

CLAREMONT BUSINESS PARK 2 FILING NO. 1

COUNTY OF EL PASO, STATE OF COLORADO

STREET IMPROVEMENT PLANS

(INCLUDING STORM SEWER)

AUGUST 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

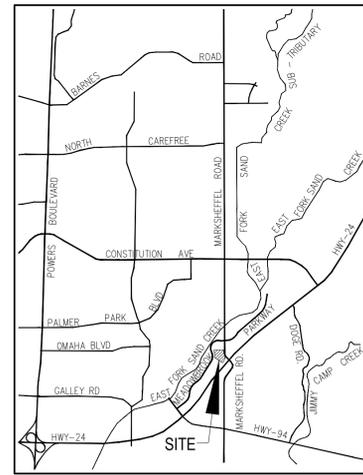
WATER RESOURCES: CHEROKEE METROPOLITAN DISTRICT
6250 PALMER PARK BOULEVARD
COLORADO SPRINGS, CO 80915-1721
JEFF MUNCER
(719) 597-5080

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

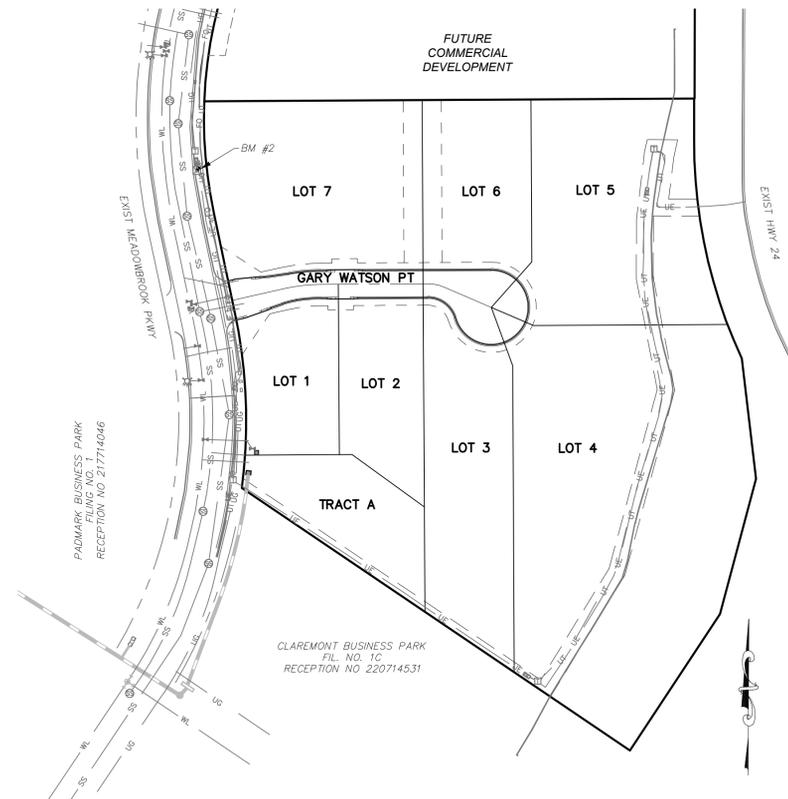
GAS DEPARTMENT: COLORADO SPRINGS UTILITIES
7710 DURANT DR.
COLORADO SPRINGS, CO 80947
TIM WENDT (719) 668-3556

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.

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.

HAMMERS CONSTRUCTION, INC. DATE

ADDRESS: 1411 WOOLSEY HEIGHTS, COLORADO SPRINGS, CO 80915

EL PASO COUNTY:

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

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

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

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

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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: 08/19/2020
DESIGNED BY: GW	DRAWN BY: CLP	CHECKED BY: VAS
SHEET 1 OF 12		S101

102 PIKES PEAK AVE, SUITE 300
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485



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

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

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.

CAUTION



GENERAL CONSTRUCTION NOTES:

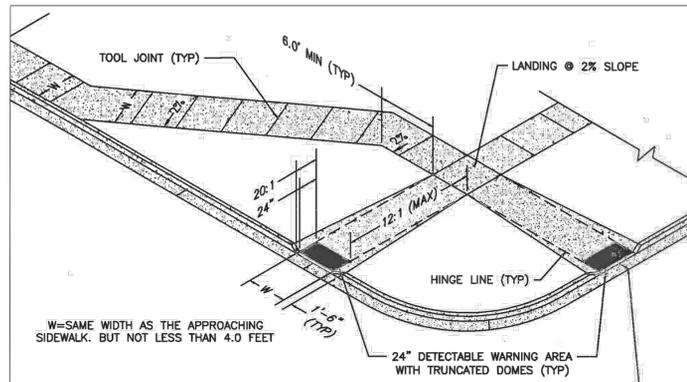
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND 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 JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES. [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.



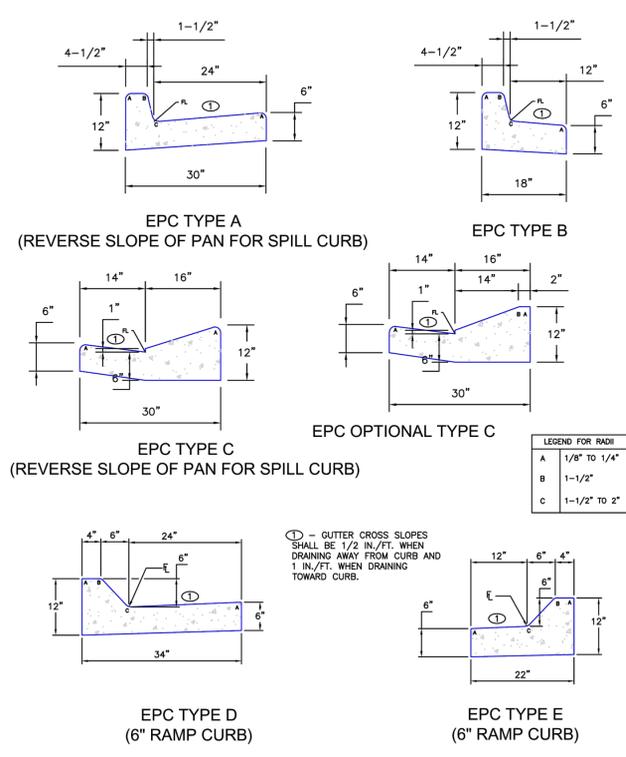
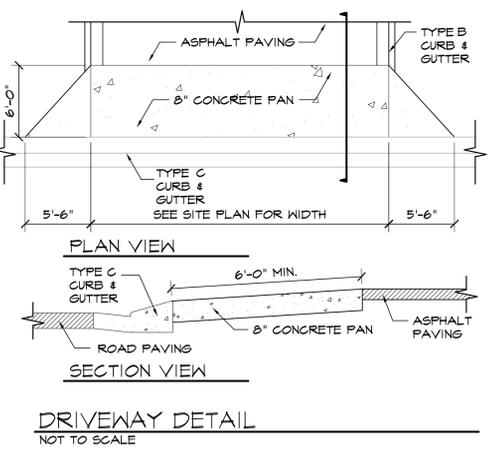
- PEDESTRIAN RAMP NOTES**
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT ENGINEERING CRITERIA MANUAL AND ADA REQUIREMENTS.
 - CONTRACTOR TO NOTIFY ENGINEERING DIVISION INSPECTION STAFF 48 HOURS PRIOR TO CONCRETE PLACEMENT.
 - PEDESTRIAN RAMP CONSTRUCTION SHALL BE A MINIMUM 4,500 PSI CONCRETE, MINIMUM 4" THICK, NON-COLORED, NON-SCORED, COARSE BROOM FINISH.
 - RAMP LOCATION AND LENGTH MAY REQUIRE MODIFICATION TO MAINTAIN THE 12:1 MAXIMUM RUNNING RAMP SLOPE AND 20:1 DETECTABLE WARNING AREA DUE TO STREET INTERSECTION GRADES AND/OR ALIGNMENTS.
 - DETECTABLE WARNING AREA SHALL START A MINIMUM OF 6" BUT NOT MORE THAN 8" FROM THE FLOWLINE OF THE CURB AT ANY POINT.
 - DETECTABLE WARNING AREA SHALL BE PREFABRICATED, REDDISH INTEGRALLY COLORED, TRUNCATED-DOME, PAVERS. THERMOPLASTIC TRUNCATED DOMES WILL NOT BE ACCEPTED.
 - THE DETECTABLE WARNING AREA SHALL BE 24" IN LENGTH AND THE FULL WIDTH OF THE RAMP.
 - RAMP WIDTH REQUIRED IS SAME AS APPROACHING SIDEWALK; 4' MINIMUM.
 - ALL RAMPERS WILL BE PERPENDICULAR TO TRAFFIC WITH THE EXCEPTION OF MID-BLOCK OR TERMINAL RAMPERS WHICH MAY BE PARALLEL SUBJECT TO APPROVAL.
 - AVOID PLACING DRAINAGE STRUCTURES, TRAFFIC SIGNAL/SIGNAGE, UTILITIES/JUNCTION BOXES, OR OTHER OBSTRUCTIONS WITHIN PROPOSED RAMP AREAS.
- GENERAL NOTES**
- WHERE THE 1'-6" FLARED SIDE(S) OF A PERPENDICULAR CURB RAMP IS (ARE) CONTIGUOUS WITH A PEDESTRIAN OR HARD SURFACE AREA, THE MAXIMUM FLARE SLOPE SHALL NOT EXCEED 10:1.
 - PEDESTRIAN WALKWAY AND/OR LOCATION OF EXISTING OR FUTURE PEDESTRIAN RAMPERS ON OPPOSITE CORNERS SHALL BE REVIEWED BEFORE CONSTRUCTING NEW RAMPERS.
 - AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMPERS, EXCLUSIVE OF THE FLARE SIDES, SHALL BE TOTALLY CONTAINED WITHIN THE MARKINGS.

DATE APPROVED: 7/9/09	REVISION DATE: 12/8/15	FILE NAME: SD_2-41
APPROVED BY: André P. Brackin	DESIGNED BY: [Blank]	CHECKED BY: [Blank]
DEPARTMENT OF TRANSPORTATION	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION	

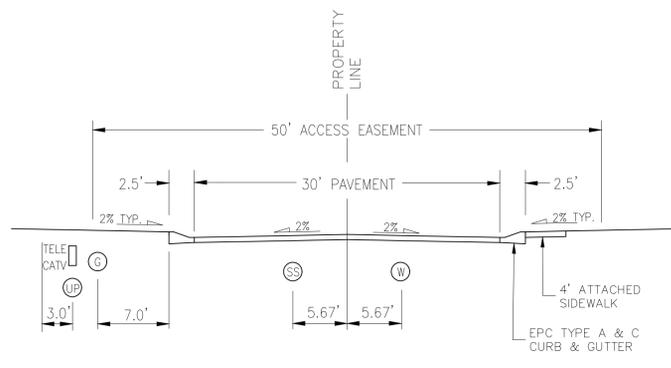
SPECIAL NOTE:

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.

Please use the latest detail that was approved by the BoCC with the addition of Chapter 6 to the ECM. I have attached a PDF of Ch6 which includes this detail.



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



URBAN LOCAL CROSS SECTION (PRIVATE)

POSTED SPEED 25 MPH
DESIGN SPEED 35 MPH



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

CLAREMONT BUSINESS PARK 2 FILING NO. 1

NOTE & DETAIL SHEET

PROJECT NO. 44-037 FILE: Yang\Const\Eng\Street Plans\SIO2.dwg DATE: 08/19/2020

DESIGNED BY: GW SCALE: N/A

DRAWN BY: CLP HORIZ: N/A

CHECKED BY: VAS VERT: N/A

SHEET 2 OF 12

SIO2

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.

MARCEL A. SANCHEZ, COLORADO P.E. NO. 37760

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

File: c:\44037A-CBP-F2-Lots 1-8.dwg Const - Eng\Street Plans\SIO2.dwg PlotStamp: 8/19/2020 1:13 PM



ABBREVIATION LEGEND

- CL-C CENTERLINE INTERSECTION
- FL-FL 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

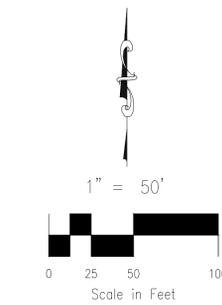
LINE	LENGTH	DIRECTION
L1	104.00'	N77°22'44"E
L2	125.98'	N89°41'23"E
L3	59.87'	S66°49'29"E

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

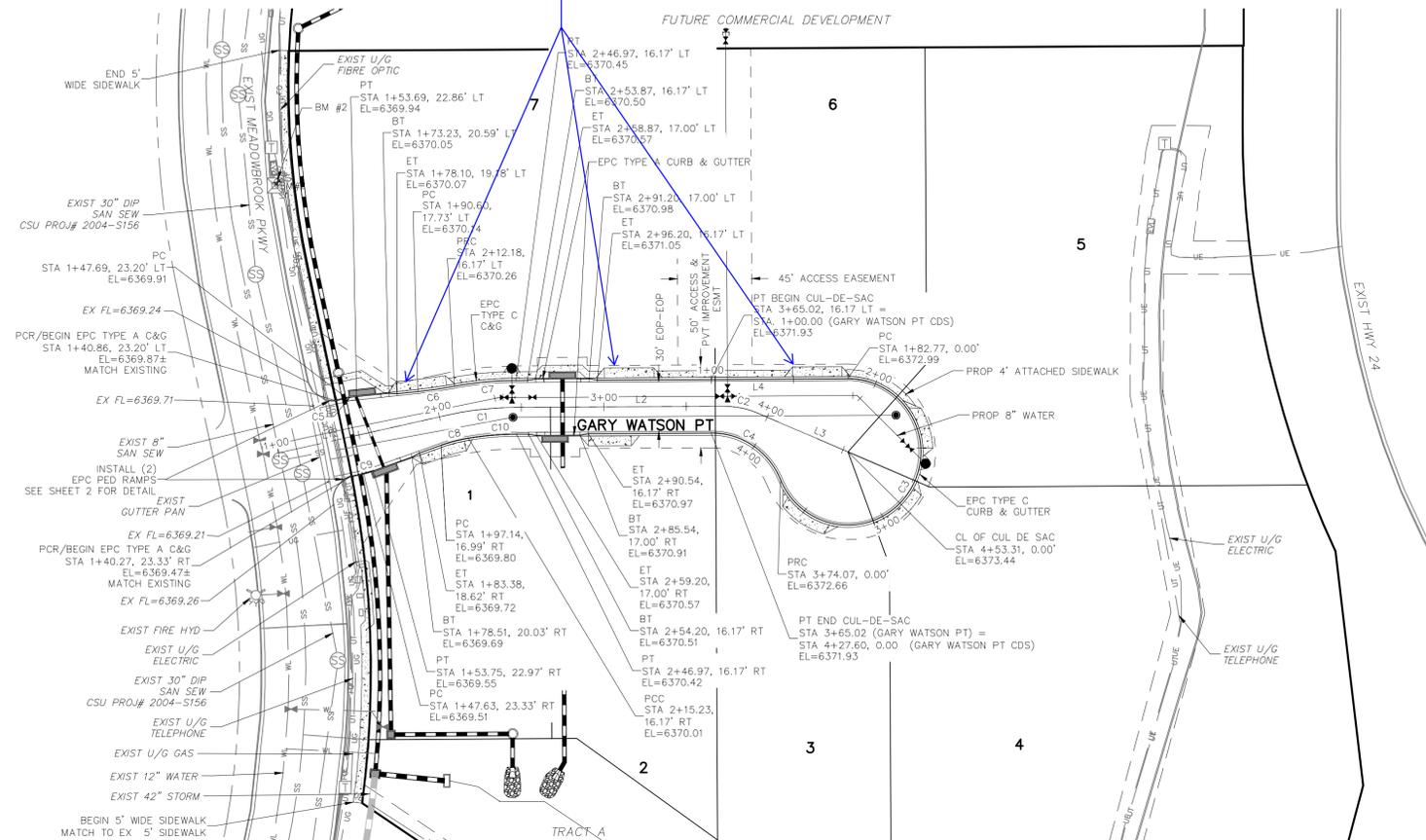
CURVE	RADIUS	LENGTH	DELTA
C3	44.17'	191.30'	248°09'48"
C4	45.00'	53.54'	68°09'48"

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°



Revise the sidewalk to go around the driveway. The sidewalk as currently shown would not meet ADA standards. Refer to county standard detail SD_2-24

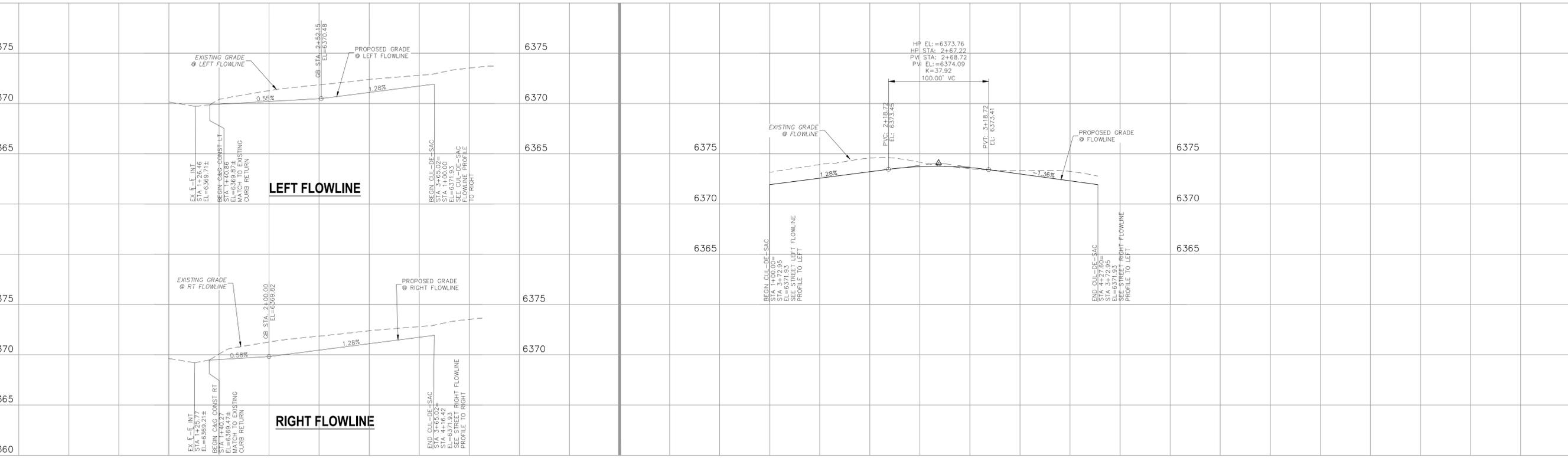
Sidewalk has been revised to match that of the SD_2-24



GARY WATSON PT (PRIVATE)

LEFT FLOWLINE

RIGHT FLOWLINE



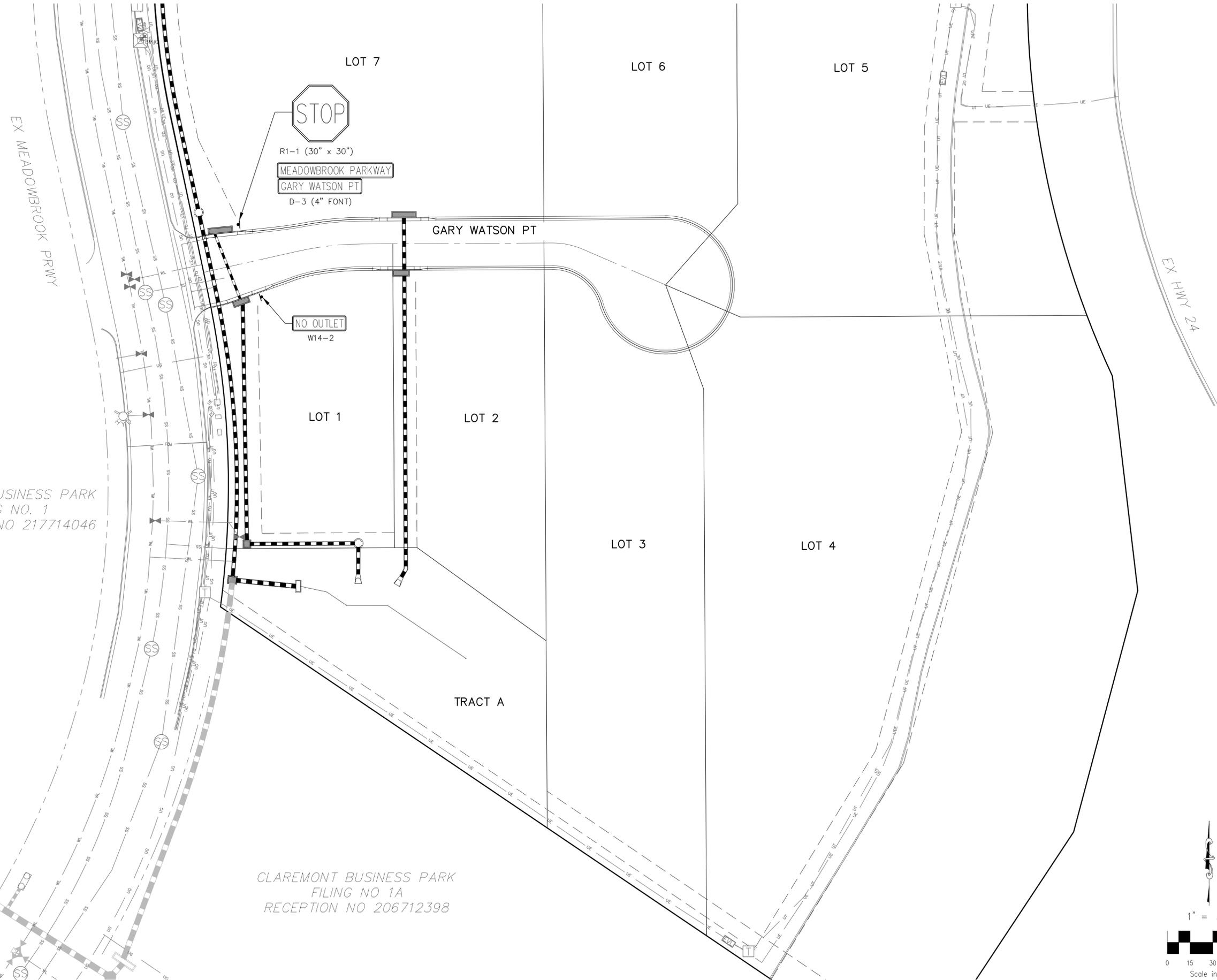
CUL-DE-SAC STA 1+00 TO STA 4+27.60

File: C:\Users\opirene\Documents\44037A-CBP F2-LOTS 1-8\DWG\Const_Dwg\STORM\SIG4.dwg PlotDate: 7/31/2020 10:28 AM

PADMARK BUSINESS PARK
FILING NO. 1
RECEPTION NO 217714046

CLAREMONT BUSINESS PARK
FILING NO 1A
RECEPTION NO 206712398

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



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	APPROVED BY	DATE

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CAUTION

CLAREMONT BUSINESS PARK 2 FILING NO. 1
SIGNAGE AND STRIPING PLAN
PROJECT NO. 44-037
DATE: 07/29/2020
SCALE: HORIZONTAL: N/A VERTICAL: N/A
DESIGNED BY: GW
DRAWN BY: CLP
CHECKED BY: VAS
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".

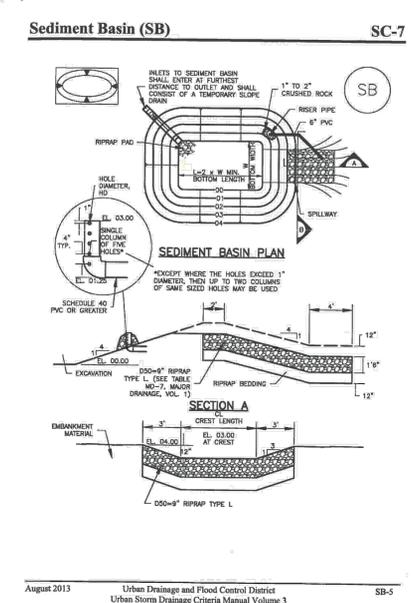
STRUCTURAL CONCRETE NOTES:

- 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:

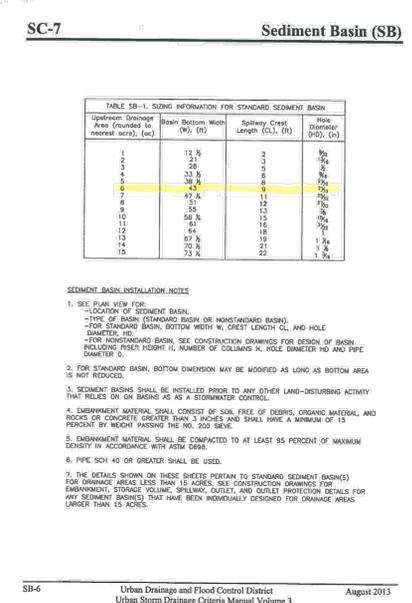
BAR SIZE	#4	#5	#6	#7	#8
SPLICE LENGTH	1'-9"	2'-2"	2'-7"	3'-4"	4'-3"

 ALL REINFORCING SHALL HAVE A 2-INCH MINIMUM COVER UNLESS OTHERWISE SPECIFIED. ALL REINFORCED STEEL TO BE EPOXY COATED.
- CAS-T-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



August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SB-5



August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SB-6

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, topographical features, and shall be covered on the top side with a heavyweight photodegradable polypropylene netting having ultraviolet additives to delay breakdown and an approximate 0.50 x 0.50 in (1.27 x 1.27 cm) mesh, and on the bottom side with a lightweight photodegradable polypropylene netting with an approximate 0.50 x 0.50 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) Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, F-403 Section 713.17 at a Type 1.5 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 12.5 cm from the edge) as an on-site guide for adjustment.

Material Contents	
Main	70% Straw Fiber 0.35 lbs/sq ft (0.18 kg/m²)
	30% Coconut Fiber 0.15 lbs/sq ft (0.07 kg/m²)
Netting	Top - Heavyweight Photodegradable with UV additives 3.0 lb/1000 sq ft (1.37 kg/100 m²)
	Bottom - Lightweight Photodegradable 1.5 lb/1000 sq ft (0.73 kg/100 m²)
Thread	Degradable 1.5 lb/1000 sq ft (0.73 kg/100 m²)

SC150 is available in the following standard roll sizes:

Width	6.67 ft (2.03 m)	16 ft (4.87 m)
Length	108 ft (32.92 m)	108 ft (32.92 m)
Weight ± 10%	44 lbs (19.95 kg)	155.6 lbs (69.9 kg)
Area	80.0 yd² (86.5 m²)	192 yd² (185.5 m²)

Index Value Properties	Test Method	Typical
Thickness	ASTM D6625	0.59 in (0.91 mm)
Density	ECTC Guidelines	75%
Water Absorbency	ASTM D1117	280%
Moisture Area	ASTM D475	11.44 cm²/ft² (388 g/m²)
Shed	ECTC Guidelines	30%
Smolder Resistance	ECTC Guidelines	Yes
Stitching	ASTM D1388	30%
Light Penetration	ECTC Guidelines	1.11 sq-in
Tensile Strength - MD	ASTM D6618	146.0 lbf/in (2.17 kN/m)
elongation - MD	ASTM D6618	26.3%
Tensile Strength - TD	ASTM D6618	147.6 lbf/in (2.10 kN/m)
elongation - TD	ASTM D6618	25.2%

Bench Scale Testing (NTPRP)		
Test Method	Parameter	Results
ECTC Method 2	150 mm (2 in) for 30 min	SL ₁₅₀ = 6.47
Reinforce	150 mm (2 in) for 30 min	SL ₁₅₀ = 6.67
ECTC Method 3	150 mm (2 in) for 30 min	SL ₁₅₀ = 6.68
Shear Resistance	Shear at 0.50 inch soil loss	2.72 lbf/ft²
ECTC Method 4	Top Soil, Fescue, 21 day incubation	538% improvement of biomass
Competition	Inch/ft	biomass

Product Participant of:

The open channel flow calculator

Select Channel Type: Trapezoidal

Velocity (V) & Discharge (Q): Select unit system: [Feet] [m]

Channel slope: 0.23 Water depth (y): 1 ft Bottom width (b): 12.5 ft

Flow velocity: 7.9918 ft/s Left Slope (Z1): 4 to 1 (H): Right Slope (Z2): 10 to 1 (H)

Flow discharge: 155.0594 ft³/s Input n value: 0.023 or select n

Calculator Status: [Calculation finished] [Reset]

Wetted perimeter: 26.67 ft Flow area: 19.5 ft² Top width (T): 26.5 ft

Specific energy: 1.98 ft Froude number: 1.63 Flow status: [Supercritical flow]

Critical depth: 1.31 ft Critical slope: 0.008 ft/ft Velocity head: 0.98 ft

Copyright 2000 Dr. Xing Fang, Department of Civil Engineering, Lamar University.

THIS SHEET REPLACED. THREE ADDITIONAL SHEETS ADDED, DP8 OPEN CHANNEL FLOW CALCULATOR, RIPRAP GRADATION SHEET AND DCM-VI TABLE 10-4.

POND 2 EMERGENCY SPILLWAY

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

CLAREMONT BUSINESS PARK 2 FILING NO. 1

GENERAL NOTES AND DETAILS

PROJECT NO. 44-037 FILE: \Lang\Const\DWG\Storm - District\ST01.dwg DATE: 07/29/2020

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

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

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.

ST01
 SHEET 5 OF 12

CAUTION

File: c:\44037a-cbp-f2-lots-1-8.dwg Const DWG\ST01.dwg PlotStamp: 8/4/2020 11:42 AM

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

CLAREMONT BUSINESS PARK 2 FILING NO. 1
 STORM SEWER PLAN & PROFILE
 PROJECT NO. 44-037
 DATE: 08/19/2020
 SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'
 DESIGNED BY: GW
 DRAWN BY: CLP
 CHECKED BY: VAS
 SHEET 6 OF 12
 ST02

102 E. Pikes Peak Ave., Ste 500
 Colorado Springs, CO 80903
 PHONE: 719.955.8485

 CIVIL CONSULTANTS, INC.

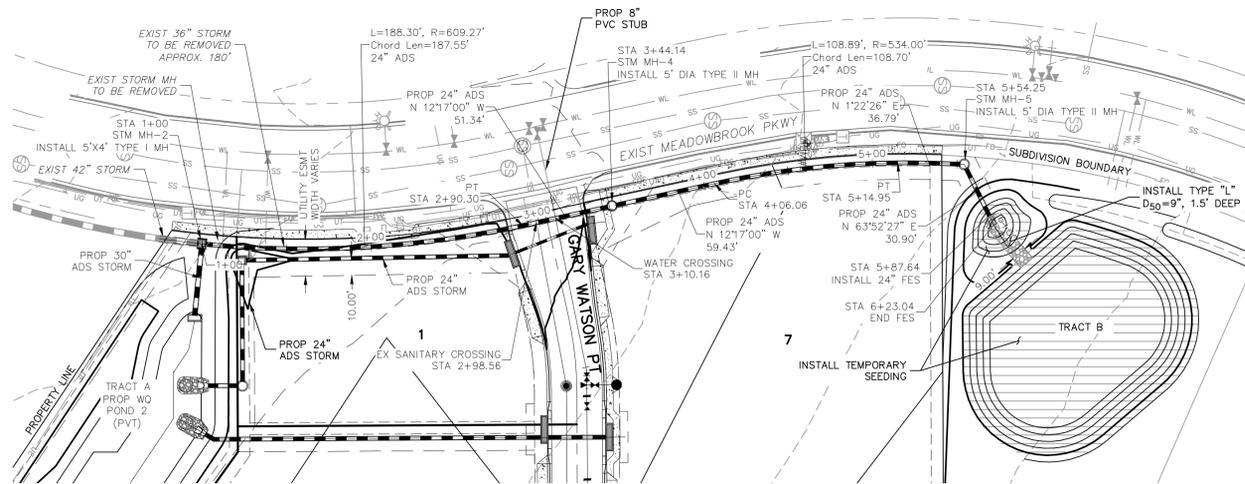
FOR AND ON BEHALF OF
 M&S CIVIL CONSULTANTS, INC.

REVISIONS:

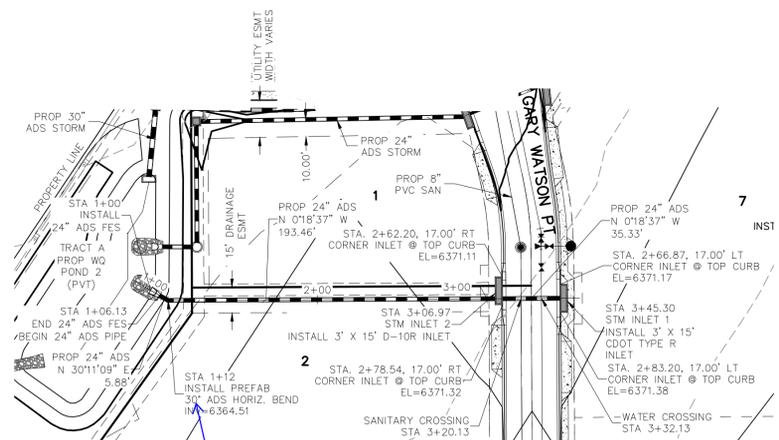
NO.	DATE:	BY:	DESCRIPTION:	APPROV. BY:	DATE:

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.

CAUTION



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



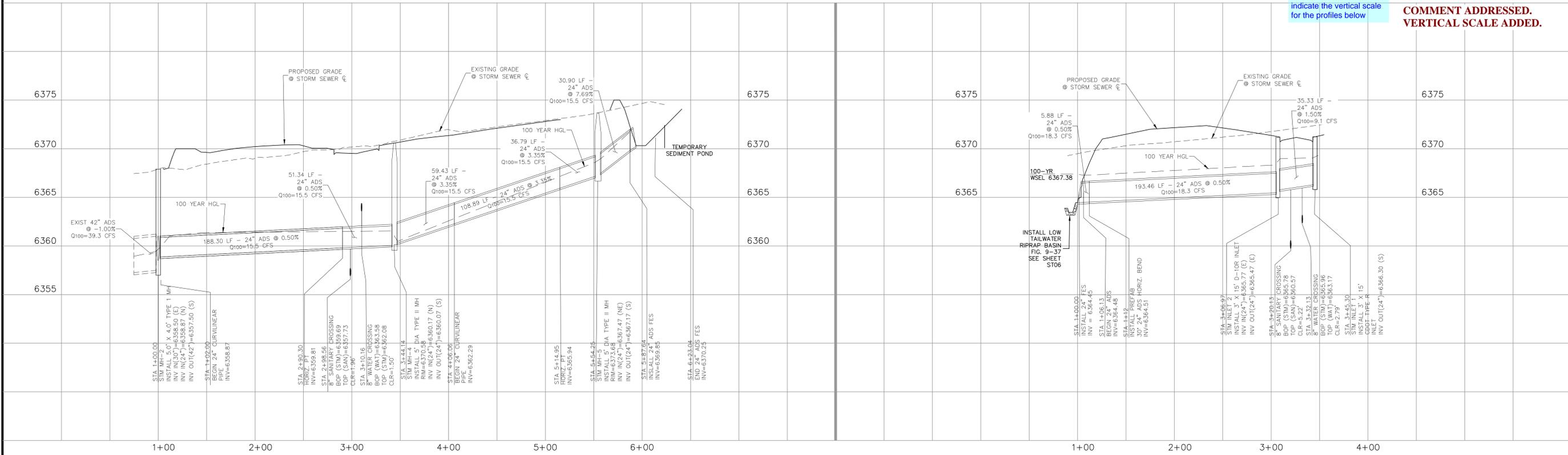
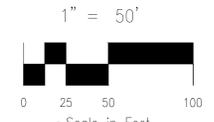
STORM 7
 STA 1+00.00 TO STA 3+45.30
 (PRIVATE)

NOTE:
 STORM 7 BETWEEN STATIONS 1+06.13 AND 3+06.97
 SHALL HAVE GASKETED, WATERTIGHT JOINTS AND
 ADHERE TO PERFORMANCE STANDARDS PER ASTM D3212.

COMMENT ADDRESSED.
 IT READS 30 DEGREE.

Review 1: Identify the vertical scale
 Review 2: Unresolved.
 indicate the vertical scale for the profiles below

COMMENT ADDRESSED.
 VERTICAL SCALE ADDED.



File: 0:\440374-CBP-F2-Lots 1-8\dwg\Cons\Draw\STREET AND STORM\ST02.dwg PlotStamp: 8/19/2020 2:46 PM

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

CLAREMONT BUSINESS PARK 2 FILING NO. 1
 STORM SEWER PLAN AND PROFILE
 PROJECT NO. 44-037
 DATE: 08/19/2020
 SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'
 DESIGNED BY: GW
 DRAWN BY: CLP
 CHECKED BY: VAS
 SHEET 7 OF 12
 ST03

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

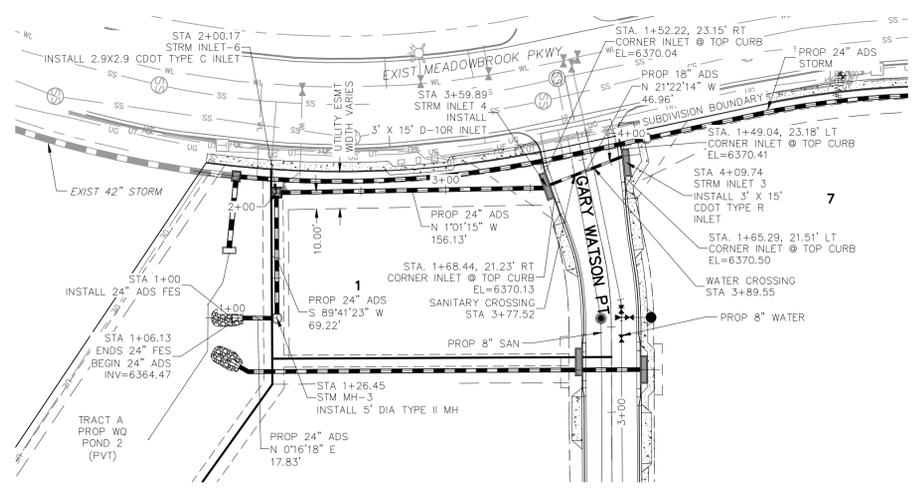
 CIVIL CONSULTANTS, INC.

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

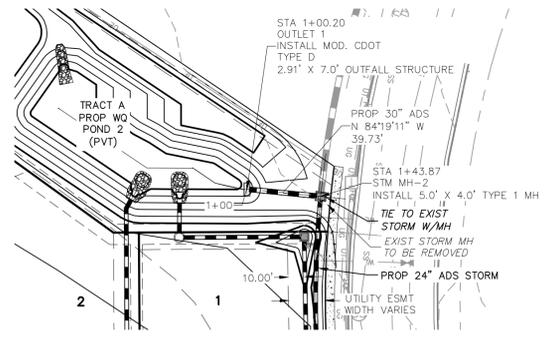
NO.	DATE	BY	DESCRIPTION	APPROVED BY	DATE

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

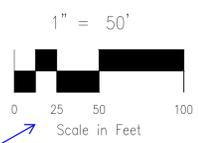
CAUTION



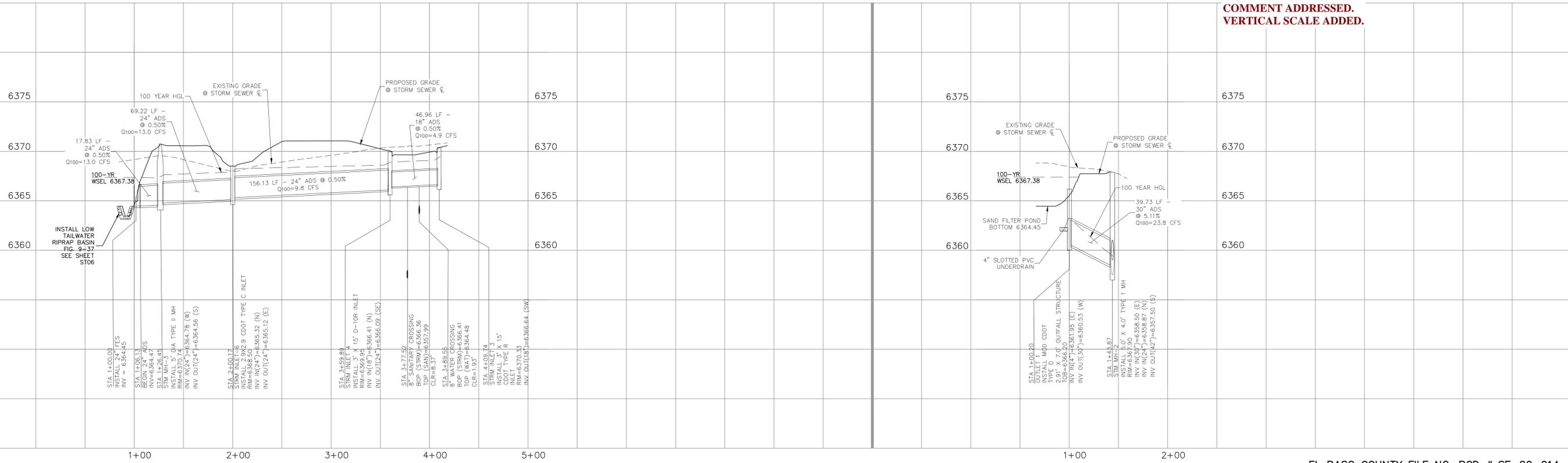
STORM 10
 STA 1+00.00 TO STA 4+07.61
 (PRIVATE)



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



Review 1: Identify the vertical scale
 Review 2: Unresolved, indicate the vertical scale for the profiles below

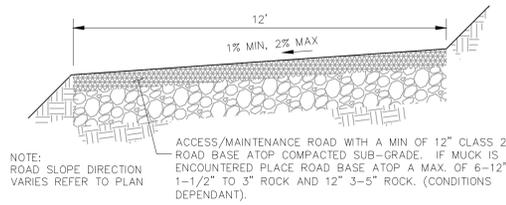


COMMENT ADDRESSED.
 VERTICAL SCALE ADDED.

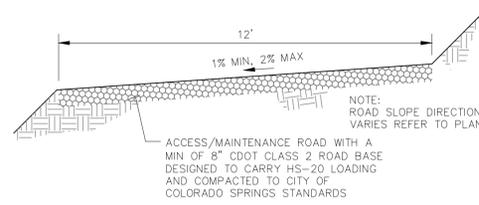
File: 0:\440374-CBP F2-Lots 1-8\dwg\Consol Draw\STREET AND STORM\ST03.dwg PlotStamp: 8/19/2020 2:56 PM

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

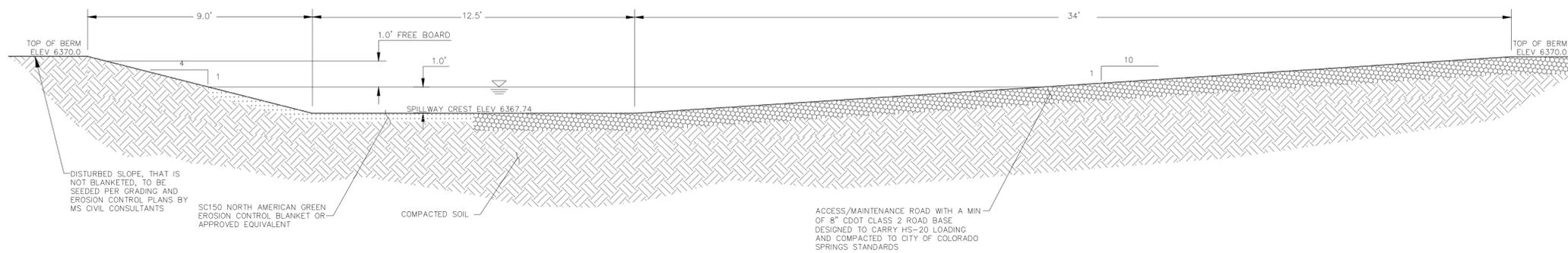
CLAREMONT BUSINESS PARK 2 FILING NO. 1
 WATER QUALITY POND 2 SITE PLAN
 PROJECT NO. 44-037
 DATE: 07/29/2020
 SCALE: N/A
 HORIZONTAL: N/A
 VERTICAL: N/A
 DESIGNED BY: GW
 DRAWN BY: CLP
 CHECKED BY: VAS
 SHEET 8 OF 12
 ST04



MAINTENANCE & ACCESS ROAD BELOW EURV TYPICAL SECTION
 NOT TO SCALE



MAINTENANCE & ACCESS ROAD ABOVE EURV TYPICAL SECTION
 NOT TO SCALE



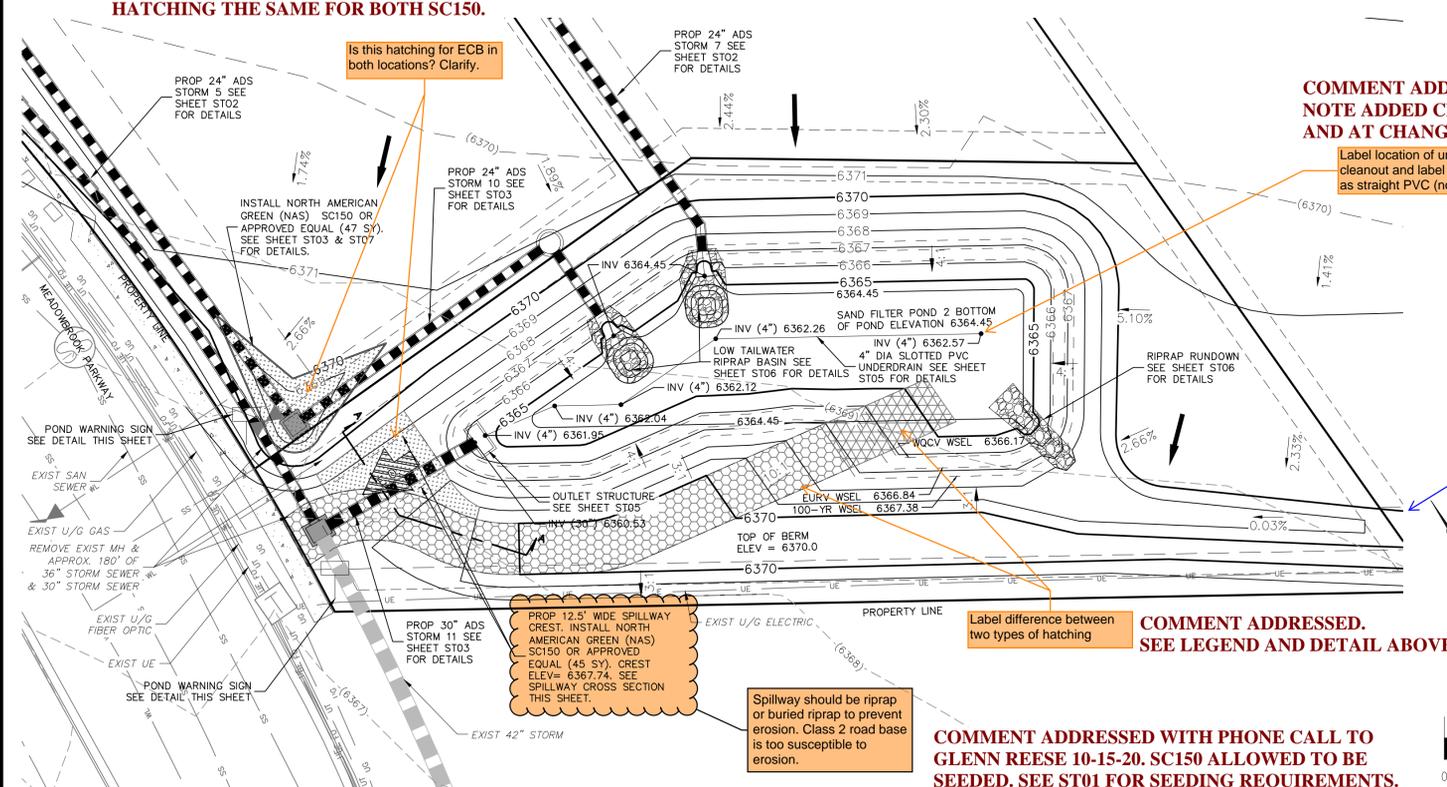
SPILLWAY SECTION A-A (PRIVATE)
 NOT TO SCALE

POND 2 WATER QUALITY DETENTION BASIN DATA	
WQ WATER SURFACE EL=	6366.17
WQ VOLUME=	0.143 AC-FT.
EURV WATER SURFACE EL=	6366.84
EURV VOLUME=	0.223 AC-FT
100-YR WATER SURFACE EL=	6367.38
SPILLWAY CREST EL=	6367.74
TOP OF EMBANKMENT EL=	6370.00
100-YR VOLUME=	0.299 AC-FT
100-YR INFLOW=	29.5 CFS
100-YR RELEASE=	23.8 CFS

GRADING NOTES:

- ALL PROPOSED CONTOURS ARE TO FINISHED GRADE.
- EARTHEN CUT AND FILL SLOPES SHALL BE 3:1 MAXIMUM. SLOPES IN EXCESS OF 4:1 SHALL BE COVERED WITH SOIL RETENTION BLANKET OVER 4" MIN. THICKNESS OF TOPSOIL AND SEEDED.
- 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 MECHANICALLY CRIMPED INTO THE SOIL IN COMBINATION WITH AN ORGANIC MULCH TACKIFIER.
- PRIOR TO ANY CONSTRUCTION ACTIVITIES THE PROPOSED SILT FENCE SHOWN ON THE EROSION CONTROL SHEET SHALL BE CONSTRUCTED. THE FENCE SHALL BE REMOVED UPON THE LATER OF STABILIZATION OF THE SITE OR COMPLETION OF CONSTRUCTION.
- TO REDUCE THE POTENTIAL FOR CLOGGING OF DEBRIS GRATES, NO STRAW MULCH SHALL BE USED WITHIN THE EURV OR WOCV 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 COMPLY WITH THE MATERIALS AND INSTALLATION REQUIREMENTS FOR EROSION CONTROL BLANKETS (STRAW COCONUT OR 100 PERCENT COCONUT). SITE-SPECIFIC CONDITIONS MAY REQUIRE ADDITIONAL BLANKET OR OTHER EROSION CONTROL MEASURES.

**COMMENT ADDRESSED.
 HATCHING THE SAME FOR BOTH SC150.**



SAND FILTER WATER QUALITY POND 2 (PRIVATE)

**COMMENT ADDRESSED.
 NOTE ADDED CLEANOUT AT END AND AT CHANGE OF HORZ DIRECTION.**

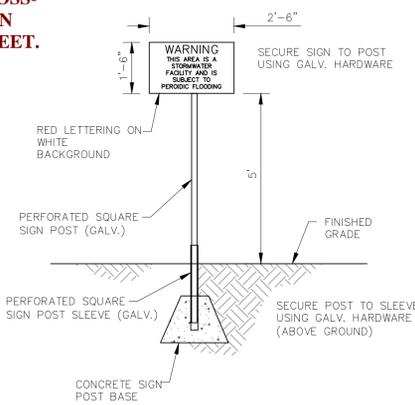
Label location of underdrain cleanout and label cleanout as straight PVC (not slotted)

**COMMENT ADDRESSED.
 SEE DETAIL ABOVE FOR CROSS-SECTION. SEE ST01 FOR OPEN CHANNEL CALCULATOR SHEET.**

Please provide a cross section detail of the swale that is conveying the flow (DP8) to the riprap rundown

**COMMENT ADDRESSED.
 SEE LEGEND AND DETAIL ABOVE.**

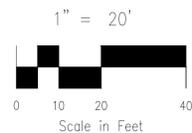
COMMENT ADDRESSED WITH PHONE CALL TO GLENN REESE 10-15-20. SC150 ALLOWED TO BE SEEDED. SEE ST01 FOR SEEDING REQUIREMENTS.



POND WARNING SIGN
 SCALE: 3/8" = 1'

LEGEND

- EX EXISTING
- FUT FUTURE
- PROP PROPOSED
- PROP MAJ CONT
- PROP MIN CONT
- EXIST MAJ CONT
- EXIST MIN CONT
- MAINTENANCE/ACCESS ROAD ABOVE EURV
- MAINTENANCE/ACCESS ROAD BELOW EURV
- RIPRAP RUNDOWN & LOW TAILWATER BASIN
- SC150 NORTH AMERICAN GREEN EROSION CONTROL BLANKET OR EQUIVALENT
- EX. FLOW ARROW
- PROP. FLOW ARROW
- PROPERTY LINE
- PROP STORM SEWER PIPE
- EASEMENT LINE
- EMERGENCY OVERTFLOW



102 E. Pikes Peak Ave., Ste 500
 Colorado Springs, CO 80903
 Phone: 719.555.4485



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

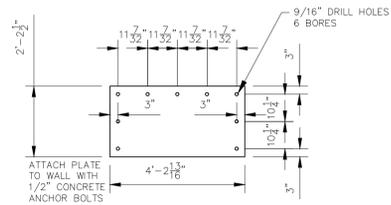
MARCIL A. SANCHEZ, COLORADO P.E. NO. 37160

NO.	DATE	BY	DESCRIPTION

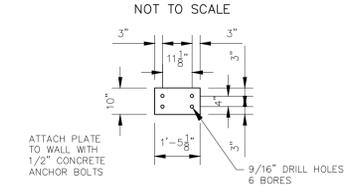
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

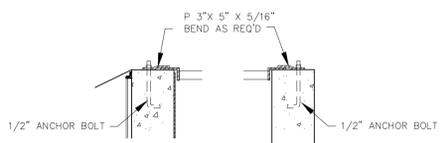
File: 0:\440374-CBP-F2-Lots 1-8\440374-CBP-F2-Lots 1-8\dwg\Consol Draw\STORM\ST04.dwg PlotStamp: 7/31/2020 1:01 PM



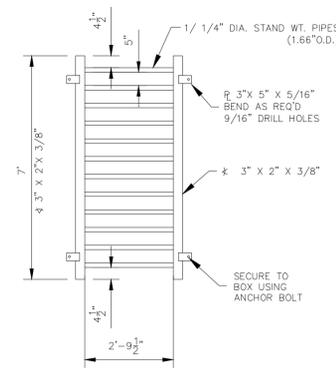
**RESTRICTOR PLATE~30"
OUTFALL PIPE**
NOT TO SCALE



RESTRICTOR PLATE~4" UNDERDRAIN
NOT TO SCALE



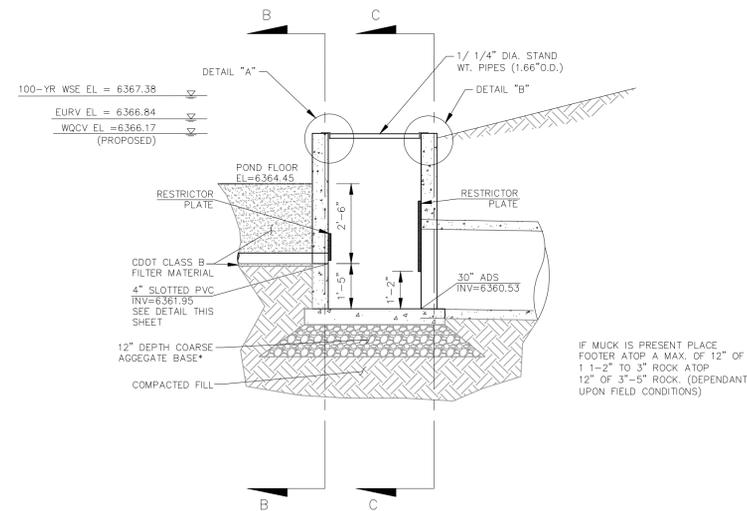
**GRATE
DETAIL "A" GRATE
DETAIL "B"**



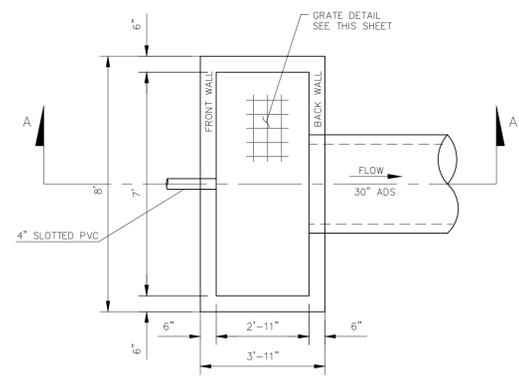
GRATE PLAN
NOT TO SCALE

NOTE:
ALL GRATES,
IMBEDS, AND
FASTENERS SHALL
BE FABRICATED
USING GALVANIZED
STEEL UNLESS
OTHERWISE NOTED.

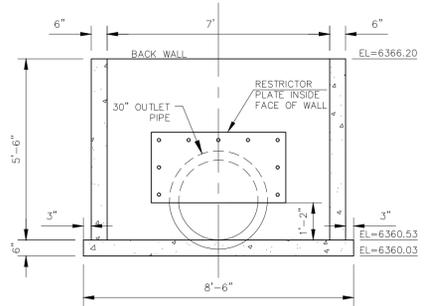
ALL GRATE
DIMENSIONS TO BE
FIELD VERIFIED
PRIOR TO
FABRICATION. ALL
GRATE MATERIAL
SHALL BE
GALVANIZED.



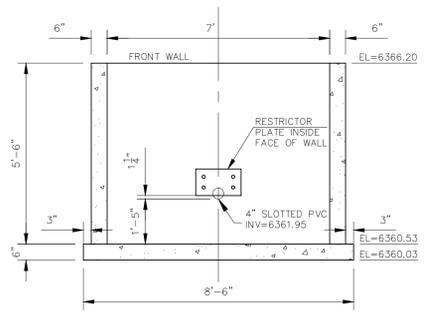
SECTION A-A
NOT TO SCALE



POND 2 WATER QUALITY OUTLET STRUCTURE
NOT TO SCALE



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 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).

T-6 Sand Filter

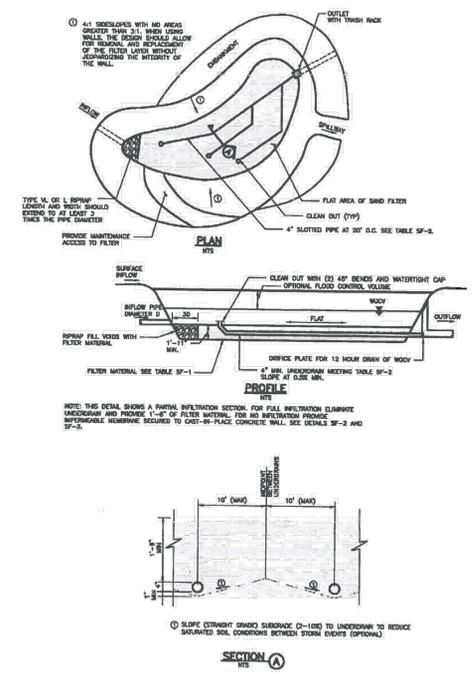


Figure SF-1. Sand Filter Plan and Sections

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

File: 0:\44037A-CBP F2-Lots 1-8\44037A-CBP F2-Lots 1-8.dwg Const Dwg\STORM\ST05.dwg PlotStamp: 7/31/2020 2:05 PM

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OUTLET STRUCTURE POND 2 DETAILS
DATE: 07/29/2020
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. PILES 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.

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

NO.	DATE	BY	DESCRIPTION

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CAUTION

STEEL GRATE QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH	WEIGHT PER FT. (LBS.)	TOTAL LBS. - 128
4	54 x 7.7 BEAM	40'	7.70	103
2	3 1/2" x 1/4" FLAT	26 1/2'	2.98	13
2	3" x 1/4" FLAT	26 1/2'	2.55	12

INLET WITH DITCH PAVING
SECTION VIEW

SECTION A-A
INLET ON GRADE (FLOW FROM ONE DIRECTION)

SECTION A-A
INLET AT BOTTOM OF VERTICAL CURVE (FLOW FROM TWO DIRECTIONS)

SECTION D-D
STANDARD INLET GRATE

SECTION E-E
CLOSE MESH GRATE

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	106	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'-0"	15'-0"

GENERAL NOTES

- INLET TYPE C IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
- CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
- REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED #4 AND SHALL HAVE A MINIMUM 2" 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" WELDED WIRE MESH (WEL) WITH 12" x 12" SQUARES.
- 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 IN 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 ASHOTO 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.

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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 ASHOTO 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.

TRANSVERSE CROSS SECTION
LONGITUDINAL CROSS SECTION
LEVEL GRATE INSTALLATION

TRANSVERSE VIEW
LONGITUDINAL VIEW
SECTION D-D
STANDARD INLET GRATE

TRANSVERSE CROSS SECTION
LONGITUDINAL CROSS SECTION
SLOPING GRATE INSTALLATION

SECTION E-E
CLOSE MESH GRATE

QUANTITIES FOR ONE INLET

H	CONCRETE (CU. YDS.)	STEEL (LBS.)	CIRCULAR PIPE RANGE
3.0	1.5	127	18-24
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

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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

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Date:	Comments:

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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.
- PLACE TRANSITION ASSEMBLY BEFORE POURING CONCRETE.
- MANHOLE RING AND COVER, STATION POINT AND OUTFLOW PIPE SHALL BE LOCATED AT THE SAME END OF THE INLET.

TRANSITION CURB
CURB FACE ASSEMBLY
SECTION A-A REGULAR INLET
SECTION A-A INLET WITH DROP BOX (H>5 FT.)
SECTION B-B END VIEW
SECTIONS C-C & D-D (DOTTED BARS ARE IN SECTION D-D)

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CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

Date:	Comments:

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4201 East Arkansas Avenue
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Phone: (303) 757-9083
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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 ASHOTO 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.

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

MARK	BAR # OR SIZE	O.C. SPACING	ALL INLETS		INLETS: H ≤ 5 FT.			INLETS: H > 5 FT.				
			NO. REQ'D.	LENGTH	L = 5 FT.	L = 10 FT.	L = 15 FT.	L = 10 FT.	L = 15 FT.			
401	4	11"	15	*	21	*	26	*	11	*	11	*
402	4	11"	7	*	13	*	18	*	7	*	7	*
403	4	9"	*	4'-0"	*	4'-0"	*	4'-0"	*	4'-0"	*	4'-0"
405	4	6"	11	6'-10"	21	6'-10"	31	6'-10"	11	6'-10"	11	6'-10"
406	4	6"	7	6'-10"	7	13'-10"	7	18'-10"	7	6'-10"	7	6'-10"
407	4	9"	*	5'-10"	*	10'-10"	*	15'-10"	*	5'-10"	*	5'-10"
408	4	12"	3	6'-10"	3	11'-10"	3	16'-0"	3	11'-10"	3	16'-0"
409	4	8"	6	5'-10"	6	10'-10"	6	15'-10"	6	10'-10"	6	15'-10"
410	4	11"	11	11'	11	11'	11	11'	11	11'	11	11'
411	4	11"	3	5'-2"	3	5'-2"	3	5'-2"	3	5'-2"	3	5'-2"
412	4	11"	3	2'-9"	3	2'-9"	3	2'-9"	3	2'-9"	3	2'-9"
413	4	9"	7	10'-10"	7	10'-10"	7	10'-10"	7	10'-10"	7	10'-10"
501	5	5 1/2"	11	3'-4"	22	3'-4"	33	3'-4"	22	3'-4"	33	3'-4"
502	5	5 1/2"	11	11'-5"	11	11'-5"	11	11'-5"	11	11'-5"	11	11'-5"
503	5	5 1/2"	5	3'-6"	16	3'-6"	27	3'-6"	6	3'-6"	17	3'-6"
504	5	5 1/2"	5	8'-4"	5	8'-4"	5	8'-4"	5	8'-4"	5	8'-4"
601	6	2 1/2"	2	8'-10"	2	8'-10"	2	8'-10"	2	8'-10"	4	8'-10"
605	6	2 1/2"	1	5'-10"	1	10'-10"	1	15'-10"	1	10'-10"	1	15'-10"

TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"

H	LENGTH	NO. REQ'D.	NO. REQ'D.	L = 5 FT.		L = 10 FT.		L = 15 FT.	
				REGULAR	DROP BOX	CONC. CU. YDS.	STEEL LBS.	CONC. CU. YDS.	STEEL LBS.
3'-0"	2'-8"	10	7	3.2	285	5.3	497	7.4	706
3'-6"	3'-2"	10	7	3.4	305	5.7	528	7.9	747
4'-0"	3'-6"	12	9	3.7	326	6.0	559	8.4	786
4'-6"	4'-2"	12	9	3.9	334	6.4	571	8.8	803
5'-0"	4'-8"	14	11	4.1	354	6.7	602	9.3	844
5'-6"	5'-2"	16	13	4.4	375	6.0	607	7.4	850
6'-0"	5'-8"	16	13	4.6	382	6.2	616	7.6	860
6'-6"	6'-2"	18	15	4.8	402	6.4	637	7.8	880
7'-0"	6'-8"	18	15	5.0	423	6.6	654	8.0	897
7'-6"	7'-2"	20	17	5.3	440	6.9	664	8.3	907
8'-0"	7'-8"	22	19	5.5	451	7.1	684	8.5	927
8'-6"	8'-2"	24	21	5.7	471	7.3	702	8.7	944
9'-0"	8'-8"	24	21	6.0	479	7.6	711	9.0	954
9'-6"	9'-2"	26	23	6.2	498	7.8	732	9.2	974
10'-0"	9'-8"	28	25	6.4	520	8.0	749	9.4	992
10'-6"	10'-2"	28	25	6.7	527	8.3	759	9.7	1001
11'-0"	10'-8"	30	27	6.9	547	8.5	779	9.9	1022

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

CLAREMONT BUSINESS PARK 2 FILING NO. 1
STANDARD DETAILS
DATE: 07/29/2020
SCALE: HORIZONTAL: N/A VERTICAL: N/A
DESIGNED BY: GT
DRAWN BY: CLP
CHECKED BY: VAS

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

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CAUTION

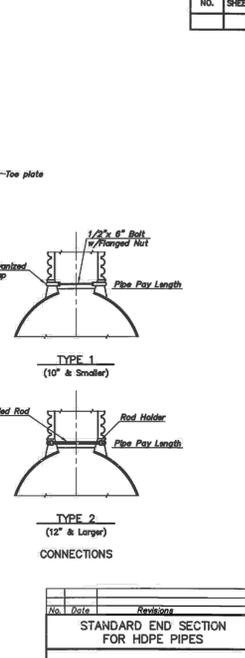
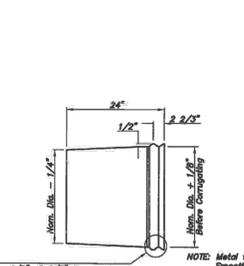
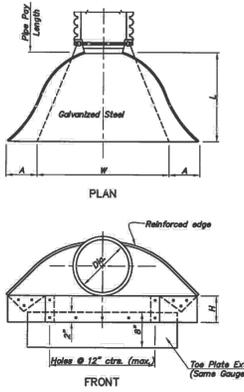
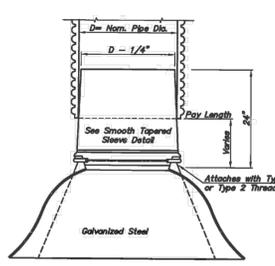
File: 0:\440374-CBP-F2-Lts-1-8\dwg\Const\Draws\STREET AND STORM\SDOT.dwg Plotstamp: 7/31/2020 2:09 PM

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"	18	14	5 3/4	4	14 1/2	16	2 1/4	27 1/2"		
10"	18	17	7 5/8	6	14 1/2	20	2 1/2	33 1/4"		
12"	18	25	7	6	21	24	2 1/2	36"		
15"	18	33	8	6	26	30	2 1/2	46"		
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"		

The 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 pipes inclusive. W + 20" for 36" to 60" diameter pipes inclusive.

Multiple panel end 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.



REV	DESCRIPTION	DATE	BY	CHKD
1	ADDED METRIC UNITS AND RENAMED	1/4/2019	MMDOVY	CHKO
2				
3				

ADS HP STORM 12" - 60" PIPE SPECIFICATION

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

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

Joint Performance: Pipes 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) pipe shall be watertight according to the requirements of ASTM D3212. Spigots shall have gaskets meeting the requirements of ASTM F477. Gaskets 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 allow 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 cover, 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 test rates.

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

Installation: Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in traffic areas for 12- through 48-inch (300 to 1200 mm) diameters shall be one foot, (0.3 m) and for 60-inch (1500 mm) diameters, the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1, Class 2 (minimum 90% 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-geo.com for a copy of the latest installation guidelines.

Table 5-7: Bend Radii for ADS Thermoplastic Pipes. Columns include Pipe Diameter (in), Joint Type, Maximum Deflection at Joint (deg), Radius (ft) per pipe length (10 ft, 15 ft, 20 ft), and 20 ft (in).

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

INSTALLATION VIEW: Shows the pipe joint with a cast iron grate and frame, stainless steel take-up clamp, and fill void space with acceptable grout material.

DETAILED CONNECTION VIEW: Shows the structure wall, non-shrink patching compound, and stainless steel take-up clamp screws placed 180 degrees from each other.

NOTES: PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST ENSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLING BETWEEN THE PIPE AND MANHOLE. INSTALLATION RECOMMENDATIONS ARE ALSO SPECIFIED IN INSTALLATION GUIDE 1.06 WATERSTOP INSTALLATION.

Table 5-8: ADS HP Storm Waterstop Groued Manhole Connection. Columns include Pipe Size, Pipe OD, Min. Hole OD, Min. Distance from Pipe Invert to Structure Invert, and ADS Product Code.

Sediment Basin (SB) SC-7

TABLE SB-1: SIZING INFORMATION FOR STANDARD SEDIMENT BASIN. Columns include Upstream Drainage Area (ac), Basin Bottom Width (ft), Spillway Crest Length (ft), and Hole Diameter (in).

SEDIMENT BASIN PLAN: Shows the layout of the basin with inlets, riser pipe, spillway, and riprap pad. Includes a note about the hole diameter and the use of columns.

SECTION A: Shows a cross-section of the basin with embankment material, crest length, and riprap bedding. Includes a note about the crest length and the use of embankment material.

Sediment Basin (SB) SC-7

SEDIMENT BASIN INSTALLATION NOTES: 1. 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, H; FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER HD, AND PIPE DIAMETER D. 2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED. 3. SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON BASINS AS A STORMWATER CONTROL. 4. 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. 5. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698. 6. PIPE SCH 40 OR GREATER SHALL BE USED. 7. 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: 1. INSPECT BASINS EACH WINTER, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF SBMS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT SBMS AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE. 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN SBMS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY. 3. WHERE BASINS HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE. 4. 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. 5. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION. 6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDING AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION. (DETAILS ADAPTED FROM BOULDER COUNTY, COLORADO)

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

HP STORM TRENCH INSTALLATION DETAIL (ALTERNATE)

TABLE 1: RECOMMENDED MINIMUM TRENCH WIDTHS. Columns include Pipe Dia., Min. Trench Width, and Class.

TABLE 2: MAXIMUM COVER FOR ADS HP STORM PIPE ALTERNATE INSTALLATION. Columns include Pipe Dia., Class, and Maximum Cover.

TABLE 3: SELECT NATIVE CLEAN MATERIAL CLASSIFICATION. Columns include Pipe Dia., Class 1, Class 2, and Class 3.

TABLE 4: MINIMUM COVER FOR ADS HP STORM PIPE ALTERNATE INSTALLATION. Columns include Pipe Dia., Class, and Minimum Cover.

TABLE 5: SURFACE LIVE LOADING CONDITIONS. Columns include Pipe Dia., Surface Live Loading, and Class.

TABLE 6: CLASS 1 MAXIMUM COVER FOR ADS HP STORM PIPE. Columns include Pipe Dia., Class 1, Class 2, and Class 3.

TABLE 7: CLASS 2 MAXIMUM COVER FOR ADS HP STORM PIPE. Columns include Pipe Dia., Class 1, Class 2, and Class 3.

TABLE 8: CLASS 3 MAXIMUM COVER FOR ADS HP STORM PIPE. Columns include Pipe Dia., Class 1, Class 2, and Class 3.

Storm Sewer General Notes SB-5

1. THE CONTRACTOR SHALL COORDINATE WITH THE GEOTECHNICAL ENGINEER AND PIPE MANUFACTURE (ADS) TO DETERMINE ACCEPTABLE MATERIAL(S) FOR BACKFILL AND SHALL PRESENT A COPY OF THE TYPICAL TRENCH SECTION(S) TO EL PASO COUNTY ENGINEERING FOR ACCEPTANCE PRIOR TO CONSTRUCTION. 2. COMPACTION AND MATERIAL TESTING SHALL BE IN ACCORDANCE WITH EL PASO COUNTY SPECIFICATIONS. 3. THE SPECIFICATION AND GUIDELINES PROVIDED ON THIS PLAN ARE FOR INFORMATION PURPOSES ONLY. IT IS THE CONTRACTOR RESPONSIBILITY TO BE IN COMPLIANCE WITH THE INSTALLATION GUIDELINES PROVIDED BY THE PIPE MANUFACTURE.

Watertight Connection Using a Manhole Boot (Cored Hole or Precast) or Precast Compression Gasket w/ Prefabricated Adapter

Table showing details for different pipe sizes and materials. Columns include Pipe Size, Adapter, and Part Number.

Watertight Connection Using a Manhole Boot (Cored Hole or Precast) or Precast Compression Gasket w/ Prefabricated Adapter

Table showing details for different pipe sizes and materials. Columns include Pipe Size, Adapter, and Part Number.

N-12 HP Storm Trench Installation Detail

TABLE 1: RECOMMENDED MINIMUM TRENCH WIDTHS. Columns include Pipe Dia., Min. Trench Width, and Class.

TABLE 2: MINIMUM COVER FOR ADS N-12 HP PIPE. Columns include Pipe Dia., Class, and Minimum Cover.

TABLE 3: SURFACE LIVE LOADING CONDITIONS. Columns include Pipe Dia., Surface Live Loading, and Class.

TABLE 4: CLASS 1 MAXIMUM COVER FOR ADS N-12 HP PIPE. Columns include Pipe Dia., Class 1, Class 2, and Class 3.

TABLE 5: CLASS 2 MAXIMUM COVER FOR ADS N-12 HP PIPE. Columns include Pipe Dia., Class 1, Class 2, and Class 3.

TABLE 6: CLASS 3 MAXIMUM COVER FOR ADS N-12 HP PIPE. Columns include Pipe Dia., Class 1, Class 2, and Class 3.

CLAREMONT BUSINESS PARK 2 FILING NO. 1

STANDARD DETAILS

DATE: 07/29/2020

PROJECT NO. 44-037

DESIGNED BY: GT

DRAWN BY: N/A

CHECKED BY: VAS

SHEET 12 OF 12

ST08

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

CIVIL CONSULTANTS, INC.

REVISED: DATE: BY: DESCRIPTION:

NO. DATE: BY: DESCRIPTION:

CAUTION