

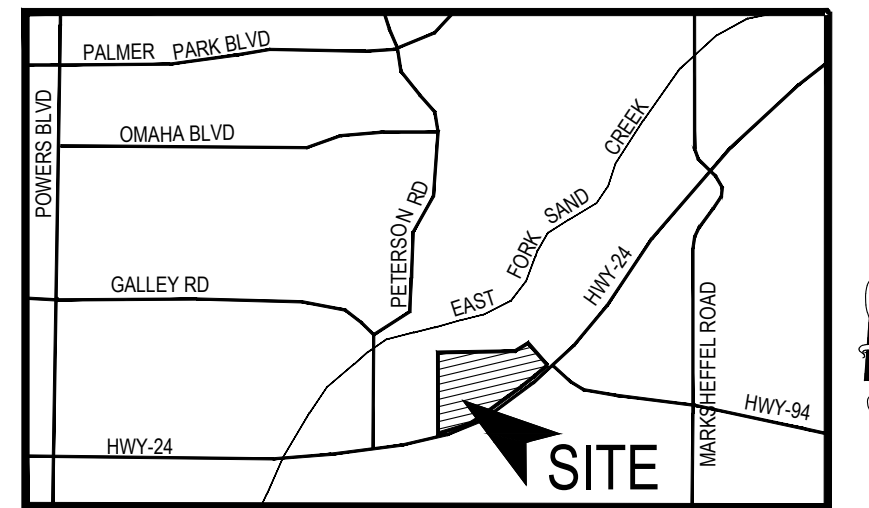
# CROSSROADS MIXED USE FILING NO. 1

## COUNTY OF EL PASO, STATE OF COLORADO STORM SEWER PLANS

UNDERGROUND DETENTION  
DECEMBER 2022

### GENERAL CONSTRUCTION NOTES:

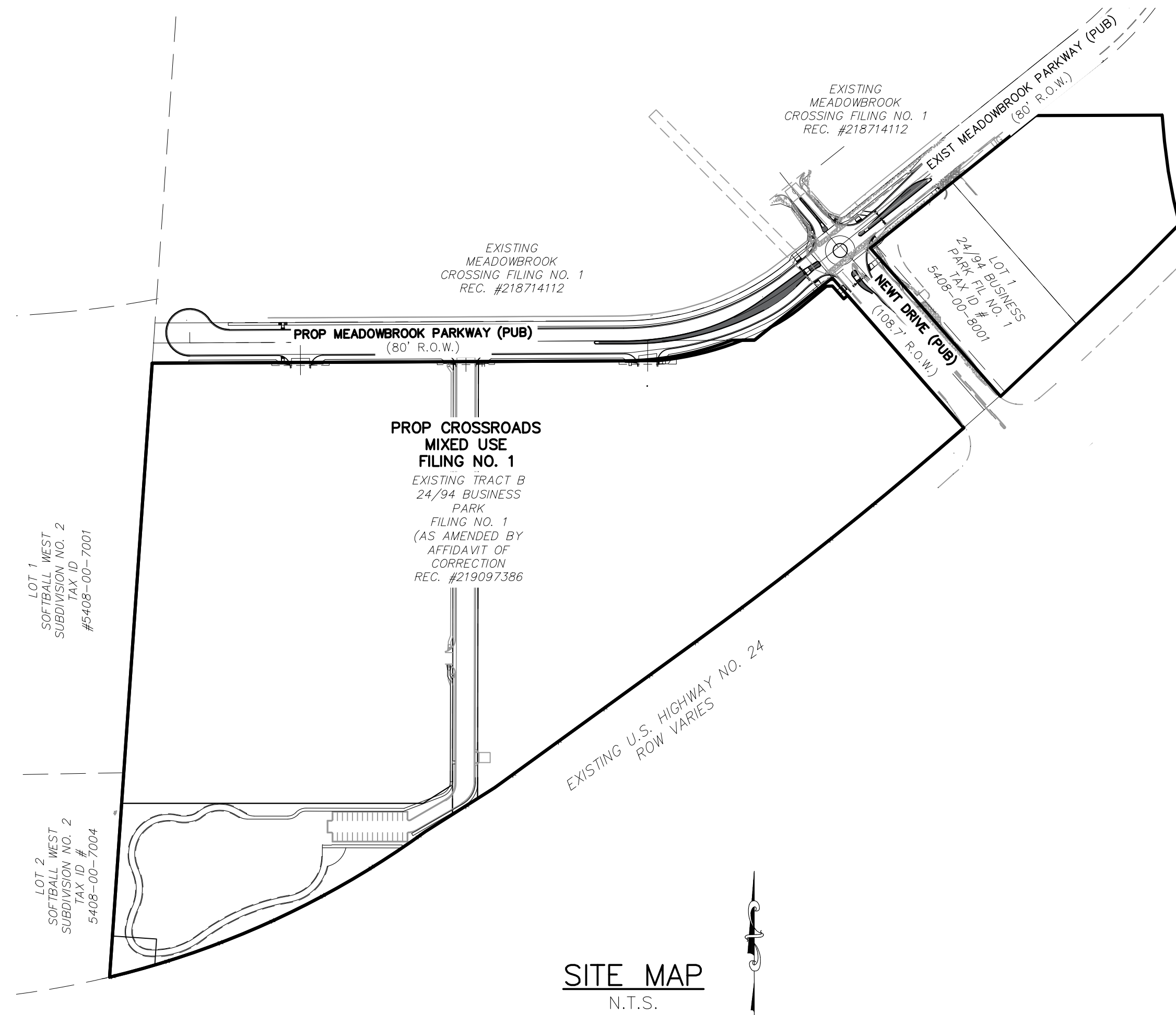
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND 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.



VICINITY MAP  
N.T.S.

### 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 THE JOB SITE 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 ON-SITE AND OFF-SITE, 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 PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT - 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 DEPARTMENT OF PUBLIC WORKS AND MUTCD CRITERIA.
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS 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.



SITE MAP  
N.T.S.

Provide an updated grading and erosion control plan

### BASIS OF BEARINGS

A PORTION OF THE EASTERLY LINE OF "SOFTBALL WEST SUBDIVISION NO. 2" RECORDED IN PLAT BOOK T-3 AT PAGE 112 OF THE RECORDS OF EL PASO COUNTY, COLORADO, BEING MONUMENTED ON THE SOUTH WITH A NO. 4 REBAR, FROM WHICH A NO. 5 REBAR WITH BLUE PLASTIC CAP STAMPED "RAMPART PLS 32820" BEARS N03°58'20"E A DISTANCE OF 1,170.16 FEET.

### BENCHMARK

- NATIONAL GEODETIC VERTICAL DATUM OF 1929, MONUMENT R76 SET IN TOP OF CONCRETE MONUMENT ELEVATION = 6286.32'
- NATIONAL GEODETIC VERTICAL DATUM OF 1929, FOUND #5 REBAR AND ORANGE CAP PLS 32820 ELEVATION = 6325.50'

Add Sheet ST07

### SHEET INDEX

- SHEET 1 TITLE SHEET
- SHEET 2 STORM SEWER PLANS & PROFILES
- SHEET 3 STORM SEWER PLANS & PROFILES
- SHEET 4 STORM SEWER PLANS & PROFILES
- SHEET 5 STORM DETAILS
- SHEET 6 STORM DETAILS
- ADS MC-7200 STORMTECH CHAMBER SPECIFICATIONS
- ADS BAYSAVER BAYSEPARATOR SPECIFICATIONS

### AGENCIES:

- OWNER/DEVELOPER: COLORADO SPRINGS EQUITIES LLC  
90 S. CASCADE AVE., SUITE 1500  
COLORADO SPRINGS, CO 80903  
DANNY MIENKA (719) 448-4034
- CIVIL ENGINEER: M & S CIVIL CONSULTANTS, INC.  
212 N. WAHSATCH, 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) 520-6300
- TRAFFIC ENGINEERING: EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS  
3275 AKERS DRIVE  
COLORADO SPRINGS, CO 80922  
JENNIFER IRVINE, P.E. (719) 520-6460
- WATER RESOURCES: CHEROKEE METROPOLITAN DISTRICT  
6250 PALMER PARK BOULEVARD  
COLORADO SPRINGS, CO 80915-1721  
JEFF MUNGER (719) 597-5080
- FIRE DISTRICT: CIMARRON HILLS FIRE DEPARTMENT  
1835 TUSKEGEE PLACE  
COLORADO SPRINGS, CO 80915  
(719) 591-0960
- GAS DEPARTMENT: COLORADO SPRINGS UTILITIES  
7710 DURANT DR.  
COLORADO SPRINGS, CO 80947  
TIM WENDT (719) 668-3556
- ELECTRIC DEPARTMENT: COLORADO SPRINGS UTILITIES  
7710 DURANT DR.  
COLORADO SPRINGS, CO 80947  
TIM WENDT (719) 668-3556
- COMMUNICATIONS: QWEST COMMUNICATIONS  
(U.N.C.C. LOCATORS) (800) 922-1987  
AT&T (LOCATORS) (719) 635-3674

### 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 OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS IN THESE DETAILED PLANS AND SPECIFICATIONS.

DANNY MIENKA (MANAGER) \_\_\_\_\_ DATE  
COLORADO SPRINGS EQUITIES LLC

### 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.

JOSHUA PALMER, P.E. \_\_\_\_\_ DATE  
COUNTY ENGINEER / ECM ADMINISTRATOR  
EL PASO COUNTY FILE NO. SF 21-029



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Add "CDR-23-002"

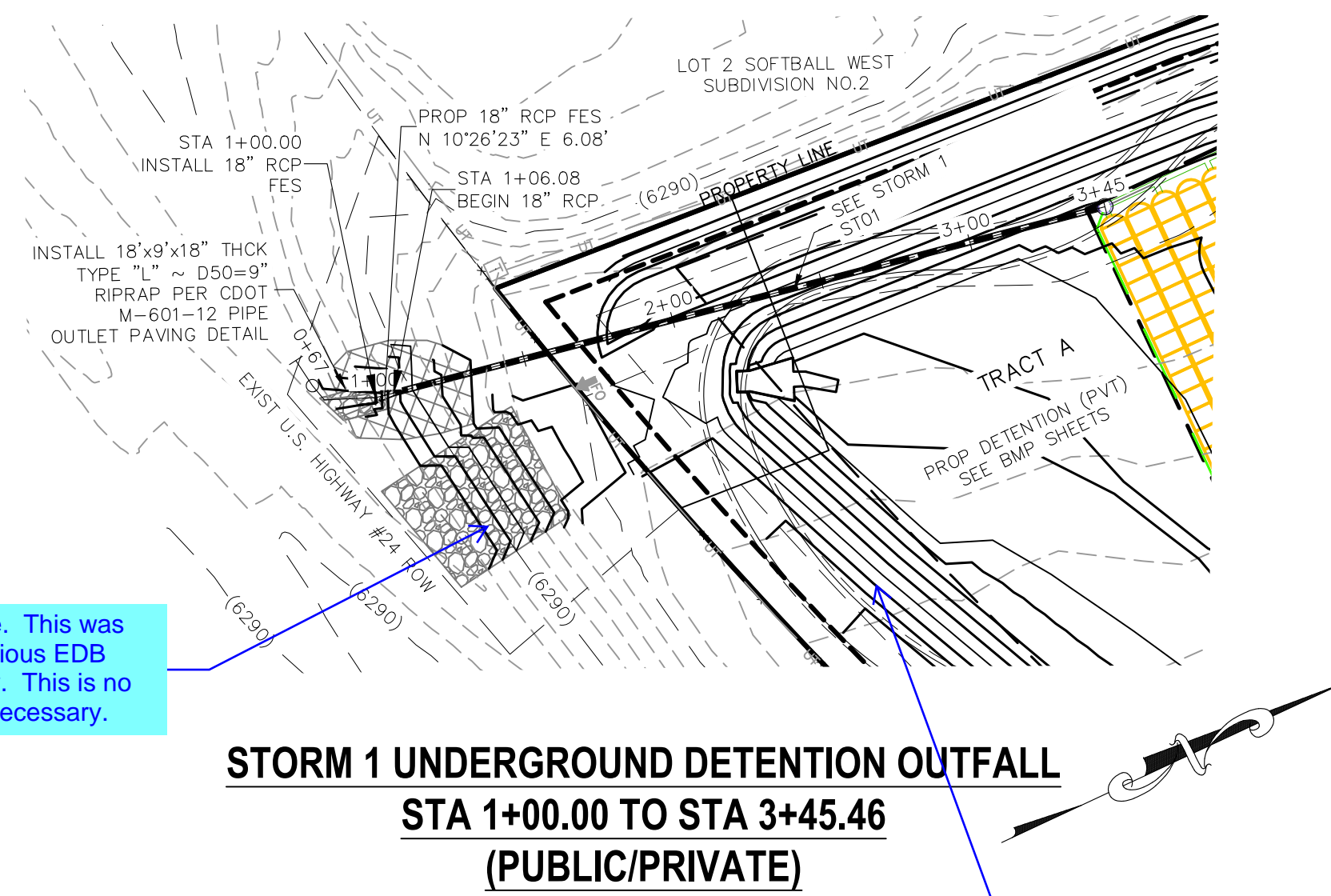
CROSS ROAD MIXED USE FILING NO.1		TITLE SHEET		DATE: 12-23-22		SHEET 1 OF 6		SI01	
PROJECT NO. 18-003		SCALE: HORIZONTAL: N/A VERTICAL: N/A		DESIGNED BY: GT		DRAWN BY: TAU		CHECKED BY: VAS	
212 N. WAHSATCH AVE., STE 305 COLORADO SPRINGS, CO 80903 PHONE: 719.955.5485									
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.		VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160							
REVISED:	NO.	DATE:	BY:	DESCRIPTION:	DATE:	BY:	DESCRIPTION:	DATE:	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 PREPARER OF THESE PLANS.									
CAUTION									

**NOTE:**

- 1.) GRATED INLET TO BE REPLACED WITH CRUB FACE INLET AT TIME OF MEADOWBROOK PARKWAY EXTENSION
- 2.) ALL PRIVATE STORM SEWER CONSTRUCTED WITH THESE PLANS TO BE MAINTAINED BY THE CROSSROADS METROPOLITAN DISTRICT NO. 1

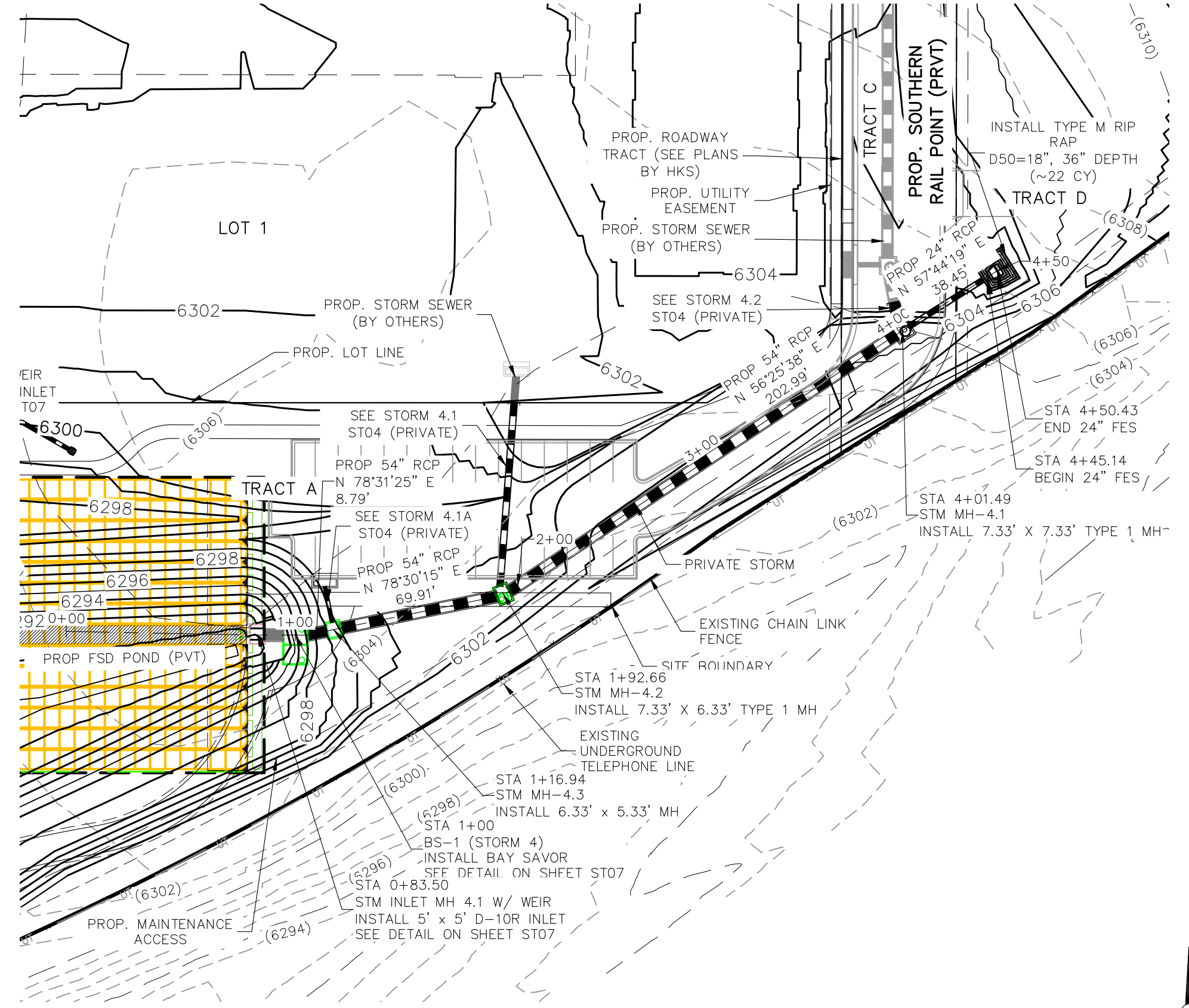
FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

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



Remove. This was the previous EDB Spillway. This is no longer necessary.

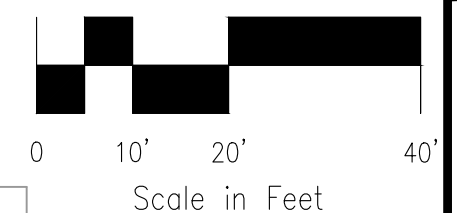
Update proposed contours to reflect the updated design.



Delete or provide clarification. This appears to be a remnant note from the previous design.



1" = 50'



Station	Structure / Pipe	Length (LF)	Slope (%)	Flow (CFS)
1+00	18" RCP	6.08	-0.50%	Q100=11.4
1+06.08	18" RCP	237.27	-0.50%	Q100=11.4
3+45.46	54" RCP	9.00	0.00%	Q100=112.0

Update proposed grade.

Station	Structure / Pipe	Length (LF)	Slope (%)	Flow (CFS)
0+83.50	54" RCP	8.79	0.50%	Q100=112.0
1+16.94	54" RCP	69.91	0.50%	Q100=109.4
1+92.66	7.33' x 6.33' MH	202.99	0.50%	Q100=110.1
4+50.43	7.33' x 7.33' MH	36.45	0.34%	Q100=19.6

PROPOSED CONCRETE FOREBAY (HANDRAILS NOT SHOWN) SEE BMPO2

Station	Structure / Pipe	Length (LF)	Slope (%)	Flow (CFS)
0+84.26	54" RCP	7.74	0.00%	Q100=74.6
1+21.98	54" RCP	5.88	-8.00%	Q100=65.5
1+32.85	48" RCP	9.37	-8.00%	Q100=65.5

BEGIN PROPOSED UNDERGROUND DETENTION CONCRETE FOREBAY SEE BMPO3 BY M&S CIVIL CONSULTANTS

**CROSS ROAD MIXED USE FILING NO. 1**

**STORM SEWER PLANS**

PROJECT NO. 18-003  
 DATE: 12-23-22  
 SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'  
 DESIGNED BY: GT  
 DRAWN BY: TAU  
 CHECKED BY: VAS

N. WABATCH AVE, STE 305  
 COLORADO SPRINGS, CO 80903  
 PHONE: 719.955.5465

**CIVIL CONSULTANTS, INC.**

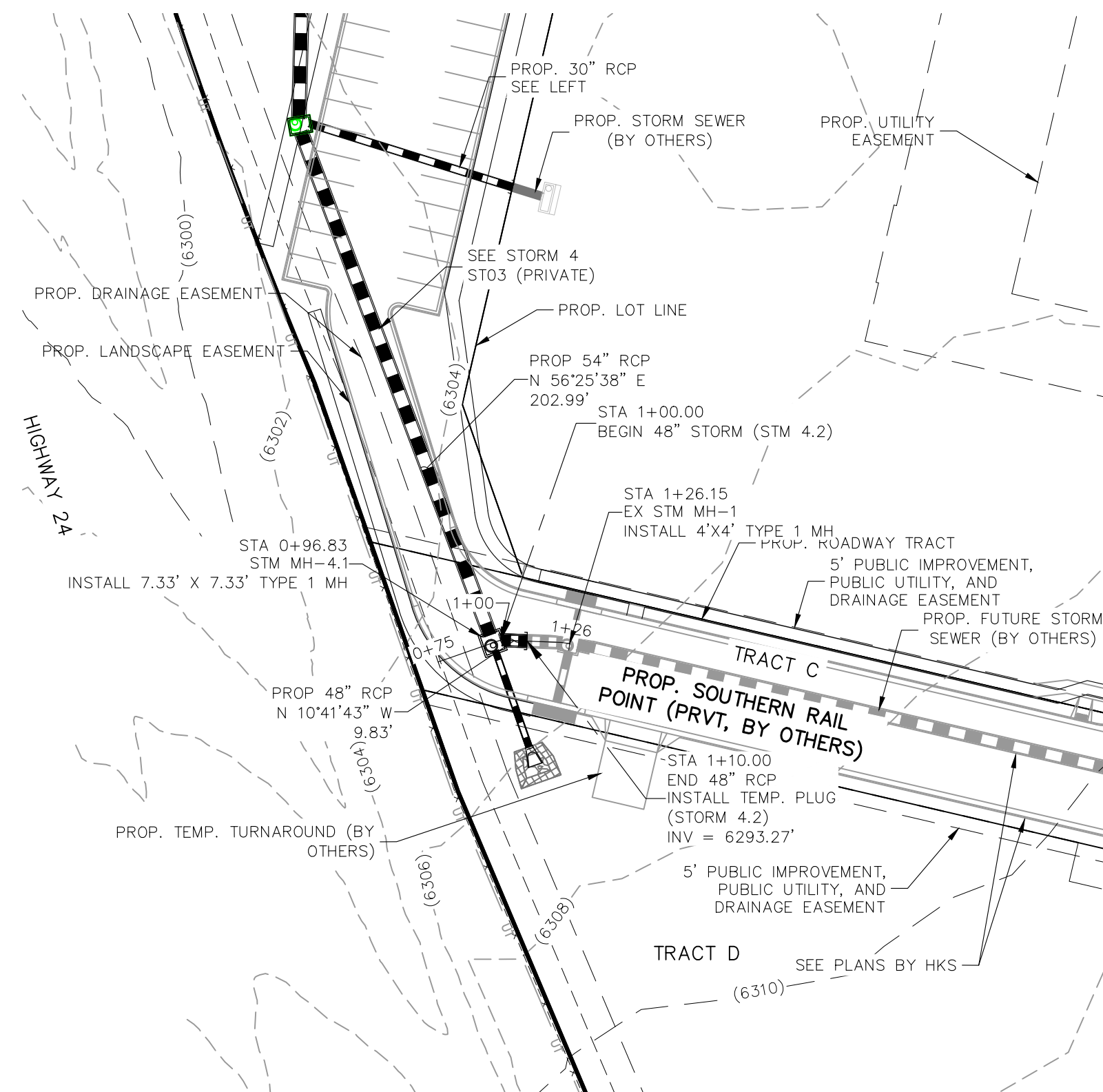
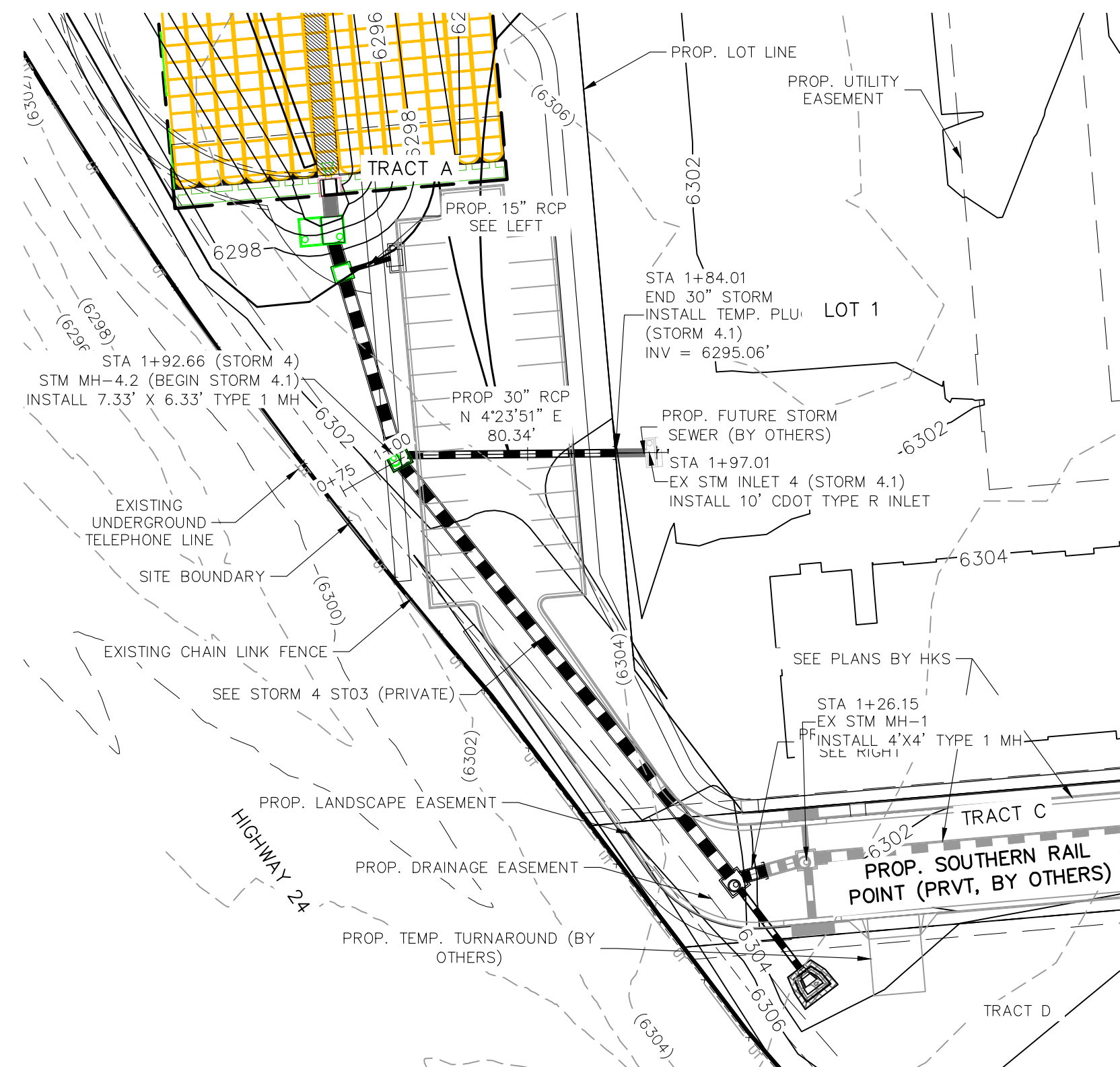
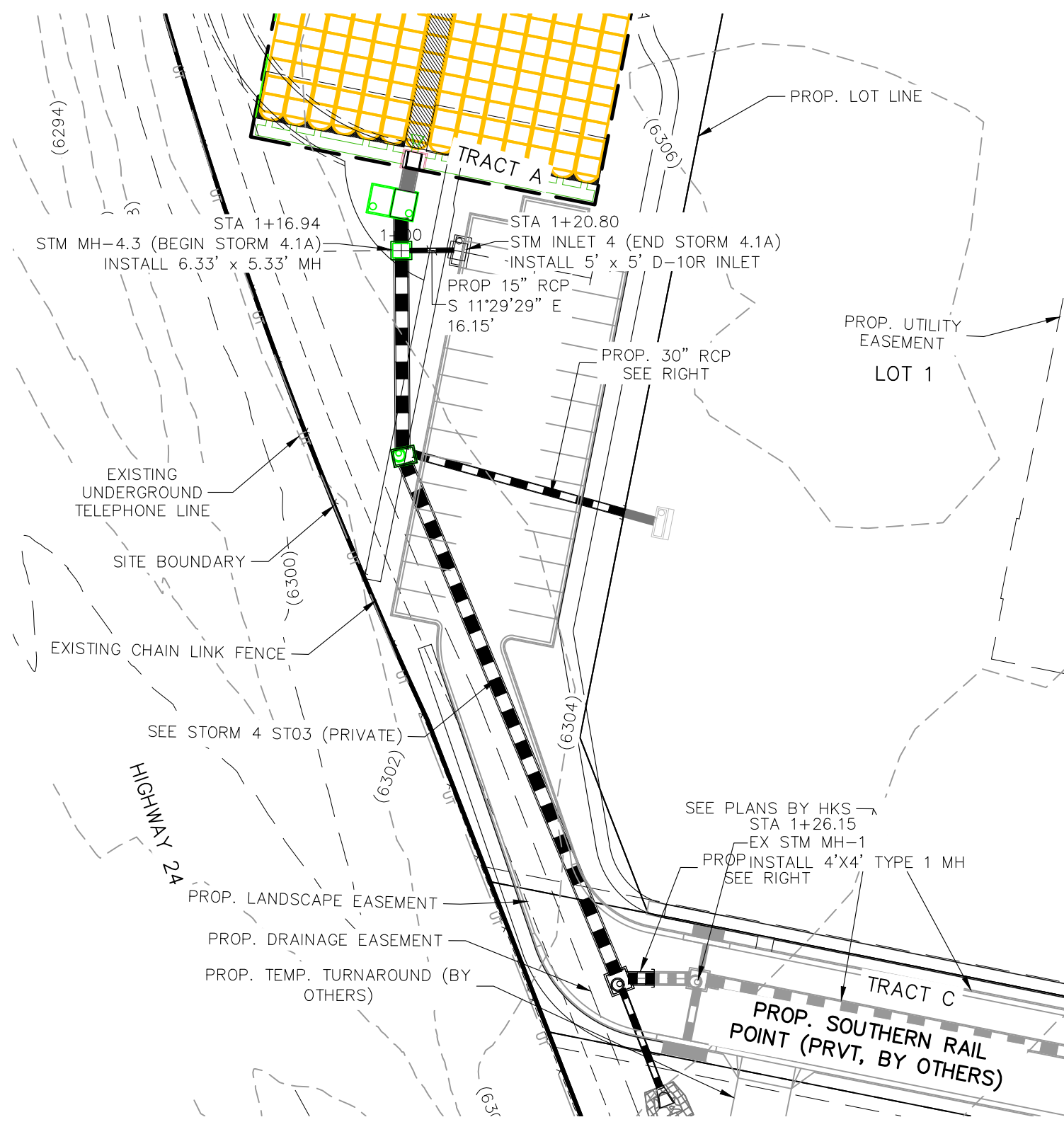
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

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

REV. NO.	DATE	BY	DESCRIPTION	APPROV. BY	DATE

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CAUTION



**NOTE:**  
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FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES  
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DATE: 12-23-22  
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DRAWN BY: TAU  
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SHEET 3 OF 6  
ST03

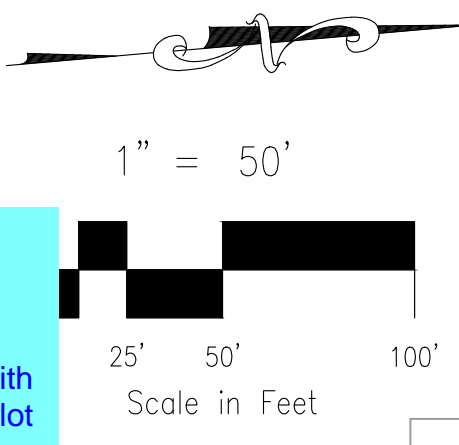
212 N. WABATCH AVE, STE 305  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.5465  
**CIVIL CONSULTANTS, INC.**

FOR AND ON BEHALF OF  
MKS CIVIL CONSULTANTS, INC.  
VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 371160

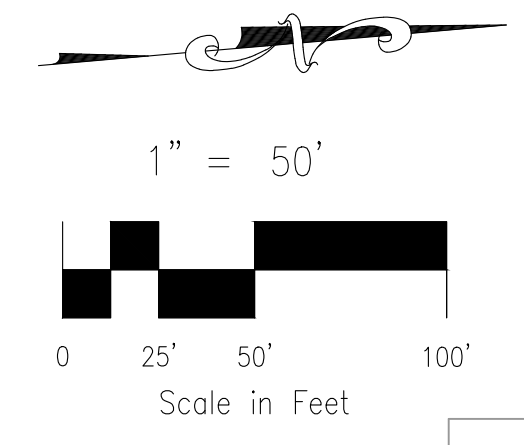
REVISIONS:  
NO. DATE BY DESCRIPTION  
APPROVED BY: DATE:  
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**CAUTION**

**STORM 4.1A (PRIVATE)**  
**STA 1+00.00 TO STA 1+20.80**

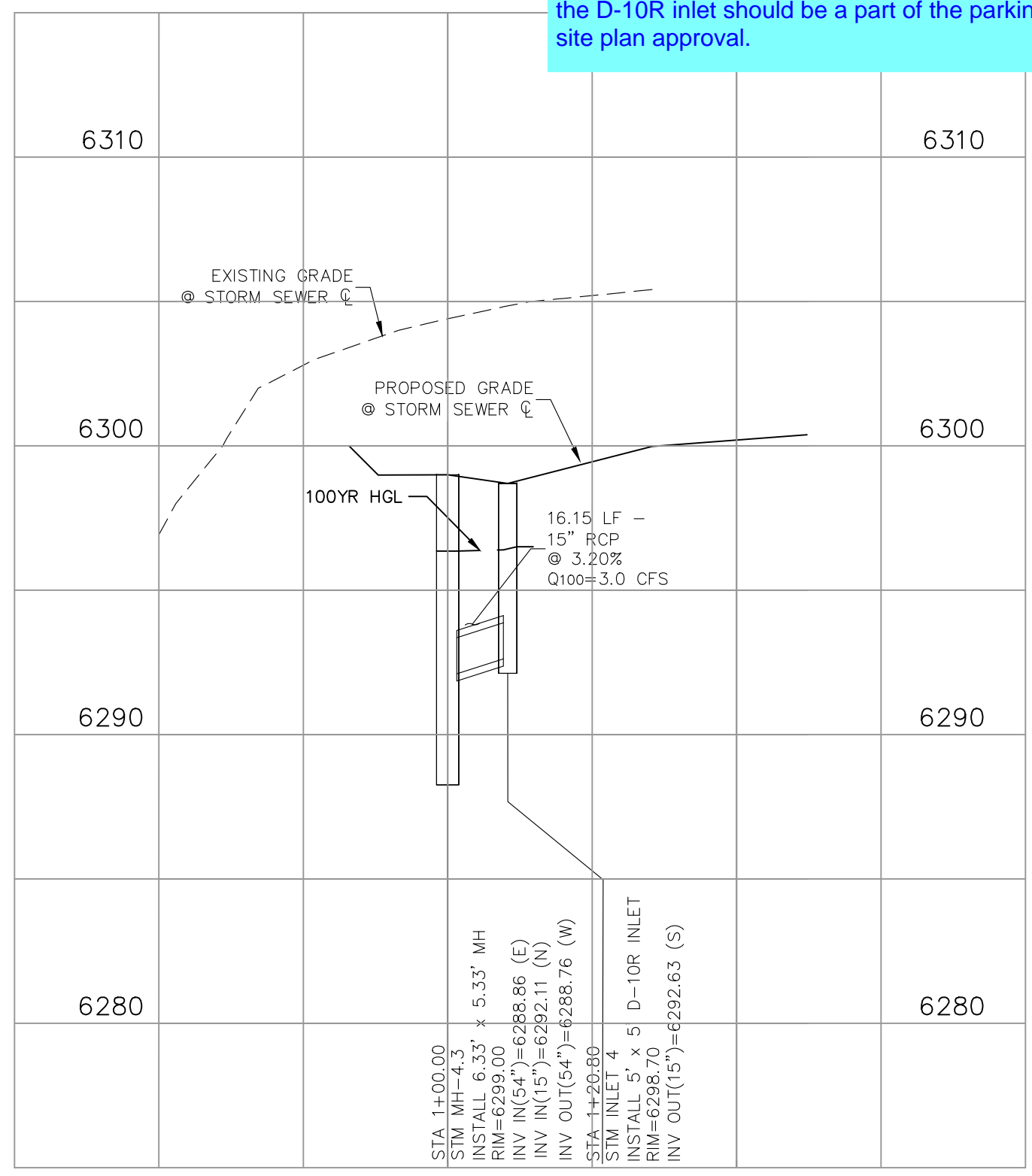
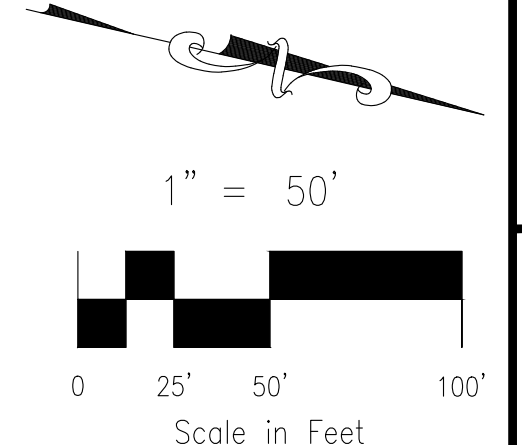
Drainage letter identified this as future parking overflow.  
Revise design. An interim drainage solution should be presented. The final configuration with the D-10R inlet should be a part of the parking lot site plan approval.



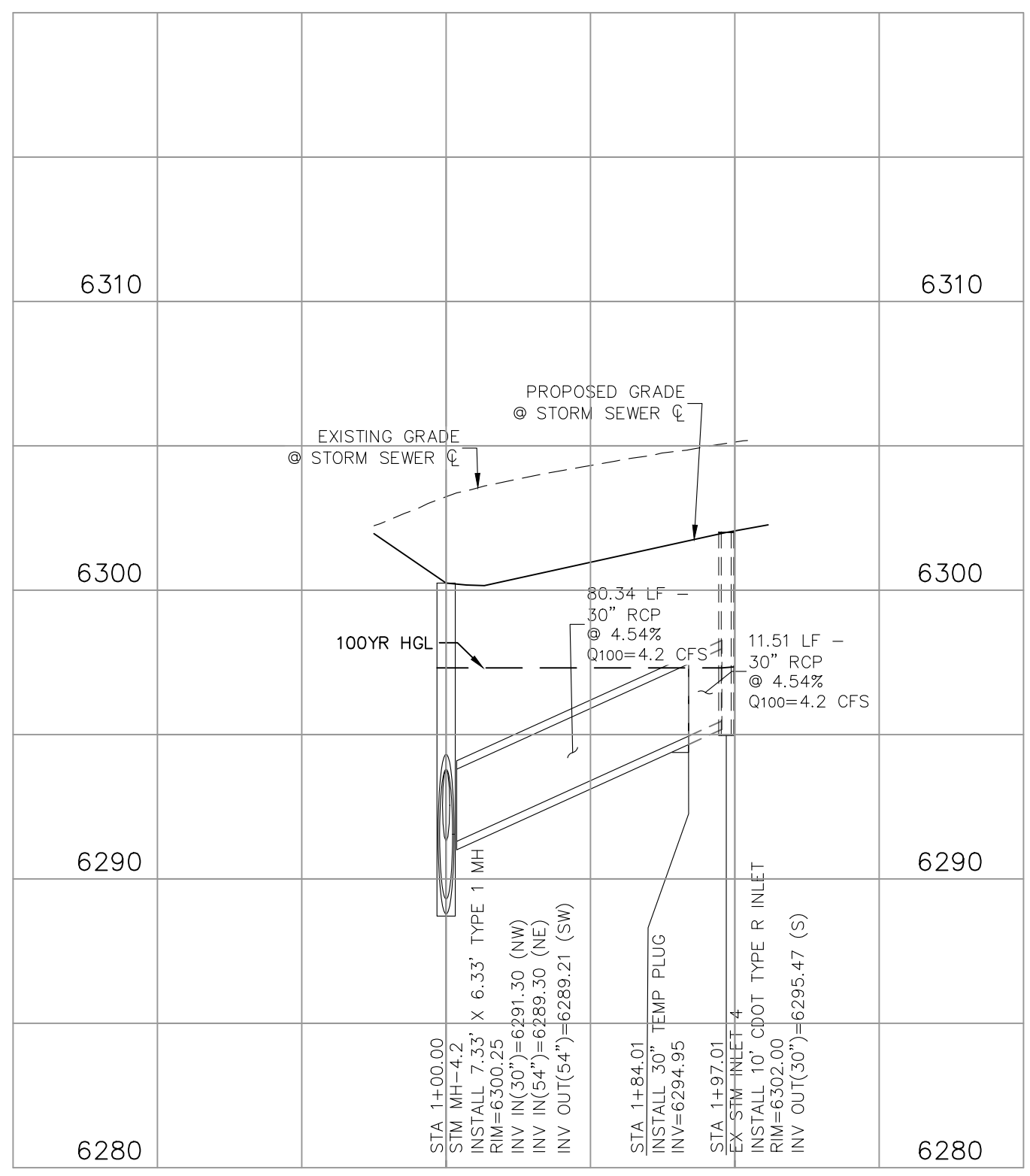
**STORM 4.1 (PRIVATE)**  
**STA 1+00.00 TO STA 1+97.01**



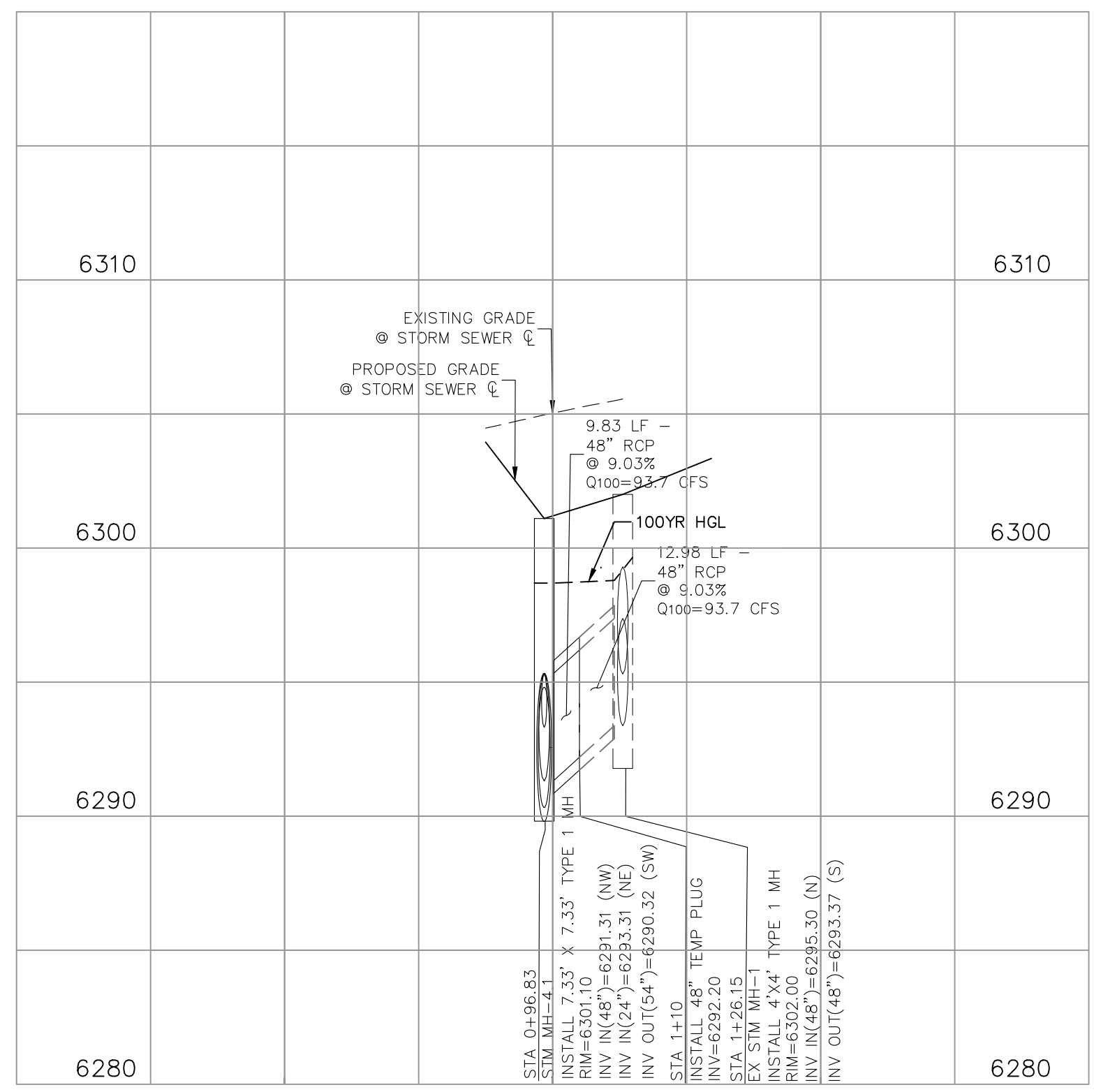
**STORM 4.2 (PRIVATE)**  
**STA 1+00.00 TO STA 1+26.15**



**STORM 4.1A (PRIVATE)**

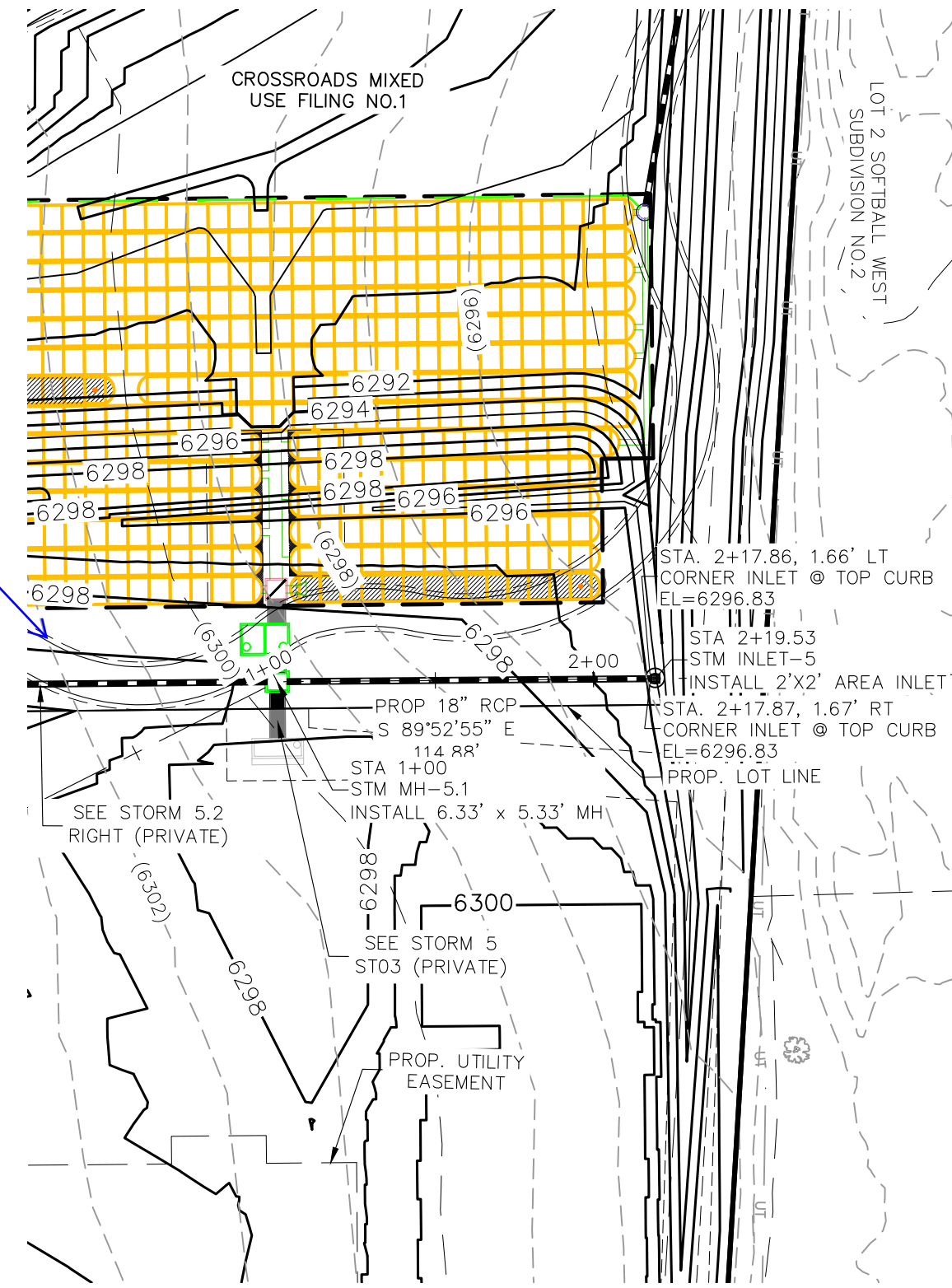


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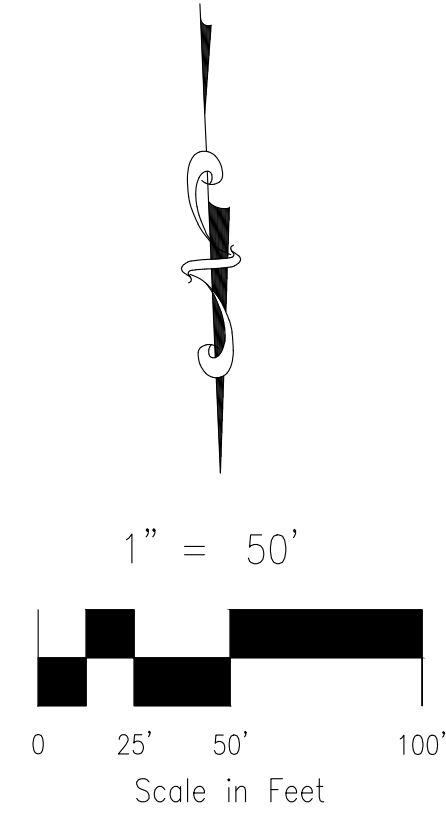


**STORM 4.2 (PRIVATE)**

label.

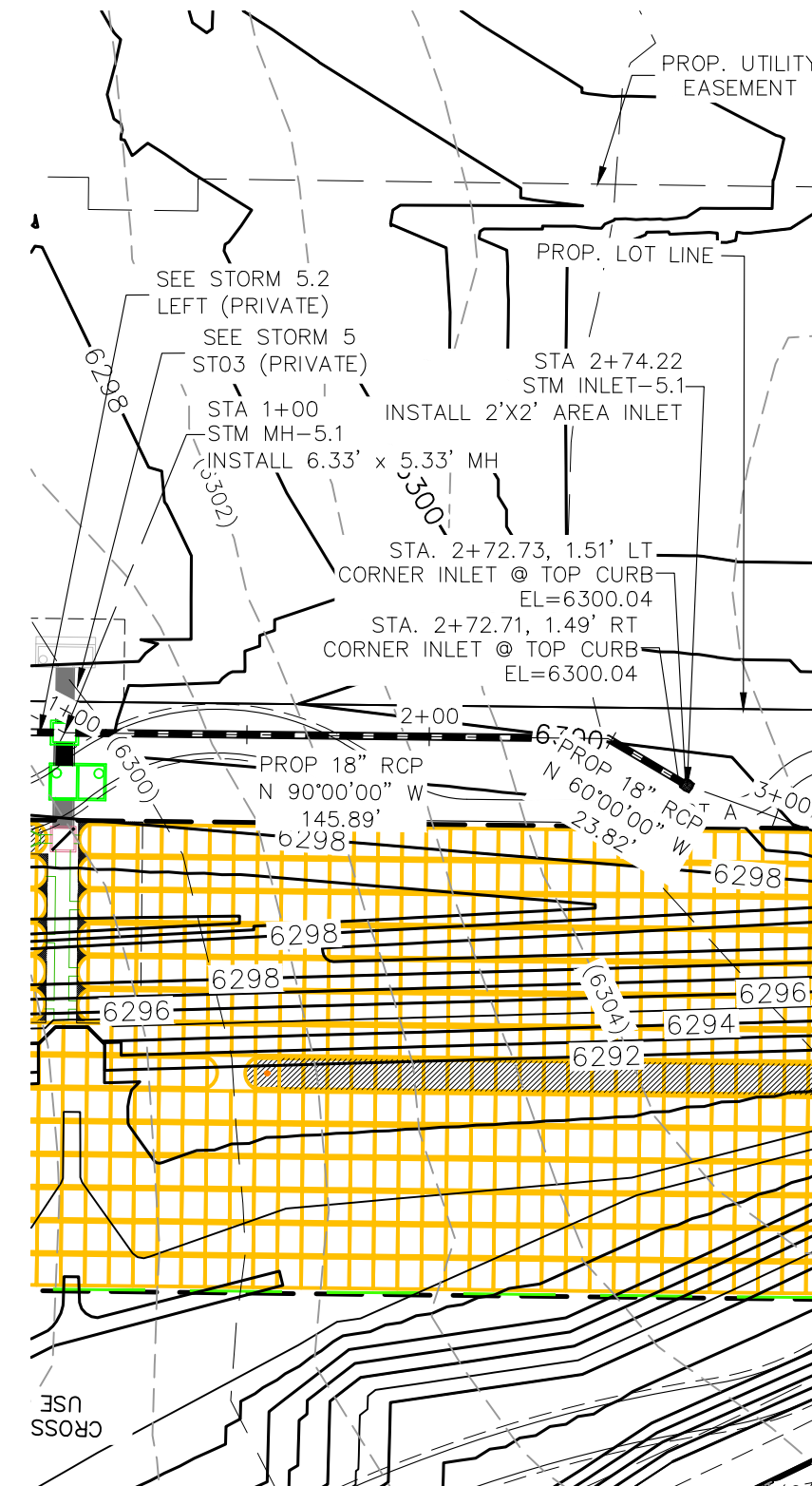


**STORM 5.1 (PRIVATE)**  
STA 1+00.00 TO STA 2+19.53

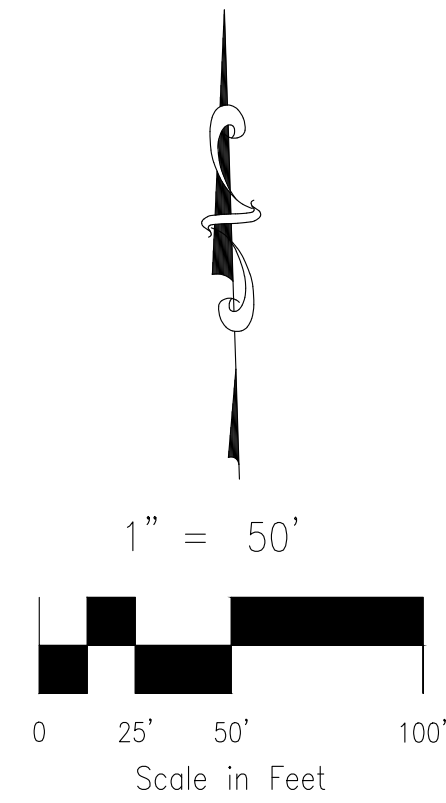


6310				6310
6300		EXISTING GRADE ● STORM SEWER	PROPOSED GRADE ● STORM SEWER	6300
6290		100YR HGL	114.88 LF 18" RCP @ 0.50% Q100=4.7 CFS	6290
6280	STA 1+00.00	STM MH-5.1 INSTALL 6.33' x 5.33' MH INV IN(48")=6289.28 (N) INV IN(18")=6291.15 (W) INV IN(18")=6291.15 (E) INV OUT(54")=6286.76 (S)		6280
	STA 2+19.53	INSTALL 2'X2' AREA INLET TOG EL=6295.75 INV OUT(18")=6292.00 (E)		
	1+00		2+00	

**STORM 5.1 (PRIVATE)**



**STORM 5.2 (PRIVATE)**  
STA 1+00.00 TO STA 2+74.22



6310				6310
6300		EXISTING GRADE ● STORM SEWER	PROPOSED GRADE ● STORM SEWER	6300
6290		100YR HGL	145.89 LF - 18" RCP @ 0.50% Q100=3.2 CFS	6290
	STA 1+00.00	INSTALL 6.33' x 5.33' MH RIM=6297.46 INV IN(48")=6289.28 (N) INV IN(18")=6291.15 (W) INV IN(18")=6291.15 (E) INV OUT(54")=6286.76 (S)		
	STA 2+74.22	INSTALL 2'X2' AREA INLET TOG EL=6295.75 INV OUT(18")=6292.00 (E)		
	1+00		2+00	

**STORM 5.2 (PRIVATE)**

**NOTE:**

ALL PRIVATE STORM SEWER CONSTRUCTED WITH THESE PLANS TO BE MAINTAINED BY THE CROSSROADS METROPOLITAN DISTRICT NO. 1

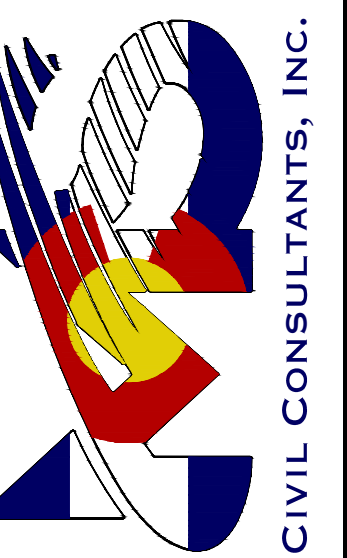
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CROSS ROAD MIXED USE FILING NO.1

STORM SEWER PLANS

PROJECT NO. 18-003  
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'  
DATE: 12-23-22  
DESIGNED BY: GT  
DRAWN BY: TAU  
CHECKED BY: VAS  
SHEET 4 OF 6  
ST04

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



FOR AND ON BEHALF OF WKS CIVIL CONSULTANTS, INC.

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

NO.	DATE	BY	DESCRIPTION	APPROVED BY	DATE

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CAUTION

**Storm Sewer Manhole Detail Type II Standard Drawing**

DATE APPROVED: 11/10/04  
 FILE NAME: SD\_3-2  
 ANDRÉ P. BRACKIN  
 DEPARTMENT OF TRANSPORTATION

SCALE: NOT TO SCALE

**Storm Sewer Manhole Detail Type I Standard Drawing**

DATE APPROVED: 7/9/09  
 FILE NAME: SD\_3-1  
 ANDRÉ BRACKIN  
 DEPARTMENT OF TRANSPORTATION

SCALE: NOT TO SCALE

**Storm Sewer Manhole Details Standard Drawing**

DATE APPROVED: 9/16/10  
 FILE NAME: SD\_3-5  
 ANDRÉ P. BRACKIN  
 DEPARTMENT OF TRANSPORTATION

SCALE: NOT TO SCALE

**Storm Sewer Manhole Riser and Cover Detail Standard Drawing**

DATE APPROVED: 8/11/11  
 FILE NAME: SD\_3-7  
 ANDRÉ P. BRACKIN  
 DEPARTMENT OF TRANSPORTATION

SCALE: NOT TO SCALE

**CONCRETE AND METAL END SECTIONS Standard Drawing**

DATE APPROVED: 7/9/09  
 FILE NAME: M-603-10  
 ANDRÉ P. BRACKIN  
 DEPARTMENT OF TRANSPORTATION

SCALE: NOT TO SCALE

- STORM SEWER GENERAL NOTES**
- ALL STATIONING IS ALONG STORM SEWER CENTERLINE UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE INVERT UNLESS OTHERWISE INDICATED.
  - ALL STORM SEWER BENDS, MANHOLES, AND WYES SHOWN ON THE PLANS SHALL BE PREFABRICATED. HORIZONTAL AND VERTICAL BENDS ARE INDICATED ON THE PLANS.
  - ALL CONNECTIONS BETWEEN DISSIMILAR MATERIALS (I.E. HP STORM PIPE AND CONCRETE STRUCTURES), SHALL BE WATER TIGHT. REFER TO ADS WATERSTOP STRUCTURE CONNECTION DETAILS (SEE THIS CONSTRUCTION SET) FOR ADDITIONAL INFORMATION.
  - THE CONTRACTOR SHOULD ATTEMPT TO LIMIT CONSTRUCTION TRAFFIC ATOP THE PROPOSED STORM SEWER INSTALLATION. AS PER THE MANUFACTURERS RECOMMENDATIONS THE CONTRACTOR SHALL PROVIDE A MIN OF 12" OF COVER AT ALL TIMES ATOP THE BACKFILLED STORM SEWER TO TOP OF THE FINISHED GROUND OR BOTTOM OF FLEXIBLE PAVEMENT SURFACE TO PROTECT THE PIPE FROM H-25 VEHICULAR TRAFFIC. A MINIMUM OF 36" SHOULD BE PROVIDED TO PROTECT THE STORM SEWER FROM 30 T TO 60 T TRAFFIC AND MINIMUM OF 72" FOR TRAFFIC UP TO 78 T AXLE LOADS. FINAL GRADING SHOWN ON THE PLANS WILL PROHIBIT VEHICULAR TRAFFIC TO LOADS LESS THE H-25.
  - REFER TO THE DETAIL IN THIS CONSTRUCTION SET FOR PIPE TRENCH DETAILS AND PIPE SPECIFICATION.

- STRUCTURAL CONCRETE NOTES:**
- 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.
  - STEEL REINFORCING SHALL BE GRADE 60 FOR ALL REINFORCING STEEL GREATER THAN #4. SPLICING, LAP SPLICING SHALL BE MINIMUM IN THE FOLLOWING TABLE UNLESS OTHERWISE SPECIFIED:  
 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.
  - CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f<sub>c</sub>) 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.
  - EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213.
  - 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.
  - 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.
  - 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

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CROSS ROAD MIXED USE FILING NO. 1  
 STORM SEWER DETAILS  
 PROJECT NO. 18-003  
 DATE: 12-23-22  
 SCALE: HORIZONTAL: NA VERTICAL: NA  
 DESIGNED BY: GT  
 DRAWN BY: TAU  
 CHECKED BY: VAS  
 SHEET 5 OF 6  
 ST05

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

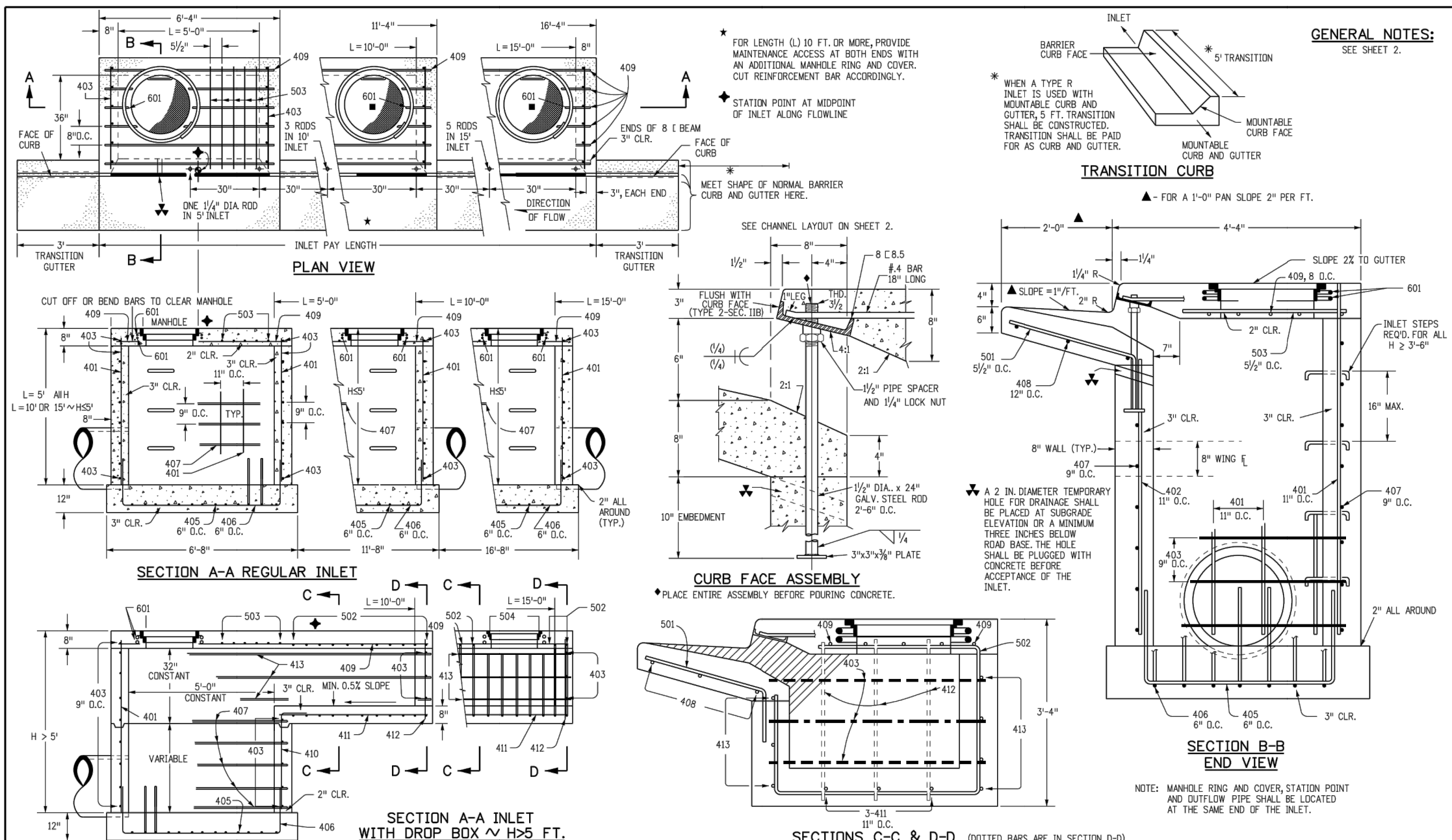
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FOR AND ON BEHALF OF  
 M&S CIVIL CONSULTANTS, INC.

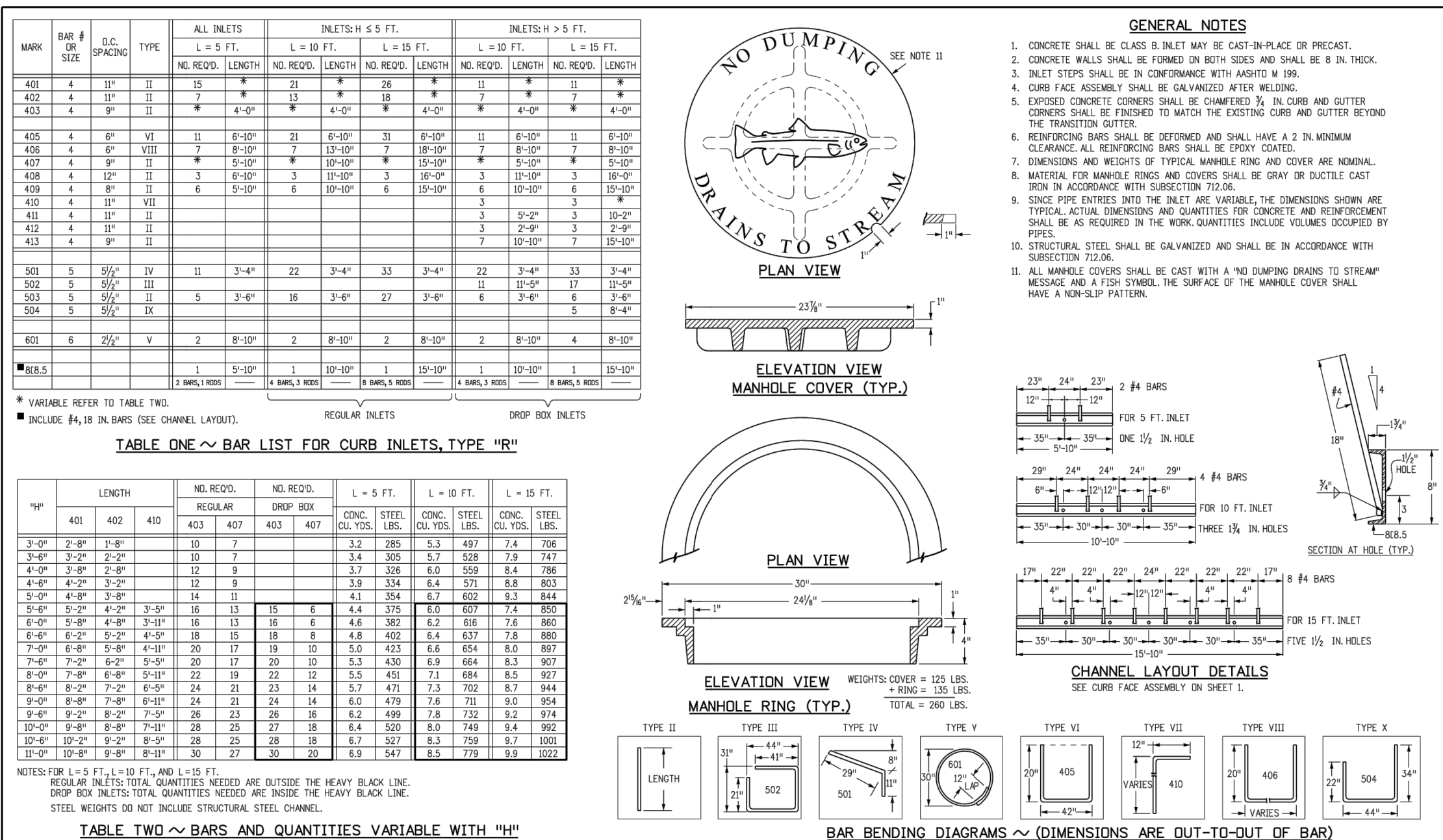
REVISIONS:  
 NO. DATE BY DESCRIPTION

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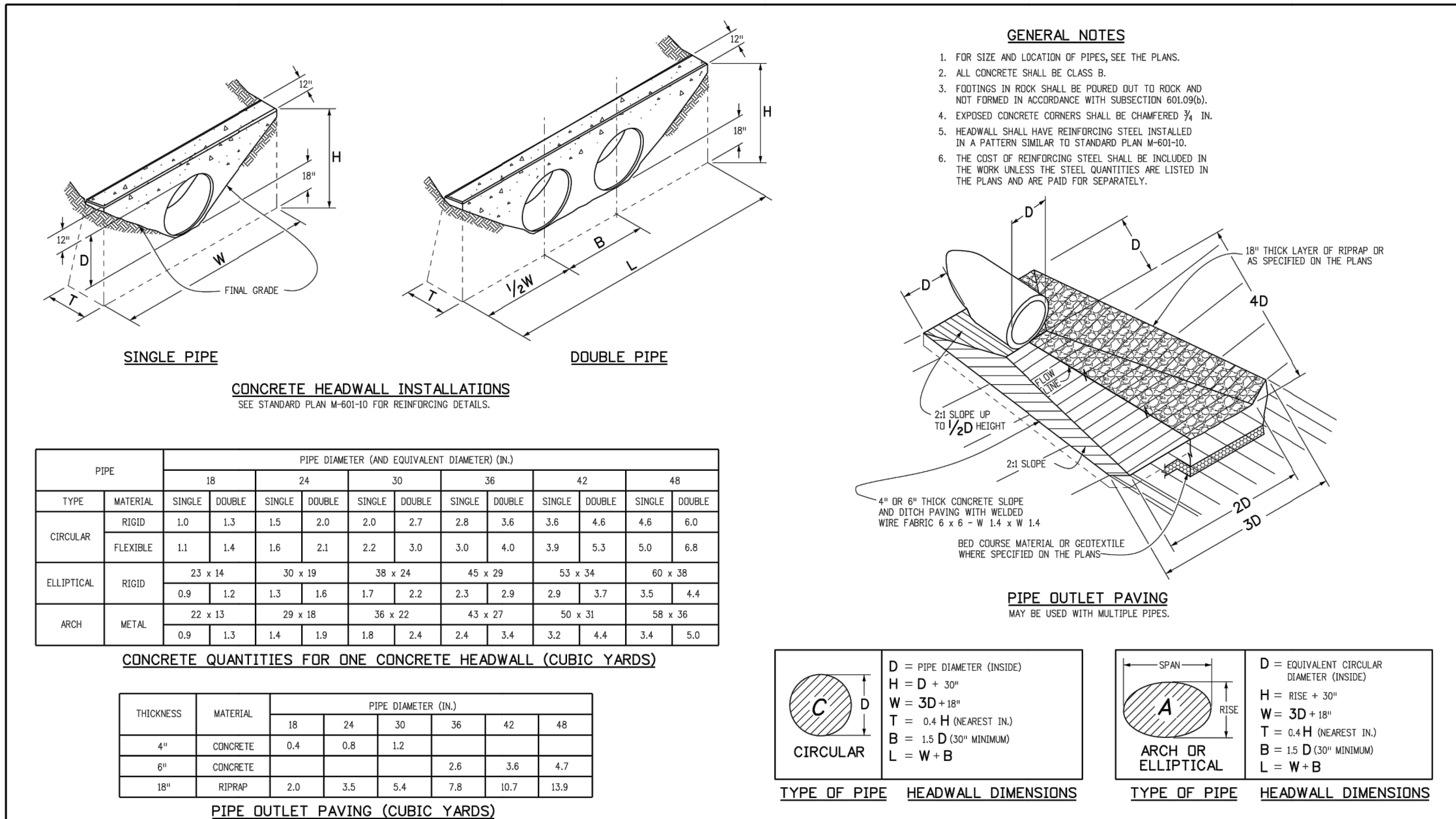
CAUTION



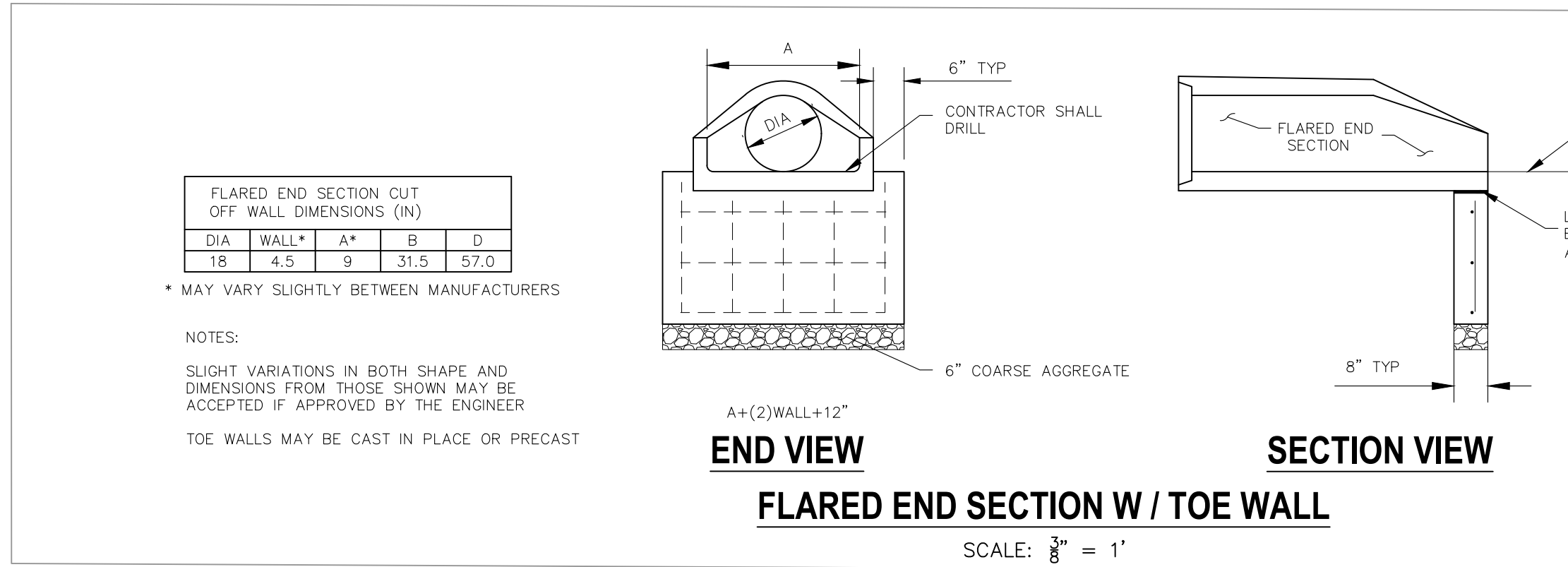
<b>Computer File Information</b> Creation Date: 07/04/12 Last Modification Date: 07/04/12 Drawing File Name: 6040120102.dgn CAD Ver.: MicroStation V8	<b>Sheet Revisions</b> Date: _____ Comments: _____	<b>Colorado Department of Transportation</b> 4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9822 Fax: (303) 757-9820	<b>CURB INLET TYPE R</b>	<b>STANDARD PLAN NO.</b> M-604-12
Project Development Branch DD/LTA	Issued By: Project Development Branch July 4, 2012		Sheet No. 1 of 2	



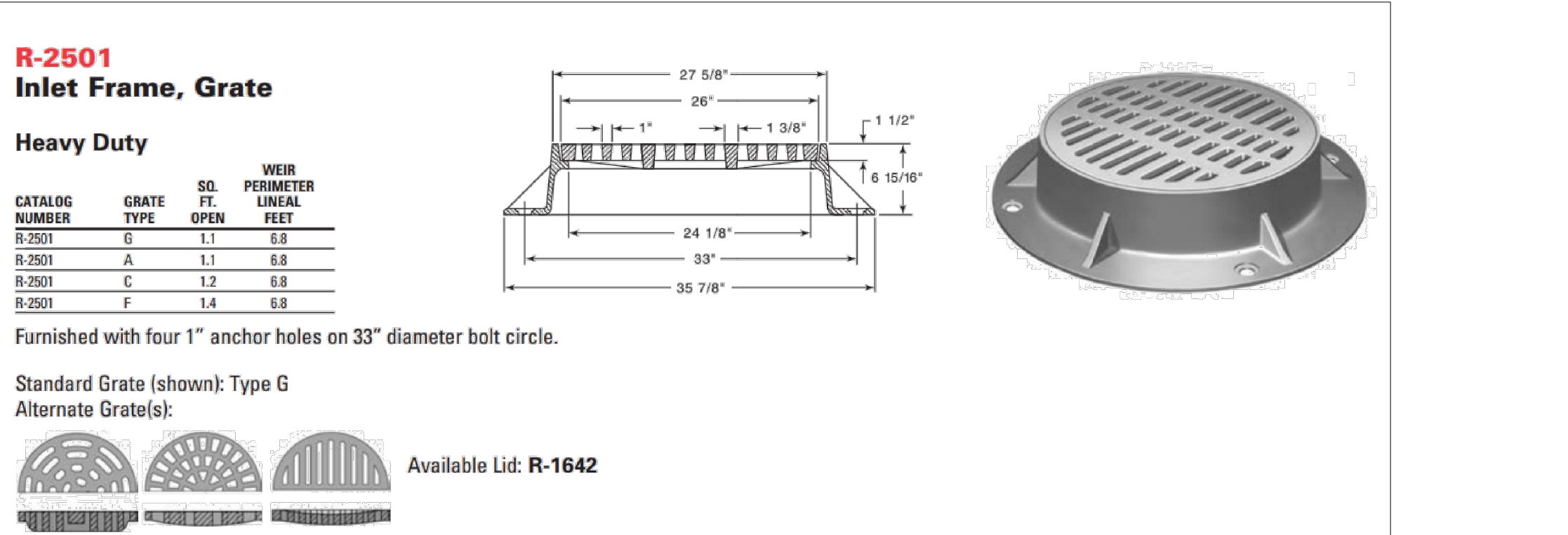
<b>Computer File Information</b> Creation Date: 07/04/12 Last Modification Date: 07/04/12 Drawing File Name: 6040120202.dgn CAD Ver.: MicroStation V8	<b>Sheet Revisions</b> Date: _____ Comments: _____	<b>Colorado Department of Transportation</b> 4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9822 Fax: (303) 757-9820	<b>CURB INLET TYPE R</b>	<b>STANDARD PLAN NO.</b> M-604-12
Project Development Branch DD/LTA	Issued By: Project Development Branch July 4, 2012		Sheet No. 2 of 2	



<b>Computer File Information</b> Creation Date: 07/04/12 Last Modification Date: 07/04/12 Drawing File Name: 6010120102.dgn CAD Ver.: MicroStation V8	<b>Sheet Revisions</b> Date: _____ Comments: _____	<b>Colorado Department of Transportation</b> 4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9822 Fax: (303) 757-9820	<b>HEADWALLS AND PIPE OUTLET PAVING</b>	<b>STANDARD PLAN NO.</b> M-601-12
Project Development Branch DD/LTA	Issued By: Project Development Branch July 4, 2012		Sheet No. 1 of 1	



<b>Computer File Information</b> Creation Date: 07/04/12 Last Modification Date: 07/04/12 Drawing File Name: 6010120202.dgn CAD Ver.: MicroStation V8	<b>Sheet Revisions</b> Date: _____ Comments: _____	<b>Colorado Department of Transportation</b> 4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9822 Fax: (303) 757-9820	<b>HEADWALLS AND PIPE OUTLET PAVING</b>	<b>STANDARD PLAN NO.</b> M-601-12
Project Development Branch DD/LTA	Issued By: Project Development Branch July 4, 2012		Sheet No. 1 of 1	



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**CROSS ROAD MIXED USE FILING NO. 1**  
**STORM SEWER DETAILS**  
 PROJECT NO. 18-003  
 SCALE: HORIZONTAL: NA  
 VERTICAL: NA  
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 DRAWN BY: TAU  
 CHECKED BY: VAS  
**ST06**  
 SHEET 6 OF 6

212 N. WABASH AVE, STE 305  
 COLORADO SPRINGS, CO 80903  
 PHONE: 719.555.5485  
**CIVIL CONSULTANTS, INC.**

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

REVISIONS:  
 NO. DATE BY DESCRIPTION  
 APPROVED BY: \_\_\_\_\_  
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**CAUTION**

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	JEROME MAGSINO 303-349-7555 JEROME.MAGSINO@ADSPIPE.COM
ADS SALES REP:	AARON ZEE 303-548-3479 AARON.ZEE@ADSPIPE.COM
PROJECT NO:	S295850



# CROSSROADS MIXED USE FILING NO. 1

## COLORADO SPRINGS, CO

### MC-7200 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-7200.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
  - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
  - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

### IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

- STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONESHOOTER LOCATED OFF THE CHAMBER BED.
  - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
  - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

### NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
  - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
  - NO RUBBER TIRE LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
  - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

**USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.**

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

**CONCEPTUAL LAYOUT**

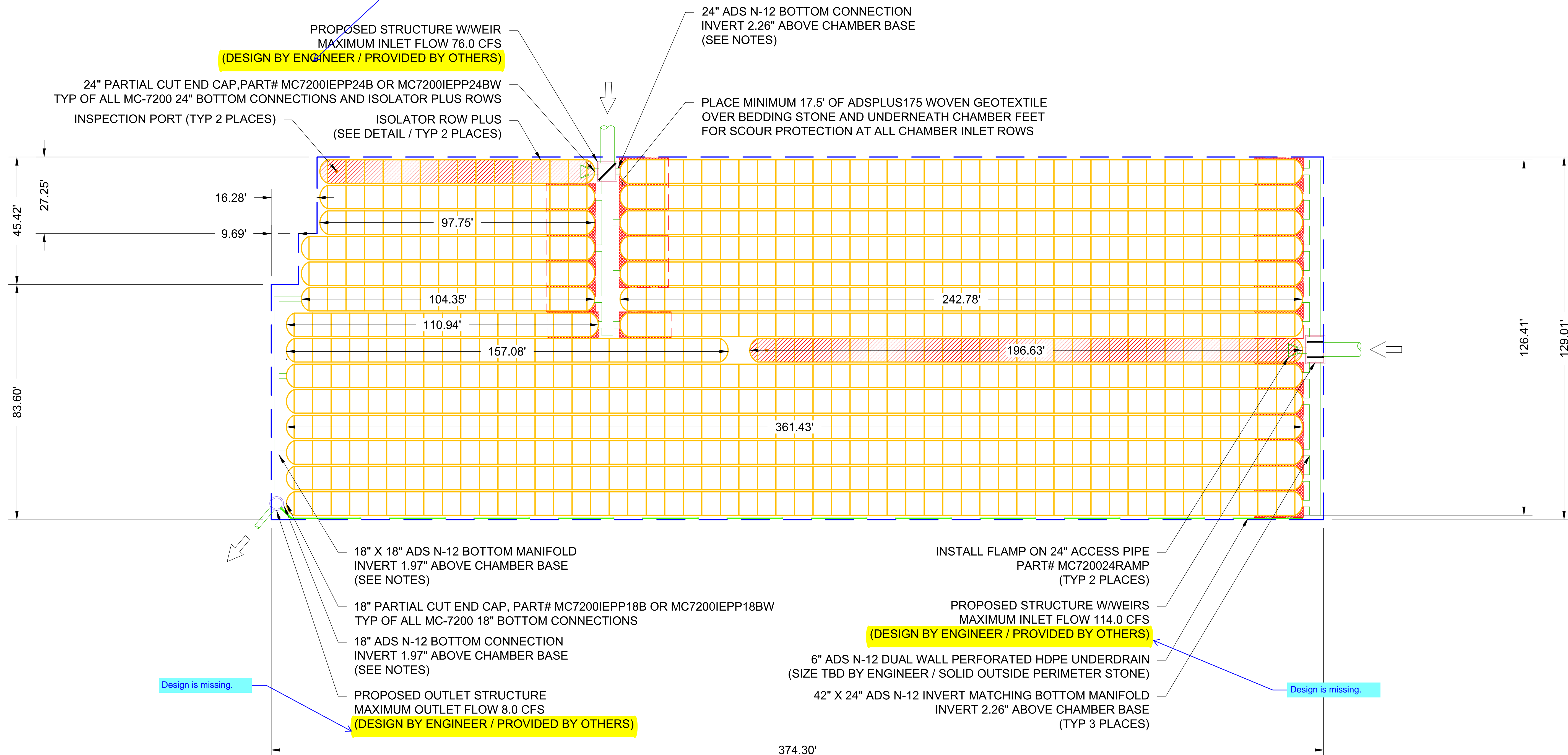
731	STORMTECH MC-7200 CHAMBERS
44	STORMTECH MC-7200 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	% STONE VOID
<b>206,903</b>	<b>INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)</b>
47670	SYSTEM AREA (ft <sup>2</sup> )
1006	SYSTEM PERIMETER (ft)

**CONCEPTUAL ELEVATIONS**

6300.22	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
6295.72	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
6295.22	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
6295.22	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
6295.22	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
6294.22	TOP OF STONE
6293.22	TOP OF MC-7200 CHAMBER
6288.41	42" X 24" MANIFOLD INVERT
6288.41	24" ISOLATOR ROW PLUS CONNECTION INVERT
6288.41	24" BOTTOM CONNECTION
6288.38	18" BOTTOM MANIFOLD / CONNECTION INVERT
6288.22	BOTTOM OF MC-7200 CHAMBER
6287.47	UNDERDRAIN INVERT
6287.47	BOTTOM OF STONE

**NOTES**

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE.
  - DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
  - THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.**
  - THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- NOT FOR CONSTRUCTION: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.**



Provide the geotech analysis that addresses this note.

The associated geotech report submitted with the final plat (SF2129) only discussed aboveground detention, and not the underground system.

The plans needs to be updated to reflect the required base stone depth.

<b>CROSSROADS MIXED USE</b> FILING NO. 1 COLORADO SPRINGS, CO		DATE:	05-05-22	DRAWN:	TSG	
		PROJECT #:	S295850	CHECKED:	CTS	
		12-18-22	RKC	UPDATED ELEVATIONS		
		12/13/22	BMW	ELEVATION AND LAYOUT ADJUSTMENTS		
		DATE	DRWN	CHKD	DESCRIPTION	
<b>StormTech®</b> Chamber System 888-892-2694   WWW.STORMTECH.COM		4640 TRUEMAN BLVD HILLIARD, OH 43026				
		0 40' 80'				
2 SHEET OF 5		THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.				

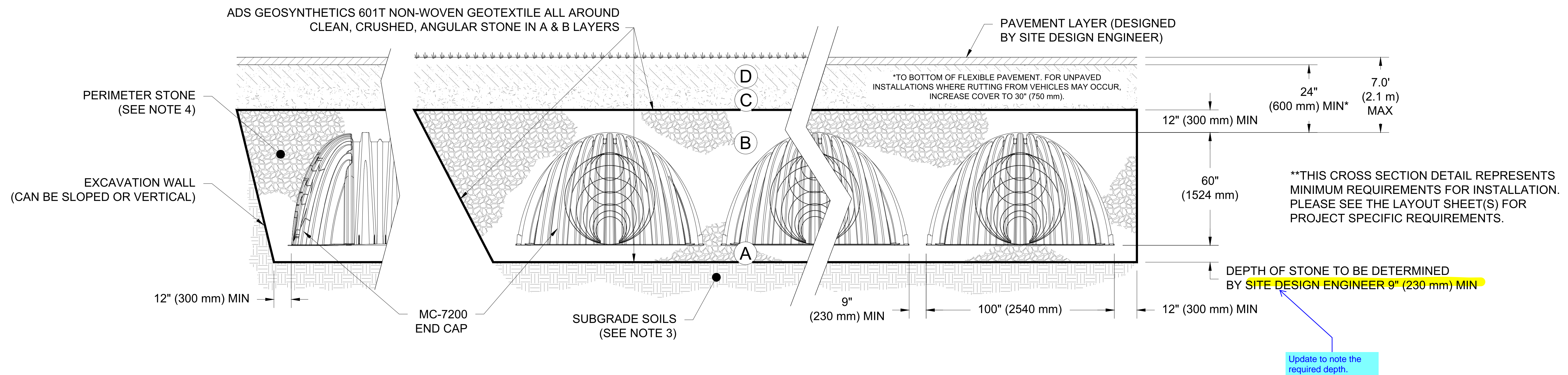


# ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	<b>FINAL FILL:</b> FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	<b>INITIAL FILL:</b> FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.  MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3  OR  AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	<b>EMBEDMENT STONE:</b> FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	NO COMPACTION REQUIRED.
A	<b>FOUNDATION STONE:</b> FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

**PLEASE NOTE:**

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



**NOTES:**

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
- MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

CROSSROADS MIXED USE  
FILING NO. 1  
COLORADO SPRINGS, CO  
DATE: 05-05-22  
DRAWN: TSG  
PROJECT #: S295850  
CHECKED: CTS

12-18-22  
RKC  
12/13/22  
JPR  
DATE

UPDATED ELEVATIONS  
ELEVATION AND LAYOUT ADJUSTMENTS  
DESCRIPTION

StormTech®  
Chamber System  
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD  
HILLIARD, OH 43026

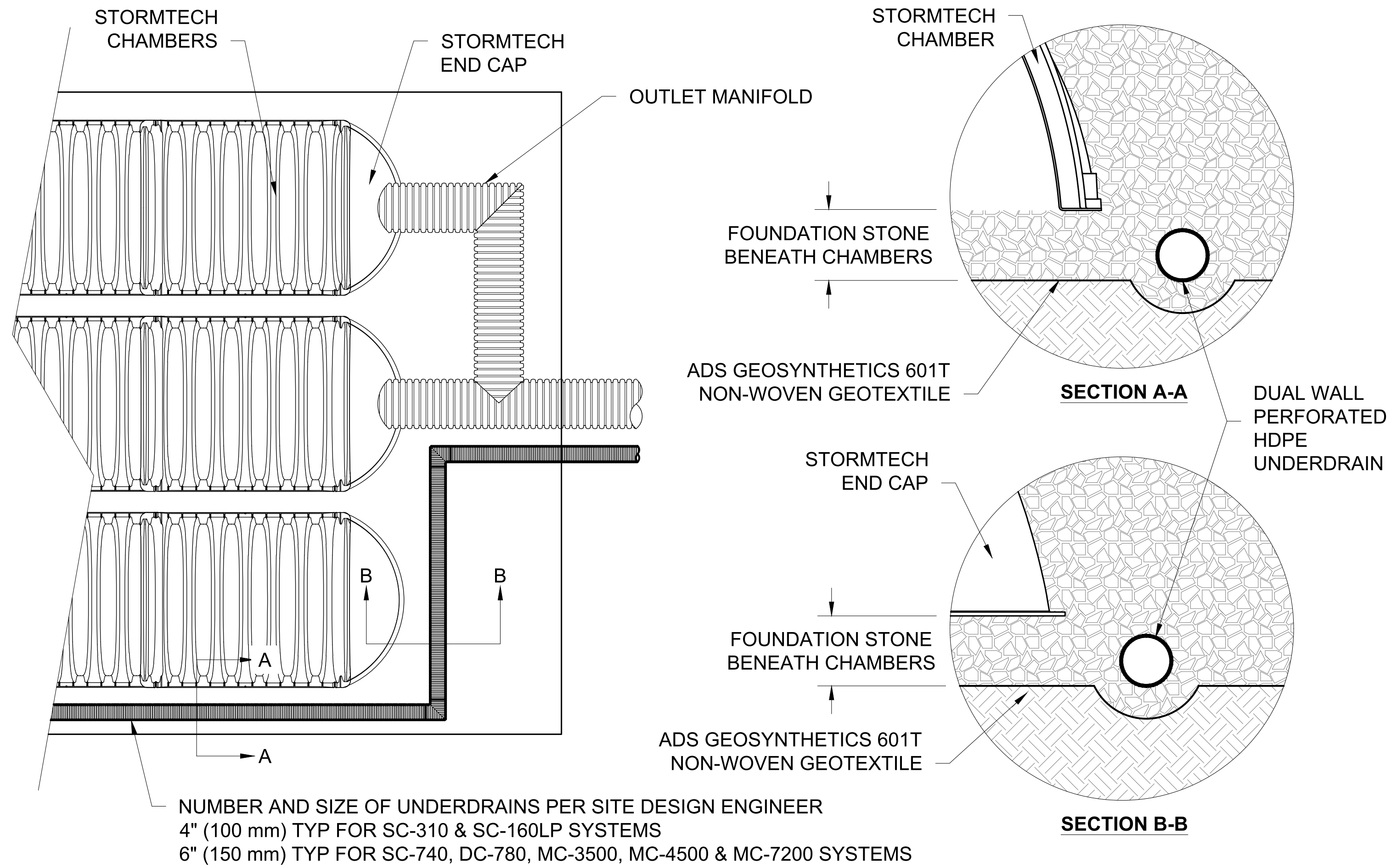
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3 SHEET  
OF 5



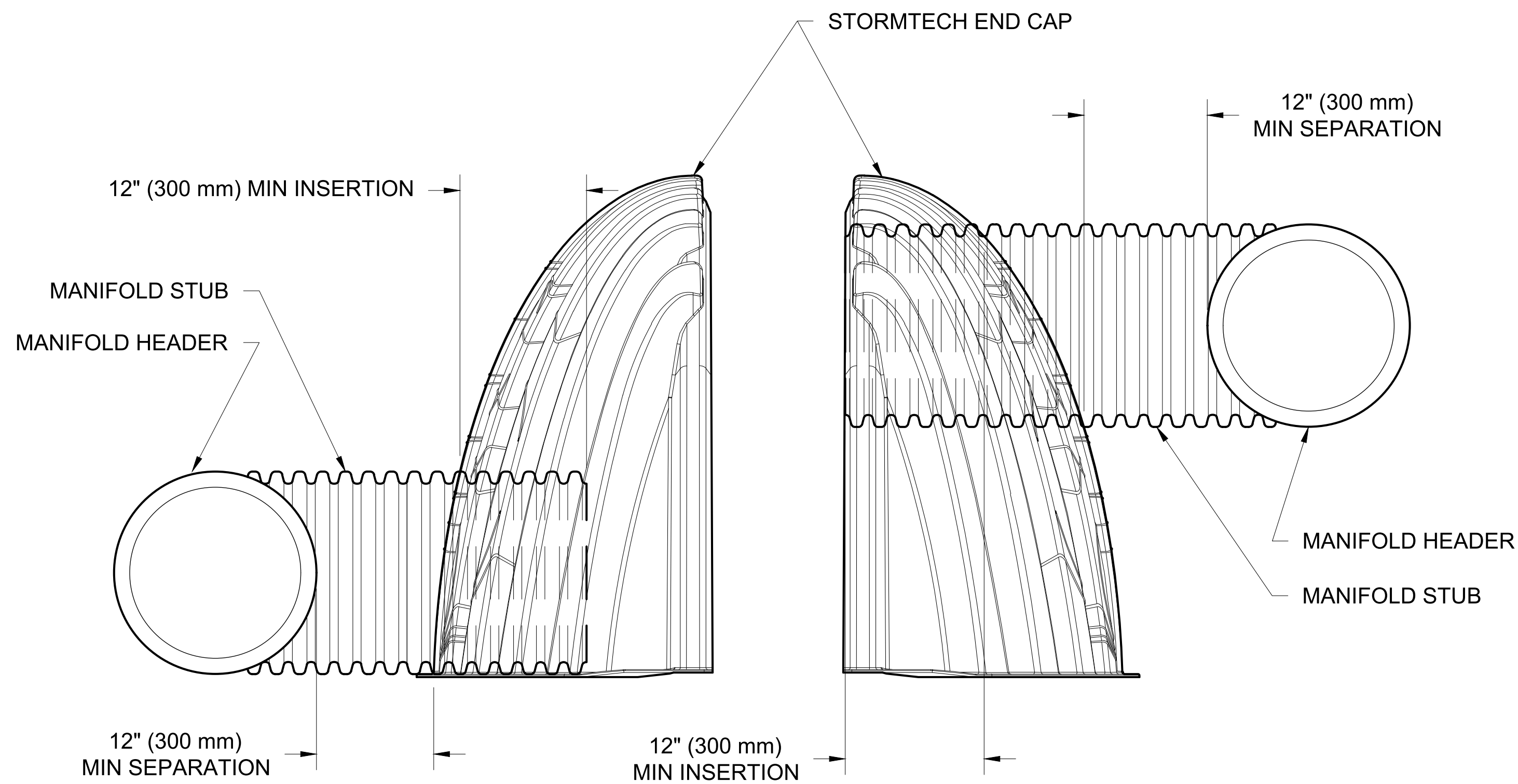
### UNDERDRAIN DETAIL

NTS



### MC-SERIES END CAP INSERTION DETAIL

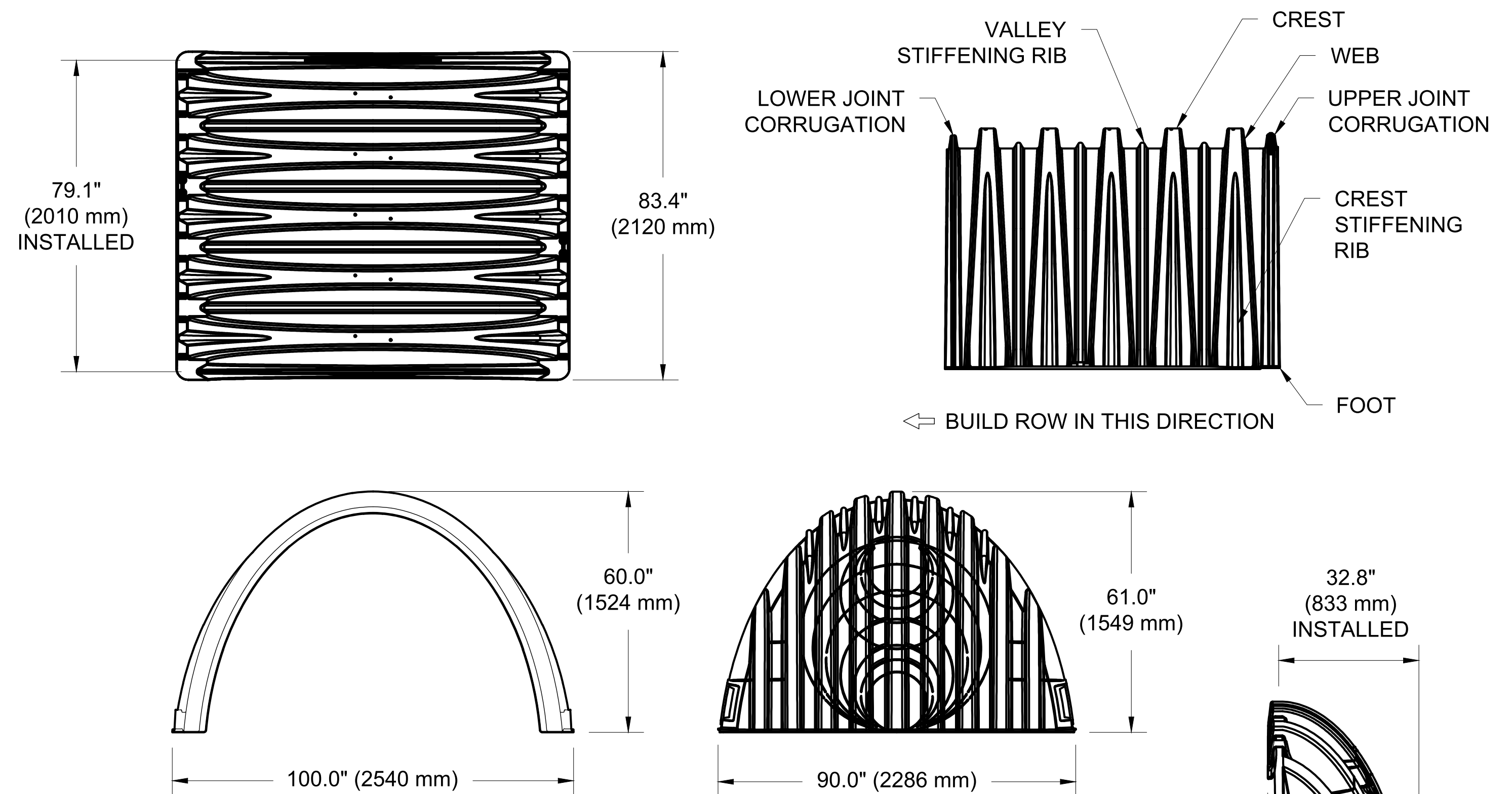
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

### MC-7200 TECHNICAL SPECIFICATION

NTS



#### NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 79.1"	(2540 mm X 1524 mm X 2010 mm)
CHAMBER STORAGE	175.9 CUBIC FEET	(4.98 m <sup>3</sup> )
MINIMUM INSTALLED STORAGE*	267.3 CUBIC FEET	(7.56 m <sup>3</sup> )
WEIGHT (NOMINAL)	205 lbs.	(92.9 kg)

#### NOMINAL END CAP SPECIFICATIONS

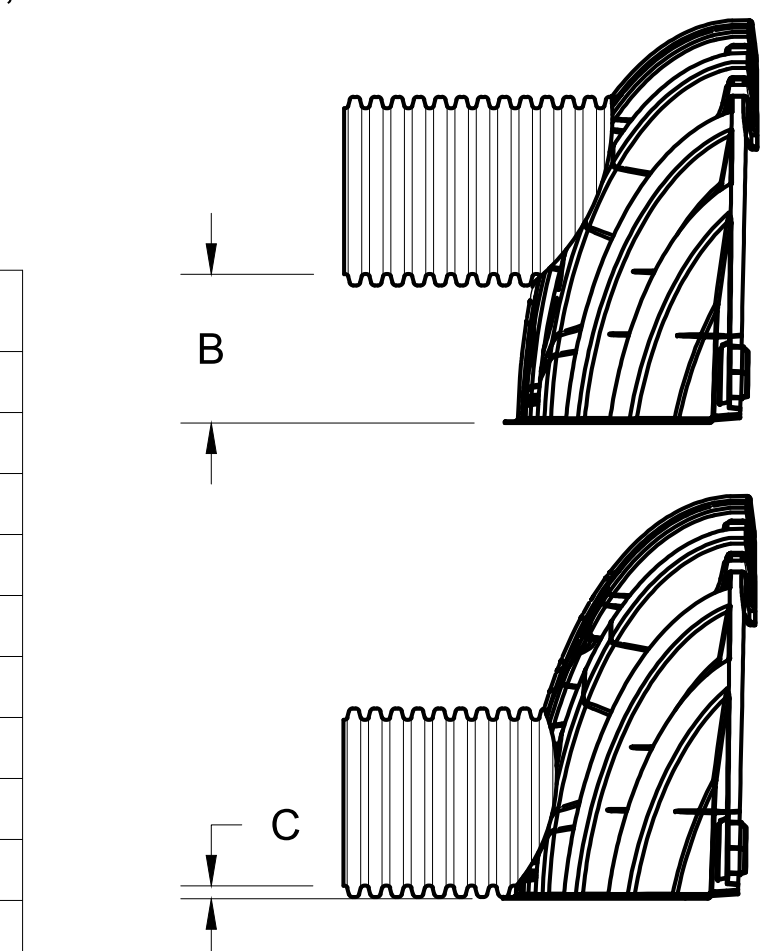
SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m <sup>3</sup> )
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m <sup>3</sup> )
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

\*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"  
 PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"  
 END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC7200IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200IEPP06B	---	---	0.86" (22 mm)
MC7200IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200IEPP08B	---	---	1.01" (26 mm)
MC7200IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200IEPP10B	---	---	1.33" (34 mm)
MC7200IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200IEPP12B	---	---	1.55" (39 mm)
MC7200IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200IEPP15B	---	---	1.70" (43 mm)
MC7200IEPP18T	---	29.36" (746 mm)	---
MC7200IEPP18TW	18" (450 mm)	---	---
MC7200IEPP18B	---	---	1.97" (50 mm)
MC7200IEPP18BW	---	---	---
MC7200IEPP24T	---	23.05" (585 mm)	---
MC7200IEPP24TW	24" (600 mm)	---	---
MC7200IEPP24B	---	---	2.26" (57 mm)
MC7200IEPP24BW	---	---	---
MC7200IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC7200IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC7200IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

CROSSROADS MIXED USE  
 FILING NO. 1  
 COLORADO SPRINGS, CO  
 DATE: 05-05-22  
 PROJECT #: S295850  
 DRAWN: TSG  
 CHECKED: CTS

DATE	DESCRIPTION
12-18-22	UPDATED ELEVATIONS
12/13/22	JPR ELEVATION AND LAYOUT ADJUSTMENTS
	BNW
	DRWN
	CHKD

StormTech®  
 Chamber System  
 888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD  
 HILLIARD, OH 43026

ADS

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PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	JEROME MAGSINO 303-349-7555 JEROME.MAGSINO@ADSPIPE.COM
ADS SALES REP:	AARON ZEE ---- AARON.ZEE@ADSPIPE.COM
PROJECT NO:	S295850



# CROSSROADS MIXED USE FILING NO. 1

## COLORADO SPRINGS, CO

### BAYSAVER BAYSEPARATOR SPECIFICATIONS

#### MATERIALS AND DESIGN

- A. CONCRETE STRUCTURES SHALL BE DESIGNED FOR H-20 TRAFFIC LOADING AND APPLICABLE SOIL LOADS OR AS OTHERWISE DETERMINED BY A LICENSED PROFESSIONAL ENGINEER. THE MATERIALS AND STRUCTURAL DESIGN OF THE DEVICES SHALL BE PER ASTM C857 AND ASTM C858.
  1. THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE IN THE MANHOLE BASE, RISER, AND TOP SECTIONS SHALL BE 4000 PSI.
  2. THE MINIMUM WALL THICKNESS SHALL BE ONE TWELFTH OF THE INTERNAL DIAMETER OF THE RISER OF LARGEST CONE DIAMETER.
  3. CEMENT SHALL CONFORM TO THE REQUIREMENTS FOR PORTLAND CEMENT OF SPECIFICATION C150.
  4. AGGREGATES SHALL CONFORM TO SPECIFICATION C33, EXCEPT THAT THE REQUIREMENT FOR GRADATION SHALL NOT APPLY.
  5. REINFORCEMENT SHALL CONSIST OF WIRE CONFORMING TO SPECIFICATION A82 OR SPECIFICATION A496, OF WIRE FABRIC CONFORMING TO SPECIFICATION A185 OR SPECIFICATION A497, OR OF BARS OF GRADE 40 STEEL CONFORMING TO SPECIFICATION A615/A615M.
  6. THE ACCESS COVER SHALL BE DESIGNED FOR HS20-44 TRAFFIC LOADING AND SHALL PROVIDE A MINIMUM 30 INCH CLEAR OPENING.
  7. ALL JOINTS SHALL BE WATERPROOF WITH WRAPPED GASKETS OR SEALED WITH A MASTIC TREATMENT.
  8. ANY GROUT USED WITHIN THE SYSTEM SHALL MEET THE ASTM C 1107 "STANDARD SPECIFICATION FOR PACKAGED DRY, HYDRAULIC-CEMENT GROUT (NON-SHRINK)". GRADES A, B AND C AT A POURABLE AND PLASTIC CONSISTENCY AT 70°F. CRD C 621 "CORPS OF ENGINEERS SPECIFICATION FOR NON-SHRINK GROUT."
  9. STORAGE MANHOLE CONNECTOR PIPES SHALL BE EQUIPPED WITH A SEAL GASKET THAT MEETS OR EXCEEDS MATERIAL SPECIFICATIONS OF ASTM C-923 OR OTHER LOCALLY APPROVED METHODS.
- B. THE SEPARATOR STRUCTURE SHALL BE SUBSTANTIALLY CONSTRUCTED OF HDPE OR EQUIVALENT CORROSION RESISTANT MATERIAL MEETING ASTM D330, ASTM F412, AND ASTM C-425.
- C. PIPES WITHIN THE UNIT, (I.E., TEE PIPES, CONNECTOR PIPES AND DOWN PIPES) SHALL BE CONSTRUCTED OF AT LEAST SDR 32.5 HDPE PIPE OF STANDARD ASTM F412.
- D. PIPE AND FITTING MATERIAL SHALL BE HIGH DENSITY POLYETHYLENE MEETING ASTM D330 MINIMUM CELL CLASSIFICATION 335400C FOR 24-INCH THROUGH 60-INCH DIAMETERS. THE 24- THROUGH 60-INCH PIPE MATERIAL SHALL BE SLOW CRACK RESISTANT HDPE MATERIAL, EVALUATED USING THE SINGLE POINT NOTCHED CONSTANT TENSILE LOAD (SP-NCTL) TEST.

#### PERFORMANCE

- A. THE STORMWATER TREATMENT UNIT SHALL BE AN ONLINE UNIT CAPABLE OF CONVEYING 100% OF THE DESIGN PEAK FLOW.
- B. THE BAYSEPARATOR UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 80% OF THE SUSPENDED SOLIDS LOAD ON AN ANNUAL AGGREGATE REMOVAL BASIS. SAID REMOVAL SHALL BE BASED ON FULL-SCALE THIRD PARTY TESTING USING F-95 MEDIA GRADATION (MANUFACTURED BY US SILICA) OR EQUIVALENT. SAID FULL SCALE TESTING SHALL HAVE INCLUDED SEDIMENT CAPTURE BASED ON ACTUAL TOTAL MASS COLLECTED BY THE STORMWATER TREATMENT UNIT(S).
- C. THE STORMWATER TREATMENT UNIT SHALL CONSIST OF ONE (1) PREFABRICATED SEPARATOR STRUCTURE, ONE (1) ONLINE COARSE SEDIMENT CAPTURE STRUCTURE, AND ONE (1) OFFLINE SEDIMENT AND FLOATABLE CAPTURE STRUCTURE. THE SEPARATOR STRUCTURE SHALL BE SUBSTANTIALLY CONSTRUCTED OF HDPE OR EQUIVALENT CORROSION RESISTANT MATERIAL. THE OFFLINE SEDIMENT STORAGE STRUCTURE MUST PROVIDE FOR OFFLINE SEDIMENT STORAGE OF SEDIMENTS AND FLOATABLES THAT ARE ISOLATED FROM HIGH INTENSITY STORMS.
- D. THE STORMWATER TREATMENT UNIT(S) HEAD LOSS AT THE PEAK DESIGN FLOW RATE SHALL NOT EXCEED THE HEAD LOSS SPECIFIED BY THE ENGINEER.
- E. THE UNIT SHALL BE DESIGNED TO REMOVE SEDIMENT PARTICLES AS WELL AS FLOATING OILS AND DEBRIS.

#### MANUFACTURER

- A. THE STORMWATER TREATMENT UNIT(S) SHALL BE OF A BASIC DESIGN THAT HAS BEEN INSTALLED AND USED SUCCESSFULLY FOR A MINIMUM OF 5 YEARS.
- B. EACH STORMWATER TREATMENT SYSTEM SHALL BE A BAYSEPARATOR SYSTEM AS MANUFACTURED BY BAYSAVER, LLC, 1030 DEER HOLLOW DR., MOUNT AIRY, MD 21771, PHONE (301) 829-6470, FAX (301) 829-3747, TOLL FREE 1-800-229-7283 (1-800-BAYSAVER), EMAIL [INFO@BAYSAVER.COM](mailto:INFO@BAYSAVER.COM) PROTECTED UNDER US PATENT NUMBER 5746911

### BAYSEPARATOR MAINTENANCE

BAYSEPARATOR SYSTEMS MUST BE INSPECTED AND MAINTAINED PERIODICALLY. INSPECTION IS MADE BY CHECKING THE DEPTH OF SEDIMENT IN EACH MANHOLE WITH A GRADE STICK OR SIMILAR DEVICE. MAINTENANCE IS REQUIRED WHEN THE SEDIMENT DEPTH IN EITHER MANHOLE EXCEEDS 2 FEET. MINIMUM INSPECTION IS RECOMMENDED TWICE A YEAR TO MAINTAIN OPERATION AND FUNCTION OF BAYSAVER.

MAINTENANCE CONSISTS OF THE FOLLOWING:

#### A. STORAGE MANHOLE

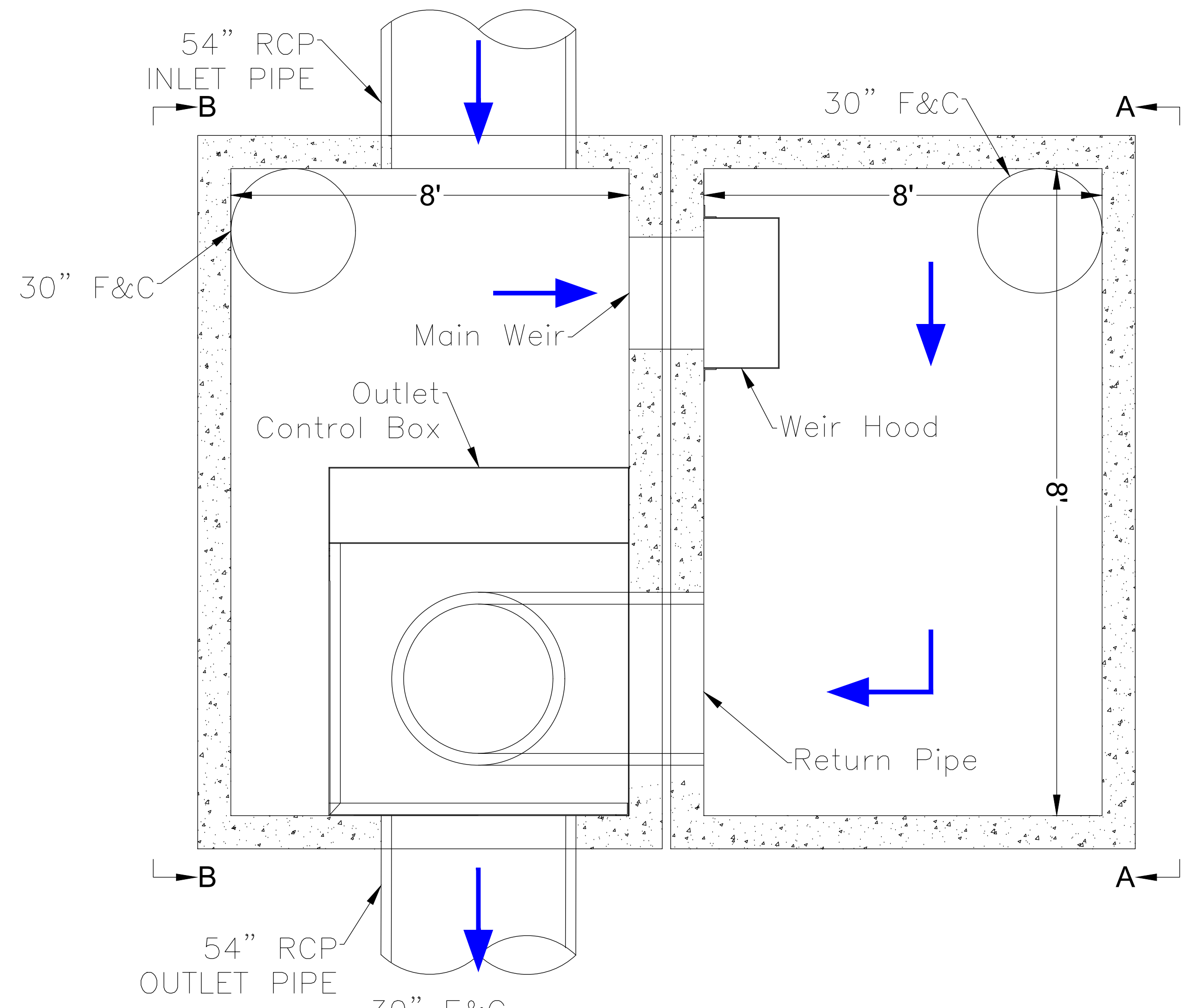
1. REMOVE THE ENTIRE VOLUME OF THE CONTAMINATED WATER BY VACUUM TRUCK.
2. CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.

#### B. PRIMARY MANHOLE

1. USING A SUBMERSIBLE PUMP, PUMP THE CLEAN WATER FROM THE CENTER OF THE MANHOLE DIRECTLY INTO THE EMPTY STORAGE MANHOLE UNTIL THE WATER LEVEL FALLS TO 1 FOOT ABOVE THE SEDIMENT LAYER.
2. REMOVE THE SETTLED SEDIMENT AND REMAINING WATER BY VACUUM TRUCK.
3. CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.
4. CONTAMINATED MATERIAL REMOVED FROM THE MANHOLES MUST BE DISPOSED OF RESPONSIBLY AND LEGALLY BY THE OPERATOR OF THE VACUUM TRUCK.

### BAYSEPARATOR INSTALLATION NOTES

1. EXCAVATION MUST PROVIDE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO STORAGE MANHOLE AND BAYSEPARATOR UNIT. INSTALL PRECAST DROP STRUCTURES ON SOLID GROUND AS VERIFIED BY A GEOTECHNICAL ENGINEER.
2. VERIFY THE SUBGRADE ELEVATION AGAINST THE MANHOLE DIMENSIONS AND CONNECTING STORM DRAIN INVERTS.
3. MAKING SURE THE BASES ARE LEVEL AND THE STORAGE MANHOLE OPENINGS ARE ALIGNED WITH THE SEPARATOR UNIT, INSTALL PRIMARY AND STORAGE MANHOLES. INSTALL WATERTIGHT GASKETS ON BASE UNITS AND COAT WITH LUBRICATING GREASE (IF REQUIRED). INSTALL ADDITIONAL MANHOLE SECTIONS AS REQUIRED. SEAL LIFT HOLES WITH NON-SHRINK GROUT.
4. BACKFILL BASE SECTIONS OF MANHOLES TO INVERT OF STORAGE MANHOLE CONNECTING PIPES. USING APPROVED BACKFILL MATERIAL, BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL AND COMPACTION SHOULD BE MONITORED BY A GEOTECHNICAL ENGINEER.
5. INSTALL BAYSEPARATOR UNIT AND CONNECTING PIPES. SEAL ALL CONNECTING JOINTS AND INSTALL SEPARATOR HDPE REDUCER/ADAPTER. CUT EXCESS LENGTH OFF CONNECTING PIPES INSIDE STORAGE MANHOLE.
6. BACKFILL SEPARATOR UNIT AND MANHOLES. AREAS NOT ACCESSIBLE TO COMPACTION EQUIPMENT MUST BE BACKFILLED WITH #57, #7, OR PEA GRAVEL.
7. INSTALL AND SET MANHOLE COVER GRADE ADJUSTMENT RINGS AS NECESSARY.
8. INSTALL AND SET MANHOLE FRAME AND COVER UNITS.



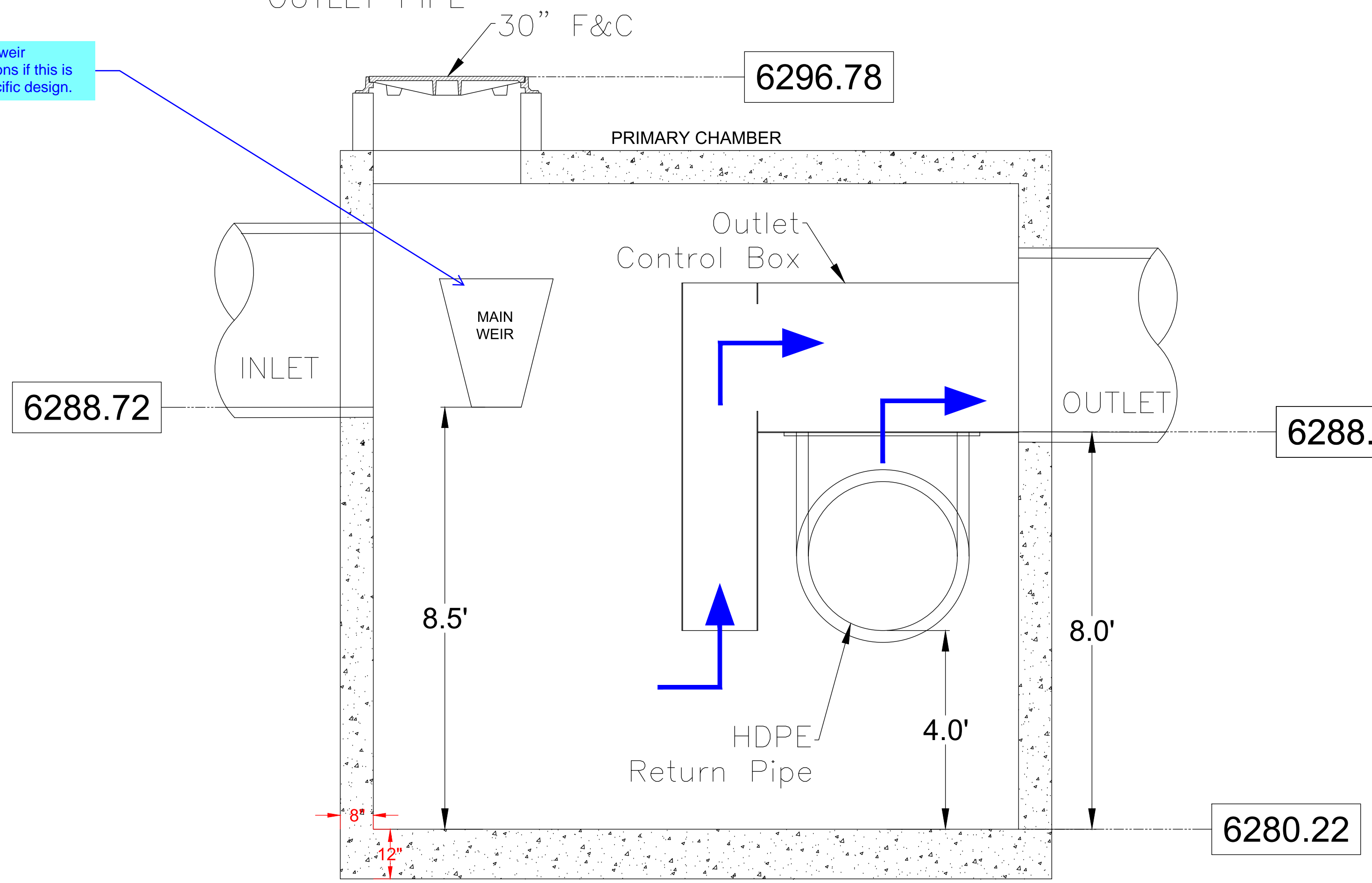
Provide and show the location and details for the steps to access the interior of the structure.

26	0.8	3.2	18" RCP	UP2
27	37.5	74.6	54" RCP	PR19", PR25, PR26
28	1.2	11.4	18" RCP	DETENTION BOND OUTFALL

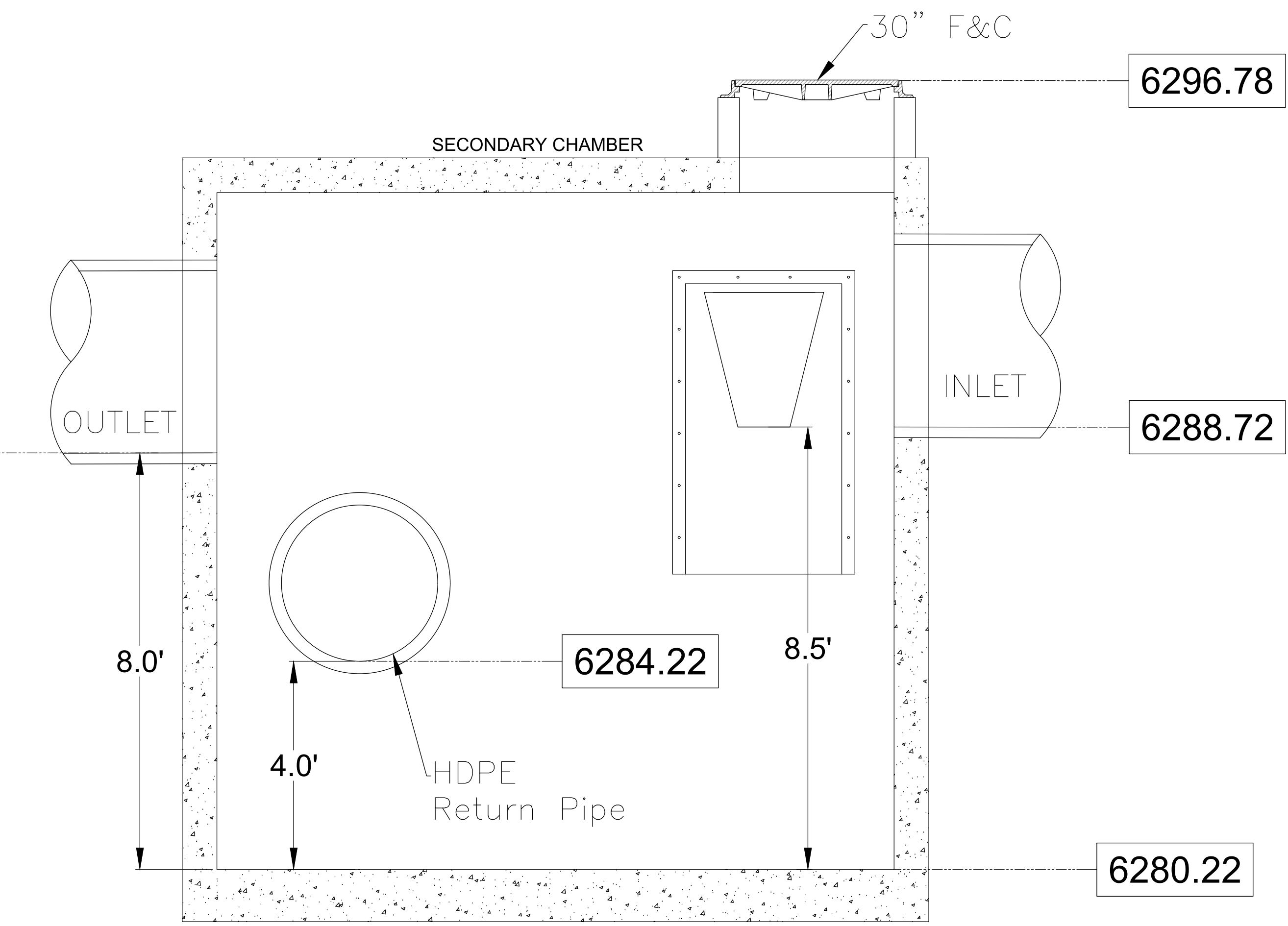
SYSTEM	NORTHSIDE
WQ FLOW RATE (CFS)	24
PEAK FLOW RATE (CFS)	65.5
INLET PIPE	54"
INLET INVERT	6288.72
OUTLET PIPE	54"
OUTLET INVERT	6288.22
RIM ELEVATION	6296.78
WIDTH (FT)	8'
LENGTH (FT)	8'
INSIDE HEIGHT (FT)	16'

Provide clarification in the drainage report.  
 The summary table notes 65.5 cfs peak flow rate which is less than the anticipated 100yr flowrates going into the bayseparator. This would backup the stormwater upstream of the Bayseparator. Should the peak flow rate be increased to match the inflow? Does the increase affect the TSS rate?

Provide weir dimensions if this is site specific design.



SECTION B-B



SECTION A-A

**CROSSROADS MIXED USE FILING NO. 1**

COLORADO SPRINGS, CO

DATE: 12/21/22 DRAWN: PR PROJECT #: S295850 CHECKED: PR

DATE	DRWN	CHKD	DESCRIPTION

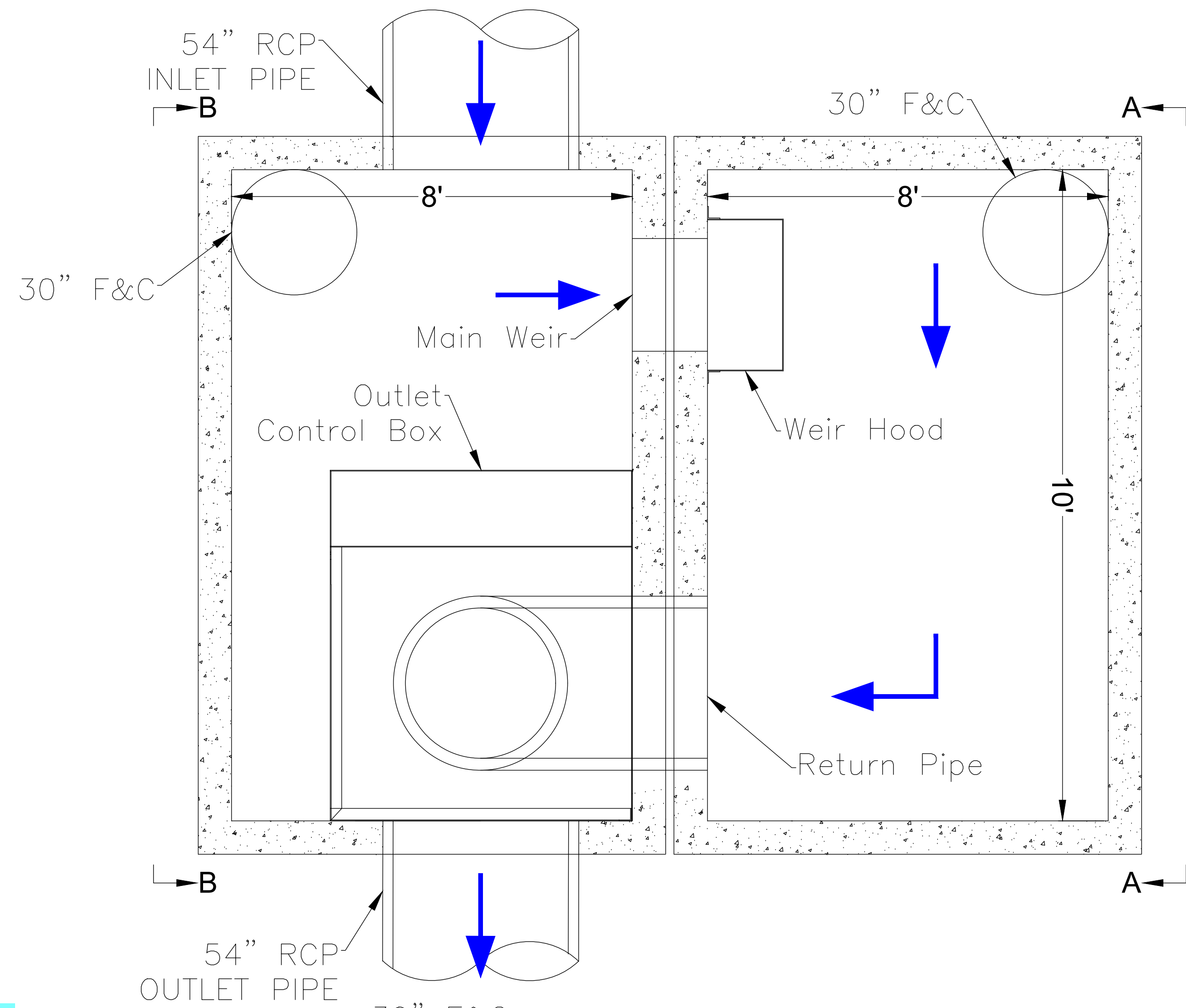
**BaySeparator**  
Stormwater Treatment System

4640 TRUEMAN BLVD  
HILLIARD, OH 43026

**NOT TO SCALE**

2 SHEET  
OF 3

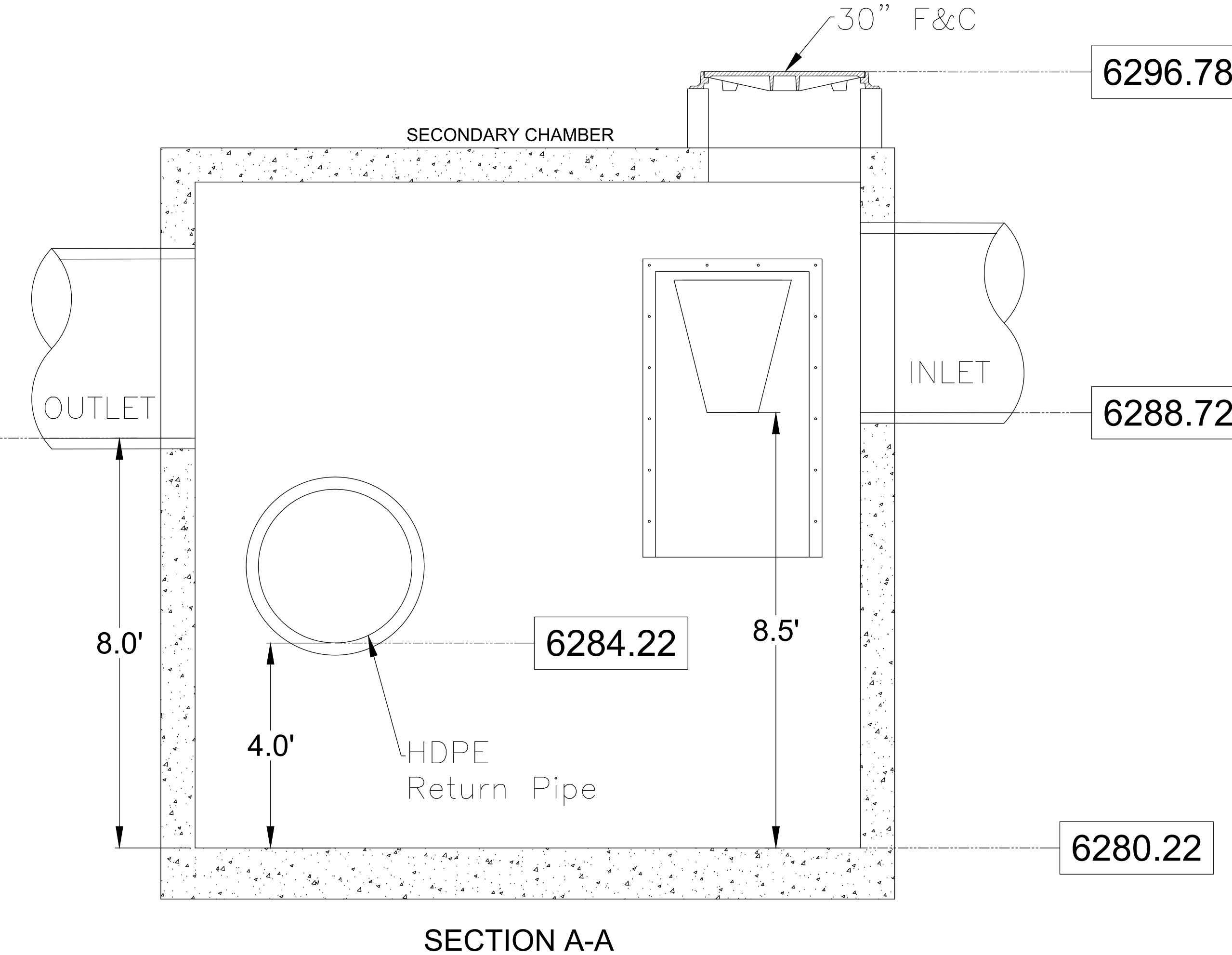
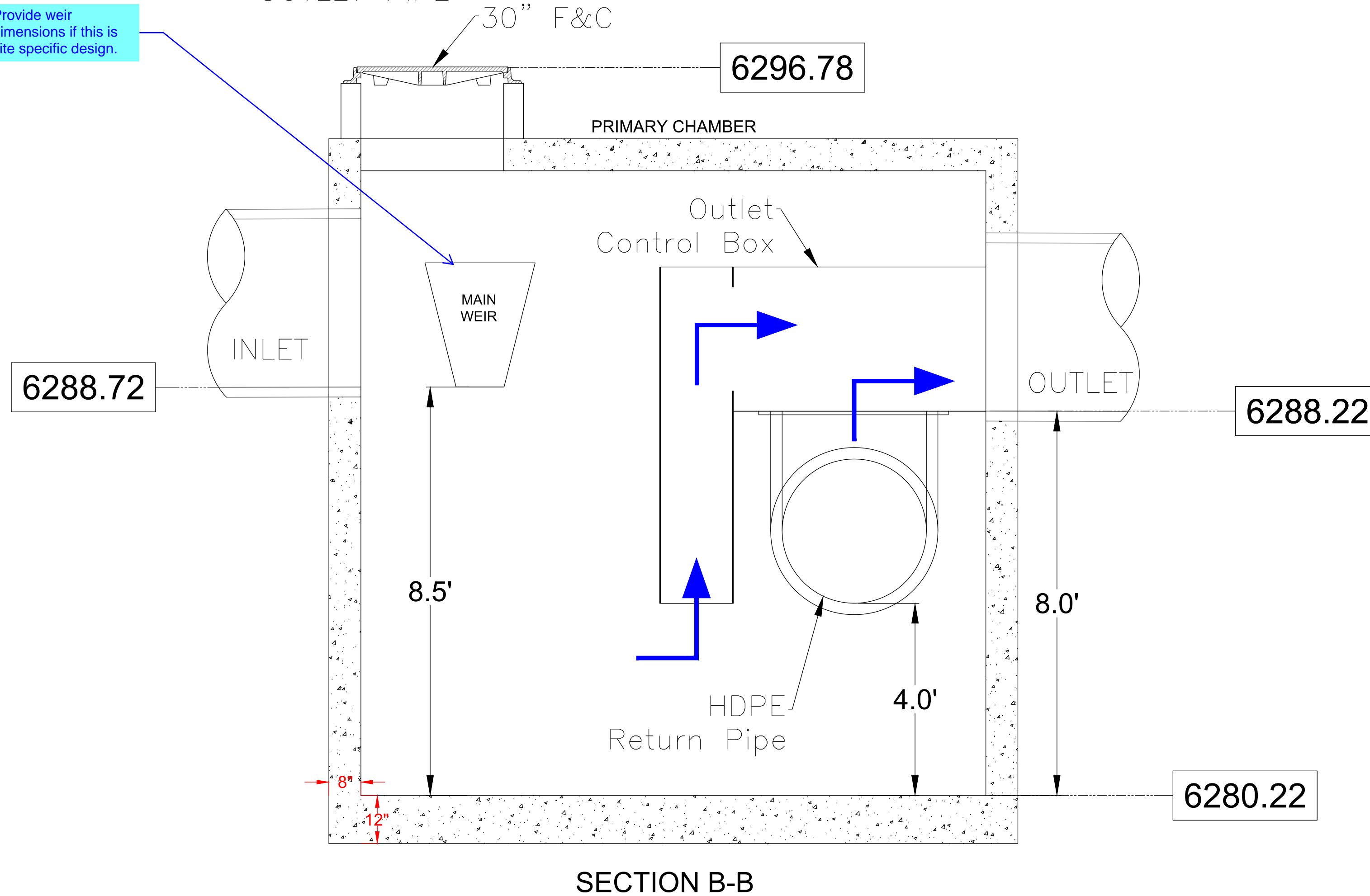
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Provide and show the location and details for the steps to access the interior of the structure.

SYSTEM	EASTSIDE
WQ FLOW RATE (CFS)	32
PEAK FLOW RATE (CFS)	112
INLET PIPE	54"
INLET INVERT	6288.72
OUTLET PIPE	54"
OUTLET INVERT	6288.22
RIM ELEVATION	6296.78
WIDTH (FT)	8'
LENGTH (FT)	10'
INSIDE HEIGHT (FT)	16'

Provide weir dimensions if this is site specific design.



CROSSROADS MIXED USE FILING NO. 1

COLORADO SPRINGS, CO

DATE: 12/21/22 DRAWN: PR PROJECT #: S295850 CHECKED: PR

**BaySeparator**  
Stormwater Treatment System

4640 TRUEMAN BLVD  
HILLIARD, OH 43026

**ADS**

NOT TO SCALE

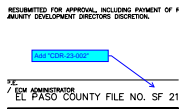
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3 SHEET OF 3

# V1\_Construction Drawings Redlines.pdf Markup Summary

Carlos (1)

Measurement: 1 Count



**Subject:** Text Box

**Page Label:** [1] 1 SI01

**Author:** Carlos

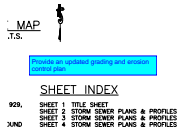
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Add "CDR-23-002"

dsdlaforce (37)

Measurement: 37 Count



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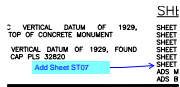
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**Author:** dsdlaforce

**Date:** 1/19/2023 12:52:08 PM

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Provide an updated grading and erosion control plan



**Subject:** Callout

**Page Label:** [1] 1 SI01

**Author:** dsdlaforce

**Date:** 1/19/2023 1:45:39 PM

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Add Sheet ST07



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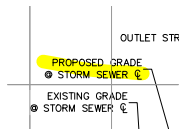
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**Author:** dsdlaforce

**Date:** 1/19/2023 12:52:34 PM

**Measurement:** 1 Count

Update proposed contours to reflect the updated design.



**Subject:** Highlight

**Page Label:** [2] 2 ST02

**Author:** dsdlaforce

**Date:** 1/19/2023 12:52:49 PM

**Measurement:** 1 Count

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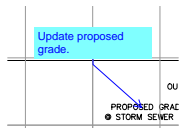
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**Author:** dsdlaforce

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**Measurement:** 1 Count



**Subject:** Callout

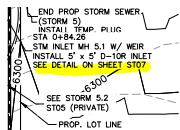
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**Author:** dsdlaforce

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Update proposed grade.



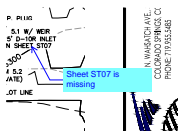
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**Author:** dsdlaforce

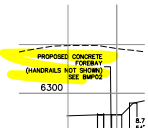
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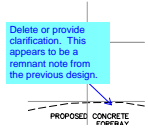


**Subject:** Callout  
**Page Label:** [2] 2 ST02  
**Author:** dsdlaforce  
**Date:** 1/19/2023 1:44:27 PM  
**Measurement:** 1 Count

Sheet ST07 is missing

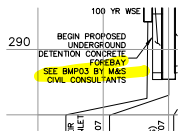


**Subject:** Highlight  
**Page Label:** [2] 2 ST02  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:42:23 PM  
**Measurement:** 1 Count

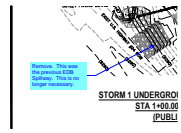


**Subject:** Callout  
**Page Label:** [2] 2 ST02  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:44:23 PM  
**Measurement:** 1 Count

Delete or provide clarification. This appears to be a remnant note from the previous design.

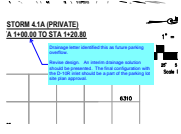


**Subject:** Highlight  
**Page Label:** [2] 2 ST02  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:43:22 PM  
**Measurement:** 1 Count



**Subject:** Callout  
**Page Label:** [2] 2 ST02  
**Author:** dsdlaforce  
**Date:** 1/23/2023 3:27:27 PM  
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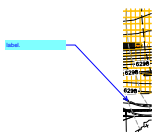
Remove. This was the previous EDB Spillway. This is no longer necessary.



**Subject:** Callout  
**Page Label:** [3] 3 ST03  
**Author:** dsdlaforce  
**Date:** 1/19/2023 1:32:15 PM  
**Measurement:** 1 Count

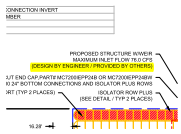
Drainage letter identified this as future parking overflow.

Revise design. An interim drainage solution should be presented. The final configuration with the D-10R inlet should be a part of the parking lot site plan approval.



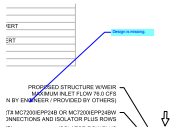
**Subject:** Callout  
**Page Label:** [4] 4 ST04  
**Author:** dsdlaforce  
**Date:** 1/19/2023 1:37:27 PM  
**Measurement:** 1 Count

label.



**Subject:** Highlight  
**Page Label:** 8  
**Author:** dsdlaforce  
**Date:** 1/19/2023 1:40:33 PM  
**Measurement:** 1 Count

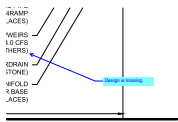
/ 0°



**Subject:** Callout  
**Page Label:** 8  
**Author:** dsdlaforce  
**Date:** 1/19/2023 1:40:49 PM  
**Measurement:** 1 Count

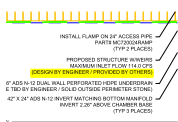
Design is missing.





**Subject:** Callout  
**Page Label:** 8  
**Author:** dsdlaforce  
**Date:** 1/19/2023 1:41:07 PM  
**Measurement:** 1 Count

Design is missing.



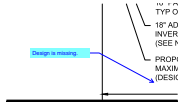
**Subject:** Highlight  
**Page Label:** 8  
**Author:** dsdlaforce  
**Date:** 1/19/2023 1:41:21 PM  
**Measurement:** 1 Count

/ 0°



**Subject:** Highlight  
**Page Label:** 8  
**Author:** dsdlaforce  
**Date:** 1/19/2023 1:41:57 PM  
**Measurement:** 1 Count

/ 0°

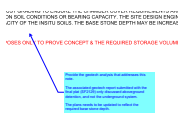


**Subject:** Callout  
**Page Label:** 8  
**Author:** dsdlaforce  
**Date:** 1/19/2023 1:42:07 PM  
**Measurement:** 1 Count

Design is missing.

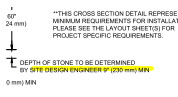


**Subject:** Cloud  
**Page Label:** 8  
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**Date:** 1/19/2023 1:51:49 PM  
**Measurement:** 1 Count

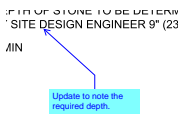


**Subject:** Callout  
**Page Label:** 8  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:02:11 PM  
**Measurement:** 1 Count

Provide the geotech analysis that addresses this note.  
  
The associated geotech report submitted with the final plat (SF2129) only discussed aboveground detention, and not the underground system.  
  
The plans needs to be updated to reflect the required base stone depth.

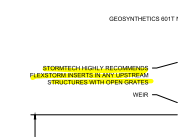


**Subject:** Highlight  
**Page Label:** 9  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:02:30 PM  
**Measurement:** 1 Count

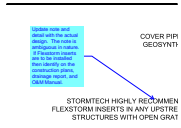


**Subject:** Callout  
**Page Label:** 9  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:03:00 PM  
**Measurement:** 1 Count

Update to note the required depth.

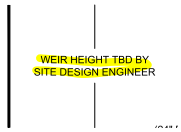


**Subject:** Highlight  
**Page Label:** 10  
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**Date:** 1/19/2023 2:04:41 PM  
**Measurement:** 1 Count

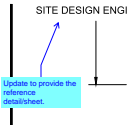


**Subject:** Callout  
**Page Label:** 10  
**Author:** dsdlaforce  
**Date:** 1/23/2023 3:41:06 PM  
**Measurement:** 1 Count

Update note and detail with the actual design. The note is ambiguous in nature. If Flexstorm inserts are to be installed then identify on the construction plans, drainage report, and O&M Manual.

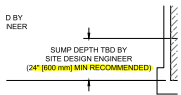


**Subject:** Highlight  
**Page Label:** 10  
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**Date:** 1/19/2023 2:10:36 PM  
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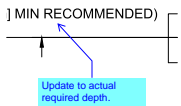


**Subject:** Callout  
**Page Label:** 10  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:11:11 PM  
**Measurement:** 1 Count

Update to provide the reference detail/sheet.

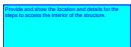


**Subject:** Highlight  
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**Date:** 1/19/2023 2:11:18 PM  
**Measurement:** 1 Count



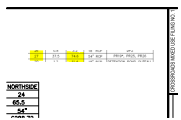
**Subject:** Callout  
**Page Label:** 10  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:11:34 PM  
**Measurement:** 1 Count

Update to actual required depth.

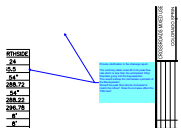


**Subject:** Text Box  
**Page Label:** 13  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:57:53 PM  
**Measurement:** 1 Count

Provide and show the location and details for the steps to access the interior of the structure.



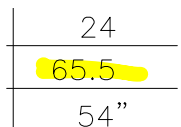
**Subject:** Image  
**Page Label:** 13  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:49:55 PM  
**Measurement:** 1 Count



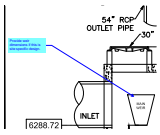
**Subject:** Callout  
**Page Label:** 13  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:40:43 PM  
**Measurement:** 1 Count

Provide clarification in the drainage report.

The summary table notes 65.5 cfs peak flow rate which is less than the anticipated 100yr flowrates going into the bayseparator. This would backup the stormwater upstream of the Bayseparator. Should the peak flow rate be increased to match the inflow? Does the increase affect the TSS rate?



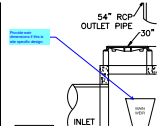
**Subject:** Highlight  
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**Author:** dsdlaforce  
**Date:** 1/19/2023 2:40:58 PM  
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**Subject:** Callout  
**Page Label:** 13  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:57:23 PM  
**Measurement:** 1 Count

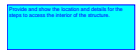
Provide weir dimensions if this is site specific design.



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**Subject:** Callout  
**Page Label:** 14  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:57:35 PM  
**Measurement:** 1 Count

Provide weir dimensions if this is site specific design.



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**Subject:** Text Box  
**Page Label:** 14  
**Author:** dsdlaforce  
**Date:** 1/19/2023 2:58:00 PM  
**Measurement:** 1 Count

Provide and show the location and details for the steps to access the interior of the structure.