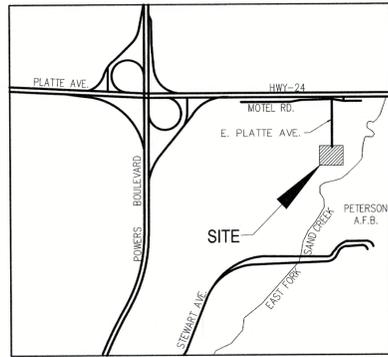


CLEARWAY, LOT 5

COUNTY OF EL PASO, STATE OF COLORADO

CONSTRUCTION PLANS

JUNE 2023



VICINITY MAP
N.T.S.

AGENCIES:

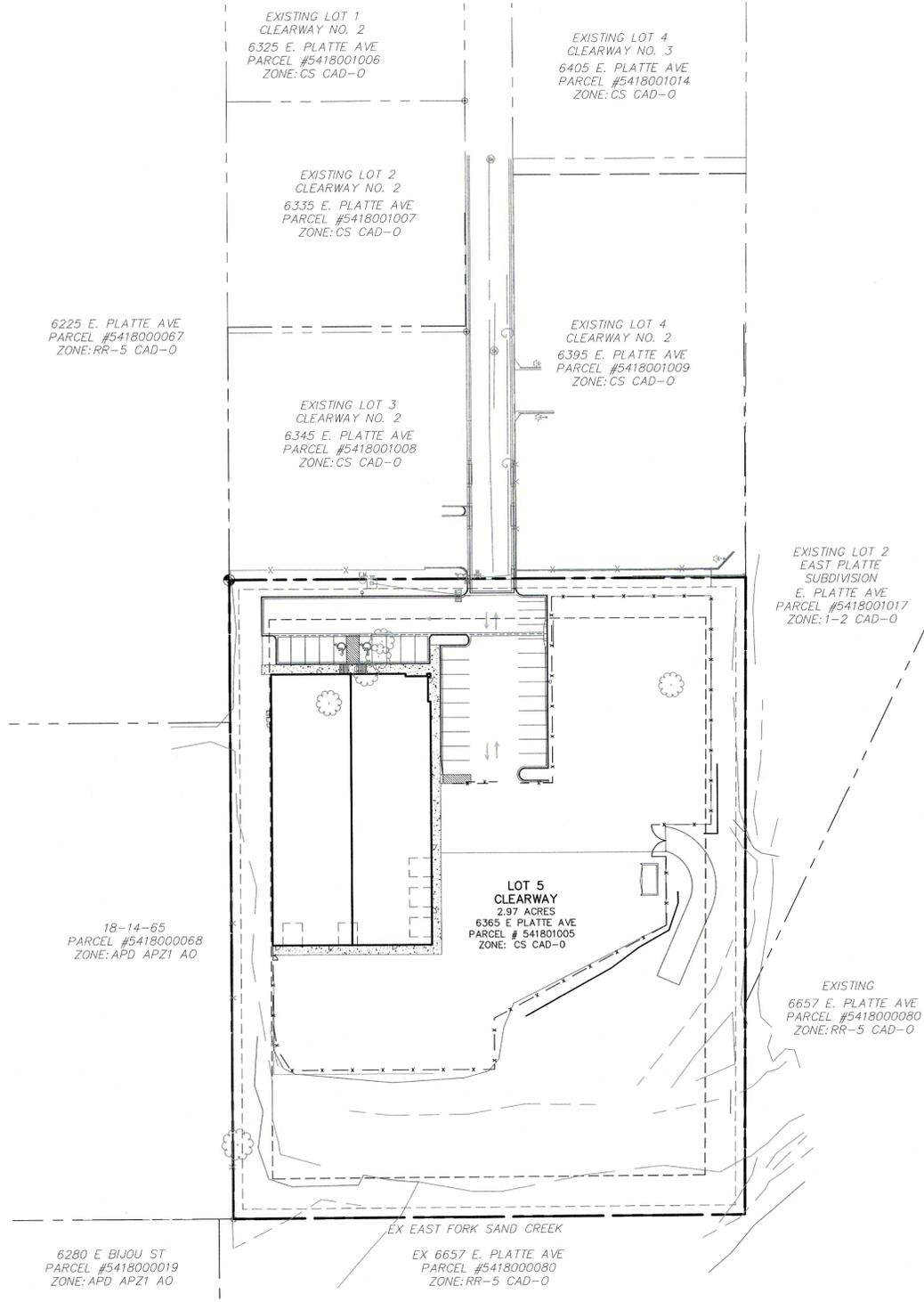
- OWNER:** WRENUT HOME SERVICES
PO BOX 2245
FORT COLLINS, CO 80522
TRENT URBAN (719) 227-0500
- DEVELOPER:** HAMMERS CONSTRUCTION
1411 WOOLSEY HEIGHTS
COLORADO SPRINGS, CO 80915
(719) 570-1599
- CIVIL ENGINEER:** M&S CIVIL CONSULTANTS, INC.
212 N WAHSATCH AVENUE, SUITE 305
COLORADO SPRINGS, CO 80903
VIRGIL A. SANCHEZ P.E. (719) 955-5485
- COUNTY ENGINEERING:** EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT
2880 INTERNATIONAL CIRCLE, SUITE 110
COLORADO SPRINGS, CO 80910
GILBERT LAFORCE, P.E. (719)-520-7945
- TRAFFIC ENGINEERING:** EL PASO COUNTY PUBLIC SERVICES & TRANS. DEPT.
3275 AKERS DRIVE
COLORADO SPRINGS, CO 80922
JOSHUA PALMER, P.E. (719) 520-6460
- FIRE DISTRICT:** CIMARRON HILLS FIRE DEPARTMENT
1835 TUSKEGEE PLACE
COLORADO SPRINGS, CO 80915
(719) 591-0960
- WATER RESOURCES:** CHEROKEE METRO DISTRICT
6250 PALMER PARK BLVD.
COLORADO SPRINGS, CO 80915
JEFF MUNGER (719) 597-5080
- GAS DEPARTMENT:** COLORADO SPRINGS UTILITIES
7710 DURANT DR.
COLORADO SPRINGS, CO 80947
TIM WENDT (719) 668-3556
- ELECTRIC DEPARTMENT:** MOUNTAIN VIEW ELECTRIC
11140 E. WOODMEN ROAD
FALCON, CO 80831
(719) 495-2283
- COMMUNICATIONS:** QWEST COMMUNICATIONS
(U.N.C.C. LOCATORS) (800) 922-1987
AT&T (LOCATORS) (719) 635-3674

BENCHMARKS:

- FIMS MONUMENT F81, LOCATED ON THE NORTH SIDE OF EAST PLAT AVE, 50' WEST OF FORD STREET.
ELEV.=6275.86' (NAVD88)
- MUELLER BOLT ON HYDRANT FLANGE, HYDRANT LOCATED AT THE SW CORNER OF LOT 3.
ELEV.=6265.48' (NAVD88)

BASIS OF BEARINGS

THE EASTERLY LINE OF LOTS 2 AND 3, OF "CLEARWAY NO 2" PLAT NO 10231 OF THE RECORDS OF EL PASO COUNTY, COLORADO, BEING MONUMENTED AT THE SOUTH END BY A 1.5" ALUMINUM CAP STAMPED PLS 38658, FROM WHICH A NAIL & WASHER, EL: 6267.44 BEARS N00°00'00"W, A DISTANCE OF 300.02 FEET.



SITE MAP
N.T.S.

DESIGN ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.



VIRGIL A. SANCHEZ, COLORADO P.E. #37160
FOR AND ON BEHALF OF M & S CIVIL CONSULTANTS, INC.

OWNER/DEVELOPER'S STATEMENT:

I, THE DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS IN THESE DETAILED PLANS AND SPECIFICATIONS.

[Signature] 11-6-23
DATE
ADDRESS: 1411 WOOLSEY HEIGHTS, COLORADO SPRINGS, CO 80915

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTORS DISCRETION.

Accepted for File
By: **Gilbert LaForce, P.E.**
Engineering Manager
Date: **11/16/2023 5:22:31 PM**
El Paso County Department of Public Works

SHEET INDEX

SHEET NO.	TITLE
SHEET 1	TITLE SHEET
SHEET 2	CONSTRUCTION NOTES & DETAILS
SHEET 3	DEMOLITION PLAN
SHEET 4	STREET IMPROVEMENT PLAN
SHEET 5	STRIPING AND SIGNAGE PLAN
SHEET 6	STORM SEWER PLAN AND PROFILE (STM1, STM1LAT1, STM1LAT2)
SHEET 7	STORM SEWER PLAN AND PROFILE (STM2, STM3)
SHEET 8	STORM SEWER PLAN AND PROFILE (STM4, STM5, STM6)
SHEET 9	STORM SEWER NOTES AND DETAILS
SHEET 10	STORM SEWER DETAILS
SHEET 11	STORM SEWER DETAILS
SHEET 12	STORM SEWER DETAILS
SHEET 13	STORM SEWER DETAILS
SHEET 14	OUTLET STRUCTURE POND 1 DETAILS
SHEET 15	OUTLET STRUCTURE POND 2 DETAILS
SHEET 16	OUTLET STRUCTURE POND 2 DETAILS

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

CLEARWAY, LOT 5
TITLE SHEET
SCALE: 1"=40'-0"

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

DATE: 06/13/2023
SHEET 1 OF 16
TS01

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

CIVIL CONSULTANTS, INC.

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

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

NO. DATE: BY: DESCRIPTION:

THE ENGINEER PREPARES 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 PREPARER OF THESE PLANS.

CAUTION

File: 0:\44022A-Mire Nut\Hammers\Draw\Const\Draw\Clearway\44022A-1501.dwg Plotstamp: 6/14/2023 3:40 PM



GENERAL CONSTRUCTION NOTES:

- 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.
- 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.
- ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
- 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.
- 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).
- ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO EPC ECM APPENDIX K - 1.2C.
- 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.
- 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.
- 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

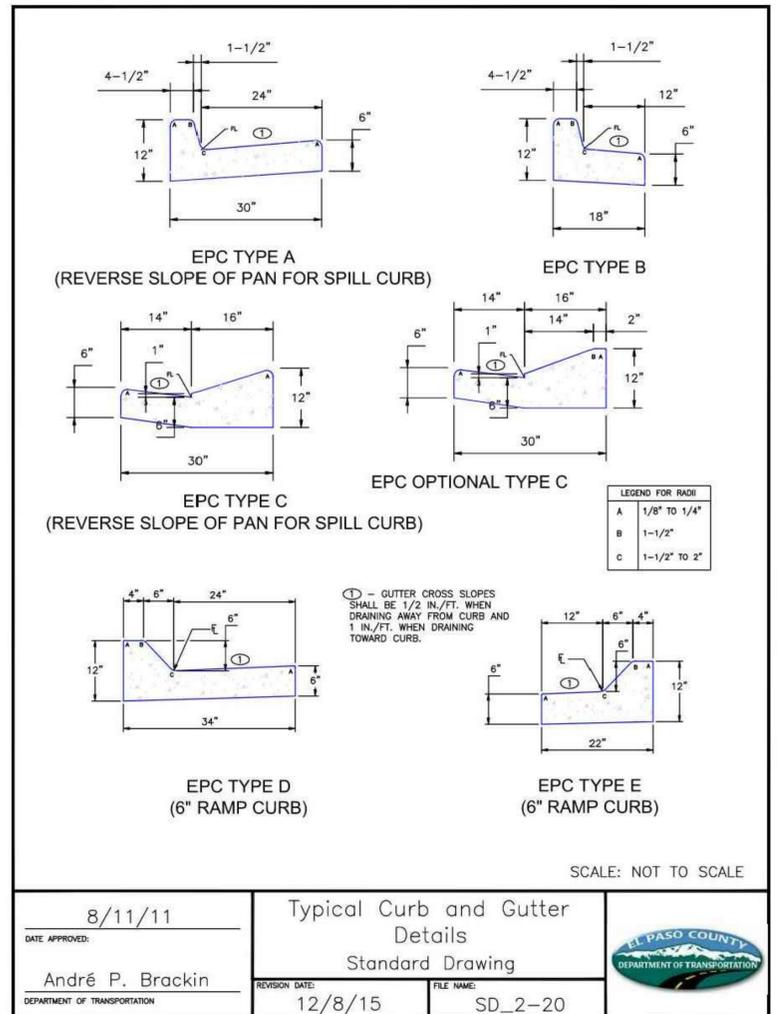
- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION 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).
- 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 ALL TIMES, INCLUDING THE FOLLOWING:
 - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
 - CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
 - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
 - CDOT M & S STANDARDS
- 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.
- 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.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PCD - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- 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.
- 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.
- ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
- 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.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- 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.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DPW AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DPW, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- 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:

- ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- 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.
- ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT.
- 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.
- STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
- ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
- 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"
- ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
- 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.
- ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
- 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
- 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.



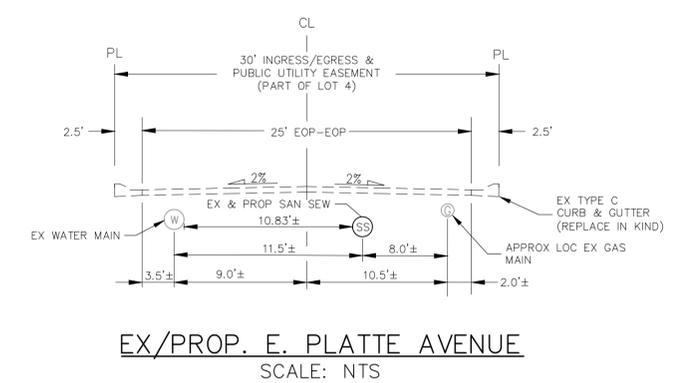
8/11/11
DATE APPROVED: André P. Brackin
DEPARTMENT OF TRANSPORTATION

Typical Curb and Gutter Details
Standard Drawing
REVISION DATE: 12/8/15
FILE NAME: SD_2-20

EL PASO COUNTY
DEPARTMENT OF TRANSPORTATION

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

File: 0:\44042A-Wire Net\Hammers\Const Dwg\Street\44042A-CN02.dwg Plotstamp: 6/14/2023 3:35 PM

CLEARWAY, LOT 5

CONSTRUCTION NOTES AND DETAILS

PROJECT NO. 44-042A DATE: 06/13/2023

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

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

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

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF WKS CIVIL CONSULTANTS, INC.

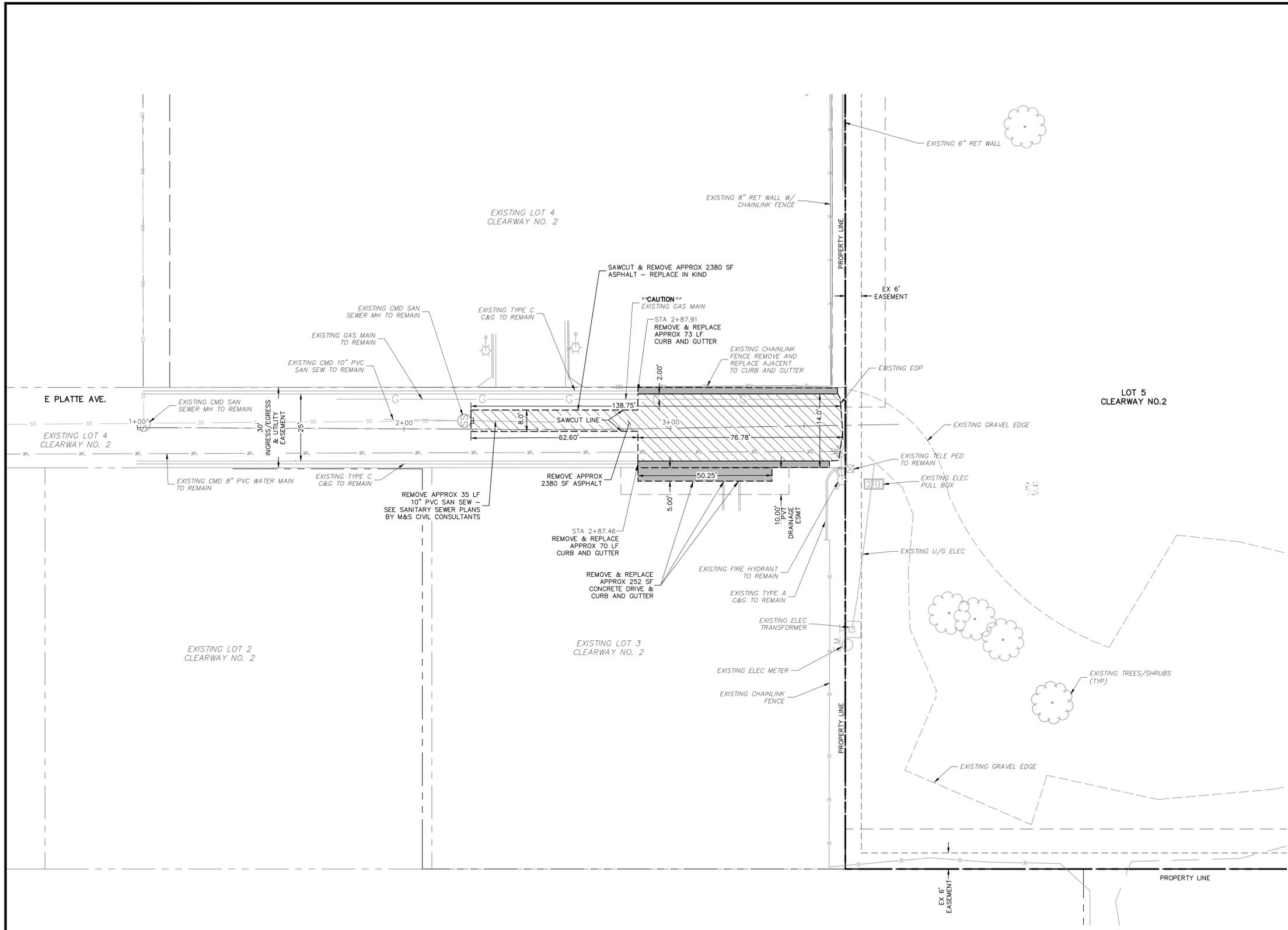
VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160

PROFESSIONAL SEAL: VIRGIL A. SANCHEZ, P.E. NO. 37160, 06/14/2023

REVISIONS: 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 PREPARE OF THESE PLANS.

CAUTION



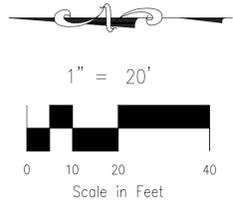
EAST PLATTE AVE. DEMOLITION PLAN

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
LN	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	⊙
EX. SANITARY MANHOLE	⊙
EX. WATER VALVE	⊙
PAVEMENT DEMOLITION AREA	▨
C&G DEMOLITION AREA	■



CLEARWAY, LOT 5	
DEMOLITION PLAN	
PROJECT NO. 44-042A	DATE: 06/13/2023
DESIGNED BY: DLM	SCALE: HORIZONTAL: 1"=20'
DRAWN BY: CLP	VERTICAL: N/A
CHECKED BY: DLM	SHEET 3 OF 16
S101	

212 N. WABATCH AVE., STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5865

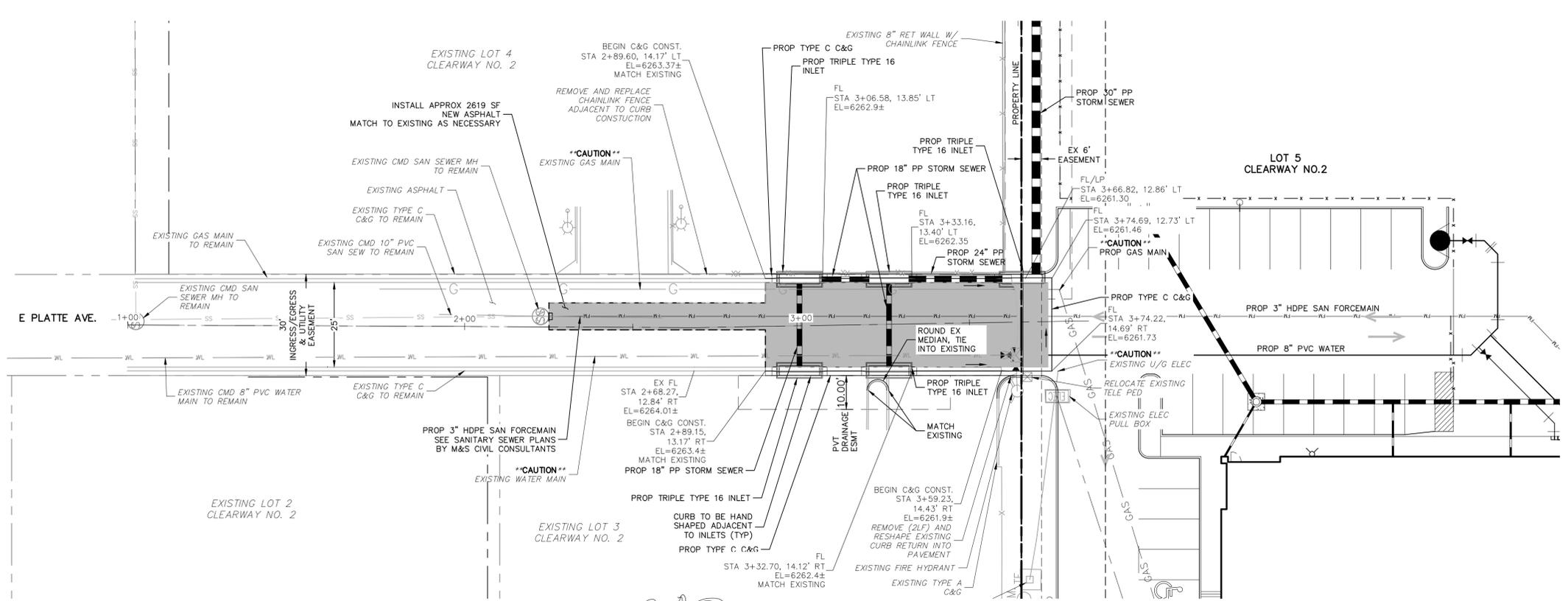
CIVIL CONSULTANTS, INC.

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

NO.	DATE	BY	DESCRIPTION

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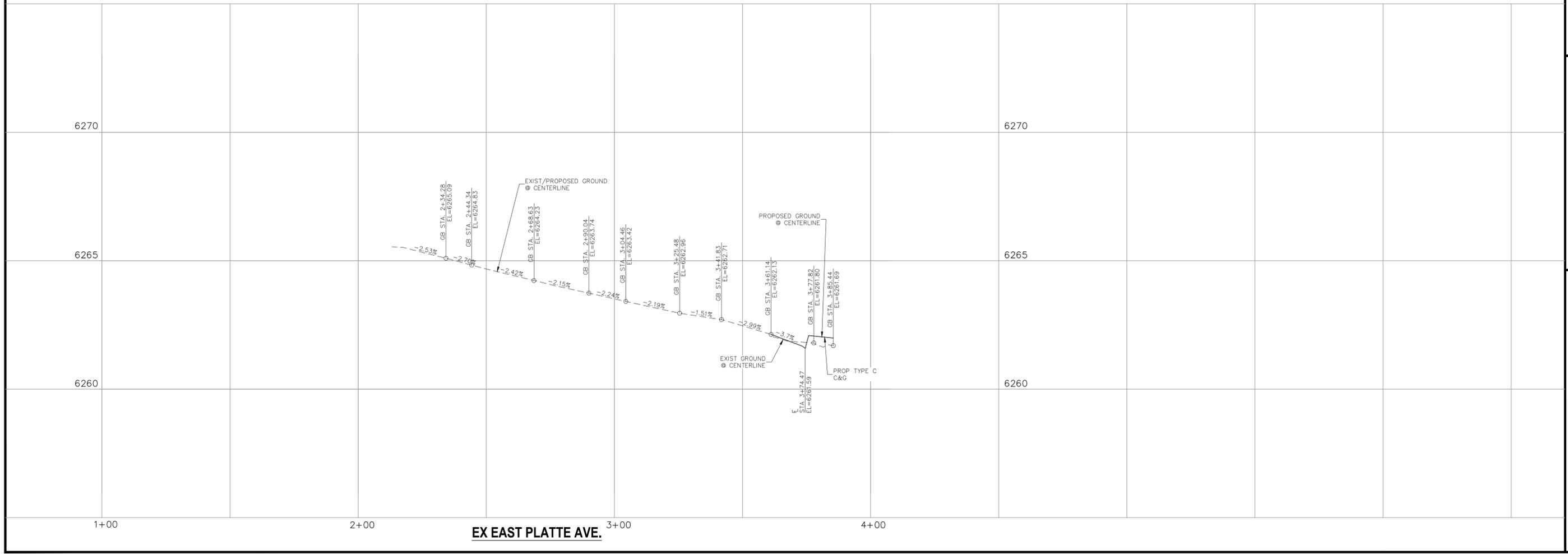
CAUTION



**EX EAST PLATTE AVE.
STA 1+00.00 - 3+74.69**

ABBREVIATION LEGEND

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



CLEARWAY, LOT 5

STREET IMPROVEMENT PLAN

PROJECT NO. 44-042A DATE: 06/13/2023

SCALE: HORIZONTAL: 1"=20' VERTICAL: 1"=2'

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

212 N. WASHCATCH 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 M&S CIVIL CONSULTANTS, INC.

PROFESSIONAL REGISTERED ENGINEER
NO. 37160
06/14/2023

REVISIONS: NO. DATE BY DESCRIPTION

APPROVED BY: DATE:

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 PREPARER OF THESE PLANS.

CAUTION

S102
SHEET 4 OF 16

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

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

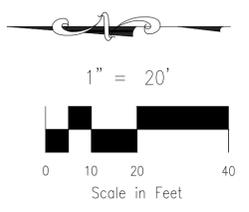
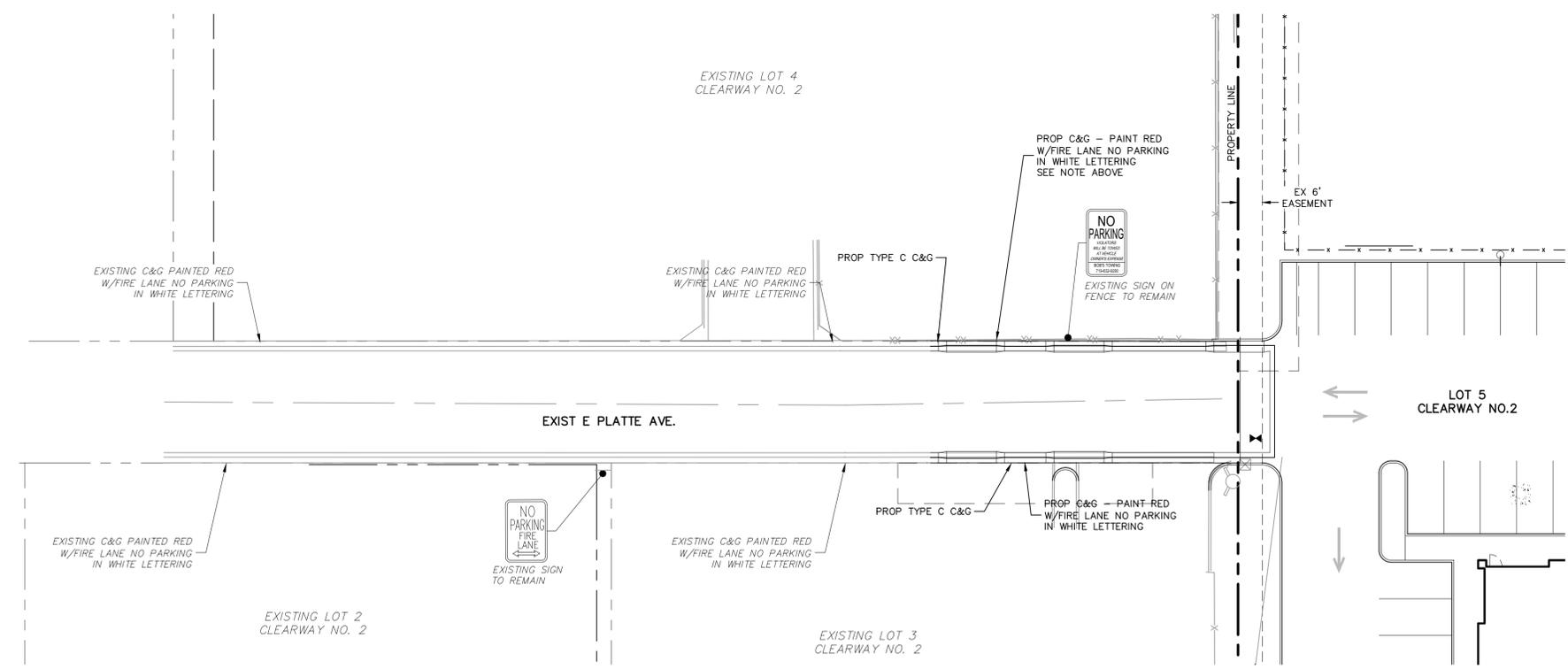
NOTE TO CONTRACTOR:

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

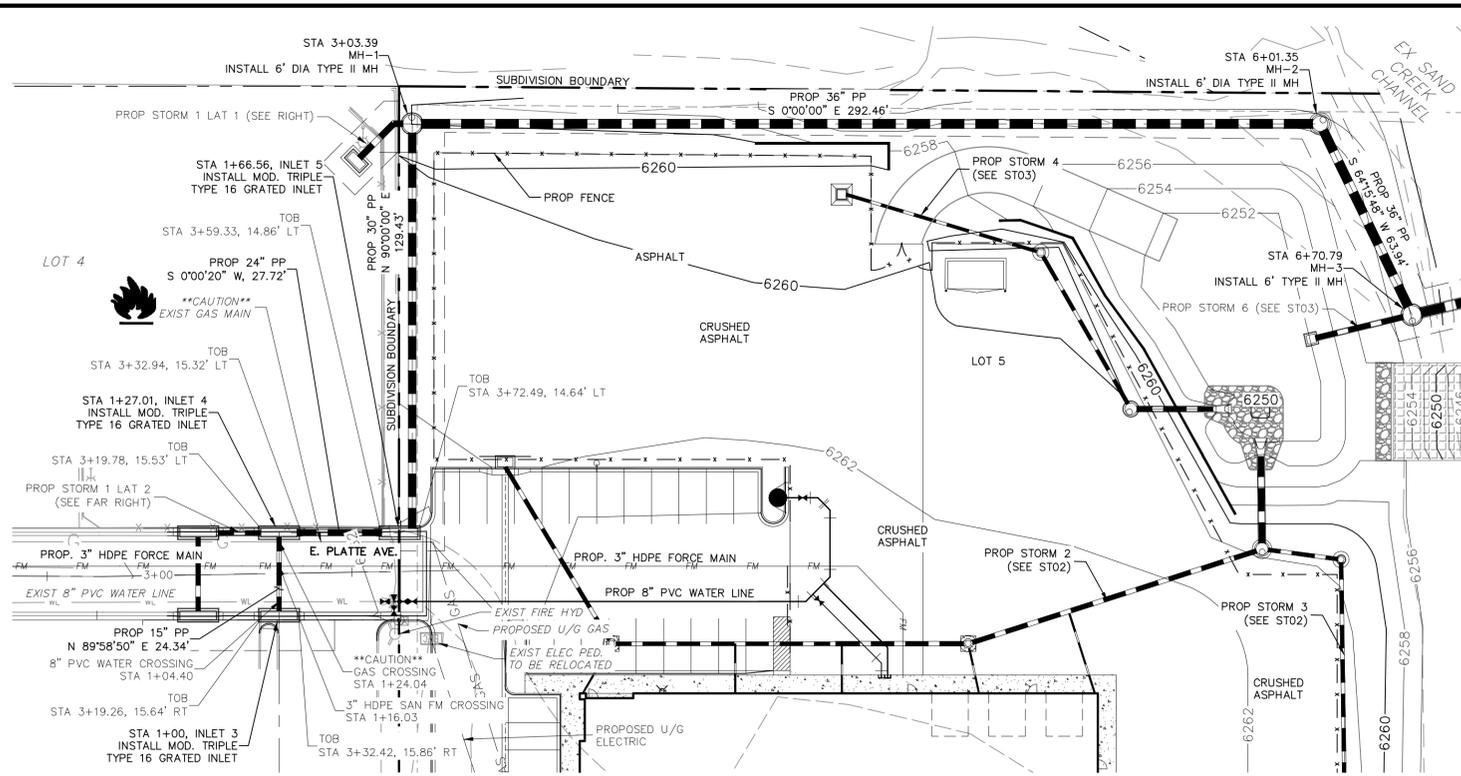
NOTE:

STRIPING ALONG CURB FACE AND TOP OF CURB SHALL BE:

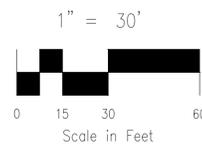
- 6" RED TRAFFIC PAINT STRIPE
- 4" WHITE REFLECTIVE LETTERING/WORDING WITH 3/4" STROKE STATING NO PARKING FIRE LANE
- LETTERING/WORDING SPACED EVERY 25'



CLEARWAY, LOT 5		STRIPING AND SIGNAGE PLAN	
PROJECT NO. 44-042A	SCALE: HORIZONTAL: 1" = 20'	DATE: 06/13/2023	S103
DESIGNED BY: DLM	DRAWN BY: CLP	CHECKED BY: DLM	SHEET 5 OF 16
212 N. WASHATCH AVE., STE 305 COLORADO SPRINGS, CO 80903 PHONE: 719.555.5865			
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.			
REVISIONS:	BY:	DESCRIPTION:	DATE:
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 OF THESE PLANS.			
CAUTION			



STORM 1
STA 0+99.84 TO STA 6+71.08

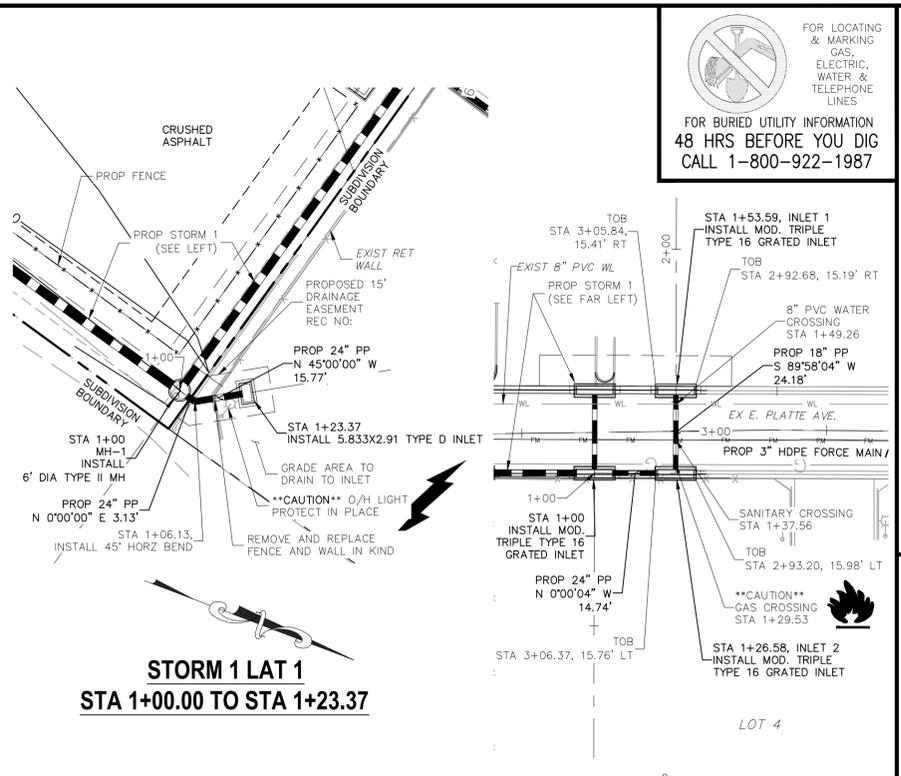


ABBREVIATION LEGEND

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	SOUTH
SAN	SANITARY SEWER
SLV	SLEEVE
SRV	SERVICE
STA	STATION
STM	STORM SEWER
W	WEST
WTR	WATER

NOTE:

1. ALL STORM SEWER CONSTRUCTED WITH THESE PLANS SHALL BE CONSIDERED PRIVATE.
2. GAS LINE NOT LOCATED, LOCATION TO BE DETERMINED BY CONTRACTOR
3. REFER TO SHEET ST07 FOR TOB/TOG ELEVATIONS FOR INLETS 1-5



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

STORM 1 LAT 1

STORM 1 LAT 2

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

212 N. WABATCH AVE., STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5468

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF WKS CIVIL CONSULTANTS, INC.

06/14/2023

PROFESSIONAL SEAL

REVISIONS:

NO.	DATE	BY	DESCRIPTION

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CAUTION

PROJECT NO. 44-042A
DATE: 06/13/2023
SCALE: HORIZONTAL: 1"=30' VERTICAL: 1"=3'
DESIGNED BY: CLP
DRAWN BY: CLP
CHECKED BY: DLM

STORM SEWER PLAN AND PROFILE

SHEET 6 OF 16

ST01

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
 FOR BURIED UTILITY INFORMATION
 48 HRS BEFORE YOU DIG
 CALL 1-800-922-1987

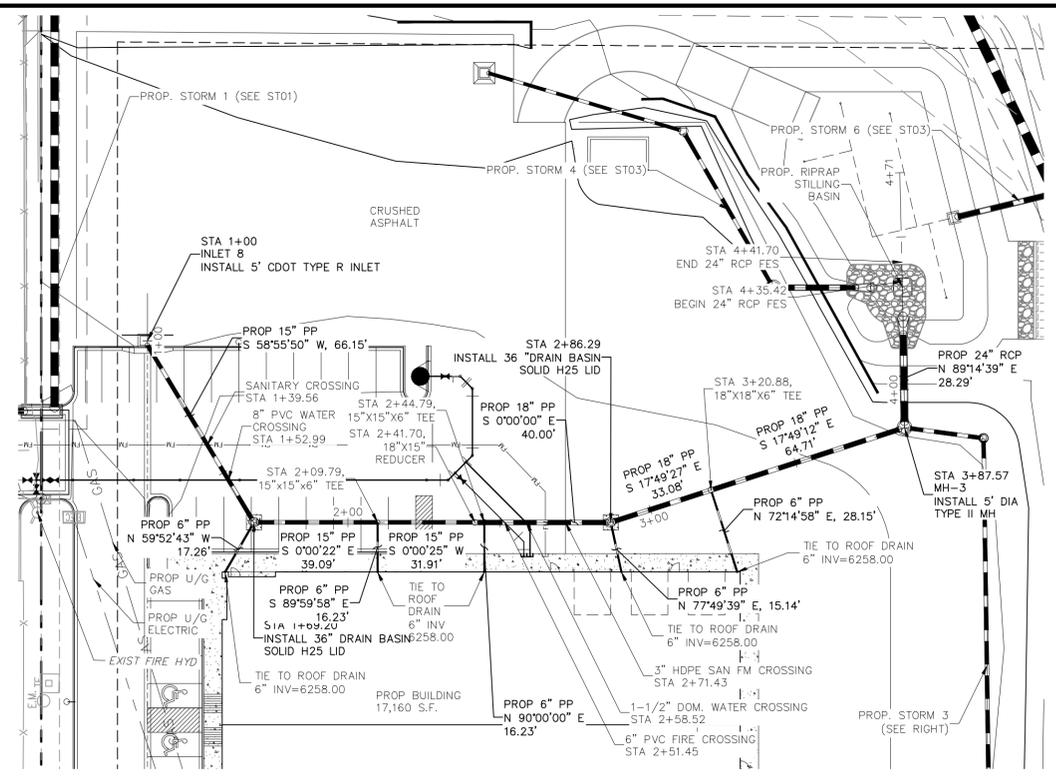
CLEARWAY, LOT 5
STORM SEWER PLAN AND PROFILE
 PROJECT NO. 44-042A
 DATE: 06/13/2023
 SCALE: HORIZONTAL: 1"=30' VERTICAL: 1"=3'
 DESIGNED BY: DLM
 DRAWN BY: CLP
 CHECKED BY: DLM
 SHEET 7 OF 16
ST02

ABBREVIATION LEGEND

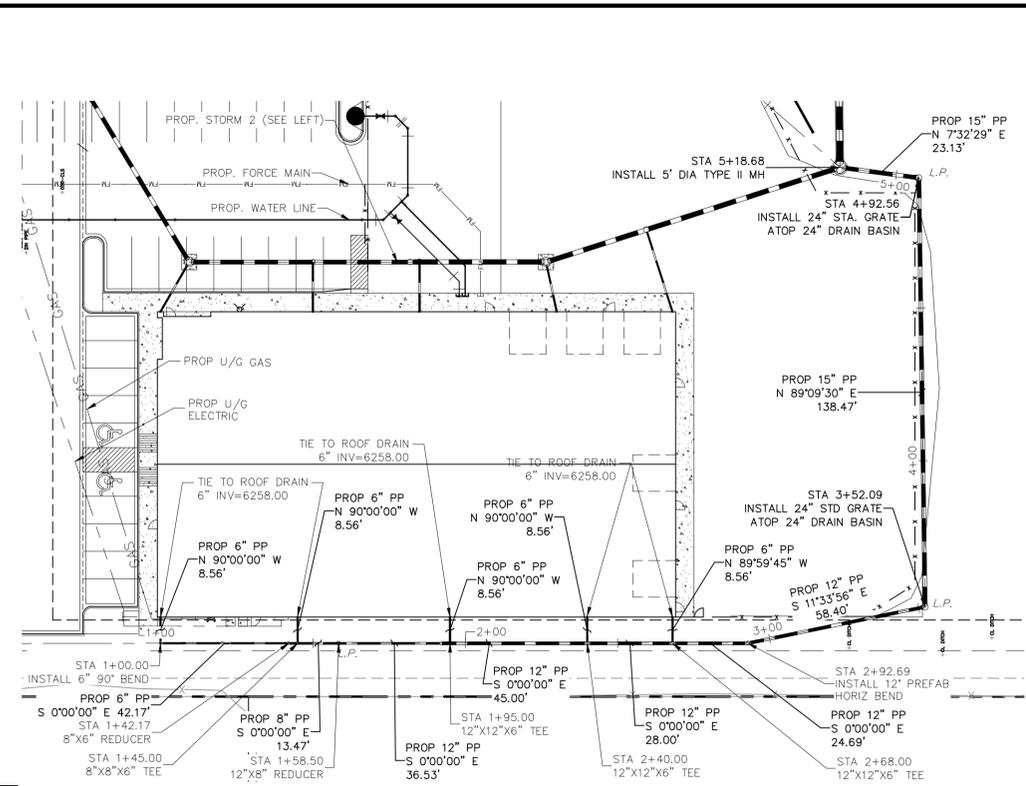
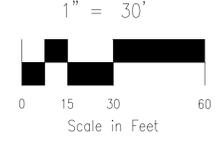
C&G	CURB AND GUTTER
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SLV	SLEEVE
SRV	SERVICE
STA	STATION
STM	STORM SEWER
W	WEST
WTR	WATER

NOTE:

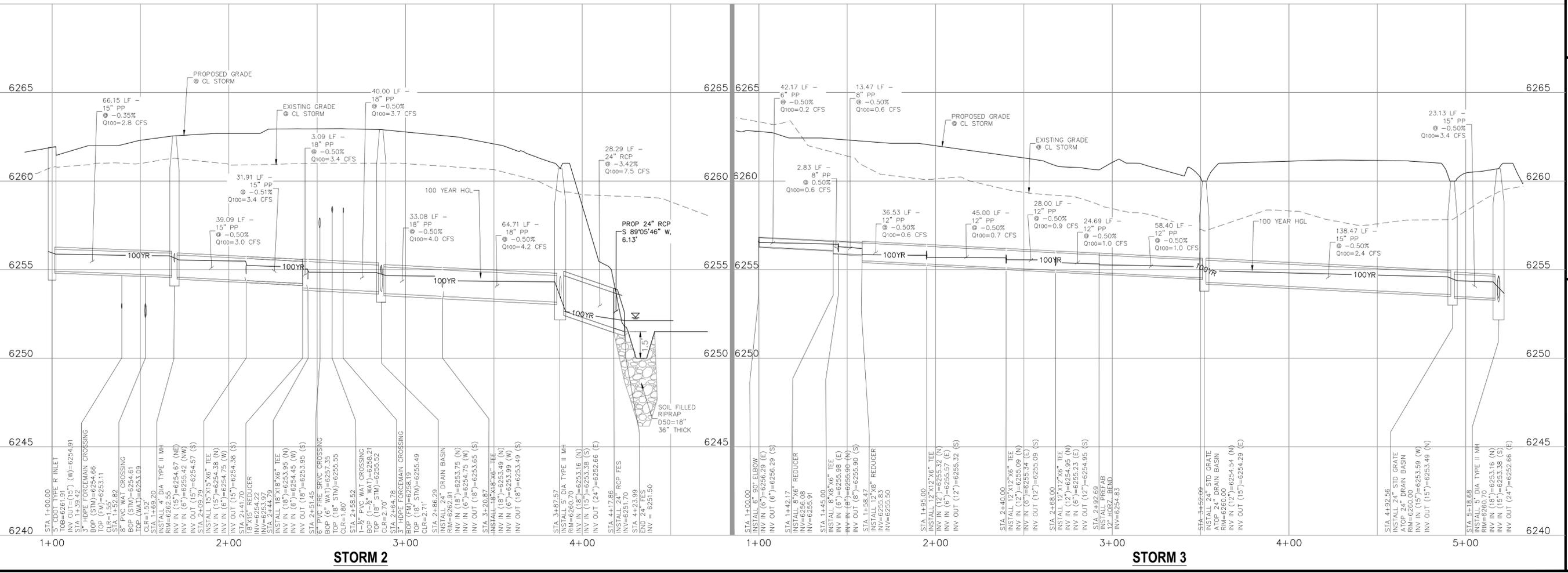
- ALL STORM SEWER CONSTRUCTED WITH THESE PLANS SHALL BE CONSIDERED PRIVATE.
- GAS LINE NOT LOCATED, LOCATION TO BE DETERMINED BY CONTRACTOR



STORM 2
STA 1+00.00 TO STA 4+41.70



STORM 3
STA 1+00.00 TO STA 5+18.68



STORM 2

STORM 3



FOR AND ON BEHALF OF
 WKS CIVIL CONSULTANTS, INC.
 VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 371160
 06/14/2023
 PROFESSIONAL SEAL

REV.	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 PREPARE OF THESE PLANS.

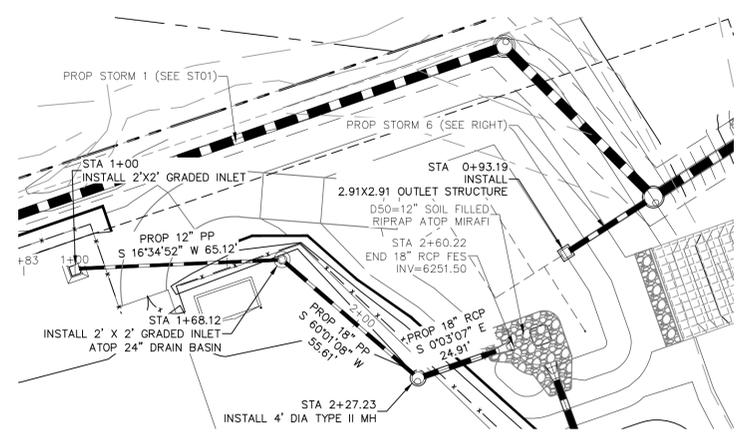
CAUTION

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
 FOR BURIED UTILITY INFORMATION
 48 HRS BEFORE YOU DIG
 CALL 1-800-922-1987

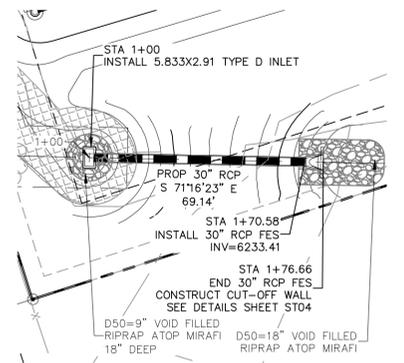
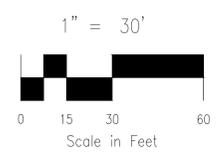
ABBREVIATION LEGEND

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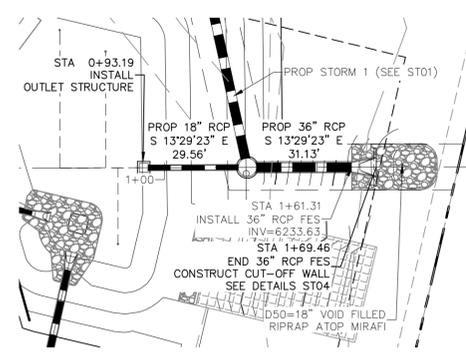
- NOTE:**
1. ALL STORM SEWER CONSTRUCTED WITH THESE PLANS SHALL BE CONSIDERED PRIVATE.
 2. GAS LINE NOT LOCATED, LOCATION TO BE DETERMINED BY CONTRACTOR



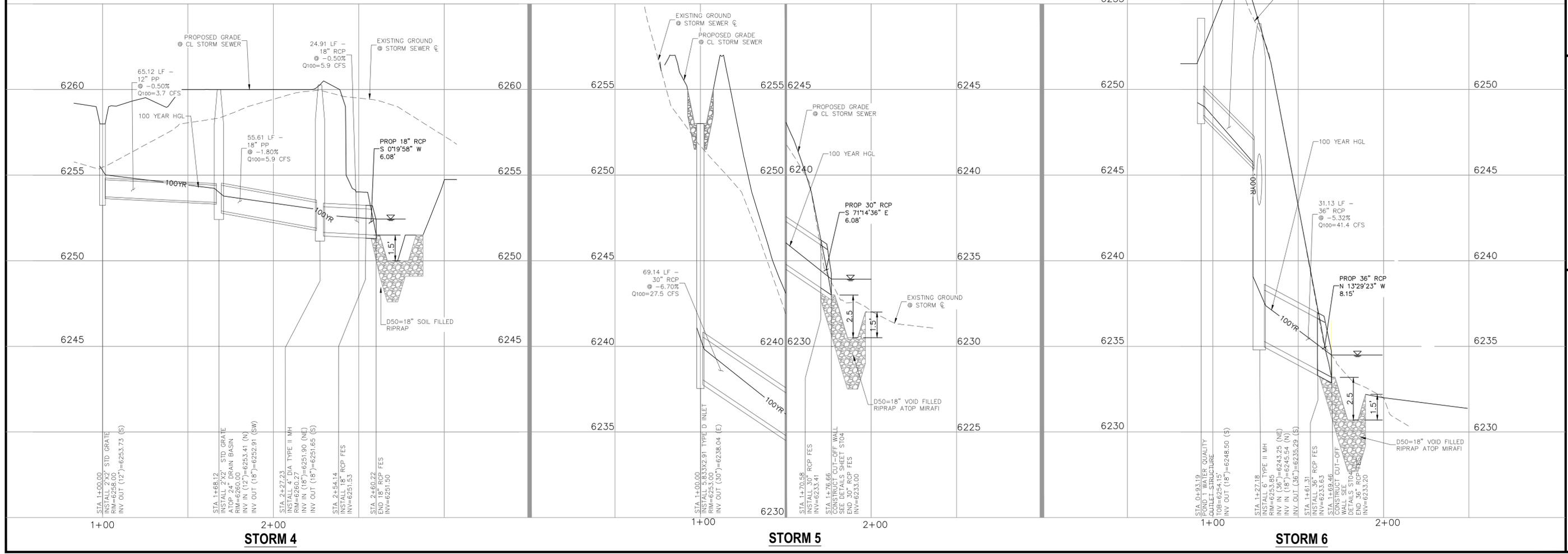
STORM 4
 STA 1+00.00 TO STA 2+60.22



STORM 5
 STA 1+00.00 TO STA 1+46.03



STORM 6
 STA 0+93.19 TO STA 1+61.31



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CLEARWAY, LOT 5	
STORM SEWER PLAN AND PROFILE	
PROJECT NO. 44-042A	DATE: 06/13/2023
DESIGNED BY: DLM	SCALE: HORIZONTAL: 1"=30'
DRAWN BY: CLP	VERTICAL: 1"=3'
CHECKED BY: DLM	
212 N. WABATCH AVE., STE 305 COLORADO SPRINGS, CO 80903 PHONE: 719.555.5485	
FOR AND ON BEHALF OF WKS CIVIL CONSULTANTS, INC. 	
REVISIONS:	DATE:
NO.	DATE
BY:	DESCRIPTION:
APPROVED BY:	
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	

STEEL GRATE QUANTITIES

NO. OF PIECES	DESCRIPTION	LENGTH PER FT. (LBS.)	NO. REQ'D PER FT.
4	54 x 7.7 BEAM	40"	7.70 103
2	3 1/2" x 1/2" FLAT	26 1/2"	2.98 13
2	3" x 1/2" FLAT	25 1/2"	2.55 12

TOTAL LBS. - 128

QUANTITIES FOR ONE INLET

H	CONCRETE (CU. YDS.)	STEEL (LBS.)	NO. REQ'D
2'-0"	0.3	78	0
3'-0"	1.0	80	0
3'-6"	1.2	96	0
4'-0"	1.3	101	1
4'-6"	1.4	106	2
5'-0"	1.5	122	2
5'-6"	1.7	137	2
6'-0"	1.8	142	3
6'-6"	1.9	158	3
7'-0"	2.0	163	3
7'-6"	2.2	179	4
8'-0"	2.3	184	4
8'-6"	2.4	199	4
9'-0"	2.5	205	5
9'-6"	2.7	220	5
10'-0"	2.9	235	6
10'-6"	3.4	251	6

BAR LIST FOR H = 2 FT. - 6 IN. AND BENDING DIAGRAM

MARK	NO. REQ'D	REIN. (LBS.)	LENGTH
401	2	2'-3"	7'-10"
402	6	2'-7"	8'-2"
403	3	1'-0"	15'-0"

GENERAL NOTES

- INLET TYPE C IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
- CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
- REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED #4 AND SHALL HAVE A MINIMUM 2 IN. CLEARANCE, CUT OR BEND AROUND PIPES AS REQUIRED.
- CONCRETE SLOPE AND DITCH PAVING SHALL BE IN ACCORDANCE WITH SECTION 507. REINFORCEMENT FOR CONCRETE SLOPE PAVING SHALL BE 6 X 6 - W4.4 X W4.4 OR 6 X 6 - W2.1 X W2.1.
- STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED, AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
- THE STANDARD INLET GRATES SHALL BE USED ON ALL TYPE C INLETS UNLESS CLOSE MESH GRATES ARE SPECIFIED ON THE PLANS.
- CLOSE MESH GRATES ARE RECOMMENDED WHERE FEET TRAFFIC OR BICYCLE ROUTES ARE IN CLOSE PROXIMITY TO GRATE. THIS GRATE IS NOT ADA COMPLIANT OR BICYCLE FRIENDLY AND SHALL NOT BE PLACED DIRECTLY IN SIDEWALKS, CROSSWALKS OR BIKE PATHS.
- STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FT. - 6 IN. AND SHALL CONFORM TO ASHOTO M 199.
- SEE STANDARD PLAN M-604-11 FOR REINFORCEMENT AROUND THE PIPE OPENING.
- ALL INLETS SHALL HAVE A 4 IN. DIA. METAL MEDALLION WITH A "NO DUMPING DRUGS TO STREAM" MESSAGE ON IT. THE MEDALLION SHALL HAVE A FISH SYMBOL WITH A BLUE BACKGROUND. IT SHALL BE FIRMLY ATTACHED TO THE TOP OF THE INLET WITH A PERMANENT FASTENER.

GENERAL NOTES

- CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
- SEE PLANS FOR SIZE AND LOCATION OF PIPE.
- STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
- STANDARD INLET GRATES SHALL BE USED ON ALL TYPE D INLETS UNLESS CLOSE MESH GRATES ARE SPECIFIED ON THE PLANS.
- STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FT. - 6 IN. AND SHALL CONFORM WITH ASHOTO M 199.
- REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED #4 AND SHALL HAVE A 2 IN. MINIMUM CLEARANCE, CUT OR BEND AROUND PIPE AS REQUIRED.

QUANTITIES FOR ONE INLET

INLET PIPE RANGE	CONCRETE (CU. YDS.)	STEEL (LBS.)
3.0	1.5	127
3.5	1.7	149
4.0	1.9	157
4.5	2.0	179
5.0	2.3	187
5.5	2.4	208
6.0	2.6	215
6.5	2.8	236
7.0	2.9	243
7.5	3.1	264
8.0	3.3	271
8.5	3.5	292
9.0	3.6	299
9.5	3.8	320
10.0	4.0	327

Computer File Information

Creation Date: 07/04/06 Initials: SRJ
 Last Modification Date: 07/04/06 Initials: LTA
 Full Path: www.dot.state.co.us/DesignSupport/
 Drawing File Name: 604010101.dwg
 CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

NO.	DATE	DESCRIPTION
1		

Colorado Department of Transportation

4201 East Arkansas Avenue
 Denver, Colorado 80222
 Phone: (303) 757-9083
 Fax: (303) 757-9820

Project Development Branch SRJ/LTA

INLET, TYPE D

Issued By: Project Development Branch on July 04, 2006

STANDARD PLAN NO. M-604-11

Sheet No. 1 of 1

GENERAL NOTES

- CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
- CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES AND SHALL BE 8 IN. THICK.
- INLET STEPS SHALL BE IN CONFORMANCE WITH ASHOTO M 199.
- CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.
- EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4 IN. CURB AND OUTER CORNERS SHALL BE FINISHED TO MATCH THE EXISTING CURB AND GUTTER BEHIND THE TRANSITION GUTTER.
- REINFORCING BARS SHALL BE DEFORMED AND SHALL HAVE A 2 IN. MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE EPOXY COATED.
- DIMENSIONS AND WEIGHTS OF TYPICAL MANHOLE RINGS AND COVERS ARE NOMINAL.
- MATERIAL FOR MANHOLE RINGS AND COVERS SHALL BE GRAY OR DUCTILE CAST IRON IN ACCORDANCE WITH SUBSECTION 712.06.
- SINCE PIPE ENTRIES INTO THE INLET ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK. QUANTITIES INCLUDE VOLUMES OCCUPIED BY PIPES.
- STRUCTURAL STEEL SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.

TABLE ONE ~ BAR LIST FOR CURB INLETS, TYPE "R"

MARK	BAR #	O.C. SPACING	ALL INLETS			INLETS: H=5 FT.			INLETS: H=9 FT.		
			L=5 FT.	L=10 FT.	L=15 FT.	L=5 FT.	L=10 FT.	L=15 FT.	L=5 FT.	L=10 FT.	L=15 FT.
401	4	11"	15	21	26	11	11	11	11	11	11
402	4	11"	7	13	18	7	7	7	7	7	7
403	4	9"	4	4	4	4	4	4	4	4	4

TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"

H	LENGTH	REGULAR		DROP BOX		L = 5 FT.		L = 10 FT.		L = 15 FT.	
		NO. REQ'D	NO. REQ'D	CONC. (CU. YDS.)	STEEL (LBS.)						
3'-0"	2'-8"	10	7	3.2	285	5.3	497	7.4	706		
3'-6"	3'-2"	10	7	3.4	305	5.7	528	7.9	747		
4'-0"	3'-8"	12	9	3.7	326	6.0	559	8.4	786		
4'-6"	4'-2"	12	9	3.9	354	6.4	571	8.8	803		
5'-0"	4'-8"	14	11	4.1	354	6.7	602	9.3	844		
5'-6"	5'-2"	16	13	4.4	375	6.0	607	7.4	850		
6'-0"	5'-8"	16	13	4.6	382	6.2	616	7.6	860		
6'-6"	6'-2"	18	15	4.8	402	6.4	637	7.8	880		
7'-0"	6'-8"	20	17	5.0	423	6.6	654	8.0	897		
7'-6"	7'-2"	20	17	5.3	430	6.9	664	8.3	907		
8'-0"	7'-8"	22	19	5.5	451	7.1	684	8.5	927		
8'-6"	8'-2"	24	21	5.7	471	7.3	702	8.7	944		
9'-0"	8'-8"	24	21	6.0	479	7.6	711	9.0	954		
9'-6"	9'-2"	26	23	6.2	499	7.8	732	9.2	974		
10'-0"	9'-8"	28	25	6.4	520	8.0	749	9.4	992		
10'-6"	10'-2"	28	25	6.7	527	8.3	759	9.7	1001		
11'-0"	10'-8"	30	27	6.9	547	8.5	779	9.8	1022		

Computer File Information

Creation Date: 07/04/06 Initials: SRJ
 Last Modification Date: 07/04/06 Initials: LTA
 Full Path: www.dot.state.co.us/DesignSupport/
 Drawing File Name: 6040120202.dwg
 CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

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Colorado Department of Transportation

4201 East Arkansas Avenue
 Denver, Colorado 80222
 Phone: (303) 757-9083
 Fax: (303) 757-9820

Project Development Branch SRJ/LTA

CURB INLET TYPE R

Issued By: Project Development Branch on July 04, 2006

STANDARD PLAN NO. M-604-12

Sheet No. 2 of 2

File: C:\44042A-Wire Nut\Hammers\Draw\Storm\44042A-ST05.dwg PlotStamp: 6/14/2023 4:09 PM

CLEARWAY, LOT 5
 STORM SEWER DETAILS

PROJECT NO. 44-042A
 SCALE: HORIZONTAL: N/A VERTICAL: N/A
 DATE: 06/13/2023
 DESIGNED BY: DLM
 DRAWN BY: CLP
 CHECKED BY: DLM

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

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF
 MRS. CIVIL CONSULTANTS, INC.
 06/14/2023

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
 FOR BURIED UTILITY INFORMATION 48 HRS BEFORE YOU DIG CALL 1-800-922-1987

REVISIONS: NO. DATE: BY: DESCRIPTION

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CAUTION

HP STORM TRENCH INSTALLATION DETAIL (ALTERNATE)

TABLE 1. RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN TRENCH WIDTH
12" (300mm)	30" (750mm)
15" (375mm)	34" (860mm)
18" (450mm)	39" (990mm)
24" (600mm)	48" (1200mm)
30" (750mm)	56" (1420mm)
36" (900mm)	64" (1620mm)
42" (1050mm)	72" (1830mm)
48" (1200mm)	80" (2030mm)
60" (1500mm)	96" (2440mm)

NOTES:

- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
- SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS I/IV MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS I. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).
- BACKFILL: FOR PIPES OUTSIDE OF PAVEMENT CLASS I MATERIAL TO BE USED FOR BACKFILL UP TO THE SPRINGLINE OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER. CLASS I MATERIAL MUST BE COMPACTED IN 6" (200mm) LIFTS.
- MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOODING.
- SELECT NATIVE CLEAN BACKFILL SHALL BE WELL PLACED, MODERATELY COMPACTED (85% SPD) CLASS IV OR BETTER PER ASTM D2321 WITH NO FOREIGN DEBRIS INCLUDING ROCKS, LARGE CLUMPS ORGANIC MATERIAL, OR FROZEN MATERIAL.
- HP ALTERNATE STORM TRENCH DETAIL MUST BE APPROVED BY DESIGN ENGINEER. DETAIL DOES NOT SUPERSEDE ADS STANDARD STD-108.

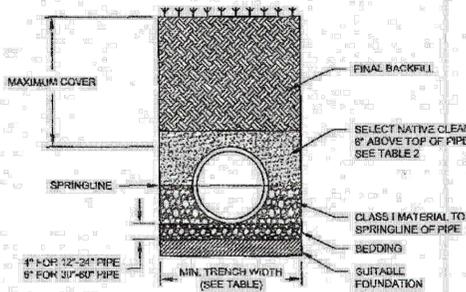


TABLE 2. MAXIMUM COVER FOR ADS HP STORM PIPE, ALTERNATE INSTALLATION, H (ft=120)

PIPE DIAM.	SELECT NATIVE CLEAN MATERIAL CLASSIFICATION		
	CLASS II	CLASS III	CLASS IV
12" (300mm)	17 (5.2m)	14 (4.3m)	11 (3.4m)
15" (375mm)	17 (5.2m)	14 (4.3m)	11 (3.4m)
18" (450mm)	16 (4.9m)	13 (4.0m)	10 (3.0m)
24" (600mm)	14 (4.3m)	12 (3.7m)	9 (2.7m)
30" (750mm)	13 (4.0m)	11 (3.4m)	8 (2.4m)
36" (900mm)	11 (3.4m)	11 (3.4m)	7 (2.1m)
42" (1050mm)	11 (3.4m)	11 (3.4m)	7 (2.1m)
48" (1200mm)	11 (3.4m)	10 (3.0m)	6 (1.8m)
60" (1500mm)	11 (3.4m)	10 (3.0m)	6 (1.8m)

FILL HEIGHT TABLE GENERATED ASSUMING DRY CONDITIONS, OUTSIDE OF WATER TABLE. FOR INSTALLATION WITHIN THE WATER TABLE, CONTACT APPLICATIONS ENGINEERING.

REV.	CLASS I COMPACTION	DATE	BY	CHKD
1	DESCRIPTION	01/20/16	MMDDYY	CHKD

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N-12 HP STORM TRENCH INSTALLATION DETAIL

TABLE 1. RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN TRENCH WIDTH
12" (300mm)	30" (750mm)
15" (375mm)	34" (860mm)
18" (450mm)	39" (990mm)
24" (600mm)	48" (1200mm)
30" (750mm)	56" (1420mm)
36" (900mm)	64" (1620mm)
42" (1050mm)	72" (1830mm)
48" (1200mm)	80" (2030mm)
60" (1500mm)	96" (2440mm)

NOTES:

- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS. LATEST EDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS I/IV MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.
- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12"-24" (300mm-600mm) DIAMETER PIPE; 6" (150mm) FOR 30"-60" (750mm-1500mm) DIAMETER PIPE. THE MIDDLE 10' BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT. USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.
- INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOODING. FOR TRAFFIC APPLICATIONS: CLASS I OR MATERIAL COMPACTED TO 95% SPD AND CLASS II COMPACTED TO 95% SPD IS REQUIRED. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" (300mm) UP TO 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE. MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. CLASS IV MATERIALS ARE NOT RECOMMENDED AS BACKFILL FOR TRAFFIC APPLICATION WITH LESS THAN 72" (1830mm) OF COVER MEASURED FROM TOP OF PIPE TO TOP OF SURFACE.

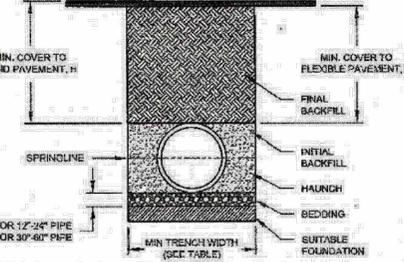


TABLE 2. MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	H-20	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48" (300mm - 1200mm)	12" (300mm)	48" (1200mm)
60" (1500mm)	24" (600mm)	80" (2030mm)

TABLE 3. MAXIMUM COVER FOR ADS N-12 HP PIPE

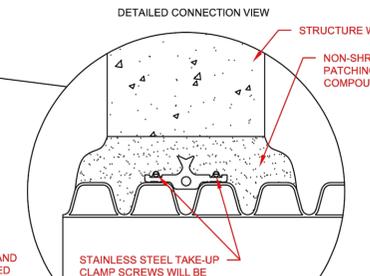
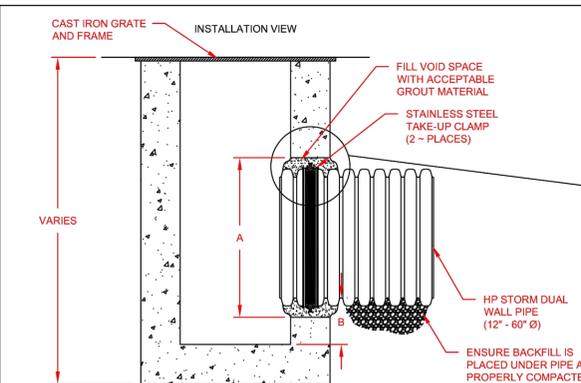
PIPE DIA	CLASS I COMPACTED	CLASS II						CLASS III						CLASS IV					
		85%	90%	95%	95%	90%	85%	85%	80%	85%	80%	85%	80%	85%	80%				
12" (300mm)	39 (11.9m)	27	20	15	24	16	14	13	22	16	14	13	12	11	10				
15" (375mm)	42 (12.8m)	29	21	16	22	17	15	14	21	15	14	13	12	11	10				
18" (450mm)	46 (14.0m)	25	18	13	19	14	13	12	18	13	12	11	10	9	8				
24" (600mm)	51 (15.5m)	22	16	11	16	11	10	9	15	10	9	8	7	6	5				
30" (750mm)	56 (17.0m)	20	14	10	14	10	9	8	13	9	8	7	6	5	4				
36" (900mm)	61 (18.6m)	18	13	9	12	9	8	7	11	8	7	6	5	4	3				
42" (1050mm)	67 (20.3m)	16	11	8	10	8	7	6	10	7	6	5	4	3	2				
48" (1200mm)	73 (22.3m)	14	10	7	9	7	6	5	9	6	5	4	3	2	1				
60" (1500mm)	84 (25.6m)	12	9	6	8	6	5	4	8	5	4	3	2	1	0				

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12. LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS: HEIGHT OF WATER (HW) = CROWN + 1; UNIT WEIGHT OF SOIL (γ) = 120 PCF

REV.	GENERAL UPDATE	DATE	BY	CHKD
1	DESCRIPTION	01/20/16	MMDDYY	CHKD

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12"-60" HP STORM WATERSTOP GROUDED MANHOLE CONNECTION (DUAL WALL)



NOTES:

PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST ENSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

INSTALLATION RECOMMENDATIONS ARE ALSO SPECIFIED IN INSTALLATION GUIDE 1.05: WATERSTOP INSTALLATION

REV.	DESCRIPTION	BY	DATE	CHKD
3	ADDED METRIC UNITS AND RENAMED	TJR	01/20/16	

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PIPE SIZE	ADAPTER	ADAPTER	PRECAST MANHOLE WATERSTOP EXTERIOR	WATERSTOP EXTERIOR	ADAPTER
12" (300mm)	1222ANBP	1222ANBP	1222ANBP	1222ANBP	1222ANBP
15" (375mm)	1522ANBP	1522ANBP	1522ANBP	1522ANBP	1522ANBP
18" (450mm)	1822ANBP	1822ANBP	1822ANBP	1822ANBP	1822ANBP
24" (600mm)	2422ANBP	2422ANBP	2422ANBP	2422ANBP	2422ANBP
30" (750mm)	3022ANBP	3022ANBP	3022ANBP	3022ANBP	3022ANBP
36" (900mm)	3622ANBP	3622ANBP	3622ANBP	3622ANBP	3622ANBP
42" (1050mm)	4222ANBP	4222ANBP	4222ANBP	4222ANBP	4222ANBP
48" (1200mm)	4822ANBP	4822ANBP	4822ANBP	4822ANBP	4822ANBP
60" (1500mm)	6022ANBP	6022ANBP	6022ANBP	6022ANBP	6022ANBP

WATERTIGHT CONNECTION USING A MANHOLE BOOT (CORED HOLE OR PRECAST) OR PRECAST COMPRESSION GASKET W/ PREFABRICATED ADAPTER

ADS HP STORM 12" - 60" PIPE SPECIFICATION

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 F2728 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 F2728 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 F2981, 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 F2981 and AASHTO M330, for the respective diameters. Bell & spigot connections shall utilize a spigot-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 F477 or ASTM F2981. 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 polypropylene meeting the material requirements of ASTM F2736, Section 4, ASTM F2981, 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 85% material, Maximum fill height depends on embankment 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 for a copy of the latest installation guidelines.

Table 5-7 Bend Radii for ADS Thermoplastic Pipe

Pipe Diameter, (in mm)	Joint Type	Minimum Deflection at Joint (deg)	Radius, ft. (m), per pipe length
4 - 36 (100 - 900)	N-12 (split band or ball-bell couplings)	3	191 (58)
42 - 60 (1050 - 1500)	N-12 (split band or ball-bell couplings)	1.5	382 (117)
4 - 24 (100 - 600)	N-12 ST or N-12 WT (Bell & Spigot)	1.5	457 (139)
30 - 60 (750 - 1500)	N-12 ST or N-12 WT (Bell & Spigot)	1	745 (227)
12 - 60 (300 - 1500)	HP Storm, Split or Tee	3	248 (76)

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CAUTION

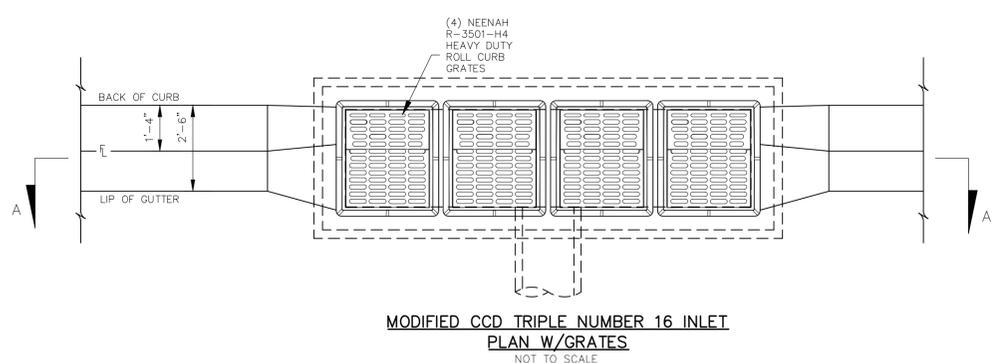
CLEARWAY, LOT 5
STORM SEWER DETAILS
SCALE: HORIZONTAL: N/A VERTICAL: N/A
DATE: 06/13/2023
PROJECT NO. 44-042A
DESIGNED BY: DLM
DRAWN BY: CLP
CHECKED BY: DLM

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

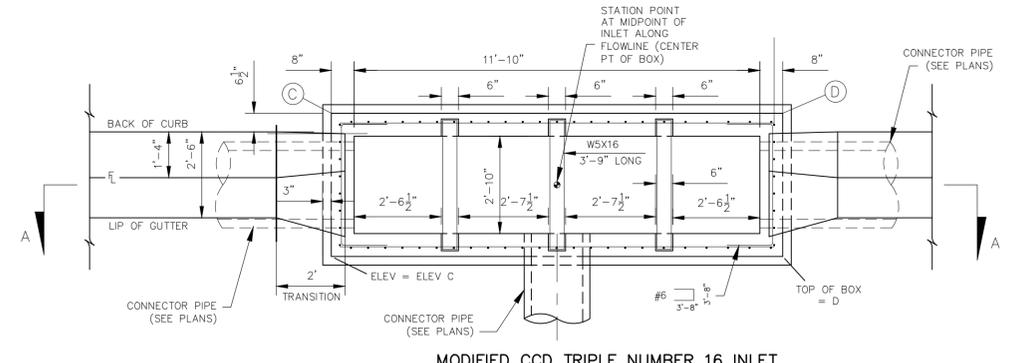


FOR AND ON BEHALF OF
KAS CIVIL CONSULTANTS, INC.
06/14/2023
PROFESSIONAL SEAL

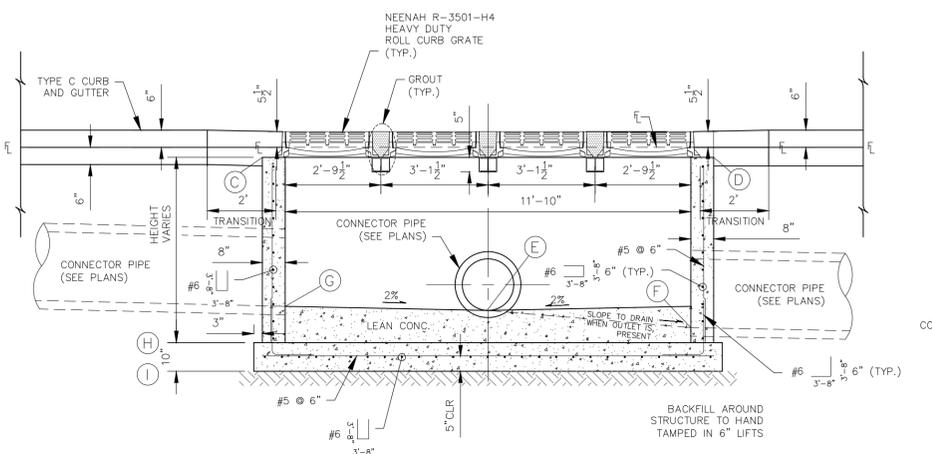
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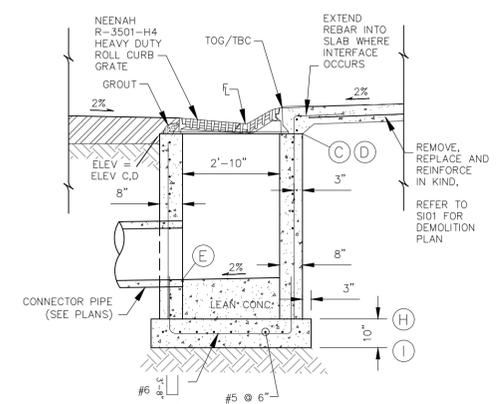
**MODIFIED CCD TRIPLE NUMBER 16 INLET
PLAN W/GRATES**
NOT TO SCALE



**MODIFIED CCD TRIPLE NUMBER 16 INLET
PLAN**
NOT TO SCALE



**MODIFIED CCD TRIPLE NUMBER 16 INLET
ELEVATION**
NOT TO SCALE



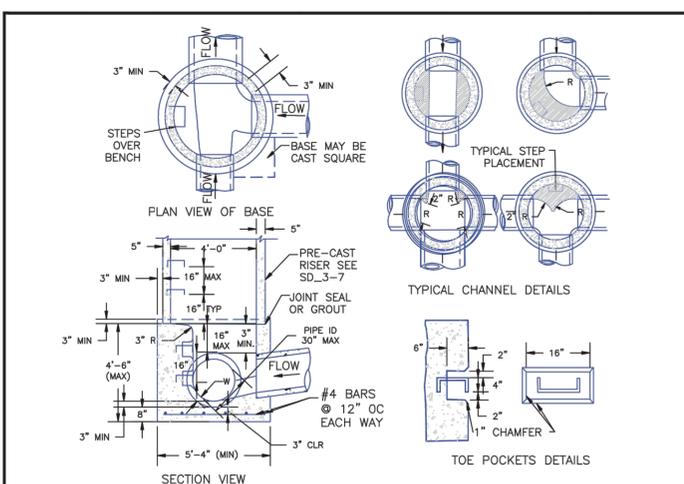
**MODIFIED CCD TRIPLE NUMBER 16 INLET
SECTION**
NOT TO SCALE

INLET	CENTER OF BOX		NORTH OUTSIDE EDGE TOP OF BOX ELEVATIONS		SOUTH OUTSIDE EDGE TOP OF BOX ELEVATIONS			
	STORM STATION	STREET STATION OFFSET	STREET STATION OFFSET	ELEVATION	POINT	STREET STATION OFFSET	ELEVATION	POINT
1	1+53.59	2+99.29, 13.21 RT	2+92.68, 15.19 RT	6263.05	D	3+05.84, 15.41 RT	6262.68	C
2	1+26.58	2+99.75, 13.79 LT	2+93.20, 15.98 LT	6262.99	C	3+06.37, 15.76 LT	6262.64	D
3	1+00.00	3+25.87, 13.67 RT	3+19.26, 15.63 RT	6263.41	D	3+32.42, 15.86 RT	6262.18	C
4	1+27.01	3+26.32, 13.34 LT	3+19.78, 15.53 LT	6262.35	C	3+32.94, 15.32 LT	6262.07	D
5	1+66.56	3+63.87, 12.67 LT	3+59.33, 14.86 LT	6261.48	C	3+72.49, 14.64 LT	6261.12	D

INLET	BOX STORM SEWER ELEVATIONS						TOP OF SLAB/BOTTOM OF SLAB ELEVATIONS			
	STORM STATION	PIPE SIZE	INVERT ELEVATION (IN)	POINT	PIPE SIZE	INVERT ELEVATION (OUT)	POINT	PIPE SIZE	INVERT ELEVATION (IN)	POINT
1	1+53.59	18	6253.49	E					6252.93	H
2	1+26.58	18	6253.37	E	24	6252.87	F		6252.14	H
3	1+00.00	15	6253.37	E					6252.68	H
4	1+27.01	15	6253.25	E	24	6252.50	F	24	6251.82	H
5	1+66.56	30	6251.86	E	24	6252.36	G		6251.12	H

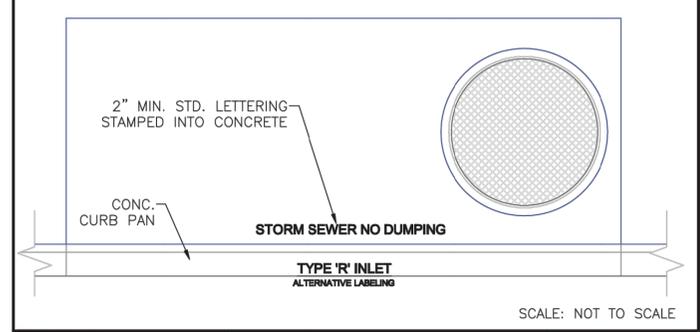
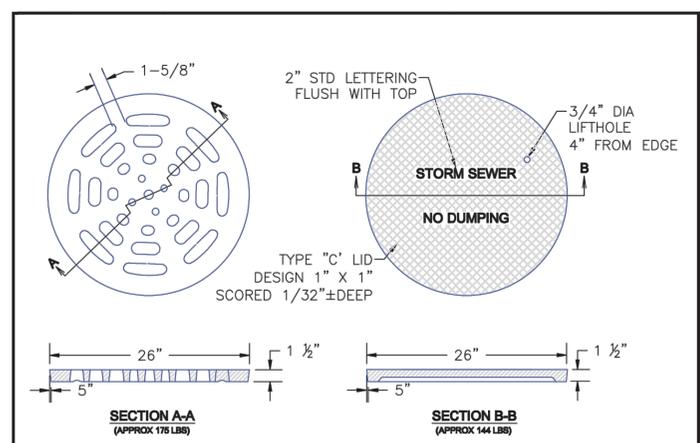
THE ELEVATIONS PROVIDED IN THE TABLES ABOVE ARE TO BE VERIFIED AND ADJUSTED BASED UPON TOP OF GRATE/EXISTING TOP BACK OF CURB IN AREAS WHERE EXISTING PARKING STALLS ARE PRESENT. INLETS ARE RECOMMENDED TO BE CAST IN PLACE TO ALLOW FOR FIELD FITMENT

**MODIFIED CCD TRIPLE NUMBER 16 INLET
STAKING TABLE**

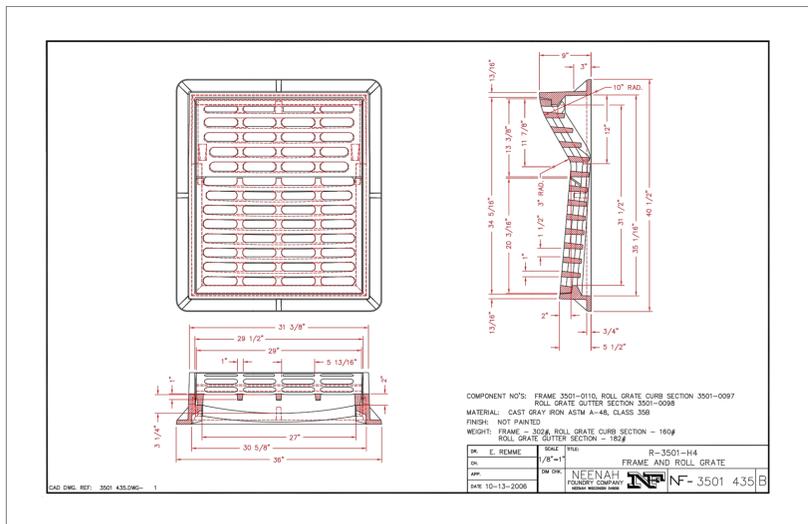


- NOTES**
- TYPE II MANHOLES SHALL BE USED WHEN APPROPRIATE AND TYPICALLY WHEN THE PIPE SIZES ARE 30" OR LESS INSIDE DIAMETER.
 - VIEW AND DETAILS ARE TYPICAL. DESIGN ENGINEER SHALL DETERMINE MANHOLE BASE CONFIGURATION AND DIMENSIONS FOR PARTICULAR PIPE SIZES AND ALIGNMENT.
 - EITHER LADDER OF STEPS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

**STORM SEWER MANHOLE DETAIL
TYPE II SD 3-2**



**STORM SEWER MANHOLE L
LID DETAILS SD 3-2**



FRAME AND GRATE DETAIL

- CONSTRUCTION NOTES**
- SUB-GRADE SHALL BE 6"-12" OF CLASS B BEDDING COMPACTED PER WCPM STANDARD CONSTRUCTION SPECIFICATIONS, ON SUITABLE, UNDISTURBED MATERIAL. IF SUBGRADE IS UNSUITABLE, THE SUBGRADE SHALL BE OVEREXCAVATED AND STABILIZED WITH CLASS B BEDDING PER WCPM STANDARD CONSTRUCTION SPECIFICATIONS.
- FLOOR SLOPE MAY BE POURED MONOLITHIC WITH BASE.
- So = SLOPE OF CONNECTOR = 2% MIN.
- UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS OR OTHERWISE APPROVED, ALL NO. 16 INLETS SHALL BE CONSTRUCTED WITH AN ADJUSTABLE CAST IRON CURB BOX (S-718).
- DESIGN CONDITIONS FOR INLET ALLOWS DEPTHS OF 12'-0" (MAX.). FOR INLETS MORE THAN 12'-0" FEET IN DEPTH, SHOP DRAWINGS AND DESIGN ANALYSIS SHALL BE SUBMITTED FOR APPROVAL.
- ALL REINFORCING STEEL SHALL BE ASTM, A-615, GRADE 60 DEFORMED BARS. DIAMETER OF BEND MEASURED ON THE INSIDE OF THE BAR SHALL BE A MINIMUM OF 6 BAR DIAMETER.
- ALL SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, 2017.
- NO FORMWORK SHALL REMAIN INSIDE STRUCTURE WHEN COMPLETE.
- CONCRETE MIX FOR GUTTER AND ANY ADDED STREET PANELS SHALL MEET CLASS 2 REQUIREMENTS FOR SULFATE RESISTANCE IN ACCORDANCE WITH CDOT STANDARD 601.04 ON STREETS WHERE MAGNESIUM CHLORIDE CHEMICAL DEICERS ARE APPLIED. REFER TO WCPM STANDARD CONSTRUCTION SPECIFICATIONS SECTION 11 FOR REQUIREMENTS FOR SULFATE RESISTANCE IN CONCRETE EXPOSED TO EARTH.
- SPLICING OF REINFORCING STEEL SHALL BE PERMITTED ONLY WHERE DETAILED IN DRAWINGS.
- INLET WALLS SHALL BE FORMED BOTH INSIDE AND OUTSIDE. CASTING OF SIDEWALLS AGAINST EARTH IS NOT PERMITTED.
- LEAN CONCRETE FILL TO BE F'C = 2000 PSI. INLET STRUCTURE, LID, STREET CURB AND GUTTER, AND PAVEMENT TO BE F'C = 4,500 PSI, MAX W/CM = 0.45 AND AIR ENTRAINED 5% TO 8%. F'C = 28 DAY COMPRESSIVE STRENGTH REQUIREMENT FOR MIX DESIGN, FIELD ACCEPTANCE.
- NO CORNER PENETRATIONS ON STRUCTURE.

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CLEARWAY, LOT 5

STORM SEWER DETAILS

PROJECT NO. 44-042A DATE: 06/13/2023

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

HORIZONTAL: N/A VERTICAL: N/A

SHEET 12 OF 16 ST07

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

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF MKS CIVIL CONSULTANTS, INC.

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

NO REGISTERED PROFESSIONAL SEAL

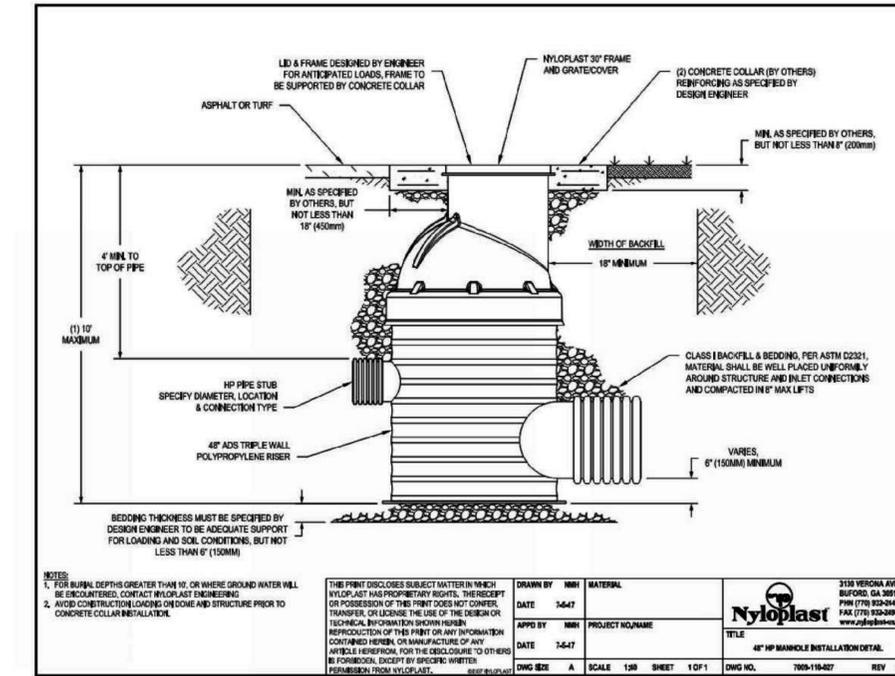
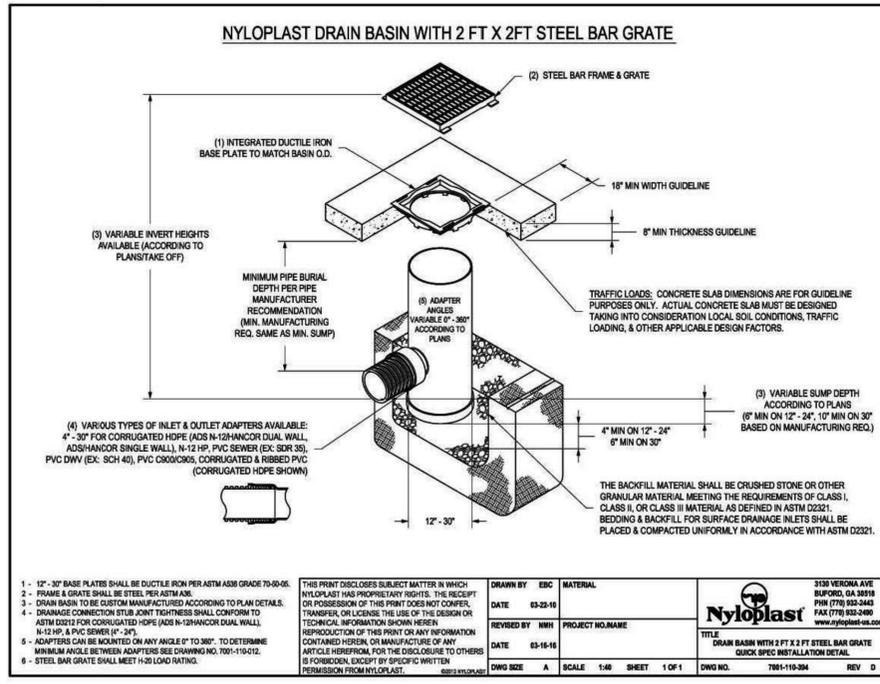
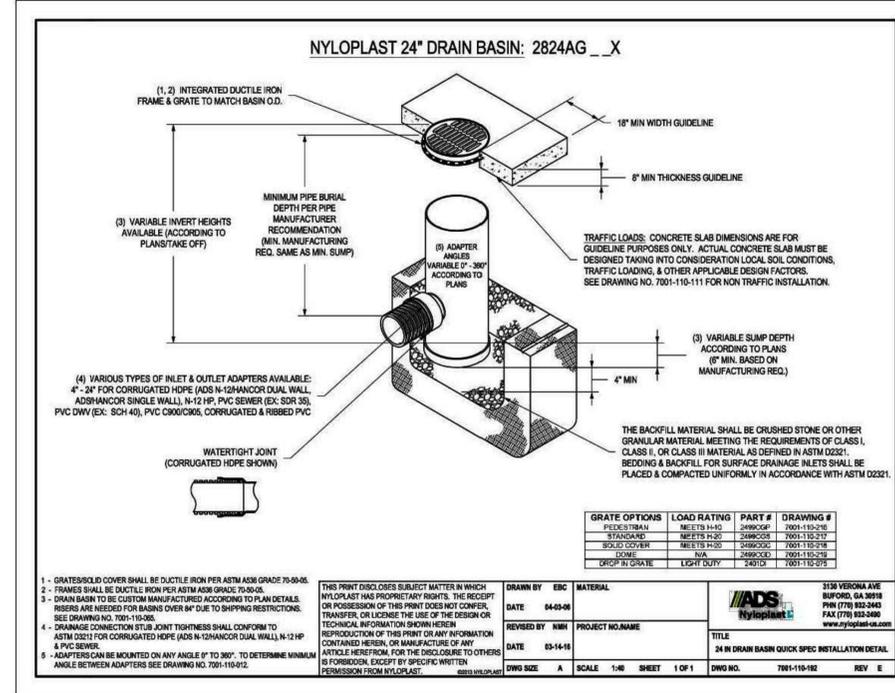
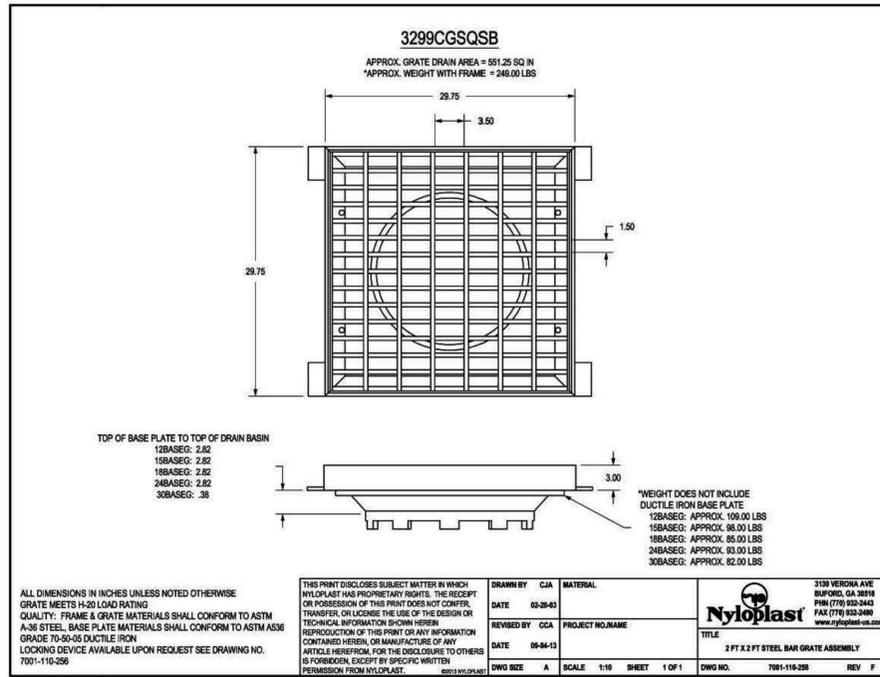
06/14/2023

REVISIONS: NO. DATE: BY: DESCRIPTION:

DATE: APPROVED BY:

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



ALTERNATIVE FOR TYPE II 4' DIA MANHOLES

CLEARWAY, LOT 5

STORM SEWER DETAILS

PROJECT NO. 44-042A
SCALE: HORIZONTAL: N/A
DATE: 06/13/2023
DESIGNED BY: DLM
DRAWN BY: CLP
CHECKED BY: DLM

ST08
SHEET 13 OF 16

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



FOR AND ON BEHALF OF
MKS CIVIL CONSULTANTS, INC.
REGISTERED PROFESSIONAL ENGINEER
NO. 37110
06/14/2023
VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160

NO.	DATE	BY	DESCRIPTION

FOR LOCATING & MARKING GAS, ELECTRIC, WATER, & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION 48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

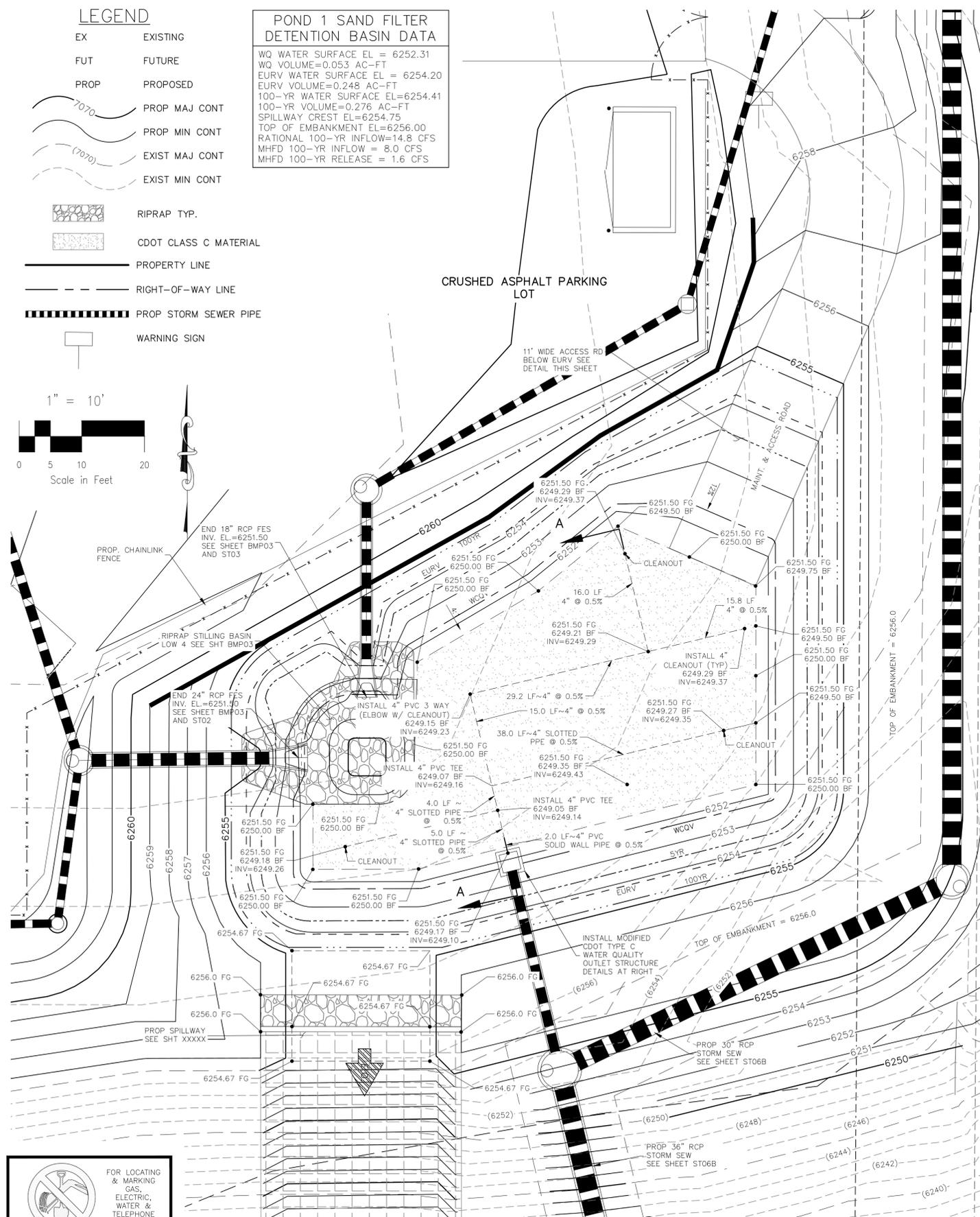
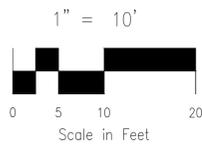
CAUTION

LEGEND

- EX EXISTING
- FUT FUTURE
- PROP PROPOSED
- 7070 PROP MAJ CONT
- 7070 PROP MIN CONT
- 7070 EXIST MAJ CONT
- 7070 EXIST MIN CONT

POND 1 SAND FILTER DETENTION BASIN DATA	
WQ WATER SURFACE EL =	6252.31
WQ VOLUME=	0.053 AC-FT
EURV WATER SURFACE EL =	6254.20
EURV VOLUME=	0.248 AC-FT
100-YR WATER SURFACE EL=	6254.41
100-YR VOLUME=	0.276 AC-FT
SPILLWAY CREST EL=	6254.75
TOP OF EMBANKMENT EL=	6256.00
RATIONAL 100-YR INFLOW=	14.8 CFS
MHFD 100-YR INFLOW =	8.0 CFS
MHFD 100-YR RELEASE =	1.6 CFS

- RIPRAP TYP.
- CDOT CLASS C MATERIAL
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROP STORM SEWER PIPE
- WARNING SIGN

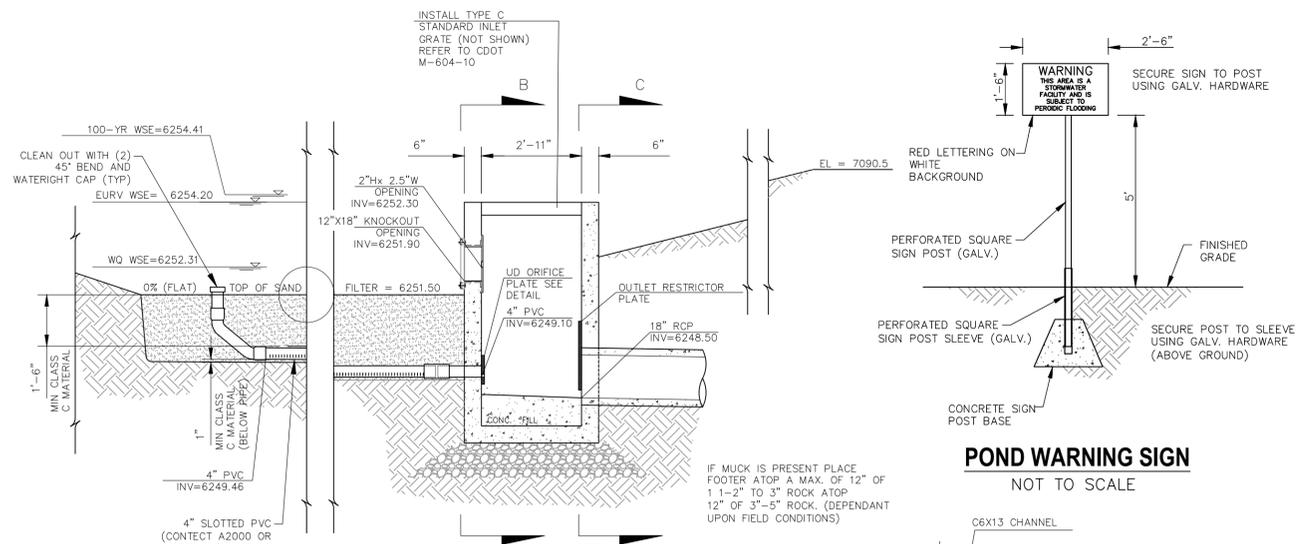


FULL SPECTRUM DETENTION SAND FILTER POND 1

SITE PLAN

SCALE 1"=10'

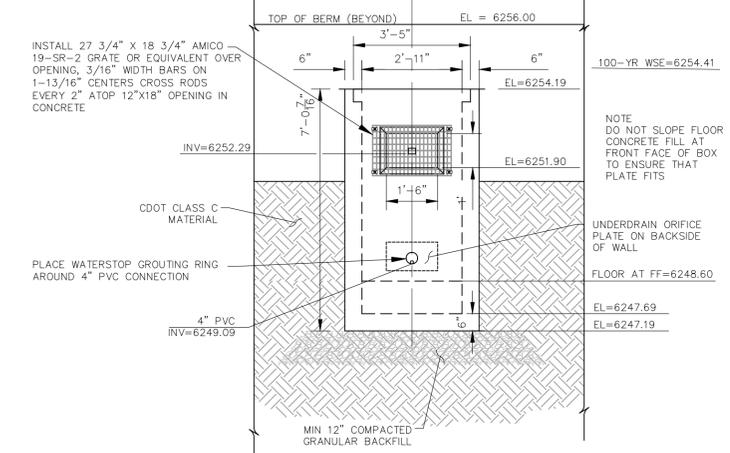
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MODIFIED CDOT TYPE C FULL SPECTRUM OUTLET BOX AND SAND FILTER

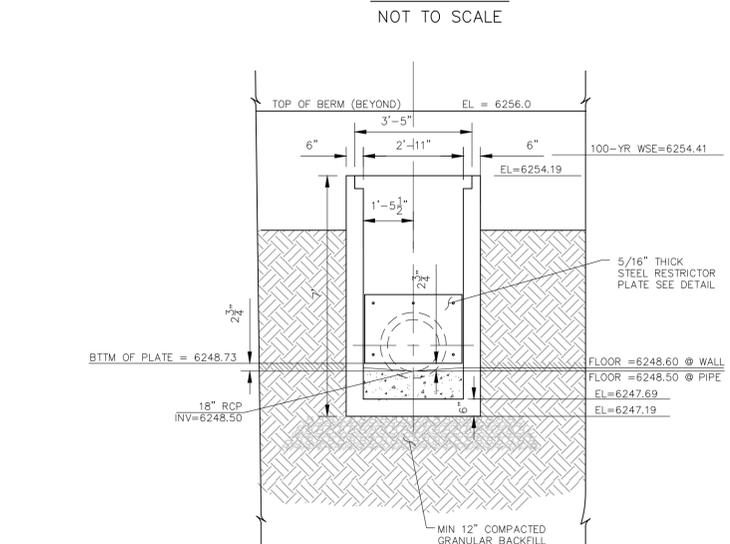
SECTION A-A

NOT TO SCALE



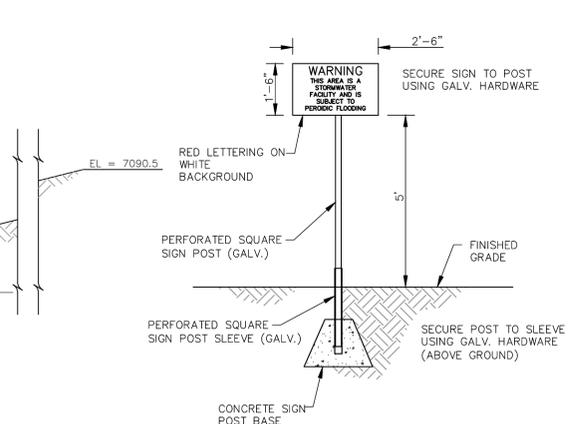
OUTLET BOX FRONT WALL

NOT TO SCALE



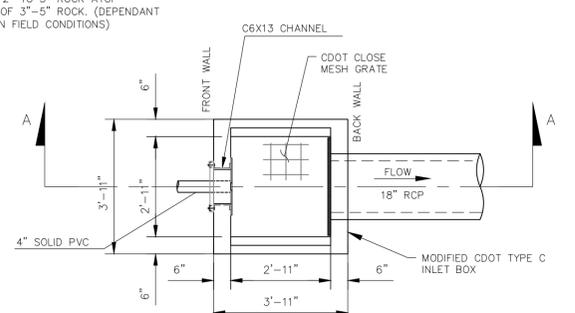
OUTLET BOX REAR WALL

NOT TO SCALE



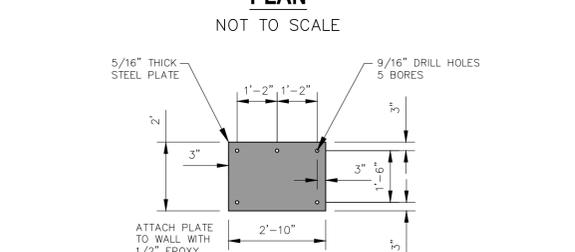
POND WARNING SIGN

NOT TO SCALE



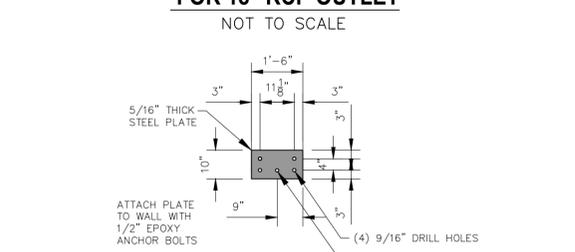
MODIFIED CDOT TYPE C PLAN

NOT TO SCALE



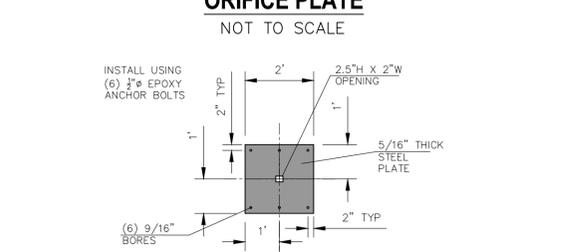
RESTRICTOR PLATE FOR 18" RCP OUTLET

NOT TO SCALE



UNDERDRAIN ORIFICE PLATE

NOT TO SCALE



ORIFICE PLATE FOR 12"x18" OPENING

NOT TO SCALE

CLEARWAY, LOT 5

OUTLET STURCTURE POND 1 DETAILS

PROJECT NO. 44-042A

DATE: 06/13/2023

SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'

DESIGNED BY: DLM

DRAWN BY: CLP

CHECKED BY: DLM

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

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF
 WKS CIVIL CONSULTANTS, INC.

06/14/2023

PROFESSIONAL SEAL

REVISIONS:

NO.	DATE	BY	DESCRIPTION

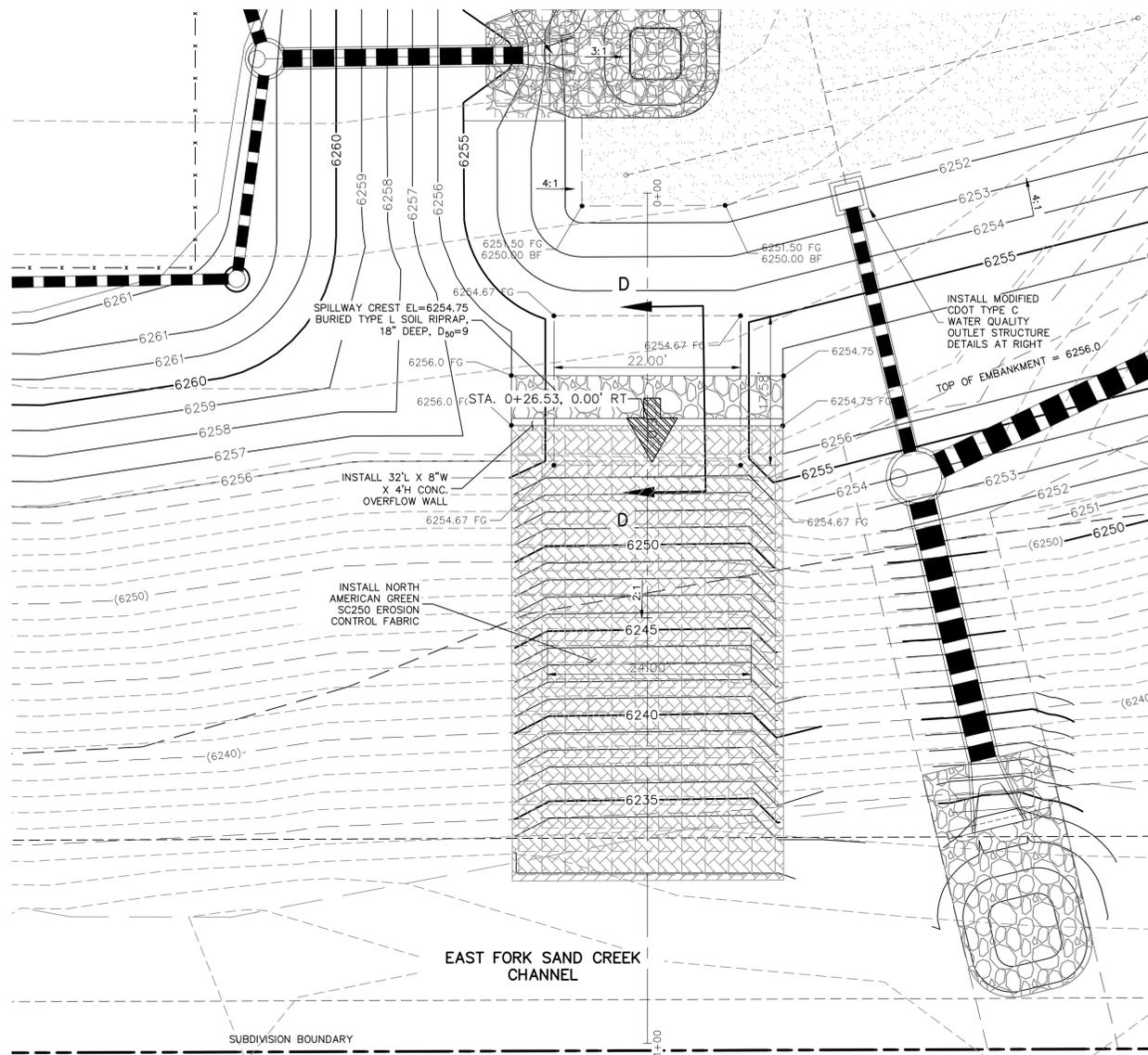
DATE: _____

APPROVED BY: _____

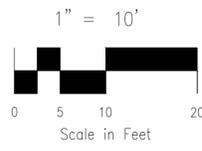
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARE OF THESE PLANS.

CAUTION

File: 0:\44042A-1\re\Hammer\Const\DWG\BMP\44042A_BMP01.dwg Plotstamp: 6/14/2023 3:37 PM

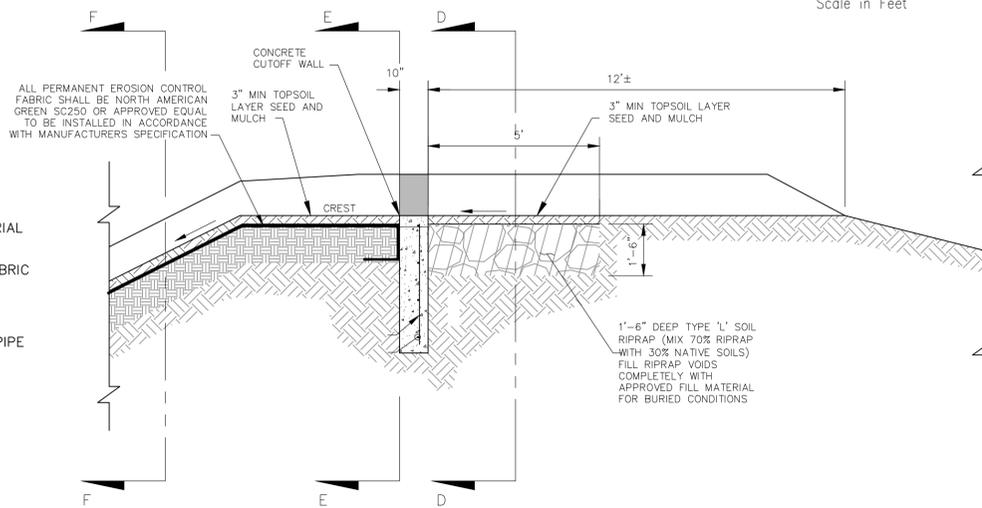


EMERGENCY OVERFLOW/RUNDOWN PLAN
NOT TO SCALE

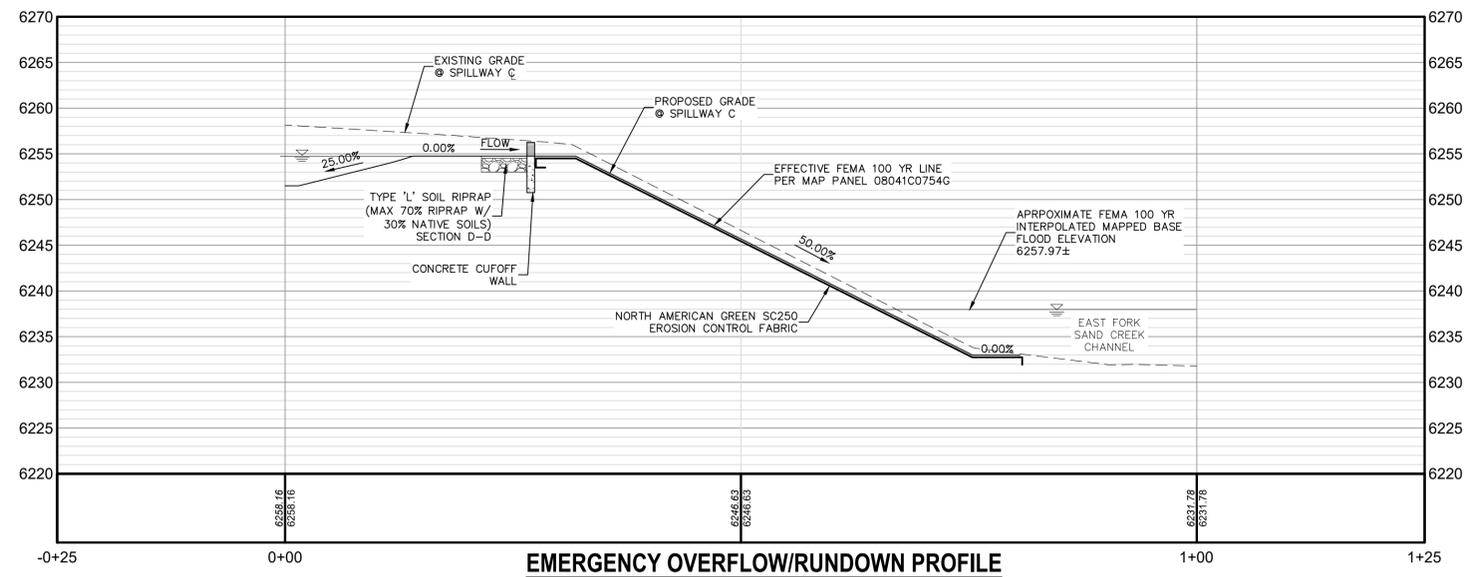


LEGEND

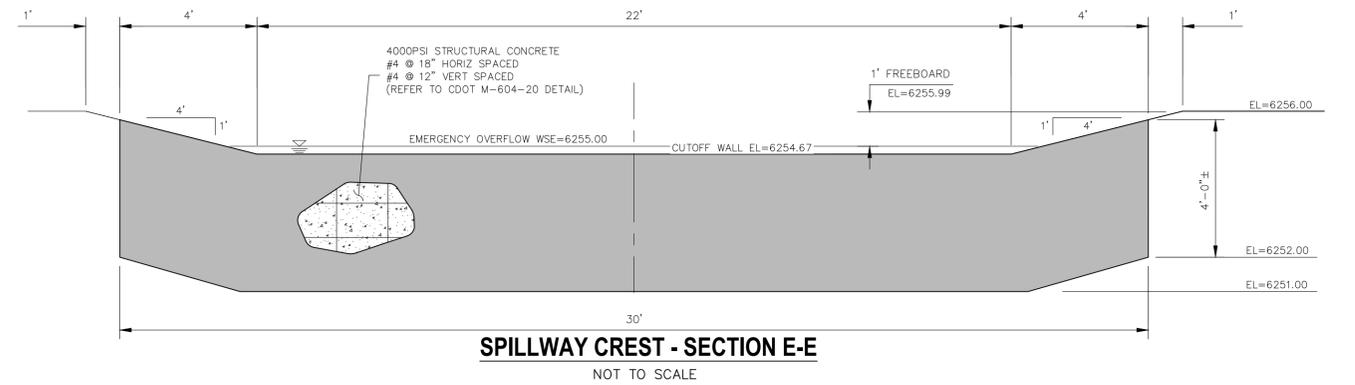
- EX EXISTING
- PROP PROPOSED
- 7070 PROP MAJ CONT
- 7070 PROP MIN CONT
- 7070 EXIST MAJ CONT
- 7070 EXIST MIN CONT
- RIPRAP TYP.
- CDOT CLASS C MATERIAL
- EROSION CONTROL FABRIC
- PROPERTY LINE
- PROP STORM SEWER PIPE
- WARNING SIGN



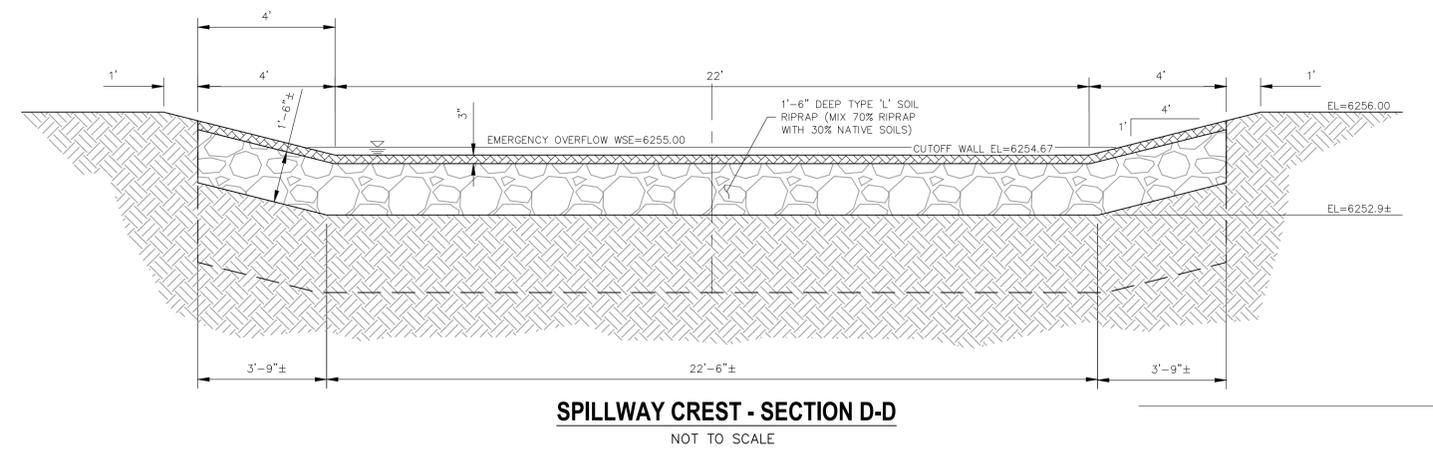
SPILLWAY SECTION D-D
NOT TO SCALE



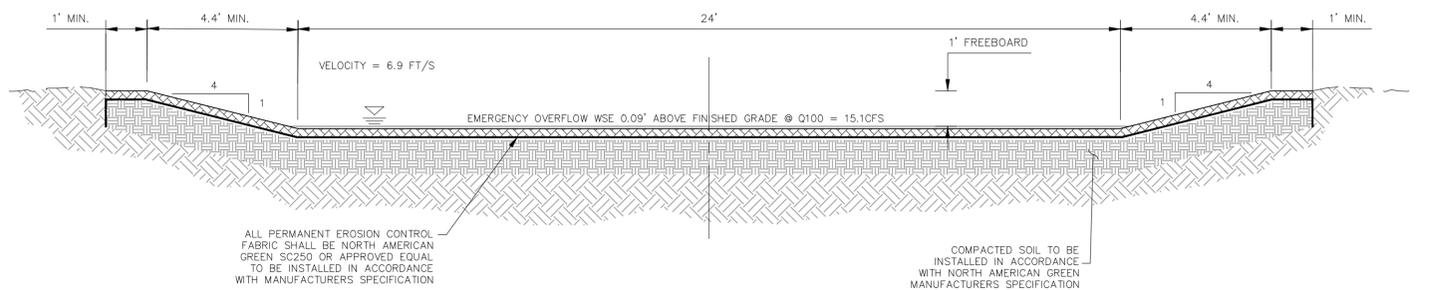
EMERGENCY OVERFLOW/RUNDOWN PROFILE
NOT TO SCALE



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: 06/13/2023

DESIGNED BY: DLM SCALE: HORIZONTAL: 1"=50' SHEET 15 OF 16 BMP02

DRAWN BY: CLP VERTICAL: 1"=5'

CHECKED BY: DLM

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

CIVIL CONSULTANTS, INC.

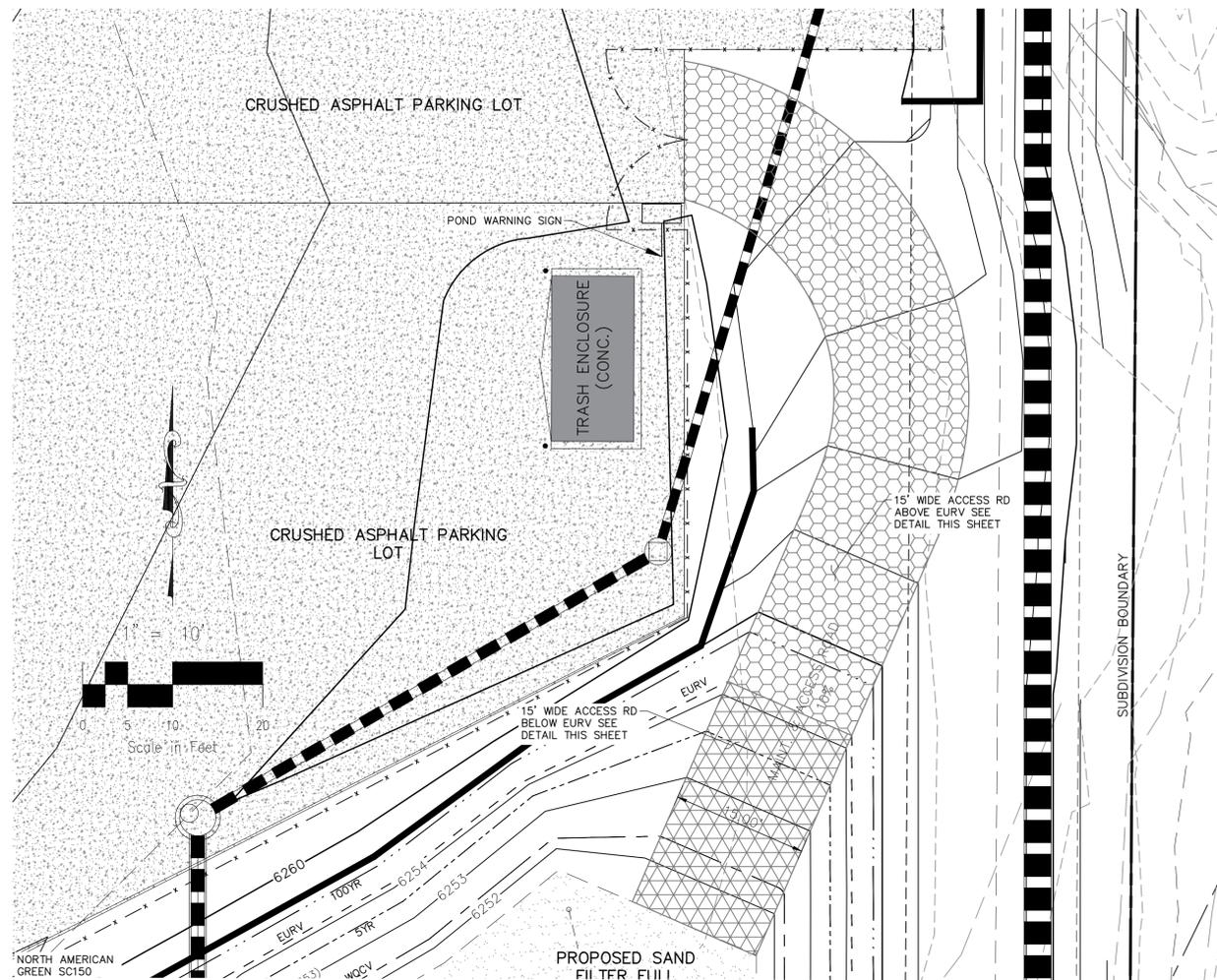
VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 371160

FOR AND ON BEHALF OF WKS CIVIL CONSULTANTS, INC.

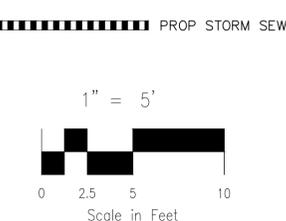
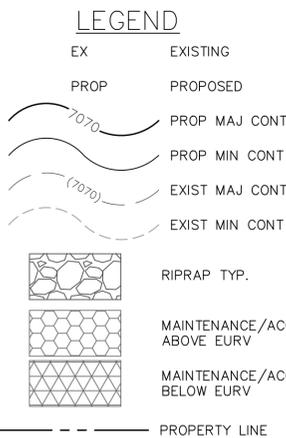
NO.	DATE	BY	DESCRIPTION

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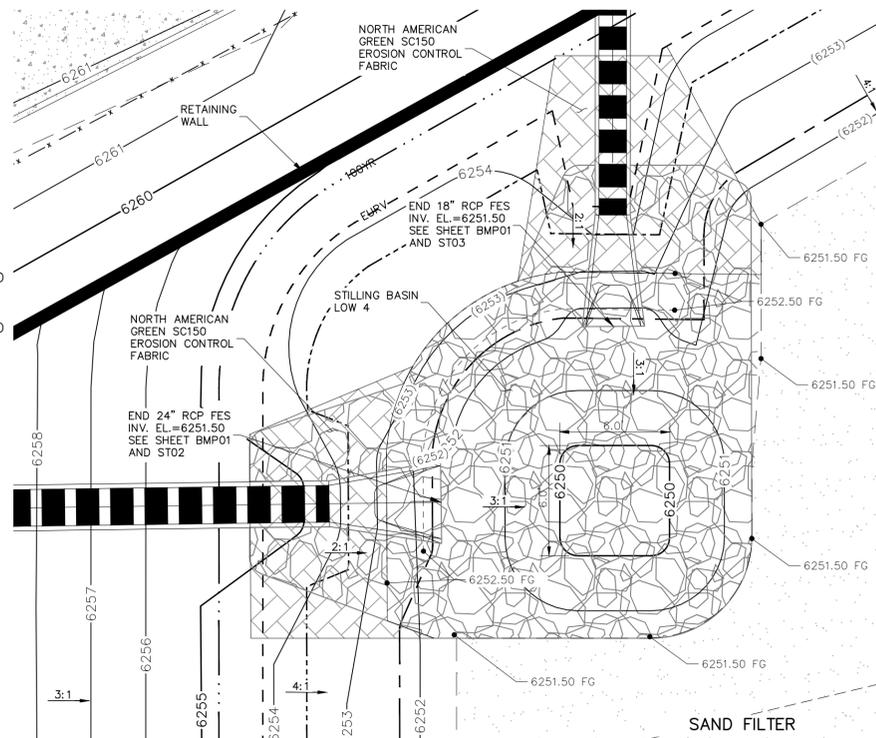
CAUTION



MAINT AND ACCESS ROADWAY PLAN
SCALE: 1" = 10'



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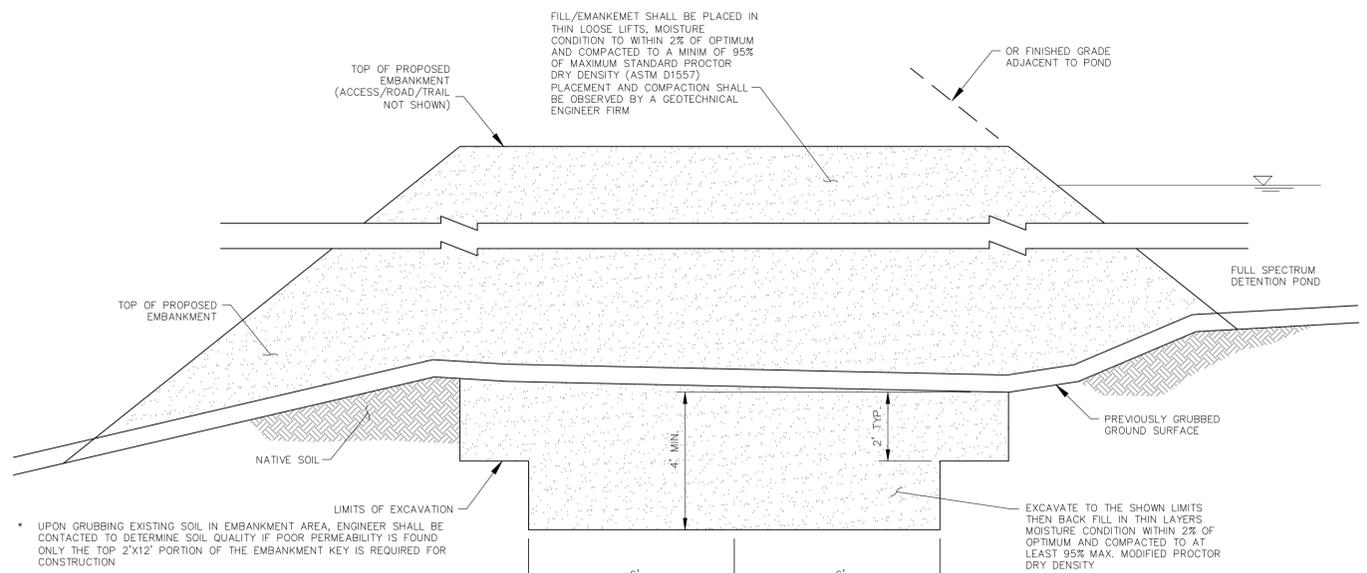


POND STILLING BASIN PLAN VIEW
SCALE: 1" = 5'

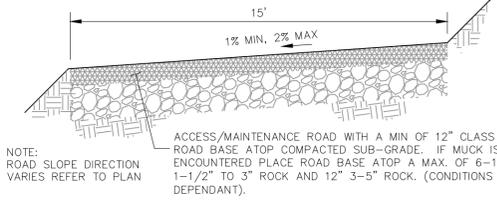
TABLE 1

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

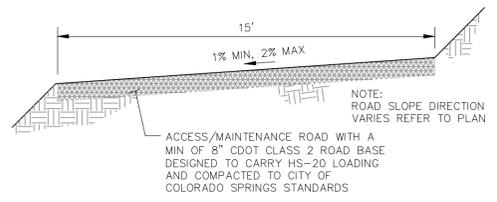
*D₅₀ = MEAN PARTICLE SIZE
REFER TO SECTION 506 RIPRAP OF CDOT SPECIFICATIONS



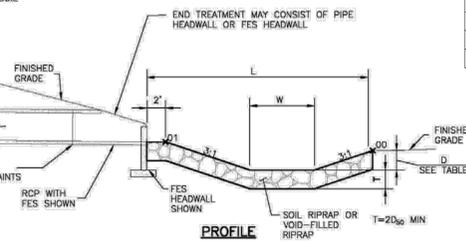
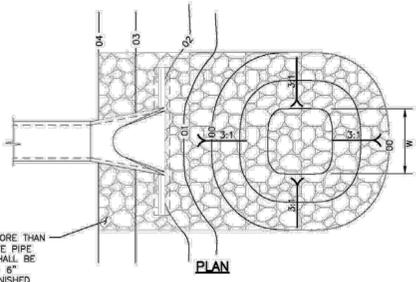
TYPICAL EMBANKMENT WITH SOIL KEYWAY
NOT TO SCALE



MAINTENANCE & ACCESS ROAD BELOW EURV TYPICAL SECTION
NOT TO SCALE



MAINTENANCE & ACCESS ROAD ABOVE EURV TYPICAL SECTION
NOT TO SCALE



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

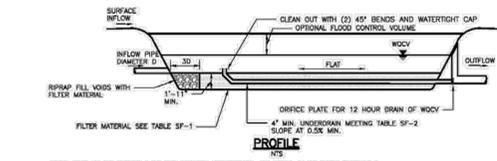
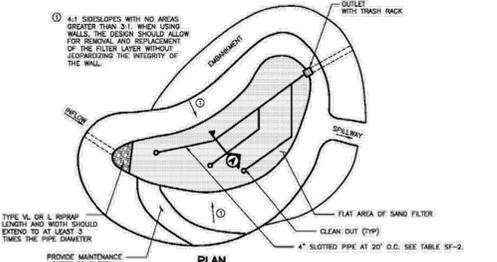
Table SF-1. Gradation Specifications for CDOT Class C Filter Material (Source: CDOT Table 703-7)

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

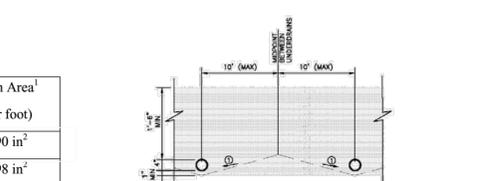
Table SF-2. Dimensions for Slotted Pipe

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

¹ 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.



NOTE: THIS DETAIL SHOWS A PARTIAL INFILTRATION SECTION. FOR FULL INFILTRATION ELIMINATE UNDERDRAIN AND PROVIDE 1'-0" OF FILTER MATERIAL. FOR NO INFILTRATION PROVIDE IMPERMEABLE MEMBRANE SECURED TO CAST-IN-PLACE CONCRETE WALL. SEE DETAILS SF-2 AND SF-3.



SECTION INTS

CLEARWAY, LOT 5

OUTLET STURCTURE POND 1 DETAILS

PROJECT NO. 44-042A

DATE: 06/13/2023

SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'

DESIGNED BY: DLM

DRAWN BY: CLP

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

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MKS CIVIL CONSULTANTS, INC.

06/14/2023

PROFESSIONAL SEAL

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

REVISIONS:

NO.	DATE	BY	DESCRIPTION

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CAUTION