

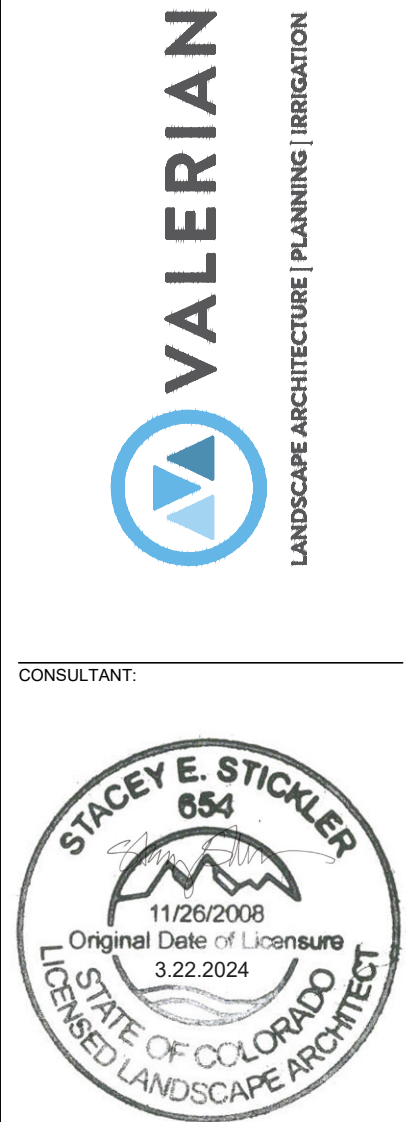
1. A CONSTRUCTION PERMIT MUST BE OBTAINED FROM THE OWNER PRIOR TO CONSTRUCTION FOR THESE IMPROVEMENTS.
2. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO FOR LOCATION OF UNDERGROUND GAS, ELECTRIC AND TELEPHONE UTILITIES AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONTRACTOR TO COMPLETE ALL LOCATES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND REPAIR OF UTILITIES IF DAMAGED. REPAIR SHALL BE DONE AT NO ADDITIONAL COST TO THE CONTRACT. ALL WORK IN UTILITY EASEMENTS SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS OF THE GOVERNING AGENCY.
4. CONTRACTOR SHALL PROVIDE TEMPORARY BARRICADES, SIGNAGE AND OTHER FORMS OF PROTECTION AS REQUIRED TO PROTECT THE OWNER'S PERSONNEL AND THE GENERAL PUBLIC FROM INJURY DURING CONSTRUCTION ACTIVITIES.
5. THE CONTRACTOR SHALL REMOVE ALL SEDIMENT, MUD, AND CONSTRUCTION DEBRIS THAT MAY ACCUMULATE IN THE FLOW LINES, PRIVATE PROPERTY, AND PUBLIC RIGHTS OF WAY AS A RESULT OF THIS CONSTRUCTION PROJECT. REMOVAL SHALL BE CONDUCTED WITHIN 24 HOURS OR AS DIRECTED BY THE OWNER.
6. THE CONTRACTOR SHALL PREVENT SEDIMENT, DEBRIS, AND ALL OTHER POLLUTANTS FROM ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION, EXCAVATION, TRENCHING, BORING, GRADING OR OTHER CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, OTHER PROPERTIES, ETC., RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
7. THE DISCHARGE OF WATER CONTAINING WASTE CEMENT TO THE STORM SEWER SYSTEM IS PROHIBITED. THE CLEANING OF CEMENT TRUCK DELIVERY CHUTES, EXCEPT IN DESIGNATED AREAS, IS PROHIBITED AT THE JOB SITE.
8. ALL EXISTING TREES AND SHRUBS SHALL REMAIN AND BE PROTECTED. CONSULT WITH THE OWNER PRIOR TO DIGGING UNDER ANY TREE CANOPY. CONTRACTOR SHALL HAND DIG BENEATH ANY AND ALL TREE CANOPIES AS DIRECTED BY THE OWNER. ANY TREE ROOTS 2" AND LARGER SHALL NOT BE DISTURBED. ANY TREE ROOTS SMALLER THAN 2" SHALL BE PRUNED FLUSH. CONTRACTOR SHALL REPLACE DAMAGED TREES OR SHRUBS AT NO COST TO THE OWNER.
9. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE; INCLUDING, SAFETY OF PERSONS AND PROPERTY DURING THE PERFORMANCE OF WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
10. THE TYPE, SIZE, LOCATION, AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO DATE OF CONSTRUCTION. FOR INFORMATION CONTACT: UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) - 1- 800-922-1987. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY SIZE AND HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING FACILITIES PRIOR TO CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES.
11. MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY OWNER.
12. ALL TRENCHES SHALL BE ADEQUATELY SUPPORTED AND THE SAFETY OF WORKERS PROVIDED FOR AS REQUIRED BY THE MOST RECENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION." THESE REGULATIONS ARE DESCRIBED IN SUBPART P, PART 1926 OF THE CODE OF FEDERAL REGULATIONS. SHEETING AND SHORING SHALL BE UTILIZED WHERE NECESSARY TO PREVENT ANY EXCESSIVE WIDENING OR SLOUGHING OF THE TRENCH WHICH MAY BE DETRIMENTAL TO HUMAN SAFETY, TO THE PIPE BEING PLACED, TO TREES, OR TO ANY EXISTING STRUCTURE WHERE EXCAVATIONS ARE MADE UNDER SEVERE WATER CONDITIONS. THE CONTRACTOR MAY BE REQUIRED TO USE AN APPROVED PILING INSTEAD OF SHEETING AND SHORING.
13. THE CONTRACTOR SHALL FURNISH THE OWNER THE "AS CONSTRUCTED" LOCATIONS OF FACILITIES INSTALLED AND, THIS IN TURN, SHALL BE PREPARED BY THE DESIGN CONSULTANT.
14. PRIOR TO THE BEGINNING OF WORK, A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD BETWEEN THE CITY, THE CONTRACTOR WHO IS SCHEDULED TO PERFORM THE WORK, THE DESIGNATED ON-SITE FIELD REPRESENTATIVE, AND ANY OTHER ENTITIES INVOLVED IN THE CONSTRUCTION.
15. NO WORK SHALL BEGIN UNTIL THE INSTALLING CONTRACTOR IS IN POSSESSION OF AN APPROVED SET OF PLANS AND SPECIFICATIONS, AND ALL NECESSARY PERMITS FOR THE IMPROVEMENTS HAS BEEN ISSUED BY THE CITY. OWNER'S APPROVAL SHALL BE FOR GENERAL CONFORMITY TO THE UTILITY SPECIFICATIONS AND SHALL NOT CONSTITUTE BLANKET APPROVAL OF ALL DIMENSIONS, QUANTITIES AND DETAILS OF THE MATERIAL OR EQUIPMENT SHOWN. NOR SHALL SUCH APPROVAL RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY FOR ERRORS CONTAINED IN THE DRAWINGS. A COPY OF THE PLANS AND ALL PERMITS SHALL BE ON-SITE AT ALL TIMES.
16. THE CONTRACTOR SHALL FURNISH REASONABLE AID AND ASSISTANCE REQUIRED BY THE OWNER FOR THE PROPER EXAMINATION OF THE MATERIALS AND WORK. WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACCEPTED WORKMANSHIP PRACTICES, DRAWINGS, AND SPECIFICATIONS. ANY WORK NOT ACCEPTED BY THE OWNER SHALL BE REDONE UNTIL COMPLIANCE WITH THESE STANDARDS IS ACHIEVED. INSTRUCTIONS GIVEN BY THE OWNER RELATING TO QUALITY OF MATERIALS AND WORKMANSHIP MUST BE OBEYED AT ONCE BY THE CONTRACTOR. THE OWNER SHALL NOT SUPERVISE OR GIVE LINE AND GRADE STAKES.
17. THE MATERIALS USED IN PROJECTS SHALL BE NEW AND SUBJECT TO THE INSPECTION AND APPROVAL OF THE OWNER AT ALL TIMES. THE OWNER HAS THE RIGHT TO PERFORM ANY TESTING DEEMED NECESSARY TO ENSURE COMPLIANCE OF THE MATERIAL WITH THESE STANDARDS. NO MATERIAL SHALL BE USED BEFORE BEING INSPECTED AND APPROVED BY THE OWNER. FAILURE OR NEGLIGENCE ON THE PART OF THE OWNER TO CONDEMN OR REJECT INFERIOR MATERIALS OR WORK SHALL NOT BE CONSTRUED TO IMPLY THEIR ACCEPTANCE SHOULD THEIR INFERIORITY BECOME EVIDENT AT ANY TIME PRIOR TO FINAL ACCEPTANCE OF THE WORK. OWNERS HAVE THE AUTHORITY TO REJECT DEFECTIVE OR INFERIOR MATERIALS AND/OR DEFECTIVE WORKMANSHIP AND TO SUSPEND WORK UNTIL SUCH TIME AS THE CONTRACTOR SHALL CORRECT THE DISCREPANCIES IN QUESTION.
18. WHENEVER DEFECTIVE MATERIALS AND WORK ARE REJECTED, THE CONTRACTOR SHALL PROMPTLY REMOVE SUCH DEFECTIVE MATERIALS AND CONSTRUCTION FROM THE JOB SITE AND REPLACE ALL DEFECTIVE PORTIONS TO THE SATISFACTION OF THE OWNER. IN THE EVENT THE CONTRACTOR FAILS TO REMOVE REJECTED ITEMS FROM THE JOB SITE WITHIN A REASONABLE LENGTH OF TIME, THE OWNER MAY ARRANGE FOR SUCH REMOVAL AT THE EXPENSE OF THE CONTRACTOR.
19. INSPECTION SHALL NOT RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK STRICTLY IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS OR ANY MODIFICATIONS THEREOF.
20. EXCEPT IN CASES OF EMERGENCY, MAINTENANCE, OR PROTECTION OF WORK ALREADY COMPLETED, NO WORK SHALL BE ALLOWED BETWEEN THE HOURS OF 7 P.M. AND 7 A.M.; NOR ON SATURDAY, SUNDAY, OR LEGAL HOLIDAYS UNLESS APPROVED BY THE OWNER IN EACH CASE.
21. ALL WORK, INCLUDING CORRECTION WORK, SHALL BE INSPECTED BY OWNER WHO SHALL HAVE THE AUTHORITY TO HALT CONSTRUCTION WHEN STANDARD CONSTRUCTION PRACTICES ARE NOT BEING ADHERED TO.
22. CONTRACTOR SHALL REMOVE CONSTRUCTION DEBRIS AND KEEP THE SITE CLEAN AND SAFE AND IS RESPONSIBLE FOR DAILY SITE SAFETY AND CLEANUP.
23. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATION AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.

- GENERAL NOTES:

- ## ABBREVIATIONS

EA	EACH	OC	ON CENTER(S)	VEH VOL	VEHICLE VOLUME
EF	EACH FACE	OD	OUTSIDE DIAMETER		
EJ	EXPANSION JOINT	OPP	OPPOSITE	W/	WITH
ELEV	ELEVATION			W/O	WITHOUT
ELECT	ELECTRICAL			WT	WEIGHT
ENG	ENGINEER	QTY	QUANTITY	WWF	WELDED WIRE FABRIC
EQ	EQUAL				
EST	ESTIMATE			YD	YARD
EW	EACH WAY				
EX	EXISTING	ROW	RIGHT-OF-WAY		

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UNDERGROUND MEMBER UTILITIES.



CLIENT:  **City of
Thornton**
9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

PROJECT:

**SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS**

11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:
20-27A

DESIGNED BY:
SS

DRAWN BY:
LR

CHECKED BY:
SS

ORIGINAL DATE:
MARCH 22 2024

[illegible]

SHEET TITLE:

GENERAL
NOTES

SHEET #: _____

Vicinity Map
N.T.S.



LEGEND

- Control Point
- Electric Transformer
- Utility Pedestal
- Marker Post
- Sanitary Sewer Manhole
- Storm Sewer Manhole
- Light
- Street Sign
- Deciduous Tree w/ Trunk Ø
- Coniferous Tree w/ Trunk Ø
- Irrigation Control Box
- Drainage
- Fence
- Power Overhead

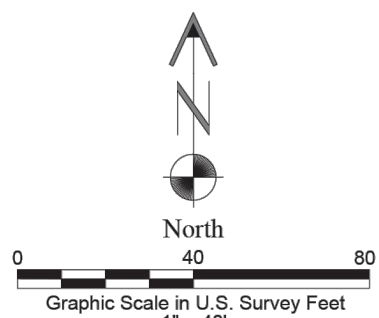
Quality Level B	Quality Level C	Quality Level D
Electric E(B)	E(C)	E(D)
Electric & Communication E/C(B)	E/C(C)	E/C(D)
Communication C(B)	C(C)	C(D)
Gas G(B)	G(C)	G(D)
Sanitary Sewer SAN(B)	SAN(C)	SAN(D)
Storm Sewer STM(B)	STM(C)	STM(D)
Water W(B)	W(C)	W(D)
Irrigation IRR(B)	IRR(C)	IRR(D)
Unknown UNK(B)	UNK(C)	UNK(D)

Notes:

- Site Benchmark is a 3.25" brass cap in the concrete walk southeast of the intersection of Holly Street and East 119th Avenue, as shown hereon, with an NAVD 88 elevation of 5215.00'. All directions, distances and dimensions are based on Colorado coordinate system of 1983 central zone.
- This plan was prepared for the purpose of a topographic survey and is not a boundary survey. This survey does not constitute a title search by this surveyor of the property shown and described hereon to determine:
 - a.) ownership of the tract of land.
 - b.) compatibility of this description with those of adjacent tracts of land.
 - c.) rights of way, easements and encumbrances of record affecting this tract of land.
- Underground utilities as shown hereon are based on best physical evidence as found in the field and may not be accurate or complete. All utilities are to be field located and verified by the proper entity.
- This survey was conducted during the month of October 2021.
- According to Colorado Law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.
- Any person who knowingly removes, alters or defaces any public land survey monument or land boundary monument or accessory commits a Class Two (2) Misdemeanor pursuant to State Statute 18-4-508, C.R.S.
- Parcel lines as shown hereon were established by Adams County GIS.

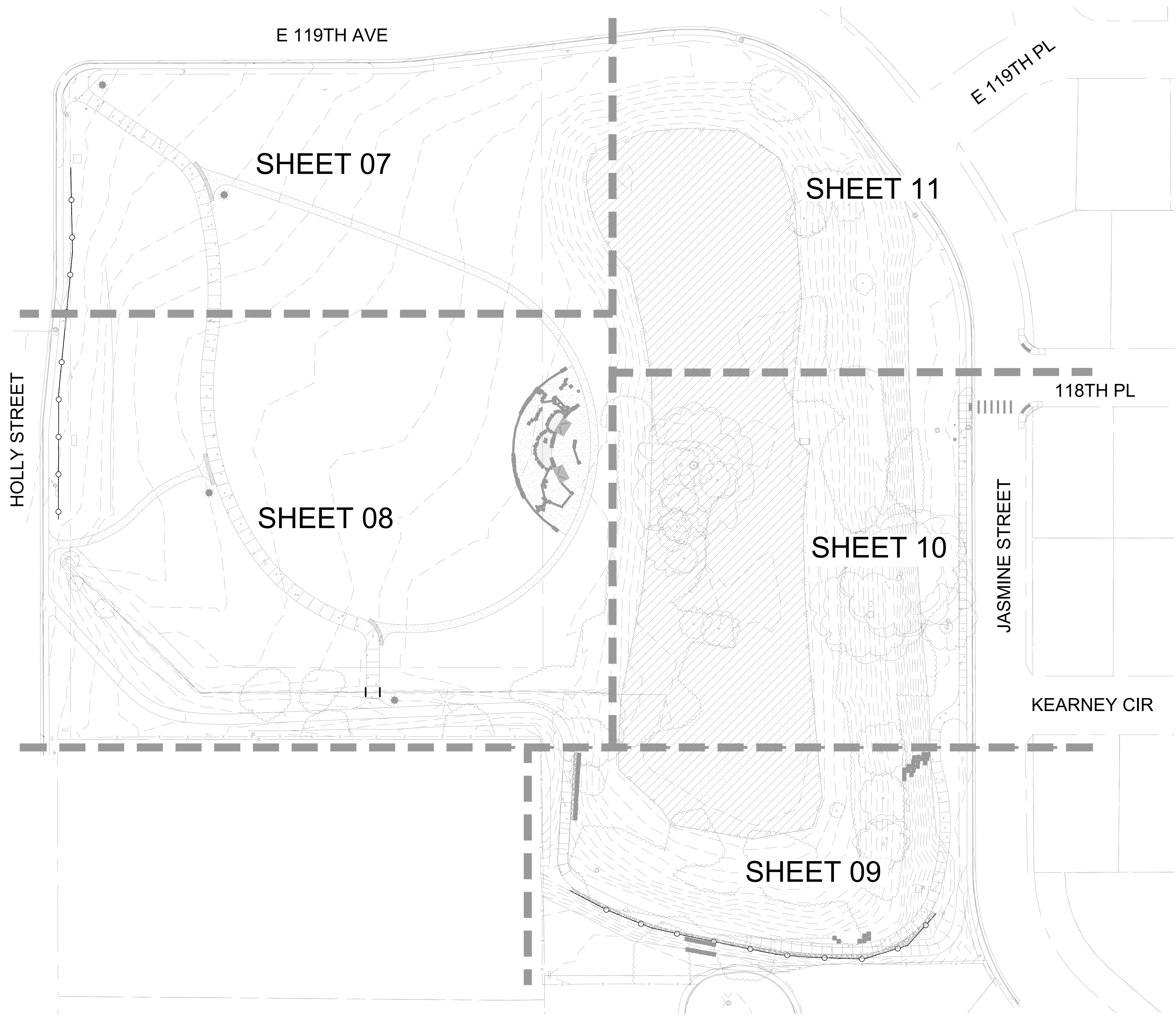
Topographic Survey - Additional
Skylake Ranch Subdivision

A Portion of the northwest quarter of Section 5, Township 2 South, Range
67 West of the Sixth Principal Meridian
County of Adams, State of Colorado



Date of Survey	October 2021
Control File	Skylake
Job Number	143760





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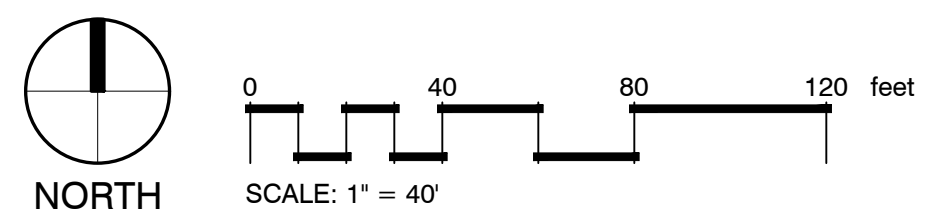
PROJECT:
SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET
SUBMITTAL:
BID SUBMITTAL

PROJECT #:
20-27A
DESIGNED BY:
SS
DRAWN BY:
LR
CHECKED BY:
SS
ORIGINAL DATE:
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
OVERALL PLAN

SHEET #:
05



NORTHING/EASTING POINT SCHEDULE

POINT	DESCRIPTION	NORTHING	EASTING
1	CL OF CONCRETE TRAIL, INTERSECT WITH EX. SIDEWALK	N 1757404.7566	E 3162219.7747
2	CL OF CONCRETE TRAIL	N 1757377.0373	E 3162260.8272
3	CL OF CONCRETE TRAIL	N 1757349.3179	E 3162301.8797
4	CL OF CONCRETE TRAIL	N 1757335.6236	E 3162315.9145
5	CL OF CONC. TRAIL, INTERSECT WITH CL OF CRUSHER TRAIL	N 1757329.1177	E 3162319.8949
6	CL OF CONCRETE TRAIL	N 1757317.8760	E 3162324.2531
7	CL OF CONCRETE TRAIL	N 1757259.7226	E 3162333.4824
8	CL OF CONCRETE TRAIL	N 1757200.9148	E 3162330.5874
9	CL OF CONCRETE TRAIL	N 1757147.1455	E 3162328.7639
10	CL OF CONC. TRAIL, INTERSECT WITH CL OF CRUSHER TRAIL	N 1757107.9311	E 3162335.8808
11	CL OF CONCRETE TRAIL	N 1757094.5433	E 3162340.0543
12	CL OF CONCRETE TRAIL	N 1757066.8237	E 3162351.8615
13	CL OF CONCRETE TRAIL	N 1757040.9786	E 3162367.3477
14	CL OF CONCRETE TRAIL	N 1757006.8288	E 3162401.7797
15	CL OF CONCRETE TRAIL	N 1756985.9439	E 3162445.5473
16	CL OF CONC. TRAIL, INTERSECT WITH CL OF CRUSHER TRAIL	N 1756980.4182	E 3162453.5151
17	CL OF CONCRETE TRAIL	N 1756971.1742	E 3162456.4424
18	CL OF CONCRETE TRAIL	N 1756946.0935	E 3162456.4424
19	CL OF CONCRETE TRAIL, INTERSECT WITH EX. CONC. TRAIL	N 1756921.0128	E 3162456.4424
20	CL OF CRUSHER FINES TRAIL	N 1757106.0792	E 3162329.1972
21	CL OF CRUSHER FINES TRAIL	N 1757104.2273	E 3162322.5136
22	CL OF CRUSHER FINES TRAIL	N 1757092.0304	E 3162295.2454
23	CL OF CRUSHER FINES TRAIL	N 1757072.8629	E 3162272.3343
24	CL OF CRUSHER FINES TRAIL	N 1757054.4536	E 3162246.0491
25	CL OF CRUSHER FINES TRAIL	N 1757047.8432	E 3162214.6467
26	CL OF CRUSHER FINES TRAIL, INTERSECT WITH EX. SIDEWALK	N 1757047.8076	E 3162205.4989
27	CL OF CRUSHER FINES TRAIL	N 1756983.9044	E 3162459.5333
28	CL OF CRUSHER FINES TRAIL	N 1756984.0775	E 3162463.4463
29	CL OF CRUSHER FINES TRAIL	N 1757087.1907	E 3162623.0123
30	CL OF CRUSHER FINES TRAIL	N 1757257.7511	E 3162539.3297
31	CL OF CRUSHER FINES TRAIL	N 1757297.4403	E 3162437.4562
32	CL OF CRUSHER FINES TRAIL	N 1757333.1558	E 3162334.1226
33	CL OF CRUSHER FINES TRAIL	N 1757333.6085	E 3162330.2091
34	CL OF CRUSHER FINES TRAIL	N 1757332.5145	E 3162326.4246
35	CL OF CONCRETE TRAIL, INTERSECT WITH EX. CONC. TRAIL	N 1756987.5052	E 3162608.6531
36	CL OF CONCRETE TRAIL	N 1756847.9461	E 3162606.3057
37	CL OF CONCRETE TRAIL	N 1756808.0090	E 3162603.9359
38	CL OF CONCRETE TRAIL	N 1756800.4323	E 3162604.3322
39	CL OF CONCRETE TRAIL, INTERSECT WITH EX. CONC. TRAIL	N 1756793.1804	E 3162606.5624
40	CL OF CONCRETE TRAIL, INTERSECT WITH EX. CONC. TRAIL	N 1756741.3200	E 3162746.2283
41	CL OF CONCRETE TRAIL	N 1756735.6311	E 3162787.4865
42	CL OF CONCRETE TRAIL	N 1756734.3329	E 3162829.1148
43	CL OF CONCRETE TRAIL	N 1756749.2582	E 3162871.4741
44	CL OF CONCRETE TRAIL	N 1756788.0045	E 3162894.1854
45	CL OF CONCRETE TRAIL	N 1756827.4840	E 3162900.0352
46	CL OF CONCRETE TRAIL	N 1756867.1508	E 3162895.6308
47	CL OF CONCRETE TRAIL	N 1756871.8683	E 3162894.4086
48	CL OF CONCRETE TRAIL	N 1756876.6046	E 3162893.2612
49	CL OF CONCRETE TRAIL	N 1756890.3212	E 3162891.9840
50	CL OF CONCRETE TRAIL	N 1756904.0672	E 3162892.8902
51	CL OF CONCRETE TRAIL	N 1756913.3028	E 3162897.6574
52	CL OF CONCRETE TRAIL	N 1756916.7140	E 3162907.4751
53	CL OF CONCRETE TRAIL	N 1756916.7229	E 3162912.1491
54	CL OF CONCRETE TRAIL, INTERSECT CL OF CONCRETE TRAIL	N 1756916.7261	E 3162913.8257
55	CL OF CONCRETE TRAIL, INTERSECT WITH EX. SIDEWALK	N 1756916.7319	E 3162916.8231
56	CL OF CONCRETE TRAIL	N 1757031.0048	E 3162913.6278
57	CL OF CONCRETE TRAIL, INTERSECT WITH CURB RAMP	N 1757145.2834	E 3162913.4300
58	EDGE OF CRUSHER FINES PAVING	N 1757055.3055	E 3162606.4001
59	EDGE OF CRUSHER FINES PAVING	N 1757122.2787	E 3162565.1502
60	EDGE OF CRUSHER FINES PAVING	N 1757185.8356	E 3162611.4913
61	CENTER OF PLAY AREA CIRCLE	N 1757119.5279	E 3162635.6777
62	CENTER OF SHADE STRUCTURE POST	N 1757086.7352	E 3162602.0083
63	CENTER OF SHADE STRUCTURE POST	N 1757105.8915	E 3162597.5601
64	CENTER OF SHADE STRUCTURE POST	N 1757136.1173	E 3162598.6994
65	CENTER OF SHADE STRUCTURE POST	N 1757144.5722	E 3162604.0392
66	CL OF CONCRETE TRAIL, INTERSECT END OF CHANNEL CROSSING	N 1756936.6800	E 3162456.4424
67	CL OF CONCRETE TRAIL, INTERSECT END OF CHANNEL CROSSING	N 1756929.6800	E 3162456.4424

TABLE OF CURVES

CURVE NO.	POINT OF BEGINNING	POINT OF END	RADIUS	LENGTH
C1	3	6	55	39.43
C2	6	8	286	117.96
C3	8	11	220	107.87
C4	11	13	220	60.31
C5	13	15	145	97.45
C6	15	17	15	19.75
C7	21	23	109	59.93
C8	23	25	80	64.62
C9	28	30	143	415.58
C10	37	39	31	15.21
C11	40	42	394	83.34
C12	42	44	65	91.69
C13	44	46	155	80.04
C14	50	52	14	21.30
C15	58	60	71	166.86

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VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:


CLIENT:

9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

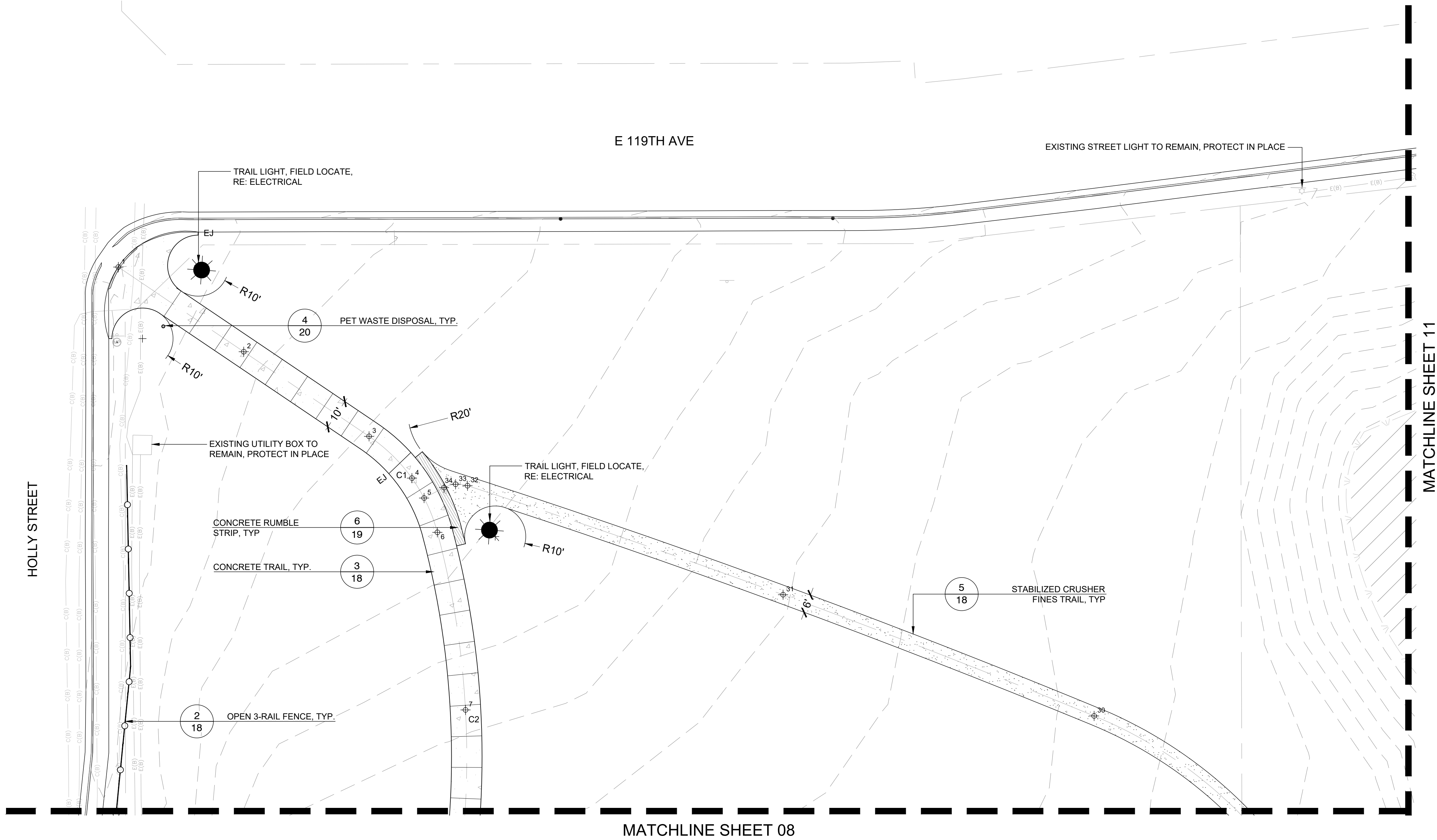
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PROJECT:
SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS
11890 HOLLY STREET
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SHEET TITLE:
LAYOUT
CONTROL
POINTS
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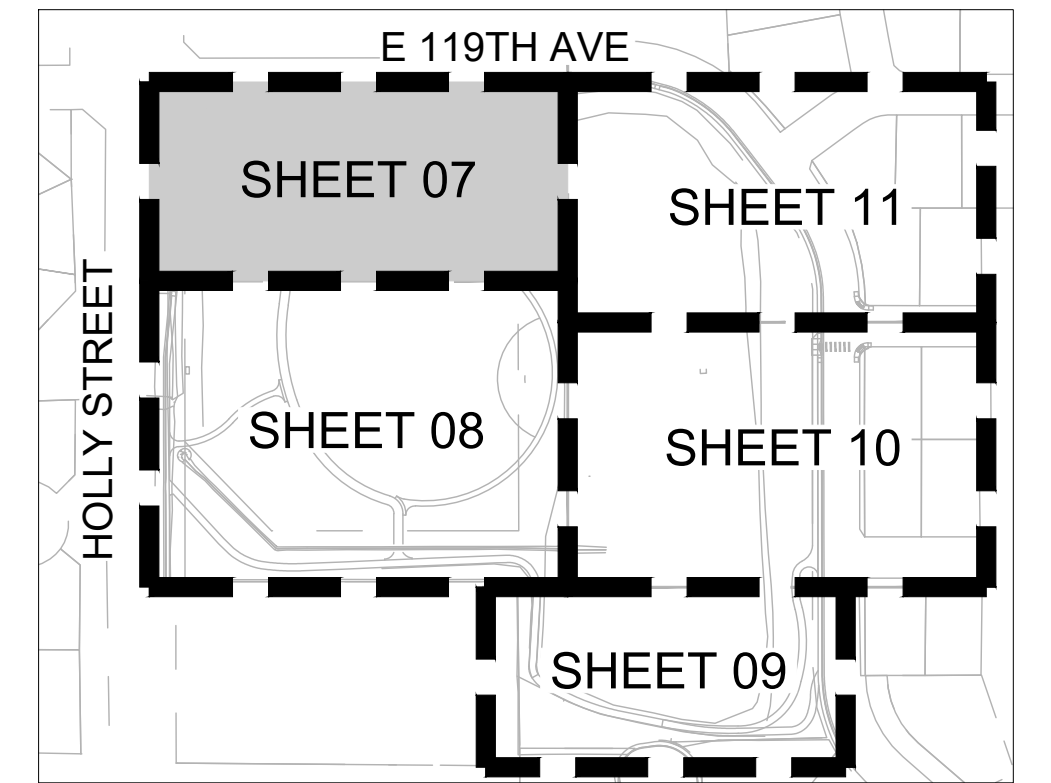


1 LAYOUT PLAN

LAYOUT NOTES

- ALL SITE IMPROVEMENTS MUST BE FIELD SURVEYED AND STAKED BY CONTRACTOR. OWNER SHALL APPROVE STAKED LOCATION OF IMPROVEMENTS PRIOR TO INSTALLATION START-UP. FINAL LOCATION OF ALL CONCRETE TRAIL, CRUSHER FINES TRAIL, POST & DOWEL FENCE, AND BOULDERS SHALL BE REVIEWED BY THE PROJECT MANAGER AND LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- PROJECT MANAGER SHALL APPROVE FINAL STAKING BY CONTRACTOR OF ALL CONCRETE FLATWORK PRIOR TO CONSTRUCTION AND ALL FORM WORK AND EXPANSION JOINT LOCATIONS PRIOR TO POURING.
- ALL DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. ANY DEVIATION FROM THESE PLANS MUST BE APPROVED BY PROJECT MANAGER PRIOR TO CONSTRUCTION.
- PRIOR TO EXCAVATION, UNDERGROUND UTILITIES MUST BE FIELD VERIFIED (SEE GENERAL NOTES).
- SEE SITE SURVEY FOR ADDITIONAL CONTROL POINTS, MONUMENTS AND BENCHMARKS.
- ALL CONTROL JOINTS SHALL BE SAW CUT AND SPACED AS INDICATED ON THE PLANS AND DETAILS. EXPANSION JOINTS SHALL BE PLACED AS INDICATED ON THE DRAWINGS OR EVERY 120 LINEAL FEET. PROVIDE EJ AT ALL TRANSITIONS BETWEEN EX CONCRETE WORK AND NEW. CONTRACTOR SHALL LAYOUT ALL CONTROL JOINTS AND EXPANSION JOINTS IN THE FIELD FOR APPROVAL BY PROJECT MANAGER.
- CRUSHER FINES TRAIL TO BE 3/8" MINUS STABILIZED GREY CRUSHER FINES OR APPROVED EQUAL. CRUSHER FINES PAVING TO BE 3/8" MINUS GREY CRUSHER FINES WITHOUT STABILIZER OR APPROVED EQUAL.

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KEY MAP

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING VEGETATION TO REMAIN
- PROPERTY BOUNDARY
- OPEN 3-RAIL FENCE
- EXISTING WETLAND
- CONCRETE
- STABILIZED CRUSHER FINES
- GRAVEL
- PLAY SAND
- TRAIL LIGHT
- SOLAR LIGHT
- 6" STEEL BENCH
- LOG BORDER/FEATURE LOG
- BOULDERS
- VERTICAL FEATURE LOG
- SHADE STRUCTURE
- TRASH RECEPTACLE
- PET WASTE DISPOSAL



CLIENT:
City of Thornton
9500 CIVIC CENTER DR
THORNTON, CO 80229
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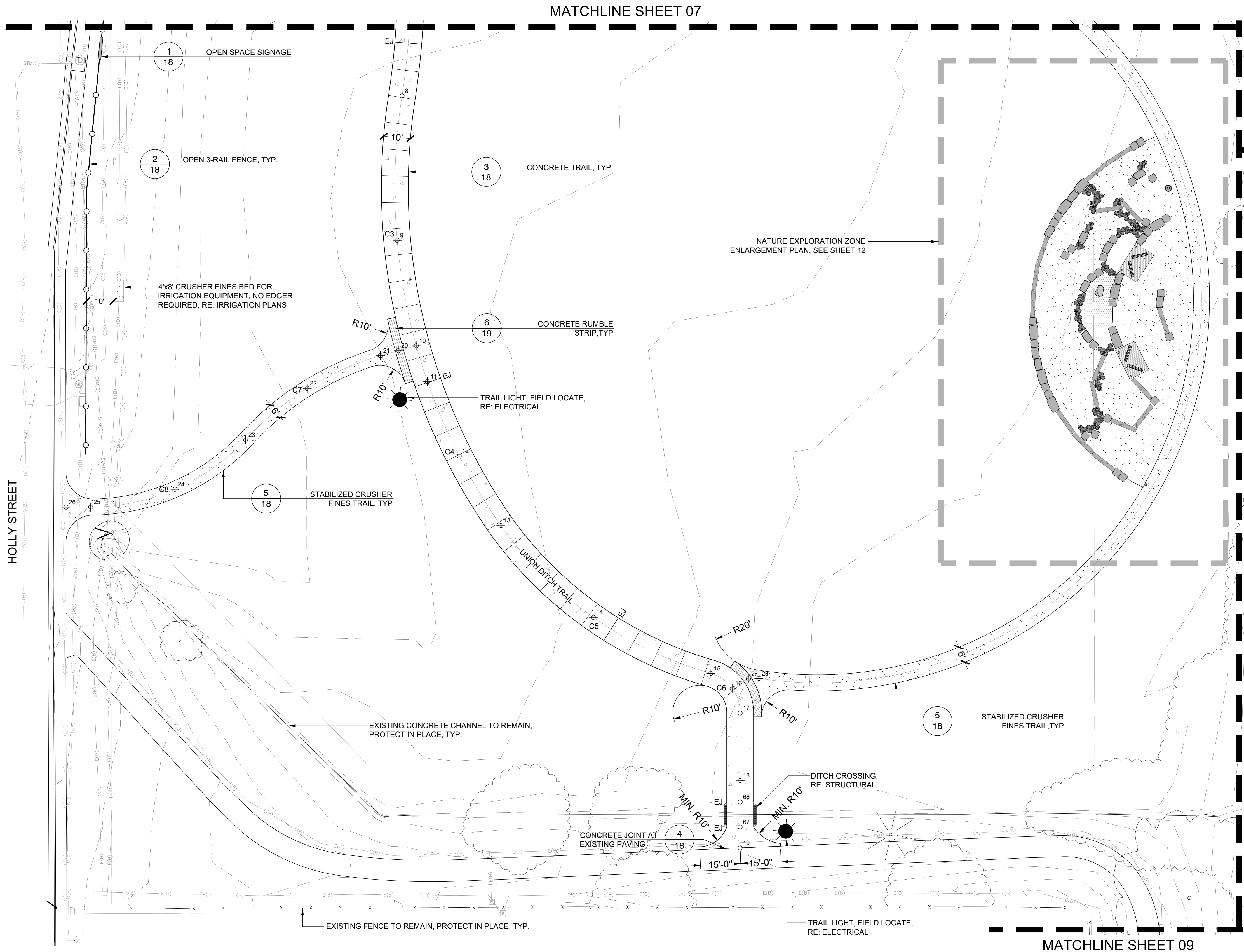
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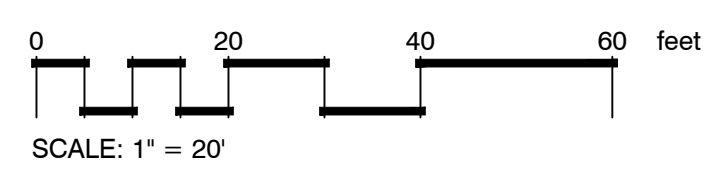
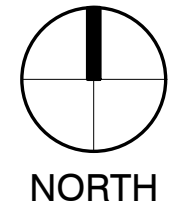
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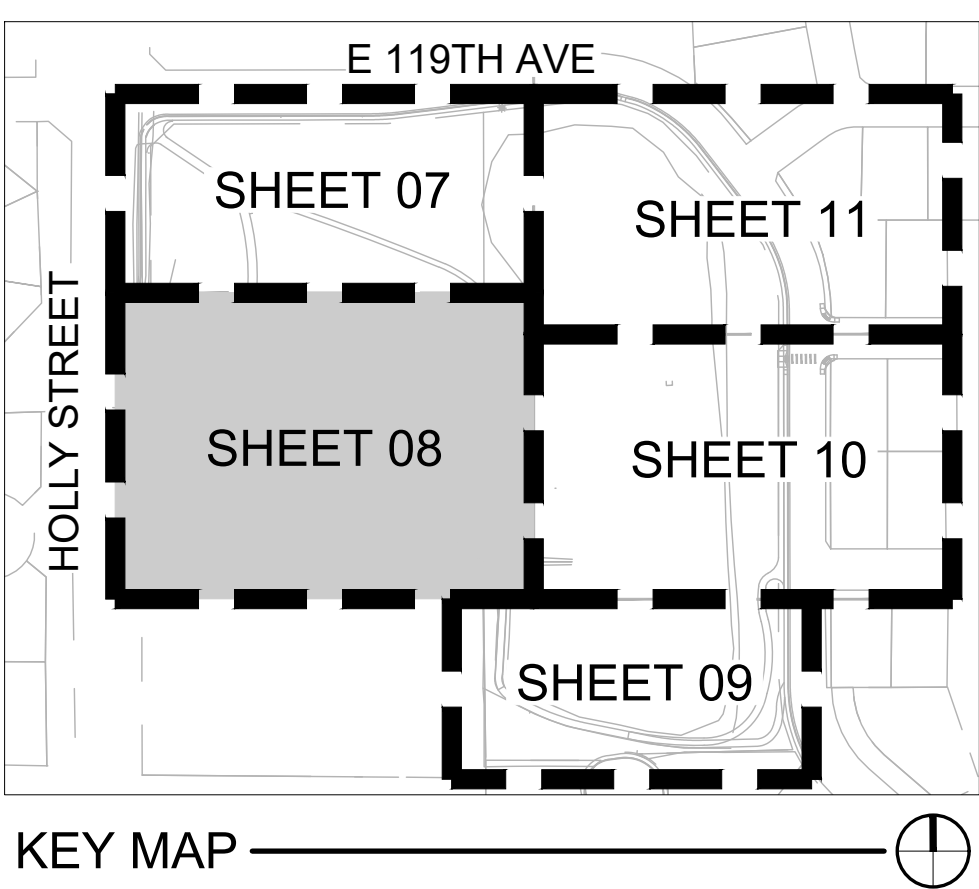
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1 LAYOUT PLAN



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CALL 2- BUSINESS DAYS IN ADVANCE BEFORE YOU DIG.
GRADE, OR EXCAVATE FOR THE MARKING OF
UNDERGROUND MEMBER UTILITIES.



LEGEND

- EXISTING TREE TO REMAIN
- EXISTING VEGETATION TO REMAIN
- PROPERTY BOUNDARY
- OPEN 3-RAIL FENCE
- EXISTING WETLAND
- CONCRETE
- STABILIZED CRUSHER FINES
- GRAVEL
- PLAY SAND
- TRAIL LIGHT
- SOLAR LIGHT
- 6" STEEL BENCH
- LOG BORDER/FEATURE LOG
- BOULDERS
- VERTICAL FEATURE LOG
- SHADE STRUCTURE
- TRASH RECEPTACLE
- PET WASTE DISPOSAL

CONSULTANT:

CLIENT:

9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

PROJECT:

SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:
20-27A

DESIGNED BY:
SS

DRAWN BY:
LR

CHECKED BY:
SS

ORIGINAL DATE:
MARCH 22, 2024

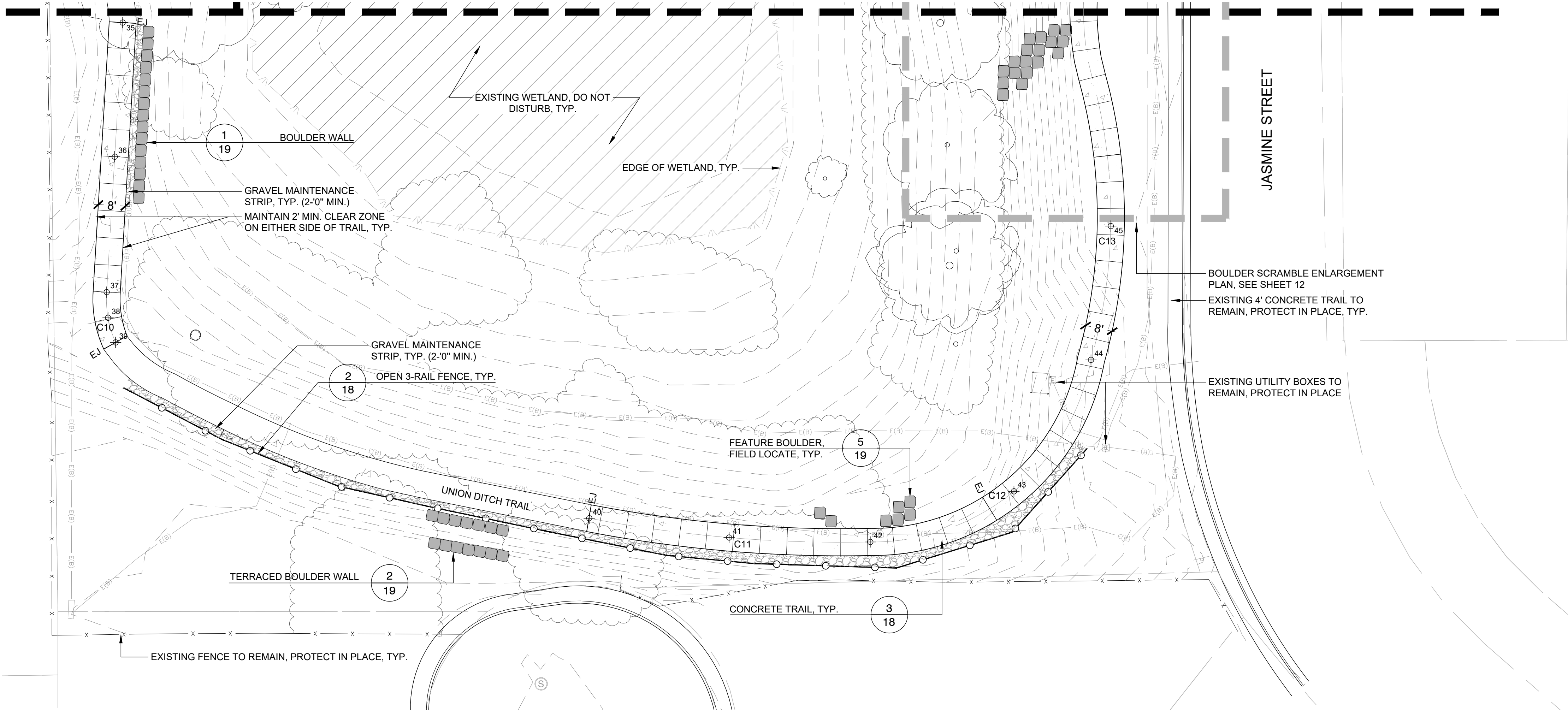
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SHEET TITLE:
LAYOUT PLAN

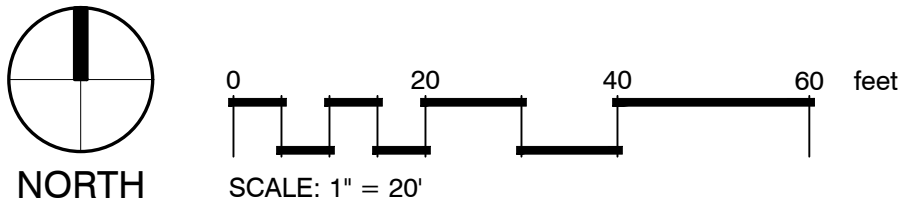
SHEET #:
08

MATCHLINE SHEET 08

MATCHLINE SHEET 10



1 LAYOUT PLAN



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VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:

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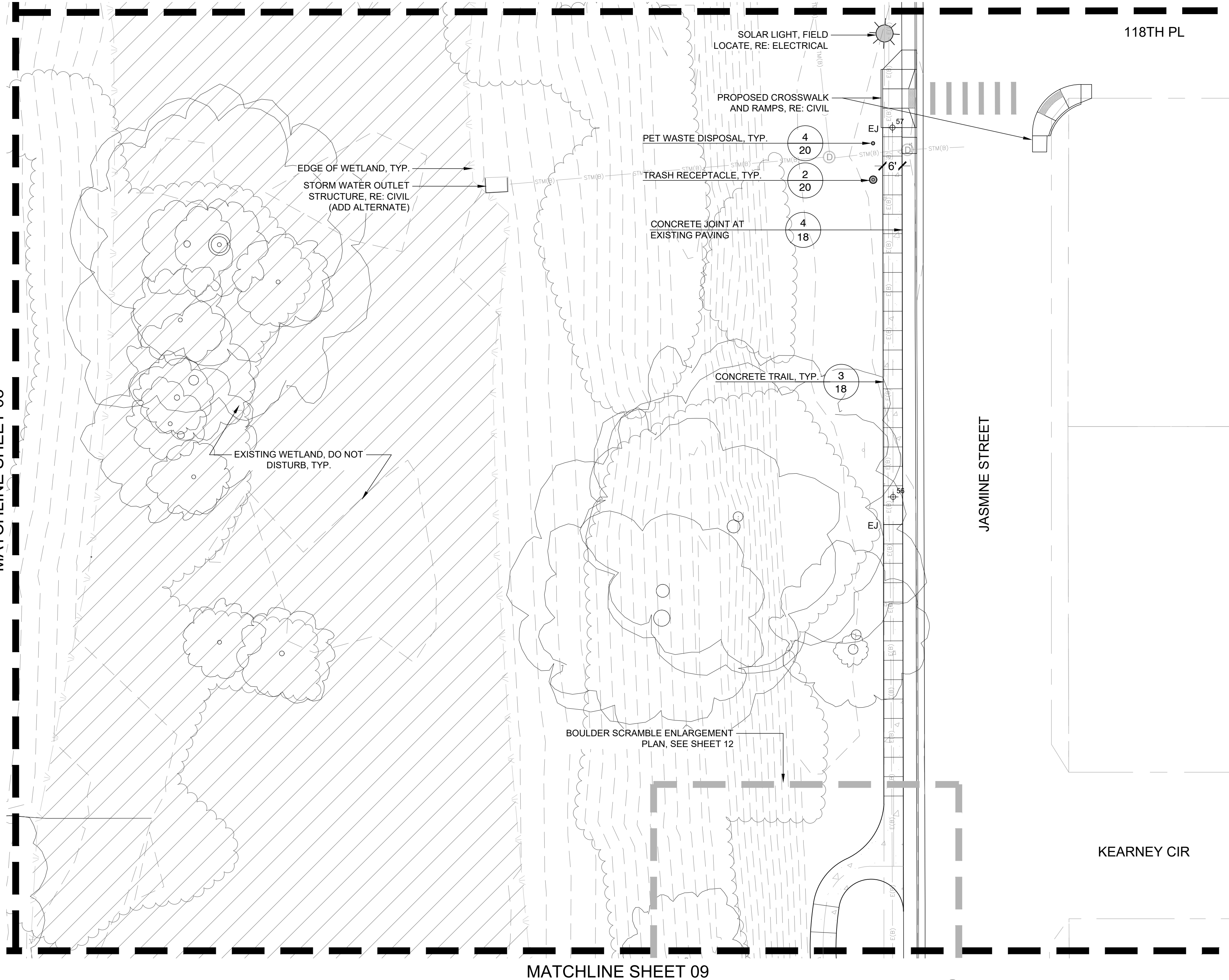
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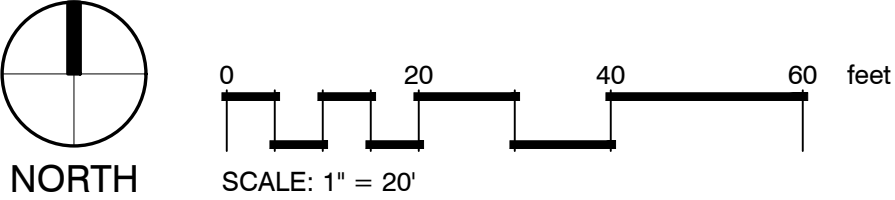
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MATCHLINE SHEET 08

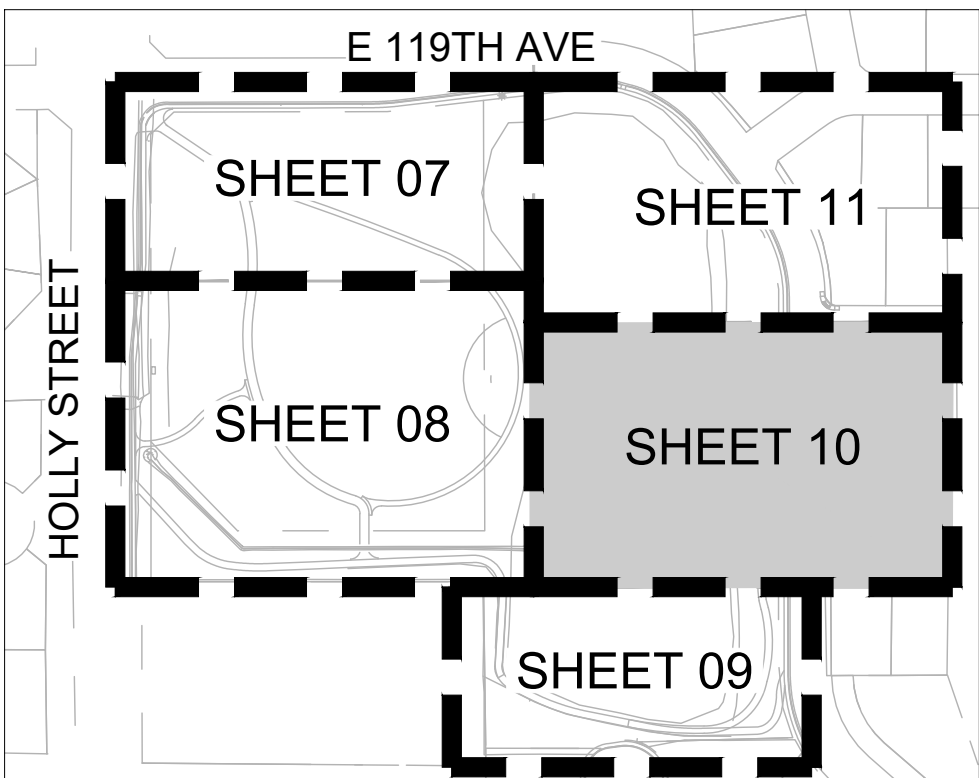
MATCHLINE SHEET 11



1 LAYOUT PLAN



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VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:
STACEY E. STICKLER
654
11/26/2008
Original Date of Licensure
3.22.2024
LICENSED LANDSCAPE ARCHITECT
STATE OF COLORADO

CLIENT:
City of Thornton
9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

PROJECT:
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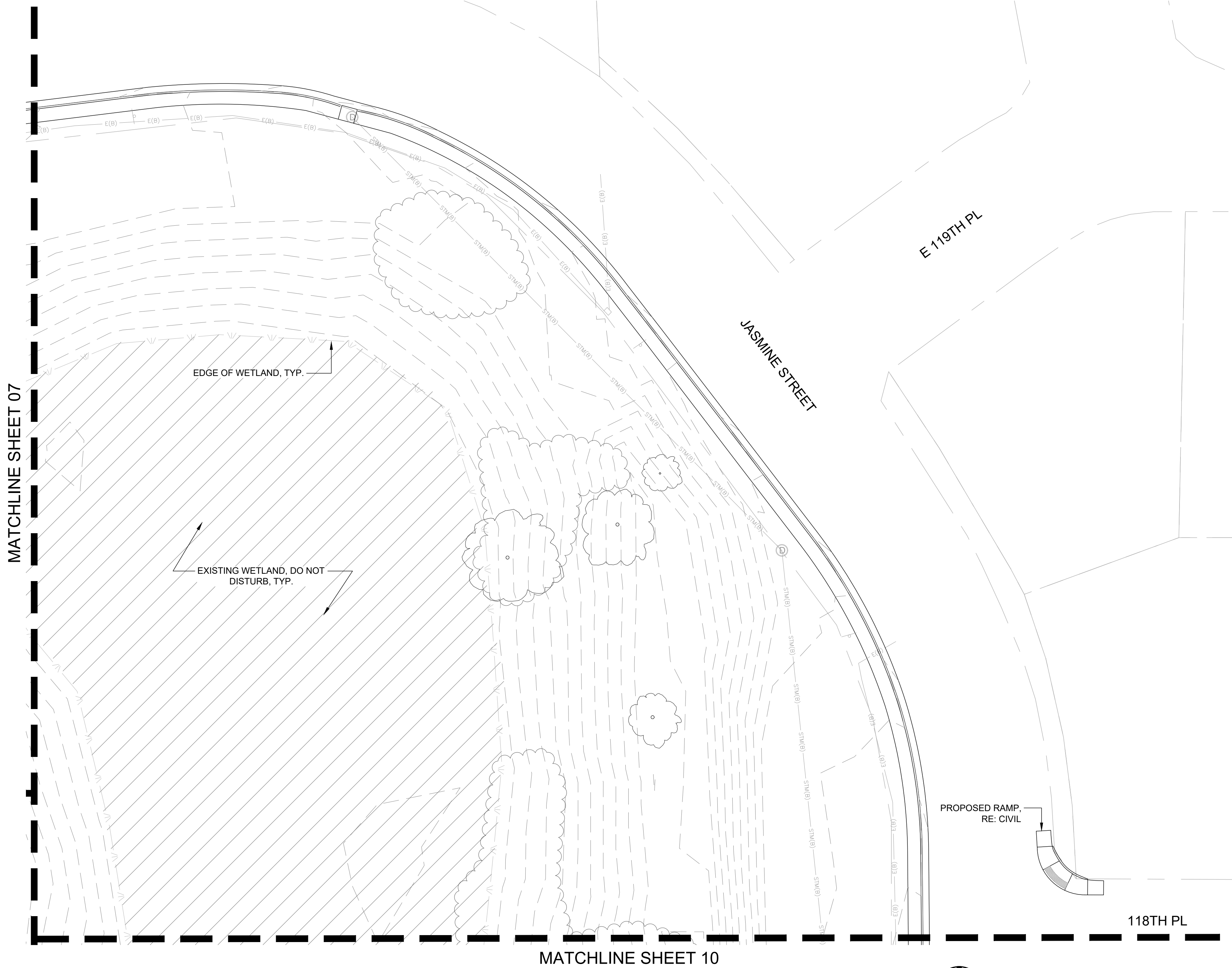
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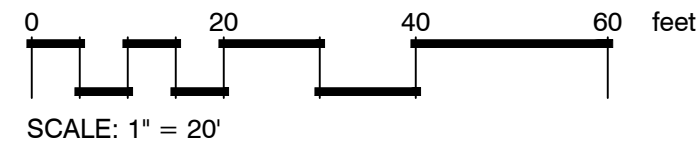
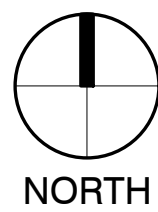
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LAYOUT PLAN

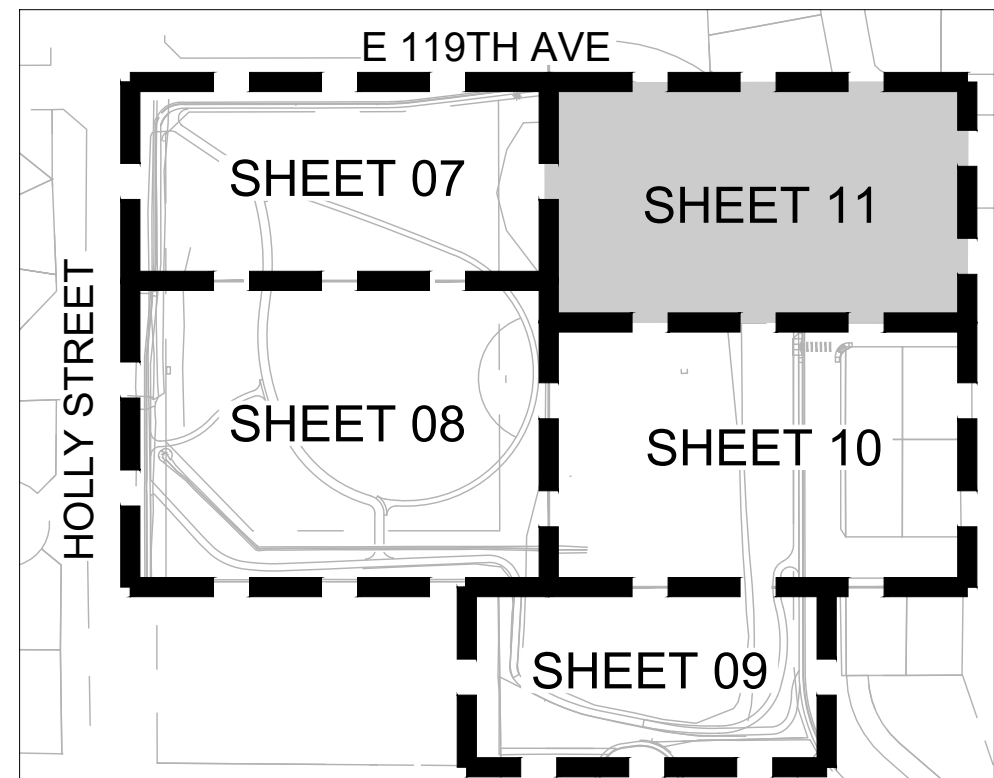
SHEET #:
10



1 LAYOUT PLAN



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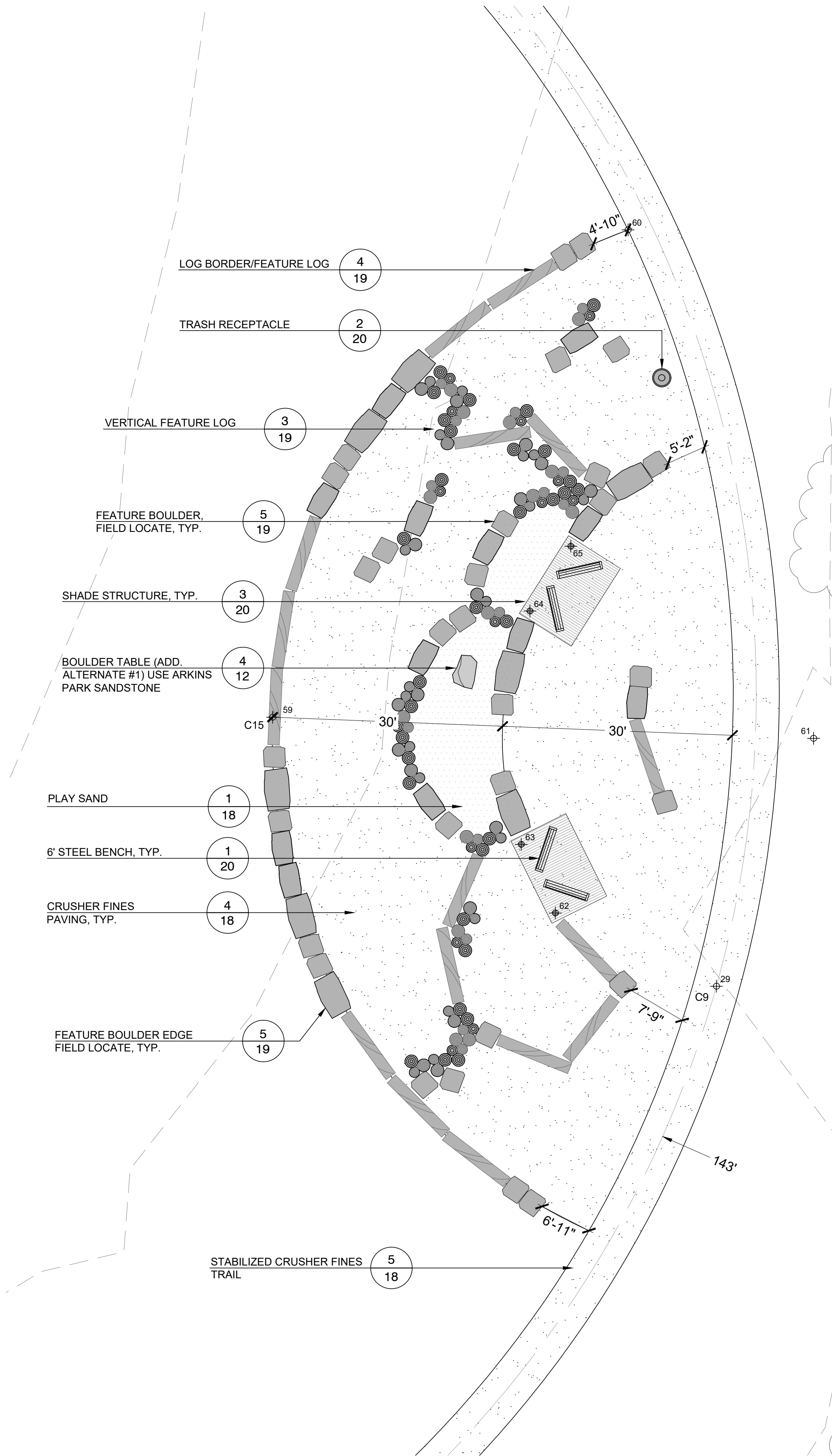
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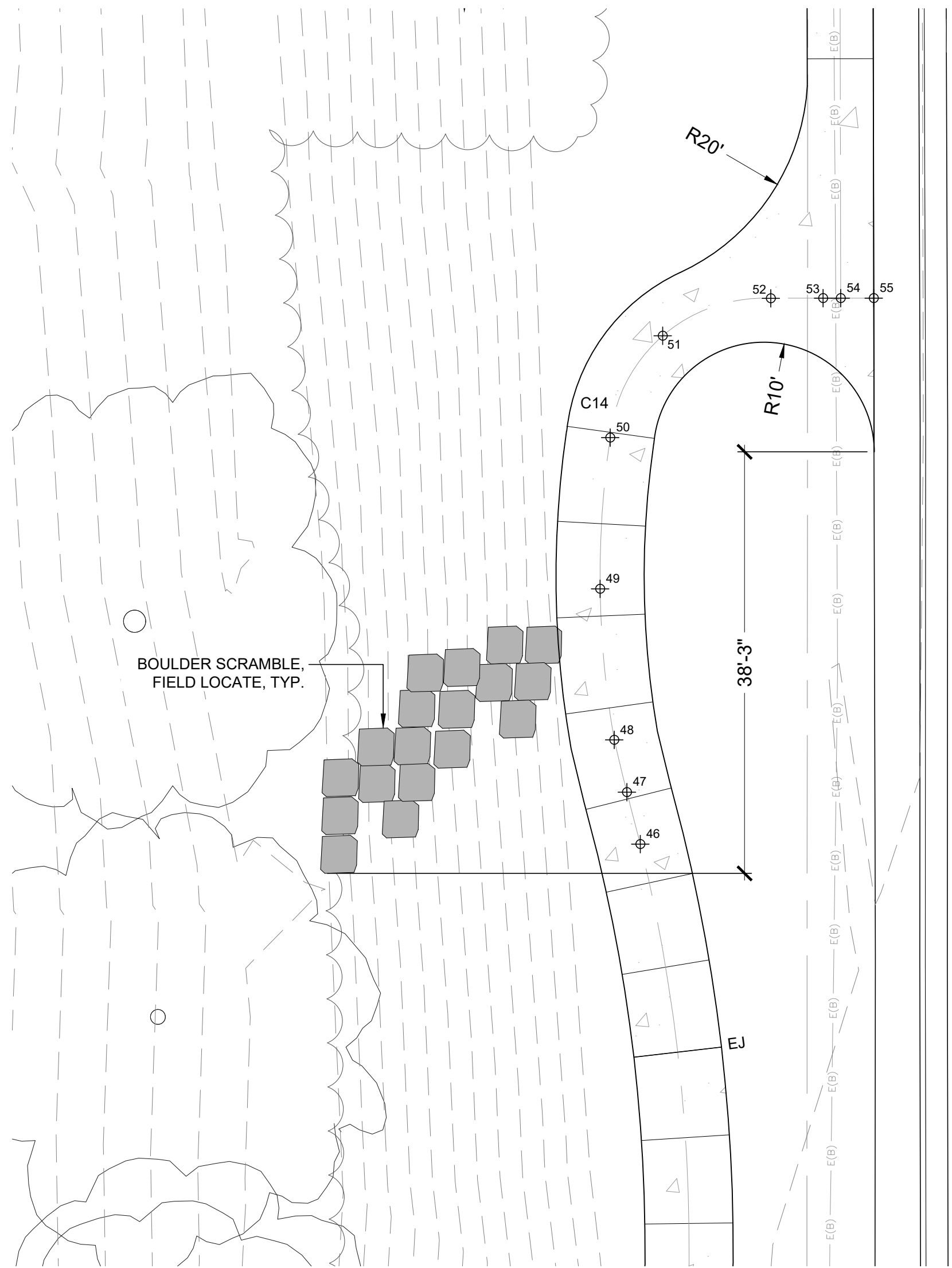
#	REVISION	DATE

SHEET TITLE:
LAYOUT PLAN

SHEET #:



1 NATURE EXPLORATION ZONE ENLARGEMENT PLAN



2 BOULDER SCRAMBLE ENLARGEMENT PLAN



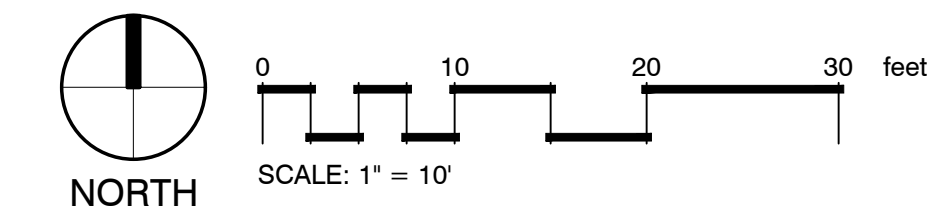
3 NATURE EXPLORATION ZONE FEATURE LOGS

NOTE:
1. REFER TO DETAIL 4 SHEET 19 FOR FURTHER INFORMATION.



4 BOULDER TABLE : ADD ALTERNATE #1

NOTE:
1. USE ARKINS PARK SANDSTONE.



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VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:
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654
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SHEET TITLE:
ENLARGEMENT PLANS

SHEET #:
12

A north arrow pointing upwards, labeled "NORTH". To its right is a profile view of the road. The horizontal axis is labeled with distances 0, 20, 40, and 60 feet. The profile shows a series of steps: a 10-foot wide section at 0-10 feet, a 10-foot wide section at 10-20 feet, a 10-foot wide section at 20-30 feet, a 10-foot wide section at 30-40 feet, and a 20-foot wide section at 40-60 feet. Below the profile is the scale: "SCALE: 1" = 20'".

KEY MAP

E 119TH AVE

HOLLY STREET

SHEET 13

SHEET 17

SHEET 14

SHEET 16

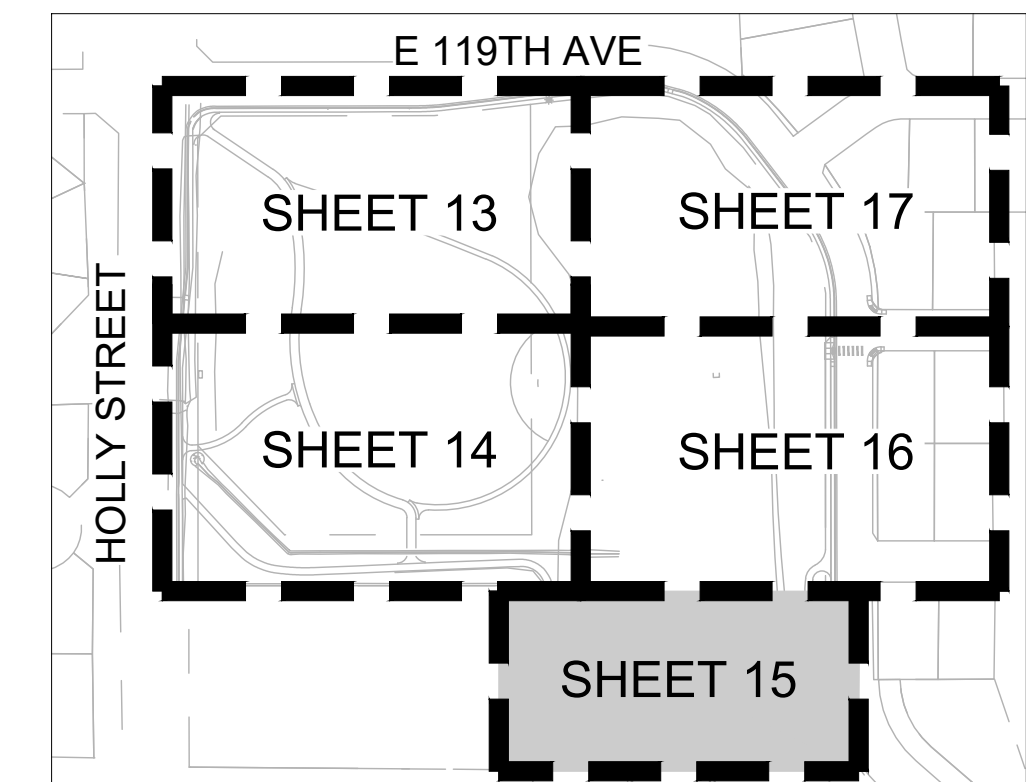
SHEET 15

	EXISTING TREE TO REMAIN
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	EXISTING CONTOUR
	PROPOSED CONTOUR
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SHEET #: _____

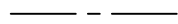
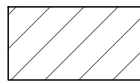
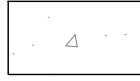
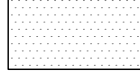
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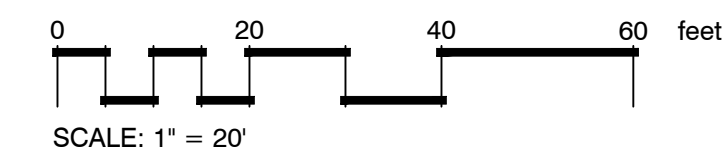
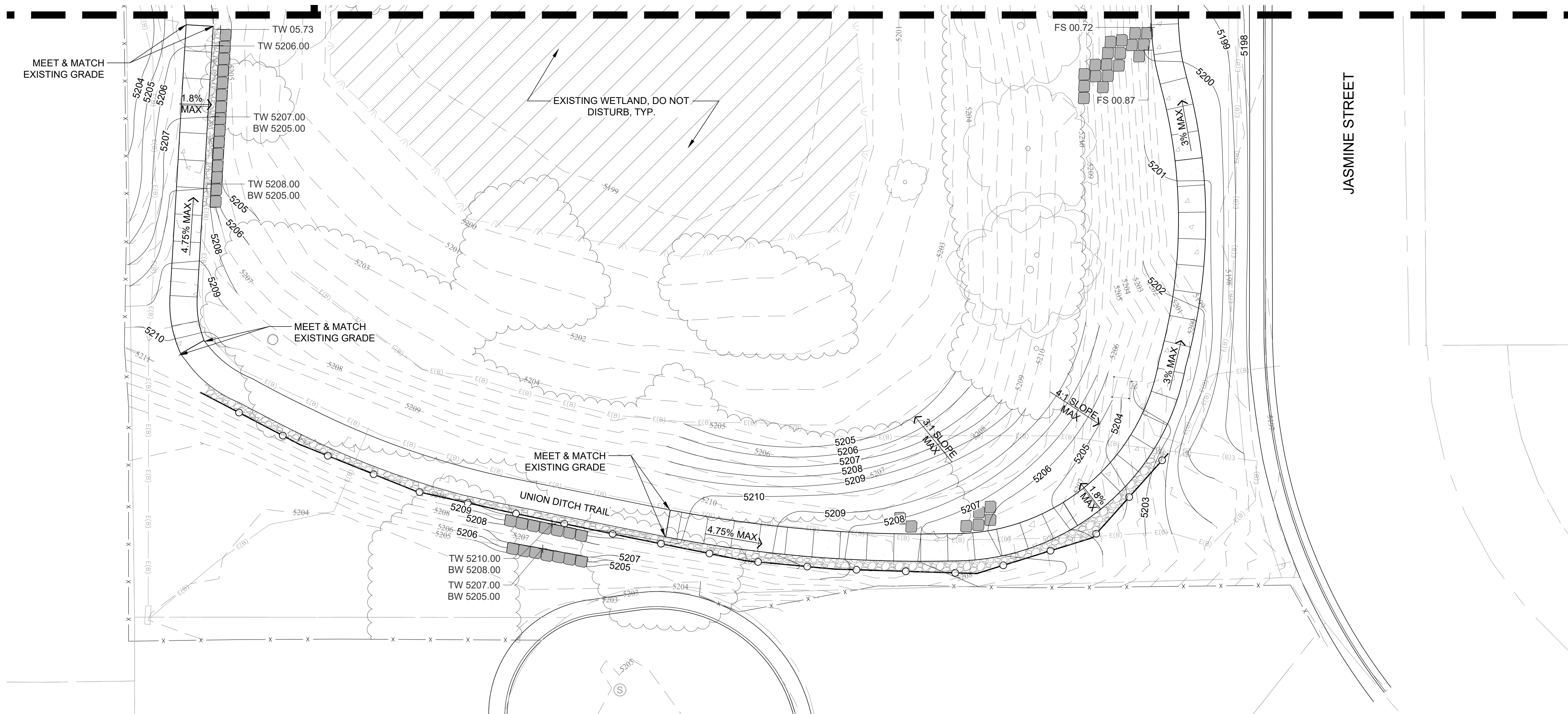
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KEY MAP 

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1 GRADING PLAN



VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CLIENT:

 **City of
Thornton**

9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

STAMP:

PROJECT:

**SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS**

11890 HOLLY STREET

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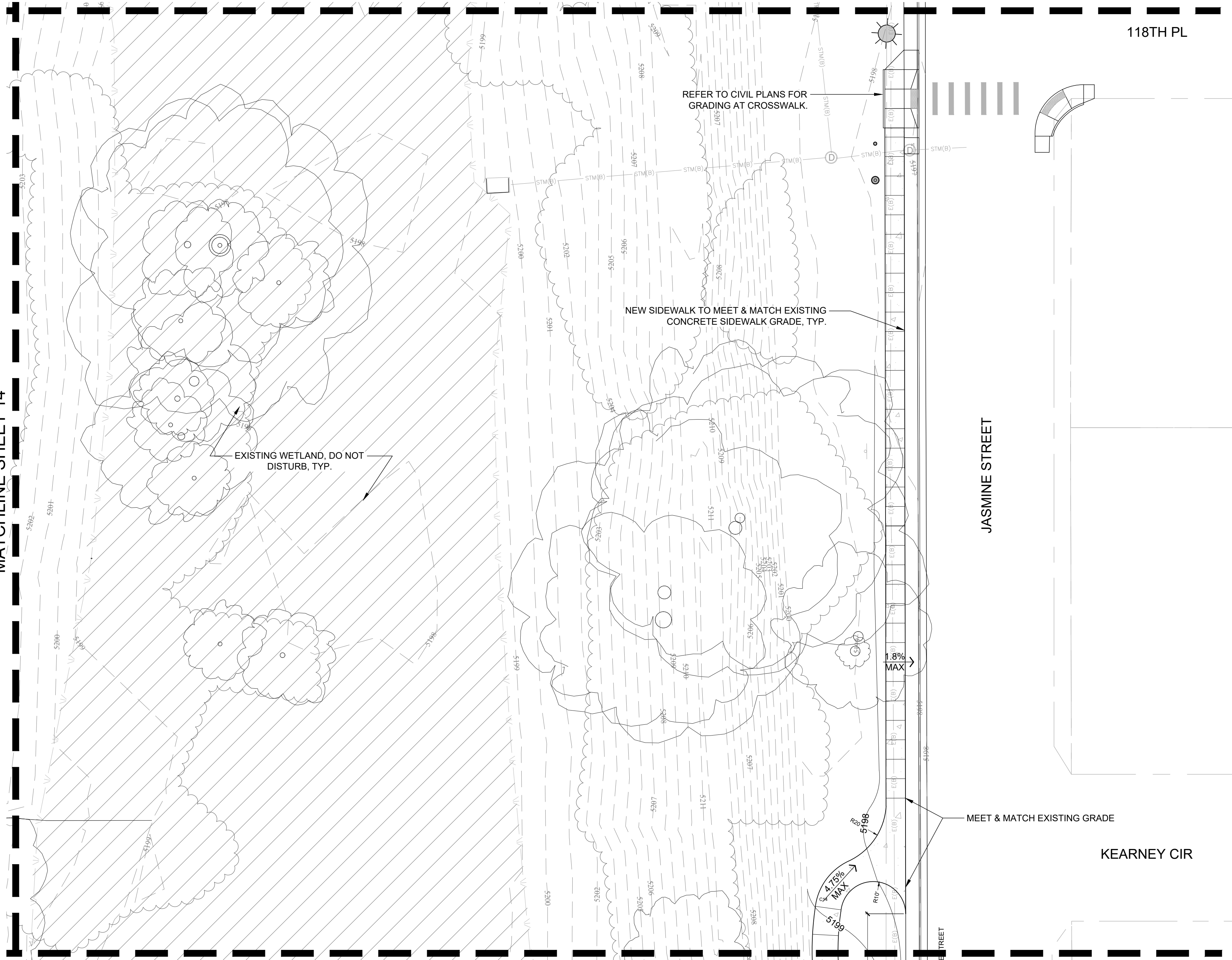
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**GRADING
PLAN**

SHEET #: _____

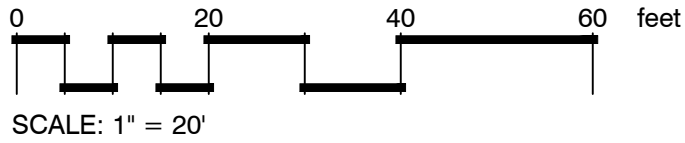
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MATCHLINE SHEET 17

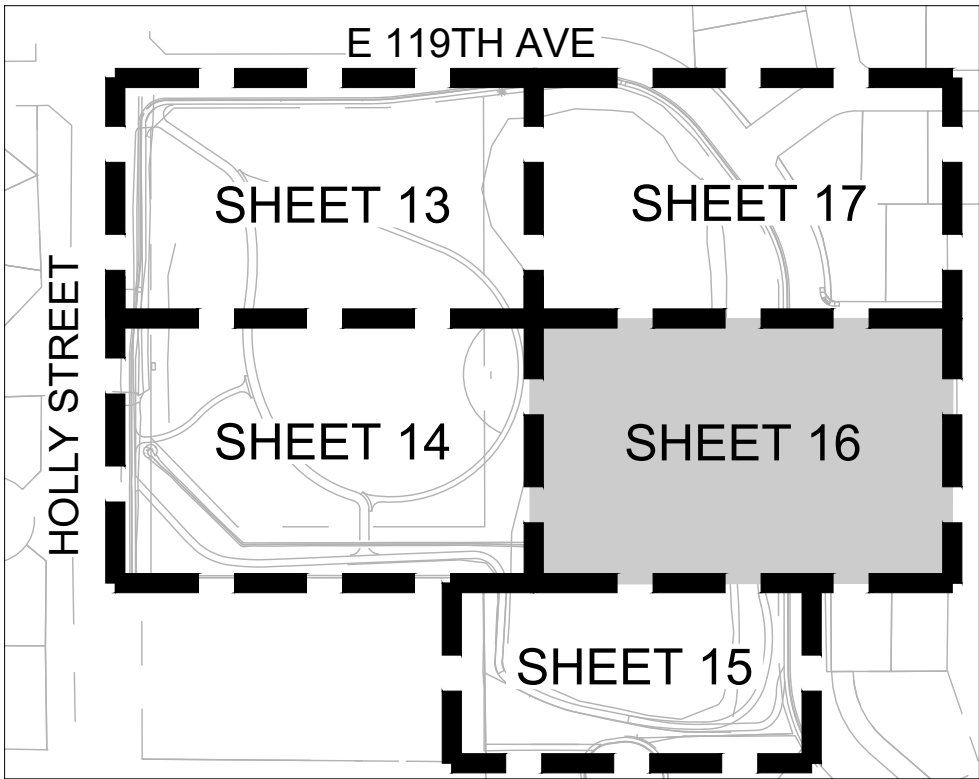


MATCHLINE SHEET 15

1 GRADING PLAN



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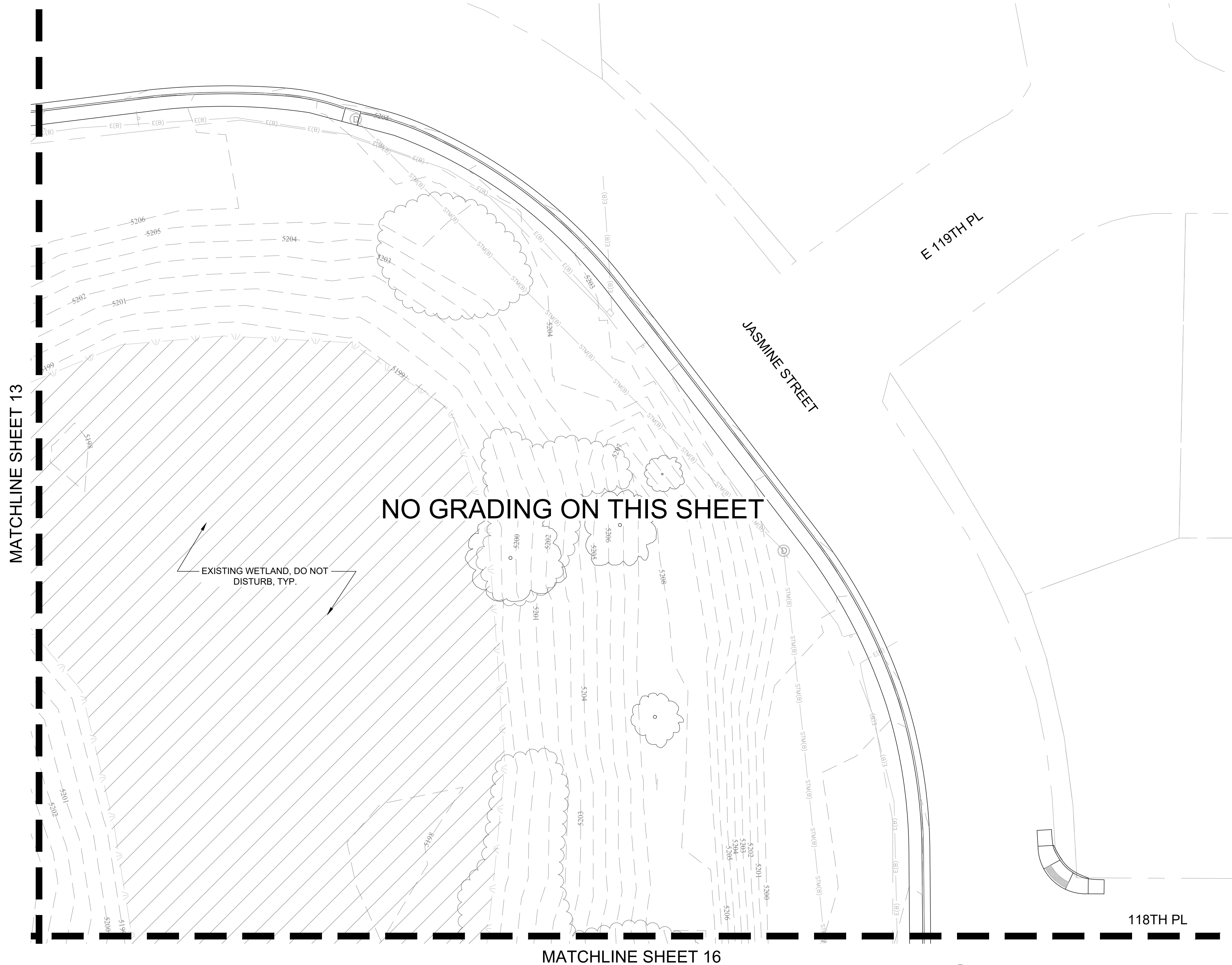
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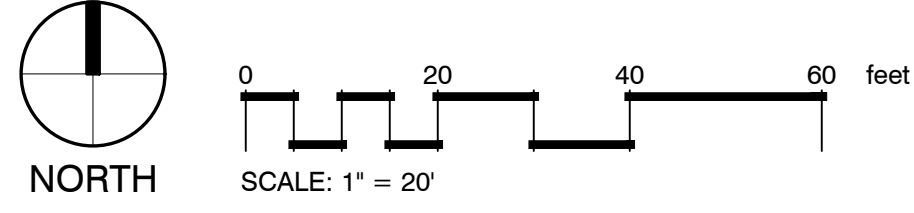
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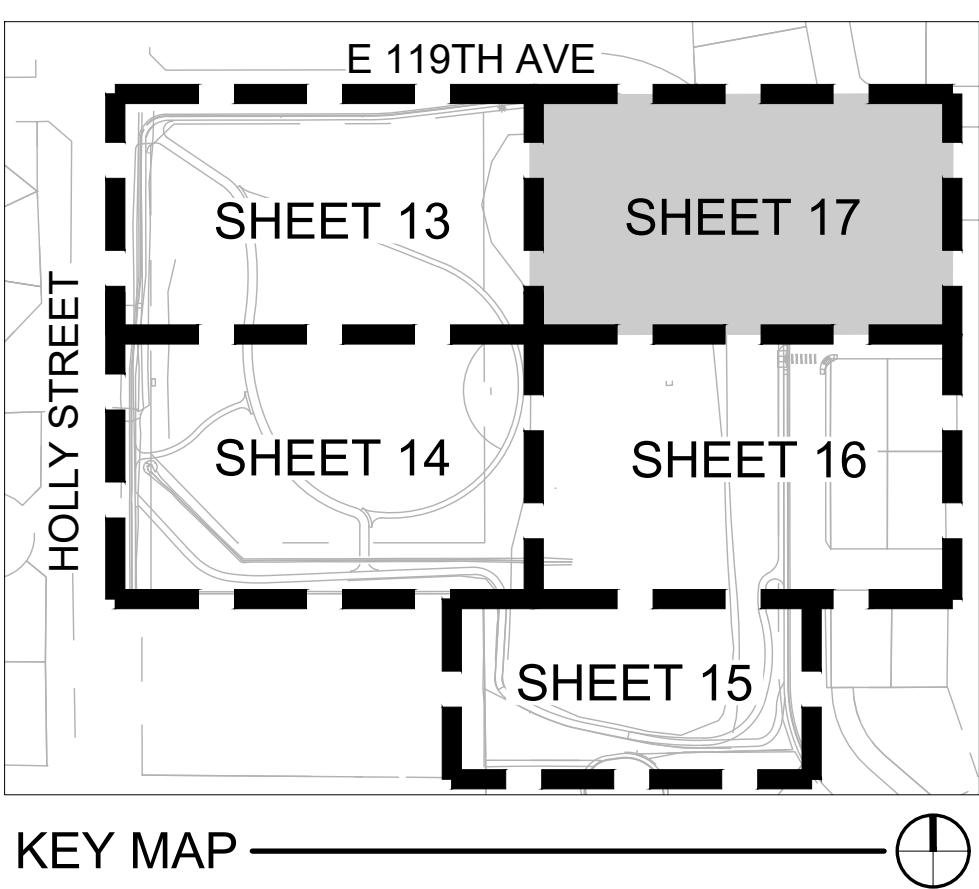
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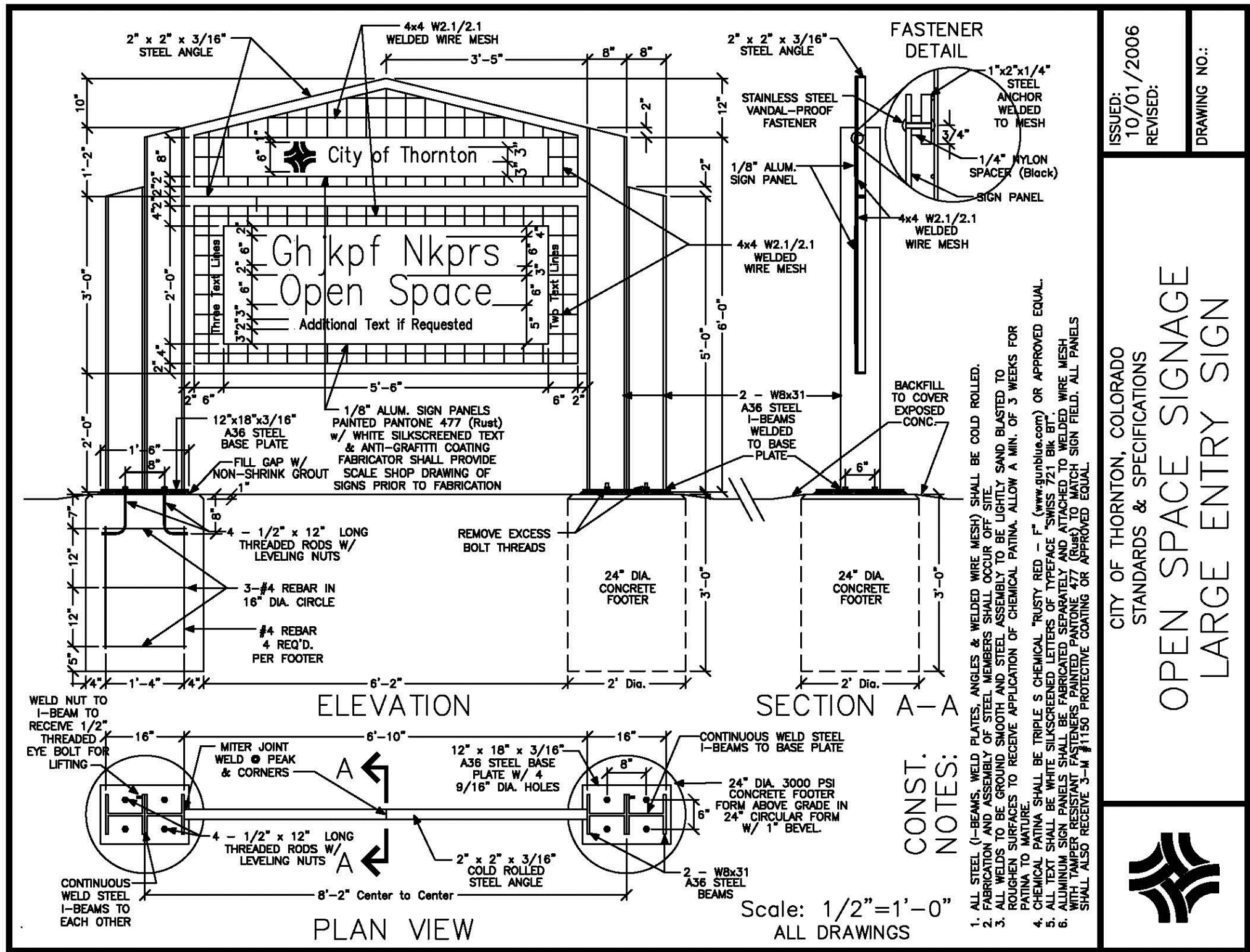
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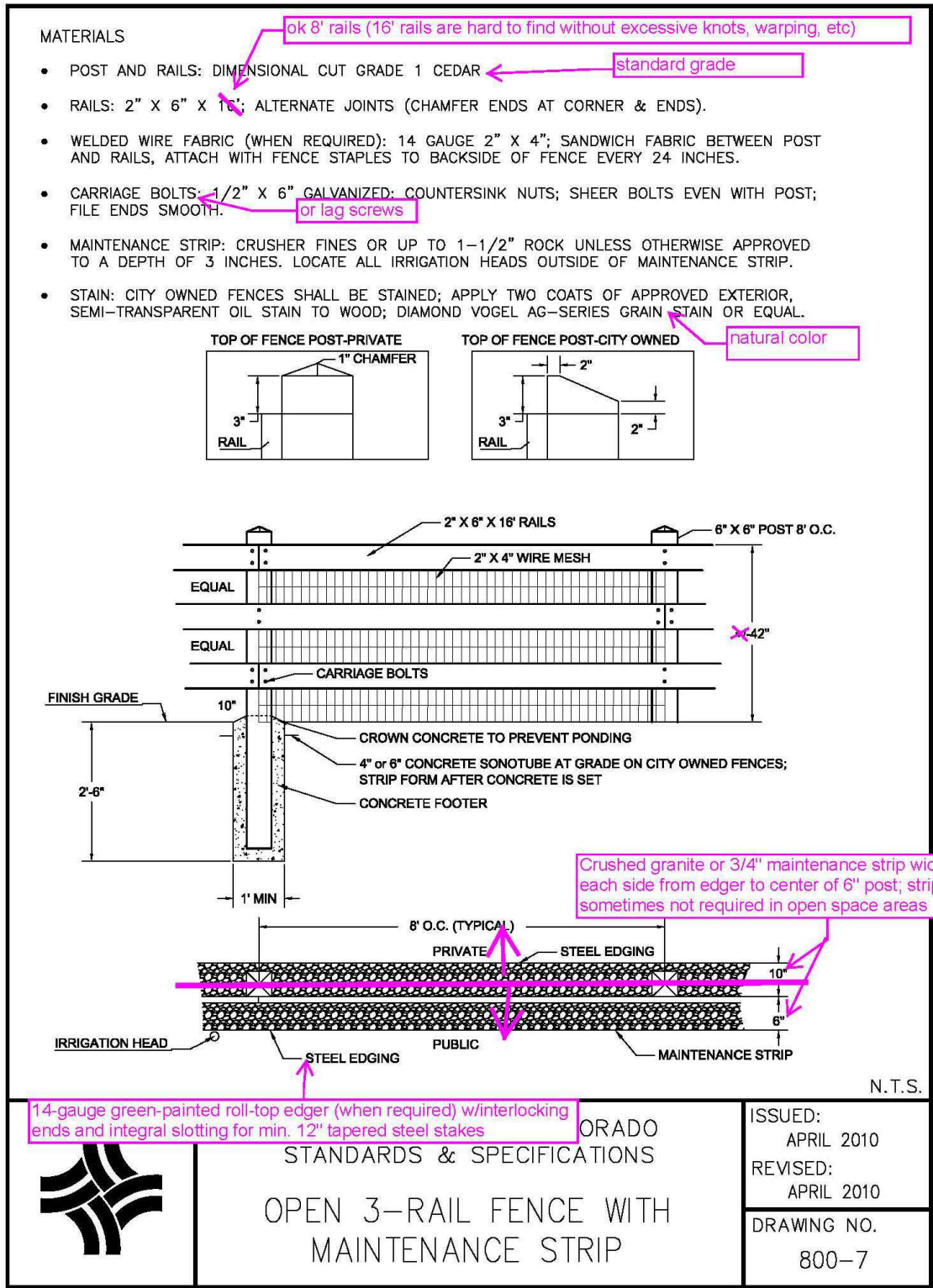
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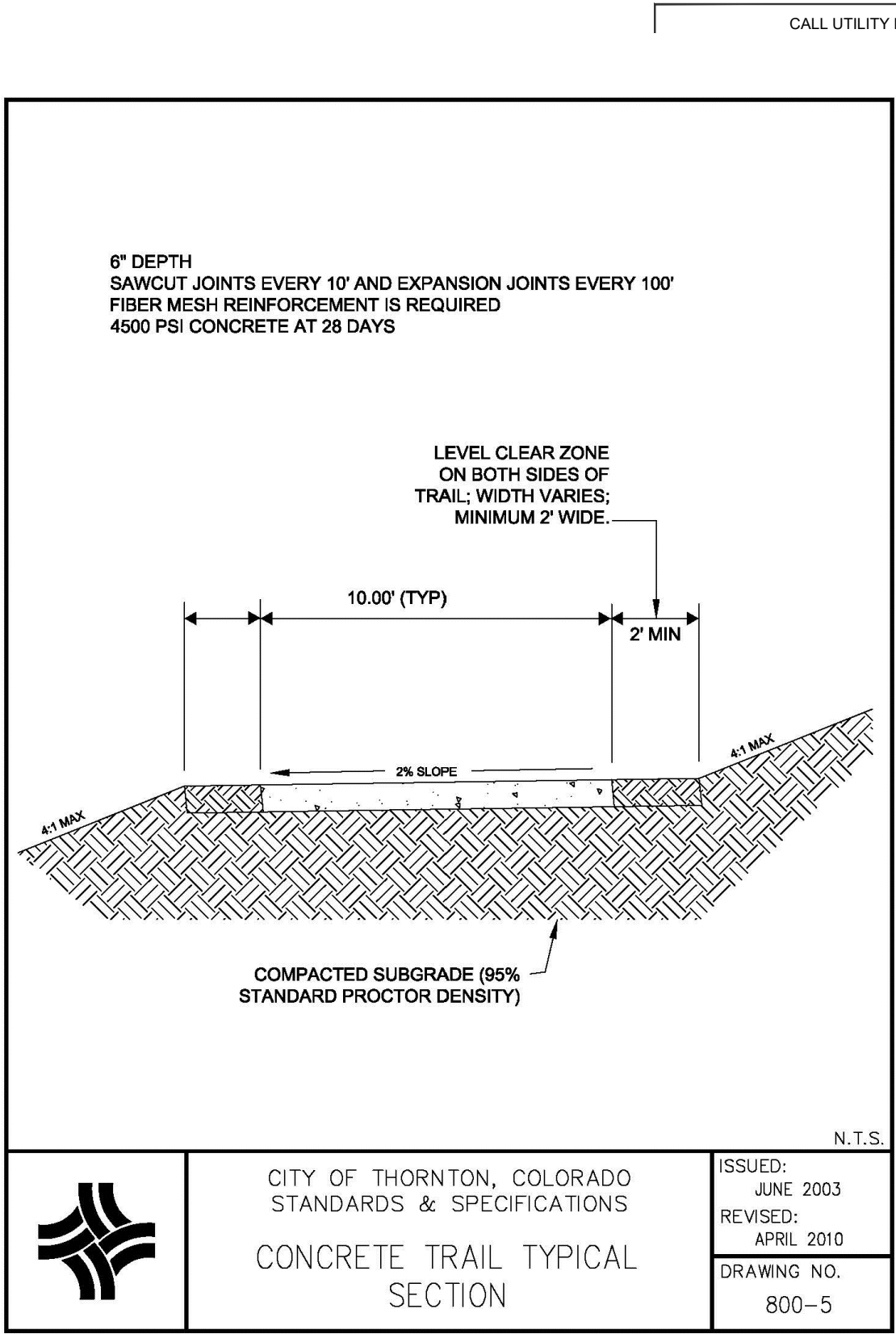
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17



1 OPEN SPACE SIGNAGE - CITY OF THORNTON STANDARD DETAIL

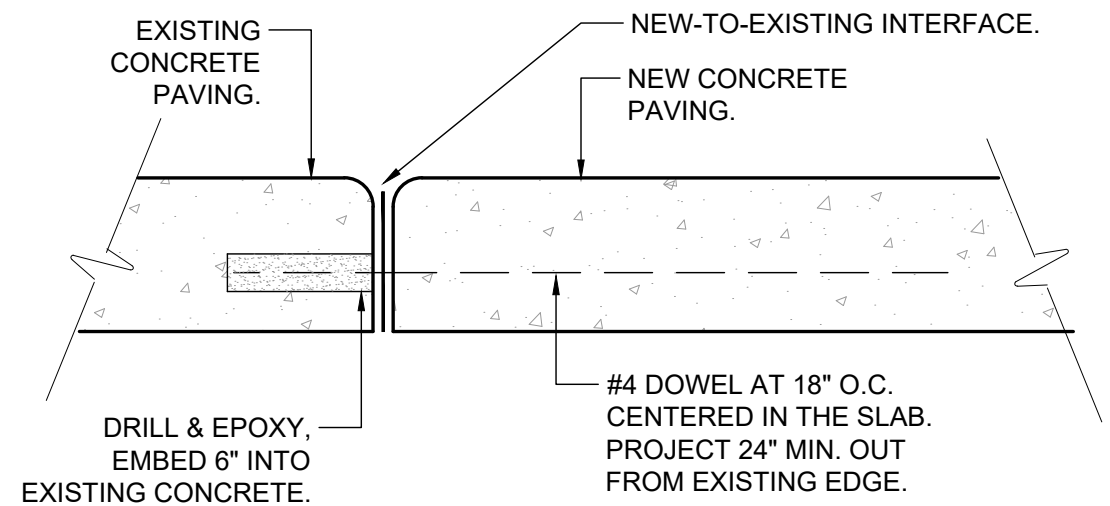


2 OPEN 3-RAIL FENCE - CITY OF THORNTON STANDARD DETAIL



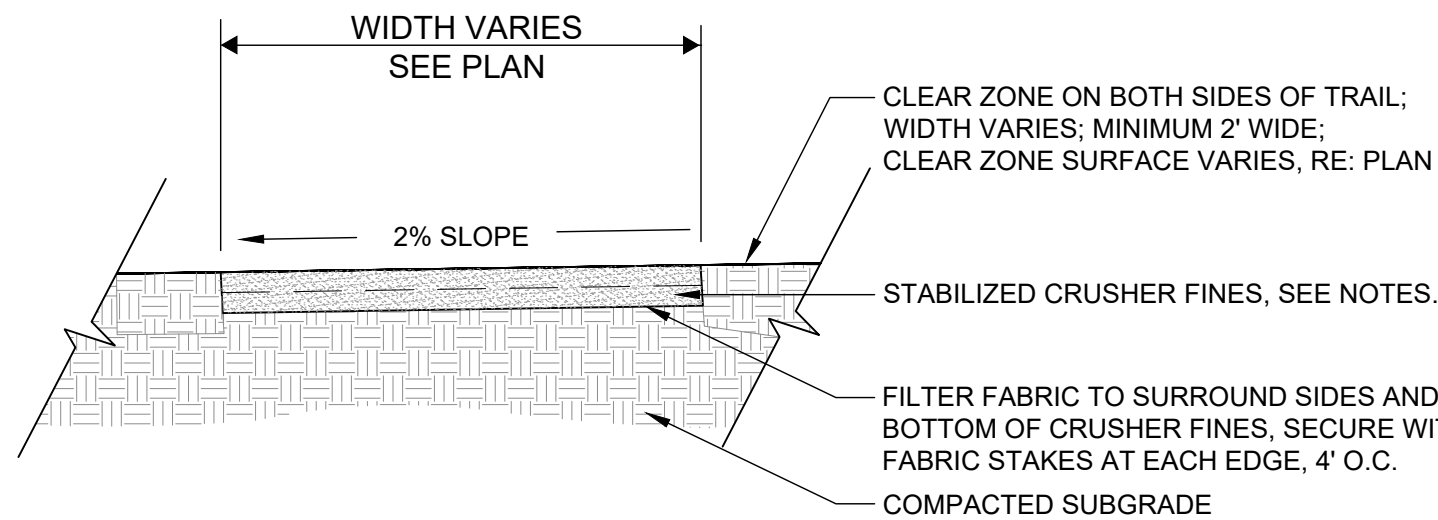
3 CONCRETE TRAIL - CITY OF THORNTON STANDARD DETAIL

- NOTES:
1. PROVIDE SAWCUT CONTROL JOINTS IN NEW CONCRETE PAVING AT 4'-0" O.C.
 2. CLEAN THE INTERFACE WHERE THE NEW CONCRETE WILL TIE INTO THE EXISTING CONCRETE. APPLY BONDING AGENT TO THE EXISTING CONCRETE SURFACE PRIOR TO CONCRETE PLACEMENT.
 3. TEST FOR GOOD COMPACTION UNDER NEW SIDEWALK EXTENSION.



4 CONCRETE JOINT AT EXISTING PAVING

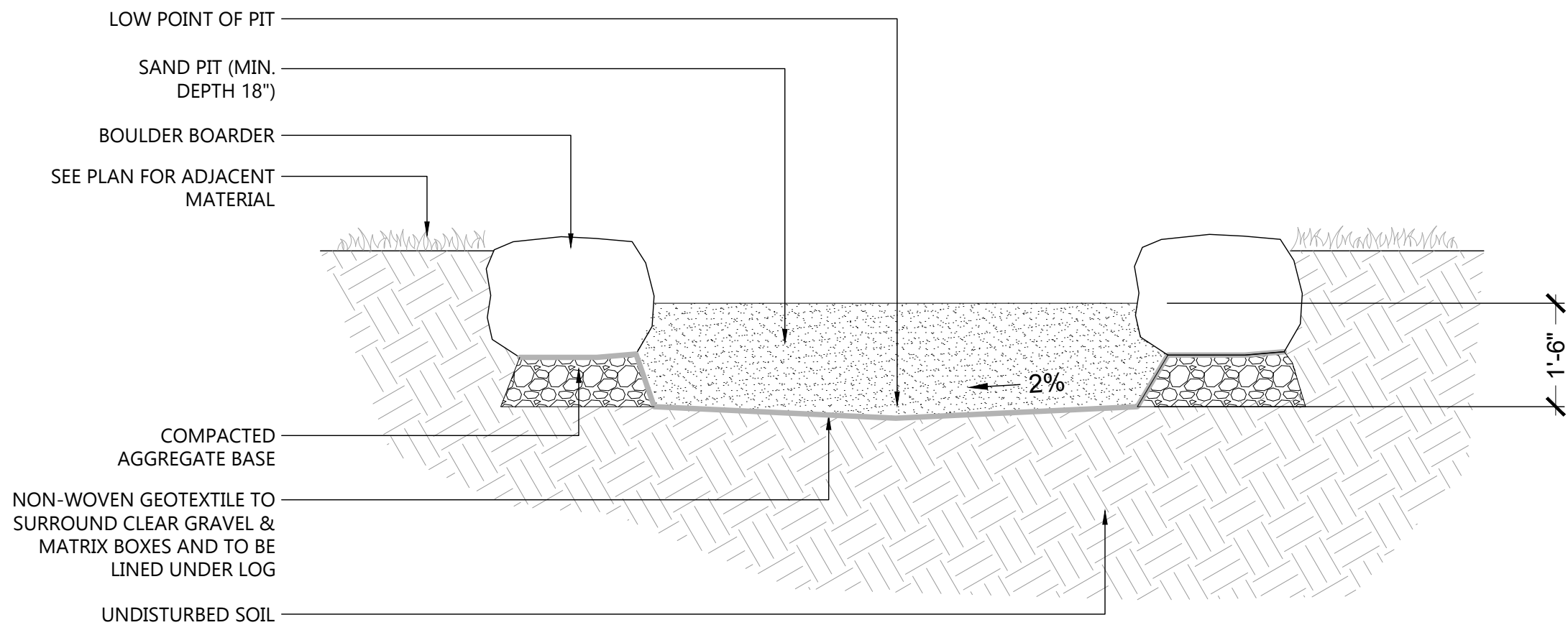
- NOTES:
1. SUPPLY AND INSTALL 1/2 inch CRUSHER FINES TO 6 inch DEPTH, MINUS MINIMUM. INSTALL IN 3 inch LIFTS, COMPACTED. PROVIDE STABILIZED CRUSHER FINES FOR TOP 3 inch LIFT. INSURE POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES.
 2. ALL CRUSHER FINES MATERIAL SHALL BE COLOR GRAY OVER FILTER FABRIC.
 3. EDGING PER CITY DIRECTION.



5 STABILIZED CRUSHER FINES TRAIL

- DRAINAGE NOTES:
1. THE BASE OF THE SAND AREA SHALL BE SLOPED 2% (MIN.) TOWARD CENTER OF PIT.
 2. SINGLE LAYER OF GEOTEXTILE TO BE LAID WITHIN THE EXCAVATED AREA COVERING ALL SIDES OF SAND PIT.
 3. GEOTEXTILE TO BE FOLDED OUTWARD AT THE TOP FROM THE EXCAVATED AREA ALONG THE UNDISTURBED SOIL TO A MINIMUM OF 24" BEYOND EXCAVATED AREA.
 4. BACKFILL ANY VOIDS REMAINING BETWEEN SOIL AND GEOTEXTILE FABRIC WITH HIGH PERFORMANCE BEDDING PRIOR TO FOLDING THE GEOTEXTILE FABRIC BACK.

- SAND NOTES:
1. PLAY SAND = WASHED COARSE GRANITIC SAND.
 2. SAND IS INTENDED FOR USE AS A PLAY MATERIAL AND SHALL COMPLY WITH LOCAL STANDARDS.
 3. DEPTH OF SAND VARIES DUE TO SLOPED BASE (FOR DRAINAGE). SAND DEPTH SHALL BE A TYPICAL DEPTH OF 18".
 4. THE SAND SURFACE SHALL BE APPROXIMATELY 4" BELOW THE ELEVATION OF THE SURROUNDING SURFACES.



6 PLAY SAND

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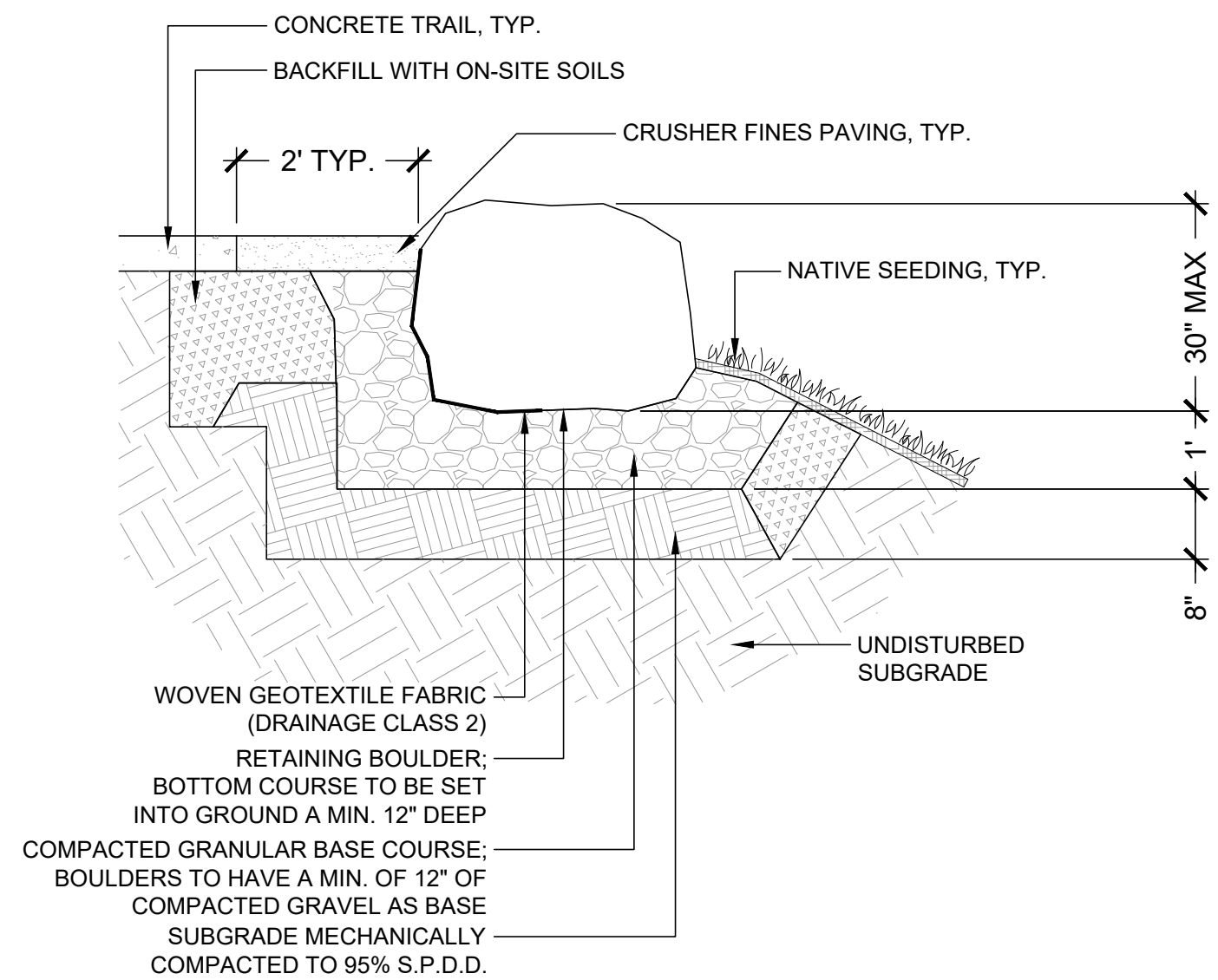
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SHEET TITLE:

SITE DETAILS

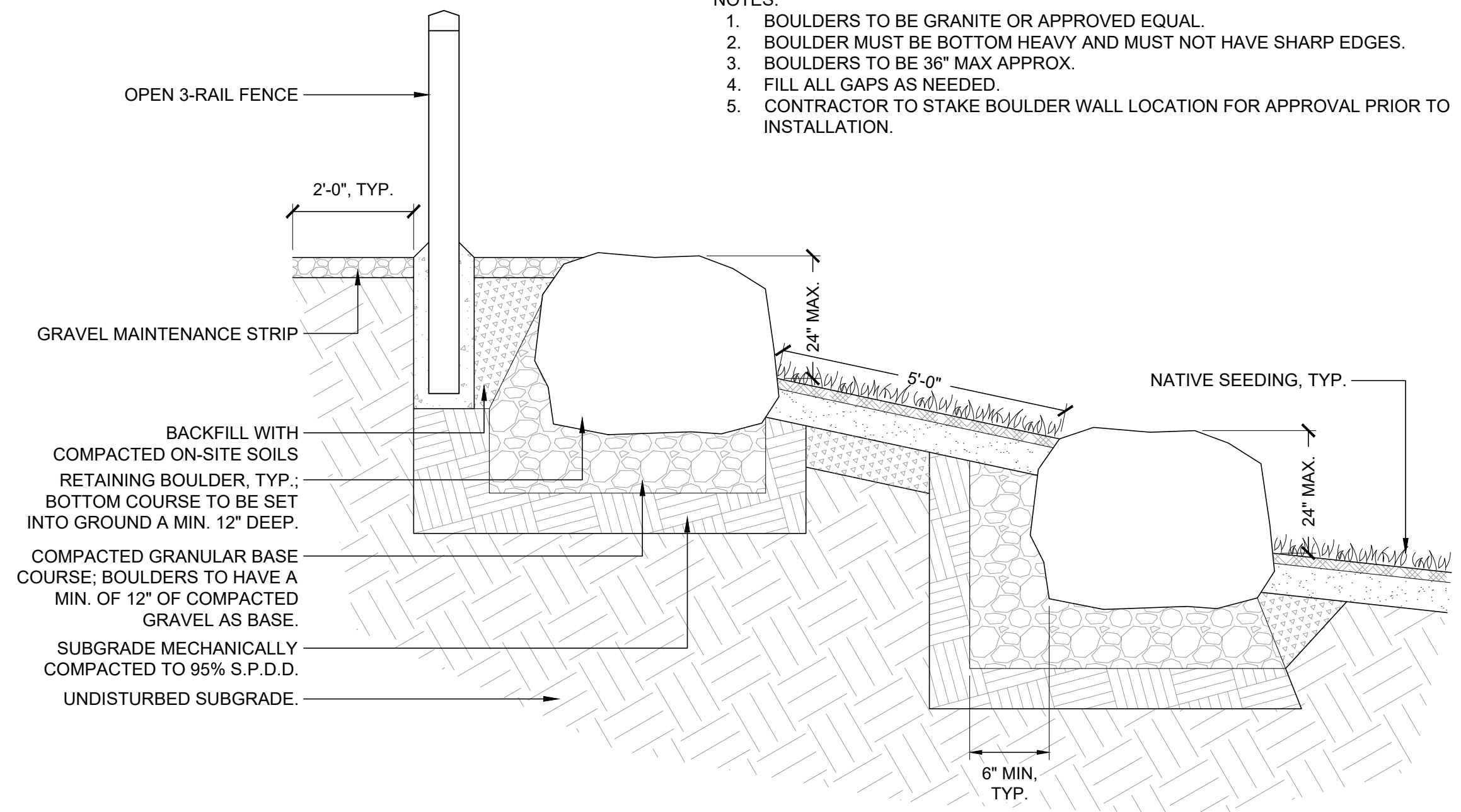
SHEET #:

NOTE:
1. TOP OF BOULDER WALL TO FOLLOW SLOPE
OF CONCRETE TRAIL.



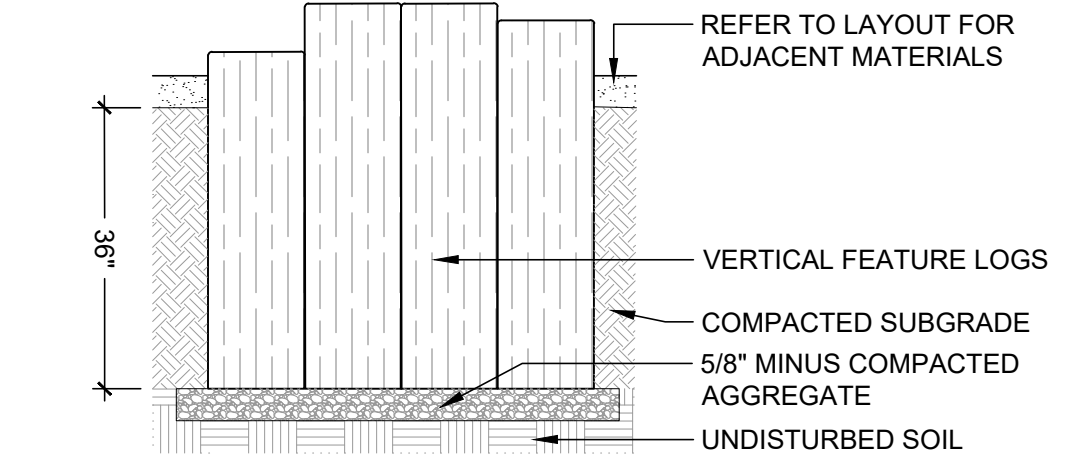
1 BOULDER WALL
NTS S2-04

NOTES:
1. BOULDERS TO BE GRANITE OR APPROVED EQUAL.
2. BOULDER MUST BE BOTTOM HEAVY AND MUST NOT HAVE SHARP EDGES.
3. BOULDERS TO BE 36" MAX APPROX.
4. FILL ALL GAPS AS NEEDED.
5. CONTRACTOR TO STAKE BOULDER WALL LOCATION FOR APPROVAL PRIOR TO INSTALLATION.



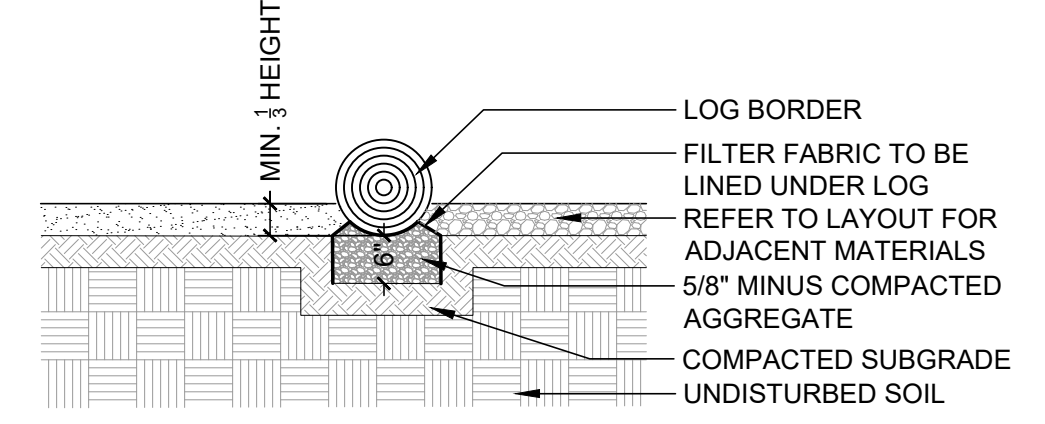
2 TERRACED BOULDER WALL
1/2" = 1'-0" S2-06

NOTES:
1. INSTALL FEATURE LOGS ACCORDING TO THE LAYOUT PLANS.
2. FILTER FABRIC TO BE INSTALLED UNDER THE BORDER LOG TO PREVENT LOOSE FILL MATERIAL FROM ACCESSING THE BORDER BASE.
3. COMPACTED BASE AGGREGATE TO BE AT LEAST 4" DEEP.
4. REFER TO THE GRADING PLANS FOR INDICATED HEIGHTS FROM FINISH GRADE.
5. DIMENSIONS OF LOGS MAY VARY FROM 6"-28" MAX
6. ALL COMPONENTS ARE TO BE MADE FROM REAL LOGS & SALVAGED TREES ON SITE. THE FOLLOWING LOG SPECIES CHOICES ARE ACCEPTABLE FOR THIS PROJECT DUE TO THEIR LONGEVITY:
SILVER MAPLE
RED OR WHITE OAK
DOUGLAS FIR
7. CONTRACTOR SHALL REMOVE BARK ON THE TOPS OF THE LOGS AND CHAMFER EDGES.



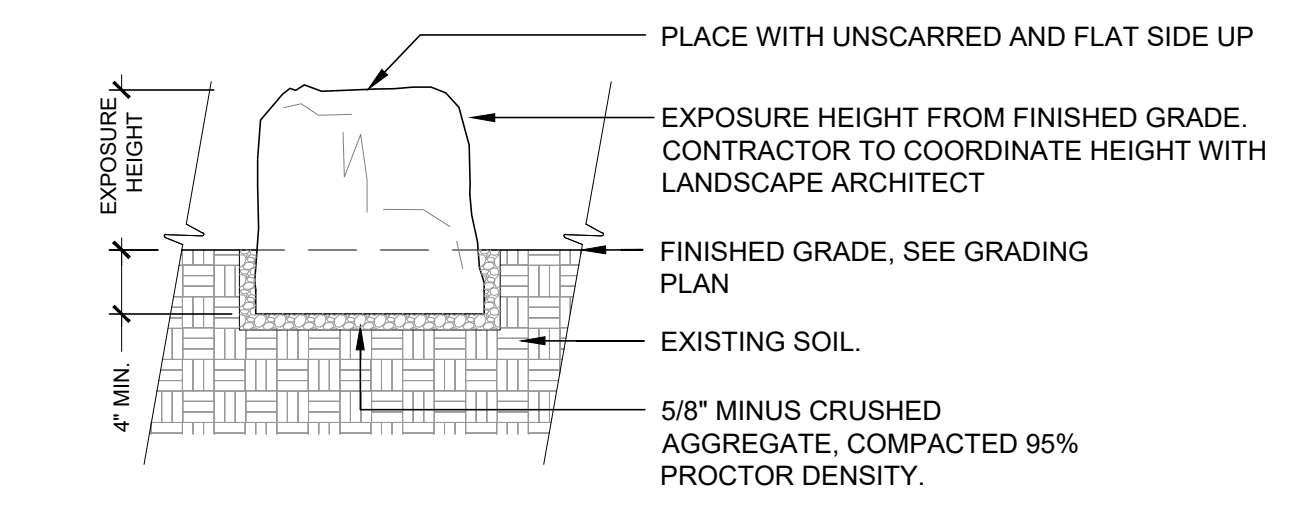
3 VERTICAL FEATURE LOG
NTS S2-02

NOTES:
1. LOGS MUST BE PLACED SO THAT A MINIMUM OF 1/3 OF THE LOGS HEIGHT IS BURIED BELOW FINISHED GRADE OF THE LOWEST SURROUNDING SURFACE.
2. FILTER FABRIC TO BE INSTALLED UNDER THE BORDER LOG TO PREVENT LOOSE FILL MATERIAL FROM ACCESSING THE BORDER BASE.
3. COMPACTED BASE AGGREGATE TO BE AT LEAST 6" DEEP.
4. BASE BID: CITY PROVIDED LOGS
5. ADD ALTERNATE #3: CONTRACTOR PROVIDED LOGS.



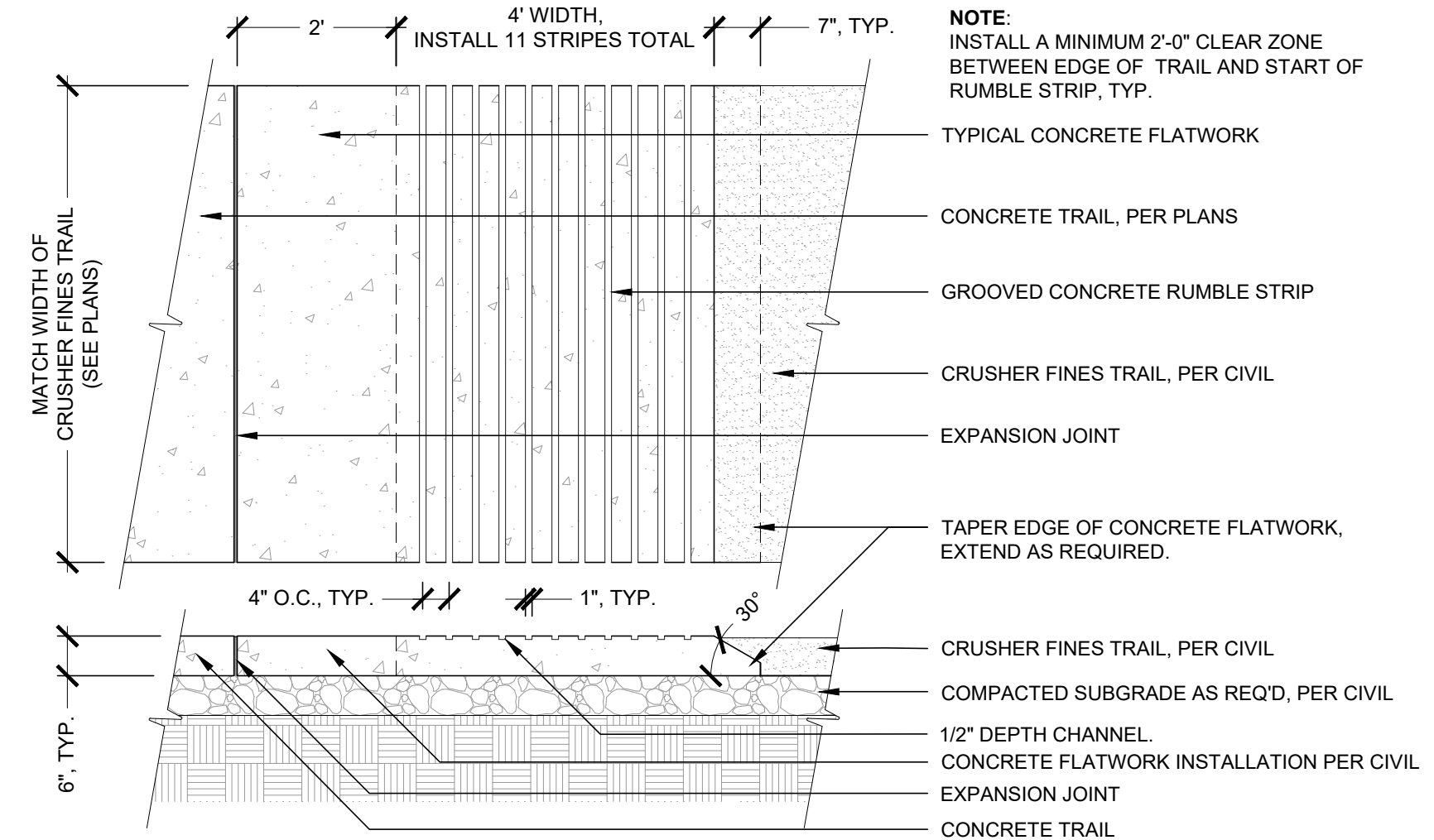
4 LOG BORDER/FEATURE LOG
NTS PF-25

NOTE:
1. BOULDERS TO BE GRAY FAIRPLAY BOULDER, AND COLORADO BUFF SANDSTONE AS INDICATED ON LAYOUT PLAN.
2. DO NOT FRACTURE BOULDERS DURING PLACEMENT, SUCH ACTION WILL BE CAUSE FOR REJECTION.
3. SELECT AND PLACE BOULDERS SO THAT MINIMAL EXCAVATION SCARS ARE VISIBLE
4. PLACE BOULDERS TO CONFIGURATIONS AND LOCATIONS AS SHOWN ON PLANS. OWNER TO APPROVE LOCATION PRIOR TO FINAL SETTING
5. ENSURE EDGES MATCH ON TOP AND FRONT FACES OF ADJACENT BOULDERS.
6. ALL BOULDERS TO BE BURIED A MINIMUM OF 1/3 OF BOULDER DEPTH.
7. ENSURE SELECTED BOULDER HAS CROWN TO SHED WATER FROM TOP TO PREVENT PUDDLING.
8. BOULDER SIZES BELOW ARE THE STANDARD SIZES UNLESS OTHERWISE SPECIFIED ON PLAN.
9. AVERAGE BOULDER SIZE = 36" x 18" x 18" WITH FLAT SIDE UP TO PROVIDE LEVEL SEATING SURFACE TO BE 18"-30".
10. CITY OF THORNTON TO APPROVE BOULDER SELECTION PRIOR TO PURCHASE/INSTALLATION.



5 FEATURE BOULDER
1/4" = 1'-0" S2-03

NOTE:
INSTALL A MINIMUM 2'-0" CLEAR ZONE BETWEEN EDGE OF TRAIL AND START OF RUMBLE STRIP, TYP.



6 CONCRETE RUMBLE STRIP
1/2" = 1'-0" 033020.90-01

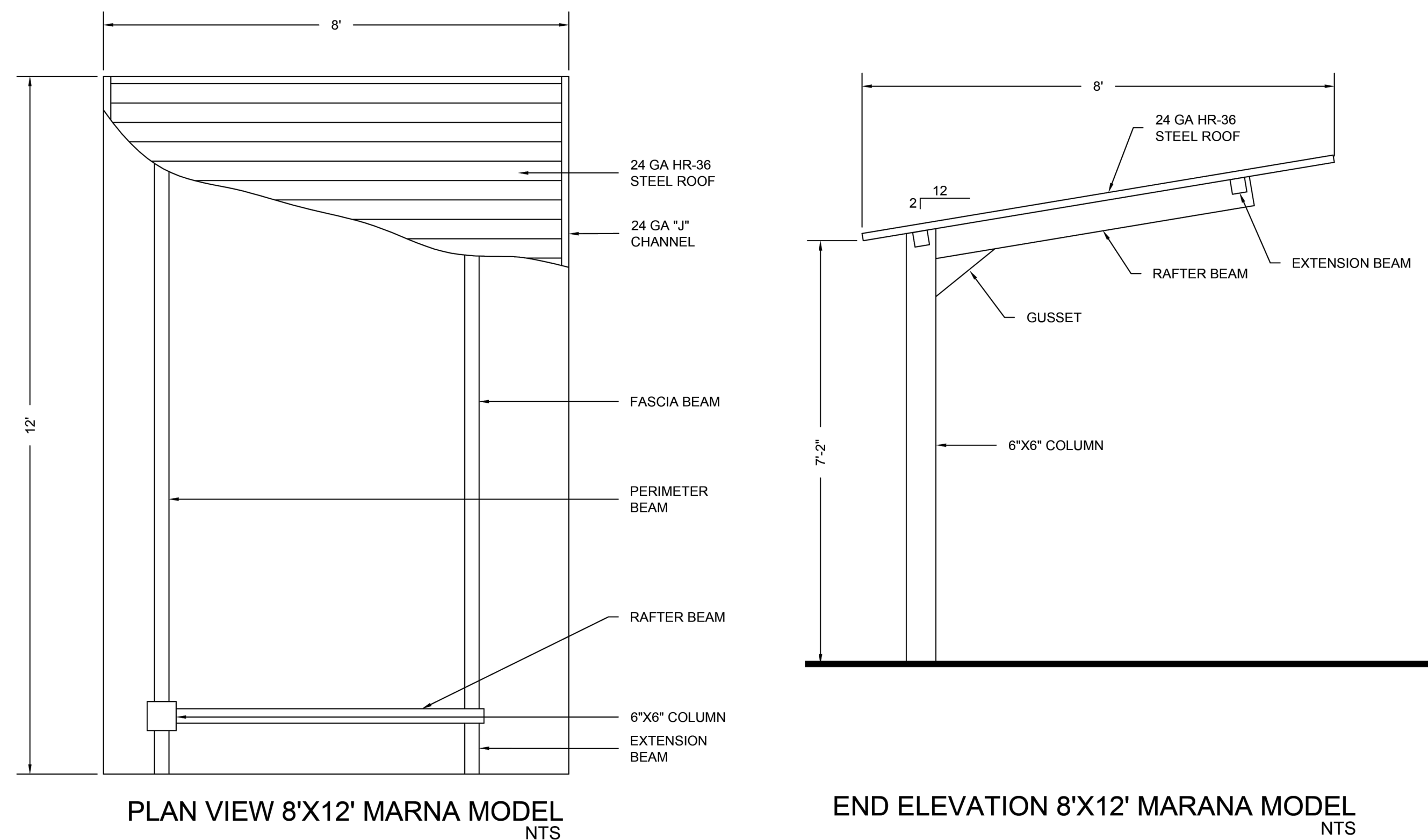
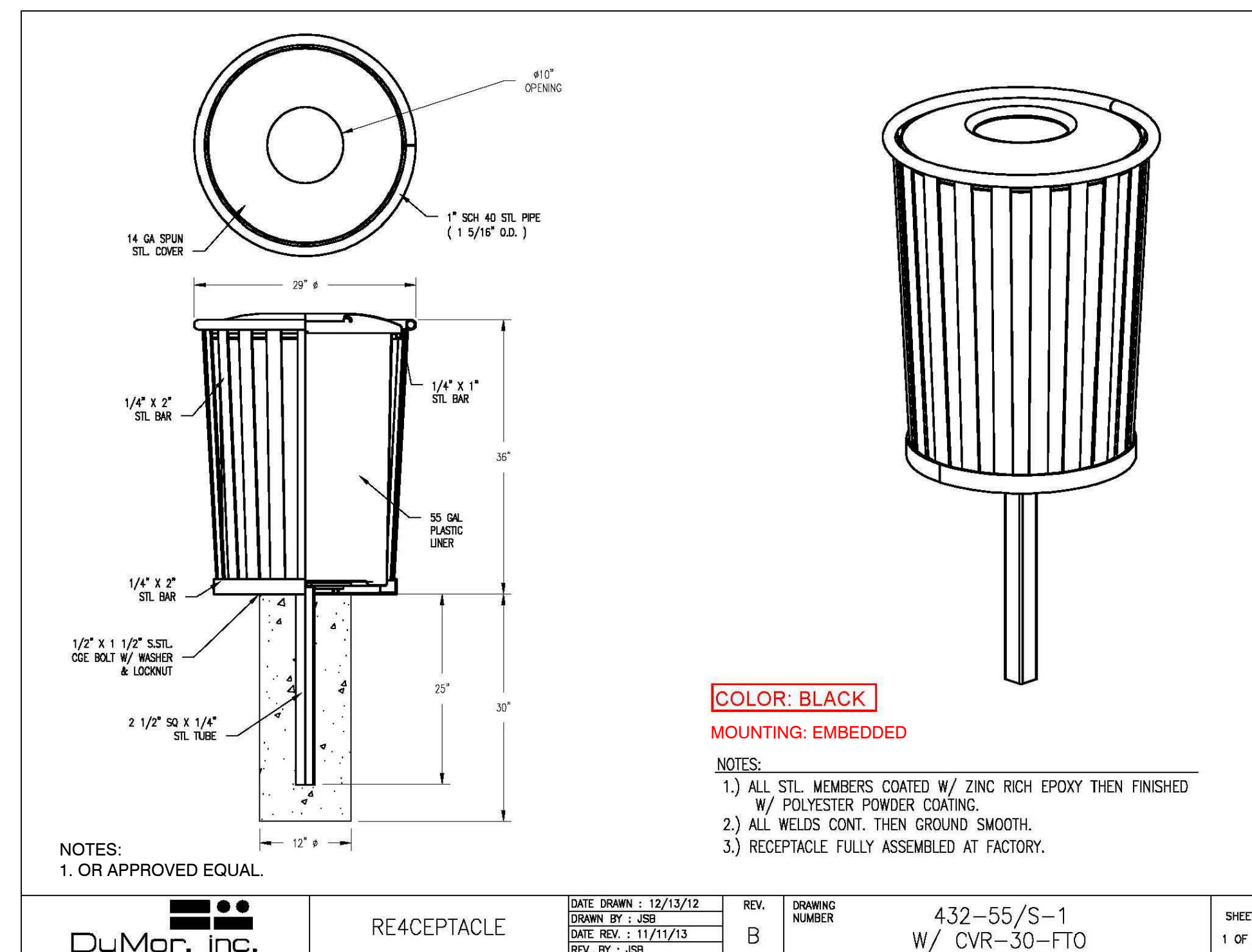
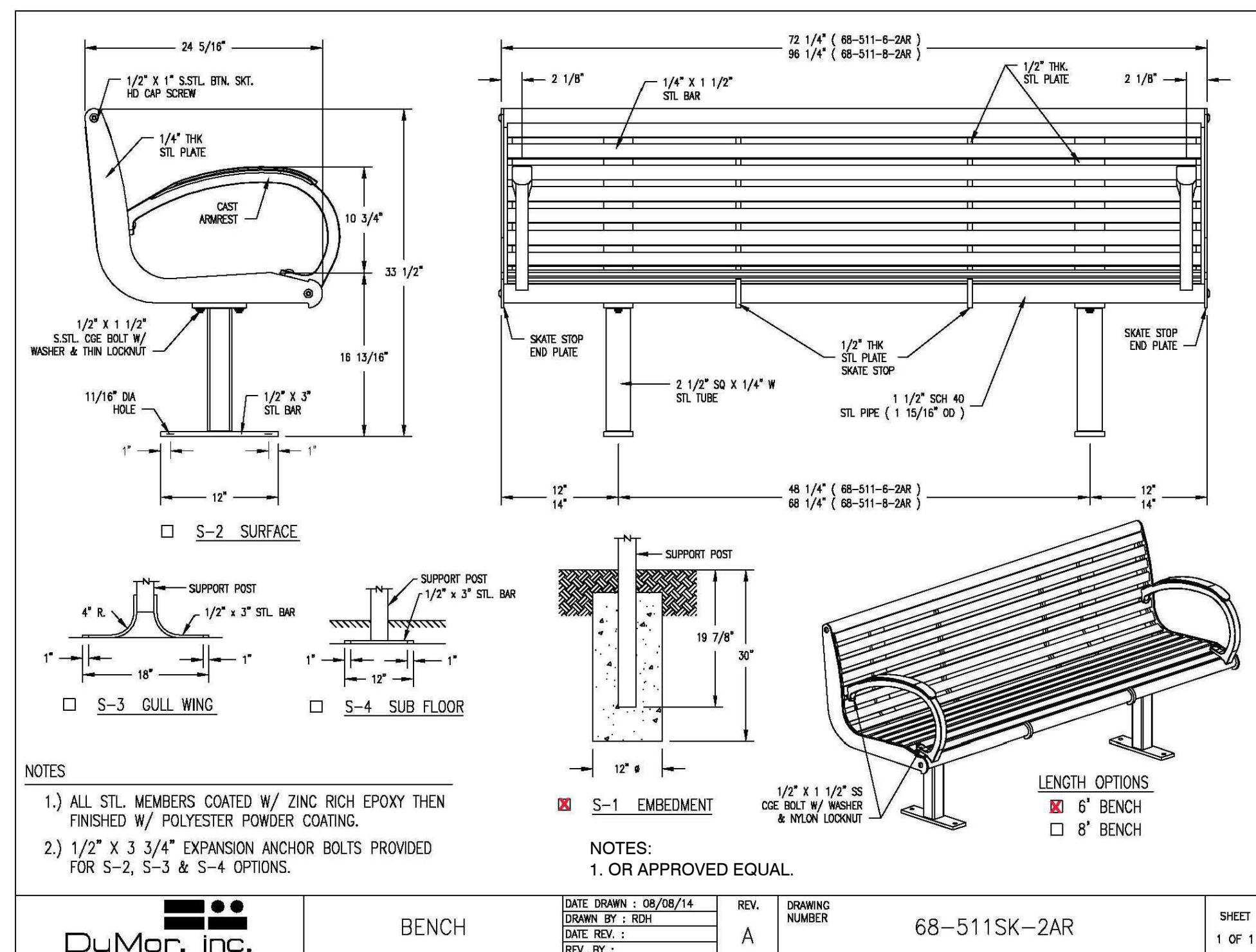
PROJECT:
SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS
11890 HOLLY STREET
SUBMITTAL:
BID SUBMITTAL

PROJECT #:
20-27A
DESIGNED BY:
SS
DRAWN BY:
LR
CHECKED BY:
SS
ORIGINAL DATE:
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
SITE DETAILS

SHEET #:



CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1.800.922.1987
CALL 2- BUSINESS DAYS IN ADVANCE BEFORE YOU DIG,
GRADE, OR EXCAVATE FOR THE MARKING OF
UNDERGROUND MEMBER UTILITIES.



VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:



CLIENT:



9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

STAMP:

PROJECT:

**SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS**
11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

SS

DRAIN BY:

DRAWN BY:
I R

CHECKED BY
CC

33

ORIGINAL DATE: MAR 01 2004

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SHEET TITLE:

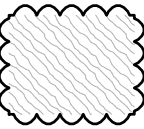
SITE DETAILS

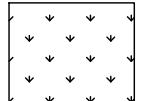
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PLANT SCHEDULE

DECIDUOUS TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	REMARKS
CASP	2	CATALPA SPECIOSA	NORTHERN CATALPA	B & B	2" CAL	PHASE 2, N.I.C.
CEOC	2	CELTIS OCCIDENTALIS	COMMON HACKBERRY	B & B	2" CAL	PHASE 2, N.I.C.
GDES	8	GYMNOCLADUS DIOICA 'ESPRESSO'	KENTUCKY COFFEETREE	B & B	2" CAL	PHASE 2, N.I.C.

SHRUB AREAS	QTY	BOTANICAL NAME	COMMON NAME	CONT @
	12,016 SF	SHRUBSCAPE	PHASE 2, N.I.C.	SF

GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT @
	228,677 SF	NATIVE SEED		SEED

PLANT SCHEDULE - SHRUBSCAPE (PHASE 2)

DECIDUOUS SHRUBS		
BOTANICAL NAME	COMMON NAME	CONT.
ACER GRANDIDENTATUM	WASATCH MAPLE	#5
CARAGANA ARBORESCENS	SIBERIAN PEASHRUB	#5
CERCOCARPUS LEDIFOLIUS	CURL LEAF MOUNTAIN MAHOGANY	#5
CHAMAEBATIARIA MILLEFOLIUM	FERNBUSH	#5
CHRYSOTHAMNUS NAUSEOSUS ALBICAULIS	TALL BLUE RABBITBRUSH	#5
FALLUGIA PARADOXA	APACHE PLUME	#5
FORESTIERA NEOMEXICANA	NEW MEXICO PRIVET	#5
PRUNUS AMERICANA	AMERICAN PLUM	#5
RHUS TRILOBATA	THREE LEAF SUMAC	#5
SORBARIA SORBIFOLIA	URAL FALSE SPIREA	#5

NATIVE SEED

- NATIVE SEED MIX TO BE 'PBSI NATIVE PRAIRIE MIX' AS SUPPLIED BY PAWNEE BUTTES SEED INC OR APPROVED EQUAL. REFER TO THE CITY OF THORNTON GUIDELINES FOR NATIVE SEED IN LANDSCAPE AREAS INSTALLATION, MAINTENANCE, ACCEPTANCE & PREFERRED MIXES.
- AFTER AMENDMENT (BIOSOL PRODUCTS PER THORNTON INSTALLATION & MAINTENANCE STANDARDS), SEED MINIMUM 18 LBS (IF DRYLAND) TO 30 LBS (IF IRRIGATED) PLS/ACRE OR 3 LBS PLS/1000 SF.
- NATIVE SEED AREAS SHALL NOT RECEIVE COMPOST. BIOSOL TO BE ADDED TO HYDROMULCH
- CHEMICAL ERADICATION OF WEEDS BEFORE SEEDING IS REQUIRED.
- NO TILLING IS REQUIRED; DRILL INTO WEED STUBBLE AND HAND SEED AS NECESSARY.

(29%) BLUE GRAMA
(25%) BUFFALOGRASS
(5%) GREEN NEEDLEGRASS
(20%) SIDEOATS GRAMA
(20%) WESTERN WHEATGRASS
(1%) SAND DROPSEED

FLOWER MIX - ADDITIONAL PER ACRE
PRAIRIE CONEFLOWER 1 LB/ACRE
BLUE FLAX 2 LB/ACRE

LANDSCAPE NOTES

- SOIL:
- ALL LANDSCAPE AREAS SHALL RECEIVE SOIL PREPARATION AS SPECIFIED.
 - SOIL PREPARATION FOR LANDSCAPE AREAS TO RECEIVE NATIVE SEED SHALL BE AMENDED WITH 1,200 - 1,800LBS/PER ACRE BIOSOL (AS DETERMINED BY SOIL TEST) PER GUIDELINES.
 - SEE AMENDMENT REQUIREMENT TABLE FOR SOIL AMENDMENT/BIOSOL QUANTITY REQUIREMENTS.

- MULCH (PHASE 2, N.I.C.):
- ALL PLANTING BEDS SHALL HAVE A MINIMUM 3" DEPTH OF DOUBLE SHREDDED WESTERN RED CEDAR 'GORILLA HAIR' MULCH.
 - TREES IN NATIVE SEED AREAS - 4" DEPTH & 8' DIAMETER RING OF DOUBLE SHREDDED WESTERN RED CEDAR 'GORILLA HAIR' MULCH.

- IRRIGATION (PHASE 2, N.I.C.):
- ALL LANDSCAPE AREAS SHALL BE IRRIGATED BY A PERMANENT, AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.
 - THE CONTROLLER SHALL INCLUDE A RAIN SHUT-OFF.
 - THE SYSTEM SHALL BE PROPERLY ZONED TO SEPARATE PLANT MATERIAL BY WATER REQUIREMENT.

- PRE-CONSTRUCTION MEETING:
- A PRE-CONSTRUCTION MEETING SHALL BE REQUIRED BETWEEN THE CONTRACTOR AND OWNER BEFORE START OF CONSTRUCTION.

- SEED
- ALL NATIVE SEED MIX AREAS SHALL BE SEEDED WITH SEED MIXES AND RATES AS OUTLINED PER THE CITY OF THORNTON NATIVE SEED GUIDELINES.
 - CONTRACTOR TO USE SEED MIX IN ANY AREAS OF DISTURBANCE THAT ARE NOT INDICATED ON THE PLANTING PLANS.

- PLANTING NOTES (PHASE 2, N.I.C.)
- PLANT DECIDUOUS TREES AND SHRUBS MINIMUM 10' (FOR MOW MAINTENANCE) FROM SIDEWALKS, BED EDGES, FENCES AND BUILDINGS.
 - ALL DECIDUOUS TREES SHALL BE BALLED AND BURLAPPED WITH FULL HEADS, STRAIGHT TRUNKS, AND SINGLE LEADERS UNLESS OTHERWISE NOTED.
 - ALL TREES TO BE TAGGED BY CITY REPRESENTATIVE.
 - ALL PLANTS TO BE THOROUGHLY WATERED IN, BY HAND AT TIME OF PLANTING.
 - CONTRACTOR SHALL STAKE PLANT MATERIAL LOCATIONS FOR APPROVAL PRIOR TO INSTALLATION.
 - ALL SHRUBSCAPE AREAS TO BE DELINEATED WITH 3-9 ORANGE TOPPED STEEL STAKES (HOME DEPOT OR APPROVED EQUAL).
 - LANDSCAPE FABRIC AND EDGING IS NOT PERMITTED PER CITY OF THORNTON.

AMENDMENT REQUIREMENTS

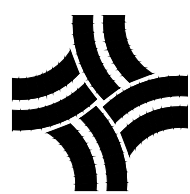
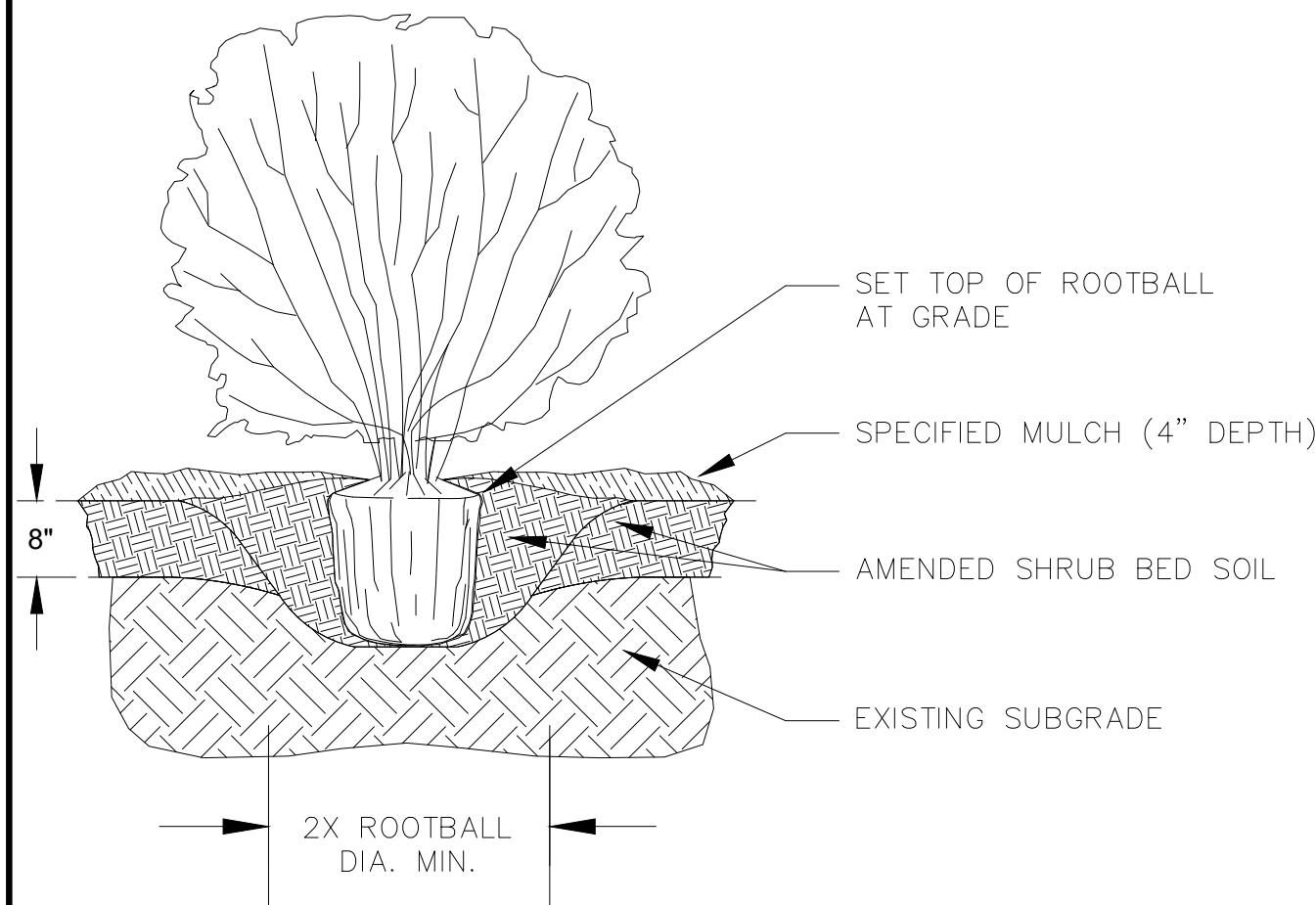
DESCRIPTION	S.F./L.F./CAL.	FORMULA	TOTAL QTY. REQ.
NATIVE SEED AREAS	228,677 SF	1,200-1,800 LBS BIOSOL ACRE	8,000 LBS BIOSOL

PLANT SHRUBS 1/2 MATURE WIDTH OR 4' FROM EDGE OF WALK, CURB OR EDGING.

ENTIRE SHRUB BED AREA SHALL BE AMENDED WITH 4 CUBIC YARDS (6 CUBIC YARDS FOR CITY MAINTAINED PROJECTS) OF CLASS I OR CLASS II COMPOST PER 1000 S.F. TILLED TO DEPTH OF 8".

IF PLANT IS ROOT BOUND AND HAS CIRCLING ROOTS, SHEAR 1/2" OF THE ROOTMASS OFF OF ALL SIDES AND BOTTOM.

DO NOT PLANT SHRUBS HIGHER THAN SURROUNDING GRADE. BACKFILL SOIL SHOULD BE PULLED OVER TOP OF ROOTBALL (NO MORE THAN 1") TO PREVENT MOISTURE WICKING AND TO ALLOW ROOTS TO GROW INTO SURROUNDING SOIL.

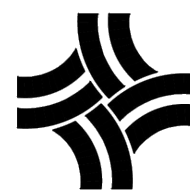
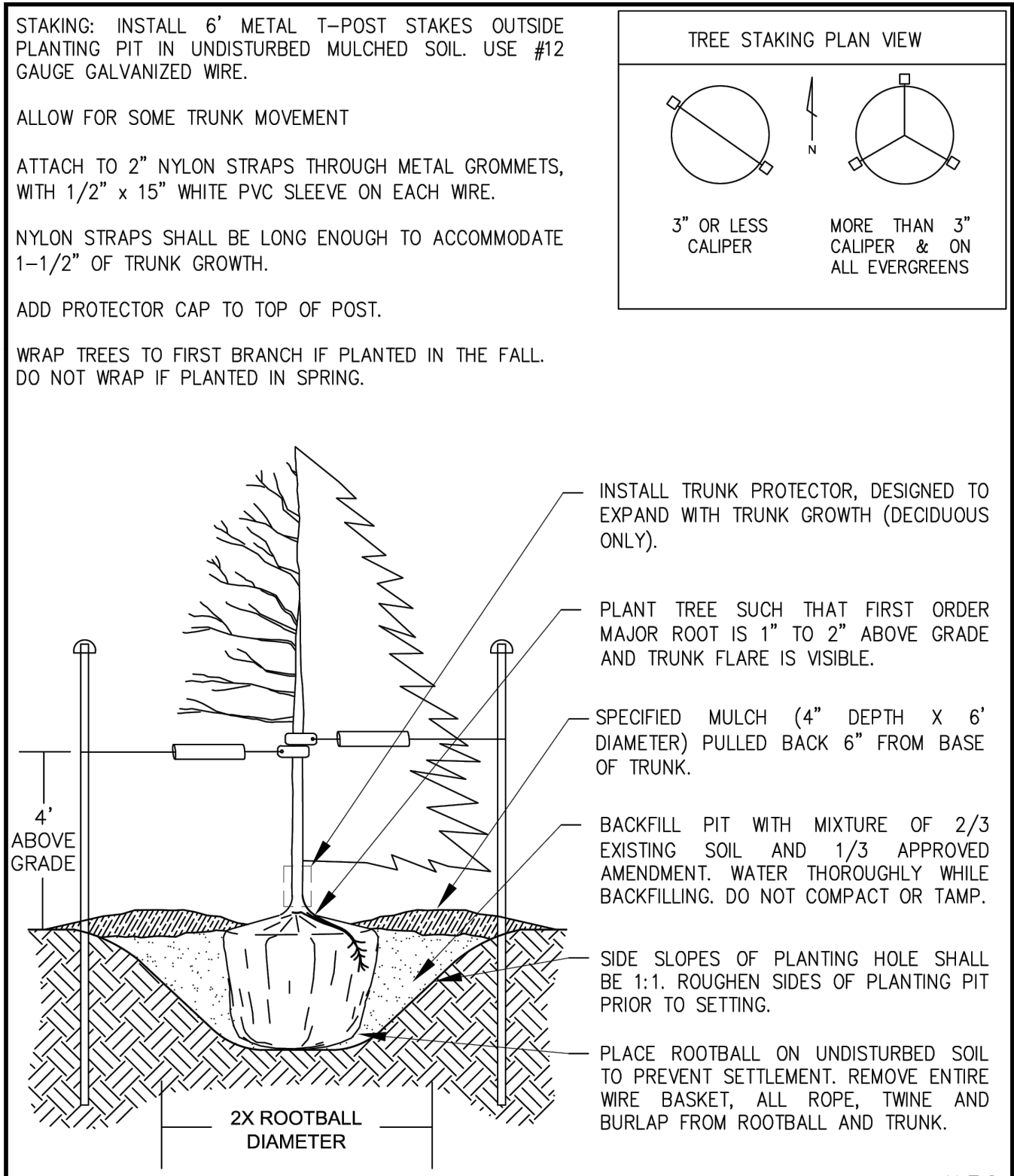


CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS

SHRUB PLANTING DETAIL

ISSUED:
MARCH 1996
REVISED:
APRIL 2010
DRAWING NO.
800-2

1 SHRUB PLANTING DETAIL - PHASE 2 N.I.C.



CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS

DECIDUOUS AND EVERGREEN TREE
PLANTING DETAIL

ISSUED:
MARCH 1996
REVISED:
APRIL 2010
DRAWING NO.
800-1A

2 TREE PLANTING DETAIL - PHASE 2 N.I.C.

NOTE: TREES IN NATIVE SEED AREAS TO HAVE AN 8' MULCH RING.



CONSULTANT:



CLIENT:



9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

STAMP:

PROJECT:

SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS
11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

SS

DRAWN BY:

LR

CHECKED BY:

SS

ORIGINAL DATE:

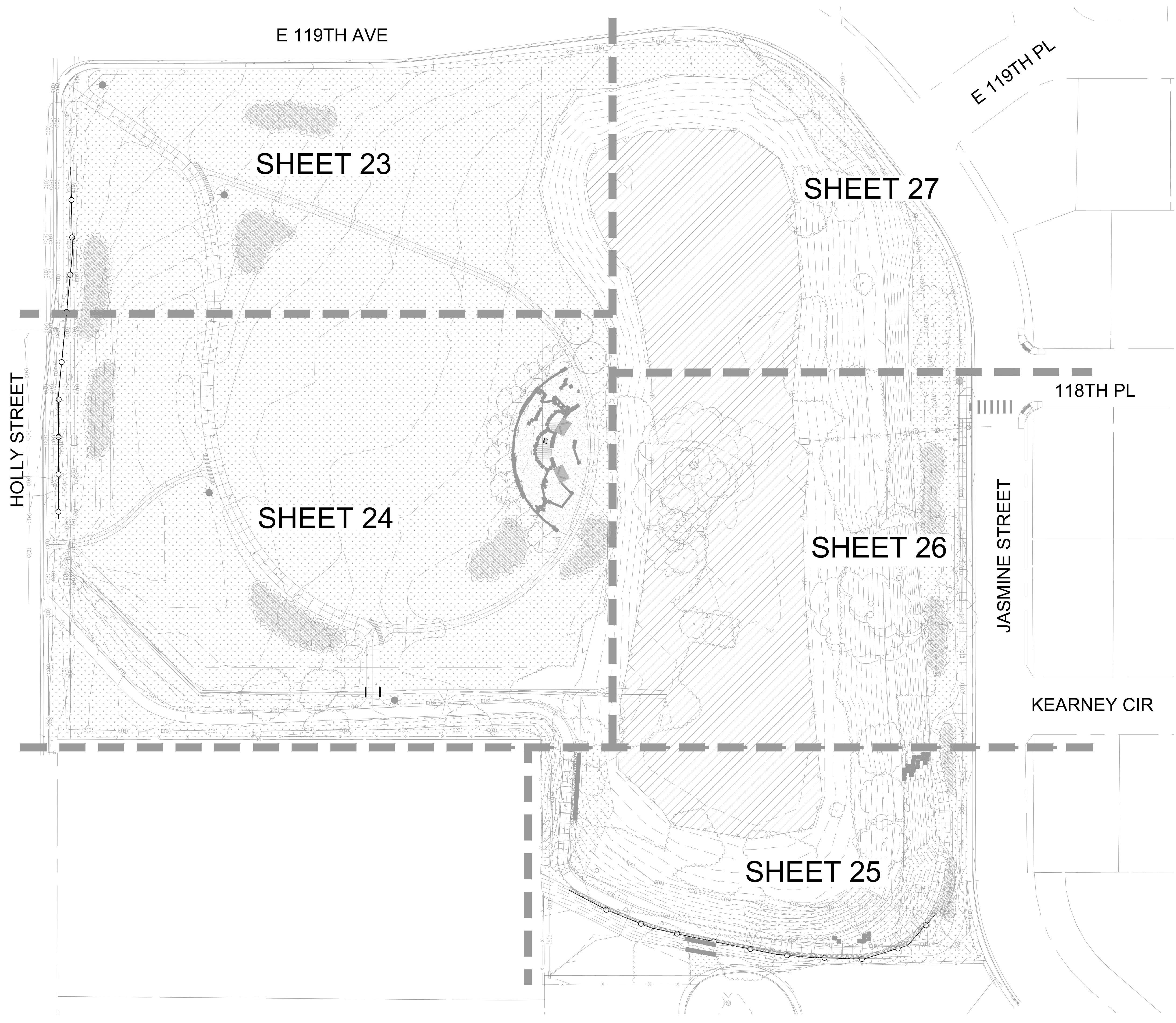
MARCH 22, 2024

#	REVISION	DATE

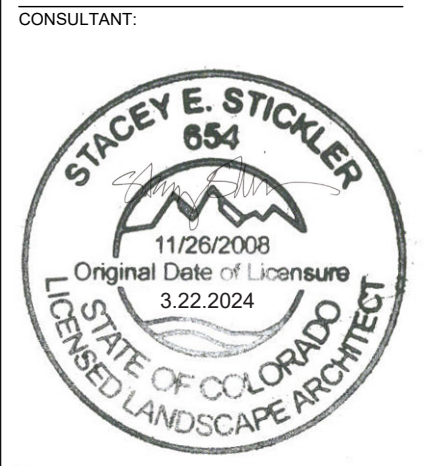
SHEET TITLE:

PLANTING
NOTES &
DETAILS

SHEET #:



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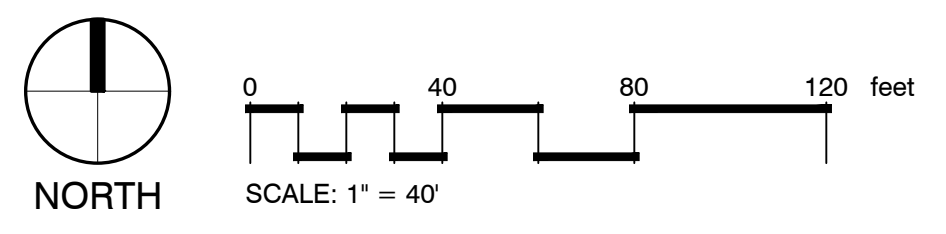
PROJECT:
SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET
SUBMITTAL:
BID SUBMITTAL

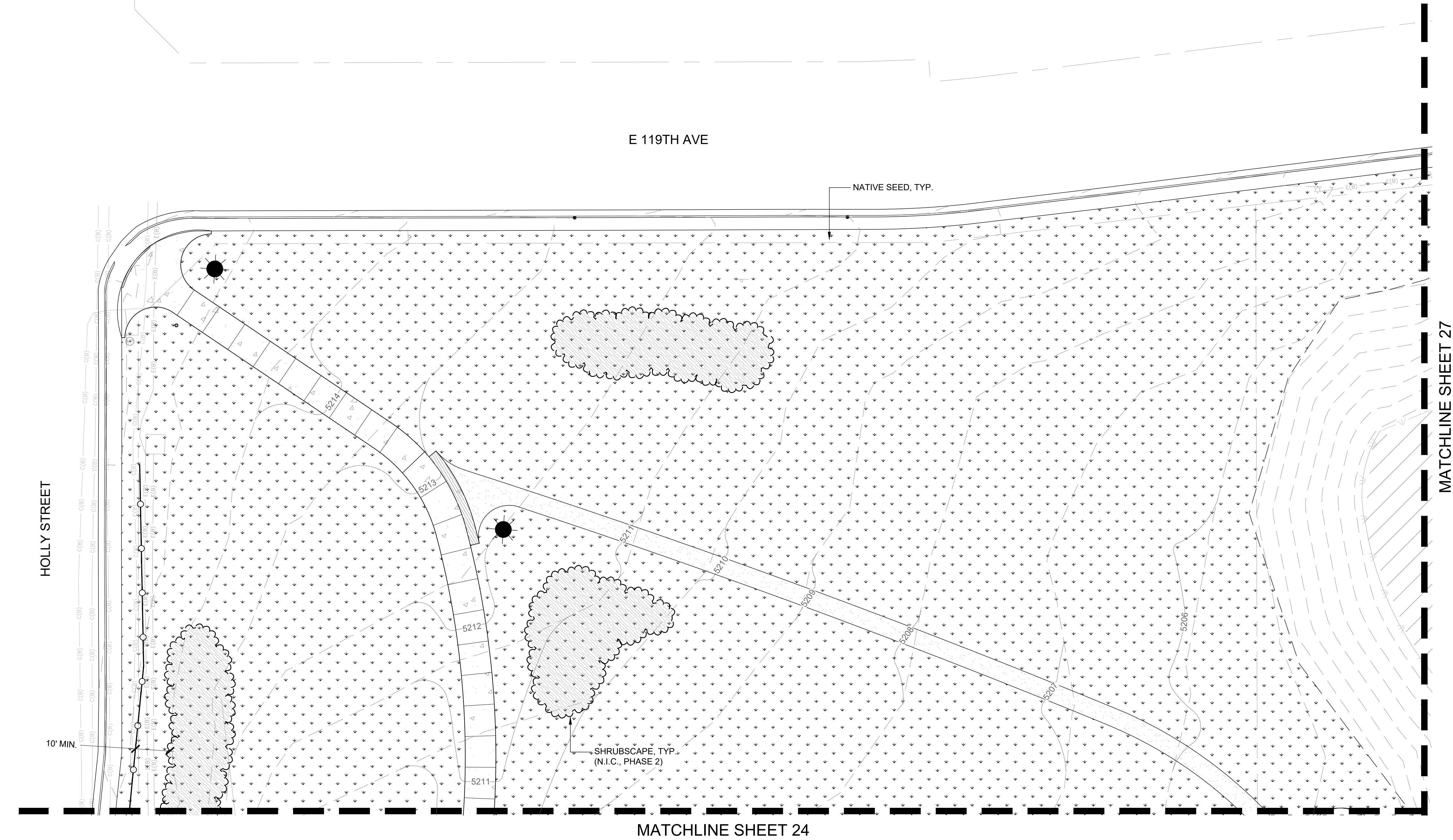
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MARCH 22, 2024

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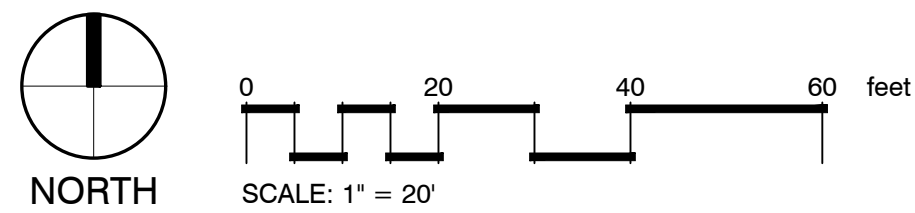
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OVERALL PLANTING PLAN

SHEET #:
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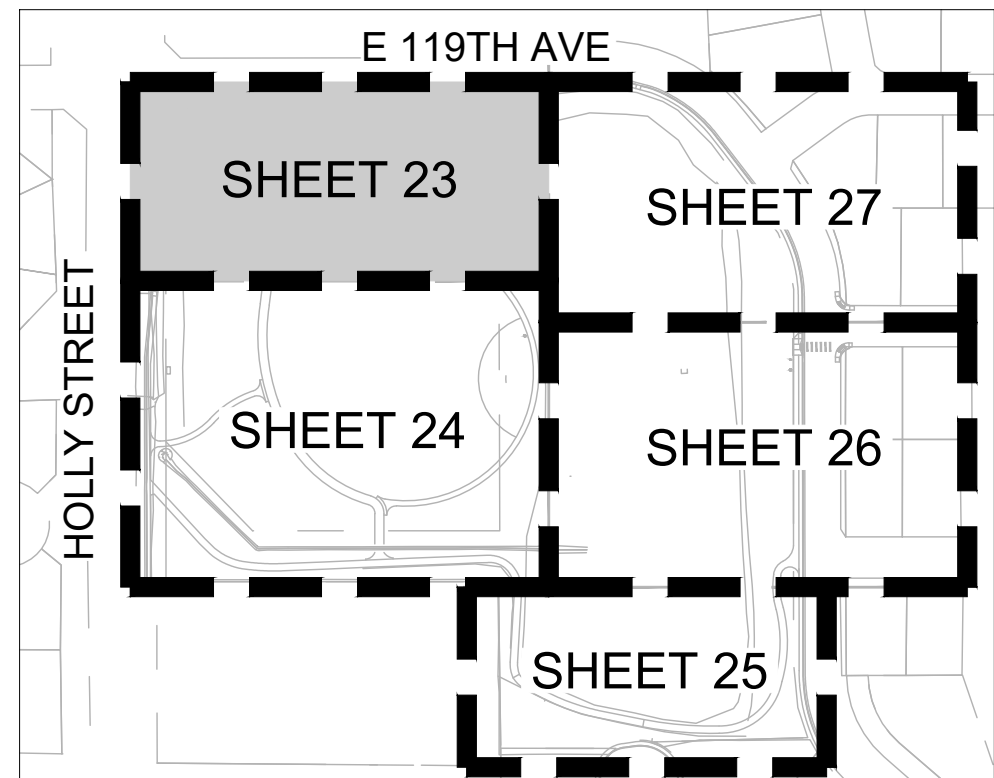




1 PLANTING PLAN



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KEY MAP

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING VEGETATION TO REMAIN
- PROPOSED DECIDUOUS TREE (N.I.C., PHASE 2)
- PROPERTY BOUNDARY
- OPEN 3-RAIL FENCE
- LIMIT OF SEED
- EXISTING WETLAND
- CONCRETE
- STABILIZED CRUSHER FINES
- SAND PLAY
- NATIVE SEED
- PROPOSED SHRUBSCAPE (N.I.C., PHASE 2)
- TRAIL LIGHT
- SOLAR LIGHT
- 6' STEEL BENCH
- LOG BORDER/FEATURE LOG
- BOULDERS
- LANDSCAPE BOULDERS
- VERTICAL FEATURE LOG
- SHADE STRUCTURE
- TRASH RECEPTACLE
- PET WASTE DISPOSAL

NOTE: TREES AND SHRUBSCAPES ARE SHOWN FOR INFORMATION ONLY.

VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:

CLIENT:

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THORNTON, CO 80229
(303) 538-7200

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PROJECT:

SKYLAKE RANCH OPEN LAND IMPROVEMENTS

11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

SS

DRAWN BY:

LR

CHECKED BY:

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MARCH 22, 2024

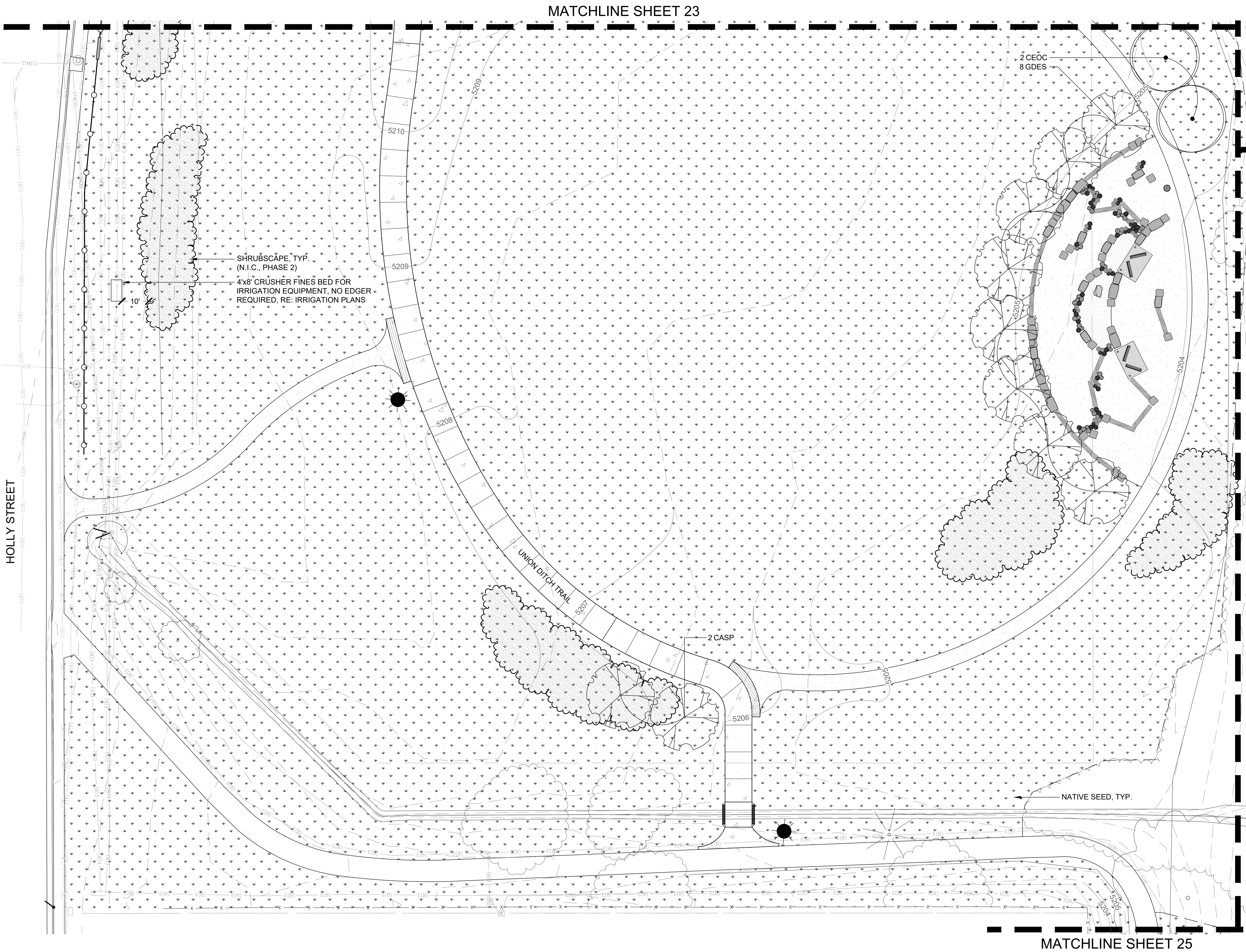
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SHEET TITLE:

PLANTING PLAN

SHEET #:

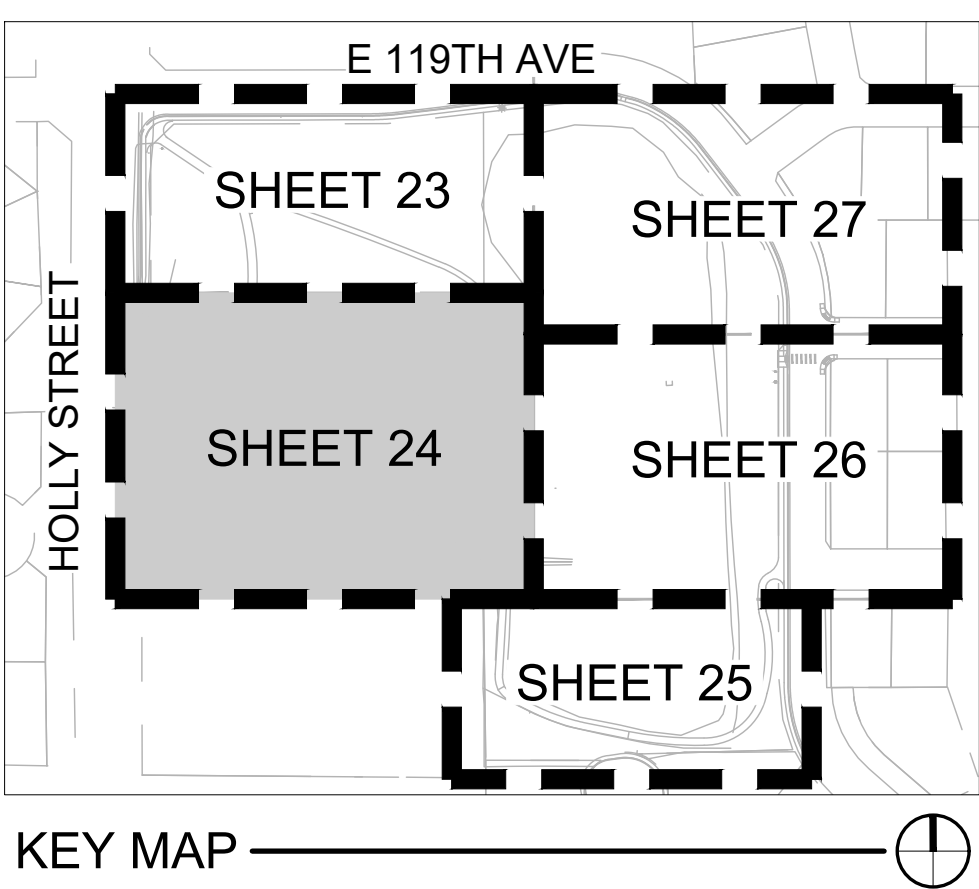
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1 PLANTING PLAN

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VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:

STACEY E. STICKLER
654
11/26/2008
Original Date of Licensure
3.22.2024
LICENSED LANDSCAPE ARCHITECT
STATE OF COLORADO

CLIENT:

City of Thornton
9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

STAMP:

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SS

DRAWN BY:

LR

CHECKED BY:

SS

ORIGINAL DATE:

MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:

PLANTING PLAN

SHEET #:

24

MATCHLINE SHEET 24

MATCHLINE SHEET 27

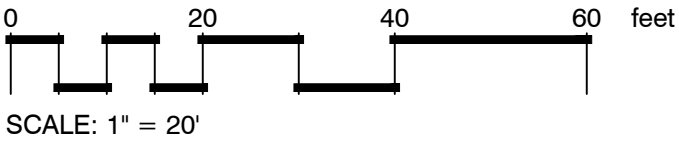
118TH PL

JASMINE STREET

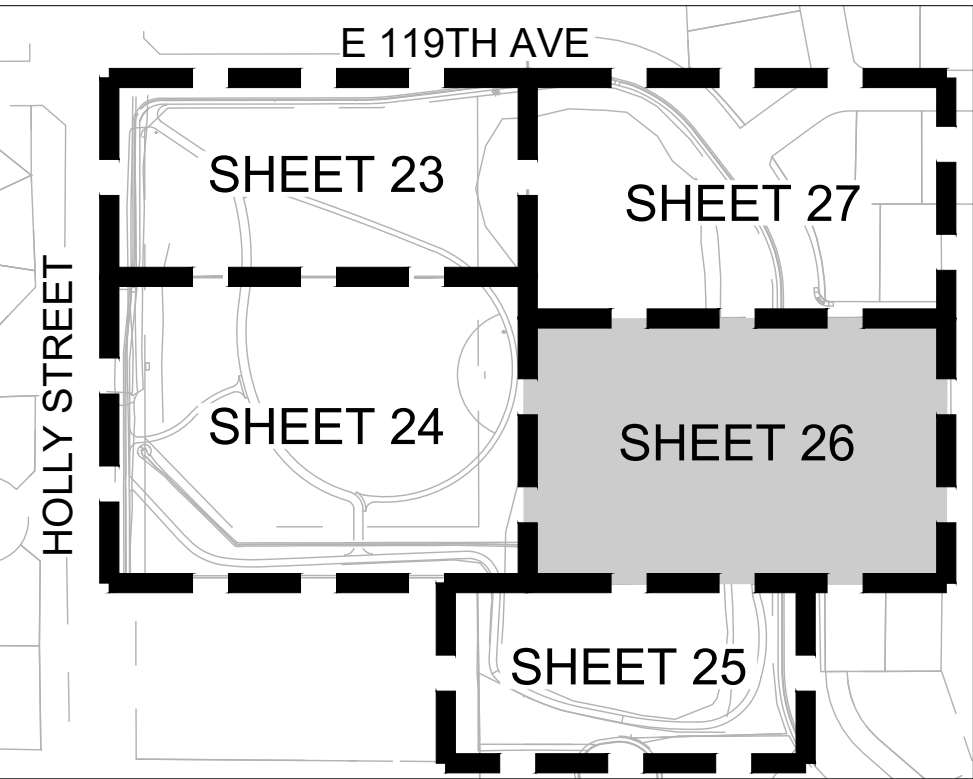
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MATCHLINE SHEET 25

1 PLANTING PLAN



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RANCH OPEN
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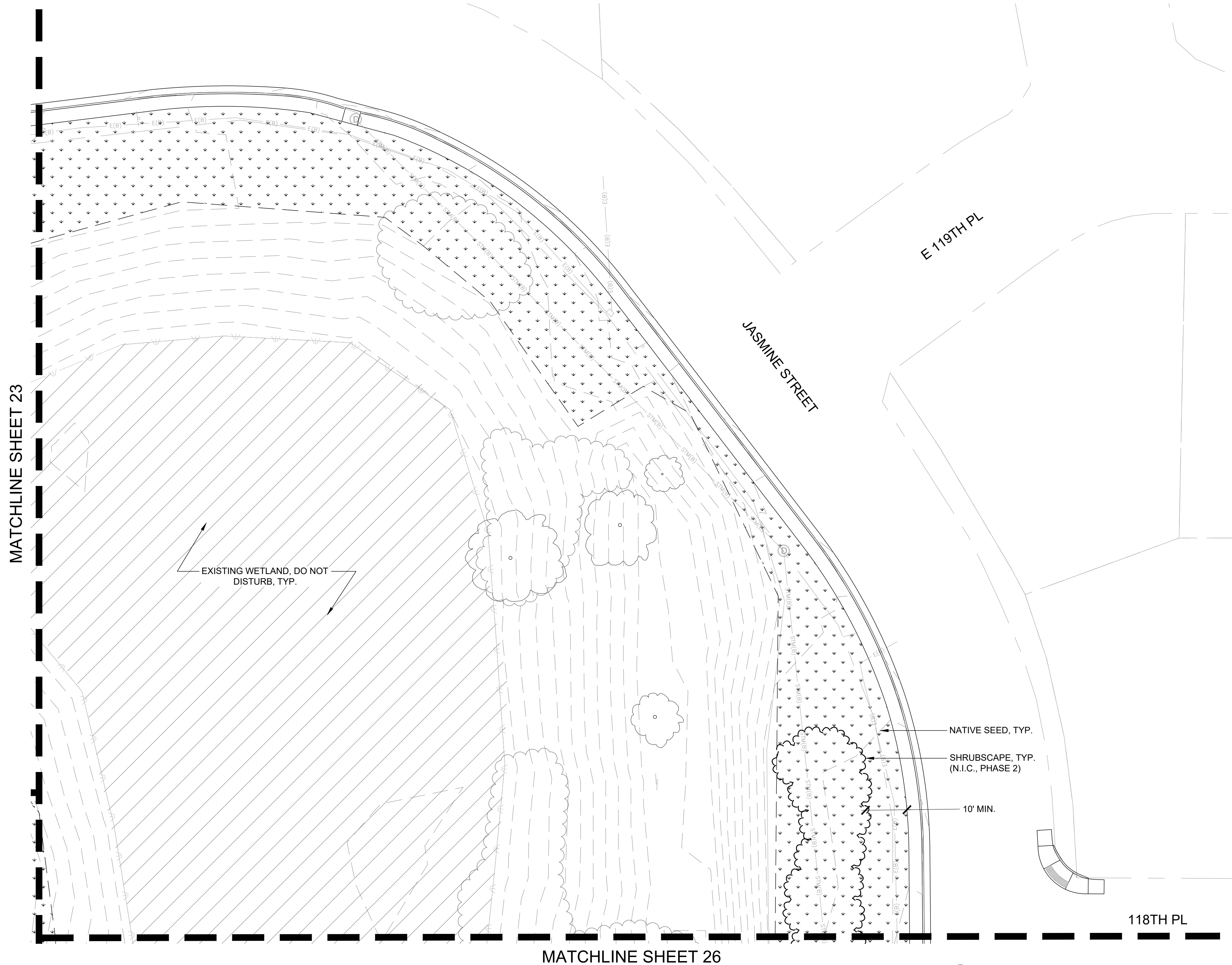
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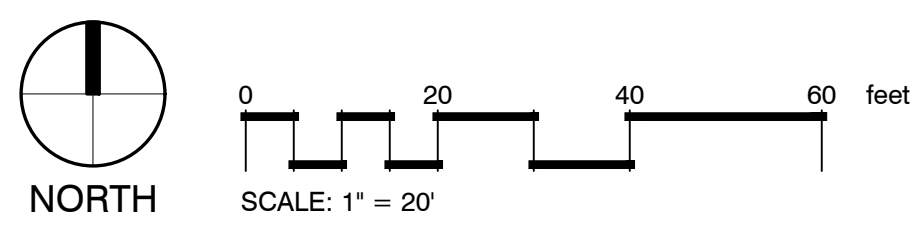
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PLANTING
PLAN

SHEET #:

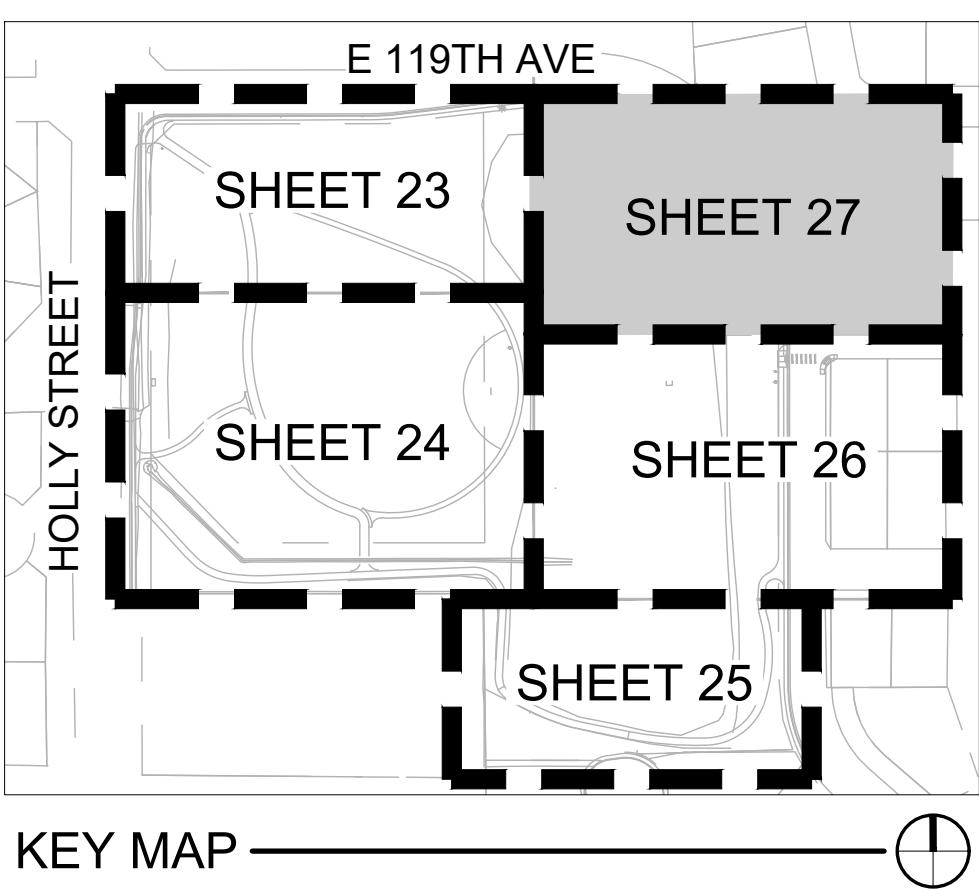


1 PLANTING PLAN



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(303) 538-7200

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SUBMITTAL:

BID SUBMITTAL

PROJECT #:
20-27A

DESIGNED BY:
SS

DRAWN BY:
LR

CHECKED BY:
SS

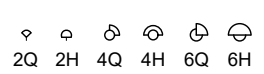
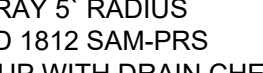
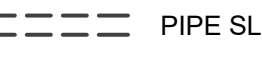
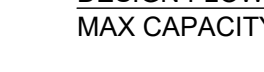
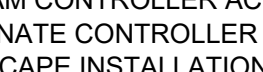
ORIGINAL DATE:
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
PLANTING PLAN

SHEET #:
27

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
	TURF SPRAY SHORT RADIUS NOZZLES RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	1	30
	TURF SPRAY 5" RADIUS RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	20	30
	TURF SPRAY 8" RADIUS RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	8	30
	TURF SPRAY 10" RADIUS RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	37	30
	TURF SPRAY 12" RADIUS RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	30	30
	TURF SPRAY 15" RADIUS RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	63	30
	TURF SPRAY ADJ RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	3	30
	RAIN BIRD 1812 HEAD WITH BUBBLER NOZZLE RAIN BIRD 5F-B STREAM BUBBLER NOZZLE	103	30
	TREE BUBBLERS TWO RAIN BIRD 1804-SAM-PRS WITH RAIN BIRD 1402 BUBBLERS (1.0 GPM/TREE)	12	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM
	RAIN BIRD 5006-PL-PC, FC-MPR-SS 25 TURF ROTOR, 6.0" POP-UP, STAINLESS STEEL RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE.	16	45	
	RAIN BIRD 5006-PL-PC, FC-MPR-SS 30 TURF ROTOR, 6.0" POP-UP, STAINLESS STEEL RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE.	20	45	
	RAIN BIRD 5006-PL-PC, FC-MPR-SS 35 TURF ROTOR, 6.0" POP-UP, STAINLESS STEEL RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE.	1	45	
	TURF ROTOR 04 RAIN BIRD F4-PC, FC-SS, 4.0" POP-UP, STAINLESS STEEL RISER, ADJUSTABLE AND FULL CIRCLE, WITH REMOVABLE SEAL-A-MATIC CHECK VALVE, 1" FEMALE THREADED INLET.	1	40	3.3
	TURF ROTOR 06 RAIN BIRD F4-PC, FC-SS, 4.0" POP-UP, STAINLESS STEEL RISER, ADJUSTABLE AND FULL CIRCLE, WITH REMOVABLE SEAL-A-MATIC CHECK VALVE, 1" FEMALE THREADED INLET.	17	40	4.9
	TURF ROTOR 08 RAIN BIRD F4-PC, FC-SS, 4.0" POP-UP, STAINLESS STEEL RISER, ADJUSTABLE AND FULL CIRCLE, WITH REMOVABLE SEAL-A-MATIC CHECK VALVE, 1" FEMALE THREADED INLET.	6	40	6.6
	TURF ROTOR 12 RAIN BIRD F4-PC, FC-SS, 4.0" POP-UP, STAINLESS STEEL RISER, ADJUSTABLE AND FULL CIRCLE, WITH REMOVABLE SEAL-A-MATIC CHECK VALVE, 1" FEMALE THREADED INLET.	86	40	9.7

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	REMOTE CONTROL VALVE RAIN BIRD PESB-PRS-D ELECTRIC REMOTE CONTROL VALVE WITH PRESSURE REGULATOR AND BL-5201 BICODER	53
	RAIN BIRD 5-NP 1IN. BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, LOCKING NON-POTABLE PURPLE RUBBER COVER, AND 1-PIECE BODY.	14
	GATE VALVE NIBCO T-113-K GATE VALVE, CLASS 125 BRONZE GATE SHUT OFF VALVE WITH CROSS HANDLE, SAME SIZE AS MAINLINE PIPE DIAMETER AT VALVE LOCATION. SIZE RANGE - 1/4" - 3"	5
	MASTER VALVE & FLOW SENSOR 2" BASELINE BHM HYDROMETER 2-INCH	1
	BACKFLOW PREVENTER 2-1/2" WILKINS ZURN 475 - 2-1/2" REDUCED PRESSURE BACKFLOW PREVENTER, INSTALLED IN GUARD-SHACK ENCLOSURE MODEL GS 4.5.	1
	BASELINE BL-3200P TWO-WIRE CONTROLLER IN 16-GAUGE STAINLESS-STEEL PEDESTAL ENCLOSURE, EXPANDABLE UP TO 200 STATIONS. WITH CELLULAR MODULE AND EXTENDED WARRANTY. INSTALL A HUNTER MINI-CLIK WIRED RAIN SENSOR AND CONNECT PER MANUFACTURERES RECOMMENDATIONS.	1

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	BASELINE BL-5311, SOIL MOISTURE SENSOR INCLUDES COMMERCIAL BISENSOR WITH INSTALLATION GUIDE, 50FT. CONNECTION WIRES PLUS DBR/7-6 CONNECTORS (TWO-WIRE SIDE ONLY) AND WIRE NUTS.	4
	RAIN SENSOR HUNTER RFC, WIRED RAIN AND FREEZE SENSOR, WITH CONDUIT INSTALLATION, MOUNT AS NOTED. NORMALLY CLOSED SWITCH.	1
	WATER METER 2"	1
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21	9,922 L.F.
	IRRIGATION MAINLINE: PVC CLASS 200 SDR 21	2,905 L.F.
	PIPE SLEEVE: PVC CLASS 200 SDR 21	175.0 L.F.



CRITICAL PRESSURE ANALYSIS WORKSHEET													
Project: Skylake Ranch Open Land													
Date: 10/25/2023													
Valve #: 22													
Location: North Side													
Multiple Valve Operation													
AREA	DESCRIPTION	TYPE	SIZE	LENGTH/QTY	FLOW (gpm)	C Factor	ID (inches)	Velocity (ft/sec)	Loss (ft/100')	Loss (psi/100')	SUB LOSS		
SOURCE EXISTING	SERVICE LINE	Duct Iron	4"	10 FT	80.0	100	4.1	1.9	0.7	0.31	0.03 PSI		
	WATER METER	Per City	2"	1 EA	80.0	n/a	n/a	n/a	n/a	n/a	3.20 PSI		
	SERVICE LINE	Duct Iron	4"	3 FT	80.0	100	4.1	1.9	0.7	0.31	0.01 PSI		
	BACKFLOW UNIT	Febco 880V	2 1/2"	1 EA	80.0	n/a	n/a	n/a	n/a	n/a	10.25 PSI		
POINT OF CONNECTION (POC) SUBTOTAL											13.49 PSI		
MAINLINE	LINE BACKFLOW TO MV	CL-200 PVC	3"	4 FT	80.0	150	3.166	3.3	1.2	0.52	0.02 PSI		
	MASTER VALVE/TEE	Hydrometer	2"	1 EA	80.0	n/a	n/a	n/a	n/a	n/a	3.50 PSI		
	MAINLINE TO T/S	CL-200 PVC	3"	204 FT	80.0	150	3.166	3.3	1.2	0.52	1.07 PSI		
	MAINLINE	CL-200 PVC	3"	376 FT	80.0	150	3.166	3.3	1.2	0.52	1.97 PSI		
	GATE VALVE	Bronze GV	3"	1 EA	43.0	n/a	n/a	n/a	n/a	n/a	0.30 PSI		
WATER SUPPLY HYDRAULIC LOSS SUBTOTAL											6.85 PSI		
CRITICAL ZONE	CONTROL VALVE	Rain Bird PEB	1 1/2"	1 EA	42.6	n/a	n/a	n/a	n/a	n/a	3.60 PSI		
	LATERAL LINE 1	CL-200 PVC	2"	9 FT	42.6	150	2.149	3.8	2.5	1.1	0.10 PSI		
	LATERAL LINE 2	CL-200 PVC	1 1/4"	23 FT	24.2	150	1.502	4.4	5.0	2.1	0.49 PSI		
	LATERAL LINE 3	CL-200 PVC	1"	53 FT	12.2	150	1.189	3.5	4.4	1.9	1.00 PSI		
	SAFETY FACTOR	10% of Pipe Losses									1.20 PSI		
	ZONE TOTAL LOSS										6.39 PSI		
	SUBTOTAL SYSTEM HYDRAULIC LOSSES										26.74 PSI		
	ELEVATION CHANGE FACTOR										-6 FT	0.433	-2.60 PSI
	TOTAL SYSTEM HYDRAULIC LOSSES										24.14 PSI		
	AVAILABLE WATER PRESSURE AT BACKFLOW										70.00 PSI		
	PRESSURE AVAILABLE AT CRITICAL HEAD										45.86 PSI		
	PRESSURE REQUIRED AT CRITICAL HEAD										40.00 PSI		
	RESIDUAL PRESSURE										5.86 PSI		

CITY OF THORNTON REQUIRED NOTES

- AVAILABLE WATER PRESSURE** - WATER PRESSURE ASSUMED TO BE 70 PSI
 - (ZONE 1 - HIGH HGL 5375' - POC ELEVATION 5214' = 161' X .43333 = 70 PSI)
 - (ZONE 1 - LOW HGL 5351' - POC ELEVATION 5214' = 137' X .43333 = 59 PSI)
- DESIGN PRESSURE** - SEE 'POINT OF CONNECTION NOTES' FOR SPECIFIC DESIGN PRESSURE CALCULATIONS ON POINT OF CONNECTION.
- DESIGN CAPACITY (FLOW)** - SEE 'POINT OF CONNECTION NOTES' FOR SPECIFIC FLOW REQUIREMENTS ON POINT OF CONNECTION.
- EXISTING WATER METER** - SEE PLANS FOR LOCATION AND 'POINT OF CONNECTION NOTES' FOR METER AND SERVICE LINE SIZE.
- RAIN SWITCH** - CONTRACTOR TO ENSURE PROPOSED RAIN SENSOR IS INSTALLED AND OPERATIONAL FOR THE CONTROLLER. COORDINATE FINAL SENSOR LOCATION WITH OWNER PRIOR TO INSTALLATION.
- WATER WINDOW** - THIS IRRIGATION SYSTEM IS DESIGNED TO APPLY 1.5" OF WATER WITHIN A MAXIMUM OF 48 HOURS OF RUN-TIME PER WEEK (6 AM - 10 AM, THREE DAYS PER WEEK). MULTIPLE VALVES OPERATING SIMULTANEOUSLY WILL BE REQUIRED TO MAINTAIN THE WATER WINDOW OF 48 HOURS MAX PER WEEK.
- WINTERIZATION** - IRRIGATION SYSTEM WINTERIZATION & SPRING START-UP REQUIRED AFTER INITIAL ACCEPTANCE. SYSTEM SHALL BE WINTERIZED BY THE MEANS OF FORCED AIR BY OCTOBER 31st OR AS DIRECTED BY OWNER.
- FIELD INSPECTION** - A FIELD INSPECTION AND IRRIGATION SYSTEM AUDIT SHALL OCCUR, AND AS-BUILT PLANS SHALL BE SUBMITTED TO THE CITY PRIOR TO INITIAL ACCEPTANCE.
- FINAL ACCEPTANCE** - A FINAL ACCEPTANCE WALK SHALL BE HELD ONE YEAR FOLLOWING INITIAL ACCEPTANCE.
- PROVIDE AS-BUILT PLAN IN AUTOCAD AND PDF FORMAT WIDECODER ADDRESS MODULE #/BASELINE SURVEY FOR AMPERAGE DRAW PER GUIDELINES IN SPECIFICATIONS; AUDIT TO BE PERFORMED ON 25% OF ZONES.

POINT OF CONNECTION (P.O.C.) NOTES:

POINT OF CONNECTION #1 - PROPOSED NEW WATER SERVICE WITH 4 INCH METER. PROVIDE 2" BACKFLOW PREVENTOR

AVAILABLE WATER PRESSURE: THE ASSUMED AVAILABLE PSI AT THE POINT OF CONNECTION 'A' IS - 70 PSI CONTRACTOR SHALL TEST WATER PRIOR TO INSTALLATION.

DESIGN PRESSURE: 50 PSI

DESIGN FLOW : 80 GPM MAX, (MULTIPLE VALVES OPERATING AT ONE TIME)
MAX CAPACITY AND PEAK FLOW OF THE IRRIGATION SYSTEM BASED ON THE FLOW FROM THE PROPOSED AND FUTURE PROPOSED IRRIGATION SYSTEM.

- THE IRRIGATION SYSTEM IS DESIGNED WITHIN A WATER WINDOW AND SIZED TO ACCOMMODATE MULTIPLE VALVE STARTS NOT TO EXCEED DESIGN FLOW LISTED. CONTRACTOR TO PROGRAM CONTROLLER ACCORDINGLY AND COORDINATE SCHEDULING WITH OWNER.
- CONTRACTOR TO COORDINATE CONTROLLER LOCATIONS WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION. INSTALL CONTROLLERS IN LANDSCAPE BED, COORDINATE WITH LANDSCAPE INSTALLATION TO SCREEN CONTROLLERS FROM ADJACENT HOMES AND RIGHT-OF-WAYS AND TRIM PROPOSED IRRIGATION HEADS TO ELIMINATE OVERSPRAY ONTO THE IRRIGATION CONTROLLER, BACKFLOW ENCLOSURE. INCLUDE ONE PRO-400 ARMADA HANDHELD GRAPHICAL TOR OR APPROVED EQUAL.
- ALL ENCLOSURES SHALL BE SECURELY MOUNTED AND LOCKABLE TO PREVENT VANDALISM, DAMAGE AND/OR THEFT. TURN KEYS OVER TO OWNER AT COMPLETION OF WORK AS PER SPECIFICATIONS.
- RAIN SENSOR, AS INDICATED IN LEGEND, MOUNT RAIN SENSOR WITHIN OPTIMAL RANGE FROM CONTROLLER, PER MANUFACTURERS RECOMMENDATIONS. INSTALL SENSOR ON LIGHT/UTILITY POLE A MINIMUM OF 10' ABOVE GRADE TO MINIMIZE DAMAGE/VANDALISM, CLEARLY NOTE LOCATION AND PROVIDE INFORMATION TO OWNERS REPRESENTATIVE.
- EXISTING IRRIGATION ZONES HAVE BEEN CREATED TO PROPERLY HYDROZONE THE SITE BASED ON SITE CONDITIONS AND MICROCLIMATES AT THE TIME OF INSTALLATION. IF FIELD ADJUSTMENTS ARE TO BE MADE IRRIGATION EQUIPMENT IRRIGATING A NORTH AND EAST EXPOSURE SHOULD NOT BE INSTALLED ON THE SAME ZONE AS IRRIGATION EQUIPMENT ON THE SOUTH AND WEST EXPOSURES TO ALLOW FOR MICROCLIMATE ADJUSTMENTS IN THE CONTROLLER PROGRAMMING.

IRRIGATION NOTES:

- THE CONTRACTOR SHALL INSTALL SYSTEM COMPONENTS IN A MANNER THAT WILL PROVIDE ADEQUATE WATER SUPPLY TO THE EXISTING IRRIGATION SYSTEM.
- REFER TO IRRIGATION SCHEDULE, NOTES, AND SPECIFICATIONS AND DETAILS FOR PRODUCT TYPES, SIZES AND INSTALLATION REQUIREMENTS.
- CONTRACTOR SHALL MEET ALL APPLICABLE LOCAL AND MUNICIPAL CODES FOR WORK NECESSARY IN IRRIGATION SYSTEM INSTALLATION.
- VERIFY ALL SITE INFORMATION PRIOR TO CONSTRUCTION. NOTIFY OWNER OF ANY DISCREPANCIES FROM PREPARED IRRIGATION PLANS.
- LOCATE ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING OF WORK. CONTRACTOR SHALL COORDINATE WITH ALL OTHER DISCIPLINES ON UTILITY INFORMATION PRIOR TO START OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO UNDERGROUND UTILITIES AND DRAINAGE SYSTEMS CAUSED BY INSTALLATION OF SYSTEM COMPONENTS.
- CONTRACTOR IS TO REFER TO AND COORDINATE IRRIGATION SYSTEM INSTALLATION AND SITE PLANS. AVOID CONFLICTING LOCATIONS BETWEEN PIPING AND EXISTING LANDSCAPE MATERIAL, EDGING, ETC. IRRIGATION PLAN EQUIPMENT LOCATIONS ARE DIAGRAMMATIC AND ARE LOCATED FOR GRAPHIC CLARITY ONLY. IT IS THE INTENT OF THIS DESIGN THAT ALL IRRIGATION EQUIPMENT BE INSTALLED IN LANDSCAPED AREAS AND WITHIN THE COMMON LANDSCAPE TRACT PROPERTY LIMITS (NOT WITHIN PRIVATE LOT AREAS). ANY EQUIPMENT SHOWN OUTSIDE OF THESE LIMITS IS SHOWN IN THAT LOCATION FOR GRAPHICAL CLARITY ONLY. ALL VALVE BOXES SHALL BE INSTALLED A MINIMUM OF 2'-0" FROM EDGE OF ANY PAVED SURFACES AND A MINIMUM OF 3'-0" FROM THE CENTERLINE OF ANY DRAINAGE SWALES.
- CONTRACTOR IS TO PROVIDE ALL NECESSARY PIPE, VALVES, ETC. DOWNSTREAM FROM POINT OF CONNECTION NOT INSTALLED BY OTHER DISCIPLINES IN ACCORDANCE WITH THE CITY OF THORNTON STANDARDS, DETAILS AND SPECIFICATIONS.
- CONTRACTOR IS TO VERIFY AVAILABLE PRESSURE AND FLOW AT POINT OF CONNECTION PRIOR TO INSTALLATION OF IRRIGATION SYSTEM EQUIPMENT AND NOTIFY OWNER WITH VERIFICATION FIGURES. FAILURE TO NOTIFY OF VERIFICATION WILL RESULT IN CONTRACTOR TAKING RESPONSIBILITY FOR ANY ALTERATIONS TO THE PLAN DUE TO VARIATIONS OF PRESSURE OR FLOW AT HIS/HER OWN RISK.
- CONTRACTOR TO COORDINATE INSTALLATION OF SLEEVING. ALL SLEEVING UNDER PAVED SURFACES SHOWN ON PLANS IS BY CONTRACTOR UNLESS OTHERWISE NOTED. ALL MAINLINES, LATERAL LINES, DRIP LINES AND WIRES UNDER PAVED SURFACES ARE TO BE INSTALLED IN SLEEVING. INSTALL SLEEVING AS PER DETAIL AND IRRIGATION SCHEDULE.
- ALL PIPING, PVC ELECTRICAL SLEEVES, ETC. UNDER PAVING SHALL BE INSTALLED PRIOR TO PAVING WORK. NO TEES, ELLS OR OTHER TURNS IN PIPING SHALL BE LOCATED UNDER PAVING. CAP ALL ENDS HAND TIGHT PRIOR TO BACKFILL.
- CONTRACTOR IS TO MAINTAIN ELECTRICAL POWER TO THE AUTOMATIC CONTROLLER AND COORDINATE WITH UTILITY PROVIDER AND OWNER ON CONNECTION TO NEW CONTROLLER.
- CONTRACTOR SHALL EXTEND ONE YELLOW 14 GAUGE TRACER WIRE FROM THE BACKFLOW ASSEMBLY TO THE END OF THE NEW MAINLINE PIPE.
- MASTER VALVE/FLOW SENSOR WIRE SHALL BE CONTINUOUS/STRAIGHT RUNS (WITHOUT SPLICES) TO CONTROLLER LOCATION. WIRE SHALL BE SHIELDED PER THE SPECIFICATIONS
- CONTRACTOR SHALL GROUND THE IRRIGATION CONTROLLER PER BASELINE GROUNDING SPECIFICATIONS AND RECOMMENDATIONS AND CITY OF THORNTON REQUIREMENTS.
- INSTALL ALL MATERIALS AND EQUIPMENT AS SHOWN IN DETAILS. USE TEFLON TAPE OR TEFLON PIPE DOPE ON ALL MALE PIPE THREADS ON ALL IRRIGATION SWING JOINT AND VALVE ASSEMBLIES.
- ALL TRENCHES TO BE PUDDLED AND COMPACTED TO THE SAME DENSITY AS THE UNDISTURBED ADJACENT SOIL, TRENCH SETTLEMENT SHALL BE REPAIRED THROUGHOUT THE WARRANTY PERIOD.
- CONTRACTOR SHALL WARRANTY THE IRRIGATION EQUIPMENT AS REQUIRED BY THE SPECIFICATIONS.
- PROVIDE WRITTEN ON-SITE VERIFICATION OF RADIO STRENGTH AT THE NEW CONTROLLER LOCATION TO CITY STAFF PRIOR TO ORDERING SPECIFIED CONTROLLER. SIGNAL STRENGTH SHALL BE VERIFIED AS ADEQUATE FOR SPECIFIED PEDESTAL-TOP ANTENNA.
- CONTRACTOR SHALL REPAIR ANY EXISTING LANDSCAPE OR IRRIGATION DAMAGE DUE TO CONSTRUCTION OPERATIONS WITHIN THE LIMIT OF WORK AT NO ADDITIONAL COST TO THE OWNER.
- VALVE BOX SIZING AS FOLLOWS: 1"-1.5" VALVES 13X24" JUMBO BOX. 2" VALVES 17X30" SUPER JUMBO.

2-WIRE SYSTEM NOTES:

- CONTRACTOR SHALL GROUND ALL DECODERS AND DECODER WIRE PER MANUFACTURERS RECOMMENDATIONS AND STANDARDS. (MINIMUM OF EVERY 500' OF DECODER CABLE OR EVERY 10 DECODERS, WHICHEVER OCCURS FIRST; AND AT ALL ENDS OF WIRE RUN.)
- CONTRACTOR SHALL USE ONLY MANUFACTURED INSULATED AND JACKETED CABLE WIRE.
- ONLY USE SINGLE STATION DECODERS (SEE SCHEDULE FOR SPECIFIC MODEL).
- LOOP 5' OF 2-WIRE INTO ALL VALVE BOXES (WITH DECODERS AND SPLICES) FOR MAINTENANCE.
- USE ONLY 3M DBR-6 WATERPROOF CONNECTORS ON ALL WIRE SPLICES AND ALL WIRE SPLICES ARE TO BE MADE WITHIN A 10" ROUND VALVE BOX.
- DO NOT LOOP 2-WIRE COMMUNICATION CABLE. INSTALL IN 'STAR' PATTERN AS PER PLANS ACCOUNT FOR FUTURE CONVERSION. PREPARE AS-BUILT PLAN SHOWING DIRECTION OF WIRE PATH AND VALVES OPERATED ALONG PATH.
- CONTRACTOR SHALL INCLUDE TWO (2) SINGLE STATION DECODERS PER CONTROLLER AS PART OF THE PROJECT TURN-OVER.
- DECODER PROGRAMMING SHALL FOLLOW ZONE NUMBERS INDICATED ON THE DRAWINGS.
- CONTRACTOR SHALL USE ONLY MANUFACTURED SHIELDED COMMUNICATION CABLE FOR FLOW SENSOR WIRE.
- NOTE DECODER ADDRESS & MODULE NUMBER ON EACH DECODER. PROVIDE BASELINE SURVEY OF TOTAL AMPERAGE DRAW AND DRAW OF EACH LEG.

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1.800.922.1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG.
GRADE, OR EXCAVATE FOR THE MARKING OF
UNDERGROUND MEMBER UTILITIES.

VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:

STACEY E. STICKLER
654
11/28/2008
Original Date of Licensure
3.22.2024
LICENSED LANDSCAPE ARCHITECT
STATE OF COLORADO

CLIENT:

City of Thornton

9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

STAMP:

PROJECT:

SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

SS

DRAWN BY:

LR

CHECKED BY:

SS

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MARCH 22, 2024

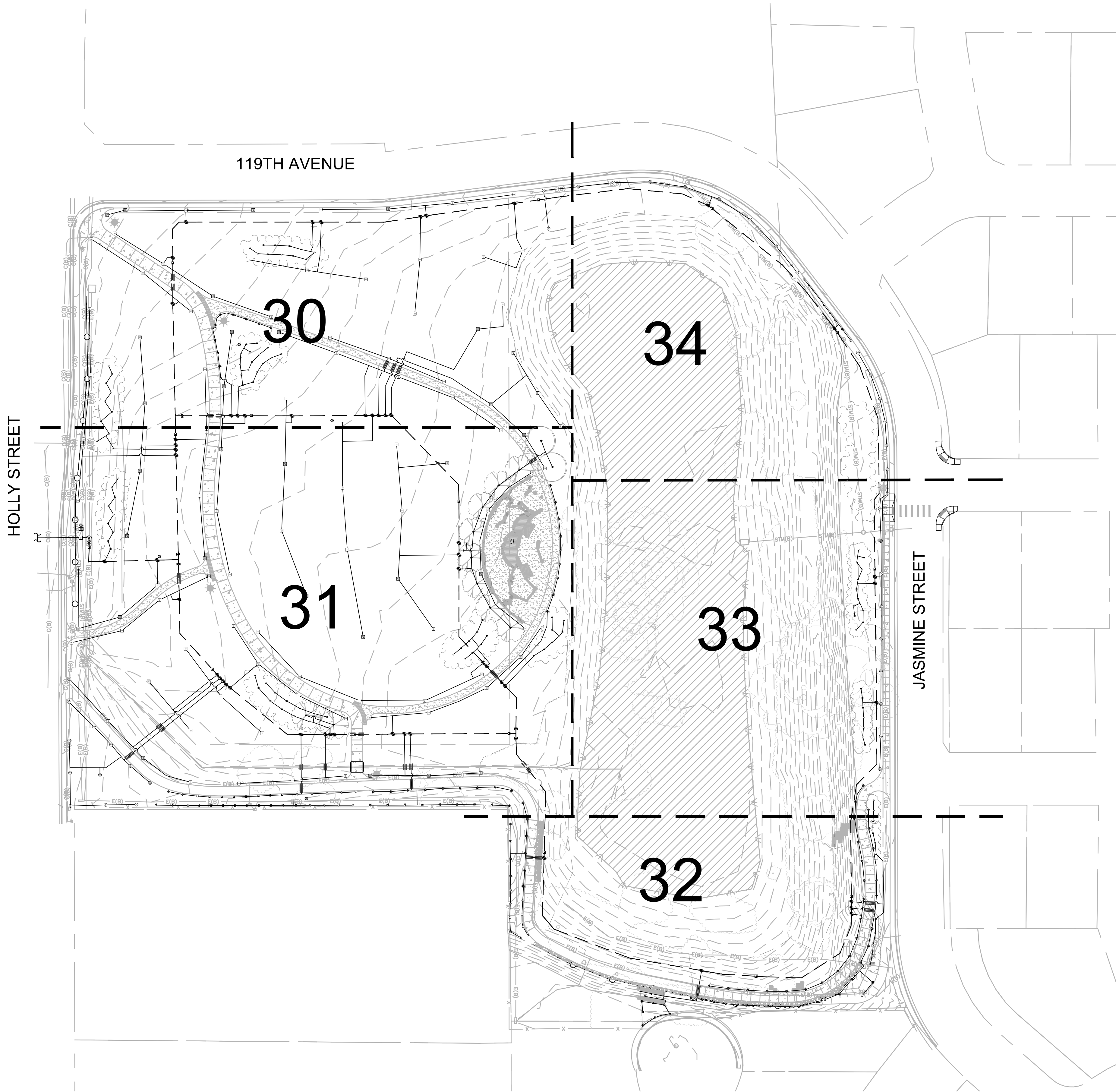
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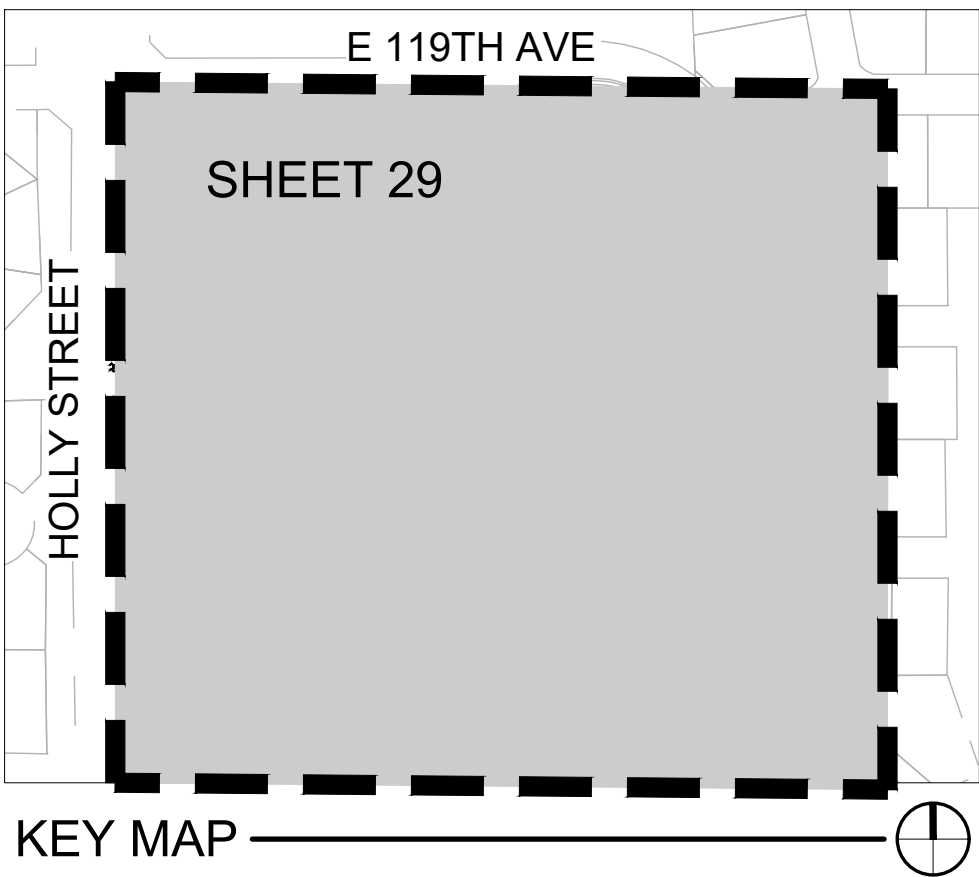
IRRIGATION NOTES

SHEET #:

IRRIGATION SHEETS SHOWN FOR INFORMATION ONLY.

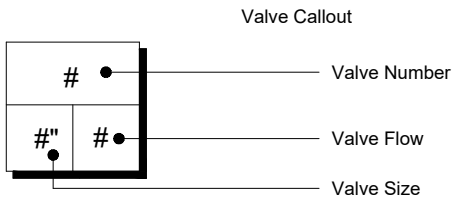


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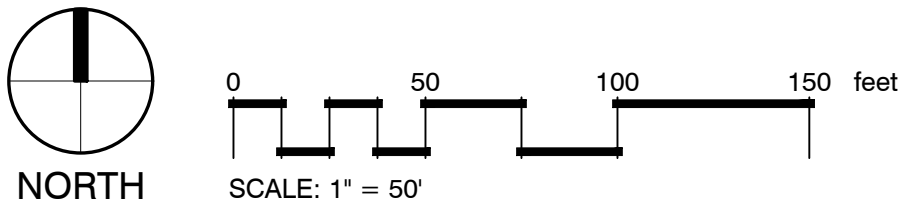


IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	TURF SPRAY 5' RADIUS
	TURF SPRAY 8' RADIUS
	TURF SPRAY 10' RADIUS
	TURF SPRAY 12' RADIUS
	TURF SPRAY 15' RADIUS
	TURF SPRAY ADJ
	RAIN BIRD 1812 HEAD WITH BUBBLER NOZZLE
	TREE BUBBLERS
	RAIN BIRD 5006-PL-PC,FC-MPR-SS 25
	RAIN BIRD 5006-PL-PC,FC-MPR-SS 30
	RAIN BIRD 5006-PL-PC,FC-MPR-SS 35
	TURF ROTOR 04 - RAIN BIRD F4-PC
	TURF ROTOR 06 - RAIN BIRD F4-PC
	TURF ROTOR 08 - RAIN BIRD F4-PC
	TURF ROTOR 12 - RAIN BIRD F4-PC
	REMOTE CONTROL VALVE
	BRASS QUICK-COUPLING VALVE
	GATE VALVE
	MASTER VALVE & FLOW SENSOR 2"
	BACKFLOW PREVENTER 2-1/2"
	TWO-WIRE CONTROLLER
	SOIL MOISTURE SENSOR
	RAIN SENSOR
	WATER METER 2"
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21
	IRRIGATION MAINLINE: PVC CLASS 200 SDR 21
	PIPE SLEEVE: PVC CLASS 200 SDR 21



1 OVERALL IRRIGATION PLAN



VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:

STACEY E. STICKLER
654
11/26/2008
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CLIENT:

City of Thornton

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(303) 538-7200

STAMP:

PROJECT:

SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS
11890 HOLLY STREET

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REVISION DATE

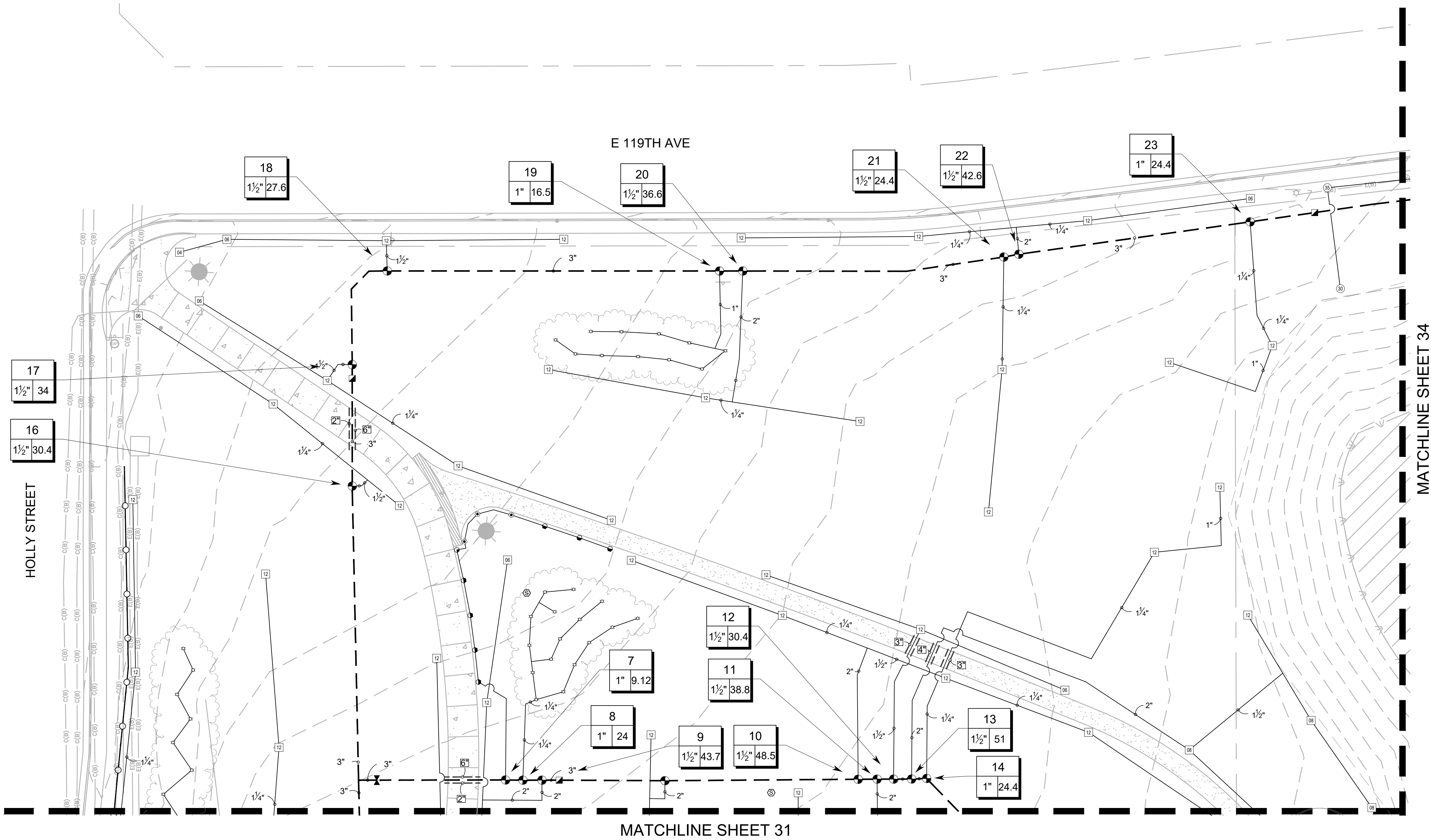
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OVERALL
IRRIGATION
PLAN

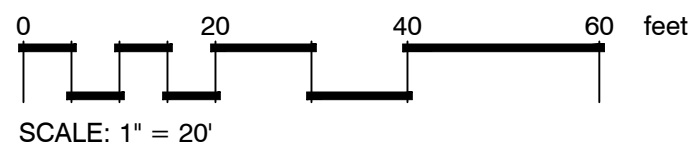
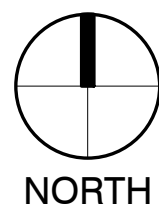
SHEET #:

29

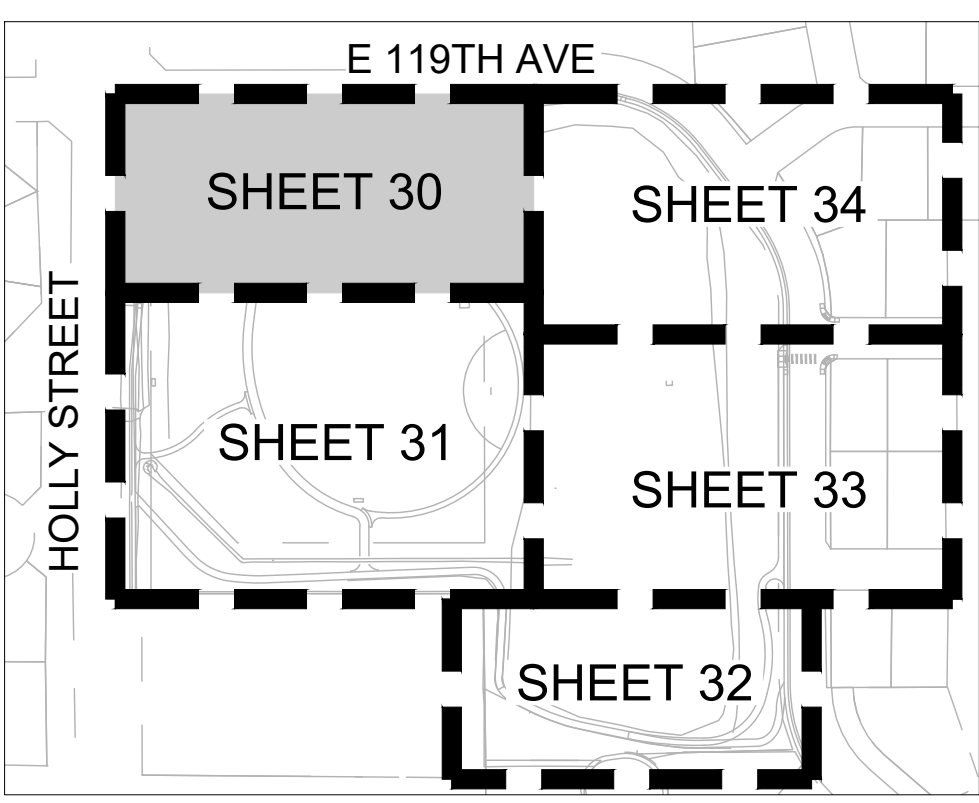
IRRIGATION SHEETS SHOWN FOR INFORMATION ONLY.



1 IRRIGATION PLAN



CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1.800.922.1987
CALL 2- BUSINESS DAYS IN ADVANCE BEFORE YOU DIG.
GRADE, OR EXCAVATE FOR THE MARKING OF
UNDERGROUND MEMBER UTILITIES.



KEY MAP

IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	TURF SPRAY 5' RADIUS
	TURF SPRAY 8' RADIUS
	TURF SPRAY 10' RADIUS
	TURF SPRAY 12' RADIUS
	TURF SPRAY 15' RADIUS
	TURF SPRAY ADJ
	RAIN BIRD 1812 HEAD WITH BUBBLER NOZZLE
	TREE BUBBLERS
	RAIN BIRD 5006-PL-PC, FC-MPR-SS 25
	RAIN BIRD 5006-PL-PC, FC-MPR-SS 30
	RAIN BIRD 5006-PL-PC, FC-MPR-SS 35
	TURF ROTOR 04 - RAIN BIRD F4-PC
	TURF ROTOR 06 - RAIN BIRD F4-PC
	TURF ROTOR 08 - RAIN BIRD F4-PC
	TURF ROTOR 12 - RAIN BIRD F4-PC
	REMOTE CONTROL VALVE
	BRASS QUICK-COUPLING VALVE
	GATE VALVE
	MASTER VALVE & FLOW SENSOR 2"
	BACKFLOW PREVENTER 2-1/2"
	TWO-WIRE CONTROLLER
	SOIL MOISTURE SENSOR
	RAIN SENSOR
	WATER METER 2"
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21
	IRRIGATION MAINLINE: PVC CLASS 200 SDR 21
	PIPE SLEEVE: PVC CLASS 200 SDR 21
	Valve Callout
	Valve Number
	Valve Flow
	Valve Size

VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:

STACEY E. STICKLER
654
11/26/2008
Original Date of Licensure
3.22.2024
LICENSED LANDSCAPE ARCHITECT
STATE OF COLORADO

CLIENT:

City of Thornton
9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

PROJECT:

SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

SS

DRAWN BY:

LR

CHECKED BY:

SS

ORIGINAL DATE:

MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:

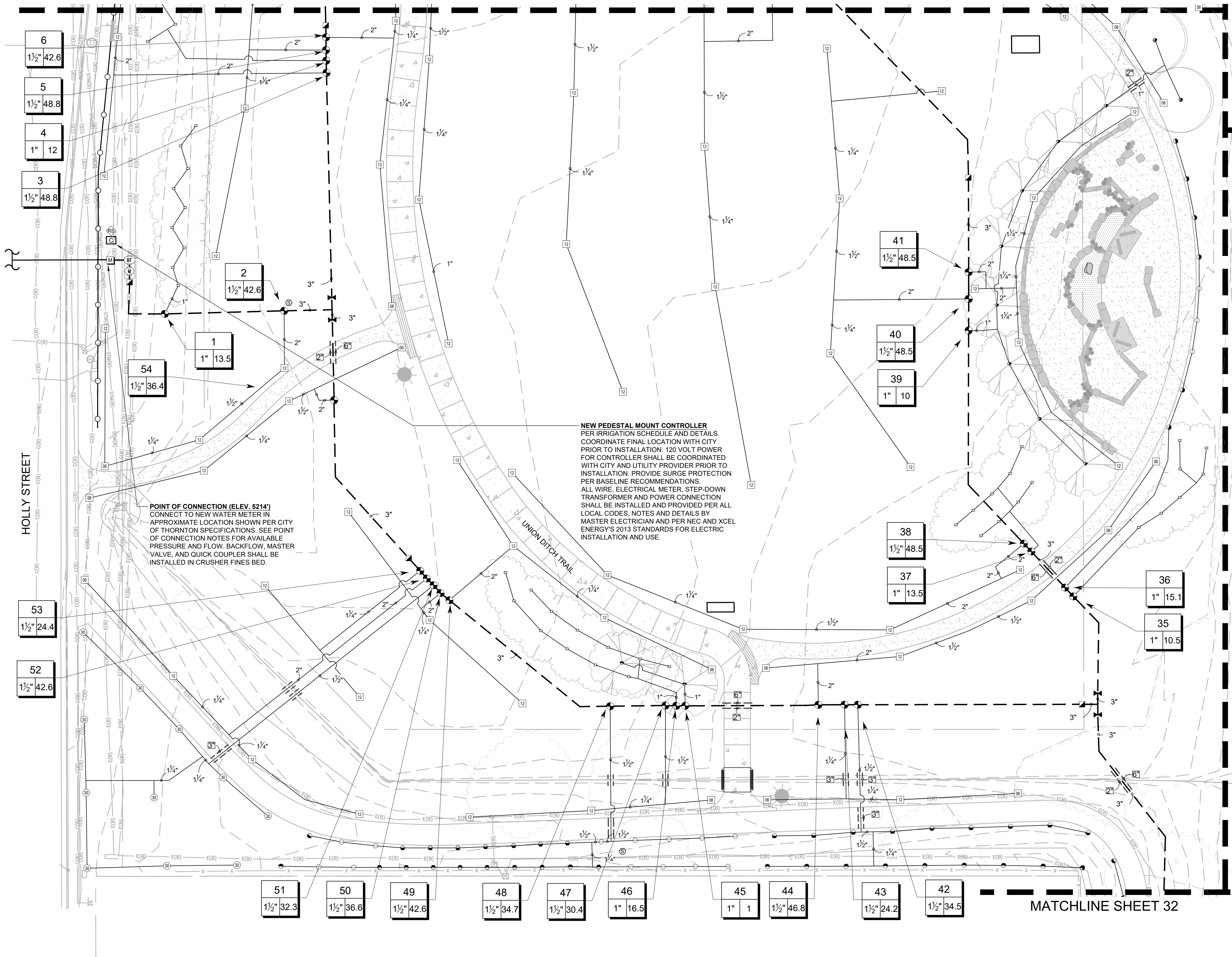
IRRIGATION PLAN

SHEET #:

30

IRRIGATION SHEETS SHOWN FOR INFORMATION ONLY.

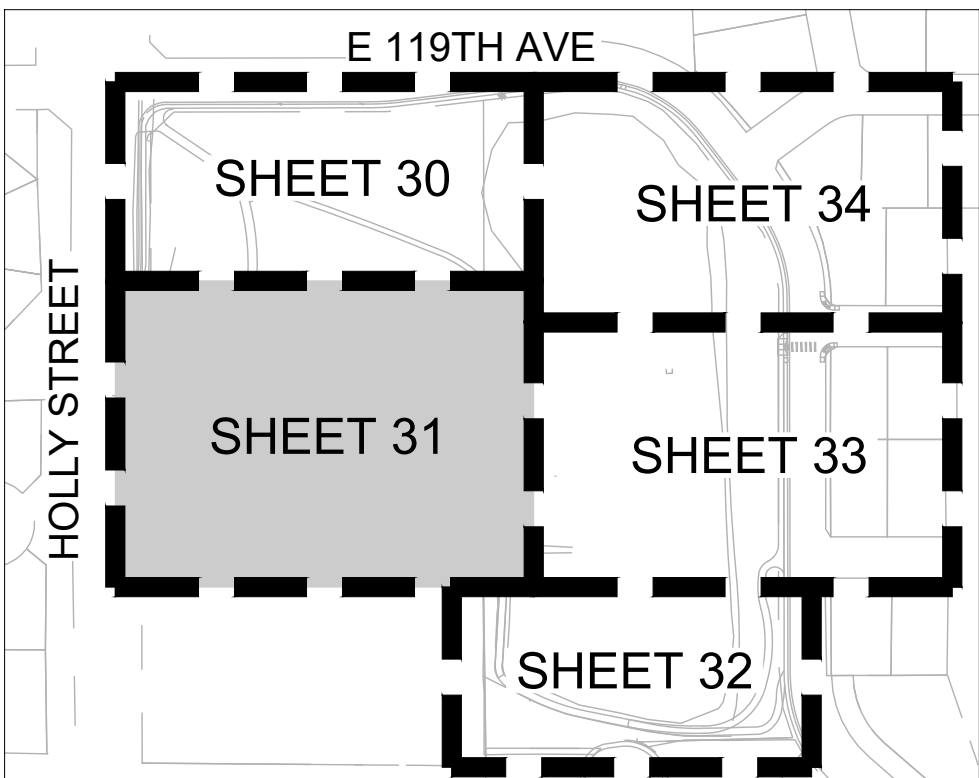
MATCHLINE SHEET 30



POINT OF CONNECTION (ELEV. 5214')
CONNECT TO NEW WATER METER IN
APPROXIMATE LOCATION SHOWN PER CITY
OF THORNTON SPECIFICATIONS. SEE POINT
OF CONNECTION NOTES FOR AVAILABLE
PRESSURE AND FLOW. BACKFLOW MASTER
VALVE, AND QUICK COUPLER SHALL BE
INSTALLED IN CRUSHER FINES BED.

NEW PEDESTAL MOUNT CONTROLLER
PER IRRIGATION SCHEDULE AND DETAILS.
COORDINATE FINAL LOCATION WITH CITY
PRIOR TO INSTALLATION. 120 VOLT POWER
FOR CONTROLLER SHALL BE COORDINATED
WITH CITY AND UTILITY PROVIDER PRIOR TO
INSTALLATION. PROVIDE SURGE PROTECTION
PER BASELINE RECOMMENDATIONS.
ALL WIRE, ELECTRICAL METER, STEP-DOWN
TRANSFORMER AND POWER CONNECTION
SHALL BE INSTALLED AND PROVIDED PER ALL
LOCAL CODES, NOTES AND DETAILS BY
MASTER ELECTRICIAN AND PER NEC AND XCEL
ENERGY'S 2013 STANDARDS FOR ELECTRIC
INSTALLATION AND USE.

CALL UTILITY NOTIFICATION
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1.800.922.1987
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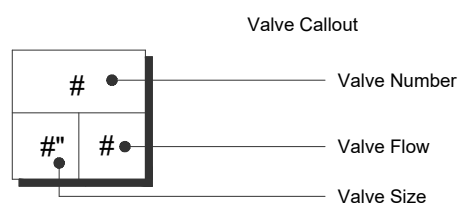


KEY MAP

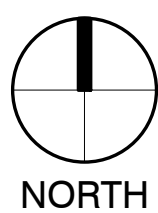
IRRIGATION LEGEND

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IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21
IRRIGATION MAINLINE: PVC CLASS 200 SDR 21
PIPE SLEEVE: PVC CLASS 200 SDR 21



1 IRRIGATION PLAN



0 20 40 60 feet
SCALE: 1" = 20'

VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

CONSULTANT:

STACEY E. STICKLER
654
11/26/2008
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STATE OF COLORADO

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City of Thornton
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PROJECT:

SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET

SUBMITTAL:

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MARCH 22, 2024

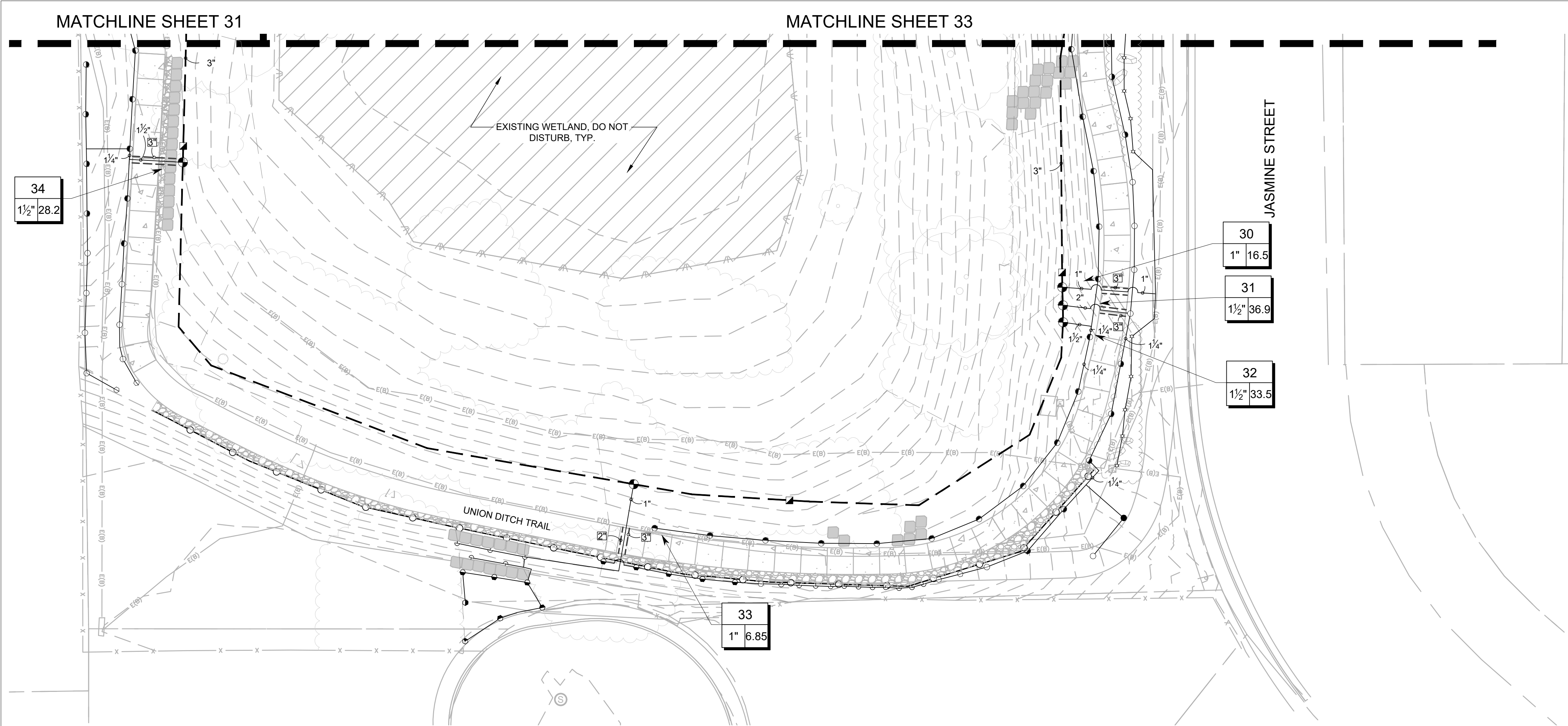
REVISION DATE

SHEET TITLE:

IRRIGATION PLAN

SHEET #:

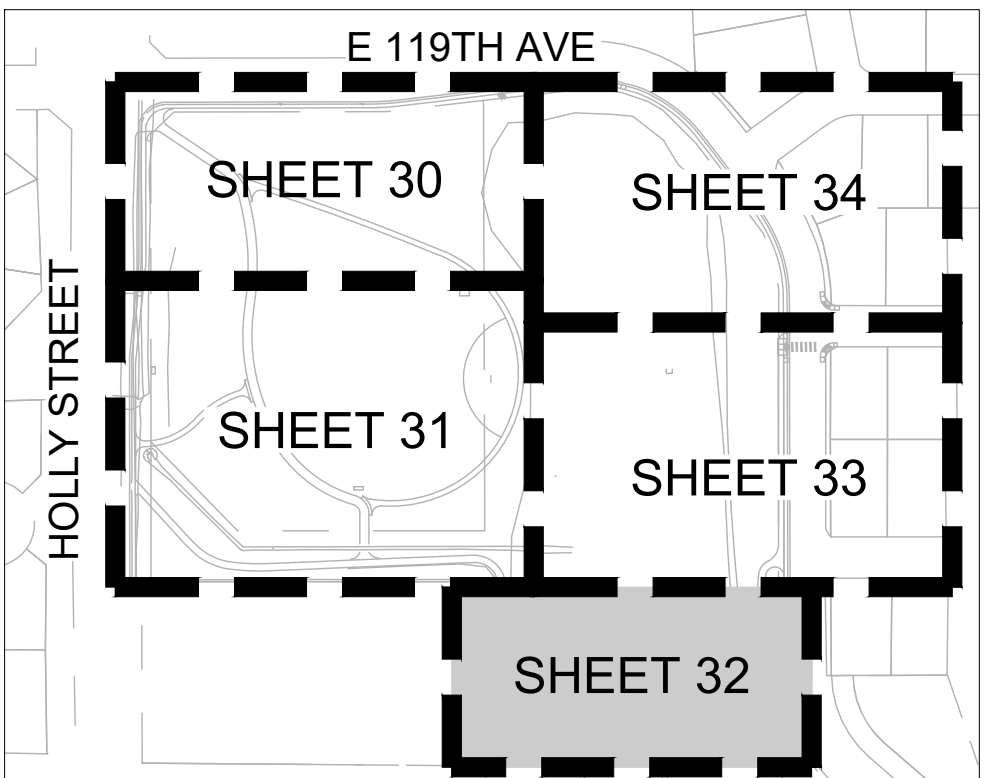
31



1 IRRIGATION PLAN

IRRIGATION SHEETS SHOWN FOR INFORMATION ONLY.

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VALERIAN
LANDSCAPE ARCHITECTURE | PLANNING | IRRIGATION

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IRRIGATION PLAN

SHEET #:

32

IRRIGATION SHEETS SHOWN FOR INFORMATION ONLY.

MATCHLINE SHEET 34

118TH PL

MATCHLINE SHEET 31

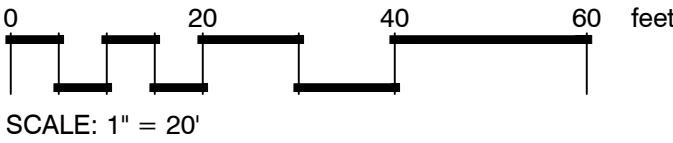
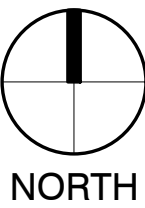
EXISTING WETLAND, DO NOT
DISTURB, TYP.

JASMINE STREET

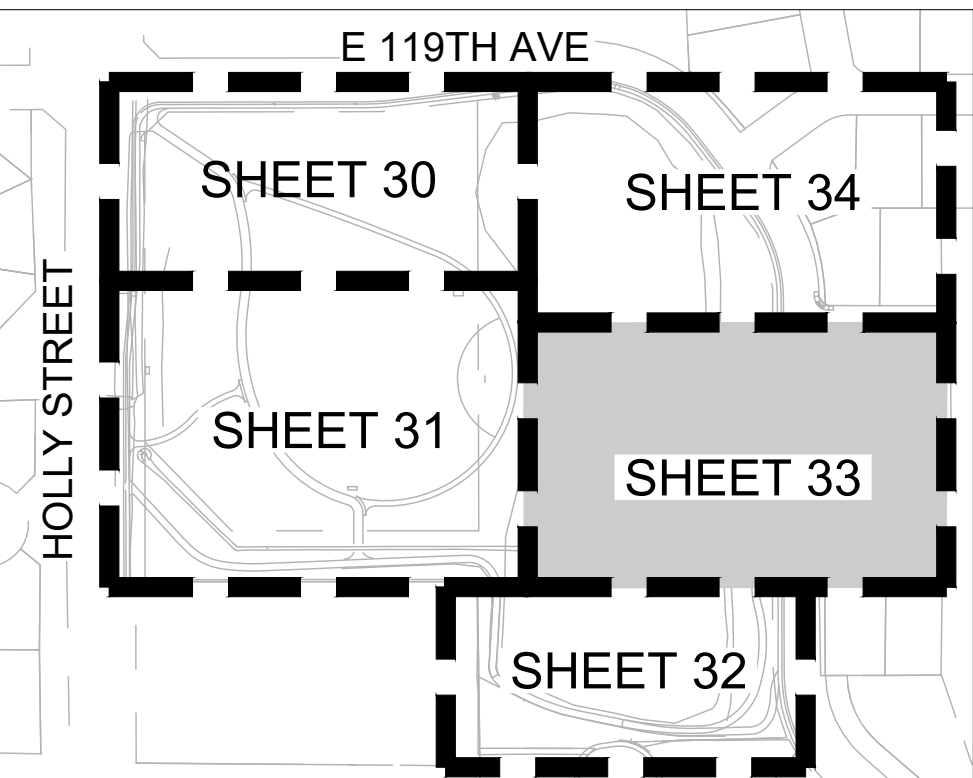
KEARNEY CIR

MATCHLINE SHEET 32

1 IRRIGATION PLAN



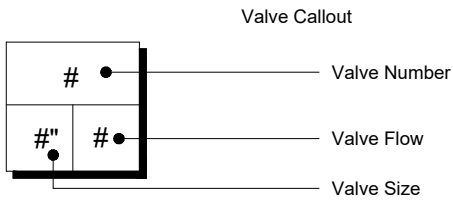
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11890 HOLLY STREET
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IRRIGATION PLAN

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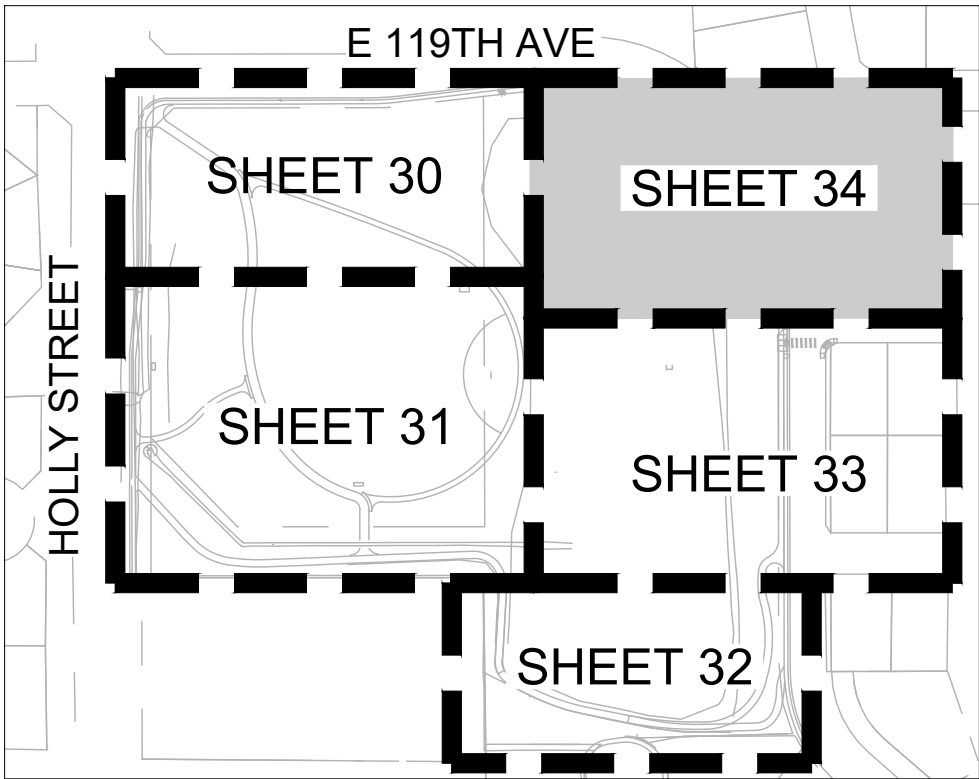
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1 IRRIGATION PLAN

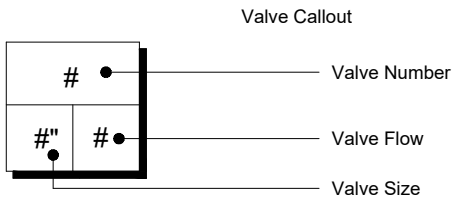
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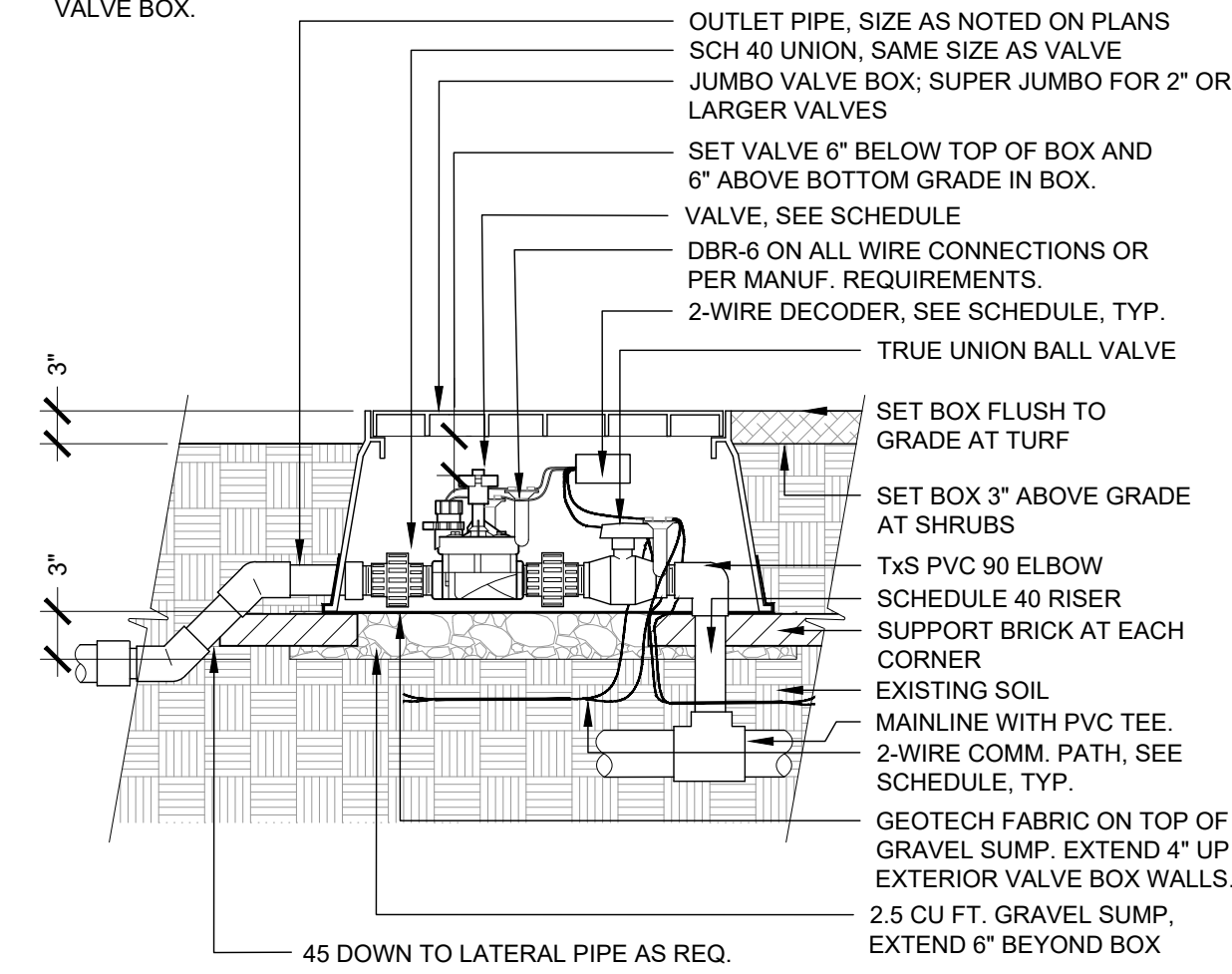
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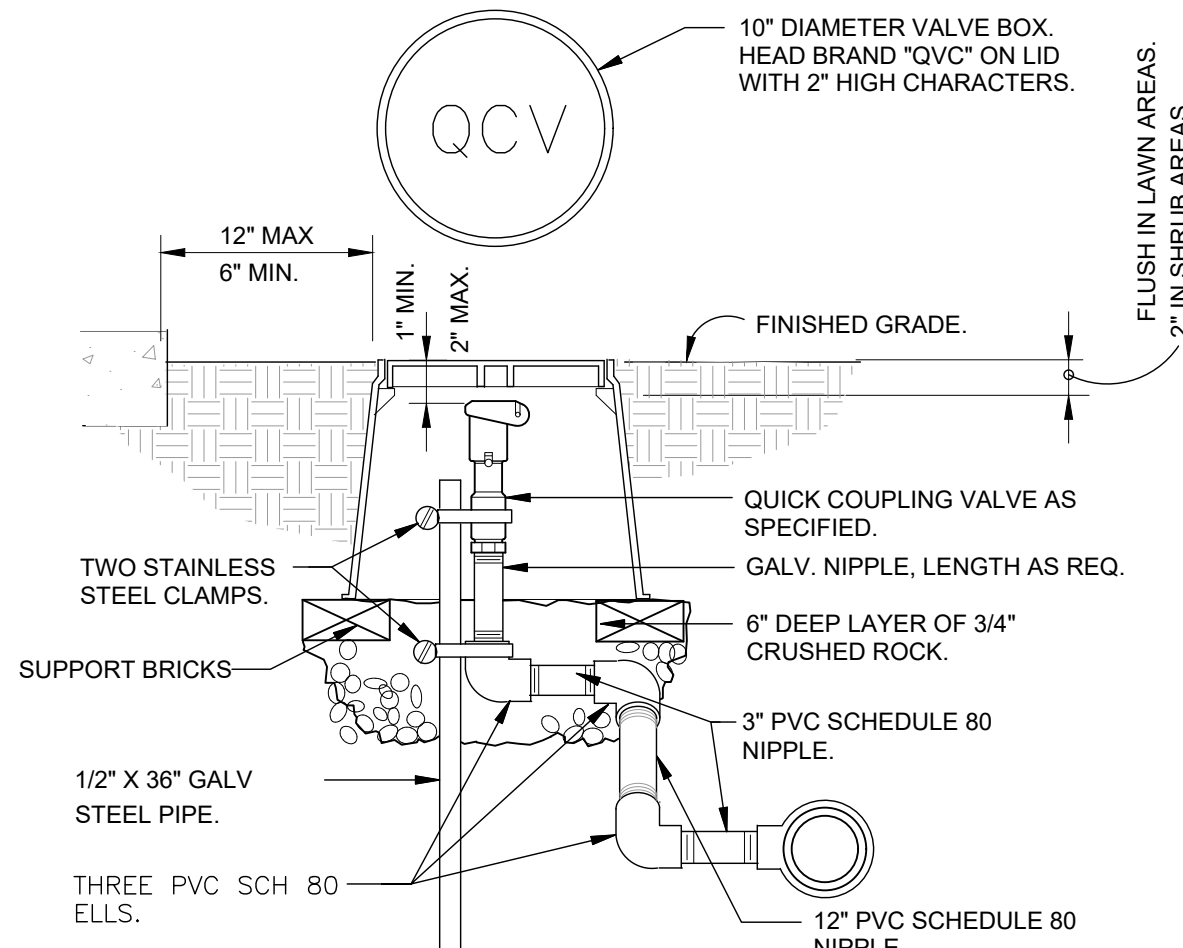
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IRRIGATION PLAN

SHEET #:
34

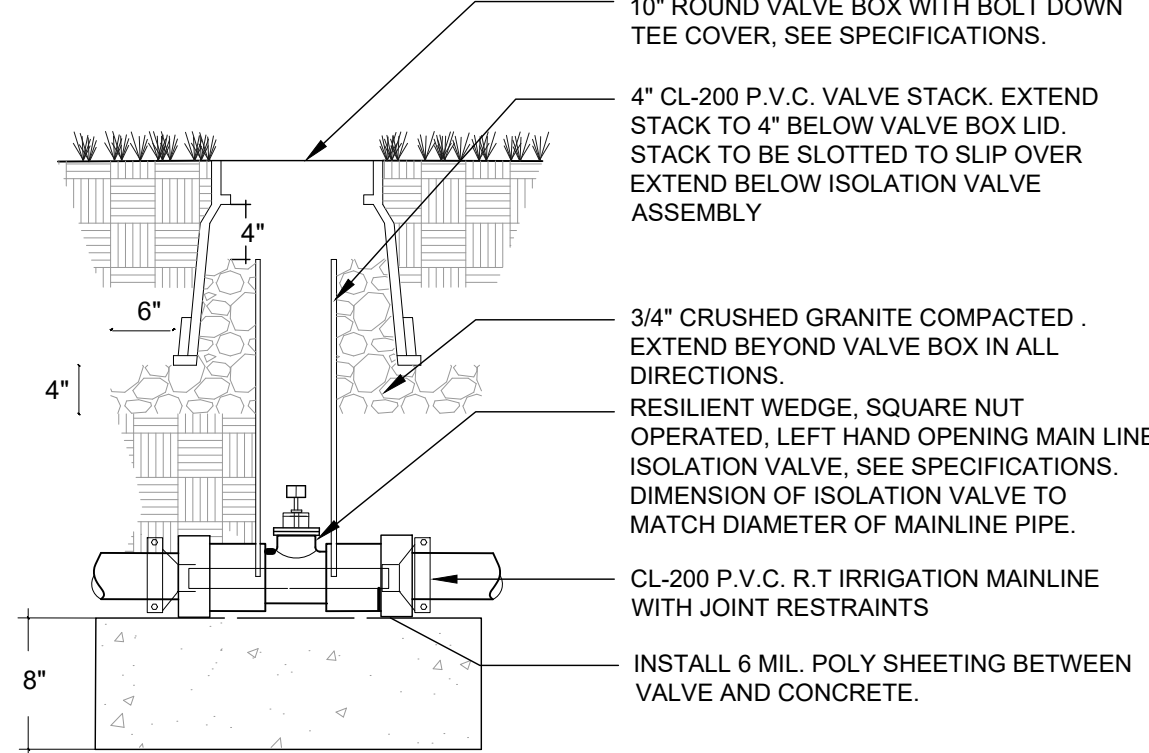
NOTE:
1. HEAT BRAND VALVE AND CONTROLLER NUMBER ON LID WITH 2" HIGH CHARACTERS.
2. SEE ADDITIONAL DETAILS FOR GROUNDING AND STAKING OF DECODER UNIT WITHIN VALVE BOX.



1 REMOTE CONTROL VALVE
1" = 1'-0" 328406.13-97

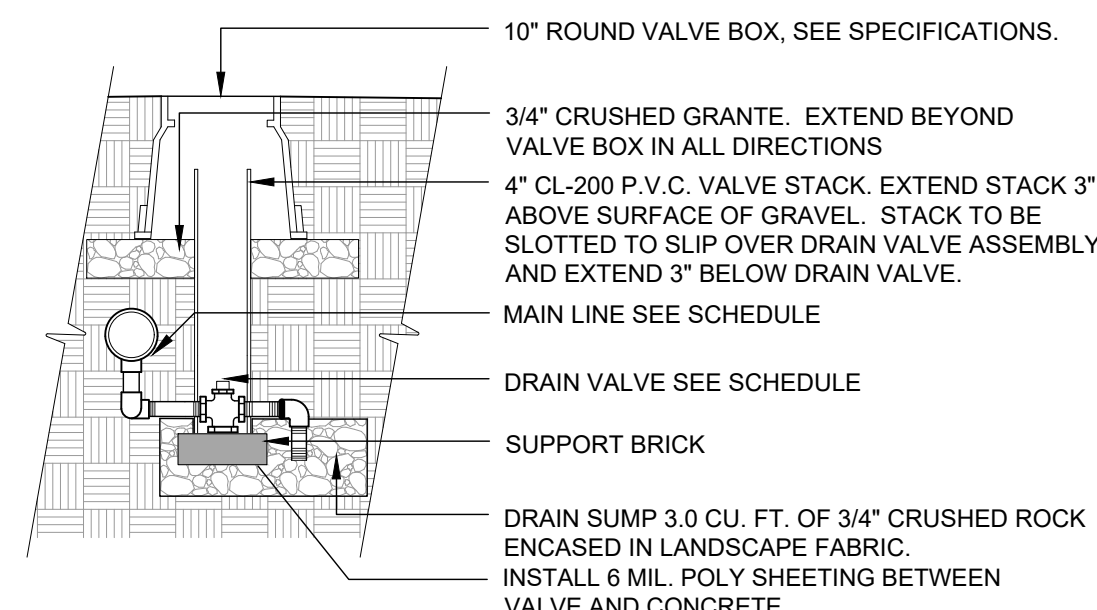


2 QUICK COUPLING VALVE IN BOX
1 1/2" = 12" 328406.43-02

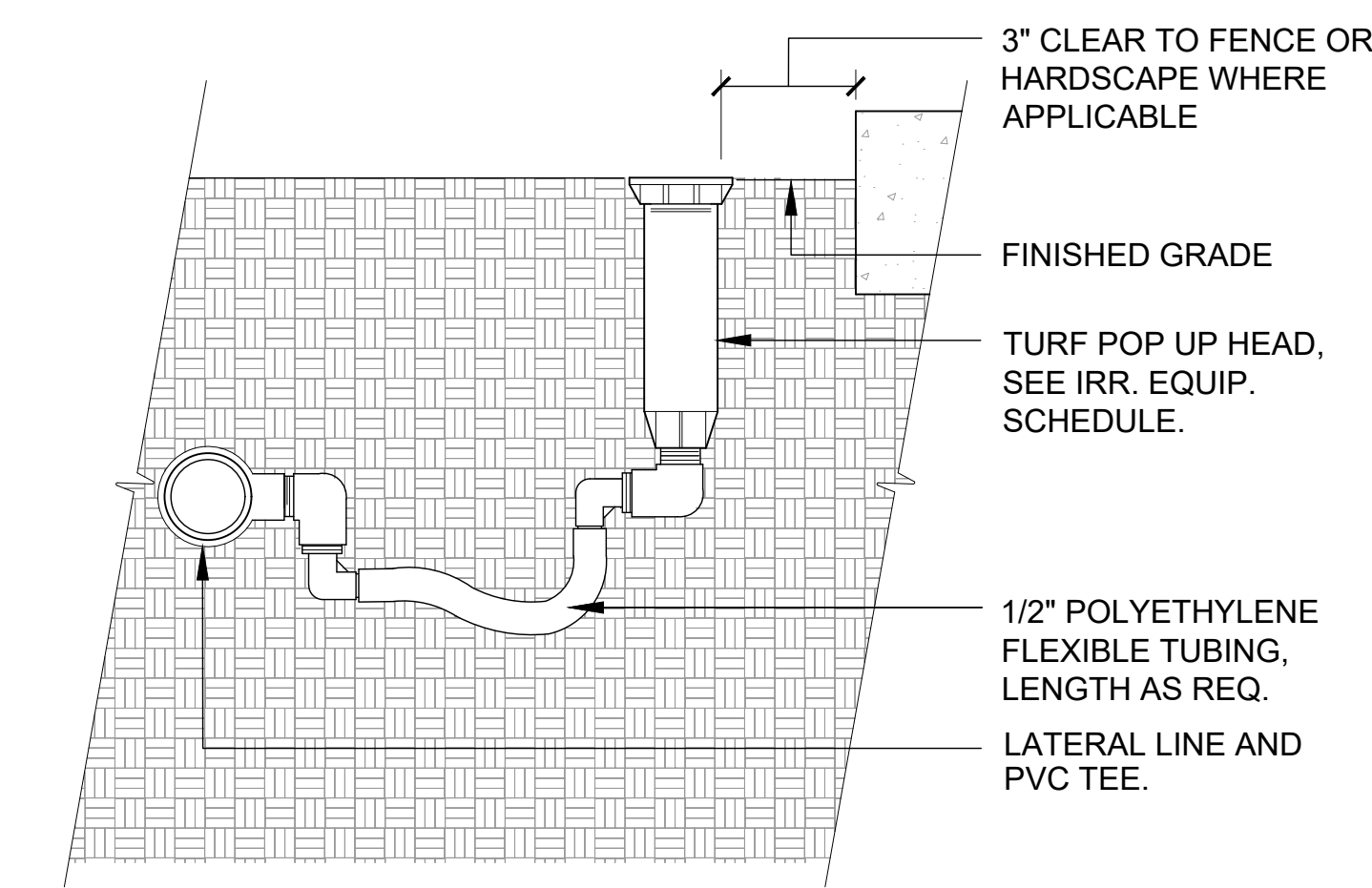


3 GATE VALVE - 3" AND LARGER
N.T.S. 328406.43-02

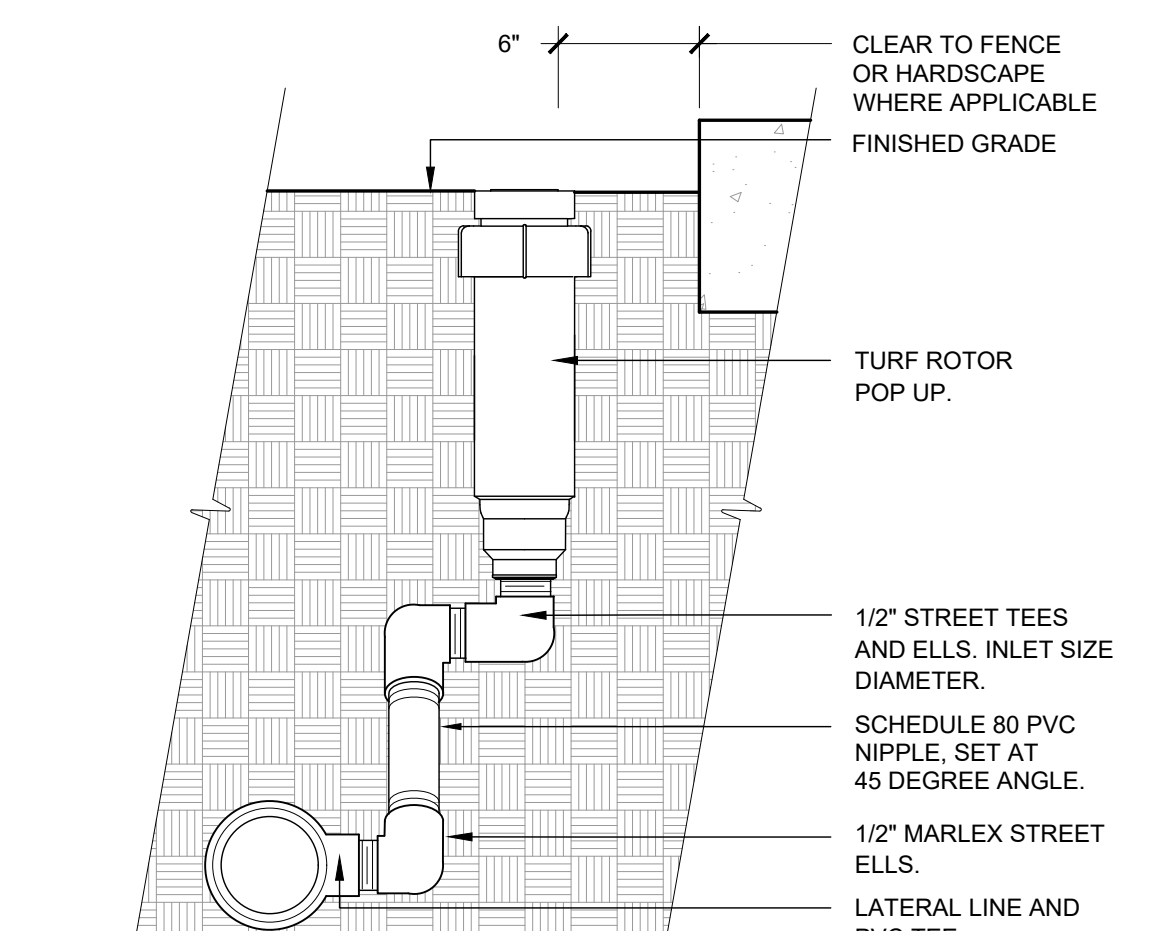
NOTE:
1. BRAND (DV) INTO VALVE BOX LID WITH 2" HIGH LETTERS MIN.
2. EXTEND VERTICAL DISCHARGE NIPPLE INTO DRAIN SUMP A MINIMUM OF 3".
3. SET TOP OF VALVE BOX LID LEVEL WITH FINISHED GRADE OF ADJACENT UNDISTURBED TURF GRASS AREAS.



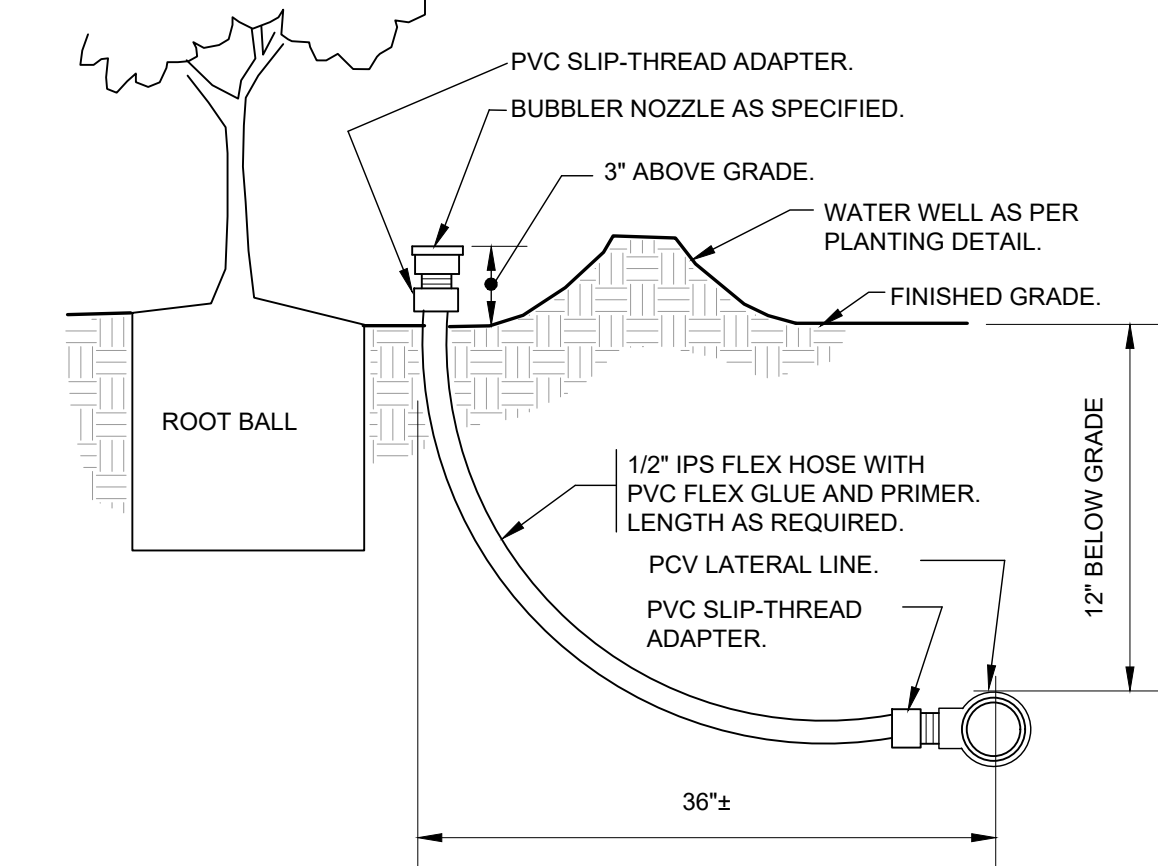
4 MANUAL DRAIN VALVE
1/2" = 1'-0" 328409.86-13



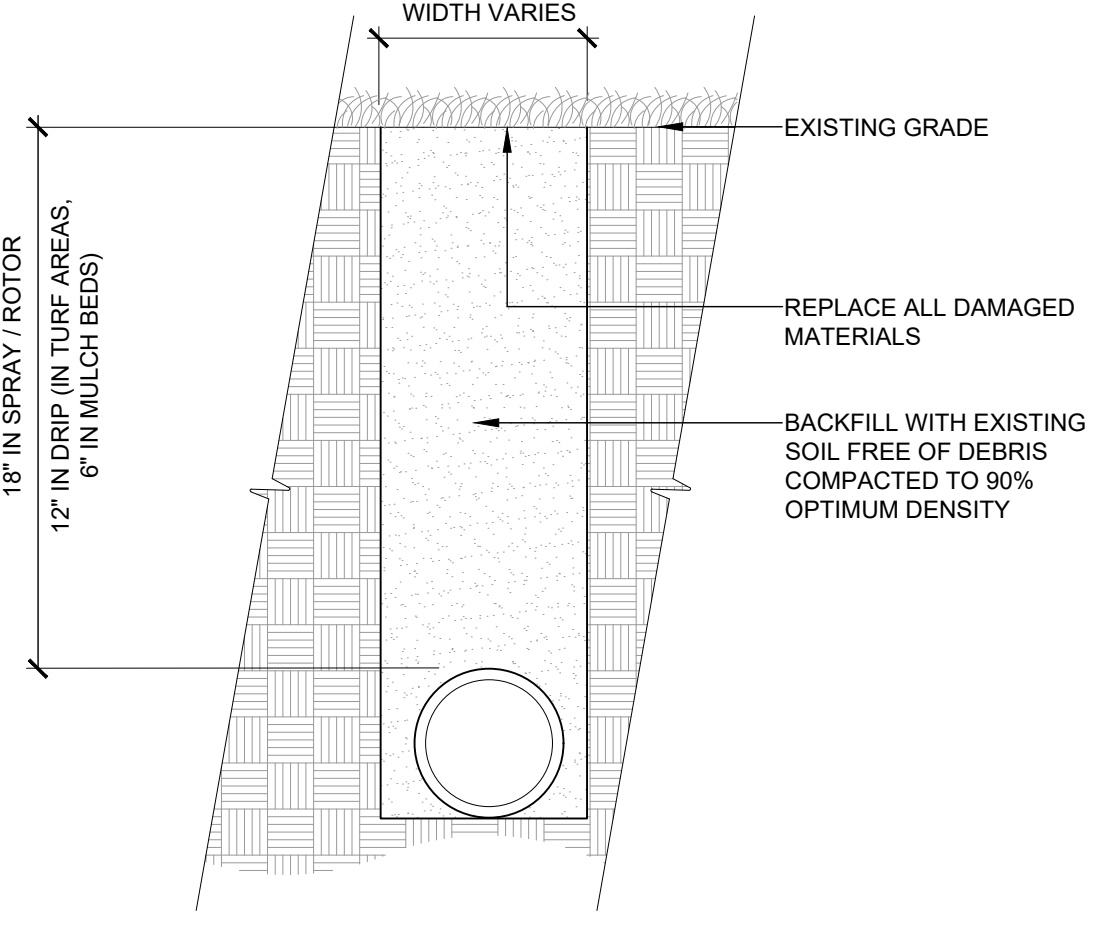
5 POP-UP SPRAY SWING ASSEMBLY
1/225-27



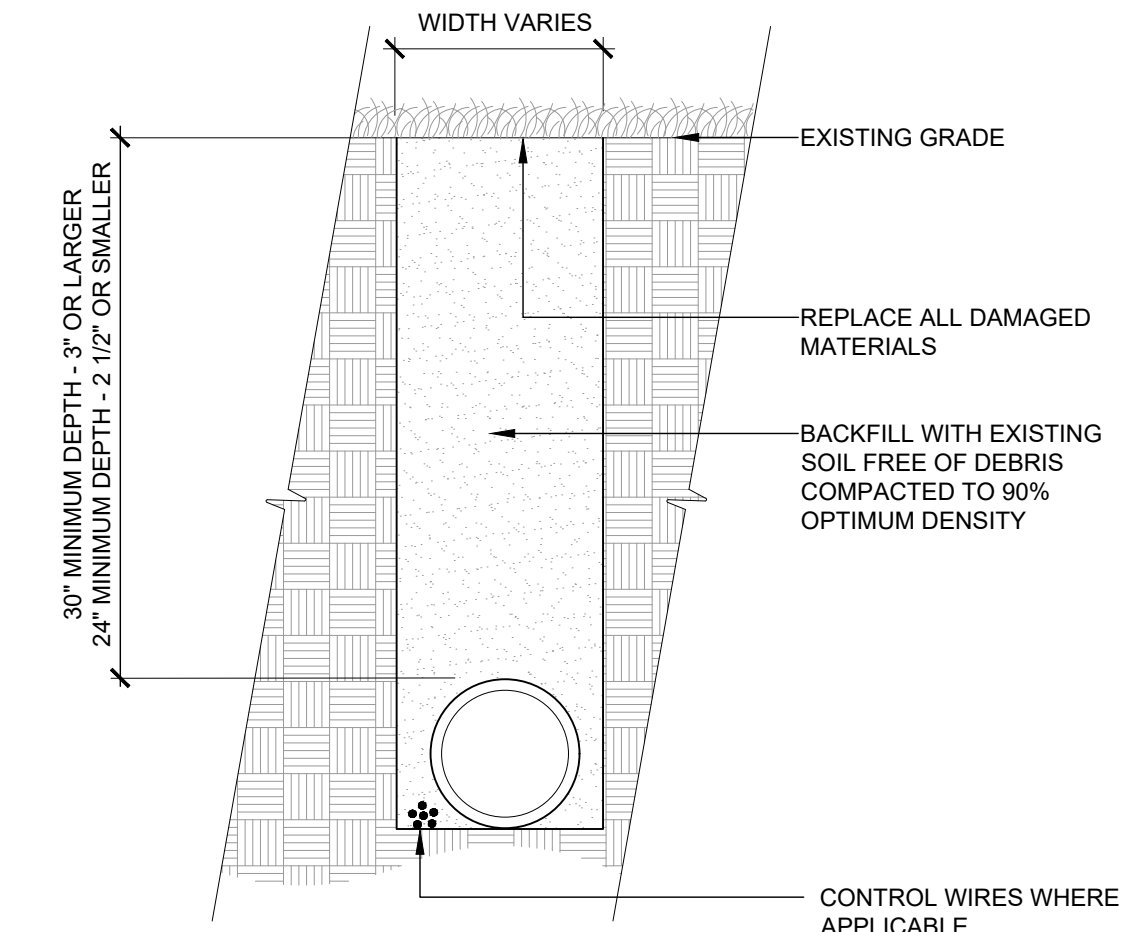
6 TURF ROTOR SWING ASSEMBLY
3" = 1'-0" 328403.16-11



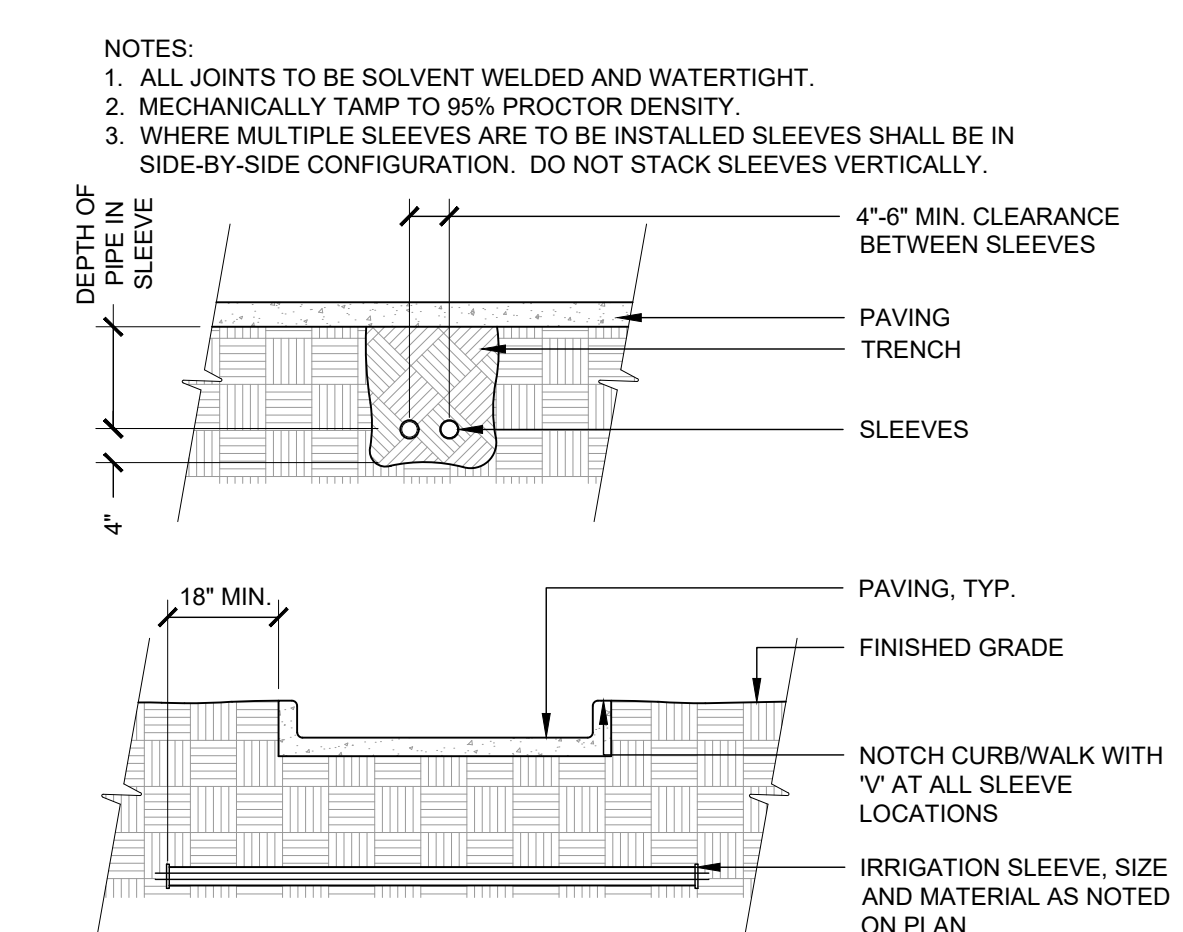
7 BUBBLER ON FLEX HOSE RISER
3" = 12" 328403.53-01



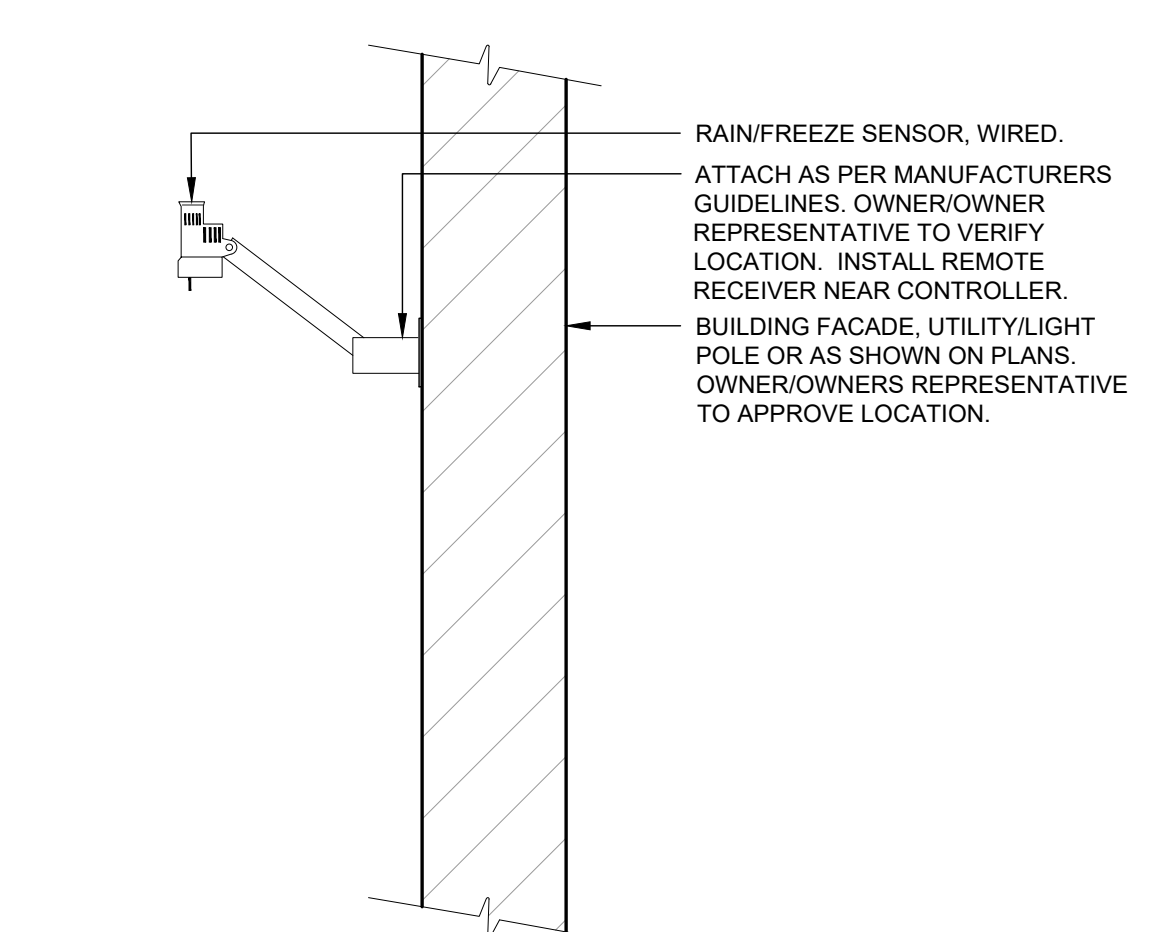
8 TRENCH DETAIL - LATERAL LINE
1 1/2" = 1'-0" 328409.16-04



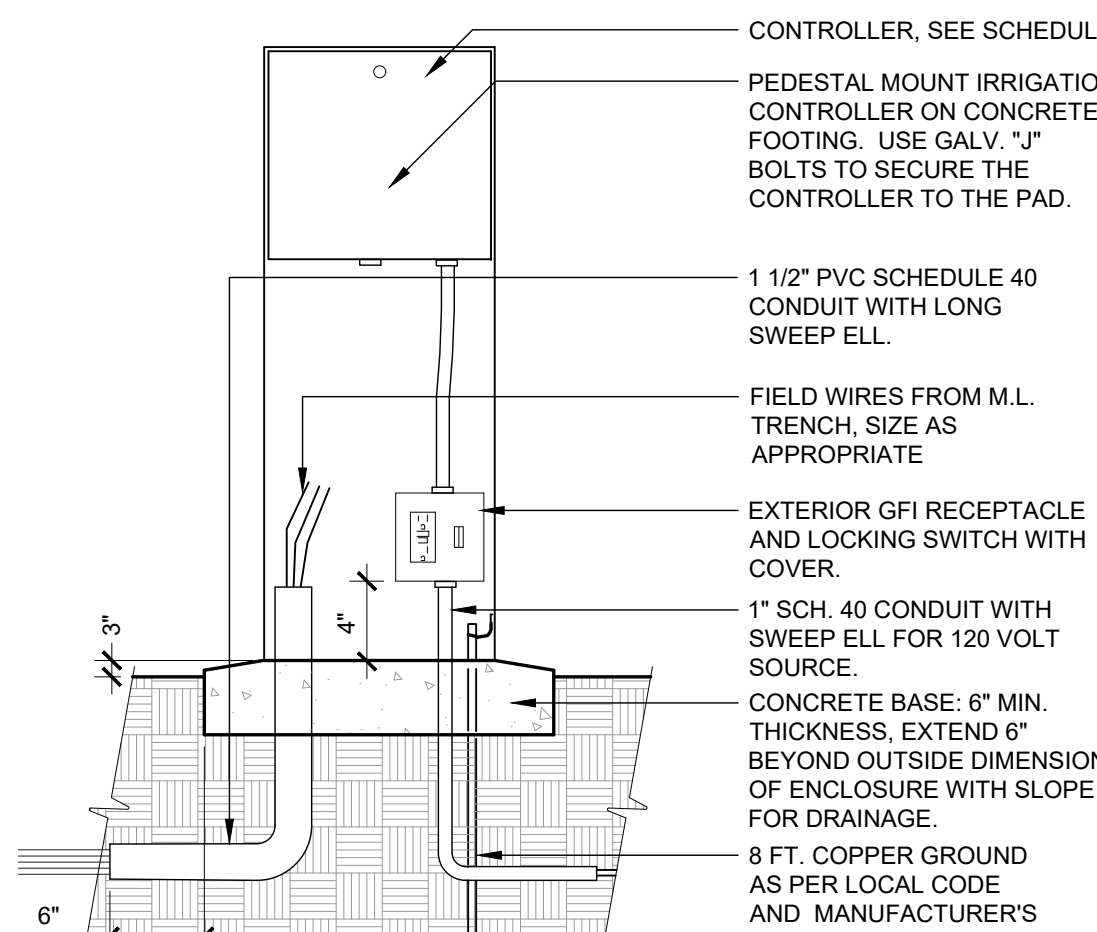
9 TRENCH DETAIL - MAINLINE
1 1/2" = 1'-0" 328409.16-04



10 SLEEVING
3/8" = 1'-0" 328409.16-04



11 RAIN SENSOR
3/4" = 1'-0" 328409.16-04



12 PEDESTAL MOUNT CONTROLLER
1" = 1'-0" 328409.16-04

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DISTANCE CHART

REFER TO THE FOLLOWING TABLE THAT LISTS THE LENGTH (IN FEET) FOR EACH SIZE/TYPE FITTING WITHIN WHICH ALL JOINTS JUST BE RESTRAINED. ALL FITTINGS AND JOINT RESTRAINTS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS & SPECIFICATIONS.

AS AN EXAMPLE, IF YOU ARE INSTALLING A 3" MAINLINE WITH A DIRECTIONAL CHANGE OF 90°, REFER TO CHART UNDER PIPE SIZE TO 3" AND UNDER BENDS 90 YOU WILL SEE THE DISTANCE OF 11". IF THERE IS ANY JOINT (VALVE, BELL, ETC.) YOU MUST INSTALL A JOINT RESTRAINT WITHIN 11" OF THE 90° MAINLINE DIRECTIONAL CHANGE.

BENDS				REDUCERS			DEAD END	
11°	22°	45°	90°	1 STEP	2 STEP	3 STEP	BLIND	SERV. B.
1'	1'	2'	6'	-	-	-	19'	6'
1'	2'	4'	9'	-	-	-	23'	10'
2'	3'	6'	11'	8'	10'	-	30'	15'
2'	4'	9'	20'	14'	20'	31'	45'	25'
3'	6'	13'	28'	30'	40'	53'	63'	40'
4'	8'	15'	38'	33'	55'	63'	75'	70'
5'	9'	19'	45'	36'	58'	75'	96'	90'
5'	10'	21'	53'	38'	60'	83'	112'	110'

INSTALLATION CHART

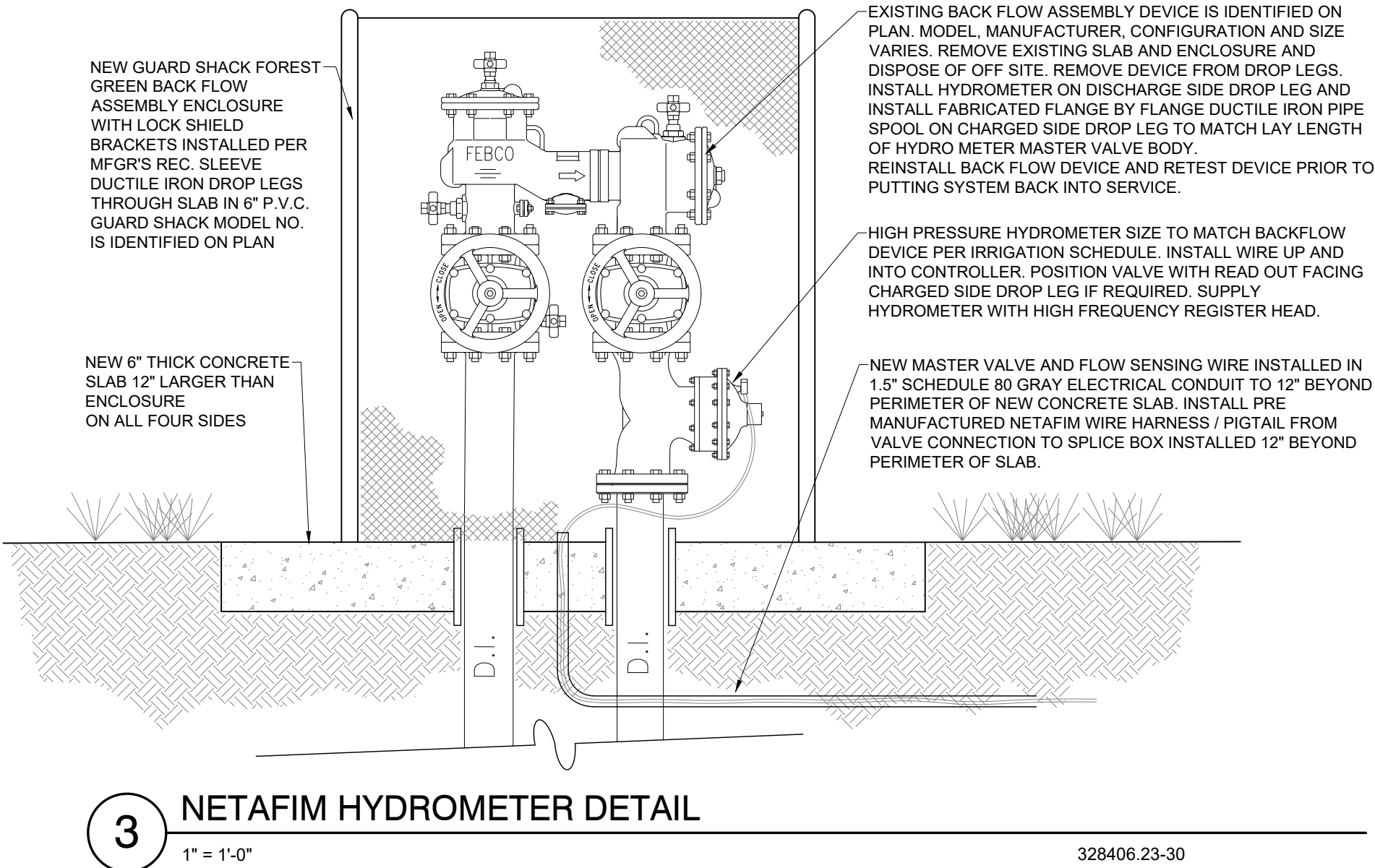
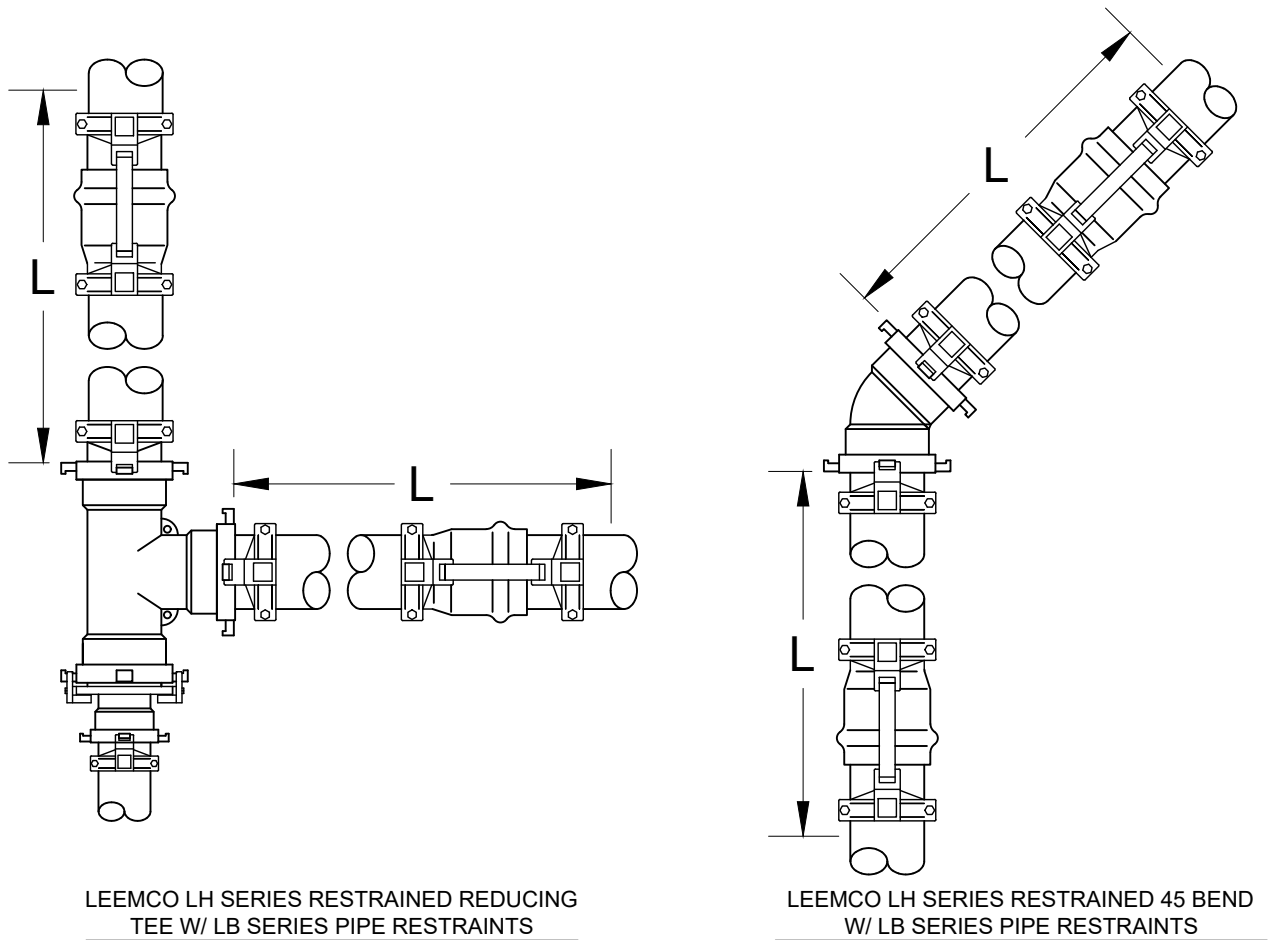
REFER TO THE FOLLOWING TABLE WHICH LISTS THE NUMBER OF BOLTS, SIZE, AND TORQUE FOR EACH BOLT IN REFERENCE TO THE SIZE OF PIPE WHICH IS BEING RESTRAINED.

AS AN EXAMPLE, IF YOU HAVE A 3" PIPE, YOU WILL NEED 2 BOLTS THAT ARE 3/8 X 2.5" AND TIGHTEN THEM WITH A TORQUE WRENCH TO 20 FT-LBS.

NO. BOLTS	BOLT SIZE	TORQUE FT-LBS.
2	3/8" x 2.5"	20
2	3/8" x 2.5"	20
2	3/8" x 2.5"	20
2	1/2" x 3"	50
2	1/2" x 3.5"	50
4	1/2" x 4"	50
4	5/8" x 5.5"	100
4	5/8" x 5.5"	100

CONTACT TONY GARNER @ (208) 631-7787, THE LEEMCO REPRESENTATIVE, FOR ALL QUESTIONS CONCERNING LEEMCO PRODUCTS. COORDINATE AN INSTALLATION CLINIC WITH TONY GARNER PRIOR TO INSTALLING THE MAINLINE.

1 LEEMCO JOINT RESTRAINT CHART DETAIL



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THORNTON, CO 80229
(303) 538-7200

STAMP:

PROJECT:
SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS
11890 HOLLY STREET

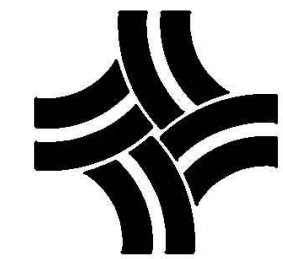
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SHEET TITLE:
IRRIGATION
DETAILS

SHEET #:



1.5" & LARGER IRRIGATION METER
POINT OF CONNECTION DETAIL

CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS

NOTE:

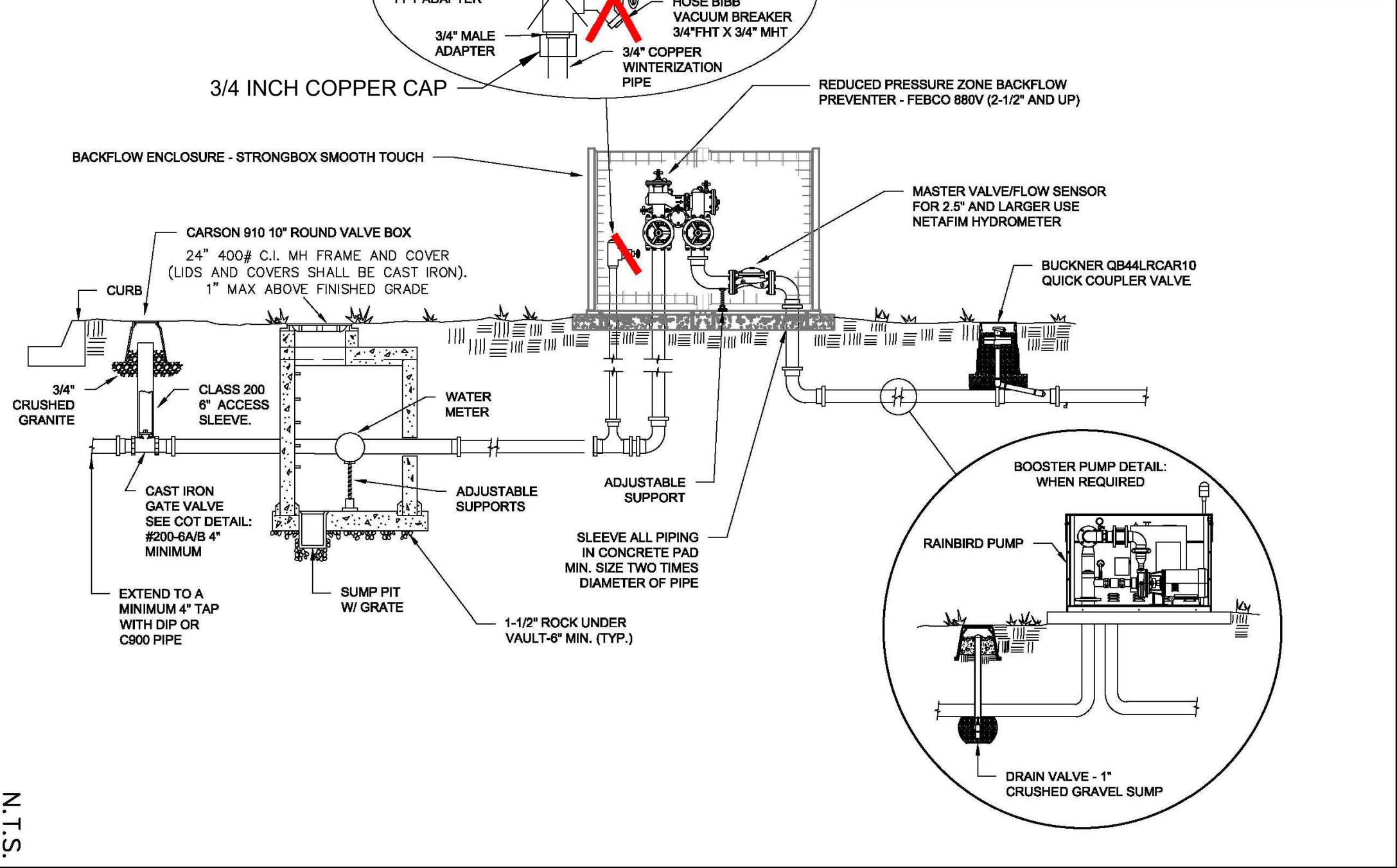
CONCRETE PAD PENETRATIONS TO BE 1" LARGER THAN SLEEVE DIAMETER. REFER TO ENCLOSURE INSTRUCTIONS FOR CONCRETE PAD DIMENSIONS. ALL VALVES AND FITTINGS INCLUDING RPZ SHALL MATCH SIZE OF THE SERVICE LINE FROM METER. SEE TABLE 800 - 1 & 2 IN THESE STANDARDS AND SPECIFICATIONS FOR MORE INFORMATION.

SEE DETAIL 800-10A & 10B FOR SPECIFIC VAULT AND METER SETTING REQUIREMENTS.

SEE SECTION 800 OF THE WRITTEN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS OF COMPONENTS.

EXTEND CRUSHED GRAVEL SUMP 6" BEYOND THE PERIMETER OF EACH ACCESS BOX FOR SUPPORT AND DRAINAGE.

N.T.S.



2 POINT OF CONNECTION DETAIL DETAIL



N.T.S.



SIBLE
N.T.S.



2 CORROSION PROTECTION DETAIL

SKYLAKE RANCH OPEN SPACE LAND IMPROVEMENTS

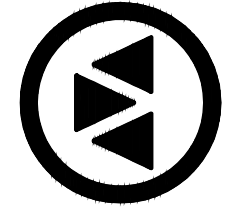
GRADING AND SEDIMENT CONTROL PLAN

CITY OF THORNTON

MARCH 2024

PROJECT #20-27A

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PROJECT:

**SKYLAKE RANCH OPEN
LAND
IMPROVEMENTS**
11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

CRC

DRAWN BY:

CRC

CHECKED BY:

JFD

ORIGINAL DATE:

MARCH 22, 2024

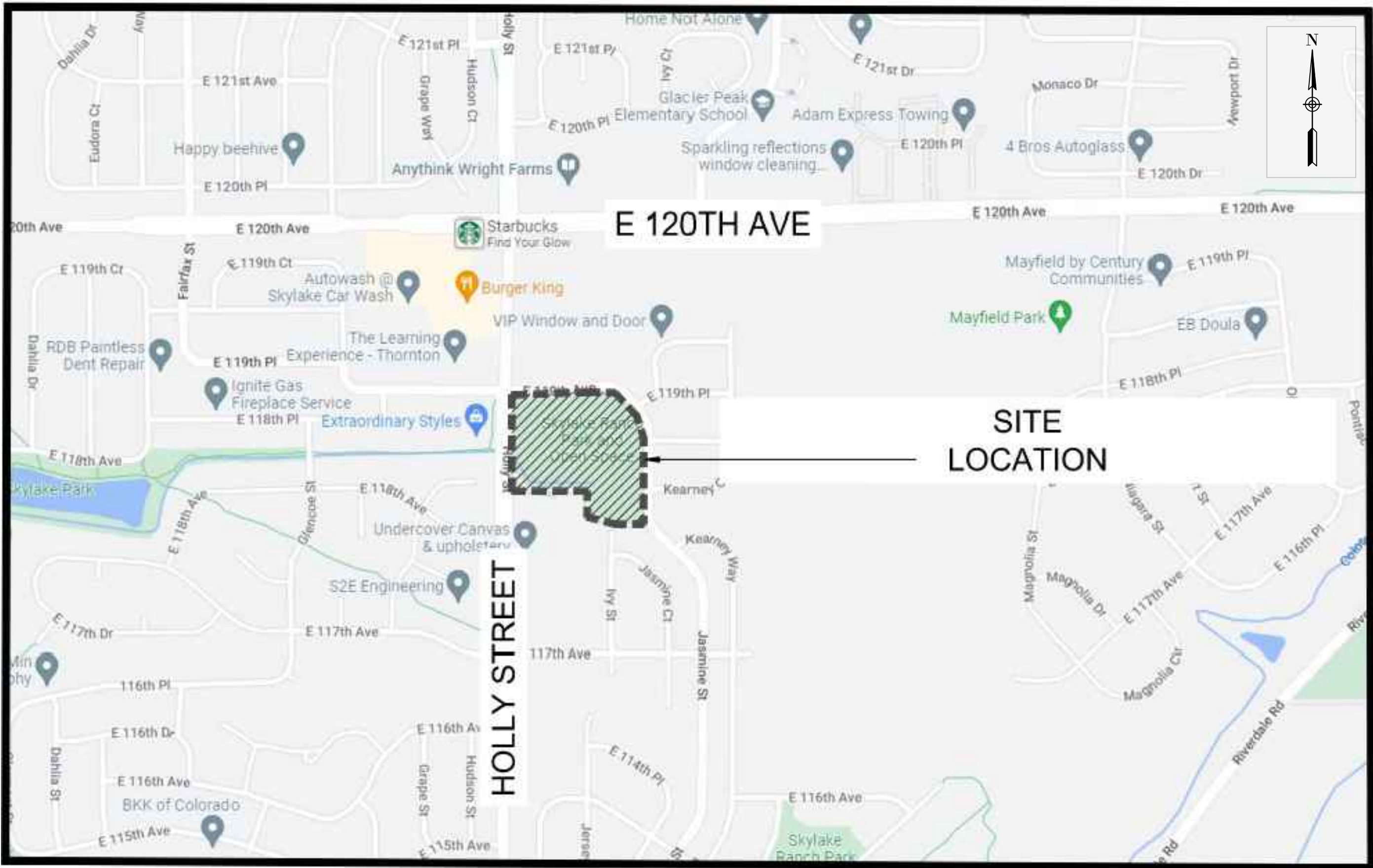
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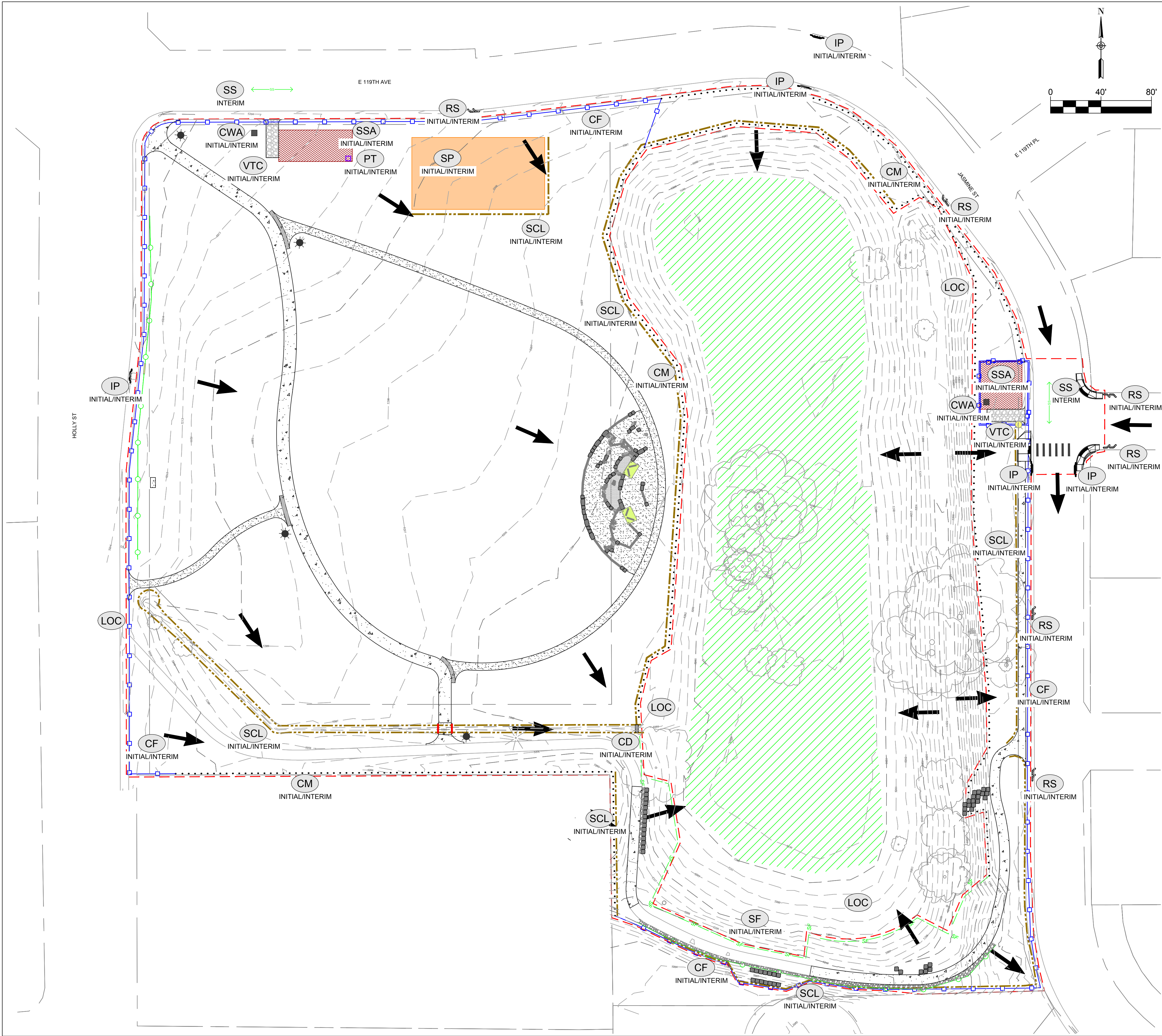
38



VICINITY MAP

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- CONTROL MEASURES SHALL BE INSTALLED BEFORE ANY EARTH DISTURBING ACTIVITIES COMMENCE.
- THE OWNER/CONTRACTOR SHALL NOTIFY THE THORNTON INSPECTOR ONCE ALL INITIAL CONTROL MEASURES HAVE BEEN INSTALLED FOR AN INITIAL INSPECTION AT LEAST FORTY EIGHT (48) HOURS PRIOR TO THE INSPECTION. CONSTRUCTION ACTIVITY CANNOT BEGIN UNTIL A PASSING INITIAL INSPECTION HAS OCCURRED.
- STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES SHALL NOT CAUSE, HAVE THE REASONABLE POTENTIAL TO CAUSE, OR MEASURABLY CONTRIBUTE TO EXCEED ANY WATER QUALITY STANDARD.
- CONSTRUCTION SHALL BE PHASED IN A MANNER TO LIMIT EARTH DISTURBING ACTIVITIES (I.E. THE ENTIRE PROJECT SITE SHOULD NOT BE DISTURBED IF CONSTRUCTION WILL ONLY BE OCCURRING IN ONE PARTICULAR SECTION).
- SEDIMENT CAUSED BY ACCELERATED SOIL EROSION SHALL BE REMOVED FROM RUNOFF WATER BEFORE IT LEAVES THE CONSTRUCTION SITE.
- BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND ANY OTHER CHEMICALS SHALL HAVE SECONDARY CONTAINMENT OR EQUIVALENT PROTECTION TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING THE MS4 OR STATE WATERS.
- A COPY OF THE SWMP AND EROSION AND SEDIMENT CONTROL (ESC) PLANS MUST BE AVAILABLE AT ALL TIMES ON THE CONSTRUCTION SITE UNLESS OTHERWISE APPROVED BY CDPHE OR THORNTON.
- THE SWMP AND EC PLAN SHALL BE CONTINUOUSLY UPDATED TO REFLECT NEW OR REVISED CONTROL MEASURES (CM) DUE TO CHANGES IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE CONSTRUCTION SITE. UPDATES MUST BE MADE WITHIN 72-HOURS FOLLOWING THE CHANGE IN CONTROL MEASURES.
- THE OWNER/CONTRACTOR SHALL INSPECT THE CONSTRUCTION SITE (INCLUDING ALL CONTROL MEASURES, STORAGE CONTAINERS, AND CONSTRUCTION EQUIPMENT) AT A MINIMUM OF EVERY 7 CALENDAR DAYS OR EVERY 14 CALENDAR DAYS. IF ON THE 14 DAY FREQUENCY A 24-HOUR POST STORM INSPECTION MUST BE CONDUCTED AFTER A PRECIPITATION EVENT OR SNOW MELT. INSPECTIONS SHALL CONTINUE UNTIL AN INACTIVATION NOTICE IS FILED WITH CDPHE.
- THE OWNER/CONTRACTOR SHALL KEEP A RECORD OF ALL INSPECTIONS ON SITE AND AVAILABLE FOR REVIEW BY CDPHE OR CITY STAFF. INSPECTION REPORTS MUST IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT.
- CONTROL MEASURES REQUIRING MAINTENANCE OR ADJUSTMENT SHALL BE REPAIRED IMMEDIATELY AFTER OBSERVATION OF THE FAILING CONTROL MEASURE.
- SILT FENCE PATCHING: PATCHING IS ONLY ALLOWED ON THE TOP HALF OF THE FENCE. NOT MORE THAN TWO (2) PATCHES PER SECTION OF FENCE. SILT FENCE WITH HOLES OR DETERIORATION ON THE LOWER HALF OF THE FENCE MUST BE REPLACED. REPAIR TYPICALLY INVOLVES REPLACING THE SILT FENCE TO MAINTAIN THE CMS EFFECTIVENESS TO DRAIN SLOWLY AND FUNCTION AS ORIGINALLY DESIGNED.
- FOR ALL INSTANCES OF NONCOMPLIANCE BASED ON ENVIRONMENTAL HAZARDS AND CHEMICAL SPILLS AND RELEASES, ALL NEEDED INFORMATION MUST BE PROVIDED ORALLY TO CDPHE SPILL REPORTING LINE (24-HOUR NUMBER FOR ENVIRONMENTAL HAZARDS AND CHEMICAL SPILLS AND RELEASES: 1-877-518-5608) WITHIN 24-HOURS FROM THE TIME THE OWNER/CONTRACTOR BECOMES AWARE OF THE CIRCUMSTANCES.
- STRAW BALES SHALL NOT BE USED FOR PRIMARY EROSION OR SEDIMENT CONTROL (I.E. STRAW BALES MAY BE USED FOR REINFORCEMENT BEHIND ANOTHER BMP SUCH AS SILT FENCE).
- CONTROL MEASURES REFERRED TO AS "CUTBACK CURB" ARE NOT ALLOWED. THE CUTBACK CURB MAY BECOME INEFFECTIVE AND MAY ALSO COMPROMISE THE INTEGRITY OF THE CURB AND IN MOST CASES DOES NOT PROVIDE ANY WATER QUALITY BENEFIT FOR FILTERING OUT SEDIMENT.
- INLET PROTECTION AND VEGETATIVE BUFFER CONTROL MEASURES SHALL NOT BE USED AS STANDALONE CMS. THESE METHODS MUST BE UTILIZED WITH AT LEAST ONE ADDITIONAL CM.
- CONTROL MEASURES INTENDED FOR SHEET FLOW SEDIMENT RUNOFF SHALL BE PLACED PARALLEL TO THE SLOPE.
- ALL CONTROL MEASURES SHALL BE CLEANED WHEN SEDIMENT LEVELS ACCUMULATE TO HALF THE DESIGN OF THE CM UNLESS OTHERWISE SPECIFIED.
- A VEHICLE TRACKING CONTROL (VTC) SHALL BE PLACED AT ALL ENTRANCES/EXITS FROM THE SITE AS WELL AS ANY EGRESS FROM EXPOSED DIRT TO PAVED AREAS TO PREVENT TRACK-OUT ONTO STREETS. IF TRACK-OUT DOES OCCUR, THE OWNER/CONTRACTOR SHALL IMMEDIATELY SWEEP THE STREET OF DEBRIS. RECYCLED CRUSHED CONCRETE OR ASPHALT SHALL NOT BE USED FOR VEHICLE TRACKING PADS.
- FOR RESIDENTIAL PROJECTS, BACK OF CURB PROTECTION IS REQUIRED ALONG ALL INTERIOR LOTS.
- ALL SEDIMENT COLLECTED IN CONTROL MEASURES SHALL BE REMOVED UPON INITIAL ACCEPTANCE.
- WIND EROSION AND DUST CONTROL MEASURES MUST BE UTILIZED TO MINIMIZE AIRBORNE PARTICULATE DUST. CONTROL MEASURES MAY INCLUDE MINIMIZING DISTURBED AREAS, WATERING, AND/OR PROVIDING TEMPORARY STABILIZATION.
- PERMANENT EROSION CONTROL MEASURES FOR SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH DISTURBANCE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH DISTURBANCE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH DISTURBANCE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED WITHIN 14 CALENDAR DAYS. TEMPORARY EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION MEASURES ARE IMPLEMENTED.
- FINAL STABILIZATION HAS BEEN ACHIEVED WHEN ALL EARTH DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED WITH AN INDIVIDUAL PLANT DENSITY OF AT LEAST 70 PERCENT OF PRE-DISTURBANCE LEVELS, OR EQUIVALENT PERMANENT, PHYSICAL EROSION REDUCTION METHODS HAVE BEEN EMPLOYED.
- ALL TEMPORARY CONTROL MEASURES SHALL BE REMOVED FROM THE SITE UPON SUBMITTING THE INACTIVATION NOTICE.
- ALL SITE WASTES (INCLUDING TRASH AND BUILDING MATERIALS) MUST BE PROPERLY MANAGED TO PREVENT POTENTIAL POLLUTION DISCHARGES TO THE MS4 OR STATE WATERS.
- STREET REPAIR OPERATIONS SUCH AS ROTOR MILLING, SLURRY SEAL AND CHIP SEAL. THE MINIMUM CMS REQUIRED ARE; INLET PROTECTION, CURB SOCKS AND STREET SWEEPING.



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BMP LEGEND

	CD	CHECK DAM
	CWA	CONCRETE WASHOUT AREA
	CF	CONSTRUCTION FENCE
	CM	CONSTRUCTION MARKER
	ECB	EROSION CONTROL BLANKET
	IP	INLET PROTECTION
	PT	PORTABLE TOILET
	RS	ROCK SOCK
	SCL	SEDIMENT CONTROL LOG
	SM	SEEDING AND MULCHING
	SF	SILT FENCE
	SP	STOCKPILE AREA
	SSA	STABILIZED STAGING AREA
	SS	STREET SWEEPING
	VTC	VEHICLE TRACKING CONTROL
	LOC	LIMITS OF CONSTRUCTION
		FLOW DIRECTIONAL ARROW

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SUBMITTAL:
BID SUBMITTAL

PROJECT #:
20-27A

DESIGNED BY:
CRC

DRAWN BY:
CRC

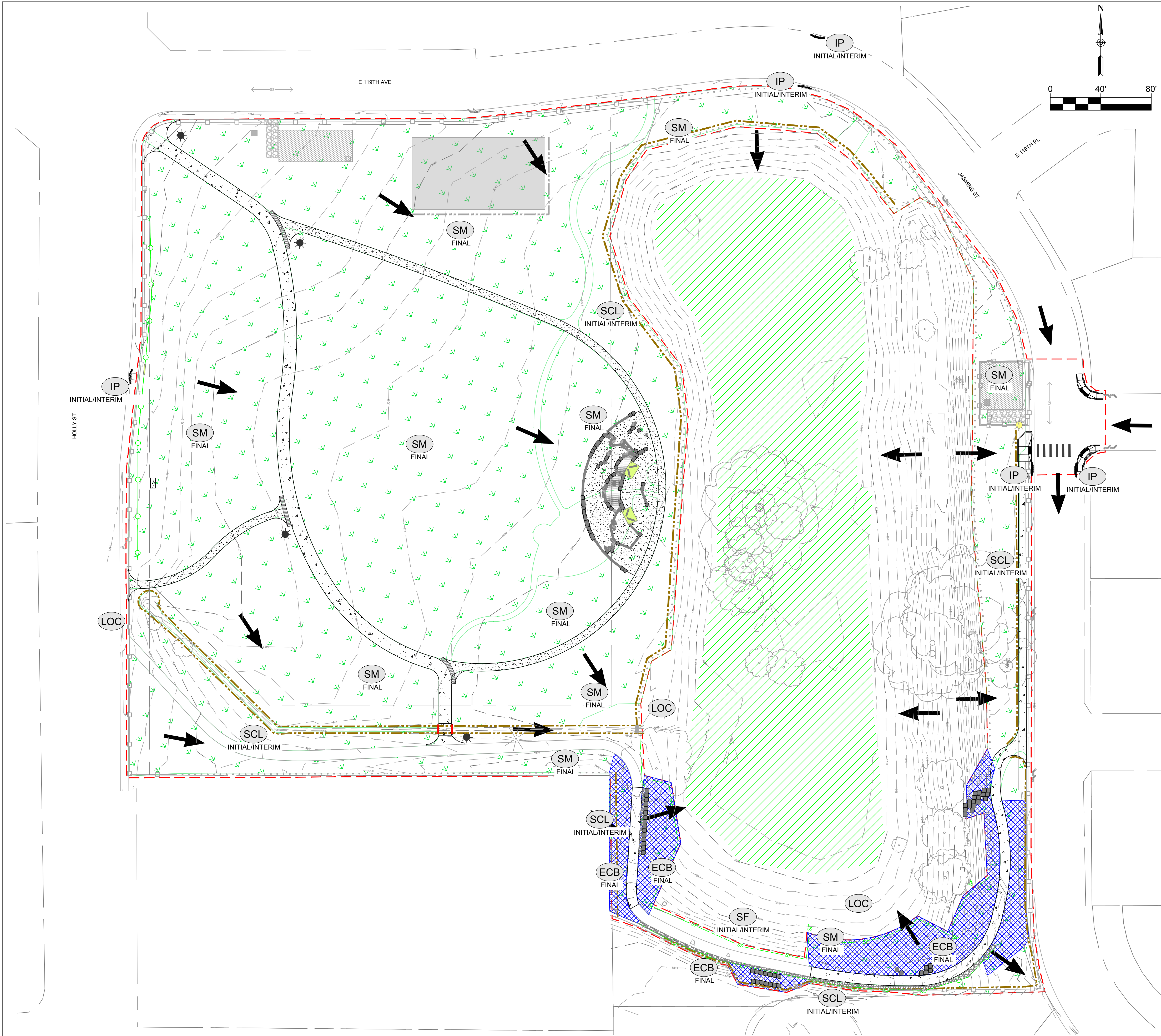
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	SSA	STABILIZED STAGING AREA
	SS	STREET SWEEPING
	VTC	VEHICLE TRACKING CONTROL
	LOC	LIMITS OF CONSTRUCTION
		FLOW DIRECTIONAL ARROW

- NOTES:
1. INLET PROTECTION, SEDIMENT CONTROL LOG, AND SILT FENCE SHOWN ON FINAL GESC PLAN SHALL REMAIN IN PLACE UNTIL THEIR REMOVAL IS APPROVED BY THE GESC INSPECTOR.

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COLORADO LICENSED
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Professional Engineer

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40

EC-12



EC-12



CD-6	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	November 2010
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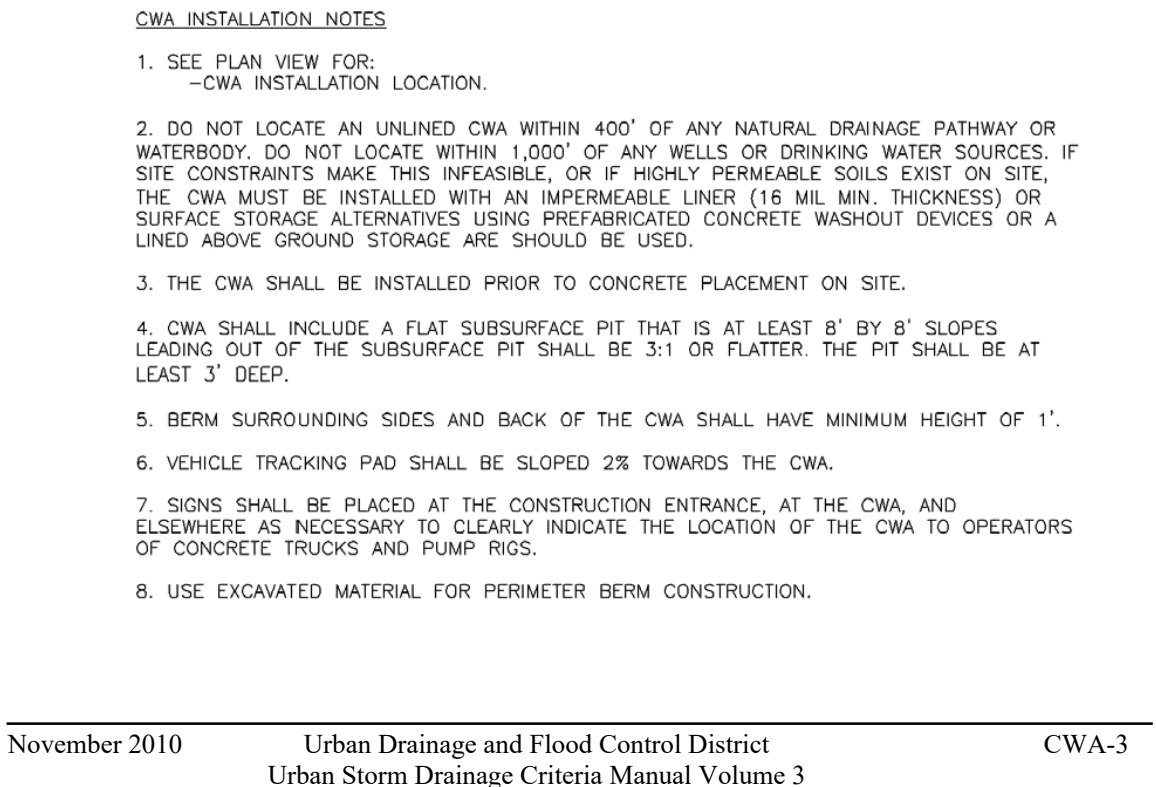
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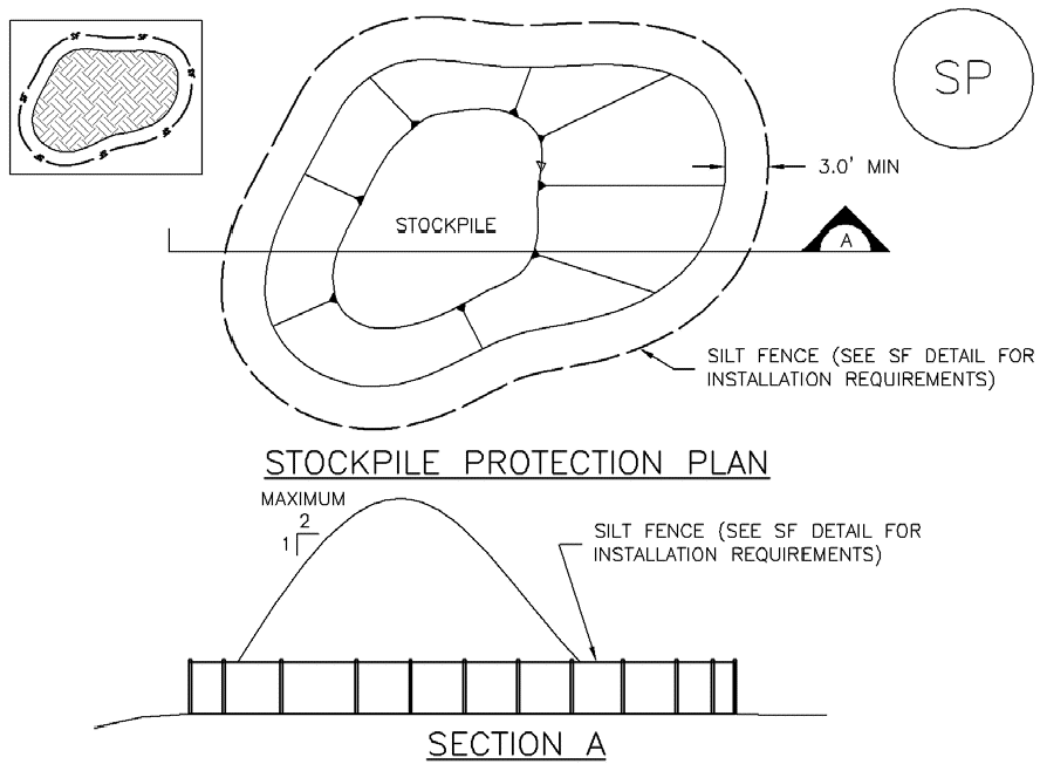
EC-12

**MM-1**

CWA-4	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	November 2010
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Stockpile Management (SP)

MM-2



SP-1. STOCKPILE PROTECTION
STOCKPILE PROTECTION INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION OF STOCKPILES.
-TYPE OF STOCKPILE PROTECTION.
- INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.
- STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEED AND MULCHED WITH A TEMPORARY GRASS COVER. ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS), USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30-60 DAYS).
- FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

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Urban Storm Drainage Criteria Manual Volume 3 SP-3

MM-2

Stockpile Management (SM)

STOCKPILE PROTECTION MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.
- STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.

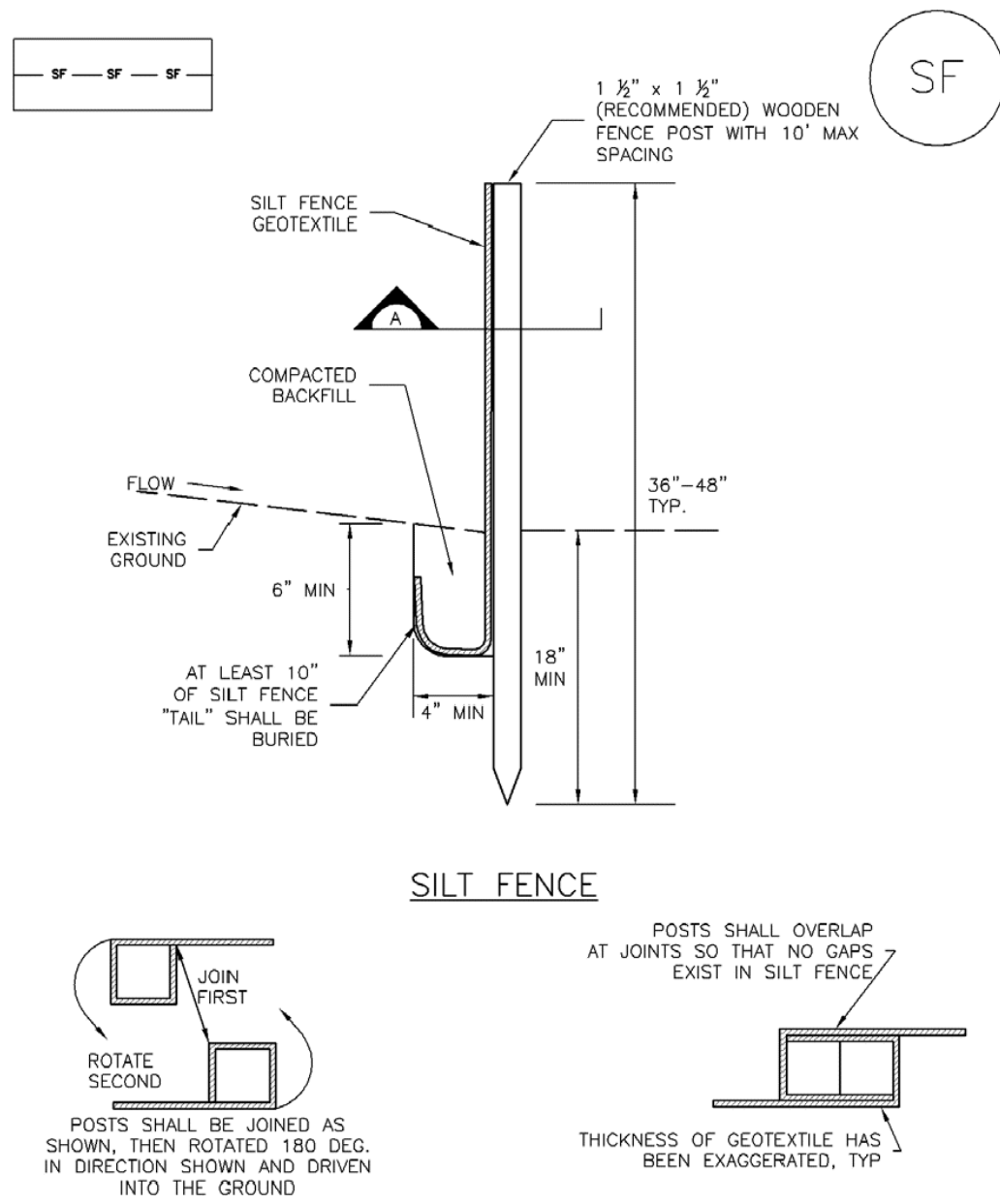
(DETAILS ADAPTED FROM PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SP-4 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 November 2010

Silt Fence (SF)

SC-1



SILT FENCE

SECTION A

SF-1. SILT FENCE

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Urban Storm Drainage Criteria Manual Volume 3 SF-3

SC-1

Silt Fence (SF)

SILT FENCE INSTALLATION NOTES

- SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
- A UNIFORM 6\"/>
- COMPACT ANCHOR TRENCH BY HAND WITH A \"JUMPING JACK\" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
- SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
- SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1\"/>
- AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A \"J-HOOK.\" THE \"J-HOOK\" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').
- SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6\"/>
- REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
- SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
- WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

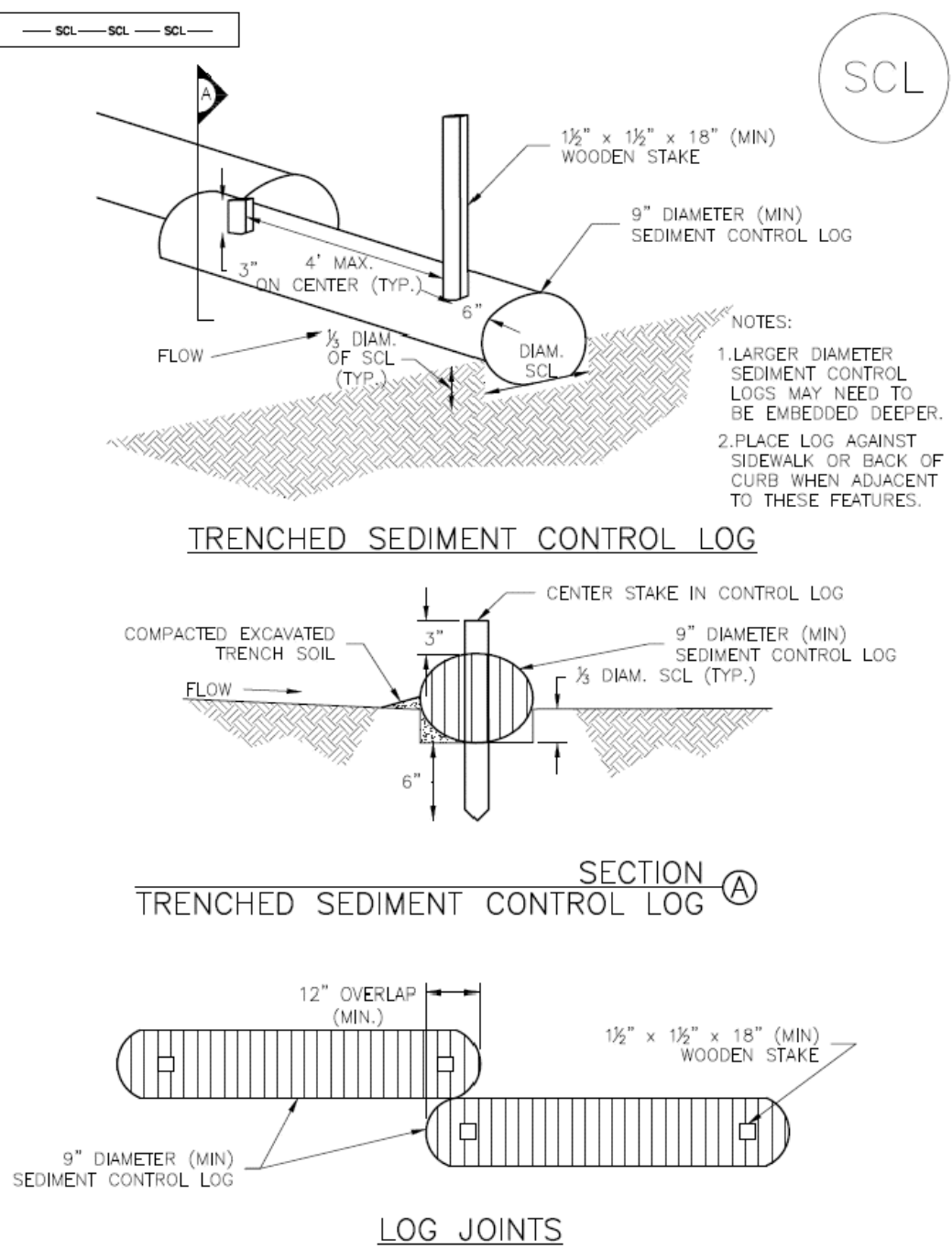
(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SF-4 Urban Drainage and Flood Control District
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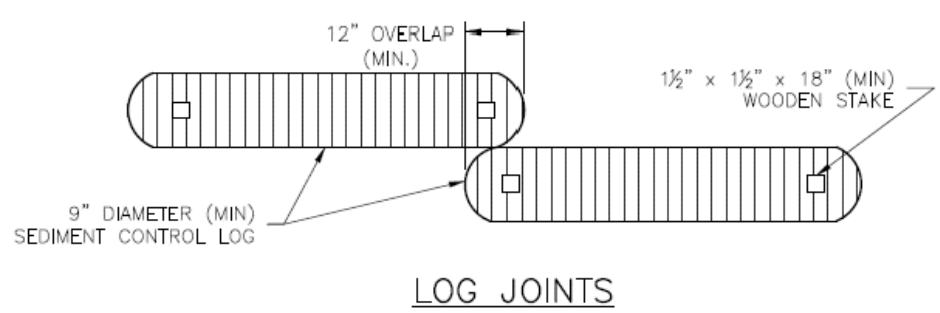
Sediment Control Log (SCL)

SC-2



TRENCHED SEDIMENT CONTROL LOG

SECTION A
TRENCHED SEDIMENT CONTROL LOG



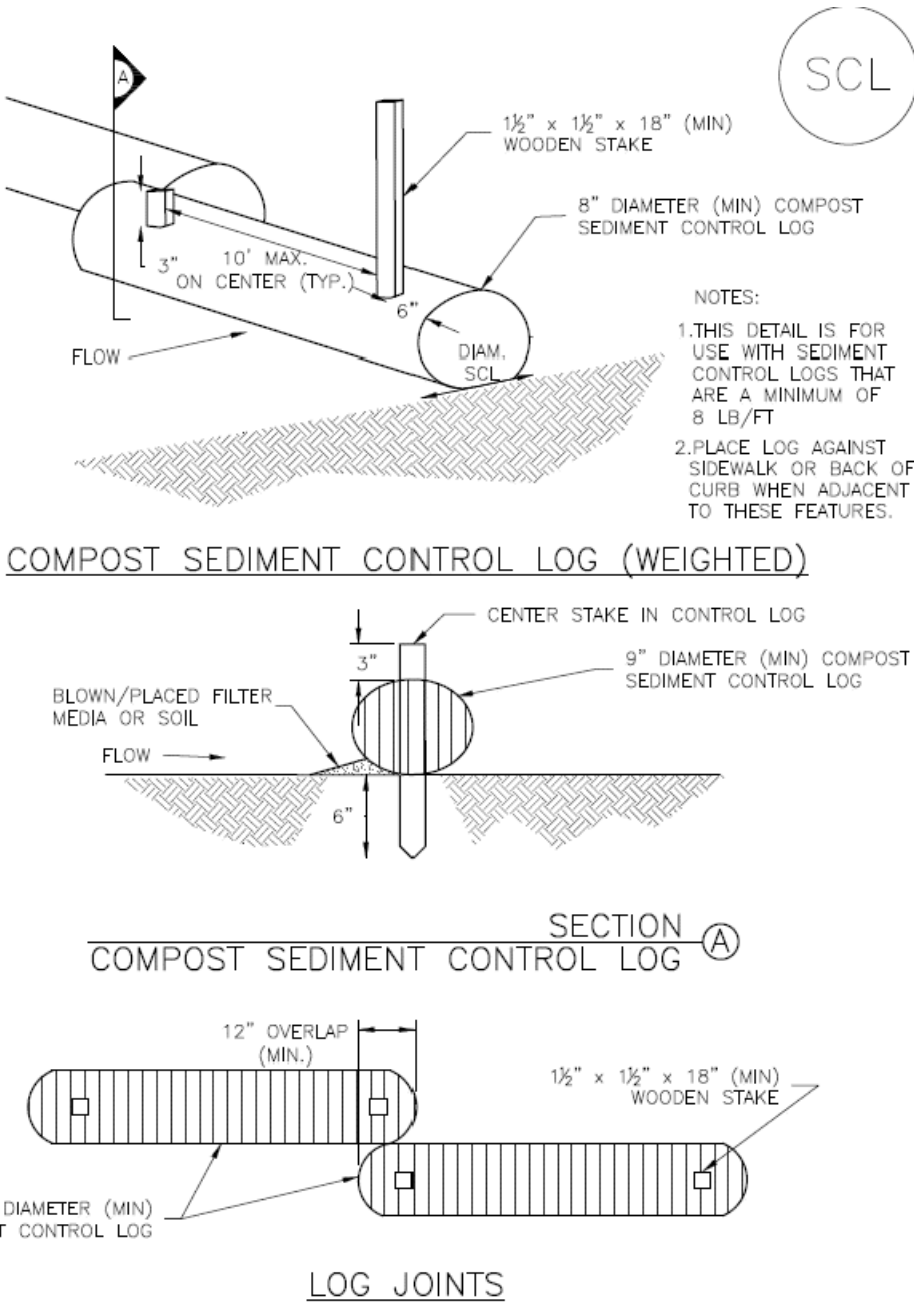
LOG JOINTS

SCL-1. TRENCHED SEDIMENT CONTROL LOG

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Urban Storm Drainage Criteria Manual Volume 3 SCL-3

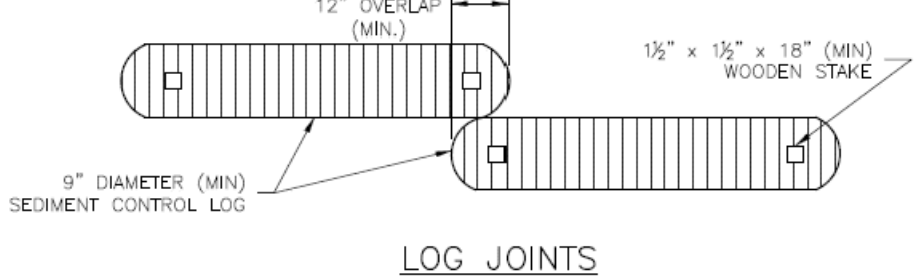
SC-2

Sediment Control Log (SCL)



COMPOST SEDIMENT CONTROL LOG (WEIGHTED)

SECTION A
COMPOST SEDIMENT CONTROL LOG



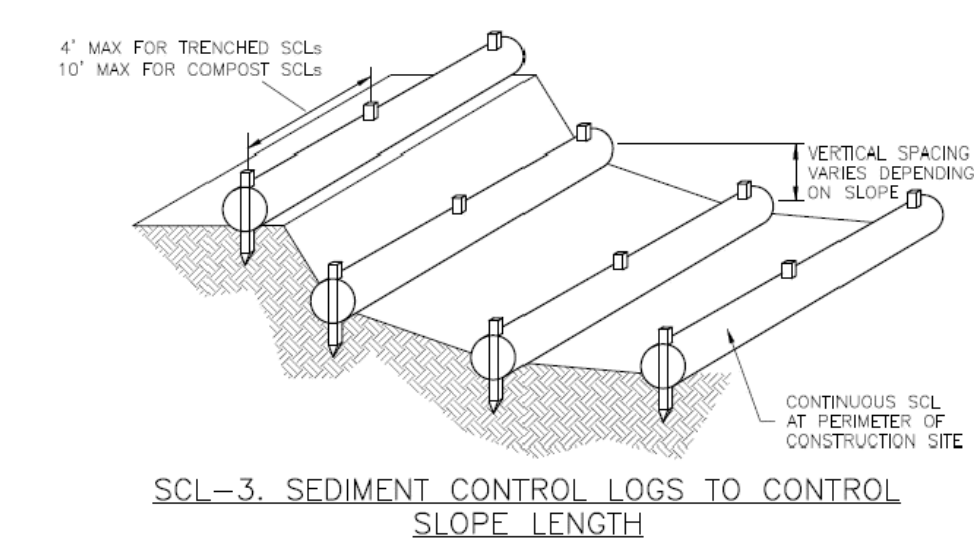
LOG JOINTS

SCL-2. COMPOST SEDIMENT CONTROL LOG (WEIGHTED)

SCL-4 Urban Drainage and Flood Control District
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Sediment Control Log (SCL)

SC-2



SCL-3. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH

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SC-2

Sediment Control Log (SCL)

SEDIMENT CONTROL LOG INSTALLATION NOTES

- SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
- SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.
- SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
- SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.
- IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/3 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING. COMPOST LOGS THAT ARE 8 LB/FT DO NOT NEED TO BE TRENCHED.
- THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL OR FILTER MATERIAL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER OR BLOWN IN PLACE.
- FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6\"/>

SEDIMENT CONTROL LOG MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/3 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
- SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. COMPOST FROM COMPOST LOGS MAY BE LEFT IN PLACE AS LONG AS BAGS ARE REMOVED AND THE AREA SEEDED. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

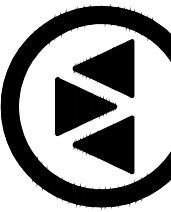
(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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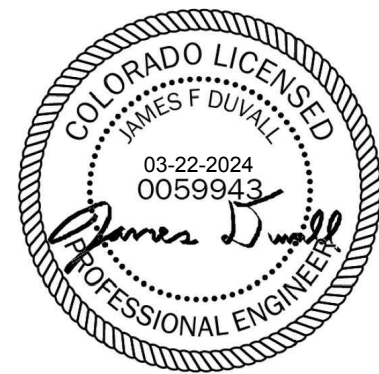
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STAMP:



PROJECT:

SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS
11890 HOLLY STREET

SUBMITAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

CRC

DRAWN BY:

CRC

CHECKED BY:

JFD

ORIGINAL DATE:

MARCH 22, 2024

#	REVISION	DATE

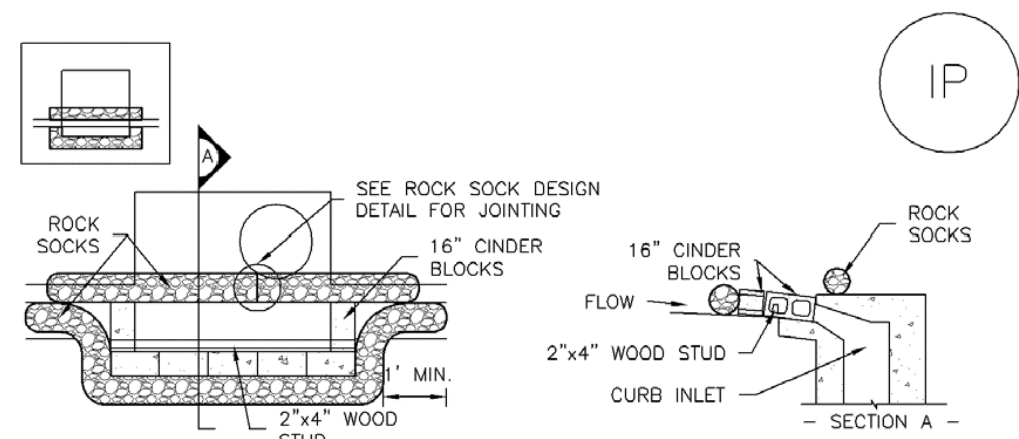
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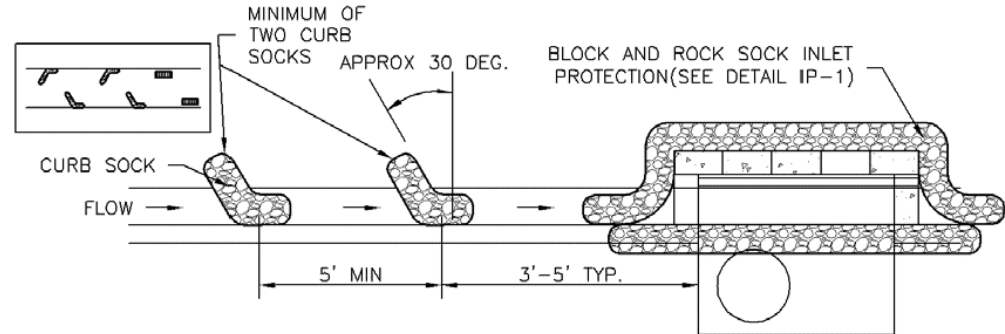
SC-6 Inlet Protection (IP)



IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. 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.
3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



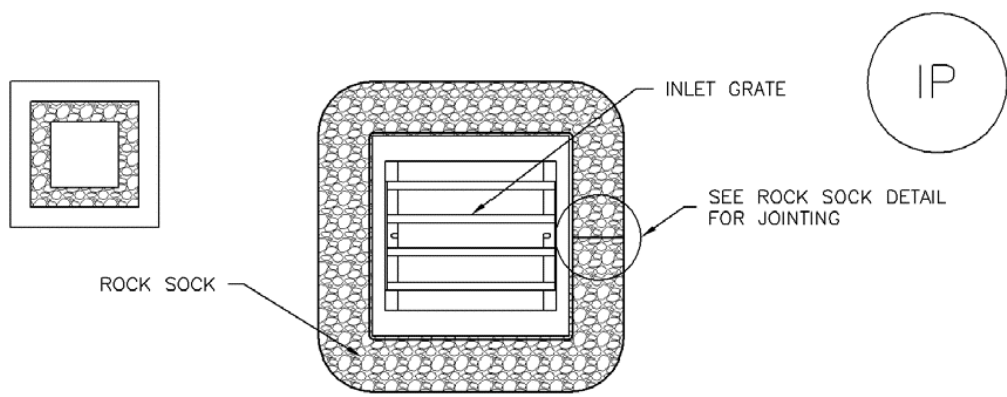
IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.
2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.
4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.

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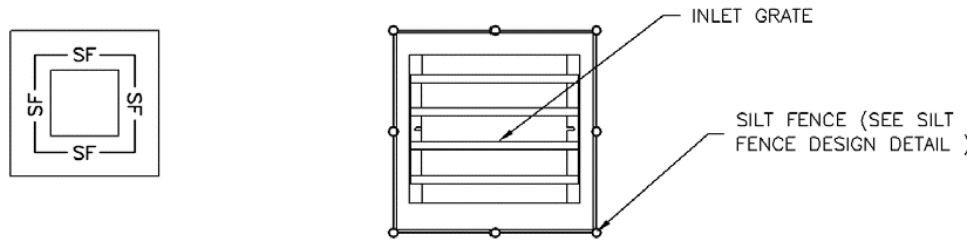
Inlet Protection (IP) SC-6



IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



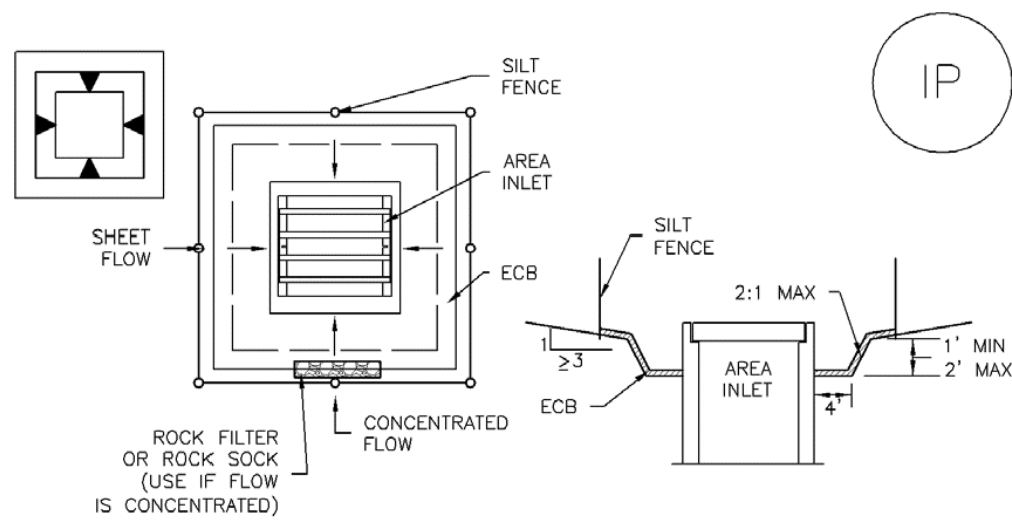
IP-4. SILT FENCE FOR SUMP INLET PROTECTION

SILT FENCE INLET PROTECTION INSTALLATION NOTES

1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.
3. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.

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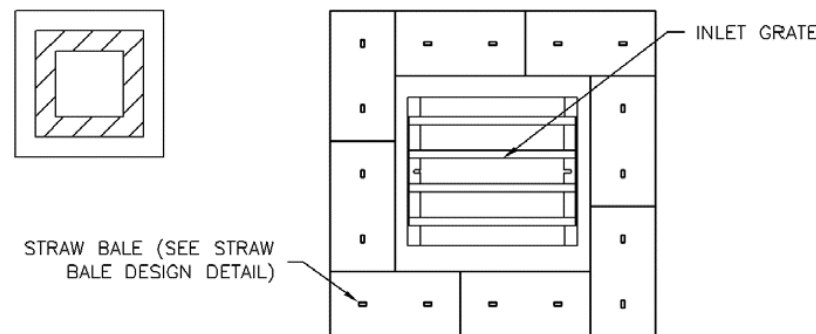
SC-6 Inlet Protection (IP)



IP-5. OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

1. THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA.
2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.
3. SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.



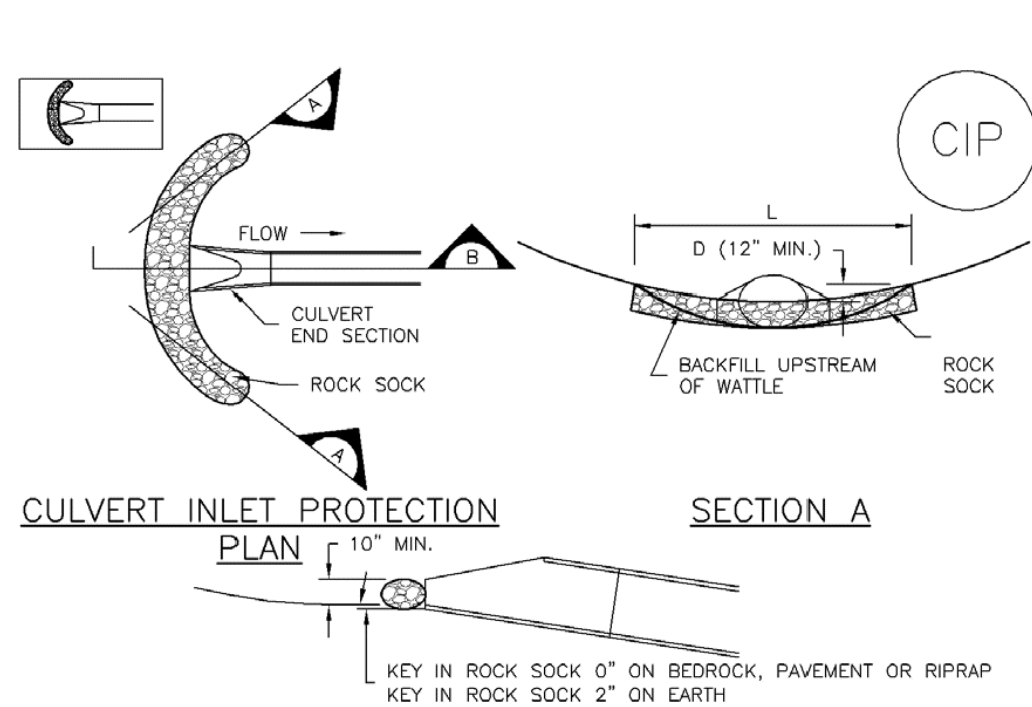
IP-6. STRAW BALE FOR SUMP INLET PROTECTION

STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

1. SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER.

IP-6 Urban Drainage and Flood Control District August 2013
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Inlet Protection (IP) SC-6



CIP-1. CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR -LOCATION OF CULVERT INLET PROTECTION.
2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS 1/2 THE HEIGHT OF THE ROCK SOCK.
5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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SC-6 Inlet Protection (IP)

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION OF INLET PROTECTION.
-TYPE OF INLET PROTECTION (IP-1, IP-2, IP-3, IP-4, IP-5, IP-6)
2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.

3. MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR 1/4 OF THE HEIGHT FOR STRAW BALES.
5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

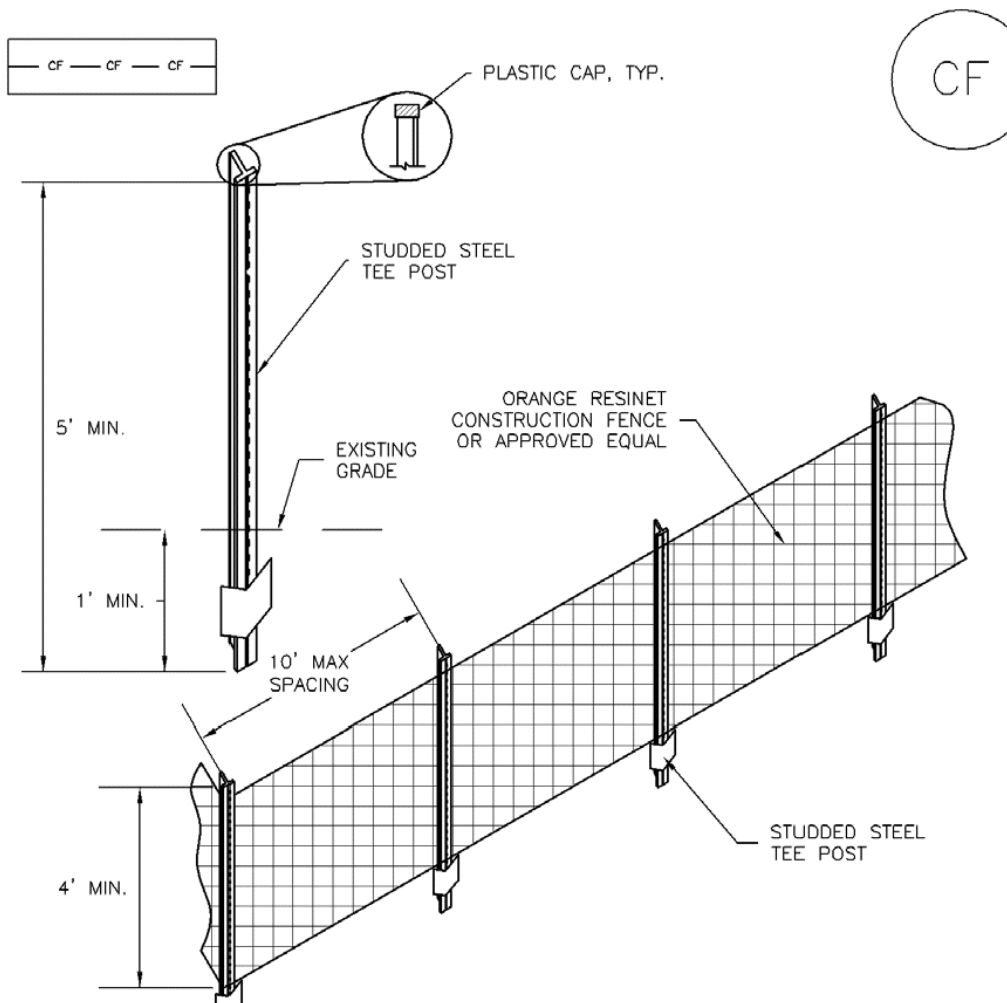
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

IP-8 Urban Drainage and Flood Control District August 2013
Urban Storm Drainage Criteria Manual Volume 3

SM-3 Construction Fence (CF)



CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION OF CONSTRUCTION FENCE.
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CF-2 Urban Drainage and Flood Control District November 2010
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Construction Fence (CF) SM-3

CONSTRUCTION FENCE MAINTENANCE NOTES

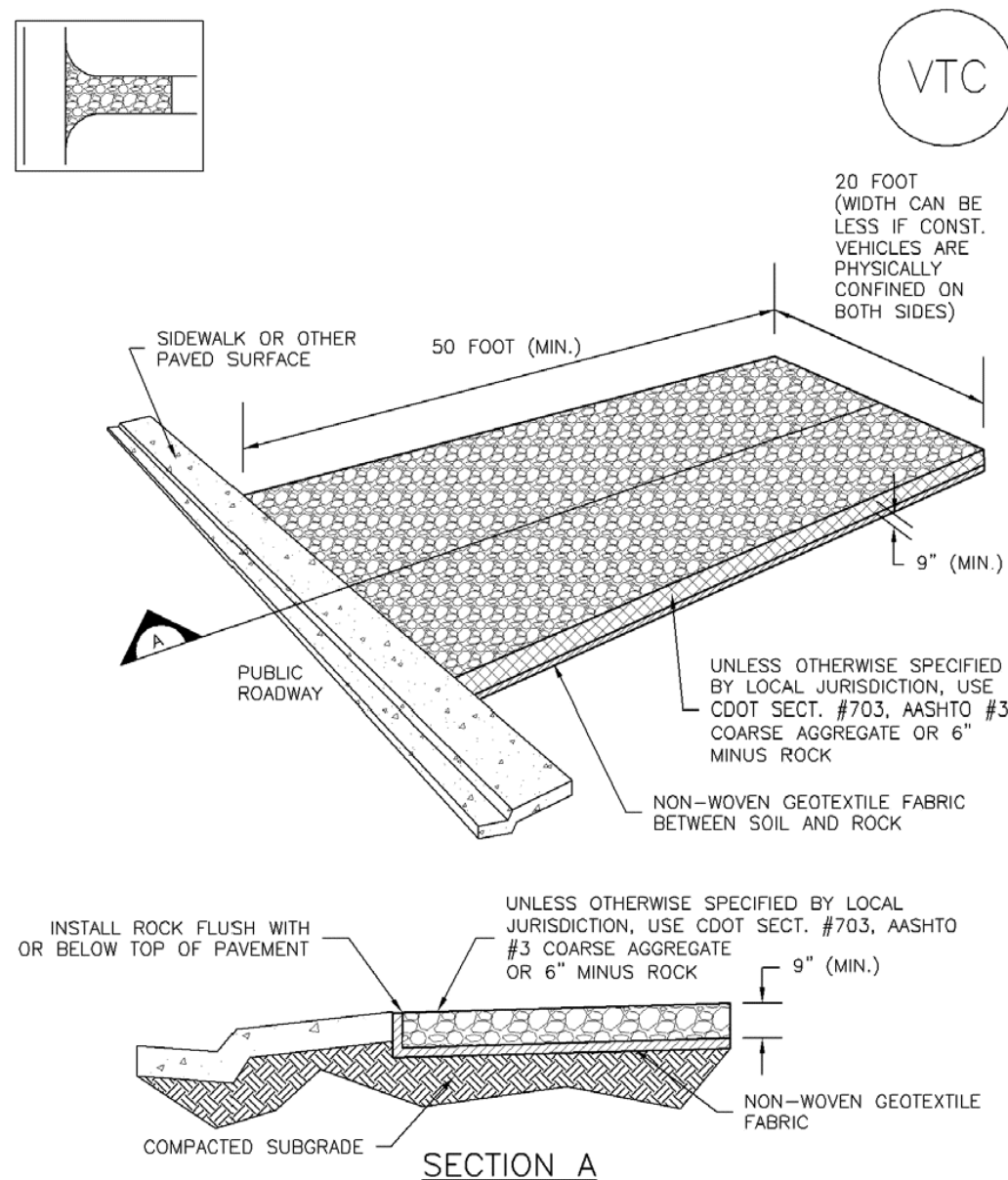
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SACS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

November 2010 Urban Drainage and Flood Control District CF-3
Urban Storm Drainage Criteria Manual Volume 3

Vehicle Tracking Control (VTC) SM-4



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

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11890 HOLLY STREET

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ORIGINAL DATE:
MARCH 22, 2024

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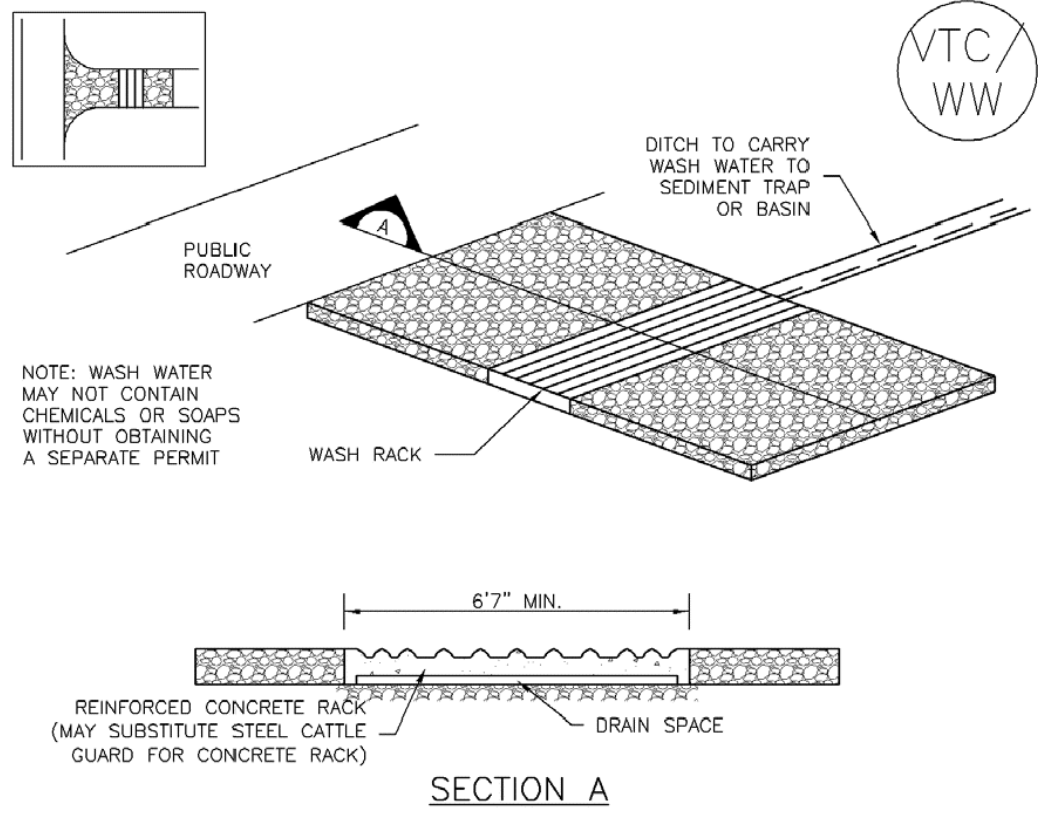
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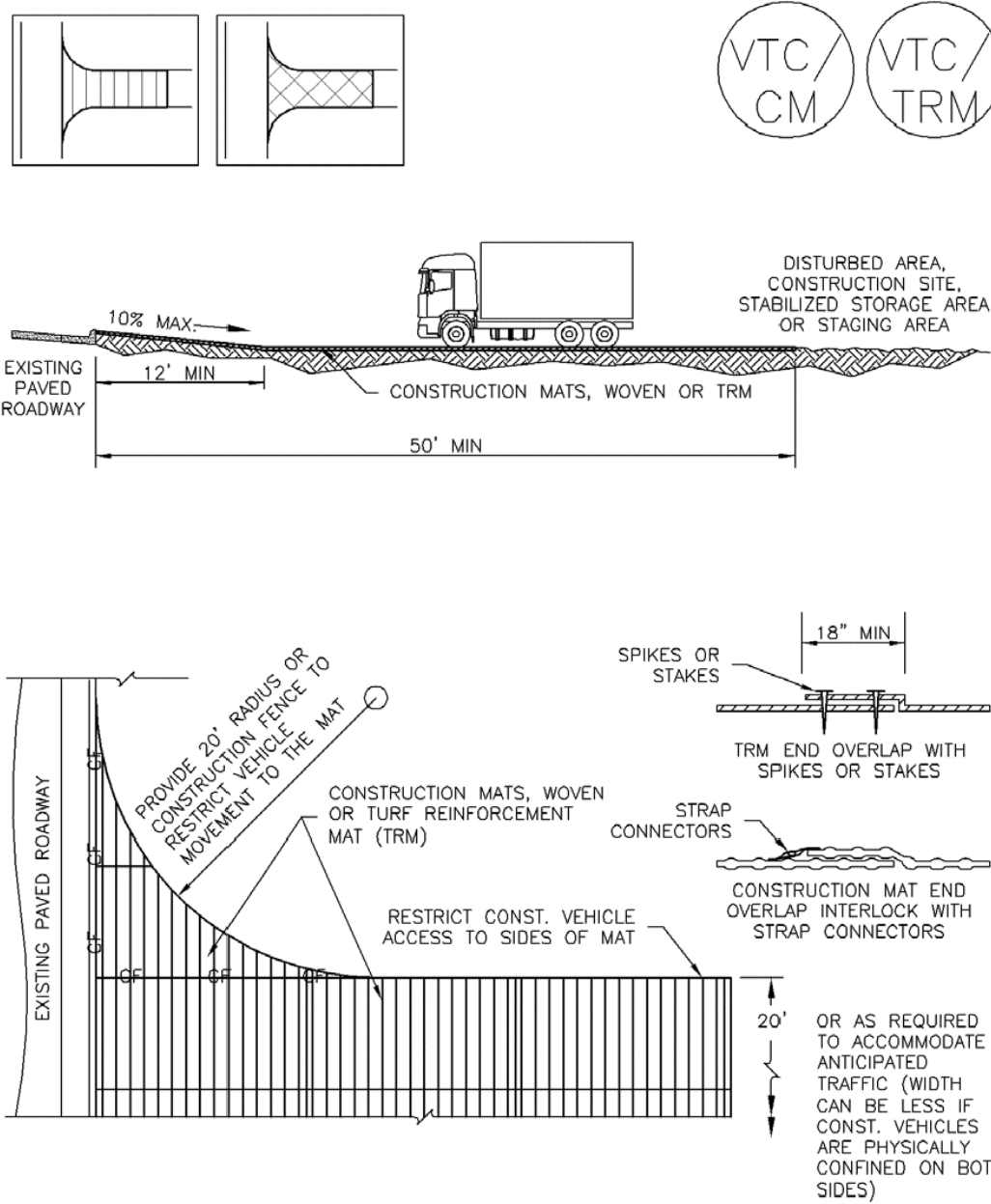
SM-4 Vehicle Tracking Control (VTC)



VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

VTC-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Vehicle Tracking Control (VTC) SM-4



VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)

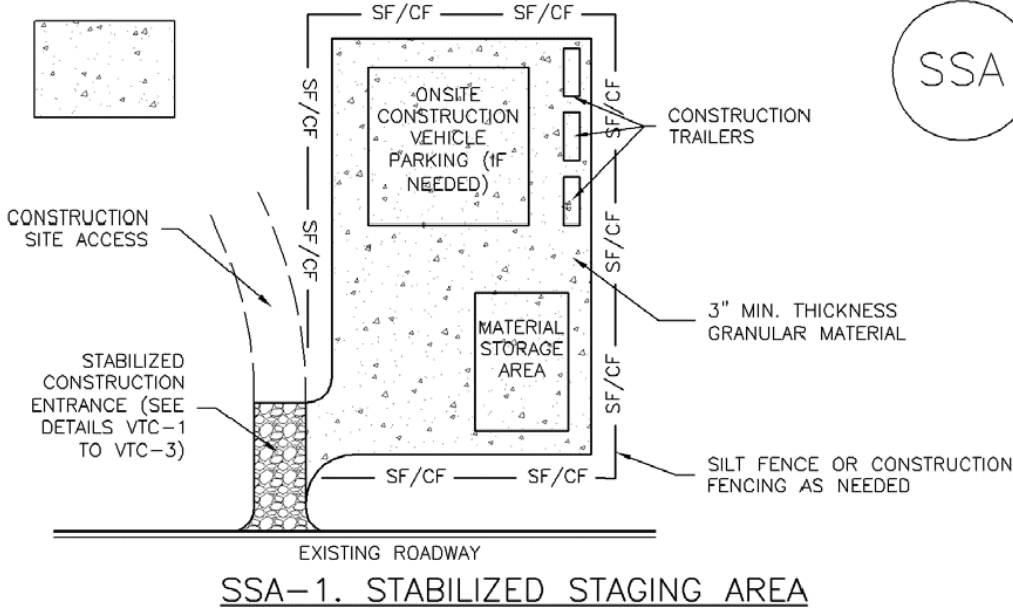
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SM-4 Vehicle Tracking Control (VTC)

- STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
 - TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).
 - CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
 - A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
 - STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
 - A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
 - UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
- STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
 - SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.
- NOTE:** MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

VTC-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Stabilized Staging Area (SSA) SM-6



SSA-1. STABILIZED STAGING AREA

- STABILIZED STAGING AREA INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION OF STAGING AREA(S).
 - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
 - STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
 - STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
 - THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
 - UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
 - ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.
- STABILIZED STAGING AREA MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

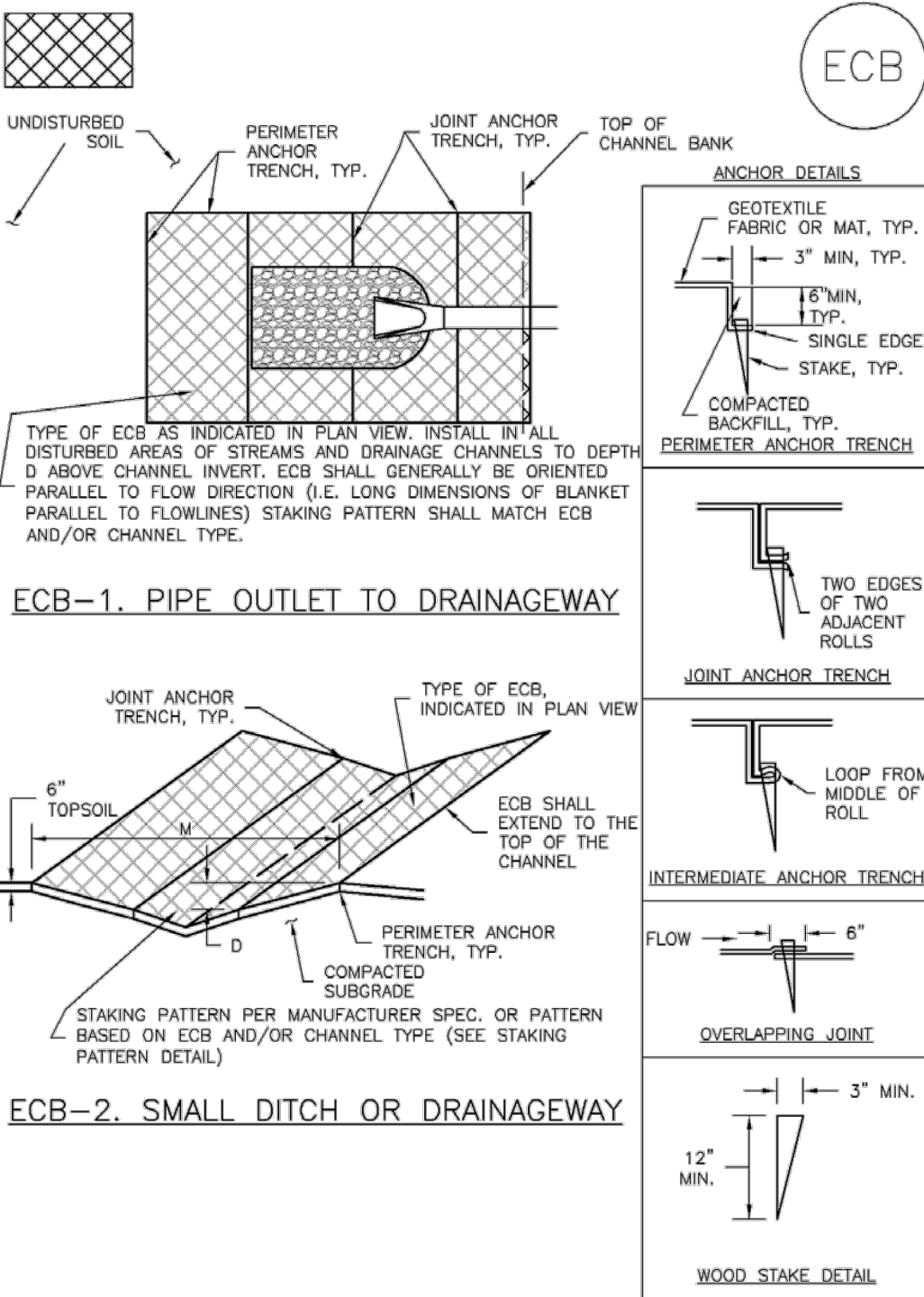
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SM-6 Stabilized Staging Area (SSA)

- STABILIZED STAGING AREA MAINTENANCE NOTES**
- STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
 - THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDING AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.
- NOTE:** MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.
- NOTE:** MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

SSA-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

EC-6 Rolled Erosion Control Products (RECP) SM-6

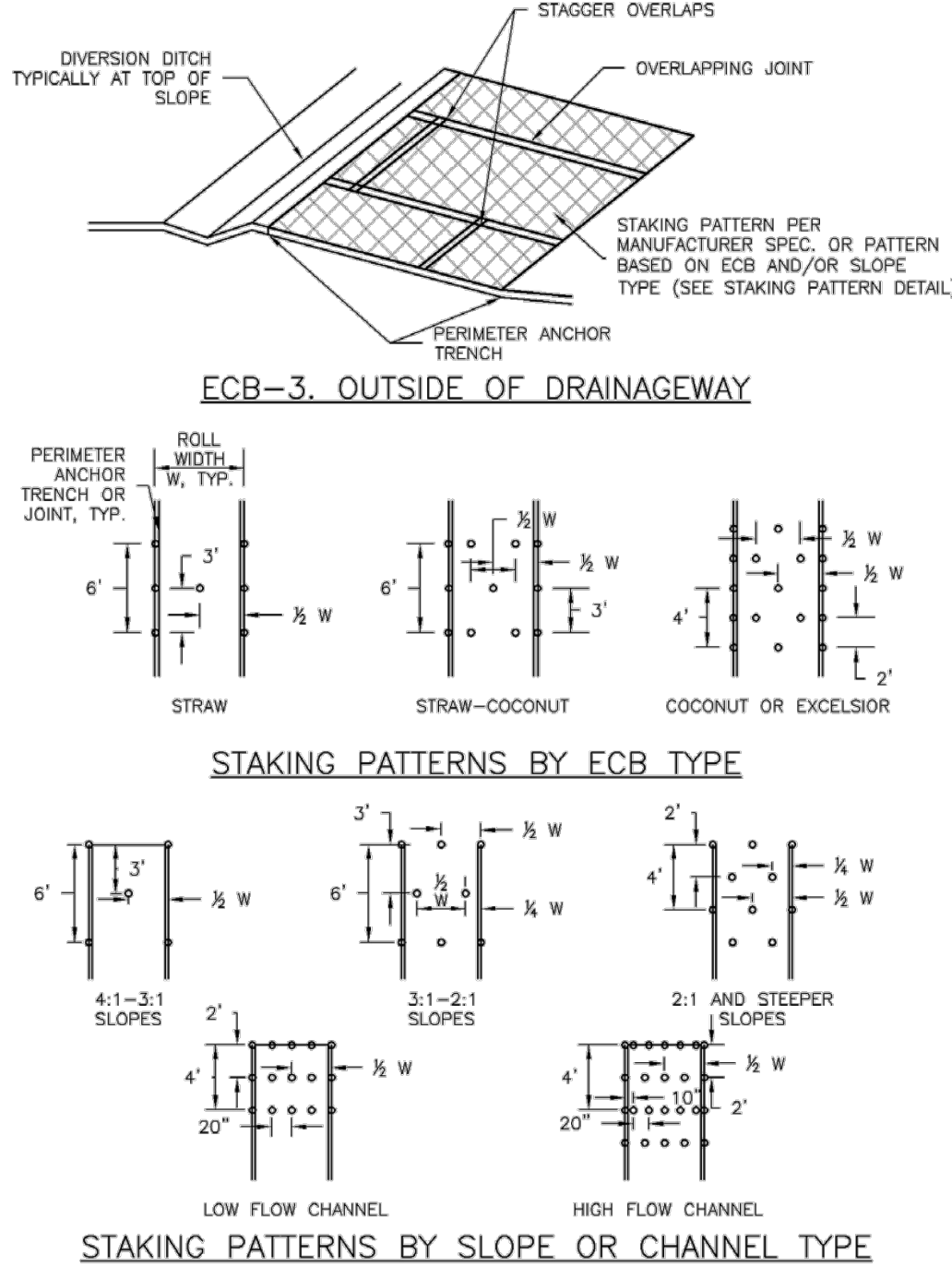


ECB-1. PIPE OUTLET TO DRAINAGEWAY

ECB-2. SMALL DITCH OR DRAINAGEWAY

RECP-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Rolled Erosion Control Products (RECP) EC-6



ECB-3. OUTSIDE OF DRAINAGEWAY

STAKING PATTERNS BY ECB TYPE

STAKING PATTERNS BY SLOPE OR CHANNEL TYPE

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 RECP-7

EC-6 Rolled Erosion Control Products (RECP)

- EROSION CONTROL BLANKET INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION OF ECB.
 - TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCELSIOR).
 - AREA, IN SQUARE YARDS OF EACH TYPE OF ECB.
 - 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
 - IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
 - PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
 - JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.
 - INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
 - OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
 - MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
 - ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBs SHALL BE RESEEDED AND MULCHED.
 - DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

TABLE ECB-1. ECB MATERIAL SPECIFICATIONS			
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT
STRAW*	—	100%	—
STRAW-COCONUT	30% MIN	70% MAX	—
COCONUT	100%	—	—
EXCELSIOR	—	—	100%

*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNELS.

*INTERMEDIATE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS

RECP-8 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

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CLIENT:

City of Thornton

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THORNTON, CO 80229
(303) 538-7200

STAMP:

COLORADO LICENSED
JAMES F. DUVALL
03-22-2024
0059943
James Duvall
PROFESSIONAL ENGINEER

PROJECT:

SKYLAKE RANCH OPEN LAND IMPROVEMENTS

11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

CRC

DRAWN BY:

CRC

CHECKED BY:

JFD

ORIGINAL DATE:

MARCH 22, 2024

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SHEET TITLE:

GESC DETAILS-4

SHEET #:

44

Rolled Erosion Control Products (RECP) EC-6

EROSION CONTROL BLANKET MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- 4. ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
- 5. ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO AND TOWN OF PARKER COLORADO, NOT AVAILABLE IN AUTOCAD)

Street Sweeping and Vacuuming (SS) SM-7

Description

Street sweeping and vacuuming remove sediment that has been tracked onto roadways to reduce sediment transport into storm drain systems or a surface waterway.

Appropriate Uses

Use this practice at construction sites where vehicles may track sediment offsite onto paved roadways.

Design and Installation

Street sweeping or vacuuming should be conducted when there is noticeable sediment accumulation on roadways adjacent to the construction site. Typically, this will be concentrated at the entrance/exit to the construction site. Well-maintained stabilized construction entrances, vehicle tracking controls and tire wash facilities can help reduce the necessary frequency of street sweeping and vacuuming.

On smaller construction sites, street sweeping can be conducted manually using a shovel and broom. Never wash accumulated sediment on roadways into storm drains.

Maintenance and Removal

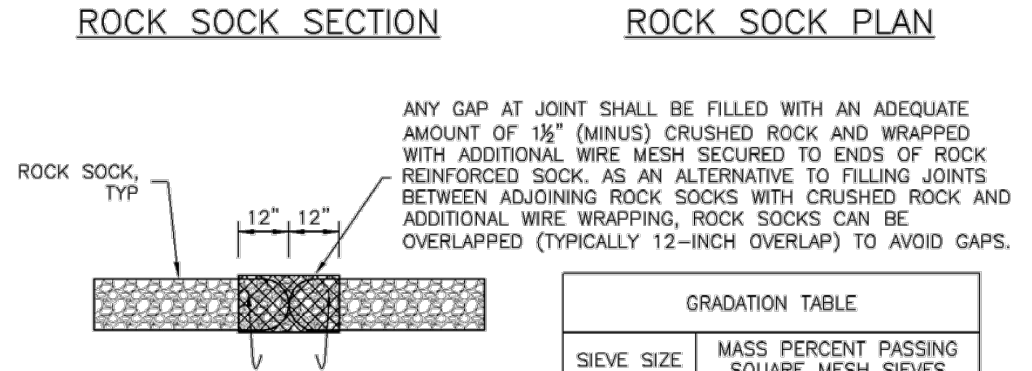
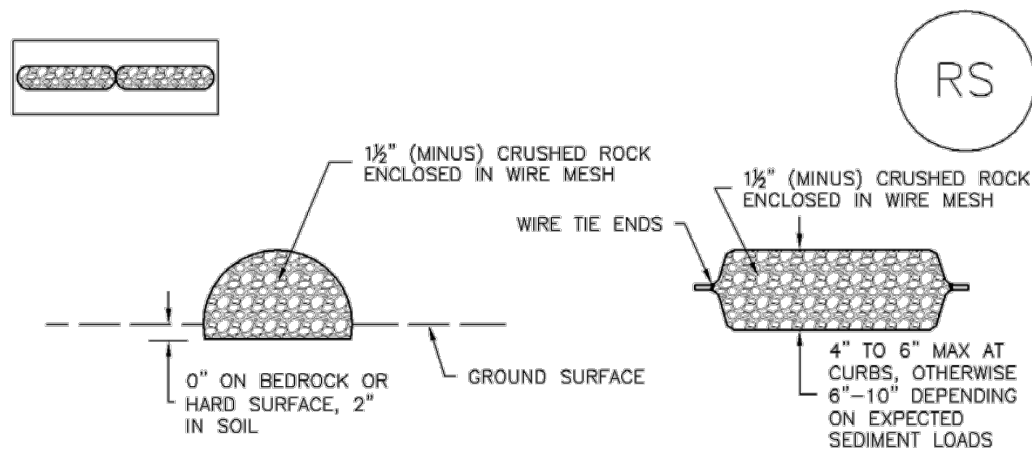
- Inspect paved roads around the perimeter of the construction site on a daily basis and more frequently, as needed. Remove accumulated sediment, as needed.
- Following street sweeping, check inlet protection that may have been displaced during street sweeping.
- Inspect area to be swept for materials that may be hazardous prior to beginning sweeping operations.



Photograph SS-1. A street sweeper removes sediment and potential pollutants along the curb line at a construction site. Photo courtesy of Tom Gore.

Street Sweeping/ Vacuuming	
Functions	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	Yes

SC-5 Rock Sock (RS)



ROCK SOCK JOINTING

ROCK SOCK INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION(S) OF ROCK SOCKS.
- CRUSHED ROCK SHALL BE 1 1/2\"/>

RS-1. ROCK SOCK PERIMETER CONTROL

Rock Sock (RS) SC-5

ROCK SOCK MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.
- SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE ROCK SOCK.
- ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET. UDFCD NEITHER NDORSES NOR DISCOURAGES USE OF PROPRIETARY PROTECTION PRODUCTS; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

Temporary and Permanent Seeding (TS/PS) EC-2

Description

Temporary seeding can be used to stabilize disturbed areas that will be inactive for an extended period. Permanent seeding should be used to stabilize areas at final grade that will not be otherwise stabilized. Effective seeding includes preparing a seedbed, selecting an appropriate seed mixture, using proper planting techniques, and protecting the seeded area with mulch, geotextiles, or other appropriate measures.

Appropriate Uses

When the soil surface is disturbed and will remain inactive for an extended period (typically determined by local government requirements), proactive stabilization measures, including planting a temporary seed mix, should be implemented. If the inactive period is short-lived (on the order of two weeks), techniques such as surface roughening may be appropriate. For longer periods of inactivity of up to one year, temporary seeding and mulching can provide effective erosion control. Permanent seeding should be used on finished areas that have not been otherwise stabilized.

The USDCM Volume 2 *Revegetation* Chapter contains suggested annual grains and native seed mixes to use for temporary seeding. Alternatively, local governments may have their own seed mixes and timelines for seeding. Check jurisdictional requirements for seeding and temporary stabilization.

Design and Installation

Effective seeding requires proper seedbed preparation, selecting an appropriate seed mixture, using appropriate seeding equipment to ensure proper coverage and density, and protecting seeded areas with mulch or fabric until plants are established.

The USDCM Volume 2 *Revegetation* Chapter contains detailed seed mixes, soil preparation practices, and seeding and mulching recommendations that should be referenced to supplement this Fact Sheet.

Drill seeding is the preferred seeding method. Hydroseeding is not recommended except in areas where steep slopes prevent use of drill seeding equipment, and even in these instances it is preferable to hand seed and mulch. Some jurisdictions do not allow hydroseeding or hydromulching.

Seedbed Preparation

Prior to seeding, ensure that areas to be revegetated have soil conditions capable of supporting vegetation. Overlot grading can result in loss of topsoil and compaction, resulting in poor quality subsoils at the ground surface that

Temporary and Permanent Seeding	
Functions	
Erosion Control	Yes
Sediment Control	No
Site/Material Management	No

EC-2 Temporary and Permanent Seeding (TS/PS)

have low nutrient value, little organic matter content, few soil microorganisms, rooting restrictions, and conditions less conducive to infiltration of precipitation. As a result, it is typically necessary to provide stockpiled topsoil, compost, or other soil amendments and rototill them into the soil to a depth of 6 inches or more.

Topsoil should be salvaged during grading operations for use and spread on areas to be revegetated later. Topsoil should be viewed as an important resource to be utilized for vegetation establishment, due to its water-holding capacity, structure, texture, organic matter content, biological activity, and nutrient content. The rooting depth of most native grasses in the semi-arid Denver metropolitan area is 6 to 18 inches. If present, at a minimum of the upper 6 inches of topsoil should be stripped, stockpiled, and ultimately respread across areas that will be revegetated.

Where topsoil is not available, subsoils should be amended to provide an appropriate plant-growth medium. Organic matter, such as well digested compost, can be added to improve soil characteristics conducive to plant growth. Other treatments can be used to adjust soil pH conditions when needed. Soil testing, which is typically inexpensive, should be completed to determine and optimize the types and amounts of amendments that are required.

If the disturbed ground surface is compacted, rip or rototill the upper 12 inches of the surface prior to placing topsoil. If adding compost to the existing soil surface, rototilling is necessary. Surface roughening will assist in placing a stable topsoil layer on steeper slopes, and allow infiltration and root penetration to greater depth. Topsoil should not be placed when either the salvaged topsoil or receiving ground are frozen or snow covered.

Prior to seeding, the soil surface should be rough and the seedbed should be firm, but neither too loose nor compacted. The upper layer of soil should be in a condition suitable for seeding at the proper depth and conducive to plant growth. Seed-to-soil contact is the key to good germination.

Refer to MHFD's Topsoil Management Guidance for detailed information on topsoil assessment, design, and construction.

Temporary Vegetation

To provide temporary vegetative cover on disturbed areas which will not be paved, built upon, or fully landscaped or worked for an extended period (typically 30 days or more), plant an annual grass appropriate for the time of planting and mulch the planted areas. Temporary grain seed mixes suitable for the Denver metropolitan area are listed in Table TS/PS-1. Native temporary seed mixes are provided in USDCM Volume 2, Chapter 13, Appendix A. These are to be considered only as general recommendations when specific design guidance for a particular site is not available. Local governments typically specify seed mixes appropriate for their jurisdiction.

Permanent Revegetation

To provide vegetative cover on disturbed areas that have reached final grade, a perennial grass mix should be established. Permanent seeding should be performed promptly (typically within 14 days) after reaching final grade. Each site will have different characteristics and a landscape professional or the local jurisdiction should be contacted to determine the most suitable seed mix for a specific site. In lieu of a specific recommendation, one of the perennial grass mixes appropriate for site conditions and growth season listed in seed mix tables in the USDCM Volume 2 *Revegetation* Chapter can be used. The pure live seed (PLS) rates of application recommended in these tables are considered to be absolute minimum rates for seed applied using proper drill-seeding equipment. These are to be considered only as general

Temporary and Permanent Seeding (TS/PS) EC-2

recommendations when specific design guidance for a particular site is not available. Local governments typically specify seed mixes appropriate for their jurisdiction.

If desired for wildlife habitat or landscape diversity, shrubs such as rubber rabbitbrush (*Chrysothamnus nauseosus*), fourwing saltbush (*Atriplex canescens*) and skunkbrush sumac (*Rhus trilobata*) could be added to the upland seed mixes at 0.25, 0.5 and 1 pound PLS/acre, respectively. In riparian zones, planting root stock of such species as American plum (*Prunus americana*), woods rose (*Rosa woodsi*), plains cottonwood (*Populus sargentii*), and willow (*Salix spp.*) may be considered. On non-topsoiled upland sites, a legume such as Ladak alfalfa at 1 pound PLS/acre can be included as a source of nitrogen for perennial grasses.

Timing of seeding is an important aspect of the revegetation process. For upland and riparian areas on the Colorado Front Range, the suitable timing for seeding is from October through May. The most favorable time to plant non-irrigated areas is during the fall, so that seed can take advantage of winter and spring moisture. Seed should not be planted if the soil is frozen, snow covered, or wet.

Seeding dates for the highest success probability of perennial species along the Front Range are generally in the spring from April through early May and in the fall after the first of September until the ground freezes. If the area is irrigated, seeding may occur in summer months, as well. See Table TS/PS-2 for appropriate seeding dates.

EC-2 Temporary and Permanent Seeding (TS/PS)

Table TS/PS-1. Minimum Drill Seeding Rates for Various Temporary Annual Grasses

Species* (Common name)	Growth Season ^a	Pounds of Pure Live Seed (PLS)/acre ^c	Planting Depth (inches)
1. Oats	Cool	35 - 50	1 - 2
2. Spring wheat	Cool	25 - 35	1 - 2
3. Spring barley	Cool	25 - 35	1 - 2
4. Annual ryegrass	Cool	10 - 15	1/2
5. Millet	Warm	3 - 15	1/2 - 3/4
6. Winter wheat	Cool	20-35	1 - 2
7. Winter barley	Cool	20-35	1 - 2
8. Winter rye	Cool	20-35	1 - 2
9. Triticale	Cool	25-40	1 - 2

^a Successful seeding of annual grass resulting in adequate plant growth will usually produce enough dead-plant residue to provide protection from wind and water erosion for an additional year. This assumes that the cover is not disturbed or mowed closer than 8 inches.

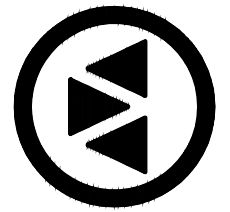
Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in the mulch.

^b See Table TS/PS-2 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months.

^c Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

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11890 HOLLY STREET

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PROJECT #:

20-27A

DESIGNED BY:

CRC

DRAWN BY:

CRC

CHECKED BY:

JFD

ORIGINAL DATE:

MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:

**GESC
DETAILS-5**

SHEET #:

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Temporary and Permanent Seeding (TS/PS) EC-2

Table TS/PS-2. Seeding Dates for Annual and Perennial Grasses				
Seeding Dates	Annual Grasses (Numbers in table reference species in Table TS/PS-1)		Perennial Grasses	
	Warm	Cool	Warm	Cool
January 1–March 15			✓	✓
March 16–April 30		1,2,3	✓	✓
May 1–May 15			✓	
May 16–June 30	5			
July 1–July 15	5			
July 16–August 31				
September 1–September 30		6, 7, 8, 9		
October 1–December 31			✓	✓

Mulch

Cover seeded areas with mulch or an appropriate rolled erosion control product to promote establishment of vegetation. Anchor mulch by crimping, netting or use of a non-toxic tackifier. See the USDCM Volume 2 *Revegetation* Chapter and Volume 3 Mulching BMP Fact Sheet (EC-04) for additional guidance.

Maintenance and Removal

Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed and mulch these areas, as needed.

If a temporary annual seed was planted, the area should be reseeded with the desired perennial mix when there will be no further work in the area. To minimize competition between annual and perennial species, the annual mix needs time to mature and die before seeding the perennial mix. To increase success of the perennial mix, it should be seeded during the appropriate seeding dates the second year after the temporary annual mix was seeded. Alternatively, if this timeline is not feasible, the annual mix seed heads should be removed and then the area seeded with the perennial mix.

An area that has been permanently seeded should have a good stand of vegetation within one growing season if irrigated and within three growing seasons without irrigation in Colorado. Reseed portions of the site that fail to germinate or remain bare after the first growing season.

Seeded areas may require irrigation, particularly during extended dry periods. Targeted weed control may also be necessary.

Protect seeded areas from construction equipment and vehicle access.

January 2021	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	TS/PS-5
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Mulching (MU) EC-4

Description

Mulching consists of evenly applying straw, hay, shredded wood mulch, rock, bark or compost to disturbed soils and securing the mulch by crimping, tackifiers, netting or other measures. Mulching helps reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff. Although often applied in conjunction with temporary or permanent seeding, it can also be used for temporary stabilization of areas that cannot be reseeded due to seasonal constraints.

Mulch can be applied either using standard mechanical dry application methods or using hydromulching equipment that hydraulically applies a slurry of water, wood fiber mulch, and often a tackifier.

Appropriate Uses

Use mulch in conjunction with seeding to help protect the seedbed and stabilize the soil. Mulch can also be used as a temporary cover on low to mild slopes to help temporarily stabilize disturbed areas where growing season constraints prevent effective reseeding. Disturbed areas should be properly mulched and tacked, or seeded, mulched and tacked promptly after final grade is reached (typically within no longer than 14 days) on portions of the site not otherwise permanently stabilized.

Standard dry mulching is encouraged in most jurisdictions; however, hydromulching may not be allowed in certain jurisdictions or may not be allowed near waterways.

Do not apply mulch during windy conditions.

Design and Installation

Prior to mulching, surface-roughen areas by rolling with a crimping or punching type roller or by track walking. Track walking should only be used where other methods are impractical because track walking with heavy equipment typically compacts the soil.

A variety of mulches can be used effectively at construction sites. Consider the following:

Photograph MU-1. An area that was recently seeded, mulched, and crimped.

Mulch	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

June 2012

Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3

MU-1

EC-4 Mulching (MU)

Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping or with the aid of tackifiers or nets. Anchoring with a crimping implement is preferred, and is the recommended method for areas flatter than 3:1. Mechanical crimpers must be capable of tucking the long mulch fibers into the soil to a depth of 3 inches without cutting them. An agricultural disk, while not an ideal substitute, may work if the disk blades are dull or blunted and set vertically; however, the frame may have to be weighted to afford proper soil penetration. Grass hay may be used in place of straw; however, because hay is comprised of the entire plant including seed, mulching with hay may seed the site with non-native grass species which might in turn out-compete the native seed. Alternatively, native species of grass hay may be purchased, but can be difficult to find and are more expensive than straw. Purchasing and utilizing a certified weed-free straw is an easier and less costly mulching method. When using grass hay, follow the same guidelines as for straw (provided above). On small areas sheltered from the wind and heavy runoff, spraying a tackifier on the mulch is satisfactory for holding it in place. For steep slopes and special situations where greater control is needed, erosion control blankets anchored with stakes should be used instead of mulch. Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1,425 lbs of fibers mixed with at least 75 lbs of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may be required for effective hydroseeding. Hydromulch typically requires up to 24 hours to dry; therefore, it should not be applied immediately prior to inclement weather. Application to roads, waterways and existing vegetation should be avoided. Erosion control mats, blankets, or nets are recommended to help stabilize steep slopes (generally 3:1 and steeper) and waterways. Depending on the product, these may be used alone or in conjunction with grass or straw mulch. Normally, use of these products will be restricted to relatively small areas. Biodegradable mats made of straw and jute, straw-coconut, coconut fiber, or excelsior can be used instead of mulch. (See the ECM/TRM BMP for more information.) Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP for more information on general types of tackifiers.) Rock can also be used as mulch. It provides protection of exposed soils to wind and water erosion and allows infiltration of precipitation. An aggregate base course can be spread on disturbed areas for temporary or permanent stabilization. The rock mulch layer should be thick enough to provide full coverage of exposed soil on the area it is applied. Maintenance and Removal After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as needed, to cover bare areas.		
MU-2	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	June 2012

CONSTRUCTION MARKERS CM

	CONSTRUCTION MARKER INSTALLATION NOTES: - SEE PLAN VIEW FOR TYPE OF CONSTRUCTION LIMIT INDICATOR (FENCE OR MARKERS), LOCATION AND LENGTH OF MARKERS - MARKERS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO OTHER CONTROL MEASURE AND ANY LAND-DISTURBING ACTIVITIES. - STEEL TEE POSTS SHALL BE UTILIZED FOR CONSTRUCTION MARKERS. SPACING OF TEE POSTS SHALL BE APPROPRIATE TO SITE CONDITIONS. CONSTRUCTION MARKER MAINTENANCE NOTES: - ANY DAMAGED FENCE OR MARKERS SHALL BE REPAIRED ON A DAILY BASIS. - MARKERS SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER MARKER REMOVAL, IT SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY OF THORNTON.

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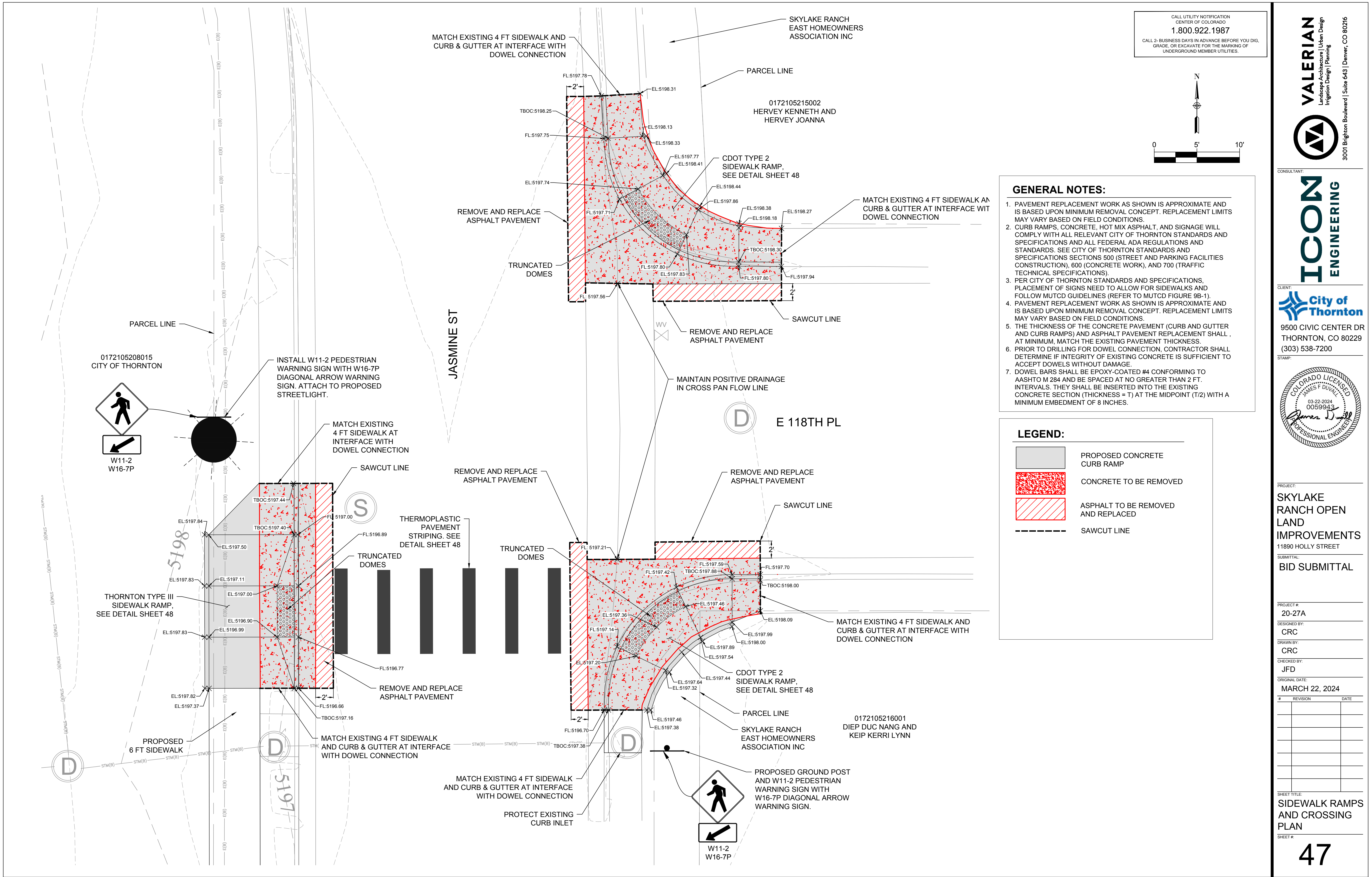

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SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET
SUBMITTAL:
BID SUBMITTAL

PROJECT #:
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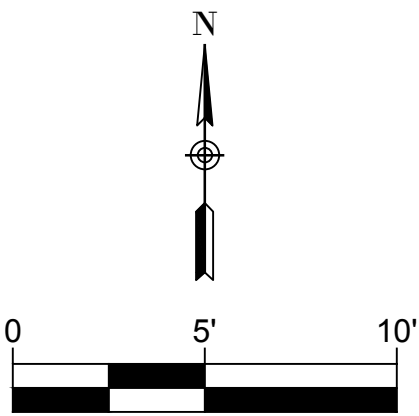
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GENERAL NOTES:

1. PAVEMENT REPLACEMENT WORK AS SHOWN IS APPROXIMATE AND IS BASED UPON MINIMUM REMOVAL CONCEPT. REPLACEMENT LIMITS MAY VARY BASED ON FIELD CONDITIONS.
2. CURB RAMPS, CONCRETE, HOT MIX ASPHALT, AND SIGNAGE WILL COMPLY WITH ALL RELEVANT CITY OF THORNTON STANDARDS AND SPECIFICATIONS AND ALL FEDERAL ADA REGULATIONS AND STANDARDS. SEE CITY OF THORNTON STANDARDS AND SPECIFICATIONS SECTIONS 500 (STREET AND PARKING FACILITIES CONSTRUCTION), 600 (CONCRETE WORK), AND 700 (TRAFFIC TECHNICAL SPECIFICATIONS).
3. PER CITY OF THORNTON STANDARDS AND SPECIFICATIONS, PLACEMENT OF SIGNS NEED TO ALLOW FOR SIDEWALKS AND FOLLOW MUTCD GUIDELINES (REFER TO MUTCD FIGURE 9B-1).
4. PAVEMENT REPLACEMENT WORK AS SHOWN IS APPROXIMATE AND IS BASED UPON MINIMUM REMOVAL CONCEPT. REPLACEMENT LIMITS MAY VARY BASED ON FIELD CONDITIONS.
5. THE THICKNESS OF THE CONCRETE PAVEMENT (CURB AND GUTTER AND CURB RAMPS) AND ASPHALT PAVEMENT REPLACEMENT SHALL, AT MINIMUM, MATCH THE EXISTING PAVEMENT THICKNESS.
6. PRIOR TO DRILLING FOR DOWEL CONNECTION, CONTRACTOR SHALL DETERMINE IF INTEGRITY OF EXISTING CONCRETE IS SUFFICIENT TO ACCEPT DOWELS WITHOUT DAMAGE.
7. DOWEL BARS SHALL BE EPOXY-COATED #4 CONFORMING TO AASHTO M 284 AND BE SPACED AT NO GREATER THAN 2 FT. INTERVALS. THEY SHALL BE INSERTED INTO THE EXISTING CONCRETE SECTION (THICKNESS = T) AT THE MIDPOINT (T/2) WITH A MINIMUM EMBEDMENT OF 8 INCHES.

LEGEND:

- PROPOSED CONCRETE CURB RAMP
- CONCRETE TO BE REMOVED
- ASPHALT TO BE REMOVED AND REPLACED
- SAWCUT LINE

VALERIAN
Landscape Architecture | Urban Design
Irrigation Design | Planning

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ICON ENGINEERING

CLIENT:

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COLORADO LICENSED
JAMES F. DUVAL
03-22-2024
0059943
James Duval
PROFESSIONAL ENGINEER

PROJECT:

SKYLAKE RANCH OPEN LAND IMPROVEMENTS

11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

CRC

DRAWN BY:

CRC

CHECKED BY:

JFD

ORIGINAL DATE:

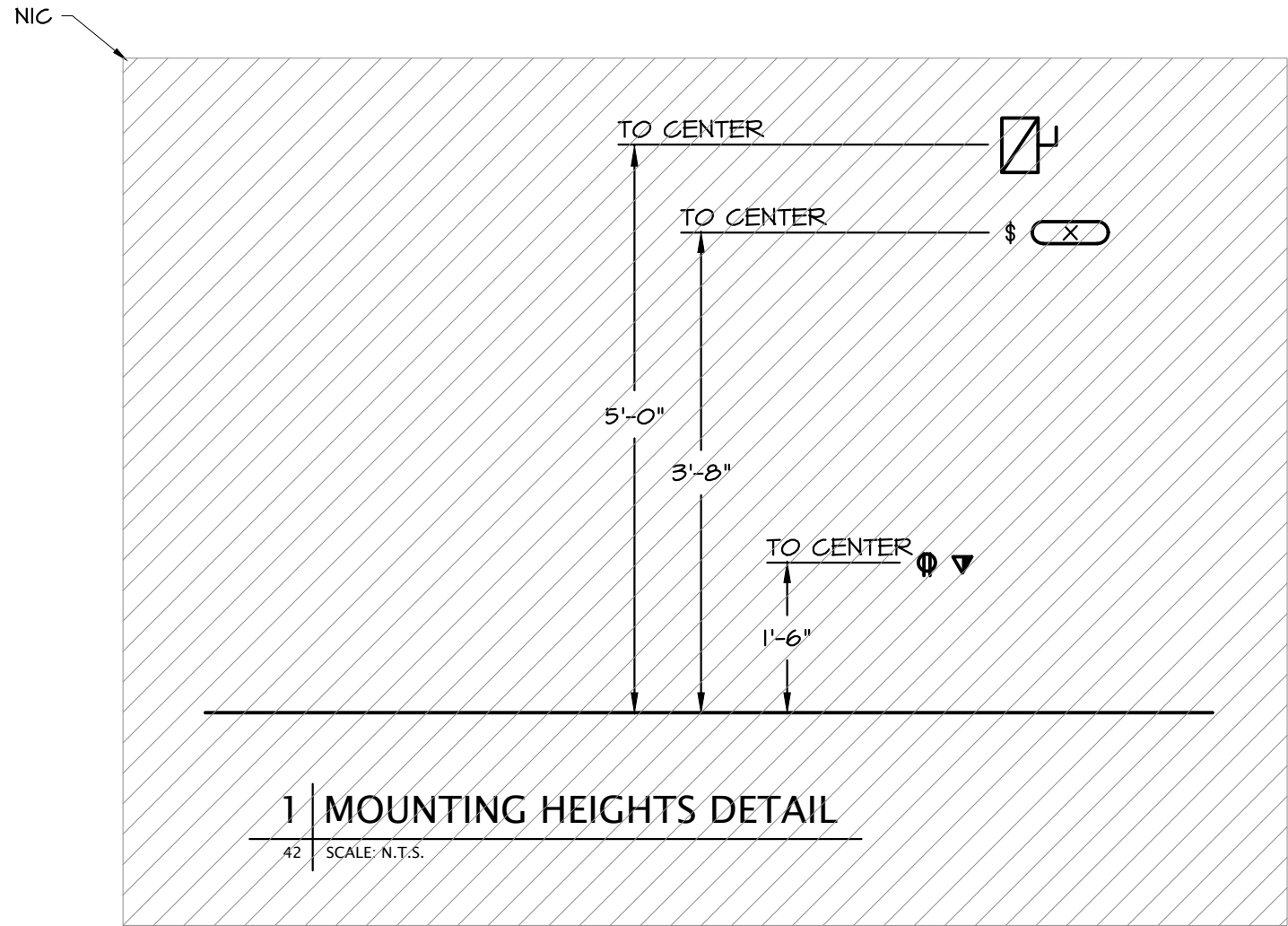
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:

SIDEWALK RAMPS AND CROSSING PLAN

SHEET #:



ABBREVIATIONS AND SYMBOLS

A	AMPERE(S)
AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERES INTERRUPTING CAPACITY
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCT	CORRELATED COLOR TEMPERATURE
CLG	CEILING
CT	CURRENT TRANSFORMER
DED	DEDICATED CIRCUIT
DISC	DISCONNECT
DW	DISHWASHER
DWS(S)	DRAWING(S)
(E)	EXISTING TO REMAIN
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
(ER)	EXISTING TO BE RELOCATED
EM	EMERGENCY
F	FUSE
FLA	FULL LOAD AMPS
G	GROUND
GC	GENERAL CONTRACTOR
GD	GARBAGE DISPOSAL
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
HP	HORSEPOWER
ISC	SHORT CIRCUIT CURRENT
KVA	KILOVOLT AMPERE(S)
KW	KILOWATT(S)
LG	LIGHTING
MCA	MINIMUM CIRCUIT AMPERE(S)
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION CENTER
MDF	MAIN DISTRIBUTION FACILITY
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE
NIC	NIC
NL	NIGHT LIGHT - SEE GENERAL NOTES
OAE	OR APPROVED EQUAL
OH	OVERHEAD
P	POLE
PART	PARTIAL CIRCUIT
PH, Ø	PHASE
PNL	PANEL
(R)	REMOVED, EXISTING TO BE REMOVED
RCPT	RECEPTACLE
REF	REFRIGERATOR
(RL)	RELOCATED LOCATION
SPD	SURGE PROTECTION DEVICE
UC	UNDER COUNTER/CABINET
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLT(S)
W	WATT(S) OR WIRE
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

	DETAIL NOTE
	DELTA REVISION NOTE
	ELECTRICAL WIRE SIZE
	LIGHTING CONTROLS SEQUENCE OF OPERATION
	DETAIL REFERENCE TAG
	CENTER LINE DESIGNATION
	OBJECT

LIGHTING FIXTURES

	LUMINAIRE TYPE, REFERENCING LUMINAIRE SCHEDULE, TYPICAL ALL FIXTURES. SUBSCRIPT, IF SHOWN, REFERENCES WALL SWITCH OR RELAY/ZONE CONTROL..
	WALL MOUNTED LUMINAIRE
	SURFACE OR PENDANT MOUNTED LUMINAIRE
	RECESSED LUMINAIRE
	DOWNLIGHT LUMINAIRE
	SURFACE CEILING LUMINAIRE
	PENDANT LUMINAIRE
	ARROW INDICATES DIRECTIONAL LUMINAIRE
	MONOPOINT LUMINAIRE
	SURFACE OR PENDANT TRACK LUMINAIRE REFER TO FIXTURE SCHEDULE FOR HEAD QTY.
	LED TAPE LUMINAIRE
	FESTOON LIGHTING
	RECESSED MULTI-HEAD LUMINAIRE
	FLOOR OR TABLE LAMP
	EXIT LUMINAIRE - SHADED INDICATES FACE/ DIRECTIONAL ARROWS AS SHOWN.
	BATTERY PACK EMERGENCY LUMINAIRE
	HATCH INDICATES EMERGENCY LUMINAIRE
	PORCELAIN KEYLESS LAMP HOLDER
	STEP LIGHT TYPE LUMINAIRE
	IN-GRADE UPLIGHT
	BOLLARD
	PEDESTRIAN POLE OR POST TOP LUMINAIRE
	EXTERIOR AREA LIGHT

WIRING DEVICES

	DUPLEX RECEPTACLE
	FOUR PLEX RECEPTACLE
	SINGLE RECEPTACLE
	COMBO RECEPTACLE/SWITCH
	SWITCHED DUPLEX RECEPTACLE
	SPECIAL PURPOSE RECEPTACLE
	FLOOR MOUNTED SPECIAL PURPOSE RECEPTACLE
	FLOOR MOUNTED RECEPTACLE DUPLEX/QUAD
	SURFACE RACEWAY
	CLOCK RECEPTACLE
	JUNCTION BOX
	WALL MOUNTED J-BOX
	FLOOR MOUNTED JUNCTION BOX
	MOLDED CASE CIRCUIT BREAKER IN ENCLOSURE
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	MAGNETIC CONTROLLER (STARTER)
	COMBINATION STARTER/DISCONNECT SWITCH
	MOTOR
	RELAY
	TIME CLOCK
	PHOTOCELL
	THERMAL OVERLOAD SWITCH
	SINGLE POLE SWITCH
	3-WAY SWITCH
	4-WAY SWITCH
	KEY OPERATED SWITCH
	LIGHTING CONTROL DEVICE. REFER TO DETAILS FOR CONTROL INTENT.

ELECTRICAL GENERAL NOTES

- THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL NECESSARY FOR A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM.
- MATERIALS AND INSTALLATION SHALL COMPLY WITH CODES, LAWS AND ORDINANCES OF FEDERAL, STATE AND LOCAL GOVERNING BODIES HAVING JURISDICTION.
- MATERIALS AND EQUIPMENT SHALL BE LISTED AND/OR LABELED BY U.L., ETL, CSA OR ANOTHER RECOGNIZED TESTING LAB.
- ALL WORK REQUIRED FOR THE INSTALLATION AS SHOWN ON DRAWINGS INCLUDING LABOR, EQUIPMENT AND MATERIALS SHALL BE IN STRICT COMPLIANCE WITH THE BUILDING STANDARDS, EXCEPT AS NOTED OTHERWISE.
- THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, GOVERNMENTAL FEES, TAXES AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE ELECTRICAL WORK.
- THE CONTRACTOR SHALL PREPARE AND SUBMIT TO GOVERNMENTAL AGENCIES AND UTILITY COMPANIES SHOP DRAWINGS, WHICH ARE REQUIRED BY THESE AGENCIES, FOR THEIR APPROVAL.
- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER/OWNER OF ANY MATERIALS OR APPARATUS BELIEVED TO BE INADEQUATE, UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES, RULES OR REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
- FOR ALL JOBS THAT INCLUDE DEMOLITION WORK BY THE ELECTRICAL CONTRACTOR, DURING AND AFTER DEMOLITION, EC SHALL MAINTAIN CIRCUIT CONTINUITY TO ALL EXISTING DEVICES THAT ARE TO REMAIN. EC SHALL REMOVE, RELOCATE, AND/OR RENOK ANY CONDUIT AND WIRING TO FACILITATE THE NEW CONSTRUCTION SCOPE OF WORK. FOR ALL LUMINAIRES THAT ARE EXISTING TO REMAIN OR EXISTING TO BE RELOCATED, EC SHALL CLEAN LENSES AND REPLACE ALL EXTINGUISHED LAMPS, UON.
- THE CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS, VISIT THE SITE, AND THOROUGHLY BECOME FAMILIAR WITH THE BUILDING STANDARDS AND LOCAL CONDITIONS RELATING TO THE WORK. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT.
- ALL MATERIALS, AND EQUIPMENT SHALL BE ERECTED, INSTALLED, CONNECTED, CLEANED, ADJUSTED, TESTED, CONDITIONED, AND PLACED IN SERVICE IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS.
- SHOP DRAWINGS SHALL INCLUDE MANUFACTURER'S NAMES, CATALOG NUMBERS, CUTS, DIAGRAMS AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE REQUIRED TO IDENTIFY AND REVIEW THE EQUIPMENT. SUBMITTALS SHALL BE IN LOGICAL GROUPS, FOR EXAMPLE, ALL LIGHTING FIXTURES, PARTIAL SUBMITTALS WILL NOT BE REVIEWED.
- SUBMIT ELECTRONIC COPIES OF THE FOLLOWING SHOP DRAWINGS FOR REVIEW.
 - PANELBOARDS, AND METERING EQUIPMENT
 - DISCONNECTS
 - LIGHT FIXTURES
 - PROVIDE "AS-BUILT" DRAWINGS AND SUBMIT TO ARCHITECT/DESIGNER.
- PROVIDE THE FOLLOWINGS INFORMATION, PER IECG 2021 C408.2.5.2 TO THE PARTY RESPONSIBLE FOR PROJECT COMMISSIONING PLAN (COMMISSIONING AGENT/ MECHANICAL ENGINEER) AND ELECTRICAL ENGINEER.
 - CUTSHEETS FOR ALL INSTALLED LIGHTING AND LIGHTING CONTROLS.
 - OPERATION AND MAINTENANCE MANUALS FOR EACH PIECE OF INSTALLED LIGHTING, REQUIRED ROUTINE MAINTENANCE ACTIONS, CLEANING AND RECOMMENDED RELAMPING SHALL BE CLEARLY IDENTIFIED.
 - SCHEDULE FOR INSPECTING AND RECALIBRATING ALL LIGHTING CONTROLS. INSPECTION OF ALL LIGHTING CONTROLS SHALL BE PERFORMED PRIOR TO ELECTRICAL ENGINEER'S COMMISSIONING SITE VISIT. RECALIBRATION OF LIGHTING CONTROLS SHALL BE PERFORMED FOLLOWING SITE VISIT AND SHALL BE BASED UPON THE RECOMMENDATIONS OF THE ELECTRICAL ENGINEER.
- ALL MATERIAL, EQUIPMENT, WIRING DEVICES, ETC. SHALL BE NEW, UNLESS SPECIFICALLY INDICATED AS EXISTING TO BE REUSED.
- CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS. ELECTRICAL CONTRACTOR IS TO SUBMIT A COMPLETE CONSTRUCTION DRAWING SET TO THE ELECTRICAL UTILITY COMPANY WITHIN 10 DAYS OF AWARD OF CONTRACT. COORDINATE TIMELINE OF THE REVIEW, APPROVAL, ALL ASSOCIATED DOWN TIME, CONSTRUCTION SCHEDULING, AND INSTALLATION OF THE UTILITY TRANSFORMER. NOTIFY OWNER OF SCHEDULING CONFLICTS.
- SHOULD ACTUAL FIELD CONDITIONS REQUIRE INDICATED CIRCUIT DESIGNATIONS TO VARY, INDICATE THE CIRCUIT NUMBER USED ON THE "AS-BUILT" DRAWINGS.
- ALL SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD BY THE ELECTRICAL CONTRACTOR WITH THE MAXIMUM AVAILABLE FAULT CURRENT AS INDICATED WITHIN THESE DOCUMENTS. THE FIELD MARKING(S) SHALL COMPLY WITH ELECTRICAL SPECIFICATIONS FOR READABILITY AND DURABILITY.
- PROVIDE COMPLETE METAL RACEWAY SYSTEMS AND ENCLOSURES FOR ALL WIRING THROUGHOUT THE EXTENT OF THE REQUIRED DISTRIBUTION SYSTEM.
 - UTILIZE RIGID POLYVINYL CHLORIDE CONDUIT (PVC) IN THE FOLLOWING LOCATIONS:
 - UNDERGROUND
 - UTILIZE ELECTRICAL METALLIC TUBING (EMT), MINIMUM SIZE OF 3/4", IN THE FOLLOWING LOCATIONS:
 - SERVICE AND FEEDERS
 - POWER CIRCUIT HOMERUN
 - BRANCH CIRCUITS IN CONCEALED OR EXPOSED LOCATIONS
- ALL NEW CIRCUITS SHALL HAVE A GROUND WIRE INSTALLED.
- EACH SWITCH, LIGHT, RECEPTACLE AND OTHER MISCELLANEOUS DEVICE SHALL BE PROVIDED WITH A GALVANIZED OR PRESSED STEEL OUTLET BOX OF THE KNOCKOUT TYPE, OF NOT LESS THAN NO. 14 U.S. GAUGE STEEL. CONDUITS SHALL BE FASTENED WITH LOCKNUTS AND BUSHINGS AND ALL UNUSED KNOCKOUTS MUST BE LEFT SEALED. THERE MUST BE SUFFICIENT ROOM FOR WIRES AND BUSHINGS AND DEEP BOXES SHALL BE INSTALLED WHERE REQUIRED. BOXES SHALL BE SECURELY AND ADEQUATELY SUPPORTED.
- ALL RECEPTACLES SHALL BE SPECIFICATION GRADE NEMA 5-20R, UNLESS OTHERWISE NOTED.
- PROVIDE OWNER WITH A COMPLETE LISTING OF ALL LAMPS UTILIZED ON THE PROJECT INCLUDING MANUFACTURER AND CATALOG INFORMATION. PROVIDE A SUGGESTED SOURCE, INCLUDING CONTACT NAME AND PHONE NUMBER, FOR REORDERING.
- ALL EXISTING ELECTRICAL SERVICES NOT SPECIFICALLY INDICATED TO BE REMOVED OR ALTERED SHALL REMAIN AS THEY PRESENTLY EXIST.
- G.C. SHALL INCLUDE IN HIS COST THE REMOVAL OF ALL EXISTING ELECTRICAL DEVICES, CONDUITS, FIXTURES AND EQUIPMENT. TURN EQUIPMENT OVER TO OWNER AS INDICATED OR RECYCLE/DISCARD ALL EQUIPMENT AS REQUIRED. E.C. SHALL BE RESPONSIBLE FOR DISCONNECTING PRIMARY SERVICE AND TEMPORARY POWER.
- CONTRACTOR TO CONDUCT FUNCTIONAL TESTING OF LIGHTING CONTROLS EQUIPMENT AS REQUIRED BY IECG 2021, SECTION C408.3. AFTER THIS TESTING IS OBSERVED AND COMPLETED, THE COMMISSIONING AUTHORITY SHALL PROVIDE DOCUMENTATION TO THE AHJ THAT CERTIFIES THAT THE INSTALLATION MEETS THE DOCUMENTED PERFORMANCE CRITERIA OF SECTION C408.A

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1.800.922.1987
CALL 2- BUSINESS DAYS IN ADVANCE BEFORE YOU DIG.
GRADE, OR EXCAVATE FOR THE MARKING OF
UNDERGROUND MEMBER UTILITIES.

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CONSULTANT:

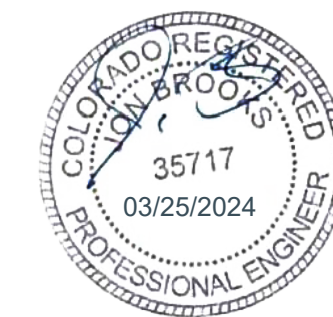
AE DESIGN
Integrated Lighting Technology
and Electrical Solutions
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aedesign-inc.com Proj # 5463.00

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(303) 538-7200

STAMP:



PROJECT:

**SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS**
11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

MLT, SPM, BYF

DRAWN BY:

MLT, SPM, BYF

CHECKED BY:

BJJ

ORIGINAL DATE:

MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:

**ELECTRICAL
COVER SHEET**

SHEET #:

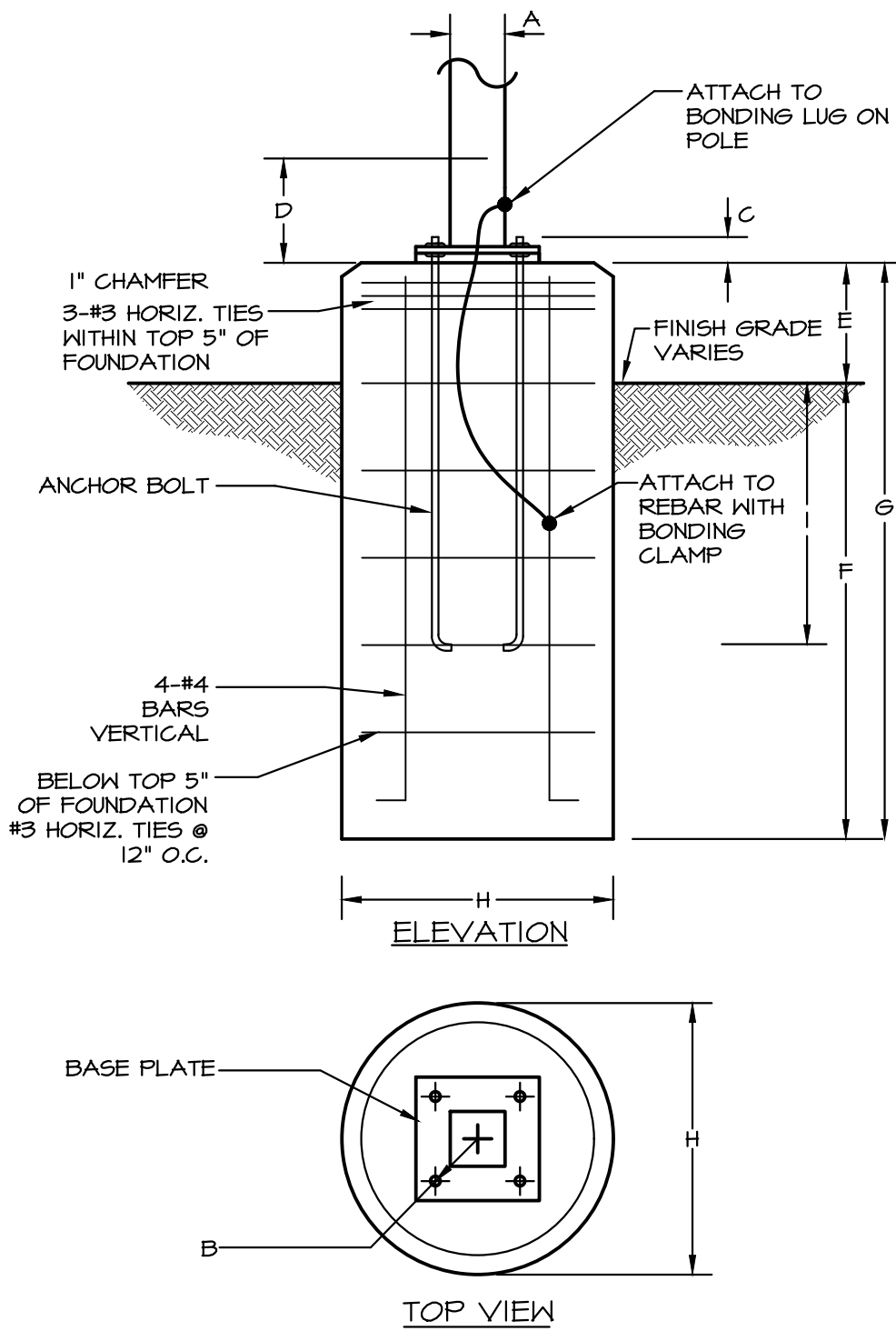
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GRADE, OR EXCAVATE FOR THE MARKING OF
UNDERGROUND MEMBER UTILITIES.

KEYNOTE LEGEND	
KEY	VALUE
	1. EC SHALL PROVIDE CONDUIT ROUTING TO FUTURE IRRIGATION CONTROLLER LOCATION.

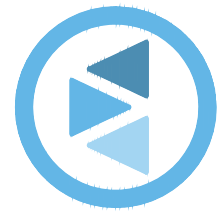
LIGHTING GENERAL NOTES	
A.	ALL LIGHTING FIXTURES ARE SOLAR POWERED AND ARE NOT CONNECTED TO THE GRID.
B.	ALL FIXTURES SHALL BE CONTROLLED VIA INTEGRAL PHOTOCELL SENSOR AND INTEGRATED TIMECLOCK.
C.	REFER TO LIGHT FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.



POLE KEY	OVERALL HEIGHT	A	ANCHOR BOLT DATA			D	E	F	G	H	I
			B	SIZE	C						
EA1	20'0"	4"	PER MANUFACTURER			2'0"	6'0"	6'0"	8'0"	24"	36"
EA2	20'0"	4"	PER MANUFACTURER			0'3"	6'0"	6'3"	6'3"	24"	36"

2 POLE BASE DETAIL
50 SCALE: NONE

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SKYLAKE RANCH OPEN LAND IMPROVEMENTS
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MLT, SPM, BYF

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BJJ

ORIGINAL DATE:

MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:

ELECTRICAL POWER AND LIGHTING PLAN

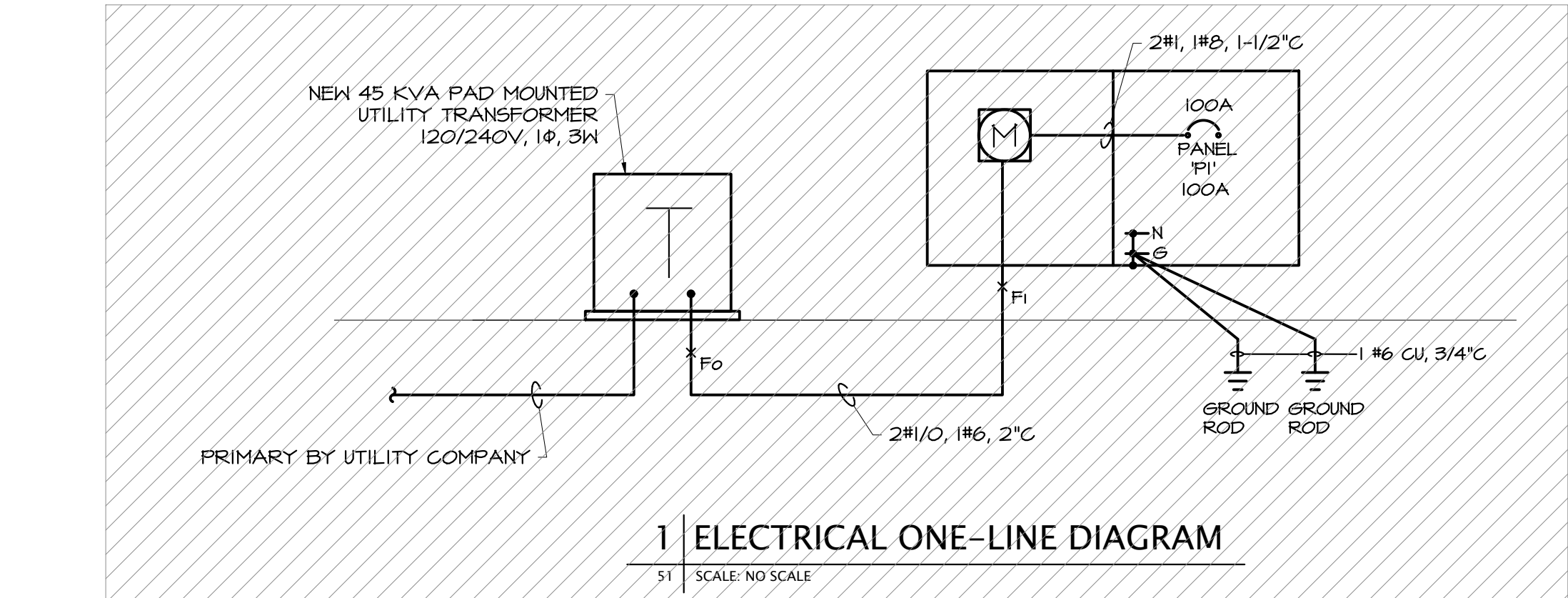
SHEET #:

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PANEL 'P1'														
VOLTAGE L-L: VOLTAGE L-N: TYPE: MOUNTING: NOTES:			240 120 1PH/3W SURFACE		LOCATION: BUS RATING: MAIN CB: FED FROM: AIC RATING:			100 100		PEDESTAL AMPS A/2P UTILITY XFMR			10K AIC	
CIR NO	LOAD TYPE	LOAD VA	LOAD DESCRIPTION (NOTE #)	CIRCUIT BREAKER			BUS	CIRCUIT BREAKER			LOAD DESCRIPTION (NOTE #)	LOAD VA	LOAD TYPE	CIR NO
				POLE	TRIP	TYPE		TYPE	TRIP	POLE				
1			SPARE	1	20		A				BUSSED SPACE			2
3			SPARE	1	20		B				BUSSED SPACE			4
5			SPARE	1	20		A				BUSSED SPACE			6
7			SPARE	1	20		B				BUSSED SPACE			8
9			SPARE	1	20		A				BUSSED SPACE			10
11			SPARE	1	20		B				BUSSED SPACE			12
13			SPARE	1	20		A				BUSSED SPACE			14
15			SPARE	1	20		B				BUSSED SPACE			16
17			SPARE	1	20		A				BUSSED SPACE			18
19			SPARE	1	20		B				BUSSED SPACE			20
21			SPARE	1	20		A				BUSSED SPACE			22
23			SPARE	1	20		B				BUSSED SPACE			24
25			SPARE	1	20		A				BUSSED SPACE			26
27			SPARE	1	20		B				BUSSED SPACE			28
29			SPARE	1	20		A				BUSSED SPACE			30
31			BUSSED SPACE				B				BUSSED SPACE			32
33			BUSSED SPACE				A				BUSSED SPACE			34
35			BUSSED SPACE				B				BUSSED SPACE			36
37			BUSSED SPACE				A				BUSSED SPACE			38
39			BUSSED SPACE				B				BUSSED SPACE			40
41			BUSSED SPACE				A				BUSSED SPACE			42
LOAD TYPE: L=LIGHTING, R=RECEPTACLE, M=MOTOR, LM=LARGEST MOTOR, E=EQUIPMENT, KE=KITCHEN EQUIPMENT, C=CONTINUOUS, S=SUBFEED PANEL														
CB TYPE: GFCI=5mA GROUND FAULT CIRCUIT INTERRUPTER, GFCP=30mA GROUND FAULT PROTECTION FOR EQUIPMENT, AFCI=ARC FAULT CIRCUIT INTERRUPTER														
CAFCCI=COMBINATION ARC FAULT 5mA GROUND FAULT CIRCUIT INTERRUPTER, ST=SHUNT TRIP, HT=HANDLE TIE WITH GROUPING #														
HC=HANDLE CLAMP FOR LOCKING IN ON/OFF POSITION, LOCK=PERMANENTLY LOCKABLE BREAKER														
TOTAL CONNECTED LOADS														
LOAD TYPE:		LOAD	MLT	DEMAND LOAD				VA		A		B		
LIGHTING:		0	1.25	0 VA				VA		0		0		
RECEPTACLE:		0	1.0	0 VA				VA		0		0		
OVER 10K:		0	0.5	0 VA				VA		0		0		
MOTOR:		0	1.0	0 VA				VA		A		B		
LGST MOTOR:		0	1.25	0 VA				VA		0		0		
EQUIPMENT:		0	1.0	0 VA				VA		0		0		
KITCH EQUIP:		0	0	0 VA				AMPS		0		0		
CONTINUOUS		0	1.25	0 VA				TOTAL ON				0 KVA		
SUBFEED PNL:		0	1.0	0 VA				PANEL:				0 AMPS		
NOTES:														
N1. EXISTING LOAD ON EXISTING CIRCUIT BREAKER.														
N2. NEW LOAD ON EXISTING CIRCUIT BREAKER.														
N3. NEW LOAD ON NEW CIRCUIT BREAKER. CIRCUIT BREAKER TYPE AND AIC RATING TO MATCH EXISTING.														

LIGHTING FIXTURE SCHEDULE															
TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLTAGE	SOURCE				MAX WATTS	LUMEN OUTPUT	DIMMING	FIXTURE FINISH	MOUNTING LOCATION	INFORMATION BOF/RFD/OFH	NOTES
					QTY	WATT	TYPE	CCT/CRI							
EA1	POLE MOUNTED SOLAR POWERED LED AREA LIGHT	FIRSTLIGHT	SCL2-SPMJ-BK-T4-W4-TD2200	-	1	-	LED	3000K 80CRI	-	3250	N/A	BLACK	POLE	20' TO BOF	1,2
EA2	POLE MOUNTED SOLAR POWERED LED AREA LIGHT	FIRSTLIGHT	SCL2-SPMJ-BK-T5-W4-TD2200	-	1	-	LED	3000K 80CRI	-	3250	N/A	BLACK	POLE	20' TO BOF	1,2
ABBREVIATIONS: BOF - BOTTOM OF FIXTURE, RFD - RECESSED FIXTURE DEPTH, OFH - OVERALL FIXTURE HEIGHT, AFF(AFG) - ABOVE FINISHED FLOOR (GRADE), WFD - WALL FIXTURE DEPTH															
GENERAL NOTES: A. ALL REFLECTOR LAMPS SHALL BE PROVIDED AS WIDE FLOOD DISTRIBUTION, UON. B. LUMENS LISTED ARE DELIVERED LUMENS, NOT INITIAL. C. FOR ALL SPECIFIED LUMINAIRES, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MOUNTING HARDWARE, ACCESSORIES, COMPONENTS, LEADER/JUMPER CABLES, WIRE FEED, CONNECTORS, END CAPS, REMOTE POWER SUPPLIES, AND ANY OTHER NECESSARY COMPONENT AS REQUIRED FOR INSTALLING A SECURE AND FULLY FUNCTIONAL SYSTEM. D. ALL FINISH SELECTIONS SHALL BE VERIFIED BY ARCHITECT/INTERIOR DESIGNER/OWNER AS PART OF THE SUBMITTAL PROCESS. UNLESS OTHERWISE NOTED, EC SHALL ASSUME STANDARD LUMINAIRE FINISH OPTION FOR PRICING. E. EXTERIOR LUMINAIRES SHALL BE COLD WEATHER RATED FOR 0 DEG. F / -10 DEG. C., AND RATED FOR OUTDOOR USE.															
SPECIFIC NOTES: 1. FIXTURE SHALL TURN ON 30 MINUTES PRIOR TO SUNSET TO FULL BRIGHTNESS; DIM AT 10:00 PM, BE REDUCED DOWN TO 30% OUTPUT FROM 10:00 PM TO 6AM; RETURN TO 100% AFTER 6AM UNTIL 30 MINUTES AFTER SUNRISE, FIXTURES SHALL TURN OFF 30 MINUTES AFTER SUNRISE. SHOULD SUNRISE OCCUR BEFORE 6AM, FIXTURES SHALL REMAIN OFF UNTIL AFTER 6AM WITH NO MORE THAN 30 TOTAL MINUTES AFTER SUNRISE NO MATTER WHAT TIME THAT OCCURS. 2. FIXTURES WILL BE PURCHASED BY THE CITY. EC SHALL INSTALL FIXTURE AND PROVIDE SUPPORTING APPURTENANCES SUCH AS CONCRETE BASE PER POLE BASE DETAIL.															

POINT	LOCATION DESCRIPTION	LENGTH (L) (ft)	VOLTAGE (EL-L)	VOLTAGE (EL-N)	PHASE	WIRE SIZE	CONDUCTOR MATERIAL	CONDUCTOR TYPE	CONDUIT MATERIAL	VOLTAGE CLASS	C VALUE	# OF PARALLEL RUNS	1SC AVAILABLE UPSTREAM	1SC AT EQUIP (13ph) OR (L-L)	FUSE LET THRU (LT)	POINT
FO	UTILITY XFMR															FO
FI	PANEL P1	5	240	120	1	1X	COPPER	THREE SINGLE CONDUCTORS	STEEL	600V	8424	1	13,884	13,043	---	FI
NOTES: 1. ALL CALCULATIONS WERE DONE USING BUSSMAN "POINT-TO-POINT" METHOD. 2. REFER TO PLANS FOR ASSUMED UTILITY TRANSFORMER SIZE UTILIZED FOR CALCULATIONS. 3. TRANSFORMER IMPEDANCES USED IN THE CALCULATIONS WERE TAKEN FROM EATONS PUBLISHED IMPEDANCES FOR DOE 2016 DRY-TYPE TRANSFORMERS. 4. CONDUCTOR LENGTHS INDICATED IN THIS SCHEDULE ARE FOR THE PURPOSES OF FAULT CURRENT CALCULATIONS ONLY. THESE LENGTHS ASSUME WORST CASE SHORTEST DISTANCE CONDITIONS AND SHOULD NOT BE UTILIZED BY THE ELECTRICAL CONTRACTOR FOR BIDDING PURPOSES. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ESTIMATING AND MEASURING ACTUAL FIELD CONDITION LENGTHS AS PART OF THE BID PROCESS.																



#	REVISION	DATE

DESIGN DATA

DESIGN CODE: 2021 INTERNATIONAL BUILDING CODE

ALL GEOTECHNICAL RECOMMENDATIONS IN REPORT 22-3-235 BY KUMAR & ASSOCIATES SHALL BE FOLLOWED. EXCERPTS ARE DETAILED BELOW:

EARTH PRESSURES:
ALLOWABLE VERTICAL BEARING PRESSURE: 2000 PSF
ALLOWABLE LATERAL BEARING PRESSURE: 175 PSF
ACTIVE = 50 PSF/FT
AT REST = 70 PSF/FT
PASSIVE = 185 PSF/FT
COEFFICIENT OF FRICTION = 0.30

MINIMUM FROST DEPTH: 30 INCHES

FILL MATERIAL AT FOOTING EXCAVATIONS SHALL BE TAKEN FROM A SUITABLE ON - SITE SOURCE THAT IS NON EXPANSIVE AS APPROVED BY THE GEOTECHNICAL ENGINEER. CDOT CLASS 1 FILL MAY BE USED IN PLACE OF ON - SITE MATERIAL.

WIND SPEED: 130 MPH (Ultimate)

GROUND/ROOF SNOW LOAD 30 PSF

EXPOSURE: B

IMPORTANCE FACTOR: 1.0

SEISMIC DESIGN CATEGORY: B

CONCRETE NOTES

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF ACI 318, ACI 304, AND ACI 315.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AT 28 DAYS WITH 2.5-4.5% ENTRAINED AIR .
- CEMENT SHALL CONFORM TO THE REQUIREMENTS OF ASTM C150 TYPE V. TYPE II CEMENT MAY BE SUBSTITUTED IF MEETING THE TYPE V REQUIREMENTS FOR SULFATE RESISTANCE, DELETERIOUS ACTIVITY, AND TOTAL ALKALI CONTENT.
- DUE TO SULFATE CONCENTRATIONS IN EXISTING SOILS, CONCRETE FOR STRUCTURE WALLS AND SLABS SHALL MEET CDOT SPECIFICATION 601.04 CLASS 3 CEMENT REQUIREMENTS, OR ACI 201 CLASS 3 CEMENT REQUIREMENTS.
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS OTHERWISE NOTED.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE.
- SPLICES SHALL BE CLASS "B".
- ALL HOOKS SHALL BE STANDARD UNLESS NOTED OTHERWISE.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH..... 3"
CONCRETE EXPOSED TO EARTH OR WEATHER.....2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER NOR CAST AGAINST EARTH:
SLAB AND WALL..... 3/4"
BEAMS AND COLUMNS..... 1 1/2"
- WHEN PARALLEL REINFORCING BARS ARE PLACED IN LAYERS OF TWO OR MORE, THE CLEAR SPACING BETWEEN LAYERS SHALL BE AT LEAST 1".
- A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE UNLESS NOTED OTHERWISE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- LOCATE AND AVOID CUTTING IN-PLACE REBAR WHEN DRILLING HOLES IN CONCRETE SLABS.
- COLUMN BASE PLATES SHALL BE PLACED WITH SETTING TEMPLATES.
- PLACE (2) #5 BARS (1 EACH FACE) WITH A 2'-0" PROJECTION ON ALL SIDES AND DIAGONALLY ACROSS CORNERS OF ALL OPENINGS LARGER THAN 12" SQUARE IN CONCRETE SLABS AND WALLS, UNLESS NOTED OTHERWISE.
- MAKE ALL BARS CONTINUOUS AROUND CORNERS OR PROVIDE CORNER BARS OF EQUAL SIZE AND SPACING.
- PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT.

STRUCTURE DESCRIPTION NARRATIVE

CAST-IN-PLACE CONCRETE CAISSON FOUNDATIONS FOR A PREFABRICATED SHADE SHELTER.

CAST-IN-PLACE CONCRETE TRAIL CROSSING OVER EXISTING DITCH.

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Civil and Structural Engineering

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303.953.9014
www.sanengineeringllc.com

CLIENT:



9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

STAMP:



PROJECT:

SKYLAKE
RANCH OPEN
LAND
IMPROVEMENTS
11890 HOLLY STREET

SUBMITTAL:

BID SUBMITTAL

PROJECT #:

20-27A

DESIGNED BY:

JJM

DRAWN BY:

MDP

CHECKED BY:

JJM

ORIGINAL DATE:

MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:

GENERAL
STRUCTURAL
NOTES

SHEET #:

52

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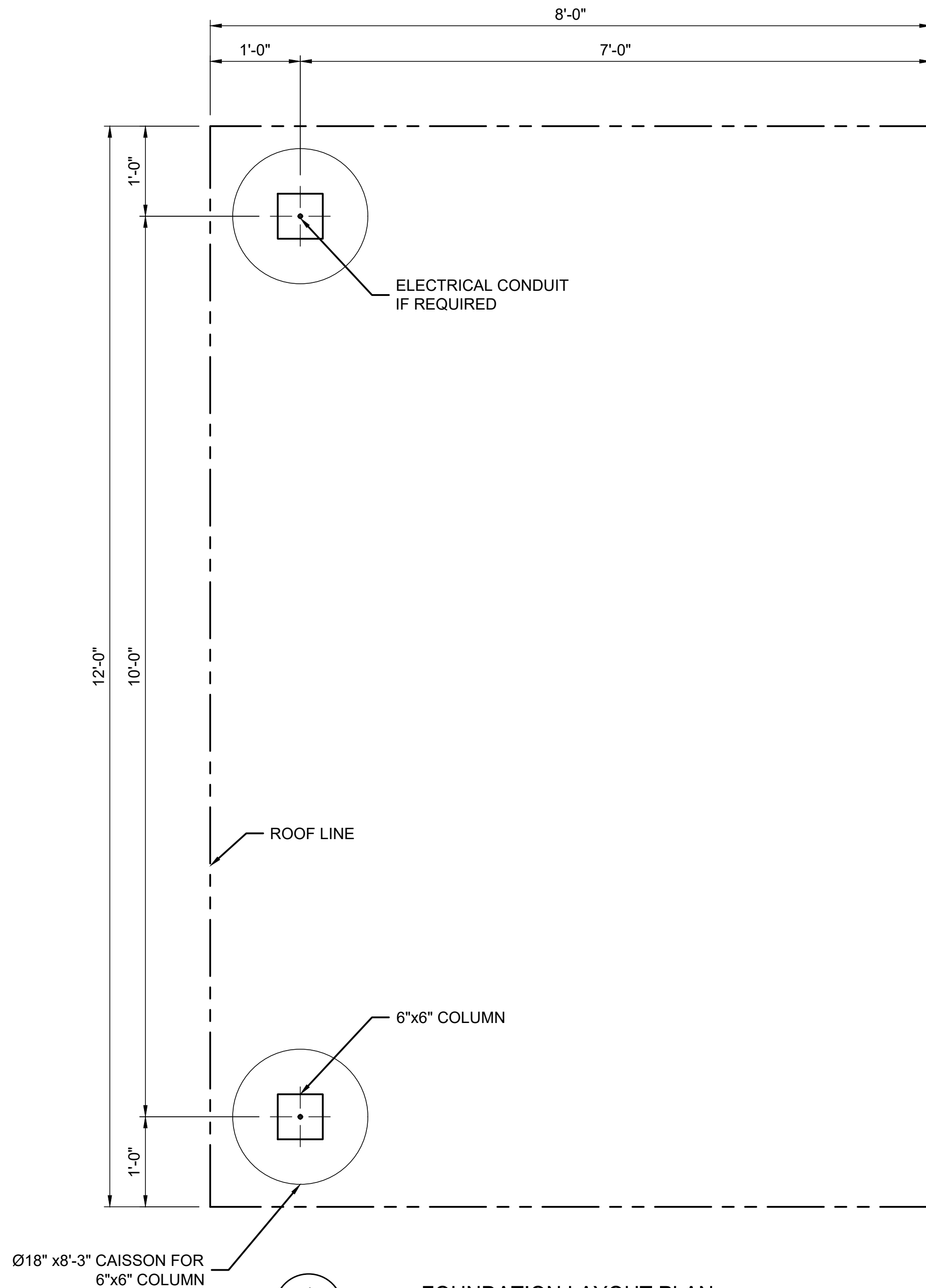
#	REVISION	DATE

SHEET TITLE:

**SHADE
STRUCTURE
FOUNDATIONS**

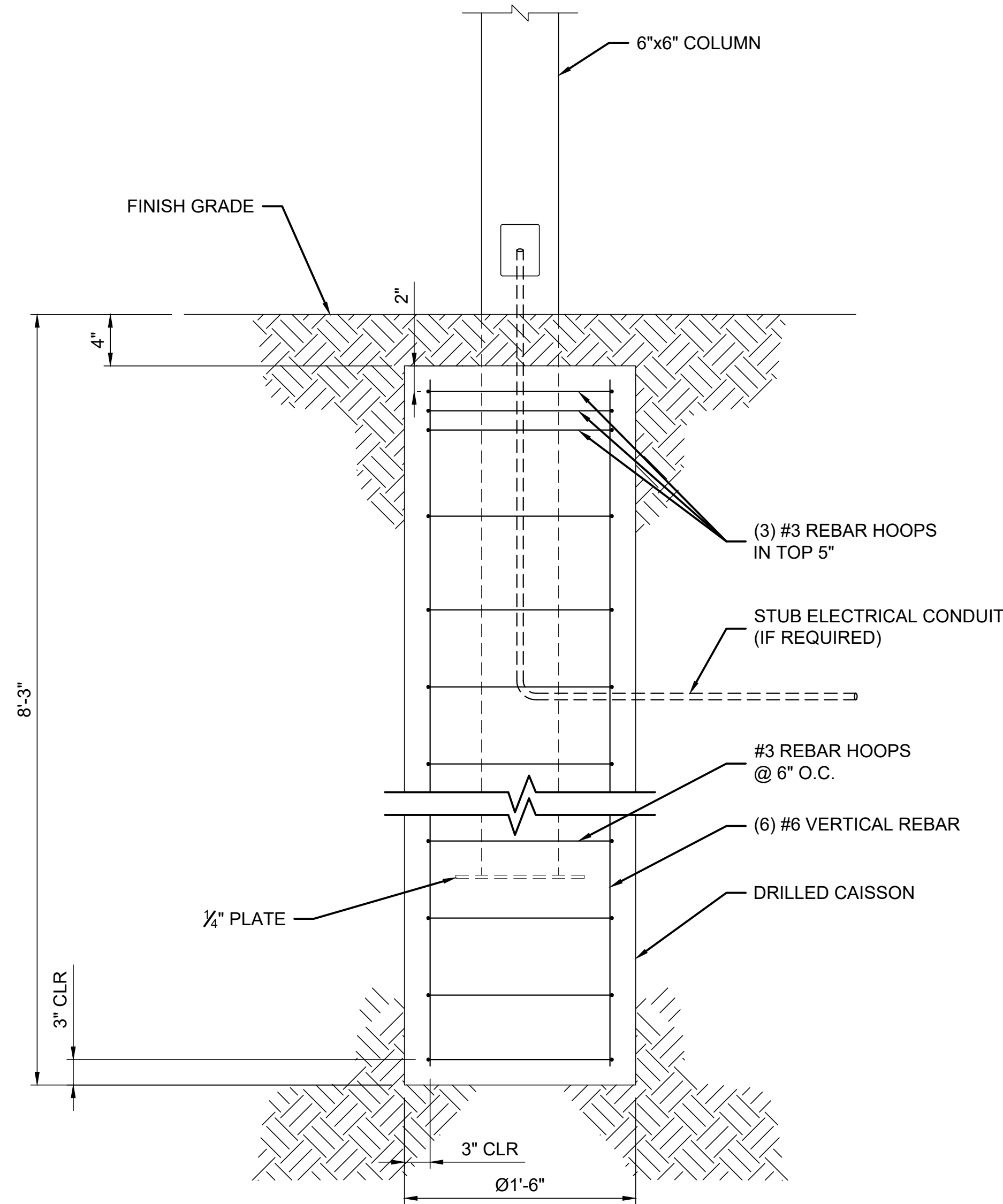
SHEET #:

53



**FOUNDATION LAYOUT PLAN
MARANA MODEL STRUCTURE**

1" = 1'-0"



**FOUNDATION ELEVATION PLAN
MARANA MODEL STRUCTURE**

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

