176.12	93.04
Junc FH21	0.00	5176.87	93.14
Junc CONNECTION3	0.00	5181.37	93.24
Junc FH20	0.00	5170.68	91.95
Junc TEE17	16.00	5170.66	91.81
Junc FH22	0.00	5170.64	90.72
Junc FH23	0.00	5170.62	91.37
Junc TEE16	30.60	5170.60	92.77
Junc FH19	0.00	5170.60	92.84
Junc FH3	0.00	5154.93	89.26
Junc DN1	8.70	5156.35	90.12
Junc DN2	16.00	5160.47	90.91
Junc DN3	17.50	5160.70	91.79
Junc DN4	23.30	5161.57	92.13
Junc DN5	4.40	5161.54	91.05
Junc DN6	5.80	5161.05	91.26

Node ID	Demand GPM	Head ft	Pressure psi
Junc DN7	20.40	5162.39	89.07
Junc DN8	21.80	5164.83	88.68
Junc DN9	26.20	5169.61	93.11
Junc DN10	13.10	5170.10	93.67
Junc DN11	8.70	5170.33	94.19
Junc DN12	11.60	5170.63	91.81
Junc DN13	17.50	5170.62	91.09
Resvr 1	909.35	5138.69	0.00
Resvr 2	-1533.78	5192.56	0.00
Resvr 3	176.53	5157.08	0.00

Network Table - Links

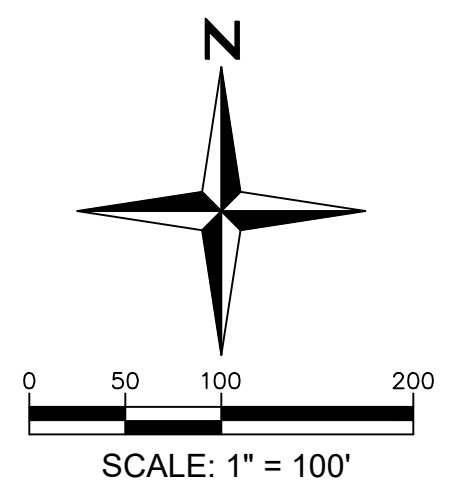
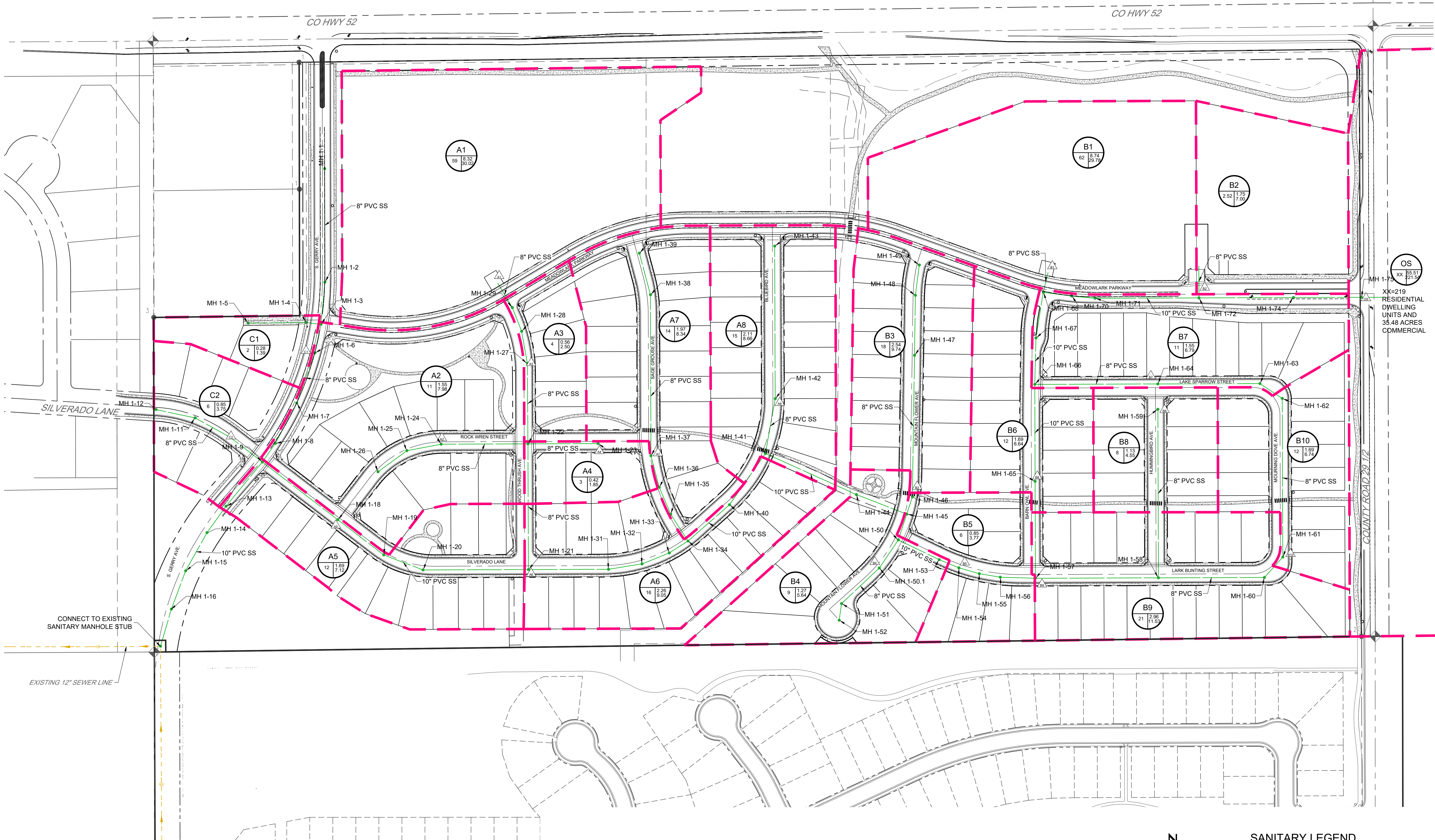
Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 7	8	130	0.00	0.00	0.00
Pipe 8	8	130	-441.31	2.82	4.02
Pipe 9	8	130	-441.31	2.82	4.01
Pipe 10	8	130	-487.81	3.11	4.84
Pipe 11	8	130	-487.81	3.11	4.83
Pipe 12	8	130	-764.37	4.88	11.11
Pipe 13	8	130	438.41	2.80	3.97
Pipe 15	8	130	909.35	5.80	15.32
Pipe 16	8	130	176.53	1.13	0.74
Pipe 17	8	130	-656.17	4.19	8.37
Pipe 18	8	130	-656.17	4.19	8.37
Pipe 20	8	130	-335.00	2.14	2.41
Pipe 21	8	130	6.80	0.04	0.00
Pipe 22	8	130	354.67	2.26	2.68
Pipe 24	8	130	337.17	2.15	2.44
Pipe 26	8	130	135.25	0.86	0.46
Pipe 27	8	130	135.25	0.86	0.45
Pipe 29	8	130	-256.16	1.64	1.46
Pipe 32	8	130	-764.37	4.88	11.10
Pipe 34	8	130	506.41	3.23	5.18
Pipe 35	10	130	-1292.58	5.28	9.91
Pipe 36	10	130	-1292.58	5.28	9.91
Pipe 38	10	130	-1079.16	4.41	7.09
Pipe 39	8	130	-1079.16	6.89	21.03
Pipe 40	10	130	-1523.98	6.23	13.44
Pipe 41	10	130	-1533.78	6.27	13.60
Pipe 42	10	130	-1533.78	6.27	13.60
Pipe 43	8	130	354.62	2.26	2.68
Pipe 44	8	130	354.62	2.26	2.68

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 45	8	130	159.27	1.02	0.61
Pipe 46	8	130	159.27	1.02	0.61
Pipe 47	8	130	58.59	0.37	0.09
Pipe 49	8	130	41.09	0.26	0.05
Pipe 50	8	130	-73.08	0.47	0.15
Pipe 52	8	130	83.57	0.53	0.18
Pipe 53	8	130	261.42	1.67	1.52
Pipe 55	8	130	239.62	1.53	1.29
Pipe 56	8	130	239.62	1.53	1.30
Pipe 58	8	130	918.05	5.86	15.59
Pipe 59	8	130	909.35	5.80	15.32
Pipe 60	8	130	-319.00	2.04	2.20
Pipe 61	8	130	-335.00	2.14	2.41
Pipe 62	8	130	-337.17	2.15	2.44
Pipe 63	8	130	-354.67	2.26	2.68
Pipe 64	8	130	-347.86	2.22	2.58
Pipe 65	8	130	-371.16	2.37	2.92
Pipe 66	8	130	-387.01	2.47	3.15
Pipe 67	8	130	-391.41	2.50	3.22
Pipe 68	8	130	-39.40	0.25	0.05
Pipe 69	8	130	-45.20	0.29	0.06
Pipe 70	8	130	276.56	1.77	1.69
Pipe 71	8	130	256.16	1.64	1.47
Pipe 72	8	130	528.21	3.37	5.60
Pipe 73	8	130	506.41	3.23	5.18
Pipe 74	8	130	-213.42	1.36	1.04
Pipe 75	8	130	-239.62	1.53	1.30
Pipe 76	8	130	0.00	0.00	0.00
Pipe 77	8	130	-13.10	0.08	0.01
Pipe 78	8	130	252.72	1.61	1.43

Link ID	Diameter in	Roughness	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 79	8	130	-261.42	1.67	1.52
Pipe 80	8	130	84.68	0.54	0.19
Pipe 81	8	130	73.08	0.47	0.14
Pipe 82	8	130	58.59	0.37	0.10
Pipe 83	8	130	41.09	0.26	0.05
Pipe 1	8	130	-909.35	5.80	15.32
Pipe 2	8	130	-176.53	1.13	0.74
Pipe 4	12	130	1533.78	4.35	5.60
Pipe 5	8	130	177.85	1.14	0.75

Appendix C - Sanitary Sewer Calculations

I:\2019\19032 - Murata Farms\Engineering Reports\Utility\Sanitary Basin Map.dwg Job: Layout1 Aug 20, 2021 10:24am tbboltzer



SANITARY LEGEND

- PROPOSED SANITARY MAIN
- EXISTING SANITARY MAIN
- PROPOSED BASIN BOUNDARY

Basin Designation Legend:

A1

- 20
- 2.0
- 5.0

Basin Designation Legend:

- BASIN DESIGNATION
- AVG. DAY (GPM)
- PEAK HOUR + 181 (GPM)
- DWELLING UNITS (ACRES FOR COMMERCIAL)
- PROPOSED DESIGN POINT

MURATA FARMS

SANITARY SEWER BASINS

SAN

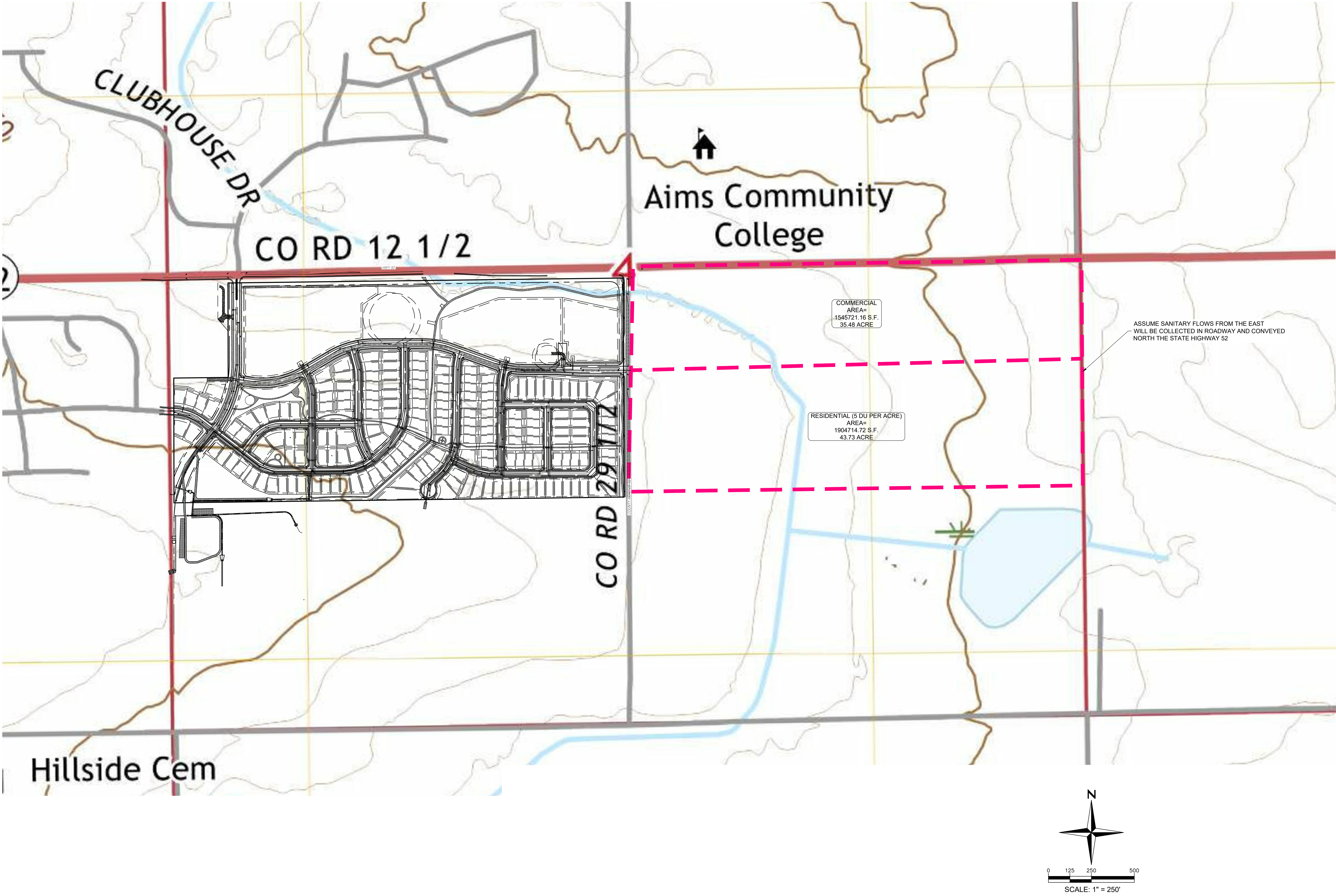
Redland

WHERE GREAT PLACES BEGIN

720.282.4753 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

DATE	NO.	DESCRIPTION	DRAWN	CHECKED	APPROVED	PROJECT NO.	HORIZ. SCALE	VERT. SCALE
8/20/21	1	FIRST FINAL PLAT SUBMITTAL	BRB	TF	TF	19032	1" = 100'	

I:\2019\19032 - Murata Farms\Engineering Reports\Utility\Sanitary\Offsite Drainage Areas.dwg tab: Layout1 Aug 19, 2021 - 5:46pm bboltzer



DRAWN	BRB
CHECKED	TF
APPROVED	TF
PROJECT NO.	19032
HORIZ. SCALE	1" = 100'
VERT. SCALE	

DATE	NO.	NOTES
8/20/21	1	FIRST FINAL PLAT SUBMITTAL

MURATA FARMS

OFFSITE SEWER BASIN

SHEET

SAN



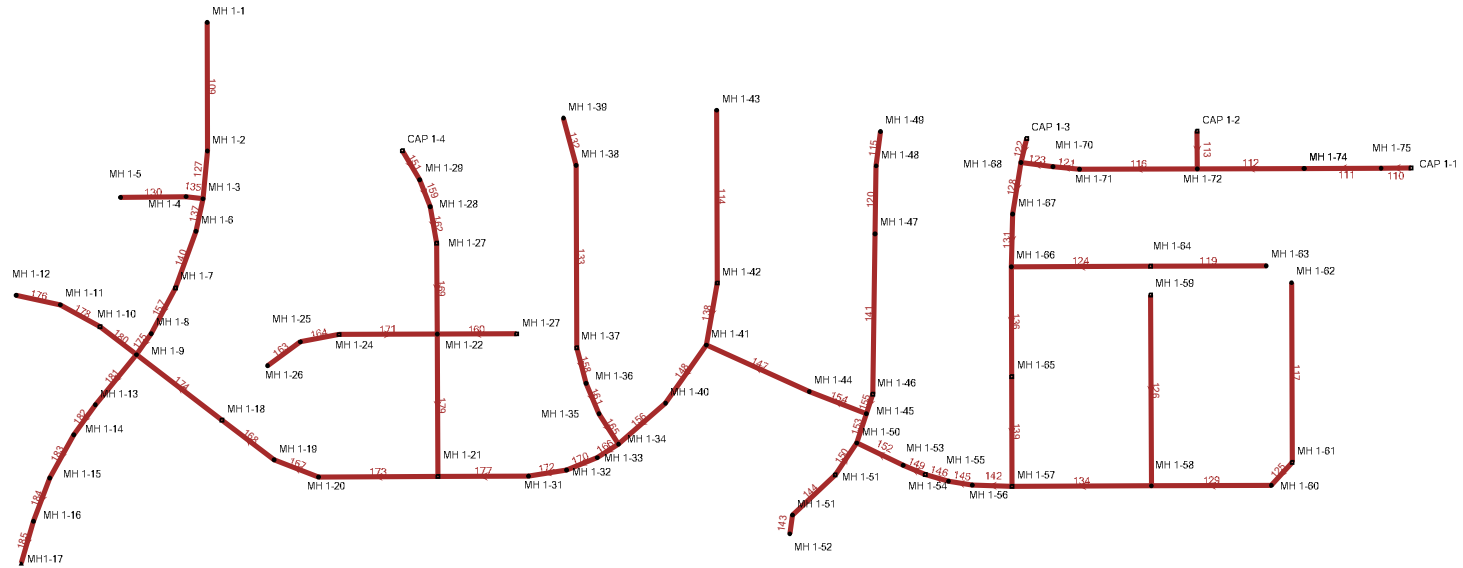
Sanitary Loading Worksheet

PROJECT NAME: Murata Farms Filing No. 1
PROJECT NUMBER: 19.032
CALCULATED BY: BRB
CHECKED BY: TF

Residential (Gallons per Capita per Day) 70
People per d.u. 2.9
Commercial (Gallons per Acre per Day) 1000
Peak Factor 3
Infiltration and Inflow (Gallons per Acre Per Day) 1000

Demand Node	Area (Acres)	Land Use			Average Day (gpd)	Average Day (gpm)	Tributary Flow Per Node		
		Attached DU	Detached DU	Commercial (Acres)			Peak Daily Flow (gpm)	Infiltration and Inflow (gpm)	PDF + I&I (gpm)
Total Site	72.7	121	180	2.52	63,623	44.18	132.55	50.49	183.03
Basin A									
A1	7.3	59			11,977	8.32	24.95	5.07	30.02
A2	4.79		11		2,233	1.55	4.65	3.33	7.98
A3	1.16		4		812	0.56	1.69	0.81	2.50
A4	0.83		3		609	0.42	1.27	0.58	1.85
A5	2.95		12		2,436	1.69	5.08	2.05	7.12
A6	3.29		16		3,248	2.26	6.77	2.28	9.05
A7	3.49		14		2,842	1.97	5.92	2.42	8.34
A8	3.34		15		3,045	2.11	6.34	2.32	8.66
Basin B									
B1	5.13	62			12,586	8.74	26.22	3.56	29.78
B2	2.52			2.52	2,520	1.75	5.25	1.75	7.00
B3	3.06		18		3,654	2.54	7.61	2.13	9.74
B4	2.64		9		1,827	1.27	3.81	1.83	5.64
B5	1.77		6		1,218	0.85	2.54	1.23	3.77
B6	2.26		12		2,436	1.69	5.08	1.57	6.64
B7	3.08		11		2,233	1.55	4.65	2.14	6.79
B8	1.68		8		1,624	1.13	3.38	1.17	4.55
B9	3.82		21		4,263	2.96	8.88	2.65	11.53
B10	2.4		12		2,436	1.69	5.08	1.67	6.74
Basin C									
C1	0.78		2		406	0.28	0.85	0.54	1.39
C2	1.74		6		1,218	0.85	2.54	1.21	3.75
Offsite	79.21		219	35.48	79,937	55.51	166.54	55.01	221.54
Site Totals		121	180	38	143,560	99.69	299.08	95.31	394.39

Scenario: Base

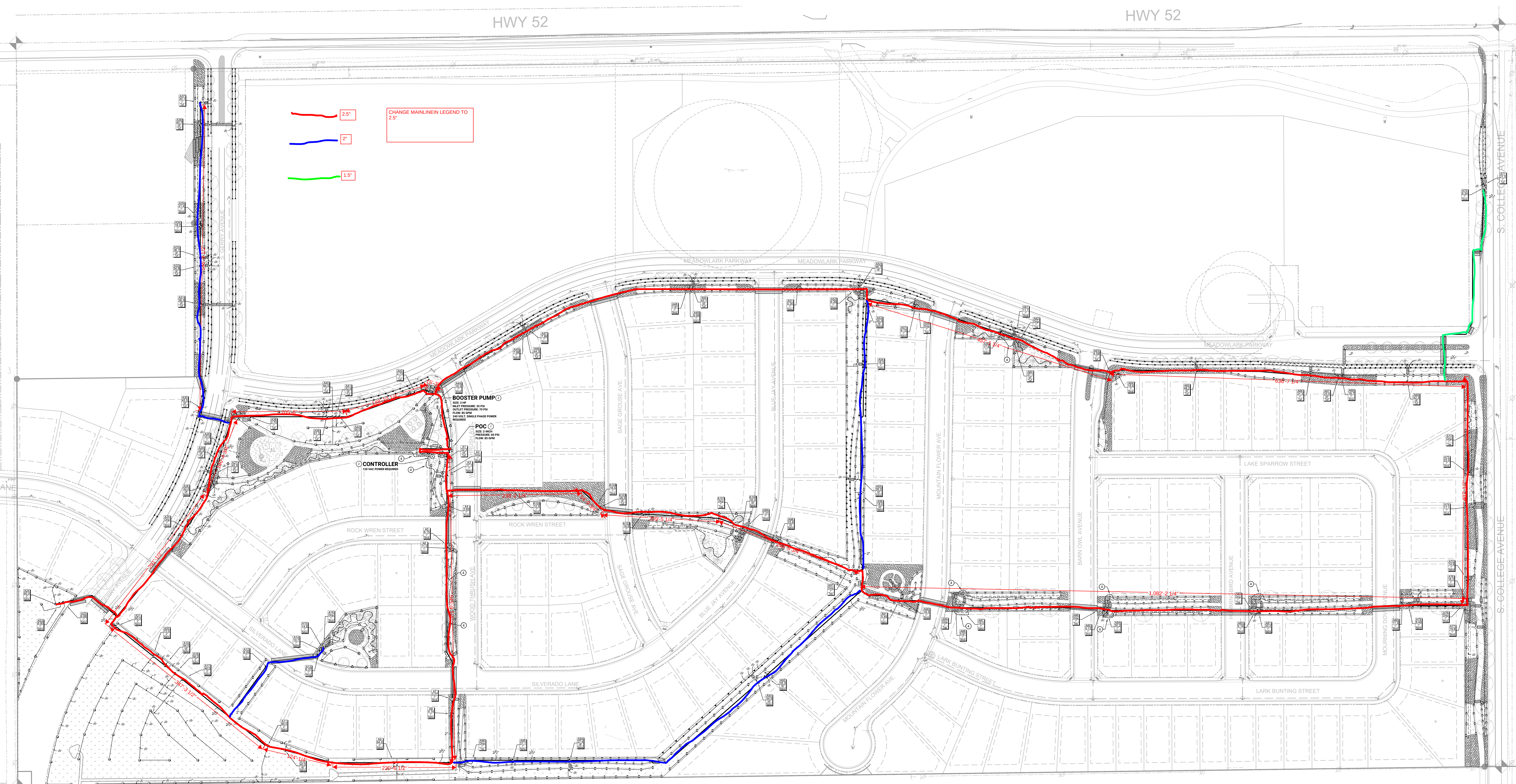


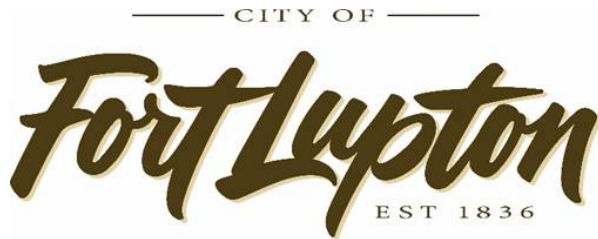
FlexTable: Conduit Table

ID	Start Node	Stop Node	Slope (Calculated) (ft/ft)	Diameter (in)	Manning's n	Flow (gpm)	Capacity (Full Flow) (gpm)	Velocity (ft/s)	Depth/Rise (%)
109	MH 1-1	MH 1-2	0.035	8.0	0.015	0.00	880.87	0.00	0.0
110	CAP 1-1	MH 1-75	0.010	10.0	0.015	221.54	852.20	2.92	35.8
111	MH 1-75	MH 1-74	0.010	10.0	0.015	221.54	852.20	2.92	35.8
112	MH 1-74	MH 1-72	0.010	10.0	0.015	221.54	852.20	2.92	35.8
113	CAP 1-2	MH 1-72	0.010	8.0	0.015	7.00	470.02	1.09	12.3
114	MH 1-43	MH 1-42	0.020	8.0	0.015	0.00	664.66	0.00	0.0
115	MH 1-49	MH 1-48	0.045	8.0	0.015	0.00	996.58	0.00	0.0
116	MH 1-72	MH 1-71	0.010	10.0	0.015	228.54	852.20	2.95	36.4
117	MH 1-62	MH 1-61	0.008	8.0	0.015	0.00	420.40	0.00	0.0
119	MH 1-63	MH 1-64	0.008	8.0	0.015	0.00	420.40	0.00	0.0
120	MH 1-48	MH 1-47	0.045	8.0	0.015	0.00	996.58	0.00	0.0
121	MH 1-71	MH 1-70	0.004	10.0	0.015	228.54	538.99	2.11	41.4
122	CAP 1-3	MH 1-68	0.010	8.0	0.015	29.78	470.02	1.68	32.9
123	MH 1-70	MH 1-68	0.004	10.0	0.015	228.54	538.99	2.11	42.0
124	MH 1-64	MH 1-66	0.008	8.0	0.015	6.79	420.40	1.00	20.7
125	MH 1-61	MH 1-60	0.010	8.0	0.015	6.74	470.02	1.08	8.3
126	MH 1-59	MH 1-58	0.010	8.0	0.015	4.55	470.02	0.95	6.9
127	MH 1-2	MH 1-3	0.025	8.0	0.015	0.00	743.07	0.00	0.0
128	MH 1-68	MH 1-67	0.002	10.0	0.015	258.32	330.54	1.49	51.2
129	MH 1-60	MH 1-58	0.007	8.0	0.015	6.74	407.05	0.97	8.6
130	MH 1-5	MH 1-4	0.004	8.0	0.015	0.00	297.27	0.00	0.0
131	MH 1-67	MH 1-66	0.004	10.0	0.015	258.32	538.99	2.18	44.3
132	MH 1-39	MH 1-38	0.012	8.0	0.015	0.00	514.87	0.00	0.0
133	MH 1-38	MH 1-37	0.012	8.0	0.015	0.00	514.87	0.00	0.0
134	MH 1-58	MH 1-57	0.004	8.0	0.015	11.29	297.27	0.91	24.3
135	MH 1-4	MH 1-3	0.004	8.0	0.015	0.00	297.27	0.00	0.0
136	MH 1-66	MH 1-65	0.004	10.0	0.015	265.11	538.99	2.19	49.9
137	MH 1-3	MH 1-6	0.025	8.0	0.015	0.00	743.07	0.00	0.0
138	MH 1-42	MH 1-41	0.015	8.0	0.015	8.66	575.64	1.34	9.0
139	MH 1-65	MH 1-57	0.004	10.0	0.015	271.75	538.99	2.21	45.6
140	MH 1-6	MH 1-7	0.025	8.0	0.015	0.00	743.07	0.00	0.0
141	MH 1-47	MH 1-46	0.005	8.0	0.015	0.00	324.94	0.00	1.0
142	MH 1-57	MH 1-56	0.004	10.0	0.015	294.57	538.99	2.25	47.7
143	MH 1-52	MH 1-51	0.004	8.0	0.015	0.00	297.27	0.00	0.0
144	MH 1-51	MH 1-51	0.004	8.0	0.015	0.00	297.27	0.00	0.0
145	MH 1-56	MH 1-55	0.004	10.0	0.015	294.57	538.99	2.25	47.7
146	MH 1-55	MH 1-54	0.004	10.0	0.015	294.57	538.99	2.25	47.7
147	MH 1-44	MH 1-41	0.004	10.0	0.015	313.72	541.92	2.29	49.4
148	MH 1-41	MH 1-40	0.004	10.0	0.015	322.38	538.99	2.30	50.3
149	MH 1-54	MH 1-53	0.004	10.0	0.015	298.34	538.99	2.26	48.1
150	MH 1-51	MH 1-50	0.004	8.0	0.015	5.64	297.27	0.74	21.4
151	CAP 1-4	MH 1-29	0.010	8.0	0.015	30.02	470.02	1.68	17.4
152	MH 1-53	MH 1-50	0.004	10.0	0.015	298.34	538.99	2.26	48.1
153	MH 1-50	MH 1-45	0.005	10.0	0.015	303.98	599.19	2.46	46.9
154	MH 1-45	MH 1-44	0.004	10.0	0.015	313.72	539.09	2.29	49.5
155	MH 1-46	MH 1-45	0.004	8.0	0.015	9.74	297.27	0.87	27.2
156	MH 1-40	MH 1-34	0.004	10.0	0.015	322.38	538.99	2.30	50.3
157	MH 1-7	MH 1-8	0.025	8.0	0.015	1.39	743.07	0.90	3.5
158	MH 1-37	MH 1-36	0.010	8.0	0.015	8.34	470.02	1.14	9.3
159	MH 1-29	MH 1-28	0.010	8.0	0.015	30.02	470.02	1.68	17.4

FlexTable: Conduit Table

ID	Start Node	Stop Node	Slope (Calculated) (ft/ft)	Diameter (in)	Manning's n	Flow (gpm)	Capacity (Full Flow) (gpm)	Velocity (ft/s)	Depth/Rise (%)
160	MH 1-27	MH 1-22	0.015	8.0	0.015	1.85	575.64	0.82	4.3
161	MH 1-36	MH 1-35	0.010	8.0	0.015	8.34	470.02	1.14	9.3
162	MH 1-28	MH 1-27	0.010	8.0	0.015	30.02	470.02	1.68	17.4
163	MH 1-26	MH 1-25	0.004	8.0	0.015	0.00	297.27	0.00	0.0
164	MH 1-25	MH 1-24	0.004	8.0	0.015	0.00	298.83	0.00	0.0
165	MH 1-35	MH 1-34	0.025	8.0	0.015	8.34	743.07	1.57	25.1
166	MH 1-34	MH 1-33	0.004	10.0	0.015	330.72	538.99	2.31	51.0
167	MH 1-20	MH 1-19	0.004	10.0	0.015	382.12	538.99	2.39	55.6
168	MH 1-19	MH 1-18	0.004	10.0	0.015	382.12	538.99	2.39	55.6
169	MH 1-27	MH 1-22	0.010	8.0	0.015	32.52	470.02	1.72	18.1
170	MH 1-33	MH 1-32	0.004	10.0	0.015	330.72	538.99	2.31	51.0
171	MH 1-24	MH 1-22	0.004	8.0	0.015	7.98	297.27	0.82	10.1
172	MH 1-32	MH 1-31	0.004	10.0	0.015	330.72	538.99	2.31	51.0
173	MH 1-21	MH 1-20	0.004	10.0	0.015	382.12	538.99	2.39	55.6
174	MH 1-18	MH 1-9	0.004	10.0	0.015	389.24	538.99	2.40	56.2
175	MH 1-8	MH 1-9	0.022	8.0	0.015	1.39	704.96	0.89	3.5
176	MH 1-12	MH 1-11	0.010	8.0	0.015	0.00	470.02	0.00	0.0
177	MH 1-31	MH 1-21	0.004	10.0	0.015	330.72	538.99	2.31	51.0
178	MH 1-11	MH 1-10	0.010	8.0	0.015	0.00	470.02	0.00	0.0
179	MH 1-22	MH 1-21	0.007	8.0	0.015	42.35	407.05	1.68	34.8
180	MH 1-10	MH 1-9	0.010	8.0	0.015	3.75	470.02	0.89	6.3
181	MH 1-9	MH 1-13	0.004	10.0	0.015	394.38	538.99	2.40	56.7
182	MH 1-13	MH 1-14	0.004	10.0	0.015	394.38	538.99	2.40	56.7
183	MH 1-14	MH 1-15	0.004	10.0	0.015	394.38	538.99	2.40	56.7
184	MH 1-15	MH 1-16	0.004	10.0	0.015	394.38	539.04	2.40	56.7
185	MH 1-16	MH1-17	0.004	10.0	0.015	394.38	538.99	2.40	56.7





Public Works

130 S. McKinley Avenue
Fort Lupton, CO 80621

Phone: 303-857-6694
Fax: 303.857.0351

www.fortluptonco.gov

SUBDIVISION IMPROVEMENTS AGREEMENT FOR MURATA FARMS (Residential)

THIS AGREEMENT is made and entered into this _____ day of _____, 2021, by and between the **CITY OF FORT LUPTON**, a municipal corporation, in the County of Weld, State of Colorado, hereinafter referred to as the "**City**," and **FL Mountain Sky, LLC**, and **CORONADO WEST, LLC**, a Delaware limited liability company hereinafter referred to as the "**Developer**", together referred to as the "**Parties**".

WHEREAS, the Developer submitted a Final Plat entitled "Murata Farms," **Case Filing No. 1, Project** No. LUP **2019-0004** **2020-0003**" (the "**Plat**"), which depicts the proposed project (the "**Development**") to be constructed by Developer on the property depicted on the Plat, which is the "**Subject Property**"; and

WHEREAS the Final PUD Plat was approved by the City of Fort Lupton City Council on **March 18, 2019**, 2021 by Resolution No. **2019R024** **2021R0** with a condition of approval **1** requiring a Subdivision Improvements Agreement; and

WHEREAS the Developer has submitted Construction Drawings for the Development entitled Murata Farms as approved by the City Engineer on **May 10, 2019**; and

WHEREAS, Developer is required to construct certain public improvements (the "**Improvements**") as a condition of Final Plat and subdivision approval for the Development; and

WHEREAS, Section 17-23(c) of the City of Fort Lupton Municipal Code requires that a subdivision agreement for public improvements be executed by the Developer and the City and recorded in the office of the Weld County Clerk and Recorder; and

WHEREAS, Section 17-23(f)(7) of the City of Fort Lupton Municipal Code requires that the installation of the required public improvements be guaranteed in the form of letter of credit, cash, or other suitable means, which have been approved by the City Attorney.

NOW, THEREFORE, in consideration of the foregoing, the Parties promise, covenant and agree as follows:

1.0 **GENERAL CONDITIONS**

1.1 Development Obligation. Developer shall be responsible for performance of the covenants set forth herein. Unless as otherwise amended within this

~~agreement~~Agreement, the Developer shall be responsible for performance of all requirements in this ~~agreement~~Agreement.

1.2 Engineering and Surveying Services. Developer agrees to furnish, at its expense, all necessary engineering and surveying services relating to the design layout and construction of the ~~improvements (the "Improvements")~~ depicted on Exhibit ~~"A"~~ attached hereto and fully incorporated herein by this reference. Said engineering services shall be performed by or under the supervision of a Registered Professional Engineer or Registered Land Surveyor, or other professionals as appropriate, licensed by the State of Colorado, and in accordance with applicable Colorado law, and shall conform to the standards and criteria for public improvements as established and approved by the City as of the date of submittal to the City.

1.3 Construction Standards. Developer shall construct all Improvements required by this Agreement, in accordance with plans and specifications approved in writing by the City, in conformance with all applicable codes and ordinances as adopted by the City, and in full conformity with the City's construction and specifications applicable at the time of actual construction.

1.4 Development Coordination. Unless specifically provided in this Agreement to the contrary, all submittals to the City or approvals required of the City in connection with this Agreement shall be submitted to or rendered by the City Administrator, or his designee, who shall have general responsibility for coordinating development with Developer.

1.5 Construction Acceptance and Warranty. No later than ten (10) days after the Improvements are completed, Developer shall request and the City shall provide inspection by the City. If Developer does not request this inspection within ten (10) days of completion of the Improvements, the City may conduct the inspection without the ~~approval~~request of Developer. Developer shall provide ~~"as-built"~~ drawings no later than thirty (30) days after the Improvements are completed. If the Improvements completed by Developer are satisfactory, the City shall grant construction acceptance (~~"Construction Acceptance"~~) within ten (10) days of the Developer's submission of "as-built" drawings, which shall be subject to final acceptance (~~"Final Acceptance"~~) as set forth herein. If the Improvements completed by Developer ~~are unsatisfactory~~do not satisfy the conditions of this Agreement, the City shall provide written notice to Developer of the repairs, replacements, construction or other work required to receive Construction Acceptance within ten (10) days from the date of City inspection. Developer shall complete all needed repairs, replacements, construction or other work within thirty (30) days of said notice, weather permitting. After Developer does complete the repairs, replacements, construction or other work required, Developer shall request a re-inspection of such work within ten (10) days to determine if Construction Acceptance can be granted. The City shall provide either Construction Acceptance or written notice of additional repairs, replacements, construction or other work required to receive Construction Acceptance within ten (10) days of the re-inspection date. The City shall issue no certificate of occupancy until the City has granted the Construction Acceptance.

1.6 Final Acceptance. At least thirty (30) days before one (1) year has elapsed from the issuance of Construction Acceptance, or as soon thereafter as weather permits, Developer shall request a Final Acceptance inspection. The City shall inspect the Improvements and shall notify the Developer in writing of all deficiencies and necessary repairs. After Developer has corrected all deficiencies and made all necessary repairs identified in said written notice, the City shall issue to Developer a letter of Final Acceptance.

1.7 Testing and Inspection.

(a) At all times during construction of the public improvements, the City shall have access to inspect materials and workmanship, and all materials and work not conforming to the approved plans and specifications shall be repaired or removed and replaced at Developer's expense so as to conform to the approved plans and specifications.

(b) The Developer will be responsible for oversight of the construction of the public improvements. The Developer shall solicit and retain a third-party engineer or inspector, solely at Developer's cost, to perform oversight, provided the engineer/inspector's qualifications are approved by the City prior to commencement of construction of the public improvements. The Developer will provide the resume of ~~a Civil Engineer~~ the third-party engineer, or other qualified inspector(s), of the construction and installation of such improvements before construction may begin. The City Engineer or the City's designee shall determine the amount of oversight required, after consultation with the Developer. The third party engineer engaged for oversight and inspection pursuant to this paragraph may be the same engineer engaged for inspection of improvements to be dedicated to the metropolitan district for the Subject Property.

(c) All testing required by the City's "*Standards and Specifications for the Design and Construction of Public Improvements*" shall be the responsibility of the Developer. All test reports shall be provided to the City Engineer.

(d) All work shown on the Improvements plans requires inspection by the City. Inspection services are provided Monday through Friday, except legal holidays, from 8:00 a.m. to 4:00 p.m. During the hours listed above and except as otherwise provided for in advance, inspections shall be scheduled a minimum of three (3) business days in advance.

1.8 Indemnification and Release of Liability. Developer agrees to defend, indemnify and hold harmless the City, its officers, employees, agents or servants, and to pay any and all judgments rendered against said persons on account of any suit, actions or claim caused by, arising from, or on account of acts or omissions by the Developer, its officers, employees, agents, consultants, contractors and subcontractors; provided, however, that Developer's obligation herein shall not apply to the extent said suit, action or claim results from any acts or omissions of officers, employees, agents or servants of the City. Said obligation of Developer shall be limited to suits, actions or claims based upon conduct prior to Final Acceptance by the City of the construction work. Developer acknowledges that the City's review and approval of plans for development of the Subject Property is done in furtherance of the general public's health, safety and welfare and that no immunity is waived and no specific relationship with, or duty of care to, the Developer or third parties is assumed by such review approval.

1.9 Insurance OSHA. Developer shall furnish to the City upon request proof thereof that all employees and contractors engaged in the construction of Improvements are covered by adequate Worker's Compensation Insurance and Public Liability Insurance and shall require faithful compliance with all provisions of the Federal Occupational Safety and Health Act (OSHA).

2.0 CONSTRUCTION OF IMPROVEMENTS

2.1 Rights-of-Way, Easements and Permits. Before the City may approve construction plans for any Improvements herein agreed upon, Developer shall acquire or dedicate, at its own expense, all rights-of-way and easements depicted on the Plat, as required by the City for the construction of the Improvements. All such conveyances shall be free and clear of liens, taxes and encumbrances and shall be by the Plat or deed, easement, license, agreement in form and substance acceptable to the City Administrator or the Administrator's designee. All title documents shall be recorded at the Developer's expense.

3.0 INFRASTRUCTURE IMPROVEMENTS

3.1 Public Improvements. The Developer agrees to construct phased public improvements (the "Improvements"), within the Subdivision, depicted on **Exhibit "A"** attached hereto and fully incorporated herein by this reference. The Developer shall be responsible for providing the City with a Security Bond, Letter of Credit, or cash deposit with the City (the "Security") guaranteeing installation of the Improvements that are not completed prior to issuance of the first building permit for each Phase. The amount shall be one hundred twenty-five percent (125%) of the applicable phased estimated cost of the required Improvements per **Exhibit "B"** (updated with current construction costs at time of Phase construction) attached hereto and fully incorporated herein by this reference. Phasing of improvements shall be in accordance with ~~Sections 3.9 and 3.10 of the Mountain Sky Development and Master Public Improvements Agreement~~the Phasing Map attached hereto as Exhibit "D", provided that the City and Developer acknowledge that this Agreement shall cover the residential Phases 1-4 shown on Exhibit "D" and the improvements within the commercial Phase 5 shown on Exhibit "D" shall be governed by the terms of a separate subdivision improvements agreement to be entered into between the City and the developer of such commercial Phase 5 prior to the development thereof, and which commercial subdivision improvements agreement shall be in substantially the same form as this agreement. The City may accept portions of the Improvements, reducing the Security for each portion completed and accepted by the City, to no less than twenty-five percent (25%) of the actual or estimated construction costs, whichever is greater, for each completed system. Each Improvement phase shall define a system, i.e. roadways system, sewer system, water system. The remaining twenty-five percent (25%) percent for each system shall be retained to secure the Developer's warranty during the designated warranty period. A warranty period of ~~two~~one (21) years~~year~~as set forth in Section 1.6 hereof shall apply to all public improvements. The City shall release or return the Security to the Developer within Thirty (30) days of receipt of the Conditional Acceptance as provided in paragraph 1.5 herein, less the twenty-five percent (25%) of construction costs to be retained during the warranty period. Upon Final Acceptance of the Improvements as provided in paragraph 1.6 herein, the twenty-five percent (25%) Security retained during the warranty period shall be released or returned to the Developer within Thirty (30) days of issuance of the Final Acceptance.

3.2 Non-Potable Water Public Improvements. The Developer will construct non-potable water main improvements (the "NPW") for the purposes of providing raw water to the Development for landscape irrigation. Construction and probationary acceptance of the NPW shall entitle the Developer to the Raw Water Equivalents per Paragraph 6.4 of this Agreement. No tap fees shall be incurred for the NPW on any lot in the Development; however, applicable meter costs shall be apply per the current meter fee schedule at the time of building permit application for each individual lot.

4.0 LANDSCAPE, PARK AND TRAIL IMPROVEMENTS

The Developer agrees to construct certain Landscape, Park and Trail improvements located within the Subdivision (the "Landscape, Park and Trail Improvements") per the approved P.U.D. referenced as **Exhibit "C"** attached hereto and fully incorporated herein by this reference, as part of the Phase Improvements. The surety shall be in the amount of one hundred twenty-five percent (125%) of the estimated cost of the Landscape, Park and Trail Improvements as shown on **Exhibit "C"**. The Landscape, Park and Trail Improvements are depicted on the ~~Final~~Murata Farms Preliminary Plat/PUD submittal of Landscape Plans ~~by DHM~~.

Design dated 12 February 2016, for Mountain Sky, submitted by henry design group dated May 6, 2021, incorporated herein by reference.

5.0 SPECIFICATIONS.

All street improvements, curb, gutter and sidewalks and appurtenances thereto, water mains, sewer mains and stormwater improvements shall be constructed and installed so as to meet or exceed City-approved plans, specifications and the Improvements described on **Exhibit “B”** Public Improvements and **Exhibit “C”** Landscape and Park Improvements. All streets within the Subdivision shall be constructed to City Standards and Specifications per the approved Construction Plans and based upon a site-specific geotechnical study and pavement design. All streetscaping will meet the requirements of the Fort Lupton Subdivision Regulations. Detention pond improvements will be required at the time of construction on the site as determined by the Phase III Drainage Study submitted.

6.0 OTHER REQUIREMENTS

6.1 Trash, Debris, Mud. Developer agrees that, during construction of the Development and Improvements described herein, Developer shall take any and all steps necessary to control trash, debris and wind or water erosion in the Development. Developer agrees to take any and all steps necessary to prevent the transfer of mud or debris from the construction site into public rights-of-way and to immediately remove such mud and debris from public rights-of-way after notification by the City. If these requirements are not met, the developer will be responsible for reimbursing the City for any costs incurred by the City in mitigating impacts of trash, debris, and mud.

6.2 Erosion Control and Sedimentation Plan. Developer agrees to submit an erosion control and sedimentation plan for review and approval by the City Engineer prior to commencement of construction on the site. Each individual lot will require erosion control measures be taken. Colorado State permits required shall be the responsibility of the Developer.

6.3 Colorado Big Thompson (CBT) Water Shares or equivalent. Developer agrees to dedicate to the City the appropriate water required by the applicable City Codes and regulations and deliverable to the City Water Treatment Plant at the time of development. The City will not receive dedication or supply water service to the project until and unless the subject property is included within the Northern Colorado Water Conservancy District and Municipal Sub-District. The Developer may, at its discretion, elect to pay cash-in-lieu to the City to satisfy the CBT water dedication requirement in accordance with City Council Resolution 2020R060. Said cash-in-lieu payments will be made on a per-lot basis at the time of Final Plat recordation. Dedicated CBT water shares shall remain attached to platted lots.

6.4 Equivalent Shares. The City herein agrees that the Developer may satisfy the CBT Water Shares or equivalent requirement of Paragraph 6.3 by purchasing equivalents via cash-in-lieu at a cost of 20% of current market price or \$15,000 (whichever is more) per platted lot, in accordance with Resolution No. 2020R060. The development must include extension and installation of a dual water system and provide irrigation water from the City’s well system.

6.5 Off-Site Public Improvements Cost Shares. The City ~~executed~~intends to execute a Cost Recovery Agreement with the ~~Mountain-Sky~~Murata Farms Residential Metropolitan District for public improvements that benefit this development. Reimbursement

payment to the City will be required [pursuant to the Cost Recovery Agreement following issuance of District bonds](#) based on the following:

Water Main Extension	\$563.17 per ¾" service tap
Non-potable Water Main Extension	\$214.12 per ¾" service connection
S College Avenue Paving	\$277,273.79 (half of paved section along frontage)
Highway 52 Deceleration Lane	To Be determined based on proportionate share of Traffic Study traffic count

7.0 MISCELLANEOUS TERMS

7.1 Local Codes and Ordinances. In addition to any of the items listed in this Agreement, all construction in the Development is subject to all local Codes and Ordinances as adopted by the City subject to exceptions agreed or granted.

7.2 Recording of Agreement. The City shall record this Agreement at Developer's expense in the office of the Clerk and Recorder, County of Weld, State of Colorado, and the City shall retain the recorded Agreement.

7.3 Binding Effect of Agreement/Assignment. This Agreement shall run with the land included within the Development and shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto. [Developer shall have the right by written instrument to assign its rights and obligations hereunder to any successor owner of the Subject Property, which assignment and assumption may be accomplished on a Phase by Phase basis. Developer shall provide written notice to the City of any such assignment and assumption, along with a copy of the executed assignment and assumption instrument.](#)

7.4 Modification and Waiver. No modification of the terms of this Agreement shall be valid unless in writing and executed with the same formality as this Agreement, and no waiver of the breach of the provisions of any section of this Agreement shall be construed as a waiver of any subsequent breach of the same section or any other sections which are contained herein.

7.5 Notices. Any notice or communication required or permitted hereunder shall be given in writing and shall be personally delivered or sent by United States mail, postage prepaid, registered or certified mail, return receipt requested, addressed as follows:

CITY: City of Fort Lupton
Attention: City Administrator
130 South McKinley Avenue
Fort Lupton, Colorado 80621

DEVELOPER: [FL Mountain Sky Coronado West, LLC](#)
[9200 E. Mineral Ave, #365.](#)
[Centennial, CO 80112](#)
[8655 S. Priest St.](#)
[Tempe, AZ 85285](#)
[Attention: John Cork](#)

or to such other address or the attention of such other person(s) as hereafter designated in writing by the applicable parties in conformance with this procedure. Notices shall be effective upon mailing or personal delivery in compliance with this paragraph.

7.6 Force Majeure. Whenever Developer is required to complete construction, maintenance, repair or replacement of Improvements by an agreed upon deadline, the City shall grant a reasonable extension of time if the performance cannot, as a practical matter, be completed in a timely manner due to acts of God or other circumstances constituting force majeure or beyond the reasonable control of the Developer.

7.7 Approvals. Whenever approval or acceptance of a matter is required or requested of the City pursuant to any provisions of this Agreement, the City shall act reasonably in responding to such matter, and no such approval or acceptance shall be unreasonably withheld or delayed.

7.8 Title and Authority. Developer warrants to the City that it is the record owner of the Subject Property upon which the Development shall be constructed or is acting in accordance with the authority of the owner. The undersigned further warrants to have full power and authority to enter into this Agreement.

7.9 Severability. This Agreement is to be governed and construed according to the laws of the State of Colorado. In the event that any provision of this Agreement is held to be violative of city, state or federal laws and hereby rendered unenforceable, either party, in its sole discretion, may determine whether the remaining provisions will or will not remain in force.

IN WITNESS WHEREOF, the Parties hereto have caused their duly authorized officials to place their hands and seals upon this Agreement the day and year first above written.

CITY OF FORT LUPTON, a Colorado
municipal corporation

By:

Zo Stieber
Mayor

STATE OF COLORADO

)

)

ss.

COUNTY OF WELD

)

SUBSCRIBED AND SWORN to before me this _____ day of _____ 2021, by Zo Stieber as Mayor of the City of Fort Lupton, Colorado.

WITNESS my hand and official seal.

MY COMMISSION EXPIRES: _____

Notary Public

~~Colorado~~ Delaware Limited

~~FL Mountain Sky~~ Coronado West, LLC, a

Liability Company

By: _____

~~J.R. Osborne~~ John Cork

STATE OF ~~COLORADO~~ _____)

)

ss.

COUNTY OF ~~WELD~~ _____)

)

SUBSCRIBED AND SWORN to before me this _____ day of _____ 2021, by ~~George Lee~~ John Cork, as ~~a Member of Fulton Village~~ the President of Coronado West, LLC.

WITNESS my hand and official seal.

MY COMMISSION EXPIRES: _____

Notary Public

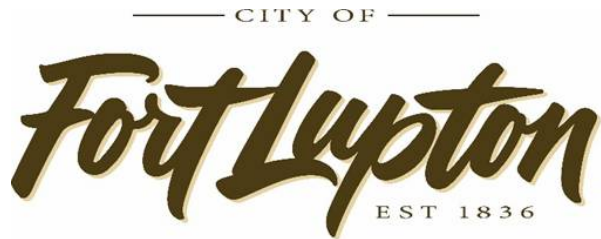
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Moved cell	
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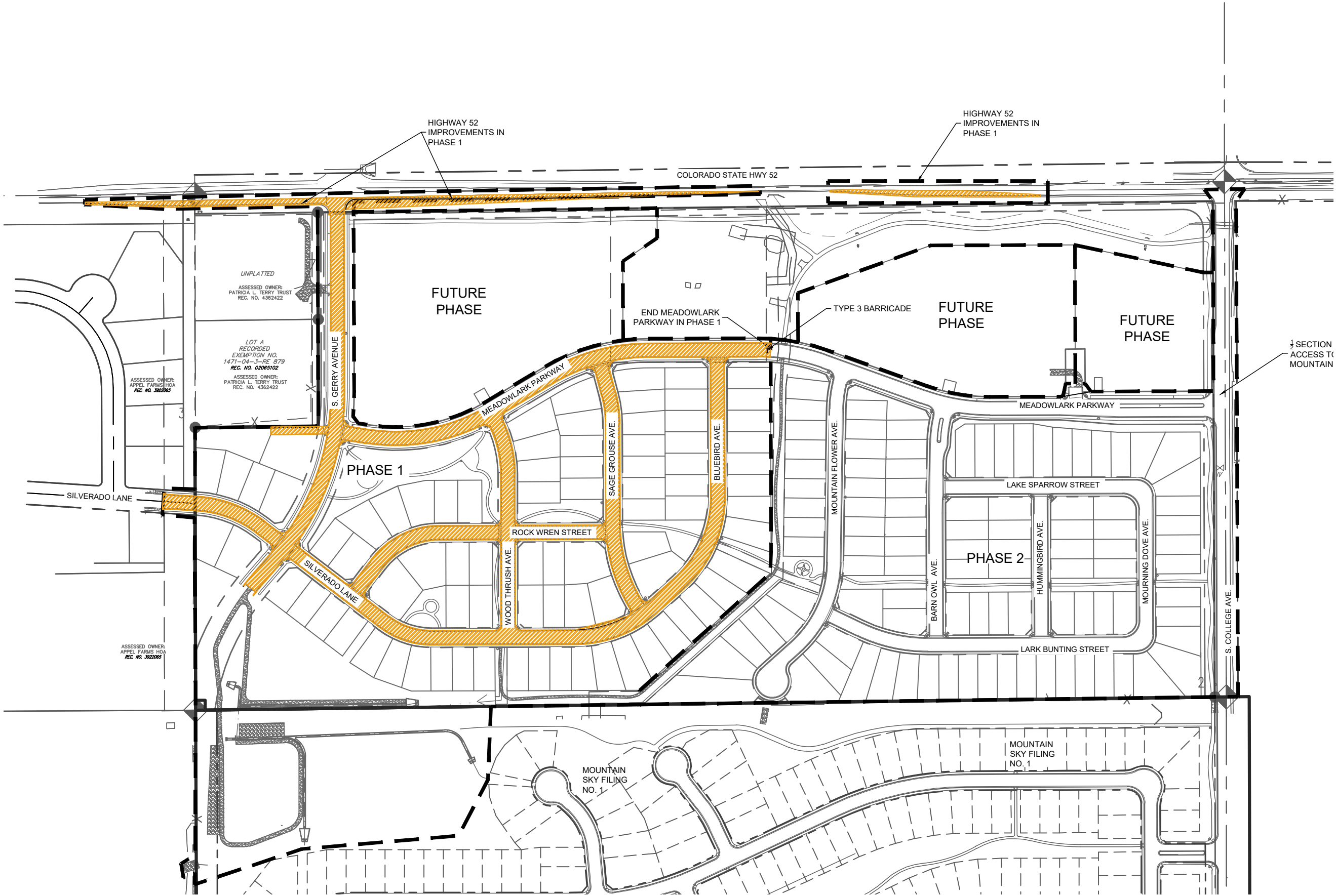


[Public Works](#)

[130 S. McKinley Avenue](#) [Phone: 303-857-6694](#)
[Fort Lupton, CO 80621](#) [Fax: 303.857.0351](#)
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[Exhibit "A" to Murata Farms SIA](#)

[Improvements by Phase](#)



SHEET
A1

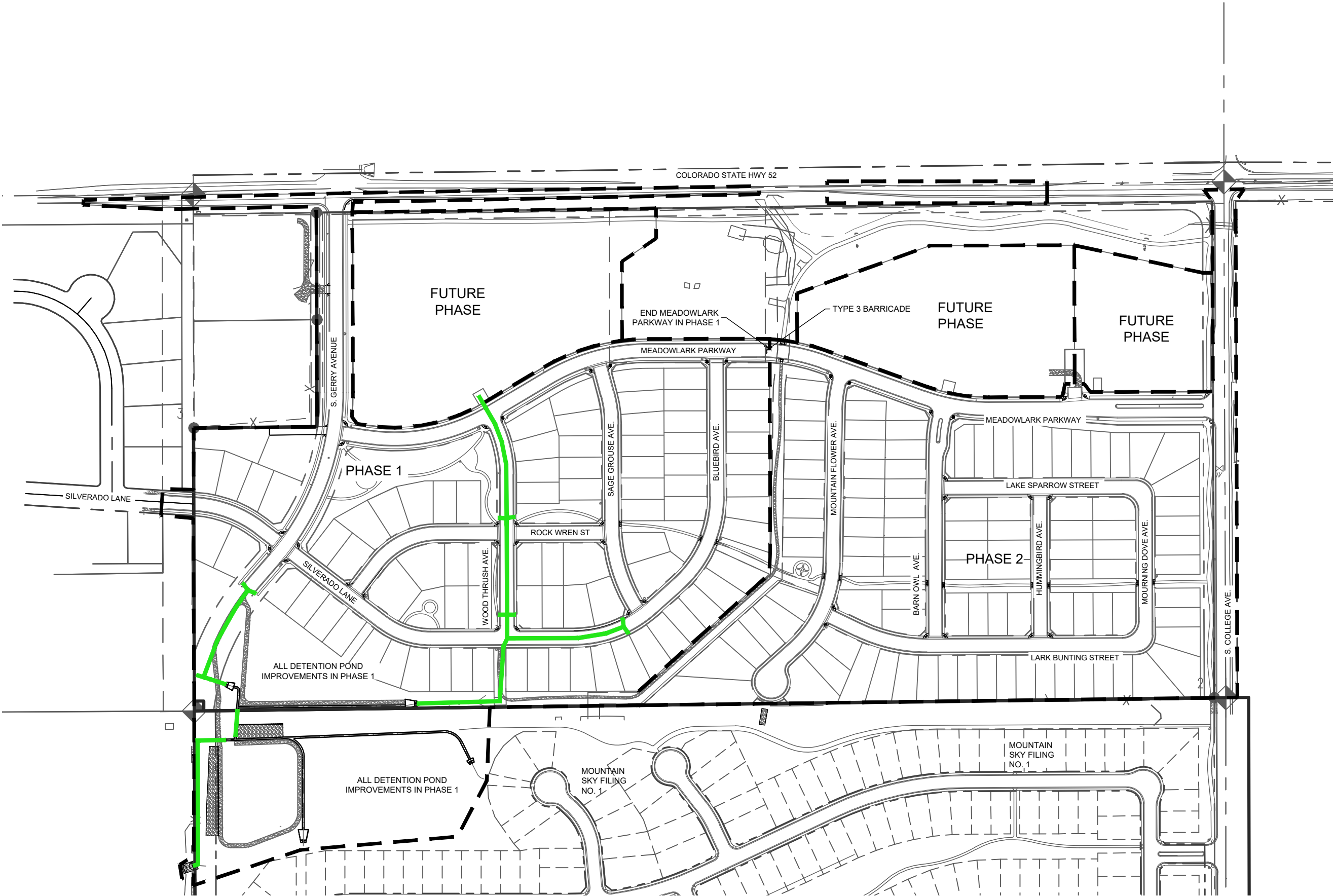
PHASE 1 STREET IMPROVEMENTS
MURATA FARMS FILING NO. 1

FT LUPTON SIA CO

DATE	8/20/21
DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032



I:\2019\19032 - Murata Farms\CADD\Exhibits\A\A\A\A EXH - STM.dwg tab: A2 PHASE 1 STORM IMPROVEMENTS Aug 20, 2021 - 4:06pm tfrazier

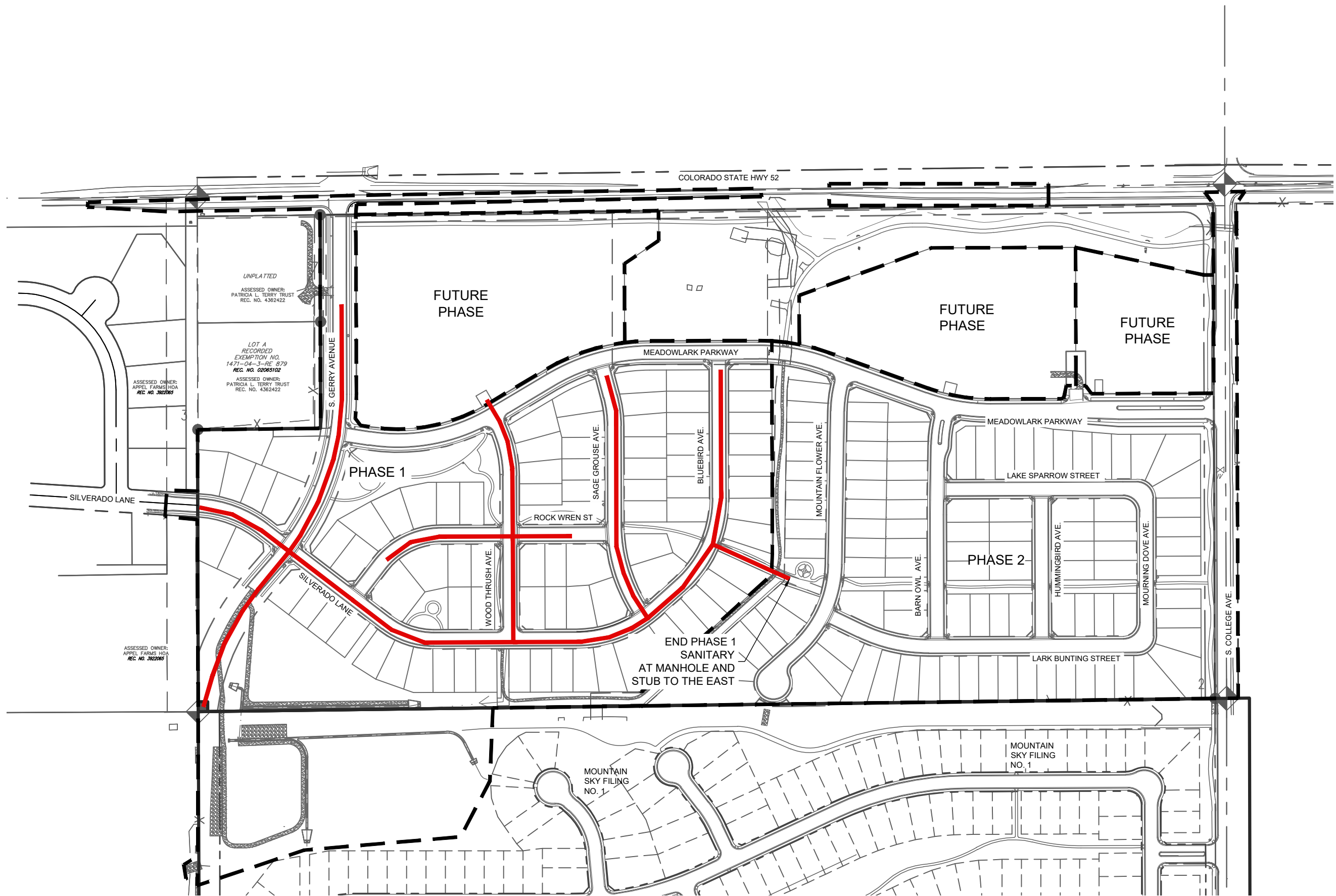


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PHASE 1 STORM IMPROVEMENTS
MURATA FARMS FILING NO. 1
FT LUPTON SIA CO

DATE	8/20/21
DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032





DATE	8/20/21
DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032

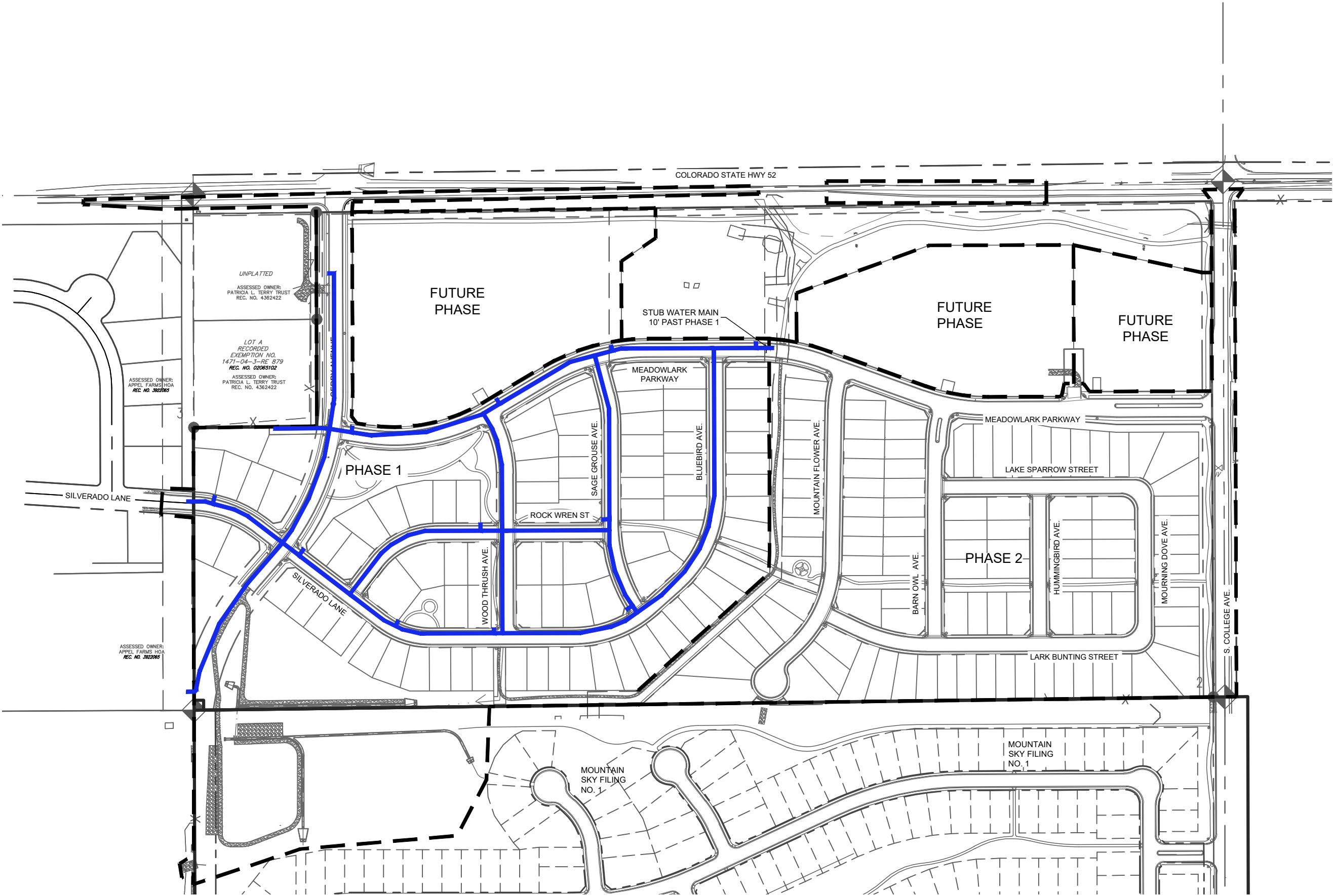
PHASE 1 SANITARY IMPROVEMENTS

MURATA FARMS FILING NO. 1

FT LUPTON S/A CO

SHEET

A3

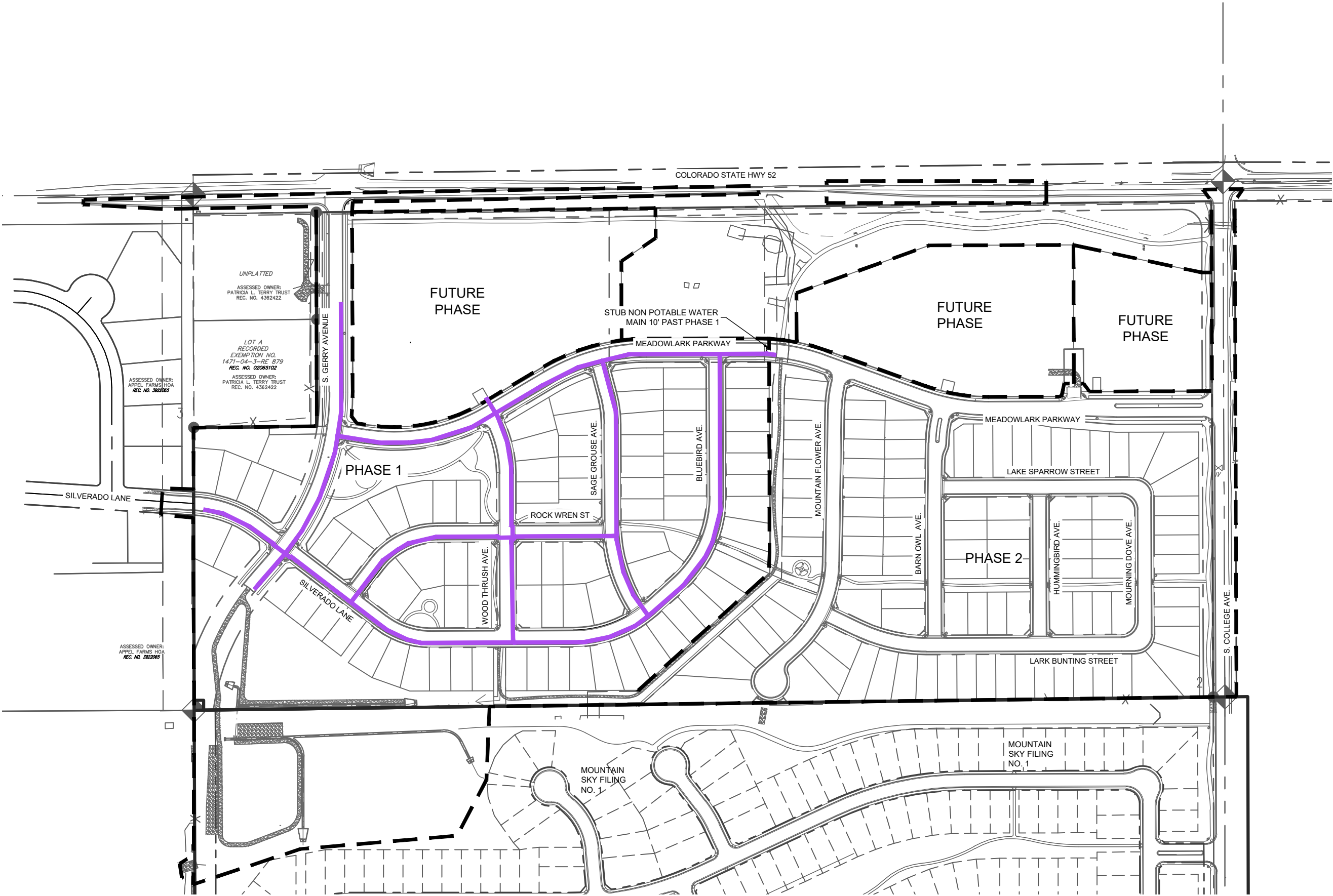


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PHASE 1 WATER IMPROVEMENTS
MURATA FARMS FILING NO. 1
FT LUPTON SIA CO

DATE	8/20/21
DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032





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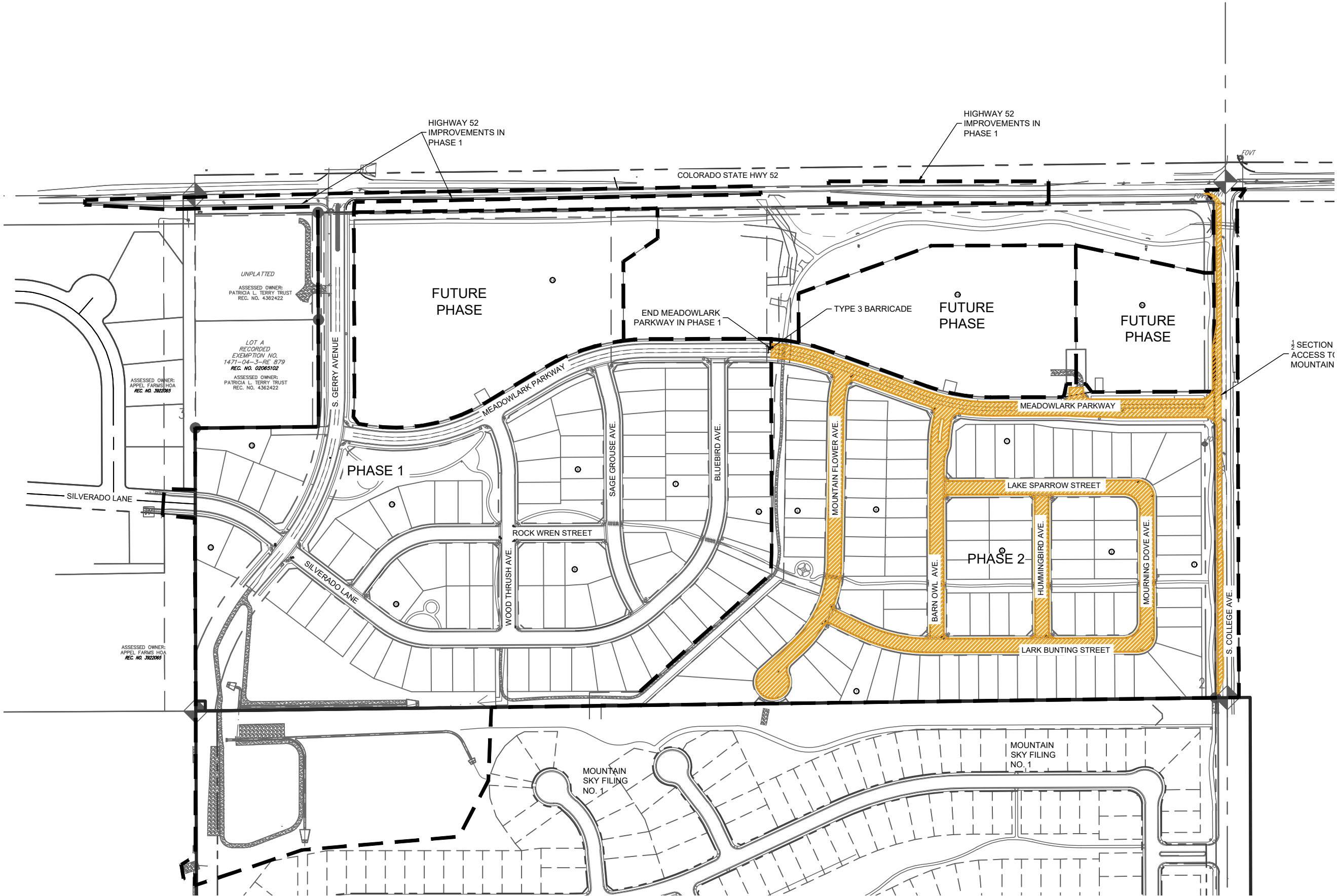
PHASE 1 NON-POTABLE WATER IMPROVEMENTS

MURATA FARMS FILING NO. 1

FT LUPTON SIA CO

DATE	8/20/21
DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032

**Redland**
WHERE GREAT PLACES BEGIN
7500 W. 120th Ave., Suite 100
Lafayette, Colorado 80120
REDLAND.COM



SHEET

A6

PHASE 2 STREET IMPROVEMENTS

MURATA FARMS FILING NO. 1

FT LUPTON

SIA

CO

8/20/21

DATE

DRAWN

BRC

CHECKED

TJF

APPROVED

TJF

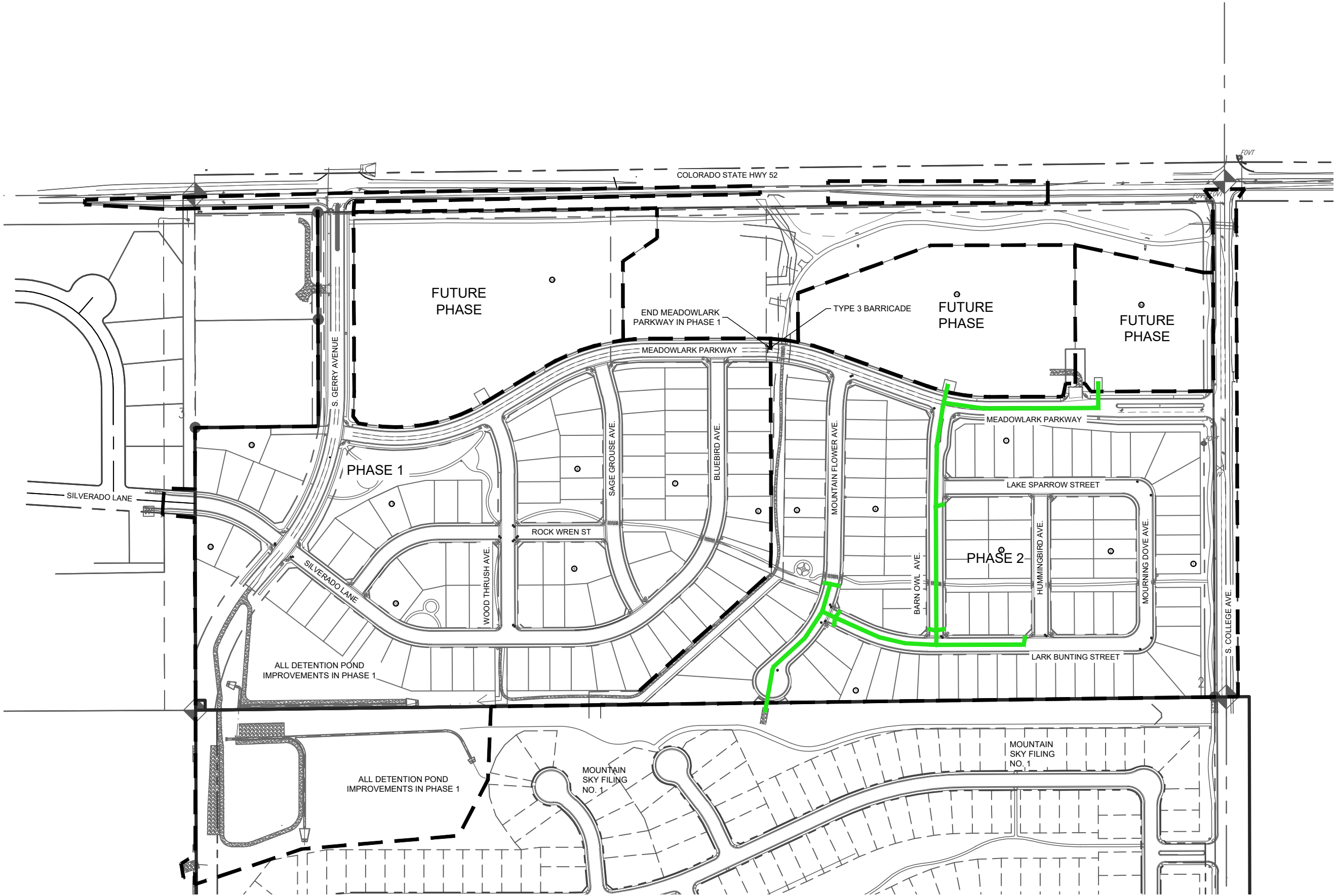
PROJECT NO.

19032



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I:\2019\19032 - Murata Farms\CADD\Exhibits\A\A\A\A EXH - STM.dwg tab: A7 PHASE 2 STORM IMPROVEMENTS Aug 20, 2021 - 4:08pm tfrazier



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PHASE 2 STORM IMPROVEMENTS

MURATA FARMS FILING NO. 1

FT LUPTON

SIA

CO

8/20/21

DATE

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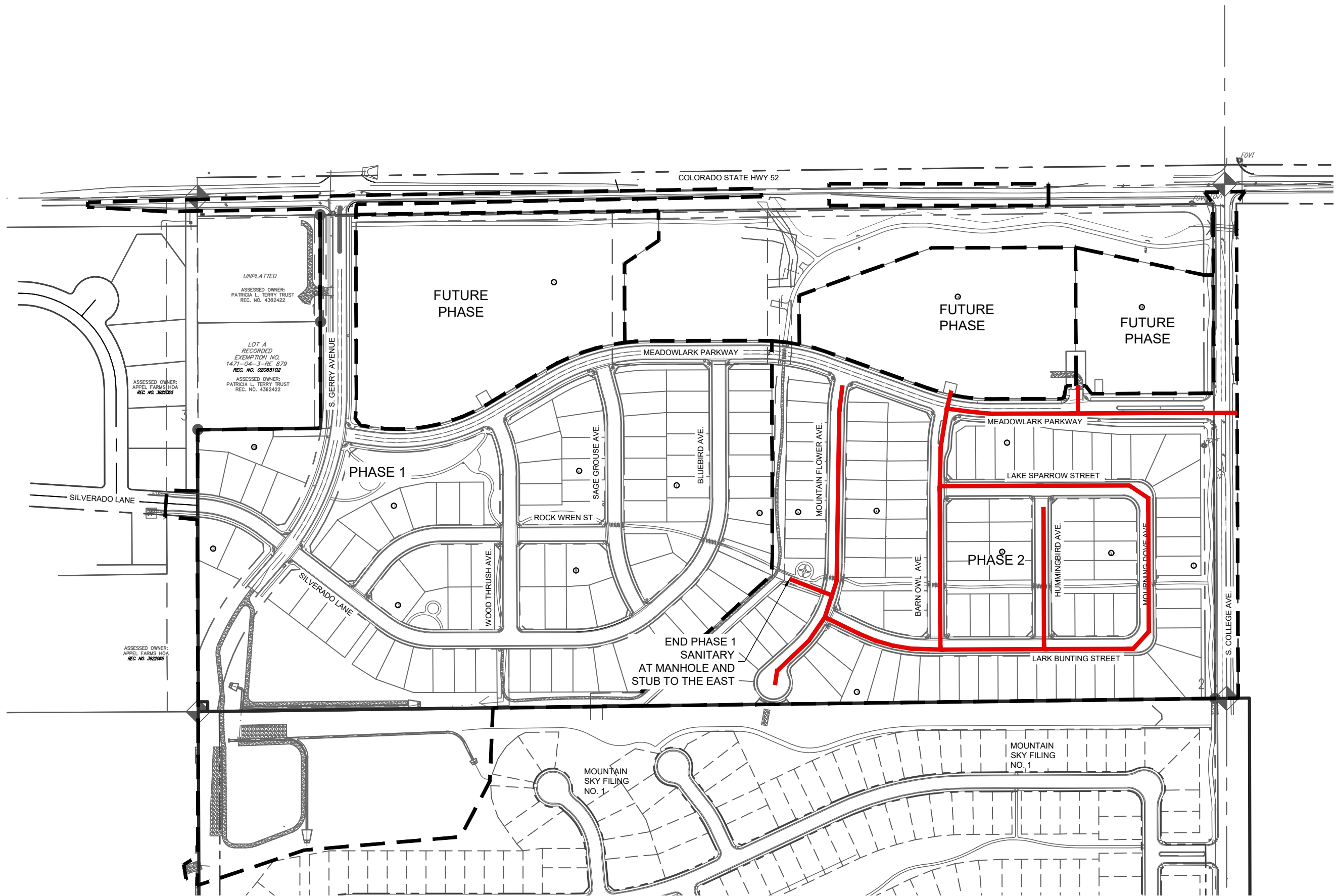
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DATE	8/20/21
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APPROVED	TJF
PROJECT NO.	19032

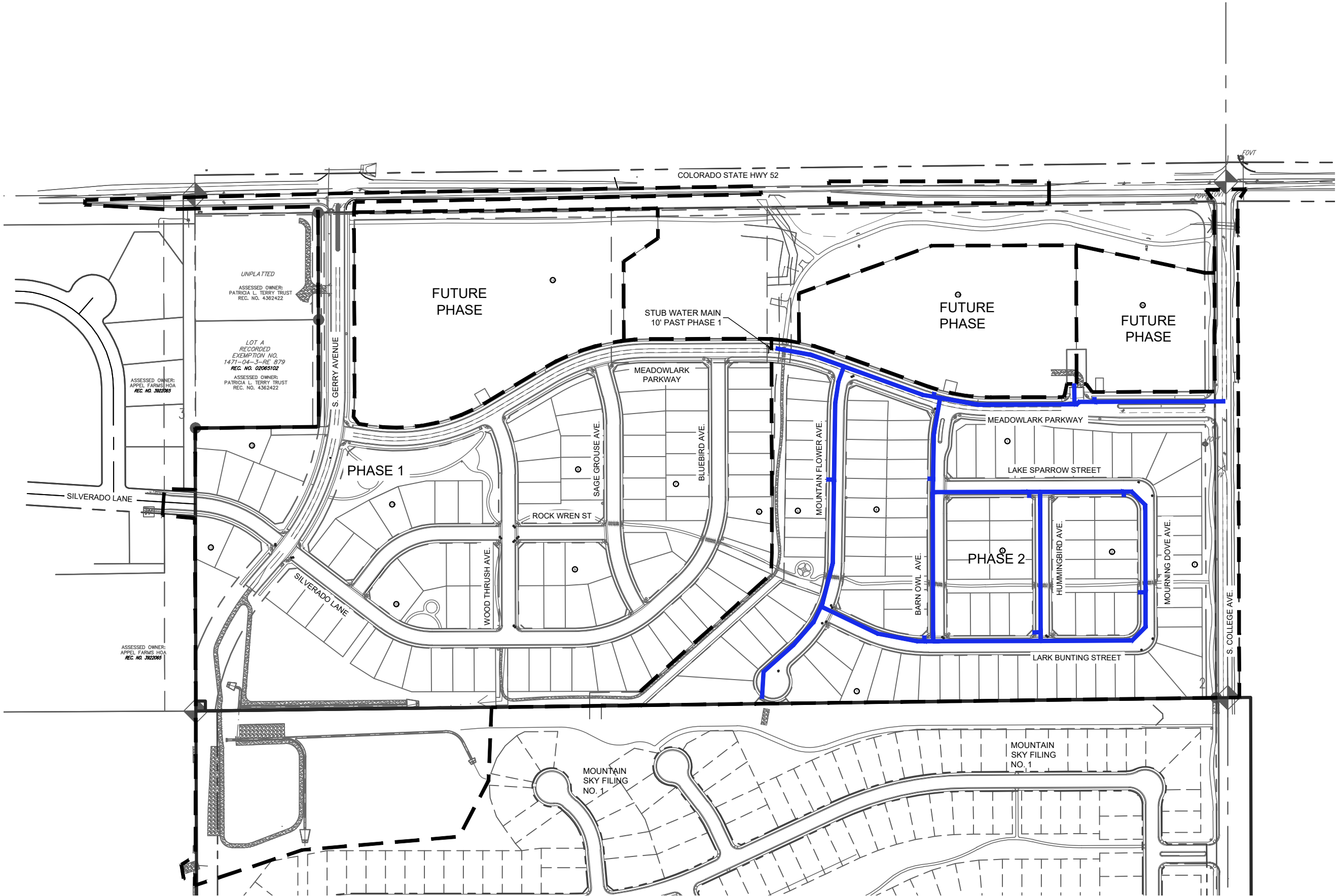
PHASE 2 SANITARY IMPROVEMENTS

MURATA FARMS FILING NO. 1

FT LUPTON S/A CO

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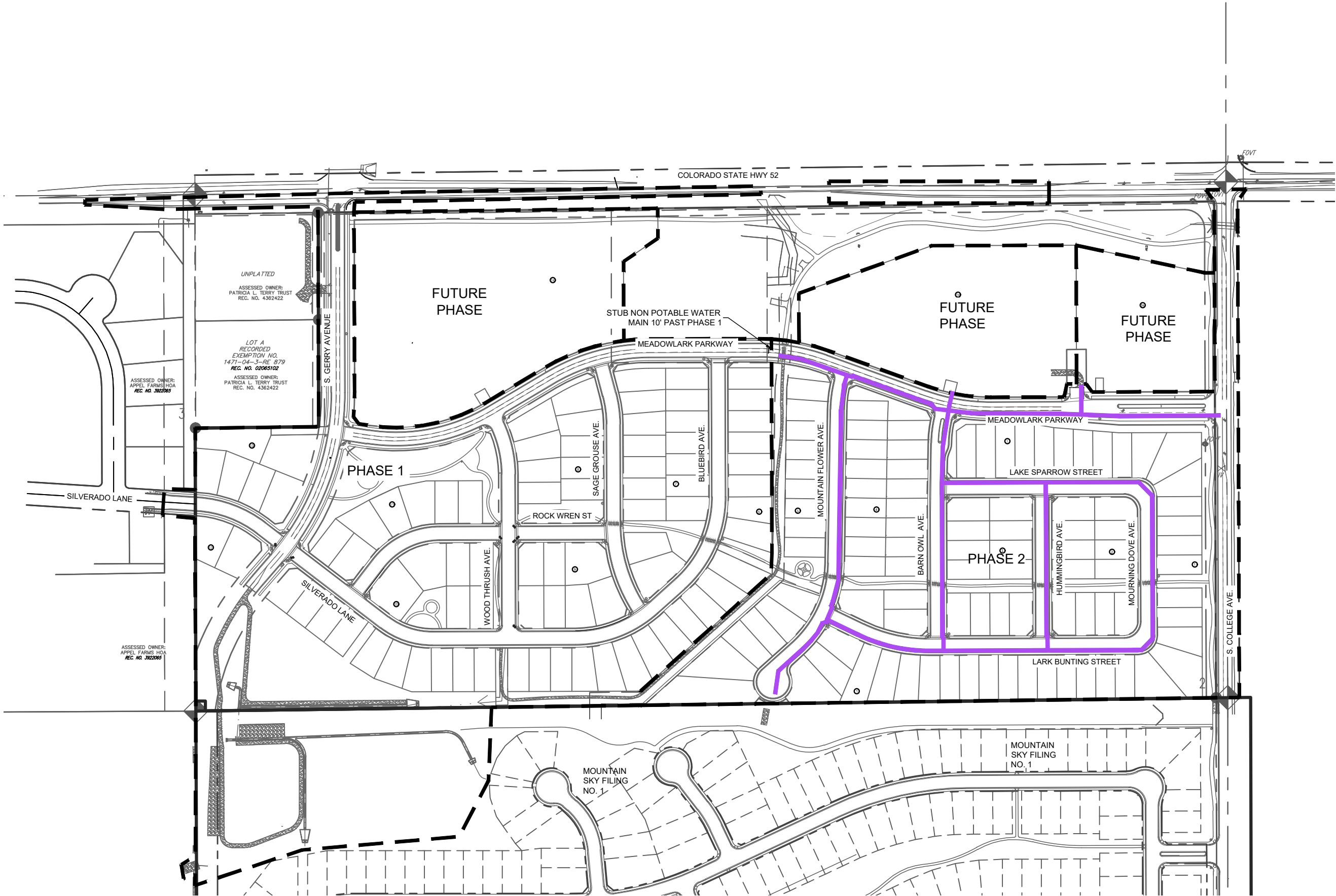


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PHASE 2 WATER IMPROVEMENTS
MURATA FARMS FILING NO. 1
FT LUPTON SIA CO

DATE	8/20/21
DRAWN	BRC
CHECKED	TJF
APPROVED	TJF
PROJECT NO.	19032





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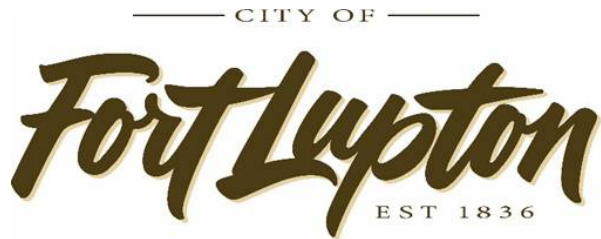
PHASE 2 NON-POTABLE WATER IMPROVEMENTS

MURATA FARMS FILING NO. 1

FT LUPTON SIA CO

DATE	8/20/21
DRAWN	BRC
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APPROVED	TJF
PROJECT NO.	19032





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[Exhibit "B" to Murata Farms SIA](#)

[Cost of Improvements by Phase](#)

Murata Farms Filing No. 1

Exhibit B - SIA Phase I Public Improvements

Opinion of Probable Cost Estimate

Date: August 20, 2021

JN: 19.032

		QUANTITY	UNIT	UNIT PRICE	TOTAL COST
Mobilization					
101	Mobilization (grading, utilities, streets)	1	LS	\$30,000.00	\$30,000
Mobilization Subtotal					\$30,000
Storm Sewer					
401	18" RCP (0-8' depth)	50	LF	\$55.00	\$2,750
402	24" RCP (0-8' depth)	353	LF	\$75.00	\$26,475
403	30" RCP (0-8' depth)	265	LF	\$90.00	\$23,850
404	36" RCP (0-8' depth)	366	LF	\$125.00	\$45,750
406	48" RCP (0-8' depth)	304	LF	\$160.00	\$48,640
434	54" RCP (0-8' depth)	358	LF	\$180.00	\$64,440
406A	60" RCP (0-8' depth)	70	LF	\$210.00	\$14,700
410	5' Dia. Manhole	10	EA	\$6,000.00	\$60,000
411	6' Dia. Manhole	2	EA	\$6,500.00	\$13,000
412	Box Base Manhole	4	EA	\$7,500.00	\$30,000
413	5' Type 'R' Inlet	1	EA	\$6,000.00	\$6,000
414	10' Type 'R' Inlet	7	EA	\$7,000.00	\$49,000
415	15' Type 'R' Inlet	2	EA	\$8,500.00	\$17,000
430	Type 'D' Inlet	2	EA	\$7,500.00	\$15,000
428	60" Flared End Section	2	EA	\$5,000.00	\$10,000
431	Pond Outlet Structure	1	EA	\$15,000.00	\$15,000
432	Type 'L' Rip Rap	643	CY	\$100.00	\$64,322
435	Concrete Cutoff Wall	345	LF	\$80.00	\$27,600
436	Trickle Channel	1,436	LF	\$25.00	\$35,900
437	Gravel Access Road	28,425	SF	\$1.50	\$42,638
438	Concrete Forebay	4	EA	\$7,500.00	\$30,000
Storm Sewer Subtotal					\$642,065

Murata Farms Filing No. 1

Exhibit B - SIA Phase I Public Improvements

Opinion of Probable Cost Estimate

Date: August 20, 2021

JN: 19.032

Water	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
501 Connect to Existing Main	2	EA	\$2,500.00	\$5,000
504 8" C-900 CL 150	4,130	LF	\$42.00	\$173,460
505 12" C-900 CL 150	1,210	LF	\$60.00	\$72,600
520 10" C-900 CL 150	1,189	LF	\$52.00	\$61,828
503 6" CL-52 DIP	173	LF	\$45.00	\$7,785
502 Fire Hydrant Assembly	13	EA	\$6,000.00	\$78,000
506 8" - 11 1/4° Bend w/ Kick Block	27	EA	\$600.00	\$16,200
514 8" Gate Valve	24	EA	\$2,000.00	\$48,000
521 10" Gate Valve	6	EA	\$2,500.00	\$15,000
522 10" x 10" Cross Fitting	1	EA	\$750.00	\$750
523 10" x 6" Tee Fitting	1	EA	\$750.00	\$750
524 10" x 12" Cross Fitting	1	EA	\$750.00	\$750
525 10" - 45° Bend w/ Kick Block	2	EA	\$750.00	\$1,500
526 10" - 11 1/4° Bend w/ Kick Block	6	EA	\$750.00	\$4,500
527 Air Release Manhole	1	EA	\$5,000.00	\$5,000
528 12" x 12" Tee Fitting	3	EA	\$950.00	\$2,850
529 12" x 6" Tee Fitting	4	EA	\$950.00	\$3,800
517 2" Blow off	1	EA	\$2,000.00	\$2,000
515 12" Gate Valve	7	EA	\$2,750.00	\$19,250
511 8" x 6" Tee Fitting	8	EA	\$600.00	\$4,800
510 8" x 8" Tee Fitting	6	EA	\$600.00	\$3,600
Water Subtotal				\$527,423

Sanitary Sewer	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
601 Connect to Existing Main	1	EA	\$3,500.00	\$3,500
604 4' Dia. Manhole (0-12' Depth)	42	EA	\$4,250.00	\$178,500
602 8" SDR-35 PVC (0-12' depth)	3,496	LF	\$42.00	\$146,832
612 10" SDR-35 PVC (0-12' depth)	1,728	LF	\$48.00	\$82,944
Sanitary Sewer Subtotal				\$411,776

Murata Farms Filing No. 1

Exhibit B - SIA Phase I Public Improvements

Opinion of Probable Cost Estimate

Date: August 20, 2021

JN: 19.032

	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
Street Improvements				
701 Subgrade Prep	27,638	SY	\$3.00	\$82,914
702 Asphalt (Full depth - 6" section)	82,152	SY-IN	\$4.25	\$349,146
702A Asphalt (Full depth - 8" section)	78,734	SY-IN	\$4.25	\$334,620
704 Subgrade Prep - Concrete Alley	310	SY	\$1.75	\$543
705 Concrete Alley (7" Section)	2,171	SY-IN	\$8.00	\$17,366
706 Alley Curb Cut / Approach	1	EA	\$2,000.00	\$2,000
707 Type 2 Curb and Gutter	3,945	LF	\$22.00	\$86,790
708 Type 1 Combination Curb, Gutter & 4' Sidewalk	7,386	LF	\$40.00	\$295,440
708A Type 1 Combination Curb, Gutter	267	LF	\$25.00	\$6,675
709 8' Concrete Crossspan	9	EA	\$2,000.00	\$18,000
710 Subgrade Prep - Concrete Walk	68,671	SF	\$1.75	\$120,174
711 5' Concrete Walk	34,574	SF	\$5.50	\$190,157
712 Handicap Ramp	24	EA	\$1,900.00	\$45,600
713 Mid-Block Ramp	2	EA	\$1,500.00	\$3,000
715 Signage	26	EA	\$500.00	\$13,000
716 Street Light (Local)	15	EA	\$7,500.00	\$112,500
717 Gravel Path	2,884	SF	\$1.50	\$4,326
Street Subtotal				\$1,682,251
Non-Potable				
820 4" C-900 CL 150	6,020	LF	\$40.00	\$240,800
821 4" x 4" Tee Fitting	7	EA	\$500.00	\$3,500
822 4" - 11 1/4° Bend w/ Kick Block	34	EA	\$500.00	\$17,000
824 4" - 45° Bend w/ Kick Block	14	EA	\$500.00	\$7,000
825 4" Cross Fitting	3	EA	\$500.00	\$1,500
817 2" Blow off	4	EA	\$2,000.00	\$8,000
827 4" Gate Valve	22	EA	\$1,750.00	\$38,500
Non Potable Subtotal				\$316,300
Subtotal Cost				\$3,609,815
15% Contingency				\$541,472
Total Cost				\$4,151,287

Notes:

- 1) This estimate is prepared based on the plans dated August 20, 2021, prepared by Redland.
- 2) Soft costs are not included.

Murata Farms Filing No. 1

Exhibit B - SIA Phase II Public Improvements

Opinion of Probable Cost Estimate

Date: August 20, 2021

JN: 19.032

		QUANTITY	UNIT	UNIT PRICE	TOTAL COST
Mobilization					
101	Mobilization (grading, utilities, streets)	1	LS	\$30,000.00	\$30,000
Mobilization Subtotal					\$30,000
Storm Sewer					
		QUANTITY	UNIT	UNIT PRICE	TOTAL COST
401	18" RCP (0-8' depth)	237	LF	\$55.00	\$13,035
402	24" RCP (0-8' depth)	124	LF	\$75.00	\$9,300
403	30" RCP (0-8' depth)	427	LF	\$90.00	\$38,430
404	36" RCP (0-8' depth)	96	LF	\$125.00	\$12,000
405	42" RCP (0-8' depth)	578	LF	\$150.00	\$86,700
406	48" RCP (0-8' depth)	347	LF	\$160.00	\$55,520
434	54" RCP (0-8' depth)	604	LF	\$180.00	\$108,720
409	4' Dia. Manhole	1	EA	\$4,500.00	\$4,500
410	5' Dia. Manhole	2	EA	\$6,000.00	\$12,000
411	6' Dia. Manhole	2	EA	\$6,500.00	\$13,000
412	Box Base Manhole	11	EA	\$7,500.00	\$82,500
413	5' Type 'R' Inlet	2	EA	\$6,000.00	\$12,000
414	10' Type 'R' Inlet	6	EA	\$7,000.00	\$42,000
415	15' Type 'R' Inlet	2	EA	\$8,500.00	\$17,000
425	36" Flared End Section	1	EA	\$3,700.00	\$3,700
Storm Sewer Subtotal					\$510,405

Murata Farms Filing No. 1

Exhibit B - SIA Phase II Public Improvements

Opinion of Probable Cost Estimate

Date: August 20, 2021

JN: 19.032

Water	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
501 Connect to Existing Main	2	EA	\$2,500.00	\$5,000
504 8" C-900 CL 150	3,608	LF	\$42.00	\$151,536
505 12" C-900 CL 150	1,166	LF	\$60.00	\$69,960
503 6" CL-52 DIP	147	LF	\$45.00	\$6,615
502 Fire Hydrant Assembly	11	EA	\$6,000.00	\$66,000
506 8" - 11 ¼° Bend w/ Kick Block	9	EA	\$600.00	\$5,400
508 8" - 45° Bend w/ Kick Block	5	EA	\$600.00	\$3,000
508A 12" - 45° Bend w/ Kick Block	2	EA	\$600.00	\$1,200
527 8" Plug w/ Kick Block	1	EA	\$400.00	\$400
520 12" - 11 ¼° Bend w/ Kick Block	2	EA	\$750.00	\$1,500
510 8" x 8" Tee Fitting	5	EA	\$600.00	\$3,000
511 8" x 6" Tee Fitting	8	EA	\$600.00	\$4,800
525 12" x 12" Tee Fitting	3	EA	\$750.00	\$2,250
515 12" Gate Valve	8	EA	\$2,750.00	\$22,000
522 8" x 6" Reducer	1	EA	\$600.00	\$600
514 8" Gate Valve	17	EA	\$2,000.00	\$34,000
524 12" x 6" Tee Fitting	2	EA	\$750.00	\$1,500
Water Subtotal				\$378,761

Sanitary Sewer	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
601 Connect to Existing Main	1	EA	\$3,500.00	\$3,500
604 4' Dia. Manhole (0-12' Depth)	32	EA	\$4,250.00	\$136,000
602 8" SDR-35 PVC (0-12' depth)	2,770	LF	\$42.00	\$116,340
612 10" SDR-35 PVC (0-12' depth)	2,075	LF	\$48.00	\$99,600
Sanitary Sewer Subtotal				\$355,440

Murata Farms Filing No. 1

Exhibit B - SIA Phase II Public Improvements

Opinion of Probable Cost Estimate

Date: August 20, 2021

JN: 19.032

Street Improvements	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
701 Subgrade Prep	22,820	SY	\$3.00	\$68,460
702 Asphalt (Full depth - 6" section)	77,400	SY-IN	\$4.25	\$328,950
702A Asphalt (Full depth - 8" section)	50,060	SY-IN	\$4.25	\$212,753
707 Type 2 Curb and Gutter	3,966	LF	\$22.00	\$87,252
708 Type 1 Combination Curb, Gutter & 4' Sidewalk	6,983	LF	\$40.00	\$279,320
709 8' Concrete Crossspan	6	EA	\$2,000.00	\$12,000
710 Subgrade Prep - Concrete Walk	93,456	SF	\$1.75	\$163,548
711 5' Concrete Walk	59,507	SF	\$5.50	\$327,289
712 Handicap Ramp	18	EA	\$1,900.00	\$34,200
713 Mid-Block Ramp	10	EA	\$1,500.00	\$15,000
715 Signage	25	EA	\$500.00	\$12,500
716 Street Light (Local)	15	EA	\$7,500.00	\$112,500
717 Gravel Path	6,014	SF	\$1.50	\$9,021

Street Subtotal \$1,662,793

Non-Potable	QUANTITY	UNIT	PRICE	COST
820 4" C-900 CL 150	4,955	LF	\$40.00	\$198,200
821 4" x 4" Tee Fitting	7	EA	\$500.00	\$3,500
822 4" - 11 ¼° Bend w/ Kick Block	10	EA	\$500.00	\$5,000
823 4" - 22 ½° Bend w/ Kick Block	1	EA	\$500.00	\$500
824 4" - 45° Bend w/ Kick Block	15	EA	\$500.00	\$7,500
825 4" Cross Fitting	1	EA	\$500.00	\$500
826 12" x 4" Tee Fitting	1	EA	\$950.00	\$950
815 12" Gate Valve	1	EA	\$2,750.00	\$2,750
827 4" Gate Valve	20	EA	\$500.00	\$10,000

Non Potable Subtotal \$228,900

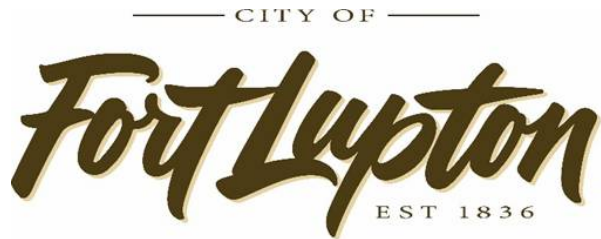
Subtotal Cost \$3,166,299

15% Contingency \$474,945

Total Cost \$3,641,244

Notes:

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- 2) Soft costs are not included.



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[Exhibit "C" to Murata Farms SIA](#)

[Cost of Landscape, Park and Trail Improvements by Phase](#)

Murata Farms

Exhibit C

Phase 1 Landscape Improvements Opinion of Cost

August 20, 2021

Item	Qty	Unit	Unit cost	Cost Per Item
RIGHT-OF-WAY TREE LAWN (NOT FRONTING HOMES)				
Turf Grass Sod with Soil Prep	17,185	sf	\$0.48	\$8,248.80
Irrigation * Does not include tap fees, Backflow	17,185	sf	\$0.80	\$13,748.00
Shade trees - 2.5" Cal B&B	39	ea	\$500.00	\$19,500.00
Ornamental Tree - 2" Cal B&B	6	ea	\$400.00	\$2,400.00
Entry Monument	1	ea	\$30,000.00	\$30,000.00
Subtotal				\$73,896.80
PARKS				
Turf Grass Sod with Soil Prep	30,071	sf	\$0.48	\$14,434.08
Rock Mulch Bed with Soil Prep	9,785	sf	\$0.68	\$6,653.80
Irrigation * Does not include tap fees, Backflow	39,856	sf	\$0.80	\$31,884.80
Native Seed w/ Soil Prep	16,433	sf	\$0.30	\$4,929.90
Temporary Irrigation	16,433	sf	\$0.68	\$11,174.44
Shade trees - 2.5" Cal B&B	14	ea	\$500.00	\$7,000.00
Ornamental Tree - 2" Cal B&B	18	ea	\$400.00	\$7,200.00
Evergreen Tree - Avg. 6' Height	23	ea	\$450.00	\$10,350.00
Shrub - 5 Gallon	342	ea	\$28.00	\$9,576.00
Perennial / Ornamental Grass - 1 Gallon	292	ea	\$16.00	\$4,672.00
Landscape Edger	590	lf	\$3.00	\$1,770.00
Engineered Wood Fiber Play Surfacing	2,290	sf	\$4.00	\$9,160.00
Playground Drain System (Fibar or Equal)	1	ea	\$1,200.00	\$1,200.00
Playground Curb	170	lf	\$24.00	\$4,080.00
Play Structure	1	ea	\$35,000.00	\$35,000.00
Play Spring Rider	2	ea	\$3,000.00	\$6,000.00
Swing Set	1	ea	\$3,500.00	\$3,500.00
Shelter 20'x24'	1	ea	\$36,000.00	\$36,000.00
Charcoal Grill	2	ea	\$530.00	\$1,060.00
Bike Rack	4	ea	\$680.00	\$2,720.00
Picnic Table	4	ea	\$2,600.00	\$10,400.00
Bench	4	ea	\$1,256.00	\$5,024.00
Trash Receptacle	2	ea	\$1,116.00	\$2,232.00
Dog Bag Station	4	ea	\$943.00	\$3,772.00
Subtotal				\$229,793.02
OPEN SPACE				
Turf Grass Sod with Soil Prep	4,302	sf	\$0.48	\$2,064.96
Rock Mulch Bed with Soil Prep	20,263	sf	\$0.68	\$13,778.84
Irrigation * Does not include tap fees, Backflow	24,565	sf	\$0.80	\$19,652.00
Native Seed w/ Soil Prep	47,919	sf	\$0.30	\$14,375.70
Temporary Irrigation	47,919	sf	\$0.68	\$32,584.92
Shade trees - 2.5" Cal B&B	10	ea	\$500.00	\$5,000.00
Ornamental Tree - 2" Cal B&B	10	ea	\$400.00	\$4,000.00
Evergreen Tree - Avg. 6' Height	24	ea	\$450.00	\$10,800.00
Shrub - 5 Gallon	366	ea	\$28.00	\$10,248.00
Perennial / Ornamental Grass - 1 Gallon	243	ea	\$16.00	\$3,888.00
Landscape Edger	490	lf	\$3.00	\$1,470.00
Bench	3	ea	\$1,256.00	\$3,768.00
Privacy Fence	194	lf	\$45.00	\$8,730.00
Open Rail Fence	5,257	lf	\$30.00	\$157,710.00
Subtotal				\$288,070.42
TOTAL ALL LANDSCAPE				\$591,760.24
10% Contingency				\$59,176.02
Grand Total				\$650,936.26

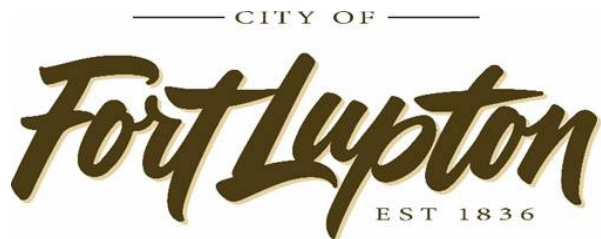
Murata Farms

Exhibit C

Phase 2 Landscape Improvements Opinion of Cost

August 20, 2021

Item	Qty	Unit	Unit cost	Cost Per Item
RIGHT-OF-WAY TREE LAWN (NOT FRONTING HOMES)				
Turf Grass Sod with Soil Prep	10,283	sf	\$0.48	\$4,935.84
Rock Mulch Bed with Soil Prep	7,802	sf	\$0.68	\$5,305.36
Irrigation * Does not include tap fees, Backflow	18,085	sf	\$0.80	\$14,468.00
Shade trees - 2.5" Cal B&B	34	ea	\$500.00	\$17,000.00
Ornamental Tree - 2" Cal B&B	5	ea	\$400.00	\$2,000.00
Shrub - 5 Gallon	224	ea	\$28.00	\$6,272.00
Perennial / Ornamental Grass - 1 Gallon	156	ea	\$16.00	\$2,496.00
Landscape Edger	88	lf	\$3.00	\$264.00
Subtotal				\$52,741.20
PARKS				
Turf Grass Sod with Soil Prep	1,002	sf	\$0.48	\$480.96
Rock Mulch Bed with Soil Prep	4,210	sf	\$0.68	\$2,862.80
Irrigation * Does not include tap fees, Backflow	5,212	sf	\$0.80	\$4,169.60
Ornamental Tree - 2" Cal B&B	5	ea	\$400.00	\$2,000.00
Evergreen Tree - Avg. 6' Height	6	ea	\$450.00	\$2,700.00
Shrub - 5 Gallon	101	ea	\$28.00	\$2,828.00
Perennial / Ornamental Grass - 1 Gallon	185	ea	\$16.00	\$2,960.00
Landscape Edger	226	lf	\$3.00	\$678.00
Bench	2	ea	\$1,256.00	\$2,512.00
Dog Bag Station	1	ea	\$943.00	\$943.00
Subtotal				\$22,134.36
OPEN SPACE				
Turf Grass Sod with Soil Prep	5,994	sf	\$0.48	\$2,877.12
Rock Mulch Bed with Soil Prep	24,984	sf	\$0.68	\$16,989.12
Irrigation * Does not include tap fees, Backflow	30,978	sf	\$0.80	\$24,782.40
Native Seed w/ Soil Prep	59,120	sf	\$0.30	\$17,736.00
Temporary Irrigation	59,120	sf	\$0.68	\$40,201.60
Shade trees - 2.5" Cal B&B	14	ea	\$500.00	\$7,000.00
Ornamental Tree - 2" Cal B&B	16	ea	\$400.00	\$6,400.00
Evergreen Tree - Avg. 6' Height	33	ea	\$450.00	\$14,850.00
Shrub - 5 Gallon	602	ea	\$28.00	\$16,856.00
Perennial / Ornamental Grass - 1 Gallon	424	ea	\$16.00	\$6,784.00
Landscape Edger	823	lf	\$3.00	\$2,469.00
Bench	1	ea	\$1,256.00	\$1,256.00
Privacy Fence	647	lf	\$45.00	\$29,115.00
Open Rail Fence	5,073	lf	\$30.00	\$152,190.00
Subtotal				\$339,506.24
TOTAL ALL LANDSCAPE				\$414,381.80
10% Contingency				\$41,438.18
Grand Total				\$455,819.98



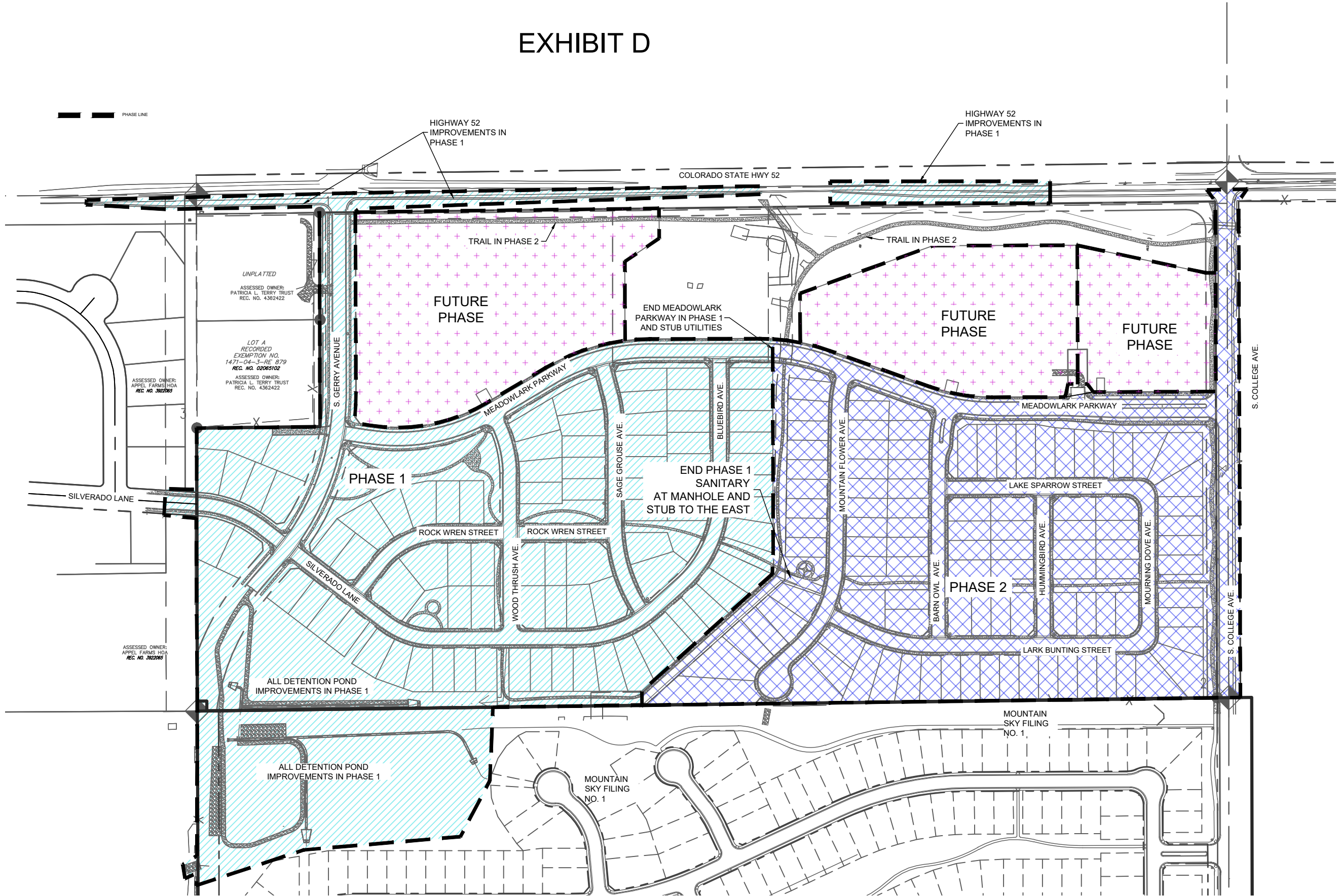
[Public Works](#)

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[Exhibit "D" to Murata Farms SIA](#)

[Phasing Map](#)

EXHIBIT D



SHEET

D

PHASING PLAN

MURATA FARMS FILING NO. 1

EXHIBIT D

FT LUPTON



DATE	8/20/21
DRAWN	BRC
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APPROVED	TJF
PROJECT NO.	19032



Redland
WHERE GREAT PLACES BEGIN
720.283.6783 Office
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REDLAND.COM



October 19, 2021

Alyssa Knutson, Planning Assistant
City of Fort Lupton Planning Commission
Transmission via email: planningdept@fortluptonco.gov

Re: Murata Farms Final Plat and PUD Plan - 2nd Letter

Project No. LUP2021-0028; Plan Nos. FPL2021-0005 & PUD2021-0004
Part of the N ½ SW ¼ of Sec. 4, T 1N, R 66W, 6th P.M.
Water Division 1, Water District 2, Weld County

Dear Alyssa Knutson:

We have received the October 18, 2021 above-referenced proposal for the Final Plat and PUD Plan for the first two phases of the Murata Farms Development. This office previously provided comments on the preliminary plat and PUD plan for this development on May 18, 2021 (Project No. LUP2021-0012 and Plan No. PPL2021-0002).

Pursuant to section 30-28-136, C.R.S. the State Engineer's Office will provide an opinion on water supply plans for new subdivisions regarding material injury to existing water rights or the adequacy of the proposed plan if a referral is submitted to this office by the board of county commissioners. This referral was submitted to this office by the City of Fort Lupton ("City"); therefore, pursuant to the State Engineer's March 4, 2005 and March 11, 2011 memorandums to the county planning directors, this office will only perform a cursory review of the referral information and provide comments. The comments do not address the adequacy of the water supply plan for this project or the ability of the water supply plan to satisfy any County regulations or requirements. In addition, **the comments provided herein cannot be used to guarantee a viable water supply plan or infrastructure, the issuance of a well permit, or the physical availability of water.**

The proposal is for the final plat of a planned unit development on a 72.71-acre property located in the N ½ SW ¼ of Sec. 4, T 2N, R 66W, 6th P.M. The proposed uses on the subject property includes single-family detached residential, paired homes, townhomes, parks, trails, open space and commercial and office uses. The PUD will consist of 180 single-family detached homes, 58 paired homes, 61 townhomes, a commercial site, and parks and open space corridors, to be completed in phases. Phase 1 will create 95 single-family lots, Phase 2 will create 85 single-family lots, Phase 3 will create paired and townhome lots, and Phase 4 will create the commercial lot.

The proposed water uses and estimated water demand were not clearly defined. The proposed water supply source is service provided by the City of Fort Lupton. A will serve letter from the City was not provided.

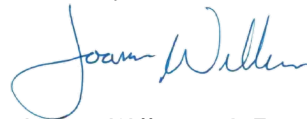
According to the "Final Plat - Final PUD Narrative" dated October 14, 2021, there are two wells on the property, one of which has been plugged and abandoned. The permit numbers of the wells were not identified. A review of our records shows well permit no. 12852-TH was located on the property and



abandoned in 1991, and well no. 159404 currently located on the subject property. Well permit no. 159404 was issued February 15, 1991 pursuant to section 37-92-602(3)(b)(II)(A), C.R.S. as the only well on a tract of land of 35.27 acres described as a portion of N ½ SW ¼ of Sec. 4, T 1N, R 66W, 6th P.M. The October 14, 2021 narrative states that “the existing structure will be removed from the site”, presumably well no. 159404. The well must be plugged and abandoned prior to subdivision approval in accordance with Rule 16 of the Water Well Construction Rules, 2 CCR 402 2 and a completed Well Abandonment Report (GWS-09) must be filed with this office. Forms are available for download at the following link:
<https://dwr.state.co.us/eforms>.

If you or the applicant have any questions, please contact Wenli Dickinson at 303-866-3581 x8206 or at Wenli.Dickinson@state.co.us.

Sincerely,

A handwritten signature in blue ink that reads "Joanna Williams". The signature is fluid and cursive, with the first name "Joanna" being more prominent than the last name "Williams".

Joanna Williams, P.E.
Water Resource Engineer

Ec: Referral no. 27697
Well permit no. 159404 file
Applicants (plmurata@comcast.net and glenicetani7@gmail.com)

Form No GWS-09 03/2017	STATE OF COLORADO, OFFICE OF THE STATE ENGINEER 1313 Sherman St., Room 821, Denver, CO 80203 303.866.3581 dwr.colorado.gov and dwrpermitsonline@state.co.us	For Office Use Only
WELL ABANDONMENT REPORT Use to report plugging and sealing of permitted wells, monitoring and other holes. Type or print in black or blue ink. Instructions and plugging standards are on reverse side		
1. Well Permit Number of plugged well _____ or MH File Number MH- _____ Owners Well Designation- _____ Receipt Number: _____		
2. Individual/Company responsible for plugging and sealing the well: Name(s) _____ License # _____ Mailing Address _____ City, St., Zip _____ Phone (_____) _____ Email _____		
3. Well (Hole) Owner: Name(s): _____ Phone: (_____) _____ Email: _____ Mailing Address, City, St., Zip: _____		
4. Well Location Address: _____		
5. GPS Well Location: County _____ UTM ☐ Zone 12 or ☐ Zone 13 Easting _____ Northing _____		
6. Legal Location: ___ 1/4 of the ___ 1/4, Sec ____, Twp _____ ☐ N or S ☐ , Range _____ ☐ E or W ☐ , ___ P.M. Distance from Section Lines _____ Ft. From ☐ N or S ☐ , _____ Ft. From ☐ E or W ☐ Line. Subdivision Name _____ Lot _____, Block _____, Filing/Unit _____		
7. I/we report the existing well/hole was plugged and sealed on _____ (date) for the following reason(s): ☐ The well was plugged and sealed as required under Well Permit Number _____. ☐ The well was not in use and was plugged and sealed. ☐ Other (please explain) _____		
8. Aquifer Type: ☐ Type I (One Confining Layer) ☐ Type I (Multiple Confining Layer) ☐ Laramie-Fox Hills (check one) ☐ Type II (Not Overlain by Type III) ☐ Type II (Overlain by Type III) ☐ Type III (alluvial)		
9. Intervals of Casing Removed/Ripped: from _____ feet to _____ feet, from _____ feet to _____ feet, from _____ feet to _____ feet, from _____ feet to _____ feet, from _____ feet to _____ feet, from _____ feet to _____ feet,		
10. Amount and Type of Material	Method of Placement	Interval
_____	_____	from _____ feet to _____ feet
_____	_____	from _____ feet to _____ feet
_____	_____	from _____ feet to _____ feet
_____	_____	from _____ feet to _____ feet
I have read the statements made herein and know the contents thereof, and they are true to my knowledge. This document is signed (or name entered if filing online) and certified in accordance with Rule 17.4 of the Water Well Construction Rules, 2 CCR 402.2. The filing of a document that contains false statements is a violation of section 37-91-108(1)(e), C.R.S., and is punishable by fines up to \$1,000 and/or revocation of the contracting license. If filing online the State Engineer considers the entry of the licensed contractor's name to be in compliance with Rule 17.4.		
11. Signature(s)	Please Print the Name, Title, & License No.	Date
_____	_____	_____
_____	_____	_____
It is the responsibility of the well owner to have the well/hole properly plugged and sealed. The Well Construction Contractor is responsible for notifying the owner of this requirement in writing.		

Instructions

This report must be computer-generated online, typed or printed in BLACK OR BLUE INK and may be reproduced by photocopy or computer generation. Photocopy reproductions must retain margins and print quality. Attach additional sheets if more space is required. Each additional sheet must be identified at the top by the well owner's name, the permit number, form name/number and a sequential page number. Report depths in feet below ground surface.

If filing online please see the [FORM SUBMITTAL, PAYMENT OPTIONS, & FEE SCHEDULE](#)

You may also save, print and email the completed form to: dwrpermitsonline@state.co.us

These reports must be completed and submitted to the Division of Water Resources, usually within 60 days of plugging and sealing the well/hole.

Please refer to **Form GWS-09A** for the Standards for Plugging, Sealing, and Abandoning Wells and Boreholes

Item Instructions: (numbers correspond with those on the front of this form)

1. Complete the well permit and receipt number for the abandoned well.
2. Complete the name and contact information for the person performing the abandonment work.
3. Complete the well owner name and contact information.
4. Complete the address where the abandoned well is located.
5. Provide the GPS location and County where the abandoned well is located.

Colorado contains two (2) UTM zones. Zone 13 covers most of Colorado. The boundary between Zone 12 and Zone 13 is the 108th Meridian (longitude). West of the 108th Meridian is UTM Zone 12 and east of the 108th Meridian is UTM Zone 13. The 108th Meridian is approximately 57 miles east of the Colorado-Utah state line. On most GPS units, the UTM zone is given as part of the Easting measurement, e.g. 12T0123456. Check the appropriate box for the zone.

6. Complete the legal description location of the (abandoned) well. For wells located in subdivisions, the name, lot, block, and filing, must be provided.
7. Indicate the reason(s) for plugging and sealing the well/hole.
8. Indicate the aquifer in which the abandoned well was completed.
9. Indicate the intervals where casing was removed, perforated, or ripped.
10. Complete the amount, type, method of placement and interval placed of the sealing materials.
11. Complete the Name, Title, and License Number (if applicable) of the individual(s) who are responsible for the work performed. The report must be signed by the responsible party per Rule 17.4. If applicable, indicate if Professional Engineer or Professional Geologist in place of License Number.

Rule 17.4 Certification - Work reports must be signed and certified as to accuracy and truthfulness of the information on the report by the well construction or pump installation contractors or authorized individuals responsible for the work performed by them or under their direction or supervision, or by the private driller or private pump installer if the work was performed by them. Such reports are deemed to be completed, signed and certified under oath.

Submit completed report to: State of Colorado, Office of the State Engineer, 1313 Sherman St, Room 821, Denver, CO 80203. You may also save, print, scan and email the completed form to dwrpermitsonline@state.co.us



October 26, 2021

VIA E-MAIL

City of Fort Lupton Planning and Building Department
130 S. McKinley Ave
Fort Lupton, Colorado 80621
planningdept@fortlupton.org

**NOTICE OF RIGHT-OF-WAY GRANT OWNED BY KERR-McGEE GATHERING
LLC**

Re: Murata Farms
M-J Perri Company– Property Owner
Township 1 North, Range 66 West, 6th P.M.
A portion of the N2SW4 of Section 4
Weld County, Colorado

City of Fort Lupton Planning and Building Department:

This letter is being sent by Kerr-McGee Gathering LLC (“KMGG”) to inform you KMGG is the owner of a valid easement and pipeline located in the N2SW4 of Section 4, Township 1 North, Range 66 West for which the City of Fort Lupton Planning and Building Department (“Town”) is reviewing Murata Farms. KMGG is submitting this comment timely, in accordance with the Town’s procedural requirements.

The following are comments in support of this Notice:

1. KMGG is the owner of a valid Right-of-Way Grant that was executed on June 4, 2002 and recorded on November 4, 2002 with the Weld County Clerk and Recorder at reception number 3002202. Referenced Right-of-Way Grant contains pipeline number 16-02-311-3-EXT.

KMGG does not object to the proposed Murata Farms provided the applicant does not encroach on KMGG’s pipelines and conforms to the terms of the Right-of-Way Grant identified above.

Please contact me at 970-598-4104 if you have any questions or comments about this matter.

Sincerely,

KERR-McGEE GATHERING LLC

Paul Gerrish
Senior Landman

cc: Murph Shelby, Senior Counsel
Sherry Bursey, Senior Counsel
Brett Cavanagh
Jake Billadeau
Heather Bennett
Kelly Reyos



November 8, 2021

Fort Lupton Planning Department
130 S. McKinley Avenue
Fort Lupton, CO 80621
www.fortlupton.org

Re: Murata Farms Filing No. 1 – 1st Submittal

Dear Mr. Hodges and Ms. Knutson:

On behalf of United Power, Inc., thank you for inviting us to review and comment on the Murata Farms Filing No. 1. After review of the information, we have the following comments:

- **Front or Rear Lot Distribution** – The 6' and 8' wide dry utility easements look good IF gas and electric are not sharing. If they are sharing the easement, we would require a 10' wide dry utility easement.
- Easements utilized by United Power cannot be encumbered by any hard surfaces such as streets or sidewalks. Although the roadways/tracts on the plat are dedicated to utilities, we have above ground equipment that cannot be placed within these areas. In addition, sidewalks take away from the use of the easement & reduces the area, limiting where our equipment can be placed.
- **Streetlights** – When streetlight locations are identified in a subdivision, we need a 5' wide dry utility easement along one side of the lot closest to the streetlight location. All streetlight locations must be approved and signed off by the city/town, etc. Please note, if we do not get these through the platting process, we will have to get individual ones during the design which will slow United Power's ability to start construction significantly.

Please have the property owner/developer/contractor submit an application for new electric service, any modification to existing facilities including relocation and/or removal along with CAD data via <https://www.unitedpower.com/construction>. United Power would like to work with these persons early in the construction process on getting an electric design prepared so that we can request any additional easements needed and hopefully have those easements dedicated on the plat rather than obtaining separate instrument. Obtaining easements via a separate instrument can be time consuming and could cause delays.

As a Reminder: No permanent structures are acceptable within the dry utility easement(s); such as, window wells, wing walls, retaining walls, basement walls, roof overhang, anything affixed to the house like decks, etc. United Power considers any structure that impedes the access, maintenance, and safety of our facilities a permanent structure. No exceptions will be allowed, and any encroachments could result in penalties.

Service will be provided according to the rules, regulations, and policies in effect by United Power at the time service is requested. We would like to remind the developer to call the Utility Notification Center by dialing 811 to have all utilities located prior to construction. We look forward to safely and efficiently providing reliable electric power and outstanding service.

Thank you,

Amber Mendoza

Amber Mendoza, RWA
ROW Agent
720.249.9315 | platreferral@unitedpower.com



DEPARTMENT OF PLANNING SERVICES

1555 N. 17th Ave

Greeley, CO 80631

Website: www.weldgov.com

Email: jflesher@weldgov.com

Phone: (970) 400-3552

Fax: (970) 304-6498

Via email to aknutson@fortluptonco.gov

November 8, 2021

Alyssa Knutson
City of Fort Lupton
130 S. McKinley Avenue
Fort Lupton, CO 80621

Subject: Murata Farm Final Plat

Dear Alyssa:

The Weld County Department of Planning Services has reviewed this proposal and submits the following comments for your consideration.

The adjacent property at 14026 SH 52 has a County-approved Use by Special Review for a kennel with up to 215 dogs (USR-906).

General Comments:

There is no County commitment to upgrade County roads and bridges to accommodate municipal developments.

The present zoning of adjacent and surrounding unincorporated properties are predominantly Agricultural. Owners of property in the area of this proposal should be made aware that agricultural uses, even when done in a manner consistent with good agricultural practices, may generate impacts such as noise, dust, flies, odors, aerial spraying, and slow-moving equipment on County roadways. It is important for future residents to note that adjacent properties may be in unincorporated Weld County and that Weld County has adopted a Right-to-Farm Statement and a Right to Extract Mineral Resources Statement and recommends they be placed on all plats adjacent to unincorporated areas:

Right-to-Farm Statement

Weld County is one of the most productive agricultural counties in the United States, typically ranking in the top ten counties in the country in total market value of agricultural products sold. The rural areas of Weld County may be open and spacious, but they are intensively used for agriculture. Persons moving into a rural area must recognize and accept there are drawbacks, including conflicts with long-standing agricultural practices and a lower level of services than in town. Along with the drawbacks come the incentives which attract urban dwellers to relocate to rural areas: open views, spaciousness, wildlife, lack of city noise and congestion, and the rural atmosphere and way of life. Without neighboring farms, those features which attract urban dwellers to rural Weld County would quickly be gone forever.

Agricultural users of the land should not be expected to change their long-established agricultural practices to accommodate the intrusions of urban users into a rural area. Well-run agricultural activities will generate off-site impacts, including noise from tractors and equipment; slow-moving farm vehicles on rural roads; dust from animal pens, field work, harvest and gravel roads; odor from animal confinement, silage and manure; smoke from ditch burning; flies and mosquitoes; hunting and trapping activities; shooting sports, legal hazing of nuisance wildlife; and the use of pesticides and fertilizers in the fields, including the use of aerial spraying. It is common practice for agricultural producers to utilize an accumulation of agricultural machinery and supplies to assist in their agricultural operations. A concentration of miscellaneous agricultural materials often produces a visual disparity between rural and urban areas of the County. Section 35-3.5-102, C.R.S., provides that an agricultural operation shall not be found to be a public or private nuisance if the agricultural operation alleged to be a nuisance employs methods or practices that are commonly or reasonably associated with agricultural production.

Water has been, and continues to be, the lifeline for the agricultural community. It is unrealistic to assume that ditches and reservoirs may simply be moved "out of the way" of residential development. When moving to the County, property owners and residents must realize they cannot take water from irrigation ditches, lakes or other structures, unless they have an adjudicated right to the water.

Weld County covers a land area of approximately four thousand (4,000) square miles in size (twice the size of the State of Delaware) with more than three thousand seven hundred (3,700) miles of state and County roads outside of municipalities. The sheer magnitude of the area to be served stretches available resources. Law enforcement is based on responses to complaints more than on patrols of the County, and the distances which must be traveled may delay all emergency responses, including law enforcement, ambulance and fire. Fire protection is usually provided by volunteers who must leave their jobs and families to respond to emergencies. County gravel roads, no matter how often they are bladed, will not provide the same kind of surface expected from a paved road. Snow removal priorities mean that roads from subdivisions to arterials may not be cleared for several days after a major snowstorm. Services in rural areas, in many cases, will not be equivalent to municipal services. Rural dwellers must, by necessity, be more self-sufficient than urban dwellers.

People are exposed to different hazards in the County than in an urban or suburban setting. Farm equipment and oil field equipment, ponds and irrigation ditches, electrical power for pumps and center pivot operations, high-speed traffic, sand burs, puncture vines, territorial farm dogs and livestock and open burning present real threats. Controlling children's activities is important, not only for their safety, but also for the protection of the farmer's livelihood.

Weld County Right to Extract Mineral Resources Statement

Weld County has some of the most abundant mineral resources, including, but not limited to, sand and gravel, oil, natural gas, and coal. Under title 34 of the Colorado Revised Statutes, minerals are vital resources because (a) the State's commercial mineral deposits are essential to the State's economy; (b) the populous counties of the state face a critical shortage of such deposits; and (c) such deposits should be extracted according to a rational plan, calculated to avoid waste of such deposits and cause the least practicable disruption of the ecology and quality of life of the citizens of the populous counties of the state.

Mineral resource locations are widespread throughout the County and people moving into these areas must recognize the various impacts associated with this development. Often times, mineral resource sites are fixed to their geographical and geophysical locations. Moreover, these resources are protected property rights and mineral owners should be afforded the opportunity to extract the mineral resource.

Thank you for the opportunity to comment on this proposal. This response addresses general requirements, concerns, or issues and is intended to assist in your community's decision-making process regarding this land use proposal. Weld County respectfully reserves the right to make further comment on information or issues as they are discovered.

Sincerely,

Jim Flesher, AICP
Long-Range Planner
Weld County

Magaly Morales-Tejada

From: George, Donna L <Donna.L.George@xcelenergy.com>
Sent: Monday, October 18, 2021 11:24 AM
To: Magaly Morales-Tejada
Subject: Automatic reply: Referral Response Request: Murata Farms Final Plat & PUD Plan (LUP2021-0028)

Out Of Office notice: I will be out of the office on personal leave for around a month beginning October 11th. In my absence, please see contact info below.

-to stop/start/change service, go to xcelenergy.com/installandconnect; you will then be assigned a Designer to work with you on your project

-will-serve letters: 1-800-628-2121

-general technical questions: BDRCO@xcelenergy.com

-high pressure gas: Jesse Vallejos, jesse.m.vallejos@xcelenergy.com

-electric transmission: coloradorightofway@xcelenergy.com

- **non-emergency matters:**

-Boulder: Bill Schulz, william.a.schulz@xcelenergy.com or Lynette Muncy, lynette.muncy@xcelenergy.com

-North Metro: Brett McGrath, brett.p.gcgrath@xcelenergy.com

-Southwest Metro: Robyn Martinez, robyn.m.martinez@xcelenergy.com

-Southeast Metro: Russ McClung, russell.w.mcclung@xcelenergy.com

-Denver Metro/core: Steve Schmidt, steve.schmidt@percheronllc.com or Lynette Muncy,

lynette.muncy@xcelenergy.com

-Foothills/Mountains: Bob Lerche, rclerche@gmail.com

-Weld County: Jake Bragg, jake.bragg@hotmail.com

-**non-urgent misc:** Robyn Martinez, robyn.m.martinez@xcelenergy.com [to field inquiries]

-emergency: Rick Grady, rick.grady@xcelenergy.com

I prefer that all referrals be re-referred in November. However, PLAT REVIEWS ONLY may be forwarded to kyle.patterson@xcelenergy.com. Xcel Energy's standard distribution easement requirements are as follows:

- Commercial Property
 - Gas main 6'
 - Electrical distribution line 10'
 - Joint trench 15'
 - Transformer 15' x 15'
 - Switch cabinet 20'x 20' or 15' x 25' depending on model
 - 10' easement is required along all lot lines abutting any public rights-of-way
- Residential Property
 - Electrical distribution line, rear lots 8'
 - Gas distribution line, front lot 6'
 - Multi-Unit developments require a 10' easement along all lot lines abutting any public rights-of-way
 - Transformer & Switch cabinet remain the same as commercial property
- Gas Line Clearances
 - All gas lines must maintain a minimum 5' of clearance from any structure, therefore, easement must adjust accordingly
- Gas Lines Not Adjacent to Road
 - Must be adjacent to drivable pavement/walkway that is a minimum of 8' wide & 6" thick to allow service trucks access & plowing in snowy conditions

CITY OF FORT LUPTON CITY COUNCIL



Shannon Rhoda, Ward 1
Chris Ceretto, Ward 2
Michael Sanchez, Ward 3

Zo Stieber, Mayor

David Crespín, Ward 1
Tommy Holton, Ward 2
Bruce Fitzgerald, Ward 3

AM 2021-189

REPLACEMENT PUMP AT THE NORTH LIFT STATION FROM WATER TECHNOLOGY GROUP FOR \$23,500.00

I. **Agenda Date:** Council Meeting – November 16, 2021

II. **Attachments:** a. Water Technology Quotation

III. **Summary Statement:**

The North Lift Station has four submersible pumps. The lift Station was built in the early 1990s. Two of the four pumps have been replaced over the years. This is to replace one of the 1990s pump that has severe wear and does not pump efficiently.

IV. **Submitted by:** _____
Jon Mays, WWTP Supervisor

V. **Finance Reviewed** _____
Finance Director

VI. **Approved for Presentation:** _____
City Administrator

VII. **Attorney Reviewed** _____ Approved _____ Pending Approval

VIII. **Certification of Council Approval:** _____
City Clerk _____ Date _____

IX. Detail of Issue/Request:

The North Lift Station provides sewer flow for approximately 40% of the City. The lift station was installed in the 1990s and has operated well.

One of the original pumps from the 1990s was recently pulled and inspected. The impeller and housing of the pump was severely worn and corroded. Due to the age of the pump, replacement parts would need to be machined. Staff requested a quote to replace the pump with a new high efficiency motor pump. The new pump will cut up fibrous material to prevent pump clogging. This feature has only become available recently.

The Water Technology Group is the factory representative for the company that now manufactures replacement pumps for this Lift Station. The original manufacturer of the old pump is no longer in business.

Jacobs staff will install the new pump.

X. Legal/Political Considerations:

XI. Alternatives/Options:

Staff could continue to operate the old pump until complete failure. This pump has a low efficiency motor and takes more electricity to operate. Also the extremely worn impellor does not allow full flow pump rates.

XII. Financial Considerations:

The utility sewer fund has \$50,000 dollars in facility repair and maintenance for the waste water treatment plant. These funds are unspent and can be transferred to pay for this replacement pump.

2021 R&M-Facilities Budget	\$ 50,000
North Lift Station Pump Replacement	(23,500)
South Lift Station Pump Rebuild	(9,495)
Budget Balance	<u>\$17,005</u>

XIII. Staff Recommendation:

Staff recommends accepting the quotation, purchasing the replacement pump, and replacing the old pump.

To: City of Fort Lupton, CO

Reference: Flygt 3152 Replacement

Proposal: OP-494680 2021 Update

Date: 10/04/2021

Flygt Submersible Pump Proposal

Qty:1 Flygt submersible wastewater pump, model FP 3153.350 with MT impeller #434. Unit shall be driven by a 20 HP, 1800 RPM, 230/3/60 submersible motor with 50' of sub cable. Pump shall be equipped with thermal and FLS leakage sensors.

Your total net price for the pump listed above-----\$23,115.00

Notes and clarifications

1. Pump selections are based on information provided
2. Anything not listed above is not included
3. Taxes are not included in the pricing
4. Lead time, 10-12 weeks ARO
5. Freight charges are prepaid and allowed
6. Quote is valid for 60 days

TERMS AND CONDITIONS

Price is FOB factory. Price does not include any freight charges. Price does not include any applicable duties or sales tax, use tax, excise tax, value-added or other similar taxes that may apply to this equipment and/or project. Unless specifically stated, price does not include manual or automatic controls, starters, protective or signal devices, wiring, anchor bolts, gauges, vibration isolation devices, installation, startup or testing.

If the price is included in a proposal, the price is firm for receipt of an order within 30 days of the date shown on the proposal. Any additional terms and conditions included in the proposal are specifically included in these terms and conditions.

Payment is due upon receipt of the invoice. An interest charge of 1-1/2% per month will be added to past due balances. Retainage of any invoiced amount is unacceptable unless specifically agreed to by Company at the time of order, and shall in no case exceed a period of 120 days. If payments are not timely received by Company, and this account is turned over to an attorney for collections, Customer agrees to pay all reasonable costs and attorney fees incurred in collection of the past due amounts.

Payment of "commercial transaction" invoices by credit card will be charged a fee based upon Cogent's average discount rate for credit card transactions for the prior calendar year. This fee will change annually and is currently 2.55%.

All equipment either rented from or through Company is subject to all of the terms and conditions listed on the back of the rental contract. Pricing does not include any overtime running of power equipment.

In no event shall Company's obligations and liabilities under this Agreement include any direct, indirect, punitive, special, incidental or consequential damages or losses that Customer may suffer or incur in connection with this sale, service or rental, including, but not limited to, loss of revenue or profits, damages or losses as a result of Customer's inability to operate, perform its obligations to third persons or injuries to goodwill; nor shall Company's liability extend to damages or losses Customer may suffer or incur as a result of such claims, suits or other proceedings made or instituted against Customer by third parties. Customer remises, releases and discharges Company from any and all liability or damages which might be caused by failure to deliver any equipment within the agreed time by Company.

Customer shall be responsible for determining the good operating condition of all materials and equipment prior to accepting the materials and equipment. NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE IS MADE UNLESS THE SAME IS SPECIFICALLY SET FORTH IN WRITING AND ACCEPTED IN WRITING BY COMPANY, BUT IN SUCH CASE THE WARRANTY OR GUARANTEE IS LIMITED AS ABOVE PROVIDED. Notwithstanding the foregoing, Company will pass through to the Customer any warranty provided by the manufacturer of any equipment supplied by Company.

Customer covenants and agrees to defend, indemnify and hold Company harmless from any claims, damages or liability arising out of the use, maintenance or delivery of the equipment or materials purchased or rented hereunder. Customer shall further defend, indemnify and hold Company harmless from any and all damages to third persons or to property caused by Customer's use or possession of the equipment or materials, to the fullest extent allowable by law.

In connection with a proposal, if Customer has any further questions or comments regarding the proposal, please feel free to contact Company. If the proposal meets with Customer's approval, please sign, date and mail or fax a copy of the proposal back to Company's office, and the identified equipment will be ordered and/or scheduled for delivery.

This agreement shall be governed by the laws of the state where the Company's branch office is located from which the equipment is rented or purchased. Customer further agrees that venue and jurisdiction shall be appropriate in the county in which Company's branch office is located from which the equipment was rented or purchased. Any provisions hereof which may prove unenforceable under any law shall not affect the validity of any other provision hereof.

CITY OF FORT LUPTON CITY COUNCIL



Shannon Rhoda, Ward 1
Chris Ceretto, Ward 2
Michael Sanchez, Ward 3

Zo Stieber, Mayor

David Crespín, Ward 1
Tommy Holton, Ward 2
Bruce Fitzgerald, Ward 3

AM 2021-190

AUTHORIZE WATER TECHNOLOGY GROUP TO REBUILD PUMP 3 FROM THE SOUTH LIFT STATION FOR \$9495.00

I. **Agenda Date:** Council Meeting – November 16, 2021

II. **Attachments:** a. Water Technology group quote

III. **Summary Statement:**

Pump 3 at the South Lift Station has failed. The Water Technology Group is the manufacturer's representative for the pumps in the South Lift Station. They have quoted \$9495.00 to rebuild the pump.

IV. **Submitted by:** _____
Jon Mays, Supervisor

V. **Finance Reviewed** _____
Finance Director

VI. **Approved for Presentation:** _____
City Administrator

VII. **Attorney Reviewed** _____ Approved _____ Pending Approval

VIII. **Certification of Council Approval:** _____
City Clerk _____ Date _____

IX. Detail of Issue/Request:

Pump 3 at the South Lift Station had a fault. Staff pulled the Pump and determined that the Pump had a seal failure. The pump was taken to the Factory representative, Water Technology Group, for inspection and disassembly. Water Technology Group inspected the pump and has recommended rebuilding the pump. The rebuild will return the pump to like new condition. Staff will reinstall the rebuilt pump.

X. Legal/Political Considerations:

XI. Alternatives/Options:

The City could purchase a new pump rather than rebuilding the failed pump. Costs for a new pump are around \$22,000.00.

XII. Financial Considerations:

The utility sewer fund has \$50,000 dollars in facility repair and maintenance for the waste water treatment plant. These funds are unspent and can be transferred to pay for this replacement pump.

2021 R&M-Facilities Budget	\$ 50,000
North Lift Station Pump Replacement	(23,500)
South Lift Station Pump Rebuild	(9,495)
Budget Balance	<u>\$17,005</u>

XIII. Staff Recommendation:

Staff recommends authorizing Water Technology Group to rebuild the pump.


COGENT
**Water Technology Group
Service Center**

Opportunity Number	OP-537728	Date	9/30/2021
PQ/Order Number	7038925	Salesman	0
Customer	City of Ft. Lupton	Customer Stock #	
Contact Name, First	Jon	Service Type	Service
Contact Name, Last	Mays	Brand	Water Technology Group
Contact Phone	303-506-2654	Market	Municipal
Contact Cell		Fluid Being Pumped	raw sewage
Contact Email	Jon.Mays@jacobs.com	Equipment Location/Station	

Manufacturer	Pentair Hydromatic
Model	S6LXP3000FC
Serial #	10279495
Item Type / Description	Submersible Solids Handling Pump
Additional Items	None
Level of Repair	L1 - Disassemble, Inspect, Estimate

DCI Technician		DCI Date	
----------------	--	----------	--

Pump As Found/Received
Notes:


Initial Inspection

HP	30	FLA	N/A	Voltage	Drop
Phase	Three	RPM	1750	IMP Code	
Power Cable Length	no cable	Power Cable Condition	no cable	Cable Disposition	Drop
Sensor Cable Length	N/A	Sensor Cable Condition	N/A	Paint Color & Type	
FLS Sensor Model	N/A	FLS OHM Standard Open	N/A	FLS OHM Actual Open	
		FLS OHM Standard Closed	N/A	FLS OHM Actual Closed	
Thermal Sensor	Drop	Thermal OHM Standard	0.3	Thermal OHM Reading	0.3
Bearing Sensor Model	N/A	Bearing OHM Standard	N/A	Bearing OHM Actual	N/A
Control Box	No	Control Box Condition	N/A		
Condition Of Oil	Milky	Mechanical Seal Pressure Test	Fail		

Electrical Inspection

OEM Ohm Standard	R/B	1.4	R/W	1.4	B/W	1.4	Junction Chamber Cond	Dirty
Cable OHM Reading	R/B	N/A	R/W	N/A	B/W	N/A	Junction Therm Reading	0.3
Junction OHM Reading	R/B	1.5	R/W	1.5	B/W	1.5	Junction FLS Reading	N/A
Cable Meg Reading	R	N/A	B	N/A	W	N/A	Electrical Notes: No cable was attached to pump upon arrival.	
Junction Meg Reading	R	>1000	B	>1000	W	>1000		
Does the Pump Pass Electrical Checks?			Pass					

Wet End

Volute Condition	Good - Reuse
------------------	--------------

Discharge Flange	Good - Reuse
------------------	--------------

Discharge Size	6"
----------------	----

Drop	Drop
------	------

Notes:

Wet end was found to be in good condition upon inspection. However the wear ring is quite worn and will need to be replaced to restore the tolerance between ring and impeller.

**Wet End Disposition**

Reuse

Impeller

Condition	Worn
-----------	------

Impeller Clearance	
--------------------	--

Balance Required?	No
-------------------	----

Notes:

Impeller was found to have wear grooves and will need to be replaced.



Impeller Disposition	
----------------------	--

Replace

Mechanical Seals

Upper Seal Condition	Severely Worn
----------------------	---------------

Lower Seal Condition	Severely Worn
----------------------	---------------

Seal Material	Upper	Carbon
	Lower	Silicon Carbide

Seal Fit on Shaft	Upper	Within tolerance
	Lower	Within tolerance

Notes:

During inspection of the mechanical seals. They were found to be in a severely worn state. Its believed that the lower seal failed causing product to be introduced to the oil cavity.



Upper Seal Disposition	
------------------------	--

Replace

Lower Seal Disposition	
------------------------	--

Replace

Bearing Housing

Housing Condition	Minimal Wear
--------------------------	--------------

Bearing Grease Cond.	Submersed in oil
-----------------------------	------------------

Bearing Condition	Upper	Worn
	Lower	Worn

Bearing Housing Fit	Upper	3.937 "
	Lower	5.512 "

Notes:

Inspection of the bearing housing showed that they were in good condition free of wear and the fits were within tolerance. Bearing housings will be cleaned and reused upon reassembly.



Housing Disposition

Reuse

Rotor

Rotor Condition	Minimal Wear
------------------------	--------------

Bearing Condition	Upper	Worn
	Lower	Worn

Rotor Shaft Fit	Upper	1.771 "
	Lower	2.559 "

Notes:

During the inspection of the rotor it was found to be in good condition and shaft fits were found to be all within tolerance. Rotor will be reused upon reassembly.



Rotor Disposition

Reuse

Bearing Disposition

Replace

Stator

Wash and Bake? Yes

Winding Analyzer Pass

Notes:

During inspection of the stator it was found to be in good condition and passed electrical tests. The stator will be washed and baked before assembly.



POST BAKE ELECTRICAL RESULTS:

OHM Reading	R/B	1.6	R/W	1.6	B/W	1.6
Meg Reading	R	<1000	B	<1000	W	<1000
Thermal	0.3					

Stator Disposition

Reuse

Conclusions

Parts Required

Sandblasting	Wear Ring	O-ring x3
Bearing Adj. Spring x2	Ball Bearing x2	Seal Kit
Impeller		

Inspection Reviewed By _____ Date _____

SERVICE ESTIMATE

Customer: City of Fort Lupton, CO Contact : Jon Mays Date: 09/30/2021 Phone: 303-506-2654 Fax: 303-857-0351 Project: Quote #: 7038925 Opp #: OP-537728	Water Technology Group - Municipal 14452 W 44th Ave Golden, CO 80403 Phone: 303-584-9000 Fax: 303-584-9920	 WATER TECHNOLOGY GROUP A COGENT COMPANY
--	---	--

Dear Jon,

We are pleased to offer the following estimate for your review.

Line No	Quantity	Description of Unit	Net Each	Net Ext.
1	1.00	S6LXP3000FC Serial Number - 10279495		
			Materials	\$7,675.00
			Labor	\$1,820.00
			Total	\$9,495.00

Disassembly, Cleaning, Inspection and Estimating Charge

\$780.00

Amount due if this unit is not repaired. An invoice for this charge will automatically generate within 90 days of this estimate. This charge is for DCI (Disassembly, Clean and Inspect). All units left at our facility for more than 6 months will be scrapped unless written notification is received.

Delivery: 5 - 7 week(s) after receipt of P.O.
 FOB Point: Shipping Point
 Terms of Payment: Upon Receipt
 Quote Validity: 30 Days

Thank you for the opportunity to provide you with this estimate. Please let us know how you would like to proceed.

Quoted By:
Tyler Grauberger
tgrauberger@cogentcompanies.com

Salesrep:
Brandon Cole
bcole@wtrgroup.com
303-888-7265

STANDARD TERMS AND CONDITIONS

Price is FOB shipping point and does not include any freight charges. Price does not include any applicable duties or sales tax, use tax, excise tax, value-added or other similar taxes that may apply to this equipment and/or project. Unless specifically stated, price does not include manual or automatic controls, starters, protective or signal devices, wiring, anchor bolts, gauges, vibration isolation devices, installation, startup or testing.

If the price is included in a proposal, the price is firm for receipt of an order within 30 days of the date shown on the proposal. Any additional terms and conditions included in the proposal are specifically included in these terms and conditions.

Unless otherwise expressly agreed to in writing by Seller, all shipments are FOB Seller shipping point at which point title also transfers.

Payment is due upon receipt of the invoice. An interest charge of 1-1/2% per month will be added to past due balances. Retainage of any invoiced amount is unacceptable unless specifically agreed to by Company at the time of order, and shall in no case exceed a period of 120 days. If payments are not timely received by Company, and this account is turned over to an attorney for collections, Customer agrees to pay all reasonable costs and attorney fees incurred in collection of the past due amounts.

Payment of 'commercial transaction' invoices by credit card will be charged a fee based upon Cogent's average discount rate for credit card transactions for the prior calendar year. This fee will change annually and is currently 2.55%.

All equipment either rented from or through Company is subject to all of the terms and conditions listed on the back of the rental contract. Pricing does not include any overtime running of power equipment.

In no event shall Company's obligations and liabilities under this Agreement include any direct, indirect, punitive, special, incidental or consequential damages or losses that Customer may suffer or incur in connection with this sale, service or rental, including, but not limited to, loss of revenue or profits, damages or losses as a result of Customer's inability to operate, perform its obligations to third persons or injuries to goodwill; nor shall Company's liability extend to damages or losses Customer may suffer or incur as a result of such claims, suits or other proceedings made or instituted against Customer by third parties. Customer remises, releases and discharges Company from any and all liability or damages which might be caused by failure to deliver any equipment within the agreed time by Company.

Customer shall be responsible for determining the good operating condition of all materials and equipment prior to accepting the materials and equipment. NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE IS MADE UNLESS THE SAME IS SPECIFICALLY SET FORTH IN WRITING AND ACCEPTED IN WRITING BY COMPANY, BUT IN SUCH CASE THE WARRANTY OR GUARANTEE IS LIMITED AS ABOVE PROVIDED. Notwithstanding the foregoing, Company will pass through to the Customer any warranty provided by the manufacturer of any equipment supplied by Company.

Customer covenants and agrees to defend, indemnify and hold Company harmless from any claims, damages or liability arising out of the use, maintenance or delivery of the equipment or materials purchased or rented hereunder. Customer shall further defend, indemnify and hold Company harmless from any and all damages to third persons or to property caused by Customer's use or possession of the equipment or materials, to the fullest extent allowable by law.

In connection with a proposal, if Customer has any further questions or comments regarding the proposal, please feel free to contact Company. If the proposal meets with Customer's approval, please sign, date and mail or fax a copy of the proposal back to Company's office, and the identified equipment will be ordered and/or scheduled for delivery.

This agreement shall be governed by the laws of the state where the Company's branch office is located from which the equipment is rented or purchased. Customer further agrees that venue and jurisdiction shall be appropriate in the county in which Company's branch office is located from which the equipment was rented or purchased. Any provisions hereof which may prove unenforceable under any law shall not affect the validity of any other provision hereof.

Revised January 2019

CITY OF
Fort Lupton
EST 1836

David Crespín, Ward 1
Tommy Holton, Ward 2
Bruce Fitzgerald, Ward 3

UPDATE CITY RETIREMENT PLAN DOCUMENTS AND INCREASE THE EMPLOYER AND EMPLOYEE PAYROLL CONTRIBUTION FOR SWORN POLICE OFFICERS FROM 9.7% TO 10.2% FOR AN ESTIMATED TOTAL OF \$10,918 FOR 2022.

IX. Detail of Issue/Request:

The City has two retirement plans, one for its sworn police officers and one for the rest of its employees. Internal Revenue Service (IRS) regulations require that plan documents be updated periodically to incorporate law changes, per the attached letter from AIG dba VALIC. The Adoption Agreements and the corresponding Basic Plan Document have been updated.

The Adoption Agreements for each plan are identical except for the Employer and Employee Contribution amounts. The amount for the City of Fort Lupton Employee Pension Plan is 4% and the amount for the Fort Lupton Police Pension Plan has been updated from 9.7% to 10.2%. The Basic Plan Document is a universal document that cannot be updated. The specific selections for each employer are set in the Adoption Agreement. Staff is recommending that Council accept the updated plan documents.

Law enforcement personnel for most Colorado agencies, including Fort Lupton, do not have social security tax withheld, nor do employers contribute to it. Law enforcement personnel are not eligible for social security benefits for wages earned while working in law enforcement. As a result, the employer and employee contribution rates for retirement plans for law enforcement personnel are higher than those for civilian personnel. Staff would like to consider offering a richer benefit to Fort Lupton law enforcement personnel to aid with recruitment and retention.

X. Legal/Political Considerations:

The IRS requires a periodic update of retirement plan documents. The City must update its documents to remain in compliance.

XI. Alternatives/Options:

The City could update the plan documents and not increase the contribution rate from 9.7% to 10.2%

XII. Financial Considerations:

Increasing the contribution by 0.5% increases the budget by 0.5% for the City, equivalent to an \$10,918 annual increase in payroll expense based on currently budgeted 2022 police department salaries. This amount may change based on total salary paid in 2022. Employees will contribute an equal amount and the deduction will reduce take home pay by 0.5%. The total cost of this change was included in the preliminary budget approved by Council on October 16, 2021.

XIII. Staff Recommendation:

Staff recommends approval of the Plan changes as required by the IRS. Staff seeks direction on the contribution increase to the Fort Lupton Police Pension Plan.



November 3, 2021

RE: Cycle 3 Restatement

Dear Retirement Plan Administrator:

In order to maintain the qualified status of your Plan, your company must adopt certain amendments required by the Internal Revenue Service (IRS) to ensure your Plan continues to comply with all current laws. To adopt the appropriate amendments, the IRS requires that you adopt a new version of your Plan document, called a "Plan restatement." To assist you with this restatement process, we have updated your Plan as required by the IRS. You will need to sign and date the attached documents to ensure your Plan continues to satisfy all current qualification requirements.

We have enclosed the following documents to assist you in the Plan restatement process:

1. Frequently Asked Questions (FAQs). We have enclosed a series of FAQs to help you understand the steps you need to take to complete the restatement process. Please review these FAQs to ensure you have properly implemented the Plan restatement process.
2. Sample resolution. We have enclosed a sample resolution describing the restatement process. This resolution should be signed to authorize the adoption of the restated plan. You should keep the signed resolution in your Plan file to document the adoption of the Plan restatement.
3. A copy of the restated Adoption Agreement containing the elections applicable to your Plan. **PLEASE REVIEW THIS DOCUMENT CAREFULLY TO MAKE SURE THE ELECTIONS IN THE DOCUMENT ARE CONSISTENT WITH HOW THE COMPANY IS CURRENTLY OPERATING THE PLAN.** This Adoption Agreement should be signed by the person authorized to execute the adoption of the Plan restatement. You should keep the original signed document in your Plan file and return a copy to us for our records.
4. Basic Plan Document. This document contains the boilerplate language applicable to the Plan as approved by the IRS, including the duties and responsibilities of the Employer. This document does not need to be signed but should be kept in your Plan file.
5. Trust Declaration and Agreement. The Trust Agreement establishes the trust for your Plan and provides for its governing provisions, including the duties and responsibilities of the Trustee and Employer. An authorized person from your company and the Trustee will need to sign the Trust Declaration or a separate Trust Agreement. You should keep the Trust Agreement in your Plan file.

Your Plan is a special type of retirement plan called a pre-approved plan. As a pre-approved plan, the IRS reviews and approves the language in your Plan. We will provide you with a copy of the opinion letter issued by the IRS documenting the approval of your Plan language.

As noted above, it is extremely important that you carefully review the enclosed Adoption Agreement to ensure it conforms to the way you currently operate your Plan. You may wish to have your tax or legal advisor review the documents to be sure the options selected are consistent with current Plan operation.

Once you have completed your review of the restated Adoption Agreement and are comfortable with the selections in the document, please sign and date the Adoption Agreement (in the manner described in the enclosed FAQs) and return one copy to us. You should retain the signed original in your Plan file. Please return a copy of the signed Adoption Agreement to us at the following address:

AIG Retirement Services
Plan.documents@aig.com
2929 Allen Parkway L-10
Houston, TX 77019

If you have any questions regarding the Plan restatement process, you may contact us at plan.documents@aig.com.

Sincerely,

AIG Retirement Services

Enclosures

***Plan Document Restatement Package
Frequently Asked Questions***

In General

Q-1: Why do we have to restate our Plan document?

A-1: Under the IRS pre-approved plan program, the IRS reviews and approves plan provisions approximately every six years. This allows the IRS to ensure that the Plan reflects new laws and regulations that affect tax qualified plans. After the IRS approves the pre-approved plan provisions, it requires that all employers that have adopted the plan execute a new plan document, commonly called a plan restatement. In recent years, Congress has enacted a number of new laws affecting tax qualified retirement plans. The IRS also has issued substantial guidance regarding the operation of qualified plans. Congress and the IRS have generally permitted employers to comply with these new rules in operation without formally amending the underlying Plan document until some date after the law is effective. As indicated above, the IRS is now requiring all qualified plans to be restated to comply in form with the new laws and guidance. This restatement is being collectively referred to as Cycle 3.

Q-2: By what date must our Plan document be restated?

A-2: The IRS has announced that employers who use a pre-approved plan document, such as yours, must restate their Plans **no later than July 31, 2022**. If a Plan is not restated and signed by July 31, 2022, it may lose its qualified status and could subject your company to substantial tax sanctions.

Q-3: We just adopted our Plan last year. Why do we need to restate the document so soon after adoption?

A-3: The IRS requires all Plans be restated onto an “IRS-approved” version of the pre-approved plan. If your company adopted your Plan prior to August 1, 2020, it is likely the Plan was not on the most recent IRS-approved version. All plans must be restated onto the latest IRS-approved version no later than July 31, 2022.

Q-4: How is the new plan document different than our current document?

A-4: The new document has been updated to address updated laws and IRS guidance, including, but not limited to:

- Rules expanding In-Plan Roth Conversions of otherwise nondistributable amounts.
- Final regulations providing for a limited modification of the required minimum distribution rules for tax-qualified defined contribution plans holding Qualifying Longevity Annuity Contracts.
- Clarifying change relating to the application of same-sex marriage rules.
- Final regulations providing guidance on mid-year changes to Safe Harbor 401(k) Plans.
- Qualified Natural Disaster Relief provided by the IRS, including, but limited to, Louisiana storms, Hurricane Matthew, Hurricane Irma, Hurricane Maria and California Wildfires.
- Revised disability claims procedures as provided by the Department of Labor (DOL).
- New rules extending the rollover period for Qualified Plan Loan Offset Amounts.

Q-5: Why does the new Plan document already contain an Interim Amendment?

A-5: The Cycle 3 Defined Contribution Pre-Approved Plan documents are based on the List of Required Modifications issued by the IRS in October of 2017. The IRS issued final regulations relating to hardship distributions under 401(k) plans on September 23, 2019. Given the timing, the IRS did not permit or approve the inclusion of hardship distribution changes pursuant to the final regulations in the Cycle 3 Defined Contribution Pre-Approved Plan documents, thus a snap-on Interim Amendment is required. Similarly, the Cycle 3 Defined Contribution Pre-Approved Plan documents do not incorporate changes due to the SECURE Act or the CARES Act. A separate Interim Amendment will be necessary to adopt those changes.

Plan Restatement Documents

Q-6: What documents have been provided and which do we need to sign in order to restate our Plan document?

A-6: We have provided the following updated Plan-related documents:

- Sample Resolution
- Restated Adoption Agreement

Frequently Asked Questions Regarding Plan Restatements

- Basic Plan Document
- ASC Trust Agreement, if applicable
- Favorable IRS Opinion letter

The appropriate individual(s) must sign the sample resolution, restated Adoption Agreement and Trust Declaration, as described below.

Q-7: Who must sign the sample resolution to adopt the Plan restatement?

A-7: The purpose of the resolution is to authorize your company to take the actions necessary to restate the plan. The attached resolution is a sample designed to satisfy the state law requirements to authorize a company to adopt the restatement of a qualified retirement plan. You should consult with your legal advisor as to whether an alternate format may or should be used to authorize adoption of the Plan restatement.

Q-8: What pages of the Adoption Agreement must be signed? Do we need to return a copy of the signed Adoption Agreement to you?

A-8: The pages that must be signed will depend on how the Plan is completed. The following describes each of the Adoption Agreement pages that may require a signature:

- **Employer Signature Page.** The Employer Signature Page must be signed by an authorized representative of the Employer that is sponsoring the Plan. A signature is required to implement the provisions under the restated Plan document.
- **Trust Declaration Page.** Generally, the Trust Declaration Page must be signed by the Employer and the Trustee indicating its acceptance of the fiduciary responsibilities under the Plan. If the Plan is using a separate Trust Agreement, the Trustee may adopt the Trust Agreement either by signing the Trust Declaration Page, as indicated therein, or by signing the separate Trust Agreement.
- **Participating Employer Signature Page.** If there is more than one employer that is maintaining the Plan, each additional employer must adopt the Plan document by executing a Participating Employer Signature Page.
- **Interim Amendment – Hardship Distributions Elective Provisions.** If the Employer wishes to override the default elections, the Employer must sign the Interim Amendment to adopt the alternate elections.

Q-9: Do we need to file our plan with the IRS?

A-9: Generally, you may rely upon the IRS opinion letter issued to the plan document sponsor in lieu of an individual determination letter. If you make significant modifications to the IRS-approved Plan, it may impact your Plan's reliance on the IRS opinion letter for which you may wish to apply for an individual IRS determination letter using Form 5307.

Q-10: Whom should I call if I have questions?

A-10: Please contact the AIG Plan Document Unit at plan.documents@aig.com.

City of Fort Lupton
NONSTANDARDIZED GOVERNMENTAL MONEY PURCHASE PLAN
ADOPTION AGREEMENT #002

By executing this Nonstandardized Governmental Money Purchase Plan Adoption Agreement (the "Adoption Agreement" or "AA"), the undersigned Employer agrees to establish or continue a Governmental Money Purchase Plan for its Employees. The Governmental Money Purchase Plan adopted by the Employer consists of the Governmental Defined Contribution Pre-Approved Plan Basic Plan Document #03 (the "BPD") and the elections made under this Adoption Agreement (collectively referred to as the "Plan"). An Employer may jointly co-sponsor the Plan by signing a Participating Employer Adoption Page, which is attached to this Adoption Agreement. **This Plan is effective as of the Effective Date identified on the Signature Page of this Adoption Agreement.**

SECTION 1
EMPLOYER INFORMATION

1-1 EMPLOYER INFORMATION.

Name: City of Fort Lupton

Address: 130 S. McKinley Avenue

Fort Lupton, Colorado 80621

Telephone: 303-857-6694

1-2 EMPLOYER IDENTIFICATION NUMBER (EIN). 84-6000665

1-3 FORM OF BUSINESS.

☒ State or political subdivision of a State

☐ State agency or instrumentality

☐ Indian Tribal Government

☐ Describe other Employer qualified to adopt a Governmental Plan: _____

1-4 EMPLOYER'S TAX YEAR END. The Employer's tax year ends December 31

1-5 RELATED EMPLOYERS. Is the Employer part of a group of Related Employers (as defined in Section 1.83 of the Plan)?

☐ Yes

☒ No

If yes, Related Employers may be listed below. A Related Employer must execute a Participating Employer Adoption Page for Employees of that Related Employer to participate in this Plan.

[Note: This AA §1-5 is for informational purposes and Employers need not list Related Employers. The failure to identify all Related Employers will not jeopardize the qualified status of the Plan.]

SECTION 2
PLAN INFORMATION

2-1 PLAN NAME. Fort Lupton Police Pension Plan

Original Effective Date: November 29, 1991

Restatement Effective Date: January 1, 2022

2-2 PLAN NUMBER. 002

2-3 TYPE OF PLAN. This Plan is a Money Purchase Defined Contribution Plan.

☐ The Plan is intended to be a FICA Replacement Plan (as defined under Section 4.03 of the Plan).

[Note: Elections under this AA must be consistent with the requirements of a FICA Replacement Plan as described under Section 4.03 of the Plan.]

2-4 **PLAN YEAR.**

- ☒ (a) Calendar year.
- ☐ (b) The 12-consecutive month period ending on _____ each year.
- ☐ (c) The Plan has a Short Plan Year running from ____ to ____.

2-5 **FROZEN PLAN.** Check this AA §2-5 if the Plan is a frozen Plan to which no contributions will be made.

- ☐ This Plan is a frozen Plan effective _____. (See Section 3.02(b)(6) of the Plan.)

[Note: As a frozen Plan, the Employer will not make any contributions with respect to Plan Compensation earned after such date and no Participant will be permitted to make any contributions to the Plan after such date. In addition, no Employee will become a Participant after the date the Plan is frozen.]

2-6 **MULTIPLE EMPLOYER PLAN.** Is this Plan a Multiple Employer Plan as defined in Section 16.07 of the Plan? (See Section 16.07 of the Plan for special rules applicable to Multiple Employer Plans.)

- ☐ Yes
- ☒ No

2-7 **PLAN ADMINISTRATOR.**

- ☒ (a) The Employer identified in AA §1-1.

- ☐ (b) Name: _____
- Address: _____
- Telephone: _____

2-8 **DEFINITION OF DISABLED.** An individual is considered Disabled for purposes of applying the provisions of this Plan if:

- ☐ (a) The individual is covered by the Employer's disability insurance plan and is determined to be disabled under such plan.
- ☒ (b) The individual is determined to be disabled by the Social Security Administration under Section 223(d) of the Social Security Act for purposes of determining eligibility for Social Security benefits.
- ☐ (c) The Plan Administrator determines an individual is unable to engage in any substantial gainful activity by reason of a medically determinable physical or mental impairment that can be expected to result in death or which has lasted, or can be expected to last, for a continuous period of not less than 12 months. The permanence and degree of such impairment shall be supported by medical evidence. The Plan Administrator may establish reasonable procedures for determining whether a Participant is Disabled.

[Note: An Employer may elect any or all of (a), (b) and (c) above. If more than one of (a), (b) and (c) is selected, the hierarchy for determining whether an individual is considered Disabled is (a), then (b) and then (c), unless described otherwise under separate administrative procedures or under subsection (d) below.]

- ☐ (d) Alternative definition of Disabled: _____

[Note: Any alternative definition described above will apply uniformly to all Participants under the Plan and will be applied in a nondiscretionary manner. The Employer may describe different definitions of Disabled for different purposes under the plan.]

SECTION 3
ELIGIBLE EMPLOYEES

3-1 **ELIGIBLE EMPLOYEES.** In addition to the Employees identified in Section 2.02 of the Plan, the following Employees are excluded from participation under the Plan. See Sections 2.02(d) and (e) of the Plan for rules regarding the effect on Plan participation if an Employee changes between an eligible and ineligible class of employment.

- ☐ (a) No exclusions
- ☐ (b) Collectively Bargained Employees
- ☐ (c) Non-resident aliens who receive no compensation from the Employer which constitutes U.S. source income

- ☐ (d) Leased Employees
- ☐ (e) Employees paid on an hourly basis
- ☐ (f) Employees paid on a salaried basis
- ☐ (g) Employees in an elected or appointed position
- ☒ (h) Part-Time Employees (as defined in Section 1.71 of the Plan)
- ☒ (i) Seasonal Employees (as defined in Section 1.89 of the Plan)
- ☐ (j) Temporary Employees (as defined in Section 1.93 of the Plan)
- ☐ (k) Employees eligible for another qualified plan sponsored by the Employer or a Related Employer

Specify name of other qualified plan (optional): _____

- ☒ (l) Other: Employees not classified as sworn police personnel

[Note: The elections under this AA §3-1 apply to any Pick-Up Contributions and any After-Tax Employee Contributions authorized under AA §6-6, unless elected otherwise under subsection (l) above. The exclusions inserted may not result in a specifically named individual or a finite group (such as employees hired before a certain date) being the only employee or employees participating under the plan in violation of the permanency requirements or Treas. Reg. §1.401-1(b)(2). It is permissible to limit participation under the plan to an employee or employees of a specifically named position or positions.]

SECTION 4 MINIMUM AGE AND SERVICE REQUIREMENTS

4-1 **ELIGIBILITY REQUIREMENTS – MINIMUM AGE AND SERVICE.** An Eligible Employee (as defined in AA §3-1) who satisfies the minimum age and service conditions under this AA §4-1 will be eligible to participate under the Plan as of his/her Entry Date (as defined in AA §4-2 below).

- (a) **Service Requirement.** An Eligible Employee must complete the following minimum service requirements to participate in the Plan.

- ☒ (1) There is no minimum service requirement for participation in the Plan.
- ☐ (2) ____ Year(s) of Service (as defined in Section 2.03(a)(1) of the Plan and AA §4-3).
- ☐ (3) The completion of at least ____ Hours of Service during the first ____ months of employment (or the first ____ days of employment) or the completion of a Year of Service (as defined in AA §4-3), if earlier.
 - ☐ (i) An Employee who completes the required Hours of Service satisfies eligibility at the end of the designated period, regardless if the Employee actually works for the entire period.
 - ☐ (ii) An Employee who completes the required Hours of Service must also be employed continuously during the designated period of employment. See Section 2.03(a)(2) of the Plan for rules regarding the application of this subsection (ii).
- ☐ (4) The completion of ____ Hours of Service during an Eligibility Computation Period. *[Note: An Employee satisfies the service requirement immediately upon completion of the designated Hours of Service rather than at the end of the Eligibility Computation Period.]*
- ☐ (5) Full-time Employees are eligible to participate as set forth in subsection (i) below. Employees who are “part-time” Employees must complete a Year of Service (as defined in AA §4-3). For this purpose, a full-time Employee is any Employee not defined in subsection (ii) below.
 - (i) Full-time Employees must complete the following minimum service requirements to participate in the Plan:
 - ☐ (A) There is no minimum service requirement for participation in the Plan.
 - ☐ (B) The completion of at least ____ Hours of Service during the first ____ months of employment or the completion of a Year of Service (as defined in AA §4-3), if earlier.
 - ☐ (C) Under the Elapsed Time method as defined in AA §4-3(c) below.
 - ☐ (D) Describe: _____

[*Note: Any conditions provided under this subsection (D) must be definitely determinable.*]

- (ii) Part-time Employees must complete a Year of Service (as defined in AA §4-3).

☐ (A) For this purpose, a part-time Employee is any Employee (including a temporary or seasonal Employee) whose normal work schedule is less than:

☐ (I) ____ hours per week.

☐ (II) ____ hours per month.

☐ (III) ____ hours per year.

☐ (B) Describe part-time Employees for this purpose: _____

[*Note: A part-time employee must be described as an individual who works less than a specified number of hours (no greater than 40) during a standard work week.*]

☐ (6) Under the Elapsed Time method as defined in AA §4-3(c) below.

☐ (7) Describe eligibility conditions: _____

- (b) **Minimum Age Requirement.** An Eligible Employee (as defined in AA §3-1) must have attained the following age to participate under the Plan.

☐ (1) There is no minimum age for Plan eligibility.

☒ (2) Age 21.

☐ (3) Age 20½.

☐ (4) Age ____.

☐ (c) **Special eligibility rules.** The following special eligibility rules apply with respect to the Plan: _____

[*Note: The elections under this AA §4-1 apply to any Pick-Up Contributions and any After-Tax Employee Contributions authorized under AA §6-6, unless elected otherwise under subsection (c) above. Subsection (c) may be used to apply the eligibility conditions selected under this AA §4-1 separately with respect to different Employee groups or different contribution formulas under the Plan. Any special eligibility rules must be definitely determinable.*]

- 4-2 **ENTRY DATE.** An Eligible Employee (as defined in AA §3-1) who satisfies the minimum age and service requirements in AA §4-1 shall be eligible to participate in the Plan as of his/her Entry Date. For this purpose, the Entry Date is the following date.

☐ (a) **Immediate.** The date the minimum age and service requirements are satisfied (or date of hire, if no minimum age and service requirements apply).

☐ (b) **Semi-annual.** The first day of the 1st and 7th month of the Plan Year.

☐ (c) **Quarterly.** The first day of the 1st, 4th, 7th and 10th month of the Plan Year.

☐ (d) **Monthly.** The first day of each calendar month.

☒ (e) **Payroll period.** The first day of the payroll period.

☐ (f) **The first day of the Plan Year.**

☐ (g) **Describe Entry Date:** _____

[*Note: Any Entry Date under this subsection (g) must be within the dates described under (a) – (f).*]

An Eligible Employee's Entry Date (as defined above) is determined based on when the Employee satisfies the minimum age and service requirements in AA §4-1. For this purpose, an Employee's Entry Date is the Entry Date:

☐ (h) **next following** satisfaction of the minimum age and service requirements.

☒ (i) **coinciding with or next following** satisfaction of the minimum age and service requirements.

☐ (j) **nearest** the satisfaction of the minimum age and service requirements.

☐ (k) **preceding** the satisfaction of the minimum age and service requirements.

This section may be used to describe any special rules for determining Entry Dates under the Plan. For example, if different Entry Date provisions apply for different groups of Employees, such different Entry Date provisions may be described below.

☐ (l) **Describe** any special rules that apply with respect to the Entry Dates under this AA §4-2: _____

[**Note:** The elections under this AA §4-2 apply to any Pick-Up Contributions and any After-Tax Employee Contributions selected under AA §6-6, unless elected otherwise under subsection (l) above. Any special rules under subsection (l) must be definitely determinable.]

4-3 **DEFAULT ELIGIBILITY RULES.** In applying the minimum age and service requirements under AA §4-1 above, the following default rules apply:

- **Year of Service.** An Employee earns a Year of Service for eligibility purposes upon completing 1,000 Hours of Service during an Eligibility Computation Period. Hours of Service are calculated based on actual hours worked during the Eligibility Computation Period. (See Section 1.57 of the Plan for the definition of Hours of Service.)
- **Eligibility Computation Period.** If one Year of Service is required for eligibility, the Plan will determine subsequent Eligibility Computation Periods on the basis of Plan Years. (See Section 2.03(a)(3)(i) of the Plan.) If more than one Year of Service is required for eligibility, the Plan will determine subsequent Eligibility Computation Periods on the basis of Anniversary Years. (See Section 2.03(a)(3)(ii) of the Plan.)

To override the default eligibility rules, complete the applicable sections of this AA §4-3. **If this AA §4-3 is not completed, the default eligibility rules apply.**

- ☐ (a) **Year of Service.** Instead of 1,000 Hours of Service, an Employee earns a Year of Service upon the completion of ____ Hours of Service during an Eligibility Computation Period.
- ☐ (b) **Eligibility Computation Period (ECP).** The Plan will use Anniversary Years, unless more than one Year of Service is required under AA §4-1(a), in which case the Plan will shift to Plan Years if the Employee does not earn a Year of Service during the first Eligibility Computation Period. (See Section 2.03(a)(3)(ii) of the Plan.)
- ☐ (c) **Elapsed Time method.** Eligibility service will be determined under the Elapsed Time method. An Eligible Employee (as defined in AA §3-1) must complete a ____ period of service to participate in the Plan. (See Section 2.03(a)(6) of the Plan.)

[**Note:** Under the Elapsed Time method, service will be measured from the Employee's employment commencement date (or reemployment commencement date, if applicable) without regard to the Eligibility Computation Period designated in Section 2.03(a)(3) of the Plan.]

- ☐ (d) **Equivalency Method.** For purposes of determining an Employee's Hours of Service for eligibility, the Plan will use the Equivalency Method (as defined in Section 2.03(a)(5) of the Plan). The Equivalency Method will apply to:

- ☐ (1) All Employees.
- ☐ (2) Only Employees for whom the Employer does not maintain hourly records. For Employees for whom the Employer maintains hourly records, eligibility will be determined based on actual hours worked.

Hours of Service for eligibility will be determined under the following Equivalency Method.

- ☐ (3) **Monthly.** 190 Hours of Service for each month worked.
- ☐ (4) **Weekly.** 45 Hours of Service for each week worked.
- ☐ (5) **Daily.** 10 Hours of Service for each day worked.
- ☐ (6) **Semi-monthly.** 95 Hours of Service for each semi-monthly period worked.
- ☐ (7) **Describe Equivalency Method:** _____

- ☐ (e) **Special eligibility provisions:** _____

[**Note:** The elections under this AA §4-3 apply to any Pick-Up Contributions and any After-Tax Employee Contributions selected under AA §6-6, unless elected otherwise under subsection (e) above. Any special rules under subsection (e) must be definitely determinable.]

4-4 **EFFECTIVE DATE OF MINIMUM AGE AND SERVICE REQUIREMENTS.** The minimum age and/or service requirements under AA §4-1 apply to all Employees under the Plan. An Employee will participate as of his/her Entry Date, taking into account all service with the Employer, including service earned prior to the Effective Date.

To allow Employees employed on a specified date to enter the Plan without regard to the minimum age and/or service conditions, complete this AA §4-4.

- ☐ An Eligible Employee who is employed by the Employer on the following designated date will enter the Plan on the designated date without regard to minimum age and/or service requirements (as designated below):
- ☐ (a) the Effective Date of this Plan (as designated in subsection (a) or (b) of the Employer Signature Page, as applicable).

☐ (b) the date the Plan is executed by the Employer (as indicated on the Employer Signature Page).

☐ (c) _____ [insert date no earlier than the Effective Date of this Plan]

An Eligible Employee who is employed on the designated date will enter the Plan on the designated date without regard to the minimum age and service requirements under AA §4-1. If both minimum age and service conditions are not waived, select subsection (d) or (e) below to designate which condition is waived under this AA §4-4.

☐ (d) This AA §4-4 only applies to the minimum service condition.

☐ (e) This AA §4-4 only applies to the minimum age condition.

The provisions of this AA §4-4 apply to all Eligible Employees employed on the designated date unless designated otherwise under subsection (f) or (g) below.

☐ (f) The provisions of this AA §4-4 apply to the following group of Employees employed on the designated date: _____

☐ (g) Describe special rules: _____

[Note: An Employee who is employed as of the designated date described in this AA §4-4 will enter the Plan as of such date unless a different Entry Date is designated under subsection (g) above. Any special rules under subsection (g) above must be definitely determinable.]

4-5 **SERVICE WITH PREDECESSOR EMPLOYER.** Service with the following Predecessor Employers will be counted for purposes of determining eligibility, vesting and allocation conditions under this Plan, unless designated otherwise under subsection (a) or (b) below. (See Sections 2.06, 3.07(b) and 6.07 of the Plan.)

☐ (a) The Plan will count service with the following Predecessor Employers:

Name of Predecessor Employer	Eligibility	Vesting	Allocation Conditions
☐ (1) _____	☐	☐	☐

☐ (b) Describe any special provisions applicable to Predecessor Employer service: _____

4-6 **BREAKS IN SERVICE.** Generally, an Employee will be credited with all service earned with the Employer, including service earned prior to a Break in Service. To disregard service earned prior to a Break in Service for eligibility purposes, complete this AA §4-6. (See Section 2.07 of the Plan.)

☐ (a) If an Employee incurs at least one Break in Service, the Plan will disregard all service earned prior to such Break in Service for purposes of determining eligibility to participate.

☐ (b) If an Employee incurs at least _____ Breaks in Service, the Plan will disregard all service earned prior to such Break in Service for purposes of determining eligibility to participate. [Enter "0" if prior service will be disregarded for all rehired Employees.]

☐ (c) The Nonvested Participant Break in Service rule applies to all Employees, including Employees who have not terminated employment.

☐ (d) Describe: _____

SECTION 5 COMPENSATION DEFINITIONS

5-1 **TOTAL COMPENSATION.** Total Compensation is based on the definition set forth under this AA §5-1. See Section 1.94 of the Plan for a specific definition of the various types of Total Compensation.

☒ (a) W-2 Wages

☐ (b) Code §415 Compensation

☐ (c) Wages under Code §3401(a)

[Note: For purposes of determining Total Compensation, each definition includes Elective Deferrals, as defined in Section 1.36 of the Plan, pre-tax contributions to a Code §125 cafeteria plan or a Code §457 plan, and qualified transportation fringes under Code §132(f)(4).]

5-2 **POST-SEVERANCE COMPENSATION.** Total Compensation includes post-severance compensation, to the extent provided in Section 1.94(b) of the Plan.

- ☐ (a) **Exclusion of post-severance compensation from Total Compensation.** The following amounts paid after a Participant's severance of employment are excluded from Total Compensation.
- ☐ (1) **Unused leave payments.** Payment for unused accrued bona fide sick, vacation, or other leave, but only if the Employee would have been able to use the leave if employment had continued.
- ☐ (2) **Deferred compensation.** Payments received by an Employee pursuant to a nonqualified unfunded deferred compensation plan, but only if the payment would have been paid to the Employee at the same time if the Employee had continued in employment and only to the extent that the payment is includible in the Employee's gross income.

[Note: Plan Compensation (as defined in Section 1.75 of the Plan) includes any post-severance compensation amounts that are includible in Total Compensation. The Employer may elect to exclude all compensation paid after severance of employment from the definition of Plan Compensation under AA §5-3(j) below or may elect to exclude specific types of post-severance compensation from Plan Compensation under AA §5-3(l) below.]

- ☐ (b) **Continuation payments for disabled Participants.** If this subsection (b) is not elected, Total Compensation does not include continuation payments for disabled Participants. If this subsection (b) is elected, Total Compensation shall include post-severance compensation paid to a Participant who is permanently and totally disabled, as provided in Section 1.94(c) of the Plan.

5-3 **PLAN COMPENSATION.** Plan Compensation is **Total Compensation** (as defined in AA §5-1 above) with the following exclusions described below.

- ☒ (a) No exclusions.
- ☐ (b) Elective Deferrals (as defined in Section 1.36 of the Plan), pre-tax contributions to a cafeteria plan or a Code §457 plan, and qualified transportation fringes under Code §132(f)(4) are excluded.
- ☐ (c) All fringe benefits (cash and noncash), reimbursements or other expense allowances, moving expenses, deferred compensation, and welfare benefits are excluded.
- ☐ (d) Compensation above \$___ is excluded.
- ☐ (e) Amounts received as a bonus are excluded.
- ☐ (f) Amounts received as commissions are excluded.
- ☐ (g) Overtime payments are excluded.
- ☐ (h) Amounts received for services performed for a non-signatory Related Employer are excluded. (See Section 2.02(c) of the Plan.)

[Note: If this subsection (h) is not elected, amounts received for services performed for a non-signatory Related Employer are INCLUDED in Plan Compensation.]

- ☐ (i) "Deemed §125 compensation" as defined in Section 1.94(d) of the Plan.
- ☐ (j) Amounts received after termination of employment are excluded. (See Section 1.94(b) of the Plan.)
- ☐ (k) Differential Pay (as defined in Section 1.94(e) of the Plan).
- ☐ (l) Describe adjustments to Plan Compensation: _____

[Note: Any modification under subsection (l) above must be definitely determinable and preclude Employer discretion. The elections under this AA §5-3 apply to any Pick-Up Contributions and any After-Tax Employee Contributions selected under AA §6-6, unless elected otherwise under subsection (l).]

5-4 **PERIOD FOR DETERMINING COMPENSATION.**

- (a) **Compensation Period.** Plan Compensation will be determined on the basis of the following period(s). *[Note: If a period other than the Plan Year applies, any reference to the Plan Year as it refers to Plan Compensation will be deemed to be a reference to the period designated under this AA §5-4.]*
- ☒ (1) The Plan Year.
- ☐ (2) The calendar year ending in the Plan Year.
- ☐ (3) The Employer's fiscal tax year ending in the Plan Year.
- ☐ (4) The 12-month period ending on _____ which ends during the Plan Year.

- (b) **Compensation while a Participant.** Unless provided otherwise under this subsection (b), in determining Plan Compensation, only compensation earned while an individual is a Participant under the Plan will be taken into account. To count compensation for the entire Plan Year, including compensation earned while an individual is not a Participant, check below. (See Section 1.75(b) of the Plan.)
- ☒ All compensation earned during the Plan Year will be taken into account, including compensation earned while an individual is not a Participant.
- (c) **Few weeks rule.** The few weeks rule (as described in Section 5.02(c)(7)(i) of the Plan) will not apply unless designated otherwise under this subsection (c).
- ☐ Amounts earned but not paid during a Limitation Year solely because of the timing of pay periods and pay dates shall be included in Total Compensation for the Limitation Year, provided the amounts are paid during the first few weeks of the next Limitation Year, the amounts are included on a uniform and consistent basis with respect to all similarly situated Employees, and no amounts are included in more than one Limitation Year.

SECTION 6 EMPLOYER AND EMPLOYEE CONTRIBUTIONS

- 6-1 **EMPLOYER / EMPLOYEE CONTRIBUTIONS.** The Employer will contribute to the Plan each Plan Year the amount determined under the Employer Contribution formula designated in AA §6-2 below. If so elected under AA §6-6, the Employer also may authorize Employees to make After-Tax Employee Contributions and/or Employer Pick-Up Contributions under the Plan.
- 6-2 **EMPLOYER CONTRIBUTION FORMULA.** For the period designated in AA §6-4 below, the Employer will make the following Employer Contributions on behalf of Participants who satisfy the allocation conditions designated in AA §6-5 below.
- ☒ (a) **Fixed contribution.**
- ☒ (1) **Fixed percentage.** 10.2 % of each Participant's Plan Compensation.
- ☐ (2) **Fixed dollar.** \$ ____ for each Participant.
- ☐ (b) **Contributions under Collective Bargaining Agreement, employment contract or equivalent arrangement.** The Employer will make an Employer Contribution based on a Collective Bargaining Agreement, employment agreement or equivalent arrangement as follows: _____
- [Note: Insert the appropriate contribution formula (and allocation formula, if applicable) from the Collective Bargaining Agreement, employment agreement or equivalent arrangement. The formula must be definitely determinable as required under Treas. Reg. §1.401-1.]*
- ☐ (c) **Permitted disparity contribution.**
- ☐ (1) **Individual method.** The Employer will contribute:
- ☐ (i) ____% of each Participant's Plan Compensation plus
- ☐ (ii) ____% of each Participant's Excess Compensation.
- [Note: The percentage of Excess Compensation may not exceed the Maximum Disparity Rate. See Section 3.02(b)(2)(i)(C) of the Plan.]*
- ☐ (2) **Group method.** The Employer will contribute ____% (not more than 25%) of total Plan Compensation of all Participants who satisfy the allocation conditions under AA §6-5 below. The Employer Contribution will be allocated under the two-step method (as defined in Section 3.02(a)(1)(i)(B)(I) of the Plan).
- ☐ (3) **Modification of permitted disparity rules.**
- ☐ (i) **Integration Level.** For purposes of determining the permitted disparity contribution under subsection (1) or (2) above, instead of the Taxable Wage Base (as defined in Section 1.92 of the Plan), the Integration Level is:
- ☐ (A) ____% of the Taxable Wage Base, increased (but not above the Taxable Wage Base) to the next higher:
- | | |
|--------------------------------------|---------------------------------------|
| ☐ (I) N/A | ☐ (II) \$1 |
| ☐ (III) \$100 | ☐ (IV) \$1,000 |

☐ (B) \$____ (not to exceed the Taxable Wage Base)

☐ (C) 20% of the Taxable Wage Base

[Note: See Section 3.02(b)(2)(i)(C) of the Plan for rules regarding the Maximum Disparity Rate that may be used where an Integration Level other than the Taxable Wage Base is selected.]

- ☐ (d) **Contribution for designated Employee groups.** The Employer will make an Employer Contribution to the Participants in the following designated groups. The amount to be contributed with respect to a designated Employee group will be determined under subsection (2) below.

- (1) **Designated Employee groups.** A separate Employer Contribution will be made to the following Employee groups:

[Note: The Employee groups designated above must be clearly defined in a manner that will not violate the definite allocation formula requirement of Treas. Reg. §1.401-1(b)(1)(i).]

- (2) **Employer Contribution percentages.**

- (3) **Special rules – More than one Employee group.** Unless designated otherwise under subsection (i), if a Participant is in more than one allocation group described in subsection (1) above during the Plan Year, the Participant will receive an Employer Contribution based on the Participant's status on the last day of the Plan Year. (See Section 3.02(b)(3) of the Plan.)

- ☐ (i) **Determined separately for each Employee group.** If a Participant is in more than one allocation group during the Plan Year, the Participant's share of the Employer Contribution will be based on the Participant's status for the part of the year the Participant is in each allocation group.

- ☐ (ii) **Describe:** _____
[Note: The language under this subsection (ii) may only describe the amount of the Employer Contribution a Participant will receive when such Participant is in more than one allocation group. Any language under this subsection (ii) must be definitely determinable.]

- ☐ (e) **Age-based contribution.** The Employer will contribute ____% of each Participant's adjusted Plan Compensation. For this purpose, a Participant's adjusted Plan Compensation is determined by multiplying the Participant's Plan Compensation by an Actuarial Factor (as described in Section 1.03 of the Plan).

A Participant's Actuarial Factor is determined based on a specified interest rate and mortality table. Unless designated otherwise under subsection (1) or (2) below, the Plan will use an applicable interest rate of 8.5% and a UP-1984 mortality table.

- ☐ (1) **Applicable interest rate.** Instead of 8.5%, the Plan will use an interest rate of ____% (must be between 7.5% and 8.5%) in determining a Participant's Actuarial Factor.

- ☐ (2) **Applicable mortality table.** Instead of the UP-1984 mortality table, the Plan will use the following mortality table in determining a Participant's Actuarial Factor: _____

- ☐ (3) **Describe special rules applicable to age-based allocation:** _____

[Note: See Appendix A of the Plan for sample Actuarial Factors based on an 8.5% applicable interest rate and the UP-1984 mortality table. If an interest rate or mortality table other than 8.5% or UP-1984 is selected, appropriate Actuarial Factors must be calculated. Subsection (3) must provide for a definitely determinable allocation method.]

- ☐ (f) **Service-based contribution.** The Employer will make the following contribution based on units of service designated under subsections (3) – (5) below.

- ☐ (1) **Fixed percentage.** ____% of Plan Compensation paid for each period of service designated below.

- ☐ (2) **Fixed dollar.** \$____ for each period of service designated below.

The service-based contribution will be based on the following periods of service:

- ☐ (3) Each Hour of Service

- ☐ (4) Each week of employment

- ☐ (5) Describe period: _____

The service-based contribution is subject to the following rules.

- ☐ (6) Describe any special provisions that apply to service-based contribution: _____
- [**Note:** Subsection (6) may only be used to describe a definite allocation formula. Any period described in subsection (5) must apply uniformly to all Participants.]

6-3 **SPECIAL RULES.** No special rules apply with respect to Employer Contributions under the Plan, except to the extent designated under this AA §6-3.

- ☐ (a) **Limit on Employer Contributions.** The Employer Contribution elected in AA §6-2 may not exceed:
- ☐ (1) _____% of Plan Compensation
- ☐ (2) \$_____
- ☐ (b) **Offset of Employer Contribution.**
- ☐ (1) A Participant's contribution of Employer Contributions under AA §6-2 above is reduced by contributions under _____ [insert name of plan(s)]. (See Section 3.02(b) of the Plan.)
- ☐ (2) In applying the offset under this subsection (b), the following rules apply: _____
- ☐ (c) **Special rules:** _____
- [**Note:** Any special rules under this subsection (c) must be definitely determinable.]

6-4 **PERIOD FOR DETERMINING EMPLOYER/EMPLOYEE CONTRIBUTION.** Unless designated otherwise in this AA §6-4, in determining the amount of the Employer/Employee Contributions to be allocated under this AA §6, the contribution will be based on Plan Compensation earned during the Plan Year.

Alternatively, instead of the Plan Year, the Employer/Employee Contributions will be determined based on Plan Compensation earned during the following period: [**Note:** The Plan Year must be used if the permitted disparity contribution formula is selected under AA §6-2(c) above.]

- ☐ (a) Plan Year quarter
- ☐ (b) calendar month
- ☐ (c) payroll period
- ☐ (d) Other: _____

[**Note:** Although Employer Contributions are determined on the basis of Plan Compensation earned during the period designated under this AA §6-4, this does not require the Employer to actually make contributions on the basis of such period. Employer Contributions may be contributed to Participants at any time within the contribution period permitted under Treas. Reg. §1.415-6, regardless of the period selected under this AA §6-4.]

6-5 **ALLOCATION CONDITIONS.** A Participant must satisfy any allocation conditions designated under this AA §6-5 to receive an allocation of Employer Contributions under the Plan. [**Note:** No allocation conditions apply to After-Tax Employee Contributions or Employer Pick-Up Contributions under AA §6-6.]

- ☒ (a) **No allocation conditions** apply with respect to Employer Contributions under the Plan.
- ☐ (b) **Employment condition.** An Employee must be employed with the Employer on the last day of the Plan Year.
- ☐ (c) **Minimum service condition.** An Employee must be credited with at least:
- ☐ (1) _____ Hours of Service during the Plan Year.
- ☐ (i) Hours of Service are determined using actual Hours of Service.
- ☐ (ii) Hours of Service are determined using the following Equivalency Method (as defined under Section 2.03(a)(5) of the Plan):
- | | |
|--|---|
| ☐ (A) Monthly | ☐ (B) Weekly |
| ☐ (C) Daily | ☐ (D) Semi-monthly |
| ☐ (E) Describe: _____ | |

[*Note: Any description under this subsection (E) must be definitely determinable.*]

- ☐ (2) ___ consecutive days of employment with the Employer during the Plan Year.
- ☐ (d) **Exceptions.**
- ☐ (1) The above allocation condition(s) will **not** apply if the Employee, during the Plan Year:
- ☐ (i) dies.
 - ☐ (ii) terminates employment due to becoming Disabled.
 - ☐ (iii) becomes Disabled.
 - ☐ (iv) terminates employment after attaining Normal Retirement Age.
[*Note: This waiver of allocation conditions applies only once during the Participant's employment with the Employer. The Employer may modify this rule in subsection (e) below.*]
 - ☐ (v) terminates employment after attaining Early Retirement Age.
[*Note: This waiver of allocation conditions applies only once during the Participant's employment with the Employer. The Employer may modify this rule in subsection (e) below.*]
 - ☐ (vi) is on an authorized leave of absence from the Employer.
- ☐ (2) The exceptions selected under subsection (1) above will apply even if an Employee has not terminated employment at the time of the selected event(s).
- ☐ (3) The exceptions selected under subsection (1) above do not apply to:
- ☐ (i) an employment condition under subsection (b) above.
 - ☐ (ii) a minimum service condition under subsection (c) above.
- ☐ (e) **Describe** any special rules governing the allocation conditions under the Plan: _____
[*Note: Any special rules under this subsection (e) must be definitely determinable.*]

6-6 **AFTER-TAX EMPLOYEE CONTRIBUTIONS AND EMPLOYER PICK-UP CONTRIBUTIONS.**

- ☐ (a) **Voluntary After-Tax Employee Contributions.** If permitted under this subsection (a), a Participant may contribute any amount as Voluntary After-Tax Employee Contributions up to the Code §415 Limitation (as defined in Section 5.02 of the Plan), except as limited under this subsection (a).
- ☐ (1) **Limits on Voluntary After-Tax Employee Contributions.** If this subsection (1) is checked, the following limits apply to Voluntary After-Tax Employee Contributions:
- ☐ (i) **Maximum limit.** A Participant may make Voluntary After-Tax Employee Contributions up to
 - ☐ (A) ___ % of Plan Compensation
 - ☐ (B) \$_____for the following period:
 - ☐ (C) the entire Plan Year.
 - ☐ (D) the portion of the Plan Year during which the Employee is eligible to participate.
 - ☐ (E) each separate payroll period during which the Employee is eligible to participate.
 - ☐ (ii) **Minimum limit.** The amount of Voluntary After-Tax Employee Contributions a Participant may make for any payroll period may not be less than:
 - ☐ (A) ___ % of Plan Compensation.
 - ☐ (B) \$_____.
- (2) **Change or revocation of Voluntary After-Tax Employee Contributions.** In addition to the Participant's Entry Date under the Plan, a Participant's election to change or resume an after-tax election will be effective as set forth under the After-Tax Employee Contributions election form or other written procedures adopted by the Plan Administrator. A Participant must be permitted to change or revoke an after-tax election at least once per year. Unless the After-Tax Contributions election form or other written procedures adopted by the Plan Administrator provide otherwise, a Participant may revoke an after-tax election (on a prospective basis) at any

time. Unless designated otherwise in a Participants after-tax election form, a Participant's affirmative election to make an After-Tax Employee Contribution will cease upon termination of employment and the Participant will need to make a new election upon rehire.

- ☐ (3) **Other limits or special rules relating to Voluntary After-Tax Employee Contributions:** _____

[**Note:** Any limits described under this subsection (3) must be consistent with the provisions of Section 3.04 of the Plan.]

- ☐ (b) **Mandatory After-Tax Employee Contributions.** If this subsection (b) is checked, Employees are required to make Mandatory After-Tax Employee Contributions in order to participate under the Plan.

- ☐ (1) **Amount of Mandatory After-Tax Employee Contributions.** Employees are required to contribute the following amount in order to participate in the Plan:

☐ (i) _____ % of each Employee's Total Compensation.

☐ (ii) \$_____ for each Participant.

☐ (iii) Describe rate or amount: _____

- ☐ (2) **Special rules** applicable to Mandatory After-Tax Employee Contributions: _____

- ☒ (c) **Employer Pick-Up Contributions.** Each Participant will be required to make a Pick-up Contribution to the Plan equal to the amount specified under this subsection (c). Any amounts contributed pursuant to this subsection (c) will be picked up by the Employer pursuant to Code §414(h) and will be treated as Employer Contributions under the Plan. Such contributions and earnings thereon will be 100% vested at all times. (See Section 3.03 of the Plan.)

- ☒ (1) The following amounts will be contributed to the Plan as an Employer Pick-Up Contribution:

☒ (i) 10.2 % of Plan Compensation.

☐ (ii) \$_____ per pay period.

☐ (iii) Any amount from _____ % to _____ % of Plan Compensation, as designated by the Employee.

[**Note:** This subsection (iii) may only be selected if the Employee designates the amount as a one-time irrevocable election.]

- ☐ (2) Elect this subsection (2) if an Employee may make a one-time irrevocable election not to make Employer Pick-Up Contributions under the Plan.

- ☐ (3) **Special rules** applicable to Employer Pick-Up Contributions: _____

[**Note:** Any Employer Pick-Up Contributions made under this subsection (c) must satisfy the requirements of Section 3.03 of the Plan. See AA §11-4 for an Employee's ability to elect out of making Employer Pick-Up Contributions.]

SECTION 7 RETIREMENT AGES

- 7-1 **NORMAL RETIREMENT AGE.** Normal Retirement Age under the Plan is:

☒ (a) Age 59 1/2 (not to exceed 65).

☐ (b) The later of age _____ (not to exceed 65) or the _____ (not to exceed 5th) anniversary of:

☐ (1) the Employee's participation commencement date (as defined in Section 1.68 of the Plan).

☐ (2) the Employee's employment commencement date.

☐ (c) Describe Normal Retirement Age: _____

[**Note:** The Normal Retirement Age must be reasonably representative of the typical retirement age for the industry in which the Plan Participants work. A Normal Retirement Age of at least age 62 is deemed to be reasonable while a Normal Retirement Age under age 55 is presumed not to satisfy this requirement unless facts and circumstances show otherwise. Whether a Normal Retirement Age between 55 and 62 satisfies this requirement depends on the facts and circumstances. A Governmental Plan must comply with the final Normal Retirement Age regulations under Treas. Reg. §1.401(a)-1, as amended, effective for Annuity Starting Dates occurring in Plan Years beginning on or after the later of the two dates described in IRS Notice 2012-29. The Employer may use AA §7-1(c), for example, to describe a reasonable Normal Retirement Age that is between age 55 and 62 that takes into account service as well as age.]

7-2 **EARLY RETIREMENT AGE.** Unless designated otherwise under this AA §7-2, there is no Early Retirement Age under the Plan.

☐ (a) A Participant reaches Early Retirement Age if he/she is still employed after attainment of each of the following:

☐ (1) Attainment of age ____

☐ (2) The ____ anniversary of the date the Employee commenced participation in the Plan, and/or

☐ (3) The completion of ____ Years of Service, determined as follows:

☐ (i) Same as for eligibility.

☐ (ii) Same as for vesting.

☐ (b) Describe. _____

SECTION 8 VESTING AND FORFEITURES

8-1 **VESTING OF EMPLOYER CONTRIBUTIONS.** The Employer Contributions authorized under AA §6-2 will vest in accordance with the vesting schedule designated under AA §8-2.

8-2 **VESTING SCHEDULE.** The vesting schedule under the Plan is as follows. See Section 6.02 of the Plan for a description of the various vesting schedules under this AA §8-2.

☒ (a) **Vesting schedule:**

☐ (1) Full and immediate vesting

☐ (2) Three-year cliff vesting schedule

☐ (3) Six-year graded vesting schedule

☒ (4) Modified vesting schedule

0 ____ % immediately on Plan participation

20 ____ % after 1 Year of Service

40 ____ % after 2 Years of Service

60 ____ % after 3 Years of Service

80 ____ % after 4 Years of Service

100 ____ % after 5 Years of Service

100 ____ % after 6 Years of Service

100 ____ % after 7 Years of Service

100 ____ % after 8 Years of Service

100 ____ % after 9 Years of Service

100% after 10 Years of Service

☐ (5) Other vesting schedule: _____

[Note: If a modified vesting schedule is selected under this subsection (a), the vested schedule must satisfy the pre-ERISA Code vesting requirements.]

☐ (b) **Special provisions applicable to vesting schedule:** _____

[Note: This subsection (b) may be used to apply a different vesting schedule for different contribution formulas or different Employee groups under the Plan. Any special provision must satisfy the pre-ERISA Code vesting requirements.]

8-3 **VESTING SERVICE.** In applying the vesting schedules under this AA §8, all service with the Employer counts for vesting purposes, unless designated otherwise under this AA §8-3.

- ☐ (a) Service before the original Effective Date of this Plan (or a Predecessor Plan) is excluded.
- ☐ (b) Service completed before the Employee's ____ birthday is excluded.
- ☐ (c) Describe vesting service exclusions: _____

[**Note:** See Section 6.07 of the Plan and AA §4-5 for rules regarding the crediting of service with Predecessor Employers for purposes of vesting under the Plan.]

8-4 **VESTING UPON DEATH, DISABILITY OR EARLY RETIREMENT AGE.** An Employee's vesting percentage increases to 100% if, while employed with the Employer, the Employee

- ☒ (a) dies
- ☒ (b) terminates employment due to becoming Disabled
- ☒ (c) becomes Disabled
- ☐ (d) reaches Early Retirement Age
- ☐ (e) Not applicable. No increase in vesting applies.

8-5 **DEFAULT VESTING RULES.** In applying the vesting requirements under this AA §8, the following default rules apply. [**Note:** No election should be made under this AA §8-5 if full and immediate vesting is selected under AA §8-2.]

- **Year of Service.** An Employee earns a Year of Service for vesting purposes upon completing 1,000 Hours of Service during a Vesting Computation Period. Hours of Service are calculated based on actual hours worked during the Vesting Computation Period. (See Section 1.57 of the Plan for the definition of Hours of Service.)
- **Vesting Computation Period.** The Vesting Computation Period is the Plan Year.

To override the default vesting rules, complete the applicable sections of this AA §8-5. If this AA §8-5 is not completed, the default vesting rules apply.

- ☐ (a) **Year of Service.** Instead of 1,000 Hours of Service, an Employee earns a Year of Service upon the completion of ____ Hours of Service during a Vesting Computation Period.
- ☐ (b) **Vesting Computation Period.** Instead of the Plan Year, the Vesting Computation Period is:
 - ☐ (1) The 12-month period beginning with the Employee's Employment Commencement Date and, for subsequent Vesting Computation Periods, the 12-month period beginning with the anniversary of the Employee's Employment Commencement Date.
 - ☐ (2) Describe: _____

[**Note:** Any Vesting Computation Period described in this subsection (2) must be a 12-consecutive month period and must apply uniformly to all Participants.]

- ☐ (c) **Elapsed Time Method.** Instead of determining vesting service based on actual Hours of Service, vesting service will be determined under the Elapsed Time Method. If this subsection (c) is checked, service will be measured from the Employee's Employment Commencement Date (or Reemployment Commencement Date, if applicable) without regard to the Vesting Computation Period designated in Section 6.05 of the Plan. (See Section 6.04(b) of the Plan.)
- ☐ (d) **Equivalency Method.** For purposes of determining an Employee's Hours of Service for vesting, the Plan will use the Equivalency Method (as defined in Section 6.04(a)(2) of the Plan). The Equivalency Method will apply to:
 - ☐ (1) All Employees.
 - ☐ (2) Only to Employees for whom the Employer does not maintain hourly records. For Employees for whom the Employer maintains hourly records, vesting will be determined based on actual hours worked.

Hours of Service for vesting will be determined under the following Equivalency Method.

 - ☐ (3) **Monthly.** 190 Hours of Service for each month worked.
 - ☐ (4) **Weekly.** 45 Hours of Service for each week worked.
 - ☐ (5) **Daily.** 10 Hours of Service for each day worked.
 - ☐ (6) **Semi-monthly.** 95 Hours of Service for each semi-monthly period.

☐ (7) Describe Equivalency Method: _____

[Note: Any description of an Equivalency Method under this subsection (7) must be definitely determinable.]

☐ (e) Special rules: _____

[Note: Any special rules under this subsection (e) must be definitely determinable.]

8-6 **BREAKS IN SERVICE.** Generally, an Employee will be credited with all service earned with the Employer, including service earned prior to a Break in Service. To disregard service earned prior to a Break in Service for vesting purposes, complete this AA §8-6. (See Section 6.08 of the Plan.)

- ☐ (a) If an Employee incurs at least one Break in Service, the Plan will disregard all service earned prior to such Break in Service for purposes of determining vesting under the Plan.
- ☐ (b) If an Employee incurs at least _____ consecutive Breaks in Service, the Plan will disregard all service earned prior to such consecutive Breaks in Service for purposes of determining vesting under the Plan. [Enter "0" if prior service will be disregarded for all rehired Employees.]
- ☐ (c) The Nonvested Participant Break in Service rule applies to all Employees, including Employees who have not terminated employment.
- ☐ (d) Describe any special rules for applying the vesting Break in Service rules: _____

[Note: Any special rules under this subsection (d) must be definitely determinable.]

8-7 **ALLOCATION OF FORFEITURES.**

The Employer may decide in its discretion how to treat forfeitures under the Plan. Alternatively, the Employer may designate under this AA §8-7 how forfeitures occurring during a Plan Year will be treated. (See Section 6.11 of the Plan.)

- ☐ (a) N/A. All contributions are 100% vested. [Do not complete the rest of this AA §8-7.]
- ☐ (b) Reallocated as additional Employer Contributions.
- ☐ (c) Used to reduce Employer Contributions.

For purposes of subsection (b) or (c) above, forfeitures will be applied:

- ☐ (d) for the Plan Year in which the forfeiture occurs.
- ☐ (e) for the Plan Year following the Plan Year in which the forfeitures occur.

Prior to applying forfeitures under subsection (b) or (c) above.

- ☐ (f) Forfeitures will be used to pay Plan expenses. (See Section 6.11(d) of the Plan.)
- ☐ (g) Forfeitures will not be used to pay Plan expenses.

In determining the amount of forfeitures to be allocated under subsection (b) above, the same allocation conditions apply as under AA §6-5, unless designated otherwise below.

- ☐ (h) Forfeitures are not subject any allocation conditions.
- ☐ (i) Forfeitures are subject to a last day of employment allocation condition.
- ☐ (j) Forfeitures are subject to a _____ Hours of Service minimum service requirement.

In determining the treatment of forfeitures under this AA §8-7, the following special rules apply:

☐ (k) Describe: _____

8-8 **SPECIAL RULES REGARDING CASH-OUT DISTRIBUTIONS.**

- (a) **Additional allocations.** If a terminated Participant receives a complete distribution of his/her vested Account Balance while still entitled to an additional allocation, the Cash-Out Distribution forfeiture provisions do not apply until the Participant receives a distribution of the additional amounts to be allocated. (See Section 6.10(a)(1) of the Plan.)

To modify the default Cash-Out Distribution forfeiture rules, complete this AA §8-8(a).

- ☐ The Cash-Out Distribution forfeiture provisions will apply if a terminated Participant takes a complete distribution, regardless of any additional allocations during the Plan Year.

- (b) **Timing of forfeitures.** A Participant who receives a Cash-Out Distribution (as defined in Section 6.10(a) of the Plan) is treated as having an immediate forfeiture of his/her nonvested Account Balance.

To modify the forfeiture timing rules to delay the occurrence of a forfeiture upon a Cash-Out Distribution, complete this AA §8-8(b).

- ☐ A forfeiture will occur upon the completion of ____ consecutive Breaks in Service (as defined in Section 6.08 of the Plan).

- (c) **Repayment of Cash-Out Distribution.** Unless elected otherwise under this AA §8-8(c), if a Participant receives a Cash-Out Distribution that results in a forfeiture, and the Participant resumes employment covered under the Plan, such Participant may repay to the Plan the amount received as a Cash-Out Distribution.

- ☐ If a Participant receives a Cash-Out Distribution that results in a forfeiture, and the Participant resumes employment covered under the Plan, such Participant may NOT repay to the Plan the amount received as a Cash-Out Distribution and the provisions of Section 6.10(a)(2) do not apply.

- 8-9 **SPECIAL RULE FOR FORFEITURE UPON DEATH OF A PARTICIPANT.** Unless elected below, no vested benefits are forfeited upon the death of a Participant.

To modify this default forfeiture rule, check to box below.

- ☐ The Plan will forfeit benefits (including vested benefits) upon the death of a Participant, if not precluded by law. In no event may the Plan forfeit any amounts attributable to After-Tax Employee Contributions under the Plan or if the Plan has commenced distributions prior to the Participant's death.

SECTION 9

DISTRIBUTION PROVISIONS – TERMINATION OF EMPLOYMENT

- 9-1 **AVAILABLE FORMS OF DISTRIBUTION.**

Lump sum distribution. A Participant may take a distribution of his/her entire vested Account Balance in a single lump sum upon termination of employment. In addition, the Plan Administrator may permit a Participant to take partial distributions or installment distributions solely to the extent necessary to satisfy the required minimum distribution rules under Section 8 of the Plan.

Additional distribution options. To provide for additional distribution options, check the applicable distribution forms under this AA §9-1.

- ☒ (a) **Installment distributions.** A Participant may take a distribution over a specified period not to exceed the life or life expectancy of the Participant (and a designated beneficiary).

- ☒ (b) **Partial lump sum.** A Participant may take a distribution of less than the entire vested Account Balance upon termination of employment.

- ☐ Minimum distribution amount. A Participant may not take a partial lump sum distribution of less than \$____.

- ☒ (c) **Annuity distributions.** A Participant may elect to have the Plan Administrator use the Participant's vested Account Balance to purchase an annuity as described in Section 7.01 of the Plan.

- ☐ (d) **Describe distribution options:** _____

[Note: Any distribution option described in this subsection (d) may not be subject to the discretion of the Employer or Plan Administrator.]

- 9-2 **PARTICIPANT AND SPOUSAL CONSENT.**

- ☒ (a) **Involuntary Cash-Out Distribution.** A Participant who terminates employment with a vested Account Balance of \$5,000 or less will receive an Involuntary Cash-Out Distribution, unless elected otherwise under this AA §9-2. If a Participant's vested Account Balance exceeds \$5,000, the Participant generally must consent to a distribution from the Plan, except to the extent provided otherwise under this AA §9-2. See Section 7.03 of the Plan for additional rules regarding the Participant consent requirements under the Plan.

- ☐ (1) **No Involuntary Cash-Out Distributions.** The Plan does not provide for Involuntary Cash-Out Distributions. A terminated Participant must consent to any distribution from the Plan. (See Section 14.02(b) of the Plan for special rules upon Plan termination.)

- ☒ (2) **Involuntary Cash-Out Distribution threshold.** A terminated Participant will receive an Involuntary Cash-Out Distribution only if the Participant's vested Account Balance is less than or equal to \$1,000_____.

- ☐ (3) **Application of Automatic Rollover rules.** The Automatic Rollover rules described in Section 7.05 of the Plan do not apply to any Involuntary Cash-Out Distribution below \$1,000, unless elected otherwise under this subsection (3). If this subsection (3) is checked, the Automatic Rollover provisions apply to all Involuntary Cash-Out Distributions (including those below \$1,000).
- ☐ (4) **Distribution upon attainment of stated age.** Participant consent will not be required with respect to distributions made upon attainment of Normal Retirement Age (or age 62, if later), regardless of the value of the Participant's vested Account Balance.
- ☒ (5) **Treatment of Rollover Contributions.** Unless elected otherwise under this subsection (5), Rollover Contributions will be excluded in determining whether a Participant's vested Account Balance exceeds the Involuntary Cash-Out threshold for purposes of applying the distribution rules under this AA §9 and the Automatic Rollover provisions under Section 7.05 of the Plan. To include Rollover Contributions in determining whether a Participant's vested Account Balance exceeds the Involuntary Cash-Out threshold, check this subsection (5).
- ☐ (b) **Spousal consent.** Spousal consent is not required for a Participant to receive a distribution or name an alternate beneficiary, unless designated otherwise under this subsection (b). See Section 9.02 of the Plan for rules regarding Spousal consent under the Plan.
- ☐ (1) **Distribution consent.** A Participant's Spouse must consent to any distribution or loan, provided the Participant's vested Account Balance exceeds \$_____.
- ☐ (2) **Beneficiary consent.** A Participant's Spouse must consent to naming someone other than the Spouse as beneficiary under the Plan.
- ☐ (c) **Describe** any special rules affecting Participant or Spousal consent: _____
[Note: Any special rules under this subsection (c) must be definitely determinable.]

9-3 TIMING OF DISTRIBUTIONS UPON TERMINATION OF EMPLOYMENT.

- (a) **Distribution of vested Account Balances exceeding \$5,000.** A Participant who terminates employment with a vested Account Balance exceeding \$5,000 may receive a distribution of his/her vested Account Balance in any form permitted under AA §9-1 within a reasonable period following:
- ☒ (1) the date the Participant terminates employment.
- ☐ (2) the last day of the Plan Year during which the Participant terminates employment.
- ☐ (3) the first Valuation Date following the Participant's termination of employment.
- ☐ (4) the end of the calendar quarter following the date the Participant terminates employment.
- ☐ (5) attainment of Normal Retirement Age, death or becoming Disabled.
- ☐ (6) Describe: _____
[Note: Any special rules under this subsection (6) must be definitely determinable.]
- (b) **Distribution of vested Account Balances not exceeding \$5,000.** A Participant who terminates employment with a vested Account Balance that does not exceed \$5,000 will receive a **lump sum** distribution of his/her vested Account Balance within a reasonable period following:
- ☒ (1) the date the Participant terminates employment.
- ☐ (2) the last day of the Plan Year during which the Participant terminates employment.
- ☐ (3) the first Valuation Date following the Participant's termination of employment.
- ☐ (4) the end of the calendar quarter following the date the Participant terminates employment.
- ☐ (5) Describe: _____
[Note: Any special rules under this subsection (5) must be definitely determinable.]
- ☐ (c) **Alternate Cash-Out distribution threshold.** Instead of a vested Account Balance Cash-Out threshold of \$5,000, for purposes of applying the Cash-Out distribution provisions under this AA §9-3, the threshold for distributions upon termination of employment will be based on a vested Account Balance of \$_____.

- ☐ (d) **Describe additional distribution options:** _____
[Note: Any additional distribution option described in this subsection (d) may not be subject to the discretion of the Employer or Plan Administrator.]

9-4 **DISTRIBUTION UPON DISABILITY.** Unless designated otherwise under this AA §9-4, a Participant who terminates employment on account of becoming Disabled may receive a distribution of his/her vested Account Balance in the same manner as a regular distribution upon termination.

- ☐ (a) **Immediate distribution upon termination of employment.** Distribution will be made as soon as reasonable following the date the Participant terminates employment on account of becoming Disabled.
- ☐ (b) **Following year distribution upon termination of employment.** Distribution will be made as soon as reasonable following the last day of the Plan Year during which the Participant terminates on account of becoming Disabled.
- ☐ (c) **Describe:** _____

[Note: Any distribution event described in this subsection (c) will apply uniformly to all Participants under the Plan and may not be subject to the discretion of the Employer or Plan Administrator.]

9-5 **DETERMINATION OF BENEFICIARY.**

- (a) **Default beneficiaries.** Under Section 7.07(c) of the Plan, to the extent a Beneficiary has not been named by the Participant (subject to the spousal consent rules) and is not designated under the terms of the Investment Arrangement(s) to receive all or any portion of the deceased Participant's death benefit, such amount shall be distributed to the Participant's surviving Spouse (if the Participant was married at the time of death) who shall be considered the designated Beneficiary. If the Participant does not have a surviving Spouse at the time of death, distribution will be made to the Participant's surviving children (including legally adopted children, but not including step-children), as designated Beneficiaries, in equal shares. If the Participant has no surviving children, distribution will be made to the Participant's estate.

- ☐ If this subsection (a) is checked, the default beneficiaries under Section 7.07(c) of the Plan are modified as follows:

- ☐ (1) The Plan adopts the default beneficiary rules under Section 7.07(c) of the Plan, except, if the Participant does not have a surviving Spouse at the time of death, distribution will be made to the Participant's children (including legally adopted children, but not including step-children), as designated Beneficiaries, **per stirpes**.

- ☐ (2) Describe other modifications to the default beneficiaries under Section 7.07(c) of the Plan: _____

[Note: The description of the modifications to the default beneficiaries must be sufficiently clear for the Plan Administrator to determine the beneficiaries and the method of distribution of the Participant's death benefit.]

- (b) **One-year marriage rule.** For purposes of determining whether an individual is considered the surviving Spouse of the Participant, the determination is based on the marital status as of the date of the Participant's death, unless designated otherwise under this subsection (b).

- ☐ If this subsection (b) is checked, in order to be considered the surviving Spouse, the Participant and surviving Spouse must have been married for the entire one-year period ending on the date of the Participant's death. If the Participant and surviving Spouse are not married for at least one year as of the date of the Participant's death, the Spouse will not be treated as the surviving Spouse for purposes of applying the distribution provisions of the Plan. (See Section 9.03 of the Plan.)

- (c) **Divorce of Spouse.** Unless elected otherwise under this subsection (c), if a Participant designates his/her Spouse as Beneficiary and subsequent to such Beneficiary designation, the Participant and Spouse are divorced, the designation of the Spouse as Beneficiary under the Plan is automatically rescinded as set forth under Section 7.07(c)(6) of the Plan.

- ☐ If this subsection (c) is checked, a Beneficiary designation will not be rescinded upon divorce of the Participant and Spouse.

[Note: Section 7.07(c)(6) of the Plan and this subsection (c) will be subject to the provisions of a Beneficiary designation entered into by the Participant. Thus, if a Beneficiary designation specifically overrides the election under this subsection (c), the provisions of the Beneficiary designation will control. See Section 7.07(c)(6) of the Plan.]

SECTION 10
IN-SERVICE DISTRIBUTIONS AND REQUIRED MINIMUM DISTRIBUTIONS

10-1 **AVAILABILITY OF IN-SERVICE DISTRIBUTIONS.** A Participant may withdraw all or any portion of his/her vested Account Balance, to the extent designated, upon the occurrence of the event(s) selected under this AA §10-1.

- ☐ (a) No in-service distributions are permitted.
- ☒ (b) Attainment of age 62 [may not be earlier than age 62].
- ☐ (c) Attainment of Normal Retirement Age.

10-2 **APPLICATION TO OTHER CONTRIBUTION SOURCES.** If the Plan allows for Rollover Contributions under AA §C-2 or After-Tax Employee Contributions under AA §6-6, unless elected otherwise under this AA §10-2, a Participant may take an in-service distribution from his/her Rollover Account and After-Tax Employee Contribution Account at any time. Employer Pick-Up Contributions will not be eligible for in-service distribution.

Alternatively, if this AA §10-2 is completed, the following in-service distribution provisions apply for Rollover Contributions, After-Tax Employee Contributions and/or Employer Pick-Up Contributions:

Rollover	After-Tax	Pick-Up	
☐	☐	☐	(a) No in-service distributions are permitted.
☐	☐	☐	(b) Attainment of age ____ (Not greater than age 70½).
☐	☐	☐	(c) Attainment of Normal Retirement Age.
☐	☐	☐	(d) Attainment of Early Retirement Age.
☐	☐	☐	(e) Describe: _____

10-3 **SPECIAL DISTRIBUTION RULES.** No special distribution rules apply, unless specifically provided under this AA §10-3.

- ☐ (a) In-service distributions will only be permitted if the Participant is 100% vested in the amounts being withdrawn.
- ☐ (b) A Participant may take no more than ____ in-service distribution(s) in a Plan Year.
- ☐ (c) A Participant may not take an in-service distribution of less than \$ ____.
- ☐ (d) A Participant may not take an in-service distribution of more than \$ ____.
- ☐ (e) Other distribution rules: _____

10-4 **REQUIRED MINIMUM DISTRIBUTIONS.**

- (a) **Required distributions after death.** If a Participant dies before distributions begin and there is a Designated Beneficiary, the Participant or Beneficiary may elect on an individual basis whether the 5-year rule (as described in Section 8.06(a) of the Plan) or the life expectancy method described under Sections 8.02 of the Plan apply. See Section 8.06(b) of the Plan for rules regarding the timing of an election authorized under this AA §10-4.

Alternatively, if selected under this subsection (a), any death distributions to a Designated Beneficiary will be made only under either the 5-year rule or the life expectancy method, as elected below:

- ☐ (1) The five-year rule under Section 8.06(a) of the Plan applies (instead of the life expectancy method). Thus, the entire death benefit must be distributed by the end of the fifth year following the year of the Participant's death. Death distributions to a Designated Beneficiary may not be made under the life expectancy method.
- ☐ (2) The life expectancy method under Sections 8.02 and 8.04 of the Plan (and not the 5-year rule).
- ☐ (b) **Describe any special rules applicable to required minimum distributions:** _____

[Note: Any special rule under this subsection (b) must satisfy the requirements of Code §401(a)(9). This subsection (b) may be used to override the default provision under Section 8.06(b) of the Plan. For example, the Employer may designate the life expectancy rules as the default rather than the five-year rule when a Participant or Beneficiary fails to make an election.]

SECTION 11
MISCELLANEOUS PROVISIONS

11-1 **PLAN VALUATION.** The Plan is valued **annually**, as of the last day of the Plan Year.

☒ (a) **Additional valuation dates.** In addition, the Plan will be valued on the following dates:

☒ (1) **Daily.** The Plan is valued at the end of each business day during which the New York Stock Exchange is open.

☐ (2) **Monthly.** The Plan is valued at the end of each month of the Plan Year.

☐ (3) **Quarterly.** The Plan is valued at the end of each Plan Year quarter.

☐ (4) **Describe:** _____

[Note: The Employer may elect operationally to perform interim valuations, regardless of any selection in this subsection (a).]

☐ (b) **Special rules.** The following special rules apply in determining the amount of income or loss allocated to Participants' Accounts: _____

11-2 **SPECIAL RULES FOR APPLYING THE CODE §415 LIMITATION.** The provisions under Section 5.02 of the Plan apply for purposes of determining the Code §415 Limitation.

Complete this AA §11-2 to override the default provisions that apply in determining the Code §415 Limitation under Section 5.02 of the Plan.

☐ (a) **Limitation Year.** Instead of the Plan Year, the Limitation Year is the 12-month period ending _____.

[Note: If the Plan has a short Plan Year for the first year of establishment, the Limitation Year is deemed to be the 12-month period ending on the last day of the short Plan Year.]

☐ (b) **Imputed compensation.** For purposes of applying the Code §415 Limitation, Total Compensation includes imputed compensation for a Participant who terminates employment on account of becoming disabled as described under Section 5.02(c)(7)(ii) of the Plan.

☐ (c) **Special rules:** _____

[Note: Any special rules under this subsection (c) must be consistent with the requirements of Code §415.]

11-3 **MILITARY SERVICE PROVISIONS -- BENEFIT ACCRUALS.** The benefit accrual provisions under Section 15.04 of the Plan do not apply. To apply the benefit accrual provisions under Section 15.04 of the Plan, check the box below.

☐ **Eligibility for Plan benefits.** Check this box if the Plan will provide the benefits described in Section 15.04 of the Plan. If this box is checked, an individual who dies or becomes disabled in qualified military service will be treated as reemployed for purposes of determining entitlement to benefits under the Plan.

11-4 **ELECTION NOT TO PARTICIPATE. (See Section 2.08 of the Plan.)** All Participants share in any allocation under this Plan and no Employee may waive out of Plan participation.

To allow Employees to make a one-time irrevocable waiver, check below.

☐ An Employee may make a one-time irrevocable election not to participate under the Plan.

11-5 **TREATMENT OF CERTAIN BENEFITS.** The protected benefits rules under Code §411(d)(6) do not apply to the Plan. However, the Employer may describe below (or in a separate addendum attached to this Adoption Agreement) the treatment of certain benefits following events such as plan merger or consolidation, transfer of assets or similar events.

Describe treatment of benefits: _____

[Note: If the benefit described here in the Plan or a plan being merged into the Plan is not either (i) available as a provision through the Pre-Approved Plan or (ii) the subject of a prior determination, advisory, or opinion letter, the Employer cannot rely on the Pre-Approved Plan Provider's opinion letter for qualification with respect to such benefit. If the benefit described here in the Plan or a plan being merged into the Plan is not permitted in a pre-approved plan, as described in Section 6.03 of Revenue Procedure 2017-41, such provision must be discontinued no later than the date the Employer adopts this Pre-Approved Plan or, in the case of a merger, the merger date.]

11-6 **SPECIAL RULES FOR MULTIPLE EMPLOYER PLANS.** If the Plan is a Multiple Employer Plan (as designated under AA §2-6), the rules applicable to Multiple Employer Plans under Section 16.07 of the Plan apply.

☐ The following special rules apply with respect to Multiple Employer Plans: _____

[Note: Any special rules under this AA §11-6 must satisfy the nondiscrimination requirements under Code §401(a)(4) and must satisfy the rules applicable to Multiple Employer Plans under Code §413(c).]

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APPENDIX A
SPECIAL EFFECTIVE DATES

[Note: This Appendix A may be used to memorialize prior Plan provisions that pertain to sources that no longer accept new contributions under the Plan.]

- ☐ A-1 **Eligible Employees.** The definition of Eligible Employee under AA §3 is effective as follows:

- ☐ A-2 **Minimum age and service conditions.** The minimum age and service conditions and Entry Date provisions specified in AA §4 are effective as follows:

- ☐ A-3 **Compensation definitions.** The compensation definitions under AA §5 are effective as follows:

- ☐ A-4 **Employer Contributions.** The Employer Contribution provisions under AA §6 are effective as follows:

- ☐ A-5 **After-Tax Employee and Pick-Up Contributions.** The provisions of the Plan addressing Employee After-Tax Contributions and Pick-Up Contribution provisions under AA §6-6 of the Plan are effective as follows:

- ☐ A-6 **Retirement ages.** The retirement age provisions under AA §7 are effective as follows:

- ☐ A-7 **Vesting and forfeiture rules.** The rules regarding vesting and forfeitures under AA §8 are effective as follows:

- ☐ A-8 **Distribution provisions.** The distribution provisions under AA §9 are effective as follows:

- ☐ A-9 **In-service distributions and Required Minimum Distributions.** The provisions regarding in-service distribution and Required Minimum Distributions under AA §10 are effective as follows:

- ☐ A-10 **Miscellaneous provisions.** The provisions under AA §11 are effective as follows:

- ☐ A-11 **Special effective date provisions for merged plans.** If any qualified retirement plans have been merged into this Plan, the provisions of Section 14.03 of the Plan apply as follows:

- ☐ A-12 **Other special effective dates:**

- ☐ A-13 **Special effective dates for restated pre-approved plans:** Use this A-13 to memorialize plan operational changes that have occurred after the general effective date of the plan and the actual plan restatement adoption date. Adopting employers may use the above Special Effective Date options (A-1 through A-12) to memorialize these changes or they may use this A-13. If the adopting employer uses this A-13, the changes will be part of the Plan, but will not be reflected in the SPD or plan summary:

**APPENDIX B
LOAN POLICY**

Use this Appendix B to identify elections dealing with the administration of Participant loans. These elections may be changed without amending this Adoption Agreement by substituting an updated Appendix B with new elections. Any modifications to this Appendix B, or any modifications to a separate loan policy describing the loan provisions selected under the Plan, will not affect an Employer's reliance on the IRS Favorable Letter. All loans are subject to any internal limitations imposed by the Investment Arrangement or the service provider or platform.

B-1 Are **PARTICIPANT LOANS** permitted? (See Section 13 of the Plan.)

- ☒ (a) Yes
☐ (b) No

B-2 **LOAN PROCEDURES.**

- ☐ (a) Loans will be provided under the default loan procedures set forth in Section 13 of the Plan, unless modified under this Appendix B.
☒ (b) Loans will be provided under a separate written loan policy.

[Note: If this subsection (b) is checked, do not complete the rest of this Appendix B.]

B-3 **AVAILABILITY OF LOANS.** Participant loans are available to all active Participants and Beneficiaries. Participant loans are not available to a former Employee or Beneficiary (including an Alternate Payee under a QDRO). To override this default provision, check subsections (a), (b) and/or (c) below:

- ☐ (a) A former Employee or Beneficiary (including an Alternate Payee) who has a vested Account Balance may request a loan from the Plan.
☐ (b) A "limited participant" as defined in Section 3.05 of the Plan may not request a loan from the Plan.
☐ (c) An officer or director of the Employer, as defined for purposes of the Sarbanes-Oxley Act, may **not** request a loan from the Plan.
☐ (d) Describe limitations on receiving loans under the Plan: _____

[Note: Any limitation under subsection (d) must be definitely determinable and not provide any Employer discretion.]

B-4 **LOAN LIMITS.** The default loan policy under Section 13.03 of the Plan allows Participants to take a loan provided all outstanding loans do not exceed 50% of the Participant's vested Account Balance. To override the default loan policy to allow loans up to \$10,000, even if greater than 50% of the Participant's vested Account Balance, check this AA §B-4.

- ☐ A Participant may take a loan equal to the greater of \$10,000 or 50% of the Participant's vested Account Balance.

[Note: If this AA §B-4 is checked, the Participant may be required to provide adequate security as required under Section 13.06 of the Plan.]

B-5 **NUMBER OF LOANS.** The default loan policy under Section 13.04 of the Plan restricts Participants to one loan outstanding at any time. To override the default loan policy and permit Participants to have more than one loan outstanding at any time, complete subsection (a) or (b) below.

- ☐ (a) A Participant may have ____ loans outstanding at any time.
☐ (b) There are no restrictions on the number of loans a Participant may have outstanding at any time.

B-6 **LOAN AMOUNT.** The default loan policy under Section 13.04 of the Plan provides that a Participant may not receive a loan of less than \$1,000. To modify the minimum loan amount or to add a maximum loan amount, complete this AA §B-6.

- ☐ (a) There is no minimum loan amount.
☐ (b) The minimum loan amount is \$_____.
☐ (c) The maximum loan amount is \$_____.

- B-7 **INTEREST RATE.** The default loan policy under Section 13.05 of the Plan provides for an interest rate commensurate with the interest rates charged by local commercial banks for similar loans. To override the default loan policy and provide a specific interest rate to be charged on Participant loans, complete this AA §B-7.
- ☐ (a) The prime interest rate plus ____ percentage point(s).
- ☐ (b) The interest rate is determined in accordance with the terms of the Investment Arrangement, service provider procedures, or other loan policy document adopted by the Plan Administrator.
- ☐ (b) Describe: _____
- [*Note: Any interest rate described in this AA §B-7 must be reasonable and must apply uniformly to all Participants.*]
- B-8 **PURPOSE OF LOAN.** The default loan policy under Section 13.02 of the Plan provides that a Participant may receive a Participant loan for any purpose. To modify the default loan policy to restrict the availability of Participant loans to hardship events, check this AA §B-8.
- ☐ (a) A Participant may only receive a Participant loan upon the demonstration of a hardship event, as described in Section 7.10(c)(1)(i) of the Plan.
- ☐ (b) A Participant may only receive a Participant loan under the following circumstances: _____
- B-9 **APPLICATION OF LOAN LIMITS.** If Participant loans are not available from all contribution sources, the limitations under Code §72(p) and the adequate security requirements of the Department of Labor regulations will be applied by taking into account the Participant's entire Account Balance. To override this provision, complete this AA §B-9.
- ☐ The loan limits and adequate security requirements will be applied by taking into account only those contribution Accounts which are available for Participant loans.
- B-10 **CURE PERIOD.** The Plan provides that a Participant incurs a loan default if a Participant does not repay a missed payment by the end of the calendar quarter following the calendar quarter in which the missed payment was due. To override this default provision to apply a shorter cure period, complete this AA §B-10.
- ☐ (a) The cure period for determining when a Participant loan is treated as in default will be ____ days (cannot exceed 90) following the end of the month in which the loan payment is missed.
- ☐ (b) The cure period for determining when a Participant loan is treated as in default will be the greater of ____ days (cannot exceed 90) following the end of the month in which the loan payment is missed or the last day of the second calendar quarter following the calendar quarter in which the missed payment was due.
- ☐ (c) The cure period for determining when a loan is treated as in default will be ____ days (cannot exceed 90) following the first missed loan payment.
- B-11 **PERIODIC REPAYMENT – PRINCIPAL RESIDENCE.** If a Participant loan is for the purchase of a Participant's primary residence, the loan repayment period for the purchase of a principal residence may not exceed ten (10) years. To override this default provision, complete this AA §B-11.
- ☐ (a) The Plan does not permit loan payments to exceed five (5) years, even for the purchase of a principal residence.
- ☐ (b) The loan repayment period for the purchase of a principal residence may not exceed ____ years (may not exceed 30).
- ☐ (c) Loans for the purchase of a Participant's primary residence may be payable over any reasonable period commensurate with the period permitted by commercial lenders for similar loans.
- B-12 **TERMINATION OF EMPLOYMENT.** Section 13.10(a) of the Plan provides that a Participant loan becomes due and payable in full upon the Participant's termination of employment. To override this default provision, complete this AA §B-12.
- ☐ A Participant loan will not become due and payable in full upon the Participant's termination of employment.
- B-13 **DIRECT ROLLOVER OF A LOAN NOTE.** Section 13.10(b) of the Plan provides that upon termination of employment a Participant may request the Direct Rollover of a loan note. To override this default provision, complete this AA §B-13.
- ☐ A Participant may **not** request the Direct Rollover of the loan note upon termination of employment.
- B-14 **LOAN RENEGOTIATION.** The default loan policy provides that a Participant may renegotiate a loan, provided the renegotiated loan separately satisfies the reasonable interest rate requirement, the adequate security requirement, the periodic repayment requirement and the loan limitations under the Plan. The Employer may restrict the availability of renegotiations to prescribed purposes provided the ability to renegotiate a Participant loan is available on a non-discriminatory basis. To override the default loan policy and restrict the ability of a Participant to renegotiate a loan, complete this AA §B-14.

- ☐ (a) A Participant may **not** renegotiate the terms of a loan.
- ☐ (b) The following special provisions apply with respect to renegotiated loans: _____

B-15 MODIFICATIONS TO DEFAULT LOAN PROVISIONS.

- ☐ The following special rules will apply with respect to Participant loans under the Plan: _____

[Note: Any provision under this AA §B-15 must satisfy the requirements under Code §72(p) and the regulations thereunder and will control over any inconsistent provisions of the Plan dealing with the administration of Participant loans.]

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APPENDIX C
ADMINISTRATIVE ELECTIONS

Use this Appendix C to identify certain elections dealing with the administration of the Plan. These elections may be changed without amending this Adoption Agreement by substituting an updated Appendix C with new elections. The provisions selected under this Appendix C do not create qualification issues and any changes to the provisions under this Appendix C will not affect the Employer's reliance on the IRS Favorable Letter.

C-1 DIRECTION OF INVESTMENTS. Are Participants permitted to **direct investments**? (See Section 10.07 of the Plan.)

☐ (a) No

☒ (b) Yes, but subject to the following restrictions:

☒ (1) No restrictions apply

☐ (2) Only for Accounts that are 100% vested

☐ (3) Specify Accounts: _____

☐ (4) Describe any special rules that apply for purposes of direction of investments: _____

[Note: This subsection (4) may be used to describe special investment provisions for specific types of investments or for specific Accounts, such as the Rollover Contribution Account.]

C-2 ROLLOVER CONTRIBUTIONS. Does the Plan accept **Rollover Contributions**? (See Section 3.05 of the Plan.)

☐ (a) No

☒ (b) Yes

☒ (1) If this subsection (1) is checked, an Employee may make a Rollover Contribution to the Plan prior to becoming a Participant in the Plan.

☐ (2) Check this subsection (2) if the Plan will accept Rollover Contributions from former Employees with an Account Balance under the Plan.

☐ (3) Describe any special rules for accepting Rollover Contributions: _____

[Note: The Employer may designate in this subsection (3), or in separate written procedures, the extent to which it will accept rollovers from designated plan types. For example, the Employer may decide not to accept rollovers from certain designated plans (e.g., 403(b) plans, §457 plans or IRAs). Any special rollover procedures will apply uniformly to all Participants under the Plan.]

C-3 LIFE INSURANCE. Are **life insurance** investments permitted? (See Section 10.08 of the Plan.)

☒ (a) No

☐ (b) Yes

C-4 QDRO PROCEDURES. Although the requirements of Code §414(p) do not apply to the Plan, the Employer may elect to apply the procedures set forth under Section 11.05 of the Plan (which are patterned after the rules under Code §414(p)) by electing subsection (a) below or may elect not to apply the procedures set forth under Section 11.05 of the Plan and instead, describe the Plan's procedures for addressing domestic relations orders below or in separate administrative procedures.

☒ (a) The Employer elects to have the requirements of Section 11.05 of the Plan apply to its Plan.

☐ (b) The requirements of Section 11.05 of the Plan do not apply to the Plan. The procedures for addressing the receipt of domestic relations orders are either set forth below or in separate administrative procedures.

Describe domestic relations procedures: _____

EMPLOYER SIGNATURE PAGE

PURPOSE OF EXECUTION. This Signature Page is being executed to effect:

- ☐ (a) The adoption of a **new plan**, effective ____ [insert Effective Date of Plan]. [Note: Date can be no earlier than the first day of the Plan Year in which the Plan is adopted.]
- ☒ (b) The **restatement** of an existing plan in order to comply with the requirements for Cycle 3 Pre-Approved Plans, pursuant to Rev. Proc. 2017-41.
- (1) Effective date of restatement: 1-1-2022. [Note: Date can be no earlier than the first day of the Plan Year in which the restatement is adopted.]
- (2) Name of plan(s) being restated: Fort Lupton Police Pension Plan
- (3) The original effective date of the plan(s) being restated: 11-29-1991
- ☐ (c) An **amendment or restatement** of the Plan (other than to comply with the requirements for Cycle 3 Pre-Approved Plans under Rev. Proc. 2017-41). If this Plan is being amended, a snap-on amendment may be used to designate the modifications to the Plan or the updated pages of the Adoption Agreement may be substituted for the original pages in the Adoption Agreement. All prior Employer Signature Pages should be retained as part of this Adoption Agreement.
- (1) Effective Date(s) of amendment/restatement: _____
- (2) Name of plan being amended/restated: _____
- (3) The original effective date of the plan being amended/restated: _____
- (4) If Plan is being amended, identify the Adoption Agreement section(s) being amended: _____

PRE-APPROVED PLAN PROVIDER INFORMATION. The Pre-Approved Plan Provider (or authorized representative) will inform the Employer of any amendments made to the Plan and will notify the Employer if it discontinues or abandons the Plan. To be eligible to receive such notification, the Employer agrees to notify the Pre-Approved Plan Provider (or authorized representative) of any change in address. The Employer may direct inquiries regarding the Plan or the effect of the IRS Opinion Letter to the Pre-Approved Plan Provider (or authorized representative) at the following location:

Name of Pre-Approved Plan Provider (or authorized representative): VALIC Retirement Services Company

Address: 2929 Allen Parkway L-10 Houston, TX 77019

Telephone number: 888-478-7020

IMPORTANT INFORMATION ABOUT THIS PRE-APPROVED PLAN. A failure to properly complete the elections in this Adoption Agreement or to operate the Plan in accordance with applicable law may result in disqualification of the Plan. The Employer may rely on the Favorable IRS Letter issued by the Internal Revenue Service to the Pre-Approved Plan Provider as evidence that the Plan is qualified under Code §401(a), to the extent provided in Rev. Proc. 2017-41. The Employer may not rely on the Favorable IRS Letter in certain circumstances or with respect to certain qualification requirements, which are specified in the Favorable IRS Letter issued with respect to the Plan and in Rev. Proc. 2017-41. In order to obtain reliance in such circumstances or with respect to such qualification requirements, the Employer may need to apply to the Internal Revenue Service for a determination letter.

By executing this Adoption Agreement, the Employer intends to adopt the provisions as set forth in this Adoption Agreement and the related Plan document. By signing this Adoption Agreement, the individual below represents that he/she has the authority to execute this Plan document on behalf of the Employer. This Adoption Agreement may only be used in conjunction with Basic Plan Document #03. The Employer understands that the Pre-Approved Plan Provider has no responsibility or liability regarding the suitability of the Plan for the Employer's needs or the options elected under this Adoption Agreement. It is recommended that the Employer consult with legal counsel before executing this Adoption Agreement.

City of Fort Lupton
(Name of Employer)

(Name of authorized representative)

(Title)

(Signature)

(Date)

TRUST DECLARATION

This Trust Declaration may be used to identify and adopt the Trust associated with the Plan.

[**Note:** The Internal Revenue Service does not review the Trust Declaration, or the trust provisions associated with Pre-Approved Plans. Therefore, the provisions of the Trust Declaration, ASC Trust Agreement or any separate Trust agreement have not been approved by the IRS and the IRS opinion letter does not cover such Trust Agreement. The Provider, the Trustee and the adopting Employer should review the applicable Trust provisions, and any modifications thereto, with legal counsel to ensure the provisions are appropriate for the Plan and consistent with Employer elections.]

Name of Plan. Fort Lupton Police Pension Plan

Name of Employer. City of Fort Lupton

Effective date of Trust Agreement: 1-1-2022

(a) The Trust terms are:

☐ (1) **Determined under the Trust provisions contained in the ASC Trust Agreement - Standard.**

[**Note:** Trustee must complete the Trustee Signature section under Section (b) below.]

☐ (i) **Directed Trustee.** The Trustee may only invest Plan assets as directed by the Plan Administrator, the Employer, an Investment Manager or other Named Fiduciary or, to the extent authorized under the Plan, a Plan Participant.

☐ (ii) **Discretionary Trustee.** The Trustee has discretion to invest Plan assets, unless specifically directed otherwise by the Plan Administrator, the Employer, an Investment Manager or other Named Fiduciary or, to the extent authorized under the Plan, a Plan Participant.

[**Modification of ASC Trust Agreement Provisions.** The Employer may amend the Trust provisions as provided under Section 1.18 of the ASC Trust Agreement. Plan provisions will override any conflicting provisions in the Trust Agreement, including any modification thereto. The Provider and the adopting Employer should review any modifications of the ASC Trust Agreement with legal counsel to ensure the provisions are appropriate for the Plan and consistent with Employer elections.]

☐ (2) **Determined under a separate Trust agreement(s).** The Trust provisions are contained in a separate Trust Agreement that has been furnished to the Employer. Notwithstanding the terms of the Plan, the terms of the Trust Agreement shall control the rights and responsibilities of the Trustee with respect to the Trust and the assets held in such Trust.

Name of Trustee. _____

Title of Trust Agreement. _____

Address of Trustee. _____

[**Note:** In using a separate Trust Agreement, the Trustee may adopt such Trust Agreement by either completing the Trustee Signature section under Section (b) below or may execute the separate Trust Agreement. In either case, the information above – Name of Trustee, Title of Trust Agreement and Address of Trustee – must be completed.]

☒ (3) **Plan is funded with custodial accounts, annuity contracts and/or insurance contracts.** There is no Trust associated with the Plan because the Plan is funded exclusively with custodial accounts, annuity contracts and/or insurance contracts.

[**Note:** No signature is required under this Trust Declaration if the Plan is funded exclusively with custodial accounts, annuity contracts and/or insurance contracts. The Employer or Plan Administrator may enter into a separate agreement with the custodian or insurance company. Such separate agreement must be consistent with the terms of the Plan.]

City of Fort Lupton
NONSTANDARDIZED GOVERNMENTAL MONEY PURCHASE PLAN
ADOPTION AGREEMENT #002

By executing this Nonstandardized Governmental Money Purchase Plan Adoption Agreement (the "Adoption Agreement" or "AA"), the undersigned Employer agrees to establish or continue a Governmental Money Purchase Plan for its Employees. The Governmental Money Purchase Plan adopted by the Employer consists of the Governmental Defined Contribution Pre-Approved Plan Basic Plan Document #03 (the "BPD") and the elections made under this Adoption Agreement (collectively referred to as the "Plan"). An Employer may jointly co-sponsor the Plan by signing a Participating Employer Adoption Page, which is attached to this Adoption Agreement. **This Plan is effective as of the Effective Date identified on the Signature Page of this Adoption Agreement.**

SECTION 1
EMPLOYER INFORMATION

1-1 EMPLOYER INFORMATION.

Name: City of Fort Lupton

Address: 130 S. McKinley Avenue

Fort Lupton, Colorado 80621

Telephone: 303-857-6694

1-2 EMPLOYER IDENTIFICATION NUMBER (EIN). 84-6000665

1-3 FORM OF BUSINESS.

☒ State or political subdivision of a State

☐ State agency or instrumentality

☐ Indian Tribal Government

☐ Describe other Employer qualified to adopt a Governmental Plan: _____

1-4 EMPLOYER'S TAX YEAR END. The Employer's tax year ends December 31

1-5 RELATED EMPLOYERS. Is the Employer part of a group of Related Employers (as defined in Section 1.83 of the Plan)?

☐ Yes

☒ No

If yes, Related Employers may be listed below. A Related Employer must execute a Participating Employer Adoption Page for Employees of that Related Employer to participate in this Plan.

[Note: This AA §1-5 is for informational purposes and Employers need not list Related Employers. The failure to identify all Related Employers will not jeopardize the qualified status of the Plan.]

SECTION 2
PLAN INFORMATION

2-1 PLAN NAME. City of Fort Lupton Employee Pension Plan

Original Effective Date: November 29, 1991

Restatement Effective Date: January 1, 2022

2-2 PLAN NUMBER. 003

2-3 TYPE OF PLAN. This Plan is a Money Purchase Defined Contribution Plan.

☐ The Plan is intended to be a FICA Replacement Plan (as defined under Section 4.03 of the Plan).

[Note: Elections under this AA must be consistent with the requirements of a FICA Replacement Plan as described under Section 4.03 of the Plan.]

2-4 **PLAN YEAR.**

- ☒ (a) Calendar year.
- ☐ (b) The 12-consecutive month period ending on _____ each year.
- ☐ (c) The Plan has a Short Plan Year running from ____ to ____.

2-5 **FROZEN PLAN.** Check this AA §2-5 if the Plan is a frozen Plan to which no contributions will be made.

- ☐ This Plan is a frozen Plan effective _____. (See Section 3.02(b)(6) of the Plan.)

[Note: As a frozen Plan, the Employer will not make any contributions with respect to Plan Compensation earned after such date and no Participant will be permitted to make any contributions to the Plan after such date. In addition, no Employee will become a Participant after the date the Plan is frozen.]

2-6 **MULTIPLE EMPLOYER PLAN.** Is this Plan a Multiple Employer Plan as defined in Section 16.07 of the Plan? (See Section 16.07 of the Plan for special rules applicable to Multiple Employer Plans.)

- ☐ Yes
- ☒ No

2-7 **PLAN ADMINISTRATOR.**

- ☒ (a) The Employer identified in AA §1-1.

- ☐ (b) Name: _____
- Address: _____
- Telephone: _____

2-8 **DEFINITION OF DISABLED.** An individual is considered Disabled for purposes of applying the provisions of this Plan if:

- ☐ (a) The individual is covered by the Employer's disability insurance plan and is determined to be disabled under such plan.
- ☒ (b) The individual is determined to be disabled by the Social Security Administration under Section 223(d) of the Social Security Act for purposes of determining eligibility for Social Security benefits.
- ☐ (c) The Plan Administrator determines an individual is unable to engage in any substantial gainful activity by reason of a medically determinable physical or mental impairment that can be expected to result in death or which has lasted, or can be expected to last, for a continuous period of not less than 12 months. The permanence and degree of such impairment shall be supported by medical evidence. The Plan Administrator may establish reasonable procedures for determining whether a Participant is Disabled.

[Note: An Employer may elect any or all of (a), (b) and (c) above. If more than one of (a), (b) and (c) is selected, the hierarchy for determining whether an individual is considered Disabled is (a), then (b) and then (c), unless described otherwise under separate administrative procedures or under subsection (d) below.]

- ☐ (d) Alternative definition of Disabled: _____

[Note: Any alternative definition described above will apply uniformly to all Participants under the Plan and will be applied in a nondiscretionary manner. The Employer may describe different definitions of Disabled for different purposes under the plan.]

SECTION 3
ELIGIBLE EMPLOYEES

3-1 **ELIGIBLE EMPLOYEES.** In addition to the Employees identified in Section 2.02 of the Plan, the following Employees are excluded from participation under the Plan. See Sections 2.02(d) and (e) of the Plan for rules regarding the effect on Plan participation if an Employee changes between an eligible and ineligible class of employment.

- ☐ (a) No exclusions
- ☐ (b) Collectively Bargained Employees
- ☐ (c) Non-resident aliens who receive no compensation from the Employer which constitutes U.S. source income

- ☐ (d) Leased Employees
- ☐ (e) Employees paid on an hourly basis
- ☐ (f) Employees paid on a salaried basis
- ☐ (g) Employees in an elected or appointed position
- ☒ (h) Part-Time Employees (as defined in Section 1.71 of the Plan)
- ☒ (i) Seasonal Employees (as defined in Section 1.89 of the Plan)
- ☐ (j) Temporary Employees (as defined in Section 1.93 of the Plan)
- ☐ (k) Employees eligible for another qualified plan sponsored by the Employer or a Related Employer

Specify name of other qualified plan (optional): _____

- ☒ (l) Other: Commissioned Officers

[Note: The elections under this AA §3-1 apply to any Pick-Up Contributions and any After-Tax Employee Contributions authorized under AA §6-6, unless elected otherwise under subsection (l) above. The exclusions inserted may not result in a specifically named individual or a finite group (such as employees hired before a certain date) being the only employee or employees participating under the plan in violation of the permanency requirements or Treas. Reg. §1.401-1(b)(2). It is permissible to limit participation under the plan to an employee or employees of a specifically named position or positions.]

SECTION 4 MINIMUM AGE AND SERVICE REQUIREMENTS

4-1 **ELIGIBILITY REQUIREMENTS – MINIMUM AGE AND SERVICE.** An Eligible Employee (as defined in AA §3-1) who satisfies the minimum age and service conditions under this AA §4-1 will be eligible to participate under the Plan as of his/her Entry Date (as defined in AA §4-2 below).

- (a) **Service Requirement.** An Eligible Employee must complete the following minimum service requirements to participate in the Plan.

- ☒ (1) There is no minimum service requirement for participation in the Plan.
- ☐ (2) ____ Year(s) of Service (as defined in Section 2.03(a)(1) of the Plan and AA §4-3).
- ☐ (3) The completion of at least ____ Hours of Service during the first ____ months of employment (or the first ____ days of employment) or the completion of a Year of Service (as defined in AA §4-3), if earlier.
 - ☐ (i) An Employee who completes the required Hours of Service satisfies eligibility at the end of the designated period, regardless if the Employee actually works for the entire period.
 - ☐ (ii) An Employee who completes the required Hours of Service must also be employed continuously during the designated period of employment. See Section 2.03(a)(2) of the Plan for rules regarding the application of this subsection (ii).
- ☐ (4) The completion of ____ Hours of Service during an Eligibility Computation Period. *[Note: An Employee satisfies the service requirement immediately upon completion of the designated Hours of Service rather than at the end of the Eligibility Computation Period.]*
- ☐ (5) Full-time Employees are eligible to participate as set forth in subsection (i) below. Employees who are “part-time” Employees must complete a Year of Service (as defined in AA §4-3). For this purpose, a full-time Employee is any Employee not defined in subsection (ii) below.
 - (i) Full-time Employees must complete the following minimum service requirements to participate in the Plan:
 - ☐ (A) There is no minimum service requirement for participation in the Plan.
 - ☐ (B) The completion of at least ____ Hours of Service during the first ____ months of employment or the completion of a Year of Service (as defined in AA §4-3), if earlier.
 - ☐ (C) Under the Elapsed Time method as defined in AA §4-3(c) below.
 - ☐ (D) Describe: _____

[*Note: Any conditions provided under this subsection (D) must be definitely determinable.*]

- (ii) Part-time Employees must complete a Year of Service (as defined in AA §4-3).

☐ (A) For this purpose, a part-time Employee is any Employee (including a temporary or seasonal Employee) whose normal work schedule is less than:

☐ (I) ____ hours per week.

☐ (II) ____ hours per month.

☐ (III) ____ hours per year.

☐ (B) Describe part-time Employees for this purpose: _____

[*Note: A part-time employee must be described as an individual who works less than a specified number of hours (no greater than 40) during a standard work week.*]

☐ (6) Under the Elapsed Time method as defined in AA §4-3(c) below.

☐ (7) Describe eligibility conditions: _____

- (b) **Minimum Age Requirement.** An Eligible Employee (as defined in AA §3-1) must have attained the following age to participate under the Plan.

☐ (1) There is no minimum age for Plan eligibility.

☐ (2) Age 21.

☐ (3) Age 20½.

☒ (4) Age 18 ____.

☐ (c) **Special eligibility rules.** The following special eligibility rules apply with respect to the Plan: _____

[*Note: The elections under this AA §4-1 apply to any Pick-Up Contributions and any After-Tax Employee Contributions authorized under AA §6-6, unless elected otherwise under subsection (c) above. Subsection (c) may be used to apply the eligibility conditions selected under this AA §4-1 separately with respect to different Employee groups or different contribution formulas under the Plan. Any special eligibility rules must be definitely determinable.*]

- 4-2 **ENTRY DATE.** An Eligible Employee (as defined in AA §3-1) who satisfies the minimum age and service requirements in AA §4-1 shall be eligible to participate in the Plan as of his/her Entry Date. For this purpose, the Entry Date is the following date.

☐ (a) **Immediate.** The date the minimum age and service requirements are satisfied (or date of hire, if no minimum age and service requirements apply).

☐ (b) **Semi-annual.** The first day of the 1st and 7th month of the Plan Year.

☐ (c) **Quarterly.** The first day of the 1st, 4th, 7th and 10th month of the Plan Year.

☐ (d) **Monthly.** The first day of each calendar month.

☒ (e) **Payroll period.** The first day of the payroll period.

☐ (f) **The first day of the Plan Year.**

☐ (g) **Describe Entry Date:** _____

[*Note: Any Entry Date under this subsection (g) must be within the dates described under (a) – (f).*]

An Eligible Employee's Entry Date (as defined above) is determined based on when the Employee satisfies the minimum age and service requirements in AA §4-1. For this purpose, an Employee's Entry Date is the Entry Date:

☐ (h) **next following** satisfaction of the minimum age and service requirements.

☒ (i) **coinciding with or next following** satisfaction of the minimum age and service requirements.

☐ (j) **nearest** the satisfaction of the minimum age and service requirements.

☐ (k) **preceding** the satisfaction of the minimum age and service requirements.

This section may be used to describe any special rules for determining Entry Dates under the Plan. For example, if different Entry Date provisions apply for different groups of Employees, such different Entry Date provisions may be described below.

☐ (l) **Describe** any special rules that apply with respect to the Entry Dates under this AA §4-2: _____

[**Note:** The elections under this AA §4-2 apply to any Pick-Up Contributions and any After-Tax Employee Contributions selected under AA §6-6, unless elected otherwise under subsection (l) above. Any special rules under subsection (l) must be definitely determinable.]

4-3 **DEFAULT ELIGIBILITY RULES.** In applying the minimum age and service requirements under AA §4-1 above, the following default rules apply:

- **Year of Service.** An Employee earns a Year of Service for eligibility purposes upon completing 1,000 Hours of Service during an Eligibility Computation Period. Hours of Service are calculated based on actual hours worked during the Eligibility Computation Period. (See Section 1.57 of the Plan for the definition of Hours of Service.)
- **Eligibility Computation Period.** If one Year of Service is required for eligibility, the Plan will determine subsequent Eligibility Computation Periods on the basis of Plan Years. (See Section 2.03(a)(3)(i) of the Plan.) If more than one Year of Service is required for eligibility, the Plan will determine subsequent Eligibility Computation Periods on the basis of Anniversary Years. (See Section 2.03(a)(3)(ii) of the Plan.)

To override the default eligibility rules, complete the applicable sections of this AA §4-3. **If this AA §4-3 is not completed, the default eligibility rules apply.**

- ☐ (a) **Year of Service.** Instead of 1,000 Hours of Service, an Employee earns a Year of Service upon the completion of ____ Hours of Service during an Eligibility Computation Period.
- ☐ (b) **Eligibility Computation Period (ECP).** The Plan will use Anniversary Years, unless more than one Year of Service is required under AA §4-1(a), in which case the Plan will shift to Plan Years if the Employee does not earn a Year of Service during the first Eligibility Computation Period. (See Section 2.03(a)(3)(ii) of the Plan.)
- ☐ (c) **Elapsed Time method.** Eligibility service will be determined under the Elapsed Time method. An Eligible Employee (as defined in AA §3-1) must complete a ____ period of service to participate in the Plan. (See Section 2.03(a)(6) of the Plan.)

[**Note:** Under the Elapsed Time method, service will be measured from the Employee's employment commencement date (or reemployment commencement date, if applicable) without regard to the Eligibility Computation Period designated in Section 2.03(a)(3) of the Plan.]

- ☐ (d) **Equivalency Method.** For purposes of determining an Employee's Hours of Service for eligibility, the Plan will use the Equivalency Method (as defined in Section 2.03(a)(5) of the Plan). The Equivalency Method will apply to:

- ☐ (1) All Employees.
- ☐ (2) Only Employees for whom the Employer does not maintain hourly records. For Employees for whom the Employer maintains hourly records, eligibility will be determined based on actual hours worked.

Hours of Service for eligibility will be determined under the following Equivalency Method.

- ☐ (3) **Monthly.** 190 Hours of Service for each month worked.
- ☐ (4) **Weekly.** 45 Hours of Service for each week worked.
- ☐ (5) **Daily.** 10 Hours of Service for each day worked.
- ☐ (6) **Semi-monthly.** 95 Hours of Service for each semi-monthly period worked.
- ☐ (7) **Describe Equivalency Method:** _____

- ☐ (e) **Special eligibility provisions:** _____

[**Note:** The elections under this AA §4-3 apply to any Pick-Up Contributions and any After-Tax Employee Contributions selected under AA §6-6, unless elected otherwise under subsection (e) above. Any special rules under subsection (e) must be definitely determinable.]

4-4 **EFFECTIVE DATE OF MINIMUM AGE AND SERVICE REQUIREMENTS.** The minimum age and/or service requirements under AA §4-1 apply to all Employees under the Plan. An Employee will participate as of his/her Entry Date, taking into account all service with the Employer, including service earned prior to the Effective Date.

To allow Employees employed on a specified date to enter the Plan without regard to the minimum age and/or service conditions, complete this AA §4-4.

- ☐ An Eligible Employee who is employed by the Employer on the following designated date will enter the Plan on the designated date without regard to minimum age and/or service requirements (as designated below):
- ☐ (a) the Effective Date of this Plan (as designated in subsection (a) or (b) of the Employer Signature Page, as applicable).

☐ (b) the date the Plan is executed by the Employer (as indicated on the Employer Signature Page).

☐ (c) _____ [insert date no earlier than the Effective Date of this Plan]

An Eligible Employee who is employed on the designated date will enter the Plan on the designated date without regard to the minimum age and service requirements under AA §4-1. If both minimum age and service conditions are not waived, select subsection (d) or (e) below to designate which condition is waived under this AA §4-4.

☐ (d) This AA §4-4 only applies to the minimum service condition.

☐ (e) This AA §4-4 only applies to the minimum age condition.

The provisions of this AA §4-4 apply to all Eligible Employees employed on the designated date unless designated otherwise under subsection (f) or (g) below.

☐ (f) The provisions of this AA §4-4 apply to the following group of Employees employed on the designated date: _____

☐ (g) Describe special rules: _____

[Note: An Employee who is employed as of the designated date described in this AA §4-4 will enter the Plan as of such date unless a different Entry Date is designated under subsection (g) above. Any special rules under subsection (g) above must be definitely determinable.]

4-5 **SERVICE WITH PREDECESSOR EMPLOYER.** Service with the following Predecessor Employers will be counted for purposes of determining eligibility, vesting and allocation conditions under this Plan, unless designated otherwise under subsection (a) or (b) below. (See Sections 2.06, 3.07(b) and 6.07 of the Plan.)

☐ (a) The Plan will count service with the following Predecessor Employers:

	Name of Predecessor Employer	Eligibility	Vesting	Allocation Conditions
☐ (1)	_____	☐	☐	☐

☐ (b) Describe any special provisions applicable to Predecessor Employer service: _____

4-6 **BREAKS IN SERVICE.** Generally, an Employee will be credited with all service earned with the Employer, including service earned prior to a Break in Service. To disregard service earned prior to a Break in Service for eligibility purposes, complete this AA §4-6. (See Section 2.07 of the Plan.)

☐ (a) If an Employee incurs at least one Break in Service, the Plan will disregard all service earned prior to such Break in Service for purposes of determining eligibility to participate.

☐ (b) If an Employee incurs at least _____ Breaks in Service, the Plan will disregard all service earned prior to such Break in Service for purposes of determining eligibility to participate. [Enter "0" if prior service will be disregarded for all rehired Employees.]

☐ (c) The Nonvested Participant Break in Service rule applies to all Employees, including Employees who have not terminated employment.

☐ (d) Describe: _____

SECTION 5 COMPENSATION DEFINITIONS

5-1 **TOTAL COMPENSATION.** Total Compensation is based on the definition set forth under this AA §5-1. See Section 1.94 of the Plan for a specific definition of the various types of Total Compensation.

☒ (a) W-2 Wages

☐ (b) Code §415 Compensation

☐ (c) Wages under Code §3401(a)

[Note: For purposes of determining Total Compensation, each definition includes Elective Deferrals, as defined in Section 1.36 of the Plan, pre-tax contributions to a Code §125 cafeteria plan or a Code §457 plan, and qualified transportation fringes under Code §132(f)(4).]

5-2 **POST-SEVERANCE COMPENSATION.** Total Compensation includes post-severance compensation, to the extent provided in Section 1.94(b) of the Plan.

- ☐ (a) **Exclusion of post-severance compensation from Total Compensation.** The following amounts paid after a Participant's severance of employment are excluded from Total Compensation.
- ☐ (1) **Unused leave payments.** Payment for unused accrued bona fide sick, vacation, or other leave, but only if the Employee would have been able to use the leave if employment had continued.
- ☐ (2) **Deferred compensation.** Payments received by an Employee pursuant to a nonqualified unfunded deferred compensation plan, but only if the payment would have been paid to the Employee at the same time if the Employee had continued in employment and only to the extent that the payment is includible in the Employee's gross income.

[Note: Plan Compensation (as defined in Section 1.75 of the Plan) includes any post-severance compensation amounts that are includible in Total Compensation. The Employer may elect to exclude all compensation paid after severance of employment from the definition of Plan Compensation under AA §5-3(j) below or may elect to exclude specific types of post-severance compensation from Plan Compensation under AA §5-3(l) below.]

- ☐ (b) **Continuation payments for disabled Participants.** If this subsection (b) is not elected, Total Compensation does not include continuation payments for disabled Participants. If this subsection (b) is elected, Total Compensation shall include post-severance compensation paid to a Participant who is permanently and totally disabled, as provided in Section 1.94(c) of the Plan.

5-3 **PLAN COMPENSATION.** Plan Compensation is **Total Compensation** (as defined in AA §5-1 above) with the following exclusions described below.

- ☒ (a) No exclusions.
- ☐ (b) Elective Deferrals (as defined in Section 1.36 of the Plan), pre-tax contributions to a cafeteria plan or a Code §457 plan, and qualified transportation fringes under Code §132(f)(4) are excluded.
- ☐ (c) All fringe benefits (cash and noncash), reimbursements or other expense allowances, moving expenses, deferred compensation, and welfare benefits are excluded.
- ☐ (d) Compensation above \$___ is excluded.
- ☐ (e) Amounts received as a bonus are excluded.
- ☐ (f) Amounts received as commissions are excluded.
- ☐ (g) Overtime payments are excluded.
- ☐ (h) Amounts received for services performed for a non-signatory Related Employer are excluded. (See Section 2.02(c) of the Plan.)
- [Note: If this subsection (h) is not elected, amounts received for services performed for a non-signatory Related Employer are INCLUDED in Plan Compensation.]*
- ☐ (i) "Deemed §125 compensation" as defined in Section 1.94(d) of the Plan.
- ☐ (j) Amounts received after termination of employment are excluded. (See Section 1.94(b) of the Plan.)
- ☐ (k) Differential Pay (as defined in Section 1.94(e) of the Plan).
- ☐ (l) Describe adjustments to Plan Compensation: _____

[Note: Any modification under subsection (l) above must be definitely determinable and preclude Employer discretion. The elections under this AA §5-3 apply to any Pick-Up Contributions and any After-Tax Employee Contributions selected under AA §6-6, unless elected otherwise under subsection (l).]

5-4 **PERIOD FOR DETERMINING COMPENSATION.**

- (a) **Compensation Period.** Plan Compensation will be determined on the basis of the following period(s). *[Note: If a period other than the Plan Year applies, any reference to the Plan Year as it refers to Plan Compensation will be deemed to be a reference to the period designated under this AA §5-4.]*
- ☒ (1) The Plan Year.
- ☐ (2) The calendar year ending in the Plan Year.
- ☐ (3) The Employer's fiscal tax year ending in the Plan Year.
- ☐ (4) The 12-month period ending on _____ which ends during the Plan Year.

- (b) **Compensation while a Participant.** Unless provided otherwise under this subsection (b), in determining Plan Compensation, only compensation earned while an individual is a Participant under the Plan will be taken into account. To count compensation for the entire Plan Year, including compensation earned while an individual is not a Participant, check below. (See Section 1.75(b) of the Plan.)
- ☐ All compensation earned during the Plan Year will be taken into account, including compensation earned while an individual is not a Participant.
- (c) **Few weeks rule.** The few weeks rule (as described in Section 5.02(c)(7)(i) of the Plan) will not apply unless designated otherwise under this subsection (c).
- ☐ Amounts earned but not paid during a Limitation Year solely because of the timing of pay periods and pay dates shall be included in Total Compensation for the Limitation Year, provided the amounts are paid during the first few weeks of the next Limitation Year, the amounts are included on a uniform and consistent basis with respect to all similarly situated Employees, and no amounts are included in more than one Limitation Year.

SECTION 6

EMPLOYER AND EMPLOYEE CONTRIBUTIONS

- 6-1 **EMPLOYER / EMPLOYEE CONTRIBUTIONS.** The Employer will contribute to the Plan each Plan Year the amount determined under the Employer Contribution formula designated in AA §6-2 below. If so elected under AA §6-6, the Employer also may authorize Employees to make After-Tax Employee Contributions and/or Employer Pick-Up Contributions under the Plan.
- 6-2 **EMPLOYER CONTRIBUTION FORMULA.** For the period designated in AA §6-4 below, the Employer will make the following Employer Contributions on behalf of Participants who satisfy the allocation conditions designated in AA §6-5 below.
- ☒ (a) **Fixed contribution.**
- ☒ (1) **Fixed percentage.** 4 ____ % of each Participant's Plan Compensation.
- ☐ (2) **Fixed dollar.** \$ ____ for each Participant.
- ☐ (b) **Contributions under Collective Bargaining Agreement, employment contract or equivalent arrangement.** The Employer will make an Employer Contribution based on a Collective Bargaining Agreement, employment agreement or equivalent arrangement as follows: _____
- [Note: Insert the appropriate contribution formula (and allocation formula, if applicable) from the Collective Bargaining Agreement, employment agreement or equivalent arrangement. The formula must be definitely determinable as required under Treas. Reg. §1.401-1.]*
- ☐ (c) **Permitted disparity contribution.**
- ☐ (1) **Individual method.** The Employer will contribute:
- ☐ (i) ____ % of each Participant's Plan Compensation plus
- ☐ (ii) ____ % of each Participant's Excess Compensation.
- [Note: The percentage of Excess Compensation may not exceed the Maximum Disparity Rate. See Section 3.02(b)(2)(i)(C) of the Plan.]*
- ☐ (2) **Group method.** The Employer will contribute ____ % (not more than 25%) of total Plan Compensation of all Participants who satisfy the allocation conditions under AA §6-5 below. The Employer Contribution will be allocated under the two-step method (as defined in Section 3.02(a)(1)(i)(B)(I) of the Plan).
- ☐ (3) **Modification of permitted disparity rules.**
- ☐ (i) **Integration Level.** For purposes of determining the permitted disparity contribution under subsection (1) or (2) above, instead of the Taxable Wage Base (as defined in Section 1.92 of the Plan), the Integration Level is:
- ☐ (A) ____ % of the Taxable Wage Base, increased (but not above the Taxable Wage Base) to the next higher:
- | | |
|--------------------------------------|---------------------------------------|
| ☐ (I) N/A | ☐ (II) \$1 |
| ☐ (III) \$100 | ☐ (IV) \$1,000 |

☐ (B) \$____ (not to exceed the Taxable Wage Base)

☐ (C) 20% of the Taxable Wage Base

[Note: See Section 3.02(b)(2)(i)(C) of the Plan for rules regarding the Maximum Disparity Rate that may be used where an Integration Level other than the Taxable Wage Base is selected.]

- ☐ (d) **Contribution for designated Employee groups.** The Employer will make an Employer Contribution to the Participants in the following designated groups. The amount to be contributed with respect to a designated Employee group will be determined under subsection (2) below.

- (1) **Designated Employee groups.** A separate Employer Contribution will be made to the following Employee groups:

[Note: The Employee groups designated above must be clearly defined in a manner that will not violate the definite allocation formula requirement of Treas. Reg. §1.401-1(b)(1)(i).]

- (2) **Employer Contribution percentages.**

- (3) **Special rules – More than one Employee group.** Unless designated otherwise under subsection (i), if a Participant is in more than one allocation group described in subsection (1) above during the Plan Year, the Participant will receive an Employer Contribution based on the Participant's status on the last day of the Plan Year. (See Section 3.02(b)(3) of the Plan.)

- ☐ (i) **Determined separately for each Employee group.** If a Participant is in more than one allocation group during the Plan Year, the Participant's share of the Employer Contribution will be based on the Participant's status for the part of the year the Participant is in each allocation group.

- ☐ (ii) **Describe:** _____
[Note: The language under this subsection (ii) may only describe the amount of the Employer Contribution a Participant will receive when such Participant is in more than one allocation group. Any language under this subsection (ii) must be definitely determinable.]

- ☐ (e) **Age-based contribution.** The Employer will contribute ____% of each Participant's adjusted Plan Compensation. For this purpose, a Participant's adjusted Plan Compensation is determined by multiplying the Participant's Plan Compensation by an Actuarial Factor (as described in Section 1.03 of the Plan).

A Participant's Actuarial Factor is determined based on a specified interest rate and mortality table. Unless designated otherwise under subsection (1) or (2) below, the Plan will use an applicable interest rate of 8.5% and a UP-1984 mortality table.

- ☐ (1) **Applicable interest rate.** Instead of 8.5%, the Plan will use an interest rate of ____% (must be between 7.5% and 8.5%) in determining a Participant's Actuarial Factor.

- ☐ (2) **Applicable mortality table.** Instead of the UP-1984 mortality table, the Plan will use the following mortality table in determining a Participant's Actuarial Factor: _____

- ☐ (3) **Describe special rules applicable to age-based allocation:** _____

[Note: See Appendix A of the Plan for sample Actuarial Factors based on an 8.5% applicable interest rate and the UP-1984 mortality table. If an interest rate or mortality table other than 8.5% or UP-1984 is selected, appropriate Actuarial Factors must be calculated. Subsection (3) must provide for a definitely determinable allocation method.]

- ☐ (f) **Service-based contribution.** The Employer will make the following contribution based on units of service designated under subsections (3) – (5) below.

- ☐ (1) **Fixed percentage.** ____% of Plan Compensation paid for each period of service designated below.

- ☐ (2) **Fixed dollar.** \$____ for each period of service designated below.

The service-based contribution will be based on the following periods of service:

- ☐ (3) Each Hour of Service

- ☐ (4) Each week of employment

- ☐ (5) Describe period: _____

The service-based contribution is subject to the following rules.

- ☐ (6) Describe any special provisions that apply to service-based contribution: _____
- [**Note:** Subsection (6) may only be used to describe a definite allocation formula. Any period described in subsection (5) must apply uniformly to all Participants.]

6-3 **SPECIAL RULES.** No special rules apply with respect to Employer Contributions under the Plan, except to the extent designated under this AA §6-3.

- ☐ (a) **Limit on Employer Contributions.** The Employer Contribution elected in AA §6-2 may not exceed:
- ☐ (1) _____% of Plan Compensation
- ☐ (2) \$_____
- ☐ (b) **Offset of Employer Contribution.**
- ☐ (1) A Participant's contribution of Employer Contributions under AA §6-2 above is reduced by contributions under _____ [insert name of plan(s)]. (See Section 3.02(b) of the Plan.)
- ☐ (2) In applying the offset under this subsection (b), the following rules apply: _____
- ☐ (c) **Special rules:** _____
- [**Note:** Any special rules under this subsection (c) must be definitely determinable.]

6-4 **PERIOD FOR DETERMINING EMPLOYER/EMPLOYEE CONTRIBUTION.** Unless designated otherwise in this AA §6-4, in determining the amount of the Employer/Employee Contributions to be allocated under this AA §6, the contribution will be based on Plan Compensation earned during the Plan Year.

Alternatively, instead of the Plan Year, the Employer/Employee Contributions will be determined based on Plan Compensation earned during the following period: [**Note:** The Plan Year must be used if the permitted disparity contribution formula is selected under AA §6-2(c) above.]

- ☐ (a) Plan Year quarter
- ☐ (b) calendar month
- ☐ (c) payroll period
- ☐ (d) Other: _____

[**Note:** Although Employer Contributions are determined on the basis of Plan Compensation earned during the period designated under this AA §6-4, this does not require the Employer to actually make contributions on the basis of such period. Employer Contributions may be contributed to Participants at any time within the contribution period permitted under Treas. Reg. §1.415-6, regardless of the period selected under this AA §6-4.]

6-5 **ALLOCATION CONDITIONS.** A Participant must satisfy any allocation conditions designated under this AA §6-5 to receive an allocation of Employer Contributions under the Plan. [**Note:** No allocation conditions apply to After-Tax Employee Contributions or Employer Pick-Up Contributions under AA §6-6.]

- ☒ (a) **No allocation conditions** apply with respect to Employer Contributions under the Plan.
- ☐ (b) **Employment condition.** An Employee must be employed with the Employer on the last day of the Plan Year.
- ☐ (c) **Minimum service condition.** An Employee must be credited with at least:
- ☐ (1) _____ Hours of Service during the Plan Year.
- ☐ (i) Hours of Service are determined using actual Hours of Service.
- ☐ (ii) Hours of Service are determined using the following Equivalency Method (as defined under Section 2.03(a)(5) of the Plan):
- | | |
|--|---|
| ☐ (A) Monthly | ☐ (B) Weekly |
| ☐ (C) Daily | ☐ (D) Semi-monthly |
| ☐ (E) Describe: _____ | |

[*Note: Any description under this subsection (E) must be definitely determinable.*]

- ☐ (2) ___ consecutive days of employment with the Employer during the Plan Year.
- ☐ (d) **Exceptions.**
- ☐ (1) The above allocation condition(s) will **not** apply if the Employee, during the Plan Year:
- ☐ (i) dies.
 - ☐ (ii) terminates employment due to becoming Disabled.
 - ☐ (iii) becomes Disabled.
 - ☐ (iv) terminates employment after attaining Normal Retirement Age.
[*Note: This waiver of allocation conditions applies only once during the Participant's employment with the Employer. The Employer may modify this rule in subsection (e) below.*]
 - ☐ (v) terminates employment after attaining Early Retirement Age.
[*Note: This waiver of allocation conditions applies only once during the Participant's employment with the Employer. The Employer may modify this rule in subsection (e) below.*]
 - ☐ (vi) is on an authorized leave of absence from the Employer.
- ☐ (2) The exceptions selected under subsection (1) above will apply even if an Employee has not terminated employment at the time of the selected event(s).
- ☐ (3) The exceptions selected under subsection (1) above do not apply to:
- ☐ (i) an employment condition under subsection (b) above.
 - ☐ (ii) a minimum service condition under subsection (c) above.
- ☐ (e) **Describe** any special rules governing the allocation conditions under the Plan: _____
[*Note: Any special rules under this subsection (e) must be definitely determinable.*]

6-6 **AFTER-TAX EMPLOYEE CONTRIBUTIONS AND EMPLOYER PICK-UP CONTRIBUTIONS.**

- ☐ (a) **Voluntary After-Tax Employee Contributions.** If permitted under this subsection (a), a Participant may contribute any amount as Voluntary After-Tax Employee Contributions up to the Code §415 Limitation (as defined in Section 5.02 of the Plan), except as limited under this subsection (a).
- ☐ (1) **Limits on Voluntary After-Tax Employee Contributions.** If this subsection (1) is checked, the following limits apply to Voluntary After-Tax Employee Contributions:
- ☐ (i) **Maximum limit.** A Participant may make Voluntary After-Tax Employee Contributions up to
 - ☐ (A) _____ % of Plan Compensation
 - ☐ (B) \$_____for the following period:
 - ☐ (C) the entire Plan Year.
 - ☐ (D) the portion of the Plan Year during which the Employee is eligible to participate.
 - ☐ (E) each separate payroll period during which the Employee is eligible to participate.
 - ☐ (ii) **Minimum limit.** The amount of Voluntary After-Tax Employee Contributions a Participant may make for any payroll period may not be less than:
 - ☐ (A) _____ % of Plan Compensation.
 - ☐ (B) \$_____.
- (2) **Change or revocation of Voluntary After-Tax Employee Contributions.** In addition to the Participant's Entry Date under the Plan, a Participant's election to change or resume an after-tax election will be effective as set forth under the After-Tax Employee Contributions election form or other written procedures adopted by the Plan Administrator. A Participant must be permitted to change or revoke an after-tax election at least once per year. Unless the After-Tax Contributions election form or other written procedures adopted by the Plan Administrator provide otherwise, a Participant may revoke an after-tax election (on a prospective basis) at any

time. Unless designated otherwise in a Participants after-tax election form, a Participant's affirmative election to make an After-Tax Employee Contribution will cease upon termination of employment and the Participant will need to make a new election upon rehire.

- ☐ (3) **Other limits or special rules relating to Voluntary After-Tax Employee Contributions:** _____

[**Note:** Any limits described under this subsection (3) must be consistent with the provisions of Section 3.04 of the Plan.]

- ☐ (b) **Mandatory After-Tax Employee Contributions.** If this subsection (b) is checked, Employees are required to make Mandatory After-Tax Employee Contributions in order to participate under the Plan.

- ☐ (1) **Amount of Mandatory After-Tax Employee Contributions.** Employees are required to contribute the following amount in order to participate in the Plan:

☐ (i) _____ % of each Employee's Total Compensation.

☐ (ii) \$_____ for each Participant.

☐ (iii) Describe rate or amount: _____

- ☐ (2) **Special rules** applicable to Mandatory After-Tax Employee Contributions: _____

- ☒ (c) **Employer Pick-Up Contributions.** Each Participant will be required to make a Pick-up Contribution to the Plan equal to the amount specified under this subsection (c). Any amounts contributed pursuant to this subsection (c) will be picked up by the Employer pursuant to Code §414(h) and will be treated as Employer Contributions under the Plan. Such contributions and earnings thereon will be 100% vested at all times. (See Section 3.03 of the Plan.)

- ☒ (1) The following amounts will be contributed to the Plan as an Employer Pick-Up Contribution:

☒ (i) 4 _____ % of Plan Compensation.

☐ (ii) \$_____ per pay period.

☐ (iii) Any amount from _____ % to _____ % of Plan Compensation, as designated by the Employee.

[**Note:** This subsection (iii) may only be selected if the Employee designates the amount as a one-time irrevocable election.]

- ☐ (2) Elect this subsection (2) if an Employee may make a one-time irrevocable election not to make Employer Pick-Up Contributions under the Plan.

- ☐ (3) **Special rules** applicable to Employer Pick-Up Contributions: _____

[**Note:** Any Employer Pick-Up Contributions made under this subsection (c) must satisfy the requirements of Section 3.03 of the Plan. See AA §11-4 for an Employee's ability to elect out of making Employer Pick-Up Contributions.]

SECTION 7 RETIREMENT AGES

- 7-1 **NORMAL RETIREMENT AGE.** Normal Retirement Age under the Plan is:

☒ (a) Age 59½ (not to exceed 65).

☐ (b) The later of age ____ (not to exceed 65) or the ____ (not to exceed 5th) anniversary of:

☐ (1) the Employee's participation commencement date (as defined in Section 1.68 of the Plan).

☐ (2) the Employee's employment commencement date.

☐ (c) Describe Normal Retirement Age: _____

[**Note:** The Normal Retirement Age must be reasonably representative of the typical retirement age for the industry in which the Plan Participants work. A Normal Retirement Age of at least age 62 is deemed to be reasonable while a Normal Retirement Age under age 55 is presumed not to satisfy this requirement unless facts and circumstances show otherwise. Whether a Normal Retirement Age between 55 and 62 satisfies this requirement depends on the facts and circumstances. A Governmental Plan must comply with the final Normal Retirement Age regulations under Treas. Reg. §1.401(a)-1, as amended, effective for Annuity Starting Dates occurring in Plan Years beginning on or after the later of the two dates described in IRS Notice 2012-29. The Employer may use AA §7-1(c), for example, to describe a reasonable Normal Retirement Age that is between age 55 and 62 that takes into account service as well as age.]

7-2 **EARLY RETIREMENT AGE.** Unless designated otherwise under this AA §7-2, there is no Early Retirement Age under the Plan.

☐ (a) A Participant reaches Early Retirement Age if he/she is still employed after attainment of each of the following:

☐ (1) Attainment of age ____

☐ (2) The ____ anniversary of the date the Employee commenced participation in the Plan, and/or

☐ (3) The completion of ____ Years of Service, determined as follows:

☐ (i) Same as for eligibility.

☐ (ii) Same as for vesting.

☐ (b) Describe. _____

SECTION 8 VESTING AND FORFEITURES

8-1 **VESTING OF EMPLOYER CONTRIBUTIONS.** The Employer Contributions authorized under AA §6-2 will vest in accordance with the vesting schedule designated under AA §8-2.

8-2 **VESTING SCHEDULE.** The vesting schedule under the Plan is as follows. See Section 6.02 of the Plan for a description of the various vesting schedules under this AA §8-2.

☒ (a) **Vesting schedule:**

☐ (1) Full and immediate vesting

☐ (2) Three-year cliff vesting schedule

☐ (3) Six-year graded vesting schedule

☒ (4) Modified vesting schedule

0 ____ % immediately on Plan participation

20 ____ % after 1 Year of Service

40 ____ % after 2 Years of Service

60 ____ % after 3 Years of Service

80 ____ % after 4 Years of Service

100 ____ % after 5 Years of Service

100 ____ % after 6 Years of Service

100 ____ % after 7 Years of Service

100 ____ % after 8 Years of Service

100 ____ % after 9 Years of Service

100% after 10 Years of Service

☐ (5) Other vesting schedule: _____

[Note: If a modified vesting schedule is selected under this subsection (a), the vested schedule must satisfy the pre-ERISA Code vesting requirements.]

☐ (b) **Special provisions applicable to vesting schedule:** _____

[Note: This subsection (b) may be used to apply a different vesting schedule for different contribution formulas or different Employee groups under the Plan. Any special provision must satisfy the pre-ERISA Code vesting requirements.]

8-3 **VESTING SERVICE.** In applying the vesting schedules under this AA §8, all service with the Employer counts for vesting purposes, unless designated otherwise under this AA §8-3.

- ☐ (a) Service before the original Effective Date of this Plan (or a Predecessor Plan) is excluded.
- ☐ (b) Service completed before the Employee's ____ birthday is excluded.
- ☐ (c) Describe vesting service exclusions: _____

[**Note:** See Section 6.07 of the Plan and AA §4-5 for rules regarding the crediting of service with Predecessor Employers for purposes of vesting under the Plan.]

8-4 **VESTING UPON DEATH, DISABILITY OR EARLY RETIREMENT AGE.** An Employee's vesting percentage increases to 100% if, while employed with the Employer, the Employee

- ☒ (a) dies
- ☒ (b) terminates employment due to becoming Disabled
- ☒ (c) becomes Disabled
- ☐ (d) reaches Early Retirement Age
- ☐ (e) Not applicable. No increase in vesting applies.

8-5 **DEFAULT VESTING RULES.** In applying the vesting requirements under this AA §8, the following default rules apply. [**Note:** No election should be made under this AA §8-5 if full and immediate vesting is selected under AA §8-2.]

- **Year of Service.** An Employee earns a Year of Service for vesting purposes upon completing 1,000 Hours of Service during a Vesting Computation Period. Hours of Service are calculated based on actual hours worked during the Vesting Computation Period. (See Section 1.57 of the Plan for the definition of Hours of Service.)
- **Vesting Computation Period.** The Vesting Computation Period is the Plan Year.

To override the default vesting rules, complete the applicable sections of this AA §8-5. If this AA §8-5 is not completed, the default vesting rules apply.

- ☐ (a) **Year of Service.** Instead of 1,000 Hours of Service, an Employee earns a Year of Service upon the completion of ____ Hours of Service during a Vesting Computation Period.
- ☐ (b) **Vesting Computation Period.** Instead of the Plan Year, the Vesting Computation Period is:
 - ☐ (1) The 12-month period beginning with the Employee's Employment Commencement Date and, for subsequent Vesting Computation Periods, the 12-month period beginning with the anniversary of the Employee's Employment Commencement Date.
 - ☐ (2) Describe: _____

[**Note:** Any Vesting Computation Period described in this subsection (2) must be a 12-consecutive month period and must apply uniformly to all Participants.]

- ☐ (c) **Elapsed Time Method.** Instead of determining vesting service based on actual Hours of Service, vesting service will be determined under the Elapsed Time Method. If this subsection (c) is checked, service will be measured from the Employee's Employment Commencement Date (or Reemployment Commencement Date, if applicable) without regard to the Vesting Computation Period designated in Section 6.05 of the Plan. (See Section 6.04(b) of the Plan.)
- ☐ (d) **Equivalency Method.** For purposes of determining an Employee's Hours of Service for vesting, the Plan will use the Equivalency Method (as defined in Section 6.04(a)(2) of the Plan). The Equivalency Method will apply to:
 - ☐ (1) All Employees.
 - ☐ (2) Only to Employees for whom the Employer does not maintain hourly records. For Employees for whom the Employer maintains hourly records, vesting will be determined based on actual hours worked.

Hours of Service for vesting will be determined under the following Equivalency Method.

 - ☐ (3) **Monthly.** 190 Hours of Service for each month worked.
 - ☐ (4) **Weekly.** 45 Hours of Service for each week worked.
 - ☐ (5) **Daily.** 10 Hours of Service for each day worked.
 - ☐ (6) **Semi-monthly.** 95 Hours of Service for each semi-monthly period.

☐ (7) Describe Equivalency Method: _____

[*Note: Any description of an Equivalency Method under this subsection (7) must be definitely determinable.*]

☐ (e) Special rules: _____

[*Note: Any special rules under this subsection (e) must be definitely determinable.*]

8-6 **BREAKS IN SERVICE.** Generally, an Employee will be credited with all service earned with the Employer, including service earned prior to a Break in Service. To disregard service earned prior to a Break in Service for vesting purposes, complete this AA §8-6. (See Section 6.08 of the Plan.)

- ☐ (a) If an Employee incurs at least one Break in Service, the Plan will disregard all service earned prior to such Break in Service for purposes of determining vesting under the Plan.
- ☐ (b) If an Employee incurs at least _____ consecutive Breaks in Service, the Plan will disregard all service earned prior to such consecutive Breaks in Service for purposes of determining vesting under the Plan. [*Enter "0" if prior service will be disregarded for all rehired Employees.*]
- ☐ (c) The Nonvested Participant Break in Service rule applies to all Employees, including Employees who have not terminated employment.
- ☐ (d) Describe any special rules for applying the vesting Break in Service rules: _____

[*Note: Any special rules under this subsection (d) must be definitely determinable.*]

8-7 **ALLOCATION OF FORFEITURES.**

The Employer may decide in its discretion how to treat forfeitures under the Plan. Alternatively, the Employer may designate under this AA §8-7 how forfeitures occurring during a Plan Year will be treated. (See Section 6.11 of the Plan.)

- ☐ (a) N/A. All contributions are 100% vested. [*Do not complete the rest of this AA §8-7.*]
- ☐ (b) Reallocated as additional Employer Contributions.
- ☐ (c) Used to reduce Employer Contributions.

For purposes of subsection (b) or (c) above, forfeitures will be applied:

- ☐ (d) for the Plan Year in which the forfeiture occurs.
- ☐ (e) for the Plan Year following the Plan Year in which the forfeitures occur.

Prior to applying forfeitures under subsection (b) or (c) above.

- ☐ (f) Forfeitures will be used to pay Plan expenses. (See Section 6.11(d) of the Plan.)
- ☐ (g) Forfeitures will not be used to pay Plan expenses.

In determining the amount of forfeitures to be allocated under subsection (b) above, the same allocation conditions apply as under AA §6-5, unless designated otherwise below.

- ☐ (h) Forfeitures are not subject any allocation conditions.
- ☐ (i) Forfeitures are subject to a last day of employment allocation condition.
- ☐ (j) Forfeitures are subject to a _____ Hours of Service minimum service requirement.

In determining the treatment of forfeitures under this AA §8-7, the following special rules apply:

☐ (k) Describe: _____

8-8 **SPECIAL RULES REGARDING CASH-OUT DISTRIBUTIONS.**

- (a) **Additional allocations.** If a terminated Participant receives a complete distribution of his/her vested Account Balance while still entitled to an additional allocation, the Cash-Out Distribution forfeiture provisions do not apply until the Participant receives a distribution of the additional amounts to be allocated. (See Section 6.10(a)(1) of the Plan.)

To modify the default Cash-Out Distribution forfeiture rules, complete this AA §8-8(a).

- ☐ The Cash-Out Distribution forfeiture provisions will apply if a terminated Participant takes a complete distribution, regardless of any additional allocations during the Plan Year.

- (b) **Timing of forfeitures.** A Participant who receives a Cash-Out Distribution (as defined in Section 6.10(a) of the Plan) is treated as having an immediate forfeiture of his/her nonvested Account Balance.

To modify the forfeiture timing rules to delay the occurrence of a forfeiture upon a Cash-Out Distribution, complete this AA §8-8(b).

- ☐ A forfeiture will occur upon the completion of ____ consecutive Breaks in Service (as defined in Section 6.08 of the Plan).

- (c) **Repayment of Cash-Out Distribution.** Unless elected otherwise under this AA §8-8(c), if a Participant receives a Cash-Out Distribution that results in a forfeiture, and the Participant resumes employment covered under the Plan, such Participant may repay to the Plan the amount received as a Cash-Out Distribution.

- ☐ If a Participant receives a Cash-Out Distribution that results in a forfeiture, and the Participant resumes employment covered under the Plan, such Participant may NOT repay to the Plan the amount received as a Cash-Out Distribution and the provisions of Section 6.10(a)(2) do not apply.

- 8-9 **SPECIAL RULE FOR FORFEITURE UPON DEATH OF A PARTICIPANT.** Unless elected below, no vested benefits are forfeited upon the death of a Participant.

To modify this default forfeiture rule, check to box below.

- ☐ The Plan will forfeit benefits (including vested benefits) upon the death of a Participant, if not precluded by law. In no event may the Plan forfeit any amounts attributable to After-Tax Employee Contributions under the Plan or if the Plan has commenced distributions prior to the Participant's death.

SECTION 9

DISTRIBUTION PROVISIONS – TERMINATION OF EMPLOYMENT

- 9-1 **AVAILABLE FORMS OF DISTRIBUTION.**

Lump sum distribution. A Participant may take a distribution of his/her entire vested Account Balance in a single lump sum upon termination of employment. In addition, the Plan Administrator may permit a Participant to take partial distributions or installment distributions solely to the extent necessary to satisfy the required minimum distribution rules under Section 8 of the Plan.

Additional distribution options. To provide for additional distribution options, check the applicable distribution forms under this AA §9-1.

- ☒ (a) **Installment distributions.** A Participant may take a distribution over a specified period not to exceed the life or life expectancy of the Participant (and a designated beneficiary).

- ☒ (b) **Partial lump sum.** A Participant may take a distribution of less than the entire vested Account Balance upon termination of employment.

- ☐ Minimum distribution amount. A Participant may not take a partial lump sum distribution of less than \$_____.

- ☒ (c) **Annuity distributions.** A Participant may elect to have the Plan Administrator use the Participant's vested Account Balance to purchase an annuity as described in Section 7.01 of the Plan.

- ☐ (d) **Describe distribution options:** _____

[Note: Any distribution option described in this subsection (d) may not be subject to the discretion of the Employer or Plan Administrator.]

- 9-2 **PARTICIPANT AND SPOUSAL CONSENT.**

- ☒ (a) **Involuntary Cash-Out Distribution.** A Participant who terminates employment with a vested Account Balance of \$5,000 or less will receive an Involuntary Cash-Out Distribution, unless elected otherwise under this AA §9-2. If a Participant's vested Account Balance exceeds \$5,000, the Participant generally must consent to a distribution from the Plan, except to the extent provided otherwise under this AA §9-2. See Section 7.03 of the Plan for additional rules regarding the Participant consent requirements under the Plan.

- ☐ (1) **No Involuntary Cash-Out Distributions.** The Plan does not provide for Involuntary Cash-Out Distributions. A terminated Participant must consent to any distribution from the Plan. (See Section 14.02(b) of the Plan for special rules upon Plan termination.)

- ☒ (2) **Involuntary Cash-Out Distribution threshold.** A terminated Participant will receive an Involuntary Cash-Out Distribution only if the Participant's vested Account Balance is less than or equal to \$1,000_____.

- ☐ (3) **Application of Automatic Rollover rules.** The Automatic Rollover rules described in Section 7.05 of the Plan do not apply to any Involuntary Cash-Out Distribution below \$1,000, unless elected otherwise under this subsection (3). If this subsection (3) is checked, the Automatic Rollover provisions apply to all Involuntary Cash-Out Distributions (including those below \$1,000).
- ☐ (4) **Distribution upon attainment of stated age.** Participant consent will not be required with respect to distributions made upon attainment of Normal Retirement Age (or age 62, if later), regardless of the value of the Participant's vested Account Balance.
- ☒ (5) **Treatment of Rollover Contributions.** Unless elected otherwise under this subsection (5), Rollover Contributions will be excluded in determining whether a Participant's vested Account Balance exceeds the Involuntary Cash-Out threshold for purposes of applying the distribution rules under this AA §9 and the Automatic Rollover provisions under Section 7.05 of the Plan. To include Rollover Contributions in determining whether a Participant's vested Account Balance exceeds the Involuntary Cash-Out threshold, check this subsection (5).
- ☐ (b) **Spousal consent.** Spousal consent is not required for a Participant to receive a distribution or name an alternate beneficiary, unless designated otherwise under this subsection (b). See Section 9.02 of the Plan for rules regarding Spousal consent under the Plan.
- ☐ (1) **Distribution consent.** A Participant's Spouse must consent to any distribution or loan, provided the Participant's vested Account Balance exceeds \$_____.
- ☐ (2) **Beneficiary consent.** A Participant's Spouse must consent to naming someone other than the Spouse as beneficiary under the Plan.
- ☐ (c) **Describe** any special rules affecting Participant or Spousal consent: _____
[Note: Any special rules under this subsection (c) must be definitely determinable.]

9-3 TIMING OF DISTRIBUTIONS UPON TERMINATION OF EMPLOYMENT.

- (a) **Distribution of vested Account Balances exceeding \$5,000.** A Participant who terminates employment with a vested Account Balance exceeding \$5,000 may receive a distribution of his/her vested Account Balance in any form permitted under AA §9-1 within a reasonable period following:
- ☒ (1) the date the Participant terminates employment.
- ☐ (2) the last day of the Plan Year during which the Participant terminates employment.
- ☐ (3) the first Valuation Date following the Participant's termination of employment.
- ☐ (4) the end of the calendar quarter following the date the Participant terminates employment.
- ☐ (5) attainment of Normal Retirement Age, death or becoming Disabled.
- ☐ (6) Describe: _____
[Note: Any special rules under this subsection (6) must be definitely determinable.]
- (b) **Distribution of vested Account Balances not exceeding \$5,000.** A Participant who terminates employment with a vested Account Balance that does not exceed \$5,000 will receive a **lump sum** distribution of his/her vested Account Balance within a reasonable period following:
- ☒ (1) the date the Participant terminates employment.
- ☐ (2) the last day of the Plan Year during which the Participant terminates employment.
- ☐ (3) the first Valuation Date following the Participant's termination of employment.
- ☐ (4) the end of the calendar quarter following the date the Participant terminates employment.
- ☐ (5) Describe: _____
[Note: Any special rules under this subsection (5) must be definitely determinable.]
- ☐ (c) **Alternate Cash-Out distribution threshold.** Instead of a vested Account Balance Cash-Out threshold of \$5,000, for purposes of applying the Cash-Out distribution provisions under this AA §9-3, the threshold for distributions upon termination of employment will be based on a vested Account Balance of \$_____.

- ☐ (d) **Describe additional distribution options:** _____
[Note: Any additional distribution option described in this subsection (d) may not be subject to the discretion of the Employer or Plan Administrator.]

9-4 **DISTRIBUTION UPON DISABILITY.** Unless designated otherwise under this AA §9-4, a Participant who terminates employment on account of becoming Disabled may receive a distribution of his/her vested Account Balance in the same manner as a regular distribution upon termination.

- ☐ (a) **Immediate distribution upon termination of employment.** Distribution will be made as soon as reasonable following the date the Participant terminates employment on account of becoming Disabled.
- ☐ (b) **Following year distribution upon termination of employment.** Distribution will be made as soon as reasonable following the last day of the Plan Year during which the Participant terminates on account of becoming Disabled.
- ☐ (c) **Describe:** _____

[Note: Any distribution event described in this subsection (c) will apply uniformly to all Participants under the Plan and may not be subject to the discretion of the Employer or Plan Administrator.]

9-5 **DETERMINATION OF BENEFICIARY.**

- (a) **Default beneficiaries.** Under Section 7.07(c) of the Plan, to the extent a Beneficiary has not been named by the Participant (subject to the spousal consent rules) and is not designated under the terms of the Investment Arrangement(s) to receive all or any portion of the deceased Participant's death benefit, such amount shall be distributed to the Participant's surviving Spouse (if the Participant was married at the time of death) who shall be considered the designated Beneficiary. If the Participant does not have a surviving Spouse at the time of death, distribution will be made to the Participant's surviving children (including legally adopted children, but not including step-children), as designated Beneficiaries, in equal shares. If the Participant has no surviving children, distribution will be made to the Participant's estate.

- ☐ If this subsection (a) is checked, the default beneficiaries under Section 7.07(c) of the Plan are modified as follows:

- ☐ (1) The Plan adopts the default beneficiary rules under Section 7.07(c) of the Plan, except, if the Participant does not have a surviving Spouse at the time of death, distribution will be made to the Participant's children (including legally adopted children, but not including step-children), as designated Beneficiaries, **per stirpes**.

- ☐ (2) Describe other modifications to the default beneficiaries under Section 7.07(c) of the Plan: _____

[Note: The description of the modifications to the default beneficiaries must be sufficiently clear for the Plan Administrator to determine the beneficiaries and the method of distribution of the Participant's death benefit.]

- (b) **One-year marriage rule.** For purposes of determining whether an individual is considered the surviving Spouse of the Participant, the determination is based on the marital status as of the date of the Participant's death, unless designated otherwise under this subsection (b).

- ☐ If this subsection (b) is checked, in order to be considered the surviving Spouse, the Participant and surviving Spouse must have been married for the entire one-year period ending on the date of the Participant's death. If the Participant and surviving Spouse are not married for at least one year as of the date of the Participant's death, the Spouse will not be treated as the surviving Spouse for purposes of applying the distribution provisions of the Plan. (See Section 9.03 of the Plan.)

- (c) **Divorce of Spouse.** Unless elected otherwise under this subsection (c), if a Participant designates his/her Spouse as Beneficiary and subsequent to such Beneficiary designation, the Participant and Spouse are divorced, the designation of the Spouse as Beneficiary under the Plan is automatically rescinded as set forth under Section 7.07(c)(6) of the Plan.

- ☐ If this subsection (c) is checked, a Beneficiary designation will not be rescinded upon divorce of the Participant and Spouse.

[Note: Section 7.07(c)(6) of the Plan and this subsection (c) will be subject to the provisions of a Beneficiary designation entered into by the Participant. Thus, if a Beneficiary designation specifically overrides the election under this subsection (c), the provisions of the Beneficiary designation will control. See Section 7.07(c)(6) of the Plan.]

SECTION 10
IN-SERVICE DISTRIBUTIONS AND REQUIRED MINIMUM DISTRIBUTIONS

10-1 **AVAILABILITY OF IN-SERVICE DISTRIBUTIONS.** A Participant may withdraw all or any portion of his/her vested Account Balance, to the extent designated, upon the occurrence of the event(s) selected under this AA §10-1.

- ☐ (a) No in-service distributions are permitted.
- ☒ (b) Attainment of age 62 [may not be earlier than age 62].
- ☐ (c) Attainment of Normal Retirement Age.

10-2 **APPLICATION TO OTHER CONTRIBUTION SOURCES.** If the Plan allows for Rollover Contributions under AA §C-2 or After-Tax Employee Contributions under AA §6-6, unless elected otherwise under this AA §10-2, a Participant may take an in-service distribution from his/her Rollover Account and After-Tax Employee Contribution Account at any time. Employer Pick-Up Contributions will not be eligible for in-service distribution.

Alternatively, if this AA §10-2 is completed, the following in-service distribution provisions apply for Rollover Contributions, After-Tax Employee Contributions and/or Employer Pick-Up Contributions:

Rollover	After-Tax	Pick-Up	
☐	☐	☐	(a) No in-service distributions are permitted.
☐	☐	☐	(b) Attainment of age ____ (Not greater than age 70½).
☐	☐	☐	(c) Attainment of Normal Retirement Age.
☐	☐	☐	(d) Attainment of Early Retirement Age.
☐	☐	☐	(e) Describe: _____

10-3 **SPECIAL DISTRIBUTION RULES.** No special distribution rules apply, unless specifically provided under this AA §10-3.

- ☐ (a) In-service distributions will only be permitted if the Participant is 100% vested in the amounts being withdrawn.
- ☐ (b) A Participant may take no more than ____ in-service distribution(s) in a Plan Year.
- ☐ (c) A Participant may not take an in-service distribution of less than \$ ____.
- ☐ (d) A Participant may not take an in-service distribution of more than \$ ____.
- ☐ (e) Other distribution rules: _____

10-4 **REQUIRED MINIMUM DISTRIBUTIONS.**

- (a) **Required distributions after death.** If a Participant dies before distributions begin and there is a Designated Beneficiary, the Participant or Beneficiary may elect on an individual basis whether the 5-year rule (as described in Section 8.06(a) of the Plan) or the life expectancy method described under Sections 8.02 of the Plan apply. See Section 8.06(b) of the Plan for rules regarding the timing of an election authorized under this AA §10-4.

Alternatively, if selected under this subsection (a), any death distributions to a Designated Beneficiary will be made only under either the 5-year rule or the life expectancy method, as elected below:

- ☐ (1) The five-year rule under Section 8.06(a) of the Plan applies (instead of the life expectancy method). Thus, the entire death benefit must be distributed by the end of the fifth year following the year of the Participant's death. Death distributions to a Designated Beneficiary may not be made under the life expectancy method.
- ☐ (2) The life expectancy method under Sections 8.02 and 8.04 of the Plan (and not the 5-year rule).
- ☐ (b) **Describe any special rules applicable to required minimum distributions:** _____

[Note: Any special rule under this subsection (b) must satisfy the requirements of Code §401(a)(9). This subsection (b) may be used to override the default provision under Section 8.06(b) of the Plan. For example, the Employer may designate the life expectancy rules as the default rather than the five-year rule when a Participant or Beneficiary fails to make an election.]

SECTION 11
MISCELLANEOUS PROVISIONS

11-1 **PLAN VALUATION.** The Plan is valued **annually**, as of the last day of the Plan Year.

☒ (a) **Additional valuation dates.** In addition, the Plan will be valued on the following dates:

☒ (1) **Daily.** The Plan is valued at the end of each business day during which the New York Stock Exchange is open.

☐ (2) **Monthly.** The Plan is valued at the end of each month of the Plan Year.

☐ (3) **Quarterly.** The Plan is valued at the end of each Plan Year quarter.

☐ (4) **Describe:** _____

[Note: The Employer may elect operationally to perform interim valuations, regardless of any selection in this subsection (a).]

☐ (b) **Special rules.** The following special rules apply in determining the amount of income or loss allocated to Participants' Accounts: _____

11-2 **SPECIAL RULES FOR APPLYING THE CODE §415 LIMITATION.** The provisions under Section 5.02 of the Plan apply for purposes of determining the Code §415 Limitation.

Complete this AA §11-2 to override the default provisions that apply in determining the Code §415 Limitation under Section 5.02 of the Plan.

☐ (a) **Limitation Year.** Instead of the Plan Year, the Limitation Year is the 12-month period ending _____.

[Note: If the Plan has a short Plan Year for the first year of establishment, the Limitation Year is deemed to be the 12-month period ending on the last day of the short Plan Year.]

☐ (b) **Imputed compensation.** For purposes of applying the Code §415 Limitation, Total Compensation includes imputed compensation for a Participant who terminates employment on account of becoming disabled as described under Section 5.02(c)(7)(ii) of the Plan.

☐ (c) **Special rules:** _____

[Note: Any special rules under this subsection (c) must be consistent with the requirements of Code §415.]

11-3 **MILITARY SERVICE PROVISIONS -- BENEFIT ACCRUALS.** The benefit accrual provisions under Section 15.04 of the Plan do not apply. To apply the benefit accrual provisions under Section 15.04 of the Plan, check the box below.

☐ **Eligibility for Plan benefits.** Check this box if the Plan will provide the benefits described in Section 15.04 of the Plan. If this box is checked, an individual who dies or becomes disabled in qualified military service will be treated as reemployed for purposes of determining entitlement to benefits under the Plan.

11-4 **ELECTION NOT TO PARTICIPATE. (See Section 2.08 of the Plan.)** All Participants share in any allocation under this Plan and no Employee may waive out of Plan participation.

To allow Employees to make a one-time irrevocable waiver, check below.

☐ An Employee may make a one-time irrevocable election not to participate under the Plan.

11-5 **TREATMENT OF CERTAIN BENEFITS.** The protected benefits rules under Code §411(d)(6)) do not apply to the Plan. However, the Employer may describe below (or in a separate addendum attached to this Adoption Agreement) the treatment of certain benefits following events such as plan merger or consolidation, transfer of assets or similar events.

Describe treatment of benefits: _____

[Note: If the benefit described here in the Plan or a plan being merged into the Plan is not either (i) available as a provision through the Pre-Approved Plan or (ii) the subject of a prior determination, advisory, or opinion letter, the Employer cannot rely on the Pre-Approved Plan Provider's opinion letter for qualification with respect to such benefit. If the benefit described here in the Plan or a plan being merged into the Plan is not permitted in a pre-approved plan, as described in Section 6.03 of Revenue Procedure 2017-41, such provision must be discontinued no later than the date the Employer adopts this Pre-Approved Plan or, in the case of a merger, the merger date.]

11-6 **SPECIAL RULES FOR MULTIPLE EMPLOYER PLANS.** If the Plan is a Multiple Employer Plan (as designated under AA §2-6), the rules applicable to Multiple Employer Plans under Section 16.07 of the Plan apply.

☐ The following special rules apply with respect to Multiple Employer Plans: _____

[Note: Any special rules under this AA §11-6 must satisfy the nondiscrimination requirements under Code §401(a)(4) and must satisfy the rules applicable to Multiple Employer Plans under Code §413(c).]

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APPENDIX A
SPECIAL EFFECTIVE DATES

[Note: This Appendix A may be used to memorialize prior Plan provisions that pertain to sources that no longer accept new contributions under the Plan.]

- ☐ A-1 **Eligible Employees.** The definition of Eligible Employee under AA §3 is effective as follows:

- ☐ A-2 **Minimum age and service conditions.** The minimum age and service conditions and Entry Date provisions specified in AA §4 are effective as follows:

- ☐ A-3 **Compensation definitions.** The compensation definitions under AA §5 are effective as follows:

- ☐ A-4 **Employer Contributions.** The Employer Contribution provisions under AA §6 are effective as follows:

- ☐ A-5 **After-Tax Employee and Pick-Up Contributions.** The provisions of the Plan addressing Employee After-Tax Contributions and Pick-Up Contribution provisions under AA §6-6 of the Plan are effective as follows:

- ☐ A-6 **Retirement ages.** The retirement age provisions under AA §7 are effective as follows:

- ☐ A-7 **Vesting and forfeiture rules.** The rules regarding vesting and forfeitures under AA §8 are effective as follows:

- ☐ A-8 **Distribution provisions.** The distribution provisions under AA §9 are effective as follows:

- ☐ A-9 **In-service distributions and Required Minimum Distributions.** The provisions regarding in-service distribution and Required Minimum Distributions under AA §10 are effective as follows:

- ☐ A-10 **Miscellaneous provisions.** The provisions under AA §11 are effective as follows:

- ☐ A-11 **Special effective date provisions for merged plans.** If any qualified retirement plans have been merged into this Plan, the provisions of Section 14.03 of the Plan apply as follows:

- ☐ A-12 **Other special effective dates:**

- ☐ A-13 **Special effective dates for restated pre-approved plans:** Use this A-13 to memorialize plan operational changes that have occurred after the general effective date of the plan and the actual plan restatement adoption date. Adopting employers may use the above Special Effective Date options (A-1 through A-12) to memorialize these changes or they may use this A-13. If the adopting employer uses this A-13, the changes will be part of the Plan, but will not be reflected in the SPD or plan summary:

APPENDIX B
LOAN POLICY

Use this Appendix B to identify elections dealing with the administration of Participant loans. These elections may be changed without amending this Adoption Agreement by substituting an updated Appendix B with new elections. Any modifications to this Appendix B, or any modifications to a separate loan policy describing the loan provisions selected under the Plan, will not affect an Employer's reliance on the IRS Favorable Letter. All loans are subject to any internal limitations imposed by the Investment Arrangement or the service provider or platform.

B-1 Are **PARTICIPANT LOANS** permitted? (See Section 13 of the Plan.)

- ☒ (a) Yes
☐ (b) No

B-2 **LOAN PROCEDURES.**

- ☐ (a) Loans will be provided under the default loan procedures set forth in Section 13 of the Plan, unless modified under this Appendix B.
☒ (b) Loans will be provided under a separate written loan policy.

[Note: If this subsection (b) is checked, do not complete the rest of this Appendix B.]

B-3 **AVAILABILITY OF LOANS.** Participant loans are available to all active Participants and Beneficiaries. Participant loans are not available to a former Employee or Beneficiary (including an Alternate Payee under a QDRO). To override this default provision, check subsections (a), (b) and/or (c) below:

- ☐ (a) A former Employee or Beneficiary (including an Alternate Payee) who has a vested Account Balance may request a loan from the Plan.
☐ (b) A "limited participant" as defined in Section 3.05 of the Plan may not request a loan from the Plan.
☐ (c) An officer or director of the Employer, as defined for purposes of the Sarbanes-Oxley Act, may **not** request a loan from the Plan.
☐ (d) Describe limitations on receiving loans under the Plan: _____

[Note: Any limitation under subsection (d) must be definitely determinable and not provide any Employer discretion.]

B-4 **LOAN LIMITS.** The default loan policy under Section 13.03 of the Plan allows Participants to take a loan provided all outstanding loans do not exceed 50% of the Participant's vested Account Balance. To override the default loan policy to allow loans up to \$10,000, even if greater than 50% of the Participant's vested Account Balance, check this AA §B-4.

- ☐ A Participant may take a loan equal to the greater of \$10,000 or 50% of the Participant's vested Account Balance.

[Note: If this AA §B-4 is checked, the Participant may be required to provide adequate security as required under Section 13.06 of the Plan.]

B-5 **NUMBER OF LOANS.** The default loan policy under Section 13.04 of the Plan restricts Participants to one loan outstanding at any time. To override the default loan policy and permit Participants to have more than one loan outstanding at any time, complete subsection (a) or (b) below.

- ☐ (a) A Participant may have ____ loans outstanding at any time.
☐ (b) There are no restrictions on the number of loans a Participant may have outstanding at any time.

B-6 **LOAN AMOUNT.** The default loan policy under Section 13.04 of the Plan provides that a Participant may not receive a loan of less than \$1,000. To modify the minimum loan amount or to add a maximum loan amount, complete this AA §B-6.

- ☐ (a) There is no minimum loan amount.
☐ (b) The minimum loan amount is \$_____.
☐ (c) The maximum loan amount is \$_____.

- B-7 **INTEREST RATE.** The default loan policy under Section 13.05 of the Plan provides for an interest rate commensurate with the interest rates charged by local commercial banks for similar loans. To override the default loan policy and provide a specific interest rate to be charged on Participant loans, complete this AA §B-7.
- ☐ (a) The prime interest rate plus ____ percentage point(s).
- ☐ (b) The interest rate is determined in accordance with the terms of the Investment Arrangement, service provider procedures, or other loan policy document adopted by the Plan Administrator.
- ☐ (b) Describe: _____
- [*Note: Any interest rate described in this AA §B-7 must be reasonable and must apply uniformly to all Participants.*]
- B-8 **PURPOSE OF LOAN.** The default loan policy under Section 13.02 of the Plan provides that a Participant may receive a Participant loan for any purpose. To modify the default loan policy to restrict the availability of Participant loans to hardship events, check this AA §B-8.
- ☐ (a) A Participant may only receive a Participant loan upon the demonstration of a hardship event, as described in Section 7.10(c)(1)(i) of the Plan.
- ☐ (b) A Participant may only receive a Participant loan under the following circumstances: _____
- B-9 **APPLICATION OF LOAN LIMITS.** If Participant loans are not available from all contribution sources, the limitations under Code §72(p) and the adequate security requirements of the Department of Labor regulations will be applied by taking into account the Participant's entire Account Balance. To override this provision, complete this AA §B-9.
- ☐ The loan limits and adequate security requirements will be applied by taking into account only those contribution Accounts which are available for Participant loans.
- B-10 **CURE PERIOD.** The Plan provides that a Participant incurs a loan default if a Participant does not repay a missed payment by the end of the calendar quarter following the calendar quarter in which the missed payment was due. To override this default provision to apply a shorter cure period, complete this AA §B-10.
- ☐ (a) The cure period for determining when a Participant loan is treated as in default will be ____ days (cannot exceed 90) following the end of the month in which the loan payment is missed.
- ☐ (b) The cure period for determining when a Participant loan is treated as in default will be the greater of ____ days (cannot exceed 90) following the end of the month in which the loan payment is missed or the last day of the second calendar quarter following the calendar quarter in which the missed payment was due.
- ☐ (c) The cure period for determining when a loan is treated as in default will be ____ days (cannot exceed 90) following the first missed loan payment.
- B-11 **PERIODIC REPAYMENT – PRINCIPAL RESIDENCE.** If a Participant loan is for the purchase of a Participant's primary residence, the loan repayment period for the purchase of a principal residence may not exceed ten (10) years. To override this default provision, complete this AA §B-11.
- ☐ (a) The Plan does not permit loan payments to exceed five (5) years, even for the purchase of a principal residence.
- ☐ (b) The loan repayment period for the purchase of a principal residence may not exceed ____ years (may not exceed 30).
- ☐ (c) Loans for the purchase of a Participant's primary residence may be payable over any reasonable period commensurate with the period permitted by commercial lenders for similar loans.
- B-12 **TERMINATION OF EMPLOYMENT.** Section 13.10(a) of the Plan provides that a Participant loan becomes due and payable in full upon the Participant's termination of employment. To override this default provision, complete this AA §B-12.
- ☐ A Participant loan will not become due and payable in full upon the Participant's termination of employment.
- B-13 **DIRECT ROLLOVER OF A LOAN NOTE.** Section 13.10(b) of the Plan provides that upon termination of employment a Participant may request the Direct Rollover of a loan note. To override this default provision, complete this AA §B-13.
- ☐ A Participant may **not** request the Direct Rollover of the loan note upon termination of employment.
- B-14 **LOAN RENEGOTIATION.** The default loan policy provides that a Participant may renegotiate a loan, provided the renegotiated loan separately satisfies the reasonable interest rate requirement, the adequate security requirement, the periodic repayment requirement and the loan limitations under the Plan. The Employer may restrict the availability of renegotiations to prescribed purposes provided the ability to renegotiate a Participant loan is available on a non-discriminatory basis. To override the default loan policy and restrict the ability of a Participant to renegotiate a loan, complete this AA §B-14.

- ☐ (a) A Participant may **not** renegotiate the terms of a loan.
- ☐ (b) The following special provisions apply with respect to renegotiated loans: _____

B-15 MODIFICATIONS TO DEFAULT LOAN PROVISIONS.

- ☐ The following special rules will apply with respect to Participant loans under the Plan: _____

[Note: Any provision under this AA §B-15 must satisfy the requirements under Code §72(p) and the regulations thereunder and will control over any inconsistent provisions of the Plan dealing with the administration of Participant loans.]

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APPENDIX C
ADMINISTRATIVE ELECTIONS

Use this Appendix C to identify certain elections dealing with the administration of the Plan. These elections may be changed without amending this Adoption Agreement by substituting an updated Appendix C with new elections. The provisions selected under this Appendix C do not create qualification issues and any changes to the provisions under this Appendix C will not affect the Employer's reliance on the IRS Favorable Letter.

C-1 DIRECTION OF INVESTMENTS. Are Participants permitted to **direct investments**? (See Section 10.07 of the Plan.)

☐ (a) No

☒ (b) Yes, but subject to the following restrictions:

☒ (1) No restrictions apply

☐ (2) Only for Accounts that are 100% vested

☐ (3) Specify Accounts: _____

☐ (4) Describe any special rules that apply for purposes of direction of investments: _____

[Note: This subsection (4) may be used to describe special investment provisions for specific types of investments or for specific Accounts, such as the Rollover Contribution Account.]

C-2 ROLLOVER CONTRIBUTIONS. Does the Plan accept **Rollover Contributions**? (See Section 3.05 of the Plan.)

☐ (a) No

☒ (b) Yes

☒ (1) If this subsection (1) is checked, an Employee may make a Rollover Contribution to the Plan prior to becoming a Participant in the Plan.

☐ (2) Check this subsection (2) if the Plan will accept Rollover Contributions from former Employees with an Account Balance under the Plan.

☐ (3) Describe any special rules for accepting Rollover Contributions: _____

[Note: The Employer may designate in this subsection (3), or in separate written procedures, the extent to which it will accept rollovers from designated plan types. For example, the Employer may decide not to accept rollovers from certain designated plans (e.g., 403(b) plans, §457 plans or IRAs). Any special rollover procedures will apply uniformly to all Participants under the Plan.]

C-3 LIFE INSURANCE. Are **life insurance** investments permitted? (See Section 10.08 of the Plan.)

☒ (a) No

☐ (b) Yes

C-4 QDRO PROCEDURES. Although the requirements of Code §414(p) do not apply to the Plan, the Employer may elect to apply the procedures set forth under Section 11.05 of the Plan (which are patterned after the rules under Code §414(p)) by electing subsection (a) below or may elect not to apply the procedures set forth under Section 11.05 of the Plan and instead, describe the Plan's procedures for addressing domestic relations orders below or in separate administrative procedures.

☒ (a) The Employer elects to have the requirements of Section 11.05 of the Plan apply to its Plan.

☐ (b) The requirements of Section 11.05 of the Plan do not apply to the Plan. The procedures for addressing the receipt of domestic relations orders are either set forth below or in separate administrative procedures.

Describe domestic relations procedures: _____

EMPLOYER SIGNATURE PAGE

PURPOSE OF EXECUTION. This Signature Page is being executed to effect:

- ☐ (a) The adoption of a **new plan**, effective ____ [insert Effective Date of Plan]. [**Note:** Date can be no earlier than the first day of the Plan Year in which the Plan is adopted.]
- ☒ (b) The **restatement** of an existing plan in order to comply with the requirements for Cycle 3 Pre-Approved Plans, pursuant to Rev. Proc. 2017-41.
- (1) Effective date of restatement: 1-1-2022. [**Note:** Date can be no earlier than the first day of the Plan Year in which the restatement is adopted.]
- (2) Name of plan(s) being restated: City of Fort Lupton Employee Pension Plan
- (3) The original effective date of the plan(s) being restated: 11-29-1991
- ☐ (c) An **amendment or restatement** of the Plan (other than to comply with the requirements for Cycle 3 Pre-Approved Plans under Rev. Proc. 2017-41). If this Plan is being amended, a snap-on amendment may be used to designate the modifications to the Plan or the updated pages of the Adoption Agreement may be substituted for the original pages in the Adoption Agreement. All prior Employer Signature Pages should be retained as part of this Adoption Agreement.
- (1) Effective Date(s) of amendment/restatement: _____
- (2) Name of plan being amended/restated: _____
- (3) The original effective date of the plan being amended/restated: _____
- (4) If Plan is being amended, identify the Adoption Agreement section(s) being amended: _____

PRE-APPROVED PLAN PROVIDER INFORMATION. The Pre-Approved Plan Provider (or authorized representative) will inform the Employer of any amendments made to the Plan and will notify the Employer if it discontinues or abandons the Plan. To be eligible to receive such notification, the Employer agrees to notify the Pre-Approved Plan Provider (or authorized representative) of any change in address. The Employer may direct inquiries regarding the Plan or the effect of the IRS Opinion Letter to the Pre-Approved Plan Provider (or authorized representative) at the following location:

Name of Pre-Approved Plan Provider (or authorized representative): VALIC Retirement Services Company

Address: 2929 Allen Parkway L-10 Houston, TX 77019

Telephone number: 888-478-7020

IMPORTANT INFORMATION ABOUT THIS PRE-APPROVED PLAN. A failure to properly complete the elections in this Adoption Agreement or to operate the Plan in accordance with applicable law may result in disqualification of the Plan. The Employer may rely on the Favorable IRS Letter issued by the Internal Revenue Service to the Pre-Approved Plan Provider as evidence that the Plan is qualified under Code §401(a), to the extent provided in Rev. Proc. 2017-41. The Employer may not rely on the Favorable IRS Letter in certain circumstances or with respect to certain qualification requirements, which are specified in the Favorable IRS Letter issued with respect to the Plan and in Rev. Proc. 2017-41. In order to obtain reliance in such circumstances or with respect to such qualification requirements, the Employer may need to apply to the Internal Revenue Service for a determination letter.

By executing this Adoption Agreement, the Employer intends to adopt the provisions as set forth in this Adoption Agreement and the related Plan document. By signing this Adoption Agreement, the individual below represents that he/she has the authority to execute this Plan document on behalf of the Employer. This Adoption Agreement may only be used in conjunction with Basic Plan Document #03. The Employer understands that the Pre-Approved Plan Provider has no responsibility or liability regarding the suitability of the Plan for the Employer's needs or the options elected under this Adoption Agreement. It is recommended that the Employer consult with legal counsel before executing this Adoption Agreement.

City of Fort Lupton
(Name of Employer)

(Name of authorized representative)

(Title)

(Signature)

(Date)

TRUST DECLARATION

This Trust Declaration may be used to identify and adopt the Trust associated with the Plan.

[Note: The Internal Revenue Service does not review the Trust Declaration, or the trust provisions associated with Pre-Approved Plans. Therefore, the provisions of the Trust Declaration, ASC Trust Agreement or any separate Trust agreement have not been approved by the IRS and the IRS opinion letter does not cover such Trust Agreement. The Provider, the Trustee and the adopting Employer should review the applicable Trust provisions, and any modifications thereto, with legal counsel to ensure the provisions are appropriate for the Plan and consistent with Employer elections.]

Name of Plan. City of Fort Lupton Employee Pension Plan

Name of Employer. City of Fort Lupton

Effective date of Trust Agreement: 1-1-2022

(a) **The Trust terms are:**

☐ (1) **Determined under the Trust provisions contained in the ASC Trust Agreement - Standard.**

[Note: Trustee must complete the Trustee Signature section under Section (b) below.]

☐ (i) **Directed Trustee.** The Trustee may only invest Plan assets as directed by the Plan Administrator, the Employer, an Investment Manager or other Named Fiduciary or, to the extent authorized under the Plan, a Plan Participant.

☐ (ii) **Discretionary Trustee.** The Trustee has discretion to invest Plan assets, unless specifically directed otherwise by the Plan Administrator, the Employer, an Investment Manager or other Named Fiduciary or, to the extent authorized under the Plan, a Plan Participant.

[Modification of ASC Trust Agreement Provisions. The Employer may amend the Trust provisions as provided under Section 1.18 of the ASC Trust Agreement. Plan provisions will override any conflicting provisions in the Trust Agreement, including any modification thereto. The Provider and the adopting Employer should review any modifications of the ASC Trust Agreement with legal counsel to ensure the provisions are appropriate for the Plan and consistent with Employer elections.]

☐ (2) **Determined under a separate Trust agreement(s).** The Trust provisions are contained in a separate Trust Agreement that has been furnished to the Employer. Notwithstanding the terms of the Plan, the terms of the Trust Agreement shall control the rights and responsibilities of the Trustee with respect to the Trust and the assets held in such Trust.

Name of Trustee. _____

Title of Trust Agreement. _____

Address of Trustee. _____

[Note: In using a separate Trust Agreement, the Trustee may adopt such Trust Agreement by either completing the Trustee Signature section under Section (b) below or may execute the separate Trust Agreement. In either case, the information above – Name of Trustee, Title of Trust Agreement and Address of Trustee – must be completed.]

☒ (3) **Plan is funded with custodial accounts, annuity contracts and/or insurance contracts.** There is no Trust associated with the Plan because the Plan is funded exclusively with custodial accounts, annuity contracts and/or insurance contracts.

[Note: No signature is required under this Trust Declaration if the Plan is funded exclusively with custodial accounts, annuity contracts and/or insurance contracts. The Employer or Plan Administrator may enter into a separate agreement with the custodian or insurance company. Such separate agreement must be consistent with the terms of the Plan.]

PRE-APPROVED GOVERNMENTAL DEFINED CONTRIBUTION PLAN

BASIC PLAN DOCUMENT

[DC-BPD #03]

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PLAN DEFINITIONS

This Section contains definitions for common terms that are used throughout the Plan. All capitalized terms under the Plan are defined in this Section or in the relevant section of the Plan document where such term is used.

1.01 Account. The separate Account maintained for each Participant under the Plan by the Plan Administrator, Plan service provider, Custodian or insurance company. A Participant may have any (or all) of the following separate Accounts, to the extent authorized under the Plan:

- Employer Contribution Account
- Matching Contribution Account
- After-Tax Employee Contribution Account
- Employer Pick-Up Contribution Account
- Rollover Contribution Account
- Transfer Account

In addition, if this Plan qualifies as a Grandfathered 401(k) Arrangement (as defined in Section 1.55), a Participant also may have any (or all) of the following separate Accounts:

- Pre-Tax Salary Deferral Account
- Roth Deferral Account
- Roth Rollover Contribution Account

The Plan Administrator may establish other Accounts, as it deems necessary, for the proper administration of the Plan.

1.02 Account Balance. Account Balance shall mean a Participant's balances in all of the Accounts maintained by the Plan on his or her behalf.

1.03 Actuarial Factor. A Participant's Actuarial Factor is used for purposes of determining the Participant's allocation under the age-based formula under AA §6-3(f) of the Profit Sharing Plan Adoption Agreement or under the age-based contribution formula under AA §6-2(e) of the Money Purchase Plan Adoption Agreement. See Section 3.02(a)(1)(i)(E) or 3.02(b)(4).

1.04 Adoption Agreement ("Agreement" or "AA"). The Adoption Agreement contains the elective provisions that an Employer may complete to supplement or modify the provisions under the Plan. Each adopting Employer must complete and execute the Adoption Agreement. If the Plan covers Employees of an Employer other than the Employer that executes the Employer Signature Page of the Adoption Agreement, such additional Employer(s) must execute a Participating Employer Adoption Page under the Adoption Agreement. (See Section 16 for rules applicable to adoption by Participating Employers.) An Employer may adopt more than one Adoption Agreement associated with this Plan document. Each executed Agreement is treated as a separate Plan. The Employer may adopt a Profit Sharing Plan Adoption Agreement or a Money Purchase Plan Adoption Agreement. The Employer also may elect under the Profit Sharing Plan Adoption Agreement to provide for a Grandfathered 401(k) Arrangement under the Plan. Any reference to the Profit Sharing Plan Adoption Agreement includes the Grandfathered 401(k) Plan Adoption Agreement, unless specifically provided otherwise.

1.05 After-Tax Employee Contributions. Employee Contributions that may be made to the Plan by a Participant that are included in the Participant's gross income in the year such amounts are contributed to the Plan and are maintained under a separate After-Tax Employee Contribution Account to which earnings and losses are allocated. See Section 3.04. For this purpose, Roth Deferrals are not considered as After-Tax Employee Contributions.

1.06 Alternate Payee. A person designated to receive all or a portion of the Participant's benefit pursuant to a QDRO. See Section 1.80.

1.07 Anniversary Years. An alternative period for measuring Eligibility Computation Periods (under Section 2.03(a)(3)) and Vesting Computation Periods (under Section 6.05). An Anniversary Year is any 12-month period which commences with the Employee's Employment Commencement Date, or which commences with the anniversary of the Employee's Employment Commencement Date.

1.08 Annual Additions. The amounts taken into account under a Defined Contribution Plan for purposes of applying the limitation on allocations under Code §415. See Section 5.02(c)(1) for the definition of Annual Additions.

1.09 Annuity Contract. A nontransferable group annuity certificate or individual contract as defined in Code §401(g) that is issued by an insurance company qualified to issue annuities in a State and that includes payment in the form of an annuity and that meets the following requirements: (a) An Annuity Contract may only be offered by an Insurance Company; (b) The Annuity Contract may be owned by the Participant, and a group Annuity Contract may be held by the Trustee or Employer (if a

qualified trust substitute under Code §401(f)); and (c) An Annuity Contract may be fixed, variable, or a combination of fixed and variable.

A life insurance contract, an endowment contract, a health or accident insurance contract, or a property, casualty, or liability insurance contract do not constitute an Annuity Contract. However, this does not apply for contracts issued before September 24, 2007.

- 1.10 Annuity Starting Date.** The date an Employee commences distribution from the Plan. If a Participant commences distribution with respect to a portion of his/her Account Balance, a separate Annuity Starting Date applies to any subsequent distribution. If distribution is made in the form of an annuity, the Annuity Starting Date is the first day of the first period for which annuity payments are made.
- 1.11 Beneficiary.** A person designated by the Participant (or by the terms of the Plan) to receive a benefit under the Plan upon the death of the Participant. See Section 7.07(c) for the applicable rules for determining a Participant's Beneficiaries under the Plan.
- 1.12 Break in Service.** The Computation Period (as defined in Section 2.03(a)(3) for purposes of eligibility and Section 6.05 for purposes of vesting) during which an Employee does not complete more than five hundred (500) Hours of Service with the Employer. However, if the Employer elects under AA §4-3(a) or AA §8-5(a) to require less than 1,000 Hours of Service to earn a Year of Service for eligibility or vesting purposes, a Break in Service will occur for any Computation Period during which the Employee does not complete more than one-half (1/2) of the Hours of Service required to earn a Year of Service for eligibility or vesting purposes, as applicable. However, if the Elapsed Time method applies under AA §4-3(c) (for purposes of eligibility) or AA §8-5(c) (for purposes of vesting), an Employee will incur a Break in Service if the Employee incurs at least a one-year Period of Severance (as defined under Section 1.72). (See Section 2.07 for a discussion of the eligibility Break in Service rules and Section 6.08 for a discussion of the vesting Break in Service rules.)
- 1.13 Cash-Out Distribution.** A total distribution made to a terminated Participant in accordance with Section 6.10(a).
- 1.14 Catch-Up Contributions.** Salary Deferrals that may be made under a Grandfathered 401(k) Arrangement that are in excess of an otherwise applicable Plan limit and that are made by a Participant who is age 50 or over by the end of his/her taxable year. See Section 3.02(c)(2)(iv).
- 1.15 Catch-Up Contribution Limit.** The annual limit applicable to Catch-Up Contributions as set forth in Section 3.02(c)(2)(iv)(A).
- 1.16 Code.** The Internal Revenue Code of 1986, as amended.
- 1.17 Code §415 Limitation.** The limit on the amount of Annual Additions a Participant may receive under the Plan during a Limitation Year. See Section 5.02.
- 1.18 Collectively Bargained Employee.** An Employee who is included in a unit of Employees covered by a collective bargaining agreement between the Employer and Employee representatives and whose retirement benefits are subject to good faith bargaining. Such Employees may be excluded from the Plan if designated under AA §3-1(b). See Section 2.02(b)(1) for additional requirements related to the exclusion of Collectively Bargained Employees.
- 1.19 Compensation Limit.** The maximum amount of compensation that can be taken into account for any Plan Year for purposes of determining a Participant's Plan Compensation. The Compensation Limit is \$200,000, as adjusted for cost-of-living, increased in accordance with Code §401(a)(17)(B). For 2019, the Compensation Limit is \$280,000. In determining the Compensation Limit for any applicable period (the "determination period"), the cost-of-living adjustment in effect for a calendar year applies to any determination period that begins with or within such calendar year.

If a determination period consists of fewer than 12 months, the Compensation Limit for such period is an amount equal to the otherwise applicable Compensation Limit multiplied by a fraction, the numerator of which is the number of months in the short determination period, and the denominator of which is 12. A determination period will not be considered to be less than 12 months merely because compensation is taken into account only for the period the Employee is a Participant. If Salary Deferrals, Matching Contributions, or After-Tax Employee Contributions are separately determined on the basis of specified periods within the determination period (e.g., on the basis of payroll periods), no proration of the Compensation Limit is required with respect to such contributions.

If compensation for any prior determination period is taken into account in determining a Participant's allocations for the current Plan Year, the compensation for such prior determination period is subject to the applicable Compensation Limit in effect for that prior period.

In determining the amount of a Participant's Salary Deferrals under a Grandfathered 401(k) Arrangement, a Participant may defer with respect to Plan Compensation that exceeds the Compensation Limit, provided the total deferrals made by the Participant satisfy the Elective Deferral Dollar Limit and any other limitations under the Plan.

- 1.20 **Computation Period.** The 12-consecutive month period used for measuring whether an Employee completes a Year of Service for eligibility or vesting purposes.
- (a) **Eligibility Computation Period.** The 12-consecutive month period used for measuring Years of Service for eligibility purposes. See Section 2.03(a)(3).
- (b) **Vesting Computation Period.** The 12-consecutive month period used for measuring Years of Service for vesting purposes. See Section 6.05.
- 1.21 **Custodian.** An organization that has custody of all or any portion of the Plan assets in a custodial account as described in Code §401(f). See Section 12.05.
- 1.22 **Defined Benefit Plan.** A plan under which a Participant's benefit is based solely on the Plan's benefit formula without the establishment of separate Accounts for Participants.
- 1.23 **Defined Contribution Plan.** A plan that provides for individual Accounts for each Participant to which all contributions, forfeitures, income, expenses, gains and losses under the Plan are credited or deducted. A Participant's benefit under a Defined Contribution Plan is based solely on the fair market value of his/her vested Account Balance.
- 1.24 **Designated Beneficiary.** A Beneficiary who is designated by the Participant (or by the terms of the Plan) and whose life expectancy is taken into account in determining minimum distributions under Code §401(a)(9) and Treas. Reg. §1.401(a)(9)-4. See Section 8.05(a).
- 1.25 **Differential Pay.** Certain payments made by the Employer to an individual while the individual is performing service in the Uniformed Services. See Section 1.94(e).
- 1.26 **Directed Account.** The Plan assets under a Trust which are held for the benefit of a specific Participant. See Section 10.03(d)(2).
- 1.27 **Directed Trustee.** A Trustee is a Directed Trustee to the extent that the Trustee's investment powers are subject to the direction of another person.
- 1.28 **Direct Rollover.** A rollover, at the Participant's direction, of all or a portion of the Participant's vested Account Balance directly to an Eligible Retirement Plan. See Section 7.0404.
- 1.29 **Disabled.** An individual is considered Disabled for purposes of applying the provisions of this Plan if the individual meets the definition of Disabled elected by the Employer under AA §2.8.
- 1.30 **Discretionary Trustee.** A Trustee is a Discretionary Trustee to the extent the Trustee has exclusive authority and discretion to invest, manage or control the Plan assets without direction from any other person.
- 1.31 **Distribution Calendar Year.** A calendar year for which a minimum distribution is required. See Section 8.05(b).
- 1.32 **Early Retirement Age.** The age and/or Years of Service set forth in AA §7-2. Early Retirement Age may be used to determine distribution rights and/or vesting rights. If a Participant separates from service before satisfying the age requirement for early retirement, but has satisfied the service requirement, the Participant will be entitled to elect an early retirement benefit upon satisfaction of such age requirement. The Plan is not required to have an Early Retirement Age.
- 1.33 **Effective Date.** The date this Plan, including any restatement or amendment of this Plan, is effective. The Effective Date of the Plan is designated on the Employer Signature Page under the Adoption Agreement.
- 1.34 **Elapsed Time.** A special method for crediting service for eligibility or vesting. See Section 2.03(a)(6) for more information on the Elapsed Time method of crediting service for eligibility purposes and Section 6.04(b) for more information on the Elapsed Time method of crediting service for vesting purposes. Also see Section 3.07 for the ability to use the Elapsed Time method for applying allocation conditions under the Plan.
- 1.35 **Elective Deferral Dollar Limit.** The maximum amount of Elective Deferrals a Participant may make for any calendar year. See Section 5.03.

- 1.36 **Elective Deferrals.** A Participant's Elective Deferrals is the sum of all Salary Deferrals (as defined in Section 1.88) and other contributions made pursuant to a Salary Deferral Election under a SARSEP described in Code §408(k)(6), a SIMPLE IRA plan described in Code §408(p), a plan described under Code §501(c)(18), and a custodial account or other arrangement described in Code §403(b). Elective Deferrals shall not include any amounts properly distributed as an Excess Amount under Code §415.
- 1.37 **Eligible Employee.** An Employee who is not excluded from participation under Section 2.02 of the Plan or AA §3-1.
- 1.38 **Eligible Retirement Plan.** A qualified retirement plan or IRA that may receive a rollover contribution. See Section 7.04(a)(2).
- 1.39 **Eligible Rollover Distribution.** An amount distributed from the Plan that is eligible for rollover to an Eligible Retirement Plan. See Section 7.04(a)(1).
- 1.40 **Employee.** An Employee is any individual employed by the Employer (including any Related Employers). An independent contractor is not an Employee. An Employee is not eligible to participate under the Plan if the individual is not an Eligible Employee under Section 2.02. A Leased Employee is also treated as an Employee of the recipient organization, as provided in Section 2.02(b)(3).
- 1.41 **Employer.** Except as otherwise provided, Employer means the Employer that adopts this Plan and any Related Employer. The Employer must be qualified to maintain a Governmental Plan under Code §414(d). (See Section 2.02(c) for rules regarding coverage of Employees of Related Employers. Also see Section 16 for rules that apply to Employers that execute a Participating Employer Adoption Page.)
- 1.42 **Employer Contributions.** Contributions the Employer makes pursuant to AA §6. See Section 3.02.
- 1.43 **Employer Pick-up Contributions.** Contributions made by the Employee and picked up by the Employer in accordance with Code §414(h)(2). See Section 3.03.
- 1.44 **Employment Commencement Date.** The date the Employee first performs an Hour of Service for the Employer.
- 1.45 **Entry Date.** The date on which an Employee becomes a Participant upon satisfying the Plan's minimum age and service conditions. See Section 2.03(b).
- 1.46 **Equivalency Method.** An alternative method for crediting Hours of Service for purposes of eligibility and vesting. See Section 2.03(a)(5) for eligibility provisions and Section 6.04(a)(2) for vesting provisions.
- 1.47 **ERISA.** The Employee Retirement Income Security Act of 1974, as amended.
- 1.48 **Excess Amount.** Amounts which exceed the Code §415 Limitation. See Section 5.02(c)(4).
- 1.49 **Excess Compensation.** The amount of Plan Compensation that exceeds the Integration Level for purposes of applying the permitted disparity allocation formula. See Section 3.02(a)(1)(i)(B) (Profit Sharing Plan) and Section 3.02(b)(2) (Money Purchase Plan).
- 1.50 **Excess Deferrals.** Elective Deferrals that exceed the Elective Deferral Dollar Limit (as defined in Section 5.03). (See Section 5.03(b) for rules regarding the correction of Excess Deferrals.)
- 1.51 **Favorable IRS Letter.** An opinion letter issued by the IRS pursuant to Rev. Proc. 2017-41 (or its successor) to a Provider as to the qualified status of a Pre-Approved Plan.
- 1.52 **FICA Replacement Plan.** This Plan may qualify as a FICA Replacement Plan under Code §3121(b)(7)(F) if the requirements under Section 4.03 are satisfied.
- 1.53 **General Trust Account.** The Plan assets under a Trust which are held for the benefit of all Plan Participants as a pooled investment. See Section 10.03(d)(1).
- 1.54 **Governmental Plan.** A plan established and maintained for its Employees by any State or political subdivision of a State, any State agency or instrumentality, or an Indian Tribal Government (provided the requirements under Section 4.02 of the Plan are satisfied), as provided under Code §414(d).
- 1.55 **Grandfathered 401(k) Arrangement.** An arrangement under Code §401(k) maintained by a governmental employer that was in existence on May 6, 1986. If a governmental entity adopted a 401(k) plan before May 6, 1986, then all 401(k) plans adopted by the governmental entity are treated as adopted before such date, including a 401(k) plan that is actually adopted after such date. A Grandfathered 401(k) Arrangement also may be adopted by an Indian Tribal Government, as defined in Section 1.58.

The Employer may elect to provide a Grandfathered 401(k) Arrangement under AA §2-3 of the Profit Sharing Plan Adoption Agreement. Any such election under AA §2-3 will be null and void if the Employer does not satisfy the requirements for maintaining a Grandfathered 401(k) Arrangement. If the Employer elects a Grandfathered 401(k) Arrangement under AA §2-3, the Employer may authorize Employees to make Salary Deferrals under the Plan in addition to Matching Contributions, Employer Contributions and After-Tax Employee Contributions, to the extent provided under AA §6 - §6B of the Adoption Agreement.

1.56 **Hardship.** A heavy and immediate financial need which meets the requirements of Section 7.10(e).

1.57 **Hour of Service.** Each Employee of the Employer will receive credit for each Hour of Service he/she works for purposes of applying the eligibility and vesting rules under the Plan. An Employee will not receive credit for the same Hour of Service under more than one category listed below.

- (a) **Performance of duties.** Hours of Service include each hour for which an Employee is paid, or entitled to payment, for the performance of duties for the Employer. These hours will be credited to the Employee for the computation period in which the duties are performed. In the case of Hours of Service to be credited to an Employee in connection with a period of no more than 31 days which extends beyond one computation period, all such Hours of Service may be credited to the first computation period or the second computation period. Hours of Service under this subsection (a) must be credited consistently for all Employees within the same job classifications.
- (b) **Nonperformance of duties.** Hours of Service include each hour for which an Employee is paid, or entitled to payment, by the Employer on account of a period of time during which no duties are performed (irrespective of whether the employment relationship has terminated) due to vacation, holiday, illness, incapacity (including disability), layoff, jury duty, military duty or leave of absence. No more than 501 hours of service will be credited under this paragraph for any single continuous period (whether or not such period occurs in a single Computation Period). Hours under this paragraph will be calculated and credited pursuant to §2530.200b-2 of the Department of Labor Regulations which is incorporated herein by this reference.
- (c) **Back pay award.** Hours of Service include each hour for which back pay, irrespective of mitigation of damages, is either awarded or agreed to by the Employer. The same Hours of Service will not be credited both under subsection (a) or subsection (b) above, as the case may be, and under this subsection (c). These hours will be credited to the Employee for the Computation Period(s) to which the award or agreement pertains rather than the Computation Period(s) in which the award, agreement or payment is made.
- (d) **Related Employers/Leased Employees.** Hours of Service will be credited for employment with any Related Employer. Hours of Service also include hours credited as a Leased Employee or as an employee under Code §414(o).
- (e) **Maternity/paternity/FMLA/military leave.** Solely for purposes of determining whether a Break in Service has occurred in a Computation Period, an individual who is absent from work for maternity or paternity reasons will receive credit for the Hours of Service which would otherwise have been credited to such individual but for such absence, or in any case in which such hours cannot be determined, 8 Hours of Service per day of such absence. For purposes of this paragraph, an absence from work for maternity or paternity reasons means an absence:
 - (1) by reason of the pregnancy of the individual,
 - (2) by reason of a birth of a child of the individual,
 - (3) by reason of the placement of a child with the individual in connection with the adoption of such child by such individual, or
 - (4) for purposes of caring for such child for a period beginning immediately following such birth or placement.

The Hours of Service credited under this paragraph will be credited in the Computation Period in which the absence begins if the crediting is necessary to prevent a Break in Service in that period, or in all other cases, in the following Computation Period.

In addition, solely for purposes of determining whether a Break in Service has occurred in a Computation Period, an individual who is absent from work due to events described under the Family and Medical Leave Act (FMLA) and as required under DOL Reg. §825.215 will receive credit for the Hours of Service which would have been credited to such individual but for the absence. In addition, solely for purposes of determining whether a Break in Service has occurred in a Computation Period, an individual who is absent from work due to military leave described under the Uniformed Services Employment and Reemployment Rights Act and as required under Code §414(u)(8)(A) and DOL Reg. 20 CFR

§1002.259 will receive credit for the Hours of Service which would have been credited to such individual but for the absence.

- 1.58 Indian Tribal Government.** The governing body of any tribe, band, community, village, or group of Indians, or (if applicable) Alaska Natives, which is determined by the Secretary of Treasury, after consultation with the Secretary of Interior, to exercise governmental functions, as defined under Code §7701(a)(40) and regulations thereunder. See Section 4.02 of the Plan for special rules applicable to Indian Tribal Governments.
- 1.59 Insurer.** Any insurance company or affiliate or subsidiary thereof, or any legal reserve insurance company, which issues one or more contracts under the Plan in accordance with the requirements under Sections 10.07 and 10.08.
- 1.60 Investment Arrangement.** The investments under the Plan as described in Section 10.06 of this Plan document. The terms governing each Investment Arrangement under the Plan, excluding those terms that are inconsistent with Code Section 401(a), are hereby incorporated by reference into the Plan. In the event of any conflict between the terms of the Plan (including, but not limited to, any elections under the Adoption Agreement) and the terms of the Investment Arrangement, the terms of the Plan shall control, except that the terms of the Plan may not alter or construe the terms of the Investment Arrangement or enlarge the obligations of the issuer or provider of the Investment Arrangement without the consent of the issuer or provider.
- 1.61 Integration Level.** The amount used for purposes of applying the permitted disparity allocation formula. The Integration Level is the Taxable Wage Base, unless the Employer designates a different amount under the Adoption Agreement. See Section 3.02(a)(1)(i)(B) (Profit Sharing Plan) and Section 3.02(b)(2) (Money Purchase Plan).
- 1.62 Leased Employee.** An individual who performs services for the Employer pursuant to an agreement between the Employer and a leasing organization, and who satisfies the definition of a Leased Employee under Code §414(n). See Section 2.02(b)(3) for rules regarding the treatment of a Leased Employee as an Employee of the Employer.
- 1.63 Limitation Year.** The measuring period for determining whether the Plan satisfies the Code §415 Limitation under Section 5.02. See Section 5.02(c)(5).
- 1.64 Mass Submitter.** The Mass Submitter, as described under Rev. Proc. 2017-41 or its successor, of this Pre-Approved Plan is ASC Institute, LLC.
- 1.65 Matching Contributions.** Matching Contributions are contributions made by the Employer on behalf of a Participant on account of other contributions made by the Participant under this Plan or another plan maintained by the Employer. See Section 3.02(c)(3).
- 1.66 Maximum Disparity Rate.** The maximum amount that may be allocated with respect to Excess Compensation under the permitted disparity allocation formula. See Section 3.02(a)(1)(i)(B) (Profit Sharing Plan) and Section 3.02(b)(2) (Money Purchase Plan).
- 1.67 Normal Retirement Age.** The age selected under AA §7-1. For purposes of applying the Normal Retirement Age provisions under AA §7-1, an Employee's participation commencement date is the first day of the first Plan Year in which the Employee commenced participation in the Plan. The Normal Retirement Age must be reasonably representative of the typical retirement age for the industry in which the Plan Participants work. A Normal Retirement Age of at least age 62 is deemed to be reasonable while a Normal Retirement Age under age 55 is presumed not to satisfy this requirement, unless facts and circumstances show otherwise. Whether a Normal Retirement Age between 55 and 62 satisfies this requirement depends on the facts and circumstances. A Governmental Plan must comply with the final Normal Retirement Age regulations under Treas. Reg. §1.401(a)-1, as amended, effective for Annuity Starting Dates occurring in Plan Years beginning on or after the later of the two dates described in IRS Notice 2012-29. The Employer may use AA §7-1(c), for example, to describe a reasonable Normal Retirement Age that is between age 55 and 62 that takes into account service as well as age.
- 1.68 Participant.** Except as provided under AA §3-1, a Participant is an Employee (or former Employee) who has satisfied the conditions for participating under the Plan, as described in Section 2.03 and AA §4-1. A Participant also includes any Employee (or former Employee) who has an Account Balance under the Plan, including an Account Balance derived from a rollover or transfer from another qualified plan or IRA. A Participant is entitled to share in an allocation of contributions or forfeitures under the Plan for a given year only if the Participant is an Eligible Employee as defined in Section 2.02, and satisfies the allocation conditions set forth in Section 3.07.

An Employee is treated as a Participant with respect to Salary Deferrals and After-Tax Employee Contributions once the Employee has satisfied the eligibility conditions under AA §4-1 for making such contributions, even if the Employee chooses not to actually make such contributions to the Plan. An Employee is treated as a Participant with respect to Matching Contributions once the Employee has satisfied the eligibility conditions under AA §4-1 for receiving such contributions, even if

the Employee does not receive a Matching Contribution because of the Employee's failure to make contributions eligible for the Matching Contribution.

- 1.69 Participating Employer.** An Employer that adopts this Plan by executing the Participating Employer Adoption Page under the Adoption Agreement. See Section 16 for the rules applicable to contributions and deductions for contributions made by a Participating Employer.
- 1.70 Participating Employer Adoption Page.** The signature page in the Adoption Agreement for a Related Employer to adopt the Plan as a Participating Employer.
- 1.71 Part-Time Employee.** Unless designated otherwise under AA 3-1(h), a Part-Time Employee is an Employee who is normally scheduled to work 20 or fewer hours per week. Notwithstanding the foregoing, if the Employer is a post-secondary educational institution, an Employee who is a teacher shall not be considered a Part-Time Employee if he/ she normally has classroom hours of one-half or more of the number of classroom hours designated by the Employer as constituting full-time employment, provided that such designation is reasonable under all of the facts and circumstances.
- 1.72 Period of Severance.** A continuous period of time during which the Employee is not employed by the Employer and which is used to determine an Employee's Participation under the Elapsed Time method. See Section 2.03(a)(6) for rules regarding eligibility and Section 6.04(b) for rules regarding vesting.
- 1.73 Plan.** The Plan is the retirement plan established or continued by the Employer for the benefit of its Employees under this Plan document. The Plan consists of the basic plan document and the elections made under the Adoption Agreement. The basic plan document is the portion of the Plan that contains the non-elective provisions. The Employer may supplement or modify the basic plan document through its elections in the Adoption Agreement or by separate governing documents that are expressly authorized by the Plan. If the Employer adopts more than one Adoption Agreement under this Plan, then each executed Adoption Agreement represents a separate Plan. The Employer may adopt the Plan, under the appropriate Adoption Agreement, as a Profit Sharing Plan (with or without provisions for a Grandfathered 401(k) Arrangement) or as a Money Purchase Plan.
- 1.74 Plan Administrator.** The Plan Administrator is the person designated to be responsible for the administration and operation of the Plan. Unless otherwise designated by the Employer, and until such designation is accepted by the designee, the Plan Administrator is the Employer. If another Employer has executed a Participating Employer Adoption Page, the Employer referred to in this Section is the Employer that executes the Employer Signature Page of the Adoption Agreement. A Plan Administrator also includes a Qualified Termination Administrator (QTA) that assumes the responsibilities of Plan Administrator.
- 1.75 Plan Compensation.** Plan Compensation is Total Compensation, as modified under AA §5-3, which is actually paid to an Employee during the determination period (as defined in subsection (a) below). In determining Plan Compensation, the Employer may elect under AA §5-3(b) to exclude all Elective Deferrals (as defined in Section 1.36), pre-tax contributions to a cafeteria plan or a Code §457 plan, and qualified transportation fringes under Code §132(f)(4). In addition, the Employer may elect under AA §5-3 to exclude other designated elements of compensation.

Plan Compensation generally includes amounts an Employee earns with a Participating Employer and amounts earned with a Related Employer (even if the Related Employer has not executed a Participating Employer Adoption Page under the Adoption Agreement). However, the Employer may elect under AA §5-3(h) to exclude all amounts earned with a Related Employer that has not executed a Participating Employer Adoption Page.

In no case may Plan Compensation for any Participant exceed the Compensation Limit (as defined in Section 1.19).

- (a) Determination period.** Unless designated otherwise under AA §5-4(a), Plan Compensation is determined based on the Plan Year. Alternatively, the Employer may elect under AA §5-4(a) to determine Plan Compensation on the basis of the calendar year ending in the Plan Year or any other 12-month period ending in the Plan Year. If the determination period is the calendar year or other 12-month period ending in the Plan Year, for any Employee whose date of hire is less than 12 months before the end of the designated 12-month period, Plan Compensation will be determined over the Plan Year.
- (b) Partial period of participation.** If an Employee is a Participant for only part of a Plan Year, Plan Compensation may be determined over the entire Plan Year or over the period during which such Employee is a Participant. In determining whether an Employee is a Participant for purposes of applying this subsection (b), the Employee's status will be determined solely with respect to the contribution type for which the definition of Plan Compensation is being determined. Plan Compensation does not include any amounts earned for any period while an individual is not an Eligible Employee (as defined in Section 2.02).

- 1.76 **Plan Year.** The 12-consecutive month period designated under AA §2-4 on which the records of the Plan are maintained. The Plan Year can be a 52-53 week period by designating the appropriate ending date in AA §2-4(b). If the Plan Year is amended to create a Short Plan Year, or if a new Plan has an initial Short Plan Year, the Employer may document such Short Plan Year under AA §2-4(c).
- 1.77 **Predecessor Employer.** An employer that previously employed the Employees of the Employer. See Sections 2.06 (eligibility), 3.07(b) (allocation conditions) and 6.07 (vesting) for the rules regarding the crediting of service with a Predecessor Employer.
- 1.78 **Pre-Tax Deferrals.** Pre-tax Deferrals are a Participant's Salary Deferrals that are not includible in the Participant's gross income at the time deferred.
- 1.79 **Provider.** An entity defined under §4.08 of Rev. Proc. 2017-41, or its successor, that provides this Plan to adopting Employers.
- 1.80 **Qualified Domestic Relations Order (QDRO).** A domestic relations order that provides for the payment of all or a portion of the Participant's benefits to an Alternate Payee and satisfies the requirements under Code §414(p). See Section 11.05.
- 1.81 **Qualifying Longevity Annuity Contract (QLAC).** An annuity contract that is purchased from an insurance company for a Participant and that satisfies the requirements under Treas. Reg. §1.401(a)(9)-6, Q&A-17.
- 1.82 **Reemployment Commencement Date.** The first date upon which an Employee is credited with an Hour of Service following a Break in Service (or Period of Severance, if the Plan is using the Elapsed Time method of crediting service).
- 1.83 **Related Employer.** A Related Employer includes all members of a controlled group of corporations (as defined in Code §414(b)), all commonly controlled trades or businesses (as defined in Code §414(c)) or affiliated service groups (as defined in Code §414(m)) of which the Employer is a part, and any other entity required to be aggregated with the Employer pursuant to regulations under Code §414(o). For purposes of applying the provisions under this Plan, the Employer and any Related Employers are treated as a single Employer, unless specifically stated otherwise. See Section 16.06 for operating rules that apply when the Employer is a member of a Related Employer group. Also see Section 16 for rules regarding participation of Employees of Related Employers.
- 1.84 **Required Beginning Date.** The date by which minimum distributions must commence under the Plan. See Section 8.05(e).
- 1.85 **Rollover Contribution.** A contribution made by an Employee to the Plan attributable to an Eligible Rollover Distribution (as defined in Section 7.04(a)(1) from another qualified plan or IRA. See Section 3.05 for rules regarding the acceptance of Rollover Contributions under this Plan.
- 1.86 **Roth Deferrals.** Roth Deferrals are Salary Deferrals that are includible in the Participant's gross income at the time deferred and have been irrevocably designated as Roth Deferrals in the Participant's Salary Deferral Election. A Participant's Roth Deferrals will be maintained in a separate Account containing only the Participant's Roth Deferrals and gains and losses attributable to those Roth Deferrals. See Section 3.02(c)(2)(v).
- 1.87 **Salary Deferral Election.** An agreement between a Participant and the Employer, whereby the Participant elects to have a specific percentage or dollar amount withheld from his/her Plan Compensation, and the Employer agrees to contribute such amount into the Plan. A Salary Deferral Election may only be made if the Plan qualifies as a Grandfathered 401(k) Arrangement as designated under AA §2-3 of the Profit Sharing Plan Adoption Agreement. See Section 3.02(c)(2)(i).
- 1.88 **Salary Deferrals.** Amounts contributed under a Grandfathered 401(k) Arrangement at the election of the Participant, in lieu of cash compensation, which are made pursuant to a Salary Deferral Election or other deferral mechanism. Salary Deferrals include Roth Deferrals and Pre-Tax Deferrals. Salary Deferrals shall not include any amounts properly distributed as an Excess Amount under Code §415 pursuant to Section 5.02(c)(4). An Employee's Salary Deferrals are treated as employer contributions for all purposes under this Plan, except as otherwise provided under the Code or Treasury regulations. See Section 3.02(c)(2).
- 1.89 **Seasonal Employee.** An Employee who normally works on a full-time basis less than five months during any year.
- 1.90 **Short Plan Year.** Any Plan Year that is less than 12 months long, either because of the amendment of the Plan Year, or because the Effective Date of a new Plan is less than 12 months prior to the end of the first Plan Year.
- 1.91 **Spouse.** Subject to any additional guidance by the IRS, other Federal agency or court, or applicable State law, a Spouse is any individual who is lawfully married to the Participant under a state or foreign jurisdiction. However, a former Spouse of the Participant will be treated as the Spouse or surviving Spouse, and any current Spouse will not be treated as the Spouse or

surviving Spouse to the extent provided under a valid QDRO. The Plan Administrator may interpret the meaning of Spouse for purposes of this Plan as such term is applicable to Governmental Plans under the Code.

1.92 Taxable Wage Base. The maximum amount of wages taken into account for Social Security purposes. The Taxable Wage Base is used to determine the Integration Level for purposes of applying the permitted disparity allocation formula. See Section 3.02(a)(1)(i)(B) (Profit Sharing Plan) and Section 3.02(b)(2) (Money Purchase Plan).

1.93 Temporary Employee. Any Employee performing services under a contractual arrangement with the Employer of two years or less duration. Possible contract extensions may be considered in determining the duration of a contractual arrangement, but only if, under the facts and circumstances, there is a significant likelihood that the Employee's contract will be extended. Future contract extensions are considered significantly likely to occur for purposes of this rule if:

- (a) on average 80 percent of similarly situated Employees have had bona fide offers to renew their contracts in the immediately preceding two academic or calendar years; or
- (b) the Employee with respect to whom the determination is being made has a history of contract extensions with respect to his or her current position.

An Employee is not considered a Temporary Employee solely because he or she is included in a unit of Employees covered by a collective bargaining agreement of two years or less duration.

1.94 Total Compensation. A Participant's compensation for services with the Employer, as defined in this Section 1.94. Total Compensation may be defined in AA §5-1 to be either W-2 Wages, Wages under Code §3401(a), or Code §415 Compensation. Each definition of Total Compensation includes Elective Deferrals (as defined in Section 1.36), elective contributions to a cafeteria plan under Code §125 or to an eligible deferred compensation plan under Code §457, Employer Pick-Up Contributions under Code §414(h)(2), and elective contributions that are not includible in the Employee's gross income as a qualified transportation fringe under Code §132(f)(4).

(a) **Total Compensation definitions.** The Employer may elect under AA §5-1 to define Total Compensation as any of the following definitions:

- (1) **W-2 Wages.** Wages within the meaning of Code §3401(a) and all other payments of compensation to an Employee by the Employer (in the course of the Employer's trade or business) for which the Employer is required to furnish the Employee a written statement under Code §6041(d), 6051(a)(3), and 6052, determined without regard to any rules under Code §3401(a) that limit the remuneration included in wages based on the nature or location of the employment or the services performed.
- (2) **Wages under Code §3401(a).** Wages within the meaning of Code §3401(a) for the purposes of income tax withholding at the source but determined without regard to any rules that limit the remuneration included in wages based on the nature or location of the employment or the services performed.
- (3) **Code §415 Compensation.** Wages, salaries, fees for professional services and other amounts received for personal services actually rendered in the course of employment with the Employer (without regard to whether or not such amounts are paid in cash) to the extent that the amounts are includible in gross income, including amounts that are includible in the gross income of an Employee under the rules of Code §409A or §457(f)(1)(A) or because the amounts are constructively received by the Employee. Such amounts include, but are not limited to, commissions, compensation for services on the basis of a percentage of profits, tips, bonuses, fringe benefits, and reimbursements or other expense allowances under a nonaccountable plan (as described in Treas. Reg. §1.62-2(c)), and excluding the following:
 - (i) Employer contributions (other than elective contributions described in Code §402(e)(3), §408(k)(6), §408(p)(2)(A)(i), or §457(b)) to a plan of deferred compensation (including a SEP described in Code §408(k) or a SIMPLE IRA described in Code §408(p), and whether or not qualified) to the extent such contributions are not includible in the Employee's gross income for the taxable year in which contributed, and any distributions (whether or not includible in gross income when distributed) from a plan of deferred compensation (whether or not qualified);
 - (ii) Amounts realized from the exercise of a non-qualified stock option, or when restricted stock (or property) held by the Employee either becomes freely transferable or is no longer subject to a substantial risk of forfeiture.
 - (iii) Amounts realized from the sale, exchange or other disposition of stock acquired under a qualified stock option.

- (iv) Other amounts which received special tax benefits, or contributions made by the Employer (other than Elective Deferrals) towards the purchase of an annuity contract described in Code §403(b) (whether or not the contributions are actually excludable from the gross income of the Employee).
- (b) **Post-severance compensation.** Effective for the first Limitation Year beginning on or after July 1, 2007, Total Compensation includes compensation that is paid after an Employee severs employment with the Employer, provided the compensation is paid by the later of 2½ months after severance from employment with the Employer maintaining the Plan or the end of the Limitation Year that includes such date of severance from employment. For this purpose, compensation paid after severance of employment may only be included in Total Compensation to the extent such amounts would have been included as compensation if they were paid prior to the Employee's severance from employment.

For purposes of applying this subsection (b), unless designated otherwise under AA §5-2(a), the following amounts that are paid after a Participant's severance of employment are included in Total Compensation:

- (1) **Regular pay.** Compensation for services during the Employee's regular working hours, or compensation for services outside the Employee's regular working hours (such as overtime or shift differential), commissions, bonuses, or other similar payments;
- (2) **Unused leave payments.** Payment for unused accrued bona fide sick, vacation, or other leave, but only if the Employee would have been able to use the leave if employment had continued; and
- (3) **Deferred compensation.** Payments received by an Employee pursuant to a nonqualified unfunded deferred compensation plan, but only if the payment would have been paid to the Employee at the same time if the Employee had continued in employment, and only to the extent that the payment is includible in the Employee's gross income.

Other post-severance payments (such as severance pay, parachute payments within the meaning of Code §280G(b)(2), or post-severance payments under a nonqualified unfunded deferred compensation plan that would not have been paid if the Employee had continued in employment) are not included as Total Compensation, even if such amounts are paid within the time period described in this subsection (b).

In determining the amount of a Participant's Employer Contributions, Matching Contributions or Salary Deferrals, Plan Compensation may not include any amounts that do not satisfy the requirements of this subsection (b) or subsection (c) below. If Total Compensation is defined to include post-severance compensation, the Employer may elect to exclude all such compensation paid after termination of employment from the definition of Plan Compensation under AA §5-3(j) or may elect to exclude any of the specific types of post-severance compensation defined in subsections (1), (2) and/or (3) above, by designating such compensation types under AA §5-3(l). The exclusion of post-severance compensation from the definition of Plan Compensation that is otherwise includible in Total Compensation may cause the Plan to fail the nondiscriminatory compensation rules under Treas. Reg. §1.414(s)-1.

- (c) **Continuation payments for disabled Participants.** Unless designated otherwise under AA §5-2(b), Total Compensation does not include compensation paid to a Participant who is permanently and totally disabled (as defined in Code §22(e)(3)). If elected under AA §5-2(b), the Plan may take into account compensation the Participant would have received for the year if the Participant was paid at the rate of compensation paid immediately before becoming permanently and totally disabled (if such compensation is greater than the Participant's compensation determined without regard to this subsection (c)), provided contributions made with respect to amounts treated as compensation under this subsection (c) are nonforfeitable when made. If so elected under AA §5-2(b), payment to disabled Participants will be included as Total Compensation, notwithstanding the rules under subsection (b) above.
- (d) **Deemed §125 compensation.** A reference to elective contributions under a Code §125 cafeteria plan includes any amounts that are not available to a participant in cash in lieu of group health coverage because the Participant is unable to certify that he or she has other health coverage. Such deemed §125 compensation will be treated as an amount under Code §125 only if the Employer does not request or collect information regarding the Participant's other health coverage as part of the enrollment process for the health plan. If the Employer elects under AA §5-3(i) to exclude deemed §125 compensation from the definition of Plan Compensation, such exclusion also will apply for purposes of determining Total Compensation under this Section 1.94.
- (e) **Differential Pay.** Effective for years beginning on or after January 1, 2009, in the case of an individual who receives Differential Pay from the Employer:
- (1) such individual will be treated as an Employee of the Employer making the payment, and

- (2) the Differential Pay shall be treated as wages and will be included in calculating an Employee's Total Compensation under the Plan.

If all Employees performing service in the Uniformed Services are entitled to receive Differential Pay on reasonably equivalent terms and are eligible to make contributions based on the payments on reasonably equivalent terms, the Plan shall not be treated as failing to meet the requirements of any provision described in Code §414(u)(1)(C) by reason of any contribution or benefit based on Differential Pay. However, for purposes of applying this subparagraph, the provisions of Code §§410(b)(3), (4), and (5) shall apply. The Employer may elect to exclude Differential Pay from the definition of Plan Compensation under AA §5-3(k).

For purposes of this subsection (e), Differential Pay means any payment which is made by an Employer to an individual while the individual is performing service in the Uniformed Services while on active duty for a period of more than 30 days, and represents all or a portion of the wages the individual would have received from the Employer if the individual were performing services for the Employer. In applying the provisions of this subsection (e), Uniformed Services are services as described in Code §3401(h)(2)(A).

- 1.95 **Trust.** The Trust is the separate funding vehicle under the Plan.
- 1.96 **Trustee.** The Trustee is the person or persons (or any successor to such person or persons) identified in the Adoption Agreement or under a separate Trust document. The Trustee may be a Discretionary Trustee or a Directed Trustee. See Section 12 for the rights and duties of a Trustee under this Plan.
- 1.97 **Valuation Date.** The date or dates upon which Plan assets are valued. Plan assets will be valued as of the last day of each Plan Year. In addition, the Employer may elect under AA §11-1 to establish additional Valuation Dates. Notwithstanding any election under AA §11-1, Plan assets may be valued on a more frequent basis within the complete discretion of the Employer. See Section 10.02.
- 1.98 **Year of Service.** A Year of Service is a 12-consecutive month Computation Period during which an Employee completes 1,000 Hours of Service. For purposes of applying the eligibility rules under Section 2.03 of the Plan, an Employee will earn a Year of Service if he/she completes 1,000 Hours of Service with the Employer during an Eligibility Computation Period (as defined in Section 2.03(a)(3)). For purposes of applying the vesting rules under Section 6, an Employee will earn a Year of Service if he/she completes 1,000 Hours of Service with the Employer during a Vesting Computation Period (as defined in Section 6.05). The Employer may elect under AA §4-3(a) (for eligibility purposes) and AA §8-5(a) (for vesting purposes) to require the completion of any lesser number of Hours of Service to earn a Year of Service. Alternatively, the Employer may elect to apply the Elapsed Time method (for eligibility and/or vesting purposes) in calculating an Employee's Years of Service under the Plan.

SECTION 2
ELIGIBILITY AND PARTICIPATION

- 2.01 Eligibility.** In order to participate in the Plan, an Employee must be an Eligible Employee (as defined in Section 2.02) and must satisfy the Plan's minimum age and service conditions (as defined in Section 2.03). Once an Employee satisfies the Plan's minimum age and service conditions, such Employee shall become a Participant on the appropriate Entry Date (as selected in AA §4-2). An Employee who meets the minimum age and service requirements set forth herein, but who is not an Eligible Employee, will be eligible to participate in the Plan only upon becoming an Eligible Employee. For purposes of determining eligibility to make Salary Deferrals, an Employee will be deemed to commence participation on a timely basis if the Employee is permitted to commence making Salary Deferrals as soon as administratively feasible after satisfying the eligibility conditions under the Plan.
- 2.02 Eligible Employees.** Unless specifically excluded under AA §3-1 or under this Section 2.02, all Employees of the Employer are Eligible Employees. AA §3-1 lists various classes of Employees that may be excluded from Plan participation. If an Employee is not an Eligible Employee (e.g., such Employee is a member of a class of Employees excluded under AA §3-1), that individual may not participate under the Plan, unless he/she subsequently becomes an Eligible Employee.
- (a) **Only Employees may participate in the Plan.** To participate in the Plan, an individual must be an Employee. If an individual is not an Employee (e.g., the individual performs services with the Employer as an independent contractor) such individual may not participate under the Plan. If an individual who is classified as a non-Employee is later determined by the Employer, or by a court or other government agency, to be an Employee of the Employer, the reclassification of such individual as an Employee will not create retroactive rights to participate in the Plan. Thus, for example, if the IRS or DOL should find that an independent contractor is really an Employee, such individual will be eligible to participate in the Plan as of the date the IRS or DOL issues a final determination declaring such individual to be an Employee (provided the individual has satisfied all conditions for participating in the Plan (as described in this Section 2)). For periods prior to the date of such final determination, the reclassified Employee will not have any rights to accrued benefits under the Plan, except as agreed to by the Employer, or mandated by a court or government agency, or as set forth in an amendment adopted by the Employer.
- (b) **Excluded Employees.** The Employer may elect under AA §3-1 to exclude designated classes of Employees. Since a governmental plan is exempt from minimum coverage testing, the Employer may elect to exclude any class of Employees without subjecting the Plan to minimum coverage or nondiscrimination testing.
- (1) **Collectively Bargained Employees.** The Employer may elect under AA §3-1(b) to exclude Collectively Bargained Employees. For this purpose, a Collectively Bargained Employee is an Employee who is included in a unit of Employees covered by a collective bargaining agreement between the Employer and Employee representatives and whose retirement benefits are subject to good faith bargaining.
- (2) **Nonresident aliens.** The Employer may elect under AA §3-1(c) to exclude Employees who are nonresident aliens. For this purpose, a nonresident alien is neither a citizen of the United States nor a resident of the United States for U.S. tax purposes (as defined in Code §7701(b)), and who does not have any earned income (as defined in Code §911) for the Employer that constitutes U.S. source income (within the meaning of Code §861). If a nonresident alien Employee has U.S. source income, he/she is treated as satisfying this definition if all of his/her U.S. source income from the Employer is exempt from U.S. income tax under an applicable income tax treaty.
- (3) **Leased Employees.** The Employer may elect under AA §3-1(d) to exclude Leased Employees. For this purpose, a Leased Employee is any person (other than an Employee of the Employer) who, pursuant to an agreement between the recipient Employer and a leasing organization, performs services for the recipient Employer on a substantially full-time basis for a period of at least one year, and such services are performed under the primary direction or control of the recipient Employer. (See Code §414(n) for rules applicable to the determination of Leased Employees.)
- (c) **Employees of Related Employers.** If the Employer is a member of a Related Employer group, Employees of each member of the Related Employer group may participate under this Plan, provided the Related Employer executes a Participating Employer Adoption Page under the Adoption Agreement. If a Related Employer does not execute a Participating Employer Adoption Page, any Employees of such Related Employer are not eligible to participate in the Plan. See Section 16.06 for operating rules that apply when the Employer is a member of a Related Employer group. Also see Section 16 for rules regarding participation of Employees of Related Employers.
- (d) **Ineligible Employee becomes Eligible Employee.** If an Employee changes status from an ineligible Employee to an Eligible Employee, such Employee will become a Participant immediately on the date he/she changes status to an Eligible Employee, provided the Employee has satisfied the Plan's minimum age and service conditions and has passed

the Entry Date (as defined in AA §4-2) that would otherwise have applied had the Employee been an Eligible Employee. If the Employee's original Entry Date (determined as if the Employee was always an Eligible Employee) has not passed as of the date the Employee becomes an Eligible Employee, the Employee will not become a Participant until such Entry Date. If an ineligible Employee has not satisfied the Plan's minimum age and service conditions at the time such Employee becomes an Eligible Employee, such Employee will become a Participant on the appropriate Entry Date following satisfaction of the Plan's minimum age and service requirements. The requirements for the timing of participation under this subsection (d) is deemed satisfied with respect to Salary Deferrals if the Employee is permitted to commence making Salary Deferrals under the Plan as soon as administratively feasible after the Employee is eligible to participate in the Plan.

- (e) **Eligible Employee becomes ineligible Employee.** If an Employee ceases to qualify as an Eligible Employee (i.e., the Employee changes status from an eligible class to an ineligible class of Employees), such Employee will immediately cease to participate in the Plan. If such Employee should subsequently become an Eligible Employee, he/she will be able to participate in the Plan in accordance with subsection (d) above.
- (f) **Improper exclusion of eligible Participant.** If the Plan improperly excludes a Participant who has satisfied the requirements under this Section 2 for participating under the Plan, the Employer may take reasonable action to correct such violation, provided such corrective action is consistent with the requirements of the Employee Plans Compliance Resolution System (EPCRS) program.

2.03 Minimum Age and Service Conditions. AA §4-1 contains specific elections as to the minimum age and service conditions which an Employee must satisfy prior to becoming eligible to participate under the Plan. A Governmental Plan is exempt from both the ERISA and pre-ERISA eligibility requirements. Therefore, the Plan may provide any minimum age and service requirements under AA §4-1 without the need to comply with the requirements of Code §410(a).

The Employer may elect to apply different minimum age and service requirements for different groups of Employees or for different contribution formulas under AA §4-1(c). In addition, the Employer may select different age and service conditions under AA §4-1 for Salary Deferrals, Matching Contributions, and/or Employer Contributions if the Plan qualifies as a Grandfathered 401(k) Arrangement.

- (a) **Application of age and service conditions.** The Employer may elect under AA §4-1 to impose minimum age and service conditions that an Employee must satisfy in order to participate under the Plan.
 - (1) **Year of Service.** In applying the minimum service requirements under AA §4-1, unless designated otherwise under AA §4-3, an Employee will earn a Year of Service if the Employee completes at least 1,000 Hours of Service with the Employer during an Eligibility Computation Period (as defined in subsection (3) below). The Employer may modify the definition of Year of Service under AA §4-3(a) to require a different number of Hours of Service to earn a Year of Service. An Employee will receive credit for a Year of Service, as of the end of the Eligibility Computation Period during which the Employee completes the required Hours of Service needed to earn a Year of Service. Unless otherwise provided under AA §4-3, an Employee need not be employed for the entire Eligibility Computation Period to receive credit for a Year of Service, provided the Employee completes the required Hours of Service during such period.
 - (2) **Months of service.** The Employer may elect under AA §4-1(a) to require a specific number of Hours of Service during a designated number of months of employment. If an Employee is required under AA §4-1(a) to complete a certain number of Hours of Service during a designated period, an Employee generally will satisfy the eligibility conditions as of the end of the designated period, regardless of whether the Employee is employed during the entire period. Alternatively, the Employer may elect under AA §4-1(a)(3)(ii) to require an Employee to be employed continuously throughout the designated period provided the Employee is eligible to participate in the Plan upon completing a Year of Service as defined in subsection (1) above.

If an Employee does not complete the required Hours of Service during the designated period, or does not work continuously during the designated period, if required under AA §4-1(a)(3)(ii), the Employee will satisfy eligibility upon completion of a Year of Service as defined in subsection (1) above. For purposes of applying the Year of Service requirement, an Employee need not be employed during the entire measuring period as long as the Employee completes the required Hours of Service, as specified under subsection (1) above. For example, an Employee who is not employed throughout the designated period, if required under AA §4-1(a)(3)(ii), would still satisfy the eligibility conditions as of the end of the Eligibility Computation Period if the Employee completes a Year of Service, regardless of whether the Employee is employed during the entire period.

- (3) **Eligibility Computation Periods.** Unless provided otherwise under AA §4-3, in determining whether an Employee has earned a Year of Service for eligibility purposes, an Employee's initial Eligibility Computation Period is the 12-month period beginning on the Employee's Employment Commencement Date. Subsequent

Eligibility Computation Periods will either be based on Plan Years or Anniversary Years (as set forth in AA §4-3).

- (i) **Plan Years.** If the Employer elects under AA §4-3 to base subsequent Eligibility Computation Periods on Plan Years, the Plan will begin measuring Years of Service on the basis of Plan Years beginning with the first Plan Year commencing after the Employee's Employment Commencement Date. Thus, for the first Plan Year following the Employee's Employment Commencement Date, the initial Eligibility Computation Period and the first Plan Year Eligibility Computation Period may overlap.
 - (ii) **Anniversary Years.** If the Employer elects under AA §4-3(b) to base subsequent Eligibility Computation Periods on Anniversary Years, the Plan will measure Years of Service after the initial Eligibility Computation Period on the basis of 12-month periods commencing with the anniversaries of the Employee's Employment Commencement Date.
 - (iii) **Rehired Employee.** If an Employee is rehired following a Break in Service, the Employee's initial Eligibility Computation Period following the Employee's return to employment will be measured from the Employee's Reemployment Commencement Date. Subsequent Eligibility Computation Periods will be measured based on the Plan Year or anniversaries of the Reemployment Commencement Date, as designated under subsection (i) or (ii) above. For this purpose, an Employee's Reemployment Commencement Date is the first day the Employee is entitled to be credited with an Hour of Service after the first Eligibility Computation Period in which the Employee incurs a Break in Service.
- (4) **Hours of Service.** In calculating an Employee's Hours of Service for purposes of applying the eligibility rules under this Section 2.03, the Employer will count the actual Hours of Service an Employee works during the year. (See Section 1.57 for the definition of Hour of Service). The Employer may elect under AA §4-3 to use an alternative method for crediting service, such as the Equivalency Method or Elapsed Time method (instead of counting the actual Hours of Service an Employee works). (See subsections (5) and (6) below for a description of the Equivalency Method and Elapsed Time method of crediting service.)
- (5) **Equivalency Method.** Instead of counting actual Hours of Service in applying the minimum service conditions under this Section 2.03, the Employer may elect under AA §4-3(d) to determine Hours of Service based on the Equivalency Method. Under the Equivalency Method, an Employee receives credit for a specified number of Hours of Service based on the period worked with the Employer.
 - (i) **Monthly.** Under the monthly Equivalency Method, an Employee is credited with 190 Hours of Service for each calendar month during which the Employee completes at least one Hour of Service with the Employer.
 - (ii) **Daily.** Under the daily Equivalency Method, an Employee is credited with 10 Hours of Service for each day during which the Employee completes at least one Hour of Service with the Employer.
 - (iii) **Weekly.** Under the weekly Equivalency Method, an Employee is credited with 45 Hours of Service for each week during which the Employee completes at least one Hour of Service with the Employer.
 - (iv) **Semi-monthly.** Under the semi-monthly Equivalency Method, an Employee is credited with 95 Hours of Service for each semi-monthly period during which the Employee completes at least one Hour of Service with the Employer.
 - (v) **Other Equivalency Method.** The Employer may describe an alternative Equivalency Method in the Adoption Agreement, provided any description of an Equivalency Method is definitely determinable.
- (6) **Elapsed Time method.** Instead of counting actual Hours of Service in applying the minimum service requirements under this Section 2.03, the Employer may elect under AA §4-3(c) to apply the Elapsed Time method for calculating an Employee's service with the Employer. Under the Elapsed Time method, an Employee receives credit for the aggregate period of time worked for the Employer commencing with the Employee's first day of employment (or reemployment, if applicable) and ending on the date the Employee terminates employment with the Employer. If an Employee's aggregate period of service includes fractional years, such fractional years are expressed in terms of days.

In calculating an Employee's aggregate period of service, the Employer may credit an Employee with service for any Period of Severance that lasts less than 12 consecutive months. For this purpose, a Period of Severance is any continuous period of time during which the Employee is not employed by the Employer. A Period of Severance begins on the date the Employee retires, quits or is discharged, or if earlier, the 12-month

anniversary of the date on which the Employee is first absent from service for a reason other than retirement, quit or discharge. In the case of an Employee who is absent from work for maternity or paternity reasons, the 12-consecutive month period beginning on the first anniversary of the first date of such absence shall not constitute a Period of Severance. For purposes of this paragraph, an absence from work for maternity or paternity reasons means an absence

- (i) by reason of the pregnancy of the Employee,
- (ii) by reason of the birth of a child of the Employee,
- (iii) by reason of the placement of a child with the Employee in connection with the adoption of such child by the Employee, or
- (iv) for purposes of caring for a child of the Employee for a period beginning immediately following the birth or placement of such child.

(7) **Amendment of age and service requirements.** If the Plan's minimum age and service conditions are amended, the amendment may consider an Employee who is a Participant immediately prior to the effective date of the amendment as satisfying the amended requirements or may require all Employees to satisfy the amended minimum age and service conditions. If an Employee has not satisfied the minimum age and service conditions as of the effective date of the amendment, the Employee must satisfy the eligibility requirements as amended. This provision may be modified under the special Effective Date provisions under Appendix A of the Adoption Agreement or under a separate amendment implementing the updated minimum age and service provisions.

(i) **Change to Elapsed Time method.** If the service crediting method is changed from an Hours of Service method to the Elapsed Time method, the amount of service credited to an Employee will equal the sum of the service under subsections (A) and (B) below. For this purpose, a change in service crediting method will occur if the Plan is amended to change the service crediting method or if the service crediting method is changed as a result of an Employee's change in employment status.

(A) The number of Years of Service equal to the number of Years of Service credited under the Hours of Service method before the Eligibility Computation Period during which the change to the Elapsed Time method occurs.

(B) For the Eligibility Computation Period in which the change occurs, the greater of:

- (I) the period of service that would be credited under the Elapsed Time method from the first day of that Eligibility Computation Period through the date of the change, or
- (II) the service that would be taken into account under the Hours of Service method for the Eligibility Computation Period which includes the date of the change.

If the period of service described in subsection (I) is the greater amount, then subsequent periods of service are credited under the Elapsed Time method beginning with the date of the change. If the period of service described in subsection (II) applies, the Elapsed Time method will be used beginning with the first day of the Eligibility Computation Period that would have followed the Eligibility Computation Period in which the change to the Elapsed Time method occurred.

If the change to the Elapsed Time method occurs as of the first day of an Eligibility Computation Period, the use of the Elapsed Time method begins as of the date of the change, and the calculation in subsection (B) above does not apply. In such case, the Employee's service is determined under subsection (A) above plus the subsequent periods of service determined under the Elapsed Time method, starting with the effective date of the change.

(ii) **Change to Hours of Service method.** If the service crediting method is changed from the Elapsed Time method to an Hours of Service method, the Employee's Elapsed Time service earned as of the date of the change is converted into Years of Service under the Hours of Service method, determined as the sum of subsections (A) and (B), below. For this purpose, a change in service crediting method will occur if the Plan is amended to change the service crediting method or if the service crediting method is changed as a result of an Employee's change in employment status.

(A) A number of Years of Service is credited that equals the number of 1-year periods of service credited under the Elapsed Time method as of the date of the change.

- (B) For the Eligibility Computation Period which includes the date of the change, the Employee is credited with an equivalent number of Hours of Service, using one of the Equivalency Methods defined in subsection (5) above for any fractional year that was credited under the Elapsed Time method as of the date of the change.

For the portion of the Eligibility Computation Period following the date of the change, actual Hours of Service are counted. The Hours of Service credited for the portion of the Eligibility Computation Period in which the Elapsed Time method was in effect are added to the actual Hours of Service credited for the remaining portion of the Eligibility Computation Period to determine if the Employee has a Year of Service for that Eligibility Computation Period.

- (b) **Entry Dates.** Once an Eligible Employee satisfies the minimum age and service conditions (as set forth in AA §4-1), the Employee will be eligible to participate under the Plan as of his/her Entry Date (as set forth in AA §4-2). If the Employer adopts a Grandfathered 401(k) Arrangement as designated under AA §2-3 of the Profit Sharing Plan Adoption Agreement, the Employer may elect different Entry Dates with respect to Salary Deferrals, Matching Contributions, and Employer Contributions.

- 2.04 **Participation on Effective Date of Plan.** Unless designated otherwise under AA §4-4, an Eligible Employee who has satisfied the minimum age and service conditions and reached his/her Entry Date as of the Effective Date of the Plan will be eligible to participate in the Plan as of such Effective Date. If an Employee has satisfied the minimum age and service conditions as of the Effective Date of the Plan but has not yet reached his/her Entry Date, the Employee will be eligible to participate on the appropriate Entry Date. The Employer may modify this rule under AA §4-4 by electing to treat all Employees employed on the Effective Date of the Plan as Participants (regardless of whether they have satisfied the Plan's minimum age and service conditions) or by designating a specific date as of which all Eligible Employees will be deemed to be a Participant, (regardless of whether the Employee has otherwise satisfied the minimum age and service conditions).
- 2.05 **Rehired Employees.** Subject to the Break in Service rules under Section 2.07, if a terminated Employee is subsequently rehired, such Employee will be eligible to participate in the Plan on his/her reemployment date, if the Employee is an Eligible Employee and the Employee had satisfied the Plan's minimum age and service conditions prior to his/her termination of employment. If a rehired Employee had not satisfied the Plan's minimum age and service conditions prior to termination of employment, such Employee is eligible to participate in the Plan on the appropriate Entry Date following satisfaction of the eligibility requirements under this Section 2.
- 2.06 **Service with Predecessor Employers.** To the extent provided under AA §4-5, if the Employer maintains the plan of a Predecessor Employer, any service with such Predecessor Employer is treated as service with the Employer for purposes of applying the provisions of this Plan.
- 2.07 **Break in Service Rules.** Generally, an Employee will be credited with all service earned for the Employer, including service earned prior to the effective date of the Plan and service earned while the Employee is an ineligible Employee. However, the Employer may elect under AA §4-6 to disregard an Employee's service with the Employer under the Break in Service rules. For this purpose, an Employee incurs a Break in Service for any Eligibility Computation Period (as defined in Section 2.03(a)(3)) during which the Employee does not complete more than five hundred (500) Hours of Service with the Employer. However, if the Employer elects to require less than 1,000 Hours of Service to earn a Year of Service for eligibility purposes, a Break in Service will occur for any Eligibility Computation Period during which the Employee does not complete more than one-half (1/2) of the Hours of Service required to earn an eligibility Year of Service.
- 2.08 **Waiver of Participation.** An Employee may not waive participation under the Plan unless specifically permitted under AA §11-4. For this purpose, the mere failure to make Salary Deferrals or After-Tax Employee Contributions is not a waiver of participation. The Employer may elect under AA §11-4 to permit Employees to make a one-time irrevocable election to not participate under the Plan. The Employer may elect under AA §6-7(c)(2) to permit Employees to make a one-time irrevocable election to waive any Employer Pick-Up Contributions under the Plan.

SECTION 3 PLAN CONTRIBUTIONS

This Section 3 describes the type of contributions that may be made to the Plan. The type of contributions that may be made to the Plan and the method for allocating such contributions may vary depending on the type of Plan involved. (See Section 5 for a discussion of the limits that apply to any contributions made under the Plan.)

- 3.01 Types of Contributions.** An Employer may designate under the Adoption Agreement the amount and type of contributions that may be made under the Plan. The Plan may provide for Employer Contributions (as authorized under AA §6) and, if so elected under AA §6-7, After-Tax Employee Contributions. In addition, the Profit Sharing Plan may provide for Matching Contributions with respect to any After-Tax Employee Contributions under the Plan or Elective Deferrals made under another plan maintained by the Employer. If the Plan qualifies as a Grandfathered 401(k) Arrangement (as designated under AA §2-3 of the Profit Sharing Plan Adoption Agreement, the Plan may provide for Salary Deferrals, Employer Contributions, Matching Contributions and After-Tax Employee Contributions.

To share in a contribution under the Plan, an Employee must satisfy all of the conditions for being a Participant (as described in Section 2) and must satisfy any allocation conditions (as described in Section 3.07) applicable to the particular type of contribution. The Employer may designate under AA §2-5 that the Plan is a frozen Plan. As a frozen Plan, the Employer will not make any Employer Contributions or Matching Contributions with respect to Plan Compensation earned after the date identified in AA §2-5 and no Participant will be permitted to make Salary Deferrals or Employee After-Tax Employee Contributions to the Plan for any period following the effective date of the freeze as identified in AA §2-5.

- 3.02 Employer Contribution Formulas.** If permitted under AA §6, the Employer may make an Employer Contribution to the Plan, in accordance with the contribution formula selected under AA §6-2. Subsection (a) below describes the Employer Contributions that may be selected under the Profit Sharing Plan Adoption Agreement, subsection (b) below describes the Employer Contributions that may be made under the Money Purchase Plan Adoption Agreement and subsection (c) below describes the Employer Contributions that may be made under a Grandfathered 401(k) Arrangement. Since a governmental plan is exempt from the nondiscrimination requirements, the contribution formulas described in this Section 3.02 need not satisfy the nondiscrimination tests under Code §401(a)(4) or the regulations thereunder.

- (a) Contribution formulas (Profit Sharing Plan).** The Employer may elect under AA §6-2 of the Profit Sharing Plan Adoption Agreement to make any of the following Employer Contributions. If the Employer elects more than one Employer Contribution formula, each formula is applied separately. The Employer's aggregate Employer Contribution for a Plan Year will be the sum of the Employer Contributions under all such formulas. Any reference to the Adoption Agreement under this subsection (a) is a reference to the Profit Sharing Plan Adoption Agreement.

- (1) Employer Contributions.** An Employer may designate under AA §6 of the Profit Sharing Adoption Agreement the amount of Employer Contributions that may be made under the Plan. Any Employer Contributions selected under AA §6 will be made in accordance with the contribution formula selected under AA §6-2. Any Employer Contribution must be allocated in accordance with a definite allocation formula as set forth in AA §6-3. To receive an allocation of Employer Contributions, a Participant must satisfy any allocations conditions designated under the Plan, as described in Section 3.07 below.

In determining the amount of Employer Contributions to be allocated to Participants under the Plan, the Plan will take into account Plan Compensation (as defined in Section 1.75) for the Plan Year. The Employer may designate under AA §6-5(a) alternative periods for determining the allocation of Employer Contributions. If alternative periods are designated under AA §6-5(a), a Participant's allocation of Employer Contributions will be determined separately for each designated period based on Plan Compensation earned during such period. If an alternative period is designated under AA §6-5(a), the Employer need not actually make the Employer Contribution during the designated period, provided the total Employer Contribution for the Plan Year is allocated based on the proper Plan Compensation. (If the permitted disparity allocation method applies under AA §6-3(c), the allocation will be based on the Plan Year.)

If the Employer maintains any other qualified plan(s) which cover any Participants under this Plan, the Employer may elect under AA §6-5(c) to reduce such Participants' allocation under this Plan to take into account the benefits provided under the Employer's other qualified plan(s). The Employer describe how the offset will be applied under AA §6-5(c)(2).

- (i) Discretionary Employer Contribution.** If a discretionary contribution is selected under AA §6-2(a), the Employer may decide on an annual basis how much (if any) it wishes to contribute to the Plan as an Employer Contribution. If the Employer elects to make a discretionary contribution, such amount may be allocated under the pro rata, permitted disparity, Employee group, age-based or uniform points allocation method (as selected in AA §6-3).

- (A) **Pro rata allocation formula.** Under the pro rata allocation formula, a pro rata share of the Employer Contribution is allocated to each Participant's Employer Contribution Account. A Participant's pro rata share may be determined based on the ratio such Participant's Plan Compensation bears to the total Plan Compensation of all Participants or as a uniform dollar amount, as designated in AA§6-3(a).
- (B) **Permitted disparity allocation formula.** Under the permitted disparity allocation formula, the Employer Contribution is allocated to Participants' Employer Contribution Accounts using a two-step method. The Employer may not elect the permitted disparity allocation formula under the Plan if the Employer maintains another qualified plan, covering any of the same Employees, which uses permitted disparity in determining the allocation of contributions or the accrual of benefits under such plan.
- (I) **Two-step method.** Under the two-step method, the discretionary Employer Contribution is allocated under the following method:
- (a) **Step one.** The Employer Contribution is allocated to each Participant's Employer Contribution Account in the ratio that the sum of each Participant's Plan Compensation plus Excess Compensation (as defined in subsection (II) below) bears to the sum of the total Plan Compensation plus Excess Compensation of all Participants, but not in excess of the Maximum Disparity Rate (as defined in subsection (IV) below).
- (b) **Step two.** Any Employer Contribution remaining after the allocation in subsection (a) above will be allocated in the ratio that each Participant's Plan Compensation bears to the total Plan Compensation of all Participants.
- (II) **Excess Compensation.** The amount of Plan Compensation that exceeds the Integration Level.
- (III) **Integration Level.** The Taxable Wage Base, unless specified otherwise under AA §6-3(c)(1).
- (IV) **Maximum Disparity Rate.** The Maximum Disparity Rate is the maximum amount that may be allocated with respect to Excess Compensation. Unless provided otherwise under AA §6-3(c)(2), the maximum amount that may be allocated as a percentage of Plan Compensation and Excess Compensation under step one of the two-step allocation method under subsection (I) above, may not exceed the following percentage:
- | <u>Integration Level</u>
<u>(as a percentage of the Taxable Wage Base)</u> | <u>Maximum</u>
<u>Disparity Rate</u> |
|---|---|
| 100% | 5.7% |
| More than 80% but less than 100% | 5.4% |
| More than 20% and not more than 80% | 4.3% |
| 20% or less | 5.7% |
- The Employer may elect to apply a greater Maximum Disparity Rate under AA §6-3(c)(2).
- (V) **Taxable Wage Base.** The maximum amount of wages that are considered for Social Security purposes as in effect at the beginning of the Plan Year.
- (C) **Uniform points allocation.** Under the uniform points allocation, the Employer will allocate the discretionary Employer Contribution on the basis of each Participant's total points for the Plan Year, as determined under AA §6-3(d). A Participant's allocation of the Employer Contribution is determined by multiplying the Employer Contribution by a fraction, the numerator of which is the Participant's total points for the Plan Year and the denominator of which is the sum of the points for all Participants for the Plan Year.

A Participant will receive points for each year(s) of age and/or each Year(s) of Service designated under AA §6-3(d). In addition, a Participant also may receive points based on his/her Plan Compensation. Each Participant will receive the same number of points for each designated year of age and/or service and the same number of points for each designated level of Plan Compensation.

- (D) **Employee group allocation.** Under the Employee group allocation method, the Employer may make a different discretionary contribution to each Participant's Employer Contribution Account based on the Employee allocation groups designated under AA §6-3(e). The Employer Contribution made for an allocation group will be allocated as a uniform percentage of Plan Compensation or as a uniform dollar amount. If the Employer Contribution is allocated as a percentage of Plan Compensation, the amount that will be allocated to each Participant within an allocation group is determined by multiplying the Employer Contribution made for that allocation group by the following fraction:

$$\frac{\text{Participant's Plan Compensation}}{\text{Plan Compensation of all Participants in the allocation group}}$$

Alternatively, the Employer may set forth in the description of the Employee groups under AA §6-3(e)(2) a fixed contribution amount for a designated Employee group. If a fixed contribution is provided for a specific Employee group, the amount designated as the fixed contribution will be allocated to each Participant within the designated Employee group.

The Employer must designate how much of the Employer Contribution is made for each of the Employee allocation groups and whether such amounts are allocated on the basis of Plan Compensation or as a uniform dollar amount. The portion of the Employer Contribution designated for a specific allocation group will be allocated only to Participants within that allocation group. If a Participant is in more than one allocation group during the Plan Year, the Participant will receive an Employer Contribution based on the Participant's status on the last day of the Plan Year. In the event a Participant is in two or more allocation groups on the last day of the Plan Year, the Participant will receive an Employer Contribution based on the first allocation group listed under AA §6-3(e)(2) in which the Participant is a part. The Employer can provide for a different treatment of Employees in multiple groups under AA §6-3(e)(3)(i).

- (E) **Age-based allocation formula.** Under the age-based allocation formula, the Employer will allocate the discretionary Employer Contribution on the basis of each Participant's adjusted Plan Compensation. For this purpose, a Participant's adjusted Plan Compensation is determined by multiplying the Participant's Plan Compensation by an Actuarial Factor. A Participant's Actuarial Factor is determined based on standard actuarial assumptions using a testing age that is the later of Normal Retirement Age or the Employee's current age. Unless designated otherwise under AA §6-3(f), a Participant's Actuarial Factor is determined based on an 8.5% interest rate and the UP-1984 mortality table. (See Appendix A of the Plan for the Actuarial Factors associated with an 8.5% interest rate and the UP-1984 mortality table and a testing age of 65. If an interest rate other than 8.5% or a mortality table other than the UP-1984 mortality table is selected under AA §6-3(f), or if a testing age other than age 65 is used, the Plan must determine the appropriate Actuarial Factors based on the designated interest rate, mortality table and testing age.)
- (ii) **Fixed Employer Contribution.** The Employer may elect under AA §6-2(b) to make a fixed contribution to the Plan. The Employer may elect under AA §6-2(b)(1) or (2) to make a fixed contribution as a designated percentage of Plan Compensation or as a uniform dollar amount. If a fixed contribution is selected under AA §6-2(b)(1) or (2), the Employer Contribution will be allocated under the fixed contribution formula under AA §6-3(b) in accordance with the selections made in AA §6-2(b).
- (iii) **Service-based Employer Contribution.** If elected in AA §6-2(d), the Employer may make a contribution based on an Employee's service with the Employer during the Plan Year (or other period designated under AA §6-5(a)). The Employer may elect to make the service-based contribution as a discretionary contribution or as a fixed contribution. Any such contribution will be allocated on the basis of Participants' Hours of Service, weeks of employment or other measuring period selected under AA §6-2(d). The Employer Contribution will be allocated under the service-based allocation formula under AA §6-3(g).

- (iv) **Contributions of Accrued Sick/Vacation Leave.** The Employer may elect under AA §6-4 to provide Employer Contributions of accrued sick and/or vacation leave, provided the following requirements are satisfied:
- (A) The leave converted under the arrangement can only be accrued unpaid leave;
 - (B) The leave converted can only be sick and/or vacation leave;
 - (C) The Employer designates how often the conversions occur;
 - (D) The eligibility requirements for participation in the plan cannot be such that an Employee becomes a Participant only in the plan year in which the Employee terminates employment;
 - (E) The only accrued unpaid leave which can be converted under the arrangement must only be leave for which the Employee has no right to request a cash payment;
 - (F) The leave conversion formula can only be one which involves multiplying an Employee's current daily rate of pay against the amount of accrued unpaid leave being converted; and
 - (G) The leave conversion formula is definitely determinable.
- (2) **Frozen Plan.** The Employer may designate under AA §2-5 that the Plan is a frozen Plan. As a frozen Plan, the Employer will not make any Employer Contributions with respect to Plan Compensation earned after the date identified in AA §2-5. If the Plan holds any unallocated forfeitures at the time the Plan is frozen, such forfeitures may be allocated to all eligible Participants in accordance with Section 6.11 in the year the Plan is frozen, regardless of any contrary selections under AA §8-7.
- (b) **Employer Contribution formulas (Money Purchase Plan).** The Employer may elect under AA §6 of the Money Purchase Plan Adoption Agreement to make any of the following Employer Contributions. Each Participant will receive an allocation of Employer Contributions equal to the amount determined under the contribution formula elected under AA §6-2. Any reference to the Adoption Agreement under this subsection (b) is a reference to the Money Purchase Plan Adoption Agreement. To receive an allocation of Employer Contributions, a Participant must satisfy any allocation conditions designated under the Plan, as described in Section 3.07 below.
- In determining the amount of Employer Contributions to be allocated to Participants under the Plan, the Plan will take into account Plan Compensation (as defined in Section 1.75) for the Plan Year. The Employer may designate under AA §6-4 alternative periods for determining the allocation of Employer Contributions. If alternative periods are designated under AA §6-4, a Participant's allocation of Employer Contributions will be determined separately for each designated period based on Plan Compensation earned during such period. If an alternative period is designated under AA §6-4, the Employer need not actually make the Employer Contribution during the designated period, provided the total Employer Contribution for the Plan Year is allocated based on the proper Plan Compensation. (If the permitted disparity allocation method applies under AA §6-2(c), the allocation will be based on the Plan Year.)
- If the Employer maintains any other qualified plan(s) which cover any Participants under this Plan, the Employer may elect under AA §6-3(b) to reduce such Participants' allocation under this Plan to take into account the benefits provided under the Employer's other qualified plan(s). The Employer may describe under AA §6-3(b)(2) how the offset will be applied.
- (1) **Uniform Employer Contribution.** If elected under AA §6-2(a), the Employer will make a contribution to each Participant under the Plan as a uniform percentage of Plan Compensation or as a uniform dollar amount, as designated in AA §6-2(a).
- (2) **Permitted disparity contribution formula.** If elected under AA §6-2(c), the Employer will make a permitted disparity contribution to each Participant using either the individual or group method. The Employer may not elect the permitted disparity contribution formula under the Plan if the Employer maintains another qualified plan, covering any of the same Employees, which uses permitted disparity in determining the allocation of contributions or the accrual of benefits under such plan.
- (i) **Individual method.** Under the individual method, each Participant will receive an allocation of the Employer Contribution equal to the amount determined under the contribution formula under AA §6-2(c)(1). A Participant may not receive an allocation with respect to Excess Compensation that exceeds the Maximum Disparity Rate.

- (A) **Excess Compensation.** The amount of Plan Compensation that exceeds the Integration Level.
- (B) **Integration Level.** The Taxable Wage Base, unless specified otherwise under AA §6-2(c)(3).
- (C) **Maximum Disparity Rate.** The Maximum Disparity Rate is the maximum amount that may be allocated with respect to Excess Compensation under the permitted disparity formula. Unless provided otherwise under AA §6-2(c)(3), the maximum amount that may be allocated as a percentage of Plan Compensation and Excess Compensation is the following percentage:

<u>Integration Level</u> <u>(as a percentage of the Taxable Wage Base)</u>	<u>Maximum</u> <u>Disparity Rate</u>
100%	5.7%
More than 80% but less than 100%	5.4%
More than 20% and not more than 80%	4.3%
20% or less	5.7%

The Employer may elect to apply a greater Maximum Disparity Rate under AA §6-2(c)(3)(ii).

- (D) **Taxable Wage Base.** The maximum amount of wages that are considered for Social Security purposes as in effect at the beginning of the Plan Year.
- (ii) **Group method.** Under the group method, the Employer contributes a fixed percentage of total Plan Compensation of all Participants. The Employer Contribution is then allocated under the two-step method (as described in subsection (a)(1)(i)(B)(I) above). In determining Excess Compensation, the Integration Level is the Taxable Wage Base, unless designated otherwise under AA §6-2(c)(3).
- (3) **Employee group contribution formula.** Under the Employee group contribution formula, the Employer may make a different contribution to each Participant's Employer Contribution Account based on the designated Employee groups identified under AA §6-2(d).

The Employer Contribution made for a designated Employee group will be allocated to each eligible Participant in such group as a uniform percentage of Plan Compensation or as a uniform dollar amount, as designated in AA §6-2(d)(2). The Employer also may elect to allocate an amount to each eligible Participant in a designated Employee group the maximum amount permissible under Code §415. See Section 5.02.

The Employee groups designated in AA §6-2(d) must be clearly defined in a manner that will not violate the definite determinable requirement of Treas. Reg. §1.401-1(b)(1)(ii). The portion of the Employer Contribution designated for a specific Employee group will be allocated only to Participants within that group. If a Participant is in more than one Employee group during the Plan Year, the Participant will receive an Employer Contribution based on the Participant's status on the last day of the Plan Year. In the event a Participant is in two or more Employee groups on the last day of the Plan Year, the Participant will receive an Employer Contribution based on the first Employee group listed under AA §6-2(d) in which the Participant is a part. The Employer can provide for a different treatment of Employees in multiple groups as part of the group description in AA §6-2(d)(1).

- (4) **Age-based contribution formula.** Under the age-based contribution formula, the Employer will contribute a specific percentage of each Participant's adjusted Plan Compensation. For this purpose, a Participant's adjusted Plan Compensation is determined by multiplying the Participant's Plan Compensation by an Actuarial Factor. A Participant's Actuarial Factor must be determined based on standard actuarial assumptions using a testing age that is the later of Normal Retirement Age or the Employee's current age. Unless designated otherwise under AA §6-2(e), a Participant's Actuarial Factor is determined based on an 8.5% interest rate and the UP-1984 mortality table. (See Appendix A of the Plan for the Actuarial Factors associated with an 8.5% interest rate and the UP-1984 mortality table and a testing age of 65. If an interest rate other than 8.5% or a mortality table other than the UP-1984 mortality table is selected under AA §6-2(e), or if a testing age other than age 65 is used, the Plan must determine the appropriate Actuarial Factors based on the designated interest rate, mortality table and testing age.)
- (5) **Service-based Employer Contribution.** If elected in AA §6-2(f), the Employer will make a contribution based on an Employee's service with the Employer during the Plan Year (or other period designated under AA §6-4.)

The Employer Contribution will be allocated on the basis of Participants' Hours of Service, weeks of employment or other measuring period selected under AA §6-2(f).

- (6) **Frozen Plan.** The Employer may designate under AA §2-5 that the Plan is a frozen Plan. As a frozen Plan, the Employer will not make any Employer Contributions with respect to Plan Compensation earned after the date identified in AA §2-5. If the Plan holds any unallocated forfeitures at the time of the termination, such forfeitures may be allocated to all eligible Participants in accordance with Section 6.11 in the year of the termination, regardless of any contrary selections under AA §8-7.
- (c) **Contribution formulas (Grandfathered 401(k) Plan).** If the Employer is eligible to maintain a Grandfathered 401(k) Arrangement (as defined under AA §2-3), the Employer may elect under the Adoption Agreement to make Employer Contributions, Matching Contributions and/or Salary Deferrals. Any reference to the Adoption Agreement under this subsection (c) is a reference to the Grandfathered 401(k) Plan Adoption Agreement.
- (1) **Employer Contributions.** An Employer may designate under AA §6 of the Grandfathered 401(k) Plan Adoption Agreement the amount of Employer Contributions that may be made under the Plan. The same rules apply with respect to Employer Contributions under the Grandfathered 401(k) Arrangement as apply under the Profit Sharing Plan, as set forth under subsection (a), above. If the Employer elects more than one Employer Contribution formula, each formula is applied separately. The Employer's aggregate Employer Contribution for a Plan Year will be the sum of the Employer Contributions under all such formulas.
- (2) **Salary Deferrals.** The Employer may elect under AA §6A of the Grandfathered 401(k) Plan Adoption Agreement to authorize Participants to make Salary Deferrals under the Plan. A Participant's total Salary Deferrals may not exceed the lesser of any limitation designated under AA §6A-2, the Elective Deferral Dollar Limit described under Section 5.03, or the amount permitted under the Code §415 Limitation described under Section 5.02. The Employer may elect under AA §6A-2(b) of the Grandfathered 401(k) Plan Adoption Agreement to apply a different limit on Salary Deferrals to the extent such Salary Deferrals are withheld from a Participant's bonus payments.
- (i) **Salary Deferral Election.** In order to make Salary Deferrals under the Plan, a Participant must enter into a Salary Deferral Election which authorizes the Employer to withhold a specific dollar amount or a specific percentage from the Participant's Plan Compensation. The Salary Deferral Election may permit a Participant to specify a different percentage or dollar amount be withheld from specified components of Plan Compensation, such as base pay, bonuses, commissions, etc. In addition, the Salary Deferral Election may provide the conditions on which an Employee's affirmative Salary Deferral Election will expire. If an Employee's Salary Deferral Election expires, such Employee can always complete a new affirmative election and designate a new deferral percentage. If the Plan is not an Automatic Contribution Arrangement and an Employee's affirmative election expires, the Salary Deferral Election may provide that the Employee's expiring deferral election remains in effect and may increase by a designated amount unless the Employee affirmatively elects otherwise. The Employer will deposit any amounts withheld from a Participant's Plan Compensation as Salary Deferrals into the Participant's Salary Deferral Account under the Plan. A Salary Deferral Election may only relate to Plan Compensation that is not currently available at the time the Salary Deferral Election is completed. In determining the amount to be withheld from a Participant's Plan Compensation, a Salary Deferral election may be rounded to the next highest or lowest whole dollar amount.

The Employer may designate under AA §6A-8 of the Grandfathered 401(k) Plan Adoption Agreement to apply a special effective date as of which Participants may begin making Salary Deferrals under the Plan. Regardless of any special effective date designated under AA §6A-8, a Salary Deferral Election may not be effective prior to the later of:

- (A) the date the Employee becomes a Participant;
- (B) the date the Participant executes the Salary Deferral Election; or
- (C) the date the Plan is first adopted or effective.

In addition, Salary Deferrals made pursuant to a Salary Deferral Election may not be made earlier than the date the Participant performs the services to which such Salary Deferrals relate or the date the compensation subject to such Salary Deferral Election would be currently available to the Participant absent the deferral election (if earlier). Regardless of when a Participant elects to commence making Salary Deferrals, the Employer may delay commencement for a reasonable period of time in order to implement the Salary Deferral election.

A Salary Deferral Election is valid even though it is executed by an Employee before he/she actually has qualified as a Participant, so long as the Salary Deferral Election is not effective before the date the Employee is a Participant.

- (ii) **Change in deferral election.** An Employee must be permitted to enter into a new Salary Deferral Election or to modify or terminate an existing Salary Deferral Election at least once a year. The Employer may designate additional dates on the Salary Deferral Election form (or other written procedures) as to when a Participant may modify or terminate a Salary Deferral Election. Any election to modify or terminate a Salary Deferral Election will take effect within a reasonable period following such election and will apply only on a prospective basis. The Employer may allow an Employee to increase his/her deferral election up to the Elective Deferral Dollar Limit at any time during the last two months of the Plan Year.
- (iii) **Automatic Contribution Arrangement.** The Employer may elect under AA §6A-7 of the Grandfathered 401(k) Plan Adoption Agreement to provide for an automatic deferral election under the Plan. If the Employer elects to apply an automatic deferral election, the Employer will automatically withhold the amount designated under AA §6A-7 from Participants' Plan Compensation, unless the Participant completes a Salary Deferral Election electing a different deferral amount (including a zero deferral amount). Unless provided otherwise under AA §6A-7, an Employee who is automatically enrolled under a prior plan document will continue to be automatically enrolled under the current Plan document.
 - (A) **Automatic increase.** The Plan may provide under AA §6A-7 of the Grandfathered 401(k) Plan Adoption Agreement that the automatic deferral amount will automatically increase by a designated percentage each Plan Year. Unless designated otherwise under AA §6A-7(a)(4), in applying any automatic deferral increase under AA §6A-7, the initial deferral amount will apply for the period that begins when the employee first participates in the automatic contribution arrangement and ends on the last day of the following Plan Year. The automatic increase will apply for each Plan Year beginning with the Plan Year immediately following the initial deferral period and for each subsequent Plan Year.
 - (B) **Annual notice requirement.** Each eligible Employee must receive a written notice describing the Participant's rights and obligations under the Plan which is sufficiently accurate and comprehensive to apprise the Employee of such rights and obligations and is written in a manner calculated to be understood by the average Plan Participant. The annual notice only needs to be provided to those Employees who are covered under the Automatic Contribution Arrangement. If it is impractical to provide the annual notice to a newly eligible Participant before the date such individual becomes eligible to participate under the Plan, the notice will be treated as timely if it is provided as soon as practicable after such date and the Employee is permitted to defer from Plan Compensation earned beginning on the date of participation.
 - (C) **Timing of annual notice.** The annual notice must be provided within a reasonable period before the beginning of each Plan Year (or, in the year an Employee becomes an eligible Employee, within a reasonable period before the Employee becomes an eligible Employee). In addition, a notice satisfies the timing requirements only if it is provided sufficiently early so that the Employee has a reasonable period of time after receipt of the notice and before the first Salary Deferral made under the arrangement to make an alternative deferral election. The annual notice will be deemed timely if it is provided to each eligible Employee at least 30 days (and no more than 90 days) before the beginning of each Plan Year. In the case of an Employee who does not receive the notice within such period because the Employee becomes an eligible Employee after the 90th day before the beginning of the Plan Year, the timing requirement is deemed to be satisfied if the notice is provided no more than 90 days before the Employee becomes an eligible Employee (and no later than the date the Employee becomes an eligible Employee).
 - (D) **Timing of automatic deferral.** Generally, the automatic deferral will commence as of the date the Employee is otherwise eligible to make Salary Deferrals under the Plan, if the Employee had completed a Salary Deferral Election. However, an automatic deferral will be treated as timely if the deferral is made pursuant to reasonable administrative procedures established by the Plan Administrator. If the Plan provides an Employee with a written notice as described in Section 3.03(c)(2)(i)(D) above no later than 30 days after his/her Entry Date, provides the Employee with the opportunity to make an affirmative Salary Deferral Election up to 30 days after the notice is provided, and, in the absence of the Employee's affirmative Salary Deferral Election, provides

that automatic deferrals will commence as soon as administratively practicable following the last day of the 30 day period, then the Plan will be treated as having a reasonable administrative procedure.

(E) **Permissible Withdrawals.** If so elected under AA §6A-7(b) of the Grandfathered 401(k) Plan Adoption Agreement, effective for Plan Years beginning on or after January 1, 2008, any Employee who has Salary Deferrals contributed to the Plan pursuant to an automatic deferral election may elect to withdraw such contributions (and earnings attributable thereto) in accordance with the requirements of this subsection (E). A permissible withdrawal under this subsection (E) may be made without regard to any elections under AA §10 and will not cause the Plan to fail the prohibition on in-service distribution applicable to Salary Deferrals under Section 7.10(c).

(I) **Amount of distribution.** A distribution satisfies the requirement of this subsection (E) if the distribution is equal to the amount of Salary Deferrals made pursuant to the automatic deferral election through the effective date of the withdrawal election (as described in subsection (III) below) adjusted for allocable gains and losses as of the date of the distribution.

The distribution amount determined under this subsection (I) may be reduced by any generally applicable fees. However, the Plan may not charge a greater fee for a permissible distribution under this subsection (E) than applies with respect to other Plan distributions.

(II) **Timing of permissive withdrawal election.** An election to withdraw Salary Deferrals under this subsection (E) must be made no later than 90 days after the date of the first default Salary Deferral. The date of the first default Salary Deferral is the date that the Plan Compensation from which such Salary Deferrals are withheld would otherwise have been included in gross income. The Employer may designate an alternative period for making permissive withdrawals under AA §6A-7(b)(3).

(III) **Effective date of permissible withdrawal.** The effective date of a permissible withdrawal election cannot be later than the pay date for the second payroll period that begins after the election is made or, if earlier, the first pay date that occurs at least 30 days after the election is made. If an Employee does not make automatic deferrals to the Plan for an entire Plan Year (e.g., due to termination of employment), the Plan may allow such Employee to take a permissive withdrawal, but only with respect to default contributions made after the Employee's return to employment.

(IV) **Consequences of permissible withdrawal.** Any amount distributed under this subsection (E) is includible in the Employee's gross income for the taxable year in which the distribution is made. However, the portion of any distribution consisting of Roth Deferrals is not included in an Employee's gross income a second time. In addition, a permissible withdrawal under this subsection (E) is not subject to any penalty tax under Code §72(t). Unless the Employee affirmatively elects otherwise, any withdrawal request will be treated as an affirmative election to stop having Salary Deferrals made on the Employee's behalf as of the date specified in subsection (III) above.

(iv) **Catch-Up Contributions.** If permitted under AA §6A-4 of the Grandfathered 401(k) Plan Adoption Agreement, a Participant who is aged 50 or over by the end of his/her taxable year beginning in the calendar year may make Catch-Up Contributions, provided such Catch-Up Contributions are in excess of an otherwise applicable limit under the Plan. For this purpose, an otherwise applicable Plan limit is a limit in the Plan that applies to Salary Deferrals without regard to Catch-up Contributions, such as a Plan-imposed Salary Deferral limit under AA §6A-2, the Code §415 Limitation (described in Section 5.02), or the Elective Deferral Dollar Limit (described in Section 5.03).

(A) **Catch-Up Contribution Limit.** Catch-up Contributions for a Participant for a taxable year may not exceed the Catch-Up Contribution Limit. The Catch-Up Contribution Limit for taxable years beginning in 2010 through 2014 is \$5,500. For taxable years beginning after 2014, the Catch-Up Contribution Limit will be adjusted for cost-of-living increases under Code §414(v)(2)(C). The Employer may operationally limit Catch-Up Contributions so that a Participant's total Catch-Up Contributions, when added to other Salary Deferrals, may not exceed 75 percent of the Participant's Plan Compensation for the taxable year.

(B) **Special treatment of Catch-Up Contributions.** Catch-up Contributions are not subject to the Elective Deferral Dollar Limit or the Code §415 Limitation.

(v) **Roth Deferrals.** For Plan Years beginning on or after January 1, 2006, if permitted under AA §6A-5 of the Grandfathered 401(k) Plan Adoption Agreement, a Participant may designate all or a portion of his/her Salary Deferrals as Roth Deferrals. For this purpose, a Roth Deferral is a Salary Deferral that satisfies the following conditions.

(A) **Irrevocable election.** The Participant makes an irrevocable election (at the time the Participant enters into his/her Salary Deferral Election) designating all or a portion of his/her Salary Deferrals as Roth Deferrals. The irrevocable election applies with respect to Salary Deferrals that are made pursuant to such election. A Participant may modify or change a Salary Deferral Election to increase or decrease the amount of Salary Deferrals designated as Roth Deferrals, provided such change or modification applies only with respect to Salary Deferrals made after such change or modification. (See subsection (ii) above for rules regarding the timing of permissible changes or modifications to a Participant's Salary Deferral Election.)

(B) **Subject to immediate taxation.** To the extent a Participant designates all or a portion of his/her Salary Deferrals as Roth Deferrals, such amounts will be includible in the Participant's income at the time the Participant would have received the contribution amounts in cash if the Employee had not made the Salary Deferral election.

(C) **Separate account.** Any amounts designated as Roth Deferrals will be maintained by the Plan in a separate Roth Deferral Account. The Plan will credit and debit all contributions and withdrawals of Roth Deferrals to such separate Account. The Plan will separately allocate gains, losses, and other credits and charges to the Roth Deferral Account on a reasonable basis that is consistent with such allocations for other Accounts under the Plan. However, in no event may the Plan allocate forfeitures under the Plan to the Roth Deferral Account. The Plan will separately track Participants' accumulated Roth Deferrals and the earnings on such amounts.

(D) **Satisfaction of Salary Deferral requirements.** Roth Deferrals are subject to the same requirements as apply to Salary Deferrals. Thus Roth Deferrals are subject to the following requirements:

(I) Roth Deferrals are always 100% vested, as provided in Section 6.01.

(II) Roth Deferrals are subject to the Elective Deferral Dollar Limit, as described in Section 5.03. For this purpose, all Salary Deferrals (both Pre-Tax Salary Deferrals and Roth Deferrals) are aggregated in applying the Elective Deferral Dollar Limit.

(III) Roth Deferrals are subject to the same distribution restrictions as apply to Salary Deferrals under Section 7.10(c). See Section 7.11(b) for special distribution provisions applicable to Roth Deferrals.

(IV) Roth Deferrals are subject to the required minimum distribution requirements under Code §401(a)(9), as set forth in Section 8.

(E) **Rollover of Roth Deferrals.**

(I) **Rollovers from this Plan.** For purposes of the rollover rules under Section 7.0404, a Direct Rollover of a distribution from a Participant's Roth Deferral Account will only be made to another Roth Deferral Account under a qualified plan described in Code §401(a) or an annuity contract or custodial account described in Code §403(b) or to a Roth IRA described in §408A, and only to the extent the rollover is permitted under the rules of Code §402(c).

(II) **Rollovers to this Plan.** Subject to the provisions under Section 3.05, a Participant may make a Rollover Contribution to his/her Roth Deferral Account only if the rollover is a Direct Rollover from another Roth Deferral Account under a qualified retirement plan (as described in Section 3.05) and only to the extent the rollover is permitted under the rules of Code §402(c). A rollover of Roth Deferrals may not be made to this Plan from a Roth

IRA. Any rollover of Roth Deferrals to this Plan will be held in a separate Roth Rollover Account.

- (III) **Minimum rollover amount.** The Plan Administrator may decide whether or not to provide for a Direct Rollover (including an Automatic Rollover) for distributions from a Participant's Roth Deferral Account if it is reasonably expected (at the time of the distribution) that the total amount the Participant will receive as a distribution during the calendar year will total less than \$200. In addition, the Plan Administrator may decide whether or not to take into account any distribution from a Participant's Roth Deferral Account in determining whether distributions from a Participant's other Accounts are reasonably expected to total less than \$200 during a year. For purposes of applying the Automatic Rollover provisions under Section 8.06, a Participant's Roth Deferral Account and the Participant's other Accounts are treated as accounts held under separate plans. (See Treas. Reg. §1.401(k)-1(f)(4)(ii).)
- (IV) **Separate treatment of Roth Deferrals.** The provisions under Section 7.0404 that allow a Participant to elect a Direct Rollover of only a portion of an Eligible Rollover Distribution, but only if the amount rolled over is at least \$500, is applied by treating any amount distributed from the Participant's Roth Deferral Account as a separate distribution from any amount distributed from the Participant's other Accounts in the Plan, even if the amounts are distributed at the same time.
- (vi) **In-Plan Roth Conversions.** Effective on or after January 1, 2013, the Employer may elect under AA §6A-5(c) of the Profit Sharing/401(k) Plan Adoption Agreement to permit In-Plan Roth Conversions under the Plan. For this purpose, an In-Plan Roth Conversion is a conversion of amounts held in a Participant's Plan Account, other than a Roth Deferral Account or Roth Rollover Account, into the Participant's In-Plan Roth Conversion Account under the Plan, pursuant to Code §402A(c)(4). Any election to make an In-Plan Roth Conversion during a taxable year may not be changed after the In-Plan Roth Conversion is completed. (For In-Plan Roth Conversions completed prior to January 1, 2013, a Participant had to be eligible to receive a distribution of the converted amounts at the time of the In-Plan Roth Conversion. The provisions of this Section 3.03(c)(vi) do not affect an In-Plan Roth Conversion completed prior to January 1, 2013.)

An In-Plan Roth Conversion may be elected by a Participant, a Spousal beneficiary, or an Alternate Payee who is a Spouse or former Spouse. To the extent the term "Participant" is used for purposes of determining eligibility to make an In-Plan Roth Conversion, such term will also include a Spousal beneficiary and an Alternate Payee who is a Spouse or former Spouse.

- (A) **Amounts Eligible for In-Plan Roth Conversion.** If permitted under AA §6A-5(c) of the Profit Sharing/401(k) Adoption Agreement, a Participant may convert any portion of his/her vested Account Balance (other than amounts attributable to Roth Deferrals or Roth Deferral rollovers) to an In-Plan Roth Conversion Account. Unless elected otherwise under AA §6A-5(c), a Participant need not be eligible to receive a distribution from the Plan at the time of the In-Plan Roth Conversion.

In addition, an In-Plan Roth Conversion will not be treated as a distribution for the following purposes:

- (I) **Participant loans.** A Participant loan directly transferred in an In-Plan Roth Conversion without changing the repayment schedule is not treated as a new loan.
- (II) **Spousal consent.** An In-Plan Roth Conversion is not treated as a distribution for purposes of applying the spousal consent requirements under Code §401(a)(11). Thus, a married Plan Participant is not required to obtain spousal consent in connection with an election to make an In-Plan Roth Conversion, even if the Plan is otherwise subject to the spousal consent requirements under Code §401(a)(11).
- (III) **Participant consent.** An In-Plan Roth Conversion is not treated as a distribution for purposes of applying the participant consent requirements under Code §411(a)(11). Thus, amounts that are converted as part of an In-Plan Roth Conversion continue to be taken into account in determining whether the Participant's vested Account Balance exceeds \$5,000 for purposes of applying the Involuntary Cash-Out provisions and will not trigger the requirement for a notice of the Participant's right to defer receipt of the distribution.

- (IV) **Mandatory withholding.** An In-Plan Roth Conversion is not subject to 20% mandatory withholding under Code §3405(c).
- (V) **Distribution restrictions.** Generally, a distribution will be permitted from the In-Plan Roth Conversion Account to the extent permitted for regular Roth Deferrals under AA §10-1. The distribution restrictions normally applicable to Roth Deferrals, as described in Section 7.10(c) of the Plan, do not apply to the extent the conversion is from a contribution source that is not otherwise subject to the distribution restrictions applicable to Roth Deferrals. In addition, distribution restrictions that otherwise apply with respect to a specific contribution source will continue to apply if such contribution source is converted to Roth Deferrals. For example, if Traditional Safe Harbor Contributions are converted to Roth Deferrals, such amounts may not be distributed on account of hardship or other event not otherwise permitted under Section 7.10(c) of the Plan, unless permitted otherwise under IRS guidance.
- (B) **Effect of In-Plan Roth Conversion.** A Participant must include in gross income the taxable amount of an In-Plan Roth Conversion. For this purpose, the taxable amount of an In-Plan Roth Conversion is the fair market value of the distribution, reduced by any basis in the converted amounts. If the distribution includes Employer securities, the fair market value includes any net unrealized appreciation within the meaning of Code §402(e)(4). If an outstanding loan is rolled over as part of an In-Plan Roth Conversion, the amount includible in gross income includes the balance of the loan.
- Generally, the taxable amount of an In-Plan Roth Conversion is includible in gross income in the taxable year in which the conversion occurs.
- (C) **Application of Early Distribution Penalty under Code §72(t).** An In-Plan Roth Conversion is not subject to the early distribution penalty under Code §72(t) at the time of the conversion. However, if an amount allocable to the taxable amount of an In-Plan Roth Conversion is subsequently distributed within the 5-taxable-year period beginning with the first day of the Participant's taxable year in which the conversion was made, the amount distributed is treated as includible in gross income for purposes of applying the Code §72(t) early distribution penalty. For this purpose, the 5-taxable-year period ends on the last day of the Participant's fifth taxable year in the period. This subsection (C) will not apply to the extent the distribution is rolled over to a Roth account in another qualified plan or is rolled over to a Roth IRA. However, the rule under this subsection (C) will apply to any subsequent distributions made from such other Roth account or Roth IRA within the 5-taxable-year period.
- (D) **Contribution Sources.** Unless elected otherwise under AA §6A-5(c), an In-Plan Roth Conversion may be made from any contribution source under the Plan, other than a Roth Deferral Account or Roth Rollover Account. The Employer may elect in AA §6A-5(c) to limit the contribution sources that are eligible for In-Plan Roth Conversion. In addition, the Employer may elect in AA §6A-5(c) to limit In-Plan Roth Conversions to contribution accounts that are 100% vested.
- (3) **Matching Contributions.** The Employer may elect under AA §6B of the Grandfathered 401(k) Plan Adoption Agreement to authorize Matching Contributions under the Plan. If the Employer elects more than one Matching Contribution formula under AA §6B-2, each formula is applied separately. A Participant's aggregate Matching Contributions will be the sum of the Matching Contributions under all such formulas. Any Matching Contribution made under the Plan will be allocated to Participants' Matching Contribution Account. To receive an allocation of Matching Contributions, a Participant must satisfy any allocations conditions designated under the Plan, as described in Section 3.07 below.
- (i) **Contributions eligible for Matching Contributions.** The Matching Contribution formula(s) apply to Salary Deferrals, Catch-Up Contributions, After-Tax Employee Contributions and/or Employer Pick-Up Contributions made under the Plan, to the extent authorized under the Adoption Agreement. In addition, the Employer may elect under AA §6B-3(b) to match Elective Deferrals under another qualified plan, 403(b) plan or 457(b) plan maintained by the Employer. If the Employer elects to make a Matching Contribution based on the Employee's Elective Deferrals or Roth Deferrals under another qualified plan, 403(b) plan or 457(b) plan, the Employer shall make a Matching Contribution on behalf of any eligible Participant who makes Elective Deferrals or Roth Deferrals to the plan designated under AA §6B-3(b). Any such Matching Contribution made to the Plan will be allocated in accordance with any special

provisions added under AA §6B-3(b). Any such Matching Contributions will be in addition to any Matching Contributions made with respect to Salary Deferrals, After-Tax Employee Contributions, Catch-Up Contributions and/or Employer Pick-Up Contributions under this Plan.

- (ii) **Period for determining Matching Contributions.** AA §6B-5 sets forth the period for which the Matching Contribution formula(s) applies. For this purpose, the period designated in AA §6B-5 applies for purposes of determining the amount of Salary Deferrals, Catch-Up Contributions, After-Tax Employee Contributions, and/or Employer Pick-Up Contributions taken into account in applying the Matching Contribution formula(s) and in applying any limits on the amount of Salary Deferrals that may be taken into account under the Matching Contribution formula(s). (See subsection (iii) below for rules applicable to true-up contributions where the Employer contributes Matching Contributions to the Plan on a different period than selected under AA §6B-5.)

If the Employer elects a discretionary Matching Contribution under the Plan, the Employer may elect to make a different Matching Contribution for each period for which Matching Contributions are determined under the Plan. Thus, for example, if the discretionary Matching Contribution is based on the Plan Year quarter, the Employer may elect to make a different level of Matching Contribution for each Plan Year quarter. The Matching Contribution for the full Plan Year must be taken into account in applying the ACP Test with respect to such Plan Year.

- (iii) **True-up contributions.** If the Employer makes Matching Contributions more frequently than annually, the Employer may need to make true-up contributions for Participants. True-up contributions will be required if the Employer actually contributes Matching Contributions to the Plan on a more frequent basis than the period that is used to determine the amount of the Matching Contributions under AA §6B-5. For example, if Matching Contributions apply with respect to Salary Deferrals made for the Plan Year, but the Employer contributes the Matching Contributions on a quarterly basis, the Employer may have to make a true-up contribution to any Participant based on Salary Deferrals for the Plan Year. If a true-up contribution is required under this subsection (iii), the Employer may make such additional contribution as required to satisfy the contribution requirements under the Plan. If true-up contributions will not be made for any Participant under the Plan, payroll period should be selected under AA §6B-5(a).

If Matching Contributions are determined on a period other than the Plan Year, the Employer may make an additional discretionary Matching Contribution equal to the true-up contribution that would otherwise be required if Matching Contributions were determined on a Plan Year basis. If an additional discretionary Matching Contribution is made under this subsection (iii), such contribution must be provided to all eligible Participants who would otherwise be entitled to a true-up contribution based on Plan Compensation for the Plan Year.

- 3.03 Employer Pick-Up Contributions.** The Employer may elect under AA §6-7(c) to make Employer Pick-Up Contributions. An Employer Pick-Up Contribution is a contribution made by an Employee that is “picked up” by the Employer in accordance with Code §414(h)(2). If the Employer elects to provide Employer Pick-Up Contributions under AA §6-7(c), a Participant who meets the eligibility requirements of AA §4-1 shall be deemed to have authorized the Employer to deduct the amount designated under AA §6-7(c) from the Participant’s Plan Compensation prior to payment. Contributions picked-up under this Section 3.03 will be withheld from the Employee’s compensation and deposited into the Participant’s Employer Pick-up Contribution Account. Contributions that are picked up under this Section 3.03 will be treated as Employer Contributions under the Plan and such contributions and earnings thereon will be 100% vested at all times.

To constitute an Employer Pick-up Contribution under this Section 3.03, the Employer must:

- (a) specify that the contributions, although designated as Employee contributions, are being paid by the Employer in lieu of contributions by the Employee;
- (b) take the action necessary to effectuate the pick-up, which must be completed before the period to which such contributions relate;
- (c) exclude from the Employee’s gross income the contributions picked up by the Employer until such time as they are distributed to the Employee; and
- (d) prohibit an Employee from opting out of the Employer Pick-up Contribution and prohibit the receipt of the contributed amounts directly instead of having them paid by the Employer to the Plan.

To satisfy the requirements of this Section 3.03, the Employer Pick-Up Contributions must be effectuated by a person duly authorized to take such action with respect to the Employer and must be evidenced by a contemporaneous written document,

such as minutes from a meeting, a resolution, an ordinance or this Plan document. Any Participating Employee may not enter into a cash or deferred election (within the meaning of Treas. Reg. § 1.401(k)-1(a)(3)) with respect to the designated Employee contributions, at any time from or after the date of the implementation of the Employer Pick-Up Contribution. For example, a Participant may not opt out of the Employer Pick-Up Contribution or receive the contributed amounts directly instead of having them paid by the Employer into the Plan.

- 3.04** **After-Tax Employee Contributions.** The Employer may elect under AA §6-7 to allow Participants to make After-Tax Employee Contributions under the Plan. If permitted under AA §6-7, a Participant's compensation will be reduced by the amount the Participant elects to contribute as an After-Tax Employee Contribution. The After-Tax Employee Contributions may be Voluntary After-Tax Employee Contributions, as designated under AA §6-7(a), or may be Mandatory After-Tax Employee Contributions, as designated under AA §6-7(b). Any After-Tax Employee Contributions made under the Plan will be held in Participants' After-Tax Employee Contribution Account, which is always 100% vested.

A Participant's election to change or resume an after-tax election will be effective as set forth under the After-Tax Employee Contributions election form or other written procedures adopted by the Plan Administrator. An Employee must be permitted to modify or terminate an existing After-Tax Employee Contribution election at least once a year. The Employer may designate additional dates on the After-Tax Employee Contribution election form (or other written procedures) as to when a Participant may commence, modify or terminate After-Tax Employee Contributions. Any election to modify or terminate an After-Tax Employee Contribution election will take effect within a reasonable period following such election and will apply only on a prospective basis.

A Participant may withdraw amounts from his/her After-Tax Employee Contribution Account at any time, in accordance with the distribution rules under Section 7.10(a), except as otherwise provided under AA §10. No forfeitures will occur solely as a result of an Employee's withdrawal of After-Tax Employee Contributions. The Employer may collect Participants' After-Tax Employee Contributions using payroll reduction or other collection procedures. The Employer may designate in the Adoption Agreement or in separate administrative procedures any special rules regarding the acceptance of After-Tax Employee Contributions. Any separate procedures will apply uniformly to all Participants under the Plan.

- 3.05** **Rollover Contributions.** An Employee (or former Employee) may make a Rollover Contribution to this Plan from a qualified retirement plan or from an IRA, if the acceptance of rollovers is permitted under AA §C-2 or if the Plan Administrator adopts administrative procedures regarding the acceptance of Rollover Contributions. Subject to the provisions under Section 3.02(c)(2)(v)(E) relating to rollovers of Roth Deferrals, any Rollover Contribution an Employee (or former Employee) makes to this Plan will be held in the Employee's Rollover Contribution Account, which is always 100% vested. A Participant may withdraw amounts from his/her Rollover Contribution Account at any time, in accordance with the distribution rules under Section 7, except as prohibited under AA §10. Any amounts received as a Rollover Contribution under this Section 3.05 will not be treated as an Annual Addition for purposes of applying the Code §415 Limitation described in Section 5.02.

For purposes of this Section 3.05, a qualified retirement plan is a tax-qualified retirement plan described in Code §401(a) or Code §403(a), an annuity contract described in §403(b) of the Code, or an eligible plan under §457(b) of the Code which is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or political subdivision of a state. To qualify as a Rollover Contribution under this Section, the Rollover Contribution must be transferred directly from the qualified retirement plan or IRA in a Direct Rollover or must be transferred to the Plan by the Employee within the requisite period of time for Rollover Contributions from the qualified plan or IRA.

The Plan Administrator may accept any Rollover Contribution that satisfies the requirements, including the time period to make Rollover Contributions, under Code §402(c) and applicable IRS regulations and other guidance. Thus, for example, the Plan Administrator may accept a Rollover Contribution as provided under Revenue Procedure 2016-47 relating to the waiver of the 60-day rollover period and acceptable self-certification by an Employee and the Plan may accept a Rollover Contribution of qualified plan loan offset amounts within the applicable time period.

If permitted under AA §C-2 or other administrative procedures, an Employee (or former Employee) may make a Rollover Contribution to the Plan even if the Employee is not a Participant with respect to any or all other contributions under the Plan. An Employee who makes a Rollover Contribution to this Plan prior to becoming a Participant shall be treated as a Participant only with respect to such Rollover Contribution Account, but shall not be treated as a Participant with respect to other contribution sources under the Plan until he/she otherwise satisfies the eligibility conditions under the Plan. To the extent Participant loans are authorized under the Plan, a "limited Participant" under this paragraph may request a Participant loan from the Rollover Contribution Account, unless provided otherwise under AA §B-3 or separate administrative procedures adopted by the Plan Administrator.

The Plan Administrator may refuse to accept a Rollover Contribution if the Plan Administrator reasonably believes the Rollover Contribution:

- (a) is not being made from a proper plan or IRA;

- (b) is not being made within sixty (60) days from receipt of the amounts from a qualified retirement plan or IRA;
- (c) could jeopardize the tax-exempt status of the Plan; or
- (d) could create adverse tax consequences for the Plan or the Employer.

Prior to accepting a Rollover Contribution, the Plan Administrator may require the Employee to provide satisfactory evidence establishing that the Rollover Contribution meets the requirements of this Section.

If the Plan accepts an invalid Rollover Contribution, the contribution will be treated, for purposes of applying the qualification requirements of Code §401(a) to the Plan, as if it were a valid Rollover Contribution if two conditions are satisfied:

- (a) When accepting the amount from the Employee as a Rollover Contribution, the Plan Administrator must reasonably conclude that the contribution is a valid Rollover Contribution; and
- (b) If the Plan Administrator later determines that the contribution was an invalid Rollover Contribution, the Plan Administrator must distribute the amount of the invalid Rollover Contribution, plus any earnings attributable thereto, to the Employee within a reasonable time after such determination.

The Plan Administrator may use the criteria set forth in IRS Revenue Ruling 2014-9, as well as other evidence, in reasonably determining whether a Rollover Contribution is valid. Thus, the Plan Administrator may access the EFAST2 database maintained by the Department of Labor to assist in determining whether a potential Rollover Contribution was distributed by a plan intended to be a qualified plan. If the Plan Administrator later determines that the Rollover Contribution was not valid, the Plan Administrator must have the amount rolled over plus any attributable earnings distributed within a reasonable period of time after such determination.

The Plan Administrator may apply different conditions for accepting Rollover Contributions from qualified retirement plans and IRAs. For example, the Plan Administrator may decide in its discretion whether to accept a Direct Rollover of a loan note from another qualified plan. Any conditions on Rollover Contributions must be applied uniformly to all Employees under the Plan.

- 3.06 **Deductible Employee Contributions.** The Plan Administrator will not accept deductible employee contributions that are made for a taxable year beginning after December 31, 1986. Contributions made prior to that date will be maintained in a separate Account which will be nonforfeitable at all times. The Account will share in the gains and losses under the Plan in the same manner as described in Section 10.03(d). No part of the deductible voluntary contribution Account will be used to purchase life insurance. The Participant may withdraw any part of the deductible voluntary contribution Account by making a written application to the Plan Administrator.
- 3.07 **Allocation Conditions.** In order to receive an allocation of Employer Contributions and/or Matching Contributions, a Participant must satisfy any allocation conditions designated under the Adoption Agreement with respect to such contributions. If the Employer elects to apply a minimum service requirement for Employer Contributions and/or Matching Contributions, the Employer may elect to base such minimum service requirement on the basis of Hours of Service or on the basis of consecutive days of employment under the Elapsed Time method.
- (a) **Special rule for year of Plan termination.** A last day employment condition automatically applies for any Plan Year in which the Plan is terminated, regardless of whether the Employer has elected to apply a last day employment condition under the Adoption Agreement. Thus, the Employer will not be obligated to make an Employer Contribution or Matching Contribution for the Plan Year in which the Plan terminates, unless the Employer provides for an Employer Contribution and/or Matching Contribution in its termination amendment. If there are unallocated forfeitures at the time of Plan termination, such forfeitures will be allocated to Participants under the Plan's procedures for allocating forfeitures.
 - (b) **Service with Predecessor Employers.** To the extent provided by the Employer under AA §4-5, if the Employer maintains the plan of a Predecessor Employer, any service with such Predecessor Employer is treated as service with the Employer for purposes of applying the allocation conditions under this Section 3.07.
- 3.08 **Contribution of Property.** Subject to the consent of the Trustee, the Employer may make its contribution to the Plan in the form of property.

SECTION 4
SPECIAL RULES AFFECTING GOVERNMENTAL PLANS AND INDIAN TRIBAL GOVERNMENT PLANS

4.01 **Governmental Plan.** Provided the Plan is properly adopted by an entity that meets the requirements for establishing and maintaining a Governmental Plan under Code §414(d), this Plan is a qualified plan under Code §401(a).

(a) **Governmental Plan exemptions.** As a Governmental Plan, this Plan is exempt from Title I of ERISA and certain qualification rules under Code §401(a), including:

- (1) The minimum age and service rules under Code §410(a) and the minimum coverage rules under Code §410(b).
- (2) The minimum vesting requirements of Code §411, including minimum vesting schedules, consent requirements for plan distributions, and the anti-cutback rule under Code §411(d)(6).
- (3) The nondiscrimination requirements under Code §§401(a)(4), 401(k) and 401(m).
- (4) The top-heavy rules under Code §416.
- (5) The joint and survivor annuity rules under Code §§401(a)(11) and 417.
- (6) The requirements for protecting benefits pursuant to a plan merger or a transfer of plan assets and liabilities, as prescribed by Code §401(a)(12).
- (7) The anti-assignment rule under Code §401(a)(13). However, the Code provisions relating to the taxability of benefits distributed pursuant to a Qualified Domestic Relations Order (QDRO) are applicable to benefits payable to an alternate payee under the QDRO. See Code §414(p)(11).
- (8) The commencement of benefit requirements under Code §401(a)(14).
- (9) The protections under Code §401(a)(19).

(b) **Adoption Agreement elections.** An Employer's election of provisions similar to requirements applicable to plans covered under Title I of ERISA, or to otherwise inapplicable qualification requirements under Code §401(a), will not affect the Plan's status as a Governmental Plan under Section 1.54. Provided the Employer is qualified to maintain a Governmental Plan, the Plan remains exempt from ERISA and certain Code requirements as a Governmental Plan.

4.02 **Plan of Indian Tribal Government Treated as Governmental Plan.** A Plan established and maintained by:

- (a) an Indian Tribal Government, as defined in Code §7701(a)(40);
- (b) a subdivision of an Indian Tribal Government, determined in accordance with Code §7871(d); or
- (c) an agency or instrumentality of either subsection (a) or (b) above

is treated as a Governmental Plan, provided the conditions in this Section 4.02 are satisfied.

To qualify as a Governmental Plan, the Plan must cover only Employees substantially all of whose services are in the performance of essential government functions, but not in the performance of commercial activities (whether or not essential government functions). The interpretation of these conditions, including the meaning of essential government function and commercial activities, is determined under applicable regulations. Provided the requirements of this Section 4.02 are satisfied, the Plan may include a cash or deferred arrangement as provided under Code §401(k).

4.03 **FICA Replacement Plan.** An Employee who satisfies the requirements as a Qualified Participant under subsection (b) below will be exempt from FICA tax as provided under Code §3121(b)(7)(F) if the requirements under this Section 4.03 are satisfied. The Plan may be identified as a FICA Replacement Plan under AA §2-3.

(a) **Minimum benefit requirement.** The Plan must provide a minimum retirement benefit as set forth under this subsection (a). For this purpose, the Plan satisfies the minimum retirement benefit requirement with respect to an Employee if allocations to the Employee's Account (without regard to any earnings allocated to the Employee's Account) are at least 7.5% of the Employee's Plan Compensation for service with the Employer. Matching Contributions by the Employer may be taken into account for this purpose.

- (1) **Definition of Plan Compensation.** The definition of Plan Compensation used in determining whether the minimum retirement benefit requirement under this subsection (a) is satisfied must be at least equal to the Employee's base pay, provided such designation is reasonable under all the facts and circumstances. Thus, the Employer may elect under AA §5-3 to exclude items such as overtime pay, bonuses, or fringe benefits. In addition, the Employer may elect under AA §5-3(l) to exclude any compensation in excess of the contribution base described in Code §3121(x) as of the beginning of the Plan Year.
 - (2) **Reasonable rate of earnings.** An Employee's Account must be credited with a reasonable rate of earnings. This requirement is satisfied if Employees' Accounts are held in a separate trust that is subject to general fiduciary standards and are credited with actual earnings under the Plan.
 - (3) **Employee Contributions.** Contributions from both the Employer and Employee may be used to make up the 7.5% allocation requirement under this subsection (a). If the Plan only provides for Employee Contributions, the Plan will satisfy the minimum benefit requirement under this subsection (a) if the total Employee Contributions are at least 7.5% of Plan Compensation.
- (b) **Qualified Participant.** An Employee is a Qualified Participant under the Plan with respect to the services performed on a given day if, on that day, the Employee has satisfied all conditions (other than vesting) for receiving an allocation under the Plan that meets the minimum retirement benefit requirement under subsection (a) above. An Employee will be a Qualified Participant on any day with respect to compensation earned during a period ending on that day and beginning on or after the beginning of the Plan Year, regardless of whether the allocations were made or accrued before the effective date of Code §3121(b)(7)(F).
- (1) **Part-Time, Seasonal and Temporary Employees.** A Part-Time, Seasonal, or Temporary Employee is not a Qualified Participant on a given day unless any benefit relied upon to meet the minimum benefit requirement under subsection (a) above is 100% vested. A Part-Time, Seasonal or Temporary Employee's benefit is considered 100% vested on a given day if on that day the Employee is unconditionally entitled to a single-sum distribution on account of death or separation from service of an amount that is at least equal to 7.5% of Plan Compensation for all periods of service taken into account in determining whether the Employee's benefit meets the minimum retirement benefit requirement under subsection (a) above.
 - (2) **Alternative lookback rule.** The Employer may elect to apply the alternative lookback rule described in Treas. Reg. §31.3121(b)(7)-2(d)(3) in determining whether an Employee is a Qualified Participant. Under the alternative lookback rule, an Employee may be treated as a Qualified Participant throughout a calendar year if the Employee is a Qualified Participant at the end of the Plan Year ending in the previous calendar year. For this purpose, if the alternative lookback rule is used, an Employee may be treated as a Qualified Participant on any given day during the first Plan Year of participation if it is reasonable on such day to believe that the Employee will be a Qualified Participant on the last day of such Plan Year.
- (c) **Special rule for short period.** An Employee may not be treated as a Qualified Participant if Plan Compensation for less than a full plan year or other 12-month period is regularly taken into account in determining allocations to the Employee's Account for the Plan Year unless, under all of the facts and circumstances, such arrangement is not a device to avoid the imposition of FICA taxes. For example, an arrangement under which Plan Compensation taken into account under AA §5-3 is limited to the contribution base described in section 3121(x)(1) is not considered a device to avoid FICA taxes by reason of such limitation.

SECTION 5
LIMITS ON CONTRIBUTIONS

5.01 Limits on Employer Contributions. Any contributions the Employer makes under the Plan are subject to the limitations set forth in this Section 5.

- (a) **Limitation on total Employer Contributions.** All Employer Contributions the Employer makes under the Plan are subject to the Code §415 Limitation, as described in Section 5.02 below. For purposes of applying the Code §415 Limitation, Employer Contributions include any Employer Contributions, Matching Contributions, or Salary Deferrals made under the Plan. See the definition of Annual Additions under Section 5.02(c)(1) below.
- (b) **Limitation on Salary Deferrals.** If the Employer adopts the Grandfathered 401(k) Arrangement, any Salary Deferrals made under the Plan are subject to the Elective Deferral Dollar Limit, as described in Section 5.03 below.

5.02 Code §415 Limitation.

- (a) **No other plan participation.** If the Participant does not participate in, and has never participated in, another qualified retirement plan, a welfare benefit fund (as defined under Code §419(e)), an individual medical account (as defined under Code §415(l)(2)), or a SEP (as defined under Code §408(k)) maintained by the Employer which provides an Annual Addition as defined in subsection (c)(1) below, then the amount of Annual Additions which may be credited to the Participant's Account for any Limitation Year will not exceed the lesser of the Maximum Permissible Amount or any other limitation contained in this Plan.

If an Employer Contribution that would otherwise be contributed or allocated to a Participant's Account will cause that Participant's Annual Additions for the Limitation Year to exceed the Maximum Permissible Amount, the amount to be contributed or allocated to such Participant will be reduced so that the Annual Additions allocated to such Participant's Account for the Limitation Year will equal the Maximum Permissible Amount. However, if a contribution or allocation is made to a Participant's Account in an amount that exceeds the Maximum Permissible Amount, such excess Annual Additions may be corrected pursuant to the correction procedures outlined under the IRS' Employee Plans Compliance Resolution System (EPCRS) as set forth in Rev. Proc. 2013-12.

- (b) **Participation in another plan.** This subsection (b) applies if, in addition to this Plan, the Participant receives an Annual Addition during any Limitation Year from another Defined Contribution Plan, a welfare benefit fund (as defined under Code §419(e)), an individual medical account (as defined under Code §415(l)(2)), or a SEP (as defined under Code §408(k)) maintained by the Employer.
 - (1) **This Plan's Code §415 Limitation.** The Annual Additions that may be credited to a Participant's Account under this Plan for any Limitation Year will not exceed the Maximum Permissible Amount (defined in subsection (c)(6) below), reduced by the Annual Additions credited to a Participant's Account under any other Defined Contribution Plan, welfare benefit fund, individual medical account, or SEP maintained by the Employer for the same Limitation Year.
 - (2) **Annual Additions reduction.** If the Annual Additions with respect to the Participant under any other Defined Contribution Plan, welfare benefit fund, individual medical account, or SEP maintained by the Employer are less than the Maximum Permissible Amount and the Annual Additions that would otherwise be contributed or allocated to the Participant's Account under this Plan would exceed the Code §415 Limitation for the Limitation Year, the amount contributed or allocated will be reduced so that the Annual Additions under all such Plans and funds for the Limitation Year will equal the Maximum Permissible Amount. However, if a contribution or allocation is made to a Participant's Account in an amount that exceeds the Maximum Permissible Amount, such excess Annual Additions may be corrected pursuant to the correction procedures outlined under the IRS' Employee Plans Compliance Resolution System (EPCRS) as set forth in Rev. Proc. 2013-12.
 - (3) **No Annual Additions permitted.** If the Annual Additions with respect to the Participant under such other Defined Contribution Plan(s), welfare benefit fund(s), individual medical account(s), or SEP(s), in the aggregate are equal to or greater than the Maximum Permissible Amount, no amount will be contributed or allocated to the Participant's Account under this Plan for the Limitation Year. However, if a contribution or allocation is made to a Participant's Account in an amount that exceeds the Maximum Permissible Amount, such excess Annual Additions may be corrected pursuant to the correction procedures outlined under the IRS' Employee Plans Compliance Resolution System (EPCRS) as set forth in Rev. Proc. 2013-12.

(c) **Definitions.**

- (1) **Annual Additions.** The amounts credited to a Participant's Account for the Limitation Year that are taken into account in applying the Code §415 Limitation, including:
- (i) Employer Contributions, including Matching Contributions, Salary Deferrals and Employer Pick-Up Contributions;
 - (ii) After-Tax Employee Contributions;
 - (iii) Forfeitures;
 - (iv) Amounts allocated to an individual medical account (as defined in Code §415(l)(2)), which is part of a pension or annuity plan maintained by the Employer;
 - (v) Amounts derived from contributions paid or accrued which are attributable to post-retirement medical benefits allocated to the separate account of a key employee (as defined in Code §419A(d)(3)) under a welfare benefit fund (as defined in Code §419(e)) maintained by the Employer; and
 - (vi) Allocations under a SEP (as defined in Code §408(k)).

An Annual Addition is credited to a Participant's Account for a particular Limitation Year if such amount is allocated to the Participant's Account as of any date within that Limitation Year. An Annual Addition will not be deemed credited to a Participant's Account for a particular Limitation Year unless such amount is actually contributed to the Plan no later than the 15th day of the tenth calendar month following the end of the calendar year or fiscal year (as applicable, depending on the basis on which the Employer keeps its books) with or within which the particular Limitation Year ends. In the case of After-Tax Employee Contributions, such amount shall not be deemed credited to a Participant's Account for a particular Limitation Year unless the contributions are actually contributed to the Plan no later than 30 days after the close of that Limitation Year.

- (2) **Defined Contribution Dollar Limitation.** \$40,000, as adjusted under Code §415(d). For 2019, the Defined Contribution Dollar Limit is \$56,000.
- (3) **Employer.** For purposes of this Section 5.02, Employer shall mean the Employer that adopts this Plan, and all members of a controlled group of corporations (as defined in §414(b) of the Code, as modified by §415(h)), all commonly controlled trades or businesses (as defined in §414(c) of the Code, as modified by §415(h)) or affiliated service groups (as defined in §414(m)) of which the adopting Employer is a part, and any other entity required to be aggregated with the Employer pursuant to regulations under §414(o) of the Code.
- (4) **Excess Amount.** The excess of the Participant's Annual Additions for the Limitation Year over the Maximum Permissible Amount.
- (5) **Limitation Year.** The Plan Year, unless the Employer elects another 12-consecutive month period under AA §11-2(a). If the Limitation Year is amended to a different 12-consecutive month period, the new Limitation Year must begin on a date within the Limitation Year in which the amendment is made. If the Plan has an initial Plan Year that is less than 12 months, the Limitation Year for such first Plan Year is the 12-month period ending on the last day of that Plan Year, unless otherwise specified in AA §11-2(a).

If an Employer has multiple Limitation Years (e.g., due to the maintenance of multiple Defined Contribution Plans by a group of Related Employers), and a Participant is credited with Annual Additions in only one Defined Contribution Plan, the Code §415 Limitation is applied only with respect to that Plan. If a Participant is credited with Annual Additions in more than one Defined Contribution Plan, each such Plan satisfies the Code §415 Limitation based on Annual Additions for the Limitation Year with respect to such plan, plus any amounts credited to the Participant's Account under all other plans required to be aggregated pursuant to Code §415(f).

- (6) **Maximum Permissible Amount.** The maximum Annual Additions that may be contributed or allocated to a Participant's Account under the Plan for any Limitation Year shall not exceed the lesser of:
- (i) the Defined Contribution Dollar Limitation; or
 - (ii) 100 percent of the Participant's Total Compensation for the Limitation Year.

The Total Compensation limitation referred to in subsection (ii) above shall not apply to any contribution for

medical benefits (within the meaning of Code §401(h) or §419A(f)(2)) which is otherwise treated as an Annual Addition.

If a short Limitation Year is created because of an amendment changing the Limitation Year to a different 12-consecutive month period, the Maximum Permissible Amount will not exceed the Defined Contribution Dollar Limitation multiplied by the following fraction:

$$\frac{\text{Number of months in the short Limitation Year}}{12}$$

If a short Limitation Year is created because the Plan has an *initial* Plan Year that is less than 12 months, no proration of the Defined Contribution Dollar Limitation is required, unless provided otherwise under AA §11-2(c). (See subsection (5) above for the rule allowing the use of a full 12-month Limitation Year for the first year of the Plan, thereby avoiding the need to prorate the Defined Contribution Dollar Limitation.)

- (7) **Total Compensation.** The amount of compensation as defined under Section 1.94, subject to the Employer's election under AA §5-1.
- (i) **Total Compensation actually paid or made available.** For purposes of applying the limitations of this Section 5.02, Total Compensation for a Limitation Year is the Total Compensation actually paid or made available to an Employee during such Limitation Year. However, if elected in AA §5-4(c), the Employer may include in Total Compensation for a Limitation Year amounts earned but not paid in the Limitation Year because of the timing of pay periods and pay days, but only if:
- (A) the amounts are paid during the first few weeks of the next Limitation Year,
 - (B) such amounts are included on a uniform and consistent basis with respect to all similarly-situated employees, and
 - (C) no amounts are included in Total Compensation in more than one Limitation Year.
- (ii) **Disabled Participants.** Total Compensation does not include any imputed compensation for the period a Participant is disabled. However, the Employer may elect under AA §11-2(b) to include under the definition of Total Compensation, the amount a terminated Participant who is permanently and totally disabled (as described under Treas. Reg. §1.415(c)-2(g)(4)) would have received for the Limitation Year if the Participant had been paid at the rate of Total Compensation paid immediately before becoming permanently and totally disabled. If the Employer elects under AA §11-2(b) to include imputed compensation for a disabled Participant, a disabled Participant will receive an allocation of any Employer Contribution the Employer makes to the Plan based on the Employee's imputed compensation for the Plan Year. Any Employer Contributions made to a disabled Participant under this subsection (ii) are fully vested when made and will be made only to Non-Highly Compensated Employees.
- (d) **Restorative payments.** Restorative payments are not considered Annual Additions for any Limitation Year. For this purpose, restorative payments are payments made to restore losses to the Plan resulting from actions (or a failure to act) by a fiduciary for which there is a reasonable risk of liability under applicable federal or state law, where Participants who are similarly situated are treated similarly with respect to the payments.
- (e) **Corrective provisions.** The Plan is amended to eliminate any specific correction methods for correcting excess annual additions. If the Plan is eligible for self-correction under the IRS' EPCRS program, the Employer may use reasonable correction methods (including the correction methods described in § 1.415-6(b)(6) of the 1981 IRS regulations) to the extent permitted under the IRS' EPCRS program.
- (f) **Change of Limitation Year.** Where there is a change of Limitation Year, a "short" Limitation Year exists for the period beginning with the first day of the Limitation Year and ending on the day before the change in Limitation Year is effective. For this purpose, if the Plan is terminated effective as of a date other than the last day of the Limitation Year, the Plan is treated as if it were amended to change its Limitation Year.

5.03 Elective Deferral Dollar Limit. The Elective Deferral Dollar Limit under this Section 5.03 applies with respect to Salary Deferrals under the Grandfathered 401(k) Arrangement. Under this Elective Deferral Dollar Limit, an Employee may not make Elective Deferrals under this Plan (and any other plan, contract or arrangement maintained by the Employer) during any calendar year in an amount that exceeds the Elective Deferral Dollar Limit in effect for the Participant's taxable year beginning

in such calendar year. Additional restrictions apply if a Participant participates in a plan maintained by an unrelated employer. (See subsection (b)(6) below.)

The Elective Deferral Dollar Limit is the limit under Code §402(g)(1). The Elective Deferral Dollar Limit is \$19,000 for taxable years beginning in 2019. The Elective Deferral Dollar Limit will be adjusted for cost-of-living increases under Code §402(g)(4). Any such adjustments will be in multiples of \$500.

If a Participant is aged 50 or over by the end of the taxable year, the Elective Deferral Dollar Limit is increased by the Catch-Up Contribution Limit (as defined in Section 3.02(c)(2)(iv)(A)). If the Plan does not provide for Catch-up Contributions, the Elective Deferral Dollar Limit is not increased by the Catch-Up Contribution Limit.

- (a) **Excess Deferrals.** Excess Deferrals are Elective Deferrals made during the Participant's taxable year that exceed the Elective Deferral Dollar Limit (as described above) for such year; counting only Elective Deferrals made under this Plan and any other plan, contract or arrangement maintained by the Employer. (See subsection (b)(6) below for provisions that apply when a Participant makes Elective Deferrals to a plan of an unrelated Employer.)
- (b) **Correction of Excess Deferrals.** If a Participant makes Excess Deferrals (i.e., Elective Deferrals in excess of the Elective Deferral Dollar Limit) under this Plan and any other plan maintained by the Employer, such Excess Deferrals (plus allocable income or loss) shall be distributed to the Participant. A distribution of Excess Deferrals may be made at any time (subject to the correction provisions under the IRS' EPCRS program as described in Rev. Proc. 2013-12 or subsequent guidance). If the corrective distribution of Excess Deferrals is made by April 15 of the calendar year following the year the Excess Deferrals are made to the Plan, such amounts will be taxable in the year of deferral but not in the year of distribution. If a corrective distribution of Excess Deferrals is made after April 15 of the following calendar year, such amounts will be taxable in both the year of deferral and the year of distribution. See subsection (3) below.
 - (1) **Amount of corrective distribution.** The amount to be distributed from this Plan as a correction of Excess Deferrals equals the amount of Elective Deferrals the Participant contributes during the taxable year to this Plan and any other plan maintained by the Employer in excess of the Elective Deferral Dollar Limit, reduced by any corrective distribution of Excess Deferrals the Participant receives during the calendar year from this Plan or other plan(s) maintained by the Employer. If a Participant has both a Pre Tax-Deferral Account and a Roth Deferral Account, the Participant may designate the extent to which the corrective distribution of Excess Deferrals is taken from the Pre-Tax Deferral Account or from the Roth Deferral Account under AA §6A-5. If a Participant does not designate the Account(s) from which the distribution will be made, the corrective distribution will be made first from the Participant's Pre-Tax Deferral Account.
 - (2) **Allocable gain or loss.** A corrective distribution of Excess Deferrals must include any allocable gain or loss for the taxable year in which the Excess Deferrals are contributed to the Plan. The gain or loss allocable to Excess Deferrals may be determined in any reasonable manner, provided the manner used to determine allocable gain or loss is applied consistently for all Participants and in a manner that is reasonably reflective of the method used by the Plan for allocating income to Participants' Accounts. A corrective distribution of Excess Deferrals will not include any income or loss allocable to the period between the end of the taxable year and the date of distribution.
 - (3) **Taxation of corrective distribution.** If a corrective distribution of Excess Deferrals is made by April 15 of the following calendar year, amounts attributable to the Excess Deferrals will be includible in the Participant's gross income in the taxable year in which such amounts are deferred under the Plan and amounts attributable to income or loss on the Excess Deferrals will be includible in gross income in the year of distribution. However, a corrective distribution of Excess Deferrals will not be included in gross income to the extent such distribution is comprised of Roth Deferrals. A Roth Deferral is treated as an Excess Deferral only to the extent that the total amount of Roth Deferrals for an individual exceeds the applicable limit for the taxable year or the Roth Deferrals are identified as Excess Deferrals and the individual receives a distribution of the Excess Deferrals and allocable income under this paragraph.

If a corrective distribution of Excess Deferrals is made after April 15, the amount of the corrective distribution attributable to Excess Deferrals will be includible in the Participant's gross income in both the taxable year in which such amounts are deferred under the Plan and the taxable year in which such amounts are distributed. (See Section 7.11(b)(2) for a discussion of the ordering rules for determining the Accounts from which the corrective distribution is made where a Participant has both a Pre-Tax Deferral Account and a Roth Deferral Account.)

If a corrective distribution of Excess Deferrals made after April 15 of the following calendar year apply to Excess Deferrals that are Roth Deferrals, such amounts are includible in gross income (without adjustment for

any return of investment in the contract under Code §72(e)(8)). In addition, such distribution cannot be a “qualified distribution” as described in Code §402A(d)(2) and is not an Eligible Rollover Distributions (within the meaning of Code §402(c)(4)). For this purpose, if a Roth Deferral account includes any Excess Deferrals, any distributions from the Roth Deferral account are treated as attributable to those Excess Deferrals until the total amount distributed from the Roth Deferral account equals the total of such Excess Deferrals and attributable income.

- (4) **Coordination with other provisions.** A corrective distribution of Excess Deferrals made by April 15 of the following calendar year may be made without consent of the Participant or the Participant’s Spouse, and without regard to any distribution restrictions applicable under Section 7. A corrective distribution of Excess Deferrals made by the appropriate April 15 also is not treated as a distribution for purposes of applying the required minimum distribution rules under Section 8.
- (5) **Suspension of Salary Deferrals.** If a Participant’s Salary Deferrals under this Plan, in combination with any Elective Deferrals the Participant makes during the calendar year under any other plan maintained by the Employer, equal or exceed the Elective Deferral Dollar Limit, the Employer may suspend the Participant’s Salary Deferrals under this Plan for the remainder of the calendar year without the Participant’s consent.
- (6) **Correction of Excess Deferrals under plans not maintained by the Employer.** The correction provisions under this subsection (b) apply only if a Participant makes Excess Deferrals under this Plan (or under this Plan and other plans maintained by the Employer). However, if a Participant has Excess Deferrals for a calendar year on account of making Elective Deferrals to a plan of an unrelated employer, the Participant may assign to this Plan any portion of his/her Elective Deferrals made under all plans during the calendar year to the extent such Elective Deferrals exceed the Elective Deferral Dollar Limit. The Participant must notify the Plan Administrator in writing on or before March 1 of the following calendar year of the amount of the Excess Deferrals to be assigned to this Plan. If any Roth Deferrals were made to a plan, the notification must also identify the extent to which, if any, the Excess Deferrals are comprised of Roth Deferrals.

Upon receipt of a timely notification, the Excess Deferrals assigned to this Plan will be distributed (along with any allocable income or loss) to the Participant in accordance with the corrective distribution provisions under this subsection (b). A Participant is deemed to notify the Plan Administrator of Excess Deferrals (including any portion of Excess Deferrals that are comprised of Roth Deferrals) to the extent such Excess Deferrals arise only under this Plan and any other plan maintained by the Employer.

SECTION 6
PARTICIPANT VESTING AND FORFEITURES

6.01 Vesting of Contributions. A Participant's vested interest in his/her Employer Contribution Account and Matching Contribution Account is determined based on the vesting schedule elected in AA §8. A Participant is always fully vested in his/her Employer Pick-Up Contribution Account, Salary Deferral Account, After-Tax Employee Contribution Account, and Rollover Contribution Account.

6.02 Vesting Schedules. A Participant's vested interest in his/her Employer Contribution Account and/or Matching Contribution Account is determined by multiplying the Participant's vesting percentage (determined under the applicable vesting schedule selected in AA §8) by the total amount under the applicable Account.

(a) **Full and immediate vesting schedule.** Under the full and immediate vesting schedule, the Participant is always 100% vested in his/her Account Balance.

(b) **6-year graded vesting schedule.** Under the 6-year graded vesting schedule, an Employee vests in his/her Employer Contribution Account and/or Matching Contribution Account in the following manner:

After 2 Years of Service – 20% vesting
After 3 Years of Service – 40% vesting
After 4 Years of Service – 60% vesting
After 5 Years of Service – 80% vesting
After 6 Years of Service – 100% vesting

(c) **3-year cliff vesting schedule.** Under the 3-year cliff vesting schedule, an Employee is 100% vested after 3 Years of Service. Prior to the third Year of Service, the vesting percentage is zero.

(d) **Modified vesting schedule.** Under the modified vesting schedule, the Employer may designate the vesting percentage that applies for each Year of Service. As a Governmental Plan, the Plan is not subject to the requirements of Code §411 and may modify the vesting schedule, provided the Plan satisfies the requirements of Code §§401(a)(4) and (7) as in effect before the enactment of ERISA. For this purpose, the modified vesting schedule must be at least as favorable as one of the following safe harbor vesting schedules:

(1) **15-year cliff vesting schedule.** The Participant is fully vested after 15 years of creditable service. Service can be based on years of employment, years of participation or other creditable years of service.

(2) **20-year graded vesting schedule.** The Participant is fully vested based on a graded vesting schedule of 5 to 20 years of creditable service. Service can be based on years of employment, years of participation or other creditable years of service.

(3) **20-year cliff vesting for qualified public safety employees.** Participant is fully vested after 20 years of creditable service. Service can be based on years of employment, years of participation or other creditable years of service. The safe harbor schedule is available only with respect to the vesting schedule applicable to a group in which substantially all of the participants are qualified public safety employees (within the meaning of Code §72(t)(10)(B)).

6.03 Special vesting rules.

(a) **Normal Retirement Age.** Unless designated otherwise under AA §8-2(b), regardless of the Plan's vesting schedule, an Employee's right to his/her Account Balance is fully vested upon the date he/she attains Normal Retirement Age (as defined in AA §7-1), provided the Employee is still employed at such time.

(b) **100% vesting upon death, disability, or Early Retirement Age.** The Employer may elect under AA §8-4 to allow a Participant's vesting percentage to automatically increase to 100% if the Participant dies, becomes Disabled, and/or attains Early Retirement Age while employed by the Employer.

(c) **Vesting upon merger, consolidation or transfer.** No accelerated vesting will be required solely because a Defined Contribution Plan is merged with another Defined Contribution Plan, or because assets are transferred from a Defined Contribution Plan to another Defined Contribution Plan.

(d) **Vesting schedules applicable to prior contributions.** If the Plan holds Employer Contributions and/or Matching Contributions that are subject to vesting, but the Plan no longer provides for such contributions, the Plan will continue to apply the vesting schedule applicable to those contributions as determined under the prior Plan document. See

Section 6.11(e) for the rules applicable to forfeitures of such prior contributions. The Employer may document any prior vesting schedule in AA §A-8.

- (e) **Different Vesting Schedules for Different Sources.** The Employer may designate different vesting schedules for different sources (e.g., Matching Contributions and/or Employer Contributions).

6.04 **Year of Service.** An Employee's position on the vesting schedule is dependent on the Employee's Years of Service with the Employer. Generally, an Employee will earn a vesting Year of Service for each Vesting Computation Period (as defined in Section 6.05) during which the Employee completes at least 1,000 Hours of Service (or the Hours of Service designated under AA §8-5(a)). Alternatively, the Employer may elect to calculate Years of Service using the Elapsed Time method (as defined in subsection 6.04(b) below).

- (a) **Hours of Service.** Unless the Employer elects to use the Elapsed Time method under AA §8-5(c), vesting Years of Service will be determined based on an Employee's Hours of Service earned during the Vesting Computation Period.
- (1) **Actual Hours of Service.** In determining an Employee's vesting Years of Service, the Employer will credit an Employee with the actual Hours of Service earned during the Vesting Computation Period, unless the Employer elects under AA §8-5(d) to determine Hours of Service using the Equivalency Method.
- (2) **Equivalency Method.** Instead of counting actual Hours of Service in applying the Plan's vesting schedules, the Employer may elect under AA §8-5(d) to determine Hours of Service based on the Equivalency Method. Under the Equivalency Method, an Employee receives credit for a specified number of Hours of Service based on the period worked with the Employer.
- (i) **Monthly.** Under the monthly Equivalency Method, an Employee is credited with 190 Hours of Service for each calendar month during which the Employee completes at least one Hour of Service with the Employer.
- (ii) **Daily.** Under the daily Equivalency Method, an Employee is credited with 10 Hours of Service for each day during which the Employee completes at least one Hour of Service with the Employer.
- (iii) **Weekly.** Under the weekly Equivalency Method, an Employee is credited with 45 Hours of Service for each week during which the Employee completes at least one Hour of Service with the Employer.
- (iv) **Semi-monthly.** Under the semi-monthly Equivalency Method, an Employee is credited with 95 Hours of Service for each semi-monthly period during which the Employee completes at least one Hour of Service with the Employer.
- (v) **Other Equivalency Method.** The Employer may describe an alternative Equivalency Method in the Adoption Agreement, provided any description of an Equivalency Method is definitely determinable.
- (3) **Employee need not be employed for entire Vesting Computation Period.** Unless provided otherwise under AA §8-5(e), if an Employee completes the required Hours of Service during a Vesting Computation Period, the Employee will receive credit for a Year of Service as of the end of such Vesting Computation Period, even if the Employee is not employed for the entire Vesting Computation Period.
- (b) **Elapsed Time method.** Instead of using Hours of Service in applying the Plan's vesting schedules, the Employer may elect under AA §8-5(c) to apply the Elapsed Time method for calculating an Employee's vesting service with the Employer. Under the Elapsed Time method, an Employee receives credit for the aggregate period of time worked for the Employer commencing with the Employee's first day of employment (or reemployment, if applicable) and ending on the date the Employee terminates employment with the Employer. If an Employee's aggregate period of service includes fractional years, such fractional years are expressed in terms of days.

In calculating an Employee's aggregate period of service, the Employer may credit an Employee with service for any Period of Severance that lasts less than 12 consecutive months. For this purpose, a Period of Severance is any continuous period of time during which the Employee is not employed by the Employer. A Period of Severance begins on the date the Employee retires, quits or is discharged, or if earlier, the 12-month anniversary of the date on which the Employee is first absent from service for a reason other than retirement, quit or discharge. In the case of an Employee who is absent from work for maternity or paternity reasons, the 12-consecutive month period beginning on the first anniversary of the first date of such absence shall not constitute a Period of Severance. For purposes of this paragraph, an absence from work for maternity or paternity reasons means an absence:

- (1) by reason of the pregnancy of the Employee;
- (2) by reason of the birth of a child of the Employee;
- (3) by reason of the placement of a child with the Employee in connection with the adoption of such child by the Employee; or
- (4) for purposes of caring for a child of the Employee for a period beginning immediately following the birth or placement of such child.

For purposes of applying the Elapsed Time method, unless otherwise provided, service will be credited for employment with any Related Employer.

6.05 Vesting Computation Period. Generally, the Vesting Computation Period is the Plan Year. Alternatively, the Employer may elect under AA §8-5(b) to use the 12-month period commencing on the Employee's date of hire (or reemployment date, if applicable) and each subsequent 12-month period commencing on the anniversary of such date or the Employer may elect to use any other 12-consecutive month period as the Vesting Computation Period.

6.06 Excluded service. Generally, all service with the Employer counts for purposes of applying the Plan's vesting schedules. However, the Employer may elect under AA §8-3 to exclude certain service with the Employer in calculating an Employee's vesting Years of Service.

- (a) **Service before the Effective Date of the Plan.** The Employer may elect under AA §8-3(a) to exclude service earned during any period prior to the date the Employer established the Plan or a Predecessor Plan. For this purpose, a Predecessor Plan is a qualified plan maintained by the Employer that is terminated within the 5-year period immediately preceding or following the establishment of this Plan. A Participant's service under a Predecessor Plan must be counted for purposes of determining the Participant's vested percentage under this Plan.
- (b) **Service before a specified age.** The Employer may elect under AA §8-3(b) to exclude service before an Employee attains a specified age. An Employee will be credited with a Year of Service for the Vesting Computation Period during which the Employee attains the required age, provided the Employee satisfies all other conditions required for a Year of Service.

6.07 Service with Predecessor Employers. To the extent provided, if the Employer maintains the plan of a Predecessor Employer, any service with such Predecessor Employer is treated as service with the Employer for purposes of applying the provisions of this Plan.

6.08 Break in Service Rules. In addition to any service excluded under Section 6.06, the Employer may elect under AA §8-6 to disregard an Employee's vesting service with the Employer earned prior to a Break in Service. For this purpose, an Employee incurs a Break in Service for any Vesting Computation Period (as defined in Section 6.05) during which the Employee does not complete more than five hundred (500) Hours of Service with the Employer. However, if the Employer elects to require less than 1,000 Hours of Service to earn a vesting Year of Service, a Break in Service will occur for any Vesting Computation Period during which the Employee does not complete more than one-half (1/2) of the Hours of Service required to earn a vesting Year of Service.

6.09 Special Vesting Rule - In-Service Distribution When Account Balance is Less than 100% Vested. If amounts are distributed from a Participant's Employer Contribution Account or Matching Contribution Account at a time when the Participant's vested percentage in such amounts is less than 100% and the Participant may increase the vested percentage in the Account Balance:

- (a) A separate Account will be established for the Participant's interest in the Plan as of the time of the distribution; and
- (b) At any relevant time the Participant's vested portion of the separate Account will be equal to an amount ("X") determined by the formula:

$$X = P (AB + D) - D$$

Where:

P is the vested percentage at the relevant time;

AB is the Account Balance at the relevant time; and

D is the amount of the distribution.

6.10 Forfeiture of Benefits. A Participant will forfeit the nonvested portion of his/her Employer Contribution and/or Matching Contribution Account upon the occurrence of any of the events described below or at any such time as the Plan Administrator determines. The Plan Administrator has the responsibility to determine the amount of a Participant's forfeiture. Until an amount is forfeited pursuant to this Section 6.10, a Participant's entire Account must remain in the Plan and continue to share in gains and losses of the Trust. A Participant will not forfeit any of his/her nonvested Account until the occurrence of one of the following events.

- (a) **Cash-Out Distribution.** Following termination of employment, a Participant may receive a total distribution of his/her vested benefit under the Plan (a Cash-Out Distribution) in accordance with the distribution provisions under Section 7. If a Participant receives a Cash-Out Distribution upon termination of employment, the Participant's nonvested benefit under the Plan will be forfeited in accordance with subsection 6.10(a)(1) below. If at the time of termination, a Participant is totally nonvested in his/her entire Account Balance, the Participant will be deemed to receive a total Cash-Out Distribution of his/her entire vested Account Balance (i.e., a deemed Cash-Out Distribution of zero dollars) as of the date of termination, subject to the forfeiture provisions under subsection 6.10(a)(1) below.

A Cash-Out Distribution does not occur until such time as the Participant receives a distribution of his/her entire vested Account Balance, including amounts attributable to Salary Deferrals. If a Participant receives a distribution of less than the entire vested portion of his/her Account Balance (including any additional amounts to be allocated under subsection 6.10(a)(1)(ii) below), the Participant will not be treated as receiving a Cash-Out Distribution until such time as the Participant receives a distribution of the remainder of the vested portion of his/her Account Balance.

- (1) **Timing of forfeiture.** Unless elected otherwise under AA §8-8(b), if a Participant receives a Cash-Out Distribution of his/her vested Account Balance (as defined in subsection (a) above), the Participant will immediately forfeit the nonvested portion of such Account Balance, as of the date of the distribution or deemed distribution (as determined under subsection (i) or (ii) below, whichever applies). (See Section 6.11 below for a discussion of the treatment of forfeitures under the Plan.)
- (i) **No further allocations.** For purposes of applying the Cash-Out Distribution rules, a terminated Participant who receives a total distribution of his/her vested Account Balance will be treated as receiving the Cash-Out Distribution as of the date the Participant receives such distribution (or in the case of a deemed Cash-Out Distribution (as described in subsection (a) above) as of the date the Participant terminates employment), provided the Participant is not entitled to any further allocations under the Plan for the Plan Year in which the Participant terminates employment. The Participant will forfeit his/her nonvested benefit as of the date the Participant receives the Cash-Out Distribution, in accordance with the provisions under Section 6.11.
- (ii) **Additional allocations.** For purposes of applying the Cash-Out Distribution rules, if upon termination of employment, a Participant is entitled to an additional allocation for the Plan Year in which the Participant terminates, such Participant will not be deemed to receive a Cash-Out Distribution until such time as the Participant receives a distribution of his/her entire vested Account Balance, including any amounts that are still to be allocated under the Plan. Thus, a terminated Participant who is entitled to an additional allocation (e.g., an additional Employer Contribution) for the Plan Year of termination will not be deemed to have a total Cash-Out Distribution until the Participant receives a distribution of such additional amounts. In the case of a deemed Cash-Out Distribution (as described in subsection (a) above), if the Participant is entitled to an additional allocation under the Plan for the Plan Year in which the Participant terminates employment, the deemed Cash-Out Distribution is deemed to occur on the first day of the Plan Year following the Plan Year in which the termination occurs, provided the Participant is still totally nonvested in his/her Account Balance.
- (iii) **Modification of Cash-Out Distribution rules.** The Employer may elect under AA §8-8(a) to modify the Cash-Out Distribution provision under subsection (ii) above to provide that the Cash-Out Distribution and related forfeiture occur immediately upon distribution (or deemed distribution) of the terminated Participant's vested Account Balance, without regard to whether the Participant is entitled to an additional allocation under the Plan.
- (2) **Repayment of Cash-Out Distribution.** Unless elected otherwise under AA §8-8(c), if a Participant receives a Cash-Out Distribution (as defined in subsection (a) above) that results in a forfeiture under subsection (1) above, and the Participant resumes employment covered under the Plan, such Participant may repay to the Plan the amount received as a Cash-Out Distribution. For this purpose, unless elected otherwise under AA §8-6, to be entitled to a restoration of benefits (as described in subsection (3) below), the Participant must repay the entire amount of the Cash-Out Distribution, including any amounts attributable to Salary Deferrals. A Participant will only be permitted to repay his/her Cash-Out Distribution if such repayment is made before the earlier of:

- (i) five (5) years after the first date on which the Participant is subsequently re-employed by the Employer; or
- (ii) the date the Participant incurs a Five-Year Forfeiture Break in Service (as defined in subsection (b) below).

If a Participant receives a deemed Cash-Out Distribution (as described in subsection (a) above), and the Participant resumes employment covered under this Plan before the date the Participant incurs a Five-Year Forfeiture Break in Service, the Participant is deemed to repay the Cash-Out Distribution immediately upon his/her reemployment.

- (3) **Restoration of forfeited benefit.** If a rehired Participant repays a Cash-Out Distribution in accordance with subsection (2) above, any amounts that were forfeited on account of such Cash-Out Distribution (unadjusted for any interest that might have accrued on such amounts after the distribution date) will be restored to the Plan no later than the end of the Plan Year following the Plan Year in which the Participant repays the Cash-Out Distribution (or is deemed to repay the Cash-Out Distribution under subsection (2) above). No amount will be restored under the Plan, however, until such time as the Participant repays the entire amount of the Cash-Out Distribution. (However, see subsection (d) below for a discussion of special rules that apply if a Participant's Cash-Out Distribution includes a distribution of Salary Deferrals.) In no event will a Participant be entitled to a restoration under this subsection (3) if the Participant returns to employment after incurring a Five-Year Forfeiture Break in Service (as defined in subsection (b) below).
- (4) **Sources of restoration.** If a Participant's forfeited benefit is required to be restored under subsection (3) above, the restoration of such forfeited benefits will occur from the following sources. If the following sources are not sufficient to completely restore the Participant's benefit, the Employer must make an additional contribution to the Plan.
 - (i) Any unallocated forfeitures for the Plan Year of the restoration.
 - (ii) Any unallocated earnings for the Plan Year of the restoration.
 - (iii) Any portion of a discretionary Employer Contribution to the extent such contribution has not been allocated to Participants' Accounts for the Plan Year of the restoration.
- (5) **Application of forfeiture rules under the Plan.** As a Governmental Plan (which is not subject to the rules under Code §411, the Plan Administrator has discretion on the manner in which the forfeiture and Cash-Out Distribution rules apply under the Plan.
- (b) **Five-Year Forfeiture Break in Service.** If a Participant has five (5) consecutive one-year Breaks in Service (a Five-Year Forfeiture Break in Service), all Years of Service after such Breaks in Service will be disregarded for the purpose of vesting in the portion of the Participant's Employer Contribution Account and/or Matching Contribution Account that accrued before such Breaks in Service. A Participant who incurs a Five-Year Forfeiture Break in Service will forfeit the nonvested portion of his/her Employer Contribution and/or Matching Contribution Account as of the end of the Vesting Computation Period in which the Participant incurs the fifth consecutive Break in Service. Except as provided under Section 6.08, a Participant who is rehired after incurring a Five-Year Forfeiture Break in Service will be credited with both pre-break and post-break service for purposes of determining his/her vested percentage in amounts that accrue under the Plan after the Five-Year Forfeiture Break in Service.
- (c) **Missing Participant or Beneficiary.** If a Participant or Beneficiary cannot be located within a reasonable period following a reasonable diligent search, the missing Participant's or Beneficiary's Account may be forfeited. An Employer will be deemed to have performed a reasonable diligent search if it performs the actions described in subsection (1) below. However, the Employer or Plan Administrator will be deemed to have waited a reasonable period following a reasonable diligent search if the Employer or Plan Administrator waits at least 6 months following the completion of the actions described in subsection (1) below.
 - (1) **Reasonable diligent search.** The Employer or Plan Administrator will be deemed to have performed a reasonable diligent search if it performs the following actions:
 - (i) Send a certified letter to the Participant's or Beneficiary's last known address.
 - (ii) Check related plan records of the Employer (e.g., health plan records) to determine if a more current address exists for the Participant or Beneficiary.

- (iii) If the Participant cannot be located, the Employer or Plan Administrator may attempt to identify and contact any individual that the Participant has designated as a Beneficiary under the Plan for updated information concerning the location of the missing Participant.
 - (iv) In addition to the search methods discussed above, the Employer or Plan Administrator may use other search methods, including the use of Internet search tools, commercial locator services, and credit reporting agencies to locate the missing Participant.
- (2) **Forfeiture of Account of missing Participant or Beneficiary.** If a Participant or Beneficiary is deemed to be missing (as described in this subsection (c)), the Plan Administrator may forfeit the distributable amount attributable to such missing Participant or Beneficiary, as permitted under applicable laws and regulations. If, after an amount is forfeited under this subsection (2), the missing Participant or Beneficiary is located, the Plan will restore the forfeited amount (unadjusted for gains or losses) to such Participant or Beneficiary within a reasonable time. However, if a missing Participant or Beneficiary has not been located by the time the Plan terminates, the forfeiture of such Participant's or Beneficiary's distributable amount will be irrevocable.
- (3) **Expenses attributable to search for missing Participant.** Reasonable expenses attendant to locating a missing Participant may be charged to such Participant's Account, provided that the amount of such expenses is reasonable. The Plan Administrator may take into account the size of a Participant's Account in relation to the cost of the search when deciding how extensive a search is required before declaring such Participant as missing under this subsection (c).
- (d) **Excess Deferrals.** If a Participant receives a distribution of Excess Deferrals, the portion of his/her Matching Contribution Account (whether vested or not) which is attributable to such distributed amounts will be forfeited. A forfeiture of Matching Contributions under this subsection (d) occurs in the Plan Year in which the Participant receives the distribution of Excess Deferrals.

6.11 Allocation of Forfeitures. The Employer may decide in its discretion how to treat forfeitures under the Plan. Alternatively, the Employer may designate under AA §8-7 how forfeitures occurring during a Plan Year will be treated. Under AA §8-7, the Employer may elect to use forfeitures in the Plan Year in which the forfeitures occur or in the Plan Year following the Plan Year in which the forfeitures occur. The Employer may elect under AA §8-7 to allocate forfeitures in any manner permitted under this Section 6.11.

- (a) **Reallocation as additional contributions under Profit Sharing Plan Adoption Agreement.** The Employer may elect in AA §8-7 to reallocate forfeitures as additional contributions under the Plan. If the Employer elects under the Profit Sharing Plan Adoption Agreement to reallocate forfeitures as additional contributions, the Employer may allocate such amounts as additional Employer Contributions and/or additional Matching Contributions. If the forfeitures allocated under this subsection (a) relate to discretionary contributions, such amounts may be allocated in the same manner as selected under AA §6-3 with respect to the contribution type being allocated. If the forfeitures relate to fixed contributions, such amounts may be allocated in addition to such fixed contributions in the ratio that the Plan Compensation of each Participant bears to the Plan Compensation of all Participants. In allocating forfeitures under this subsection (a), the Employer may take into account any limits under AA §6B-4 in determining the amount of forfeitures to be allocated as additional Matching Contributions. In applying the provisions of this subsection (a), no allocation of forfeitures will be made to any Participant with respect to forfeitures that arise out of his/her own Account. A Participant may share in any additional forfeitures to the extent the Participant is eligible to receive an allocation of such forfeitures under AA §8-7.
- (b) **Reallocation as additional Employer Contributions under Money Purchase Plan Adoption Agreement.** The Employer may elect in AA §8-7 to reallocate forfeitures as additional Employer Contributions under the Plan. If the Employer elects under the Money Purchase Plan Adoption Agreement to reallocate forfeitures as additional Employer Contributions, such amounts will be allocated in the ratio that the Plan Compensation of each Participant bears to the Plan Compensation of all Participants. In applying the provisions of this subsection (b), no allocation of forfeitures will be made to any Participant with respect to forfeitures that arise out of his/her own Account.
- (c) **Reduction of contributions.** The Employer may elect in AA §8-7 to use forfeitures to reduce Employer Contributions and/or Matching Contributions under the Plan. If the Employer elects to use forfeitures to reduce contributions, the Employer may, in its discretion, use such forfeitures to reduce Employer Contributions, Matching Contributions, or both. The Employer may adjust its contribution deposits in any manner, provided the total Employer Contributions and/or Matching Contributions made for the Plan Year properly take into account the forfeitures that are to be used to reduce such contributions for that Plan Year. If contributions are allocated over multiple allocation periods, the Employer may reduce its contribution for any allocation periods within the Plan Year in which the forfeitures are to be allocated so that the total amount allocated for the Plan Year is proper. If the Plan provides for a discretionary Employer or Matching Contribution and the Employer elects not to make an Employer or Matching Contribution for the Plan

Year, any forfeitures will be allocated to eligible Participants as an additional Employer or Matching Contribution, as provided under subsection (a) above.

- (d) **Payment of Plan expenses.** The Employer may elect under AA §8-7 to use forfeitures to pay Plan expenses for the Plan Year in which the forfeitures would otherwise be applied. If any forfeitures remain after the payment of Plan expenses under this subsection, the remaining forfeitures will be allocated as selected under AA §8-7. This subsection (d) only applies to the extent Plan expenses are paid by the Plan. Nothing herein affects the ability of the Employer to pay Plan expenses, as authorized under Section 11.04(a). In determining the Plan expenses that may be offset by Plan forfeitures, the Employer may use any reasonable method to determine the Plan expenses attributable to a particular year. In addition, the Employer may elect to use forfeitures first to reduce Employer and/or Matching Contributions or as an additional allocation (as set forth in AA §8-7) prior to using forfeitures to pay Plan expenses.

(e) **Forfeiture rules for other contribution types.**

- (1) **Prior Employer and/or Matching Contributions.** If the Plan maintains Employer Contribution and/or Matching Contribution Accounts, but the Plan no longer provides for such contributions, such amounts will continue to vest under the vesting schedule applicable to such contributions under the prior Plan or under any vesting schedule designated under Appendix A of the Adoption Agreement. If there are any forfeitures related to such prior contributions, such amounts may be reallocated as an additional Employer Contribution or as an additional Matching Contribution in accordance with the provisions of subsection (a) or (b) above, to the extent such contributions are authorized under the Plan, or may be used to reduce any Employer Contribution or Matching Contribution, consistent with the provisions of subsection (c) above. If the Plan does not provide for either Employer Contributions or Matching Contributions, the Employer may reallocate forfeitures of prior contributions as an Employer Contribution (using the pro rata allocation formula) or as a discretionary Matching Contribution under the Profit Sharing Plan Adoption Agreement, as applicable, or as a fixed contribution under the Money Purchase Plan Adoption Agreement. Alternatively, the Employer may use such forfeitures to pay Plan expenses as authorized under subsection (d) above. The Employer may elect to use such forfeitures in the Plan Year the forfeiture occurs or in the following Plan Year.
- (2) **Other contributions.** If a Participant has any other amounts under the Plan which are treated as forfeited (e.g. a forfeiture for a missing Participant under Section 6.10(c)), and no selections are made under AA §8-7 regarding the treatment of forfeitures under the Plan, such amounts may be forfeited in accordance with any of the forfeiture options described in this Section 6.11.

SECTION 7 PLAN DISTRIBUTIONS

A Participant may receive a distribution of his/her vested Account Balance at the time and in the manner provided under this Section 7. Upon reaching the Required Beginning Date (defined in Section 8.05(e)), a Participant must begin receiving distributions under the Plan (in accordance with the provisions of Section 8.)

7.01 Available Forms of Distribution. The Employer may elect under AA §9-1 the forms of distribution that are available to a Participant or Beneficiary under the Plan. Different distribution options may apply depending on whether a distribution is made upon termination of employment, death, disability or as an in-service withdrawal. Available distribution options under AA §9-1 may include a lump sum of all or a portion of the Participant's vested Account Balance, an in-kind distribution of an Annuity Contract, partial lump sums, installments, annuity payments, or any other form designated in AA §9-1. In addition, distribution options may be available as provided under a guaranteed income product to the extent such distribution options are consistent with qualification requirements applicable to such distributions. Any distribution options selected under the Plan must comply with the required minimum distribution rules under Section 8.

If the Plan provides for installment payments as an optional form of distribution, such payments may be made in monthly, quarterly, semi-annual, or annual payments over a period not exceeding the life expectancy of the Participant and his/her designated Beneficiary. The Plan Administrator may permit a Participant or Beneficiary to accelerate the payment of all, or any portion, of an installment distribution. If the Plan provides for annuity payments, the Plan must purchase an annuity that provides for payments over a period that does not extend beyond either the life of the Participant (or the lives of the Participant and his/her designated Beneficiary) or the life expectancy of the Participant (or the life expectancy of the Participant and his/her designated Beneficiary). (The availability of installments and/or annuity payments may be restricted under AA §9-1(d).)

If the Plan holds Employer Contributions and/or Matching Contributions, but the Plan no longer provides for such contributions, the Plan may continue to apply the distribution options applicable to those contributions as determined under the prior Plan document, unless elected otherwise. The Employer may document any prior distribution options in AA Appendix A or AA §10-3.

7.02 Amount Eligible for Distribution. For purposes of determining the amount a Participant or Beneficiary may receive as a distribution from the Plan, a Participant's Account Balance is determined as of the Valuation Date (as specified in AA §11-1) immediately preceding the date the Participant or Beneficiary receives his/her distribution from the Plan. For this purpose, the Account Balance must be increased for any contributions allocated to the Participant's Account since the most recent Valuation Date and must be reduced for any distributions made from the Participant's Account since the most recent Valuation Date. A Participant or Beneficiary does not share in any allocation of gains or losses attributable to the period between the most recent Valuation Date and the date of the distribution, unless provided otherwise under uniform funding and valuation procedures established by the Plan Administrator. See Section 10.03.

7.03 Participant Consent. To the extent elected under AA §9-2, if the value of a Participant's entire vested Account Balance exceeds the Involuntary Cash-Out threshold (as defined in subsection (a) below), the Participant must consent to any distribution of such Account Balance prior to his/her Required Beginning Date (as defined in Section 8.05(e)) or, if so provided in AA §9-2(a)(4), as of the date the Participant attains (or would have attained if not deceased) the later of Normal Retirement Age or age 62. A failure by the Participant (and Spouse, if applicable) to consent to a distribution while a benefit is immediately distributable shall be deemed to be an election to defer commencement of payment of any benefit sufficient to satisfy this section.

(a) **Involuntary Cash-Out threshold.** For purposes of determining whether a distribution is subject to the Participant consent requirements as described in Section 7.0303, the Involuntary Cash-Out threshold is \$5,000 unless a different amount is designated under AA §9-2(a). (See Section 7.05 for a discussion of the Automatic Rollover rules that apply if a Participant does not consent to a distribution that is otherwise available without Participant consent.) For purposes of determining whether a Participant's vested Account Balance exceeds the Involuntary Cash-Out threshold, the value of the Participant's vested Account Balance shall be determined without regard to that portion of the Account Balance that is attributable to Rollover Contributions (and earnings allocable thereto) within the meaning of Code §§402(c), 403(a)(4), 403(b)(8), 408(d)(3)(A)(ii), and 457(e)(16). The Employer may elect in AA §9-2(a)(5) to include Rollover Contributions (and earnings allocable thereto) in determining whether the Participant's vested Account Balance exceeds the Involuntary Cash-Out threshold.

(b) **Participant notice.** If a distribution is subject to Participant consent, the Participant must consent in writing to the distribution within a reasonable period prior to the Annuity Starting Date (as defined in Section 1.10). For this purpose, any consent made within the 180-day period ending on the Annuity Starting Date will be deemed to be made within a reasonable period. If the distribution is subject to spousal consent under AA §9-2(b), the Participant's Spouse also must consent to the distribution in accordance with Section 9.02.

Prior to receiving a distribution from the Plan, a Participant must be notified of his/her right to defer any distribution from the Plan. The notification shall include a general description of the material features and the relative values of the optional forms of benefit available under the Plan (consistent with the requirements under Code §417(a)(3)). Effective for Plan Years beginning on or after January 1, 2007, the Participant notice must include a description of the consequences of a Participant's decision not to defer the receipt of a distribution. The notice must be provided no less than 30 days and no more than 180 days prior to the Participant's Annuity Starting Date. However, distribution may commence less than 30 days after the notice is given, if the Participant is clearly informed of his/her right to take 30 days after receiving the notice to decide whether or not to elect a distribution (and, if applicable, a particular distribution option), and the Participant, after receiving the notice, affirmatively elects to receive the distribution prior to the expiration of the 30-day minimum period. The notice requirements described in this paragraph may be satisfied by providing a summary of the required information, so long as the conditions described in applicable regulations for the provision of such a summary are satisfied, and the full notice is also provided (without regard to the 180-day period described in this subsection).

- (c) **Special rules.** The consent rules under this Section 7.03 apply to distributions made after the Participant's termination of employment and to distributions made prior to the Participant's termination of employment. However, the consent of the Participant (and the Participant's Spouse, if applicable) shall not be required to the extent that a distribution is required to satisfy the required minimum distribution rules under Section 8 or to satisfy the requirements of Code §415, as described in Section 5.02. A Participant also will not be required to consent to a corrective distribution of Excess Deferrals.

7.04 Direct Rollovers. Notwithstanding any provision in the Plan to the contrary, a Participant may elect, at the time and the manner prescribed by the Plan Administrator, to have all or any portion of an Eligible Rollover Distribution paid directly to an Eligible Retirement Plan in a Direct Rollover. If an Eligible Rollover Distribution is less than \$500, the Participant may not elect a Direct Rollover of only a portion of such distribution (i.e., a Participant must elect a complete Direct Rollover if the Eligible Rollover Distribution is less than \$500). For purposes of this Section 7.0404, a Participant includes a Participant or former Participant. In addition, this Section applies to any distribution from the Plan made to a Participant's surviving Spouse or to a Participant's Spouse or former Spouse who is the Alternate Payee under a QDRO, as defined in Section 1.80. This Section 7.0404 also applies to distributions made to a Participant's non-Spouse beneficiary, as set forth in subsection (c) below.

(a) **Definitions.**

- (1) **Eligible Rollover Distribution.** An Eligible Rollover Distribution is any distribution of all or any portion of a Participant's Account Balance, except an Eligible Rollover Distribution does not include:
- (i) any distribution that is one of a series of substantially equal periodic payments (not less frequently than annually) made for the life (or life expectancy) of the Participant or the joint lives (or joint life expectancies) of the Participant and the Participant's Beneficiary, or for a specified period of ten years or more;
 - (ii) any distribution to the extent such distribution is a required minimum distribution under Code §401(a)(9), as described under Section 8;
 - (iii) any Hardship distribution, as described in Section 7.10(e);
 - (iv) the portion of any distribution that is not includible in gross income (determined without regard to the exclusion for net unrealized appreciation with respect to Employer securities);
 - (v) any distribution if it is reasonably expected (at the time of the distribution) that the total amount the Participant will receive as a distribution during the calendar year will total less than \$200;
 - (vi) a distribution made to satisfy the requirements of Code §415 (as described in Section 5.02) or a distribution to correct Excess Deferrals.
- (2) **Eligible Retirement Plan.** For purposes of applying the Direct Rollover provisions under this Section 7.0404, an Eligible Retirement Plan is:
- (i) a qualified plan described in Code §401(a);
 - (ii) an individual retirement account described in Code §408(a);
 - (iii) an individual retirement annuity described in Code §408(b);

- (iv) an annuity plan described in Code §403(a);
- (v) an annuity contract described in Code §403(b);
- (vi) an eligible plan under Code §457(b) which is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or political subdivision of a state and which agrees to separately account for amounts transferred into such plan from this Plan; or
- (vii) for rollovers made on or after December 31, 2015, a SIMPLE IRA described in Code §408(p). However, the following restrictions apply: (1) the provision does not allow SIMPLE IRAs to accept rollovers from designated Roth accounts, and (2) the change applies only to rollovers made after the two-year period beginning on the date the Participant first participated in their employer's SIMPLE IRA plan.

The definition of Eligible Retirement Plan also applies in the case of a distribution to a surviving Spouse, or to a Spouse or former Spouse who is the Alternate Payee under a QDRO.

To the extent any portion of an Eligible Rollover Distribution is attributable to Roth Deferrals (as defined in Section 3.02(c)(2)(v)), an Eligible Retirement Plan with respect to such portion of the distribution shall include only another designated Roth account of the Participant or a Roth IRA. To the extent any portion of an Eligible Rollover Distribution is attributable to After-Tax Employee Contributions, an Eligible Retirement Plan with respect to such portion of the distribution shall include only an individual retirement account or annuity described in Code §408(a) or (b) or a qualified Defined Contribution Plan described in Code §401(a) or §403(a) that agrees to separately account for amounts so transferred, including separately accounting for the portion of such distribution which is includible in gross income and the portion of such distribution which is not includible in gross income.

- (3) **Direct Rollover.** A Direct Rollover is a payment made directly from the Plan to the Eligible Retirement Plan specified by the Participant. The Plan Administrator may develop reasonable procedures for accommodating Direct Rollover requests.
- (b) **Direct Rollover notice.** A Participant entitled to an Eligible Rollover Distribution must receive a written explanation of his/her right to a Direct Rollover, the tax consequences of not making a Direct Rollover, and if applicable, any available special income tax elections. The notice must be provided within 30 –180 days prior to the Participant's Annuity Starting Date in the same manner as described in Section 7.03(b). The Direct Rollover notice must be provided to all Participants, unless the total amount the Participant will receive as a distribution during the calendar year is expected to be less than \$200.

If a Participant terminates employment and is eligible for a distribution which is not subject to Participant consent, and the Participant does not respond to the Direct Rollover notice indicating whether a Direct Rollover is desired and the name of the Eligible Retirement Plan to which the Direct Rollover is to be made, the Plan Administrator may distribute the Participant's entire vested Account Balance in the form of an Automatic Rollover (pursuant to Section 7.0505). If a distribution would qualify for Automatic Rollover, the Direct Rollover notice must describe the procedures for making an Automatic Rollover, including the name, address, and telephone number of the IRA trustee and information regarding IRA maintenance and withdrawal fees and how the IRA funds will be invested. The Direct Rollover notice also must describe the timing of the Automatic Rollover and the Participant's ability to affirmatively opt out of the Automatic Rollover.
- (c) **Direct Rollover by non-Spouse beneficiary.** The Plan must permit a non-Spouse beneficiary (as defined in Code §401(a)(9)(E)) to make a direct rollover of an eligible rollover distribution to an individual retirement account under Code §408(a) or an individual retirement annuity under Code §408(b) that is established on behalf of the designated beneficiary and that will be treated as an inherited IRA pursuant to the provisions of Code §402(c)(11). A non-Spouse rollover will be subject to the direct rollover requirements under Code §401(a)(31), the rollover notice requirements under Code §402(f) or the mandatory withholding requirements under Code §3405(c).
- (d) **Direct Rollover of non-taxable amounts.** Notwithstanding any other provision of the Plan, an Eligible Rollover Distribution may include the portion of any distribution that is not includible in gross income. For this purpose, an Eligible Retirement Plan includes a Defined Contribution or Defined Benefit Plan qualified under Code §401(a) and a tax-sheltered annuity plan under Code §403(b), provided the rollover is accomplished through a direct rollover and the recipient Eligible Retirement Plan separately accounts for any amounts attributable to the rollover of any nontaxable distribution and earnings thereon.
- (e) **Rollovers to Roth IRA.** A Participant or beneficiary (including a non-spousal beneficiary to the extent permitted under subsection (c) above), may rollover an Eligible Rollover Distribution (as defined in subsection (a)(1) above) to a Roth

IRA, provided the Participant (or beneficiary) satisfies the requirements for making a Roth contribution under Code §408A(c)(3)(B). Any amounts rolled over to a Roth IRA will be included in gross income to the extent such amounts would have been included in gross income if not rolled over (as required under Code §408A(d)(3)(A)). For purposes of this subsection (e), the Plan Administrator is not responsible for assuring the Participant (or beneficiary) is eligible to make a rollover to a Roth IRA.

7.05 Automatic Rollover.

- (a) **Automatic Rollover requirements.** If a Participant is entitled to an Involuntary Cash-Out Distribution (as defined in subsection (b) below), and the Participant does not elect to receive a distribution of such amount (either as a Direct Rollover to an Eligible Retirement Plan or as a direct distribution to the Participant), then the Plan Administrator may pay the distribution in a Direct Rollover to an individual retirement plan (IRA) designated by the Plan Administrator. (The Automatic Rollover provisions under this subsection (a) apply to any Involuntary Cash-Out Distribution for which the Participant fails to consent to a distribution, without regard to whether the Participant can be located. See Section 6.10(c) for alternatives if the Participant cannot be located after a reasonable diligent search.). For purposes of applying the Automatic Rollover provisions under this Section 7.05, a Participant's Roth Deferral Account and the Participant's other Accounts are treated as accounts held under separate plans. (See Treas. Reg. §1.401(k)-1(f)(4)(ii).)
- (b) **Involuntary Cash-Out Distribution.** An Involuntary Cash-Out Distribution is any distribution that is made from the Plan without the Participant's consent. Unless elected otherwise under AA §9-2(a)(3), an Involuntary Cash-Out Distribution, for purposes of applying the Automatic Rollover requirements under this Section 7.0505 does not include any amounts below \$1,000. (See Section 7.0303 for the Participant consent requirements with respect to distributions under the Plan.) The Plan Administrator may decide whether or not to provide for an Automatic Rollover for a distribution if it is reasonably expected (at the time of the distribution) that the total amount the Participant will receive as a distribution during the calendar year will total less than \$200.
- (c) **Treatment of Rollover Contributions.** Unless elected otherwise under AA §9-2(a)(5), for purposes of determining whether a mandatory distribution is greater than \$1,000, the portion of the Participant's distribution attributable to any Rollover Contribution is excluded.

7.06 Distribution Upon Termination of Employment. Subject to the required minimum distribution provisions under Section 8, a Participant who terminates employment for any reason (other than death) is entitled to receive a distribution of his/her vested Account Balance in accordance with this Section 7.0606. (See Section 7.0707 for the applicable rules when a Participant dies before distribution of his/her vested Account Balance is completed.)

- (a) **Account Balance not exceeding Cash-Out threshold.** If a Participant's vested Account Balance does not exceed \$5,000 (or other Cash-Out threshold designated under AA §9-2(a)(2)) at the time of distribution, the only distribution option available under the Plan is a lump sum option. The Participant will be eligible to receive a distribution of his/her vested Account Balance as of the date selected in AA §9-3(b).
- (b) **Account Balance exceeding Cash-Out threshold.** If a Participant's vested Account Balance exceeds \$5,000 (or other Cash-Out threshold designated under AA §9-2(a)(2)) at the time of distribution, the Participant may elect to receive a distribution of his/her vested Account Balance in any form permitted under AA §9-1. The Participant will be eligible to receive a distribution of his/her vested Account Balance as of the date selected in AA §9-3(a). The Employer may elect to accelerate the distribution to Employees upon special circumstances, such as termination after attainment of Normal Retirement Age or other special circumstances.

7.07 Distribution Upon Death. Subject to the Required Minimum Distribution rules in Section 8, a Participant's vested Account Balance will be distributed to the Participant's Beneficiary(ies) in accordance with this Section 7.0707. (See subsection (c) below for rules regarding the determination of Beneficiaries upon the death of the Participant.) The form of benefit payable with respect to a deceased Participant will depend on whether the Participant dies before or after distribution of his/her Account Balance has commenced.

- (a) **Death after commencement of benefits.** If a Participant begins receiving a distribution of his/her benefits under the Plan, and subsequently dies prior to receiving the full value of his/her vested Account Balance, the remaining benefit will continue to be paid to the Participant's Beneficiary(ies) in accordance with the form of payment that has already commenced. If a Participant commences distribution prior to death only with respect to a portion of his/her Account Balance, then the rules in subsection (b) below apply to the rest of the Account Balance.
- (b) **Death before commencement of benefits.** If a Participant dies before commencing distribution of his/her benefits under the Plan, the form and timing of any death benefits will depend on whether the value of the death benefit exceeds \$5,000 (or other threshold designated under AA §9-2(a)(2)).

- (1) **Death benefit not exceeding \$5,000.** If the value of the death benefit does not exceed \$5,000, such benefit will be paid to the Participant's Beneficiary(ies) in a single sum as soon as administratively feasible following the Participant's death.
- (2) **Death benefit exceeding \$5,000.** If the value of the death benefit exceeds \$5,000, such benefit will be paid in a lump sum as soon as administratively feasible following the Participant's death. However, the death benefit may be payable in a different form if prescribed by the Participant's Beneficiary designation, or the Beneficiary, before a lump sum payment of the benefit is made, elects to receive the distribution in an alternative form of benefit permitted under Section 7.011.

In no event will any death benefit be paid in a manner that is inconsistent with the Required Minimum Distribution rules under Section 8. The Beneficiary of any pre-retirement death benefit described in this subsection (b) may postpone the commencement of the death benefit to a date that is not later than the latest commencement date permitted under Section 8.

- (c) **Determining a Participant's Beneficiary.** The determination of a Participant's (or Beneficiary's, if applicable) Beneficiary(ies) to receive any death benefits under the Plan will be based on the Participant's (or Beneficiary's, if applicable) Beneficiary designation under the Plan. If a Participant (or Beneficiary, if applicable) does not designate a Beneficiary to receive the death benefits under the Plan, distribution will be made to the default Beneficiaries, as set forth in subsection (3) below.
 - (1) **Post-retirement death benefit.** If a Participant dies after commencing distribution of benefits under the Plan (but prior to receiving a distribution of his/her entire vested Account Balance under the Plan), the Beneficiary of any post-retirement death benefit is determined in accordance with the Beneficiary selected under the distribution option in effect prior to death.
 - (2) **Pre-retirement death benefit.** If a Participant dies before commencing distribution of his/her benefits under the Plan, the surviving Spouse (determined at the time of the Participant's death) will be treated as the sole Beneficiary, unless:
 - (i) there is a valid contrary Beneficiary designation;
 - (ii) there is no surviving Spouse (determined under applicable laws at the time of Participant's death); or
 - (iii) the Spouse makes a valid disclaimer.
 - (3) **Default beneficiaries.** To the extent a Beneficiary has not been named by the Participant, and is not designated under the terms of the Investment Arrangement(s), this Plan, or the Adoption Agreement to receive all or any portion of the deceased Participant's death benefit, such amount shall be distributed to the Participant's surviving Spouse (if the Participant was married at the time of death) who shall be considered the designated Beneficiary. If a Participant is legally divorced, the former Spouse is not considered the default Beneficiary. If the Participant does not have a surviving Spouse at the time of death, distribution will be made to the Participant's surviving children (including legally adopted children, but not including step-children), as designated Beneficiaries, in equal shares. If the Participant has no surviving children, distribution will be made to the Participant's estate. The Employer may modify the default beneficiary rules described in this subparagraph under AA §9-5(a).
 - (4) **Identification of Beneficiaries.** The Plan Administrator may request proof of the Participant's death and may require the Beneficiary to provide evidence of his/her right to receive a distribution from the Plan in any form or manner the Plan Administrator may deem appropriate. The Plan Administrator's determination of the Participant's death and of the right of a Beneficiary to receive payment under the Plan shall be conclusive. If a distribution is to be made to a minor or incompetent Beneficiary, payments may be made to the person's legal guardian or conservator recognized under state law, or custodian in accordance with the Uniform Gifts to Minors Act or similar law as permitted under the laws of the state where the Beneficiary resides. The Plan Administrator or Trustee will not be liable for any payments made in accordance with this subsection (4) and will not be required to make any inquiries with respect to the competence of any person entitled to benefits under the Plan. (See Section 9.03 for a special one-year marriage rule that may apply under AA §9-5(b).)
 - (5) **Death of Beneficiary.** Unless specified otherwise in the Participant's (or Beneficiary's, if applicable) Beneficiary designation form or under AA §9-5, if a Beneficiary does not predecease the Participant but dies before distribution of the death benefit is made to the Beneficiary, the death benefit will be paid to the Beneficiary's estate. If the Participant and the Participant's Beneficiary die simultaneously, and the Participant's

Beneficiary designation form does not address simultaneous death, the determination of the death beneficiary will be determined under any state simultaneous death laws, to the extent applicable. If no applicable state law applies, the death benefit will be paid to the contingent beneficiaries named under the Participant's beneficiary designation. If there are no contingent beneficiaries, the death benefit will be paid to the Participant's default beneficiaries, as described in subsection (3) above.

- (6) **Divorce from Spouse.** Except as otherwise provided in an Investment Arrangement, and unless designated otherwise under AA §9-5(c), if a Participant designates his/her Spouse as Beneficiary and subsequent to such Beneficiary designation, the Participant and Spouse are divorced, the designation of the Spouse as Beneficiary under the Plan is automatically rescinded unless specifically provided otherwise under a divorce decree or QDRO, or unless the Participant enters into a new Beneficiary designation naming the prior Spouse as Beneficiary. In addition, the provisions under this subsection (6) will not apply if the Participant has entered into a Beneficiary designation that specifically overrides the provisions of this subsection (6).

- (d) **Slayer Rule.** Notwithstanding anything to the contrary in the Plan, if the Plan Administrator receives notice prior to distribution of a Participant's vested Account that an individual is responsible for the death of such Participant, then no payment of benefits with respect to such Participant will be made under any provision of the Plan to such individual. An individual will be treated as being responsible for the death of a Participant for purposes of the foregoing sentence only if, by virtue of such individual's involvement in the death of the Participant, such individual's entitlement to any interest in assets of the deceased could be denied (whether or not there is in fact any such entitlement) under any applicable state law, including, without limitation, laws governing intestate succession, wills, jointly-owned property, bonds, and life insurance. For purposes of the Plan, any such responsible individual will be deemed to have predeceased the Participant. The Plan Administrator shall withhold distribution of benefits otherwise payable under the Plan for such period of time as is necessary or appropriate under the circumstances to make a determination with regard to the application of this section.

7.08 **Distribution to Disabled Employees.** Unless elected otherwise under AA §9-4, no special distribution rules apply to Disabled Employees. However, the Employer may elect in AA §9-4 to permit a distribution at an earlier date for Disabled Employees.

7.09 **Qualified Distributions for Retired Public Safety Officers.** If permitted under separate administrative procedures, a Participant who is an eligible retired public safety officer may elect, after separation from service, to have qualified health insurance premiums deducted from amounts to be distributed from the Plan that would otherwise be includible in gross income, and to have such amounts paid directly to the insurer or group health plan. The distribution may be excluded from the Participant's gross income to the extent that the aggregate amount of the distribution does not exceed the lesser of the amount used to pay the qualified health insurance premiums of the Participant, the Participant's spouse, and the Participant's dependents (as defined in Code §152), or \$3,000, determined by aggregating all distributions with respect to the Participant that are used to pay qualified health insurance premiums from all eligible retirement plans of the Employer as defined in Code §414(d).

- (a) **Qualified health insurance premiums.** The term "qualified health insurance premiums" means premiums for coverage for the Participant, the Participant's spouse, and the Participant's dependents (as defined in Code §152) by an accident or health insurance plan (including under a self-insured plan) or qualified long-term care insurance contract (within the meaning of Code §7702B(b)).
- (b) **Eligible retired public safety officer.** The term "eligible retired public safety officer" means an individual who separated from service, either by reason of disability or after attainment of Normal Retirement Age, as a public safety officer with the Employer. For this purpose, a public safety officer is an individual serving the Employer in an official capacity, with or without compensation, as a law enforcement officer, a firefighter, a chaplain, or a member of a rescue squad or ambulance crew.

7.10 **In-Service Distributions.** The Employer may elect under AA §10 to permit in-service distributions under the Plan. Except to the extent provided under subsection (a) below, if an in-service distribution is not specifically permitted under AA §10, a Participant may not receive a distribution from the Plan until termination of employment, death or disability.

- (a) **After-Tax Employee Contributions and Rollover Contributions.** Unless designated otherwise under AA §10-2, a Participant may withdraw at any time, upon written request, all or any portion of his/her Account Balance attributable to After-Tax Employee Contributions or Rollover Contributions. No forfeiture will occur solely as a result of an Employer's withdrawal of After-Tax Employee Contributions.
- (b) **Employer Contributions and Matching Contributions.** The Employer may elect under AA §10 the extent to which in-service distributions will be permitted from Employer Contributions (including Matching Contributions, if applicable) under the Plan. If permitted under AA §10 of the Profit Sharing Plan Adoption Agreement, Employer Contributions may be withdrawn upon the occurrence of a specified event (such as attainment of a designated age or the occurrence of a Hardship, as defined in subsection (e) below). In addition, a Participant may withdraw his/her Employer

Contributions (and Matching Contributions, if applicable) upon the completion of a certain number of years, provided no distribution solely on account of years may be made with respect to Employer Contributions that have been accumulated in the Plan for less than 2 years, unless the Participant has been a Participant in the Plan for at least 5 years. (See Section 6.09 for special vesting rules that apply if a Participant takes an in-service distribution prior to becoming 100% vested in such contributions.)

For Plan Years beginning after January 1, 2007, if the Plan is a pension plan (e.g., a money purchase plan or if the Plan holds transferred assets from a money purchase plan), a Participant may not receive an in-service distribution of his/her vested Account Balance prior to the earlier of the attainment of Normal Retirement Age or age 62 (to the extent permitted under AA §10-1 or AA §10-2).

- (c) **Salary Deferrals under Grandfathered 401(k) Arrangement.** If the Plan qualifies as a Grandfathered 401(k) Arrangement, as designated under AA §2-3 of the Profit Sharing Adoption Agreement, any Salary Deferrals (including any earnings on such amounts) generally may not be distributed prior to the Participant's severance from employment, death, or disability. However, the Employer may elect under AA §10 to permit an in-service distribution of such amounts upon attainment of a specified age (no earlier than age 59½, upon a Hardship (as defined in subsection (e) below) or upon a Qualified Reservist Distribution, as defined under subsection (d) below.

If Normal Retirement Age or Early Retirement Age is earlier than age 59½ and an in-service distribution is permitted upon attainment of Normal Retirement Age or Early Retirement Age from Salary Deferrals, the Normal Retirement Age and/or Early Retirement Age will be deemed to be age 59½ for purposes of determining eligibility to distribute Salary Deferrals.

- (d) **Penalty-free withdrawals for individuals called to active duty.** Effective September 11, 2001, the distribution provisions applicable to Salary Deferrals include a Qualified Reservist Distribution, as defined in subsection (1) below. If a Participant takes a Qualified Reservist Distribution, such distributions will not be subject to the 10% penalty tax under Code §72(t). A Qualified Reservist Distribution is only available if permitted under AA §10-1.

- (1) **Qualified Reservist Distribution.** For purposes of this subsection (d), a Qualified Reservist Distribution means any distribution to an individual if:

- (i) such distribution is from amounts attributable to elective deferrals described in Code §402(g)(3)(A) or (C) or Code §501(c)(18)(D)(iii),
- (ii) such individual was (by reason of being a member of a reserve component (as defined in §101 of Title 37 of the United States Code)) ordered or called to active duty for a period in excess of 179 days or for an indefinite period, and
- (iii) such distribution is made during the period beginning on the date of such order or call, and ending at the close of the active duty period.

- (2) **Active duty.** A Qualified Reservist Distribution will only be available for individuals who are ordered or called into active duty after September 11, 2001.

- (e) **Hardship distribution.** The Employer may elect under AA §10-1 or AA §10-2 of the Profit Sharing Plan Adoption Agreement to authorize an in-service distribution upon the occurrence of a Hardship event. A Hardship distribution of Salary Deferrals must meet the requirements of a safe harbor Hardship as described under subsection (1) below. For other contribution types, the Employer may elect to apply the safe harbor Hardship rules under subsection (1) below or the non-safe harbor Hardship provisions under subsection (2) below.

- (1) **Safe harbor Hardship distribution.** To qualify for a safe harbor Hardship, a Participant must demonstrate an immediate and heavy financial need, as described in subsection (i) below, and the distribution must be necessary to satisfy such need, as described in subsection 0 below.

- (i) **Immediate and heavy financial need.** To be considered an immediate and heavy financial need, the Hardship distribution must be made to satisfy one of the following financial needs:

- (A) to pay expenses incurred or necessary for medical care (as described in Code §213(d)) of the Participant, the Participant's Spouse or dependents (determined without regard to whether the expenses exceed 7.5% of adjusted gross income);
- (B) for the purchase (excluding mortgage payments) of a principal residence for the Participant;

- (C) for payment of tuition and related educational fees (including room and board) for the next 12 months of post-secondary education for the Participant, the Participant's Spouse, children or dependents;
- (D) to prevent the eviction of the Participant from, or a foreclosure on the mortgage of, the Participant's principal residence;
- (E) to pay funeral or burial expenses for the Participant's deceased parent, Spouse, child or dependent;
- (F) to pay expenses to repair damage to the Participant's principal residence that would qualify for a casualty loss deduction under Code §165 (determined without regard to whether the loss exceeds the 10% of adjusted gross income limit); or
- (G) for any other event that the IRS recognizes as a safe harbor Hardship distribution event under ruling, notice or other guidance of general applicability.

For purposes of determining eligibility of a Hardship distribution under this subsection (i), a dependent is determined under Code §152. However, for taxable years beginning on or after January 1, 2005, the determination of dependent for purposes of tuition and education fees under subsection (C) above will be made without regard to Code §152(b)(1), (b)(2), and (d)(1)(B), and the determination of dependent for purposes of funeral or burial expenses under subsection (E) above will be made without regard to Code §152(d)(1)(B).

A Participant must provide the Plan Administrator with a written request for a Hardship distribution. The Plan Administrator may require written documentation, as it deems necessary, to sufficiently document the existence of a proper Hardship event.

- (ii) **Distribution necessary to satisfy need.** A distribution will be considered as necessary to satisfy an immediate and heavy financial need of the Participant if:

- (A) The distribution is not in excess of the amount of the immediate and heavy financial need (including amounts necessary to pay any federal, state or local income taxes or penalties reasonably anticipated to result from the distribution);
- (B) The Participant has obtained all available distributions, other than Hardship distributions, and all nontaxable loans under the Plan and all plans maintained by the Employer; and
- (C) The Participant is suspended from making Salary Deferrals (and After-Tax Employee Contributions) for at least 6 months after the receipt of the Hardship distribution.

- (2) **Non-safe harbor Hardship distribution.** The Employer may elect in AA §10-1(e) or AA §10-2(e) of the Profit Sharing Plan Adoption Agreement to permit Participants to take a Hardship distribution without satisfying the requirements of subsection (1) above.

- (i) **Immediate and heavy financial need.** For purposes of determining whether a Hardship exists under this subsection (2), the same Hardship distribution events described in subsection (i) will qualify as a Hardship distribution event under this subsection (2). The Employer may modify the permissible Hardship distribution events under AA §10-3(f) of the Profit Sharing Plan Adoption Agreement.
- (ii) **Distribution necessary to satisfy need.** A Hardship distribution under this subsection (2) need not satisfy the requirements under subsection 0 above. Instead, all relevant facts and circumstances are considered to determine whether the Employee has other resources reasonably available to relieve or satisfy the need. For this purpose, resources include assets of the Employee's Spouse and minor children that are reasonably available to the Employee. In addition, the amount withdrawn for hardship may include amounts necessary to pay federal, state or local income taxes, or penalties reasonably anticipated to result from the distribution.

The Employer or Plan Administrator may rely upon the Employee's written representation that the need cannot be reasonably relieved through the following sources:

- (A) Reimbursement or compensation by insurance;

- (B) Liquidation of the Employee's assets;
- (C) Cessation of Salary Deferrals or After-Tax Employee Contributions under the Plan;
- (D) Other currently available distributions or nontaxable loans from the Plan or any other plan maintained by the Employer (or any other employer);
- (E) Borrowing from commercial sources on reasonable commercial terms in an amount sufficient to satisfy the need.

The Employer or Plan Administrator may not rely upon the written representation under this subsection 0 if the Employer has actual knowledge to the contrary.

- (3) **Amount available for Hardship distribution.** A Participant may receive a Hardship distribution of any portion of his/her vested Employer Contribution Account or Matching Contribution Account (including earnings thereon), as permitted under AA §10. A Participant may receive a Hardship distribution of Salary Deferrals provided such distribution, when added to other Hardship distributions from Salary Deferrals, does not exceed the total Salary Deferrals the Participant has made to the Plan (increased by income allocable to such Salary Deferrals as of the later of December 31, 1988 or the end of the last Plan Year ending before July 1, 1989).
- (4) **Availability to terminated Employees.** If a Hardship distribution is permitted under AA §10-1 or AA §10-2, a Participant may take such a Hardship distribution after termination of employment to the extent no other distribution is available from the Plan.
- (5) **Application of Hardship distributions rules with respect to primary beneficiaries.** If elected under AA §10-3(e), if the Plan otherwise permits Hardship distributions based on the safe harbor hardship provisions under subsection (1), the existence of an immediate and heavy financial need under subsection (i) may be determined with respect to a primary beneficiary under the Plan. For this purpose, a primary beneficiary is an individual who is named as a beneficiary under the Plan and has an unconditional right to all or a portion of a Participant's Account Balance upon the death of the Participant. Hardship distributions with respect to primary beneficiaries under this subsection (5) are limited to Hardship distributions on account of medical expenses, educational expenses and funeral expenses (as described in subsections (A), (C) and (E), above). Any Hardship distribution with respect to a primary beneficiary must satisfy all the other requirements applicable to Hardship distributions under subsection (e).

7.11 Sources of Distribution. Except as otherwise provided in the Investment Arrangement, and unless provided otherwise in separate administrative provisions adopted by the Plan Administrator, in applying the distribution provisions under this Section 7, distributions will be made on a pro rata basis from all Accounts from which a distribution is permitted. Alternatively, the Plan Administrator may permit Participants to direct the Plan Administrator as to which Account the distribution is to be made. Regardless of a Participant's direction as to the source of any distribution, the tax effect of such a distribution will be governed by Code §72 and the regulations thereunder.

- (a) **Exception for Hardship withdrawals.** If the Plan permits a Hardship withdrawal from both Salary Deferrals (including Roth Deferrals) and Employer Contributions, a Hardship distribution will first be treated as having been made from a Participant's Employer Contribution Account and then from the Employer's Matching Contribution Account, to the extent such Hardship distribution is available with respect to such Accounts. Only when all available amounts have been exhausted under the Participant's Employer Contribution Account and/or Matching Contribution Account will a Hardship distribution be made from a Participant's Pre-Tax Salary Deferral Account and/or Roth Deferral Account. (See subsection (b) below for the ordering rules for distributions from the Pre-Tax Salary Deferral and Roth Deferral Accounts.) The Plan Administrator may modify the ordering rules under this subsection (a) under separate administrative procedures.
- (b) **Roth Deferrals.** If a Participant has both a Pre-Tax Salary Deferral Account and a Roth Deferral Account, withdrawals and loans from such Accounts will be made in accordance with this subsection (b).
 - (1) **Distributions and withdrawals.** Unless designated otherwise under AA §6A-5 of the Grandfathered 401(k) Plan Adoption Agreement or separate administrative procedures, if a Participant has both a Pre-Tax Salary Deferral Account and a Roth Deferral Account, the Participant may designate the extent to which a distribution or withdrawal of Salary Deferrals will come from the Pre-Tax Salary Deferral Account or the Roth Deferral Account. Alternatively, the Employer may provide under AA §6A-5 of the Grandfathered 401(k) Plan Adoption Agreement (or under separate administrative procedures) that any distribution or withdrawal of Salary Deferrals will be made on a pro rata basis from the Pre-Tax Salary Deferral Account and the Roth Deferral Account.

Alternatively, the Employer may designate any other order of distribution and withdrawals under AA §6A-5 or separate administrative procedures.

- (2) **Distribution of Excess Deferrals.** Unless designated otherwise under AA §6A-5 of the Grandfathered 401(k) Plan Adoption Agreement or separate administrative procedures, if a Participant has both a Pre-Tax Salary Deferral Account and a Roth Deferral Account, and the Plan is required to make a corrective distribution of Excess Deferrals to such Participant, the Participant may designate whether the Plan will make such corrective distribution of Excess Deferrals from the Pre-Tax Salary Deferral Account or the Roth Deferral Account. Alternatively, the Employer may elect under AA §6A-5 of the Grandfathered 401(k) Plan Adoption Agreement (or under separate administrative procedures) that corrective distributions of Salary Deferrals to correct Excess Deferrals will be made pro rata from the Pre-Tax Salary Deferral Account and Roth Deferral Account or first from the Pre-Tax Salary Deferral Account or first from the Roth Deferral Account.

Unless designated otherwise under separate administrative procedures, if a Participant is permitted to designate the extent to which a corrective distribution is made from the Pre-Tax Salary Deferral Account or the Roth Deferral Account, and the Participant fails to designate the appropriate Account by the date the corrective distribution is made from the Plan, such corrective distribution may be withdrawn equally from both the Pre-Tax Salary Deferral Account and the Roth Deferral Account, or the Employer may withdraw such amounts first from either the Pre-Tax Salary Deferral Account or the Roth Deferral Account.

- (c) **In-kind distributions.** Nothing in this Section 7 precludes the Plan Administrator from making a distribution in the form of property, or other in-kind distribution. If the Plan invests in Annuity Contracts, the Plan Administrator may make a distribution in the form of distributed Annuity Contracts. An in-kind distribution is only available to the extent such investments are held in the Participant's Account at the time of the distribution. This subsection does not give any Participant the right to request an in-kind distribution if not otherwise authorized by the Plan Administrator.

- 7.12 **Correction of Qualification Defects.** Nothing in this Section 7 precludes the Plan Administrator from making a distribution to a Participant to correct a qualification defect consistent with the correction procedures under the IRS' voluntary compliance programs. Thus, for example, if an Employee is permitted to enter the Plan prior to his/her proper Entry Date under Section 2.03(b) and the Plan Administrator determines that a corrective distribution is a proper means of correcting the operational violation, nothing in this Section 7 would prevent the Plan from making such corrective distribution. Any such distribution must be made in accordance with the correction procedures applicable under the IRS' voluntary correction programs under Rev. Proc. 2013-12 (or successive guidance).

SECTION 8
REQUIRED MINIMUM DISTRIBUTIONS

8.01 Required Minimum Distributions. Unless specified otherwise under Appendix A of the Adoption Agreement, the provisions of this Section apply to calendar years beginning on or after January 1, 2003. A Participant's entire interest under the Plan will be distributed, or begin to be distributed, to the Participant no later than the Participant's Required Beginning Date (as defined in Section 8.05(e)). All distributions required under this Section 8 will be determined and made in accordance with the regulations under Code §401(a)(9) and the minimum distribution incidental benefit requirement of Code §401(a)(9)(G). For purposes of applying the required minimum distribution rules under this Section 8, any distribution made in a form other than a lump sum must be made over one of the following periods (or a combination thereof):

- (a) the life of the Participant;
- (b) the life of the Participant and a Designated Beneficiary;
- (c) a period certain not extending beyond the life expectancy of the Participant; or
- (d) a period certain not extending beyond the joint and last survivor life expectancy of the Participant and a Designated Beneficiary.

8.02 Death of Participant before required distributions begin. If the Participant dies before required distributions begin, the Participant's entire interest will be distributed, or begin to be distributed, no later than as follows:

- (a) **Surviving Spouse is sole Designated Beneficiary.** Unless designated otherwise under AA §10-4, if the Participant's surviving Spouse is the Participant's sole Designated Beneficiary, the surviving Spouse may elect to take distributions under the five-year rule (as described in Section 8.06(a) below) or under the life expectancy method. If the life expectancy method applies, distributions to the surviving Spouse will begin by December 31 of the calendar year immediately following the calendar year in which the Participant died, or by December 31 of the calendar year in which the Participant would have attained age 70-1/2, if later.
- (b) **Surviving Spouse is not the sole Designated Beneficiary.** Unless designated otherwise under AA §10-4, if the Participant's surviving Spouse is not the Participant's sole Designated Beneficiary, the Designated Beneficiary may elect to take distributions under the five-year rule (as described in Section 8.06(a) below) or under the life expectancy method. If the life expectancy method applies, then distributions to the Designated Beneficiary will begin by December 31 of the calendar year immediately following the calendar year in which the Participant died. If the Designated Beneficiary does not elect to commence distributions by December 31 of the calendar year immediately following the calendar year in which the Participant dies, a complete distribution must be made by December 31 of the calendar year containing the fifth anniversary of the Participant's death. See Section 8.06(a) below.
- (c) **No Designated Beneficiary.** If there is no Designated Beneficiary as of the date of the Participant's death who remains a Beneficiary as of September 30 of the year immediately following the year of the Participant's death, the Participant's entire interest will be distributed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.
- (d) **Death of surviving Spouse.** If the Participant's surviving Spouse is the Participant's sole Designated Beneficiary and the surviving Spouse dies after the Participant but before distributions to the surviving Spouse begin, this Section 8.02 (other than subsection (a) above) will apply as if the surviving Spouse were the Participant.

For purposes of this Section 8.02 and AA §10-4, unless subsection (d) above applies, distributions are considered to begin on the Participant's Required Beginning Date. If subsection (d) above applies, distributions are considered to begin on the date distributions are required to begin to the surviving Spouse under subsection (a) above. If distributions under an annuity purchased from an insurance company irrevocably commence to the participant before the Participant's Required Beginning Date (or to the Participant's surviving Spouse before the date distributions are required to begin to the surviving Spouse under subsection (a) above), the date distributions are considered to begin is the date distributions actually commence.

8.03 Required Minimum Distributions during Participant's lifetime.

- (a) **Amount of Required Minimum Distribution for each Distribution Calendar Year.** During the Participant's lifetime, the minimum amount that will be distributed for each Distribution Calendar Year is the lesser of:
 - (1) the quotient obtained by dividing the Participant's Account Balance by the distribution period set forth in the Uniform Lifetime Table found in Treas. Reg. §1.401(a)(9)-9, Q&A-2, using the Participant's age as of the Participant's birthday in the Distribution Calendar Year; or

- (2) if the Participant's sole Designated Beneficiary for the Distribution Calendar Year is the Participant's Spouse, the quotient obtained by dividing the Participant's Account Balance by the number in the Joint and Last Survivor Table set forth in Treas. Reg. §1.401(a)(9)-9, Q&A-3, using the Participant's and Spouse's attained ages as of the Participant's and Spouse's birthdays in the Distribution Calendar Year.
- (b) **Lifetime Required Minimum Distributions continue through year of Participant's death.** Required Minimum Distributions will be determined under this subsection (b) beginning with the first Distribution Calendar Year and continuing up to, and including, the Distribution Calendar Year that includes the Participant's date of death.

8.04 **Required Minimum Distributions After Participant's Death.**

(a) **Death on or after date required distributions begin.**

- (1) **Participant survived by Designated Beneficiary.** If the Participant dies on or after the date required distributions begin and there is a Designated Beneficiary, the minimum amount that will be distributed for each Distribution Calendar Year after the year of the Participant's death is the quotient obtained by dividing the Participant's Account Balance by the longer of the remaining life expectancy of the Participant or the remaining life expectancy of the Participant's Designated Beneficiary, determined as follows:
 - (i) The Participant's remaining life expectancy is calculated in accordance with the Single Life Table found in Treas. Reg. §1.401(a)(9)-9, Q&A-1, using the age of the Participant in the year of death, reduced by one for each subsequent year.
 - (ii) If the Participant's surviving Spouse is the Participant's sole Designated Beneficiary, the remaining life expectancy of the surviving Spouse is calculated using the Single Life Table found in Treas. Reg. §1.401(a)(9)-9, Q&A-1, for each Distribution Calendar Year after the year of the Participant's death using the surviving Spouse's age as of the Spouse's birthday in that year. For Distribution Calendar Years after the year of the surviving Spouse's death, the remaining life expectancy of the surviving Spouse is calculated using the age of the surviving Spouse as of the Spouse's birthday in the calendar year of the Spouse's death, reduced by one for each subsequent calendar year.
 - (iii) If the Participant's surviving Spouse is not the Participant's sole Designated Beneficiary, the Designated Beneficiary's remaining life expectancy is calculated under the Single Life Table using the age of the Designated Beneficiary in the year following the year of the Participant's death, reduced by one for each subsequent year.
- (2) **No Designated Beneficiary.** If the participant dies on or after the date required distributions begin and there is no Designated Beneficiary as of the Participant's date of death who remains a Designated Beneficiary as of September 30 of the year after the year of the Participant's death, the minimum amount that will be distributed for each Distribution Calendar Year after the year of the Participant's death is the quotient obtained by dividing the Participant's Account Balance by the Participant's remaining life expectancy under the Single Life Table calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

(b) **Death before date required distributions begin.**

- (1) **Participant survived by Designated Beneficiary.** Unless designated otherwise under AA §10-4, if the Participant dies before the date required distributions begin and there is a Designated Beneficiary, the minimum amount that will be distributed for each Distribution Calendar Year after the year of the Participant's death is the quotient obtained by dividing the Participant's Account Balance by the remaining life expectancy of the Participant's Designated Beneficiary, determined as provided in subsection (a) above.
- (2) **No Designated Beneficiary.** If the Participant dies before the date distributions begin and there is no Designated Beneficiary as of the date of death of the Participant who remains a Designated Beneficiary as of September 30 of the year following the year of the Participant's death, distribution of the Participant's entire interest must be completed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.
- (3) **Death of surviving Spouse before distributions to surviving Spouse are required to begin.** If the Participant dies before the date distributions begin, the Participant's surviving Spouse is the Participant's sole Designated Beneficiary, and the surviving Spouse dies before distributions are required to begin to the surviving Spouse under Section 8.02(a), this subsection (b) will apply as if the surviving Spouse were the Participant.

8.05 **Definitions.**

- (a) **Designated Beneficiary.** A Beneficiary designated by the Participant (or the Plan), whose life expectancy may be taken into account to calculate minimum distributions, pursuant to Code §401(a)(9) and Treas. Reg. §1.401(a)(9)-4.
- (b) **Distribution Calendar Year.** A calendar year for which a minimum distribution is required. For distributions beginning before the Participant's death, the first Distribution Calendar Year is the calendar year immediately preceding the calendar year that contains the Participant's Required Beginning Date. For distributions beginning after the Participant's death, the first Distribution Calendar Year is the calendar year in which distributions are required to begin pursuant to Section 8.02. The Required Minimum Distribution for the Participant's first Distribution Calendar Year will be made on or before the Participant's Required Beginning Date. The Required Minimum Distribution for other Distribution Calendar Years, including the Required Minimum Distribution for the Distribution Calendar Year in which the Participant's Required Beginning Date occurs, will be made on or before December 31 of that Distribution Calendar Year.
- (c) **Life expectancy.** For purposes of determining a Participant's Required Minimum Distribution amount, life expectancy is computed using one of the following tables, as appropriate: (1) Single Life Table, (2) Uniform Life Table, or (3) Joint and Last Survivor Table found in Treas. Reg. §1.401(a)(9)-9, Q&A-1.
- (d) **Account Balance.** For purposes of determining a Participant's Required Minimum Distribution, the Participant's Account Balance is determined based on the Account Balance as of the last Valuation Date in the calendar year immediately preceding the Distribution Calendar Year (the "valuation calendar year"), increased by the amount of any contributions or forfeitures allocated to the Account Balance as of dates in the calendar year after the Valuation Date, and decreased by distributions made in the calendar year after the Valuation Date. The Account Balance for the valuation calendar year includes any amounts rolled over or transferred to the Plan either in the valuation calendar year or in the Distribution Calendar Year, if distributed or transferred in the valuation calendar year.
- (e) **Required Beginning Date.** Unless designated otherwise under AA §10-4, a Participant's Required Beginning Date under the Plan is April 1 that follows the end of the calendar year in which the later of the following two events occurs:
 - (1) the Participant attains age 70½; or
 - (2) the Participant terminates employment.

A Participant may begin in-service distributions prior to his/her Required Beginning Date only to the extent authorized under Section 7.100 and AA §10. However, if this Plan were amended to add the Required Beginning Date rules under this subsection (e), a Participant who attained age 70½ prior to January 1, 1999 (or, if later, January 1 following the date the Plan is first amended to contain the Required Beginning Date rules under this subsection (e)) may receive in-service minimum distributions in accordance with the terms of the Plan in existence prior to such amendment.

8.06 **Special Rules.**

- (a) **Election to apply 5-year rule to required distributions after death.** If the Participant dies before distributions begin and there is a Designated Beneficiary, the Employer may elect under AA §10-4, instead of applying the provisions of Sections 8.02 and 8.04, to require the Participant's entire interest to be distributed to the Designated Beneficiary by December 31 of the calendar year containing the fifth anniversary of the Participant's death. If the Participant's surviving Spouse is the Participant's sole Designated Beneficiary and the surviving Spouse dies after the Participant but before distributions to either the Participant or the surviving Spouse begin, this election will apply as if the surviving Spouse were the Participant.
- (b) **Election to allow Participants or Beneficiaries to elect 5-year rule.** If a Participant or Designated Beneficiary is permitted under AA §10-4 to elect whether to apply the life expectancy rule under Section 8.02 above or the five year rule under subsection (a) above, the election must be made no later than the earlier of September 30 of the calendar year in which distribution would be required to begin under Section 8.02 or by September 30 of the calendar year which contains the fifth anniversary of the Participant's (or, if applicable, surviving Spouse's) death. If neither the Participant nor Beneficiary makes an election under this paragraph, distributions will be made in accordance with the five-year rule under subsection (a) above, unless the Employer specifies otherwise under AA §10-4(b).
- (c) **Forms of Distribution.** Unless the Participant's interest is distributed in the form of an annuity purchased from an insurance company or in a lump sum on or before the Required Beginning Date, as of the first Distribution Calendar Year distributions will be made in accordance with Sections 8.02 and 8.04. If the Participant's interest is distributed in the form of an annuity purchased from an insurance company, distributions thereunder will be made in accordance with the requirements of Code §401(a)(9) and the regulations.

- (d) **Treatment of trust beneficiaries as Designated Beneficiaries.** If a trust is properly named as a Beneficiary under the Plan, the beneficiaries of the trust will be treated as the Designated Beneficiaries of the Participant solely for purposes of determining the distribution period under this Section 8 with respect to the trust's interests in the Participant's vested Account Balance. The beneficiaries of a trust will be treated as Designated Beneficiaries for this purpose only if, during any period during which required minimum distributions are being determined by treating the beneficiaries of the trust as Designated Beneficiaries, the following requirements are met:

- (1) the trust is a valid trust under state law, or would be but for the fact there is no corpus;
- (2) the trust is irrevocable or will, by its terms, become irrevocable upon the death of the Participant;
- (3) the beneficiaries of the trust who are beneficiaries with respect to the trust's interests in the Participant's vested Account Balance are identifiable from the trust instrument; and
- (4) the Plan Administrator receives the documentation described in subsection (e)(1) below.

If the foregoing requirements are satisfied and the Plan Administrator receives such additional information as it may request, the Plan Administrator may treat such beneficiaries of the trust as Designated Beneficiaries.

- (e) **Special rules applicable to trust beneficiaries.**

- (1) **Information that must be supplied to Plan Administrator.**

- (i) **Required minimum distribution before death where Spouse is sole beneficiary.** If a Participant designates a trust as the beneficiary of his/her entire benefit and the Participant's Spouse is the sole beneficiary of the trust, the Participant must provide the information under (A) or (B) below to satisfy the information requirements under subsection (d)(4) above.
- (A) The Participant must provide to the Plan Administrator a copy of the trust instrument and agree that if the trust instrument is amended at any time in the future, the Participant will, within a reasonable time, provide to the Plan Administrator a copy of each such amendment; or
- (B) The Participant must:
- (I) provide to the Plan Administrator a list of all of the beneficiaries of the trust (including contingent and remaindermen beneficiaries with a description of the conditions on their entitlement sufficient to establish that the Spouse is the sole beneficiary) for purposes of Code §401(a)(9);
 - (II) certify that, to the best of the Participant's knowledge, the list under subsection (I) above is correct and complete and that the requirements of subsection (d) above are satisfied;
 - (III) agree that, if the trust instrument is amended at any time in the future, the Participant will, within a reasonable time, provide to the Plan Administrator corrected certifications to the extent that the amendment changes any information previously certified; and
 - (IV) agree to provide a copy of the trust instrument to the Plan Administrator upon demand.
- (ii) **Required minimum distribution after death.** In order to satisfy the documentation requirement of subsection (d)(4) above for required minimum distributions after the death of the Participant (or Spouse in a case to which Treas. Reg. §.401(a)(9)-3, Q&A-5 applies), the trustee of the trust must satisfy the requirements of subsection (A) or (B) below by October 31 of the calendar year immediately following the calendar year in which the Participant died.
- (A) The trustee of the trust must:
- (I) provide the Plan Administrator with a final list of all beneficiaries of the trust (including contingent and remaindermen beneficiaries with a description of the conditions on their entitlement) as of September 30 of the calendar year following the calendar year of the Participant's death;

- (II) certify that, to the best of the trustee's knowledge, the list in subsection (I) above is correct and complete and that the requirements of subsection (d) above are satisfied; and
 - (III) agree to provide a copy of the trust instrument to the Plan Administrator upon demand.
- (B) The trustee of the trust must provide the Plan Administrator with a copy of the actual trust document for the trust that is named as a beneficiary of the Participant under the Plan as of the Participant's date of death.

- (2) **Relief for discrepancy.** If required minimum distributions are determined based on the information provided to the Plan Administrator in certifications or trust instruments described in subsection (1) above, the Plan will not fail to satisfy Code §401(a)(9) merely because the actual terms of the trust instrument are inconsistent with the information in those certifications or trust instruments previously provided to the Plan Administrator, provided the Plan Administrator reasonably relied on the information provided and the required minimum distributions for calendar years after the calendar year in which the discrepancy is discovered are determined based on the actual terms of the trust instrument.

8.07 Transitional Rule. Notwithstanding the other requirements of this Section 8, distribution on behalf of any Employee may be made in accordance with all of the following requirements (regardless of when such distribution commences):

- (a) The distribution by the Plan is one that would not have disqualified the Plan under Code §401(a)(9) as in effect prior to amendment by the Deficit Reduction Act of 1984;
- (b) The distribution is in accordance with a method of distribution designated by the Participant whose interest in the Plan is being distributed or, if the Participant is deceased, by a Beneficiary of such Participant;
- (c) Such designation was in writing, was signed by the Participant or the beneficiary, and was made before January 1, 1984;
- (d) The Participant had accrued a benefit under the Plan as of December 31, 1983; and
- (e) The method of distribution designated by the Participant or the beneficiary specifies the time at which distribution will commence, the period over which distributions will be made, and in the case of any distribution upon the Participant's death, the beneficiaries of the Participant listed in order of priority.

A distribution upon death will not be covered by this transitional rule unless the information in the designation contains the required information described above with respect to the distributions to be made upon the death of the Participant.

For any distribution which commences before January 1, 1984, but continues after December 31, 1983, the Participant, or the Beneficiary, to whom such distribution is being made, will be presumed to have designated the method of distribution under which the distribution is being made if the method of distribution was specified in writing and the distribution satisfies the requirements in subsections (a) - (e) above.

If a designation is revoked any subsequent distribution must satisfy the requirements of Code §401(a)(9) and the proposed regulations thereunder. If a designation is revoked subsequent to the date distributions are required to begin, the Plan must distribute by the end of the calendar year following the calendar year in which the revocation occurs the total amount not yet distributed which would have been required to have been distributed to satisfy Code §401(a)(9) and the proposed regulations thereunder, but for the TEFRA §242(b)(2) election. For calendar years beginning after December 31, 1988, such distributions must meet the minimum distribution incidental benefit requirements. Any changes in the designation will be considered to be a revocation of the designation. However, the mere substitution or addition of another Beneficiary (one not named in the designation) under the designation will not be considered to be a revocation of the designation, so long as such substitution or addition does not alter the period over which distributions are to be made under the designation, directly or indirectly (for example, by altering the relevant measuring life). In the case in which an amount is transferred or rolled over from one plan to another plan, the rules in Treas. Reg. §1.401(a)(9)-8, Q&A-14 and Q&A-15 shall apply.

8.08 Modification of Minimum Distribution Rules Relating to Qualified Longevity Annuity Contracts. The following provisions modify the required minimum distribution rules under this Section 8 of the Plan to conform the rules to final Treasury Regulation §1.401(a)(9)-6 relating to the purchase of Qualifying Longevity Annuity Contracts (QLACs). The Plan will apply the provisions consistent with the requirements under the Treas. Reg. §§1.401(a)(9)-5 and 1.401(a)(9)-6, as amended.

- (a) The following provisions modify the required minimum distribution rules under this Section 8 of the Plan to conform the rules to final Treasury Regulation §1.401(a)(9)-6 relating to the purchase of Qualifying Longevity Annuity

Contracts (QLACs). The Plan will apply the provisions consistent with the requirements under the Treas. Reg. §§1.401(a)(9)-5 and 1.401(a)(9)-6, as amended.

(b) Effective/Applicability Dates.

- (1) General effective dates.** This Section 8.08 applies to contracts purchased on or after July 2, 2014. If on or after July 2, 2014 an existing contract is exchanged for a contract that satisfies the requirements of this Section 8.08, the new contract will be treated as purchased on the date of the exchange, and the fair market value of the contract that is exchanged for a QLAC will be treated as a premium paid with respect to the QLAC.
- (2) Delayed applicability date for requirement that contract state that it is intended to be QLAC.** An annuity contract purchased before January 1, 2016, will not fail to be a QLAC merely because the contract does not satisfy the requirement of subsection (d)(1)(vi), provided that:
 - (i)** When the contract (or a certificate under a group annuity contract) is issued, the Employee is notified that the annuity contract is intended to be a QLAC; and
 - (ii)** The contract is amended (or a rider, endorsement or amendment to the certificate is issued) no later than December 31, 2016, to state that the annuity contract is intended to be a QLAC.

(c) Account Balance for Determining Minimum Distributions. For purposes of determining a Participant's Required Minimum Distribution as described under this Section 8.08 of the Plan, the Participant's Account Balance as defined under Section 8.05(d) of the Plan, does not include the value of any Qualifying Longevity Annuity Contract (QLAC), described under subsection (d) below and Treas. Reg. §1.401(a)(9)-6, Q&A - 17, that is held under the Plan.

(d) Rules Applicable to Qualifying Longevity Annuity Contracts.

- (1) Definition of Qualifying Longevity Annuity Contracts.** A Qualifying Longevity Annuity Contract (QLAC) is an annuity contract that is purchased from an insurance company for an Employee and that, in accordance with the rules of application of this Article II and Treas. Reg. §1.401(a)(9)-6, Q&A - 17, satisfies each of the following requirements:
 - (i)** Premiums for the contract satisfy the requirements of subsection (2) of this subsection (d);
 - (ii)** The contract provides that distributions under the contract must commence not later than a specified annuity starting date that is no later than the first day of the month next following the 85th anniversary of the Employee's birth;
 - (iii)** The contract provides that, after distributions under the contract commence, those distributions must satisfy the requirements of this Article and Treas. Reg. §1.401(a)(9) (other than the requirement that annuity payments commence on or before the Required Beginning Date);
 - (iv)** The contract does not make available any commutation benefit, cash surrender right, or other similar feature;
 - (v)** No benefits are provided under the contract after the death of the employee other than the benefits described in Subsection (3) of this subsection (d);
 - (vi)** When the contract is issued, the contract (or a rider or endorsement with respect to that contract) states that the contract is intended to be a QLAC; and
 - (vii)** The contract is not a variable contract under Code §817, an indexed contract, or a similar contract, except to the extent provided by the Commissioner of the Internal Revenue Service in revenue rulings, notices, or other guidance published in the Internal Revenue Bulletin.

(2) **Limitations on premiums.**

- (i) **In general.** The premiums paid with respect to the contract on a date satisfy the requirements of this subsection (2) if they do not exceed the lesser of the dollar limitation in subsection (ii) below or the percentage limitation in subsection (iii) below.
- (ii) **Dollar limitation.** The dollar limitation is an amount equal to the excess of:
- (A) \$125,000 (as adjusted under Section (d)(2) of Treas. Reg. §1.401(a)(9)-6, Q&A - 17), over
- (B) The sum of:
- (I) The premiums paid before that date with respect to the contract, and
- (II) The premiums paid on or before that date with respect to any other contract that is intended to be a QLAC and that is purchased for the Employee under the Plan, or any other plan, annuity, or account described in Code §§ 401(a), 403(a), 403(b), or 408 or eligible governmental plan under Code §457(b).
- (iii) **Percentage limitation.** The percentage limitation is an amount equal to the excess of:
- (A) 25 percent of the Employee's Account Balance under the Plan (including the value of any QLAC held under the plan for the Employee) as of that date, determined in accordance with Treas. Reg. §1.401(a)(9)-6, Q&A - 17 (d)(1)(iii), over
- (B) The sum of:
- (I) The premiums paid before that date with respect to the contract, and
- (II) The premiums paid on or before that date with respect to any other contract that is intended to be a QLAC and that is held or was purchased for the employee under the plan.

(3) **Payments after death of the Employee.**

(i) **Surviving spouse is sole beneficiary.**

- (A) **Death on or after annuity starting date.** If the Employee dies on or after the annuity starting date for the contract, and the Employee's surviving spouse is the sole beneficiary under the contract, then except as provided in Treas. Reg. §1.401(a)(9)-6, Q&A - 17 (c)(4), the only benefit permitted to be paid after the Employee's death is a life annuity payable to the surviving spouse where the periodic annuity payment is not in excess of 100 percent of the periodic annuity payment that is payable to the Employee.
- (B) **Death before annuity starting date.**
- (I) **Amount of annuity.** If the employee dies before the annuity starting date and the employee's surviving spouse is the sole beneficiary under the contract then, except as provided in paragraph in Treas. Reg. §1.401(a)(9)-6, Q&A - 17 (c)(4), the only benefit permitted to be paid after the Employee's death is a life annuity payable to the surviving spouse where the periodic annuity payment is not in excess of 100 percent of the periodic annuity payment that would have been payable to the Employee as of the date that benefits to the surviving spouse commence. However, the annuity is permitted to exceed 100 percent of the periodic annuity payment that would have been payable to the employee to the extent necessary to satisfy the requirement to provide a Qualified Preretirement Survivor Annuity.
- (II) **Commencement date for annuity.** Any life annuity payable to the surviving spouse under Subsection (I) above must commence no later than the date on which the annuity payable to the Employee would have commenced under the contract if the Employee had not died.

(ii) **Surviving spouse is not sole beneficiary.**

- (A) **Death on or after annuity starting date.** If the Employee dies on or after the annuity starting date for the contract and the Employee's surviving spouse is not the sole beneficiary under the contract then, except as provided in Treas. Reg. §1.401(a)(9)-6, Q&A - 17 (c)(4), the only benefit permitted to be paid after the Employee's death is a life annuity payable to the designated beneficiary where the periodic annuity payment is not in excess of the applicable percentage (determined under paragraph Treas. Reg. §1.401(a)(9)-6, Q&A - 17 (c)(2)(iii)) of the periodic annuity payment that is payable to the Employee.
- (B) **Death before annuity starting date.**
- (I) **Amount of annuity.** If the Employee dies before the annuity starting date and the Employee's surviving spouse is not the sole beneficiary under the contract then, except as provided in Treas. Reg. §1.401(a)(9)-6, Q&A - 17 (c)(4), the only benefit permitted to be paid after the Employee's death is a life annuity payable to the designated beneficiary where the periodic annuity payment is not in excess of the applicable percentage (determined under Treas. Reg. §1.401(a)(9)-6, Q&A - 17(c)(2)(iii)) of the periodic annuity payment that would have been payable to the Employee as of the date that benefits to the designated beneficiary commence under this subsection (I)
- (II) **Commencement date for annuity.** In any case in which the employee dies before the annuity starting date, any life annuity payable to a designated beneficiary under this subsection (II) must commence by the last day of the calendar year immediately following the calendar year of the Employee's death.
- (4) **Rules of application.**
- (i) **Rules relating to premiums.**
- (A) **Reliance on representations.** For purposes of the limitation on premiums described in Subsections (2)(ii) and (2)(iii) above, unless the Plan Administrator has actual knowledge to the contrary, the Plan Administrator may rely on an Employee's representation (made in writing or such other form as may be prescribed by the Commissioner of the Internal revenue Service) of the amount of the premiums described in subsections (2)(ii)(B)(II) and (2)(iii)(B)(II) above, but only with respect to premiums that are not paid under a plan, annuity, or contract that is maintained by the Employer or Related Employer.
- (B) **Consequences of excess premiums.**
- (I) **General Rule.** If an annuity contract fails to be a QLAC solely because a premium for the contract exceeds the limits under subsection (II) below, then the contract is not a QLAC beginning on the date that premium payment is made unless the excess premium is returned to the non-QLAC portion of the Employee's account in accordance with Treas. Reg. §1.401(a)(9)-6, Q&A - 17 (d)(1)(ii)(B). If the contract fails to be a QLAC, then the value of the contract may not be disregarded under A-3(d) of Treas. Reg. §1.401(a)(9)-5 as of the date on which the contract ceases to be a QLAC.
- (II) **Correction in year following year of excess.** If the excess premium is returned (either in cash or in the form of a contract that is not intended to be a QLAC) to the non-QLAC portion of the Employee's account by the end of the calendar year following the calendar year in which the excess premium was originally paid, then the contract will not be treated as exceeding the limits under this subsection (II) at any time, and the value of the contract will not be included in the Employee's Account Balance. If the excess premium (including the fair market value of an annuity contract that is not intended to be a QLAC, if applicable) is returned to the non-QLAC portion of the Employee's account after the last valuation date for the calendar year in which the excess premium was originally paid, then the Employee's account balance for that calendar year must be increased to reflect that excess premium in the same manner as an Employee's Account Balance is increased under Treas. Reg. §1.401(a)(9)-7, A-2 to reflect a rollover received after the last valuation date.
- (III) **Return of excess premium not a commutation benefit.** If the excess premium is returned to the non-QLAC portion of the Employee's account as described in Treas. Reg.

§1.401(a)(9)-6, Q&A - 17 (d)(1)(ii)(B), it will not be treated as a violation of the requirement in subsection (d)(1)(iv) that the contract not provide a commutation benefit.

- (C) **Application of 25-percent limit.** For purposes of the 25-percent limit under subsection (2)(iii)(A) above, an Employee's Account Balance on the date on which premiums for a contract are paid is the account balance as of the last valuation date preceding the date of the premium payment, adjusted as follows. The Account Balance is increased for contributions allocated to the account during the period that begins after the valuation date and ends before the date the premium is paid, and decreased for distributions made from the account during that period.

(ii) **Dollar and age limitations subject to adjustments.**

- (A) **Dollar limitation.** In the case of calendar years beginning on or after January 1, 2015, the \$125,000 amount under subsection (2)(ii)(A) above will be adjusted at the same time and in the same manner as the limits are adjusted under Code §415(d), except that the base period shall be the calendar quarter beginning July 1, 2013, and any increase under this subsection that is not a multiple of \$10,000 will be rounded to the next lowest multiple of \$10,000.
- (B) **Age limitation.** The maximum age set forth in subsection (1)(ii) above may be adjusted to reflect changes in mortality, with any such adjusted age to be prescribed by the Commissioner of the Internal Revenue Service in revenue rulings, notices, or other guidance published in the Internal Revenue Bulletin.
- (C) **Prospective application of adjustments.** If a contract fails to be a QLAC because it does not satisfy the dollar limitation in subsection (2)(ii) above, or the age limitation in subsection (1)(ii) above, any subsequent adjustment that is made pursuant to Subsections (A) or (B) above will not cause the contract to become a QLAC.

- (iii) **Determination of whether contract is intended to be a QLAC.** If a contract fails to be a QLAC at any time for a reason other than an excess premium described in Treas. Reg. §1.401(a)(9)-6, Q&A - 17 (d)(1)(ii), then as of the date of purchase the contract will not be treated as a QLAC (for purposes of A-3(d) of Treas. Reg. §1.401(a)(9)-5), or as a contract that is intended to be a QLAC as of the date of purchase.

- (iv) **Group annuity contract certificates.** The requirement under subsection (d)(1)(vi) above, that the contract state that it is intended to be a QLAC when issued is satisfied if a certificate is issued under a group annuity contract and the certificate, when issued, states that the Employee's interest under the group annuity contract is intended to be a QLAC.

SECTION 9
SPOUSAL CONSENT RULES

- 9.01** **Application of Joint and Survivor Annuity Rules.** As a Governmental Plan, the Qualified Joint and Survivor Annuity rules under Code §§401(a)(11) and 417 do not apply to the Plan. The Employer may elect to require spousal consent for Plan distributions under AA §9-2(b).
- 9.02** **Spousal consent.** If the Employer elects under AA §9-2(b) to require spousal consent to a Plan distribution, the Spouse's consent will be required with respect to a distribution as designated in AA §9-2(b). A Spouse's consent, if required, must be provided pursuant to a Qualified Election. For this purpose, a Qualified Election is a written election signed by both the Participant and the Participant's Spouse that specifically acknowledges the effect of the election. The Spouse's consent must be witnessed by a plan representative or notary public. If the Qualified Election permits the Participant to change a payment form or Beneficiary designation without any further consent by the Spouse, the Qualified Election must acknowledge that the Spouse has the right to limit consent to a specific Beneficiary, and a specific form of benefit, as applicable, and that the Spouse voluntarily elects to relinquish either or both of such rights.
- 9.03** **One-year marriage rule.** The Employer may elect under AA §9-5(b), for purposes of identifying a Beneficiary under Section 7.07(c) and for purposes of applying the spousal consent rules under this Section 9, that an individual will not be considered the surviving Spouse of the Participant if the Participant and the surviving Spouse have not been married for the entire one-year period ending on the date of the Participant's death.

SECTION 10
PLAN ACCOUNTING AND INVESTMENTS

10.01 Participant Accounts. The Plan Administrator will maintain a separate Account for each Participant to reflect the Participant's entire interest under the Plan. The Plan Administrator may maintain any (or all) of the following separate sub-Accounts:

- Employer Contribution Account
- Matching Contribution Account
- After-Tax Employee Contribution Account
- Rollover Contribution Account
- Transfer Account.

In addition, if this Plan qualifies as a Grandfathered 401(k) Arrangement (as designated under AA §2-3 of the Profit Sharing Plan Adoption Agreement), the Plan Administrator may also maintain the following separate Accounts:

- Pre-Tax Salary Deferral Account
- Roth Deferral Account
- Roth Rollover Contribution Account
- In-Plan Roth Conversion Account

The Plan Administrator may establish other Accounts, as it deems necessary, for the proper administration of the Plan.

10.02 Valuation of Accounts. A Participant's portion of the Trust assets is determined as of each Valuation Date under the Plan. The value of a Participant's Account consists of the fair market value of the Participant's share of the Trust assets. The Trustee must value Plan assets at least annually. The Trustee's determination of the value of Trust assets shall be final and conclusive.

- (a) **Periodic valuation.** The Employer may elect under AA §11-1 or may elect operationally to value assets on a periodic basis. The Trustee and the Plan Administrator may adopt reasonable procedures for performing such valuations.
- (b) **Daily valuation.** The Employer may elect under AA §11-1 or may elect operationally to value assets on a daily basis. The Plan Administrator may adopt reasonable procedures for performing such valuations. Unless otherwise set forth in the written procedures, a daily valued Plan will have its assets valued at the end of each business day during which the New York Stock Exchange is open. The Plan Administrator has authority to interpret the provisions of this Plan in the context of a daily valuation procedure. This includes, but is not limited to, the determination of the value of the Participant's Account for purposes of Participant loans, distribution and consent rights, and corrective distributions.
- (c) **Interim valuations.** The Plan Administrator may request the Trustee to perform interim valuations.

10.03 Adjustments to Participant Accounts. Unless the Plan Administrator adopts other reasonable administrative procedures, as of each Valuation Date under the Plan, each Participant's Account is adjusted in the following manner.

- (a) **Distributions and forfeitures from a Participant's Account.** A Participant's Account will be reduced by any distributions, forfeitures and other reductions from the Account since the previous Valuation Date.
- (b) **Life insurance premiums and dividends.** A Participant's Account will be reduced by the amount of any life insurance premium payments under the Plan made for the benefit of the Participant since the previous Valuation Date. The Account will be credited with any dividends or credits paid on any life insurance policy held by the Trust for the benefit of the Participant.
- (c) **Contributions and forfeitures allocated to a Participant's Account.** A Participant's Account will be credited with any contribution, forfeiture or other additions allocated to the Participant since the previous Valuation Date.
- (d) **Net income or loss.** A Participant's Account will be adjusted for any net income or loss in accordance with any reasonable procedures that the Plan Administrator may establish. Such procedures may be reflected in a funding agreement governing the applicable investments under the Plan. To the extent the Plan Administrator does not establish separate written procedures, net income or loss will be allocated to Participants' Accounts in accordance with the following provisions.
- (1) **Net income or loss attributable to General Trust Account.** To the extent a Participant's Account is invested as part of a General Trust Account, such Account is adjusted for its allocable share of net income or loss experienced by the General Trust Account. The net income or loss of the General Trust Account is allocated to the Participant Accounts in the ratio that each Participant's Account bears to all Accounts, based on the value of each Participant's Account as of the prior Valuation Date, as adjusted in subsections (a) - (c) above. In

determining Participant Account Balances as of the prior Valuation Date, the Employer may apply a weighted average method that credits each Participant's Account with a portion of the contributions made since the prior Valuation Date. The Plan's investment procedures may designate the specific type(s) of contributions eligible for a weighted allocation of net income or loss and may designate alternative methods for determining the weighted allocation. If the Employer elects to apply a weighted average method, such method will be applied uniformly to all Participant Accounts under the General Trust Account.

- (2) **Net income or loss attributable to a Directed Account.** If the Participant or Beneficiary is entitled to direct the investment of all or part of his/her Account (see Section 10.07), the Account (or the portion of the Account which is subject to such direction) will be maintained as a Directed Account, which reflects the value of the directed investments as of any Valuation Date. The assets held in a Directed Account may be (but are not required to be) segregated from the other investments held in the Trust. Net income or loss attributable to the investments made by a Directed Account is allocated to such Account in a manner that reasonably reflects the investment experience of such Directed Account. Where a Directed Account reflects segregated investments, the manner of allocating net income or loss shall not result in a Participant (or Beneficiary) being entitled to distribution from the Directed Account that exceeds the value of such Account as of the date of distribution.

10.04 Share or unit accounting. The Plan's investment procedures may provide for share or unit accounting to reflect the value of Accounts, if such method is appropriate for the investments allocable to such Accounts.

10.05 Suspense accounts. The Plan's investment procedures also may provide for special valuation procedures for suspense accounts that are properly established under the Plan.

10.06 Investments under the Plan.

- (a) **Investment options.** The person(s) responsible for the investment of Plan assets is authorized to invest Plan assets in any prudent investment. Investment options include, but are not limited to, the following:

- common and preferred stock or other equity securities (including stock bought and sold on margin);
- corporate bonds;
- open-end or closed-end mutual funds (including funds for which a Volume Submitter Sponsor, Trustee, or affiliate serves as investment advisor or other capacity);
- money market accounts;
- certificates of deposit;
- debentures;
- commercial paper;
- put and call options;
- limited partnerships;
- mortgages;
- U.S. Government obligations, including U.S. Treasury notes and bonds;
- real and personal property having a ready market;
- life insurance or annuity policies;
- commodities;
- savings accounts;
- notes; and
- securities issued by the Trustee and/or its affiliates, as permitted by law.

- (b) **Investment of tax deductible Employee contributions in life insurance and collectibles.** No portion of any voluntary, tax deductible Employee contributions being held under the Plan (or any earnings thereon) may be invested in life insurance contracts or, as with any Participant-directed investment, in tangible personal property characterized by the IRS as a collectible.

10.07 Participant-directed investments. Unless otherwise indicated in the Adoption Agreement or in separate procedures, and except as otherwise required in an Investment Arrangement, each Participant shall have the exclusive right, in accordance with the provisions of the Plan, to direct the investment of all or a portion of the amounts allocated to the separate Accounts of the Participant under the Plan. (A reference to Participant under this Section 10.07 also applies to any Beneficiary or Alternate Payee eligible to direct investments under the Plan.)

- (a) **Limits on participant investment direction.** The Employer may elect under AA §C-1 or under separate investment procedures to limit Participant direction of investment to specific types of contributions or with respect to specific

investment options. The terms of an Investment Arrangement may impose additional limitations. In no case may Participants direct that investments be made in collectibles, other than U.S. Government or State issued gold and silver coins. (See Section 10.03(d)(2) for rules regarding allocation of net income or loss to a Directed Account.)

- (b) **Failure to direct investment.** If Participant direction of investments is permitted, the Plan Administrator will designate how accounts will be invested in the absence of proper affirmative direction from the Participant. The Plan or Plan Administrator may designate a default fund under the Plan on behalf of Participants who have been identified by the Plan Administrator as having not specified investment choices under the Plan.

10.08 Investment in Life Insurance. A group or individual life insurance policy purchased by the Plan may be issued on the life of a Participant, a Participant's Spouse, a Participant's child or children, a family member of the Participant, or any other individual with an insurable interest. If this Plan is a money purchase plan, a life insurance policy may only be issued on the life of the Participant. A life insurance policy includes any type of policy, including a second-to-die policy, provided that the holding of a particular type of policy is not prohibited under rules applicable to qualified plans.

Any premiums on life insurance held for the benefit of a Participant will be charged against such Participant's vested Account Balance. Unless directed otherwise, the Plan Administrator will reduce each of the Participant's Accounts under the Plan equally to pay premiums on life insurance held for such Participant's benefit. Any premiums paid for life insurance policies must satisfy the incidental life insurance rules under subsection (a) below.

- (a) **Incidental Life Insurance Rules.** Any life insurance purchased under the Plan must meet the following requirements:
- (1) **Ordinary life insurance policies.** The aggregate premiums paid for ordinary life insurance policies (i.e., policies with both nondecreasing death benefits and nonincreasing premiums) for the benefit of a Participant must be at any time less than 50% of the aggregate amount of Employer Contributions (including Salary Deferrals) and forfeitures that have been allocated to the Account of such Participant.
 - (2) **Life insurance policies other than ordinary life.** The aggregate premiums paid for term, universal or other life insurance policies (other than ordinary life insurance policies) for the benefit of a Participant shall not at any time exceed 25% of the aggregate amount of Employer Contributions (including Salary Deferrals) and forfeitures that have been allocated to the Account of such Participant.
 - (3) **Combination of ordinary and other life insurance policies.** The sum of one-half (½) of the aggregate premiums paid for ordinary life insurance policies plus all the aggregate premiums paid for any other life insurance policies for the benefit of a Participant shall not at any time exceed 25% of the aggregate amount of Employer Contributions (including Salary Deferrals) and forfeitures which have been allocated to the Account of such Participant.
 - (4) **Exception for certain Profit Sharing Plans.** If the Plan is a Profit Sharing Plan, the limitations in this Section do not apply to the extent life insurance premiums are paid only with Employer Contributions and forfeitures that have been accumulated in the Participant's Account for at least two years or are paid with respect to a Participant who has been a Participant for at least five years. For purposes of applying this special limitation, Employer Contributions do not include any Salary Deferrals, QMACs, QNECs or Safe-Harbor Contributions under a 401(k) plan.
 - (5) **Exception for After-Tax Employee Contributions and Rollover Contributions.** The Plan Administrator also may invest, with the Participant's consent, any portion of the Participant's After-Tax Employee Contribution Account or Rollover Contribution Account in a group or individual life insurance policy for the benefit of such Participant, without regard to the incidental life insurance rules under this Section.
- (b) **Ownership of Life Insurance Policies.** The Trustee is the owner of any life insurance policies purchased under the Plan. Any life insurance policy purchased under the Plan must designate the Trustee as owner and beneficiary under the policy. The Trustee will pay all proceeds of any life insurance policies to the Beneficiary of the Participant for whom such policy is held in accordance with the distribution provisions under Section 7. In no event shall the Trustee retain any part of the proceeds from any life insurance policies for the benefit of the Plan.
- (c) **Evidence of Insurability.** Prior to purchasing a life insurance policy, the Plan Administrator may require the individual whose life is being insured to provide evidence of insurability, such as a physical examination, as may be required by the Insurer.
- (d) **Distribution of Insurance Policies.** Life insurance policies under the Plan, which are held on behalf of a Participant, must be distributed to the Participant or converted to cash upon the later of the Participant's Annuity Starting Date (as defined in Section 1.10) or termination of employment. Any life insurance policies that are held on behalf of a

terminated Participant must continue to satisfy the incidental life insurance rules under subsection (a) above. If a life insurance policy is purchased on behalf of an individual other than the Participant, and such individual dies, the Participant may withdraw any or all life insurance proceeds from the Plan, to the extent such proceeds exceed the cash value of the life insurance policy determined immediately before the death of the insured individual.

- (e) **Discontinuance of Insurance Policies.** Investments in life insurance may be discontinued at any time, either at the direction of the Trustee or other fiduciary responsible for making investment decisions. If the Plan provides for Participant direction of investments, life insurance as an investment option may be eliminated at any time by the Plan Administrator. Where life insurance investment options are being discontinued, the Plan Administrator, in its sole discretion, may offer the sale of the insurance policies to the Participant, or to another person, provided that the prohibited transaction exemption requirements prescribed by the Department of Labor are satisfied.
- (f) **Protection of Insurer.** An Insurer (as defined in Section 1.59) that issues a life insurance policy under the terms of this Section 10.08, shall not be responsible for the validity of this Plan and shall be protected and held harmless for any actions taken or not taken by the Trustee or any actions taken in accordance with written directions from the Trustee or the Employer (or any duly authorized representatives of the Trustee or Employer). An Insurer shall have no obligation to determine the propriety of any premium payments or to guarantee the proper application of any payments made by the insurance company to the Trustee.

The Insurer is not and shall not be considered a party to this Plan and is not a fiduciary with respect to the Plan solely as a result of the issuance of life insurance policies under this Section 10.08.

- (g) **No Responsibility for Act of Insurer.** Neither the Employer, the Plan Administrator nor the Trustee shall be responsible for the validity of the provisions under a life insurance policy issued under this Section 10.08 or for the failure or refusal by the Insurer to provide benefits under such policy. The Employer, the Plan Administrator and the Trustee are also not responsible for any action or failure to act by the Insurer or any other person which results in the delay of a payment under the life insurance policy or which renders the policy invalid or unenforceable in whole or in part.

SECTION 11
PLAN ADMINISTRATION AND OPERATION

- 11.01 Plan Administrator.** The Employer is the Plan Administrator, unless the Employer designates in writing an alternative Plan Administrator. The Plan Administrator has the responsibilities described in this Section 11.
- 11.02 Designation of Alternative Plan Administrator.** The Employer may designate another person or persons as the Plan Administrator by name, by reference to the person or group of persons holding a particular position, by reference to a procedure under which the Plan Administrator is designated, or by reference to a person or group of persons charged with the specific responsibilities of Plan Administrator.
- (a) **Acceptance of responsibility by designated Plan Administrator.** If the Employer designates an alternative Plan Administrator, the designated Plan Administrator must accept its responsibilities in writing. The Employer and the designated Plan Administrator jointly will determine the time period for which the alternative Plan Administrator will serve.
 - (b) **Multiple alternative Plan Administrators.** If the Employer designated more than one person as an alternative Plan Administrator, such Plan Administrators shall act by majority vote, unless the group delegates particular Plan Administrator duties to a specific person.
 - (c) **Resignation or removal of designated Plan Administrator.** A designated Plan Administrator may resign by delivering a written notice of resignation to the Employer. The Employer may remove a designated Plan Administrator by delivering a written notice of removal. If a designated Plan Administrator resigns or is removed, and no new alternative Plan Administrator is designated, the Employer is the Plan Administrator.
 - (d) **Employer responsibilities.** If the Employer designates an alternative Plan Administrator, the Employer will provide in a timely manner all appropriate information necessary for the Plan Administrator to perform its duties. This information includes, but is not limited to, Participant compensation data, Employee employment, service and termination information, and other information the Plan Administrator may require. The Plan Administrator may rely on the accuracy of any information and data provided by the Employer.
 - (e) **Indemnification of Plan Administrator.** The Employer will indemnify, defend and hold harmless the Plan Administrator (including the individual members of any administrative committee appointed by the Employer to handle administrative functions of the Plan or any Employees who have administrative responsibility for the Plan) with respect to any liability, loss, damage or expense resulting from any act or omission (except willful misconduct or gross negligence) in their official capacities in the administration of this Plan, including attorney, accountant and advisory fees and all other expenses reasonably incurred in their defense.
- 11.03 Duties, Powers and Responsibilities of the Plan Administrator.** The Plan Administrator will administer the Plan for the exclusive benefit of the Plan Participants and Beneficiaries, and in accordance with the terms of the Plan. If the terms of the Plan are unclear, the Plan Administrator may interpret the Plan, provided such interpretation is consistent with the rules of Code §401(a) and subject to the limitations of the Investment Arrangement(s). This right to interpret the Plan is an express grant of discretionary authority to resolve ambiguities in the Plan document and to make discretionary decisions regarding the interpretation of the Plan's terms, including who is eligible to participate under the Plan, and the benefit rights of a Participant or Beneficiary. Unless an interpretation or decision is determined to be arbitrary and capricious, the Plan Administrator will not be held liable for any interpretation of the Plan terms or decision regarding the application of a Plan provision.
- (a) **Delegation of duties, powers and responsibilities.** The Plan Administrator may delegate its duties, powers or responsibilities to one or more persons. Such delegation must be in writing and accepted by the person or persons receiving the delegation. The Employer must agree to such delegation by an alternative Plan Administrator.
 - (b) **Specific Plan Administrator responsibilities.** The Plan Administrator has the general responsibility to control and manage the operation of the Plan. This responsibility includes, but is not limited to, the following:
 - (1) To interpret and enforce the provisions of the Plan, including those related to Plan eligibility, vesting and benefits;
 - (2) To communicate with the Trustee and other responsible persons with respect to the crediting of Plan contributions, the disbursement of Plan distributions and other relevant matters;
 - (3) To develop separate procedures (if necessary) consistent with the terms of the Plan to assist in the administration of the Plan, including the adoption of a separate or modified loan policy (see Section 13), procedures for direction of investment by Participants (see Section 10.07), procedures for determining whether domestic

relations orders are QDROs, and procedures for the determination of investment earnings to be allocated to Participants' Accounts (see Section 10.03(d));

- (4) To maintain all records necessary for tax and other administration purposes;
- (5) To furnish and to file all appropriate notices, reports and other information to Participants, Beneficiaries, the Employer, the Trustee and government agencies (as necessary);
- (6) To provide information relating to Plan Participants and Beneficiaries;
- (7) To retain the services of other persons, including investment managers, attorneys, consultants, advisers and others, to assist in the administration of the Plan;
- (8) To review and decide on claims for benefits under the Plan; and
- (9) To correct any defect or error in the operation of the Plan;

11.04 **Plan Administration Expenses.**

- (a) **Reasonable Plan administration expenses.** All reasonable expenses related to plan administration may be paid from Plan assets, except to the extent the expenses are paid (or reimbursed) by the Employer. For this purpose, Plan expenses include, but are not limited to, all reasonable costs, charges and expenses incurred by the Trustee in connection with the administration of the Trust (including such reasonable compensation to the Trustee as may be agreed upon from time to time between the Employer or Plan Administrator and the Trustee and any fees for legal services rendered to the Trustee).
- (b) **Plan expense allocation.** The Plan Administrator may allocate plan expenses among the accounts of Plan Participants. The Plan Administrator has authority to allocate these expenses either proportionally based on the value of the Account Balances or pro rata based on the number of Participants in the Plan. The Plan Administrator will determine the proper method for allocating expenses in accordance with such reasonable nondiscriminatory rules as the Plan Administrator deems appropriate under the circumstances. Unless the Plan Administrator decides otherwise, the following expenses will be allocated to the Participant's Account relative to which the expense is incurred: distribution expenses, including those relating to lump sums, installments, QDROs, hardship, in-service and required minimum distributions; loan expenses; participant direction expenses, including brokerage fees; and benefit calculations.
- (c) **Expenses related to administration of former Employee or surviving Spouse.** The Plan may charge reasonable Plan administrative expenses to the Account of that former Employee or surviving Spouse, but only if the administrative expenses are on a pro rata basis. Under the pro rata basis, the expenses are based on the amount in each account of a former Employee or surviving Spouse receiving benefits from the Plan. The Plan Administrator may use another reasonable basis for charging the expenses.
- (d) **Reimbursement Spending Account.** The Employer may maintain a reimbursement spending account to hold certain miscellaneous amounts that are remitted to the Plan. Any amounts allocated to the reimbursement spending account will be applied to pay reasonable Plan expenses no later than the end of the Plan Year following the Plan Year in which such amounts were allocated to the reimbursement spending account and any remaining amounts held in the reimbursement spending account may be allocated to Participants as an allocation of earnings for the Plan Year. Such excess amounts held under the reimbursement spending account may be allocated in a reasonable manner. For example, such excess amounts may be allocated to all Participants under the Plan pro-rata on the basis of Account Balances or under any other reasonable method.

11.05 **Qualified Domestic Relations Orders (QDROs).** As a Governmental Plan, the requirements of Code §414(p) do not apply to the Plan. The Employer may elect under AA §C-4 to use the rules set forth below (which are patterned after the rules under Code §414(p)) for domestic relations orders or may elect under AA §C-4 or under separate administrative procedures to develop its process for addressing domestic relations orders received by the Plan.

- (a) **In general.** Upon receipt of an order which appears to be a QDRO, the Plan Administrator will notify the Participant involved and each Alternate Payee under the order. The Plan Administrator will determine whether the order is a QDRO and will notify each affected individual of such determination.
- (b) **Definitions related to Qualified Domestic Relations Orders (QDROs).**
 - (1) **QDRO.** A QDRO is a domestic relations order that creates or recognizes the existence of an Alternate Payee's right to receive, or assigns to an Alternate Payee the right to receive, all or a portion of the benefits payable with

respect to a Participant under the Plan. The QDRO must contain certain information and meet other requirements described in this Section 11.05.

- (2) **Domestic relations order.** A domestic relations order is a judgment, decree, or order (including the approval of a property settlement) that is made pursuant to state domestic relations law (including community property law).
- (3) **Alternate Payee.** An Alternate Payee must be a Spouse, former Spouse, child, or other dependent of a Participant.
- (c) **Recognition as a QDRO.** To be a QDRO, an order must be a domestic relations order (as defined in subsection (b)(2) above) that relates to the provision of child support, alimony payments, or marital property rights for the benefit of an Alternate Payee. The Plan Administrator is not required to determine whether the court or agency issuing the domestic relations order had jurisdiction to issue an order, whether state law is correctly applied in the order, whether service was properly made on the parties, or whether an individual identified in an order as an Alternate Payee is a proper Alternate Payee under state law.

A domestic relations order otherwise meeting the requirements to be a QDRO shall not fail to be treated as a QDRO solely because:

- (1) the order is issued after, or revises, another domestic relations order or QDRO; or
- (2) of the time at which the order is issued, including orders issued after the death of the Participant.

Any QDRO described in this Section 11.05 shall be subject to the same requirements and protections which apply to QDROs under Code §414(p)(7).

- (d) **Contents of QDRO.** A QDRO must contain the following information:
 - (1) the name and last known mailing address of the Participant and each Alternate Payee;
 - (2) the name of each plan to which the order applies;
 - (3) the dollar amount or percentage (or the method of determining the amount or percentage) of the benefit to be paid to the Alternate Payee; and
 - (4) the number of payments or time period to which the order applies.
- (e) **Impermissible QDRO provisions.**
 - (1) The order must not require the Plan to provide an Alternate Payee or Participant with any type or form of benefit, or any option, not otherwise provided under the Plan;
 - (2) The order must not require the Plan to provide for increased benefits (determined on the basis of actuarial value);
 - (3) The order must not require the Plan to pay benefits to an Alternate Payee that are required to be paid to another Alternate Payee under another order previously determined to be a QDRO; and
 - (4) The order must not require the Plan to pay benefits to an Alternate Payee in the form of a Qualified Joint and Survivor Annuity for the lives of the Alternate Payee and his or her subsequent Spouse.
- (f) **Immediate distribution to Alternate Payee.** Even if a Participant is not eligible to receive an immediate distribution from the Plan, an Alternate Payee may receive a QDRO benefit immediately in a lump sum, provided such distribution is consistent with the QDRO provisions.
- (g) **Fee for QDRO determination.** The Plan Administrator may condition the making of a QDRO determination on the payment of a fee by a Participant or an Alternate Payee (either directly or as a charge against the Participant's Account).
- (h) **QDRO procedure.**
 - (1) **Access to information.** The Plan Administrator will provide access to Plan and Participant benefit information sufficient for a prospective Alternate Payee to prepare a QDRO. Such information might include the summary plan description, other relevant plan documents, and a statement of the Participant's benefit entitlements. The

disclosure of this information is conditioned on the prospective Alternate Payee providing to the Plan Administrator information sufficient to reasonably establish that the disclosure request is being made in connection with a domestic relations order.

- (2) **Notifications to Participant and Alternate Payee.** The Plan Administrator will promptly notify the affected Participant and each Alternate Payee named in the domestic relations order of the receipt of the order. The Plan Administrator will send the notification to the address included in the domestic relations order. Along with the notification, the Plan Administrator will provide a copy of the Plan's procedures for determining whether a domestic relations order is a QDRO.
- (3) **Alternate Payee representative.** The prospective Alternate Payee may designate a representative to receive copies of notices and Plan information that are sent to the Alternate Payee with respect to the domestic relations order.
- (4) **Evaluation of domestic relations order.** Within a reasonable period of time, the Plan Administrator will evaluate the domestic relations order to determine whether it is a QDRO. A reasonable period will depend on the specific circumstances. The domestic relations order must contain the information described in subsection (d) above. If the order is only deficient in a minor respect, the Plan Administrator may supplement information in the order from information within the Plan Administrator's control or through communication with the prospective Alternate Payee.
 - (i) **Separate accounting.** Upon receipt of a domestic relations order, the Plan Administrator will separately account for and preserve the amounts that would be payable to an Alternate Payee until a determination is made with respect to the status of the order. During the period in which the status of the order is being determined, the Plan Administrator will take whatever steps are necessary to ensure that amounts that would be payable to the Alternate Payee, if the order were a QDRO, are not distributed to the Participant or any other person. The separate accounting requirement may be satisfied, at the Plan Administrator's discretion, by a segregation of the assets that are subject to separate accounting.
 - (ii) **Separate accounting until the end of 18-month period.** The Plan Administrator will continue to separately account for amounts that are payable under the QDRO until the end of an 18-month period. The 18-month period will begin on the first date following the Plan's receipt of the order upon which a payment would be required to be made to an Alternate Payee under the order. If, within the 18-month period, the Plan Administrator determines that the order is a QDRO, the Plan Administrator must pay the Alternate Payee in accordance with the terms of the QDRO. If, however, the Plan Administrator determines within the 18-month period that the order is not a QDRO, or, if the status of the order is not resolved by the end of the 18-month period, the Plan Administrator may pay out the amounts otherwise payable under the order to the person or persons who would have been entitled to such amounts if there had been no order. If the order is later determined to be a QDRO, the order will apply only prospectively; that is, the Alternate Payee will be entitled only to amounts payable under the order after the subsequent determination.
 - (iii) **Preliminary review.** The Plan Administrator will perform a preliminary review of the domestic relations order to determine if it is a QDRO. If this preliminary review indicates the order is deficient in some manner, the Plan Administrator will allow the parties to attempt to correct any deficiency before issuing a final decision on the domestic relations order. The ability to correct is limited to a reasonable period of time.
 - (iv) **Notification of determination.** The Plan Administrator will notify in writing the Participant and each Alternate Payee of the Plan Administrator's decision as to whether a domestic relations order is a QDRO. In the case of a determination that an order is not a QDRO, the written notice will contain the following information:
 - (A) references to the Plan provisions on which the Plan Administrator based its decision;
 - (B) an explanation of any time limits that apply to rights available to the parties under the Plan (such as the duration of any protective actions the Plan Administrator will take); and
 - (C) a description of any additional material, information, or modifications necessary for the order to be a QDRO and an explanation of why such material, information, or modifications are necessary.

- (v) **Treatment of Alternate Payee.** If an order is accepted as a QDRO, the Plan Administrator will act in accordance with the terms of the QDRO as if it were a part of the Plan. Except as designated otherwise under this subsection (v), an Alternate Payee will be considered a Beneficiary under the Plan and be afforded the same rights as a Beneficiary. The Plan Administrator will provide any appropriate disclosure information relating to the Plan to the Alternate Payee. In determining the rights of an Alternate Payee, unless designated otherwise under AA §C-4(b), the following rules apply:
- (A) **Loans.** An Alternate Payee is not permitted to take a loan from the Plan.
- (B) **Death benefits.** If an Alternate Payee dies prior to receiving the entire amount designated under the QDRO, such benefits will be paid in accordance with Section 7.0707, treating the Alternate Payee as the Beneficiary. If the Alternate Payee dies without a designated Beneficiary, the benefits will be paid to the Alternate Payee's estate. Any death benefit will be paid in a single sum as soon as administratively feasible after the Alternate Payee's death.
- (C) **Direction of investments.** An Alternate Payee has the right to direct the investment of the portion of the Participant's benefit that is segregated for the Alternate Payee's benefit pursuant to a QDRO in the same manner as the Participant.

11.06 **Claims Procedure.** The Plan Administrator may establish procedures for administering benefit claims. Such benefit claims procedures should provide claimants with a reasonable opportunity to have a full and fair review of a denied claim. The Plan Administrator is authorized to conduct an examination of the relevant facts to determine the merits of a Participant's or Beneficiary's claim for Plan benefits.

SECTION 12
TRUST AND OTHER PLAN FUNDING

- 12.01** **Establishment of Trust or Other Funding Mechanism.** In conjunction with the establishment of this Plan, the Employer will establish and maintain a domestic Trust in the United States consisting of such sums as shall from time to time be paid to the Trustee under the Plan and such earnings, income and appreciation as may accrue thereon.

The Employer, in lieu of a Trust, may establish an alternative funding mechanism, as allowed for plans qualified under Code §401(a).

- 12.02** **Conflicting Trust Provisions.** In the event of any conflict between the terms of this Plan and any conflicting provision contained in any associated Trust, custodial account document or any document that is incorporated by reference, the terms of this Plan will govern.

- 12.03** **More than One Trustee.** If the Plan has more than one person acting as Trustee, the Trustees may allocate the Trustee responsibilities by mutual agreement. The Trustees may agree to make decisions by a majority vote or may permit any one of the Trustees to make any decision, undertake any action or execute any documents affecting this Trust without the approval of the remaining Trustees. The Trustees may agree to the allocation of responsibilities in a separate trust agreement or other binding document.

- 12.04** **Annual Valuation.** The Plan assets will be valued at least on an annual basis. The Employer may designate more frequent Valuation Dates under AA §11-1. Notwithstanding any election under AA §11-1, the Trustee and Plan Administrator may agree to value the Trust on a more frequent basis, and/or to perform an interim valuation of the Trust.

- 12.05** **Appointment of Custodian.** The Plan Administrator may appoint a Custodian to hold all or any portion of the Plan assets. A Custodian has the powers, rights and responsibilities similar to those of a Directed Trustee. The Custodian will be protected from any liability with respect to actions taken pursuant to the direction of the Trustee, Plan Administrator, the Employer, an investment manager, or other third party with authority to provide direction to the Custodian. The Employer may enter into a separate agreement with the Custodian. Such separate agreement must be consistent with the responsibilities and obligations set forth in this Plan document.

- 12.06** **Custodial Accounts, Annuity Contracts and Insurance Contracts.** As provided under Code §401(f), a custodial account, an annuity contract or a contract issued by an Insurer is treated as a qualified trust under the Plan if (i) the custodial account or contract would, except for the fact that it is not a trust, constitute a qualified trust under Code §401(a) and (ii) in the case of a custodial account the assets thereof are held by a bank (as defined in Code §408(n)) or another person who demonstrates to the IRS that the manner in which the assets are held are consistent with the requirements of Code §401(a).

No insurance contract will be purchased under the Plan unless such contract or a separate definite written agreement between the Employer and the Insurer provides that no value under contracts providing benefits under the Plan or credits determined by the Insurer (on account of dividends, earnings, or other experience rating credits, or surrender or cancellation credits) with respect to such contracts may be paid or returned to the Employer or diverted to or used for other than the exclusive benefit of the Participants or their Beneficiaries. However, any contribution made by the Employer because of a mistake of fact must be returned to the Employer within one year of the contribution.

If this Plan is funded by individual contracts that provide a Participant's benefit under the Plan, such individual contracts shall constitute the Participant's Account Balance. If this Plan is funded by group contracts, under the group annuity or group insurance contract, premiums or other consideration received by the insurance company must be allocated to Participants' accounts under the Plan.

SECTION 13
PARTICIPANT LOANS

- 13.01 Availability of Participant Loans.** The Employer may elect under Appendix B of the Adoption Agreement to permit Participants to take loans from their vested Account Balance under the Plan. Participant loans may be treated as a segregated investment on behalf of each individual Participant for whom the loan is made or may be treated as a general investment of the Plan. If the Employer elects to permit loans under the Plan, the Employer may elect to use the default loan policy under this Section 13, as modified under Appendix B of the Adoption Agreement, or an outside loan policy for purposes of administering Participant loans under the Plan. If a separate written loan policy is adopted, the terms of such separate loan policy will control over the terms of this Plan with respect to the administration of any Participant loans. Any separate written loan policy must satisfy the requirements under Code §72(p) and the regulations thereunder. All loans are subject to the terms of the Investment Arrangement(s)

To receive a Participant loan, a Participant must sign (including, where applicable, using electronic or other means recognized as sufficient) a promissory note along with a pledge or assignment of the portion of the Account Balance used for security on the loan. The loan will be evidenced by a legally enforceable agreement which specifies the amount and term of the loan, and the repayment schedule.

- 13.02 Must be Available in Reasonably Equivalent Manner.** Participant loans must be made available to Participants in a reasonably equivalent manner. The Employer may elect under AA §B-8 to limit the availability of Participant loans to specified events. For example, the availability of Participant loans may be limited to the occurrence of a hardship event as described in Section (i).

- 13.03 Loan Limitations.** A Participant loan may not be made to the extent such loan (when added to the outstanding balance of all other loans made to the Participant) exceeds the lesser of:

- (a) \$50,000 (reduced by the excess, if any, of the Participant's highest outstanding balance of loans from the Plan during the one-year period ending on the day before the date on which such loan is made, over the Participant's outstanding balance of loans from the Plan as of the date such loan is made) or
- (b) one-half (½) of the Participant's vested Account Balance, determined as of the Valuation Date coinciding with or immediately preceding such loan, adjusted for any contributions or distributions made since such Valuation Date.

If so elected under AA §B-4, a Participant may take a loan equal to the greater of \$10,000 or 50% of the Participant's vested Account Balance. However, if a Participant takes a loan in excess of 50% of the Participant's vested Account Balance, such loan is still subject to the adequate security requirements under Section 13.06.

In applying the limitations under this Section 13.03, all plans maintained by the Employer are aggregated and treated as a single plan. In addition, any assignment or pledge of any portion of the Participant's interest in the Plan and any loan, pledge, or assignment with respect to any insurance contract purchased under the Plan will be treated as loan under this Section.

- 13.04 Limit on Amount and Number of Loans.** Unless elected otherwise under AA §B-5 and/or AA §B-6, or under a separate written loan policy, a Participant may not receive a Participant loan of less than \$1,000 nor may a Participant have more than one Participant loan outstanding at any time.

- (a) **Loan renegotiation.** Unless designated otherwise under AA §B-14, a Participant may be permitted to renegotiate a loan without violating the one outstanding loan requirement to the extent such renegotiated loan is a new loan (i.e., the renegotiated loan separately satisfies the reasonable interest rate requirement under Section 13.05, the adequate security requirement under Section 13.06, and the periodic repayment requirement under Section 13.07) and the renegotiated loan does not exceed the limitations under Section 13.03 above, treating both the replaced loan and the renegotiated loan as outstanding at the same time. However, if the term of the renegotiated loan does not end later than the original term of the replaced loan, the replaced loan may be ignored in applying the limitations under Section 13.03 above.
- (b) **Participant must be creditworthy.** The Plan Administrator may refuse to make a loan to any Participant who is determined to be not creditworthy. For this purpose, a Participant is not creditworthy if, based on the facts and circumstances, it is reasonable to believe that the Participant will not repay the loan. A Participant who has defaulted on a previous loan from the Plan and has not repaid such loan (with accrued interest) at the time of any subsequent loan will be treated as not creditworthy until such time as the Participant repays the defaulted loan (with accrued interest).

- 13.05 Reasonable Rate of Interest.** All Participant loans will be charged a reasonable rate of interest. Alternative methods for determining a reasonable rate of interest may be identified under AA §B-7 or under a separate written loan policy. The interest rate assumptions must be periodically reviewed to ensure the interest rate charged on Participant loans is reasonable.

If a Participant is in military service while he/she has an outstanding Participant loan, the applicable interest charged on such loan during the period while the Participant is in military service will not exceed 6% per year provided the Participant provides written notice and a copy of his/her call-up or extension orders to the Plan Administrator within 180 days following the Participant's termination or release from military service. For this purpose, military service is as defined in the Soldier's and Sailor's Civil Relief Act of 1940 as modified by the Servicemembers Civil Relief Act of 2003. The Participant may voluntarily waive this 6% interest limitation and the Plan Administrator may petition the court to retain the original interest rate if the ability to repay is not affected by the Participant's activation to military duty.

13.06 Adequate Security. All Participant loans must be adequately secured. The Participant's vested Account Balance shall be used as security for a Participant loan provided the outstanding balance of all Participant loans made to such Participant does not exceed 50% of the Participant's vested Account Balance, determined immediately after the origination of each loan. The Plan Administrator may require a Participant to provide additional collateral to receive a Participant loan if the Plan Administrator determines such additional collateral is required to protect the interests of Plan Participants. A separate loan policy or written modifications to this loan policy may prescribe alternative rules for obtaining adequate security.

13.07 Periodic Repayment. A Participant loan must provide for level amortization with payments to be made not less frequently than quarterly. A Participant loan must be payable within a period not exceeding five (5) years, unless the loan is for the purchase of the Participant's principal residence, in which case the loan may be payable within ten (10) years or such longer period that is commensurate with the repayment period permitted by commercial lenders for similar loans. Loan repayments must be made through payroll withholding, ACH and/or coupon payment.

(a) **Leave of absence.** A Participant with an outstanding Participant loan may suspend loan payments to the Plan for up to 12 months for any period during which the Participant's pay is insufficient to fully repay the required loan payments. Upon the Participant's return to employment (or after the end of the 12-month period, if earlier), the Participant's outstanding loan will be re-amortized over the remaining period of such loan to make up for the missed payments. The re-amortized loan may extend beyond the original loan term so long as the loan is paid in full by whichever of the following dates comes first:

- (1) the date which is five (5) years from the original date of the loan (or the end of the suspension, if sooner); or
- (2) the original loan repayment deadline (or the end of the suspension period, if later) plus the length of the suspension period.

Alternatively, upon a Participant's return to employment (or after the end of the 12-month period, if earlier), the Plan Administrator may allow the Participant's outstanding loan payments to resume at the same loan payment amount as of the time of the loan suspension, with a balloon payment of the remaining balance due by the earlier of (1) the date which is five (5) years from the original date of the loan (or the end of the suspension, if sooner), or (2) the original loan repayment deadline (or the end of the suspension period, if later) plus the length of the suspension period.

(b) **Military leave.** A Participant with an outstanding Participant loan also may suspend loan payments for any period such Participant is on military leave, in accordance with Code §414(u)(4). Upon the Participant's return from military leave (or the expiration of five years from the date the Participant began his/her military leave, if earlier), loan payments will recommence under the amortization schedule in effect prior to the Participant's military leave, without regard to the five-year maximum loan repayment period. Alternatively, the loan may be re-amortized to require a different level of loan payment, as long as the amount and frequency of such payments are not less than the amount and frequency under the amortization schedule in effect prior to the Participant's military leave.

13.08 Designation of Accounts. A Participant loan will be treated as a segregated investment on behalf of the individual Participant for whom the loan is made or may be treated as a general investment of the Plan. Unless designated otherwise under AA §B-9 or under a separate loan procedure, loan amounts may be taken from any available contribution source under the Plan. The Plan Administrator may determine the contribution sources from which a loan is taken or may follow directions of the Participant.

Each payment of principal and interest paid by a Participant on his/her Participant loan shall be credited to the same Participant Accounts and investment funds within such Accounts from which the loan was taken.

13.09 Procedures for Loan Default. Except as otherwise provided in the Investment Arrangement and in any loan agreement, and subject to applicable requirements in Code §72(p) and the regulations thereunder, the following loan default provisions will apply. A Participant will be considered to be in default with respect to a loan if any scheduled repayment with respect to such loan is not made by the end of the calendar quarter following the calendar quarter in which the missed payment was due. The Employer may apply a shorter cure period under AA §B-10.

If a Participant defaults on a Participant loan, the Plan may not offset the Participant's Account Balance until the Participant is otherwise entitled to an immediate distribution of the portion of the Account Balance which will be offset and such amount

being offset is available as security on the loan, pursuant to Section 13.06. For this purpose, a loan default is treated as an immediate distribution event to the extent the law does not prohibit an actual distribution of the type of contributions which would be offset as a result of the loan default). The Participant may repay the outstanding balance of a defaulted loan (including accrued interest through the date of repayment) at any time.

Pending the offset of a Participant's Account Balance following a defaulted loan, the following rules apply to the amount in default.

- (a) Interest continues to accrue on the amount in default until the time of the loan offset or, if earlier, the date the loan repayments are made current or the amount is satisfied with other collateral.
- (b) A subsequent offset of the amount in default is not reported as a taxable distribution, except to the extent the taxable portion of the default amount was not previously reported by the Plan as a taxable distribution.
- (c) The post-default accrued interest included in the loan offset is not reported as a taxable distribution at the time of the offset.

A separate loan policy or written modifications to this loan policy may modify the procedures for determining a loan default.

13.10 Termination of Employment.

- (a) **Offset of outstanding loan.** If permitted under the Investment Arrangement, the loan agreement and any loan policy and unless elected otherwise under AA §B-12 or if a Participant requests a Direct Rollover as allowed under Section 13.10(b), a Participant loan becomes due and payable in full immediately upon the Participant's termination of employment. Upon a Participant's termination, the Participant may repay the entire outstanding balance of the loan (including any accrued interest) within a reasonable period following termination of employment. If the Participant does not repay the entire outstanding loan balance, the Participant's vested Account Balance will be reduced by the remaining outstanding balance of the loan to the extent such Account Balance is available as security on the loan, pursuant to Section 13.06, and the remaining vested Account Balance will be distributed in accordance with the distribution provisions under Section 7. If the outstanding loan balance of a deceased Participant is not repaid, the outstanding loan balance shall be treated as a distribution to the Participant and shall reduce the death benefit amount payable to the Beneficiary under Section 7.0707.
- (b) **Direct Rollover.** Unless elected otherwise under AA §B-13, upon termination of employment, a Participant may request a Direct Rollover of the loan note (provided the distribution is an Eligible Rollover Distribution as defined in Section 7.04(a)(1)) to another qualified plan which agrees to accept a Direct Rollover of the loan note. A Participant may not engage in a Direct Rollover of a loan to the extent the Participant has already received a deemed distribution with respect to such loan. (See the rules regarding deemed distributions upon a loan default under Section 13.09.)

13.11 Mergers, Transfers or Direct Rollovers from another Plan/Change in Loan Record Keeper. Except as otherwise provided in an Investment Arrangement and related loan agreement, and subject to applicable requirements in Code §72(p) and the regulations thereunder, any Participant loan transferred into the Plan as the result of a merger, consolidation, or plan to plan transfer, or rolled over to the Plan from another plan, shall be administered in accordance with the provisions of the note reflecting such loan, and shall remain outstanding until repaid in accordance with its terms, except that the Participant may be permitted to renegotiate the terms of the loan to the extent necessary to ensure the administration of such loan continues to satisfy the requirements of Code §72(p) and the regulations thereunder. In addition, if there is a change in the person or persons to whom the record keeping of Participant loans has been delegated, a loan shall continue to be administered in accordance with the provisions of the note reflecting such loan, and shall remain outstanding until repaid in accordance with its terms, except that the Participant may be permitted to renegotiate the terms of a loan to the extent necessary to ensure the administration of the loan after the change in the loan record keeper continues to satisfy the requirements of Code §72(p) and the regulations thereunder, regardless of any contrary election under AA §B-14.

13.12 Amendment of Plan to Eliminate Participant Loans. The Plan may be amended at any time to eliminate Participant loans on a prospective basis. However, the elimination of a Participant loan feature may not result in the acceleration of payment of any existing Participant loans, unless the terms of the Participant loan permit such acceleration.

SECTION 14
PLAN AMENDMENTS, TERMINATION, MERGERS AND TRANSFERS

14.01 Plan Amendments.

- (a) **Amendment by the Provider.** The Provider (as described in §4.08 of Revenue Procedure 2017-41 or its successor) may amend any part of the plan. However, for purposes of reliance on an Opinion Letter, the Provider will no longer have the authority to amend the plan on behalf of the Employer as of the date (1) the employer amends the plan to incorporate a type of plan described in §6.03 of Rev. Proc. 2017-41 that is not permitted under the Pre-approved Plan program, or (2) the Internal Revenue Service notifies the employer, in accordance with §8.06(3) of Rev. Proc. 2017-41, that the Plan is an individually designed plan due to the nature and extent of Employer amendments to the Plan.

For purposes of Provider amendments, the Mass Submitter shall be recognized as the agent of the Provider. If the Provider does not adopt the amendments made by the Mass Submitter, it will no longer be identical to or a minor modifier of the Mass Submitter plan.

The Provider will maintain, or have maintained on its behalf, a record of the Employers that have adopted the Plan, and the Provider will make reasonable and diligent efforts to ensure that adopting Employers have actually received and are aware of all Plan amendments and that such Employers adopt new documents when necessary.

- (b) **Amendment by the Employer.** The Employer shall have the right at any time to amend the Adoption Agreement in the following manner without affecting the Plan's status as a Pre-Approved Plan. (The ability to amend the Plan as authorized under this subsection (b) applies only to the Employer that executes the Employer Signature Page of the Adoption Agreement. Any amendment to the Plan by the Employer under this subsection (b) also applies to any other Employer that participates under the Plan as a Participating Employer.)

- (1) The Employer may change any optional selections under the Adoption Agreement.
- (2) The Employer may add overriding language to the Adoption Agreement when such language is necessary to satisfy Code §415 because of the required aggregation of multiple plans.
- (3) The Employer may change the Employer Information in Section 1 of the Adoption Agreement and/or the administrative selections under Appendix C of the Adoption Agreement by replacing the appropriate page(s) within the Adoption Agreement. Such amendment does not require re-execution of the Employer Signature Page of the Adoption Agreement and any such change will not affect the Employer's reliance on the Favorable IRS Letter.
- (4) The Employer may amend administrative provisions of the trust or custodial document, including the name of the Plan, Employer, Trustee or Custodian, Plan Administrator and other fiduciaries, the trust year, and the name of any pooled trust in which the Plan's trust will participate.
- (5) The Employer may add certain sample or model amendments published by the IRS which specifically provide that their adoption will not cause the Plan to be treated as an individually designed plan.
- (6) The Employer may add or change provisions permitted under the Plan and/or specify or change the effective date of a provision as permitted under the Plan.
- (7) The Employer may adopt any amendments that it deems necessary to satisfy the requirements for resolving qualification failures under the IRS' compliance resolution programs.

The Employer may amend the Plan at any time for any other reason. If such amendment is not deemed to be significant, the Plan will not lose its status as a Pre-Approved Plan. However, if the Employer modifies the language of the Plan or Adoption Agreement (other than the completion of optional selections (e.g., Describe lines), the Employer will not be able to rely on the Favorable IRS Letter issued with respect to the Plan and will need to submit the Plan to the IRS for a favorable determination letter to retain reliance. If an amendment to the Plan is deemed significant, such amendment could cause the Plan to lose its status as a Pre-Approved Plan and become an individually designed plan.

- (c) **Method of amendment.** An amendment to the Plan may be adopted as a modification to the Adoption Agreement and/or Basic Plan Document or as a separate snap-on amendment. An amendment to the Plan may be adopted as part of

a properly executed board resolution. Any such amendment must be executed by the board of directors or an authorized representative of the Employer.

- (d) **Effective date of Plan Amendments.** If the Plan is restated or amended, such restatement or amendment is generally effective as of the Effective Date of the restatement or amendment (as designated on the Employer Signature Page with respect to such amendment), except where the context indicates a reference to an earlier Effective Date. The Employer may designate special effective dates for individual provisions under the Plan where provided in the Adoption Agreement or under Appendix A of the Adoption Agreement.
- (1) **Retroactive Effective Date.** If the Plan is amended retroactively (e.g., to add language required to comply with IRS guidance or law), the provisions of this Plan generally override the provisions of any prior Plan. However, if the provisions of this Plan are different from the provisions of the Employer's prior plan and, after the retroactive Effective Date of this Plan, the Employer operated in compliance with the provisions of the prior plan, the provisions of such prior plan are incorporated into this Plan for purposes of determining whether the Employer operated the Plan in compliance with its terms, provided operation in compliance with the terms of the prior plan do not violate any qualification requirements under the Code, regulations, or other IRS guidance.
- (2) **Retroactive effect of certain provisions.** This Plan is designed to comply with the Code, regulations, and general guidance applicable to qualified retirement plans in effect as of the Effective Date of the Plan. Certain provisions of the Plan are retroactively effective as indicated in the specific provisions. If the Plan is being restated within the remedial amendment period for retroactive compliance, the special effective dates for such provisions will apply, even if such special effective dates precede the Effective Date of the restatement designated on the Employer Signature Page of the Adoption Agreement. If the Effective Date of this restatement or amendment is later than the applicable special effective date, such special effective dates will apply and any prior plan being replaced by this Plan will be considered to have been timely amended for the applicable provisions.
- (3) **Merged plans.** Except for retroactive application of the provisions under this subsection (d), if one or more qualified retirement plans have been merged into this Plan, the provisions of the merging plan(s) will remain in full force and effect until the Effective Date of the Plan merger(s), unless provided otherwise under Appendix A of the Adoption Agreement.

14.02 Plan Termination. The Employer may terminate this Plan at any time by delivering to the Trustee and Plan Administrator written notice of such termination.

- (a) **Full and immediate vesting.** Upon a full or partial termination of the Plan (or in the case of a Profit Sharing Plan, the complete discontinuance of contributions), all amounts credited to an affected Participant's Account become 100% vested, regardless of the Participant's vested percentage determined under Section 6.02. The Plan Administrator has discretion to determine whether a partial termination has occurred.
- (b) **Distribution upon Plan termination.** Upon the termination of the Plan, the Plan Administrator shall direct the distribution of Plan assets to Participants in accordance with the provisions under Section 7. For purposes of applying the provisions of this subsection (b), distribution may be delayed until the Employer receives a favorable determination letter from the IRS as to the qualified status of the Plan upon termination, provided the determination letter request is made within a reasonable period following the termination of the Plan. Until all Plan assets have been distributed from the Plan, the Employer must amend the Plan in order to comply with current laws and regulations and may take any other actions necessary to retain the qualified status of the Plan.
- (c) **Missing Participants.** Upon termination of the Plan, if any Participant cannot be located after a reasonable diligent search (as defined in Section 6.10(c)(1)), the Plan Administrator may make a direct rollover to an IRA selected by the Plan Administrator. For this purpose, the Plan Administrator will adopt procedures similar to the procedures required under Section 7.0505 for making Automatic Rollovers in applying the provisions under this subsection (c). An Automatic Rollover under this subsection (c) may be made on behalf of any missing Participant, regardless of the value of his/her vested Account Balance under the Plan.
- (d) **Partial Termination.** In determining whether a Plan has experienced a partial termination, the Plan Administrator will apply the principals set forth under IRS Revenue Ruling 2007-43.

14.03 Merger or Consolidation. In the event the Plan is merged or consolidated with another plan, each Participant must be entitled to a benefit immediately after such merger or consolidation that is at least equal to the benefit the Participant was entitled to immediately before such merger or consolidation (had the Plan terminated).

If the Employer amends the Plan from one type of Defined Contribution Plan (e.g., a Money Purchase Plan) into another type of Defined Contribution Plan (e.g., a Profit Sharing Plan) that will not result in a partial termination or any other event that would require full vesting of some or all Plan Participants.

14.04 Transfer of Assets. Subject to the terms governing the applicable Investment Arrangement, the Plan Administrator may, but is not required to, permit plan-to-plan transfers to and from the Plan.

The Plan Administrator may, but is not required to, accept a transfer of assets from another qualified retirement plan on behalf of any Employee, even if such Employee is not eligible to receive other contributions under the Plan. If a transfer of assets is made on behalf of an Employee prior to the Employee's becoming a Participant, the Employee shall be treated as a Participant for all purposes with respect to such transferred amount. Any assets transferred to this Plan from another plan must be accompanied by written instructions designating the name of each Employee for whose benefit such amounts are being transferred, the current value of such assets, and the sources from which such amounts are derived. The Plan Administrator will deposit any transferred assets in the appropriate Participant's Transfer Account. The Transfer Account will contain any sub-Accounts necessary to separately track the sources of the transferred assets. Each sub-Account will be treated in the same manner as the corresponding Plan Account.

If the Plan is a Profit Sharing Plan or a Grandfathered 401(k) Arrangement and the Plan accepts a transfer of assets from a money purchase plan, the amounts transferred (and any gains attributable to such transferred amounts) continue to be subject to the distribution restrictions applicable to money purchase plan assets under the transferor plan. Such amounts may not be distributed for reasons other than death, disability, attainment of Normal Retirement Age, attainment of age 62, or termination of employment, regardless of any distribution provisions under this Plan that would otherwise permit a distribution prior to such events.

The Plan Administrator may refuse to accept a transfer of assets if the Plan Administrator reasonably believes the transfer (1) is not being made from a proper qualified plan; (2) could jeopardize the tax-exempt status of the Plan; or (3) could create adverse tax consequences for the Plan or the Employer. Prior to accepting a transfer of assets, the Plan Administrator may require evidence documenting that the transfer of assets meets the requirements of this Section. The Trustee will have no responsibility to determine whether the transfer of assets meets the requirements of this Section; to verify the correctness of the amount and type of assets being transferred to the Plan; or to perform a due diligence review with respect to such transfer.

- (a) **Trustee's right to refuse transfer.** If the assets to be transferred to the Plan under this Section 14.04 are not susceptible to proper valuation and identification or are of such a nature that their valuation is incompatible with other Plan assets, the Trustee may refuse to accept the transfer of all or any specific asset, or may condition acceptance of the assets on the sale or disposition of any specific asset.
- (b) **Transfer of Plan to unrelated Employer.** The Employer may not transfer sponsorship of the Plan to an unrelated employer if the transfer is not in connection with a transfer of business assets or operations from the Employer to the unrelated employer.

SECTION 15
MISCELLANEOUS

- 15.01 Exclusive Benefit.** Plan assets will not be used for, or diverted to, a purpose other than the exclusive benefit of Participants or their Beneficiaries.

No amendment may authorize or permit any portion of the assets held under the Plan to be used for or diverted to a purpose other than the exclusive benefit of Participants or their Beneficiaries, except to the extent such assets are used to pay taxes or administrative expenses of the Plan. An amendment also may not cause or permit any portion of the assets held under the Plan to revert to or become property of the Employer.

- 15.02 Return of Employer Contributions.** Upon written request by the Employer, the Trustee may return any Employer Contributions provided that the circumstances and the time frames described below are satisfied. The Trustee may request the Employer to provide additional information to ensure the amounts may be properly returned. Any amounts returned shall not include earnings, but must be reduced by any losses.

- (a) **Mistake of fact.** Any Employer Contributions made because of a mistake of fact must be returned to the Employer within one year of the contribution.
- (b) **Failure to initially qualify.** Employer Contributions to the Plan are made with the understanding, in the case of a new Plan, that the Plan satisfies the qualification requirements of Code §401(a) as of the Plan's Effective Date. In the event that the Internal Revenue Service determines that the Plan is not initially qualified under the Code, any Employer Contributions (and allocable earnings) made incident to that initial qualification must be returned to the Employer within one year after the date the initial qualification is denied, but only if the application for the qualification is made by the time prescribed by law for filing the employer's return for the taxable year in which the Plan is adopted, or such later date as the Secretary of the Treasury may prescribe.

- 15.03 Participants' Rights.** The adoption of this Plan by the Employer does not give any Participant, Beneficiary, or Employee a right to continued employment with the Employer and does not affect the Employer's right to discharge an Employee or Participant at any time. This Plan also does not create any legal or equitable rights in favor of any Participant, Beneficiary, or Employee against the Employer, Plan Administrator or Trustee. Unless the context indicates otherwise, any amendment to this Plan is not applicable to determine the benefits accrued (and the extent to which such benefits are vested) by a Participant or former Employee whose employment terminated before the effective date of such amendment, except where application of such amendment to the terminated Participant or former Employee is required by statute, regulation or other guidance of general applicability. Where the provisions of the Plan are ambiguous as to the application of an amendment to a terminated Participant or former Employee, the Plan Administrator has the authority to make a final determination on the proper interpretation of the Plan.

- 15.04 Military Service.** To the extent required under Code §414(u), an Employee who returns to employment with the Employer following a period of qualified military service will receive any contributions, benefits and service credit required under Code §414(u), provided the Employee satisfies all applicable requirements under the Code and regulations. In determining the amount of contributions under Code §414(u), Plan Compensation will be deemed to be the compensation the Employee would have received during the period while in military service based on the rate of pay the Employee would have received from the Employer but for the absence due to military leave. If the compensation the Employee would have received during the leave is not reasonably certain, Plan Compensation will be equal to the Employee's average compensation from the Employer during the twelve (12) month period immediately preceding the military leave, or, if shorter, the Employee's actual period of employment with the Employer.

- (a) **Death benefits under qualified military service.** In the case of a Participant who dies while performing qualified military service (as defined in Code §414(u)), the survivors of the Participant are entitled to any additional benefits (other than benefit accruals relating to the period of qualified military service) provided under the Plan as though the Participant resumed and then terminated employment on account of death.
- (b) **Benefit accruals.** If elected under AA §11-3, for benefit accrual purposes, the Plan will treat an individual who dies or becomes disabled (as defined under the terms of the Plan) while performing qualified military service (as defined in Code §414(u)) with respect to the Employer, as if the individual has resumed employment in accordance with the individual's reemployment rights under the Uniformed Services Employment and Reemployment Rights Act (USERRA) on the day preceding death or disability (as the case may be) and terminated employment on the actual date of death or disability.
- (1) This subsection (b) shall apply only if all individuals performing qualified military service with respect to the Employer maintaining the Plan who die or became disabled as a result of performing qualified military service prior to reemployment by the employer are credited with service and benefits on reasonably equivalent terms.

- (2) The amount of employee contributions and the amount of elective deferrals of an individual treated as reemployed under this subsection (b) shall be determined on the basis of the individual's average actual employee contributions or elective deferrals for the lesser of:
- (i) the 12-month period of service with the Employer immediately prior to qualified military service; or
 - (ii) if service with the Employer is less than such 12-month period, the actual length of continuous service with the Employer.
- (c) **Plan distributions.** Notwithstanding the provisions regarding the treatment of Differential Pay and unless otherwise elected under AA §10-1(l), an individual may be treated as having been severed from employment during any period the individual is on active duty for a period of at least 30 days while performing service in the Uniformed Services for purposes of receiving a Plan distribution under Code §401(k)(2)(B)(i)(I). If an individual elects to receive a distribution while on military leave, the individual may not make Salary Deferrals or Employee After-Tax Employee Contributions under the Plan during the 6-month period beginning on the date of the distribution. However, a distribution under this provision that is also a Qualified Reservist Distribution is not subject to the 6-month suspension.
- (d) **Make-Up Contributions.** A Participant who is reemployed following a qualified military leave shall have the right to make up any Salary Deferrals or After-Tax Employee Contributions to which he/she would have been entitled but for the fact the Participant was on qualified military leave. To the extent a Participant returning from qualified military leave would have been required to make Employer Pick-Up Contributions, as described in Section 3.03, the Participant will be required to make such Employer Pick-Up Contributions upon his/her return to employment based on the amount that would have been contributed but for the fact the Participant was on qualified military leave. The Employer will also make any Employer Contributions and Matching Contributions the Participant would have earned during the period of qualified military leave had the Participant remained employed during such period. The Employer will only be required to make Matching Contributions if the reemployed Participant makes up the underlying contributions that were eligible for the Matching Contributions.

In determining the amount of Make-Up Contributions a Participant may make under this subsection (d), a Participant will be treated as earning Plan Compensation during the period the Participant was on qualified military leave equal to:

- (1) the rate of pay the Participant would have received from the Employer during such period had the Participant not been on qualified military leave; or
- (2) if the Plan Compensation the Participant would have received during such period was not reasonably certain, the Participant's average Plan Compensation during the 12-month period immediately preceding the qualified military leave (or the entire period of employment, if shorter).

If the Employer is required under this subsection (d) to make Employer Contributions for a reemployed Participant, the Employer must make such Employer Contributions not later than 90 days after the date of reemployment or the date the Employer Contributions are otherwise due for the year in which the military service was performed. For Salary Deferrals and After-Tax Employee Contributions, a Participant who is reemployed following a qualified military leave may make up such contributions during the period beginning on the date of reemployment and ending on the earlier of the date that is three times the length of the military service period or 5 years from the date of reemployment. Any required Matching Contributions must be made in the same manner as other Matching Contributions under the Plan following the Participant's contribution of the amounts eligible for the Matching Contributions.

Any make up contributions under this subsection (d) are subject to the Code §415 Limitation under Section 5.02 and the Elective Deferral Dollar Limitation under Section 5.03 for the year for which the make-up contribution would have been made had the Participant not been on qualified military leave.

- 15.05 **Annuity Contract.** Any annuity contract distributed under the Plan must be nontransferable. In addition, the terms of any annuity contract purchased and distributed to a Participant, or to a Participant's Spouse, must comply with all requirements under the Code and regulations thereunder.
- 15.06 **Use of IRS Compliance Programs.** Nothing in this Plan document should be construed to limit the availability of the IRS' voluntary compliance programs. An Employer may take whatever corrective actions are permitted under the IRS voluntary compliance programs, as is deemed appropriate by the Plan Administrator or Employer. If the Employer's Plan fails to attain or retain qualification, such Plan will no longer participate in this Volume Submitter Plan and will be considered an individually designed plan.

- 15.07 **Governing Law.** The provisions of this Plan shall be construed, administered, and enforced in accordance with the provisions of applicable Federal Law and, to the extent applicable, the laws of the state in which the Trustee has its principal place of business. The foregoing provisions of this Section shall not preclude the Employer and the Trustee from agreeing to a different state law with respect to the construction, administration and enforcement of the Plan.
- 15.08 **Waiver of Notice.** Any person entitled to a notice under the Plan may waive the right to receive such notice, to the extent such a waiver is not prohibited by law, regulation or other pronouncement.
- 15.09 **Use of Electronic Media.** The Employer, Plan Administrator, Trustee and any other designated individual responsible for providing applicable notices or disclosures under the Plan, and any Participant or beneficiary making an election under the Plan may use telephonic or electronic media to satisfy any notice requirements required by this Plan. Any use of electronic medium under the Plan must comply with the requirements outlined in Treas. Reg. §1.401(a)-21 or other general guidance concerning the use of telephonic or electronic media. The Plan Administrator also may use telephonic or electronic media to conduct plan transactions such as enrolling participants, making (and changing) Salary Deferral Elections, electing (and changing) investment allocations, applying for Plan loans, and other transactions, to the extent permissible under regulations (or other generally applicable guidance).
- 15.10 **Severability of Provisions.** In the event that any provision of this Plan shall be held to be illegal, invalid or unenforceable for any reason, the remaining provisions under the Plan shall be construed as if the illegal, invalid or unenforceable provisions had never been included in the Plan.
- 15.11 **Binding Effect.** The Plan, and all actions and decisions made thereunder, shall be binding upon all applicable parties, and their heirs, executors, administrators, successors and assigns.

SECTION 16
PARTICIPATING EMPLOYERS

- 16.01 Participation by Participating Employers.** An Employer (other than the Employer that executes the Employer Signature Page of the Adoption Agreement) may elect to participate under this Plan by executing a Participating Employer Adoption Page under the Adoption Agreement. A Participating Employer (including a Related Employer defined in Section 1.83) may not contribute to this Plan unless it (or its authorized representative) executes the Participating Employer Adoption Page.
- 16.02 Participating Employer Adoption Page.**
- (a) **Application of Plan provisions.** By executing a Participating Employer Adoption Page, a Participating Employer adopts all the provisions of the Plan, including the elective choices made by the signatory Employer under the Adoption Agreement. The Participating Employer may elect under the Participating Employer Adoption Page to modify the elective provisions under the Adoption Agreement as they apply to the Participating Employer.
 - (b) **Plan amendments.** In addition, unless provided otherwise under the Participating Employer Adoption Page, a Participating Employer is bound by any amendments made to the Plan in accordance with Section 14.01.
 - (c) **Trustee designation.** The Participating Employer agrees to use the same Trustee as is designated on the Trust Declaration under the Agreement, except as provided in a separate trust agreement.
- 16.03 Compensation of Related Employers.** In applying the provisions of this Plan, Total Compensation (as defined in Section 1.94) includes amounts earned with a Related Employer, regardless of whether such Related Employer executes a Participating Employer Adoption Page. The Employer may elect under AA §5-3(h) to exclude amounts earned with a Related Employer that does not execute a Participating Employer Adoption Page for purposes of determining an Employee's Plan Compensation.
- 16.04 Allocation of Contributions and Forfeitures.** Unless selected otherwise under the Participating Employer Adoption Page, any contributions made by a Participating Employer (and any forfeitures relating to such contributions) will be allocated to all Participants employed by the Employer and Participating Employers in accordance with the provisions under this Plan. A Participating Employer may elect under the Participating Employer Adoption Page to allocate its contributions (and forfeitures relating to such contributions) only to the Participants employed by the Participating Employer making such contributions. If so elected, Employees of the Participating Employer will not share in an allocation of contributions (or forfeitures relating to such contributions) made by any other Participating Employer (except in such individual's capacity as an Employee of that other Participating Employer). Thus, for example, a Participating Employer may make a different discretionary contribution and allocate such contribution only to its Employees. Where contributions are allocated only to the Employees of a contributing Participating Employer, a separate accounting must be maintained of Employees' Account Balances attributable to the contributions of a particular Participating Employer. This separate accounting is necessary only for contributions that are not 100% vested, so that the allocation of forfeitures attributable to such contributions can be allocated for the benefit of the appropriate Employees.
- 16.05 Discontinuance of Participation by a Participating Employer.** A Participating Employer may discontinue its participation under the Plan at any time. To document a Participating Employer's cessation of participation, the following procedures should be followed:
- (a) the Participating Employer should adopt a resolution that formally terminates active participation in the Plan as of a specified date;
 - (b) the Employer that has executed the Employer Signature Page of the Adoption Agreement should re-execute such page, indicating an amendment by page substitution through the deletion of the Participating Employer Adoption Page executed by the withdrawing Participating Employer; and
 - (c) the withdrawing Participating Employer should provide any notices to its Employees that are required by law.
- Discontinuance of participation means that no further benefits accrue after the effective date of such discontinuance with respect to employment with the withdrawing Participating Employer. The portion of the Plan attributable to the withdrawing Participating Employer may continue as a separate plan, under which benefits may continue to accrue, through the adoption by the Participating Employer of a successor plan (which may be created through the execution of a separate Adoption Agreement by the Participating Employer) or by spin-off of the portion of the Plan attributable to such Participating Employer followed by a merger or transfer into another existing plan, as specified in a merger or transfer agreement.
- 16.06 Operational Rules for Related Employer Groups.** If an Employer has one or more Related Employers, the Employer and such Related Employer(s) constitute a Related Employer group. In such case, the following rules apply to the operation of the Plan.

- (a) If the term Employer is used in the context of administrative functions necessary to the operation, establishment, maintenance, or termination of the Plan, only the Employer executing the Employer Signature Page under the Adoption Agreement, and any Related Employer executing a Participating Employer Adoption Page, is treated as the Employer.
- (b) Hours of Service are determined by treating all members of the Related Employer group as the Employer.
- (c) The term Excluded Employee is determined by treating all members of the Related Employer group as the Employer, except as specifically provided in the Plan.
- (d) Compensation is determined by treating all members of the Related Employer group as the Employer, except as specifically provided in the Plan.
- (e) An Employee is not treated as terminated from employment if the Employee is employed by any member of the Related Employer group.
- (f) The Code §415 Limitation described in Section 5.02 is applied by treating all members of the Related Employer group as the Employer.

In all other contexts, the term Employer generally means a reference to all members of the Related Employer group, unless the context requires otherwise. If the terms of the Plan are ambiguous with respect to the treatment of the Related Employer group as the Employer, the Plan Administrator has the authority to make a final determination on the proper interpretation of the Plan.

16.07 Multiple Employer Plans. Regardless of any election under AA §2-6, if an Employer (other than a Related Employer) executes a Participating Employer Adoption Page under the Adoption Agreement, the Plan is treated as a Multiple Employer Plan. Treatment of the Plan as a Multiple Employer Plan will not affect reliance on the Favorable IRS Letter issued to the Provider or any determination letter issued on the Plan.

- (a) **Application of qualification rules to Multiple Employer Plans.** If the Plan is a Multiple Employer Plan, the following qualification rules apply, as applicable to a Governmental Plan.
 - (1) **Eligibility requirements.** If the Plan is a Multiple Employer Plan, the eligibility rules under the Plan are applied as if the Employees of all Employers participating in the Multiple Employer Plan are employed by a single Employer.
 - (2) **Vesting rules.** If the Plan is a Multiple Employer Plan, the vesting rules under the Plan are applied as if the Employees of all Employers participating in the Multiple Employer Plan are employed by a single Employer.
 - (3) **Code §415 Limit.** If the Employer is a Multiple Employer Plan, the Code §415 Limit under the Plan is applied as if the Employees of all Employers participating in the Multiple Employer Plan are employed by a single Employer. Thus, if a Participant receives contributions from more than one Employer within the Multiple Employer Plan, such contributions must be aggregated for purposes of applying the Code §415 Limit. For this purpose, Total Compensation from all Participating Employers may be considered in applying the Code §415 Limit.
 - (4) **Other rules applicable to Multiple Employer Plans.** To the extent not addressed in this Section 16.07, the rules under Code §413(c) and applicable regulations will apply to a Governmental Multiple Employer Plan.
- (b) **Definitions that apply to Multiple Employer Plans.**
 - (1) **Lead Employer.** The signatory Employer under the Adoption Agreement. See subsection (c)(2) below for rules regarding the ability of the Lead Employer to amend the Plan on behalf of Participating Employers.
 - (2) **Participating Employer.** An Employer which, with the consent of the Lead Employer, executes a Participating Employer Adoption Page. To the extent permitted by the Lead Employer, a Participating Employer may modify the selections made by the Lead Employer under the Adoption Agreement. Any modifications made by a Participating Employer may be described as an attachment to the Participating Employer Signature Page for that Participating Employer.
 - (3) **Professional Employer Organization (PEO).** An organization described in Rev. Proc. 2002-21 and any successor legislation or regulation. If the Lead Employer is a PEO, each Participating Employer is a Client Organization as defined in Rev. Proc. 2002-21. Any Employee on the PEO's payroll who receives amounts from the PEO for providing services pursuant to a service agreement between the PEO and the Client Organization shall be deemed to be the Employee of the Client Organization for whom the Employee performs services, and

not of the PEO. Any amounts paid by a PEO to an Employee of a Client Organization shall be treated as paid by the Client Organization for all purposes under the Plan.

- (c) **Special rules for Multiple Employer Plans.** The Lead Employer is the Plan Administrator under the Plan, unless specifically designated otherwise under AA §11-12 or under separate written procedures assigning such responsibilities to another party. The underlying Participating Employers are co-sponsors of the Multiple Employer Plan.
- (1) **Allocation of contributions.** Any contributions (and forfeitures relating to such contributions) made by a Participating Employer will be allocated only to the Participants employed by the Participating Employer making such contributions. By adopting the Plan, a Participating Employer agrees to make any contributions required under the Plan to maintain the qualified status of the Plan.
- (2) **Amendment of Plan document.** The Lead Employer reserves the right to amend the Plan on behalf of all Participating Employers. Each Employer signing a Participating Employer Signature Page shall be bound by the provisions in this Plan document and any selections made under the Adoption Agreement, except to the extent the Participating Employer makes a contrary election under the Adoption Agreement, as set forth under subsection (b)(2) above.
- (i) **Plan amendments.** The Lead Employer shall be responsible for ensuring the Plan is updated for any required amendments. Unless provided otherwise under the Participating Employer Signature Page, a Participating Employer is bound by any amendments made to the Plan by the Lead Employer.
- (ii) **Trustee designation.** The Participating Employer agrees to use the same Trustee as is designated on the Trust Declaration under the Lead Employer Adoption Agreement, except as provided in a separate trust agreement.
- (iii) **Plan termination.** The Lead Employer may terminate this Plan at any time by delivering to the Trustee and each Participating Employer a written notice of such termination.
- (iv) **Execution of Participating Employer Adoption Page.** The Employer that has executed the Employer Signature Page of the Adoption Agreement, or its designated representative, is authorized to sign the Participating Employer Adoption Page on behalf of a Participating Employer to adopt an amendment or subsequent Plan restatement, unless otherwise provided under the Participating Employer Adoption Page.
- (3) **Ability of Lead Employer to Remove Participating Employers.** The Lead Employer may remove any Participating Employer from the Plan if the Participating Employer refuses to correct a qualification defect under the Plan maintained by such Participating Employer. Upon removal from the Plan, the Participating Employer may continue to maintain its portion of the Plan as a single-Employer Plan. Upon removal of a Participating Employer, Employees of such terminated Participating Employer will cease to be eligible to accrue additional benefits under this Plan with respect to Plan Compensation earned on or after the date of termination.
- The Lead Employer may develop reasonable administrative procedures outlining the procedures for removing a Participating Employer from the Plan. By adopting this Plan, each Participating Employer authorizes the Lead Employer to exercise the option to remove a Participating Employer from the Plan in accordance with such administrative procedures.
- Upon removal of a Participating Employer, the terminated Participating Employer may elect to have the assets associated with Accounts of its Employees to be transferred to a separate Defined Contribution Plan maintained by the terminated Participating Employer consistent with the requirements under Code §414(l). If the Participating Employer does not establish a Defined Contribution Plan to accept the transfer of assets from this Plan, the Lead Employer may establish a new Defined Contribution Plan on behalf of the Participating Employer to which the assets attributable to the Employees of the terminating Participating Employer may be transferred consistent with the requirements under Code §414(l). Any new plan established by the Lead Employer will contain provisions consistent with the selections applicable to the Participating Employer under this Plan. The terminated Participating Employer will be responsible for designating the Trustee of the new Plan. If no such designation is made, the Trustee will be the highest ranking officer or representative of the Employer or such other financial institution designated by the Lead Employer to protect the interests of Plan Participants. Reasonable expenses associated with the establishment of the new plan may be charged to the Accounts of Participants of the terminated Participating Employer.
- (4) **Withdrawal from Plan.** Upon thirty (30) days written notice to the other party, either the Lead Employer or Participating Employer may voluntarily withdraw from the Plan. If a Participating Employer withdraws from the Plan, the Participating Employer may continue to maintain the Plan as a single-Employer Plan. Plan assets

attributable to the Employees of the Participating Employer will be transferred to the Participating Employer's Plan, consistent with the requirements of Code §414(l). No distributions will be permitted from the Plan solely on account of a Participating Employer's withdrawal from the Plan. The withdrawing Employer will bear all reasonable costs associated with the withdrawal and transfer of assets to a new plan. Employees of a withdrawing Employer will cease to be eligible to accrue additional benefits under this Plan with respect to Plan Compensation earned on or after the date of withdrawal. The withdrawal of a Participating Employer from the Plan is not considered a Plan termination which allows distributions to the Participants of the withdrawing Participating Employer.

- (5) **Indemnification of Lead Employer.** Each Participating Employer will indemnify and hold harmless the Plan Administrator, the Lead Employer and its subsidiaries; officers, directors, shareholders, employees, and agents of the Lead Employer; the Plan; the Trustees, Fiduciaries, Participants and Beneficiaries of the Plan, as well as their respective successors and assigns, against any cause of action, loss, liability, damage, cost, or expense of any nature whatsoever (including, but not limited to, attorney's fees and costs, whether or not suit is brought, as well as IRS plan disqualifications, other sanctions or compliance fees) arising out of, or relating to, the Participating Employer's noncompliance with any of the Plan's terms or requirements; any intentional or negligent act or omission the Participating Employer commits with regard to the Plan; and any omission or provision of incorrect information with regard to the Plan which causes the Plan to fail to satisfy the requirements of a tax-qualified plan.

APPENDIX A
ACTUARIAL FACTORS
(For use with age-based contribution formula)

Actuarial Factor Table. The following table sets forth Actuarial Factors based on a testing age of 65, an interest rate of 8.5% and an UP-1984 mortality table. The Actuarial Factors in this table must be modified if the Employer uses a testing age other than age 65 or selects a different interest rate or mortality table under the age-based contribution formula. To determine a Participant's Actuarial Factor, use the factor corresponding to the number of years to the Participant's testing age. The number of years to the testing age is determined by counting the number of years from the last day of the current plan year to the last day of the Plan Year in which the Participant reaches the testing age. If the Participant has reached the testing age as of the last day of the current Plan Year, the number of years is 0 for that year and all subsequent years.

Years to Testing Age	Actuarial Factor		Years to Testing Age	Actuarial Factor
0	0.07949		25	0.01034
1	0.07326		26	0.00953
2	0.06752		27	0.00878
3	0.06223		28	0.00810
4	0.05736		29	0.00746
5	0.05286		30	0.00688
6	0.04872		31	0.00634
7	0.04490		32	0.00584
8	0.04139		33	0.00538
9	0.03814		34	0.00496
10	0.03516		35	0.00457
11	0.03240		36	0.00422
12	0.02986		37	0.00389
13	0.02752		38	0.00358
14	0.02537		39	0.00330
15	0.02338		40	0.00304
16	0.02155		41	0.00280
17	0.01986		42	0.00258
18	0.01831		43	0.00238
19	0.01687		44	0.00219
20	0.01555		45	0.00202
21	0.01433		46	0.00186
22	0.01321		47	0.00172
23	0.01217		48	0.00158
24	0.01122		49	0.00146

APPENDIX B
INTERIM AMENDMENT #1
FINAL REGULATIONS RELATING TO HARDSHIP DISTRIBUTIONS

- B-1.01 Change in Hardship Distribution requirements.** The IRS has issued Final Regulations that amend the rules relating to Hardship distributions from the Plan. This Interim Amendment #1 (Interim Amendment) sets forth the provisions of the Final Regulations and their application to the Plan by amending Section 7.10(e) of the Plan and providing appropriate Elective Provisions under Interim Amendment - Hardship Distributions Elective Provisions in the Adoption Agreement (Elective Provisions). The Plan Administrator shall administer the provisions of this Interim Amendment, and its Elective Provisions, consistent with a good-faith interpretation of the requirements of the Final Regulations as set forth under Treas. Reg. §§1.401(k)-1, 1.401(k)-3 and 1.401(m)-3, as amended.
- (a) **Effective Dates.** Except as otherwise provided in this Interim Amendment, and its Elective Provisions, the Final Regulations and this Interim Amendment apply to Hardship distributions made on or after January 1, 2020. For Hardship distributions made before January 1, 2020, the rules applicable to Hardship distributions prior to the Final Regulations apply, unless the Employer elects earlier application as permitted under subsections (a) and (b) below.
- (1) **Options for earlier application.** If elected under the Elective Provisions, the provisions of this Interim Amendment may be applied to distributions made in Plan Years beginning after December 31, 2018. The Employer may elect to apply the prohibition on the suspension of Salary Deferrals and After-Tax Employee Contributions as of the first day of the first Plan Year beginning after December 31, 2018, even if the Hardship distribution was made in a prior year. In addition, the Employer may operationally apply the revised deemed immediate and heavy financial need expenses under Section 7.10(e)(1) of the Plan, as amended by this Interim Amendment, to distributions made on or after a date as early as January 1, 2018.
- (2) **Certain rules optional in 2019.** If, in accordance with the provisions of Section B-1.01(a)(1) of this Interim Amendment, the Employer applies certain Hardship distribution provisions to distributions made before January 1, 2020, then the Employer may disregard the rules relating to the employee representation, as described under Section 7.10(e)(3)(ii)(B) of the Plan, as amended by this Interim Amendment, and the rules prohibiting the suspension of contributions, as described under Section 7.10(e)(3)(iii) of the Plan, as amended by this Interim Amendment, to such distributions.
- (3) **2020 effective date for employee representations and suspension prohibition.** In any event, the rules relating to the employee representation, as described under Section 7.10(e)(3)(ii)(B) of the Plan, as amended by this Interim Amendment, and the rules prohibiting the suspension of contributions, as described under Section 7.10(e)(3)(iv) of the Plan, as amended by this Interim Amendment, are formally made effective for Hardship distributions made on or after January 1, 2020.
- B-2.01 Amendment of Section 7.10(e) of the Plan.** Section 7.10(e) of the Plan is deleted and replaced with the following:
- (e) **Hardship distribution.** The Employer may elect under AA §10-1 or AA §10-2 of the Profit Sharing/401(k) Plan Adoption Agreement or under Section HD-1 of the Elective Provisions to authorize an in-service distribution upon the occurrence of Hardship. A distribution is made on account of Hardship only if the distribution both is made on account of an immediate and heavy financial need and is necessary to satisfy the financial need.
- (1) **Deemed immediate and heavy financial need.** A distribution is deemed to be made on account of an immediate and heavy financial need of the Employee if the distribution satisfies one of the following needs:
- (i) Expenses incurred or necessary for medical care (as described in Code §213(d)) of the Participant, the Participant's Spouse or dependents (determined without regard to whether the expenses exceed 7.5% of adjusted gross income);
 - (ii) Costs directly related to the purchase (excluding mortgage payments) of a principal residence for the Participant;
 - (iii) Payment of tuition, related educational fees and room and board for up to the next 12 months of post-secondary education for the Participant, the Participant's Spouse, children or dependents;
 - (iv) Payments necessary to prevent the eviction of the Participant from, or a foreclosure on the mortgage of, the Participant's principal residence;
 - (v) Payments for funeral or burial expenses for the Participant's deceased parent, Spouse, child or dependent;
 - (vi) Expenses for the repair of damage to the Participant's principal residence that would qualify for the

casualty deduction under Code §165 (determined without regard to Code §165(h)(5) and whether the loss exceeds 10% of adjusted gross income);

- (vii) Expenses and losses (including loss of income) incurred by the Participant on account of a disaster declared by the Federal Emergency Management Agency (FEMA) under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, Pub. L. 100-707, provided that the Participant's principal residence or principal place of employment at the time of the disaster was located in an area designated by FEMA for individual assistance with respect to the disaster; or
- (viii) for any other event that the IRS recognizes as a deemed immediate and heavy financial need Hardship distribution event under ruling, notice or other guidance of general applicability.

For purposes of determining eligibility for a Hardship distribution under this subsection (1), a dependent is determined under Code §152. However, the determination of dependent for purposes of tuition and related educational fees under subsection (iii) above will be made without regard to Code §§152(b)(1), (b)(2), and (d)(1)(B) and the determination of dependent for purposes of funeral or burial expenses under subsection (v) above will be made without regard to Code §152(d)(1)(B).

A Participant must provide the Plan Administrator with a written request for a Hardship distribution. The Plan Administrator may require written documentation, as it deems necessary, to sufficiently document the existence of a proper Hardship event.

- (2) **Non-deemed immediate and heavy financial need.** The Employer may elect under in the Profit Sharing/401(k) Plan Adoption Agreement to permit Participants to take a Hardship distribution without satisfying one of the needs in subsection (1) above by setting forth nondiscriminatory and objective standards under AA §10-3(f).
- (3) **Distribution necessary to satisfy financial need.**
 - (i) **Distribution may not exceed amount of need.** A distribution is treated as necessary to satisfy an immediate and heavy financial need of an Employee only to the extent the amount of the distribution is not in excess of the amount required to satisfy the financial need (including any amounts necessary to pay any federal, state, or local income taxes or penalties reasonably anticipated to result from the distribution).
 - (ii) **No alternative means reasonably available.** A distribution is not treated as necessary to satisfy an immediate and heavy financial need of an employee unless each of the following requirements is satisfied:
 - (A) The Employee has obtained all other currently available distributions (including distributions of ESOP dividends under Code §404(k), but not Hardship distributions) under the Plan and all other plans of deferred compensation, whether qualified or nonqualified, maintained by the Employer;
 - (B) The Employee has provided to the Plan Administrator a representation in writing (including the use of an electronic medium as defined in Treas. Reg. §1.401(a)-21(e)(3)), or in such other form as may be prescribed by the IRS, that he or she has insufficient cash or other liquid assets reasonably available to satisfy the need; and
 - (C) The Plan Administrator does not have actual knowledge that is contrary to the representation.
 - (iii) **Additional conditions.** The Plan generally may provide for additional conditions to demonstrate that a distribution is necessary to satisfy an immediate and heavy financial need of an employee. For example, a plan may provide that, before a Hardship distribution may be made, an Employee must obtain all nontaxable loans (determined at the time a loan is made) available under the Plan and all other plans maintained by the Employer.
 - (iv) **No suspensions allowed for Hardship distributions made on or after January 1, 2020.** The Plan may not provide for a suspension of an Employee's Salary Deferrals or After-Tax Employee Contributions under any plan described in Code §§401(a) or 403(a), any Code §403(b) plan, or any eligible governmental plan described in Treas. Reg. §1.457-2(f) as a condition of obtaining a Hardship distribution for Hardship distributions made on or after January 1, 2020.
- (4) **Sources for Hardship distributions.** For Plan Years beginning after December 31, 2018 (or such later date specified under the AA §10-1 or under §HD-1(a) and/or (b) of Elective Provisions, the Employer may permit Hardship distributions from the vested portion of a Participant's Employer Contribution Account, Matching

Contribution Account, Pre-Tax Salary Deferral Account, Roth Deferral Account, Qualified Nonelective Employer Contribution (QNEC) Account, Qualified Matching Contribution (QMAC) Account, Safe Harbor Employer Contribution Account, Safe Harbor Matching Contribution Account, QACA Safe Harbor Contribution Account and QACA Safe Harbor Matching Contribution Account. The Hardship distribution may include earnings on these Accounts, regardless of when amounts were contributed or earned. The Employer may designate the Accounts (including earnings) from which a Participant may receive a Hardship distribution under §HD-1 of the Elective Provisions. The Plan Administrator may adopt distribution ordering rules consistent with the sources available for Hardship distributions under separate administrative procedures. This subsection (4) supersedes any contrary provisions under the Plan, including any provision that limits the sources for Hardship distribution.

- (5) **Availability to terminated Employees.** If a Hardship distribution is permitted under AA §10-1 or AA §10-2 or under §HD-1 of the Interim Amendment, a Participant may take such a Hardship distribution after termination of employment to the extent no other distribution is available from the Plan.
- (6) **Application of Hardship distributions rules with respect to primary beneficiaries.** If elected under AA §10-3(e) of the Profit Sharing/401(k) Plan, if the Plan otherwise permits Hardship distributions based on the deemed immediate and heavy needs under subsection 7.10(e)(1)(i) (medical expenses), (1)(iii) (educational expenses) or (1)(v) (funeral expenses) above, the existence of an immediate and heavy financial need may be determined with respect to a primary beneficiary under the Plan. For this purpose, a primary beneficiary is an individual who is named as a beneficiary under the Plan and has an unconditional right to all or a portion of a Participant's Account Balance upon the death of the Participant. Any Hardship distribution with respect to a primary beneficiary must satisfy all the other requirements applicable to Hardship distributions under Section 7.10(e) of the Plan, as amended by this Interim Amendment.

B-3.01 Relief for Victims of Certain Qualified Natural Disasters. Notwithstanding other provisions of the Plan, the Employer may operate the Plan to provide relief from certain qualification rules relating to Hardship distributions and loans for Participants who are victims of certain Qualified Natural Disasters, as set forth under applicable IRS or legislative guidance.

B-3.02 Qualified Natural Disasters. For purposes of this section, Qualified Natural Disasters, in addition to the Qualified Natural Disasters listed under the 2017 Pre-Approved Defined Contribution Plan Interim Amendment previously adopted by the Pre-Approved Plan Provider, include Hurricane Michael and Hurricane Florence, as provided under the preamble to the Final Regulations.

B-3.03 General Rules. If the Employer and the Plan Administrator make good-faith efforts to apply the Plan provisions in conformance with the relief provided under applicable guidance, the Plan will not be treated as failing to satisfy the requirements of the Code or regulations. In general, the following rules apply:

- (a) In order to make a loan or distribution (including a Hardship distribution), the Plan must provide for loans or distributions, as applicable.
- (b) Participants (victims) for whom the relief is available are determined under the appropriate IRS or legislative guidance.
- (c) The amount available for Hardship distribution is limited to the maximum amount that would be available for a Hardship distribution under the Plan. However, the relief provided applies to any Hardship distribution of the Participant and no post-distribution contribution restrictions apply.
- (d) To qualify for relief under this section, a Hardship distribution must be made on account of a Hardship resulting from the applicable Qualified Natural Disaster and within the time frame provided under the applicable guidance relating to the Qualified Natural Disaster.
- (e) The Plan will not be treated as failing to follow Plan procedural requirements for loans or distributions during the periods provided under guidance relating to the applicable Qualified Natural Disaster, which for Hurricane Michael and Hurricane Florence ended on March 15, 2019.

CITY OF FORT LUPTON CITY COUNCIL



Shannon Rhoda, Ward 1
Chris Ceretto, Ward 2
Mike Sanchez, Ward 3

Zo Stieber, Mayor

David Crespino, Ward 1
Tommy Holton, Ward 2
Bruce Fitzgerald Ward 3

AM 2021-192

APPROVING AN AGREEMENT WITH CLIFTONLARSONALLEN TO PROVIDE IMPLEMENTATION SERVICES FOR THE NEW GASB87 REQUIREMENTS FOR AN AMOUNT NOT TO EXCEED \$17,000 TO BE PAID FROM THE GENERAL FUND

I. **Agenda Date:** Council Meeting – November 16, 2021

II. **Attachments:** a. CliftonLarsonAllen LLP Services List

III. **Summary Statement:**

The Governmental Accounting Standards Board is requiring the implantation of GASB87 in 2022. This changes the and adds accounting and reporting standards for lease agreements.

IV. **Submitted by:** _____
Leann Perino, Finance Director

V. **Finance Reviewed** _____
Finance Director

VI. **Approved for Presentation:** _____
City Administrator

VII. **Attorney Reviewed** _____ Approved _____ Pending Approval

VIII. **Certification of Council Approval:** _____
City Clerk _____ Date _____

IX. Detail of Issue/Request:

Clifton Larson Allen will help the City review all lease and service agreements to determine which ones will need to be tracked and accounted for under GASB87. They will use the information to find, choose and implement a software programs that meets our needs.

The software will collect all the data required by GASB87 for financial reporting purposes and generate year end journal entries for all leases.

X. Legal/Political Considerations:

None

XI. Alternatives/Options:

Do not hire CLA

XII. Financial Considerations:

The general fund has \$23,700 remaining in the miscellaneous professional services account to pay for these services.

XIII. Staff Recommendation:

Approve hiring CliftonLarsonAllen LLP provide GASB87 services.

Phase 1 – Planning

Management may require assistance with the development of the methodology, approach, and overall structure of the engagement.

- Define roles and responsibilities, including identification of a cross-functional project team
- Establish communication protocols to ensure the most respectful and efficient working relationship is created at the very beginning of the process
- Refine and tailor the methodology and approach
- Conduct a kick-off meeting with appropriate stakeholders as identified by management

Phase 2 – Current State Assessment

Management may require assistance to further understand the current lease and service contracts.

- Collaborate on developing an understanding of the organization's current state as it relates to leasing. This includes reviewing prior lease disclosure, classification, and document current state
- Deliver a GASB 87 training for the organization's key stakeholders (if necessary)
- Collaborate on obtaining and inventorying all explicit leases and relevant service contracts throughout the organization
- Assist with verifying the completeness of the lease population
- Conduct initial discussions related to embedded leases and, if appropriate, begin the embedded lease analysis

Phase 3 – Lease Accounting Software Configuration and Testing

Management may require assistance with selection and implementation of software.

- Assist with the software configuration to facilitate proper mapping
- Assist in preparing test batches to be uploaded and in validating the calculation results and reports from the system
- Assist with uploading and testing accuracy of output for the full population of leases

Phase 4 – Lease Analysis and Implementation

Management may require assistance in the determination as to whether an arrangement meets the definition of a lease and assist in the collection of the required data to record the leased asset on the balance sheet.

- Analyze leases and service contracts and identify and document key attributes within each lease
- Perform and document a methodical embedded lease assessment
- Assist with the input of key leasing data and terms into the selected software or tool

Phase 5 – Functional Area Analysis and Execution (TBD if requested by Management)**

We will assist management to perform an analysis to obtain an understanding of the impact the guidance will have on each functional area. In addition, assist with the change management of processes across impacted functional areas. Responsibilities may include, but not be limited to, the following:

- Assist with the performance of a functional area impact assessment
- Assist with the determination of "action" items versus "awareness" items
- Assist with the development of a functional area project plan
- Provide training of key aspects of guidance to functional areas

- Recommend and directly assist management, as needed, with modifications to existing accounting and reporting processes, accounting policies, and process and internal control documentation
- Conduct periodic status update calls with the Management throughout phase 5

**Our methodology and approach is executed in five phases as outlined above. We typically engage with our clients initially for phases 1-4. Since the potential impact to functional areas and related processes are unknown at this time, estimates cannot be provided for phase 5. If there is minimal impact to the functional areas and related processes and/or you are able to address and implement changes internally, our assistance with phase 5 may not be needed. However, we will assess and discuss with management when we are in phase 4 to determine what assistance may or may not be needed at that time with phase 5.



Upcoming Events

November 5-19, 2021	Art Show at the Library
November 23, 2021	Town Hall Meeting, 130 S. McKinley Ave. 6:30 p.m.
November 27, 2021	Small Business Saturday
December 7, 2021	City Council Meeting, 130 S. McKinley Ave. 7:00 p.m.
December 14, 2021	Town Hall Meeting, 130 S. McKinley Ave. 6:30 p.m.