



N.T.S.



GENERAL CONSTRUCTION NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
3. ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
4. ALL BACKFILL, SUB-BASE, AND/OR BASE COURSE (CLASS 6) MATERIAL SHALL BE COMPACTED PER THE SOILS ENGINEER'S RECOMMENDATIONS, AND APPROVED BY EL PASO COUNTY PCD.
5. ALL STATIONING IS CENTERLINE OF IMPROVEMENTS UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE FLOW LINE UNLESS OTHERWISE INDICATED AS TOP BACK OF CURB (TBC), ASPHALT (ASP), OR TOP OF INLET OR BOX (TOB).
6. ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO EPC ECM APPENDIX K - 1.2C.
7. ALL INTERSECTION ACCESSES TO BE CONSTRUCTED WITH A 25 FOOT SIGHT VISIBILITY TRIANGLES IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" VERTICAL IN THIS AREA.
8. ALL CULVERTS AND STORM DRAIN PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDPE), REINFORCED CONCRETE PIPE (RCP). ALL CULVERTS SHALL BE PLACED COMPLETE WITH FLARED END SECTIONS. ADEQUACY OF MATERIAL THICKNESS FOR ANY CSP INSTALLED SHALL BE VERIFIED BY OWNER'S GEOTECHNICAL ENGINEER TO SUPPORT MINIMUM 50 YEAR DESIGN LIFE. CULVERTS MUST CONFORM TO EPC ECM SECTION 3.32 - CULVERTS.
9. ASPHALT THICKNESS AND BASE COURSE THICKNESS (COMPACTED) FOR ROADS SHALL BE PER DESIGN REPORT BY OWNER'S GEOTECHNICAL ENGINEER. OWNER'S GEOTECHNICAL ENGINEER TO BE ON SITE AT THE TIME OF ROAD CONSTRUCTION TO EVALUATE SOIL CONDITIONS AND DETERMINE IF ADDITIONAL MEASURES ARE NECESSARY TO ASSURE STABILITY OF THE NEW ROADS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO CONSTRUCTION.

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

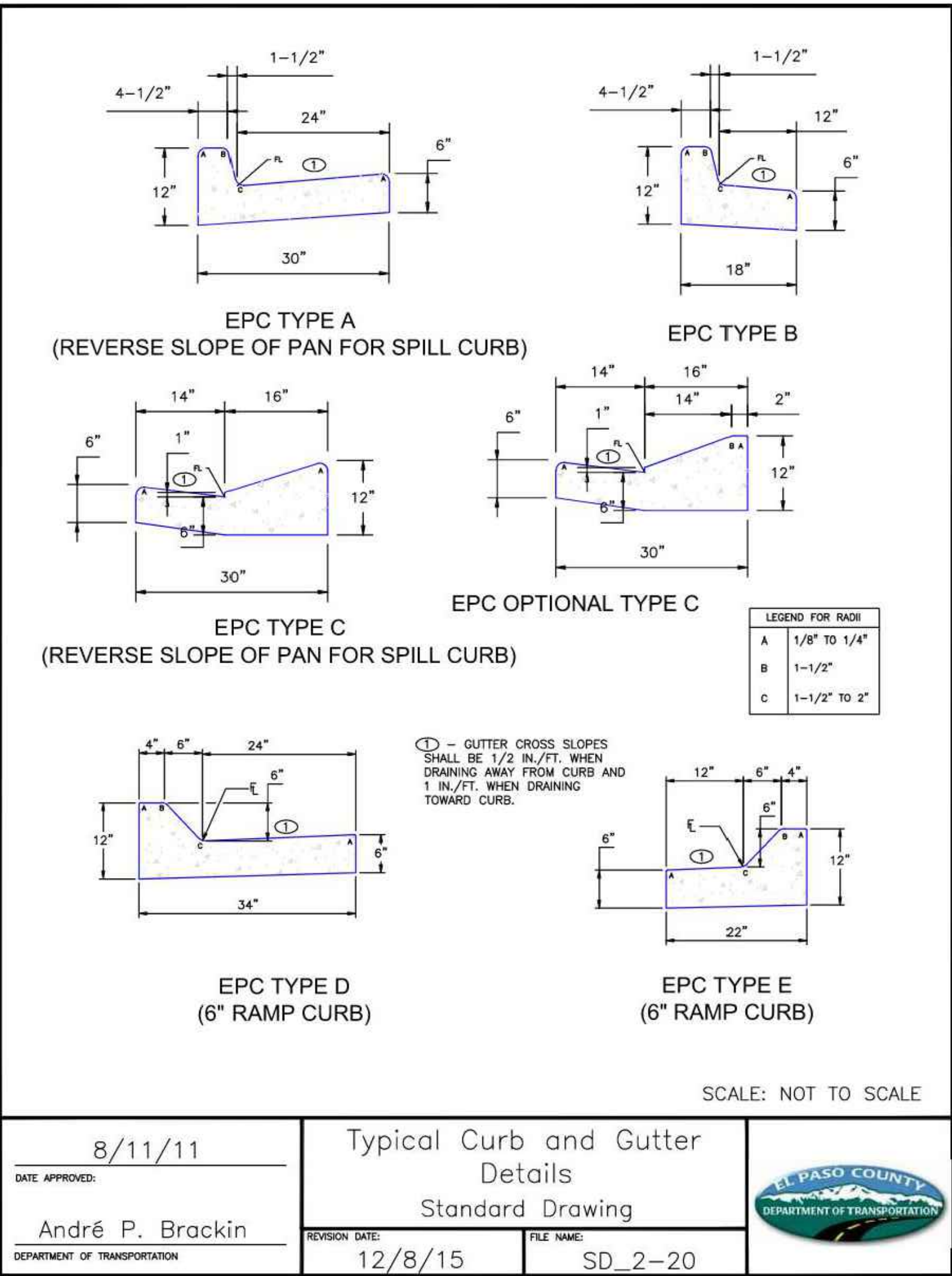
1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
  - a. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
  - b. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
  - c. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
  - d. CDOT M & S STANDARDS
4. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PCD - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
8. CONTRACTOR SHALL NOT DEViate FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
9. ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
10. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
11. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
12. SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DPW AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DPW, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
15. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.

SIGNING AND STRIPING NOTES:

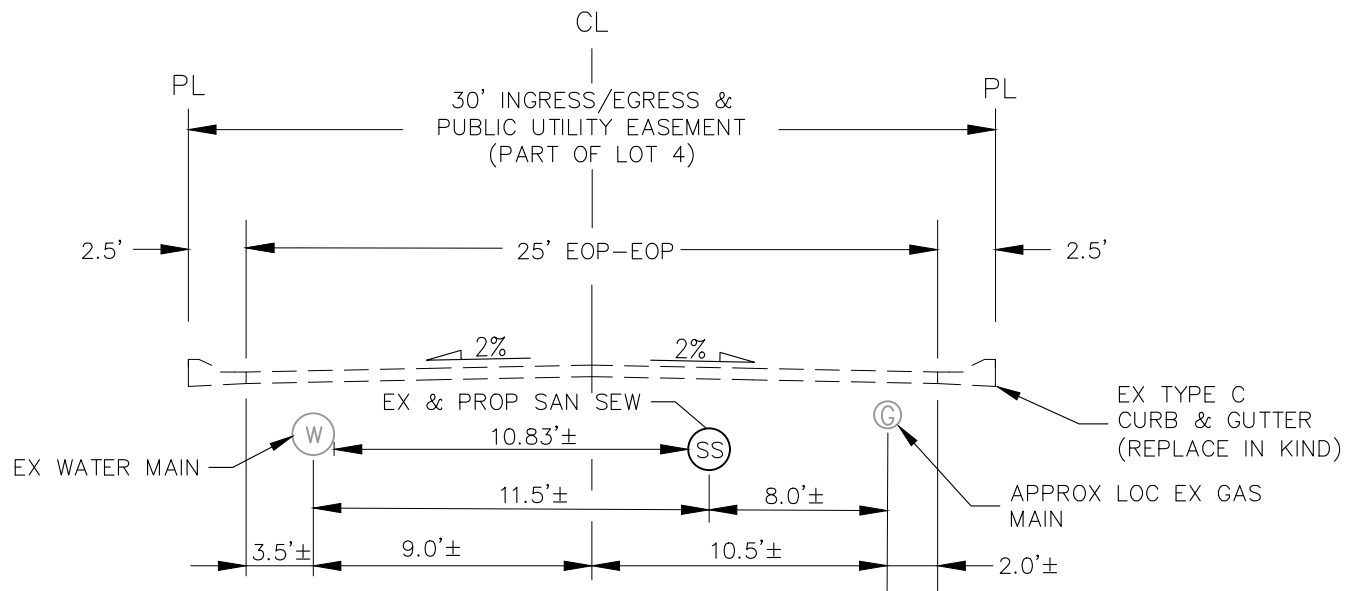
1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
3. ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT.
4. ALL SIGNS SHOWN ON THE SIGNING AND STRIPING PLAN SHALL BE NEW SIGNS. EXISTING SIGNS MAY REMAIN OR BE REUSED IF THEY MEET CURRENT EL PASO COUNTY AND MUTCD STANDARDS.
5. STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
6. ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
7. ALL STREET NAME SIGNS SHALL HAVE "D" SERIES LETTERS, WITH LOCAL ROADWAY SIGNS BEING 4" UPPER-LOWER CASE LETTERING ON 8" BLANK AND NON-LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER-LOWER CASE ON 12" BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULTI-LANE ROADWAYS WITH SPEED LIMITS OF 40 MPH OR HIGHER SHALL HAVE 8" UPPER-LOWER CASE LETTERING ON 18" BLANK WITH A WHITE BORDER THAT IS NOT RECESSED. THE WIDTH OF THE NON-RECESSED WHITE BORDERS SHALL MATCH PAGE 255 OF THE 2012 MUTCD "STANDARD HIGHWAY SIGNS"
8. ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
9. ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75" X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SLIPBASE DESIGN.
10. ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
11. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS SHALL BE A MINIMUM 125 MIL THICKNESS PREFORMED THERMOPLASTIC PAVEMENT MARKINGS WITH TAPERED LEADING EDGES PER CDOT STANDARD S-627-1. WORD AND SYMBOL MARKINGS SHALL BE THE NARROW TYPE. STOP BARS SHALL BE 24" IN WIDTH. CROSSWALKS LINES SHALL BE 12" WIDE AND 8' LONG PER CDOT S-627-1.
12. ALL LONGITUDINAL LINES SHALL BE A MINIMUM 15MIL THICKNESS EPOXY PAINT. ALL NON-LOCAL RESIDENTIAL ROADWAYS SHALL INCLUDE BOTH RIGHT AND LEFT EDGE LINE STRIPING AND ANY ADDITIONAL STRIPING AS REQUIRED BY CDOT S-627-1.
13. THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
14. THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.

SPECIAL NOTE:

THE PARTIES RESPONSIBLE FOR THIS PLAN HAVE FAMILIARIZED THEMSELVES WITH ALL CURRENT ACCESSIBILITY CRITERIA AND SPECIFICATIONS AND THE PROPOSED PLAN REFLECTS ALL SITE ELEMENTS REQUIRED BY THE APPLICABLE ADA DESIGN STANDARDS AND GUIDELINES AS PUBLISHED BY THE UNITED STATES DEPARTMENT OF JUSTICE. APPROVAL OF THIS PLAN BY EL PASO COUNTY DOES NOT ASSURE COMPLIANCE WITH THE ADA OR ANY REGULATIONS OR GUIDELINES ENACTED OR PROMULGATED UNDER OR WITH RESPECT TO SUCH LAWS.



TYPICAL CURB AND GUTTER DETAIL (SD 2-20C)  
SCALE: NTS



EX/PROP. E. PLATTE AVENUE  
SCALE: NTS



FOR LOCATING  
& MARKING  
GAS,  
ELECTRIC,  
WATER &  
TELEPHONE  
LINES



FOR BURIED UTILITY INFORMATION  
48 HRS BEFORE YOU DIG  
CALL 1-800-922-1987

CLEARWAY, LOT 5

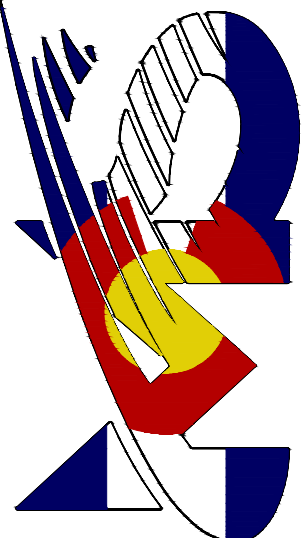
CONSTRUCTION NOTES AND DETAILS

PROJECT NO. 44-042A  
DESIGNED BY: DLM  
DRAWN BY: CLP  
CHECKED BY: DLM

DATE: 09-09-2022  
SCALE: HORIZONTAL: N/A  
VERTICAL: N/A

CN02  
SHEET 2 OF 16

210 N WAHATCH AVE, STE 305  
COLORADO SPRINGS CO 80903  
PHONE: 719.555.5465



CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF  
CIVIL CONSULTANTS, INC.

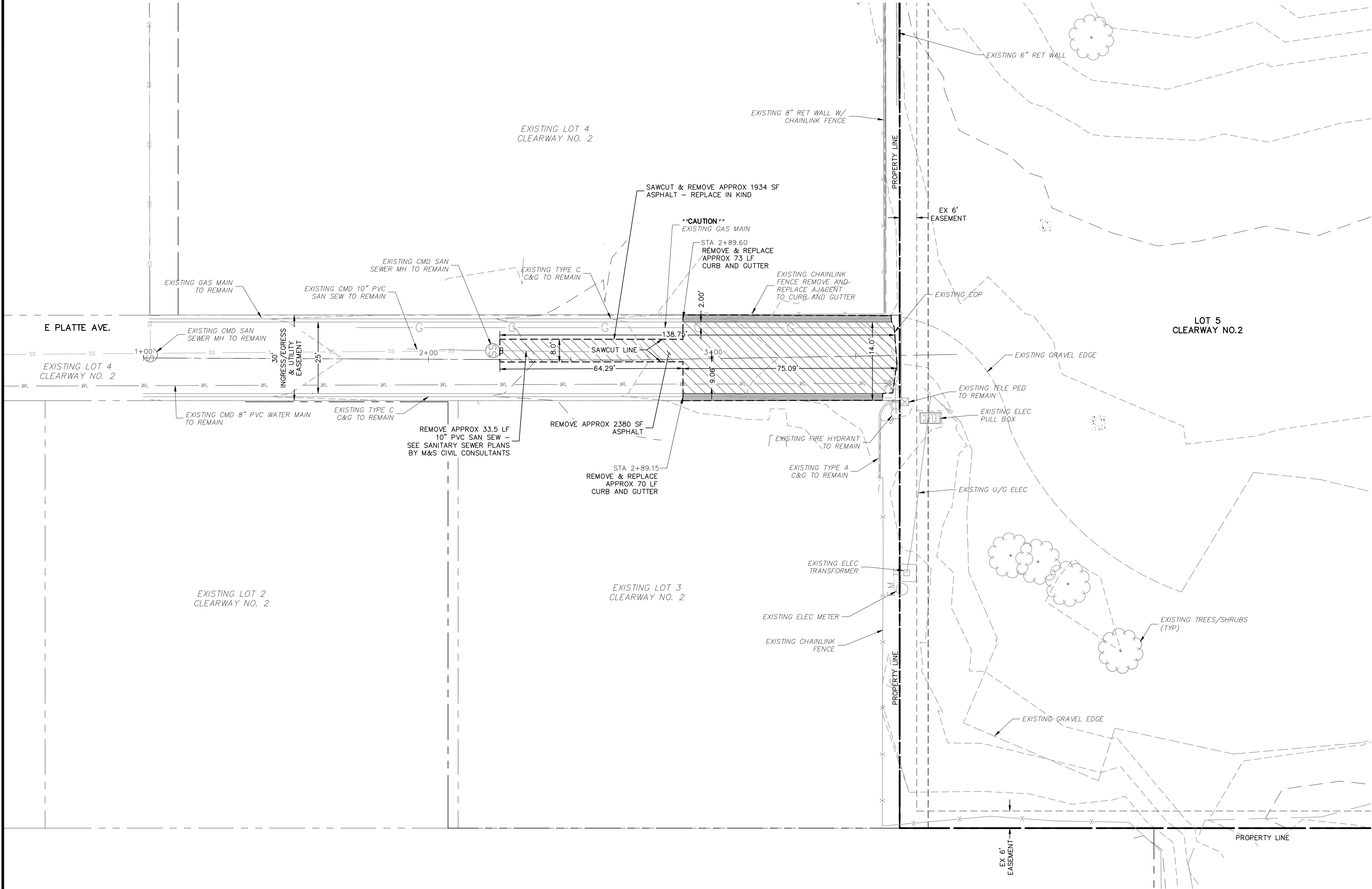
REVISIONS:  
NO. DATE BY DESCRIPTION

DATE: 9/9/2022 BY: [Signature] DESCRIPTION: [Signature]

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARE OF THESE PLANS.

CAUTION





EAST PLATTE AVE. DEMOLITION PLAN

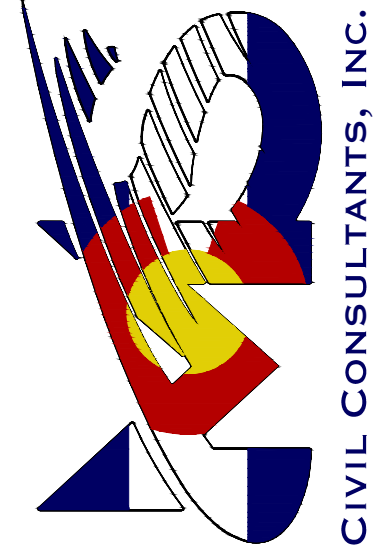
ABBREVIATION LEGEND

CL	CENTERLINE INTERSECTION	LT	LEFT
FL-FL	FLOWLINE INTERSECTION	RT	RIGHT
BT	BEGIN TRANSITION	FL	FLOWLINE
ET	END TRANSITION	TBC	TOP BACK OF CURB
PC	POINT OF CURVE	XPAN	CROSSSPAN
PCC	POINT OF COMPOUND CURVE	STD	STANDARD
PCR	POINT OF CURB RETURN	SHT	SHEET
PRC	POINT OF REVERSE CURVE	P&P	PLAN AND PROFILE
PT	POINT OF TANGENT	C&G	CURB AND GUTTER
EL	ELEVATION	W	WEST
CDS	CUL-DE-SAC	E	EAST
KN	KNUCKLE	ROW	RIGHT OF WAY
LP	LOW POINT	EOP	EDGE OF PAVEMENT
N	NORTH	WTR	WATER
S	SOUTH	SAN	SANITARY SEWER
HP	HIGH POINT	PVT	PRIVATE
PUB	PUBLIC	WV	WATER VALVE
C&G	CURB AND GUTTER	PED	PEDESTRIAN
CMD	CHEROKEE METRO DISTRICT		

LEGEND

SAWCUT LINE	---
SITE BOUNDARY	---
ADJACENT PROPERTY	---
EXIST STORM SEWER LINE	---
EX. UNDERGROUND ELECTRIC LINE	---
EX. SANITARY SEWER LINE	SS---
EX. WATER LINE	WL---
EX. GAS MAIN	G---
EX. FENCE	X---
EASEMENT	---
EX. STORM MH	ST
EX. SANITARY MANHOLE	SS
EX. WATER VALVE	WV
PAVEMENT DEMOLITION AREA	---
C&G DEMOLITION AREA	---

212 N. WABATCH AVE. STE 305  
COLORADO SPRINGS CO 80903  
PHONE: 719.555.5465



FOR AND ON  
BEHALF OF  
W&S CONSULTANTS,  
INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

NO.	DATE	BY	DESCRIPTION	APPROVED BY	DATE

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CAUTION

CLEARWAY, LOT 5

DEMOLITION PLAN

PROJECT NO. 44-042A	SCALE:	DATE:
DESIGNED BY: DLM	HORIZONTAL: 1"=20'	09-09-2022
DRAWN BY: CLP	VERTICAL: N/A	
CHECKED BY: DLM		

S101

SHEET 3 OF 16

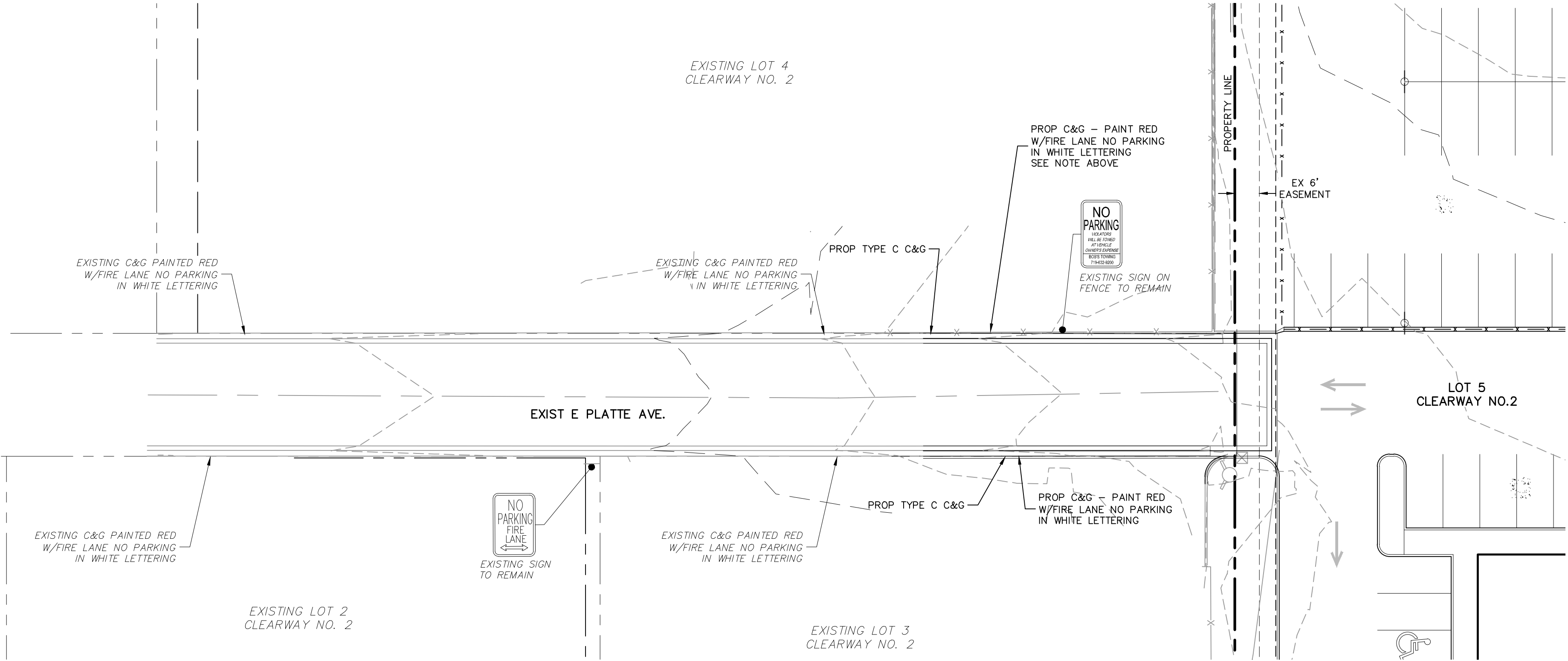


SAWCUT LINE  
SITE BOUNDARY  
ADJACENT PROPERTY  
EXIST STORM SEWER LINE  
EX. UNDERGROUND ELECTRIC LINE  
EX. SANITARY SEWER LINE  
EX. WATER LINE  
EX. GAS MAIN  
EX. FENCE  
EASEMENT  
PROP C&G  
EX. STORM MH  
EX. SANITARY MANHOLE  
EX. WATER VALVE  
NEW ASPHALT – MATCH EXISTING

1" = 20'

0 10 20 40  
Scale in Feet





NOTE TO CONTRACTOR:

1. ALL SIGNAGE INSTALLATION IS TO BE IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

NOTE:

- STRIPING ALONG CURB FACE AND TOP OF CURB SHALL BE:
1. 6" RED TRAFFIC PAINT STRIPE
  2. 4" WHITE REFLECTIVE LETTERING/WORDING WITH 3/4" STROKE STATING NO PARKING FIRE LANE
  3. LETTERING/WORDING SPACED EVERY 25'

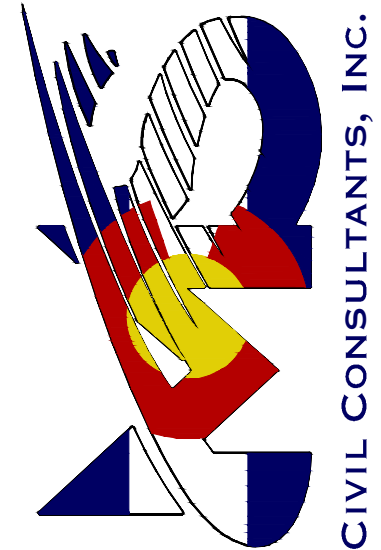
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C&G	CURB AND GUTTER	PED	PEDESTRIAN
OMD	CHEROKEE METRO DISTRICT		

LEGEND

SITE BOUNDARY	---
ADJACENT PROPERTY	---
EX. FENCE	-X-
EASEMENT	----
PROP C&G	=====
	(S)

212 N. WAHATCH AVE. STE 305  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.5465



VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON  
BEHALF OF  
VIRGIL A. SANCHEZ,  
INC.

NO.	DATE	BY	DESCRIPTION	APPROVED BY	DATE

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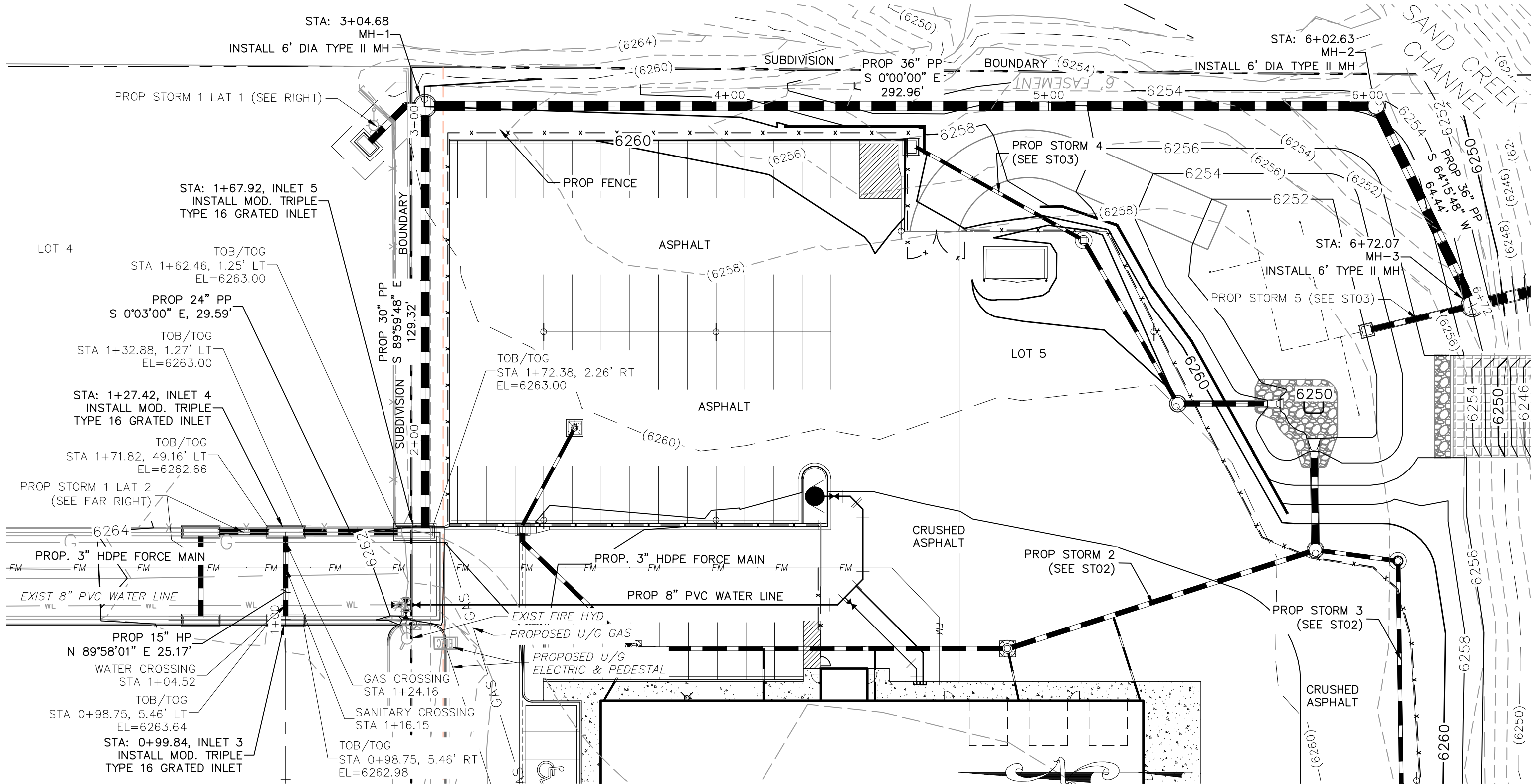
CAUTION

CLEARWAY, LOT 5

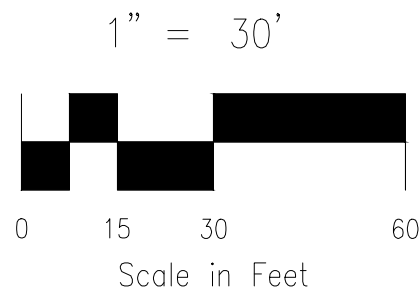
STRIPING AND SIGNAGE PLAN

PROJECT NO. 44-042A	SCALE: HORIZONTAL: 1"=20' VERTICAL: 1"=2'	DATE: 09-09-2022	S103
DESIGNED BY: DLM	DRAWN BY: CLP	CHECKED BY: DLM	





**STORM 1**  
**STA 0+99.84 TO STA 6+72.07**

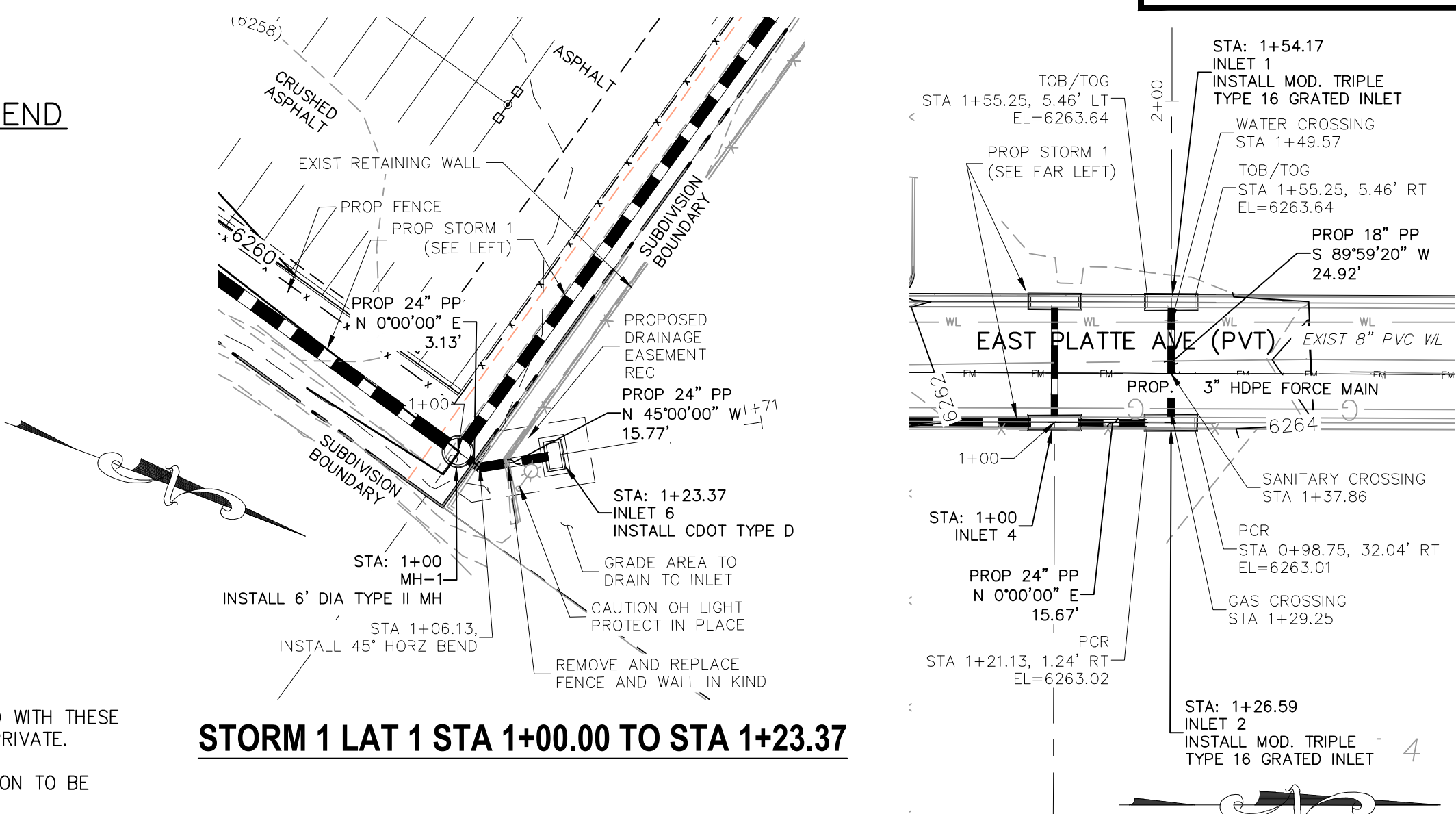


**ABBREVIATION LEGEND**

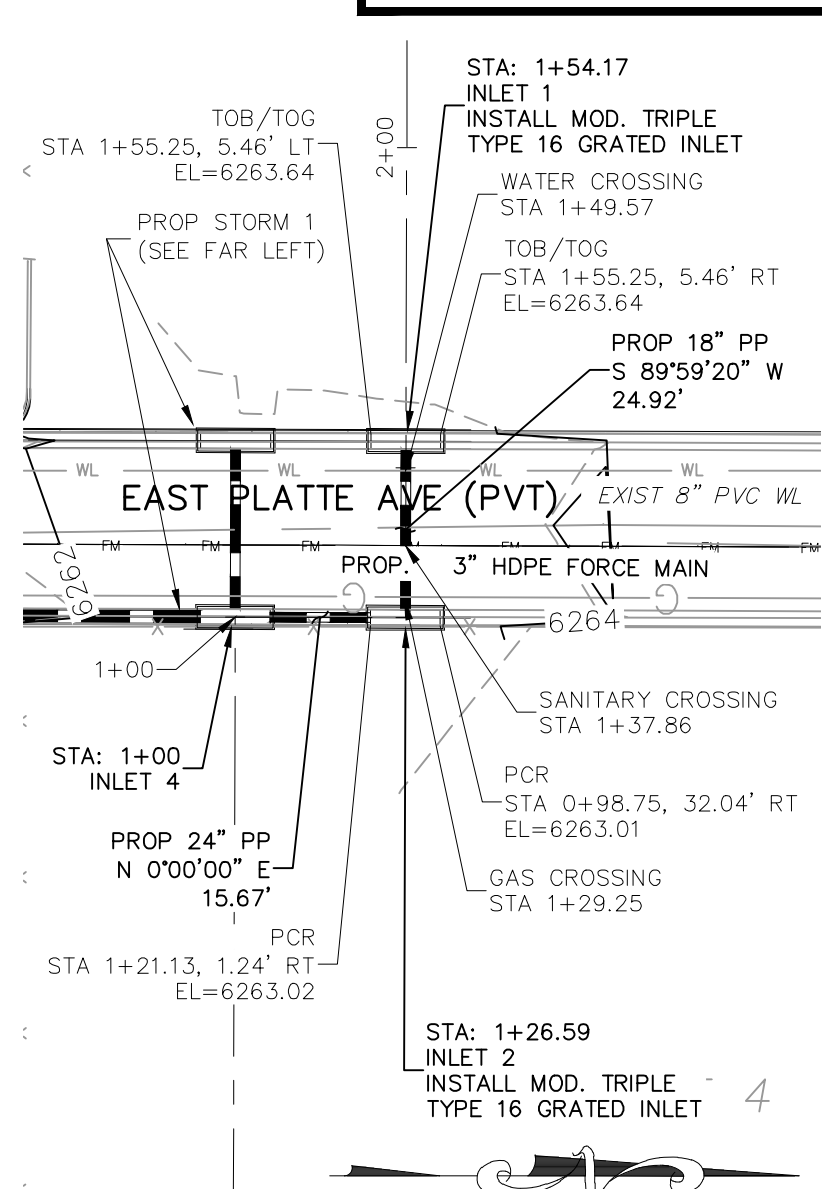
C&G	CURB AND GUTTER
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EX	EXISTING
LT	LEFT
N	NORTH
NTS	NOT TO SCALE
PUB	PUBLIC
PVT	PRIVATE
PROP	PROPOSED
RT	RIGHT
S	SOUTH
SAN	SANITARY SEWER
SLV	SLEEVE
SRV	SERVICE
STA	STATION
STM	STORM SEWER
W	WEST
WTR	WATER

**NOTE:**

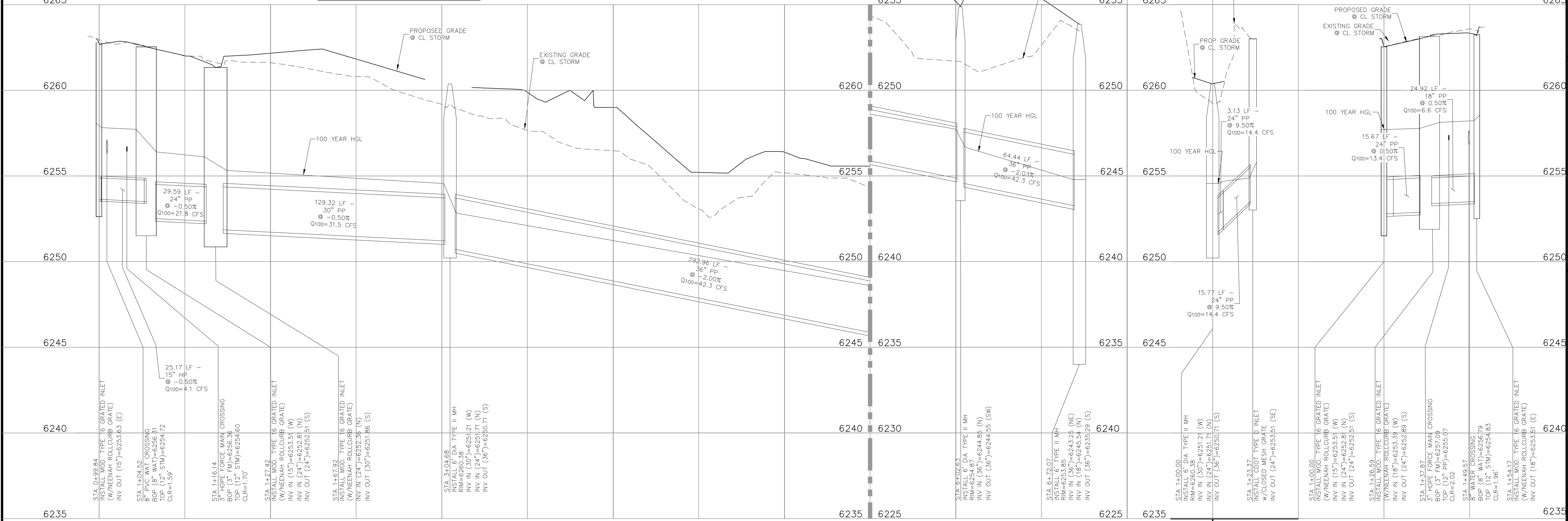
ALL STORM SEWER CONSTRUCTED WITH THESE PLANS SHALL BE CONSIDERED PRIVATE.  
GAS LINE NOT LOCATED, LOCATION TO BE DETERMINED BY CONTRACTOR



**STORM 1 LAT 1 STA 1+00.00 TO STA 1+23.37**



**STORM 1 LAT 2**  
**STA 1+00.00 TO STA 1+54.17**



**STORM 1 STA 0+99.84 TO STA 6+72.07**

**STORM 1 LAT 1 STA 1+00.00 TO STA 1+23.37** **STORM 1 LAT 2 STA 1+00.00 TO STA 1+54.17**



FOR LOCATING & MARKING  
GAS,  
ELECTRIC,  
WATER &  
TELEPHONE  
LINES

FOR BURIED UTILITY INFORMATION  
48 HRS BEFORE YOU DIG  
CALL 1-800-922-1987

CLEARWAY, LOT 5

STORM SEWER PLAN AND PROFILE

PROJECT NO. 44-042A

DATE: 09-09-2022

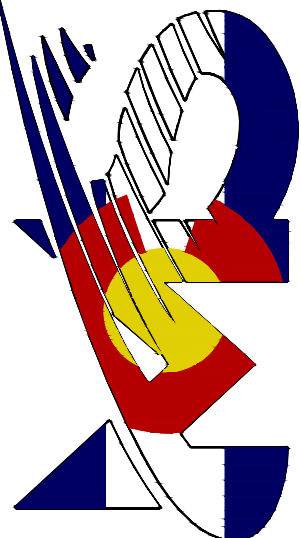
SCALE: HORIZONTAL: 1"=30' VERTICAL: 1"=3'

DESIGNED BY: DLM

DRAWN BY: CLP

CHECKED BY: DLM

212 N WAHATCH AVE, STE 305  
COLORADO SPRINGS CO 80903  
PHONE 719.555.5485



CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF  
MRS. CIVIL CONSULTANTS, INC.

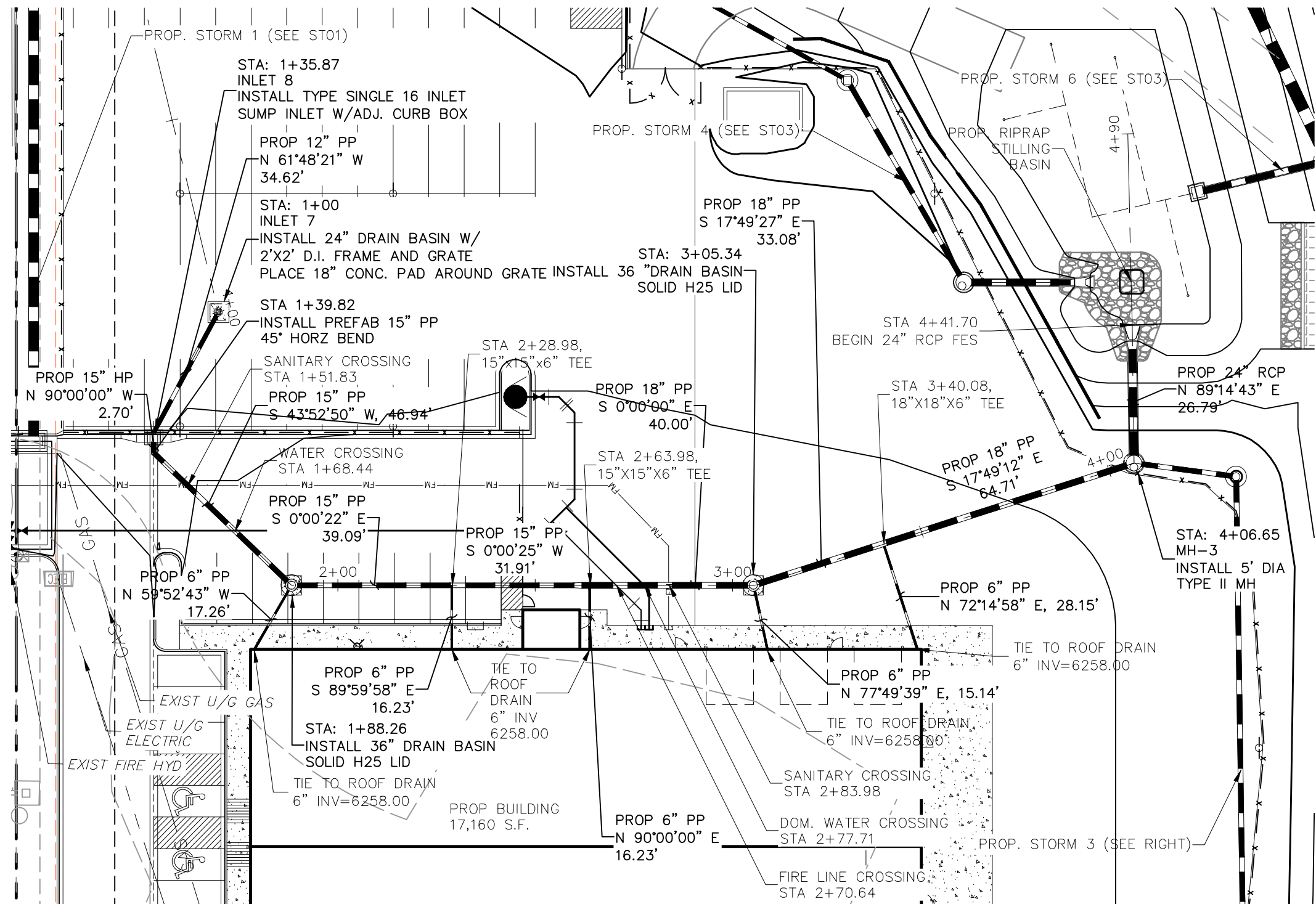
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 371160

REV	DATE	BY	DESCRIPTION

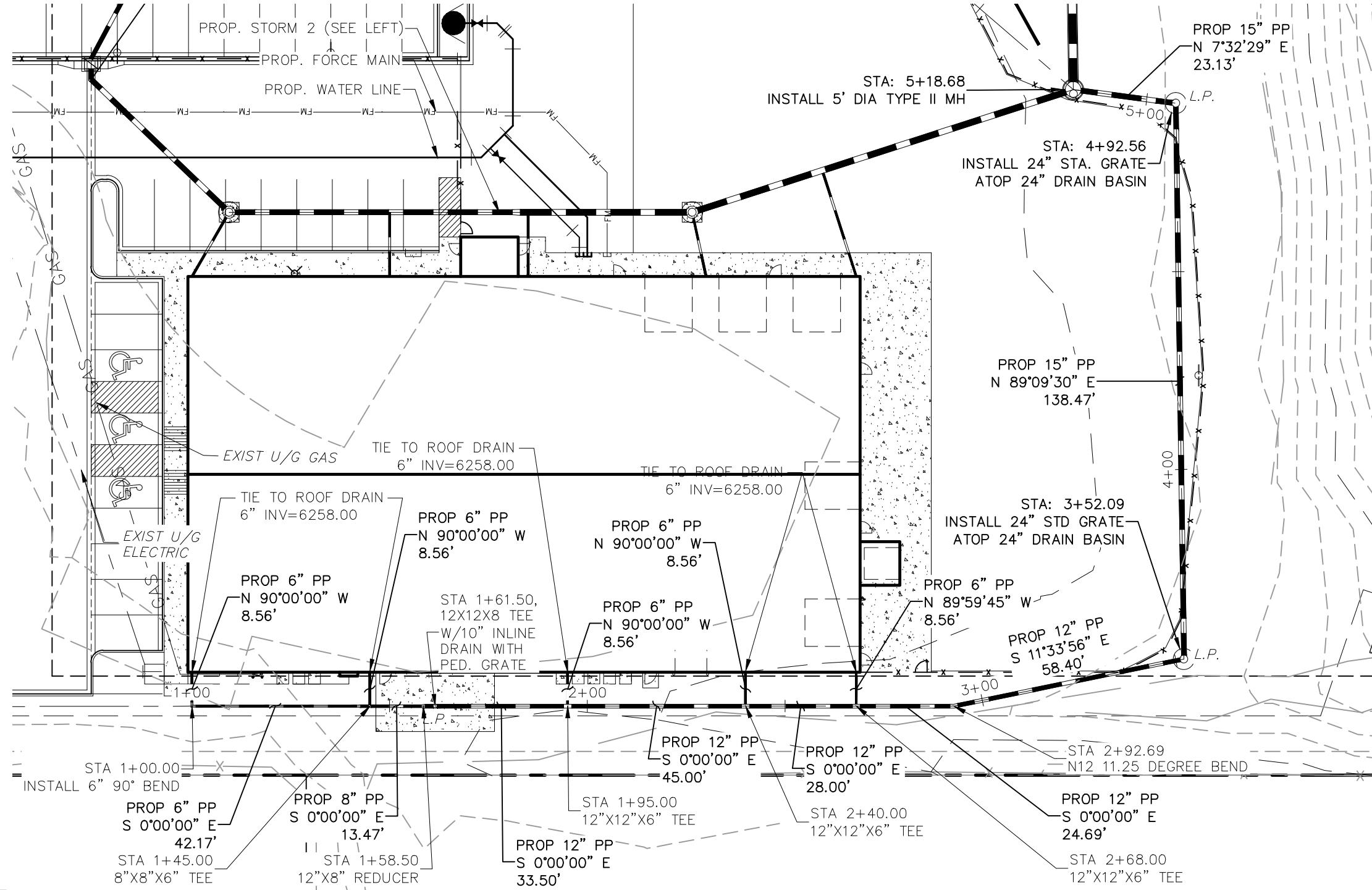
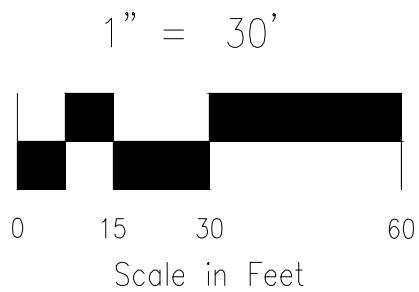
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CAUTION





**STORM 2**  
**STA 1+00.00 TO STA 4+41.70**



**STORM 3**  
**STA 1+00.00 TO STA 5+18.68**



**ABBREVIATION LEGEND**

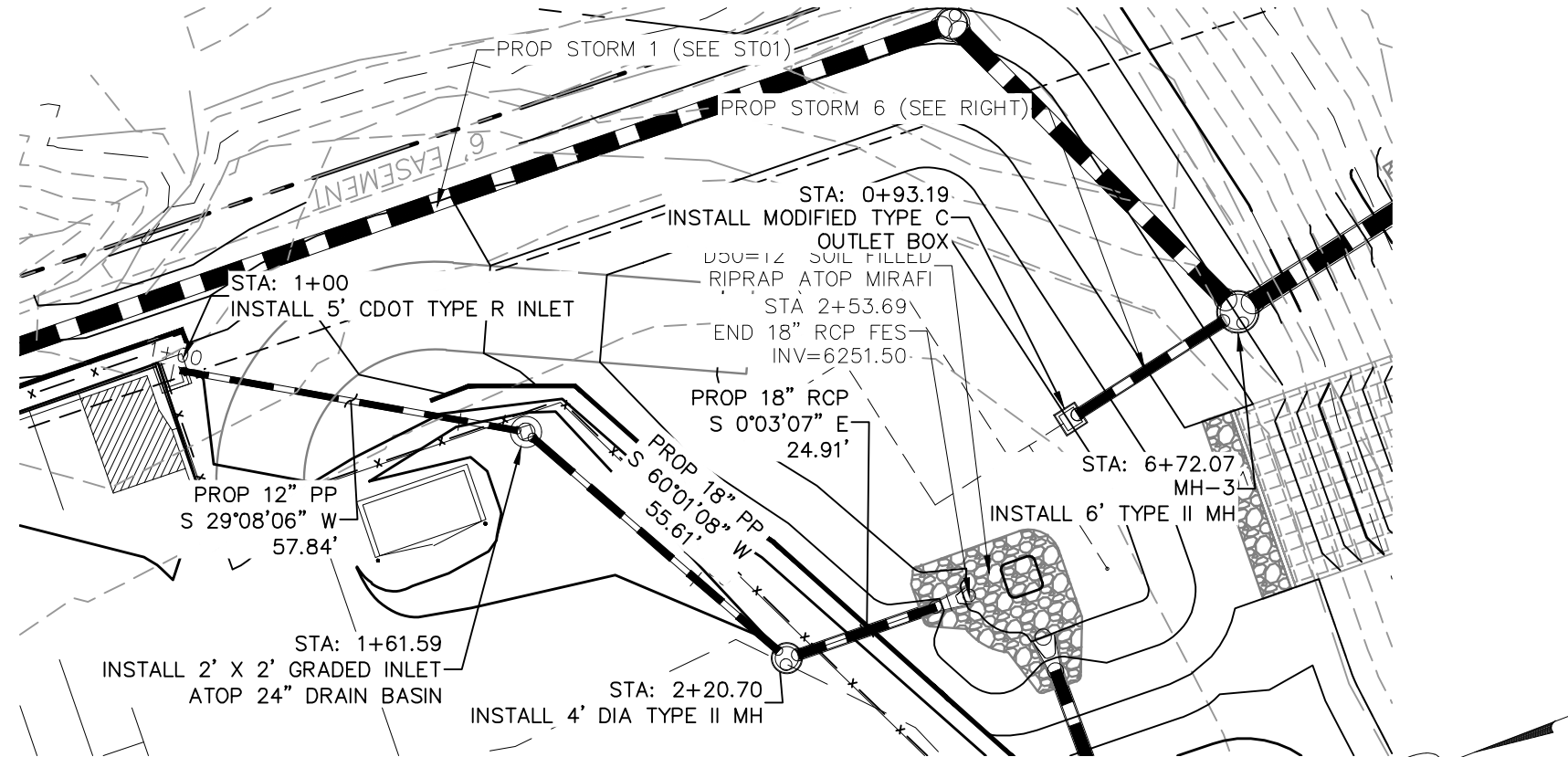
C&G	CURB AND GUTTER
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S	SOUTH
SAN	SANITARY SEWER
SLV	SLEEVE
SRV	SERVICE
STA	STATION
STM	STORM SEWER
W	WEST
WTR	WATER

**NOTE:**

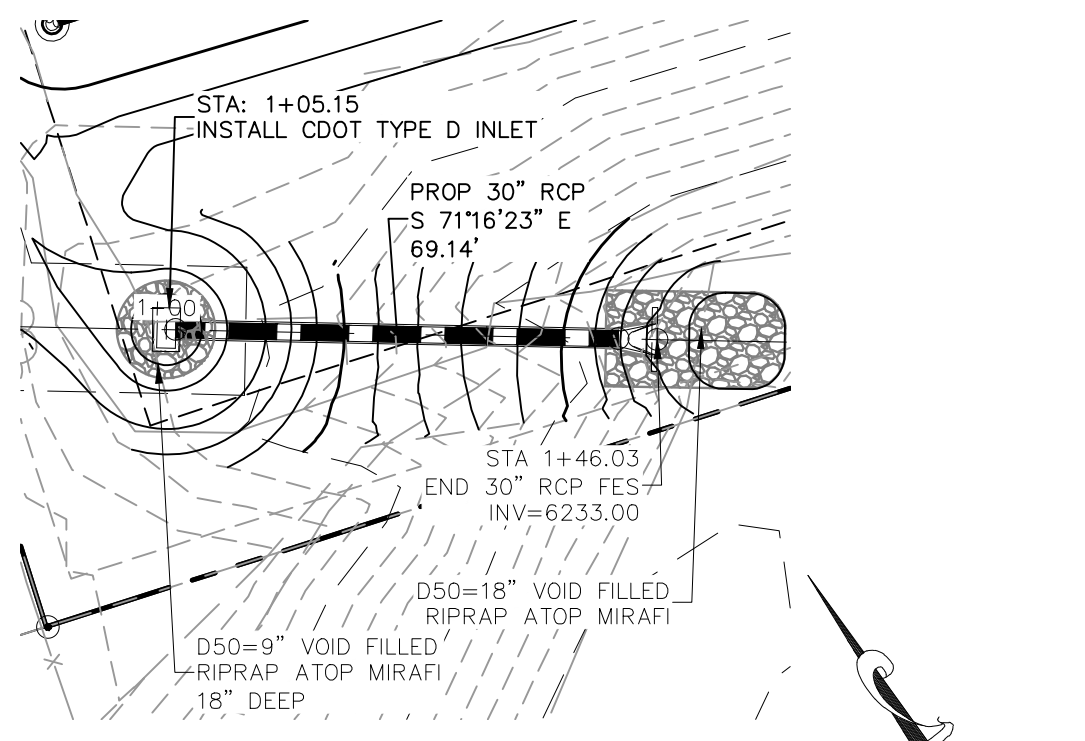
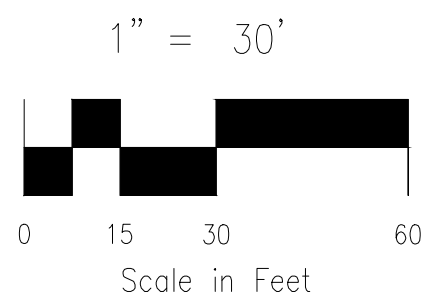
ALL STORM SEWER TO BE PRIVATE.  
CONTRACTOR TO CROSS REFERENCE  
DETAILED GRADING PLANS TO  
VERIFY TOP OF BOX OR GRATE  
ELEVATIONS

CLEARWAY, LOT 5		DATE: 09-09-2022	ST02
STORM SEWER PLAN AND PROFILE		SCALE: HORIZONTAL: 1"=30' VERTICAL: 1"=3'	SHEET 7 OF 16
PROJECT NO. 44-042A		DESIGNED BY: DLM	CHECKED BY: DLM
DRAWN BY: CUP			
212 N. WABATCH AVE., STE 305 COLORADO SPRINGS, CO 80903 PHONE 719.555.5485			
FOR AND ON BEHALF OF MRS. CIVIL CONSULTANTS, INC.			
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 371160			
REVISIONS:	NO.	DATE:	DESCRIPTION:
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARED BY THESE PLANS.			
CAUTION			

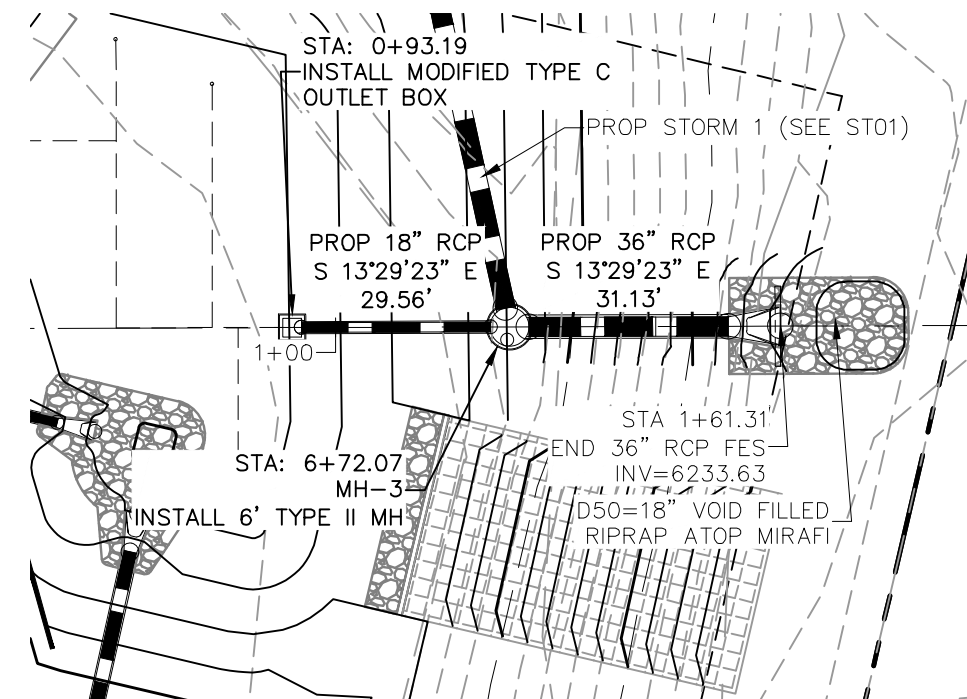




**STORM 4**  
**STA 1+00.00 TO STA 2+53.69**



**STORM 5**  
**STA 1+00.00 TO STA 1+46.03**



**STORM 6**  
**STA 0+93.19 TO STA 1+61.31**



**ABBREVIATION LEGEND**

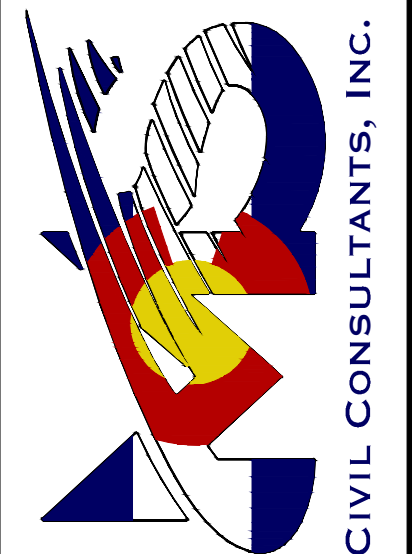
C&G	CURB AND GUTTER
CL	CENTERLINE
CONST	CONSTRUCTION
EL	ELEVATION
EX	EXISTING
LT	LEFT
N	NORTH
NTS	NOT TO SCALE
PUB	PUBLIC
PVT	PRIVATE
PROP	PROPOSED
RT	RIGHT
S	SANITARY SEWER
SLV	SLEEVE
SRV	SERVICE
STA	STATION
STM	STORM SEWER
W	WEST
WTR	WATER

**NOTE:**

ALL STORM SEWER TO BE PRIVATE.  
CONTRACTOR TO CROSS REFERENCE  
DETAILED GRADING PLANS TO  
VERIFY TOP OF BOX OR GRATE  
ELEVATIONS

CLEARWAY, LOT 5		DATE: 09-09-2022	
STORM SEWER PLAN AND PROFILE		SHEET 8 OF 16	
PROJECT NO. 44-042A		SCALE: HORIZONTAL: 1"=30' VERTICAL: 1"=3'	
DESIGNED BY: DLM		DRAWN BY: CJP	
CHECKED BY: DLM		ST03	

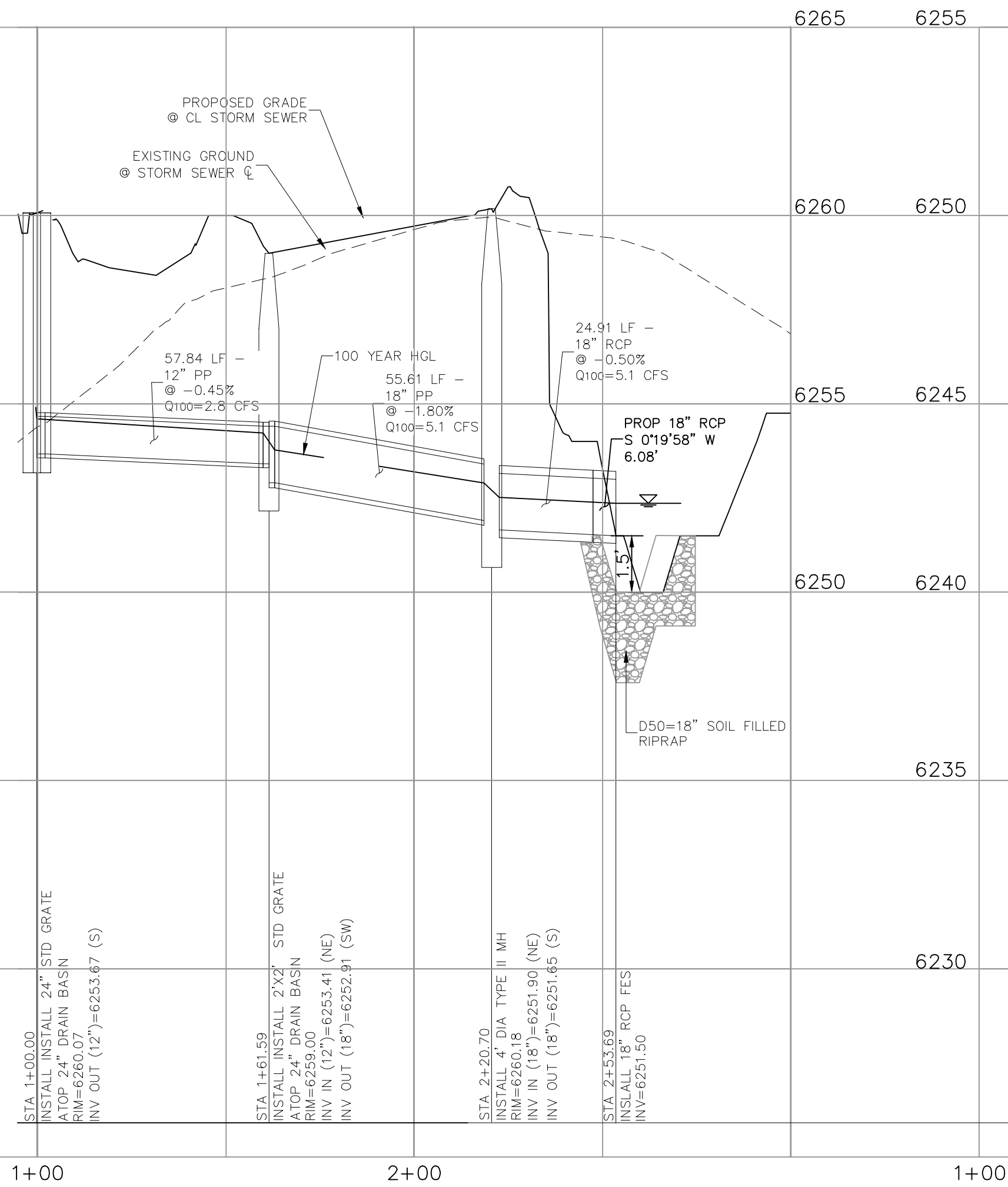
212 N. WAHATCH AVE. STE 305  
COLORADO SPRINGS CO 80903  
PHONE: 719.555.5485



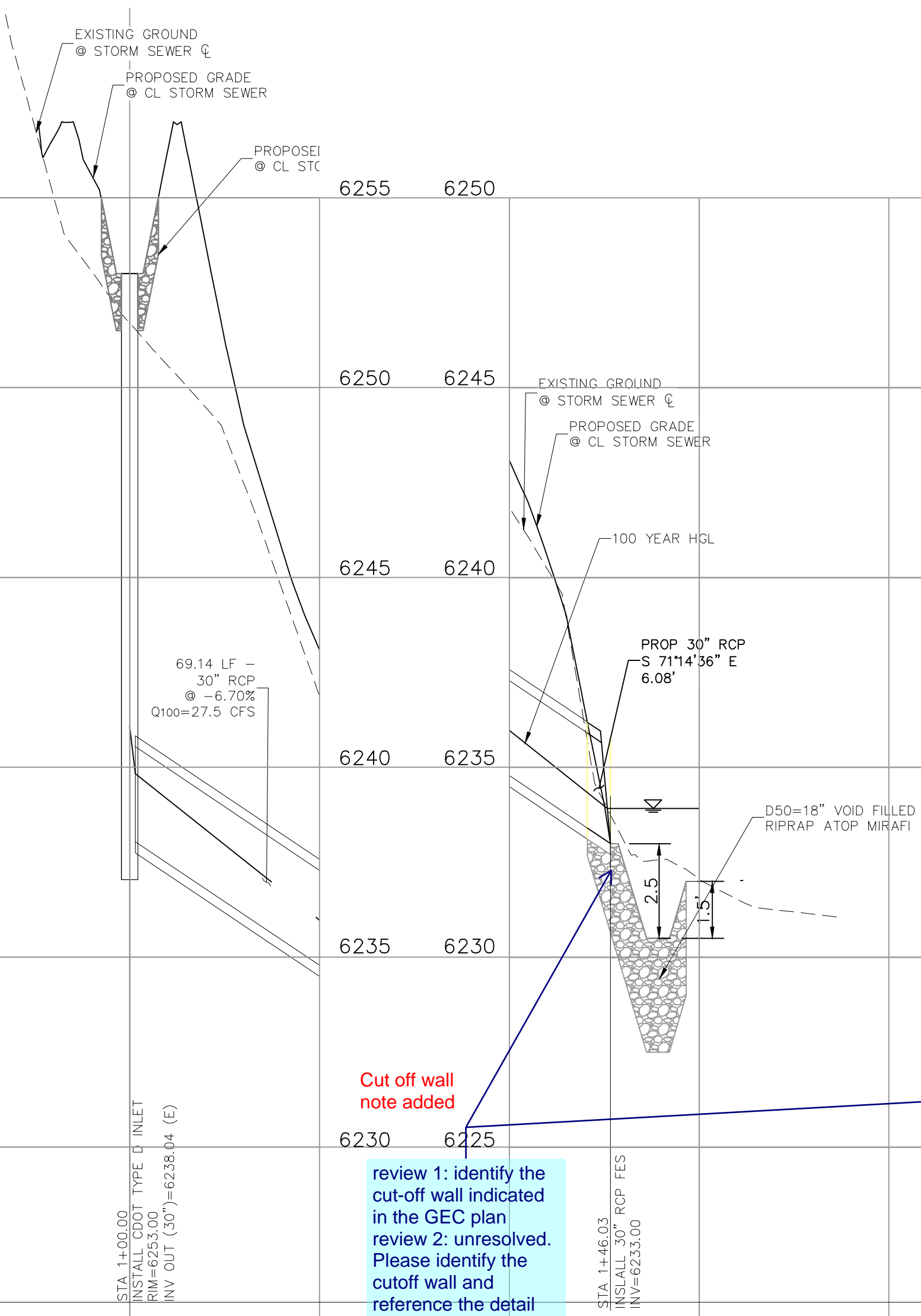
FOR AND ON  
BEHALF OF  
MKS CIVIL  
CONSULTANTS,  
INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

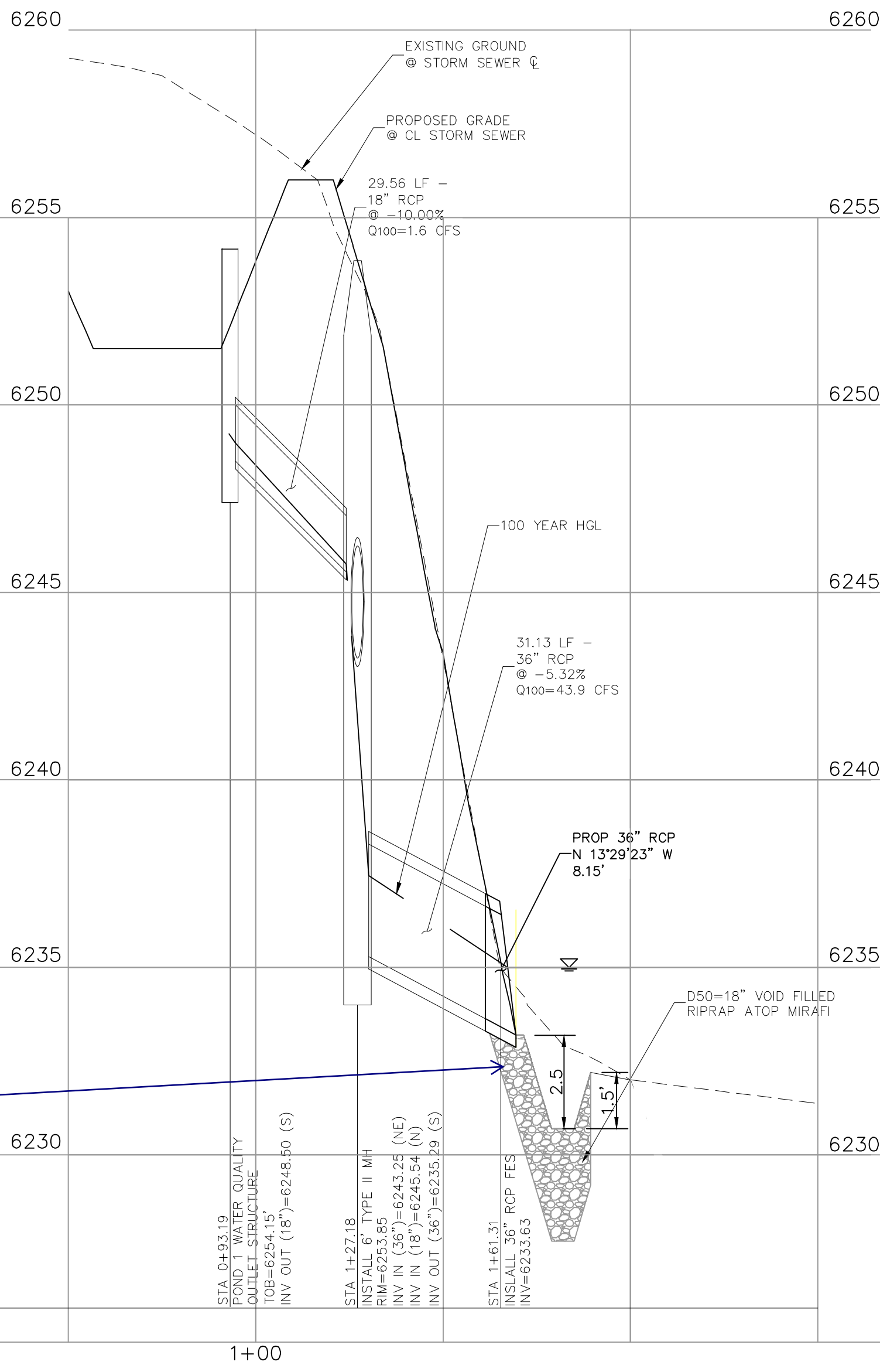
REVISIONS:		APPROVED BY:		DATE:	
NO.	DATE	BY	DESCRIPTION		
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARED BY THESE PLANS.					
CAUTION					



**STORM 4 STA 1+00.00 TO STA 2+53.69**



**STORM 5 STA 1+00.00 TO STA 1+46.03**



**STORM 6 STA 0+93.19 TO STA 1+61.31**

Cut off wall  
note added

review 1: identify the  
cut-off wall indicated  
in the GEC plan  
review 2: unresolved.  
Please identify the  
cutoff wall and  
reference the detail  
on the next page



STANDARD CONSTRUCTION NOTES:

1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIME INCLUDING THE FOLLOWING:

3.1 EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)

3.2 CITY OF COLORADO SPRINGS/EL PASO COUNTY ENGINEERING CRITERIA MANUAL VOLUMES 1 AND 2.

3.3 COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARDS SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.

3.4 CDOT M&S STANDARDS.
4. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ACCURACY SHOW EXISTING CONDITION BOTH ONSITE AND OFFSITE ON THE CONSTRUCTION PLANS. ANY MODIFICATION NECESSARY DUE TO CONFLICT OMISSIONS OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPERS RESPONSIBILITY TO RECTIFY.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORM WATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, US ARMY CORPS OF ENGINEER ISSUED 401 AND/OR 404 PERMITS AND COUNTY AND STATE FUGITIVE DUST PERMITS.
6. ANY TEMPORARY SIGNAGE AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOW AND MUTCD CRITERIA.
7. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DOT INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
8. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFFSITE DISTURBANCE GRADING, OR CONSTRUCTION.

STORM SEWER GENERAL NOTES

1. ALL STATIONING IS ALONG STORM SEWER CENTERLINE UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE INVERT UNLESS OTHERWISE INDICATED.
2. ALL STORM SEWER BENDS AND WYES SHOWN ON THE PLAN SHALL BE PREFABRICATED.
3. HORIZONTAL AND VERTICAL BENDS ARE INDICATED ON THE PLANS.
4. JOINTS SHALL BE IN ACCORDANCE WITH ASTM C443 "STANDARD SPECIFICATIONS FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKET." IN NO CASE SHALL THE MAXIMUM JOINT OPENING FOR STRAIGHT ALIGNMENT EXCEED 1 INCH OR ONE AND ONE-HALF INCH ON CURVED ALIGNMENT.
5. INLET DIMENSIONS SHOWN ON PLANS REFER TO DISTANCES FROM INSIDE FACES OF BOX BETWEEN THE WIDTHS AND LENGTHS.
6. MANHOLE WIDTHS AND LENGTHS SHOWN ON PLAN REFER TO THE EXTERIOR WALL DIMENSIONS.
7. ALL REINFORCED CONCRETE PIPE STORM SEWER SHALL BE A MINIMUM OF CLASS III. ALL POLYPROPYLENE PIPE SHALL BE ADS N-12 DUAL WALL PIPE OR APPROVED EQUAL. SPECIFIC SEGMENTS OF STORM SEWER SHALL BE REQUIRED TO BE CONSTRUCTED OF A MINIMUM OF 5000 PSI CONCRETE DUE TO EXCESSIVE VELOCITIES. REFER TO ADDITIONAL NOTES WITHIN CONSTRUCTION PLANS.
8. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
9. THE MH RING (FRAME) SHALL BE SET IN A BED OF GROUT. THE FRAME SHALL BE SURROUNDED WITH A GROUT IN UNPAVED AREA, OR A CONCRETE COLLAR IN PAVED AREA.
10. PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO ASTM C 478 (AASHTO M 199).
11. CAST IN PLACE MANHOLES SHALL BE CLASS B CONCRETE.
12. STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
13. ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI. VERTICAL STEEL SHALL BE PLACED AT  $\varnothing$  OF WALL. ALL BARS SHALL HAVE A 2" MINIMUM CLEARANCE.
14. FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE OR APPROVED GROUT.
15. STUB-OUTS SHALL EXTEND 4 FT MINIMUM BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
16. CHECK WITH THE LOCAL GOVERNMENT AUTHORITY FOR ANY ADDITIONAL STORM SEWER SPECIFICATIONS, DETAILS, OR REGULATIONS.
17. THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.
18. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PREFABRICATED STRUCTURES TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

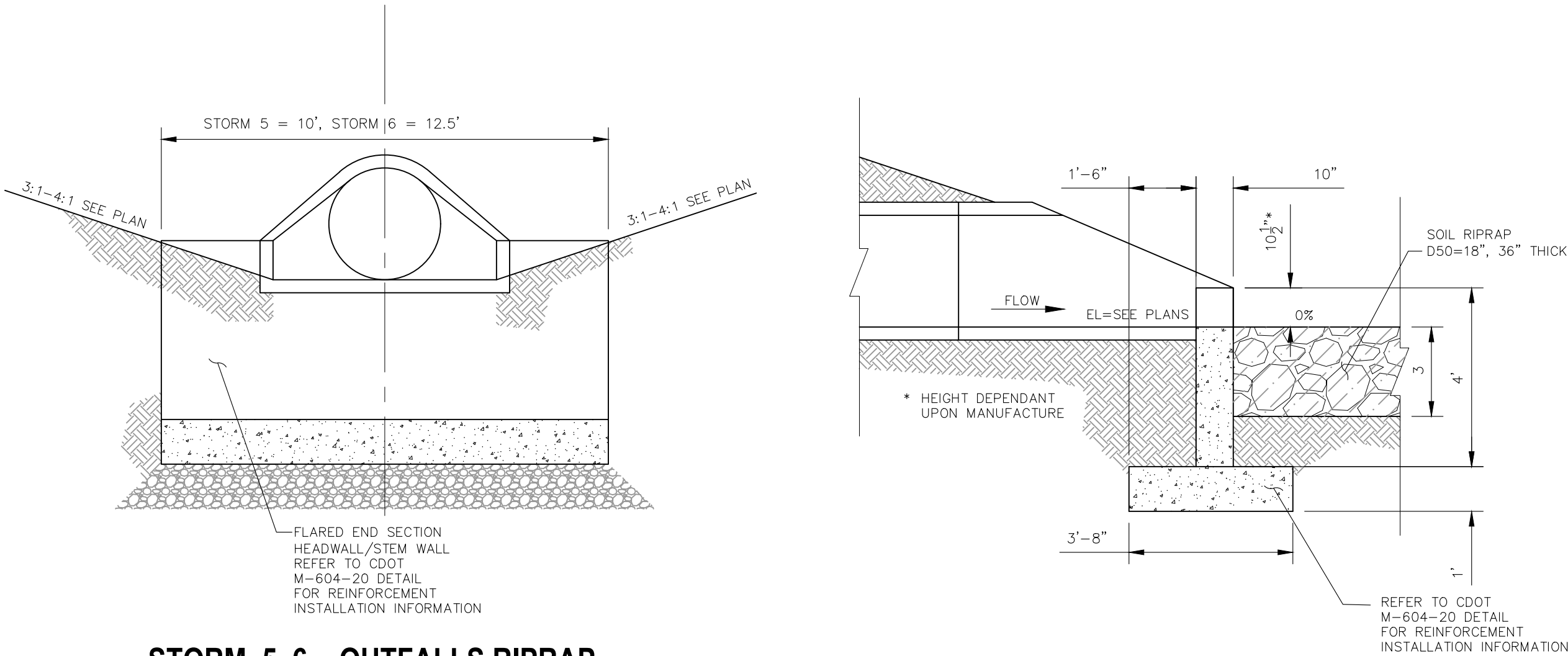
SOIL RIPRAP NOTES:

1. THE SOIL MATERIAL SHALL BE NATIVE OR TOPSOIL AND MIXED WITH SIXTY FIVE PERCENT (65%) RIPRAP AND THIRTY FIVE PERCENT (35%) SOIL BY VOLUME.
2. SOIL RIPRAP SHALL CONSIST OF A UNIFORM MIXTURE OF SOIL AND RIPRAP WITHOUT VOIDS.
3. CONTRACTOR SHALL COOPERATE WITH ENGINEER IN OBTAINING AND PROVIDED SAMPLES OF ALL SPECIFIED MATERIALS.
4. CONTRACTOR SHALL SUBMIT CERTIFIED LABORATORY TEST CERTIFICATES FOR ALL ITEMS REQUIRED FOR SOIL RIPRAP.
5. RIPRAP USED SHALL BE THE TYPE DESIGNATED ON THE DRAWINGS AND SHALL CONFORM TO TABLE SHOWN ~~TO THE RIGHT~~.
6. THE RIPRAP DESIGNATION AND TOTAL THICKNESS OF RIPRAP SHALL BE AS SHOWN ON THE DRAWINGS. THE MAXIMUM STONE SIZE SHALL NOT LARGER THAN THE THICKNESS OF THE RIPRAP.
7. NEITHER WIDTH NOR THICKNESS OF A SINGLE STONE OF RIPRAP SHALL BE LESS THAN ONE-THIRD ( $\frac{1}{3}$ ) OF ITS LENGTH.
8. THE SPECIFIC GRAVITY OF THE RIPRAP SHALL BE TWO AND ONE-HALF (2.5) OR GREATER.
9. MINIMUM DENSITY FOR ACCEPTABLE RIPRAP SHALL BE ONE HUNDRED AND SIXTY FIVE (165) POUNDS PER CUBIC FOOT.
10. RIPRAP SPECIFIC GRAVITY SHALL BE ACCORDING TO THE BULK-SATURATED, SURFACE-DRY BASIS, IN ACCORDANCE WITH AASHTO T85.
11. BROKEN CONCRETE OR ASPHALT PAVEMENT SHALL NOT BE ACCEPTABLE FOR USE IN THE WORK.
12. ROUNDED RIPRAP (RIVER ROCK) IS NOT ACCEPTABLE, UNLESS SPECIFICALLY DESIGNATED ON THE DRAWINGS.

STRUCTURAL CONCRETE NOTES:

1. ALL CONSTRUCTION INVOLVING THE PLACEMENT OF STRUCTURAL CONCRETE SHALL BE COMPLETED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, AND AS SUPPLEMENTED BY THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION.
2. STEEL REINFORCING SHALL BE GRADE 60 FOR ALL REINFORCING STEEL GREATER THAN #4. SPLICING, LAP SPLICING SHALL BE MINIMUM IN THE FOLLOWING TABLE  
BAR SIZE #4 #5 #6 #7 #8  
SPLICE LENGTH 1'-9" 2'-2" 2'-7" 3'-4" 4'-3"  
ALL REINFORCING SHALL HAVE A 2-INCH MINIMUM COVER UNLESS OTHERWISE SPECIFIED. ALL REINFORCED STEEL TO BE EPOXY COATED.
3. CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH ( $f_c$ ) OF 4,000 PSI AT 28 DAYS. ALL CONCRETE PLACED AGAINST SOIL SHALL BE TYPE II PORTLAND CEMENT. ALL EXPOSED CORNERS SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS OTHERWISE SPECIFIED.
4. EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213.
5. BACKFILL AGAINST STRUCTURES SHALL NOT COMMENCE UNTIL ALL SUPPORTING DIAPHRAGMS ARE IN PLACE AND CONCRETE HAS OBTAINED ITS FULL SEVEN DAY STRENGTH. BACKFILL SHALL BE PLACED EQUALLY ON EACH SIDE OF RETAINING WALL STRUCTURES AND CUTOFF WALLS UNTIL THE FINAL GRADE IS REACHED.
6. FOOTING EXCAVATIONS SHALL BE EXAMINED BY THE GEOTECHNICAL ENGINEER WITH A 24-HOUR MINIMUM NOTIFICATION FOR SOIL AND/OR CONCRETE TESTING. PLACEMENT OF CONCRETE IN THE ABSENCE OF TESTING SHALL BE COMPLETED AT THE SOLE RISK OF THE CONTRACTOR.
7. PRIOR TO THE PLACEMENT OF CONCRETE IN AREAS WHERE SOIL IS PRESENT, THE SOIL SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6-INCHES. THE MOISTURE CONTENT SHALL BE ADJUSTED TO WITHIN PLUS OR MINUS 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT AND RECOMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION (AASHTO-T-180).

ABBREVIATIONS  
EC --- EPOXY COATED O.F. --- OUTSIDE FACE E.F. --- EACH FACE E.W. --- EACH WAY I.F. --- INSIDE FACE N.F. --- NEAR FACE  
T.O.C. --- TOP OF CONCRETE B.O.C. --- BOTTOM OF CONCRETE CONT. --- CONTINUOUS



STORM 5, 6 - OUTFALLS RIPRAP  
APRON W/HEADWALL ELEVATION (TYP.)

NOT TO SCALE

STORM 5,6 - OUTFALL RIPRAP  
APRON W/HEADWALL SECTION (TYP.)

NOT TO SCALE



CLEARWAY, LOT 5

STORM SEWER NOTES AND DETAILS

PROJECT NO. 44-042A

DATE: 09-09-2022

SCALE: HORIZONTAL: N/A VERTICAL: N/A

DESIGNED BY: DLM

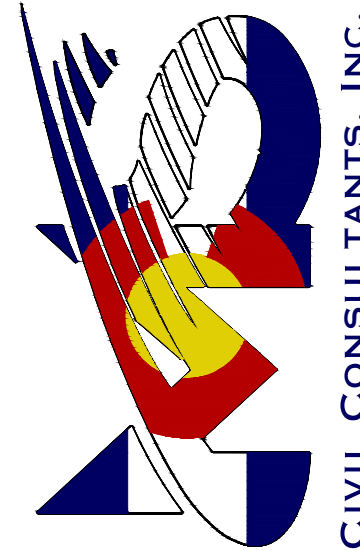
DRAWN BY: CLP

CHECKED BY: DLM

SHEET 9 OF 16

ST04

217 N. WAHATCH AVE. STE 305  
COLORADO SPRINGS CO 80903  
PHONE: 719.555.5465

CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

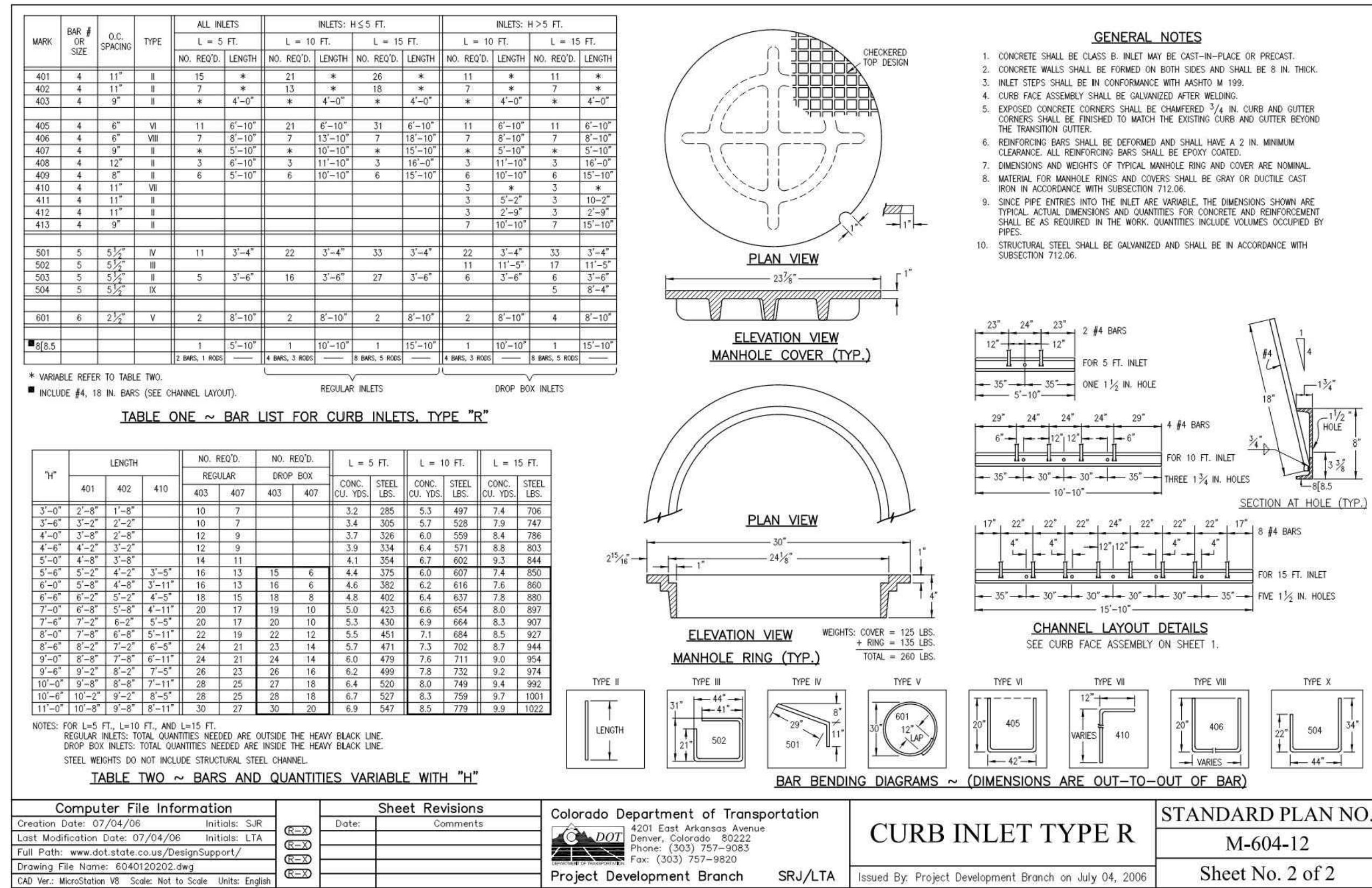
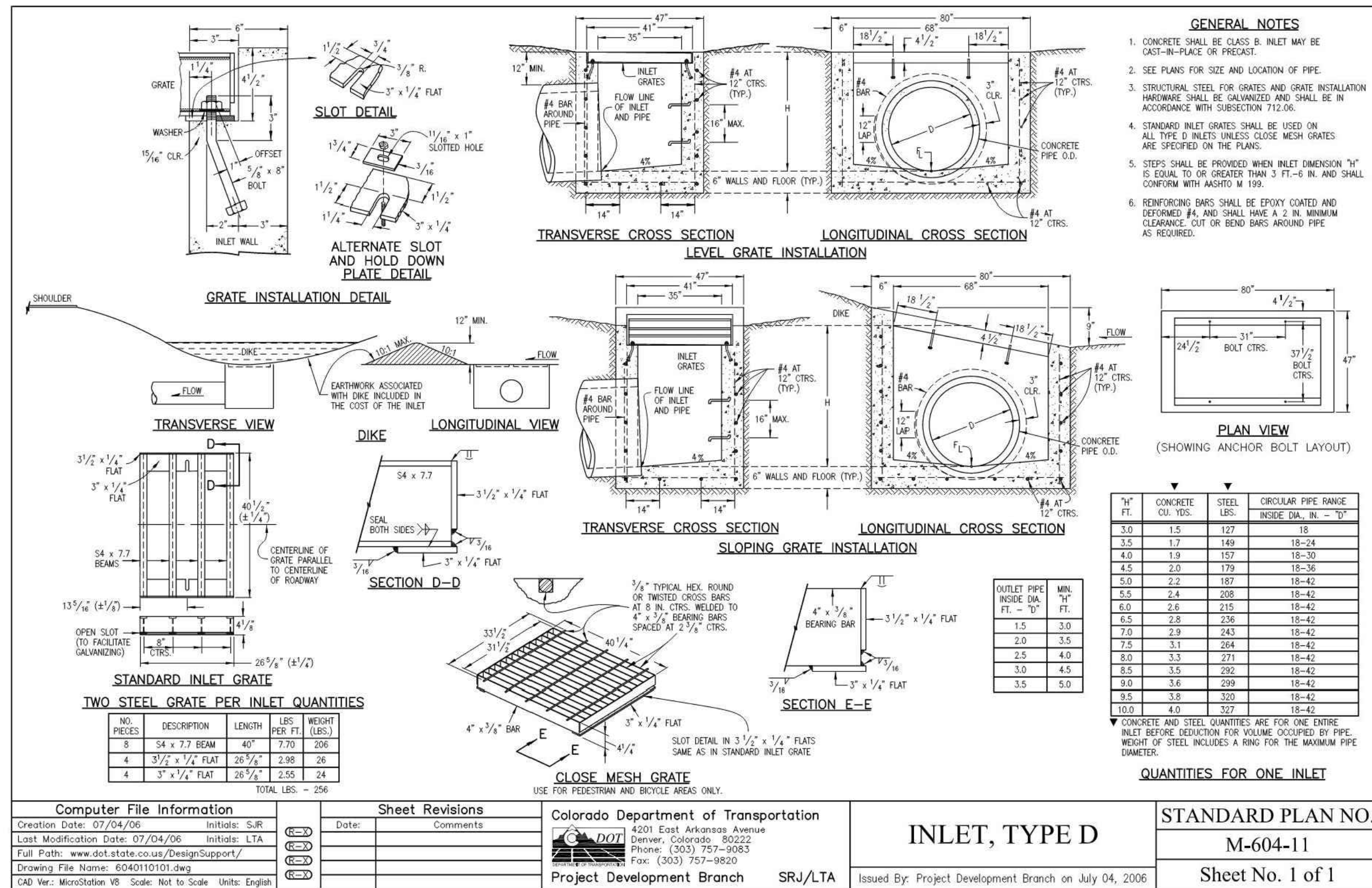
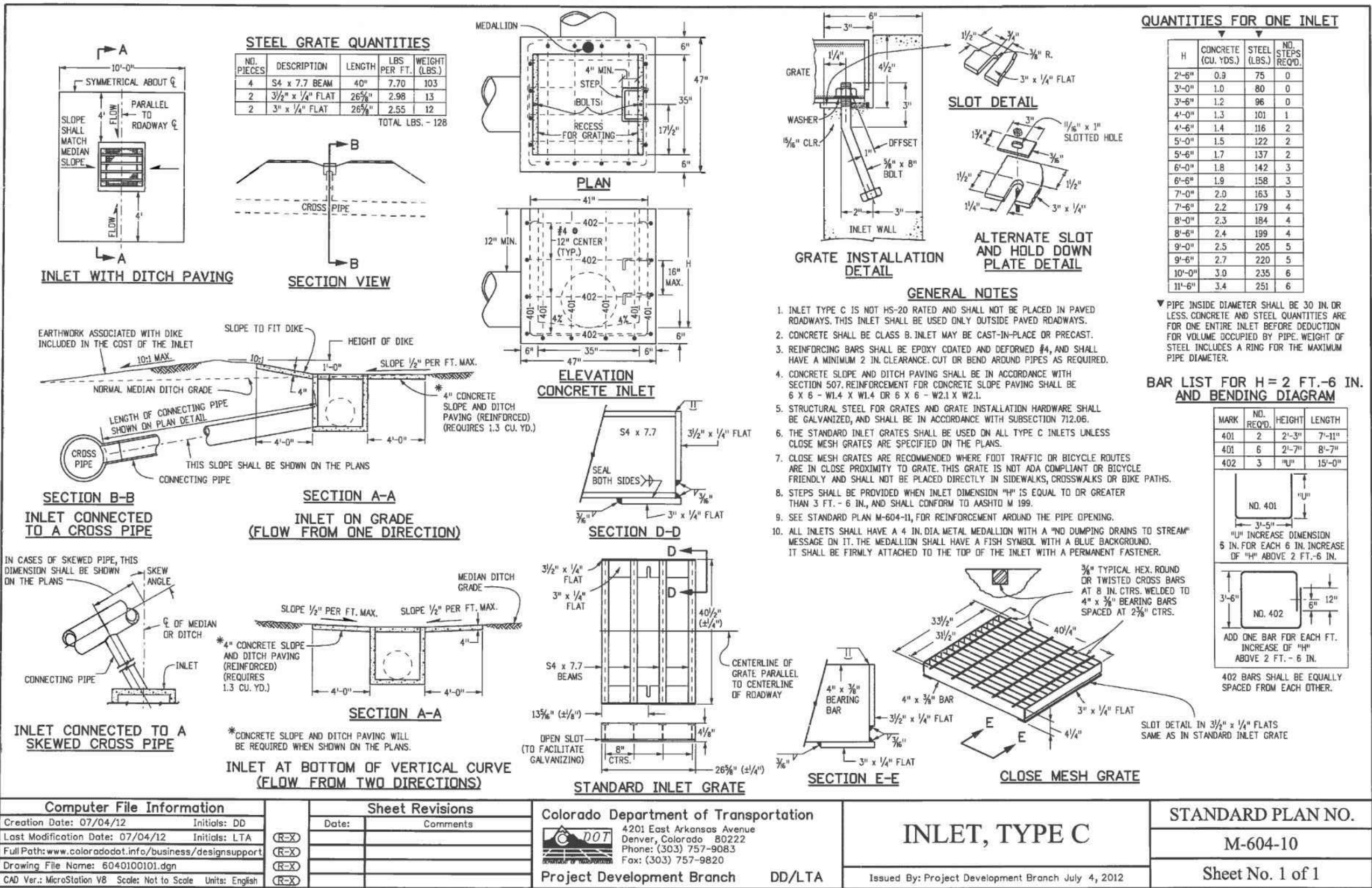
FOR AND ON BEHALF OF CIVIL CONSULTANTS, INC.

REVNO.	DATE	BY	DESCRIPTION	APPR'D. BY	DATE

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CAUTION





CLEARWAY, LOT 5

STORM SEWER DETAILS

PROJECT NO. 44-042A

DATE: 09-09-2022

SCALE: HORIZONTAL: N/A  
VERTICAL: N/A

DESIGNED BY: DLM  
DRAWN BY: CLP  
CHECKED BY: DLM

210 N WAHATCH AVE STE 305  
COLORADO SPRINGS CO 80903  
PHONE: 719.555.5465

ST05

SHEET 10 OF 16

CIVIL CONSULTANTS, INC.

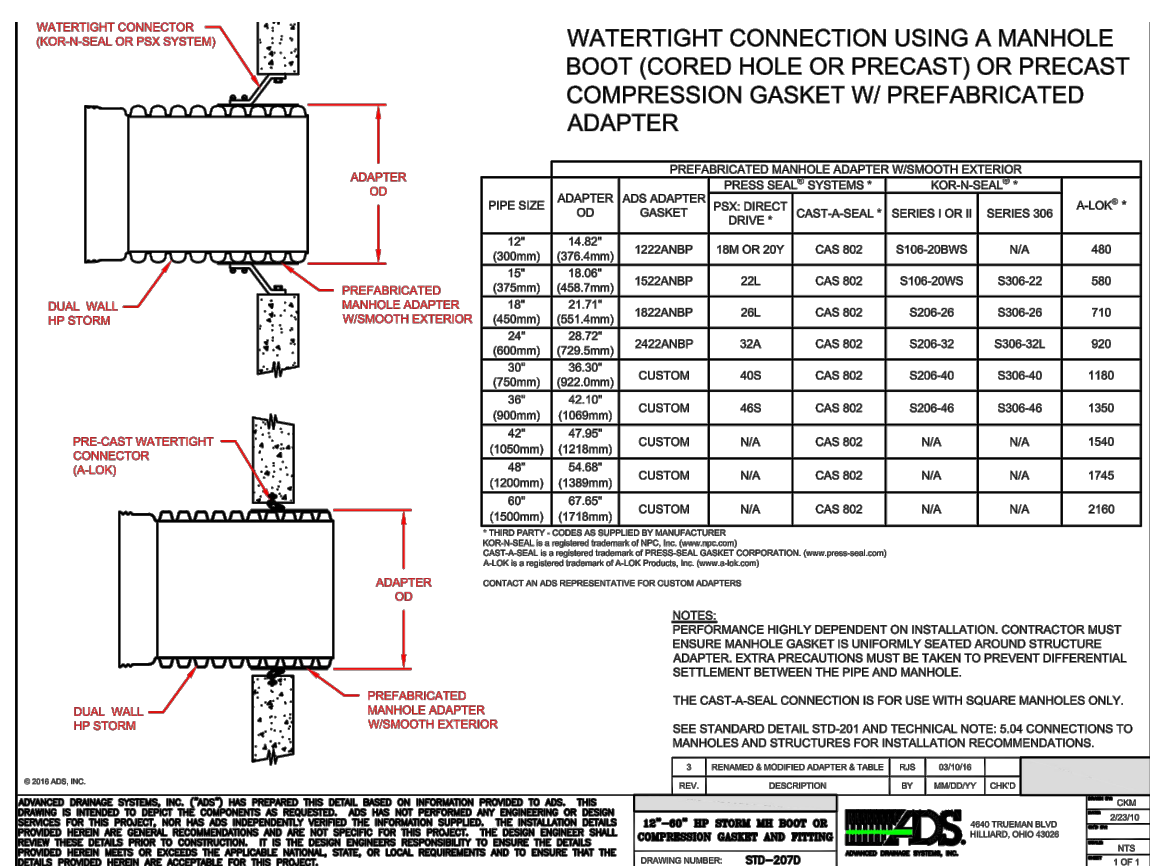
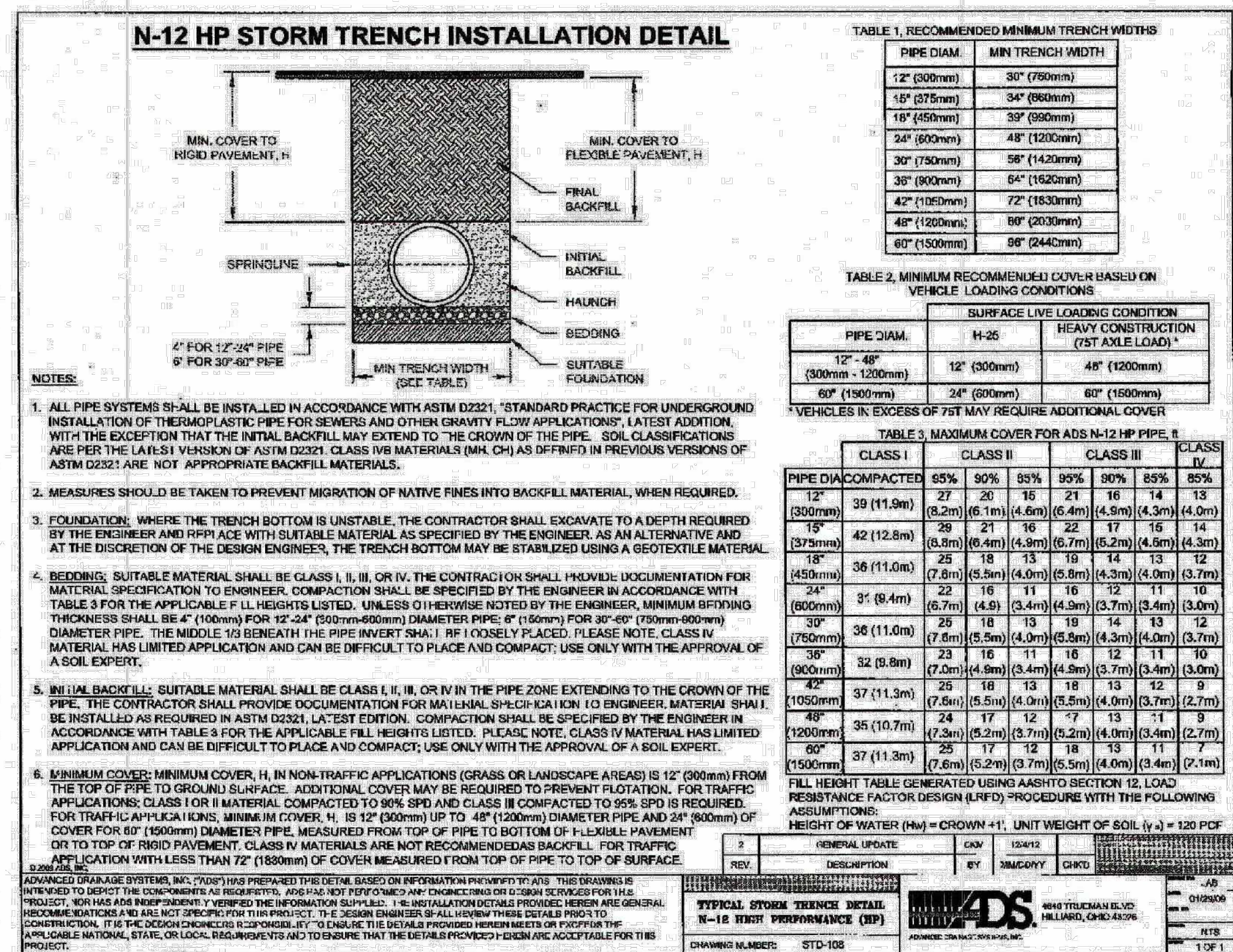
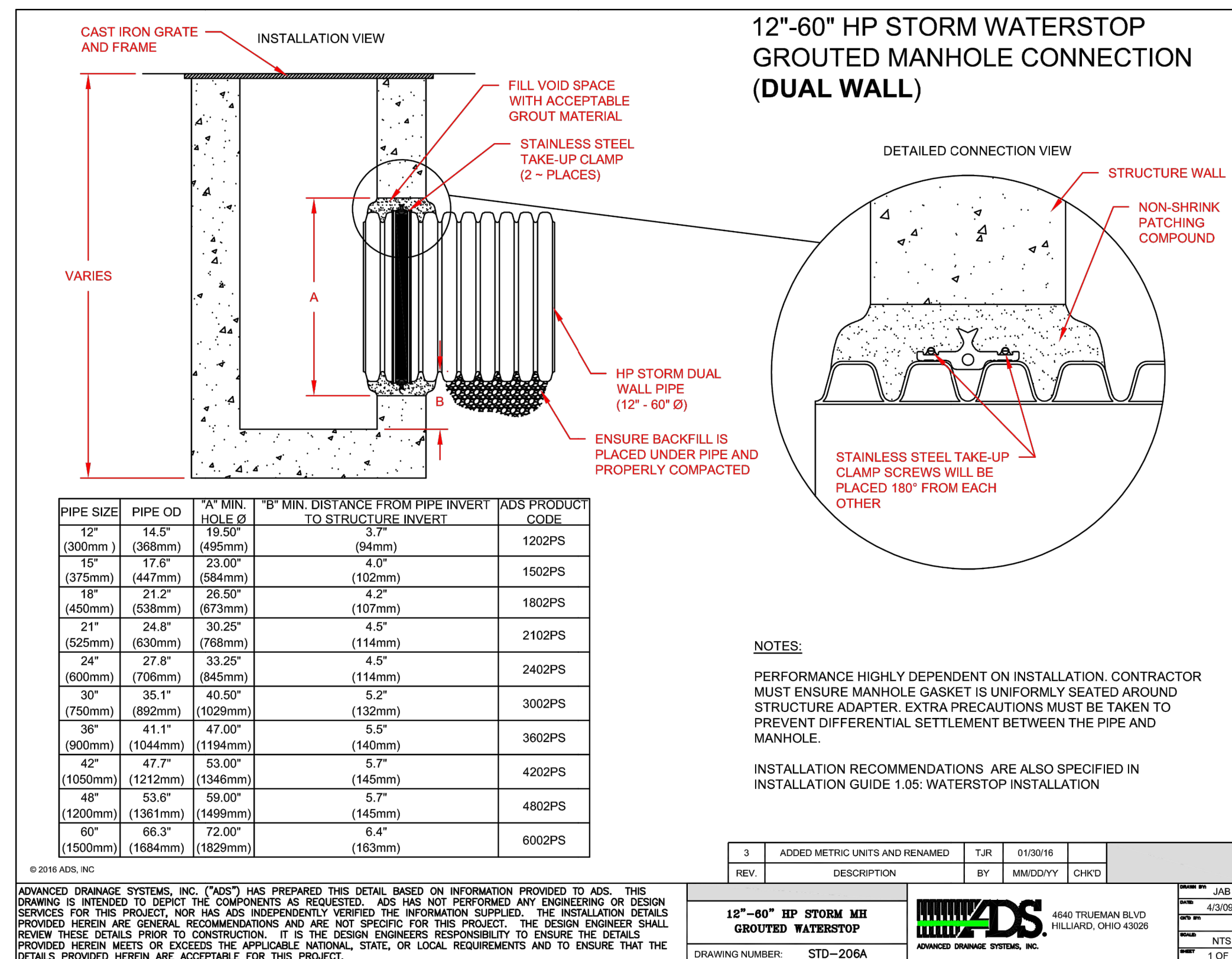
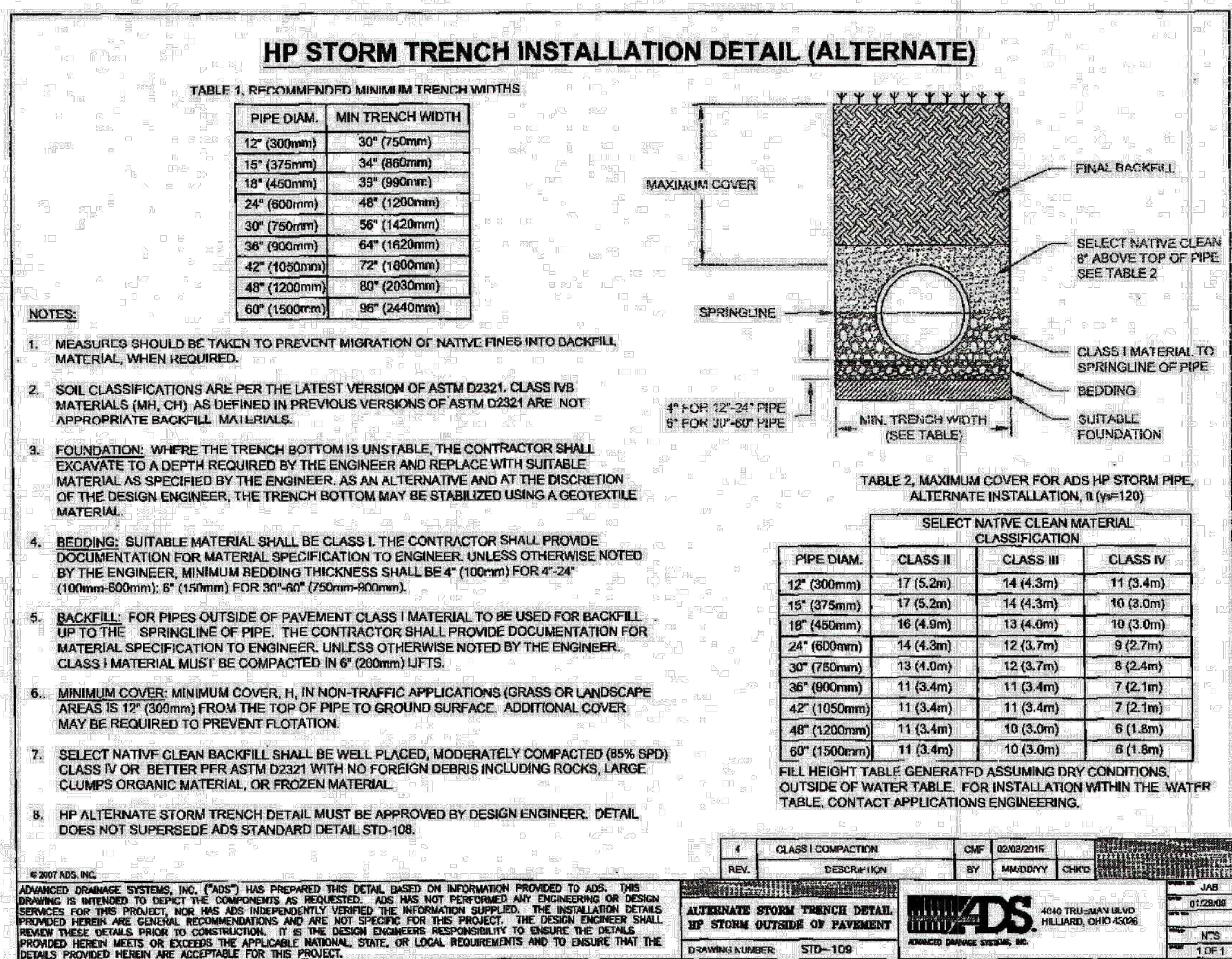
FOR AND ON BEHALF OF CONSULTANTS, INC.

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION 48 HRS BEFORE YOU DIG CALL 1-800-922-1987

CAUTION





**Scope**  
This specification describes 12- through 60-inch (300 to 1500 mm) ADS HP Storm pipe for use in gravity-flow storm drainage applications.

**Pipe Requirements**

- 12- through 30-inch (300 to 750 mm) pipe shall have a smooth interior and annular exterior corrugations and meet or exceed ASTM F2736 and AASHTO M330
- 36- through 60-inch (900 to 1500 mm) pipe shall have a smooth interior and annular exterior corrugations and meet or exceed ASTM F2881 and AASHTO M330
- Manning's "n" value for use in design shall be 0.012

**Joint Performance**  
Pipe shall be joined with a gasketed integral bell & spigot joint meeting the requirements of ASTM F2736 or F2881, for the respective diameters.

12- through 60-inch (300 to 1500 mm) shall be watertight according to the requirements of ASTM D3212. Spigots shall have gaskets meeting the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.

12- through 60-inch (300 to 1500 mm) diameters shall have a reinforced bell with a polymer composite band installed by the manufacturer.

**Fittings**  
Fittings shall conform to ASTM F2736, ASTM F2881 and AASHTO M330, for the respective diameters. Bell and spigot connections shall utilize a spun-on, welded or integral bell and spigot with gaskets meeting ASTM F477. Bell & spigot fittings joint shall meet the watertight joint performance requirements of ASTM D3212. Corrugated couplings shall be split collar, engaging at least 2 full corrugations.

**Field Pipe and Joint Performance**  
To assure watertightness, field performance verification may be accomplished by testing in accordance with ASTM F1417 or ASTM F2487. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

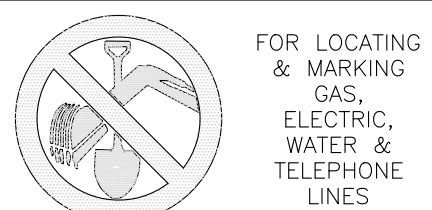
**Material Properties**  
Polypropylene compound for pipe and fitting production shall be impact modified copolymer meeting the material requirements of ASTM F2736, Section 4, ASTM F2881, Section 5 and AASHTO M330, Section 6.1, for the respective diameters.

**Installation**  
Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in traffic areas for 12- through 48-inch (300 to 1200 mm) diameters shall be one foot, (0.3 m) and for 60-inch (1500 mm) diameters, the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1, Class 2 (minimum 90% SPD) or Class 3 (minimum 95%) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.04. Contact your local ADS representative or visit our website at [www.ads-inc.com](http://www.ads-inc.com) for a copy of the latest installation guidelines.

Pipe Dimensions									
Normal Pipe I.D. in (mm)	12 (303)	15 (381)	18 (450)	24 (609)	30 (762)	36 (914)	42 (1067)	48 (1219)	60 (1500)
Average Pipe I.D. in (mm)	12.1 (307)	14.9 (378)	18.0 (457)	24.1 (612)	30.1 (765)	36.7 (932)	41.8 (1062)	47.3 (1201)	59.8 (1506)
Average Pipe O.D. in (mm)	12.2 (308)	15.1 (383)	18.2 (459)	24.2 (613)	30.2 (767)	36.8 (934)	41.9 (1063)	47.4 (1202)	59.9 (1507)
Minimum Pipe Thickness @ 5% Deflection (130°C)	75 (520)	80 (61)	86 (385)	50 (343)	50 (308)	40 (275)	35 (240)	35 (240)	30 (205)

Pipe Diameter, (in mm)	Joint Type	Maximum Deflection at Joint (in)	Radius, ft. min. per pipe length (10 ft min.)	15 ft min.	20 ft min.
4 - 30	N-12 (split band or ball- ball coupling)	1	311	248	183
40 - 60	N-12 (split band or ball- ball coupling)	1	380	309	226
42 - 60	N-12 (split band or ball- ball coupling)	1.5	387	317	248
1050 - 1500	N-12 (split band or ball- ball coupling)	1	1152	922	683
4 - 24	N-12 ST or N-12 WT B end & spool	1.5	n/a	452	353
110 - 1000	N-12 ST or N-12 WT B end & spool	1	n/a	745	583
30 - 60	N-12 ST or N-12 WT (750 - 1500)	1	n/a	745	583
12 - 60	HF ST/CLAS, Sami- Tite HF ST/CLAS	1	n/a	248	382
100 - 300	HF ST/CLAS, Sami- Tite HF ST/CLAS	1	n/a	248	382

*Note:* Joint deflections based on joint profiles and accounts for possible field variations.  
Bend radii calculated using joint orientations only. Calculators do not assume any bend in the pipe wall. Joint deflections based on joint profiles and accounts for possible field variations.  
Bend radii (excluding ball & spool)



FOR BURIED UTILITY INFORMATION  
48 HRS BEFORE YOU DIG  
CALL 1-800-922-1987

160 FOR AND ON  
BEHALF OF  
M&S CIVIL  
CONSULTANTS,  
INC.

[illegible]

212 N. WAHSATCH AVE., STE 305  
COLORADO SPRINGS, CO 80903  
PHONE: 719.955.5485

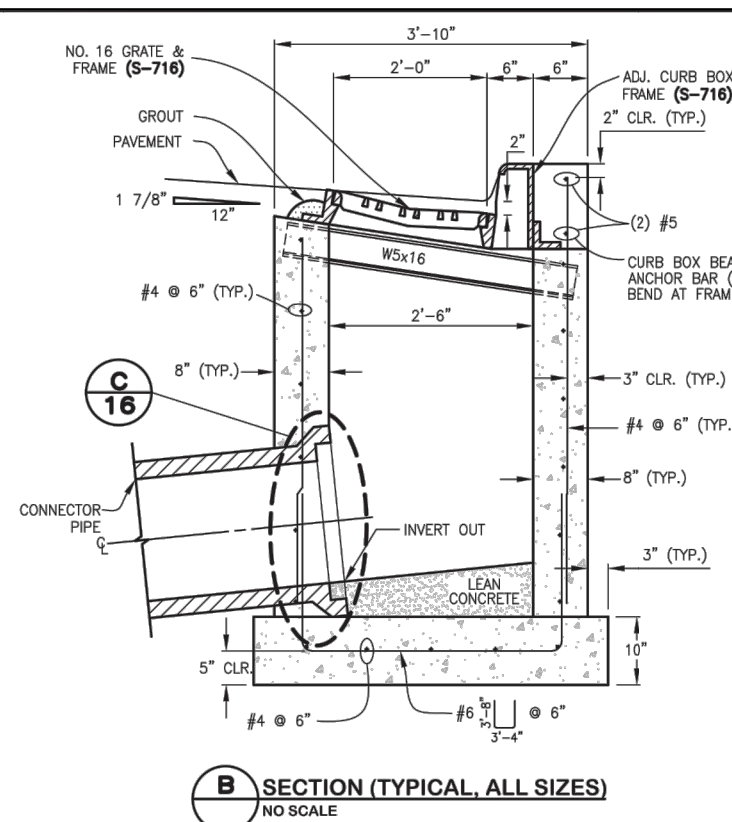
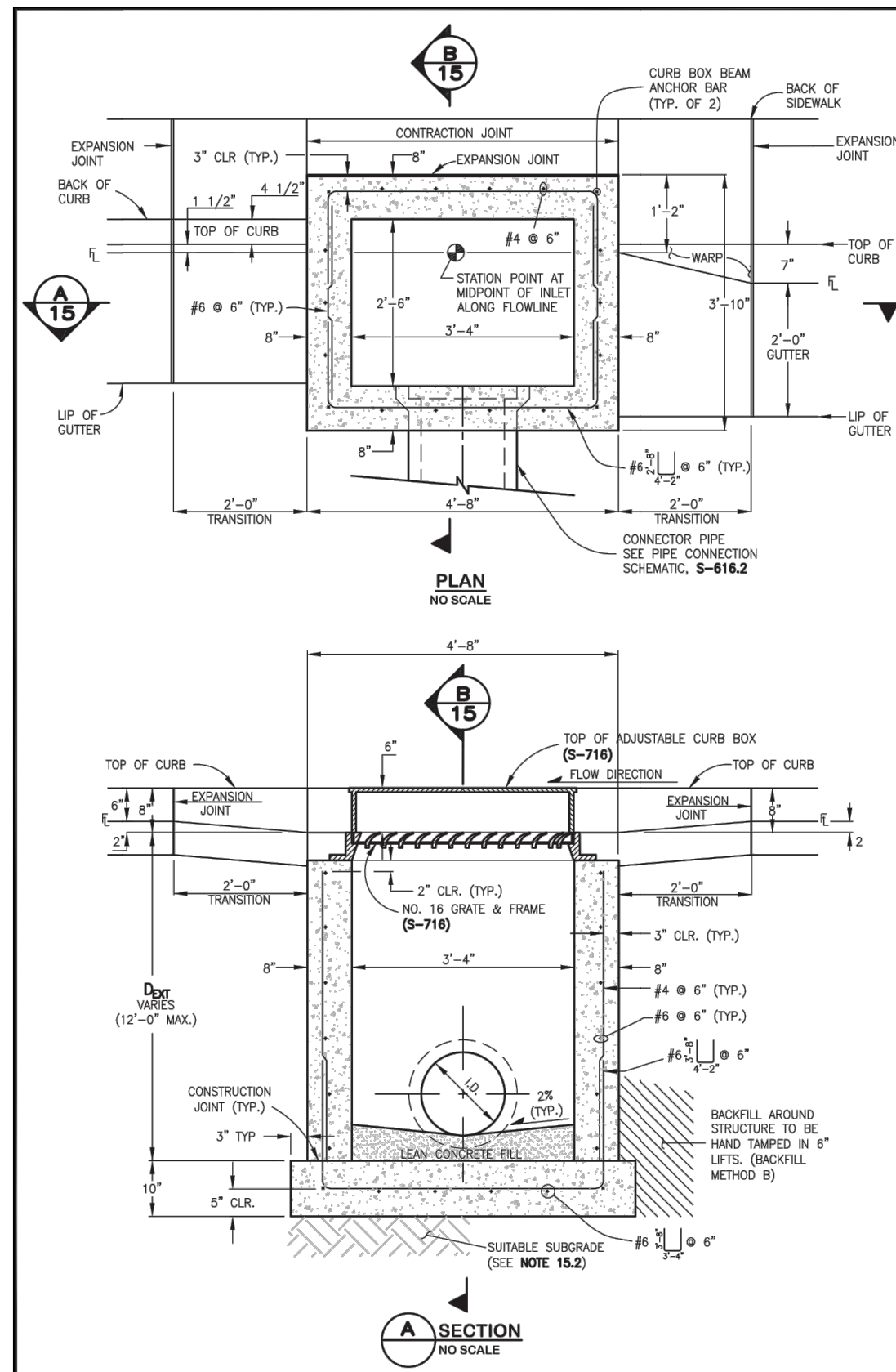
CLEARWAY, LOT 5

## STORM SEWER DETAILS

PROJECT NO. 44-042A	SCALE:	DATE: 09-09-20
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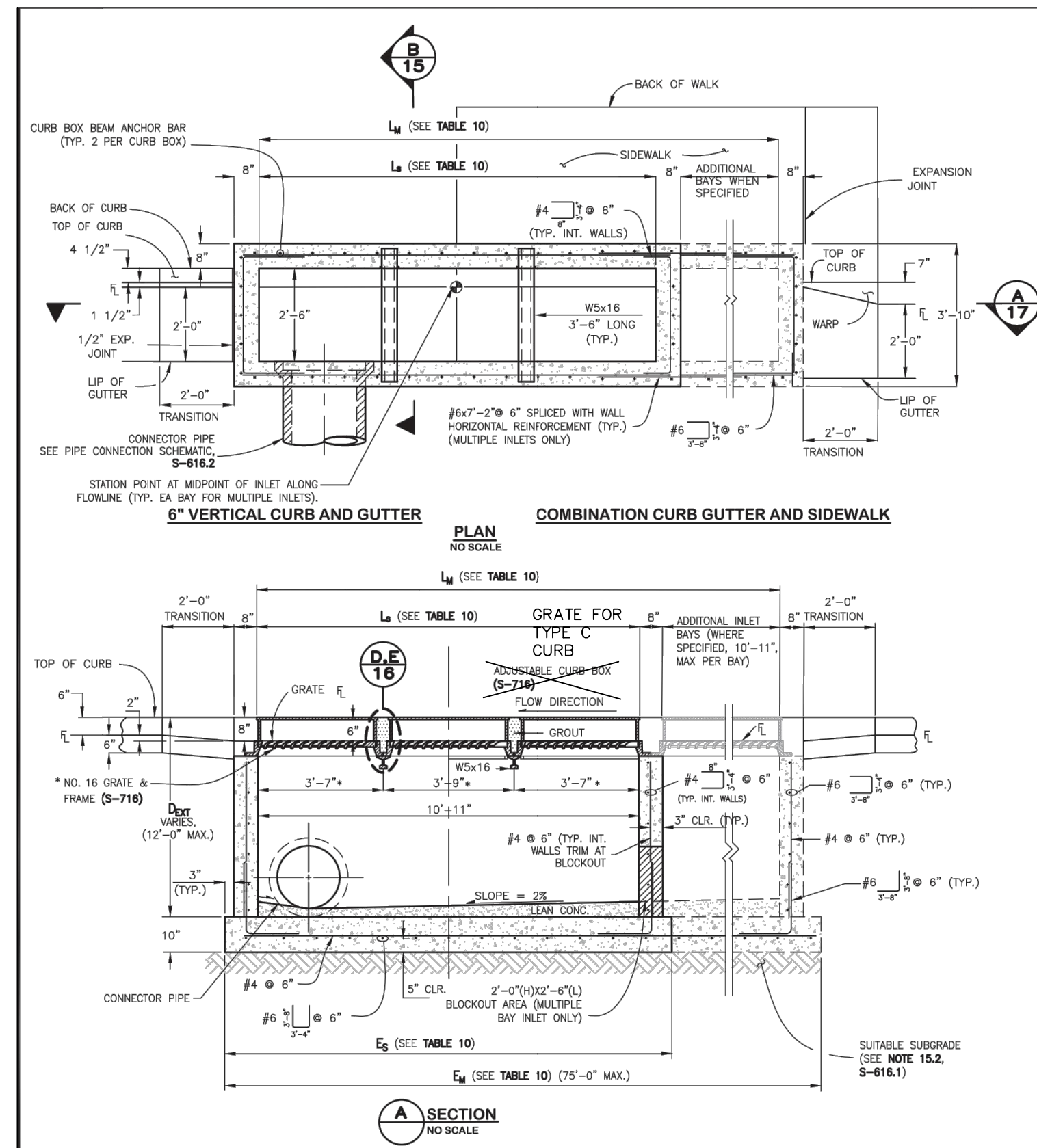
ST06





SINGLE NUMBER 16 INLET NOTES:

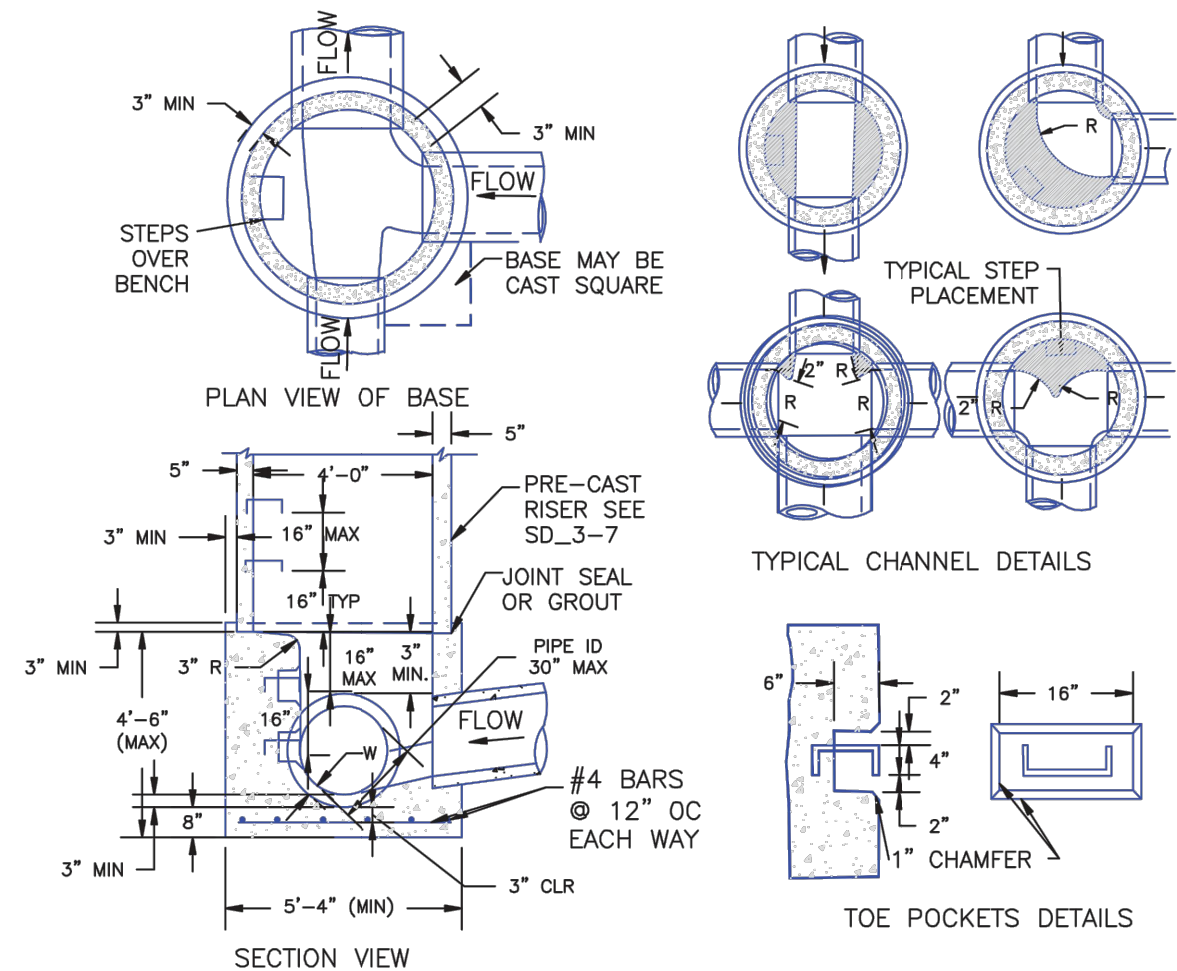
- 15.1 FOR PAVEMENT PURPOSES, INLET STRUCTURES SHALL ALSO INCLUDE 2'-0" CURB & GUTTER TRANSITION SECTION AT EACH END OF INLET PUS  
SIDEWALK SURFACES, WHEN REQUIRED BEHIND INLET STRUCTURE AND TRANSITION SECTIONS.
- 15.2 INLET STRUCTURES SHALL BE CONSTRUCTED TO MEET ALL WPCMA STANDARD CONSTRUCTION SPECIFICATIONS, ON SUITABLE, UNDISTURBED  
MATERIAL. IF SUBGRADE IS UNSUITABLE, THE SUBGRADE SHALL BE OVERLACED AND STABILIZED WITH CLASS B BEDDING PER WPCMA STANDARD  
CONSTRUCTION SPECIFICATIONS.
- 15.3 FLOOR SLOPE MAY BE PAVED MONOLITHIC WITH BASE.
- 15.4  $SC = \text{SLOPE OF CONNECTOR} = 2\%$  MIN.
- 15.5 UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS OR OTHERWISE APPROVED, ALL NO. 16 INLETS SHALL BE CONSTRUCTED WITH AN ADJUSTABLE CAR  
NOR CURB BOX (8-716).
- 15.6 DESIGN OF INLET ALLOWS DEPTHS OF 12'-0" (MAX.) FOR INLETS MORE THAN 12'-0" FEET IN DEPTH. SHOP DRAWINGS AND DESIGN ANAL  
YSIS SHALL BE SUBMITTED FOR APPROVAL.
- 15.7 ALL REINFORCING STEEL SHALL BE ASTM A-615, GRADE 60 DEFORMED BARS. DIAMETER OF BEND MEASURED ON THE INSIDE OF THE BAR SHALL  
BE 4X THE BAR DIAMETER.
- 15.8 ALL SHALL CONFORM TO ASHTO LD-615, DESIGN SPECIFICATIONS, 8TH EDITION, 2017.
- 15.9 NO FORMWORK SHALL WORK REMAIN INSIDE STRUCTURE WHEN COMPLETE.
- 15.10 CONCRETE MIX FOR GUTTER AND ANY ADDER STREET PANELS SHALL MEET CLASS 2 REQUIREMENTS FOR SULFATE RESISTANCE IN ACCORDANCE WITH  
WPCMA STANDARD CONSTRUCTION SPECIFICATIONS. WHEN MAGNESIUM CHLORIDE CHEMICAL ADJERS ARE APPLIED, REFER TO WPCMA STANDARD CONSTRUCTION  
SPECIFICATIONS SECTION 11 FOR REQUIREMENTS FOR SULFATE RESISTANCE IN CONCRETE EXPOSED TO EARTH.
- 15.11 UNLESS OTHERWISE SPECIFIED, ALL INLETS SHALL BE FINISHED WITH 1" SMOOTH CASTLE IN DRAWINGS.
- 15.12 INLET WALLS SHALL BE FORMED BOTH INSIDE AND OUTSIDE, CASTING OF SIDEWALKS AGAINST EARTH IS NOT PERMITTED.
- 15.13 LEAN CONCRETE FILL TO BE  $SC = 2000$  PSI. INLET STRUCTURE, LD, STREET CURB & GUTTER, AND PAVEMENT TO BE  $SC = 4500$  PSI, MAX  
W/C = 0.45 AND AIR ENTRAINED 5% TO 6%. F/C = 28 DAY COMPRESSIVE TENSILE REQUIREMENT FOR MIX DESIGN, FIELD ACCEPTANCE.
- 15.14 FOR THROUGH STRUCTURES, REMOVES MUST COME TO TOP OF PILE.
- 15.15 NO CORNER PENETRATIONS ON STRUCTURE.
- 15.16 SEE WPCMA STANDARD CONSTRUCTION SPECIFICATIONS SECTION 11.04 STORM INLETS FOR MORE INFORMATION. USE OF THIS DETAIL WITHOUT  
APPROVAL SHALL BE CONSIDERED NON-COMPLYING.
- 15.17 SEE **S-6162** FOR REPAIR REPLACEMENT AT WALL PENETRATION.
- 15.18 REFER TO "TRANSPORTATION STANDARDS AND DETAILS FOR THE ENGINEERING DIVISION" FOR ADJACENT ROADWAY AND SIDEWALK DESIGN CRITERIA.



TRIPLE NUMBER 16 INLET NOTES:

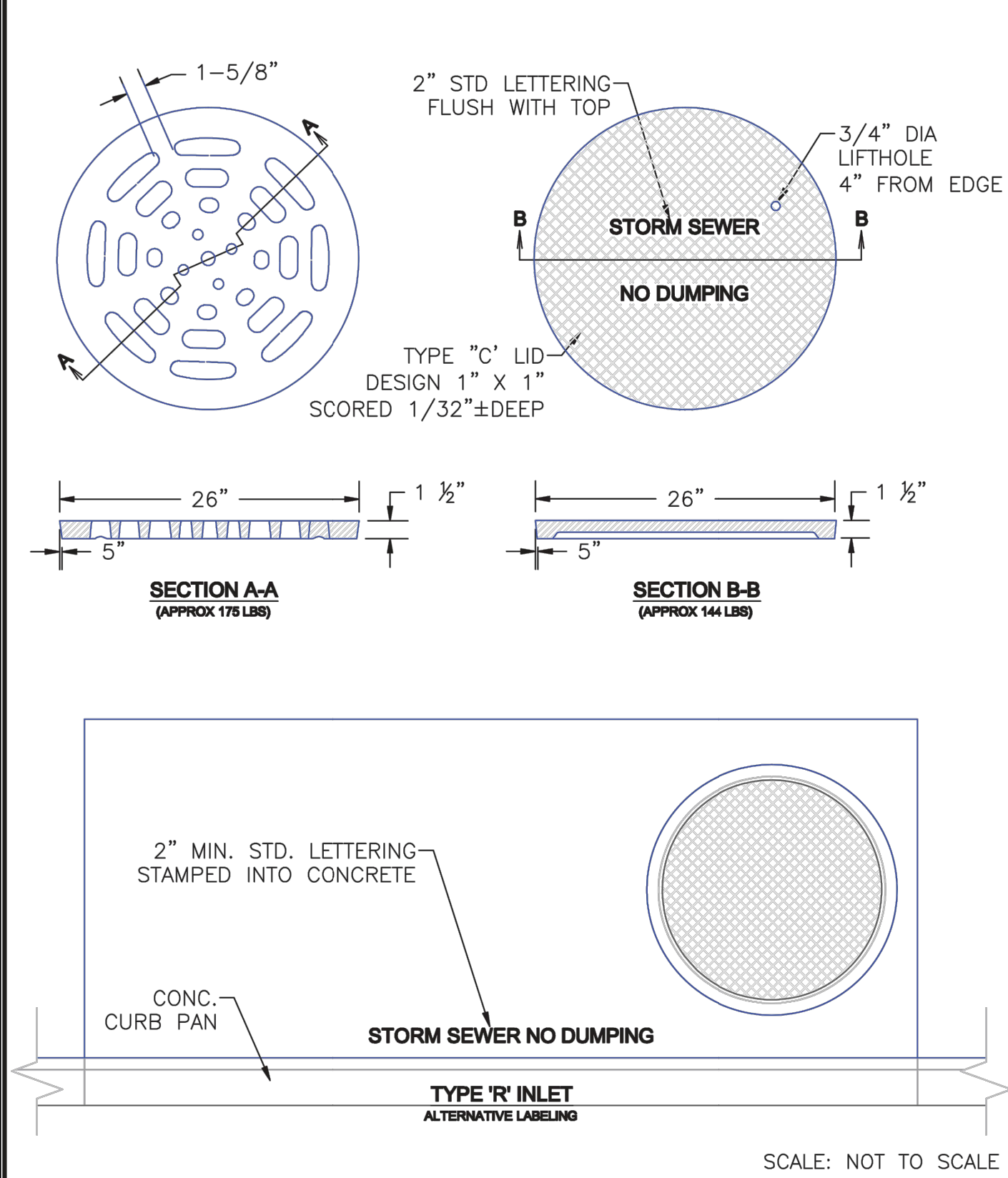
- 17.1 SEE WQMP STANDARD CONSTRUCTION SPECIFICATIONS SECTION 11.05 STORM INLETS FOR MORE INFORMATION.  
17.2 USE OF THIS DETAIL WITHOUT SPECIFICATIONS SHALL BE CONSIDERED NON-COMPLIANT.  
17.3 SEE GENERAL NOTES ON **S-616.1**.  
17.4 EXPANSION JOINT MATERIAL SHALL BE PLACED FULL DEPTH OF THE CURB AND GUTTER, SIDEWALK, CONCRETE PAVEMENT AS APPLICABLE. THE TOP PORTION OF THE JOINT SHALL BE SEALED WITH SILICONE SEALANT.  
17.5 SEE **S-616.2** FOR REBAR PLACEMENT AROUND CONNECTOR PIPE.
- \* STANDARD DETAIL **S-716** APPLIES TO ALL OF THE GRATE & FRAME GEOMETRIC DIMENSIONS FOR THE TRIPLE NUMBER 16 INLET EXCEPT FOR THE FRAME LENGTH. FRAME LENGTH SHOULD BE MANUFACTURED FOR THE DIMENSIONS CALLED OUT ON THIS SHEET.

TABLE 10. NO. 16 TOTAL INLET LENGTH		
INLET CONFIGURATION	L <sub>1</sub> OR L <sub>2</sub> INLET LENGTH	E <sub>1</sub> OR E <sub>2</sub> TOTAL BOTTOM SLAB LENGTH
TRIPLE NO. 16	10'-11"	12'-9"
NO. 16 3-3-2		
(EXAMPLE CONFIGURATION)	10'-11", 10'-11", 7'-1"	32'-1"
NO. 16 _____ (CONFIGURATION TEMPLATE)	_____	$= 3' + 8' + 1' + 8' + 1' + 8' + 1' + 8' + 3'$



- NOTES
1. TYPE II MANHOLES SHALL BE USED WHEN APPROPRIATE AND TYPICALLY WHEN THE PIPE SIZES ARE 30" OR LESS INSIDE DIAMETER.
  2. VIEW AND DETAILS ARE TYPICAL. DESIGN ENGINEER SHALL DETERMINE MANHOLE BASE CONFIGURATION AND DIMENSIONS FOR PARTICULAR PIPE SIZES AND ALIGNMENT.
  3. EITHER LADDER OF STEPS SHALL BE INSTALLED WHEN MANHOLE DEPTH EXCEEDS 30". STEPS IN BASE SHALL BE INSTALLED IN "POCKETS" (SEE DETAIL THIS SHEET). LOWEST STEP SHALL BE A MAXIMUM OF 16" ABOVE THE FLOOR.
  4. PIPES SHALL BE TRIMMED TO FINAL SHAPE AND SET BEFORE MANHOLE IS POURED.
  5. BENCH SHALL BE SLOPED TOWARD CENTER OF MANHOLE BASE (4:1 MAX., ½" PER FOOT. MIN.).
  6. FLOOR OF MANHOLE SHALL BE TROWELLED TO A SMOOTH, HARD SURFACE AND SHALL SLOPE TOWARDS THE OUTLET (8:1, ½" PER FT. MIN.). FLOOR SHALL BE SHAPED AND CHANNLED; SEE DETAILS THIS SHEET.

SCALE: NOT TO SCALE



STORM SEWER MANHOLE DETAIL  
TYPE II SD 3-2

STORM SEWER MANHOLE L  
LID DETAILS SD 3-2



FOR BURIED UTILITY INFORMATION  
48 HRS BEFORE YOU DIG  
CALL 1-800-922-1987

VIRGIL A. SANCHEZ. COLORADO P.E. NO. 37160

FOR AND ON  
BEHALF OF  
M&S CIVIL  
CONSULTANTS,  
INC.

NO	DATE	BY:	DESCRIPTION:
REVISIONS:			

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### CAUTION

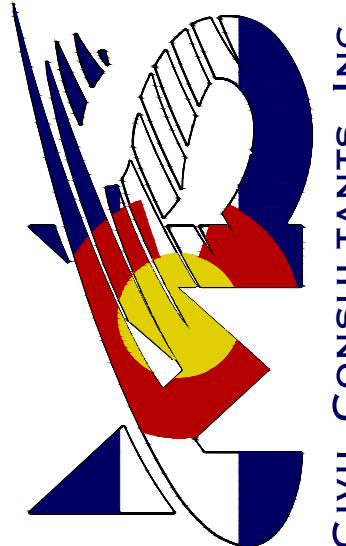
**CLEARWAY, LOT 5**

## STORM SEWER DETAILS

PROJECT NO. 44-042A	SCALE:	DATE: 09-09-2022
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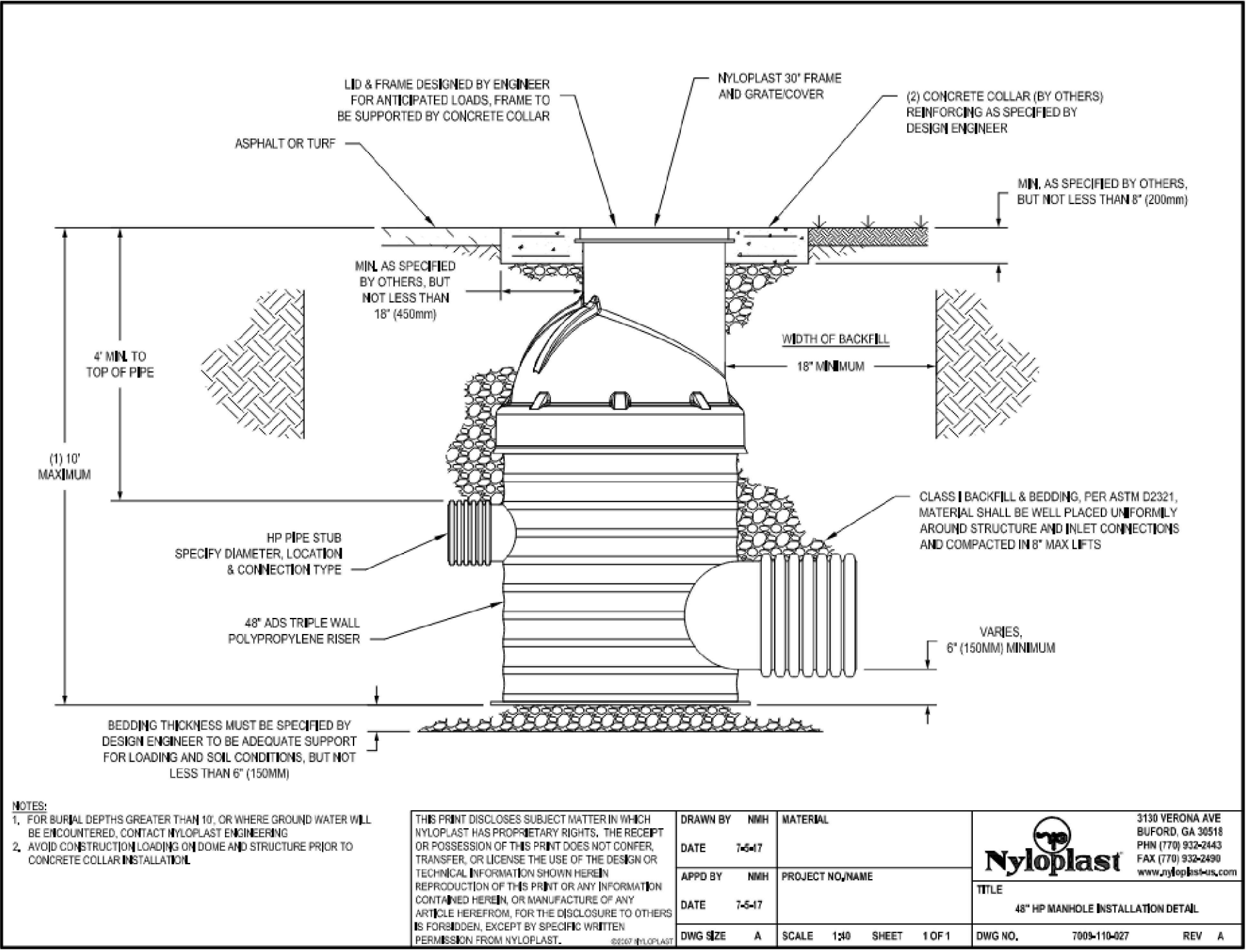
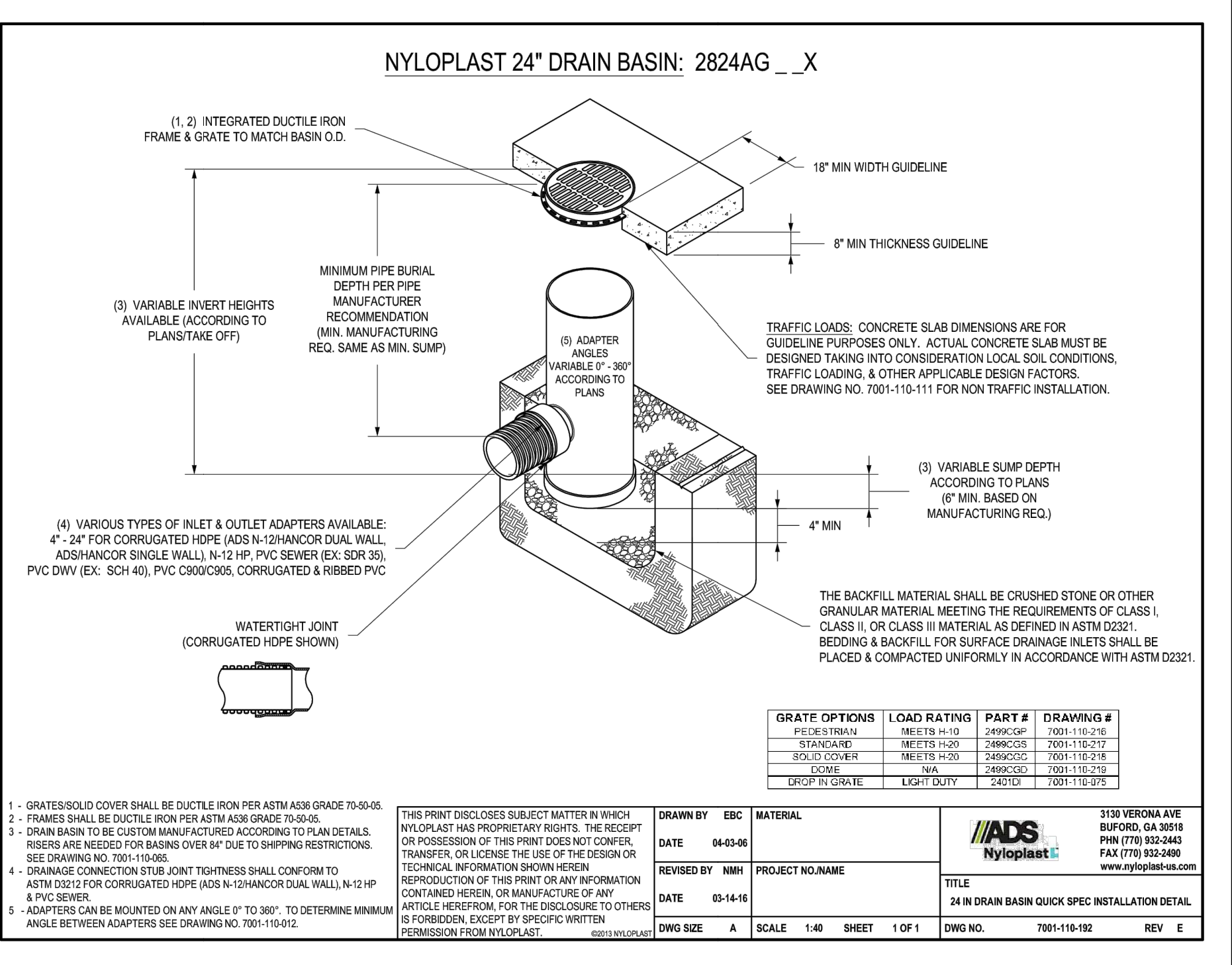
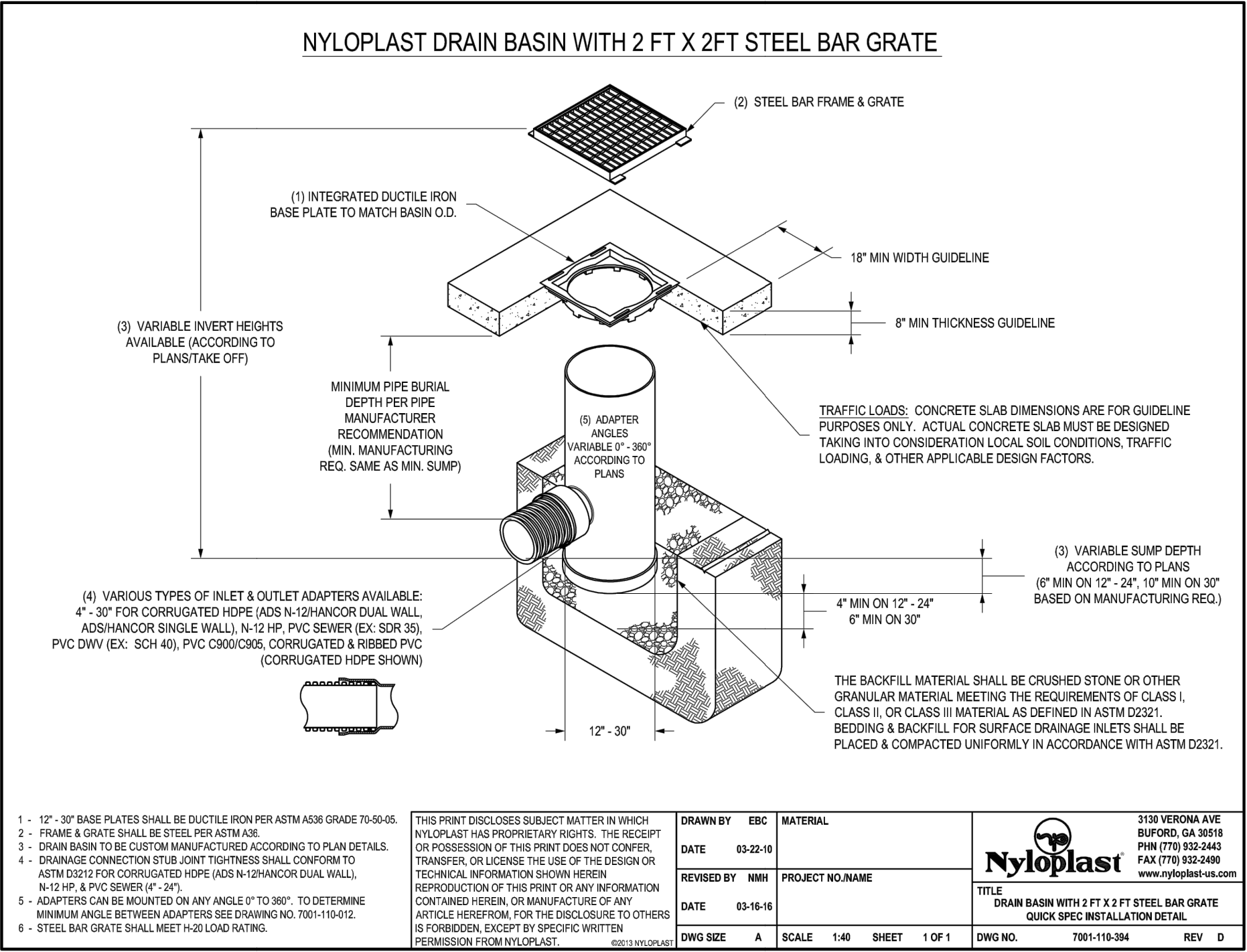
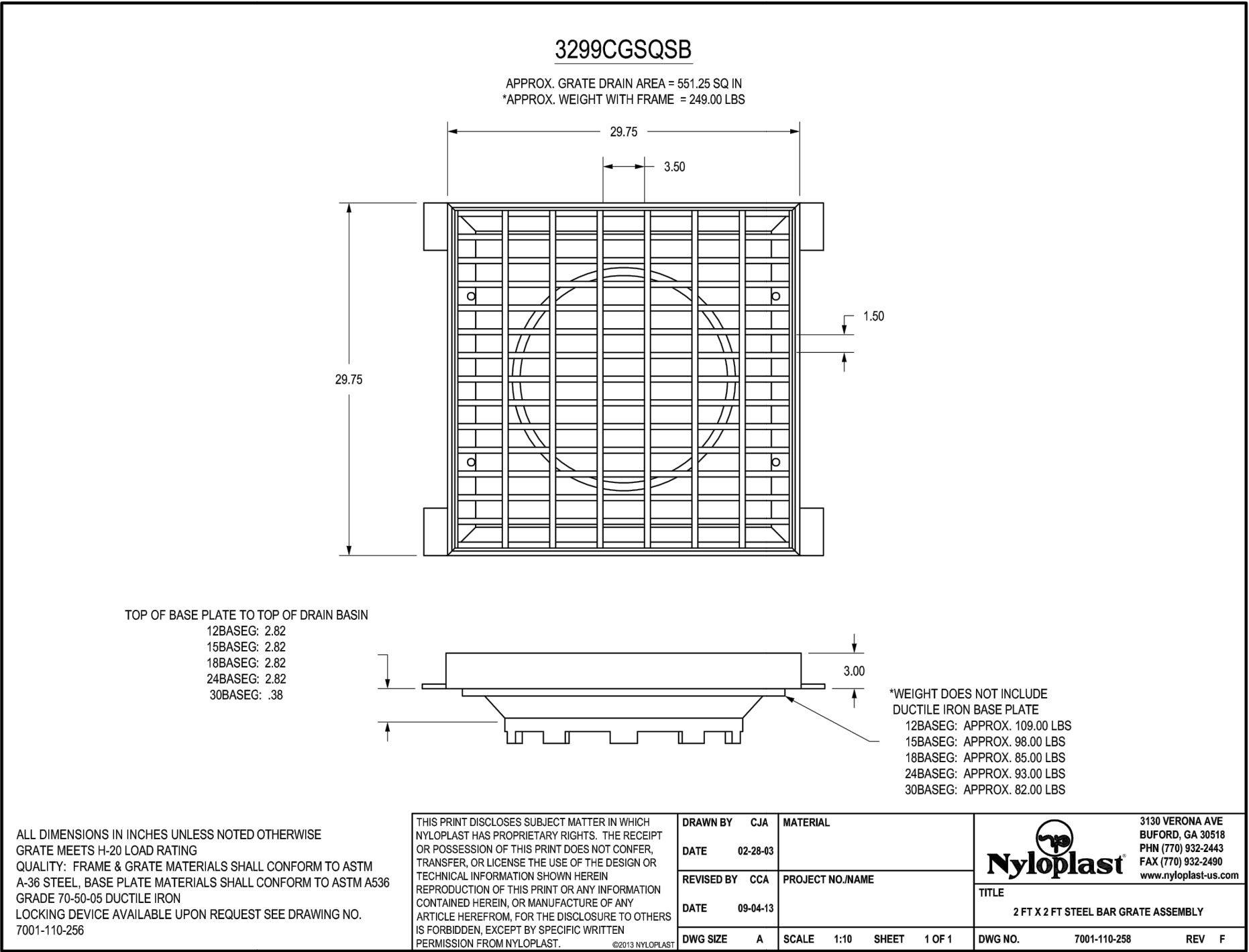
DATE: 09-09-2022

SHEET 12 OF 16



212 N. WAHSATCH AVE., STE 305  
COLORADO SPRINGS, CO 80903





CLEARWAY, LOT 5

STORM SEWER DETAILS

PROJECT NO. 44-042A

DATE: 09-09-2022

SCALE: HORIZONTAL: N/A  
VERTICAL: N/A

DESIGNED BY: DLM  
DRAWN BY: CLP  
CHECKED BY: DLM

ST08  
SHEET 13 OF 16

210 N WAHATCH AVE, STE 303  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.5465

CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF  
CIVIL CONSULTANTS, INC.

REVISIONS:	NO.	DATE:	BY:	DESCRIPTION:	DATE:

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

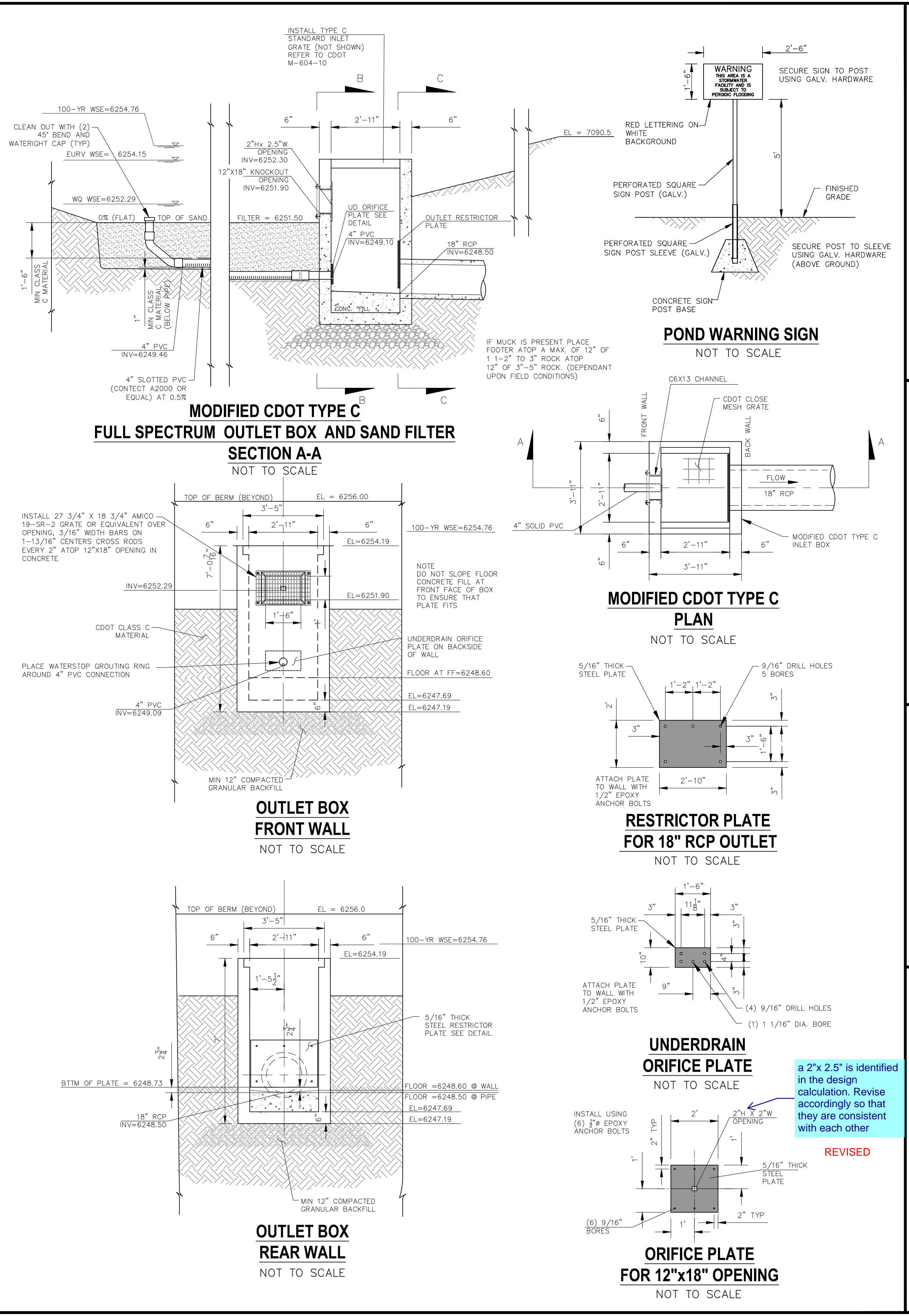
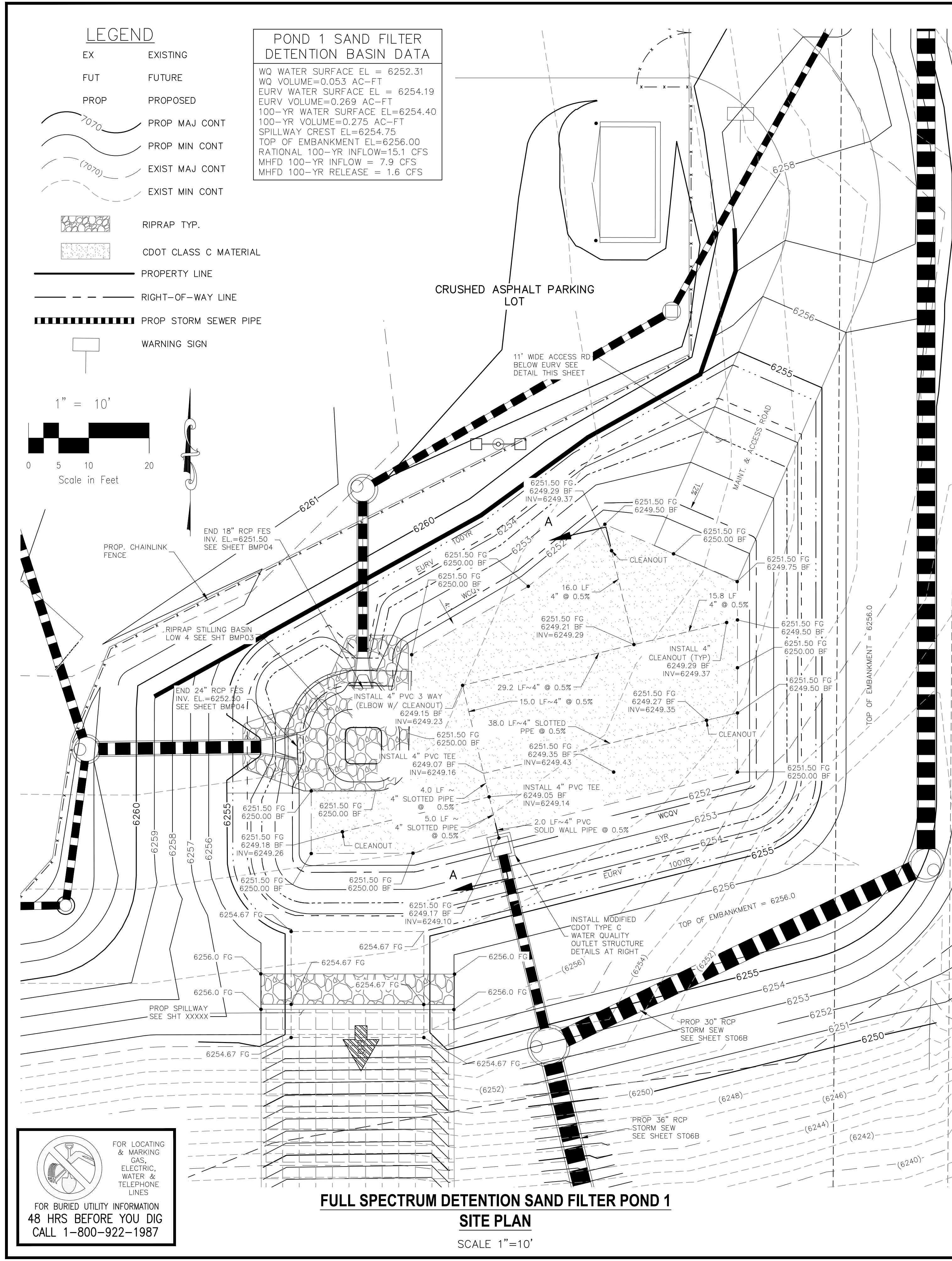
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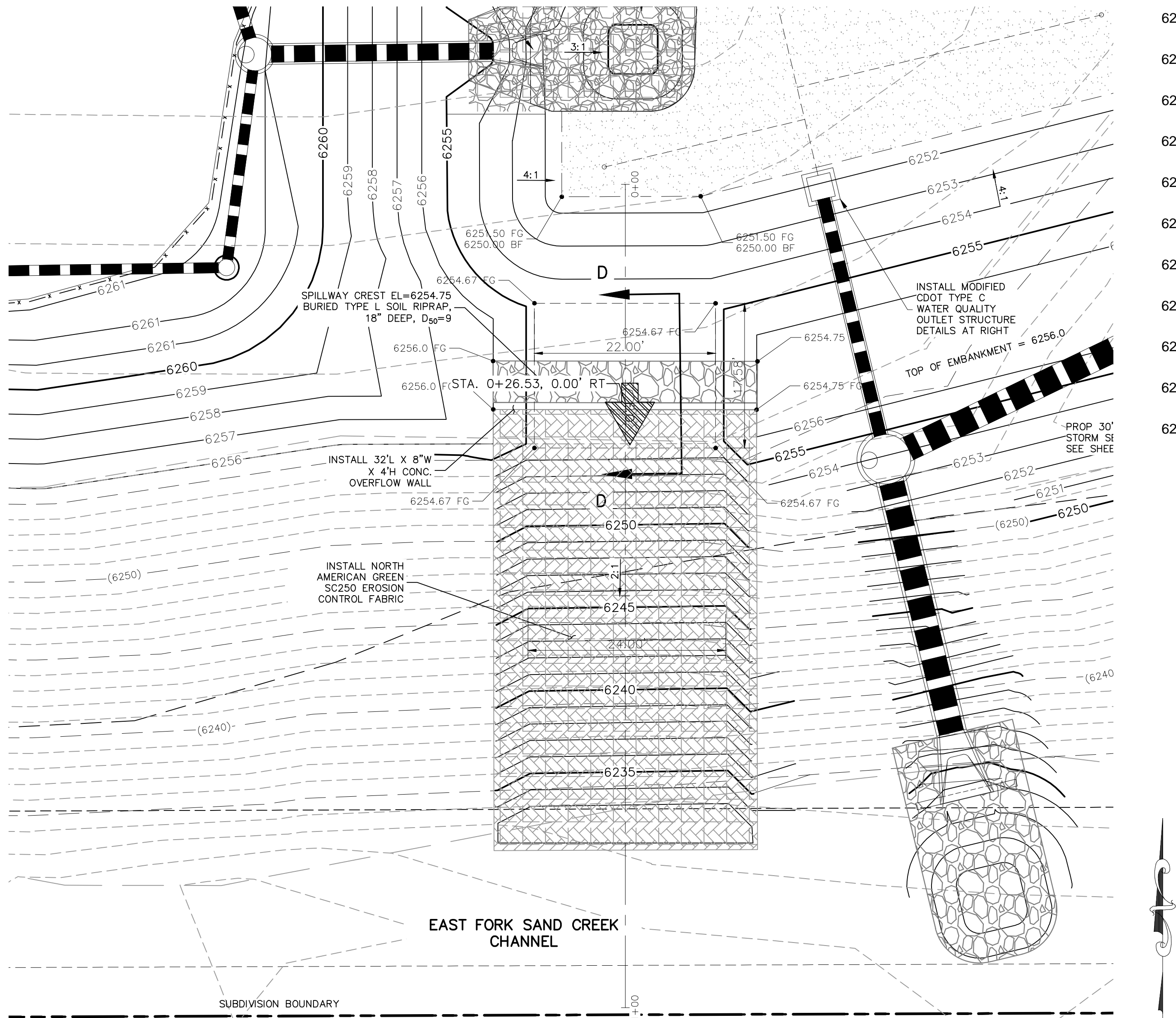
CAUTION

EL PASO COUNTY FILE NO. PCD # PPR-22-034



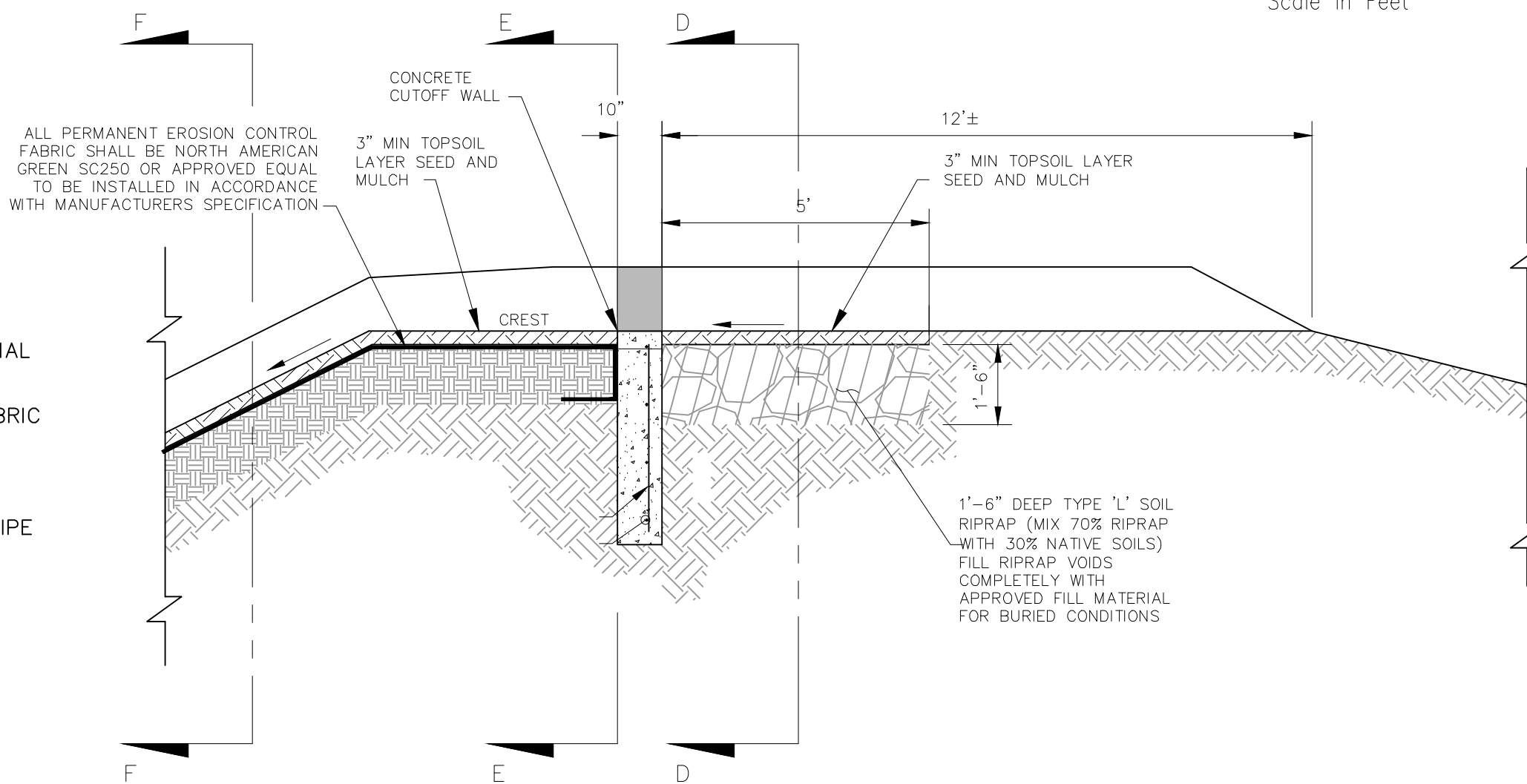
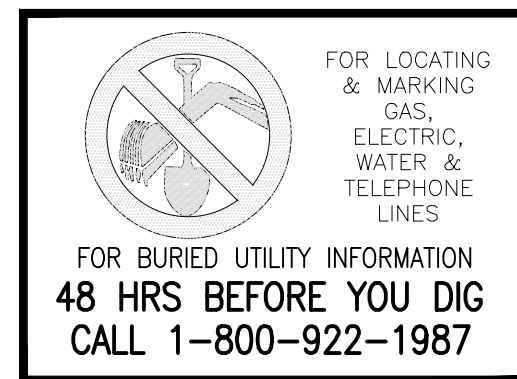




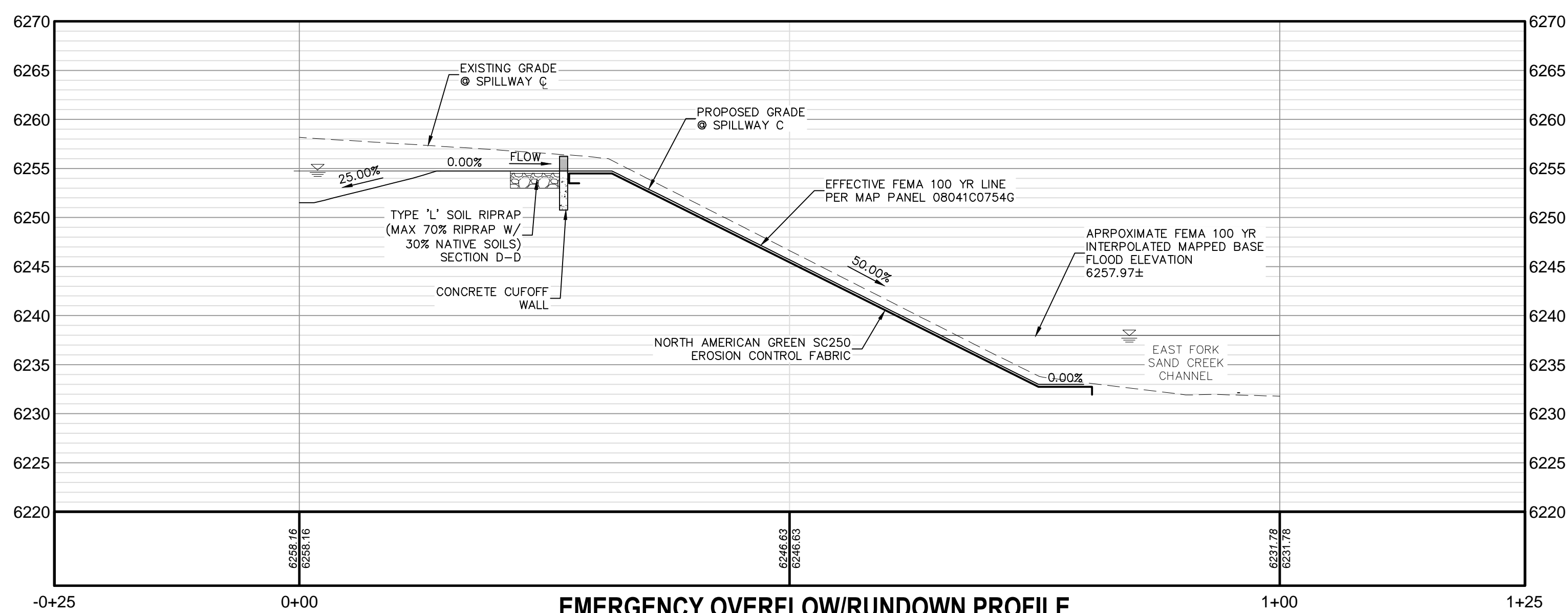


EMERGENCY OVERFLOW/RUNDOWN PLAN  
NOT TO SCALE

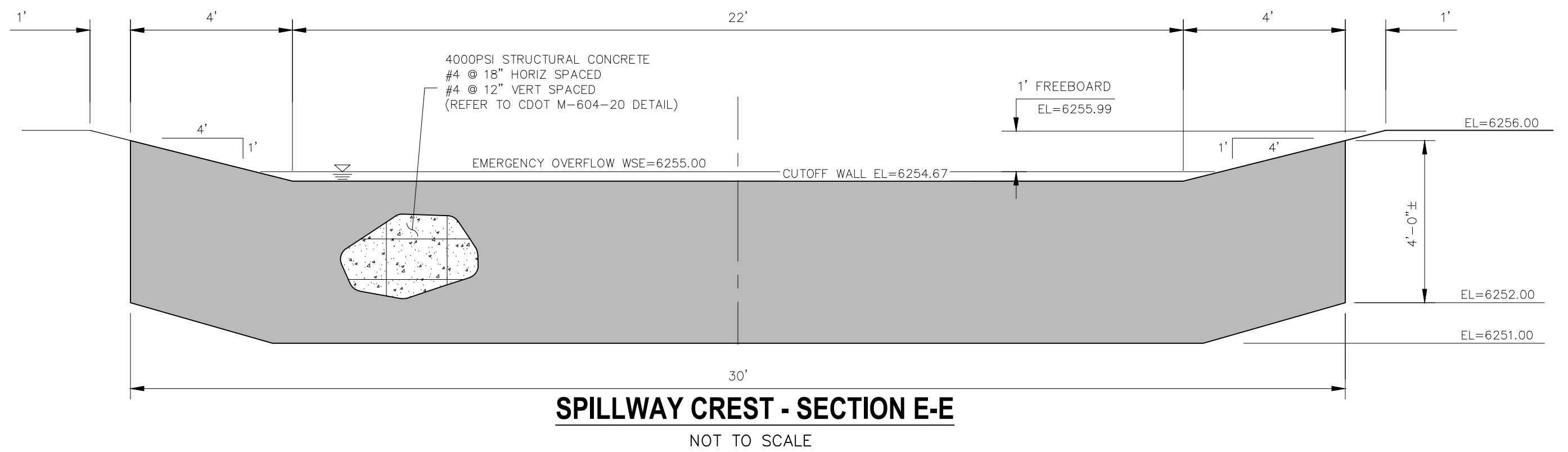
- LEGEND**
- EX EXISTING  
PROP PROPOSED
- 7070 PROP MAJ CONT  
7070 PROP MIN CONT  
7070 EXIST MAJ CONT  
7070 EXIST MIN CONT
- RIPRAP TYP.  
CDOT CLASS C MATERIAL  
EROSION CONTROL FABRIC  
PROPERTY LINE  
PROP STORM SEWER PIPE  
WARNING SIGN



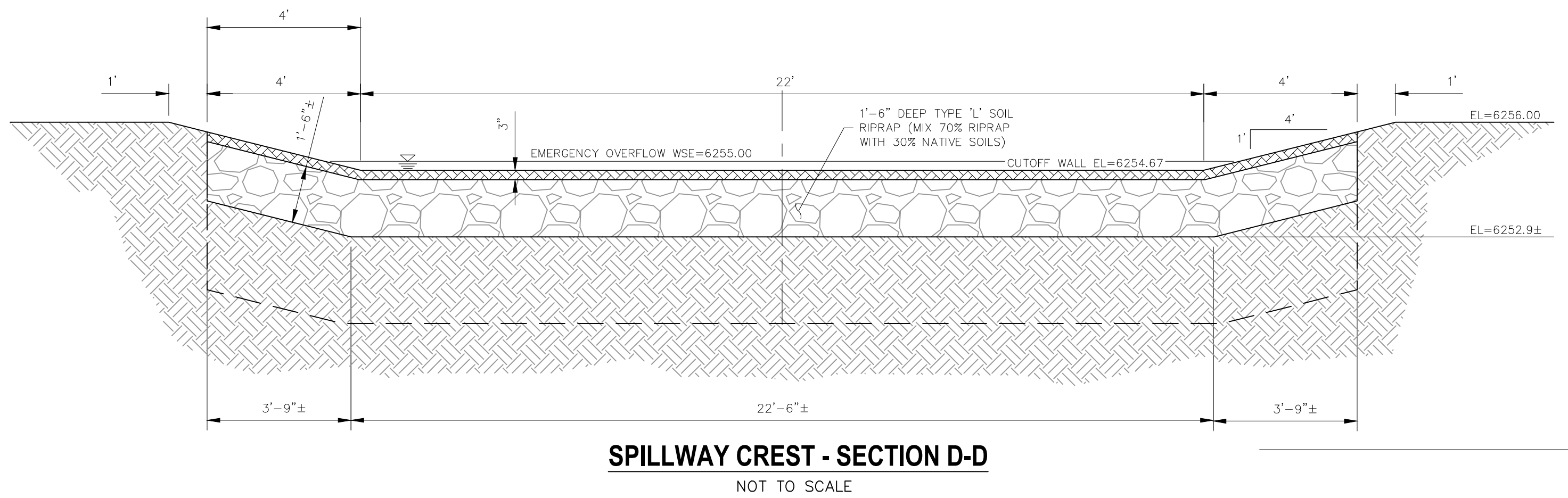
SPILLWAY SECTION D-D  
NOT TO SCALE



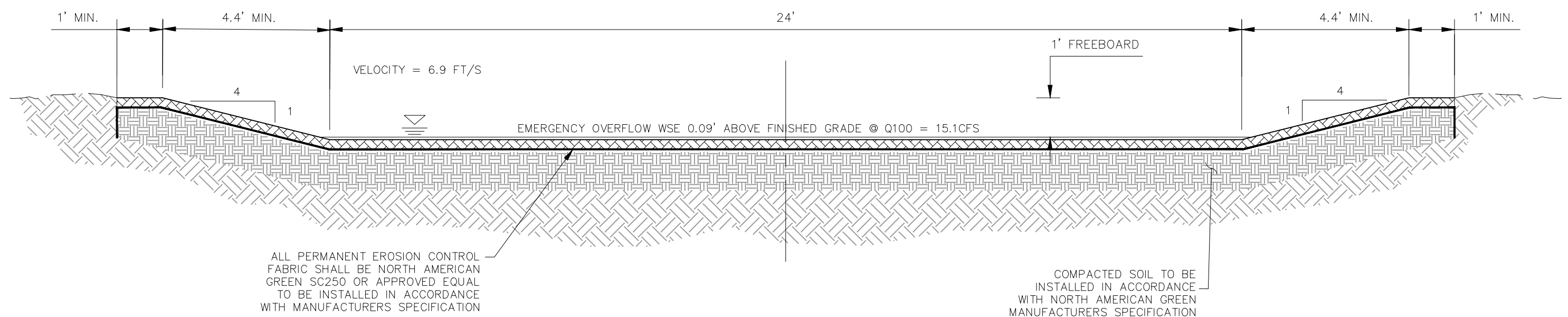
EMERGENCY OVERFLOW/RUNDOWN PROFILE  
NOT TO SCALE



SPILLWAY CREST - SECTION E-E  
NOT TO SCALE



SPILLWAY CREST - SECTION D-D  
NOT TO SCALE



SPILLWAY RUNDOWN - SECTION F-F  
NOT TO SCALE

CLEARWAY, LOT 5	
OUTLET STURCTURE POND 1 DETAILS	
PROJECT NO. 44-042A	DATE: 09-09-2022
DESIGNED BY: DLM	HORIZONTAL: 1"=50'
DRAWN BY: CLP	VERTICAL: 1"=5'
CHECKED BY: DLM	SHEET 15 OF 16
BMP02	

212 N WAHATCH AVE. STE 305  
COLORADO SPRINGS CO 80903  
PHONE: 719.555.5485

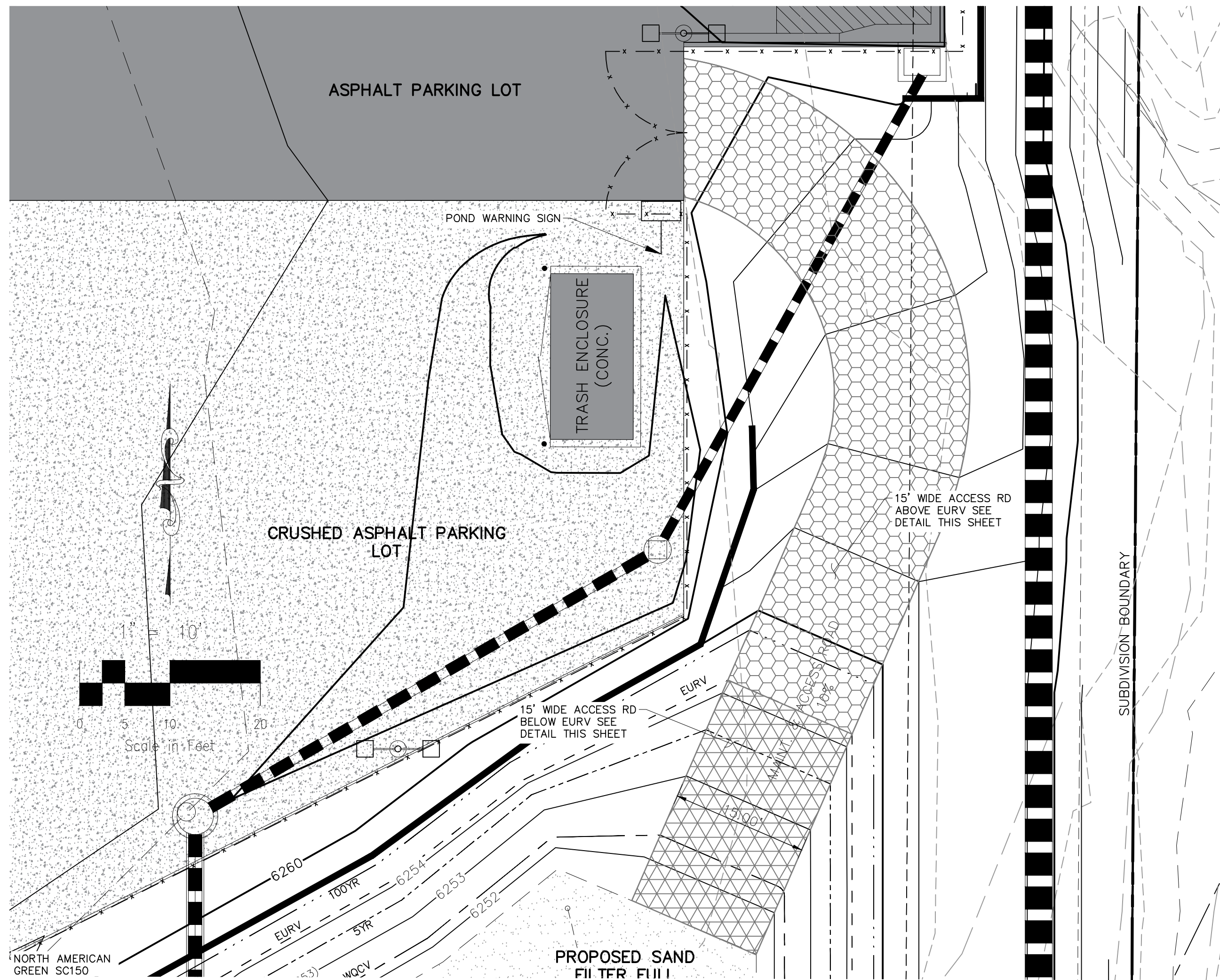
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF  
MKS CIVIL CONSULTANTS, INC.

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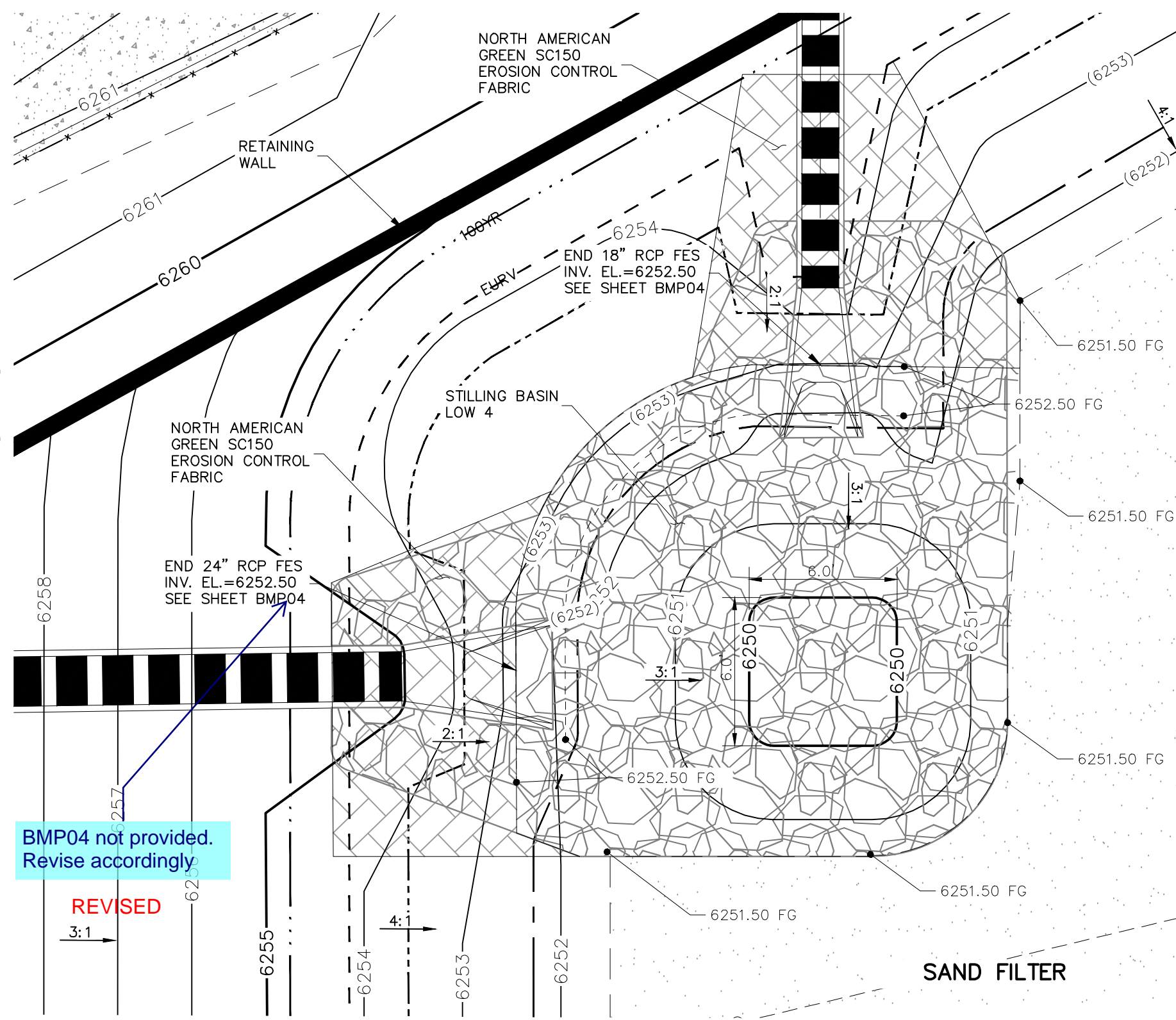
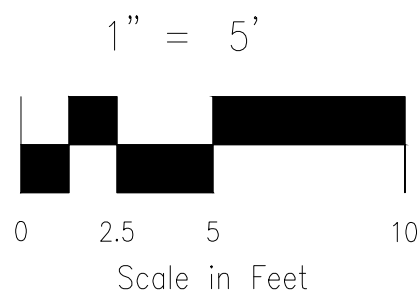
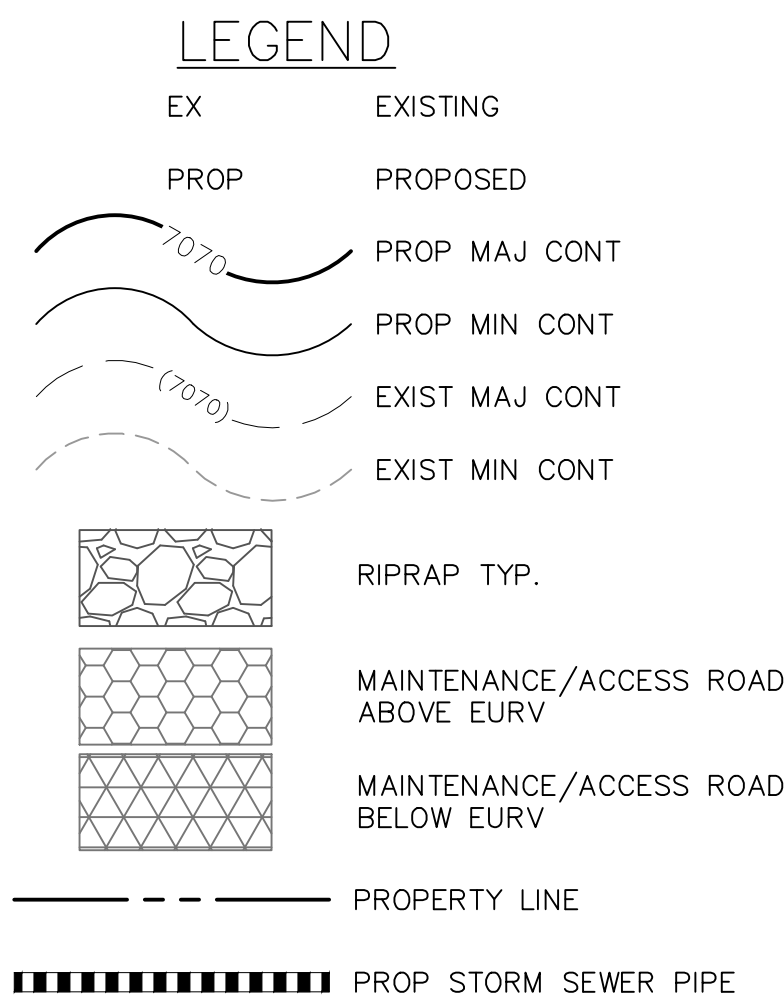
CAUTION





MAINT AND ACCESS ROADWAY PLAN

SCALE: 1" = 10'



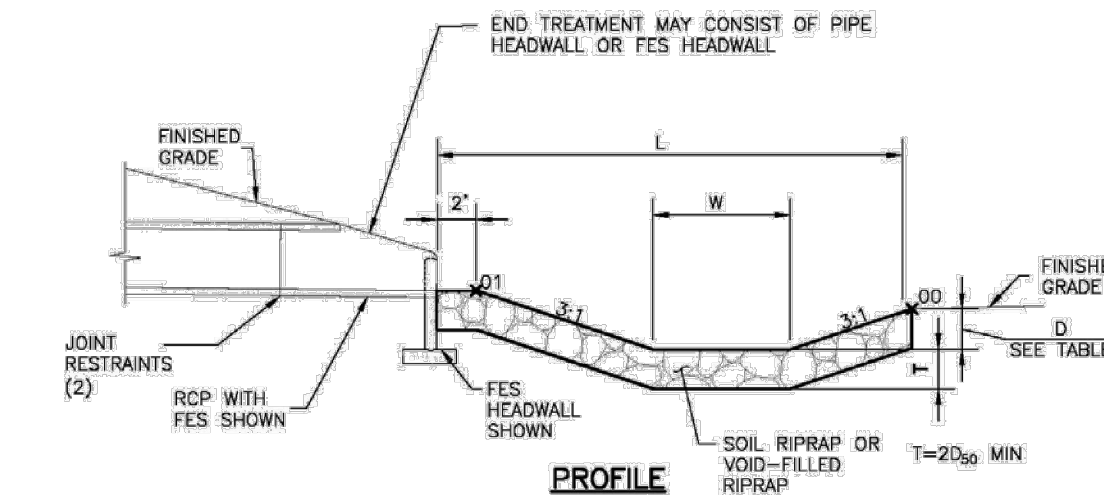
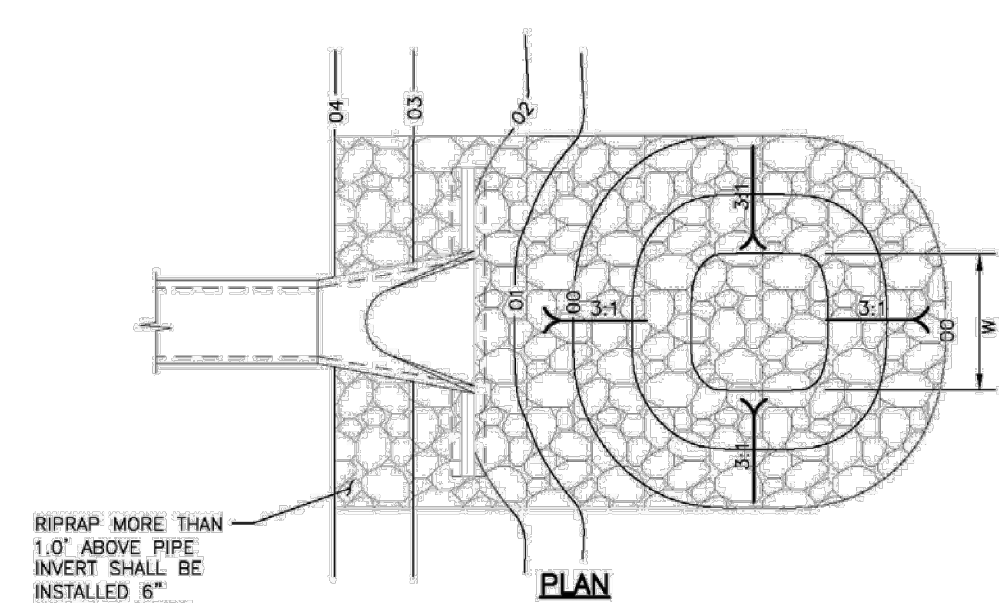
POND STILLING BASIN PLAN VIEW

SCALE: 1" = 5'

TABLE 1

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D <sub>50</sub> * (INCHES)
TYPE VL	70-100 50-70 35-50 2-10	12 9 6 2	6
TYPE L	70-100 50-70 35-50 2-10	15 12 9 3	9
TYPE M	70-100 50-70 35-50 2-10	21 18 12 4	12
TYPE H	70-100 50-70 35-50 2-10	30 24 18 6	18
TYPE VH	70-100 50-70 35-50 2-10	41 33 24 9	24

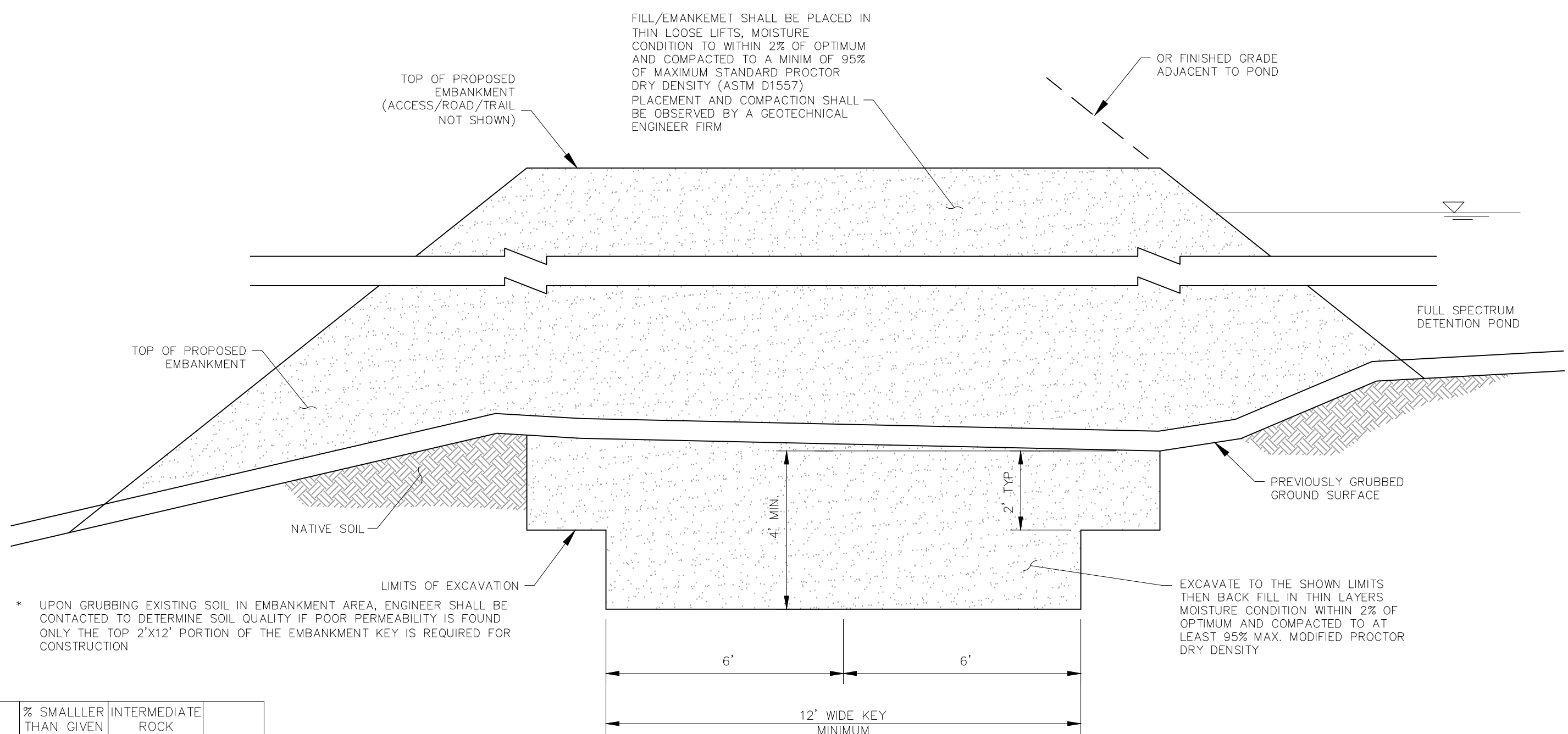
\*D<sub>50</sub> = MEAN PARTICLE SIZE  
REFER TO SECTION 506 RIPRAP OF CDOT SPECIFICATIONS



PIPE SIZE OR BOX HEIGHT	D	W*	L
18" - 24"	1'-0"	4'	15'
30" - 36"	1'-6"	6'	20'
42" - 48"	2'-0"	7'	24'
54" - 60"	2'-6"	8'	28'
66" - 72"	3'-0"	9'	32'

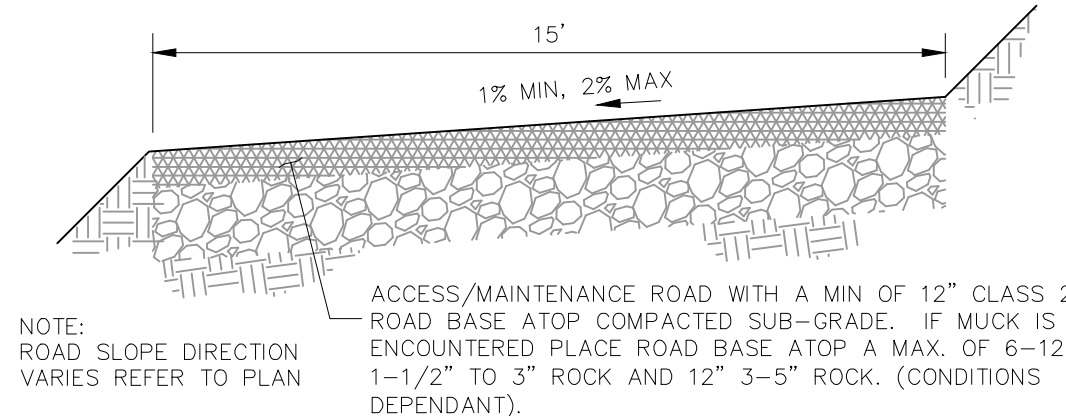
\* IF OUTLET PIPE IS A BOX CULVERT WITH A WIDTH GREATER THAN W, THEN W = CULVERT WIDTH

Figure 9-37. Low tailwater riprap basin



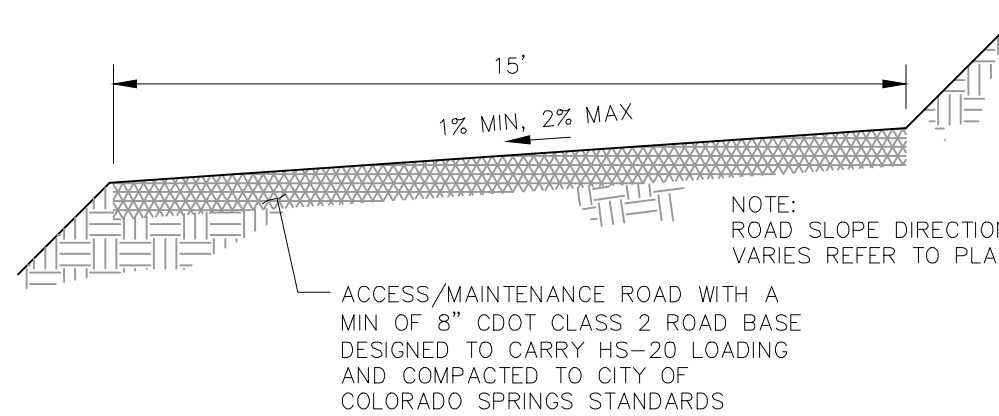
TYPICAL EMBANKMENT WITH SOIL KEYWAY

NOT TO SCALE



MAINTENANCE & ACCESS ROAD  
BELOW EURV TYPICAL SECTION

NOT TO SCALE



MAINTENANCE & ACCESS ROAD  
ABOVE EURV TYPICAL SECTION

NOT TO SCALE

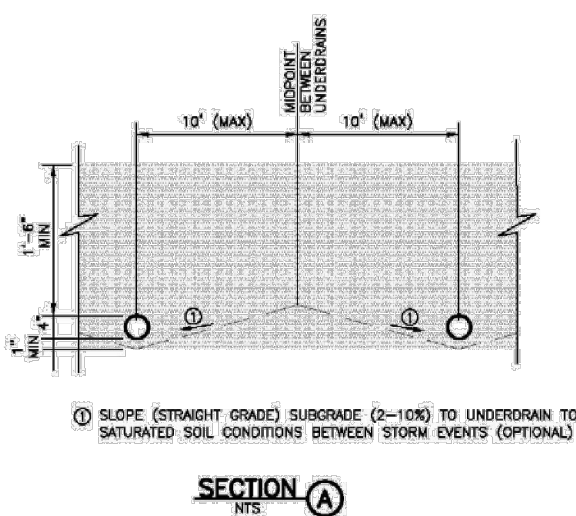
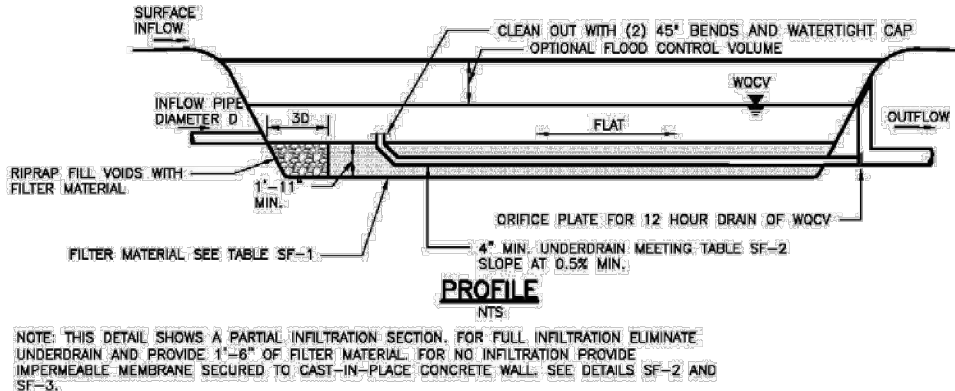
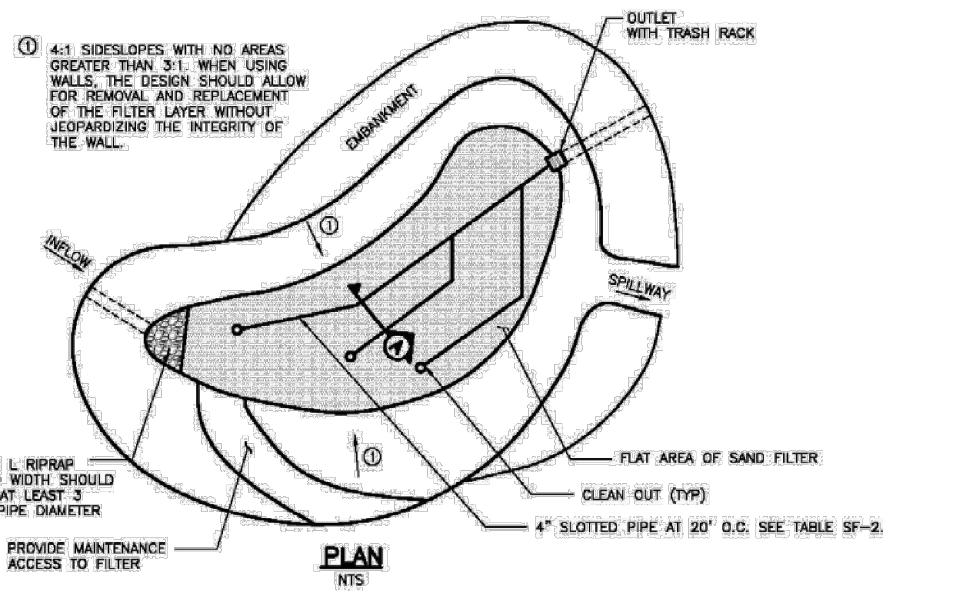
Table SF-1. Gradation Specifications for CDOT Class C Filter Material  
(Source: CDOT Table 703-7)

Sieve Size	Mass Percent Passing Square Mesh Sieves
19.0 mm (3/4")	100
4.75 mm (No. 4)	60 - 100
300 µm (No. 50)	10 - 30
150 µm (No. 100)	0 - 10
75 µm (No. 200)	0 - 3

Table SF-2. Dimensions for Slotted Pipe

Pipe Size	Slot Length <sup>1</sup>	Maximum Slot Width	Slot Centers <sup>1</sup>	Open Area <sup>1</sup> (per foot)
4"	1-1/16"	0.032"	0.413"	1.90 in <sup>2</sup>
6"	1-3/8"	0.032"	0.516"	1.98 in <sup>2</sup>

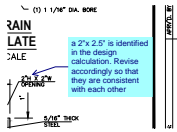
<sup>1</sup> Some variation in these values is acceptable and is expected from various pipe manufacturers. Be aware that both increased slot length and decreased slot centers will be beneficial to hydraulics but detrimental to the structure of the pipe.





# Roadway Plans\_V2 redlines.pdf Markup Summary

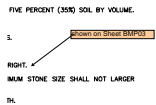
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**Date:** 10/20/2022 4:16:14 PM  
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a 2"x 2.5" is identified in the design calculation. Revise accordingly so that they are consistent with each other

10/23/2022 3:32:25 PM (1)



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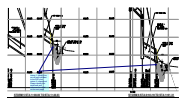
shown on Sheet BMP03

10/23/2022 3:32:32 PM (1)

SOIL RIPRAP.  
WN ~~TO THE RIGHT~~.  
S. THE MAXIMUM STC

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**Author:** dotprete  
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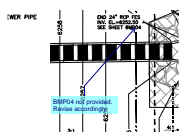
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review 1: identify the cut-off wall indicated in the GEC plan  
review 2: unresolved. Please identify the cutoff wall and reference the detail on the next page

10/24/2022 8:15:49 AM (1)



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BMP04 not provided. Revise accordingly