

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

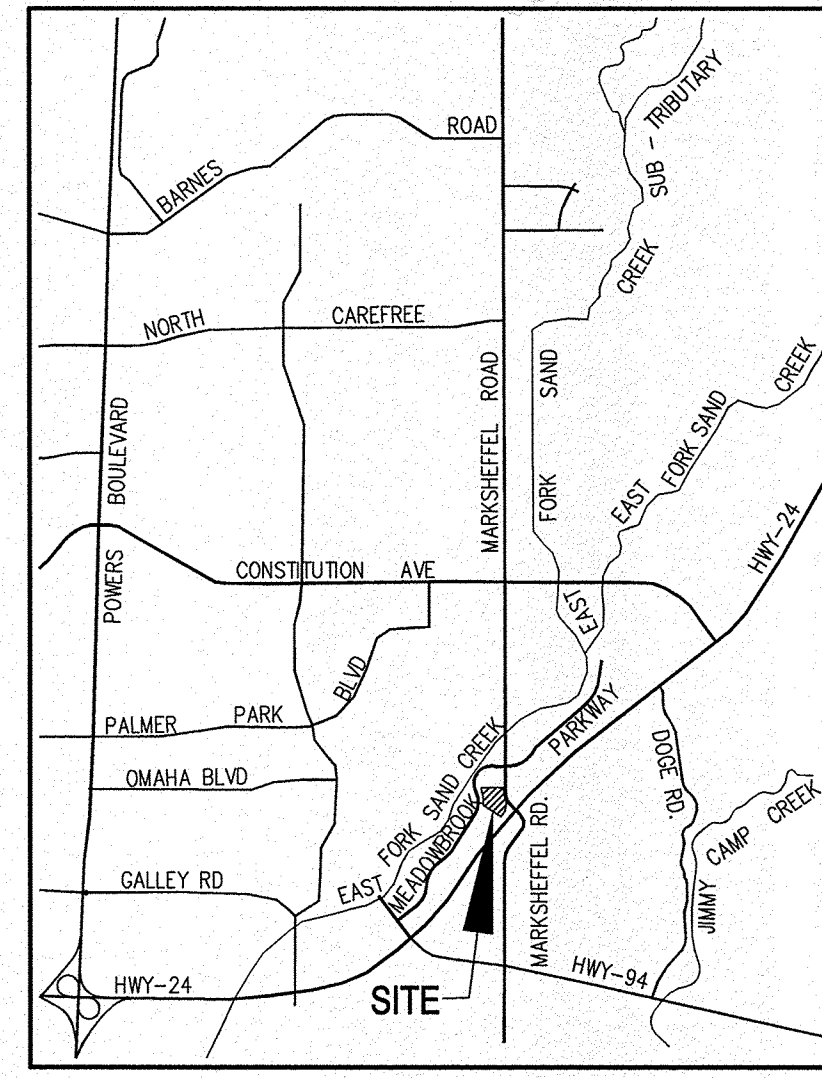
WATER RESOURCES: CHEROKEE METROPOLITAN DISTRICT
6250 PALMER PARK BOULEVARD
COLORADO SPRINGS, CO 80915-1721
JEFF MUNGER
(719) 597-5080

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

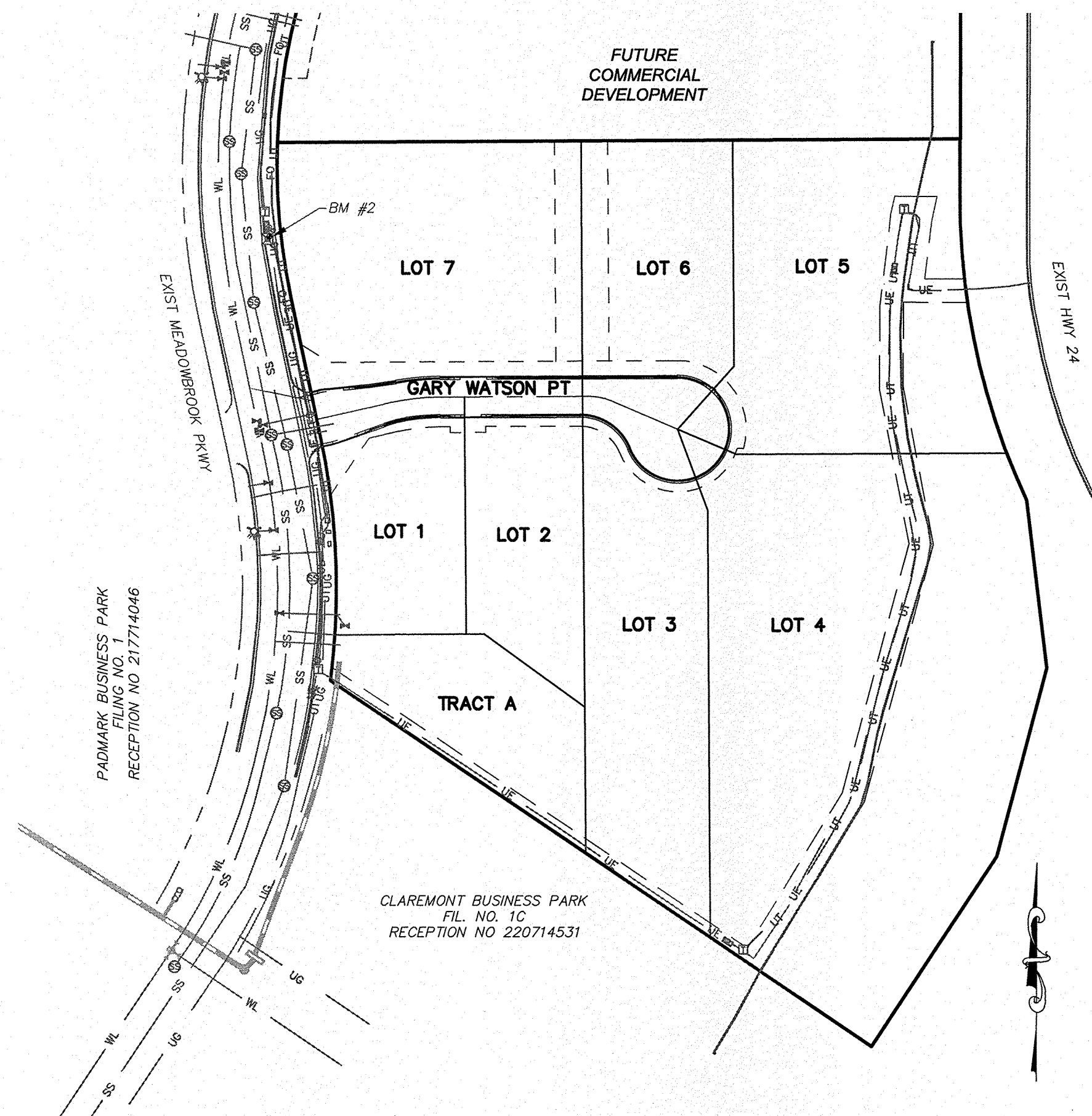
GAS DEPARTMENT: COLORADO SPRINGS UTILITIES
7710 DURANT DR.
COLORADO SPRINGS, CO 80947
TIM WENDT (719) 668-3556

ELECTRIC DEPARTMENT: MOUNTAIN VIEW ELECTRIC
11140 E. WOODMEN ROAD
FALCON, CO 80831
(719) 495-2283

COMMUNICATIONS: QWEST COMMUNICATIONS
(U.N.C.C. LOCATORS) (800) 922-1987
AT&T (LOCATORS) (719) 635-3674



VICINITY MAP
N.T.S.



SITE MAP
N.T.S.

**AS-BUILT
ENGINEERING RECORD DRAWINGS**

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]
1/18/2021
DATE

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.

**APPROVED
Engineering Department**

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

02/11/2021 7:51:15 AM
dsdnijkamp
**EPC Planning & Community
Development Department**

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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: BW
DRAWN BY: CLP
CHECKED BY: VMS
SHEET 1 OF 12
S101

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

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF
M&S CIVIL
CONSULTANTS,
INC.

NO.	DATE	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

File: C:\44037A-CBP-F2-Lots 1-8\44037A-CBP-F2-Lots 1-8.dwg (Cont. Dwg) \STREET AND STORM\SI01.dwg Plotstamp: 10/21/2020 10:29 AM

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

GENERAL CONSTRUCTION NOTES:

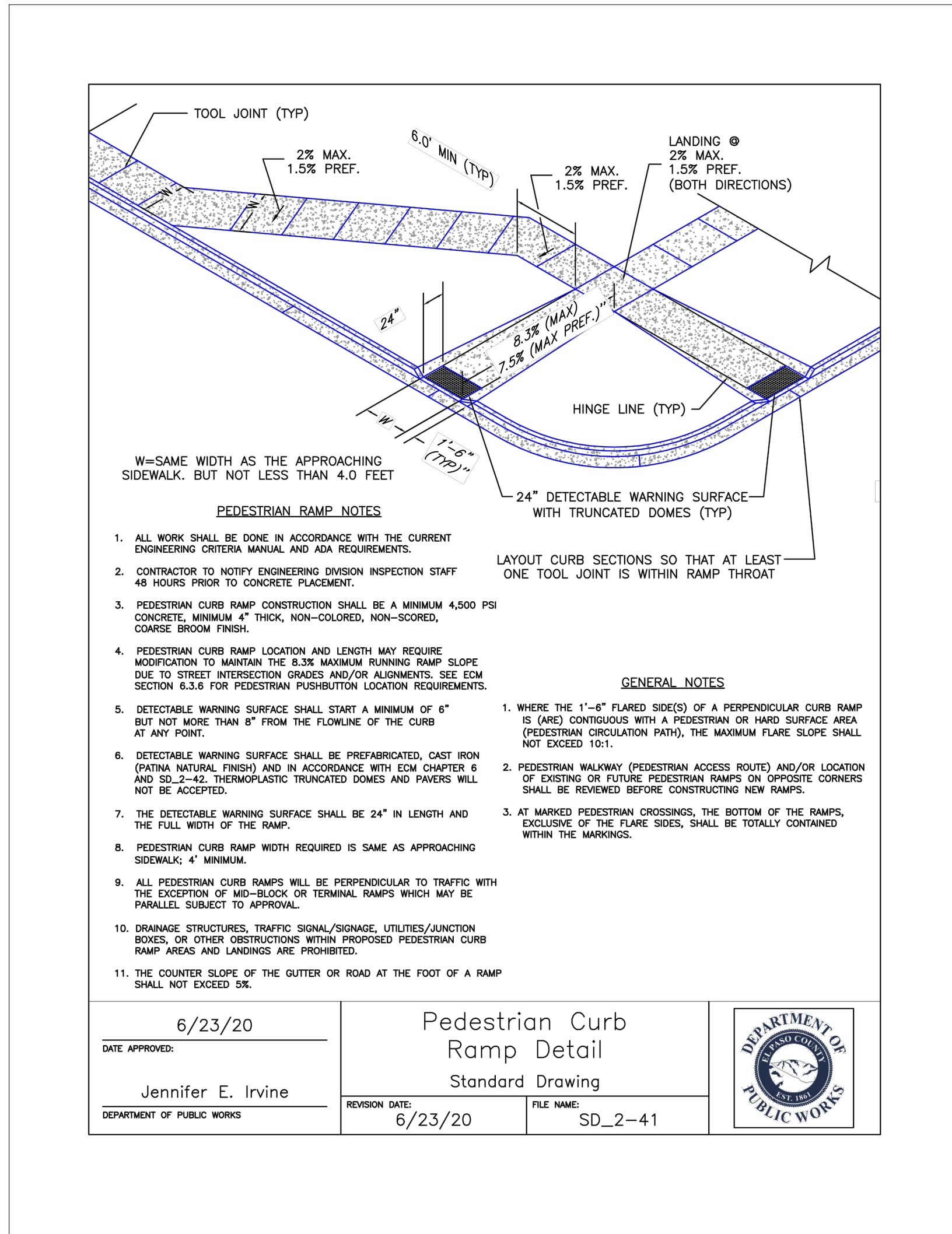
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND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

SIGNING AND STRIPING NOTES:

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

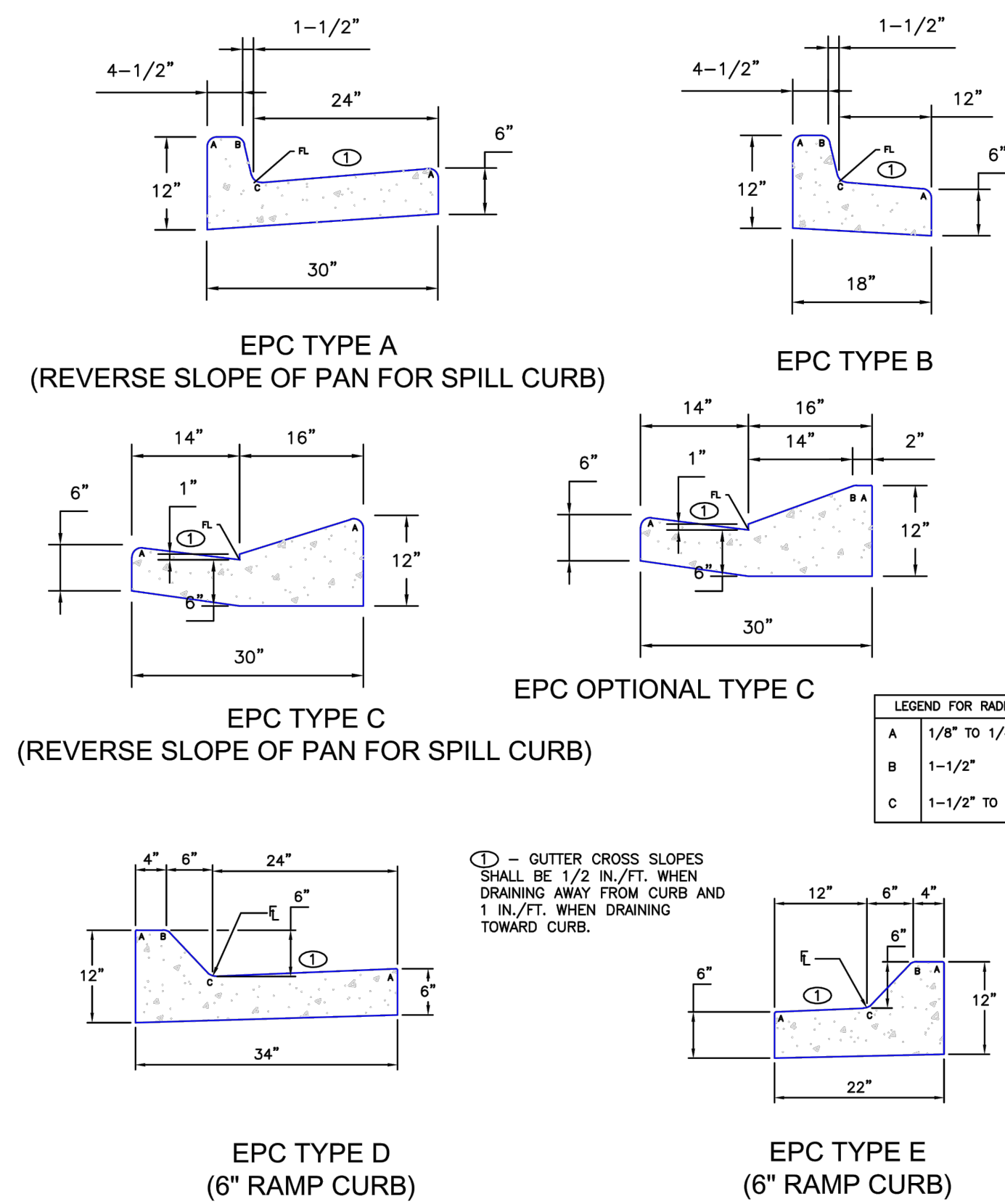
STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

- 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 ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PCD - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTION 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 PAVEMENT.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DPW AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DPW, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.

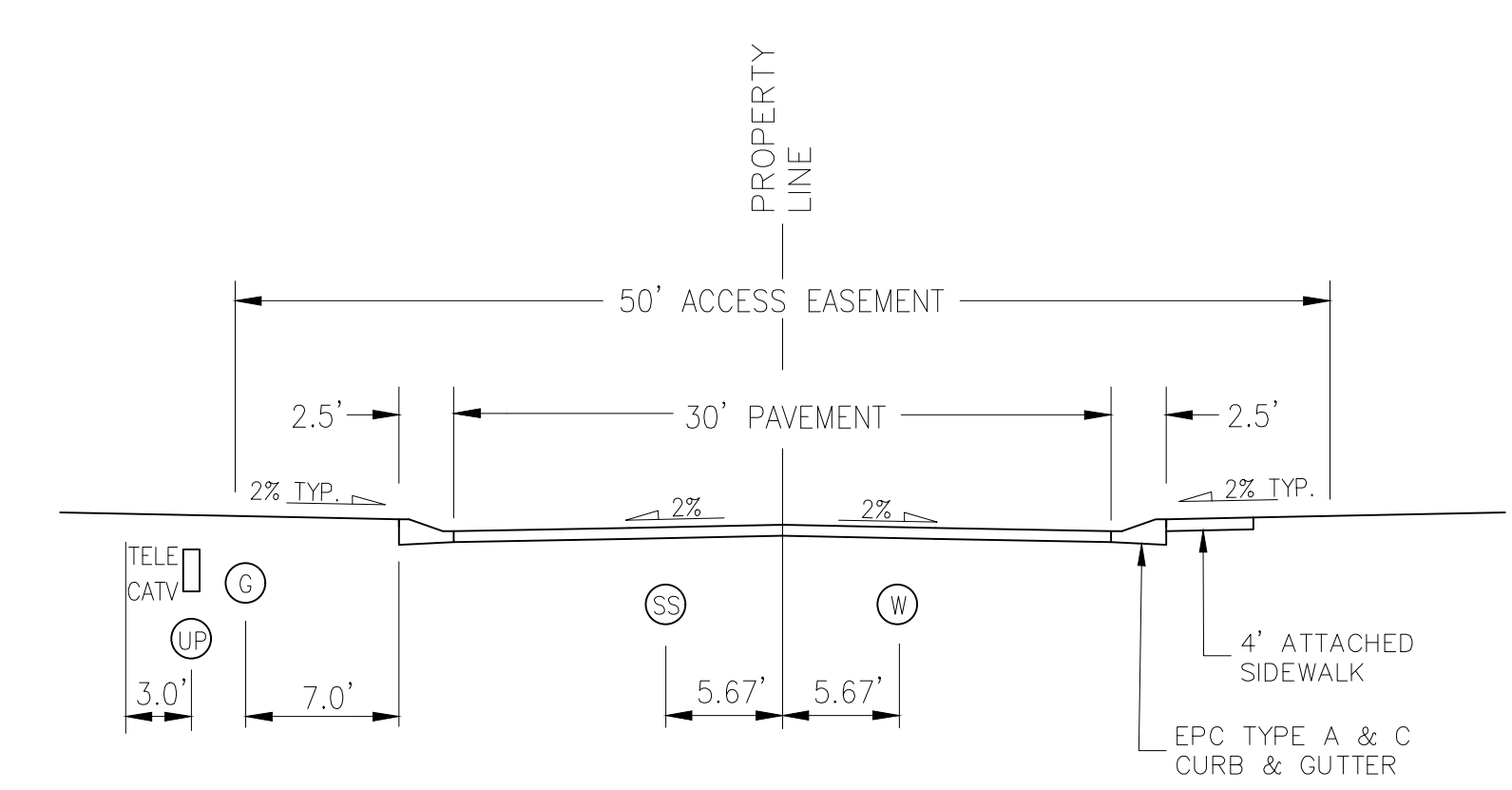


SPECIAL NOTE:

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



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



URBAN LOCAL CROSS SECTION (PRIVATE)
SCALE: NTS

POSTED SPEED 25 MPH
DESIGN SPEED 35 MPH

**AS-BUILT
ENGINEERING RECORD DRAWINGS**



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CLAREMONT BUSINESS PARK 2 FILING NO. 1

NOTE & DETAIL SHEET

PROJECT NO. 44-037 FILE: \ang\Const\Eng\Street Plans\S102.dwg DATE: 10/21/2020

DESIGNED BY: GW SCALE: N/A

DRAWN BY: CLP HORIZ: N/A

CHECKED BY: VAS VERT: N/A

SHEET 2 OF 12

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.

APPROVED BY: DATE:

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

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ABBREVIATION LEGEND

- C-C CENTERLINE INTERSECTION
- F-F 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

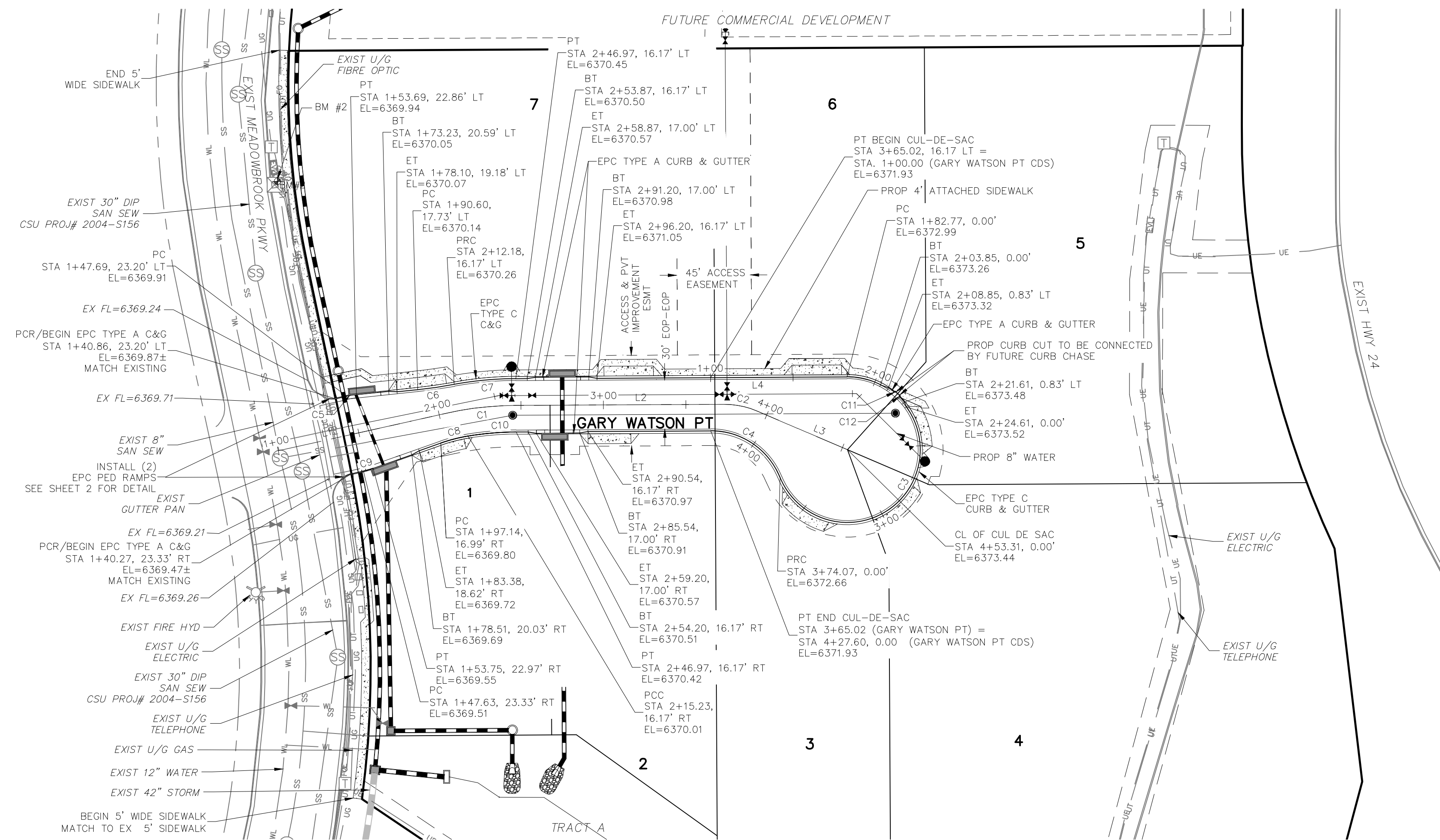
LINE	LENGTH	DIRECTION
L1	104.00'	N77°22'44"E
L2	125.98'	N89°41'23"E
L3	59.87'	S66°49'29"E

CURVE	RADIUS	LENGTH	DELTA
C1	200.00'	42.97'	121°8'39"
C2	50.00'	20.50'	23°29'08"

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

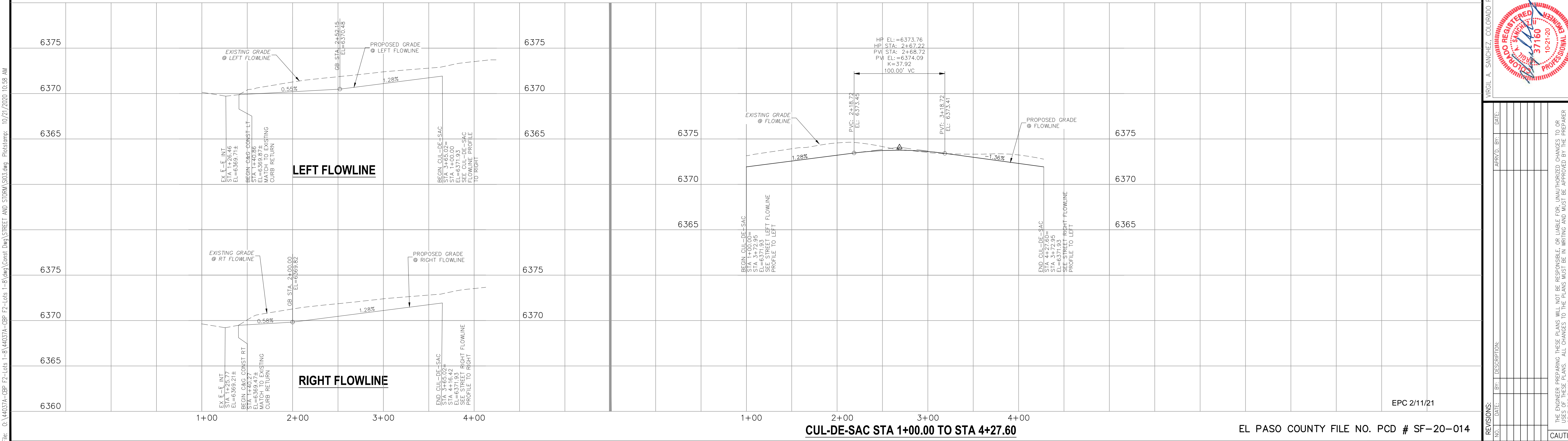
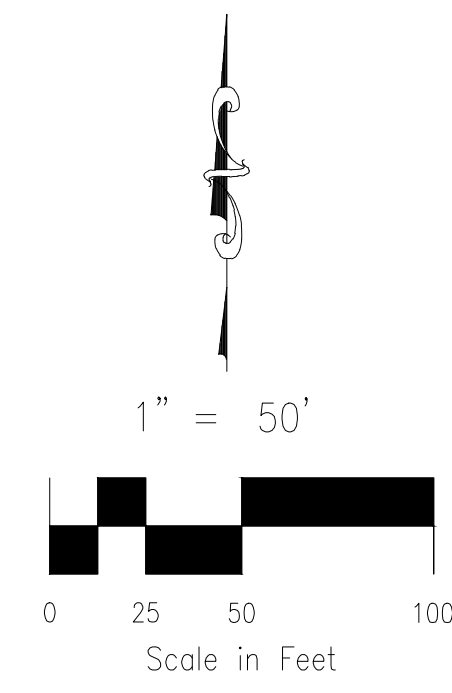
CURVE	RADIUS	LENGTH	DELTA
C3	44.17'	191.30'	248°09'48"
C4	45.00'	53.54'	68°09'48"

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°



**GARY WATSON PT
 (PRIVATE)**

**AS-BUILT
 ENGINEERING RECORD DRAWINGS**



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

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

REVISIONS:

NO.	DATE	BY	DESCRIPTION

APPROVED BY: _____ DATE: _____

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

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CAUTION

102 E. Pikes Peak Ave. Suite 500
 Colorado Springs, CO 80903
 PHONE: 719.555.4485

CIVIL CONSULTANTS, INC.

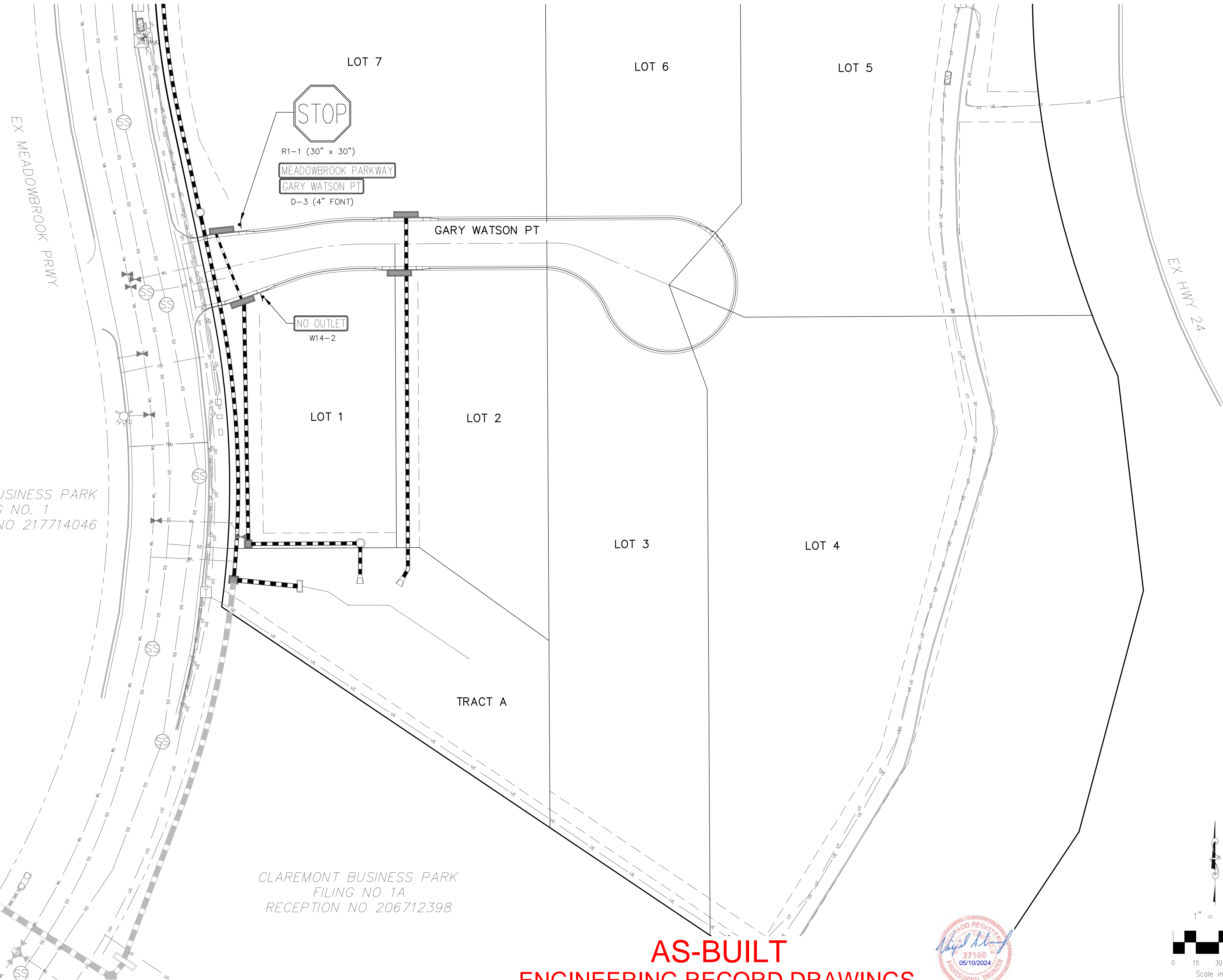
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File: C:\440374-CBP-FZ-Lots 1-8\440374-CBP-FZ-Lots 1-8.dwg Corel Draw\STREET AND STORM\S04.dwg PlotStamp: 10/21/2020 11:02 AM

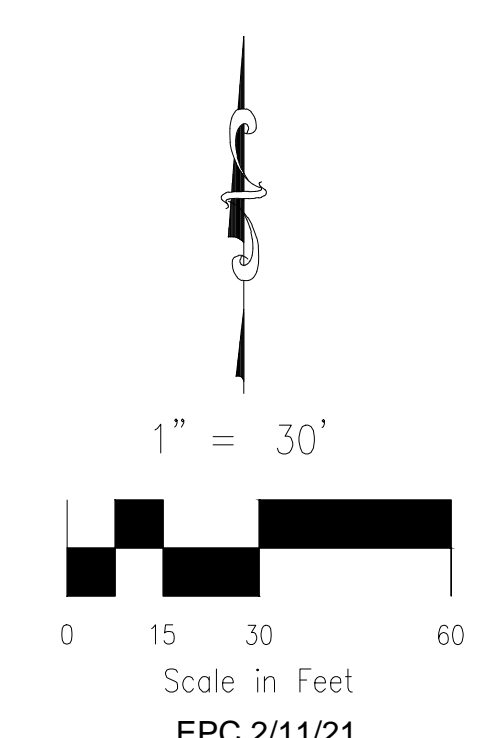
PADMARK BUSINESS PARK
FILING NO. 1
RECEPTION NO 217714046

CLAREMONT BUSINESS PARK
FILING NO 1A
RECEPTION NO 206712398

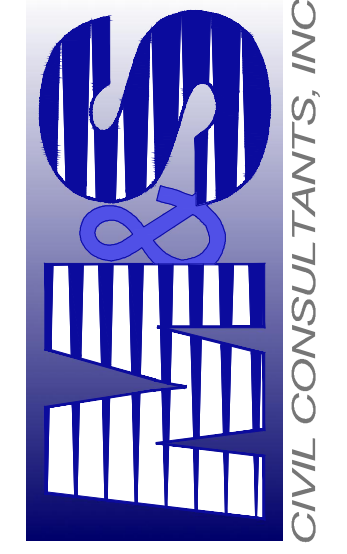

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AS-BUILT ENGINEERING RECORD DRAWINGS



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

CLAREMONT BUSINESS PARK 2 FILING NO. 1 SIGNAGE AND STRIPING PLAN		PROJECT NO. 44-037 DATE: 10/21/2020	SCALE: HORIZONTAL: N/A VERTICAL: N/A	SHEET 4 OF 12 S104
102 E. PILES PEAK AVE. SUITE 500 COLORADO SPRINGS, CO 80903 PHONE: 719.555.5485				
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.				
REVISIONS: NO. DATE BY DESCRIPTION APPROV. BY DATE	THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.			
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 - 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 (f_c) OF 4,000 PSI AT 28 DAYS. ALL CONCRETE PLACED AGAINST SOIL SHALL BE TYPE II PORTLAND CEMENT. ALL EXPOSED CORNERS SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS OTHERWISE SPECIFIED.
- 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



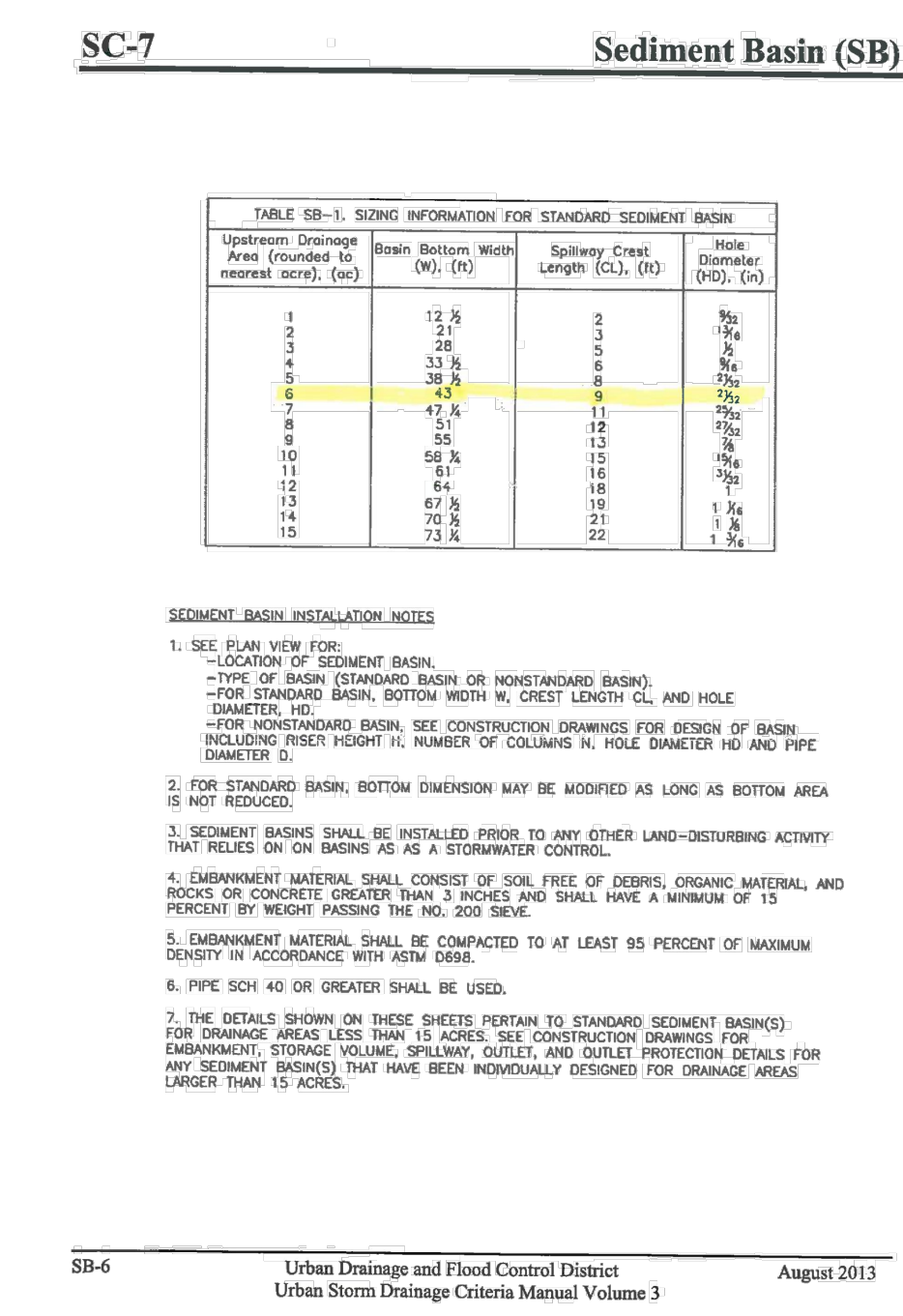
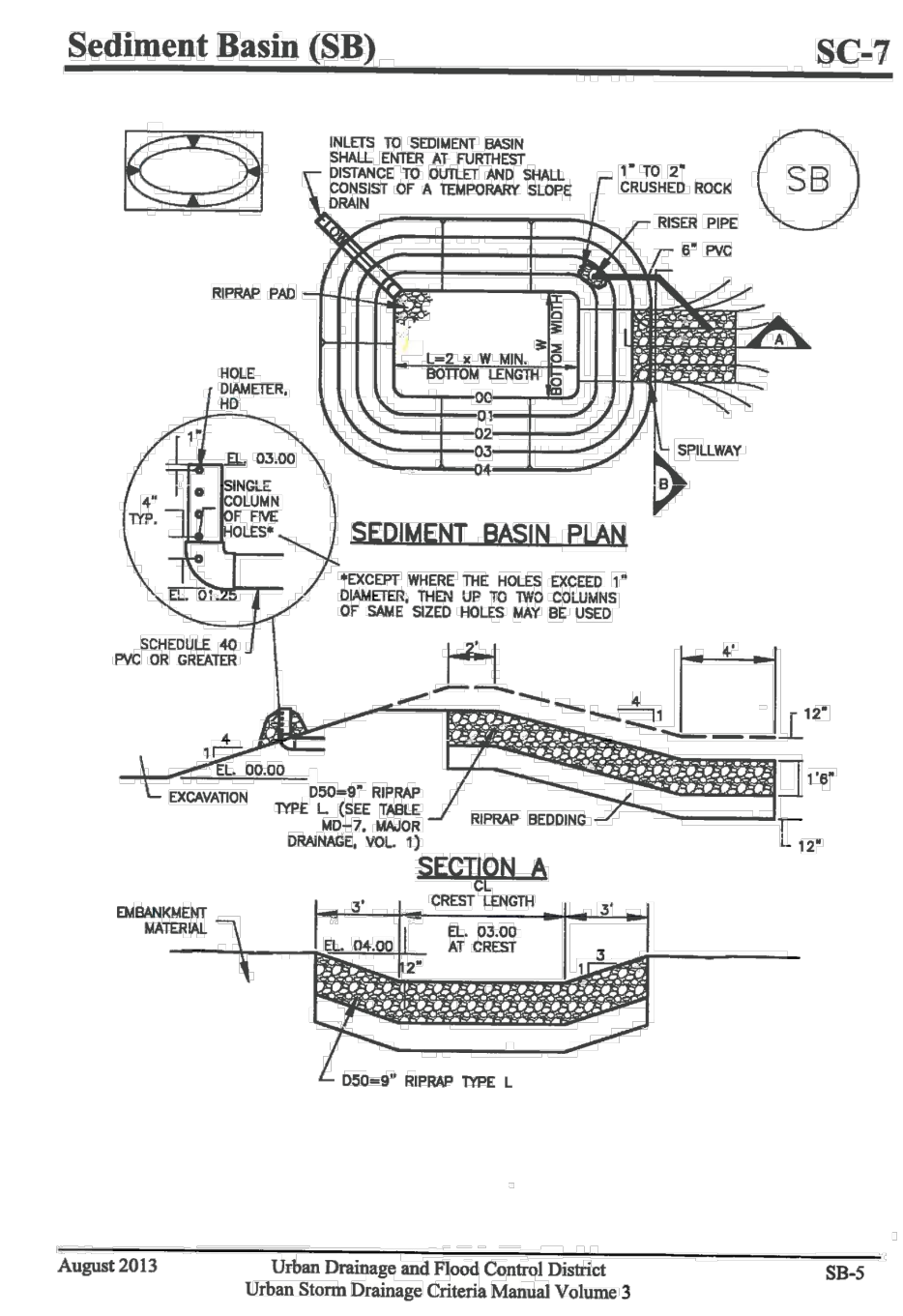
CLAREMONT BUSINESS PARK 2 FILING NO. 1

GENERAL NOTES AND DETAILS

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

DESIGNED BY: GW SCALE: N/A
 DRAWN BY: CLP HORIZ: N/A
 CHECKED BY: VAS VERT: N/A

ST01
 SHEET 5 OF 12



AS-BUILT ENGINEERING RECORD DRAWINGS



Material and Performance Specification Sheet

SC150 Erosion Control Blanket

The extended-term double net erosion control blanket shall be a machine-produced mat of 70% agricultural straw and 30% coconut fiber with a functional longevity of up to 24 months. (NOTE: Functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with even weight distributed over the entire area of the mat. The blanket shall be covered on the top side with a heavyweight photodegradable polypropylene netting having ultraviolet additives to delay breakdown and an approximate 0.83 x 0.83 (1.59 x 1.59 cm) mesh, and on the bottom side with a lightweight photodegradable polypropylene netting with an approximate 1.59 x 0.59 in (1.27 x 1.27 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread.

The SC150 shall meet requirements established by the Erosion Control Technology Council (ECTC) Specification and the US Department of Transportation, Federal Highway Administration's (FHWA) Opened Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03 Section 713.17 as a type 3.B Extended-term Erosion Control Blanket.

The SC150 is also available with the DOT System™, which consists of installation staple patterns clearly marked on the erosion control blanket with environmentally safe paint. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-6 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

Material	Material Content	Quantity
Mat	70% Straw Fiber	0.26 (dry wt) (0.19 kg/m²)
	30% Coconut Fiber	0.15 (dry wt) (0.09 kg/m²)
Netting	1.59" x 1.59" photodegradable with UV additives	3.0 lb/1000 ft² (1.47 kg/100 m²)
	Lightweight photodegradable	1.5 lb/1000 ft² (0.73 kg/100 m²)
Thread	Degradable	1.5 lb/1000 ft² (0.73 kg/100 m²)

SC150 is available in the following standard roll sizes:

Width	Length	Weight ± 10%	Area
6.67 ft (2.03 m)	16 ft (4.87 m)	108 lb (49.0 kg)	107.37 sq ft (9.93 m²)
4.4 ft (1.34 m)	44 ft (13.41 m)	108 lb (49.0 kg)	193.74 sq ft (17.86 m²)

Performance Design Values:

Property	Test Method	Typical Results
Thickness	ASTM D625	0.39 in (9.91 mm)
Resiliency	ECTC Guidelines	1.7%
Water Absorbency	ASTM D1117	285%
Manhole Area	ASTM D615	114.4 sq ft (10.6 m²)
Swirl	ECTC Guidelines	30%
Smaller Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D338	1.11 inch
Light Penetration	ECTC Guidelines	8.7%
Tensile Strength-MD	ASTM D618	1.65 lb/ft (2.17 kN/m)
Dimensional Change-MD	ASTM D618	26.9%
Tensile Strength-TD	ASTM D618	147.8 lb/ft (2.19 kN/m)
Elongation-TD	ASTM D618	26.2%

Branch Scale Testing (NTPP):

Test Method	Parameters	Results
ECTC Method 2	150 mm (2.0 in) for 30 min	S ₆₀ = 4.47
	150 mm (6.0 in) for 30 min	S ₆₀ = 4.47
ECTC Method 3	150 mm (6.0 in) for 30 min	S ₆₀ = 4.48
ECTC Method 4	Shear at 500 inch soil loss	2.72 inch
ECTC Method 4	Top Soil, Fescue, 21 day incubation	53% improvement of biomass

Product Participant of: **DOOR**

The open channel flow calculator

Select Channel Type: Trapezoid

Velocity (V) & Discharge (Q): Select unit system: Feet (ft)

Channel slope: 0.23 Water depth (h): 2.61 ft Bottom width (b): 12.5 ft

Flow velocity: 4.1514 ft/s Left Slope (Z1): 4 to 1 (H:V) Right Slope (Z2): 10 to 1 (H:V)

Flow discharge: 46.9078 ft³/s Input n value: 0.035 or select n

Wetted perimeter: 21.87 ft Top width (T): 21.75 ft

Flow area: 11.32 ft² Flow status: Subcritical flow

Specific energy: 0.93 ft Froude number: 1.01 Velocity head: 0.27 ft

Critical depth: 0.87 ft Critical slope: 0.0221 ft/ft Velocity head: 0.24 ft

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The open channel flow calculator

Select Channel Type: Trapezoid

Velocity (V) & Discharge (Q): Select unit system: Feet (ft)

Channel slope: 0.1 Water depth (h): 0.87 ft Bottom width (b): 2 ft

Flow velocity: 3.9153 ft/s Left Slope (Z1): 3 to 1 (H:V) Right Slope (Z2): 3 to 1 (H:V)

Flow discharge: 15.7029 ft³/s Input n value: 0.025 or select n

Wetted perimeter: 7.5 ft Top width (T): 7.22 ft

Flow area: 4.01 ft² Flow status: Subcritical flow

Specific energy: 1.11 ft Froude number: 0.93 Velocity head: 0.24 ft

Critical depth: 0.84 ft Critical slope: 0.0116 ft/ft Velocity head: 0.24 ft

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DP8 SWALE
Q100=15.7 cfs

POND 2 EMERGENCY SPILLWAY
Q100=46.9 cfs

TABLE 10-4
MAXIMUM PERMISSIBLE VELOCITIES FOR BARE CHANNELS WITH VARIOUS GRASS LININGS AND SLOPES

Channel Slope	Lining	Permissible Mean Channel Velocity ± (ft/sec)
0 - 5%	Sodded grass	7
	Bermudagrass	6
	Reed canarygrass	5
	Tall fescue	5
	Kentucky bluegrass	5
5 - 10%	Grass-legume mixture	4
	Red fescue	2.5
	Redtop	2.5
	Sericea lespedeza	2.5
	Annual lespedeza	2.5
Greater than 10%	Small grains (temporary)	2.5
	Sodded grass	4
	Bermudagrass	4
	Reed canarygrass	3
	Tall fescue	3
Greater than 10%	Kentucky bluegrass	3

• For highly erodible soils, decrease permissible velocities by 25%.

• Grass lined channels are dependent upon assurances of continuous growth and maintenance of grasses.

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D ₅₀ (INCHES)
TYPE VL	70 - 100	12	6
	50 - 70	8	
	30 - 50	6	
TYPE L	70 - 100	15	9
	50 - 70	10	
	30 - 50	8	
TYPE M	70 - 100	21	12
	50 - 70	16	
	30 - 50	12	
TYPE H	70 - 100	30	18
	50 - 70	24	
	30 - 50	18	

*D₅₀ = MEAN ROCK SIZE

102 E. Pikes Peak Ave., Suite 500
 Colorado Springs, CO 80903
 Phone: 719.555.5485

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

REGISTERED PROFESSIONAL ENGINEER
 No. 37160
 10-21-20

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CAUTION

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 STORM SEWER PLAN & PROFILE
 PROJECT NO. 44-037
 DATE: 10/15/2020
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 DESIGNED BY: GW
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 CHECKED BY: VAS
 SHEET 6 OF 12
 ST02

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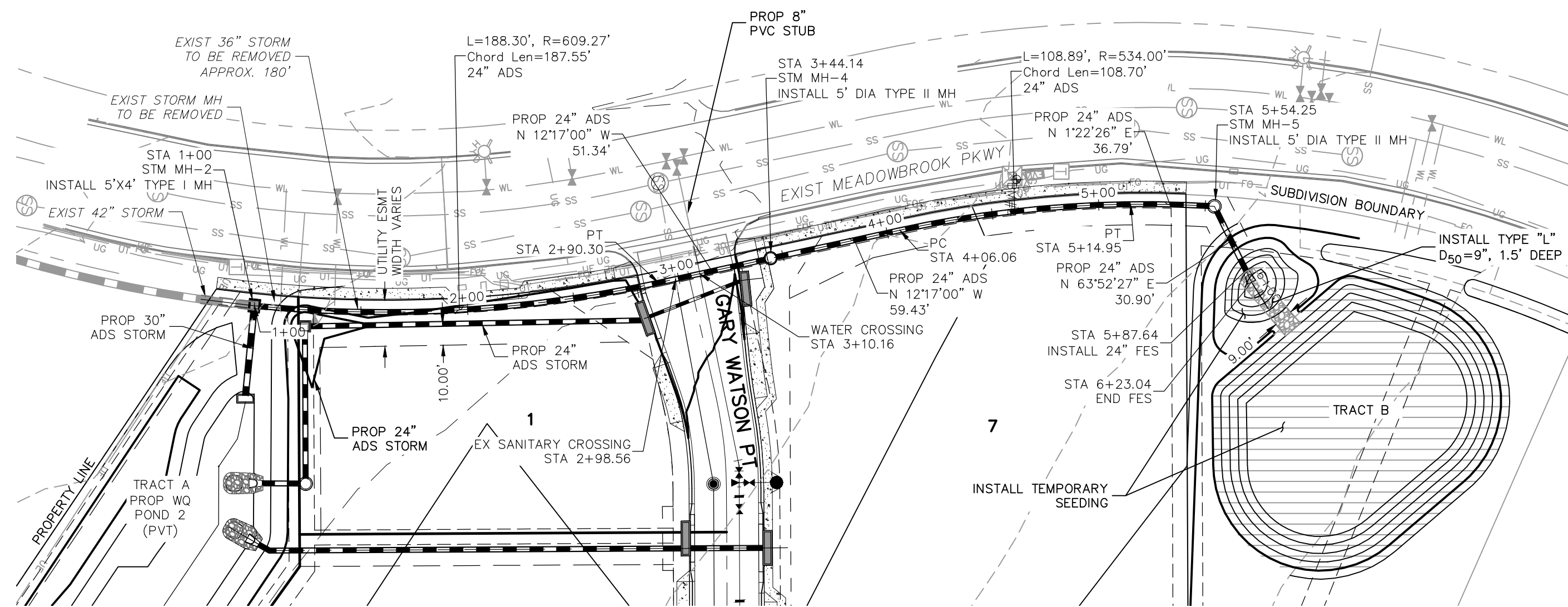
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 VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

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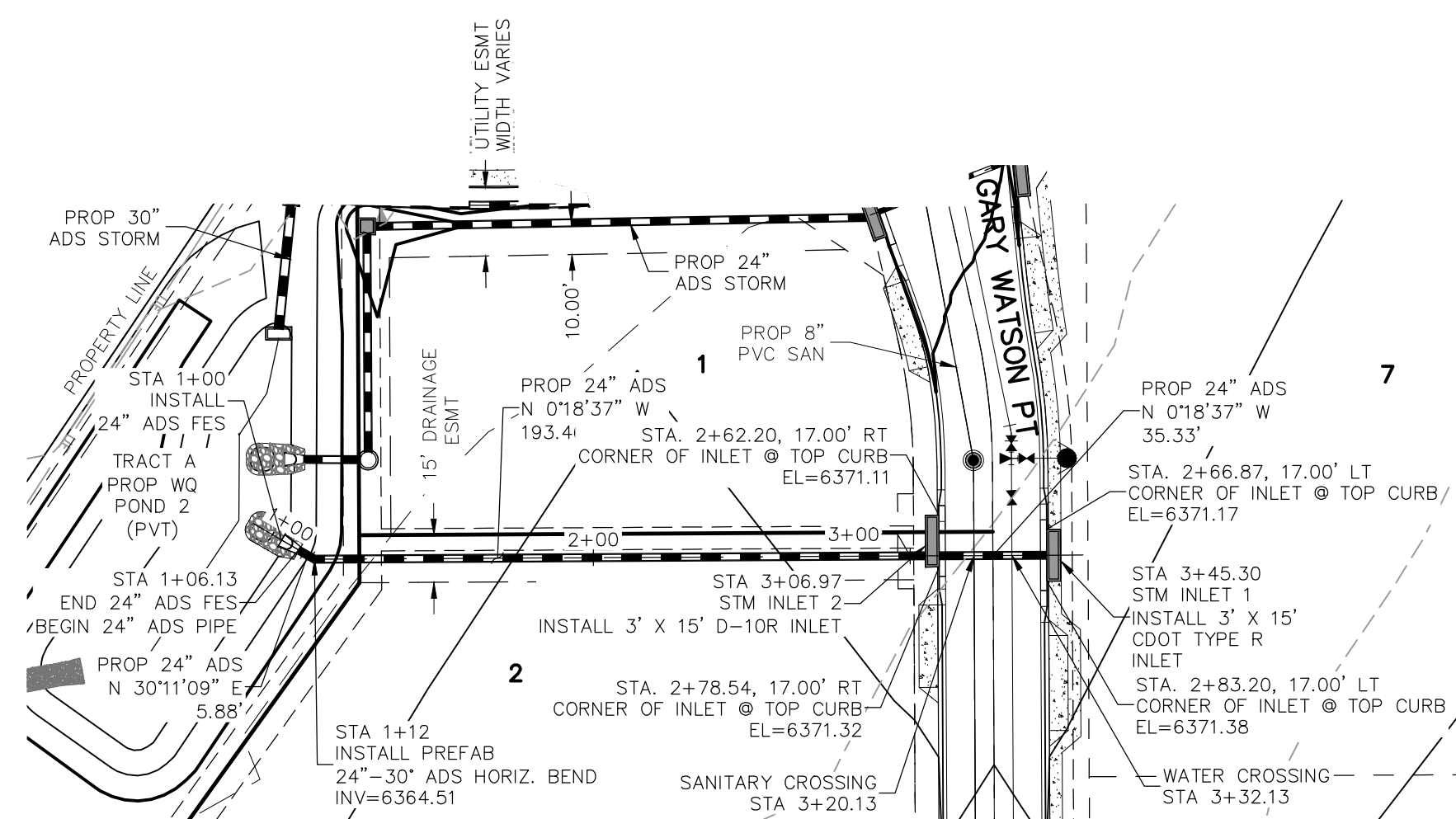
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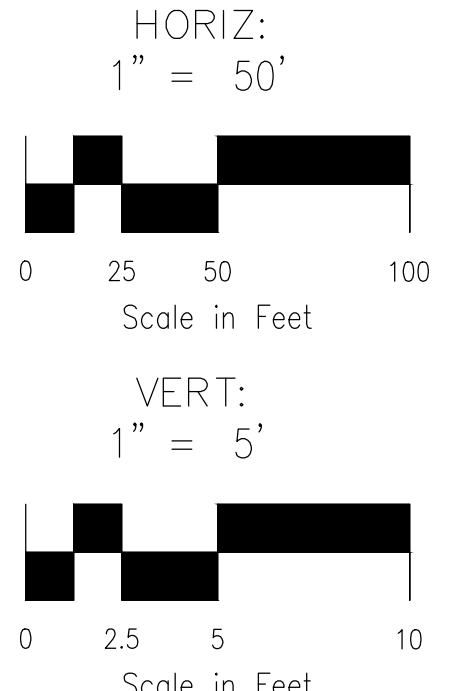


STORM 5
 STA 1+00.00 TO STA 5+92.88
 (PRIVATE)

**AS-BUILT
 ENGINEERING RECORD DRAWINGS**



STORM 7
 STA 1+00.00 TO STA 3+45.30
 (PRIVATE)



STATION	DESCRIPTION	PROPOSED GRADE	EXISTING GRADE	100 YEAR HGL	100 YEAR HGL
1+00	STA 1+00.00 STM MH-2 N 121°17'00" W 51.34' INV IN(24")=6358.50 (E) INV IN(24")=6358.87 (N) INV OUT(24")=6357.50 (S)	6375	6375	6375	6375
2+00	STA 2+90.30 PROP 24" ADS N 121°17'00" W 51.34' BOP (SIM)=6359.69 TOP (SAN)=6357.73 CLR=1.96'	6375	6375	6375	6375
3+00	STA 3+10.16 PROP 24" ADS N 121°17'00" W 51.34' BOP (WT)=6363.58 TOP (SIM)=6362.08 CLR=1.50'	6375	6375	6375	6375
4+00	STA 3+44.14 STM MH-4 N 121°17'00" W 51.34' R=6370.81 INV IN(24")=6360.17 (N) INV IN(24")=6360.07 (S) INV OUT(24")=6360.07 (S)	6375	6375	6375	6375
5+00	STA 5+14.95 PROP 24" ADS N 63°52'27" E 30.90' BOP (SIM)=6364.48 TOP (SAN)=6364.48 CLR=0.00'	6375	6375	6375	6375
6+00	STA 5+48.25 STM MH-5 N 121°17'00" W 51.34' R=6370.81 INV IN(24")=6367.17 (S) INV OUT(24")=6367.17 (S)	6375	6375	6375	6375
7+00	STA 6+23.04 END FES	6375	6375	6375	6375
8+00	STA 1+06.13 END 24" ADS FES BEGIN 24" ADS PIPE	6365	6365	6365	6365
9+00	STA 1+06.13 END 24" ADS FES BEGIN 24" ADS PIPE	6365	6365	6365	6365
10+00	STA 1+12 INSTALL PREFAB 24"-30" ADS HORIZ. BEND INV=6364.51	6365	6365	6365	6365
11+00	STA 3+06.97 STM INLET 2 N 018°37' W 193.4' CORNER OF INLET @ TOP CURB EL=6371.11	6365	6365	6365	6365
12+00	STA 3+20.13 B" SANITARY CROSSING TOP (SAN)=6360.57 CLR=5.22'	6365	6365	6365	6365
13+00	STA 3+32.13 B" WATER CROSSING TOP (WAT)=6363.17 CLR=2.79'	6365	6365	6365	6365
14+00	STA 3+45.30 STM INLET 1 N 018°37' W 35.33' CORNER OF INLET @ TOP CURB EL=6371.38	6365	6365	6365	6365
15+00	STA 3+45.30 INSTALL 3' X 15' D-10R INLET CORNER OF INLET @ TOP CURB EL=6371.32	6365	6365	6365	6365
16+00	STA 2+78.54, 17.00' RT CORNER OF INLET @ TOP CURB EL=6371.32	6365	6365	6365	6365
17+00	STA 2+83.20, 17.00' LT CORNER OF INLET @ TOP CURB EL=6371.38	6365	6365	6365	6365
18+00	STA 3+20.13 WATER CROSSING STA 3+20.13	6365	6365	6365	6365

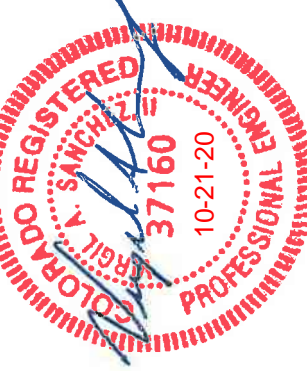
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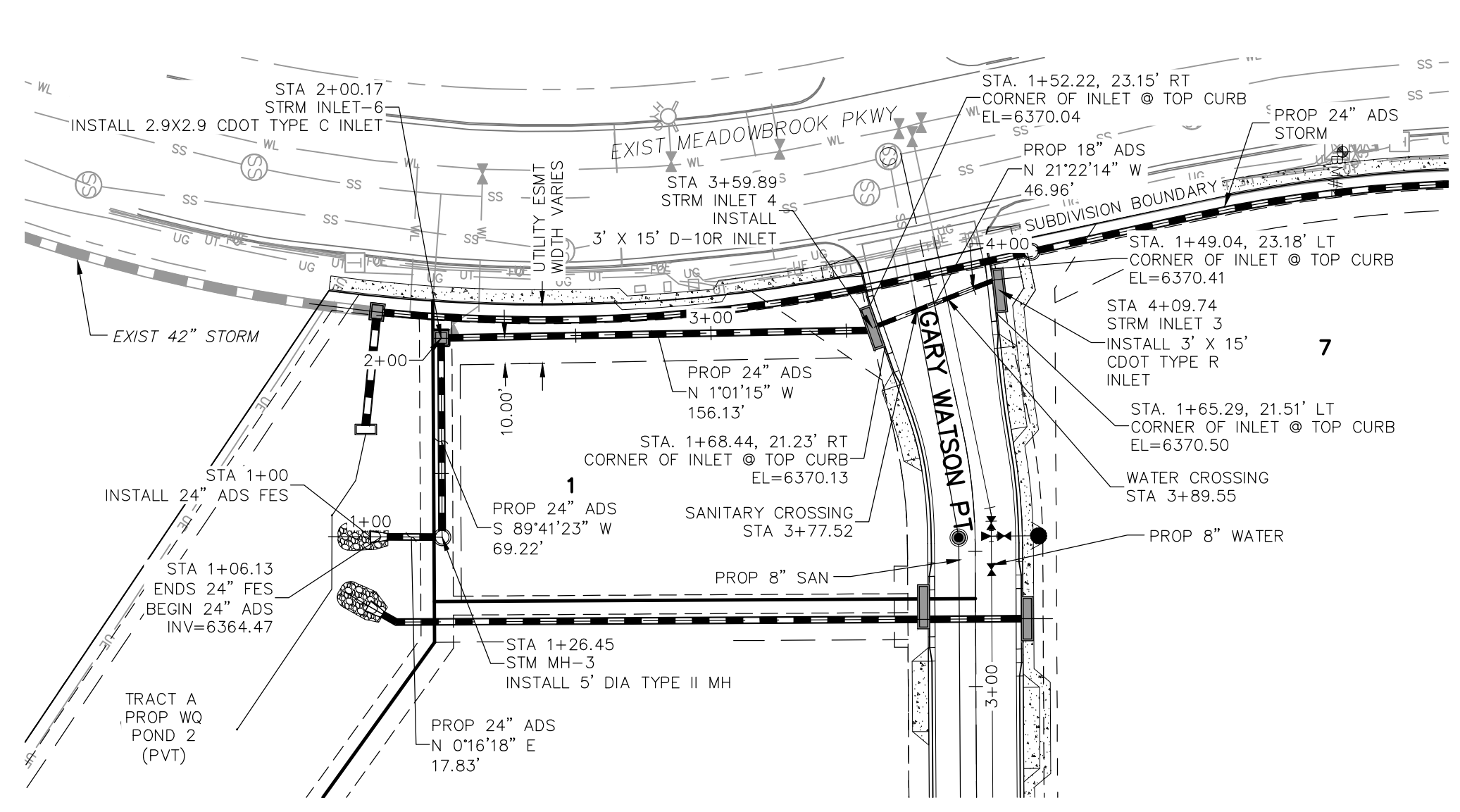
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 MARGIE A. SANCHEZ, COLORADO P.E. NO. 37160

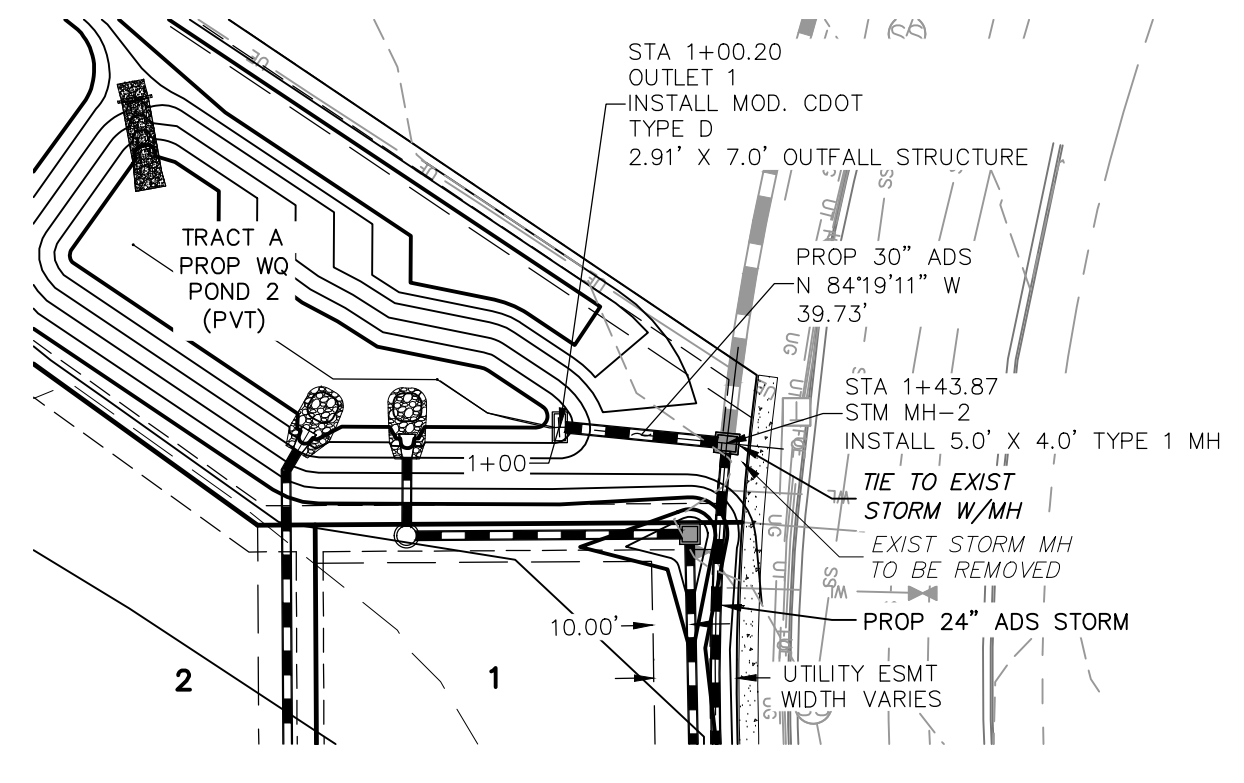
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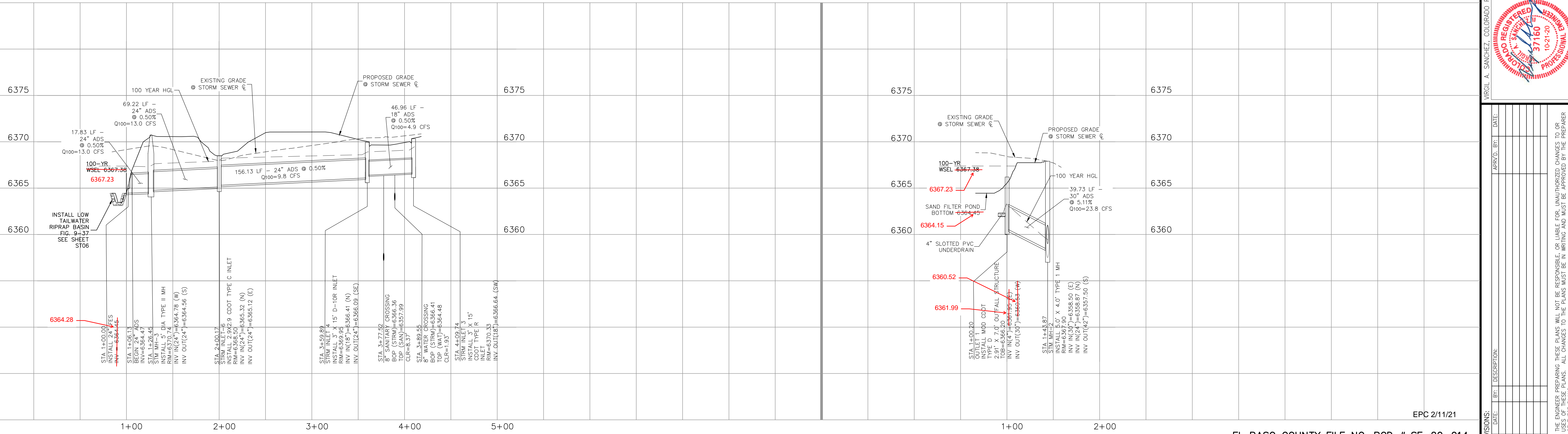
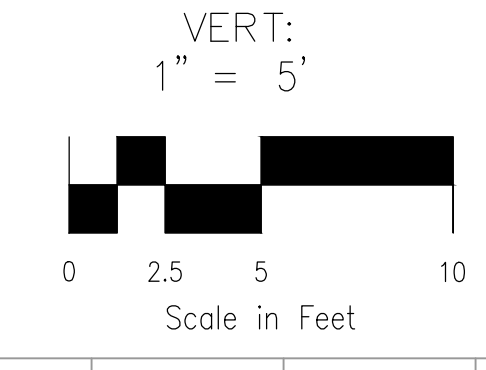
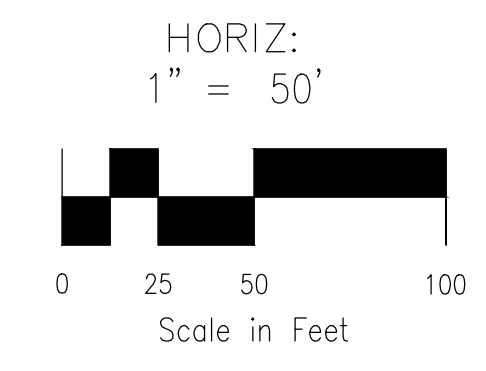


STORM 10
 STA 1+00.00 TO STA 4+07.61
 (PRIVATE)



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

AS-BUILT
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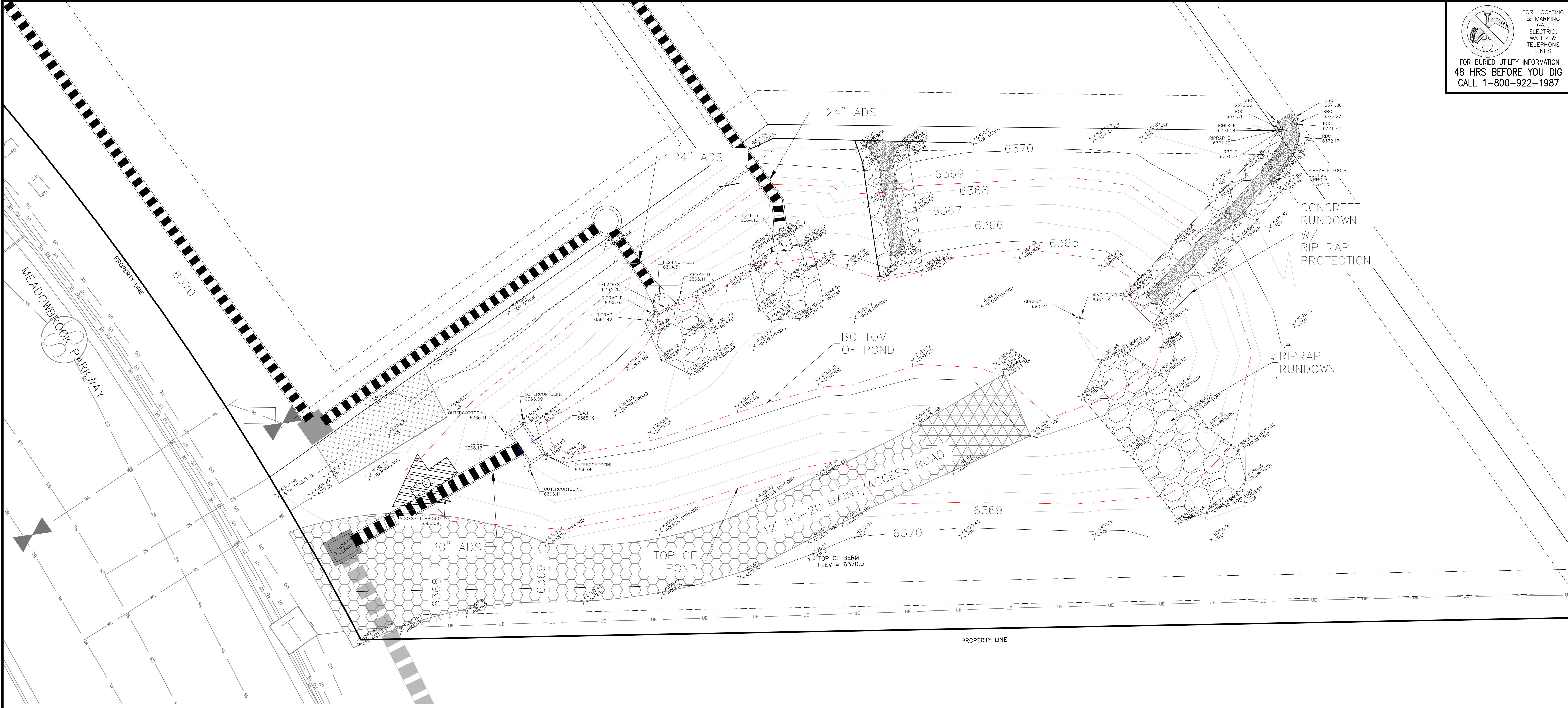


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Pond 2 Certification

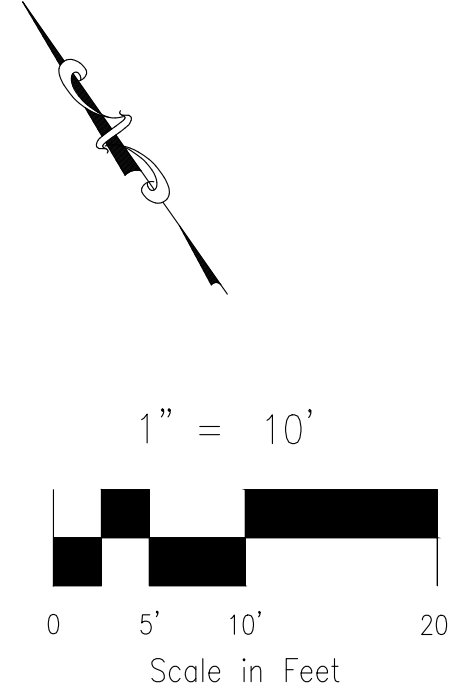
Inlet Pipes
 Designed 24" invert in = 6364.45', Survey 24" invert in = 6364.16'
 Designed 24" invert in = 6364.45', Survey 24" invert in = 6364.28'

Outlet Structure Grated Inlet
 Designed Invert In = 6361.70', Survey Invert In = 6361.99'
 Designed 30" invert out = 6360.53', Survey 30" invert out = 6360.52
 Design Top Conc. Grate = 6366.20, Survey Top Conc. Grate = 6366.11

Spillway = Grated Inlet
 Design Spillway elevation = 6367.74, Survey Spillway elevation = 6367.68

Design Volume = 0.299 Acre Feet @ 6367.38' (100 yr surface)

Provided Volume = 0.320 Acre Feet @ 6367.23' (100 yr surface)



LEGEND

- POND BOTTOM (6364.45)
- EXIST MAJ CONT
- EXIST MIN CONT
- MAINTENANCE/ACCESS ROAD ABOVE EURV 8" CDOT CLASS 2
- MAINTENANCE/ACCESS ROAD BELOW EURV 12" CDOT CLASS 2
- RIPRAP RUNDOWN & LOW TAILWATER BASIN
- SC150 NORTH AMERICAN GREEN EROSION CONTROL BLANKET OR EQUIVALENT
- PROPERTY LINE
- PROP STORM SEWER PIPE
- EASEMENT LINE
- EMERGENCY OVERTFLOW

CLAREMONT BUSINESS PARK 2 FILING NO. 1
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 PROJECT NO. 44-037
 SCALE: HORIZONTAL: N/A VERTICAL: N/A
 DATE: 12/3/21
 DESIGNED BY: GW
 DRAWN BY: CW
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 SHEET 1 OF 1
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 COLORADO SPRINGS, CO 80903
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 VIRGIL A. SANCHEZ, COLORADO P.E. NO. 377160

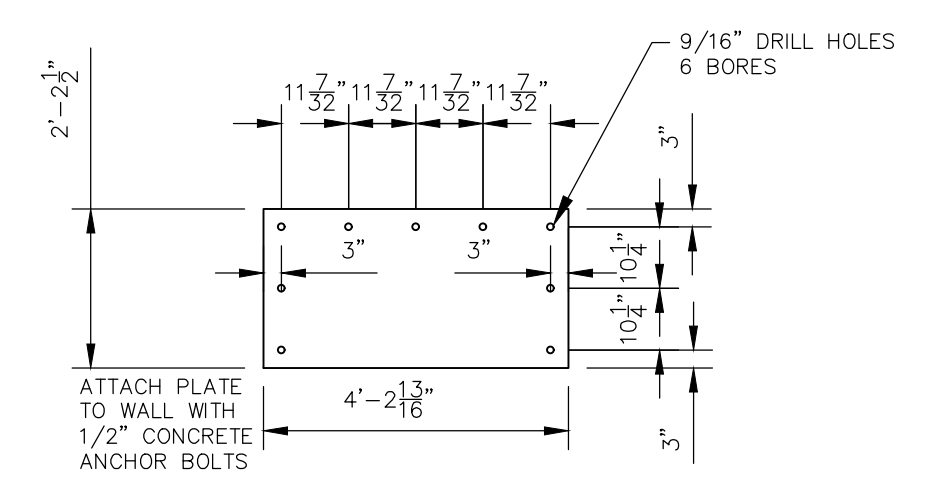
NO.	DATE	BY	DESCRIPTION	APPROVED BY	DATE

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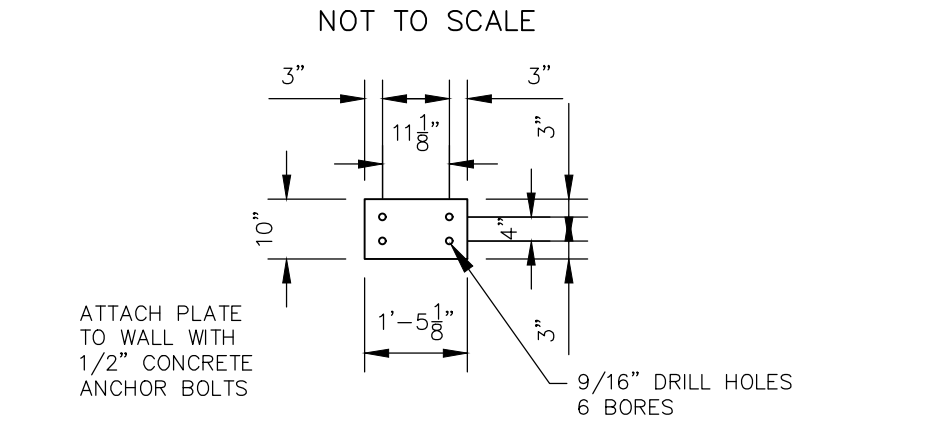
CAUTION

File: 0:\440374-CBP-F2-Lots 1-8\DWG\Eng Exhibits\BMP AS BUILT-CERTIFICATION.dwg Plotstamp: 12/3/2021 12:48 PM

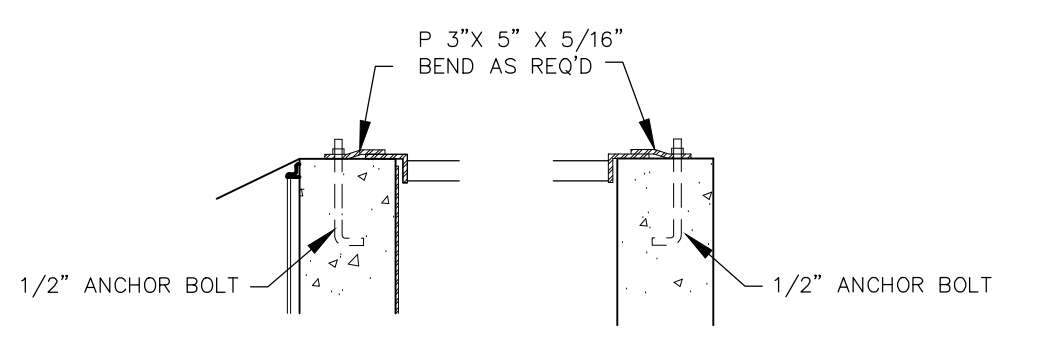
AS-BUILT ENGINEERING RECORD DRAWINGS



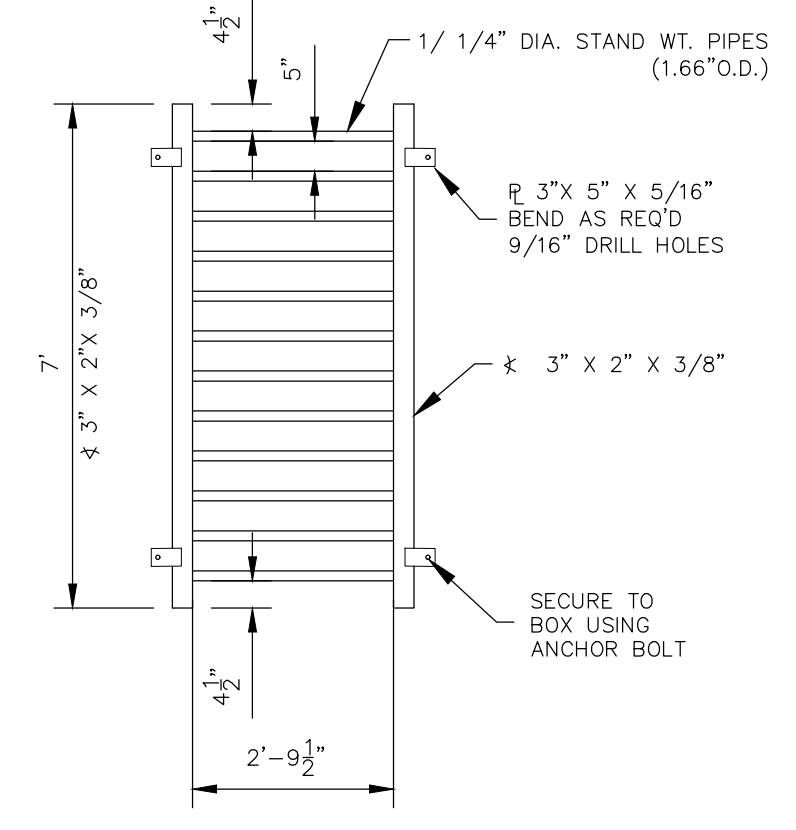
**RESTRICTOR PLATE~30"
OUTFALL PIPE**
NOT TO SCALE



RESTRICTOR PLATE~4" UNDERDRAIN
NOT TO SCALE



**GRATE
DETAIL "A" GRATE
DETAIL "B"**



GRATE PLAN
NOT TO SCALE

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

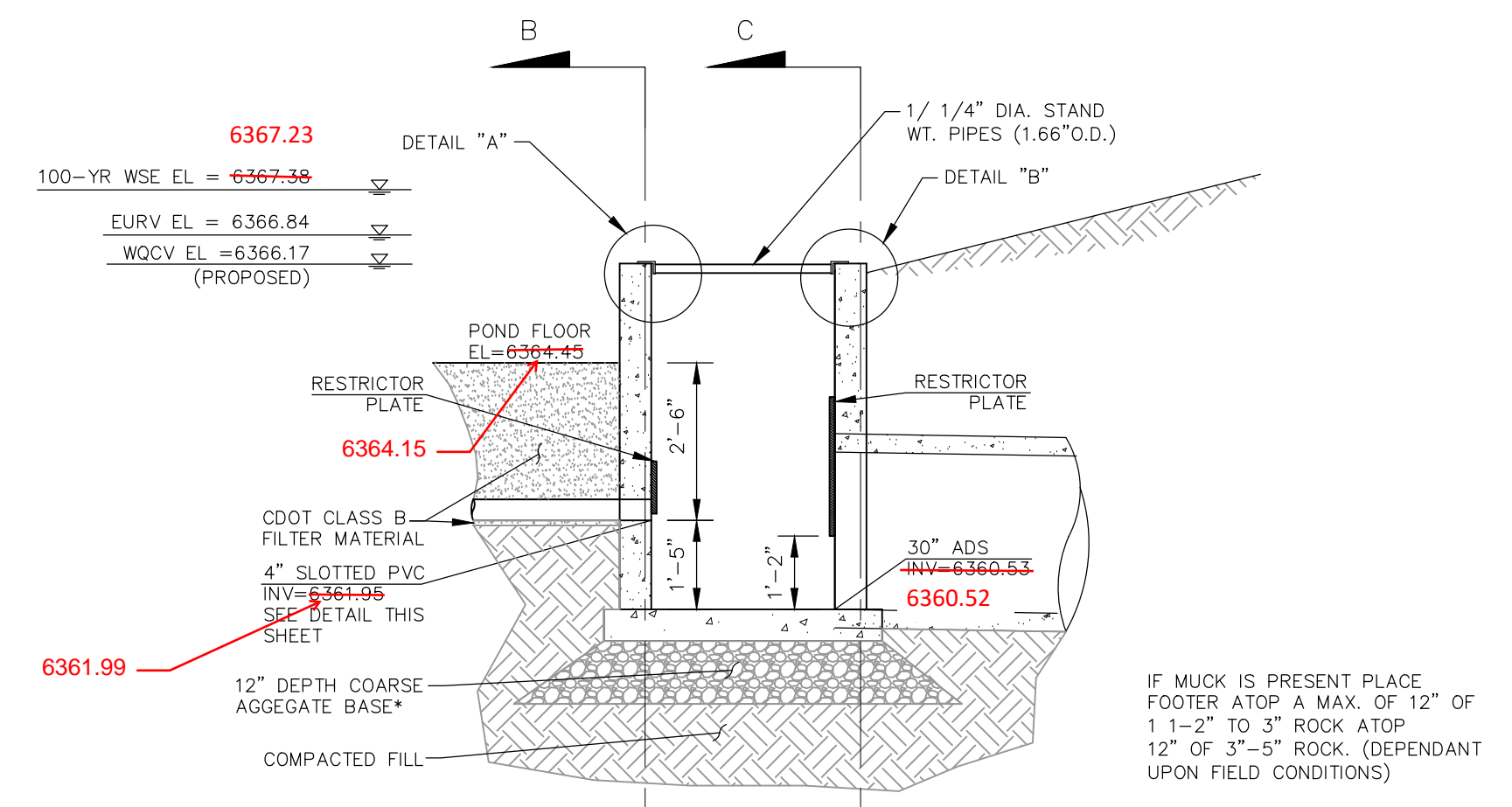
Table SF-1. Gradation specifications for CDOT Class B or C filter material
(Source: CDOT Table 703-7)

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

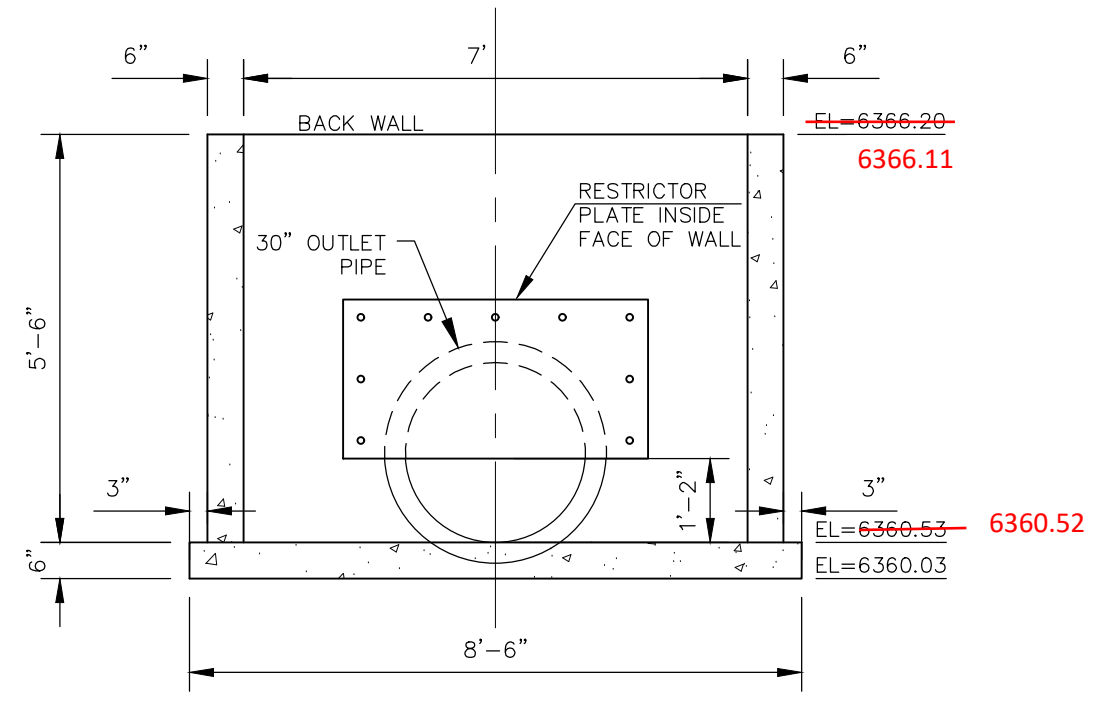
Table SF-2. Dimensions for Slotted Pipe¹

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

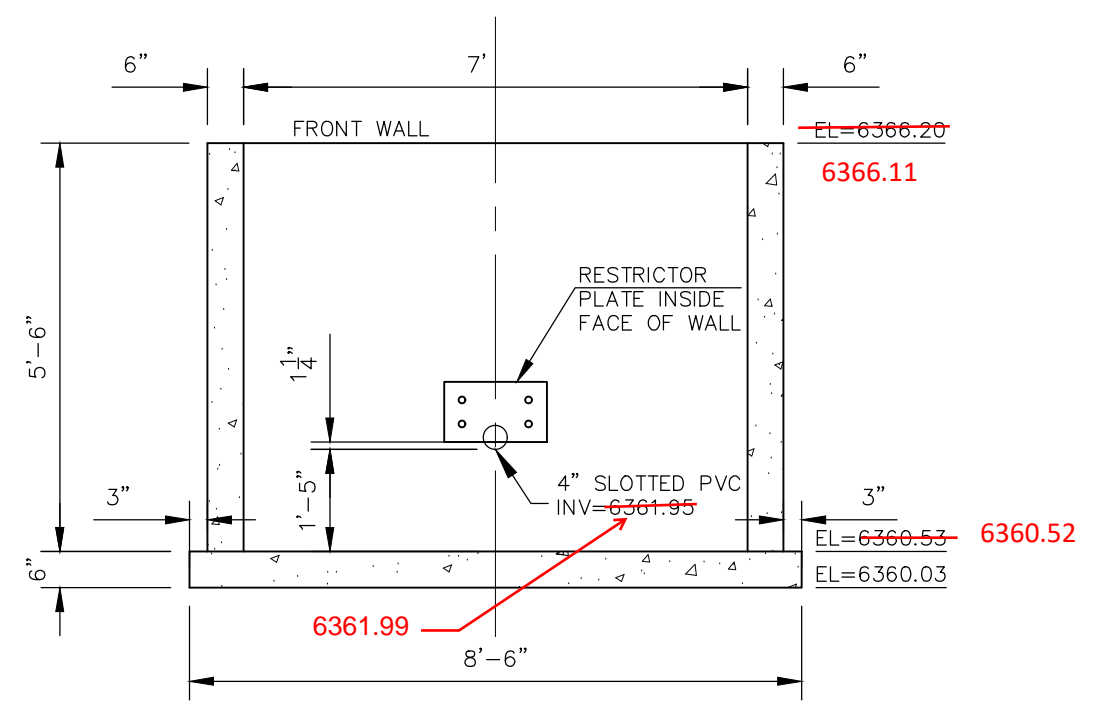
¹ Pipe must conform to requirements of ASTM designation F949. There shall be no evidence of splitting, cracking, or breaking when the pipe is tested per ASTM test method D2412 in accordance with F949 section 7.5 and ASTM F794 section 8.5. Contech A-2000 slotted pipe (or equal).



SECTION A-A
NOT TO SCALE



SECTION C-C BACK WALL
NOT TO SCALE



SECTION B-B FRONT WALL
NOT TO SCALE

T-6 Sand Filter

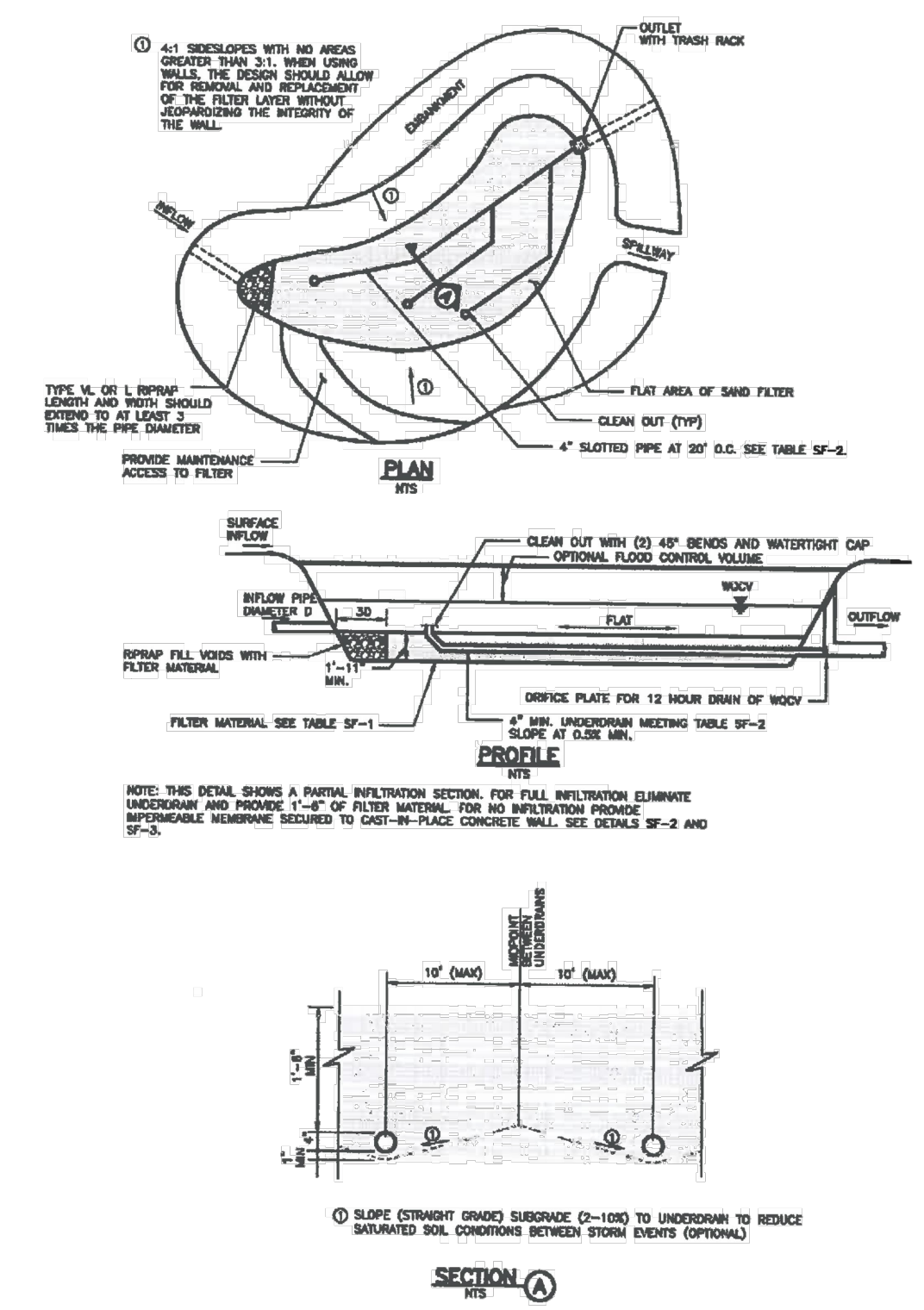
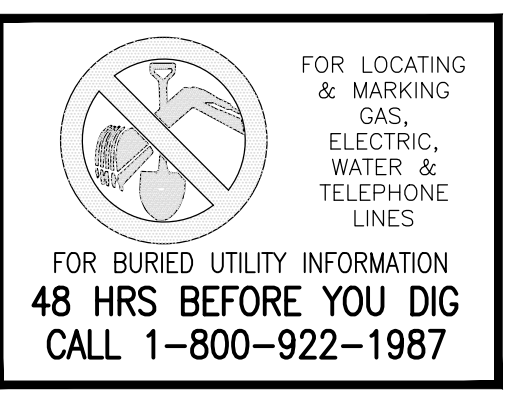


Figure SF-1. Sand Filter Plan and Sections

SF-8 Urban Drainage and Flood Control District November 2015
Urban Storm Drainage Criteria Manual Volume 3

File: 0:\440371-CBP-FZ-Lots 1-8\440371-CBP-FZ-Lots 1-8.dwg Const Drawn: Storm\S105.dwg PlotDate: 10/21/2020 11:53 AM



CLAREMONT BUSINESS PARK 2 FILING NO. 1
 OUTLET STRUCTURE POND 2 DETAILS
 DATE: 10/21/2020
 SCALE: HORIZONTAL: N/A VERTICAL: N/A
 PROJECT NO. 44-037
 DESIGNED BY: GW
 DRAWN BY: CLP
 CHECKED BY: VAS
 SHEET 9 OF 12
 ST05

102 E. Pikes Peak Ave., 5th Floor
 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:

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 CAUTION

STEEL GRATE QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH PER FT.	WEIGHT PER FT. (LBS.)
4	5/8" x 7/8" BEAM	40"	7.70
2	3/4" x 1/2" FLAT	26 2/3"	2.98
2	3" x 1/2" FLAT	26 2/3"	2.55
TOTAL LBS. = 128			

QUANTITIES FOR ONE INLET

H	CONCRETE (CU. YDS.)	STEEL (LBS.)	NO. STEPS	NO. RINGS
2'-0"	0.3	75	0	0
3'-0"	1.0	80	0	0
3'-6"	1.2	86	0	0
4'-0"	1.3	93	1	1
4'-6"	1.4	116	2	2
5'-0"	1.5	122	2	2
5'-6"	1.7	137	2	2
6'-0"	1.8	142	3	3
6'-6"	1.9	158	3	3
7'-0"	2.0	163	3	3
7'-6"	2.2	179	4	4
8'-0"	2.3	184	4	4
8'-6"	2.4	199	4	4
9'-0"	2.5	205	5	5
9'-6"	2.7	220	5	5
10'-0"	3.0	235	6	6
11'-0"	3.4	251	6	6

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

MARK	NO.	REQ'D.	HEIGHT	LENGTH
401	2	2-3"	7-11"	
400	6	2-7"	8-7"	
402	3	1/4"	15-0"	

GENERAL NOTES

- INLET TYPE C IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
- CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
- REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED #4 AND SHALL HAVE A MINIMUM 2" CLEARANCE CUT OR BEND AROUND PIPES AS REQUIRED.
- CONCRETE SLOPE AND DITCH PAVING SHALL BE IN ACCORDANCE WITH SECTION 507. REINFORCEMENT FOR CONCRETE SLOPE PAVING SHALL BE 6" x 6" W x 1/4" D @ 6" x 6" - 182.1 X WEL.
- STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED, AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
- THE STANDARD INLET GRATES SHALL BE USED ON ALL TYPE C INLETS UNLESS CLOSE MESH GRATES ARE SPECIFIED ON THE PLANS.
- CLOSE MESH GRATES ARE RECOMMENDED WHERE FOOT TRAFFIC OR BICYCLE ROUTES ARE IN CLOSE PROXIMITY TO GRATE. THIS GRATE IS NOT A COMPLIANT OR BICYCLE FRIENDLY AND SHALL NOT BE PLACED DIRECTLY IN SIDEWALKS, CROSSWALKS OR BIKE PATHS.
- STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FT. - 6 IN., AND SHALL CONFORM TO AASHTO M 199.
- SEE STANDARD PLAN M-604-11, FOR REINFORCEMENT AROUND THE PIPE OPENING.
- ALL INLETS SHALL HAVE A 4" IN. METAL MEDALLION WITH A NO DRIVING DRAINS TO STREAM MESSAGE ON IT. THE MEDALLION SHALL HAVE A FISH SYMBOL WITH A BLUE BACKGROUND. IT SHALL BE FIRMLY ATTACHED TO THE TOP OF THE INLET WITH A PERMANENT FASTENER.

Computer File Information
 Creation Date: 07/04/12 Initials: DD
 Last Modification Date: 07/04/12 Initials: LTA
 Full Path: www.dot.state.co.us/DesignSupport/
 Drawing File Name: 604010101.dwg
 CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:	Comments:

Colorado Department of Transportation
 4201 East Arkansas Avenue
 Denver, Colorado 80222
 Phone: (303) 757-9083
 Fax: (303) 757-9820
 Project Development Branch DD/LTA

INLET, TYPE C
 STANDARD PLAN NO. M-604-10
 Sheet No. 1 of 1

GENERAL NOTES

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

QUANTITIES FOR ONE INLET

H	CONCRETE (CU. YDS.)	STEEL (LBS.)	CIRCULAR PIPE RANGE INSIDE DIA. IN. - "D"
3.0	1.5	127	18
3.5	1.7	149	18-24
4.0	1.9	157	18-30
4.5	2.0	179	18-36
5.0	2.2	187	18-42
5.5	2.4	208	18-42
6.0	2.6	215	18-42
6.5	2.8	236	18-42
7.0	2.9	243	18-42
7.5	3.1	264	18-42
8.0	3.3	271	18-42
8.5	3.5	292	18-42
9.0	3.6	299	18-42
9.5	3.8	320	18-42
10.0	4.0	327	18-42

Computer File Information
 Creation Date: 07/04/08 Initials: SRJ
 Last Modification Date: 07/04/06 Initials: LTA
 Full Path: www.dot.state.co.us/DesignSupport/
 Drawing File Name: 604010101.dwg
 CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:	Comments:

Colorado Department of Transportation
 4201 East Arkansas Avenue
 Denver, Colorado 80222
 Phone: (303) 757-9083
 Fax: (303) 757-9820
 Project Development Branch SRJ/LTA

INLET, TYPE D
 STANDARD PLAN NO. M-604-11
 Sheet No. 1 of 1

GENERAL NOTES

- FOR LENGTH (L) GREATER THAN 5 FT. PROVIDE MAINTENANCE ACCESS AT BOTH ENDS.
- ADDITIONAL MANHOLE RING AND COVER REQUIRED WHEN L=10 FT. OR MORE. CUT REINFORCEMENT BAR ACCORDINGLY.
- WHEN A PIPE R INLET IS USED WITH MOUNTABLE CURBS AND GUTTER, THE TRANSITION SHALL BE CONSTRUCTED. TRANSITION SHALL BE PAID FOR AS CURB AND GUTTER.
- MEET SHAPE OF NORMAL BARRIER CURB AND GUTTER HERE.
- SEE CHANNEL LAYOUT ON SHEET 2.
- FOR A 1'-0" PAN SLOPE 2" PER FT.
- 2" ALL AROUND (TYP.)
- NOTE: MANHOLE RING AND COVER, STATION POINT AND OUTFLOW PIPE SHALL BE LOCATED AT THE SAME END OF THE INLET.

Computer File Information
 Creation Date: 07/04/06 Initials: SRJ
 Last Modification Date: 07/04/06 Initials: LTA
 Full Path: www.dot.state.co.us/DesignSupport/
 Drawing File Name: 604010102.dwg
 CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:	Comments:

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 Denver, Colorado 80222
 Phone: (303) 757-9083
 Fax: (303) 757-9820
 Project Development Branch SRJ/LTA

CURB INLET TYPE R
 STANDARD PLAN NO. M-604-12
 Sheet No. 1 of 2

GENERAL NOTES

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

Computer File Information
 Creation Date: 07/04/06 Initials: SRJ
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 Full Path: www.dot.state.co.us/DesignSupport/
 Drawing File Name: 604010102.dwg
 CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

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 Denver, Colorado 80222
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CURB INLET TYPE R
 STANDARD PLAN NO. M-604-12
 Sheet No. 2 of 2

AS-BUILT ENGINEERING RECORD DRAWINGS

CLAREMONT BUSINESS PARK 2 FILING NO. 1

PROJECT NO. 44-037
 SCALE: HORIZONTAL: N/A VERTICAL: N/A
 DATE: 07/29/2020
 DESIGNED BY: GT
 DRAWN BY: CLP
 CHECKED BY: VAS

20 BOULDER CRESCENT SUITE 110
 COLORADO SPRINGS, CO 80903
 PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

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

REGISTERED PROFESSIONAL ENGINEER
 NO. 37160
 EXPIRES 10-31-20

REVISIONS:
 NO. DATE: BY: DESCRIPTION:

EPC 2/11/21
 EL PASO COUNTY FILE NO. PCD # SF-20-014

CAUTION

