

CLAREMONT BUSINESS PARK FILING NO. 3

COUNTY OF EL PASO, STATE OF COLORADO

STREET IMPROVEMENT PLANS

(INCLUDING STORM SEWER)

APRIL 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
Jeff Rice, P.E. (719) 520-6300

TRAFFIC ENGINEERING: El Paso County Department of Public Works
3275 Akers Drive
Colorado Springs, CO 80922
Jennifer Irvine, P.E. (719) 520-6460

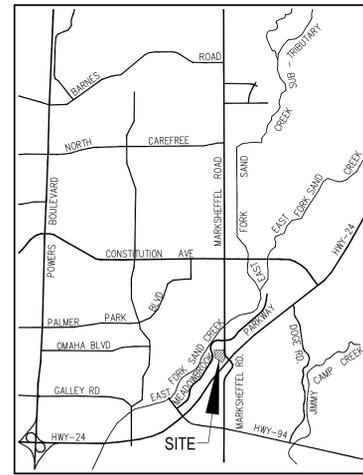
WATER RESOURCES: Cherokee Metropolitan District
6250 Palmer Park Boulevard
Colorado Springs, CO 80915-1721
Jeff Munger (719) 597-5080

FIRE DISTRICT: Cimarron Hills Fire Department
1835 Tuskegee Place
Colorado Springs, CO 80915
(719) 591-0960

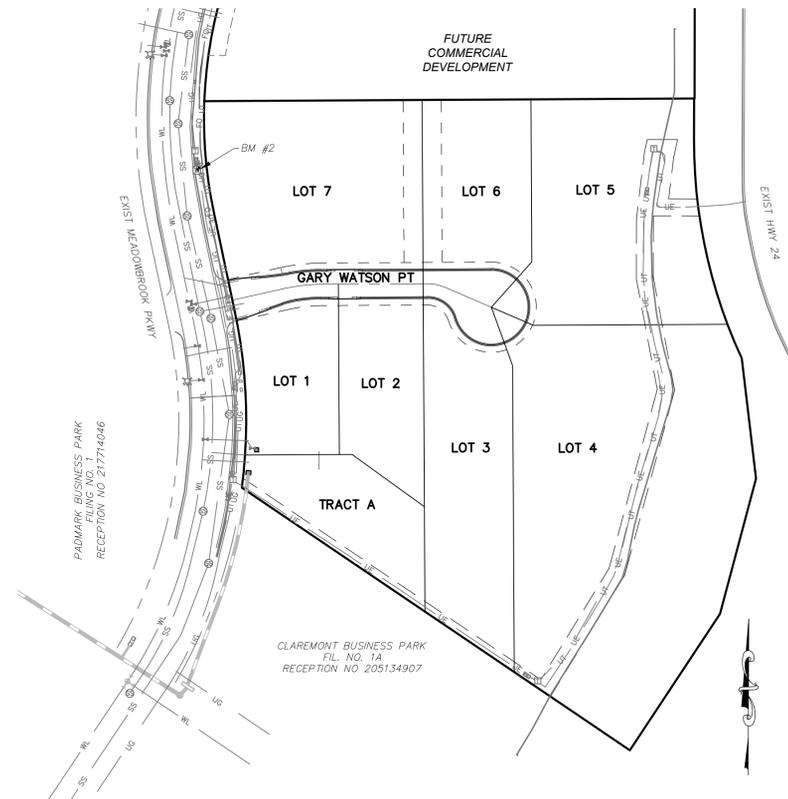
GAS DEPARTMENT: Colorado Springs Utilities
7710 Durant Dr.
Colorado Springs, CO 80947
Tim Wendt (719) 668-3556

ELECTRIC DEPARTMENT: 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.

CLAREMONT BUSINESS PARK FILING NO. 3

STREET IMPROVEMENT PLANS

DATE: 04/28/2020

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

DESIGNED BY: GW

DRAWN BY: CLP

CHECKED BY: VAS

SHEET 1 OF 12

SI01

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



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48 HRS BEFORE YOU DIG
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ABBREVIATION LEGEND

- CL-CL 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

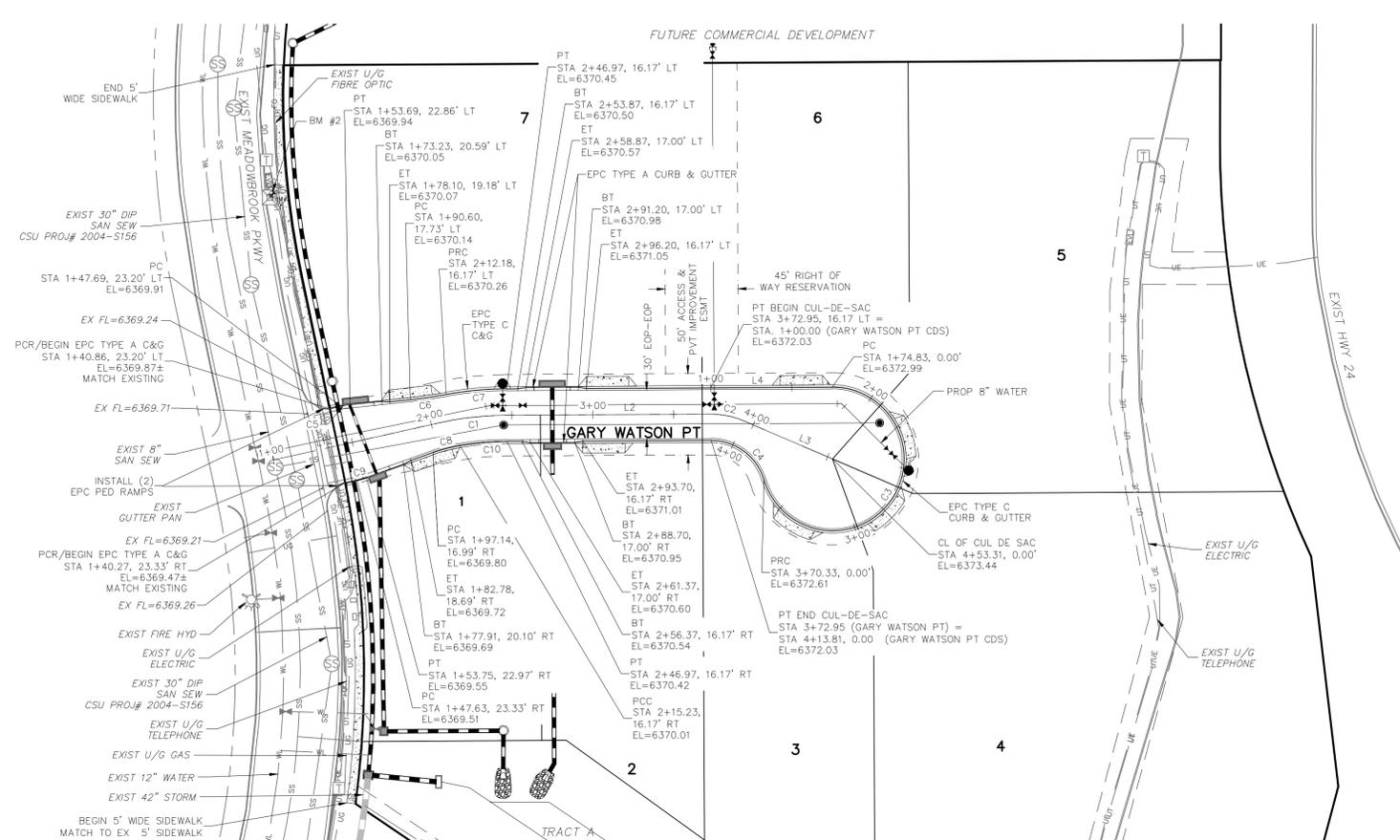
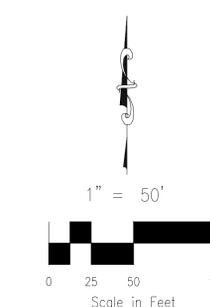
LINE	LENGTH	DIRECTION
L1	104.00'	N77°22'44"E
L2	125.98'	N89°41'23"E
L3	59.87'	S66°49'29"E

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

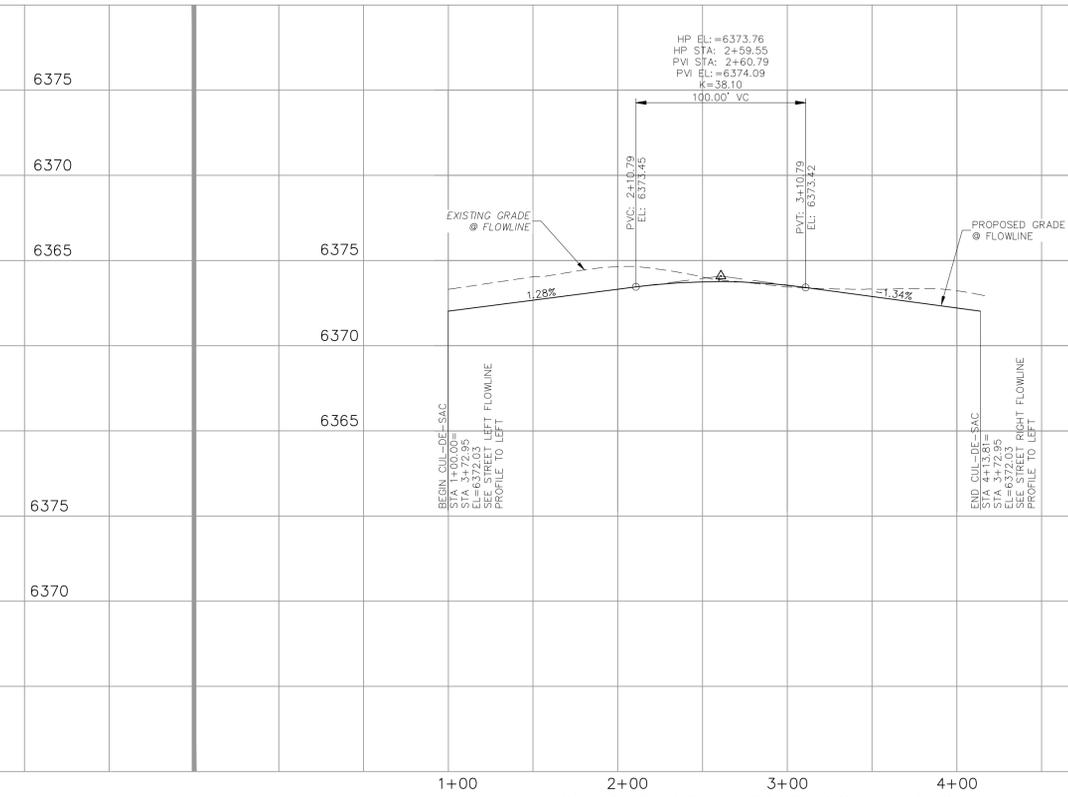
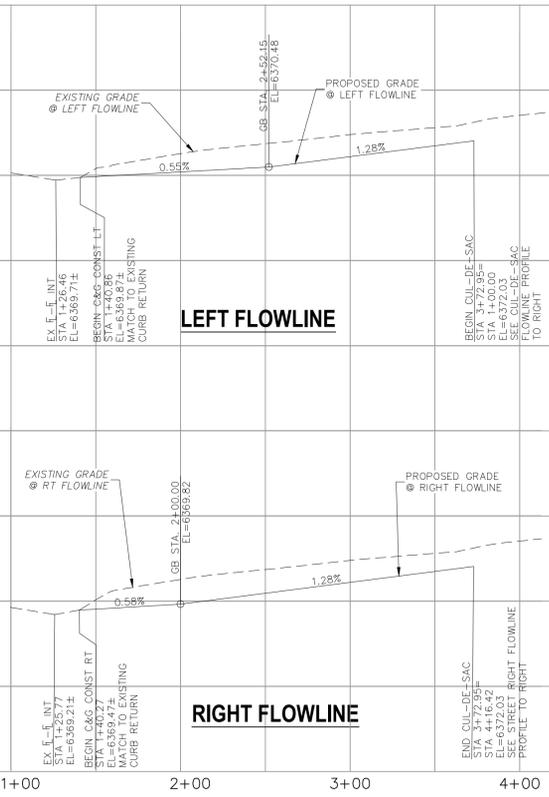
LINE	LENGTH	DIRECTION
L4	74.83'	N89°41'23"E

CURVE	RADIUS	LENGTH	DELTA
C3	44.17'	195.50'	253°37'02"
C4	33.83'	43.47'	73°37'02"

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°



**GARY WATSON PT
(PRIVATE)**



CUL-DE-SAC STA 1+00.00 TO STA 4+16.42

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CLAREMONT BUSINESS PARK FILING NO. 3
STREET IMPROVEMENT PLANS

PROJECT NO. 44-037 FILE: \dwg\Const\DWG\Street & Storm Plans\S03.dwg DATE: 04/28/2020

DESIGNED BY: GW SCALE: CLP
 DRAWN BY: CLP HORIZ: 1"=50'
 CHECKED BY: VAS VERT: 1"=50'

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

M&S CIVIL CONSULTANTS, INC.

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

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

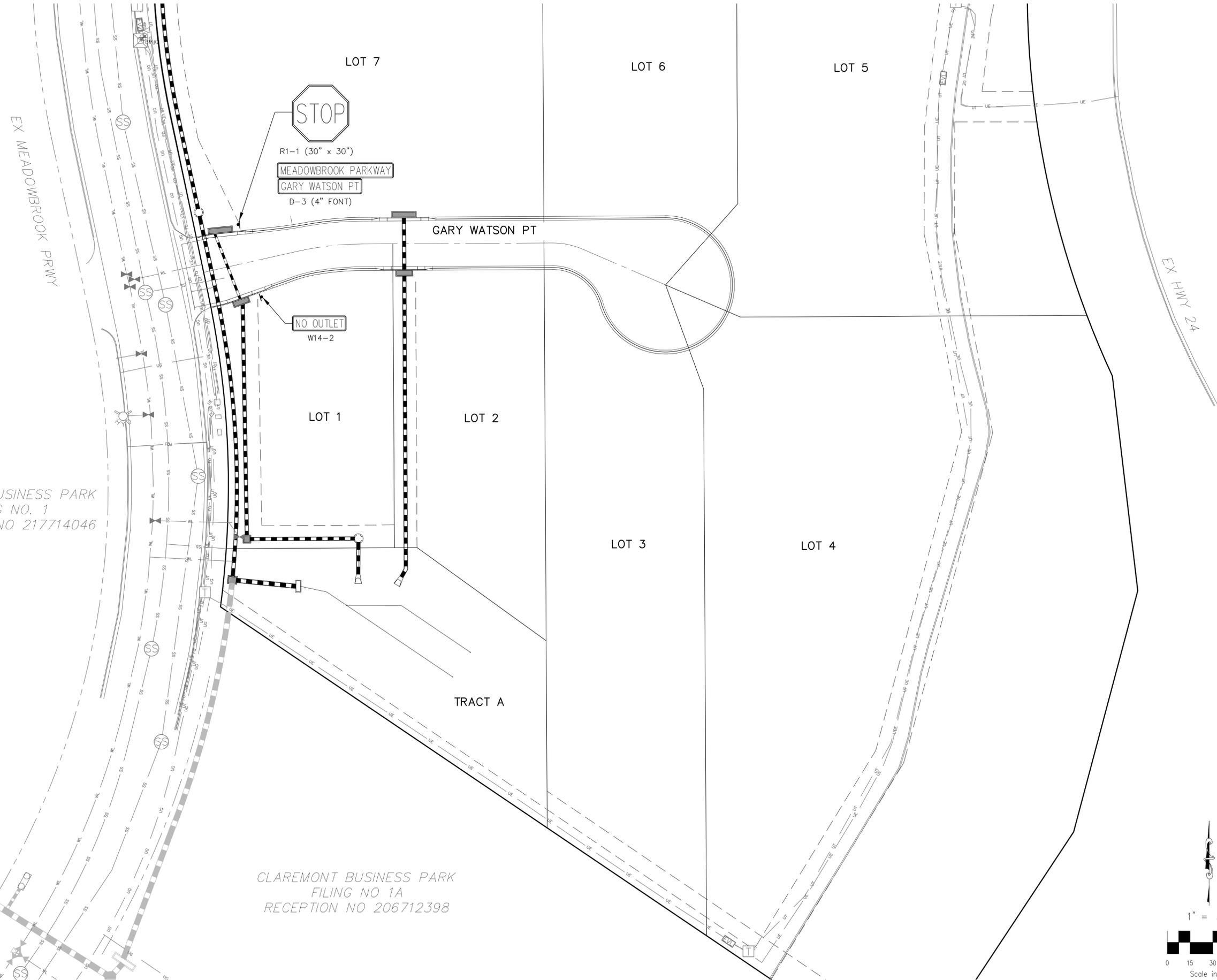
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CAUTION

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PADMARK BUSINESS PARK
FILING NO. 1
RECEPTION NO 217714046

CLAREMONT BUSINESS PARK
FILING NO 1A
RECEPTION NO 206712398



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& MARKING
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WATER &
TELEPHONE
LINES

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CLAREMONT BUSINESS PARK FILING NO. 3
SIGNAGE AND STRIPING PLAN

PROJECT NO. 44-037
DATE: 04/28/2020

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

DESIGNED BY: GW
DRAWN BY: CLP
CHECKED BY: VAS

SHEET 4 OF 12
S104

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

M&S
CIVIL CONSULTANTS, INC.

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

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

NO.	DATE	BY	DESCRIPTION	APPROV'D. BY	DATE

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CAUTION

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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.
- CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (fc) OF 4,000 PSI AT 28 DAYS. ALL CONCRETE PLACED AGAINST SOIL SHALL BE TYPE II PORTLAND CEMENT. ALL EXPOSED CORNERS SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS OTHERWISE SPECIFIED.
- EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213.
- BACKFILL AGAINST STRUCTURES SHALL NOT COMMENCE UNTIL ALL SUPPORTING DIAPHRAGMS ARE IN PLACE AND CONCRETE HAS OBTAINED ITS FULL SEVEN DAY STRENGTH. BACKFILL SHALL BE PLACED EQUALLY ON EACH SIDE OF RETAINING WALL STRUCTURES AND CUTOFF WALLS UNTIL THE FINAL GRADE IS REACHED.
- FOOTING EXCAVATIONS SHALL BE EXAMINED BY THE GEOTECHNICAL ENGINEER WITH A 24-HOUR MINIMUM NOTIFICATION FOR SOIL AND/OR CONCRETE TESTING. PLACEMENT OF CONCRETE IN THE ABSENCE OF TESTING SHALL BE COMPLETED AT THE SOLE RISK OF THE CONTRACTOR.
- PRIOR TO THE PLACEMENT OF CONCRETE IN AREAS WHERE SOIL IS PRESENT, THE SOIL SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6-INCHES. THE MOISTURE CONTENT SHALL BE ADJUSTED TO WITHIN PLUS OR MINUS 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT AND RECOMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION (AASHTO-T-180).

ABBREVIATIONS
 EC -- EPOXY COATED O.F. -- OUTSIDE FACE E.F. -- EACH FACE E.W. -- EACH WAY I.F. -- INSIDE FACE N.F. -- NEAR FACE
 T.O.C. -- TOP OF CONCRETE B.O.C. -- BOTTOM OF CONCRETE CONT. -- CONTINUOUS

CLAREMONT BUSINESS PARK FILING NO. 3

GENERAL NOTES AND DETAILS

PROJECT NO. 44-037 FILE: \Lang\Const-Dwg\Storm - District\ST01.dwg DATE: 04/28/2020

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

ST01

SHEET 5 OF 12

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

CIVIL CONSULTANTS, INC.

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

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

NO.	DATE	BY	DESCRIPTION	APPROVED BY	DATE

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CAUTION

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CLAREMONT BUSINESS PARK FILING NO. 3
 STORM SEWER PLAN & PROFILE
 DATE: 04/28/2020
 SCALE: HORIZONTAL: N/A VERTICAL: N/A
 PROJECT NO. 44-037
 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: 719.555.5485

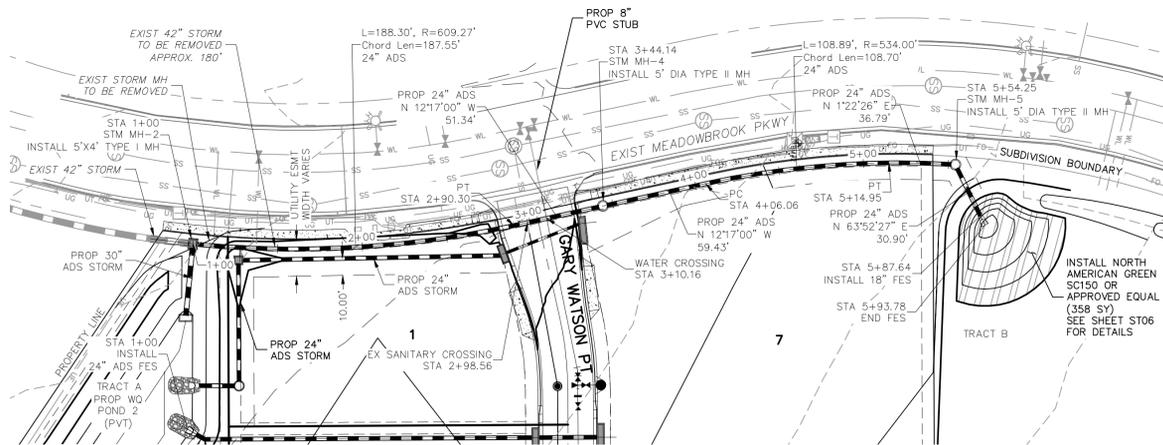
 CIVIL CONSULTANTS, INC.

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

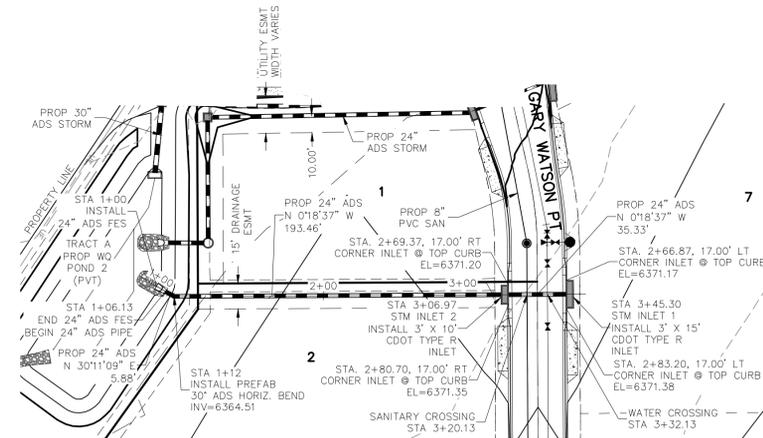
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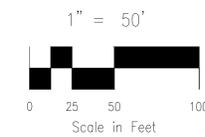
CAUTION



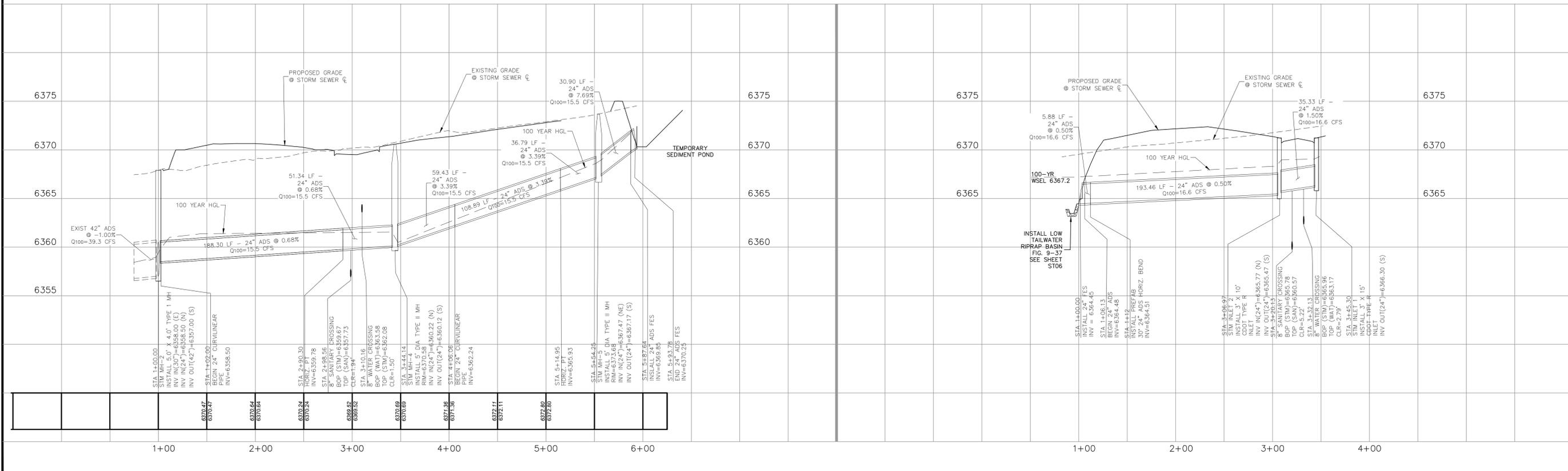
STORM 5
STA 1+00.00 TO STA 5+92.88
(PRIVATE)



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



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CLAREMONT BUSINESS PARK FILING NO. 3

STORM SEWER PLAN AND PROFILE

PROJECT NO. 44-037

DESIGNED BY: GW

DRAWN BY: CLP

CHECKED BY: VAS

SCALE:

HORIZONTAL: N/A

VERTICAL: N/A

DATE: 04/28/2020

SHEET 7 OF 12

ST03

102 E. Pikes Peak Ave., Ste 500
 Colorado Springs, CO 80903
 PHONE: 719.555.5485



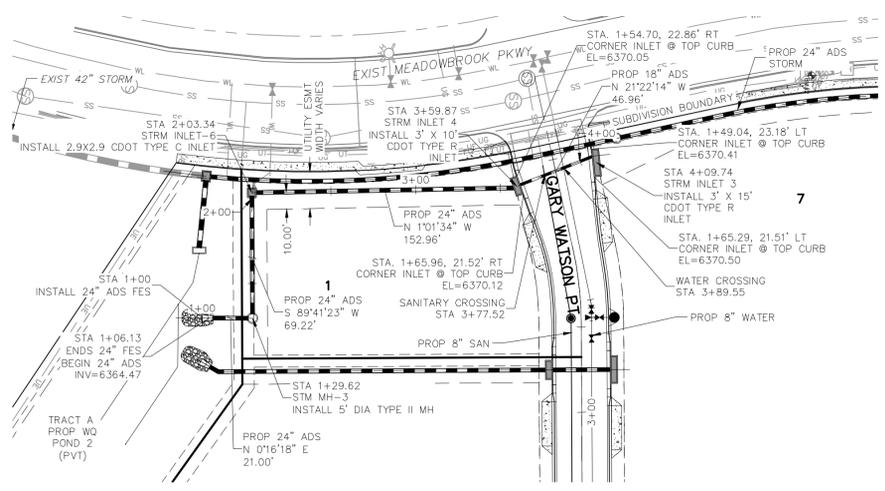
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

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

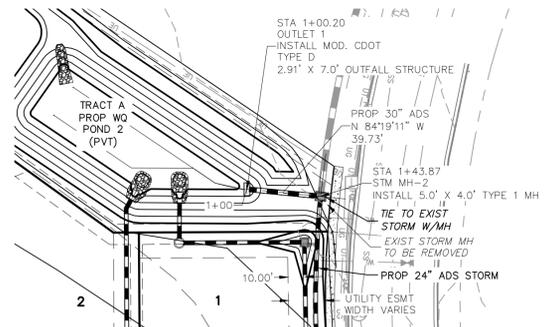
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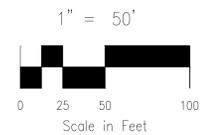
CAUTION



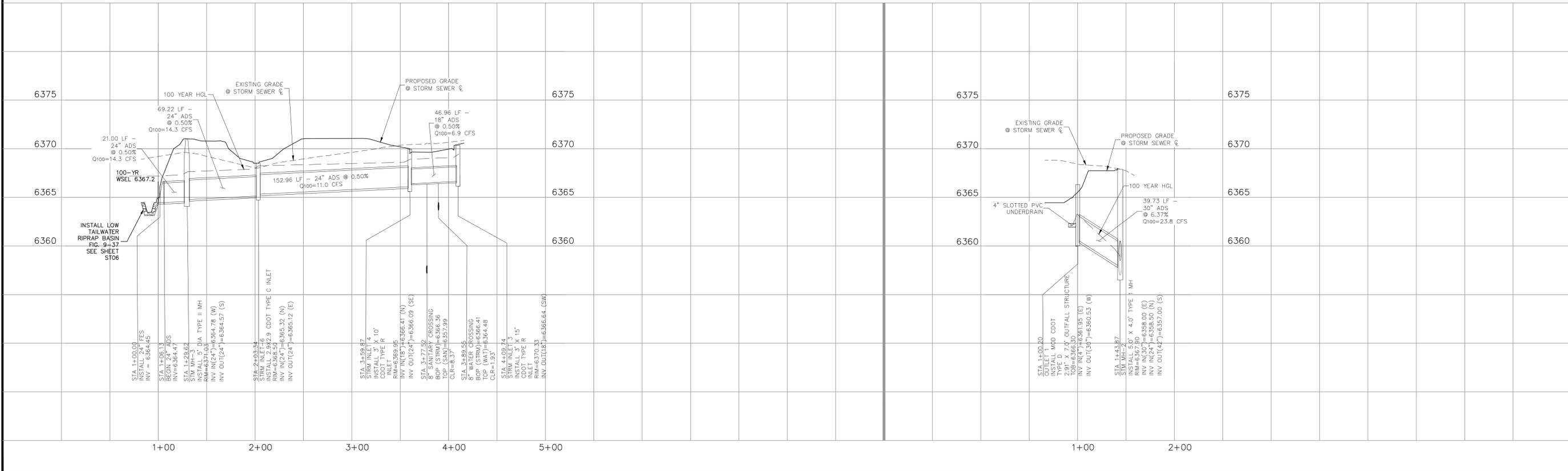
STORM 10
STA 1+00.00 TO STA 4+07.61
(PRIVATE)



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

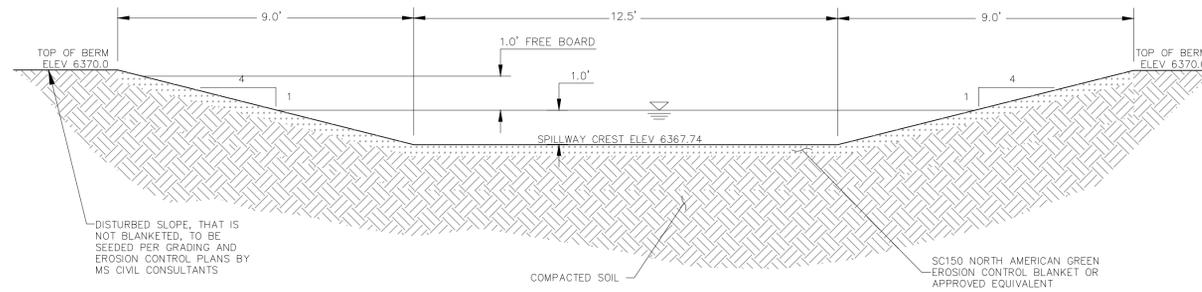


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 CALL 1-800-922-1987

CLAREMONT BUSINESS PARK FILING NO. 3
 WATER QUALITY POND 2 SITE PLAN
 PROJECT NO. 44-037
 DATE: 04/28/2020
 SCALE: N/A
 HORIZONTAL: N/A
 VERTICAL: N/A
 DESIGNED BY: GW
 DRAWN BY: CLP
 CHECKED BY: VAS
 SHEET 8 OF 12
 ST04



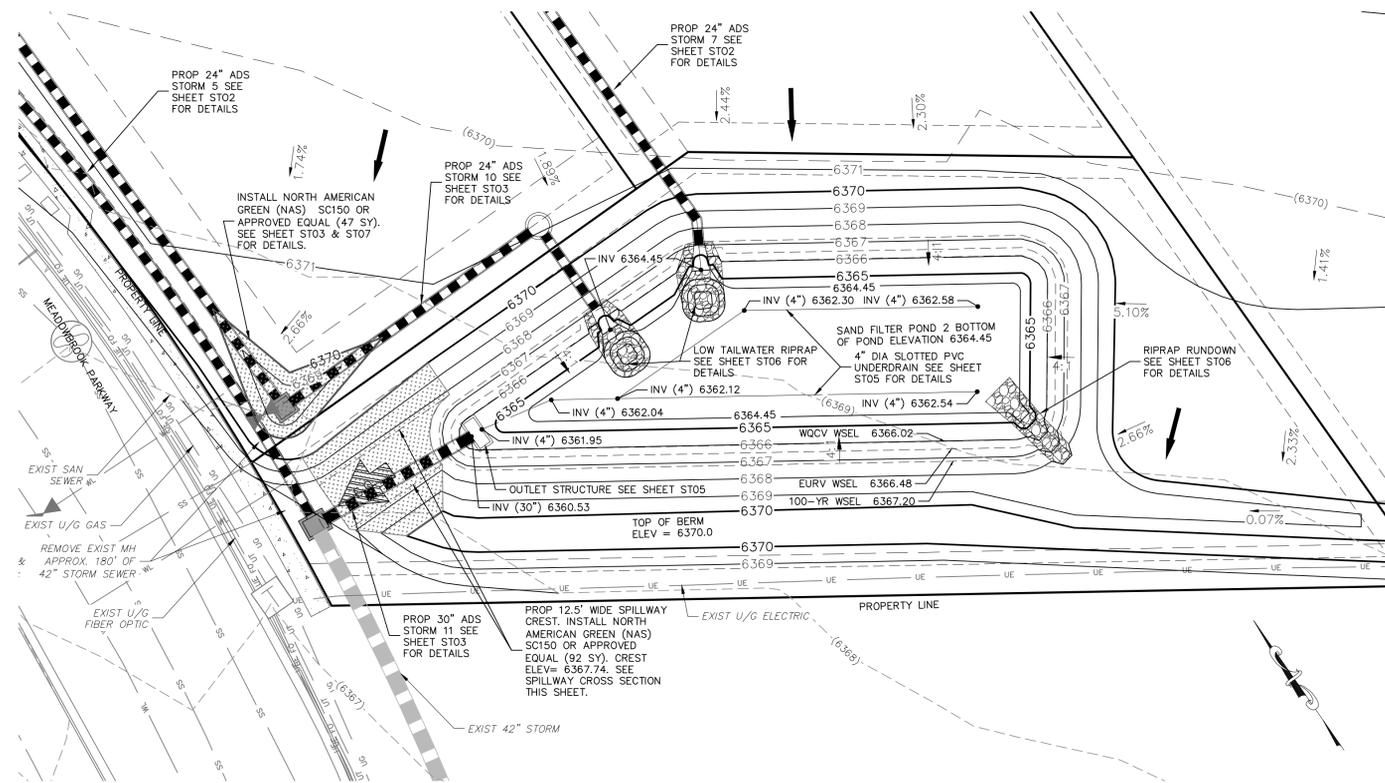
**SAND FILTER WATER QUALITY POND 2 (PRIVATE)
 SPILLWAY SECTION**

NOT TO SCALE

POND 2 WATER QUALITY DETENTION BASIN DATA	
WQ WATER SURFACE EL=	6366.02
WQ VOLUME=	0.143 AC-FT.
EURV WATER SURFACE EL=	6366.48
EURV VOLUME=	0.197 AC-FT
100-YR WATER SURFACE EL=	6367.20
SPILLWAY CREST EL=	6367.74
TOP OF EMBANKMENT EL=	6370.00
100-YR VOLUME=	0.300 AC-FT
100-YR INFLOW=	46.3 CFS
100-YR RELEASE=	23.8 CFS

GRADING NOTES:

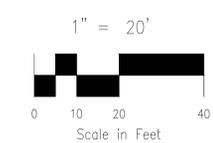
- ALL PROPOSED CONTOURS ARE TO FINISHED GRADE.
- EARTHEN CUT AND FILL SLOPES SHALL BE 3:1 MAXIMUM. SLOPES IN EXCESS OF 4:1 SHALL BE COVERED WITH SOIL RETENTION BLANKET OVER 4" MIN. THICKNESS OF TOPSOIL AND SEEDED.
- IF THE PROJECT IS CONSTRUCTED DURING THE SUMMER WHEN SEEDING IS NOT ALLOWED, APPLY 1-1/2 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 WQV 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.



SAND FILTER WATER QUALITY POND 2 (PRIVATE)

LEGEND

- EX EXISTING
- FUT FUTURE
- PROP PROPOSED
- PROP MAJ CONT
- PROP MIN CONT
- EXIST MAJ CONT
- EXIST MIN CONT
- RIPRAP
- 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: 719.555.5485

CIVIL CONSULTANTS, INC.

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

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

File: 0:\440374-CBP-F2-Lots 1-8\dwg\Consol Draw\STORM\ST04.dwg PlotStamp: 4/29/2020 6:34 PM

STEEL GRATE QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH (FT.)	WEIGHT (LBS.)
4	5/8" x 7/8" BEAM	40'	7.70
2	3/4" x 1/2" FLAT	28 1/2'	2.98
2	3" x 1/2" FLAT	28 1/2'	2.55
TOTAL			13.23

QUANTITIES FOR ONE INLET

H (CONC. CU. YDS.)	STEEL (LBS.)	NO. STEPS
2'-0"	0.3	75
3'-0"	1.0	80
3'-6"	1.2	86
4'-0"	1.3	91
4'-6"	1.4	96
5'-0"	1.5	102
5'-6"	1.7	107
6'-0"	1.8	112
6'-6"	1.9	118
7'-0"	2.0	123
7'-6"	2.2	129
8'-0"	2.3	134
8'-6"	2.4	139
9'-0"	2.5	145
9'-6"	2.7	150
10'-0"	3.0	156
11'-0"	3.4	161

BAR LIST FOR 2 FT. x 6 IN. AND HENDING DIAGRAM

MARK	NO.	REQ'D.	HEIGHT	LENGTH
401	2	2-3"	7-11"	
402	6	2-7"	8-7"	
403	3	1-1"	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 4" W x 1/2" W x 6" x 6" W x 1/2" W.
- 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 DIA. 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/business/designsupport/
 Drawing File Name: 604010101.dgn
 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
 Issued By: Project Development Branch July 4, 2012

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" FT.	CONCRETE CU. YDS.	STEEL LBS.	CIRCULAR PIPE RANGE INSIDE DIA. IN. - "O"
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

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Sheet Revisions

Date:	Comments:

Colorado Department of Transportation
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 Phone: (303) 757-9083
 Fax: (303) 757-9820

Project Development Branch SRJ/LTA
 Issued By: Project Development Branch on July 04, 2006

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 BARS ACCORDINGLY.
- WHEN A TYPE R INLET IS USED WITH MOUNTABLE CURBS AND GUTTER, 5 FT. 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.

BAR LIST FOR CURB INLETS, TYPE "R"

"H"	LENGTH	NO. REQ'D.							
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'-0"	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'-6"	16	13	4.6	382	6.2	616	7.6	860
6'-6"	6'-0"	18	15	4.8	402	6.4	637	7.8	880
7'-0"	6'-8"	20	17	5.0	423	6.6	654	8.0	897
7'-6"	7'-2"	20	17	5.2	430	6.9	664	8.3	907
8'-0"	7'-6"	22	19	5.5	451	7.1	684	8.5	927
8'-6"	8'-0"	24	21	5.7	471	7.3	702	8.7	944
9'-0"	8'-8"	24	21	5.9	479	7.6	711	9.0	954
9'-6"	9'-2"	26	23	6.2	499	7.8	732	9.2	974
10'-0"	9'-6"	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

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: 6040120102.dgn
 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
 Issued By: Project Development Branch on July 04, 2006

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.

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

MARK	BAR # OR SIZE	O.C. SPACING	TYPE	ALL INLETS L = 5 FT.	INLETS: H ≤ 5 FT. L = 10 FT.	INLETS: H ≤ 5 FT. L = 15 FT.	INLETS: H > 5 FT. L = 10 FT.	INLETS: H > 5 FT. L = 15 FT.
401	4	11"	II	15	21	26	11	11
402	4	11"	II	7	13	18	7	7
403	4	9"	II	4	4	4	4	4
405	4	6"	VI	11	6	31	11	6
406	4	6"	VI	7	13	10	7	8
407	4	9"	II	5	10	10	5	5
408	4	12"	II	3	6	3	3	3
409	4	8"	II	6	5	6	6	6
410	4	11"	VI	10	10	10	3	3
411	4	11"	II	3	5	3	3	3
412	4	11"	II	3	5	3	3	3
413	4	9"	II	7	10	7	7	7
501	5	5 1/2"	IV	11	3	22	3	3
502	5	5 1/2"	IV	11	3	3	11	11
503	5	5 1/2"	IV	5	3	16	6	3
504	5	5 1/2"	IV	3	3	3	3	3
601	6	2 1/2"	V	2	8	2	2	8

Computer File Information
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 Drawing File Name: 6040120102.dgn
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Sheet Revisions

Date:	Comments:

Colorado Department of Transportation
 4201 East Arkansas Avenue
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 Phone: (303) 757-9083
 Fax: (303) 757-9820

Project Development Branch SRJ/LTA
 Issued By: Project Development Branch on July 04, 2006

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

CLAREMONT BUSINESS PARK FILING NO. 3

STANDARD DETAILS

DATE: 04/20/2020

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

DESIGNED BY: GT

DRAWN BY: VAS

CHECKED BY: N/A

SHEET 11 OF 12

PROJECT NO. 44-037

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.

REVISIONS:

NO.	DATE:	DESCRIPTION:

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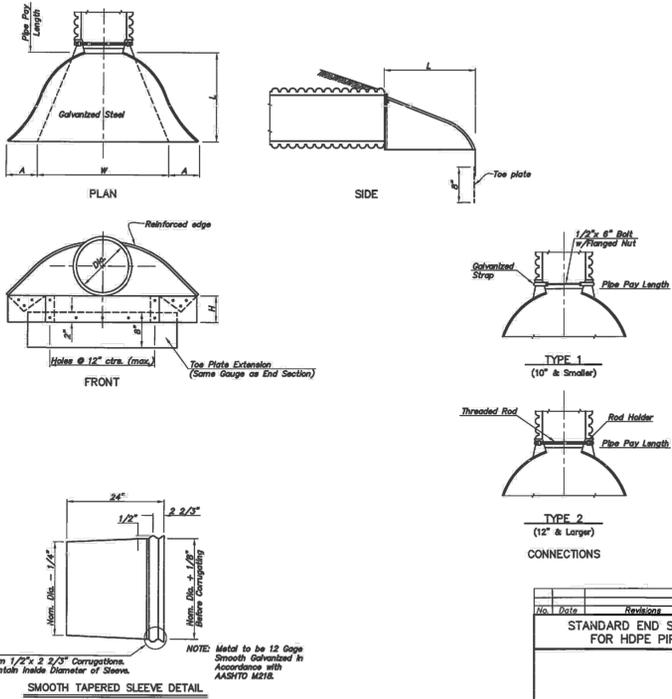
CAUTION

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	18	2 1/4	27 1/2"
10"	18	17	7 5/8	5	18 1/2	20	2 1/2	33 1/2"
12"	18	22	7	6	21 2/4	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	97	114	2	150"

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

Multiple panel 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.



SHEET NO.	TOTAL SHEETS
-----------	--------------

ADS HP STORM 12" - 60" PIPE SPECIFICATION

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

Pipe Requirements: 12- through 30-inch (300 to 750 mm) pipe shall have a smooth interior and annular exterior corrugations and meet or exceed ASTM 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 material. Contact the manufacturer for recommended test rates.

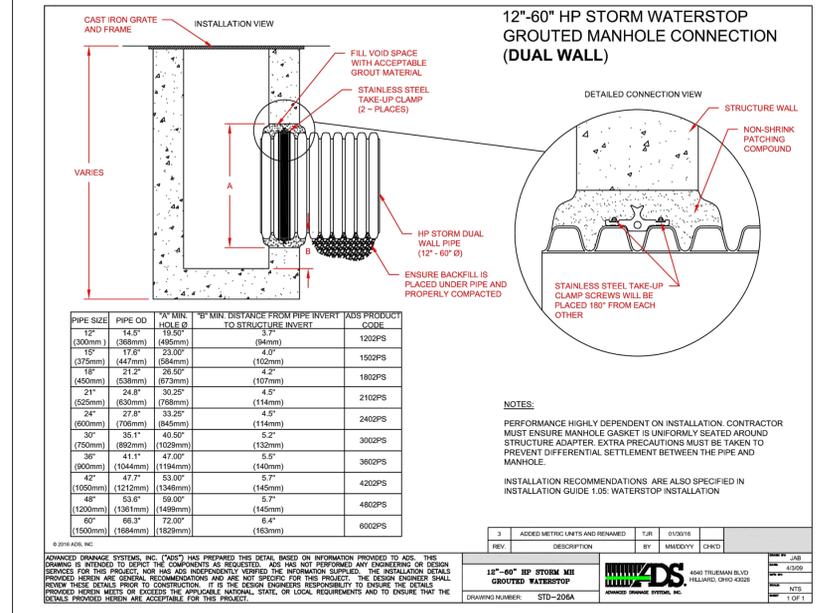
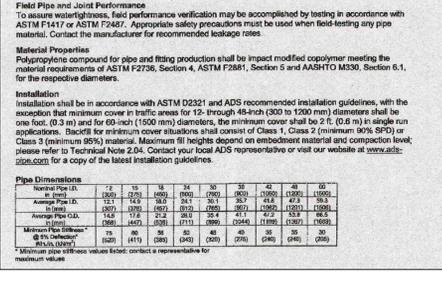
Material Properties: Polypropylene compound for pipe and fitting production shall be impact modified polypropylene meeting the material requirements of ASTM F2736, Section 4, ASTM F2881, Section 5 and AASHTO M330, Section 6.1, for the respective diameters.

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% SP) 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-pipe.com for a copy of the latest installation guidelines.

Pipe Dimensions:

Pipe Diameter (in)	12	15	18	24	30	36	42	48	60
Nominal ID	12.0	15.0	18.0	24.0	30.0	36.0	42.0	48.0	60.0
Actual ID	12.1	15.1	18.1	24.1	30.1	36.1	42.1	48.1	60.1
Actual OD	12.3	15.3	18.3	24.3	30.3	36.3	42.3	48.3	60.3
Average Pipe C/D	12.3	15.3	18.3	24.3	30.3	36.3	42.3	48.3	60.3
Min. Pipe C/D	12.1	15.1	18.1	24.1	30.1	36.1	42.1	48.1	60.1
Max. Pipe C/D	12.5	15.5	18.5	24.5	30.5	36.5	42.5	48.5	60.5
Min. Pipe Wall Thickness (in)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Min. Pipe Wall Thickness (mm)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8

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



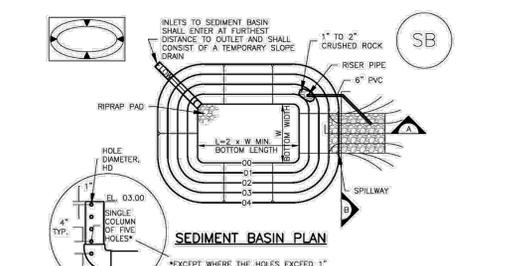
PIPE SIZE	PIPE OD	MIN. HOLE Ø	MIN. DISTANCE FROM PIPE INVERT TO STRUCTURE INVERT	ADS PRODUCT CODE
12" (300mm)	12.3"	12.5"	4.0"	1202PS
15" (375mm)	15.3"	15.5"	4.0"	1502PS
18" (450mm)	18.3"	18.5"	4.2"	1802PS
24" (600mm)	24.3"	24.5"	4.5"	2102PS
30" (750mm)	30.3"	30.5"	4.5"	2402PS
36" (900mm)	36.3"	36.5"	5.2"	3002PS
42" (1050mm)	42.3"	42.5"	5.7"	3602PS
48" (1200mm)	48.3"	48.5"	6.4"	4202PS
60" (1500mm)	60.3"	60.5"	7.2"	6002PS

ADVANCED DRAINAGE SYSTEMS, INC. (ADS) HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THE DESIGNER IS RESPONSIBLE FOR VERIFYING THE INFORMATION PROVIDED TO ADS. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT. THE DESIGNER SHALL BE RESPONSIBLE FOR VERIFYING THE INFORMATION PROVIDED TO ADS. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT. THE DESIGNER SHALL BE RESPONSIBLE FOR VERIFYING THE INFORMATION PROVIDED TO ADS. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT. THE DESIGNER SHALL BE RESPONSIBLE FOR VERIFYING THE INFORMATION PROVIDED TO ADS.

REV	DESCRIPTION	DATE	BY	CHKD
1	ADDED METRIC UNITS AND RENAMED	01/13/20	MMEDVY	CHD
2	REVISED	04/20/2020	MMEDVY	CHD

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

Sediment Basin (SB) SC-7



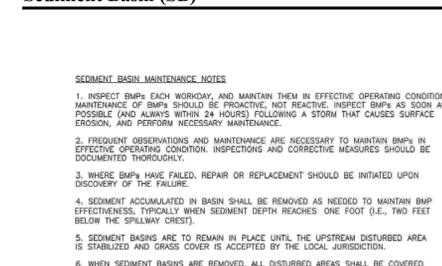
Upstream Drainage Area (rounded to nearest acre), (ac)	Basin Bottom Width (ft), (ft)	Spillway Crest Length (CL), (ft)	Hole Diameter (ft), (ft)
1	12 1/2	3	9 1/2
2	21	3	15 1/2
3	26	3	18 1/2
4	33 1/2	3	21 1/2
5	38 1/2	3	24 1/2
6	43	3	27 1/2
7	47 1/2	3	29 1/2
8	51	3	31 1/2
9	55	3	33 1/2
10	59 1/2	3	35 1/2
11	64	3	37 1/2
12	67 1/2	3	39 1/2
13	70 1/2	3	41 1/2
14	74	3	43 1/2
15	77 1/2	3	45 1/2

SEDIMENT BASIN INSTALLATION NOTES

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

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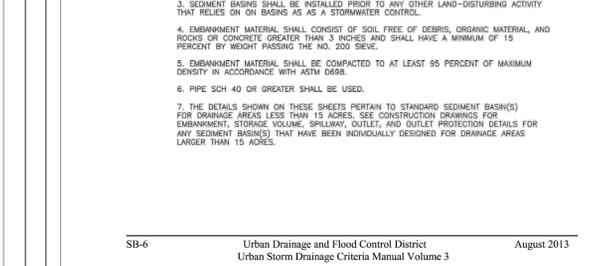
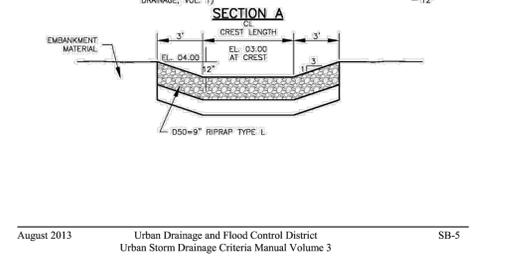


SEDIMENT BASIN INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF SEDIMENT BASIN
 - TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN)
 - FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL AND HOLE DIAMETER, HO
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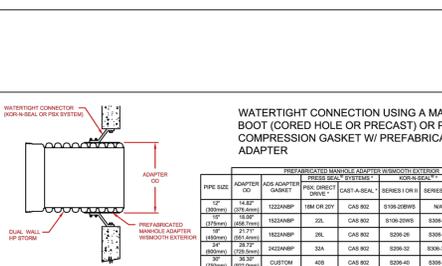
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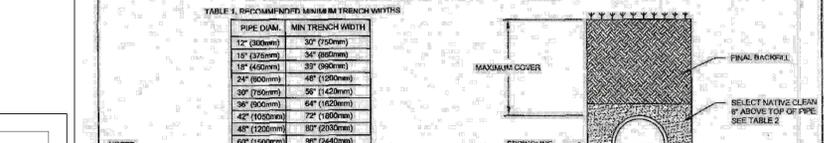
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Sediment Basin (SB) SC-7



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HP STORM TRENCH INSTALLATION DETAIL (ALTERNATE)



PIPE DIA.	MIN. TRENCH WIDTH
12" (300mm)	30" (750mm)
15" (375mm)	36" (900mm)
18" (450mm)	36" (900mm)
24" (600mm)	48" (1200mm)
30" (750mm)	54" (1350mm)
36" (900mm)	60" (1500mm)
42" (1050mm)	66" (1650mm)
48" (1200mm)	72" (1800mm)
60" (1500mm)	84" (2100mm)

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

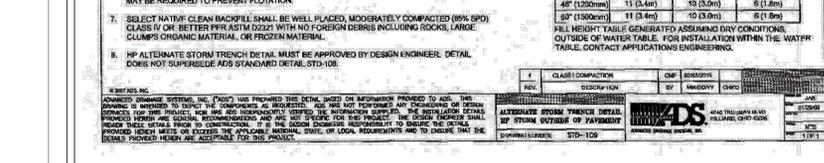
PIPE DIA.	CLASS II	CLASS III	CLASS IV
12" (300mm)	17 (5.2m)	14 (4.3m)	11 (3.4m)
15" (375mm)	16 (4.9m)	13 (4.0m)	10 (3.0m)
18" (450mm)	14 (4.3m)	12 (3.7m)	9 (2.7m)
24" (600mm)	13 (4.0m)	10 (3.0m)	8 (2.4m)
30" (750mm)	11 (3.4m)	9 (2.7m)	7 (2.1m)
36" (900mm)	11 (3.4m)	9 (2.7m)	7 (2.1m)
42" (1050mm)	11 (3.4m)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

NOTES:

- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
- SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2922. CLASS III MATERIALS (ML OR AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2922) ARE NOT APPROPRIATE BACKFILL MATERIALS.
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL, AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATE AND TO THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS II, III, OR IV IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR UNDERGROUND INSTALLATION OF THESE PLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS. LATEST ADOPTION WITH THE EXCEPTION THAT THE NATURAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2922. CLASS III MATERIALS (ML, CH AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2922) ARE NOT APPROPRIATE BACKFILL MATERIALS.
- MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOUTATION.
- SELECT NATIVE CLEAN BACKFILL SHALL BE WELL PLACED, MODERATELY COMPACTED (90% SP) CLASS IV OR BETTER PER ASTM D2922 WITH NO FOREIGN DEBRIS INCLUDING ROCKS, LARGE CLUMPS ORGANIC MATERIAL, OR FROZEN MATERIAL.
- HP ALTERNATE STORM TRENCH DETAIL MUST BE APPROVED BY DESIGN ENGINEER. DETAIL DOES NOT SUPERSEDE ADS STANDARD DETAIL STD-108.

REV	DESCRIPTION	DATE	BY	CHKD
1	ADDED METRIC UNITS AND RENAMED	01/13/20	MMEDVY	CHD
2	REVISED	04/20/2020	MMEDVY	CHD

12" - 60" HP STORM TRENCH INSTALLATION DETAIL



PIPE DIA.	MIN. TRENCH WIDTH
12" (300mm)	30" (750mm)
15" (375mm)	36" (900mm)
18" (450mm)	36" (900mm)
24" (600mm)	48" (1200mm)
30" (750mm)	54" (1350mm)
36" (900mm)	60" (1500mm)
42" (1050mm)	66" (1650mm)
48" (1200mm)	72" (1800mm)
60" (1500mm)	84" (2100mm)

PIPE DIA.	HS-20	SEMI TRAILER (25T AXLE LOAD)
12" (300mm)	12" (300mm)	48" (1200mm)
15" (375mm)	12" (300mm)	48" (1200mm)
18" (450mm)	12" (300mm)	48" (1200mm)
24" (600mm)	12" (300mm)	48" (1200mm)
30" (750mm)	12" (300mm)	48" (1200mm)
36" (900mm)	12" (300mm)	48" (1200mm)
42" (1050mm)	12" (300mm)	48" (1200mm)
48" (1200mm)	12" (300mm)	48" (1200mm)
60" (1500mm)	12" (300mm)	48" (1200mm)

PIPE DIA.	CLASS II	CLASS III	CLASS IV
12" (300mm)	17 (5.2m)	14 (4.3m)	11 (3.4m)
15" (375mm)	16 (4.9m)	13 (4.0m)	10 (3.0m)
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42" (1050mm)	11 (3.4m)	9 (2.7m)	7 (2.1m)
48" (1200mm)	11 (3.4m)	9 (2.7m)	7 (2.1m)
60" (1500mm)	11 (3.4m)	9 (2.7m)	7 (2.1m)

NOTES:

- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321. STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THESE PLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS. LATEST ADOPTION WITH THE EXCEPTION THAT THE NATURAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2922. CLASS III MATERIALS (ML, CH AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2922) ARE NOT APPROPRIATE BACKFILL MATERIALS.
- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL, AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATE AND TO THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS II, III, OR IV IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR UNDERGROUND INSTALLATION OF THESE PLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS. LATEST ADOPTION WITH THE EXCEPTION THAT THE NATURAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2922. CLASS III MATERIALS (ML, CH AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2922) ARE NOT APPROPRIATE BACKFILL MATERIALS.
- MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOUTATION.
- SELECT NATIVE CLEAN BACKFILL SHALL BE WELL PLACED, MODERATELY COMPACTED (90% SP) CLASS IV OR BETTER PER ASTM D2922 WITH NO FOREIGN DEBRIS INCLUDING ROCKS, LARGE CLUMPS ORGANIC MATERIAL, OR FROZEN MATERIAL.
- HP ALTERNATE STORM TRENCH DETAIL MUST BE APPROVED BY DESIGN ENGINEER. DETAIL DOES NOT SUPERSEDE ADS STANDARD DETAIL STD-108.

REV	DESCRIPTION	DATE	BY	CHKD
1	ADDED METRIC UNITS AND RENAMED	01/13/20	MMEDVY	CHD
2	REVISED	04/20/2020	MMEDVY	CHD

12" - 60" HP STORM TRENCH INSTALLATION DETAIL