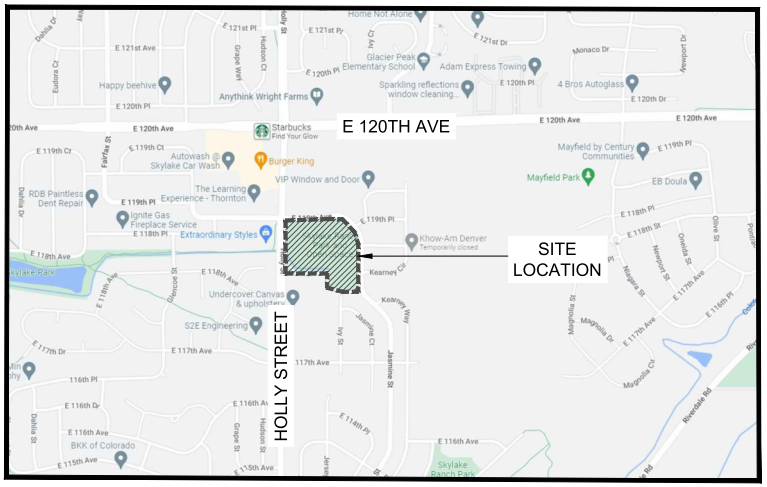
CALL UTILITY NOTIFICATION CENTER OF COLORADO
1.800.922.1987
CALL 2- BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

SKYLAKE RANCH OPEN LAND IMPROVEMENTS

CITY OF THORNTON

PROJECT #20-27A
ADDRESS: 11890 HOLLY STREET



VICINITY MAP

NORTH

LANDSCAPE ARCHITECT

VALERIAN LLC
165 SOUTH UNION BLVD, SUITE 366
LAKEWOOD, CO 50228
PHONE: 303.907.1323
CONTACT: STACEY STICKLER
EMAIL: STACEYS@VALERIANLLC.COM

CIVIL ENGINEER

ICON ENGINEERING, INC.
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CENTENNIAL, CO 80112
PHONE: 303.221.0802
CONTACT: JAMES DUVALL
Email: jduvall@iconeng.com

ELECTRICAL ENGINEER

AE DESIGN
1900 WAZEE STR, #205
DENVER, CO 80202
PHONE: 720.683.6861
CONTACT:MORIAH HOLLAND
EMAIL: MHOLLAND@AEDESIGN-INC.COM

STRUCTURAL ENGINEER

SAN ENGINEERING
1150 W. LITTLETON BLVD, SUITE 200
LITTLETON, CO 80204
PHONE: 303.953.9014
CONTACT: JOHN MIGGLIACCIO
EMAIL: JOHN@SANSTRUCTURAL.COM

ENVIRONMENTAL CONSULTANT

ERO RESOURCES
1626 COLE BLVD, SUITE 100
LAKEWOOD, CO 80401
PHONE: 303.552.6351
CONTACT: COURTNEY MARNE
Email: CMARNE@ERORESOURCES.COM

DRAWING INDEX

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SIGNATURE BLOCK

PAULA SCHULTE

PARKS, RECREATION AND COMMUNITY PROGRAMS DEPARTMENT

VALERIAN

CONSULTANT:

STACEY E. STICKLER 654 — 11/25/2008 Original Date of Licensure 3.22.2024 — STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

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
ORIGINAL DATE: MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
COVER SHEET

SHEET #:
01

CITY OF THORNTON STANDARD NOTES:

1. A CONSTRUCTION PERMIT MUST BE OBTAINED FROM THE OWNER PRIOR TO CONSTRUCTION OF 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 NEGLECT 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.
24. CONTRACTOR SHALL NOTIFY ALL RESIDENTS AND/OR BUSINESSES IN WRITING 48 HOURS PRIOR TO ANY SHUT-OFF IN SERVICE. THE NOTICES MUST HAVE CONTRACTOR'S PHONE NUMBER AND NAME OF CONTACT PERSON, AND EMERGENCY PHONE NUMBER FOR AFTER HOURS CALLS. ALL SHUT-OFF'S MUST BE APPROVED BY THE OWNER, AND CITY VALVES AND APPURTENANCES SHALL BE OPERATED BY OWNER, UNLESS WRITTEN PERMISSION IS GIVEN OTHERWISE.
25. ALL DAMAGED EXISTING CURB, GUTTER, AND SIDEWALK SHALL BE REPAIRED PRIOR TO ACCEPTANCE OF COMPLETED IMPROVEMENTS.
26. REPAIR OF ANY DAMAGE TO EXISTING IMPROVEMENTS OR LANDSCAPING IS THE RESPONSIBILITY OF THE CONTRACTOR.

GENERAL NOTES:

1. A TOPOGRAPHIC SURVEY WAS PROVIDED BY TOPOGRAPHIC LAND SURVEYORS, (303) 666-0379
2. AFTER PLAN APPROVAL, A CONSTRUCTION PERMIT MUST BE OBTAINED FROM THE CITY OF THORNTON PRIOR TO CONSTRUCTION OF THESE IMPROVEMENTS.
3. A PRE-CONSTRUCTION MEETING MUST BE HELD BETWEEN THE CONTRACTOR AND CITY OF THORNTON CONSTRUCTION MANAGEMENT SERVICES PERSONNEL PRIOR TO CONSTRUCTION.
4. 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.
5. REFER TO EXISTING CONDITIONS AND DEMOLITION PLAN FOR SITE REMOVALS.
6. CONTRACTOR SHALL COORDINATE WITH EXCEL, UNITED POWER, COMCAST AND CENTURY LINK FOR INSTILLATION OF RELOCATED UTILITIES.
7. ALL TRAFFIC CONTROL SHALL BE IN CONFORMANCE WITH THE MUTCD.
8. CONTRACTOR SHALL SUPPLY ENGINEER'S LETTER OF COMPLIANCE.
9. CONTRACTOR TO OBTAIN BUILDING PERMIT FOR THE SHADE STRUCTURES.

ABBREVIATIONS

APPROX	APPROXIMATE
ARCH	ARCHITECT
AVG	AVERAGE
B&B	BALLED AND BURLAPPED
BLDG	BUILDING
BM	BENCHMARK
BOC	BACK OF CURB
BR	BOTTOM OF RAMP
BS	BOTTOM OF STEP
BTWN	BETWEEN
BW	BOTTOM OF WALL
CAL	CALIPER
CF	CUBIC FEET
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTERLINE
CLR	CLEAR(ANCE)
COMP	COMPACTED
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CU	CUBIC
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLISH, DEMOLITION
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DTL	DETAIL
DWG	DRAWING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
ELECT	ELECTRICAL
ENG	ENGINEER
EQ	EQUAL
EST	ESTIMATE
EW	EACH WAY
EX	EXISTING
FG	FINISHED GRADE
FIN	FINISH
FL	FLOW LINE
FS	FINISH SURFACE
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GC	GENERAL CONTRACT(OR)
GPM	GALLON PER MINUTE
HORIZ	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
ID	INSIDE DIAMETER
INV	INVERT ELEVATION
IN	INCHES
INCL	INCLUDE(D)
IRR	IRRIGATION
JT(S)	JOINT(S)
LIN	LINEAR
LOD	LIMIT OF DISTURBANCE
LOW	LIMIT OF WORK
LP	LOW POINT
LT	LIGHT
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER(S)
OD	OUTSIDE DIAMETER
OPP	OPPOSITE
QTY	QUANTITY
ROW	RIGHT-OF-WAY
SAN	SANITARY
SCH	SCHEDULE
SD	STORM DRAIN
SEC	SECTION
SF	SQUARE FOOT (FEET)
SHT	SHEET
SIM	SIMILAR
SPECS	SPECIFICATIONS
SQ	SQUARE
STA	STATION
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
TBC	TOP OF BACK OF CURB
TBD	TO BE DETERMINED
TC	TOP OF CURB
THK	THICK
TLF	TOP OF LIGHT FOOTING
TO	TOP OF
TOC	TOP OF CONCRETE
TOPO	TOPOGRAPHY
TR	TOP OF RAMP
TRANS	TRANSFORMER
TS	TOP OF STEP
TW	TOP OF WALL
TYP	TYPICAL
UNFIN	UNFINISHED
VAR	VARIES
VERT	VERTICAL
VEH	VEHICLE
VOL	VOLUME
W/	WITH
W/O	WITHOUT
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD	YARD

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VALERIAN
CONSULTANT:
STACEY E. STICKLER 654 — 11/25/2008 Original Date of Licensure 3.22.2024 — STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT
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
ORIGINAL DATE: MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
GENERAL NOTES

SHEET #:
02

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

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:

1. 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 5215.08'. All directions, distances and dimensions are based on Colorado coordinate system of 1983 central zone.
2. 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.
3. 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.
4. This survey was conducted during the month of October 2021.
5. 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.
6. 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.
7. Parcel lines as shown hereon were established by Adams County GIS.

Date of Survey	October 2021
Control File	Skylake
Job Number	143760

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
505 Stacy Court Ste B, Lafayette, CO 80026
303.666.0379 www.topographic.com

DWG: G:\GEOSURV\Adams\Valentai\Skylake Ranch Open Land Survey 143760\Skylake Ranch Grid R1.dwg USER: sjarnell DATE PRINTED: 5/31/2022 11:56:32 AM

1 EXISTING CONDITIONS & DEMO PLAN

NORTH

0 50 100 150 feet

SCALE: 1" = 50'

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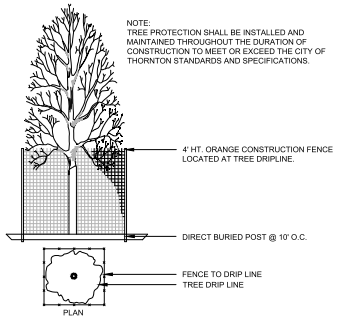
LEGEND

- EXISTING TREE TO REMAIN
- EXISTING VEGETATION TO REMAIN
- EXISTING TREE TO BE REMOVED & REUSED ON SITE
- PROPERTY BOUNDARY
- TREE PROTECTION FENCE
- TREE PROTECTION ZONE (TPZ)
- EXISTING CONCRETE TRAIL TO BE REMOVED
- CLEARING & GRUBBING
- EXISTING WETLAND
- LIMITS OF CONSTRUCTION



1 TREE PROTECTION
3/8" = 1'-0" CP-01

TREE PROTECTION NOTES:

1. PROTECTIVE FENCING SHALL BE SET UP TO VISIBLY SHOW THE TREE PROTECTION ZONE.
2. ALL EQUIPMENT, INCLUDING FOOT TRAFFIC SHALL REMAIN OUTSIDE OF THE TREE PROTECTION ZONE.
3. IF ROOTS GREATER THAN 1-INCH IN DIAMETER REQUIRE REMOVAL, A CLEAN CUT SHALL BE ACCOMPLISHED USING A SHARP HAND TOOL. A MAXIMUM OF TWO 3-INCH DIAMETER ROOTS PER TREE ARE PERMITTED FOR REMOVAL. THE REMOVAL OF ADDITIONAL ROOTS 3-INCHES OR GREATER IN DIAMETER REQUIRES APPROVAL OF THE CITY FORESTER OR DESIGNEE.
4. CLEAN UP OF TREES TO REMAIN AND LIMB REMOVAL SHALL BE ACCOMPLISHED BEFORE CONSTRUCTION BEGINS BY A PROFESSIONAL, ISA CERTIFIED, LICENSED COMPANY APPROVED BY THE CITY OF THORNTON.
5. DESIGNATE CONCRETE WASHOUT AREAS. THESE AREAS SHALL NOT FLOW INTO OR ACROSS THE TREE PROTECTION ZONE.
6. NO STOCKPILING OF SOIL IS PERMITTED WITHIN THE TREE PROTECTION ZONE.
7. NO VEHICLE PARKING IS PERMITTED WITHIN THE TREE PROTECTION ZONE.
8. THE SOIL SHALL NOT BE COMPACTED WITHIN THE TREE PROTECTION ZONE.

DEMOLITION NOTES:

1. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK. BE AWARE OF ANY UNDERGROUND UTILITIES. PROTECT ALL EXISTING SITE FEATURES INCLUDING CONCRETE CURB AND GUTTER, CONCRETE SIDEWALK, CONCRETE WALK,TREES, UTILITIES, AND SOD TO REMAIN FROM POTENTIAL DAMAGE BY SITE CONSTRUCTION OPERATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO INSPECT AND CONFIRM SITE CONDITIONS PRIOR TO BEGINNING WORK. COMMENCEMENT OF WORK SHALL SIGNIFY ALL CONDITIONS ARE ACCEPTABLE AND NO ALLOWANCE WILL BE MADE FOR UNRECOGNIZED CONDITIONS AFTER START OF WORK.
3. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXITING HARDSCAPE AND LANDSCAPE TO BE REMOVED PRIOR TO DEMO/CONSTRUCTION.
4. CONTRACTOR SHALL REPLACE OR REPAIR TO ORIGINAL CONDITION ALL BUILDINGS, UTILITIES AND SITE IMPROVEMENTS NOT DESIGNATED FOR REMOVAL THAT ARE DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS AT NO ADDITIONAL COST TO THE OWNER.
5. ALL TRAFFIC CONTROL SHALL BE IN CONFORMANCE WITH THE MUTCD.
6. CONTRACTOR TO PROVIDE PRUNING OF EXISTING TREES PER DIRECTION OF THE OWNER.
7. ALL INGRESS/EGRESS POINTS OF ACCESS FOR HEAVY VEHICLES AND EQUIPMENT TO BE COORDINATED WITH CITY OF THORNTON.
8. ALL TREES TO BE REMOVED SHALL BE SALVAGED AND REUSED IN NATURE EXPLORATION ZONE PER PLANS.
9. SEE LAYOUT PLANS FOR ALL DIMENSIONS.

VALERIAN

CONSULTANT:

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

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DRAWN BY: LR
CHECKED BY: SS
ORIGINAL DATE: MARCH 22, 2024

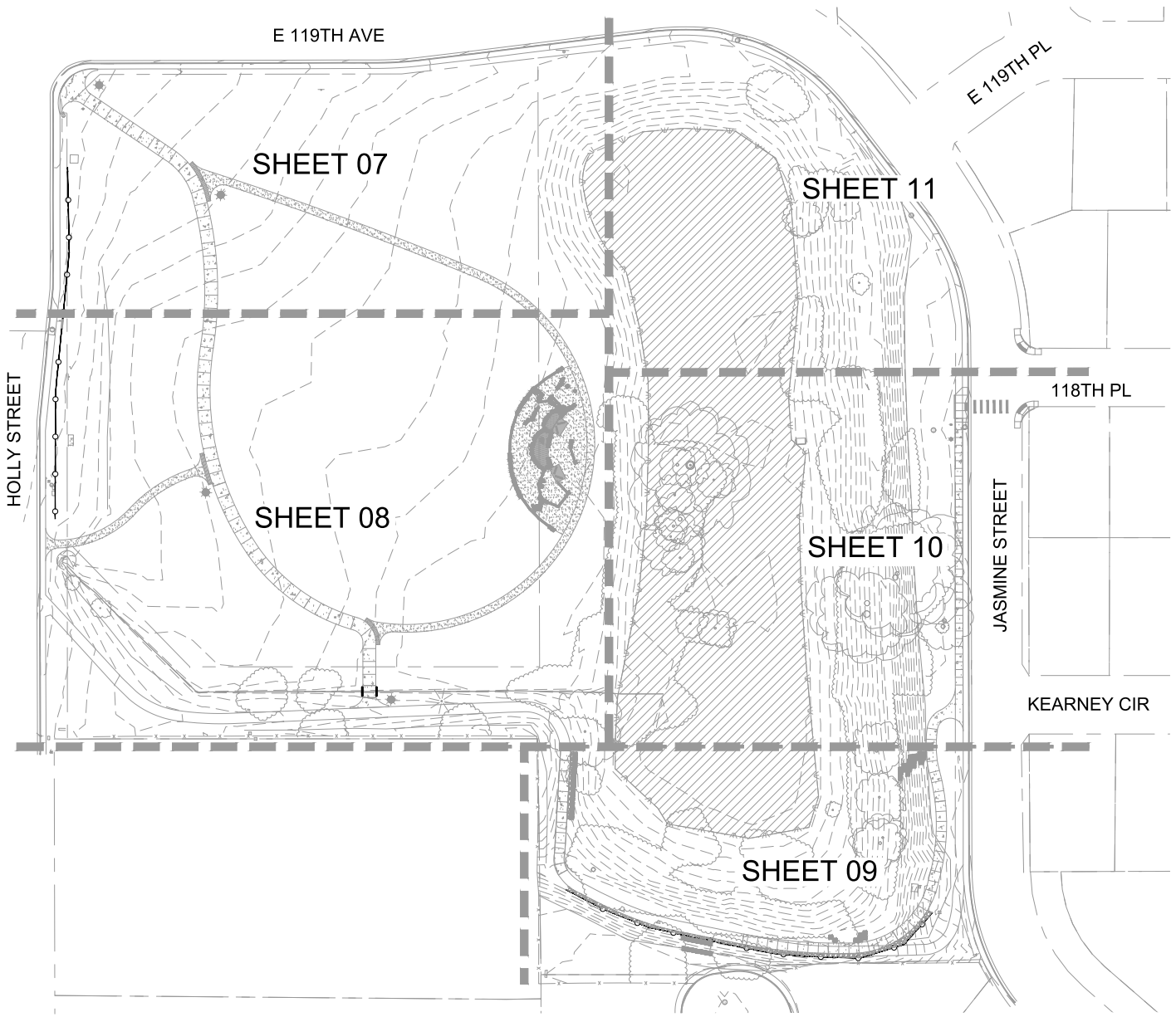
#	REVISION	DATE

SHEET TITLE:

EXISTING CONDITIONS & DEMO PLAN

SHEET #:

04



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.

NORTH

0 40 80 120 feet
SCALE: 1" = 40'

VALERIAN

CONSULTANT:

STACEY E. STICKLER
0554
11/26/2008
Original Date of Licensure
3.22.2024
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

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

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 3162333.4624
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 1756887.5052	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 1757096.7352	E 3162602.0083
63	CENTER OF SHADE STRUCTURE POST	N 1757105.6915	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

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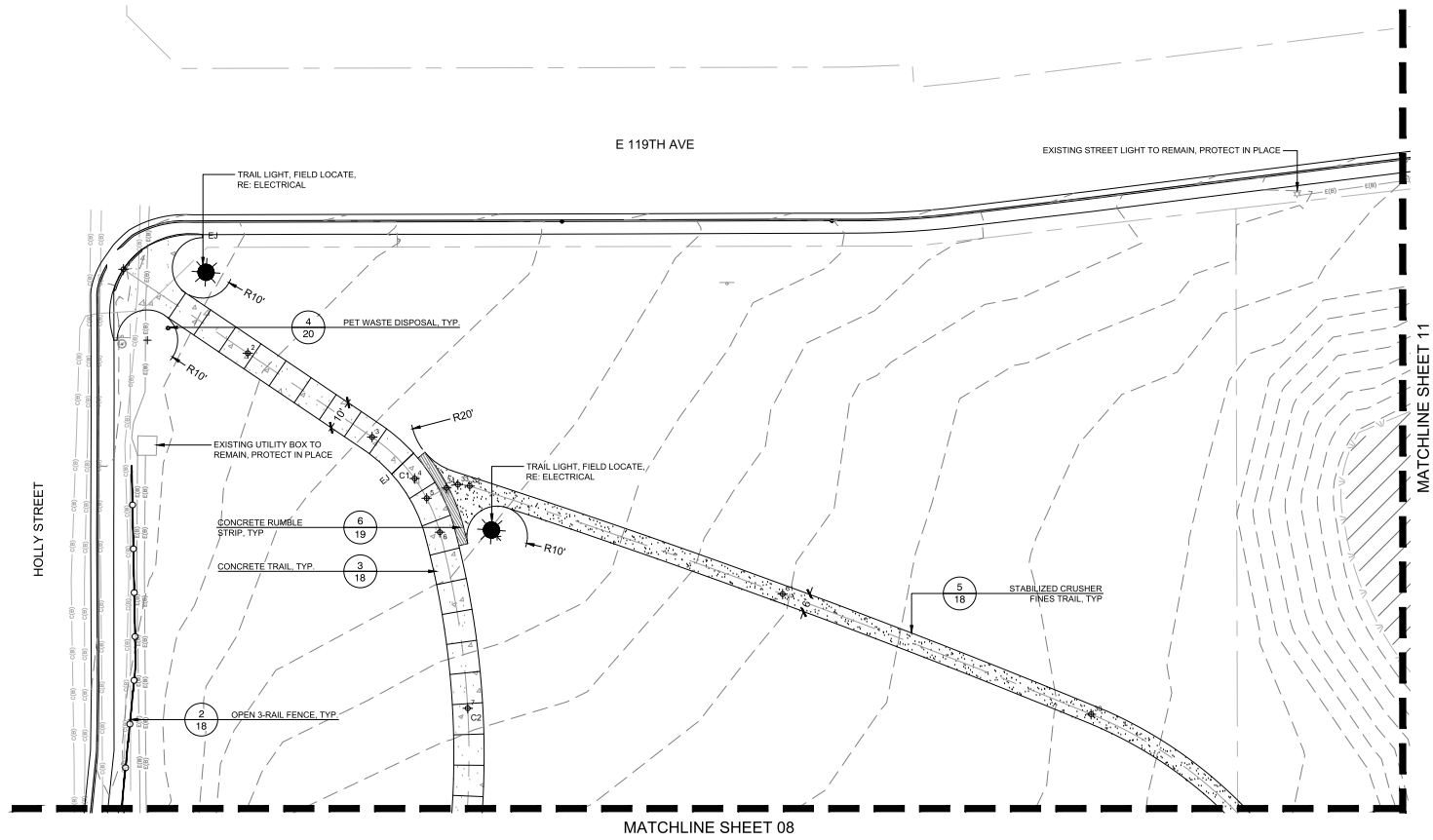
DRAWN BY: LR
CHECKED BY: SS
ORIGINAL DATE: MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
LAYOUT CONTROL POINTS

SHEET #:
06



1 LAYOUT PLAN

NORTH

0 20 40 60 feet

SCALE: 1" = 20'

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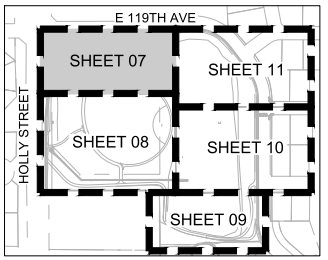

KEY MAP

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

LAYOUT NOTES

1. 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.
2. 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.
3. 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.
4. PRIOR TO EXCAVATION, UNDERGROUND UTILITIES MUST BE FIELD VERIFIED (SEE GENERAL NOTES).
5. SEE SITE SURVEY FOR ADDITIONAL CONTROL POINTS, MONUMENTS AND BENCHMARKS.
6. 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.
7. 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.

VALERIAN
CONSULTANT:
STACEY E. STICKLER 0554 11/26/2008 Original Date of Licensure 3.22.2024 STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT
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PROJECT:
SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET

SUBMITTAL:
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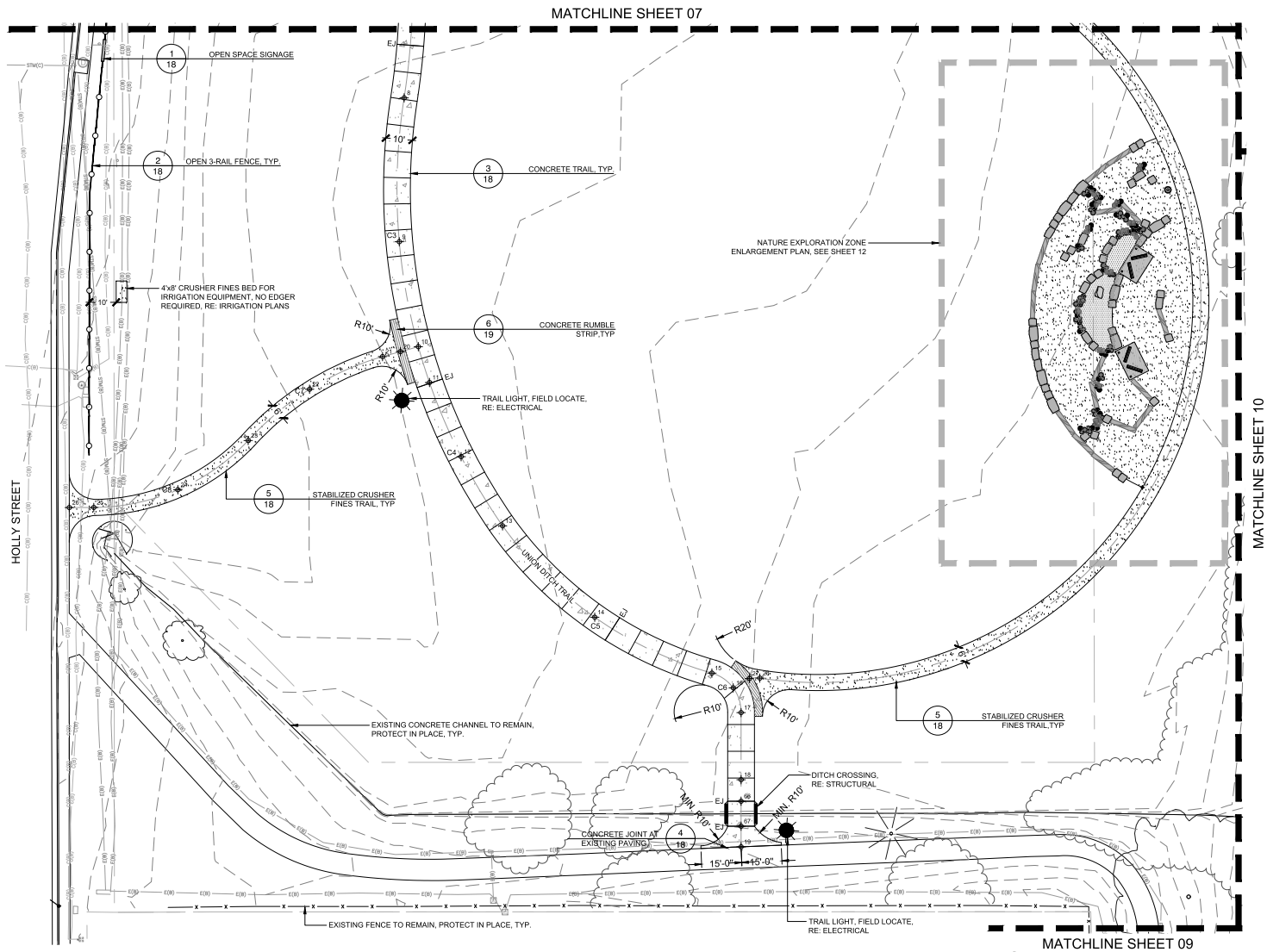
ORIGINAL DATE: MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
LAYOUT PLAN

SHEET #:
07



1 LAYOUT PLAN

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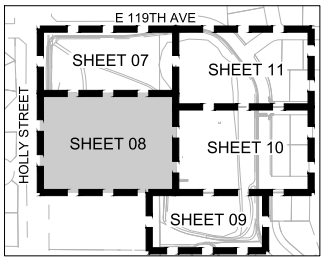

KEY MAP

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- TRASH RECEPTACLE
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VALERIAN

CONSULTANT:

STACEY E. STICKLER 0554 — 11/26/2008 Original Date of Licensure 3.22.2024 — STATE OF COLORADO — LICENSED LANDSCAPE ARCHITECT

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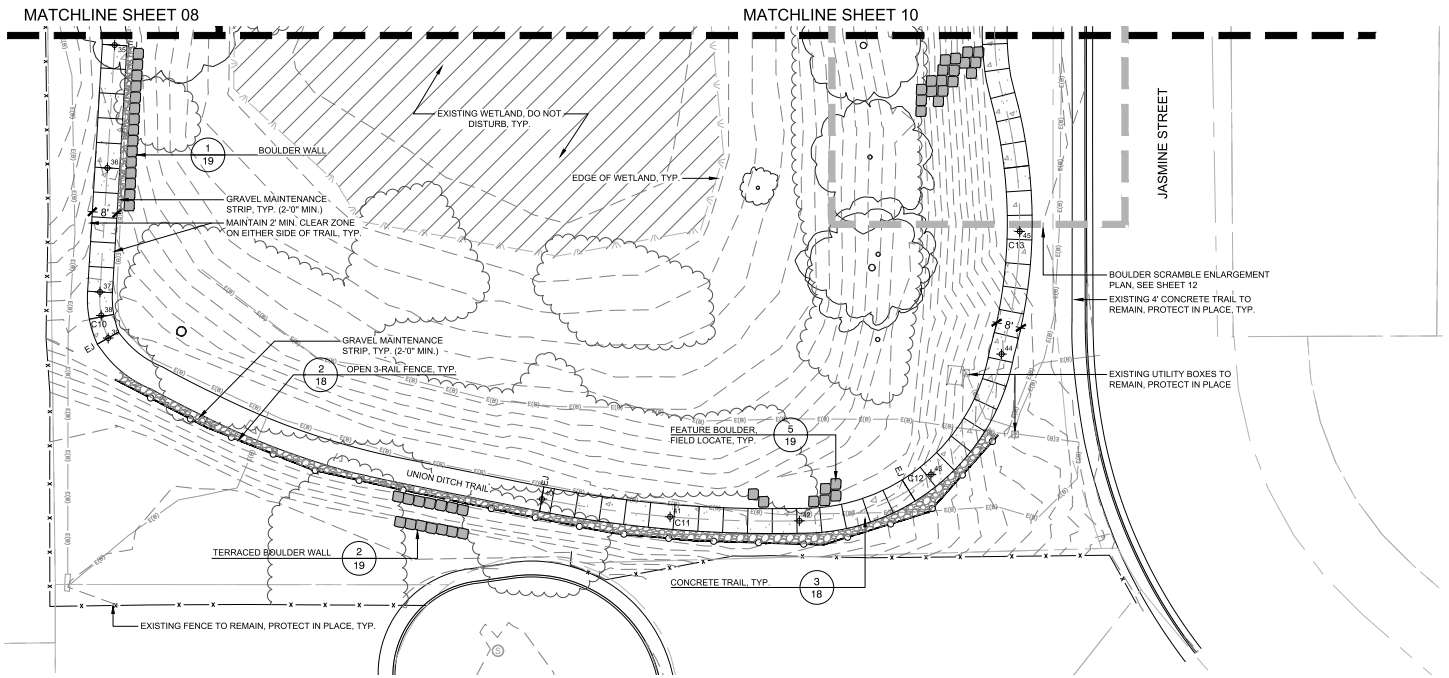
LAYOUT PLAN

SHEET #:
08



1 LAYOUT PLAN

NORTH

0 20 40 60 feet

SCALE: 1" = 20'

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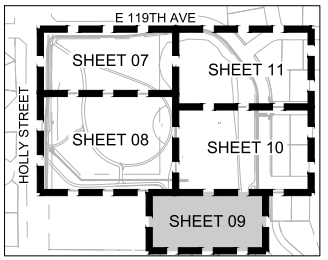

KEY MAP

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VALERIAN

CONSULTANT:

STACEY E. STICKLER 0054 — 11/26/2008 Original Date of Issuance 3.22.2024 — STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

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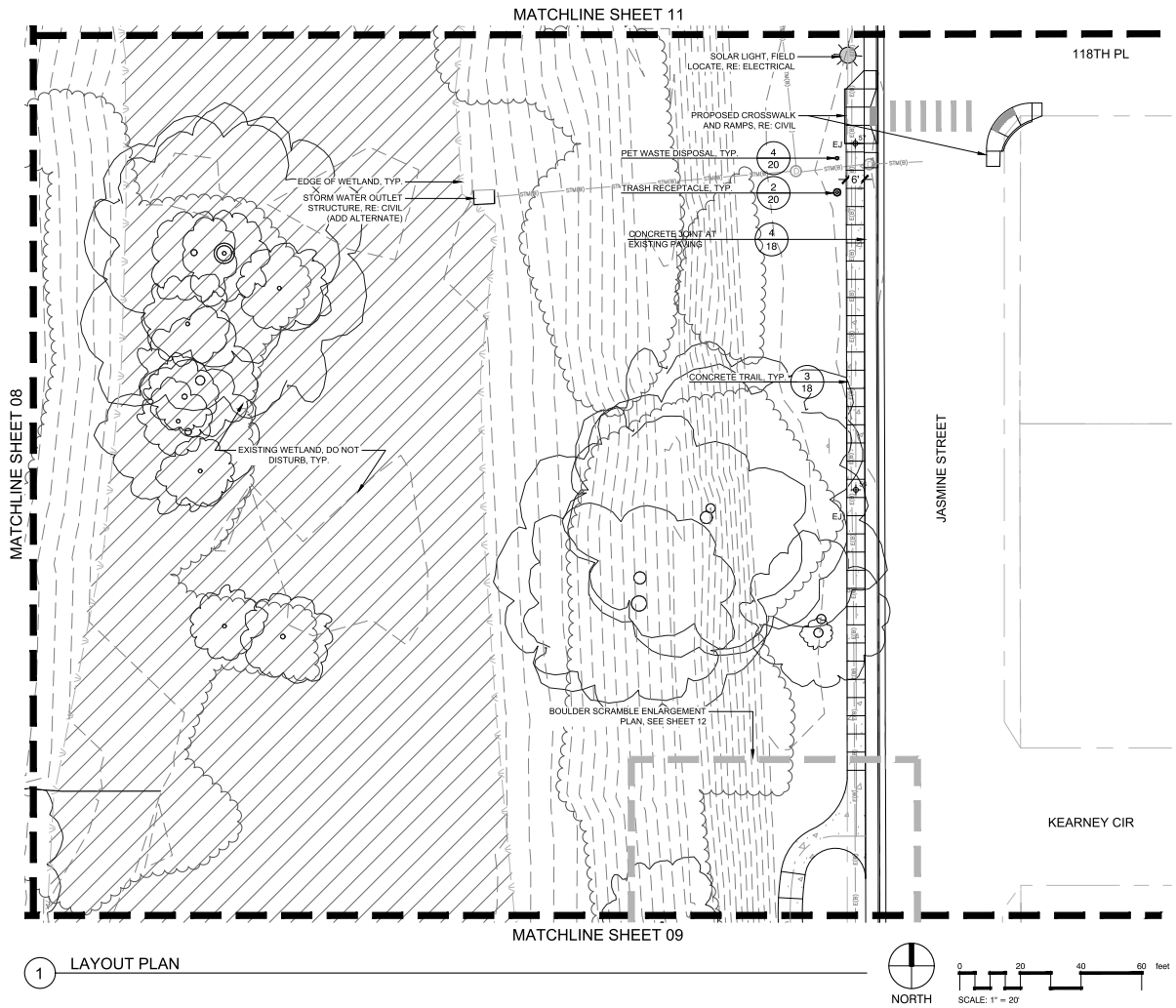
#	REVISION	DATE

SHEET TITLE:

LAYOUT PLAN

SHEET #:

09



1 LAYOUT PLAN

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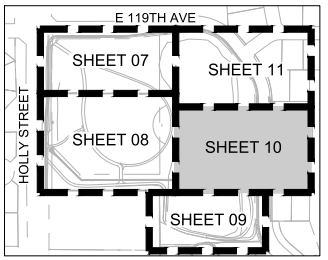

KEY MAP

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- PET WASTE DISPOSAL

VALERIAN

CONSULTANT:

STACEY E. STICKLER 0547
11/26/2008
Original Date of Licensure
3.22.2024
STATE OF COLORADO
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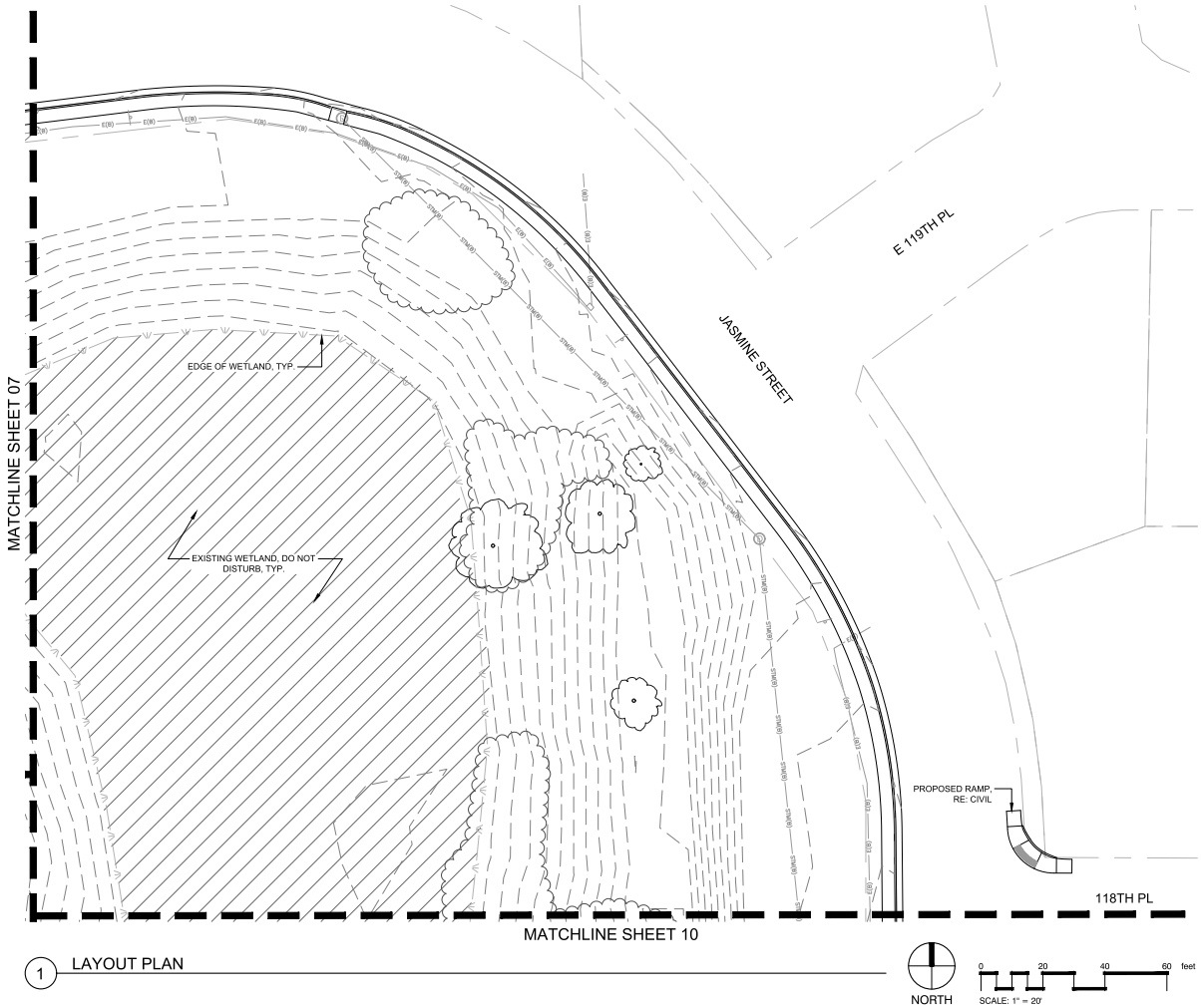
SHEET TITLE:
LAYOUT PLAN

SHEET #:
10



1 LAYOUT PLAN

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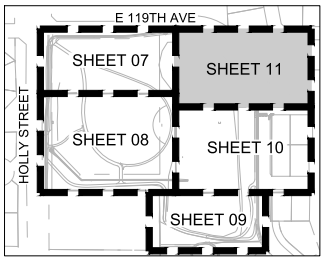

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VALERIAN

CONSULTANT:

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

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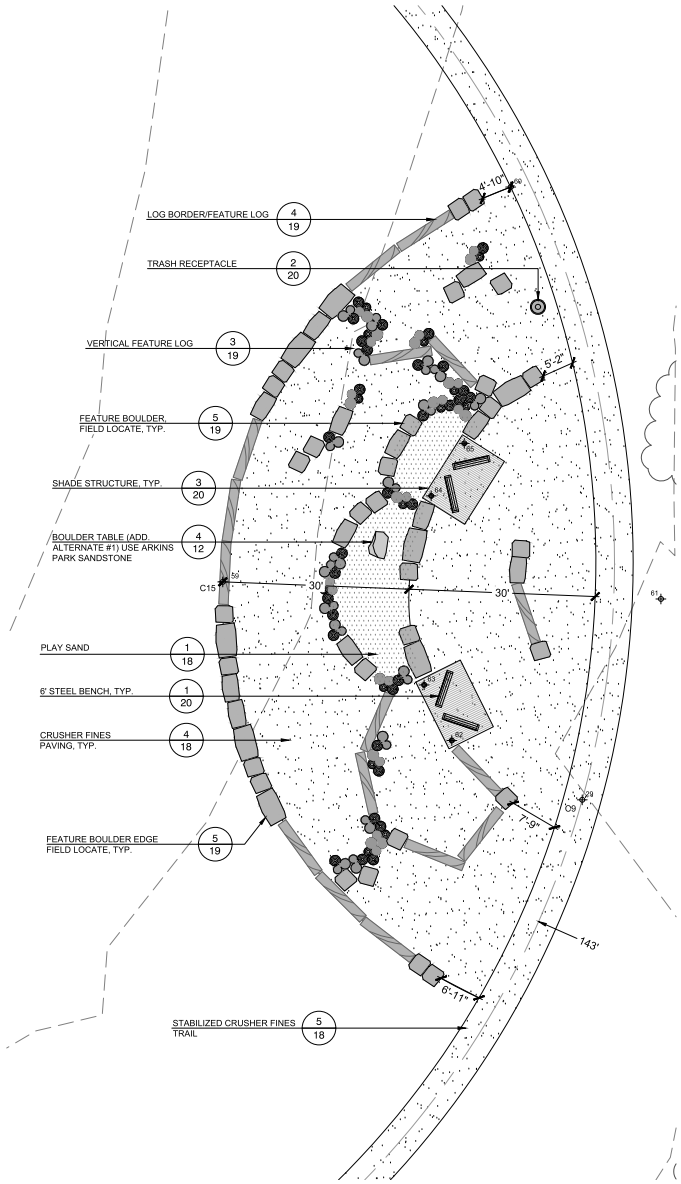
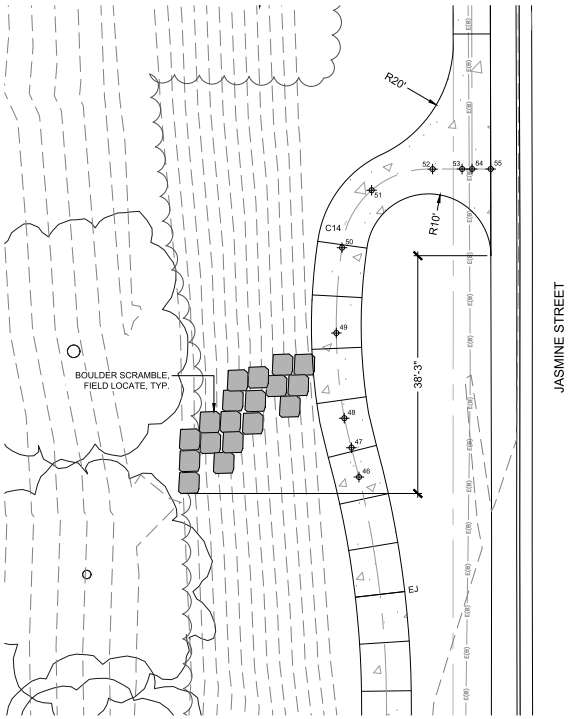
LAYOUT PLAN

SHEET #:
11



1 NATURE EXPLORATION ZONE ENLARGEMENT PLAN



2 BOULDER SCRAMBLE ENLARGEMENT PLAN

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

3 NATURE EXPLORATION ZONE FEATURE LOGS

4 BOULDER TABLE : ADD ALTERNATE #1

NOTE:
1. USE ARKINS PARK SANDSTONE.

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- TRASH RECEPTACLE
- PET WASTE DISPOSAL

NORTH

0 10 20 30 feet
SCALE: 1" = 10'

VALERIAN

CONSULTANT:

STACEY E. STICKLER 654 — 11/25/2008 Original Date of Licensure 3.22.2024 — STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

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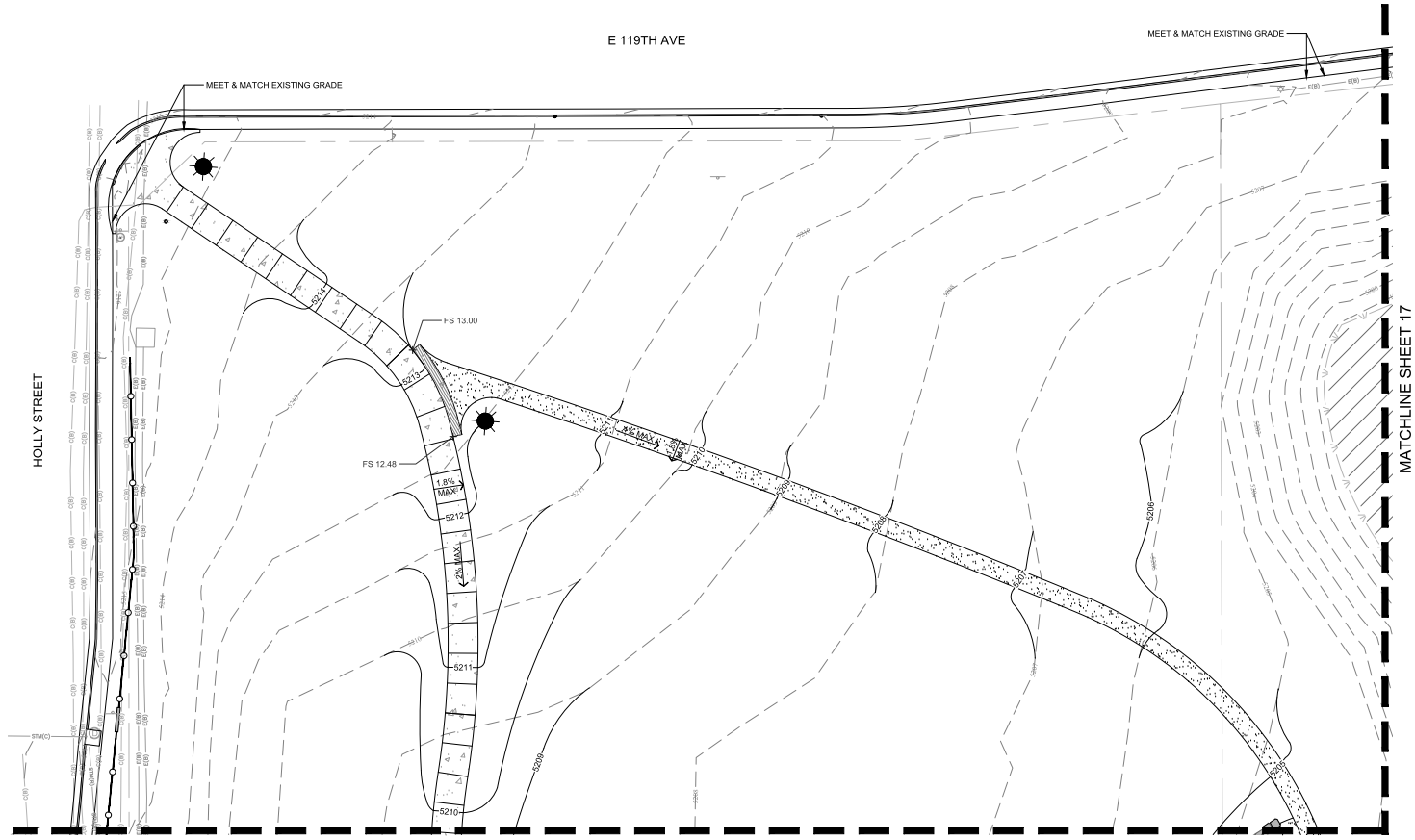
SUBMITTAL:
BID SUBMITTAL

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

#	REVISION	DATE

SHEET TITLE:
ENLARGEMENT PLANS

SHEET #:
12

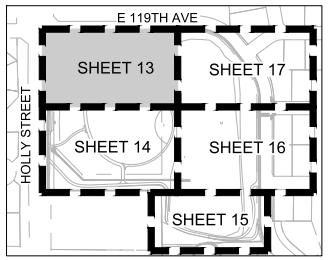


1 GRADING PLAN

NORTH

SCALE: 1" = 20'

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

LEGEND

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

GRADING NOTES:

1. EXISTING CONTOUR INTERVAL IS 1 FOOT.
2. PROPOSED CONTOUR INTERVAL IS 1 FOOT.
3. CONTRACTOR TO VERIFY ALL EXISTING SPOT ELEVATIONS.
4. ALL AREAS DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE PREPARED AND LANDSCAPED AS DIRECTED.
5. ALL TOPSOIL WHERE PHYSICALLY PRACTICABLE, SHALL BE SALVAGED AND NO TOPSOIL SHALL BE REMOVED FROM THE SITE EXCEPT AS SET FORTH IN THE APPROVED PLANS. TOPSOIL AND OVERBURDEN SHALL BE SEGREGATED AND STOCKPILED SEPARATELY. ALL STOCKPILES SHALL REMAIN WEED FREE. TOPSOIL AND OVERBURDEN SHALL BE REDISTRIBUTED WITHIN THE GRADED AREA AFTER ROUGH GRADING TO PROVIDE A SUITABLE BASE FOR AREAS THAT WILL BE SEEDED AND PLANTED. RUNOFF FROM THE STOCKPILED AREA SHALL BE CONTROLLED TO PREVENT EROSION AND RESULTING SEDIMENTATION OF RUNOFF WATER.
6. CONTRACTOR SHALL USE WATER SPRINKLING AND OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT SCATTERING WHEN REQUESTED BY OWNER. DO NOT USE WATER WHEN IT MAY CREATE HAZARDOUS CONDITIONS SUCH AS ICING, FLOODING OR RUNOFF POLLUTION OR IF PROHIBITED BY CURRENT DROUGHT RESTRICTIONS.
7. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS.
8. PROPOSED GRADING ADJACENT TO EXISTING UTILITY STRUCTURES (MH, BACKFLOW, WATER METER) AND MAY NEED ADJUSTMENT.
9. CONTRACTOR SHALL PROVIDE SMOOTH FINISH GRADE FREE OF RUTS, DEPRESSIONS AND IRREGULARITIES.
10. SEE UTILITIES PLAN FOR ELEVATIONS, LOCATIONS AND DETAILS OF DRAINAGE IMPROVEMENTS.
11. CONTRACTOR SHALL USE CAUTION WHEN GRADING AROUND EXISTING TREES. DAMAGED TREES WILL BE REPLACED TO THE SATISFACTION OF THE PROJECT MANAGER. NO EQUIPMENT SHALL BE ALLOWED WITHIN THE TREE PROTECTION ZONE (TPZ).
12. UTILITIES SHOWN ARE FOR INFORMATION ONLY. IT SHALL REMAIN THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING UTILITIES. CONTRACTOR SHALL RESTORE AREAS DAMAGED DURING CONSTRUCTION TO THEIR ORIGINAL STATE.
13. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND BASE THE BID ON ACTUAL ON-SITE CONDITIONS AND MEASUREMENTS. POSITIVE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES. ANY DISCREPANCIES ON THE PLANS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER.
14. CARE SHALL BE TAKEN THAT ANY GRADING OR DISTURBANCE WITHIN THE TREE PROTECT ZONES SHALL BE DONE BY HAND.
15. CONTRACTOR SHALL VERIFY THE EXISTING GRADE OF THE EXISTING CONCRETE TRAIL TO MEET AND MATCH THE PROPOSED CONCRETE TRAIL ELEVATION.
16. ALL CONCRETE PAVING SHALL MEET ADA COMPLIANCE AND SHALL NOT EXCEED THE 1.5% CROSS SLOPE. IF THE CONCRETE PAVING IS NOT IN COMPLIANCE, THE CONTRACTOR SHALL REPLACE THE CONCRETE AT NO COST TO THE OWNER.
17. ALL IMPROVEMENTS SHALL MAINTAIN POSITIVE DRAINAGE.
18. CONTRACTOR TO PROVIDE EXISTING SPOT ELEVATIONS AT THE EXISTING CONCRETE TRAIL ONCE THE TRAIL CONNECTION LOCATION IS APPROVED IN THE FIELD.
19. CONTRACTOR TO PROVIDE ALL EROSION CONTROL MEASURES PER THE CITY AND COUNTY OF DENVER.

VALERIAN

CONSULTANT:

STACEY E. STICKLER 0054 — 11/26/2008 Original Date of Licensure 3.22.2024 — STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

CLIENT:

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

STAMP:

PROJECT:
SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET

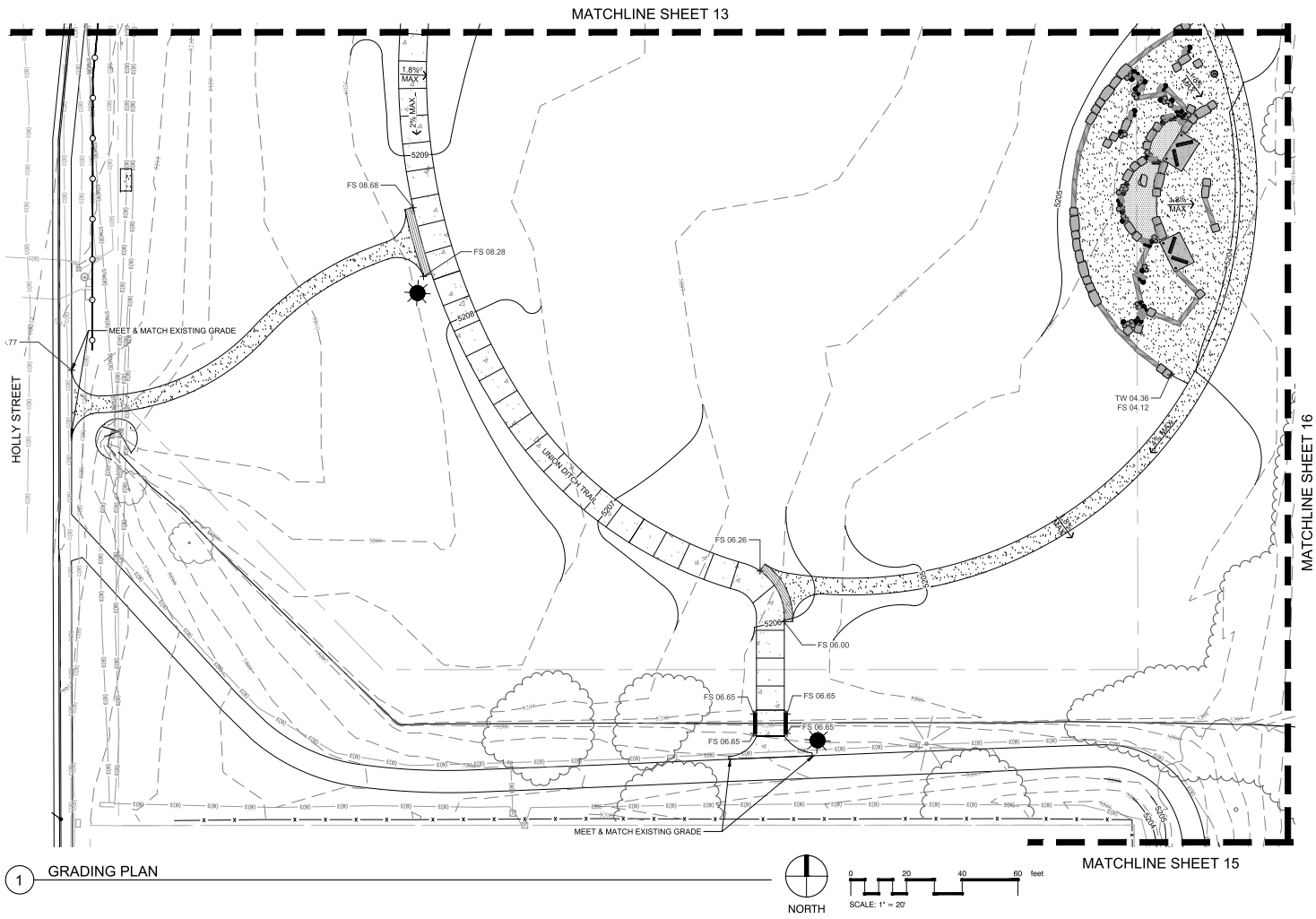
SUBMITTAL:
BID SUBMITTAL

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

#	REVISION	DATE

SHEET TITLE:
GRADING PLAN

SHEET #:
13



1 GRADING PLAN

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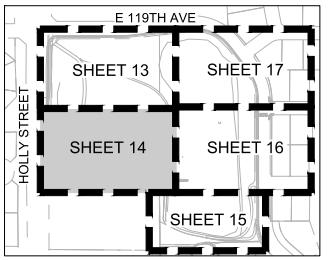

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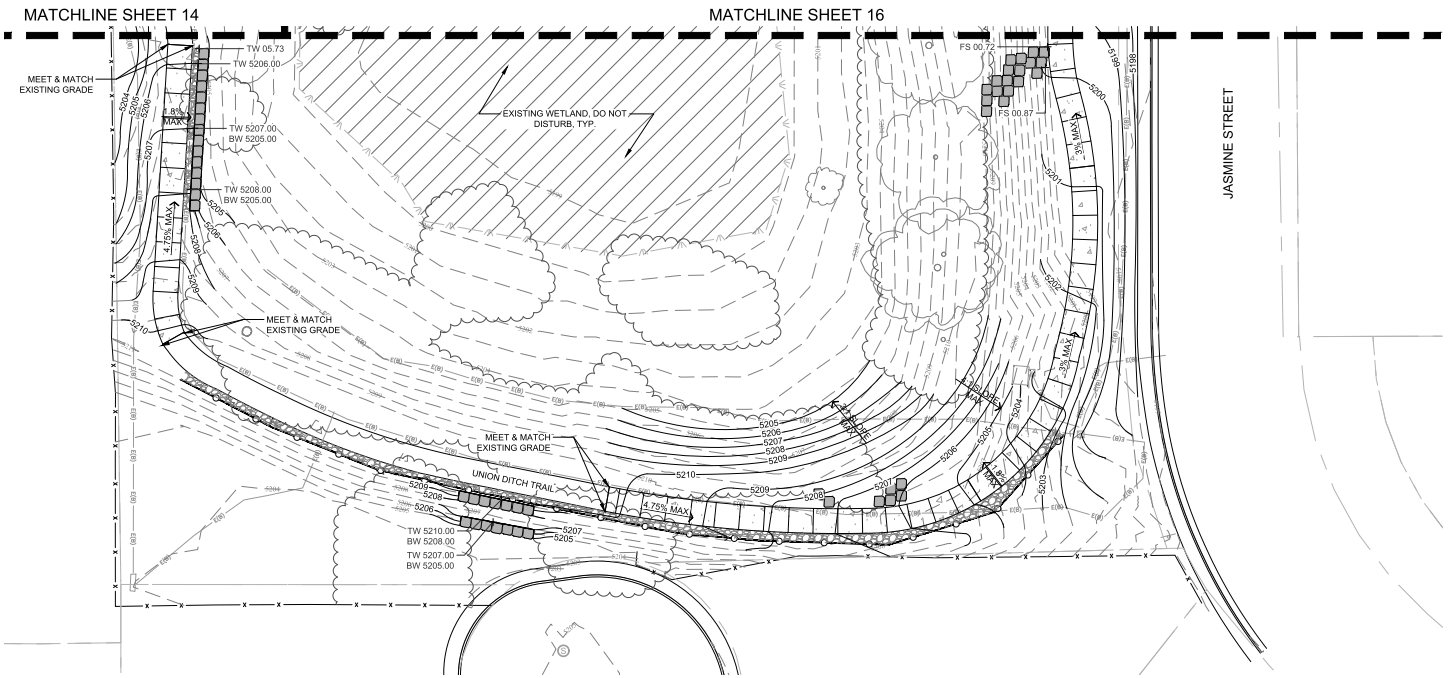

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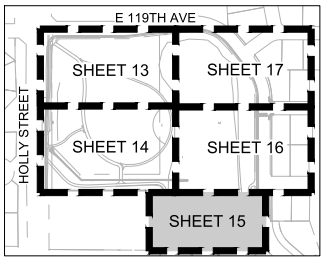

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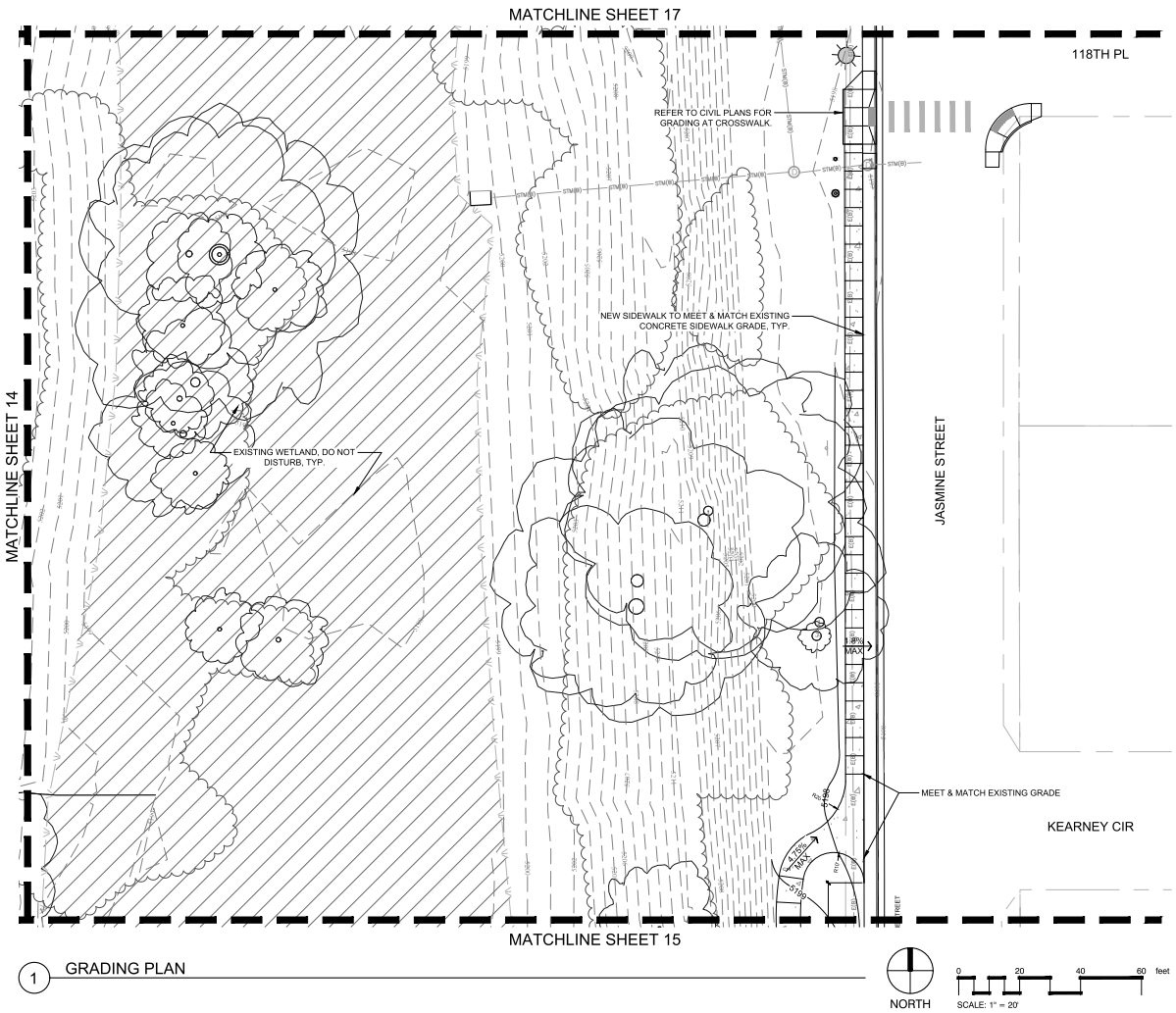
15



1 GRADING PLAN

NORTH

0 20 40 60 feet

SCALE: 1" = 20'

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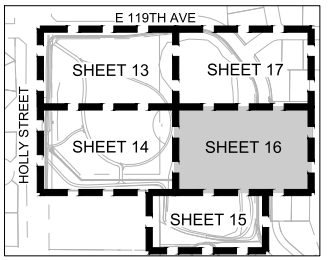

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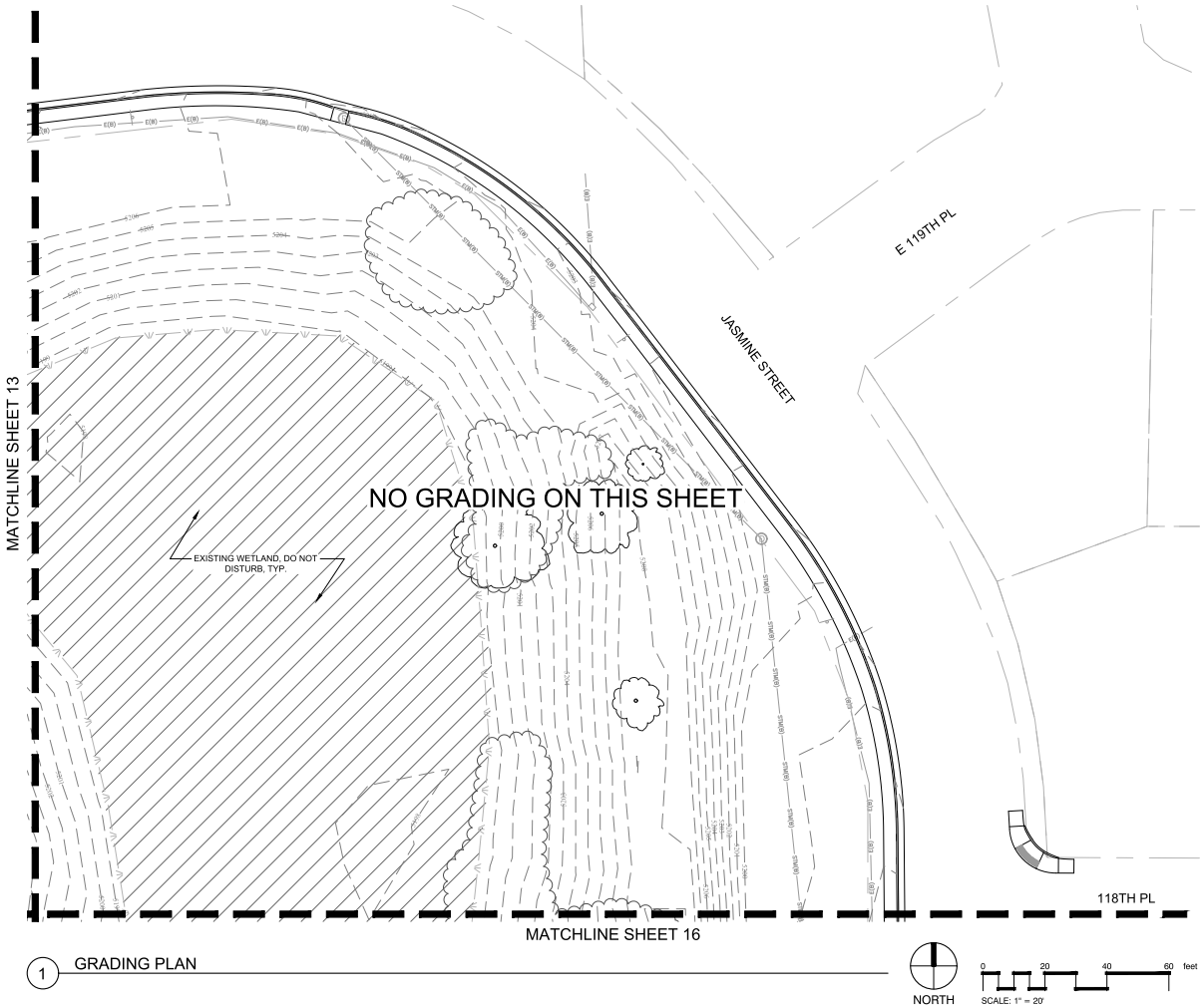
16



1 GRADING PLAN

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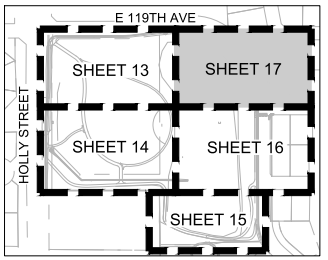

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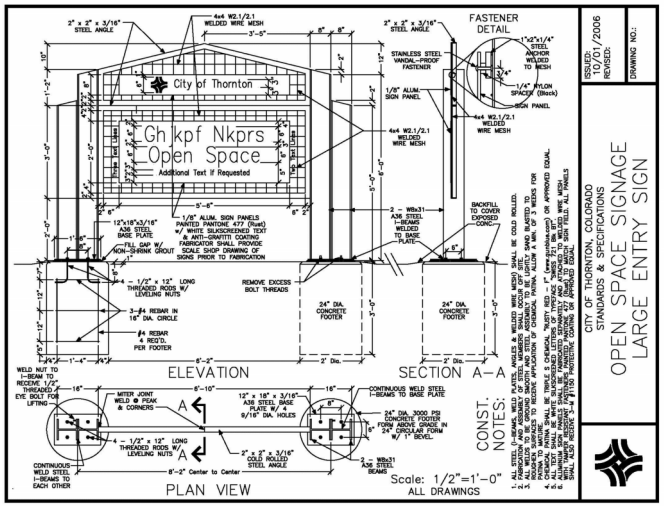
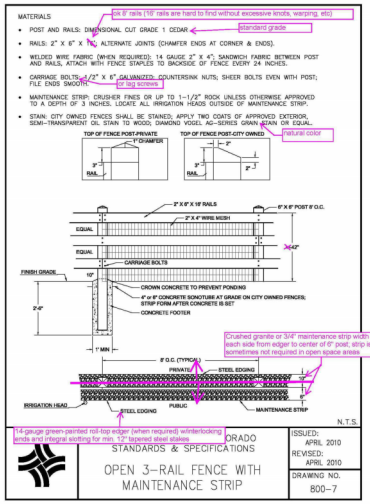


NOTES:
1. CITY SHALL PROVIDE CAMERA READY ART FOR SIGNAGE.

1 OPEN SPACE SIGNAGE - CITY OF THORNTON STANDARD DETAIL

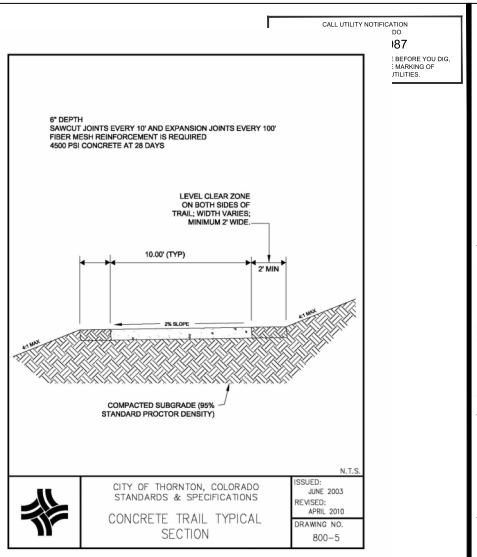
NTS



NOTES:
1. MAINTENANCE STRIP PER PLANS.
2. 3/4" FRACTURED GRANITE MAINTENANCE STRIP AT SLOPES ONLY.
3. MESH SHOWN IN DETAIL WILL NOT BE INCLUDED.

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

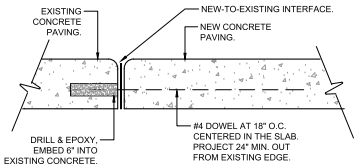
NTS



3 CONCRETE TRAIL - CITY OF THORNTON STANDARD DETAIL

NTS

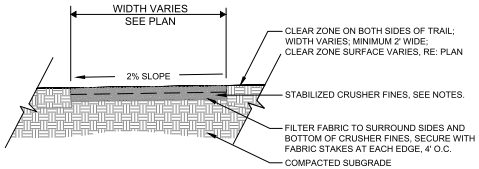
NOTES:
1. PROVIDE SAWCUT CONTROL JOINTS IN NEW CONCRETE PAVING AT 4'-0" O.C.
2. CLEAN THE INTERFACE WHERE THE NEW CONCRETE WILL TIE INTO THE EXISTING CONCRETE. APPLY BONDING AGENT TO THE EXISTING CONCRETE SURFACE PRIOR TO CONCRETE PLACEMENT.
3. TEST FOR GOOD COMPACTION UNDER NEW SIDEWALK EXTENSION.



4 CONCRETE JOINT AT EXISTING PAVING

3" = 1'-0" S2-05

NOTES:
1. SUPPLY AND INSTALL 3/4" CRUSHER FINES TO 6" DEPTH, MINUS MINIMUM. INSTALL IN 3" LIFTS, COMPACTED. PROVIDE STABILIZED CRUSHER FINES FOR TOP 3" 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.

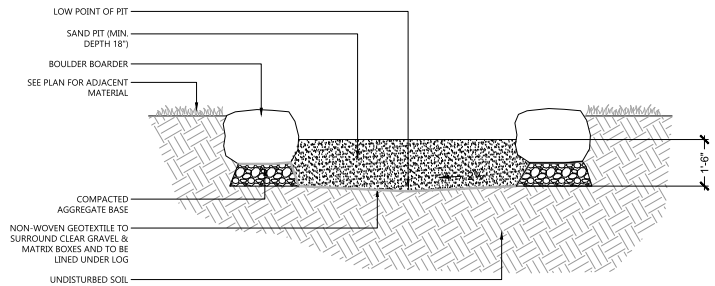


5 STABILIZED CRUSHER FINES TRAIL

1/4" = 1'-0" S2-01

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

1/2" = 1'-0" S2-07

VALERIAN
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SITE DETAILS

SHEET #:
18

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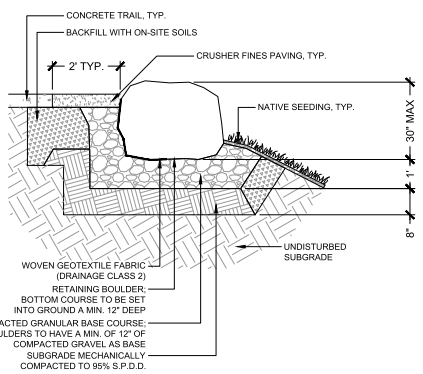
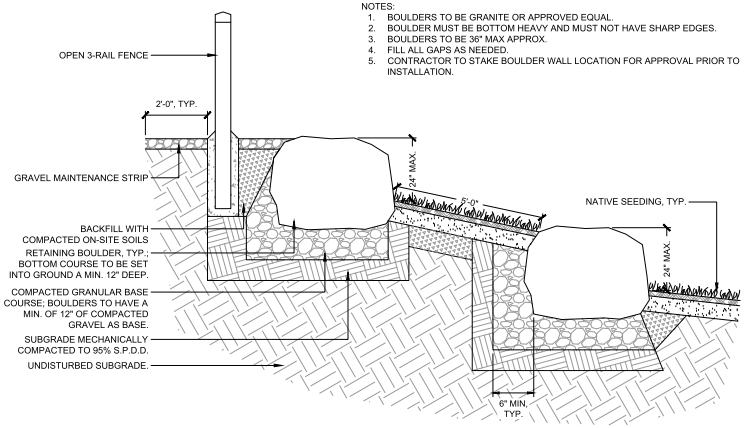
1.800.922.1987
CALL 2- BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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



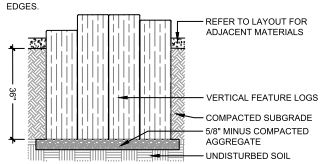
1 BOULDER WALL
NTS S2-04

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.



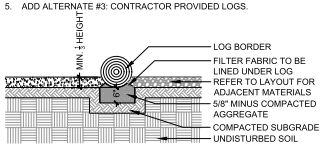
2 TERRACED BOULDER WALL
1/2" = 1'-0" S2-06

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.



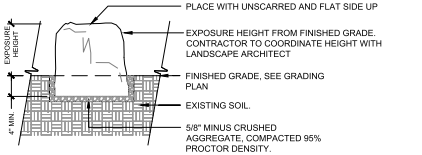
3 VERTICAL FEATURE LOG
NTS S2-02

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.

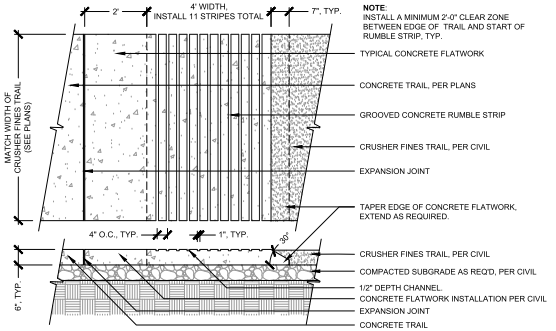


4 LOG BORDER/FEATURE LOG
NTS PF-25

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 $\frac{1}{3}$ 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



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

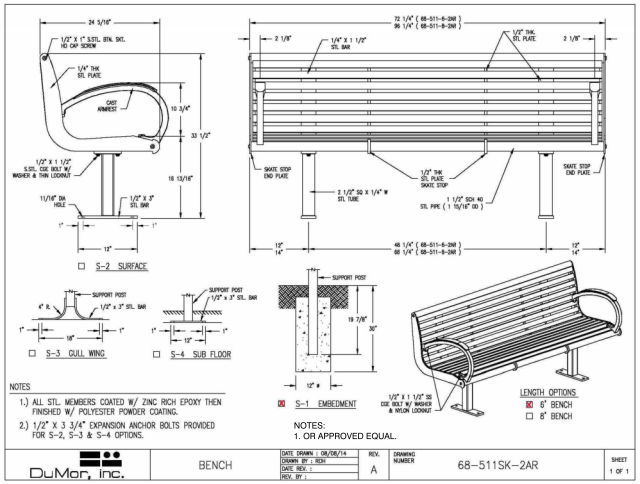
VALERIAN
CONSULTANT:
STACEY E. STICKLER 654 — Original Date of Licensure 3.22.2024 — STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT
CLIENT:
City of Thornton
9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

STAMP:

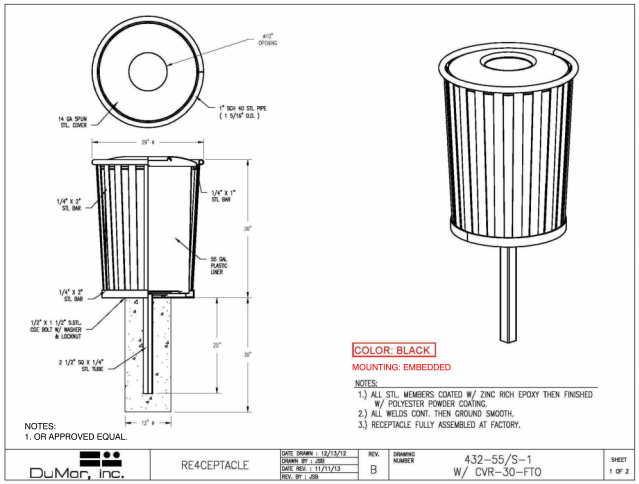
PROJECT:
SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET
SUBMITTAL:
BID SUBMITTAL
PROJECT #: 20-27A
DESIGNED BY: SS
DRAWN BY: LR
CHECKED BY: SS
ORIGINAL DATE: MARCH 22, 2024

#	REVISION	DATE

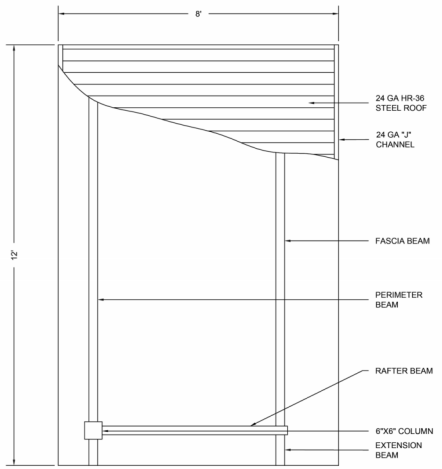
SHEET TITLE:
SITE DETAILS
SHEET #:
19



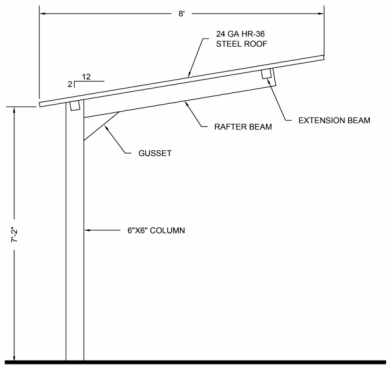
1 6' STEEL BENCH
NTS



2 TRASH RECEPTACLE
NTS



PLAN VIEW 8'X12' MARNA MODEL
NTS



END ELEVATION 8'X12' MARANA MODEL
NTS

ROOF COLOR: CHARCOAL
COLUMN COLOR: BLACK

NOTES:
1. OR APPROVED EQUAL.
2. SEE SPECIFICATIONS FOR REQUIREMENTS.
3. CONTRACTOR TO OBTAIN BUILDING PERMIT FOR SHADE STRUCTURES.
4. ADD ALTERNATE #2: STANDING SEAM ROOF.

3 SHADE STRUCTURE
NTS

NOTES:
1. DISPENSER: MUTT MITT #MM0240 COLOR: DARK GREEN. AVAILABLE THROUGH UPBEAT SITE FURNISHINGS, PHONE: (800) 325-3047 - OR APPROVED EQUAL
2. SUPPORT POST - A500 2.5" SQUARE STEEL TUBE, ¼" WALL THICKNESS, 8' HIGH.
3. POST SHALL BE CLEANED, PRIMED AND PAINTED TO MATCH DISPENSER AFTER DRILLING FOR FASTENERS AND PRIOR TO INSTALLATION WITH TAMPER -RESISTANT STAINLESS STEEL FASTENERS.
4. OR APPROVED EQUAL.

4 PET WASTE DISPOSAL
NTS

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VALERIAN

CONSULTANT:

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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

1. 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.
2. 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.
3. NATIVE SEED AREAS SHALL NOT RECEIVE COMPOST. BIOSOL TO BE ADDED TO HYDROMULCH
4. CHEMICAL ERADICATION OF WEEDS BEFORE SEEDING IS REQUIRED.
5. 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

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

LANDSCAPE NOTES

SOIL:
1. ALL LANDSCAPE AREAS SHALL RECEIVE SOIL PREPARATION AS SPECIFIED.
2. 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.
3. SEE AMENDMENT REQUIREMENT TABLE FOR SOIL AMENDMENT/BIOSOL QUANTITY REQUIREMENTS.

MULCH (PHASE 2, N.I.C.):
1. ALL PLANTING BEDS SHALL HAVE A MINIMUM 3" DEPTH OF DOUBLE SHREDDED WESTERN RED CEDAR 'GORILLA HAIR' MULCH.
2. 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.):
1. ALL LANDSCAPE AREAS SHALL BE IRRIGATED BY A PERMANENT, AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.
2. THE CONTROLLER SHALL INCLUDE A RAIN SHUT-OFF.
3. THE SYSTEM SHALL BE PROPERLY ZONED TO SEPARATE PLANT MATERIAL BY WATER REQUIREMENT.

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

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

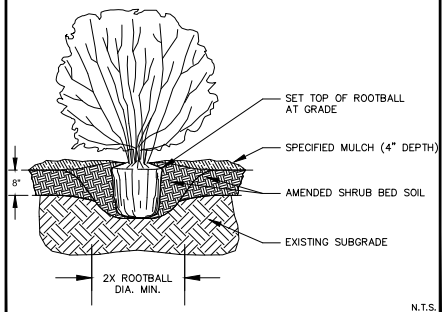
PLANTING NOTES (PHASE 2, N.I.C.)
1. PLANT DECIDUOUS TREES AND SHRUBS MINIMUM 10' (FOR MOW MAINTENANCE) FROM SIDEWALKS, BED EDGES, FENCES AND BUILDINGS.
2. ALL DECIDUOUS TREES SHALL BE BALLED AND BURLAPPED WITH FULL HEADS, STRAIGHT TRUNKS, AND SINGLE LEADERS UNLESS OTHERWISE NOTED.
3. ALL TREES TO BE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

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.



N.T.S.

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.

STAKING: INSTALL 6' METAL T-POST STAKES OUTSIDE PLANTING PIT IN UNDISTURBED MULCHED SOIL. USE #12 GAUGE GALVANIZED WIRE.

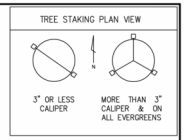
ALLOW FOR SOME TRUNK MOVEMENT

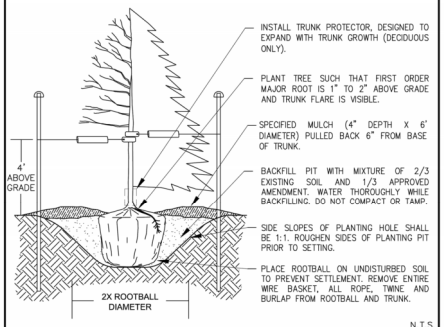
ATTACH TO 2" NYLON STRAPS THROUGH METAL GROMMETS, WITH 1/2" x 15" WHITE PVC SLEEVE ON EACH WIRE.

NYLON STRAPS SHALL BE LONG ENOUGH TO ACCOMMODATE 1-1/2" OF TRUNK GROWTH.

ADD PROTECTOR CAP TO TOP OF POST.

WRAP TREES TO FIRST BRANCH IF PLANTED IN THE FALL. DO NOT WRAP IF PLANTED IN SPRING.





N.T.S.

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.

VALERIAN
CONSULTANT:
STACEY E. STICKLER 0034
11/26/2008
Original Date of Licensure
3.22.2024
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LICENSED LANDSCAPE ARCHITECT
CLIENT:
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THORNTON, CO 80229
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11890 HOLLY STREET

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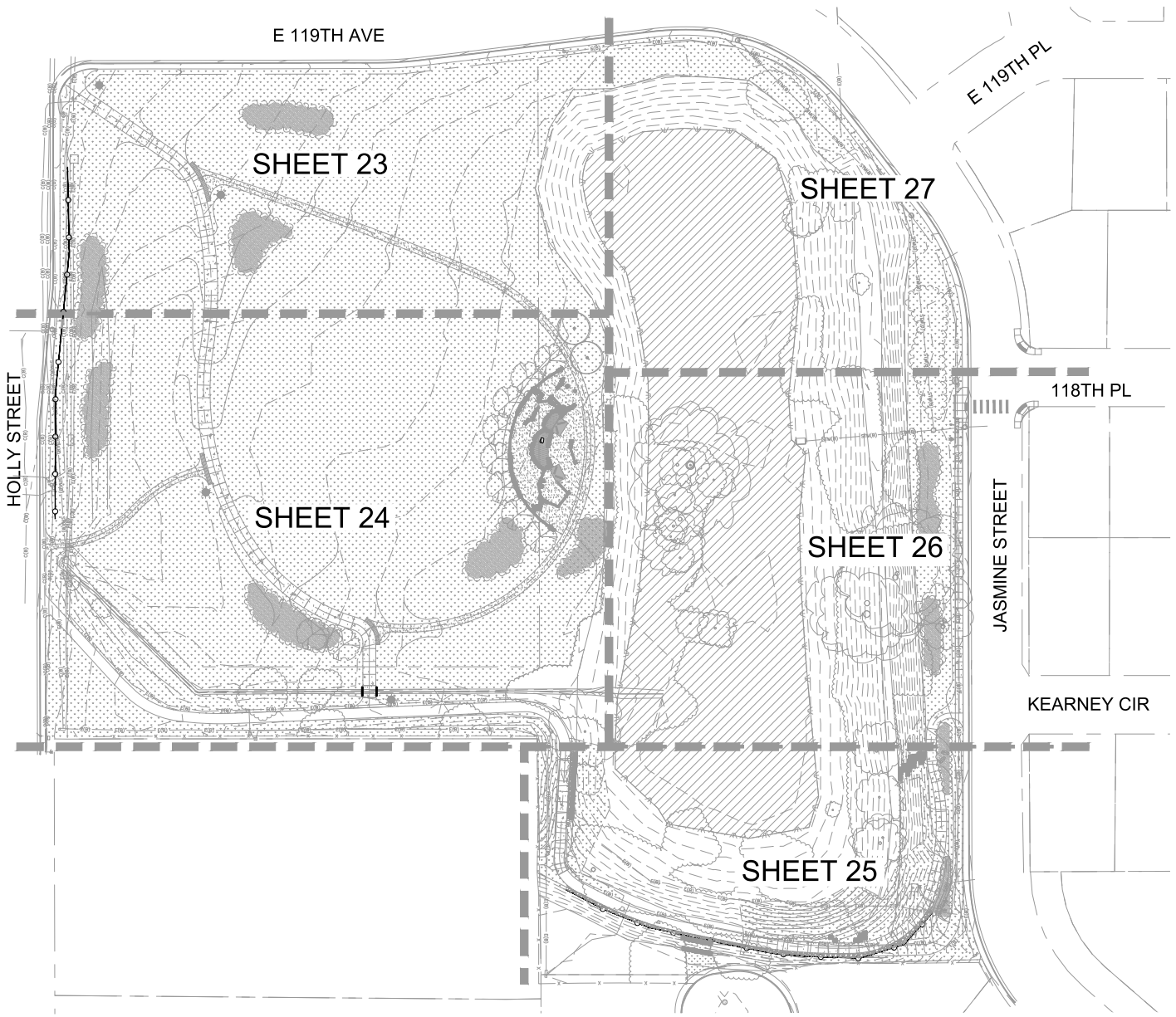
PLANTING NOTES & DETAILS

SHEET #:
21



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NORTH

0 40 80 120 feet
SCALE: 1" = 40'

VALERIAN

CONSULTANT:

STACEY E. STICKLER
0554
11/26/2008
Original Date of Licensure
3.22.2024
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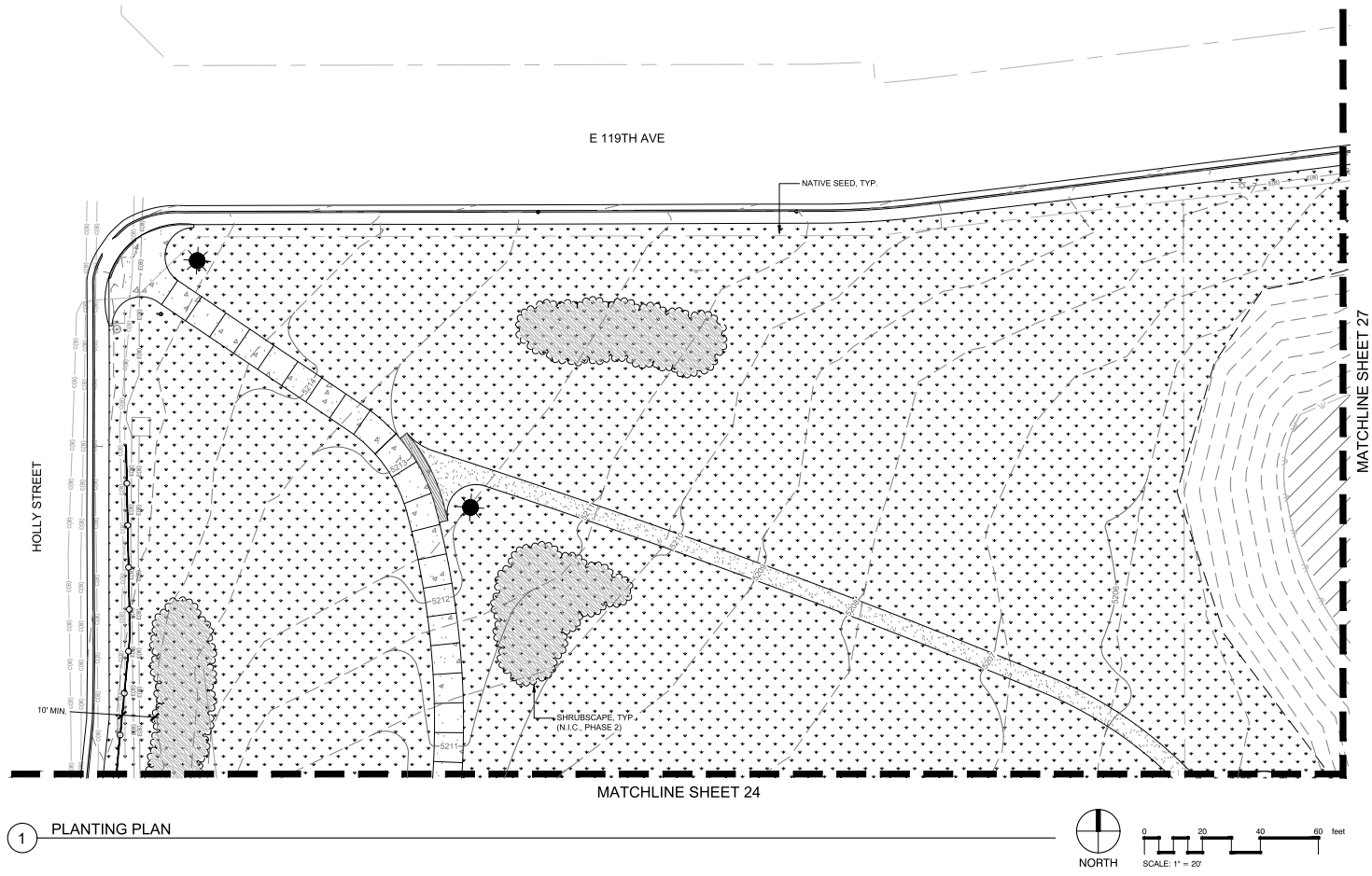
SHEET TITLE:

OVERALL PLANTING PLAN

SHEET #:

22



1 PLANTING PLAN

NORTH

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

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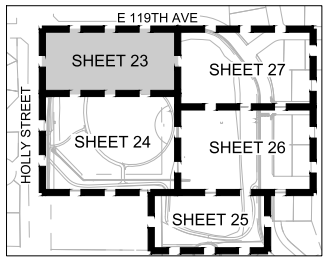

KEY MAP

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

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6554
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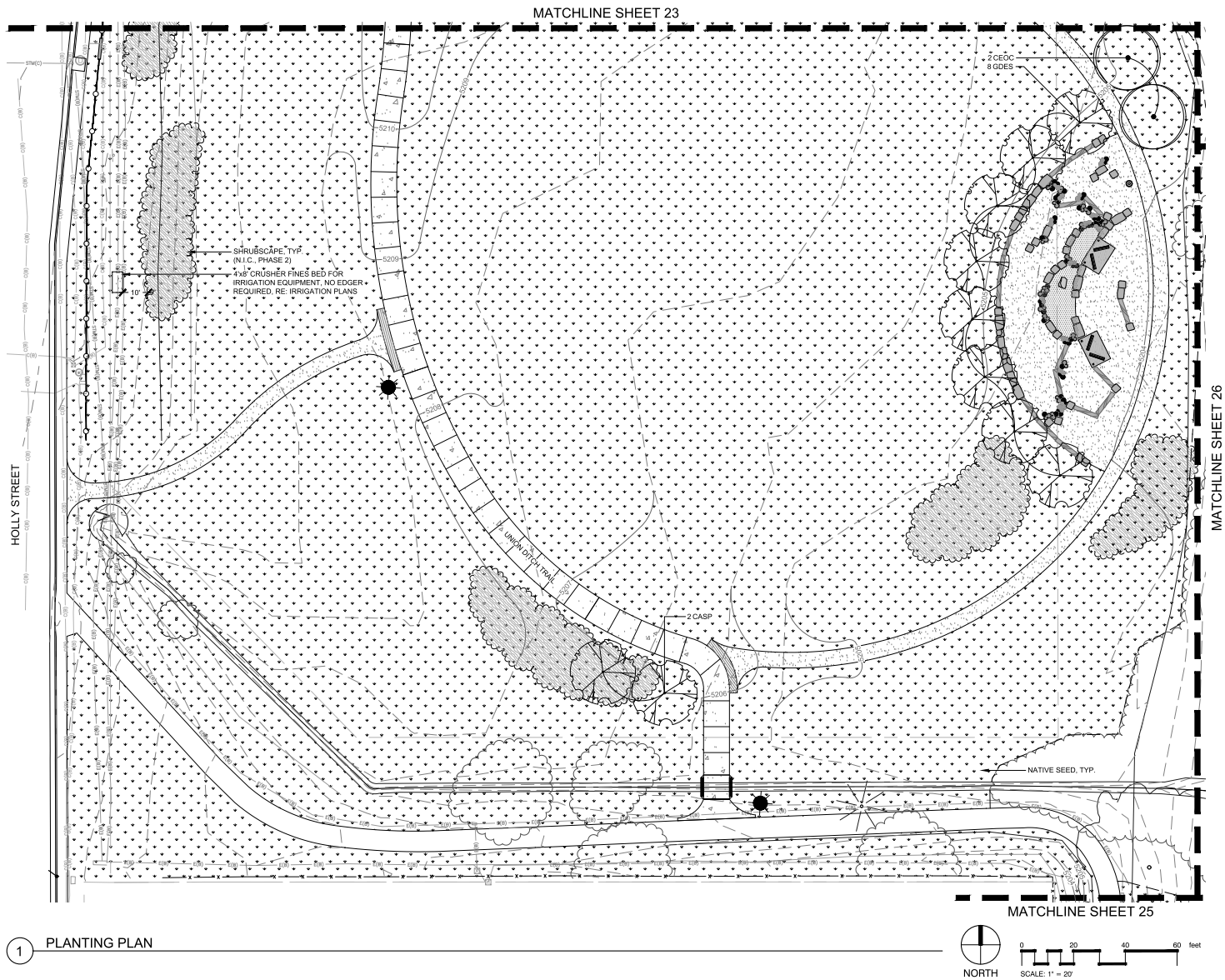

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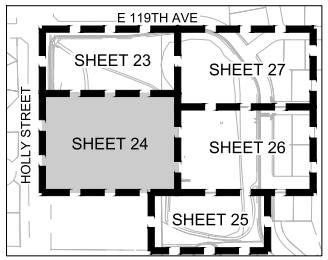

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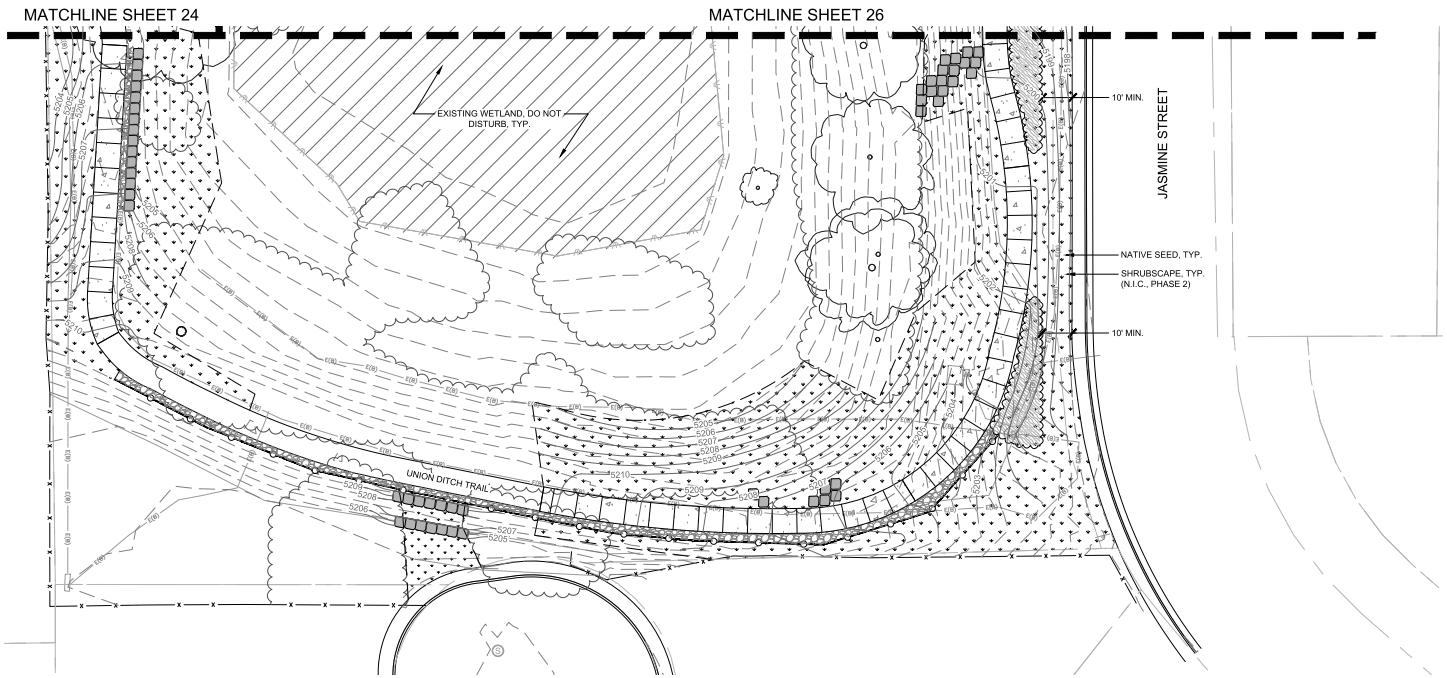

1 PLANTING PLAN

NORTH

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

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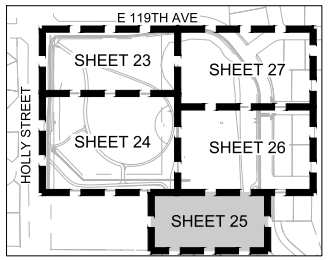

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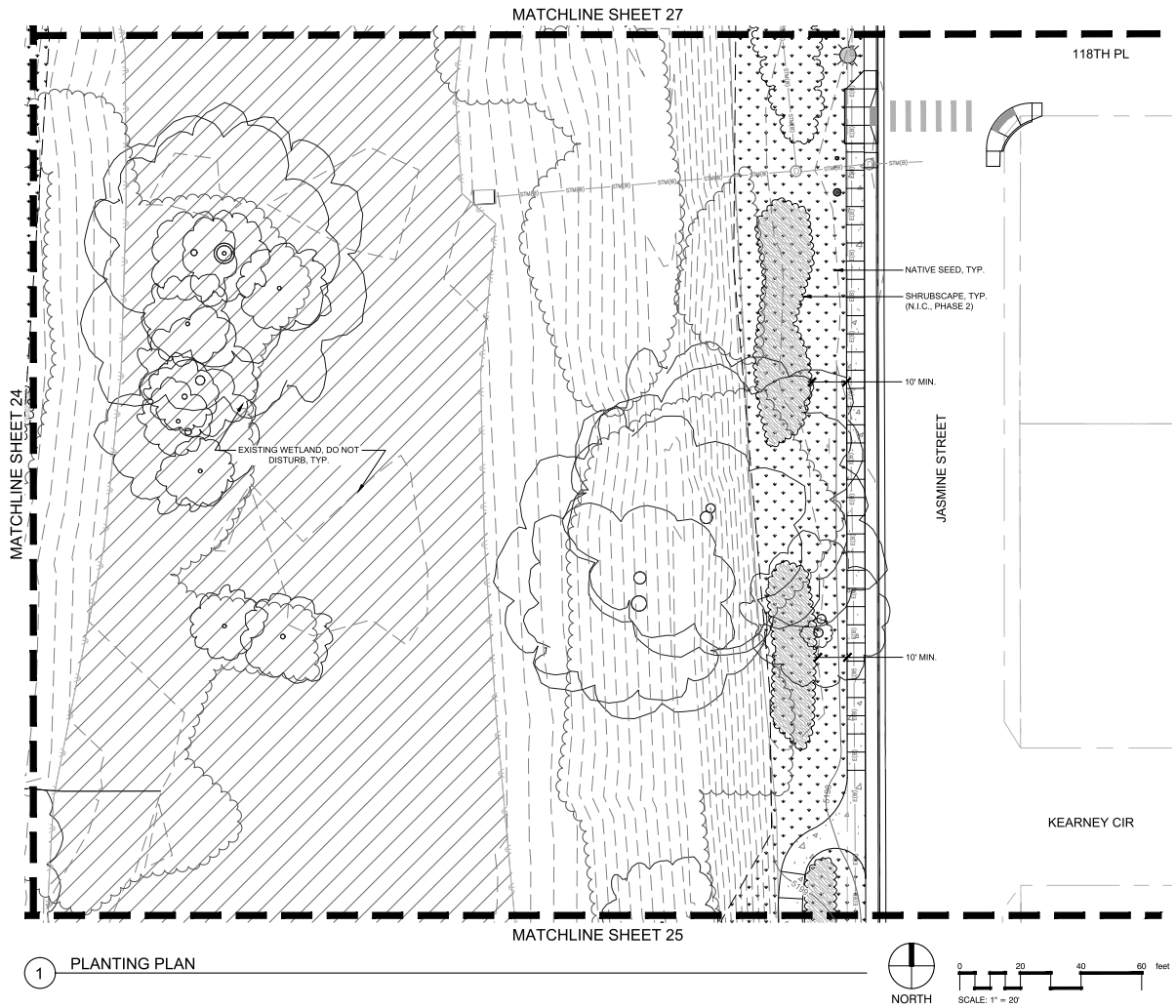

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SCALE: 1" = 20'

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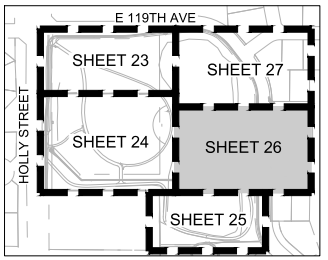


KEY MAP

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

CONSULTANT:

STACEY E. STICKLER
0042
11/26/2008
Original Date of Licensure
3.22.2024
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

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

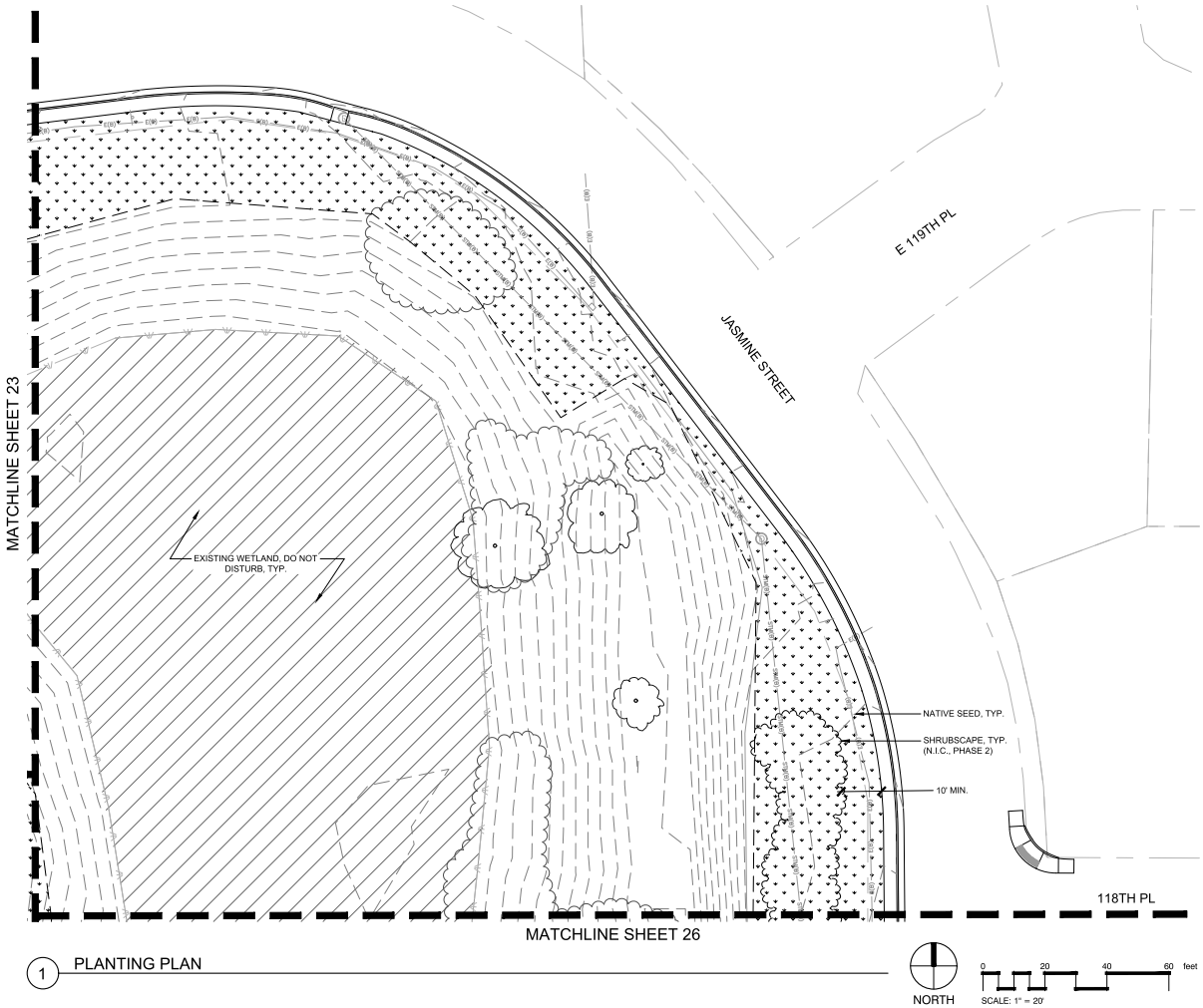
CHECKED BY:
SS

ORIGINAL DATE:
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
PLANTING PLAN

SHEET #:
26



1 PLANTING PLAN

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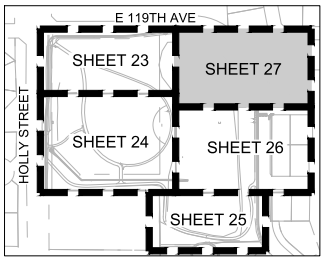

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IRRIGATION SCHEDULE

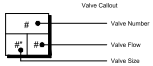
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
2Q 2H 4Q 4H 6Q 6H	TURF SPRAY SHORT RADIUS NOZZLES RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	1	30
Q H F	TURF SPRAY 5` RADIUS RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	20	30
Q T H F	TURF SPRAY 8` RADIUS RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	8	30
Q T H F	TURF SPRAY 10` RADIUS RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	37	30
Q T H TT TQ F	TURF SPRAY 12` RADIUS RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	30	30
Q T H TT TQ F	TURF SPRAY 15` RADIUS RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	63	30
4 6 8 10 12 15 17	TURF SPRAY ADJ RAIN BIRD 1812 SAM-PRS 6.0" POP-UP WITH DRAIN CHECK VALVE.	3	30
CST Q H F	RAIN BIRD 1812 HEAD WITH BUBBLER NOZZLE RAIN BIRD 5F-B STREAM BUBBLER NOZZLE	103	30
1401 1402 1404 1406	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
25	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	
30	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	
35	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	
04	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
06	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
08	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
12	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
M	MASTER VALVE & FLOW SENSOR 2" BASELINE BHM HYDROMETER 2-INCH	1
BF	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
C	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
S	BASELINE BL-5311, SOIL MOISTURE SENSOR INCLUDES COMMERCIAL BISENSOR WITH INSTALLATION GUIDE, 50FT. CONNECTION WIRES PLUS DBR/V-6 CONNECTORS (TWO-WIRE SIDE ONLY) AND WIRE NUTS.	4
RS	RAIN SENSOR HUNTER RFC, WIRED RAIN AND FREEZE SENSOR, WITH CONDUIT INSTALLATION, MOUNT AS NOTED. NORMALLY CLOSED SWITCH.	1
M	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.

Valve Callout



CRITICAL PRESSURE ANALYSIS WORKSHEET

Project: Skylake Ranch Open Land
Date: 10/25/2023
Valve #: 23
Location: North Side
Multiple Valve Operation

VALERIAN

AREA	DESCRIPTION	TYPE	SIZE	LENGTH/QTY	FLOW	C Factor	ID	Velocity	Loss	Loss	SUB LOSS
SOURCE EXISTING	SERVICE LINE	Duct Iron	4"	10 FT	60.0	130	4.81	3.9	0.27	0.21	0.02 PSI
	WATER METER	Pre City	2"	1 EA	60.0	n/a	n/a	n/a	n/a	n/a	5.20 PSI
	SERVICE LINE	Duct Iron	4"	3 FT	60.0	130	4.81	3.9	0.27	0.21	0.01 PSI
	BACKFLOW UNIT	Febco 850V	2 1/2"	1 EA	60.0	n/a	n/a	n/a	n/a	n/a	10.25 PSI
									POINT OF CONNECTION (POC) SUBTOTAL		15.48 PSI
MAINLINE	LINE BACKFLOW TO MV	CL-200 PVC	3"	4.21	60.0	150	3.26	3.3	0.5	0.22	0.93 PSI
	MASTER VALVE/FS	Hydrometer	2"	1 EA	60.0	n/a	n/a	n/a	n/a	n/a	3.50 PSI
	MAINLINE TO TEE	CL-200 PVC	3"	201.41	60.0	150	3.26	3.3	1.2	0.52	1.07 PSI
	MAINLINE	CL-200 PVC	3"	3/6.71	60.0	150	3.26	3.3	1.2	0.52	1.07 PSI
	GATE VALVE	Hydro-Gx	2"	1 EA	42.0	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 PRS	1 1/5"	1 EA	42.0	n/a	n/a	n/a	n/a	n/a	7.60 PSI
	LATERAL LINE 1	CL-200 PVC	2"	8 FT	42.0	150	2.309	3.8	2.3	1.1	0.20 PSI
	LATERAL LINE 2	CL-200 PVC	1 1/4"	23 FT	21.2	150	1.527	4.4	3.0	2.1	0.49 PSI
	LATERAL LINE 3	CL 200 PVC	1"	93 FT	12.2	150	1.189	3.6	4.4	1.8	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										61.86 PSI
	PRESSURE REQUIRED AT CRITICAL HEAD										40.00 PSI
	RESIDUAL PRESSURE										3.86 PSI

CITY OF THORNTON REQUIRED NOTES

1. **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)
2. **DESIGN PRESSURE** - SEE 'POINT OF CONNECTION NOTES' FOR SPECIFIC DESIGN PRESSURE CALCULATIONS ON POINT OF CONNECTION.
3. **DESIGN CAPACITY (FLOW)** - SEE 'POINT OF CONNECTION NOTES' FOR SPECIFIC FLOW REQUIREMENTS ON POINT OF CONNECTION.
4. **EXISTING WATER METER** - SEE PLANS FOR LOCATION AND 'POINT OF CONNECTION NOTES' FOR METER AND SERVICE LINE SIZE.
5. **RAIN SWITCH** - CONTRACTOR TO ENSURE PROPOSED RAIN SENSOR IS INSTALLED AND OPERATIONAL FOR THE CONTROLLER. COORDINATE FINAL SENSOR LOCATION WITH OWNER PRIOR TO INSTALLATION.
6. **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.
7. **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.
8. **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.
9. **FINAL ACCEPTANCE** - A FINAL ACCEPTANCE WALK SHALL BE HELD ONE YEAR FOLLOWING INITIAL ACCEPTANCE.
10. PROVIDE AS-BUILT PLAN IN AUTOCAD AND PDF FORMAT W/DECODER 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.

1. 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.
2. 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 TDR OR APPROVED EQUAL.
3. 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.
4. 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.
5. 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:

1. THE CONTRACTOR SHALL INSTALL SYSTEM COMPONENTS IN A MANNER THAT WILL PROVIDE ADEQUATE WATER SUPPLY TO THE EXISTING IRRIGATION SYSTEM.
2. REFER TO IRRIGATION SCHEDULE, NOTES, AND SPECIFICATIONS AND DETAILS FOR PRODUCT TYPES, SIZES AND INSTALLATION REQUIREMENTS.
3. CONTRACTOR SHALL MEET ALL APPLICABLE LOCAL AND MUNICIPAL CODES FOR WORK NECESSARY IN IRRIGATION SYSTEM INSTALLATION.
4. VERIFY ALL SITE INFORMATION PRIOR TO CONSTRUCTION. NOTIFY OWNER OF ANY DISCREPANCIES FROM PREPARED IRRIGATION PLANS.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. CONTRACTOR IS TO MAINTAIN ELECTRICAL POWER TO THE AUTOMATIC CONTROLLER AND COORDINATE WITH UTILITY PROVIDER AND OWNER ON CONNECTION TO NEW CONTROLLER.
12. CONTRACTOR SHALL EXTEND ONE YELLOW 14 GAUGE TRACER WIRE FROM THE BACKFLOW ASSEMBLY TO THE END OF THE NEW MAINLINE PIPE.
13. MASTER VALVE/FLOW SENSOR WIRE SHALL BE CONTINUOUS/STRAIGHT RUNS (WITHOUT SPLICES) TO CONTROLLER LOCATION. WIRE SHALL BE SHIELDED PER THE SPECIFICATIONS.
14. CONTRACTOR SHALL GROUND THE IRRIGATION CONTROLLER PER BASELINE GROUNDING SPECIFICATIONS AND RECOMMENDATIONS AND CITY OF THORNTON REQUIREMENTS.
15. 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.
16. 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.
17. CONTRACTOR SHALL WARRANTY THE IRRIGATION EQUIPMENT AS REQUIRED BY THE SPECIFICATIONS.
18. 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.
19. 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.
20. VALVE BOX SIZING AS FOLLOWS: 1"-1.5" VALVES 13X24" JUMBO BOX. 2" VALVES 17X30" SUPER JUMBO.

2-WIRE SYSTEM NOTES:

1. 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.)
2. CONTRACTOR SHALL USE DIRECT BURIED INSULATED AND JACKETED CABLE WIRE.
3. ONLY USE SINGLE STATION DECODERS (SEE SCHEDULE FOR SPECIFIC MODEL).
4. LOOP 5' OF 2-WIRE INTO ALL VALVE BOXES (WITH DECODERS AND SPLICES) FOR MAINTENANCE.
5. 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.
6. 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.
7. CONTRACTOR SHALL INCLUDE TWO (2) SINGLE STATION DECODERS PER CONTROLLER AS PART OF THE PROJECT TURN-OVER.
8. DECODER PROGRAMMING SHALL FOLLOW ZONE NUMBERS INDICATED ON THE DRAWINGS.
9. CONTRACTOR SHALL USE ONLY MANUFACTURED SHIELDED COMMUNICATION CABLE FOR FLOW SENSOR WIRE.
10. NOTE DECODER ADDRESS & MODULE NUMBER ON EACH DECODER. PROVIDE BASELINE SURVEY OF TOTAL AMPERAGE DRAW AND DRAW OF EACH LEG.

VALERIAN

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SHEET TITLE:
IRRIGATION NOTES

SHEET #:
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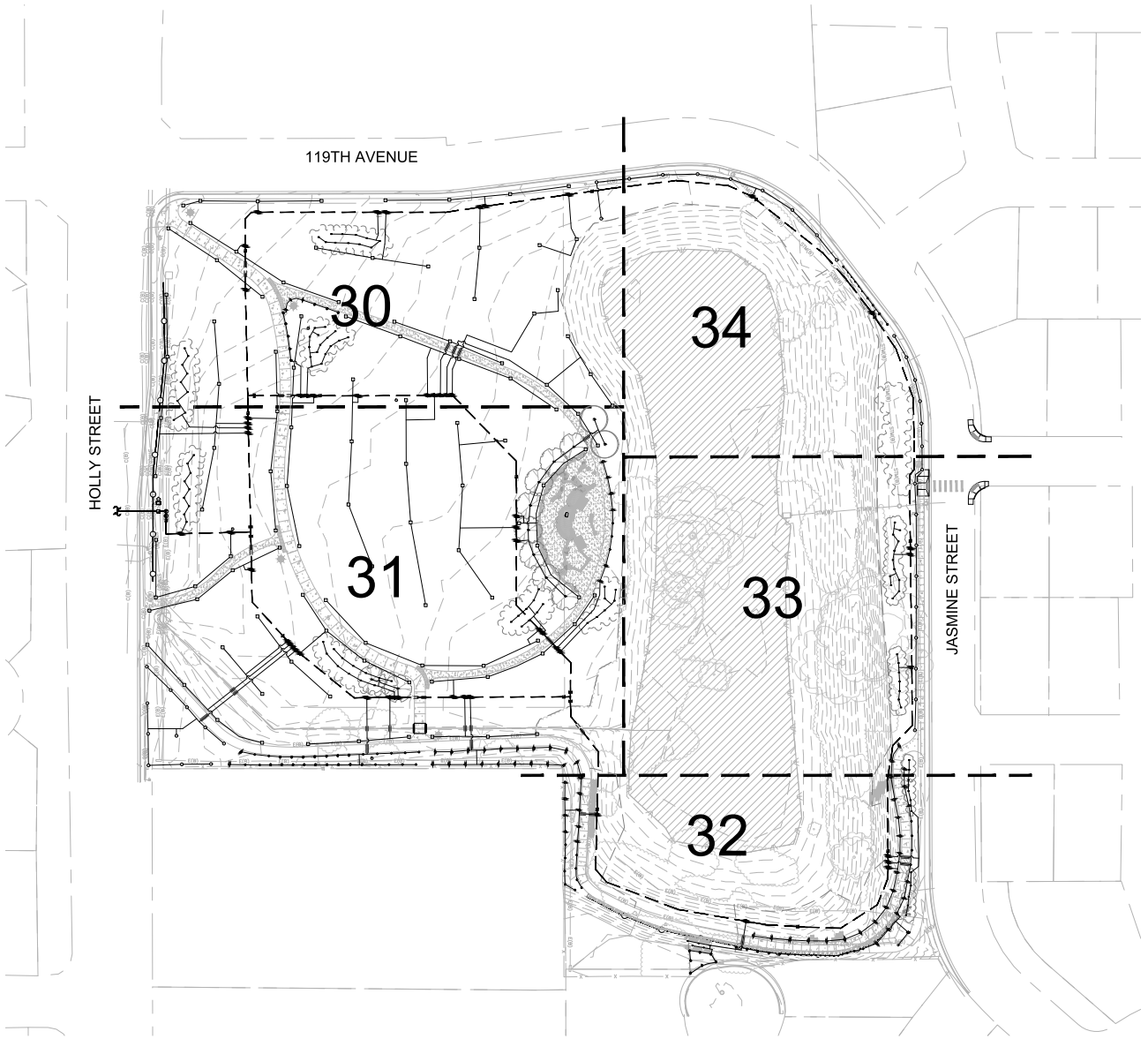
IRRIGATION SHEETS SHOWN FOR INFORMATION ONLY.



1 OVERALL IRRIGATION PLAN

NORTH

SCALE: 1" = 50'

0 50 100 150 feet

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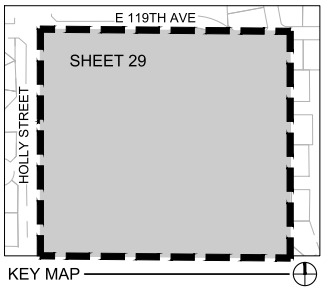

IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
Q H F	TURF SPRAY 5' RADIUS
Q T H F	TURF SPRAY 8' RADIUS
Q T H F	TURF SPRAY 10' RADIUS
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Q T H TT TQ F	TURF SPRAY 15' RADIUS
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CST Q H F	RAIN BIRD 1812 HEAD WITH BUBBLER NOZZLE
1401 1402 1404 1408	TREE BUBBLERS
25	RAIN BIRD 5006-PL-PC,FC-MPR-SS 25
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	REMOTE CONTROL VALVE
	BRASS QUICK-COUPLING VALVE
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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

Valve Callout
Valve Number
#" Valve Flow
Valve Size

VALERIAN

CONSULTANT:

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

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

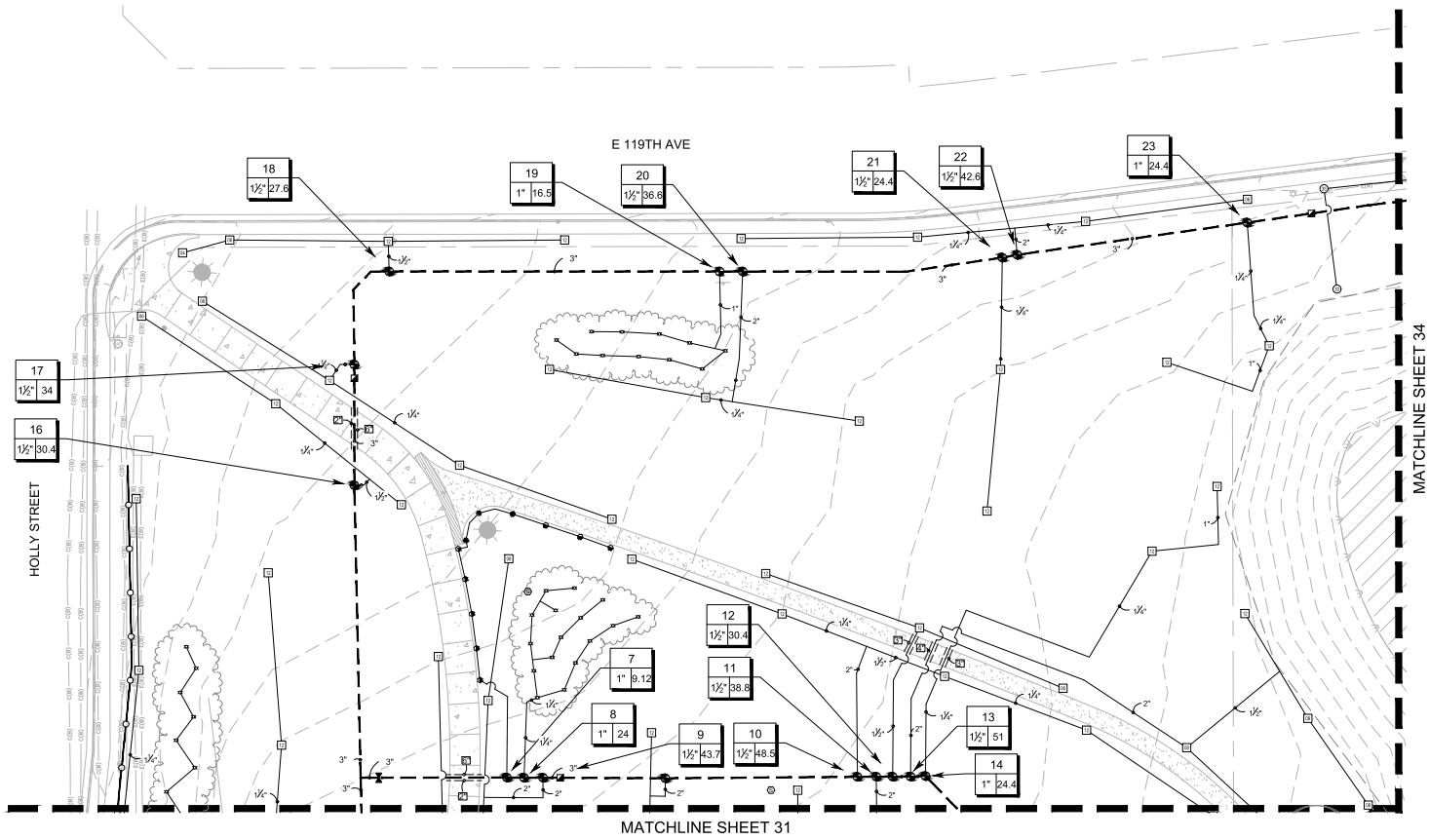
ORIGINAL DATE:
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
OVERALL IRRIGATION PLAN

SHEET #:
29

IRRIGATION SHEETS SHOWN FOR INFORMATION ONLY.



1 IRRIGATION PLAN

NORTH

0 20 40 60 feet

SCALE: 1" = 20'

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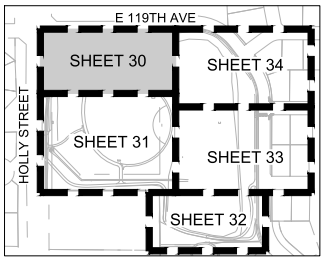

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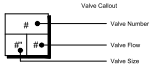
Valve Callout



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IRRIGATION PLAN

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30

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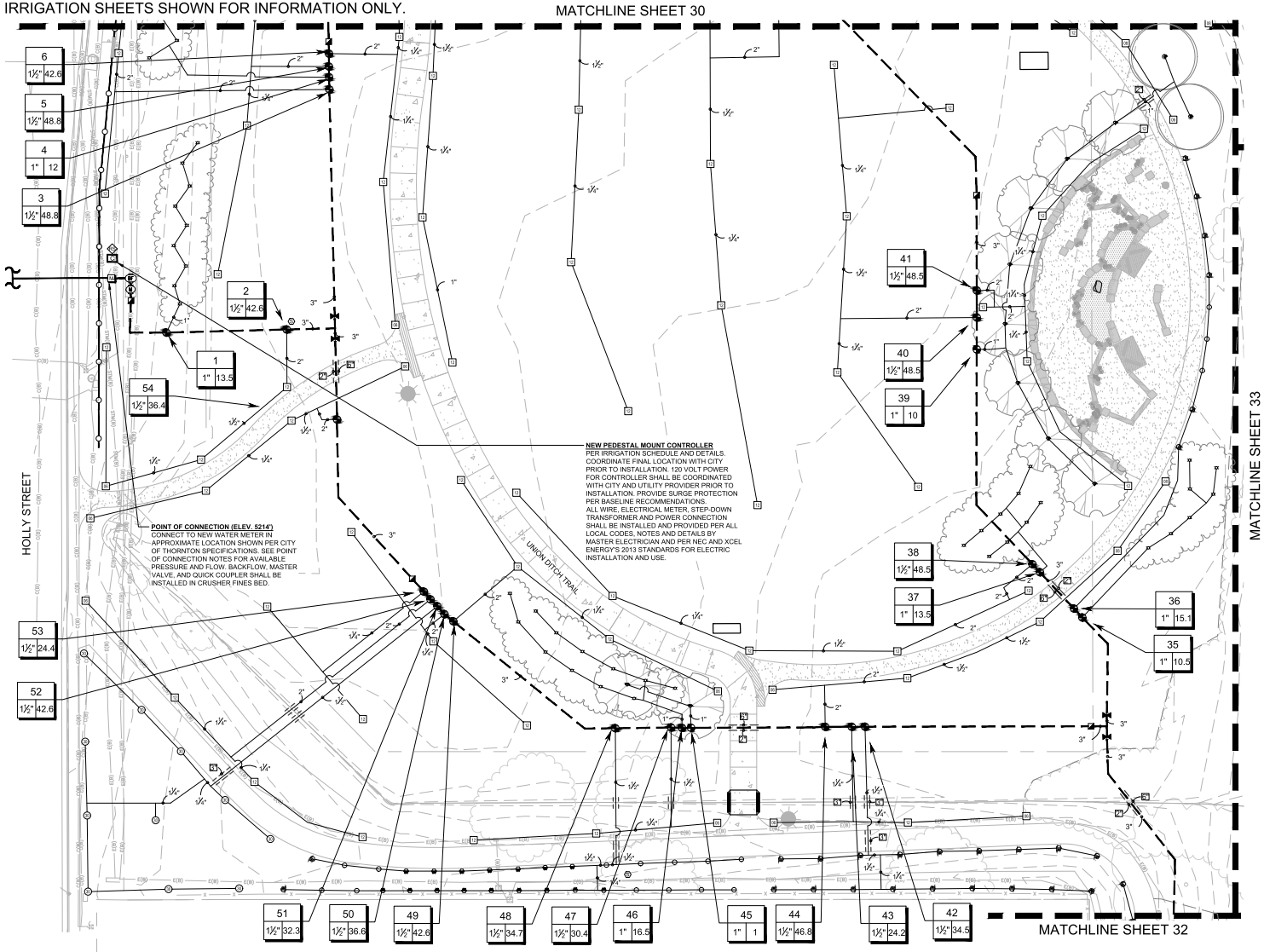
MATCHLINE SHEET 30



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.

MATCHLINE SHEET 32

1 IRRIGATION PLAN

NORTH

SCALE: 1" = 20'

0 20 40 60 feet

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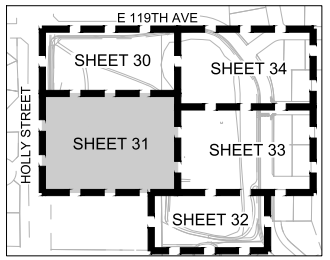

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Valve Callout
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SHEET TITLE:
IRRIGATION PLAN

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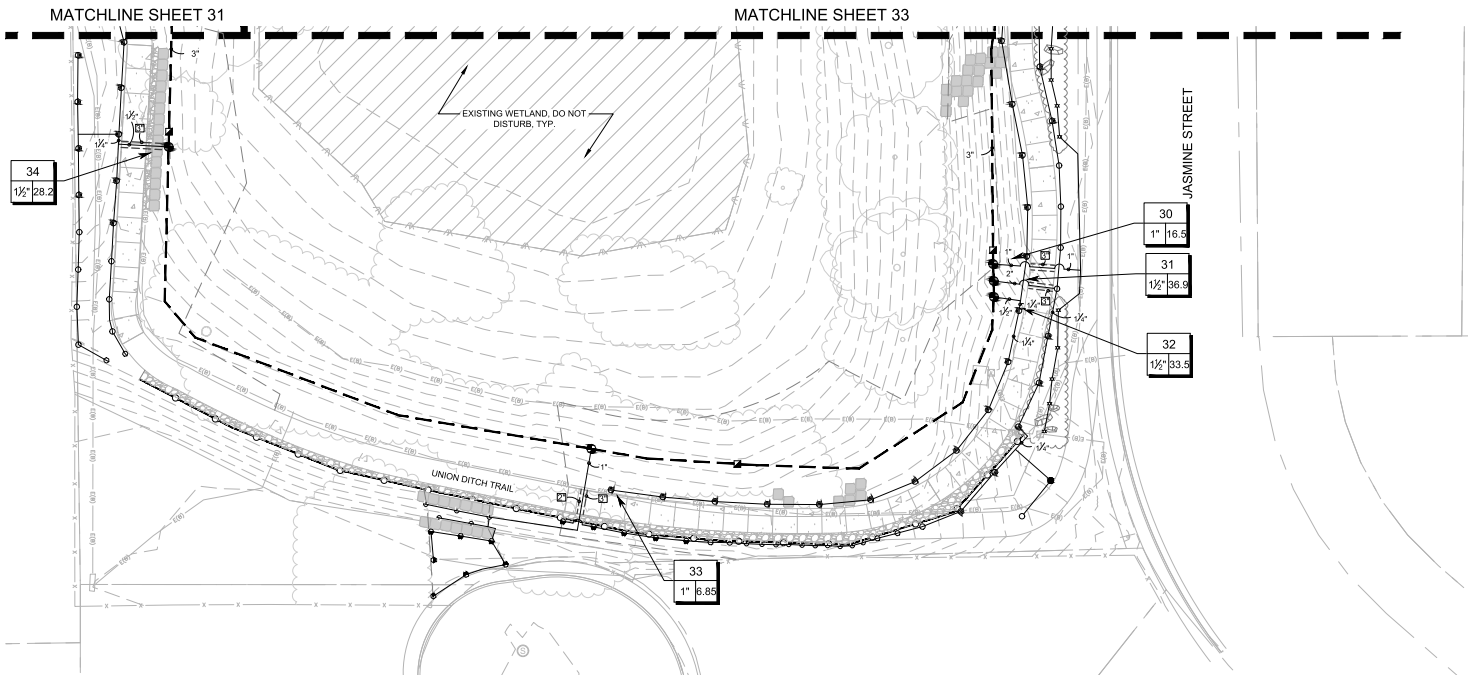
31



1 IRRIGATION PLAN

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SCALE: 1" = 20'

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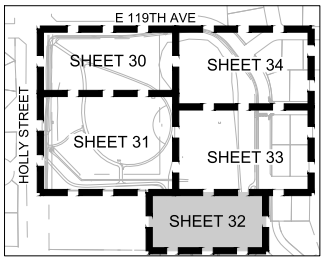

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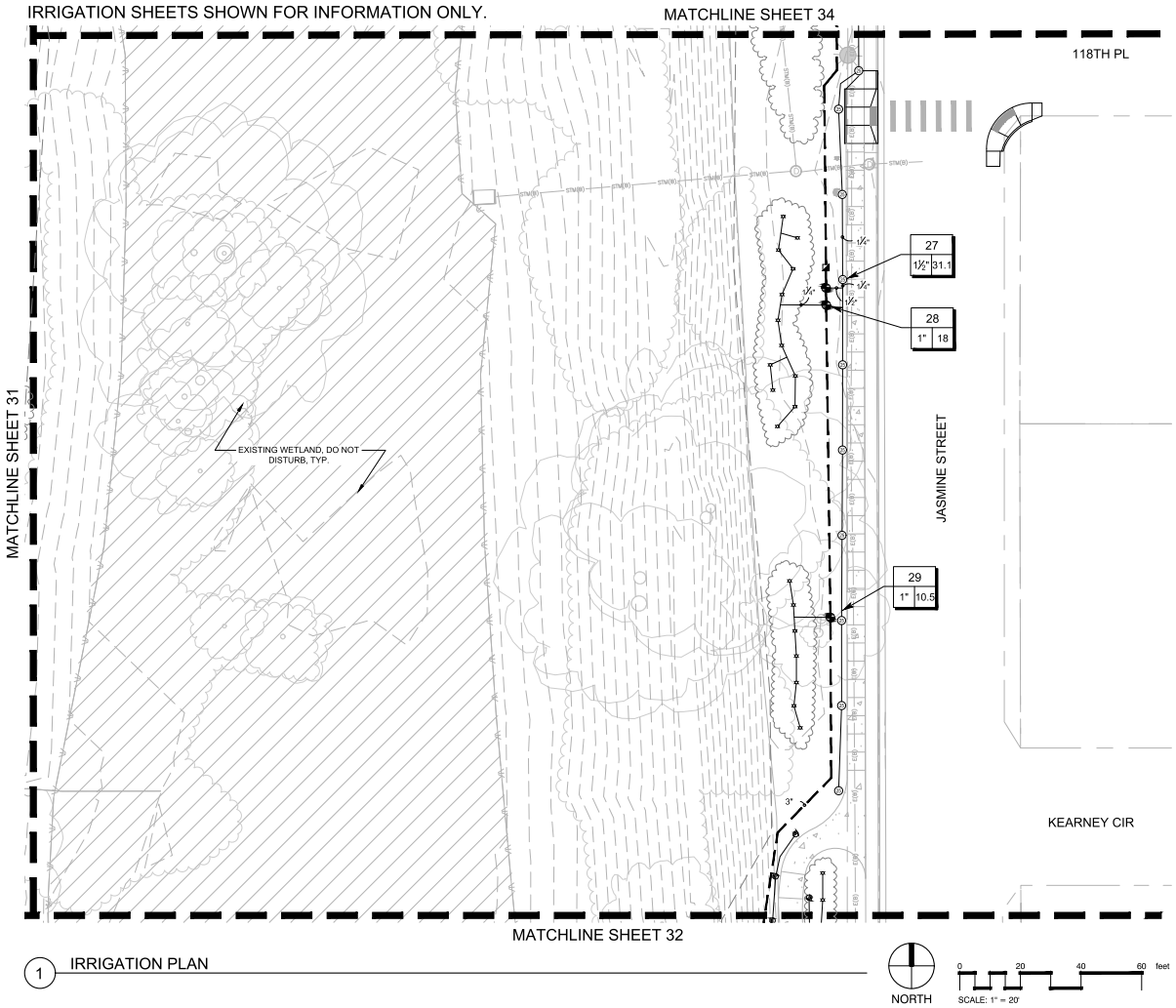

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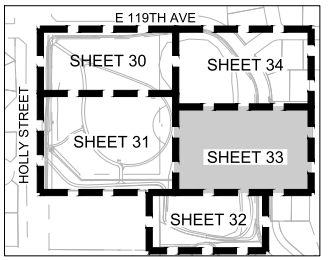

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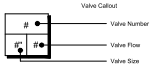
Valve Callout



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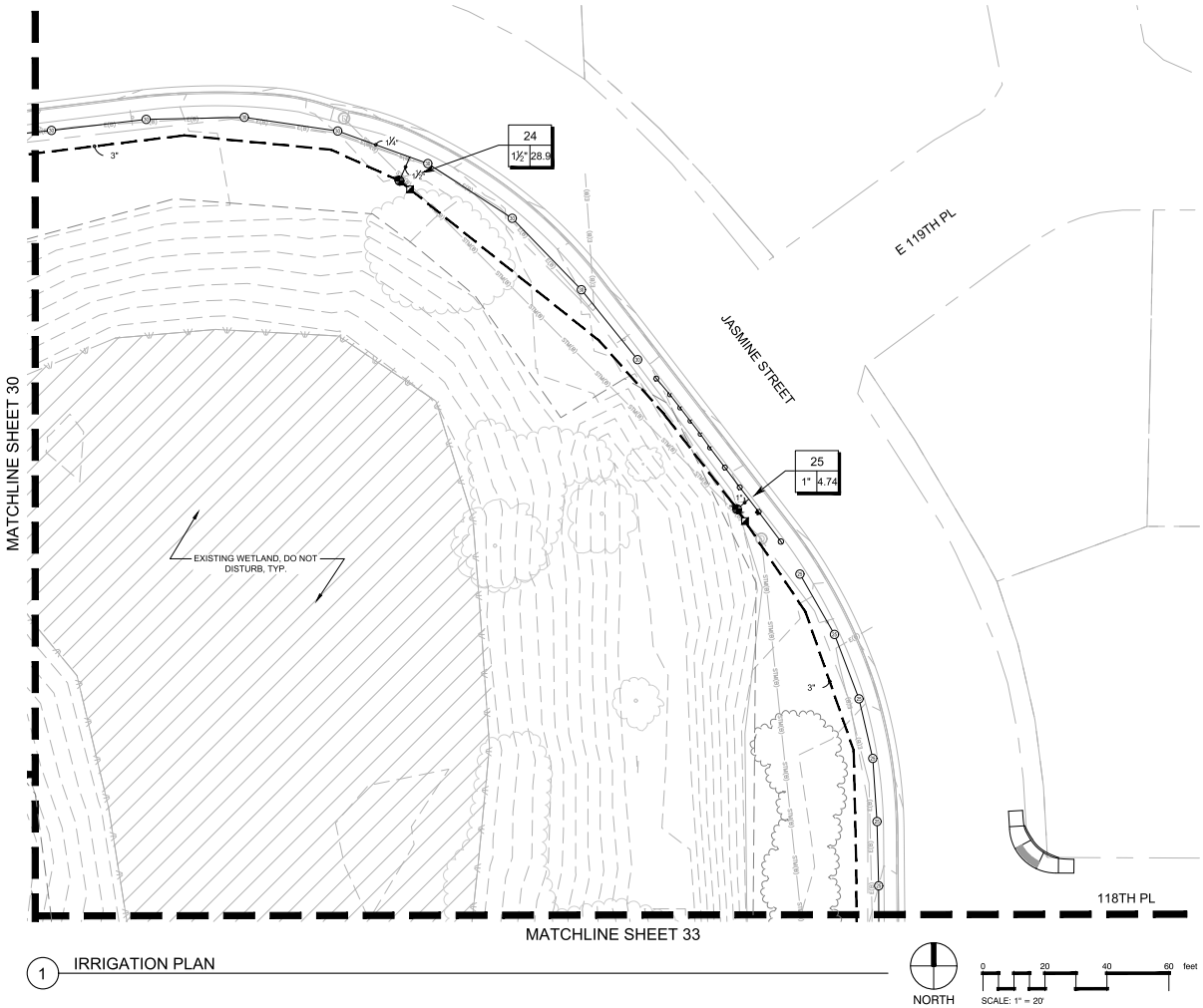

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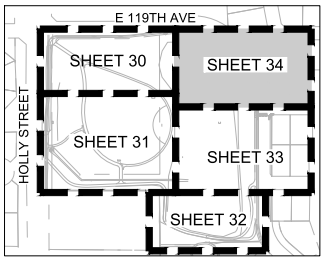

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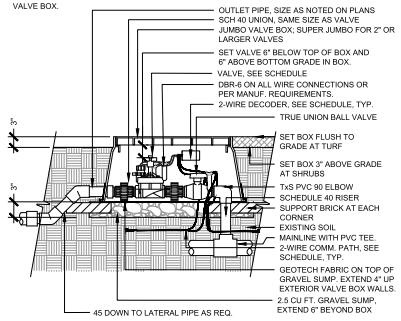
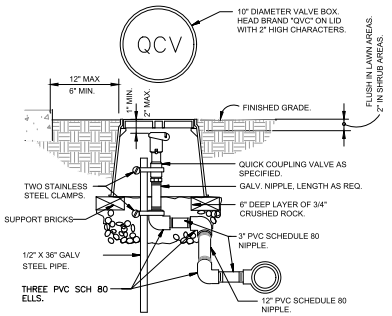
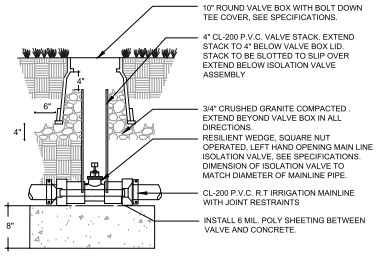
NOTE:
1. HEAT BRAND VALVE AND CONTROLLER NUMBER ON LID WITH 2" HIGH CHARACTERS.
2. SEE ADDITIONAL DETAILS FOR GROUNDING AND STAKING OF DECODER UNIT WITHIN VALVE BOX.



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



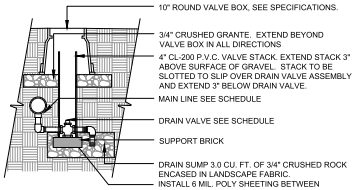
2 QUICK COUPLING VALVE IN BOX
1 1/2" = 12" 328406.43-02



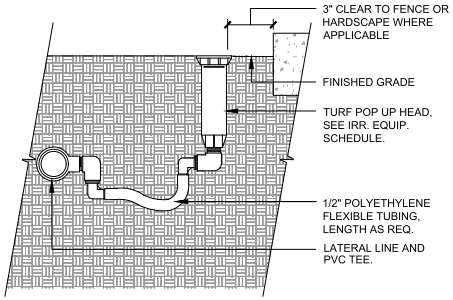
NOTE:
1. BRAND (GV) INTO VALVE BOX LID WITH 1" HIGH LETTERS MIN.
2. SET TOP OF VALVE BOX LID LEVEL WITH FINISHED GRADE OF ADJACENT TURF GRASS AREAS.
3. PROVIDE 4" CLEAR BETWEEN TOP OF STACK AND UNDERSIDE OF VALVE BOX LID.

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

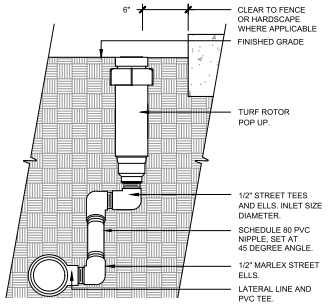
NOTE:
1. BRAND (DV) INTO VALVE BOX LID WITH 2" HIGH LETTERS MIN.
2. EXTEND VERTICAL DISCHARGE NIPPLE INTO DRAIN SUMP A MINIMUM OF 3".
3. SET TOP OF VALVE BOX LID LEVEL WITH FINISHED GRADE OF ADJACENT UNDISTURBED TURF GRASS AREAS.



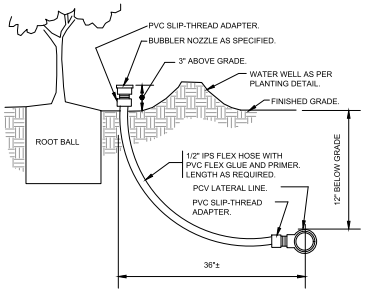
4 MANUAL DRAIN VALVE
1/2" = 1'-0" 328409.86-13



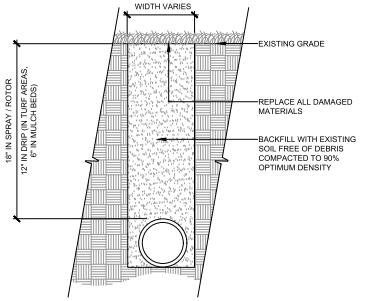
5 POP-UP SPRAY SWING ASSEMBLY
I225-27



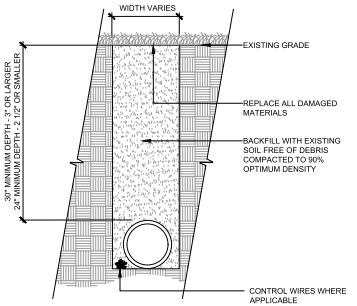
6 TURF ROTOR SWING ASSEMBLY
3" = 1'-0" 328403.16-11



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

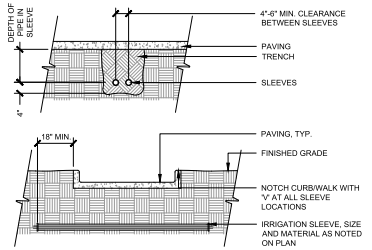


8 TRENCH DETAIL - LATERAL LINE
1 1/2" = 1'-0" 328409.16-04

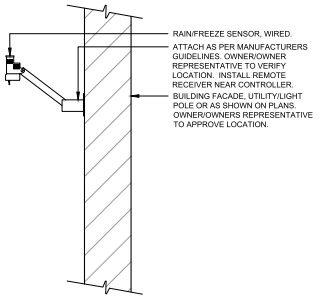


9 TRENCH DETAIL - MAINLINE
1 1/2" = 1'-0" 328409.16-04

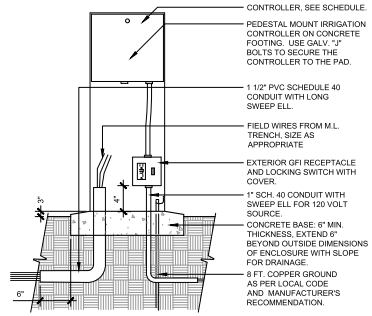
NOTES:
1. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
2. MECHANICALLY TAMP TO 95% PROCTOR DENSITY.
3. WHERE MULTIPLE SLEEVES ARE TO BE INSTALLED SLEEVES SHALL BE IN SIDE-BY-SIDE CONFIGURATION. DO NOT STACK SLEEVES VERTICALLY.



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

VALERIAN

CONSULTANT:

STACEY E. STICKLER
0554
11/26/2008
Original Date of Licensure
3.22.2024
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

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
ORIGINAL DATE:
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
IRRIGATION DETAILS

SHEET #:
35

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'	8'
1½"	2'	4'	9'	4'	-	-	-	23'	10'
2"	3'	6'	11'	8'	10'	-	-	30'	15'
3"	4'	9'	20'	14'	20'	31'	-	45'	25'
3"	6'	13'	29'	30'	40'	53'	63'	63'	40'
4"	8'	15'	38'	33'	55'	63'	75'	75'	70'
5"	9'	19'	45'	38'	56'	75'	96'	96'	90'
6"	10'	21'	53'	38'	60'	83'	112'	112'	110'

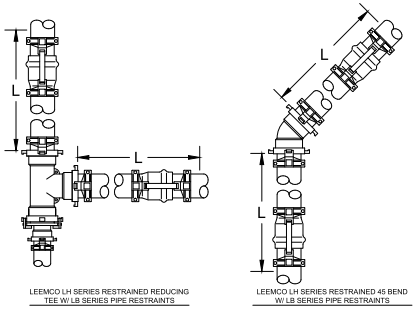
INSTALLATION CHART

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

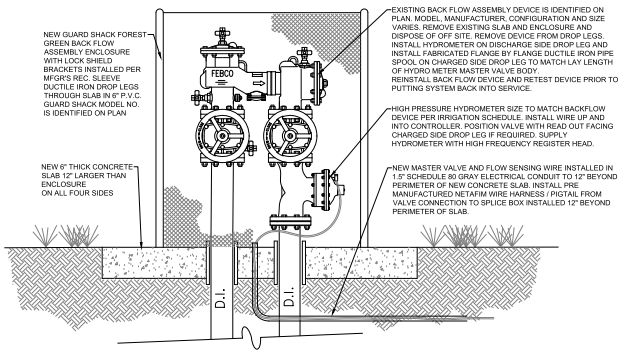
CONTACT TONY GARNER @ (208) 631-7787, THE LEEMCO REPRESENTATIVE, FOR ALL QUESTIONS CONCERNING LEEMCO PRODUCTS. COORDINATE AN INSTALLATION CLINIC WITH TONY GARNER PRIOR TO INSTALLING THE MAINLINE.



LEEMCO LH SERIES RESTRAINED REDUCING TEE W/ LB SERIES PIPE RESTRAINTS

LEEMCO LH SERIES RESTRAINED 45 BEND W/ LB SERIES PIPE RESTRAINTS

1 LEEMCO JOINT RESTRAINT CHART DETAIL

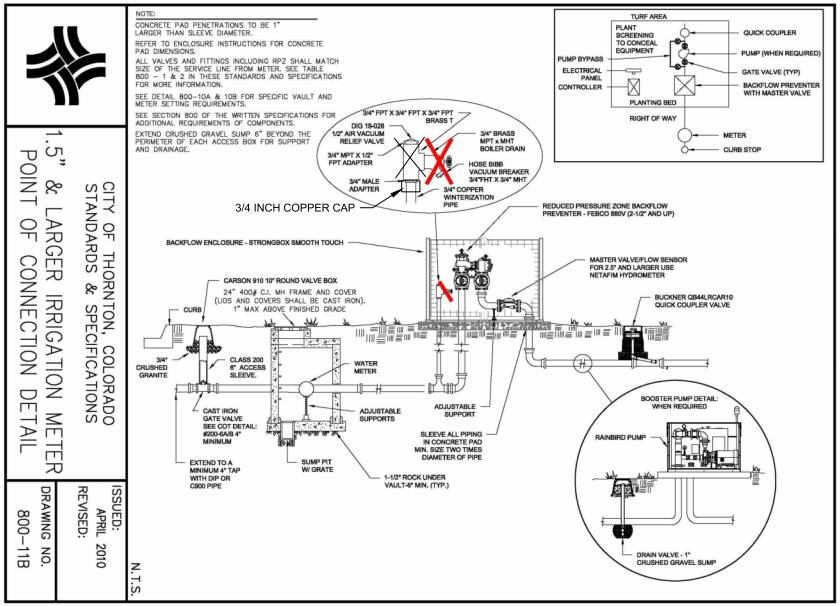


3 NETAFIM HYDROMETER DETAIL

1" = 1'-0"

328406.23-30

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.



2 POINT OF CONNECTION DETAIL DETAIL

City of Thornton
9500 Civic Center Drive
Thornton, CO 80229

COMMUNITY SERVICES DEPARTMENT
Open Space and Capital Projects
303-255-7831
FAX 303-255-7710

IRRIGATION ELECTRICAL SERVICE & METER PIT INSTALL

ELECTRICAL SERVICE

1. It is usual for the irrigation designer to contact utility Xcel or United Power during the system design phase for a location of the power drop for the electrical meter. A transformer-type drop box is installed at that location. All wires from the drop to the meter should be in conduit; the voltage is reduced at the meter.
2. The city prefers to minimize the distance between the electrical meter and location of the controller. The utility maintains all underground wires from the drop to the electrical meter and the city maintains all wires from the electrical meter to the controller. As possible, locate the meter in the dedicated irrigation component bed near the controller.
3. The city's GIS will establish an address for each meter (usually '.5' to an existing address locates the water meter). Location drop information from the utility plus the proposed general location of the electric & water meter are required from the irrigation designer.
4. When a new electric meter pedestal is installed with a new irrigation controller, install the electric and irrigation pedestals together on a shared minimum 30" x 48" x 6" concrete pad. Place pedestals on pad with a minimum 12" clear separation. Extend sweep ells and conduits at least 24" past the edge of the pedestal pad. Grounding rods are required.
5. All the irrigation components (backflow, electric pedestal, controller etc.) should be clustered together in a mulched bed.
6. The project's electrician installs everything from the electric meter in the clustered irrigation component bed to the 'drop area' specified by the utility company (usually a transformer-type box).
7. The contractor's work is inspected by COT (the meter address is required for the utility permit) and when that permit has been signed off by the city, then the utility company will come out and connect their electrical drop in the utility's box to the contractor's work.

METER PIT INSTALLATION

1. The contractor purchases and installs the required meter pit and all the irrigation piping up to and through the holes in the meter vault. The meter is provided by the city.
2. The project's licensed plumber or certified backflow tester tests and certifies the backflow and its installation and attaches a tag to the device. The Building Department looks for the certification tag then signs off.
3. The Meter Shop checks the vault installation, plumbing and required sign-offs.
   a. No pipe reductions are allowed in the pit.
   b. There is no by-pass in irrigation meter pits.
   c. If the meter is 2" or less, the city sets the meter in the vault. If the meter is more than 2", the contractor sets the meter.

VALERIAN

CONSULTANT:

STACEY E. STICKLER 0554 — 11/26/2008 Original Date of License — 3.22.2024 — STATE OF COLORADO — LICENSED LANDSCAPE ARCHITECT

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

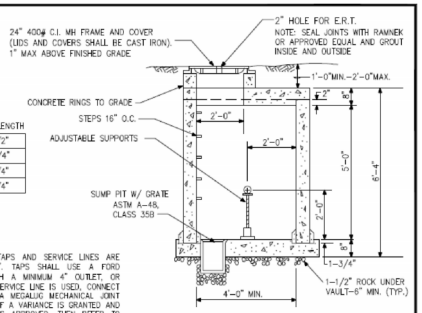
ORIGINAL DATE:
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
IRRIGATION DETAILS

SHEET #:
36

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.



SIZE	LAYING LENGTH
1-1/2" COMPOUND	13-1/2"
2" TURBINE	10-3/4"
3" TURBINE	12-1/4"
4" TURBINE	14-1/4"

VAULT PROFILE

ALL IRRIGATION WATER CONNECTION TAPS AND SERVICE LINES ARE REQUIRED TO BE A MINIMUM OF 4". TAPS SHALL USE A FORD STAINLESS STEEL TAPING SLEEVE WITH A MINIMUM 4" OUTLET, OR APPROVED EQUIVALENT. IF C900 PVC SERVICE LINE IS USED, CONNECT IT TO THE TAPPING SLEEVING USING A MEGALUG MECHANICAL JOINT RESTRAINT OR APPROVED EQUIVALENT. IF A VARIANCE IS GRANTED AND A SMALLER TAP AND SERVICE LINE IS APPROVED, THEN REFER TO WATER SERVICE INSTRUCTIONS IN DETAILS #200-14, 17A, & 18B.

CORPORATION STOPS SHALL BE AWWA TAPER THREAD TO COPPER CONNECTION OF PACK JOINT AND SHALL BE A FORD TYPE FB00 OR AN APPROVED EQUAL. TAPS SHALL BE MADE BY THE RESPONSIBLE PARTY.

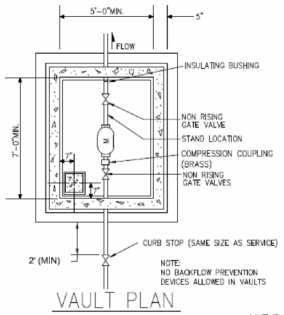
A MINIMUM 4" GATE VALVE CONFORMING TO DETAIL #200-6A/B OF THESE STANDARDS AND SPECIFICATIONS SHALL BE INSTALLED ON EVERY IRRIGATION SERVICE BETWEEN THE WATER MAIN AND THE METER, WHICH IS AT A POINT AT OR NEAR THE PROPERTY LINE. THE VALVE SHALL BE ACCESSIBLE THROUGH A TYLER 6860 3-PIECE VALVE BOX WITH STANDARD OVAL BASE AND A DROP LID.

INSIDE THE METER PIT, PIPE SHALL BE TYPE K CLASS, RIGID COPPER PIPE. THE METER VAULT PIPING SHALL BE OF THE SAME INSIDE DIAMETER AS THE METER ORIFICE. ANY SERVICE PIPE MATERIAL CHANGES SHALL OCCUR OUTSIDE THE METER VAULT.

JOINTS SHALL BE OF A SWEAT COPPER DESIGN. SOLDER USED IN CONNECTION OF THE JOINTS SHALL BE OF A LEAD CONTENT OF 0.20 OR LESS.

GATE VALVES SHALL BE AWWA APPROVED GATE VALVES OF BRASS CONSTRUCTION. THE VALVES SHALL BE COUNTERCLOCKWISE OPEN. REFER TO SUBSECTION 204.10(I) OF THESE STANDARDS AND SPECIFICATIONS. VALVES LOCATED IN VAULTS SHALL HAVE HANDWHEELS IN LIEU OF A TWO (2) INCH SQUARE OPERATING NUT.

WATER SERVICE LOCATIONS SHALL BE MARKED WITH A "V" ON THE CURB, AND SEWER SERVICE SHALL BE MARKED WITH AN "X". MARKINGS SHALL BE NEATLY STAMPED, CHISELED OR SAWCUT, AND SHALL NOT BE PAINTED.



VAULT PLAN

N.T.S.

CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS
STANDARD IRRIGATION METER SETTING VAULT DETAIL FOR 1-1/2", 2", 3" & 4" METERS

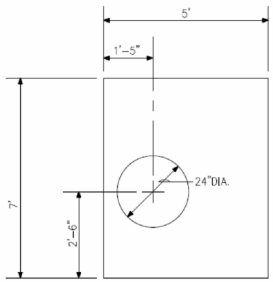
ISSUED: APRIL 1992
REVISED: JAN 2012
DRAWING NO. 800-10A

METER VAULT LIDS AND COVER SHALL BE CAST IRON.

PIPE SHALL BE TYPE K CLASS, RIGID COPPER PIPE. THE METER VAULT PIPING SHALL BE OF THE SAME INSIDE DIAMETER AS THE METER ORIFICE. JOINTS SHALL BE OF SWEAT COPPER DESIGN. SOLDER USED IN CONNECTION OF THE JOINTS SHALL BE OF A LEAD CONTENT OF 0.20 OR LESS. THE OUTLET SIDE OF THE COPPER SETTERS SHALL BE ISOLATED FROM THE SERVICE LINE WITH A FORD SERVICE INSULATOR OR APPROVED EQUIVALENT.

GATE VALVES SHALL BE AWWA APPROVED GATE VALVES OF BRASS CONSTRUCTION. THE VALVE STEMS SHALL BE OF NON-RISING DESIGN. VALVES SHALL BE COUNTERCLOCKWISE OPEN, AND SHALL HAVE HANDWHEELS IN LIEU OF A TWO (2) INCH SQUARE OPERATING NUT. VALVES SHALL BE INSTALLED BOTH UPSTREAM AND DOWNSTREAM OF THE WATER METER WITHIN THE VAULT.

BRASS UNIONS OF A COMPRESSION TYPE SEALING DESIGN SHALL BE INSTALLED BETWEEN THE GATE VALVE AND THE WATER METER, EITHER UPSTREAM OR DOWNSTREAM OF THE METER TO FACILITATE REMOVAL OF THE WATER METER FROM THE SERVICE LINE.



ROOF SLAB

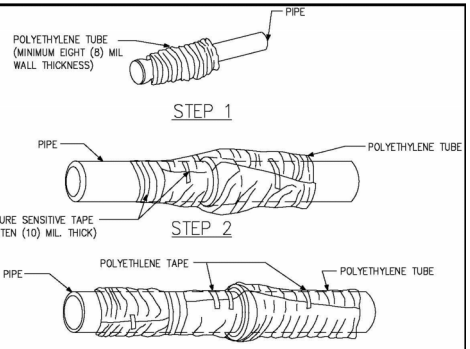
N.T.S.

CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS
STANDARD IRRIGATION METER ROOF SLAB DETAIL FOR 1-1/2", 2", 3", & 4" METERS

ISSUED: APRIL 1992
REVISED: APRIL 2010
DRAWING NO. 800-10B

1 WATER METER DETAILS

FOR D.I.P.:



NOTE: POLYETHYLENE ENCASEMENT MATERIAL SHALL BE MANUFACTURED IN ACCORDANCE WITH CURRENT ASTM STANDARD. THE RAW MATERIAL USED TO MANUFACTURE POLYETHYLENE FILM SHALL BE TYPE I, CLASS A, GRADE E-1 IN ACCORDANCE WITH CURRENT ASTM STANDARD.

STEP 1 – PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.

STEP 2 – PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE.

STEP 3 – OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.

FOR STEEL:

BITUMINOUS MATERIAL IS TO BE USED FOR CORROSION PROTECTION ON ALL STEEL PIPES.

SOIL RESISTIVITY TESTS:

SOIL RESISTIVITY TESTS AND/OR ANY OTHER SOIL TESTS ARE REQUIRED WITH THE UTILIZATION OF METAL PIPING OR AT THE SOLE DISCRETION OF THE DEVELOPMENT ENGINEERING MANAGER. OTHER MEANS OF CORROSION PROTECTION MUST BE SPECIFICALLY APPROVED BY THE DEVELOPMENT ENGINEERING MANAGER. THE RESPONSIBLE PARTY SHALL INCUR THE COSTS OF ALL SOIL TESTING AS REQUIRED.

N.T.S.

CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS
CORROSION PROTECTION DETAIL

ISSUED: APRIL 1992
REVISED: APRIL 2010
DRAWING NO. 200-15

2 CORROSION PROTECTION DETAIL

VALERIAN
CONSULTANT:
STACEY E. STICKLER 0047
11/26/2008
Original Date of Licensure
3.22.2024
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT
CLIENT:
City of Thornton
9500 CIVIC CENTER DR
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LR
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SS
ORIGINAL DATE:
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
IRRIGATION DETAILS

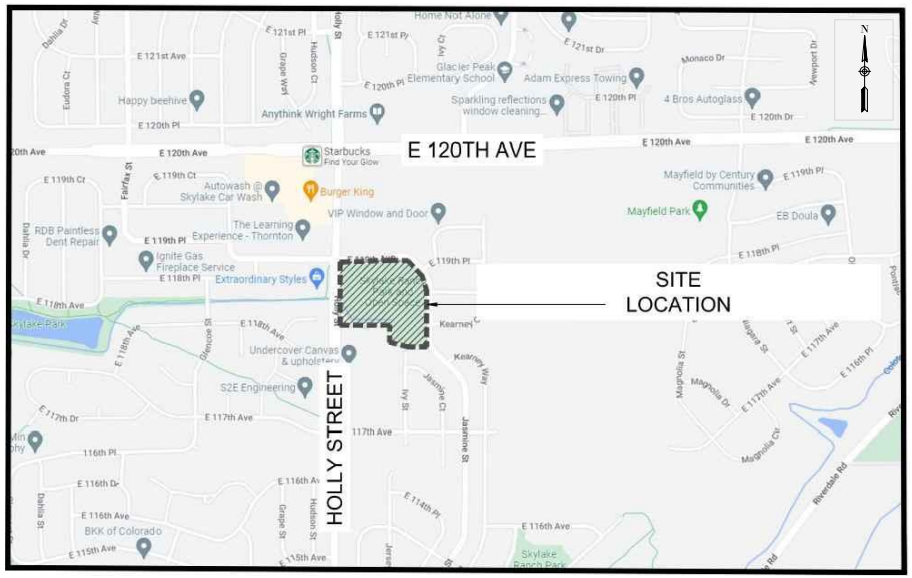
SHEET #:
37

SKYLAKE RANCH OPEN SPACE LAND IMPROVEMENTS

GRADING AND SEDIMENT CONTROL PLAN
CITY OF THORNTON
MARCH 2024

PROJECT #20-27A

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.



VICINITY MAP

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. CONTROL MEASURES SHALL BE INSTALLED BEFORE ANY EARTH DISTURBING ACTIVITIES COMMENCE.
2. 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.
3. STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES SHALL NOT CAUSE, HAVE THE REASONABLE POTENTIAL TO CAUSE, OR MEASURABLY CONTRIBUTE TO EXCEED ANY WATER QUALITY STANDARD.
4. 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).
5. SEDIMENT CAUSED BY ACCELERATED SOIL EROSION SHALL BE REMOVED FROM RUNOFF WATER BEFORE IT LEAVES THE CONSTRUCTION SITE.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. CONTROL MEASURES REQUIRING MAINTENANCE OR ADJUSTMENT SHALL BE REPAIRED IMMEDIATELY AFTER OBSERVATION OF THE FAILING CONTROL MEASURE.
12. 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.
13. 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.
14. 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).
15. 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.
16. 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.
17. CONTROL MEASURES INTENDED FOR SHEET FLOW SEDIMENT RUNOFF SHALL BE PLACED PARALLEL TO THE SLOPE.
18. ALL CONTROL MEASURES SHALL BE CLEANED WHEN SEDIMENT LEVELS ACCUMULATE TO HALF THE DESIGN OF THE CM UNLESS OTHERWISE SPECIFIED.
19. 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.
20. FOR RESIDENTIAL PROJECTS, BACK OF CURB PROTECTION IS REQUIRED ALONG ALL INTERIOR LOTS.
21. ALL SEDIMENT COLLECTED IN CONTROL MEASURES SHALL BE REMOVED UPON INITIAL ACCEPTANCE.
22. 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.
23. 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.
24. 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.
25. ALL TEMPORARY CONTROL MEASURES SHALL BE REMOVED FROM THE SITE UPON SUBMITTING THE INACTIVATION NOTICE.
26. ALL SITE WASTES (INCLUDING TRASH AND BUILDING MATERIALS) MUST BE PROPERLY MANAGED TO PREVENT POTENTIAL POLLUTION DISCHARGES TO THE MS4 OR STATE WATERS.
27. 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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03-22-2024
0059943
PROFESSIONAL ENGINEER

PROJECT:
SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET

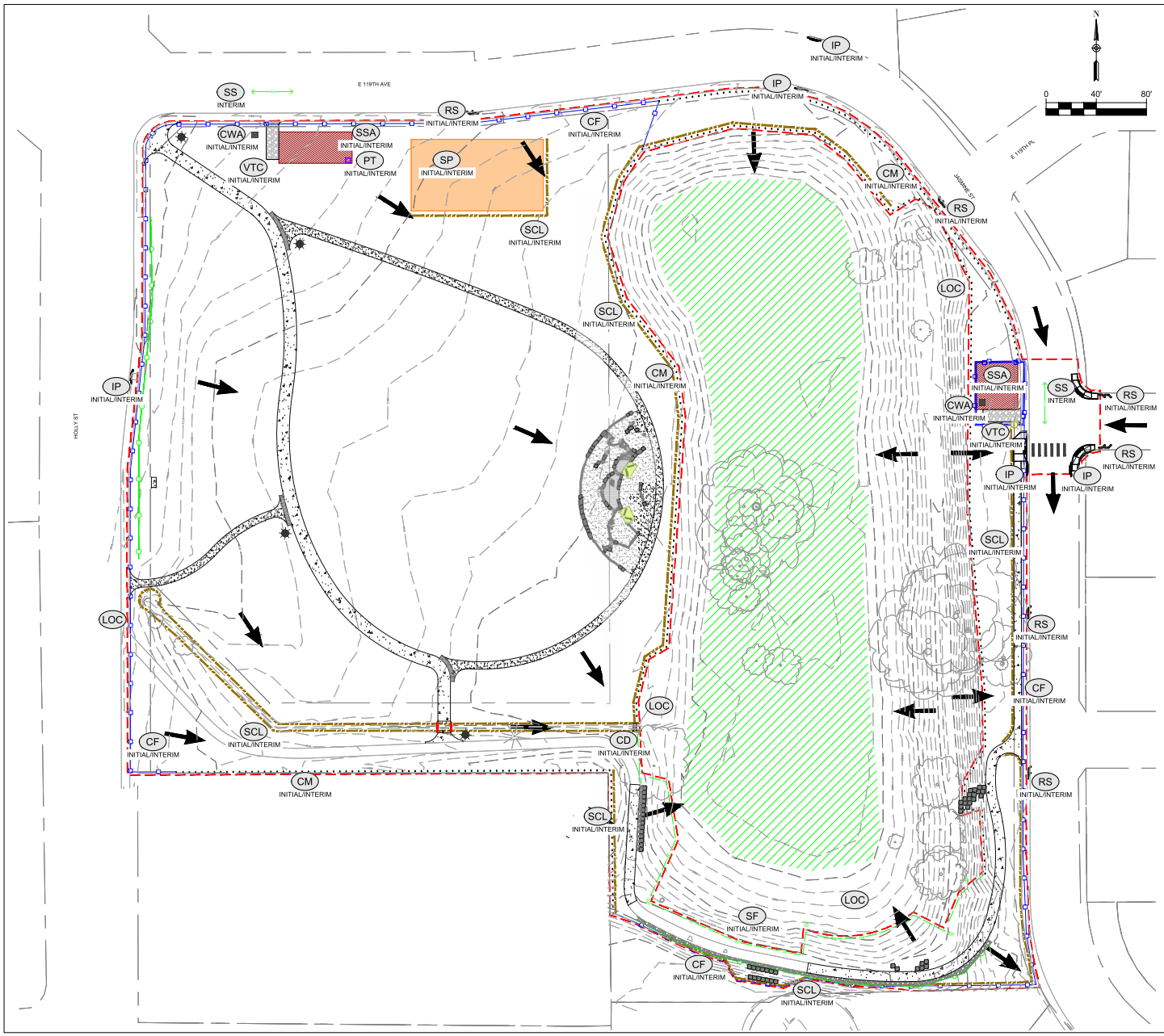
SUBMITTAL:
BID SUBMITTAL

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

#	REVISION	DATE

SHEET TITLE:
GESC COVER/NOTES

SHEET #:
38



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.

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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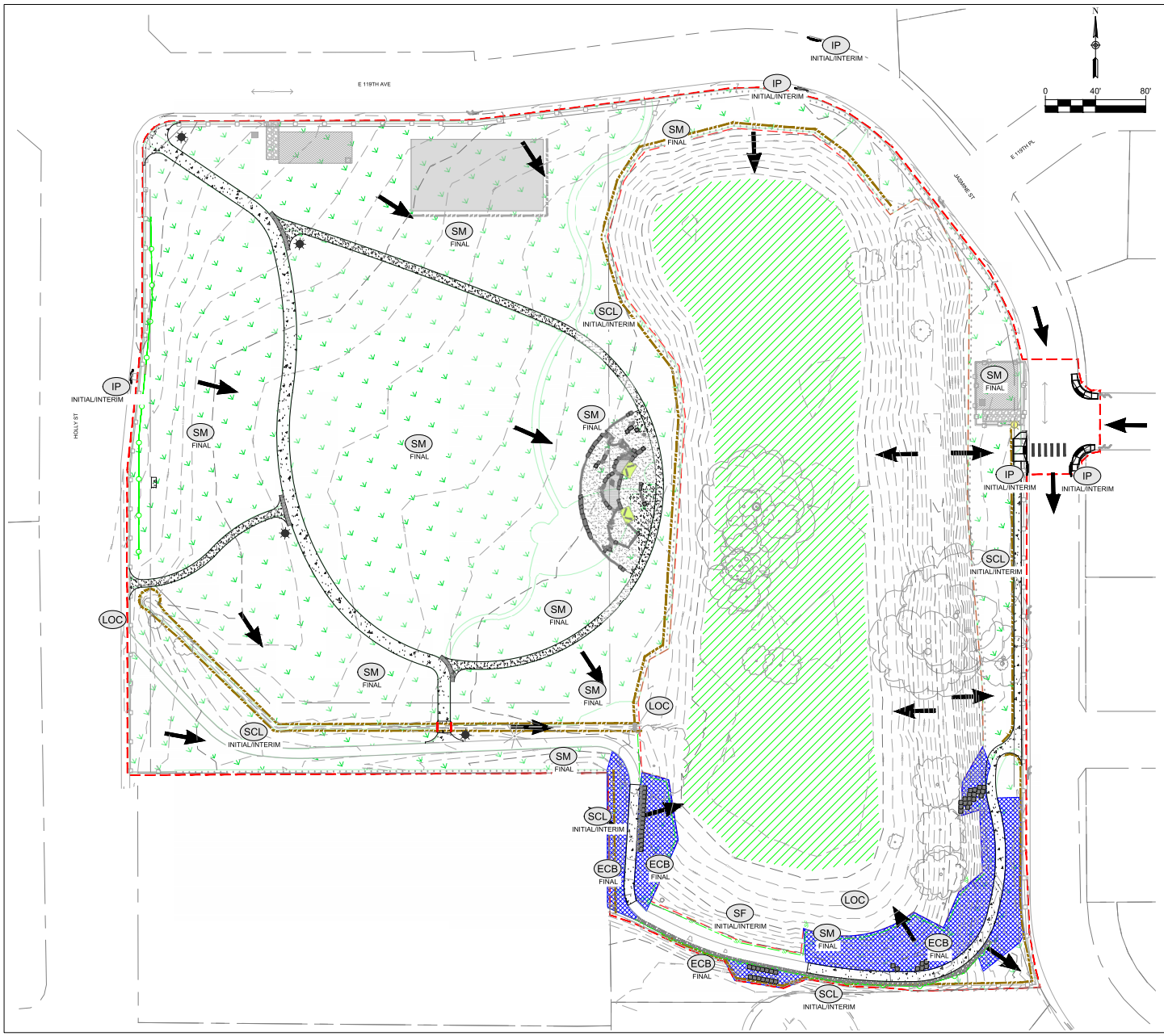
#	REVISION	DATE

SHEET TITLE:
GESC INITIAL-INTERIM

SHEET #:
39



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.

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

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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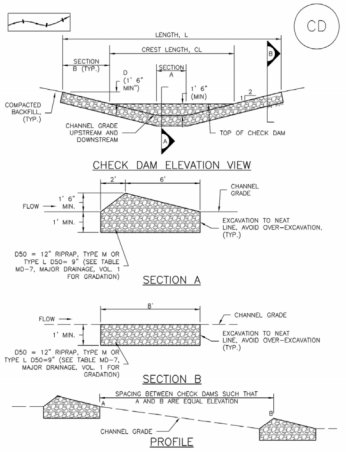
SHEET TITLE:
GESC FINAL

SHEET #:
40

Check Dams (CD) EC-12



CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF CHECK DAMS.
   –CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   –LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).

2. CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.

3. RIPRAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RIPRAP USED FOR CHECK DAMS ARE TYPE M (D50 12") OR TYPE L (D50 9").

4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'.

5. THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1' 6" HIGHER THAN THE CENTER OF THE CHECK DAM.

CHECK DAM 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.

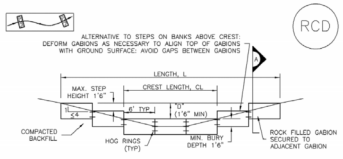
4. SEDIMENT ACCUMULATED UPSTREAM OF THE CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN ½ OF THE HEIGHT OF THE CREST.

5. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

6. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL, DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, 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.



REINFORCED CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATIONS OF CHECK DAMS.
   –CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   –LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).

2. CHECK DAMS INDICATED ON THE SWMP SHALL BE INSTALLED PRIOR TO AN UPSTREAM LAND–DISTURBING ACTIVITIES.

3. REINFORCED CHECK DAMS, GABIONS SHALL HAVE GALVANIZED TWISTED WIRE NETTING WITH A MAXIMUM OPENING DIMENSION OF 4½" AND A MINIMUM WIRE THICKNESS OF 0.10". WIRE "HOG RINGS" AT 4" SPACING OR OTHER APPROVED MEANS SHALL BE USED AT ALL GABION SEAMS AND TO SECURE THE GABION TO THE ADJACENT SECTION.

4. THE CHECK DAM SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1' 6".

5. GEOTEXTILE BLANKET SHALL BE PLACED IN THE REINFORCED CHECK DAM TRENCH EXTENDING A MINIMUM OF 1' 6" ON BOTH THE UPSTREAM AND DOWNSTREAM SIDES OF THE REINFORCED CHECK DAM.

CD–2. REINFORCED CHECK DAM

REINFORCED CHECK DAM 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 REINFORCED CHECK DAMS SHALL BE REMOVED AS NEEDED TO MAINTAIN THE EFFECTIVENESS OF BMP, TYPICALLY WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE CREST.

5. REPAIR OR REPLACE REINFORCED CHECK DAMS WHEN THERE ARE SIGNS OF DAMAGE SUCH AS HOLES IN THE GABION OR UNDERCUTTING.

6. REINFORCED CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

7. WHEN REINFORCED CHECK DAMS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, AND COVERED WITH A GEOTEXTILE BLANKET, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM 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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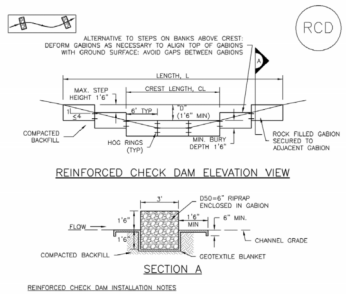
GESC DETAILS-1

SHEET #:
41

Check Dams (CD) EC-12



REINFORCED CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATIONS OF CHECK DAMS.
   –CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   –LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).

2. CHECK DAMS INDICATED ON THE SWMP SHALL BE INSTALLED PRIOR TO AN UPSTREAM LAND–DISTURBING ACTIVITIES.

3. REINFORCED CHECK DAMS, GABIONS SHALL HAVE GALVANIZED TWISTED WIRE NETTING WITH A MAXIMUM OPENING DIMENSION OF 4½" AND A MINIMUM WIRE THICKNESS OF 0.10". WIRE "HOG RINGS" AT 4" SPACING OR OTHER APPROVED MEANS SHALL BE USED AT ALL GABION SEAMS AND TO SECURE THE GABION TO THE ADJACENT SECTION.

4. THE CHECK DAM SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1' 6".

5. GEOTEXTILE BLANKET SHALL BE PLACED IN THE REINFORCED CHECK DAM TRENCH EXTENDING A MINIMUM OF 1' 6" ON BOTH THE UPSTREAM AND DOWNSTREAM SIDES OF THE REINFORCED CHECK DAM.

CD–2. REINFORCED CHECK DAM

REINFORCED CHECK DAM 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 REINFORCED CHECK DAMS SHALL BE REMOVED AS NEEDED TO MAINTAIN THE EFFECTIVENESS OF BMP, TYPICALLY WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE CREST.

5. REPAIR OR REPLACE REINFORCED CHECK DAMS WHEN THERE ARE SIGNS OF DAMAGE SUCH AS HOLES IN THE GABION OR UNDERCUTTING.

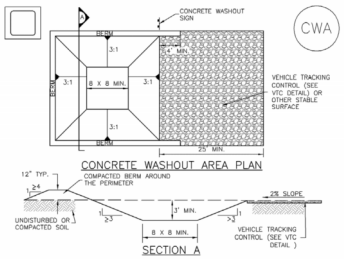
6. REINFORCED CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

7. WHEN REINFORCED CHECK DAMS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, AND COVERED WITH A GEOTEXTILE BLANKET, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF 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.

Concrete Washout Area (CWA) MM-1



CWA–1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –CWA INSTALLATION LOCATION.

2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY, DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (18 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.

4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.

5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.

6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.

7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CWA 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. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.

5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER–TIGHT CONTAINER AND DISPOSED OF PROPERLY.

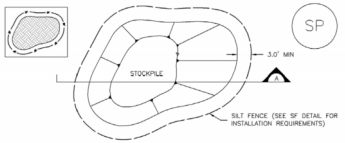
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.

7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

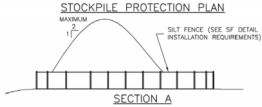
(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD).

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.

Stockpile Management (SP) MM-2



STOCKPILE PROTECTION PLAN



SECTION A

SP–1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF STOCKPILES.
   –TYPE OF STOCKPILE PROTECTION.

2. 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.

3. 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 SEEDED 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).

4. 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.

MM-2 Stockpile Management (SM)

STOCKPILE 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.

STOCKPILE PROTECTION MAINTENANCE NOTES

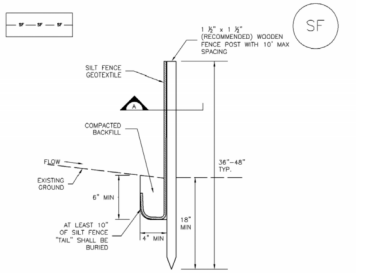
4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.

5. 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.

Silt Fence (SF) SC-1



SILT FENCE

SECTION A

SF–1. SILT FENCE

SC-1 Silt Fence (SF)

SILT FENCE INSTALLATION NOTES

1. 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.

2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.

3. 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.

4. 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.

5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.

6. 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').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT 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. 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".

5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

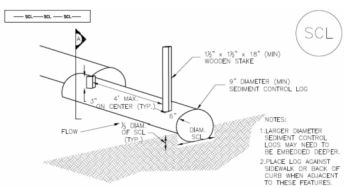
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.

7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

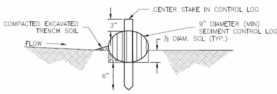
(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

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.

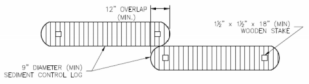
Sediment Control Log (SCL) SC-2



TRENCHED SEDIMENT CONTROL LOG



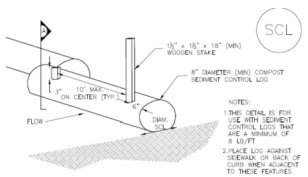
SECTION A
TRENCHED SEDIMENT CONTROL LOG



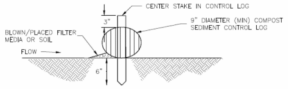
LOG JOINTS

SCL–1. TRENCHED SEDIMENT CONTROL LOG

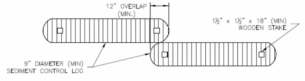
SC-2 Sediment Control Log (SCL)



COMPOST SEDIMENT CONTROL LOG (WEIGHTED)



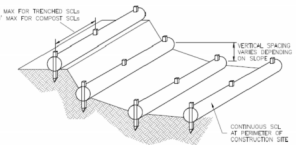
SECTION A
COMPOST SEDIMENT CONTROL LOG



LOG JOINTS

SCL–2. COMPOST SEDIMENT CONTROL LOG (WEIGHTED)

Sediment Control Log (SCL) SC-2



SCL–3. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH

SC-2 Sediment Control Log (SCL)

SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.

2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND–DISTURBING ACTIVITIES.

3. 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.

4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.

5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY ⅓ 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.

6. 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.

7. 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" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED. COMPOST LOGS SHOULD BE STAKED 10' ON CENTER.

SEDIMENT CONTROL LOG 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 SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY ½ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.

5. 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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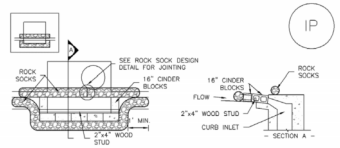
CRC
DRAWN BY:
CRC
CHECKED BY:
JFD
ORIGINAL DATE:
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
GESC DETAILS-2

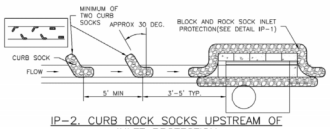
SHEET #:
42



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

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

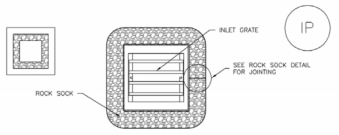
1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



IP–2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

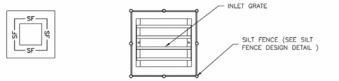
1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.
2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.
4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM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



IP–3. ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES

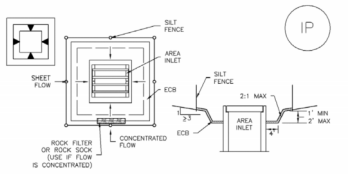
1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



IP–4. SILT FENCE FOR SUMP INLET PROTECTION

SILT FENCE INLET PROTECTION INSTALLATION NOTES

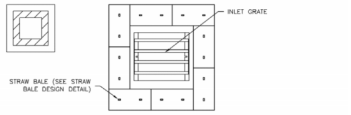
1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.
3. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL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



IP–5. OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

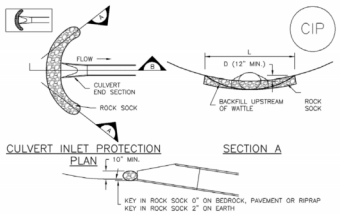
1. THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA.
2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.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



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 ½ 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.

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.
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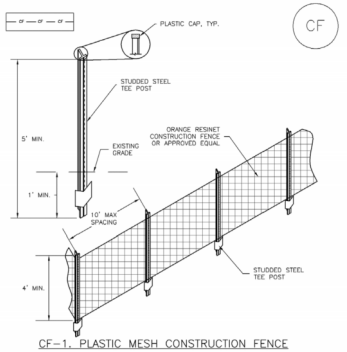
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ¼ 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.



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.

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 SAGS. 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.

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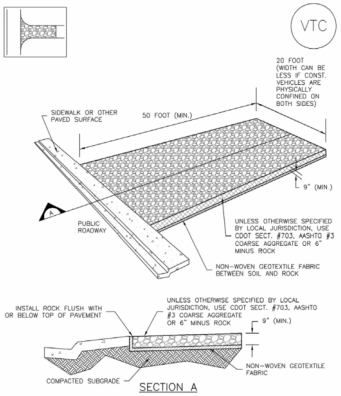

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BID SUBMITTAL

PROJECT #:
20-27A

DESIGNED BY:
CRC

DRAWN BY:
CRC

CHECKED BY:
JFD

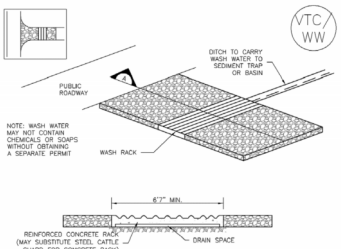
ORIGINAL DATE:
MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
GESC DETAILS-3

SHEET #:
43

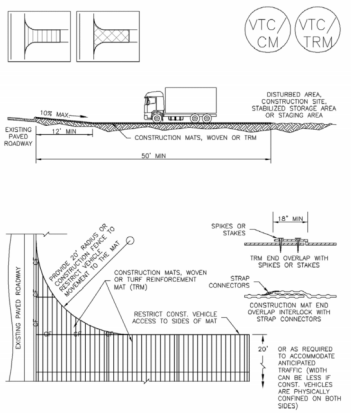
SM-4 Vehicle Tracking Control (VTC)



SECTION A

VTC–2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

Vehicle Tracking Control (VTC) SM-4



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

SM-4 Vehicle Tracking Control (VTC)

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
   –TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).
2. 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.
3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT–OF–WAYS.
4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
5. A NON–WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

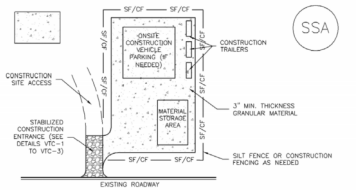
STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

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. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
5. 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)

Stabilized Staging Area (SSA) SM-6



SSA–1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF STAGING AREA(S).
   –CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA 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. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

SM-6 Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

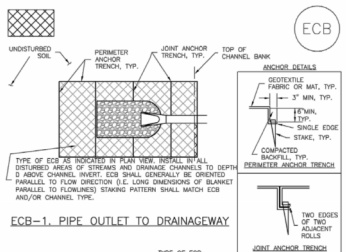
5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED 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.

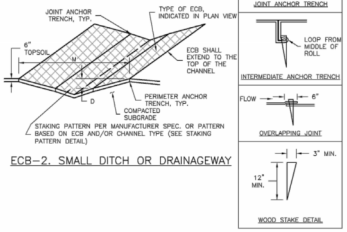
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

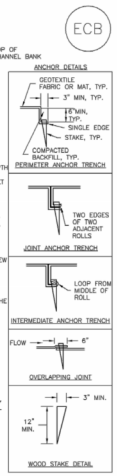
EC-6 Rolled Erosion Control Products (RECP)



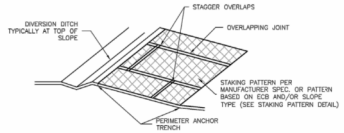
ECB–1. PIPE OUTLET TO DRAINAGEWAY



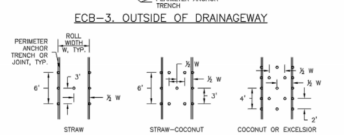
ECB–2. SMALL DITCH OR DRAINAGEWAY



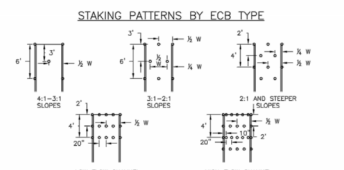
Rolled Erosion Control Products (RECP) EC-6



ECB–3. OUTSIDE OF DRAINAGEWAY



STAKING PATTERNS BY ECB TYPE



STAKING PATTERNS BY SLOPE OR CHANNEL TYPE

EC-6 Rolled Erosion Control Products (RECP)

EROSION CONTROL BLANKET INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF ECB.
   –TYPE OF ECB (STRAW, STRAW–COCONUT, COCONUT, OR EXCELSIOR).
   –AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.
2. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
3. 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.
4. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
5. 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.
6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE–HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
7. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
8. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB–1.
9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBS SHALL BE RESEEDED AND MULCHED.
10. 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	RECOMMENDED NETTING**
STRAW*	–	100%	–	DOUBLE/ NATURAL
STRAW–COCONUT	30% MIN	70% MAX	–	DOUBLE/ NATURAL
COCONUT	100%	–	–	DOUBLE/ NATURAL
EXCELSIOR	–	–	100%	DOUBLE/ NATURAL

*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAM OR DRAINAGE CHANNEL.
**ALTERNATIVE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS

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 | Urban Design
Irrigation Design | Planning
3001 Brighton Boulevard | Suite 643 | Denver, CO 80216
CONSULTANT:
ICON ENGINEERING
CLIENT:
City of Thornton
9500 CIVIC CENTER DR
THORNTON, CO 80229
(303) 538-7200

STAMP:

COLORADO LICENSED
JAMES F DUVALL
03-22-2024
0059943
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:
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.

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

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.

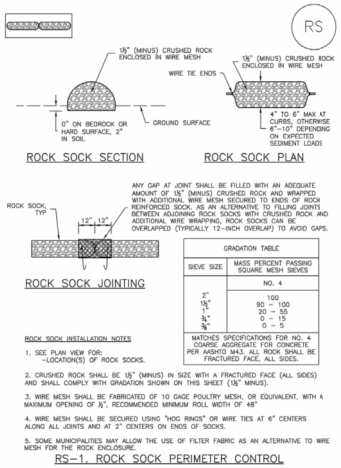
On smaller construction sites, street sweeping can be conducted manually using a shovel and broom. Never wash accumulated sediment on roadways into storm drains.

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 opentions.

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

SC-5 Rock Sock (RS)



GRADATION TABLE	
SIEVE SIZE:	MASS PERCENT PASSING SQUARE MESH SIEVES
	NO. 4
2"	100
1½"	80 – 100
1"	20 – 55
¾"	0 – 15
⅜"	0 – 5
MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.	

ROCK SOCK INSTALLATION NOTES

1. SEE PLAN VIEW FOR: –LOCATION(S) OF ROCK SOCKS.
2. CRUSHED ROCK SHALL BE 1½" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1½" MINUS).
3. WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF ½", RECOMMENDED MINIMUM ROLL WIDTH OF 48"
4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.
5. SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

RS–1, ROCK SOCK PERIMETER CONTROL

Rock Sock (RS) SC-5

ROCK SOCK 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. ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.

5. 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 ½ OF THE HEIGHT OF THE ROCK SOCK.

6. ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

7. 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 NOORSES 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.

Photograph TS/PS -1. Equipment used to drill seed. Photo courtesy of Douglas County.

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.

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

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

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 woodsii*), 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[a] (Common name)	Growth Season[b]	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	½
5. Millet	Warm	3 - 15	½ - ¾
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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03-22-2024
0059943
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:
GESC DETAILS-5

SHEET #:
45

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

Table TS/PS-2. Seeding Dates for Annual and Perennial Grasses

	Annual Grasses (Numbers in table reference species in Table TS/PS-1)		Perennial Grasses	
Seeding Dates	**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.

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.

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

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:

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

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.)

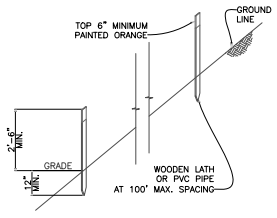
Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP for more information on general types of tackifiers.)

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.

CONSTRUCTION MARKERS (CM)



(ALTERNATIVE TO CONSTRUCTION FENCE)
SCALE: 1/4" = 1'-0"

CONSTRUCTION MARKER INSTALLATION NOTES:
1. SEE PLAN VIEW FOR TYPE OF CONSTRUCTION LIMIT INDICATOR (FENCE OR MARKERS). LOCATION AND LENGTH OF MARKERS
2. MARKERS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO OTHER CONTROL MEASURE AND ANY LAND-DISTURBING ACTIVITIES.
3. STEEL TEE POSTS SHALL BE UTILIZED FOR CONSTRUCTION MARKERS. SPACING OF TEE POSTS SHALL BE APPROPRIATE TO SITE CONDITIONS.

CONSTRUCTION MARKER MAINTENANCE NOTES:
1. ANY DAMAGED FENCE OR MARKERS SHALL BE REPAIRED ON A DAILY BASIS.
2. 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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COLORADO LICENSED
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03-22-2024
0059943
PROFESSIONAL ENGINEER

PROJECT:
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11890 HOLLY STREET

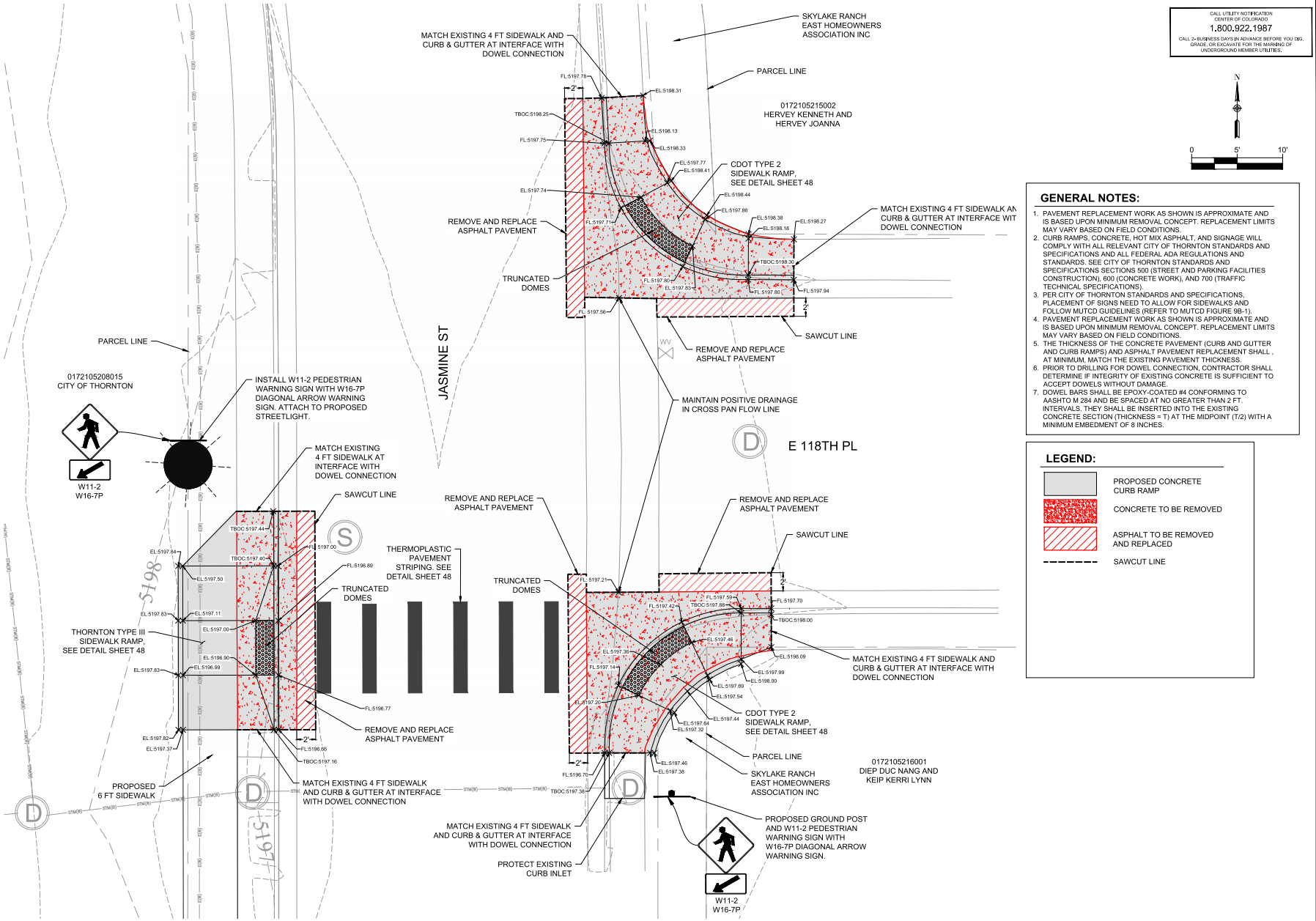
SUBMITTAL:
BID SUBMITTAL

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

#	REVISION	DATE

SHEET TITLE:
GESC DETAILS-6

SHEET #:
46



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.

N

0 5' 10'

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

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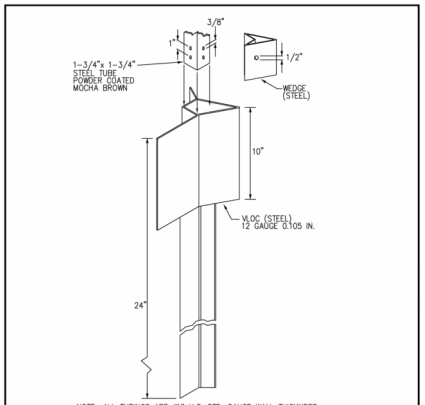
CHECKED BY: JFD
ORIGINAL DATE: MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
SIDEWALK RAMPS AND CROSSING PLAN

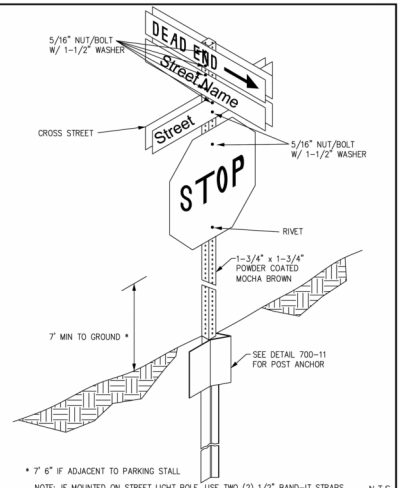
SHEET #:
47



NOTE: ALL TUBINGS ARE #12 U.S. STD. GAUGE WALL THICKNESS.
SIGN POST INSTALLATION SHALL FOLLOW THE MANUFACTURER'S INSTRUCTIONS AND THESE SPECIFICATIONS:
1. THE SIGN POST ANCHOR SHALL BE DRIVEN INTO THE GROUND TO 1" ABOVE THE GROUND. SIDEWALK SHALL BE POURED AROUND SIGN POST ANCHOR OR EXISTING SIDEWALK SHALL BE CORE DRILLED AND SEALED AROUND THE POST ANCHOR.
2. INSERT SIGN POST INTO ANCHOR ASSEMBLY 6 INCHES AND INSTALL WEDGE.
3. INSTALLED SIGN AND POST SHALL BE PLUMB AND FREE OF VERTICAL AND LATERAL MOVEMENT.

N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: FEBRUARY 2003 REVISED: APRIL 2010
SIGN POST ANCHOR DETAIL	DRAWING NO. 700-11

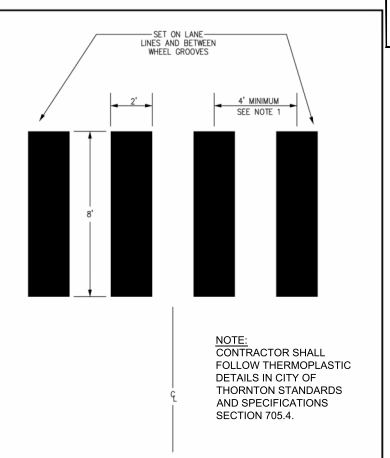


* 7' 6" IF ADJACENT TO PARKING STALL

NOTE: IF MOUNTED ON STREET LIGHT POLE, USE TWO (2) 1/2" BAND-IT STRAPS

N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: FEBRUARY 2003 REVISED: AUG 2012
SIGN ASSEMBLY DETAIL	DRAWING NO. 700-12



NOTE:
CONTRACTOR SHALL FOLLOW THERMOPLASTIC DETAILS IN CITY OF THORNTON STANDARDS AND SPECIFICATIONS SECTION 705.4.

FIELD ADJUST SPACING TO AVOID VEHICLE TIRE PATHS.

N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: FEBRUARY 2003 REVISED: APRIL 2010
CROSSWALK PAVEMENT MARKING DETAIL	DRAWING NO. 700-18

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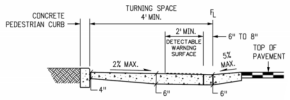
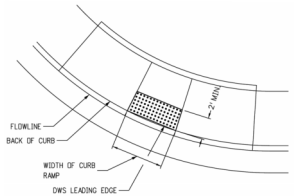


SECTION A-A



TYPE 2 CURB RAMP

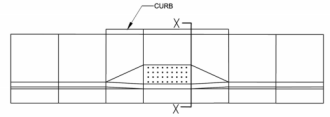
PARALLEL RAMP NOTES

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

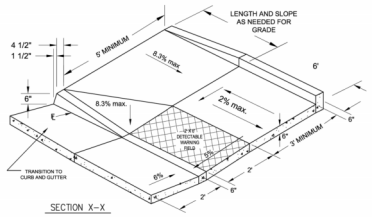
DETECTABLE WARNING SURFACE NOTES:

1. DETECTABLE WARNING SURFACES (DWS) SHALL BE INSTALLED AT SIDEWALK, OR SHARED USE PATH, TO STREET TRANSITIONS, AND SHALL CONSIST OF TRUNCATED DOME SURFACES. ANY TRUNCATED DOME PANELS OR PAVERS WHICH ARE USED MUST BE ON THE CDOT APPROVED PRODUCTS LIST (APL).
2. THE DETECTABLE WARNING SURFACE SHALL SPAN THE FULL WIDTH OF THE CURB RAMP, SHARED USE PATH, OR OTHER ROADWAY ENTRANCE AS APPLICABLE. A GAP OF 2 INCHES FROM THE EDGE OF THE DETECTABLE WARNING SURFACE TO THE EDGE OF THE CURB RAMP OR SHARED USE PATH IS PERMITTED.
3. WHEN DETECTABLE WARNING SURFACES ARE PLACED ON A SLOPE GREATER THAN 5.0%, TRUNCATED DOMES SHOULD BE ALIGNED IN THE DIRECTION OF THE RAMP RUN; OTHERWISE DOMES ARE NOT REQUIRED TO BE ALIGNED. TRUNCATED DOMES SHALL BE IN A SQUARE GRID OR RADIAL PATTERN. WHEN PLACED RADIALLY, PLACE ADJACENT DWS PLATES EDGE TO EDGE. EDGES OF CUT PLATES SHALL BE STRAIGHT.
4. LOCATE ONE CORNER OF THE DWS LEADING EDGE AT THE BACK OF CURB. NO POINT ON THE LEADING EDGE OF THE DWS MAY BE MORE THAN 5 FT. FROM THE BACK OF CURB. WHEN ANY POINT OF THE LEADING EDGE OF THE DWS WILL BE GREATER THAN 5 FT. FROM THE BACK OF CURB, PLACE THE DWS RADIALLY AT THE BACK OF CURB.
5. WHERE PERPENDICULAR DIRECTIONAL RAMPS ABUT A WALKABLE SURFACE, THE LEADING EDGE OF THE DWS SHALL NOT BE PLACED FURTHER THAN 2 FEET FROM THE BACK OF CURB. IF THE RADIUS OF A CORNER MAKES THIS IMPOSSIBLE, ORIENT THE CURB RAMP PERPENDICULAR TO THE CURB AND GUTTER.
6. IF THE DETECTABLE WARNING SURFACE IS CUT, GRIND OFF THE REMAINING PORTION OF ANY CUT TRUNCATED DOMES. SEAL ALL CUT PANEL EDGES WITH AN APL SEALANT TO PREVENT WATER DAMAGE.
7. TRUNCATED DOME PLATES SHALL BE EMBEDED IN THE CONCRETE CURB RAMP WHILE THE CONCRETE IS PLASTIC.
8. DWS SHALL NOT BE PLACED OVER GRADE BREAKS.

CDOT TYPE 2 PARALLEL CURB RAMP DETAILS



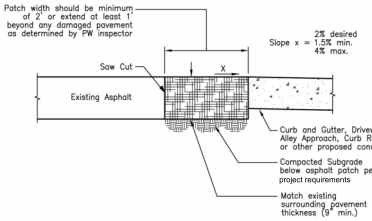
NOTES
1. DETECTABLE WARNING FIELD SHALL BE CAST-IN-PLACE RED EAST JORDAN IRON WORKS OR APPROVED EQUAL.
2. CONCRETE SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS SECTION 600-CONCRETE WORK, 4500PSI CDOT CLASS D CONCRETE WITH FIBER MESH REINFORCEMENT
3. CHANGES IN GRADE SHALL NOT EXCEED 11%.



SECTION X-X

N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: APRIL 2010 REVISED:
TYPE III SIDEWALK RAMP (TEE)	DRAWING NO. 500-14



NOTE:
1. CONTRACTOR SHALL FOLLOW ALL HOT MIX ASPHALT GUIDANCE PROVIDED IN CITY OF THORNTON STANDARDS AND SPECIFICATIONS SECTION 504.
2. PATCH METHOD (E.G. "T" PATCH) MAY BE REQUIRED BY CITY INSPECTOR BASED ON CONDITION OF SURROUNDING PAVEMENT AND SUBGRADE.

ASPHALT PATCH DETAIL

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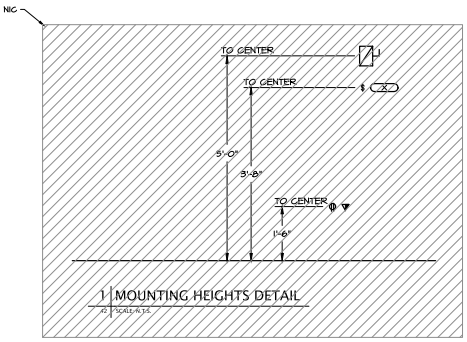
ORIGINAL DATE: MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
SIDEWALK RAMPS AND CROSSING DETAILS

SHEET #:
48



1 | MOUNTING HEIGHTS DETAIL

x2 SCALE: N.T.S.

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
DWG(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)
LTG	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

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

1. THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL NECESSARY FOR A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM.
2. MATERIALS AND INSTALLATION SHALL COMPLY WITH CODES, LAWS AND ORDINANCES OF FEDERAL, STATE AND LOCAL GOVERNING BODIES HAVING JURISDICTION.
3. MATERIALS AND EQUIPMENT SHALL BE LISTED AND/OR LABELED BY U.L., ETL, CSA OR ANOTHER RECOGNIZED TESTING LAB.
4. 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.
5. 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.
6. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO GOVERNMENTAL AGENCIES AND UTILITY COMPANIES SHOP DRAWINGS, WHICH ARE REQUIRED BY THESE AGENCIES, FOR THEIR APPROVAL.
7. 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.
8. 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 REWORK 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.
9. 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.
10. 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.
11. 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.
12. SUBMIT ELECTRONIC COPIES OF THE FOLLOWING SHOP DRAWINGS FOR REVIEW.
    A. PANELBOARDS, AND METERING EQUIPMENT
    B. DISCONNECTS
    C. LIGHT FIXTURES
    D. PROVIDE "AS-BUILT" DRAWINGS AND SUBMIT TO ARCHITECT/DESIGNER.
13. PROVIDE THE FOLLOWING INFORMATION, PER IECC 2021 C408.2.5.2 TO THE PARTY RESPONSIBLE FOR PROJECT COMMISSIONING PLAN (COMMISSIONING AGENT/ MECHANICAL ENGINEER) AND ELECTRICAL ENGINEER.
    a. CUTSHEETS FOR ALL INSTALLED LIGHTING AND LIGHTING CONTROLS.
    b. OPERATION AND MAINTENANCE MANUALS FOR EACH PIECE OF INSTALLED LIGHTING, REQUIRED ROUTINE MAINTENANCE ACTIONS, CLEANING AND RECOMMENDED RELAMPING SHALL BE CLEARLY IDENTIFIED.
    c. 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.
14. ALL MATERIAL, EQUIPMENT, WIRING DEVICES, ETC. SHALL BE NEW UNLESS SPECIFICALLY INDICATED AS EXISTING TO BE REUSED.
15. 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.
16. SHOULD ACTUAL FIELD CONDITIONS REQUIRE INDICATED CIRCUIT DESIGNATIONS TO VARY, INDICATE THE CIRCUIT NUMBER USED ON THE "AS-BUILT" DRAWINGS.
17. 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.
18. PROVIDE COMPLETE METAL RACEWAY SYSTEMS AND ENCLOSURES FOR ALL WIRING THROUGHOUT THE EXTENT OF THE REQUIRED DISTRIBUTION SYSTEM.
    A. UTILIZE RIGID POLYVINYL CHLORIDE CONDUIT (PVC) IN THE FOLLOWING LOCATIONS:
        a. UNDERGROUND
    B. UTILIZE ELECTRICAL METALLIC TUBING (EMT), MINIMUM SIZE OF 3/4", IN THE FOLLOWING LOCATIONS:
        a. SERVICE AND FEEDERS
        b. POWER CIRCUIT HOMERUN
        c. BRANCH CIRCUITS IN CONCEALED OR EXPOSED LOCATIONS
19. ALL NEW CIRCUITS SHALL HAVE A GROUND WIRE INSTALLED.
20. 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.
21. ALL RECEPTACLES SHALL BE SPECIFICATION GRADE NEMA 5-20R, UNLESS OTHERWISE NOTED.
22. 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.
23. ALL EXISTING ELECTRICAL SERVICES NOT SPECIFICALLY INDICATED TO BE REMOVED OR ALTERED SHALL REMAIN AS THEY PRESENTLY EXIST.
24. 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.
25. CONTRACTOR TO CONDUCT FUNCTIONAL TESTING OF LIGHTING CONTROLS EQUIPMENT AS REQUIRED BY IECC 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 C405.A

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STAMP:
COLORADO REGISTERED
BRANDON J. JOHNSON
35717
03/25/2024
PROFESSIONAL ENGINEER

PROJECT:
SKYLAKE RANCH OPEN LAND IMPROVEMENTS
11890 HOLLY STREET

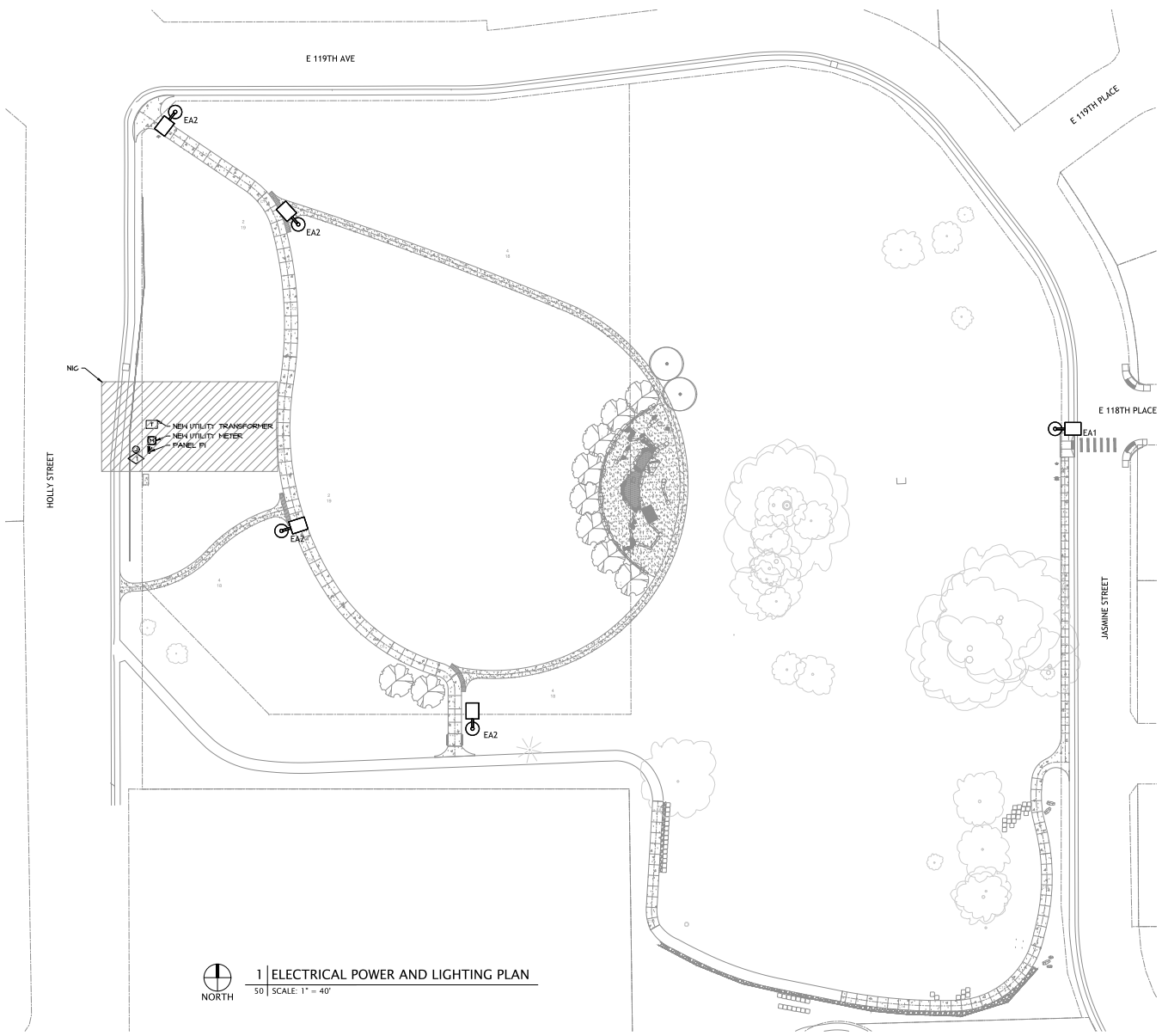
SUBMITTAL:
BID SUBMITTAL

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 #:
49



1 | ELECTRICAL POWER AND LIGHTING PLAN
50 | SCALE: 1" = 40'

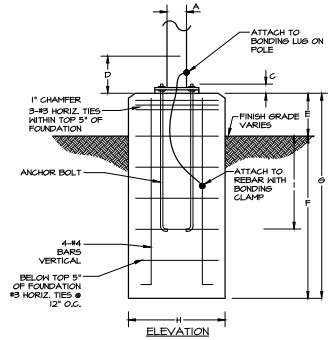
NORTH

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.

NIC

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 B	SIZE	C	D	E	F	G	H	I
EA1	20'0"	4"	PER MANUFACTURER			2'0"	6'0"	8'0"	24"	36"	
EA2	20'0"	4"	PER MANUFACTURER			0'3"	6'0"	6'3"	24"	36"	

2 | POLE BASE DETAIL
50 | SCALE: NONE

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COLORADO REGISTERED PROFESSIONAL ENGINEER
BRIAN J. JOHNSTON
35717
03/25/2024

PROJECT:
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11890 HOLLY STREET

SUBMITTAL:
BID SUBMITTAL

PROJECT #: 20-27A
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DRAWN BY: MLT, SPM, BYF
CHECKED BY: BJJ
ORIGINAL DATE: MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
ELECTRICAL POWER AND LIGHTING PLAN

SHEET #:
50

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PANEL 'P1'

VOLTAGE L-L: 240
VOLTAGE L-N: 120
TYPE: 1PH/3W
MOUNTING: SURFACE
NOTES:

LOCATION: PEDESTAL
BUS RATING: 100 AMPS
MAIN CB: 100 A/2P
FED FROM: UTILITY XFMR
AIC RATING: 10K A.I.C.

CIR NO	LOAD TYPE	LOAD VA	LOAD DESCRIPTION (NOTE N#)	CIRCUIT BREAKER POLE	CIRCUIT BREAKER TRIP	CIRCUIT BREAKER TYPE	BUS	CIRCUIT BREAKER TYPE	CIRCUIT BREAKER TRIP	CIRCUIT BREAKER POLE	LOAD DESCRIPTION (NOTE N#)	LOAD VA	LOAD TYPE	CIR NO
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=SUSPEED PANEL
CB TYPE: GFCI=5MA GROUND FAULT CIRCUIT INTERRUPTER, GFEP=30MA GROUND FAULT PROTECTION FOR EQUIPMENT, ARC=ARC FAULT CIRCUIT INTERRUPTER
CAFCI=COMBINATION ARC FAULT & 5MA GROUND FAULT CIRCUIT INTERRUPTER, SHT=SHUNT TRIP, HTM=HANDLE TIE WITH GROUPINGS #
HC=HANDLE CLAMP FOR LOCKING IN ON/OFF POSITION, LOCK=PERMANENTLY LOCKABLE BREAKER

LOAD TYPE	LOAD	MULT	DEMAND LOAD	
LIGHTING:	0	1.25	0	VA
RECEPTACLE:	0	1.0	0	VA
OVER 10KI	0	0.5	0	VA
MOTOR:	0	1.0	0	VA
LRGST MOTOR:	0	1.25	0	VA
EQUIPMENT:	0	1.0	0	VA
KITCH EQUIP:	0	0	0	VA
CONTINUOUS:	0	1.25	0	VA
SUSPEED PNL:	0	1.0	0	VA

TOTAL CONNECTED LOADS		
	A	B
VA	0	0

TOTAL DEMANDED LOADS		
	A	B
VA	0	0
AMPS	0	0

TOTAL ON PANEL: 0 KVA, 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.

NIC

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLTAGE	SOURCE QTY	SOURCE WATT	SOURCE TYPE	SOURCE CCT/CRI	MAX WATTS	LUMEN OUTPUT	DIMMING	FIXTURE FINISH	MOUNTING LOCATION	MOUNTING INFORMATION BOF/RFD/OFH	NOTES
EA1	POLE MOUNTED SOLAR POWERED LED AREA LIGHT	FIRSTLIGHT	SCL2-SPMU-BK-T4-MM-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-SPMU-BK-T5-MM-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

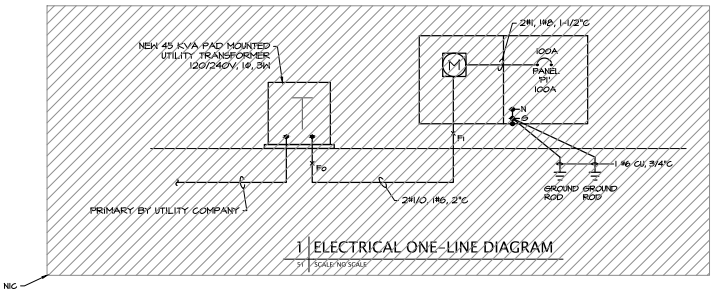
GENERAL NOTES:
A. ALL REFLECTOR LAMPS SHALL BE PROVIDED AS WIDE FLOOD DISTRIBUTION, WDN.
B. LUMENS LISTED ARE DELIVERED LUMENS, NOT INITIAL.
C. FOR ALL SPECIFIED LUMINAIRES, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MOUNTING HARDWARE, ACCESSORIES, COMPONENTS, LEADER/JUMPER CABLES, 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 / -18 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 APPERTUNANCES SUCH AS CONCRETE BASE PER POLE BASE DETAIL.

FAULT CURRENT CALCULATION SCHEDULE

POINT	LOCATION DESCRIPTION	LENGTH (L) /ft	VOLTAGE (L-L)	VOLTAGE (L-N)	PHASE	WIRE SIZE	CONDUCTOR MATERIAL	CONDUCTOR TYPE	CONDUIT MATERIAL	VOLTAGE CLASS	C VALUE	# OF PARALLEL RUNS	Isc AVAILABLE UPSTREAM	Isc AT EQUIP. (SCH OR (L-L))	FUSE LET THRU (LT)	POINT
TO	UTILITY XFMR													ISCXFM		FO
F1	PANEL P1	5	240	120	1	#2	COPPER	THREE SINGLE CONDUCTORS	STEEL	600V	19424	1	ISCXFM	ISCP1	---	F1

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 EATON'S 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.



1 ELECTRICAL ONE-LINE DIAGRAM
SCALE: NO SCALE

NIC

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CHECKED BY: BJJ
ORIGINAL DATE: MARCH 22, 2024

#	REVISION	DATE

SHEET TITLE:
ELECTRICAL SCHEDULES

SHEET #:
51

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

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF ACI 318, ACI 304, AND ACI 315.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AT 28 DAYS WITH 2.5-4.5% ENTRAINED AIR .
3. 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.
4. 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.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS OTHERWISE NOTED.
6. ALL REINFORCING STEEL SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED.
7. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE.
8. SPLICES SHALL BE CLASS "B".
9. ALL HOOKS SHALL BE STANDARD UNLESS NOTED OTHERWISE.
10. 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..... ¾"
      - BEAMS AND COLUMNS..... 1½"
11. WHEN PARALLEL REINFORCING BARS ARE PLACED IN LAYERS OF TWO OR MORE, THE CLEAR SPACING BETWEEN LAYERS SHALL BE AT LEAST 1".
12. 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.
13. LOCATE AND AVOID CUTTING IN-PLACE REBAR WHEN DRILLING HOLES IN CONCRETE SLABS.
14. COLUMN BASE PLATES SHALL BE PLACED WITH SETTING TEMPLATES.
15. 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.
16. MAKE ALL BARS CONTINUOUS AROUND CORNERS OR PROVIDE CORNER BARS OF EQUAL SIZE AND SPACING.
17. 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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(303) 538-7200

STAMP:
COLORADO REGISTERED PROFESSIONAL ENGINEER
03/26/2024

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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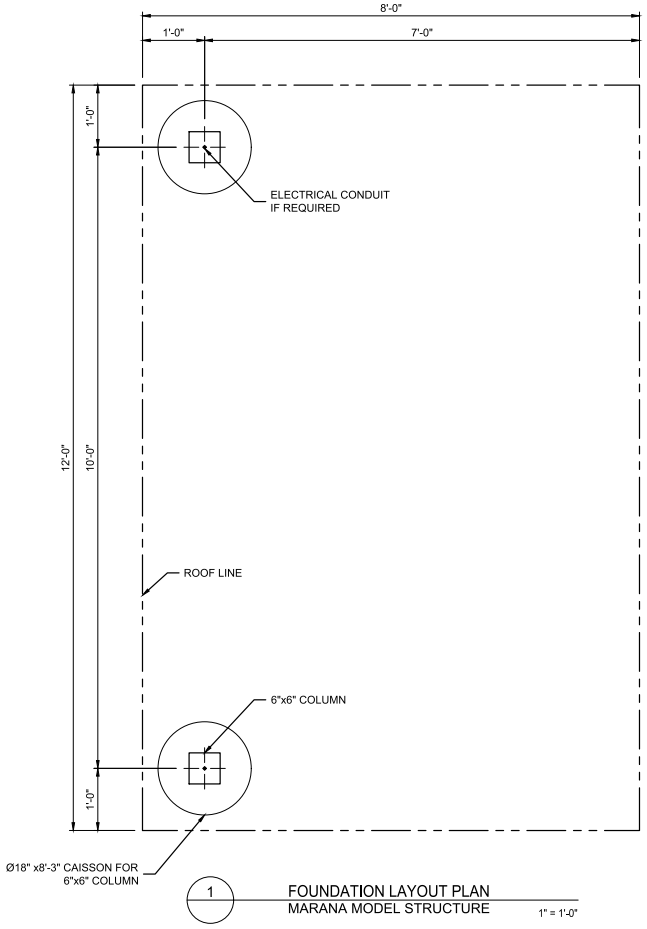
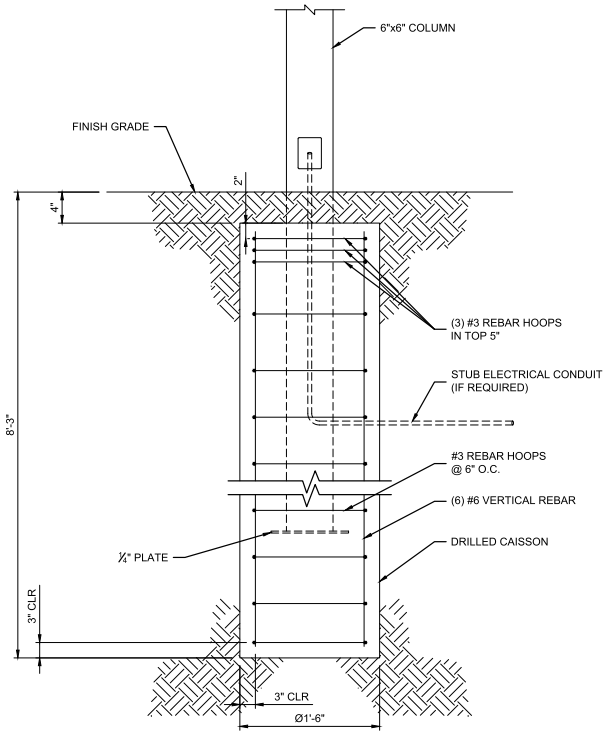


1 FOUNDATION LAYOUT PLAN
MARANA MODEL STRUCTURE
1" = 1'-0"



2 FOUNDATION ELEVATION PLAN
MARANA MODEL STRUCTURE
1-1/2" = 1'-0"

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SHEET TITLE:
SHADE STRUCTURE FOUNDATIONS

SHEET #:
53

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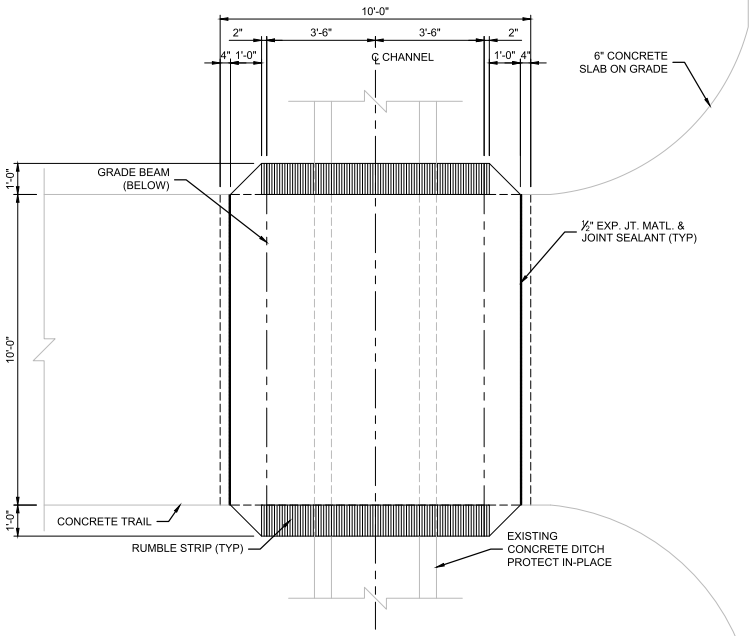
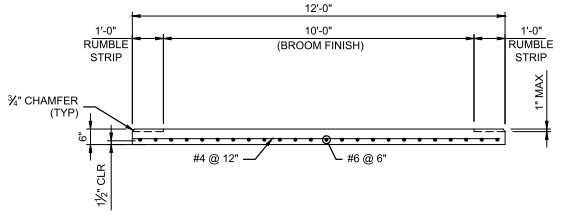


3 DITCH CROSSING - PLAN
1/2" = 1'-0"

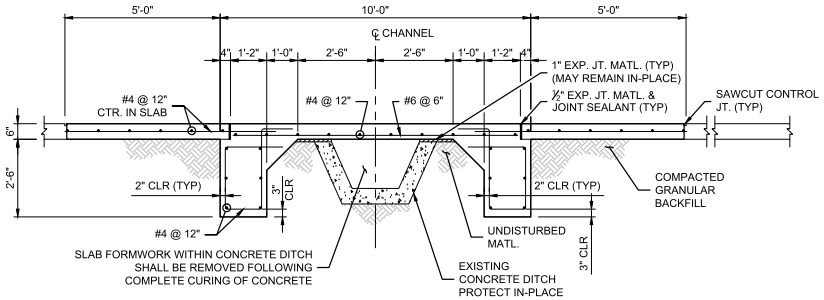
EXISTING TRAIL



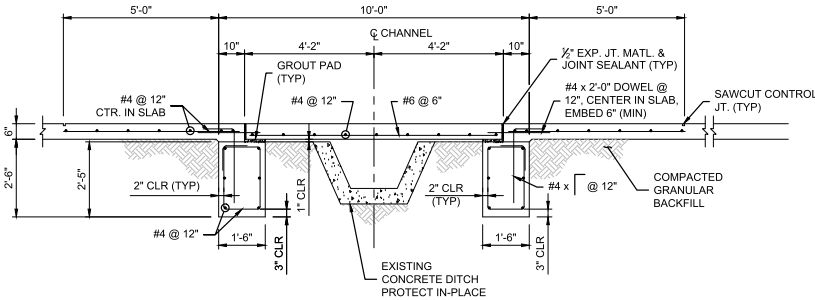
5 DITCH CROSSING - TYPICAL SECTION AT CROSSING
1/2" = 1'-0"

NOTES:

1. CONTRACTOR TO DETERMINE WHICH ALTERNATIVE TO BE USED FOR DITCH CROSSING.
2. PRECAST PANEL SHALL BE FABRICATED WITH RUMBLE STRIPS AS SHOWN IN TYPICAL SECTION. SHOP DRAWING SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.
3. PRECAST PANEL SHALL NOT BEAR ON EXISTING CONCRETE DITCH AT ANY LOCATION.
4. ANY LIFTING HOOKS OR BARS PROJECTING FROM TOP SURFACE OF PRECAST SHALL BE REMOVED AND HOLES PATCHED.



4 DITCH CROSSING - LONGITUDINAL SECTION
(CAST-IN-PLACE ALTERNATIVE)
1/2" = 1'-0"



4 DITCH CROSSING - LONGITUDINAL SECTION
(PRECAST ALTERNATIVE)
1/2" = 1'-0"

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SHEET TITLE:
DITCH CROSSING DETAILS
SHEET #:
54