CITY OF FORT LUPTON
CITY COUNCIL/ENTERPRISE BOARDS
REGULAR MEETING AGENDA
Tuesday, June 16, 2026
6:00 PM
130 South McKinley Avenue

Chris Ceretto, Mayor
Valerie Blackston, Ward 1
Bruce Davis, Ward 2
Michael Sanchez, Ward 3
David Crespin, Ward 1
Claud Hanes, Ward 2
Bruce Fitzgerald, Ward 3

Call to Order

Pledge of Allegiance

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 Ceretto

Approval of Agenda

Review of Accounts Payables

a. June 16, 2026 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. June 2, 2026 City Council Meeting Minutes

b. Second Reading Ordinance 2026-1200 Amending Specific Provision of the Fort Lupton Municipal Code Adopting the 2024 Edition of the Model Traffic Code

c. AM 2026-092 Authorize Reallocation of Funding from Tank Repairs Capital Improvement Project to Water Treatment Plant Improvements

d. AM 2026-094 Accepting a Proposal from SYNLawn Colorado for the Playground Turf Surfacing Including Installation for an Amount Not to Exceed $44,265.45 to be Paid from the CPR Fund – Capital Projects

e. AM 2026-096 Approving a Resolution for the Approval of the Amerin Pre-Annexation Agreement

Action Memorandum

a. AM 2026-093 Accepting a Bid Proposal from HPM, Inc., to Serve as the General Manager/General Contractor for the Koshio Park Renovation Project for an Amount Not to Exceed $717,060.50 to be paid from the CPR Fund – Capital Projects.

b. AM 2026-095 Award the 2026 Crack and Slurry Seal Project to Vance Brothers for an Amount Not to Exceed $700,000.00, Allocated from the Street Sales Tax Fund

Staff Reports

Mayor/Council Reports

Future City Events

a. July 1, 2026 Coffee with a Cop, Fort Lupton Recreation Center, 203 S. Harrison Ave. 8:00 a.m. - 9:00 a.m.
July 4, 2026 Independence Day Celebration, Community Park, 203 S. Harrison Ave.

3:00 p.m. - 8:00 p.m.
July 10-11, 2026 Citywide Yard Sales

Upcoming Meetings

a. June 30, 2026 Town Hall Meeting, City Hall, 130 S. McKinley Ave. 6:00 p.m.
July 7, 2026 City Council Meeting, City Hall, 130 S. McKinley Ave. 6:00 p.m.
July 14, 2026 Town Hall Meeting, City Hall, 130 S. McKinley Ave. 6:00 p.m.
July 21, 2026 City Council Meeting, City Hall, 130 S. McKinley Ave. 6:00 p.m.

Adjourn

Council Check Report

City of Fort Lupton

By Check Number

Date Range: 06/03/2026 - 06/16/2026

Vendor Number / Payable #	Vendor Name / Payable Type	Post Date	Payment Date / Payable Description	Payment Type	Discount Amount / Discount Amount	Payment Amount / Payable Amount	Number
Bank Code: New Main Operating-New Main Operating							
000044	AGFINITY INC		06/09/2026	Regular	0.00	6,376.86	110280
H92251	Invoice	05/20/2026	GF-CLEARSURF 90%-PARKS		0.00	2,292.19	
I92933	Invoice	05/22/2026	GOLF-UNLEADED GASOHOL-MAINT		0.00	2,724.11	
I92934	Invoice	05/22/2026	GOLF-FIELDMASTER DYED DIESEL-MAINT		0.00	1,360.56	
000108	AUSMUS LAW FIRM PC		06/09/2026	Regular	0.00	6,500.00	110281
10139	Invoice	06/01/2026	GF-2026 City Attorney Services-Legal		0.00	6,500.00	
002092	BIG AIR JUMPERS		06/09/2026	Regular	0.00	1,885.28	110282
O49263	Invoice	05/01/2026	CPR-BOUNCE HOUSE FOR 4TH OF JULY EV...		0.00	1,885.28	
003989	BLADES GROUP LLC		06/09/2026	Regular	0.00	2,880.00	110283
18053109	Invoice	05/19/2026	SSTX-CUBIC YARD ROCK ASPHALT-STREETS		0.00	2,880.00	
001715	BUFFALO BRAND SEED		06/09/2026	Regular	0.00	3,380.00	110284
26-02349-OP	Invoice	06/01/2026	GOLF-SEEDS-MAINT		0.00	3,380.00	
003478	BUFFALO REFRIGERATION		06/09/2026	Regular	0.00	737.00	110285
1533	Invoice	05/25/2026	GOLF-LABOR, PARTS, INLINE FILTER-PRO S...		0.00	537.00	
1534	Invoice	05/25/2026	GOLF-LABOR, DRIVE TIME-PRO SHOP		0.00	200.00	
004053	CAMCOR, INC.		06/09/2026	Regular	0.00	5,730.00	110286
2600891	Invoice	05/27/2026	Barco and Bose conference rooms New Cit...		0.00	5,730.00	
000239	CITY OF FORT LUPTON		06/09/2026	Regular	0.00	100.00	110287
CIT#133421-1C	Invoice	05/28/2026	GF-RESTITUTION, CIT#133421-1, S. NAVA-		0.00	100.00	
000241	CITY OF FT LUPTON-UTIL INVOICE		06/09/2026	Regular	0.00	258.82	110288
990005001 APRIL...	Invoice	05/07/2026	GF-CITY HALL WATER SERVICE 03/31-04/3...		0.00	258.82	
000247	CLIFTONLARSONALLEN LLP		06/09/2026	Regular	0.00	22,863.00	110289
L261339726	Invoice	06/01/2026	GF-Accounting Services-Misc		0.00	13,125.00	
L261339726A	Invoice	06/01/2026	GF-2025 ACFR Perperation Services-FIN		0.00	4,488.00	
L261339726B	Invoice	06/01/2026	GF-2026 Payroll Services-Finance		0.00	5,250.00	
000307	COMCAST CABLE COMM, LLC		06/09/2026	Regular	0.00	204.33	110290
0147405 JUNE26	Invoice	06/01/2026	CPR-JUNE 2026 PHONE/INTERNET SERV-...		0.00	204.33	
000307	COMCAST CABLE COMM, LLC		06/09/2026	Regular	0.00	158.91	110291
0025494 JUNE26	Invoice	06/01/2026	GOLF-JUNE 2026 CABLE SERVICES-PRO SH...		0.00	158.91	
001517	CORE&MAIN LP		06/09/2026	Regular	0.00	770.84	110292
Z108688	Invoice	05/29/2026	UF-PARTS, SUPPLIES-W LINES		0.00	770.84	
000372	DELL MARKETING LP		06/09/2026	Regular	0.00	4,628.40	110293
10876700348	Invoice	05/28/2026	PDUs (12) for new City Hall Server Racks		0.00	4,628.40	
003559	DRAKE DUO PRINTS LTD		06/09/2026	Regular	0.00	674.02	110294
1440	Invoice	05/26/2026	REC-SUMMER CAMP SHIRTS-REC CENTER		0.00	674.02	
000246	DUNLOP SPORTS AMERICAS		06/09/2026	Regular	0.00	452.90	110295
8962927 NN	Credit Memo	05/01/2026	GOLF-CREDIT FOR RETURNS-PRO SHOP		0.00	-984.82	
8985297 SO	Invoice	05/11/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	412.80	
8998749 SO	Invoice	05/18/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	1,024.92	
003960	ELITE INDUSTRIES, INC.		06/09/2026	Regular	0.00	6,096.05	110296
10980	Invoice	03/25/2026			0.00	6,096.05	

Vendor Number / Payable #	Vendor Name / Payable Type	Post Date	Payment Date / Payable Description	Payment Type	Discount Amount / Discount Amount	Payment Amount / Payable Amount	Number
000445	EWING IRRIGATION PRODUCTS INC		06/09/2026	Regular	0.00	707.50	110297
30392034	Invoice	05/21/2026	GF-GORILLA HAIR MULCH-PARKS		0.00	707.50	
003687	EXTREME CARE LLC		06/09/2026	Regular	0.00	280.00	110298
34907	Invoice	05/28/2026	REC-REPLACED BELT ON WATER ROWER-R...		0.00	280.00	
000512	FUZION FIELD SERVICES LLC		06/09/2026	Regular	0.00	247.50	110299
420447	Invoice	05/01/2026	GOLF-PORTABLE TOILET SERVICES-MAINT		0.00	247.50	
002143	GREEN CO2 SYSTEMS		06/09/2026	Regular	0.00	45.29	110300
00405251	Invoice	05/28/2026	REC-POOL CO2 REFILL-REC CENTER		0.00	45.29	
003845	GUADALUPE RAMIREZ		06/09/2026	Regular	0.00	55.00	110301
2008138.001	Invoice	05/29/2026	GF-SWIM LESSONS REFUND-		0.00	55.00	
000616	J & T CONSULTING INC		06/09/2026	Regular	0.00	4,418.15	110302
3325	Invoice	06/02/2026	UF-2026 Water Engineering-Water		0.00	4,418.15	
002977	JOSEPH ELLIOTT USA LLC		06/09/2026	Regular	0.00	221.44	110303
38799	Invoice	05/22/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	221.44	
004110	LEENA GARCIA		06/09/2026	Regular	0.00	65.00	110304
2008137.001	Invoice	05/29/2026	GF-SHELTER REFUND-		0.00	65.00	
000735	LL JOHNSON DISTRIBUTING		06/09/2026	Regular	0.00	7,140.14	110305
1170018-00A	Invoice	06/01/2026	GOLF-RISER WELD ASSEMBLY-MAINT		0.00	500.00	
1171383-00	Invoice	05/26/2026	GOLF-PARTS, SUPPLIES-MAINT		0.00	3,370.00	
1973437-00	Invoice	05/01/2026	GOLF-FLAGS, SUPPLIES-MAINT		0.00	2,936.65	
1975640-00	Invoice	05/11/2026	GOLF-OIL FILTER-MAINT		0.00	172.64	
1976137-00	Invoice	05/19/2026	GOLF-THROTTLE-MAINT		0.00	160.85	
003281	MICHELLE MAGELSSEN		06/09/2026	Regular	0.00	301.09	110306
052926	Invoice	05/29/2026	GF-MILEAGE REIMBURSEMENT-EC DEV		0.00	301.09	
000795	MILE HIGH TURFGRASS, LLC		06/09/2026	Regular	0.00	4,877.50	110307
13636	Invoice	05/14/2026	GOLF-CHEMICALS, FERTILIZER-MAINT		0.00	4,877.50	
000865	OFFICE DEPOT		06/09/2026	Regular	0.00	109.75	110308
469205902001	Invoice	05/18/2026	GF-PURELL ORIGINAL PUMP-STREETS		0.00	50.63	
469517299001	Invoice	05/21/2026	GF-PURELL ORIG PUMP, STAPLER-ADMIN/...		0.00	59.12	
003213	OLD TOWN PEST CONTROL		06/09/2026	Regular	0.00	600.00	110309
16536	Invoice	05/28/2026	GF-PRAIRIE DOG CONTROL-PW SHOP		0.00	600.00	
002265	QUADIENT FINANCE USA INC		06/09/2026	Regular	0.00	220.00	110310
80877446 APRIL...	Invoice	05/27/2026	POSTAGE RECHARGES APRIL 25-MAY 25, 2...		0.00	220.00	
004109	ROUGH CUT RECORDS, LLC		06/09/2026	Regular	0.00	2,000.00	110311
020222	Invoice	05/01/2026	CPR-ENTERTAINMENT FOR JULY 4TH EVEN...		0.00	2,000.00	
000999	SHAMROCK FOODS COMPANY		06/09/2026	Regular	0.00	1,091.64	110312
36738021	Invoice	05/26/2026	GOLFOOD, BEVERAGES, PREPACKAGED G...		0.00	1,091.64	
004108	SKINNY'S SOUND AND STAGING PRODUCTIONS		06/09/2026	Regular	0.00	3,965.00	110313
5910	Invoice	05/01/2026	CPR-4TH OF JULY SOUND & STAGE RENTAL...		0.00	3,965.00	
001022	SOUTHERN GLAZER'S OF CO		06/09/2026	Regular	0.00	190.26	110314
4046228	Invoice	05/27/2026	GOLF-BEVERAGES-PRO SHOP		0.00	190.26	
001026	SPECIALTY CIGARS, LLC		06/09/2026	Regular	0.00	332.85	110315
US16-43664478	Invoice	05/22/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	332.85	
001040	STERICYCLE		06/09/2026	Regular	0.00	57.59	110316
8014308888	Invoice	05/18/2026	REC-BIOHAZARD-REC CENTER		0.00	10.56	
8014411253	Invoice	05/25/2026	GF-SHREDDING SERVICE CITY HALL-CITY CL		0.00	47.03	

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001052	SWIRE COCA-COLA, USA		06/09/2026	Regular	0.00	1,235.58	110317
52582507004	Invoice	05/29/2026	GOLF-PRE PACKAGED GOODS-PRO SHOP		0.00	1,235.58	
001064	TAYLORMADE GOLF COMPANY INC		06/09/2026	Regular	0.00	609.72	110318
39177333	Invoice	05/20/2026	GOLF-MERCHADISE-PRO SHOP		0.00	609.72	
001105	TOSHIBA FINANCIAL SERVICES		06/09/2026	Regular	0.00	3,012.60	110319
582650164	Invoice	06/01/2026	Rec-Copier Supply Freight-Rec		0.00	3,012.60	
001147	USA BLUE BOOK		06/09/2026	Regular	0.00	1,400.15	110320
INV01057356	Invoice	05/27/2026	UF/SF-MARKING FLAGS, PAINT-W LINES/S ...		0.00	1,400.15	
001207	WESTERN DISTRIBUTING INC		06/09/2026	Regular	0.00	78.36	110321
891858	Invoice	05/29/2026	GOLF-BEVERAGE-PRO SHOP		0.00	78.36	
001224	XCEL ENERGY-GAS		06/09/2026	Regular	0.00	612.01	110322
979244969	Invoice	05/01/2026	GFMAY26 GAS BILL-PARKS		0.00	481.12	
979480539	Invoice	05/27/2026	GF-MAY 2026 GAS BILL-MUSEUM		0.00	130.89	
000453	FAMILY SUPPORT REGISTRY		06/12/2026	Regular	0.00	140.76	110323
INV0001997	Invoice	06/12/2026	A. Infante Jr - Remit ID 06092977-SDU/Tri...		0.00	140.76	
002254	ADIDAS AMERICA INC		06/16/2026	Regular	0.00	4,478.70	110324
6165166946	Invoice	06/01/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	2,176.00	
6165333255	Invoice	06/01/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	39.50	
6165534418	Invoice	06/02/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	720.00	
6165550306	Invoice	06/05/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	60.00	
6165554320	Invoice	06/05/2026	GF-UNIFORMS-PW		0.00	1,483.20	
000079	AMERICAN RED CROSS		06/16/2026	Regular	0.00	378.00	110325
23276277	Invoice	05/28/2026	GOLF-CPR & AED CLASSES-PRO SHOP/MAI...		0.00	378.00	
004000	APEX WASTE SOLUTIONS		06/16/2026	Regular	0.00	1,412.08	110326
1287197	Invoice	07/01/2026	GF-JUL26 TRASH SERVICE-CITY HALL		0.00	152.62	
1287199	Invoice	07/01/2026	CPR-203 S HARRISON JUL26 TRASH SRVC		0.00	96.16	
1287201	Invoice	07/01/2026	GF-JUL26 800 12TH TRASH SRVC-PW SHOP		0.00	182.02	
1287202	Invoice	07/01/2026	GF-JUL26205 S HARRISON TRASH SRV-PAR...		0.00	136.50	
1287203	Invoice	07/01/2026	CEM-JUL26 TRASH SRVC-CEM		0.00	240.66	
1287204	Invoice	07/01/2026	GOLF-JUL26 TRASH SRVC-PRO SHOP		0.00	273.00	
1287205	Invoice	07/01/2026	GOLF-JUL26 TRASH SRVC-MAINT		0.00	152.62	
1287207	Invoice	07/01/2026	GF-0 HWY 52 JUL26 TRASH SRVC-FAC		0.00	136.50	
1287277	Invoice	07/01/2026	GF-1025 1ST ST JUL26 TRASH SRVC-CODE		0.00	42.00	
000108	AUSMUS LAW FIRM PC		06/16/2026	Regular	0.00	1,200.00	110327
10146	Invoice	06/01/2026	GF-PROSECUTION SERVICES FOR MAY 202...		0.00	1,200.00	
003478	BUFFALO REFRIGERATION		06/16/2026	Regular	0.00	240.00	110328
1553	Invoice	06/02/2026	GOLF-REPAIRS, MAINTENANCE-PRO SHOP		0.00	240.00	
000239	CITY OF FORT LUPTON		06/16/2026	Regular	0.00	118.00	110329
CIT #E0023275-1	Invoice	06/05/2026	GF-RESTITUTION, CIT#E0023275-1 D. TH...		0.00	118.00	
000256	COLORADO DEPT OF EARLY CHILDHOOD		06/16/2026	Regular	0.00	235.00	110330
LICENSE #1543436	Invoice	06/01/2026	REC-SUMMER CAMP LICENSE RENEWAL-R...		0.00	235.00	
000307	COMCAST CABLE COMM, LLC		06/16/2026	Regular	0.00	160.57	110331
0116038 JUNE26	Invoice	06/01/2026	REC-PHONE SERVICE FOR JUNE 2026-REC ...		0.00	160.57	
003559	DRAKE DUO PRINTS LTD		06/16/2026	Regular	0.00	238.88	110332
1453	Invoice	06/01/2026	CPR-VOLLEYBALL CAMP SHIRTS-ATHL		0.00	238.88	
000246	DUNLOP SPORTS AMERICAS		06/16/2026	Regular	0.00	1,949.40	110333
9025388 SO	Invoice	06/01/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	1,949.40	
000445	EWING IRRIGATION PRODUCTS INC		06/16/2026	Regular	0.00	342.89	110334

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30573107	Invoice	06/04/2026	GF-GREY BREEZE TON-PARKS		0.00	59.89	
30592681	Invoice	06/05/2026	GF-GORILLA HAIR MULCH-PARKS		0.00	283.00	
000461	FERRELLGAS LP		06/16/2026	Regular	0.00	747.69	110335
1133833385	Invoice	05/11/2026	GOLF-PROPANE-MAINT		0.00	747.69	
002143	GREEN CO2 SYSTEMS		06/16/2026	Regular	0.00	720.23	110336
00405699	Invoice	06/04/2026	REC-CO2 REFILL FOR POOL-REC CENTER		0.00	192.02	
02117085	Invoice	06/01/2026	REC-POD'S CO2 MONTHLY RENTAL-REC C...		0.00	346.79	
02117663	Invoice	06/01/2026	GF-SPLASH PARK'S MONTHLY RENTAL-PA...		0.00	181.42	
004111	HANNAH LU		06/16/2026	Regular	0.00	150.00	110337
2008136.001	Invoice	05/29/2026	GF-POOL PARTY REFUND-		0.00	150.00	
000567	HIGH COUNTRY BEVERAGE CORP		06/16/2026	Regular	0.00	2,978.75	110338
W-7407710	Invoice	06/01/2026	GOLF-BEVERAGES-PRO SHOP		0.00	1,444.45	
W-7413783	Invoice	06/08/2026	GOLF-BEVERAGES-PRO SHOP		0.00	1,534.30	
003120	HUDSON LOCKERS, INC		06/16/2026	Regular	0.00	270.00	110339
645	Invoice	06/05/2026	GOLF-PRE PACKAGED GOODS-PRO SHOP		0.00	270.00	
000588	ID EDGE INC		06/16/2026	Regular	0.00	528.00	110340
106662	Invoice	05/29/2026	REC-CARDS FOR CARD PRINTER-REC CENT...		0.00	528.00	
001851	IMA, INC		06/16/2026	Regular	0.00	13,229.67	110341
632315	Invoice	06/05/2026	UF-2026-27 Flood Insurance FBS00001840...		0.00	5,471.94	
632317	Invoice	06/05/2026	UF-2026-27 Flood Insurance FBS00001840...		0.00	7,757.73	
003577	JR ENGINEERING LLC		06/16/2026	Regular	0.00	5,998.50	110342
89081	Invoice	05/31/2026	SST-HWY 52 & COLLEGE AVE PROJECT DES...		0.00	5,998.50	
000735	LL JOHNSON DISTRIBUTING		06/16/2026	Regular	0.00	757.98	110343
1171591-00	Invoice	06/03/2026	GOLF-PARTS, SUPPLIES-MAINT		0.00	757.98	
000847	NORMAN'S MEMORIALS INC.		06/16/2026	Regular	0.00	140.00	110344
060826	Invoice	06/08/2026	CEM-SHIRLEY A GRIFFITHS-CEMETERY		0.00	140.00	
000865	OFFICE DEPOT		06/16/2026	Regular	0.00	88.19	110345
471444928001	Invoice	06/04/2026	GF-RED IPG COLORED CLOTH-CITY CL		0.00	88.19	
002738	ORIGINAL WATERMEN INC		06/16/2026	Regular	0.00	724.00	110346
507579	Invoice	05/28/2026	REC-LIFEGUARD SHORTS-REC CENTER		0.00	724.00	
003044	PEAK FORM, LLC		06/16/2026	Regular	0.00	1,087.00	110347
7694K25213	Invoice	06/01/2026	GF-DOT TESTS, PREHIRE TESTING, RAPID P...		0.00	1,087.00	
003432	PRISWING SOFTWARE LLC		06/16/2026	Regular	0.00	375.00	110348
INV4183613	Invoice	06/01/2026	GOLF-MONTHLY LICENSE FEE-PRO SHOP		0.00	375.00	
001643	PROCODE INC		06/16/2026	Regular	0.00	56,058.00	110349
3915224	Invoice	05/31/2026	GF-INSPECTION FEES/PERMITS-BLDG INSP		0.00	56,058.00	
000991	SCNS SPORTS FOODS INC		06/16/2026	Regular	0.00	129.96	110350
247607	Invoice	06/01/2026	GOLF-PRE PACKAGED GOODS-PRO SHOP		0.00	129.96	
000999	SHAMROCK FOODS COMPANY		06/16/2026	Regular	0.00	3,143.05	110351
36849479	Invoice	05/30/2026	GOLF-FOOD, BEVERAGES, PRE PACKAGED ...		0.00	898.84	
36863106	Invoice	06/03/2026	GOLF-FOOD, BEVERAGES, PRE PACKAGED ...		0.00	959.11	
36874783	Invoice	06/07/2026	GOLF-FOOD, BEVERAGES, PRE PACKAGED ...		0.00	1,341.07	
RMA 10876289	Credit Memo	06/03/2026	GOLF-CREDIT FOR RETURN OF BRATWURS...		0.00	-55.97	
001040	STERICYCLE		06/16/2026	Regular	0.00	1,109.60	110352
8014456127	Invoice	05/31/2026	GF-ANNUAL CITYWIDE SHREDDING-CITY CL		0.00	1,109.60	
002967	SYNERGETIC STAFFING LLC		06/16/2026	Regular	0.00	1,009.89	110353

Vendor Number / Payable #	Vendor Name / Payable Type	Post Date	Payment Date / Payable Description	Payment Type	Discount Amount / Discount Amount	Payment Amount / Payable Amount	Number
21012488	Invoice	06/01/2026	GF-TEMP WAGES MAY 26-29, 2026-FAC		0.00	1,009.89	
001064	TAYLORMADE GOLF COMPANY INC		06/16/2026	Regular	0.00	759.29	110354
39206975	Invoice	05/28/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	495.84	
39218640	Invoice	06/02/2026	GOLF-MERCHANDISE-PRO SHOP		0.00	263.45	
001120	TRUDILIGENCE LLC		06/16/2026	Regular	0.00	464.45	110355
73717	Invoice	05/31/2026	GF-BACKGROUND CHECKS-HR		0.00	464.45	
001137	UNITED POWER		06/16/2026	Regular	0.00	163.71	110356
1215802 MAY26	Invoice	05/01/2026	GF-MAY 2026 ELECTRIC SERVICE (VET OFF…		0.00	163.71	
001137	UNITED POWER		06/16/2026	Regular	0.00	50,375.22	110357
10553102 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-EMERG SIREN		0.00	26.18	
1194602 MAY26	Invoice	05/01/2026	GC-MAY26 ELECTRIC-CLUBHOUSE		0.00	967.46	
1195001 MAY26	Invoice	05/01/2026	GC-MAY26 ELECTRIC-PUMP HOUSE		0.00	4,342.87	
1195501 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-WTR TANK&PUMP		0.00	5,709.52	
1195603 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-455 COLLEGE AVE PUMP …		0.00	707.10	
1195701 MAY26	Invoice	05/01/2026	GC-MAY26 ELECTRIC-MAINT BLDG		0.00	213.86	
1196401 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-WELCOME SIGNS		0.00	41.56	
1207701 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-B&G SPRINKLER CONTROL		0.00	24.38	
1240301 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-SEWER LIFT STA		0.00	137.55	
1241801 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-PEARSON PK BALLFIELD		0.00	3,377.94	
1241903 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-PEARSON PK		0.00	157.69	
1276101 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-WELL #4		0.00	949.38	
1279801 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-SCH SIGNAL		0.00	29.33	
1295501 MAY26	Invoice	05/01/2026	CPR-MAY26 ELEC-MUSEUM		0.00	81.86	
1296101 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-WELL #5		0.00	835.12	
1302801 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-CITY HALL		0.00	2,578.79	
1302901 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-WELL #1		0.00	100.33	
1316801 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-WELL #3		0.00	923.12	
1322501 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-STREET LIGHTS		0.00	6,941.79	
1360303 MAY26	Invoice	05/01/2026	CEM-MAY26 ELEC-CEMETERY		0.00	39.75	
13842400 MAY26	Invoice	05/01/2026	CPR-MAY26 ELEC-REC SIGN		0.00	63.16	
14427100 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-VERIZON BLDG		0.00	147.37	
15232500 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-TORN SIREN		0.00	24.43	
17149700 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-WCR8 SIGNAL		0.00	63.98	
17761600 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-HERITAGE PARK		0.00	23.07	
17868800 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-LANCASTER SPRINK		0.00	23.00	
18057500 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-S LIFT STATION		0.00	646.82	
18498400 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-WELL#7		0.00	352.25	
18762100 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-LIGHT RECEPTACLES		0.00	46.18	
19595600 MAY26	Invoice	05/01/2026	GC-MAY26 ELECTRIC-SIGN LIGHT		0.00	23.71	
20040100MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-TERM RES DAM PUMP W		0.00	228.84	
21675200 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-IRRIGATE 2414 HORSESH…		0.00	131.90	
21675300 MAY26	Credit Memo	05/01/2026	MAY 26 ELECTRIC IRRIGATE 1912 WAGO…		0.00	-217.46	
22185901 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-FULTON PARK IRRIGATION		0.00	23.86	
6601202 MAY26	Invoice	05/01/2026	GC-MAY26 ELECTRIC-PAVILLION		0.00	29.79	
6612303 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-COYOTE CREEK ENTRANCE		0.00	24.44	
6779701 MAY26	Invoice	05/01/2026	REC-75% MAY26 ELEC-REC		0.00	12,034.11	
704901 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-WWTP		0.00	200.00	
7225800 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-GAZEBO		0.00	25.56	
726705 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-SIGN 70110&70111		0.00	28.79	
7280200 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-WATER TANKS		0.00	25.08	
733101 MAY26	Invoice	05/01/2026	GF-MAY26 ELEC-SHOP		0.00	222.62	
762901 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-WELL #13		0.00	903.28	
803908 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-WTR TRMT PLANT		0.00	6,302.14	
8976200 MAY26	Invoice	05/01/2026	UF-MAY26 ELEC-N LIFT STATION		0.00	812.72	
	Void		06/16/2026	Regular	0.00	0.00	110358
	Void		06/16/2026	Regular	0.00	0.00	110359

Vendor Number / Payable #	Vendor Name / Payable Type	Post Date	Payment Date / Payable Description	Payment Type	Discount Amount / Discount Amount	Payment Amount / Payable Amount	Number
001137	UNITED POWER		06/16/2026	Regular	0.00	579.49	110360
24165100 MAY26	Invoice	05/01/2026	GF-MAY 2026 ELECTRIC SERVICE (SPLASH ...		0.00	579.49	
001149	UTILITY NOTIFICATION CENTER		06/16/2026	Regular	0.00	421.86	110361
226050709	Invoice	05/31/2026	UF-4TH BILLING TIER ANNUAL ASSESMENT...		0.00	421.86	
002132	VECTOR DISEASE CONTROL		06/16/2026	Regular	0.00	3,659.49	110362
PI-A00018535	Invoice	05/01/2026	GF-MOSQUITO CONTROL-PW		0.00	3,659.49	
001156	VERIZON WIRELESS SVCS LLC		06/16/2026	Regular	0.00	10,117.51	110363
6144627520	Invoice	05/01/2026	GF- 04/27-05/26 VERIZON LICENSES		0.00	10,117.51	
001208	WBA, LOCAL GOVERNMENT LAW		06/16/2026	Regular	0.00	1,457.55	110364
49072	Invoice	06/08/2026	GF-May2026 Ft Lupton 227 MD Legal Fees		0.00	1,457.55	
001212	WILLIAMS AND WEISS CONSULTING LLC		06/16/2026	Regular	0.00	4,230.00	110365
2280	Invoice	06/09/2026	UF-2026 Decree Accounting-Water		0.00	4,230.00	
003640	WYOMING TRIBUNE EAGLE		06/16/2026	Regular	0.00	2,122.63	110366
052688372	Invoice	05/31/2026	REC/CPR-REC GUIDES-REC/COMM CENTER...		0.00	2,122.63	
001225	YAMAHA MOTOR CORP		06/16/2026	Regular	0.00	17,416.35	110367
32549	Invoice	05/21/2026	GOLF-LEASE JUNE 1-30, 2026-ADMIN		0.00	17,416.35	
000024	ACE HARDWARE OF FORT LUPTON		06/09/2026	EFT	0.00	51.03	9100830
112975/1	Invoice	05/27/2026	GOLF-BUSHING-MAINT		0.00	6.59	
1130371/1	Invoice	06/01/2026	GOLF-SUPPLIES, PARTS-MAINT		0.00	44.44	
002841	AIRBOUND		06/09/2026	EFT	0.00	5,310.00	9100831
EVENT #248869-1	Invoice	05/26/2026	CPR-FINAL PYMNT FOR 4TH OF JULY RIDES...		0.00	5,310.00	
003196	AMAZE HEALTH		06/09/2026	EFT	0.00	2,250.00	9100832
INV-12305	Invoice	05/31/2026	GF-MAY 2026 MONTHLY USER FEES-MISC		0.00	2,250.00	
001820	BADGER METER		06/09/2026	EFT	0.00	78.74	9100833
1808983	Invoice	05/28/2026	UF-METER CHECK ON RESIDENTIAL HOME...		0.00	78.74	
003415	BLUEBEAM INC		06/09/2026	EFT	0.00	260.00	9100834
2863104	Invoice	05/28/2026	GF-SUBSCRIPTION RENEWAL MAY 2026-...		0.00	260.00	
000167	BRIGHTON FORD INC		06/09/2026	EFT	0.00	225.15	9100835
158677	Invoice	05/13/2026	GF/SF-PARTS FOR UNIT 22, FORD F-250-ST...		0.00	225.15	
002853	BUCKEYE CLEANING CENTER		06/09/2026	EFT	0.00	3,057.78	9100836
90762818	Invoice	05/28/2026	REC-JANITORIAL SUPPLIES-REC CENTER		0.00	3,057.78	
002122	BURNS & MCDONNELL ENGINEERING CO INC		06/09/2026	EFT	0.00	198,208.54	9100837
160868-31	Invoice	05/29/2026	UF-WATER TOWER CONSTRUCTION MAN...		0.00	198,208.54	
000361	DBC IRRIGATION SUPPLY		06/09/2026	EFT	0.00	336.25	9100838
S6385453.001	Invoice	06/01/2026	GF-SUPREME LAWN MIX-PARKS		0.00	336.25	
002723	EAGLE ROCK COMPANY OF COLO		06/09/2026	EFT	0.00	1,383.28	9100839
15317449	Invoice	05/26/2026	GOLF-BEVERAGES-PRO SHOP		0.00	598.98	
15317450	Invoice	05/26/2026	GOLF-BEVERAGES-PRO SHOP		0.00	784.30	
003720	FREDERICK M GOODBEE		06/09/2026	EFT	0.00	1,600.00	9100840
052626	Invoice	05/26/2026	GF-MAY 2026 JUDGE SERVICES-COURT		0.00	1,600.00	
002169	GH PHIPPS CONSTRUCTION COMPANIES		06/09/2026	EFT	0.00	1,363,552.88	9100841
CITY HALL 15	Invoice	05/28/2026	GF-PURCHASE MATERIALS FOR NEW CITY ...		0.00	1,251,242.60	
CITY HALL 15A	Invoice	05/28/2026	GF-CITY HALL CONSTRUCTION-MISC		0.00	112,310.28	
000931	R & L TIRES		06/09/2026	EFT	0.00	164.34	9100842
536063	Invoice	05/19/2026	GOLF-TIRE SERVICES-MAINT		0.00	22.34	
63402	Invoice	05/26/2026	GF-TIRE DISPOSALFOR CLEAN UP DAYS-LE...		0.00	142.00	

Vendor Number / Payable #	Vendor Name / Payable Type	Post Date	Payment Date / Payable Description	Payment Type	Discount Amount / Discount Amount	Payment Amount / Payable Amount	Number
001101	TODD HODGES DESIGN, LLC		06/09/2026	EFT	0.00	9,126.00	9100843
3776	Invoice	06/01/2026	GF-PLANNING SERVICES MAY 18-31, 2026...		0.00	9,126.00	
001135	UNION PACIFIC RAILROAD CO		06/09/2026	EFT	0.00	20,670.00	9100844
347507356	Invoice	05/28/2026	UF-Union Pacific License- NonPot Main CR...		0.00	20,670.00	
003398	UNIVERSITY AUTO PARTS		06/09/2026	EFT	0.00	34.20	9100845
276933	Invoice	05/29/2026	GF-LONG NOSE PLIERS-PW SHOP		0.00	34.20	
001594	WILBUR-ELLIS COMPANY LLC		06/09/2026	EFT	0.00	2,742.73	9100846
17841281	Invoice	05/20/2026	GOLF-PARTS, SUPPLIES-MAINT		0.00	2,049.88	
17860267	Invoice	05/27/2026	GOLF-CHEMICALS, FERTILIZER-MAINT		0.00	692.85	
000048	AIRGAS USA LLC		06/16/2026	EFT	0.00	27.46	9100847
5525196713	Invoice	05/31/2026	GOLF-LARGE ACETYLENE, LARGE OXYGEN...		0.00	27.46	
001293	AMAZON.COM		06/16/2026	EFT	0.00	2,397.95	9100848
116R-7GFH-R7YL	Invoice	06/05/2026	GF-HP Toner Cartridge 4 pack-Finance		0.00	511.89	
1D1G-1M64-V7JN	Invoice	06/05/2026	IT Amazon Orders		0.00	1,212.12	
1LJJ-J166-RGQH	Invoice	06/05/2026	GF-MISC ITEMS, PARTS, SUPPLIES-PW SHO...		0.00	762.92	
1TWX-V9VF-3W...	Credit Memo	06/05/2026	GF-CREDIT FOR RETURN-PW SHOP		0.00	-88.98	
001820	BADGER METER		06/16/2026	EFT	0.00	4,301.22	9100849
80238801	Invoice	05/28/2026	UF/SF-METER SERVICES-W LINES/S LINES		0.00	4,301.22	
003962	BOHANNAN HUSTON INC		06/16/2026	EFT	0.00	3,512.18	9100850
000139653	Invoice	06/07/2026	UF-DROUGHT RESPONSE PLAN ENGINEER...		0.00	3,512.18	
002973	BOOTBARN INC		06/16/2026	EFT	0.00	476.98	9100851
INV00611271	Invoice	06/01/2026	GF-UNIFORMS-FAC		0.00	157.49	
INV00611272	Invoice	06/01/2026	GF-UNIFORMS-FAC		0.00	175.00	
INV00611273	Invoice	06/01/2026	GF-UNIFORMS-FAC		0.00	144.49	
000361	DBC IRRIGATION SUPPLY		06/16/2026	EFT	0.00	850.73	9100852
S6391015.001	Invoice	06/02/2026	GOLF-IRRIGATION SUPPLIES-MAINT		0.00	595.30	
S6396947.001	Invoice	06/09/2026	GF-BONNET ASSEMBLY-PARKS		0.00	255.43	
002723	EAGLE ROCK COMPANY OF COLO		06/16/2026	EFT	0.00	1,454.48	9100853
15342698	Invoice	06/01/2026	GOLF-BEVERAGES-PRO SHOP		0.00	291.30	
15342699	Invoice	06/01/2026	GOLF-BEVERAGES-PRO SHOP		0.00	272.70	
15370317	Invoice	06/08/2026	GOLF-BEVERAGES-PRO SHOP		0.00	356.58	
15370318	Invoice	06/08/2026	GOLF-BEVERAGES-PRO SHOP		0.00	419.50	
15371250	Invoice	06/08/2026	GOLF-BEVERAGES-PRO SHOP		0.00	164.40	
37350075	Credit Memo	06/08/2026	GOLF-BEVERAGES-PRO SHOP		0.00	-50.00	
004052	ECOLOGICAL RESOURCE CONSULTANTS LLC		06/16/2026	EFT	0.00	6,506.50	9100854
INV1548	Invoice	05/31/2026	UF-2026 Decree Accounting-Water		0.00	6,506.50	
000425	ELEVATION COFFEE TRADERS		06/16/2026	EFT	0.00	548.64	9100855
170402	Invoice	06/01/2026	GOLF-COFFEE-PRO SHOP		0.00	182.88	
172315	Invoice	06/03/2026	GOLF-COFFEE-PRO SHOP		0.00	365.76	
000909	FERGUSON ENTERPRISES, LLC		06/16/2026	EFT	0.00	147.50	9100856
1685911	Invoice	06/04/2026	UF-PARTS/SUPPLIES-W LINES		0.00	147.50	
002674	HAYES POZNANOVIC KORVER, LLC		06/16/2026	EFT	0.00	15,095.00	9100857
3201	Invoice	06/05/2026	GF-May2026 Legal Fees - Water		0.00	15,095.00	
003316	MIGUEL IRAOLA		06/16/2026	EFT	0.00	1,050.00	9100858
04302026	Invoice	06/01/2026	GF-APRIL 2026 COURT TRANSLATION SERV...		0.00	525.00	
05302026	Invoice	05/30/2026	GF-TRANSLATOR SERVICES FOR MAY 2026...		0.00	525.00	
000869	OPERATIONS MANAGEMENT INT		06/16/2026	EFT	0.00	166,997.50	9100859
351230-OS-MZ	Invoice	06/02/2026	UF-DESIGN WATER PLANT PLATFORM/ME...		0.00	166,997.50	

Vendor Number / Payable #	Vendor Name / Payable Type	Post Date	Payment Date / Payable Description	Payment Type	Discount Amount / Discount Amount	Payment Amount / Payable Amount	Number
001998	PEAK DIGITAL OFFICE SOLUTIONS		06/16/2026	EFT	0.00	675.00	9100860
74820	Invoice	06/08/2026	GF-LASERFICE PROFESSIONAL HRS FOR PR...		0.00	675.00	
000939	RECREATION SUPPLY COMPANY		06/16/2026	EFT	0.00	104.07	9100861
543290	Invoice	05/30/2026	GF-SPLASH PARK REGEANTS-PARKS		0.00	104.07	
001135	UNION PACIFIC RAILROAD CO		06/16/2026	EFT	0.00	3,507.01	9100862
347595040	Invoice	06/04/2026	GF-2026 R.R. Park Lease-Parks		0.00	3,507.01	
003398	UNIVERSITY AUTO PARTS		06/16/2026	EFT	0.00	73.13	9100863
277790	Invoice	06/04/2026	GF/UF-PARTS, SUPPLIES-STREETS/W LINES		0.00	73.13	
000119	BANK OF COLORADO		06/12/2026	Bank Draft	0.00	8,994.86	DFT0002790
INV0001993	Invoice	06/12/2026	HSA DISTRIBUTION		0.00	8,994.86	
000119	BANK OF COLORADO		06/12/2026	Bank Draft	0.00	1,992.49	DFT0002791
INV0001994	Invoice	06/12/2026	HSA DISTRIBUTION		0.00	1,992.49	
000465	FIRE & POLICE PENSION ASC		06/12/2026	Bank Draft	0.00	2,592.60	DFT0002792
INV0001995	Invoice	06/12/2026	FPPA - PD Retirement Plan Contributions		0.00	2,592.60	
001416	VALIC_1		06/12/2026	Bank Draft	0.00	57,836.83	DFT0002793
INV0001996	Invoice	06/12/2026	VALIC - 457(b) $ Contributions		0.00	57,836.83	
001265	IRS		06/12/2026	Bank Draft	0.00	108,417.34	DFT0002794
INV0001998	Invoice	06/12/2026	Federal Withholding		0.00	108,417.34	
001418	CO DEPARTMENT OF REVENUE		06/12/2026	Bank Draft	0.00	18,459.00	DFT0002795
INV0001999	Invoice	06/12/2026	CO Withholding		0.00	18,459.00	

Bank Code New Main Operating Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	165	86	0.00	289,477.87
Manual Checks	0	0	0.00	0.00
Voided Checks	0	2	0.00	0.00
Bank Drafts	6	6	0.00	198,293.12
EFT's	52	34	0.00	1,816,776.27
	223	**128**	**0.00**	**2,304,547.26**

All Bank Codes Check Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	165	86	0.00	289,477.87
Manual Checks	0	0	0.00	0.00
Voided Checks	0	2	0.00	0.00
Bank Drafts	6	6	0.00	198,293.12
EFT's	52	34	0.00	1,816,776.27
	223	**128**	**0.00**	**2,304,547.26**

Fund Summary

Fund	Name	Period	Amount
999	POOLED CASH/CONSOLIDATED CASH	6/2026	2,304,547.26
			2,304,547.26

RECORD OF PROCEEDINGS
FORT LUPTON CITY COUNCIL/ENTERPRISE BOARDS
June 2, 2026

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, June 2, 2026. Mayor Chris Ceretto called the meeting to order at 6:03 p.m. and invited everyone to join him in the Pledge of Allegiance.

ROLL CALL

Mari Peña, City Clerk, called the roll. Those present were Mayor Chris Ceretto, Councilmembers, Bruce Fitzgerald, David Crespin, Bruce Davis, Michael Sanchez, Claud Hanes, and Valerie Blackston.

Also present were City Administrator, Chris Cross, City Clerk, Mari Peña, City Attorney, Andy Ausmus, Chief of Police William Carnes, Planning Director Todd Hodges and Finance Director Leann Perino.

PERSONS TO ADDRESS COUNCIL

The Youth Advisory Committee introduced themselves to City Council and provided an overview of the events they have participated in.

APPROVAL OF AGENDA

Staff requested to add an item under Action Memorandum, Withdrawal of the County Road 8.5 Annexation Submitted by Ken Evans with 8 ½ Enterprises LLC. It was moved by Bruce Fitzgerald and seconded by Valerie Blackston to approve the agenda as amended. Motion passed unanimously on voice vote.

REVIEW OF ACCOUNTS PAYABLES

Council reviewed the June 2, 2026 payables; there were no questions or comments from the Mayor or Council.

CONSENT AGENDA

City Administrator, Chris Cross read the following consent agenda items into the record. It was moved by Claud Hanes and seconded by Bruce Davis to approve the Consent Agenda as presented with the following items:

- May 19, 2026 City Council Meeting Minutes
- Annual Renewal of Preventative Maintenance for Security Cameras for an Amount Not to Exceed $41,450.00, Allocated from the IT Repair & Maintenance Equipment Account (AM 2026-085)

- Approving the Purchase and Install of a New 2025 Mobile Office from Satellite for a Cost of $114,746.29 Allocated from the Utility Fund (AM 2026-088)
- Accepting Resolution 2026R035 APPROVING THE FIRST AMENDMENT TO THE VENDOR AGREEMENT FOR PROFESSIONAL SERVICES WITH AYRES ASSOCIATES, INC., TO AMEND THE SCOPE OF WORK TO INCLUDE THE HOUSING ACTION PLAN AND STRATEGIC GROWTH ELEMENT OF THE COMPREHENSIVE PLAN UPDATE (AM 2026-089)
- Accepting a Proposal from Temperature Engineering to Replace One Commercial Roof Top Unit on the Recreation Center for an Amount Not to Exceed $46,591.00 to be Paid from the Recreation Center Capital Projects Account (AM 2026-090)

Motion passed unanimously on roll call vote.

ACTION MEMORANDUM

AM 2026-087 Accepting a Proposal from Landscape Structures, Inc. for the Koshio Park Playground Equipment and Pour-in-Place Surfacing Including Installation for an Amount Not to Exceed $475,228.66 to be paid from the CPR Fund – Capital Projects

The Recreation Department would like to purchase the playground equipment and pour-in-place surfacing including installation from Landscape Structures, Inc. Purchasing consideration is below:

- Manufacturing time is expected to take approximately 6-8 weeks. Receipt and storage of the equipment will be the responsibility of City of Fort Lupton.
- Sourcewell purchasing cooperatives allows the City to save $31,965.53, and that discount is reflected on the proposal.

Staff budgeted $1,600,000.00 for Koshio Park renovation project. Proposal from Landscape Structures, Inc. is within Norris Design estimated project budget.

It was moved by Bruce Davis and seconded by Valerie Blackston to Accept a Proposal from Landscape Structures, Inc. for the Koshio Park Playground Equipment and Pour-in-Place Surfacing Including Installation for an Amount Not to Exceed $475,228.66 to be paid from the CPR Fund – Capital Projects. Motion passed unanimously on roll call vote.

AM 2026-091 Accepting a Proposal from Miracle Playsystems to Purchase One Poligon Shelter for an Amount Not to Exceed $40,030.40 to be Paid from the CPR Fund – Capital Projects.

The Recreation Department would like to purchase one Poligon Shelter from Miracle Playsystems. This shelter will replace the existing shelter at Koshio Park. The new shelter is 16’ x 30’ and will feature a food prep / serving area. Purchasing consideration is below:

- Manufacturing time is expected to take approximately 6-8 weeks. Receipt and storage of the equipment will be the responsibility of City of Fort Lupton.
- Sourcewell purchasing cooperatives allows the City to save $2,837.60, and that discount is reflected on the proposal.

It was moved by Valerie Blackston and seconded by Bruce Davis Accepting a Proposal from Miracle Playsystems to Purchase One Poligon Shelter for an Amount Not to Exceed $40,030.40 to be Paid from the CPR Fund – Capital Projects. Motion passed unanimously on roll call vote.

Withdrawal of the County Road 8.5 Annexation Application Submitted by Ken Evans with 8 ½ Enterprises LLC.

Magaly Morales, City Planner, informed the Council that the County Road 8.5 annexation application submitted by Ken Evans with 8 ½ Enterprises LLC has been withdrawn, so no public hearing will be held.

STAFF REPORTS

Beth Gudmestad, Library Director, stated the Adult Reading Program has begun and invited Council to register.

Doug Cook, Recreation Center Director, announced that the Summer Sizzle 5k will take place on June 13th and encouraged everyone to register.

Mari Peña, City Clerk, shared that the Memorial Day service went well and was well attended.

MAYOR/COUNCIL REPORTS

Mayor Chris Ceretto expressed his appreciation to City Clerk Mari Peña for coordinating the Memorial Day service and noted that the event was excellent.

Councilmember David Crespin said he's seeing more youth on bikes and scooters and is excited about the city's growth and diversity.

FUTURE CITY EVENTS

June 3, 2026 Coffee with a Cop, Fort Lupton Recreation Center, 203 S. Harrison Ave. 8:00 a.m. - 9:00 a.m.

June 13, 2026 Summer Sizzle 5K, Fort Lupton Recreation Center, 203 S. Harrison Ave. 8:00 a.m.

UPCOMING MEETINGS

June 9, 2026 Town Hall Meeting, City Hall, 130 S. McKinley Ave. 6:00 p.m.

June 16, 2026 City Council Meeting, City Hall, 130 S. McKinley Ave. 6:00 p.m.

June 30, 2026 Town Hall Meeting, City Hall, 130 S. McKinley Ave. 6:00 p.m.

July 7, 2026 City Council Meeting, City Hall, 130 S. McKinley Ave. 6:00 p.m.

EXECUTIVE SESSION

It was moved by Claud Hanes and seconded by David Crespin to move to Executive Session at 6:21 p.m**.** to consider the purchase, acquisition, lease, transfer or sale of real, personal or other property, pursuant to C.R.S. § 24-6-402(4)(a) – Purchase of Land. Motion passed unanimously on roll call vote. The following moved into Executive Session: Mayor Ceretto, Councilmembers David Crespin, Claud Hanes, Michael Sanchez, Bruce Fitzgerald, and Valerie Blackston. City Attorney, Andy Ausmus, City Administrator, Chris Cross, Finance Director, Leann Perino and Planning Director, Todd Hodges. The Executive Session ended at 6:49 p.m. and the regular meeting reconvened.

ADJOURNMENT

The meeting adjourned at 6:49 p.m.

Submitted by,

_____

Maricela Peña, City Clerk

Approved by City Council,

_____

Chris Ceretto, Mayor

DRAFT

ORDINANCE NO. 2026-1200
INTRODUCED BY: BRUCE DAVIS

AN ORDINANCE OF THE CITY OF FORT LUPTON, COLORADO, AMENDING SPECIFIC PROVISION OF THE FORT LUPTON MUNICIPAL CODE ADOPTING THE 2024 EDITION OF THE MODEL TRAFFIC CODE

WHEREAS, City Council deems it necessary to revise specific provisions of the Fort Lupton Municipal Code; and

WHEREAS, City Council finds that it is the best interest of the health, safety and welfare of the citizens that the provisions set forth herein be enacted.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF FORT LUPTON, COLORADO, AS FOLLOWS:

INTRODUCED, READ, AND PASSED ON FIRST READING, AND ORDERED PUBLISHED this 19th day of May 19, 2026.

PUBLISHED in the Fort Lupton Press the 28th day of May 2026.

FINALLY READ BY TITLE ONLY, PASSED AND ORDERED FINALLY PUBLISHED by title only this 16th day of June, 2026.

PUBLISHED BY TITLE ONLY the 25th day of June, 2026.

EFFECTIVE (after publication) the 25th day of July, 2026.

CITY OF FORT LUPTON, COLORADO

_____
Chris Ceretto, Mayor

ATTEST:

_____
Maricela Peña
City Clerk

Approved as to form:

_____
Andy Ausmus, City Attorney

City Council Meeting
Date: 6/16/2026
Staff: Aaron Richardson,
Jacobs Project Manager

AM 2026-092
Public Hearing☐

SUBJECT FOR DISCUSSION

Authorize Reallocation of Funding from Tank Repairs Capital Improvement Project to Water Treatment Plant Improvements.

SUMMARY STATEMENT/BACKGROUND DISCUSSION

External water tank repair was an approved CIP for 2026. After thorough inspections by numerous contractors, it was determined there were no major repairs required. Therefore, we're requesting to reallocate those CIP funds to replace/upgrade several critical pieces of equipment at the WTP.

These repairs have all become necessary in the last 6 months. These items include:

Replacement of the data concentrator	$13,500
Fire panel	$12,500
TOC (Total Organic Carbon) analyzer	$ 6,000
Separating the SCADA networks, and upgrading cybersecurity related hardware	$18,000
TOTAL WTP CIP	**$50,000**

FINANCIAL CONSIDERATIONS

The utility fund capital improvements budget for project is $50,000, and the estimates for completion of these projects is $50,000.

LEGAL/POLITICAL CONSIDERATIONS

Not Applicable

ALTERNATIVES/OPTIONS

Spend the $50,000 on the tanks
Reallocate CIP budget to these needed projects
Do Nothing

STAFF RECOMMENDATIONS

Staff recommends approval of reallocation of the tank repairs CIP budget in the Capital Improvements budget for the Water Treatment Plant and moving forward with these capital projects.

Attachments: None

Certification of Council Approval:
Ordinance No. _____
Resolution No. _____

_____ City Clerk

_____ Date

City Council Meeting
Date: June 16, 2026
Staff: Doug Cook,
Parks & Recreation Director

AM 2026-094
Public Hearing☐

SUBJECT FOR DISCUSSION

Accepting a Proposal from SYNLawn Colorado for the Playground Turf Surfacing Including Installation for an Amount Not to Exceed $44,265.45 to be Paid from the CPR Fund – Capital Projects.

SUMMARY STATEMENT/BACKGROUND DISCUSSION

The Recreation Department would like to purchase the playground turf surfacing including installation (attachment A) from SYNLawn Colorado. See purchasing consideration below:

- Lead time is expected to take approximately 4-5 weeks.
- Sourcewell purchasing cooperatives allows the City to save $8,000.00, and that discount is reflected on the proposal.

FINANCIAL CONSIDERATIONS

Staff budgeted $1,600,000.00 for Koshio Park renovation project (CPR Fund – Capital Projects 230.6000.575000). Proposal from SYNLawn Colorado is within Norris Design estimated project budget.

LEGAL/POLITICAL CONSIDERATIONS

None

ALTERNATIVES/OPTIONS

By using Sourcewell we are ensuring the lowest price for the playground turf surface including installation.

STAFF RECOMMENDATIONS

Staff recommends to approve the proposal from SYNLawn Colorado for the playground turf surfacing including install (attachment A) for an amount not to exceed $44,265.45 to be paid from the CPR Fund – Capital Projects.

Attachments: a. Vendor Agreement – SYNLawn Colorado

Certification of Council Approval:
Ordinance No. _____
Resolution No. _____

_____ City Clerk

_____ Date

City of Fort Lupton, Colorado

Vendor Agreement

This VENDOR Agreement is entered into by and between the **City of Fort Lupton**, Colorado (hereinafter "City") and SYNLawn Colorado (hereinafter "VENDOR").

WHEREAS, the parties hereto agree in consideration of the covenants, payments and agreements set forth herein as follows:

1. **SCOPE OF SERVICES** Contractor will furnish all tools, equipment, machinery, supplies, superintendence, insurance, transportation, labor and other construction accessories, services and facilities specified or required to be incorporated in and for a permanent part of the completed work. Contractor shall provide and perform all necessary labor in a first class and workmanlike manner and in accordance with the conditions and prices stated in the bid proposal and the requirements, stipulations, provisions and conditions of the contract documents. Contractor shall perform, execute, construct and complete all things mentioned to be done by the Contractor and all work included in the scope of work and bid specifications set forth and incorporated herein as **Exhibit A**. VENDOR confirms it possesses all necessary permits and professional licenses, as needed, and is in good standing with the State of Colorado. Further, VENDOR states, if applicable, it possesses professional liability insurance.

2. **CONTRACT DOCUMENTS.** This Agreement consists of and includes this Agreement and the scope of work set forth in the VENDOR's Scope of Work attached hereto as **Exhibit A**. In the event of any conflict between the specific contract terms and requirements of this Vendor Agreement and any terms and conditions of Vendor or Exhibit A, the parties specifically agree the terms of this Vendor Agreement shall control.

3. **PERIOD OF SERVICE AND SCHEDULE.** The provisions of this Agreement have been agreed to in anticipation of the orderly and continuous progress of the Project through completion of the services stated in the Proposal.

4. **CONTRACT SUM.** The City shall pay to the VENDOR for performance and completion of the work and or services encompassed by this Agreement, and the VENDOR will accept as full compensation therefore the sum of not to exceed **$44,265.45**, as set forth in the Fee Schedule attached hereto as **Exhibit A**, and subject to confirmation by the City of completion of the scope of work in accordance with the contract documents attached hereto. Said amounts to be paid upon review and acceptance of the work by the City, in its sole discretion, including completion by the VENDOR of any review corrections as determined by the City.

5. CONTRACT APPROPRIATIONS/NO CHANGE ORDERS. The City states that the amount of money appropriated for this Agreement is equal to or in excess of the contract amount. No change order to this Agreement requiring additional compensable work to be performed, which work causes the aggregate amount payable under this Agreement to exceed the amount appropriated for the original contract shall be issued by the City unless the City notifies the VENDOR in writing, that lawful appropriations to cover the costs of this additional work has been made and the change order is approved by the City in its sole discretion in writing. City shall have the right to make changes within the general scope of VENDOR's services, with an appropriate change in compensation and schedule, upon execution of a mutually acceptable amendment or change order signed by authorized representatives of City and VENDOR.

6. AMENDMENT/NO ASSIGNMENT. No modification or amendment of this Agreement shall be valid unless in writing and signed by all parties to this Agreement. VENDOR's services will be performed solely for the benefit of City and not for the benefit of any other persons or entities. Neither City nor VENDOR shall assign or transfer interest in this Agreement without the written consent of the other.

7. **COMPLETE AGREEMENT.** This Agreement, and the exhibits hereto, shall constitute the entire agreement between the parties with respect to the subject matter hereof and there are no agreements, representations or warranties other than as set forth herein. ***IN THE EVENT OF A CONFLICT BETWEEN THE SPECIFIC TERMS AND REQUIREMENTS OF THIS VENDOR AGREEMENT AND ANY TERMS AND CONDITIONS OF THE VENDOR OR EXHIBIT A ATTACHED HERETO, THE PARTIES SPECIFICALLY AGREE THE TERMS OF THIS FORT LUPTON VENDOR AGREEMENT SHALL CONTROL.***

8. DOCUMENTS. All documents prepared by VENDOR pursuant to this Agreement shall become the exclusive property of the City after full payment therefore. The parties expressly acknowledge that the work was specifically ordered or commissioned by the City, and further agree that it shall be considered Instruments of Service and Vendor shall retain all common law, statutory and other reserved rights, including copyrights. Submission or distribution of Instruments of Services to meet official regulatory requirements or for similar purposes in connection with the Project is not to be construed as publication in derogation of the reserved rights of the Vendor. The Vendor grants to the City a nonexclusive license to use the Instruments of Service solely and exclusively for purposes of constructing, using, maintaining, altering and adding to the Project. The license granted under this section permits the City to authorize the Contractor, Subcontractor, and suppliers, to reproduce applicable portions of the Instruments of Services, solely and exclusively for use in performing services or construction for the project. If the Vendor rightfully terminates this Agreement for cause the license granted in this section shall terminate. In the event the City uses the Instruments of Services without retaining the authors writing authorization, the City releases the Vendor from all claims and causes of action arising from such uses. The City, to the extent permitted by law, further agrees to indemnify and hold harmless the Vendor from all costs and expenses, including the cost of defense, related to claims and causes of action asserted by any third person or entity to the extent such cost and expense arise from the City's use of the Instruments of Services under this section. Except for the license granted

under this section, no other license or right shall be deemed granted or implied under this Agreement. The City shall not assign, delegate, sublicense, pledge or otherwise transfer any license granted herein to another party without prior writing agreement for the Vendor. Any unauthorized use of the Instruments of Services shall be at the City's sole risk and without liability to the VENDOR.

9. TERMINATION. Services may be terminated by City or VENDOR by seven (7) days' written notice in the event of substantial failure to perform in accordance with the terms hereof by the other party through no fault of the terminating party. If so terminated, City shall pay VENDOR all amounts due for all services properly rendered and accepted by the City. The City may terminate this Vendor Agreement without cause with thirty (30) days' written notice.

10. SEVERABILITY. In the event any portion of this Agreement is held to be unenforceable, the unenforceable portion of this Agreement will be deleted and the remaining provisions of the Agreement shall continue in full force and effect.

11. GOVERNING LAW. This Agreement shall be governed by the laws of the State of Colorado. All parties agree that any dispute regarding enforcement of this Agreement shall be filed in Weld County District Court after first attempting in good faith to submit the dispute to mediation. Submission of any dispute to mediation shall be a condition precedent to filing litigation in this matter, other than the request for injunctive relief.

12. OSHA REQUIREMENTS. VENDOR agrees that it alone bears the responsibility for providing a safe and healthy work environment and shall provide its employees with adequate orientation and training to safely perform the scope of work set forth in this contract. VENDOR shall at all times comply with the safety and health regulations of the Occupational Safety and Health Act of 1970 (29 CFR 1926) including all amendments and modifications thereto. In the event there is a conflict between the safety and health provisions of federal, state or local regulations, the more stringent provision shall prevail. VENDOR acknowledges and agrees that with respect to the scope of work under this contract, it shall comply with all obligations and assume all responsibilities for its actions regarding all OSHA rules and regulations.

13. NO WAIVER OF GOVERNMENTAL IMMUNITY. The City, its elected officials, officers and employees are relying upon, and do not waive or intent to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities and protections provided by the Colorado Governmental Immunity Act, C.R.S. Sec. 24-10-101 et seq. as amended or otherwise available to the City. Nothing herein shall operate as a waiver of any right the City has of governmental immunity under Colorado law which is specifically herein reserved.

14. INDEPENDENT CONTRACTOR. VENDOR is a separate, legal entity from the City and the parties make this Agreement accordingly with the understanding that VENDOR at all times is acting as an independent contractor and not an employee or agent of the City. All persons retained by VENDOR to perform services pursuant to this Agreement shall be

employees or independent contractors of VENDOR and are not employees, contractors or agents of the City. VENDOR does not have the authority to bind the City by contract or otherwise.

15. FORCE MAJEURE. Neither party shall be liable or responsible to the other party nor be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any obligation under this Agreement when such failure or delay is caused by or results from causes beyond the reasonable control of the affected party, including but not limited to fire, floods, embargoes, pandemics, wars, acts of war (whether war is declared or not), insurrections, riots, civil commotions, strikes, lockouts or other labor disturbances, instances affecting public health including pandemics, acts of God or acts, omission, or delays in acting by any governmental authority. Provided, however, that the party so affected shall use reasonable efforts to avoid or remove such causes of non-performance, and shall continue performance hereunder with reasonable dispatch whenever such causes are removed. Either party shall provide the other party with prompt written notice of any delay or failure to perform that occurs by reason of force majeure. The parties shall mutually seek a resolution of the delay or the failure to perform as noted above.

16. INDEMNIFICATION BY VENDOR. VENDOR shall defend, indemnify and hold the City harmless from any damages caused by negligence, including but not limited loss, liability, expenses, suit or claim, or claim for injury to persons or damage to property arising out of the activities of VENDOR or its sub-consultants pursuant to this Agreement. Expenses shall include all out of pocket expenses, attorney fees, expert costs and related litigation fees. This indemnification is full and complete and is a material term of this Agreement. VENDOR shall notify its insurance carrier immediately of any possible claim.

17. STANDARD OF CARE.

a. The standard of care for all services performed or furnished by VENDOR under this Agreement will be the care and skill ordinarily used by members of the VENDOR's profession.

b. Re-performance of services that fail to meet the standard of care shall be VENDOR's sole obligation.

18. LIABILITY INSURANCE

1. Comprehensive General Liability

a. The VENDOR shall name the City as an additional insured on any applicable insurance policy. The VENDOR shall purchase and maintain in force a Comprehensive General Liability Insurance Policy and such other insurance that is appropriate or applicable for the work being performed and services furnished and shall provide protection from claims set forth hereinbelow which may arise out of or result from the VENDOR's performance and furnishing of the work and the VENDOR's other obligations under the Contract Documents, whether performed or furnished by the VENDOR, by any Sub-VENDOR, by anyone directly or indirectly employed by any of them to perform or

furnish any of the work, or by anyone for whose acts any of them may be liable:

i. Claims under workers' compensation, disability benefits, and other similar employee benefit acts;

ii. Claims for damages because of bodily injury, occupational sickness or disease, or death of the Consultant's employees;

iii. Claims for damages because of bodily injury, sickness or disease, or the death of any person other than the VENDOR's employees;

iv. Claims for damages insured by personal injury liability coverage which are sustained:

a) by any person as a result of an offense directly or indirectly related to the employment of such person by the VENDOR; or

b) by any other person for any other reason; Claims for damages, other than to the Work itself, because of injury to or the destruction of tangible property wherever located, including the loss of use resulting therefrom;

c) Claims for damages because of bodily injury or the death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle.

(a) The insurance required shall include the specific coverages, and be written for not less than the limits of liability and coverages specified or required by Colorado Law, whichever is greater.

i. If applicable, Workers' Compensation and related coverages:

a)	State of Colorado	Statutory
b)	Applicable Federal	Statutory
c)	Employer's Liability	$ 100,000 each accident
		$ 500,000 disease, policy limit
		$ 100,000 disease, each employee

(b) The VENDOR's Comprehensive General Liability Insurance Policy shall include:

i.	General Aggregate	$ 1,000,000
ii.	Personal and Advertising Injury	$ 500,000
iii.	Each Occurrence (Bodily Injury and Property Damage)	$ 500,000
iv.	Excess or Umbrella Liability Bodily Injury and Property Damage	$ 2,000,000
	Retention	$ 10,000

2. Automobile Liability

Combined Single Limit of $ 2,000,000

3. If applicable, Professional Liability

Limits of Liability:

Aggregate	$ 4,000,000
Per Claim	$ 1,000,000

24. **APPROVAL REQUIRED.** This Agreement is subject to the final approval of the Fort Lupton City Council and signature by the Mayor of Fort Lupton.

EXECUTED THIS_____DAY OF **_____, 2026**.

CITY OF FORT LUPTON, COLORADO

_____

BY:_____

TITLE:_____

VENDOR: Landscape Structures, Inc.

_____

BY:_____

TITLE:_____

Commercial Proposal 26-1192-2

Issue Date June 9, 2026
Expires July 9, 2026

PREPARED BY
Bobby Shoemaker
SYNLawn Colorado
(719) 666-4786
Bobby.shoemaker@synlawn.com
12656 E Jamison Pl Unit 10, Englewood, CO 80112, USA

PREPARED FOR
Doug Cook
City of Fort Lupton
(303) 857-4200
DCook@FortLuptonCo.Gov
131 McKinley Ave Fort Lupton, CO 80621

COMMERCIAL PROPOSAL DETAILS
131 McKinley Ave Fort Lupton, CO 80621

SYNLawn Responsibilities:
Install nailer board and pad
Install turf
Install infill

Client/GC Responsibilities:
Install any concrete and drainage per CDs
Subbase prep including grading, compaction, and filter fabric per CDs
Hoist materials to install location
Accurate communication of schedule

City of Fort Lupton
Fort Lupton , Colorado
Account # 116831

Sourcewell Contact

Makenna Quinn

Email: makenna.quinn@sourcewell-mn.gov

Please note, mobilization of a crew to a project that is not adequately prepared for turf installation will result in an additional mobilization fee.

Reference Project Plan for turf layout. Estimate valid for 30 days after date of issue.

We look forward to working with you!

Please consider adding our maintenance package which includes maintenance tools, attic stock materials, and staff training.

DESCRIPTION	QTY	UNIT PRICE	TOTAL
Commercial Installation			$19,556.74
Nailer Board: 1x4 Composite Nailerboard: 1x4 Composite	192 Linear Feet	$3.36	$645.12
OptiFill 16/30 *OptiFILL+® is manufactured by an Eco-friendly, VOC free coating process using natural river washed silica sand as a substrate *OptiFILL+® is UV and weathering resistant, with no detectable color change or degradation after 5,000 hours of accelerated weathering *OptiFILL+® improves the drainage of the turf system for maximum fluid (water/pet urine) infiltration	1,375 Square Feet	$1.09	$1,498.75



SYNPro Play Color: Green. Pile Weight: 58 oz. Pile Height: 1"	3,585 Square Feet	$5.22	$18,713.70
SYNPro Play Owner Attic Stock	150 Square Feet	$5.22	$783.00
Brock Pad PowerBase PLAY 2" PowerBase Play XL (PLB50XL), 50mm Thickness (2")	1,582 Square Feet	$5.22	$8,258.04
Turf Tak Adhesive Two part solvent-free polyurethane adhesive by Chemique	30 Gallons	$93.67	$2,810.10
Sourcewell Discount	1 Each	-$8,000.00	-$8,000.00
		TOTAL	**$44,265.45**

The above specifications, costs, and terms are hereby accepted.

DOUG COOK **DATE**

CLIENT EXPECTATIONS

Thank you for choosing SYNLawn. We appreciate the trust you have put in our business and look forward to showing you why we are the number one synthetic grass company in the nation. To provide you with the best possible experience for your home or commercial improvement project, we would like to provide you with some important and helpful information. If you have any questions regarding the information provided in this document, please do not hesitate to call our office.

- Installation dates are set upon receipt of initial deposit, along with receipt of your signed estimate, Terms and Conditions, and Client Expectations. Please be advised that SYNLawn will do its best to accommodate scheduled installations but weather, casualty, scheduling conflicts, and general delays in material prevents SYNLawn from guaranteeing installation dates.
- A deposit in the amount of 50% of the project total is required with the remaining balance coming due upon completion of the project. This 50% deposit must be paid to secure a spot on our schedule.
    - Payment terms listed on proposal supersede this section.
- Please expect your installation to take a day or more depending on the size of the job and the services you have ordered.
- When we plan your job, we select and cut turf from the same dye lot. Please note that if you choose to add more turf while crews are on site or decide to add turf to your project after the job has been completed, we cannot guarantee that we will have a matching dye lot in stock. Make sure that all services that are to be completed by our crew are written in your contract. The crew will only perform work that appears in the contract and if any additional work is requested, please get with your project coordinator.
- **Seams** – Our SYNLawn professional crews work hard to hide any seams that may be necessary for your project, but we do not guarantee that seams will be 100% invisible.
- **Pets** – We do our best to recommend the appropriate synthetic grass products and after care instructions to our clients with pets. Recommendations Include:
    - Choosing a synthetic turf product designed for medium to heavy traffic.
    - Choosing an antimicrobial infill as a top-coat infill

- Please note that SYNLawn cannot guarantee that pet odors will not develop over time. If pet odors occur, please get with your project coordinator for remedies.
- **Temperature** – Synthetic turf does not stay as cool as natural sod. During extreme temperatures, the surface temperature of synthetic turf will get hot.
- SYNLawn does not cover work completed by other contractors, or any issues arising from work performed by others.
- **Reflective issues** – With the exception of nylon products, window reflections can damage your turf.
    - Any window reflection has potential to reflect an elevated temperature that can melt your turf. Solar screens or window coverings can prevent this from occurring and should be considered if you think you may have a window that will reflect on your synthetic grass. Apart from nylon products, melting of turf is NOT covered under your warranty.
- **Weeds** – We cannot guarantee weeds will not appear especially around the edges or your synthetic turf and weeds are not covered under your installation warranty. We recommend using organic or commercially available weed killers.
- Unknown objects underground such as roots, tree stumps, concrete, boulders, etc. cannot always be seen at the time of the estimate and shall be handled as an additional charge based on additional time and materials needed, should the crew run into this during the installation process.
- **Gophers** – If evidence of rodents or gophers are not found during your initial visit but are later discovered, additional charges may apply to have gopher mesh protection installed. Ask your salesperson about pricing.
- Our crew leader will do a final inspection of the project to ensure quality of workmanship. We encourage you to participate in the final inspection, although we do not require you to be at the project location on the final day of the installation. A certificate of completion must be completed for your warranty to become effective.
- Final payment will be due on the scheduled last day of installation. If you paid your deposit with a credit card and filled out a billing authorization form your final payment will be processed automatically. If you paid by check, please email a copy of your final check to co.sales@synlawn.com. Copies of all invoices paid can be emailed to you, at your request.
- SYNLawn has the right to collect progress payment form financing companies if applicable.
- SYNLawn is not responsible for any rebate offered by the city, state, or any other third-party company.

TERMS & CONDITIONS

SYNLawn Colorado herein referred to as contractor, uses license, insured, bonded, and incorporated contractors under the laws of the state of Colorado.
The owner of the property is responsible for obtaining any financing he/she deems necessary. Contractor may, at its option, assist or provide such financing as requested and approved by the Owner. If the contractor provides financing to the owner, the contractor shall have the right to sell, assign, or transfer the security note, trust deed and/or lien contract to any other party, entity, or institution of its choice.

INSTALLATION INFORMATION:

- Contractor agrees to start and diligently pursue work to completion but shall not be responsible for delays from causes beyond the contractor's control. Mobilization of a crew to a project that is not adequately prepared for turf installation will result in a False Start Fee.
    - A False Start Fee of $2,000 will be charged if the Parties have mutually agreed upon a commencement date, but the Client fails to complete the required pre-work to the satisfaction of the Contractor. Examples of incomplete pre-work include, but are not limited to:
        - Failure to properly prepare the sub-base;
        - Failure to install concrete, drainage, and/or irrigation systems as previously agreed;
        - Unavailability of previously designated site access for the Contractor's materials and/or installation crews.

- During the progress of installation, the owner may request additional work. The buyer may not require a contractor to perform extra or change-order work without providing written authorization prior to the commencement of any work covered by the new change order. Extra work or a change order is not enforceable against a buyer unless the change order also identifies all the following in writing prior to the commencement of any work covered by the change order:

- Scope of work encompassed.
- Amount added or subtracted from the contract.
- Effect on the completion date.
    - The contractor's failure to comply with the requirements of this paragraph does not preclude the recovery of compensation for work performed based upon legal or equitable remedies designed to prevent unjust enrichment. Contractor shall be entitled to compensation for extra work completed at a unit price equal to that in the contract. All other work to be billed at contractor's cost-plus markup fees. The amount of such extra work shall be determined in advance or may be charged for at actual cost plus 35% for contractor's overhead and profit. Sums for extras shall be due and payable in advance of the work being performed unless agreed to in writing that it is payable at any other time.

- Owner/GC shall grant access to work areas for workers and vehicles and shall allow areas for storage of materials and debris. Owner agrees to keep driveways clear of movement and parking of trucks and trailers for normal work hours. Contractors and workers shall not be expected to keep gates closed for animals or children. Contractors shall not be held responsible for damage to driveways, walks, shrubs, or other vegetation by movement of trucks, workers, materials, debris, equipment etc.

- Upon Completion of work, contractor will remove job-related debris and surplus materials from the owner's property and leave it in a neat, broom-clean condition.

- Turf is covered by the manufacturer's warranty. The contractor warrants the installation for one year and is not responsible for settling that occurs due to mother nature or work performed by others. Examples are trenching, drain work, tree removal, etc., and prior to the contractor's involvement, a copy of the warranty will be provided. In addition, base settling caused by mother nature or new construction is not covered under this craftsmanship warranty.

- Synthetic turf can be readily repaired or seamed. As with any manufactured product, there are occasionally slight differences in color between dye lots. The contractor cannot be held responsible for

any difference in color shading, should the owner request additional turf to be installed or a repair be deemed necessary.

CANCELLATION:

- A buyer who is a senior citizen (age 65 or over) may cancel this transaction at any time prior to midnight of the fifth business day after the date of the transaction. All other aged buyers have three business days to cancel. Cancellations must be submitted in writing. Cancellations will incur a 25% restocking fee.

COMMERCIAL GENERAL LIABILITY AND WORKERS COMPENSATION INSURANCE:

- SYNLawn carries commercial general liability insurance for all employees. Certification is available on request from SYNLawn.

- SYNLawn carries workers' compensation insurance for all employees.

ARBITRATION OF DISPUTES:

- In any legal action on this contract, the prevailing party shall be entitled to reasonable attorney fees and costs. Any controversy or claim arising out of or relating to this contract, or the breach thereof, shall be settled by arbitration administered by the American Arbitration Association under commercial arbitration rules, and judgment of the award rendered by the arbitrator(s) may be entered in any court having jurisdiction.

MECHANIC'S LIEN WARNING:

- Anyone who helps improve your property, but who is not paid may record a mechanic's lien on your property. A mechanics' lien is a claim, like a mortgage or home equity loan, made against your property and recorded with the county recorder. Even if you pay your contractor in full, unpaid subcontractors, suppliers, and laborers who helped to improve your property may record mechanics'

lien and sue you to foreclose the lien. If a court finds the lien is valid, you could be forced to pay twice or have a court officer sell your home to pay the lien. Liens can also affect your credit.

- To preserve their right to record a lien, each subcontractor and materials supplier must provide you with a document called a 20-day Preliminary Notice. This notice is not a lien. The purpose of the notice is to let you know the person who sends you the notice has the right to record a lien on your property if he or she is not paid. Be careful. The Preliminary Notice can be sent up to 20 days after the subcontractor starts work or the supplier provides materials. This can be a problem if you pay your contractor before you receive the Preliminary Notices. You will not get Preliminary Notices from your prime contractor or from laborers who work on your project. The law assumes you already know they are improving your property. Protect yourself from liens. Get a list from your contractor of all subcontractors and materials suppliers that work on your project. Find out from your contractor when these subcontractors started work and suppliers delivered goods or materials. Then wait 20 days, paying attention to the Preliminary Notices you receive. Pay with join checks. When your contractor tells you it is time to pay for the work of a subcontractor or supplier who has provided you with a Preliminary Notice, write a joint check payable to both the contractor and subcontractor or supplier. If you do nothing you risk having a lien placed on your home. This can mean you may have to pay twice or face the forced sale of your home to pay what you owe.

SIGNATURE ON THE PRECEDING PROPOSAL SIGNIFIES YOU HAVE READ AND COMPLETELY UNDERSTAND THE TERMS OF THIS CONTRACT.

City Council Meeting
Date: June 16, 2026
Staff: Sean McDermott, Planner

AM 2026-096
Public Hearing☐

SUBJECT FOR DISCUSSION

Approving a Resolution for the Approval of the Amerin Pre-Annexation Agreement

SUMMARY STATEMENT/BACKGROUND DISCUSSION

The request is to authorize the Mayor to execute a pre-annexation agreement between the Amerin Family Trust and the City of Fort Lupton ("Agreement"). This Agreement is for the future annexation of 106 acres, more or less, of a property owned by the Amerin Family Trust, which is located north and adjacent to CR 12, south and adjacent to State Hwy 52, and east and adjacent to CR 19 in unincorporated Weld County, and further legally described under Exhibit A of the proposed Agreement. The Agreement arose from the Amerin Family Trust bringing a Change of Zone application before the Weld County Board of County Commissioners requesting a rezone from (A) Agricultural to (C-3) Heavy Commercial. As a condition of approval from the Board of County Commissioners, the Amerin Family Trust must execute a pre-annexation agreement with the City of Fort Lupton. Based upon the Agreement, the Amerin Family Trust or the future property owner shall apply for annexation to the City of Fort Lupton after 15 years, with the City having the option to decline annexation.

FINANCIAL CONSIDERATIONS

N/A

LEGAL/POLITICAL CONSIDERATIONS

The property is located within the City of Fort Lupton's Comprehensive Plan area and Three-Mile Plan. The Comprehensive Plan Future Land Use Map identifies future use of the property as commercial transition (along Hwy 52) and agricultural. However, this is currently being reviewed with the ongoing Comprehensive Plan update and the commercial zoning would be supported at this location. The pre-annexation agreement ensures commercial zoning is provided to the Amerin Family Trust or the property owner at time of annexation.

ALTERNATIVES/OPTIONS

The City Council has the following options:

1. Approve the Resolution authorizing the Mayor to enter into a pre-annexation agreement with the Amerin Family Trust;
2. Do not approve the Resolution authorizing the Mayor to enter into a pre-annexation agreement with the Amerin Family Trust; and
3. Send the Resolution back to staff for further review and comment.

STAFF RECOMMENDATION

Staff recommends Alternative 1, approving the Resolution to enter into a pre-annexation agreement between the Amerin Family Trust and the City of Fort Lupton.

Attachments:

a. Resolution
b. Proposed Pre-Annexation Agreement

Certification of Council Approval:
Ordinance No. _____
Resolution No. _____

_____ City Clerk

_____ Date

RESOLUTION NO. 2026Rxxx

A RESOLUTION OF THE CITY COUNCIL OF FORT LUPTON APPROVING THE AMERIN PRE-ANNEXATION AGREEMENT.

WHEREAS, the Amerin Family Trust submitted an application to Weld County to rezone a property comprising of two parcels totaling approximately 106 acres, more or less, located north and adjacent to CR 12, south and adjacent to State Hwy 52, east and adjacent to CR 19, and further described in Exhibit A of the proposed agreement (the "Property") from Agricultural (A) to Heavy Commercial (C-3); and

WHEREAS, the Property is located within the City of Fort Lupton's comprehensive plan area and three-mile plan area; and

WHEREAS, the hearing for this application was held before the Board of County Commissioners on April 22, 2026; and

WHEREAS, as a condition of approval of changing the zone district of the property from Agricultural (A) to Commercial (C-3) by Weld County, the property owner agreed to execute a pre-annexation agreement with the City; and

WHEREAS, the City's Comprehensive Plan currently designates the future land use of this property as commercial transition and agricultural. This is currently being reviewed with the ongoing Comprehensive Plan update and the commercial zoning would be supported at this location; and

WHEREAS, the Owner and the City desire to annex the Property into the City, but to delay such annexation pursuant to the terms and conditions stated in the pre-annexation agreement; and

WHEREAS, after review of the pre-annexation agreement and consideration of staff comments, the City Council finds that the pre-annexation agreement is in conformance with the Fort Lupton Comprehensive Plan, zoning code, and is consistent with the goals and policies therein; and

NOW THEREFORE BE IT RESOLVED that the Fort Lupton City Council reviewed the pre-annexation agreement with supporting documentation and hereby approves the Amerin Pre-Annexation Agreement and authorizes the Mayor's signature of the Agreement.

APPROVED AND PASSED BY A MAJORITY VOTE OF THOSE ELECTED TO THE CITY COUNCIL THIS 16th DAY OF JUNE 2026.

City of Fort Lupton, Colorado

_____

Chris Ceretto, Mayor

Attest:

_____

Maricela Peña, City Clerk

Approved as to form:

_____

Andy Ausmus, City Attorney

PRE-ANNEXATION AGREEMENT

THIS PRE-ANNEXATION AGREEMENT (this "Agreement") is made and entered into this _____ day of _____, 2026 (the "Effective Date"), by and between the AMERIN FAMILY TRUST, hereinafter referred to as "Owner" and the CITY OF FORT LUPTON, a municipal corporation of the State of Colorado, hereinafter referred to as "Fort Lupton" or "City". Owner and City are referred to herein collectively as the "Parties" and individually as a "Party".

WITNESSETH:

WHEREAS, the Owner owns real property comprising approximately 106 acres, more or less, being more particularly described in **Exhibit A**, which is attached hereto, incorporated herein, and made a part hereof (the "Property"), which is located in the unincorporated area of Weld County; and

WHEREAS, the Property is currently eligible for annexation and lies within the area of Fort Lupton's Comprehensive Plan; and

WHEREAS, the current zoning of the Property is Agricultural (A) and the Owner has submitted an application to Weld County to change the zone of the Property from Agricultural (A) to Commercial (C-3) (the "Application"); and

WHEREAS, the Owner and the City desire to annex the Property into the City, but to delay such annexation pursuant to the terms and conditions stated in this Agreement; and

WHEREAS, the execution of this Agreement is a condition of approval of the Application; and

WHEREAS, the parties by this Agreement desire to set forth their understanding with respect to annexation of the Property to the City, the pre-annexation uses on the Property, and related matters; and

WHEREAS, it is to the mutual benefit of the parties hereto to enter into the following Agreement.

NOW, THEREFORE, IN CONSIDERATION OF THE ABOVE PREMISES AND THE COVENANTS AS HEREINAFTER SET FORTH, IT IS AGREED BY AND BETWEEN THE PARTIES AS FOLLOWS:

1. Incorporation of Recitals. The parties confirm and incorporate the foregoing recitals into this Agreement.

2. Purpose. The purpose of this Agreement is to set forth the terms and conditions of the future annexation of the Property to the City. Except as expressly provided for herein to the contrary, all terms and conditions herein are in addition to all requirements concerning annexation and zoning

contained in the Fort Lupton Municipal Code and Comprehensive Plan, and the Municipal Annexation Act of 1965, as amended, C.R.S. 31-12-101, et. seq.

3. Annexation. The Owner agrees to apply for and consent to the annexation of the Property to the City, at Owner's sole cost and expense, on or before the date which is fifteen (15) years after the Effective Date of this Agreement. Additionally, Owner agrees to promptly apply for and consent to the annexation of the Property to the City if City has delivered notice that Owner is required to do so under this Agreement ("Annexation Notice"). Owner shall diligently pursue such annexation until completion. The City shall not deliver the Annexation Notice to Owner before the fifteen (15) year period is complete unless the Owner submits an application for a change in land use that requires a public hearing in Weld County. In the event that the City refuses to issue an Annexation Notice, or otherwise fails to approve the Owner's annexation application, the Owner shall have no obligation to annex the Property to such municipality.

4. Zoning; Existing Uses. Owner's obligation to annex into the City is conditional on the City's approval of commercial zoning, or such other zoning as Owner may agree to. In determining the appropriate zone district for the Property, the parties shall consider the existing uses on site, in addition to any other items required by law. Notwithstanding the foregoing, any legal uses and structures existing on site at the time of annexation shall be permitted to continue. If such uses and structures are not allowable uses under the zone district applied at the time of annexation, such uses and structures will be considered non-conforming legal uses and structures.

5. Property to be Annexed. The Property the Owner shall annex to the City pursuant to this Agreement is the Property described on **Exhibit A**, attached hereto and incorporated herein by reference, or such portion thereof as the City may request. To facilitate any requested annexation of a portion of the Property, Owner hereby consents to the division of the Property for annexation purposes only, to the extent such consent is required by C.R.S. 31-12-105(1). Owner shall execute additional evidence of such consent upon request by the City.

6. Failure to Annex: Appointment of Attorney-in-Fact. In the event Owner fails to apply to annex the Property to the City as required by this Agreement, the City may at its sole option and without otherwise limiting its legal rights, bring an action at law or equity, including an action for specific performance, to enforce Owner's obligations hereunder. Further, Owner, for themselves, their successors, transferees, heirs, and assigns hereby irrevocably appoints the Mayor of the City of Fort Lupton as Owner's lawful attorney-in-fact for the purpose of signing any annexation petition or petition for annexation election, for voting in any annexation election, and for executing any and all other documents determined by the City to be necessary for annexation of the Property to the City. The City's Mayor shall exercise the powers under this appointment only upon written request of the City Council, and only if the Owner and/or its successors, transferees, heirs and assigns have not signed a petition for annexation within the timeframe required by section 3. This power of attorney is granted and intended to be valid for the longest period of time permitted by state statute. If the City proceeds to annex the Property as authorized in this section, it may advance all fees and costs related to the annexation, and shall be entitled to recover the same as a personal obligation of the Owner. Such fees and costs shall also constitute a lien against the Property, which may be foreclosed or otherwise collected as provided by law.

7. Annexation Documents. When required by this Agreement, Owner shall provide at its expense a legal description, annexation petition, annexation maps, surveys, newspaper publications, and other reports and documents determined by the City to be necessary to accomplish the annexation of the Property to the City.

8. Legislative Discretion. The Owner acknowledges that annexation of the Property is subject to the legislative discretion of the City Council of the City of Fort Lupton. Nothing in this Agreement is intended or shall be construed to require the City to annex the Property or to initiate any annexation proceedings relating to the Property.

9. Covenants to Run with Land/Binding Effect. This Agreement and all covenants herein touch and concern the real property described in **Exhibit A** and shall be covenants running with the land. This Agreement shall be binding upon and inure to the benefit of the Owner and the City, and their respective heirs, transferees, successors, and assigns. This Agreement shall be recorded with the County Clerk of Weld County, Colorado, at Owner's expense.

10. No Repeal of Laws. Nothing contained in this Agreement shall constitute or be interpreted as a repeal of the City's ordinances or resolutions, or as a waiver of the City's legislative, governmental, or police powers to promote and protect the health, safety, and welfare of the City and its inhabitants.

11. Severability. The parties agree that if any part, term, portion, or provision of this Agreement is held by a court of competent jurisdiction to be illegal or in conflict with any law of the State of Colorado, the validity of the remaining parts, terms, portions, or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular part, term, portion, or provision held to be invalid.

12. Future Cooperation. The parties agree that they will cooperate with one another in accomplishing the terms, conditions, and provisions of this Agreement, and will execute such additional documents as necessary to effectuate the same.

13. Amendment. This Agreement may be amended only by mutual agreement of the City and Owner. Such amendments shall be in writing, shall be recorded with the County Clerk of Weld County, Colorado, shall be covenants running with the land, and shall be binding upon all persons or entities having an interest in the Property subject to the amendment unless otherwise specified in the amendment.

14. Entire Agreement. This Agreement embodies the entire agreement of the parties. There are no promises, terms, or obligations other than those contained herein, and this Agreement supersedes all previous communications, representations, or agreements, either verbal or written, between the parties.

15. Owner. As used in this Agreement, the term "Owner" shall include any of the heirs, successors, transferees or assigns of Owner. All such parties shall have the right to enforce this

Agreement and shall be subject to the terms of this Agreement as if they were the original parties thereto.

16. Amendments to Law. As used in this Agreement, unless otherwise specifically provided herein, any reference to any provision of any City ordinance, resolution, regulation, or policy is intended to refer to any subsequent amendments or revisions to such City ordinance, resolution, regulation, or policy, and the parties agree such amendments or revisions shall be binding upon Owner.

17. Notice. All notices required under this Agreement shall be in writing and shall be hand-delivered or sent by facsimile transmission or registered or certified mail, return receipt requested, postage prepaid, to the addresses of the parties herein set forth. All notices by hand delivery shall be effective upon receipt. All facsimile transmissions shall be effective upon transmission receipt. All notices by mail shall be considered effective seventy-two (72) hours after deposit in the United States mail with the proper address as set forth below. Either party by notice so given may change the address to which future notices shall be sent.

Notice to City:	CITY OF FORT LUPTON Attn: City Manager 130 S. McKinley Ave. Fort Lupton, CO 80621
With copy to:	Ausmus Law Firm, PC Attn: Andy Ausmus 6020 Greenwood Plaza Blvd. Suite 100 Greenwood Village, CO 80111
Notice to Owner:	Amerin Family Trust Attn: Harold Amerin 4038 County Road 21 Fort Lupton, CO 80621
With copy to:	Coan, Payton & Payne, LLC Attn: Bob Choate 103 W. Mountain Ave., Suite 200 Fort Collins, CO 80524

18. Governing Law. The laws of the State of Colorado shall govern the validity, performance, and enforcement of this Agreement. Should either party institute legal suit or action for enforcement of any obligation contained herein, it is agreed that the venue of such suit or action shall be in Weld County, Colorado.

19. Headings. The paragraph headings in this Agreement shall not be used in the construction or interpretation hereof as they have no substantive effect and are for convenience only.

CITY OF FORT LUPTON, COLORADO

By:_____
Mayor

ATTEST:

_____
City Clerk

APPROVED AS TO LEGAL FORM

_____
City of Attorney

OWNER:
AMERIN FAMILY TRUST

By: _____
Harold Amerin, Trustee

ACKNOWLEDGEMENT

STATE OF COLORADO)
)ss
COUNTY OF _____)

The above and foregoing signature of Harold Amerin was subscribed and sworn to before me this _____ day of _____, 202_.

Witness my hand and official seal.

My commission expires on: _____.

(SEAL) _____

EXHIBIT A

LEGAL DESCRIPTION OF PROPERTY

The west one-third (W1/3) and the south one-half (S1/2) of Section 3, Township 1 North, Range 67 West of the 6th P.M., Weld County, Colorado, except those parcels conveyed to Weld County be deed recorded July 15, 1935 in Book 980 at Page 112 and as conveyed to the Department of Highways, State of Colorado, by deed recorded August 29, 1958 in Book 1511 at Page 328 all in Weld County, State of Colorado.



City Council Meeting
Date: June 16, 2026
Staff: Doug Cook,
Parks & Recreation Director

AM 2026-093
Public Hearing☐

SUBJECT FOR DISCUSSION

Accepting a Bid Proposal from HPM, Inc., to Serve as the General Manager/General Contractor for the Koshio Park Renovation Project for an Amount Not to Exceed $717,060.50 to be paid from the CRR Fund – Capital Projects.

SUMMARY STATEMENT/BACKGROUND DISCUSSION

On April 21, 2026, an RFP was issued for solicitation of services for the construction project at Koshio Park. The project consists of demolition of existing park features, renovation of some existing park features and construction of new features within an existing park. Project features include asphalt parking, curb and gutter, sidewalk, concrete pathways, landscape plantings, irrigation, site lighting, site furnishings and shade shelters.

Proposal includes general conditions, demo/site clearing, site work, landscape, irrigation, site electrical and lighting. Proposal also includes bid alternate A, B, C, D and E. Staff recommends accepting total base bid and bid alternates A, B, C, D and E.

FINANCIAL CONSIDERATIONS

Staff budgeted $1,600,000.00 for Koshio Park renovation project (CPR Fund – Capital Projects 230.6000.575000). Proposal from HMP, Inc. is within Norris Design estimated project budget.

LEGAL/POLITICAL CONSIDERATIONS

None

ALTERNATIVES/OPTIONS

Request for bid closed on June 2, 2026, staff could look at other contractors. 6 bids were submitted. HMP, Inc. was low bid proposal.

STAFF RECOMMENDATIONS

Staff recommend to accept the bid proposal from HPM, Inc. to provide Contract Management/General Contractor services for the Koshio Park Renovation Project for an amount not exceed $717,060.00.

Attachments: a. Vendor Agreement
b. Notice of Award

Certification of Council Approval:
Ordinance No. _____
Resolution No. _____

_____ City Clerk

_____ Date

CITY OF Fort Lupton EST 1836

Parks and Recreation Department

Construction Agreement

This KOSHIO PARK RENOVATION PROJECT Agreement is entered into by and between the **City of Fort Lupton**, Colorado (hereinafter "City") and **HPM, Inc.** (hereinafter "CONTRACTOR").

WHEREAS, the parties hereto agree in consideration of the covenants, payments and agreements set forth herein as follows:

1. **SCOPE OF WORK.** Contractor will furnish all tools, equipment, machinery, supplies, superintendence, insurance, transportation, labor and other construction accessories, services and facilities specified or required to be incorporated in and for a permanent part of the completed work. Contractor shall provide and perform all necessary labor in a first class and workmanlike manner and in accordance with the conditions and prices stated in the bid proposal and the requirements, stipulations, provisions and conditions of the contract documents. Contractor shall perform, execute, construct and complete all things mentioned to be done by the Contractor and all work included in the scope of work and bid specifications set forth and incorporated herein as **Exhibit A**. Contractor shall provide all insurance and or bonds as required by Exhibit A prior to commencement of work. All certificates of insurance from contractors should list the City as an additional insured.

2. **CONTRACT DOCUMENTS.** This Agreement consists of and includes this Agreement and the scope of work set forth in the bid specifications attached hereto as **Exhibit A** and the Contractor's Bid proposal set forth as **Exhibit B**. In the event of any conflict between any of these documents, this document and **Exhibit A** shall control.

3. **TIME OF COMPLETION.** The Contractor agrees to commence work upon execution of this Agreement and to complete all work by no later than **November 30, 2026**.

4. **CONTRACT SUM.** The City shall pay to the Contractor for performance and completion of the work encompassed by this Agreement, and the Contractor will accept as full compensation therefore the sum of **$717,060.50**, subject to confirmation by the City of completion of the scope of work in accordance with the contract documents attached hereto. Said amounts to be paid upon inspection and acceptance of the work by the City, in its sole discretion, including completion by the Contractor of any punch-list items as determined by the City and execution of any releases by Contractor deemed necessary by the City.

5. **CONTRACT APPROPRIATIONS/NO CHANGE ORDERS.** No change orders shall be allowed on this project unless with written approval of the City. The City states that the amount of money appropriated for this Agreement is equal to or in excess of the contract amount. No change order to this Agreement requiring additional compensable work to be performed, which work causes the aggregate amount payable under this Agreement to exceed the amount appropriated for the original contract shall be issued by the City unless the City notifies the Contractor in writing, that lawful appropriations to cover the costs of this additional work has been made.

6. **WARRANTY.** All warranties for work performed by the Contractor, repairs to be made or service calls required to be attended to by Contractor shall be as set forth and required by Exhibit A and or by Colorado law. Contractor shall notify the City when the scope of work is completed and the City shall confirm completion of the work, in the City's sole discretion. Once the scope of work is confirmed by the City as completed, the Notice of Commencement of Warranty (**Exhibit C attached hereto and incorporated herein)** will be tendered by the City. The warranty period shall only commence upon execution and tendering of Exhibit C to the Contractor by the City and said warranty shall continue for two years from tendering of Exhibit C.

7. **AMENDMENT/NO ASSIGNMENT.** No modification or amendment of this Agreement shall be valid unless in writing and signed by all parties to this Agreement. Consultant's services will be performed solely for the benefit of City and not for the benefit of any other persons or entities. Neither City nor Consultant shall assign or transfer interest in this Agreement without the written consent of the other.

8. **COMPLETE AGREEMENT.** This Agreement, and the exhibits hereto, shall constitute the entire agreement between the parties with respect to the subject matter hereof and there are no agreements, representations or warranties other than as set forth herein.

9. **SEVERABILITY.** In the event any portion of this Agreement is held to be unenforceable, the unenforceable portion of this Agreement will be deleted and the remaining provisions of the Agreement shall continue in full force and effect.

10. **GOVERNING LAW.** Contractor agrees to comply with all local, state and federal laws in its performance of work under this Agreement. This Agreement shall be governed by the laws of the State of Colorado. All parties agree that any dispute regarding enforcement of this Agreement shall be filed in Weld County District Court after first attempting in good faith to submit the dispute to mediation. Submission of any dispute to mediation shall be a condition precedent to filing litigation in this matter, other than the request for injunctive relief.

11. **OSHA REQUIREMENTS.** Contractor agrees that it alone bears the responsibility for providing a safe and healthy work environment and shall provide its employees with adequate orientation and training to safely perform the scope of work set forth in this contract. Contractor shall at all times comply with the safety and health regulations of the Occupational Safety and Health Act of 1970 (29 CFR 1926) including all amendments and modifications thereto. In the event there is a conflict between the safety and health provisions of federal, state or local regulations, the more stringent provision shall prevail. Contractor acknowledges and agrees that with respect to the scope of work under this contract, it shall comply with all obligations and assume all responsibilities imposed upon the "controlling contractor" as such term is defined and construed under all OSHA rules and regulations. The Contractor shall adhere to all federal, state and local safety and health regulations, laws and ordinances.

12. **NO WAIVER OF GOVERNMENTAL IMMUNITY.** The City, its elected officials, officers and employees are relying upon, and do not waive or intent to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities and protections provided by the Colorado Governmental Immunity Act, C.R.S. Sec. 24-10-101 et seq. as amended or otherwise available to the City. Nothing herein shall operate as a waiver of any right the City has of governmental immunity under Colorado law which is specifically herein reserved.

13. **FORCE MAJEURE.** Neither party shall be liable or responsible to the other party nor be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any obligation under this Agreement when such failure or delay is caused by or results from causes beyond the reasonable control of the affected party, including but not limited to fire, floods, embargoes, pandemics, wars, acts of war (whether war is declared or not), insurrections, riots, civil commotions, strikes, lockouts or other labor disturbances, instances affecting public health including pandemics, acts of God or acts, omission, or delays in acting by any governmental authority. Provided, however, that the party so affected shall use reasonable efforts to avoid or remove such causes of non-performance, and shall continue performance hereunder with reasonable dispatch whenever such causes are removed. Either party shall provide the other party with prompt written notice of any delay or failure to perform that occurs by reason of force majeure. The parties shall mutually seek a resolution of the delay or the failure to perform as noted above.

14. **INDEPENDENT CONTRACTOR.** Contractor is a separate, legal entity from the City and the parties make this Agreement accordingly with the understanding that Contractor at all times is acting as an independent contractor and not an employee or agent of the City. All persons retained by Contractor to perform services pursuant to this Agreement shall be employees or independent contractors of Contractor and are not employees, contractors or agents of the City. Contractor does not have the authority to bind the City by contract or otherwise

15. **INDEMNIFICATION BY CONTRACTOR.** Contractor shall indemnify and hold the City harmless from any damages, including but not limited to any loss, liability, expenses, suit or claim, or claim for injury to persons or damage to property arising the negligence or other fault of Consultant or its Consultants pursuant to this Agreement. Expenses shall include all out of pocket expenses, attorney fees, expert costs and related litigation fees.

15. **APPROVAL REQUIRED.** This Agreement is subject to the final approval of the Fort Lupton City Council and signature by the Mayor of Fort Lupton.

EXECUTED THIS _____ DAY OF _____, 2026.

CITY OF FORT LUPTON, COLORADO

_____
BY:_____
TITLE:_____

CONTRACTOR:

_____
BY:_____
TITLE:_____

Request for Proposals
Koshio Park Renovation Project
Number: FTL2026-131

I. PURPOSE OF REQUEST

Notice is hereby issued by the City of Fort Lupton regarding the solicitation of services for the construction project at Koshio Park, situated at 131 McKinley Avenue, Fort Lupton, CO 80621.

II. PROJECT DESCRIPTION SUMMARY

Overview

The project consists of demolition of existing park features, renovation of some existing park features and construction of new features within an existing City park. Project features include asphalt parking, curb and gutter, sidewalk, concrete pathways, landscape plantings, irrigation, site lighting, site furnishings and shade shelters. No work is to be completed within the CDOT roadway along 1st Street (State Highway 52).

III. TIME SCHEDULE

The City ‘s proposed time schedule is listed below:

Issue RFP to Firms	**April 21, 2026**
Mandatory Pre-Bid Meeting	**April 30, 2026 10:00am MST**
(location: Koshio Park; 131 McKinley Ave, Fort Lupton, CO 80621)	
Questions due to Owner	**May 8, 2026 5:00pm MST**
Response to Questions	**May 15, 2026 5:00pm MST**
RFP Submittal due to Owner	**June 2, 2026 2:00pm MST**
Notice of Award	**June 16, 2026**
Completion Date	**November 30, 2026**

IV. INSTRUCTIONS TO BIDDERS

1. Questions concerning the information contained herein should be directed to the following individual:

Doug Cook
203 South Harrison Avenue
Fort Lupton, CO 80621
720.466.6162
dcook@fortluptonco.gov

2. Proposals should be delivered electronically by email to Bids@fortluptonco.gov or mailed with a thumb drive to the City of Fort Lupton, Attn: Finance Department – Fort Lupton Municipal Building Project, 130 S. McKinley Avenue, Fort Lupton, Colorado 80621. Proposals shall be clearly marked as “Koshio Park Project” on the outside of the envelope. Only proposals received at the above location by **June 2, 2026 2:00pm MST** will be considered. **Faxed proposals will not be accepted**. A statement declaring that “I waive my right to a sealed submittal” must be added to the email.

3. Applicants must sign and date the submittal.

4. The City of Fort Lupton reserves the right to accept or reject, any or all submittals, and select the consulting firm that is deemed to be in the Owner’s best interest.

5. The essential information requested here is to be provided in full in applicant's preferred format. Companies will be limited to 30 pages.

V. RFP APPLICANT QUALIFICATIONS, STATEMENTS, PROPOSAL

1) On the proposed City of Fort Lupton Koshio Park Project, what type of work, and approximately what percentage of that work will be self-performed by company?
2) Proposer shall submit a preliminary timeline of dates and schedule for the project.
3) Has your firm or organization ever held a contract with The City of Fort Lupton? If yes, please list dates of service and contract amount.
4) Identify the main point of contact for the project team.
5) Bid Form – Exhibit A
6) Supplemental Unit Price Schedule – Exhibit B

VI. SUMMARY OF WORK

1) Attachment A – Summary of Work
2) Attachment B – Construction Docs
3) Attachment C – Technical Specifications
4) Attachment D – Geotech Report
5) Attachment E – Drainage Report

VII. BID BOND

Any singular reference to the Bidder, the surety, the City or other party shall be considered plural where applicable.

1) The Bidder and the surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to the City upon default of the Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of the Bidder's and the surety's liability. The recovery of such penal sum under the terms of this Bond shall be the City's sole and exclusive remedy upon the Bidder's default.

2) The default of the Bidder occurs upon the failure of the Bidder to deliver within the time required by the Bidding Documents (or any extension thereof that may be agreed to in writing by the City), the executed Public Works Agreement required by the Bidding Documents and any Performance and Payment Bonds required by the Bidding Documents.

3) This Obligation is Null and Void if:

A. The City accepts the Bidder's Bid and the Bidder delivers within the time required by the Bidding Documents (or any extension thereof that may be agreed to in writing by the City) the executed Public Works Agreement required by the Bidding Documents, and any Performance and Payment Bonds required by the Bidding Documents; or

B. All Bids are rejected by the City; or

C. The City fails to issue a Notice of Award to the Bidder within the time specified in the Bidding Documents (or any extension thereof that may be agreed to in writing by the Bidder and, if applicable, consented to by the surety when required by Paragraph 5 hereinbelow).

4) Payment of this Bid Bond will be due and payable upon default of Bidder and within thirty (30) calendar days after receipt by the Bidder and the surety of written notice of default from the City, which notice

will be given with reasonable promptness, identifying this Bid Bond and the project as well as including a statement of the amount due.

5) The surety waives notice of any and all defenses based on or arising out of any time extension for issuing the Notice of Award that may be agreed to in writing by the City and the Bidder, provided, however, that the total time for issuing the Notice of Award, including extensions, shall not in the aggregate exceed one-hundred twenty (120) days from the Bid due date without the surety's written consent.

6) No suit or action shall be commenced under this Bid Bond prior to thirty (30) calendar days after the Notice of Default required in Paragraph 4 hereinabove is received by the Bidder and the surety and in no case later than one (1) year after the subject Bid's due date.

7) Any suit or action under this Bid Bond shall be commenced only in the Weld County District Court.

8) Notices required hereunder shall be in writing and sent to the Bidder and the surety at the respective addresses shown on the face of this Bid Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and are deemed to be effective upon the documented receipt by the party concerned.

9) The surety shall cause to be attached to this Bid Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bid Bond on behalf of the surety to execute, seal, and deliver such Bid Bond and bind the surety thereby.

10) This Bid Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bid Bond is deemed to be included herein as if set forth at length. If any provision of this Bid Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bid Bond that is not in conflict therewith shall continue in full force and effect.

11) The term "Bid" as used herein includes a Bid, Offer, or Proposal as may be applicable.

BIDDER *(Name and Address)*

SURETY *(Name and Address of Principal Place of Business)*

OWNER *(Name and Address)*

BID
Bid Due Date:
Description *(Project Name and Include Location)*

BOND
Bond Number:
Date *(Not Earlier than Bid Due Date)*:
Penal Sum:* _____ $ _____
(Words) (Figures)

The Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER	**SURETY**
_____	
Bidder's Name and Corporate Seal	
By:	By:
_____	_____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest:	Attest:
_____	_____
Signature	Signature
_____	_____
Title	Title

*See PM Clause 3, *Instructions to Bidders*, Paragraph 9, *Bid Security*, and Conditions of Contract Sub-Clause 14-02.09, *Proposal Guaranty*.

VII. LEGAL REQUIREMENTS

A. Verification of Information:

Applicants are hereby notified that the City of Fort Lupton will rely on the accuracy and completeness of all information provided in making its selection. As such, Applicants are urged to carefully review all information provided to ensure clarity, accuracy, and completeness of such information. As the City deems necessary and appropriate in its sole discretion, City reserves the right to make any inquiries or other follow up required to verify the information provided. The City reserves the right to select any or reject any and all submissions in their best interest.

B. Disclosure of Information:

All submissions and other materials provided or produced pursuant to this RFP may be subject to the Colorado Open Records Law, CRS 24-72-201 ET. Seq. As such, Applicants are urged to review these disclosure requirements and any other exceptions to disclosure of information furnished by another party and, prior to submission to the City, appropriately identify materials, which are not subject to disclosure. In the event of a request by the City for disclosure of such information, the City shall advise the Applicant of such request to give the Applicant an opportunity to object to the disclosure of designated confidential materials furnished to the City.

C. Discrimination in Employment:

In connection with the performance of work on this project, the selected Service Provider agrees not to refuse to hire, discharge, promote or demote, or to discriminate in matters of compensation against any person otherwise qualified, solely because of race, color, religion, national origin, gender, age, military status, sexual orientation, marital status, or physical or mental disability; and the Service Provider further agrees to insert the foregoing provision in all subcontracts hereunder.

D. Applicable Laws:

This selection process and the performance of any selected shall be subject to, governed by and construed in accordance with applicable Federal Laws, the laws of the State of Colorado and the Charter, and other applicable regulations as the same may be amended from time to time.

E. Cost of Developing Proposal:

Any costs associated with developing proposals is the sole responsibility of the Service Provider. The City assumes no liability for any costs incurred throughout the entire selection process.

F. Qualification/Proposal Ownership:

All qualifications, including attachments, supplementary materials, sketches, etc. shall become the property of the City and will not be returned to the applicant.

G. Addenda:

As the City may require, addenda may be issued to supplement this RFP. All Applicants who attended the in-person pre-bid meeting on **April 30, 2026 10:00am MST** are in receipt of the RFP are considered registered. The list of registered participants will be used to issue all communications regarding this RFP, including formal addenda and date changes. It shall be conclusively presumed that each Applicant attending in-person pre-bid meeting has received all subsequent communications relating to the project. Applicants will be responsible for all such information issued by this method.

H. Contract

The successful firm will be required to enter into a written contract with the City in a form acceptable to the City.

I. Employment Eligibility

In accordance with CRS 8-17.5-101 &102, contractor certifies at the time of this certification:

1. That the contractor does not knowingly employ or contract with an illegal alien who will perform work under the public contract for services, and
2. That the contractor will participate in the E-Verify program or the Department Program in order to confirm the employment eligibility of all employees who are newly hired for employment to perform work under the public contract for services.
3. That the contractor will otherwise comply with provisions and procedures identified in CRS 8-17.5-101 &102.

Candidates will provide affirmation that, if issued the contract, the firm will within a time prescribed by the City execute the required agreement and furnish required insurance policies and certificates of insurance.

Thank you for your time and effort in responding to this RFP.

SECTION 011000 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Project information
2. Work covered by Contract Documents
3. Work by Owner
4. Work by Others
5. Owner Furnished/Contractor Installed items
6. Access to site
7. Phasing
8. Coordination with public access and adjacent properties
9. Work restrictions
10. Construction Schedule

1.3 PROJECT INFORMATION

A. Project Name: Koshio Park

1. Project Location: 131 McKinley Avenue, Fort Lupton, CO 80621

B. Owner: City of Fort Lupton

1. Owner: Doug Cook, City of Fort Lupton

C. Project Summary: The project consists of demolition of existing park features, renovation of some existing park features and construction of new features within an existing City park. Project features include asphalt parking, curb and gutter, sidewalk, concrete pathways, landscape plantings, irrigation, site lighting, site furnishings and shade shelters. No work is to be completed within the CDOT roadway along 1st Street (State Highway 52).

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Project Work is defined by the Contract Documents and consists of the following:

1. Removal of existing sod, concrete walkways, curb and gutter, Clearing and grubbing of project site, minor demolition and replacement of existing concrete for utility routing where noted, site grading

and new retaining walls, new site lighting, new City gateway sign, new irrigation and landscape and other Work indicated in the Contract Documents.

2. The project consists of a Base Bid and Bid Alternates.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 WORK BY OWNER

A. Concurrent Work by Owner: Owner will perform the following construction operations at Project site. Those operations will be conducted concurrent to Work under this Contract. Sequencing of concurrent installation to be coordinated with Owner.

1. Restroom interior renovations and electrical upgrades.

1.6 WORK BY OTHERS

A. Concurrent Work by Others: Owner will perform the following construction operations at Project site. Those operations will be conducted concurrent to Work under this Contract. Sequencing of concurrent installation to be coordinated with Owner's installers.

1. PIP playground surfacing

2. Artificial turf playground surfacing

3. Playground Equipment

4. Existing light pole and overhead power to be removed by UNITED POWER.

1.7 OWNER-FURNISHED/CONTRACTOR INSTALLED ITEMS (OFCI)

A. Owner will furnish items indicated. Owner is responsible for ordering/providing items in a timely manner to coincide with installation schedule. Owner and Contractor to coordinate storage of these items prior to installation. These items are to be installed by the Contractor per manufacturer's recommendations.

B. Owner-Furnished/Contractor Installed Items:

1. Site Furnishings

2. Shade Shelter(s)

1.8 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations during construction period. Notify Owner of any access needs beyond identified project limits.

B. Condition of Existing Grounds: Maintain portions of existing grounds, landscape, and hardscape affected by construction operations throughout construction period. Repair damage caused by construction operations.

C. Staging Area: Provide a staging plan for Owner approval.

D. Parking on neighborhood streets by contractor, sub contractors or vendors is prohibited.

1.9 PHASING

A. Construction to be completed in a single phase.

1.10 COORDINATION WITH PUBLIC ACCESS AND ADJACENT PROPERTIES

A. Public pedestrian access to sidewalks must be maintained at all times. Sidewalk closures shall be clearly signed at cross-street approaches. Any closures of existing parking shall also be signed and clearly delineated. Existing vehicular and pedestrian accesses to adjacent properties to be maintained at all times.

1. Do not close or obstruct walkways, corridors, parking spaces, or other occupied or used facilities without written permission from Owner.

2. Owner will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.

1.11 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to normal business working hours of 7:00 AM to 5:00 PM, Monday through Friday, unless otherwise indicated.

1. Weekend Hours and after hours work is permitted with permission from owner. Request must be made 24 hours prior to Work.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.

E. Restricted Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

1.12 CONSTRUCTION SCHEDULE

A. Construction shall be completed in multiple phases as identified on plans. Completion date for the entire project shall be on or before November 30, 2026.

END OF SECTION 011000

KOSHIO PARK

FORT LUPTON, CO

65% CONSTRUCTION DOCUMENTS

CONSULTANT TEAM

OWNER
CITY OF FORT LUPTON
203 S. HARRISON AVE.
FORT LUPTON, CO 80621
P: 303.587.6694
CONTACT: DOUG COOK

LANDSCAPE ARCHITECT
NORRIS DESIGN
244 N. COLLEGE AVE. #165
FORT COLLINS, CO 80524
P: 970.409.3414
CONTACT: KELLEY SAVAGE

CIVIL ENGINEER
CONTERRA ENGINEERING
242 LINDEN ST. #5943
FORT COLLINS, CO 80524
P: 720.689.5806
CONTACT: ERIK NAKOS

ELECTRICAL ENGINEER
ACKERMAN ENGINEERING
3000 YOUNGFIELD ST.
SUITE 264
WHEAT RIDGE, CO 80215
P: 303.278.7297
CONTACT: HELEN RESCHL

STRUCTURAL ENGINEER
MCBRIDE STRUCTURAL DESIGN
3713 ROCHDALE DR.
FORT COLLINS, CO 80525
P: 970.420.5316
CONTACT: JOHN MCBRIDE

SURVEY
LAMP RYNEARSON
4715 INNOVATION DR. #100
FORT COLLINS, CO 80525
P: 970.226.0342
CONTACT: LAINE LANDAU

VICINITY MAP



SHEET INDEX

G-001	COVER SHEET
G-002	TOPOGRAPHIC SURVEY
C-001	CIVIL GENERAL NOTES
C-101	DEMOLITION PLAN
C-201	EROSION CONTROL PLAN
CD-201	EROSION CONTROL DETAILS
C-301	GRADING PLAN
C-501	HORIZONTAL CONTROL PLAN
CD-501	HORIZONTAL CONTROL DETAILS
CD-502	HORIZONTAL CONTROL DETAILS
LS-001	SITE NOTES & ABBREVIATIONS
LS-002	SITE SCHEDULES
LS-101	SITE PLAN
LS-501	LANDSCAPE SITE DETAILS
LS-502	LANDSCAPE SITE DETAILS
LP-001	LANDSCAPE NOTES & SCHEDULES
LP-101	LANDSCAPE PLAN
LP-501	LANDSCAPE DETAILS
LI-001	IRRIGATION NOTES & SCHEDULES
LI-101	IRRIGATION PLAN
LI-501	IRRIGATION DETAILS
LI-502	IRRIGATION DETAILS
LI-503	IRRIGATION DETAILS
S-101	STRUCTURAL NOTES & DETAILS
E-000	ELEC. LEGEND & ONE-LINE
E-100	SITE ELECTRICAL PLAN
E-101	SHELTER ELECT PLANS
E-100	ELECTRICAL DETAILS

NORRIS DESIGN
PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON

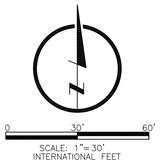
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

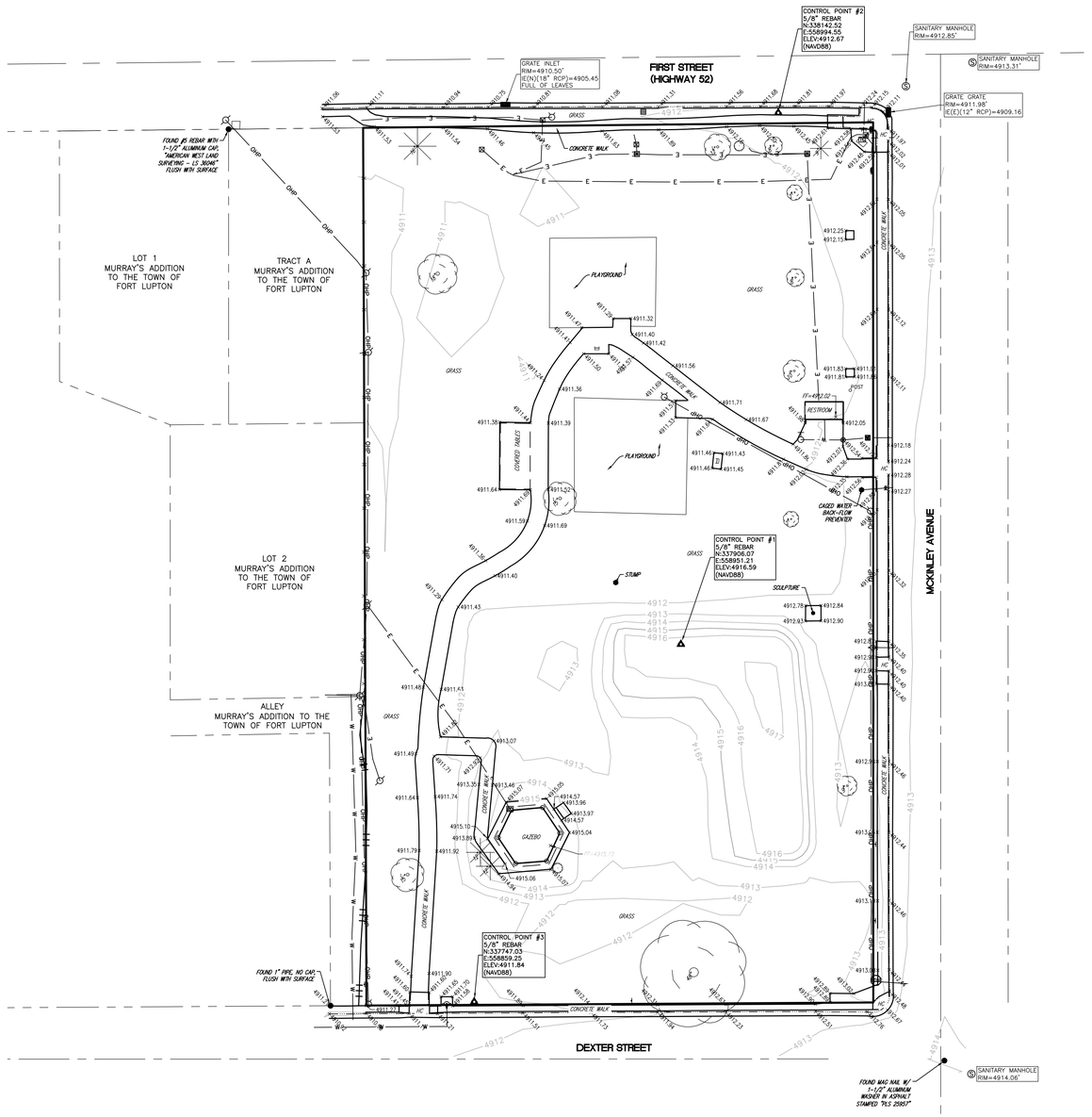
DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
COVER SHEET

G-001

CHECKED BY: CS/KS
DRAWN BY: HV





PROJECT CONTROL
*ALL MEASUREMENTS ARE IN INTERNATIONAL FEET

CONTROL POINT #1: 5/8" X 24" REBAR WITH A 1 1/4" ORANGE PLASTIC CAP, STAMPED: "CONTROL POINT"
N: 337906.072 LAT: 40°04'46.198380"N
E: 558951.208 LONG: -104°48'47.948150"W
EL: 4916.586

CONTROL POINT #2: 5/8" X 24" REBAR WITH A 1 1/4" ORANGE PLASTIC CAP, STAMPED: "CONTROL POINT"
N: 338142.516 LAT: 40°04'48.535096"N
E: 558994.545 LONG: -104°48'47.395775"W
EL: 4912.665

CONTROL POINT #3: 5/8" X 24" REBAR WITH A 1 1/4" ORANGE PLASTIC CAP, STAMPED: "CONTROL POINT"
N: 337747.031 LAT: 40°04'44.625587"N
E: 558859.253 LONG: -104°48'49.127446"W
EL: 4911.841

HORIZONTAL DATUM
NORTH AMERICAN DATUM OF 1983 (2011);

THIS PROJECT IS IN A CUSTOM LOW-DISTORTION PROJECTION, THE PARAMETERS OF THE PROJECTION ARE SHOWN BELOW:

PROJECTION TYPE:	TRANSVERSE MERCATOR
LATITUDE AT ORIGIN:	40°15'00"N
CENTRAL MERIDIAN:	104°40'00"W
FALSE NORTHING:	400000.000 IFT
FALSE EASTING:	600000.000 IFT
GRID SCALE FACTOR:	1.00024000266

VERTICAL DATUM
NORTH AMERICAN VERTICAL DATUM OF 1988.
ELEVATIONS ARE ESTABLISHED THROUGH GNSS MEASUREMENTS USING GEOID MODEL 18.

NOTES
1. 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 CERTIFICATION SHOWN HEREON.
2. THIS DRAWING INCLUDES OBSERVED SURFACE EVIDENCE OF SERVICES AND UTILITIES EVIDENT AT THE TIME OF SURVEY. PRIMO UTILITY SERVICES, A PRIVATE UTILITY LOCATING COMPANY, WAS CONTRACTED TO PROVIDE THE LOCATION OF UNDERGROUND UTILITIES ON 12/05/2025. NO RESPONSIBILITY OR LIABILITY IS ASSUMED BY THE SURVEYOR FOR THE FAILURE TO SHOW ANY BURIED SERVICE AND/OR UTILITY LINES EVEN THOUGH THEY MAY EXIST. CONTACT "ONE CALL" (811) PRIOR TO ANY EXCAVATION ON THIS SITE.
3. FIELD WORK WAS DONE FROM 12/05/25-12/09/25, 1/6/2026.
4. ALL LINEAL DISTANCES SHOWN HERE ON ARE BASED ON THE INTERNATIONAL FOOT DEFINED AS 1 INTERNATIONAL FOOT = 0.3048 METERS.
5. APPROXIMATE RIGHT OF WAY LOCATIONS HAVE BEEN SHOWN. A FULL BOUNDARY SURVEY WOULD BE REQUIRED TO DETERMINE THE ACTUAL BOUNDARY.

SURVEYORS CERTIFICATE
I, LAINE A. LANDAU, A DULY LICENSED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS TOPOGRAPHIC SURVEY WAS MADE BY ME OR UNDER MY DIRECT SUPERVISION AND ACCURATELY REPRESENTS THE AREA TO BE CERTIFIED; IS BASED UPON MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF; IS IN ACCORDANCE WITH APPLICABLE STANDARDS OF PRACTICE; AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

COLORADO LICENSED
LAINE A. LANDAU
31159
1/7/2026
PROFESSIONAL LAND SURVEYOR

LAINE A. LANDAU – COLORADO PLS 31159
ON BEHALF OF LAMP RYNEARSON, INC.
EMAIL ADDRESS: LAINE.LANDAU@LAMPRYNEARSON.COM

LEGEND

- APPROXIMATE RIGHT OF WAY LINE, SEE NOTE 5
- ADJACENT LOT
- CENTERLINE
- ELECTRIC CABINET
- ELECTRIC PEDESTAL
- ELECTRIC PULLBOX
- FIRE HYDRANT
- GRATE INLET
- IRRIGATION CONTROL VALVE
- LIGHT POLE
- MISC POINT
- POST
- BENCH
- BUSH
- COLUMN ROUND
- CONIFEROUS TREE
- CONTROL POINT
- DECIDUOUS TREE
- ELECTRIC CABINET
- ELECTRIC PEDESTAL
- ELECTRIC PULLBOX
- FIRE HYDRANT
- GRATE INLET
- IRRIGATION CONTROL VALVE
- LIGHT POLE
- MISC POINT
- POST
- POWER POLE
- SANITARY MANHOLE
- SIGN
- STOP SIGN
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL PULL BOX
- TRAFFIC SIGNAL CABINET
- WATER CURB STOP
- WATER METER
- WATER VALVE
- YARD HYDRANT

NOTE:
SURVEY PROVIDED FOR REFERENCE ONLY. CONFIRM EXISTING CONDITIONS PRIOR TO BEGINNING DEMO. REPORT ANY CONFLICTS TO OWNER'S REPRESENTATIVE.

LAMP RYNEARSON
LAMPRYNEARSON.COM
OMAHA, NEBRASKA
14710 W. DODGE RD, STE. 100 (402) 496.2498
NE AUTHORIZATION NO.: CA0130
FORT COLLINS, COLORADO
4715 INNOVATION DR., STE. 100 (970) 226.0342
KANSAS CITY, MISSOURI
9001 STATE LINE RD., STE. 200 (816) 361.0440
MO AUTH. NO.: E-2013011903 | LS-2019043127

TOPOGRAPHIC SURVEY
KOSHIO PARK

KOSHIO PARK TOPOGRAPHIC SURVEY
FORT LUPTON, COLORADO

811 Know what's **below.** **Call** before you dig.
ALL UTILITIES ARE SHOWN ACCORDING TO INFORMATION AVAILABLE TO THE ENGINEER. THERE IS NO GUARANTEE ALL FACILITIES ARE SHOWN OR THAT THE LOCATION, DEPTH, AND SIZE OF EACH FACILITY IS CORRECTED. THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL UTILITIES AND SERVICE LINES PRIOR TO CONSTRUCTION.

REVISIONS

DESIGNER / DRAFTER
LAINE LANDAU / JOSH CROAK
DATE
1/7/2026
PROJECT NUMBER
0225036
BOOK AND PAGE

SHEET
G-002

L:\Engineering\0225036 Ft Lupton Koshio Park Boundary Topo\SURVEY\DRAWINGS\BASE MODELS\0225036-1.dwg, 1/7/2026 9:23:53 AM, MICHAEL STRATTON, LAMP RYNEARSON

GENERAL CONSTRUCTION NOTES

1. **COMPLIANCE AND DOCUMENTATION**:
   - ENSURE ALL MATERIALS AND WORKMANSHIP ADHERE TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE RELEVANT AUTHORITY HAVING JURISDICTION, UTILITY DISTRICTS, STATE DEPARTMENT OF TRANSPORTATION, JURISDICTIONAL FIRE PROTECTION REQUIREMENTS, AND ALL APPLICABLE STATE AND LOCAL STANDARDS.
   - CIVIL SPECIFICATION PROVIDED FOR THIS PROJECT SHALL SUPERSEDE ANY CONFLICTS IN THIS PLAN SET.
   - CONTRACTOR SHALL KEEP A SIGNED COPY OF THE APPROVED PLANS, REPORTS, STANDARDS, AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES. THE CONTRACTOR SHALL MAINTAIN AN ASBUILT REDLINE SET OF PLANS ON THE SITE AT ALL TIMES.
   - CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS ROUTES AS REQUIRED BY THE JURISDICTIONAL FIRE PROTECTION DISTRICT.
   - OBTAIN WRITTEN APPROVAL FOR ANY VARIANCES FROM THESE DOCUMENTS.
   - NOTIFY THE ENGINEER OF ANY CONFLICTING STANDARDS OR SPECIFICATIONS. IN CASE OF CONFLICTS, THE STRICTER OR HIGHER QUALITY STANDARD WILL APPLY.
2. **PERMITS AND APPROVALS**:
   - THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING AND ADHERING TO ALL NECESSARY CODES, LICENSES, PERMITS, BONDS, AND STANDARD SPECIFICATIONS REQUIRED FOR THE WORK. THIS INCLUDES LOCAL AND STATE GROUNDWATER DISCHARGE PERMITS.
3. **NOTIFICATIONS**:
   - NOTIFY THE REQUIRED PARTIES (OWNER, OWNER'S REPRESENTATIVE, MUNICIPAL/DISTRICT INSPECTOR, GEOTECHNICAL ENGINEER, ENGINEER, AND/OR UTILITY OWNER) AT LEAST 48 HOURS BEFORE STARTING CONSTRUCTION, PRIOR TO BACKFILLING, AND AS REQUIRED BY JURISDICTIONAL AUTHORITY OR PROJECT SPECIFICATIONS.
4. **UTILITIES**:
   - THE TYPE, SIZE, LOCATION, AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES IN THE AREA OF CONSTRUCTION HAVE BEEN SHOWN PER FIELD INVESTIGATION BY OTHERS AND AVAILABLE UTILITY RECORDS AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER A MINIMUM OF 24 HOURS BEFORE PUTTING A TOOL TO EARTH. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, ALONG THE ROUTE OF WORK AND TO COORDINATE CONSTRUCTION SCHEDULES WITH THE UTILITY OWNERS AND TO SCHEDULE UTILITY ADJUSTMENTS TO ELIMINATE CONFLICT WITH PROGRESS OF THE WORK. THE CONTRACTOR SHALL NOTE ALL UTILITIES MAY NOT APPEAR ON THESE PLANS AND THAT THE POTENTIAL CONFLICT WITH UTILITIES SHALL BE CONSIDERED IN THE PREPARATION OF ANY BIDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT AND SHALL HOLD THE OWNERS AND THE ENGINEER HARMLESS FOR DAMAGE ARISING FROM FAILURE TO ADEQUATELY PROTECT UTILITIES.
   - VERIFY THE EXACT SIZE, LOCATION, AND TYPE OF ALL EXISTING UTILITIES BEFORE STARTING WORK.
   - THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DAMAGE AND COSTS DUE TO FAILURE TO LOCATE AND PRESERVE UTILITIES.
   - NOTIFY PUBLIC AND PRIVATE UTILITY COMPANIES TO DETERMINE THE LOCATION OF ALL EXISTING UTILITIES BEFORE GRADING AND CONSTRUCTION.
   - PERFORM AND INSPECT ALL WORK IN UTILITY AREAS ACCORDING TO THE UTILITY OWNER'S REQUIREMENTS.
   - OBTAIN APPROVAL FROM THE MUNICIPALITY/UTILITY OWNER AND ENGINEER BEFORE RELOCATING ANY ENCOUNTERED UTILITIES.
   - ENSURE ALL SERVICE CONNECTIONS AND RELOCATIONS ARE COORDINATED WITH THE UTILITY OWNER AND ENGINEER.
   - IMMEDIATELY NOTIFY THE ENGINEER OF ANY UTILITY DISCREPANCIES OR CONFLICTS.
5. **SITE CONDITIONS AND SAFETY**:
   - THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY DURING THE WORK. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF PROJECT CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS FROM ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK.
   - PREPARE A TRAFFIC CONTROL PLAN FOR APPROVAL AND PROVIDE ALL NECESSARY DEVICES FOR PUBLIC SAFETY.
   - COMPLY WITH THE TRAFFIC CONTROL PLAN AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) FOR CONSTRUCTION SIGNAGE AND TRAFFIC CONTROL.
6. **GROUNDWATER MANAGEMENT**:
   - THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE ANY ENCOUNTERED GROUNDWATER DURING CONSTRUCTION IN A MANNER THAT PREVENTS FLOODING OR EROSION AND APPLIES TO ALL STATE AND LOCAL GROUNDWATER DISCHARGE PERMIT REQUIREMENTS.
7. **ELEVATION ADJUSTMENTS**:
   - ADJUST RIMS, COVERS AND GRATE ELEVATIONS TO MATCH THE FINAL PAVEMENT AND FINISHED GRADE ELEVATIONS, REGARDLESS OF ELEVATIONS SHOWN ON PLANS.
   - THE EXISTING AND PROPOSED ELEVATIONS SHOWN ON THE PLANS ARE BASED ON EXTRAPOLATED FIELD SURVEY INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL CONFIRM ALL ELEVATIONS AT TIE-INS TO EXISTING FEATURES INCLUDING PAVING, PIPING, FLATWORK, EARTHWORK GRADING, ETC. PRIOR TO CONSTRUCTION. ANY DISCREPANCIES IN ELEVATIONS FROM THOSE SHOWN ON THE PLANS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO CONSTRUCTION. ALL FLATWORK MUST PREVENT PONDING AND PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES, EQUIPMENT, ETC. TOWARDS THE INTENDED DRAINAGE FEATURE.
8. **FLATWORK AND DRAINAGE**:
   - OBTAIN APPROVAL FOR FORMWORK AT CRITICAL AREAS BEFORE PLACING CONCRETE.
9. **ASPHALT WORK**:
   - PROVIDE SAWCUTTING AND PATCHING TO ACHIEVE POSITIVE DRAINAGE AND SMOOTH TRANSITIONS TO EXISTING ASPHALT WITHIN ACCEPTABLE SLOPES.
   - ADDITIONAL SAWCUTTING AND PATCHING MAY BE REQUIRED AT UTILITY WORK AND CONNECTION POINTS.
10. **PROTECTION OF EXISTING FEATURES**:
    - PROTECT AND MAINTAIN EXISTING MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC. EXTEND OR LOWER FEATURES TO FINAL SURFACE LEVEL WITH APPROPRIATE CAPS AND LIDS.
    - PROVIDE A CONCRETE COLLAR FOR ALL EXISTING AND PROPOSED MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC., IN LANDSCAPED AREAS.
11. **CONCRETE WORK**:
    - OBTAIN OWNER APPROVAL FOR PRIVATE CONCRETE FINISHING, JOINT PATTERNS, AND COLORING BEFORE CONSTRUCTION. SUBMIT A JOINT LAYOUT PLAN FOR APPROVAL.
12. **PIPE LENGTHS AND CONTROL POINTS**:
    - ADJUST PIPE LENGTHS TO ACCOUNT FOR STRUCTURES AND FLARED END SECTIONS BASED ON THE STRUCTURE DETAILS.
    - PIPE LENGTHS SHOWN ON PLANS ARE TO THE CENTER OF STRUCTURE. PIPE LENGTHS SHOWN ON PLANS CONNECTED TO FLARED END SECTIONS (FES) INCLUDE THE FULL LENGTH OF FES AND SHOULD BE ADJUSTED ACCORDINGLY.
13. **SITE CLEANUP**:
    - REMOVE ALL SURPLUS MATERIALS, TOOLS, TEMPORARY STRUCTURES, DEBRIS, AND RUBBISH CAUSED BY CONSTRUCTION. RESTORE THE AREA TO ITS ORIGINAL CONDITION WITHIN 48 HOURS OF PROJECT COMPLETION UNLESS DIRECTED OTHERWISE.
14. **EROSION AND SEDIMENT CONTROL**:
    - IMPLEMENT AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH LOCAL AND STATE GUIDELINES.
    - PROHIBIT SILT AND DEBRIS-LADEN RUNOFF FROM LEAVING THE SITE AND KEEP PUBLIC AREAS FREE OF MUD AND DEBRIS.
    - RE-ESTABLISH FINAL GRADES AND REMOVE ACCUMULATED SEDIMENTATION FROM ALL AREAS, INCLUDING SWALES, PIPES, INLETS, CURBS AND DETENTION/WATER QUALITY AREAS.
    - REMOVE TEMPORARY EROSION CONTROL MEASURES AND REPAIR AREAS AFTER VEGETATION IS ESTABLISHED AND ACCEPTED BY THE OWNER AND MUNICIPALITY.
15. **TREE AND VEGETATION PROTECTION**:
    - PROTECT ALL TREES AND VEGETATION BY PLACING CONSTRUCTION FENCING AT THE DRIP LINE OF TREES AND PLANTS NEAR THE WORK ZONE. HAND EXCAVATION IS REQUIRED AT ROOT ZONES WHERE PROPOSED PAVING OR UTILITY WORK IS WITHIN THE DRIPLINE OF TREES.
16. **ASBUILTS**
    - THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE, SHALL PROVIDE THE OWNER AND ENGINEER OF RECORD A COMPLETE SET OF CONSTRUCTION RECORD DRAWINGS (ASBUILTS) FOR ALL CONSTRUCTED IMPROVEMENTS, IF REQUIRED BY THE OWNER OR AHJ, THE ASBULT SET SHALL SHOW SUFFICIENT DIMENSION TIES TO PERMANENT SURFACE FEATURES OR NORTHING/EASTING POINTS FOR ALL BURIED FACILITIES TO ALLOW FOR FUTURE LOCATING. THE ASBUILT SET SHALL SHOW ALL APPLICABLE ASBUILT IMPROVEMENTS INCLUDING BUT NOT LIMITED TO: CONTOURS, ELEVATIONS OF ALL FLATWORK, FLOWLINES, GRADE BREAKS, CROSS SLOPES AND ANY OTHER ELEVATIONS TO DEMONSTRATE COMPLIANCE WITH THE PLANS. ALL POND FEATURES INCLUDING TOP, BOTTOM AND GRADE BREAKS, OUTLET FEATURES INCLUDING TOP AND BOTTOM OF OUTLET STRUCTURE, PERFORATION SIZES AND ELEVATIONS ABOVE INVERT, PIPE INVERTS, ETC. ASBUILTS SHALL BE PREPARED BY A PLS.

TOPSOIL NOTE:

- TOPSOIL IS DEFINED AS FERTILE, FRIABLE, NATURAL LOAM, SURFACE SOIL, REASONABLY FREE OF SUBSOIL, CLAY LUMPS, BRUSH, WEEDS, AND OTHER LITTER, AND FREE OF ROCKS, STUMPS, STONES LARGER THAN 2 INCHES IN ANY DIMENSION, AND OTHER EXTRANEOUS OR TOXIC MATTER HARMFUL TO PLANT GROWTH FOR AREAS TO BE SEEDED OR PLANTED. COORDINATE TESTING REQUIREMENTS WITH ENGINEER AND OWNER.
- ALL TOPSOIL SCRAPED FROM THE SITE IS TO BE STOCKPILED AND REDISTRIBUTED AFTER FINAL GRADING IS COMPLETE.
- CLEAN TOPSOIL FREE OF PLANTS AND SEEDS WILL BE SPREAD TO 4-INCH MINIMUM DEPTH OR AS SPECIFIED BY DRAWINGS, WHICHEVER IS GREATER, PRIOR TO SEEDING. ALL DISTURBED AREAS THAT WILL NOT BE PAVED OR OTHERWISE HAVE PERMANENT EROSION MEASURES ESTABLISHED SHALL HAVE CLEAN TOPSOIL SPREAD TO AN EVEN 4-INCH MINIMUM DEPTH UNLESS SPECIFIED OTHERWISE. IN NO CASE SHALL BARE EARTH REMAIN AT THE CONCLUSION OF CONSTRUCTION.

SURVEY INFORMATION:

SURVEY INFORMATION PROVIDED BY LAMP RYNEARSON, SEE TOPOGRAPHIC SURVEY KOSHIO PARK, DATED 1/7/26.

- CONTROL POINT #1:
  - DESCRIPTION: ½" X 24" REBAR WITH A 1-1/4" ORANGE PLASTIC CAP STAMPED: "CONTROL POINT"
  - N: 337906.072
  - E: 558951.208
  - EL: 4916.586
- CONTROL POINT #2:
  - DESCRIPTION: ½" X 24" REBAR WITH A 1-1/4" ORANGE PLASTIC CAP STAMPED: "CONTROL POINT"
  - N: 338142.516
  - E: 558994.545
  - EL: 4912.665
- CONTROL POINT #3:
  - DESCRIPTION: ½" X 24" REBAR WITH A 1-1/4" ORANGE PLASTIC CAP STAMPED: "CONTROL POINT"
  - N: 337747.031
  - E: 558859.253
  - EL: 4911.841

GENERAL ABBREVIATIONS

AASHTO	AMERICAN ASSOC. OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	E	EAST	IRR	IRRIGATION		
		EA	EACH	JTS	JOINTS	R	RIGHT
ABAN	ABANDON	ECC	ECCENTRIC			RAD	RADIUS
AC	ASPHALTIC CONCRETE PAVING	EJ	EXPANSION JT	KO	KNOCKOUT	RCP	REINFORCED CONCRETE PIPE
ADDL	ADDITIONAL	EL	ELEVATION	KPL	KICK PLATE	RD	ROOF DRAIN
ADDM	ADDENDUM	ELB	ELBOW	KWY	KEYWAY	RE	REFERENCE
ADJ	ADJUSTABLE	ELEC	ELECTRICAL			RECT	RECTANGULAR
AL	ALUMINUM	ENGR	ENGINEER	L	LEFT OR LITER	REINF	REINFORCE (D) (ING) (MENT)
ALT	ALTERNATE	EOC	EDGE OF CONCRETE	LSCAPE	LANDSCAPE(ING)	REQD	REQUIRED
AMT	AMOUNT	EOP	EDGE OF PAVEMENT	LF	LINEAR FOOT	ROW	RIGHT OF WAY
APPROX	APPROXIMATE	EQ	EQUAL	LP	LOW POINT OR LIGHT POLE	R&R	REMOVE AND REPLACE
ARCH	ARCHITECT(URAL)	EQUIP	EQUIPMENT	LT	LIGHT		
ARV	AIR RELIEF VALVE	EQUIV	EQUIVALENT	LWL	LOW WATER LEVEL	SAN	SANITARY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	ESMT	EASEMENT			SC	SAWCUT
		EST	ESTIMATE	MAINT	MAINTENANCE	SD	STORM DRAIN
ASPH	ASPHALT	EVCE	END VERTICAL CURVE ELEVATION	MAN	MANUAL	SECT	SECTION
ASSY	ASSEMBLY	EVCS	END VERTICAL CURVE STATION	MATL	MATERIAL	SPD	STANDARD PROCTOR DENSITY
ASYM	ASYMMETRICAL	EW	EACH WAY	MAX	MAXIMUM	SPEC	SPECIFICATION
AUTO	AUTOMATIC	EXP	JT EXPANSION JOINT	ME	MATCH EXISTING	SQ	SQUARE
AVG	AVERAGE	EXIST	EXISTING	MECH	MECHANICAL	SQ IN	SQUARE INCH
AWWA	AMERICAN WATER WORKS ASSOC.			MEP	MECHANICAL, ELECTRICAL, PLUMBING (ARCH)	SQ FT	SQUARE FOOT
		FND	FOUNDATION	MFR	MANUFACTURER	SQ YD	SQUARE YARD
BC	BACK OF CURB	FES	FLARED END SECTION	MH	MANHOLE	SS	SANITARY SEWER
BFV	BUTTERFLY VALVE	FF	FINISH FLOOR	MIN	MINIMUM	SST	STAINLESS STEEL
BG	FINISHED GRADE ADJACENT TO BOTTOM OF WALL	FG	FINISH GRADE	MISC	MISCELLANEOUS	STA	STATION
		FH	FIRE HYDRANT	MJ	MECHANICAL JOINT	STD	STANDARD
BLDG	BUILDING	FL	FLOW LINE			STL	STEEL
BLK	BLOCK	FN	FENCE	N	NORTH	STRUCT	STRUCTURAL
BM	BENCH MARK	FOC	FACE OF CONCRETE	NA	NOT APPLICABLE	SVC	SERVICE
BMP	BEST MANAGEMENT PRACTICE	FPM	FEET PER MINUTE	NIC	NOT IN CONTRACT	SWMP	STORMWATER MANAGEMENT PLAN
BS	BACKSIGHT	FPS	FEET PER SECOND	NPT	NATIONAL PIPE THREAD	SWPPP	STORMWATER POLLUTION PREVENTION PLAN
BOS	BOTTOM OF STEP	FT	FEET	NTS	NOT TO SCALE	SYM	SYMMETRICAL
BOT	BOTTOM	FTG	FOOTING OR FITTING				
BSMT	BASEMENT			OS	OFFSET	TB	THRUST BLOCK
BVCE	BEGIN VERTICAL CURVE ELEVATION	G	GAS	OC	ON CENTER	TBC	TOP BACK OF CURB
BVCS	BEGIN VERTICAL CURVE STATION	GA	GAUGE	OD	OUTSIDE DIAMETER	TEMP	TEMPORARY
BW	BOTTOM OF WALL	GAL	GALLON	OPP	OPPOSITE	TG	FINISHED GRADE ADJACENT TO TOP OF WALL
		GALV	GALVANIZED	OPT	OPTIONAL	THK	THICK
CB	CATCH BASIN	GB	GRADE BREAK			TOB	TOP OF BANK
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION	GIP	GALVANIZED IRON PIPE	PC	POINT OF CURVATURE	TOC	TOP OF CONCRETE OR TOP OF CURB
		GND	GROUND	PCO	PRESSURE CLEAN OUT	TOS	TOP OF STEP
CIP	CAST IRON PIPE	GPD	GALLONS PER DAY	PCR	POINT OF CURVE RETURN	TOT	TOTAL
CJ	CONSTRUCTION JOINT	GPM	GALLONS PER MINUTE	PI	POINT OF INTERSECTION	TW	TOP OF WALL OR CAP OF WALL
CL	CENTER LINE	GR	GRATE	PVI	POINT OF VERTICAL INTERSECTION	TYP	TYPICAL
CLR	CLEAR	GRTG	GRATING	PL	PROPERTY LINE		
CMP	CORRUGATED METAL PIPE	GSP	GALVANIZED STEEL PIPE	PE	POLYETHYLENE	UBC	UNIFORM BUILDING CODE
CMU	CONCRETE MASONRY UNIT	GV	GATE VALVE	PREFAB	PREFABRICATED	UGE	UNDERGROUND ELECTRIC
CO	CLEANOUT			PRELIM	PRELIMINARY	UTIL	UTILITY
CONC	CONCRETE	H	HIGH	PREP	PREPARATION	VERT	VERTICAL
CONST	CONSTRUCTION	HDWL	HEADWALL	PROP	PROPOSED	VC	POINT OF VERTICAL CURVATURE
CONT	CONTINUOUS	HNDRL	HAND RAIL	PRV	PRESSURE REDUCING VALVE OR PRESSURE RELIEF VALVE	VCP	VITRIFIED CLAY PIPE
CR	CONCENTRIC REDUCER	HORIZ	HORIZONTAL				
CTR	CENTER	HP	HIGH POINT	PSF	POUNDS PER SQUARE FOOT	W	WIDE OR WIDTH
CY	CUBIC YARDS	HR	HOUR	PSI	POUNDS PER SQUARE INCH	W/	WITH
		HVAC	HEATING, VENTILATION, AIR CONDITIONING	PT	POINT OF TANGENCY	W/O	WITHOUT
DEMO	DEMOLITION	HWY	HIGHWAY	PV	PLUG VALVE	WQCV	WATER QUALITY CONTROL VOLUME
DET	DETAIL	HWL	HIGH WATER LINE	PVC	POLYVINYL CHLORIDE OR POINT OF VERTICAL CURVATURE	WSE	WATER SURFACE ELEVATION
DIA	DIAMETER	HYD	HYDRANT			WW	WASTEWATER
DIAG	DIAGONAL			PVMT	PAVEMENT		
DIP	DUCTILE IRON PIPE	INCL	INCLUDED			X	SECT CROSS SECTION
DOM	DOMESTIC	ID	INSIDE DIAMETER	QTY	QUANTITY	XFMR	ELECTRICAL TRANSFORMER
DN	DOWN	IN	INLET				
DWG	DRAWING	INV	INVERT				

Sheet List Table

Sheet Number	Sheet Title
C-001	GENERAL NOTES
C-101	DEMOLITION PLAN
C-201	EROSION CONTROL PLAN
CD-201	EROSION CONTROL DETAILS
C-301	GRADING PLAN
C-501	HORIZONTAL CONTROL PLAN
CD-501	HORIZONTAL CONTROL DETAILS
CD-502	HORIZONTAL CONTROL DETAILS

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KOSHIO PARK | FORT LUPTON, CO 80621
BID SET

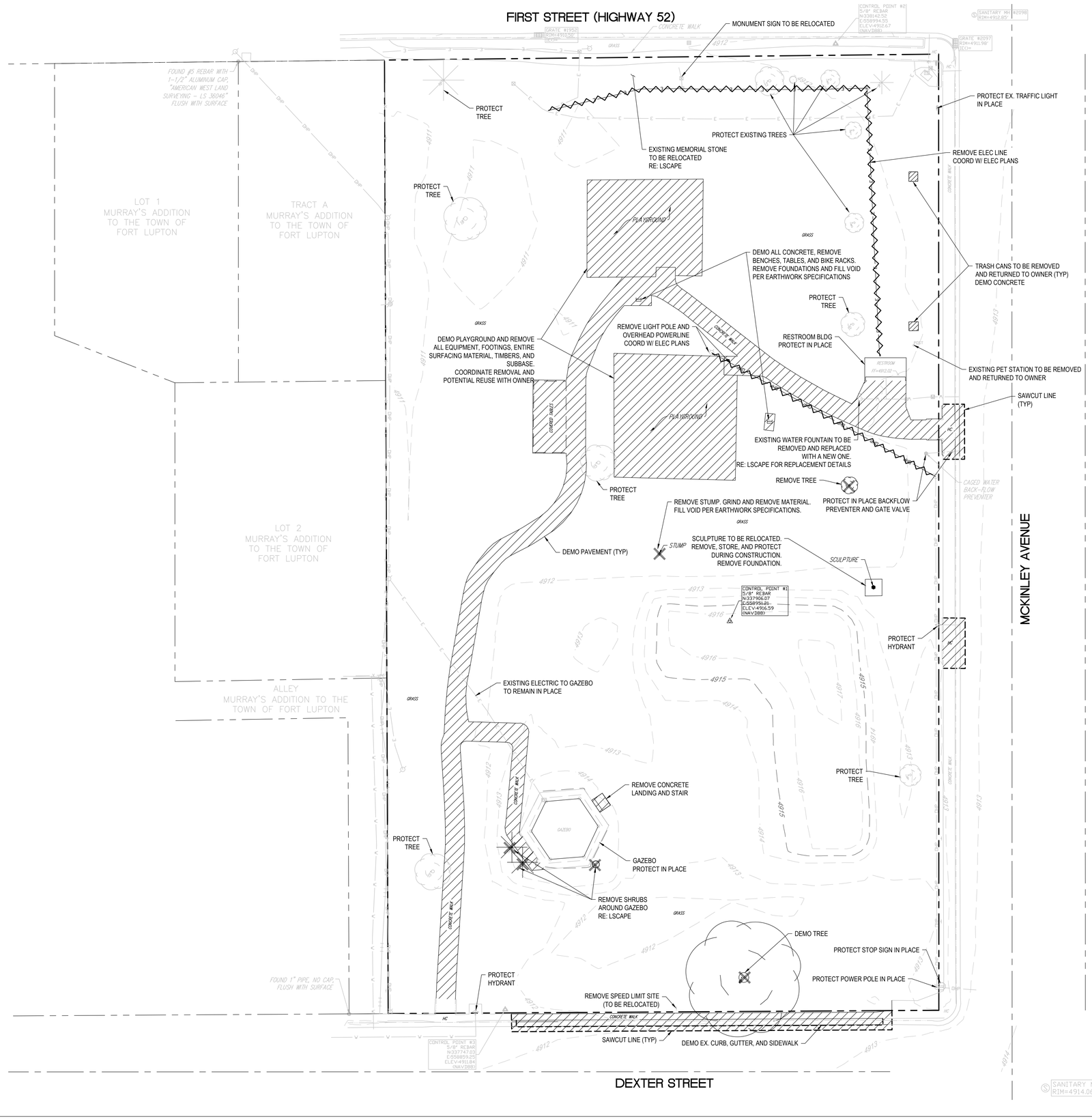
OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

CHECKED BY: ETN
DRAWN BY: JJC

SHEET TITLE:
GENERAL NOTES

C-001



GENERAL LEGEND

- PROPERTY LINE
- EASEMENT
- EX MINOR CONTOUR
- EX MAJOR CONTOUR
- EX SPOT ELEVATION
- SAWCUT LINE

DEMOLITION LEGEND

- SURFACE DEMO
- SUBSURFACE DEMO
- ABANDON SUBSURFACE FEATURE
- PAVEMENT DEMO
- SAWCUT LINE
- SURFACE DEMO

DEMOLITION NOTES

1. DEMOLITION LIMITS MAY VARY — COORDINATE WITH THE OWNER, LANDSCAPE ARCHITECT, AND ENGINEER TO ADJUST BOUNDARIES, PROTECT ITEMS TO REMAIN (FENCING, TREES, ETC.), AND PHASE THE WORK APPROPRIATELY.
2. REFER TO LANDSCAPE ARCHITECT PLANS FOR SALVAGING SITE FURNISHINGS. CIVIL AND LANDSCAPE ARCHITECT DEMOLITION MUST BE COORDINATED TOGETHER.
3. ALL REQUIRED EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE BEFORE CONSTRUCTION STARTS.
4. CONTRACTOR MUST VERIFY ALL UNDERGROUND UTILITIES BEFORE WORK BEGINS. SEE GENERAL CONSTRUCTION NOTES FOR UTILITY INFO AND SAFETY PRECAUTIONS.
5. COORDINATE ANY DRY UTILITY OR ELECTRICAL DEMOLITION OR RELOCATION WITH THE OWNER, UTILITY PROVIDER, AND ELECTRICAL ENGINEER.
6. REFER TO GENERAL CONSTRUCTION NOTES AND COORDINATE WITH LANDSCAPE ARCHITECT FOR ANY REQUIRED TREE PROTECTION OR REMOVAL.
7. REPLACE FLATWORK AT UTILITY TRENCHES. SAWCUTTING AND PAVEMENT REMOVAL MUST BE CLEAN AND EXTEND TO THE NEAREST JOINT.
8. COMPLY WITH ALL REGULATIONS FOR HAZARDOUS MATERIAL HANDLING AND DISPOSAL.
9. MAINTAIN SAFE PEDESTRIAN ROUTES DURING WORK. PROVIDE TEMPORARY SIGNAGE AND PATHWAYS AS NEEDED.
10. ANY UNINTENTIONAL DAMAGE TO SITE ELEMENTS NOT DESIGNATED FOR DEMOLITION MUST BE REPAIRED OR REPLACED BY THE CONTRACTOR.
11. TAKE NECESSARY PRECAUTIONS TO AVOID DISRUPTING EXISTING UTILITIES OR SERVICES DURING CONSTRUCTION.
12. CONTRACTOR IS RESPONSIBLE FOR VERIFYING SITE CONDITIONS PRIOR TO COMMENCING DEMOLITION. NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY CONFLICTS OR CONDITIONS THAT VARY FROM SURVEY.
13. CONTRACTOR SHALL PROTECT ALL FEATURES THAT ARE NOT TO BE REMOVED ADJACENT TO THE CONSTRUCTION AREA INCLUDING, BUT NOT LIMITED TO, ADJACENT BUILDING, FOUNDATIONS, PAVEMENT, FENCING AND ABOVE GROUND OR UNDERGROUND UTILITIES.

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CONTERRA ENGINEERING

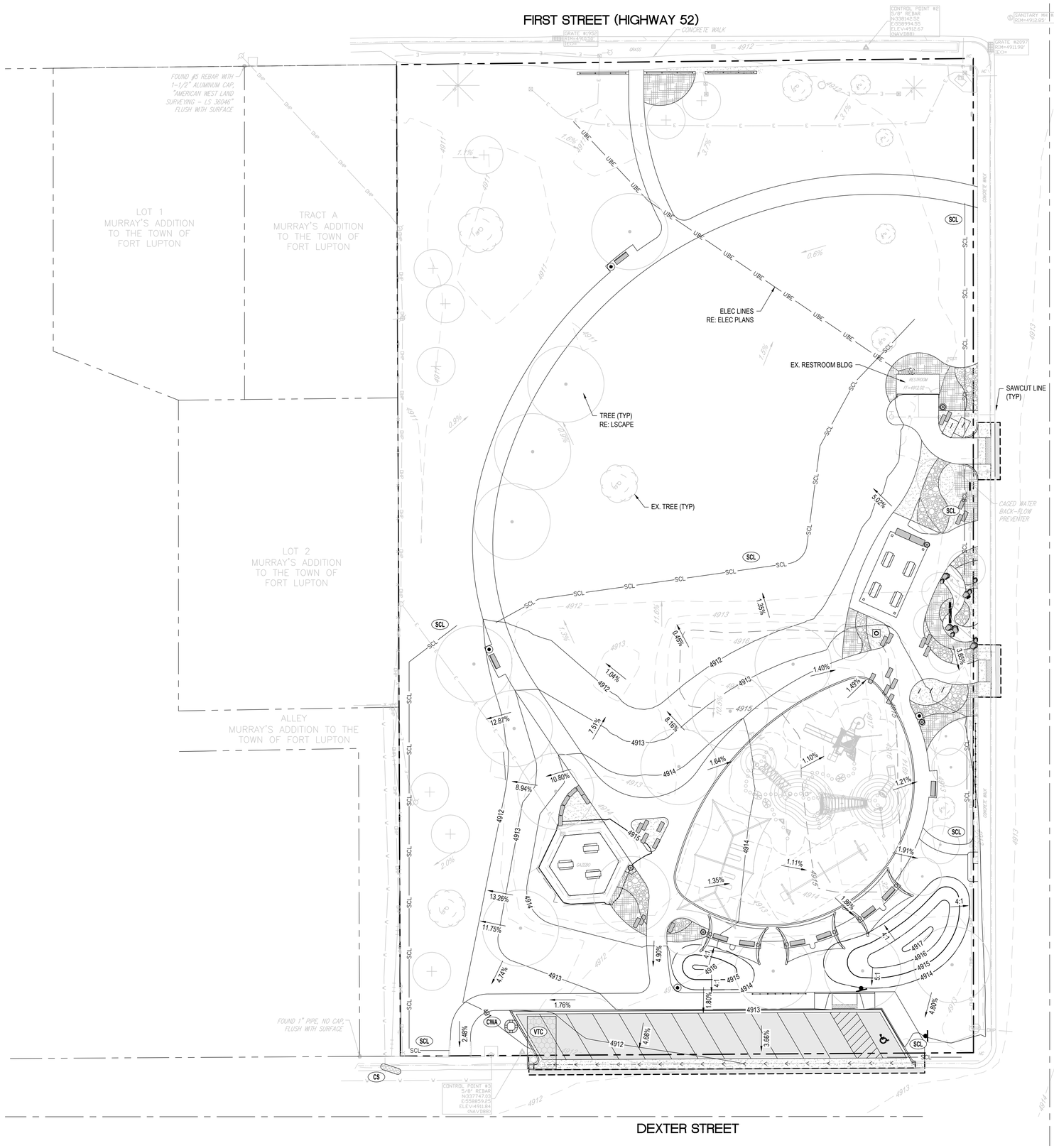
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SCALE IN FEET

SHEET TITLE:
DEMOLITION PLAN

C-101

CHECKED BY: ETN
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GENERAL LEGEND

- PROPERTY LINE
- EASEMENT
- EX MINOR CONTOUR
- EX MAJOR CONTOUR
- PR MINOR CONTOUR
- PR MAJOR CONTOUR
- EX SPOT ELEVATION
- PR SPOT ELEVATION
- SLOPE ARROW
- SAWCUT LINE
- FLOW LINE
- CURB AND GUTTER
- ASPHALT PAVING
- CONCRETE PAVING
- GRAVEL
- SIGN POST

EROSION CONTROL LEGEND

- SCL — SEDIMENT CONTROL LOG RE: SHT CD-201
- CWA — CONCRETE WASHOUT AREA RE: SHT CD-201
- VTC — VEHICLE TRACTION CONTROL RE: SHT CD-201
- CS — CURB SOCK RE: SHT CD-201
- IP — INLET/OUTLET PROTECTION RE: SHT CD-201

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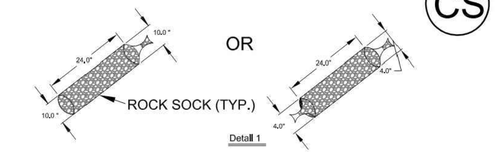
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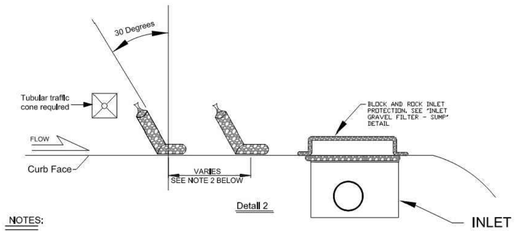
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EROSION CONTROL PLAN

C-201

811

CS



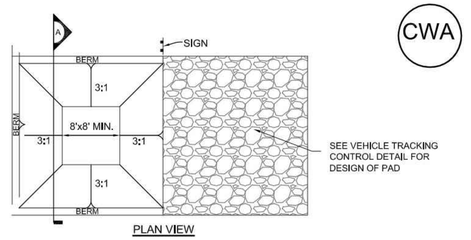


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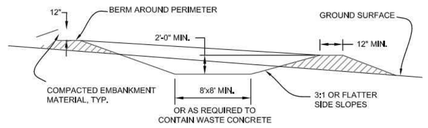
1) SOCKS WILL BE USED UPGRADIENT OF THE INLET AND FLUSH WITH THE CURB.
2) NO LESS THAN TWO 10 INCH DIAMETER SOCKS MUST BE USED IN SEQUENCE, SPACED NO MORE THAN FIVE FEET APART. NO LESS THAN SIX SOCKS SHALL BE USED IF THE 4 INCH SOCK IS USED, ALSO SPACED AT NO MORE THAN 5 FEET APART.
3) ALIGN AT 30 DEGREES 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.

CITY OF Fort Lupton EST 1836 COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	ON GRADE INLET PROTECTION	EC 6
		DATE: 8/15/14

CWA



PLAN VIEW



SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

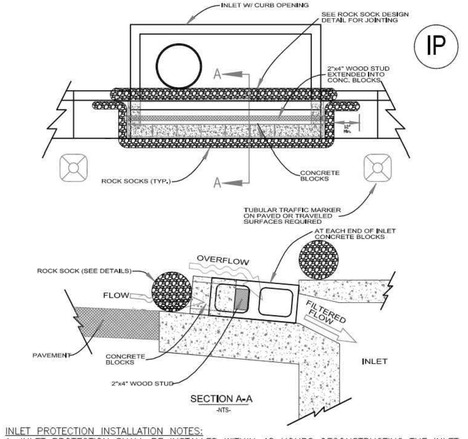
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT ARE TO OPERATORS OF CONCRETE TRCUYKS AND PUMP RIGS.

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AND APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH, OR OTHERWISE STABILZE IN A MANNER APPROVED BY THE CITY.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.
5. PORTABLE ROLLOFF TYPE OF CONCRETE WASHOUT FACILITIES WILL ALSO BE ALLOWED.

CITY OF Fort Lupton EST 1836 COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	CONCRETE WASHOUT AREA	EC 9
		DATE: 8/15/14

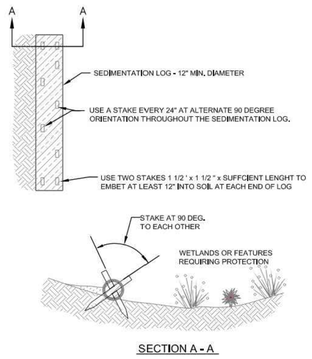
IP



INLET PROTECTION INSTALLATION NOTES:
1. INLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OFCONSTRUCTING 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.

CITY OF Fort Lupton EST 1836 COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	INLET GRAVEL FILTER - SUMP	EC5
		DATE: 8/15/14

SCL



SECTION A - A

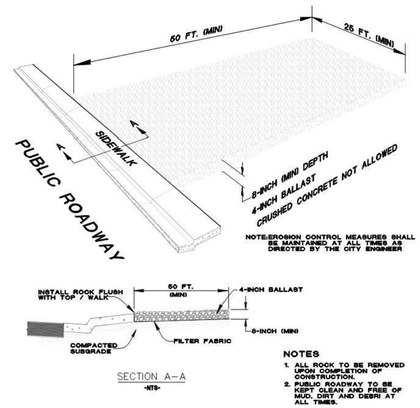
SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF SEDIMENT CONTROL LOG.
2. SEDIMENT CONTROL LOGS INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR, OR COCONUT FIBER.
4. NOT FOR USE IN CONCENTRATED FLOW AREAS.
5. THE SEDIMENT CONTROL LOG SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 2".

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. THE SWMP MANAGER SHALL INSPECT SEDIMENT CONTROL LOGS DAILY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE CREST OF LOG.
3. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE COVERED WITH TOP SOIL, DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

CITY OF Fort Lupton EST 1836 COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	SEDIMENT CONTROL LOGS	EC 16
		DATE: 8/15/14



NOTES
1. ALL ROCK TO BE REMOVED UPON COMPLETION OF CONSTRUCTION.
2. PUBLIC ROADWAY TO BE KEPT CLEAN AND FREE OF MUD, DIRT AND DEBRI AT ALL TIMES.

CITY OF Fort Lupton EST 1836 COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	VEHICLE TRACKING PAD	EC 8
		DATE: 8/15/14

CHECKED BY: ETN
DRAWN BY: JJC

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PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694

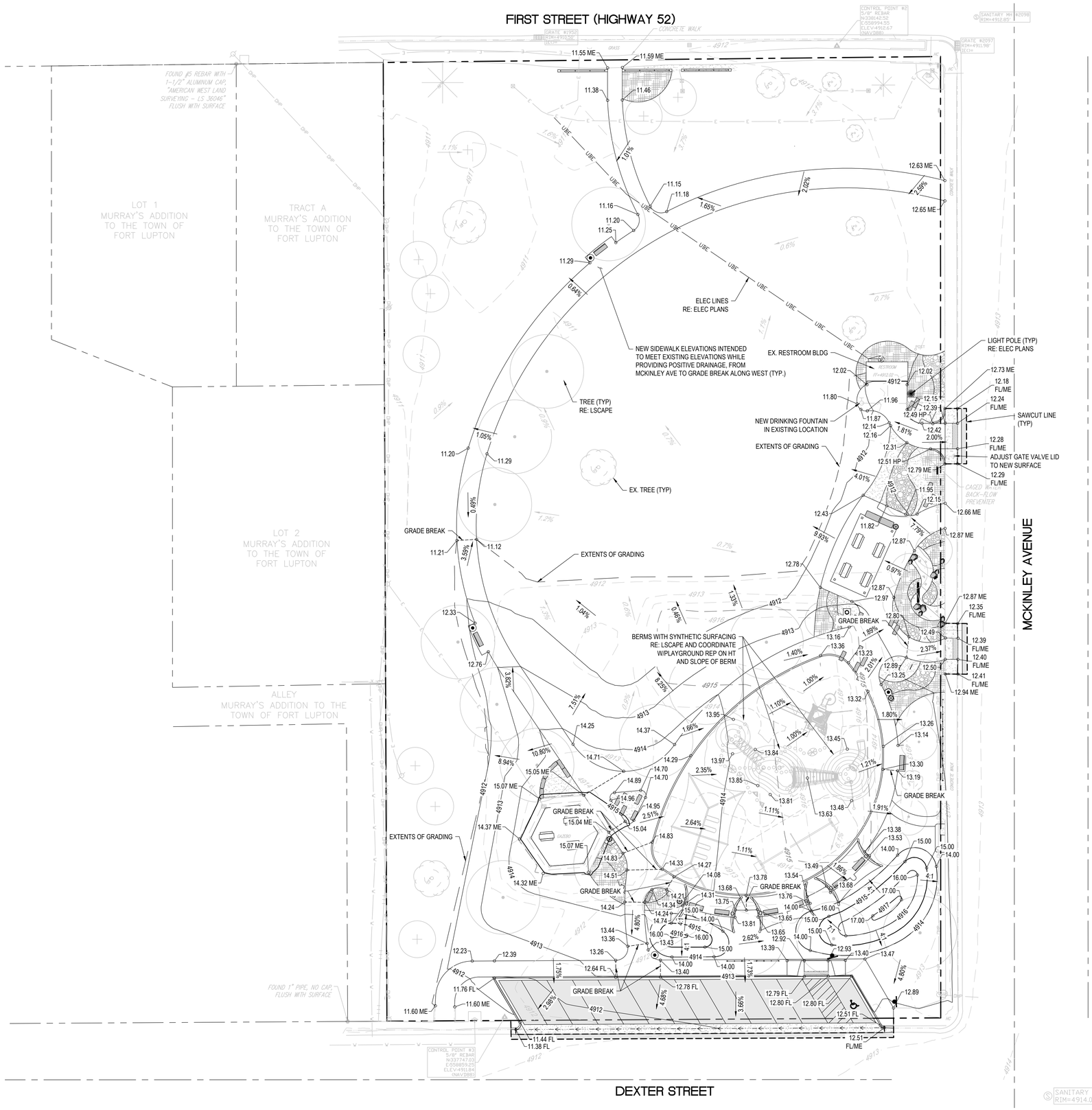
CONTERRA ENGINEERING

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
EROSION CONTROL DETAILS

CD-201

811



GENERAL LEGEND

- PROPERTY LINE
- EASEMENT
- EX MINOR CONTOUR
- EX MAJOR CONTOUR
- PR MINOR CONTOUR
- PR MAJOR CONTOUR
- EX SPOT ELEVATION
- PR SPOT ELEVATION
- SLOPE ARROW
- SAWCUT LINE
- FLOW LINE
- CURB AND GUTTER
- ASPHALT PAVING
- CONCRETE PAVING
- GRAVEL
- SIGN POST

NOTE:

1. GRADING DESIGN IS INTENDED TO BE BALANCED ACROSS THE SITE. IMPORT/EXPORT OF MATERIAL IS NOT INTENDED. CUT/FILL IS MEANT TO BE BALANCED. DUE TO DIFFERENCES IN SURVEY DATA, EXISTING TOPSOIL DEPTH, DEPTH OF EXISTING PLAYGROUND MATERIALS, ETC. IT IS NOT POSSIBLE TO PRECISELY COMPUTE THE CUT/FILL VOLUMES. IF THERE IS EXCESS MATERIAL, THAT MATERIAL IS TO BE SPREAD THINLY ON SITE IN A MANNER THAT STILL PROVIDES POSITIVE DRAINAGE AND MATCHES THE GRADING INTENT, OUTSIDE OF THE PAVED AND PLAYGROUND AREAS. IF THERE IS A SHORTAGE OF MATERIAL, THAT MATERIAL SHALL BE THINLY SCRAPED FROM THE SITE OUTSIDE OF THE PAVED AND PLAYGROUND AREAS.

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CONTERRA ENGINEERING

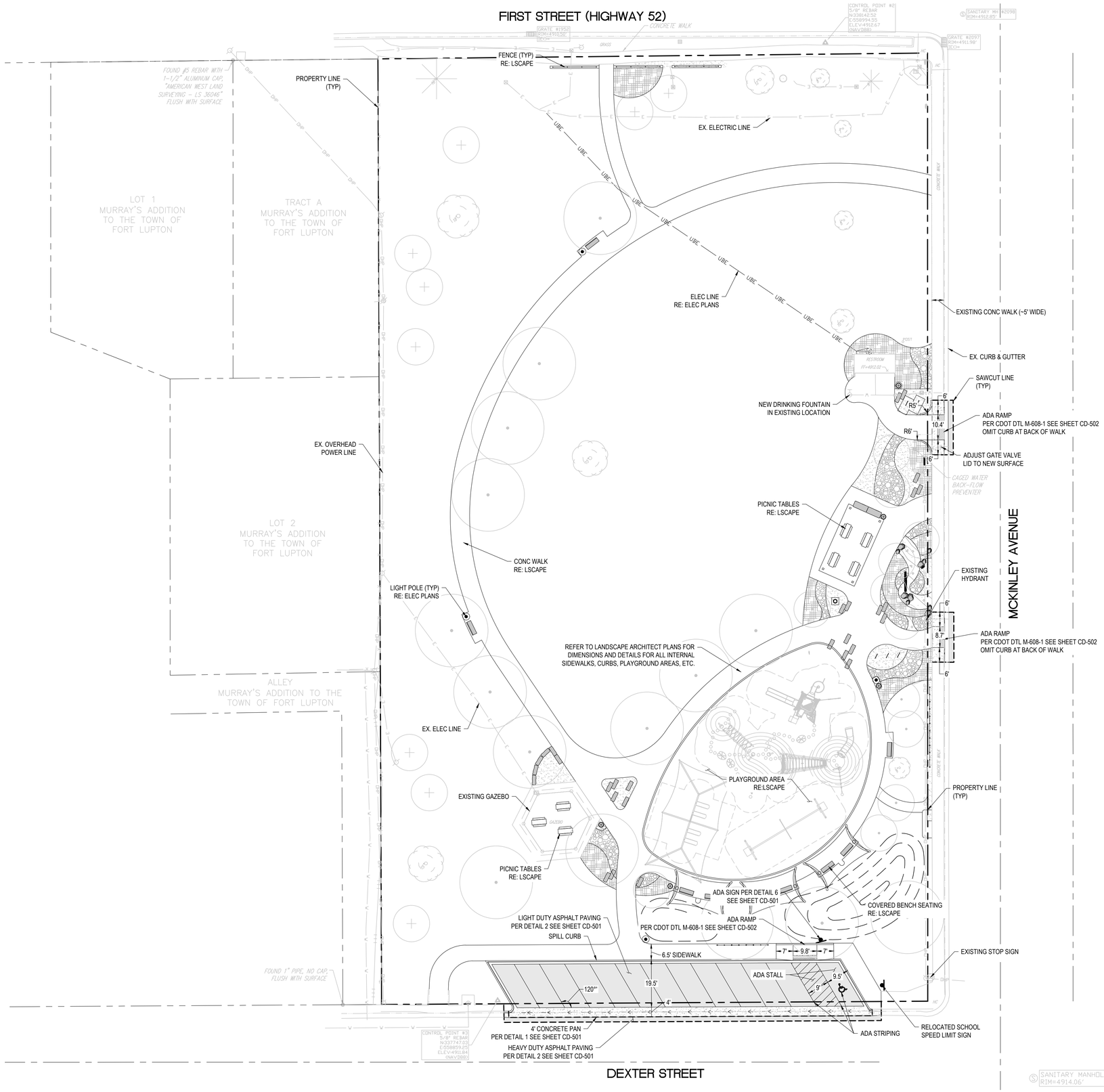
DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

20 0 20 40
SCALE IN FEET

SHEET TITLE:
GRADING PLAN

C-301

CHECKED BY: ETN
DRAWN BY: JJC



GENERAL LEGEND

- PROPERTY LINE
- EASEMENT
- EX MINOR CONTOUR (16)
- EX MAJOR CONTOUR (20)
- PR MINOR CONTOUR (31)
- PR MAJOR CONTOUR (35)
- EX SPOT ELEVATION (47.68)
- PR SPOT ELEVATION (67.60)
- SLOPE ARROW (2.50%)
- SAWCUT LINE
- FLOW LINE
- CURB AND GUTTER
- ASPHALT PAVING
- CONCRETE PAVING
- GRAVEL
- SIGN POST

GENERAL NOTES:

1. REFERENCE LANDSCAPING PLANS FOR ALL ONSITE FLATWORK, STRUCTURES, FENCING, PLAYGROUNDS, SEAT WALLS, SPECIFICATIONS, ETC.
2. REFERENCE THESE CIVIL PLANS AND SPECIFICATIONS FOR FLATWORK ADJACENT TO ROW (ASPHALT, CURB & GUTTER, ADA RAMPS, DRAINAGE PANS, TRAFFIC/PARKING SIGNAGE, PAVEMENT STRIPING, ETC.).

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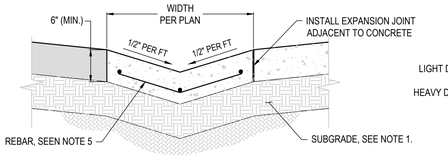
CONTERRA ENGINEERING

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SHEET TITLE:
HORIZONTAL
CONTROL PLAN

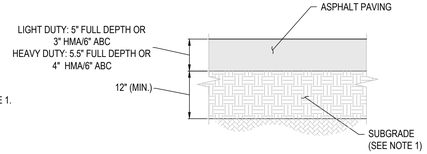
C-501



NOTES:

1. SUBGRADE TO BE OVER-EXCAVATED, MOISTURE TREATED, AND RECOMPACTED PER SPECIFICATIONS.
2. EXPANSION JOINTS AND CONTRACTION JOINTS SHOWN PER SEPARATE DETAIL.
3. FIBERMESH REINFORCEMENT SHALL BE IN ALL CONCRETE, PER SPECIFICATIONS.
4. CONCRETE JOINT LAYOUT PLAN SHALL BE PROVIDED BY THE CONTRACTOR TO THE OWNER FOR THEIR APPROVAL.
5. REINFORCEMENT:
   - (3) #4 REBAR PARALLEL TO FLOWLINE
   - (1) #4 REBAR PERPENDICULAR REBAR AT 24" O.C.
   - 2.5" CLEAR OF LIMITS OF CONCRETE PAN

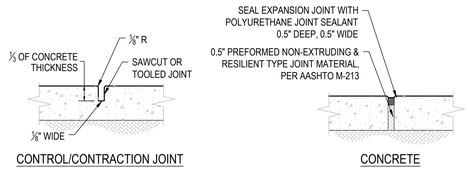
1 REINFORCED CONCRETE PAN DETAIL
NOT TO SCALE



NOTES:

1. SUBGRADE TO BE OVER-EXCAVATED, MOISTURE TREATED, AND RECOMPACTED PER SPECIFICATIONS.
2. LIGHT DUTY ASPHALT TO BE INSTALLED FOR CAR PARKING STALLS.
3. HEAVY DUTY ASPHALT TO BE INSTALLED FOR DRIVE LANES, SERVICE DRIVES, AND BUS LOOPS.
4. REFER TO SPECIFICATIONS FOR SURFACE (TOP) COURSE TYPES AND MINIMUM THICKNESS.

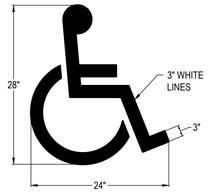
2 FULL DEPTH ASPHALT PAVEMENT SECTION DETAIL
NOT TO SCALE



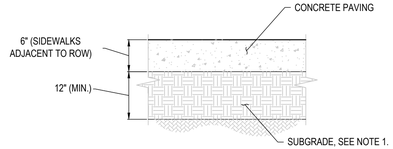
NOTES:

1. CONTROL/CONTRACTION JOINTS SHALL BE AT INTERVAL TO MATCH WIDTH OF SIDEWALK (6' MAX).
2. PROVIDE EXPANSION JOINTS IN THE CURB AT INTERVALS NOT EXCEEDING 100 FEET AND AT ALL LOCATIONS WHERE NEW SIDEWALK CONNECTS TO EXISTING OR PROPOSED CONCRETE STRUCTURES, UNLESS OTHERWISE NOTED. REFER TO PLAN FOR SPECIFIC LOCATIONS.
3. REMOVE ANY PLASTIC FORMING MATERIAL (E.G., "ZIP STRIPS") FROM THE PREFORMED JOINT FILLER BEFORE APPLYING JOINT SEALANT.

3 CONCRETE JOINT DETAIL
NOT TO SCALE



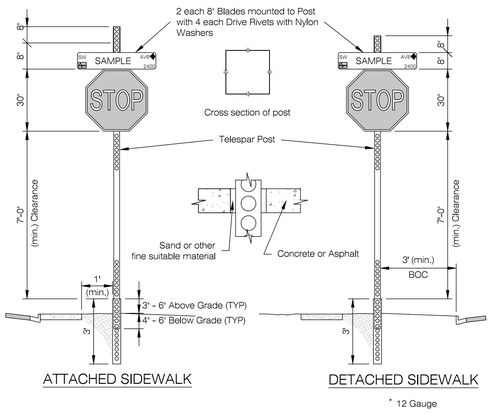
4 ADA SYMBOL PAVEMENT DETAIL
NOT TO SCALE



NOTES:

1. SUBGRADE TO BE OVER-EXCAVATED, MOISTURE TREATED, AND RECOMPACTED PER SPECIFICATIONS.
2. EXPANSION JOINTS AND CONTRACTION JOINTS SHOWN PER SEPARATE DETAIL.
3. FIBERMESH REINFORCEMENT SHALL BE IN ALL CONCRETE, PER SPECIFICATIONS
4. HEAVY DUTY CONCRETE TO HAVE REINFORCEMENT: #4 REBAR, 12-INCHES ON CENTER EACH WAY, 3-INCHES CLEAR ON ALL SIDES, REFERENCE SPECIFICATIONS.

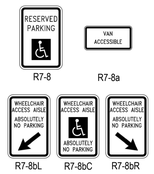
5 CONCRETE PAVEMENT SECTION DETAIL
NOT TO SCALE



NOTES:

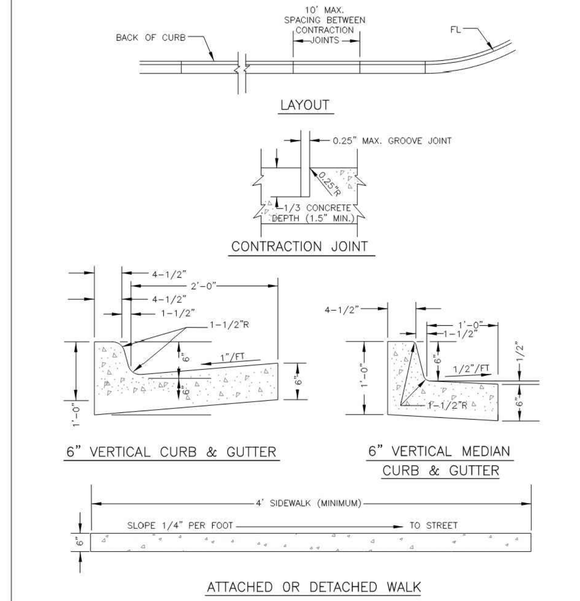
1. ATTACH THE SIGN PANELS TIGHTLY TO THE POST AND USE OVERSIZED WASHERS TO KEEP THE SIGN FROM BREAKING LOOSE FROM THE POST WHEN HIT BY A VEHICLE.
2. SIGN PANELS SHOULD BE MOUNTED A MINIMUM OF 7 FEET ABOVE THE PAVEMENT OR GROUND.
3. SIGNS LARGER THAN 36 INCHES IN LENGTH OR WIDTH REQUIRE WIND BRACING AND SPECIAL POST DESIGN.
4. ANCHOR STUB AND POST ARE SQUARE STEEL TUBE (PERFORATED).
5. ALL "NO PARKING" SIGNS SHALL BE INSTALLED AT 45° FROM FLOW LINE.
6. R1-1 "STOP" SIGN 30" HIGH DENSITY/DIAMOND GRADE SIGN MOUNTED TO POST WITH 1EACH DRIVE RIVET WITH NYLON WASHER AGAINST SIGN FACE (ON TOP OF THE SIGN). SIGN SHALL BE MOUNTED WITH 1 EACH 5/16"X2 1/2" HEW BOLT WITH NYLON WASHERS AGAINST SIGN FACE (ON BOTTOM OF THE SIGN). SECURED WITH 1 EACH 5/16" HEX NUT ON THE BACK SIDE OF POST.
7. 4" CORE DRILL IN ASPHALT OR CONCRETE OR PROVIDE A 4" PVC SLEEVE CUT FLUSH TO THE SURFACE FOR PLACEMENT OF ANCHOR POST. VOIDS TO BE FILLED IN WITH SAND OR OTHER FINE SUITABLE MATERIAL.

6 SIGN POST DETAIL
NOT TO SCALE

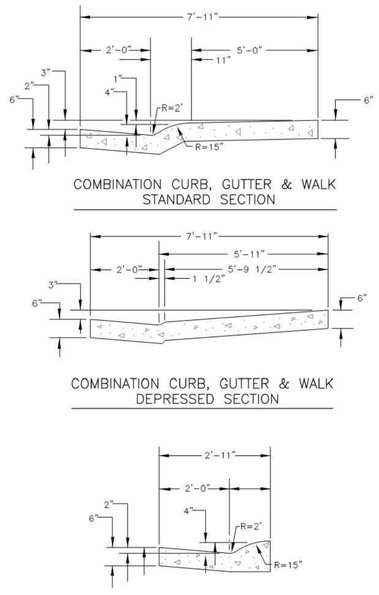


SIGNAGE NOTES:

1. SIGNS SHALL COMPLY WITH MUTCD REQUIREMENTS FOR MATERIALS AND INSTALLATION. REFER TO DETAIL S-614-2.
2. CLASS I SIGNS SHALL HAVE A MINIMUM THICKNESS OF 0.080 ALUMINUM GAUGE FOR SIGNS 12"–36", AND 0.100 ALUMINUM GAUGE FOR SIGNS 36" AND LARGER.
3. CERTAIN SIGNS MAY REQUIRE ADJUSTED PLACEMENT OR ROTATION. COORDINATE FINAL POSITIONING WITH THE ENGINEER. STEEL PIPE POSTS SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.



CITY OF Fort Lupton EST 1893 COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	VERTICAL CURB AND GUTTER	R7
		DATE: 8/15/14



CITY OF Fort Lupton EST 1893 COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	COMBINATION CURB, GUTTER, AND WALK	R8
		DATE: 8/15/14

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OWNER:
CITY OF FORT LUPTON

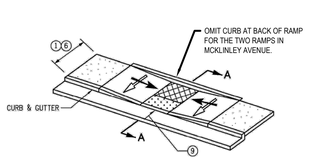
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CONTERRA ENGINEERING

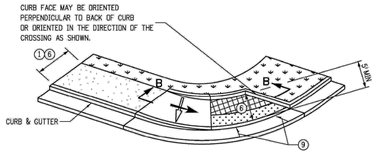
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SHEET TITLE:
HORIZONTAL CONTROL DETAILS

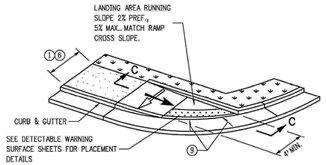
CD-501



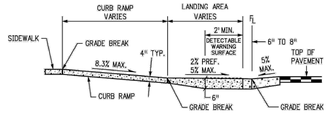
PARALLEL RAMP
(TYPICAL)



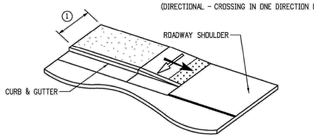
PARALLEL RAMP
(SIDEWALK ENDS)



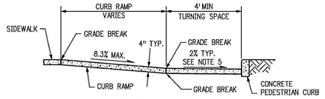
PARALLEL RAMP
(DIRECTIONAL - CROSSING IN ONE DIRECTION ONLY)



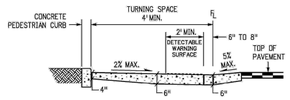
SECTION C-C



SIDEWALK TO SHOULDER TRANSITION



SECTION B-B



SECTION A-A

SIDEWALK

TURNING SPACE (4) (5) (6)

DETECTABLE WARNING SURFACE (DWS)

PARALLEL RAMP NOTES

1. RAMP WIDTH - PROVIDE A RAMP WIDTH EQUAL TO THE ADJOINING SIDEWALK, PROVIDE 4 FT. WIDTH MINIMUM. RAMPS SERVICING SHARED USE PATHS SHALL MATCH THE WIDTH OF THE PATH.
2. RAMP RUNNING SLOPE - 8.3% MAX.
3. RAMP CROSS SLOPE - 2.0% MAX.
4. TURNING SPACE RUNNING SLOPE - 2.0% MAX. TURNING SPACE RUNNING SLOPE IS MEASURED PERPENDICULAR TO THE BACK OF CURB.
5. TURNING SPACE CROSS SLOPE - 2.0% TYPICAL, AT CROSSINGS WITHOUT YIELD OR STOP CONTROL, OR WITH A SIGNAL WHERE VEHICLES CAN PROCEED THROUGH THE INTERSECTION WITHOUT SLOWING OR STOPPING, THE CROSS SLOPE OF THE TURNING SPACE MAY EQUAL THE HIGHWAY GRADE. AT MIDBLOCK PEDESTRIAN STREET CROSSINGS THE TURNING SPACE CROSS SLOPE MAY EQUAL THE HIGHWAY GRADE. TURNING SPACE CROSS SLOPE IS MEASURED IN THE DIRECTION OF THE RAMP RUN.
6. TURNING SPACE DIMENSIONS - PROVIDE A TURNING SPACE AT THE BOTTOM OF PARALLEL RAMPS WITH A WIDTH EQUAL TO THE WIDTH OF THE CURB RAMP. PROVIDE 4 FT. MINIMUM, MEASURED IN THE DIRECTION OF THE RAMP RUN. IF THE TURNING SPACE IS CONSTRAINED ON TWO SIDES, PROVIDE 5 FT. MEASURED IN THE DIRECTION OF PEDESTRIAN STREET CROSSING. THE TURNING SPACE MAY CONTAIN THE DETECTABLE WARNING SURFACE.
7. RAMP ALIGNMENT - RAMPS SHALL BE ALIGNED SO THE TURNING SPACE IS FULLY CONTAINED WITHIN THE CROSSWALK OR STREET CROSSING THEY SERVE. PROVIDE ONE RAMP FOR EACH STREET CROSSING DIRECTION. IN ALTERATIONS, WHERE EXISTING PHYSICAL CONSTRAINTS PREVENT PROVIDING ONE CURB RAMP FOR EACH CROSSING DIRECTION, A SINGLE DIAGONAL CURB RAMP (ON THE APEX OF A CORNER) SHALL BE PERMITTED TO SERVE BOTH PEDESTRIAN STREET CROSSINGS. DIAGONAL RAMPS ARE NOT ACCEPTABLE IN NEW CONSTRUCTION, OR FULL-DEPTH RECONSTRUCTION.
8. RAMP LENGTH - PARALLEL RAMP LENGTH IS DEPENDENT UPON THE RAMP SLOPE AND THE CHANGE OF ELEVATION FROM THE TURNING SPACE TO THE SIDEWALK. WHERE TERRAIN IS SLOPING A RAMP IS NOT REQUIRED TO CHASE GRADE MORE THAN 15 FT. REGARDLESS OF THE RESULTING RAMP SLOPE.
9. GUTTER COUNTER SLOPE - 5.0% MAX.

TYPE 2 PARALLEL CURB RAMPS

Computer File Information		Sheet Revisions	
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Last Modification Date: 07/31/19	(R-X)		
Detailer Initials: LTA	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

Colorado Department of Transportation
2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
Phones 303-757-9021 FAX: 303-757-9868
Project Development Branch JBK

CURB RAMPS

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-608-1
Standard Sheet No. 4 of 10
Project Sheet Number:

CHECKED BY: ETN
DRAWN BY: JJC

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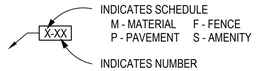
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SHEET TITLE:
HORIZONTAL CONTROL DETAILS

CD-502

REFERENCES

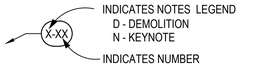
CALLOUTS



SCHEDULE

INDICATES SCHEDULE
M - MATERIAL F - FENCE
P - PAVEMENT S - AMENITY

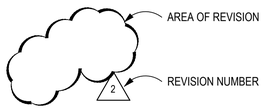
INDICATES NUMBER



INDICATES NOTES LEGEND
D - DEMOLITION
N - KEYNOTE

INDICATES NUMBER

REVISION SYMBOL



AREA OF REVISION

REVISION NUMBER

ABBREVIATIONS

&	AND
@	AT
℄	CENTERLINE
Φ	DIAMETER OR ROUND
#	POUND OR NUMBER
AB	ANCHOR BOLT
AD	AREA DRAIN
ADDM	ADDENDUM
ADJ	ADJUSTABLE
AGG	AGGREGATE
ALUM	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ASPH	ASPHALT
ARCH	ARCHITECT(URAL)
BOC	BACK OF CURB
BW	BOTTOM OF WALL
BS	BOTTOM OF STAIR
BEV	BEVEL
BITUM	BITUMINOUS
BLDG	BUILDING
BOT	BOTTOM
BSMT	BASEMENT
BTWN	BETWEEN
BRLP	BURLAP
CB	CATCH BASIN
CF	CUBIC FOOT/FEET
CHAM	CHAMFER
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT(S)
CO	CLEAN OUT
COL	COLUMN
COMP	COMPACTED
CONC	CONCRETE
COND	CONDITION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CTR	CENTER
CY	CUBIC YARD(S)
DPTH	DEEP,DEPTH
DBL	DOUBLE
DEMO	DEMOLISH, DEMOLITION
DEP	DEPRESSED
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DWG	DRAWING
E	EAST
EA	EACH
EJ	EXPANSION JOINT
ELEV	ELEVATION
ELEC	ELECTRICAL
ENCL	ENCLOSURE
EQ	EQUAL
EW	EACH WAY
EQUIV	EQUIVALENT
EXIST, EX	EXISTING
FD	FLOOR DRAIN
FDN	FOUNDATION
FF	FACE FOOT
FFE	FINISH FLOOR ELEVATION
FIN	FINISH(ED)
FG	FINISH GRADE
FL	FLOWLINE
FLR	FLOOR
FLASH	FLASHING
FT	FOOT, FEET
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACT(OR)
GND	GROUND
GR	GRADE
HP	HIGH POINT
HT	HEIGHT
HORIZ	HORIZONTAL
INSUL	INSULATION
IN	INCH
INT	INTEGRAL
INV	INVERT
JST	JOIST
JNT	JOINT
KJ	KEYED JOINT
LP	LOW POINT
LF	LINEAL FEET
LBS	POUNDS
MAX	MAXIMUM
ME	MATCH EXISTING
MECH	MECHANICAL
MEMB	MEMBRANE
MED	MEDIUM
MET	METAL
MFG	MANUFACTURER
MH	MANHOLE
MID	MIDDLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MTD	MOUNTED
MTG	MOUNTING
N	NORTH
NIC	NOT IN CONTRACT
NO, #	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OPP	OPPOSITE
OH	OVERHEAD
PA	PLANTING AREA
PC	POINT OF CURVATURE
PL	PROPERTY LINE
PLBG	PLUMBING
PLNTG	PLANTING
PNL	PANEL
POL	POLISHED
PR	PAIR
PRCST	PRECAST
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PTD	PAINTED
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
RAD	RADIUS
REF	REFERENCE
REINF	REINFORCING
REQ	REQUIRED
ROW	RIGHT OF WAY
S	SOUTH
SC	SCALE
SCHD	SCHEDULE
SCRN	SCREEN
SECT	SECTION
SF	SQUARE FOOT (FEET)
SHT	SHEET
SG	SUBGRADE
SQ	SQUARE
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STRC	STRUCTURAL
SY	SQUARE YARD
SYM	SYMMETRICAL
TC	TOP OF CURB
TS	TOP OF STEP/SEAT
TW	TOP OF WALL
TYP	TYPICAL
VAR	VARIES
VERT	VERTICAL
W	WEST
W/	WITH
WID	WIDTH
WL	WATER LEVEL
W/O	WITHOUT
WT	WEIGHT
WWM	WELDED WIRE MESH

GENERAL NOTES

1. THESE PLANS SHALL NOT BE UTILIZED FOR CONSTRUCTION OR PERMITTING UNLESS STATED FOR SUCH USE IN THE TITLE BLOCK.
2. DRAWINGS ARE INTENDED TO BE PRINTED ON 24 X 36 PAPER. PRINTING THESE DRAWINGS AT A DIFFERENT SIZE WILL IMPACT THE SCALE. VERIFY THE GRAPHIC SCALE BEFORE REFERENCING ANY MEASUREMENTS ON THESE SHEETS. THE RECIPIENT OF THESE DRAWINGS SHALL BE RESPONSIBLE FOR ANY ERRORS RESULTING FROM INCORRECT PRINTING, COPYING, OR ANY OTHER CHANGES THAT ALTER THE SCALE OF THE DRAWINGS.
3. VERIFY ALL PLAN DIMENSIONS PRIOR TO START OF CONSTRUCTION. NOTIFY THE OWNER'S REPRESENTATIVE TO ADDRESS ANY QUESTIONS OR CLARIFY ANY DISCREPANCIES.
4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
5. THE CONTRACTOR SHALL PROVIDE A STAKED LAYOUT OF ALL SITE IMPROVEMENTS FOR INSPECTION BY THE OWNER'S REPRESENTATIVE AND MAKE MODIFICATIONS AS REQUIRED. ALL LAYOUT INFORMATION IS AVAILABLE IN DIGITAL FORMAT FOR USE BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE THE NECESSARY SURVEY SCOPE NEEDED FOR LAYOUT WITH THE OWNER OR OWNER'S REPRESENTATIVE.
6. ALL CONSTRUCTION SHALL COMPLY WITH PROJECT GEOTECHNICAL REPORT.
7. CONTRACTOR SHALL CONFIRM THAT SITE CONDITIONS ARE SIMILAR TO THE PLANS, WITHIN TOLERANCES STATED IN THE CONTRACT DOCUMENTS, AND SATISFACTORY TO THE CONTRACTOR PRIOR TO START OF WORK. SHOULD SITE CONDITIONS BE DIFFERENT THAN REPRESENTED ON THE PLANS OR UNSATISFACTORY TO THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE FOR CLARIFICATION AND FURTHER DIRECTION.
8. CONTRACTOR IS RESPONSIBLE TO PAY FOR, AND OBTAIN, ANY REQUIRED APPLICATIONS, PERMITTING, LICENSES, INSPECTIONS AND METERS ASSOCIATED WITH WORK.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO ANY VIOLATIONS OR NON-CONFORMANCE WITH THE PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS, JURISDICTIONAL CODES, AND REGULATORY AGENCIES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL UTILITY LOCATES PRIOR TO ANY EXCAVATION. REFER TO ENGINEERING UTILITY PLANS FOR ALL PROPOSED UTILITY LOCATIONS AND DETAILS. NOTIFY OWNER'S REPRESENTATIVE IF EXISTING OR PROPOSED UTILITIES INTERFERE WITH THE ABILITY TO PERFORM WORK.
11. UNLESS IDENTIFIED ON THE PLANS FOR DEMOLITION OR REMOVAL, THE CONTRACTOR IS RESPONSIBLE FOR THE COST TO REPAIR UTILITIES, ADJACENT OR EXISTING LANDSCAPE, ADJACENT OR EXISTING PAVING, OR ANY PUBLIC AND PRIVATE PROPERTY THAT IS DAMAGED BY THE CONTRACTOR OR THEIR SUBCONTRACTOR'S OPERATIONS DURING INSTALLATION, ESTABLISHMENT OR DURING THE SPECIFIED MAINTENANCE PERIOD. ALL DAMAGES SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS AS DETERMINED BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR LOGGING ANY DAMAGES PRIOR TO START OF CONSTRUCTION AND DURING THE CONTRACT PERIOD.
12. ALL WORK SHALL BE CONFINED TO THE AREA WITHIN THE CONSTRUCTION LIMITS AS SHOWN ON THE PLANS. ANY AREAS OR IMPROVEMENTS DISTURBED OUTSIDE THESE LIMITS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. IN THE EVENT THE CONTRACTOR REQUIRES A MODIFICATION TO THE CONSTRUCTION LIMITS, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER'S REPRESENTATIVE PRIOR TO ANY DISTURBANCE OUTSIDE OF THE LIMITS OF WORK. NO WORK OR CONSTRUCTION OPERATIONS SHALL BE COMPLETED WITHIN THE CDOT ROW AND NO TRAFFIC DISRUPTIONS REQUIRING CDOT PERMITS SHALL OCCUR WITHIN THE CDOT ROW.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY OF THEIR TRENCHES OR EXCAVATIONS THAT SETTLE. THIS INCLUDES ADDING FILL, RECOMPACTING, SEEDING SODDING, OR ANY OTHER ITEMS REQUIRED TO BRING THE TRENCH ELEVATION TO CORRECT GRADES AT THE END OF THE WARRANTY PERIOD AND TO MEET THE PROPOSED SURFACE CONDITION.
14. THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT A TRAFFIC CONTROL PLAN TO THE APPROPRIATE JURISDICTIONAL AGENCIES AND THE OWNER'S REPRESENTATIVE IF THEIR WORK AND OPERATIONS AFFECT OR IMPACT THE PUBLIC RIGHTS-OF-WAY. OBTAIN APPROVAL PRIOR TO ANY WORK WHICH AFFECTS OR IMPACTS THE PUBLIC RIGHTS-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THIS REQUIREMENT DURING THE CONTRACT PERIOD.
15. SIGHT TRIANGLES AND SIGHT LINES SHALL REMAIN UNOBSTRUCTED BY EQUIPMENT, CONSTRUCTION MATERIALS, PLANT MATERIAL OR ANY OTHER VISUAL OBSTACLE DURING THE CONTRACT PERIOD AND AT MATURITY OF PLANTS PER LOCAL JURISDICTIONAL REQUIREMENTS.
16. NO PLANT MATERIAL OTHER THAN GROUND COVER IS ALLOWED TO BE PLANTED ADJACENT TO FIRE HYDRANTS AS STIPULATED BY JURISDICTIONAL REQUIREMENTS.
17. COORDINATE SITE ACCESS, STAGING, STORAGE AND CLEANOUT AREAS WITH OWNER'S REPRESENTATIVE.
18. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY SAFETY FENCING AND BARRIERS AROUND ALL IMPROVEMENTS SUCH AS WALLS, PLAY STRUCTURES, EXCAVATIONS, ETC. ASSOCIATED WITH THEIR WORK UNTIL SUCH FACILITIES ARE COMPLETELY INSTALLED PER THE PLANS, SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THEIR MATERIAL STOCK PILES AND WORK FROM VANDALISM, EROSION OR UNINTENDED DISTURBANCE DURING THE CONSTRUCTION PERIOD AND UNTIL FINAL ACCEPTANCE IS ISSUED.
20. THE CONTRACTOR SHALL KNOW, UNDERSTAND AND ABIDE BY ANY STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ASSOCIATED WITH THE SITE. IF A STORM WATER POLLUTION PREVENTION PLAN IS NOT PROVIDED BY THE OWNER'S REPRESENTATIVE, REQUEST A COPY BEFORE PERFORMANCE OF ANY SITE WORK.
21. MAINTAIN ANY STORM WATER MANAGEMENT FACILITIES THAT EXIST ON SITE FOR FULL FUNCTIONALITY. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ANY NEW STORM WATER MANAGEMENT FACILITIES THAT ARE IDENTIFIED IN THE SCOPE OF WORK TO FULL FUNCTIONALITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER FOR FAILURE TO MAINTAIN STORM WATER MANAGEMENT FACILITIES DURING THE CONTRACT PERIOD.
22. THE CONTRACTOR SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM EXITING THE SITE OR ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION OR CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THESE REQUIREMENTS DURING THEIR CONTRACTED COURSE OF WORK.
23. THE CONTRACTOR SHALL BE RESPONSIBLE TO PREVENT ANY IMPACTS TO ADJACENT WATERWAYS, WETLANDS, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS RESULTING FROM WORK DONE AS PART OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THESE STANDARDS DURING THEIR CONTRACTED COURSE OF WORK.
24. THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL INSURE THAT ALL LOADS OF CONSTRUCTION MATERIAL IMPORTED TO OR EXPORTED FROM THE PROJECT SITE SHALL BE PROPERLY COVERED TO PREVENT LOSS OF MATERIAL DURING TRANSPORT. TRANSPORTATION METHODS ON PUBLIC RIGHT-OF WAYS SHALL CONFORM TO JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THESE REQUIREMENTS.
25. THE CLEANING OF EQUIPMENT IS PROHIBITED AT THE JOB SITE UNLESS AUTHORIZED BY THE OWNER'S REPRESENTATIVE IN A DESIGNATED AREA. THE DISCHARGE OF WATER, WASTE CONCRETE, POLLUTANTS, OR OTHER MATERIALS SHALL ONLY OCCUR IN AREAS DESIGNED FOR SUCH USE AND APPROVED BY THE OWNER'S REPRESENTATIVE.
26. THE CLEANING OF CONCRETE EQUIPMENT IS PROHIBITED AT THE JOB SITE EXCEPT IN DESIGNATED CONCRETE WASHOUT AREAS. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE IN THE STORM SEWER IS PROHIBITED.
27. THE USE OF REBAR, STEEL STAKES, OR STEEL FENCE POSTS TO STAKE DOWN STRAW OR HAY BALES OR TO SUPPORT SILT FENCING USED AS AN EROSION CONTROL MEASURE IS PROHIBITED.
28. LOCAL, STATE AND FEDERAL JURISDICTIONAL REQUIREMENTS, RESTRICTIONS OR PROCEDURES SHALL SUPERSEDE THESE PLANS, NOTES AND SPECIFICATIONS WHEN MORE STRINGENT. NOTIFY THE OWNER'S REPRESENTATIVE IF CONFLICTS OCCUR.

ADA NOTES

29. ALL SITE FEATURES AND FURNISHINGS SHALL BE INSTALLED TO MEET ALL ADA REQUIREMENTS FOR REACH, OBSTRUCTION, KNEE CLEARANCE AND MANEUVERABILITY.
30. REFER TO CIVIL FOR ADA ROUTES, INCLUDING SLOPE AND CROSS SLOPE.

PAVING & LAYOUT NOTES

1. THE CONTRACTOR SHALL INSTALL OR COORDINATE INSTALLATION OF SLEEVING FOR IRRIGATION AND UTILITY IMPROVEMENTS PRIOR TO INSTALLING ALL PAVING. REFER TO IRRIGATION AND UTILITY PLANS FOR SIZE AND LOCATIONS.
2. CONTRACTOR SHALL COORDINATE AND BE RESPONSIBLE FOR ALL SUB-GRADE COMPACTION UNDER PAVED AREAS. REFER TO PLANS, DETAILS, SPECIFICATIONS OR GEOTECHNICAL REPORTS WHICH IDENTIFY COMPACTION REQUIREMENTS. COORDINATE ALL COMPACTION TESTING WITH OWNER'S REPRESENTATIVE. CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR THE REPLACEMENT OF ANY PAVING THAT CRACKS OR MOVES RESULTING FROM IMPROPER COMPACTION.
3. CURVED WALKS AND CURB EDGES ARE INTENDED TO BE CONSTRUCTED WITH SMOOTH FLOWING CURVES. ANYTHING OTHER THAN SMOOTH FLOWING CURVES WILL BE REJECTED AS DETERMINED BY THE OWNER'S REPRESENTATIVE.
4. LAYOUT ALL SURFACING, SCORE JOINTS AND PAVING PATTERNS AS CLOSELY AS POSSIBLE TO PLANS, DETAILS, AND SPECIFICATIONS. DO NOT DEVIATE FROM PLANS UNLESS SPECIFIC APPROVAL IS OBTAINED FROM THE OWNER'S REPRESENTATIVE.
5. CONTRACTOR SHALL COORDINATE A FORM INSPECTION WITH THE OWNER'S REPRESENTATIVE NO LESS THEN 24 HOURS PRIOR TO PLACEMENT OF ANY SURFACING.
6. CONCRETE EDGES, SAW CUTS AND/OR TROWELED SCORE JOINTS SHALL BE CRISP, CLEAN, COMPLETE AND NEAT IN APPEARANCE.
7. ALL EXPOSED PAVING SHALL BE FINISHED PER DETAILS.
8. CONTRACTOR SHALL PROVIDE ALL SUPERVISION, PROTECTION AND FACILITIES NECESSARY TO INSURE PROPER CURING AND FINISH OF PAVING.
9. WHEN APPLICABLE, CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY FENCING AROUND ALL PLAY STRUCTURES UNTIL PROPER FALL SURFACE IS COMPLETELY INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

SITE DEMOLITION NOTES

1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING SITE CONDITIONS PRIOR TO COMMENCING DEMOLITION. NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY CONFLICTS OR CONDITIONS THAT VARY FROM SURVEY.
2. CONTRACTOR SHALL PROTECT ALL EXISTING FEATURES THAT ARE NOT TO BE REMOVED ADJACENT TO THE CONSTRUCTION AREA INCLUDING, BUT NOT LIMITED TO, ADJACENT BUILDINGS, FOUNDATIONS, WALLS, PICNIC SHELTERS, FENCING, RAILING CURBS, AND ABOVE GROUND OR UNDERGROUND UTILITIES.
3. EXISTING TREES TO REMAIN UNLESS OTHERWISE INDICATED, REPORT CONFLICTS TO OWNER'S REP IMMEDIATELY.
4. MITIGATION FOR ANY DAMAGED EXISTING TREES TO BE MITIGATED PER SPECIFICATIONS.
5. PRIOR TO COMMENCING DEMOLITION, BARRIERS SHALL BE ERECTED AROUND ALL PROTECTED TREES WITH CHAINLINK FENCE A MINIMUM OF SIX FEET IN HEIGHT, ONE AND ONE-HALF DISTANCE BETWEEN TRUNK AND DRIP LINE OR ONE FOOT FOR EVERY DIAMETER INCH OF TRUNK, WHICHEVER IS GREATER. THERE SHALL BE NO STORAGE OR MOVEMENT OF EQUIPMENT, MATERIAL, DEBRIS OR FILL WITHIN THE FENCED TREE PROTECTION ZONE. TREE FENCING CAN BE PER INDIVIDUAL TREE OR COMBINED AS LONG AS TREE PROTECTION MINIMUMS STATED ABOVE ARE MET. FENCING MAY BE TEMPORARILY RELOCATED DURING GRADING OPERATIONS IF NEEDED, BUT SHALL BE REINSTALLED BY CLOSE OF SAME BUSINESS DAY.
6. WITHIN THE DRIP LINE OF ANY PROTECTED EXISTING TREE, THERE SHALL BE NO CUT OR FILL OVER FOUR-INCH DEPTH UNLESS A QUALIFIED ARBORIST OR FORESTER HAS EVALUATED AND APPROVED THE DISTURBANCE.
7. NO DAMAGING ATTACHMENTS, WIRES, SIGNS OR PERMITS MAY BE FASTED TO ANY PROTECTED TREE.
8. THE INSTALLATION OF UTILITIES, IRRIGATION LINES OR ANY UNDERGROUND FIXTURE REQUIRING EXCAVATION DEEPER THAN SIX (6) INCHES SHALL BE ACCOMPLISHED BY BORING UNDER THE ROOT SYSTEM OF PROTECTED EXISTING TREES AT A MINIMUM DEPTH OF TWENTY-FOUR(24) INCHES. THE AUGER DISTANCE IS ESTABLISHED FROM THE FACE OF THE TREE (OUTER BARK) AND IS SCALED FROM THE TREE DIAMETER AT BREAST HEIGHT.
9. CONTRACTOR TO FIELD LOCATE PERIMETER FENCING FOR DEMOLITION OPERATIONS FOR OWNER APPROVAL PRIOR TO COMMENCING DEMOLITION. ANY AREA NEEDED FOR TEMPORARY STOCKPILING OF REMOVED MATERIALS SHALL BE SECURELY FENCED AND THE LOCATION APPROVED BY OWNER.
10. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL EXCESS MATERIALS.
11. EXISTING RESTROOM TO BE PROTECTED IN PLACE THROUGHOUT DEMOLITION AND CONSTRUCTION. ANY DAMAGE TO STRUCTURE OR FINISHES TO BE REPAIRED BY CONTRACTOR AT CONTRACTOR'S EXPENSE.
12. CONTRACTOR SHALL REMOVE ALL ITEMS TO EXTENT REQUIRED TO ACCOMMODATE COMPLETION OF WORK AND ESTABLISHMENT OF A SUFFICIENT BASE FOR NEW CONSTRUCTION, INCLUDING TREE ROOTS, SUBGRADE/BASE, AND STRUCTURAL MATERIALS.
13. UPON REMOVAL OF ALL ITEMS, ALL IMPACTED AREAS TO BE FILLED, AMENDED AND COMPACTED AS REQUIRED BY EACH TYPE OF NEW CONSTRUCTION.
14. TREE REMOVAL TO INCLUDE COMPLETE ROOTBALL REMOVAL AND REMOVAL OF LARGE ROOTS OVER 2" DIAMETER. TREE PITS TO BE BACKFILLED AND RE-COMPACTED TO APPROXIMATE EXISTING GRADE IF CONSTRUCTION OPERATIONS WILL NOT IMMEDIATELY COMMENCE TO ALLOW SETTING AT PROPOSED GRADE. ANY OPEN PITS TO BE FENCED IF BACKFILL CANNOT BE COMPLETED IMMEDIATELY.
15. FOR DETAILED INFORMATION ON REMOVAL AND SALVAGE OF ELECTRICAL AND IRRIGATION, SEE ELECTRICAL PLANS AND IRRIGATION PLANS.

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811

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PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
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KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
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SHEET TITLE:
SITE NOTES & ABBREVIATIONS

LS-001

AMENITY SCHEDULE

CODE	DESCRIPTION	PRODUCT NAME	MANUFACTURER	MODEL #	COLOR / FINISH	SIZE / DIMENSIONS	DETAIL	NOTES
S-01	SHADE SHELTER - SMALL	SHADE SAIL	USA SHADE	229.1 ORION	TBD	23' X 14'		OFCI STRUCTURAL ENGINEERING BY MFG.
S-02	SHADE SHELTER - LARGE	MONOSLOPE	POLIGON	MSL-16X30	TBD	30'-1 1/2" X 16'		OFCI STRUCTURAL ENGINEERING BY MFG.
S-03	BACKED BENCH	WALDEN BENCH	THOMAS STEELE	WDB-6-WI34	IPE WITH POWDER COATED STEEL, COLOR: GUNMETAL	70" X 2'		OFCI SURFACE MOUNT
S-04	PICNIC TABLE	WALDEN PICNIC TABLE	THOMAS STEELE	WDTP-8HC-WI34-FS-P	IPE WITH POWER COATED STEEL, COLOR: GUNMETAL	95 1/2" X 62 1/2"		OFCI FREESTANDING
S-05	TRASH RECEPTACLE	WALDEN RECEPTACLE	THOMAS STEELE	WDTR-32-WI-P LID-D-P	IPE WITH POWDER COATED STEEL, COLOR: GUNPOWDER WITH DOME LID	32 GAL, 2' DIA		OFCI SURFACE MOUNT
S-06	PET STATION	LOW PROFILE	DOG WASTE DEPOT	DEPOT-045-B-BLCK	BLACK	5'		OFCI SURFACE MOUNT
S-07	BIKE RACK	LOFTY BIKE RACK	THOMAS STEELE	LBR-2-SF-P	POWDERCOAT BLACK	6" X 26 1/2"		OFCI SURFACE MOUNT
S-08	FOOD PREP TABLE	HANNA RECTANGUALAR BAR TABLE	WABASH VALLEY	HAA5E7PS02	SILVER	72" X 30"		OFCI SURFACE MOUNT
S-09	DRINKING FOUNTAIN	PEDESTAL W/BOTTLE FILLER	MFG	10145 SM & SMSS	UMBRIA GREY	46 1/2" W X 56" H	N/A	EXACT MODEL PLUMBING TO BE COORDINATED WITH EXISTING SERVICE LINE. OFCI.

NOTES
1. FURNISHINGS TO BE INSTALLED PER MFG RECOMMENDATIONS.
2. ALL FURNISHINGS ARE OFCI AND INCLUDED FOR REFERENCE ONLY.

PAVEMENT SCHEDULE

CODE	DESCRIPTION	COLOR / FINISH	SIZE / DIMENSIONS	DETAIL	NOTES
P-01	CONCRETE PAVING	STANDARD GREY / MED BROOM	SEE PLANS	1 / LS-501	INTERIOR SITE WALKS AND PADS

KEY NOTES

CODE	DESCRIPTION	DETAIL
N-01	PARK SIGN - NORTH	1 / LS-502
N-02	PARK SIGN - EAST	2 / LS-502
N-03	PARK RULES & REGS SIGN	4 / LS-502
N-04	DECORATIVE FENCE	3 / LS-502
N-05	PLAY CURB	4 / LS-501
N-06	ARTIFICIAL PLAY TURF BASE & CURB	5 / LS-501
N-07	SITE LIGHTING & ELEC., TYP.	RE: ELEC
N-08	RELOCATED EXISTING PLAQUE	
N-09	FOOD TRUCK PEDESTAL	RE: ELEC
N-10	EXISTING GAZEBO AND CONCRETE PAD TO REMAIN	RE: NOTES LS-101
N-11	EXISTING RESTROOM TO REMAIN	
N-12	EXISTING TURF TO REMAIN	RE: LAND
N-13	EXISTING CURB/PAN TO REMAIN, TYP.	
N-14	EXISTING BLACKFLOW PREVENTER TO REMAIN	RE: IRRG
N-15	EXISTING FIRE HYDRANT TO REMAIN	
N-16	FUTURE SCULPTURE LOCATION, BY OWNER	
N-17	EXPANSION JOINT, TYP.	1/LS-501
N-18	CONTROL JOINT, TYP.	1/LS-501

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KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

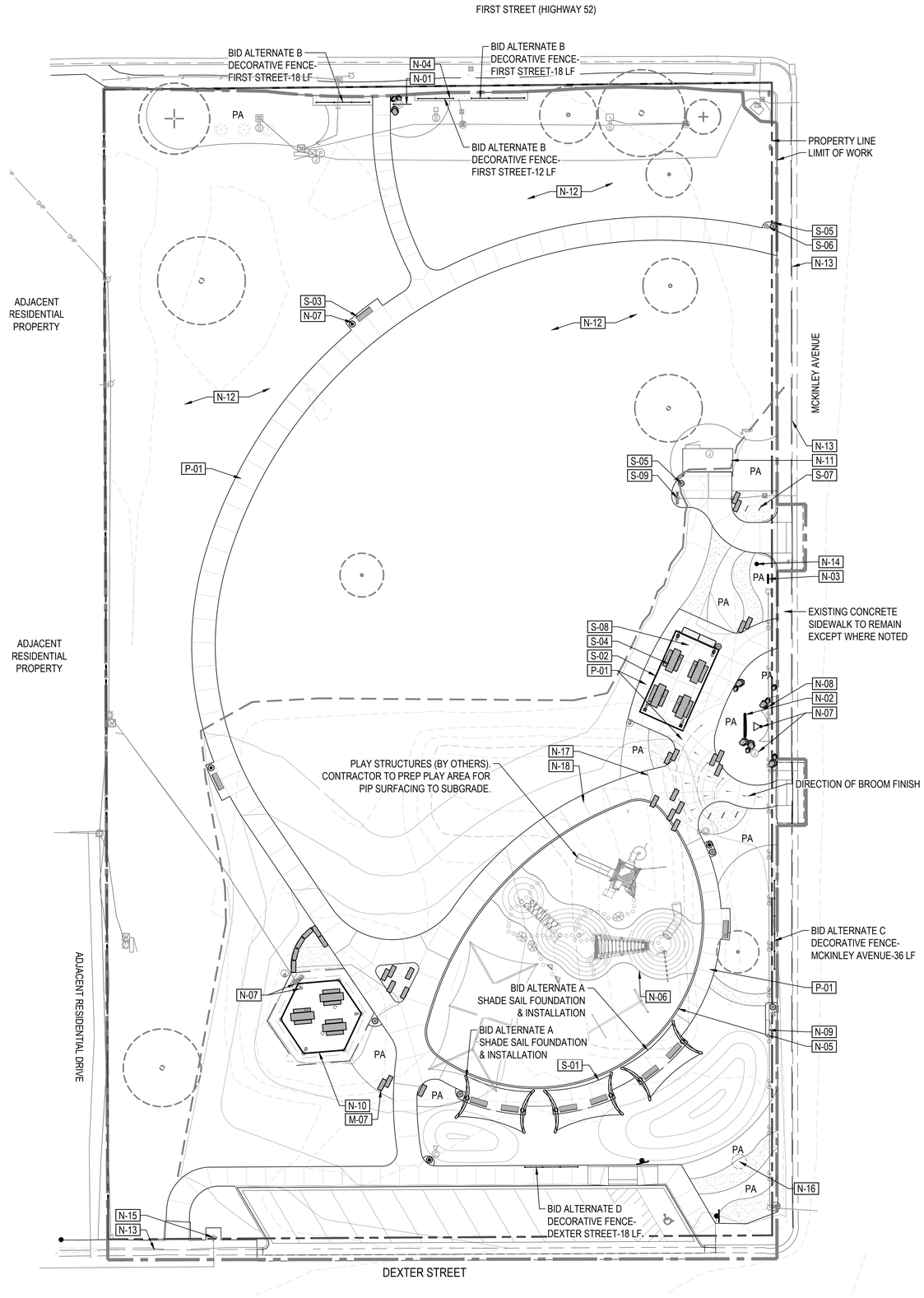
OWNER:
CITY OF FORT LUPTON

203 S. HARRISON AVE
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FORT LUPTON, CO

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SHEET TITLE:
SITE PLAN SCHEDULES

LS-002



LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- LIMIT OF WORK
- LIMIT OF GRADING
- EXISTING TOPOGRAPHY
- PROPOSED TOPOGRAPHY
- EXISTING SIDEWALK
- EXISTING TRAFFIC LIGHT
- EXISTING LIGHT POLE
- PROPOSED SIGN
- EXISTING TREES TO REMAIN
- EXISTING GRASSES TO REMAIN
- PA — PLANTING AREA

SYMBOL	CODE	DESCRIPTION
	P-01	CONCRETE PAVING
	M-04	DECORATIVE ROCK MULCH
	M-05	COBBLE MULCH
SIZE A / SIZE B	M-06	LANDSCAPE BOULDER
	M-07	SANDSTONE BLOCK SEATS
	M-08	CRUSHER FINES PAVING

SYMBOL	CODE	DESCRIPTION
	S-01	SHADE SHELTER - SMALL OFCI
	S-02	SHADE SHELTER - LARGE OFCI
	S-03	BACKED BENCH OFCI
	S-04	PICNIC TABLE OFCI
	S-05	TRASH RECEPTACLE OFCI
	S-06	PET STATION OFCI
	S-07	BIKE RACK OFCI
	S-08	FOOD PREP TABLE OFCI
	S-09	DRINKING FOUNTAIN OFCI

KEY NOTES

CODE	DESCRIPTION
N-01	PARK SIGN - NORTH
N-02	PARK SIGN - EAST
N-03	PARK RULES & REGS SIGN
N-04	DECORATIVE FENCE
N-05	PLAY CURB
N-06	ARTIFICIAL PLAY TURF BASE & CURB
N-07	SITE LIGHTING & ELEC., TYP.
N-08	RELOCATED EXISTING PLAQUE
N-09	FOOD TRUCK PEDESTAL
N-10	EXISTING GAZEBO AND CONCRETE PAD TO REMAIN
N-11	EXISTING RESTROOM TO REMAIN
N-12	EXISTING TURF TO REMAIN
N-13	EXISTING CURB/PAN TO REMAIN, TYP.
N-14	EXISTING BLACKFLOW PREVENTER TO REMAIN
N-15	EXISTING FIRE HYDRANT TO REMAIN
N-16	FUTURE SCULPTURE LOCATION, BY OWNER
N-17	EXPANSION JOINT, TYP.
N-18	CONTROL JOINT, TYP.

GAZEBO RE-FINISHING NOTES

1. EXTERIOR OF GAZEBO TO BE PREPPED AND REPAINTED, COLOR TO MATCH EXISTING
2. EXISTING CONCRETE TO BE POWER-WASHED
3. RAILINGS TO BE REMOVED TO ALLOW ACCESS FROM ALL SIDES
4. EXISTING PICNIC TABLES AND TRASH RECEPTACLE TO BE REMOVED AND SALVAGED BY OWNER

NORTH

0 10 20 40

SCALE 1" = 20'

811

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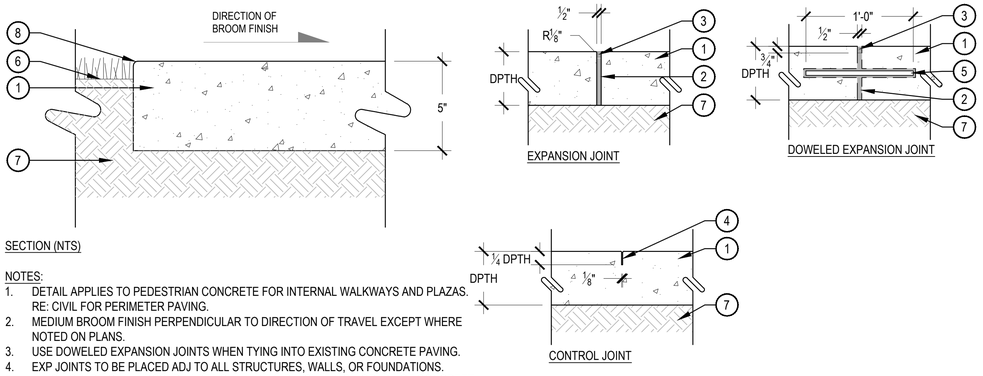
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SHEET TITLE:
SITE PLAN

LS-101



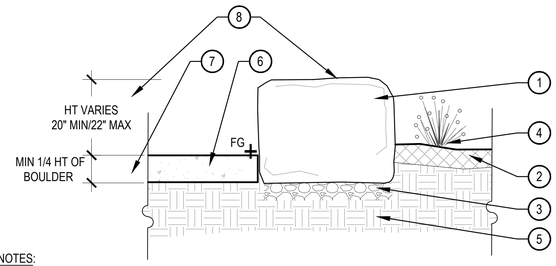
SECTION (NTS)

NOTES:
1. DETAIL APPLIES TO PEDESTRIAN CONCRETE FOR INTERNAL WALKWAYS AND PLAZAS. RE: CIVIL FOR PERIMETER PAVING.
2. MEDIUM BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL EXCEPT WHERE NOTED ON PLANS.
3. USE DOWELED EXPANSION JOINTS WHEN TYING INTO EXISTING CONCRETE PAVING.
4. EXP JOINTS TO BE PLACED ADJ TO ALL STRUCTURES, WALLS, OR FOUNDATIONS.
5. FINISH GRADE OF LANDSCAPE AREA SHALL BE 1" BELOW FINISH GRADE OF CONCRETE WHERE ADJ TO OTHER PAVING, FG OF BOTH PAVED SURFACES TO BE FLUSH.
6. SLOPE ALL FINISH GRADE TO DRAIN PER PLANS.

1. CIP CONCRETE
2. EXP JNT MATERIAL, HOLD 3/4" BELOW FG
3. SIKA 2C NS SEALANT
4. SAWCUT JNT
5. DRILL AND INSTALL 12" LENGTH GREASED SMOOTH #4 GA DOWELS INTO EXISTING CONC, 3'-0" O.C.
6. ADJ LANDSCAPE OR PAVING
7. COMPACTED SUBGRADE
8. 1/4" RAD ALL OUTSIDE EDGES

1 CONCRETE PAVING & JOINTS

SCALE: 1 1/2" = 1'-0"

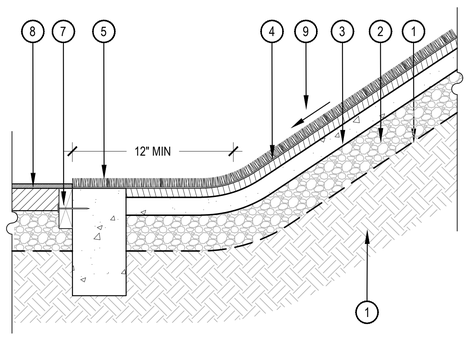


NOTES:
1. FIELD LOCATE ALL STONE BLOCKS FOR OWNER'S REPRESENTATIVE APPROVAL PRIOR TO PLACEMENT.
2. SUBMIT REPRESENTATIVE SAMPLE AND PHOTOGRAPHS SHOWING SCALE, COLOR VARIATION AND EDGE CONDITIONS. OWNER'S REPRESENTATIVE TO APPROVE BOULDER SELECTION ON-SITE AT SUPPLIER OR QUARRY PRIOR TO DELIVERY TO PROJECT SITE.
3. NO BLOCK SHALL BE LESS THAN 28" IN HEIGHT.
4. MIN. BLOCK WIDTH 18". CONFIRM PROPER CIRCULATION CLEARANCE AT EDGES IF WIDER THAN 18".
5. PROVIDE MOCK-UP OF GROUPING OF MIN. 3 BOULDERS FOR REVIEW PRIOR TO INSTALLATION OF REMAINING BOULDERS.
6. WHEN SURROUNDED BY CONCRETE, SET SANDSTONE BLOCKS PRIOR TO SURROUNDING FLATWORK INSTALLATION.

1. SANDSTONE BLOCK BOULDER, RE: MATERIALS SCHEDULE. LOCATE PER PLANS, PLACE IN GROUPS AND ALIGNED AS SHOWN. SET PLUMB AND WITH FLATTEST FACE ON TOP. STONES TO ABUT EACH OTHER WITH 1" MAX GAPS. ABUT TO FACE OF CONCRETE WHERE SHOWN ON PLANS. KNOCK OFF ALL LOOSE MATERIAL AND SHARP EDGES.
2. MULCH OR GROUNDCOVER, RE: PLANS
3. 3" MIN DEPTH AGGREGATE BASE COURSE
4. ADJACENT LANDSCAPE; RE: PLANS. SLOPE FOR POSITIVE DRAINAGE AROUND BOULDER.
5. COMPACTED SUBGRADE.
6. ADJACENT CONCRETE PAVING
7. BURY MINIMUM 1/4 DEPTH OF BOULDER.
8. TOP FACE OF BOULDERS TO BE WITHIN 1" HT OF EACH OTHER

3 SANDSTONE BLOCK SEATS

SCALE: 3/4" = 1'-0"

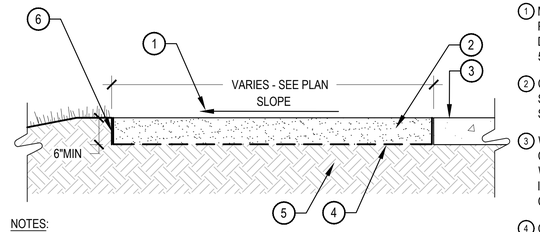


NOTES:
1. COORD FINAL FG W/ PLAYGROUND REP TO CONFIRM GRADES MEET REQUIREMENTS FOR EQUIPMENT INSTALLATION. PLAYGROUND REP TO REVIEW SUBBASE GRADES FOR APPROVAL PRIOR TO INSTALLATION OF ASPHALT OR CONCRETE PAD.
2. COORD W/ PLAYGROUND REP FOR FOOTINGS OR OTHER FEATURES THAT WILL PENETRATE SUBBASE.

1. GEOTEXTILE FABRIC
2. GRAVEL BASE PER ARTIFICIAL TURF MFG RECOMMENDATIONS.
3. 2" ASPHALT OR CONC PAD PER ARTIFICIAL TURF MFG RECOMMENDATIONS
4. SYNPLAY PRO ARTIFICIAL TURF AND CUSHIONING LAYER (BY OTHERS)
5. CIP CONC CURB. RE: PLANS FOR LOCATION. COORD W/ PLAY REP TO CONFIRM CURB IS OUTSIDE FALL ZONE. TURF TO EXTEND MIN 1' BEYOND TOE OF SLOPE.
6. COMPACTED SUBGRADE
7. NAILER BOARD (BY OTHERS)
8. ADJ PIP SURFACING (BY OTHERS)
9. SLOPE PER PLANS. PROVIDE SMOOTH TRANSITION AT TOP AND BOTTOM OF SLOPE.

5 ARTIFICIAL PLAY TURF BASE AND CURB

SCALE: 1 1/2" = 1'-0"

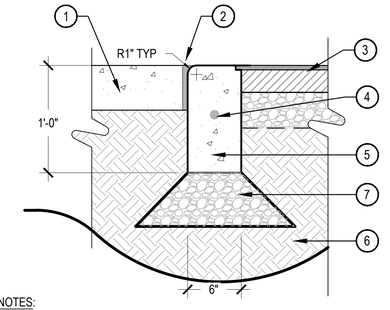


NOTES:
1. STABILIZER TO BE ADDED PRIOR TO COMPACTION AND INSTALLED PER MFG RECOMMENDATIONS.
2. CRUSHER FINES TO BE COMPACTED UNTIL MATERIAL IS FIRMLY LOCKED TOGETHER.
3. CRUSHER FINES DEPTH SHOWN TO BE AFTER COMPACTION.
4. SLOPE TO DRAIN PER PLANS AND PROVIDE SMOOTH TRANSITION TO ADJ LANDSCAPE OR PAVING.
5. FINISH SURFACE TO BE EVEN, SMOOTH AND FREE OF DEPRESSIONS. RECOMPACT AS REQUIRED TO ACHIEVE CONSITENT SURFACE WITH CONTINUOUS POSITIVE DRAINAGE.

1. MAX 2% CROSS SLOPE PERPENDICULAR TO DIRECTION OF TRAVEL. MAX 5% LONGITUDINAL SLOPE.
2. CRUSHER FINES WITH STABILIZER, RE: MATERIAL SCHEDULE.
3. WHERE ADJ TO PAVING, FG OF CRUSHER FINES TO BE LEVEL WITH PAVING FG AT EDGE INTERFACE AFTER COMPACTION. RE: PLANS.
4. GEOTEXTILE FABRIC, SECURE W/ FABRIC STAKES 5' O.C. AT EACH EDGE, WRAP AT EDGES
5. COMPACTED SUBGRADE
6. STEEL EDGER, WHERE ADJ TO LANDSCAPE. RE: PLANS AND MATERIAL SCHEDULE.

2 CRUSHER FINES PAVING

SCALE: 3/4" = 1'-0"



NOTES:
1. INC VERTICAL EXP JNT @ 50' O.C.

1. ADJ. CONC PAVING
2. EXP JNT W/ SEALANT WHEN ADJ. TO CONCRETE
3. PIP SURFACING (BY OTHERS)
4. #4 REBAR CONT. 3" CLR
5. CIP CONC, MED BROOM FINISH. SCORE TOP AND ALL EXPOSED FACES @ 10' OC.
6. COMPACTED SUBGRADE
7. GRAVEL SUBBASE

4 PLAY CURB

SCALE: 1 1/2" = 1'-0"

NORRIS DESIGN
PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON

203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
SITE DETAILS

LS-501

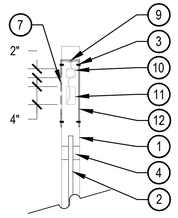
CS/KS
HV

CHECKED BY:
DRAWN BY:

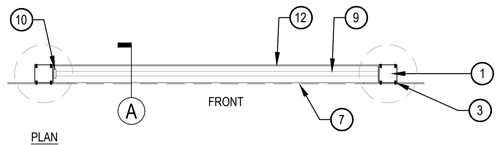
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NOTES:
1. PROVIDE SHOP DRAWINGS FOR APPROVAL, CONFIRM LAYOUT PRIOR TO FABRICATION / INSTALLATION.
2. ALL STEEL TO BE POWDER COATED, COLOR: BLACK.
3. LANDSCAPE ARCHITECT TO PROVIDE DIGITAL FILES TO FABRICATOR FOR PLASMA CUTTING.

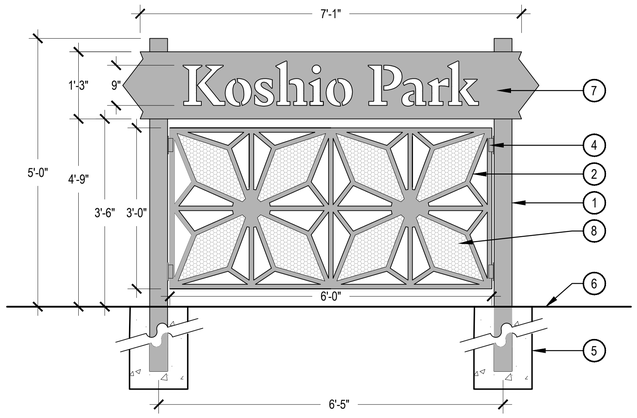
CONTACT:
MIKE MORGAN
970-690-6856
FUSION FABRICATION



SECTION A



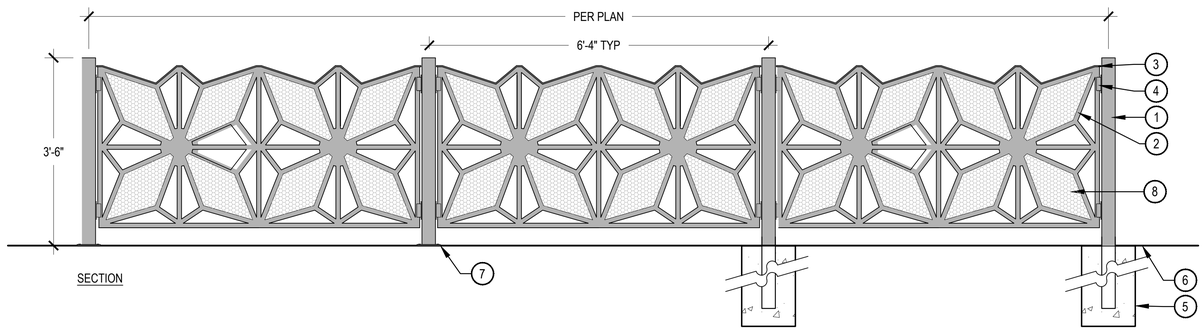
PLAN



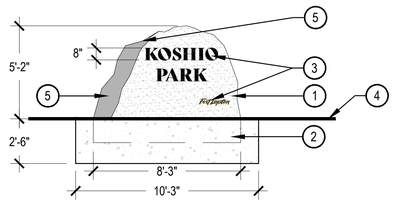
1. 4"X4" SQ. STEEL POST
2. ¼" THK STEEL DECORATIVE FENCE PANEL, RE: DETAIL 1/LS-502
3. TAMPERPROOF FASTENER SCREW, 6" OC MAX., COLOR: BLACK
4. PANEL FASTENER TAB
5. CIP CONC FOOTING, RE: STRC
6. FINISH GRADE
7. ¼" THK STEEL SIGN W/ LETTER CUT OUTS
8. PERFORATED METAL, 22 GA ROUND ON 3/16" STAGGERED CENTERS, 65% OPEN AREA
9. LIGHTING CHANNEL, RE: ELEC
10. DRIVER, RE: ELEC
11. HANDHOLD, RE: ELEC
12. ¼" THK STEEL BACK AND TOP COVER

1 PARK SIGN - NORTH

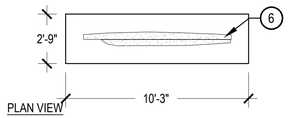
SCALE: 3/4" = 1'-0"



SECTION



FRONT SECTION



PLAN VIEW

NOTES:
1. DIMENSIONS OF STONE ARE APPROXIMATE UNTIL STONE IS SELECTED. FOOTING TO BE REVISED BASED ON FINAL DIMENSIONS.
2. FONT TO BE DETERMINED BY OWNER.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OF SIGN

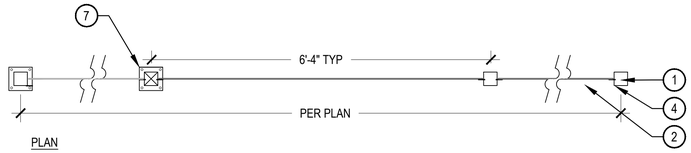


BACK ELEVATION

1. 4"-6" THICK BUFF SANDSTONE SLAB
2. CONCRETE FOOTING, RE: STRUCTURAL
3. 1/4" DEPTH MINIMUM SANDBLAST TEXT. STAIN WITH LITHOCHROME CHEMSTAIN BLACK OR APPROVED EQUAL
4. FINISH GRADE
5. 4-6" THICK RED SANDSTONE SLAB
6. WORK BACK OF STONE TO PROVIDE SMOOTH SURFACE THAT CAN ABUT DIRECTLY FOR AT LEAST 50% OF SLAB. MAX GAP. SEAL ALL SIDES WITH COLOR TO MATCH BUFF STONE.

2 PARK SIGN - EAST

SCALE: 1/4" = 1'-0"



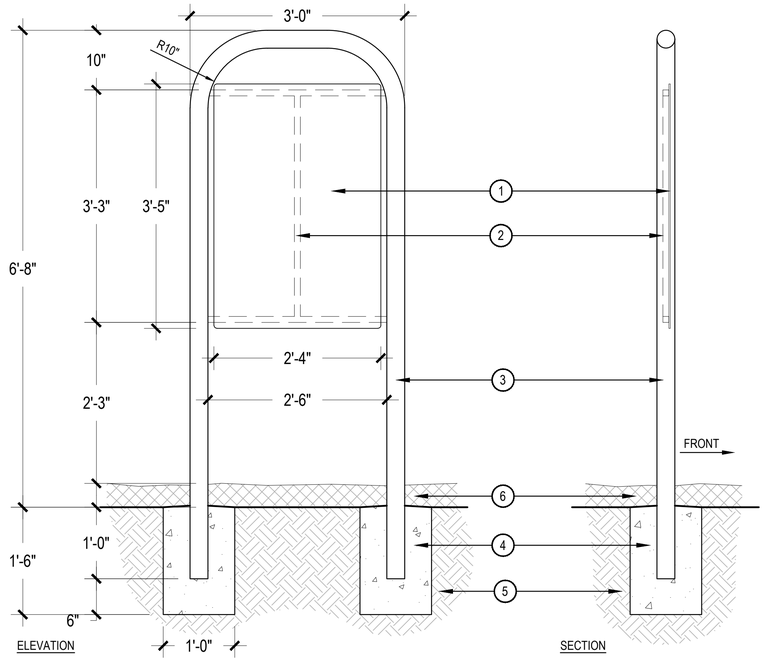
PLAN

NOTES:
1. PROVIDE SHOP DRAWINGS FOR APPROVAL, CONFIRM LAYOUT PRIOR TO FABRICATION / INSTALLATION.
2. VERIFY MOUNTING SURFACE CONDITIONS PRIOR TO FABRICATION.
3. ALL STEEL TO BE POWDER COATED, COLOR: BLACK.
4. LANDSCAPE ARCHITECT TO PROVIDE DIGITAL FILES TO FABRICATOR FOR PLASMA CUTTING.
5. FABRICATOR CONTACT: MIKE MORGAN, 970-690-6856, FUSION FABRICATION

1. 3"X3" SQ. STEEL POST
2. 1/4" THK STEEL PANEL, PLASMA CUT BY FABRICATOR
3. 1/4" x 1" FLAT STOCK STEEL
4. PANEL FASTENER TAB
5. CIP CONC FOOTING, RE: STRC
6. FINISH GRADE
7. SURFACE MOUNT CONDITION - 5.25"X5.25"X0.375" STEEL BASE PLATE, WELD TO STEEL POST, SURFACE MOUNT USING 3/4" Ø F1554 ANCHOR RODS EMBEDDED 12" INTO CONC
8. 22 GA ROUND ON 3/16" STAGGERED CENTERS, 65% OPEN AREA

3 DECORATIVE FENCE - BID ALT B, C, D

SCALE: 3/4" = 1'-0"



ELEVATION SECTION



PARK RULES PANEL

NOTES:
1. POWDER COAT STEEL BLACK.
2. FINAL FONT, TEXT CONTENT AND SIGN COLORS TO BE APPROVED BY OWNER.
3. OWNER TO PROVIDE ORIGINAL ARTWORK FOR LOGO.

1. ALUMINUM SIGN, 0.080 GA, ANCHOR TO STEEL FRAME W/ TAMPER-PROOF BOLTS. COLOR TO BE SELECTED BY OWNER. SIGN FACE TO HAVE A PROTECTIVE GRAFFITI RESISTANT COATING. LETTERING 1" TALL MIN
2. 1"X1" STEEL FRAME, WELDED TO STEEL TUBE
3. 3" OD TUBULAR STEEL POST
4. CIP CONC FOOTING. SET TOP AT BOTTOM OF MULCH. SLOPE TOP TO DRAIN.
5. COMPACTED SUBGRADE
6. PLANTING BED MULCH
7. CITY LOGO
8. SIGN PANEL COLORS TO MATCH CITY COLOR PALETTE.

4 PARK REGULATORY SIGN

SCALE: 1" = 1'-0"

CHECKED BY: CS/KS
DRAWN BY: HV

NORRIS DESIGN
PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
SITE DETAILS

LS-502

LANDSCAPE NOTES

1. THE CONTRACTOR SHALL FOLLOW THE LANDSCAPE PLANS AND SPECIFICATIONS AS CLOSELY AS POSSIBLE. ANY SUBSTITUTION OR ALTERATION SHALL NOT BE ALLOWED WITHOUT APPROVAL OF THE OWNER'S REPRESENTATIVE. OVERALL PLANT QUANTITY AND QUALITY SHALL BE CONSISTENT WITH THE PLANS.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES. GRAPHIC QUANTITIES TAKE PRECEDENCE OVER WRITTEN QUANTITIES.
3. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO INSPECT AND TAG ALL PLANT MATERIAL PRIOR TO SHIPPING TO THE SITE. IN ALL CASES, THE OWNER'S REPRESENTATIVE MAY REJECT PLANT MATERIAL AT THE SITE IF MATERIAL IS DAMAGED, DISEASED, OR DECLINING IN HEALTH AT THE TIME OF ONSITE INSPECTIONS OR IF THE PLANT MATERIAL DOES NOT MEET THE MINIMUM SPECIFIED STANDARD IDENTIFIED ON THE PLANS AND IN THE SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE FOR INSPECTION AND APPROVAL OF ALL MATERIALS AND PRODUCTS PRIOR TO INSTALLATION.
4. THE CONTRACTOR SHALL WARRANTY ALL CONTRACTED WORK AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER SUBSTANTIAL COMPLETION HAS BEEN ISSUED BY THE OWNER'S REPRESENTATIVE FOR THE ENTIRE PROJECT UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS OR SPECIFICATIONS.
5. REFER TO IRRIGATION PLANS FOR LIMITS AND TYPES OF IRRIGATION DESIGNED FOR THE LANDSCAPE. IN NO CASE SHALL IRRIGATION BE EMITTED WITHIN THE MINIMUM DISTANCE FROM BUILDING OR WALL FOUNDATIONS AS STIPULATED IN THE GEOTECHNICAL REPORT. ALL IRRIGATION DISTRIBUTION LINES, HEADS AND EMITTERS SHALL BE KEPT OUTSIDE THE MINIMUM DISTANCE AWAY FROM ALL BUILDING AND WALL FOUNDATIONS AS STIPULATED IN THE GEOTECHNICAL REPORT.
6. LANDSCAPE MATERIAL LOCATIONS SHALL HAVE PRECEDENCE OVER IRRIGATION MAINLINE AND LATERAL LOCATIONS. COORDINATE INSTALLATION OF IRRIGATION EQUIPMENT SO THAT IT DOES NOT INTERFERE WITH THE PLANTING OF TREES OR OTHER LANDSCAPE MATERIAL.
7. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING POSITIVE DRAINAGE EXISTS IN ALL LANDSCAPE AREAS. SURFACE DRAINAGE ON LANDSCAPE AREAS SHALL NOT FLOW TOWARD STRUCTURES AND FOUNDATIONS. MAINTAIN SLOPE AWAY FROM FOUNDATIONS PER THE GEOTECHNICAL REPORT RECOMMENDATIONS. ALL LANDSCAPE AREAS BETWEEN WALKS AND CURBS SHALL DRAIN FREELY TO THE CURB UNLESS OTHERWISE IDENTIFIED ON THE GRADING PLAN. IN NO CASE SHALL THE GRADE, TURF THATCH, OR OTHER LANDSCAPE MATERIALS DAM WATER AGAINST WALKS. MINIMUM SLOPES ON LANDSCAPE AREAS SHALL BE 2%; MAXIMUM SLOPE SHALL BE 25% UNLESS SPECIFICALLY IDENTIFIED ON THE PLANS OR APPROVED BY THE OWNER'S REPRESENTATIVE.
9. PRIOR TO INSTALLATION OF PLANT MATERIALS, AREAS THAT HAVE BEEN COMPACTED OR DISTURBED BY CONSTRUCTION ACTIVITY SHALL BE THOROUGHLY LOOSENED TO A DEPTH OF 8" - 12" AND AMENDED AS NOTED IN TECHNICAL SPECIFICATIONS OR JURISDICTIONAL REQUIREMENTS.
10. TREES SHALL NOT BE LOCATED IN DRAINAGE SWALES, DRAINAGE AREAS, OR UTILITY EASEMENTS. CONTACT OWNER'S REPRESENTATIVE FOR RELOCATION OF PLANTS IN QUESTIONABLE AREAS PRIOR TO INSTALLATION.
11. THE CENTER OF EVERGREEN TREES SHALL NOT BE PLACED CLOSER THAN 8' AND THE CENTER OF ORNAMENTAL TREES CLOSER THAN 6' FROM A SIDEWALK, STREET OR DRIVE LANE. EVERGREEN TREES SHALL NOT BE LOCATED ANY CLOSER THAN 15' FROM IRRIGATION ROTOR HEADS. NOTIFY OWNER'S REPRESENTATIVE IF TREE LOCATIONS CONFLICT WITH THESE STANDARDS FOR FURTHER DIRECTION.
12. ALL EVERGREEN TREES SHALL BE FULLY BRANCHED TO THE GROUND AND SHALL NOT EXHIBIT SIGNS OF ACCELERATED GROWTH AS DETERMINED BY THE OWNER'S REPRESENTATIVE.
13. ALL TREES ARE TO BE STAKED AND GUYED PER DETAILS FOR A PERIOD OF 1 YEAR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING STAKES AT THE END OF 1 YEAR FROM ACCEPTANCE OF LANDSCAPE INSTALLATION BY THE OWNER'S REPRESENTATIVE. OBTAIN APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO REMOVAL.
14. ALL TREES IN SEED OR TURF AREAS SHALL RECEIVE MULCH RINGS CONTAINING SPECIFIED WOOD MULCH; REFER TO MATERIAL SCHEDULE. OBTAIN APPROVAL FROM OWNER'S REPRESENTATIVE FOR ANY TREES THAT WILL NOT BE MULCHED FOR EXCESSIVE MOISTURE REASONS.
15. PLANTING BEDS ARE TO BE CONTAINED BY SPECIFIED EDGER; REFER TO MATERIAL SCHEDULE. EDGER IS NOT REQUIRED WHEN ADJACENT TO CURBS, WALLS, WALKS OR SOLID FENCES WITHIN 3" OF PRE-MULCHED FINAL GRADE. EDGER SHALL NOT BE REQUIRED TO SEPARATE MULCH TYPES UNLESS SPECIFIED ON THE PLANS.
16. PLANTING BEDS TO BE MULCHED WITH SPECIFIED MULCH; REFER TO MATERIAL SCHEDULE.
17. AT SEED AREA BOUNDARIES ADJACENT TO EXISTING NATIVE AREAS, OVERLAP ABUTTING NATIVE AREAS BY THE FULL WIDTH OF THE SEEDER.
18. EXISTING TURF AREAS THAT ARE DISTURBED DURING CONSTRUCTION, ESTABLISHMENT AND THE MAINTENANCE PERIOD SHALL BE RESTORED WITH NEW SOD TO MATCH EXISTING TURF SPECIES. GRADES SHALL BE RESTORED TO MEET GRADING PLAN FINISH GRADE AT END OF WARRANTY PERIOD.
19. WHEN COMPLETE, ALL GRADES SHALL BE WITHIN +/- 1/8" OF FINISHED GRADES AS SHOWN ON THE PLANS.
20. THE CONTRACTOR IS EXPECTED TO KNOW AND UNDERSTAND THE CITY AND COUNTY SPECIFICATIONS FOR LANDSCAPE AND IRRIGATION. IN CASES OF DISCREPANCIES THE HIGHER OF THE TWO STANDARDS SHALL HAVE PRECEDENCE.

BID ALTERNATE E - 1ST STREET LANDSCAPE BED

CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	WATER USE	HEIGHT	SPREAD
DECIDUOUS SHRUBS								
VI MM	6	VIBURNUM BUREJAETICUM `P017S`	MINI MAN™ DWARF MANCHURIAN VIBURNUM	CONT.	#5	LOW	5`-6`	5`-6`
EVERGREEN SHRUBS								
AR PA	11	ARCTOSTAPHYLOS X COLORADOENSIS `PANCHITO`	PANCHITO MANZANITA	CONT.	#5	LOW	1`-2`	3`-4`
ORNAMENTAL GRASSES								
BO BA	10	BOUTELOUA GRACILIS `BLONDE AMBITION`	BLOND AMBITION BLUE GRAMA GRASS	CONT.	#1	VERY LOW	2`-3`	1`-2`

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	WATER USE	HEIGHT	SPREAD
DECIDUOUS CANOPY TREES								
QU SH	2	QUERCUS SHUMARDII	SHUMARD RED OAK	B & B	2" CAL.	LOW	40`-50`	30`-40`
TI RE	7	TILIA AMERICANA `REDMOND`	REDMOND AMERICAN LINDEN	B & B	2" CAL.	MOD	40`-50`	30`-40`
UL CC	7	ULMUS DAVIDIANA CHOICECITY	CHOICE CITY ELM	B & B	2" CAL.	MOD	40`-50`	30`-40`
EVERGREEN TREES								
PI ED	3	PINUS EDULIS	PINON PINE	B & B	6` HT.	VERY LOW	25`-30`	15`-20`
PI PO	6	PINUS PONDEROSA	PONDEROSA PINE	B & B	6` HT.	LOW	70'-80'	30`-40`
ORNAMENTAL TREES								
MA SS	5	MALUS X `SPRING SNOW`	SPRING SNOW CRAB APPLE	B & B	1.5" CAL.	MOD	15`-25`	20`-25`
PR AM	3	PRUNUS AMERICANA	AMERICAN PLUM	B & B	6` CLUMP	LOW	15`-20`	10`-15`
PR CH	1	PRUNUS X VIRGINIANA `P002`	SUCKER PUNCH CANADA CHOKECHERRY	B & B	1.5" CAL.	LOW	25`-30`	20`-25`
PY CA	1	PYRUS CALLERYANA CHANTICLEER	CHANTICLEER PEAR	B & B	1.5" CAL.	MOD	25`-30`	15`-20`
DECIDUOUS SHRUBS								
PH MO	8	PHYSOCARPUS MONOGYNUS	MOUNTAIN NINEBARK	CONT.	#5	LOW	3`-4`	3`-4`
VI MM	9	VIBURNUM BUREJAETICUM `P017S`	MINI MAN™ DWARF MANCHURIAN VIBURNUM	CONT.	#5	LOW	5`-6`	5`-6`
EVERGREEN SHRUBS								
AR PA	33	ARCTOSTAPHYLOS X COLORADOENSIS `PANCHITO`	PANCHITO MANZANITA	CONT.	#5	LOW	1`-2`	3`-4`
ORNAMENTAL GRASSES								
AN WI	1	ANDROPOGON GERARDII `WINDWALKER`	WINDWALKER BIG BLUE STEM	CONT.	#1	LOW	5`-6`	2`-3`
BO BA	42	BOUTELOUA GRACILIS `BLONDE AMBITION`	BLOND AMBITION BLUE GRAMA GRASS	CONT.	#1	VERY LOW	2`-3`	1`-2`
ER AM	4	ERIANTHUS RAVENNAE	HARDY PAMPAS GRASS	EXST.	#1	LOW	10'-12'	5`-6`
MU RE	28	MUHLENBERGIA REVERCHONI `UNDAUNTED`	UNDAUNTED MUHLY	CONT.	#1	MOD	1`-2`	1`-2`
PA SH	9	PANICUM VIRGATUM `SHENANDOAH`	SHENANDOAH SWITCH GRASS	CONT.	#1	LOW	3`-4`	1`-2`
PERENNIALS								
AC MO	18	ACHILLEA X `MOONSHINE`	MOONSHINE YARROW	CONT.	#1	LOW	1`-2`	1`-2`
HE SA	22	HEUCHERA X `SNOW ANGEL`	SNOW ANGEL CORAL BELLS	CONT.	#1	MOD	1`-2`	1`-2`
PE PP	26	PENSTEMON MEXICALI `PIKE`S PEAK PURPLE`	PIKES PEAK PURPLE PENSTEMON	CONT.	#1	LOW	1`-2`	<1`

LANDSCAPE MATERIAL SCHEDULE

CODE	DESCRIPTION	PRODUCT NAME	SUPPLIER/MANUFACTURER	MODEL #	COLOR / FINISH	SIZE / DIMENSIONS	DETAIL	NOTES
M-01	ORGANIC MULCH	WASHINGTON CEDAR (GORILLA HAIR)	SITEONE LANDSCAPE SUPPLY	N/A	BROWN	SEE PLANS	3 / LP-501	TO BE PLACED IN TREE PLANTING RINGS AT 3" MIN. DEPTH
M-02	METAL EDGER	METAL EDGER	DURAEDGE	ROLLED TOP EDGE	POWDER COAT GREEN	4" X 14 GAUGE	N/A	TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS. REFER TO GENERAL LANDSCAPE NOTES
M-03	ROCK MULCH	LOCAL RIVER ROCK	SITEONE LANDSCAPE SUPPLY	DAGG-0962-TN	EARTH TONES	1-1/2"	2 & 4 / LP-501	TO BE PLACED IN SHRUB AREAS AT 3" MIN. DEPTH OVER WEED BARRIER
M-04	DECORATIVE ROCK MULCH	PALLETIZED MEXICAN BEACH PEBBLES	SITEONE LANDSCAPE SUPPLY	RIVR-0530-TN	DARK GRAY	1"-2"	N/A	TO BE PLACED OVER WEED BARRIER AT 3" MIN. DEPTH
M-05	COBBLE MULCH	LOCAL RIVER ROCK	SITEONE LANDSCAPE SUPPLY	DAGG-0961-TN	HORIZON	2"-4"	N/A	TO BE PLACED OVER WEED BARRIER AT 3" MIN. DEPTH
M-06	LANDSCAPE BOULDER	RIVER BOULDER	COLORADO MATERIALS INC	N/A	GRANITE GRAY	RE: PLANS	5 / LP-501	
M-07	SANDSTONE BLOCK SEATS	SANDSTONE BLOCK	ARKINS PARK	N/A	MASONVILLE BUFF	4` L X 18"W X 28" MIN. H	3 / LS-501	
M-08	CRUSHER FINES PAVING	BREEZE	SITEONE LANDSCAPE SUPPLY	CAGG-0224	TAN	N/A	2 / LS-501	

NOTES
1. MATERIALS LISTED IN SCHEDULE ARE "APPROVED EQUAL" UNLESS OTHERWISE NOTED.

CHECKED BY: CS/KS
DRAWN BY: HV

NORRIS DESIGN
PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

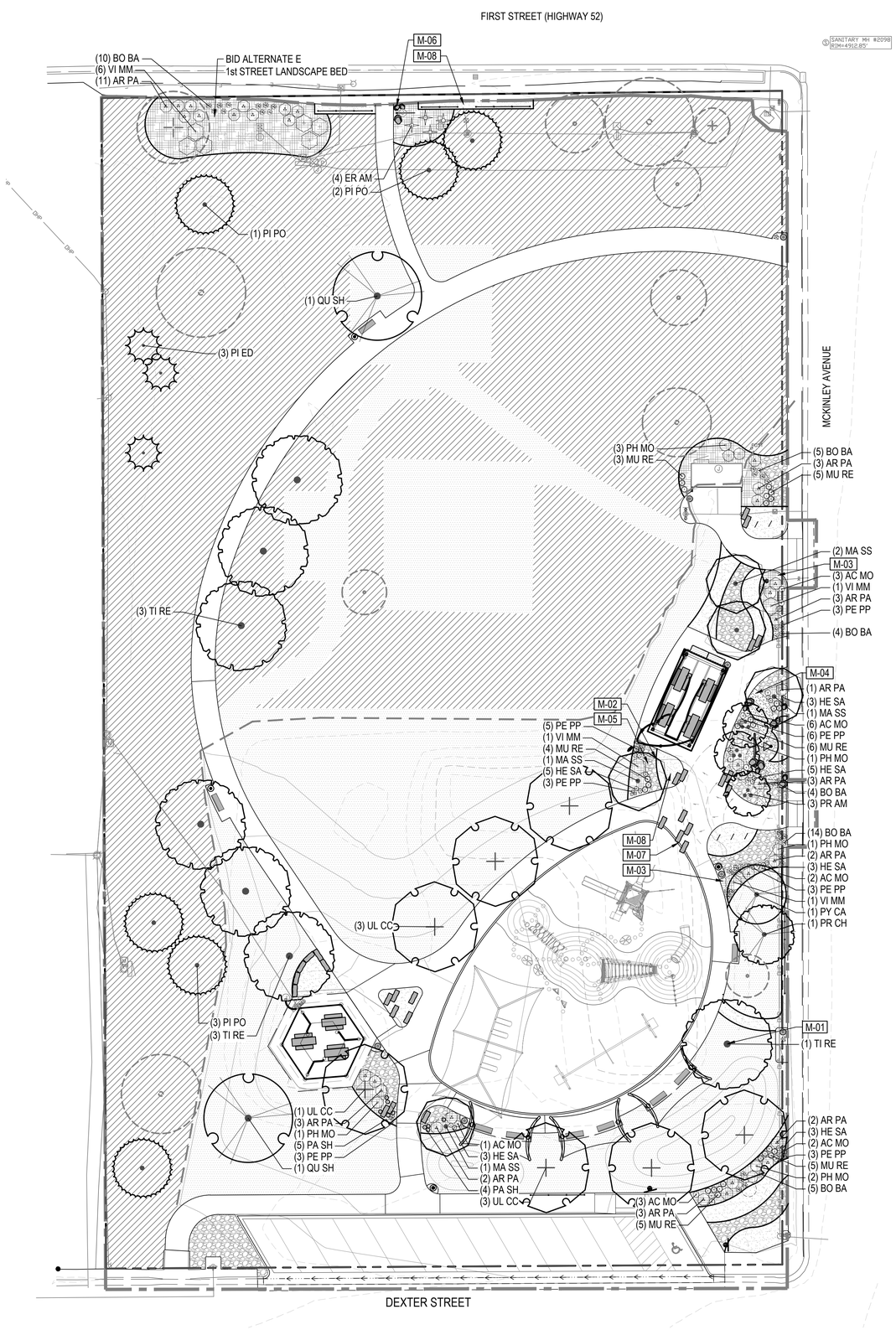
OWNER:
CITY OF FORT LUPTON

203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
LANDSCAPE NOTES & SCHEDULES

LP-001



LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- LIMIT OF WORK
- LIMIT OF GRADING
- EXISTING TOPOGRAPHY
- PROPOSED TOPOGRAPHY
- LIMIT OF MULCH TYPE
- EXISTING SIDEWALK
- EXISTING TRAFFIC LIGHT
- EXISTING LIGHT POLE
- PROPOSED SIGN
- EXISTING TREES TO REMAIN
- EXISTING GRASSES TO REMAIN
- PA — PLANTING AREA
- EXISTING SOD TO REMAIN
- SOD, BLEND TO MATCH EXISTING

CODE	DESCRIPTION
P-01	CONCRETE PAVING

SYMBOL	CODE	DESCRIPTION
	M-01	ORGANIC MULCH
	M-02	METAL EDGER
	M-03	ROCK MULCH
	M-04	DECORATIVE ROCK MULCH
	M-05	COBBLE MULCH
SIZE A / SIZE B	M-06	LANDSCAPE BOULDER
	M-07	SANDSTONE BLOCK SEATS
	M-08	CRUSHER FINES PAVING

KEY NOTES

CODE	DESCRIPTION
N-01	PARK SIGN - NORTH
N-02	PARK SIGN - EAST
N-03	PARK RULES & REGS SIGN
N-04	DECORATIVE FENCE
N-05	PLAY CURB
N-06	ARTIFICIAL PLAY TURF BASE & CURB
N-07	SITE LIGHTING & ELEC., TYP.
N-08	RELOCATED EXISTING PLAQUE
N-09	FOOD TRUCK PEDESTAL
N-10	EXISTING GAZEBO AND CONCRETE PAD TO REMAIN
N-11	EXISTING RESTROOM TO REMAIN
N-12	EXISTING TURF TO REMAIN
N-13	EXISTING CURB/PAN TO REMAIN, TYP.
N-14	EXISTING BLACKFLOW PREVENTER TO REMAIN
N-15	EXISTING FIRE HYDRANT TO REMAIN
N-16	FUTURE SCULPTURE LOCATION, BY OWNER
N-17	EXPANSION JOINT, TYP.
N-18	CONTROL JOINT, TYP.

PLANT SCHEDULE

CODE	COMMON NAME
DECIDUOUS CANOPY TREES	
UL CC	CHOICE CITY ELM
TI RE	REDMOND AMERICAN LINDEN
QU SH	SHUMARD RED OAK
EVERGREEN TREES	
PI ED	PINON PINE
PI PO	PONDEROSA PINE
ORNAMENTAL TREES	
PR AM	AMERICAN PLUM
PY CA	CHANTICLEER PEAR
MA SS	SPRING SNOW CRAB APPLE
PR CH	SUCKER PUNCH CANADA CHOKECHERRY
DECIDUOUS SHRUBS	
VI MM	MINI MAN™ DWARF MANCHURIAN VIBURNUM
PH MO	MOUNTAIN NINEBARK
EVERGREEN SHRUBS	
AR PA	PANCHITO MANZANITA
ORNAMENTAL GRASSES	
BO BA	BLOND AMBITION BLUE GRAMA GRASS
ER AM	HARDY PAMPAS GRASS
PA SH	SHENANDOAH SWITCH GRASS
MU RE	UNDAUNTED MUHLY
AN WI	WINDWALKER BIG BLUE STEM
PERENNIALS	
AC MO	MOONSHINE YARROW
PE PP	PIKES PEAK PURPLE PENSTEMON
HE SA	SNOW ANGEL CORAL BELLS
TURF	
TH SD	SOD, BLEND TO MATCH EXISTING

NORTH

0 10 20 40

SCALE 1" = 20'

811

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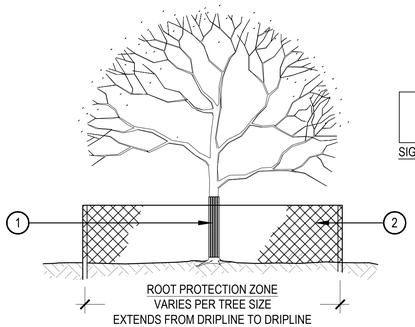
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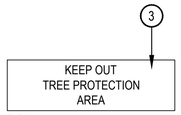
DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
LANDSCAPE PLAN

LP-101

NOTES:
1. TREES TO BE PROTECTED AND PRESERVED SHALL BE IDENTIFIED ON THE TRUNK WITH WHITE SURVEY TAPE. GROUPING OF MORE THAN ONE TREE MAY OCCUR.
2. TO PREVENT ROOT SMOTHERING, SOIL STOCKPILES, SUPPLIES, EQUIPMENT OR ANY OTHER MATERIAL SHALL NOT BE PLACED OR STORED WITHIN THE DRIP LINE OR WITHIN 15 FEET OF A TREE TRUNK, WHICHEVER IS GREATER.
3. FENCING MATERIAL SHALL BE SET AT THE DRIP LINE OR 15 FEET FROM TREE TRUNK, WHICHEVER IS GREATER, AND MAINTAINED IN AN UPRIGHT POSITION THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
4. FENCING MATERIAL SHALL BE BRIGHT, CONTRASTING COLOR, DURABLE, AND A MINIMUM OF FOUR FEET IN HEIGHT.
5. TREE ROOTS SHALL NOT BE CUT UNLESS CUTTING IS UNAVOIDABLE.
6. WHEN ROOT CUTTING IS UNAVOIDABLE, A CLEAN SHARP CUT SHALL BE MADE TO AVOID SHREDDING OR SMASHING. ROOT CUTS SHOULD BE MADE BACK TO A LATERAL ROOT. ROOTS SHALL BE CUT NO MORE THAN 1/3 OF THE RADIUS FROM DRIPLINE TO TRUNK. WHENEVER POSSIBLE, ROOTS SHOULD BE CUT BETWEEN LATE FALL AND BUD OPENING, DURING DORMANCY PERIOD. ROOT STIMULATOR SHALL BE APPLIED TO CUT ROOTS. EXPOSED ROOTS SHALL BE COVERED IMMEDIATELY TO PREVENT DEHYDRATION. ROOTS SHALL BE COVERED WITH SOIL OR BURLAP AND KEPT MOIST.WATERING OF PROTECTED TREES IN WHICH ROOTS WERE CUT SHALL BE PROVIDED BY THE CONTRACTOR.
7. WHEN ROOT CUTTING IS UNAVOIDABLE, A CLEAN SHARP CUT SHALL BE MADE TO AVOID SHREDDING OR SMASHING. ROOT CUTS SHOULD BE MADE BACK TO A LATERAL ROOT. WHENEVER POSSIBLE, ROOTS SHOULD BE CUT BETWEEN LATE FALL AND BUD OPENING, DURING DORMANCY PERIOD. EXPOSED ROOTS SHALL BE COVERED IMMEDIATELY TO PREVENT DEHYDRATION. ROOTS SHALL BE COVERED WITH SOIL OR BURLAP AND KEPT MOIST.WATERING OF PROTECTED TREES IN WHICH ROOTS WERE CUT SHALL BE PROVIDED BY THE CONTRACTOR.
8. ANY GRADE CHANGES (SUCH AS THE REMOVAL OF TOPSOIL OR ADDITION OF FILL MATERIAL) WITHIN THE DRIP LINE SHOULD BE AVOIDED FOR EXISTING TREES TO REMAIN. RETAINING WALLS AND TREE WELLS ARE ACCEPTABLE ONLY WHEN CONSTRUCTED PRIOR TO GRADE CHANGE.





SIGN

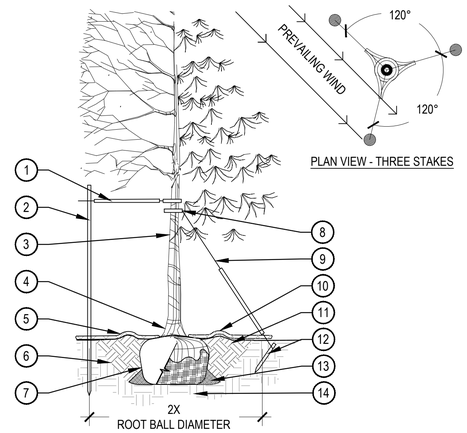
1. **TRUNK PROTECTION** - 1" BOARDS NO LESS THAN 5' LONG OR TO REACH FIRST SCAFFOLD BRANCH. WIRE TO HOLD BOARDS IN PLACE, NO NAILS PERMITTED. INCLUDE WRAPPING OF BURLAP UNDER BOARDS.
2. **BRANCH PROTECTION -** PROTECT LOWER BRANCHES OF TREE CANOPY. PROVIDE CONSTRUCTION FENCING OR EQUAL AT DRIPLINE MINIMUM.
3. PLACE SIGNS EVERY 50', PLACE SIGNS WHERE VISIBLE, ATTACH TO FENCING.

1 TREE PROTECTION

SCALE: 1/8" = 1'-0"

PRUNING NOTES:
1. ALL PRUNING SHALL COMPLY WITH ANSI A300 STANDARDS.
2. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS AND BROKEN BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED. HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

STAKING NOTES:
1. STAKE TREES PER FOLLOWING SCHEDULE, THEN REMOVE AT END OF FIRST GROWING SEASON.
   a. 1-1/2" CALIPER SIZE - MIN. 1 STAKE ON SIDE OF PREVAILING WIND (GENERALLY N.W. SIDE).
   b. 1-1/2" - 3" CALIPER SIZE - MIN. 2 STAKES - ONE ON N.W. SIDE, ONE ON S.W. SIDE (OR PREVAILING WIND SIDE AND 180° FROM THAT SIDE).
   c. 3" CALIPER SIZE AND LARGER - 3 STAKES PER DIAGRAM.
2. WIRE OR CABLE SHALL BE MIN. 12 GAUGE, TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. NYLON STRAPS SHALL BE LONG ENOUGH TO ACCOMMODATE 1-1/2" OF GROWTH AND BUFFER ALL BRANCHES FROM WIRE.

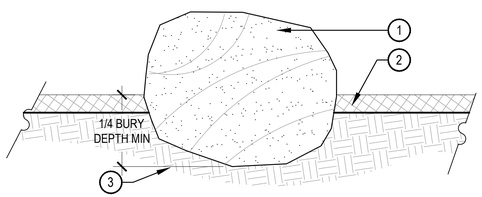


PLAN VIEW - THREE STAKES

1. PLACE MINIMUM 1/2" PVC PIPE AROUND EACH WIRE, EXPOSED WIRE SHALL BE MAXIMUM 2" EACH SIDE
2. 6'-0"UNTREATED WOOD POST, MINIMUM 1.5" DIAMETER, ALL SHALL BE DRIVEN OUTSIDE ROOTBALL AND IN UNDISTURBED SOIL
3. TREE WRAP TO BE INSTALLED ONLY FROM OCTOBER 1 THROUGH APRIL 30, DECIDUOUS ONLY, WRAP FROM BASE OF TRUNK TO BOTTOM LIMB
4. PLANT TREE SO THAT TOP MOST MAJOR ROOT IS 1"-2" ABOVE FINISHED GRADE
5. 2'-0" RADIUS MULCH RING, CENTERED ON TRUNK, 3" DEPTH, DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK, FINISHED GRADE REFERENCES TOP OF MULCH
6. 1:1 SLOPE ON SIDES OF PLANTING HOLE
7. ROPES AT TOP OF ROOTBALL SHALL BE CUT, REMOVE TOP 1/3 OF BURLAP, NON-BIODEGRADABLE MATERIAL SHALL BE TOTALLY REMOVED
8. GROMMETED NYLON STRAPS
9. GALVANIZED WIRE, MINIMUM 12 GAUGE CABLE,TWIST WIRE ONLY TO KEEP FROM SLIPPING
10. 4-6" HIGH WATER SAUCER IN NON-TURF AREAS
11. BACKFILL WITH BLEND OF EXISTING SOIL AND A MAXIMUM 20%, BY VOLUME, ORGANIC MATERIAL, WATER THOROUGHLY WHEN BACKFILLING
12. 2'-0" STEEL T-POST, ALL SHALL BE DRIVEN BELOW GRADE AND OUTSIDE ROOTBALL IN UNDISTURBED SOIL
13. PLACE SOIL AROUND ROOT BALL FIRMLY, DO NOT COMPACT OR TAMP, SETTLE SOIL WITH WATER TO FILL ALL AIR POCKETS
14. PLACE ROOT BALL ON UNDISTURBED SOIL TO PREVENT SETTLEMENT

3 TREE PLANTING DETAIL

SCALE: 3/16" = 1'-0"



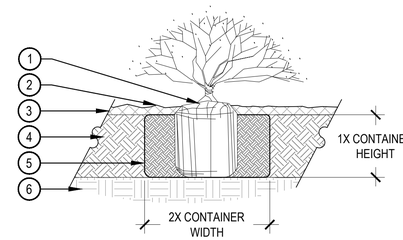
1. BOULDER. SET MIN 1/4 DEPTH BELOW FG
2. SPECIFIED MULCH, RE: LANDSCAPE SCHEDULE
3. COMPACTED SUBGRADE

BOULDER SCHEDULE		
ITEM	SIZE	QTY
'A' SIZE	30" HT x 25" W x 20" L	7
'B' SIZE	36" HT x 30" W x 37" L	6

NOTES:
1. STAKE ALL BOULDER LOCATIONS FOR OWNER'S REP APPROVAL PRIOR TO INSTALLATION. SET IN GROUPS AS SHOWN IN PLANS.
2. SIZES NOTED ARE MINIMUMS. LARGER BOULDERS CAN BE USED IF SPACE ALLOWS.

5 LANDSCAPE BOULDER

SCALE: 3/4" = 1'-0"

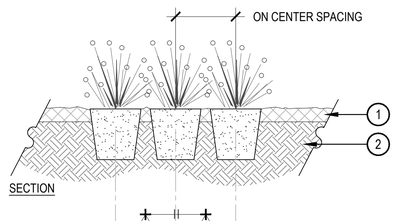


1. SET SHRUB ROOT-BALL 1" HIGHER THAN FINISH GRADE
2. FINISH GRADE (TOP OF MULCH)
3. SPECIFIED MULCH, REFER TO MATERIAL SCHEDULE
4. TILL IN SPECIFIED SOIL AMENDMENT TO A DEPTH OF 8" IN BED
5. BACKFILLED AMENDED SOIL
6. UNDISTURBED SOIL

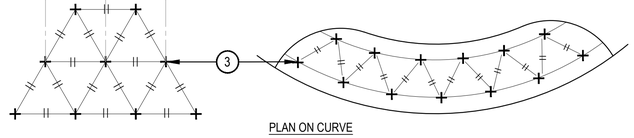
NOTE:
1. BROKEN OR CRUMBLING ROOT-BALLS WILL BE REJECTED.
2. CARE SHOULD BE TAKEN NOT TO DAMAGE THE SHRUB OR ROOT-BALL WHEN REMOVING IT FROM ITS CONTAINER.
3. ALL JUNIPERS SHOULD BE PLANTED SO THE TOP OF THE ROOT-BALL OCCURS ABOVE THE FINISH GRADE OF THE MULCH LAYER.
4. DIG PLANT PIT TWICE AS WIDE AND AS HIGH AS THE CONTAINER.
5. PRUNE ALL DEAD OR DAMAGED WOOD PRIOR TO PLANTING, DO NOT PRUNE MORE THAN 20% OF LIMBS.

2 SHRUB PLANTING

SCALE: 1 1/2" = 1'-0"



SECTION



PLAN

PLAN ON CURVE

1. SPECIFIED MULCH, REFER TO MATERIAL SCHEDULE
2. AMENDED PLANTING BED TILLED TO A DEPTH OF 6"
3. CENTER OF PLANT

NOTES:
1. WHEN PLANTED ON A CURVE, ORIENT ROWS TO FOLLOW THE LONG AXIS OF AREAS WHERE PLANTS ARE MASSED.

4 PERENNIAL PLANT LAYOUT

SCALE: 1" = 1'-0"

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(303) 587-6694
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DATE:
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SHEET TITLE:
LANDSCAPE DETAILS

LP-501

IRRIGATION GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO INSTALL THE IMPROVEMENTS SHOWN ON THE PLANS.
2. THE CONTRACTOR SHALL COORDINATE AS NECESSARY WITH THE GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE FOR SUCCESSFUL COMPLETION OF THIS WORK.
3. ALL IRRIGATION EQUIPMENT IS TO BE AS SPECIFIED OR APPROVED EQUAL PER THE DISCRETION OF THE OWNER'S REPRESENTATIVE. THE CONTRACTOR ASSUMES ALL LIABILITY ASSOCIATED WITH THE MODIFICATION OF THE IRRIGATION SYSTEM DESIGN WITHOUT NOTIFYING THE OWNER'S REPRESENTATIVE.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT A THOROUGH SITE INSPECTION AND REVIEW OF THE PROJECT CONSTRUCTION DOCUMENTS INCLUDING BUT NOT LIMITED TO THE FOLLOWING: LANDSCAPE PLAN, UTILITY PLAN, CIVIL UTILITY PLAN, ARCHITECTURE PLAN, GRADING AND DRAINAGE PLAN AND ALL OTHER ASSOCIATED PLANS AND SPECIFICATIONS THAT AFFECT THIS WORK PRIOR TO START OF WORK. IF THE AND CONTRACTOR OBSERVES ANY DISCREPANCIES AMONG THE CONSTRUCTION DOCUMENTS AND THE EXISTING CONDITIONS ON SITE, IT IS THEIR RESPONSIBILITY TO CONTACT THE OWNER'S REPRESENTATIVE IMMEDIATELY.
5. THE CONTRACTOR MUST VERIFY THE LOCATION OF ALL PUBLIC AND PRIVATE UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. IF THE CONTRACTOR FAILS TO DO SO AND DAMAGES ANY UNDERGROUND UTILITIES. THE CONTRACTOR SHALL PAY FOR ANY REPAIR WORK ASSOCIATED WITH SAID DAMAGES.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ADEQUATE VERTICAL AND HORIZONTAL SEPARATION BETWEEN ALL IRRIGATION DISTRIBUTION LINES AND ALL UTILITIES (EXISTING OR PROPOSED), CONDUIT, STORM WATER COMPONENTS, DRAINS, ETC.
7. THE CONTRACTOR SHALL CONFORM TO ALL LOCAL AND STATE REGULATIONS AND INSTALL THE IRRIGATION SYSTEM AND ITS COMPONENTS PER MANUFACTURER'S SPECIFICATIONS. THE CONTRACTOR SHALL OBTAIN AND PROVIDE PAYMENT FOR ALL PERMITS REQUIRED BY ANY LOCAL AND STATE AGENCIES AND UTILITY COMPANIES HAVING JURISDICTION OVER THIS SITE.
8. IT IS THE INTENT OF THIS DESIGN THAT ALL IRRIGATION EQUIPMENT BE INSTALLED WITHIN LANDSCAPE AREAS AND WITHIN THE PROJECT LIMITS. EQUIPMENT SHOWN OUTSIDE OF THESE LIMITS IS SHOWN FOR GRAPHIC CLARITY ONLY. IF THERE IS A QUESTION REGARDING THE LOCATION OF ANY COMPONENT OF THE IRRIGATION SYSTEM, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNER'S REPRESENTATIVE. IF THE CONTRACTOR NEGLECTS TO NOTIFY THE NECESSARY PARTIES, THE CONTRACTOR SHALL PAY FOR ANY REPLACEMENT OR MODIFICATION TO ENSURE PROPER LOCATION AND OPERATION OF THE IRRIGATION SYSTEM AND ITS COMPONENTS.
9. ALL IRRIGATION DISTRIBUTION LINES AND EQUIPMENT INCLUDING BUT NOT LIMITED TO, MAINLINE, LATERALS, SPRAY HEADS, DRIP EMITTERS SHALL BE KEPT A MINIMUM DISTANCE OF 6' AWAY FROM ALL BUILDING AND WALL FOUNDATIONS, OR AS STIPULATED IN THE GEOTECHNICAL REPORT , WHICHEVER IS GREATER. EQUIPMENT MAY BE SHOWN IN THIS AREA FOR GRAPHIC CLARITY. COORDINATE ALL REQUIRED SETBACKS WITH OWNER'S REPRESENTATIVE PRIOR TO START OF WORK.
10. EACH VALVE SHALL BE INSTALLED IN A SEPARATE VALVE BOX AS DETAILED. ALL VALVE BOXES AND LIDS SHALL BE COMMERCIAL GRADE, PLASTIC WITH SELF LOCKING COVERS. LID COLOR TO BE GREEN. INSTALL FLUSH TO FINISH GRADE AND PER CONSTRUCTION DETAILS. DO NOT INSTALL IN PAVED AREAS OR IN BOTTOMS OF DRAINAGE SWALES/BASINS.
11. CONTRACTOR SHALL INSTALL DETECTABLE MARKING TAPE OR #14g DIRECT BURY TRACER WIRE IN ALL PRESSURE MAINLINE TRENCHES. SEE IRRIGATION DETAILS FOR MORE INFORMATION.
12. PLANT MATERIAL LOCATIONS TAKE PRECEDENCE OVER ROUTING OF IRRIGATION PIPING. COORDINATE INSTALLATION OF IRRIGATION EQUIPMENT SO THAT IT DOES NOT INTERFERE WITH THE PLANTING OF TREES OR OTHER LANDSCAPE MATERIAL.
13. THE CONTRACTOR SHALL MARK THE LOCATION OF THE MAINLINE, CONTROL VALVES, GATE VALVES AND HEAD LAYOUT OF A REPRESENTATIVE SPRAY ZONE. SCHEDULE A REVIEW WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
14. INSTALL SCH. 40 BALL-VALVE WITH OPERATIONAL INDICATOR AT ENDS OF ALL DRIP LATERALS AS DETAILED. FLUSH ALL LATERALS THOROUGHLY BEFORE INSTALLING EMITTERS AND BUBBLERS.
15. CONTRACTOR SHALL FINE TUNE AND ADJUST NOZZLE DIRECTION AND RADIUS TO REDUCE OVERSPRAY ONTO PAVING OR HARD SURFACES.
16. CONTRACTOR SHALL INSTALL A QUICK COUPLER IN 10" VALVE BOX AT THE END OF ALL BRANCHES OF THE MAINLINE, OR AS SHOWN ON PLANS, FOR WINTERIZATION AND FLUSHING OF MAINLINE.
17. THE CONTRACTOR SHALL PERFORM A PRESSURE TEST ON ALL MAINLINES. CONTRACTOR SHALL PRESSURIZE MAINLINES TO 120 PSI AND MAINTAIN PRESSURE AT 120 PSI FOR A MINIMUM CONTINUOUS PERIOD OF TWO (2) HOURS TO ACHIEVE FINAL ACCEPTANCE.
18. THIS IRRIGATION SYSTEM HAS BEEN DESIGNED TO OPERATE DURING A THREE (3) NIGHT PER WEEK, SIXTEEN (16) HOURS PER NIGHT WATERING WINDOW. DRIP IRRIGATION ZONES MAY BE ALLOWED TO RUN ON A SEPARATE SCHEDULE FROM THIS WATER WINDOW DEPENDING JURISDICTION. LANDSCAPE ESTABLISHMENT WILL REQUIRE INCREASED IRRIGATION WATER FOR DURATION OF THE ESTABLISHMENT PERIOD AND MAY REQUIRE TWICE THE AMOUNT OF WATER AS ESTABLISHED PLANT MATERIAL. THE CONTRACTOR SHALL COORDINATE WATERING SCHEDULES AND APPLICATION RATES WITH THE OWNER'S REPRESENTATIVE PRIOR TO FINAL ACCEPTANCE.
19. THE DESIGN IS BASED ON THE FOLLOWING PROJECTED PEAK SEASON WEEKLY APPLICATION RATES AFTER ESTABLISHMENT. THESE FIGURES WILL NEED TO BE ADJUSTED DUE TO SEASONAL CHANGES AND VARIABLE WEATHER CONDITIONS.
    - FESCUE/BLUEGRASS BLEND TURF 1.75" PER WEEK PEAK SEASON
    - TREE, SHRUB, AND PERENNIAL PLANT MATERIAL 1.00" PER WEEK PEAK SEASON
20. THE CONTRACTOR SHALL PROVIDE A SEASONAL MAINTENANCE SCHEDULE WHICH SHALL BEGIN ON APRIL 15TH AND END ON OCTOBER 15TH TO ENSURE THE EFFICIENCY AND LONGEVITY OF THE IRRIGATION SYSTEM. THE MAINTENANCE SCHEDULE SHALL INCLUDE BUT IS NOT LIMITED TO THE FOLLOWING LIST OF BEST MANAGEMENT PRACTICES:
    - CHECK HEADS FOR COVERAGE AND LEAKAGE.
    - CHECK CONTROLLER PROGRAMMING AND ADJUST FOR SEASONAL CHANGES AS NECESSARY.
    - VERIFY THAT THE WATER SUPPLY AND PRESSURE ARE AS STATED IN THE DESIGN.
    - CERTIFY THE BACKFLOW PREVENTION DEVICE AND SUBMIT TEST RESULTS TO THE PROPERTY MANAGER.
    - PERIODICALLY VERIFY THE THE SENSORS IN THE IRRIGATION SYSTEM ARE OPERATING CORRECTLY.
    - WINTERIZATION AND SPRING START UP PROCEDURES.

IRRIGATION POINT OF CONNECTION NOTES

1. POINT OF CONNECTION: THERE IS ONE (1) POINT OF CONNECTION ON THIS PROJECT.
   POC #1 : 2" EXISTING IRRIGATION WATER METER LOCATED ON MCKINLEY AVE ADJACENT TO PARK RESTROOMS.
    - CONTRACTOR IS TO LOCATE AND CONNECT DOWNSTREAM OF THE DEDICATED EXISTING 2" BACKFLOW PREVENTION ASSEMBLY. EXTEND COPPER TUBING MINIMUM 30" HORIZONTAL FROM BACKFLOW PREVENTER AND INSTALL ONE MANUAL DRAIN, TRANSITION TO AND EXTEND CLASS 200 PVC MAINLINE TO GATE VALVE, MASTER VALVE, FLOW SENSOR, 1" QUICK COUPLER, AND EXTEND MAINLINE TO VALVES AS SHOWN.
    - THE CONTRACTOR SHALL CONFORM TO ALL LOCAL CODES, OBTAIN AND PROVIDE PAYMENT FOR ALL PERMITS ASSOCIATED WITH THIS WORK.
2. CONTROLLER LOCATION: THERE IS ONE (1) CONTROLLER ON THIS PROJECT.
   CONTROLLER A : WALL MOUNTED CONTROLLER LOCATED INSIDE PARK RESTROOM WATER ENTRY ROOM, ADJACENT TO POC #1.
    - CONTROLLER SHALL BE PROGRAMMED TO RUN MULTIPLE VALVES AT ONE TIME WITH A MAXIMUM TOTAL OF 70 GPM .
    - CONTROLLER TO BE MOUNTED PER DETAILS AND MANUFACTURER'S SPECIFICATIONS.
    - CONTRACTOR TO COORDINATE WITH OWNER'S REPRESENTATIVE AND ELECTRICAL PLANS FOR POWER SERVICE. ALL ELECTRICAL EQUIPMENT AND POWER CONNECTION INSTALLATION SHALL CONFORM TO ALL LOCAL CODES. INSTALL A LINE VOLTAGE SURGE DEVICE (INTERMATIC AG2401C3/ OR SQUARE D SDSA1175) FOR 120V IN A JUNCTION BOX PRIOR TO CONTROLLER.
    - RAIN/FREEZE SENSOR: MOUNT THE RAIN SENSOR ON POWER POLE SOUTHEAST OF RESTROOM IN PROXIMITY TO THE CONTROLLER. THE SENSOR SHALL BE MOUNTED IN A LOCATION IN FULL SUN AND OPEN TO RAINFALL. SENSOR SHALL BE NO MORE THAN 200' FROM WIRELESS RECEIVER. MOUNT WIRELESS RECEIVER ON OR ADJACENT TO THE IRRIGATION CONTROLLER.
3. SYSTEM PRESSURE: THE SYSTEM HAS BEEN DESIGNED PER THE FOLLOWING SPECIFICATIONS: REQUIRED MINIMUM STATIC PRESSURE OF 65 PSI AND MAXIMUM SAFE VELOCITY OF 5 FPS IN ANY PVC PIPE AND 7.5 FPS IN ANY COPPER PIPE.
    - PER CITY OF FORT LUPTON THE STATIC PRESSURE ON SITE IS APPROXIMATELY 65 PSI.
    - THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE PRESSURE IN THE FIELD AT THE POINT OF CONNECTION BEFORE CONSTRUCTION BEGINS AND FOR NOTIFYING THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCY BETWEEN THE DESIGN PRESSURE OF THE SYSTEM AND THE MEASURED PRESSURE IN THE FIELD. IF THE CONTRACTOR FAILS TO NOTIFY OWNER'S REPRESENTATIVE OF SUCH DISCREPANCIES, THEN THE CONTRACTOR ASSUMES ALL LIABILITY AND COSTS ASSOCIATED WITH SYSTEM MODIFICATIONS TO ACCOMMODATE THE ACTUAL PRESSURE.
4. FLOW SENSOR: SENSOR REQUIRES A MINIMUM FLOW FOR PROPER READINGS. MULTIPLE ZONES MAY BE REQUIRED TO RUN SIMULTANEOUSLY TO ACHIEVE THE MINIMUM FLOWS REQUIRED. CONTRACTOR TO SET 'K' VALUES PER MANUFACTURER.
    - FLOW SENSOR REQUIRES A MINIMUM FLOW OF .92 GPM.
5. COMMUNICATION: IT IS REQUIRED THAT THE IRRIGATION CONTROLLER BE CONNECTED TO THE WEATHERMATIC WATER MANAGEMENT CONTROL APPLICATION FOR OPTIMUM FUNCTION OF THE IRRIGATION SYSTEM. COORDINATE WITH OWNER'S REPRESENTATIVE AND CONTACT THE LOCAL CONTROLLER MANUFACTURER REPRESENTATIVE OR AUTHORIZED VENDOR PRIOR TO ORDERING CONTROLLER FOR COMMUNICATION AND CONNECTIVITY OPTIONS.

CONVENTIONAL WIRE NOTES

1. GROUNDING FOR THE IRRIGATION CONTROLLER SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS AND PER THE AMERICAN SOCIETY OF IRRIGATION CONSULTANTS GUIDELINE 100-2002 FOR EARTH GROUNDING ELECTRONIC EQUIPMENT IN IRRIGATION SYSTEMS FOUND AT www.asic.org/Design_Guides.aspx. FOR TECHNICAL SUPPORT REGARDING THE IRRIGATION CONTROLLER OR GROUNDING PLEASE CONTACT THE MANUFACTURER.
2. NEW CONTROLLER WIRE SHALL BE 14GA MIN. UL APPROVED WIRE. CONTRACTOR SHALL VERIFY EXISTING CONNECTIONS AND USE UL APPROVED WIRE STRIPPER AND 3M DBY WATERPROOF CONNECTIONS AT ALL NEW SPLICES AND CONNECTION POINTS. CONTRACTOR TO INSTALL RED ELECTRIC MARKING TAPE WITH CONTROLLER WIRE THAT IS NOT WITH MAINLINE. WIRES SHALL BE BUNDLED TOGETHER BY BLACK ELECTRICAL TAPE EVERY 10 L.F.
3. CONTRACTOR SHALL HAVE 30" OF SPARE CONTROL WIRE PRESENT AT ALL SPLICE POINTS. SPARE WIRE SHALL BE COILED IN A NEAT AND ORDERLY FASHION AT EACH SPLICE POINT.
4. CONTRACTOR SHALL EXTEND TWO (2) SPARE CONTROL WIRES, AND ONE (1) SPARE COMMON WIRE AT THE END OF THE MAINLINE. CONTRACTOR SHALL INSTALL ONE (1) WIRE PULL BOX AT EACH END OF THE MAINLINE.

EXISTING TREE NOTES

1. ALL TRENCHING OR OTHER WORK UNDER LIMB SPREAD OF ANY AND ALL PLANT MATERIAL SHALL BE DONE BY HAND, BORING OR BY OTHER METHODS SO AS TO PREVENT DAMAGE TO LIMBS OR BRANCHES.
2. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES USE ALL POSSIBLE CARE TO AVOID INJURY TO TREES AND TREE ROOTS.
3. EXCAVATION AND TRENCHING, IN AREAS WHERE 2" AND LARGER ROOTS OCCUR, SHALL BE DONE BY HAND.
4. ROOTS 2" OR LARGER IN DIAMETER SHALL BE TUNNELED UNDER AND SHALL BE HEAVILY WRAPPED WITH BURLAP TO PREVENT SCARRING OR EXCESSIVE DRYING.
5. ROOTS SMALLER THAN 2" IN DIAMETER SHALL BE HAND TRIMMED AT THE WALL OF TRENCH, MAKING CLEAN CUTS THROUGH ROOTS.
6. TRENCHES ADJACENT TO TREES SHALL BE CLOSED WITHIN 24 HOURS, AND WHEN THIS IS NOT POSSIBLE, THE SIDE OF THE TRENCH ADJACENT TO TREE SHALL BE KEPT SHADED WITH MOISTENED BURLAP OR CANVAS UNTIL BACKFILL.

SLEEVING COORDINATION NOTES

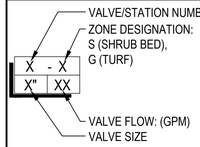
1. INSTALLATION OF IRRIGATION SLEEVING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE IRRIGATION CONTRACTOR FOR LOCATION AND SIZING OF SLEEVES PRIOR TO THE START OF CONSTRUCTION.
2. SLEEVES SHALL BE INSTALLED PRIOR TO THE START OF PAVING OPERATIONS.
3. THE CONTRACTOR SHALL SLEEVE ALL IRRIGATION DISTRIBUTION LINES, VALVE CONTROL WIRES AND COMMUNICATION WIRES UNDER ALL PAVED SURFACES, WALL FOOTERS, DRAINAGE CHANNELS, INLETS, CATCH BASINS, ETC.
4. ALL SLEEVES SHALL EXTEND A MINIMUM OF 12" BEYOND EDGE OF ALL OBSTRUCTIONS. NO TEES, ELLS OR OTHER TURNS IN PIPING SHALL BE LOCATED UNDER ANY OBSTRUCTIONS.
5. EACH PIPE SHALL BE IN A SEPARATE SLEEVE. WIRES SHALL BE IN A SEPARATE PIPE UNDER ALL PAVED SURFACES.
6. SLEEVING SHALL BE INSTALLED PER THE SIZES AND QUANTITIES SHOWN ON THE PLANS BASED ON THE CHART BELOW.

PIPING	REQUIRED SLEEVE SIZE
MAINLINE PIPING	6" CLASS 200 PVC
LATERAL PIPING	2X NOMINAL DIAMETER OF LATERAL
CONTROL WIRES	2" CLASS 200 PVC (2.5" 45 WIRES +)

IRRIGATION SCHEDULE

SYMBOL	DESCRIPTION	MODEL NO. DESCRIPTION	DETAIL # AND SHEET	
M	IRRIGATION METER	**2" EXISTING IRRIGATION METER** REFER TO CIVIL, UTILITY, AND WATER PLANS	N/A	N/A
C	IRRIGATION CONTROLLER	**WEATHERMATIC-SL-4848-1YR-BDL-FLOW-MINA** 120VAC POWER REQUIRED - SEE PLANS FOR LOCATION	1	LI-501
	RAIN SENSOR	**WEATHERMATIC - RFS5** REFER TO CONTROLLER NOTES	2	LI-501
	BACKFLOW PREVENTER	**EXISTING 2" BACKFLOW PREVENTER**	N/A	N/A
MD	MANUAL DRAIN VALVE	**MATCO-NORCA 3/4" 201X** INSTALLED IN AEP 910L-1G2G VALVE BOX	3	LI-501
MV	MASTER VALVE	**RAIN BIRD 200-EFB-CP SERIES** WITH SCH 40 BALL VALVE, INSTALLED IN AEP 1015-1G2G VALVE BOX	4	LI-501
FS	FLOW SENSOR	**FLOMEC QS200-20** WITH SHIELDED COMMUNICATION CABLE BACK TO CONTROLLER, INSTALLED IN AEP 1015-1G2G VALVE BOX	7	LI-501
	ISOLATION GATE VALVE	**MATCO-NORCA 514TX** MATCH LINE SIZE, INSTALLED IN AEP 910L-1G2G VALVE BOX	5	LI501
	QUICK COUPLER	**RAIN BIRD 44LRC** INSTALLED IN AEP 910L-1G2G VALVE BOX	6	LI-501
	TURF VALVE ASSEMBLY	**RAIN BIRD PEB SERIES** WITH SCH 40 BALL VALVE, INSTALLED IN AEP 1015-1G2G VALVE BOX, SIZED PER PLAN	8	LI-501
	DRIP VALVE ASSEMBLY	**RAIN BIRD XCZ-100-PRB** WITH SCH 40 BALL VALVE, INSTALLED IN AEP 1320-1G2G VALVE BOX, SIZED PER PLAN	5	LI-503
	TURF ROTOR	**RAIN BIRD 5006+-SAM-SS WITH STANDARD NOZZLE** NOZZLE PER PLAN	2	LI-502
MP1000 MP2000 MP3000 MP3500	TURF ROTARY	**RAIN BIRD RD06-S-P45-F WITH HUNTER MP SERIES NOZZLE** NOZZLE PER PLAN	1	LI-502
	TURF SPRAY	**RAIN BIRD RD06-S-P30-F WITH MPR (FIXED) OR HE-VAN (ADJUSTABLE) NOZZLE** NOZZLE PER PLAN	1	LI-502
	SLEEVING	**CLASS 200 PVC** REFER TO SLEEVING NOTES	6	LI-502
	SERVICE LINE	**TYPE K COPPER** SIZE: MATCH POC UNLESS OTHERWISE NOTED	NA	N/A
	PVC MAINLINE	**CLASS 200 PVC BE/RT** SIZE: 2.5" UNLESS OTHERWISE NOTED	N/A	N/A
	PVC TURF LATERAL	**CLASS 200 PVC BE** SIZE: 1" MINIMUM UNLESS OTHERWISE NOTED	N/A	N/A
	DRIP LATERAL	**UV RESISTANT POLYETHYLENE** SIZE: 3/4" MINIMUM UNLESS OTHERWISE NOTED	N/A	N/A
	DRIP FLUSH VALVE & INDICATOR	**SCH 40 BALL VALVE WITH HUNTER ECO-ID-12 OPERATIONAL INDICATOR** INSTALLED IN AEP 910L-1G2G VALVE BOX	4	LI-503

VALVE CALLOUT



EMITTER SCHEDULE

PLANT TYPE	EMITTER	QTY.	TOTAL GPH
PERENNIAL / GRASSES	0.5 GPH	TWO EACH	1.0 GPH
DECIDUOUS SHRUBS	1.0 GPH	TWO EACH	2.0 GPH
EVERGREEN SHRUBS	1.0 GPH	TWO EACH	2.0 GPH
DECIDUOUS TREE	1.0 GPH	EIGHT EACH	8.0 GPH
EVERGREEN TREE	1.0 GPH	EIGHT EACH	8.0 GPH

EMITTER NOTES

1. ALL PLANT MATERIAL SHALL BE IRRIGATED WITH RAIN BIRD XB SERIES PRESSURE COMPENSATING EMITTERS.
2. EMITTER SCHEDULE IS FOR REFERENCE ONLY. THE CONTRACTOR SHALL ADJUST EMITTER AND NUMBER OF EMITTERS BASED ON THE NEEDS OF INDIVIDUAL PLANTS OR PLANT HYDROZONES.
3. 1/4" DISTRIBUTION TUBING NOT TO EXCEED 8' IN LENGTH.
4. RAIN BIRD DBC-025 DIFFUSER BUG CAP AND TS-025 STAKE ON ALL 1/4" DISTRIBUTION TUBING EMISSION POINTS.
5. REFER TO DRIP IRRIGATION DETAILS #1 - #5, SHEET LI-503

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DRAWN BY: HV

NORRIS DESIGN
PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
NORRIS-DESIGN.COM

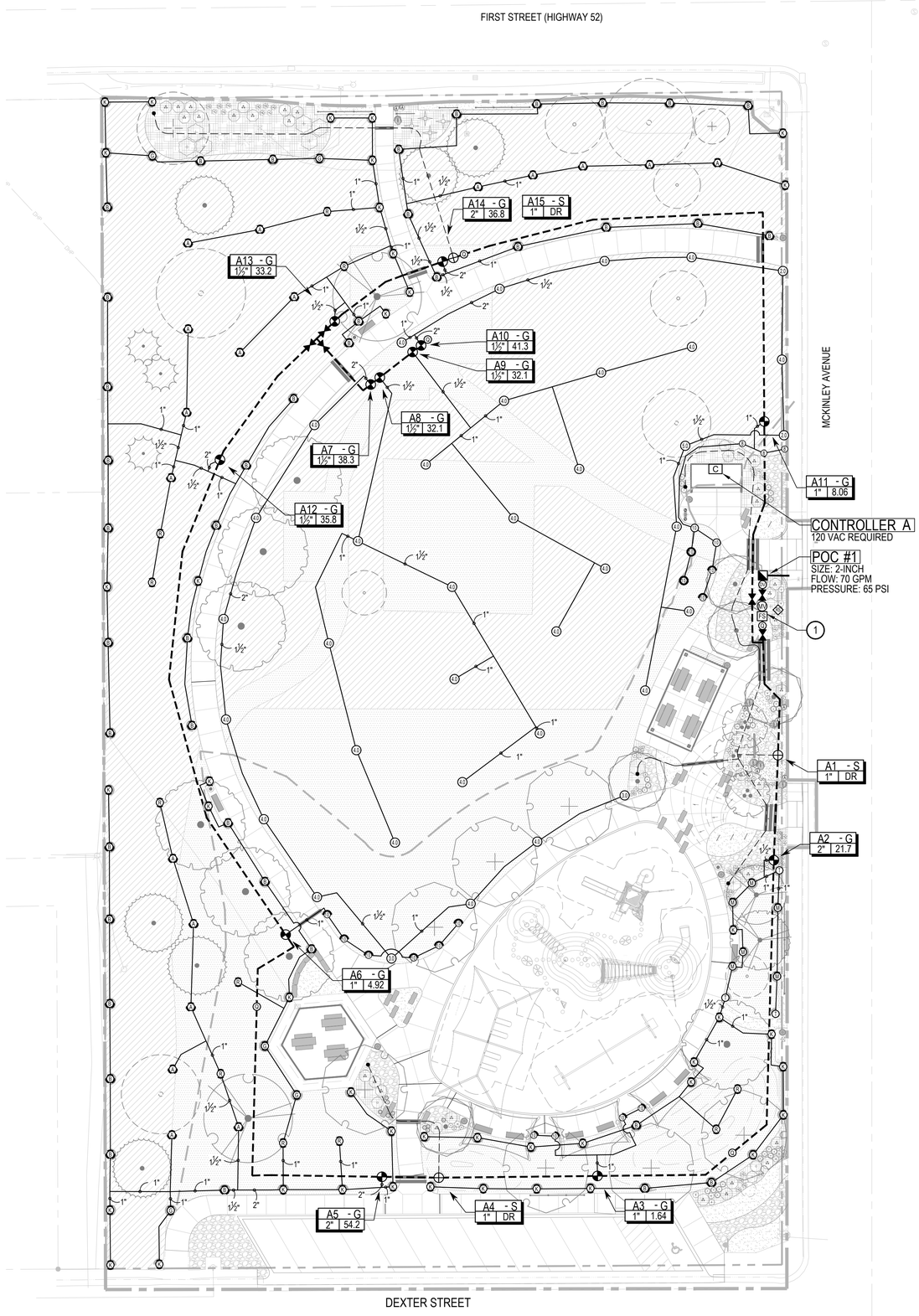
KOSHIO PARK | FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
IRRIGATION NOTES & SCHEDULES

LI-001



SYMBOL	DESCRIPTION
M	IRRIGATION METER
C	IRRIGATION CONTROLLER
	RAIN SENSOR
	BACKFLOW PREVENTER
	MANUAL DRAIN VALVE
MV	MASTER VALVE
FS	FLOW SENSOR
	ISOLATION GATE VALVE
	QUICK COUPLER
	TURF VALVE ASSEMBLY
	DRIP VALVE ASSEMBLY
	TURF ROTOR
MPCORNER MP1000 MP2000 MP3000 MP3500	TURF ROTARY
A Q T H F	TURF SPRAY
	SLEEVING
	SERVICE LINE
	PVC MAINLINE
	PVC TURF LATERAL
	DRIP LATERAL
	DRIP FLUSH VALVE & INDICATOR

IRRIGATION KEY NOTES

1. IRRIGATION EQUIPMENT IS SHOWN HERE FOR GRAPHIC CLARITY. ALL MAINLINES, LATERALS, VALVES ETC SHALL BE LOCATED WITHIN PLANTING AREAS.

NORTH

0 10 20 40

SCALE 1" = 20'

811

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KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

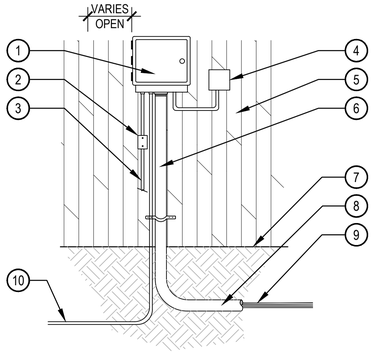
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203 S. HARRISON AVE
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FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
IRRIGATION PLAN

LI-101

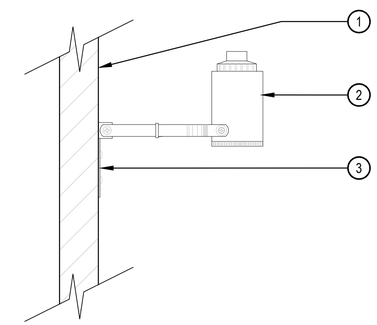


1. CONTROLLER MOUNT AT EYE-LEVEL PER MANUFACTURER'S RECOMMENDATIONS
2. DISCONNECT SWITCH
3. 120 POWER SOURCE IN STEEL CONDUIT
4. WIRELESS SENSOR RECEIVER
5. BUILDING EXTERIOR WALL
6. RIGID STEEL CONDUIT W/ CONTROL WIRES TO VALVES
7. FINISH GRADE
8. CONDUIT TO EXTEND 5 FT. BEYOND WALL
9. UF DIRECT BURIAL WIRE TO CONTROL VALVES
10. UF DIRECT BURIAL WIRE TO GROUNDING PER ASIC GUIDELINES

NOTE:
1. ALL ELECTRICAL AND CONTROLLER WIRE TO BE INSTALLED PER LOCAL CODE AND MANUFACTURER'S SPECIFICATIONS.
2. GROUND CONTROLLER PER LOCAL CODE AND MANUFACTURER'S SPECIFICATIONS.
3. PROVIDE WATERPROOF SEALANT FOR ALL CONDUIT AND WIRE ACCESS POINTS.
4. PROVIDE LOCK FOR ENCLOSURE.

1 CONTROLLER WALL MOUNT EXTERIOR

NTS

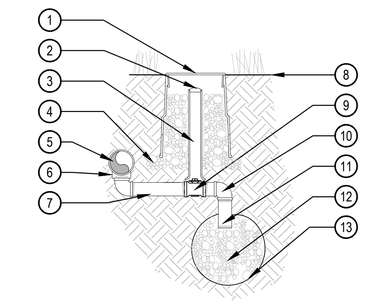


1. SUITABLE FASCIA, WALL, OR GUTTER MOUNT. MOUNT IN LOCATION WHERE SENSOR CAN RECEIVE FULL SUN AND IS OPEN TO RAINFALL.
2. WIRELESS RAIN SENSOR, LOCATE WITHIN 500' OF THE CONTROLLER.
3. SECURE MOUNTING BRACKET TO EXTERIOR WALL WITH SCREWS PER LOCAL CODES

NOTE:
1. PROVIDE WATERPROOF SEALANT FOR ALL CONDUIT AND WIRE ACCESS POINTS.
2. FINAL LOCATION AND MOUNTING SYSTEM TO BE DETERMINED BY OWNER.
3. SENSOR SHOULD NOT BE MOUNTED UNDER TREES, IN AREAS AFFECTED BY SPRINKLER SYSTEM OR UNDER EAVE OF HOUSE.

2 RAIN SENSOR SURFACE MOUNT

NTS

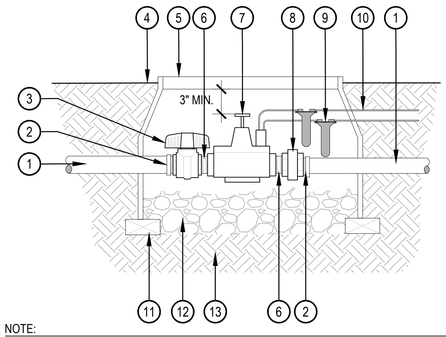


1. 10" LOCKING ROUND BOX & COVER PER SCHEDULE. TOP OF BOX TO BE FLUSH WITH FINISH GRADE.
2. 2" VALVE MARKER
3. 2" CL160 PVC ACCESS SLEEVE LENGTH AS REQUIRED.
4. 3" DEPTH 3/4" CRUSHED GRAVEL 6" BEYOND EDGE OF BOX
5. PVC PRESSURE MAIN LINE
6. SCH. 80 TEE PER MAINLINE SIZE ALIGN IN A DOWNWARD POSITIC
7. SCH. 80 PVC NIPPLE
8. FINISH GRADE
9. 1" BRONZE STOP VALVE WITH SLOTTED KEY OPERATOR
10. SCH. 80 PVC ELL
11. SCH. 80 PVC NIPPLE
12. 3/4" GRAVEL SUMP - 1 CU. FT. MI
13. SOIL BLANKET ENCLOSING SUM AMOCO ENG. FABRIC 4545 - 4.5 OZ. OR EQUAL

NOTE:
1. ALL THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.
2. LOCATE DRAIN VALVE AT POINT OF CONNECTION AND AT ALL LOW POINT(S) ALONG THE IRRIGATION MAINLINE AS NEEDED.

3 MANUAL DRAIN VALVE

SCALE: N

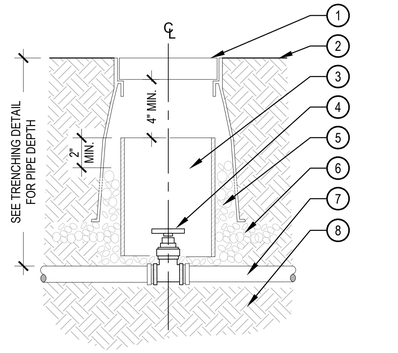


1. PVC MAINLINE
2. SCH. 80 PVC MALE ADAPTER
3. SCH. 80 PVC BALL VALVE
4. FINISH GRADE
5. LOCKING VALVE BOX
6. SCH. 80 PVC NIPPLE (THREADED)
7. MASTER VALVE
8. SCH. 80 PVC UNION (THREADED)
9. WATERPROOF ELECTRICAL CONNECTIONS
10. WIRES TO CONTROLLER
11. BRICK SUPPORTS 2 MIN.
12. 3/4" GRAVEL SUMP - 8" DEPTH
13. COMPACTED SUBGRADE

NOTE:
1. INSTALL MASTER VALVE PER MANUFACTURER'S SPECIFICATIONS FOR WIRING AND GROUNDING.

4 MASTER VALVE

SCALE: NTS

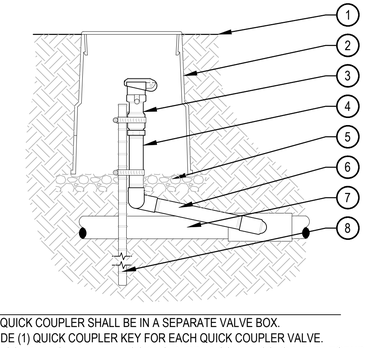


1. LOCKING ROUND BOX & COVER PER SCHEDULE. TOP OF BOX TO BE FLUSH WITH FINISH GRADE
2. FINISH GRADE
3. 8" SCH 40 PVC ACCESS SLEEVE LENGTH AS REQUIRED.
4. GATE VALVE W/ CROSS HANDLE AND SOLID WEDGE DISC PER SCHEDULE
5. 3/4" GRAVEL SUMP FILL IN AND AROUND BOX AS REQUIRED.
6. 3" DEPTH 3/4: GRAVEL EXTEND 6" BEYOND EDGE OF BOX
7. PVC MAINLINE
8. COMPACTED SUBGRADE

NOTE:
1. COMPACT SOIL AROUND GATE VALVE ASSEMBLY TO THE SAME DENSITY AS ADJACENT UNDISTURBED SUBGRADE.
2. DO NOT REST VALVE BOX OR ACCESS SLEEVES ON MAINLINE OR LATERAL LINE.
3. PROVIDE GATE VALVE KEY - LENGTH AS REQUIRED.

5 GATE VALVE 2" AND SMALLER

SCALE: NTS

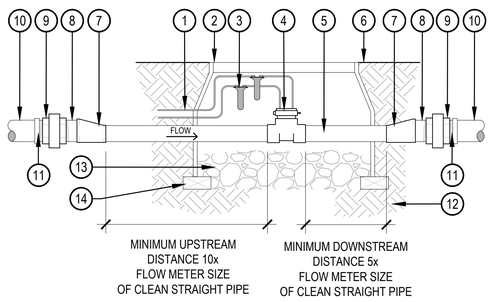


1. FINISH GRADE
2. 10" ROUND BOX & COVER PER SCHEDULE. TOP OF BOX TO FLUSH WITH FINISH GRADE
3. QUICK COUPLING VALVE W/ LOCKING COVER PER SCHEDULE
4. SCH. 80 PVC RISER (T x T)
5. 3" DEPTH 3/4" GRAVEL BASE EXTEND 6" BEYOND EDGE OF BOX
6. PVC SWING JOINT
7. PVC MAINLINE
8. 24" LONG #4 REBAR TO HOLD QUICK COUPLER IN PLACE W/ (2) STAINLESS STEEL CLAMPS

NOTES:
1. EACH QUICK COUPLER SHALL BE IN A SEPARATE VALVE BOX.
2. PROVIDE (1) QUICK COUPLER KEY FOR EACH QUICK COUPLER VALVE.
3. QUICK COUPLER SHALL HAVE LOCKING RUBBER COVER. COLOR PER LEGEND.
4. COMPACT SOIL AROUND GATE VALVE ASSEMBLY TO THE SAME DENSITY AS ADJACENT UNDISTURBED SUB-GRADE.
5. ALL THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.

6 QUICK COUPLER

SCALE: N

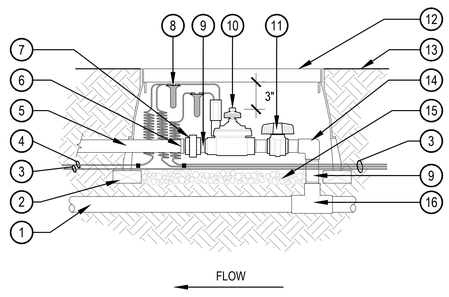


1. WIRES TO CONTROLLER
2. LOCKING VALVE BOX
3. WATERPROOF ELECTRICAL CONNECTIONS
4. FLOW SENSOR PER SCHEDULE
5. DOWNSIZED MAINLINE
6. FINISH GRADE
7. SCH. 80 PVC ECCENTRIC COUPLING (S x S) - SIZE & QTY TO BE DETERMINED IN FIELD
8. SCH. 80 PVC NIPPLE (MPTxS)
9. SCH. 80 PVC UNION (THREADED)
10. PVC MAINLINE
11. SCH. 80 PVC MALE ADAPTER
12. COMPACTED SUBGRADE
13. 3/4" GRAVEL SUMP 8" DEPTH
14. BRICK SUPPORTS 2 MIN.

NOTE:
1. INSTALL FLOW SENSOR PER MANUFACTURER'S SPECIFICATIONS FOR WIRING AND GROUNDING.

7 FLOW SENSOR

SCALE: NTS



1. PVC MAINLINE
2. BRICK SUPPORT (4 MIN.)
3. CONTROL WIRE
4. COMMON WIRE TO NEXT VALVE(S)
5. PVC LATERAL
6. PVC MALE ADAPTER
7. SCH. 80 PVC UNION (THREADED)
8. WATERPROOF CONNECTORS
9. (4) SCH. 80 PVC NIPPLE/ RISER (SIZE & LENGTH VARY)
10. CONTROL VALVE
11. SCH. 80 PVC BALL VALVE
12. LOCKING VALVE BOX
13. FINISH GRADE
14. PVC ELBOW (TxT)
15. 3/4" GRAVEL SUMP - 4" DEPTH
16. PVC TEE (SxSxT)

NOTE:
1. INSTAL CONTROL VALVE PER MANUFACTURER'S RECOMMENDATIONS.

8 CONTROL VALVE

SCALE: NTS

CHECKED BY: CS/KS
DRAWN BY: HV

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#165
FORT COLLINS, CO 80524
P 970.409.3414
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KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

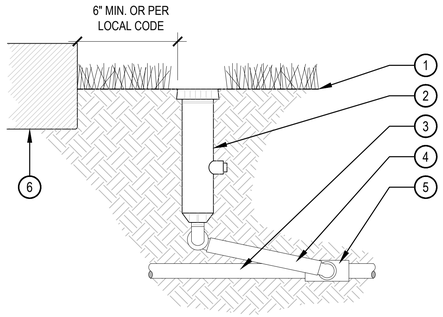
OWNER:
CITY OF FORT LUPTON

203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
IRRIGATION DETAILS

LI-501

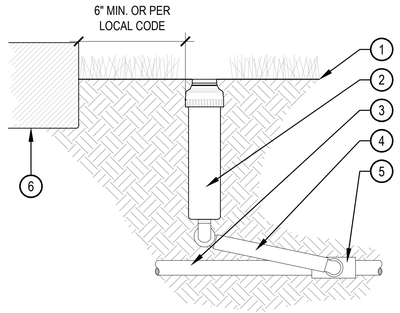


1. FINISH GRADE
2. POP-UP SPRAY HEAD PER SCHEDULE
3. PVC LATERAL PIPE
4. SWING JOINT ASSEMBLY
5. PVC SCH. 40 TEE OR ELL (S x T)
6. WALLS, WALKS, COURTS, CURB, ETC.

NOTE:
1. AFTER FLUSHING HEADS, REGRADE AND COMPACT AS NEEDED TO RETURN TO FINISH GRADE.
2. SPRINKLERS SHALL BE MIN. 6" FROM ANY WALLS, WALKS, COURTS, AND 12" FROM TURF EDGE.
3. ADJUST ALL SPRINKLERS HEADS SO THAT NO OVERSPRAY OCCURS ON ANY WALLS, WALKS, COURTS, ETC.
4. ALL THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.
5. COMPACT SOIL AROUND HEAD TO THE SAME DENSITY AS ADJACENT UNDISTURBED SUBGRADE.

1 POP-UP SPRAY

SCALE: NTS

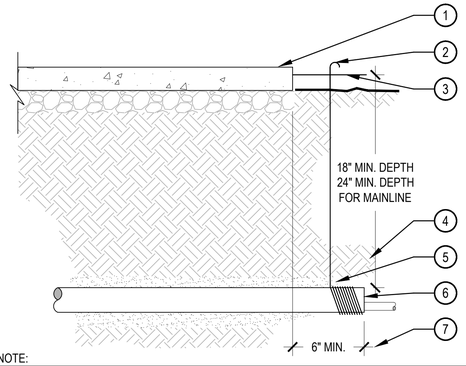


1. FINISH GRADE
2. ROTOR - SIZE PER PLAN
3. PVC LATERAL PIPE
4. SWING JOINT ASSEMBLY
5. PVC SCH. 40 TEE OR ELL (S x T)
6. WALLS, WALKS, COURTS, CURB, ETC.

NOTE:
1. SET TOP OF HEAD FLUSH WITH FINISH GRADE.
2. ADJUSTABLE ARC NOZZLES SHALL BE USED ON CURVED OR NON-STANDARD ANGLED EDGES.
3. ROTORS SHALL BE INSTALLED 6" MININUM FROM ANY WALLS, WALKS, COURTS, ETC. PER LOCAL CODES
4. ADJUST ALL ROTOR HEADS SO THAT NO OVERSPRAY OCCURS ON ANY WALLS, WALKS, COURTS, ETC.
5. ALL THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.

2 POP-UP ROTOR

SCALE: NTS

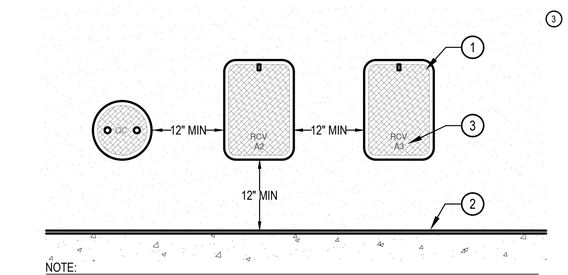


1. PAVING
2. WRAP 12 GAUGE GALVANIZED WIRE AROUND EACH END OF SLEEVE (10 WRAPS MIN.) AND EXTEND TO SURFACE AS A LOCATING DEVICE
3. FINISH GRADE / TOP OF DG
4. COMPACT SOIL AROUND SLEEVE TO SAME DENSITY AS ADJACENT UNDISTURBED SOIL
5. WASHED AND GRADED MORTAR SAND BACKFILL IN ROCKY SOIL CONDITIONS
6. PVC SLEEVE PER SCHEDULE, TWICE DIAMETER OF THE SUM OF THE PIPES/ WIRES
7. EXTEND SLEEVES 6" BEYOND EDGES OF PAVING

NOTE:
1. ALL SLEEVES SHALL BE INSPECTED PRIOR TO BACKFILLING.
2. CAP SLEEVES UNTIL USE.
3. MULTIPLE SLEEVES REQUIRE 4" HORIZONTAL SEPARATION WITHIN SAME SLEEVE TRENCH.
4. IRRIGATION PIPE AND WIRE SHALL NOT SHARE THE SAME SLEEVE.
5. MARK / STAMP - 'X' AND/OR INSTALL PLACARD AT BACK OF CURB.

3 PIPE SLEEVE

SCALE: NTS

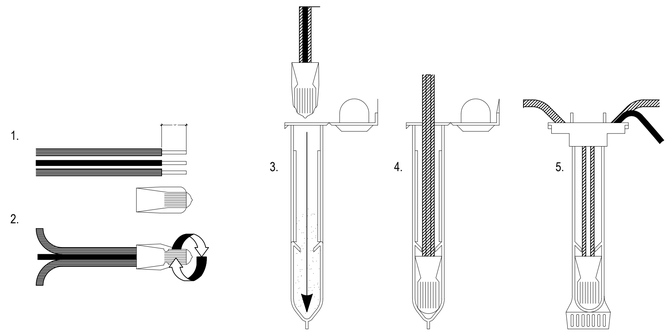


NOTE:
1. INSTALL ONLY ONE RCV TO VALVE BOX. LOCATE AT LEAST 12-INCHES FROM AND ALIGN WITH NEARBY WALLS OR EDGES OF PAVED AREAS. GROUP RCV ASSEMBLIES TOGETHER WHERE PRACTICAL.
2. GROUP RCV ASSEMBLIES TOGETHER WHERE PRACTICAL, BUT AVOID GROUPING MORE THAN THREE (3) STANDARD VALVE BOXES TOGETHER IN A SERIES.
3. ARRANGE GROUPED VALVE BOXES IN RECTANGULAR PATTERNS.

1. VALVE BOX: ALIGN EVENLY AND SPACE EVENLY FROM SIDEWALK, STRUCTURE, WALL, OR CURB
2. SIDEWALK OR PAVING
3. VALVE BOX LID BRANDED WITH CONTROLLER & STATION NUMBER

4 VALVE BOX PLACEMENT

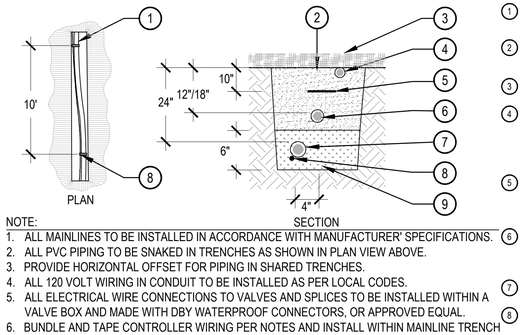
SCALE: NTS



NOTE:
1. STRIP ENDS OF WIRE - 1/2"
2. SECURE WIRES INTO WIRE NUT
3. INSERT WIRE NUT INTO CAPSULE
4. PUSH WIRE INTO BOTTOM OF CAPSULE
5. CLOSE COVER OF CAPSULE, SEPARATING WIRES INTO CHANNELS
6. VISUALLY CHECK THAT CONNECTOR IS BELOW LOCKING "FINGERS"

5 DIRECT BURY WIRE SPLICE

SCALE: NTS



NOTE:
1. ALL MAINLINES TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER' SPECIFICATIONS.
2. ALL PVC PIPING TO BE SNAKED IN TRENCHES AS SHOWN IN PLAN VIEW ABOVE.
3. PROVIDE HORIZONTAL OFFSET FOR PIPING IN SHARED TRENCHES.
4. ALL 120 VOLT WIRING IN CONDUIT TO BE INSTALLED AS PER LOCAL CODES.
5. ALL ELECTRICAL WIRE CONNECTIONS TO VALVES AND SPLICES TO BE INSTALLED WITHIN A VALVE BOX AND MADE WITH DBY WATERPROOF CONNECTORS, OR APPROVED EQUAL.
6. BUNDLE AND TAPE CONTROLLER WIRING PER NOTES AND INSTALL WITHIN MAINLINE TRENCH WHEREVER POSSIBLE.
7. CONTROLLER WIRE TO BE BURIED AT 18" MIN DEPTH IF NOT LOCATED WITH MAINLINE.
8. MANILINE BEDDING MATERIAL SHALL BE 1/4" MINUS SAND, AND SHALL BE 3" BELOW PIPE OR WIRE AND 3" ABOVE MAINLINE.
9. BEDDING IS NOT REQUIRED IN POLYETHYLENE TUBING TRENCHES OR SHARED TRENCHES.
10. EXCAVATED COVER MATERIAL SHALL BE FREE FROM DEBRIS AND ROCKS 1/2" OR GREATER.

1. SNAKE PVC OR POLYETHYLENE PIPE IN TRENCH
2. EXCAVATED COVER MATERIAL (SEE NOTES)
3. FINISH GRADE/TOP OF MULCH
4. POLYETHYLENE DRIP LATERAL (INSTALL JUST BELOW ROUGH GRADE TO PROVIDE UV COVER PRIOR TO MULCH LAYER)
5. MAINLINE MARKING TAPE (PURPLE MARKING TAPE IF RECLAIMED)
6. IRRIGATION SPRAY LATERAL PIPE 12" DEPTH FOR SPRAY LATERALS 18" FOR ROTOR LATERALS
7. IRRIGATION MAINLINE PIPE
8. VALVE WIRING. BUNDLE AND TAPE PER IRRIGATION NOTES
9. BEDDING MATERIAL (SEE NOTES)

6 PIPE TRENCH

SCALE: NTS

CHECKED BY: CS/KS
DRAWN BY: HV

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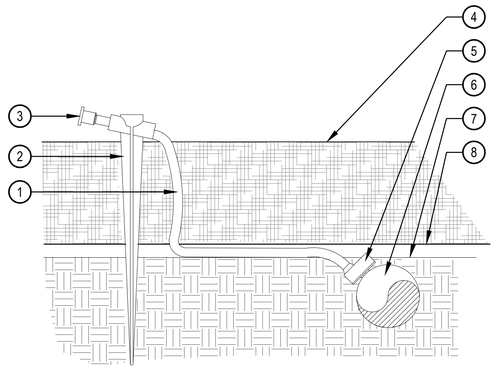
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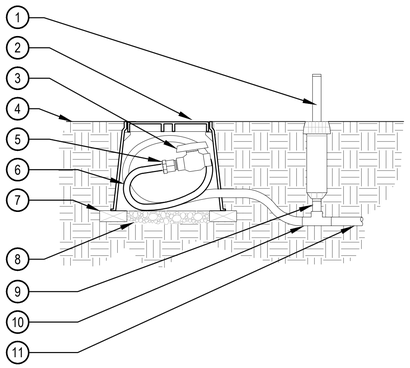
LI-502



1. 1/4" DISTRIBUTION TUBING. RUN TUBING UNDER WEED BARRIER FABRIC TO PLANT. LENGTH NOT TO EXCEED 8'
2. UNIVERSAL 1/4" STAKE
3. DIFFUSER CAP
4. TOP OF MULCH
5. PRESSURE COMPENSATING EMITTER PER EMITTER SCHEDULE. INSTALL EMITTER AT 45° TO 60° ANGLE
6. 3/4" POLYETHYLENE TUBING SET WITH TOP OF TUBING FLUSH WITH FINISH GRADE OF SOIL
7. FINISH GRADE OF SOIL
8. WEED BARRIER FABRIC

1 SINGLE OUTLET EMITTER

SCALE: NTS

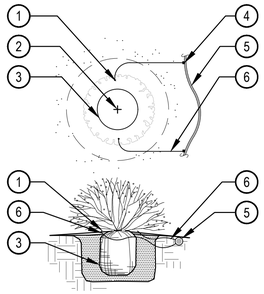


1. 12" MIN. POP-UP HEAD WITH ENCLOSED NOZZLE AND SWING PIPE. (ZONE OPERATIONAL INDICATOR)
2. LOCKING ROUND BOX & COVER PER SCHEDULE. TOP OF BOX TO BE FLUSH WITH FINISH GRADE
3. 3/4" SCH. 40 PVC BALL VALVE
4. FINISH GRADE
5. 3/4" MxI MALE ADAPTER W/ CLAMPS
6. 3/4" POLYETHYLENE DRIP TUBING - 24" COIL IN BOX FOR MAINTENANCE
7. BRICK (2 REQUIRED MIN.)
8. 3/4" GRAVEL SUMP, 4" DEPTH
9. 1/2" SCH. 80 NIPPLE (LENGTH AS NEEDED)
10. 3/4"x3/4"x1/2" IxIxF INSERT TEE
11. POLY LATERAL

NOTE:
1. COMPACT SOIL AROUND VALVE BOX TO THE SAME DENSITY AS ADJACENT UNDISTURBED SUBGRADE.
2. INSTALL OPERATIONAL INDICATOR WITHIN 24" OF FLUSH VALVE.
3. ALL THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.

4 DRIP FLUSH VALVE WITH OPERATIONAL INDICATOR

SCALE: NTS

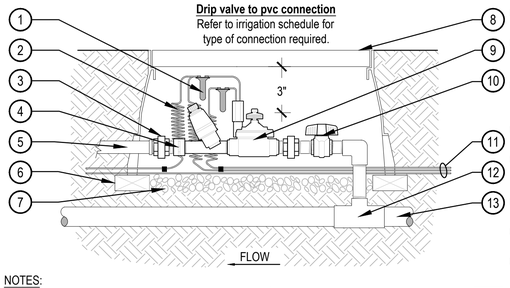


1. DIFFUSER CAP W/ DRIP STAKE
2. PLANT CENTER
3. PLANT ROOTBALL
4. SINGLE OUTLET EMITTER
5. 3/4" POLYETHYLENE DRIP TUBING
6. 1/4" DISTRIBUTION TUBING (LENGTH NOT TO EXCEED 8')

NOTE:
1. EMITTERS SHALL BE EQUALLY SPACED AROUND ROOTBALL.
2. FLUSH ALL LINES THOROUGHLY PRIOR TO EMITTER INSTALLATION.
2. IF PLANTING ON A 4:1 SLOPE OR STEEPER, INSTALL EMITTERS ON THE UPHILL SIDE OF PLANT.
3. EMITTERS SHALL BE SELF-FLUSHING PRESSURE COMPENSATING-TYPE UNLESS NOTED OTHERWISE.
4. DRIP VALVE ZONES (HYDROZONES) ARE DESIGNED TO ACCOUNT FOR DIFFERENCES IN PLANT REQUIREMENTS AND SUN EXPOSURE.
5. CONTRACTOR SHALL ENSURE HYDROZONES ARE VALVED SEPARATELY AS SHOWN ON PLAN.

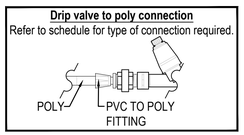
2 SINGLE OUTLET EMITTER PLACEMENT

SCALE: NTS



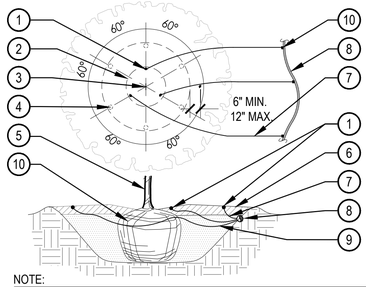
1. WATERPROOF CONNECTORS
2. 30" COIL OF WIRE MINIMUM. PLACED IN BOX.
3. (2) SCH. 80 PVC UNION (THREADED)
4. PVC COUPLING (FPTxFPT)
5. LATERAL TO DRIP, MATERIAL PER SCHEDULE
6. BRICK SUPPORT (4 MIN)
7. 4" DEPTH GRAVEL SUMP
8. VALVE BOX PER IRRIGATION SCHEDULE, FLUSH TOP OF BOX W/ GRADE
9. CONTROL VALVE
10. SCH. 80 PVC BALL VALVE
11. CONTROL AND COMMON WIRES FROM CONTROLLER
12. SCH. 80 PVC TEE (SxSxT)
13. PVC MAINLINE

NOTES:
1. BUNDLE & TAPE WIRE EVERY 10 FT. SEAL WIRE ENDS WITH WATERPROOF SPLICING MATERIAL.
2. 30" MINIMUM LENGTH OF CONTROL WIRE COILED AND PLACED IN BOX AT WATER PROOF CONNECTION TO SOLENOID.
3. INSTALL DRIP CONTROL ZONE KIT PER MANUFACTURER'S SPECIFICATIONS FOR WIRING



5 DRIP CONTROL ZONE KIT

SCALE: NTS



1. EMISSION POINT. DIFFUSER CAP W/ DRIP STAKE (TYP.)
2. PLANT ROOT BALL (TYP.)
3. PLANT CENTER (TYP.)
4. SECOND EMISSION POINTS SEE NOTE 3 BELOW
5. TREE TRUNK
6. MULCH LAYER
7. 1/4" DISTRIBUTION TUBING (LENGTH NOT TO EXCEED 8')
8. 3/4" POLYETHYLENE DRIP TUBING
9. SINGLE OUTLET EMITTER
10. ROOTBALL

NOTE:
1. MAXIMUM LENGTH OF ONE DISTRIBUTION TUBE SHALL BE 8'.
2. ALL EMISSION POINTS SHALL BE LOCATED ON UPHILL SIDE OF PLANT MATERIAL. ONE EMISSION POINT SHALL BE DIRECTLY TO PLANT BALL AS INDICATED. ADDITIONAL EMISSION POINTS SHALL BE WITHIN PLANT PIT PERIMETER AS DIRECTED IN THE EMITTER SCHEDULE.
3. SECOND EMISSION POINTS (IF NEEDED) AS PER THE EMITTER SCHEDULE FOR TREES WITH 3" CALIPER OR GREATER OR CONIFEROUS TREES 10' OR GREATER IN HEIGHT.
4. THIS IS A WATERING GUIDE ONLY. SITE, SOIL AND PLANT CONDITIONS VARY GREATLY. CONTRACTOR MUST OBSERVE THE PLANT MATERIAL AND MAKE ADJUSTMENTS AS NECESSARY FOR PROPER PLANT WATER REQUIREMENT.

3 TREE EMITTER PLACEMENT

SCALE: NTS

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SHEET TITLE:
IRRIGATION DETAILS

LI-503

STRUCTURAL NOTES:
ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2024 INTERNATIONAL BUILDING CODE.
THIS DESIGN IS BASED ON A RISK CATEGORY II STRUCTURE AND THE 2024 INTERNATIONAL BUILDING CODE.

DESIGN LOADS:
CONCRETE DEAD LOAD = 145 PCF
GROUND SNOW - $p_{g(ULTIMATE)}$ = 43 PSF
GROUND SNOW - $p_{g(ASD)}$ = 30 PSF
WIND SPEED = 115 MPH (ULTIMATE), EXPOSURE C
MINIMUM FROST DEPTH = 30 INCHES

SOILS: KUMAR & ASSOCIATES, INC. REPORT 26-3-110, DATED MARCH 16, 2026
MAXIMUM ASSUMED ALLOWABLE BEARING PRESSURE: 3500 PSF, MIN. DEAD LOAD BEARING PRESSURE: 0 PSF.
ALL BEARING SOILS SHALL BE OBSERVED & APPROVED BY AN ENGINEER REGISTERED IN THE STATE OF COLORADO.
FOUNDATIONS SHOULD BE FORMED TO THE PROPER SIZE AND LAYOUT AS SHOWN ON PLANS.
ALL FOUNDATION ELEMENTS SHOULD BE OBSERVED PRIOR TO PLACEMENT OF CONCRETE AS REQUIRED BY THE GOVERNING AGENCY.

MATERIALS:
CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI (FOUNDATION ELEMENTS), 4500 PSI (SLABS). PROVIDE 5-8% AIR ENTRAINMENT (EXTERIOR). CEMENT TO BE TYPE I/II. MAXIMUM WATER-TO-CEMENT RATIO SHALL NOT EXCEED 0.45.
CONCRETE REINFORCEMENT SHALL BE A615, GRADE 60. ALL REINFORCING SHALL BE PLACED IN ACCORDANCE WITH ACI 318 RECOMMENDATIONS INCLUDING SPACING, CONCRETE COVER AND MINIMUM LAP SPLICES.
SLABS ON GRADE SHALL BE PLACED ON APPROVED MATERIAL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. PROVIDE SLAB CONTROL JOINTS IN ACCORDANCE WITH ACI RECOMMENDATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INFORM THE OWNER OF THE POTENTIAL FOR DAMAGE DUE TO SLAB MOVEMENTS AND THE PRECAUTIONS TO BE TAKEN TO MINIMIZE THE POTENTIAL DAMAGE WHEN MOVEMENT OCCURS. IF THE OWNER CHOOSES SLAB ON GRADE CONSTRUCTION, THE OWNER SHALL ASSUME ALL RISK AND MAINTENANCE ASSOCIATED WITH SLAB ON GRADE CONSTRUCTION.

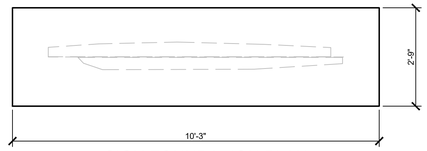
NOTES:
THE STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT, ELECTRICAL, MECHANICAL, PLUMBING AND SITE DRAWINGS. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS SHOWN ON THIS PLAN PRIOR TO CONCRETE PLACEMENT. CONFLICTS IN DIMENSION, INTERFERENCE OR OMISSIONS DISCOVERED IN THE COURSE OF WORK SHALL BE DIRECTED TO THE LANDSCAPE ARCHITECT PRIOR TO CONTINUATION OF CONSTRUCTION. THE EXISTING CONDITIONS DEPICTED ON THESE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
THE STRUCTURAL DRAWINGS REPRESENT THE FINAL STRUCTURE. THE DRAWINGS DO NOT INDICATE THE CONTRACTORS MEANS, METHODS, TECHNIQUES, SEQUENCES OF CONSTRUCTION AND JOB SAFETY. THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO FOLLOW PLANS, SPECIFICATIONS, AND/OR ENGINEERING RECOMMENDATIONS, NOR IS THE ENGINEER OF RECORD RESPONSIBLE FOR ECONOMIC LOSS AND/OR DELAYS ON THE CONTRACTOR OR SUBCONTRACTORS.
ALL CONSTRUCTION SHALL BE ADEQUATELY BRACED TO PREVENT DISTORTION AND DAMAGE DUE TO CONSTRUCTION LOADS AND NATURAL FORCES. THE CONTRACTOR SHALL MAKE ALLOWANCES FOR DIFFERENCE BETWEEN TEMPERATURE DURING ERECTION AND MEAN TEMPERATURE WHEN STRUCTURE IS COMPLETED AND IN SERVICE.

SPECIAL STRUCTURAL INSPECTIONS AND TESTING

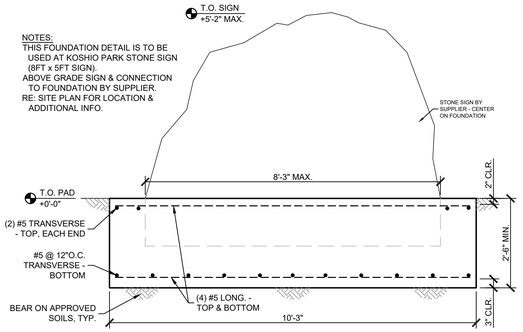
A. SPECIAL INSPECTION AND TESTING SHALL BE PERFORMED AS REQUIRED BY THE LOCAL JURISDICTION, CHAPTER 17 OF THE BUILDING CODE AND THE CONSTRUCTION DOCUMENTS.
B. COORDINATE AND SCHEDULE INSPECTION AND TESTING PRIOR TO THE START OF WORK REQUIRING INSPECTION AND TESTING WHILE PROVIDING SPECIAL INSPECTION REASONABLE NOTICE.
C. ALL DEFICIENCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.
D. INSPECTIONS PERFORMED BY THE LOCAL JURISDICTION DO NOT REPLACE INSPECTION OR TESTING REQUIRED BY THE OWNERS TESTING AGENCY.
E. SPECIAL INSPECTION AND TESTING IS REQUIRED FOR THE ITEMS SHOWN IN THE SPECIAL INSPECTIONS AND TESTING TABLE.
F. PERIODIC INSPECTIONS IS DEFINED AS PART-TIME OR INTERMITTENT INSPECTION OF THE WORK. IT IS THE SPECIAL INSPECTOR'S RESPONSIBILITY TO DETERMINE AND COORDINATE THE FREQUENCY AND DURATION OF THE INSPECTION RELATIVE TO THE CONTRACTOR'S SCHEDULE AND SEQUENCING OF THE WORK IN ORDER TO THE MEET THE INSPECTION AND REPORTING REQUIREMENTS.
G. CONTINUOUS INSPECTIONS ARE TO BE PERFORMED ON EACH INSTANCE OF THE TASK TO COMPLETED.
H. THE OWNER'S TESTING AGENCY SHALL PERFORM SPECIAL INSPECTIONS AND TESTING REQUIRED BY THE STRUCTURAL DOCUMENTS, BUILDING CODE AND LOCAL AUTHORITY. UPON COMPLETION OF WORK, THE TESTING AGENCY SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

SPECIAL INSPECTIONS AND TESTING

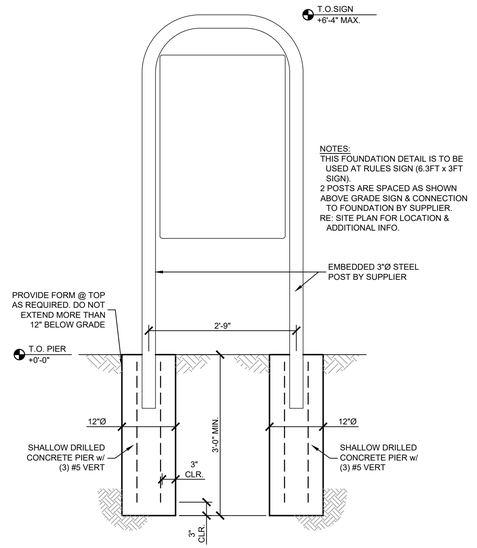
CATEGORY/ MATERIAL	VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
SOILS AND FOUNDATIONS	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		X
	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X
	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		X
	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X	
	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY SITE HAS BEEN PREPARED PROPERLY		X
CAST-IN-PLACE CONCRETE	INSPECT REINFORCEMENT AND VERIFY PLACEMENT		X
	REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706 B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" C. INSPECT ALL OTHER WELDS		X X X
	INSPECT ANCHORS, MECHANICAL COUPLERS AND EMBEDS CAST IN CONCRETE		X
	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE: A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE	X	X
	VERIFY USE OF REQUIRED MIX DESIGN		X
	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	
	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X
	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		X



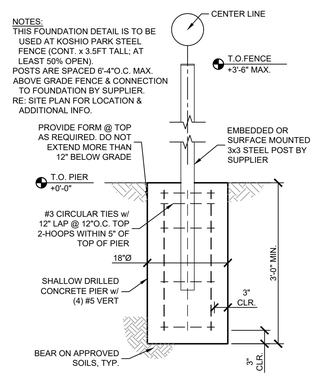
SIGN FOUNDATION PLAN



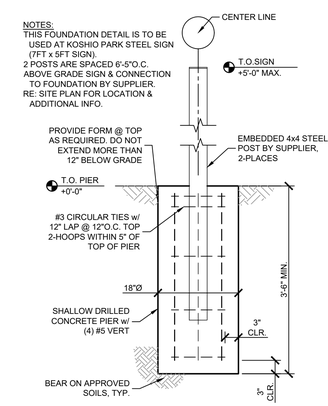
4 S101 PARK SIGN - EAST FOUNDATION DETAIL
1/2" = 1'-0"



3 S101 RULES & REGS SIGN FOUNDATION DETAIL
3/4" = 1'-0"



2 S101 FENCE FOUNDATION DETAIL
3/4" = 1'-0"



1 S101 PARK SIGN - NORTH FOUNDATION DETAIL
3/4" = 1'-0"

CHECKED BY: JRM
DRAWN BY: JRM

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McBRIDE
STRUCTURAL DESIGN
970-420-5316
mcbridestructural.com
john@mcbridestructural.com

NOT FOR CONSTRUCTION

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
STRUCTURAL NOTES & DETAILS

S-101

FEEDER SCHEDULE

ALL WIRE SHALL BE COPPER UNLESS NOTED OTHERWISE

Feeder Key	# of Runs	Wire Size	Ground	Conduit	Notes
20A,3G	1 Set	3#12	+1#12G	3/4"C	1
20A,4G	1 Set	4#12	+1#12G	3/4"C	1
30A,3G	1 Set	3#10	+1#10G	3/4"C	1
30A,4G	1 Set	4#10	+1#10G	3/4"C	1
40A,3G	1 Set	3#8	+1#8G	3/4"C	1
40A,4G	1 Set	4#8	+1#8G	3/4"C	1
50A,3G	1 Set	3#6	+1#8G	1"C	
50A,4G	1 Set	4#6	+1#8G	1"C	
60A,3G	1 Set	3#4	+1#8G	1 1/4"C	
60A,4G	1 Set	4#4	+1#8G	1 1/4"C	
70A,3G	1 Set	3#4	+1#8G	1 1/4"C	
70A,4G	1 Set	4#4	+1#8G	1 1/4"C	
80A,3G	1 Set	3#3	+1#8G	1 1/4"C	
80A,4G	1 Set	4#3	+1#8G	1 1/4"C	
100A,3G	1 Set	3#1	+1#8G	1 1/2"C	
100A,4G	1 Set	4#1	+1#8G	1 1/2"C	
125A,3G	1 Set	3#1	+1#6G	1 1/2"C	
125A,4G	1 Set	4#1	+1#6G	1 1/2"C	
150A,3G	1 Set	3#1/0	+1#6G	2"C	
150A,4G	1 Set	4#1/0	+1#6G	2"C	

If "G" is not shown on the ONE-LINE DIAGRAM Feeder callout then ground conductor is not required with feeder

NOTES:

1 Minimum 1" Conduit for all underground installations

Short Circuit Summary

Point-to-Point * Feeder Summary

Key	Description	Phase	Length	Isc Avail	# Runs	C	V(L-L)	Isc @ Device
	@United Pwr Transformer (50kVA)							13889
1	@ Existing Pedestal P1	1	175	13889	1	7493	240	3751
2	@ New RR Panel P1A	1	185	3751	1	4811	240	1703
	@United Pwr Pole Trans (25kVA)							6944
3	@ Existing Shelter Panel	1	310	6944	1	7493	240	2046
4	@ Food Truck Pedestal FTP	1	215	2046	1	2430	240	816

Name: **Existing Shelter Panel S1** Mnt Method: **Surface (NEMA 3R)**
Volt: **240/120** Bus Rating: **100**
Ph: **1** Main Breaker **100**
Wire: **3** AIC Rating: **10,000**
Mfr: **Square D**

Code		Description	Load VA	Bkr	P	Ph A	Ph B	P	Bkr	Load VA	Description	Code	
1	1	Existing Lts	150	20	1	*		1	20	540	Existing Recepts	2	2
3	1	NE Shelter Lts *	80	20	1		*	2	50	7800	Food Truck Pedestal *	6	4
5	2	NE Shelter Recpts *	1000	20	1	*		/	/	/	----	/	6
7	2	NE Shelter Recpts *	1000	20	1		*		-		Space Only		8
9		Space Only		-		*			-		Space Only		10
11		Space Only		-			*		-		Space Only		12
13		Space Only		-		*			-		Space Only		14
15		Space Only		-			*		-		Space Only		16

Shading indicates existing circuit / breaker - No Change >>>> Unshaded indicates new circuit / breaker

Code	Description	Load VA	Dem
1	Lighting	230	125%
2	Rec up to 10,000	2540	100%
	Rec over 10,000		50%
3	Motor		100%
	Largest Motor		125%
4	Heater		100%
5	Kitchen		100%
6	Miscellaneous	7800	100%
7	Sub Panel		100%

Load Summary

Per Phase		
Ph A	5590	VA
Ph B	4980	VA
Connected	10570	VA
Code Demand	10628	VA
Code	44.28	Amps

* Provide new overcurrent protection device as indicated.

Name: **Existing Pedestal P1 (Modified)** Mnt Method: **Milbank Pedestal (NEMA 3R)**
Volt: **240/120** Bus Rating: **100**
Ph: **1** Main Breaker **100**
Wire: **3** AIC Rating: **10,000**

Code		Description	Load VA	Bkr	P	Ph A	Ph B	P	Bkr	Load VA	Description	Code	
1		Main Breaker		100	2	*		2	60	890	RR Bldg Subpanel *	7	2
3				/			*		/		--- "P1A"		4
5	2	Landscaoe	1000	20	1	*		1	20	200	Lts Pedestrian	1	6
7	2	Landscape	1000	20	1		*	1	20	50	Ltg North signage	1	8
9	2	Landscape	1000	20	1	*		1	20	100	Pole Camera Pow er	6	10
11		Space Only		-			*	1	20	50	Ltg East signage *	1	12
13		Space Only		-		*			-		Space Only		14
15		Space Only		-			*		-		Space Only		16

Shading indicates existing circuit / breaker - No Change >>>> Unshaded indicates new circuit / breaker

Code	Description	Load VA	Dem
1	Lighting	300	125%
2	Rec up to 10,000	3000	100%
	Rec over 10,000		50%
3	Motor		100%
	Largest Motor		125%
4	Heater		100%
5	Kitchen		100%
6	Miscellaneous	100	100%
7	Sub Panel	890	100%

Load Summary

Per Phase		
Ph A	2745	VA
Ph B	1545	VA
Connected	4290	VA
Code Demand	4365	VA
Code	18.19	Amps

* Provide new overcurrent protection device as indicated

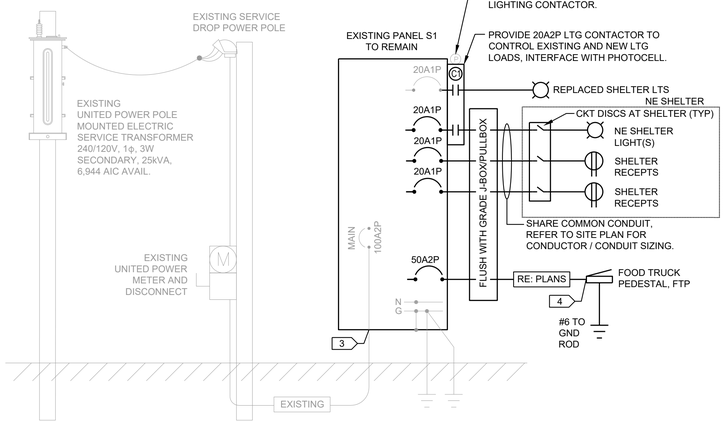
Name: **P1A (New)** Mnt Method: **Surface (NEMA 3R)**
Volt: **240/120** Bus Rating: **100**
Ph: **1** Main Breaker **60**
Wire: **3** AIC Rating: **10,000**

Code		Description	Load VA	Bkr	P	Ph A	Ph B	P	Bkr	Load VA	Description	Code	
1	1	Lts RR Bldg	120	20	1	*		1	20	200	Irrigation Controller	6	2
3	2	Rec RR Bldg	540	20	1		*	1	20		Spare		4
5		Spare		20	1	*		1	20		Spare		6
7		Spare		20	1		*	1	20		Space Only		8
9		Space Only		-		*			-		Space Only		10
11		Space Only		-			*		-		Space Only		12
13		Space Only		-		*			-		Space Only		14
15		Space Only		-			*		-		Space Only		16

Code	Description	Load VA	Dem
1	Lighting	120	125%
2	Rec up to 10,000	540	100%
	Rec over 10,000		50%
3	Motor		100%
	Largest Motor		125%
4	Heater		100%
5	Kitchen		100%
6	Miscellaneous	200	100%
7	Sub Panel		100%

Load Summary

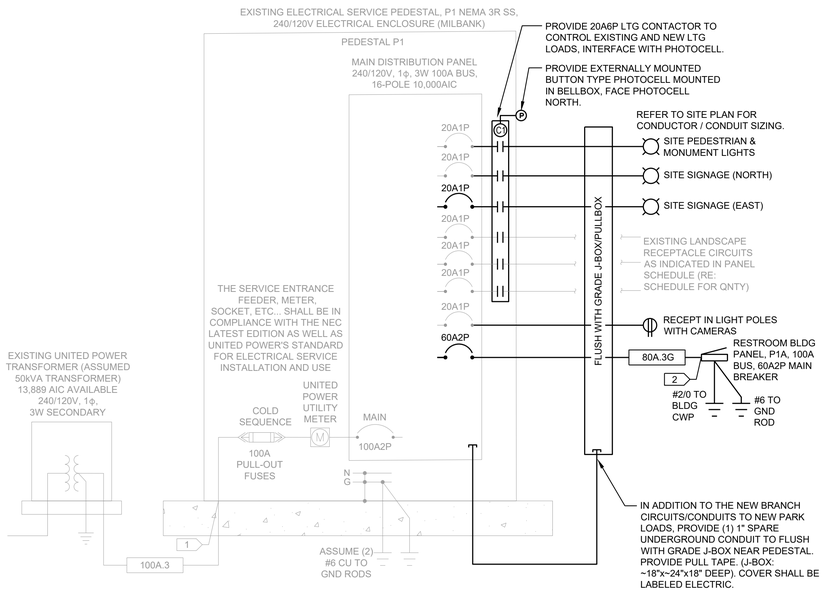
Per Phase		
Ph A	320	VA
Ph B	540	VA
Connected	860	VA
Code Demand	890	VA
Code	3.71	Amps



EXISTING HEXAGON SHELTER ELECTRICAL ONE-LINE DIAGRAM

SCALE: NTS

2 E000



EXISTING ELECTRICAL ONE-LINE DIAGRAM, PEDESTAL P1

SCALE: NTS

1 E000

DEMOLITION GENERAL NOTES

AS-BUILT CONDITIONS HAVE BEEN DETERMINED FROM RECORD DRAWINGS (IF THEY EXIST), FIELD INVESTIGATIONS (ACCESSIBLE AREAS AND EQUIPMENT), AND DISCUSSIONS WITH MAINTENANCE PERSONNEL (WHERE THEY ARE AVAILABLE). THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR INVESTIGATING AS-BUILT CONDITIONS PRIOR TO ANY DEMOLITION AND/OR MODIFICATIONS. SHOULD THERE BE ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THE DESIGN INTENT THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT/ENGINEER.

ALL ELECTRICAL DEVICES AND EQUIPMENT TO BE DEMOLISHED SHALL BE REMOVED BY THE APPROPRIATE SYSTEM CONTRACTOR THAT THE EQUIPMENT FALL UNDER. ELECTRICAL DEVICES REMOVED BY EC, FIRE ALARM DEVICES REMOVED BY FAC, SECURE ACCESS AND INTRUSION DETECTION REMOVED BY SC. ANY DEVICES REMOVED AND INDICATED TO BE ADDED OR RELOCATED TO A NEW LOCATION IN THE VICINITY, THE ASSOCIATED WIRING/CABLING SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION IF IT IS DETERMINED THE WIRING/CABLING IS SUFFICIENTLY LONG ENOUGH TO FEED THE DEVICE IN THE NEW LOCATION.

COORDINATE ALL DEMOLITION WITH GENERAL DEMOLITION. DISCONNECT ALL ELECTRICAL PRIOR TO DEMOLITION BY OTHER TRADES. REFER TO THE LANDSCAPE ARCHITECTURAL AND CIVIL PLANS FOR MORE INFORMATION.

CONTRACTOR SHALL COORDINATE WITH THE OWNER OR THEIR AUTHORIZED REPRESENTATIVE, TO DETERMINE ALL EXISTING EQUIPMENT AND DEVICES TO BE RETAINED BY THE OWNER. CONTRACTOR SHALL CAREFULLY REMOVE ALL EQUIPMENT AND DEVICES TO BE RETAINED, PRESERVE AND STORE THE EQUIPMENT IN A LOCATION DESIGNATED BY THE OWNER. ALL OTHER DEVICES, EQUIPMENT, AND DEBRIS SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROPRIATE OFFSITE LOCATION.

CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL, PRESERVATION, STORAGE, AND PROTECTION OF ALL EQUIPMENT AND DEVICES DESIGNATED TO BE REMOVED AND RE-INSTALLED.

ALL ABANDONED DEVICES, EQUIPMENT, CONDUIT, WIRE, CABLE, ETC. (WHETHER ABANDONED BY THIS PROJECT OR PREVIOUSLY ABANDONED) SHALL BE REMOVED.

POWER SYSTEMS: ALL FEEDERS AND BRANCH CIRCUITS CONDUIT AND CONDUCTORS SHALL BE REMOVED BACK TO THE SOURCE OR NEAREST REMAINING DEVICE AS APPLICABLE. PROVIDE A FINISHED BLANK COVERPLATE ON ALL BOXES ABANDONED IN WALLS.

EXISTING ELECTRICAL EQUIPMENT, DEVICES, AND WIRING TO REMAIN WHERE INDICATED. RESTORE THE FUNCTION OF ANY REMAINING EQUIPMENT THAT IS AFFECTED BY MODIFICATIONS TO THE ELECTRICAL SYSTEM IN OTHER AREAS AS SOON AS POSSIBLE AND AT NO ADDITIONAL COST TO THE OWNER. ALL REPAIRS SHALL BE COORDINATED WITH THE ARCHITECT/ENGINEER. CONTRACTOR SHALL MAKE REASONABLE EFFORT TO LOCATE ALL AFFECTED DEVICES AND RESTORE FUNCTIONALITY.

EXISTING DEVICES INDICATED TO BE RECONNECTED TO NEW CIRCUITS AND/OR PANELS SHALL USE NEW CIRCUITS INDICATED. THE EXISTING BRANCH CIRCUIT SHALL BE INTERCEPTED NEAR THE FIRST REMAINING DEVICE AND NEW CONDUIT/WIRE INSTALLED FROM THAT POINT BACK TO THE NEW DESTINATION (I.E. PANEL).

PROJECT GENERAL NOTES

REFER TO THE LANDSCAPE ARCHITECTURAL PLANS FOR ADDITIONAL INSTALLATION REQUIREMENTS.

THE ELECTRICAL INSTALLATION SHALL BE IN COMPLIANCE WITH THE FOLLOWING: NATIONAL ELECTRICAL CODE (NEC) LOCAL ENFORCED EDITION.

CIRCUITING ROUTING SHOWN IS DIAGRAMMATIC. CIRCUIT DESIGNATIONS ARE INDICATED AND SHALL BE STRICTLY FOLLOWED. ALL CIRCUITING SHALL BE COPPER CONDUCTORS IN CONDUIT (3/4" MINIMUM). LUMINAIRES MAY BE CONNECTED VIA MANUFACTURER PROVIDED FLEXIBLE CONDUIT/CONDUCTOR WHIPS. CONTRACTOR SHALL PROVIDE ALL WIRE, CONDUIT, JUNCTION/PULL BOXES, AND SUPPORTS ETC. FOR A COMPLETE ELECTRICAL SYSTEM.

ALL NEW (120V OR 277V SINGLE PHASE) BRANCH CIRCUIT WIRING SHALL ORIGINATE AT SINGLE POLE BREAKERS AND SHALL BE INSTALLED WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR. THE NEUTRAL CONDUCTOR SHALL HAVE A TRACER STRIPE (THE STRIPE COLOR SHALL MATCH THE COLOR OF THE PHASE CONDUCTOR).

ANY EXISTING MULTI-CIRCUIT BRANCH WIRING (120V OR 277V SINGLE PHASE CIRCUITS) INSTALLED IN A COMMON CONDUIT, WITH A COMMON NEUTRAL, SHALL ORIGINATE FROM A MULTI-POLE BREAKER OR SINGLE POLE BREAKERS WITH MULTI-POLE BREAKER HANDLE TIES. THE CONTRACTOR SHALL HAVE THE OPTION TO REWIRE THE BRANCH CIRCUITS WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR. THE NEUTRAL CONDUCTOR SHALL HAVE A TRACER STRIPE (THE STRIPE COLOR SHALL MATCH THE COLOR OF THE PHASE CONDUCTOR).

ALL DISTRIBUTION AND BRANCH CIRCUIT FEEDERS SHALL BE PROVIDED WITH AN INSULATED, GREEN GROUND WIRE.

ROUTE ALL CONDUIT/CIRCUITING IN FINISHED SPACES CONCEALED IN WALLS, ABOVE CEILINGS, OR BELOW FLOORS. ALL CONDUIT/CIRCUITING SHALL BE RUN PARALLEL TO BUILDING WALLS AND LINES. ANY SURFACE MOUNTED CONDUIT MOUNTED TO FINISHED SURFACES OR LOCATED IN FINISHED SPACES SHALL BE PAINTED TO MATCH THE SURFACE ON WHICH IT IS MOUNTED.

SURFACE MOUNTED CONDUIT IN FINISHED SPACES AND/OR SPACES NORMALLY OCCUPIED BY STUDENTS OR STAFF SHALL MOUNTED TIGHT AGAINST THE WALL WITH SINGLE OR DOUBLE HOLE STRAPS.

MOUNTING HEIGHTS ARE AS FOLLOWS UNLESS NOTED OTHERWISE OR A PREVIOUS BUILDING STANDARD HAS BEEN ESTABLISHED.

POWER RECEPTACLES	+18"
SWITCHES	AS INDICATED ON PLANS

ALL DIMENSIONS ARE TO THE CENTER OF THE DEVICE.

CONTRACTOR SHALL EXAMINE ALL EXISTING DEVICES THAT ARE INDICATED TO REMAIN OR BE RELOCATED (RECEPTS, SWITCHES, DIMMERS ETC.) AND REPLACE DAMAGED UNITS WITH NEW.

INSULATION COLOR: ALL INSULATED CONDUCTORS (SERVICE ENTRANCE, FEEDER, AND BRANCH CIRCUIT) SHALL HAVE FULL COLORED INSULATION, COLORS AS SPECIFIED IN SECTION 26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEMS, FOR THE ENTIRE LENGTH OF THE CONDUCTOR. NEUTRAL CONDUCTORS INSTALLED, IN COMPLIANCE WITH THE NEC-LATEST EDITION FOR EACH SINGLE POLE BREAKER, SHALL HAVE A TRACER STRIPE TO MATCH THE CORRESPONDING PHASE CONDUCTOR COLOR.

USE OF MC CABLE IS PROHIBITED EXCEPT FOR LUMINAIRE CONNECTION WHIPS (MAXIMUM OF 6FT ROUTED FROM A HOMERUN CONDUIT J-BOX TO AN INDIVIDUAL LUMINAIRE).

USE OF AC, NM, ENT, OR OTHER MANUFACTURED PRE-WIRED SYSTEMS CABLE IS PROHIBITED.

FOR STEEL CONDUIT LARGER THAN 1/2-INCH SIZE, PROVIDE STEEL INSULATED TYPE BUSHINGS, DESIGNED TO PREVENT ABRASION OF WIRES WITHOUT IMPAIRING THE CONTINUITY OF THE CONDUIT GROUNDING SYSTEM. GROUNDING BUSHINGS SHALL BE LOCKING TYPE AND SHALL BE PROVIDED WITH A FEED-THROUGH COMPRESSION LUG FOR SECURING THE GROUND CABLES. PROVIDE LISTED WATERPROOF FITTINGS FOR ALL CONDUIT IN WET LOCATIONS, SUCH AS EXPOSED TO WEATHER.

LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE PROVIDED IN SUFFICIENT LENGTHS FOR MAKEUP OF MOTORS, TRANSFORMERS, OR EQUIPMENT, AND/OR RACEWAY CONNECTIONS WHERE ISOLATION OF SOUND AND VIBRATION TRANSMISSION IS REQUIRED.

DEVICE COVERPLATES: PROVIDE IDENTIFICATION OF CIRCUITS AT ALL INDIVIDUAL WALL SWITCHES, RECEPTACLES, AND CONTROL DEVICE STATIONS. IDENTIFY CIRCUITS WITH PREPRINTED LABEL ON THE FRONT SIDE OF THE COVERPLATE AS WELL AS IDENTIFY CIRCUITS WITH PERMANENT INK MARKER ON THE BACKSIDE OF THE COVERPLATE.

ALL PANELS WITH CIRCUITS INDICATED TO BE MODIFIED IN THESE DOCUMENTS SHALL BE PROVIDED WITH AN UPDATED, TYPED, PANEL DIRECTORY. INCLUDE CONTRACTOR'S CONTACT INFORMATION AND CLOSE-OUT DATE OF THE PROJECT.

ELECTRICAL LEGEND

- J-BOX
- MOTOR
- CEILING RECEPTACLE
- DUPLEX RECEPTACLE
- FOUR-PLEX RECEPTACLE
- BLANK FACE GFCI PROTECTION DEVICE
- GFI 4-PLEX WITH ONE GFI DUPLEX AND ONE GFI PROTECTED STANDARD DUPLEX
- SPECIAL NEMA RECEPTACLE
- HEAVY DUTY DISCONNECT SWITCH
- MOTOR STARTER
- HEAVY DUTY STARTER-DISCONNECT
- TRANSFORMER
- SPD SURGE SUPPRESSION DEVICE
- METER
- STO THERMAL OVERLOAD SW
- BRANCH CIRCUIT PANEL
- SURFACE WALL LUMINAIRE
- SURFACE CEILING LUMINAIRE
- RECESSED DOWNLIGHT
- RECESSED WALL WASHER
- LUMINAIRE STRIP
- SURFACE OR WALL LUMINAIRE
- PARKING LOT POLE LIGHT
- PEDESTRIAN POLE LUMINAIRE
- FLOOD LUMINAIRE
- S SWITCH
- S_3 3-WAY SWITCH
- S_{OS} OCCUPANCY SENSOR SWITCH
- S_T TIMER SWITCH
- P PHOTOCELL
- OCCUPANCY SENSOR
- OCC. SEN. POWER PACK
- TIME CLOCK
- # XXX REVISION NUMBER
- # EQUIPMENT TAG
- # DRAWING NOTE
- # FLAG NOTE
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- GFI INDICATES GROUND FAULT CIRCUIT INTERRUPT DEVICE
- WP INDICATES WEATHERPROOF EQUIPMENT/DEVICE
- ~ BREAKLINE
- —OPE— OVERHEAD PRIMARY ELECTRIC
- —OSE— OVERHEAD SECONDARY ELECTRIC
- —UPE— UNDERGROUND PRIMARY ELECTRIC
- —USE— UNDERGROUND SECONDARY ELECTRIC
- —UBE— UNDERGROUND BRANCH ELECTRIC
- —OBE— OVERHEAD BRANCH ELECTRIC
- —UC— UNDERGROUND COMMUNICATION
- BOLD LINEWEIGHT AND/OR "N" INDICATES NEW DEVICE OR EQUIPMENT
- BOLD LINEWEIGHT AND/OR "R" INDICATES DEVICE OR EQUIPMENT TO BE REPLACED
- LIGHT LINEWEIGHT AND/OR "E" INDICATES EXISTING DEVICE TO REMAIN
- DASHED LINETYPE AND/OR "D" INDICATES DEVICE TO BE REMOVED / DEMOLISHED

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www.aeconsulting.com

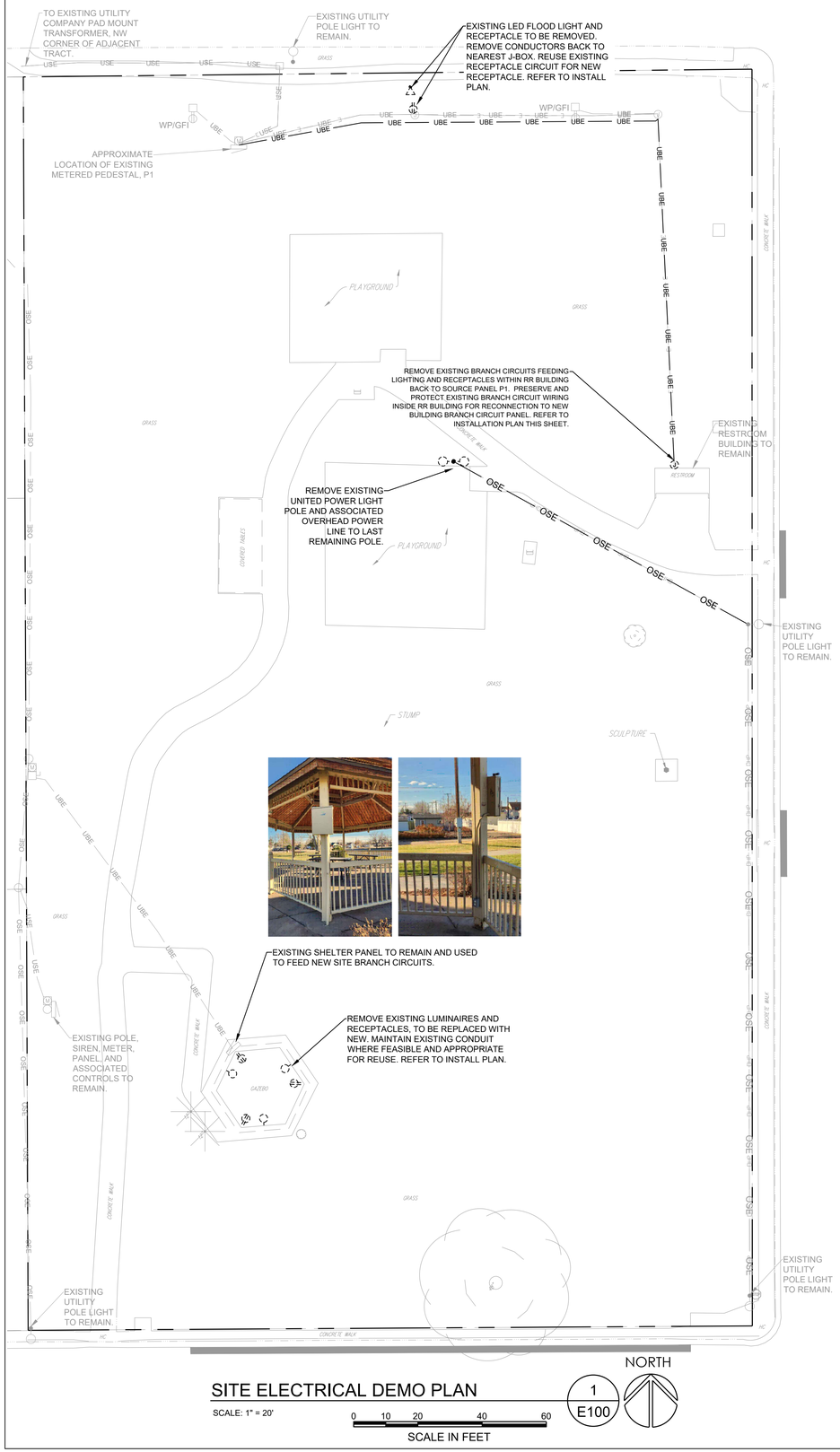
DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
ELEC. LEGEND & ONE-LINE

E-000

CHECKED BY: CSKS
DRAWN BY: HV

811



SITE ELECTRICAL DEMO PLAN

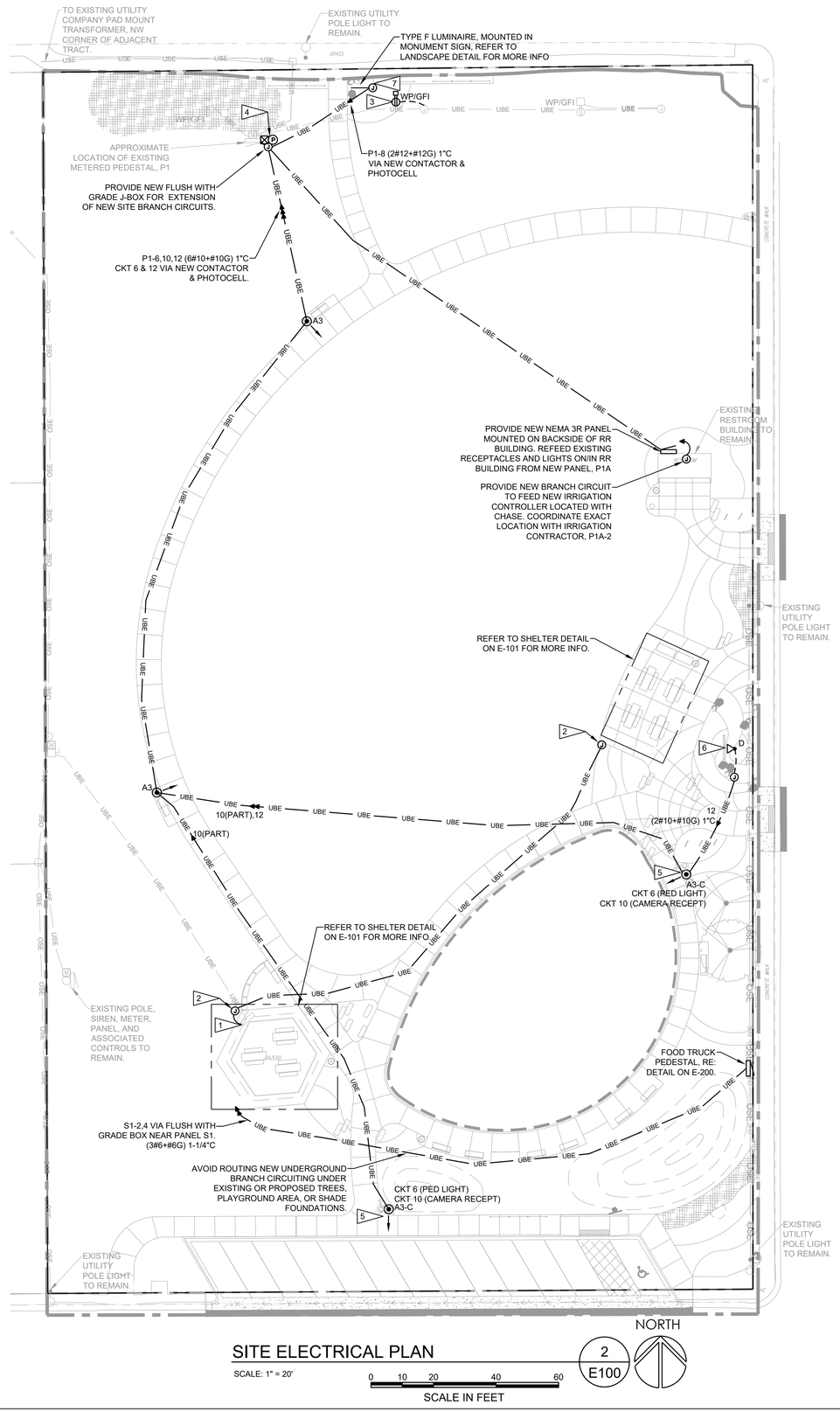
SCALE: 1" = 20'

0 10 20 40 60

SCALE IN FEET

NORTH

1 E100



SITE ELECTRICAL PLAN

SCALE: 1" = 20'

0 10 20 40 60

SCALE IN FEET

NORTH

2 E100

SITE PLAN GENERAL NOTES

ALL WIRING SHALL BE IN COMPLIANCE WITH THE NEC LATEST EDITION: ALL MULTI-WIRE BRANCH CIRCUITS (120V OR 277V SINGLE PHASE CIRCUITS) IDENTIFIED IN THE PANEL SCHEDULES ORIGINATING FROM SINGLE POLE BREAKER SHALL BE INSTALLED WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR. THE NEUTRAL CONDUCTOR SHALL HAVE A TRACER STRIPE (THE STRIPE COLOR SHALL MATCH THE COLOR OF THE PHASE CONDUCTOR).

REFER TO THE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INSTALLATION, CONDUIT DEPTHS, AND SPECIFICATION REQUIREMENTS. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE TO THE MOST CURRENT LOCAL CODES AND THE NEC LATEST EDITION.

ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC WITH PVC COATED GRC ELBOWS AND RISERS TO 4 FEET ABOVE GRADE AND 1 INCH MINIMUM DIAMETER, UNLESS NOTED OTHERWISE.

ALL UNDERGROUND COMMUNICATION, ELECTRICAL FEEDER, AND BRANCH CIRCUITS SHALL BE INSTALLED A MINIMUM OF 30 INCHES BELOW GRADE WITH BURIED ELECTRICAL WARNING TAPE INSTALLED DIRECTLY ABOVE BETWEEN 6 AND 12 INCHES BELOW GRADE. CONTRACTOR SHALL PROVIDE PULL BOXES AS REQUIRED TO MINIMIZE THE NUMBER OF BENDS TO MEET CODE.

ALL ELECTRICAL DEVICE LOCATIONS SHALL BE COORDINATED WITH THE LANDSCAPE AND CIVIL DRAWINGS/ARCHITECT PRIOR TO ROUGH-IN TO DETERMINE TYPICAL INSTALLATION REQUIREMENTS/LOCATIONS IN RELATION TO THE SITE LANDSCAPE AND CIVIL ELEMENTS. REFER TO LANDSCAPE PLANS FOR EXACT LOCATIONS OF PEDESTRIAN POLES. LOCATIONS ARE COORDINATED WITH SIDEWALKS AND CONCRETE PAVING AND POLE BASES NEED TO BE INTEGRATED WITH SIDEWALK PAVING.

UNDERGROUND CONDUIT IS INDICATED BY DASHED LINES, UBE, USE, UPE, OR UC.

ROUTE ALL CONDUIT/CIRCUITING ON FINISHED SPACES CONCEALED IN WALLS, ABOVE CEILINGS, OR BELOW FLOORS. ALL CONDUIT/CIRCUITING SHALL BE RUN PARALLEL TO BUILDING WALLS. ANY SURFACE MOUNTED CONDUIT IN FINISHED SPACES OR MOUNTED ON FINISHED SURFACES SHALL BE PAINTED TO MATCH THE SURFACE ON WHICH IT IS MOUNTED.

ROUTE ALL UNDERGROUND CONDUITS A MINIMUM OF 5' FROM TREE DRIP LINES AND AVOID ROUTING UNDERGROUND CONDUITS WITHIN OR CROSSING DRAINAGE SWALES OR DETENTION AREAS/PONDS.

ALL NEW CIRCUITS SHALL HAVE GROUNDING CONDUCTORS IN ALL FEEDERS AND BRANCH CIRCUITS.

FOR ALL WEATHERPROOF RECEPTACLE COVERS PROVIDE CAST ALUMINUM, WHILE-IN-USE WEATHERPROOF TYPE COVERS, HUBBELL-MG58XX SERIES OR EQUAL.

ALL EXTERIOR RECEPTACLES SHALL BE GFI PROTECTED DEVICES AND HAVE WEATHERPROOF COVERS.

PLAN GENERAL NOTES:

REFER TO E-000 FOR PROJECT GENERAL NOTES AND DEMOLITION GENERAL NOTES. (TYPICAL FOR ALL SHEETS)

FLAG NOTES:

1. EXISTING SHELTER PANEL S1 SHALL REMAIN AND BE UTILIZED FOR NEW BRANCH CIRCUITS AS INDICATED ON PLANS. SAW CUT A PORTION OF THE CONCRETE SIDEWALK FOR BRANCH CIRCUIT CONDUITS FEEDING SITE LOADS. DO NOT SAW CUT OR DAMAGE THE EXISTING SHELTER FOUNDATION.
2. PROVIDE FLUSH WITH GRADE J-BOX FOR CONDUIT EXTENSION FROM EXISTING GAZEBO PANEL TO SHELTER OR SITE BRANCH CIRCUITS. REFER TO DETAILS FOR MORE INFORMATION.
3. PROVIDE NEW POST MOUNTED RECEPTACLE, LOCATE IN LANDSCAPE BED. REFER TO DETAIL ON E-200. RECONNECT TO EXISTING RECEPTACLE CIRCUIT FROM PANEL P1.
4. EXISTING PEDESTAL P1 TO REMAIN. PROVIDE NEW 20A2P LTG CONTACTOR AND EXTERIOR PHOTOCELL TO CONTROL THE TWO SITE LIGHTING CIRCUITS VIA PHOTOCELL. MOUNT CONTACTOR WITHIN MILBANK ENCLOSURE. MOUNT EXTERIOR RATED BUTTON TYPE PHOTOCELL IN A BELLBOX TO THE SIDE OF THE PEDESTAL TO CONTROL THE CONTACTOR. PHOTOCELL SHALL FACE NORTH.
5. PROVIDE (1) 120V CAMERA POWER CIRCUIT TO EACH LIGHT POLE INDICATED WITH A CAMERA. TERMINATE CIRCUIT AT A RECEPTACLE/J-BOX IN CARLON BOX IN POLE BASE. PROVIDE 3/4"C FROM SECURITY SIDE OF CARLON J-BOX UP INTO POLE, TO BOTTOM OF TOP HAND HOLE, W/ RUBBER BUSHING AT TOP END OF CONDUIT (TO BE UTILIZED AS RACEWAY FOR OWNER PROVIDED/INSTALLED CAMERA CABLING). CAMERAS TO BE PROVIDED IN FUTURE BY OWNER.
6. LOCATE LUMINAIRE CENTERED ON MONUMENT SIGNAGE "KOSHIO PARK" TEXT. AIM LUMINAIRE ON MONUMENT, REFER TO MTG DETAIL ON E-200 FOR OFFSET FROM SIGN.
7. MOUNT TYPE F LUMINAIRE WITHIN TOP OF FENCE / MONUMENT SIGN. PROVIDE FLUSH MOUNTED J-BOX IN POST HANDHOLE FOR ROUTING OF BRANCH CIRCUIT. MOUNT DRIVER ON FENCE POST, BETWEEN PANELS. MOUNT LED LUMINAIRE TO THE INSIDE PORTION OF THE "KOSHIO PARK" PANELING. PROVIDE A #10 GROUNDING CONDUCTOR BONDED TO THE POST AND 10'X5/8" GROUND ROD. TO REFER TO THE LANDSCAPE DETAILS FOR MORE INFO.

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DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

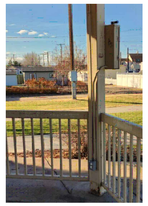
SHEET TITLE:
SITE ELECTRICAL PLAN

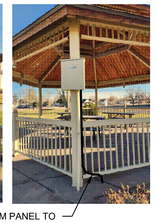
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CS/KS
HV

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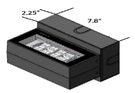


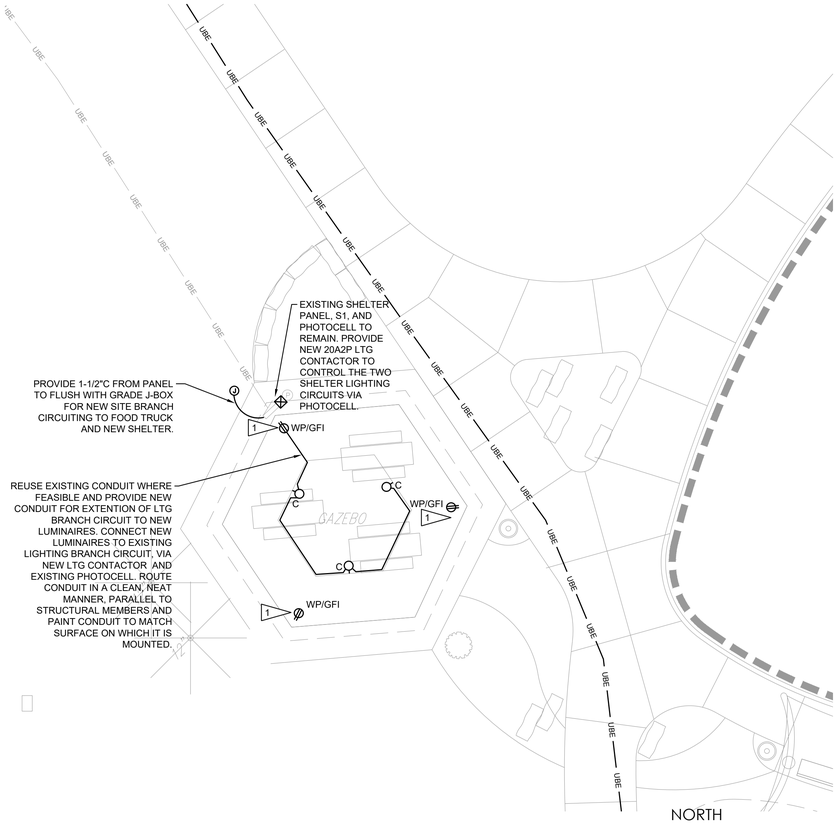


ROUTE NEW CONDUIT FROM PANEL TO AVOID PENETRATING EXISTING SHELTER FOUNDATION. SAW CUT AND PATCH CONCRETE WHERE NEW CONDUIT EXTENDS UNDERGROUND.



MOUNT LUMINAIRES CENTERED VERTICALLY AND HORIZONTALLY ON BEAM AND BETWEEN VERTICAL MEMBERS.



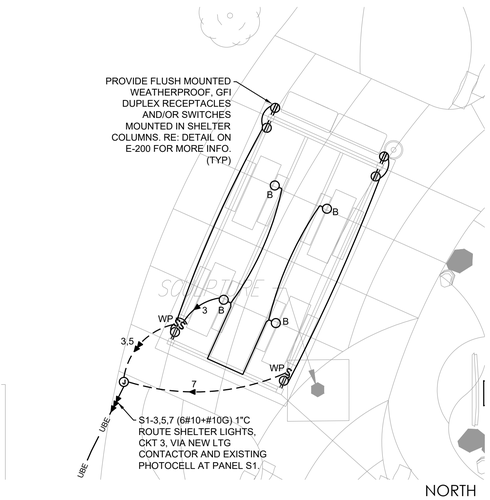


EXISTING SHELTER ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"

NORTH

1 E101



NEW SHELTER ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"

NORTH

2 E101

Koshio Park Luminaire Schedule

Key	Wattage, LED Color	Delivered Lumens	Driver & Dimming	Description	Finish	Mount	Specification			Max Input Wattage	Notes
							Manufacturer	Catalog Number	Volt		
A3	48W LED 3000K 80 CRI	4500	0-10V NON-DIM	POST TOP MOUNTED DECORATIVE PEDESTRIAN LUMINAIRE, TYPE 3 DIST, SMOOTH DIFFUSE LENS, WET LOCATION, B1-U0-G2, 11' TALL ROUND POLE	BY LANDSCP ARCH	POST TOP TO 11' TALL ROUND POLE ON FLUSH CONC BASE	INVUE LITHONIA OR EQUAL	ARB-B2-LED-D1-T3-FINISH-8030 11' TALL RND STEEL POLE	UNV	50	
A3-C	48W LED 3000K 80 CRI	4500	0-10V NON-DIM	SAME AS TYPE A3, EXCEPT SHORTER POLE SECOND HANDHOLE 18" DN FROM TOP OF POLE, PROVISIONS FOR CAMERA MTG BRACKETS AT 90 DEG FROM DIRECTION OF LUMINAIRE HEAD, RE: PLANS MOUNT ON A 24" CONCRETE BASE	BY LANDSCP ARCH	POST TOP TO 9' TALL ROUND POLE ON 24" TALL CONC BASE	INVUE LITHONIA OR EQUAL	ARB-B2-LED-D1-T5-FINISH-8030 9' TALL RND STEEL POLE 2ND HANDHOLE-18" DN FROM TOP OF POLE FOR CAMERA AT 12" FROM TOP OF POLE	UNV	50	3
B	14W LED 3000K 80 CRI	1675	0-10V NON-DIM	WALL/BEAM MOUNTED DIR LED LUMINAIRE, 4.7"H x 8"W x 4"D, HEAVY DUTY VANDAL HSNG WET LOCATION, FULL CUT OFF, TYPE 3 DIST SURFACE CONDUIT ENTRY/WIRING COMPARTMENT, INTEGRAL DRIVER	BY LANDSCP ARCH	TO SIDE OF BEAM	LIGMAN OR EQUAL	ULEE-30011-14W-T3-W30-FINISH-UNV-SCBT	UNV	15	
C	2x14W 3000K 80 CRI	2 x 1618	0-10V NON-DIM	WALL MOUNTED DIR/IND RECTANGULAR LED, WET LOCATION, SURFACE CONDUIT ENTRY, WIDE INDIRECT, WIDE DIRECT DIST, INTEGRAL DRIVER, <5" TALL MOUNTING BRACKET	BY LANDSCP ARCH	TO SIDE OF BEAM	LIGMAN OR EQUAL	ULEE-30041-2X14W-W-W-W30-FINISH-UNV-SCBT	UNV	30	
D	20W 3000K 80 CRI	1200	0-10V NON-DIM	GROUND MOUNTED LED UPLIGHT, WALL WASH DIST, HIGH TEMP THERMAL PLASTIC HSNG, CAST BRONZE EYEBALL TRIM, INTEGRAL DRIVER	CAST BRONZE	IN-GRADE	KIM	LTV82-EB-WW-12L-3K-UV	UNV	20	
F	2.5W/FT 3000K 80 CRI	342 LMS/FT	NON-DIM	LINEAR LED CHANNEL, 5'-4" LONG, STATIC WHITE, WET LOCATION LISTED, 36W WET LOCATION REMOTE 24V DRIVER RE: DWGS FOR MORE INFO	STANDARD	EXTERIOR WITHIN TOP OF SIGN	KELVIX LUMINII OR EQUAL	UNI2-WL-O-300-30K-24V-CH-211-2-FRF-CP-EC END POWER FEED HLV36-SC	UNV	36	1,2

Not all parts and pieces may be identified in the catalog number. It shall be the Contractor's and Supplier/Manufacturer's responsibility to ensure all necessary parts, pieces, and hardware are provided with the luminaire for a complete installation.

Notes:
1. Refer to the Landscape Arch detail and electrical notes for more information on mounting.
2. Provide rigid mounting channel for exterior applications, frosted lens, and mounting clips for 6" o.c. spacings.
3. Camera mounting brackets provided by pole manufacturer. Camera and camera wiring provided by Owner.

SITE PLAN GENERAL NOTES

ALL WIRING SHALL BE IN COMPLIANCE WITH THE NEC LATEST EDITION: ALL MULTI-WIRE BRANCH CIRCUITS (120V OR 277V SINGLE PHASE CIRCUITS) IDENTIFIED IN THE PANEL SCHEDULES ORIGINATING FROM SINGLE POLE BREAKER SHALL BE INSTALLED WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR. THE NEUTRAL CONDUCTOR SHALL HAVE A TRACER STRIPE (THE STRIPE COLOR SHALL MATCH THE COLOR OF THE PHASE CONDUCTOR).

REFER TO THE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INSTALLATION, CONDUIT DEPTHS, AND SPECIFICATION REQUIREMENTS. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE TO THE MOST CURRENT LOCAL CODES AND THE NEC LATEST EDITION.

ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC WITH PVC COATED GRC ELBOWS AND RISERS TO 4 FEET ABOVE GRADE AND 1 INCH MINIMUM DIAMETER, UNLESS NOTED OTHERWISE.

ALL UNDERGROUND COMMUNICATION, ELECTRICAL FEEDER, AND BRANCH CIRCUITS SHALL BE INSTALLED A MINIMUM OF 30 INCHES BELOW GRADE WITH BURIED ELECTRICAL WARNING TAPE INSTALLED DIRECTLY ABOVE BETWEEN 6 AND 12 INCHES BELOW GRADE. CONTRACTOR SHALL PROVIDE PULL BOXES AS REQUIRED TO MINIMIZE THE NUMBER OF BENDS TO MEET CODE.

ALL ELECTRICAL DEVICE LOCATIONS SHALL BE COORDINATED WITH THE LANDSCAPE AND CIVIL DRAWINGS/ARCHITECT PRIOR TO ROUGH-IN TO DETERMINE TYPICAL INSTALLATION REQUIREMENTS/LOCATIONS IN RELATION TO THE SITE LANDSCAPE AND CIVIL ELEMENTS. REFER TO LANDSCAPE PLANS FOR EXACT LOCATIONS OF PEDESTRIAN POLES. LOCATIONS ARE COORDINATED WITH SIDEWALKS AND CONCRETE PAVING AND POLE BASES NEED TO BE INTEGRATED WITH SIDEWALK PAVING.

UNDERGROUND CONDUIT IS INDICATED BY DASHED LINES, UBE, USE, UPE, OR UC.

ROUTE ALL CONDUIT/CIRCUITING ON FINISHED SPACES CONCEALED IN WALLS, ABOVE CEILINGS, OR BELOW FLOORS. ALL CONDUIT/CIRCUITING SHALL BE RUN PARALLEL TO BUILDING WALLS. ANY SURFACE MOUNTED CONDUIT IN FINISHED SPACES OR MOUNTED ON FINISHED SURFACES SHALL BE PAINTED TO MATCH THE SURFACE ON WHICH IT IS MOUNTED.

ROUTE ALL UNDERGROUND CONDUITS A MINIMUM OF 5' FROM TREE DRIP LINES AND AVOID ROUTING UNDERGROUND CONDUITS WITHIN OR CROSSING DRAINAGE SWALES OR DETENTION AREAS/PONDS.

ALL NEW CIRCUITS SHALL HAVE GROUNDING CONDUCTORS IN ALL FEEDERS AND BRANCH CIRCUITS.

FOR ALL WEATHERPROOF RECEPTACLE COVERS PROVIDE CAST ALUMINUM, WHILE-IN-USE WEATHERPROOF TYPE COVERS, HUBBELL-MG58XX SERIES OR EQUAL.

ALL EXTERIOR RECEPTACLES SHALL BE GFI PROTECTED DEVICES AND HAVE WEATHERPROOF COVERS.

THE CONTRACTOR SHALL PROVIDE STAMPED AND SIGNED STRUCTURALLY ENGINEERED POLE BASE SHOP DRAWINGS FOR ALL OF THE VARIOUS POLE BASES REQUIRED. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROVIDING THE AUTHORITY HAVING JURISDICTION WITH A STAMPED LETTER "GENERAL COMPLIANCE LETTER", VERIFYING THAT ALL NEW LIGHT BASE CAISSONS AND LIGHT ATTACHMENTS TO THE BASES HAVE BEEN INSTALLED IN ACCORDANCE WITH THE STAMPED STRUCTURAL PLANS AND ANY /ALL APPLICABLE CODES. THE POLE BASE DETAILS PROVIDED IN THE ELECTRICAL DRAWINGS ARE FOR GENERAL STYLE AND DIMENSIONS ONLY.

PLAN GENERAL NOTES:

REFER TO E-000 FOR PROJECT GENERAL NOTES AND DEMOLITION GENERAL NOTES. (TYPICAL FOR ALL SHEETS)

FLAG NOTES:

1. REPLACE EXISTING RECEPTACLES WITH NEW NEW GFI RECEPTACLES AND PROVIDE NEW METAL WEATHERPROOF IN-USE COVERS. RECONNECT TO EXISTING CIRCUIT FED FROM PANEL S1.
2. PROVIDE FLUSH WITH GRADE J-BOX FOR CONDUIT EXTENSION FROM EXISTING GAZEBO PANEL TO SITE BRANCH CIRCUITS OR SHELTER.

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4/10/26 - BID SET

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SHELTER ELECT PLANS

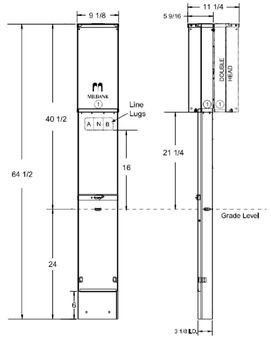
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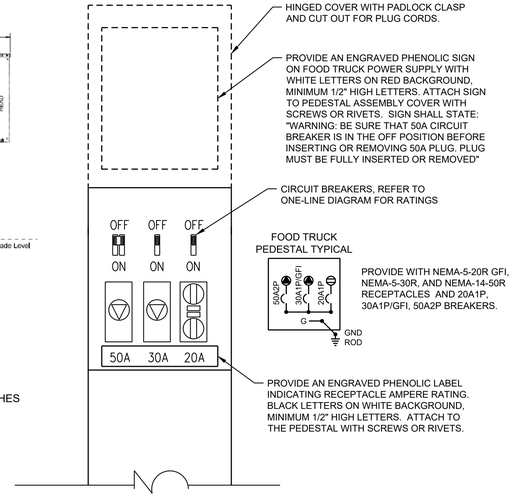
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U5200-XL-75



DIMENSIONS INDICATED ABOVE ARE INCHES

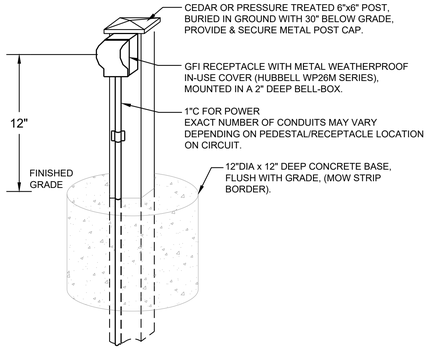


FOOD TRUCK POWER SUPPLY PEDESTAL. PROVIDE PAD MOUNT UNIT MILBANK U5210-XL-D-Z OR EQUIVALENT, THE PEDESTAL SHALL BE A WEATHERPROOF METAL ENCLOSURE WITH HINGED WEATHERPROOF IN-USE METAL COVER TO PROTECT THE BREAKERS AND RECEPTACLES. EACH PEDESTAL SHALL BE RATED 120/240V, 1PH , 3W+GND, 75A BUS, 50A MAIN LUG ONLY, 10,000A.I.C. BRACING.

TYPICAL FOOD TRUCK POWER PEDESTAL CONFIGURATION DETAIL

6 / E200

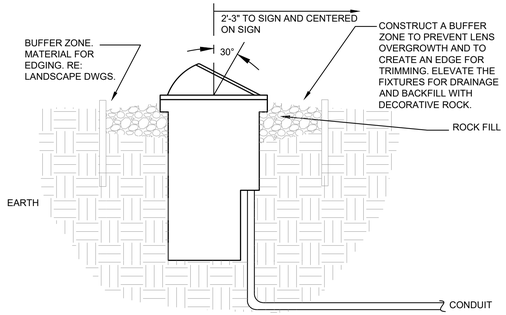
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POST MOUNTED RECEPTACLE DETAIL

7 / E200

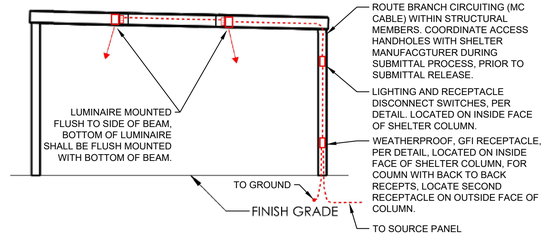
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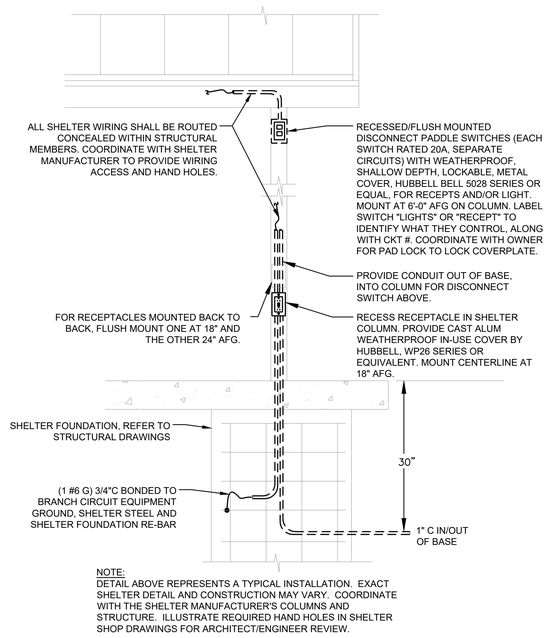


TYPE D: GROUND MOUNT LIGHT DETAIL

8 / E200

SCALE: NTS



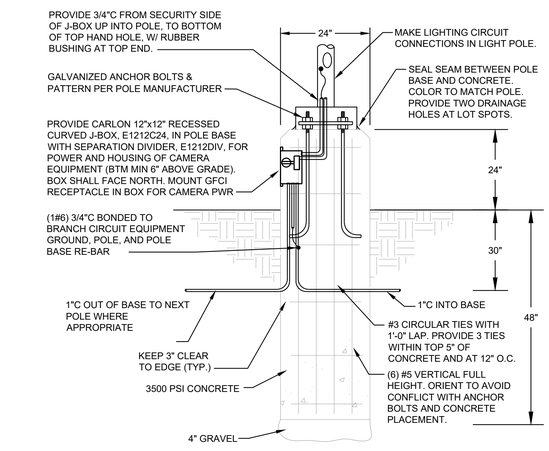


NOTE:
DETAIL ABOVE REPRESENTS A TYPICAL INSTALLATION. EXACT SHELTER DETAIL AND CONSTRUCTION MAY VARY. COORDINATE WITH THE SHELTER MANUFACTURER'S COLUMNS AND STRUCTURE. ILLUSTRATE REQUIRED HAND HOLES IN SHELTER SHOP DRAWINGS FOR ARCHITECT/ENGINEER REVIEW.

NEW SHELTER LIGHT DISCONNECT DETAIL

4 / E200

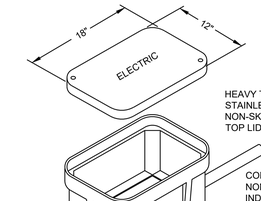
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PEDESTRIAN LIGHT POLE BASE DETAIL WITH CAMERA

5 / E200

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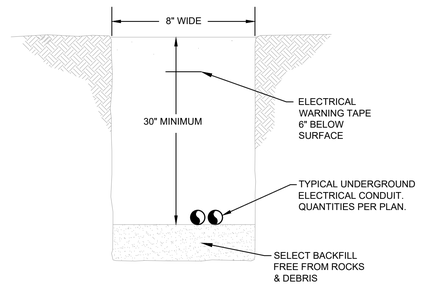


TYPICAL FLUSH WITH GRADE PULL BOX DETAIL

1 / E200

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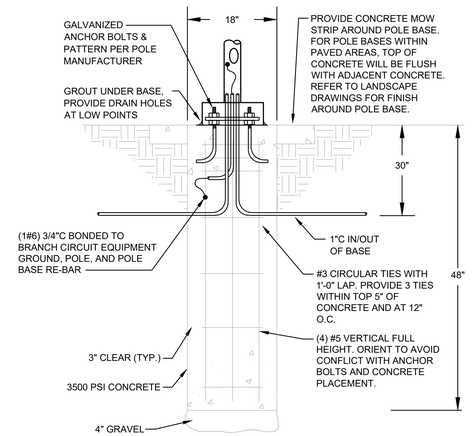
TYPICAL POWER FEEDER PULLBOX (12"x18"x18"DEEP OR LARGER PER PLANS) QUAZITE PG STYLE SERVICE BOX WITH HEAVY DUTY BOLT ON COVER AS MANUFACTURED BY STRONGWELL. STACK MULTIPLE BOXES TO ACHIEVE THE OVERALL INDICATED DEPTH.



TYPICAL CONDUIT TRENCH DETAIL

2 / E200

SCALE: NTS



PEDESTRIAN LIGHT POLE BASE DETAIL

3 / E200

SCALE: NTS

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DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
ELECTRICAL DETAILS

E-200

Koshio Park

Technical Specifications

Owner:

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SECTION 024100 - DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

A. This work includes the removal and disposal of trees, abandoned utility services, curb, gutter, pipes, sidewalk, structures, guardrails, fences, pavements, signage, markings and all other obstructions that are not designated or permitted to remain. Salvaging, stockpiling, cleaning culverts and sawing and cutting to facilitate controlled breaking and removal of concrete and asphalt to a neat line as shown on the plans or noted herein.

B. Materials removed and not designated to be salvaged or incorporated into the WORK shall become the property of CONTRACTOR.

1.2 RELATED SECTIONS

A. Section 01 50 00 - Temporary Construction Facilities

B. Section 31 00 00 – Earthwork

C. Section 31 25 00 – Erosion and Sedimentation Controls

D. Section 32 92 19 – Seeding

1.3 SUBMITTALS

A. Permits and Certificates.
1. Permits and notices authorizing demolition of structures, site features and utilities.
2. Well abandonment permit and certificate per State Engineer if required.

1.4 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Division One specifications.

B. Record via survey and/or plan markup actual locations of abandoned and/or capped utilities and subsurface obstructions.

1.5 REGULATORY REQUIREMENTS

A. Conform to, and obtain required permits from all applicable authorities having jurisdiction for demolition of structures, safety of adjacent structures, dust control, disposal and handling of hazardous and/or contaminated materials.

B. Provide notification, as required, to any affected utility owners prior to starting work and comply with their permitting, construction and documentation requirements.

C. Prior to any closure, obstruction or rerouting of roadways, sidewalks, or drive lanes that would otherwise inhibit access into or out of a site, written approval by the right-of-way owner and fire department must be obtained.

1.6 SCHEDULING

A. Schedule and submit under provisions of Division One specifications.

B. Provide detailed descriptions for demolition and removal procedures.

PART 2 PRODUCTS

2.1 FILL MATERIALS

A. Fill Material: Use acceptable fill material under provisions of Section 31 00 00.

PART 3 EXECUTION

3.1 INSPECTION

A. Confirm all structures, site features and utilities to be demolished are unoccupied and discontinued in use.

3.2 PREPARATION

A. Protect in place all existing site features and structures not intended for demolition. Any demolition or damage to existing site features or structures not intended for demolition shall be repaired at the Contractor’s expense.

B. All utilities shall be marked prior to the start of demolition. Potholing shall be used to confirm horizontal and vertical locations of utilities.

C. Refer to Division One for installation of fencing, gates, access and site control to protect against unauthorized personnel from entering the site during demolition.

D. Provide temporary utility routing as needed to maintain service during construction. Bridges, culverts, and other drainage structures shall not be removed until satisfactory arrangements have been made to accommodate traffic and drainage.

E. Erosion control measures shall be installed prior to start of demolition.

3.3 GENERAL REQUIREMENTS

A. Refer to Section 31 25 00 Erosion and Sedimentation Controls, the SWPPP, SWMP, erosion control plans and local jurisdictional requirements for installation and maintenance of erosion control measures and dust mitigation. Erosion control measures shall be in place prior to start of demolition.

B. Where portions of structures are to be removed, the portions designated to remain shall be prepared to fit the new construction and shall be protected from damage. All damage to structures designated to remain in place shall be repaired at the Contractor's expense. Method of repair shall be approved by the Engineer.

C. Removal of signs shall include removal of posts, footings, pedestals, sign panels, and brackets. Concrete adhering to salvable signposts shall be removed.

D. Sawing of concrete shall be done to a true line, with a vertical face, unless otherwise specified. The minimum depth of a saw cut in concrete shall be 2 inches or to the depth of the reinforcing steel, whichever occurs first.

E. Blasting or other operations used to remove existing structures or obstructions, which may damage new construction, shall be completed before placing the new work.

F. Basements and other cavities left by structure removal and/or excavation shall be filled to the level of the surrounding ground with suitable material and shall be compacted per Section 31 00 00 – Earthwork.

G. Where culverts or sewers are to be left in place and plugged, the ends of concrete or masonry culverts shall be filled with suitable material. The ends of corrugated metal pipe culverts shall be crushed. Culvert and sewer ends are to be sufficiently filled or crushed to prevent future settlement of embankments. Plugging of culverts shall include removal of headwalls and other appurtenances where necessary to accommodate the work.

H. Procedures for abandoning water wells shall conform to the State Engineer. The Contractor shall properly plug and abandon the designated wells and file an abandonment report for each. An abandonment report shall be prepared that describes the well location and how it was plugged. This report shall be submitted to the Board, with a copy given to the Project Engineer, within 60 days after performing the work.

I. Remove demolished material from the site. Demolished concrete and asphalt material may be used to construct embankments per Section 31 00 00 Earthwork.

J. When removal operations are located over or in proximity to a railroad or any live waterway, additional coordination including potential incident emergency/risk management notifications with the railroad or other agency (United States Army Corps of Engineers (USACE), US Fish and Wildlife Service, US Forest Service, etc.) shall be required.

3.4 SALVABLE MATERIAL

A. All salvable material designated in the Contract or Engineer to remain the property of the Owner shall be removed without damage, in sections or pieces that may be readily transported and shall be stockpiled by the Contractor at specified locations within the project limits. The Contractor shall safeguard salvable materials and shall be responsible for the expense of repairing or replacing damaged or missing material until it is incorporated into the work or is handed over to the Owner.

3.5 DISPOSAL AND CLEANING

A. Do not store or burn waste materials on-site.

B. Transport demolition debris to designated off-site disposal area. Comply with all regulatory requirements for transportation of hazardous and nonhazardous materials.

C. Culverts, pipes, inlets, ponds and basins designated in the Contract to be cleaned shall be cleaned by removing all sedimentation and debris and all appurtenant structures.

END OF SECTION

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes for cast-in-place concrete footings and foundations.

B. Related Requirements:

1. Division 32 “Rigid Paving”.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, and other pozzolans materials subject to compliance with requirements.

B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.3 ACTION SUBMITTALS

A. Product Data: For each of the following.

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Aggregates.
5. Admixtures:

a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.

6. Vapor retarders.
7. Curing materials.
8. Joint fillers.

B. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Minimum 28-day compressive strength.
3. Durability exposure class.
4. Maximum w/cm.
5. Calculated equilibrium unit weight, for lightweight concrete.
6. Slump limit.

7. Air content.
8. Nominal maximum aggregate size.
9. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
10. Intended placement method.
11. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.4 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Curing compounds.
4. Vapor retarders.
5. Joint-filler strips.

B. Material Test Reports: For the following, from a qualified testing agency:

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Blended hydraulic cement.
5. Aggregates.
6. Admixtures:

1.5 QUALITY ASSURANCE

A. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94/C94M and ACI 301 (ACI 301M).

1.7 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 (ACI 301M) and ACI 306.1.

B. Hot-Weather Placement: Comply with ACI 301 (ACI 301M) and ACI 305.1 (ACI 305.1M).

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 (ACI 301M) unless modified by requirements in the Contract Documents.

2.2 CONCRETE MATERIALS

A. Cementitious Materials:

1. Portland Cement: ASTM C150/C150M, Type II or Type I/II, gray.
2. Fly Ash: ASTM C618, Class C or F.
3. Slag Cement: ASTM C989/C989M, Grade 100 or 120.

B. Normal-Weight Aggregates: ASTM C33/C33M, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: 3/4 inch (19 mm) nominal.

2.3 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301 (ACI 301M).

1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash or Other Pozzolans: 25 percent by mass.
2. Slag Cement: 50 percent by mass.
3. Total of Fly Ash or Other Pozzolans, Slag Cement: 50 percent by mass, with fly ash or pozzolans not exceeding 25 percent by mass.
4. Total of Fly Ash or Other Pozzolans: 35 percent by mass with fly ash or pozzolans not exceeding 25 percent by mass.

C. Admixtures: Use admixtures in accordance with manufacturer's written instructions.

1. Use water-reducing or high-range water-reducing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete and concrete with a w/cm below 0.50.

2.4 CONCRETE MIXTURES

A. Class [J]: Normal-weight concrete used for exterior retaining walls and foundations.

1. Exposure Class: ACI 318 (ACI 318M) F2.
2. Minimum Compressive Strength: 4500 psi (24.1 MPa) at 28 days.
3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).
4. Air Content: 5% to 8%

B. Class [K]: Normal-weight concrete used for general exterior site work.

1. Exposure Class: ACI 318 (ACI 318M) F2.
2. Minimum Compressive Strength: 4500 psi (24.1 MPa) at 28 days.
3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).

4. Air Content: 5% to 8%

2.5 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M, and furnish batch ticket information.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete in accordance with ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least 1-1/2 minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.
3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

3.2 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.

1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify Owner’s Representative and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Owner’s Representative in writing, but not to exceed the amount indicated on the concrete delivery ticket.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301 (ACI 301M), but not to exceed the amount indicated on the concrete delivery ticket.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

3.3 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling In:

1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
2. Mix, place, and cure concrete, as specified, to blend with in-place construction.
3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations:

1. Coordinate sizes and locations of concrete bases with actual equipment provided.
2. Construct concrete bases 8 inches (200 mm) high unless otherwise indicated on Drawings, and extend base not less than 6 inches (150 mm) in each direction beyond the maximum dimensions of supported equipment unless otherwise indicated on Drawings, or unless required for seismic anchor support.
3. Minimum Compressive Strength: 3500 psi (24.1 MPa) at 28 days.
4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch (450-mm) centers around the full perimeter of concrete base.
5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete substrate.
6. Prior to pouring concrete, place and secure anchorage devices.

    a. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
    b. Cast anchor-bolt insert into bases.
    c. Install anchor bolts to elevations required for proper attachment to supported equipment.

3.4 CONCRETE CURING

A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

1. Comply with ACI 301 (ACI 301M) and ACI 306.1 for cold weather protection during curing.
2. Comply with ACI 301 (ACI 301M) and ACI 305.1 (ACI 305.1M) for hot-weather protection during curing.

3.5 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.

B. Testing Agency: Owner will engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

1. Testing agency shall be responsible for providing curing container for composite samples on Site and verifying that field-cured composite samples are cured in accordance with ASTM C31/C31M.
2. Testing agency shall immediately report to Owner's Representative, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
3. Testing agency shall report results of tests and inspections, in writing, to Owner, Owner's Representative, Contractor, and concrete manufacturer within 48 hours of inspections and tests.

a. Test reports shall include reporting requirements of ASTM C31/C31M, ASTM C39/C39M, and ACI 301, including the following as applicable to each test and inspection:

1) Project name.
2) Name of testing agency.
3) Names and certification numbers of field and laboratory technicians performing inspections and testing.
4) Name of concrete manufacturer.
5) Date and time of inspection, sampling, and field testing.
6) Date and time of concrete placement.
7) Location in Work of concrete represented by samples.
8) Date and time sample was obtained.
9) Truck and batch ticket numbers.
10) Design compressive strength at 28 days.
11) Concrete mixture designation, proportions, and materials.
12) Field test results.
13) Information on storage and curing of samples before testing, including curing method and maximum and minimum temperatures during initial curing period.
14) Type of fracture and compressive break strengths at seven days and 28 days.

END OF SECTION

SECTION 044420 - STONE WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes the following:
1. Sandstone Block Seats
2. Landscape Boulders

1.03 SUBMITTALS

A. Sample stone for each application listed. To be provided on-site for Owner's Representative review. Minimum size 18" x 18" x 18".

1.04 PRODUCT HANDLING

A. Store materials where directed under cover, off the ground, in a dry area. Protect boulders in transit and when moved on site to prevent cracking, chipping, or marking of exposed surfaces by construction equipment.

1.05 PROJECT CONDITIONS

A. Lay and set stone only when ambient temperature is above 40 degrees F. Protect work from cold and frost, ensuring that mortar will harden without freezing.

PART 2 - PRODUCTS

2.01 STONE

A. Reference drawings for types and sizes.

B. Available sources include but are not limited to:
1. www.crystallandscapesupplies.com/
2. www.arkinsparkstone.com/
3. www.coloradomaterialsinc.com/
4. www.siteone.com

PART 3 - EXECUTION

3.1 SETTING STONE

A. Roughly shape stone with a hammer to approximate fit within paving or other constraints. Knock off weak portions and sharp edges. Smooth corners and connection points.

B. Set boulders as indicated on the drawings.

C. Set stones with a minimum of 1% slope at the top of each stone to ensure water will be shed.

D. The top of stones shall be within 1” of elevations shown on drawings.

A. Protect stone faces from staining. When work is not in progress, keep stone covered with approved non-staining waterproof coverings.

3.2 CLEANING

A. Scrub large scratches with a fiber brush using water.

END OF SECTION

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Decorative Fencing

1.02 ACTION SUBMITTALS

A. Product Data: For the following:

1. Perforated metal.
2. Fasteners.

B. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

C. Samples: For each type and finish of extruded metal.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design ladders, alternating tread devices, and vehicular barrier cable systems.

B. Structural Performance of Aluminum Ladders: Ladders, including landings, shall withstand the effects of loads and stresses within limits and under conditions specified in ANSI A14.3.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F, ambient; 180 deg F material surfaces.

2.02 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

C. Steel Tubing: ASTM A500/A500M, cold-formed steel tubing.

D. Steel Pipe: ASTM A53/A53M, Standard Weight (Schedule 40) unless otherwise indicated.

E. Aluminum Extrusions: ASTM B221, Alloy 6063-T6.

2.03 FASTENERS

A. General: Unless otherwise indicated, provide Type 304 stainless steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.

1. Provide stainless steel fasteners for fastening aluminum or stainless steel.
2. Provide bronze fasteners for fastening bronze.

B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A307, Grade A; with hex nuts, ASTM A563; and, where indicated, flat washers.

C. High-Strength Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325, Type 3, heavy-hex steel structural bolts; ASTM A563, Grade DH3, heavy-hex carbon-steel nuts; and where indicated, flat washers.

D. Stainless Steel Bolts and Nuts: Regular hexagon-head annealed stainless steel bolts, ASTM F593; with hex nuts, ASTM F594; and, where indicated, flat washers; Alloy Group 1.

E. Anchor Bolts: ASTM F1554, Grade 36, of dimensions indicated; with nuts, ASTM A563; and, where indicated, flat washers.

1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastenened is indicated to be galvanized.

F. Anchors, General: Capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing in accordance with ASTM E488/E488M, conducted by a qualified independent testing agency.

G. Cast-in-Place Anchors in Concrete: Either threaded or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A47/A47M malleable iron or ASTM A27/A27M cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F2329/F2329M.

H. Post-Installed Anchors: Torque-controlled expansion anchors.

1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, unless otherwise indicated.
2. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 stainless steel bolts, ASTM F593, and nuts, ASTM F594.

2.04 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

2.05 MISCELLANEOUS FRAMING AND SUPPORTS

A. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

2.06 STEEL WELD PLATES AND ANGLES

A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.07 GENERAL FINISH REQUIREMENTS

A. Finish metal fabrications after assembly.

B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.08 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A153/A153M for steel and iron hardware and with ASTM A123/A123M for other steel and iron products.

1. Retain subparagraph below if galvanized items are painted.
2. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.

B. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.

1. Shop prime with zinc-rich primer.

C. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.02 INSTALLATION OF MISCELLANEOUS FRAMING AND SUPPORTS

A. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

3.03 INSTALLATION OF METAL BOLLARDS

A. Fill metal-capped bollards solidly with concrete and allow concrete to cure seven days before installing.

B. Anchor bollards in concrete with pipe sleeves preset and anchored into concrete. Fill annular space around bollard solidly with shrinkage-resistant grout; mixed and placed to comply with grout manufacturer's written instructions. Slope grout up approximately 1/8 inch toward bollard.

C. Anchor bollards in place with concrete footings. Center and align bollards in holes 3 inches above bottom of excavation. Place concrete and vibrate or tamp for consolidation. Support and brace bollards in position until concrete has cured.

D. Fill bollards solidly with concrete, mounding top surface to shed water.

3.04 INSTALLATION OF BEARING AND LEVELING PLATES

A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.

B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with shrinkage-resistant grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.05 REPAIRS

A. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A780/A780M.

END OF SECTION

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SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on exterior substrates.
   1. Steel.
   2. Wood railings.

B. Related Requirements:

   1. Division 05 "Metal Fabrications" for shop priming of metal substrates with primers specified in this section.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

   1. Indicate VOC content.

B. Samples for Initial Selection: For each type of topcoat product.

C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

   1. Submit Samples on rigid backing, 8 inches square.
   2. Label each coat of each Sample.
   3. Label each Sample for location and application area.

D. Product List: For each product indicated, include the following:

   1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
   2. Indicate VOC content.

1.3 CLOSEOUT SUBMITTALS

A. Coating Maintenance Manual: Provide coating maintenance manual including area summary with finish schedule, area detail designating location where each product/color/finish was used, product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

   1. Paint: 1 gal. (5) of each material and color applied.

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1.5 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Owner’s representative will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

2. Final approval of color selections will be based on mockups.

   a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Owner’s representative at no added cost to Owner.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner’s representative specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacture’s label with the following information:

1. Product name and type (description).
2. Batch date.
3. Color number.
4. VOC content.
5. Environmental handling requirements.
6. Surface preparation requirements.
7. Application instructions.

B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If suspected hazardous materials are encountered, do not disturb; immediately notify Owner's representative and Owner.

D. Hazardous Materials: Hazardous materials including lead paint may be present in structures to be painted. A report on the presence of known hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified.
2. Perform preparation for painting of substrates known to include lead paint in accordance with EPA Renovation, Repair and Painting Rule and additional requirements of authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide Sherwin-Williams Company; products indicated or comparable product from one of the following:

1. Sherwin Williams – Pro Industrial Water Based Acrolon 100 or equal.

B. Comparable Products: Comparable products of approved manufacturers will be considered in accordance with Section 016000 "Product Requirements," and the following:

1. Products are approved by manufacturer in writing for application specified.
2. Products meet performance and physical characteristics of basis of design product including published ratio of solids by volume, plus or minus two percent.

C. Source Limitations: Obtain paint materials from single source from single listed manufacturer.

1. Manufacturer's designations listed on a separate color schedule are for color reference only and do not indicate prior approval.

2.2 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. VOC Content: For field applications, provide paints and coatings that complies with VOC content limits of authorities having jurisdiction.

C. Color: To be selected by Owner.

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2.3 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.

1. Report, in writing, conditions that may affect application, appearance, or performance of paint.

B. Substrate Conditions:

1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

a. Concrete: 12 percent.
b. Fiber-Cement Board: 12 percent.
c. Masonry (Clay and CMU): 12 percent.
d. Wood: 15 percent.
e. Portland Cement Plaster: 12 percent.
f. Gypsum Board: 12 percent.

C. Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

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1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer**.**

1. SSPC-SP 2, "Hand Tool Cleaning."
2. SSPC-SP 3, "Power Tool Cleaning."
3. SSPC-SP 7/NACE No. 4, "Brush-off Blast Cleaning."
4. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."

E. Wood Substrates: Remove mill glaze and dust, sand smooth. Fill open joints, cracks, nail holes and other pits or depressions flush and smooth with wood filler after priming. Use wood putty to match finish paint coat. Touch up knots or sap streaks with a stain-blocking sealer before priming.

F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
3. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
4. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.FIELD QUALITY CONTROL

E. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.

2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.4 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Owner’s representative, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINTING SCHEDULE

A. Ferrous Metal, Galvanized-Metal, and Aluminum Substrates:

1. Water-Based Light Industrial Coating System:

a. Prime Coat: Primer, water based.

1) S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, 5.0 to 10.0 mils wet, 2.0 to 4.0 mils dry.

b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.
c. Topcoat: Light industrial coating, exterior, water based eggshell.

1) S-W Pro Industrial Eg-Shel Acrylic B66-660 Series, at 2.5 to 4.0 mils dry, per coat.

d. Topcoat: Light industrial coating, exterior, water based, semi-gloss.

1) S-W Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series, at 2.5 to 4.0 mils dry, per coat.

e. Topcoat: Light industrial coating, exterior, water based, gloss.

1) S-W Pro Industrial Acrylic Gloss Coating, B66-600 Series, at 2.5 to 4.0 mils dry, per coat.

END OF SECTION

SECTION 102000 - PREFABRICATED SHADE SHELTERS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes prefabricated trellises.

B. Related Sections
1. See Division 3 for Cast-In-Place Concrete for shelter footings.

1.2 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has specialized in installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer of prefabricated picnic shelter.

1.3 DELIVERY, STORAGE AND HANDLING

A. General: Refer to General Conditions, Control and Material. Deliver and store panels and accessories in a dry place to avoid condensation or contact with materials that might cause staining, such as lime, cement, fresh concrete, or chemicals.

PART 2 - PRODUCTS

2.1 PRODUCTS

A. Prefabricated structures
a. Owner furnished, contractor installed. Reference drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, site surface and foundations and other conditions affecting performance,

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Verify locations of footings and paving.

3.3 INSTALLATION, GENERAL

A. General: Comply with manufacturer’s written installation instructions, unless more stringent requirements are indicated. Anchor prefabricated picnic shelter securely, positioned at locations and elevations indicated on Shop Drawings.

B. Coordinate installation with other trades

C. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

D. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

E. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.

F. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.4 CLEANING

A. After completing prefabricated picnic shelter installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace components.

END OF SECTION

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 SCOPE

A. Requirements for the electrical features being furnished and installed under these Specifications shall be in accordance with the requirements of this Section.

B. These Specifications, including the Drawings, outline the general requirements for the electrical design and are based on proposed equipment ratings, locations, and conditions to provide for estimated equipment loads and proposed power and lighting circuit ratings.

C. The CONTRACTOR shall coordinate all electrical installations and designs and shall place the electrical equipment accurately in position; level and plumb, connect, and adjust the electrical equipment; and make the electrical installations ready for service.

D. After the CONTRACTOR has selected the equipment and completed the equipment location, outline and layout drawings, the electrical equipment ratings and power circuits shall be checked, coordinated, and revised as needed.

E. The CONTRACTOR shall furnish and install all materials and equipment and provide all labor required and necessary to complete the work shown on drawings and/or listed below and all other work and miscellaneous items, not specifically mentioned, but inferred for a complete installation, including all accessories and appurtenances required for testing the system. It is the intent of drawings and Specifications that all systems be complete and ready for operation.

F. The CONTRACTOR shall perform electrical systems demolition, cutting and patching for electrical construction, and provide touchup painting.

G. The CONTRACTOR shall contact UNCC 811 two full working days prior to any digging to request utility system locates. Any system, wire, cable, or piping damaged during the construction process shall be repaired or replaced to the Owner’s satisfaction without additional cost to the Owner.

H. The CONTRACTOR shall contact the Owner’sProject Manager to request owner system locates (irrigation systems and/or other buried owner systems). Any system, wire, cable, or piping damaged during the construction process shall be repaired or replaced to the Owner’s satisfaction without additional cost to the Owner.

I. The CONTRACTOR shall notify the Engineer and Owner’s Project Manager a minimum of 48 hours prior to any inspection as well as prior to covering up any work.

1.2 REFERENCES

A. The latest edition of the following standards and codes, standard publications of professional organizations, and the State of Colorado are the minimum requirements for this work.

1. American National Standards Institute (ANSI)
2. American Society for Testing and Materials (ASTM)
3. Association of Edison Illuminating Companies (AEIC)

4. Code of Federal Regulations (CFR)
5. Insulated Cable Engineer's Association (ICEA)
6. Institute of Electrical and Electronic Engineers (IEEE)
7. National Electrical Manufacturer's Association (NEMA)
8. National Fire Protection Association (NFPA)
9. NFPA 70, The National Electrical Code (NEC-latest edition)
10. International Energy Conservation Code (IECC)
11. Underwriters' Laboratories, Inc. (UL)
12. State, City, and Local Authorities

1.3 CONTRACTOR SUBMITTALS

A. General

1. All submittals shall be in accordance with the requirements of this Section and Section 013300 – Submittal Procedures.
2. All drawings and technical data are required to be furnished by the CONTRACTOR shall be written in English, and all units of measurements shall be in the English system. All drawings shall be made expressly for this Contract. Typical drawings are not acceptable. The drawings and data shall be complete and accurate in their content. Originals and all copies shall be legible. Drawings shall be prepared using AutoCAD format and shall be drawn to scale and shall have neat lettering. Freehand sketches will not be accepted.
3. Shop Drawings shall include bills of material, front views, assembly drawings, mounting details, schematic diagrams, elementary diagrams, block diagrams, and wiring diagrams. Shop Drawings shall show overall dimensions and minimum clearances for all electrical equipment. Full-size drawings shall be submitted.
4. The drawings shall be prepared using graphical symbols and device function numbers conforming to the latest applicable standards of ANSI.

B. Approval Shop Drawings and Data

1. The CONTRACTOR shall furnish Shop Drawings, data, and instructions for the equipment for approval by the ENGINEER.
2. Prepare and submit a set of coordination drawings showing major elements, components, and systems of electrical equipment and materials in relationship with other building components. Prepare 11”x17” or 24”x36” drawings to an accurate scale of 1/4"=1'-0" or larger. Indicate the locations of all equipment and materials, including clearances for servicing and maintaining equipment including (but not necessarily limited to) the following:
   a. Electric equipment room layouts
   b. Mechanical equipment room layouts
3. Prepare coordination drawings for specific equipment installations, including, but not limited to the following:
   a. Panelboards
   b. Equipment connections
   c. Circuit and disconnects
   e. Feeder conduits
4. Wiring Diagrams: Provide wiring diagrams indicating field installed electrical power and control wiring and cabling layouts, overcurrent protective devices, equipment, and equipment connections.

5. Material Shop Drawings shall show:
    a. Equipment locations, outlines, and layouts: Approval drawings and information shall show equipment locations with respect to the structure, enclosure construction, conduit entries where applicable, grounding plan showing ground rod locations, dimensions, arrangement of components within the enclosures, and section arrangement.
    b. Bills of material: Bills of material shall give information of each piece of equipment including type, style, manufacturer, and other pertinent information such as scales, trip ratings, settings, and other information, as applicable.
    c. Nameplates: Nameplate lists shall provide information on material, sizes, and engraved lettering.
    d. Schematic Diagrams: Schematic diagram drawings shall show complete functional operation of the equipment including equipment devices and components that are identifiable by reference to the bill of material item.
    e. Wiring diagram: Wiring diagram drawings shall show complete wiring of the equipment devices and components including terminal block numbers and wire (conductor) designations.
    f. Manufacturer's data: Manufacturer's data, such as catalog cut sheets, shall be clearly marked to indicate the item being provided. The data shall provide sufficient comprehensive product information to fully demonstrate that the product meets the requirements of these specifications.

C. Final Drawings

1. The CONTRACTOR shall furnish final drawings for all electrical systems. All final drawings shall show all changes and revision dates made up to the time the drawings are furnished. The drawings shall show "as-built" equipment and installations. All drawings furnished shall apply specifically to the equipment actually furnished. No equipment shall be shipped until the drawings have been updated to show the equipment at the time of shipment. The final drawings shall include the requirements of 013300 – Submittals. The following final drawings shall be furnished.
    a. Outlines and location of equipment relative to the structure.
    b. Grounding plan and location of ground rods and grounding connections.
    c. Nameplate lists.
    d. Panel Directories.
    e. Location of conduit hubs, knockouts, openings, and pull boxes.
    f. Schematic diagrams.
    g. Wiring diagrams.

D. Test Reports

1. The CONTRACTOR shall submit to the ENGINEER certified copies of test reports as required in Section 260800 Testing for Electrical or as required by specific sections of Division 26. Ground resistance or equipment, that does not successfully pass the testing requirements, will be rejected. Equipment tests are defined within Section 260800 Testing for Electrical and the specific equipment requirement Sections elsewhere in these Specifications.

E. Operation and Maintenance Instructions, Descriptive Data, and Bills of Material

1. Each set of material shall be assembled into one binder with a cover and front index sheet.
2. The operation and maintenance instructions shall be descriptive data that apply specifically to the equipment furnished and shall include the features pertaining to operation, maintenance, control, relaying, instrumentation, programming, and other features.

3. Descriptive data and bills of material shall describe the components furnished. These data shall be such that the components can be identified as to manufacturer, type, rating, characteristics, and other identification so that a component to be replaced could be ordered from the description furnished.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to State of Colorado, and marked for intended use.

B. Comply with NFPA 70, the National Electrical Code (latest edition).

C. All equipment and materials will be new and unused and shall conform with the current applicable industry standards. All equipment and materials shall be installed in compliance with manufacturer's recommendations and requirements. Workmanship and neat appearance shall be as important as electrical and mechanical operation. Defective or damaged materials shall be replaced or repaired prior to final acceptance in a manner meeting approval of Architect and/or Engineer and at no additional cost to Owner.

D. The State of Colorado Department of Regulatory Agencies (Electrical Board) is the Authority Having Jurisdiction for this project.

1.5 DEFINITIONS

A. Instructions such as "Provide" shall mean the same as though the words "This Contractor shall" preceded each such instruction. "Provide" shall mean "Furnish and Install." Where the words "Accepted" or "Acceptable" are used, such "Accepted" or "Acceptable" action by the Engineer and/or Architect denotes that the work or equipment item is in conformance with the design concept of the project and, in general, complies with pertinent information given in the Contract Documents.

1.6 SEQUENCING AND COORDINATION

A. The electrical system construction sequence shall follow the general project sequence.

B. Coordinate chases, slots, inserts, sleeves, and openings with general construction work and arrange in building structure during progress of construction to facilitate the electrical installation.

C. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment requiring positioning before closing in the building.

D. Coordinate electrical service components (primary feeder(s), utility company transformer, secondary service entrance feeder, main disconnection means and sequence, metering equipment, grounding, etc.) as well as access and connections to utility company equipment furnished by utility companies.

1. Coordinate installation and connection of exterior underground and overhead utilities and services, including provision for electricity-metering components.
2. Comply with requirements of authorities having jurisdiction and of utility company providing electrical power and other services.

E. No work shall be concealed until after inspection and approval by proper authorities. If work is concealed without inspection and approval, Contractor shall be responsible for all work required to expose and restore the concealed work in addition to all required modifications.

F. Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.

G. Where electrical identification markings and devices will be concealed by acoustical ceilings and similar finishes, coordinate installation of these items before ceiling installation.

PART 2 - PRODUCTS

2.1 EQUIPMENT AND MATERIALS

A. Electrical equipment and materials shall be as specified on the drawings and in accordance with standards referenced in Article 1.2.

B. All equipment nameplates shall be in English. All signs and symbols shall be in accordance with ANSI Y32.2.

C. Mounting bolts, nuts, and washers for items of electrical equipment shall be ASTM A276Type 316 stainless steel. Cadmium-plated mounting hardware will not be permitted.

D. Door latching mechanisms on the electrical equipment enclosure shall include combination handle and cylinder-type locks. Handles and locks made of pot metal will not be acceptable. The keys shall be removable in both the locked and unlocked position. Where possible, all locks shall be keyed alike. An identifying serial number shall be stamped on each lock and the associated key. A total of five keys shall be furnished for each differently keyed lock.

E. In addition to the electrical materials specified herein, the CONTRACTOR shall furnish and install shims, grout, expansion anchors, wood blocking, anchor bolts, screws, nuts, washers, and all other hardware and incidentals required to complete the electrical installation.

F. If the CONTRACTOR-furnished electrical equipment and materials are of such size, type, ratings, or other physical properties that changes are required in the approved CONTRACTOR's designs, it shall be the responsibility of the CONTRACTOR to effect all changes necessary as required and approved by the ENGINEER without additional compensation.

G. Nameplates shall be provided in compliance with Section 260553 Identification for Electrical.

2.2 EQUIPMENT FOR UTILITY COMPANY'S ELECTRICITY METERING

A. Current-Transformer Cabinets: Comply with requirements of electrical power utility company.

B. Meter Sockets: Comply with requirements of electrical power utility company.

C. Service Entrance conduit and conductors: Comply with requirements of electrical power utility company.

2.3 TOUCHUP PAINT

A. For Equipment: Equipment manufacturer's paint selected to match installed equipment finish.

B. Galvanized Surfaces: Zinc-rich paint recommended by item manufacturer.

2.4 TOOLS

A. The CONTRACTOR shall furnish all special tools and appliances as required for maintenance and adjustment of electrical equipment. The CONTRACTOR shall furnish all additional tools and equipment as necessary to properly install, adjust, and check the operation of the electrical equipment.

2.5 TEMPORARY FACILITIES:

A. Responsibility for providing electricity for temporary construction facilities and construction equipment, lighting, heating, telecommunications, and other systems shall be as identified in Division 01 and as coordinated between the General Contractor and Division 26 Contractor.

B. If AC power systems or their backup systems serving telecommunications, computer equipment, or their associated HVAC equipment and controls are taken out of service, for any reason, the Contractor shall be responsible for providing temporary systems during the period when the AC power systems or their backup systems are out of service. The Contractor shall be responsible for providing temporary power to all loads being interrupted.

PART 3 - EXECUTION

3.1 ELECTRICAL EQUIPMENT INSTALLATION

A. General

1. Installation of electrical equipment shall be in accordance with the manufacturer's installation instructions. Nuts and bolts used in electrical equipment assembly and installation shall be tightened by the use of torque wrenches to torque values recommended by the equipment manufacturer.
2. The CONTRACTOR shall make all electrical wire, cable, conduit, and grounding connections and furnish all miscellaneous materials that are required for making these connections to the equipment.
3. The CONTRACTOR shall drill all holes and provide all fastenings required for mounting or installing electrical equipment and materials.
4. Any electrical equipment installed on concrete foundations shall be given full and even bearing by being grouted in place. Grouting shall be in accordance with Section 03 30 00 – Concrete
5. Repair of damage to painted and/or galvanized surfaces shall be made in accordance with manufacturer’s recommendations.
6. Repair or replacement of damaged parts shall be in accordance with Article 1.4

B. Equipment Identification

1. The completed electrical installation shall be provided with adequate identification of circuits and equipment to assist personnel during maintenance.

2. Nameplates shall be provided for all panelboards, panels, starters, switches, and push button stations. In addition to the nameplates shown, control devices shall be equipped with standard collar type legend plates, as required.
3. Control devices within enclosures shall be identified with nameplates.
4. Terminal strips shall be identified by imprinted marker strips

C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange, and install components and equipment to provide the maximum possible headroom.

D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Adhere to clearances required by the NEC-latest edition, NFPA 70. Connect for ease of disconnecting, with minimum interference with other installations.

E. Right of Way: Give to raceways and piping systems installed at a required slope.

3.2 UTILITY COMPANY ELECTRICITY-METERING EQUIPMENT

A. Install CT enclosures, meters, service entrance feeders, and other equipment according to the local utility company's written requirements. Coordinate the installation, access to transformers and other utility company equipment with the utility company.

B. Provide grounding, trenching and empty conduits for the primary feeder as required by the local utility company. Install according to the local utility company's written requirements.

3.3 CUTTING AND PATCHING

A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.

B. Coordinate the repair and refinish of disturbed finish materials and other surfaces with the appropriate trade to have areas restored to match adjacent undisturbed surfaces. This contractor is responsible for all costs of repairs required by work performed by this contractor. Install new fireproofing where existing firestopping has been disturbed. Repair and refinish materials and other surfaces by skilled mechanics of trades involved.

3.4 FIELD TESTING AND STARTUP

A. After the electrical installations have been completed, the CONTRACTOR shall operationally test the electrical equipment and circuits installed under these specifications, unless specifically indicated otherwise herein, to demonstrate that the requirements of these specifications have been fulfilled.

B. The CONTRACTOR shall have available, at the construction site, drawings that show the electrical installation at the time of the examination, instruction books, equipment tests reports, coordination curves, and data.

C. Immediately prior to the acceptance tests, the CONTRACTOR shall service all electrical equipment in accordance with manufacturer's instructions.

D. While performing the functions of testing and checkout, the CONTRACTOR shall retain full responsibility for the removal and replacement of any wiring connections. The CONTRACTOR shall make wiring changes, setting adjustments, equipment replacements, or other revisions, which are necessary for the proper and adequate functioning of the installation. The CONTRACTOR shall be responsible for and shall replace at the CONTRACTOR's own expense any wiring, instruments, or equipment which may be damaged in the checkout process.

1. All switches shall be tested for correct operation.
2. All instrumentation systems shall be calibrated and tested for proper operation.
3. The grounding system shall be tested for proper resistance.

3.5 FIELD QUALITY CONTROL

A. Inspect installed components for damage and faulty work, including the following:

1. Raceways
2. Conductors and Cables
3. Supporting Devices for Electrical Components
4. Electrical Identification
5. Concrete Equipment Bases
6. Electrical Demolition
7. Cutting and Patching for Electrical Construction
8. Touchup Painting

3.6 CLEANING AND PROTECTION

A. On completion of installation, including outlets, fittings, and devices, inspect exposed finish. Remove burrs, dirt, paint spots, and construction debris.

B. Protect equipment and installations and maintain conditions to ensure that coatings, finishes, and cabinets are without damage or deterioration at time of Final Acceptance.

3.7 WARRANTY

A. The CONTRACTOR shall warranty all electrical workmanship and materials for a minimum of one year or for the warranty period specified in individual sections whichever is greater. The warranty period shall extend from the date of Final Acceptance.

B. In addition to the standard warranties the CONTRACTOR shall attend a warranty walk through meeting to be held at eleven months from the date of Final Acceptance.

END OF SECTION 260500

SECTION 260519 - LOW-VOLTAGE POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SCOPE

A. This Section includes building wires and cables and associated connectors, splices, and terminations for wiring systems rated 600V and less.

B. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 REFERENCES

A. The latest edition of the following standards and codes are the minimum requirements for this work.

1. Insulated Cable Engineer's Association (ICEA)
2. InterNational Electrical Testing Association (NETA ATS)
3. National Electrical Contractors Association (NECA)
4. National Electrical Manufacturer's Association (NEMA)
5. National Fire Protection Association (NFPA)
6. NFPA 70, The National Electrical Code (NEC-latest edition)
7. Underwriters' Laboratories, Inc. (UL)

1.3 SUBMITTALS

A. The CONTRACTOR shall submit manufacturers’ catalog data for the wire and cables in accordance with the requirements of this Section, Section 260500 – Common Work Results for Electrical, and Section 013300 –Submittal Procedures.

1.4 QUALITY ASSURANCE

A. Listing and Labeling: Provide wires and cables specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in NFPA 70, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" as defined in OSHA Regulation 1910.7.

B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MATERIALS

A. The insulated conductors furnished shall be of the proper voltage rating, type, and size for the application, and shall have been manufactured within twenty four (24) months prior to receipt of the notice to proceed under this contract. All conductors shall be stranded copper unless specifically stated otherwise. All conductors shall be suitable for installation in a vertical position. All conductors shall have an AWG or kcmil designation.

B. 600-Volt, Single Conductor for General Use Other Than Direct Burial: The insulated conductors shall conform to the requirements of NEC-latest edition, shall bear the UL label, shall be suitable for general use other than direct burial, and shall be NEC-latest edition type THW, THWN/THHN or XHHW.

C. Polyethylene warning tape: Polyethylene warning tape for installation above buried power feeders shall be 6 inches wide, yellow in color, with CAUTION printed continuously the full length of the tape.

D. Multiconductor Power and Control Cable: Multiconductor cables shall be provided as noted on the Drawings. The multiconductor cables shall be as follows:

1. 600 volts insulated.
2. Multiconductor type suitable for installation in trays and conduits.
3. Individual conductors shall be insulated with NEC-latest edition type THHN insulation and color-coded.
4. Polyester tape, or equivalent, over the conductor group.
5. Shielded with 100 percent aluminum foil taper and with minimum No. 18 AWG tinned and copper drain wire.
6. An overall covering (jacket) of thermoplastic or neoprene.
    a. Cable with No. 14 AWG individual conductors:
        (i) 3/C and smaller - 45 mils thick.
        (ii) 4/C to 12/C - 60 mils thick.
        (iii) Over 12/C - 80 mils thick.

E. Instrumentation Cable: The instrumentation cable shall be suitable for all uses and shall be as follows:

1. Twisted pair, individually shielded, having varying lengths of lay to minimize crosstalk.
2. UL listed and labeled, Type TC.
3. Voltage: 300V.
4. Conductors tinned copper, stranded, and No. 18 AWG minimum.
5. Pair Shield: Aluminum coated Mylar with tinned copper drain wire, No. 18 AWG minimum.
6. Jacket: Plenum Rated.
7. Conductor Identification: ICEA S-61-402, black and white in pairs. White conductor printed numerically for group identification.

F. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Wires and Cables:
   a. Southwire Company.
   b. The Okonite Company
   c. USA Wire & Cable, Inc.

2. Connectors for Wires and Cables:
   a. AMP Incorporated.
   b. General Signal; O-Z/Gedney Unit.
   c. 3M Company; Electrical Products Division.

2.2 WIRES AND CABLES 600-VOLT NOMINAL OR LESS

A. UL-listed building wires and cables with appropriate ratings for installed application.

B. Rubber Insulation Material: Comply with NEMA WC 3.

C. Thermoplastic Insulation Material: Comply with NEMA WC 5.

D. Cross-Linked Polyethylene Insulation Material: Comply with NEMA WC 7.

E. Ethylene Propylene Rubber Insulation Material: Comply with NEMA WC 8.

F. Factory applied color coded insulation the entire length of conductors for all wire.

G. Conductor Material: Copper.

H. Stranding: Solid conductor for No. 10 AWG and smaller (except for Engine/Generator Control Wiring); stranded conductor for larger than No. 10 AWG.

I. Insulation Color: All insulated conductors (service entrance, feeder, and branch circuit) shall have full colored insulation, colors as specified in Section 26 05 53 Identification For Electrical Systems, for the entire length of the conductor. Neutral conductors installed, in compliance with the NEC-latest edition for each single pole breaker, shall have a tracer stripe to match the phase conductor color. (Contact Omnicable.com / 303-574-9444 or equivalent for striped conductors).

J. Use of MC cable is prohibited except for luminaire connection whips (from homerun j-box to luminaire).

K. Use of AC, NM, ENT, or other manufactured pre-wired systems cable is prohibited.

2.3 CONNECTORS AND SPLICES 600-VOLT NOMINAL OR LESS

A. UL-listed, factory-fabricated wiring connectors of size, ampacity rating, material, type, and class for application and service indicated. Comply with Project's installation requirements and as specified in Part 3 “Wire and Insulation Applications" Article.

B. Electrical Tape:

1. Plastic tape, 8.5 mils maximum thickness, 1,000,000 megohms minimum insulation resistance, oil-resistant vinyl backing, oil-resistant acrylic adhesive, incapable of supporting combustion per ASTM D-568 Test Method B.
2. 3M +33 Type.

C. Cable Lubricants:

1. Wire pulling lubricants shall be specifically recommended by the cable manufacturer for assisting in pulling jacketed cables. Cable lubricants shall be soapstone, graphite, or talc for rubber or plastic-insulated cables. Lubricants shall be rated for use in low temperatures (-20º F). Lubricant shall not be deleterious to the cable sheath, jacket, or outer coverings.
2. Ideal Yellow #77, Aqua Blue, Poly Water, Dyna Blue or equivalent.

2.4 MISCELLANEOUS WIRING MATERIAL

A. Miscellaneous Connecting and Splicing Devices: Miscellaneous products, such as heat shrink tubing, electrical insulation, plug caps, splices and kits, tapes, terminal blocks, and terminations, shall be approved for the specific application.

B. Joint compounds shall be approved for the specific type of metal joint to be prepared.

C. Cable ties, clamps, and identification shall be nylon, self-locking.

D. Fire-seal fittings, certified by UL, for installation where sleeves penetrate fire-rated walls, floors, etc., as required by NEC-latest edition Article 300-21. Size fire seals for the application.

PART 3 - EXECUTION

3.1 GENERAL

A. All wiring shall be in compliance with the NEC-latest edition: All single phase branch circuits originating at single pole or multi-pole breakers (120V single phase circuits, or 277V single phase circuits) shall be installed with a dedicated neutral conductor for each phase conductor. The neutral conductor shall have a tracer stripe (the stripe color shall match the color of the phase conductor).

B. All wiring shall be routed through an UL-listed raceway regardless of voltage application, unless specified otherwise on the drawings or under other sections of these Specifications.

C. Derate conductor ampacities based on the NEC-latest edition when more than three current carrying conductors are installed in one raceway.

D. No conductors or cable shall be pulled into any portion of conduit system until all construction work, which might damage the wire, has been completed and raceways have been swabbed. In no case shall wire be left exposed where students and staff may have access.

E. Lubricate cables to facilitate pulling. Lubrication material shall be inert to cable and raceways and rated for -20°F for pulling #4AWG and larger wires.

F. Install compression connectors with hydraulic die, embossing die code into connector. Connect to bus with Belleville type washers for positive pressure over complete contact area. Insulate with heat shrink tubing.

G. Sizes of conduits, unless specifically shown otherwise, shall be determined from Chapter 9 of the latest National Electrical Code based on THW wire in electric metallic tubing.

3.2 INSTALLATION 600 VOLTS, NOMINAL OR LESS GENERAL

A. Unless otherwise indicated, all wiring for branch circuits shall be #12 AWG protected by 20-ampere circuit breakers. Wire size shall be increased to account for voltage drop for all 120-volt circuits over 75 feet, and all 277-volt circuits over 150 feet to the first outlet. Wire size shall be uniform for the entire length of the circuit unless noted otherwise. Homeruns which indicate upgrading circuit conductors for voltage drop, e.g., #10AWG wire on 20-ampere circuit, shall have the conductor size indicated carried throughout the circuit to the last device or fixture.

B. Do not splice feeders or dedicated branch circuits unless otherwise indicated. Install all wire continuous from outlet to outlet or terminal to terminal. Splices in cables when required shall be made in handholes, pull boxes or junction boxes and shall be in strict accordance with cable manufacturer's recommendations utilizing solderless connectors UL approved for the use. Splices for pole mounted luminaires shall be made in the pole handhole, or in the curved Carlon box when specified or indicated on the drawings to be installed in the above grade portion of the pole base. Make up splices in outlet boxes with 8 inches of correctly color-coded tails left in box. Splices in wires size #10AWG and smaller shall be made with insulated spring type wire connectors, "Scotchlok." Use U.L. listed compression connectors (Ilsco Clear Tap or Burndy Hi Press), for wire splices and taps, #8AWG and larger. All insulating tape used on circuits of 600 volts and less shall be 3-M +33. Tape or heat shrink uninsulated conductors and connectors with electrical tape to 150 percent of the insulation value of the conductor. Terminate spare conductors with electrical tape.

C. Make connections, splices, taps and joints with solderless devices, mechanically and electrically secure.

D. Provide a separate neutral for dimmer branch circuits, ground fault interrupter branch circuits, lighting branch circuits serving electronic ballasts.

E. All phase, neutral, and ground conductors shall be tagged with corresponding circuit numbers at panelboard as well as at all junction and outlet boxes.

F. Make all ground, neutral, and line connections to receptacle and wiring device terminals by means of the side terminal screw connections. Branch conductors shall not be connected to the device with backside “push-in” connectors. Provide ground jumper from outlet box to ground terminal of receptacle.

3.3 STORAGE AND HANDLING

A. Store wiring materials in a protected environment not subject to physical damage or the effects of sunlight or inclement weather.

3.4 FIELD QUALITY CONTROL

A. Wire and Cable Tests (600 Volts): Measure the insulating resistance of service entrance conductors, feeder circuit conductors, and service ground. Measurements shall be taken between conductors and between conductors and ground. Resistance shall be 1,000,000 ohms or more when tested at 500 volts by megger without branch circuit loads. Tests and procedures shall meet the approval of the ENGINEER and shall be in accordance with the applicable ICEA standards for the wires and cables to be installed. Furnish all instruments, equipment, and personnel required for testing, and conduct tests in the presence of the ENGINEER. Submit written reports of the tests and results to the ENGINEER.

B. Testing: On installation of wires and cables and before electrical circuitry has been energized, demonstrate product capability and compliance with requirements.

1. Procedures: Perform each visual and mechanical inspection and electrical test stated in NETA ATS, Section 7.3.1. Certify compliance with test parameters.

C. Correct malfunctioning conductors and cables at Project site, where possible, and retest to demonstrate compliance; otherwise, remove and replace with new units and retest.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL

PART 1 - GENERAL

1.1 SCOPE

A. This Section includes grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other Sections.

B. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 REFERENCES

A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
ANSI/ASTM B3 Soft or Annealed Copper Wire
ANSI/ASTM B8 Concentric-Lay –Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ANSI/UL 467 Grounding and Bonding Equipment

B. NFPA70 – NATIONAL ELECTRICAL CODE (NEC-latest edition)

1.3 DEFINITIONS

A. Bonding and Grounding for Telecommunications / Data Communications Systems:
Telecommunications Main Grounding Busbar (TMGB)
Telecommunications Grounding Busbar (TGB)
Telecommunications Bonding Backbone (TBB) conductor.

1.4 SUBMITTALS

A. Product Data: For the following:

1. Ground rods
2. Ground bars
3. Ground enhancement material

B. Qualification Data: For firms and persons specified in "Quality Assurance" Article.

C. Field Test Reports: Submit written test reports to include the following:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

D. The CONTRACTOR shall submit manufacturers catalog data for the grounding materials, grounding drawing, and test reports in accordance with the requirements of this Section, Section 260500 – Common Work Results for Electrical, and Section 013300 –Submittal Procedures.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to the State of Colorado and marked for intended use.

1. Comply with UL 467.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Grounding Conductors, Cables, Connectors, and Rods:
   a. ILSCO.
   b. Kearney/Cooper Power Systems.
   c. Lyncole XIT Grounding.
   d. O-Z/Gedney Co.; a business of the EGS Electrical Group.
   e. Raco, Inc.; Division of Hubbell.
   f. Thomas & Betts, Electrical.
2. Grounding Bus Bars for power and telecommunications systems:
   a. Chatsworth (CPI)
   b. Cooper B-Line
   c. Erico (nVent)
   d. Harger
   e. Hubbell
   f. ILSCO.
   g. Legrand (Ortronics)
   h. Panduit
   i. Thomas & Betts, Electrical.

2.2 GROUNDING CONDUCTORS

A. For insulated conductors, comply with Division 26 Section "Low-Voltage Power Conductors and Cables."

B. Material: Copper.

C. Equipment Grounding Conductors: Insulated with green-colored insulation.

D. Grounding Electrode Conductors: Stranded cable.

E. Underground Conductors: Bare, tinned, stranded, unless otherwise indicated.

F. Bare Copper Conductors: Comply with the following:

1. Solid Conductors: ASTM B 3.
2. Assembly of Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.

G. Copper Bonding Conductors: As follows:

1. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG copper conductor, 1/4 inch (6.4 mm) in diameter.
2. Bonding Conductor: No. 4 or No. 6 AWG, stranded copper conductor.
3. Bonding Jumper: Bare copper tape, braided bare copper conductors, terminated with copper ferrules; 1-5/8 inches (42 mm) wide and 1/16 inch (1.5 mm) thick.
4. Tinned Bonding Jumper: Tinned-copper tape, braided copper conductors, terminated with copper ferrules; 1-5/8 inches (42 mm) wide and 1/16 inch (1.5 mm) thick.

H. Grounding Bus Bar: Bare, annealed copper bars of rectangular cross section, mounted to wall with insulators. Bus bar dimensions shall be 1/4-by-4-by-20-inch minimum (6.35-by-100-by-500-mm), copper or copper alloys having a minimum of 95% conductivity.

2.3 CONNECTOR PRODUCTS

A. Comply with IEEE 837 and UL 467; listed for use for specific types, sizes, and combinations of conductors and connected items.

B. Bolted Connectors: Bolted-pressure-type connectors, or compression type. Burndy Hi-Press series lugs, ILSCO Clear Taps may be used for wire sizes #8 through 500kcmil.

C. Welded Connectors: Exothermic-welded type, in kit form, and selected per manufacturer's written instructions.

2.4 GROUNDING ELECTRODES

A. Ground Rods: Sectional type; copper-clad steel.

1. Size: 3/4 in diameter by 120 inches.

B. Concrete Encased Ground Electrode: The concrete encased ground electrode shall consist of a minimum of 20 feet of bare #4 copper conductor or larger installed as a single run, or #5 rebar or larger installed as a single run, or multiple column (2 or more) grid with equal size cross members 18 inches on center welded (or double-tied) together, installed within the foundation or footer and encased with a minimum of two inches of concrete cover in all directions.

PART 3 - EXECUTION

3.1 APPLICATION

A. Use only copper conductors for both insulated and bare grounding conductors in direct contact with earth, concrete, masonry, crushed stone, and similar materials.

B. In raceways, use insulated equipment grounding conductors.

C. Exothermic-Welded Connections: Use for connections to structural steel and for underground connections, except those at test wells.

D. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.

E. Ground Rod Clamps at Test Wells: Use bolted pressure clamps with at least two bolts.

3.2 EQUIPMENT GROUNDING CONDUCTORS

A. Comply with NFPA 70, Article 250, for types, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NFPA 70 are indicated.

B. Install equipment grounding conductors in all feeders and branch circuits. This grounding conductor shall be in addition to the ground path provided by the continuously grounded metallic raceway system that encloses the phase and neutral conductors. Where there are parallel feeders installed in more than one raceway, each raceway shall have a green insulated equipment ground conductor. Provide ground bushings bonded to grounding conductor at both ends of all feeder conduits.

C. Nonmetallic Raceways: Install an equipment grounding conductor in nonmetallic raceways unless they are designated for telephone or data cables.

D. Air-Duct Equipment Circuits: Install an equipment grounding conductor to duct-mounted electrical devices operating at 120 volts and more, including air cleaners and heaters. Bond conductor to each unit and to air duct.

E. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate equipment grounding conductor to each electric water heater, heat-tracing, and antifrost heating cable. Bond conductor to heater units, piping, connected equipment, and components.

F. Signal and Communication Systems: For telephone, alarm, voice and data, and other communication systems, provide insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location in compliance with TIA-607-D.

1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a telecommunications grounding bus bar.
2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

G. Metal Poles Supporting Outdoor Lighting Fixtures: Provide a grounding electrode in addition to installing a separate equipment grounding conductor with supply branch-circuit conductors.

3.3 INSTALLATION

A. Ground Rods: Install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes.

1. Drive ground rods until tops are 2 inches (50 mm) below finished floor or final grade, unless otherwise indicated.
2. Interconnect ground rods with grounding electrode conductors. Use exothermic weld connections without exposing steel or damaging copper coating.

B. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

C. Bonding Straps and Jumpers: Install so vibration by equipment mounted on vibration isolation hangers and supports is not transmitted to rigidly mounted equipment. Use exothermic-welded connectors for outdoor locations, unless a disconnect-type connection is required; then, use a bolted clamp. Bond straps directly to the basic structure taking care not to penetrate any adjacent parts. Install straps only in locations accessible for maintenance.

D. Metal Water Service Pipe: Provide insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes by grounding clamp connectors. Where a dielectric main water fitting is installed, connect grounding conductor to street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.

E. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with grounding clamp connectors.

F. Bond interior metal piping systems and metal air ducts to equipment grounding conductors of associated pumps, fans, blowers, electric heaters, and air cleaners. Where metallic piping and duct systems are rendered metallically non-continuous by non-conductive couplings, provide bonding jumpers to restore grounding continuity. Use braided-type bonding straps.

G. Bond each aboveground portion of gas piping system upstream from equipment shutoff valve.

H. Bonding and Grounding for Telecommunications / Data Communications Systems: For telephone, alarm, voice, data, and other communication systems, provide TMGB in the MDF, and a TGB in each IDF. TMGB is interconnected to each TGB by a TBB conductor.

1. Service and Central Equipment Locations such as the MDF or other communications entrance facility: Provide a TMGB bonded to facility Electrical Service Grounding Busbar.

3.4 CONNECTIONS

A. General: Make connections so galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.

B. All connections to ground buses shall be by mechanical means.

C. Exothermic-Welded Connections: Comply with manufacturer's written instructions. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable.

D. Equipment Grounding Conductor Terminations: For No. 8 AWG and larger, use pressure-type grounding lugs. No. 10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors. Use Burndy QGFL 34 B1 type connectors for attachment to building steel

E. Noncontact Metal Raceway Terminations: If metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate both ends of conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing. Bond electrically noncontinuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.

F. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

G. Compression-Type Connections (#8 and Larger): Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on grounding conductor.

H. Moisture Protection: If insulated grounding conductors are connected to ground rods or grounding buses, insulate entire area of connection and seal against moisture penetration of insulation and cable.

3.5 FIELD QUALITY CONTROL

A. Tests: Perform the following field quality-control testing:

1. After installing grounding system but before permanent electrical circuitry has been energized, test for compliance with requirements.
2. Test completed grounding system at each service disconnect enclosure grounding terminal, the maximum ground-resistance shall not exceed 5 ohms. Measure ground resistance not less than two full days after the last trace of precipitation, and without the soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance. Perform tests, by the fall-of-potential method according to IEEE 81.
3. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.

B. Final testing and reporting shall be performed by the independent testing firm.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 SCOPE

A. The CONTRACTOR shall furnish and install supports, fasteners, and anchors for all electrical conduits; boxes, switchboards, panelboards, transformers, and accessories required for a complete and secure electrical system. The term "conduit" shall be considered synonymous with the term "raceway" as defined in Article 100 of the NEC-latest edition.

B. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 REFERENCES

A. The latest edition of the following standards and codes are the minimum requirements for this work.

NFPA No. 70 National Electrical Code (NEC-latest edition)

1.3 SUBMITTALS

A. The CONTRACTOR shall submit product data, drawings, and descriptive information in accordance with the requirements of this Section, Section 260500 – Common Work Results for Electrical, and Section 013300 –Submittal Procedures.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. For structures assigned to Seismic Design Category B, C, D, E or F, where the requirements of Section 13.2.1 of ASCE 7 for nonstructural components, supports or attachments are met by seismic qualification as specified in Item 2 therein, components shall meet the seismic qualification by analysis, testing or experience data. Certificates of compliance for the seismic qualification shall be submitted to the Building Official/Authority Having Jurisdiction.

2.2 SUPPORTING DEVICES FOR ELECTRICAL COMPONENTS

A. Provide hangers and supports to support raceways, fixtures, cabinets, boxes, etc. as manufactured by B-Line, Caddy, Unistrut, or Kindorf.

B. Material: Cold-formed steel, with corrosion-resistant coating.

C. Metal Items for Use Outdoors or in Damp Locations: Steel, hot-dip galvanized after fabrication.

D. Slotted-Steel Channel Supports: Flange edges turned toward web, and 9/16-inch- (14-mm-) diameter slotted holes at a maximum of 2 inches (50 mm) o.c., in webs.

1. Channel Thickness: Selected to suit structural loading.
2. Fittings and Accessories: Products of the same manufacturer as channel supports.

E. Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, trapeze hangers, wall brackets, roof supports, and spring-steel clamps or click-type hangers.

1. Trapeze hangers shall be an assembly consisting of parallel vertical threaded rods suspended from structure, using support devices and methods listed herein, connected at the lower ends by a horizontal slotted steel channel member. All components shall be engineered and manufactured specifically for use and assembly as supports/hangers.

F. Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.

G. Roof Supports: Pyramid based supports with rubber base and galvanized steel mounting top cover. Supports shall be mounted on top of 12” W by 12” L by 1.5” H concrete paving stones. Provide additional 24” square roof membrane material between the roofing material and paving stones or other material as directed by roofing manufacturer/supplier/contractor.

H. Fabricated supports, use structural steel or steel channel, rigidly welded, or bolted to present a neat appearance.

I. Expansion Anchors: Carbon-steel wedge or sleeve type. Anchors shall be removable type.

J. Toggle Bolts: All-steel springhead type.

K. Mounting bolts, nuts, and washers for items of electrical equipment shall be ASTM A276Type 316 stainless steel. Cadmium-plated mounting hardware will not be permitted.

L. Perforated pipe strap and wire supports are prohibited.

M. Powder-actuated anchors are prohibited without specific written permission.

N. Concrete housekeeping pads for transformers and free standing floor mounted switchgear enclosures and cabinets shall be in compliance with Division 3 Concrete. Housekeeping pads shall be a minimum of four inches high and extend 3 inches beyond the footprint of the supported equipment.

O. Door latching mechanisms on the electrical equipment enclosure shall include combination handle and cylinder-type locks. Handles and locks made of pot metal will not be acceptable. The keys shall be removable in both the locked and unlocked position. Where possible, all locks shall be keyed alike. An identifying serial number shall be stamped on each lock and the associated key.

PART 3 - EXECUTION

3.1 GENERAL

A. Install supporting devices to fasten electrical components securely and permanently in accordance with NEC-latest edition requirements.

1. Fasten supports directly to structure. Do not fasten supports to piping, ductwork, mechanical equipment, conduit, or ceiling system suspension wires or wire of any type.
2. Drilling or other modification of structural steel members is prohibited without specific written permission from the structural engineer.

B. Coordinate with the building structural system and with other electrical installation.

C. Electrical system layouts indicated on drawings are generally diagrammatic but shall be followed as closely as actual construction and work of other trades will permit. Govern exact routing of raceways and locations of outlets by structure and equipment served. Take all dimensions from architectural drawings.

D. Consult all other drawings. Verify all scales and report any dimensional discrepancies or other conflicts to Architect before submitting bid.

E. Avoid cutting and boring holes through structure or structural members wherever possible. Obtain prior approval of Architect and conform to all structural requirements when cutting or boring structure is necessary and permitted.

F. Raceway Supports: Comply with the NEC-latest edition and the following requirements:

1. Install individual and multiple (trapeze) raceway hangers and riser clamps as necessary to support raceways. Provide U-bolts, clamps, attachments, and other hardware necessary for hanger assembly and for securing hanger rods and conduits. Provide a minimum of 20% space available for future raceways for all multiple raceway supports.
2. Support parallel runs of horizontal raceways together on trapeze-type hangers.
3. Support individual horizontal raceways by separate pipe hangers. Spring steel fasteners may be used in lieu of hangers only for 1-1/2-inch and smaller raceways serving lighting and receptacle branch circuits above suspended ceilings. For hanger rods with spring steel fasteners, use 1/4-inch-diameter or larger threaded steel. Use spring steel fasteners that are specifically designed for supporting single conduits or tubing.
4. Space supports for raceways in accordance with NEC-latest edition, but in no case shall support spacing exceed 8-feet between supports or 2-feet from any box or conduit body.
5. Support raceway within 1 foot of box and access fittings.
6. In vertical runs, arrange support so the load produced by the weight of the raceway and the enclosed conductors is carried entirely by the conduit supports with no weight load on raceway connections.
7. Wire will not be allowed for conduit support.

G. Panelboards: Comply with the NEC-latest edition and the following requirements:

1. Install surface-mounted cabinets and panelboards with minimum of four anchors.
2. Bridge between studs above and below recess mounted cabinets and panelboards with channels to support cabinets in stud walls.
3. Align tops of all adjacent cabinets.

H. Transformers and Freestanding Switchgear Enclosures: Concrete housekeeping pads shall be provided for all transformers and free standing floor mounted switchgear enclosures. Secure transformers and free standing switchgear to concrete housekeeping pads with a minimum of four anchors per section.

1. Transformers smaller than 15 kVA may be wall-mounted. Transformers 15 kVA and larger shall be floor-mounted unless otherwise shown on the drawings. Provide Korfund elasti-rib vibration isolations pads along with rubber washers for all mounting bolts. Where wall-mounted, provide factory mounting brackets.

I. Fasten hanger rods, conduit clamps, and outlet and junction boxes to building structure using expansion anchors or preset inserts.

J. Use toggle bolts or hollow wall fasteners in hollow masonry, plaster, or gypsum board partitions and walls.

K. Use expansion anchors or preset inserts in solid masonry walls

L. Use self-drilling anchors or expansion anchor on concrete surfaces

M. Use sheet metal screws in sheet metal studs.

N. Use hexagon head bolts with spring lock washers under all nuts.

O. Sleeves: Install in concrete slabs and walls for raceways and cable installations. All penetrations through walls and floors shall be sealed. For non-rated walls and floors apply additional materials used in penetrated wall construction (grout, gyp-board and tape, etc.) or non-rated gap sealant.

For sleeves through fire rated-wall or floor construction, apply UL- listed fire-stopping sealant in gaps between sleeves and enclosed conduits and cables in accordance with sealant manufacturer’s requirements.

END OF SECTION 260529

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL

PART 1 - GENERAL

1.1 SCOPE

A. The CONTRACTOR shall furnish and install all electrical conduits; boxes, and accessories required for the installation of conductors for the power, control, and instrumentation services. The term "conduit" shall be considered synonymous with the term "raceway" as defined in Article 100 of the NEC-latest edition.

B. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 REFERENCES

A. The latest edition of the following standards and codes are the minimum requirements for this work.

ANSI C80.1	Rigid Steel Conduit, Zinc-coated
ANSI C80.6	Intermediate Metal Conduit, Zinc-coated
ANSI C80.3	Electrical Metallic Tubing, Zinc-coated
NEMA FB 1	Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies
NEMA RN 1	Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit
NEMA TC2	Rigid Nonmetallic Conduit (Schedule 40 and Schedule 80)
NEMA TC 3	PVC Fittings for Use with Rigid PVC Conduit and Tubing
NFPA No. 70	National Electrical Code (NEC-latest edition)
UL-651	Standard for Safety Schedule 40 and 80 PVC Conduit

B. Sizes of conduits, unless specifically shown otherwise, shall be determined from Tables in Chapter 9 of latest National Electrical Code (latest edition).

1.3 SUBMITTALS

A. The CONTRACTOR shall submit drawings, data, and descriptive information in accordance with the requirements of this Section, Section 260500 – Common Work Results for Electrical, and Section 013300 –Submittal Procedures.

PART 2 - PRODUCTS

2.1 RACEWAYS AND FITTINGS

A. Metallic Conduit Systems:

1. Electrical Metallic Conduit (EMT). EMT shall be zinc-coated steel, galvanized on the outside and coated on the inside with a hard smooth lacquer finish. EMT fittings shall be steel set-screw type with insulated throats.
2. Flexible Metal Conduit (FMC): FMC shall be single strip, continuous, flexible interlocked double-wrapped steel, zinc-coated inside and out forming smooth internal wiring channel with steel compression fittings.
3. Intermediate Metal Conduit (IMC): IMC shall be hot-dipped galvanized with a zinc-coating. Fittings shall be steel threaded type.
4. Liquidtight Flexible Steel Conduit (LFSC): FLSC shall be zinc-coated steel the same as FMC except with sunlight-resistant and mineral-oil-resistant plastic jacket. Fittings shall be cast malleable iron or steel body and gland nut, cadmium-plated with one-piece brass grounding bushings threaded to interior of conduit. Provide spiral molded vinyl sealing ring between gland nut and bushing and nylon insulated throat.
5. Rigid Steel Conduit (RSC): RSC shall be heavy wall, hot dipped galvanized steel inside and out with threaded ends. RSC fittings shall be steel, threaded type. Plastic-coated Rigid Steel Conduit shall be rigid galvanized steel conduit having a 0.030"(.762 mm) minimum thick factory-bonded PVC jacket, using pre-jacketed couplings as manufactured by Pittsburgh Robroy, Plastic Applicator, Occidental or approved equal.

B. Nonmetallic Conduit Systems:

1. Rigid Nonmetallic Conduit (RNC): RNC shall be polyvinyl chloride (PVC) Schedule 40 or 80 suitable for 90°C. Provide solvent cemented type fittings matched to conduit type and material.
2. Liquidtight Flexible Nonmetallic Conduit (LFNC): LFNC shall comply with UL3.

C. Metal Wireways: Wireways shall be hinged cover or screw cover complete with all necessary manufactured fittings which shall be of one manufacturer. Wireway shall be G.E. Type HS or ITE KEL Duct or acceptable equal.

1. Material: Sheet metal sized and shaped as indicated.
2. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system. Provide wire retainers at not greater than 12 inches (300 mm) on center.
3. Select features, unless otherwise indicated, as required to complete wiring system and to comply with NFPA 70.
4. Wireway Covers: Hinged type
5. Exterior, wet, or damp locations shall be NEMA 250 Type 3R
6. Finish: Manufacturer's standard enamel finish

D. Bushings: For steel conduit larger than 1/2-inch size, provide insulated type bushings, designed to prevent abrasion of wires without impairing the continuity of the conduit grounding system. Grounding bushings shall be locking type and shall be provided with a feed-through compression lug for securing the ground cables. Unions shall be electro-galvanized ferrous alloy type Appleton UNF or UNY, Crouse-Hinds UNF or UNY, or equal.

Grounding bushings shall be steel type and installed at both ends of the conduit on all feeders, as well as all transformer, motor, motor controller, kitchen, and TVSS equipment branch circuits.

E. Sealing Fittings: Provide threaded, zinc or cadmium coated, cast or malleable iron type for steel conduits. Fittings used to prevent passage of water vapor shall be of the continuous drain type.

F. Provide minimum ¾" conduit for all circuit homeruns from the source panel to the first device

G. Flexible Metallic and Flexible Non-Metallic conduit installations shall be limited to 6ft in length.

H. Use of MC cable is prohibited except for luminaire connection whips (luminaire connection whips from a homerun j-box to each individual luminaire, luminaire to luminaire is not allowed. Maximum of 6 feet length for connecting luminaires in accessible ceilings to the local junction box. Maximum of 3 feet length for connecting luminaires in non-accessible ceilings to the local junction box.).

I. Use of AC, NM, ENT, or other manufactured pre-wired systems cable is prohibited.

2.2 SURFACE METAL RACEWAYS

A. Surface metal raceway components, fittings, and accessories shall be of one manufacturer, designed and listed for use together as surface metal raceway.

1. Sheet metal channel with fitted cover.
2. Couplings, elbows, and connectors shall be designed for use with the raceway system.
3. Boxes and extension rings shall be designed for use with the raceway systems. (extension rings are not allowed on new construction, one extension ring is allowed on existing recessed boxes where conductor length will still comply with the latest NEC requirements)
4. Use flat head screws to fasten channel to surfaces.
   a. Option: Use suitable clips and straps
5. Use insulating bushings and inserts at connections to outlets and corner fittings.
6. Maintain grounding continuity between raceway components.

B. Acceptable Manufacturers:

1. Carlton, Hubbell, IsoDuct, Panduit, Square D, Walker, Wiremold, or equivalent.

2.3 OUTLET, JUNCTION AND PULL BOXES

A. Acceptable Manufacturers:

1. Boxes and Cabinets; Bell, Bowers, Raco, Steel City, Appleton, Carlton, Lew Electric, National Electric Products, or equivalent.
2. Floor boxes; Walker, Hubbell, Raceway Components Inc., Bowers, Rotco Inc., Steel City, Appleton, Lew Electric, or equivalent.

B. Outlet, Junction and Pull Boxes:

1. Cast Type Boxes: Cast type boxes shall be ferrous alloy and have gasketed cast covers and inside threaded hubs with adapters, as necessary. Cast-metal boxes shall comply with NEMA 3R. Covers shall be cast metal weatherproof while in-use type.

2. Galvanized Pressed Steel Type Boxes: Boxes shall be pressed steel, galvanized or cadmium-plated (4-inch x 2 1/8” deep minimum square for all wall locations, 4 11/16-inch x 2 1/8” deep minimum square for all above ceiling locations), with galvanized cover or extension ring as required (extension rings are not allowed on new construction, one extension ring is allowed on existing recessed boxes where conductor length will still comply with the latest NEC requirements). Knockout type shall be used with knockouts removed only where necessary to accommodate the conduit entering. Boxes shall comply with NEMA OS 1. Provide a grounding terminal in each box containing a green equipment ground conductor, or serving motors, lighting fixtures, or receptacles. Grounding terminal shall be green-colored washer-in-head machine screw or grounding bushing.
3. Field gang type boxes are prohibited in all applications and extension boxes are prohibited on new construction.
4. Floor Boxes and Fittings:
    a. General: Provide surface floor boxes and fittings of the types, ratings, and configurations as shown on the Drawings.
5. Cover and Device Plates: Provide device plates for each switch, receptacle, signal and telephone outlet, and special purpose outlet. Do not use sectional gang plates. Provide multi-gang outlet plates for multi-gang boxes. Provide high impact thermoplastic or nylon for devices in finished areas, and galvanized steel on surface-mounted devices in unfinished areas, unless otherwise selected by Architect. Surface outlet coverplates shall have beveled edges. Color of thermoplastic device plates shall be the same as the device or as selected by Architect.
6. Cut-in/after-set boxes are not allowed.

C. Metal Pull boxes: Pullboxes shall be screw cover complete with all necessary manufactured fittings which shall be of one manufacturer.

1. Material: Sheet metal sized and shaped as indicated.
2. Select features, unless otherwise indicated, as required to complete wiring system and to comply with NFPA 70.
3. Exterior, wet, or damp locations shall be NEMA 250 Type 3R
4. Finish: Manufacturer's standard enamel finish

D. Flush with grade enclosures and pull boxes shall be QUAZITE® as manufactured by Strongwell or approved equal. The pull/splice box shall be constructed of polymer concrete consisting of sand and aggregate bound together with a polymer resin. Internal reinforcement may be provided by means of steel, fiberglass, or a combination of the two. Boxes and covers shall be concrete gray and sustain a minimum vertical test load of 22,568# over a 10" square. Boxes shall be stackable for extra depth.

PART 3 - EXECUTION

3.1 GENERAL

A. Electrical system layouts indicated on drawings are generally diagrammatic but shall be followed as closely as actual construction and work of other trades will permit. Govern exact routing of raceways and locations of outlets by structure and equipment served. Take all dimensions from architectural drawings.

B. Consult all other drawings. Verify all scales and report any dimensional discrepancies or other conflicts to Architect before submitting bid.

C. All home runs to panelboards are intended to be started from outlet nearest panel and continuing in general direction of that panel. Continue such circuits to panel as though routes were completely indicated. Terminate homeruns of signal, alarm, and communications systems in a similar manner.

D. Avoid cutting and boring holes through structure or structural members wherever possible. Obtain prior approval of Architect and conform to all structural requirements when cutting or boring structure is necessary and permitted.

E. Furnish and install all necessary hardware, hangers, blocking, brackets, bracing, runners, etc. required for equipment specified under this section.

F. Raceways shall be installed and complete prior to pulling any wire into raceway.

3.2 RACEWAYS - GENERAL

A. Protect all non-PVC coated metallic raceway in earth or fill from corrosion with two coats of corrosion resistant paint or tape wrap.

B. Elbows for conduit installed below grade or floor slabs and vertical conduit risers to above grade or floor slabs shall be rigid steel conduit with factory PVC coating or two coats of corrosion resistant paint or tape wrap.

C. Tie embedded raceways securely in place prior to concrete placement. Raceways installed below floor slabs shall extend a minimum of 4 inches (100 mm) above the finished slab or housekeeping pad to the first connector. Install capped bushings on conduit stub ups.

D. Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or monofilament plastic line with not less than 200-lb. (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of the pull wire. Tag both ends noting destination.

E. Use temporary raceway caps to prevent foreign matter from entering conduits.

F. Make all bends using an approved bending tool. Make conduit bends and offsets so ID is not reduced. Keep legs of bends in the same plane and straight legs of offsets parallel, unless otherwise indicated. Cut all conduits square and ream all cuts to remove burrs. Exercise all necessary precautions during the construction period to prevent entry or accumulation of moisture, dust, concrete, and all foreign matter into the raceway system. The contractor shall pull a mandrel through each raceway to ensure the raceway interior is clean and dry prior to pulling conductors or cable.

G. Make bends in exposed parallel or banked runs from same centerline to make bends parallel. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for exposed parallel raceways.

H. Connect motors and equipment subject to vibration, noise transmission, or movement with a maximum of 72 inch (183 cm) liquid tight flexible conduit. Install separate ground conductor across flexible connections.

I. Above grade - defined as areas above finished grade for a building exterior and above top surface of any slabs (or other concrete work on grade) for a building interior. Installation of and materials for above-grade raceways shall conform with the following:

1. Install conduit concealed within finished walls, ceilings, and floors except at surface cabinets, for motor and equipment connections, and in building service equipment rooms unless otherwise indicated. Surface metal raceways shall be used where raceways are specified or allowed to be installed exposed in finished areas.
2. Route all conduit/raceways, exposed and concealed, parallel or perpendicular to building lines with right angle turns and symmetrical bends.
3. Paint all surface conduit, installed in finished areas, to match the adjacent surfaces on which it is mounted.
4. Install raceways a minimum of 6 inches (150 mm) away from parallel runs of flues and steam pipes or other heated lines. Locate horizontal raceway runs above water and steam piping.
5. Install raceways a minimum of 6 inches below the roof deck.
6. Provide for waterproofing of all raceways, outlets, fittings, etc. which penetrate exterior walls or the roof to preserve the weatherproof integrity of the building. Provide pockets for waterflashing and counterflashing or pitch pockets for waterproofing of all raceways, outlets, fittings, etc. which penetrate roof. Wherever conduits penetrate concrete walls to outdoors, the Contractor shall provide a watertight seal as manufactured by O.Z. Gedney Company, Type CSMC; Thunderline Corporation, Link Seal, or equal.
7. Raceways between cabinets, fittings or boxes shall not exceed 200 feet (60 m) for straight runs or 100 feet (30 m) for runs with the maximum number of bends.
8. Provide one empty 3/4-inch (20 mm) conduit for each set of three spare circuit breakers or spaces in flush-mounted panelboards into the overhead accessible ceiling space.
9. Raceways Above Suspended Ceilings:
    a. Raceways shall not be supported from ceiling support wires. Provide independent support of raceways.
    b. Install conduit 1 foot (300 mm) minimum above top of ceiling.
10. Rigid metallic steel conduit shall be installed in the following above-grade areas:
    a. Where exposed/surface mounted, exterior locations, and where subject to damage. Rigid steel conduit shall extend to a minimum of 8-feet above finished floor/grade.
    b. Where specifically required by the National Electrical Code.
11. Electrical Metallic Tubing (EMT): Shall be installed in:
    a. Concealed locations in furred or masonry walls or ceilings.
    b. Embedded in poured insulating fills.
    c. Exposed areas at least 4 feet (2.5 m) above floor.
12. Liquid tight flexible metal conduit shall be provided in sufficient lengths for makeup of motors, transformers, or equipment, and/or raceway connections where isolation of sound and vibration transmission is required. Liquid-tight flexible metal conduit shall contain a separate equipment grounding conductor, sized per NEC-latest edition requirements.
13. Flexible metallic and non-metallic conduit shall not exceed 6 feet (1.8 m) in length. Flexible 3/8-inch fixture whip connections to recessed lighting fixtures shall not exceed 6 feet (1.8 m) in length.
14. Surface raceways, where indicated on drawings, shall be metal and of a size approved for number and size of wires to be installed and shall be installed in a neat, workmanlike manner, with runs parallel or perpendicular to walls and partitions. Raceways, elbows, fittings, outlets and devices shall be of same manufacturer and designed for use together.
15. Conduit Supports and Fasteners:
    a. Supports: Provide supports for horizontal steel conduits and EMT not more than 2 feet from boxes and conduit bodies, and not more than 8 feet (2.5 m) apart with one support near each elbow or bend, including runs above suspended ceilings.

b. Individual: Install spring steel fasteners with hanger rods on conduits 1-1/2 inch (40 mm) or smaller. Install individual pipe hangers for conduits larger than 1-1/2 inch (40 mm).
c. Trapezes: Install multiple (trapeze) pipe hangers where two or more horizontal conduits run parallel and at the same elevation. Secure each conduit to the horizontal hanger member by a U-bolt, one-hole strap or other specially designed and approved fastener. Install 3/16-inch (5 mm) diameter or larger steel rods for trapezes, spring steel fasteners, clips and clamps. Wire or perforated strapping shall not be used for the support of any conduit.
d. Roof Top Conduit Support: Conduit routed across the roof shall be limited to a maximum of 10 feet and for the connection of roof top equipment only. Fasten pipe to stands specifically manufactured for support of pipes installed on roofs. Stands shall support pipe a minimum of 6 inches above the roof and be resistant to damage from environmental conditions and other causes such as birds. Stands shall be Caddy Pyramid 50 series or equivalent. Support stands requiring fastening through the roof membrane are prohibited.
e. Fastening: Fasten pipe straps and hanger rods to concrete by means of inserts or expansion bolts, to brickwork by means of expansion bolts, and to hollow masonry by means of toggle bolts. Wooden plugs and shields shall not be used. Power-driven fasteners may be used to attach pipe straps and hanger rods to concrete where approved by Architect. Install raceway on steel construction with approved clamps which do not depend on friction or set-screw pressure alone.

16. Fittings: Use approved type couplings and connectors in all conduit runs and make all joints tight. Provide insulated bushings or rain-tight connections with insulated throats for all terminations in pipe sizes 1-1/4" (32 mm) and larger. Provide waterproof fittings for all runs in wet locations, such as exposed to weather, buried in slabs, etc. Provide raceway expansion joints, in compliance with NEC-latest edition and approved by the State, with necessary bonding conductor at building expansion joints, between structures and where required to compensate for raceway or building thermal expansion and contraction.
17. Firestops and seals shall be provided for penetrations through fire-rated walls and floors. Firestops and seals shall be 3M's fire barrier sealant CP 25WB and/or composite sheets #CS195, or equal, and shall be applied in accordance with manufacturer's recommendations. Products which are affected by water are not acceptable.

J. Below Grade: Defined as area below finished grade for a building exterior and below bottom floor slab for a building interior. Installation of and materials for below-grade raceways shall conform with the following:

1. Elbows for conduit installed below grade or floor slabs and vertical conduit risers to above grade or floor slabs shall be rigid steel conduit with factory PVC coating or two coats of corrosion resistant paint or tape wrap.
2. Below-grade raceways shall turn up and extend 48 inches minimum above floor or equipment foundation.
3. Install conduits below slab-on-grade concrete 12 inch minimum below bottom of concrete slab unless shown otherwise on the drawings.
4. Install exterior underground conduits 30 inch minimum below finished grade unless shown otherwise on the drawings.
5. Non-encased Raceways: Unless specifically noted on drawings for concrete encasement, provide either of the following raceway systems for installation below slabs on grade or in earth or gravel.
   a. Rigid, heavy-wall, Schedule 40 or 80, polyvinyl chloride PVC plastic conduit, suitable for direct burial. All offsets and 90-degree ells shall be rigid plastic-coated conduit. Provide continuous ground wire for all non-metallic conduits.

b. Rigid steel conduit that is not completely encased in concrete but is in contact with ground or on a vapor barrier shall be wrapped with Scotchrap 51 half-lapped or shall have an additional outside factory coating of polyvinyl chloride with a minimum coat thickness of 30 mils (0.762 mm). Other PVC or Phenolic-resin-epoxy coating material, which is equally flexible and chemically resistant, may be used providing approval by the Engineer is obtained prior to installation. Provide pre-jacketed couplings to provide a substantially watertight jacketing system.
c. All underground conduits and ducts 2 inches (50 mm) and larger shall be proven clear by pulling through a ball mandrel (diameter approximately 85% of conduit inside diameter) followed by close fitting wire brush and wad of felt or similar material. Clear raceway of all obstructions and dirt prior to pulling in wires or cables. Clean empty raceways similarly. Clear or replace any raceway which rejects ball mandrel.
d. Provide seal-off fittings where conduits enter or leave hazardous wiring area or areas of widely different temperature and/or humidity.

6. Non-Metallic Raceway Installations:
   a. Joints shall be made using the material recommended by the raceway manufacturer. Components shall be cleaned prior to assembly.
   b. Raceway cutoffs shall be square and shall not deform conduit. Ream rough surfaces.
   c. Provide male box adapters to terminate raceways.
   d. Where separable terminations are required, provide PVC threaded adapters with locknuts or bushings. Provide "O" rings for watertight installations.
   e. Bends shall be made by methods that do not deform or damage the conduit.
   f. Provide expansion fittings where required in compliance with NEC-latest edition and approved by the State.
   g. Raceway supports shall be installed to allow the non-metallic conduit to slide through the supports.
   h. Non-metallic raceway is not permitted within the building.

3.3 RACEWAYS AND BOXES FOR TELE/DATA

A. Raceway for telephone, television, paging, and local area network Information Management Outlet (IMO).

1. Conduit runs less than 100 feet from point-to-point shall not contain more than two 90º standard factory bends, or three 90º, 24 inch radius bends.
2. Conduit runs exceeding 100 feet from point-to-point or exceeding two 90º bends shall contain accessible pull boxes.
3. Standard IMO box shall be 4-inch x 2 1/8” deep minimum square with 1-gang device ring for all wall locations, with 1” conduit stub-up to accessible ceiling location. Provide protective bushings on all IMO conduits. Install pull strings in all IMO conduits.
4. When IMOs must be mounted on exposed surface conditions, provide surface metal raceway or conduit and (Bell) cast-type box with threaded knockouts. Paint raceway to match surface on which it is mounted.

3.4 OUTLET, JUNCTION AND PULL BOXES

A. Provide galvanized or zinc-coated, pressed steel outlet boxes for all locations except where otherwise indicated or where cast metal boxes are required by the NEC-latest edition. Provide plaster or tile rings for all flush outlets installed where wood, drywall, tile, plaster, etc. types of finishes are applied. All outlets for exterior application shall be cast, weatherproof type, with gasket and cast coverplate. Tile boxes of extra depth may be used for interior, dry applications where masonry block or brick walls constitute the finished wall surface. In any event, provide

outlet boxes of proper type and design for the particular fixture or device to be installed. Structural conditions and obstructions or other equipment items shall govern exact location of outlets and equipment. When necessary, relocate outlets so that when fixtures or equipment are installed, they will be symmetrically located according to room layout and will not interfere with other work or equipment. Verify final location of all outlets, panels, equipment, etc. with Architect and/or Engineer.

B. Equip light fixture outlet boxes with 3/8-inch (10 mm) no-bolt fixture studs. Provide a minimum 4-inch (100 mm) octagon box. Where fixtures are mounted on or in an accessible type ceiling, provide a junction box and extend flexible conduit to each fixture. Outlet boxes in finished ceilings or walls shall be fitted with appropriate covers, set to come flush with the finished surface. Where more than one switch or device is located at one point, use gang boxes and covers unless otherwise indicated. Sectional switch boxes or utility boxes will not be permitted. Provide tile box or a 4-inch (100 mm) square box with tile ring in masonry walls which will not be plastered or furred, or where "drywall" type materials are applied.

C. Except as otherwise noted, locate outlet boxes as follows: Dimensions given are from finished floor to center line of outlets. Adjust heights of outlets in masonry walls to correspond with consistent brick or block course. Outlets in block walls shall be installed in core of block.

1.	Wall switch outlets	44 inches (112 cm)
2.	Convenience outlets, long axis vertical-ground pole up or horizontal-ground pole on left side	18 inches (46 cm)
3.	Phone and data outlets	18 inches (46 cm)

D. Over counters, benches, special equipment, baseboards, fin tube radiators, wainscoting, etc., outlets shall be at a height (6 inches (150 mm)) above the interfering item, or as noted on drawings.

E. Junction and Pull Boxes: Use outlet boxes as junction boxes wherever possible. Larger junction and pull boxes over 12 inches (300 mm) in any dimension shall be fabricated from sheet steel, sized according to NEC-latest edition, and have screw-on covers. All junction boxes shall be accessible.

F. Surface-mounted device boxes mounted below 8 feet shall be Metal Surface Raceway boxes or (Bell) cast-type boxes with threaded knockouts (without knock-outs other than as required by conduit entering/leaving).

G. Flush with Grade Pull Boxes: Provide junction/pull boxes wherever underground conduit runs exceed 500 feet or where required to comply with the maximum number/radius of bends per the NEC. Junction/Pull boxes shall be sized according to NEC-latest edition and have lockable screw-on covers. All junction boxes shall be accessible.

END OF SECTION 260533

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL

PART 1 - GENERAL

1.1 SCOPE

A. This Section includes electrical identification materials and devices required to comply with ANSI C2, NFPA 70, OSHA standards, and the State of Colorado.

B. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 REFERENCES

A. NFPA 70 National Electrical Code (NEC-latest edition)

B. NESC National Electrical Safety Code

1.3 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

B. All submittals shall be in accordance with the requirements of this Section, Section 260500- Common Work Results for Electrical, and Section 013300 – Submittal Procedures.

1.4 QUALITY ASSURANCE

A. Comply with ANSI C2.

B. Comply with NFPA 70.

C. Comply with ANSI A13.1 and NFPA 70 for color-coding.

PART 2 - PRODUCTS

2.1 RACEWAY AND CABLE LABELS

A. Comply with ANSI A13.1, Table 3, for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.

B. Pretensioned, Wraparound Plastic Sleeves: Flexible, preprinted, color-coded, acrylic band sized to suit the diameter of the line it identifies and arranged to stay in place by pretensioned gripping action when placed in position.

C. Aluminum, Wraparound Marker Bands: Bands cut from 0.014-inch- (0.4-mm-) thick aluminum sheet, with stamped or embossed legend, and fitted with slots or ears for permanently securing around wire or cable jacket or around groups of conductors.

D. Plasticized Card-Stock Tags: Vinyl cloth with preprinted and field-printed legends. Orange background, unless otherwise indicated, with eyelet for fastener.

E. Tape Labels: Embossed adhesive tape, with 3/16 inch white characters.

F. "Kroy" Labels: Kroy tape with 3/8 inch minimum characters.

2.2 NAMEPLATES AND SIGNS

A. Safety Signs: Comply with 29 CFR, Chapter XVII, Part 1910.145.

B. Engraved Plastic Nameplates and Signs: Engraving stock, melamine plastic laminate, minimum 1/16-inch (1.6 mm) thick for signs up to 20 square inches (129 square cm) and 1/8-inch (3.2 mm) thick for larger sizes.

1. Punched or drilled for mechanical fasteners.

C. Fasteners for Nameplates and Signs: Self-tapping, stainless-steel screws or No. 10/32, stainless-steel machine screws with nuts and flat and lock washers.

2.3 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Cable Ties: Fungus-inert, self-extinguishing, one-piece, self-locking, Type 6/6 nylon cable ties.

B. Paint: Formulated for the type of surface and intended use.

1. Primer for Galvanized Metal: Single-component acrylic vehicle formulated for galvanized surfaces.
2. Enamel: Silicone-alkyd or alkyd urethane as recommended by primer manufacturer.

C. Polyethylene warning tape: Polyethylene warning tape for installation above buried power feeders shall be 6 inches wide, yellow in color, with CAUTION printed continuously the full length of the tape.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Identification Materials and Devices: Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

B. Sequence of Work: If identification is applied to surfaces that require finish, install identification after completing finish work.

C. Lettering, Colors, and Graphics: Coordinate names, abbreviations, colors, and other designations with corresponding designations. Use consistent designations throughout Project.

1. White characters on black background for "Normal",
2. White characters on red background for "Emergency" and fire alarm devices
3. White characters on green background for "Ground".

D. Install painted identification according to manufacturer's written instructions and as follows:

1. Clean surfaces of dust, loose material, and oily films before painting.
2. Prime surfaces using type of primer specified for surface.
3. Apply one intermediate and one finish coat of enamel.

E. Color Banding Raceways and Exposed Cables: Band exposed and accessible raceways of the systems listed below:

1. Apply the following colors to the systems listed below:
    a. Fire Alarm System: Red
    b. Emergency Power System: Red

F. Device Coverplates: Use preprinted label for identification of circuits at all individual wall switches and receptacles, control device stations. Locate label on the front side of the coverplate as well as identify circuits with permanent ink on the backside of the coverplate.

G. Wire Identification: Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with branch circuit or feeder number as indicated on equipment manufacturer’s shop drawings for control wiring.

H. Junction Box and Pull Box Identification: Use indelible black marker to inscribe circuit or bus, switch numbers and source panel on the outside of each junction and pullbox cover.

I. Panel Directories: Provide TYPED, UPDATED Panel Directories for all Distribution Feeder and Branch Circuit Panels modified by this project.

J. Paths of Underground Electrical Lines: During trench backfilling, for exterior underground power, control, signal, and communication lines, install continuous underground plastic line marker located directly above line at 6 to 8 inches (150 to 200 mm) below finished grade. Where width of multiple lines installed in a common trench or concrete envelope does not exceed 16 inches (400 mm) overall, use a single line marker. Install line marker for underground wiring, both direct-buried cables and cables in raceway.

K. Secondary Service, Feeder, and Branch-Circuit Conductors: Factory Color-coded insulation throughout the entire length of the conductor

1. Color-code 208/120-volt system as follows:
    a. Phase A: Black
    b. Phase B: Red
    c. Phase C: Blue
    d. Neutral: White with a phase colored stripe
    e. Ground: Green

2. Color-code 480/277-volt system as follows:
    a. Phase A: Brown
    b. Phase B: Orange
    c. Phase C: Yellow
    d. Neutral: Gray with a phase colored stripe
    e. Ground: Green

3. 0-10V Lighting and System Control wire installed with power conductors:
    a. Purple and Pink

4. Lighting Controls:
   a. Yellow

5. Factory applied colored insulation the entire length of all conductors.

L. Equipment Identification Labels for Equipment Above Ceilings: Engraved plastic laminate. Fastened to ceiling grid or access door below each electrical device or electrical unit of equipment installed above the ceiling.

M. Equipment Identification Labels: Engraved plastic laminate. Install on each unit of equipment, including central or master unit of each system. Apply labels for each unit of the following categories of equipment using mechanical fasteners:

1. Distribution and control equipment
   a. Identify equipment as well as loads served
   b. 1/4 inch lettering for equipment designation
   c. 1/8 inch lettering to identify voltage rating, fault current rating
   d. 1/8 inch lettering to identify fuse rating/type for all fused disconnects
   e. 1/8 inch lettering to identify feeder conduit & wire size information
   f. 1/8 inch lettering to identify feeder source

2. Individual Circuit Breakers and Switches in Panelboards and Switchboards:
   a. 1/8 inch lettering to identify circuit and load served, including location.
   b. 1/8 inch lettering to identify feeder conduit & wire size information

3. Panelboards, Switchboards, electrical cabinets, and enclosures:
   a. 1/4 inch lettering for equipment designation
   b. 1/8 inch lettering to identify voltage rating, fault current rating
   c. 1/8 inch lettering to identify feeder conduit & wire size information
   d. 1/8 inch lettering to identify feeder source

4. Individual Control Equipment (timeclocks, lighting control cabinets and contactors):
   a. 1/8 inch lettering to identify circuit and load served, including location.
   b. 1/8 inch lettering to identify voltage rating, fault current rating
   c. 1/8 inch lettering to identify feeder conduit & wire size information
   d. 1/8 inch lettering to identify feeder source

5. Individual Circuit Breakers, Enclosed Disconnect Switches, and Motor Starters:
   a. 1/8 inch lettering to identify load served.
   b. 1/8 inch lettering to identify voltage rating, fault current rating
   c. 1/8 inch lettering to identify feeder conduit & wire size information
   d. 1/8 inch lettering to identify feeder source

6. Transformers:
   a. 1/4 inch lettering to identify equipment designation.
   b. 1/8 inch lettering to identify primary and secondary voltages, primary source, and secondary load and location.
   c. 1/8 inch lettering to identify load served
   d. 1/8 inch lettering to identify feeder conduit & wire size information
   e. 1/8 inch lettering to identify feeder source

7. Main Grounds:
   a. 1/4 inch lettering "Do Not Disconnect".
   b. Label “Grounding Electrode Conductor” and “Main bonding Jumper” with engraved tags, 1/4 inch lettering.

8. Devices Above Ceilings:
   a. 1/4 inch lettering to identify equipment designation.
   b. Mechanically fastened to ceiling below device.
   c. Lighting Controllers – black font on orange label tape adhered to ceiling t-grid or adhered directly to device if installed in exposed ceiling cavity.

9. Tele-Data:
   a. Identify telephone / data raceways with the label “TELE-DATA” on pull and junction boxes and conduit at the termination points, 1/4 inch lettering.
   b. Identify Telephone Termination Backboard with the label “TELEPHONE”.

N. Equipment Warning Labels: Engraved plastic laminate. Install on each unit of equipment, including central or master unit of each system. Apply labels for each unit of the following categories of equipment using mechanical fasteners:

1. Clearance requirements for all Panelboards, Switchboards, Electrical Cabinets, and Transformers (clearance shall be stated as 36 Inch minimum for equipment rated equal to or less than 150 volts to ground, and 42 inches minimum for equipment rated more than 150 volts to ground):
   a. 1/2 inch lettering stating the following:

CAUTION:
DO NOT STORE EQUIPMENT AND/OR MATERIALS IN
FRONT OF THIS ELECTRICAL EQUIPMENT

MAINTAIN MINIMUM ___ INCHES OF CLEAR
AREA IN COMPLIANCE WITH THE
NATIONAL ELECTRICAL CODE

O. Equipment Warning Labels: Arc-Flash Hazard Warning. Electrical equipment, such as switchboards, switchgear, panelboards, industrial control panels, meter socket enclosures, and motor control centers, shall be field or factory marked to warn qualified persons of potential electric arc flash hazards. The marking shall meet the requirements below and shall be located so as to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

1. The marking shall adequately warn of the hazard using effective words, colors, or symbols in compliance with the NFPA 70E, 130.5(C) Equipment Labeling. Equipment labeling for the arc flash hazard shall have one or more of the following: (a.) Available incident energy at corresponding working distance; (b.) Minimum arc rating of clothing; (c.) Required level of PPE; (d.) Highest Hazard Risk Category for the equipment; Nominal system voltage; and Arc flash boundary.

2. The label shall be permanently affixed to the equipment or wiring method and shall not be handwritten.

3. The label shall be of sufficient durability to withstand the environment involved.

END OF SECTION 260553

SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 SCOPE

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes panelboards, overcurrent protective devices, and associated auxiliary equipment rated 600 V and less for the following types:

1. Lighting and appliance branch-circuit panelboards.

1.3 SUBMITTALS

A. Product Data: For each type of panelboard, overcurrent protective device, TVSS device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

1. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following:
   a. Enclosure types and details for types other than NEMA 250, Type 1.
   b. Bus configuration, current, and voltage ratings.
   c. Short-circuit current rating of panelboards and overcurrent protective devices.
   d. UL listing for series rating of installed devices.
   e. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

C. Qualification Data: Submit data for testing agencies indicating that they comply with qualifications specified in "Quality Assurance" Article.

D. Field Test Reports: Submit written test reports and include the following:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

E. Panelboard Schedules: For installation in panelboards. Submit final versions.

F. Maintenance Data: For panelboards and components to include in maintenance manuals specified in Division 1. In addition to requirements specified in Division 1 Section " Closeout Procedures," include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
2. Time-current curves, including selectable ranges for each type of overcurrent protective device.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: Testing agency that is a member company of the National Electrical Testing Association and that is acceptable to authorities having jurisdiction.

1. Testing Agency's Field Supervisor: Person currently certified by the National Electrical Testing Association or National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NEMA PB 1.

D. Comply with NFPA 70.

1.5 COORDINATION

A. Coordinate layout and installation of panelboards and components with existing and other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, and encumbrances to workspace clearance requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Panelboards shall be as manufactured by the same manufacturer selected for Switchgear specified in Section 262413.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Corp.; Cutler-Hammer Products.
2. General Electric Co.
3. Westinghouse/Siemens/ITE
4. Square D Co.

2.2 FABRICATION AND FEATURES

A. Enclosures: Flush- and surface-mounted cabinets. NEMA PB 1, Type 1, to meet environmental conditions at installed location.
1. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
2. Other Wet or Damp Locations: NEMA 250, Type 4.

B. Front: Entire front trim hinged (piano type hinge) to box and with standard hinged door within hinged trim cover and secured to box with screws. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.

C. Finish: Manufacturer's standard enamel finish over corrosion-resistant treatment or primer coat.

D. Directory Card: With transparent protective cover, mounted inside metal frame, inside panelboard door. (Panel schedules shall be typed and include device type and room(s) served).

E. Bus: Hard-drawn copper, 98 percent conductivity.

F. Main and Neutral Lugs: Mechanical type suitable for use with conductor material.

G. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment ground conductors; bonded to box.

H. Future Devices: Mounting brackets, bus connections, and necessary appurtenances required for future installation of devices.

I. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear loads.

2.3 PANELBOARD SHORT-CIRCUIT RATING

A. Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.4 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

B. Doors: Front mounted with concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.5 OVERCURRENT PROTECTIVE DEVICES

A. Molded-Case Circuit Breaker: NEMA AB 1, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

B. Molded-Case Circuit-Breaker Features and Accessories. Standard frame sizes, trip ratings, and number of poles.

1. Lugs: Mechanical style, suitable for number, size, trip ratings, and material of conductors.
2. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install panelboards and accessories according to NEMA PB 1.1.

B. Mounting Heights: Top of trim 74 inches (1880 mm) above finished floor, unless otherwise indicated.

C. Mounting: Plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish.

D. Circuit Directory: Create a directory to indicate installed circuit loads (Panel directories shall be typed and include device type and room(s) served). Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

E. Install filler plates in unused spaces.

F. Provision for Future Circuits at Flush Panelboards: Stub two 1-inch (27-GRC) empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future.

G. Neatly train all wiring inside panels using nylon straps.

3.2 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs as specified in Section 260553 "Identification for Electrical."

B. Panelboard Nameplates: Label each panelboard with engraved laminated-plastic nameplate mounted with corrosion-resistant screws.

3.3 CONNECTIONS

A. Install equipment grounding connections for panelboards with ground continuity to main electrical ground bus.

B. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.4 FIELD QUALITY CONTROL

A. Prepare for acceptance tests as follows:

1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
2. Test continuity of each circuit.

B. Testing Agency: Perform tests or engage a qualified independent testing agency to perform specified testing.

C. Testing: After installing panelboards and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements.

1. Procedures: Perform each visual and mechanical inspection and electrical test indicated in NETA ATS, Section 7.5 for switches and Section 7.6 for molded-case circuit breakers. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

3.5 CLEANING

A. On completion of installation, inspect interior and exterior of panelboards. Remove paint splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

END OF SECTION 262416

SECTION 262726 - WIRING DEVICES

PART 1 - GENERAL

1.1 SCOPE

A. The CONTRACTOR shall furnish and install all wiring devices shown on the Drawings and as required for the electrical distribution systems.

B. Wiring devices shall include lighting switches, plug receptacles, multi-outlet assemblies, and miscellaneous wiring devices including cover plates and all other materials and accessories required for the complete wiring device installations as shown on the Drawings and as described in this Section.

1.2 REFERENCES

A. NEMA WD 1-83: General Requirements for Wiring Devices.

B. NEMA WD 6-88: Wiring Device – Dimensional Requirements.

C. UL 486A-91: Wire Connectors and Soldering Lugs for Use with Copper Conductors.

D. UL 20: General-Use Snap Switches.

E. UL 498: Electrical Attachment Plugs and Receptacles.

F. UL 943: Ground-Fault Circuit Interrupters.

1.3 SUBMITTALS

A. The CONTRACTOR shall submit drawings, data, and descriptive information in accordance with the requirements of this Section, Section 260500 – Common Work Results for Electrical, and Section 013300 – Submittal Procedures.

B. Samples:

1. Submit physical sample of each type of device used and device coverplate product samples to illustrate materials, equipment or workmanship, for color selection coordination and compliance with technical specifications

1.4 QUALITY ASSURANCE

A. Qualifications:

1. Provide products specified in this Section that are “listed and labeled” (as defined by the National Electrical Code, Article 100).
2. Comply with NEMA WD 1. Comply with NFPA 70.

1.5 DEFINITIONS

A. GFCI: Ground-Fault Circuit Interrupter

1.6 COORDINATION

A. Receptacles for Owner-Furnished Equipment: Match plug configurations.

B. Cord and Plug Sets: Match equipment requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Packing, Shipping, Handling, and Unloading: Deliver all materials to the Work site in original, new, and unopened containers bearing the manufacturer's name and label.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: Items of material furnished for the Work, subject to compliance with requirements, items listed or equal approved from manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Wiring Devices:

1. Bryant Electric, Inc.
2. Arrow-Hart
3. Eagle Electric Manufacturing Co., Inc.
4. GE Company; GE Wiring Devices.
5. Hubbell, Inc.; Wiring Devices Div.
6. Ilsco
7. Leviton Manufacturing Co., Inc.
8. Pass & Seymour/Legrand, Wiring Devices Div.
9. Lutron
10. Slater
11. Raceway Components, Inc. – for floor mounted service fittings
12. Wood Head – for cord drops

C. Multioutlet Assemblies:

1. Carlton
2. IsoDuct
3. Panduit
4. Pass & Seymour
5. Walker
6. Wiremold

D. Dimming Switches:

1. Lithonia Lighting Controls
2. Lutron Electronics Company, Inc.

E. Time Clocks:

1. Intermatic
2. Paragon
3. Tork

2.2 COMPONENTS

A. Straight-Blade Receptacles: 20-Ampere, Heavy-Duty grade, nylon, flat faced Comply with NEMA WD 6. Provide devices for installation in a 2-3/4-inch- (70-mm-) deep outlet box without an adapter.

Automatic Load Control Receptacles identified on the drawings for compliance with IECC – C405.11 shall be permanently marked, by the manufacturer, with the generic controlled receptacle symbol and the word “CONTROLLED” as well as be a different color as noted.

B. GFCI Receptacles: Specification Grade, nylon, flat faced, feed-through type, with integral NEMA WD 6 Configuration 5-20R duplex receptacle. Manufactured to protect connected downstream receptacles on same circuit (when downstream receptacles are located in the same room). Provide devices for installation in a 2-3/4-inch- (70-mm-) deep outlet box without an adapter.

C. Locking Receptacles: Heavy-Duty grade, Comply with NEMA WD 6. Provide devices for installation in a 2-3/4-inch- (70-mm-) deep outlet box without an adapter.

D. Tamper Guard Receptacles: Specification Grade, nylon, flat faced, feed-through type, with integral NEMA WD 6 Configuration 5-20R duplex receptacle. Manufactured with thermoplastic dual mechanism shutter system to help prevent insertion of foreign objects. Provide devices for installation in a 2-3/4-inch- (70-mm-) deep outlet box without an adapter. GFCI type tamper guard receptacles shall also meet GFCI requirements.

E. Tamper Guard GFCI Receptacles: Specification Grade, nylon, flat faced, feed-through type, with integral NEMA WD 6 Configuration 5-20R duplex receptacle. Manufactured with thermoplastic dual mechanism shutter system to help prevent insertion of foreign objects. Devices shall be intended to protect connected downstream receptacles on same circuit (when downstream receptacles are located in the same room). Provide devices for installation in a 2-3/4-inch- (70-mm-) deep outlet box without an adapter.

F. Cord and Plug Sets: Match voltage and current ratings and number of conductors to requirements of equipment being connected. Rubber-insulated cord, stranded-copper conductors, with type SOW-A jacket. Green-insulated grounding conductor and equipment-rating ampacity plus a minimum of 30 percent. Nylon plug body and integral cable-clamping jaws. Match cord and receptacle type for connection.

G. Snap Switches: General-duty, nylon, quiet type. Switch shall be rated at 20 A, 120/277-VAC. Provide devices for installation in a 2-3/4-inch- (70-mm-) deep outlet box without an adapter.

H. Dimmer Switches: Comply with NEMA WD 2. Modular, full-wave, solid-state units with integral, quiet on/off switches and audible and electromagnetic noise filters. Continuously adjustable slide control, toggle or rotary knob. Single-pole or three-way switch to suit connections. Modular incandescent lamp dimmers, 120 V, 60 Hz with continuously adjustable rotary knob, toggle, or slide; single pole with soft tap or other quiet switch; electromagnetic filter to eliminate noise, RF, and TV interference; and 5-inch (130-mm) wire connecting leads. Modular fluorescent lamp dimmers, compatible with dimming ballasts; trim potentiometer to adjust low-

end dimming; dimmer-ballast combination capable of consistent dimming to a maximum of 1 percent of full brightness.

I. Multi-pole Contactors and Relays:

1. Description: Electrically operated and mechanically held and complying with UL 508 and NEMA ICS 2.
2. Current Rating for Switching: UL listing or rating consistent with type of load served, including tungsten filament, inductive, and high-inrush ballast (ballasts with 15 percent or less total harmonic distortion of normal load current).
3. Control Coil Voltage: Match control power source.

J. Time Clocks: Solid-state programmable units with alphanumeric display complying with UL 917.

1. Description: Electronic astronomic type complying with UL 917.
2. Astronomic dial.
3. Two contacts rated 30 A at 277-V ac, unless otherwise indicated.
4. Two pilot-duty contacts rated 2 A at 240-V ac, unless otherwise indicated.
5. Eight-day program uniquely programmable for each weekday and holidays.
7. Skip-day mode.

K. Floor Service Fittings: Types: Modular, flush-type, dual-service units suitable for wiring method used. Modular, pop-up, dual-service units suitable for wiring method used. Modular, above-floor, dual-service units suitable for wiring method used. Compartmentalized barrier to separate power and signal compartments. Die-cast aluminum housing material, satin finished. Duplex receptacle NEMA WD 6, Configuration 5-20R, gray finish, unless otherwise indicated. Provide signal outlet with blank cover and bushed cable opening, unless otherwise indicated.

L. Multioutlet Assemblies: Products from a single manufacturer designed as a complete, matching assembly of raceway, and receptacles. Raceway shall be constructed of sheet metal with manufacturer’s standard finish.

M. Wall Plates: Single and combination types match corresponding wiring devices. Metal plate-securing screw with head color to match plate finish. Material for Finished Spaces: Nylon, color to match wiring devices, color to be selected by architect.

2.3 FINISHES

A. Color: Manufacturers standard ivory (or match existing color prevalent on site).

2.4 PEDESTAL

A. The campsite pedestals shall be single-head, pad-mount pedestal as manufactured Midwest series UO75CP4010 with additional 20A1P breaker (No Substitutions) provided with the following:

1. 75amp pad-mount, un-metered, pedestal with skirt
2. 20amp breaker (for water hydrant heater)
3. 20amp GFI receptacle with 20amp breaker
4. 30amp receptacle with 30amp breaker
5. 50amp receptacle with 50amp breaker

All the enclosure parts including the pedestal, pad-mount kit, skirt, breaker/receptacle enclosure, and the receptacle cover shall be constructed of metal. All enclosure exterior finishes shall be painted with manufacturer standard gray.

B. The pedestal shall be weatherproof, provided with 75ampere main lugs, 75ampere buses (phase and neutral), 10,000 ampere fault current bracing, the receptacles specified in 2.2 above, and all other necessary parts for a complete installed unit. The pedestal shall be provided with the following branch breakers:

1. One 50 ampere, two pole breaker to disconnect the 50 ampere receptacle specified in 2.2 above.
2. One 30 ampere, single pole, breaker to disconnect the 30 ampere receptacle specified in 2.2 above.
3. One 20 ampere, single pole, ground fault interrupter type breaker to disconnect the 20 ampere receptacle specified in 2.2 above.

C. The receptacles shall be mounted in a common compartment with a single weatherproof lift up cover. The cover shall be pad-lockable in the closed position. The cover shall also be deep enough and notched so that the cover will completely close with recreation vehicle cords and plugs connected.

D. The pedestal shall have a continuous skirt enclosure from the bottom of the receptacle compartment down to grade. Refer to mounting detail in the drawings.

E. All the pedestals provided for this project shall be of the same manufacturer and assembled with universal type breakers and receptacles from a single manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Secure all devices and assemblies plumb and secure

B. Arrange devices and assemblies, unless otherwise noted, mounted flush with long dimension vertical, and grounding terminal of receptacles on top.

C. Install wall dimming switches to achieve indicated ratings as noted on Drawings, after derating for ganging as instructed by manufacturer. Connect wiring to dimmer in accordance with manufacturer’s installation instructions, do not share neutral conductor connected to load side of dimmers.

D. Provide adequate protection for devices and assemblies prior to commencement of painting. Install device wall plates and assembly cover plates upon completion of painting.

E. Connect wiring device and assembly grounding terminal to outlet box with bonding jumper. Connect wiring device and assembly grounding terminal to branch circuit conductors and equipment grounding wire with six inch wire pigtails.

F. Tighten all electrical connectors and electrical terminals according to manufacturer’s published torque-tightening values. If torque values are not published, use torque values as specified in UL 486A and UL 486B.

3.2 IDENTIFICATION

A. Comply with Section 260553 “Identification for Electrical”

B. For lighting control power packs located above accessible ceilings, provide typed labels on ceiling T-grid indicating the location of the device(s). Provide proper labeling “Power Pack” etc.

3.3 FIELD QUALITY CONTROL

A. Site Tests, Inspections:

1. Test wiring devices for proper polarity and ground continuity. Operate each device and assembly at least six times.
2. Test GFCI operation with both local and remote fault simulations in accordance with manufacturer’s written testing procedures.

3.4 ADJUSTING

A. Replace damaged and/or defective components.

3.5 CLEANING

A. Keep all items protected before, during, and after installation. Clean area and remove all debris. Remove all paint overspray and/or spattering from devices and assemblies.

3.6 DEMONSTRATION

A. The Contractor shall provide for demonstration and complete instruction to the Owners’ operating personnel as to the operation, maintenance, and repair procedures of all installed devices and assemblies.

END OF SECTION 262726

SECTION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 SCOPE

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

A. Section Includes: This section includes requirements for individually mounted and enclosed fused and non-fused disconnect switches, fuses, and circuit breakers for disconnecting and protecting services, feeders, branch circuits, and utilization equipment.

1.3 REFERENCES

A. The latest edition of the following standards and codes, standard publications of professional organizations, and the local authorities having jurisdiction are the minimum requirements for this work.

1. American National Standards Institute (ANSI)
2. Institute of Electrical and Electronic Engineers (IEEE)
3. National Electrical Manufacturer's Association (NEMA)
4. National Fire Protection Association (NFPA)
5. NFPA 70, the National Electrical Code (NEC-latest edition)
6. Underwriters Laboratories, Inc. (UL)
7. State, city, and local authorities

1.4 SUBMITTALS

A. General:

1. Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product data for disconnect switches, circuit breakers, and accessories specified in this section as follows:

1. Descriptive data and ratings for voltage, continuous current, maximum horsepower, and short-circuit rating.
2. Dimensional plans, elevations, sections, and details.
3. NEMA enclosure type and size.
4. Cable terminal size, number, and material.
5. Unit wiring diagrams depicting local and remote devices.
6. Accessories device descriptive bulletins and product data sheets (i.e., shunt trip coil, undervoltage release, ground fault, auxiliary contacts, key interlocks, etc.).

C. Spare Parts: Provide 10% (minimum of 3 fuses) spare fuses for each fuse rating and type used on the project.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70, the National Electrical Code (latest edition).

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Disconnect Switches and Circuit Breakers: Acceptable manufacturers are listed below. All disconnect and circuit breakers shall be of the same manufacturer as Switchgear and Panelboards.

1. Eaton Corp.; Cutler-Hammer
2. General Electric Co.
3. Westinghouse/Siemens/ITE
4. Square D Company

B. Fuses: Acceptable manufacturers are listed below. All fuses shall be of the same manufacturer.

1. Bussman
2. Gould Shamut
3. Littlefuse

2.2 DISCONNECT SWITCHES

A. Enclosed fusible and non-fusible switches, 1200-amp and smaller, NEMA KS1, heavy duty type with cover and externally accessible lockable handle, 600-volts, horsepower rated for motors as required. Number of poles and ampacity as noted or required by code. Short-circuit rating shall be sufficient to withstand the available fault current or let-through current before the fuse melts without damage or change in rating.

B. Fusible switches 30- through 600-amperes shall be furnished with rejection class "R" or "J" type fuse clips and 800 through 1200 amperes shall be furnished with class "L" type fuse clips.

C. Switches shall incorporate a safety cover interlock to prevent opening the cover with the switch in the "ON" position or prevent placing the switch in the "ON" position with the cover open. Provide a “defeater” for authorized personnel.

D. Handles shall have provisions for padlocking and shall clearly indicate the ON and OFF positions. Front cover doors shall be padlockable in the closed position.

2.3 FUSES

A. Fuses shall be Class K-1 and K-5 of rejection type for 600 amperes and below and Class L for over 600 amperes. Fuse voltage class shall be either 250 volt or 600 volt and shall be applied according to circuit voltage.

B. Coordinate the low-voltage fuses required for the project to provide basic selective protection and properly coordinate with the other associated protective equipment.

2.4 CIRCUIT BREAKERS

A. General:

1. Provide 600-volt enclosed molded case circuit breaker per NEMA AB1 with lockable handle with frame size, trip rating, number of poles, and interrupting rating to meet available fault current. Application listing shall be appropriate for switching fluorescent lighting loads or heating, air conditioning, and refrigerating equipment.
2. Circuit breakers shall be operated by a toggle-type handle and shall have a quick-make, quick-breaker over-center switching mechanism that is mechanically trip-free. Automatic tripping of the breaker shall be clearly indicated by the handle position. Contacts shall be nonwelding silver alloy and arc extinction shall be accomplished by means of arc chutes.
3. Thermal-magnetic Circuit Breakers: Frame sizes 400 amp and smaller shall have inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits.
4. Adjustable Instantaneous-trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
5. Electronic Trip Unit Circuit Breakers: Frame sizes 600 amp and larger shall have RMS sensing; field-replaceable rating plug; with the following field-adjustable settings as noted on the drawings by L, S, I, and G.
    a. Instantaneous trip
    b. Long- and short-pickup levels
    c. Long- and short-time adjustments
    d. Ground-fault pickup level, time delay, and I^2t response
6. Current-limiting Circuit Breakers: Frame sizes 400 amp and smaller; let-through ratings less than NEMA FU 1, RK-5.
7. GFCI Circuit Breakers: Single- and two-pole configurations with 5-mA trip sensitivity for personal protection and 30 mA trip sensitivity for equipment protection.
8. Molded-case Switch: Molded-case circuit breaker without trip units.

B. Circuit-breaker Features and Accessories: Standard frame sizes, trip ratings, and number of poles.

1. Lugs: Mechanical style suitable for number, size, and material of conductors.
2. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.
3. Ground-fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
4. Shunt Trip: 120-volt trip coil energized from separate circuit.

2.5 ENCLOSURE

A. NEMA 1 to meet environmental conditions of installed location.

1. Outdoor Locations: NEMA 250, Type 3R.
2. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
3. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
4. Hazardous Areas Indicated on Drawings: NEMA 250, Type 7 for Class I Group A, B, C, or D.
5. Hazardous Areas Indicated on Drawings: NEMA 250, Type 9 for Class II Group E, F, or G.
6. Indoor use for protection against dust, falling dirt, and dripping non-corrosive liquids; NEMA 250, Type 12

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install devices in general area of equipment and accessible to maintenance personnel according to manufacturer's written instructions. Secure devices firmly to supporting structure with approved fasteners in a level and plumb manner. Verify voltage and amperage size and enclosure type of devices for each installation. Where practical, devices shall be mounted such that the top of switch is a maximum of 6'-0" above finished floor or surface.

B. Connect devices to wiring system and to ground as indicated and instructed by manufacturer.

1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. Where manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

C. Identify each device according to requirements in other sections of these specifications.

3.2 OVERCURRENT PROTECTIVE DEVICES

A. Install fuses where required as a protective device in conformance with equipment manufacturer's specified requirements and in accordance with the requirements of this section.

3.3 EQUIPMENT CONNECTIONS

A. Provide all final power connections for mechanical equipment. Confirm with suppliers all rough-in data, e.g., electrical characteristics, dimensions, locations, type of connection, etc., prior to installation.

3.4 FUSE CABINET

A. Surface-mounted steel fuse cabinet shall be wall-mounted in the main electrical room and have a hinged front door and a flush catch with lock (panelboard type). The cabinet shall contain the spare fuses of each size and type used in the project. On front of hinged door, provide an engraved nameplate with black letters and white phenolic material screwed in place reading, "Spare Fuses."

3.5 FIELD QUALITY CONTROL

A. Prepare for acceptance tests as follows:

1. Test insulation resistance for each enclosed switch, circuit breaker, component, and control circuit.
2. Test continuity of each line- and load-side circuit.
3. Perform visual and mechanical inspection.
4. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

3.6 ADJUSTING

A. Set field-adjustable switches and circuit-breaker trip ranges.

3.7 CLEANING

A. On completion of installation, inspect interior and exterior of enclosures. Remove paint and plaster splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

END OF SECTION 262816

SECTION 265600 - EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 SCOPE

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Exterior luminaires with lamps, ballasts, solid state lighting, and drivers, and those mounted on exterior surfaces of buildings.
2. Time clocks

1.3 SUBMITTALS

A. Product Data: For each luminaire, arranged in the order of lighting unit designation. Include data on features, accessories, finishes, and the following:

1. Physical description of fixture, including dimensions and verification of indicated parameters.
2. Luminaire dimensions, effective projected area, details of attaching luminaires, accessories, and installation and construction details.
3. Luminaire materials.
4. Photoelectric relays.
5. Solid State Lighting and Drivers.

B. Shop Drawings: Anchor-bolt templates keyed to specific poles and certified by manufacturer.

C. Wiring Diagrams: Power, signal, and control wiring.

D. Coordination Drawings: Mounting and connection details, drawn to scale, for exterior luminaries with requirements specified on the luminaire schedule.

E. Samples for Verification: For exterior luminaires designated for sample submission in the Exterior Luminaire Schedule.

1. Lamps: Specified units installed.
2. Driver: 120-V models of specified luminaire type.
3. Finishes: For each finished metal used in support components.

F. Source quality-control test reports.

G. Field quality-control test reports.

H. Operation and Maintenance Data: For luminaires to include in maintenance manuals.

I. Warranties: Special warranties specified in this Section.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.

B. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicted, that is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. Comply with IEEE C2, "National Electrical Safety Code."

E. Comply with NFPA 70.

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace luminaires or components of luminaires and lamps that fail in materials or workmanship; corrode; or fade, stain, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.

1. Warranty Period for Luminaires: Five years from date of Final Acceptance.

a. Warranty Period for Metal Corrosion: Five years from date of Final Acceptance.
b. Warranty Period for Color Retention: Five years from date of Final Acceptance.

1.6 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps: Furnish 10% of each type.
2. Glass and Plastic Lenses, Covers, and Other Optical Parts: Furnish 10% of each type.
3. Ballasts: Furnish 10% of each type.
4. Globes and Guards: Furnish 3% of each type.
5. SSL (LED) Luminaires: Furnish one of each type installed (luminaire only if installed on pole).

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified.

2.2 LUMINAIRES, GENERAL

A. Complying with UL 1598 and listed for installation in wet locations.

B. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.

C. Metal Parts: Free of burrs and sharp corners and edges.

D. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form and support to prevent warping and sagging.

E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.

G. Exposed Hardware Material: Stainless steel.

H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

I. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:

1. White Surfaces: 85 percent.
2. Specular Surfaces: 83 percent.
3. Diffusing Specular Surfaces: 75 percent.

J. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.

2.3 EXTERIOR LUMINAIRES

A. Refer to the luminaire schedule for more information and specification.

2.4 SOLID STATE LIGHTING (LED)

A. High performance LEDs with the following features:

1. Luminaire and components tested to IESNA LM-79 & LM-80 protocol
2. Efficacy over 90 lumens per watt or DLC QPL criteria, whichever is more stringent
3. Available in Type II, III, IV, and V distributions
4. Operating temperature of -30C to 55C
5. Lumen maintenance L80 rating > 50,000 hours.
6. Life rating: 50,000 hours
7. Color temperature: 3,000K with a CRI > 70 with CRI consistency over the life of the module, or DLC QPL criteria whichever is more stringent, unless otherwise noted on luminaire schedule.
8. LED platform building in series, parallel circuits ensuring consistent light output in the event of a single LED failure.
9. Certifications: CE/UL/ETL
10. Shatter resistant lens material, highly transparent and non-yellowing lens.
11. Wet location listed.

B. LED Drivers:
1. IP65 rated
2. Built in surge protection and thermal control (per ANSI/IEEE C62.41.2)
3. Current Constant output 50/60 HZ
4. Driver Efficiency has power factor >90%, THD < 20%
5. Integral to luminaire, unless noted otherwise.

C. Solid State Lighting (LED): Color Temperature and Minimum Color-Rendering Index: 3000K and 70 CRI, unless otherwise indicated.

2.5 FACTORY FINISHES

A. Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match process and color of pole or support materials specified in Section 09 90 00 Finishes.

B. Factory-Painted Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
2. Interior Surfaces: Apply one coat of bituminous paint on interior of pole or otherwise treat to prevent corrosion.
3. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

a. Color: As specified on luminaire schedule.

C. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
2. Class I, Clear Anodic Finish: AA-M32C22A41 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.

    a. Color: as specified on the luminaire schedule.

2.6 POLES

A. Wind Load

1. Minimum 125 mph velocity with luminaires and brackets mounted.
2. Comply with local requirements of Authorities Having Jurisdiction for minimum wind load design requirements.

B. Pole bases

1. For above grade concrete pole bases, provide Carlon curved junction boxes.
2. Make splices in Carlon boxes, not pole hand holes.
3. Provide dividers in Carlon box where required to keep low voltage cables separate from line voltage conductors.
4. Finish concrete foundation to a fine stone finish with chamfered top edge

C. Poles

1. Provide square metallic, non-tapered poles.
2. Provide metal bolt base cover over anchor bolts
3. Provide double nuts for adjustment

2.7 SOURCE QUALITY CONTROL

A. Provide services of a qualified, independent testing and inspecting agency to factory test luminaires with ballasts and lamps; certify results for isofootcandle curves, zonal lumen, average and minimum ratios, and electrical and energy-efficiency data for ballasts.

B. Factory test fixtures with ballasts and lamps; certify results for isofootcandle curves, zonal lumen, average and minimum ratios, and electrical and energy-efficiency data for ballasts.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install lamps in each fixture.

B. Luminaire Attachment: Fasten to indicated structural supports.

C. Adjust luminaires that require field adjustment or aiming.

3.2 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.3 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION 265600

SECTION 310000 - EARTHWORK

PART 1 GENERAL

1.1 SUMMARY

A. This work consists of clearing, grubbing, removing and disposing of vegetation and debris, the excavation and backfilling of onsite and/or engineered material associated with trenching, embankment, ditches, channels, backfilling, pipe embedment, stabilization, grading, topsoil and subgrade preparation. Excavation related to buildings, if required, is noted in accordance with the project Geotechnical Report and shall be used as reference only. Pumping and dewatering plans and all necessary permitting, testing and compliance shall be the responsibility of the Contractor.

B. SECTION INCLUDES
   1. Clearing, grubbing and site preparation
   2. Removal and disposal of debris
   3. Handling, storage, transportation, and disposal of excavated material
   4. Backfilling
   5. Pipe embedment
   6. Construction of fills and embankments
   7. Excavation for buildings & structures
   8. Pavement Subgrade preparation
   9. Trench Stabilization
   10. Final grading
   11. Slope Stabilization
   12. Appurtenant work

1.2 RELATED SECTIONS

A. Section 00 00 00 – Geotechnical Report

B. Section 02 41 00 – Demolition

C. Section 31 25 00 – Erosion and Sedimentation Controls

D. Section 32 12 00 – Flexible Paving

E. Section 32 13 00 – Rigid Paving

1.3 REFERENCES

A. AASHTO – American Association of State Highway and Transportation Officials

B. ASTM – American Society for Testing and Materials
   1. C33 – Concrete Aggregates
   2. C136 – Sieve Analysis of Fine and Coarse Aggregates
   3. D698 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb. Rammer and 12-Inch Drop
   4. D1241 – Material for Soil Aggregate Subbase, Base and Surface Courses
   5. D1557 – Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
   6. D4253 – Test Methods for Maximum Index Density of Soils and Unit Weight of Soils Using a Vibratory Table

7. D4254 – Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
8. D4318 – Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
9. D6938 – Test Method for In-Place Density and Water Content of Soil and Soil Aggregate by Nuclear Methods (Shallow Depth)

C. ACI – American Concrete Institute
1. 229 – Controlled Low-Strength Materials

D. CABO/ANSI – Council of American Building Officials/American National Standards Institute
1. A117.1 – Accessible and Useable Buildings and Facilities Standards

E. CDOT – Colorado Department of Transportation

F. OSHA – Occupational Safety and Health Administration
1. Part 1926 – Safety and Health Regulations for Construction

1.4 SUBMITTALS

A. Submit under provisions of Division One specifications.

B. Product Data: Submit on all products or materials supplied herein.

C. Test Reports: Indicate supplier, date of testing (must be within 1 year), sieve analysis, optimum moisture content and density in accordance with ASTM D698 if appropriate for crushed rock or gravel, pipe embedment and material for fills and embankment.

1.5 REGULATORY REQUIREMENTS

A. Burning is prohibited on-site. Ensure compliance with all relevant codes, regulations, and laws.

B. Adhere to the applicable requirements of CABO/ANSI A117.1 for accessibility concerning walkways, ramps, parking areas, driveways, curb ramps, etc.

C. Secure and comply with all necessary permits from the authority having jurisdiction, including any stormwater and/or groundwater discharge permits as needed.

D. For public improvements, if there is a conflict between municipal standards and this specification, municipal standards for products and installation will take precedence.

E. Perform excavation work in accordance with the requirements of the authority having jurisdiction and current OSHA regulations.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Safeguard adjacent structures and surrounding areas from damage during excavation, filling, and backfilling activities.

B. Protect the work from erosion or similar types of damage until the project is accepted. Leave the protection in place for use by subsequent contractors.

C. Avoid backfilling or constructing fills during freezing weather. Perform backfilling or fill construction only when the temperature is 35°F and rising.

D. Do not use frozen materials, snow, or ice in any backfill or fill areas.

E. Refrain from backfilling or constructing fills on frozen surfaces.

F. Prevent excavated material from becoming frozen.

G. Avoid backfilling or constructing fills or embankments during periods of heavy rainfall or precipitation when soil moisture conditions prevent proper compaction.

H. Do not remove trees from outside excavation or fill areas unless authorized by the Owner; protect trees from permanent damage due to construction activities.

I. Provide temporary bridges for roadways, walkways, driveways, and similar areas.

1.7 QUALITY ASSURANCE

A. All imported material to be free of hazardous and organic wastes, “clean” as defined by EPA, and approved for its intended use by the Owner or project Geotechnical Engineer.

PART 2 PRODUCTS

2.1 MATERIALS

A. General - Soil materials, whether from sources on or off the site must be approved by the Geotechnical Engineer as suitable for intended use and specifically for required location or purpose.

B. Material Suitability:
   1. Unless otherwise defined herein, all fill material should be non-expansive soil free of vegetation, brush, sod, trash and debris, and other deleterious substances, and should not contain rocks or lumps having a diameter of more than 4 inches. A fill material should be considered non-expansive if the swell potential of the material, when remolded to 95% of the standard Proctor (ASTM D698) maximum dry density at optimum moisture content, does not exceed 1.0% when wet under a 200 psf surcharge pressure. If grading is performed during times of freezing weather, the fill should not contain frozen materials, and, if the subgrade is allowed to freeze, all frozen material should be removed prior to additional fill placement for footings or slabs.

C. Classification of Excavated Materials:
   1. No classification applies. Remove and handle all excavated materials regardless of its type, character, composition, condition, or depth. This includes all material that is not classified as rock excavation as described in Paragraph 2.1.B.2 Rock Excavation is included herein.
   2. Waste Materials:
      a. Waste materials are considered unacceptable materials for compaction or placement fill. Site fills will not include environmental pollutants, hazardous substances or waste, hazardous products or by-products.
      b. Transport and properly dispose of any rubble and waste materials found in excavation off the Owner’s property
      c. If hazardous, transite or asbestos containing materials are found in excavation, stop work immediately and notify the Owner within one hour of discovery. Comply with special handling requirements.

D. Fills and Embankments

1. To the maximum extent practical use excess earth from onsite excavation for fills and embankments.
2. Free from rocks or stones larger than 12 inch in greatest dimension and free from brush, stumps, logs, roots, debris, and organic and other deleterious materials
3. Fill and embankment material must be acceptable to Engineer
4. No rocks or stones larger than 6 inch in upper 18 inches of fill or embankment. Where allowed, distribute rocks and stones through the fill to not interfere with compaction.

E. Imported Fill for Fills and Embankments:
1. The Contractor is responsible for obtaining additional material for fills and embankments as necessary to meet the requirements shown on the Drawings.
2. Imported fill: Refer to Material Suitability

F. Structural Fill
a. Structural fill should consist of moisture conditioned on-site soils or, if necessary, imported non-expansive soils with a maximum of 50% passing the No. 200 sieve, a maximum Liquid Limit of 35, and a maximum Plasticity Index of 12.
2. Topsoil
3. Topsoil is defined as fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter, and free of rocks, stumps, stones larger than 2 inches in any dimension, and other extraneous or toxic matter harmful to plant growth for areas to be seeded or planted. Coordinate testing requirements with Landscape Architect and Owner.
4. Clean topsoil free of plants and seeds will be spread to 4-inch minimum depth or as specified by Drawings, whichever is greater.

G. Grubbings
1. Grubbings are defined as the first 1 inch of surface vegetation and topsoil consisting of primarily existing grass groundcover free of roots, brush, and other objectionable material and debris.
2. Reuse grubbing and surface topsoil containing plants and seeds in designated revegetation areas only.

H. Compacted Trench Backfill
1. Job excavated material finely divided, free of debris, organic material, and stones larger than 6 inches in greatest dimension without masses of moist, stiff clay, or topsoil
2. In upper 18 inches, no rock or rock excavated detritus, larger than 6 inches except with specific approval from Geotechnical Engineer.
3. No rock greater than 3 inches in greatest dimension within 3 feet of top of pipe

I. Coarse Base Rock
1. Granular material, maximum 3 inches, less than 10% passing 1-inch sieve.
2. Free of trash, clay and dust
3. Compaction as specified by Geotechnical Engineer

J. Road Base
1. Will meet ASTM specification for Class II aggregate base and CDOT Class 6 gradation

Sieve Size	Percent Passing by Weight
3/4"	90-100
No. 4	30-65
No. 8	22-55
No. 200	3-12

2.2 ACCESSORIES

A. Controlled Low Strength Material (Flow Fill)
   1. Comply with Fort Lupton requirements and ACI 229 for the use of flowable fill within the right-of-way or for public utility trench backfill.
   2. Product will be a lean, sand-cement slurry, “flowable fill” or similar material with a 28-day unconfined compressive strength between 50 and 200 psi.

B. Non-woven geotextile fabric
   1. Needle-punched nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. Product must be inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids. Product must meet AASHTO M288-06 Class 3 for elongation > 50%.
      a. Mirafi 140N or accepted substitution

PART 3 EXECUTION

3.1 EXAMINATION

A. Field verify the location of all underground utilities, pipelines and structures prior to excavation

3.2 PERFORMANCE — GENERAL

A. Contractor to verify quantities of cuts and fills and perform all earthwork required to meet the grades as shown on the Drawings, including but not limited to, additional import or export required to handle compaction, building and pavement subgrade preparation, and pipe bedding.

B. Perform work in a safe and proper manner with appropriate precautions against hazard

C. Provide adequate working space and clearances for work performed within excavations and for installation and removal of utilities

D. Contain all construction activity on the designated site and within the limits of work. Cost of restoration offsite will be the responsibility of the Contractor

E. Maintain service to pipelines and utilities indicated on Drawings during construction

3.3 PREPARATION

A. Clearing and Grubbing
   1. Clear all site areas within the limits of work of grasses, roots, brush, and other objectionable material and debris.
   2. Strip subgrade for fills and embankments of surface vegetation, sod, tree stumps and organic topsoil. Strip and stockpile all on-site material meeting the topsoil definition for all areas receiving grading where shown on Drawings
   3. Remove all waste materials from site and dispose. Stockpile all acceptable grubbings for reuse in revegetation areas.
   4. Remove and dispose of tree stumps and roots over 3 inches in diameter to a minimum depth of 18 inches below the natural surface or 5 feet below finished surface level, whichever is lower.
   5. Remove debris including all demolished trees, underbrush, stumps, roots and other combustible materials from site and dispose of off-site; on-site burning is not permitted
   6. Backfill all excavated depression include grub holes with approved material

B. Preservation of Trees
   1. Do not remove trees outside fill or excavated areas, except as authorized by Engineer
   2. Protect trees and their roots within the drip line that are to remain from permanent damage by construction operation
   3. Trim standing trees in conflict with construction operations as directed by Owner and Landscape Architect

C. Topsoil Stripping
   1. Strip onsite material meeting the topsoil definition to minimum depth of 4 inches from areas to receive grading as shown on Drawings.
   2. Stockpile topsoil in areas designated by Owner and indicated on Drawings where it will not interfere with construction operations and activities and existing facilities
   3. At the completion of work in each area, place and grade topsoil to maintain gradient as indicated and required. Roughen surface as required for erosion control.

D. Waste and Debris
   1. Stockpile all acceptable grubbing for reuse in native revegetation areas
   2. Remove and dispose of all waste materials and debris from clearing, grubbing, stripping and demolition off site

E. Stockpiles
   1. Segregate materials suitable for the following:
      a. Topsoil
      b. Embankments and fills
      c. Backfill
      d. Spoils and waste only
   2. No excavation will be deposited or stockpiled at any time so as to endanger stability of banks or structures, health of trees and shrubs to be protected, or portions of the Work, either by direct pressure or indirectly by overloading banks contiguous to the operation
   3. Stockpile soil materials away from edge of excavations
   4. Do not obstruct or prevent access to roads, driveways, ditches, natural drainage channels, and utility control devices
   5. If in result of adjacent structures, easement limitations, or other restrictions sufficient storage is not available within Project limits, Contractor will arrange for off-site areas for stockpiling and for moving material to and from the storage area at no additional cost to the Owner

3.4 PROTECTION OF EXISTING UTILITIES AND STRUCTURES

A. Excavation and backfill operations will be performed in such a manner to prevent cave-ins of excavations or the undermining, damage or disturbing of existing utilities and structures or of new work.

B. Backfill will be placed and compacted so as to prevent future settlement or damage to existing utilities and structures and new work

C. Any excavations improperly backfilled or where settlement occurs will be reopened to the depth required then refilled with approved materials and compacted, and the surface restored to the required grade and condition, at no additional costs to the Owner

D. Any damage due to excavation, backfilling, or settlement of the backfill, or injury to persons or damage to property occurring as a result of such damage will be the responsibility of the Contractor. All costs to repair such damage, in a manner satisfactory to the Engineer, will be borne by the Contractor at no additional expense to the Owner

3.5 TRENCH STABILIZATION

A. Thoroughly compact and consolidate subgrades for concrete structures, precast structures, and utility trench bottoms so they remain firm, dense and intact during required construction activities

B. Remove all mud and muck during excavation

C. Reinforce subgrades with crushed rock or gravel if they become mucky during construction activities

D. Finished elevation of stabilized subgrades are to be at or below subgrade elevations indicated on Drawings

E. Allow no more than ½ inch depth of mud or muck to remain on trench bottoms when pipe bedding material is placed thereon

F. Scarify trench subgrade to a depth of 6 to 8 inches before compaction

3.6 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.10 foot

B. Remove existing unsuitable/uncompacted fill, old foundations, rubble/debris, soft or otherwise unsuitable material, and replace with suitable material in excavation

C. Extend excavations to a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction and inspections

D. Trim to neat lines where details call for concrete to be deposited against earth

E. Excavate by hand in areas where space and access will not permit use of machines

F. Provide dewatering and temporary drainage as required to keep excavations dry.

G. Reshape subgrade and wet as required

H. Notify Geotechnical Engineer when structure excavation has reached designated depth. Do not proceed with structure construction until excavation is approved by Geotechnical Engineer.

3.7 PAVEMENT OVEREXCAVATION AND SUBGRADE PREPARATION

A. Excavate subgrade for asphalt pavement areas per the lines, grades, and dimensions indicated on Drawings within a tolerance of plus or minus 0.10 foot. Excavate subgrade for concrete pavement areas per the lines, grades, and dimensions indicated on Drawings within a tolerance of plus or minus 0.05 foot.

B. Overexcavate and scarify existing soil a minimum of 12 inches under pavement areas, slabs, curbs and walks, adjust to a moisture content within 0 to +3 percentage points of optimum and compacted to 95% of the standard Proctor maximum dry density.

C. Extend subgrade preparation a minimum of one foot beyond back of proposed pavement, slabs, curbs and walks.

D. Extend subgrade preparation a minimum of two feet beyond back of proposed structure foundation limit.

E. Proof roll with a pneumatic tire equipment with a minimum axle load of 18 kips per axle a maximum of 24 hours prior to paving to locate any soft spots that exhibit instability and deflection beyond subgrade tolerances listed above. Areas that are observed to have soft spots in the subgrade, where deflection is not uniform or is excessive as determined by the Geotechnical Engineer, will be ripped, scarified, dried or wetted as necessary and recompacted to the requirements for density and moisture at the Contractor's expense. After recompaction, these areas will be proof rolled again and all failures again corrected at the Contractor's expense.

F. If the Contractor fails to place the sub base, base course, or initial pavement course within 24 hours or the condition of the subgrade changes due to weather or other conditions, proof rolling and correction will be performed again at the Contractor's expense.

3.8 FILLS AND EMBANKMENTS

A. Using suitable approved materials, shape, trim, and finish cut slopes to conform with contours and elevations indicated on Drawings

B. Suitable materials will consist of excavations or borrow areas
   1. Borrow
      a. Borrow areas will be arranged by Contractor at no additional cost to Owner and will be subject to approval by Engineer or Geotechnical Engineer
      b. Includes all topsoils and fill materials from approved offsite locations

C. Place in layers from 4 to 8 inches where high degree of compaction is required. Otherwise, place in 8 to 12 inch layers. Will be placed on subgrades approved by Engineer or Geotechnical Engineer

D. Will not be placed on frozen surface. Do not place snow, ice or frozen materials in fill

E. Level and roll subgrade so surface materials will be compact and bond with the first layer of fill or embankment
   1. Plow and scarify subgrade to a minimum depth of 6 inches until uniform and free of large clods

F. Place in horizontal layers at maximum uncompacted depth per compaction specifications herein.

G. Spread and level material deposited in piles and windrows before compacting

H. Thoroughly compact each layer by rolling or other means acceptable to Geotechnical Engineer to meet the moisture and compaction specifications herein.

I. Alter compaction methods if material fails to meet specified density

J. Where a trench passes through a fill or embankment, place and compact fill or embankment to 12 inch above the top of the pipe before excavating the trench

K. Add water and harrow, disc, blade, or otherwise work each layer to obtain the uniform moisture content and adequate compaction

L. Refer to geotechnical report for additional requirements for fill and embankment preparation requirements.

3.9 COMPACTION

A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure as described herein.

C. Refer to geotechnical report for additional requirements for site development material, subexcavation, compaction and related earthwork operations.

D. Percentage of Maximum Dry Density Requirements: Moisture treat and compact soil to not less than the following percentages of maximum dry density and to within the specified moisture content range of optimum moisture content according to ASTM D698 as follows:

Surface Improvement	Compaction %	Moisture Content
Structures	98%	-2 to +2
Paved Areas	95%	-2 to +2
Synthetic Turf Fields	95%	-2 to +2
Utility Trenches	95%	-2 to +2
Lawns or Unpaved Areas	90%	-2 to +2
Public Right-of-way	Per municipal standards	

1. Do not deposit or compact tamped or otherwise mechanically compacted backfill if frozen or if in water.
2. Take particular care to compact backfill which will be beneath slabs, pipes, drives, roads, parking areas, curb, gutters, or other surface construction.

3.10 BORROW OR SPOIL AREA

A. Obtain suitable material required to complete fill and embankments from excavation, on-site areas.

B. The location, size, shape, depth, drainage, and surfacing of borrow or spoil pits will be acceptable to Owner.

C. Make all areas regular in shape with graded and surfaced side and bottom slopes when completed

D. Cut side slopes not steeper than 1:1 and uniform for the entire length of any one side

E. Final grade disturbed areas of borrow to uniform slope (maximum slope = 4:1, minimum slope = 50:1).

F. Use material free of debris and deleterious material

G. Contractor is responsible for compliance with Colorado Discharge Permit System and local erosion control permitting requirements for any and all onsite and offsite, disturbed spoil and borrow areas. Upon completion of spoil and/or borrow operations, clean up spoil and/or borrow areas in a neat and reasonable manner to the satisfaction of the offsite property owner, Owner and Engineer.

3.11 DISPOSAL OF EXCESS EXCAVATED MATERIALS

A. Use excess excavated materials in fills and embankments as indicated on the Drawings to the extent needed. Coordinate with Owner and Engineer on locations for excess material placement.

B. Excess material may be spread onsite at locations acceptable to the Owner and the Engineer. Final quantity, location and grade to be determined prior to placement of excess material.
   1. Distribute excess earth from excavations of the site to location/s over unimproved areas of the site identified by the Owner for such purpose. Otherwise, stockpile in neat piles at locations directed by the Owner and the Engineer.
      a. Carefully finish material thus wasted with a drag, blade machine, or other suitable tool to a smooth, uniform surface without obstructing drainage at any point
      b. Don not waste excess excavated material in the above manner where the new fill crosses drainages, driveways or other improvements
      c. Distribute and level to thickness indicated on Drawings

C. At the Owner's discretion and with the Engineer's approval, suitable excess excavated materials from onsite may be disposed offsite at locations directed by Owner or specified on the Drawings.

D. Remove debris, junk, broken concrete, broken asphalt, rock, stones, stumps, logs, roots, and other unsuitable material from the site and dispose of it.

3.12 BLASTING

A. Blasting or other use of explosives is not permitted without approval

3.13 DRAINAGE MAINTENANCE

A. Do not backfill trenches across roadways, drives, walks or other trafficways adjacent to drainage ditches or water courses prior to backfilling the trench on the upstream side of the trafficway to prevent impounding water after pipe is laid

B. Backfill so that water does not accumulate in unfilled or partially filled trenches

C. Remove materials deposited in roadway ditches or other water courses crossed by the trench line immediately after backfilling is completed and restore ditches and water courses to original section, grade, and contours

D. Do not obstruct surface drainage any longer than necessary

E. Provide and maintain temporary bridges and other structures across unfilled trenches as required to maintain traffic

F. Provide adequate storm flow conveyance through the site at all times during construction to avoid flooding of any buildings or adjacent property. Provide overland drainage routing when storm sewer inlets are not fully functioning due to erosion and sediment control measures.

3.14 FINAL GRADING

A. After completion of all other outside work and after backfilling is completed and settled, bring to grade at the indicated elevations, slopes and contours, all areas being graded on site

B. Graders and other power equipment may be used for final grading and slope dressing if the result is uniform and equivalent to hand work

C. Grade all surfaces for effective drainage, provide a 2 percent minimum slope except as otherwise shown on the Drawings

D. Provide a smooth transition between adjacent existing grades and new grades

E. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances

F. Slope grades to direct water away from buildings and prevent ponds from forming where not intended

G. Finish subgrades at lawns and unpaved areas to required elevations within a tolerance of plus or minus one (1) inch

H. Finish grades will be no more than 0.1 foot above or below those indicated

I. Finish all ditches, swales and gutters to drain readily

J. Coordinate final subgrade depth with finish landscape treatment and required topsoil depths

K. Topsoil
   1. Clean topsoil, free of plants and seed will be spread to 4-inch minimum depth, or as specified by landscaping specifications and Drawings, whichever is greater, for areas of the site as detailed by the landscape Drawings.
   2. Reuse grubbings and surface topsoil containing plants and seeds in designated revegetation areas only.

3.15 SLOPE STABILIZATION

A. Cover channel banks, slopes, bottom and thalweg (water flowline at lowest point in channel) with erosion control fabric mat where grade is steeper than 4H to 1V and where indicated on the Drawings

B. Lay fabric smoothly on surface, bury top end of each section in 6-inch deep excavated topsoil trench. Provide 6-inch overlap minimum of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil

C. Secure outside edges and overlaps at 48 inch intervals with 4-inch to 6-inch U-shaped type pins or wooden stakes depending on ground condition

D. Lightly dress slopes with topsoil to ensure close contact between fabric and soil

E. At sides of ditches, lay fabric laps in direction of water flow. Lap ends and edges minimum 6 inches

F. Maintain integrity of erosion control fabric

G. Prior to laying fabric, seed disturbed areas under provisions of related seeding and landscaping specification sections [or] as specified on Drawings.

3.16 SETTLEMENT

A. Warranty for settlement of all fills, embankments, and backfills is stipulated in the General Conditions from final completion of Contract under which Work is performed

B. Repair or replace within 30 [verify with Owner] days after notice by Engineer or Owner

3.17 FIELD QUALITY CONTROL

A. Provide under provisions of General Conditions and Division One Specifications

B. Coordinate testing with Owner. Owner will provide all field testing to determine compliance of in-place and backfill materials and compaction in accordance with the specifications, and to verify design bearing capacities.

C. It is the Contractor's responsibility to initiate, coordinate and accommodate all required tests and inspections including conformance with requirements of all applicable public agencies and authorities. Contractor will be responsible for coordinating the testing requirement with testing agency and provide the testing agency advance notification to schedule tests.

D. Fills and Embankment Testing
   1. Two moisture-density relationship tests, ASTM D698, on each type of fill material
   2. One in-place compaction test for each 5,000 square feet every 1.5 feet of vertical lift of material placed
   3. Additional in-place compaction tests at the discretion of the Owner

E. Pipe Embedment and Backfill Testing
   1. Two moisture-density relationship tests, ASTM D698, or two relative density tests, ASTM D4253/D4254, as appropriate for each type of embedment on backfill material proposed, except granular embedment material
   2. One in-place compaction test every 200 lineal feet of trench in the compacted embedment zone and at every 1.5 feet of vertical lift of backfill materials, per ASTM D6938
   3. One in-place compaction test near top of trench for trench depth of 2 feet or less, per ASTM D6938
   4. Additional in-place compaction tests at the discretion of the Owner

F. Pavement and Structural Subgrade Testing
   1. At a minimum, two moisture-density relationship tests, ASTM D698, or two relative density tests, ASTM D4253/D4254, as appropriate and adequate for each type backfill material proposed.
   2. Perform tests for each footing, concrete site feature, and drainage structure subgrade. Perform tests at every 100 linear feet of subgrade of foundation walls, retaining walls, and every 150 feet for curbing, pans, drainage features, walks, etc. (or portions thereof). Perform tests every 2,000 square feet required of building slab area, exterior slabs and pavement/flatwork areas (with no less than 3 tests). Test at subgrade and at every vertical lift of backfill materials placed.
   3. Additional in-place compaction tests at the discretion of the Owner

G. Inspection and approval
   1. A qualified Geotechnical Engineer will inspect the natural soil at bottom of excavations for structures
   2. Do not prepare subgrade or place concrete until Geotechnical Engineer's inspection has taken place and any resulting recommendations of the Geotechnical Engineer have been fulfilled or until the inspection has been waived by the Geotechnical Engineer
   3. Prior to placement of structural fill, overexcavated foundations subgrades will be observed and tested by a qualified Geotechnical Engineer to ensure suitable bearing materials exist
   4. Geotechnical Engineer will provide a letter to Engineer to confirm the presence of suitable subgrade material and properly placed fill materials by Contractor in accordance with Drawings and geotechnical report.

H. Retesting of failed compaction will be performed by Geotechnical Engineer for Owner, but paid for the Contractor

END OF SECTION

SECTION 312500 - EROSION AND SEDIMENTATION CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. This work consists of temporary measures needed to control erosion and water pollution. These temporary measures will include, but not be limited to, berms, dikes, dams, sediment basins, fiber mats, netting, gravel, mulches, grasses, slope drains, and other erosion control devices or methods. These temporary measures shall be installed at the locations where needed to control erosion and water pollution during the construction of the project and during site restoration, and as directed by ENGINEER, and as shown on the drawings.

B. The Erosion Control Plan presented in the drawings serves as a minimum for the requirements of erosion control during construction. Contractor has the ultimate responsibility for providing adequate erosion control and water quality throughout the duration of the project. Therefore, if the provided plan is not working sufficiently to protect the project areas, then Contractor shall provide additional measures as required to obtain the required protection.

1.2 RELATED SECTIONS

A. Section 31 00 00 – Earthwork

B. Section 32 12 00 – Flexible Paving

C. Section 32 13 00 – Rigid Paving

1.3 REFERENCES AND STANDARDS

A. Fort Lupton MS4 Permit

B. CDOT – Colorado Department of Transportation

C. MHFD – Mile High Flood District

D. CDPHE – Colorado Department of Public Health and Environment

1.4 SUBMITTALS

A. Submit under provisions of Division One specifications.

B. Submit the following information:
1. Erosion Control Plan,
2. Construction schedule for Erosion Control per Article Scheduling,
3. Sequencing Plan per Article Scheduling,
4. All applicable permits for Erosion Control.

C. Product data: Submit on all products or materials supplied herein.

1.5 REGULATORY REQUIREMENTS

A. Obtain and comply with all requirements of Fort Lupton and/or Groundwater Discharge Permits, as required.

B. 401 Construction Dewatering Industrial Wastewater Permit (Construction Dewatering Permit 401):
   1. Contractor shall apply for and obtain a Construction Dewatering Permit 401 from the appropriate state environmental agency.
   2. All costs for this permit shall be the responsibility of Contractor.
   3. This permit requires that specific actions be performed at designated times.
   4. Contractor is legally obligated to comply with all terms and conditions of the permit including testing for effluent limitations.
   5. Contractor shall allow the state environment agency or other representatives to enter the site to test for compliance with the permit.
   6. Non-compliance with the permit can result in stoppage of all work.

C. In the event of conflict between these requirements and erosion and pollution control laws, rules, or regulations of other Federal, State, or local agencies, the more restrictive laws, rules, or regulations shall apply.

1.6 SCHEDULING

A. Sequencing Plan:
   1. Contractor shall submit a sequencing plan for approval for erosion control in conformance with Contractor's overall Construction Plan for approval by FORT LUPTON, Owner.
   2. Changes to the Erosion Control Sequencing Plan may be considered by FORT LUPTON, Owner only if presented in writing by the Contractor.

B. Temporary Erosion Control:
   1. When so indicated in the Contract Documents, or when directed by FORT LUPTON, Owner. Contractor shall prepare construction schedules for accomplishing temporary erosion control work including all maintenance procedures.
   2. These schedules shall be applicable to clearing and grubbing, grading, structural work, construction, etc.

C. Contractor shall submit for acceptance the proposed method of erosion control on haul roads and borrow pits and a plan for disposal of waste material.

D. Contractor shall be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the accepted schedule. Temporary erosion control measures shall then be used to correct conditions that develop during construction.

E. Work shall not be started until the erosion control schedules and methods of operations have been accepted.

PART 2 PRODUCTS

2.1 MATERIALS

A. Comply with all applicable municipal or local Municipal Separate Storm Sewer System (MS4) requirements.

B. All materials shall be submitted for approval prior to installation.

C. Natural or biodegradable materials shall be reasonably clean, free of deleterious materials, and certified weed free. Materials may include, but are not limited to, hay bales, straw, fiber mats, fiber netting, wood cellulose, fiber fabric, gravel.

PART 3 EXECUTION

3.1 GENERAL

A. All temporary and permanent erosion and sediment control practices will be maintained and repaired as needed to ensure continued performance of their intended function.

B. FORT LUPTON will monitor Contractor's erosion control methods. If the overall function and intent of erosion control is not being met, FORT LUPTON will require Contractor to provide additional measures as required to obtain the desired results.

C. The erosion control features installed by Contractor shall be adequately maintained by Contractor until the project is accepted.

3.2 PROTECTION OF ADJACENT PROPERITES

A. Properties adjacent to the site of a land disturbance shall be protected from sediment deposition.

B. In addition to the erosion control measures required on the drawings, perimeter controls may be required if damage to adjacent properties is likely, and may include, but is not limited to:
   1. Vegetated buffer strip around the lower perimeter of the land disturbance.
      a. Vegetated buffer strips may be used only where runoff in sheet flow is expected and should be at least twenty (20) feet in width.
   2. Sediment barriers such as straw bales, erosion logs, and silt fences.
   3. Sediment basins and porous landscape detention ponds.
   4. Combination of above measures.

3.3 CONSTRUCTION

A. Stabilization of Disturbed Areas:
   1. Temporary sediment control measures shall be established within five (5) days from time of exposure or disturbance.
   2. Permanent erosion protection measures shall be established within five (5) days after final grading of areas.

B. Stabilization of Sediment and Erosion Control Measures:
   1. Sediment barriers, perimeter dikes, and other measures intended to either trap sediment or prevent runoff from flowing over disturbed areas shall be constructed as a first step in grading and be made functional before land disturbance takes place.
   2. Earthen structures such as dams, dikes, and diversions shall be stabilized within five (5) days of installation.
   3. Stormwater outlets shall also be stabilized prior to any upstream land disturbing activities.

C. Stabilization of Waterways and Outlets:
   1. All onsite stormwater conveyance channels used by Contractor for temporary erosion control purposes shall be designed and constructed with adequate capacity and protection to prevent erosion during storm and runoff events.

2. Stabilization adequate to prevent erosion shall also be provided at the outlets of all pipes and channels.

D. Storm Sewer Inlet Protection: All storm sewer inlets which are made operable during construction or which drain stormwater runoff from a construction site shall be protected from sediment deposition by the use of filters.

E. Construction Access Routes:
1. Wherever construction vehicles enter or leave a construction site, a Stabilized Construction Entrance is required.
2. Where sediment is transported onto a public road surface, the roads shall be cleaned thoroughly at the end of each day.
3. Sediment shall be removed from roads by shoveling or sweeping and be transported to a sediment controlled disposal area.
4. Street washing shall be allowed only after sediment is removed in the manner described above.

3.4 DISPOSITION OF TEMPORARY MEASURES

A. All temporary erosion and sediment control measures shall be disposed of within thirty (30) days after final site stabilization is achieved or after the temporary measures are no longer needed as determined by FORT LUPTON

B. Trapped sediment and other disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion.

C. Substantial Completion of Erosion Control Measures:
1. At the time specified in the Contract Documents, and subject to compliance with specified materials and installation requirements, Contractor shall receive a Substantial Completion Certificate for temporary erosion control measures.
2. Substantial Completion Certificate can at times be known by different agencies or parties as: Certificate of Substantial Completion, Notice of Completion, Project Completion Certification, Certification of Erosion Control Measures, or other titles.
3. Maintenance of Erosion Control Measures after Substantial Completion: Contractor shall be responsible for maintaining temporary erosion control measures as specified in the drawings and Contract Documents until such time as work has been accepted by FORT LUPTON and as specified in Division 1 for Closeout Procedures.

END OF SECTION

SECTION 321200 - FLEXIBLE PAVING

PART 1 GENERAL

1.1 SUMMARY

A. This work consists of constructing one or more courses of hot mix asphalt (HMA) on a prepared base per these specifications, and in conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established. These specifications include general requirements that are applicable to all types of hot mix asphalts irrespective of gradation of aggregate, kind and quantity of asphalt cement, or pavement use. Deviations from these general requirements will be indicated in the specific requirements for each type. This work consists of one or more courses of asphalt mixture constructed on a prepared foundation per these specifications and the specific requirements of the type under contract, and in conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established. Hot Mix Asphalt (Patching) consists of those quantities required for the replacement of unstable corrugated areas in the existing pavement, pipe trenches, areas removed for curb and gutter forms, areas between the curb and gutter or sidewalk and the existing paved parking lots, and areas designated on the plans. These quantities will be restricted to small areas that require hand placement methods and where conventional paving equipment cannot be utilized.

1.2 SECTION INCLUDES

A. Full depth hot bituminous pavement (asphalt) over prepared subgrade

B. Overlay, patch and/or pavement rehabilitation applications for streets, parking lots and other miscellaneous asphalt pavement

1.3 RELATED SECTIONS

A. Section 01 02 00 – Geotechnical Report

B. Section 31 00 00 – Earthwork

C. Section 32 13 00 – Rigid Paving

1.4 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO):
   1. T 230: Standard Method of Test of Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures

B. American Society for Testing and Materials (ASTM):
   1. C29: Unit Weight and Voids in Aggregate
   2. C88: Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
   3. C117: Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing
   4. C128: Specific Gravity Test and Absorption of Fine Aggregate
   5. C131: Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
   6. C136: Sieve or Screen Analysis of Fine and Coarse Aggregates
   7. D70: Specific Gravity of Semi-Solid Bituminous Materials
   8. D2726: Bulk Specific Gravity of Compacted Bituminous Mixtures

9. D2041: Theoretical Maximum Specific Gravity of Bituminous Paving Mixtures
10. D4462: Viscosity of Asphalts (Bitumens)
11. 2172: Quantities Extraction of Bitumens from Bituminous Paving Mixtures
12. D2419: Sand Equivalent Value of Soils and Fine Aggregate
13. D290: Bituminous Mixing Plant Inspection
14. D6373: Performance Graded Asphalt Binder
15. D692: Course Aggregate for Bituminous Paving
16. D1073: Fine Aggregate for Bituminous Paving Mixtures
17. D1241: Materials for Soil-Aggregate Subbase, Base and Surface Courses
18. D2026: Cutback Asphalt (Slow-Curing Type)
19. D2027: Cutback Asphalt (Medium-Curing Type)
20. D2028: Cutback Asphalt (Rapid-Curing Type)
21. D2950: Density of Bituminous Concrete in Place by Nuclear Methods

C. Surface Preparation Standards (SSPC)
1. SP-2: Superior Performing Asphalt Pavement System (Superpave) Level 1 Mix Design

D. Colorado Department of Transportation

E. Colorado Asphalt Pavement Association

F. Fort Lupton construction specifications, standards and details.

1.5 SUBMITTALS

A. Submit in accordance with Division One Specifications

B. Record of Work: Maintain record of time and date of placement, temperature, and weather conditions, retain until completion and furnish copy to engineer.

C. Proposed Design Job Mix Formula for each mixture required by the contract. The mixture design shall be determined using AASHTO T-312 or Colorado Procedure CP-L 5115 for the Superpave Method of Mixture Design.

D. Test Reports: Proposed Design Job Mix testing shall be performed in a materials laboratory under the direct supervision of; and shall be stamped and signed by a Professional Engineer licensed in the State of Colorado practicing in this field. In addition, the General Contractor shall submit as part of the Proposed Design Job Mix, documents to verify the following:
1. Mix test for both base course and wearing course to be submitted.
2. Source of materials
3. Gradation, specific gravity, source and description of individual aggregates and the final blend
4. Aggregate physical properties
5. Source and Grade of the Performance Graded Binder (PG Binder)
6. Proposed Design Job Mix – aggregate and additive blending, final gradation shown on 0.45 power graph, optimum asphalt content
7. Required mixing and compaction temperatures
8. Mixture properties determined at a minimum of four asphalt contents and interpolated at optimum and graphs showing mixture properties versus asphalt content.
9. Sampling and testing of asphalt concrete mixtures for quality control during paving operations
   a. Uncompacted asphalt concrete mix
      i) Asphalt cement content: ASTM D2172 (AASHTO T164)
      ii) Maximum Specific Gravity: ASTM D2041 (AASHTO T209)
   b. Compacted asphalt concrete mix
      i) Bulk density: ASTM D1188 (AASHTO T166)

c. Perform at least one test for each day's paving but not less than one test per each 4000 sf of each lift.

1.6 QUALITY ASSURANCE

A. Materials, production, and placement shall conform to applicable CDOT and CSU standards.

B. Testing laboratories shall be properly certified and supervised by a Colorado-licensed Professional Engineer experienced in asphalt materials.

1.7 REGULATORY REQUIREMENTS

A. Work within public rights-of-way shall comply with requirements of:
1. Authority Having Jurisdiction
2. Colorado Department of Transportation
3. Local jurisdiction standards
4. Applicable agency specifications.

B. Accessibility-related paving shall conform to ADA and CABO/ANSI A117.1 requirements.

1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle materials under provisions of Division One Specifications

B. Transport asphalt mixtures in clean, non-stick truck beds treated with approved release agents.

C. Petroleum-based release agents are not permitted.

D. Cover loads to minimize heat loss and protect from weather.

E. Use insulated truck beds for extended hauls or when ambient temperatures are below 50°F.deliveries

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not place asphalt on frozen, wet, muddy, or unstable surfaces.

B. Placement shall comply with CDOT temperature requirements based on lift thickness and binder type. Minimum air and surface temperatures shall meet or exceed CDOT Table 401-3 requirements.

Table 401-3
Placement Temperature Limitations in °F

Compacted Layer Thickness in inches	Minimum Surface and Air Temperature °F Top Layer	Minimum Surface and Air Temperature °F Layers Below Top Layer
< 1 1/2	60	50
1 1/2 - < 3	50	40
3 or more	45	35

Table 401-3 Notes: Air temperature is taken in the shade. Surface is defined as the existing base on that the new pavement is to be placed.

PART 2 PRODUCTS

2.1 GENERAL

A. Asphalt materials and construction methods shall comply with CDOT Sections 403 and 702 unless otherwise noted.

2.2 TACK AND FOG COAT EMULSIONS:
1. Refer to CDOT Table 702-2
2. SS-1 or CSS-1h per AASHTO M208 or M140

2.3 ASPHALTIC CEMENT:
1. Superpave Performance Graded (PG) binder of PG58-28 Table 702-1 of CDOT standard section 702
2. Asphalt cement shall not be acid modified or alkaline modified
3. Asphalt cement shall not contain any used oils that have not been rerefined
4. Modifiers that do not comply with environmental rules and regulations including 40 CFR Part 261.6(a) (3) (IV), and part 266/Subpart C shall not be added. Modifiers will not be carcinogenic

2.4 AGGREGATES

A. Aggregates for Hot Mix Asphalt:
1. Aggregates for hot mix asphalt (HMA) shall be of uniform quality, composed of clean, hard, durable particles of crushed stone, crushed gravel, natural gravel, or crushed slag. Excess of fine material shall be wasted before crushing.
2. A percentage of the aggregate retained on the 4.75 mm (No. 4) sieve for Gradings S, SX and SG— and on the 2.36 mm (No. 8) sieve for Gradings SF and ST—shall have at least two mechanically induced fractured faces when tested per Colorado Procedure 45. This percentage will be specified in Table 403-1.
3. The angularity of the fine aggregate shall be a minimum of 45.0 percent when determined according to AASHTO T 304.
4. Grading SF mixes, may not require fine aggregate angularity of 45.0 percent.
5. Aggregate samples representing each aggregate stockpile shall be non-plastic if the percent of aggregate passing the 2.36 mm (No. 8) sieve is greater than or equal to 10 percent by weight of the individual aggregate sample.
6. Plasticity will be determined per AASHTO T 90.
7. The material shall not contain clay balls, vegetable matter, or other deleterious substances.
8. The aggregate for Gradings ST, S, SX, and SG shall have a percentage of wear of 45 or less when tested per AASHTO T 96.

B. Base Course Aggregates for Asphaltic Concrete
1. Provide aggregate in gradations for courses to comply with Class S, Colorado Department of Transportation Table 703-4
2. Up to 20% Reclaimed Asphalt Pavement (RAP) will be allowed in non-polymer or non-rubberized mixes.

C. Surface Course Aggregates for Asphaltic Concrete
1. Provide aggregate in gradations for courses to comply with Class SX, Colorado Department of Transportation, ASTM C136.
2. The percentage of wear, Los Angeles Abrasion Test (AASHTO T 96), shall not be more than 35.
3. Aggregates for cover coat material shall be crushed stone, crushed slag, crushed gravel, or natural gravel. Aggregates shall be composed of clean, tough, durable fragments free from an excess of flat, elongated, soft, or disintegrated pieces and free from fragments coated with

dirt or other objectionable matter. Slag shall be air-cooled blast-furnace slag reasonably uniform in density

4. The maximum amount of flat and elongated aggregate with a ratio of 3:1 shall not exceed 12 percent as determined by ASTM D4791
5. When blast-furnace slag is used, the weight per cubic foot shall be at least 70 pounds

D. Mineral Filler:
1. Mineral filler shall conform to the requirements of AASHTO M 17 and shall consist of rock dust, slag dust, hydrated lime, hydraulic cement, fly ash, or other suitable mineral matter. It shall be free of organic impurities and agglomerations. When used, it shall be dry enough to flow freely.
2. Mineral filler shall have a plasticity index not greater than four excluding hydrated lime and hydraulic cement
3.
4. Mineral filler shall be graded within the following limits:

Table 703-8
Mineral Filler Gradation

Sieve Size	Mass Percent Passing Square Mesh Sieves
600 µm (No. 30)	100
300 µm (No. 50)	95-100
75 µm (No. 200)	70-100

E. Weed Control: First application, “Roundup.” Second application, Casoron “W-50" or “G-10” with colored marker dye, manufactured by Pacific Coast Borax Company or an accepted substitute of non-flammable type.

2.5 MIX DESIGN SUBMITTAL

A. Submit mix design giving unit weight and to meet following requirements prior to placement of asphalt:

Property	S(75)	SX(75)
Air Voids in Mix, %		
(N Design)	3.5-4.5	3.5-4.5
Initial Gyrations	7	7
Design Gyrations	75	75
Hveem Stability	28 min	28 min
Voids Filled w/ Asphalt	65-80	65-80

2.6 ACCESSORIES

A. Traffic Control Devices
1. Signs.
a. Comply with AHJ standards and specifications for signs within the public right-of-way.
b. Sign faces, posts and bases shall be in conformance with the following materials specifications. All nonstandard sign faces, posts and bases must be approved by Owner. Private property or nonstandard signs will be maintained by the owner. Submit shop drawings for approval prior to fabrication. All signs shall conform to current M.U.T.C.D.

Standards and Colorado Supplements. All signs shall be 3M-engineer grade reflective sheeting or accepted substitute.

c. Traffic/Parking Signs: Sign blanks shall be 6061 or 5052-H38 aluminum alloy .080 inches thick. Facing shall be specified reflective sheeting with standard sign colors based on standard graphics and as shown on the plans.

2. Sign Posts.
   a. For large signs greater than 12”W x 18”H and for multiple signs of any size mounted on the same post: sign posts shall be two (2) inch by two (2) inch galvanized telespar tube.
   b. For regular single signs 12”W x 18”H or smaller: sign posts shall be one and one-half (1-1/2) inch by one and one-half (1-1/2) inch galvanized telespar tube.
   c. Galvanized telespar tube shall have 0.120-inch wall thickness, and three-eighths (3/8) inch holes drilled on one (1) inch centers, all sides over full length, ten (10) feet in length (min).
3. Sign Post Anchor Bases (Stubs). All sign post anchor bases shall be twist resistant square galvanized telespar tube post with thickness and hole pattern the same as sign posts. Use 2-1/4” by 2-1/4” anchor for large posts and 1-3/4” by 1-3/4” anchor for regular posts. Bases shall be embedded a minimum of 36” below finished grade and shall extend 3” above finished grade.
4. Signs Post Anchor Bases with concrete footing: Sign, post, base and compacted soil shall be rigid and able to withstand wind loads. Where predominantly clay soils are present which will not properly compact at sign base, install a 6” diameter by 36” deep concrete footing around signs post anchor base for all signs in landscaped areas.
5. All signs and posts shall be mounted and secured with municipal-approved vandal-proof type TL-3896 drive rivets with washers, or accepted substitute.

B. Pavement Marking. Specified pavement marking materials shall be used at locations as identified below.
   1. Comply with Owner/AHJ standards and specifications for pavement marking within the public right-of-way.
   2. FS TT-P-1952, Type I Alkyd, white, blue, yellow and red color paint meeting requirements of CDOT Standard Specification 708. Verify colors and extent of painting prior to painting. Unless noted on plans, evident at existing striping or instructed, provide white in color for traffic striping, parking stalls, and other control markings on internal pavement, yellow in color for traffic control markings or restricted parking or where indicated, blue in color for accessible parking stalls, and red in color for curbs where no parking is indicated. Reflectorized paint required for traffic stripes and control markings on internal drive, road or street pavements.
   3. Furnish paint with a no-pick-up maximum drying time of 20 minutes, when tested according to ASTM D711 using a wet film thickness of 0.015-inch when tested and applied at 77 degrees F.
   4. 3M Stamark 5730 preformed plastic marking material or an accepted substitute shall be used for crosswalks, stop bars, symbols (i.e. turn arrows) and striping for separation of turn and through lanes in right-of-way. Use of thermoplastic pavement marking is not permitted.

PART 3 EXECUTION

3.1 EXAMINATION

A. Establish and maintain required lines and elevations. Provide grade and location stakes under this section as required for asphaltic concrete paving work.

B. Operate heavy, rubber-tired front loader over subgrade of paved areas. Where soft spots occur, remove loose materials and replace with Class 6 road base aggregate complying with CDOT standards compacted to level of subgrade.

3.2 PREPARATION

A. Prepare subgrade in accordance with Section 31 00 00

B. Loose and Foreign Material
   1. Remove unsuitable material and replace with compacted Class 6 aggregate where required

C. Weed Control
   1. If weeds or vegetation exist at or on the subgrade, apply “Round-up” at rates following manufacturer’s instructions. Apply “Round-up” three days prior to removal of vegetation, subgrade preparation and application of Casoron as described below to allow “Round-up” to kill all vegetation. Remove all living and dead weeds, root balls, tree/shrub roots, vegetation, and/or any organic matter from on or in the subgrade per applicable earthwork specifications prior to subgrade preparation and paving at all areas to be paved.
   2. After all fine grading, checking, shaping, and compacting of the subgrade has been completed, and just prior to placing asphalt or aggregate base course, all subgrade soil in the area to receive asphalt pavement shall be thoroughly treated with Casoron soil sterilant (in addition to “Round-up” and regardless of presence of existing weeds or vegetation). Casoron shall be thoroughly sprinkled to distribute the chemical through the first two or three inches of the subgrade. For all areas to be paved, apply Casoron weed control at a minimum rate per 100 square yards of 2.4 pounds for G-10 or 4.0 pounds for 50w at rates and methods recommended by manufacturer within one day of paving.
   3. The Contractor shall provide all necessary protection to prevent injury to animal, fish, or plant life and property occasioned by the application of the soil sterilant. Apply on a calm, wind-free day. The Contractor will be held responsible for all application of soil sterilant or the storage of same. Protect existing and new trees and shrubs beyond the limit of paving from damage due to weed killer or soil sterilant overspray or root contact. Extra caution is required to prevent over-application of products in areas to be paved under tree canopies. Trees and shrubs damaged or killed by weed killer or sterilant application shall be replaced by the contractor at contractor’s expense.
   4. Do not apply within 20 feet of trees or shrubs

D. Tack Coat
   1. Apply in similar manner as prime coat, except as modified
   2. Dilute material with equal parts of water and apply to contact surfaces of previously constructed asphaltic concrete or portland cement concrete and surfaces
   3. Apply at rate of 0.05 to 0.15 gallons per square yard of surface
   4. Apply tack coat by brush to contact surfaces of curbs, gutters, catch basins, and other structures projecting into or abutting asphaltic concrete pavement
   5. Allow surfaces to dry until material is at condition of tackiness to receive pavement
   6. Where asphaltic concrete will adhere to surface, tack coat may be eliminated by Engineer

3.3 COLD MILLING

A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.
   1. Mill to minimum depth of 1 ½-inches, or as indicated on the plans.
   2. Mill to a uniform finished surface free of gouges, grooves, and ridges of more than ¼ inch depth.
   3. Control rate of milling to prevent tearing of existing asphalt course.
   4. Repair or replace curbs, manholes, and other construction damaged during cold milling.
   5. Excavate and trim unbound-aggregate base course, if encountered, and keep material separate from milled hot-mix asphalt.
   6. Transport milled hot-mix asphalt to asphalt recycling facility.

7. Keep milled pavement surface free of loose material and dust.

3.4 RING/FRAME ADJUSTMENTS

A. Set ring/frames of subsurface structures to final grade as a part of this work.

B. Placing Ring/Frames
   1. Surround ring/frames set to elevation with a ring of compacted asphalt concrete base prior to paving
   2. Place asphalt concrete mixture up to 1-inch below top of ring/frame, slope to grade, and compact by hand tamping

C. Adjust frames to proper position to meet paving

D. If permanent covers are not in place, provide temporary covers over openings until completion of rolling operations

E. Set ring/frames to grade, flush with surface of adjacent pavement

3.5 PREPARING THE MIXTURE

A. Comply with ASTM D995 for material storage, control, and mixing and for plant equipment and operation

B. Stockpile
   1. Keep each component of the various sized combined aggregates in separate stockpiles
   2. Maintain stockpiles so that separate aggregate sizes will not be intermixed and to prevent segregation

C. Heating
   1. Heat the asphalt cement at the mixing plant to viscosity at which it can be uniformly distributed throughout mixture
   2. Use lowest possible temperature to suite temperature viscosity characteristics of asphalt
   3. Do not exceed 350 degrees F

D. Aggregate
   1. Heat-dry aggregates to acceptable moisture content
   2. Deliver to mixer at recommended temperature to suite penetration grade and viscosity characteristics of asphalt cement, ambient temperature, and workability of mixture
   3. Accurately weigh or measure dry aggregates and weigh or meter asphalt cement to comply with job-mix formula requirements

E. Mix aggregate and asphalt cement to achieve 90-95 percent coated particles for base mixtures and 85-90 percent coated particles for surface mixture, per ASTM D2489

3.6 EQUIPMENT

A. Bituminous Pavers:
   1. Self-propelled, spreads without tearing surfaces, equipped with an activated screed assembly, heated if necessary, controls pavement edges to true lines without use of stationary forms and capable of spreading and finishing the asphalt plant mix material in widths applicable to the typical sections and thicknesses shown in the contract documents.
   2. Pavers used for roadway shoulders, recreational paths and similar construction will be capable of spreading and finishing the courses of asphalt plant mix material in width shown in the contract documents.

3. Pavers will be equipped with automatic screed controls with sensors capable of sensing grade from an outside reference line, and maintaining the screed at the specified longitudinal grade and transverse slope. The sensor will be constructed to operate from either or both sides of the paver and will be capable of working with the following devices:
    a. Ski-type device at least 30 feet in length
    b. Short ski or short shoe
    c. At least 5,000 feet of control line and stakes
4. The controls will be capable of maintaining the screed at the specified transverse slope within plus or minus 0.1 percent.
5. Manual operation will be permitted:
    a. For constructing irregularly shaped or minor areas
    b. If the automatic controls fail or malfunction the equipment may be operated manually for the remainder of the normal working day, provided specified results are obtained. However, if specified surface tolerances cannot be achieved, paving operations will be suspended until satisfactory correction, repairs of equipment replacements are made.

B. Rolling Equipment
1. Steel-wheel roller: Self-propelled, contact pressure of 250 to 350 psi per inch of width of roller wheel, equipped with adjustable scrapers and means for keeping wheel wet to prevent mix from sticking
2. Pneumatic-tired rollers: Self-propelled, contact pressure under each tire of 85 to 110 psi, wheels spaced so that one pass will accomplish one complete coverage equal to rolling width of machine, oscillating wheels. Remove and replace immediately tires picking up fines

C. Hand Tools: Provide rakes, lutes, shovels, tampers, smoothing irons, pavement cutters, portable heaters, and other miscellaneous small tools

3.7 PLACING THE MIX

A. Place asphalt concrete mixture on prepared surface, spread and strike-off using paving machine

B. Complete placement over full width of section on each day's run

C. Spread mixture at minimum temperature specified by CDOT Table 401-5 for the specific binder used in the asphalt mix:
1. PG 64-22: 320 F minimum mix discharge temperature, 235 F minimum delivered mix temperature
2. PG 58-28: 275 F minimum mix discharge temperature, 235 F minimum delivered mix temperature
3. The maximum mix discharge temperature will not exceed the minimum discharge temperature by more than 30 F.
4. Delivered mix temperature will be measured behind the paver screed
5. Hot asphalt mixture will be produced at the lowest temperature with the specified temperature range:
    a. producing a workable mix and provides for uniform coating of aggregates, in accordance with AASHTO T195
    b. allowing the required compaction to be achieved

D. Inaccessible and small areas may be placed by hand

E. Conform to the grade, cross section, finish thickness, and density indicated.

F. Lift Thickness
1. Place in multiple lifts. Place asphalt in lifts such that each compacted lift thickness is no less than 2.0” thick and no greater than 3.0” thick. Top lift to be 2” thick.

2. Typical Lift Thickness Sequencing:

Final Asphalt Section Required (inches)	No. of Lifts	Thickness of each Lift (inches) from bottom to top lift
2”	1	2
3”	1	3
4”	2	2-2
5”	2	3-2
6”	3	2-2-2
7”	3	3-2-2
8”	3	3-3-2
9”	4	3-2-2-2
10”	4	3-3-2-2
>10	Review with Engineer	

G. Paver Placing
1. Unless otherwise directed, being placing along centerline of areas in crowned section and at high side on one-way slope and in direction of traffic flow
2. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips
3. Complete base courses before placing surface courses
4. Place mixture in continuous operation as practicable

H. Hand Placing
1. Spread, tamp, and finish mixing using hand tools in areas where machine spreading is not possible as acceptable to Engineer
2. Place mixture at a rate that will insure handling and compaction before mixture becomes cooler than acceptable working temperature

I. Joints
1. Construct transverse joint at right angles to centerline when operations are suspended long enough for mixture to chill
2. Construct joints to have same texture, density, and smoothness as adjacent sections of asphalt concrete course
3. Clean contact surfaces free of sand, dirt, or other objectionable material and apply tack coat
4. Offset transverse joints in succeeding courses not less than 24 inches
5. Cut back edge of existing pavement or previously placed course to expose an even, vertical surface for full course thickness
6. Offset longitudinal joints in succeeding courses not less than 6 inches
7. When the edges of longitudinal joints are irregular, honeycombed or inadequately compacted, cut back unsatisfactory sections to expose an even, vertical surface for full course thickness
8. Wearing course constructed in even number of strips; place 1 longitudinal joint on centerline of road
9. Wearing course constructed in odd number of strips; place the centerline of 1 strip on centerline of road

J. Gutter: Finish surface high adjacent to concrete gutter so when compacted surface is slightly higher than edge of curb and flashing

3.8 COMPACTING THE MIX

A. All paving will be compacted to 94 +/- 2% of Maximum Theoretical (RICE) density, CP-51 or AASHTO T209: Maximum Specific Gravity of Bituminous Paving Mixtures, as determined by ASTM D 2950. RICE values will be used in calculating Relative Compaction according to CP-44 or AASHTO T166.

B. Provide pneumatic and steel-wheel type rollers to obtain the required pavement density, surface texture and rideability

C. Begin rolling operations when the mixture will bear weight of roller without excessive displacement and complete as quickly as possible after placement occurs.

D. Compaction operations will be continuous until the required density is achieved or the density requirements are not met and the mix temperature falls below 185˚ F or there is obvious surface distress or breakage. Minimum compaction temperatures may be adjusted according to the asphalt binder supplier recommendations. Adjusted minimum compaction temperatures must be shown on the approved mix design or on the asphalt binder supplier documentation kept on file at the jobsite.

E. Do not permit heavy equipment, including rollers to stand on finished surface before it has thoroughly cooled or set

F. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers

G. Start rolling longitudinally at extreme lower side of sections and proceed toward center of pavement. Roll to slightly different lengths on alternate roller runs

H. Do not roll centers of sections first under any circumstances

I. Breakdown Rolling
   1. Accomplish breakdown or initial rolling immediately following rolling of transverse and longitudinal joints and outside edge
   2. Operate rollers as close as possible to paver without causing pavement displacement
   3. Check crown, grade, and smoothness after breakdown rolling
   4. Repair displaced areas by loosening at once with lutes or rakes and filling, if required, with hot loose material before continuing rolling

J. Second Rolling
   1. Follow breakdown rolling as soon as possible, while mixture is hot and in condition for compaction
   2. Continue second rolling until mixture has been thoroughly compacted

K. Finish Rolling
   1. Perform finish rolling while mixture is still warm enough for removal of roller marks by combination of steel and pneumatic rollers
   2. Continue rolling until roller marks are eliminated and course has attained specified density, and required surface texture and surface tolerances
   3. After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled and attained its maximum degree of hardness

L. Patching
   1. Remove and replace defective areas

2. Cut-out and fill with fresh, hot asphaltic concrete
3. Remove deficient areas for full depth of course
4. Cut sides perpendicular and parallel to direction of traffic with edges vertical
5. Apply tack coat to exposed surfaces before placing new asphaltic concrete mixture
6. Compact by rolling to specified surface density and smoothness

3.9 JOINING TO EXISTING WORK

A. Cut sides vertically and apply tack coat to exposed asphalt surfaces before placing new pavement. Meet existing thickness of surface and base courses, but not less than specified for new work.

B. All joins shall be compacted to 92.0% +/- 2.0% of RICE, taken fully on each side of joint, every 200 lineal feet. RICE values shall be used in calculating Relative Compaction according to AASHTO T166.

3.10 FIELD QUALITY CONTROL

A. The Owner will engage a certified testing agency to perform field testing to determine compliance of in-place asphaltic concrete paving materials and compaction in accordance with Division One Specifications.

B. It is the Contractor's responsibility to initiate, coordinate and accommodate all required tests and inspections including conformance with requirements of all applicable public agencies and authorities. Contractor will be responsible for coordinating the testing requirement with testing agency and provide the testing agency advance notification to schedule tests.

C. Testing Agency will test in-place pavement for density and thickness.

D. Asphalt density testing:
1. Every one-hundred fifty (150) lineal feet per driving lane.
2. Every 2,000 square feet of parking lot
3. Densities shall be between ninety-two percent (92%) and ninety-six percent (96%) of the RICE unit weight

E. Contractor to verify final surfaces are of uniform texture, conforming to required grades and cross sections

F. The Contractor will core the pavement as required by the testing agency for field density tests in accordance with AASHTO T 230, Method B, or for field calibration of nuclear density equipment in accordance with ASTM D 2950.
1. Testing agency will take not less than 4-inch diameter pavement specimens
2. At the testing agency's discretion, cores may be required at the beginning of placement of each pavement layer or change of mixture materials or gradation.
3. Untested areas during placement will require cores to be taken to verify compaction
4. Contractor to repair holes from test specimens

G. For each completed course or from locations directed by the testing agency, and at a minimum, a representative asphalt pavement sample shall be taken from the first one thousand (1,000) tons, and all mix properties shall be verified. The percent voids filled with asphalt cement, Hveem stability, and Lottman shall be verified at a minimum of every ten-thousand (10,000) tons. Asphalt testing shall comply with ASTM D1559. Two copies of all test reports shall be submitted directly to the Engineer.

H. Acceptable density of in-place course materials is between 92 and 96 percent of the recorded laboratory RICE unit weight. Immediately re-compact asphaltic concrete not conforming to acceptable density. Remove and replace all sections not in conformance density requirements

I. Thickness: Variations from drawings
   1. Base course: 1/4-inch +
   2. Remove and replace paving less than minimum thickness

J. Grade Tolerance: ±0.05 feet

K. Surface Smoothness
   1. Test using a 10-foot straight edge applied parallel to direction of drainage
   2. Advance straight edge five feet, maximum 1/4-inch per foot from nearest point of contact
   3. Do not permit pockets or depressions where water may pool
   4. Remove and replace areas, deficient in smoothness. Overlay corrections may be permitted only if acceptable to Engineer

L. Inspection: The work of this section is subject to the inspection and approval of the engineer and/or owner. The following inspections are required:
   1. Protection of adjacent property
   2. Staking and establishment of elevations
   3. Establishment and compaction of subgrade
   4. Placement and compaction of bituminous base course and wearing surface
   5. Final inspection
   6. Obtain approval of each element of work listed above in sequence of its completion before proceeding with the next item

3.11 CLEANING

A. After completion of paving operations, clean surfaces of excess or spilled asphalt materials to the satisfaction of Engineer

3.12 PROTECTION OF FINISHED WORK

A. After final rolling, do not permit vehicular traffic on asphalt concrete pavement until it has cooled and hardened and in no case sooner than 6 hours

B. Provide barricades and warning devices as required to protect pavement and the general public

3.13 WARRANTY

A. Provide installer’s 2-year written warranty endorsed by the contractor warranting the pavement from creeping, shoring, cracking, softening, settling, ponding and other defects due to improper placing or defective materials. Replace defective materials upon notification by the owner in accordance with the requirements of the original work.

3.14 SCHEDULE OF MIX PLACEMENT: COORDINATE WITH GEOTECHNICAL REPORT AND DETAILS AND NOTES SHOWN ON THE PLANS

A. Refer to Drawings for asphalt thickness and subgrade requirements.

END OF SECTION

SECTION 321300 - RIGID PAVING

PART 1 GENERAL

1.1 SUMMARY

A. This work consists of constructing a pavement composed of Portland Cement Concrete on a prepared subgrade or base course per these specifications and in conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established

1.2 SECTION INCLUDES

A. Forming, jointing, placing and curing of concrete pavements, curbs, gutters, cross pans, islands and sidewalks.

1.3 RELATED SECTIONS

A. Section 00 31 32 – Geotechnical Data

B. Section 31 00 00 – Earthwork

1.4 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO):
1. M6, Standard Specification for Fine Aggregate for Hydraulics Cement Concrete.
2. M80, Standard Specification for Coarse Aggregate for Hydraulics Cement Concrete.
3. M148, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
4. M154, Standard Specification for Air-Entraining Admixtures for Concrete.
5. M171, Standard Specification for Sheet Materials for Curing Concrete.
6. M182, Standard Specification for Burlap Cloth Made from Jute or Kenaf and Cotton Mats.
7. M194M/M194, Standard Specification for Chemical Admixtures for Concrete.
8. T22, Standard Method of Test for Compressive Strength of Cylindrical Concrete Specimens.
9. T23, Standard Method of Test for Making and Curing Concrete Test Specimens in the Field.
10. T26, Standard Method of Test for Quality of Water to Be Used in Concrete.
11. T27, Sieve Analysis of Fine and Coarse Aggregates
12. T96, Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
13. T11, Standard Method of Test for Clay Lumps and Friable Particles in Aggregate.
14. T119M/T119, Standard Method of Test for Slump of Hydraulic Cement Concrete.
15. T121M/T121, Standard Method of Test for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete.
16. T141, Standard Method of Test for Sampling Freshly Mixed Concrete.
17. T152, Standard Method of Test for Air Content of Freshly Mixed Concrete by the Pressure Method.
18. T176, Standard Method of Test for Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test.
19. T199, Standard Method of Test for Air Content of Freshly Mixed Concrete by the Chace Indicator.

B. American Concrete Institute (ACI)
1. 214 – Recommended Practice for Evaluating Compression Test Results of Field Concrete
2. 301 – Specifications for Structural Concrete for buildings

3. 304 – Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
4. 305/305R – Hot Weather Concreting
5. 306/306R – Cold Weather Concreting
6. 308 – Standard Practice for Curing Concrete

C. American Society for Testing and Materials (ASTM)
1. A1064 – Carbon Steel Wire and Welded Wire Reinforcement, Plain and Deformed for Concrete
2. A615 – Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
3. C31 – Making and Curing Concrete Test Specimens in the Field
4. C33 – Concrete Aggregates
5. C39 – Test Method for Compressive Strength of Cylindrical Concrete Specimens
6. C94 – Ready Mix Concrete
7. C143 – Test Method of Slump of Hydraulic Cement Concrete
8. C150 – Portland Cement
9. C260 – Air-Entraining Admixtures for Concrete
10. C309/AASHTO M148 – Liquid Membrane-Forming Compounds for Curing Concrete
11. C494 – Chemical Admixtures for Concrete
12. C618 – Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
13. C1116 – Fiber Reinforced Concrete
14. D994 – Preformed Expansion Joint Filler for Concrete (Bituminous Type)
15. D6690 – Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
16. C979 – Pigments for Integrally Colored Concrete
17. D1751 – Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction
18. D1752 – Preformed Sponge Rubber Cork Expansion and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction
19. D7508 – Polyolefin Chopped Stands for Use in Concrete

D. CABO/ANSI A117.1 for accessibility requirements related to walks, ramps, parking areas, drives, curb ramps, etc.

E. Colorado Department of Transportation (CDOT):
1. Section 703.01, Fine Aggregate for Concrete.
2. CP30, Sampling of Aggregates.
3. CP31A, Sieve Analysis of Fine and Coarse Aggregates.
4. CP60, Determining Surface Moisture in Fine and Coarse Aggregates..

1.5 SUBMITTALS

A. Provide under provisions of Division One Specifications

B. CONTRACTOR shall submit certified laboratory test certificates for all items required in this section.

C. Contractor shall submit mix design for concrete in writing to ENGINEER for approval prior to placement of concrete.
1. Provide sufficient information on mix design and products specified to verify compliance with specifications.

D. CONTRACTOR shall submit batch tickets for each load of concrete. Tickets shall show weight of all materials and additives used in each batch.

1.6 QUALITY ASSURANCE

A. Perform work in accordance with ACI 301, Conform materials and installation to applicable portions of Colorado Department of Transportation, and the Local Jurisdictional construction specifications, standards and details.

1.7 REGULATORY REQUIREMENTS

A. For work on public streets or rights-of-way conform to the requirements of the Local Authority Having Jurisdiction construction specifications, standards and details for the Construction of Curbs, Gutters, Sidewalks, Driveways, Street Paving, and other public right-of-way Improvements.

B. Comply with applicable requirements of CABO/ANSI A117.1 for accessibility requirements related to walks, ramps, parking areas, drives, curb ramps, etc.

C. Obtain cementitious materials and aggregate from same source for all work

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect and handle materials under provisions of Division One Specifications

B. Reinforcing steel: Store on supports which will keep materials from contact with the ground and cover

C. Rubber and plastic materials: Store in a cool place, do not expose to direct sunlight

D. Prepare a delivery ticket for each load of ready-mixed concrete

E. Contractor shall submit tickets for all concrete delivered to site:
   1. Quantity delivered
   2. Actual quantity of each material in batch
   3. Outdoor temp in the shade
   4. Time at which cement was added
   5. Numerical sequence of the delivery
   6. Quantity of water that can be added in the field based on mix design
   7. Free moisture in fine and coarse aggregate in percent by weight
   8. Temperature of batch

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen

B. Protect concrete from rapid loss of moisture during hot water placement

PART 2 PRODUCTS

2.1 MATERIALS

A. Coarse Aggregate for Concrete: Coarse aggregates shall conform to the requirements of AASHTO M80, except that the percentage of wear shall not exceed forty-five (45) when tested in accordance with AASHTO T96. Coarse aggregate shall conform to the grading in table below:

Coarse Aggregates for Portland Cement Concrete	
Sieve Size or Test Procedure	**% Passing or Test Requirement**
1 inch	100
¾ inch	90-100
⅜ inch	20-55
No. 4	0-10
No. 8	0-5
% Wear	45, Max
Clay Lumps * Friable Particles, %	2.0, Max
Coal & Lignites, %	0.5, Max
Sodium Sulfate Soundness %	12, Max

B. Fine Aggregate for Concrete: Fine aggregates shall meet Colorado Department of Transportation, Section 703.01 requirements and gradation as shown in the table below. Fine aggregate for concrete shall conform to the requirements of AASHTO M6. The amount of deleterious substances removable by elutriation shall not exceed three percent (3%) by dry weight of fine aggregate when tested in accordance with AASHTO T11, unless otherwise specified. The minimum Sand Equivalent, as tested in accordance with AASHTO T176 shall be eighty (80), unless otherwise specified. The Fineness Modules shall not be less than two and five-tenths (2.50) nor greater than three and five-tenths (3.50), unless otherwise approved.

Fine Aggregates for Portland Cement Concrete	
Sieve Size or Test Procedure	**% Passing or Test Requirement**
⅜ inch	100
No. 4	95 - 100
No. 16	45 - 80
No. 50	10 - 30
No. 100	2 - 10
No. 200	3, Max
Friable Particles, %	1.0, Max
Coal & Lignite, %	1.0, Max
Deleterious Material (AASHTO T112),%	3, Max
Sand Equivalent (AASHTO T176),%	80, Min
Fineness Modules	2.50 - 3.50
Sodium Sulfate Soundness, %	20.0, Max

C. Form Materials
1. Form Materials: Plywood: PS 1, waterproof resin-bonded, exterior type Douglas Fir; face adjacent to concrete Grade B or better
2. Fiberboard: FS LL-B-810, Type IX, tempered, waterproof, screen back, concrete form hardboard
3. Capable of supporting loads imposed by construction equipment, straight and free from warp. Clean and strong enough to resist pressure of concrete when placed and retain horizontal and

vertical alignment. Coat forms with a non-staining form release agent that will not discolor or deface the surface of the concrete

4. Joint filler: ASTM D1751 or D1752 type; 3/4-inch thick unless indicated otherwise

D. Reinforcement
   1. Where reinforcement is specified herein or indicated on the plans:
      a. Bars: ASTM A615, Grade 60
      b. Reinforcing Welded Wire Fabric (WWF): ASTM A1064, steel, 16 gage minimum
         i) Furnish in flat sheets
      c. Dowels: ASTM A615; 40 ksi yield, Grade 60, plain steel, unfinished finish
      d. Fibrous reinforcement: Collated, fibrillated, polypropylene fibers, tensile strength 70,000 psi
         i) ASTM C1116 and ASTM D7508
         ii) Use minimum of 1.5 pounds per cubic yard
         iii) Fibermesh or accepted substitution

E. Weed Control: First application, “Roundup.” Second application, Casoron “W-50" or “G-10” with colored marker dye, manufactured by Pacific Coast Borax Company or an accepted substitute of non-flammable type.

F. Curing Compound: ASTM C309, AASHTO M-148, white pigmented liquid membrane

G. Joint Sealers: Polyurethane base, elastomeric, self leveling, chemical cure, handling 50% joint movement; Sikaflex-2C-SL or accepted substitutions

H. Sheet Materials: AASHTO M171, 4 mil

I. Expansion Joint Material: 0.5-inch thick, ASTM D1751, asphalt impregnated fiber board, glass fiber or sponge, or closed cell polyethylene foam; Texmastic “vinylex 3600,” Sonneborn “Sonoflex F,” or accepted substitutions

2.2 CONCRETE MIX

A. Comply with ASTM C94

B. Maximum Coarse Aggregate Size: 1-inch

C. Portland Cement: ASTM C150, Type II; 555 pounds minimum per cubic yard of concrete

D. Water/Cementitious Material (Cement and Fly Ash) Ratio: Less than or equal to 0.45

E. Slump: 4-inch maximum
   1. May be increased to 4.5 inches for hand work, acceptable to Engineer
   2. As low as possible consistent with proper handling and thorough compaction

F. Volumetric Air Content: 6.0%±2% after placement for 1-inch aggregate
   1. Vary air content with maximum size aggregate, ASTM C94, Table 3.

G. Strength: Compressive strength as determined by ASTM C39, 4,500 psi minimum at 28 days

H. Consistency: Uniform slump, suitable for the placement conditions with aggregate floating uniformly throughout the concrete mass, flowing sluggishly when vibrated or spaded

I. Adjust mix as required to meet specifications

J. Approved fly ash may be substituted for Portland cement up to a maximum of 25 percent Class C or Class F by weight of the cementitious material content. Fly ash for concrete shall conform to the requirements of ASTM C618 with the following exceptions:
   1. The loss on ignition shall not exceed 3.0 percent
   2. The CaO in Class F fly ash shall not exceed 18 percent
   3. Class C fly ash will not be permitted where sulfate resistant cement is required.
   4. CONTRACTOR shall submit certified laboratory test results for the fly ash. Test results that do not meet the physical and chemical requirements may result in the suspension of the use of fly ash until the corrections necessary have been taken to ensure that the material meets the SPECIFICATIONS.

K. Admixtures: Content, batching method, and time of introduction in accordance with the manufacturer's recommendations for compliance with this specification
   1. Include a water reducing admixture
   2. Calcium chloride content shall not exceed 0.05% of the cement content by weight

2.3 SOURCE QUALITY CONTROL AND TESTS

A. Provide under provisions of Division One Specifications

B. Submit proposed mix design to Engineer for review prior to commencement of work

C. Tests on cement and aggregates will be performed to ensure conformance with specified requirements

D. Test samples in accordance with ACI 301.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify compacted subgrade is acceptable and ready to support paving and imposed loads

B. Verify gradients and elevations of base are correct

C. Check completed formwork for grade and alignment to the following tolerances:
   1. Top of forms not more than 1/8-inch in 10 feet
   2. Vertical face on longitudinal axis, not more than 1/4-inch in 10 feet

3.2 PREPARATION

A. Subgrade
   1. Prepare subgrade in accordance with Section 31 00 00 – Earthwork
   2. Moisten subgrade to depth of 6 inches at optimal moisture not more than 12 hours prior to placement to minimize absorption of water from fresh concrete
   3. Check for soft spots by proof-rolling or other means prior to setting forms. Remove soft yielding material and replace. Compact to specifications under provisions of Section 31 00 00 – Earthwork.
   4. Check crown and/or elevation of subgrade to assure specified thickness. Compact to specification additional material used to bring to correct elevation. Remove excess material where subgrade is too high
   5. Clean subgrade of all loose materials before placement of concrete. Do not disturb area inside forms after fine grading is complete
   6. Weed Control:

a. If weeds or vegetation exist at or on the subgrade, apply “Round-up” at rates following manufacturer’s instructions. Apply “Round-up” three days prior to removal of vegetation, subgrade preparation and application of Casoron as described below to allow “Round-up” to kill all vegetation. Remove all living and dead weeds, root balls, tree/shrub roots, vegetation, and/or any organic matter from on or in the subgrade per applicable earthwork specifications prior to subgrade preparation and paving at all areas to be paved.
b. After all fine grading, checking, shaping, and compacting of the subgrade has been completed, and just prior to placing pavement, all subgrade soil in the area to receive pavement shall be thoroughly treated with Casoron soil sterilant (in addition to “Round-up” and regardless of presence of existing weeds or vegetation). Casoron shall be thoroughly sprinkled to distribute the chemical through the first two or three inches of the subgrade. For all areas to be paved, apply Casoron weed control at a minimum rate per 100 square yards of 2.4 pounds for G-10 or 4.0 pounds for 50w at rates and methods recommended by manufacturer within one day of paving.
c. The Contractor shall provide all necessary protection to prevent injury to animal, fish, or plant life and property occasioned by the application of the soil sterilant. Apply on a calm, wind-free day. The Contractor will be held responsible for all application of soil sterilant or the storage of same. Protect existing and new trees and shrubs beyond the limit of paving from damage due to weed killer or soil sterilant overspray or root contact. Extra caution is required to prevent over-application of products in areas to be paved under tree canopies. Trees and shrubs damaged or killed by weed killer or sterilant application shall be replaced by the contractor at contractor’s expense.
d. Do not apply within 20 feet of trees or shrubs

B. Frame Adjustment
1. Coat surfaces of manhole and catch basin frames with oil to prevent bond with concrete pavement for concrete collars
2. Set frames of structures in full grout bed to provide bearing. Set to final grade
3. Form construction joints and blockouts as indicated on drawings

3.3 PERFORMANCE AND INSTALLATION

A. Transporting mixed concrete
1. Transporting of mixed concrete shall conform to ACI 305R
2. Do not exceed manufacturer’s guaranteed capacity of truck agitators. Maintain the mixed concrete in a thoroughly mixed and uniform mass during handling
3. Do not incorporate additional mixing water into the concrete during hauling or after arrival at the delivery point, unless ordered by the Engineer. If additional water is to be incorporated into the concrete, revolve the drum not less than 30 revolutions at mixing speed after the water is added and before placing concrete.
4. Furnish a water measuring device in good working condition, mounted on each transit mix truck, for measuring the water added to the mix on the site by the Engineer
5. Provide delivery ticket and comply with delivery requirements of this section

B. Forming
1. Place and secure forms to correct location, dimension, profile, and gradient
2. Install sufficient quantity of forms to allow continuous progress of work so that forms can remain in place at least 24 hours after concrete placement
3. Join neatly and mechanically tamp to assure firm placement. Assemble formwork to permit easy stripping and dismantling without damaging concrete
4. Oil forms prior to concrete placement
5. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement

6. Set dowels, expansion joints, preformed construction joints and header boards as specified or indicated on the drawings
7. Low roll or mountable curbs may be formed without the use of face form by using a straight edge and template to form curb face
8. Backfill behind forms as required to prevent water from entering subgrade

C. Reinforcement
1. Add fiber reinforcement to mix at plant prior to delivery to jobsite. Mixing shall be as recommended by the manufacturer to distribute the product evenly throughout the concrete mix
2. Place bar or WWF reinforcement at mid-height of slabs-on-grade or as shown on the drawings
   a. Install in as long lengths as possible. Lap adjoining pieces at least one full mesh and lace with wire
   b. Support with metal chairs, brick or stone is unacceptable
3. Hold all tie and marginal dowels in proper position by sufficient supports or pins
4. Mechanically install dowels or place on supports if center longitudinal joint is sawed in lieu of placing plastic strip
5. Interrupt reinforcement at expansion joints
6. Place dowels to achieve pavement and curb alignment as detailed.
7. Provide doweled joints inch at interruptions of concrete with one end of dowel set in capped sleeve to allow longitudinal movement
8. Grease dowels on one side of joints with caps on greased end

D. Placing concrete
1. Place concrete in accordance with ACI 301
2. Lightly moisten subgrade or base course immediately before placing concrete.
3. Ensure reinforcement, inserts, embedded parts, and formed joints are not disturbed
4. during concrete placement
5. Deposit concrete near final position. Minimize segregation and damage to subgrade
6. Place concrete continuously over the full width of the panel and between predetermined construction joints. Spread mechanically to prevent segregation and separation of materials
7. Consolidate concrete with vibrators and spade next to forms to remove air spaces or honeycombs
8. Do not place concrete in forms that has begun to set
9. Do not place more concrete in one day than can be finished before dark the same day
10. Curbs and Gutters: Automatic machine may be used for curb and gutter placement at Contractor's option. If machine placement is to be used, submit revised mix design and laboratory test results which meet or exceed minimums specified. Machine placement must produce curbs and gutters to required cross-section, lines, grades, finish, and jointing as specified for formed concrete. If results are not acceptable, remove and replace with formed concrete as specified
11. Walks: Construct sidewalks with a minimum thickness of 4-inch. Tool edges to rounded profile and finish as specified or as shown on the drawings. Pitch walks 1/4-inch per foot for cross drainage unless otherwise indicated

E. Cold weather concreting
1. Conform to ACI 306/306R, except as modified herein
2. Minimum concrete temp at the time of mixing

Outdoor Temp at Placement (in shade)	Concrete Temp at Mixing
Below 30°F	70°F
Between 30°F & 45°F	60°F

Above 45°F	45°F

3. Do not place heated concrete which is warmer than 80 degrees F
4. If freezing temp are expected during curing, maintain the concrete temp at or above 50 deg F for 5 days or 70 deg F for 3 days with forms in place
5. Do not allow concrete to cool suddenly

F. Hot weather concreting
1. Conform to ACI 305/305R, except as modified herein
2. At air temp of 90 degrees F and above keep concrete as cool as possible during placement and curing. Fog sprayers or special wetting agents may be required for protection
3. Do not allow concrete temperature to exceed 70 deg F at placement
4. Prevent plastic shrinkage cracking due to rapid evaporation of moisture
5. Do not place concrete when the actual or anticipated evaporation rate equals or exceeds 0.2 lbs per sq ft per hr as determined from ACI 305, Fig 2.1.4

G. Joints
1. Provide concrete joints per Admas County Standard Details
2. Sidewalk and pavement
   a. Contraction joints: At intervals not to exceed 10 feet and 1 1/2 inches deep, tooled or sawcut
   b. Expansion joints: 1/2-inch premolded joints where sidewalks end at curb returns, against fixed objects, at points of sharp radius, and between sidewalk and driveway slabs. Place expansion joint at minimum of every 100 feet.
   c. Construction joints: At all separate pours, and around all appurtenances such as manholes, utility poles, and other penetrations extending into and through sidewalks. Place backer rod and polyurethane sealant for entire joint length
3. Curb and Gutter
   a. Contraction joints: At intervals not to exceed 10 feet made by insertion of 1/8-inch template at right angles to curb and 1 1/2-inch deep.
   b. Expansion joints: At curb returns, against fixed objects, at points of sharp radius, between adjacent sidewalk and curb at all curb returns, between sidewalk and all driveway slabs, and along straight lengths every 200 linear feet. Install expansion joint filler between concrete sidewalks and any fixed structure. Extend expansion joint material for full depth of concrete, except stop 1/2-inch below finish surface.
   c. Construction joints: At all separate pours, place backer rod and polyurethane sealant for entire joint length.
4. Place expansion joint filler between paving components and buildings or other appurtenances at temperatures above 50 deg F. Clean all dust, debris and water from joint. Recess top of filler 1/2-inch for sealant placement.
5. Provide keyed joints as indicated in details.

H. Finishing
1. Run straight-edge over forms with sawing motion to fill all holes and depressions.
2. After striking-off and consolidating concrete, smooth surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to compact surface and produce uniform texture.
3. After floating, test surface for trueness with a 10' straightedge. Distribute concrete as required to remove surface irregularities, and re-float repaired areas to provide a continuous smooth finish
4. Finish surfaces with a wooden or magnesium float. Plastering of surfaces is not permitted
5. Immediately after float finishing, slightly roughen the concrete surface by brooming in the direction perpendicular to the main traffic route. Use fine hair fiber-bristle broom unless otherwise directed. Coordinate the required final finish with the Engineer before application.

6. On inclined slab surfaces and steps, provide a coarse, non-slip finish by scoring surface with a stiff-bristled broom, perpendicular to line of traffic
7. Edge all outside edges of the slab and all joints with a 0.25-inch radius edging tool.
8. Work edges of gutters, back top edge of curb, and formed joints with an edging tool, and round to 0.5-inch radius, unless otherwise indicated. Eliminate tool marks on concrete surface
9. Brush with soft bristle brush to remove trowel marks and leave a uniform appearance just before concrete takes initial set.
10. Direction of Texturing:
    a. Curb and Gutter: At right angles to the curb line
    b. Sidewalk: At right angles to centerline of sidewalk.
11. Place curing compound on exposed concrete surfaces immediately after finishing. Apply under pressure at the rate of one gallon to not more than 135 square feet by mechanical sprayers in accordance with manufacturer's instructions acceptable to Engineer.

I. Joint sealing
1. Seal joints and clean concrete prior to opening to traffic.
2. Seal all expansion joints.
3. Separate concrete from other structures with 3/4-inch thick joint filler.
4. Place joint filler in concrete pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
5. Extend joint filler from bottom of pavement to within 1/4-inch of finished surface.

J. Curing and protection
1. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury
2. Have plastic sheeting, straw, burlap and/or canvas materials available at all times to protect fresh uncured surfaces from adverse weather conditions
3. Do not permit pedestrian traffic over sidewalks for 7 days minimum after finishing. Do not permit vehicular traffic over pavement for 14 days minimum after finishing or until 75 percent design strength of concrete has been achieved

3.4 FIELD QUALITY CONTROL

A. Comply with Division One Specifications - Quality Assurance: Field inspections and testing

B. It is the Contractor’s responsibility to initiate, coordinate and accommodate all required tests and inspections including conformance with requirements of all applicable public agencies and authorities. Contractor will be responsible for coordinating the testing requirement with testing agency and provide testing agency advance notification to schedule tests.

C. At the time of final acceptance inspection, the repair of all cracks shall be completed.
1. Cracks that are less than one-quarter (1/4) inch wide, exhibit no horizontal or vertical shifting, and do not meet the conditions in 2, 3, and 4, below may, at the discretion of the OWNER, be sealed by routing approximately three-quarter (3/4) inch to one (1) inch deep by one-quarter (1/4) inch wide and filling with Sikaflex 1-A or equivalent.
2. Any crack that extends through a joint shall require removal and replacement of the entire cracked area.
3. Any longitudinal cracked section of concrete shall require complete removal and replacement of that section between joints.
4. Repair action for hairline cracks as determined in 1, above, may be waived at the discretion of OWNER. For the purpose of this section, a hairline crack is one that is reasonably immeasurable and without separation as determined by ENGINEER.

D. Tolerances
1. Division One Specifications - Quality Assurance: Tolerances

2. Maximum Variation of Surface Grade: 1/4- inch in 10 ft
3. Maximum Variation from True Alignment: 3/8-inch in 10 ft

E. Take cylinders and perform slump and air entrainment tests as required by Division One Specifications in accordance with ACI 301. Unit weight and mix temperature will also be taken

F. The first three loads will be tested for slump and air content. If any one test fails to meet requirements, that load will be rejected and tests will continue on each load until three consecutive loads meet requirements. Thereafter, five concrete test cylinders will be taken for every 75 cu yds or less cu yds of concrete placed each day

G. One additional test cylinder will be taken during cold weather and cured on site under same conditions as concrete it represents

H. One slump and air entrainment test will be taken for each set of test cylinders taken

I. Cylinders will be tested as follows: 2 at 7 days, 2 at 28 days and one at a later date, if necessary, as directed by the Engineer

J. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken

K. Thickness of fresh concrete may be checked by Owner at random. Coring will be conducted in accordance with Adams County requirements. Where average thickness of concrete is deficient in thickness by more than 0.20-inch, but not more than 1.0-inch, payment to Contractor will be adjusted based on amount indicated in schedule of values for portland cement concrete paving as specified in the following table.

CONCRETE PAVEMENT DEFICIENCY	
Deficiency in Thickness (Determined by Cores) INCHES	Proportional Part of Contract Price Allowed
0.00 to 0.20	100%
0.21 to 0.30	80%
0.31 to 0.40	72%
0.41 to 0.50	68%
0.51 to 0.75	57%
0.76 to 1.00	50%
Over 1.00	NONE

Note: When thickness of pavement is deficient by more than one inch, and judgment of the Engineer is that area of such deficiency should not be removed and replaced, there will be no payment for the area retained.

L. Failure of Test Cylinders or Coring Results: Engineer may order removal and replacement of concrete as required upon failure of 28-day tests or if thickness of pavement is less than 95% of specified thickness

3.5 SCHEDULE OF CONCRETE

A. See plans for concrete thicknesses and subgrade preparation.

3.6 SCHEDULE OF CONCRETE REINFORCEMENT

A. Fiber reinforcement required for all concrete flatwork, including curb and gutter, sidewalk and pavement

B. Rebar reinforcement required for all cross pans. See plans for rebar sizes and installation pattern. Reinforce all cross pans in conformance with Adams County standards and specifications

C. Trash pad, dumpster locations and other locations shown on plans as heavy duty concrete: 8-inch thick concrete with #4 rebar, 12-inches on center, each way, three inches clear on all sides

END OF SECTION

SECTION 321540 – CRUSHER FINES PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Report Documentation
   1. Geotechnical Evaluation
      Iselin Park – Court Improvements
      Ground Engineering
      November 10, 2022

1.2 SUMMARY

A. This Section includes requirements for demolition, earthwork, grading, furnishing, and placement of crushed stone paving.
   1. Furnish and place crushed stone paving, bonded with fine aggregate, constructed on a prepared underlying base course in accordance with these specifications and in conformity with the dimensions, typical cross section, and the lines and grades shown on the Contract Drawings. The locations where crushed stone paving will be used are shown on the Contract Drawings.

B. Related Sections:
   1. Division 01 Section “Layout of Work and Surveys”.
   2. Division 01 Section “Contractor Quality Control”.
   3. Division 01 Section “Erosion and Sedimentation Control”.
   4. Division 31 Section “Earthwork”.

1.3 REFERENCES

A. ASTM C117 – Test Method for Materials Finer than No. 200 (75-um) Sieve in Mineral Aggregates by Washing.

B. ASTM C136 – Method for Sieve Analysis of Fine and Coarse Aggregates.

C. ASTM D4318 – Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.

1.4 SUBMITTALS

A. Material Analysis: Contractor shall provide copies of the following test data required by ASTM:
   1. ASTM C136 - Sieve Analysis.
   2. ASTM C127 - Specific Gravity and Absorption.
   3. ASTM C131 - L.A. Abrasion.

B. Samples: Provide a one (1) quart sample of material for approval.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.

B. Bulk Materials:
   1. Do not dump or store bulk materials near structures, utilities, walkways, and pavements, or on existing turf areas, plant materials or within critical root zones.
   2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
   3. Accompany each delivery of bulk materials with appropriate certificates.

C. Rejection of material.
   1. Evidence of inadequate protection or improper handling or storage shall be cause for rejection.
   2. Any product or material exhibiting signs of damage due to nonconformity to specifications or due to delivery, storage or handling shall be rejected by the Project Manager. Contractor shall be responsible for hauling off-site and disposing of according to general conditions and codes of the governing jurisdiction.

1.6 PROJECT CONDITIONS

A. Environmental requirements: Work shall occur only when weather and soil conditions permit in accordance with locally accepted practice.

B. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with proposed crushed stone paving areas by field measurements before proceeding with work.

C. Interruption of Existing Services or Utilities: Do not interrupt services or utilities to facilities occupied by Owner or others.

D. Existing Conditions:
   1. Utilities: Determine location of existing and proposed underground utilities. Perform work in a manner to avoid damage. Hand excavate, as required.
   2. Excavation: Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.

E. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained.

1.7 MAINTENANCE SERVICE

A. General: Maintain Work in accordance with Division 01.
   1. Maintenance Period: Begin maintenance immediately after Work is completed. Maintain areas until the end of the Warranty period.

B. See Division 01 Section “Warranty”.

PART 2 - PRODUCTS

2.1 CRUSHED STONE PAVING

A. Type: Crushed granite stone or gravel. Shall be unused material free of shale, lay, friable materials, organics, and debris.

1. Size Range: 3/8 inch maximum

Sieve Size	Percent Passing
2 inch	100
3/8 inch	100
No. 4	85
No. 8	63
No. 16	50
No. 30	39
No. 50	29
No. 100	18

2. Color: Refer to plans.

2.2 SOIL STABILIZER

A. Soil stabilizer or binder: Organic-Lock Binder for Aggregate Surfaces or approved equal.

1. ADA compliant
   a. Meet ADA guidelines for stability, firmness, and slip resistance
2. LEED Potential

B. Mechanically blended stabilized crushed stone paving. Provide in all locations shown on the drawings.
1. Mix crushed stone paving material with Organic-Lock with a pug mill that includes a weigh-belt feeder.
   a. Mix fourteen (14) pounds of binder per two thousand (2,000) pounds of aggregate or per manufacturer specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas where the Work of this Section will be performed for compliance with requirements and conditions affecting installation and performance.
1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within the work area.
2. Verify that final grades are completed in accordance with the drawings.

B. Proceed with installation only after unsatisfactory conditions have been corrected and approved by Project Manager.

3.2 FIELD QUALITY CONTROL

A. Mock-up: Provide field constructed sample installation of crushed stone paving and prepared subgrade.
   1. Mock-up to be ten foot (10') x ten foot (10') and located where directed by Project Manager. Mock-up shall include proposed edge and banding, and surface stabilization if specified.
   2. Project Manager shall review mock up within forty-eight (48) hours of notification by the contractor.
   3. Make necessary adjustments as directed by Project Manager.
   4. Obtain approval from Project Manager before proceeding with the Work.
   5. Retain and protect mock-up during construction as a standard for judging completed crushed stone paving work. Do not remove or destroy mock-up until work is completed.
   6. Accepted and properly maintained sample installations may remain in completed work if approved in writing by Project Manager.
   7. All work shall match accepted field mock-up.

3.3 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, turf areas, existing landscape areas, and trees from damage.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of

C. Install edging of type and in locations shown on drawings. Obtain acceptance of layout by Project Manager before excavating or installing. Make minor adjustments as required.

3.4 PLACEMENT OF CRUSHED STONE PAVING

A. Cut earthwork to width of trail/area to receive crusher fines paving to approximate depth section as specified on the Contract Drawings. Remove, haul and dispose of excess material off site, or use on-site with approval of Project Manager.

B. Complete excavation required in sub-grade before fine grading and final compaction of sub-grade is performed. Extend sub-grade compaction one foot (1') beyond proposed edge of crushed stone paving or as indicated on drawings.
   1. Where earth moving is required the sub-grade shall be compacted to ninety five percent (95%) standard proctor within two percent (2%) of the optimum moisture.
   2. Keep areas being graded or compacted shaped and drained during construction. Ruts greater than or equal to 1 inch deep in sub-grade shall be graded out and reshaped as required, and re-compacted before crushed stone paving placement.
   3. If the trail is part of a cross slope it should drain in the direction of the slope no greater than two percent (2%). Ensure that no low spots exist so that ponding does not occur.

C. Prior to placement of Crushed Stone Paving material, the sub-grade shall be proof rolled. Where soft spots are detected, scarify subgrade beneath Crushed Stone Paving trail to a minimum of six-inch (6") depth. Moisture treat and compact to a minimum ninety five percent (95%) proctor density as determined by ASTM D698 or AASHTO T-99. Take moisture density tests every two hundred fifty (250) lineal feet of trail or proof roll. Treat and compact sub-grade, leaving it 5-inches below final grade for placement of Crushed Stone Paving. Compact material and retest by proof rolling to achieve approval of Project Manager.

D. Install crushed stone paving only after excavation and construction work which might injure it have been completed, and after edging has been completely installed on the compacted sub-grade. Install crushed stone paving, over compacted base course in areas indicated on plan.

E. Spread crushed stone evenly to fifty percent (50%) of specified depth. Avoid segregation of aggregate and contamination with lower courses or sub-grade.

F. Compact to ninety-five percent (95%) of maximum density as determined by ASTM D1557.
   1. Maintain surface course moisture content within plus/minus three percent (± 3%) of optimum. Add water to quarry fines paving as required to achieve optimum moisture content and a uniform, compacted surface conforming to the finish grades indicated.
   2. Compact areas inaccessible to rolling by mechanical tamping.

G. Protect crushed stone paving from soil or other contaminates during and following installation.

H. Spread and compact additional crushed stone paving to achieve the required minimum compacted thickness per compaction requirements in this section

3.5 PLACEMENT OF STABILIZED CRUSHED STONE PAVING

A. Complete items 3.3.A through H above using specified crusher fines material with pre-incorporated specified binder at specified application rates.

B. Do not allow traffic on stabilized crushed stone paving for two days.

3.6 MAINTENANCE AND REPAIRS:

A. Crusher Fines Paving:
   1. Areas that do not compact, become eroded or are degraded in visual quality and/or performance as determined by the Project Manager are to be removed and/or repaired. Obtain approval of repair methods from Project Manager prior to affecting repairs.

B. Stabilized Crusher Fines Paving:
   1. To repair, excavate damaged area leaving a minimum one-inch (1”) depth of existing stabilized crushed stone paving. Apply stabilized crusher fines to existing surface as described above. Compact per 3.3.F above.
   2. Do not allow traffic on repaired stabilized crushed stone paving for two days or until paving has fully cured.

3.7 CLEANUP AND PROTECTION

A. All areas shall be clean at the end of each workday.

B. The contractor shall maintain protection during installation, curing, and maintenance periods.
   1. Erect temporary fencing or barricades and warning signs as required protecting newly installed Crushed Stone Paving areas from traffic, other trades, and trespassers. Maintain fencing and barricades throughout initial maintenance period and remove with approval of Project Manager.

C. Project completion: All debris, soil, trash, and excavated and/or stripped material resulting from Crushed Stone Paving operations and unsuitable for or in excess of requirements for completing work of this Section shall be disposed of off-site.

D. Maintain protection during installation and maintenance periods. See Division 1. Treat, repair or replace damaged work as required.

3.8 QUALITY ASSURANCE

A. Refer to Division 1 Section “Quality Assurance”.

END OF SECTION 321540

SECTION 323300 - SITE FURNISHINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Benches
2. Trash receptacles.
3. Picnic tables
4. Pet Stations
5. Bike Racks
6. Food Prep Tables

PART 2 - PRODUCTS

2.1 SITE FURNISHINGS

A. Owner furnished, contractor installed. Reference Plans.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.

B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.

C. Install site furnishings level, plumb, true, and securely anchored at locations indicated on Drawings with vandal resistant hardware. Use levelling hardware as needed to create plumb surface across sloping finish grades.

D. Provide shims, vandal resistant hardware and spare parts.

END OF SECTION 323300

SECTION 328400 - IRRIGATION

PART 1 - GENERAL

1.1 SUMMARY

A. This section covers work necessary for installing the automatic underground irrigation system as indicated on the Construction Documents and details in accordance with the Contract Documents.

1.2 DESCRIPTION OF WORK

A. The work shall include, but is not limited to, all labor, material procurement, equipment, tools, transportation protection, and services required for complete installation of the automatic underground irrigation system as indicated or reasonably implied on the Construction Documents and/or specified herein.

B. Contractor shall retain a copy of the Construction Documents on the project site until final project acceptance.

C. If any discrepancies exist between the plans and the specifications, the specifications will prevail.

D. Work of this Section generally includes provisions for the installation of an automatic underground irrigation system which includes the following:
   1. The Contractor shall comply with all local, state, and federal regulations regarding materials, methods of work, and disposal of excess and waste materials. The Contractor shall provide notices required by governmental authorities, request required inspections, obtain required permits, and pay for all associated fees.
   2. Static pressure verification and coordination of irrigation system installation with landscape material installation.
   3. Trenching, stockpiling excavation materials, refilling and compacting trenches.
   4. Complete and fully operational irrigation system including but not limited to piping, valves, fittings, heads, controllers and wiring, and final adjustments to ensure complete coverage.
   5. Water connections.
   6. Electronic connections.
   7. Replacement of unsatisfactory materials.
   8. Clean-up, Consultant Reviews, and Project Acceptance.
   9. Tests, including pressure testing.

1.3 RELATED SECTIONS

A. Section 329000 – General Landscape

B. Section 319110 – Soil Preparation

C. Section 329010 – Landscape Maintenance

1.4 REFERENCES

A. Perform Work in accordance with requirements of the Special Provisions and as well as provisions of all applicable laws, codes, ordinances, rules, and regulations.

B. Conform to requirements of reference information listed below except where more stringent requirements are shown or specified in Contract Documents.
   1. American Society for Testing and Materials (ASTM) - Specifications and Test Methods specifically referenced in this Section.
      a. ASTM D 2241 – Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
      b. ASTM D 2464 – Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Threaded, Schedule 40
      c. ASTM D 2564 – Solvent cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
      d. ASTM D 2855 – Making Solvent – Cemented joints for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings
   2. Underwriters Laboratories (UL) - UL Wires and Cables.

1.5 QUALITY ASSURANCE

A. Contractor Qualifications - Installer shall have had considerable experience and demonstrate ability in the installation of irrigation systems of similar types in a neat, orderly, and responsible manner in accordance with recognized industry standards of workmanship. To demonstrate the ability and experience, as well as the financial stability, necessary for this Project, contractor qualifications will be submitted as required in Bidding Documents prior to the contract award. Request for Contractor qualifications shall include (but are not limited to) the following:
   1. Contractor shall provide (3) three examples of similar project work completed within the past (6) six years. Description of projects shall include:
      a. Name of project.
      b. Location.
      c. Owner’s Representative or project contact.
      d. Brief description of work and project budget.
   2. Current company financial statements.

B. Special Requirements
   1. Work involving substantial plumbing for installation of copper piping, backflow preventer(s), and related work shall be executed by licensed and bonded plumber(s), performed in accordance with all prevailing codes and regulations. Secure a permit at least forty-eight (48) hours prior to start of installation.
   2. Tolerances - Specified depths of mains and laterals and pitch of pipes are minimums. Settlement of trenches is cause for removal of finish grade treatment, refilling, compaction, and repair of finish grade treatment.
   3. Coordination with other Contractors - The Contractor shall protect, maintain, and coordinate the work contain in this section with the work of all subcontractors and other trades to avoid conflicts and ensure that construction is not interrupted or delayed.
   4. Damage to other Improvements - Contractor shall replace or repair damage to grading, soil preparation, seeding, sodding, or planting done under other Sections during Work associated with installation of irrigation system at no additional cost to Owner’s Representative.
   5. Work involving connection to, installation, or extension of 120-volt or greater electrical service shall be executed by a licensed and bonded electrician, performed in accordance with all prevailing codes and regulations (see Electrical Engineering Plans).
   6. The Contractor shall be responsible for providing certification through (Municipality or Utility) for the backflow prevention unit as specified on the Construction Documents and herein.

C. Pre-Construction Conference - Contractor shall schedule and conduct a conference to review in detail quality control and construction requirements for equipment, materials, and systems used to perform the Work specified herein. The Pre-Construction Conference shall be scheduled not less than ten (10) days prior to commencement of Work. All parties required to be in attendance shall be notified no later than seven (7) days prior to the date of the conference. Contractor shall notify qualified representatives of each party concerned with that portion of Work to attend the conference, including but not limited to Consultants, Contractor's Superintendent, Owner's Representative, and Installer.

D. Minutes of conference shall be recorded and distributed by Owner's Representative to all parties in attendance within seven (7) calendar days of conference.

E. Advanced Notices
   1. The Contractor shall provide the Owner's Representative with the following advanced notices:
      a. Notice of pre-construction conference seven (7) days in advance.
      b. Notice of product delivery observation schedules forty-eight (48) hours in advance.
      c. Notice of pressure supply line installation forty-eight (48) hours in advance.
      d. Notice of control wire installation inspection forty-eight (48) hours in advance.
      e. Notice of lateral line and turf irrigation installation inspection forty-eight (48) hours in advance.
      f. Notice of turf sprinkler coverage inspection forty-eight (48) hours in advance.
      g. Substantial Completion acceptance walk through and the start of the Maintenance Period one (1) week in advance.
      h. Final Acceptance Observation seven (7) days in advance.
      i. Notice of Warranty Period expirations, each phase one (1) week in advance.
      j. Notice of Final Completion and Owner assumes maintenance of project two (2) weeks in advance.

F. Vandalism
   1. The Contractor will not be responsible for malicious destruction of any part of the automatic irrigation system after Final Acceptance of the project. The Contractor will, however, be responsible for replacement of vandalized materials stored but not yet installed, and material vandalized prior to Final Acceptance. All cases of vandalism shall be promptly reported to the Owner's Representative. The Contractor shall inform the Owner's Representative in writing if additional protection must be installed to protect the landscaping from damage after installation.

1.6 SUBMITTALS

A. Prepare and make submittals in accordance with conditions of the Contract and Construction Documents prior to installation.

B. Materials List - Submit two (2) copies of a complete materials list indicating manufacturer, model number, and description of all materials and equipment to be installed. Show appropriate dimensions and adequate detail to accurately portray intent of construction. A list of equipment and components to include but not limited to are:
   1. Irrigation Controller
      a. Including the cabinet/enclosure, expansion modules, communication modules, sensors, decoders, grounding, wiring, and waterproof wire connectors as specified on the construction documents.
   2. Mainline Valves & Components
      a. Including the enclosure (size and finish) and winterization blanket as specified on the construction documents.

b. Including all valve boxes, drain valve, master valve, flow sensor, isolation gate valve, quick coupling valve, air/vacuum relief valve, pressure reducing valve, remote-control valve, remote-control drip valve, and all associated fittings, adapters, and methods for installation as specified on the construction documents.

3. Sprinkler & Drip Components
   a. Including the pop-up rotor bodies, rotary/spray bodies, nozzles, and swing joint assemblies; point source drip emitters, 1/4" tubing, stakes, bug caps, flush caps, operational indicators and inline emitter tubing; and all associated fittings, adapters and methods for installation.
4. Piping
   a. Including material, size, and pressure ratings for the service line, mainline, sleeving, lateral, and drip laterals; all mechanical joints, primer and solvent; and all associated fittings, adapters and methods for installation.

C. Record Drawings (As-Builts)
1. At onset of irrigation installation secure AutoCAD files of original irrigation design from Owner's Representative. At the end of every day, revise as-built prints for work accomplished that day in red ink. As-built field prints shall be brought up to date at the close of the working day every Friday by a qualified draftsperson. A print of record plan(s) shall be available at the Project Site. Indicate zone changes on weekly as-built drawings. Indicate non-pressure piping changes on as-builts. Upon completion of Project, submit for review, prior to Final Acceptance, final set of as-built mylars and an AutoCAD or Adobe Acrobat * format (also known as Portable Document Format or PDF), and submitted on a single-session, closed CD-ROM disc. Dimensions, from two permanent points of reference (building corners, sidewalk, road intersections or permanent structures), location of following items:
   a. Connection to existing water lines.
   b. Routing of (turf) sprinkler pressure lines (dimension maximum 100 feet along routing).
   c. Routing of potable line for quick couplers (dimension maximum 100 feet along routing).
   d. Electric remote control valves (Drip, Turf and Master Valves).
   e. Quick coupling valves.
   f. Spray heads
   g. Drip line blowout stubs (end caps).
   h. Control wire routing if not with pressure mainline.
   i. Gate valves.
   j. Control wire and communication cable splices.
   k. Water meters.
   l. Locations of all sleeving including size, quantity, and depth of sleeve.
   m. Flow sensors.
   n. Other related equipment as directed by Consultant.

D. Prior to scheduling final walk through for Substantial Completion, the Contractor shall submit all As-Built information to the Owner's Representative for approval.

E. Owner's Representative will not certify any pay request submitted by the Contractor if the record As-Built drawings and controller data charts are not current, and processing of pay request will not occur until record As-Built drawings and controller data charts are up-dated.

F. If record As-Built drawings and controller data charts are not provided to the Owner's Representative within the specified time frame, the Owner's Representative shall collect the data for programming purposes and charge the Contractor for time and materials.

G. Operation Instructions Manual (See Section 329010 Landscape Maintenance) - Submit three (3) written operating instructions in a three-ring binder including all cut sheets of products,

coordinate controller/watering operation instruction with Owner’s Representative maintenance personnel and contact information of the contractor including name, address, phone number and contact person.

H. Controller Charts
1. Do not prepare controller charts until Owner’s Representative has reviewed record as-built drawings.
2. Contractor shall provide both a hard copy and an electronic version of the controller chart for each automatic controller installed.
a. Chart may be reproduction of record drawing if scale permits fitting of controller door. If photo reduction prints are required, keep reduction to maximum size possible to retain full legibility.
b. Chart shall be a bond or blueline print of the actual "as-built" system, showing the area covered by that controller.
(i) Identify area of coverage of each remote control valve, using a distinctly different pastel color drawing over entire area of coverage.
(ii) Following review of charts by the Owner’s Representative, the charts shall be hermetically sealed between two layers of 20-mm thick plastic sheet.
(iii) Charts shall be completed and reviewed prior to Final Completion walk-through of the irrigation system.
(iv) Attach Owner’s-Representative-approved controller chart to inside of each controller door using self-adhesive Velcro strips.

I. Prior to Final Walk-through for each area of the Project, the Contractor shall confirm that the following has been accomplished:
1. Construction record as-built drawings per section 1.05
2. Controller charts
3. Operation manuals

1.7 DELIVERY, STORAGE, AND HANDLING

A. Product Delivery Observation
1. The Contractor shall schedule and conduct a control wire installation inspection conference to review in detail quality control and construction methods for the installation of the control wire. The Contractor shall provide forty-eight (48) notice to the Owner’s Representative for his inspection of products for conformance to the Construction Documents and specified herein.

B. Deliver, unload, store, and handle materials, packaging, bundling, and products in dry, weatherproof, condition in a manner to prevent damage, breakage, deterioration, intrusion, ignition, and vandalism. Deliver in original unopened packaging containers prominently displaying manufacturer's name, volume, quantity, contents, instructions, and conformance to local, state, and federal law. Remove and replace cracked, broken, or contaminated items or elements prematurely exposed to moisture, inclement weather, sun, snow, ice, temperature extremes, fire, or jobsite damage.

C. Exercise care in handling, loading, and storing, of PVC pipe. All PVC pipe shall be transported in a vehicle which allows length of pipe to lie flat so as not to subject it to undue bending or concentrated external loads. All sections of pipe that have been dented or damaged shall be discarded, and if installed, shall be replaced with new piping.

1.8 JOBSITE CONDITIONS

A. Protection of Property
   1. Preserve and protect all trees, plants, monuments, structures, and paved areas from damage due to Work under this Section. In the event damage does occur, all damaged items shall be completely repaired or replaced to satisfaction of Owner's Representative, and all injury to living plants shall be repaired by Contractor. All costs of said repairs shall be charged to and paid for by Contractor.
   2. Protect buildings, walks, walls, and other property from damage. Flare and barricade open ditches. Damage caused to asphalt, concrete, or other building material surfaces shall be repaired or replaced at no additional cost to the Owner. All disturbed areas shall be restored to their original condition.

B. Existing Trees
   1. All Work shall be performed outside of the drip zone (canopy) of all existing plant material.
   2. Where it is necessary to excavate adjacent to existing trees use all possible care to avoid injury to trees and tree roots. Excavation, in areas where 2 inch and larger roots occur, shall be done by hand. Roots 2 inches or larger in diameter, except directly in the path of pipe of conduit, shall be tunneled under and shall be heavily wrapped with burlap to prevent scarring or excessive drying. Where a trenching machine is operated close to trees having roots smaller than 2 inches in diameter, wall of trench adjacent to tree shall be hand trimmed, making clean cuts through roots. Trenches adjacent to trees shall be closed within twenty-four (24) hours, and when this is not possible, side of trench adjacent to tree shall be kept shaded with moistened burlap or canvas.

C. Protection and Repair of Underground Lines
   1. The Contractor shall contact BLUE STAKE two (2) full working days prior to commencing any construction activity on the Project (Saturday and Sunday are not considered working days). Any damage to the utilities shall be repaired at the Contractor's expense. Painting the location of utilities on asphalt or concrete pavement is prohibited. When Blue Stake ticket is ordered, stake chasers or stake flagging must be requested.
   2. In addition to requesting a BLUE STAKE the Contractor shall request proper utility company to stake exact location (including depth) of all underground electric, gas, or telephone lines. Painting the location of utilities on asphalt or concrete pavement is prohibited. When the proper utility company is contacted stake chasers or stake flagging must be requested to mark the locations of their utilities.
   3. Take whatever precautions are necessary to protect these underground lines from damage. If damage does occur, Utility Owner shall repair all damage. Contractor shall pay all costs of such repairs unless other arrangements have been made.
   4. If a utility is damaged and it was not properly marked by the utility company, the utility company is responsible for any damages by the Contractor. The Contractor is responsible to provide adequate evidence that the utility was not marked and negotiate with the utility provider to repair the damage.
   5. The Contractor, in writing, to locate all private utilities (i.e., electrical service to outside lighting) before proceeding with excavation. If, after such request and necessary staking, private utilities that were not staked are encountered and damaged by Installer, Owner shall repair them at no cost to Installer. If Contractor damages staked or located utilities, they shall be repaired by Utility Owner at Contractor's expense unless other arrangements have been made.

D. Replacement of Paving and Curbs - Where trenches and lines cross existing roadways, paths, curbing, etc., damage to these shall be kept to a minimum and shall be restored to original condition.

1.9 WARRANTY

A. Manufacturer shall guarantee all materials against defects for a period of one year from date of Final Acceptance (whichever is a greater time period).

B. Contractor shall guarantee that all work is compliant with the Construction Documents and Specifications and is free from defects in materials and workmanship for a period of one (1) year after the date of Final Acceptance. Ordinary wear and tear are expected. Contractor shall be responsible for coordinating material warranty items with the manufacturer/distributor.

C. Settling of backfilled trenches that may occur during warranty period, including complete restoration of damaged property, shall be repaired/completed at no expense to the Owner.

D. Expenses due to vandalism before substantial completion shall be borne by Contractor.

E. Contractor shall make such repairs or replacements within a reasonable time after receipt of notice from the Owner's Representative. Contractor shall authorize the Owner's Representative to proceed to have said repairs or replacements made at Contractor's expense and we will pay the costs and charges therefore upon demand if repairs or replacements are not completed by the Contractor within a reasonable time frame.

F. Owner's Representative maintenance company will maintain turf and planting areas during Warranty Period, so as not to hamper proper operation of irrigation system.

1.10 MAINTENANCE

A. Furnish the following maintenance items to Owner's Representative prior to Final Acceptance:
   1. Two (2) sets of special tools required for removing, disassembling, and adjusting each type of sprinkler head and valve supplied on this Project.
   2. Two (2) six (6) foot valve keys for operation of gate valves.
   3. Two (2) keys for each automatic controller.
   4. Two (2) quick coupler keys and two matching hose swivels for each type of quick coupling valve installed.

1.11 EXTRA STOCK

A. In addition to installed system components, furnish the following items to the Owner's Representative:
   1. Four (4) per 100 installed drip emitters of each type used.
   2. Two (2) pop-up heads of each type used.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General Piping
   1. Pressure Supply Line (from point of connection through backflow prevention unit) - Type "K" Hard Copper.
   2. Pressure Supply Lines (downstream of backflow prevention units) - Class 200 PVC BE (1" - 2 ½")
   3. Non-pressure lines - Class 200 PVC BE
   4. PVC Sleeving - Class 200 PVC.
   5. Drip Tubing - Hardie Dura-Pol EHD 1645 3/4" with .050-inch wall thickness.

6. Emitter Tubing - As recommended by emitter manufacturer.

B. Copper Pipe and Fittings:
   1. Copper Pipe - Type “K”, hard tempered.
   2. Fittings - Wrought copper, solder joint type.
   3. Joints - Soldered with solder, 45% silver, 15% copper, 16% zinc, and 24% cadmium and solidus at 1125~F and liquids at 1145~F.

C. Brass Pipe and Fittings:
   1. Brass Pipe - 85% red brass, ANSI Schedule 40 screwed pipe.
   2. Fittings - Medium brass, screwed 125-pound class.

D. Plastic Pipe and Fittings
   1. Identification Markings (Identify all pipe with following indelible markings):
      a. Manufacturer's name.
      b. Nominal pipe size.
      c. Schedule of class.
      d. Pressure rating.
      e. NSF (National Sanitation Foundation) seal of approval.
      f. Date of extrusion.
   2. Solvent Weld Pipe - Manufactured from virgin polyvinyl chloride (PVC) compound in accordance with ASTM D2241 and ASTM D1784; cell classification 12454-B, Type 1, Grade 1.
      a. Fittings - Standard right, Schedule 40, injection molded PVC; complying with ASTM D1784 and D2466, cell classification 12454-B.
         (i) Threads - Injection molded type (where required).
         (ii) Tees and ells - Side gated.
      b. Threaded Nipples - ASTM D2464, Schedule 80 with molded threads.
      c. Joint Cement and Primer - Type as recommended by manufacturer of pipe and fittings.
   3. Pipe (flexible plastic type) - Manufactured from virgin polyethylene in accordance with ASTM D2239, with a hydrostatic design stress of 620 psi and designed as PE2306.
   4. Fitting: Manufactured in accordance with ASTM D2609, PVC type I, cell classification 12454-B.
   5. Pressure Supply Piping Locating Tape for Non-Potable Systems:
      a. Be traceable with wire detection
      b. Markline Tape, 3" wide detectable tape, blue in color with the words "CAUTION: WATERLINE BELOW" printed every 36 inches. Place per trenching detail.

E. Master Valve
   1. 2-way, solenoid pilot operated type made of brass; diaphragm-activated and slow closing. Include freely pivoted seat seal; retained (mounted) without attachment to diaphragm.

F. Flow Sensor
   1. PVC type and size shown on Construction Documents.

G. Control Valves
   1. Globe style, normally closed, spring-loaded, nylon reinforced rubber diaphragm, glass filled UV resistant nylon body, and 24 VAC encapsulated solenoid.
   2. Provide self-cleaning stainless steel port screen and bleeder valve with internal bleed for field operation to permit operation in the field without power at the controller.

H. Pressure Regulating Filter
   1. Plastic construction
   2. Preset pressure reducing valve and line strainer
   3. Strainer shall have a 100-psi pressure rating, 150 mesh screen, a ½” outlet for flushing

I. Emitters
1. Single port or multi-port, pressure compensating type, with a flow variation of less than 10 percent. Furnish each outlet with a separate silicone elastomer control element.

J. Ball Vales
1. Schedule 40 PVC construction, IPS threads.

K. Gate Valves
1. Gate Valves for 3 Inch and Larger Pipe – Iron body, brass or bronze mounted AWWA Bronze body mounted AWWA gate valves with a clear waterway equal to full nominal diameter of valve; rubber gasket or mechanical joint-type only.
2. Gate Valves for 2-1/2” and Smaller Pipe – Brass construction; solid wedge, IPS threads, and non-rising stem with wheel or cross square nut operating handle.
3. Valves shall be able to withstand a continuous working pressure of 200 psi and be equipped with a square operating nut and resilient wedge.

L. Quick Coupling Valves
1. Brass two-piece body designed for working pressure of 150 PSI.
2. Equip quick coupler with locking rubber cover.

M. Valve Boxes
1. Color shall be green for all Valve Boxes.
2. Gate Valves, Quick Coupling Valves, and Wire Splice or Stub Box - Carson Brooks #910-10, box as detailed on Construction Documents.
3. 1 inch through 2-inch Control Valves, Master Valves, Pressure Regulating Valves and Communication Cable Splice box - Carson Brooks #1220-12 box, captive bolt and Loc-Kit Fastener as detailed.
4. Drip Valve Assemblies and Flow Sensors - Carson Brooks #1220-12 box as detailed.

N. Electrical Control Wiring
1. Low Voltage
   a. Electrical Control Wire - AWG UFUL approved No. 14 direct burial copper wire or larger, if required to operate system as designed.
   b. Electrical Common Wire - AWG UFUL approved No. 12 direct burial copper wire or larger, if required to operate system as designed.
   c. Wire Colors:
      (i) Control Wires - Red.
      (ii) Common Wires - White.
      (iii) Master Valve Control Wires – (1) Blue, (2) Blue with Stripe.
      (iv) Flow Sensor – (1) Orange, (2) Black.
      (v) Spare Control Wires – Green.
      (vi) Spare Common Wires - Yellow.
      (vii) Control Wire connections and splices shall be made with 3M DBY direct bury splice or approved equal.
2. Low Voltage – Two Wire
   a. Decoder Cable - AWG UFUL approved No. 14, 2 – conductor, double jacketed direct burial copper wire or larger, if required to operate system as designed. Paige P7072D or approved equal.
   b. Control Wire connections and splices shall be made with 3M DBR/Y-6 direct bury splice or approved equal.
3. Communication Cable
   a. Paige PE-89 or approved equal
   b. 3M Gel-type connections installed within Preformed Super Serviseal Splice Kit or approved similar dry splice method.
4. High Voltage –

a. Type required by local codes and ordinances, of proper size to accommodate needs of equipment serviced (see Electrical Engineering Plans).

O. Two-wire Decoders
1. Two wire valve decoders shall be provided for each control valve, master valve, flow sensor and rain sensor.
2. Provide all line surge protection at spacing and installation per manufacturers specifications for two-wire systems.

P. Sprinkler Heads
1. Plastic body pop-up assembly in 6” and 12” heights
2. Built in pressure regulating device and check valve, and a removable spray nozzle.
3. Provide full, half, third, or quarter circle patterns as required, with matched precipitation rates.
4. The blow-by, when the stem pops up, should not exceed 0.05 gpm up to 8 psi and 0 gpm above 8 psi.

Q. Automatic Controller
1. Provide controller with two stage primary and secondary surge protection, non-volatile memory, self-diagnostic electronic circuit breaker, locking hinged cover, remote ready port, back up battery, rust resistant weather tight steel cabinet, quick disconnect cables, master valve circuit, two sensor connections, and capable of operating the number of control valves indicated on the drawings.
2. Include the following operation features
a. Programmable
(i) Four programs
(ii) Watering calendar up to 31 days
(iii) Valve test up to 8 minutes
(iv) Rain shut off for up to seven days
b. Furnish each station capable of watering up to 24 hours in one-minute increments with timing accurate within one percent.
c. Furnish controller with three cycle starts a day for three of the programs and with water budgeting through percentage scaling from 0% to 250%, with 100% as normal.

PART 3 - EXECUTION

3.1 SITE CONDITIONS, LANDSCAPE PLAN REVIEW AND COORDINATION

A. Contractor shall be held responsible for coordination between landscape and irrigation system installation. Landscape material locations shown on the Landscape Plan shall take precedence over the irrigation system equipment locations. If irrigation equipment is installed in conflict with the landscape material locations shown on the Landscape Plan, the Contractor shall be required to relocate the irrigation equipment, as necessary, at Contractor’s expense.

B. Contractor is responsible to notify Owner’s Representative of any field conditions that vary from the conditions shown on the Irrigation Construction Documents. If the Contractor fails to notify the Owner’s Representative of these conditions, the Contractor shall be held responsible for all costs associated with system adjustments required due to the change in field conditions.

3.2 STATIC PRESSURE VERIFICATION

Contractor shall field verify the static pressure at the project site, prior to commencing work or ordering irrigation materials, and submit findings, in writing, to the Owner's Representative. If Contractor fails to verify static water pressure prior to commencing work or ordering irrigation materials, Contractor shall assume responsibility for all costs required to make system operational and the costs required to replace any damaged landscape material. Damage shall include all required material costs, design costs and plant replacement costs.

3.3 INSPECTION

A. Examine areas and conditions under which Work of this Section is to be performed. Do not proceed with Work until unsatisfactory conditions have been corrected.

B. Grading operations, with the exception of final grading, shall be completed and approved by Owner's Representative before staking or installation of any irrigation system begins.

C. Underground Utilities shall be installed prior to installation of irrigation system. If irrigation installation takes place prior to utility installation, Contractor shall notify Owner's Representative of this condition in writing prior to commencement of irrigation installation.

3.4 PREPARATION

A. Staking shall occur as follows:
   1. Mark, with lath stakes, routing of pressure supply line and flag spray heads for first few zones. Contact Owner's Representative forty-eight (48) hours in advance and request review of staking. Proposed locations of all trees shall be field staked by Contractor and approved by Owner's Representative prior to Owner's Representative review of irrigation staking. Contractor will advise installer as to the amount of staking to be prepared. Owner's Representative will review staking and direct changes if required. Review does not relieve installer from coverage problems due to improper placement of heads after staking.
   2. Contractor shall contact Owner's Representative if field spacing varies by +/- 10% of the spacing shown on the irrigation plans. If Contractor fails to notify Owner's Representative of variances exceeding 10%, Contractor assumes full responsibility for the costs associated with any required system modifications deemed necessary by the Owner's Representative.
   3. If project has significant topography, freeform planting beds, or other amenities, which could require alteration of irrigation equipment layout as deemed necessary by Owner's Representative, do not install irrigation equipment in these areas until Owner's Representative has reviewed equipment staking.

B. Install sleeving under asphalt paving and concrete walks, prior to concreting and paving operations, to accommodate piping and wiring. Sleeving shall be sized per plans. Compact backfill around sleeves to 95% Modified Proctor Density within 2% of optimum moisture content in accordance with ASTM D1557.

C. Trenching - Trench excavation shall follow, as much as possible, layout shown on Construction Documents. Dig trenches straight and support pipe continuously on bottom of trench. Trench bottom shall be clean and smooth with all rock and organic debris removed. Pressure supply line trenches shall be uniform as required to meet minimum depth requirements for the type of pipe being installed.
   1. Clearances
      a. Piping smaller than three (3) Inches - Minimum clearance of piping three (3) inches or smaller shall be three (3) inches horizontally on both sides of the trench.

b. Line Clearance - Provide not less than four (4) inches of clearance between each line and not less than twelve (12) inches of clearance between lines of other trades.

2. Pipe and Wire Depth
   a. Pressure Supply Piping – twenty-four (24) inches from top of pipe.
   b. PVC Sleeving – Match depth of (deepest) sleeved material (under drives and walks).
   c. Non-pressure Piping (rotor) – eighteen (18) inches from top of pipe.
   d. Non-pressure Piping (pop-up) – twelve (12) inches from top of pipe.
   e. Control Wiring/Communication Cable - Side of pressure main or at eighteen (18) inch depth if installed in a separate trench with no mainline piping.
   f. Emitter Tubing (Micro-tubing) – eight (8) inches from top of pipe (non-slope plantings), four (4) inches from top of pipe on slopes 2:1 or greater.
3. Boring shall be permitted only where pipe must pass under obstruction(s) which cannot be removed. In backfilling bore, final density of backfill shall match that of surrounding soil. It is acceptable to use sleeves of suitable diameter installed first by jacking or boring, and pipe laid through sleeves. Observe same precautions as though pipe were installed in open trench.

3.5 INSTALLATION

A. Locate other equipment as near as possible to locations designated on Construction Documents. Contractor shall notify Owner’s Representative of any deviations for approval prior to installation.

B. PVC Piping
1. Snake pipe in trench as much as possible to allow for expansion and contraction.
2. Do not install pipe when air temperature is below 40°F.
3. When pipe installation is not in progress, or at end of each day, close pipe ends with tight plug or cap. (Perform work in accordance with good practices prevailing in piping trades).
4. Coordinate pressure supply line installation with required bedding operations.
5. Stake all above-grade PVC piping per details.
6. Use 45° ells when making perpendicular crossings of above-grade PVC piping, to depress bottom pipe.
7. Lay pipe and make all plastic-to-plastic joints in accordance with manufacturer's recommendations.

C. Control Wiring
1. Low Voltage Wiring
   a. Bury control wiring between controller and electric valves in pressure supply line trenches, strung as close as possible to main pipe lines with such wires to be consistently located below and to one side of pipe, or in separate trenches.
   b. Bundle all 24-volt wires at ten (10) foot intervals and lay with pressure supply line pipe to one side of the trench.
   c. Provide an expansion loop at every pressure pipe angle fitting, every electric control valve location (in valve box), and every five hundred (500) feet. Form expansion loop by wrapping wire at least 8 times around a 3/4-inch pipe and withdrawing pipe.
   d. Make all splices and connections using 3M DBY connectors or similar dry splice method.
   e. Install all control wire splices not occurring at control valve in a separate splice valve box.
   f. Install one control wire for each control valve.
2. Maintenance spare wire

a. Run two spare #14 AWG UFUL control wires and one common wire from controller pedestal to the end of each and every leg of mainline. Label spare wires at controller and wire stub box.
b. Run all future control wires from controller to point indicated on drawings. Coil a minimum of ten (10) feet at termination and install in 10” round valve box. Label all wires at termination.

3. High Voltage Wiring for Automatic Controller
   a. Provide 120-volt power connection to automatic controller.
   b. All electric work shall conform to local codes, ordinances, and authorities having jurisdiction. All high voltage electrical work shall be performed by licensed electrician. See Electrical Engineering Plan.

D. Automatic Controller
1. The automatic controller manufacturer model as per Construction Documents.
2. The Contractor shall coordinate automatic controller power source with electrical plans.
3. Install controller in accordance with manufacturer's instructions as detailed and where shown on Construction Documents.
4. Owner’s Representative shall approve final location of controller prior to installation.
5. Connect electric control valves to controller in numerical sequence as shown on Construction Documents.
6. Each controller shall be a dedicated separate ground wire and grounding rod as detailed or per manufacturer’s recommendations. The Owner’s Representative may waive the need for a grounding rod if other sufficient grounding to the controller is provided and is an acceptable method of grounding as approved by the manufacturer.
7. All above ground conduit shall be rigid galvanized with appropriate fittings. All below ground conduit shall be schedule 80 PVC.

E. Electric Remote Control Valves
1. Install cross-handle three (3) inches below finished grade where shown on Construction Documents as detailed.
2. When grouped together in a manifold, allow at least twelve (12) inches between valve box sides and space control valves accordingly. Install individual valve box flush with grade.
3. When parallel to roadway, sidewalk or other permanent element or structure, control valve and box are to be installed perpendicular to element or structure, spaced equally.

F. Quick Coupling Valves
1. Install quick couplers on double swing-joint assemblies of schedule 80 PVC piping as indicated on irrigation construction details; plumb and flush to grade. Angled nipple relative to pressure supply line shall be no more than 45 ° and no less than 10 °.

G. Drip Emitters
1. Stake all single port surface emitters as detailed on Construction Documents and stake with acceptable tubing.

H. Valve Boxes
1. All valve boxes shall meet all applicable codes and ordinances.
2. Install one valve box for each type of valve installed as detailed. Valve box extensions are not acceptable except for master valves, flow sensors and gate valves (3” and larger).
3. Install gravel sump after compaction of all trenches. Place final portion of gravel inside valve box after valve box is backfilled and compacted.
4. Install “Christy” stainless steel or 2.5” x 5” plastic valve label tags for each valve box (1-800-258-4583). Entire controller & station number shall be printed on each tag. Letter and number size shall be no smaller than 1/8 inch and no greater than 1/4 inches. Label each valve box as follows:

a. Electric Remote Control valves – Controller letter and station number.
b. Quick Coupler Valves – Label “QCV.”
c. Wire Splices – Label “WS.”
d. Drip Piping Blow-out Stubs – Label with Controller letter and station number of each drip piping blow-out.
e. Gate Valves – Label “GV.”
f. Manual Drain Valves – Label “MDV.”
g. Flow Sensors – Label “FS.”

I. Gate Valves
1. Install where shown on Construction Documents as detailed.

J. Sprinkler Heads
1. Install sprinkler heads where designated on Construction Documents or where staked. Set to finish grade as detailed.
2. Spacing of heads shall not exceed the maximum distance as indicated on the Construction Documents unless re-staked as directed by Owner’s Representative. In no case shall the spacing exceed maximum distance recommended by manufacturer.
3. Flush system prior to installing sprinkler heads. Install heads on prefabricated swing joints as detailed. Adjust part circle heads for proper coverage. Adjust heads to correct height after sod is installed.
4. Plant placement shall not interfere with intended sprinkler head coverage, piping, or other equipment.
5. Contractor may request nozzle changes or adjustments without additional cost to the Owner’s Representative.

K. Turf Sprinkler Coverage Inspection
1. The Contractor shall schedule and conduct a turf sprinkler coverage installation inspection conference to review in detail quality control and construction methods for the installation of the lateral lines for the turf sprinkler and the coverage each sprinkler is achieving. The Contractor shall provide forty-eight (48) notice to the Owner’s Representative and all other respective parties involved in the turf sprinkler installation inspection to request their presence at the conference.

L. Control Wiring
1. All Control wiring to be laid to bottom and side of pressure supply line trench. Separate wire trenches will not be allowed unless approved by Owner’s Representative prior to installation.

M. Supply Line Pressure Testing –
1. Conduct tests in presence of Owner’s Representative. Arrange for presence of Owner’s Representative forty-eight (48) hours in advance of testing.
2. Supply force pump and all other test equipment as necessary to properly test the system.
3. Prior to backfilling and installation of all control valves, fill pressure supply line with water, and pressurize to 40 PSI over the designated static pressure or 120 PSI, whichever is greater, for a period of two (2) hours.
4. Test is acceptable if no loss of pressure is evident during the test period.
5. Detect and repair leaks as necessary.
6. Retest system until test pressure can be maintained for duration of test time.
7. Before Final Acceptance, pressure supply line shall remain under pressure for a period of forty-eight (48) hours.

N. Backfilling –
1. Do not begin backfilling operations until required system tests have been completed and approved by Owner’s Representative.

2. Backfill shall not be done in freezing weather except with prior written approval by Owner's Representative. Leave trenches slightly mounded to allow for settlement after backfilling is completed.
3. Trenches shall be finish graded prior to final walk-through of system by Owner's Representative.
4. All pressure supply lines shall be bedded with construction grade sand three (3) inches below invert of pipe, to three (3) inches above top of pipe and width of trench when site conditions are rocky or otherwise unfavorable.
5. Excavated material is generally considered satisfactory for backfill purposes. Backfill material shall be free of rubbish, vegetable matter, frozen materials, and stones larger than one (1) inch in maximum dimension. Do not mix subsoil with topsoil. Material not suitable for backfill shall be disposed of off-site in a legal manner or wasted on-site at the direction and approval of the Owner's Representative. Contractor shall be responsible for providing suitable backfill if excavated material is unacceptable or not sufficient to meet backfill, compaction, and final grade requirements
6. Do not leave trenches open for a period of more than 48 hours. Open excavations shall be protected in accordance with OSHA regulations.
7. Compact backfill to 90% maximum density, determined in accordance with ASTM D155-7 utilizing the following methods:
    a. Mechanical tamping.
    b. Puddling or ponding. Puddling or ponding and/or jetting are prohibited within twenty feet (20'-0") of building or foundation walls.

O. Piping Under Paving
1. Provide sleeving as required
2. Piping located under areas where asphalt or concrete paving will be installed shall be bedded with construction grade sand (a layer three (3) inches below pipe and three (3) inches above pipe).
3. Piping shall have a minimum clearance of six (6) inches from each other, and from lines of other trades. Parallel lines shall not be installed directly over one another.
4. Compact backfill material in six (6) inch lifts at 90% maximum density determined in accordance with ASTM D155-7 using manual or mechanical tamping devices.
5. Set in place, cap, and pressure test all piping under paving, in presence of the Owner's Representative prior to backfilling and paving operations.
6. Piping under existing walks and asphalt or concrete pavement shall be done by jacking, boring, or hydraulic driving, but where cutting or breaking of walks and/or concrete is necessary, it shall be done and replaced at no cost to Owner's Representative. Obtain permission to cut or break walks and/or asphalt or concrete paving from Owner's Representative when saw-cutting or sleeving under any public roadways or streets.

3.6 FIELD QUALITY CONTROL

A. Flushing
1. After piping, risers, and valves are in place and connected, but prior to installation of sprinkler heads, quick coupler assemblies, and hose valves, thoroughly flush piping system under full head of water pressure from dead end fittings.
2. Maintain flushing for five (5) minutes through furthermost valves.
3. Cap risers after flushing.

B. Substantial Completion Walk-Through
1. Arrange for Owner's Representative's presence forty-eight (48) hours in advance of walk-through.
2. Entire system shall be completely installed and operational prior to scheduling of walk-through. All sodded areas are to be complete with head height and valve boxes adjusted accordingly.

3. Operate each zone in its entirety for Owner’s Representative at time of walk-through and additionally, open all valve boxes.
4. Consultant shall generate a punch list of items to be corrected prior to Final Completion.
5. Furnish all materials and perform all work required to correct all inadequacies of coverage due to deviations from Contract Documents, and as directed by Owner’s Representative.
6. During walk-through, expose all drip emitters under operations for observation by Owner’s Representative to demonstrate that they are performing and installed as designed, prior to placing of all decorative rock. Schedule separate walk-through if necessary.
7. Supply Owner’s Representative with prints of irrigation as-builts prior to scheduling Substantial Completion Walk-through.

C. Final Acceptance Walk-Through
1. Arrange for Owner’s Representative presence seven (7) days in advance of walk-through.
2. Show evidence that Owner’s Representative has received all accessories, charts, record drawings, equipment, operational manuals, and warranties as required before Final Completion Walk-through is scheduled.
3. Operate each zone, in its entirety for Owner’s Representative at time of walk-through to ensure correction of all incomplete items.
4. Items deemed not acceptable by Owner’s Representative shall be resolved to the complete satisfaction of Owner’s Representative.
5. If, after request to Owner’s Representative for the Final Completion Walk-through of the irrigation system, the Owner’s Representative finds items during the walk-through which have not been properly adjusted, reworked, or replaced as indicated on list of incomplete items from previous walk-through, Contractor shall be charged for all subsequent walk-throughs. Funds will be withheld from Final Payment and/or retainage to Owner’s Representative, in amount equal to additional time and expenses required by Owner’s Representative to conduct and document further walk-throughs as deemed necessary to ensure compliance with Contract Documents.

3.7 ADJUSTING

A. Upon completion of installation, "fine-tune" entire system by regulating valves, adjusting patterns and break-up arms, and setting pressure reducing valves at proper and similar pressure to provide optimum and efficient coverage. Flush and adjust all sprinkler heads for optimum performance and to prevent overspray onto walks, roadways, and buildings as much as possible. Heads of same type shall be operating at same pressure +/- 7%.

B. If it is determined that irrigation adjustments will provide proper coverage, and improved water distribution as determined by Owner’s Representative, the Contractor shall make such adjustments prior to Final Acceptance, as directed, at no additional cost to the Owner’s Representative. Adjustments may also include changes in nozzle sizes, degrees of arc, and control valve throttling.

C. All sprinkler heads shall be set perpendicular flush to finish grade unless otherwise noted on Construction Plans or directed by Owner’s Representative.

D. Areas which do not conform to designated operation requirements due to unauthorized changes or poor installation practices shall be immediately corrected at no additional cost to the Owner’s Representative.

3.8 CLEANING

A. Maintain continuous cleaning operations throughout the duration of work. All trash and debris generated by installation of irrigation system shall be disposed of off-site, in a legal manner, at no additional cost to the Owner's Representative.

END OF SECTION 328400

SECTION 329000 - GENERAL LANDSCAPE

PART 1 - GENERAL

1.1 SUMMARY

A. Furnish all trees, shrubs, and other plant materials, labor equipment, and non-plant materials required to complete installation of planting indicated on the landscape drawings and details. Furnish all soil preparation, fertilizer, soil mulching, trees, shrubs, groundcovers, sodding, bed mulching, labor and equipment required to landscape all areas as indicated on the landscape drawings.

B. Work in this Section includes, installation of trees, shrubs, perennials, annuals, ornamental grasses, installation of mulch materials and mitigation of areas damaged by construction activities performed under this contract.

C. Section Includes
1. Installation of trees, shrubs, ornamental grasses, perennials, annuals, installation of mulch materials and mitigation of areas damaged by construction activities performed under this contract.

D. Owner Furnished Items
1. None

E. Permits
1. Contractor is responsible for obtaining all necessary permits required for installation of landscape and irrigation.
2. Contractor shall know, understand, and comply with all watering restrictions.
3. Permits may be necessary if restrictions are in effect.

1.2 REFERENCES

A. Refer to Drawings

B. Refer to the Agreement between the Contractor and Owner

C. Refer to Section on Soil Preparation

D. Refer to Section on Sodding

1.3 DEFINITIONS

A. Subgrade: The final elevation of material supporting additional material above it.

B. Finished Grade: The final elevation of the upper most surface material. Sod shall be top of thatch layer.

1.4 SUBMITTALS

A. See Section 01 3000 – Administrative Requirements for submittal procedures.

B. Product Data: Submit product data sheets for each of the following items. Submittals must be made prior to commencing any site work.
   1. Compost
   2. Weed Fabric
   3. Turfgrass/Sod
   4. Crusher Fines
   5. River Rock Mulch
   6. Beach Pebbles
   7. Organic Mulch
   8. Landscape Boulder
   9. Sandstone Block Seats
   10. Metal Edger
   11. Tree Staking and Guying System
   12. Tree Wrap

C. Samples: Submit physical samples of each of the following materials for approval. All samples shall be submitted in a one-quart, clear, zip-top plastic bag, or appropriate container. Submittals must be made prior to commencing any site work. All samples shall be clearly labeled with the following information.
   1. Project Name
   2. Material name as shown on plans and specifications
   3. Supplier or distributor's name
   4. Supplier or distributor's product name and order number
   5. Required samples are as follows:
      a. Compost
      b. Crusher Fines
      c. River Rock Mulch
      d. Beach Pebbles
      e. Organic Mulch

D. Supplier list
   1. Submit a single list of all material suppliers for plant material, and all related landscape and irrigation materials to complete the work in this section and related sections. List must be submitted prior to commencing any site work.

E. Construction Schedule
   1. Prior to beginning installation of the landscape, the Contractor shall submit a project construction schedule to the General Contractor and Owner for approval. The schedule shall include the areas and types of construction to be undertaken and the sequence which will be used to complete the project. The schedule must be submitted prior to commencement of activities. The schedule shall clearly identify proposed timing for seeding, sodding, and plant material installation.

F. Certificates for Inspections of Materials
   1. All State, Federal, or other inspection certificates shall be submitted to the Landscape Architect prior to acceptance of the plant material along with other information showing the source or origin.
   2. Submit current grower or nursery certifications to Landscape Architect indicating that all contractor supplied plant material is healthy, vigorous, and free from insect pests, plant diseases, and injuries.

G. Contract Closeout Submittals
   1. Operation and Maintenance Manuals
      a. At Final Acceptance, the Contractor shall furnish written maintenance instructions to the Owner's Representative and Owner for maintenance and care of the landscaping. Instructions shall include directions for irrigation, weeding, pruning, fertilization, and spraying, as required to continue proper maintenance through a full growing season and dormant period.
      b. The Contractor shall furnish an operation manual for all equipment.

H. Guarantee and Warranty
   1. At Initial Acceptance, the Contractor shall furnish written guarantee and warranty to the Owner based on the requirements of this section.

1.5 QUALITY ASSURANCE

A. Reference Standards
   1. U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act and equal in quality to standards for Certified Seed.
   2. Requirements for measurements, grading, branching, quality, and the balling and burlapping of plants listed in the plant list shall follow the current issue of American Standard for Nursery Stock issued by the American Association of Nurserymen, Inc., ANSI-Z 60.1, most current version.
   3. Plants shall equal or exceed the measurements specified in the plant list, which are minimum acceptable sizes. Plants shall be measured before pruning with branches in normal position. Any necessary pruning shall be done at the time of planting.

B. Quality of Materials
   1. All materials shall be subject to inspection and approval. Prior to Initial Acceptance the Landscape Architect reserves the right to reject the work and all materials at any time or place which in their opinion fails to meet these specification requirements.
   2. Inspection is primarily for quality; however, other requirements are not waived even though visual inspection results in approval. Materials may be inspected where growing but inspection at the place of growth shall not preclude the right of rejection at the site. Inspection may be made periodically during installation of materials, at Initial Acceptance, and at Final Acceptance by the Landscape Architect. Plants shall have a habit of growth that is normal for the species. They shall be healthy, vigorous, and free from insect pests, plant diseases, and injuries. All plant material shall be inspected stock conforming to all State and Federal Regulations.
   3. Plant material shall not exhibit signs of accelerated growth.

C. Vandalism
   1. The Contractor is not responsible for malicious destruction of plantings after Final Acceptance of the project. The Contractor is, however, responsible for replacement of materials stored but not yet installed, and installed material vandalized prior to Final Acceptance. The Contractor shall promptly report all cases of vandalism to the Owner. The Contractor shall inform the Owner in writing if additional protection must be installed to protect the landscaping from damage after installation.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping
   1. Deliver fertilizer to site in original unopened containers bearing the manufacturer's guaranteed chemical analysis, name, trade name, trademark, and conformance to State law.
   2. Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored. Provide copies of delivery receipts for construction materials to the Owner's Representative as the deliveries are made. These construction materials include fertilizers, soil amendments, peat moss, manure, grass seed, plant tabs, and mulches.
   3. Plants shall be in containers with limbs bound, properly wrapped, and prepared for shipping in accordance with recognized standard practice. Between the time plants are dug and actual planting the root system shall be kept moist, and plants shall be protected from adverse conditions due to climate and transportation.
   4. Each plant shall be identified by means of a grower's label affixed to the plant. The grower's label shall have the data needed to show conformance to specifications. Use durable waterproof labels with water resistant ink which will remain legible for at least 60 days. Notify the Owner's Representative prior to delivery of plant materials to the site so that a pre-planting inspection may be made or indicate delivery schedule in advance so plant material may be inspected upon arrival at job site, whichever is more appropriate.
   5. Do not drop plants. Do not lift plants by the trunk, stems, or foliage. The ball of the plant shall be natural, and the plant shall be always handled by the ball. All plants shall be always protected from drying out or other injury. Minor broken and damaged roots shall be pruned before planting.

B. Acceptance at Site
   1. Remove unacceptable plant material immediately from job site.
   2. Major damage is cause for rejection.
   3. No balled or burlapped plant shall be accepted if the ball is broken, if the trunk is loose in the ball, or if trees are handled roughly.

C. Storage and Protection
   1. Deliver trees and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than four (4) hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by setting balled stock on ground and cover ball with soil or peat moss.
   2. Always keep root balls moist.
   3. Protect all existing and newly planted trees, shrubs, and groundcover within the areas of construction and related excavation as herein specified. Provide suitable barricades such as fences as required.

1.7 PROJECT/SITE CONDITIONS

A. The Contractor must examine the subgrade upon which work is to be performed, verify subgrade elevations, observe the conditions under which work is to be performed, verify suitability of the soil, and notify the Owner's Representative in writing of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the General Contractor. Commencement of work shall mean acceptance of the site conditions.

B. Existing Conditions
   1. The site will be provided to the contractor within ±0.1 foot of finish grades.
   2. Utilities
      a. Determine location of underground utilities and perform work in a manner which will avoid possible damage. Do not permit heavy equipment such as trucks, rollers, or bulldozers to damage utilities. When necessary, hand excavate to minimize the possibility of damage to underground utilities. Maintain grade stakes set by others until removal is mutually agreed upon by all parties concerned. Any damage to utilities that may result despite protective measures must be completely corrected and repaired by the Contractor at no additional cost to the Owner.

1.8 SEQUENCING & SCHEDULING

A. Planting Schedule
   1. Schedule each type of required landscape work during the normal season for such work. Establish dates for each type of work and establish a completion date. Correlate work with specified maintenance periods to provide maintenance until Acceptance by the Owner. Do not depart from the accepted schedule, except with written authorization. Submit request to the Owner's Representative for changes in the planting schedule. When delays in the planting schedule are unavoidable, include documentation of the reason for delay.
   2. Plant trees and shrubs during normal season based on project location climate.

B. Coordination With Lawns
   1. Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise authorized by the Owner's Representative. If planting of trees and shrubs occurs after lawn work, protect lawn areas, and promptly repair damage to lawns resulting from planting operations.

1.9 WARRANTY & GUARANTEE

A. Initial Acceptance consists of a walk-through of the project site by the Landscape Architect resulting in a punch list. Punch list items shall be completed by the Contractor and verified as complete by the Landscape Architect. Following verification, an Initial Acceptance letter may be issued outlining areas accepted, date of acceptance, and noting any outstanding punch list items. Date of Initial Acceptance shall also be the warranty period start date.

B. Final Acceptance shall consist of a walk-through of the project site by the Landscape Architect resulting in a punch list. Punch list items shall be completed by the Contractor and verified as complete by the Landscape Architect. Following verification, a Final Acceptance letter may be issued outlining areas accepted, date of acceptance, and noting any outstanding punch list items. Final Acceptance walk-through shall be scheduled thirty (30) days prior to the expiration of the warranty period. It is the Contractor's responsibility to contact the Owner's Representative and Owner to schedule Final Acceptance activities.

C. Warranty trees, shrubs, groundcovers, and all plant material for a period of one year from the date of Initial Acceptance against defects not resulting from neglect of Owner, or abuse and damage by others. Contractor shall document such damage and submit to Owner within seven (7) days.

D. For a period of one year after Initial Acceptance of work, at no additional cost to the Owner, the Contractor shall replace any plants that are dead, in an unhealthy or unsightly condition, or have lost their natural shape due to dead branches or excessive pruning. Inadequate maintenance by

the Owner shall not be cause for replacement. All replacement planting shall be done within 30 days of punch list issuance.

E. Replacement plants shall be of the same variety and size or larger as originally specified in the plant list. Plants shall be planted as originally specified. All areas damaged by planting or replacement operations shall be fully restored to their original condition as specified. Remove all dead or defective plant material from the site immediately.

F. A one-year warranty shall also apply to the plants replaced because of the Initial Acceptance walk-through punch list.

1.10 MAINTENANCE

A. Begin interim maintenance period immediately after planting of landscape materials and installation of sod areas. Interim maintenance occurs until Initial Acceptance has been issued, at which point the maintenance period begins.

B. The maintenance period will commence on the date of Initial Acceptance and end at midnight on the date of Final Acceptance or once all warranty items are complete, whichever occurs later. Phased plantings require prior authorization from the Owner, as well as any adjustments to this date. This can be negotiated with the Owner and Owner's Representative after installation has begun.

C. When the installation Contractor performs the maintenance items required for all landscape areas during the interim maintenance and maintenance periods, Contractor shall be responsible for any warranty items.

D. When General Contractor or Owner accepts an installation contract that does not include maintenance for all landscape areas for the duration of the interim maintenance and maintenance periods or hires a separate Contractor to perform maintenance during the interim maintenance and/or maintenance period, the installation warranty shall be thirty (30) days for the installation Contractor commencing from the date of Initial Acceptance.

E. Review maintenance requirements of the project with the Owner prior to Final Acceptance, and prior to the termination of the maintenance period. Information conveyed to the Owner shall be consistent with the maintenance instructions provided by the Contractor as part of the contract close out submittals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Mulch
   1. Reference Landscape Plans

B. Stakes and Guys
   1. Stakes - 2' metal t-posts and 6' wood posts
   2. Guys - 12-gauge galvanized steel wire
   3. Nylon straps - 1 1/2", with metal grommet ends.
   4. ¾" White, PVC pipe, 24" lengths.

C. Tree Wrapping
   1. Clark’s Tree Wrap, 4” wide, designed to prevent winter bark injury. Secure with flexible grafting ties.

D. Weed Control Fabric
   1. Mirafi Mirascape E fabric, 3.6 oz per square yard, or an approved equal.

E. Trees, Shrubs, Ornamental Grasses, and Flowers
   1. Provide nursery grown trees, shrubs, ornamental grasses, and perennials unless otherwise indicated, grown in a recognized nursery in accordance with good horticultural practice, with healthy root systems developed by transplanting or root pruning. Provide only healthy vigorous stock, free of diseases, insects, eggs, larvae, and defects such as knots, sunscald, injuries, abrasions, or disfigurement. Only plants grown in Hardiness Zones 2,3,4, and 5 will be accepted. Hardiness Zones are defined in U.S. Department of Agriculture publications. Grower's certificates may be required when doubt exists as to the origin of the plant material.
   2. Provide trees, shrubs, ornamental grasses, and flowers true to name and variety established by the American Joint Committee on Horticultural Nomenclature "Standardized Plant Names", Second Edition, 1942.
   3. Provide trees, shrubs, ornamental grasses, and flowers of the size shown or specified in the plant list and in accordance with the dimensional relationship requirements of ANSI Z60.1 for the kind and type of plant material required. Plant material larger than the specified size may be used, in which case the sizes of the root balls will be increased proportionately.
   4. Label each tree and shrub with a securely attached waterproof tag bearing legible designation of botanical and common name and size.
   5. Where formal arrangements or consecutive order of plants are shown, select stock for uniform height and spread, and label with numbers (if necessary) to assure symmetry in appearance of planting.
   6. Provide plant material complying with the recommendations and requirements of ANSI Z60.1 "Standard for Nursery Stock" and as further specified.

F. Deciduous Trees
   1. Provide trees of the height and caliper listed or shown.
   2. Where shade trees are required, provide single stem trees with straight trunk and intact leader, free of branches to a point six (6) feet above the ground.
   3. Where small trees of upright or spreading type are required, provide trees with single stem, branched, or pruned naturally according to species and type, and with the relationship of caliper and branching recommended by ANSI Z60.1, unless otherwise shown.
   4. Where shown as "bush form" provide trees with 3 or more main stems starting close to the ground in the manner of a shrub.
   5. Where shown as a "clump form" provide trees with 3 or more stem starting from the ground.
   6. Provide balled and burlapped deciduous trees unless noted as container plants. Balled and burlapped plants shall be dug with firm, natural balls of earth of the diameter specified or larger, to encompass the fibrous and feeding root system necessary for full recovery of the plant.

G. Deciduous Shrubs and Groundcovers
   1. Provide deciduous shrubs with not less than the minimum number of canes required by ANSI Z60.1 for the type and height of shrub specified.
   2. Plants furnished in containers shall have been grown in pots, cans, or baskets long enough to have sufficient roots to hold earth together intact after removal from container, without being root bound.

H. Coniferous and Broadleaf Evergreens
   1. Provide evergreens of the size shown.
   2. Provide evergreens with well-balanced form complying with requirements for other size relationships to the primary dimension shown.
   3. Trees shall exhibit consistent growth periods and shall not exhibit signs of accelerated growth.
   4. Provide balled and burlapped evergreen trees unless otherwise noted as container or collected stock.
   5. Foliage shall have a good intense color.
   6. Trees shall contain a central dominant leader with evenly spaced branches. Plants containing multiple central leaders will be rejected.

I. Requirements for Balled and Burlapped Stock:
   1. Where shown or specified to be balled and burlapped, provide trees and shrubs dug with a firm, natural ball of earth in which they were grown.
   2. Provide ball size of not less than the diameter and depth recommended by ANSI Z60.1 for the type and size of tree or shrub required. Increase ball size or modify ratio of depth to diameter as required to encompass the fibrous and feeding root system necessary for full recovery of trees or shrubs subject to unusual or atypical conditions of growth, soil conditions, or horticultural practice.
   3. Wrap and tie earth ball as recommended by ANSI Z60.1 for the size of balls required. Drum-lace balls with a diameter of thirty inches (30") or greater.

J. Requirements for Container Grown Stock
   1. Where specified as acceptable, provide healthy, vigorous well rooted shrubs or ornamental grasses established in the container in which they are sold.
   2. No bare rooted or recently containerized stock will be accepted.
   3. Established container stock is defined as a tree or shrub transplanted into a container and grown in the container for a length of time sufficient to develop new fibrous roots so that the root mass will retain its shape and hold together when removed from the container.
   4. Use rigid container which will hold ball shape and protect root mass during shipment.
   5. Provide trees and shrubs established in containers of not less than the minimum sizes recommended by ANSI Z60.1 for the kind, type, and size of trees and shrubs required.
   6. Perennials and ornamental grasses provided in containers shall have well developed root masses without being root bound and should display an appropriate amount of foliage for the time of year in which they are being planted. Cutting back of perennials and grasses for fall planting is acceptable assuming a portion of the plant is visible and cutting does not damage the growing portions of the plant.

PART 3 - EXECUTION

3.1 EXAMINATION

A. The Contractor shall inspect the site with the Owner and/or Owner’s Representative prior to beginning any activities on site. The contractor shall provide a written report of any discrepancies that would interfere with their scope of work or would delay progress on the project.

3.2 INSTALLATION

A. Proceed with and complete the landscape work as soon as portions of the site become available, working within the seasonal limitations for each kind of landscape work required.

B. Cooperate with any other contractors and trades which may be working in and adjacent to the landscape work areas. Examine drawings which show the development of the entire site and become familiar with the scope of all work required.

C. Final Plant Locations
   1. Stake location of individual trees for approval by Landscape Architect prior to planting or excavating.
   2. If a new tree or shrub needs to be relocated due to interference with underground piping or wiring, the Contractor shall notify the Owner's Representative and receive approval of a new location by Landscape Architect. Any changes shall be shown on the as-built drawings provided by the Contractor at Initial Acceptance.
   3. The Landscape Architect must approve the precise location of all plants prior to pit excavation and installation.
   4. Make minor adjustments as requested by the Landscape Architect or as necessary to avoid conflicts with sprinkler line locations.

D. Excavation For Planting
   1. Where rubble fill is encountered, notify the Owner's Representative. Prepare planting pits properly by removal of rubble or other acceptable methods.
   2. If rock, underground construction work, or other obstructions are encountered in excavation for planting of trees or shrubs, notify the Owner's Representative. If necessary, new locations may be selected by the Owner's Representative. Any changes shall be shown on the as-built drawings provided by the Contractor at Initial Acceptance.
   3. If subsoil conditions indicate the retention of water in planting areas, as shown by seepage or other evidence indication the presence of underground water, notify the Owner's Representative before backfilling.
   4. Tree pits shall be dug with flat bottoms and vertical sides. Tree pits shall be dug with radius equal the diameter of the root ball. All tree pits shall have a minimum depth to accommodate root ball.
   5. The Contractor is responsible for demonstrating to the Owner's Representative that planting pits have adequate drainage. This shall be performed by digging sample holes throughout the site and filling them with water. Holes must drain with in twenty-four hours to be acceptable. Pits that do not drain shall be provided with twelve-inch (12") diameter by thirty-six inch (36") deep auger holes (one per tree pit) to be filled with 1 1/2" gravel. A change order will be issued if the Owner's Representative determines drain holes shall be installed.

E. Setting and Backfilling
   1. For container grown stock, excavate pit at least twice as wide as the container.
   2. Set tree ball plumb and in the center of pit or trench with top of ball 2" minimum above adjacent landscape grades. Remove burlap from sides and tops of balls, but do not remove from under balls. Remove platforms, if any, before setting. When setting place additional backfill around base and sides of ball and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.
   3. No burlap shall be pulled out from under balls.
   4. Entire wire basket and surplus nylon or binding shall be completely removed, taking care not to damage the root ball. Any roots which are bruised or broken shall be pruned at the time of planting.
   5. After planting, the Contractor shall water each plant regularly until Final Acceptance.

6. For plantings in non-turf areas, provide berm around the edge of excavations to form shallow saucer to collect water and to hold mulch.

F. Mulching
1. Fine grade all planting beds to be mulched allowing for full depth of specified mulch.
2. Place specified mulch evenly over all areas at depth indicated on plans.
3. Rake and feather finish grade of mulch level and 1/2" below adjacent edger surfaces.
4. Make sure mulch is at full depth at adjacent walks and paved surfaces and that mulch doesn't protrude above these surfaces.
5. Mulch a 24" diameter ring around all trees in turf areas with specified depth of organic mulch, after irrigation areas have been watered in.

G. Pruning
1. Prune, thin out, and shape trees and shrubs in accordance with standard horticultural practice. Prune trees to retain required height and spread.
2. Do not cut tree leaders. Remove only injured or dead branches from flowering trees.
3. Prune shrubs to retain their natural character and shape, and to accomplish their use in the landscape design.
4. Required shrub sizes are the size after pruning.
5. Remove and replace excessively pruned or deformed stock resulting from improper pruning.

H. Guying and Staking
1. Removal of all guying and staking shall occur prior to the Final Acceptance walk-through and the cost shall be included as part of the installation of the work.
2. Deciduous guying system
   a. Pound stakes 2’ deep minimum into undisturbed soil beyond the planting pit so that stake is secure. Secure wire through metal grommets on nylon strap and wrap above first branch or at mid-point of tree. Secure guy wire to stake so that it is taut but allows some movement and so that no sharp projections of wire are extending from post. Adjust tension on wire if needed. Flag guy wire with 3/4" PVC pipe for visibility.
3. Conifer guying system
   a. Pound stakes 2’ minimum into undisturbed soil beyond the planting pit so that stake is secure, angling away from planting pit and so that top is flush with finish grade. Secure wire through metal grommets on canvas strap and wrap at midpoint of tree. Secure guy wire to stake so that it is taut but not overly tight and so that no sharp projections of wire are extending from post. Adjust tension on wire if needed. Flag guy wire with 3/4" PVC for visibility.

3.3 FIELD QUALITY CONTROL

A. When all the landscape work is completed, the Landscape Architect shall inspect the landscape work to determine if the work is complete upon seven (7) calendar days advance notice by the Contractor. The Landscape Architect in conjunction with the General Contractor, Owner, and any additional required parties, shall prepare a punch list of items improperly installed, inadequately sized, or otherwise deficient based on the findings of his inspection. The punch list shall be completed not more than seven (7) working days after the Initial Acceptance walk-through. When the Contractor has remedied all deficiencies and completed all items on the punch list, the Contractor shall request another inspection by the Landscape Architect to determine whether the deficiencies have been adequately corrected. Once the punch list items have been corrected and re-inspected, the Landscape Architect shall issue an Initial

Acceptance letter to the Owner who will then respond to the Contractor in writing formally accepting the work and beginning the warranty period.

B. Thirty (30) days prior to the completion of the warranty period, the Landscape Architect, shall inspect the landscape work to determine if the work is complete upon seven (7) calendar days advance notice by the Contractor. The Landscape Architect in conjunction with the General Contractor, Owner, and any additional required parties, shall prepare a punch list of items improperly installed, inadequately sized, or otherwise deficient based on the findings of his inspection. The punch list shall be completed not more than seven (7) working days after the Final Acceptance walk-through. When the Contractor has remedied all deficiencies and completed all items on the punch list, the Contractor shall request another inspection by the Landscape Architect to determine whether the deficiencies have been adequately corrected. Once the punch list items have been corrected and re-inspected, the Landscape Architect shall issue a Final Acceptance letter to the Owner who will then respond to the Contractor in writing formally accepting the work. The required maintenance instructions shall be forwarded to the Owner's Representative and Owner prior to the Final Acceptance to inform the Owner of any maintenance responsibilities that would be required for the project.

3.4 ADJUSTING AND CLEANING

A. During landscape work, store materials and equipment where directed.

B. Keep pavements clean and work areas in an orderly condition.

C. Protect landscape work from loss, damage, and deterioration during storage, installation, and maintenance periods.

D. Protect from trespassers, as well as from operations by other Contractors and tradesmen and landscape operations.

E. At the time of the Final Acceptance walk-through and before the issuance of Final Acceptance, all paved areas shall be thoroughly cleaned by the Contractor by sweeping and washing. All construction equipment, excess materials, debris, or rubbish shall be removed from the site.

END OF SECTION 329000

SECTION 329110 - SOIL PREPARATION

PART 1 - GENERAL

1.1 SUMMARY

A. Work in this Section includes ripping, fertilizing, soil conditioning, and fine grading as shown on plans and details included on construction drawings as under this contract.

1.2 SUBMITTALS

A. Refer to General Landscape Section

1.3 DELIVERY, STORAGE AND HANDLING

A. Comply with related sections.

1.4 PROJECT/SITE CONDITIONS

A. Do not perform work when climate and existing site conditions will not provide satisfactory results.

B. Vehicle accessibility on site shall be as directed by the Owner's Representative. Repair damage to prepared ground and surface caused by vehicle movement during work under this section to original condition at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Compost
   1. A totally organic product that has been aerobically and naturally processed without the addition of coarse wood chips, in such a manner as to maintain a consistent temperature of 140 degrees Fahrenheit or greater for a period of time sufficient to create the following characteristics, measured by dry weight.
      a. Moisture content of 30%-35%
      b. Organic matter to nitrogen ratio: 25:1 to 30:1.
      c. pH: 6.0 to 8.0 pH.
      d. Salts: maximum of 10 mmhos/cm.
      e. Less than 1% soil, dirt or sand.
      f. Maximum particle size of ½ inch diameter.
      g. Eradication of all harmful weed seeds, pathogens, and bacteria.
      h. A non-offensive, earth smell.

2. Acceptable materials are as follows.
   a. A-1 Organics - BioComp
   b. Front Range Materials (Arvada, Colorado, 303-960-9996)– FRM Premium Compost (Item #2-101)
   c. Certified “Class I” compost product
   d. Or Approved Equal

B. Plant Mix Backfill for Trees
1. Plant mix shall be used to backfill around all tree plantings as indicated on the drawings. The plant mix shall consist of equal parts of:
   a. Topsoil
   b. Compost
   c. Excavated soil
   d. Myke Pro AN1 (www.usemyke.com) at the manufacturer’s recommended rate for the tree’s size/caliper

Caliper / Height	Myke Pro Cups Each
1.5 in (40 mm)	2
2.0 in (50 mm)	3
2.5 in (65 mm)	4
3.0 in (75 mm)	5
4.0 in (100 mm)	6
4.5 in (115 mm)	7.5
4'	1.75
5'	2
6'	3
7'	3.5
8'	4
10'	5
12'	6
14'	7.5

2. The ingredients shall be thoroughly mixed.

C. Bluegrass sod and irrigated bluegrass seed area amendments:
1. Thoroughly mix the following amendments tilled to a depth of six inches.
   a. Specified Compost 5.0 c.y. per 1,000 s.f.

D. Planting Bed Amendments
1. Thoroughly mix the following amendments tilled to a depth of six (6) inches. No additional backfill amendments are required around shrubs if amending the entire bed area.
   a. Specified Compost 5.0 c.y. per 1,000 s.f.
   b. Diammonium Phosphate 5.0 lbs. per 1,000 s.f.
   c. Pre-emergent Weed Controller use manufacturer’s specified rate

2.2 SOURCE QUALITY CONTROL

A. Verification of Performance
1. Compost and other soil amendments are identified by a rate of cubic yards per 1000 s.f. To accurately determine if amendments are applied at the correct rate, the following chart is supplied. This chart is intended to verify the cubic yards by allowing a method for measuring the depth of the material spread uniformly across the surface of the planting area, with no exposed soil, prior to mixing the amendments with the existing soils.

2. This method is used during inspections to verify that adequate amendments are incorporated into the soil.

c.y./1000 s.f.	Depth (inches)
2.0 c.y./1000 s.f.	¾ inch
3.0 c.y./1000 s.f.	1 inch
4.0 c.y./1000 s.f.	1 ¼ inches
5.0 c.y./1000 s.f.	1 ½ inches

3. An inspection of soil preparation will be performed by the Owner's Representative before areas will be released for planting. The inspection shall consist of taking a soil sample to determine:
   a. Proper tilling of the soil. Soil will be judged on how easily a soil probe can be inserted into the ground.
   b. Proper depth of tilling, and homogeneity of the soil. The soil sample will be judged on uniformity of the soil profile in the top six to eight inches.
   c. A visual inspection for adequate compost will be conducted. An area that has similar soil structure and has not received compost will be used as the basis of comparison. Should a disagreement exist, multiple soil samples will be sent to an independent testing laboratory to determine the amount of organic matter present. The Owner's Representative will pay for this testing.

PART 3 - EXECUTION

3.1 EXAMINATION

A. General
   1. Verify that existing site conditions are as specified and indicated before beginning work under this Section.
   2. Unknown soil conditions may exist on site. This specification is intended to be a standard specification for Soil Preparation for bid purposes only. The contractor is responsible for creating a suitable soil medium that ensures healthy plant growth. Immediately following rough grading operations, the contractor shall take multiple soil samples of the site to identify any chemical, structural, or other soil borne issues that would make the soil counterproductive to healthy plant growth. This analysis shall include recommendations for additional organic matter required for the soil. Should amendments or additional work be required to make these soils more conducive to healthy plant growth, the contractors shall submit a change order for the modification 30 days prior to start of landscape installation for Owner's Approval. The change order request shall clearly detail any additional work or amendments necessary for those unacceptable soils.

B. Grades
   1. Inspect to verify rough grading is within +0.1 foot or 1/10" of grades indicated and specified.

C. Damaged Earth
   1. Inspect to verify that earth rendered unfit to receive planting due to concrete, water, mortar, limewater, or any other contaminant dumped on it has been removed and replaced with clean earth from a source approved by the Owner's Representative.

D. Cleanliness
   1. Inspect to verify that site is clean of all trash and debris.

E. Equipment

1. Inspect to verify other trades have removed all equipment and staging areas from areas of work.

F. Unsatisfactory Conditions
1. Report in writing to General Contractor with copy to Owner.

G. Acceptance
1. Beginning of installation means acceptance of existing conditions by Contractor.

3.2 PREPARATION

A. Protection
1. Locate sewer, water, irrigation, gas, electric, phone, and other pipelines or conduits and equipment prior to commencing work.
2. Be responsible for proper repair to landscape, utilities, walls, pavements, and other site improvements damaged by operations under this section.

B. Weed Control
1. Remove weeds by applying herbicide one (1) week before soil preparation and as needed, but no sooner than 3 months before beginning work.
2. If the area to be developed is infested with noxious or invasive weeds, a chemical application will be required at a rate recommended on the chemical's product label.
3. The contractor shall remove all weeds prior to tilling or spreading any soil amendments. All dead plant material shall be removed from the site and not tilled into the soil.

C. Surface Grade
1. Remove weeds, debris, clods, and rocks larger than ½". Dispose of accumulated debris at direction of Owner or Owner's Representative.

D. Runoff
1. Take measures and furnish equipment and labor necessary to control the flow, drainage, and accumulation of water. Ensure positive drainage exists.

E. Erosion Control
1. Take measures and furnish equipment and labor necessary to control and prevent soil erosion, blowing soil, and accumulation of wind-deposited material on the site through duration of work.
2. No areas of the site may remain unprotected for more than 30 days, or as directed by the storm water management plan.
3. The contractor shall assume maintenance and management responsibilities for erosion control in an area upon commencement of activities in that area. Erosion control practices must be compliant with the local jurisdiction rules and regulations, and any Storm Water Management Plans/Programs in place.
4. The contractor will be expected to begin repair to damaged erosion control devices, siltation, wash outs, etc. within twenty-four hours of a storm event or upon notification by the Owner's Representative.

3.3 INSTALLATION

A. Soil Amendment
1. Evenly distribute soil amendments, conditioners, and fertilizer, and first application of fertilizer in landscaped areas at the rates outlined in Part 2.01 of this Section.

B. Mixing
   1. After applying soil conditioner, fertilizers, and compost thoroughly till area to depth of 6" minimum by tilling, plowing, harrowing, or disking until soil is well pulverized and thoroughly mixed.

C. Fine Grading in all Landscape Areas:
   1. Do fine grading for areas prior to planting.
   2. Maintain required positive drainage away from buildings for ground surfaces surrounding buildings that will be landscaped.
   3. Establish finish grades to within 0.10 foot or 1/10” of grades indicated.
   4. Fine grading must be inspected and approved by Owner’s Representative.
   5. Any damage caused by inclement weather to finish grades before inspection will be repaired by the contractor prior to acceptance by Owner’s Representative.
   6. Sodded areas - Allow 1" for sod.

D. Noxious weeds or parts thereof shall not be present in the surface grade prior to landscaping.

E. Prior to acceptance of grades, hand rake to smooth, even surface free of debris, clods, rocks, and vegetable matter greater than ½".

3.4 FIELD QUALITY CONTROL

A. Inspection
   1. Provide notice to Owner’s Representative requesting inspection at least seven (7) calendar days prior to anticipated date of completion.
   2. The following required inspections will be conducted to ensure proper preparation of soil prior to planting.
      a. During, or after, the first cultivation.
      b. After the application of specified soil amendments.
      c. During, or after, the second cultivation.
      d. After the final grades have been established.

B. Deficiencies
   1. Owner’s Representative will identify deficiencies to Contractor who shall make satisfactory adjustments and shall again notify Owner’s Representative for final inspection.

3.5 CLEANING

A. Remove debris and excess materials from site. Clean out drainage inlet structures. Clean paved and finished surfaces soiled as a result of work under this Section, in accordance with direction given by Owner’s Representative.

3.6 PROTECTION

A. Provide and install barriers as required and as directed by Owner’s Representative to protect completed areas against damage from pedestrian and vehicular traffic until acceptance by Owner. Contractor is not responsible for malicious destruction caused by Others.

END OF SECTION 329110

SECTION 329223 - SODDING

PART 1 - GENERAL

1.1 SUMMARY

A. Furnish all supervision, labor, material, equipment, transportation, permits and fees, and perform all operations in connection with the installation of sod, where called for in plans and specifications.

1.2 REFERENCES

A. Reference Standards: U.S. Department of Agriculture Rules and Regulations under Federal Seed Act and equal in quality to standards for Certified Seed.

B. General Landscape Section

C. Soil Preparation Section

1.3 SUBMITTALS

A. Refer to General Landscape Section.

1.4 QUALITY ASSURANCE

A. Sod Materials
   1. Subject to submittal approval, inspection, and acceptance. Owner’s Representative reserves the right to reject at any time or place prior to acceptance, any work and sod which in the Owner’s Representative's opinion fails to meet these specification requirements. Promptly remove rejected sod from site if directed by Owner or Owner’s Representative and at Contractor’s expense.
   2. Sod materials submittal shall be made and approved by Landscape Architect prior to the commencement of any sodding activities.

B. Inspection
   1. Inspection will be made periodically during sodding, at Initial Acceptance and at Final Acceptance by Landscape Architect.
   2. Inspection shall be scheduled prior to sodding. Owner’s Representative will inspect finish grades on which sod will be laid. This inspection does not dismiss the Contractor’s responsibility for creating positive drainage across the landscaped areas.

C. Sod Standards
   1. General - Healthy, thick turf having undergone a program of regular fertilization, mowing, and weed control; free of objectionable weeds; uniform in green color, leaf texture and density; healthy, vigorous root system; inspected and found free of disease, nematodes, pests, and pest larvae by the entomologist of the State Department of Agriculture.
   2. Each piece of Sod - Sandy-loam soil base that will not break, crumble, or tear during sod installation.
   3. Thickness – 5/8" minimum root zone thickness.

4. Thatch - Not to exceed ½" uncompressed.
5. Size - Cut in strips 18" wide no more than 24 hours prior to delivery.

1.5 DELIVERY, STORAGE AND HANDLING

A. Packing and Shipping
1. Deliver on sod on pallets properly loaded on vehicles and with root system protected from exposure to sun, wind, and heat in accordance with standard practice and labeled with botanical and common name of each grass species in accordance with Federal Seed Act.
2. Protect sod from dehydration, contamination, and heating always. Keep stored sod moist and under shade or covered with moistened burlap.
3. Do not drop sod rolls from carts, trucks, or pallets.

B. Acceptance at Site
1. Material shall be inspected upon arrival at job site.
2. Immediately remove unacceptable material from job site.

C. Storage and Protection
1. Do not stack sod more than 2 feet deep.
2. Do not deliver more sod than can be installed within 24 hours. Storage is not recommended.

1.6 PROJECT/SITE CONDITIONS

A. Environmental Requirements:
1. Do not install sod on saturated or frozen soil.

B. Existing Conditions
1. Import and place any fill material required to adjust the fine grade to meet drainage requirements or to match hard surface fine grades, or as indicated on Grading Plans (e.g., 1 inch lower than adjacent concrete trails).
2. Vehicular accessibility on site shall not be allowed unless directed by Owner’s Representative. Repair damage to prepared grounds and surfaces caused by vehicular movement during work under this section to original condition at no additional cost to Owner.

1.7 WARRANTY & GUARANTEE

A. Warranty sod for a period of one year from date of Initial Acceptance be in a healthy, vigorous growing condition.

B. During the maintenance period, replace at once sod areas that die due to natural causes, are unhealthy, etc.

C. Replacement will not be required between October 15 and April 15.

D. Install replacement sod as originally specified and warranted.

1.8 MAINTENANCE

1. The interim maintenance period shall begin immediately after each area is sodded and continue until date of Initial Acceptance of entire project. During this time, the contractor shall, be responsible for watering, mowing, spraying, weeding, aerating, fertilizing, and all related work as necessary to ensure that sodded areas are in a vigorous growing condition. Furnish all supervision, labor, material, and equipment to maintain turf areas.
2. The maintenance period shall begin on the date of Initial Acceptance of entire project and continue until midnight on the date of Final Acceptance. During this time, the contractor shall, be responsible for watering, mowing, spraying, weeding, aerating, fertilizing, and all related work as necessary to ensure that sodded areas are in a vigorous growing condition. Furnish all supervision, labor, material, and equipment to maintain turf areas.
3. When installation Contractor performs the full maintenance period, Contractor shall be responsible for any warranty items.
4. When General Contractor or Owner accepts an installation contract that does not include the full maintenance period or hires a separate Contractor to perform maintenance during the maintenance period, the installation warranty shall be 30 days for the installation Contractor commencing from the date of Initial Acceptance.

1.9 WATERING

A. Initially water sod upon completion of work areas consistent with irrigation zones until installation is complete and the irrigation system can be operated under full control. Water sod sufficiently to moisten subsoil at least 4" deep in a manner not to cause erosion or damage to adjacent finished surfaces. Water shall be free of substances harmful to plant growth. Contractor is responsible for furnishing water from underground sprinkler system, quick couplers, or other source to ensure survival of sod.

B. Contractor shall know, understand, and abide by all local water restrictions, if in effect.

C. Contractor will be held responsible for any fines received for violating any watering restrictions in effect, at Contractor’s expense.

D. The Contractor shall attempt to provide the minimum water necessary to maintain irrigated landscape areas, especially in times of drought and during summer months.

E. Re-sodding
   1. Re-sod spots larger than nine inches square or per local jurisdiction, and not having healthy, uniform stand of grass.

F. Insect and Disease Control:
   1. As required, using insecticides and fungicides approved by Owner or Owner’s Representative.

PART 2 - PRODUCTS

A. Refer to the General Landscape Section.

PART 3 - EXECUTION

3.1 EXAMINATION

A. General
1. Verify that existing site conditions are as specified and indicated before beginning work under this section.

B. Layout
1. Verify layout of sodded areas as indicated prior to starting operations.

C. Grades
1. Contractor shall inspect finished grades prior to installing any sod.

D. Unsatisfactory Conditions
1. Report in writing to General Contractor with copy to Owner's Representative.
2. Beginning of installation means acceptance of existing conditions by this Contractor.

3.2 PREPARATION

A. Protection
1. Pay for repairs made by contractors designated by Owner.
2. Identify prepared sod areas requiring protection and erect barriers for proper protection and traffic control.

B. Sodding Areas
1. Remove weeds, debris, and rocks larger than ½" which may hinder sodding. Dispose of accumulated debris off-site in approved legal dump site, or in a location pre-approved by the General Contractor or Owner.

C. Repair
1. Re-establish grade and specified conditions to damaged sod areas prior to placing sod. Receive final approval from General Contractor after grading operations and prior to placing sod.

D. Adjustment
1. Adjust irrigation heads to proper watering height according to depth of sod material but lower than compacted blade height to enable lawn mowers to cut grass freely without damage to the sprinkler system.

E. Weeding
1. If the area to be developed is infested with noxious or invasive weeds, a chemical application will be required, at a rate recommended on the chemical's product label.

F. Fine Grading
1. Perform as required to maintain positive drainage, prevent ponding and direct run-off into catch basins, drainage structures, etc., and as required to provide smooth well-contoured surface prior to proceeding. Tolerance: ± 0.04 foot.
2. Unless noted on plans, tree lawns, or areas between curb and sidewalk, shall exhibit positive drainage towards the street. "Crowning," berming, or anything other than straight grading between these surfaces shall be rejected, unless otherwise waived by owner or owner's representative.

3. Fine grading must be approved by both Contractor and General Contractor prior to sodding. Contractor should provide at least two (2) calendar days' notice for inspection. Sod shall be installed within 48 hours of inspection. The Contractor will be responsible for repairing any grades damage by inclement weather, before or after finish grades are inspected.

3.3 SODDING

A. Sodding
   1. Soil on which sod is laid should be slightly moist.
   2. Lay with longest dimension parallel to contours and in continuous rows.
   3. Tightly butt ends and sides of sod together. Stagger and compact vertical joints between sod strips by rolling so sod will be incorporated with the ground surface, insuring tight joints between adjacent pieces.
   4. Where new sod meets existing, cut existing with sod cutter to insure a tight joint and smooth transition between new and existing turf cover.

B. Rolling
   1. When soil and sod are moist, roll sod lightly as soon as possible after it is laid. Delay rolling until just before the second watering.

C. Topsoil
   1. Add along exposed edges to match adjacent grade. Feather topsoil out approximately 1 ft. from edge of sod.

D. Drainage
   1. Assure finished areas of sod are such that positive drainage of storm and irrigation water will occur and ponding of water does not occur per Grading Plans.

3.4 REPAIR OF EXISTING SOD AREAS DISTURBED BY RENOVATION

A. Repair existing sod areas disturbed by renovation work (utilities, paving, etc.) in accordance with these specifications to satisfaction of Owner.

B. Add topsoil and re-sod as necessary to eliminate tire ruts and other depressions.

3.5 NOTIFICATION OF INSPECTION

A. Notification
   1. Give notice requesting inspection by Owner's Representative at least seven (7) calendar days prior to the anticipated date of completion. All sod must be healthy and significantly rooted in place to be considered complete.

B. Deficiencies
   1. If deficiencies exist, Owner's Representative shall specify such deficiencies to the Contractor who shall make satisfactory adjustments and will again notify the Owner's Representative for final inspection.

3.6 CLEANING

A. Remove pallets, unused sod, and other debris from site. Clean paved and finished surfaces soiled as a result of work under this Section in accordance with directions given by Owner's Representative. Clean out drainage inlet structures.

3.7 PROTECTION

A. Provide and install barriers as needed or required and/or as directed by Owner's Representative, to protect sodded areas against damage form pedestrian and vehicular traffic until Initial Acceptance by Owner. Contractor, at Contractor's expense, is responsible for malicious destruction of sodding caused by others until Final Acceptance unless fully document and received by Owner within seven (7) days of said damage.

END OF SECTION 329223

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GEOTECHNICAL ENGINEERING STUDY
PROPOSED KOSHIO PARK RENOVATION
131 MCKINLEY AVENUE
FORT LUPTON, COLORADO

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Project No. 26-3-110

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FIG. 1 – LOCATION OF EXPLORATORY BORINGS
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SUMMARY

1. Two (2) exploratory borings were drilled for this study. The borings generally encountered a thin layer of topsoil overlying approximately 2.5 to 4.5 feet of man-placed fill. The man-placed fill was in turn underlain by layers of naturally deposited (natural) granular soils that extended to the explored depths of about 20 to 40 feet below the ground surface.

   The man-placed fill consisted of clayey sand to silty, sandy clay. The natural granular soils consisted of well- to poorly graded sand with variable silt and gravel content.

   Groundwater was encountered in Boring 1 at the time of drilling at a depth of about 19 feet below the ground surface and was not encountered in the borings when subsequently checked 5 days after drilling. Caving was noted in the borings at depths of about 18.5 feet below the ground surface when subsequent groundwater level observations were performed 5 days after drilling.

2. Shallow spread footings are feasible for the structures constructed on the site. Spread footings should be designed for a maximum net allowable bearing pressure of 3,500 psf when placed on undisturbed natural soils or properly compacted structural fill extending to natural soils.

3. Slab-on-grade construction is also feasible at the site. Slab on grade floors should be underlain by a minimum of 2 feet of properly compacted fill material extending to undisturbed natural soils. Additional design considerations and recommendations are presented herein.

4. Drilled footings should also be feasible for structures. Geotechnical related design recommendations regarding the drilled footings are presented herein.

5. The following table presents the minimum pavement thickness recommendations for this development.

Paved Area	Full Depth Asphalt (inches)	Composite Section Asphalt/ABC (inches)	PCCP (inches)
Light Duty	5.0	3.0 / 6.0	5.0
Heavy Duty	5.5	4.0 / 6.0	6.0

ABC – Aggregate Base Course
PCCP – Portland Cement Concrete Pavement

All pavements should be placed on a minimum of 12 inches of moisture-density conditioned on-site overburden soils.

PURPOSE AND SCOPE OF WORK

This report presents the results of a geotechnical engineering study for the proposed Koshio Park Renovation project to be located at 131 McKinley Avenue in Fort Lupton, Colorado. The project site is shown on Fig. 1. The study was conducted for the purpose of providing geotechnical engineering recommendations and site grading considerations related to the project. This study was performed in general accordance with our Proposal No. P3-25-285B to the City of Fort Lupton dated September 23, 2025 and revised on February 20, 2026.

A field exploration program consisting of exploratory borings was conducted to obtain site specific information on subsurface conditions. Samples of soil obtained during the field exploration program were tested in the laboratory to determine their classification and engineering characteristics. The results of the field exploration and laboratory testing programs were analyzed to develop geotechnical engineering recommendations for use in design and construction of the proposed development.

This report has been prepared to summarize the data obtained during this study and to present our conclusions and recommendations based on the proposed construction and the subsurface conditions encountered. Design parameters and a discussion of geotechnical engineering considerations related to construction of the proposed project are included in the report.

PROPOSED CONSTRUCTION

Based on the information provided, we understand the renovations to the existing park will include improvements to the playground and a picnic shelter.

If the proposed construction varies significantly from that described above or depicted in this report, we should be notified to reevaluate the recommendations provided herein.

SITE CONDITIONS

At the time of drilling, the site contained the existing playground, a concrete trail, a restroom structure, a shade structure and a gazebo. The site also contained trees and sod surfacing and was relatively flat with an approximate 3-foot-tall embankment that was located south of the existing playground. The site was bounded to the west by a single-family residential

neighborhood, to the north by State Highway 52, to the east by South McKinley Avenue and to the south by Dexter Street.

SUBSURFACE CONDITIONS

The subsurface conditions at the site were explored by drilling two (2) exploratory borings to depths of about 20 to 40 feet below the ground surface at the approximate locations shown on Fig. 1. Graphic logs of the borings are presented on Fig. 2 and a legend and notes describing the soil encountered are presented on Fig. 3.

The borings generally encountered a thin layer of topsoil overlying approximately 2.5 to 4.5 feet of man-placed fill. The man-placed fill was in turn underlain by layers of naturally deposited (natural) granular soils that extended to the explored depths of about 20 to 40 feet below the ground surface.

The man-placed fill consisted of clayey sand to silty, sandy clay. The natural granular soils consisted of well- to poorly graded sand with variable silt and gravel content.

The man-placed fill contained a fine to coarse grained sand fraction and was moist and light brown to dark brown. The natural granular soils were fine to coarse grained, moist to wet below groundwater and light brown to brown. Based on sampler penetration resistance, the natural granular soils were medium dense to very dense.

Groundwater was encountered in Boring 1 at the time of drilling at a depth of about 19 feet below the ground surface and was not encountered in the borings when subsequently checked 5 days after drilling. Caving was noted in the borings when subsequent groundwater level observations were performed 5 days after drilling at depths of about 18.5 feet below the ground surface. Groundwater levels are expected to fluctuate with time and may fluctuate upward after wet weather or after landscape irrigation.

LABORATORY TESTING

Laboratory testing was performed on selected samples obtained from the borings to determine in-situ moisture content and dry density, Atterberg limits, gradation, swell-consolidation

characteristics, and water-soluble sulfates. The results of the laboratory tests are shown next to the boring logs on Fig. 2, graphically plotted on Figs. 4 and 5, and summarized in the attached Table I. The testing was conducted in general accordance with recognized test procedures, primarily those of ASTM International and the Colorado Department of Transportation (CDOT).

Index Properties: Samples were classified into categories of similar engineering properties in general accordance with the Unified Soil Classification System. This system is based on index properties, including liquid limit and plasticity index and gradation characteristics. Values for moisture content and dry density, liquid limit and plasticity index, and the percent of soil passing the U.S. No. 4 and No. 200 sieves are presented in Table I and adjacent to the corresponding sample on the boring logs.

Swell-Consolidation: Swell-consolidation testing was conducted on a selected sample of the man-placed fill to evaluate the compressibility and swell characteristics under loading and when submerged in water. The samples were prepared and placed in a confining ring between porous discs, subjected to a surcharge pressure of 200-psf and allowed to consolidate before being submerged. The sample height was monitored until deformation practically ceased under each load increment.

Results of the swell-consolidation tests are plotted as a curve of the final strain at each increment of pressure against the log of the pressure and are presented on Fig. 4. Based on the results of the laboratory swell-consolidation testing, a sample of the man-placed fill exhibited low swell potential (0.2%) upon wetting under a 200-psf surcharge pressure.

WATER-SOLUBLE SULFATES

The concentrations of water-soluble sulfates measured in a sample of the man-placed fill obtained from the exploratory borings was 0.00%. This concentration of water-soluble sulfates represents a Class S0 severity exposure to sulfate attack on concrete exposed to these materials. The degrees of attack are based on a range of Class S0, Class S1, Class S2, and Class S3 severity exposure as presented in ACI 201.2R-16.

Based on the laboratory test results, we believe special sulfate resistant cement will generally not be required for concrete exposed to the on-site soils.

GEOTECHNICAL ENGINEERING CONSIDERATIONS

Existing Fill: Without documentation of placement conditions including density testing documenting the degree of compaction, the existing fill materials are considered non-engineered and generally not suitable for support of foundations or floor slabs. Of particular concern with undocumented fill materials is the increased likelihood of consolidation movement upon application of structural loads or changes in moisture content. Although less likely on this site, the soils can have a heave potential if the moisture content is allowed to increase. Based upon the results of the laboratory testing, the existing fill materials are estimated to have erratic moisture contents well below to near the assumed optimum moisture content.

Criteria for spread footing foundations are presented below; however, it is very important to the long-term performance of the slabs that all of the existing fill materials be removed from below the proposed foundation elements and floor slabs and to a distance beyond the building area as outlined in Item 7 of the “Foundation Recommendations” section below. In our opinion, the removed fill, excluding deleterious materials, is suitable to be moisture conditioned and compacted as structural fill below foundation elements, floor slabs and exterior flatwork. We have no way to accurately predict the total magnitude of potential settlements if the existing fill is left in place; however, movements exceeding 1-inch are possible. As discussed above, to reduce settlement potential, all existing fills beneath planned spread footing foundations should be removed and replaced with structural fill, placed and compacted according to the material and placement criteria presented in the “Site Grading” section of this report.

FOUNDATION RECOMMENDATIONS

Spread Footings: Spread footing foundations should be feasible for structures at the site. The design and construction criteria presented below should be observed for a spread footing foundation system. The construction details should be considered when preparing project documents.

1. Footings placed on undisturbed natural soils or properly compacted structural fill extending to natural soils should be designed for a net allowable bearing pressure of 3,500 psf. Structural fill material type and placement recommendations are provided in the "Site Grading" section of this report.

2. Based on experience, we estimate total settlement for footings designed and constructed as discussed in this section will be less than 1 inch. Differential settlements across individual buildings are estimated to be approximately ½ to ¾ of the total settlement.

3. Spread footings placed on properly compacted structural fill should have a minimum footing width of 16 inches for continuous footings and of 24 inches for isolated pads.

4. Exterior footings and footings beneath unheated areas should be provided with adequate soil cover above their bearing elevation for frost protection. Placement of foundations at least 36 inches below the exterior grade is typically used in this area.

5. The lateral resistance of a spread footing placed on properly compacted structural fill material will be a combination of the sliding resistance of the footing on the foundation materials and passive earth pressure against the side of the footing. Resistance to sliding at the bottoms of the footings can be calculated based on a coefficient of friction of 0.35. Passive pressure against the sides of the footings can be calculated using an equivalent fluid unit weight of 205 pcf. The above values are working values.

   Structural fill placed against the sides of footings and grade beams to resist lateral loads should be compacted according to the criteria presented under "Site Grading" for foundation wall backfill.

6. Continuous foundation walls should be reinforced top and bottom to span an unsupported length of at least 10 feet.

7. Areas of existing fill, loose and/or soft material, or deleterious substances encountered within footing excavations should be removed and replaced with structural fill material

compacted to the criteria presented under “Site Grading”. New fill should extend down from the edges of the footings at a 1 horizontal to 1 vertical projection.

8. Care should be taken when excavating the foundations to avoid disturbing the supporting materials.

9. A representative of the geotechnical engineer should observe all footing excavations prior to concrete placement.

Drilled Footings: We recommend playground equipment be installed to the manufacturer’s recommendations. Drilled footings should be placed at a minimum of 36 inches below the exterior grade for frost protection. We recognize pole foundations are commonly used for these applications and are commonly constructed as 2- to 3-foot diameter drilled footings. Drilled footings are typically designed to resist downward and upward axial forces as well as significant lateral forces. An allowable end bearing pressure of 3,500 psf should apply to drilled footing design. Additionally, a skin friction value of 100 psf may be accounted for in design based on the interaction between the soil and sides of the drilled footing for use as axial support. The skin friction value is for direct contact between cast in place concrete and the adjoining supporting soils. Drilled footings should be placed directly on undisturbed natural soils or properly compacted structural fill extending to undisturbed natural soils.

FLOOR SLABS

We recommend that slabs on grade be placed on a minimum of 2 feet of properly compacted structural fill extending to undisturbed natural soils to mitigate the potential for settlement due to compression of existing fills remaining beneath the floor slabs. The owner should be made aware that there is an increased risk of floor slab movements if existing fills are left in place below floor slabs.

To reduce the effects of some differential movement, floor slabs should be separated from all bearing walls and columns with expansion joints which allow unrestrained vertical movement. Interior non-bearing partitions resting on floor slabs should be provided with slip joints so that, if

the slabs move, the movement cannot be transmitted to the upper structure. This detail is also important for wallboards, stairways and door frames. Slip joints which will allow at least 1½ inches of vertical movement are recommended.

Floor slab control joints should be used to reduce damage due to shrinkage cracking. Joint spacing is dependent on slab thickness, concrete aggregate size, and slump, and should be consistent with recognized guidelines such as those of the Portland Cement Association (PCA) and American Concrete Institute (ACI). The joint spacing and slab reinforcement should be established by the designer based on experience and the intended slab use. We suggest joints be provided on the order of about 12 to 15 feet apart in both directions. The requirements for slab reinforcement should be established by the designer based on experience and the intended slab use.

EXTERIOR FLATWORK

Prior to placing site flatwork, the exposed subgrade including areas receiving fill should be scarified to a depth of 12 inches, adjusted to a moisture content within 2 percentage points of the optimum moisture content and re-compacted to at least 95% of the standard Proctor (ASTM D698) maximum dry density. Flatwork considered sensitive to movement should not be placed on the existing fill and should be placed on undisturbed natural soils or structural fill extending to undisturbed natural soils.

SITE SEISMIC CRITERIA

The Colorado Front Range is in a low seismic activity area. The soil profile generally consists of layers of relatively dense granular soils. The overburden granular soils classify as IBC Site Class D. Based on our experience on sites with similar profiles, IBC Site Class D should be used for design. Based on the subsurface profile and site seismicity, liquefaction is not a design consideration.

SURFACE DRAINAGE

Proper surface drainage is very important for acceptable performance of the structure during construction and after construction has been completed. Drainage recommendations provided by local, state and national entities should be followed based on the intended use of the facility.

The following recommendations should be used as guidelines and changes should be made only after consultation with the geotechnical engineer.

1. Excessive wetting or drying of subgrade soil should be avoided during construction.

2. The ground surface surrounding the exterior of the shallow foundations should be sloped to drain away in all directions. We recommend a minimum slope of 6 inches in the first 10 feet in unpaved areas and a minimum slope of 3 inches in the first 10 feet in impervious flatwork and paved areas. Site drainage beyond the 10-foot zone should be designed to promote runoff and reduce infiltration. These slopes may be changed as required for handicap access points in accordance with the Americans with Disabilities Act.

3. To promote runoff, the upper 1 to 2 feet of the backfill adjacent to buildings should be a relatively impervious on-site soil or be covered by flatwork or a pavement structure.

4. Exterior backfill should be adjusted to near optimum moisture content (generally optimum to +3% of optimum unless indicated otherwise in this report) and compacted to at least 95% of the standard Proctor (ASTM D698) maximum dry density.

5. Ponding of water should not be allowed in backfill material or in a zone within 10 feet of the building foundations, whichever is greater.

SITE GRADING

Site Preparation: Based on our understanding of the proposed construction and observed site topography, site grading within the structure footprint is expected to consist of minimal cuts and fills. Material types encountered during site grading will generally consist of natural clayey soils. These materials can be excavated during site grading operations with moderate to heavy-duty earth moving equipment.

Existing fills, if encountered, are considered non-engineered and unsuitable in their current condition for support of floor slabs or settlement-sensitive exterior flatwork unless properly

prepared. Proper preparation should include complete removal of existing fill from beneath floor slabs and settlement sensitive flatwork.

The on-site overburden soil, including the existing fills, should be suitable for use as general site fill and as structural fill, provided they do not contain organic or other deleterious materials.

Temporary Excavations and Dewatering: Temporary excavations should be constructed in accordance with OSHA requirements, as well as state, local and other applicable requirements. Site excavations will encounter natural granular soils classified as OSHA Type C soils. Excavations encountering loose granular soils, or groundwater, will require much shallower side slopes than those allowed by OSHA and/or temporary shoring.

In our opinion, conventional hydraulic excavation equipment can be used for excavation of the existing fill materials and underlying natural soils. Excavated slopes may soften due to construction traffic and erode from surface runoff. Measures to keep surface runoff from excavation slopes, including diversion berms, should be considered.

Cut and Fill Slopes: Permanent unretained cuts in the overburden soils and fill slopes up to 10 feet high should be constructed at a 2H:1V (horizontal to vertical) or flatter inclination for stability purposes and at a 3H:1V or flatter inclination for limiting the potential for erosion. If groundwater seepage is encountered during or prior to cut slope excavation, a stability evaluation should be conducted to determine if the seepage would adversely affect the cut.

Material Specifications: Unless specifically modified in the preceding sections of this report, the following recommended material and compaction requirements are presented for compacted fills on the project site. A geotechnical engineer should evaluate the suitability of all proposed fill materials for the project prior to placement.

1. *Structural Fill beneath Spread Footing Foundations, Floor Slabs, Pavement and Settlement-Sensitive Flatwork*: Structural fill should consist of moisture conditioned on-site soils or, if necessary, imported non-expansive soils with a maximum of 50% passing the No. 200 sieve, a maximum Liquid Limit of 35, and a maximum Plasticity Index of 12.

Fill source materials, including on-site soils, not meeting one or more of these criteria may be acceptable if they meet the swell criteria presented in Item 3 below.

2. *Material Suitability*: Unless otherwise defined herein, all fill material should be non-expansive soil free of vegetation, brush, sod, trash and debris, and other deleterious substances, and should not contain rocks or lumps having a diameter of more than 4 inches. A fill material should be considered non-expansive if the swell potential of the material, when remolded to 95% of the standard Proctor (ASTM D698) maximum dry density at optimum moisture content, does not exceed 1.0% when wet under a 200 psf surcharge pressure. If grading is performed during times of freezing weather, the fill should not contain frozen materials, and, if the subgrade is allowed to freeze, all frozen material should be removed prior to additional fill placement for footings or slabs.

   Based on the data from the borings and results of the laboratory testing, the on-site soils should be suitable for reuse as compacted site grading fill and as structural fill.

   Evaluation of potential structural fill sources, particularly those not meeting the above liquid limit and plasticity index criteria for imported fill materials, should include determination of laboratory moisture-density relationships and swell-consolidation tests on remolded samples prior to acceptance.

Compaction Requirements: We recommend the following compaction criteria be used on the project:

1. *Moisture Content*: Fill materials should be compacted at moisture contents within 2 percentage points of the optimum moisture content for predominantly granular materials and between 0 and +3 percentage points of optimum for predominantly cohesive materials, if used. The contractor should be aware that clay materials, including on-site and imported materials, may become somewhat unstable and deform under wheel loads if placed near the upper end of the moisture range.

2. *Placement and Degree of Compaction*: Unless otherwise defined herein, compacted fill should be placed in maximum 8-inch-thick loose lifts. The following compaction criteria should be followed during construction:

Fill Location	Percentage of Maximum Standard Proctor Density (ASTM D-698)
Beneath Spread Footing Foundations	98%
Adjacent to Spread Footing Foundations	95%
Beneath Floor Slabs, Pavement and Exterior Flatwork[1]	95%
Utility Trenches	95%
Landscape and Other Areas	90%

[1] Aggregate base course should be compacted to a minimum of 95 percent of the modified Proctor (ASTM D 1557) maximum dry density at moisture contents within 2 percentage points of optimum.

3. *Subgrade Preparation*: Areas receiving new fill should be prepared as recommended in specific sections of this report to provide a uniform base for fill placement. All other areas to receive new fill not specifically addressed herein should be scarified to a depth of at least 8 inches and recompacted to at least 95% of the standard Proctor (ASTM D698) maximum dry density at the moisture contents recommended above.

Subgrade preparation should include proof rolling with a heavily loaded pneumatic-tired vehicle or a heavy, smooth-drum roller compactor. Areas that deform excessively during proof rolling should be removed and replaced to achieve a reasonably stable subgrade prior to placement of compacted fill or slabs, flatwork or pavements.

PAVEMENT DESIGN

A pavement section is a layered system designed to distribute concentrated traffic loads to the subgrade. Performance of the pavement structure is directly related to the physical properties of the subgrade soils and traffic loadings. Pavement design procedures are based on strength properties of the subgrade and pavement materials assuming stable, uniform conditions. Soils are represented for pavement design purposes by means of a soil support value for flexible pavements and a modulus of subgrade reaction for rigid pavements. Both values are empirically related to strength.

Subgrade Materials: Based on the results of the field and laboratory studies, the near surface subgrade materials at the site classify between A-1-a and A-4 soils with group indices between 0 and 1 in accordance with the American Association of State Highway and Transportation Officials (AASHTO) classification system. Soils classifying as A-1-a and are generally considered to provide good subgrade support and soils classifying as A-4 are generally considered to provide fair subgrade support. For design purposes, a soil support value of 5,050 psi was selected for flexible pavements.

Design Traffic: Since anticipated traffic loading information was not available at the time of report preparation, an equivalent 18-kip daily load application (EDLA) of 5 was assumed for automobile and light truck traffic areas and an EDLA of 10 was assumed for areas that will be accessed by multi-unit trucks as well as fire lanes elsewhere on the site.

Pavement Design: The following table presents the minimum pavement thickness recommendations for this development.

Paved Area	Full Depth Asphalt (inches)	Composite Section Asphalt/ABC (inches)	PCCP (inches)
Light Duty	5.0	3.0 / 6.0	5.0
Heavy Duty	5.5	4.0 / 6.0	6.0

ABC – Aggregate Base Course
PCCP – Portland Cement Concrete Pavement

Truck loading dock areas and other areas where truck turning movements are concentrated should be paved with 6 inches of Portland cement concrete. The concrete pavement should contain sawed or formed joints to ¼ of the depth of the slab at a maximum distance of 12 feet on center. Concrete pavement will be somewhat more sensitive to heave-related movements than asphalt pavement.

Pavement Materials: The following are recommended material and placement requirements for pavement construction for this project site. We recommend that properties and mix designs for all

materials proposed to be used for pavements be submitted for review to the geotechnical engineer prior to placement.

1. *Aggregate Base Course*: Aggregate base course (ABC) used beneath hot mixed asphalt (HMA) pavements should meet the material specifications for Class 6 ABC stated in the current Colorado Department of Transportation (CDOT) *"Standard Specifications for Road and Bridge Construction"*. The ABC should be placed and compacted as outlined in the "Site Grading" section of this report.

2. *Hot Mix Asphalt:* Hot mix asphalt (HMA) materials and mix designs should meet the applicable requirements indicated in the current CDOT *"Standard Specifications for Road and Bridge Construction"*. We recommend that the HMA used for this project is designed in accordance with the Super Pave Gyratory Mix Design method. The mix should generally meet Grading S or SX specifications with a Super Pave gyratory design revolution (*NDESIGN*) of 75. The mix design for the HMA should use a performance grade PG 58-28 asphalt binder. Placement and compaction of HMA should follow current CDOT standards and specifications.

3. *Portland Cement Concrete*: Portland cement concrete pavement (PCCP) should meet Class P specifications and requirements in the current CDOT *"Standard Specifications for Road and Bridge Construction"*. Rigid PCCP is more sensitive to distress due to movement resulting from settlement or heave of the underlying base layer and/or subgrade than flexible asphalt pavements. The PCCP should contain sawed or formed joints to ¼ of the depth of the slab at a maximum distance of 12 to 15 feet on center.

The above PCCP thicknesses are presented as un-reinforced slabs. Based on projects with similar heavy vehicular loading in certain areas, we recommend that dowels be provided at transverse and longitudinal joints within the slabs located in the travel lanes of heavily loaded vehicles, loading docks and areas where truck turning movements are likely to be concentrated. Additionally, curbs and/or pans should be tied to the slabs. The dowels and tie bars will help minimize the risk for differential movements between slabs to assist in more uniformly transferring axle loads to the subgrade. The current CDOT *"Standard Specifications for*

Road and Bridge Construction" provides some guidance on dowel and tie bar placement, as well as in the Standard Plans: M&S Standards. The proper sealing and maintenance of joints to minimize the infiltration of surface water is critical to the performance of PCCP, especially if dowels and tie bars are not installed.

Subgrade Preparation: Prior to placing the pavement section, the entire subgrade area should be thoroughly plowed and well mixed to a minimum depth of 12 inches, adjusted to a moisture content within 0 to +3 percentage points of optimum and compacted to 95% of the standard Proctor maximum dry density. The pavement subgrade should be proof rolled with a heavily loaded pneumatic-tired vehicle. Pavement design procedures assume a stable subgrade. Areas which deform excessively under heavy wheel loads are not stable and should be removed and replaced to achieve a stable subgrade prior to paving. Areas of existing fill may also require deeper removal and replacement if they are either unstable or not well compacted.

Drainage: The collection and diversion of surface drainage away from paved areas is extremely important to the satisfactory performance of pavement. Drainage design should provide for the removal of water from paved areas and prevent the wetting of the subgrade soils.

DESIGN AND CONSTRUCTION SUPPORT SERVICES

Kumar & Associates, Inc. should be retained to review the project plans and specifications for conformance with the recommendations provided in our report. We are also available to assist the design team in preparing specifications for geotechnical aspects of the project, and performing additional studies, if necessary, to accommodate possible changes in the proposed construction.

We recommend that Kumar & Associates, Inc. be retained to provide observation and testing services to document that the intent of this report and the requirements of the plans and specifications are being followed during construction, and to identify possible variations in subsurface conditions from those encountered in this study so that we can re-evaluate our recommendations, if needed.

LIMITATIONS

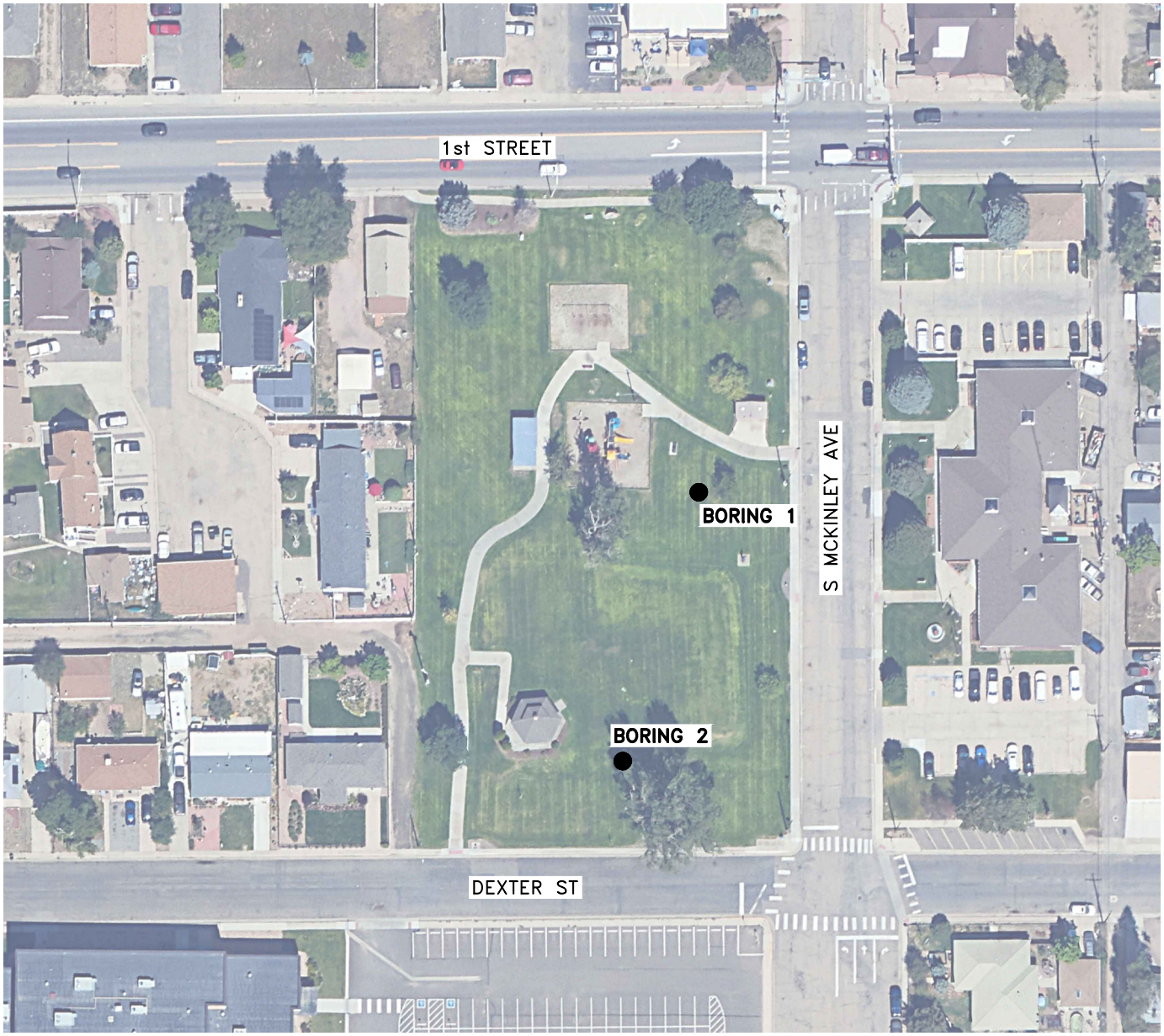
This study has been conducted for exclusive use by the client for geotechnical related design and

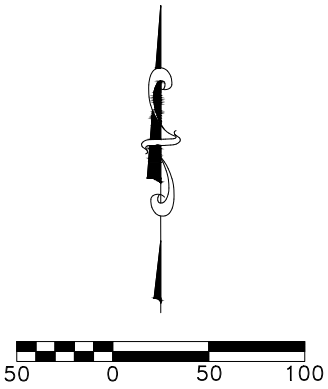
construction criteria for the project. The conclusions and recommendations submitted in this report are based upon the data obtained from the exploratory borings at the locations indicated on Fig. 1 or as described in the report, and the proposed type of construction. This report may not reflect subsurface variations that occur between the exploratory borings, and the nature and extent of variations across the site may not become evident until site grading and excavations are performed. If during construction, fill, soil, rock or water conditions appear to be different from those described herein, Kumar & Associates, Inc. should be advised at once so that a re-evaluation of the recommendations presented in this report can be made. Kumar & Associates, Inc. is not responsible for liability associated with interpretation of subsurface data by others.

Swelling soils occur on this site. Such soils are stable at their natural moisture content but can undergo high volume changes with changes in moisture content. The extent and amount of perched water beneath the building site because of area irrigation and inadequate surface drainage is difficult, if not impossible, to foresee.

The recommendations presented in this report are based on current theories and experience of our engineers on the behavior of swelling soil in this area. The owner should be aware that there is risk of movement and possible damage to shallow foundations and exterior slabs and pavements on sites where expansive soils occur. Following the recommendations given by a geotechnical engineer, careful construction practice and prudent maintenance by the owner can, however, decrease this risk.

JAH/ER
Rev. by: JLB
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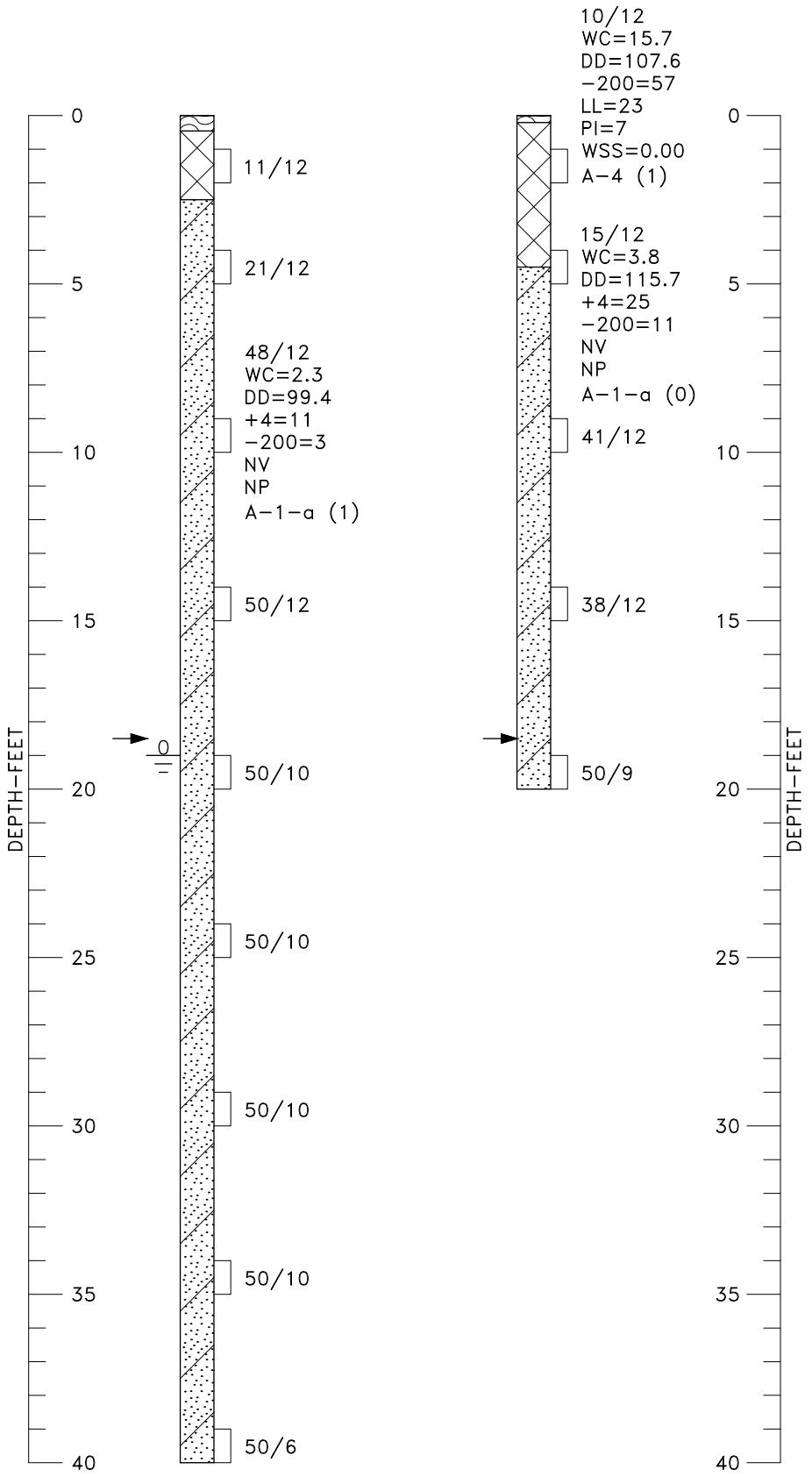




VICINITY MAP
NOT TO SCALE

26–3–110	Kumar & Associates	LOCATION OF EXPLORATORY BORINGS	Fig. 1

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26−3−110	Kumar & Associates	LOGS OF EXPLORATORY BORINGS	Fig. 2

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LEGEND


TOPSOIL.


FILL: CLAYEY SAND (SC) TO SILTY, SANDY CLAY (CL–ML), FINE TO COARSE GRAINED SAND FRACTION, MOIST, LIGHT BROWN TO DARK BROWN.


WELL TO POORLY GRADED SAND WITH VARIABLE SILT AND GRAVEL CONTENT (SW, SP, SW–SM, AND SP–SM), FINE TO COARSE GRAINED, MEDIUM DENSE TO VERY DENSE, MOIST TO WET BELOW GROUNDWATER, LIGHT BROWN TO BROWN.


DRIVE SAMPLE, 2–INCH I.D. CALIFORNIA LINER SAMPLE.

11/12 DRIVE SAMPLE BLOW COUNT. INDICATES THAT 11 BLOWS OF A 140–POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE THE SAMPLER 12 INCHES.


DEPTH TO WATER LEVEL ENCOUNTERED AT THE TIME OF DRILLING.

DEPTH AT WHICH BORING CAVED.

NOTES

1. THE EXPLORATORY BORINGS WERE DRILLED ON FEBRUARY 12, 2026 WITH A 4–INCH–DIAMETER CONTINUOUS–FLIGHT POWER AUGER.

2. THE LOCATIONS OF THE EXPLORATORY BORINGS WERE MEASURED APPROXIMATELY BY HANDHELD GPS DEVICE.

3. THE ELEVATIONS OF THE EXPLORATORY BORINGS WERE NOT MEASURED AND THE LOGS OF THE EXPLORATORY BORINGS ARE PLOTTED TO DEPTH.

4. THE EXPLORATORY BORING LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

5. THE LINES BETWEEN MATERIALS SHOWN ON THE EXPLORATORY BORING LOGS REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN MATERIAL TYPES AND THE TRANSITIONS MAY BE GRADUAL.

6. GROUNDWATER LEVELS SHOWN ON THE LOGS WERE MEASURED AT THE TIME AND UNDER CONDITIONS INDICATED. FLUCTUATIONS IN THE WATER LEVEL MAY OCCUR WITH TIME.

7. LABORATORY TEST RESULTS:
   WC = WATER CONTENT (%) (ASTM D2216);
   DD = DRY DENSITY (pcf) (ASTM D2216);
   +4 = PERCENTAGE RETAINED ON NO. 4 SIEVE (ASTM D6913);
   –200= PERCENTAGE PASSING NO. 200 SIEVE (ASTM D1140);
   LL = LIQUID LIMIT (ASTM D4318);
   PI = PLASTICITY INDEX (ASTM D4318);
   NV = NO LIQUID LIMIT VALUE (ASTM D4318);
   NP = NON–PLASTIC (ASTM D4318);
   WSS = WATER SOLUBLE SULFATES (%) (CP–L 2103);
   A–1–a (1) = AASHTO CLASSIFICATION (GROUP INDEX) (AASHTO M 145).

26–3–110	Kumar & Associates	LEGEND AND NOTES	Fig. 3

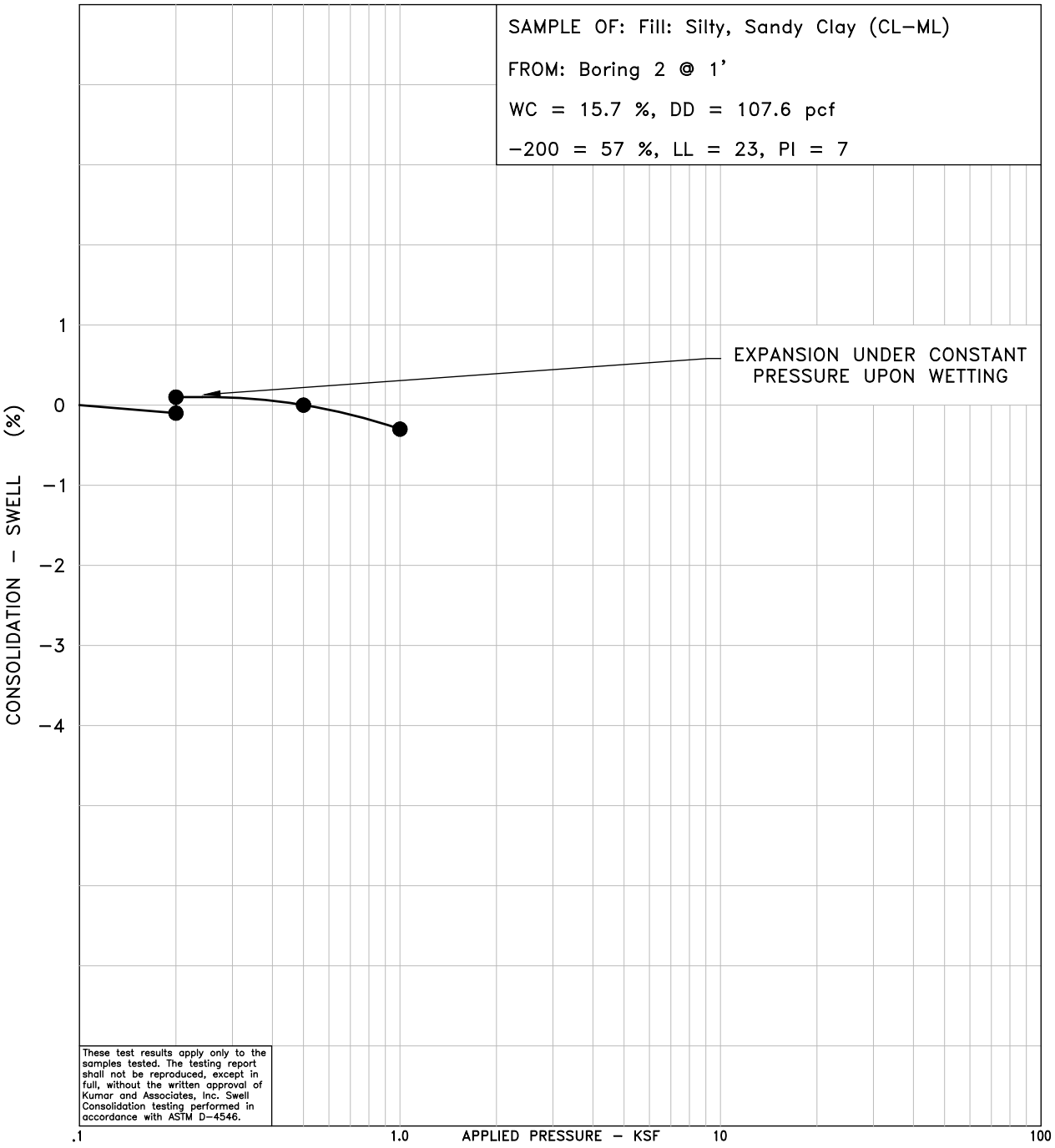
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SAMPLE OF: Fill: Silty, Sandy Clay (CL–ML)

FROM: Boring 2 @ 1'

WC = 15.7 %, DD = 107.6 pcf

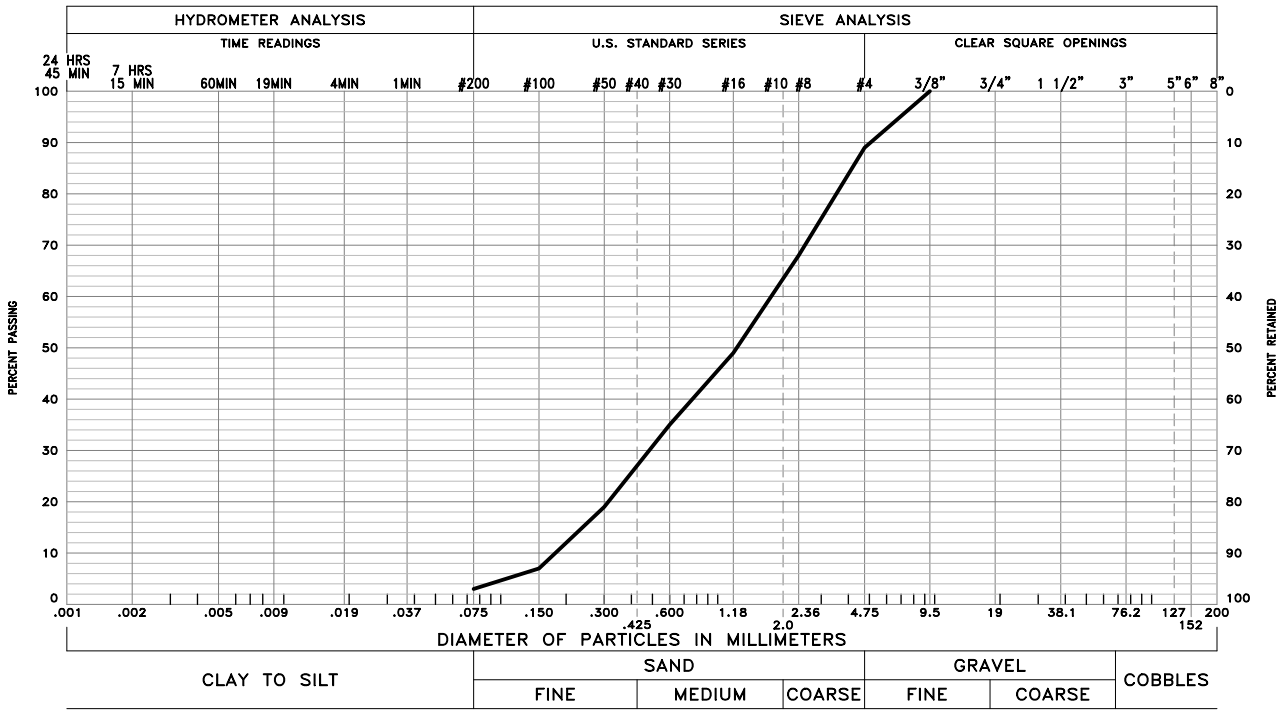
–200 = 57 %, LL = 23, PI = 7



These test results apply only to the samples tested. The testing report shall not be reproduced, except in full, without the written approval of Kumar and Associates, Inc. Swell Consolidation testing performed in accordance with ASTM D–4546.

26–3–110	Kumar & Associates	SWELL–CONSOLIDATION TEST RESULTS	Fig. 4

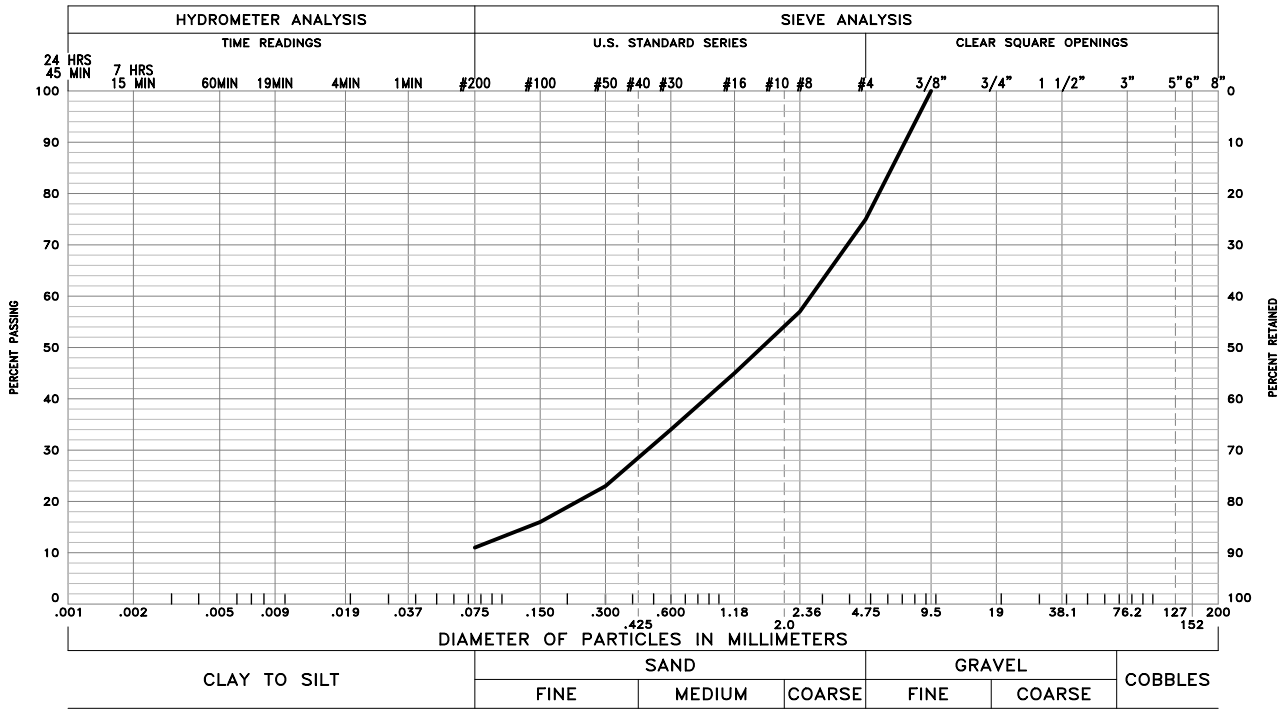
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GRAVEL 11 % SAND 86 % SILT AND CLAY 3 %

LIQUID LIMIT NV PLASTICITY INDEX NP

SAMPLE OF: Poorly Graded Sand (SP) FROM: Boring 1 @ 9'



GRAVEL 25 % SAND 64 % SILT AND CLAY 11 %

LIQUID LIMIT NV PLASTICITY INDEX NP

SAMPLE OF: Well Graded Sand with Silt and Gravel (SW-SM) FROM: Boring 2 @ 4'

These test results apply only to the samples which were tested. The testing report shall not be reproduced, except in full, without the written approval of Kumar & Associates, Inc. Sieve analysis testing is performed in accordance with ASTM D6913, ASTM D7928, ASTM C136 and/or ASTM D1140.

26-3-110	Kumar & Associates	GRADATION TEST RESULTS	Fig. 5

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Table I
Summary of Laboratory Test Results

Project No.: 26-3-110
Project Name: Koshio Park Improvements
Date Sampled: February 12, 2026
Date Received: February 19, 2026

Sample Location		Date Tested	Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation		Percent Passing No. 200 Sieve	Atterberg Limits		Water Soluble Sulfates (%)	AASHTO Classification (Group Index)	Soil or Bedrock Type
Boring	Depth (Feet)				Gravel (%)	Sand (%)		Liquid Limit (%)	Plasticity Index(%)			
1	9	2/26/26	2.3	99.4	11	86	3	NV	NP		A-1-a (1)	Poorly Graded Sand (SP)
2	1	2/26/26	15.7	107.6			57	23	7	0.00	A-4 (1)	Fill: Silty, Sandy Clay (CL-ML)
2	4	2/26/26	3.8	115.7	25	64	11	NV	NP		A-1-a (0)	Well Graded Sand with Silt and Gravel (SW-SM)

Final Drainage Memo

For

Koshio Park

Located at:

131 McKinley Avenue

Fort Lupton, CO 80621

Prepared by:

Conterra Engineering, LLC

242 Linden Street #5943

Fort Collins, CO 80524

March 10, 2026

Mr. Doug Cook
Parks and Recreation Director
Fort Lupton
203 S. Harrison Avenue,
Fort Lupton, Colorado 80621

Reference: Final Drainage Memo for the Koshio Park Redevelopment Project
Conterra Project Number: 25017

Dear Doug:

We are pleased to present this final drainage memo to you for review for the Koshio Park Redevelopment Project. This drainage memo depicts the existing and proposed conditions associated with the redevelopment and any changes in drainage characteristics for the site.

Please reach out if you have any questions or need any further information.

Sincerely,

Conterra Engineering

By: _____
Erik T. Nakos, P.E.
Managing Partner



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General Location and Description of Existing Park

Koshio Park is an existing park located in Fort Lupton at the southwest corner Highway 52 and South McKinley Avenue. It is approximately two acres and is comprised of concrete pathways, a couple of playgrounds, shade structures a gazebo and a restroom facility. The majority of the park is landscaped in turf grass and very gently slopes from northeast to southwest. The high point of the site is actually the southeast corner, but the site ultimately flows toward the southwest corner.

The site is surrounded by Highway 52 along the north, South McKinley Avenue to the east, Dexter Street to the south, and residential homes to the west. There is no access to the site via curb cuts, the only existing parking is on street parking along McKinley and Dexter.

There are no storm water facilities on the existing site, and the only stormwater infrastructure in the area appears to be in Highway 52, which is a CDOT highway within CDOT's jurisdiction. No work within CDOT's right of way is planned for this project.

Per FEMA Flood Insurance Rate Map 08123C2104F, this park is located in Flood Zone X, Areas of Minimal Flooding.

Per the National Resource Conservation Service (NRCS), the site soils are generally classified as Altvan Loam, and are considered a Hydrologic Soil Group B.

Description of Proposed Park Improvements

The majority of the park will be redeveloped. The only remaining portions of the park will be the existing gazebo and restroom facility. The majority of the improvements to the park will be focused along the south side, the remainder of the park is to have as little disturbance as possible.

These improvements will include new sidewalks, playgrounds, accessible routes to the gazebo, a new parking lot off of Dexter Street, planting areas, gathering areas and amenities. The new surface materials will be a mixture of concrete for sidewalks and patios, poured in place playground surfacing, landscaping with mulch and replacement of turf grass everywhere else.

The grading of the new park features will be such that the historic drainage pattern to the southwest will remain. There are no proposed improvements for stormwater.

Stormwater Drainage: Existing and Proposed Conditions

As mentioned above, the existing park does not have any stormwater drainage facilities on site. The existing site sheet drains across the park and ultimately into Dexter Street.

The existing park has a weighted imperviousness of 10.0%, with a peak 100-yr discharge of 6.20cfs. This includes all the sidewalks, gazebos, playgrounds, etc. See attached runoff calculations spreadsheet.

The proposed improvements to the park will maintain the existing drainage pattern, no new stormwater infrastructure is planned.

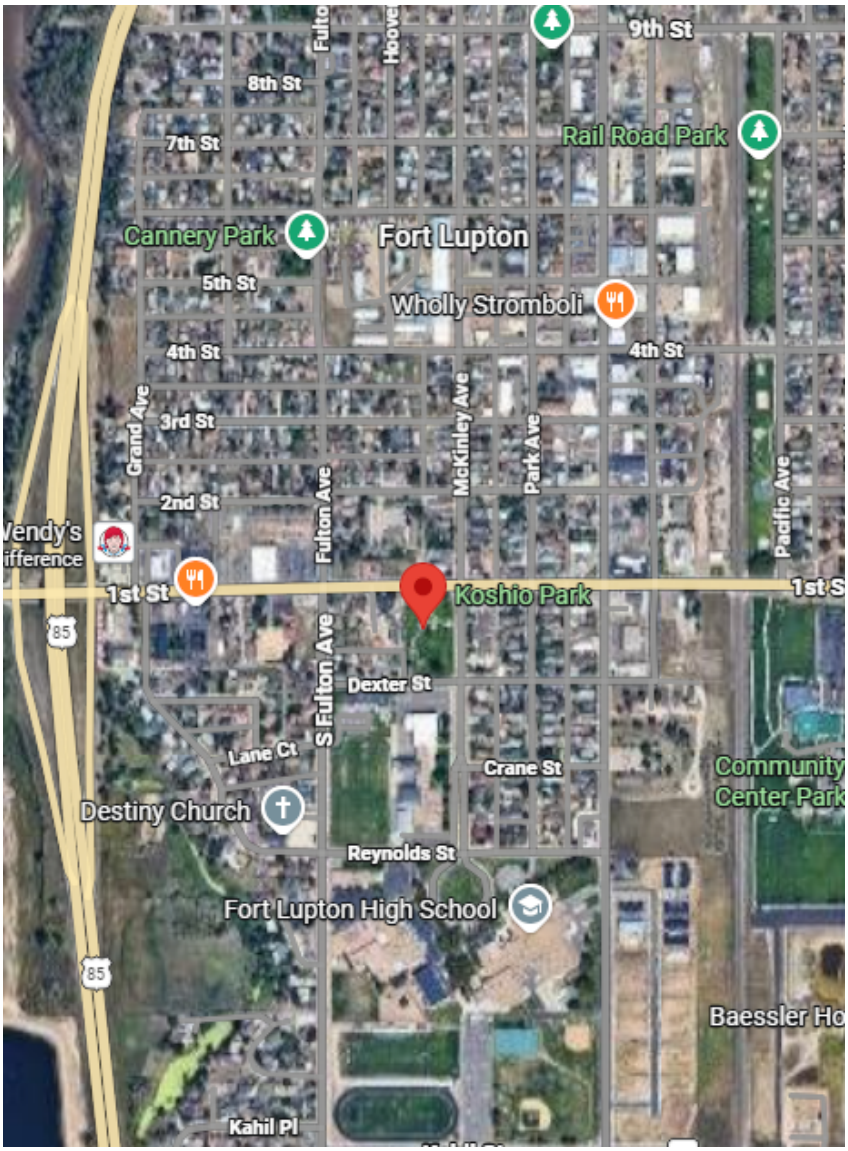
The proposed park will have a weighted imperviousness of 21.6%, with a peak 100-yr discharge of 6.90cfs. The increase in runoff is due to the increased imperviousness from the parking area and additional sidewalks, playgrounds and patios.

Therefore, the new park will only increase the flows running off the site by 0.70cfs in the 100-yr storm event. The discharge point will still be out to Dexter Street. No increase in flows will be to the CDOT right of way.

Conclusions

The redevelopment of Koshio Park will ultimately increase the peak flows discharging from the site, from 6.20cfs to 6.90cfs, overall a negligible amount in the 100-yr storm. Since there are no stormwater facilities in the area to help facilitate attenuation of this increase in peak discharge, the additional stormwater will runoff undetained into Dexter Street.

Appendix A:
Vicinity Map


9th St
8th St
7th St
Rail Road Park
Cannery Park
Fort Lupton
5th St
Wholly Stromboli
4th St
4th St
Grand Ave
3rd St
McKinley Ave
Park Ave
Pacific Ave
2nd St
Fulton Ave
1st St
Koshio Park
1st S
85
S Fulton Ave
Dexter St
Lane Ct
Crane St
Community Center Park
Destiny Church
Reynolds St
Fort Lupton High School
85
Baessler Ho
Kahil Pl

VICINTY MAP

Appendix B:
Runoff Calculations

Template

Historic and Proposed Runoff Coefficient & Time of Concentration Calculations

Location: Brighton
Minor Design Storm: 10
Major Design Storm: 100
Soil Type: B

Basin Design Data

	I (%) =	100%	90%	90%	40%	25%	25%	2%	2%		I (%)	Runoff Coeff's				Initial Overland Time (t_i)			Travel Time (t_t) t_t=Length/(Velocity x 60)						t_c Comp	tc Urbanized Check ON		t_c Final
Basin Name	Design Point	A_{paved} streets (sf)	$A_{drives/conc}$ (sf)	A_{roof} (sf)	A_{gravel} (sf)	A_{plygnd} (sf)	$A_{art.\ turf}$ (sf)	$A_{lscape\ (B\ soil)}$ (sf)	$A_{lscape\ (C/D\ soil)}$ (sf)	A_{Total} (sf)	A_{Total} (ac)	Imp (%)	C2	C5	C10	C100	Upper most Length (ft)	Slope (%)	t_i (min)	Length (ft)	Slope (%)	Type of Land Surface	K	Velocity (fps)	t_t (min)	Time of Conc $t_i + t_t = t_c$	Total Length (ft)	t_c=(L/180)+ 10 (min.)	Min t_c
HISTORIC	1	0	5,980	895	0	4,300			77,272	88,447	2.03	10.0%	0.06	0.07	0.14	0.47	350	1.0%	35.3	20	2.0%	Paved areas & shallow paved swales	20	2.8	0.1	35.5	370	12.1	12.1
PROPOSED	2	2,852	13,239	1,530		6,400			64,263	88,284	2.03	21.6%	0.14	0.16	0.23	0.53	350	1.0%	32.2	20	2.0%	Paved areas & shallow paved swales	20	2.8	0.1	32.3	370	12.1	12.1

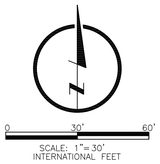
I = (28.5 P1) / ((10 + TC) 0.786)

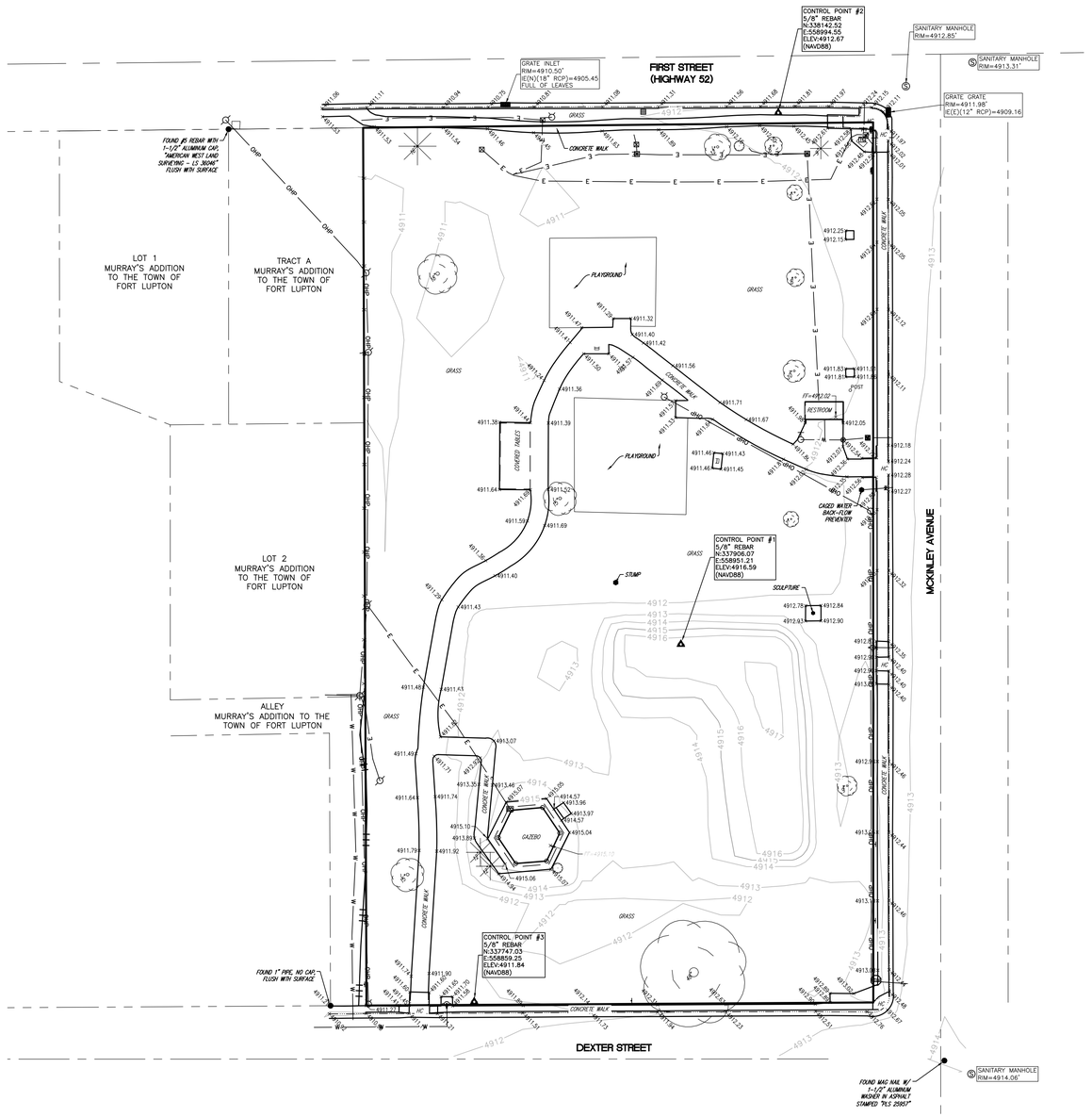
			Runoff Coeff's				Rainfall Intensities (in/hr)				Area		Flow Rates (cfs)			
Basin Name	Design Point	Time of Conc (tc)	C2	C5	C10	C100	2	5	10	100	A_{Total} (sf)	A_{Total} (ac)	Q2	Q5	Q10	Q100
HISTORIC	1	12.1	0.06	0.07	0.14	0.47	2.08	2.78	3.45	6.45	88,447	2.03	0.24	0.39	0.96	6.20
PROPOSED	2	12.1	0.14	0.16	0.23	0.53	2.08	2.78	3.45	6.45	88,284	2.03	0.59	0.91	1.62	6.90

Appendix C:

Existing Conditions and Proposed Conditions

EXISTING CONDITIONS SURVEY





PROJECT CONTROL
*ALL MEASUREMENTS ARE IN INTERNATIONAL FEET

CONTROL POINT #1: 5/8" X 24" REBAR WITH A 1 1/4" ORANGE PLASTIC CAP, STAMPED: "CONTROL POINT"
N: 337906.072 LAT: 40°04'46.198380"N
E: 558951.208 LONG: -104°48'47.948150"W
EL: 4916.586

CONTROL POINT #2: 5/8" X 24" REBAR WITH A 1 1/4" ORANGE PLASTIC CAP, STAMPED: "CONTROL POINT"
N: 338142.516 LAT: 40°04'48.535096"N
E: 558994.545 LONG: -104°48'47.395775"W
EL: 4912.665

CONTROL POINT #3: 5/8" X 24" REBAR WITH A 1 1/4" ORANGE PLASTIC CAP, STAMPED: "CONTROL POINT"
N: 337747.031 LAT: 40°04'44.625587"N
E: 558859.253 LONG: -104°48'49.127446"W
EL: 4911.841

HORIZONTAL DATUM
NORTH AMERICAN DATUM OF 1983 (2011);

THIS PROJECT IS IN A CUSTOM LOW-DISTORTION PROJECTION, THE PARAMETERS OF THE PROJECTION ARE SHOWN BELOW:

PROJECTION TYPE:	TRANSVERSE MERCATOR
LATITUDE AT ORIGIN:	40°15'00"N
CENTRAL MERIDIAN:	104°40'00"W
FALSE NORTHING:	400000.000 IFT
FALSE EASTING:	600000.000 IFT
GRID SCALE FACTOR:	1.00024000266

VERTICAL DATUM
NORTH AMERICAN VERTICAL DATUM OF 1988.
ELEVATIONS ARE ESTABLISHED THROUGH GNSS MEASUREMENTS USING GEOID MODEL 18.

NOTES
1. 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 CERTIFICATION SHOWN HEREON.
2. THIS DRAWING INCLUDES OBSERVED SURFACE EVIDENCE OF SERVICES AND UTILITIES EVIDENT AT THE TIME OF SURVEY. PRIMO UTILITY SERVICES, A PRIVATE UTILITY LOCATING COMPANY, WAS CONTRACTED TO PROVIDE THE LOCATION OF UNDERGROUND UTILITIES ON 12/05/2025. NO RESPONSIBILITY OR LIABILITY IS ASSUMED BY THE SURVEYOR FOR THE FAILURE TO SHOW ANY BURIED SERVICE AND/OR UTILITY LINES EVEN THOUGH THEY MAY EXIST. CONTACT "ONE CALL" (811) PRIOR TO ANY EXCAVATION ON THIS SITE.
3. FIELD WORK WAS DONE FROM 12/05/25-12/09/25, 1/6/2026.
4. ALL LINEAL DISTANCES SHOWN HERE ON ARE BASED ON THE INTERNATIONAL FOOT DEFINED AS 1 INTERNATIONAL FOOT = 0.3048 METERS.
5. APPROXIMATE RIGHT OF WAY LOCATIONS HAVE BEEN SHOWN. A FULL BOUNDARY SURVEY WOULD BE REQUIRED TO DETERMINE THE ACTUAL BOUNDARY.

SURVEYORS CERTIFICATE
I, LAINE A. LANDAU, A DULY LICENSED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS TOPOGRAPHIC SURVEY WAS MADE BY ME OR UNDER MY DIRECT SUPERVISION AND ACCURATELY REPRESENTS THE AREA TO BE CERTIFIED; IS BASED UPON MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF; IS IN ACCORDANCE WITH APPLICABLE STANDARDS OF PRACTICE; AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

COLORADO LICENSED LAINE A. LANDAU 31159 PROFESSIONAL LAND SURVEYOR
31159
1/7/2026

LAINE A. LANDAU – COLORADO PLS 31159
ON BEHALF OF LAMP RYNEARSON, INC.
EMAIL ADDRESS: LAINE.LANDAU@LAMPRYNEARSON.COM

LEGEND

- APPROXIMATE RIGHT OF WAY LINE, SEE NOTE 5
- ADJACENT LOT
- CENTERLINE
- ELECTRIC CABINET
- ELECTRIC PEDESTAL
- ELECTRIC PULLBOX
- FIRE HYDRANT
- GRATE INLET
- IRRIGATION CONTROL VALVE
- LIGHT POLE
- MISC POINT
- POST
- BENCH
- BUSH
- COLUMN ROUND
- CONIFEROUS TREE
- CONTROL POINT
- DECIDUOUS TREE
- ELECTRIC CABINET
- ELECTRIC PEDESTAL
- ELECTRIC PULLBOX
- FIRE HYDRANT
- GRATE INLET
- IRRIGATION CONTROL VALVE
- LIGHT POLE
- MISC POINT
- POST
- POWER POLE
- SANITARY MANHOLE
- SIGN
- STOP SIGN
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL PULL BOX
- TRAFFIC SIGNAL CABINET
- WATER CURB STOP
- WATER METER
- WATER VALVE
- YARD HYDRANT

LAMP RYNEARSON
LAMPRYNEARSON.COM
OMAHA, NEBRASKA
14710 W. DODGE RD, STE. 100 (402) 496.2498
NE AUTHORIZATION NO.: CA0130
FORT COLLINS, COLORADO
4715 INNOVATION DR., STE. 100 (970) 226.0342
KANSAS CITY, MISSOURI
9001 STATE LINE RD., STE. 200 (816) 361.0440
MO AUTH. NO.: E-2013011903 | LS-2019043127

TOPOGRAPHIC SURVEY
KOSHIO PARK

KOSHIO PARK TOPOGRAPHIC SURVEY
FORT LUPTON, COLORADO

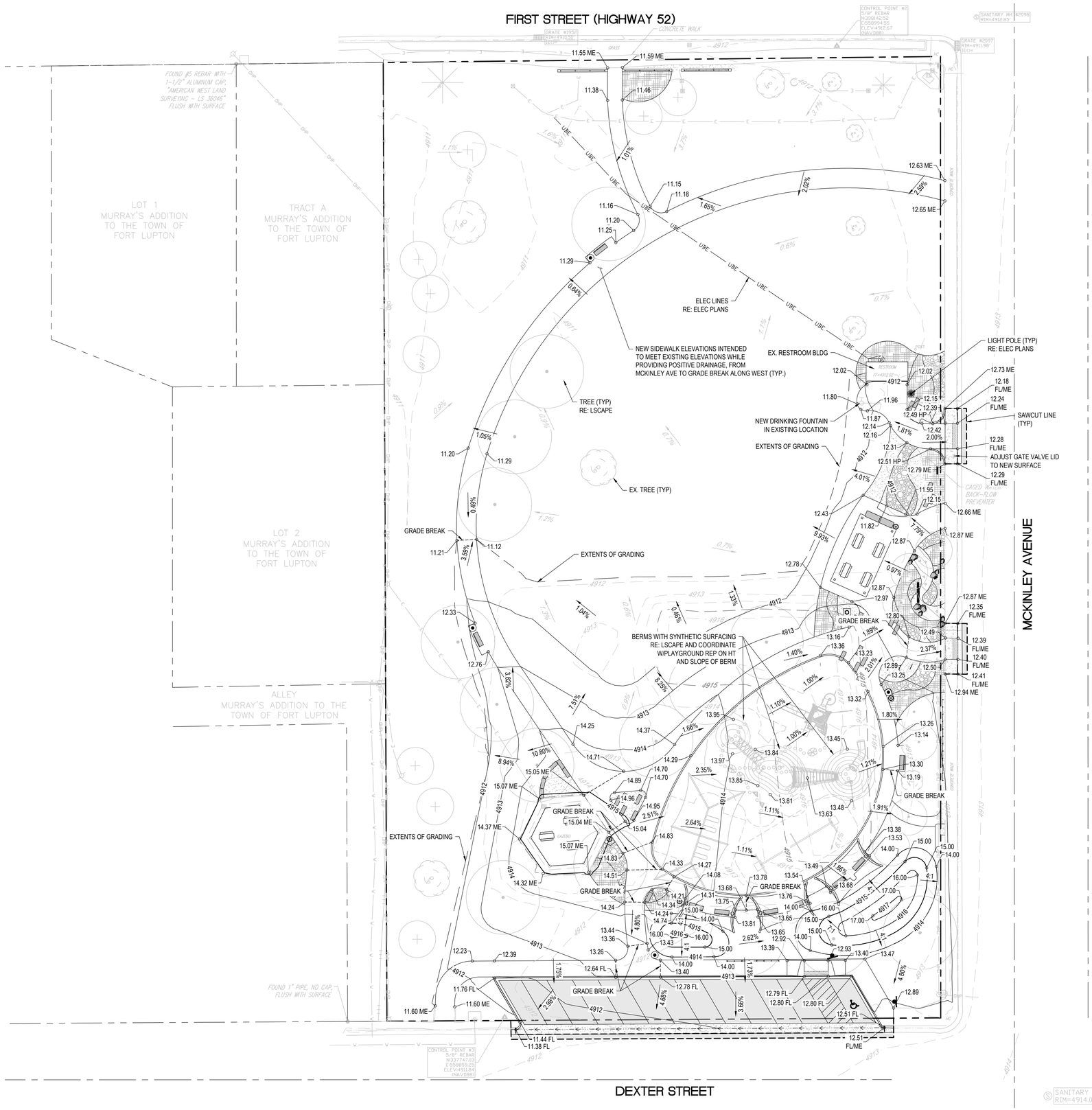
811 Know what's **below.** **Call** before you dig.
ALL UTILITIES ARE SHOWN ACCORDING TO INFORMATION AVAILABLE TO THE ENGINEER. THERE IS NO GUARANTEE ALL FACILITIES ARE SHOWN OR THAT THE LOCATION, DEPTH, AND SIZE OF EACH FACILITY IS CORRECTED. THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL UTILITIES AND SERVICE LINES PRIOR TO CONSTRUCTION.

REVISIONS

DESIGNER / DRAFTER
LAINE LANDAU / JOSH CROAK
DATE
1/7/2026
PROJECT NUMBER
0225036
BOOK AND PAGE

SHEET
1 OF 1

L:\Engineering\0225036 Ft Lupton Koshio Park Boundary Topo\SURVEY\DRAWINGS\BASE MODELS\0225036-1.dwg, 1/7/2026 9:23:53 AM, MICHAEL STRATTON, LAMP RYNEARSON


FIRST STREET (HIGHWAY 52)
DEXTER STREET
MCKINLEY AVENUE
LOT 1 MURRAY'S ADDITION TO THE TOWN OF FORT LUPTON
TRACT A MURRAY'S ADDITION TO THE TOWN OF FORT LUPTON
LOT 2 MURRAY'S ADDITION TO THE TOWN OF FORT LUPTON
ALLEY MURRAY'S ADDITION TO THE TOWN OF FORT LUPTON
FOUND #5 REBAR WITH 1-1/2" ALUMINUM CAP, "AMERICAN WEST LAND SURVEYING - LS 36046" FLUSH WITH SURFACE
FOUND 1" PIPE, NO CAP, FLUSH WITH SURFACE
CONTROL POINT #2 5/8" REBAR N:338442.52 E:538994.55 ELEV:4912.67 (NAVD88)
CONTROL POINT #3 5/8" REBAR N:337747.63 E:538859.25 ELEV:4911.84 (NAVD88)
SANITARY MH #2098 RIM=4912.85'
SANITARY MANHOLE RIM=4914.06'
GRATE #1952 RIM=4910.59' DEPR
GRATE #2097 RIM=4911.98' DEPR
CONCRETE WALK
GRASS
EX. RESTROOM BLDG
RESTROOM FF=4915.00
CAUTION
ELEC LINES RE: ELEC PLANS
NEW SIDEWALK ELEVATIONS INTENDED TO MEET EXISTING ELEVATIONS WHILE PROVIDING POSITIVE DRAINAGE, FROM MCKINLEY AVE TO GRADE BREAK ALONG WEST (TYP.)
TREE (TYP) RE: LSCAPE
EX. TREE (TYP)
EXTENTS OF GRADING
GRADE BREAK
BERMS WITH SYNTHETIC SURFACING RE: LSCAPE AND COORDINATE W/PLAYGROUND REP ON HT AND SLOPE OF BERM
LIGHT POLE (TYP) RE: ELEC PLANS
NEW DRINKING FOUNTAIN IN EXISTING LOCATION
SAWCUT LINE (TYP)
ADJUST GATE VALVE LID TO NEW SURFACE
CAGED W/ BACK-FLOW PREVENTER
GRADE BREAK
GRADE BREAK
GRADE BREAK
GRADE BREAK
GRADE BREAK
GRADE BREAK
EXTENTS OF GRADING
EXTENTS OF GRADING
CURB & GUTTER
CURB & GUTTER
CURB & GUTTER

Appendix D:
NRCS Soil Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Weld County, Colorado, Southern Part



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


104° 48' 58" W
104° 48' 43" W
515670
515700
515730
515760
515790
515820
515850
515880
515910
515940
515970
516000
516030
40° 4' 50" N
40° 4' 42" N
4436720
4436690
4436660
4436630
4436600
4436570
4436540
4436510
52
1st St
1
S Mckinley Ave
S Fulton Ave
Dexter St
29
Soil Map may not be valid at this scale.
Map Scale: 1:1,680 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 20 40 80 120
Feet
0 50 100 200 300
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 24, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 8, 2021—Jun 12, 2021

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Altvan loam, 0 to 1 percent slopes	13.3	96.9%
29	Julesburg sandy loam, 0 to 1 percent slopes	0.4	3.1%
Totals for Area of Interest		**13.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Weld County, Colorado, Southern Part

1—Altvan loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 361j
Elevation: 4,500 to 4,900 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 130 to 150 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Altvan and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Altvan

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Old alluvium

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 25 inches: clay loam
H3 - 25 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Minor Components

Cascajo

Percent of map unit: 9 percent
Hydric soil rating: No

Aquic haplustolls
Percent of map unit: 1 percent
Landform: Swales
Hydric soil rating: Yes

29—Julesburg sandy loam, 0 to 1 percent slopes

Map Unit Setting
National map unit symbol: 3626
Elevation: 4,700 to 4,800 feet
Mean annual precipitation: 15 to 19 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 145 to 155 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Julesburg and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Julesburg

Setting
Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: South platte river alluvium

Typical profile
H1 - 0 to 12 inches: sandy loam
H2 - 12 to 27 inches: sandy loam
H3 - 27 to 60 inches: sand

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups
Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: R067BY024CO - Sandy Plains

Hydric soil rating: No

Minor Components

Edgar

Percent of map unit: 4 percent
Hydric soil rating: No

Remmit

Percent of map unit: 4 percent
Hydric soil rating: No

Valent

Percent of map unit: 4 percent
Hydric soil rating: No

Vona

Percent of map unit: 3 percent
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

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.



Map Scale: 1:1,680 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

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

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Table—Hydrologic Soil Group

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Totals for Area of Interest			**13.7**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Appendix E:
FEMA Maps

National Flood Hazard Layer FIRMette

FEMA

104°49'6"W 40°5'5"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

104°48'29"W 40°4'37"N

Basemap Imagery Source: USGS National Map 2023

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
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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 1/28/2026 at 10:34 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.

Koshio Park

ADDENDUM #2

May 15th, 2026

Issued, 2:30 pm MDT

1.1 NOTICE TO BIDDERS

This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders. This Addendum serves to clarify, revise, supplement and supersede information in the drawings. Each bidder shall be responsible for reading the items in this Addendum in order to determine to what extent work is affected. Each bidder shall be responsible for advising all subcontractors and material suppliers of this Addendum. The successful bidder shall execute each item, herein listed, in complete conformance with all applicable sections of Drawings and Specifications

A. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

B. The date for receipt of bids is unchanged by this Addendum.

1.2 CLARIFICATIONS & REVISIONS

A. The City's Liquidated Damages clause has been included herein.

B. Drawing revisions and clarifications have been provided for the artificial turf play mounds, demolition items, playground grading, amenities and sire furnishings, location and notations of items on the site plan, plant materials, irrigation layout and drawing legibility.

C. A complete revised drawing set is attached to this addenda. The following drawings sheets have been revised. These drawings shall replace and supersede those in the Bid Set dated 04-10-26.
   1. C-101 Demolition Plan
   2. C-301 Grading Plan
   3. L-002 Site Plan Schedules
   4. LS-101 Site Plan
   5. LS-501 Site Details
   6. LP-001 Landscape Notes & Schedules
   7. LP-101 Landscape Plan

8. LI-101 Irrigation Plan
9. E-100 Site Electrical Plan

1.3 RESPONSES TO BIDDERS QUESTIONS

1. Do you have an architect estimate for this project? We are trying to get our bonding ordered.
   A: Yes, however the estimate will not be shared at this time.

2. Will the project be tax exempt?
   A: Yes, tax exempt.

3. What is the project budget?
   A: See response to item #1 above.

4. What is the anticipated start date and completion date?
   A: Anticipated start date would be mid-July with completion by November 30, 2026.

5. Are we to assume this will be a balanced site or will there be import/export required?
   A: See note on Grading Plan C-301.

6. Will any portion of the park remain open during construction?
   A: All areas of Koshio Park will be closed during construction.

7. Please clarify what will be furnished by owner.
   A: See OFCI items noted on LS-002, LS-101 and 01 1000 Summary of Work.

8. Who will carry costs for 3rd party testing?
   A: Contractor is responsible for any testing, surveying and permitting required for project
   1-cylinder test per 100 cubic yards.
   Compaction testing required.
   Please refer to City of Fort Lupton Standards and Specifications manual.
   https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

9. Who will be responsible for permit costs?
   A: The City will submit permits for owner purchased items. All other permits would be the responsibility of the Contractor.

10. Per the Exhibit A - Bid Form, within line item 1 - General Conditions it states to provide required testing and inspections. Please clarify what all required testing and inspections the GC is responsible for.
    A: Concrete testing. Contractor is responsible for any testing, surveying and permitting required for project
    1-cylinder test per 100 cubic yards.
    Compaction testing required.
    Please refer to City of Fort Lupton Standards and Specifications manual.
    https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

11. Please confirm what the percentage for the bid bond is to be.
    A: Performance Bond – 10%

12. Please clarify what playground area items, to be removed, the Owner and GC are all responsible for that is listed within the note description for the playgrounds per sheet C-101.
    A: See revised C-101 for clarification.

13. Keynote 9 within detail 1 on sheet LS-502 states, "lighting channel, re: electrical." Can we get the electrical details for that lighting per keynote 9?
    A: This information is provided on sheets E-100 and E-101.

14. Within the notes for detail 1 on sheet LS-502 it lists Fusion Fabrication for the decorative fencing. Please confirm if Fusion Fabrication is the only fabricator that we can use or if it is open to use other fabricators.
    A: All fabricators or products are "or equal".

15. Keynote 2 within detail 1 on sheet LS-502 states, "1/4" thick steel decorative fence panel, re: detail 1/LS-502." Are there any additional section detail(s) information on the 1/4" thick steel decorative fence panel available?
    A: Available information, thickness and dimensions are already provided in the detail. This is a custom element not a standard product. Final artwork will be provided to the awarded contractor as noted in the detail.

16. Landscape drawings says to prep play area for PIP? To what extent are we prepping? Sitework?
    A: Contractor to provide PIP area to subgrade only including compaction of subgrade.

17. Where is artificial tur located? Are we prepping for the turf? To what extent?
    A: Artificial turf is called out and located on sheet LS-101. See 5/LS-501 contractor to provide all items not noted as by others. Manufacturer/turf installer to provide turf and cushioning layer and gravel subbase only. See revised sheet LS-501 for clarification.

18. Owner supplied items and installed by GC are these listed on LS-002 Amenity Schedule? Can we get the specs on those items to determine install cost?
    A: See response to question #7 above. All information on model #'s is provided in the schedule. Installation requirements are noted in 32 3300 Site Furnishings.

19. Has the site furnishing been ordered? Will they arrive on time to meet schedule?
    A: Furnishing have started to be ordered and are expected to arrive on time to meet schedule.

20. Documents to turn in at bid time: Exhibit A, - Bid Form, Exhibit B-Supplemental Price, Bid Bond and Prequal information?
    A: See Section 5 of the RFP – Application Qualifications, Statements and Proposal.

21. Is there a bid bond form?
    A: Performance Bond – 10%. Form will be provided to the selected Contractor.

22. Project is tax exempt?
    A: Yes, tax exempt.

23. Is there an underdrain drawing for the Playground area? Will it Daylight or tie into storm? Will there be a bid tab for this?
    A: There is no underdrain system.

24. Is there a bid tab for the Park Rules Sign?
    A: No, the supplemental unit pricing is not a comprehensive bid tab.

25. Is there a detail for the finished concrete under the Playground PIP? With Elevations?
A: There is no concrete under the PIP. See 4/LS-501. If this was intended to refer to the Play Turf, that installation detail is shown on 5/LS-501. Grading elevations for the play turf mounds have been added to sheet LS-101.

26. Is there a Shelter drawing to get to our IBC Licensed Shelter installer so he can obtain the correct Permit from the City?
A: Yes, shelter drawings will be provided to the selected bidder.

27. Is the Supplemental Unit price schedule to be turned in with the bid?
A: Yes.

28. Is there water accessible to the park during construction?
A: Yes, water can be pulled from a hydrant in the park. Contractor must bring their own meter and backflow device. To apply for hydrant use, please use the Community Core portal: https://www.fortluptonco.gov/162/Public-Works There will be a $1500 deposit, a $25 application fee, and $12 per 1000 gallons used. Any questions regarding pulling water from hydrants should be directed to Amber Phillips at aphillips@fortluptonco.gov or 720-466-6112.

29. Will the site furnishing be delivered to the park? If not who will insure these during handling & transport?
A: Yes, all furnishings and Owner purchased items will be delivered to the site.

30. Will the Demo that the city is keeping need to be delivered? If so, how far is receiving?
A: City salvaged items will be removed from the site by the City.

31. Is this a taxable project?
A: Project is tax exempt.

32. What will the owner need inspected on the project?
A: Contractor is responsible for any testing, surveying and permitting required for project
    a. *1-cylinder test per 100 cubic yards.*
    b. *Compaction testing required.*
Please refer to City of Fort Lupton Standards and Specifications manual.
https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

33. Is a Bid Bond required as part of the bid submission? On the site walk the question was asked about bid bond and the verbal answer was no. The ITB includes a bond form and discusses a bid bond.
A: Yes a performance bond is required. See response to item #11 above.

34. What are the requirements for P&P Bonds?
A: See response to item #11 above.

35. Please provide the existing sod/seed mix currently installed at Koshio Park to allow accurate pricing and coordination for the specified "Sod, Blend to Match Existing" areas shown in the landscape plans.
A: See revised sheet LP-001 for sod mix.

36. The Contract Documents do not mention Liquidated Damages can you confirm that they are not part of the contract documents or please provide the requirements
A: See Below.

14-9.3.0 Liquidated Damages

A. *Because time is an essential element of the Project, it is extremely important that the work be pressed vigorously to completion. The City's cost of administering the Contract, including engineering, inspection, and supervision, will be increased as the time occupied in the work is lengthened. The public is subject to detriment and inconvenience when the project's full use cannot be made. Should the Contractor fail to perform any of the individual work tasks by the completion date stipulated in PWA Clause 3, Time for Completion, the Contractor shall pay to the City, as liquidated damages and not as a penalty, the amounts set forth in CC Sub-Clause 14-9.3.F, hereinbelow unless written extensions to the Time for Completion granted by City expressly waive liquidated damages.*

B. *In the case of joint responsibility for any delay in the works' final completion, where two (2) or more separate contracts are in force at the same time and cover work at the same site, the liquidated damages assessed against any one (1) contractor will be based upon the individual responsibility of that contractor for the delay as determined by, and in the Engineer's judgment.*

C. *The City has the right to deduct the liquidated damages from any money in its hands, otherwise due, or to become due, to the Contractor.*

D. *The City is entitled to recover from the Contractor all ascertainable damages arising from the delay in completing the work. The said damages shall include, without limitation, all engineering, inspection, supervision, and legal expenses directly incurred by the City because of such delay.*

E. *Additionally, the Contractor agrees that the City and/or the public will suffer other damage or financial loss if the work is not completed on time or within any time extensions allowed in accordance with the provisions of CC Sub-Clause 14-6.7, Extending the Time for Completion. The Contractor and the City agree that proof of the exact amount of any such damage or loss is difficult to determine. Accordingly, the Contractor agrees to pay the sums stated in the Proposal and the Project Manual as liquidated damages and not as penalty for each calendar day or part thereof that the Work remains uncompleted after the contract time has expired.*

F. *The schedule of Liquidated Damages set forth in Table 1 is an amount, agreed to by the Contractor and the City, as reasonably representing the additional construction and engineering costs that may be incurred by the City if the Contractor fails to complete its performance within PWA Clause 3, Time for Completion.*

G. *Should the amount otherwise due the Contractor be less than the amount of such damages provided for herein, the Contractor and the surety shall be liable to the City for such deficiency.*

H. *Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the City of any of its rights under the Contract.*

Original Contract Amount		Liquidated Damages per Calendar Day ($)
From More Than	To and Including	
0	150,000	500
150,000	250,000	600
250,000	500,000	800
500,000	1,000,000	1,400
1,000,000	2,000,000	2,000
2,000,000	4,000,000	3,300
4,000,000	10,000,000	3,900
10,000,000	- - - - - - - -	3,900 plus 300 per each additional 1,000,000 Contract Amount or Part Thereof Over 10,000,000

37. Is there going to be an underdrain in the play areas?
    A: See response to #23 above

38. Tabulation for Installing Owner Furnished Shelter, Site Furnishings?
    A: See response to #24, not all items are included in the supplemental unit price schedule. Installation for all furnishings by the contractor shall be included in Base Bid Breakout Item #3.

39. Erosion control Tabulation?
    A: See response to #24, not all items are included in the supplemental unit price schedule. Erosion control shall be included as noted in Base Bid Breakout Item #3.

40. On your Bid Schedule there is not a quantity Column for tallies of units.
    A: See response to #24, not all items are included in the supplemental unit price schedule. This is not a complete bid tab and does not require a total per instructions at the top of the page.

41. Is there a specific way you want this filled out?
    A: Unable to respond to this item as it is not clear what section this is referring to. All forms can be filled out electronically.

42. What percentage of the project will the bid bond need to cover?
    A: 10% See response to #11 above.

END OF ADDENDUM #2

KOSHIO PARK

FORT LUPTON, CO

65% CONSTRUCTION DOCUMENTS

CONSULTANT TEAM

OWNER
CITY OF FORT LUPTON
203 S. HARRISON AVE.
FORT LUPTON, CO 80621
P: 303.587.6694
CONTACT: DOUG COOK

LANDSCAPE ARCHITECT
NORRIS DESIGN
244 N. COLLEGE AVE. #165
FORT COLLINS, CO 80524
P: 970.409.3414
CONTACT: KELLEY SAVAGE

CIVIL ENGINEER
CONTERRA ENGINEERING
242 LINDEN ST. #5943
FORT COLLINS, CO 80524
P: 720.689.5806
CONTACT: ERIK NAKOS

ELECTRICAL ENGINEER
ACKERMAN ENGINEERING
3000 YOUNGFIELD ST.
SUITE 264
WHEAT RIDGE, CO 80215
P: 303.278.7297
CONTACT: HELEN RESCHL

STRUCTURAL ENGINEER
MCBRIDE STRUCTURAL DESIGN
3713 ROCHDALE DR.
FORT COLLINS, CO 80525
P: 970.420.5316
CONTACT: JOHN MCBRIDE

SURVEY
LAMP RYNEARSON
4715 INNOVATION DR. #100
FORT COLLINS, CO 80525
P: 970.226.0342
CONTACT: LAINE LANDAU

VICINITY MAP



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CD-201	EROSION CONTROL DETAILS
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C-501	HORIZONTAL CONTROL PLAN
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LP-001	LANDSCAPE NOTES & SCHEDULES
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LI-101	IRRIGATION PLAN
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E-000	ELEC. LEGEND & ONE-LINE
E-100	SITE ELECTRICAL PLAN
E-101	SHELTER ELECT PLANS
E-100	ELECTRICAL DETAILS

NORRIS DESIGN
PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON

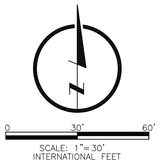
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

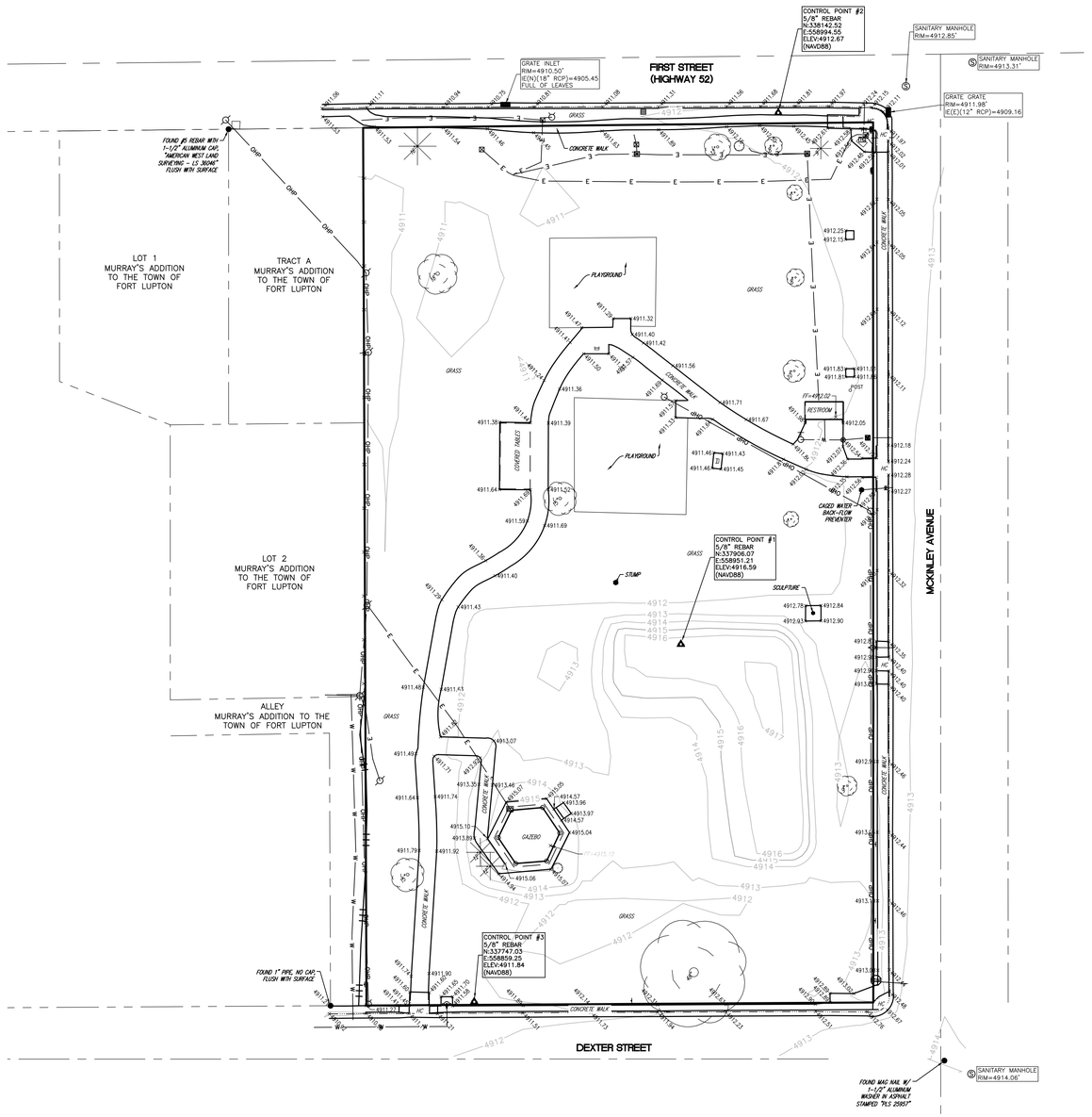
DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
COVER SHEET

G-001

CHECKED BY: CS/KS
DRAWN BY: HV





PROJECT CONTROL
*ALL MEASUREMENTS ARE IN INTERNATIONAL FEET

CONTROL POINT #1: 5/8" X 24" REBAR WITH A 1 1/4" ORANGE PLASTIC CAP, STAMPED: "CONTROL POINT"
N: 337906.072 LAT: 40°04'46.198380"N
E: 558951.208 LONG: -104°48'47.948150"W
EL: 4916.586

CONTROL POINT #2: 5/8" X 24" REBAR WITH A 1 1/4" ORANGE PLASTIC CAP, STAMPED: "CONTROL POINT"
N: 338142.516 LAT: 40°04'48.535096"N
E: 558994.545 LONG: -104°48'47.395775"W
EL: 4912.665

CONTROL POINT #3: 5/8" X 24" REBAR WITH A 1 1/4" ORANGE PLASTIC CAP, STAMPED: "CONTROL POINT"
N: 337747.031 LAT: 40°04'44.625587"N
E: 558859.253 LONG: -104°48'49.127446"W
EL: 4911.841

HORIZONTAL DATUM
NORTH AMERICAN DATUM OF 1983 (2011);

THIS PROJECT IS IN A CUSTOM LOW-DISTORTION PROJECTION, THE PARAMETERS OF THE PROJECTION ARE SHOWN BELOW:

PROJECTION TYPE:	TRANSVERSE MERCATOR
LATITUDE AT ORIGIN:	40°15'00"N
CENTRAL MERIDIAN:	104°40'00"W
FALSE NORTHING:	400000.000 IFT
FALSE EASTING:	600000.000 IFT
GRID SCALE FACTOR:	1.00024000266

VERTICAL DATUM
NORTH AMERICAN VERTICAL DATUM OF 1988.
ELEVATIONS ARE ESTABLISHED THROUGH GNSS MEASUREMENTS USING GEOID MODEL 18.

NOTES
1. 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 CERTIFICATION SHOWN HEREON.
2. THIS DRAWING INCLUDES OBSERVED SURFACE EVIDENCE OF SERVICES AND UTILITIES EVIDENT AT THE TIME OF SURVEY. PRIMO UTILITY SERVICES, A PRIVATE UTILITY LOCATING COMPANY, WAS CONTRACTED TO PROVIDE THE LOCATION OF UNDERGROUND UTILITIES ON 12/05/2025. NO RESPONSIBILITY OR LIABILITY IS ASSUMED BY THE SURVEYOR FOR THE FAILURE TO SHOW ANY BURIED SERVICE AND/OR UTILITY LINES EVEN THOUGH THEY MAY EXIST. CONTACT "ONE CALL" (811) PRIOR TO ANY EXCAVATION ON THIS SITE.
3. FIELD WORK WAS DONE FROM 12/05/25-12/09/25, 1/6/2026.
4. ALL LINEAL DISTANCES SHOWN HERE ON ARE BASED ON THE INTERNATIONAL FOOT DEFINED AS 1 INTERNATIONAL FOOT = 0.3048 METERS.
5. APPROXIMATE RIGHT OF WAY LOCATIONS HAVE BEEN SHOWN. A FULL BOUNDARY SURVEY WOULD BE REQUIRED TO DETERMINE THE ACTUAL BOUNDARY.

SURVEYORS CERTIFICATE
I, LAINE A. LANDAU, A DULY LICENSED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS TOPOGRAPHIC SURVEY WAS MADE BY ME OR UNDER MY DIRECT SUPERVISION AND ACCURATELY REPRESENTS THE AREA TO BE CERTIFIED; IS BASED UPON MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF; IS IN ACCORDANCE WITH APPLICABLE STANDARDS OF PRACTICE; AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

COLORADO LICENSED
LAINE A. LANDAU
31159
PROFESSIONAL LAND SURVEYOR
1/7/2026

LAINE A. LANDAU – COLORADO PLS 31159
ON BEHALF OF LAMP RYNEARSON, INC.
EMAIL ADDRESS: LAINE.LANDAU@LAMPRYNEARSON.COM

LEGEND

- APPROXIMATE RIGHT OF WAY LINE, SEE NOTE 5
- ADJACENT LOT
- CENTERLINE
- ELECTRIC CABINET
- ELECTRIC PEDESTAL
- ELECTRIC PULLBOX
- FIRE HYDRANT
- GRATE INLET
- IRRIGATION CONTROL VALVE
- LIGHT POLE
- MISC POINT
- POST
- BENCH
- BUSH
- COLUMN ROUND
- CONIFEROUS TREE
- CONTROL POINT
- DECIDUOUS TREE
- ELECTRIC CABINET
- ELECTRIC PEDESTAL
- ELECTRIC PULLBOX
- FIRE HYDRANT
- GRATE INLET
- IRRIGATION CONTROL VALVE
- LIGHT POLE
- MISC POINT
- POST
- POWER POLE
- SANITARY MANHOLE
- SIGN
- STOP SIGN
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL PULL BOX
- TRAFFIC SIGNAL CABINET
- WATER CURB STOP
- WATER METER
- WATER VALVE
- YARD HYDRANT

NOTE:
SURVEY PROVIDED FOR REFERENCE ONLY. CONFIRM EXISTING CONDITIONS PRIOR TO BEGINNING DEMO. REPORT ANY CONFLICTS TO OWNER'S REPRESENTATIVE.

LAMP RYNEARSON
LAMPRYNEARSON.COM
OMAHA, NEBRASKA
14710 W. DODGE RD, STE. 100 (402) 496.2498
NE AUTHORIZATION NO.: CA0130
FORT COLLINS, COLORADO
4715 INNOVATION DR., STE. 100 (970) 226.0342
KANSAS CITY, MISSOURI
9001 STATE LINE RD., STE. 200 (816) 361.0440
MO AUTH. NO.: E-2013011903 | LS-2019043127

TOPOGRAPHIC SURVEY
KOSHIO PARK

KOSHIO PARK TOPOGRAPHIC SURVEY
FORT LUPTON, COLORADO

811 Know what's below. Call before you dig.
ALL UTILITIES ARE SHOWN ACCORDING TO INFORMATION AVAILABLE TO THE ENGINEER. THERE IS NO GUARANTEE ALL FACILITIES ARE SHOWN OR THAT THE LOCATION, DEPTH, AND SIZE OF EACH FACILITY IS CORRECTED. THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL UTILITIES AND SERVICE LINES PRIOR TO CONSTRUCTION.

REVISIONS

DESIGNER / DRAFTER
LAINE LANDAU / JOSH CROAK
DATE
1/7/2026
PROJECT NUMBER
0225036
BOOK AND PAGE

SHEET
G-002

L:\Engineering\0225036 Ft Lupton Koshio Park Boundary Tops\SURVEY\DRAWINGS\BASE MODELS\0225036-1.dwg, 1/7/2026 9:23:53 AM, MICHAEL STRATTON, LAMP RYNEARSON

GENERAL CONSTRUCTION NOTES

1. **COMPLIANCE AND DOCUMENTATION**:
   - ENSURE ALL MATERIALS AND WORKMANSHIP ADHERE TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE RELEVANT AUTHORITY HAVING JURISDICTION, UTILITY DISTRICTS, STATE DEPARTMENT OF TRANSPORTATION, JURISDICTIONAL FIRE PROTECTION REQUIREMENTS, AND ALL APPLICABLE STATE AND LOCAL STANDARDS.
   - CIVIL SPECIFICATION PROVIDED FOR THIS PROJECT SHALL SUPERSEDE ANY CONFLICTS IN THIS PLAN SET.
   - CONTRACTOR SHALL KEEP A SIGNED COPY OF THE APPROVED PLANS, REPORTS, STANDARDS, AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES. THE CONTRACTOR SHALL MAINTAIN AN ASBUILT REDLINE SET OF PLANS ON THE SITE AT ALL TIMES.
   - CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS ROUTES AS REQUIRED BY THE JURISDICTIONAL FIRE PROTECTION DISTRICT.
   - OBTAIN WRITTEN APPROVAL FOR ANY VARIANCES FROM THESE DOCUMENTS.
   - NOTIFY THE ENGINEER OF ANY CONFLICTING STANDARDS OR SPECIFICATIONS. IN CASE OF CONFLICTS, THE STRICTER OR HIGHER QUALITY STANDARD WILL APPLY.
2. **PERMITS AND APPROVALS**:
   - THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING AND ADHERING TO ALL NECESSARY CODES, LICENSES, PERMITS, BONDS, AND STANDARD SPECIFICATIONS REQUIRED FOR THE WORK. THIS INCLUDES LOCAL AND STATE GROUNDWATER DISCHARGE PERMITS.
3. **NOTIFICATIONS**:
   - NOTIFY THE REQUIRED PARTIES (OWNER, OWNER'S REPRESENTATIVE, MUNICIPAL/DISTRICT INSPECTOR, GEOTECHNICAL ENGINEER, ENGINEER, AND/OR UTILITY OWNER) AT LEAST 48 HOURS BEFORE STARTING CONSTRUCTION, PRIOR TO BACKFILLING, AND AS REQUIRED BY JURISDICTIONAL AUTHORITY OR PROJECT SPECIFICATIONS.
4. **UTILITIES**:
   - THE TYPE, SIZE, LOCATION, AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES IN THE AREA OF CONSTRUCTION HAVE BEEN SHOWN PER FIELD INVESTIGATION BY OTHERS AND AVAILABLE UTILITY RECORDS AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER A MINIMUM OF 24 HOURS BEFORE PUTTING A TOOL TO EARTH. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, ALONG THE ROUTE OF WORK AND TO COORDINATE CONSTRUCTION SCHEDULES WITH THE UTILITY OWNERS AND TO SCHEDULE UTILITY ADJUSTMENTS TO ELIMINATE CONFLICT WITH PROGRESS OF THE WORK. THE CONTRACTOR SHALL NOTE ALL UTILITIES MAY NOT APPEAR ON THESE PLANS AND THAT THE POTENTIAL CONFLICT WITH UTILITIES SHALL BE CONSIDERED IN THE PREPARATION OF ANY BIDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT AND SHALL HOLD THE OWNERS AND THE ENGINEER HARMLESS FOR DAMAGE ARISING FROM FAILURE TO ADEQUATELY PROTECT UTILITIES.
   - VERIFY THE EXACT SIZE, LOCATION, AND TYPE OF ALL EXISTING UTILITIES BEFORE STARTING WORK.
   - THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DAMAGE AND COSTS DUE TO FAILURE TO LOCATE AND PRESERVE UTILITIES.
   - NOTIFY PUBLIC AND PRIVATE UTILITY COMPANIES TO DETERMINE THE LOCATION OF ALL EXISTING UTILITIES BEFORE GRADING AND CONSTRUCTION.
   - PERFORM AND INSPECT ALL WORK IN UTILITY AREAS ACCORDING TO THE UTILITY OWNER'S REQUIREMENTS.
   - OBTAIN APPROVAL FROM THE MUNICIPALITY/UTILITY OWNER AND ENGINEER BEFORE RELOCATING ANY ENCOUNTERED UTILITIES.
   - ENSURE ALL SERVICE CONNECTIONS AND RELOCATIONS ARE COORDINATED WITH THE UTILITY OWNER AND ENGINEER.
   - IMMEDIATELY NOTIFY THE ENGINEER OF ANY UTILITY DISCREPANCIES OR CONFLICTS.
5. **SITE CONDITIONS AND SAFETY**:
   - THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY DURING THE WORK. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF PROJECT CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS FROM ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK.
   - PREPARE A TRAFFIC CONTROL PLAN FOR APPROVAL AND PROVIDE ALL NECESSARY DEVICES FOR PUBLIC SAFETY.
   - COMPLY WITH THE TRAFFIC CONTROL PLAN AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) FOR CONSTRUCTION SIGNAGE AND TRAFFIC CONTROL.
6. **GROUNDWATER MANAGEMENT**:
   - THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE ANY ENCOUNTERED GROUNDWATER DURING CONSTRUCTION IN A MANNER THAT PREVENTS FLOODING OR EROSION AND APPLIES TO ALL STATE AND LOCAL GROUNDWATER DISCHARGE PERMIT REQUIREMENTS.
7. **ELEVATION ADJUSTMENTS**:
   - ADJUST RIMS, COVERS AND GRATE ELEVATIONS TO MATCH THE FINAL PAVEMENT AND FINISHED GRADE ELEVATIONS, REGARDLESS OF ELEVATIONS SHOWN ON PLANS.
   - THE EXISTING AND PROPOSED ELEVATIONS SHOWN ON THE PLANS ARE BASED ON EXTRAPOLATED FIELD SURVEY INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL CONFIRM ALL ELEVATIONS AT TIE-INS TO EXISTING FEATURES INCLUDING PAVING, PIPING, FLATWORK, EARTHWORK GRADING, ETC. PRIOR TO CONSTRUCTION. ANY DISCREPANCIES IN ELEVATIONS FROM THOSE SHOWN ON THE PLANS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO CONSTRUCTION. ALL FLATWORK MUST PREVENT PONDING AND PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES, EQUIPMENT, ETC. TOWARDS THE INTENDED DRAINAGE FEATURE.
8. **FLATWORK AND DRAINAGE**:
   - OBTAIN APPROVAL FOR FORMWORK AT CRITICAL AREAS BEFORE PLACING CONCRETE.
9. **ASPHALT WORK**:
   - PROVIDE SAWCUTTING AND PATCHING TO ACHIEVE POSITIVE DRAINAGE AND SMOOTH TRANSITIONS TO EXISTING ASPHALT WITHIN ACCEPTABLE SLOPES.
   - ADDITIONAL SAWCUTTING AND PATCHING MAY BE REQUIRED AT UTILITY WORK AND CONNECTION POINTS.
10. **PROTECTION OF EXISTING FEATURES**:
   - PROTECT AND MAINTAIN EXISTING MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC. EXTEND OR LOWER FEATURES TO FINAL SURFACE LEVEL WITH APPROPRIATE CAPS AND LIDS.
   - PROVIDE A CONCRETE COLLAR FOR ALL EXISTING AND PROPOSED MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC., IN LANDSCAPED AREAS.
11. **CONCRETE WORK**:
   - OBTAIN OWNER APPROVAL FOR PRIVATE CONCRETE FINISHING, JOINT PATTERNS, AND COLORING BEFORE CONSTRUCTION. SUBMIT A JOINT LAYOUT PLAN FOR APPROVAL.
12. **PIPE LENGTHS AND CONTROL POINTS**:
   - ADJUST PIPE LENGTHS TO ACCOUNT FOR STRUCTURES AND FLARED END SECTIONS BASED ON THE STRUCTURE DETAILS.
   - PIPE LENGTHS SHOWN ON PLANS ARE TO THE CENTER OF STRUCTURE. PIPE LENGTHS SHOWN ON PLANS CONNECTED TO FLARED END SECTIONS (FES) INCLUDE THE FULL LENGTH OF FES AND SHOULD BE ADJUSTED ACCORDINGLY.
13. **SITE CLEANUP**:
   - REMOVE ALL SURPLUS MATERIALS, TOOLS, TEMPORARY STRUCTURES, DEBRIS, AND RUBBISH CAUSED BY CONSTRUCTION. RESTORE THE AREA TO ITS ORIGINAL CONDITION WITHIN 48 HOURS OF PROJECT COMPLETION UNLESS DIRECTED OTHERWISE.
14. **EROSION AND SEDIMENT CONTROL**:
   - IMPLEMENT AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH LOCAL AND STATE GUIDELINES.
   - PROHIBIT SILT AND DEBRIS-LADEN RUNOFF FROM LEAVING THE SITE AND KEEP PUBLIC AREAS FREE OF MUD AND DEBRIS.
   - RE-ESTABLISH FINAL GRADES AND REMOVE ACCUMULATED SEDIMENTATION FROM ALL AREAS, INCLUDING SWALES, PIPES, INLETS, CURBS AND DETENTION/WATER QUALITY AREAS.
   - REMOVE TEMPORARY EROSION CONTROL MEASURES AND REPAIR AREAS AFTER VEGETATION IS ESTABLISHED AND ACCEPTED BY THE OWNER AND MUNICIPALITY.
15. **TREE AND VEGETATION PROTECTION**:
   - PROTECT ALL TREES AND VEGETATION BY PLACING CONSTRUCTION FENCING AT THE DRIP LINE OF TREES AND PLANTS NEAR THE WORK ZONE. HAND EXCAVATION IS REQUIRED AT ROOT ZONES WHERE PROPOSED PAVING OR UTILITY WORK IS WITHIN THE DRIPLINE OF TREES.
16. **ASBUILTS**
   - THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE, SHALL PROVIDE THE OWNER AND ENGINEER OF RECORD A COMPLETE SET OF CONSTRUCTION RECORD DRAWINGS (ASBUILTS) FOR ALL CONSTRUCTED IMPROVEMENTS, IF REQUIRED BY THE OWNER OR AHJ. THE ASBULT SET SHALL SHOW SUFFICIENT DIMENSION TIES TO PERMANENT SURFACE FEATURES OR NORTHING/EASTING POINTS FOR ALL BURIED FACILITIES TO ALLOW FOR FUTURE LOCATING. THE ASBUILT SET SHALL SHOW ALL APPLICABLE ASBUILT IMPROVEMENTS INCLUDING BUT NOT LIMITED TO: CONTOURS, ELEVATIONS OF ALL FLATWORK, FLOWLINES, GRADE BREAKS, CROSS SLOPES AND ANY OTHER ELEVATIONS TO DEMONSTRATE COMPLIANCE WITH THE PLANS. ALL POND FEATURES INCLUDING TOP, BOTTOM AND GRADE BREAKS, OUTLET FEATURES INCLUDING TOP AND BOTTOM OF OUTLET STRUCTURE, PERFORATION SIZES AND ELEVATIONS ABOVE INVERT, PIPE INVERTS, ETC. ASBUILTS SHALL BE PREPARED BY A PLS.

TOPSOIL NOTE:

- TOPSOIL IS DEFINED AS FERTILE, FRIABLE, NATURAL LOAM, SURFACE SOIL, REASONABLY FREE OF SUBSOIL, CLAY LUMPS, BRUSH, WEEDS, AND OTHER LITTER, AND FREE OF ROCKS, STUMPS, STONES LARGER THAN 2 INCHES IN ANY DIMENSION, AND OTHER EXTRANEOUS OR TOXIC MATTER HARMFUL TO PLANT GROWTH FOR AREAS TO BE SEEDED OR PLANTED. COORDINATE TESTING REQUIREMENTS WITH ENGINEER AND OWNER.
- ALL TOPSOIL SCRAPED FROM THE SITE IS TO BE STOCKPILED AND REDISTRIBUTED AFTER FINAL GRADING IS COMPLETE.
- CLEAN TOPSOIL FREE OF PLANTS AND SEEDS WILL BE SPREAD TO 4-INCH MINIMUM DEPTH OR AS SPECIFIED BY DRAWINGS, WHICHEVER IS GREATER, PRIOR TO SEEDING. ALL DISTURBED AREAS THAT WILL NOT BE PAVED OR OTHERWISE HAVE PERMANENT EROSION MEASURES ESTABLISHED SHALL HAVE CLEAN TOPSOIL SPREAD TO AN EVEN 4-INCH MINIMUM DEPTH UNLESS SPECIFIED OTHERWISE. IN NO CASE SHALL BARE EARTH REMAIN AT THE CONCLUSION OF CONSTRUCTION.

SURVEY INFORMATION:

SURVEY INFORMATION PROVIDED BY LAMP RYNEARSON, SEE TOPOGRAPHIC SURVEY KOSHIO PARK, DATED 1/7/26.

- CONTROL POINT #1:
  - DESCRIPTION: ½" X 24" REBAR WITH A 1-1/4" ORANGE PLASTIC CAP STAMPED: "CONTROL POINT"
  - N: 337906.072
  - E: 558951.208
  - EL: 4916.586
- CONTROL POINT #2:
  - DESCRIPTION: ½" X 24" REBAR WITH A 1-1/4" ORANGE PLASTIC CAP STAMPED: "CONTROL POINT"
  - N: 338142.516
  - E: 558994.545
  - EL: 4912.665
- CONTROL POINT #3:
  - DESCRIPTION: ½" X 24" REBAR WITH A 1-1/4" ORANGE PLASTIC CAP STAMPED: "CONTROL POINT"
  - N: 337747.031
  - E: 558859.253
  - EL: 4911.841

GENERAL ABBREVIATIONS

AASHTO	AMERICAN ASSOC. OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	E	EAST	IRR	IRRIGATION		
		EA	EACH	JTS	JOINTS	R	RIGHT
ABAN	ABANDON	ECC	ECCENTRIC			RAD	RADIUS
AC	ASPHALTIC CONCRETE PAVING	EJ	EXPANSION JT	KO	KNOCKOUT	RCP	REINFORCED CONCRETE PIPE
ADDL	ADDITIONAL	EL	ELEVATION	KPL	KICK PLATE	RD	ROOF DRAIN
ADDM	ADDENDUM	ELB	ELBOW	KWY	KEYWAY	RE	REFERENCE
ADJ	ADJUSTABLE	ELEC	ELECTRICAL			RECT	RECTANGULAR
AL	ALUMINUM	ENGR	ENGINEER	L	LEFT OR LITER	REINF	REINFORCE (D) (ING) (MENT)
ALT	ALTERNATE	EOC	EDGE OF CONCRETE	LSCAPE	LANDSCAPE(ING)	REQD	REQUIRED
AMT	AMOUNT	EOP	EDGE OF PAVEMENT	LF	LINEAR FOOT	ROW	RIGHT OF WAY
APPROX	APPROXIMATE	EQ	EQUAL	LP	LOW POINT OR LIGHT POLE	R&R	REMOVE AND REPLACE
ARCH	ARCHITECT(URAL)	EQUIP	EQUIPMENT	LT	LIGHT		
ARV	AIR RELIEF VALVE	EQUIV	EQUIVALENT	LWL	LOW WATER LEVEL	SAN	SANITARY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	ESMT	EASEMENT			SC	SAWCUT
		EST	ESTIMATE	MAINT	MAINTENANCE	SD	STORM DRAIN
ASPH	ASPHALT	EVCE	END VERTICAL CURVE ELEVATION	MAN	MANUAL	SECT	SECTION
ASSY	ASSEMBLY	EVCS	END VERTICAL CURVE STATION	MATL	MATERIAL	SPD	STANDARD PROCTOR DENSITY
ASYM	ASYMMETRICAL	EW	EACH WAY	MAX	MAXIMUM	SPEC	SPECIFICATION
AUTO	AUTOMATIC	EXP	JT EXPANSION JOINT	ME	MATCH EXISTING	SQ	SQUARE
AVG	AVERAGE	EXIST	EXISTING	MECH	MECHANICAL	SQ IN	SQUARE INCH
AWWA	AMERICAN WATER WORKS ASSOC.			MEP	MECHANICAL, ELECTRICAL, PLUMBING (ARCH)	SQ FT	SQUARE FOOT
		FND	FOUNDATION	MFR	MANUFACTURER	SQ YD	SQUARE YARD
BC	BACK OF CURB	FES	FLARED END SECTION	MH	MANHOLE	SS	SANITARY SEWER
BFV	BUTTERFLY VALVE	FF	FINISH FLOOR	MIN	MINIMUM	SST	STAINLESS STEEL
BG	FINISHED GRADE ADJACENT TO BOTTOM OF WALL	FG	FINISH GRADE	MISC	MISCELLANEOUS	STA	STATION
		FH	FIRE HYDRANT	MJ	MECHANICAL JOINT	STD	STANDARD
BLDG	BUILDING	FL	FLOW LINE			STL	STEEL
BLK	BLOCK	FN	FENCE	N	NORTH	STRUCT	STRUCTURAL
BM	BENCH MARK	FOC	FACE OF CONCRETE	NA	NOT APPLICABLE	SVC	SERVICE
BMP	BEST MANAGEMENT PRACTICE	FPM	FEET PER MINUTE	NIC	NOT IN CONTRACT	SWMP	STORMWATER MANAGEMENT PLAN
BS	BACKSIGHT	FPS	FEET PER SECOND	NPT	NATIONAL PIPE THREAD	SWPPP	STORMWATER POLLUTION PREVENTION PLAN
BOS	BOTTOM OF STEP	FT	FEET	NTS	NOT TO SCALE	SYM	SYMMETRICAL
BOT	BOTTOM	FTG	FOOTING OR FITTING				
BSMT	BASEMENT			OS	OFFSET	TB	THRUST BLOCK
BVCE	BEGIN VERTICAL CURVE ELEVATION	G	GAS	OC	ON CENTER	TBC	TOP BACK OF CURB
BVCS	BEGIN VERTICAL CURVE STATION	GA	GAUGE	OD	OUTSIDE DIAMETER	TEMP	TEMPORARY
BW	BOTTOM OF WALL	GAL	GALLON	OPP	OPPOSITE	TG	FINISHED GRADE ADJACENT TO TOP OF WALL
		GALV	GALVANIZED	OPT	OPTIONAL	THK	THICK
CB	CATCH BASIN	GB	GRADE BREAK			TOB	TOP OF BANK
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION	GIP	GALVANIZED IRON PIPE	PC	POINT OF CURVATURE	TOC	TOP OF CONCRETE OR TOP OF CURB
		GND	GROUND	PCO	PRESSURE CLEAN OUT	TOS	TOP OF STEP
CIP	CAST IRON PIPE	GPD	GALLONS PER DAY	PCR	POINT OF CURVE RETURN	TOT	TOTAL
CJ	CONSTRUCTION JOINT	GPM	GALLONS PER MINUTE	PI	POINT OF INTERSECTION	TW	TOP OF WALL OR CAP OF WALL
CL	CENTER LINE	GR	GRATE	PVI	POINT OF VERTICAL INTERSECTION	TYP	TYPICAL
CLR	CLEAR	GRTG	GRATING	PL	PROPERTY LINE		
CMP	CORRUGATED METAL PIPE	GSP	GALVANIZED STEEL PIPE	PE	POLYETHYLENE	UBC	UNIFORM BUILDING CODE
CMU	CONCRETE MASONRY UNIT	GV	GATE VALVE	PREFAB	PREFABRICATED	UGE	UNDERGROUND ELECTRIC
CO	CLEANOUT			PRELIM	PRELIMINARY	UTIL	UTILITY
CONC	CONCRETE	H	HIGH	PREP	PREPARATION	VERT	VERTICAL
CONST	CONSTRUCTION	HDWL	HEADWALL	PROP	PROPOSED	VC	POINT OF VERTICAL CURVATURE
CONT	CONTINUOUS	HNDRL	HAND RAIL	PRV	PRESSURE REDUCING VALVE OR PRESSURE RELIEF VALVE	VCP	VITRIFIED CLAY PIPE
CR	CONCENTRIC REDUCER	HORIZ	HORIZONTAL				
CTR	CENTER	HP	HIGH POINT	PSF	POUNDS PER SQUARE FOOT	W	WIDE OR WIDTH
CY	CUBIC YARDS	HR	HOUR	PSI	POUNDS PER SQUARE INCH	W/	WITH
		HVAC	HEATING, VENTILATION, AIR CONDITIONING	PT	POINT OF TANGENCY	W/O	WITHOUT
DEMO	DEMOLITION	HWY	HIGHWAY	PV	PLUG VALVE	WQCV	WATER QUALITY CONTROL VOLUME
DET	DETAIL	HWL	HIGH WATER LINE	PVC	POLYVINYL CHLORIDE OR POINT OF VERTICAL CURVATURE	WSE	WATER SURFACE ELEVATION
DIA	DIAMETER	HYD	HYDRANT			WW	WASTEWATER
DIAG	DIAGONAL			PVMT	PAVEMENT		
DIP	DUCTILE IRON PIPE	INCL	INCLUDED			X	SECT CROSS SECTION
DOM	DOMESTIC	ID	INSIDE DIAMETER	QTY	QUANTITY	XFMR	ELECTRICAL TRANSFORMER
DN	DOWN	IN	INLET				
DWG	DRAWING	INV	INVERT				

Sheet List Table

Sheet Number	Sheet Title
C-001	GENERAL NOTES
C-101	DEMOLITION PLAN
C-201	EROSION CONTROL PLAN
CD-201	EROSION CONTROL DETAILS
C-301	GRADING PLAN
C-501	HORIZONTAL CONTROL PLAN
CD-501	HORIZONTAL CONTROL DETAILS
CD-502	HORIZONTAL CONTROL DETAILS

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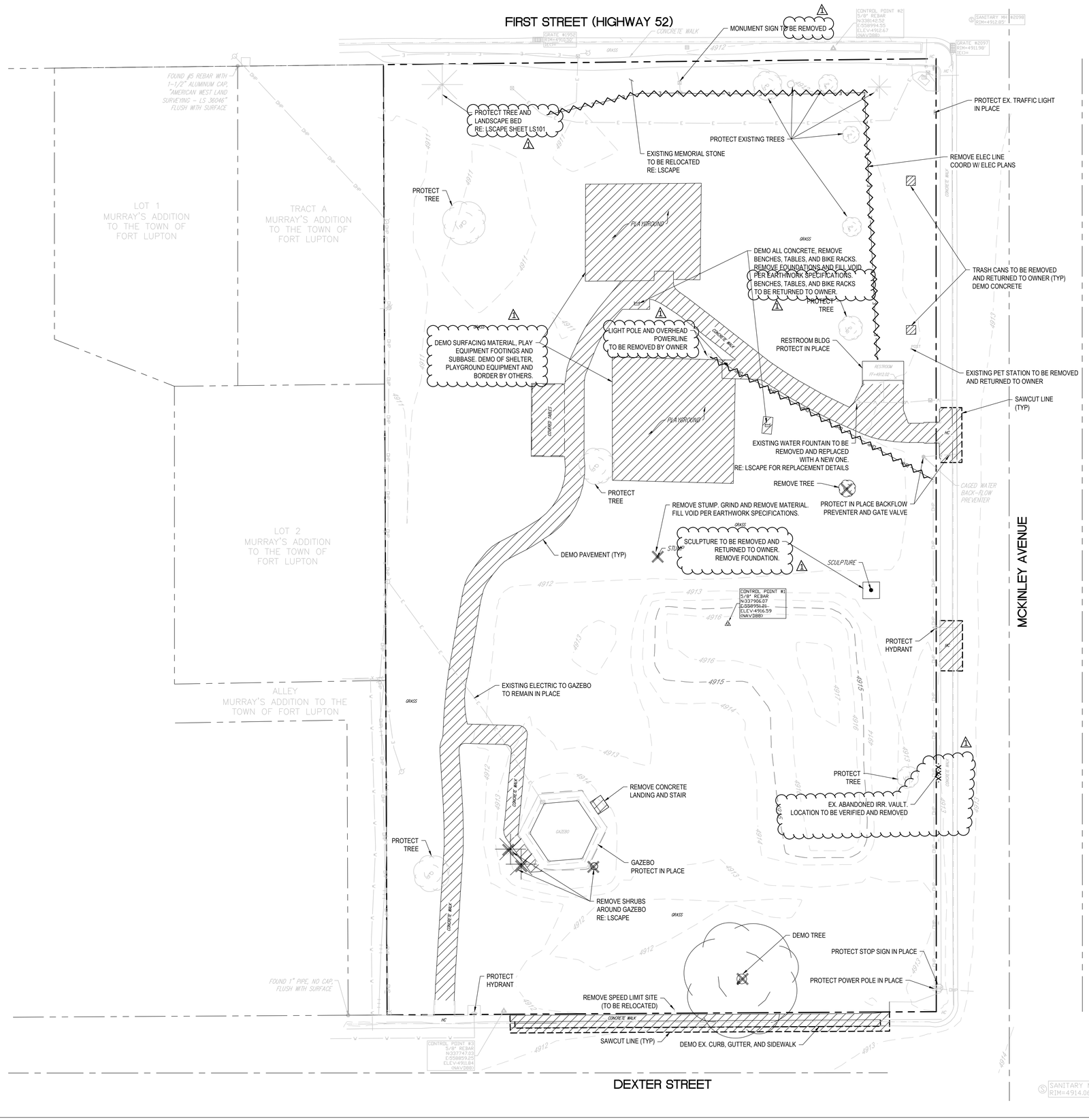
KOSHIO PARK
131 MCKINLEY AVE
FORT LUPTON, CO 80621

OWNER:
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203 S. HARRISON AVE
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(303) 587-6694

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SHEET TITLE:
GENERAL NOTES

C-001



GENERAL LEGEND

- PROPERTY LINE
- EASEMENT
- EX MINOR CONTOUR
- EX MAJOR CONTOUR
- EX SPOT ELEVATION
- SAWCUT LINE

DEMOLITION LEGEND

- SURFACE DEMO
- SUBSURFACE DEMO
- ABANDON SUBSURFACE FEATURE
- PAVEMENT DEMO
- SAWCUT LINE
- SURFACE DEMO

DEMOLITION NOTES

1. DEMOLITION LIMITS MAY VARY — COORDINATE WITH THE OWNER, LANDSCAPE ARCHITECT, AND ENGINEER TO ADJUST BOUNDARIES, PROTECT ITEMS TO REMAIN (FENCING, TREES, ETC.), AND PHASE THE WORK APPROPRIATELY.
2. REFER TO LANDSCAPE ARCHITECT PLANS FOR SALVAGING SITE FURNISHINGS. CIVIL AND LANDSCAPE ARCHITECT DEMOLITION MUST BE COORDINATED TOGETHER.
3. ALL REQUIRED EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE BEFORE CONSTRUCTION STARTS.
4. CONTRACTOR MUST VERIFY ALL UNDERGROUND UTILITIES BEFORE WORK BEGINS. SEE GENERAL CONSTRUCTION NOTES FOR UTILITY INFO AND SAFETY PRECAUTIONS.
5. COORDINATE ANY DRY UTILITY OR ELECTRICAL DEMOLITION OR RELOCATION WITH THE OWNER, UTILITY PROVIDER, AND ELECTRICAL ENGINEER.
6. REFER TO GENERAL CONSTRUCTION NOTES AND COORDINATE WITH LANDSCAPE ARCHITECT FOR ANY REQUIRED TREE PROTECTION OR REMOVAL.
7. REPLACE FLATWORK AT UTILITY TRENCHES. SAWCUTTING AND PAVEMENT REMOVAL MUST BE CLEAN AND EXTEND TO THE NEAREST JOINT.
8. COMPLY WITH ALL REGULATIONS FOR HAZARDOUS MATERIAL HANDLING AND DISPOSAL.
9. MAINTAIN SAFE PEDESTRIAN ROUTES DURING WORK. PROVIDE TEMPORARY SIGNAGE AND PATHWAYS AS NEEDED.
10. ANY UNINTENTIONAL DAMAGE TO SITE ELEMENTS NOT DESIGNATED FOR DEMOLITION MUST BE REPAIRED OR REPLACED BY THE CONTRACTOR.
11. TAKE NECESSARY PRECAUTIONS TO AVOID DISRUPTING EXISTING UTILITIES OR SERVICES DURING CONSTRUCTION.
12. CONTRACTOR IS RESPONSIBLE FOR VERIFYING SITE CONDITIONS PRIOR TO COMMENCING DEMOLITION. NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY CONFLICTS OR CONDITIONS THAT VARY FROM SURVEY.
13. CONTRACTOR SHALL PROTECT ALL FEATURES THAT ARE NOT TO BE REMOVED ADJACENT TO THE CONSTRUCTION AREA INCLUDING, BUT NOT LIMITED TO, ADJACENT BUILDING, FOUNDATIONS, PAVEMENT, FENCING AND ABOVE GROUND OR UNDERGROUND UTILITIES.

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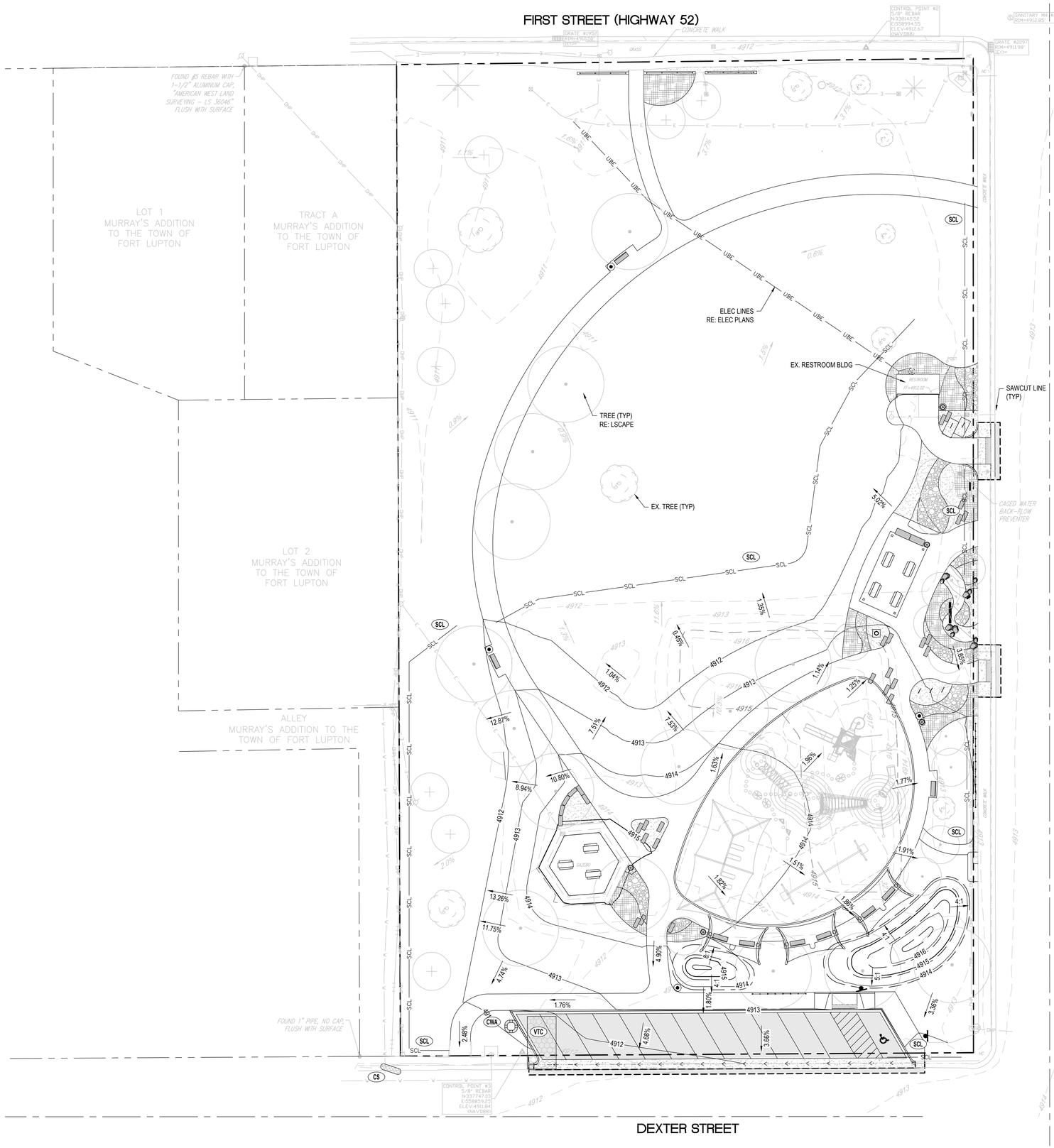
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SCALE IN FEET

SHEET TITLE:
DEMOLITION PLAN

C-101

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DRAWN BY: JJC



GENERAL LEGEND

- PROPERTY LINE
- EASEMENT
- EX MINOR CONTOUR
- EX MAJOR CONTOUR
- PR MINOR CONTOUR
- PR MAJOR CONTOUR
- EX SPOT ELEVATION
- PR SPOT ELEVATION
- SLOPE ARROW
- SAWCUT LINE
- FLOW LINE
- CURB AND GUTTER
- ASPHALT PAVING
- CONCRETE PAVING
- GRAVEL
- SIGN POST

EROSION CONTROL LEGEND

- SCL — SEDIMENT CONTROL LOG RE: SHT CD-201
- CWA — CONCRETE WASHOUT AREA RE: SHT CD-201
- VTC — VEHICLE TRACTION CONTROL RE: SHT CD-201
- CS — CURB SOCK RE: SHT CD-201
- IP — INLET/OUTLET PROTECTION RE: SHT CD-201

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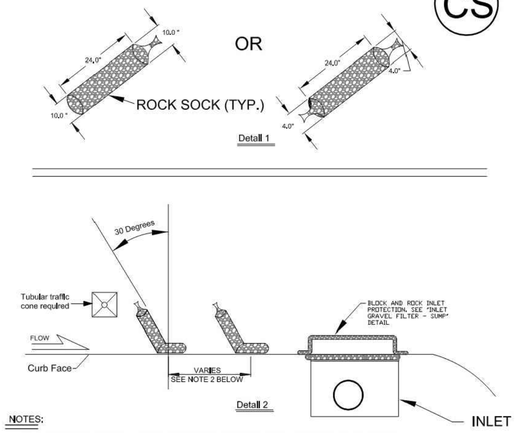
SHEET TITLE:
EROSION CONTROL PLAN

C-201

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811

CS

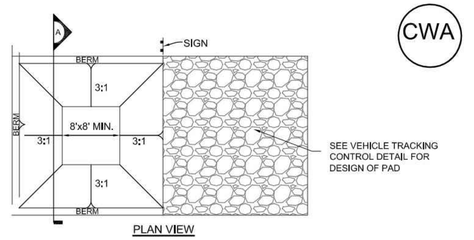


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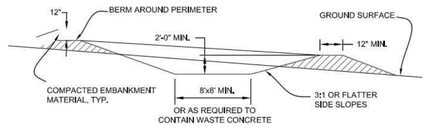
1) SOCKS WILL BE USED UPGRADIENT OF THE INLET AND FLUSH WITH THE CURB.
2) NO LESS THAN TWO 10 INCH DIAMETER SOCKS MUST BE USED IN SEQUENCE, SPACED NO MORE THAN FIVE FEET APART. NO LESS THAN SIX SOCKS SHALL BE USED IF THE 4 INCH SOCK IS USED, ALSO SPACED AT NO MORE THAN 5 FEET APART.
3) ALIGN AT 30 DEGREES 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.

CITY OF Fort Lupton EST 1836 — COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	ON GRADE INLET PROTECTION	EC 6
		DATE: 8/15/14

CWA



PLAN VIEW



SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

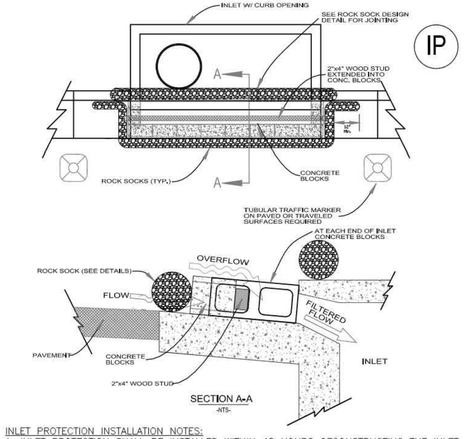
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT ARE TO OPERATORS OF CONCRETE TRCUYKS AND PUMP RIGS.

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AND APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH, OR OTHERWISE STABILZE IN A MANNER APPROVED BY THE CITY.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.
5. PORTABLE ROLLOFF TYPE OF CONCRETE WASHOUT FACILITIES WILL ALSO BE ALLOWED.

CITY OF Fort Lupton EST 1836 — COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	CONCRETE WASHOUT AREA	EC 9
		DATE: 8/15/14

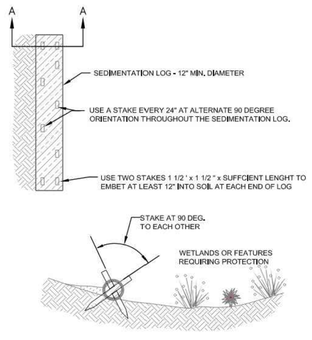
IP



INLET PROTECTION INSTALLATION NOTES:
1. INLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OFCONSTRUCTING 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.

CITY OF Fort Lupton EST 1836 — COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	INLET GRAVEL FILTER - SUMP	EC5
		DATE: 8/15/14

SCL



SECTION A - A

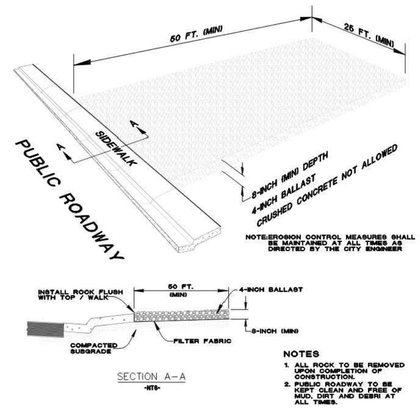
SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF SEDIMENT CONTROL LOG.
2. SEDIMENT CONTROL LOGS INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR, OR COCONUT FIBER.
4. NOT FOR USE IN CONCENTRATED FLOW AREAS.
5. THE SEDIMENT CONTROL LOG SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 2".

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. THE SWMP MANAGER SHALL INSPECT SEDIMENT CONTROL LOGS DAILY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE CREST OF LOG.
3. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE COVERED WITH TOP SOIL, DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

CITY OF Fort Lupton EST 1836 — COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	SEDIMENT CONTROL LOGS	EC 16
		DATE: 8/15/14



NOTES
1. ALL ROCK TO BE REMOVED UPON COMPLETION OF CONSTRUCTION.
2. PUBLIC ROADWAY TO BE KEPT CLEAN AND FREE OF MUD, DIRT AND DEBRI AT ALL TIMES.

CITY OF Fort Lupton EST 1836 — COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	VEHICLE TRACKING PAD	EC 8
		DATE: 8/15/14

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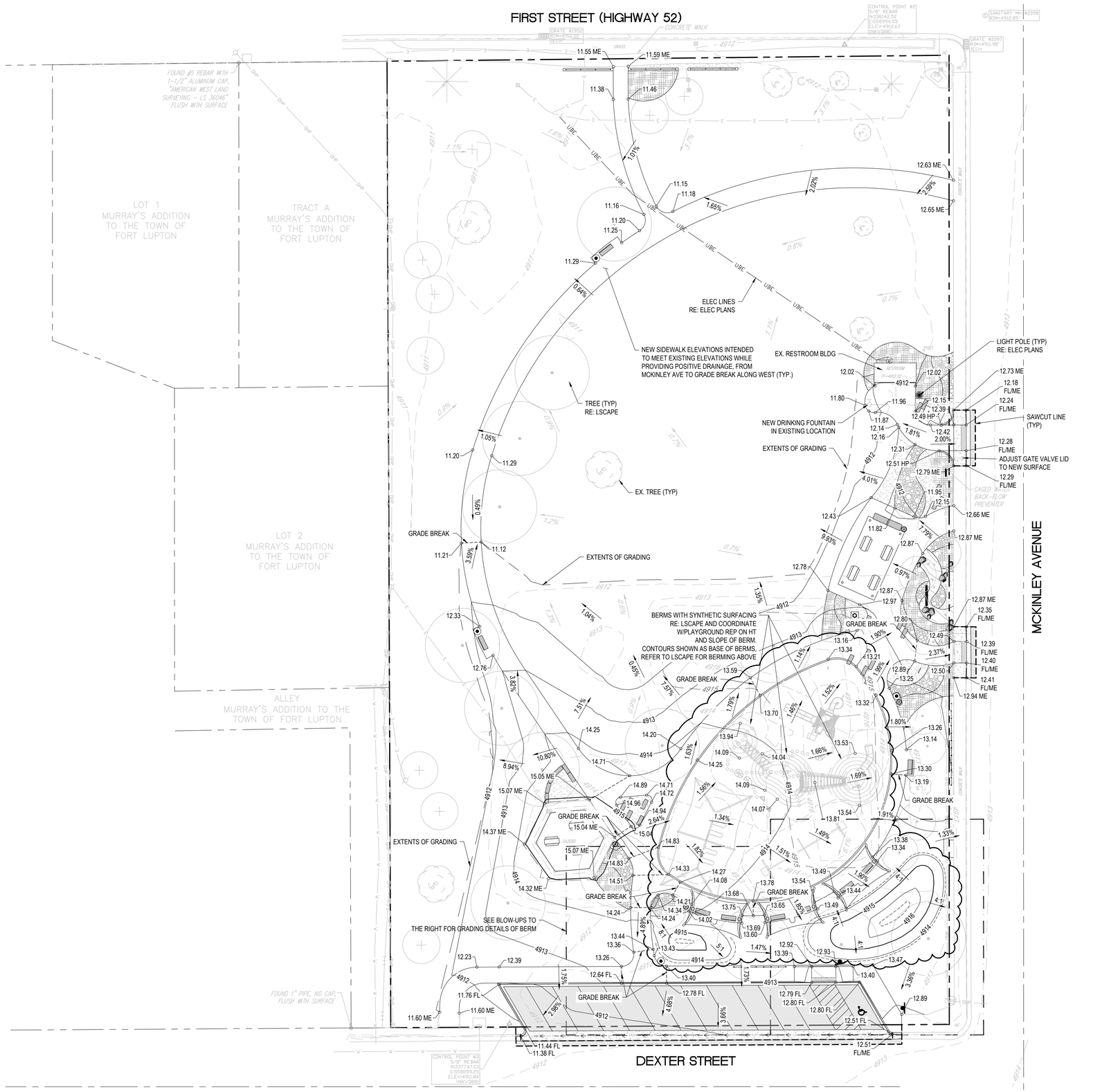
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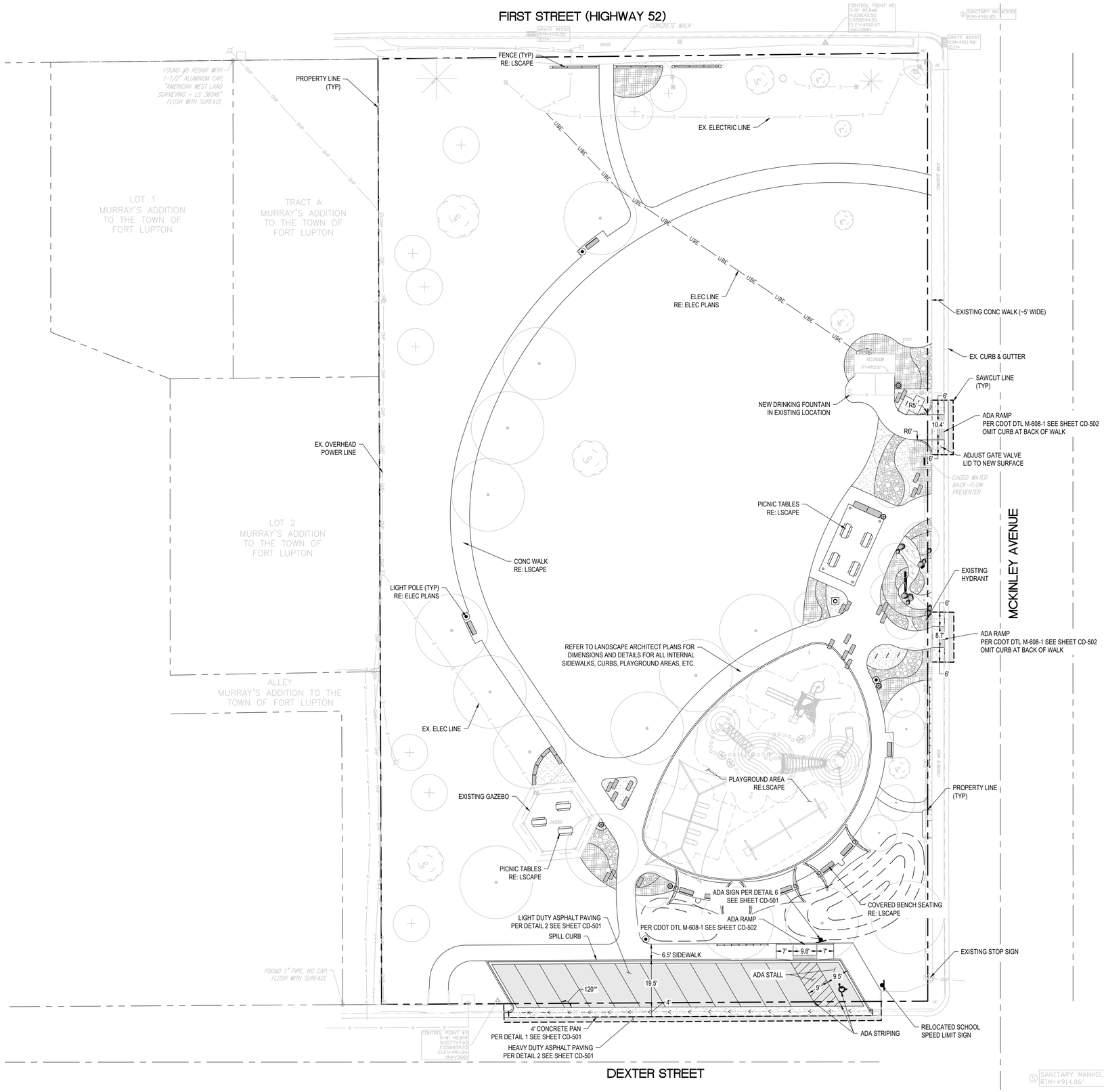
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SHEET TITLE:
EROSION CONTROL DETAILS

CD-201

811


FIRST STREET (HIGHWAY 52)
DEXTER STREET
MCKINLEY AVENUE
LOT 1 MURRAY'S ADDITION TO THE TOWN OF FORT LUPTON
TRACT A MURRAY'S ADDITION TO THE TOWN OF FORT LUPTON
LOT 2 MURRAY'S ADDITION TO THE TOWN OF FORT LUPTON
ALLEY MURRAY'S ADDITION TO THE TOWN OF FORT LUPTON
FOUND #5 REBAR WITH 1-1/2" ALUMINUM CAP, "AMERICAN WEST LAND SURVEYING - LS 36046" FLUSH WITH SURFACE
FOUND 1" PIPE, NO CAP, FLUSH WITH SURFACE
CONTROL POINT #2 5/8" REBAR N:338142.52 E:2558994.55 ELEV:4912.67 (NAVD88)
CONTROL POINT #3 5/8" REBAR N:337747.23 E:2558959.25 ELEV:4911.84 (NAVD88)
SANITARY MH #2098 RIM=4912.89'
GRATE #1958 RIM=4910.50' ELEC
GRATE #2097 RIM=4911.98' ELEC
CONCRETE WALK
GRASS
EX. RESTROOM BLDG
ELEC LINES RE: ELEC PLANS
NEW SIDEWALK ELEVATIONS INTENDED TO MEET EXISTING ELEVATIONS WHILE PROVIDING POSITIVE DRAINAGE, FROM MCKINLEY AVE TO GRADE BREAK ALONG WEST (TYP.)
TREE (TYP) RE: LSCAPE
EX. TREE (TYP)
NEW DRINKING FOUNTAIN IN EXISTING LOCATION
EXTENTS OF GRADING
LIGHT POLE (TYP) RE: ELEC PLANS
SAWCUT LINE (TYP)
ADJUST GATE VALVE LID TO NEW SURFACE
CAGED W/ H.B. BACK-FLOW PREVENTER
GRADE BREAK
BERMS WITH SYNTHETIC SURFACING RE: LSCAPE AND COORDINATE W/PLAYGROUND REP ON HT AND SLOPE OF BERM. CONTOURS SHOWN AS BASE OF BERMS. REFER TO LSCAPE FOR BERMING ABOVE
SEE BLOW-UPS TO THE RIGHT FOR GRADING DETAILS OF BERM
GRADE BREAK
EXTENTS OF GRADING
GRADE BREAK
GRADE BREAK
GRADE BREAK
GRADE BREAK
EXTENTS OF GRADING
GRADE BREAK
GRADE BREAK
GRADE BREAK
GRADE BREAK



GENERAL LEGEND

- PROPERTY LINE
- EASEMENT
- EX MINOR CONTOUR
- EX MAJOR CONTOUR
- PR MINOR CONTOUR
- PR MAJOR CONTOUR
- EX SPOT ELEVATION
- PR SPOT ELEVATION
- SLOPE ARROW
- SAWCUT LINE
- FLOW LINE
- CURB AND GUTTER
- ASPHALT PAVING
- CONCRETE PAVING
- GRAVEL
- SIGN POST

GENERAL NOTES:

1. REFERENCE LANDSCAPING PLANS FOR ALL ONSITE FLATWORK, STRUCTURES, FENCING, PLAYGROUNDS, SEAT WALLS, SPECIFICATIONS, ETC.
2. REFERENCE THESE CIVIL PLANS AND SPECIFICATIONS FOR FLATWORK ADJACENT TO ROW (ASPHALT, CURB & GUTTER, ADA RAMPS, DRAINAGE PANS, TRAFFIC/PARKING SIGNAGE, PAVEMENT STRIPING, ETC.).

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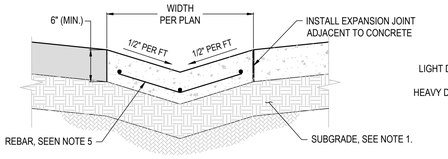
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SHEET TITLE:
HORIZONTAL
CONTROL PLAN

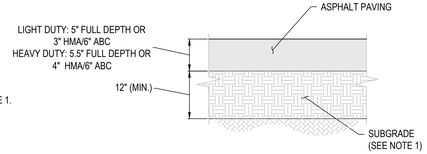
C-501



NOTES:

1. SUBGRADE TO BE OVER-EXCAVATED, MOISTURE TREATED, AND RECOMPACTED PER SPECIFICATIONS.
2. EXPANSION JOINTS AND CONTRACTION JOINTS SHOWN PER SEPARATE DETAIL.
3. FIBERMESH REINFORCEMENT SHALL BE IN ALL CONCRETE, PER SPECIFICATIONS.
4. CONCRETE JOINT LAYOUT PLAN SHALL BE PROVIDED BY THE CONTRACTOR TO THE OWNER FOR THEIR APPROVAL.
5. REINFORCEMENT:
   - (3) #4 REBAR PARALLEL TO FLOWLINE
   - (1) #4 REBAR PERPENDICULAR REBAR AT 24" O.C.
   - 2.5" CLEAR OF LIMITS OF CONCRETE PAN

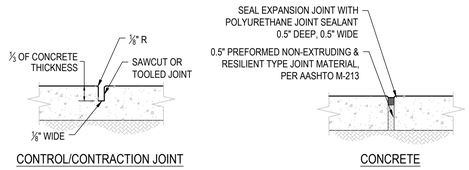
1 REINFORCED CONCRETE PAN DETAIL
NOT TO SCALE



NOTES:

1. SUBGRADE TO BE OVER-EXCAVATED, MOISTURE TREATED, AND RECOMPACTED PER SPECIFICATIONS.
2. LIGHT DUTY ASPHALT TO BE INSTALLED FOR CAR PARKING STALLS.
3. HEAVY DUTY ASPHALT TO BE INSTALLED FOR DRIVE LANES, SERVICE DRIVES, AND BUS LOOPS.
4. REFER TO SPECIFICATIONS FOR SURFACE (TOP) COURSE TYPES AND MINIMUM THICKNESS.

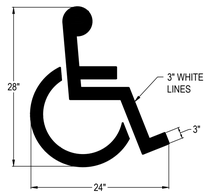
2 FULL DEPTH ASPHALT PAVEMENT SECTION DETAIL
NOT TO SCALE



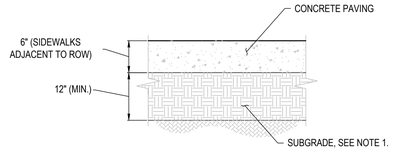
NOTES:

1. CONTROL/CONTRACTION JOINTS SHALL BE AT INTERVAL TO MATCH WIDTH OF SIDEWALK (6' MAX).
2. PROVIDE EXPANSION JOINTS IN THE CURB AT INTERVALS NOT EXCEEDING 100 FEET AND AT ALL LOCATIONS WHERE NEW SIDEWALK CONNECTS TO EXISTING OR PROPOSED CONCRETE STRUCTURES, UNLESS OTHERWISE NOTED. REFER TO PLAN FOR SPECIFIC LOCATIONS.
3. REMOVE ANY PLASTIC FORMING MATERIAL (E.G., "ZIP STRIPS") FROM THE PREFORMED JOINT FILLER BEFORE APPLYING JOINT SEALANT.

3 CONCRETE JOINT DETAIL
NOT TO SCALE



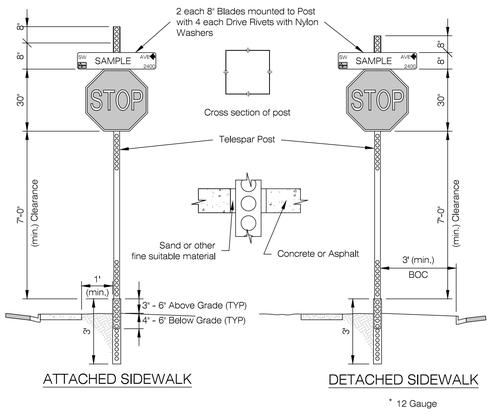
4 ADA SYMBOL PAVEMENT DETAIL
NOT TO SCALE



NOTES:

1. SUBGRADE TO BE OVER-EXCAVATED, MOISTURE TREATED, AND RECOMPACTED PER SPECIFICATIONS.
2. EXPANSION JOINTS AND CONTRACTION JOINTS SHOWN PER SEPARATE DETAIL.
3. FIBERMESH REINFORCEMENT SHALL BE IN ALL CONCRETE, PER SPECIFICATIONS
4. HEAVY DUTY CONCRETE TO HAVE REINFORCEMENT: #4 REBAR, 12-INCHES ON CENTER EACH WAY, 3-INCHES CLEAR ON ALL SIDES, REFERENCE SPECIFICATIONS.

5 CONCRETE PAVEMENT SECTION DETAIL
NOT TO SCALE



NOTES:

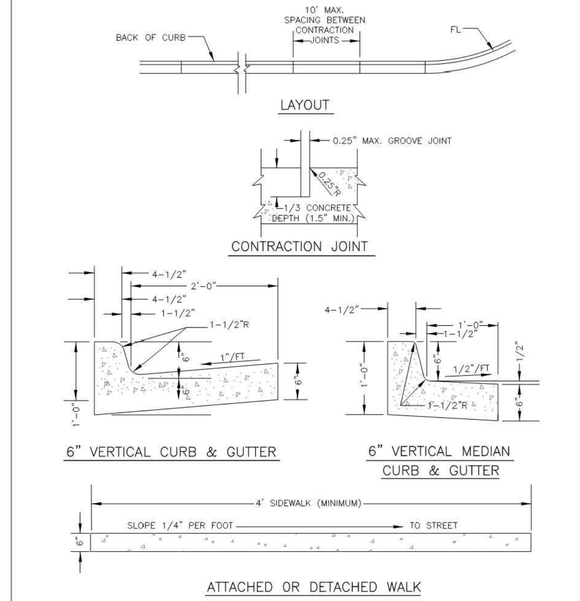
1. ATTACH THE SIGN PANELS TIGHTLY TO THE POST AND USE OVERSIZED WASHERS TO KEEP THE SIGN FROM BREAKING LOOSE FROM THE POST WHEN HIT BY A VEHICLE.
2. SIGN PANELS SHOULD BE MOUNTED A MINIMUM OF 7 FEET ABOVE THE PAVEMENT OR GROUND.
3. SIGNS LARGER THAN 36 INCHES IN LENGTH OR WIDTH REQUIRE WIND BRACING AND SPECIAL POST DESIGN.
4. ANCHOR STUB AND POST ARE SQUARE STEEL TUBE (PERFORATED).
5. ALL "NO PARKING" SIGNS SHALL BE INSTALLED AT 45° FROM FLOW LINE.
6. R1-1 "STOP" SIGN 30" HIGH DENSITY/DIAMOND GRADE SIGN MOUNTED TO POST WITH 1EACH DRIVE RIVET WITH NYLON WASHER AGAINST SIGN FACE (ON TOP OF THE SIGN). SIGN SHALL BE MOUNTED WITH 1 EACH 5/16"X2 1/2" HEW BOLT WITH NYLON WASHERS AGAINST SIGN FACE (ON BOTTOM OF THE SIGN). SECURED WITH 1 EACH 5/16" HEX NUT ON THE BACK SIDE OF POST.
7. 4" CORE DRILL IN ASPHALT OR CONCRETE OR PROVIDE A 4" PVC SLEEVE CUT FLUSH TO THE SURFACE FOR PLACEMENT OF ANCHOR POST. VOIDS TO BE FILLED IN WITH SAND OR OTHER FINE SUITABLE MATERIAL.

6 SIGN POST DETAIL
NOT TO SCALE

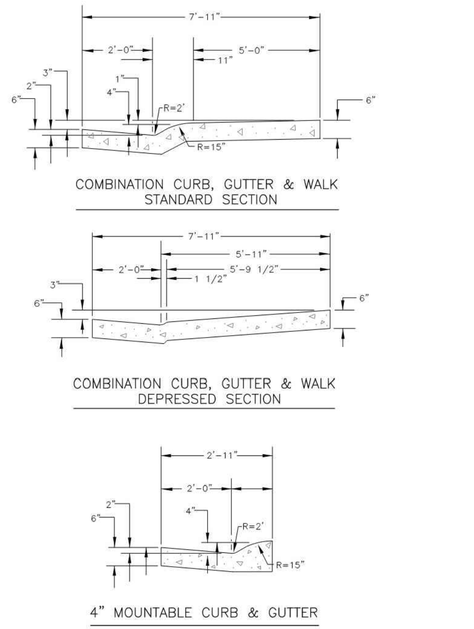


SIGNAGE NOTES:

1. SIGNS SHALL COMPLY WITH MUTCD REQUIREMENTS FOR MATERIALS AND INSTALLATION. REFER TO DETAIL S-614-2.
2. CLASS I SIGNS SHALL HAVE A MINIMUM THICKNESS OF 0.080 ALUMINUM GAUGE FOR SIGNS 12"–36", AND 0.100 ALUMINUM GAUGE FOR SIGNS 36" AND LARGER.
3. CERTAIN SIGNS MAY REQUIRE ADJUSTED PLACEMENT OR ROTATION. COORDINATE FINAL POSITIONING WITH THE ENGINEER. STEEL PIPE POSTS SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.



CITY OF Fort Lupton — COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	VERTICAL CURB AND GUTTER	R7
		DATE: 8/15/14



CITY OF Fort Lupton — COME PAINT YOUR FUTURE WITH US	DESIGN STANDARDS	STANDARD DRAWING
	COMBINATION CURB, GUTTER, AND WALK	R8
		DATE: 8/15/14

CHECKED BY: ETN
DRAWN BY: JJC

NORRIS DESIGN
PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
131 MCKINLEY AVE
FORT LUPTON, CO 80621

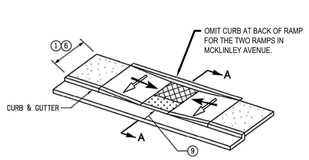
OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694

CONTERRA ENGINEERING

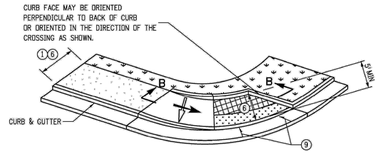
DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
HORIZONTAL CONTROL DETAILS

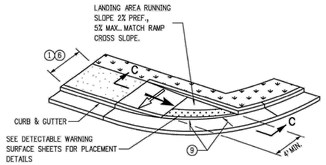
CD-501



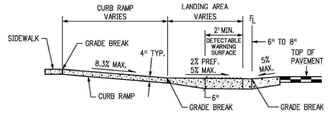
PARALLEL RAMP
(TYPICAL)



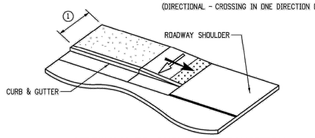
PARALLEL RAMP
(SIDEWALK ENDS)



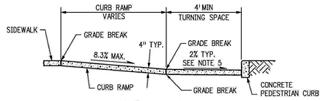
PARALLEL RAMP
(DIRECTIONAL - CROSSING IN ONE DIRECTION ONLY)



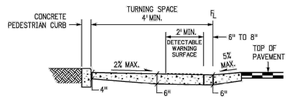
SECTION C-C



SIDEWALK TO SHOULDER TRANSITION



SECTION B-B



SECTION A-A

SIDEWALK

TURNING SPACE (4) (5) (6)

DETECTABLE WARNING SURFACE (DWS)

PARALLEL RAMP NOTES

1. RAMP WIDTH - PROVIDE A RAMP WIDTH EQUAL TO THE ADJOINING SIDEWALK, PROVIDE 4 FT. WIDTH MINIMUM. RAMPS SERVICING SHARED USE PATHS SHALL MATCH THE WIDTH OF THE PATH.
2. RAMP RUNNING SLOPE - 8.3% MAX.
3. RAMP CROSS SLOPE - 2.0% MAX.
4. TURNING SPACE RUNNING SLOPE - 2.0% MAX. TURNING SPACE RUNNING SLOPE IS MEASURED PERPENDICULAR TO THE BACK OF CURB.
5. TURNING SPACE CROSS SLOPE - 2.0% TYPICAL, AT CROSSINGS WITHOUT YIELD OR STOP CONTROL, OR WITH A SIGNAL WHERE VEHICLES CAN PROCEED THROUGH THE INTERSECTION WITHOUT SLOWING OR STOPPING, THE CROSS SLOPE OF THE TURNING SPACE MAY EQUAL THE HIGHWAY GRADE. AT MIDBLOCK PEDESTRIAN STREET CROSSINGS THE TURNING SPACE CROSS SLOPE MAY EQUAL THE HIGHWAY GRADE. TURNING SPACE CROSS SLOPE IS MEASURED IN THE DIRECTION OF THE RAMP RUN.
6. TURNING SPACE DIMENSIONS - PROVIDE A TURNING SPACE AT THE BOTTOM OF PARALLEL RAMPS WITH A WIDTH EQUAL TO THE WIDTH OF THE CURB RAMP. PROVIDE 4 FT. MINIMUM, MEASURED IN THE DIRECTION OF THE RAMP RUN. IF THE TURNING SPACE IS CONSTRAINED ON TWO SIDES, PROVIDE 5 FT. MEASURED IN THE DIRECTION OF PEDESTRIAN STREET CROSSING. THE TURNING SPACE MAY CONTAIN THE DETECTABLE WARNING SURFACE.
7. RAMP ALIGNMENT - RAMPS SHALL BE ALIGNED SO THE TURNING SPACE IS FULLY CONTAINED WITHIN THE CROSSWALK OR STREET CROSSING THEY SERVE. PROVIDE ONE RAMP FOR EACH STREET CROSSING DIRECTION. IN ALTERATIONS, WHERE EXISTING PHYSICAL CONSTRAINTS PREVENT PROVIDING ONE CURB RAMP FOR EACH CROSSING DIRECTION, A SINGLE DIAGONAL CURB RAMP (ON THE APEX OF A CORNER) SHALL BE PERMITTED TO SERVE BOTH PEDESTRIAN STREET CROSSINGS. DIAGONAL RAMPS ARE NOT ACCEPTABLE IN NEW CONSTRUCTION, OR FULL-DEPTH RECONSTRUCTION.
8. RAMP LENGTH - PARALLEL RAMP LENGTH IS DEPENDENT UPON THE RAMP SLOPE AND THE CHANGE OF ELEVATION FROM THE TURNING SPACE TO THE SIDEWALK. WHERE TERRAIN IS SLOPING A RAMP IS NOT REQUIRED TO CHASE GRADE MORE THAN 15 FT. REGARDLESS OF THE RESULTING RAMP SLOPE.
9. GUTTER COUNTER SLOPE - 5.0% MAX.

TYPE 2 PARALLEL CURB RAMPS

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK	(R-X)		
Last Modification Date: 07/31/19	(R-X)		
Detailer Initials: LTA	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

Colorado Department of Transportation
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CDOT HQ, 3rd Floor
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Phones 303-757-9021 FAX: 303-757-9868
Project Development Branch JBK

CURB RAMPS

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-608-1
Standard Sheet No. 4 of 10
Project Sheet Number:

CHECKED BY: ETN
DRAWN BY: JJC

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KOSHIO PARK
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FORT LUPTON, CO 80621

OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
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CONTERRA ENGINEERING

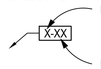
DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
HORIZONTAL CONTROL DETAILS

CD-502

REFERENCES

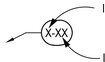
CALLOUTS



SCHEDULE

INDICATES SCHEDULE
M - MATERIAL F - FENCE
P - PAVEMENT S - AMENITY

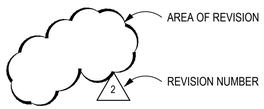
INDICATES NUMBER



INDICATES NOTES LEGEND
D - DEMOLITION
N - KEYNOTE

INDICATES NUMBER

REVISION SYMBOL



AREA OF REVISION

REVISION NUMBER

ABBREVIATIONS

&	AND
@	AT
℄	CENTERLINE
Φ	DIAMETER OR ROUND
#	POUND OR NUMBER
AB	ANCHOR BOLT
AD	AREA DRAIN
ADDM	ADDENDUM
ADJ	ADJUSTABLE
AGG	AGGREGATE
ALUM	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ASPH	ASPHALT
ARCH	ARCHITECT(URAL)
BOC	BACK OF CURB
BW	BOTTOM OF WALL
BS	BOTTOM OF STAIR
BEV	BEVEL
BITUM	BITUMINOUS
BLDG	BUILDING
BOT	BOTTOM
BSMT	BASEMENT
BTWN	BETWEEN
BRLP	BURLAP
CB	CATCH BASIN
CF	CUBIC FOOT/FEET
CHAM	CHAMFER
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT(S)
CO	CLEAN OUT
COL	COLUMN
COMP	COMPACTED
CONC	CONCRETE
COND	CONDITION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CTR	CENTER
CY	CUBIC YARD(S)
DPTH	DEEP,DEPTH
DBL	DOUBLE
DEMO	DEMOLISH, DEMOLITION
DEP	DEPRESSED
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DWG	DRAWING
E	EAST
EA	EACH
EJ	EXPANSION JOINT
ELEV	ELEVATION
ELEC	ELECTRICAL
ENCL	ENCLOSURE
EQ	EQUAL
EW	EACH WAY
EQUIV	EQUIVALENT
EXIST, EX	EXISTING
FD	FLOOR DRAIN
FDN	FOUNDATION
FF	FACE FOOT
FFE	FINISH FLOOR ELEVATION
FIN	FINISH(ED)
FG	FINISH GRADE
FL	FLOWLINE
FLR	FLOOR
FLASH	FLASHING
FT	FOOT, FEET
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACT(OR)
GND	GROUND
GR	GRADE
HP	HIGH POINT
HT	HEIGHT
HORIZ	HORIZONTAL
INSUL	INSULATION
IN	INCH
INT	INTEGRAL
INV	INVERT
JST	JOIST
JNT	JOINT
KJ	KEYED JOINT
LP	LOW POINT
LF	LINEAL FEET
LBS	POUNDS
MAX	MAXIMUM
ME	MATCH EXISTING
MECH	MECHANICAL
MEMB	MEMBRANE
MED	MEDIUM
MET	METAL
MFG	MANUFACTURER
MH	MANHOLE
MID	MIDDLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MTD	MOUNTED
MTG	MOUNTING
N	NORTH
NIC	NOT IN CONTRACT
NO, #	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OPP	OPPOSITE
OH	OVERHEAD
PA	PLANTING AREA
PC	POINT OF CURVATURE
PL	PROPERTY LINE
PLBG	PLUMBING
PLNTG	PLANTING
PNL	PANEL
POL	POLISHED
PR	PAIR
PRCST	PRECAST
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PTD	PAINTED
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
RAD	RADIUS
REF	REFERENCE
REINF	REINFORCING
REQ	REQUIRED
ROW	RIGHT OF WAY
S	SOUTH
SC	SCALE
SCHD	SCHEDULE
SCRN	SCREEN
SECT	SECTION
SF	SQUARE FOOT (FEET)
SHT	SHEET
SG	SUBGRADE
SQ	SQUARE
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STRC	STRUCTURAL
SY	SQUARE YARD
SYM	SYMMETRICAL
TC	TOP OF CURB
TS	TOP OF STEP/SEAT
TW	TOP OF WALL
TYP	TYPICAL
VAR	VARIES
VERT	VERTICAL
W	WEST
W/	WITH
WID	WIDTH
WL	WATER LEVEL
W/O	WITHOUT
WT	WEIGHT
WWM	WELDED WIRE MESH

GENERAL NOTES

1. THESE PLANS SHALL NOT BE UTILIZED FOR CONSTRUCTION OR PERMITTING UNLESS STATED FOR SUCH USE IN THE TITLE BLOCK.
2. DRAWINGS ARE INTENDED TO BE PRINTED ON 24 X 36 PAPER. PRINTING THESE DRAWINGS AT A DIFFERENT SIZE WILL IMPACT THE SCALE. VERIFY THE GRAPHIC SCALE BEFORE REFERENCING ANY MEASUREMENTS ON THESE SHEETS. THE RECIPIENT OF THESE DRAWINGS SHALL BE RESPONSIBLE FOR ANY ERRORS RESULTING FROM INCORRECT PRINTING, COPYING, OR ANY OTHER CHANGES THAT ALTER THE SCALE OF THE DRAWINGS.
3. VERIFY ALL PLAN DIMENSIONS PRIOR TO START OF CONSTRUCTION. NOTIFY THE OWNER'S REPRESENTATIVE TO ADDRESS ANY QUESTIONS OR CLARIFY ANY DISCREPANCIES.
4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
5. THE CONTRACTOR SHALL PROVIDE A STAKED LAYOUT OF ALL SITE IMPROVEMENTS FOR INSPECTION BY THE OWNER'S REPRESENTATIVE AND MAKE MODIFICATIONS AS REQUIRED. ALL LAYOUT INFORMATION IS AVAILABLE IN DIGITAL FORMAT FOR USE BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE THE NECESSARY SURVEY SCOPE NEEDED FOR LAYOUT WITH THE OWNER OR OWNER'S REPRESENTATIVE.
6. ALL CONSTRUCTION SHALL COMPLY WITH PROJECT GEOTECHNICAL REPORT.
7. CONTRACTOR SHALL CONFIRM THAT SITE CONDITIONS ARE SIMILAR TO THE PLANS, WITHIN TOLERANCES STATED IN THE CONTRACT DOCUMENTS, AND SATISFACTORY TO THE CONTRACTOR PRIOR TO START OF WORK. SHOULD SITE CONDITIONS BE DIFFERENT THAN REPRESENTED ON THE PLANS OR UNSATISFACTORY TO THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE FOR CLARIFICATION AND FURTHER DIRECTION.
8. CONTRACTOR IS RESPONSIBLE TO PAY FOR, AND OBTAIN, ANY REQUIRED APPLICATIONS, PERMITTING, LICENSES, INSPECTIONS AND METERS ASSOCIATED WITH WORK.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO ANY VIOLATIONS OR NON-CONFORMANCE WITH THE PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS, JURISDICTIONAL CODES, AND REGULATORY AGENCIES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL UTILITY LOCATES PRIOR TO ANY EXCAVATION. REFER TO ENGINEERING UTILITY PLANS FOR ALL PROPOSED UTILITY LOCATIONS AND DETAILS. NOTIFY OWNER'S REPRESENTATIVE IF EXISTING OR PROPOSED UTILITIES INTERFERE WITH THE ABILITY TO PERFORM WORK.
11. UNLESS IDENTIFIED ON THE PLANS FOR DEMOLITION OR REMOVAL, THE CONTRACTOR IS RESPONSIBLE FOR THE COST TO REPAIR UTILITIES, ADJACENT OR EXISTING LANDSCAPE, ADJACENT OR EXISTING PAVING, OR ANY PUBLIC AND PRIVATE PROPERTY THAT IS DAMAGED BY THE CONTRACTOR OR THEIR SUBCONTRACTOR'S OPERATIONS DURING INSTALLATION, ESTABLISHMENT OR DURING THE SPECIFIED MAINTENANCE PERIOD. ALL DAMAGES SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS AS DETERMINED BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR LOGGING ANY DAMAGES PRIOR TO START OF CONSTRUCTION AND DURING THE CONTRACT PERIOD.
12. ALL WORK SHALL BE CONFINED TO THE AREA WITHIN THE CONSTRUCTION LIMITS AS SHOWN ON THE PLANS. ANY AREAS OR IMPROVEMENTS DISTURBED OUTSIDE THESE LIMITS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. IN THE EVENT THE CONTRACTOR REQUIRES A MODIFICATION TO THE CONSTRUCTION LIMITS, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER'S REPRESENTATIVE PRIOR TO ANY DISTURBANCE OUTSIDE OF THE LIMITS OF WORK. NO WORK OR CONSTRUCTION OPERATIONS SHALL BE COMPLETED WITHIN THE CDOT ROW AND NO TRAFFIC DISRUPTIONS REQUIRING CDOT PERMITS SHALL OCCUR WITHIN THE CDOT ROW.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY OF THEIR TRENCHES OR EXCAVATIONS THAT SETTLE. THIS INCLUDES ADDING FILL, RECOMPACTING, SEEDING SODDING, OR ANY OTHER ITEMS REQUIRED TO BRING THE TRENCH ELEVATION TO CORRECT GRADES AT THE END OF THE WARRANTY PERIOD AND TO MEET THE PROPOSED SURFACE CONDITION.
14. THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT A TRAFFIC CONTROL PLAN TO THE APPROPRIATE JURISDICTIONAL AGENCIES AND THE OWNER'S REPRESENTATIVE IF THEIR WORK AND OPERATIONS AFFECT OR IMPACT THE PUBLIC RIGHTS-OF-WAY. OBTAIN APPROVAL PRIOR TO ANY WORK WHICH AFFECTS OR IMPACTS THE PUBLIC RIGHTS-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THIS REQUIREMENT DURING THE CONTRACT PERIOD.
15. SIGHT TRIANGLES AND SIGHT LINES SHALL REMAIN UNOBSTRUCTED BY EQUIPMENT, CONSTRUCTION MATERIALS, PLANT MATERIAL OR ANY OTHER VISUAL OBSTACLE DURING THE CONTRACT PERIOD AND AT MATURITY OF PLANTS PER LOCAL JURISDICTIONAL REQUIREMENTS.
16. NO PLANT MATERIAL OTHER THAN GROUND COVER IS ALLOWED TO BE PLANTED ADJACENT TO FIRE HYDRANTS AS STIPULATED BY JURISDICTIONAL REQUIREMENTS.
17. COORDINATE SITE ACCESS, STAGING, STORAGE AND CLEANOUT AREAS WITH OWNER'S REPRESENTATIVE.
18. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY SAFETY FENCING AND BARRIERS AROUND ALL IMPROVEMENTS SUCH AS WALLS, PLAY STRUCTURES, EXCAVATIONS, ETC. ASSOCIATED WITH THEIR WORK UNTIL SUCH FACILITIES ARE COMPLETELY INSTALLED PER THE PLANS, SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THEIR MATERIAL STOCK PILES AND WORK FROM VANDALISM, EROSION OR UNINTENDED DISTURBANCE DURING THE CONSTRUCTION PERIOD AND UNTIL FINAL ACCEPTANCE IS ISSUED.
20. THE CONTRACTOR SHALL KNOW, UNDERSTAND AND ABIDE BY ANY STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ASSOCIATED WITH THE SITE. IF A STORM WATER POLLUTION PREVENTION PLAN IS NOT PROVIDED BY THE OWNER'S REPRESENTATIVE, REQUEST A COPY BEFORE PERFORMANCE OF ANY SITE WORK.
21. MAINTAIN ANY STORM WATER MANAGEMENT FACILITIES THAT EXIST ON SITE FOR FULL FUNCTIONALITY. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ANY NEW STORM WATER MANAGEMENT FACILITIES THAT ARE IDENTIFIED IN THE SCOPE OF WORK TO FULL FUNCTIONALITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER FOR FAILURE TO MAINTAIN STORM WATER MANAGEMENT FACILITIES DURING THE CONTRACT PERIOD.
22. THE CONTRACTOR SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM EXITING THE SITE OR ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION OR CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THESE REQUIREMENTS DURING THEIR CONTRACTED COURSE OF WORK.
23. THE CONTRACTOR SHALL BE RESPONSIBLE TO PREVENT ANY IMPACTS TO ADJACENT WATERWAYS, WETLANDS, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS RESULTING FROM WORK DONE AS PART OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THESE STANDARDS DURING THEIR CONTRACTED COURSE OF WORK.
24. THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL INSURE THAT ALL LOADS OF CONSTRUCTION MATERIAL IMPORTED TO OR EXPORTED FROM THE PROJECT SITE SHALL BE PROPERLY COVERED TO PREVENT LOSS OF MATERIAL DURING TRANSPORT. TRANSPORTATION METHODS ON PUBLIC RIGHT-OF WAYS SHALL CONFORM TO JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES OR PENALTIES ASSESSED TO THE OWNER RELATING TO THESE REQUIREMENTS.
25. THE CLEANING OF EQUIPMENT IS PROHIBITED AT THE JOB SITE UNLESS AUTHORIZED BY THE OWNER'S REPRESENTATIVE IN A DESIGNATED AREA. THE DISCHARGE OF WATER, WASTE CONCRETE, POLLUTANTS, OR OTHER MATERIALS SHALL ONLY OCCUR IN AREAS DESIGNED FOR SUCH USE AND APPROVED BY THE OWNER'S REPRESENTATIVE.
26. THE CLEANING OF CONCRETE EQUIPMENT IS PROHIBITED AT THE JOB SITE EXCEPT IN DESIGNATED CONCRETE WASHOUT AREAS. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE IN THE STORM SEWER IS PROHIBITED.
27. THE USE OF REBAR, STEEL STAKES, OR STEEL FENCE POSTS TO STAKE DOWN STRAW OR HAY BALES OR TO SUPPORT SILT FENCING USED AS AN EROSION CONTROL MEASURE IS PROHIBITED.
28. LOCAL, STATE AND FEDERAL JURISDICTIONAL REQUIREMENTS, RESTRICTIONS OR PROCEDURES SHALL SUPERSEDE THESE PLANS, NOTES AND SPECIFICATIONS WHEN MORE STRINGENT. NOTIFY THE OWNER'S REPRESENTATIVE IF CONFLICTS OCCUR.

ADA NOTES

29. ALL SITE FEATURES AND FURNISHINGS SHALL BE INSTALLED TO MEET ALL ADA REQUIREMENTS FOR REACH, OBSTRUCTION, KNEE CLEARANCE AND MANEUVERABILITY.
30. REFER TO CIVIL FOR ADA ROUTES, INCLUDING SLOPE AND CROSS SLOPE.

PAVING & LAYOUT NOTES

1. THE CONTRACTOR SHALL INSTALL OR COORDINATE INSTALLATION OF SLEEVING FOR IRRIGATION AND UTILITY IMPROVEMENTS PRIOR TO INSTALLING ALL PAVING. REFER TO IRRIGATION AND UTILITY PLANS FOR SIZE AND LOCATIONS.
2. CONTRACTOR SHALL COORDINATE AND BE RESPONSIBLE FOR ALL SUB-GRADE COMPACTION UNDER PAVED AREAS. REFER TO PLANS, DETAILS, SPECIFICATIONS OR GEOTECHNICAL REPORTS WHICH IDENTIFY COMPACTION REQUIREMENTS. COORDINATE ALL COMPACTION TESTING WITH OWNER'S REPRESENTATIVE. CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR THE REPLACEMENT OF ANY PAVING THAT CRACKS OR MOVES RESULTING FROM IMPROPER COMPACTION.
3. CURVED WALKS AND CURB EDGES ARE INTENDED TO BE CONSTRUCTED WITH SMOOTH FLOWING CURVES. ANYTHING OTHER THAN SMOOTH FLOWING CURVES WILL BE REJECTED AS DETERMINED BY THE OWNER'S REPRESENTATIVE.
4. LAYOUT ALL SURFACING, SCORE JOINTS AND PAVING PATTERNS AS CLOSELY AS POSSIBLE TO PLANS, DETAILS, AND SPECIFICATIONS. DO NOT DEVIATE FROM PLANS UNLESS SPECIFIC APPROVAL IS OBTAINED FROM THE OWNER'S REPRESENTATIVE.
5. CONTRACTOR SHALL COORDINATE A FORM INSPECTION WITH THE OWNER'S REPRESENTATIVE NO LESS THEN 24 HOURS PRIOR TO PLACEMENT OF ANY SURFACING.
6. CONCRETE EDGES, SAW CUTS AND/OR TROWELED SCORE JOINTS SHALL BE CRISP, CLEAN, COMPLETE AND NEAT IN APPEARANCE.
7. ALL EXPOSED PAVING SHALL BE FINISHED PER DETAILS.
8. CONTRACTOR SHALL PROVIDE ALL SUPERVISION, PROTECTION AND FACILITIES NECESSARY TO INSURE PROPER CURING AND FINISH OF PAVING.
9. WHEN APPLICABLE, CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY FENCING AROUND ALL PLAY STRUCTURES UNTIL PROPER FALL SURFACE IS COMPLETELY INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

SITE DEMOLITION NOTES

1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING SITE CONDITIONS PRIOR TO COMMENCING DEMOLITION. NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY CONFLICTS OR CONDITIONS THAT VARY FROM SURVEY.
2. CONTRACTOR SHALL PROTECT ALL EXISTING FEATURES THAT ARE NOT TO BE REMOVED ADJACENT TO THE CONSTRUCTION AREA INCLUDING, BUT NOT LIMITED TO, ADJACENT BUILDINGS, FOUNDATIONS, WALLS, PICNIC SHELTERS, FENCING, RAILING CURBS, AND ABOVE GROUND OR UNDERGROUND UTILITIES.
3. EXISTING TREES TO REMAIN UNLESS OTHERWISE INDICATED, REPORT CONFLICTS TO OWNER'S REP IMMEDIATELY.
4. MITIGATION FOR ANY DAMAGED EXISTING TREES TO BE MITIGATED PER SPECIFICATIONS.
5. PRIOR TO COMMENCING DEMOLITION, BARRIERS SHALL BE ERECTED AROUND ALL PROTECTED TREES WITH CHAINLINK FENCE A MINIMUM OF SIX FEET IN HEIGHT, ONE AND ONE-HALF DISTANCE BETWEEN TRUNK AND DRIP LINE OR ONE FOOT FOR EVERY DIAMETER INCH OF TRUNK, WHICHEVER IS GREATER. THERE SHALL BE NO STORAGE OR MOVEMENT OF EQUIPMENT, MATERIAL, DEBRIS OR FILL WITHIN THE FENCED TREE PROTECTION ZONE. TREE FENCING CAN BE PER INDIVIDUAL TREE OR COMBINED AS LONG AS TREE PROTECTION MINIMUMS STATED ABOVE ARE MET. FENCING MAY BE TEMPORARILY RELOCATED DURING GRADING OPERATIONS IF NEEDED, BUT SHALL BE REINSTALLED BY CLOSE OF SAME BUSINESS DAY.
6. WITHIN THE DRIP LINE OF ANY PROTECTED EXISTING TREE, THERE SHALL BE NO CUT OR FILL OVER FOUR-INCH DEPTH UNLESS A QUALIFIED ARBORIST OR FORESTER HAS EVALUATED AND APPROVED THE DISTURBANCE.
7. NO DAMAGING ATTACHMENTS, WIRES, SIGNS OR PERMITS MAY BE FASTED TO ANY PROTECTED TREE.
8. THE INSTALLATION OF UTILITIES, IRRIGATION LINES OR ANY UNDERGROUND FIXTURE REQUIRING EXCAVATION DEEPER THAN SIX (6) INCHES SHALL BE ACCOMPLISHED BY BORING UNDER THE ROOT SYSTEM OF PROTECTED EXISTING TREES AT A MINIMUM DEPTH OF TWENTY-FOUR(24) INCHES. THE AUGER DISTANCE IS ESTABLISHED FROM THE FACE OF THE TREE (OUTER BARK) AND IS SCALED FROM THE TREE DIAMETER AT BREAST HEIGHT.
9. CONTRACTOR TO FIELD LOCATE PERIMETER FENCING FOR DEMOLITION OPERATIONS FOR OWNER APPROVAL PRIOR TO COMMENCING DEMOLITION. ANY AREA NEEDED FOR TEMPORARY STOCKPILING OF REMOVED MATERIALS SHALL BE SECURELY FENCED AND THE LOCATION APPROVED BY OWNER.
10. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL EXCESS MATERIALS.
11. EXISTING RESTROOM TO BE PROTECTED IN PLACE THROUGHOUT DEMOLITION AND CONSTRUCTION. ANY DAMAGE TO STRUCTURE OR FINISHES TO BE REPAIRED BY CONTRACTOR AT CONTRACTOR'S EXPENSE.
12. CONTRACTOR SHALL REMOVE ALL ITEMS TO EXTENT REQUIRED TO ACCOMMODATE COMPLETION OF WORK AND ESTABLISHMENT OF A SUFFICIENT BASE FOR NEW CONSTRUCTION, INCLUDING TREE ROOTS, SUBGRADE/BASE, AND STRUCTURAL MATERIALS.
13. UPON REMOVAL OF ALL ITEMS, ALL IMPACTED AREAS TO BE FILLED, AMENDED AND COMPACTED AS REQUIRED BY EACH TYPE OF NEW CONSTRUCTION.
14. TREE REMOVAL TO INCLUDE COMPLETE ROOTBALL REMOVAL AND REMOVAL OF LARGE ROOTS OVER 2" DIAMETER. TREE PITS TO BE BACKFILLED AND RE-COMPACTED TO APPROXIMATE EXISTING GRADE IF CONSTRUCTION OPERATIONS WILL NOT IMMEDIATELY COMMENCE TO ALLOW SETTING AT PROPOSED GRADE. ANY OPEN PITS TO BE FENCED IF BACKFILL CANNOT BE COMPLETED IMMEDIATELY.
15. FOR DETAILED INFORMATION ON REMOVAL AND SALVAGE OF ELECTRICAL AND IRRIGATION, SEE ELECTRICAL PLANS AND IRRIGATION PLANS.

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KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
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(303) 587-6694
FORT LUPTON, CO

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SHEET TITLE:
SITE NOTES & ABBREVIATIONS

LS-001

AMENITY SCHEDULE

CODE	DESCRIPTION	PRODUCT NAME	MANUFACTURER	MODEL #	COLOR / FINISH	SIZE / DIMENSIONS	NOTES
S-01	SHADE SHELTER - SMALL	SHADE SAIL	USA SHADE	229.1 ORION	TBD	23' X 14'	OFCI STRUCTURAL ENGINEERING BY MFG.
S-02	SHADE SHELTER - LARGE	MONOSLOPE	POLIGON	MSL-16X30	TBD	30'-1 1/2" X 16'	OFCI STRUCTURAL ENGINEERING BY MFG.
S-03	BACKED BENCH	WALDEN BENCH	THOMAS STEELE	WDB-6-WI34	IPE WITH POWDER COATED STEEL, COLOR: GUNMETAL	70" X 2'	OFCI SURFACE MOUNT
S-04	PICNIC TABLE	WALDEN PICNIC TABLE	THOMAS STEELE	WDTP-8HC-WI34-FS-P	IPE WITH POWER COATED STEEL, COLOR: GUNMETAL	95 1/2" X 62 1/2"	OFCI FREESTANDING
S-05	TRASH RECEPTACLE	WALDEN RECEPTACLE	THOMAS STEELE	WDTR-32-WI-P LID-D-P	IPE WITH POWDER COATED STEEL, COLOR: GUNPOWDER WITH DOME LID	32 GAL, 2' DIA	OFCI SURFACE MOUNT
S-06	PET STATION	LOW PROFILE	DOG WASTE DEPOT	DEPOT-045-B-BLCK	BLACK	5'	OFCI SURFACE MOUNT
S-07	BIKE RACK	LOFTY BIKE RACK	THOMAS STEELE	LBR-2-SF-P	POWDERCOAT BLACK	6" X 26 1/2"	OFCI SURFACE MOUNT
S-08	FOOD PREP TABLE	HANNA RECTANGUALAR BAR TABLE	WABASH VALLEY	HAA5E7PS02	SILVER	72" X 30"	OFCI SURFACE MOUNT
S-09	DRINKING FOUNTAIN	PEDESTAL W/BOTTLE FILLER	MDG	10145 SM & SMSS	UMBRIA GREY	46 1/2" W X 56" H	EXACT MODEL PLUMBING TO BE COORDINATED WITH EXISTING SERVICE LINE. OFCI.

NOTES
1. FURNISHINGS TO BE INSTALLED PER MFG RECOMMENDATIONS.
2. ALL FURNISHINGS ARE OFCI AND INCLUDED FOR REFERENCE ONLY.

PAVEMENT SCHEDULE

CODE	DESCRIPTION	COLOR / FINISH	SIZE / DIMENSIONS	DETAIL	NOTES
P-01	CONCRETE PAVING	STANDARD GREY / MED BROOM	SEE PLANS	1 / LS-501	INTERIOR SITE WALKS AND PADS

KEY NOTES

CODE	DESCRIPTION	DETAIL
N-01	PARK SIGN - NORTH	1 / LS-502
N-02	PARK SIGN - EAST	2 / LS-502
N-03	PARK RULES & REGS SIGN	4 / LS-502
N-04	DECORATIVE FENCE	3 / LS-502
N-05	PLAY CURB	4 / LS-501
N-06	PLAY TURF BASE & PIP INTERFACE	5 / LS-501
N-07	SITE LIGHTING & ELEC., TYP.	RE: ELEC
N-08	RELOCATED EXISTING PLAQUE	
N-09	FOOD TRUCK PEDESTAL	RE: ELEC
N-10	EXISTING GAZEBO AND CONCRETE PAD TO REMAIN	RE: NOTES LS-101
N-11	EXISTING RESTROOM TO REMAIN	
N-12	EXISTING CURB/PAN TO REMAIN, TYP.	
N-13	EXISTING BACKFLOW PREVENTER TO REMAIN	RE: IRRG
N-14	EXISTING FIRE HYDRANT TO REMAIN	
N-15	FUTURE SCULPTURE LOCATION, BY OWNER	
N-16	EXPANSION JOINT, TYP.	1/LS-501
N-17	CONTROL JOINT, TYP.	1/LS-501
N-18	GRADE BREAK AT CONTROL JOINT, TYP.	RE: CIVIL

1

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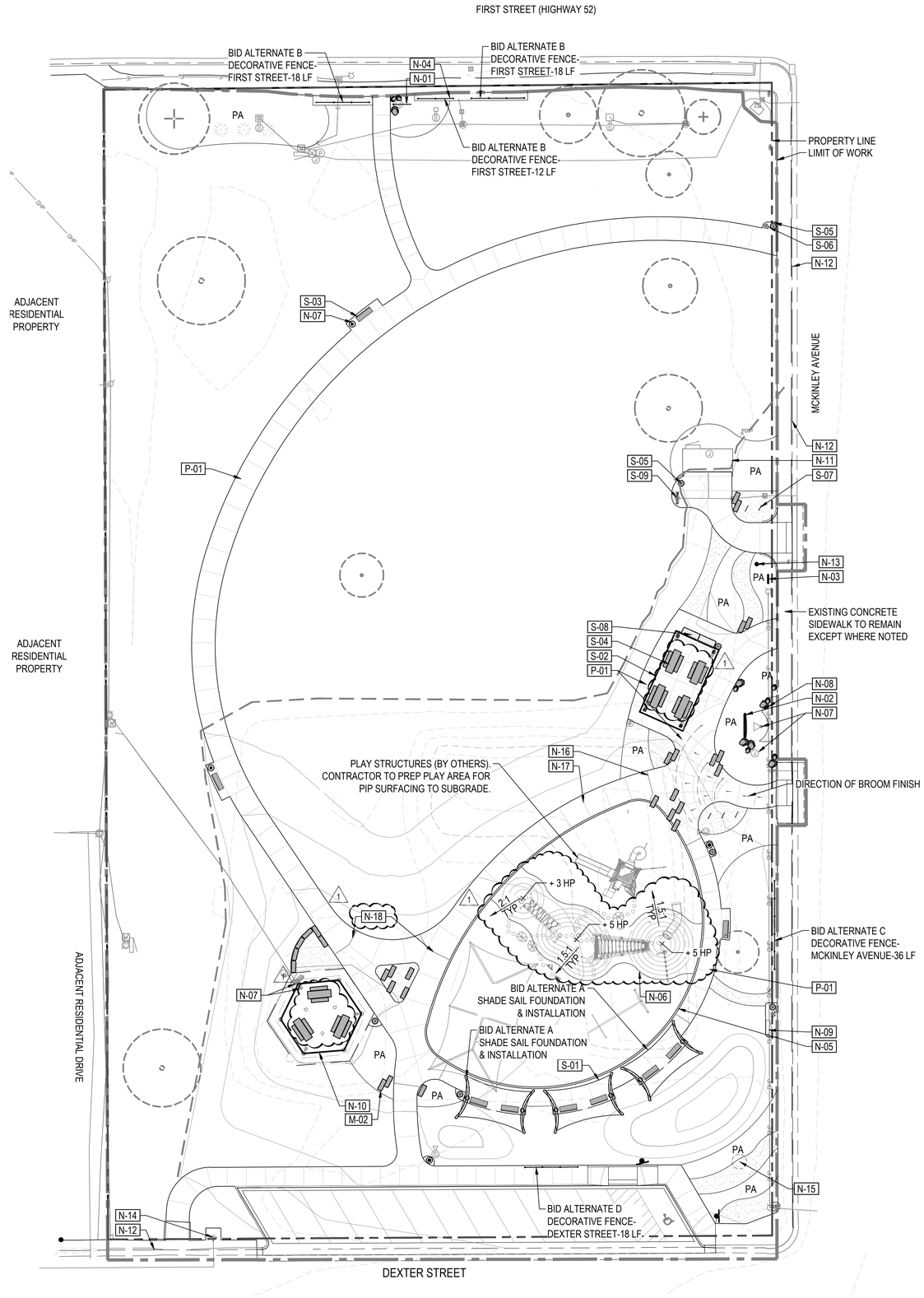
OWNER:
CITY OF FORT LUPTON

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1 05/15/2026 - ADDENDUM 2

SHEET TITLE:
SITE PLAN SCHEDULES

LS-002



LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- LIMIT OF WORK
- LIMIT OF GRADING
- EXISTING TOPOGRAPHY
- PROPOSED TOPOGRAPHY
- EXISTING SIDEWALK
- EXISTING TRAFFIC LIGHT
- EXISTING LIGHT POLE
- PROPOSED SIGN
- EXISTING TREES TO REMAIN
- EXISTING GRASSES TO REMAIN
- PA — PLANTING AREA

SYMBOL	CODE	DESCRIPTION
	P-01	CONCRETE PAVING
	M-04	DECORATIVE ROCK MULCH
	M-05	COBBLE MULCH
SIZE A / SIZE B	M-06	LANDSCAPE BOULDER
	M-07	SANDSTONE BLOCK SEATS
	M-08	CRUSHER FINES PAVING

SYMBOL	CODE	DESCRIPTION
	S-01	SHADE SHELTER - SMALL OFCI
	S-02	SHADE SHELTER - LARGE OFCI
	S-03	BACKED BENCH OFCI
	S-04	PICNIC TABLE OFCI
	S-05	TRASH RECEPTACLE OFCI
	S-06	PET STATION OFCI
	S-07	BIKE RACK OFCI
	S-08	FOOD PREP TABLE OFCI
	S-09	DRINKING FOUNTAIN OFCI

KEY NOTES

CODE	DESCRIPTION
N-01	PARK SIGN - NORTH
N-02	PARK SIGN - EAST
N-03	PARK RULES & REGS SIGN
N-04	DECORATIVE FENCE
N-05	PLAY CURB
N-06	PLAY TURF BASE & PIP INTERFACE
N-07	SITE LIGHTING & ELEC., TYP.
N-08	RELOCATED EXISTING PLAQUE
N-09	FOOD TRUCK PEDESTAL
N-10	EXISTING GAZEBO AND CONCRETE PAD TO REMAIN
N-11	EXISTING RESTROOM TO REMAIN
N-12	EXISTING CURB/PAN TO REMAIN, TYP.
N-13	EXISTING BACKFLOW PREVENTER TO REMAIN
N-14	EXISTING FIRE HYDRANT TO REMAIN
N-15	FUTURE SCULPTURE LOCATION, BY OWNER
N-16	EXPANSION JOINT, TYP.
N-17	CONTROL JOINT, TYP.
1 N-18	GRADE BREAK AT CONTROL JOINT, TYP.

1 GAZEBO RE-FINISHING NOTES

1. EXTERIOR OF GAZEBO TO BE PREPPED AND REPAINTED, COLOR TO MATCH EXISTING
2. EXISTING CONCRETE TO BE POWER-WASHED
3. EXISTING PICNIC TABLES AND TRASH RECEPTACLE TO BE REMOVED AND SALVAGED BY OWNER

NORTH

0 10 20 40

SCALE 1" = 20'

811

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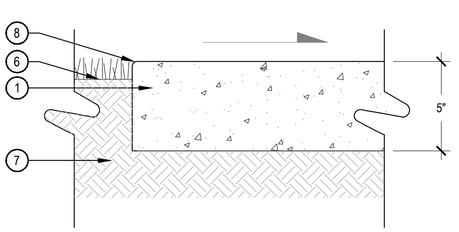
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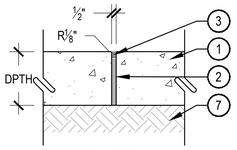
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SHEET TITLE:
SITE PLAN

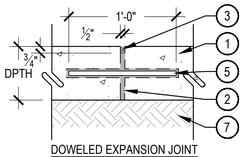
LS-101



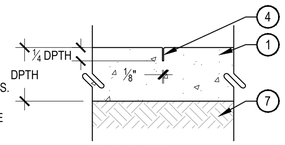
SECTION (NTS)



EXPANSION JOINT



DOWELED EXPANSION JOINT



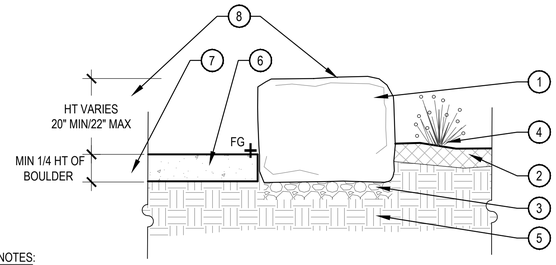
CONTROL JOINT

NOTES:
1. DETAIL APPLIES TO PEDESTRIAN CONCRETE FOR INTERNAL WALKWAYS AND PLAZAS. RE: CIVIL FOR PERIMETER PAVING.
2. MEDIUM BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL EXCEPT WHERE NOTED ON PLANS.
3. USE DOWELED EXPANSION JOINTS WHEN TYING INTO EXISTING CONCRETE PAVING.
4. EXP JOINTS TO BE PLACED ADJ TO ALL STRUCTURES, WALLS, OR FOUNDATIONS.
5. FINISH GRADE OF LANDSCAPE AREA SHALL BE 1" BELOW FINISH GRADE OF CONCRETE WHERE ADJ TO OTHER PAVING, FG OF BOTH PAVED SURFACES TO BE FLUSH.
6. SLOPE ALL FINISH GRADE TO DRAIN PER PLANS.

(1) CIP CONCRETE
(2) EXP JNT MATERIAL, HOLD 3/4" BELOW FG
(3) SIKA 2C NS SEALANT
(4) SAWCUT JNT
(5) DRILL AND INSTALL 12" LENGTH GREASED SMOOTH #4 GA DOWELS INTO EXISTING CONC, 3'-0" O.C.
(6) ADJ LANDSCAPE OR PAVING
(7) COMPACTED SUBGRADE
(8) 1/4" RAD ALL OUTSIDE EDGES

1 CONCRETE PAVING & JOINTS

SCALE: 1 1/2" = 1'-0"

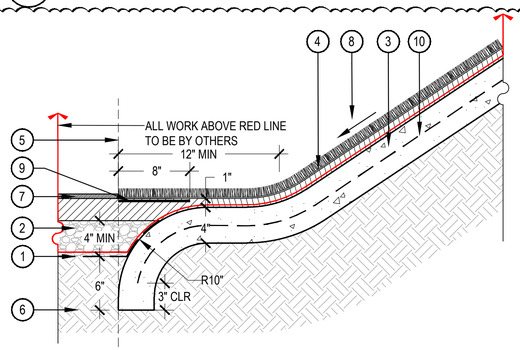


NOTES:
1. FIELD LOCATE ALL STONE BLOCKS FOR OWNER'S REPRESENTATIVE APPROVAL PRIOR TO PLACEMENT.
2. SUBMIT REPRESENTATIVE SAMPLE AND PHOTOGRAPHS SHOWING SCALE, COLOR VARIATION AND EDGE CONDITIONS. OWNER'S REPRESENTATIVE TO APPROVE BOULDER SELECTION ON-SITE AT SUPPLIER OR QUARRY PRIOR TO DELIVERY TO PROJECT SITE.
3. NO BLOCK SHALL BE LESS THAN 28" IN HEIGHT.
4. MIN. BLOCK WIDTH 18". CONFIRM PROPER CIRCULATION CLEARANCE AT EDGES IF WIDER THAN 18".
5. PROVIDE MOCK-UP OF GROUPING OF MIN. 3 BOULDERS FOR REVIEW PRIOR TO INSTALLATION OF REMAINING BOULDERS.
6. WHEN SURROUNDED BY CONCRETE, SET SANDSTONE BLOCKS PRIOR TO SURROUNDING FLATWORK INSTALLATION.

(1) SANDSTONE BLOCK BOULDER, RE: MATERIALS SCHEDULE. LOCATE PER PLANS, PLACE IN GROUPS AND ALIGNED AS SHOWN. SET PLUMB AND WITH FLATTEST FACE ON TOP. STONES TO ABUT EACH OTHER WITH 1" MAX GAPS. ABUT TO FACE OF CONCRETE WHERE SHOWN ON PLANS. KNOCK OFF ALL LOOSE MATERIAL AND SHARP EDGES.
(2) MULCH OR GROUNDCOVER, RE: PLANS
(3) 3" MIN DEPTH AGGREGATE BASE COURSE
(4) ADJACENT LANDSCAPE; RE: PLANS. SLOPE FOR POSITIVE DRAINAGE AROUND BOULDER.
(5) COMPACTED SUBGRADE.
(6) ADJACENT CONCRETE PAVING
(7) BURY MINIMUM 1/4 DEPTH OF BOULDER.
(8) TOP FACE OF BOULDERS TO BE WITHIN 1" HT OF EACH OTHER

3 SANDSTONE BLOCK SEATS

SCALE: 3/4" = 1'-0"

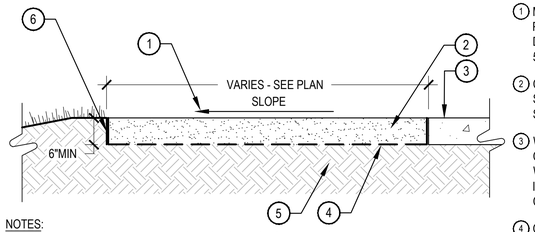


NOTES:
1. COORD FINAL FG W/ PLAYGROUND REP TO CONFIRM GRADES MEET REQUIREMENTS FOR EQUIPMENT INSTALLATION. PLAYGROUND REP TO REVIEW SUBBASE GRADES FOR APPROVAL PRIOR TO INSTALLATION OF CIP CONCRETE.
2. COORD W/ PLAYGROUND REP FOR FOOTINGS OR OTHER FEATURES THAT WILL PENETRATE SUBBASE.

(1) GEOTEXTILE FABRIC
(2) PIP GRAVEL BASE (BY OTHERS)
(3) CIP CONCRETE BASE. FINISH PER TURF MFG RECOMMENDATIONS
(4) SYNPLAY PRO ARTIFICIAL TURF AND CUSHIONING LAYER (BY OTHERS)
(5) LIMIT OF TURF AND FACE OF CIP CONCRETE, RE: PLANS. TURF TO EXTEND MIN 1' BEYOND TOE OF SLOPE.
(6) COMPACTED SUBGRADE
(7) ADJ PIP SURFACING AND CUSHIONING LAYER (BY OTHERS)
(8) SLOPE PER PLANS. PROVIDE SMOOTH TRANSITION AT TOP AND BOTTOM OF SLOPE.
(9) TURF ADHESIVE (BY OTHERS)
(10) 6X6 WELDED WIRE MESH, W1.9 GA

5 PLAY TURF BASE AND PIP INTERFACE

SCALE: 1 1/2" = 1'-0"

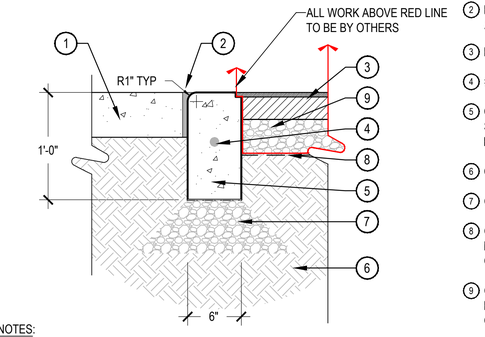


NOTES:
1. STABILIZER TO BE ADDED PRIOR TO COMPACTION AND INSTALLED PER MFG RECOMMENDATIONS.
2. CRUSHER FINES TO BE COMPACTED UNTIL MATERIAL IS FIRMLY LOCKED TOGETHER.
3. CRUSHER FINES DEPTH SHOWN TO BE AFTER COMPACTION.
4. SLOPE TO DRAIN PER PLANS AND PROVIDE SMOOTH TRANSITION TO ADJ LANDSCAPE OR PAVING.
5. FINISH SURFACE TO BE EVEN, SMOOTH AND FREE OF DEPRESSIONS. RECOMPACT AS REQUIRED TO ACHIEVE CONSITENT SURFACE WITH CONTINUOUS POSITIVE DRAINAGE.

(1) MAX 2% CROSS SLOPE PERPENDICULAR TO DIRECTION OF TRAVEL. MAX 5% LONGITUDINAL SLOPE.
(2) CRUSHER FINES WITH STABILIZER, RE: MATERIAL SCHEDULE.
(3) WHERE ADJ TO PAVING, FG OF CRUSHER FINES TO BE LEVEL WITH PAVING FG AT EDGE INTERFACE AFTER COMPACTION. RE: PLANS.
(4) GEOTEXTILE FABRIC, SECURE W/ FABRIC STAKES 5' O.C. AT EACH EDGE, WRAP AT EDGES
(5) COMPACTED SUBGRADE
(6) STEEL EDGER, WHERE ADJ TO LANDSCAPE. RE: PLANS AND MATERIAL SCHEDULE.

2 CRUSHER FINES PAVING

SCALE: 3/4" = 1'-0"



NOTES:
1. INC VERTICAL EXP JNT @ 50' O.C.

(1) ADJ. CONC PAVING
(2) EXP JNT W/ SEALANT WHEN ADJ. TO CONCRETE
(3) PIP SURFACING (BY OTHERS)
(4) #4 REBAR CONT. 3" CLR
(5) CIP CONC, MED BROOM FINISH. SCORE TOP AND ALL EXPOSED FACES @ 10' OC.
(6) COMPACTED SUBGRADE
(7) GRAVEL SUBBASE
(8) GEOTEXTILE FABRIC PER PIP MFG RECOMMENDATIONS (BY OTHERS)
(9) GRAVEL BASE PER PIP MFG RECOMMENDATIONS (BY OTHERS)

4 PLAY CURB

SCALE: 1 1/2" = 1'-0"

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KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON

203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET
1 05/15/2026 - ADDENDUM 2

CS/KS
HV
CHECKED BY:
DRAWN BY:

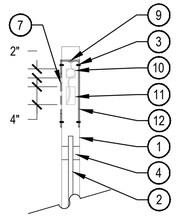
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SITE DETAILS

LS-501

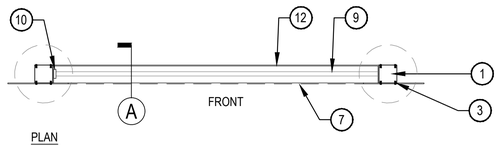
811

NOTES:
1. PROVIDE SHOP DRAWINGS FOR APPROVAL, CONFIRM LAYOUT PRIOR TO FABRICATION / INSTALLATION.
2. ALL STEEL TO BE POWDER COATED, COLOR: BLACK.
3. LANDSCAPE ARCHITECT TO PROVIDE DIGITAL FILES TO FABRICATOR FOR PLASMA CUTTING.

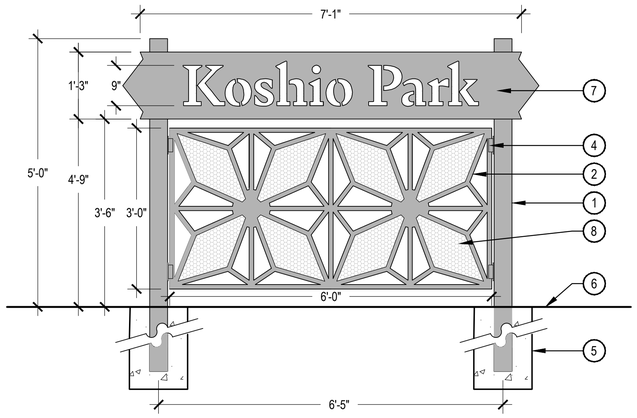
CONTACT:
MIKE MORGAN
970-690-6856
FUSION FABRICATION



SECTION A



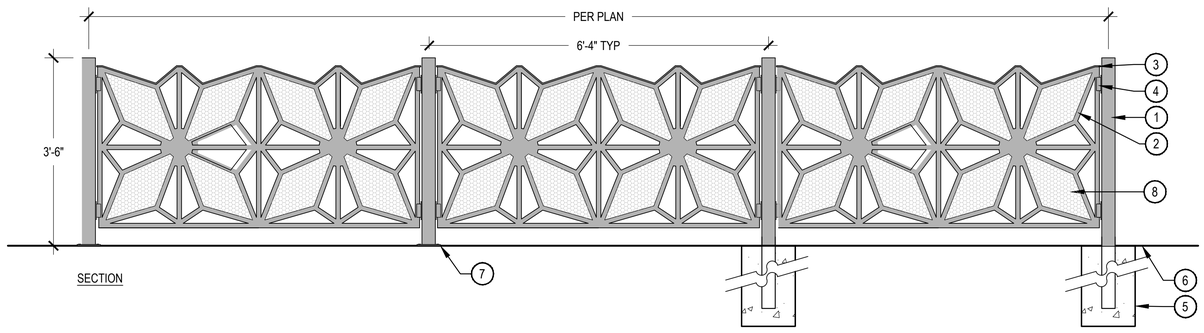
PLAN



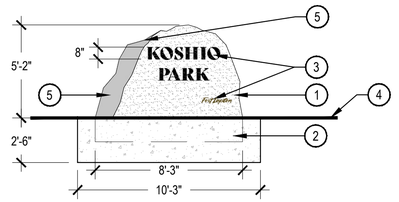
1. 4"X4" SQ. STEEL POST
2. ¼" THK STEEL DECORATIVE FENCE PANEL, RE: DETAIL 1/LS-502
3. TAMPERPROOF FASTENER SCREW, 6" OC MAX., COLOR: BLACK
4. PANEL FASTENER TAB
5. CIP CONC FOOTING, RE: STRC
6. FINISH GRADE
7. ¼" THK STEEL SIGN W/ LETTER CUT OUTS
8. PERFORATED METAL, 22 GA ROUND ON 3/16" STAGGERED CENTERS, 65% OPEN AREA
9. LIGHTING CHANNEL, RE: ELEC
10. DRIVER, RE: ELEC
11. HANDHOLD, RE: ELEC
12. ¼" THK STEEL BACK AND TOP COVER

1 PARK SIGN - NORTH

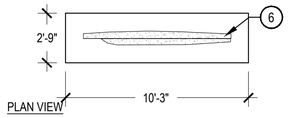
SCALE: 3/4" = 1'-0"



SECTION



FRONT SECTION



PLAN VIEW

NOTES:
1. DIMENSIONS OF STONE ARE APPROXIMATE UNTIL STONE IS SELECTED. FOOTING TO BE REVISED BASED ON FINAL DIMENSIONS.
2. FONT TO BE DETERMINED BY OWNER.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OF SIGN

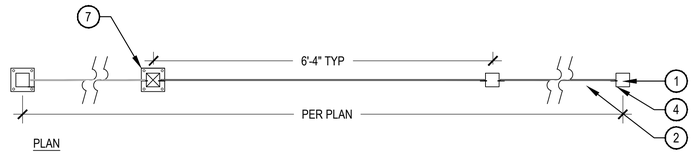


BACK ELEVATION

1. 4"-6" THICK BUFF SANDSTONE SLAB
2. CONCRETE FOOTING, RE: STRUCTURAL
3. 1/4" DEPTH MINIMUM SANDBLAST TEXT. STAIN WITH LITHOCHROME CHEMSTAIN BLACK OR APPROVED EQUAL
4. FINISH GRADE
5. 4-6" THICK RED SANDSTONE SLAB
6. WORK BACK OF STONE TO PROVIDE SMOOTH SURFACE THAT CAN ABUT DIRECTLY FOR AT LEAST 50% OF SLAB. MAX GAP. SEAL ALL SIDES WITH COLOR TO MATCH BUFF STONE.

2 PARK SIGN - EAST

SCALE: 1/4" = 1'-0"



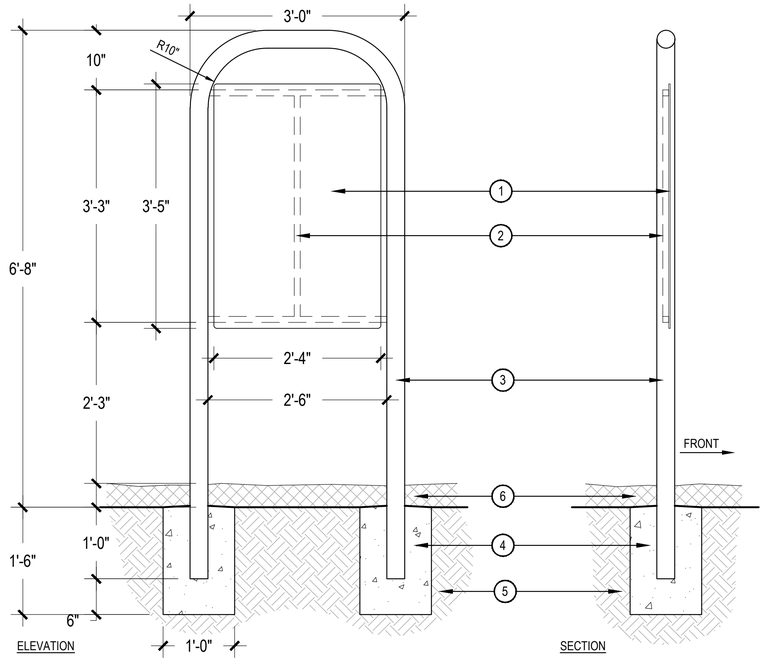
PLAN

NOTES:
1. PROVIDE SHOP DRAWINGS FOR APPROVAL, CONFIRM LAYOUT PRIOR TO FABRICATION / INSTALLATION.
2. VERIFY MOUNTING SURFACE CONDITIONS PRIOR TO FABRICATION.
3. ALL STEEL TO BE POWDER COATED, COLOR: BLACK.
4. LANDSCAPE ARCHITECT TO PROVIDE DIGITAL FILES TO FABRICATOR FOR PLASMA CUTTING.
5. FABRICATOR CONTACT: MIKE MORGAN, 970-690-6856, FUSION FABRICATION

1. 3"X3" SQ. STEEL POST
2. 1/4" THK STEEL PANEL, PLASMA CUT BY FABRICATOR
3. 1/4" x 1" FLAT STOCK STEEL
4. PANEL FASTENER TAB
5. CIP CONC FOOTING, RE: STRC
6. FINISH GRADE
7. SURFACE MOUNT CONDITION - 5.25"X5.25"X0.375" STEEL BASE PLATE, WELD TO STEEL POST, SURFACE MOUNT USING 3/4" Ø F1554 ANCHOR RODS EMBEDDED 12" INTO CONC
8. 22 GA ROUND ON 3/16" STAGGERED CENTERS, 65% OPEN AREA

3 DECORATIVE FENCE - BID ALT B, C, D

SCALE: 3/4" = 1'-0"



ELEVATION SECTION



PARK RULES PANEL

NOTES:
1. POWDER COAT STEEL BLACK.
2. FINAL FONT, TEXT CONTENT AND SIGN COLORS TO BE APPROVED BY OWNER.
3. OWNER TO PROVIDE ORIGINAL ARTWORK FOR LOGO.

1. ALUMINUM SIGN, 0.080 GA, ANCHOR TO STEEL FRAME W/ TAMPER-PROOF BOLTS. COLOR TO BE SELECTED BY OWNER. SIGN FACE TO HAVE A PROTECTIVE GRAFFITI RESISTANT COATING. LETTERING 1" TALL MIN
2. 1"X1" STEEL FRAME, WELDED TO STEEL TUBE
3. 3" OD TUBULAR STEEL POST
4. CIP CONC FOOTING. SET TOP AT BOTTOM OF MULCH. SLOPE TOP TO DRAIN.
5. COMPACTED SUBGRADE
6. PLANTING BED MULCH
7. CITY LOGO
8. SIGN PANEL COLORS TO MATCH CITY COLOR PALETTE.

4 PARK REGULATORY SIGN

SCALE: 1" = 1'-0"

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KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
SITE DETAILS

LS-502

LANDSCAPE NOTES

1. THE CONTRACTOR SHALL FOLLOW THE LANDSCAPE PLANS AND SPECIFICATIONS AS CLOSELY AS POSSIBLE. ANY SUBSTITUTION OR ALTERATION SHALL NOT BE ALLOWED WITHOUT APPROVAL OF THE OWNER'S REPRESENTATIVE. OVERALL PLANT QUANTITY AND QUALITY SHALL BE CONSISTENT WITH THE PLANS.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES. GRAPHIC QUANTITIES TAKE PRECEDENCE OVER WRITTEN QUANTITIES.
3. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO INSPECT AND TAG ALL PLANT MATERIAL PRIOR TO SHIPPING TO THE SITE. IN ALL CASES, THE OWNER'S REPRESENTATIVE MAY REJECT PLANT MATERIAL AT THE SITE IF MATERIAL IS DAMAGED, DISEASED, OR DECLINING IN HEALTH AT THE TIME OF ONSITE INSPECTIONS OR IF THE PLANT MATERIAL DOES NOT MEET THE MINIMUM SPECIFIED STANDARD IDENTIFIED ON THE PLANS AND IN THE SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE FOR INSPECTION AND APPROVAL OF ALL MATERIALS AND PRODUCTS PRIOR TO INSTALLATION.
4. THE CONTRACTOR SHALL WARRANTY ALL CONTRACTED WORK AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER SUBSTANTIAL COMPLETION HAS BEEN ISSUED BY THE OWNER'S REPRESENTATIVE FOR THE ENTIRE PROJECT UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS OR SPECIFICATIONS.
5. REFER TO IRRIGATION PLANS FOR LIMITS AND TYPES OF IRRIGATION DESIGNED FOR THE LANDSCAPE. IN NO CASE SHALL IRRIGATION BE EMITTED WITHIN THE MINIMUM DISTANCE FROM BUILDING OR WALL FOUNDATIONS AS STIPULATED IN THE GEOTECHNICAL REPORT. ALL IRRIGATION DISTRIBUTION LINES, HEADS AND EMITTERS SHALL BE KEPT OUTSIDE THE MINIMUM DISTANCE AWAY FROM ALL BUILDING AND WALL FOUNDATIONS AS STIPULATED IN THE GEOTECHNICAL REPORT.
6. LANDSCAPE MATERIAL LOCATIONS SHALL HAVE PRECEDENCE OVER IRRIGATION MAINLINE AND LATERAL LOCATIONS. COORDINATE INSTALLATION OF IRRIGATION EQUIPMENT SO THAT IT DOES NOT INTERFERE WITH THE PLANTING OF TREES OR OTHER LANDSCAPE MATERIAL.
7. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING POSITIVE DRAINAGE EXISTS IN ALL LANDSCAPE AREAS. SURFACE DRAINAGE ON LANDSCAPE AREAS SHALL NOT FLOW TOWARD STRUCTURES AND FOUNDATIONS. MAINTAIN SLOPE AWAY FROM FOUNDATIONS PER THE GEOTECHNICAL REPORT RECOMMENDATIONS. ALL LANDSCAPE AREAS BETWEEN WALKS AND CURBS SHALL DRAIN FREELY TO THE CURB UNLESS OTHERWISE IDENTIFIED ON THE GRADING PLAN. IN NO CASE SHALL THE GRADE, TURF THATCH, OR OTHER LANDSCAPE MATERIALS DAM WATER AGAINST WALKS. MINIMUM SLOPES ON LANDSCAPE AREAS SHALL BE 2%; MAXIMUM SLOPE SHALL BE 25% UNLESS SPECIFICALLY IDENTIFIED ON THE PLANS OR APPROVED BY THE OWNER'S REPRESENTATIVE.
9. PRIOR TO INSTALLATION OF PLANT MATERIALS, AREAS THAT HAVE BEEN COMPACTED OR DISTURBED BY CONSTRUCTION ACTIVITY SHALL BE THOROUGHLY LOOSENED TO A DEPTH OF 8" - 12" AND AMENDED AS NOTED IN TECHNICAL SPECIFICATIONS OR JURISDICTIONAL REQUIREMENTS.
10. TREES SHALL NOT BE LOCATED IN DRAINAGE SWALES, DRAINAGE AREAS, OR UTILITY EASEMENTS. CONTACT OWNER'S REPRESENTATIVE FOR RELOCATION OF PLANTS IN QUESTIONABLE AREAS PRIOR TO INSTALLATION.
11. THE CENTER OF EVERGREEN TREES SHALL NOT BE PLACED CLOSER THAN 8' AND THE CENTER OF ORNAMENTAL TREES CLOSER THAN 6' FROM A SIDEWALK, STREET OR DRIVE LANE. EVERGREEN TREES SHALL NOT BE LOCATED ANY CLOSER THAN 15' FROM IRRIGATION ROTOR HEADS. NOTIFY OWNER'S REPRESENTATIVE IF TREE LOCATIONS CONFLICT WITH THESE STANDARDS FOR FURTHER DIRECTION.
12. ALL EVERGREEN TREES SHALL BE FULLY BRANCHED TO THE GROUND AND SHALL NOT EXHIBIT SIGNS OF ACCELERATED GROWTH AS DETERMINED BY THE OWNER'S REPRESENTATIVE.
13. ALL TREES ARE TO BE STAKED AND GUYED PER DETAILS FOR A PERIOD OF 1 YEAR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING STAKES AT THE END OF 1 YEAR FROM ACCEPTANCE OF LANDSCAPE INSTALLATION BY THE OWNER'S REPRESENTATIVE. OBTAIN APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO REMOVAL.
14. ALL TREES IN SEED OR TURF AREAS SHALL RECEIVE MULCH RINGS CONTAINING SPECIFIED WOOD MULCH; REFER TO MATERIAL SCHEDULE. OBTAIN APPROVAL FROM OWNER'S REPRESENTATIVE FOR ANY TREES THAT WILL NOT BE MULCHED FOR EXCESSIVE MOISTURE REASONS.
15. PLANTING BEDS ARE TO BE CONTAINED BY SPECIFIED EDGER; REFER TO MATERIAL SCHEDULE. EDGER IS NOT REQUIRED WHEN ADJACENT TO CURBS, WALLS, WALKS OR SOLID FENCES WITHIN 3" OF PRE-MULCHED FINAL GRADE. EDGER SHALL NOT BE REQUIRED TO SEPARATE MULCH TYPES UNLESS SPECIFIED ON THE PLANS.
16. PLANTING BEDS TO BE MULCHED WITH SPECIFIED MULCH; REFER TO MATERIAL SCHEDULE.
17. AT SEED AREA BOUNDARIES ADJACENT TO EXISTING NATIVE AREAS, OVERLAP ABUTTING NATIVE AREAS BY THE FULL WIDTH OF THE SEEDER. (1)
18. EXISTING TURF AREAS THAT ARE DISTURBED DURING CONSTRUCTION, ESTABLISHMENT AND THE MAINTENANCE PERIOD SHALL BE RESTORED WITH NEW SOD. GRADES SHALL BE RESTORED TO MEET GRADING PLAN FINISH GRADE AT END OF WARRANTY PERIOD.
19. WHEN COMPLETE, ALL GRADES SHALL BE WITHIN +/- 1/8" OF FINISHED GRADES AS SHOWN ON THE PLANS.
20. THE CONTRACTOR IS EXPECTED TO KNOW AND UNDERSTAND THE CITY AND COUNTY SPECIFICATIONS FOR LANDSCAPE AND IRRIGATION. IN CASES OF DISCREPANCIES THE HIGHER OF THE TWO STANDARDS SHALL HAVE PRECEDENCE.

BID ALTERNATE E - 1ST STREET LANDSCAPE BED

CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	WATER USE	HEIGHT	SPREAD
DECIDUOUS SHRUBS								
VI MM	6	VIBURNUM BUREJAETICUM `P017S`	MINI MAN™ DWARF MANCHURIAN VIBURNUM	CONT.	#5	LOW	5`-6`	5`-6`
EVERGREEN SHRUBS								
AR PA	11	ARCTOSTAPHYLOS X COLORADOENSIS `PANCHITO`	PANCHITO MANZANITA	CONT.	#5	LOW	1`-2`	3`-4`
ORNAMENTAL GRASSES								
BO BA	10	BOUTELOUA GRACILIS `BLONDE AMBITION`	BLOND AMBITION BLUE GRAMA GRASS	CONT.	#1	VERY LOW	2`-3`	1`-2`

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	WATER USE	HEIGHT	SPREAD
DECIDUOUS CANOPY TREES								
QU SH	2	QUERCUS SHUMARDII	SHUMARD RED OAK	B & B	2" CAL.	LOW	40`-50`	30`-40`
TI RE	7	TILIA AMERICANA `REDMOND`	REDMOND AMERICAN LINDEN	B & B	2" CAL.	MOD	40`-50`	30`-40`
UL CC	7	ULMUS DAVIDIANA CHOICECITY	CHOICE CITY ELM	B & B	2" CAL.	MOD	40`-50`	30`-40`
EVERGREEN TREES								
(1) PI ED	3	PINUS EDULIS	PINON PINE	B & B	6` HT.	VERY LOW	25`-30`	15`-20`
PI NI	6	PINUS NIGRA	AUSTRIAN BLACK PINE	B & B	6` HT.	LOW	50`-60`	30`-40`
ORNAMENTAL TREES								
MA SS	5	MALUS X `SPRING SNOW`	SPRING SNOW CRAB APPLE	B & B	1.5" CAL.	MOD	15`-25`	20`-25`
PR AM	3	PRUNUS AMERICANA	AMERICAN PLUM	B & B	6` CLUMP	LOW	15`-20`	10`-15`
PR CH	1	PRUNUS X VIRGINIANA `P002`	SUCKER PUNCH CANADA CHOKECHERRY	B & B	1.5" CAL.	LOW	25`-30`	20`-25`
PY CA	1	PYRUS CALLERYANA CHANTICLEER	CHANTICLEER PEAR	B & B	1.5" CAL.	MOD	25`-30`	15`-20`
DECIDUOUS SHRUBS								
FA PA	1	FALLUGIA PARADOXA	APACHE PLUME	CONT.	#5	VERY LOW	5`-6`	5`-6`
PH MO	8	PHYSOCARPUS MONOGYNUS	MOUNTAIN NINEBARK	CONT.	#5	LOW	3`-4`	3`-4`
VI MM	9	VIBURNUM BUREJAETICUM `P017S`	MINI MAN™ DWARF MANCHURIAN VIBURNUM	CONT.	#5	LOW	5`-6`	5`-6`
EVERGREEN SHRUBS								
AR PA	33	ARCTOSTAPHYLOS X COLORADOENSIS `PANCHITO`	PANCHITO MANZANITA	CONT.	#5	LOW	1`-2`	3`-4`
ORNAMENTAL GRASSES								
AN WI	1	ANDROPOGON GERARDII `WINDWALKER`	WINDWALKER BIG BLUE STEM	CONT.	#1	LOW	5`-6`	2`-3`
BO BA	42	BOUTELOUA GRACILIS `BLONDE AMBITION`	BLOND AMBITION BLUE GRAMA GRASS	CONT.	#1	VERY LOW	2`-3`	1`-2`
ER AM	4	ERIANTHUS RAVENNAE	HARDY PAMPAS GRASS	EXST.	#1	LOW	10'-12'	5`-6`
MU RE	28	MUHLENBERGIA REVERCHONI `UNDAUNTED`	UNDAUNTED MUHLY	CONT.	#1	MOD	1`-2`	1`-2`
PA SH	9	PANICUM VIRGATUM `SHENANDOAH`	SHENANDOAH SWITCH GRASS	CONT.	#1	LOW	3`-4`	1`-2`
PERENNIALS								
AC MO	18	ACHILLEA X `MOONSHINE`	MOONSHINE YARROW	CONT.	#1	LOW	1`-2`	1`-2`
HE SA	22	HEUCHERA X `SNOW ANGEL`	SNOW ANGEL CORAL BELLS	CONT.	#1	MOD	1`-2`	1`-2`
PE PP	26	PENSTEMON MEXICALI `PIKE`S PEAK PURPLE`	PIKES PEAK PURPLE PENSTEMON	CONT.	#1	LOW	1`-2`	<1`

(1)

CODE	QTY	BOTANICAL NAME	COMMON NAME
TURF			
TH SD	23,238 SF	SOD	VORTEX BLUEGRASS BLEND BY KORBY SOD

LANDSCAPE MATERIAL SCHEDULE

CODE	DESCRIPTION	PRODUCT NAME	SUPPLIER/MANUFACTURER	MODEL #	COLOR / FINISH	SIZE / DIMENSIONS	DETAIL	NOTES
M-01	ORGANIC MULCH	WASHINGTON CEDAR (GORILLA HAIR)	SITEONE LANDSCAPE SUPPLY	N/A	BROWN	SEE PLANS	3 / LP-501	TO BE PLACED IN TREE PLANTING RINGS AT 3" MIN. DEPTH
M-02	METAL EDGER	METAL EDGER	DURAEDGE	ROLLED TOP EDGE	POWDER COAT GREEN	4" X 14 GAUGE	N/A	TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS. REFER TO GENERAL LANDSCAPE NOTES
M-03	ROCK MULCH	LOCAL RIVER ROCK	SITEONE LANDSCAPE SUPPLY	DAGG-0962-TN	EARTH TONES	1-1/2"	2 & 4 / LP-501 (1)	TO BE PLACED IN SHRUB AREAS AT 3" MIN. DEPTH OVER WEED BARRIER
M-04	DECORATIVE ROCK MULCH	PALLETIZED MEXICAN BEACH PEBBLES	SITEONE LANDSCAPE SUPPLY	RIVR-0530-TN	DARK GRAY	1"-2"	N/A	TO BE PLACED OVER WEED BARRIER AT 3" MIN. DEPTH WHERE INDICATED ON PLANS
M-05	COBBLE MULCH	LOCAL RIVER ROCK	SITEONE LANDSCAPE SUPPLY	DAGG-0961-TN	HORIZON	2"-4"	N/A	TO BE PLACED OVER WEED BARRIER AT 3" MIN. DEPTH WHERE INDICATED ON PLANS
M-06	LANDSCAPE BOULDER	RIVER BOULDER	COLORADO MATERIALS INC	N/A	GRANITE GRAY	RE: PLANS	5 / LP-501	
M-07	SANDSTONE BLOCK SEATS	SANDSTONE BLOCK	ARKINS PARK	N/A	MASONVILLE BUFF	4` L X 18"W X 28" MIN. H	3 / LS-501	
M-08	CRUSHER FINES PAVING	BREEZE	SITEONE LANDSCAPE SUPPLY	CAGG-0224	TAN	N/A	2 / LS-501	

NOTES
1. MATERIALS LISTED IN SCHEDULE ARE "APPROVED EQUAL" UNLESS OTHERWISE NOTED.

CHECKED BY: CS/KS
DRAWN BY: HV

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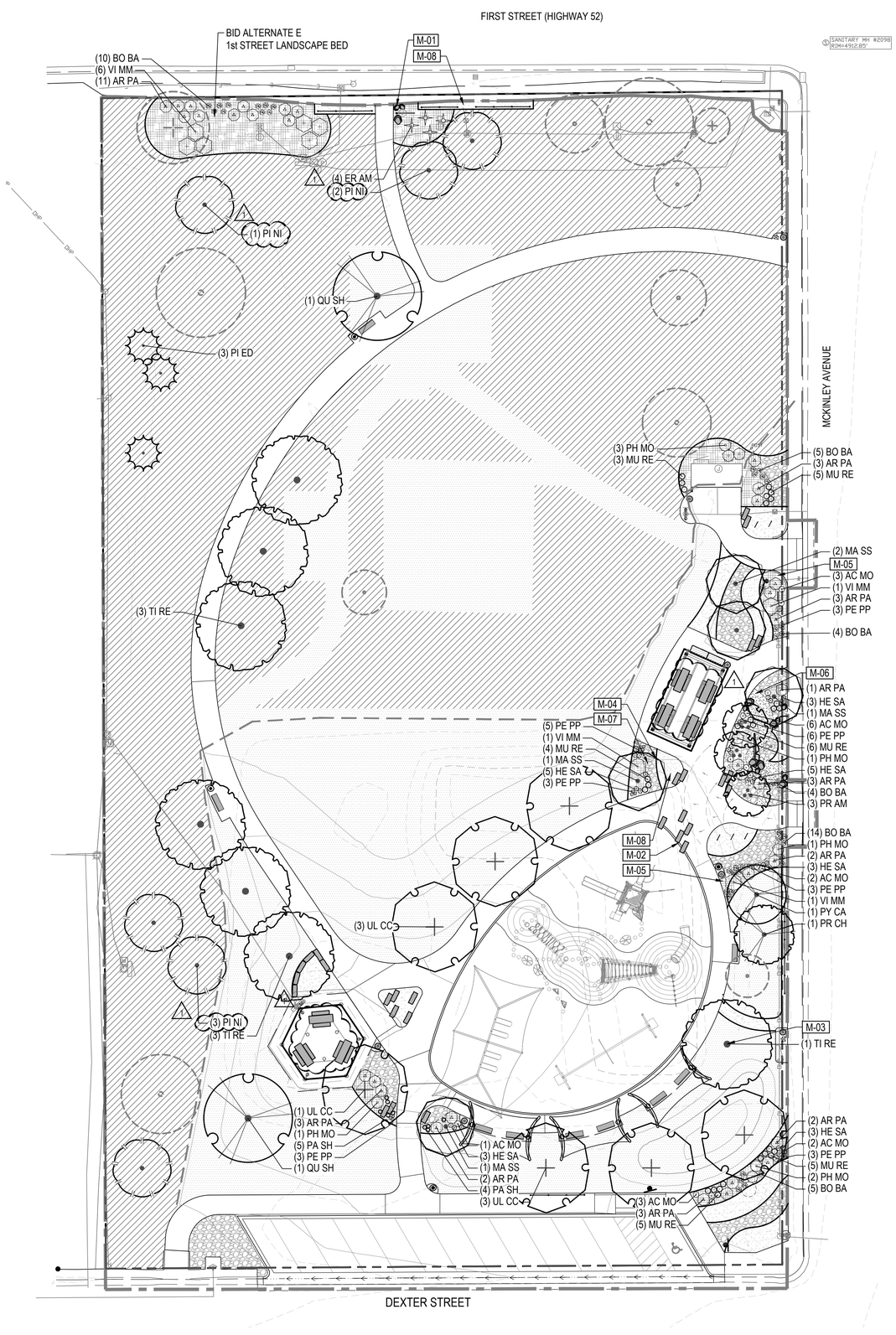
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CITY OF FORT LUPTON
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FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET
(1) 05/15/2026 - ADDENDUM 2

SHEET TITLE:
LANDSCAPE NOTES & SCHEDULES

LP-001



LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- LIMIT OF WORK
- LIMIT OF GRADING
- EXISTING TOPOGRAPHY
- PROPOSED TOPOGRAPHY
- LIMIT OF MULCH TYPE
- EXISTING SIDEWALK
- EXISTING TRAFFIC LIGHT
- EXISTING LIGHT POLE
- PROPOSED SIGN
- EXISTING TREES TO REMAIN
- EXISTING GRASSES TO REMAIN
- PA — PLANTING AREA
- EXISTING SOD TO REMAIN
- SOD

CODE	DESCRIPTION
P-01	CONCRETE PAVING

SYMBOL	CODE	DESCRIPTION
	M-01	ORGANIC MULCH
	M-02	METAL EDGER
	M-03	ROCK MULCH
	M-04	DECORATIVE ROCK MULCH
	M-05	COBBLE MULCH
SIZE A / SIZE B	M-06	LANDSCAPE BOULDER
	M-07	SANDSTONE BLOCK SEATS
	M-08	CRUSHER FINES PAVING

KEY NOTES

CODE	DESCRIPTION
N-01	PARK SIGN - NORTH
N-02	PARK SIGN - EAST
N-03	PARK RULES & REGS SIGN
N-04	DECORATIVE FENCE
N-05	PLAY CURB
N-06	PLAY TURF BASE & PIP INTERFACE
N-07	SITE LIGHTING & ELEC., TYP.
N-08	RELOCATED EXISTING PLAQUE
N-09	FOOD TRUCK PEDESTAL
N-10	EXISTING GAZEBO AND CONCRETE PAD TO REMAIN
N-11	EXISTING RESTROOM TO REMAIN
N-12	EXISTING CURB/PAN TO REMAIN, TYP.
N-13	EXISTING BACKFLOW PREVENTER TO REMAIN
N-14	EXISTING FIRE HYDRANT TO REMAIN
N-15	FUTURE SCULPTURE LOCATION, BY OWNER
N-16	EXPANSION JOINT, TYP.
1 N-17	CONTROL JOINT, TYP.
N-18	GRADE BREAK AT CONTROL JOINT, TYP.

PLANT SCHEDULE

CODE	COMMON NAME
DECIDUOUS CANOPY TREES	
UL CC	CHOICE CITY ELM
TI RE	REDMOND AMERICAN LINDEN
QU SH	SHUMARD RED OAK
EVERGREEN TREES	
PI NI	AUSTRIAN BLACK PINE
PI ED	PINON PINE
ORNAMENTAL TREES	
PR AM	AMERICAN PLUM
PY CA	CHANTICLEER PEAR
MA SS	SPRING SNOW CRAB APPLE
PR CH	SUCKER PUNCH CANADA CHOKECHERRY
DECIDUOUS SHRUBS	
VI MM	MINI MAN™ DWARF MANCHURIAN VIBURNUM
PH MO	MOUNTAIN NINEBARK
EVERGREEN SHRUBS	
AR PA	PANCHITO MANZANITA
ORNAMENTAL GRASSES	
BO BA	BLOND AMBITION BLUE GRAMA GRASS
ER AM	HARDY PAMPAS GRASS
PA SH	SHENANDOAH SWITCH GRASS
MU RE	UNDAUNTED MUHLY
AN WI	WINDWALKER BIG BLUE STEM
PERENNIALS	
AC MO	MOONSHINE YARROW
PE PP	PIKES PEAK PURPLE PENSTEMON
HE SA	SNOW ANGEL CORAL BELLS
1 **TURF**	
TH SD	KORBY SOD VORTEX HYBRID BLUEGRASS

NORTH

0 10 20 40

SCALE 1" = 20'

811

CHECKED BY: CS/KS
DRAWN BY: HV

NORRIS DESIGN
PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON

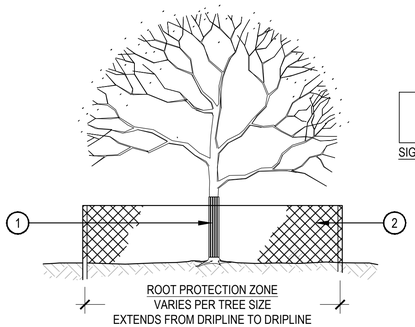
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

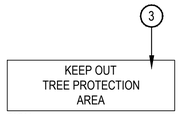
DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET
1 05/15/2026 - ADDENDUM 2

SHEET TITLE:
LANDSCAPE PLAN

LP-101

NOTES:
1. TREES TO BE PROTECTED AND PRESERVED SHALL BE IDENTIFIED ON THE TRUNK WITH WHITE SURVEY TAPE. GROUPING OF MORE THAN ONE TREE MAY OCCUR.
2. TO PREVENT ROOT SMOTHERING, SOIL STOCKPILES, SUPPLIES, EQUIPMENT OR ANY OTHER MATERIAL SHALL NOT BE PLACED OR STORED WITHIN THE DRIP LINE OR WITHIN 15 FEET OF A TREE TRUNK, WHICHEVER IS GREATER.
3. FENCING MATERIAL SHALL BE SET AT THE DRIP LINE OR 15 FEET FROM TREE TRUNK, WHICHEVER IS GREATER, AND MAINTAINED IN AN UPRIGHT POSITION THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
4. FENCING MATERIAL SHALL BE BRIGHT, CONTRASTING COLOR, DURABLE, AND A MINIMUM OF FOUR FEET IN HEIGHT.
5. TREE ROOTS SHALL NOT BE CUT UNLESS CUTTING IS UNAVOIDABLE.
6. WHEN ROOT CUTTING IS UNAVOIDABLE, A CLEAN SHARP CUT SHALL BE MADE TO AVOID SHREDDING OR SMASHING. ROOT CUTS SHOULD BE MADE BACK TO A LATERAL ROOT. ROOTS SHALL BE CUT NO MORE THAN 1/3 OF THE RADIUS FROM DRIPLINE TO TRUNK. WHENEVER POSSIBLE, ROOTS SHOULD BE CUT BETWEEN LATE FALL AND BUD OPENING, DURING DORMANCY PERIOD. ROOT STIMULATOR SHALL BE APPLIED TO CUT ROOTS. EXPOSED ROOTS SHALL BE COVERED IMMEDIATELY TO PREVENT DEHYDRATION. ROOTS SHALL BE COVERED WITH SOIL OR BURLAP AND KEPT MOIST.WATERING OF PROTECTED TREES IN WHICH ROOTS WERE CUT SHALL BE PROVIDED BY THE CONTRACTOR.
7. WHEN ROOT CUTTING IS UNAVOIDABLE, A CLEAN SHARP CUT SHALL BE MADE TO AVOID SHREDDING OR SMASHING. ROOT CUTS SHOULD BE MADE BACK TO A LATERAL ROOT. WHENEVER POSSIBLE, ROOTS SHOULD BE CUT BETWEEN LATE FALL AND BUD OPENING, DURING DORMANCY PERIOD. EXPOSED ROOTS SHALL BE COVERED IMMEDIATELY TO PREVENT DEHYDRATION. ROOTS SHALL BE COVERED WITH SOIL OR BURLAP AND KEPT MOIST.WATERING OF PROTECTED TREES IN WHICH ROOTS WERE CUT SHALL BE PROVIDED BY THE CONTRACTOR.
8. ANY GRADE CHANGES (SUCH AS THE REMOVAL OF TOPSOIL OR ADDITION OF FILL MATERIAL) WITHIN THE DRIP LINE SHOULD BE AVOIDED FOR EXISTING TREES TO REMAIN. RETAINING WALLS AND TREE WELLS ARE ACCEPTABLE ONLY WHEN CONSTRUCTED PRIOR TO GRADE CHANGE.



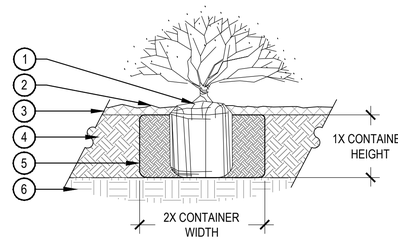


SIGN

1. **TRUNK PROTECTION** - 1" BOARDS NO LESS THAN 5' LONG OR TO REACH FIRST SCAFFOLD BRANCH. WIRE TO HOLD BOARDS IN PLACE, NO NAILS PERMITTED. INCLUDE WRAPPING OF BURLAP UNDER BOARDS.
2. **BRANCH PROTECTION -** PROTECT LOWER BRANCHES OF TREE CANOPY. PROVIDE CONSTRUCTION FENCING OR EQUAL AT DRIPLINE MINIMUM.
3. PLACE SIGNS EVERY 50', PLACE SIGNS WHERE VISIBLE, ATTACH TO FENCING.

1 TREE PROTECTION

SCALE: 1/8" = 1'-0"



1. SET SHRUB ROOT-BALL 1" HIGHER THAN FINISH GRADE
2. FINISH GRADE (TOP OF MULCH)
3. SPECIFIED MULCH, REFER TO MATERIAL SCHEDULE
4. TILL IN SPECIFIED SOIL AMENDMENT TO A DEPTH OF 8" IN BED
5. BACKFILLED AMENDED SOIL
6. UNDISTURBED SOIL

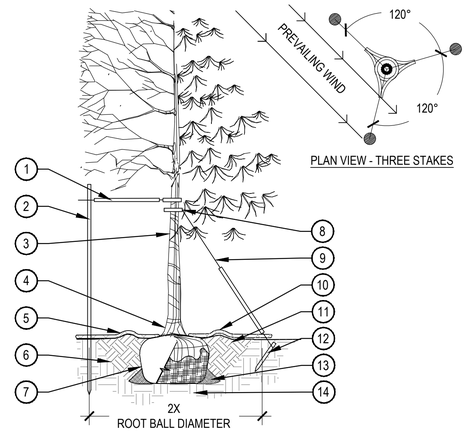
NOTE:
1. BROKEN OR CRUMBLING ROOT-BALLS WILL BE REJECTED.
2. CARE SHOULD BE TAKEN NOT TO DAMAGE THE SHRUB OR ROOT-BALL WHEN REMOVING IT FROM ITS CONTAINER.
3. ALL JUNIPERS SHOULD BE PLANTED SO THE TOP OF THE ROOT-BALL OCCURS ABOVE THE FINISH GRADE OF THE MULCH LAYER.
4. DIG PLANT PIT TWICE AS WIDE AND AS HIGH AS THE CONTAINER.
5. PRUNE ALL DEAD OR DAMAGED WOOD PRIOR TO PLANTING, DO NOT PRUNE MORE THAN 20% OF LIMBS.

2 SHRUB PLANTING

SCALE: 1 1/2" = 1'-0"

PRUNING NOTES:
1. ALL PRUNING SHALL COMPLY WITH ANSI A300 STANDARDS.
2. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS AND BROKEN BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED. HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

STAKING NOTES:
1. STAKE TREES PER FOLLOWING SCHEDULE, THEN REMOVE AT END OF FIRST GROWING SEASON.
   a. 1-1/2" CALIPER SIZE - MIN. 1 STAKE ON SIDE OF PREVAILING WIND (GENERALLY N.W. SIDE).
   b. 1-1/2" - 3" CALIPER SIZE - MIN. 2 STAKES - ONE ON N.W. SIDE, ONE ON S.W. SIDE (OR PREVAILING WIND SIDE AND 180° FROM THAT SIDE).
   c. 3" CALIPER SIZE AND LARGER - 3 STAKES PER DIAGRAM.
2. WIRE OR CABLE SHALL BE MIN. 12 GAUGE, TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. NYLON STRAPS SHALL BE LONG ENOUGH TO ACCOMMODATE 1-1/2" OF GROWTH AND BUFFER ALL BRANCHES FROM WIRE.

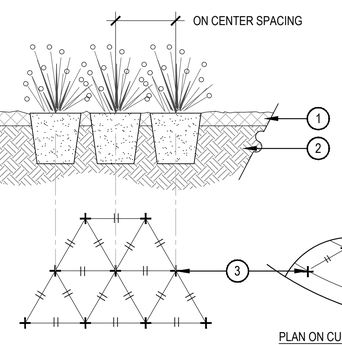


PLAN VIEW - THREE STAKES

1. PLACE MINIMUM 1/2" PVC PIPE AROUND EACH WIRE, EXPOSED WIRE SHALL BE MAXIMUM 2" EACH SIDE
2. 6'-0"UNTREATED WOOD POST, MINIMUM 1.5" DIAMETER, ALL SHALL BE DRIVEN OUTSIDE ROOTBALL AND IN UNDISTURBED SOIL
3. TREE WRAP TO BE INSTALLED ONLY FROM OCTOBER 1 THROUGH APRIL 30, DECIDUOUS ONLY, WRAP FROM BASE OF TRUNK TO BOTTOM LIMB
4. PLANT TREE SO THAT TOP MOST MAJOR ROOT IS 1"-2" ABOVE FINISHED GRADE
5. 2'-0" RADIUS MULCH RING, CENTERED ON TRUNK, 3" DEPTH, DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK, FINISHED GRADE REFERENCES TOP OF MULCH
6. 1:1 SLOPE ON SIDES OF PLANTING HOLE
7. ROPES AT TOP OF ROOTBALL SHALL BE CUT, REMOVE TOP 1/3 OF BURLAP, NON-BIODEGRADABLE MATERIAL SHALL BE TOTALLY REMOVED
8. GROMMETED NYLON STRAPS
9. GALVANIZED WIRE, MINIMUM 12 GAUGE CABLE,TWIST WIRE ONLY TO KEEP FROM SLIPPING
10. 4-6" HIGH WATER SAUCER IN NON-TURF AREAS
11. BACKFILL WITH BLEND OF EXISTING SOIL AND A MAXIMUM 20%, BY VOLUME, ORGANIC MATERIAL, WATER THOROUGHLY WHEN BACKFILLING
12. 2'-0" STEEL T-POST, ALL SHALL BE DRIVEN BELOW GRADE AND OUTSIDE ROOTBALL IN UNDISTURBED SOIL
13. PLACE SOIL AROUND ROOT BALL FIRMLY, DO NOT COMPACT OR TAMP, SETTLE SOIL WITH WATER TO FILL ALL AIR POCKETS
14. PLACE ROOT BALL ON UNDISTURBED SOIL TO PREVENT SETTLEMENT

3 TREE PLANTING DETAIL

SCALE: 3/16" = 1'-0"



SECTION

PLAN

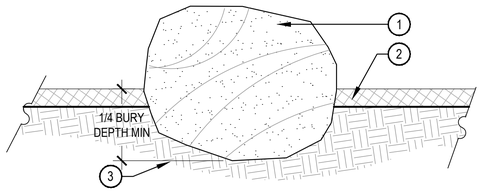
PLAN ON CURVE

1. SPECIFIED MULCH, REFER TO MATERIAL SCHEDULE
2. AMENDED PLANTING BED TILLED TO A DEPTH OF 6"
3. CENTER OF PLANT

NOTES:
1. WHEN PLANTED ON A CURVE, ORIENT ROWS TO FOLLOW THE LONG AXIS OF AREAS WHERE PLANTS ARE MASSED.

4 PERENNIAL PLANT LAYOUT

SCALE: 1" = 1'-0"



1. BOULDER. SET MIN 1/4 DEPTH BELOW FG
2. SPECIFIED MULCH, RE: LANDSCAPE SCHEDULE
3. COMPACTED SUBGRADE

BOULDER SCHEDULE		
ITEM	SIZE	QTY
'A' SIZE	30" HT x 25" W x 20" L	7
'B' SIZE	36" HT x 30" W x 37" L	6

NOTES:
1. STAKE ALL BOULDER LOCATIONS FOR OWNER'S REP APPROVAL PRIOR TO INSTALLATION. SET IN GROUPS AS SHOWN IN PLANS.
2. SIZES NOTED ARE MINIMUMS. LARGER BOULDERS CAN BE USED IF SPACE ALLOWS.

5 LANDSCAPE BOULDER

SCALE: 3/4" = 1'-0"

CHECKED BY: CS/KS
DRAWN BY: HV

NORRIS DESIGN
PEOPLE + PLACEMAKING
244 NORTH COLLEGE AVENUE
#165
FORT COLLINS, CO 80524
P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
LANDSCAPE DETAILS

LP-501

IRRIGATION GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO INSTALL THE IMPROVEMENTS SHOWN ON THE PLANS.
2. THE CONTRACTOR SHALL COORDINATE AS NECESSARY WITH THE GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE FOR SUCCESSFUL COMPLETION OF THIS WORK.
3. ALL IRRIGATION EQUIPMENT IS TO BE AS SPECIFIED OR APPROVED EQUAL PER THE DISCRETION OF THE OWNER'S REPRESENTATIVE. THE CONTRACTOR ASSUMES ALL LIABILITY ASSOCIATED WITH THE MODIFICATION OF THE IRRIGATION SYSTEM DESIGN WITHOUT NOTIFYING THE OWNER'S REPRESENTATIVE.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT A THOROUGH SITE INSPECTION AND REVIEW OF THE PROJECT CONSTRUCTION DOCUMENTS INCLUDING BUT NOT LIMITED TO THE FOLLOWING: LANDSCAPE PLAN, UTILITY PLAN, CIVIL UTILITY PLAN, ARCHITECTURE PLAN, GRADING AND DRAINAGE PLAN AND ALL OTHER ASSOCIATED PLANS AND SPECIFICATIONS THAT AFFECT THIS WORK PRIOR TO START OF WORK. IF THE AND CONTRACTOR OBSERVES ANY DISCREPANCIES AMONG THE CONSTRUCTION DOCUMENTS AND THE EXISTING CONDITIONS ON SITE, IT IS THEIR RESPONSIBILITY TO CONTACT THE OWNER'S REPRESENTATIVE IMMEDIATELY.
5. THE CONTRACTOR MUST VERIFY THE LOCATION OF ALL PUBLIC AND PRIVATE UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. IF THE CONTRACTOR FAILS TO DO SO AND DAMAGES ANY UNDERGROUND UTILITIES. THE CONTRACTOR SHALL PAY FOR ANY REPAIR WORK ASSOCIATED WITH SAID DAMAGES.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ADEQUATE VERTICAL AND HORIZONTAL SEPARATION BETWEEN ALL IRRIGATION DISTRIBUTION LINES AND ALL UTILITIES (EXISTING OR PROPOSED), CONDUIT, STORM WATER COMPONENTS, DRAINS, ETC.
7. THE CONTRACTOR SHALL CONFORM TO ALL LOCAL AND STATE REGULATIONS AND INSTALL THE IRRIGATION SYSTEM AND ITS COMPONENTS PER MANUFACTURER'S SPECIFICATIONS. THE CONTRACTOR SHALL OBTAIN AND PROVIDE PAYMENT FOR ALL PERMITS REQUIRED BY ANY LOCAL AND STATE AGENCIES AND UTILITY COMPANIES HAVING JURISDICTION OVER THIS SITE.
8. IT IS THE INTENT OF THIS DESIGN THAT ALL IRRIGATION EQUIPMENT BE INSTALLED WITHIN LANDSCAPE AREAS AND WITHIN THE PROJECT LIMITS. EQUIPMENT SHOWN OUTSIDE OF THESE LIMITS IS SHOWN FOR GRAPHIC CLARITY ONLY. IF THERE IS A QUESTION REGARDING THE LOCATION OF ANY COMPONENT OF THE IRRIGATION SYSTEM, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNER'S REPRESENTATIVE. IF THE CONTRACTOR NEGLECTS TO NOTIFY THE NECESSARY PARTIES, THE CONTRACTOR SHALL PAY FOR ANY REPLACEMENT OR MODIFICATION TO ENSURE PROPER LOCATION AND OPERATION OF THE IRRIGATION SYSTEM AND ITS COMPONENTS.
9. ALL IRRIGATION DISTRIBUTION LINES AND EQUIPMENT INCLUDING BUT NOT LIMITED TO, MAINLINE, LATERALS, SPRAY HEADS, DRIP EMITTERS SHALL BE KEPT A MINIMUM DISTANCE OF 6' AWAY FROM ALL BUILDING AND WALL FOUNDATIONS, OR AS STIPULATED IN THE GEOTECHNICAL REPORT , WHICHEVER IS GREATER. EQUIPMENT MAY BE SHOWN IN THIS AREA FOR GRAPHIC CLARITY. COORDINATE ALL REQUIRED SETBACKS WITH OWNER'S REPRESENTATIVE PRIOR TO START OF WORK.
10. EACH VALVE SHALL BE INSTALLED IN A SEPARATE VALVE BOX AS DETAILED. ALL VALVE BOXES AND LIDS SHALL BE COMMERCIAL GRADE, PLASTIC WITH SELF LOCKING COVERS. LID COLOR TO BE GREEN. INSTALL FLUSH TO FINISH GRADE AND PER CONSTRUCTION DETAILS. DO NOT INSTALL IN PAVED AREAS OR IN BOTTOMS OF DRAINAGE SWALES/BASINS.
11. CONTRACTOR SHALL INSTALL DETECTABLE MARKING TAPE OR #14g DIRECT BURY TRACER WIRE IN ALL PRESSURE MAINLINE TRENCHES. SEE IRRIGATION DETAILS FOR MORE INFORMATION.
12. PLANT MATERIAL LOCATIONS TAKE PRECEDENCE OVER ROUTING OF IRRIGATION PIPING. COORDINATE INSTALLATION OF IRRIGATION EQUIPMENT SO THAT IT DOES NOT INTERFERE WITH THE PLANTING OF TREES OR OTHER LANDSCAPE MATERIAL.
13. THE CONTRACTOR SHALL MARK THE LOCATION OF THE MAINLINE, CONTROL VALVES, GATE VALVES AND HEAD LAYOUT OF A REPRESENTATIVE SPRAY ZONE. SCHEDULE A REVIEW WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
14. INSTALL SCH. 40 BALL-VALVE WITH OPERATIONAL INDICATOR AT ENDS OF ALL DRIP LATERALS AS DETAILED. FLUSH ALL LATERALS THOROUGHLY BEFORE INSTALLING EMITTERS AND BUBBLERS.
15. CONTRACTOR SHALL FINE TUNE AND ADJUST NOZZLE DIRECTION AND RADIUS TO REDUCE OVERSPRAY ONTO PAVING OR HARD SURFACES.
16. CONTRACTOR SHALL INSTALL A QUICK COUPLER IN 10" VALVE BOX AT THE END OF ALL BRANCHES OF THE MAINLINE, OR AS SHOWN ON PLANS, FOR WINTERIZATION AND FLUSHING OF MAINLINE.
17. THE CONTRACTOR SHALL PERFORM A PRESSURE TEST ON ALL MAINLINES. CONTRACTOR SHALL PRESSURIZE MAINLINES TO 120 PSI AND MAINTAIN PRESSURE AT 120 PSI FOR A MINIMUM CONTINUOUS PERIOD OF TWO (2) HOURS TO ACHIEVE FINAL ACCEPTANCE.
18. THIS IRRIGATION SYSTEM HAS BEEN DESIGNED TO OPERATE DURING A THREE (3) NIGHT PER WEEK, SIXTEEN (16) HOURS PER NIGHT WATERING WINDOW. DRIP IRRIGATION ZONES MAY BE ALLOWED TO RUN ON A SEPARATE SCHEDULE FROM THIS WATER WINDOW DEPENDING JURISDICTION. LANDSCAPE ESTABLISHMENT WILL REQUIRE INCREASED IRRIGATION WATER FOR DURATION OF THE ESTABLISHMENT PERIOD AND MAY REQUIRE TWICE THE AMOUNT OF WATER AS ESTABLISHED PLANT MATERIAL. THE CONTRACTOR SHALL COORDINATE WATERING SCHEDULES AND APPLICATION RATES WITH THE OWNER'S REPRESENTATIVE PRIOR TO FINAL ACCEPTANCE.
19. THE DESIGN IS BASED ON THE FOLLOWING PROJECTED PEAK SEASON WEEKLY APPLICATION RATES AFTER ESTABLISHMENT. THESE FIGURES WILL NEED TO BE ADJUSTED DUE TO SEASONAL CHANGES AND VARIABLE WEATHER CONDITIONS.
    - FESCUE/BLUEGRASS BLEND TURF 1.75" PER WEEK PEAK SEASON
    - TREE, SHRUB, AND PERENNIAL PLANT MATERIAL 1.00" PER WEEK PEAK SEASON
20. THE CONTRACTOR SHALL PROVIDE A SEASONAL MAINTENANCE SCHEDULE WHICH SHALL BEGIN ON APRIL 15TH AND END ON OCTOBER 15TH TO ENSURE THE EFFICIENCY AND LONGEVITY OF THE IRRIGATION SYSTEM. THE MAINTENANCE SCHEDULE SHALL INCLUDE BUT IS NOT LIMITED TO THE FOLLOWING LIST OF BEST MANAGEMENT PRACTICES:
    - CHECK HEADS FOR COVERAGE AND LEAKAGE.
    - CHECK CONTROLLER PROGRAMMING AND ADJUST FOR SEASONAL CHANGES AS NECESSARY.
    - VERIFY THAT THE WATER SUPPLY AND PRESSURE ARE AS STATED IN THE DESIGN.
    - CERTIFY THE BACKFLOW PREVENTION DEVICE AND SUBMIT TEST RESULTS TO THE PROPERTY MANAGER.
    - PERIODICALLY VERIFY THE THE SENSORS IN THE IRRIGATION SYSTEM ARE OPERATING CORRECTLY.
    - WINTERIZATION AND SPRING START UP PROCEDURES.

IRRIGATION POINT OF CONNECTION NOTES

1. POINT OF CONNECTION: THERE IS ONE (1) POINT OF CONNECTION ON THIS PROJECT.
   POC #1 : 2" EXISTING IRRIGATION WATER METER LOCATED ON MCKINLEY AVE ADJACENT TO PARK RESTROOMS.
    - CONTRACTOR IS TO LOCATE AND CONNECT DOWNSTREAM OF THE DEDICATED EXISTING 2" BACKFLOW PREVENTION ASSEMBLY. EXTEND COPPER TUBING MINIMUM 30" HORIZONTAL FROM BACKFLOW PREVENTER AND INSTALL ONE MANUAL DRAIN, TRANSITION TO AND EXTEND CLASS 200 PVC MAINLINE TO GATE VALVE, MASTER VALVE, FLOW SENSOR, 1" QUICK COUPLER, AND EXTEND MAINLINE TO VALVES AS SHOWN.
    - THE CONTRACTOR SHALL CONFORM TO ALL LOCAL CODES, OBTAIN AND PROVIDE PAYMENT FOR ALL PERMITS ASSOCIATED WITH THIS WORK.
2. CONTROLLER LOCATION: THERE IS ONE (1) CONTROLLER ON THIS PROJECT.
   CONTROLLER A : WALL MOUNTED CONTROLLER LOCATED INSIDE PARK RESTROOM WATER ENTRY ROOM, ADJACENT TO POC #1.
    - CONTROLLER SHALL BE PROGRAMMED TO RUN MULTIPLE VALVES AT ONE TIME WITH A MAXIMUM TOTAL OF 70 GPM .
    - CONTROLLER TO BE MOUNTED PER DETAILS AND MANUFACTURER'S SPECIFICATIONS.
    - CONTRACTOR TO COORDINATE WITH OWNER'S REPRESENTATIVE AND ELECTRICAL PLANS FOR POWER SERVICE. ALL ELECTRICAL EQUIPMENT AND POWER CONNECTION INSTALLATION SHALL CONFORM TO ALL LOCAL CODES. INSTALL A LINE VOLTAGE SURGE DEVICE (INTERMATIC AG2401C3/ OR SQUARE D SDSA1175) FOR 120V IN A JUNCTION BOX PRIOR TO CONTROLLER.
    - RAIN/FREEZE SENSOR: MOUNT THE RAIN SENSOR ON POWER POLE SOUTHEAST OF RESTROOM IN PROXIMITY TO THE CONTROLLER. THE SENSOR SHALL BE MOUNTED IN A LOCATION IN FULL SUN AND OPEN TO RAINFALL. SENSOR SHALL BE NO MORE THAN 200' FROM WIRELESS RECEIVER. MOUNT WIRELESS RECEIVER ON OR ADJACENT TO THE IRRIGATION CONTROLLER.
3. SYSTEM PRESSURE: THE SYSTEM HAS BEEN DESIGNED PER THE FOLLOWING SPECIFICATIONS: REQUIRED MINIMUM STATIC PRESSURE OF 65 PSI AND MAXIMUM SAFE VELOCITY OF 5 FPS IN ANY PVC PIPE AND 7.5 FPS IN ANY COPPER PIPE.
    - PER CITY OF FORT LUPTON THE STATIC PRESSURE ON SITE IS APPROXIMATELY 65 PSI.
    - THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE PRESSURE IN THE FIELD AT THE POINT OF CONNECTION BEFORE CONSTRUCTION BEGINS AND FOR NOTIFYING THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCY BETWEEN THE DESIGN PRESSURE OF THE SYSTEM AND THE MEASURED PRESSURE IN THE FIELD. IF THE CONTRACTOR FAILS TO NOTIFY OWNER'S REPRESENTATIVE OF SUCH DISCREPANCIES, THEN THE CONTRACTOR ASSUMES ALL LIABILITY AND COSTS ASSOCIATED WITH SYSTEM MODIFICATIONS TO ACCOMMODATE THE ACTUAL PRESSURE.
4. FLOW SENSOR: SENSOR REQUIRES A MINIMUM FLOW FOR PROPER READINGS. MULTIPLE ZONES MAY BE REQUIRED TO RUN SIMULTANEOUSLY TO ACHIEVE THE MINIMUM FLOWS REQUIRED. CONTRACTOR TO SET 'K' VALUES PER MANUFACTURER.
    - FLOW SENSOR REQUIRES A MINIMUM FLOW OF 0.92 GPM.
5. COMMUNICATION: IT IS REQUIRED THAT THE IRRIGATION CONTROLLER BE CONNECTED TO THE WEATHERMATIC WATER MANAGEMENT CONTROL APPLICATION FOR OPTIMUM FUNCTION OF THE IRRIGATION SYSTEM. COORDINATE WITH OWNER'S REPRESENTATIVE AND CONTACT THE LOCAL CONTROLLER MANUFACTURER REPRESENTATIVE OR AUTHORIZED VENDOR PRIOR TO ORDERING CONTROLLER FOR COMMUNICATION AND CONNECTIVITY OPTIONS.

CONVENTIONAL WIRE NOTES

1. GROUNDING FOR THE IRRIGATION CONTROLLER SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS AND PER THE AMERICAN SOCIETY OF IRRIGATION CONSULTANTS GUIDELINE 100-2002 FOR EARTH GROUNDING ELECTRONIC EQUIPMENT IN IRRIGATION SYSTEMS FOUND AT www.asic.org/Design_Guides.aspx. FOR TECHNICAL SUPPORT REGARDING THE IRRIGATION CONTROLLER OR GROUNDING PLEASE CONTACT THE MANUFACTURER.
2. NEW CONTROLLER WIRE SHALL BE 14GA MIN. UL APPROVED WIRE. CONTRACTOR SHALL VERIFY EXISTING CONNECTIONS AND USE UL APPROVED WIRE STRIPPER AND 3M DBY WATERPROOF CONNECTIONS AT ALL NEW SPLICES AND CONNECTION POINTS. CONTRACTOR TO INSTALL RED ELECTRIC MARKING TAPE WITH CONTROLLER WIRE THAT IS NOT WITH MAINLINE. WIRES SHALL BE BUNDLED TOGETHER BY BLACK ELECTRICAL TAPE EVERY 10 L.F.
3. CONTRACTOR SHALL HAVE 30" OF SPARE CONTROL WIRE PRESENT AT ALL SPLICE POINTS. SPARE WIRE SHALL BE COILED IN A NEAT AND ORDERLY FASHION AT EACH SPLICE POINT.
4. CONTRACTOR SHALL EXTEND TWO (2) SPARE CONTROL WIRES, AND ONE (1) SPARE COMMON WIRE AT THE END OF THE MAINLINE. CONTRACTOR SHALL INSTALL ONE (1) WIRE PULL BOX AT EACH END OF THE MAINLINE.

EXISTING TREE NOTES

1. ALL TRENCHING OR OTHER WORK UNDER LIMB SPREAD OF ANY AND ALL PLANT MATERIAL SHALL BE DONE BY HAND, BORING OR BY OTHER METHODS SO AS TO PREVENT DAMAGE TO LIMBS OR BRANCHES.
2. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES USE ALL POSSIBLE CARE TO AVOID INJURY TO TREES AND TREE ROOTS.
3. EXCAVATION AND TRENCHING, IN AREAS WHERE 2" AND LARGER ROOTS OCCUR, SHALL BE DONE BY HAND.
4. ROOTS 2" OR LARGER IN DIAMETER SHALL BE TUNNELED UNDER AND SHALL BE HEAVILY WRAPPED WITH BURLAP TO PREVENT SCARRING OR EXCESSIVE DRYING.
5. ROOTS SMALLER THAN 2" IN DIAMETER SHALL BE HAND TRIMMED AT THE WALL OF TRENCH, MAKING CLEAN CUTS THROUGH ROOTS.
6. TRENCHES ADJACENT TO TREES SHALL BE CLOSED WITHIN 24 HOURS, AND WHEN THIS IS NOT POSSIBLE, THE SIDE OF THE TRENCH ADJACENT TO TREE SHALL BE KEPT SHADED WITH MOISTENED BURLAP OR CANVAS UNTIL BACKFILL.

SLEEVING COORDINATION NOTES

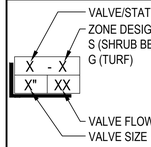
1. INSTALLATION OF IRRIGATION SLEEVING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE IRRIGATION CONTRACTOR FOR LOCATION AND SIZING OF SLEEVES PRIOR TO THE START OF CONSTRUCTION.
2. SLEEVES SHALL BE INSTALLED PRIOR TO THE START OF PAVING OPERATIONS.
3. THE CONTRACTOR SHALL SLEEVE ALL IRRIGATION DISTRIBUTION LINES, VALVE CONTROL WIRES AND COMMUNICATION WIRES UNDER ALL PAVED SURFACES, WALL FOOTERS, DRAINAGE CHANNELS, INLETS, CATCH BASINS, ETC.
4. ALL SLEEVES SHALL EXTEND A MINIMUM OF 12" BEYOND EDGE OF ALL OBSTRUCTIONS. NO TEES, ELLS OR OTHER TURNS IN PIPING SHALL BE LOCATED UNDER ANY OBSTRUCTIONS.
5. EACH PIPE SHALL BE IN A SEPARATE SLEEVE. WIRES SHALL BE IN A SEPARATE PIPE UNDER ALL PAVED SURFACES.
6. SLEEVING SHALL BE INSTALLED PER THE SIZES AND QUANTITIES SHOWN ON THE PLANS BASED ON THE CHART BELOW.

PIPING	REQUIRED SLEEVE SIZE
MAINLINE PIPING	6" CLASS 200 PVC
LATERAL PIPING	2X NOMINAL DIAMETER OF LATERAL
CONTROL WIRES	2" CLASS 200 PVC (2.5" 45 WIRES +)

IRRIGATION SCHEDULE

SYMBOL	DESCRIPTION	MODEL NO. DESCRIPTION	DETAIL # AND SHEET	
M	IRRIGATION METER	**2" EXISTING IRRIGATION METER** REFER TO CIVIL, UTILITY, AND WATER PLANS	N/A	N/A
C	IRRIGATION CONTROLLER	**WEATHERMATIC-SL-4848-1YR-BDL-FLOW-MINA** 120VAC POWER REQUIRED - SEE PLANS FOR LOCATION	1	LI-501
	RAIN SENSOR	**WEATHERMATIC - RFS5** REFER TO CONTROLLER NOTES	2	LI-501
	BACKFLOW PREVENTER	**EXISTING 2" BACKFLOW PREVENTER**	N/A	N/A
	MANUAL DRAIN VALVE	**MATCO-NORCA 3/4" 201X** INSTALLED IN AEP 910L-1G2G VALVE BOX	3	LI-501
MV	MASTER VALVE	**RAIN BIRD 200-EFB-CP SERIES** WITH SCH 40 BALL VALVE, INSTALLED IN AEP 1015-1G2G VALVE BOX	4	LI-501
FS	FLOW SENSOR	**FLOMEC QS200-20** WITH SHIELDED COMMUNICATION CABLE BACK TO CONTROLLER, INSTALLED IN AEP 1015-1G2G VALVE BOX	7	LI-501
	ISOLATION GATE VALVE	**MATCO-NORCA 514TX** MATCH LINE SIZE, INSTALLED IN AEP 910L-1G2G VALVE BOX	5	LI501
	QUICK COUPLER	**RAIN BIRD 44LRC** INSTALLED IN AEP 910L-1G2G VALVE BOX	6	LI-501
	TURF VALVE ASSEMBLY	**RAIN BIRD PEB SERIES** WITH SCH 40 BALL VALVE, INSTALLED IN AEP 1015-1G2G VALVE BOX, SIZED PER PLAN	8	LI-501
	DRIP VALVE ASSEMBLY	**RAIN BIRD XCZ-100-PRB** WITH SCH 40 BALL VALVE, INSTALLED IN AEP 1320-1G2G VALVE BOX, SIZED PER PLAN	5	LI-503
	TURF ROTOR	**RAIN BIRD 5006+-SAM-SS WITH STANDARD NOZZLE** NOZZLE PER PLAN	2	LI-502
MP1000 MP2000 MP3000 MP3500	TURF ROTARY	**RAIN BIRD RD06-S-P45-F WITH HUNTER MP SERIES NOZZLE** NOZZLE PER PLAN	1	LI-502
	TURF SPRAY	**RAIN BIRD RD06-S-P30-F WITH MPR (FIXED) OR HE-VAN (ADJUSTABLE) NOZZLE** NOZZLE PER PLAN	1	LI-502
	SLEEVING	**CLASS 200 PVC** REFER TO SLEEVING NOTES	6	LI-502
	SERVICE LINE	**TYPE K COPPER** SIZE: MATCH POC UNLESS OTHERWISE NOTED	NA	N/A
	PVC MAINLINE	**CLASS 200 PVC BE/RT** SIZE: 2.5" UNLESS OTHERWISE NOTED	N/A	N/A
	PVC TURF LATERAL	**CLASS 200 PVC BE** SIZE: 1" MINIMUM UNLESS OTHERWISE NOTED	N/A	N/A
	DRIP LATERAL	**UV RESISTANT POLYETHYLENE** SIZE: 3/4" MINIMUM UNLESS OTHERWISE NOTED	N/A	N/A
	DRIP FLUSH VALVE & INDICATOR	**SCH 40 BALL VALVE WITH HUNTER ECO-ID-12 OPERATIONAL INDICATOR** INSTALLED IN AEP 910L-1G2G VALVE BOX	4	LI-503

VALVE CALLOUT



EMITTER SCHEDULE

PLANT TYPE	EMITTER	QTY.	TOTAL GPH
PERENNIAL / GRASSES	0.5 GPH	TWO EACH	1.0 GPH
DECIDUOUS SHRUBS	1.0 GPH	TWO EACH	2.0 GPH
EVERGREEN SHRUBS	1.0 GPH	TWO EACH	2.0 GPH
DECIDUOUS TREE	1.0 GPH	EIGHT EACH	8.0 GPH
EVERGREEN TREE	1.0 GPH	EIGHT EACH	8.0 GPH

EMITTER NOTES

1. ALL PLANT MATERIAL SHALL BE IRRIGATED WITH RAIN BIRD XB SERIES PRESSURE COMPENSATING EMITTERS.
2. EMITTER SCHEDULE IS FOR REFERENCE ONLY. THE CONTRACTOR SHALL ADJUST EMITTER AND NUMBER OF EMITTERS BASED ON THE NEEDS OF INDIVIDUAL PLANTS OR PLANT HYDROZONES.
3. 1/4" DISTRIBUTION TUBING NOT TO EXCEED 8' IN LENGTH.
4. RAIN BIRD DBC-025 DIFFUSER BUG CAP AND TS-025 STAKE ON ALL 1/4" DISTRIBUTION TUBING EMISSION POINTS.
5. REFER TO DRIP IRRIGATION DETAILS #1 - #5, SHEET LI-503

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DRAWN BY: HV

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PEOPLE + PLACEMAKING
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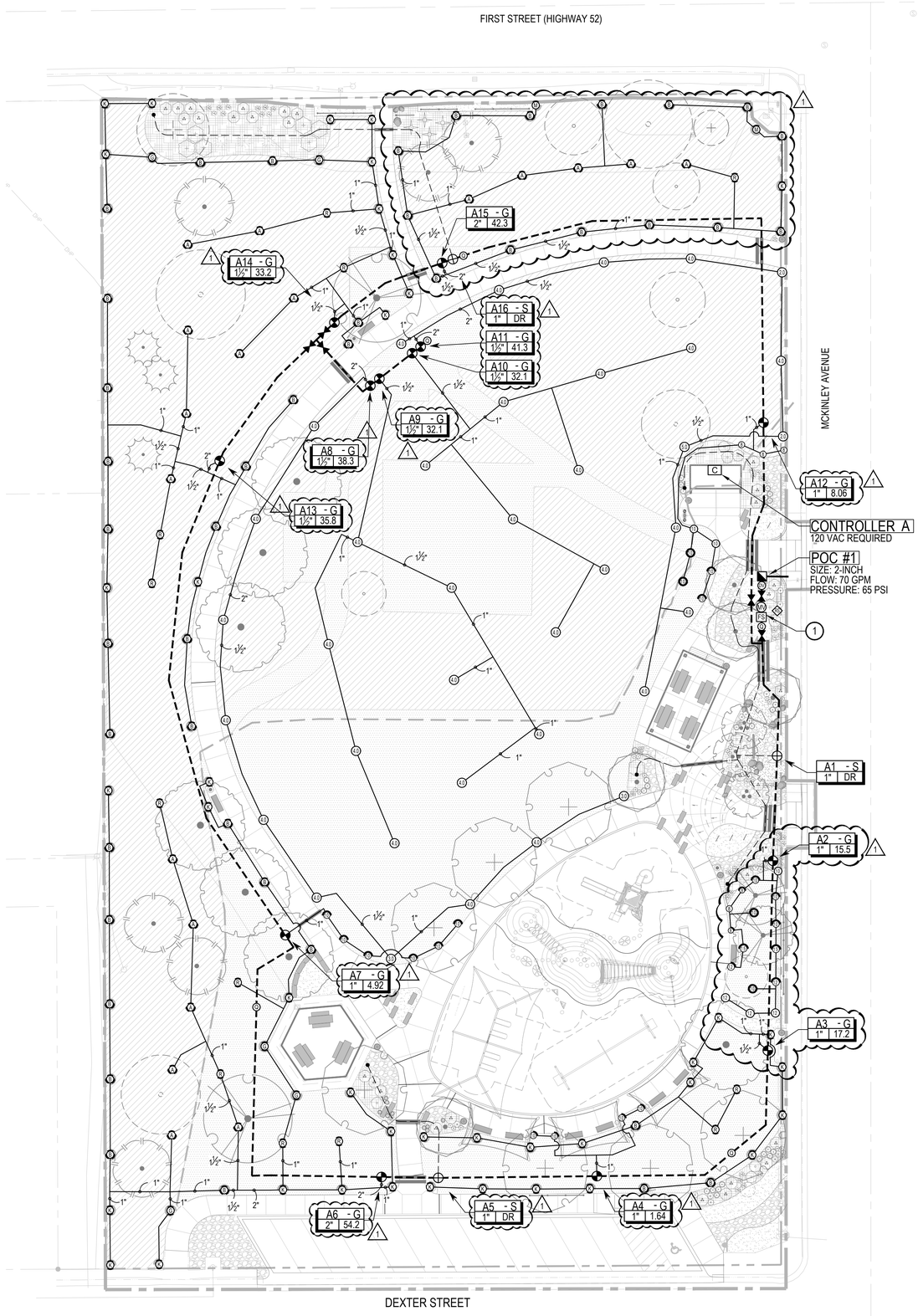
KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
IRRIGATION NOTES & SCHEDULES

LI-001



SYMBOL	DESCRIPTION
M	IRRIGATION METER
C	IRRIGATION CONTROLLER
	RAIN SENSOR
	BACKFLOW PREVENTER
	MANUAL DRAIN VALVE
MV	MASTER VALVE
FS	FLOW SENSOR
	ISOLATION GATE VALVE
	QUICK COUPLER
	TURF VALVE ASSEMBLY
	DRIP VALVE ASSEMBLY
	TURF ROTOR
MPCORNER MP1000 MP2000 MP3000 MP3500	TURF ROTARY
A Q T H F	TURF SPRAY
	SLEEVING
	SERVICE LINE
	PVC MAINLINE
	PVC TURF LATERAL
	DRIP LATERAL
	DRIP FLUSH VALVE & INDICATOR

IRRIGATION KEY NOTES

1. IRRIGATION EQUIPMENT IS SHOWN HERE FOR GRAPHIC CLARITY. ALL MAINLINES, LATERALS, VALVES ETC SHALL BE LOCATED WITHIN PLANTING AREAS.

NORTH

0 10 20 40

SCALE 1" = 20'

811

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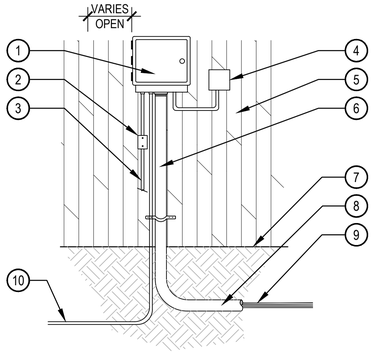
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1 05/15/2026 - ADDENDUM 2

SHEET TITLE:
SHEET TITLE

LI-101

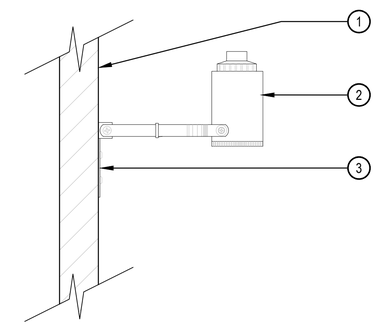


1. CONTROLLER MOUNT AT EYE-LEVEL PER MANUFACTURER'S RECOMMENDATIONS
2. DISCONNECT SWITCH
3. 120 POWER SOURCE IN STEEL CONDUIT
4. WIRELESS SENSOR RECEIVER
5. BUILDING EXTERIOR WALL
6. RIGID STEEL CONDUIT W/ CONTROL WIRES TO VALVES
7. FINISH GRADE
8. CONDUIT TO EXTEND 5 FT. BEYOND WALL
9. UF DIRECT BURIAL WIRE TO CONTROL VALVES
10. UF DIRECT BURIAL WIRE TO GROUNDING PER ASIC GUIDELINES

NOTE:
1. ALL ELECTRICAL AND CONTROLLER WIRE TO BE INSTALLED PER LOCAL CODE AND MANUFACTURER'S SPECIFICATIONS.
2. GROUND CONTROLLER PER LOCAL CODE AND MANUFACTURER'S SPECIFICATIONS.
3. PROVIDE WATERPROOF SEALANT FOR ALL CONDUIT AND WIRE ACCESS POINTS.
4. PROVIDE LOCK FOR ENCLOSURE.

1 CONTROLLER WALL MOUNT EXTERIOR

NTS

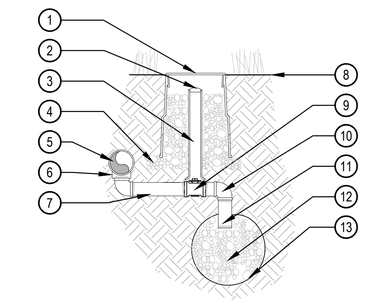


1. SUITABLE FASCIA, WALL, OR GUTTER MOUNT. MOUNT IN LOCATION WHERE SENSOR CAN RECEIVE FULL SUN AND IS OPEN TO RAINFALL.
2. WIRELESS RAIN SENSOR, LOCATE WITHIN 500' OF THE CONTROLLER.
3. SECURE MOUNTING BRACKET TO EXTERIOR WALL WITH SCREWS PER LOCAL CODES

NOTE:
1. PROVIDE WATERPROOF SEALANT FOR ALL CONDUIT AND WIRE ACCESS POINTS.
2. FINAL LOCATION AND MOUNTING SYSTEM TO BE DETERMINED BY OWNER.
3. SENSOR SHOULD NOT BE MOUNTED UNDER TREES, IN AREAS AFFECTED BY SPRINKLER SYSTEM OR UNDER EAVE OF HOUSE.

2 RAIN SENSOR SURFACE MOUNT

NTS

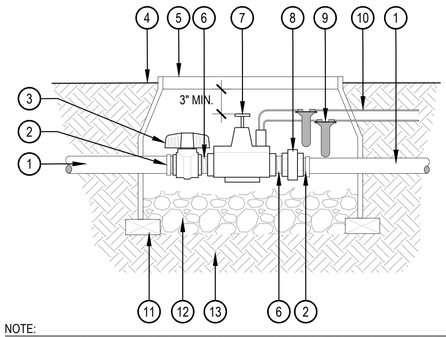


1. 10" LOCKING ROUND BOX & COVER PER SCHEDULE. TOP OF BOX TO BE FLUSH WITH FINISH GRADE.
2. 2" VALVE MARKER
3. 2" CL160 PVC ACCESS SLEEVE LENGTH AS REQUIRED.
4. 3" DEPTH 3/4" CRUSHED GRAVEL 6" BEYOND EDGE OF BOX
5. PVC PRESSURE MAIN LINE
6. SCH. 80 TEE PER MAINLINE SIZE ALIGN IN A DOWNWARD POSITIC
7. SCH. 80 PVC NIPPLE
8. FINISH GRADE
9. 1" BRONZE STOP VALVE WITH SLOTTED KEY OPERATOR
10. SCH. 80 PVC ELL
11. SCH. 80 PVC NIPPLE
12. 3/4" GRAVEL SUMP - 1 CU. FT. MI
13. SOIL BLANKET ENCLOSING SUM AMOCO ENG. FABRIC 4545 - 4.5 OZ. OR EQUAL

NOTE:
1. ALL THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.
2. LOCATE DRAIN VALVE AT POINT OF CONNECTION AND AT ALL LOW POINT(S) ALONG THE IRRIGATION MAINLINE AS NEEDED.

3 MANUAL DRAIN VALVE

SCALE: N

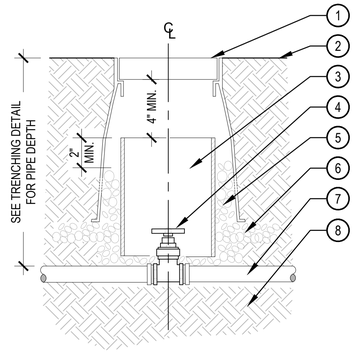


1. PVC MAINLINE
2. SCH. 80 PVC MALE ADAPTER
3. SCH. 80 PVC BALL VALVE
4. FINISH GRADE
5. LOCKING VALVE BOX
6. SCH. 80 PVC NIPPLE (THREADED)
7. MASTER VALVE
8. SCH. 80 PVC UNION (THREADED)
9. WATERPROOF ELECTRICAL CONNECTIONS
10. WIRES TO CONTROLLER
11. BRICK SUPPORTS 2 MIN.
12. 3/4" GRAVEL SUMP - 8" DEPTH
13. COMPACTED SUBGRADE

NOTE:
1. INSTALL MASTER VALVE PER MANUFACTURER'S SPECIFICATIONS FOR WIRING AND GROUNDING.

4 MASTER VALVE

SCALE: NTS

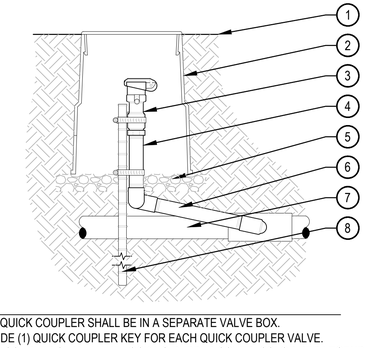


1. LOCKING ROUND BOX & COVER PER SCHEDULE. TOP OF BOX TO BE FLUSH WITH FINISH GRADE
2. FINISH GRADE
3. 8" SCH 40 PVC ACCESS SLEEVE LENGTH AS REQUIRED.
4. GATE VALVE W/ CROSS HANDLE AND SOLID WEDGE DISC PER SCHEDULE
5. 3/4" GRAVEL SUMP FILL IN AND AROUND BOX AS REQUIRED.
6. 3" DEPTH 3/4: GRAVEL EXTEND 6" BEYOND EDGE OF BOX
7. PVC MAINLINE
8. COMPACTED SUBGRADE

NOTE:
1. COMPACT SOIL AROUND GATE VALVE ASSEMBLY TO THE SAME DENSITY AS ADJACENT UNDISTURBED SUBGRADE.
2. DO NOT REST VALVE BOX OR ACCESS SLEEVES ON MAINLINE OR LATERAL LINE.
3. PROVIDE GATE VALVE KEY - LENGTH AS REQUIRED.

5 GATE VALVE 2" AND SMALLER

SCALE: NTS

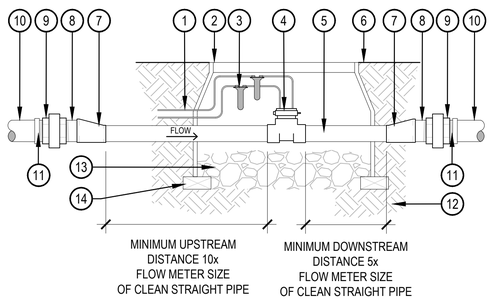


1. FINISH GRADE
2. 10" ROUND BOX & COVER PER SCHEDULE. TOP OF BOX TO FLUSH WITH FINISH GRADE
3. QUICK COUPLING VALVE W/ LOCKING COVER PER SCHEDULE
4. SCH. 80 PVC RISER (T x T)
5. 3" DEPTH 3/4" GRAVEL BASE EXTEND 6" BEYOND EDGE OF BOX
6. PVC SWING JOINT
7. PVC MAINLINE
8. 24" LONG #4 REBAR TO HOLD QUICK COUPLER IN PLACE W/ (2) STAINLESS STEEL CLAMPS

NOTES:
1. EACH QUICK COUPLER SHALL BE IN A SEPARATE VALVE BOX.
2. PROVIDE (1) QUICK COUPLER KEY FOR EACH QUICK COUPLER VALVE.
3. QUICK COUPLER SHALL HAVE LOCKING RUBBER COVER. COLOR PER LEGEND.
4. COMPACT SOIL AROUND GATE VALVE ASSEMBLY TO THE SAME DENSITY AS ADJACENT UNDISTURBED SUB-GRADE.
5. ALL THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.

6 QUICK COUPLER

SCALE: N

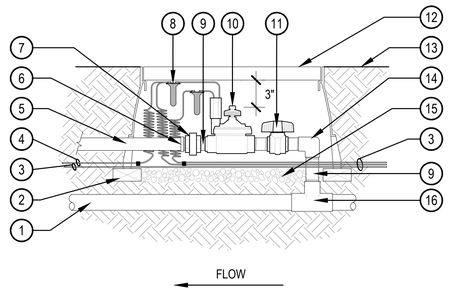


1. WIRES TO CONTROLLER
2. LOCKING VALVE BOX
3. WATERPROOF ELECTRICAL CONNECTIONS
4. FLOW SENSOR PER SCHEDULE
5. DOWNSIZED MAINLINE
6. FINISH GRADE
7. SCH. 80 PVC ECCENTRIC COUPLING (S x S) - SIZE & QTY TO BE DETERMINED IN FIELD
8. SCH. 80 PVC NIPPLE (MPTxS)
9. SCH. 80 PVC UNION (THREADED)
10. PVC MAINLINE
11. SCH. 80 PVC MALE ADAPTER
12. COMPACTED SUBGRADE
13. 3/4" GRAVEL SUMP 8" DEPTH
14. BRICK SUPPORTS 2 MIN.

NOTE:
1. INSTALL FLOW SENSOR PER MANUFACTURER'S SPECIFICATIONS FOR WIRING AND GROUNDING.

7 FLOW SENSOR

SCALE: NTS



1. PVC MAINLINE
2. BRICK SUPPORT (4 MIN.)
3. CONTROL WIRE
4. COMMON WIRE TO NEXT VALVE(S)
5. PVC LATERAL
6. PVC MALE ADAPTER
7. SCH. 80 PVC UNION (THREADED)
8. WATERPROOF CONNECTORS
9. (4) SCH. 80 PVC NIPPLE/ RISER (SIZE & LENGTH VARY)
10. CONTROL VALVE
11. SCH. 80 PVC BALL VALVE
12. LOCKING VALVE BOX
13. FINISH GRADE
14. PVC ELBOW (TxT)
15. 3/4" GRAVEL SUMP - 4" DEPTH
16. PVC TEE (SxSxT)

NOTE:
1. INSTAL CONTROL VALVE PER MANUFACTURER'S RECOMMENDATIONS.

8 CONTROL VALVE

SCALE: NTS

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DRAWN BY: HV

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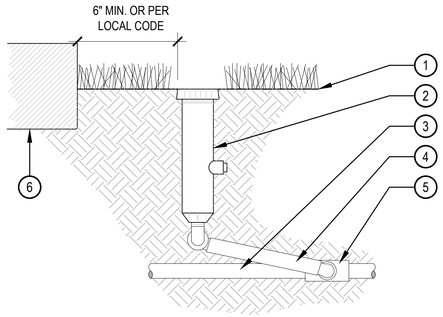
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CITY OF FORT LUPTON

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FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
IRRIGATION DETAILS

LI-501

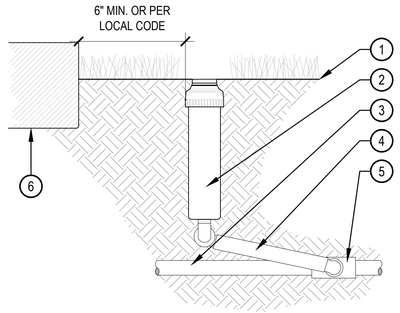


1. FINISH GRADE
2. POP-UP SPRAY HEAD PER SCHEDULE
3. PVC LATERAL PIPE
4. SWING JOINT ASSEMBLY
5. PVC SCH. 40 TEE OR ELL (S x T)
6. WALLS, WALKS, COURTS, CURB, ETC.

NOTE:
1. AFTER FLUSHING HEADS, REGRADE AND COMPACT AS NEEDED TO RETURN TO FINISH GRADE.
2. SPRINKLERS SHALL BE MIN. 6" FROM ANY WALLS, WALKS, COURTS, AND 12" FROM TURF EDGE.
3. ADJUST ALL SPRINKLERS HEADS SO THAT NO OVERSPRAY OCCURS ON ANY WALLS, WALKS, COURTS, ETC.
4. ALL THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.
5. COMPACT SOIL AROUND HEAD TO THE SAME DENSITY AS ADJACENT UNDISTURBED SUBGRADE.

1 POP-UP SPRAY

SCALE: NTS

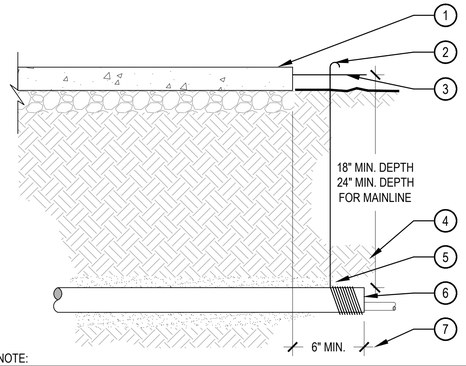


1. FINISH GRADE
2. ROTOR - SIZE PER PLAN
3. PVC LATERAL PIPE
4. SWING JOINT ASSEMBLY
5. PVC SCH. 40 TEE OR ELL (S x T)
6. WALLS, WALKS, COURTS, CURB, ETC.

NOTE:
1. SET TOP OF HEAD FLUSH WITH FINISH GRADE.
2. ADJUSTABLE ARC NOZZLES SHALL BE USED ON CURVED OR NON-STANDARD ANGLED EDGES.
3. ROTORS SHALL BE INSTALLED 6" MININUM FROM ANY WALLS, WALKS, COURTS, ETC. PER LOCAL CODES
4. ADJUST ALL ROTOR HEADS SO THAT NO OVERSPRAY OCCURS ON ANY WALLS, WALKS, COURTS, ETC.
5. ALL THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.

2 POP-UP ROTOR

SCALE: NTS

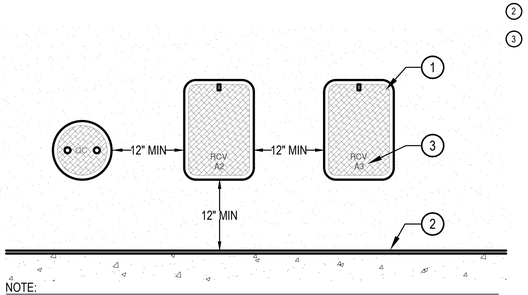


1. PAVING
2. WRAP 12 GAUGE GALVANIZED WIRE AROUND EACH END OF SLEEVE (10 WRAPS MIN.) AND EXTEND TO SURFACE AS A LOCATING DEVICE
3. FINISH GRADE / TOP OF DG
4. COMPACT SOIL AROUND SLEEVE TO SAME DENSITY AS ADJACENT UNDISTURBED SOIL
5. WASHED AND GRADED MORTAR SAND BACKFILL IN ROCKY SOIL CONDITIONS
6. PVC SLEEVE PER SCHEDULE, TWICE DIAMETER OF THE SUM OF THE PIPES/ WIRES
7. EXTEND SLEEVES 6" BEYOND EDGES OF PAVING

NOTE:
1. ALL SLEEVES SHALL BE INSPECTED PRIOR TO BACKFILLING.
2. CAP SLEEVES UNTIL USE.
3. MULTIPLE SLEEVES REQUIRE 4" HORIZONTAL SEPARATION WITHIN SAME SLEEVE TRENCH.
4. IRRIGATION PIPE AND WIRE SHALL NOT SHARE THE SAME SLEEVE.
5. MARK / STAMP - 'X' AND/OR INSTALL PLACARD AT BACK OF CURB.

3 PIPE SLEEVE

SCALE: NTS

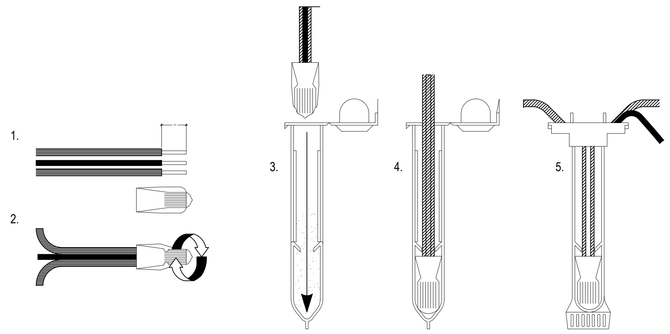


NOTE:
1. INSTALL ONLY ONE RCV TO VALVE BOX. LOCATE AT LEAST 12-INCHES FROM AND ALIGN WITH NEARBY WALLS OR EDGES OF PAVED AREAS. GROUP RCV ASSEMBLIES TOGETHER WHERE PRACTICAL.
2. GROUP RCV ASSEMBLIES TOGETHER WHERE PRACTICAL, BUT AVOID GROUPING MORE THAN THREE (3) STANDARD VALVE BOXES TOGETHER IN A SERIES.
3. ARRANGE GROUPED VALVE BOXES IN RECTANGULAR PATTERNS.

1. VALVE BOX: ALIGN EVENLY AND SPACE EVENLY FROM SIDEWALK, STRUCTURE, WALL, OR CURB
2. SIDEWALK OR PAVING
3. VALVE BOX LID BRANDED WITH CONTROLLER & STATION NUMBER

4 VALVE BOX PLACEMENT

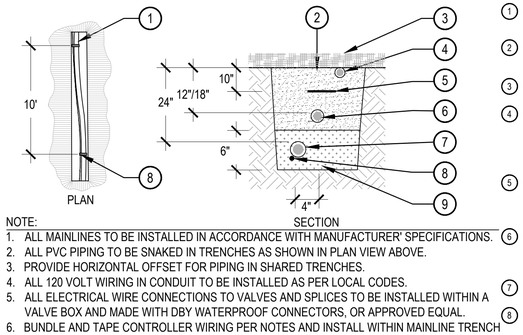
SCALE: NTS



NOTE:
1. STRIP ENDS OF WIRE - 1/2"
2. SECURE WIRES INTO WIRE NUT
3. INSERT WIRE NUT INTO CAPSULE
4. PUSH WIRE INTO BOTTOM OF CAPSULE
5. CLOSE COVER OF CAPSULE, SEPARATING WIRES INTO CHANNELS
6. VISUALLY CHECK THAT CONNECTOR IS BELOW LOCKING "FINGERS"

5 DIRECT BURY WIRE SPLICE

SCALE: NTS



NOTE:
1. ALL MAINLINES TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER' SPECIFICATIONS.
2. ALL PVC PIPING TO BE SNAKED IN TRENCHES AS SHOWN IN PLAN VIEW ABOVE.
3. PROVIDE HORIZONTAL OFFSET FOR PIPING IN SHARED TRENCHES.
4. ALL 120 VOLT WIRING IN CONDUIT TO BE INSTALLED AS PER LOCAL CODES.
5. ALL ELECTRICAL WIRE CONNECTIONS TO VALVES AND SPLICES TO BE INSTALLED WITHIN A VALVE BOX AND MADE WITH DBY WATERPROOF CONNECTORS, OR APPROVED EQUAL.
6. BUNDLE AND TAPE CONTROLLER WIRING PER NOTES AND INSTALL WITHIN MAINLINE TRENCH WHEREVER POSSIBLE.
7. CONTROLLER WIRE TO BE BURIED AT 18" MIN DEPTH IF NOT LOCATED WITH MAINLINE.
8. MANILINE BEDDING MATERIAL SHALL BE 1/4" MINUS SAND, AND SHALL BE 3" BELOW PIPE OR WIRE AND 3" ABOVE MAINLINE.
9. BEDDING IS NOT REQUIRED IN POLYETHYLENE TUBING TRENCHES OR SHARED TRENCHES.
10. EXCAVATED COVER MATERIAL SHALL BE FREE FROM DEBRIS AND ROCKS 1/2" OR GREATER.

1. SNAKE PVC OR POLYETHYLENE PIPE IN TRENCH
2. EXCAVATED COVER MATERIAL (SEE NOTES)
3. FINISH GRADE/TOP OF MULCH
4. POLYETHYLENE DRIP LATERAL (INSTALL JUST BELOW ROUGH GRADE TO PROVIDE UV COVER PRIOR TO MULCH LAYER)
5. MAINLINE MARKING TAPE (PURPLE MARKING TAPE IF RECLAIMED)
6. IRRIGATION SPRAY LATERAL PIPE 12" DEPTH FOR SPRAY LATERALS 18" FOR ROTOR LATERALS
7. IRRIGATION MAINLINE PIPE
8. VALVE WIRING. BUNDLE AND TAPE PER IRRIGATION NOTES
9. BEDDING MATERIAL (SEE NOTES)

6 PIPE TRENCH

SCALE: NTS

CHECKED BY: CS/KS
DRAWN BY: HV

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BID SET

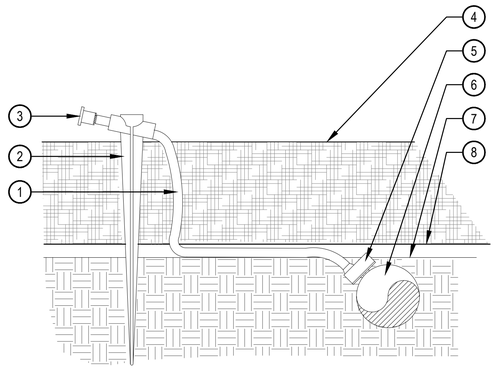
OWNER:
CITY OF FORT LUPTON

203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
IRRIGATION DETAILS

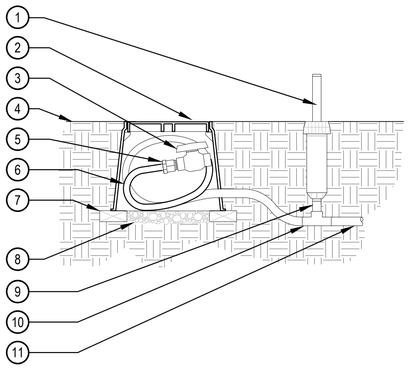
LI-502



1. 1/4" DISTRIBUTION TUBING. RUN TUBING UNDER WEED BARRIER FABRIC TO PLANT. LENGTH NOT TO EXCEED 8'
2. UNIVERSAL 1/4" STAKE
3. DIFFUSER CAP
4. TOP OF MULCH
5. PRESSURE COMPENSATING EMITTER PER EMITTER SCHEDULE. INSTALL EMITTER AT 45° TO 60° ANGLE
6. 3/4" POLYETHYLENE TUBING SET WITH TOP OF TUBING FLUSH WITH FINISH GRADE OF SOIL
7. FINISH GRADE OF SOIL
8. WEED BARRIER FABRIC

1 SINGLE OUTLET EMITTER

SCALE: NTS

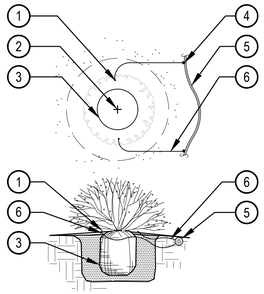


1. 12" MIN. POP-UP HEAD WITH ENCLOSED NOZZLE AND SWING PIPE. (ZONE OPERATIONAL INDICATOR)
2. LOCKING ROUND BOX & COVER PER SCHEDULE. TOP OF BOX TO BE FLUSH WITH FINISH GRADE
3. 3/4" SCH. 40 PVC BALL VALVE
4. FINISH GRADE
5. 3/4" MxI MALE ADAPTER W/ CLAMPS
6. 3/4" POLYETHYLENE DRIP TUBING - 24" COIL IN BOX FOR MAINTENANCE
7. BRICK (2 REQUIRED MIN.)
8. 3/4" GRAVEL SUMP, 4" DEPTH
9. 1/2" SCH. 80 NIPPLE (LENGTH AS NEEDED)
10. 3/4"x3/4"x1/2" IxIxF INSERT TEE
11. POLY LATERAL

NOTE:
1. COMPACT SOIL AROUND VALVE BOX TO THE SAME DENSITY AS ADJACENT UNDISTURBED SUBGRADE.
2. INSTALL OPERATIONAL INDICATOR WITHIN 24" OF FLUSH VALVE.
3. ALL THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.

4 DRIP FLUSH VALVE WITH OPERATIONAL INDICATOR

SCALE: NTS

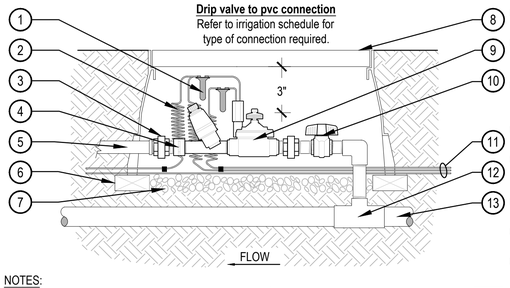


1. DIFFUSER CAP W/ DRIP STAKE
2. PLANT CENTER
3. PLANT ROOTBALL
4. SINGLE OUTLET EMITTER
5. 3/4" POLYETHYLENE DRIP TUBING
6. 1/4" DISTRIBUTION TUBING (LENGTH NOT TO EXCEED 8')

NOTE:
1. EMITTERS SHALL BE EQUALLY SPACED AROUND ROOTBALL.
2. FLUSH ALL LINES THOROUGHLY PRIOR TO EMITTER INSTALLATION.
2. IF PLANTING ON A 4:1 SLOPE OR STEEPER, INSTALL EMITTERS ON THE UPHILL SIDE OF PLANT.
3. EMITTERS SHALL BE SELF-FLUSHING PRESSURE COMPENSATING-TYPE UNLESS NOTED OTHERWISE.
4. DRIP VALVE ZONES (HYDROZONES) ARE DESIGNED TO ACCOUNT FOR DIFFERENCES IN PLANT REQUIREMENTS AND SUN EXPOSURE.
5. CONTRACTOR SHALL ENSURE HYDROZONES ARE VALVED SEPARATELY AS SHOWN ON PLAN.

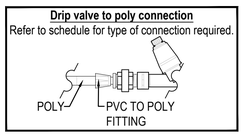
2 SINGLE OUTLET EMITTER PLACEMENT

SCALE: NTS



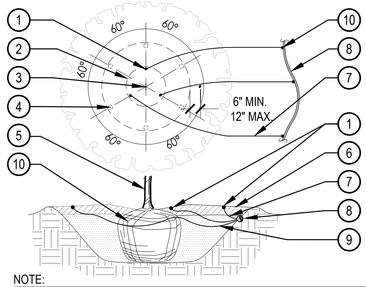
1. WATERPROOF CONNECTORS
2. 30" COIL OF WIRE MINIMUM. PLACED IN BOX.
3. (2) SCH. 80 PVC UNION (THREADED)
4. PVC COUPLING (FPTxFPT)
5. LATERAL TO DRIP, MATERIAL PER SCHEDULE
6. BRICK SUPPORT (4 MIN)
7. 4" DEPTH GRAVEL SUMP
8. VALVE BOX PER IRRIGATION SCHEDULE, FLUSH TOP OF BOX W/ GRADE
9. CONTROL VALVE
10. SCH. 80 PVC BALL VALVE
11. CONTROL AND COMMON WIRES FROM CONTROLLER
12. SCH. 80 PVC TEE (SxSxT)
13. PVC MAINLINE

NOTES:
1. BUNDLE & TAPE WIRE EVERY 10 FT. SEAL WIRE ENDS WITH WATERPROOF SPLICING MATERIAL.
2. 30" MINIMUM LENGTH OF CONTROL WIRE COILED AND PLACED IN BOX AT WATER PROOF CONNECTION TO SOLENOID.
3. INSTALL DRIP CONTROL ZONE KIT PER MANUFACTURER'S SPECIFICATIONS FOR WIRING



5 DRIP CONTROL ZONE KIT

SCALE: NTS



1. EMISSION POINT. DIFFUSER CAP W/ DRIP STAKE (TYP.)
2. PLANT ROOT BALL (TYP.)
3. PLANT CENTER (TYP.)
4. SECOND EMISSION POINTS SEE NOTE 3 BELOW
5. TREE TRUNK
6. MULCH LAYER
7. 1/4" DISTRIBUTION TUBING (LENGTH NOT TO EXCEED 8')
8. 3/4" POLYETHYLENE DRIP TUBING
9. SINGLE OUTLET EMITTER
10. ROOTBALL

NOTE:
1. MAXIMUM LENGTH OF ONE DISTRIBUTION TUBE SHALL BE 8'.
2. ALL EMISSION POINTS SHALL BE LOCATED ON UPHILL SIDE OF PLANT MATERIAL. ONE EMISSION POINT SHALL BE DIRECTLY TO PLANT BALL AS INDICATED. ADDITIONAL EMISSION POINTS SHALL BE WITHIN PLANT PIT PERIMETER AS DIRECTED IN THE EMITTER SCHEDULE.
3. SECOND EMISSION POINTS (IF NEEDED) AS PER THE EMITTER SCHEDULE FOR TREES WITH 3" CALIPER OR GREATER OR CONIFEROUS TREES 10' OR GREATER IN HEIGHT.
4. THIS IS A WATERING GUIDE ONLY. SITE, SOIL AND PLANT CONDITIONS VARY GREATLY. CONTRACTOR MUST OBSERVE THE PLANT MATERIAL AND MAKE ADJUSTMENTS AS NECESSARY FOR PROPER PLANT WATER REQUIREMENT.

3 TREE EMITTER PLACEMENT

SCALE: NTS

CHECKED BY: CS/KS
DRAWN BY: HV

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FORT LUPTON, CO

DATE:
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4/10/26 - BID SET

SHEET TITLE:
IRRIGATION DETAILS

LI-503

STRUCTURAL NOTES:
ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2024 INTERNATIONAL BUILDING CODE.
THIS DESIGN IS BASED ON A RISK CATEGORY II STRUCTURE AND THE 2024 INTERNATIONAL BUILDING CODE.

DESIGN LOADS:
CONCRETE DEAD LOAD = 145 PCF
GROUND SNOW - $p_{g(ULTIMATE)}$ = 43 PSF
GROUND SNOW - $p_{g(ASD)}$ = 30 PSF
WIND SPEED = 115 MPH (ULTIMATE), EXPOSURE C
MINIMUM FROST DEPTH = 30 INCHES

SOILS: KUMAR & ASSOCIATES, INC. REPORT 26-3-110, DATED MARCH 16, 2026
MAXIMUM ASSUMED ALLOWABLE BEARING PRESSURE: 3500 PSF, MIN. DEAD LOAD BEARING PRESSURE: 0 PSF.
ALL BEARING SOILS SHALL BE OBSERVED & APPROVED BY AN ENGINEER REGISTERED IN THE STATE OF COLORADO.
FOUNDATIONS SHOULD BE FORMED TO THE PROPER SIZE AND LAYOUT AS SHOWN ON PLANS.
ALL FOUNDATION ELEMENTS SHOULD BE OBSERVED PRIOR TO PLACEMENT OF CONCRETE AS REQUIRED BY THE GOVERNING AGENCY.

MATERIALS:
CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI (FOUNDATION ELEMENTS), 4500 PSI (SLABS). PROVIDE 5-8% AIR ENTRAINMENT (EXTERIOR). CEMENT TO BE TYPE I/II. MAXIMUM WATER-TO-CEMENT RATIO SHALL NOT EXCEED 0.45.
CONCRETE REINFORCEMENT SHALL BE A615, GRADE 60. ALL REINFORCING SHALL BE PLACED IN ACCORDANCE WITH ACI 318 RECOMMENDATIONS INCLUDING SPACING, CONCRETE COVER AND MINIMUM LAP SPLICES.
SLABS ON GRADE SHALL BE PLACED ON APPROVED MATERIAL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. PROVIDE SLAB CONTROL JOINTS IN ACCORDANCE WITH ACI RECOMMENDATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INFORM THE OWNER OF THE POTENTIAL FOR DAMAGE DUE TO SLAB MOVEMENTS AND THE PRECAUTIONS TO BE TAKEN TO MINIMIZE THE POTENTIAL DAMAGE WHEN MOVEMENT OCCURS. IF THE OWNER CHOOSES SLAB ON GRADE CONSTRUCTION, THE OWNER SHALL ASSUME ALL RISK AND MAINTENANCE ASSOCIATED WITH SLAB ON GRADE CONSTRUCTION.

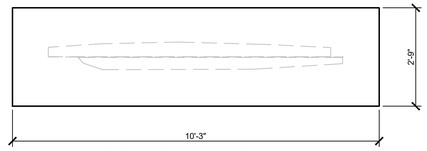
NOTES:
THE STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT, ELECTRICAL, MECHANICAL, PLUMBING AND SITE DRAWINGS. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS SHOWN ON THIS PLAN PRIOR TO CONCRETE PLACEMENT. CONFLICTS IN DIMENSION, INTERFERENCE OR OMISSIONS DISCOVERED IN THE COURSE OF WORK SHALL BE DIRECTED TO THE LANDSCAPE ARCHITECT PRIOR TO CONTINUATION OF CONSTRUCTION. THE EXISTING CONDITIONS DEPICTED ON THESE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
THE STRUCTURAL DRAWINGS REPRESENT THE FINAL STRUCTURE. THE DRAWINGS DO NOT INDICATE THE CONTRACTORS MEANS, METHODS, TECHNIQUES, SEQUENCES OF CONSTRUCTION AND JOB SAFETY. THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO FOLLOW PLANS, SPECIFICATIONS, AND/OR ENGINEERING RECOMMENDATIONS, NOR IS THE ENGINEER OF RECORD RESPONSIBLE FOR ECONOMIC LOSS AND/OR DELAYS ON THE CONTRACTOR OR SUBCONTRACTORS.
ALL CONSTRUCTION SHALL BE ADEQUATELY BRACED TO PREVENT DISTORTION AND DAMAGE DUE TO CONSTRUCTION LOADS AND NATURAL FORCES. THE CONTRACTOR SHALL MAKE ALLOWANCES FOR DIFFERENCE BETWEEN TEMPERATURE DURING ERECTION AND MEAN TEMPERATURE WHEN STRUCTURE IS COMPLETED AND IN SERVICE.

SPECIAL STRUCTURAL INSPECTIONS AND TESTING

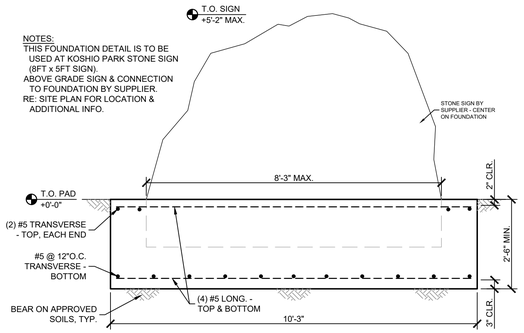
A. SPECIAL INSPECTION AND TESTING SHALL BE PERFORMED AS REQUIRED BY THE LOCAL JURISDICTION, CHAPTER 17 OF THE BUILDING CODE AND THE CONSTRUCTION DOCUMENTS.
B. COORDINATE AND SCHEDULE INSPECTION AND TESTING PRIOR TO THE START OF WORK REQUIRING INSPECTION AND TESTING WHILE PROVIDING SPECIAL INSPECTION REASONABLE NOTICE.
C. ALL DEFICIENCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.
D. INSPECTIONS PERFORMED BY THE LOCAL JURISDICTION DO NOT REPLACE INSPECTION OR TESTING REQUIRED BY THE OWNERS TESTING AGENCY.
E. SPECIAL INSPECTION AND TESTING IS REQUIRED FOR THE ITEMS SHOWN IN THE SPECIAL INSPECTIONS AND TESTING TABLE.
F. PERIODIC INSPECTIONS IS DEFINED AS PART-TIME OR INTERMITTENT INSPECTION OF THE WORK. IT IS THE SPECIAL INSPECTOR'S RESPONSIBILITY TO DETERMINE AND COORDINATE THE FREQUENCY AND DURATION OF THE INSPECTION RELATIVE TO THE CONTRACTOR'S SCHEDULE AND SEQUENCING OF THE WORK IN ORDER TO THE MEET THE INSPECTION AND REPORTING REQUIREMENTS.
G. CONTINUOUS INSPECTIONS ARE TO BE PERFORMED ON EACH INSTANCE OF THE TASK TO COMPLETED.
H. THE OWNER'S TESTING AGENCY SHALL PERFORM SPECIAL INSPECTIONS AND TESTING REQUIRED BY THE STRUCTURAL DOCUMENTS, BUILDING CODE AND LOCAL AUTHORITY. UPON COMPLETION OF WORK, THE TESTING AGENCY SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

SPECIAL INSPECTIONS AND TESTING

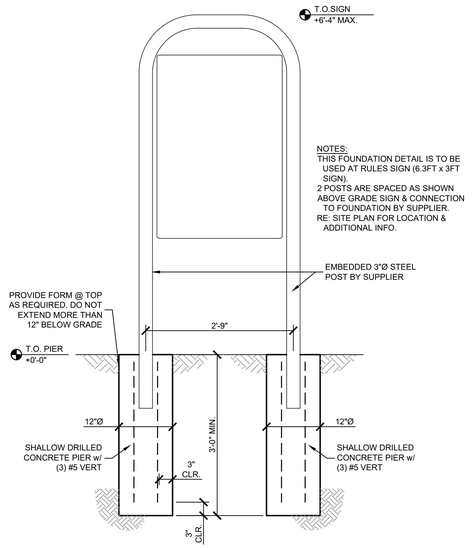
CATEGORY/ MATERIAL	VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
SOILS AND FOUNDATIONS	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		X
	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X
	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		X
	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X	
	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY SITE HAS BEEN PREPARED PROPERLY		X
CAST-IN-PLACE CONCRETE	INSPECT REINFORCEMENT AND VERIFY PLACEMENT		X
	REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706 B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" C. INSPECT ALL OTHER WELDS		X X X
	INSPECT ANCHORS, MECHANICAL COUPLERS AND EMBEDS CAST IN CONCRETE		X
	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE: A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE	X	 X
	VERIFY USE OF REQUIRED MIX DESIGN		X
	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	
	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X
	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		X



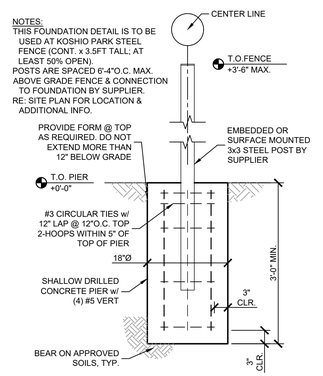
SIGN FOUNDATION PLAN



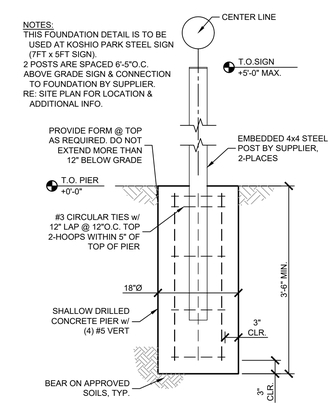
4 S101 PARK SIGN - EAST FOUNDATION DETAIL
1/2" = 1'-0"



3 S101 RULES & REGS SIGN FOUNDATION DETAIL
3/4" = 1'-0"



2 S101 FENCE FOUNDATION DETAIL
3/4" = 1'-0"



1 S101 PARK SIGN - NORTH FOUNDATION DETAIL
3/4" = 1'-0"

CHECKED BY: JRM
DRAWN BY: JRM

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NOT FOR CONSTRUCTION

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
STRUCTURAL NOTES & DETAILS

S-101

FEEDER SCHEDULE

ALL WIRE SHALL BE COPPER UNLESS NOTED OTHERWISE

Feeder Key	# of Runs	Wire Size	Ground	Conduit	Notes
20A,3G	1 Set	3#12	+1#12G	3/4"C	1
20A,4G	1 Set	4#12	+1#12G	3/4"C	1
30A,3G	1 Set	3#10	+1#10G	3/4"C	1
30A,4G	1 Set	4#10	+1#10G	3/4"C	1
40A,3G	1 Set	3#8	+1#8G	3/4"C	1
40A,4G	1 Set	4#8	+1#8G	3/4"C	1
50A,3G	1 Set	3#6	+1#8G	1"C	
50A,4G	1 Set	4#6	+1#8G	1"C	
60A,3G	1 Set	3#4	+1#8G	1 1/4"C	
60A,4G	1 Set	4#4	+1#8G	1 1/4"C	
70A,3G	1 Set	3#4	+1#8G	1 1/4"C	
70A,4G	1 Set	4#4	+1#8G	1 1/4"C	
80A,3G	1 Set	3#3	+1#8G	1 1/4"C	
80A,4G	1 Set	4#3	+1#8G	1 1/4"C	
100A,3G	1 Set	3#1	+1#8G	1 1/2"C	
100A,4G	1 Set	4#1	+1#8G	1 1/2"C	
125A,3G	1 Set	3#1	+1#6G	1 1/2"C	
125A,4G	1 Set	4#1	+1#6G	1 1/2"C	
150A,3G	1 Set	3#1/0	+1#6G	2"C	
150A,4G	1 Set	4#1/0	+1#6G	2"C	

If "G" is not shown on the ONE-LINE DIAGRAM Feeder callout then ground conductor is not required with feeder

NOTES:

1 Minimum 1" Conduit for all underground installations

Short Circuit Summary

Point-to-Point * Feeder Summary

Key	Description	Phase	Length	Isc Avail	# Runs	C	V(L-L)	Isc @ Device
	@United Pwr Transformer (50kVA)							13889
1	@ Existing Pedestal P1	1	175	13889	1	7493	240	3751
2	@ New RR Panel P1A	1	185	3751	1	4811	240	1703
	@United Pwr Pole Trans (25kVA)							6944
3	@ Existing Shelter Panel	1	310	6944	1	7493	240	2046
4	@ Food Truck Pedestal FTP	1	215	2046	1	2430	240	816

Name: **Existing Shelter Panel S1** Mnt Method: **Surface (NEMA 3R)**
Volt: **240/120** Bus Rating: **100**
Ph: **1** Main Breaker **100**
Wire: **3** AIC Rating: **10,000**
Mfr: **Square D**

Code		Description	Load VA	Bkr	P	Ph A	Ph B	P	Bkr	Load VA	Description	Code	
1	1	Existing Lts	150	20	1	*		1	20	540	Existing Recepts	2	2
3	1	NE Shelter Lts *	80	20	1		*	2	50	7800	Food Truck Pedestal *	6	4
5	2	NE Shelter Recpts *	1000	20	1	*		/	/	/	----	/	6
7	2	NE Shelter Recpts *	1000	20	1		*		-		Space Only		8
9		Space Only		-		*			-		Space Only		10
11		Space Only		-			*		-		Space Only		12
13		Space Only		-		*			-		Space Only		14
15		Space Only		-			*		-		Space Only		16

Shading indicates existing circuit / breaker - No Change >>>> Unshaded indicates new circuit / breaker

Code	Description	Load VA	Dem
1	Lighting	230	125%
2	Rec up to 10,000	2540	100%
	Rec over 10,000		50%
3	Motor		100%
	Largest Motor		125%
4	Heater		100%
5	Kitchen		100%
6	Miscellaneous	7800	100%
7	Sub Panel		100%

Load Summary

Per Phase		
Ph A	5590	VA
Ph B	4980	VA
Connected	10570	VA
Code Demand	10628	VA
Code	44.28	Amps

* Provide new overcurrent protection device as indicated.

Name: **Existing Pedestal P1 (Modified)** Mnt Method: **Milbank Pedestal (NEMA 3R)**
Volt: **240/120** Bus Rating: **100**
Ph: **1** Main Breaker **100**
Wire: **3** AIC Rating: **10,000**

Code		Description	Load VA	Bkr	P	Ph A	Ph B	P	Bkr	Load VA	Description	Code	
1		Main Breaker		100	2	*		2	60	890	RR Bldg Subpanel *	7	2
3				/			*		/		--- "P1A"		4
5	2	Landscaoe	1000	20	1	*		1	20	200	Lts Pedestrian	1	6
7	2	Landscape	1000	20	1		*	1	20	50	Ltg North signage	1	8
9	2	Landscape	1000	20	1	*		1	20	100	Pole Camera Pow er	6	10
11		Space Only		-			*	1	20	50	Ltg East signage *	1	12
13		Space Only		-		*			-		Space Only		14
15		Space Only		-			*		-		Space Only		16

Shading indicates existing circuit / breaker - No Change >>>> Unshaded indicates new circuit / breaker

Code	Description	Load VA	Dem
1	Lighting	300	125%
2	Rec up to 10,000	3000	100%
	Rec over 10,000		50%
3	Motor		100%
	Largest Motor		125%
4	Heater		100%
5	Kitchen		100%
6	Miscellaneous	100	100%
7	Sub Panel	890	100%

Load Summary

Per Phase		
Ph A	2745	VA
Ph B	1545	VA
Connected	4290	VA
Code Demand	4365	VA
Code	18.19	Amps

* Provide new overcurrent protection device as indicated

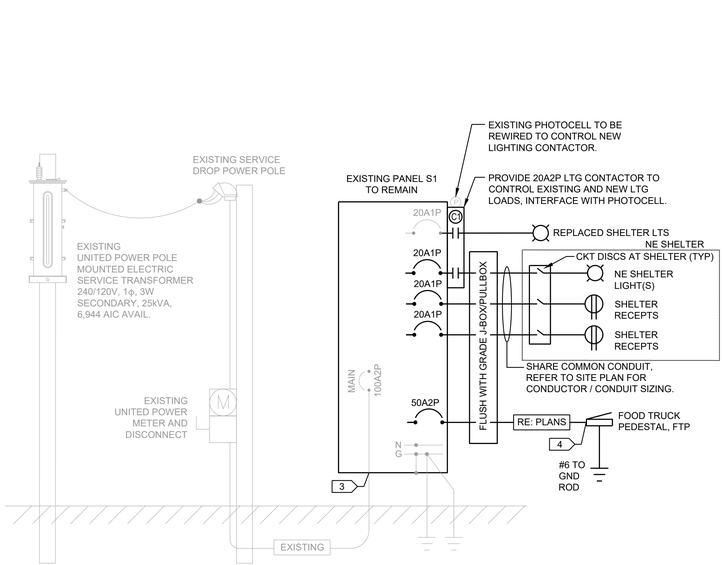
Name: **P1A (New)** Mnt Method: **Surface (NEMA 3R)**
Volt: **240/120** Bus Rating: **100**
Ph: **1** Main Breaker **60**
Wire: **3** AIC Rating: **10,000**

Code		Description	Load VA	Bkr	P	Ph A	Ph B	P	Bkr	Load VA	Description	Code	
1	1	Lts RR Bldg	120	20	1	*		1	20	200	Irrigation Controller	6	2
3	2	Rec RR Bldg	540	20	1		*	1	20		Spare		4
5		Spare		20	1	*		1	20		Spare		6
7		Spare		20	1		*	1	20		Space Only		8
9		Space Only		-		*			-		Space Only		10
11		Space Only		-			*		-		Space Only		12
13		Space Only		-		*			-		Space Only		14
15		Space Only		-			*		-		Space Only		16

Code	Description	Load VA	Dem
1	Lighting	120	125%
2	Rec up to 10,000	540	100%
	Rec over 10,000		50%
3	Motor		100%
	Largest Motor		125%
4	Heater		100%
5	Kitchen		100%
6	Miscellaneous	200	100%
7	Sub Panel		100%

Load Summary

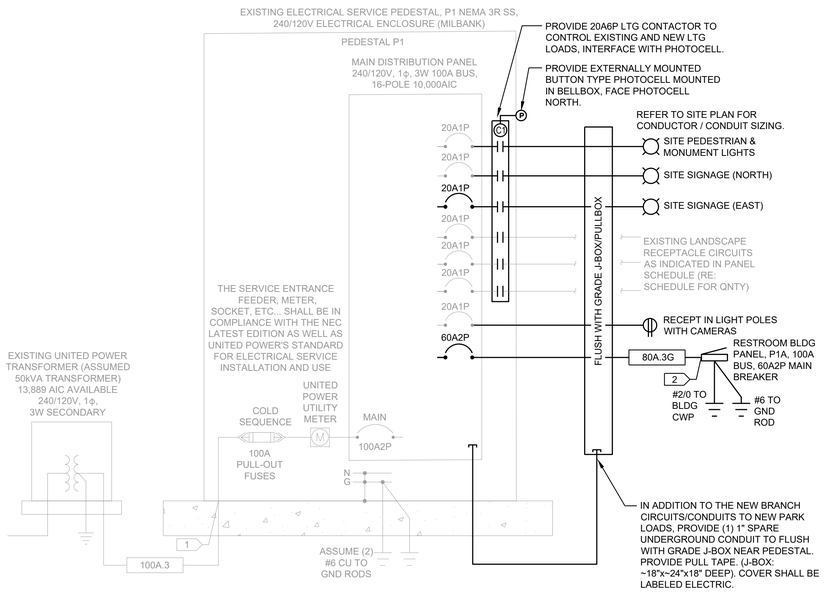
Per Phase		
Ph A	320	VA
Ph B	540	VA
Connected	860	VA
Code Demand	890	VA
Code	3.71	Amps



EXISTING HEXAGON SHELTER ELECTRICAL ONE-LINE DIAGRAM

SCALE: NTS

2 E000



EXISTING ELECTRICAL ONE-LINE DIAGRAM, PEDESTAL P1

SCALE: NTS

1 E000

DEMOLITION GENERAL NOTES

AS-BUILT CONDITIONS HAVE BEEN DETERMINED FROM RECORD DRAWINGS (IF THEY EXIST), FIELD INVESTIGATIONS (ACCESSIBLE AREAS AND EQUIPMENT), AND DISCUSSIONS WITH MAINTENANCE PERSONNEL (WHERE THEY ARE AVAILABLE). THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR INVESTIGATING AS-BUILT CONDITIONS PRIOR TO ANY DEMOLITION AND/OR MODIFICATIONS. SHOULD THERE BE ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THE DESIGN INTENT THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT/ENGINEER.

ALL ELECTRICAL DEVICES AND EQUIPMENT TO BE DEMOLISHED SHALL BE REMOVED BY THE APPROPRIATE SYSTEM CONTRACTOR THAT THE EQUIPMENT FALL UNDER. ELECTRICAL DEVICES REMOVED BY EC, FIRE ALARM DEVICES REMOVED BY FAC, SECURE ACCESS AND INTRUSION DETECTION REMOVED BY SC. ANY DEVICES REMOVED AND INDICATED TO BE ADDED OR RELOCATED TO A NEW LOCATION IN THE VICINITY, THE ASSOCIATED WIRING/CABLING SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION IF IT IS DETERMINED THE WIRING/CABLING IS SUFFICIENTLY LONG ENOUGH TO FEED THE DEVICE IN THE NEW LOCATION.

COORDINATE ALL DEMOLITION WITH GENERAL DEMOLITION. DISCONNECT ALL ELECTRICAL PRIOR TO DEMOLITION BY OTHER TRADES. REFER TO THE LANDSCAPE ARCHITECTURAL AND CIVIL PLANS FOR MORE INFORMATION.

CONTRACTOR SHALL COORDINATE WITH THE OWNER OR THEIR AUTHORIZED REPRESENTATIVE, TO DETERMINE ALL EXISTING EQUIPMENT AND DEVICES TO BE RETAINED BY THE OWNER. CONTRACTOR SHALL CAREFULLY REMOVE ALL EQUIPMENT AND DEVICES TO BE RETAINED, PRESERVE AND STORE THE EQUIPMENT IN A LOCATION DESIGNATED BY THE OWNER. ALL OTHER DEVICES, EQUIPMENT, AND DEBRIS SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROPRIATE OFFSITE LOCATION.

CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL, PRESERVATION, STORAGE, AND PROTECTION OF ALL EQUIPMENT AND DEVICES DESIGNATED TO BE REMOVED AND RE-INSTALLED.

ALL ABANDONED DEVICES, EQUIPMENT, CONDUIT, WIRE, CABLE, ETC. (WHETHER ABANDONED BY THIS PROJECT OR PREVIOUSLY ABANDONED) SHALL BE REMOVED.

POWER SYSTEMS: ALL FEEDERS AND BRANCH CIRCUITS CONDUIT AND CONDUCTORS SHALL BE REMOVED BACK TO THE SOURCE OR NEAREST REMAINING DEVICE AS APPLICABLE. PROVIDE A FINISHED BLANK COVERPLATE ON ALL BOXES ABANDONED IN WALLS.

EXISTING ELECTRICAL EQUIPMENT, DEVICES, AND WIRING TO REMAIN WHERE INDICATED. RESTORE THE FUNCTION OF ANY REMAINING EQUIPMENT THAT IS AFFECTED BY MODIFICATIONS TO THE ELECTRICAL SYSTEM IN OTHER AREAS AS SOON AS POSSIBLE AND AT NO ADDITIONAL COST TO THE OWNER. ALL REPAIRS SHALL BE COORDINATED WITH THE ARCHITECT/ENGINEER. CONTRACTOR SHALL MAKE REASONABLE EFFORT TO LOCATE ALL AFFECTED DEVICES AND RESTORE FUNCTIONALITY.

EXISTING DEVICES INDICATED TO BE RECONNECTED TO NEW CIRCUITS AND/OR PANELS SHALL USE NEW CIRCUITS INDICATED. THE EXISTING BRANCH CIRCUIT SHALL BE INTERCEPTED NEAR THE FIRST REMAINING DEVICE AND NEW CONDUIT/WIRE INSTALLED FROM THAT POINT BACK TO THE NEW DESTINATION (I.E. PANEL).

PROJECT GENERAL NOTES

REFER TO THE LANDSCAPE ARCHITECTURAL PLANS FOR ADDITIONAL INSTALLATION REQUIREMENTS.

THE ELECTRICAL INSTALLATION SHALL BE IN COMPLIANCE WITH THE FOLLOWING: NATIONAL ELECTRICAL CODE (NEC) LOCAL ENFORCED EDITION.

CIRCUITING ROUTING SHOWN IS DIAGRAMMATIC. CIRCUIT DESIGNATIONS ARE INDICATED AND SHALL BE STRICTLY FOLLOWED. ALL CIRCUITING SHALL BE COPPER CONDUCTORS IN CONDUIT (3/4" MINIMUM). LUMINAIRES MAY BE CONNECTED VIA MANUFACTURER PROVIDED FLEXIBLE CONDUIT/CONDUCTOR WHIPS. CONTRACTOR SHALL PROVIDE ALL WIRE, CONDUIT, JUNCTION/PULL BOXES, AND SUPPORTS ETC. FOR A COMPLETE ELECTRICAL SYSTEM.

ALL NEW (120V OR 277V SINGLE PHASE) BRANCH CIRCUIT WIRING SHALL ORIGINATE AT SINGLE POLE BREAKERS AND SHALL BE INSTALLED WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR. THE NEUTRAL CONDUCTOR SHALL HAVE A TRACER STRIPE (THE STRIPE COLOR SHALL MATCH THE COLOR OF THE PHASE CONDUCTOR).

ANY EXISTING MULTI-CIRCUIT BRANCH WIRING (120V OR 277V SINGLE PHASE CIRCUITS) INSTALLED IN A COMMON CONDUIT, WITH A COMMON NEUTRAL, SHALL ORIGINATE FROM A MULTI-POLE BREAKER OR SINGLE POLE BREAKERS WITH MULTI-POLE BREAKER HANDLE TIES. THE CONTRACTOR SHALL HAVE THE OPTION TO REWIRE THE BRANCH CIRCUITS WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR. THE NEUTRAL CONDUCTOR SHALL HAVE A TRACER STRIPE (THE STRIPE COLOR SHALL MATCH THE COLOR OF THE PHASE CONDUCTOR).

ALL DISTRIBUTION AND BRANCH CIRCUIT FEEDERS SHALL BE PROVIDED WITH AN INSULATED, GREEN GROUND WIRE.

ROUTE ALL CONDUIT/CIRCUITING IN FINISHED SPACES CONCEALED IN WALLS, ABOVE CEILINGS, OR BELOW FLOORS. ALL CONDUIT/CIRCUITING SHALL BE RUN PARALLEL TO BUILDING WALLS AND LINES. ANY SURFACE MOUNTED CONDUIT MOUNTED TO FINISHED SURFACES OR LOCATED IN FINISHED SPACES SHALL BE PAINTED TO MATCH THE SURFACE ON WHICH IT IS MOUNTED.

SURFACE MOUNTED CONDUIT IN FINISHED SPACES AND/OR SPACES NORMALLY OCCUPIED BY STUDENTS OR STAFF SHALL MOUNTED TIGHT AGAINST THE WALL WITH SINGLE OR DOUBLE HOLE STRAPS.

MOUNTING HEIGHTS ARE AS FOLLOWS UNLESS NOTED OTHERWISE OR A PREVIOUS BUILDING STANDARD HAS BEEN ESTABLISHED.

POWER RECEPTACLES	+18"
SWITCHES	AS INDICATED ON PLANS

ALL DIMENSIONS ARE TO THE CENTER OF THE DEVICE.

CONTRACTOR SHALL EXAMINE ALL EXISTING DEVICES THAT ARE INDICATED TO REMAIN OR BE RELOCATED (RECEPTS, SWITCHES, DIMMERS ETC.) AND REPLACE DAMAGED UNITS WITH NEW.

INSULATION COLOR: ALL INSULATED CONDUCTORS (SERVICE ENTRANCE, FEEDER, AND BRANCH CIRCUIT) SHALL HAVE FULL COLORED INSULATION, COLORS AS SPECIFIED IN SECTION 26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEMS, FOR THE ENTIRE LENGTH OF THE CONDUCTOR. NEUTRAL CONDUCTORS INSTALLED, IN COMPLIANCE WITH THE NEC-LATEST EDITION FOR EACH SINGLE POLE BREAKER, SHALL HAVE A TRACER STRIPE TO MATCH THE CORRESPONDING PHASE CONDUCTOR COLOR.

USE OF MC CABLE IS PROHIBITED EXCEPT FOR LUMINAIRE CONNECTION WHIPS (MAXIMUM OF 6FT ROUTED FROM A HOMERUN CONDUIT J-BOX TO AN INDIVIDUAL LUMINAIRE).

USE OF AC, NM, ENT, OR OTHER MANUFACTURED PRE-WIRED SYSTEMS CABLE IS PROHIBITED.

FOR STEEL CONDUIT LARGER THAN 1/2-INCH SIZE, PROVIDE STEEL INSULATED TYPE BUSHINGS, DESIGNED TO PREVENT ABRASION OF WIRES WITHOUT IMPAIRING THE CONTINUITY OF THE CONDUIT GROUNDING SYSTEM. GROUNDING BUSHINGS SHALL BE LOCKING TYPE AND SHALL BE PROVIDED WITH A FEED-THROUGH COMPRESSION LUG FOR SECURING THE GROUND CABLES. PROVIDE LISTED WATERPROOF FITTINGS FOR ALL CONDUIT IN WET LOCATIONS, SUCH AS EXPOSED TO WEATHER.

LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE PROVIDED IN SUFFICIENT LENGTHS FOR MAKEUP OF MOTORS, TRANSFORMERS, OR EQUIPMENT, AND/OR RACEWAY CONNECTIONS WHERE ISOLATION OF SOUND AND VIBRATION TRANSMISSION IS REQUIRED.

DEVICE COVERPLATES: PROVIDE IDENTIFICATION OF CIRCUITS AT ALL INDIVIDUAL WALL SWITCHES, RECEPTACLES, AND CONTROL DEVICE STATIONS. IDENTIFY CIRCUITS WITH PREPRINTED LABEL ON THE FRONT SIDE OF THE COVERPLATE AS WELL AS IDENTIFY CIRCUITS WITH PERMANENT INK MARKER ON THE BACKSIDE OF THE COVERPLATE.

ALL PANELS WITH CIRCUITS INDICATED TO BE MODIFIED IN THESE DOCUMENTS SHALL BE PROVIDED WITH AN UPDATED, TYPED, PANEL DIRECTORY. INCLUDE CONTRACTOR'S CONTACT INFORMATION AND CLOSE-OUT DATE OF THE PROJECT.

ELECTRICAL LEGEND

- J-BOX
- MOTOR
- CEILING RECEPTACLE
- DUPLEX RECEPTACLE
- FOUR-PLEX RECEPTACLE
- BLANK FACE GFCI PROTECTION DEVICE
- GFI 4-PLEX WITH ONE GFI DUPLEX AND ONE GFI PROTECTED STANDARD DUPLEX
- SPECIAL NEMA RECEPTACLE
- HEAVY DUTY DISCONNECT SWITCH
- MOTOR STARTER
- HEAVY DUTY STARTER-DISCONNECT
- TRANSFORMER
- SPD SURGE SUPPRESSION DEVICE
- METER
- STO THERMAL OVERLOAD SW
- BRANCH CIRCUIT PANEL
- SURFACE WALL LUMINAIRE
- SURFACE CEILING LUMINAIRE
- RECESSED DOWNLIGHT
- RECESSED WALL WASHER
- LUMINAIRE STRIP
- SURFACE OR WALL LUMINAIRE
- PARKING LOT POLE LIGHT
- PEDESTRIAN POLE LUMINAIRE
- FLOOD LUMINAIRE
- S SWITCH
- S_3 3-WAY SWITCH
- S_{OS} OCCUPANCY SENSOR SWITCH
- S_T TIMER SWITCH
- P PHOTOCELL
- OS OCCUPANCY SENSOR
- OPS OCC. SEN. POWER PACK
- TC TIME CLOCK
- # XXX REVISION NUMBER
- # EQUIPMENT TAG
- # DRAWING NOTE
- # FLAG NOTE
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- GFI INDICATES GROUND FAULT CIRCUIT INTERRUPT DEVICE
- WP INDICATES WEATHERPROOF EQUIPMENT/DEVICE
- ~ BREAKLINE
- —OPE— OVERHEAD PRIMARY ELECTRIC
- —OSE— OVERHEAD SECONDARY ELECTRIC
- —UPE— UNDERGROUND PRIMARY ELECTRIC
- —USE— UNDERGROUND SECONDARY ELECTRIC
- —UBE— UNDERGROUND BRANCH ELECTRIC
- —OBE— OVERHEAD BRANCH ELECTRIC
- —UC— UNDERGROUND COMMUNICATION
- BOLD LINEWEIGHT AND/OR "N" INDICATES NEW DEVICE OR EQUIPMENT
- BOLD LINEWEIGHT AND/OR "R" INDICATES DEVICE OR EQUIPMENT TO BE REPLACED
- LIGHT LINEWEIGHT AND/OR "E" INDICATES EXISTING DEVICE TO REMAIN
- DASHED LINETYPE AND/OR "D" INDICATES DEVICE TO BE REMOVED / DEMOLISHED

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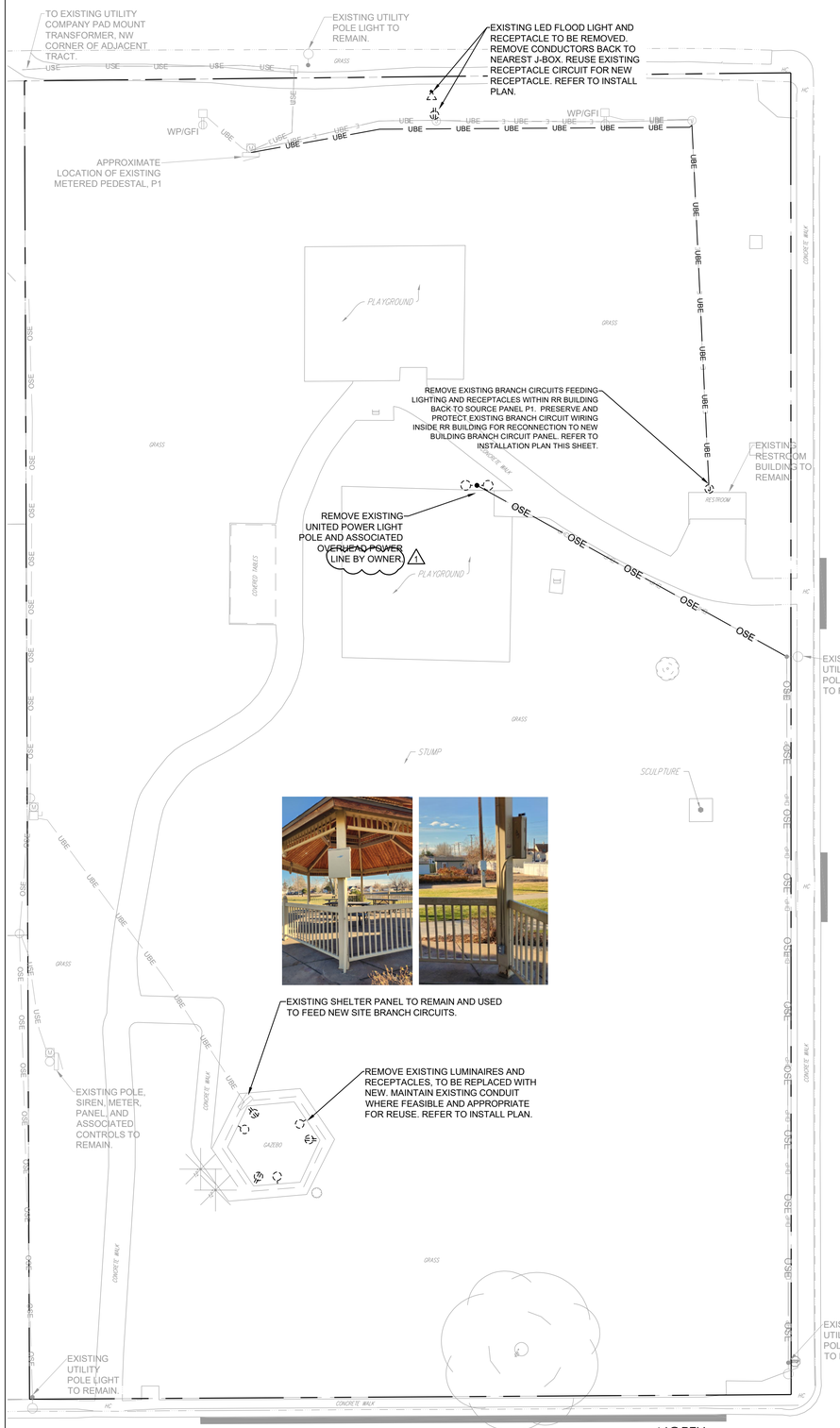
DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
ELEC. LEGEND & ONE-LINE

E-000

CHECKED BY: CSKS
DRAWN BY: HV

811



SITE ELECTRICAL DEMO PLAN

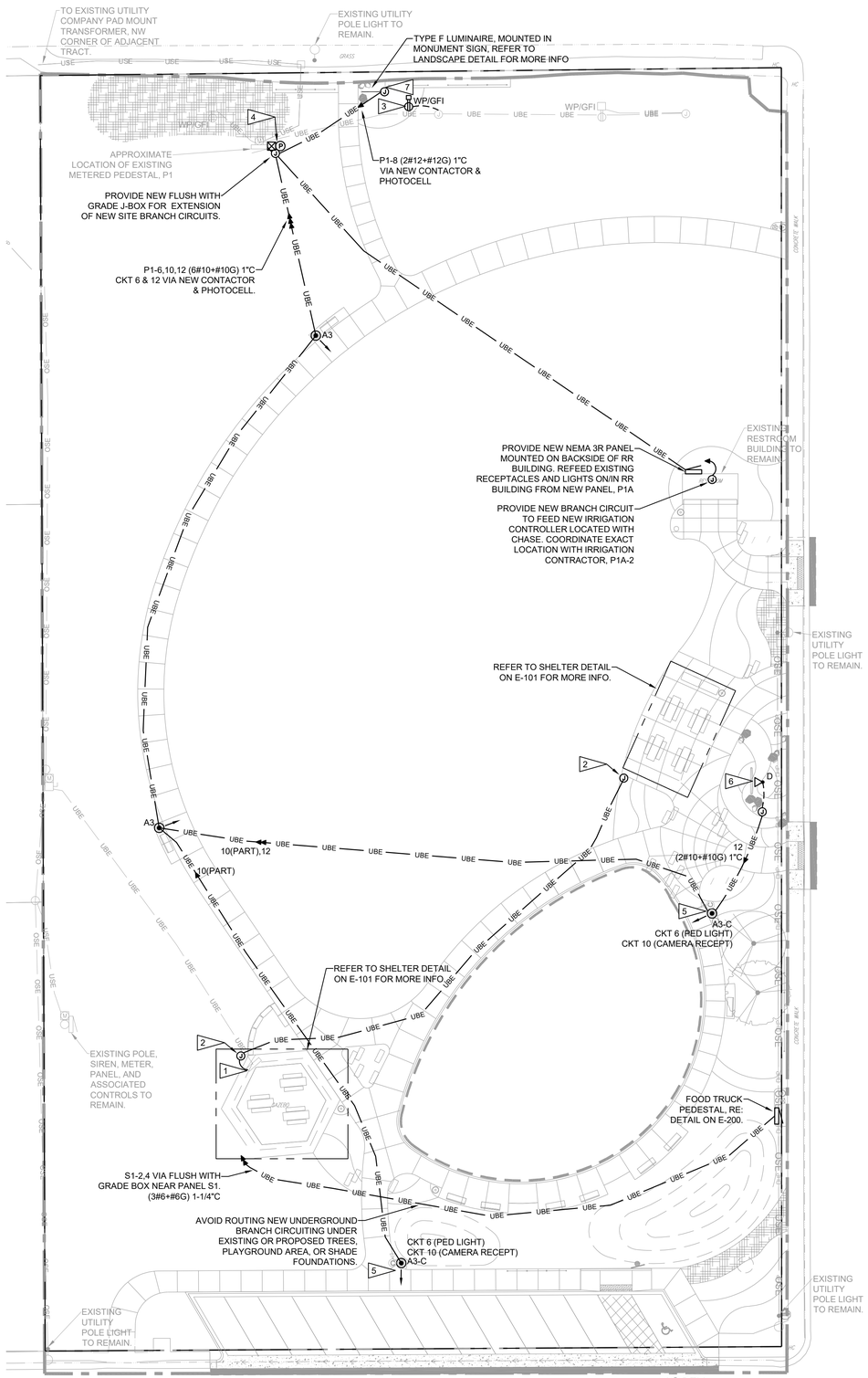
SCALE: 1" = 20'

0 10 20 40 60

SCALE IN FEET

NORTH

1 E100



SITE ELECTRICAL PLAN

SCALE: 1" = 20'

0 10 20 40 60

SCALE IN FEET

NORTH

2 E100

SITE PLAN GENERAL NOTES

ALL WIRING SHALL BE IN COMPLIANCE WITH THE NEC LATEST EDITION: ALL MULTI-WIRE BRANCH CIRCUITS (120V OR 277V SINGLE PHASE CIRCUITS) IDENTIFIED IN THE PANEL SCHEDULES ORIGINATING FROM SINGLE POLE BREAKER SHALL BE INSTALLED WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR. THE NEUTRAL CONDUCTOR SHALL HAVE A TRACER STRIPE (THE STRIPE COLOR SHALL MATCH THE COLOR OF THE PHASE CONDUCTOR).

REFER TO THE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INSTALLATION, CONDUIT DEPTHS, AND SPECIFICATION REQUIREMENTS. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE TO THE MOST CURRENT LOCAL CODES AND THE NEC LATEST EDITION.

ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC WITH PVC COATED GRC ELBOWS AND RISERS TO 4 FEET ABOVE GRADE AND 1 INCH MINIMUM DIAMETER, UNLESS NOTED OTHERWISE.

ALL UNDERGROUND COMMUNICATION, ELECTRICAL FEEDER, AND BRANCH CIRCUITS SHALL BE INSTALLED A MINIMUM OF 30 INCHES BELOW GRADE WITH BURIED ELECTRICAL WARNING TAPE INSTALLED DIRECTLY ABOVE BETWEEN 6 AND 12 INCHES BELOW GRADE. CONTRACTOR SHALL PROVIDE PULL BOXES AS REQUIRED TO MINIMIZE THE NUMBER OF BENDS TO MEET CODE.

ALL ELECTRICAL DEVICE LOCATIONS SHALL BE COORDINATED WITH THE LANDSCAPE AND CIVIL DRAWINGS/ARCHITECT PRIOR TO ROUGH-IN TO DETERMINE TYPICAL INSTALLATION REQUIREMENTS/LOCATIONS IN RELATION TO THE SITE LANDSCAPE AND CIVIL ELEMENTS. REFER TO LANDSCAPE PLANS FOR EXACT LOCATIONS OF PEDESTRIAN POLES. LOCATIONS ARE COORDINATED WITH SIDEWALKS AND CONCRETE PAVING AND POLE BASES NEED TO BE INTEGRATED WITH SIDEWALK PAVING.

UNDERGROUND CONDUIT IS INDICATED BY DASHED LINES, UBE, USE, UPE, OR UC.

ROUTE ALL CONDUIT/CIRCUITING ON FINISHED SPACES CONCEALED IN WALLS, ABOVE CEILINGS, OR BELOW FLOORS. ALL CONDUIT/CIRCUITING SHALL BE RUN PARALLEL TO BUILDING WALLS. ANY SURFACE MOUNTED CONDUIT IN FINISHED SPACES OR MOUNTED ON FINISHED SURFACES SHALL BE PAINTED TO MATCH THE SURFACE ON WHICH IT IS MOUNTED.

ROUTE ALL UNDERGROUND CONDUITS A MINIMUM OF 5' FROM TREE DRIP LINES AND AVOID ROUTING UNDERGROUND CONDUITS WITHIN OR CROSSING DRAINAGE SWALES OR DETENTION AREAS/PONDS.

ALL NEW CIRCUITS SHALL HAVE GROUNDING CONDUCTORS IN ALL FEEDERS AND BRANCH CIRCUITS.

FOR ALL WEATHERPROOF RECEPTACLE COVERS PROVIDE CAST ALUMINUM, WHILE-IN-USE WEATHERPROOF TYPE COVERS, HUBBELL-MG58XX SERIES OR EQUAL.

ALL EXTERIOR RECEPTACLES SHALL BE GFI PROTECTED DEVICES AND HAVE WEATHERPROOF COVERS.

PLAN GENERAL NOTES:

REFER TO E-000 FOR PROJECT GENERAL NOTES AND DEMOLITION GENERAL NOTES. (TYPICAL FOR ALL SHEETS)

FLAG NOTES:

1. EXISTING SHELTER PANEL S1 SHALL REMAIN AND BE UTILIZED FOR NEW BRANCH CIRCUITS AS INDICATED ON PLANS. SAW CUT A PORTION OF THE CONCRETE SIDEWALK FOR BRANCH CIRCUIT CONDUITS FEEDING SITE LOADS. DO NOT SAW CUT OR DAMAGE THE EXISTING SHELTER FOUNDATION.
2. PROVIDE FLUSH WITH GRADE J-BOX FOR CONDUIT EXTENSION FROM EXISTING GAZEBO PANEL TO SHELTER OR SITE BRANCH CIRCUITS. REFER TO DETAILS FOR MORE INFORMATION.
3. PROVIDE NEW POST MOUNTED RECEPTACLE, LOCATE IN LANDSCAPE BED. REFER TO DETAIL ON E-200. RECONNECT TO EXISTING RECEPTACLE CIRCUIT FROM PANEL P1.
4. EXISTING PEDESTAL P1 TO REMAIN. PROVIDE NEW 20A2P LTG CONTACTOR AND EXTERIOR PHOTOCELL TO CONTROL THE TWO SITE LIGHTING CIRCUITS VIA PHOTOCELL. MOUNT CONTACTOR WITHIN MILBANK ENCLOSURE. MOUNT EXTERIOR RATED BUTTON TYPE PHOTOCELL IN A BELLBOX TO THE SIDE OF THE PEDESTAL TO CONTROL THE CONTACTOR. PHOTOCELL SHALL FACE NORTH.
5. PROVIDE (1) 120V CAMERA POWER CIRCUIT TO EACH LIGHT POLE INDICATED WITH A CAMERA. TERMINATE CIRCUIT AT A RECEPTACLE/J-BOX IN CARLON BOX IN POLE BASE. PROVIDE 3/4"C FROM SECURITY SIDE OF CARLON J-BOX UP INTO POLE, TO BOTTOM OF TOP HAND HOLE, W/ RUBBER BUSHING AT TOP END OF CONDUIT (TO BE UTILIZED AS RACEWAY FOR OWNER PROVIDED/INSTALLED CAMERA CABLING). CAMERAS TO BE PROVIDED IN FUTURE BY OWNER.
6. LOCATE LUMINAIRE CENTERED ON MONUMENT SIGNAGE "KOSHIO PARK" TEXT. AIM LUMINAIRE ON MONUMENT, REFER TO MTG DETAIL ON E-200 FOR OFFSET FROM SIGN.
7. MOUNT TYPE F LUMINAIRE WITHIN TOP OF FENCE / MONUMENT SIGN. PROVIDE FLUSH MOUNTED J-BOX IN POST HANDHOLE FOR ROUTING OF BRANCH CIRCUIT. MOUNT DRIVER ON FENCE POST, BETWEEN PANELS. MOUNT LED LUMINAIRE TO THE INSIDE PORTION OF THE "KOSHIO PARK" PANELING. PROVIDE A #10 GROUNDING CONDUCTOR BONDED TO THE POST AND 10'x5/8" GROUND ROD. TO REFER TO THE LANDSCAPE DETAILS FOR MORE INFO.

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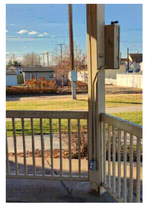
DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET
⚠1 5/15/26 - ADDENDUM 2

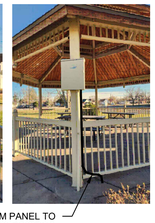
CHECKED BY: CS/KS
DRAWN BY: HV

SHEET TITLE:
SITE ELECTRICAL PLAN

E-100

811

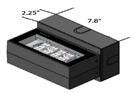


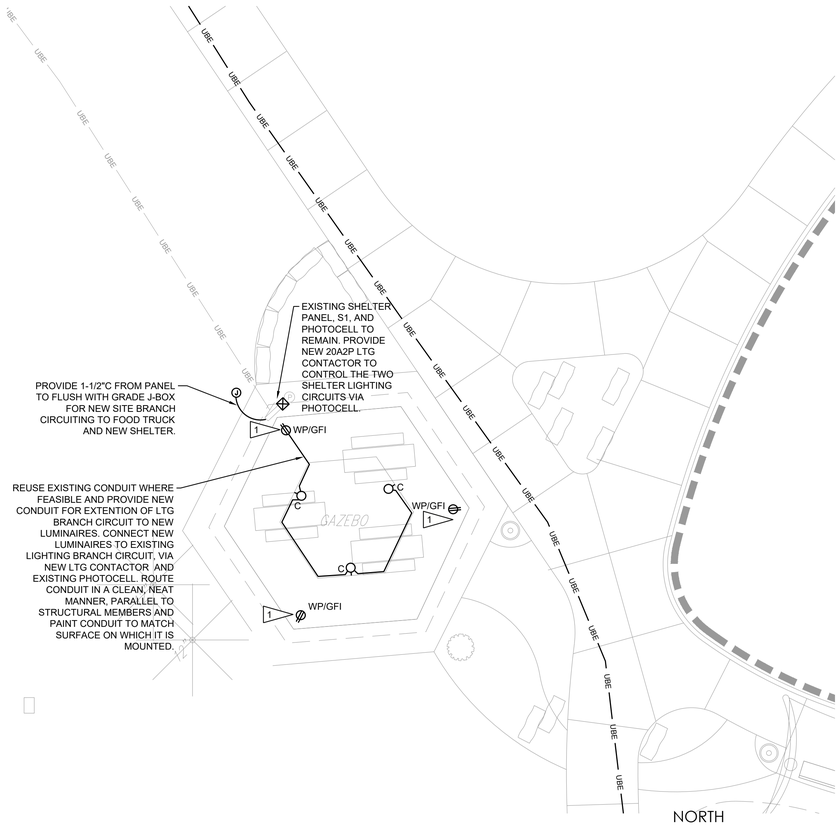


ROUTE NEW CONDUIT FROM PANEL TO AVOID PENETRATING EXISTING SHELTER FOUNDATION. SAW CUT AND PATCH CONCRETE WHERE NEW CONDUIT EXTENDS UNDERGROUND.



MOUNT LUMINAIRES CENTERED VERTICALLY AND HORIZONTALLY ON BEAM AND BETWEEN VERTICAL MEMBERS.



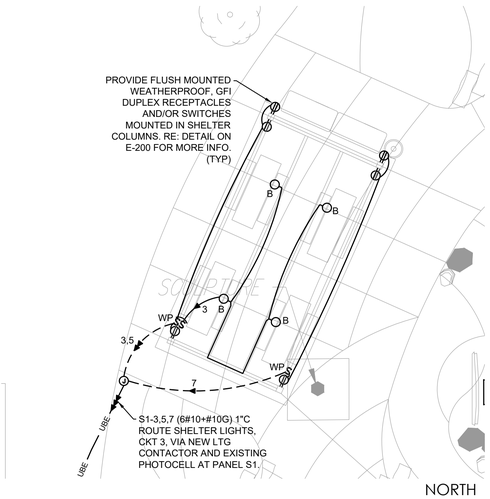


EXISTING SHELTER ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"

NORTH

1 E101



NEW SHELTER ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"

NORTH

2 E101

Koshio Park Luminaire Schedule

Key	Wattage, LED Color	Delivered Lumens	Driver & Dimming	Description	Finish	Mount	Specification			Max Input Wattage	Notes
							Manufacturer	Catalog Number	Volt		
A3	48W LED 3000K 80 CRI	4500	0-10V NON-DIM	POST TOP MOUNTED DECORATIVE PEDESTRIAN LUMINAIRE, TYPE 3 DIST, SMOOTH DIFFUSE LENS, WET LOCATION, B1-U0-G2, 11' TALL ROUND POLE	BY LANDSCP ARCH	POST TOP TO 11' TALL ROUND POLE ON FLUSH CONC BASE	INVUE LITHONIA OR EQUAL	ARB-B2-LED-D1-T3-FINISH-8030 11' TALL RND STEEL POLE	UNV	50	
A3-C	48W LED 3000K 80 CRI	4500	0-10V NON-DIM	SAME AS TYPE A3, EXCEPT SHORTER POLE SECOND HANDHOLE 18" DN FROM TOP OF POLE, PROVISIONS FOR CAMERA MTG BRACKETS AT 90 DEG FROM DIRECTION OF LUMINAIRE HEAD, RE: PLANS MOUNT ON A 24" CONCRETE BASE	BY LANDSCP ARCH	POST TOP TO 9' TALL ROUND POLE ON 24" TALL CONC BASE	INVUE LITHONIA OR EQUAL	ARB-B2-LED-D1-T5-FINISH-8030 9' TALL RND STEEL POLE 2ND HANDHOLE-18" DN FROM TOP OF POLE FOR CAMERA AT 12" FROM TOP OF POLE	UNV	50	3
B	14W LED 3000K 80 CRI	1675	0-10V NON-DIM	WALL/BEAM MOUNTED DIR LED LUMINAIRE, 4.7"H x 8"W x 4"D, HEAVY DUTY VANDAL HSNG WET LOCATION, FULL CUT OFF, TYPE 3 DIST SURFACE CONDUIT ENTRY/WIRING COMPARTMENT, INTEGRAL DRIVER	BY LANDSCP ARCH	TO SIDE OF BEAM	LIGMAN OR EQUAL	ULEE-30011-14W-T3-W30-FINISH-UNV-SCBT	UNV	15	
C	2x14W 3000K 80 CRI	2 x 1618	0-10V NON-DIM	WALL MOUNTED DIR/IND RECTANGULAR LED, WET LOCATION, SURFACE CONDUIT ENTRY, WIDE INDIRECT, WIDE DIRECT DIST, INTEGRAL DRIVER, <5" TALL MOUNTING BRACKET	BY LANDSCP ARCH	TO SIDE OF BEAM	LIGMAN OR EQUAL	ULEE-30041-2X14W-W-W-W30-FINISH-UNV-SCBT	UNV	30	
D	20W 3000K 80 CRI	1200	0-10V NON-DIM	GROUND MOUNTED LED UPLIGHT, WALL WASH DIST, HIGH TEMP THERMAL PLASTIC HSNG, CAST BRONZE EYEBALL TRIM, INTEGRAL DRIVER	CAST BRONZE	IN-GRADE	KIM	LTV82-EB-WW-12L-3K-UV	UNV	20	
F	2.5W/FT 3000K 80 CRI	342 LMS/FT	NON-DIM	LINEAR LED CHANNEL, 5'-4" LONG, STATIC WHITE, WET LOCATION LISTED, 36W WET LOCATION REMOTE 24V DRIVER RE: DWGS FOR MORE INFO	STANDARD	EXTERIOR WITHIN TOP OF SIGN	KELVIX LUMINII OR EQUAL	UNI2-WL-O-300-30K-24V-CH-211-2-FRF-CP-EC END POWER FEED HLV36-SC	UNV	36	1,2

Not all parts and pieces may be identified in the catalog number. It shall be the Contractor's and Supplier/Manufacturer's responsibility to ensure all necessary parts, pieces, and hardware are provided with the luminaire for a complete installation.

Notes:
1. Refer to the Landscape Arch detail and electrical notes for more information on mounting.
2. Provide rigid mounting channel for exterior applications, frosted lens, and mounting clips for 6" o.c. spacings.
3. Camera mounting brackets provided by pole manufacturer. Camera and camera wiring provided by Owner.

SITE PLAN GENERAL NOTES

ALL WIRING SHALL BE IN COMPLIANCE WITH THE NEC LATEST EDITION: ALL MULTI-WIRE BRANCH CIRCUITS (120V OR 277V SINGLE PHASE CIRCUITS) IDENTIFIED IN THE PANEL SCHEDULES ORIGINATING FROM SINGLE POLE BREAKER SHALL BE INSTALLED WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR. THE NEUTRAL CONDUCTOR SHALL HAVE A TRACER STRIPE (THE STRIPE COLOR SHALL MATCH THE COLOR OF THE PHASE CONDUCTOR).

REFER TO THE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INSTALLATION, CONDUIT DEPTHS, AND SPECIFICATION REQUIREMENTS. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE TO THE MOST CURRENT LOCAL CODES AND THE NEC LATEST EDITION.

ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC WITH PVC COATED GRC ELBOWS AND RISERS TO 4 FEET ABOVE GRADE AND 1 INCH MINIMUM DIAMETER, UNLESS NOTED OTHERWISE.

ALL UNDERGROUND COMMUNICATION, ELECTRICAL FEEDER, AND BRANCH CIRCUITS SHALL BE INSTALLED A MINIMUM OF 30 INCHES BELOW GRADE WITH BURIED ELECTRICAL WARNING TAPE INSTALLED DIRECTLY ABOVE BETWEEN 6 AND 12 INCHES BELOW GRADE. CONTRACTOR SHALL PROVIDE PULL BOXES AS REQUIRED TO MINIMIZE THE NUMBER OF BENDS TO MEET CODE.

ALL ELECTRICAL DEVICE LOCATIONS SHALL BE COORDINATED WITH THE LANDSCAPE AND CIVIL DRAWINGS/ARCHITECT PRIOR TO ROUGH-IN TO DETERMINE TYPICAL INSTALLATION REQUIREMENTS/LOCATIONS IN RELATION TO THE SITE LANDSCAPE AND CIVIL ELEMENTS. REFER TO LANDSCAPE PLANS FOR EXACT LOCATIONS OF PEDESTRIAN POLES. LOCATIONS ARE COORDINATED WITH SIDEWALKS AND CONCRETE PAVING AND POLE BASES NEED TO BE INTEGRATED WITH SIDEWALK PAVING.

UNDERGROUND CONDUIT IS INDICATED BY DASHED LINES, UBE, USE, UPE, OR UC.

ROUTE ALL CONDUIT/CIRCUITING ON FINISHED SPACES CONCEALED IN WALLS, ABOVE CEILINGS, OR BELOW FLOORS. ALL CONDUIT/CIRCUITING SHALL BE RUN PARALLEL TO BUILDING WALLS. ANY SURFACE MOUNTED CONDUIT IN FINISHED SPACES OR MOUNTED ON FINISHED SURFACES SHALL BE PAINTED TO MATCH THE SURFACE ON WHICH IT IS MOUNTED.

ROUTE ALL UNDERGROUND CONDUITS A MINIMUM OF 5' FROM TREE DRIP LINES AND AVOID ROUTING UNDERGROUND CONDUITS WITHIN OR CROSSING DRAINAGE SWALES OR DETENTION AREAS/PONDS.

ALL NEW CIRCUITS SHALL HAVE GROUNDING CONDUCTORS IN ALL FEEDERS AND BRANCH CIRCUITS.

FOR ALL WEATHERPROOF RECEPTACLE COVERS PROVIDE CAST ALUMINUM, WHILE-IN-USE WEATHERPROOF TYPE COVERS, HUBBELL-MG58XX SERIES OR EQUAL.

ALL EXTERIOR RECEPTACLES SHALL BE GFI PROTECTED DEVICES AND HAVE WEATHERPROOF COVERS.

THE CONTRACTOR SHALL PROVIDE STAMPED AND SIGNED STRUCTURALLY ENGINEERED POLE BASE SHOP DRAWINGS FOR ALL OF THE VARIOUS POLE BASES REQUIRED. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROVIDING THE AUTHORITY HAVING JURISDICTION WITH A STAMPED LETTER "GENERAL COMPLIANCE LETTER", VERIFYING THAT ALL NEW LIGHT BASE CAISSONS AND LIGHT ATTACHMENTS TO THE BASES HAVE BEEN INSTALLED IN ACCORDANCE WITH THE STAMPED STRUCTURAL PLANS AND ANY /ALL APPLICABLE CODES. THE POLE BASE DETAILS PROVIDED IN THE ELECTRICAL DRAWINGS ARE FOR GENERAL STYLE AND DIMENSIONS ONLY.

PLAN GENERAL NOTES:

REFER TO E-000 FOR PROJECT GENERAL NOTES AND DEMOLITION GENERAL NOTES. (TYPICAL FOR ALL SHEETS)

FLAG NOTES:

1. REPLACE EXISTING RECEPTACLES WITH NEW NEW GFI RECEPTACLES AND PROVIDE NEW METAL WEATHERPROOF IN-USE COVERS. RECONNECT TO EXISTING CIRCUIT FED FROM PANEL S1.
2. PROVIDE FLUSH WITH GRADE J-BOX FOR CONDUIT EXTENSION FROM EXISTING GAZEBO PANEL TO SITE BRANCH CIRCUITS OR SHELTER.

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244 NORTH COLLEGE AVENUE
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P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON
203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

ackerman engineering, inc.
3000 Youngfield St, Suite 264
Wheat Ridge, Colorado 80215
Ph 303-278-7297
www.aeiconsulting.com

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
SHELTER ELECT PLANS

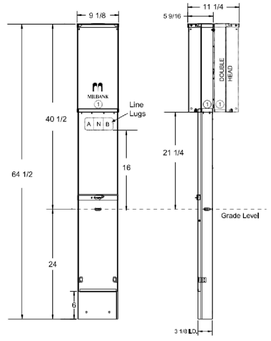
E-101

CHECKED BY: CS/KS
DRAWN BY: HV

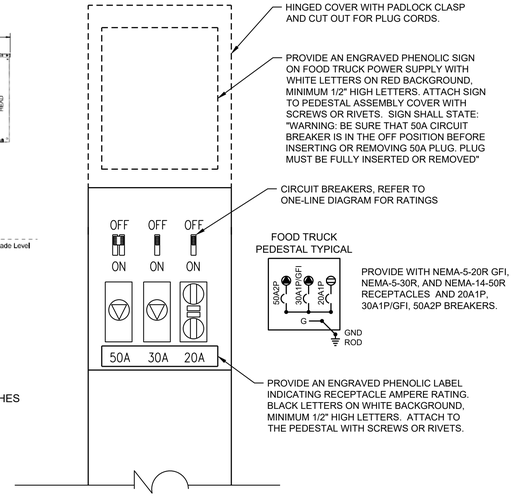
811



U5200-XL-75



DIMENSIONS INDICATED ABOVE ARE INCHES

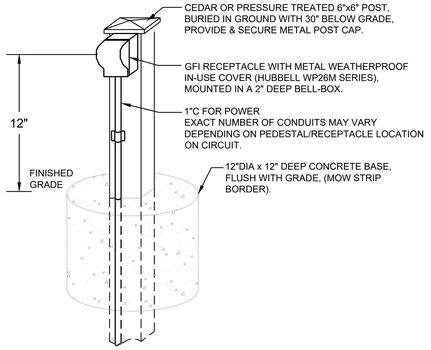


FOOD TRUCK POWER SUPPLY PEDESTAL. PROVIDE PAD MOUNT UNIT MILBANK U5210-XL-D-Z OR EQUIVALENT, THE PEDESTAL SHALL BE A WEATHERPROOF METAL ENCLOSURE WITH HINGED WEATHERPROOF IN-USE METAL COVER TO PROTECT THE BREAKERS AND RECEPTACLES. EACH PEDESTAL SHALL BE RATED 120/240V, 1PH , 3W+GND, 75A BUS, 50A MAIN LUG ONLY, 10,000A.I.C. BRACING.

TYPICAL FOOD TRUCK POWER PEDESTAL CONFIGURATION DETAIL

6 / E200

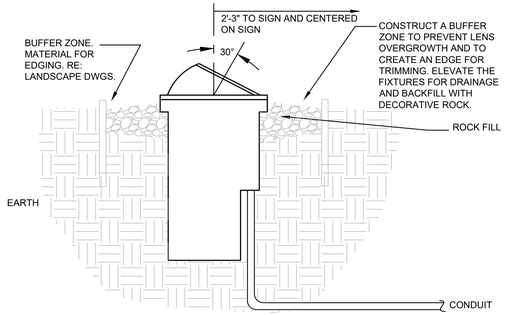
SCALE: NTS



POST MOUNTED RECEPTACLE DETAIL

7 / E200

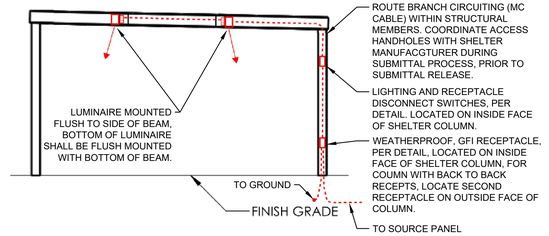
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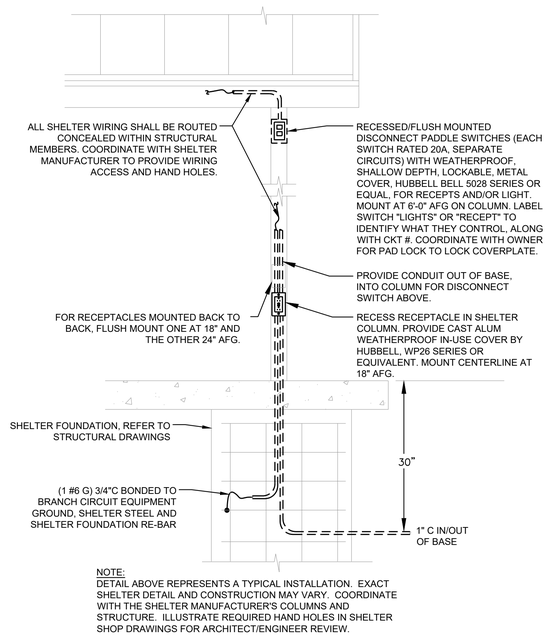


TYPE D: GROUND MOUNT LIGHT DETAIL

8 / E200

SCALE: NTS



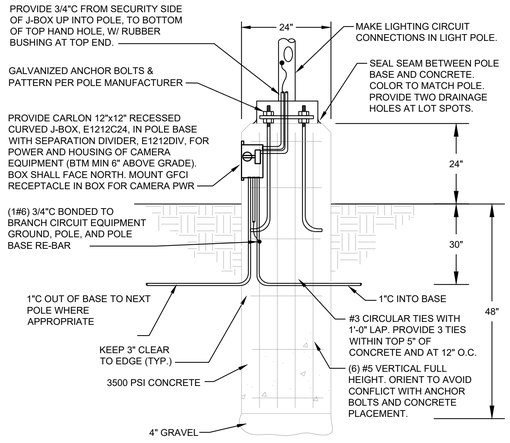


NOTE:
DETAIL ABOVE REPRESENTS A TYPICAL INSTALLATION. EXACT SHELTER DETAIL AND CONSTRUCTION MAY VARY. COORDINATE WITH THE SHELTER MANUFACTURER'S COLUMNS AND STRUCTURE. ILLUSTRATE REQUIRED HAND HOLES IN SHELTER SHOP DRAWINGS FOR ARCHITECT/ENGINEER REVIEW.

NEW SHELTER LIGHT DISCONNECT DETAIL

4 / E200

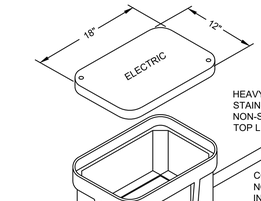
SCALE: NTS



PEDESTRIAN LIGHT POLE BASE DETAIL WITH CAMERA

5 / E200

SCALE: NTS

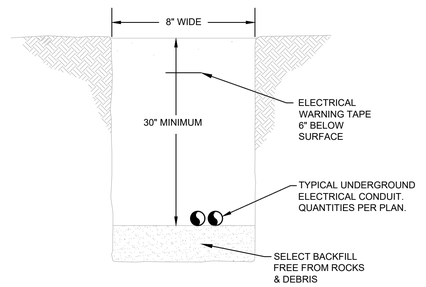


TYPICAL FLUSH WITH GRADE PULL BOX DETAIL

1 / E200

SCALE: NTS

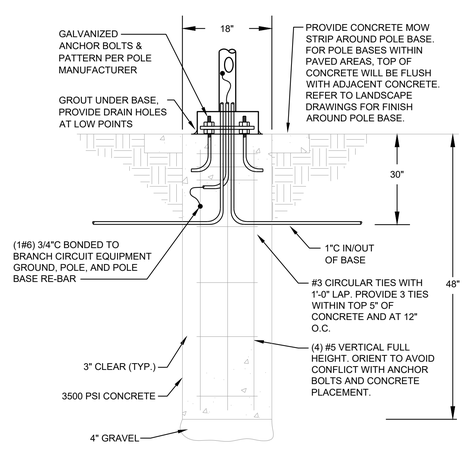
TYPICAL POWER FEEDER PULLBOX (12"x18"x18"DEEP OR LARGER PER PLANS) QUAZITE PG STYLE SERVICE BOX WITH HEAVY DUTY BOLT ON COVER AS MANUFACTURED BY STRONGWELL. STACK MULTIPLE BOXES TO ACHIEVE THE OVERALL INDICATED DEPTH.



TYPICAL CONDUIT TRENCH DETAIL

2 / E200

SCALE: NTS



PEDESTRIAN LIGHT POLE BASE DETAIL

3 / E200

SCALE: NTS

811

CHECKED BY: CS/KS
DRAWN BY: HV

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P 970.409.3414
NORRIS-DESIGN.COM

KOSHIO PARK
FORT LUPTON, CO 80621
BID SET

OWNER:
CITY OF FORT LUPTON

203 S. HARRISON AVE
FORT LUPTON, CO 80621
(303) 587-6694
FORT LUPTON, CO

ackerman engineering, inc.
3000 Youngfield St. Suite 264
Wheat Ridge, Colorado 80215
Ph 303-278-7297
www.aeiconsulting.com

DATE:
1/30/26 - DD (65% CDs)
4/10/26 - BID SET

SHEET TITLE:
ELECTRICAL DETAILS

E-200

Koshio Park

ADDENDUM #3

May 22nd, 2026

Issued, 2:30 pm MDT

1.1 NOTICE TO BIDDERS

This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders. This Addendum serves to clarify, revise, supplement and supersede information in the drawings. Each bidder shall be responsible for reading the items in this Addendum in order to determine to what extent work is affected. Each bidder shall be responsible for advising all subcontractors and material suppliers of this Addendum. The successful bidder shall execute each item, herein listed, in complete conformance with all applicable sections of Drawings and Specifications

A. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

B. The date for receipt of bids is unchanged by this Addendum.

1.2 CLARIFICATIONS & REVISIONS

A. The City's Liquidated Damages clause has been included herein.

B. Drawing revisions and clarifications have been provided for the artificial turf play mounds, demolition items, playground grading, amenities and sire furnishings, location and notations of items on the site plan, plant materials, irrigation layout and drawing legibility.

C. A complete revised drawing set is attached to this addenda. The following drawings sheets have been revised. These drawings shall replace and supersede those in the Bid Set dated 04-10-26.
   1. C-101 Demolition Plan
   2. C-301 Grading Plan
   3. L-002 Site Plan Schedules
   4. LS-101 Site Plan
   5. LS-501 Site Details
   6. LP-001 Landscape Notes & Schedules
   7. LP-101 Landscape Plan

8. LI-101 Irrigation Plan
9. E-100 Site Electrical Plan

D. The center shade sail called out as S-01 is part of the base bid. The other two are the bid alternate A.

E. Certificate of Insurance will need to be provided by contractor.

1.3 RESPONSES TO BIDDERS QUESTIONS

1. Do you have an architect estimate for this project? We are trying to get our bonding ordered.
   A: Yes, however the estimate will not be shared at this time.

2. Will the project be tax exempt?
   A: Yes, tax exempt.

3. What is the project budget?
   A: See response to item #1 above.

4. What is the anticipated start date and completion date?
   A: Anticipated start date would be mid-July with completion by November 30, 2026.

5. Are we to assume this will be a balanced site or will there be import/export required?
   A: See note on Grading Plan C-301.

6. Will any portion of the park remain open during construction?
   A: All areas of Koshio Park will be closed during construction.

7. Please clarify what will be furnished by owner.
   A: See OFCI items noted on LS-002, LS-101 and 01 1000 Summary of Work.

8. Who will carry costs for 3rd party testing?
   A: Contractor is responsible for any testing, surveying and permitting required for project
   1-cylinder test per 100 cubic yards.
   Compaction testing required.
   Please refer to City of Fort Lupton Standards and Specifications manual.
   https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

9. Who will be responsible for permit costs?
   A: The City will submit permits for owner purchased items. All other permits would be the responsibility of the Contractor.

10. Per the Exhibit A - Bid Form, within line item 1 - General Conditions it states to provide required testing and inspections. Please clarify what all required testing and inspections the GC is responsible for.
    A: Concrete testing. Contractor is responsible for any testing, surveying and permitting required for project
    1-cylinder test per 100 cubic yards.
    Compaction testing required.
    Please refer to City of Fort Lupton Standards and Specifications manual.
    https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

11. Please confirm what the percentage for the bid bond is to be.
    A: Performance Bond – 10%
    B: Bid Bond – None
    C: Payment Bond - None

12. Please clarify what playground area items, to be removed, the Owner and GC are all responsible for that is listed within the note description for the playgrounds per sheet C-101.
    A: See revised C-101 for clarification.

13. Keynote 9 within detail 1 on sheet LS-502 states, "lighting channel, re: electrical." Can we get the electrical details for that lighting per keynote 9?
    A: This information is provided on sheets E-100 and E-101.

14. Within the notes for detail 1 on sheet LS-502 it lists Fusion Fabrication for the decorative fencing. Please confirm if Fusion Fabrication is the only fabricator that we can use or if it is open to use other fabricators.
    A: All fabricators or products are "or equal".

15. Keynote 2 within detail 1 on sheet LS-502 states, "1/4" thick steel decorative fence panel, re: detail 1/LS-502." Are there any additional section detail(s) information on the 1/4" thick steel decorative fence panel available?
    A: Available information, thickness and dimensions are already provided in the detail. This is a custom element not a standard product. Final artwork will be provided to the awarded contractor as noted in the detail.

16. Landscape drawings says to prep play area for PIP? To what extent are we prepping? Sitework?
    A: Contractor to provide PIP area to subgrade only including compaction of subgrade.

17. Where is artificial tur located? Are we prepping for the turf? To what extent?
    A: Artificial turf is called out and located on sheet LS-101. See 5/LS-501 contractor to provide all items not noted as by others. Manufacturer/turf installer to provide turf and cushioning layer and gravel subbase only. See revised sheet LS-501 for clarification.

18. Owner supplied items and installed by GC are these listed on LS-002 Amenity Schedule? Can we get the specs on those items to determine install cost?
    A: See response to question #7 above. All information on model #'s is provided in the schedule. Installation requirements are noted in 32 3300 Site Furnishings.

19. Has the site furnishing been ordered? Will they arrive on time to meet schedule?
    A: Furnishing have started to be ordered and are expected to arrive on time to meet schedule.

20. Documents to turn in at bid time: Exhibit A, - Bid Form, Exhibit B-Supplemental Price, Bid Bond and Prequal information?
    A: See Section 5 of the RFP – Application Qualifications, Statements and Proposal.

21. Is there a bid bond form?
    A: Performance Bond – 10%. Form will be provided to the selected Contractor.
    B: Bid Bond – None
    C: Payment Bond - None

22. Project is tax exempt?
    A: Yes, tax exempt.

23. Is there an underdrain drawing for the Playground area? Will it Daylight or tie into storm? Will there be a bid tab for this?
    A: There is no underdrain system.

24. Is there a bid tab for the Park Rules Sign?
    A: No, the supplemental unit pricing is not a comprehensive bid tab.

25. Is there a detail for the finished concrete under the Playground PIP? With Elevations?
    A: There is no concrete under the PIP. See 4/LS-501. If this was intended to refer to the Play Turf, that installation detail is shown on 5/LS-501. Grading elevations for the play turf mounds have been added to sheet LS-101.

26. Is there a Shelter drawing to get to our IBC Licensed Shelter installer so he can obtain the correct Permit from the City?
    A: Yes, shelter drawings will be provided to the selected bidder.

27. Is the Supplemental Unit price schedule to be turned in with the bid?
    A: Yes.

28. Is there water accessible to the park during construction?
    A: Yes, water can be pulled from a hydrant in the park. Contractor must bring their own meter and backflow device. To apply for hydrant use, please use the Community Core portal: https://www.fortluptonco.gov/162/Public-Works There will be a $1500 deposit, a $25 application fee, and $12 per 1000 gallons used. Any questions regarding pulling water from hydrants should be directed to Amber Phillips at aphillips@fortluptonco.gov or 720-466-6112.

29. Will the site furnishing be delivered to the park? If not who will insure these during handling & transport?
    A: Yes, all furnishings and Owner purchased items will be delivered to the site.

30. Will the Demo that the city is keeping need to be delivered? If so, how far is receiving?
    A: City salvaged items will be removed from the site by the City.

31. Is this a taxable project?
    A: Project is tax exempt.

32. What will the owner need inspected on the project?
    A: Contractor is responsible for any testing, surveying and permitting required for project
    a. *1-cylinder test per 100 cubic yards.*
    b. *Compaction testing required.*

    Please refer to City of Fort Lupton Standards and Specifications manual.
    https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

33. Is a Bid Bond required as part of the bid submission? On the site walk the question was asked about bid bond and the verbal answer was no. The ITB includes a bond form and discusses a bid bond.
    A: Yes a performance bond is required. See response to item #11 above.

34. What are the requirements for P&P Bonds?
    A: See response to item #11 above.

35. Please provide the existing sod/seed mix currently installed at Koshio Park to allow accurate pricing and coordination for the specified "Sod, Blend to Match Existing" areas shown in the landscape plans.

A: See revised sheet LP-001 for sod mix.

36. The Contract Documents do not mention Liquidated Damages can you confirm that they are not part of the contract documents or please provide the requirements
A: See Below.

14-9.3.0 Liquidated Damages

A. *Because time is an essential element of the Project, it is extremely important that the work be pressed vigorously to completion. The City's cost of administering the Contract, including engineering, inspection, and supervision, will be increased as the time occupied in the work is lengthened. The public is subject to detriment and inconvenience when the project's full use cannot be made. Should the Contractor fail to perform any of the individual work tasks by the completion date stipulated in PWA Clause 3, Time for Completion, the Contractor shall pay to the City, as liquidated damages and not as a penalty, the amounts set forth in CC Sub-Clause 14-9.3.F, hereinbelow unless written extensions to the Time for Completion granted by City expressly waive liquidated damages.*

B. *In the case of joint responsibility for any delay in the works' final completion, where two (2) or more separate contracts are in force at the same time and cover work at the same site, the liquidated damages assessed against any one (1) contractor will be based upon the individual responsibility of that contractor for the delay as determined by, and in the Engineer's judgment.*

C. *The City has the right to deduct the liquidated damages from any money in its hands, otherwise due, or to become due, to the Contractor.*

D. *The City is entitled to recover from the Contractor all ascertainable damages arising from the delay in completing the work. The said damages shall include, without limitation, all engineering, inspection, supervision, and legal expenses directly incurred by the City because of such delay.*

E. *Additionally, the Contractor agrees that the City and/or the public will suffer other damage or financial loss if the work is not completed on time or within any time extensions allowed in accordance with the provisions of CC Sub-Clause 14-6.7, Extending the Time for Completion. The Contractor and the City agree that proof of the exact amount of any such damage or loss is difficult to determine. Accordingly, the Contractor agrees to pay the sums stated in the Proposal and the Project Manual as liquidated damages and not as penalty for each calendar day or part thereof that the Work remains uncompleted after the contract time has expired.*

F. *The schedule of Liquidated Damages set forth in Table 1 is an amount, agreed to by the Contractor and the City, as reasonably representing the additional construction and engineering costs that may be incurred by the City if the Contractor fails to complete its performance within PWA Clause 3, Time for Completion.*

G. *Should the amount otherwise due the Contractor be less than the amount of such damages provided for herein, the Contractor and the surety shall be liable to the City for such deficiency.*

H. *Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the City of any of its rights under the Contract.*

Original Contract Amount		Liquidated Damages
From More Than	To and Including	per Calendar Day ($)
0	150,000	500
150,000	250,000	600
250,000	500,000	800
500,000	1,000,000	1,400
1,000,000	2,000,000	2,000
2,000,000	4,000,000	3,300
4,000,000	10,000,000	3,900
		3,900 plus 300 per each additional

37. Is there going to be an underdrain in the play areas?
    A: See response to #23 above

38. Tabulation for Installing Owner Furnished Shelter, Site Furnishings?
    A: See response to #24, not all items are included in the supplemental unit price schedule. Installation for all furnishings by the contractor shall be included in Base Bid Breakout Item #3.

39. Erosion control Tabulation?
    A: See response to #24, not all items are included in the supplemental unit price schedule. Erosion control shall be included as noted in Base Bid Breakout Item #3.

40. On your Bid Schedule there is not a quantity Column for tallies of units.
    A: See response to #24, not all items are included in the supplemental unit price schedule. This is not a complete bid tab and does not require a total per instructions at the top of the page.

41. Is there a specific way you want this filled out?
    A: Unable to respond to this item as it is not clear what section this is referring to. All forms can be filled out electronically.

42. What percentage of the project will the bid bond need to cover?
    A: 10% See response to #11 above.
    B: Bid Bond – None
    C: Payment Bond - None

END OF ADDENDUM #3

Koshio Park

ADDENDUM #4

June 1, 2026

Issued, 10:30 am MDT

1.1 NOTICE TO BIDDERS

This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders.

Bid Opening will be held on June 2, 2026 at 2:30pm MST at the Fort Lupton Recreation Center located at 203 South Harrison Avenue, Fort Lupton, CO 80621.

CORPORATE HEADQUARTERS
9781 S. Meridian Blvd.
Suite 120
Englewood, CO 80112
720.575.9896 PHONE

6/2/2026

Doug Cook
203 South Harrison Avenue
Fort Lupton, CO 80621
720.466.6162
dcook@fortluptonco.gov

Dear Mr. Cook:

HPM, Inc. is pleased to submit our proposal for the City of Fort Lupton Koshio Park Improvements Project. We appreciate the opportunity to partner with the City on this important community enhancement project and are excited about the opportunity to deliver a high-quality project that meets the City's goals for schedule, safety, and overall project execution.

In response to the Applicant Qualifications, Statements, and Proposal requirements included in the RFP, HPM provides the following information:

1. Self-Performed Work

HPM anticipates self-performing approximately 25% of the total contract value for the Koshio Park Improvements Project.

Self-performed work is anticipated to include:

- Demolition
- Site grading and earthwork
- Foundation excavations
- Site furnishings installation
- Shade structure installation
- Fence foundation installation
- Painting of existing structures
- Site management, supervision, and general conditions

The remaining work will be performed by qualified subcontractors under HPM's direct management and oversight.

2. Preliminary Schedule

Please refer to the attached preliminary project schedule for additional detail.

At a high level, HPM anticipates the following timeline:

- Mobilization and construction start: Mid-July 2026
- Major construction activities: July through October 2026
- Substantial Completion: October 2026
- Final Completion: End of October 2026

This schedule is preliminary and will be refined following contract award and coordination with the City.

3. Previous Experience with the City of Fort Lupton

HPM currently holds a contract with the City of Fort Lupton for the **Fort Lupton Elevated Water Storage Tank Project**.

- **Project:** Fort Lupton Elevated Water Storage Tank
- **Status:** Active Contract
- **Contract Amount:** $17,387,672
- **Dates of Service:** 7/31/2025

HPM has enjoyed working with the City on this project and looks forward to the opportunity to continue building upon that relationship through successful delivery of the Koshio Park Improvements Project.

4. Main Point of Contact

The primary point of contact for this proposal and the proposed project team is:

Spencer Marxsen
Project Manager
HPM, Inc.
9781 S. Meridian Blvd., Suite 120
Englewood, Colorado 80112

Office: 720-575-9896
Mobile: 402-658-8689
Email: Spencer.Marxsen@hpmcontracting.com

5. Bid Form – Exhibit A

Completed and included with this proposal submission.

6. Supplemental Unit Price Schedule – Exhibit B

Completed and included with this proposal submission.

Thank you for your consideration of HPM's proposal. We appreciate the opportunity to submit and look forward to the possibility of partnering with the City of Fort Lupton to successfully deliver the Koshio Park Improvements Project. Should you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,

David Danielson
Preconstruction Services

Exhibit A

BASE BID BREAKOUT

Provide prices for all items listed below. All prices shall be completely installed items. These prices may be used by the Owner to increase or decrease the scope of the Work. See Supplemental Unit Price Schedule for additional pricing breakdowns.

1. GENERAL CONDITIONS $ 55,419.00
LS
This item shall include general conditions, mobilization, supervision, landscape and irrigation maintenance (one-year warranty), required testing and inspections, Temporary Facilities, Controls, and Staging.

2. DEMOLITION/SITE CLEARING $ 32,338.00
LS
This item shall include all demolition tasks for completion and site preparation for new construction, including any needed off-site disposal of materials and all other materials and labor required to complete the demolition and site clearing.

3. SITE WORK $ 238,090.00
LS
This item shall include all earthwork, subgrade preparation, grading, drainage, erosion control, paving subgrade, concrete paving, drainage pans, curb and gutter, ramps, parking striping, asphalt paving, playground subbase, playground artificial turf base, playground curb, footings, signage, painting of existing shelter and all other materials and labor required to complete items not specifically described or included in items 2 through 6.

4. LANDSCAPE $ 145,230.00
LS
This item shall include all sodding, soil preparation, mulch, trees, shrubs, plants, landscape boulders, stone blocks, soil preparation and all other materials and labor required to complete the landscape installation.

5. IRRIGATION $ 52,113.00 LS
This item shall include all trenching, piping, sleeving, controls, electrical wire, sprinkler assemblies, and all other materials and labor required to complete the irrigation system.

6. SITE ELECTRICAL AND LIGHTING $ 139,105.00 LS

This item shall include electrical service, power and electrical connections, site lighting, food truck pedestal and all other materials and labor required to complete site electrical and lighting.

TOTAL BASE BID (Insert total amount here) $ 662,295.00

LS

(must equal "Total Lump Sum Bid" on page 1 of the Bid Form**)**

A. BID ALTERNATE A - SHADE SAIL FOUNDATIONS & INSTALLATION $ 5,555.00 EA

This item shall include foundations and installation of Owner furnished shade sail, to include all reinforcement and all other materials and labor required to complete shade said foundations and installation.

B. BID ALTERNATE B – DECORATIVE FENCE – FIRST STREET $ 24,425.00 LS

This item shall include foundations, metal panels, fabrication and installation, hardware and all other materials and labor required to complete the Decorative Fence – First Street.

C. BID ALTERNATE C – DECORATIVE FENCE – MCKINLEY AVENUE $ 12,109.00 LS

This item shall include foundations, metal panels, fabrication and installation, hardware and all other materials and labor required to complete the Decorative Fence – McKinley Avenue.

D. BID ALTERNATE D – DECORATIVE FENCE – DEXTER STREET $ 7,077.50 LS

This item shall include foundations, metal panels, fabrication and installation, hardware and all other materials and labor required to complete the Decorative Fence – Dexter Street.

E. BID ALTERNATE E – 1ST STREET LANDSCAPE BED $ 5,599.00 LS

This item shall include mulch, plants, landscape edger, weed barrier fabric and all other materials and labor required to complete the 1st Street Landscape Bed.

004322 - SUPPLEMENTAL UNIT PRICE SCHEDULE

Koshio Park

BIDDER'S NAME: HPM Contracting Inc.

BIDDER'S SIGNATURE: 

DATE OF SIGNATURE: 6/02/2026

The following prices are intended to be the basis of additions or deletions to the work outlined in the Project Manual and shown on the Drawings. The value of such changes shall be determined by the quantities involved at the time of award, or as reinstated as specified. All unit prices for each of the items listed shall include all cost involved in the installation of each item or performance of tasks, its pro rata share of profits, labor and overhead. Unit prices do not need to add up to Lump Sum.

DEMOLITION + SITE CLEARING

Item	*Description*	*Unit*	*Unit Price*
1	Remove Concrete Sidewalk	s.f.	$0.63
2	Remove Curb & Gutter	l.f.	$1.60
3	Remove Concrete Pan	l.f.	$1.60
4	Remove Asphalt Paving	s.y.	$5.83
5	Remove Sod	s.f.	$0.47

SITE WORK

Item	*Description*	*Unit*	*Unit Price*
6	Earthwork cut/fill in place	c.y.	$3.98
7	Imported Fill	c.y.	$5.25
8	Asphalt Paving Patching	s.y.	$10.08
9	Asphalt Paving	l.f.	$10.08
10	Curb and Gutter	l.f.	$29.12
11	Concrete Pan	l.f.	$35.84
12	ADA Ramp	ea	$30.24
13	Crusher Fines Paving	s.f.	$2.82
14	Sloped Concrete Paving for Atrificial Play Turf	s.f.	$5.82
15	Concrete Paving	s.f.	$6.16
16	Playground Curb	l.f.	$26.88
17	Sandstone Block Seat	ea	$526.25
18	North Park ID Sign	ea	$280.00
19	East Park ID Sign	ea	$2912.00

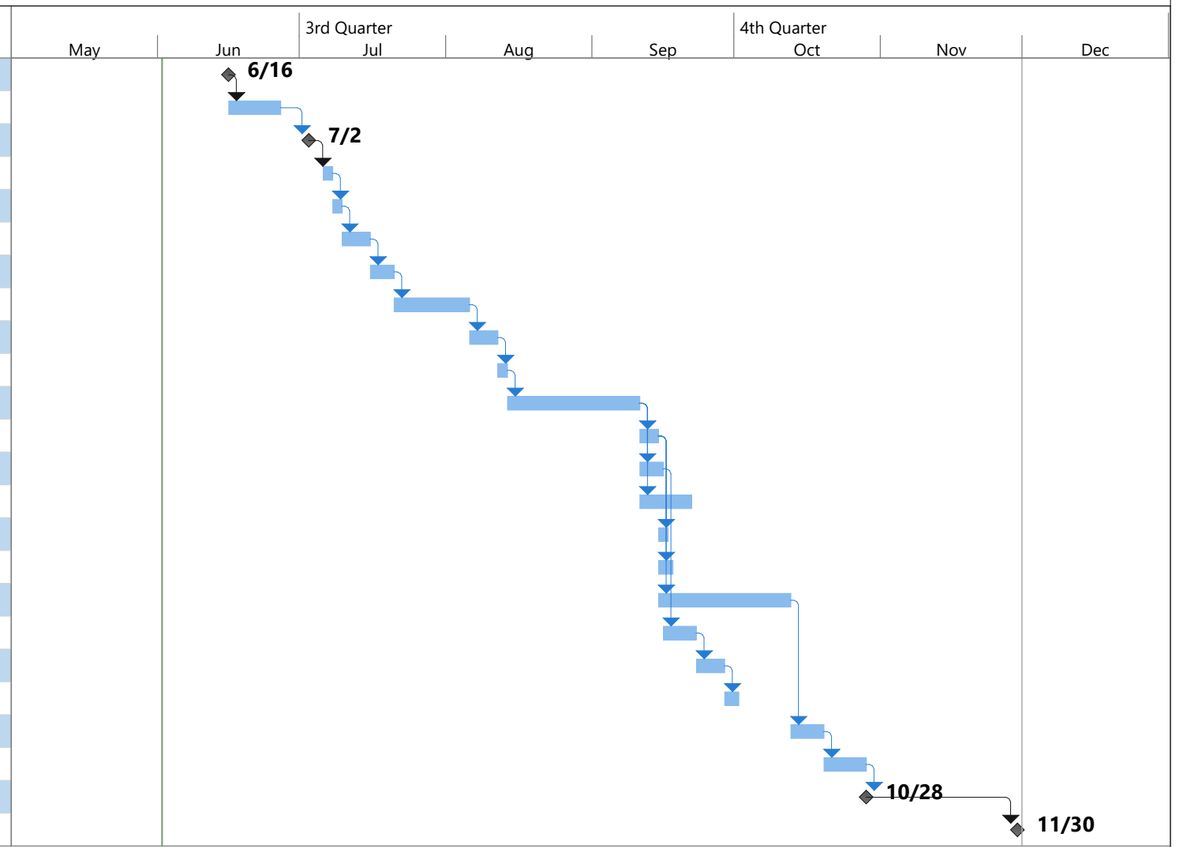
LANDSCAPE

Item	*Description*	*Unit*	*Unit Price*
20	Evergreen Tree (6' ht)	ea.	$614.10
21	Ornamental Tree (1.5" cal)	ea.	$541.30
22	Ornamental Tree (6' clump)	ea.	$541.30
23	Deciduous Shrubs (#5 container)	ea.	$90.26
24	Evergreen Shrubs (#5 container)	ea.	$81.12
25	Ornamental Grasses (#1 container)	ea.	$32.35
26	Perennials (#1 container)	ea.	$31.90
27	Soil preparation + fine grading	c.y.	$1.00
28	Rock Mulch (per materials schedule)	s.f.	$2.73
29	Decorative Rock Mulch (per materials schedule)	s.f.	$14.29
30	Cobble Mulch (per materials schedule)	s.f.	$2.93
31	Sod	s.f.	$2.66
32	Landscape Boulder 'A' size	ea.	$603.74
33	Landscape Boulder 'B' size	ea.	$1,304.50

IRRIGATION			
Item	*Description*	*Unit*	*Unit Price*
34	Irrigation Meter	ea.	$2,492.00
35	Irrigation Controller and Rain Sensor	ea.	$4,490.43
36	Manual Drain Valve	ea.	$168.60
37	Master Valve	ea.	$587.11
38	Quick Coupler Valve	ea.	$539.41
39	Flow Sensor	ea.	$847.31
40	Isolation Gate Valve	ea.	$305.10
41	Quick Coupler	ea.	$539.41
42	Turf Valve Assembly	ea.	$353.30
43	Drip Valve Assembly	ea.	$486.25
44	Turf Rotor	ea.	$68.58
45	Turf Rotary	ea.	$68.58
46	Turf Spray	ea.	$44.72
47	Drip Flush Valve Assembly	ea.	$105.20
48	2.5" PVC Mainline Piping with Decoder Wire (trenche	l.f.	$3.98
49	1" PVC Lateral Piping (trenched)	l.f.	$1.79
50	3/4" Poly Drip Lateral (trenched)	l.f.	$1.66
SITE LIGHTING & ELECTRICAL			
Item	*Description*	*Unit*	*Unit Price*
51	A3 - Post Top Mounted Pedestrian Luminaire	*ea.*	$4984
52	A3-C - Post Top Mounted Pedestrian Luminaire, Shor	*ea.*	$5040
53	B - Wall/Beam Mounted LED Luminaire	*ea.*	$1019.20
54	C - Wall Mounted Rectangular LED	*ea.*	$1142.40
55	D - Ground Mounted Uplight	*ea.*	$2452.80
56	F - Linear LED Channel	*l.f.*	$851.20
57	Wiring	*l.f.*	$63.28
58	Nema 3R Panel	*ea.*	$3136.00
59	Food Truck Pedestal	*ea.*	$5600.00
60	Underground Conduit	*l.f.*	$4.25

HPM Inc. Koshio Park Base Scope with Alternates
Project Schedule

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		Notice of Award	0 days	Tue 6/16/26	Tue 6/16/26	
2		Contract Execution	9 days	Tue 6/16/26	Fri 6/26/26	1
3		Notice to Proceed	0 days	Thu 7/2/26	Thu 7/2/26	2
4		Mobilization	2 days	Mon 7/6/26	Tue 7/7/26	3
5		Erosion Control	2 days	Wed 7/8/26	Thu 7/9/26	4
6		Clear & Grub/Demo	4 days	Fri 7/10/26	Wed 7/15/26	5
7		Site Work	3 days	Thu 7/16/26	Mon 7/20/26	6
8		Irrigation and Underground Electrical	12 days	Tue 7/21/26	Wed 8/5/26	7
9		Lansdscape Grading	4 days	Thu 8/6/26	Tue 8/11/26	8
10		Flatwork Grading	2 days	Wed 8/12/26	Thu 8/13/26	9
11		Site Concrete	20 days	Fri 8/14/26	Thu 9/10/26	10
12		Asphalt Paving	2 days	Fri 9/11/26	Mon 9/14/26	11
13		Furnish & Install	3 days	Fri 9/11/26	Tue 9/15/26	11
14		Above Ground Electrical	7 days	Fri 9/11/26	Mon 9/21/26	11
15		Shade Structure Install (Including Alt. A)	2 days	Tue 9/15/26	Wed 9/16/26	12
16		Signage and Striping	3 days	Tue 9/15/26	Thu 9/17/26	12
17		Landscaping	20 days	Tue 9/15/26	Mon 10/12/26	12
18		Decorative Fence (Alt. B)	5 days	Wed 9/16/26	Tue 9/22/26	13
19		Decorative Fence (Alt. C)	4 days	Wed 9/23/26	Mon 9/28/26	18
20		Decorative Fence (Alt. D)	3 days	Tue 9/29/26	Thu 10/1/26	19
21		Landscape Bed (Alt. E)	5 days	Tue 10/13/26	Mon 10/19/26	17
22		Punchlist	7 days	Tue 10/20/26	Wed 10/28/26	21
23		Substantial Completion	0 days	Wed 10/28/26	Wed 10/28/26	22
24		Contractual Final Completion	0 days	Mon 11/30/26	Mon 11/30/26	23



Project: HPM Koshio Park with
Date: Tue 6/2/26

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

Addendum 1

Acknowledged
Matt Adams
HPM, Inc.
5/7/26

FTL20206 - 131

Pre-Bid Meeting: April 30, 2026 at 10:00am

Date	Company	Name	Phone	Email	Signature
4/30	Rocky Mtn Electric	Clint Boswell	907-841-9864	cboswell@RMEC.llc	
4/30	RMEC	Kasandra Watkins	720-301-5469	KWatkins@RMEC.llc	
4/30	APCO Electric	Sam Gluck	970-381-1190	sam@apcoelectric.com	
4/30	HPM	David Danielson	720 761 7851	david.danielson@HPMCONTRACTING.com	
4/30	Top-Notch Pavement Solutions	Mike Medved	936-524-6089	MMEDVED@Top-notchpavement.com	
4/30	TCC Corporation	Steph McCormack	970.460.0583	smccormack@tccorp.net	Steph McCormack
4/30	Northern Concrete	Tony Brand	970-556-0313	Tonyswithnorth@gmail.com	
4-30	Mtn. Constructors	Joe Kuntz	970-785-6661	bids@mtnconstructors.com	
4-30	Arrow J Landscape	Gary Olson	720 299 5714	golson@arrowj.com	
4/30	Avery Waldron	Alpine Gardens	214 232 3106	avery@alpinegardens.com	
4/30	Elite Industries Inc	Chris Klausner	720 339 5772	chris@eliteindustriesinc.com	
4/30	T2 Construction	Kyle Kadlec	303-432-8742	Kyle@T2-construction.com	
4/30	Greatland	Adriana Irra	720) 9846187	JR@Greatlandcontractors.com	
4/30	Environmental Landscape	Josh Mueller	720.291-0991	josh@ekiwerks.com	
4/30	Pinnacle Electric + Construction	Austin Feilmeier	9706740606	austin@pinnacleelectricCORP.com	
4/30	Colorado Paving Inc	Jesus Sanchez	(720)556-3123	Jsanchez@COpaving.com	
4/30	Halcyon	Fred Dunning	6024034757	Fred Dunning	
4/30	Richdell construction	Dylan Fisk	307 4484602	dfisk@richdell.com	
4/30	Designscapes	Jeff Thompson	303 912 7253	JThompson@designscapes.org	

FTL20206 - 131

Pre-Bid Meeting: April 30, 2026 at 10:00am

Date	Company	Name	Phone	Email	Signature
4/30	POUDRE CONSTRUCTION	BEAU BRITTENHAM	303-717-7964	beau@poudreconstruction.com	
4/30	GTC	COLTEN [illegible]	303-772-5041	[illegible]@GTC1.NET	
4/30	ClearCreek Civil	Keith Gerdes	909-781-7949	keith.g@clearcreekcivil	
4/30	KCI Construction	Shaun Seresac	303-571-2127	sseresac@kciconst.com	
4/30	iBuild Construction	Kelly Fischer	970-888-1666	KF.ibuild@gmail	
4/30	Western States Re	Jen Renfrew	832-270-1983	jrenfrow@WSReclamation.com	
4/30	Donnelly Const.	Kris Kaufman	303 396 2254	KKaufman@DonnellyInd.com	
4/30	Bleeker Const.	Cory Bleeker	303-912-9935	cory@bleekerco.com	
4/30	Powell Restoration	Jordan Ziegler	720-626-4415	Jordan@Powellenviro.com	
4/30	Ground Solutions	Dan Boyer	720 491 8615	DBoyer@groundsolutionco.com	
4/30	Signature Landscape	Andy Hamad	3320-1994	And-y@signaturedenver.com	
4-30	Hpm	Andrew Elgin	239-877-6019	andrew.elgin@Hpmcontracting.com	
4-30	McCauley Const.	TIM WEBB	970-686-6300	TIM.WEBB@MCCAULEYCONSTRUCTORS.com	

Acknowledged
Matt Adams
HPM, Inc.
5/15/26

Koshio Park

ADDENDUM #2

May 15th, 2026

Issued, 2:30 pm MDT

1.1 NOTICE TO BIDDERS

This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders. This Addendum serves to clarify, revise, supplement and supersede information in the drawings. Each bidder shall be responsible for reading the items in this Addendum in order to determine to what extent work is affected. Each bidder shall be responsible for advising all subcontractors and material suppliers of this Addendum. The successful bidder shall execute each item, herein listed, in complete conformance with all applicable sections of Drawings and Specifications

A. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

B. The date for receipt of bids is unchanged by this Addendum.

1.2 CLARIFICATIONS & REVISIONS

A. The City's Liquidated Damages clause has been included herein.

B. Drawing revisions and clarifications have been provided for the artificial turf play mounds, demolition items, playground grading, amenities and sire furnishings, location and notations of items on the site plan, plant materials, irrigation layout and drawing legibility.

C. A complete revised drawing set is attached to this addenda. The following drawings sheets have been revised. These drawings shall replace and supersede those in the Bid Set dated 04-10-26.
   1. C-101 Demolition Plan
   2. C-301 Grading Plan
   3. L-002 Site Plan Schedules
   4. LS-101 Site Plan
   5. LS-501 Site Details
   6. LP-001 Landscape Notes & Schedules
   7. LP-101 Landscape Plan

8. LI-101 Irrigation Plan
9. E-100 Site Electrical Plan

1.3 RESPONSES TO BIDDERS QUESTIONS

1. Do you have an architect estimate for this project? We are trying to get our bonding ordered.
   A: Yes, however the estimate will not be shared at this time.

2. Will the project be tax exempt?
   A: Yes, tax exempt.

3. What is the project budget?
   A: See response to item #1 above.

4. What is the anticipated start date and completion date?
   A: Anticipated start date would be mid-July with completion by November 30, 2026.

5. Are we to assume this will be a balanced site or will there be import/export required?
   A: See note on Grading Plan C-301.

6. Will any portion of the park remain open during construction?
   A: All areas of Koshio Park will be closed during construction.

7. Please clarify what will be furnished by owner.
   A: See OFCI items noted on LS-002, LS-101 and 01 1000 Summary of Work.

8. Who will carry costs for 3rd party testing?
   A: Contractor is responsible for any testing, surveying and permitting required for project
   1-cylinder test per 100 cubic yards.
   Compaction testing required.
   Please refer to City of Fort Lupton Standards and Specifications manual.
   https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

9. Who will be responsible for permit costs?
   A: The City will submit permits for owner purchased items. All other permits would be the responsibility of the Contractor.

10. Per the Exhibit A - Bid Form, within line item 1 - General Conditions it states to provide required testing and inspections. Please clarify what all required testing and inspections the GC is responsible for.
    A: Concrete testing. Contractor is responsible for any testing, surveying and permitting required for project
    1-cylinder test per 100 cubic yards.
    Compaction testing required.
    Please refer to City of Fort Lupton Standards and Specifications manual.
    https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

11. Please confirm what the percentage for the bid bond is to be.
    A: Performance Bond – 10%

12. Please clarify what playground area items, to be removed, the Owner and GC are all responsible for that is listed within the note description for the playgrounds per sheet C-101.
    A: See revised C-101 for clarification.

13. Keynote 9 within detail 1 on sheet LS-502 states, "lighting channel, re: electrical." Can we get the electrical details for that lighting per keynote 9?
    A: This information is provided on sheets E-100 and E-101.

14. Within the notes for detail 1 on sheet LS-502 it lists Fusion Fabrication for the decorative fencing. Please confirm if Fusion Fabrication is the only fabricator that we can use or if it is open to use other fabricators.
    A: All fabricators or products are "or equal".

15. Keynote 2 within detail 1 on sheet LS-502 states, "1/4" thick steel decorative fence panel, re: detail 1/LS-502." Are there any additional section detail(s) information on the 1/4" thick steel decorative fence panel available?
    A: Available information, thickness and dimensions are already provided in the detail. This is a custom element not a standard product. Final artwork will be provided to the awarded contractor as noted in the detail.

16. Landscape drawings says to prep play area for PIP? To what extent are we prepping? Sitework?
    A: Contractor to provide PIP area to subgrade only including compaction of subgrade.

17. Where is artificial tur located? Are we prepping for the turf? To what extent?
    A: Artificial turf is called out and located on sheet LS-101. See 5/LS-501 contractor to provide all items not noted as by others. Manufacturer/turf installer to provide turf and cushioning layer and gravel subbase only. See revised sheet LS-501 for clarification.

18. Owner supplied items and installed by GC are these listed on LS-002 Amenity Schedule? Can we get the specs on those items to determine install cost?
    A: See response to question #7 above. All information on model #'s is provided in the schedule. Installation requirements are noted in 32 3300 Site Furnishings.

19. Has the site furnishing been ordered? Will they arrive on time to meet schedule?
    A: Furnishing have started to be ordered and are expected to arrive on time to meet schedule.

20. Documents to turn in at bid time: Exhibit A, - Bid Form, Exhibit B-Supplemental Price, Bid Bond and Prequal information?
    A: See Section 5 of the RFP – Application Qualifications, Statements and Proposal.

21. Is there a bid bond form?
    A: Performance Bond – 10%. Form will be provided to the selected Contractor.

22. Project is tax exempt?
    A: Yes, tax exempt.

23. Is there an underdrain drawing for the Playground area? Will it Daylight or tie into storm? Will there be a bid tab for this?
    A: There is no underdrain system.

24. Is there a bid tab for the Park Rules Sign?
    A: No, the supplemental unit pricing is not a comprehensive bid tab.

25. Is there a detail for the finished concrete under the Playground PIP? With Elevations?
A: There is no concrete under the PIP. See 4/LS-501. If this was intended to refer to the Play Turf, that installation detail is shown on 5/LS-501. Grading elevations for the play turf mounds have been added to sheet LS-101.

26. Is there a Shelter drawing to get to our IBC Licensed Shelter installer so he can obtain the correct Permit from the City?
A: Yes, shelter drawings will be provided to the selected bidder.

27. Is the Supplemental Unit price schedule to be turned in with the bid?
A: Yes.

28. Is there water accessible to the park during construction?
A: Yes, water can be pulled from a hydrant in the park. Contractor must bring their own meter and backflow device. To apply for hydrant use, please use the Community Core portal: https://www.fortluptonco.gov/162/Public-Works There will be a $1500 deposit, a $25 application fee, and $12 per 1000 gallons used. Any questions regarding pulling water from hydrants should be directed to Amber Phillips at aphillips@fortluptonco.gov or 720-466-6112.

29. Will the site furnishing be delivered to the park? If not who will insure these during handling & transport?
A: Yes, all furnishings and Owner purchased items will be delivered to the site.

30. Will the Demo that the city is keeping need to be delivered? If so, how far is receiving?
A: City salvaged items will be removed from the site by the City.

31. Is this a taxable project?
A: Project is tax exempt.

32. What will the owner need inspected on the project?
A: Contractor is responsible for any testing, surveying and permitting required for project
    a. *1-cylinder test per 100 cubic yards.*
    b. *Compaction testing required.*
Please refer to City of Fort Lupton Standards and Specifications manual.
https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

33. Is a Bid Bond required as part of the bid submission? On the site walk the question was asked about bid bond and the verbal answer was no. The ITB includes a bond form and discusses a bid bond.
A: Yes a performance bond is required. See response to item #11 above.

34. What are the requirements for P&P Bonds?
A: See response to item #11 above.

35. Please provide the existing sod/seed mix currently installed at Koshio Park to allow accurate pricing and coordination for the specified “Sod, Blend to Match Existing” areas shown in the landscape plans.
A: See revised sheet LP-001 for sod mix.

36. The Contract Documents do not mention Liquidated Damages can you confirm that they are not part of the contract documents or please provide the requirements
A: See Below.

14-9.3.0 Liquidated Damages

A. *Because time is an essential element of the Project, it is extremely important that the work be pressed vigorously to completion. The City's cost of administering the Contract, including engineering, inspection, and supervision, will be increased as the time occupied in the work is lengthened. The public is subject to detriment and inconvenience when the project's full use cannot be made. Should the Contractor fail to perform any of the individual work tasks by the completion date stipulated in PWA Clause 3, Time for Completion, the Contractor shall pay to the City, as liquidated damages and not as a penalty, the amounts set forth in CC Sub-Clause 14-9.3.F, hereinbelow unless written extensions to the Time for Completion granted by City expressly waive liquidated damages.*

B. *In the case of joint responsibility for any delay in the works' final completion, where two (2) or more separate contracts are in force at the same time and cover work at the same site, the liquidated damages assessed against any one (1) contractor will be based upon the individual responsibility of that contractor for the delay as determined by, and in the Engineer's judgment.*

C. *The City has the right to deduct the liquidated damages from any money in its hands, otherwise due, or to become due, to the Contractor.*

D. *The City is entitled to recover from the Contractor all ascertainable damages arising from the delay in completing the work. The said damages shall include, without limitation, all engineering, inspection, supervision, and legal expenses directly incurred by the City because of such delay.*

E. *Additionally, the Contractor agrees that the City and/or the public will suffer other damage or financial loss if the work is not completed on time or within any time extensions allowed in accordance with the provisions of CC Sub-Clause 14-6.7, Extending the Time for Completion. The Contractor and the City agree that proof of the exact amount of any such damage or loss is difficult to determine. Accordingly, the Contractor agrees to pay the sums stated in the Proposal and the Project Manual as liquidated damages and not as penalty for each calendar day or part thereof that the Work remains uncompleted after the contract time has expired.*

F. *The schedule of Liquidated Damages set forth in Table 1 is an amount, agreed to by the Contractor and the City, as reasonably representing the additional construction and engineering costs that may be incurred by the City if the Contractor fails to complete its performance within PWA Clause 3, Time for Completion.*

G. *Should the amount otherwise due the Contractor be less than the amount of such damages provided for herein, the Contractor and the surety shall be liable to the City for such deficiency.*

H. *Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the City of any of its rights under the Contract.*

Original Contract Amount		Liquidated Damages per Calendar Day ($)
From More Than	To and Including	
0	150,000	500
150,000	250,000	600
250,000	500,000	800
500,000	1,000,000	1,400
1,000,000	2,000,000	2,000
2,000,000	4,000,000	3,300
4,000,000	10,000,000	3,900
10,000,000	- - - - - - - -	3,900 plus 300 per each additional 1,000,000 Contract Amount or Part Thereof Over 10,000,000

37. Is there going to be an underdrain in the play areas?
    A: See response to #23 above

38. Tabulation for Installing Owner Furnished Shelter, Site Furnishings?
    A: See response to #24, not all items are included in the supplemental unit price schedule. Installation for all furnishings by the contractor shall be included in Base Bid Breakout Item #3.

39. Erosion control Tabulation?
    A: See response to #24, not all items are included in the supplemental unit price schedule. Erosion control shall be included as noted in Base Bid Breakout Item #3.

40. On your Bid Schedule there is not a quantity Column for tallies of units.
    A: See response to #24, not all items are included in the supplemental unit price schedule. This is not a complete bid tab and does not require a total per instructions at the top of the page.

41. Is there a specific way you want this filled out?
    A: Unable to respond to this item as it is not clear what section this is referring to. All forms can be filled out electronically.

42. What percentage of the project will the bid bond need to cover?
    A: 10% See response to #11 above.

END OF ADDENDUM #2

Acknowledged
Matt Adams
HPM, Inc.
5/22/26

Koshio Park

ADDENDUM #3

May 22nd, 2026

Issued, 2:30 pm MDT

1.1 NOTICE TO BIDDERS

This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders. This Addendum serves to clarify, revise, supplement and supersede information in the drawings. Each bidder shall be responsible for reading the items in this Addendum in order to determine to what extent work is affected. Each bidder shall be responsible for advising all subcontractors and material suppliers of this Addendum. The successful bidder shall execute each item, herein listed, in complete conformance with all applicable sections of Drawings and Specifications

A. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

B. The date for receipt of bids is unchanged by this Addendum.

1.2 CLARIFICATIONS & REVISIONS

A. The City's Liquidated Damages clause has been included herein.

B. Drawing revisions and clarifications have been provided for the artificial turf play mounds, demolition items, playground grading, amenities and sire furnishings, location and notations of items on the site plan, plant materials, irrigation layout and drawing legibility.

C. A complete revised drawing set is attached to this addenda. The following drawings sheets have been revised. These drawings shall replace and supersede those in the Bid Set dated 04-10-26.

1. C-101 Demolition Plan
2. C-301 Grading Plan
3. L-002 Site Plan Schedules
4. LS-101 Site Plan
5. LS-501 Site Details
6. LP-001 Landscape Notes & Schedules
7. LP-101 Landscape Plan

8. LI-101 Irrigation Plan
9. E-100 Site Electrical Plan

D. The center shade sail called out as S-01 is part of the base bid. The other two are the bid alternate A.

E. Certificate of Insurance will need to be provided by contractor.

1.3 RESPONSES TO BIDDERS QUESTIONS

1. Do you have an architect estimate for this project? We are trying to get our bonding ordered.
   A: Yes, however the estimate will not be shared at this time.

2. Will the project be tax exempt?
   A: Yes, tax exempt.

3. What is the project budget?
   A: See response to item #1 above.

4. What is the anticipated start date and completion date?
   A: Anticipated start date would be mid-July with completion by November 30, 2026.

5. Are we to assume this will be a balanced site or will there be import/export required?
   A: See note on Grading Plan C-301.

6. Will any portion of the park remain open during construction?
   A: All areas of Koshio Park will be closed during construction.

7. Please clarify what will be furnished by owner.
   A: See OFCI items noted on LS-002, LS-101 and 01 1000 Summary of Work.

8. Who will carry costs for 3rd party testing?
   A: Contractor is responsible for any testing, surveying and permitting required for project
   1-cylinder test per 100 cubic yards.
   Compaction testing required.
   Please refer to City of Fort Lupton Standards and Specifications manual.
   https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

9. Who will be responsible for permit costs?
   A: The City will submit permits for owner purchased items. All other permits would be the responsibility of the Contractor.

10. Per the Exhibit A - Bid Form, within line item 1 - General Conditions it states to provide required testing and inspections. Please clarify what all required testing and inspections the GC is responsible for.
    A: Concrete testing. Contractor is responsible for any testing, surveying and permitting required for project
    1-cylinder test per 100 cubic yards.
    Compaction testing required.
    Please refer to City of Fort Lupton Standards and Specifications manual.
    https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

11. Please confirm what the percentage for the bid bond is to be.
    A: Performance Bond – 10%
    B: Bid Bond – None
    C: Payment Bond - None

12. Please clarify what playground area items, to be removed, the Owner and GC are all responsible for that is listed within the note description for the playgrounds per sheet C-101.
    A: See revised C-101 for clarification.

13. Keynote 9 within detail 1 on sheet LS-502 states, "lighting channel, re: electrical." Can we get the electrical details for that lighting per keynote 9?
    A: This information is provided on sheets E-100 and E-101.

14. Within the notes for detail 1 on sheet LS-502 it lists Fusion Fabrication for the decorative fencing. Please confirm if Fusion Fabrication is the only fabricator that we can use or if it is open to use other fabricators.
    A: All fabricators or products are "or equal".

15. Keynote 2 within detail 1 on sheet LS-502 states, "1/4" thick steel decorative fence panel, re: detail 1/LS-502." Are there any additional section detail(s) information on the 1/4" thick steel decorative fence panel available?
    A: Available information, thickness and dimensions are already provided in the detail. This is a custom element not a standard product. Final artwork will be provided to the awarded contractor as noted in the detail.

16. Landscape drawings says to prep play area for PIP? To what extent are we prepping? Sitework?
    A: Contractor to provide PIP area to subgrade only including compaction of subgrade.

17. Where is artificial tur located? Are we prepping for the turf? To what extent?
    A: Artificial turf is called out and located on sheet LS-101. See 5/LS-501 contractor to provide all items not noted as by others. Manufacturer/turf installer to provide turf and cushioning layer and gravel subbase only. See revised sheet LS-501 for clarification.

18. Owner supplied items and installed by GC are these listed on LS-002 Amenity Schedule? Can we get the specs on those items to determine install cost?
    A: See response to question #7 above. All information on model #'s is provided in the schedule. Installation requirements are noted in 32 3300 Site Furnishings.

19. Has the site furnishing been ordered? Will they arrive on time to meet schedule?
    A: Furnishing have started to be ordered and are expected to arrive on time to meet schedule.

20. Documents to turn in at bid time: Exhibit A, - Bid Form, Exhibit B-Supplemental Price, Bid Bond and Prequal information?
    A: See Section 5 of the RFP – Application Qualifications, Statements and Proposal.

21. Is there a bid bond form?
    A: Performance Bond – 10%. Form will be provided to the selected Contractor.
    B: Bid Bond – None
    C: Payment Bond - None

22. Project is tax exempt?
    A: Yes, tax exempt.

23. Is there an underdrain drawing for the Playground area? Will it Daylight or tie into storm? Will there be a bid tab for this?
    A: There is no underdrain system.

24. Is there a bid tab for the Park Rules Sign?
    A: No, the supplemental unit pricing is not a comprehensive bid tab.

25. Is there a detail for the finished concrete under the Playground PIP? With Elevations?
    A: There is no concrete under the PIP. See 4/LS-501. If this was intended to refer to the Play Turf, that installation detail is shown on 5/LS-501. Grading elevations for the play turf mounds have been added to sheet LS-101.

26. Is there a Shelter drawing to get to our IBC Licensed Shelter installer so he can obtain the correct Permit from the City?
    A: Yes, shelter drawings will be provided to the selected bidder.

27. Is the Supplemental Unit price schedule to be turned in with the bid?
    A: Yes.

28. Is there water accessible to the park during construction?
    A: Yes, water can be pulled from a hydrant in the park. Contractor must bring their own meter and backflow device. To apply for hydrant use, please use the Community Core portal: https://www.fortluptonco.gov/162/Public-Works There will be a $1500 deposit, a $25 application fee, and $12 per 1000 gallons used. Any questions regarding pulling water from hydrants should be directed to Amber Phillips at aphillips@fortluptonco.gov or 720-466-6112.

29. Will the site furnishing be delivered to the park? If not who will insure these during handling & transport?
    A: Yes, all furnishings and Owner purchased items will be delivered to the site.

30. Will the Demo that the city is keeping need to be delivered? If so, how far is receiving?
    A: City salvaged items will be removed from the site by the City.

31. Is this a taxable project?
    A: Project is tax exempt.

32. What will the owner need inspected on the project?
    A: Contractor is responsible for any testing, surveying and permitting required for project
    a. *1-cylinder test per 100 cubic yards.*
    b. *Compaction testing required.*

    Please refer to City of Fort Lupton Standards and Specifications manual.
    https://co-fortlupton2.civicplus.com/533/Standards-and-Specifications-Manual

33. Is a Bid Bond required as part of the bid submission? On the site walk the question was asked about bid bond and the verbal answer was no. The ITB includes a bond form and discusses a bid bond.
    A: Yes a performance bond is required. See response to item #11 above.

34. What are the requirements for P&P Bonds?
    A: See response to item #11 above.

35. Please provide the existing sod/seed mix currently installed at Koshio Park to allow accurate pricing and coordination for the specified "Sod, Blend to Match Existing" areas shown in the landscape plans.

A: See revised sheet LP-001 for sod mix.

36. The Contract Documents do not mention Liquidated Damages can you confirm that they are not part of the contract documents or please provide the requirements
A: See Below.

14-9.3.0 Liquidated Damages

A. *Because time is an essential element of the Project, it is extremely important that the work be pressed vigorously to completion. The City's cost of administering the Contract, including engineering, inspection, and supervision, will be increased as the time occupied in the work is lengthened. The public is subject to detriment and inconvenience when the project's full use cannot be made. Should the Contractor fail to perform any of the individual work tasks by the completion date stipulated in PWA Clause 3, Time for Completion, the Contractor shall pay to the City, as liquidated damages and not as a penalty, the amounts set forth in CC Sub-Clause 14-9.3.F, hereinbelow unless written extensions to the Time for Completion granted by City expressly waive liquidated damages.*

B. *In the case of joint responsibility for any delay in the works' final completion, where two (2) or more separate contracts are in force at the same time and cover work at the same site, the liquidated damages assessed against any one (1) contractor will be based upon the individual responsibility of that contractor for the delay as determined by, and in the Engineer's judgment.*

C. *The City has the right to deduct the liquidated damages from any money in its hands, otherwise due, or to become due, to the Contractor.*

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F. *The schedule of Liquidated Damages set forth in Table 1 is an amount, agreed to by the Contractor and the City, as reasonably representing the additional construction and engineering costs that may be incurred by the City if the Contractor fails to complete its performance within PWA Clause 3, Time for Completion.*

G. *Should the amount otherwise due the Contractor be less than the amount of such damages provided for herein, the Contractor and the surety shall be liable to the City for such deficiency.*

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Original Contract Amount		Liquidated Damages
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150,000	250,000	600
250,000	500,000	800
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1,000,000	2,000,000	2,000
2,000,000	4,000,000	3,300
4,000,000	10,000,000	3,900
		3,900 plus 300 per each additional

37. Is there going to be an underdrain in the play areas?
    A: See response to #23 above

38. Tabulation for Installing Owner Furnished Shelter, Site Furnishings?
    A: See response to #24, not all items are included in the supplemental unit price schedule. Installation for all furnishings by the contractor shall be included in Base Bid Breakout Item #3.

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41. Is there a specific way you want this filled out?
    A: Unable to respond to this item as it is not clear what section this is referring to. All forms can be filled out electronically.

42. What percentage of the project will the bid bond need to cover?
    A: 10% See response to #11 above.
    B: Bid Bond – None
    C: Payment Bond - None

END OF ADDENDUM #3

Acknowledged
Matt Adams
HPM, Inc.
6/1/26

Koshio Park

ADDENDUM #4

June 1, 2026

Issued, 10:30 am MDT

1.1 NOTICE TO BIDDERS

This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders.

Bid Opening will be held on June 2, 2026 at 2:30pm MST at the Fort Lupton Recreation Center located at 203 South Harrison Avenue, Fort Lupton, CO 80621.

JOHN MEADE PARK

CHERRY HILLS VILLAGE, COLO.





PROJECT TYPE

Reconstruction - Park

ACREAGE

10.3 Acres

DURATION OF PROJECT

Aug. 2019-July 2020

DELIVERY METHOD

Design-Bid-Build

CONTRACT VALUE

$3,376,840

OWNER

City of Cherry Creek

PROJECT TEAM LEAD

Matt Adams

ARCHITECT

Mundus Bishop Design

John Meade Park is the unique reconstruction of an existing urban park that connects natural play elements with an active wetland experience. This project was recognized with both the American Public Works Association Colorado Chapter Project of the Year and AGC Merit Award – Meeting the Challenge of a Difficult Job awards. Work included the complete restoration of an existing urban wetland area, precise grading of the wetland area in strict accordance with the 404 permit and floodplain development permit, and grading for new contours and new wetland plugs in the affected areas of the wetlands.

The adjacent existing ponds were dewatered and dredged to bring capacity back to the state permitted levels with new fishing piers installed and a new control weir at the entrance to the park ponds. The installation of a wetland boardwalk experience with natural net climbers, a playground with a tree house platform and a natural wood bridge, boulder climbers and nets, rock seat walls, a natural amphitheater, and a pedestrian bridge completed the new site interactive features on the project.

A new custom modular restroom building was installed with all new utility connections tied into the existing site infrastructure located on the edge of the park. The project was a design-bid-build contract with unique design-build elements that required HPM to take conceptual design ideas and convert them to engineering and shop drawing packages necessary to develop material parts list and assembly instructions to complete unique project elements. This included a playground tree house platform with a rope “shaky bridge” element. The development and integration of the comprehensive drawings to procure the required materials was completed by the integrated design team members along with the City and allowed early procurement of the final equipment well ahead of schedule.

The completion of the project included the removal of the old fire station and maintenance building from the project site, installation of a site wide irrigation system and the restoration of all disturbed locations within the park.

DICKENS FARM NATURE PARK

LONGMONT, COLO.





PROJECT TYPE

New Construction - Park

ACREAGE

28 Acres

DURATION OF PROJECT

May 2019-Jan. 2020

DELIVERY METHOD

Design-Bid-Build

CONTRACT VALUE

$3,051,593

OWNER

City of Longmont

PROJECT TEAM LEAD

Matt Adams

ARCHITECT

Confluent Design

This APWA Award-winning project was a hybrid of design-build and design-bid-build elements to design and construct a nature play area and open space area for the City of Longmont as part of the St. Vrain Creek restoration program. The guiding design principle of this project was to create a park and play area(s) with natural design features to encourage natural play.

Work features included site grading, drainage, rock wall installation, site trails including concrete and crusher fines, three covered shelter areas, sod installation, seeding, irrigation and landscape, wooden fencing, and site furnishings. Design-build elements, which required close coordination between the construction and design teams, included constructing a bike skills track area featuring several natural obstacles and features consisting of log, rock, and earthen embanked features.

Additional work was comprised of grading and construction of a new roadway and parking lot and vehicle turnaround, which included roadway preparation, curb and gutter installation, a driveway tie-in to a local street, driveway pan, asphalt paving, and striping. The signature component of the design-build aspect of this project was the Discovery Island, a nature discovery area consisting of natural play features such as climbers, natural tunnels, water play, sensory path, and vice tunnel. Work included regrading of an existing pond bottom to create fish habitat and installation of wetland vegetation.

A multi-use bathroom building was constructed from the ground up and included all associated utilities, including sewer and water installation into existing city systems. A water quality pond was built in the new parking lot, as well as site storm drains. Other pertinent features of this project included installing a concrete and crusher fine trail system, constructing natural play features including log climbers, tunnels, water features, and installing park equipment, including three shelters.

LOUISVILLE NEIGHBORHOOD PARKS

LOUISVILLE, COLO.





PROJECT TYPE

Reconstruction - Park

ACREAGE

1.2 Acres

DURATION OF PROJECT

July 2019-April 2020

DELIVERY METHOD

Design-Build

CONTRACT VALUE

$563,200

OWNER

City of Louisville

PROJECT TEAM LEAD

Matt Adams

ARCHITECT

The Architerra Group

This design-build project involved the design, source, and construction of two city parks within a set budget. The design process kicked off with a community meeting to gather input and feedback on park elements they wanted to see. After initial concepts were developed based on community input, the design-build team presented design concepts to the parks and recreation board for final selection.

Design development included real-time pricing exercises throughout the design process to ensure that the park design features fit within the city's limited budget. To do this, HPM established regular task force meetings with the design team and owner to develop an open book budgeting and cost estimating process to ensure that the parks were delivered within the allocated budget while getting the most features out of the budget as possible.

The design-build model allowed for the selection of long lead equipment to take place during the design phase, allowing the equipment to be procured and delivered in line with an aggressive schedule. The park improvements including all new equipment, flatwork, and landscaping at two separate park locations within the City of Louisville.

This design-build project was a success from start to finish. There were no changes to the base scope, and only one small change that the City requested be incorporated into our contract (additional scope unrelated to the base contract). While not a large project in terms of size, the upfront effort of concept, budgeting, and design was essentially the same. Several design concepts were developed and shared with the community and local leaders until the selected concept was finalized.

LASLEY PARK RENOVATIONS

LAKEWOOD, COLO.





PROJECT TYPE

Reconstruction - Park

PROJECT COMPLETION

May 2018

DELIVERY METHOD

Design-Bid-Build

CONTRACT VALUE

$1,420,000

OWNER

City of Lakewood

ARCHITECT

City of Lakewood

HPM renovated this entire park including new playground equipment, landscaping, and hardscaping. Park features included playground equipment, exercise equipment, a basketball court, volleyball court, horseshoe court, water fountains, and park amenities. The site also included natural improvements such as lawn seeding areas and landscaping.

The Lasley Park was a straight-forward project with few complications or interruptions. The additional owner directed scope included overruns of some bid quantities and additional landscaping, which had no affect on the project schedule. One unusual aspect of this project was the coordination between different departments within the City of Lakewood.

Our primary contact was with the Parks and Recreation department, where most of the work took place. However, a portion of the scope took place outside the limits of the park, where we coordinated with members of the Public Works department. This required additional coordination with different inspectors with a different set of expectations. It was important for us to understand these differences and work appropriately with each department to ensure a successful completion of the project.

REGIS JESUIT HIGH SCHOOL TENNIS COURTS AND ATHLETIC FACILITY

AURORA, COLO.





PROJECT TYPE

New Construction

PROJECT COMPLETION DATE

June 2024

DELIVERY METHOD

CMAR

CONTRACT VALUE

$3,396,000 million

OWNER'S REP

Anser Advisory

PROJECT TEAM LEAD

Cal Houston

ARCHITECT

Larson Incitti Architects (LIA)

The Regis Jesuit High School (RJHS) Tennis Court and Athletic Facility project is a comprehensive and multi-phased effort to install a new tennis court facility and future athletic fields. RJHS is expanding their campus which includes the construction of a new science and innovation center building. This building took the footprint of their existing tennis court facility, which required them to demolish their current facility.

The school planned to relocate and improve their tennis court complex and add athletic fields and student parking. However, RJHS ran into funding and budget issues with the amount of work they wanted accomplished and in the time frame desired. HPM was approached by RJHS to provide a proposal and project approach to help the project team determine what work could take place within what phase, with a primary focus of opening the tennis court facility in time for the 2024 fall athletic season.

HPM began working under a CMAR preconstruction agreement with RJHS and the team of engineers and architects, including JVA who is the civil engineer for this project, to price elements of work and help find a solution that would meet the stringent permit requirements of several local agencies, while delivering the tennis court project under a limited budget.

In November 2023, the construction of Phase 1 began. HPM completed the existing site demolition, clear and grub, and site mass grading and construction of permanent detention basins. We also completed drainage improvements including buried drainage and pond structural elements such as the forebay and outfall structures. We completed installation of the tennis courts in early spring 2024.

REFERENCES

List clients (2-5 - see previous pages) for whom similar work has been done. Include contact name, email and phone number.

1

DICKENS NATURE FARM PARK

Steve Ransweiler, 303-774-4532, steve.ransweiler@longmontcolorado.gov

2

REGIS JESUIT HIGH SCHOOL TENNIS COURT AND ATHLETIC FACILITY

Karley Olson, 303-918-0317, karley.olson@anseradvisory.com

3

JOHN MEADE PARK

Emily Black, 303-783-2742, eblack@cherryhillsvillage.com

4

VILLAGE GREEN PARK, CITY OF GREENWOOD VILLAGE

Dave Foster, P.L.A., 303-962-8478, davefoster@gallowayUS.com

> *"HPM's performance on this project was exemplary. This was the first time that the City has contracted with HPM for a project like this, but would welcome the opportunity to work with them and their team.... in the future."*
>
> *Steve Ransweiler*
> *Senior Project Manager*
> *City of Longmont*

Experience working with similar sized municipalities

HPM has completed projects in many similarly sized municipalities, including:

- City of Lafayette
- City of Northglenn
- City of Longmont
- City of Parker
- City of Greenwood Village
- City of Lone Tree

PROJECT EXPERIENCE MATRIX - RELEVANT SCOPES

	Park	Alt Delivery	Recreation Features	Municipal/ City Client	Bathroom / Building	Award Winning
John Meade Park	●		●	●	●	●
Dickens Farm Nature Park	●		●	●	●	●
Louisville Neighborhood Park	●	●	●	●		
Regis Jesuit HS Athletic Facility		●	●			
Rocky Mountain National Park (ROMO) Workforce Housing		●	●		●	
Village Green Park (City of Greenwood Village)	●		●	●	●	
Lasley Park (City of Lakewood)	●		●	●	●	

CITY OF
Fort Lupton
EST 1836

Parks and Recreation Department

130 S. McKinley Avenue
Fort Lupton, CO 80621
Phone: 303.857.6694
Fax: 303.857.0351
www.fortluptonco.gov

Exhibit C

June 16, 2026

HPM, Inc.
9781 S. Meridian Blvd., Suite 120
Englewood, CO 80112

RE: Koshio Park Renovation Project
Warranty Repairs/Acceptance

Dear Contractor:

In accordance with the Construction Agreement approved on June 16, 2026, the City did a walk-through inspection of the Koshio Park construction. Confirmation of all permitting and inspections have been received.

Construction is deemed complete.

The **Warranty Period** will begin effective TBD.

Please call me if you have any questions at 720-466-6162.

Sincerely,

Doug Cook
City of Fort Lupton
Parks and Recreation Director

NOTICE OF COMMENCEMENT OF WARRANTY

Contractor has certified to the applicable City officials in writing that the scope of work pursuant to agreement dated **TBD** has been completed in conformance with the terms and conditions of said Public Improvements Agreement. City officials have confirmed the scope of work set forth in the contract has been completed by Contractor.

The confirmation of completion date is hereby identified as **TBD**. Accordingly, the commencement of warranty date.

This Notice of Commencement of Warranty is given this TBD day of TBD.

CITY OF FORT LUPTON, COLORADO

_____

Doug Cook, Parks and Recreation Director

CITY OF
Fort Lupton
EST 1836

Koshio Park Renovation Project

130 S. McKinley Avenue
Fort Lupton, CO 80621
Phone: 303.857.6694
Fax: 303.857.0351
www.fortluptonco.gov

HPM, Inc.
9781 S. Meridian Blvd., Suite 120
Englewood, CO 80112

Date: **June 16, 2026**

Attention: Matt Adams

Subject: City of Fort Lupton, Colorado
Koshio Park Renovation Project

Notice of Award

The City of Fort Lupton, Colorado, has considered the Proposal submitted by you for the above described work in response to the Invitation for Bids dated **June 2, 2026**, and the Instructions to Bidders.

You are hereby notified that your Proposal has been accepted for the work in the amount or amounts shown on your Proposal.

You are required by the Instructions to Bidders to execute the Agreement and furnish any Performance Bond, the Payment Bond, Insurance Certificates, and other required documentation no later than ten (10) calendar days from the date of this notice.

If you fail to execute the said Agreement no later than seven (7) calendar days from the date of this Notice of Award, the City of Fort Lupton, Colorado, will be entitled to consider all your rights arising out of the City of Fort Lupton, Colorado's acceptance of your Proposal as abandoned and as a forfeiture of your Proposal security as liquidated damages, but not as a penalty, for the delay and extra work caused thereby and also to compensate the City of Fort Lupton, Colorado, for the difference between your Proposal and the next lowest Bid. The City of Fort Lupton, Colorado, will be entitled to such other rights as may be granted by Colorado law.

You are required to return an acknowledged copy of this Notice of Award to the City of Fort Lupton, Colorado.

The insurance certificates required for this project shall be sent to City of Fort Lupton, Attention: Chris Cross, 130 South McKinley Avenue, Fort Lupton, Colorado 80621.

CITY OF FORT LUPTON, COLORADO

_____

By: Chris Ceretto

Title: Mayor

Address: 130 South McKinley Avenue

Fort Lupton, Colorado 80621

Telephone: (303) 857-6694

Acceptance of Notice of Award

Receipt of the above Notice to Proceed is hereby acknowledged:

this the _____ day of _____, 2026.

HPM, Inc.

By: _____

Title: _____

Telephone: _____

City Council Meeting
Date: June 16, 2026
Staff: Monroe Peck,
Engineering Projects Manager

AM 2026-095
Public Hearing☐

SUBJECT FOR DISCUSSION

Award the 2026 Crack and Slurry Seal Project to Vance Brothers for an Amount Not to Exceed $700,000.00, Allocated from the Street Sales Tax Fund

SUMMARY STATEMENT/BACKGROUND DISCUSSION

Public Works is responsible for upkeep of road surfaces within the city. The current projects to be done include approximately 37,000 sq yards of slurry to be done this fall including striping, 68 tons of mastic crack sealing, and 21 tons of traditional crack sealing.

The main target areas for this fall are Denver Avenue, as well as the roads inside the Appel Farms subdivision.

More slurry seal is slated for Spring of 2027 pending council's approval, as well as the potential to add work. This contract is an on-call contract that is not to exceed $700,000.00 and comes from the Street Sales Tax Fund.

FINANCIAL CONSIDERATIONS

The 2026 Street Sales Tax Fund includes:

$1,000,000 for Asphalt Patch & Seal
($250,000) for Asphalt patching to Top Notch
$750,000 available for crack seal and slurry seal.

LEGAL/POLITICAL CONSIDERATIONS

Not Applicable.

ALTERNATIVES/OPTIONS

A. Award project to Vance Brothers Inc.
B. Award project to another bidder
C. Re-bid project

STAFF RECOMMENDATIONS

Staff recommends awarding the Crack and Slurry Seal Project to Vance Brothers for not to exceed $700,000.00 from the Street Sales Tax Fund.

Attachments:

a. Bid Tabulation
b. Notice of Award
c. PW Agreement Vance Brothers

Certification of Council Approval:
Ordinance No. _____
Resolution No. _____

_____ City Clerk

_____ Date

City of Fort Lupton, Colorado
Public Works Department

Clause 8 - Bid Form
Crack Seal/Slurry Seal

Contractor's Name:			Engineers Est		Top Notch		Vance Bros.		A-One Chipseal	
Project Total				$ 2,136,680.00		$ 1,085,845.03		$ 1,153,412.29		$ 1,269,694.60

SCHEDULE 1 - Fall 2026

Schedule 1 Total				$ 1,103,247.33		$ 631,638.57		$ 577,629.72		$ 634,481.76

Division 100 - General Provisions

Payment Item No.	Specification Reference	Description	Payment Unit	Quantity	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers
1	TS 16-101	Mobilization	LS	1	$ 20,949.57	$ 20,949.57	$ 6,848.14	$ 6,848.14	$ 12,366.03	$ 12,366.03	$ 36,682.33	$ 36,682.33
2	TS 16-102	Traffic Control	LS	1	$ 27,932.76	$ 27,932.76	$ 7,555.06	$ 7,555.06	$ 7,578.90	$ 7,578.90	$ 57,961.34	$ 57,961.34
SUBTOTAL						$ 48,882.33		$ 14,403.19		$ 19,944.94		$ 94,643.66

Chapter 6 - Asphalt Work

Payment Item No.	Specification Reference	Description	Payment Unit	Quantity	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers
4	TS 16-408	Hot Poured Joint and Crack Sealant	TON	21	$ 7,500.00	$ 157,500.00	$ 4,542.47	$ 95,391.87	$ 3,750.00	$ 78,750.00	$ 3,700.00	$ 77,700.00
5	CODOT 403 (REVISED) STONE MATRIX ASPHALT	Mastic (Stone Matrix Apshalt)	TON	68	$ 7,500.00	$ 510,000.00	$ 4,609.11	$ 313,419.48	$ 3,850.00	$ 261,800.00	$ 3,700.00	$ 251,600.00
6	TS 16-409	Slurry Seal	SY	36,889	$ 5.00	$ 184,445.00	$ 1.77	$ 65,293.53	$ 2.40	$ 88,533.60	$ 2.90	$ 106,978.10
SUBTOTAL						$ 851,945.00		$ 474,104.88		$ 429,083.60		$ 436,278.10

Division 600 - Miscellaneous												
7	TS 16-605	Thermoplastic Lane (Single White - 4" Wide Solid Line)	LF	20,750	$ 6.00	$ 124,500.00	$ 3.99	$ 82,792.50	$ 3.56	$ 73,870.00	$ 2.98	$ 61,835.00
	TS 16-605	Thermoplastic Centerline (Dashed Yellow 4" Wide)	LF	4,125	$ 8.00	$ 33,000.00	$ 4.60	$ 18,975.00	$ 3.56	$ 14,685.00	$ 2.00	$ 8,250.00
8	TS 16-605	Thermoplastic Centerline (Single Yellow w/ Dashed Yellow 4" Wide)	LF	0	$ 8.00	$ -	$ 3.99	$ -	$ 5.35	$ -	$ 4.00	$ -
9	TS 16-605	Thermoplastic Centerline (Double Yellow 4" Wide Each)	LF	5,300	$ 8.00	$ 42,400.00	$ 7.75	$ 41,075.00	$ 7.13	$ 37,789.00	$ 5.96	$ 31,588.00
10	TS 16-605	Thermoplastic Crosshatch (Single Yellow - 4" Wide Solid Line)	LF	0	$ 8.00	$ -		$ -		$ -	$ 5.25	$ -
11	TS 16-605	Thermoplastic White - 4" Broken Line	LF	0	$ 5.00	$ -		$ -		$ -	$ 2.98	$ -
12	TS 16-605	Thermoplastic White - 24" Stop Bar	LF	24	$ 30.00	$ 720.00	$ 12.00	$ 288.00	$ 24.52	$ 588.48	$ 20.50	$ 492.00
13	TS 16-605	Thermoplastic White - Crosswalk (18" Wide x 9' Long Bars)	EA	10	$ 180.00	$ 1,800.00		$ -	$ 166.87	$ 1,668.70	$ 139.50	$ 1,395.00
14	TS 16-606	Preform Thermoplastic Pavement Marking (Turn/Through Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
15	TS 16-606	Preform Thermoplastic Pavement Marking (Left Turn Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
16	TS 16-606	Preform Thermoplastic Pavement Marking (Right Turn Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
17	TS 16-606	Preform Thermoplastic Pavement Marking (Through Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
18	TS 16-605	Preform Thermoplastic Pavement Marking (ONLY)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
19	TS 16-605	Preform Thermoplastic Pavement Marking (Handicap Symbol)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
SCHEDULE SUBTOTAL						$ 202,420.00		$ 143,130.50		$ 128,601.18		$ 103,560.00

SCHEDULE 2 - Spring 2027

Schedule 2 Total						$ 406,172.67		$ 172,669.09		$ 224,539.84		$ 245,374.84

Division 100 - General Provisions

Payment Item No.	Specification Reference	Description	Payment Unit	Quantity	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers
1	TS 16-101	Mobilization	LS	1	$ 9,050.43	$ 9,050.43	$ 1,750.59	$ 1,750.59	$ 15,084.19	$ 15,084.19	$ 21,117.67	$ 21,117.67
2	TS 16-102	Traffic Control	LS	1	$ 12,067.24	$ 12,067.24	$ 1,604.94	$ 1,604.94	$ 6,323.44	$ 6,323.44	$ 6,938.66	$ 6,938.66
SUBTOTAL						$ 21,117.67		$ 3,355.54		$ 21,407.62		$ 28,056.34

Chapter 6 - Asphalt Work

Payment Item No.	Specification Reference	Description	Payment Unit	Quantity	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers
6	TS 16-409	Slurry Seal	SY	56,115	$ 5.00	$ 280,575.00	$ 1.77	$ 99,323.55	$ 2.40	$ 134,676.00	$ 2.90	$ 162,733.50
SUBTOTAL						$ 280,575.00		$ 99,323.55		$ 134,676.00		$ 162,733.50

Division 600 - Miscellaneous												
7	TS 16-605	Thermoplastic Lane (Single White - 4" Wide Solid Line)	LF	8,000	$ 6.00	$ 48,000.00	$ 3.99	$ 31,920.00	$ 3.56	$ 28,480.00	$ 2.98	$ 23,840.00
	TS 16-605	Thermoplastic Centerline (Dashed Yellow 4" Wide)	LF	2,400	$ 8.00	$ 19,200.00	$ 4.60	$ 11,040.00	$ 3.56	$ 8,544.00	$ 2.00	$ 4,800.00
8	TS 16-605	Thermoplastic Centerline (Single Yellow w/ Dashed Yellow 4" Wide)	LF	700	$ 8.00	$ 5,600.00	$ 3.99	$ 2,793.00	$ 5.35	$ 3,745.00	$ 4.00	$ 2,800.00
9	TS 16-605	Thermoplastic Centerline (Double Yellow 4" Wide Each)	LF	2,700	$ 8.00	$ 21,600.00	$ 7.75	$ 20,925.00	$ 7.13	$ 19,251.00	$ 5.96	$ 16,092.00
10	TS 16-605	Thermoplastic Crosshatch (Single Yellow - 4" Wide Solid Line)	LF	0	$ 8.00	$ -		$ -		$ -	$ 5.25	$ -
11	TS 16-605	Thermoplastic White - 4" Broken Line	LF	0	$ 5.00	$ -		$ -		$ -	$ 2.98	$ -
12	TS 16-605	Thermoplastic White - 24" Stop Bar	LF	276	$ 30.00	$ 8,280.00	$ 12.00	$ 3,312.00	$ 24.52	$ 6,767.52	$ 20.50	$ 5,658.00
13	TS 16-605	Thermoplastic White - Crosswalk (18" Wide x 9' Long Bars)	EA	10	$ 180.00	$ 1,800.00		$ -	$ 166.87	$ 1,668.70	$ 139.50	$ 1,395.00
14	TS 16-606	Preform Thermoplastic Pavement Marking (Turn/Through Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
15	TS 16-606	Preform Thermoplastic Pavement Marking (Left Turn Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
16	TS 16-606	Preform Thermoplastic Pavement Marking (Right Turn Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
17	TS 16-606	Preform Thermoplastic Pavement Marking (Through Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
18	TS 16-605	Preform Thermoplastic Pavement Marking (ONLY)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
19	TS 16-605	Preform Thermoplastic Pavement Marking (Handicap Symbol)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
SCHEDULE SUBTOTAL						$ 104,480.00		$ 69,990.00		$ 68,456.22		$ 54,585.00

SCHEDULE 3 - County Road 24

Schedule 3 Total						$ 627,260.00		$ 281,537.37		$ 351,242.73		$ 389,838.00

Division 100 - General Provisions

Payment Item No.	Specification Reference	Description	Payment Unit	Quantity	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers
1	TS 16-101	Mobilization	LS	1	$ 15,000.00	$ 15,000.00	$ 3,746.00	$ 3,746.00	$ 23,652.44	$ 23,652.44	$ 30,000.00	$ 30,000.00
2	TS 16-102	Traffic Control	LS	1	$ 20,000.00	$ 20,000.00	$ 2,327.50	$ 2,327.50	$ 7,500.00	$ 7,500.00	$ 11,500.00	$ 11,500.00
SUBTOTAL						$ 35,000.00		$ 6,073.50		$ 31,152.44		$ 41,500.00

Chapter 6 - Asphalt Work

Payment Item No.	Specification Reference	Description	Payment Unit	Quantity	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers	Rate in Numbers	Amount in Numbers
4	TS 16-408	Hot Poured Joint and Crack Sealant	TON	21	$ 7,500.00	$ 157,500.00	$ 4,542.47	$ 95,391.87	$ 3,373.05	$ 70,834.05	$ 3,700.00	$ 77,700.00
6	TS 16-409	Chip Seal	SY	32,400	$ 5.00	$ 162,000.00		$ -	$ 3.14	$ 101,736.00	$ 4.45	$ 144,180.00
SUBTOTAL						$ 319,500.00		$ 95,391.87		$ 172,570.05		$ 221,880.00

Division 600 - Miscellaneous												
7	TS 16-605	Thermoplastic Lane (Single White - 4" Wide Solid Line)	LF	19,400	$ 6.00	$ 116,400.00	$ 3.99	$ 77,406.00	$ 3.56	$ 69,064.00	$ 2.98	$ 57,812.00
	TS 16-605	Thermoplastic Centerline (Dashed Yellow 4" Wide)	LF	9,700	$ 8.00	$ 77,600.00	$ 4.60	$ 44,620.00	$ 3.56	$ 34,532.00	$ 2.00	$ 19,400.00
8	TS 16-605	Thermoplastic Centerline (Single Yellow w/ Dashed Yellow 4" Wide)	LF	4,800	$ 8.00	$ 38,400.00	$ 3.99	$ 19,152.00	$ 5.35	$ 25,680.00	$ 4.00	$ 19,200.00
9	TS 16-605	Thermoplastic Centerline (Double Yellow 4" Wide Each)	LF	5,000	$ 8.00	$ 40,000.00	$ 7.75	$ 38,750.00	$ 3.59	$ 17,950.00	$ 5.96	$ 29,800.00
10	TS 16-605	Thermoplastic Crosshatch (Single Yellow - 4" Wide Solid Line)	LF	0	$ 8.00	$ -		$ -		$ -	$ 5.25	$ -
11	TS 16-605	Thermoplastic White - 4" Broken Line	LF	0	$ 5.00	$ -		$ -		$ -	$ 2.98	$ -
12	TS 16-605	Thermoplastic White - 24" Stop Bar	LF	12	$ 30.00	$ 360.00	$ 12.00	$ 144.00	$ 24.52	$ 294.24	$ 20.50	$ 246.00
13	TS 16-605	Thermoplastic White - Crosswalk (18" Wide x 9' Long Bars)	EA	0	$ 180.00	$ -		$ -		$ -	$ 139.50	$ -
14	TS 16-606	Preform Thermoplastic Pavement Marking (Turn/Through Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
15	TS 16-606	Preform Thermoplastic Pavement Marking (Left Turn Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
16	TS 16-606	Preform Thermoplastic Pavement Marking (Right Turn Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
17	TS 16-606	Preform Thermoplastic Pavement Marking (Through Arrow)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
18	TS 16-605	Preform Thermoplastic Pavement Marking (ONLY)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
19	TS 16-605	Preform Thermoplastic Pavement Marking (Handicap Symbol)	EA	0	$ 750.00	$ -		$ -		$ -		$ -
SCHEDULE SUBTOTAL						$ 272,760.00		$ 180,072.00		$ 147,520.24		$ 126,458.00

Signature: _____ Company: _____

End Clause 8

Public Works

130 S. McKinley Avenue
Fort Lupton, CO 80621
Phone: 303.857.6694
Fax: 303.857.0351
www.fortluptonco.gov

Vance Brothers, LLC

Date: **June 17, 2026**

380 West 62nd Ave.
Denver, CO 80216

Attention: Heath Russo

Subject: City of Fort Lupton, Colorado
The 2026 Crack and Slurry Seal Project

Notice of Award

The City of Fort Lupton, Colorado, has considered the Proposal submitted by you for the above described work in response to the Invitation for Bids dated **May 6, 2026**, and the Instructions to Bidders.

You are hereby notified that your revised Proposal has been accepted for the work in the amount or amounts shown on your Proposal.

You are required by the Instructions to Bidders to execute the Public Works Agreement and furnish the Performance Bond, the Payment Bond, Insurance Certificates, and other required documentation no later than ten (10) calendar days from the date of this notice.

If you fail to execute the said Public Works Agreement and to furnish the said Bonds no later than seven (7) calendar days from the date of this Notice of Award, the City of Fort Lupton, Colorado, will be entitled to consider all your rights arising out of the City of Fort Lupton, Colorado's acceptance of your Proposal as abandoned and as a forfeiture of your Proposal security as liquidated damages, but not as a penalty, for the delay and extra work caused thereby and also to compensate the City of Fort Lupton, Colorado, for the difference between your Proposal and the next lowest Bid. The City of Fort Lupton, Colorado, will be entitled to such other rights as may be granted by Colorado law.

You are required to return an acknowledged copy of this Notice of Award to the City of Fort Lupton, Colorado.

The insurance certificates required for this project shall be sent to City of Fort Lupton, Attention: Chris Cross, 130 South McKinley Avenue, Fort Lupton, Colorado 80621.

CITY OF FORT LUPTON, COLORADO

_____

By: Chris Ceretto

Title: Mayor

Address: 130 South McKinley Avenue

Fort Lupton, Colorado 80621

Telephone: (303) 857-6694

Acceptance of Notice of Award

Receipt of the above Notice to Proceed is hereby acknowledged:

this the _____ day of _____, 2026.

Vance Brothers, LLC

By: _____

Title: _____

Telephone: _____

Public Works
Construction Agreement

This **Public Works Agreement**, hereinafter "Agreement," is entered into by and between the City of Fort Lupton, Colorado, hereinafter "City," and Vance Brothers, LLC, hereinafter "Contractor."

WHEREAS the parties hereto agree in consideration of the covenants, payments, and agreements set forth herein as follows:

1. Scope of Work

The Contractor shall furnish all tools, equipment, machinery, supplies, superintendence, insurance, transportation, labor and other construction accessories, services and facilities specified or required to be incorporated into and for a permanent part of the completed Work. The Contractor shall provide and perform all necessary labor in a first class and workmanlike manner in accordance with the conditions and prices stated in the Bid Proposal and the requirements, stipulations, provisions and conditions of the Contract Documents. The Contractor shall perform, execute, construct, and complete all things mentioned to be done by the Contractor and all work included in this Scope of Work and the Bid Documents set forth and incorporated hereinbelow.

2. Contract Documents

The executed Contract Documents comprise the following:

A. The Executed Agreement;

B. Addenda (if any);

C. Advertisement for Bids;

D. Invitation for Bids;

E. Instructions to Bidders;

F. Proposed Subcontractors;

G. Non-Collusion Affidavit;

H. Bid, Performance, and Payment Bonds;

I. Proposal;

J. Bid Form;

K. Conditions of Contract;

L. Special Conditions of Contract;

M. City of Fort Lupton, Colorado *Standards and Specifications for the Construction of Public Improvements*, latest edition;

N. The Colorado Department of Transportation *2017 Standard Specifications for Road and Bridge Construction*;

O. Certificates of Insurance; and

P. Plans (Drawings).

This Agreement, together with the other Documents enumerated above, which said other Documents are as fully a part of the Agreement as if hereto attached or herein repeated, form the Contract between the parties hereto. In the event that any provisions in any component part of this Agreement conflicts with any provision of any other component part, the conflict shall be resolved by the Engineer whose decision shall be final.

3. Time for Completion

The Contractor agrees to commence work upon execution of this Agreement and to substantially complete all work within 28 calendar days**.**

4. Contract Appropriations / No Change Orders

The City states that the amount of money appropriated for this Agreement is equal to or in excess of the Contract Sum. No Change Order to this Agreement requiring additional compensable Work to be performed, which Work causes the aggregate amount payable under this Agreement to exceed the Amount appropriated for the Original Contract will be issued by the City unless the City notifies the Contractor, in writing, that lawful appropriations to cover the costs of the Additional Work have been made.

5. Contract Amount

The City will pay to the Contractor for the performance and completion of the Work encompassed by this Agreement, and the Contractor shall accept as full compensation therefore the Amount of **Seven Hundred Thousand DOLLARS and Zero CENTS**, **$700,000.00**, subject to the City's confirmation of the completion of the Scope of Work in accordance with the Contract Documents attached hereto. The said Amount to be paid upon the City's inspection and acceptance of the Work, at the City's sole discretion, including the Contractor's completion of any punch-list items as determined by the City and the execution of any releases by the Contractor deemed necessary by the City.

6. Contractor Payments

The Contractor shall, at no more than or less than monthly intervals on a Date to be agreed by the City and the Contractor, submit Application for Payment requests to the City.

A. The Application for Payment shall clearly identify and provide such detail for which the Engineer and the Contractor shall agree to describe the Work completed by the Contractor up to the Date of the Application for Payment.

B. The City will deduct and retain an amount equal to ten percent (10%) of the Application for Payment's Amount. The retained amounts shall be paid upon Final Acceptance of the work.

C. The City will endeavor to effect the Progress Payments to the Contractor no later than thirty (30) calendar days after the Date the Application for Payment is received by the City.

D. The Contractor shall charge Past Due Accounts an interest rate of two percent (2%) per month on any unpaid balance.

7. Warranty

All warranties for Work performed by the Contractor, repairs to be made or service calls required to be attended to by the Contractor shall be two (2) years. The Contractor shall notify the City when the Scope of Work is Completed and the City will confirm Completion of the Work, at the City's sole discretion. Once the Scope of Work is confirmed by the City as being completed, the Notice of Commencement of Warranty attached hereto and incorporated herein will be tendered by the City. The Warranty Period shall only commence upon the execution and tendering of the Notice of Commencement of Warranty to the Contractor by the City and said Warranty shall continue for the Warranty Period.

8. Amendment / No Assignment

No modification or amendment of this Agreement shall be valid unless in writing and signed by all parties to this Agreement.

9. Complete Agreement

This Agreement, and the documents attached hereto, constitute the entire Agreement between the parties with respect to the subject matter hereof and there are no agreements, representations or warranties other than as set forth herein.

10. Severability

In the event that any portion of this Agreement is held to be unenforceable, the unenforceable portion of this Agreement will be deleted and the remaining provisions of the Agreement shall continue in full force and effect.

11. Governing Law

This Agreement is governed by the laws of the State of Colorado. All parties agree that any dispute regarding enforcement of this Agreement shall be filed

in the Weld County District Court after first attempting in good faith to submit the dispute to mediation. The submission of any dispute to mediation shall be a condition precedent to the filing of litigation in this matter, other than the request for injunctive relief.

12. OSHA Requirements

The Contractor agrees that it alone bears the responsibility for providing a safe and healthy work environment and shall provide employees with adequate orientation and training to safely perform the Scope of Work set forth in this Agreement. The Contractor shall at all times comply with the safety and health regulations of the Occupational Safety and Health Act of 1970 (29 CFR 1926) including all amendments and modifications thereto. In the event there is a conflict between the safety and health provisions of federal, state or local regulations, the more stringent provision shall prevail. The Contractor acknowledges and agrees that with respect to the Scope of Work under this contract, it shall comply with all obligations and assume all responsibilities imposed upon the "Controlling Contractor" as such term is defined and construed under all of OSHA's rules and regulations.

13. No Waiver of Governmental Immunity

The City, its elected officials, officers, and employees are relying upon, and do not waive or intent to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities and protections provided by the C.R.S. § 24-10-101 et seq., *Colorado Governmental Immunity Act*, as amended or otherwise available to the City. Nothing herein shall operate as a waiver of any right the City has of governmental immunity under Colorado law which is specifically herein reserved.

14. Independent Contractor

The Contractor is a separate, legal entity from the City and the parties making this Agreement accordingly with the understanding that the Contractor at all times is acting as an independent contractor and not an employee or agent of the City. All persons retained by the Contractor to perform services pursuant to this Agreement shall be employees or independent contractors of the Contractor and are not employees, contractors or agents of the City. The Contractor does not have the authority to bind the City by contract or otherwise.

15. Indemnification by Contractor

The Contractor shall defend, indemnify and hold the City harmless from any damages, including but not limited to any loss, liability, expenses, suit or claim, or claim for injury to persons or damage to property arising out of the activities of the Contractor or its subcontractors pursuant to this Agreement. Expenses shall include all out of pocket expenses, attorney fees, expert costs and related litigation fees.

16. Force Majeure

Neither party shall be liable or responsible to the other party nor be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any obligation under this Agreement when such failure or delay is caused by or results from causes beyond the reasonable control of the affected party, including but not limited to fire, floods, embargoes, pandemics, wars, acts of war (whether war is declared or not), insurrections, riots, civil commotions, strikes, lockouts or other labor disturbances, instances affecting public health including pandemics, acts of God or acts, omission, or delays in acting by any governmental authority. Provided, however, that the party so affected shall use reasonable efforts to avoid or remove such causes of non-performance, and shall continue performance hereunder with reasonable dispatch whenever such causes are removed. Either party shall provide the other party with prompt written notice of any delay or failure to perform that occurs by reason of force majeure. The parties shall mutually seek a resolution of the delay or the failure to perform as noted above.

17. Approval Required

This Agreement is subject to the final approval of the Fort Lupton, Colorado, City Council and signature by the Mayor of Fort Lupton.

EXECUTED THIS _____ DAY OF _____, 2026

CITY OF FORT LUPTON, COLORADO

_____

By: **Chris Ceretto**

Title: **Mayor**

VANCE BROTHERS, LLC

_____

By: _____

Title: _____