

# CLAREMONT BUSINESS PARK 2 FILING NO. 1

## COUNTY OF EL PASO, STATE OF COLORADO

# STREET IMPROVEMENT PLANS

## (INCLUDING STORM SEWER)

OCTOBER 2020

### AGENCIES:

OWNER/DEVELOPER: HAMMERS CONSTRUCTION, INC.  
1411 WOOLSEY HEIGHTS  
COLORADO SPRINGS, CO 80915  
(719) 570-1599

CIVIL ENGINEER: M & S CIVIL CONSULTANTS, INC.  
102 E. PIKES PEAK, 5TH FLOOR  
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  
DANIEL TORRES P.E. (719) 520-6305

TRAFFIC ENGINEERING: EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS  
3275 AKERS DRIVE  
COLORADO SPRINGS, CO 80922  
JENNIFER IRVINE, P.E. (719) 520-6460

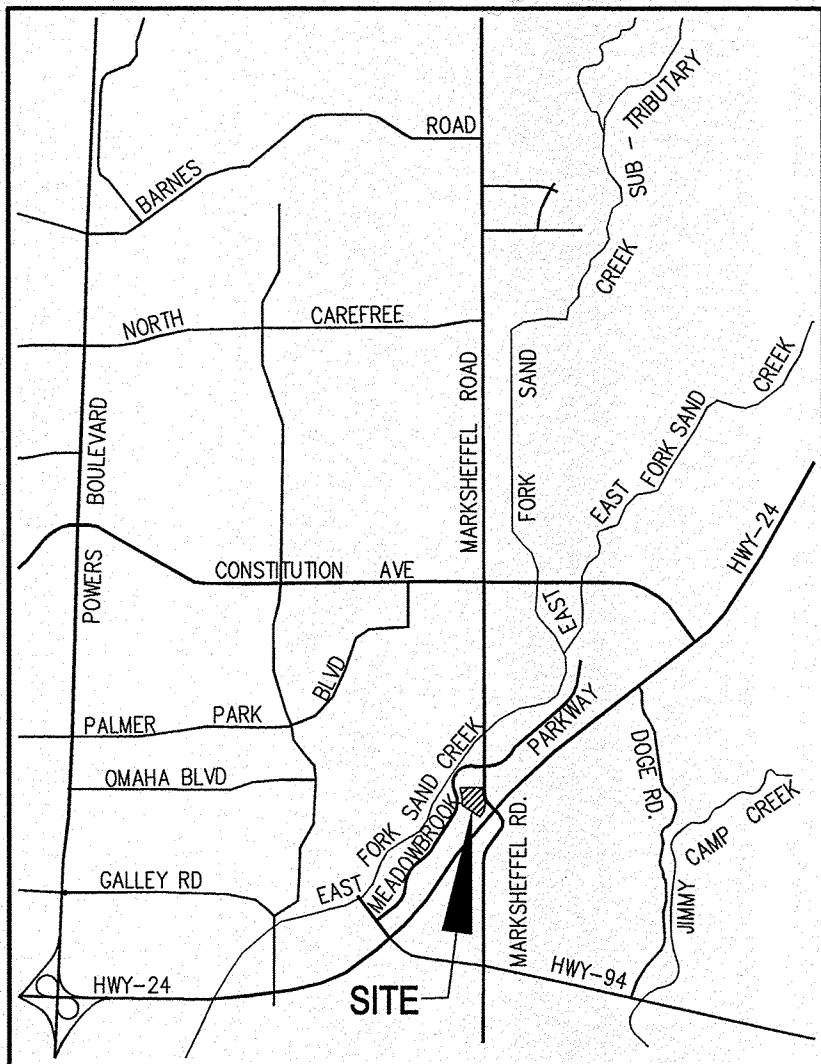
WATER RESOURCES: CHEROKEE METROPOLITAN DISTRICT  
6250 PALMER PARK BOULEVARD  
COLORADO SPRINGS, CO 80915-1721  
JEFF MUNGER  
(719) 597-5080

FIRE DISTRICT: CIMARRON HILLS FIRE DEPARTMENT  
1835 TUSKEGEE PLACE  
COLORADO SPRINGS, CO 80915  
(719) 591-0960

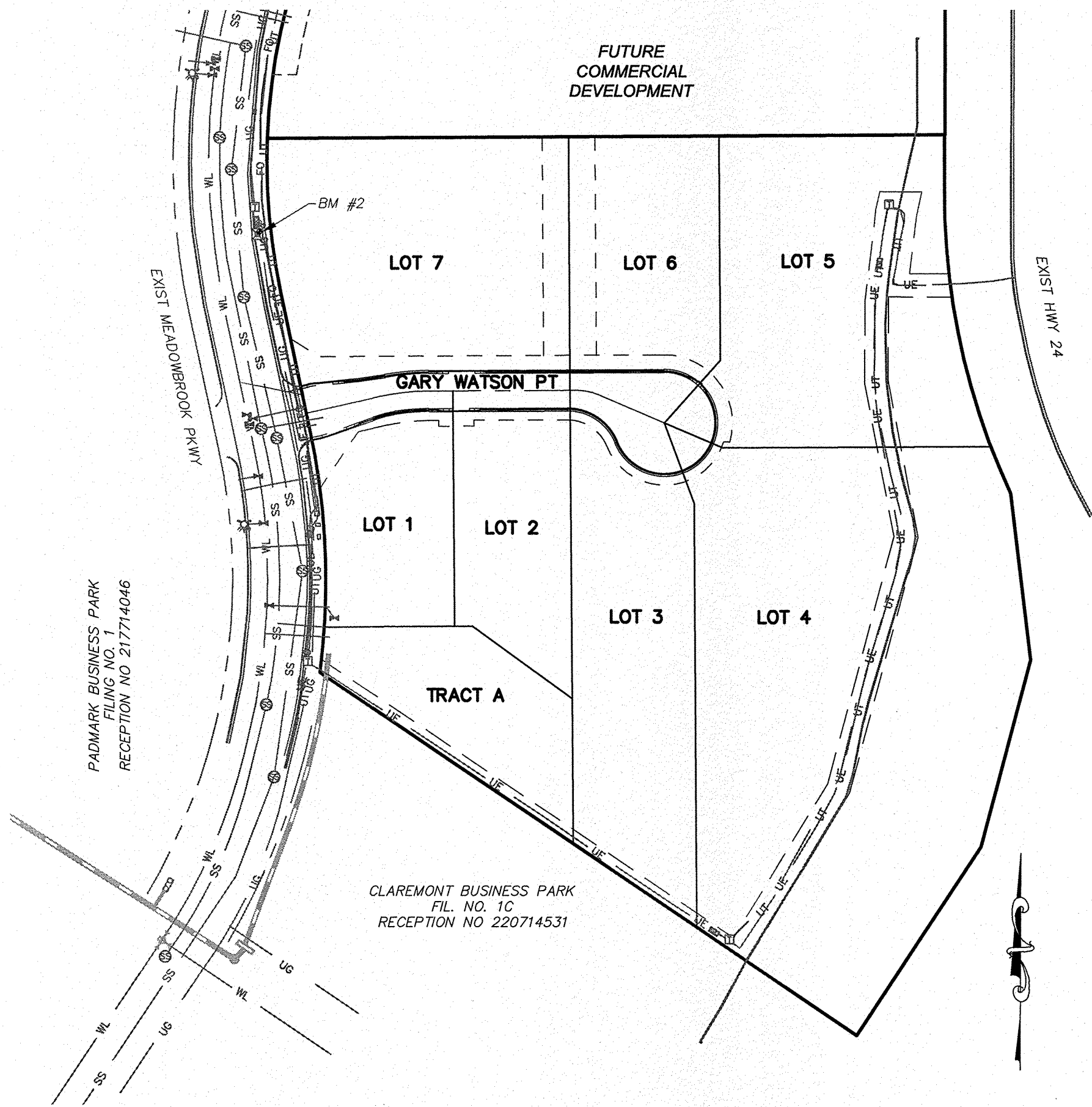
GAS DEPARTMENT: COLORADO SPRINGS UTILITIES  
7710 DURANT DR.  
COLORADO SPRINGS, CO 80947  
TIM WENDT (719) 688-3556

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



VICINITY MAP  
N.T.S.



SITE MAP  
N.T.S.

### BASIS OF BEARINGS

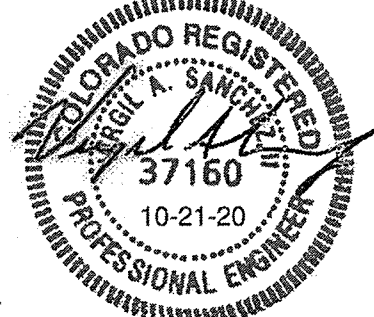
BASIS OF BEARINGS: THE CHORD OF THE WESTERLY LINE OF LOT 2, CLAREMONT BUSINESS PARK FILING NO. 1A UNDER RECEPTION NO. 206712398, BEING MONUMENTED AT THE SOUTHERLY END WITH A NAIL AND WASHER, PLS NO ILLEGIBLE, AND AT THE NORTHERLY END WITH A REBAR AND ALUMINUM CAP PLS NO. 27605 IS ASSUMED TO BEAR N22°18'18"E, A DISTANCE OF 218.26 FEET.

### BENCHMARKS

- BL33 BEING A BERNTSEN TOP SECURITY MONUMENT IN RANGE BOX 5' SOUTH OF SOUTH ROW FENCE OF HWY 24 UNDER CENTERLINE OF TRANSMISSION LINE. ELEVATION = 6455.17'
- CONTROL POINT 1, SET PK NAIL IN NE CORNER OF ELECTRIC TRANSFORMER PAD ELEVATION = 6372.26'

### 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.

*[Signature]*  
DATE: 1/18/2021

HAMMERS CONSTRUCTION, INC.

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.

JENNIFER IRVINE, P.E.  
COUNTY ENGINEER / ECM ADMINISTRATOR

DATE

### SHEET INDEX

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SHEET 2	NOTE & DETAIL SHEET
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SHEET 4	SIGNAGE AND STRIPING PLAN
SHEET 5	STORM SEWER NOTES
SHEET 6	STORM SEWER PLAN & PROFILE
SHEET 7	STORM SEWER PLAN & PROFILE
SHEET 8	WATER QUALITY POND 2 SITE PLAN
SHEET 9	OUTLET STRUCTURE POND 2 DETAILS
SHEET 10	WATER QUALITY POND 2 DETAILS & POND 1 TEMPORARY SEDIMENT POND
SHEET 11	STANDARD DETAILS
SHEET 12	STANDARD DETAILS

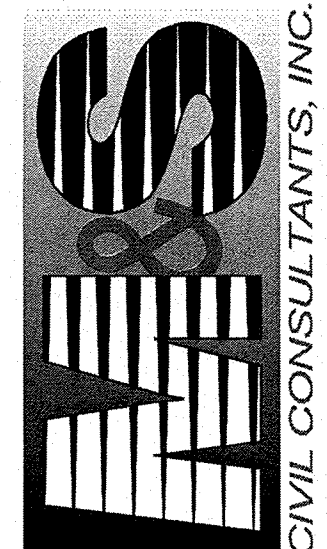
EL PASO COUNTY FILE NO. PCD # SF-20-014

CLAREMONT BUSINESS PARK 2 FILING NO. 1

STREET IMPROVEMENT PLANS

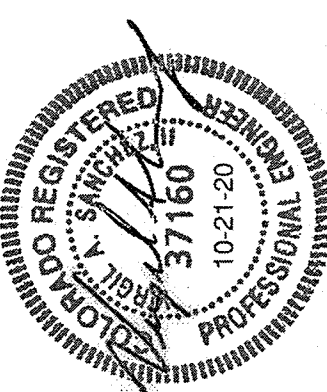
PROJECT NO. 44-037	SCALE: HORIZONTAL: N/A VERTICAL: N/A	DATE: 10/21/2020
DESIGNED BY: GW	DRAWN BY: CLP	CHECKED BY: WAS
SHEET 1 OF 12		S101

102 PIKES PEAK AVE. SUITE 500  
COLORADO SPRINGS, CO 80903  
PHONE: 719.955.5485



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

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

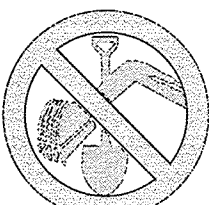


REVISIONS:

NO.	DATE	APPROVED BY	DATE
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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



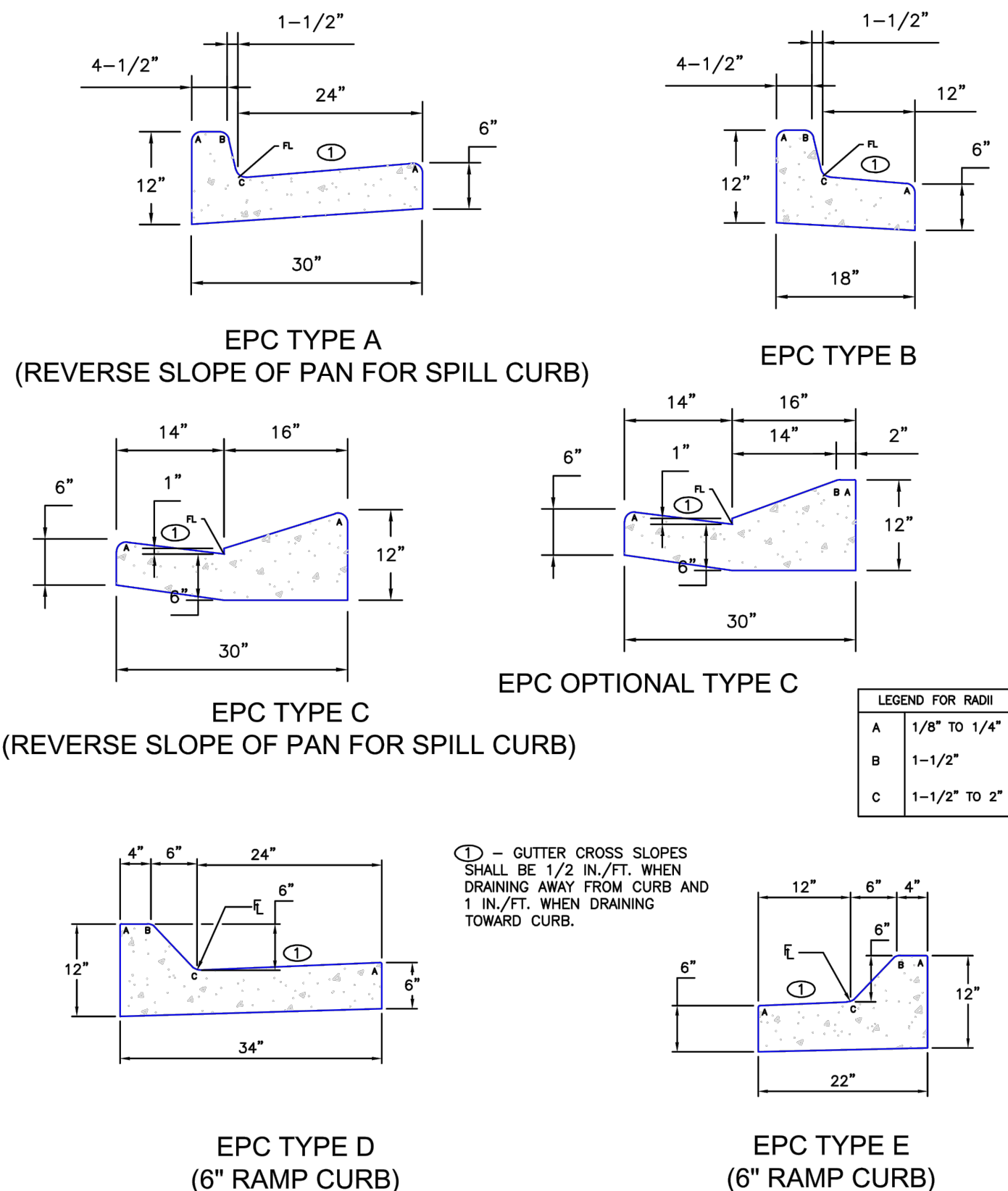
FOR LOCATING  
& MARKING  
GAS,  
ELECTRIC,  
WATER &  
TELEPHONE  
LINES

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

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

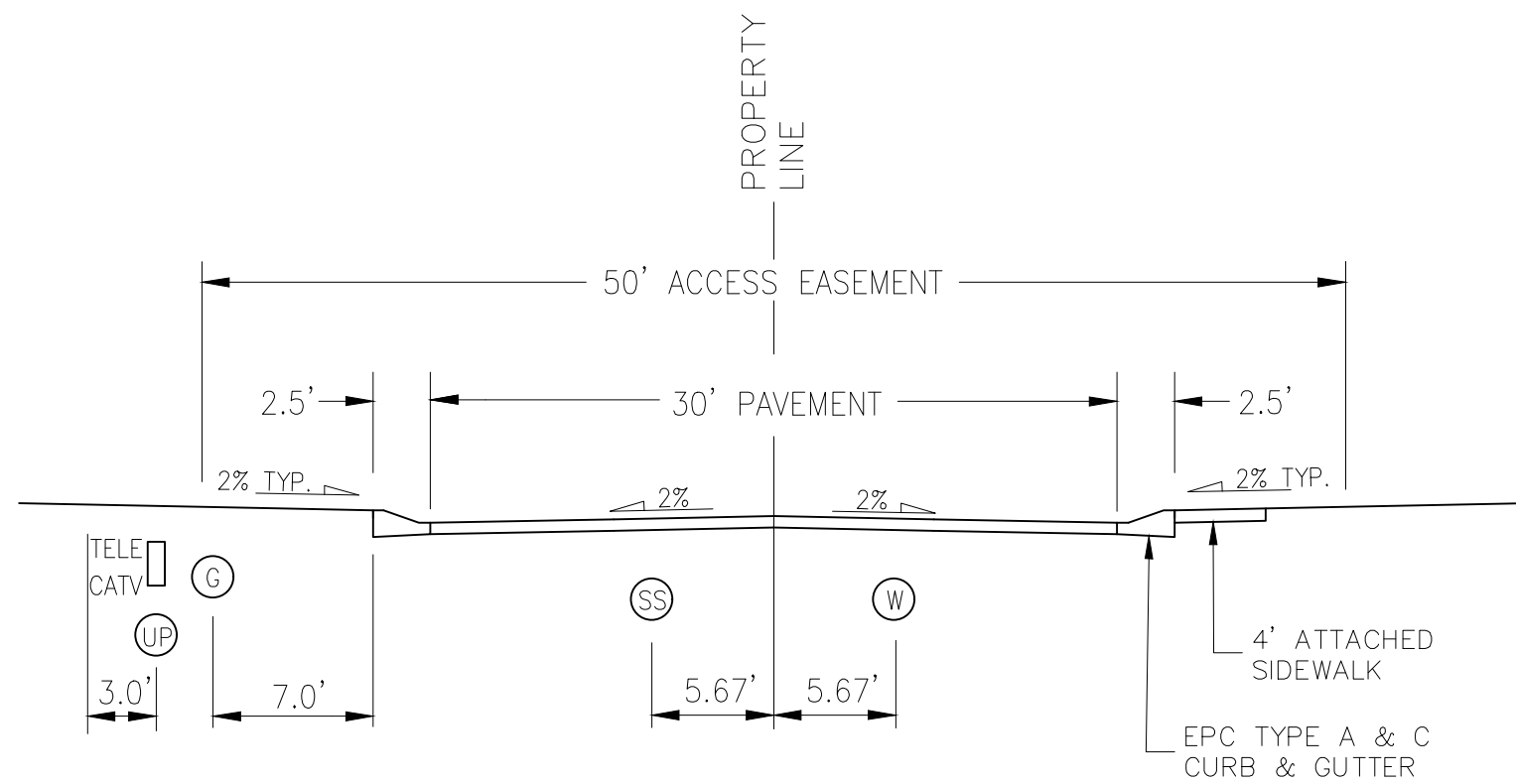
1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
3. ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PCO.
4. ALL SIGNS SHOWN ON THE SIGNING AND STRIPING PLAN SHALL BE NEW SIGNS. EXISTING SIGNS MAY REMAIN OR BE REUSED IF THEY MEET CURRENT EL PASO COUNTY AND MUTCD STANDARDS.
5. STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
6. ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
7. ALL STREET NAME SIGNS SHALL HAVE "D" SERIES LETTERS, WITH LOCAL ROADWAY SIGNS BEING 4" UPPER-LOWER CASE LETTERING ON 8" BLANK AND NON-LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER-LOWER CASE ON 12" BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULTI-LANE ROADWAYS WITH SPEED LIMITS OF 40 MPH OR HIGHER SHALL HAVE 8" UPPER-LOWER CASE LETTERING ON 18" BLANK WITH A WHITE BORDER THAT IS NOT RECESSED. THE WIDTH OF THE NON-RECESSED WHITE BORDERS SHALL MATCH PAGE 255 OF THE 2012 MUTCD "STANDARD HIGHWAY SIGNS"
8. ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
9. ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75" X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SLIPBASE DESIGN.
10. ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.010" MINIMUM THICKNESS.
11. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS SHALL BE A MINIMUM 125 MIL THICKNESS PREFORMED THERMOPLASTIC PAVEMENT MARKINGS WITH TAPERED LEADING EDGES PER CDOT STANDARD S-627-1. WORD AND SYMBOL MARKINGS SHALL BE THE NARROW TYPE. STOP BARS SHALL BE 24" IN WIDTH. CROSSWALKS LINES SHALL BE 12" WIDE AND 8' LONG PER CDOT S-627-1.
12. ALL LONGITUDINAL LINES SHALL BE A MINIMUM 15MIL THICKNESS EPOXY PAINT. ALL NON-LOCAL RESIDENTIAL ROADWAYS SHALL INCLUDE BOTH RIGHT AND LEFT EDGE LINE STRIPING AND ANY ADDITIONAL STRIPING AS REQUIRED BY CDOT S-627-1.
13. THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
14. THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY DPW PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.

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



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

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.

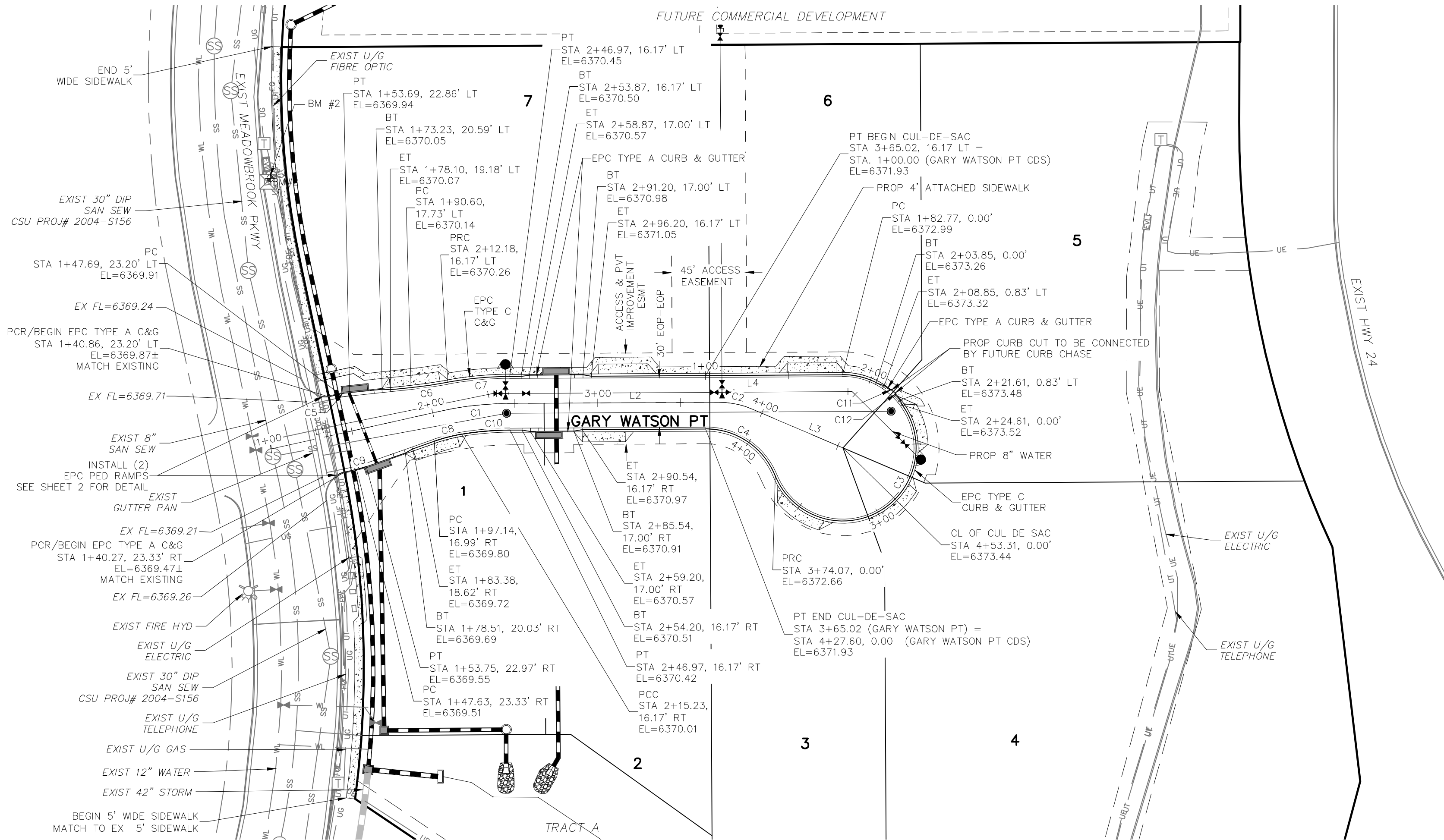


\*DESIGN SPEED 35 MPH\*



EL PASO COUNTY FILE NO. PCD # SF-20-014

File: Q:\44037A-CBP F2-Lots 1-8\44037A-CBP F2-Lots 1-8.dwg Const Dwg\STREET AND STORM\S03.dwg Plotstamp: 10/21/2020 10:58 AM



GARY WATSON PT  
(PRIVATE)

#### ABBREVIATION LEGEND

C-@	CENTERLINE INTERSECTION
F-L	FLOWLINE INTERSECTION
BT	BEGIN TRANSITION
ET	END TRANSITION
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCR	POINT OF CURB RETURN
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
EL	ELEVATION
LT	LEFT
RT	RIGHT

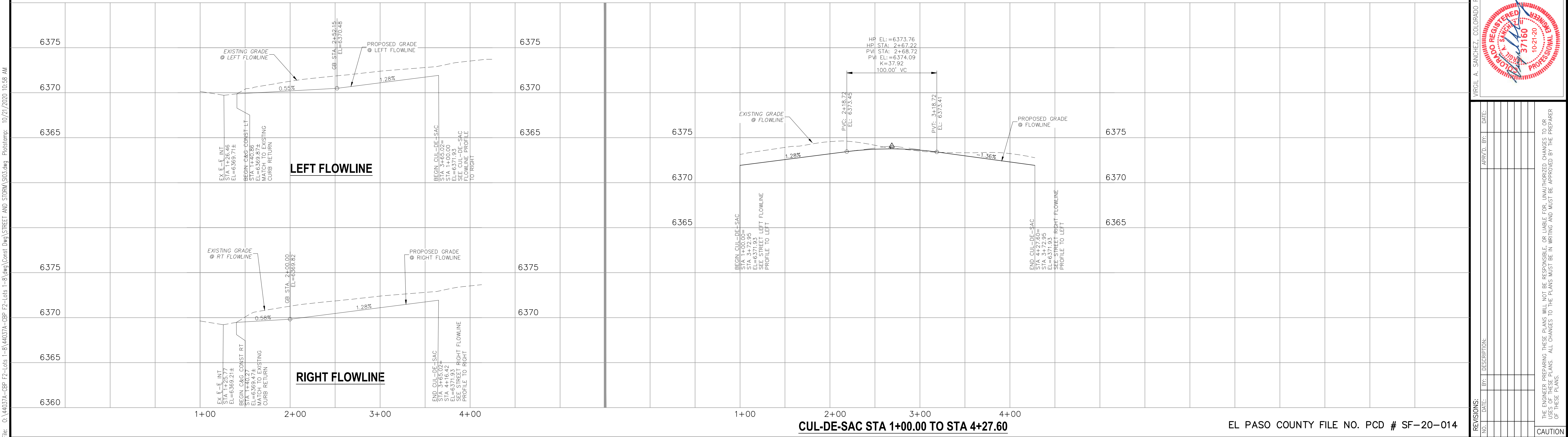
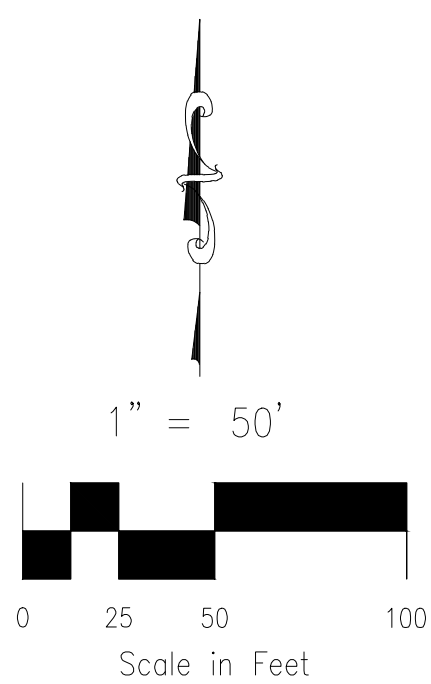
CENTERLINE LINE TABLE		
LINE	LENGTH	DIRECTION
L1	104.00'	N77°22'44"E
L2	125.98'	N89°41'23"E
L3	59.87'	S66°49'29"E

CENTERLINE CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	200.00'	42.97'	12°18'39"
C2	50.00'	20.50'	23°29'08"

CURB FLOWLINE LINE TABLE		
LINE	LENGTH	DIRECTION
L4	82.77'	N89°41'23"E

CURB FLOWLINE CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C3	44.17'	191.30'	248°09'48"
C4	45.00'	53.54'	68°09'48"

CURB FLOWLINE CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C5	52.00'	6.01'	6.62°
C6	298.83'	22.31'	4.28°
C7	216.17'	37.60'	9.97°
C8	98.83'	17.21'	9.98°
C9	52.00'	6.13'	6.76°
C10	183.83'	29.17'	9.09°
C11	1.00'	1.52'	86.88°
C12	1.00'	1.52'	86.88°



CUL-DE-SAC STA 1+00.00 TO STA 4+27.60

EL PASO COUNTY FILE NO. PCD # SF-20-014



CLAREMONT BUSINESS PARK 2 FILING NO. 1

STREET IMPROVEMENT PLANS

PROJECT NO. 44-037

FILE: Yang\Const Dwg\Street & Storm Plans\S03.dwg

DATE: 10/21/2020

DESIGNED BY: GW

DRAWN BY: CLP

CHECKED BY: VAS

SHEET 3 OF 12

S103

102 E. PIKES PEAK AVE. SUITE 500  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

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

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APPROVED BY:	DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE 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

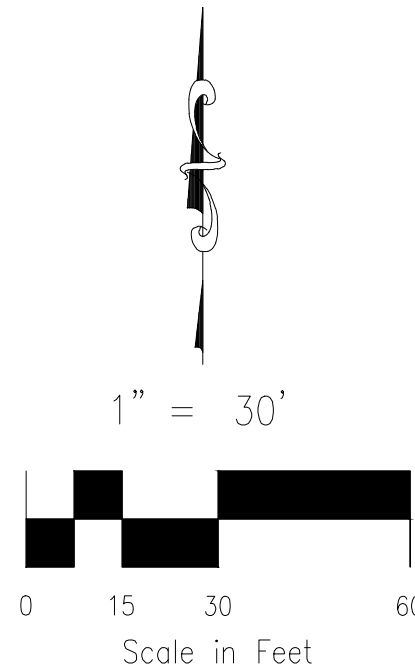
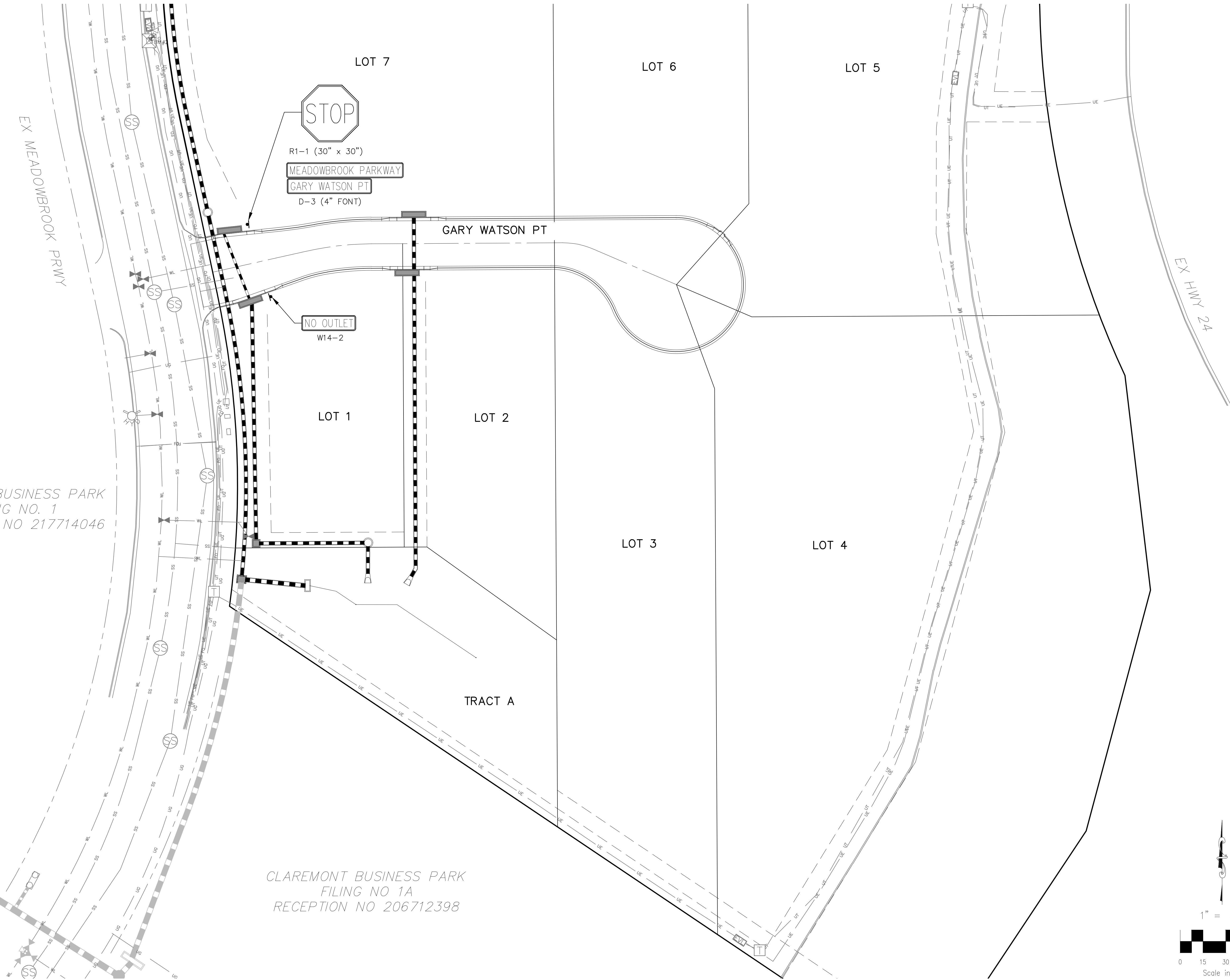
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FOR LOCATING  
& MARKING  
GAS,  
ELECTRIC,  
WATER &  
TELEPHONE  
LINES  
FOR BURIED UTILITY INFORMATION  
48 HRS BEFORE YOU DIG  
CALL 1-800-922-1987

PADMARK BUSINESS PARK  
FILING NO. 1  
RECEPTION NO 217714046

CLAREMONT BUSINESS PARK  
FILING NO 1A  
RECEPTION NO 206712398



EL PASO COUNTY FILE NO. PCD # SF-20-01

REVISIONS:		DATE:	BY:	DESCRIPTION:	APPROVED BY:	DATE:

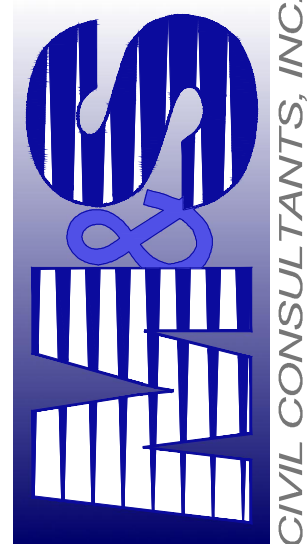
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CAUTION

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



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



CIVIL CONSULTANTS, INC.

102 E. PIKES PEAK AVE. SUITE 500  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.5485

CLAREMONT BUSINESS PARK 2 FILING NO. 1

SIGNAGE AND STRIPING PLAN

PROJECT NO. 44-037	SCALE:	DATE:	10/21/2020
DESIGNED BY: GW	HORIZONTAL: N/A		
DRAWN BY: CLP	VERTICAL: N/A		
CHECKED BY: WAS			
		SHEET 4 OF 12	S104

STANDARD CONSTRUCTION NOTES:

- 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 LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
- CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIME INCLUDING THE FOLLOWING:
  - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
  - CITY OF COLORADO SPRINGS/EL PASO COUNTY ENGINEERING CRITERIA MANUAL VOLUMES 1 AND 2.
  - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARDS SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.
  - CDOT M&S STANDARDS.
- IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ACCURACY SHOW EXISTING CONDITION BOTH ONSITE AND OFFSITE ON THE CONSTRUCTION PLANS. ANY MODIFICATION NECESSARY DUE TO CONFLICT OMISSIONS OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPERS RESPONSIBILITY TO RECTIFY.
- IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORM WATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, US ARMY CORPS OF ENGINEER ISSUED 401 AND/OR 404 PERMITS AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- ANY TEMPORARY SIGNAGE AND STRIPING SHALL COMPLY WITH EL PASO COUNTY PCD AND MUTCD CRITERIA.
- 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 OFFSITE DISTURBANCE GRADING, OR CONSTRUCTION.

STORM SEWER GENERAL NOTES

- ALL STATIONING IS ALONG STORM SEWER CENTERLINE UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE INVERT UNLESS OTHERWISE INDICATED.
  - ALL STORM SEWER PIPE SHALL BE ADS "HP STORM" POLYPROPYLENE PIPE (ADS) WITH GASKETED WATERTIGHT COUPLERS UNLESS OTHERWISE NOTED.
  - 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 MANUFACTURES 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.
- THE POLYPROPYLENE PIPE BEING INSTALLED POSSESS LESS MASS THAN RIGID PIPE MATERIALS AND MAY HAVE A TENDENCY TO SHIFT IN THE TRENCH DURING INSTALLATION. IT IS THE CONTRACTORS RESPONSIBILITY TO INSTALL THE PRODUCT IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATIONS AND TO MAINTAIN THE LINE AND GRADE SHOWN ON THE PLANS.
- THE MINIMUM COVER (TO PREVENT FLOTATION) FROM THE TOP OF PIPE TO THE FINISHED GRADE FOR THE POLYETHYLENE PIPE SHALL BE AS FOLLOWS: 48" ADS = 33", 42" ADS = 29", 36" ADS = 25", 30" ADS = 22", 24" ADS = 17", 18" ADS = 13".

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. ALL REINFORCED STEEL TO BE EPOXY COATED.
- CAS-IN-PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (fc) 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



CLAREMONT BUSINESS PARK 2 FILING NO. 1

GENERAL NOTES AND DETAILS

PROJECT NO. 44-037 FILE: Yang\Const Dwg\Storm - District\ST01.dwg DATE: 10/15/2020

DESIGNED BY: GW SCALE: N/A

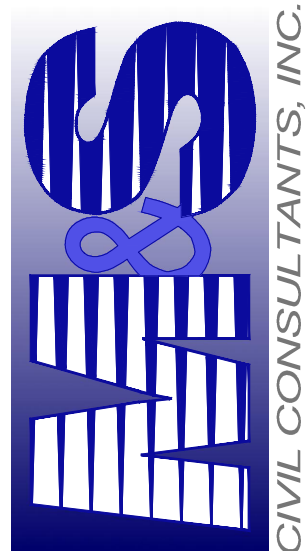
DRAWN BY: CLP

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SHEET 5 OF 12

ST01

102 E. Pikes Peak Ave., Suite 500  
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FOR AND ON  
BEHALF OF  
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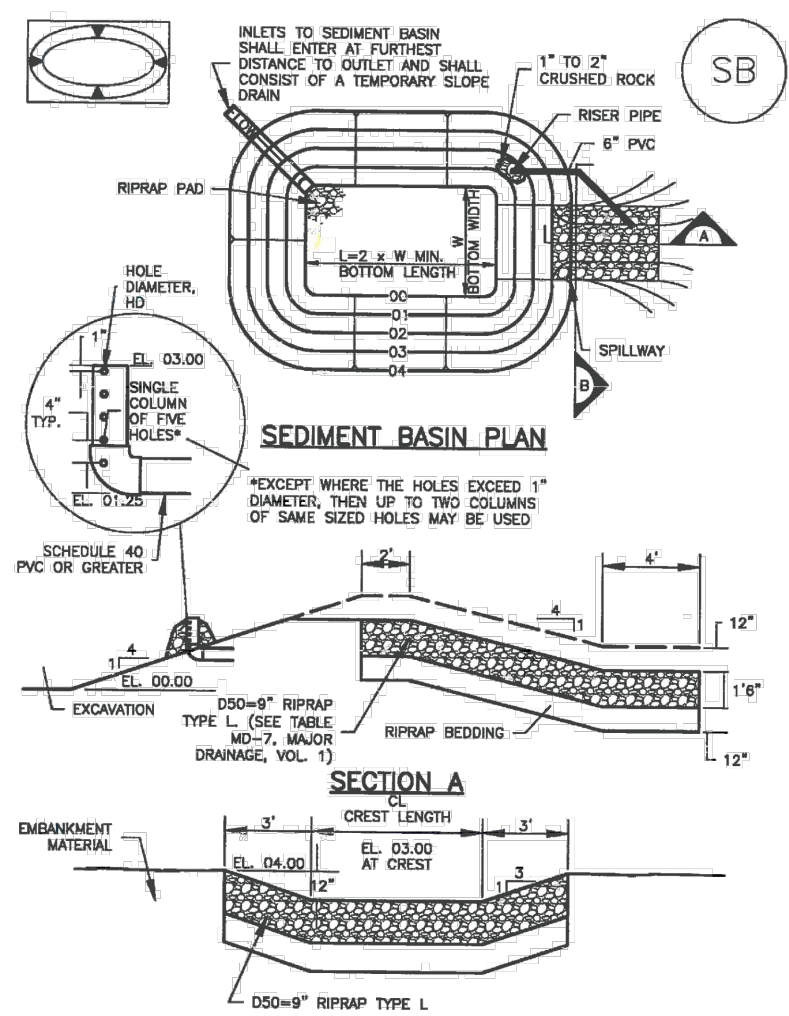
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160



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

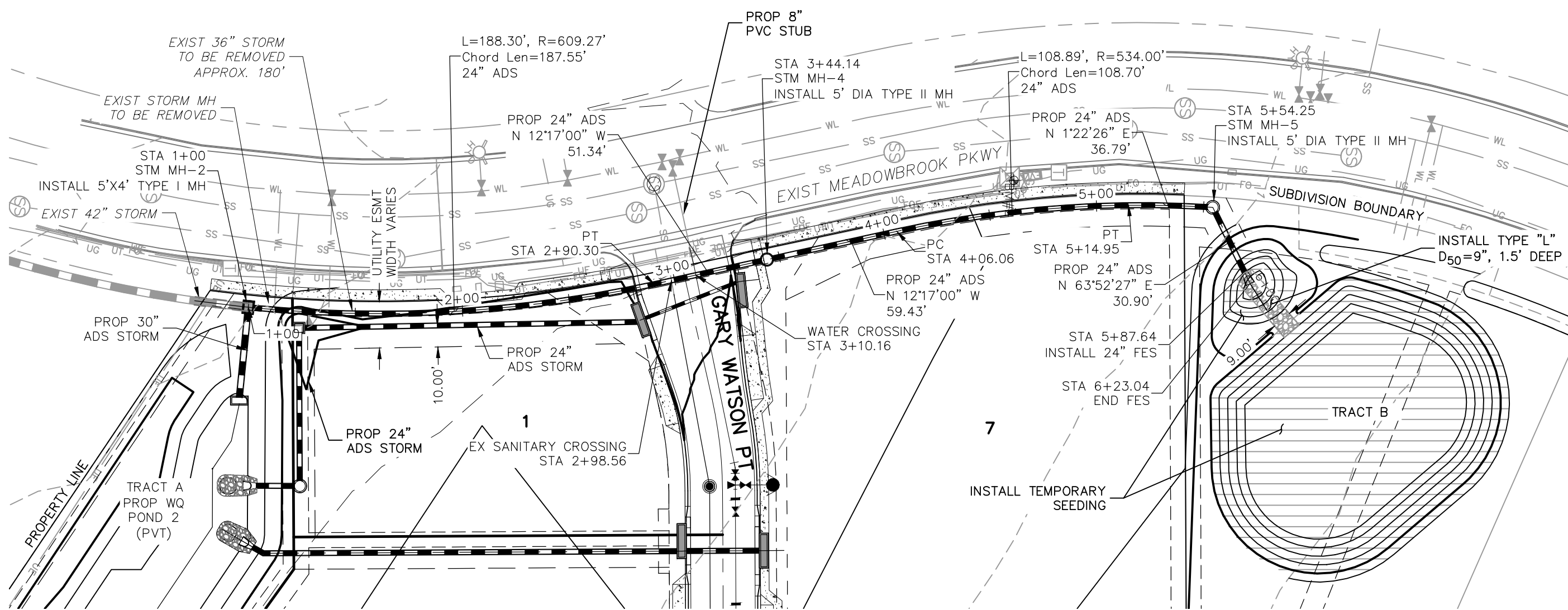
Sediment Basin (SB) SC-7



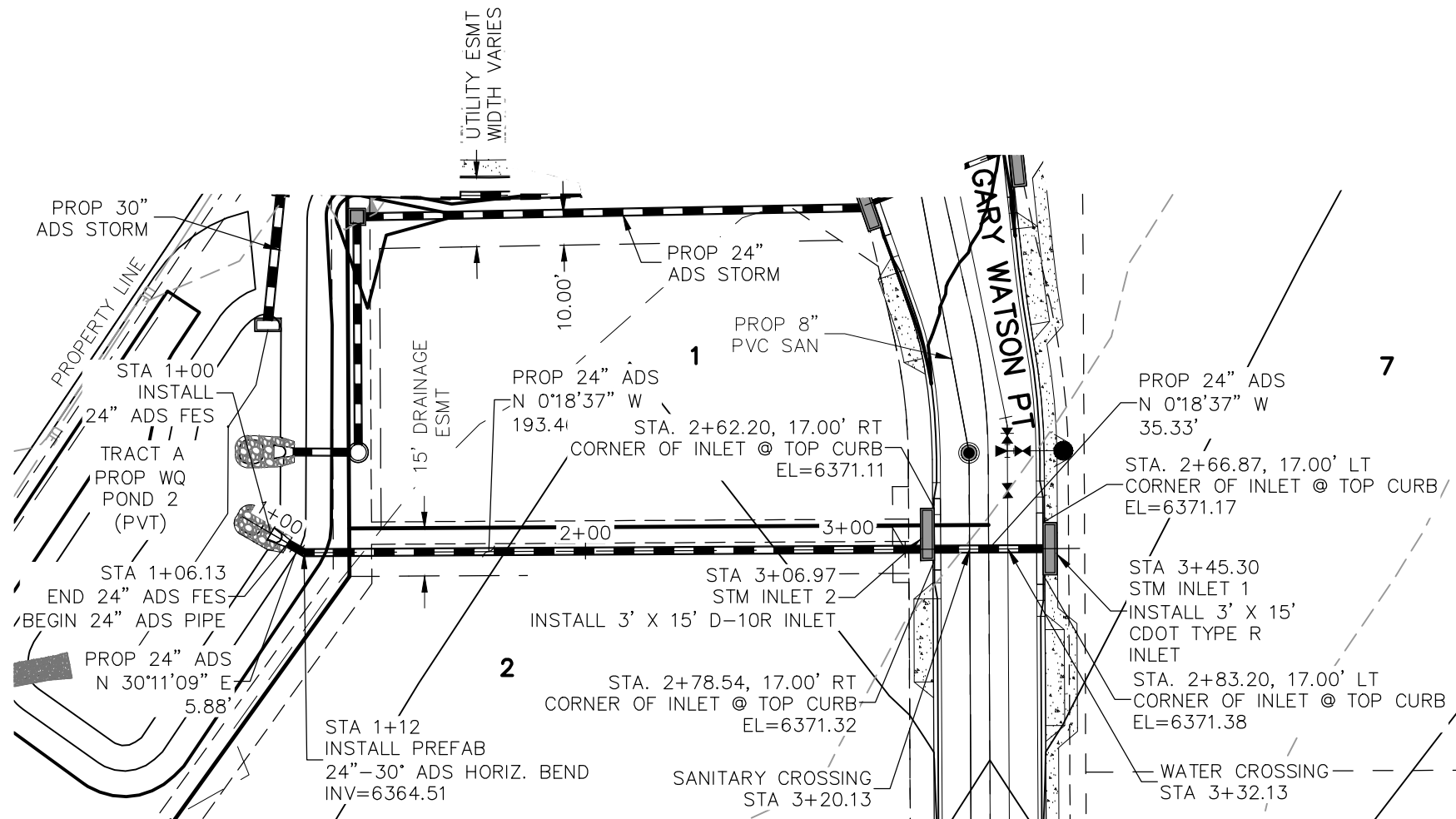
August 2013 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 SB-3

SC-7 Sediment Basin (SB)

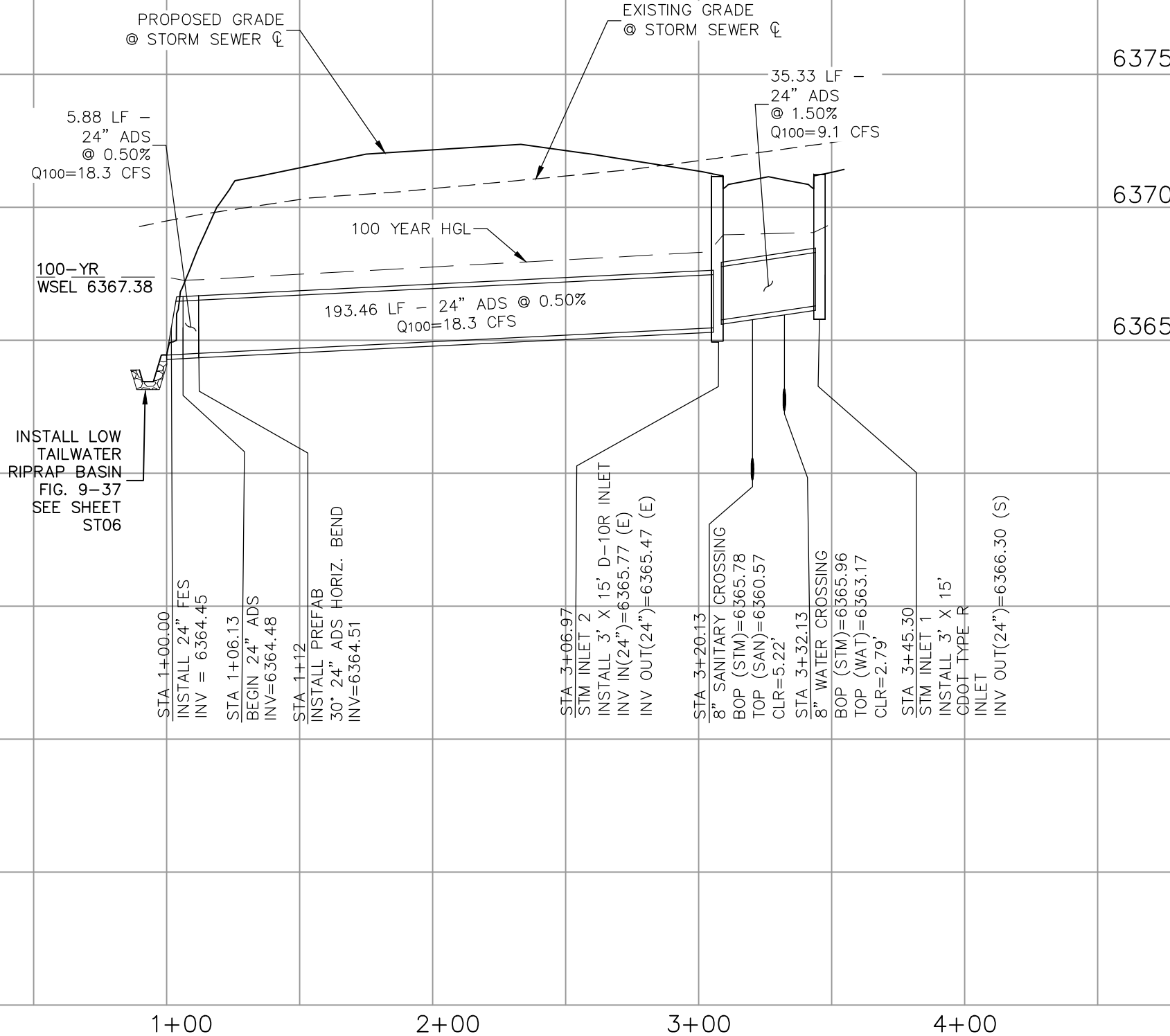
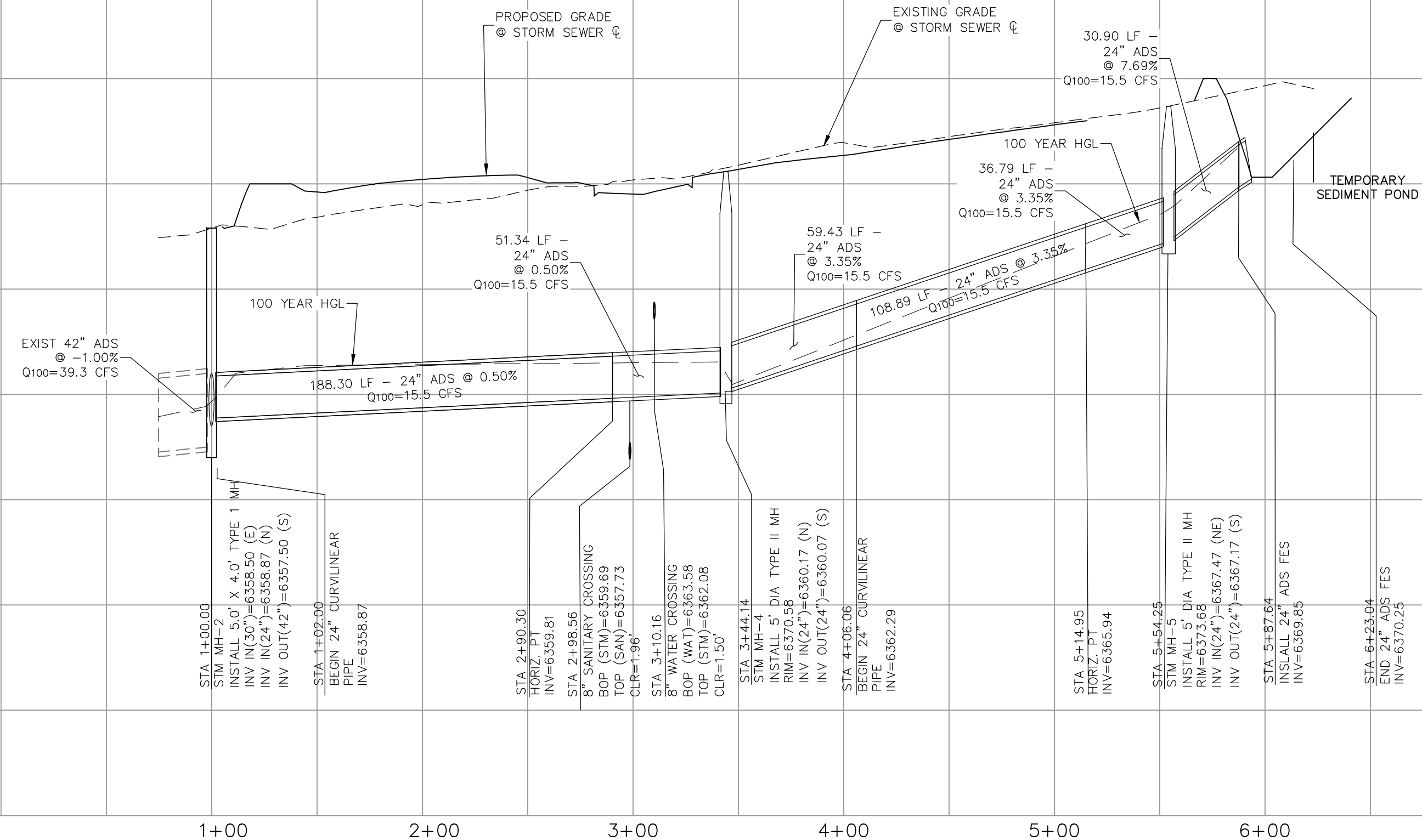
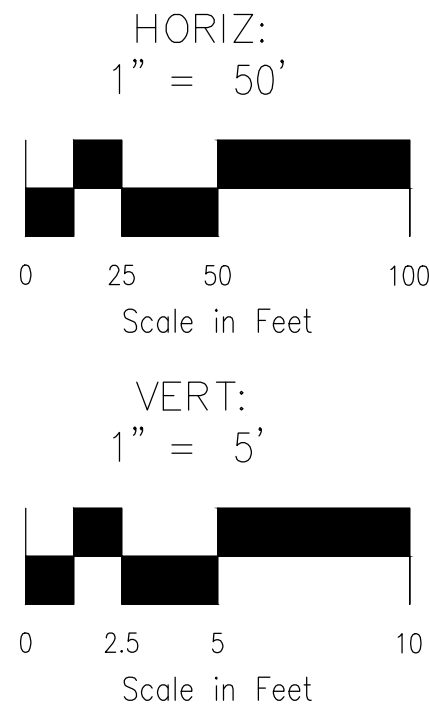
TABLE SB-1. SIZING INFORMATION FOR STANDARD SEDIMENT BASIN				
Upstream Drainage Area (rounded to nearest acre), (a)	Basin Bottom Width (W), (ft)	Spillway Crest Length (CL), (ft)	Hole Diameter (D), (in)	
1	12 1/2	2	9 1/2	
2	21	3	15 1/2	
3	30	4	21 1/2	
4	38 1/2	5	27 1/2	
5	47 1/2	6	33 1/2	
6	56 1/2	7	39 1/2	
7	65 1/2	8	45 1/2	
8	74 1/2	9	51 1/2	
9	83 1/2	10	57 1/2	
10	92 1/2	11	63 1/2	
11	101 1/2	12	69 1/2	
12	110 1/2	13	75 1/2	
13	119 1/2	14	81 1/2	
14	128 1/2	15	87 1/2	
15	137 1/2	16	93 1/2	



**STORM 5**  
**STA 1+00.00 TO STA 5+92.88**  
**(PRIVATE)**

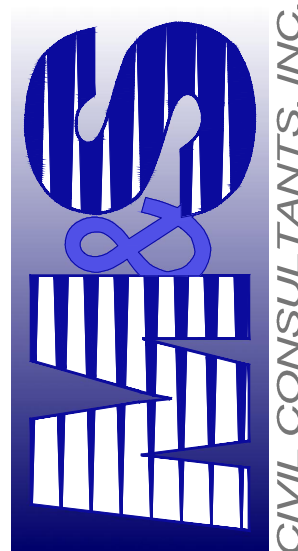


**STORM 7**  
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**(PRIVATE)**



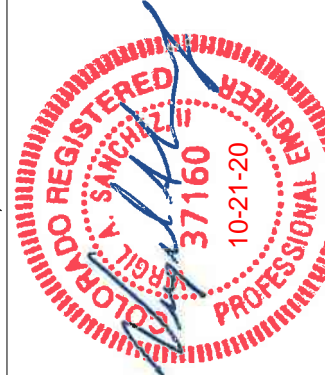
CLAREMONT BUSINESS PARK 2 FILING NO. 1	
STORM SEWER PLAN & PROFILE	
PROJECT NO. 44-037	DATE: 10/15/2020
DESIGNED BY: GW	SCALE: HORIZONTAL: 1"=50'
DRAWN BY: CLP	VERTICAL: 1"=5'
CHECKED BY: VAS	SHEET 6 OF 12
ST02	

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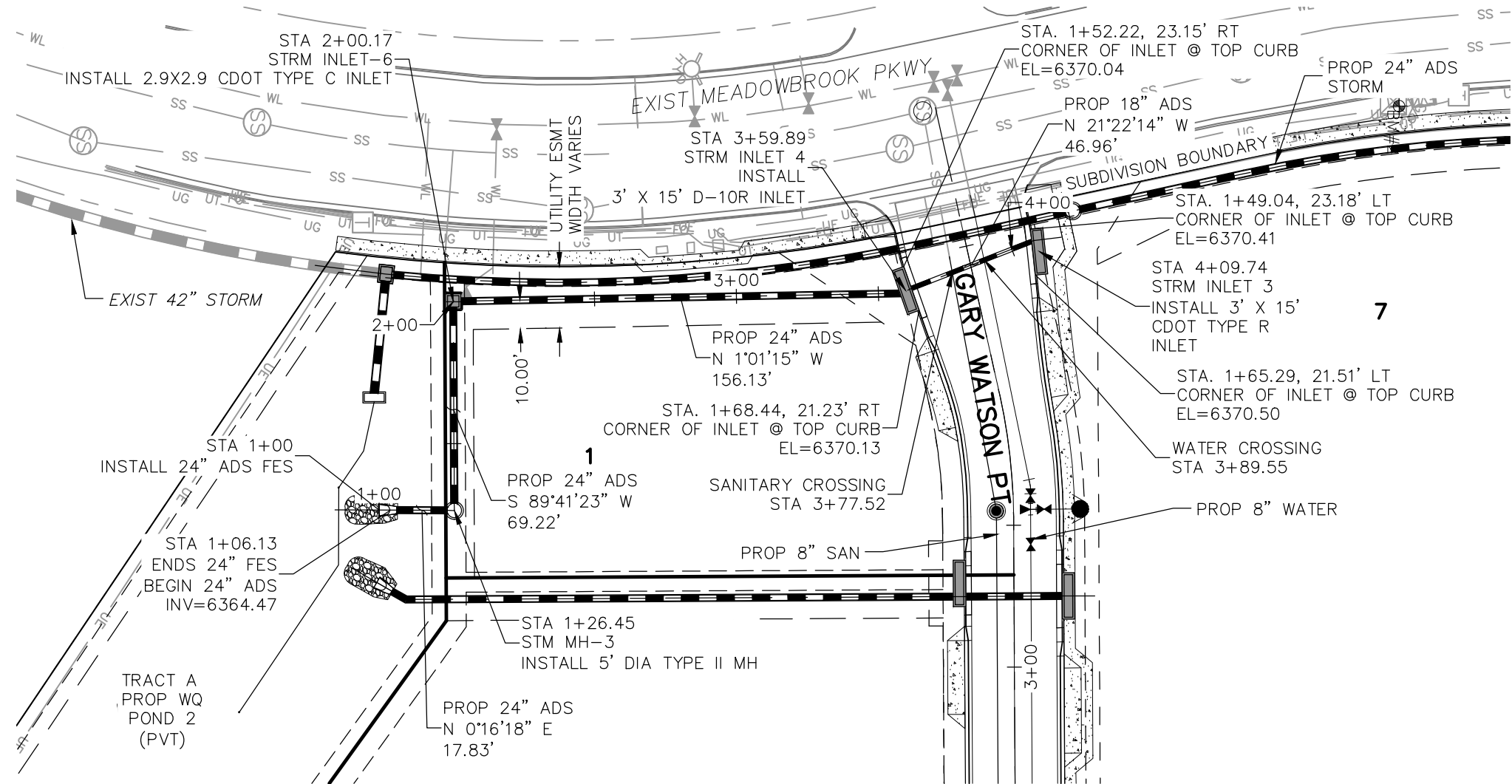
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160



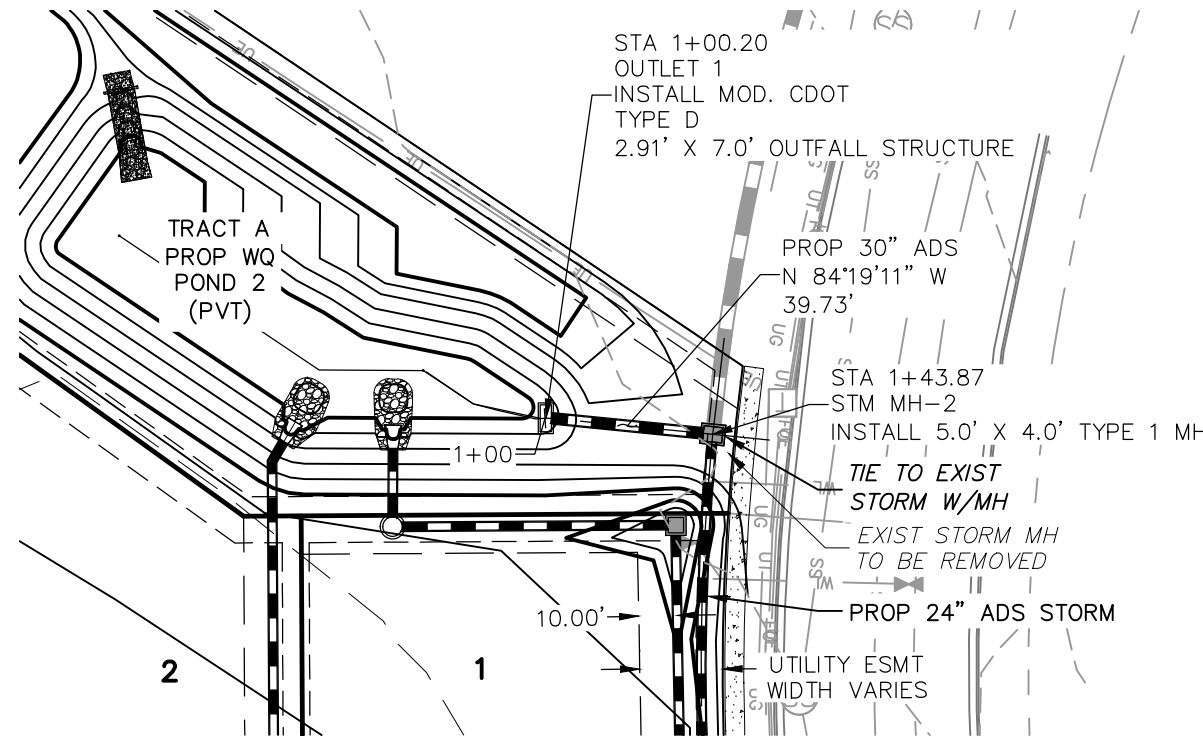
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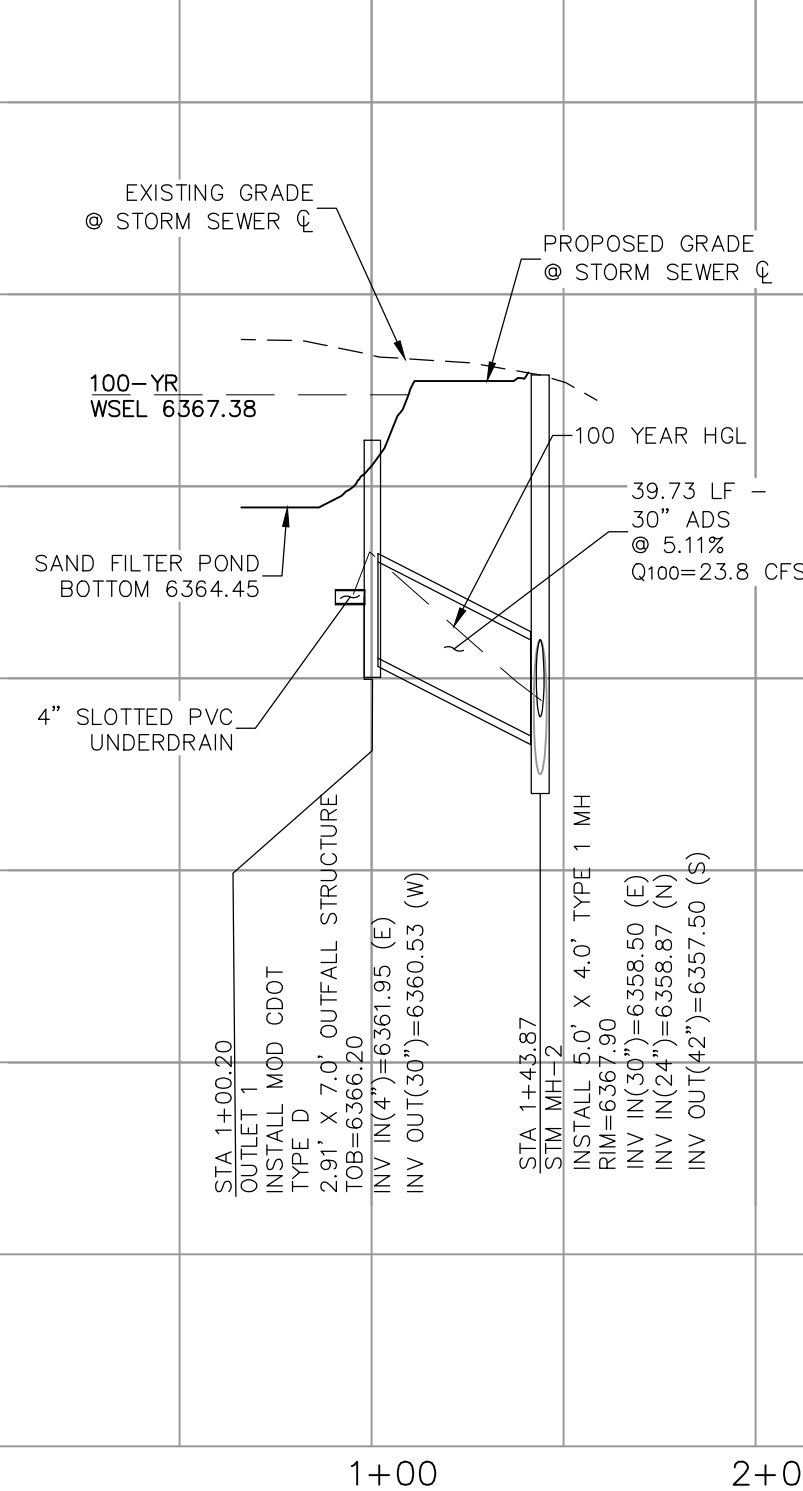
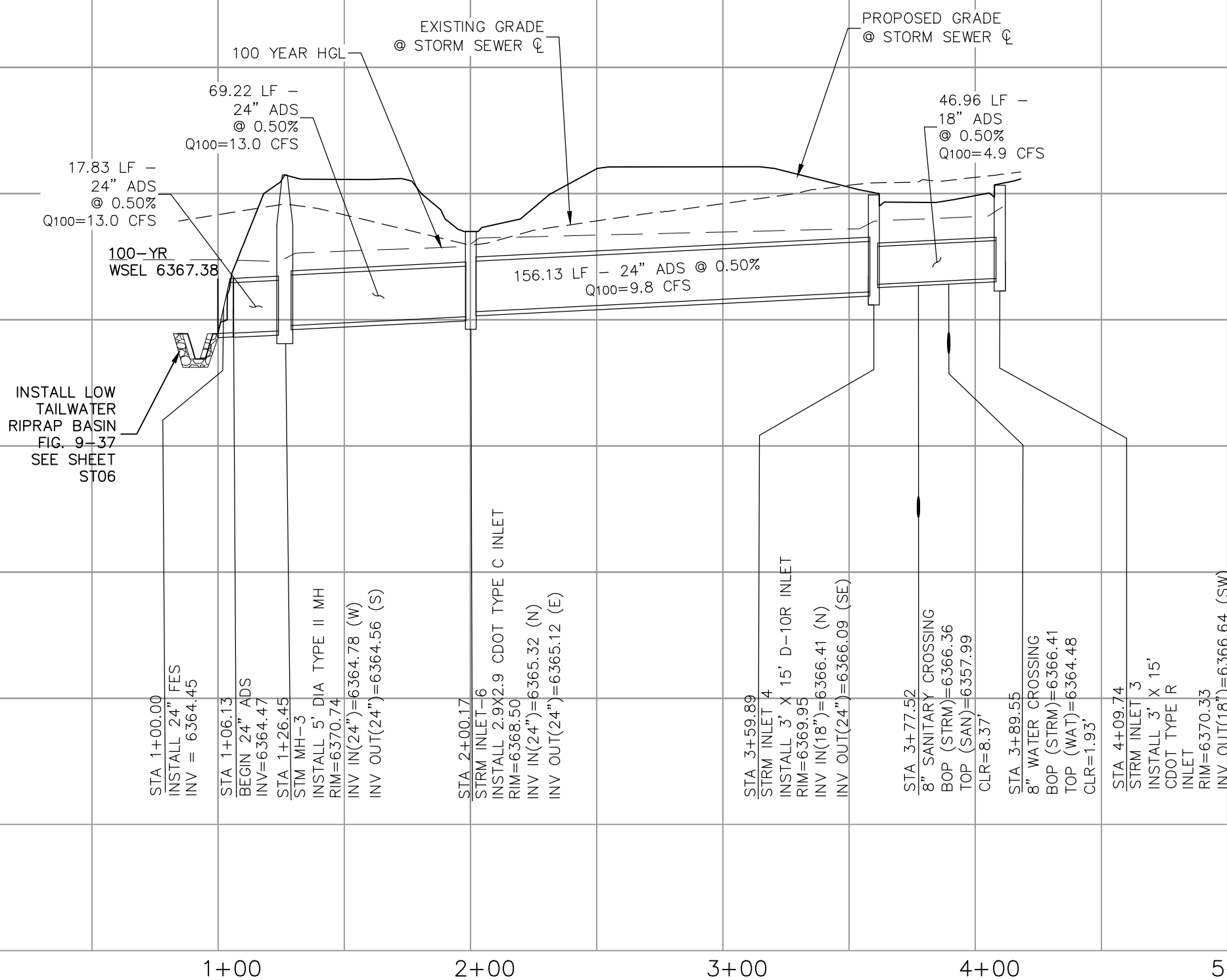
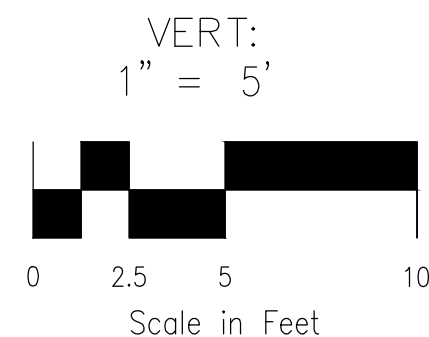
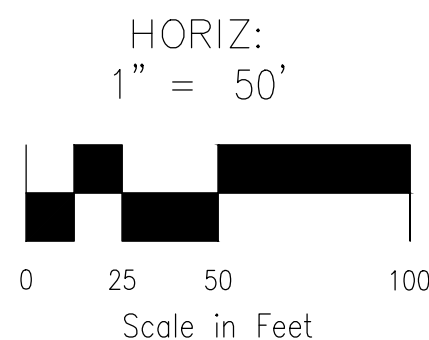
CAUTION



**STORM 10**  
**STA 1+00.00 TO STA 4+07.61**  
**(PRIVATE)**



**STORM 11**  
**STA 1+00.00 TO STA 1+43.87**  
**(PRIVATE)**



**CLAREMONT BUSINESS PARK 2 FILING NO. 1**

**STORM SEWER PLAN AND PROFILE**

PROJECT NO. 44-037  
DESIGNED BY: GW  
DRAWN BY: CLP  
CHECKED BY: VAS

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

DATE: 10/15/2020  
SHEET 7 OF 12  
ST03

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PHONE: 719.555.5485

**CIVIL CONSULTANTS, INC.**

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

**PROFESSIONAL ENGINEER**  
37160  
10-21-20

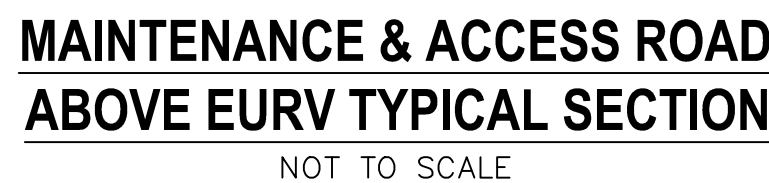
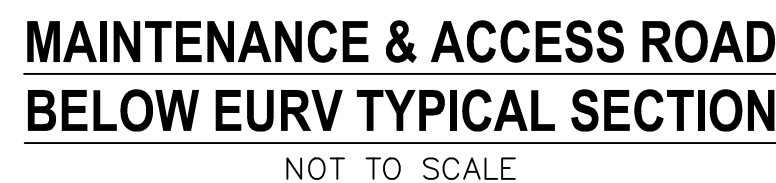
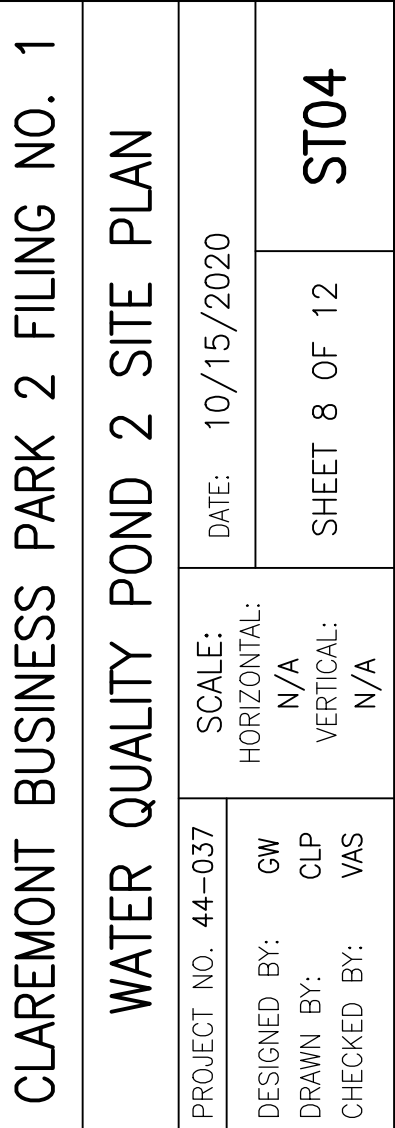
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APPROV. BY:	DATE:

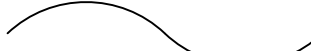





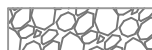







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**CAUTION**



## GRADING NOTES:

1. ALL PROPOSED CONTOURS ARE TO FINISHED GRADE.
2. EARTHWORK CUT AND FILL SLOPES SHALL BE 3:1.  
MAXIMUM SLOPES IN EXCESS OF 4:1 SHALL BE  
CONSTRUCTED WITH SOIL OR SLOPE BUCKET OVER 4" MIN.  
THICKNESS OF TOPSOIL AND SEEDED.
3. IF THE PROJECT IS CONSTRUCTED DURING THE SUMMER  
WHEN SEEDING IS NOT ALLOWED, APPLY 1-1/2 TONS  
OF CERTIFIED WEED FREE MULCH PER ACRE  
IMMEDIATELY FOLLOWING COMPLETION OF THE SOIL IN COMBINATION  
WITH AN ORGANIC MULCH TACKIFIER.
4. PRIOR TO ANY CONSTRUCTION ACTIVITIES THE  
PROPOSED SILT FENCE SHOWN ON THE EROSION  
CONTROL SHEET SHALL BE CONSTRUCTED. THE FENCE  
MUST BE REMOVED IMMEDIATELY UPON COMPLETION OF  
THE SITE OR COMPLETION OF CONSTRUCTION.
5. TO REDUCE THE POTENTIAL FOR CLOGGING OF DEBRIS  
GRATES, NO STRAW MULCH SHALL BE USED WITHIN THE  
EVRV OR WOVC OF A DETENTION BASIN. INSTEAD,  
EROSION CONTROL BLANKETS SHALL BE INSTALLED FOR  
A WIDTH OF AT LEAST 6 FEET ON EITHER SIDE OF  
CONCRETE LOW-FLOW CHANNELS. THE BLANKETS SHALL  
BE MADE WITH THE MATERIALS AND INSTALLATION  
REQUIREMENTS FOR EROSION CONTROL BLANKETS  
(STRAW COCONUT OR 100 PERCENT COCONUT).  
EROSION CONTROL BLANKETS OR EROSION CONTROL BLANKET  
OR OTHER EROSION CONTROL MEASURES.

- | <u>LEGEND</u>   |  |
|---|--|
| EX  | EXISTING   |
| FUT   | FUTURE   |
| PROP  | PROPOSED   |
|  | PROP MAJ CONT  |
|  | PROP MIN CONT  |
|  | EXIST MAJ CONT   |
|  | EXIST MIN CONT   |
|  | MAINTENANCE/ACCESS ROAD<br>ABOVE EURV 8" CDOT CL                       |
|  | MAINTENANCE/ACCESS ROAD<br>BELOW EURV 12" CDOT CL                      |
|  | RIPRAP RUNDOWN &<br>LOW TAILWATER BASIN                                |
|  | SC150 NORTH AMERICAN<br>GREEN EROSION CONTROL<br>BLANKET OR EQUIVALENT |
|  | EX. FLOW ARROW   |
|  | PROP. FLOW ARROW   |
|  | PROPERTY LINE  |
|  | PROP STORM SEWER PIPE  |
|  | EASEMENT LINE  |
|  | EMERGENCY OVERFLOW   |

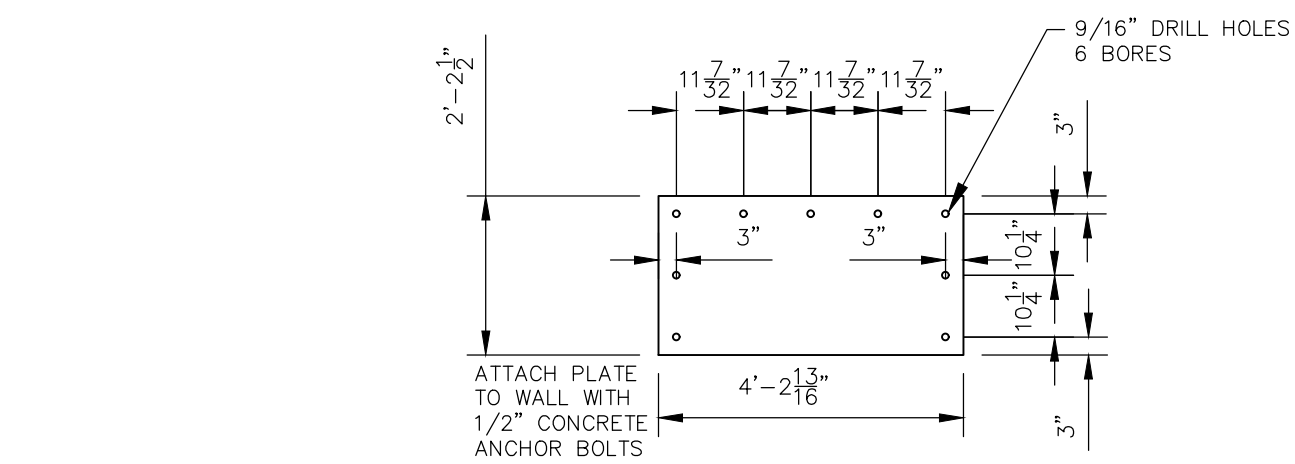


File: 0:\440371A-CBP F2-Lots 1-8\440371A-CBP F2-Lots 1-8.dwg Const Dwg\STREET AND STORM\ST05.dwg Plotstamp: 10/21/2020 11:53 AM

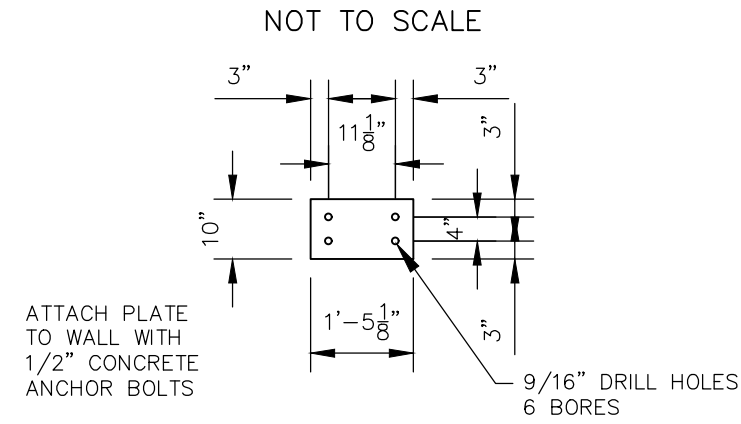


FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

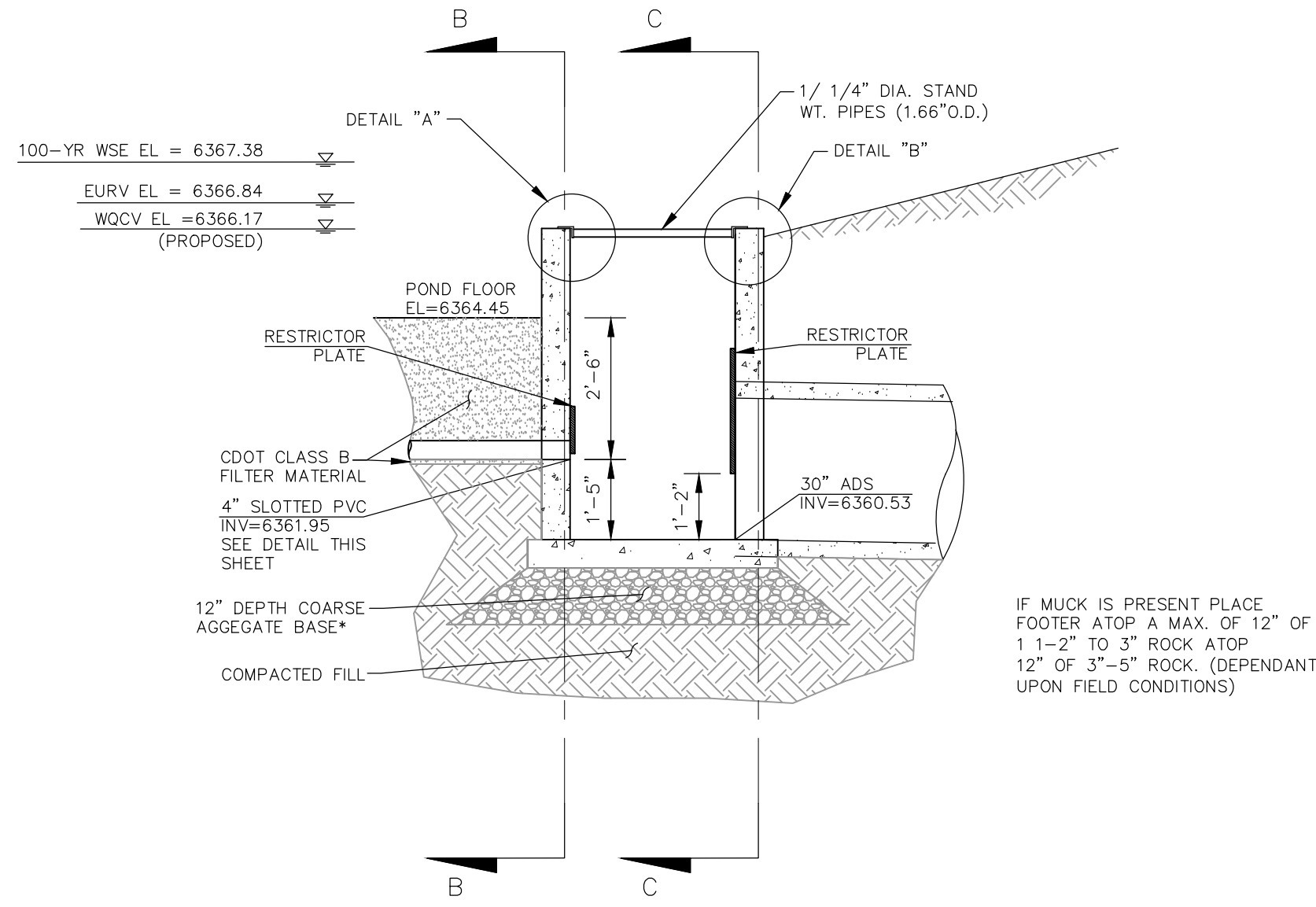
FOR BURIED UTILITY INFORMATION  
48 HRS BEFORE YOU DIG  
CALL 1-800-922-1987



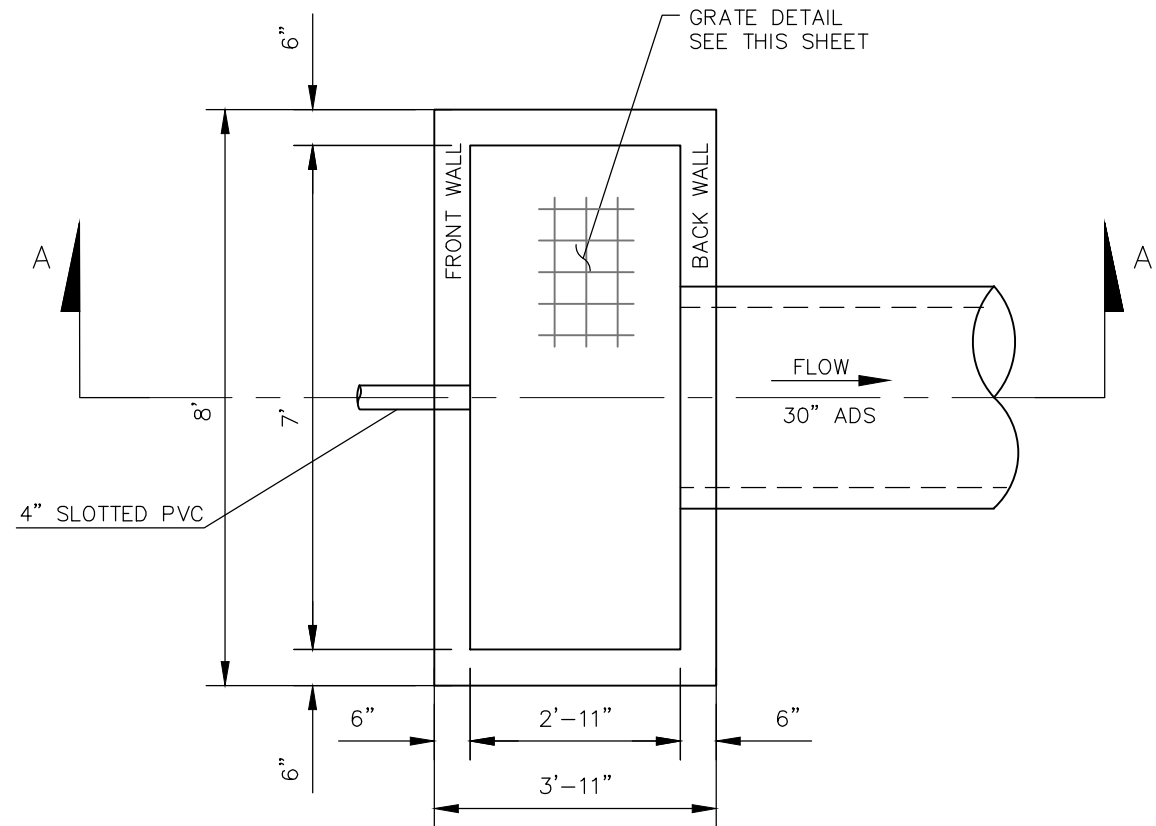
RESTRICTOR PLATE~30"  
OUTFALL PIPE



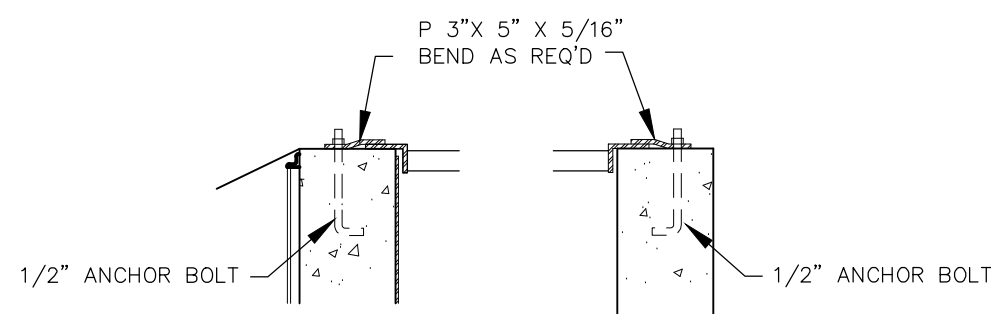
RESTRICTOR PLATE~4" UNDERDRAIN



SECTION A-A  
NOT TO SCALE

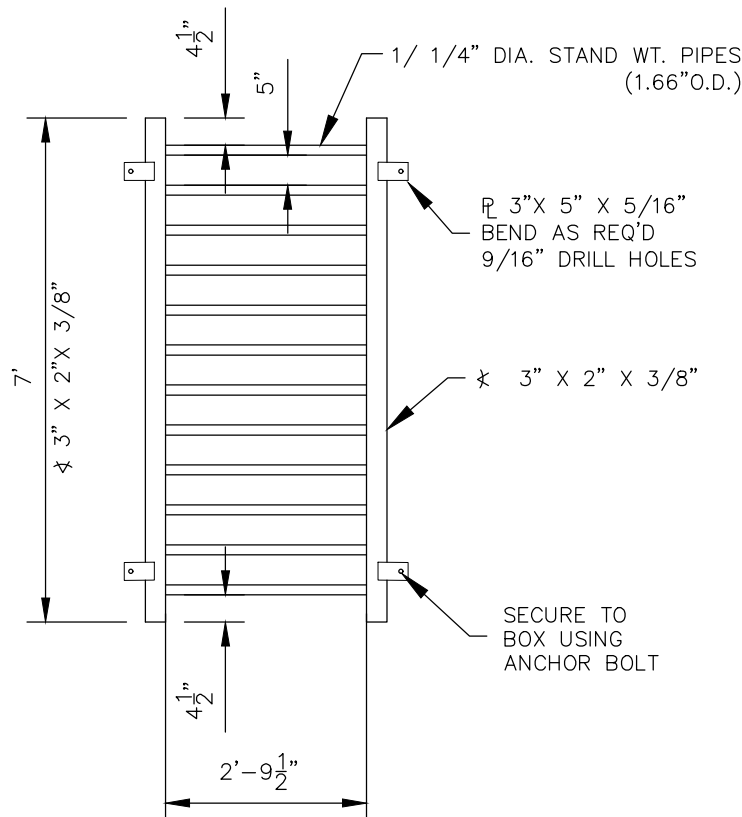


POND 2 WATER QUALITY OUTLET STRUCTURE  
NOT TO SCALE



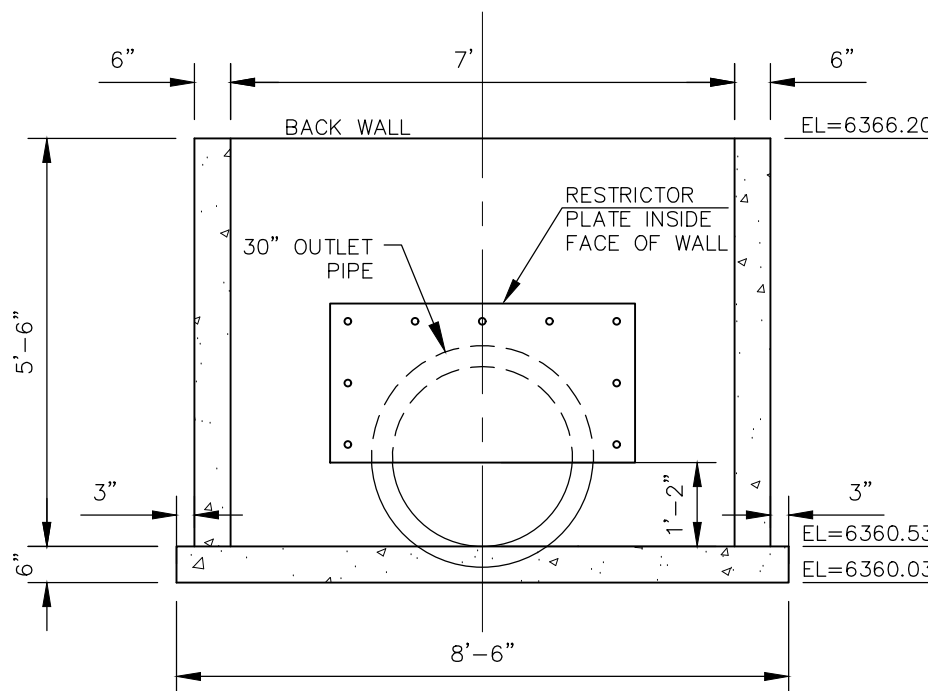
GRATE  
DETAIL "A"

GRATE  
DETAIL "B"

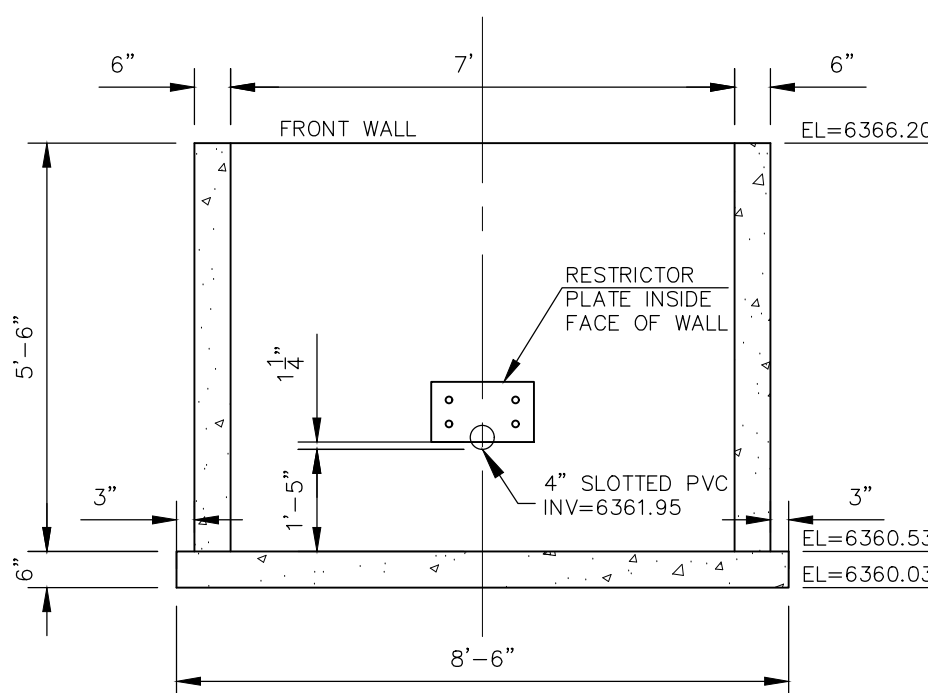


GRATE PLAN  
NOT TO SCALE

NOTE:  
ALL GRATES,  
IMBEDS, AND  
FASTENERS SHALL  
BE FABRICATED  
USING GALVANIZED  
STEEL, UNLESS  
OTHERWISE NOTED.  
  
ALL GRATE  
DIMENSIONS TO BE  
FIELD VERIFIED  
PRIOR TO  
FABRICATION. ALL  
GRATE MATERIAL  
SHALL BE  
GALVANIZED.



SECTION C-C BACK WALL  
NOT TO SCALE



SECTION B-B FRONT WALL  
NOT TO SCALE

Table SF-1. Gradation specifications for CDOT Class B or C filter material  
(Source: CDOT Table 703-7)

Sieve Size	CDOT Class B filter material	CDOT Class C filter material
	Mass Percent Passing Square Mesh Sieves	
37.5 mm (1.5")	100	
19.0 mm (0.75")		100
4.75 mm (No.4)	20-60	60-100
1.18 mm (No. 16)	10-30	
300 um (No. 50)	0-10	10-30
150 um (No. 100)		0-10
75 um (No. 200)	0-3	0-3

Table SF-2. Dimensions for Slotted Pipe<sup>1</sup>

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

<sup>1</sup> Pipe must conform to requirements of ASTM designation F949. There shall be no evidence of splitting, cracking, or breaking when the pipe is tested per ASTM test method D2412 in accordance with F949 section 7.5 and ASTM F794 section 8.5. Contextech A-2000 slotted pipe (or equal).

## T-6

## Sand Filter

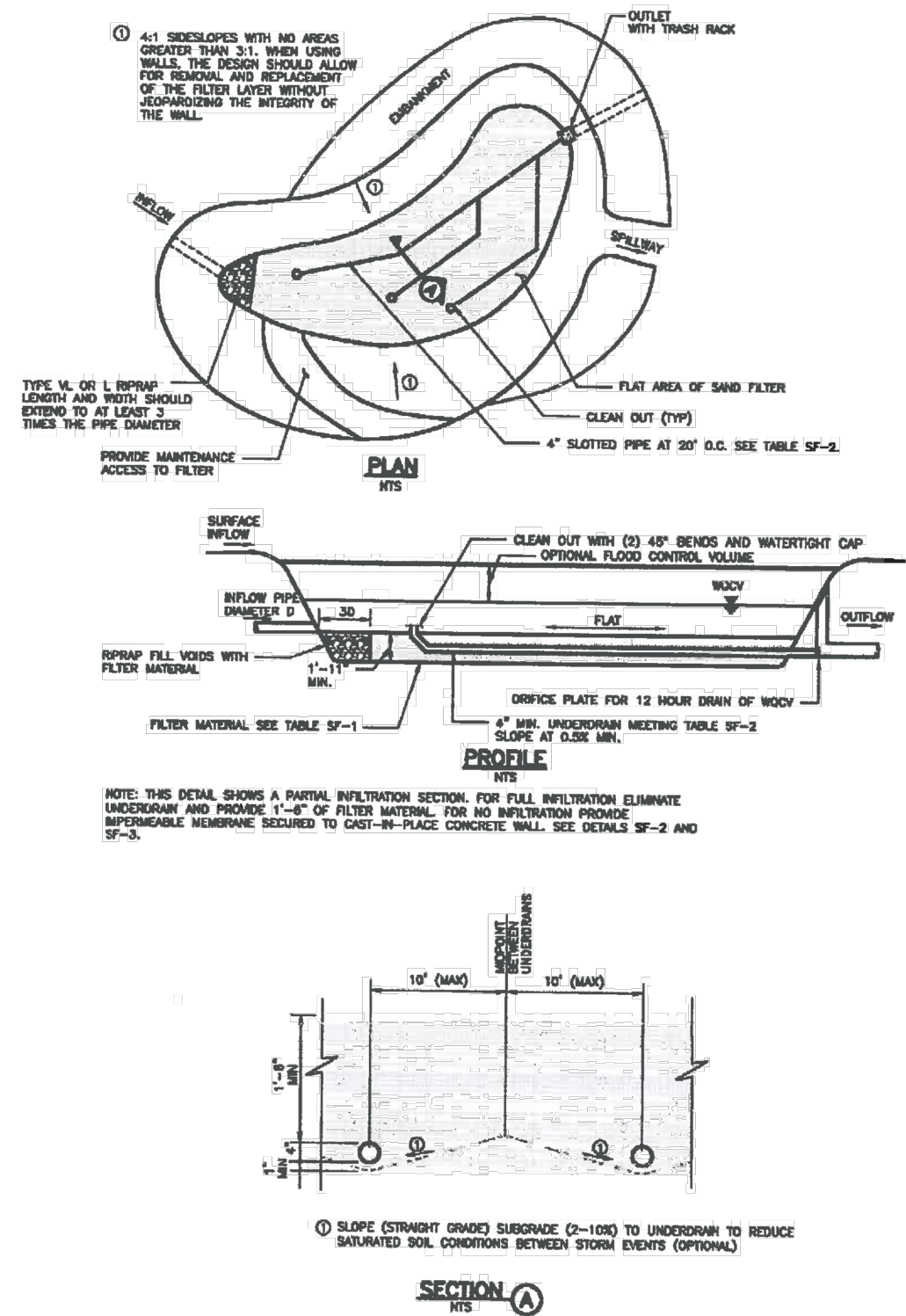


Figure SF-1. Sand Filter Plan and Sections

SF-8

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

November 2015

CLAREMONT BUSINESS PARK 2 FILING NO. 1

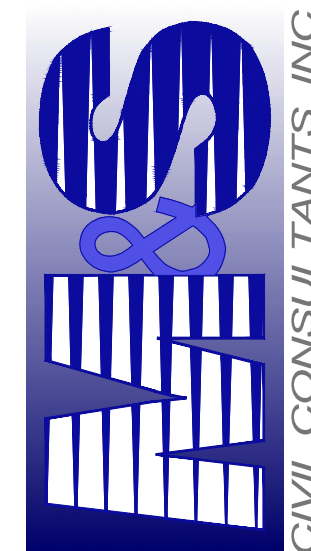
OUTLET STRUCTURE POND 2 DETAILS

DATE: 10/21/2020

SHEET 9 OF 12

ST05

102 E. Pikes Peak Ave., 5th Floor  
Colorado Springs, CO 80903  
Phone: 719.555.5485



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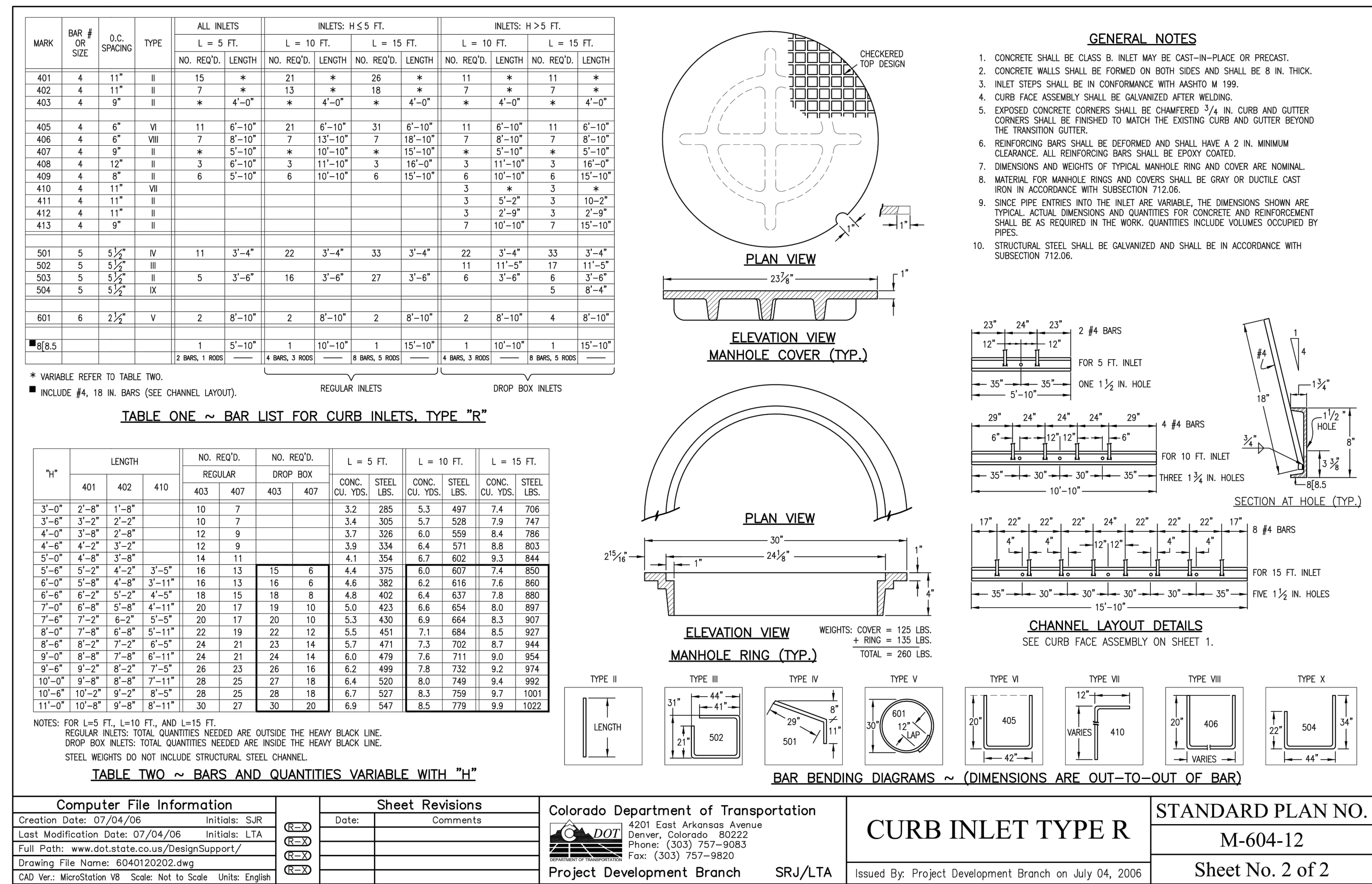
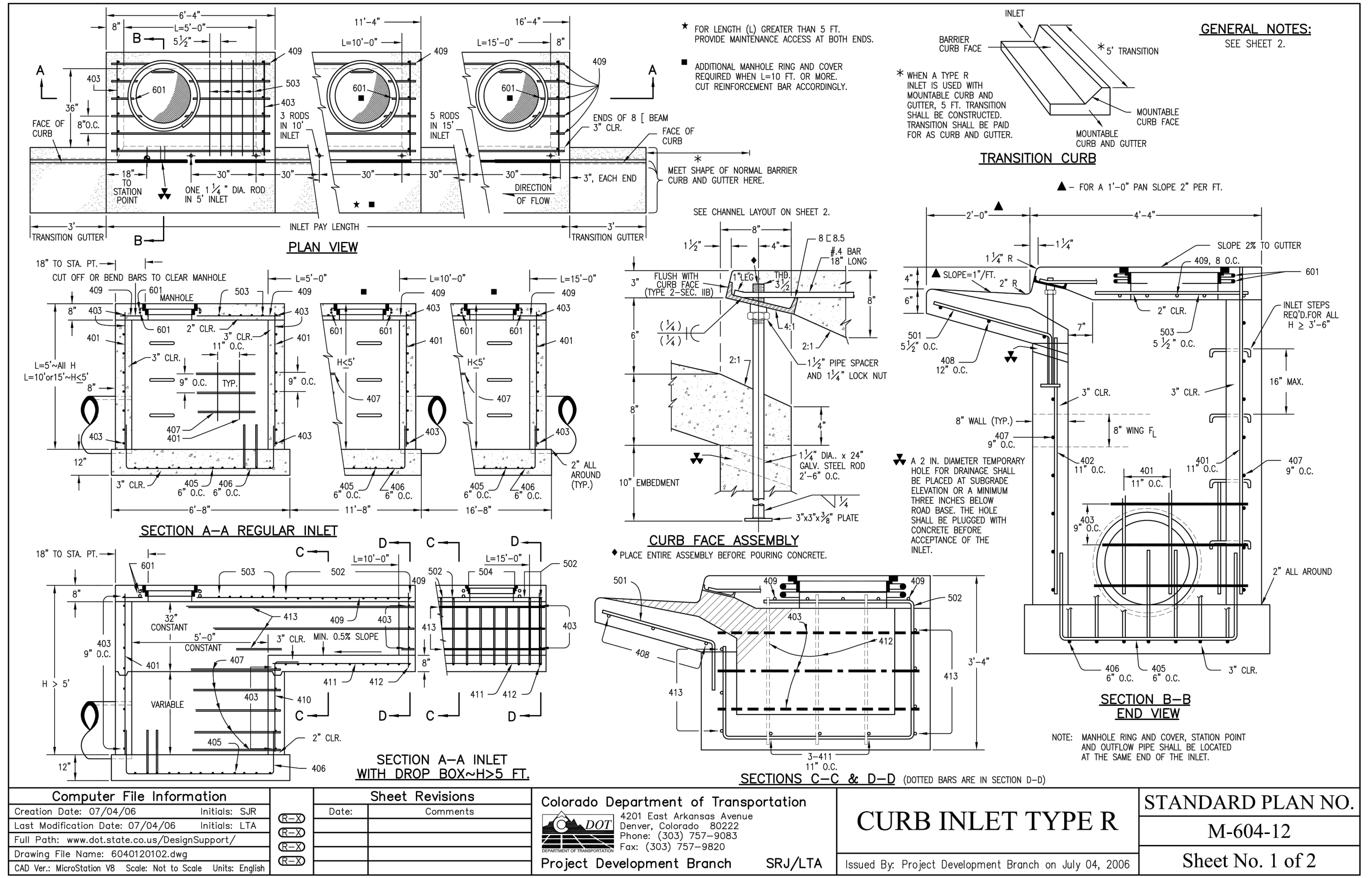
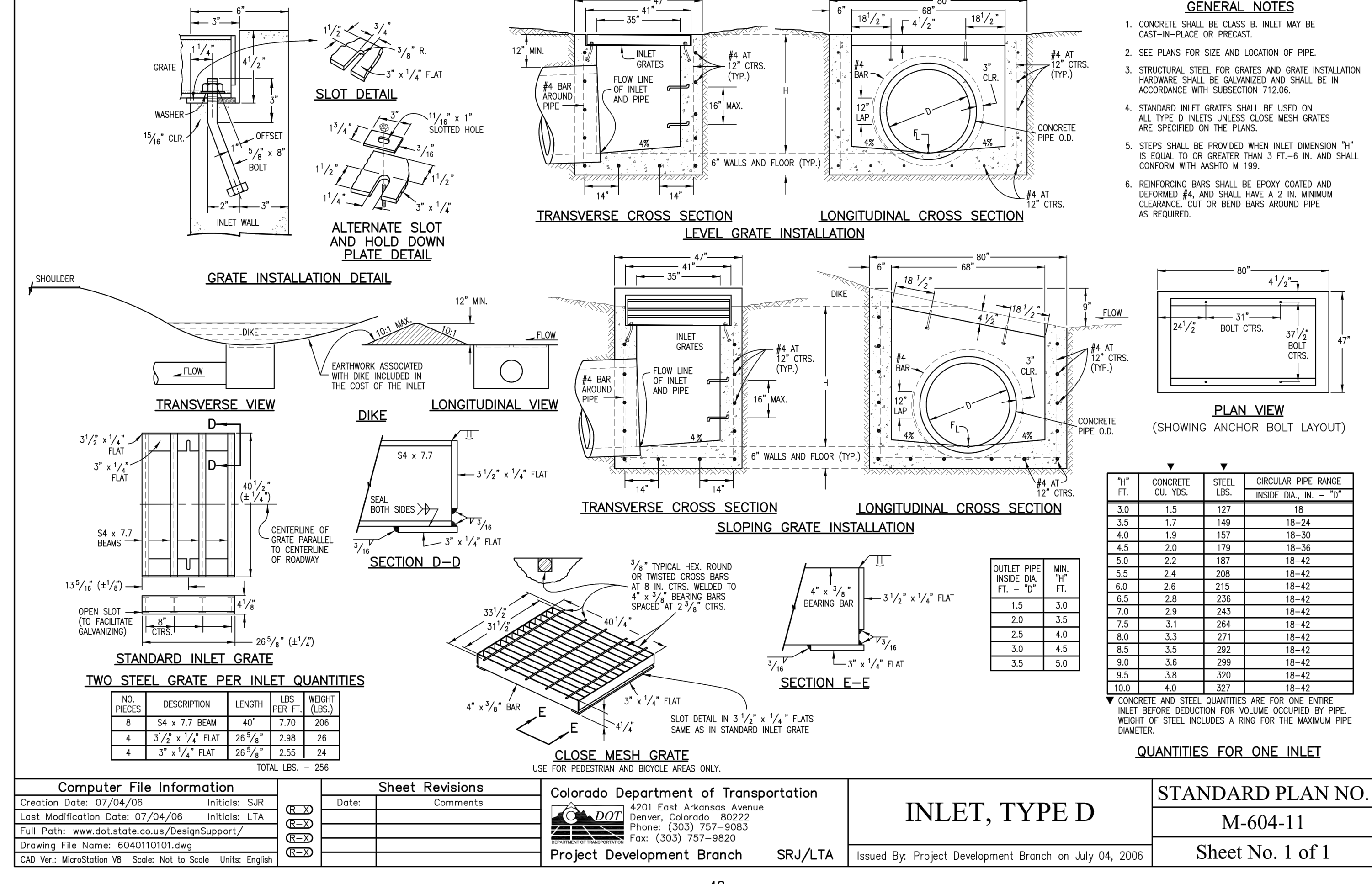
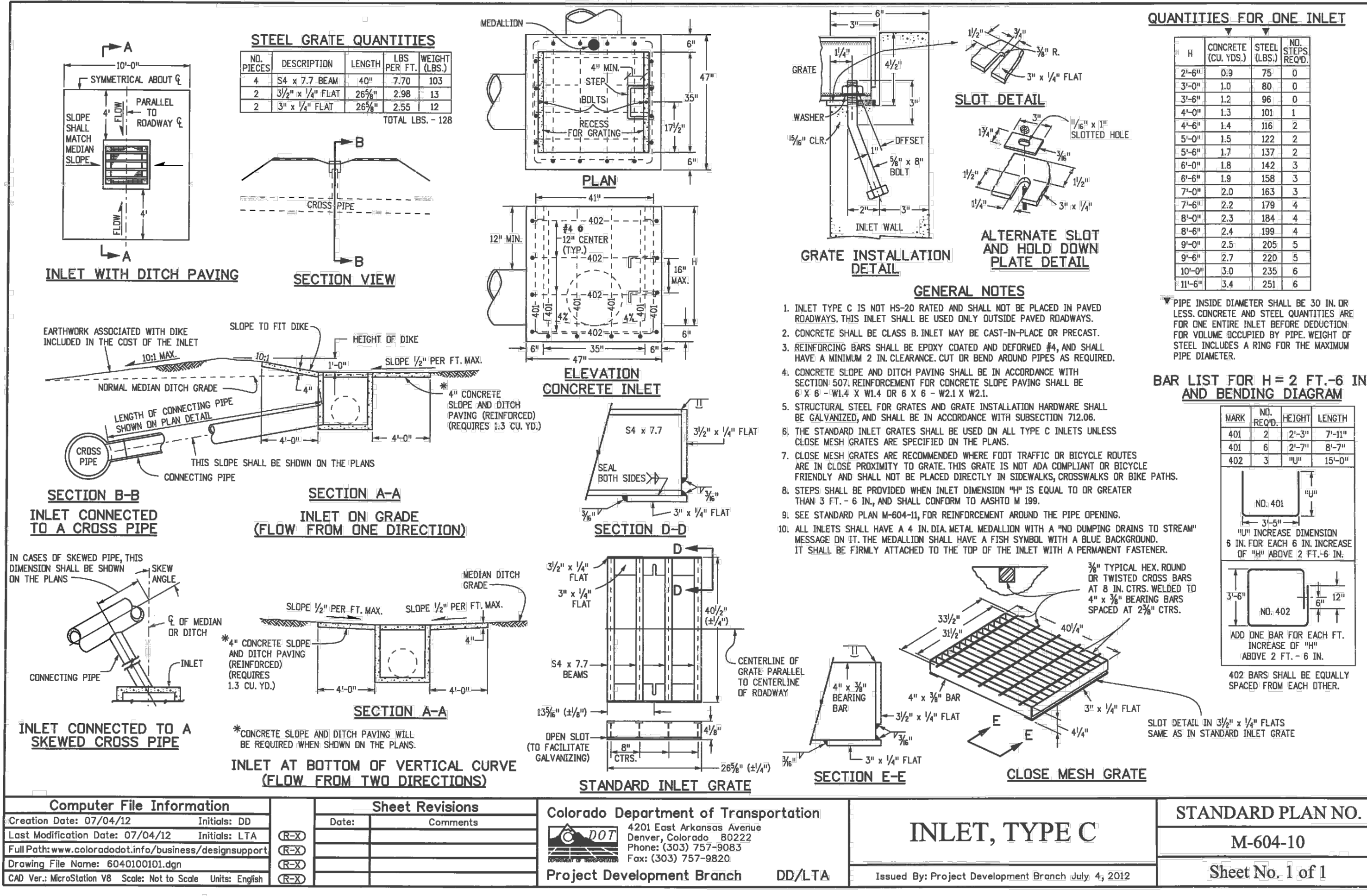
MARCIL A. SANCHEZ, COLORADO P.E. NO. 37160

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 PREPARER OF THESE PLANS.

CAUTION



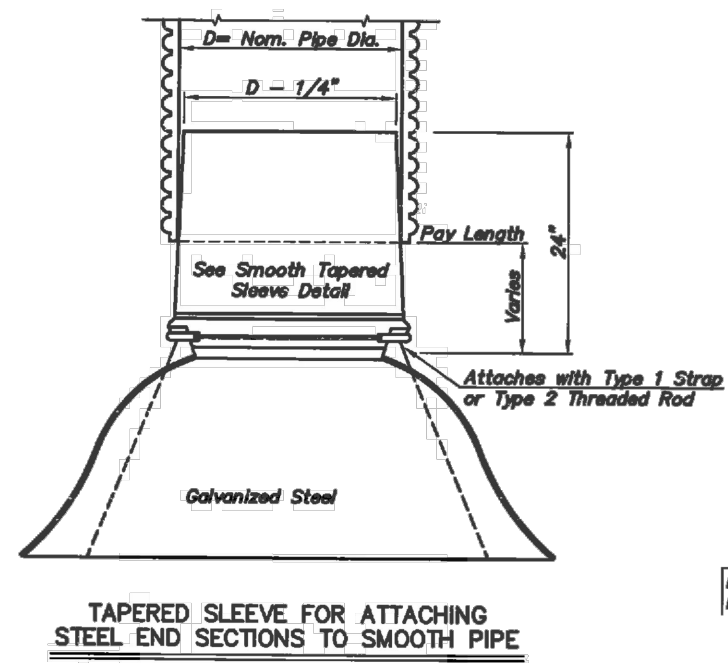


END SECTIONS FOR HDPE PIPE										
Dia.	Gauge	Weight	* A	* H	* L	* W	Slope	Overall Width		
6"	18	10	4	3	8	12	2	20"		
8"	14	5 3/4	4	14 1/2	16	2 1/4	27 1/2"			
10"	17	7 5/8	6	14 1/2	20	2 1/2	35 1/4"			
12"	18	25	7	0	21	24	2 1/2	36"		
15"	18	33	8	6	28	30	2 1/2	40"		
18"	18	42	8	6	31	36	2 1/2	52"		
21"	18	49	9	6	36	42	2 1/2	60"		
24"	18	65	10	6	41	48	2 1/2	68"		
30"	14	123	12	8	51	60	2 1/2	84"		
36"	14	135	14	9	60	72	2 1/2	100"		
42"	12	320	16	11	69	84	2 1/2	116"		
48"	12	375	18	12	78	90	2 1/4	126"		
54"	12	440	18	12	84	102	2 1/4	138"		
60"	12/10	610	18	12	87	114	2	150"		

Toe plate extensions where specified, to be punched to match holes in apron lip. 3/8" bolts to be furnished. The length of toe plate to be as follows: W + 10" for 12" to 30" diameter pipe inclusive. W + 20" for 36" to 60" diameter pipe inclusive.

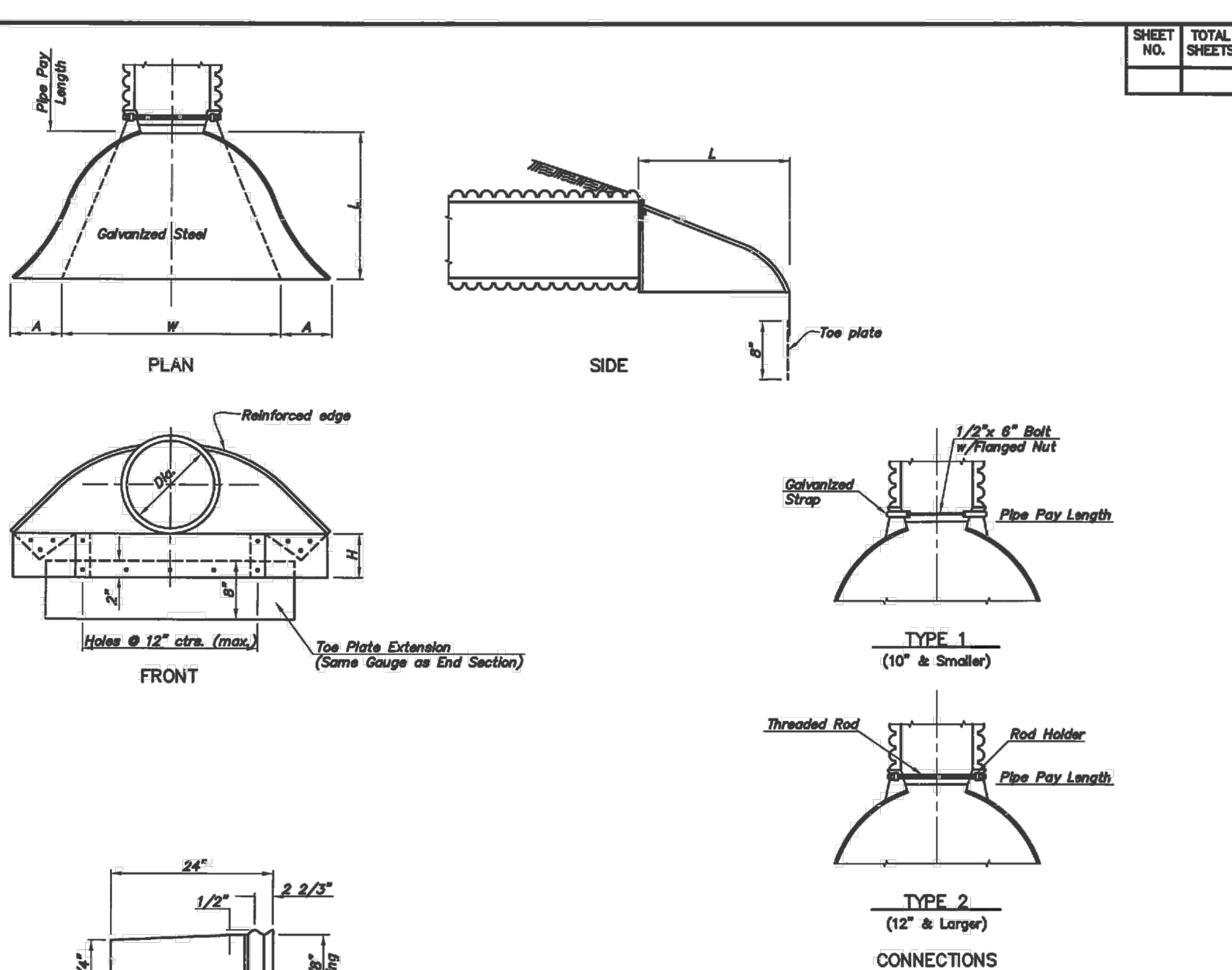
Multiple panel and sections shall have lap seams which are to be tightly jointed by bolts. Corner plate, and toe plate to be same gauge as end section.

\* - Dimensions in Inches Plus or Minus Standard Shop Tolerance.



NOTE: Metal to be 12 Gauge Smooth Inside Diameter of Sleeve.

SMOOTH TAPERED SLEEVE DETAIL



TYPE 2 (12\"/>

CONNECTIONS

No.	Date	Revisions

STANDARD END SECTION FOR HDPE PIPES

## ADS HP STORM 12\"/>

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

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

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

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

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

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

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

Installation  
Installation shall be in accordance with ASTM D3231 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% SP) or Class 3 (minimum 85% material. Maximum fill heights depend 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-ns.com](http://www.ads-ns.com) for a copy of the latest installation guidelines.

Pipe Diameter, in (mm)	12 (300)	15 (380)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Minimum pipe wall thickness, in (mm)	0.1875 (4.76)	0.21875 (5.56)	0.25 (6.35)	0.3125 (7.92)	0.375 (9.52)	0.4375 (11.18)	0.5 (12.7)	0.5625 (14.33)	0.625 (15.88)

Minimum pipe wall thickness values listed, constant is representative for maximum values.

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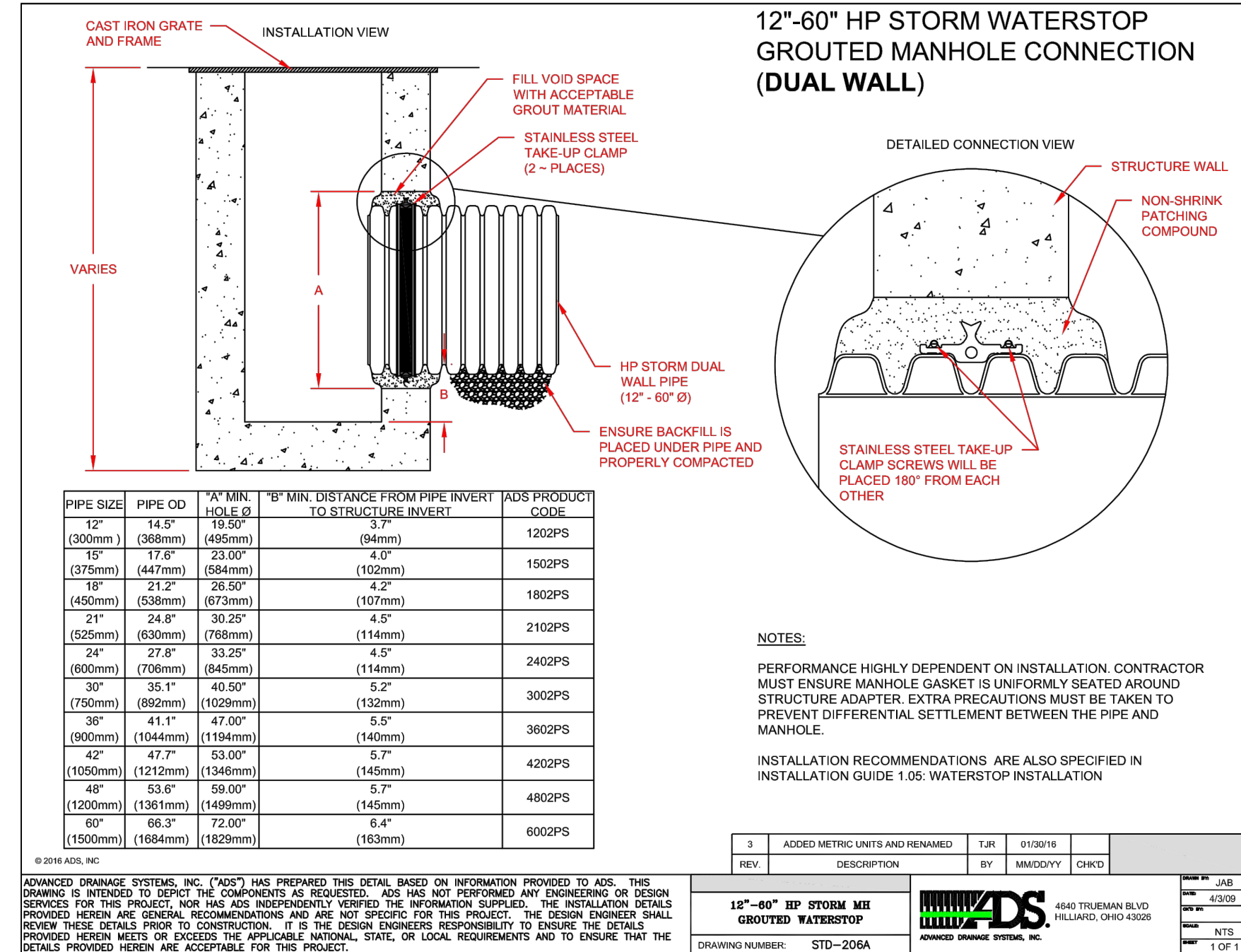
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PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST ENSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

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

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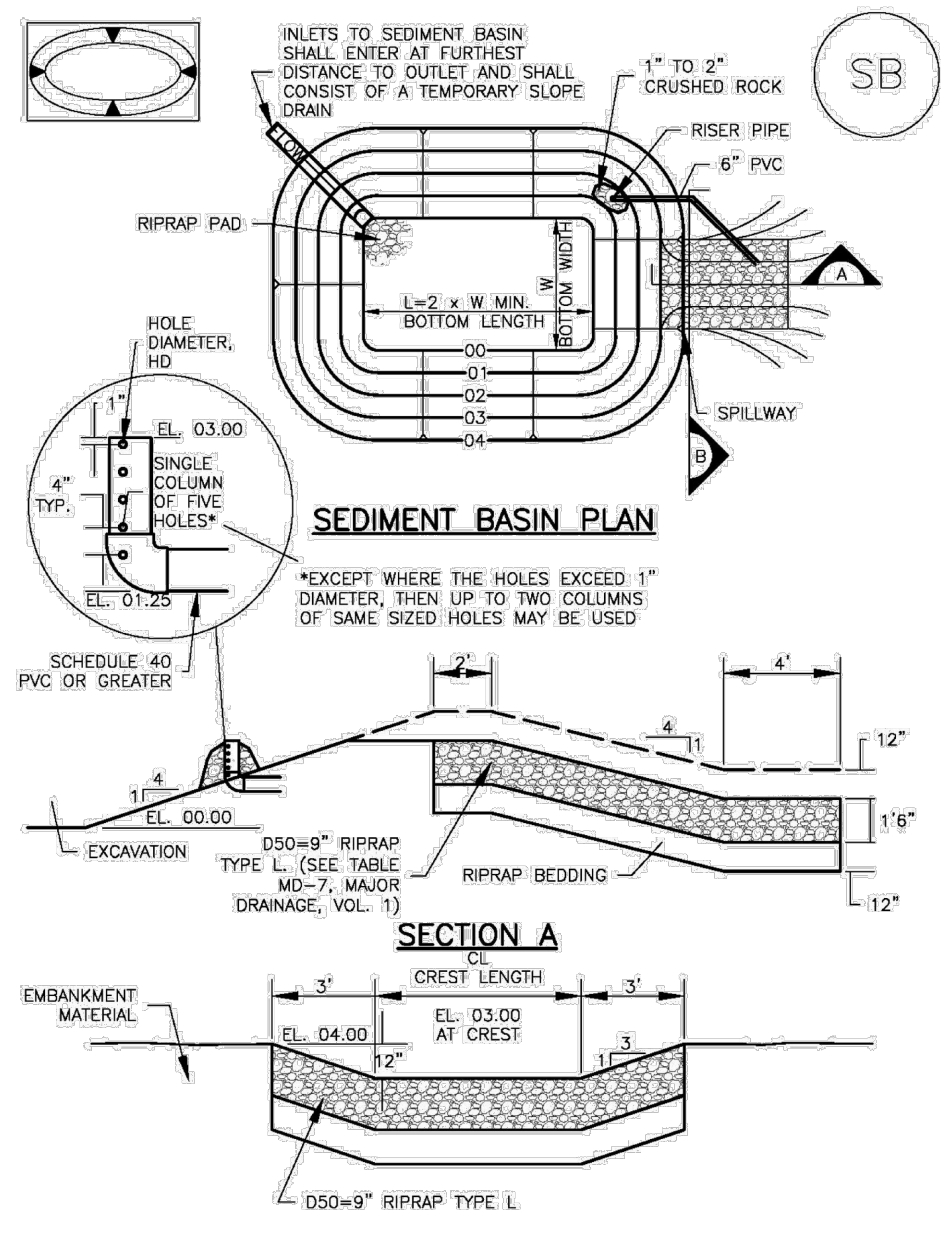
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## Sediment Basin (SB)

## SC-7



## SC-7

## Sediment Basin (SB)

Upstream Drainage Area (rounded to nearest acre), (ac)	Basin Bottom Width (W), (ft)	Spillway Crest Length (CL), (ft)	Hole Diameter (D), (in)
1	12 1/2	2	8 1/2
2	21	3	10 1/2
3	28	4	12 1/2
4	33 1/2	5	14 1/2
5	38 1/2	6	16 1/2
6	43	7	18 1/2
7	47 1/2	8	20 1/2
8	51	9	22 1/2
9	55	10	24 1/2
10	58 1/2	11	26 1/2
11	61	12	28 1/2
12	64	13	30 1/2
13	67 1/2	14	32 1/2
14	70 1/2	15	34 1/2
15	73 1/2	16	36 1/2

## SEDIMENT BASIN INSTALLATION NOTES

- SEE PLAN VIEW FOR:
  - LOCATION OF SEDIMENT BASIN
  - TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN)
  - FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, D.
  - FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER D, AND PIPE DIAMETER D.
- FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
- SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON BASINS AS A STORMWATER CONTROL.
- EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.
- EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
- PIPE SCH 40 OR GREATER SHALL BE USED.
- THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

## Sediment Basin (SB)

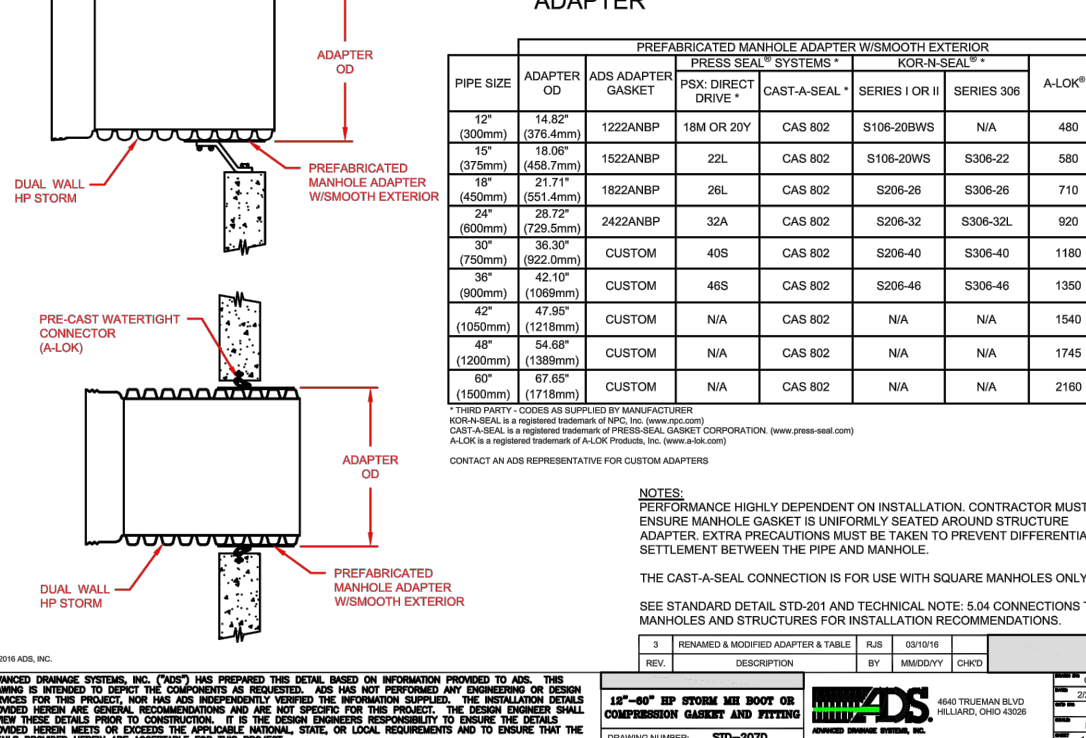
## SC-7

## SEDIMENT BASIN MAINTENANCE NOTES

- INSPECT EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (0.3 METERS) BELOW THE SPILLWAY CREST.
- SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION.
- WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

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

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



PIPE SIZE (in)	ADAPTER (in)	MANHOLE BOOT (in)	PRECAST COMPRESSION GASKET (in)	PREFABRICATED ADAPTER (in)
12"	12"	12"	12"	12"
15"	15"	15"	15"	15"
18"	18"	18"	18"	18"
24"	24"	24"	24"	24"
30"	30"	30"	30"	30"
36"	36"	36"	36"	36"
42"	42"	42"	42"	42"
48"	48"	48"	48"	48"
60"	60"	60"	60"	60"

NOTE: THE CAST-IN-PLACE CONNECTION IS FOR USE WITH SQUARE MANHOLES ONLY. THE CAST-IN-PLACE CONNECTION IS NOT TO BE USED FOR ROUND MANHOLES.

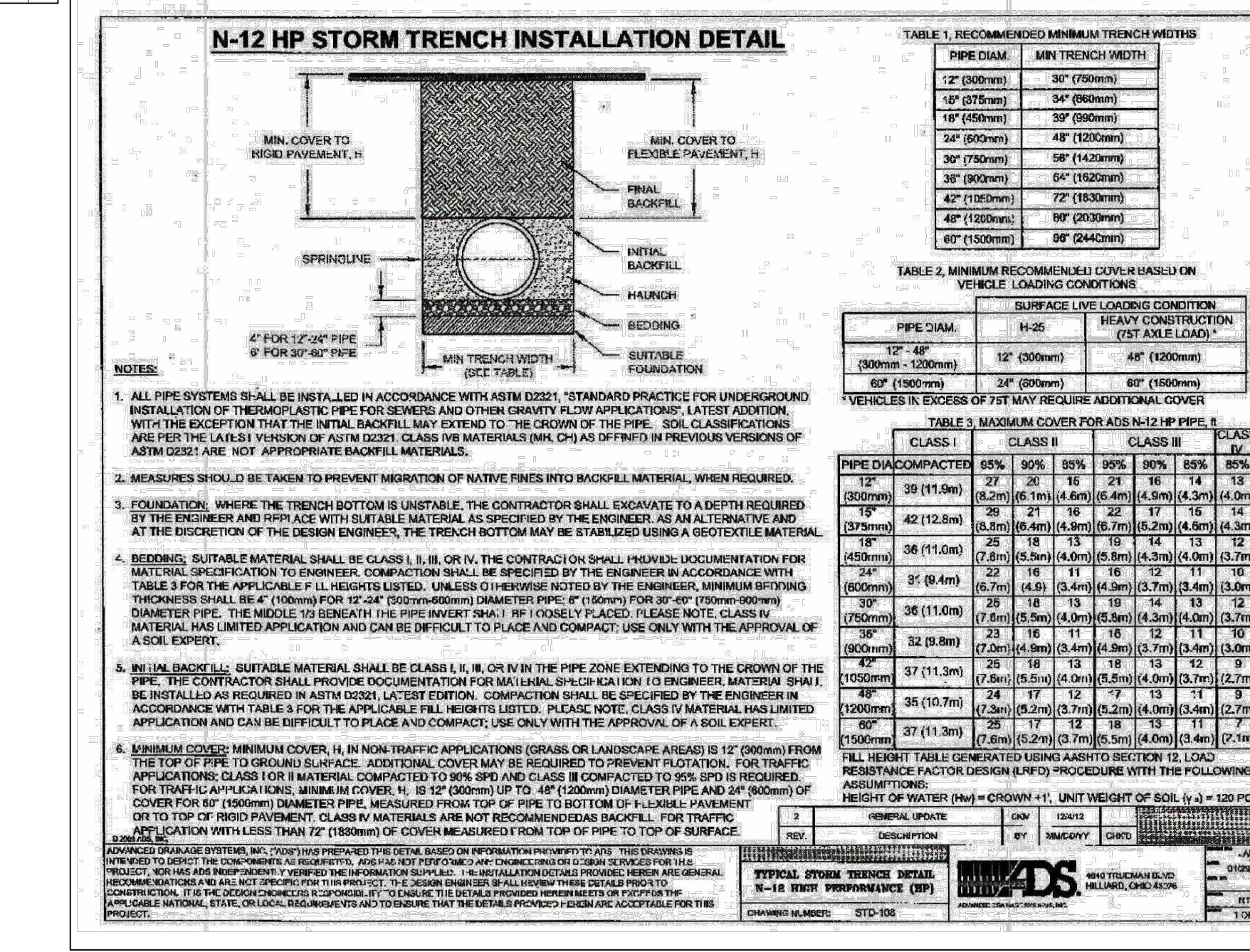
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