

# Claremont Business Park 2 Filing No. 1 ). 3

COUNTY OF EL PASO, STATE OF COLORADO

UPDATED

## STREET IMPROVEMENT PLANS (INCLUDING STORM SEWER)

APRIL 2020

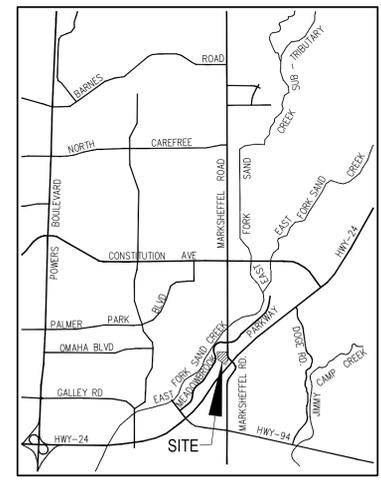
UPDATED

Claremont Business Park 2 Filing No. 1

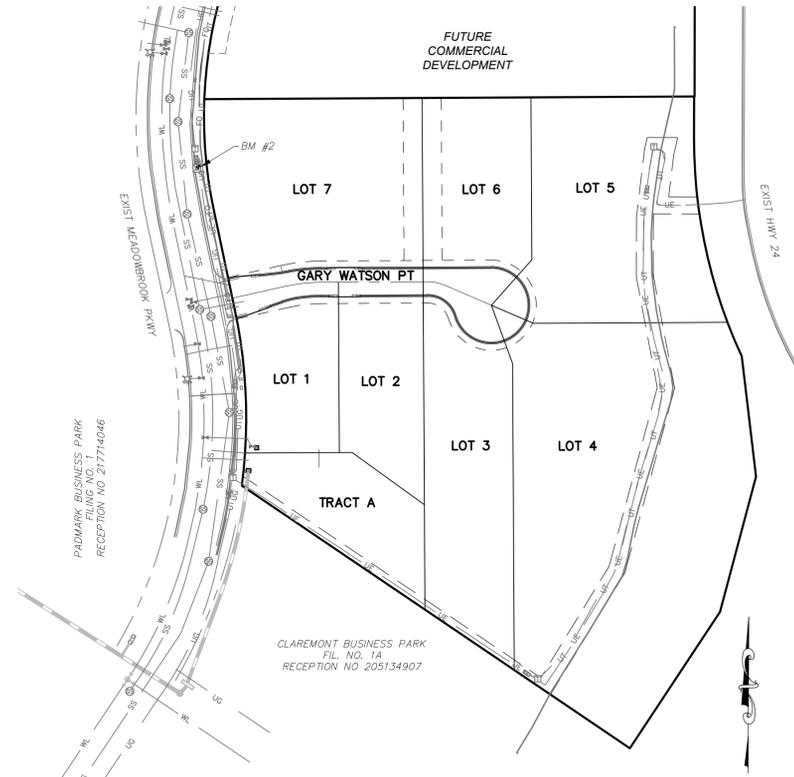
STREET IMPROVEMENT PLANS	
PROJECT NO. 44-037	DATE: 04/28/2020
DESIGNED BY: GW	HORIZONTAL: N/A
DRAWN BY: CLP	VERTICAL: N/A
CHECKED BY: VAS	SHEET 1 OF 12
S101	

### 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 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.

REMOVED TO DANIEL

Remove an

### 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

### SHEET INDEX

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- SHEET 2 NOTE & DETAIL SHEET
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- SHEET 9 OUTLET STRUCTURE POND 2 DETAILS
- SHEET 10 WATER QUALITY POND 2 DETAILS & POND 1 TEMPORARY SEDIMENT POND
- SHEET 11 STANDARD DETAILS
- SHEET 12 STANDARD DETAILS

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

File: C:\Users\opirene\Documents\44037A-CBP F2-LOTS 1-8\44037A-CBP F2-LOTS 1-8\DWG\Const\_Dwg\STREET AND STORM\301.dwg PlotStamp: 4/28/2020 2:04 PM







UPDATED

**ABBREVIATION LEGEND**

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

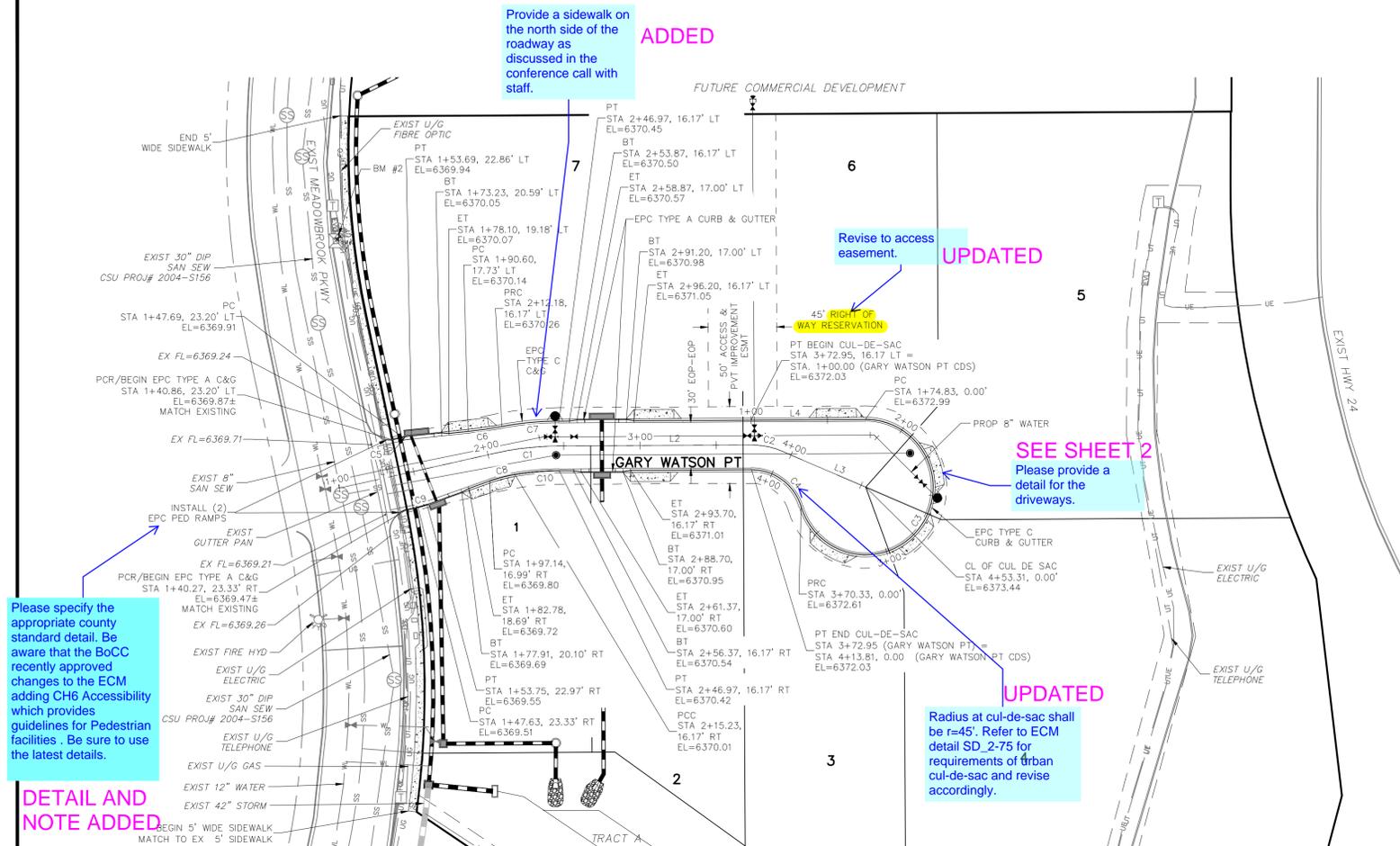
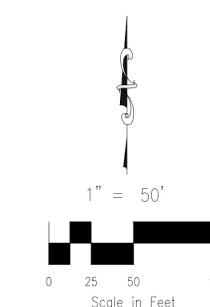
LINE	LENGTH	DIRECTION
L1	104.00'	N77°22'44"E
L2	125.98'	N89°41'23"E
L3	59.87'	S66°49'29"E

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

LINE	LENGTH	DIRECTION
L4	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"

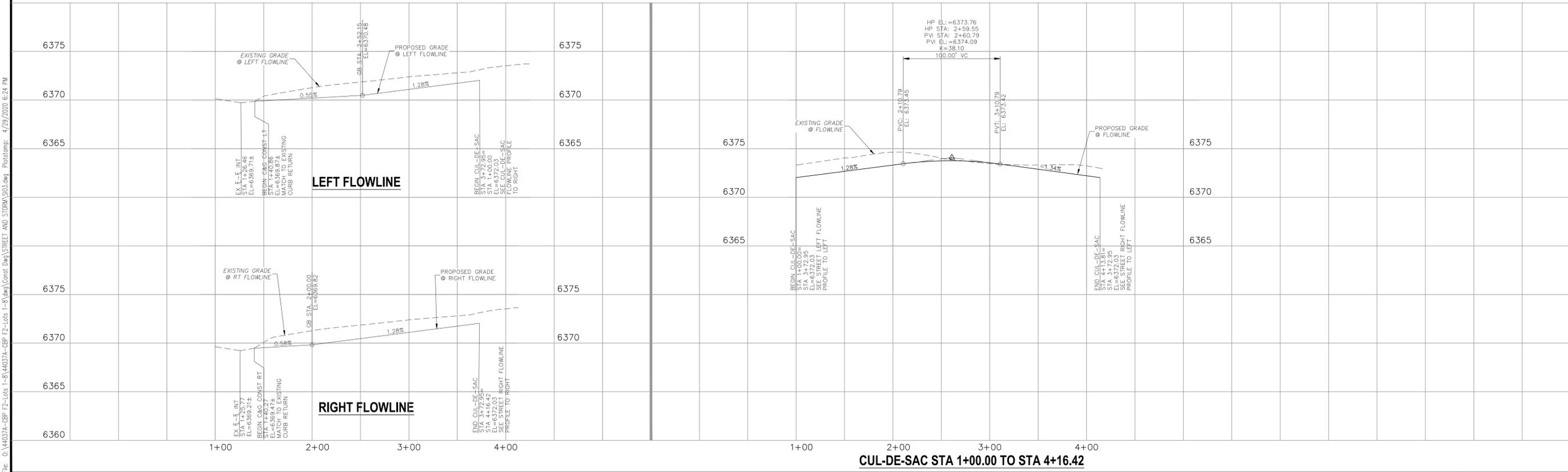
CURVE	RADIUS	LENGTH	DELTA
C5	52.00'	6.01'	6.62
C6	298.83	22.31'	4.28
C7	216.17	37.60'	9.97
C8	98.83	17.21'	9.98
C9	52.00'	6.13'	6.76
C10	183.83	29.17'	9.09



Please specify the appropriate county standard detail. Be aware that the BoCC recently approved changes to the ECM adding CH6 Accessibility which provides guidelines for Pedestrian facilities. Be sure to use the latest details.

DETAIL AND NOTE ADDED

File: O:\44037A-CBP-F2-Lots 1-8\44037A-CBP-F2-Lots 1-8.dwg Const Date: 4/29/2020 6:24 PM



**Claremont Business Park 2 Filing No. 1**  
**STREET IMPROVEMENT PLANS**  
 PROJECT NO. 44-037 FILE: \avg\Const\Draw\Street & Storm Plans\SIO3.dwg DATE: 04/28/2020  
 DESIGNED BY: GW SCALE: SHEET 3 OF 12  
 DRAWN BY: CLP HORIZ: 1"=50' SIO3  
 CHECKED BY: VAS VERT: 1"=5'

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.

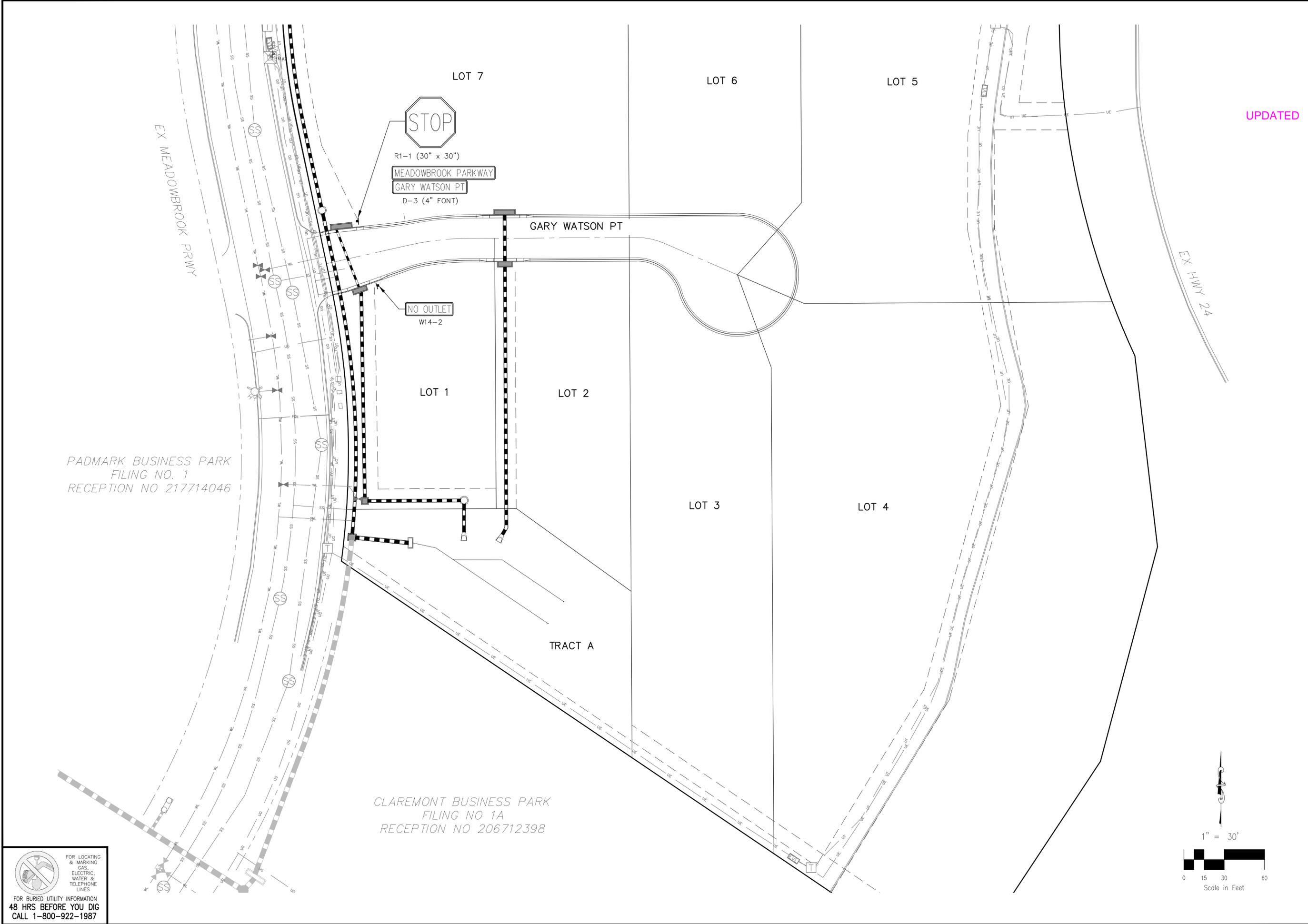
NO.	DATE	BY	DESCRIPTION

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

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CAUTION

File: C:\Users\opirene\Documents\44037A-CBP F2-LOTS 1-8\DWG\Const\_Dwg\STORM\SIG04.dwg PlotStamp: 4/28/2020 2:07 PM

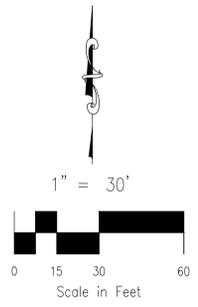


PADMARK BUSINESS PARK  
FILING NO. 1  
RECEPTION NO 217714046

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



UPDATED

Claremont Business Park 2 Filing No. 1

SIGNAGE AND STRIPING PLAN	
PROJECT NO. 44-037	DATE: 04/28/2020
DESIGNED BY: GW	HORIZONTAL: N/A
DRAWN BY: CLP	VERTICAL: N/A
CHECKED BY: VAS	SHEET 4 OF 12
	S104

102 E. Pikes 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.

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CAUTION

**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 (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

UPDATED

Claremont Business Park 2 Filing No. 1

GENERAL NOTES AND DETAILS	
PROJECT NO. 44-037	FILE: \\ang\Const\Draw\Storm - District\ST01.dwg
DESIGNED BY: GW	SCALE: N/A
DRAWN BY: CLP	HORIZ: N/A
CHECKED BY: VAS	VERT: N/A
	DATE: 04/28/2020
	SHEET 5 OF 12
	ST01

102 E. PILES PEAK AVE., SUITE 500  
 COLORADO SPRINGS, CO 80903  
 PHONE: 719.955.8485



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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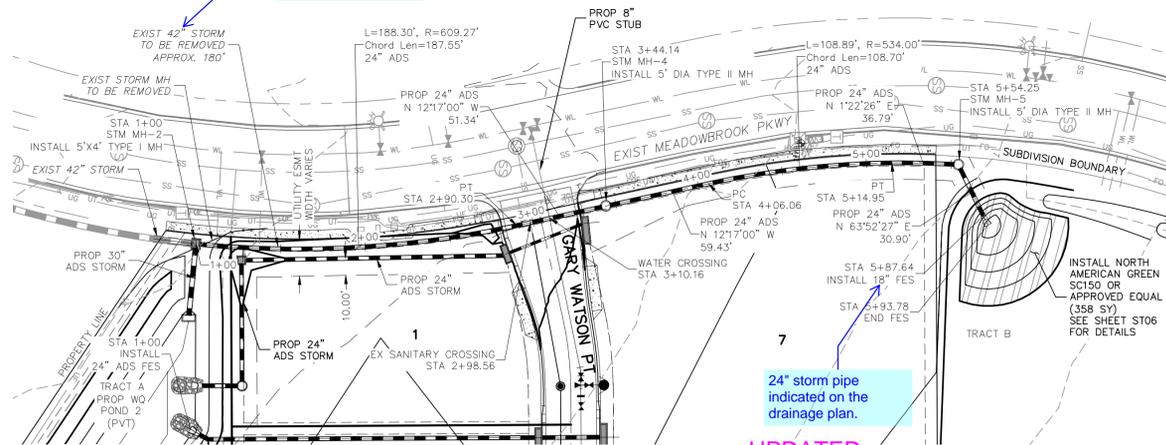
CAUTION



UPDATED

UPDATED

The drainage plan indicates a 36" storm sewer to be removed. Revise accordingly.

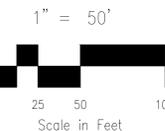
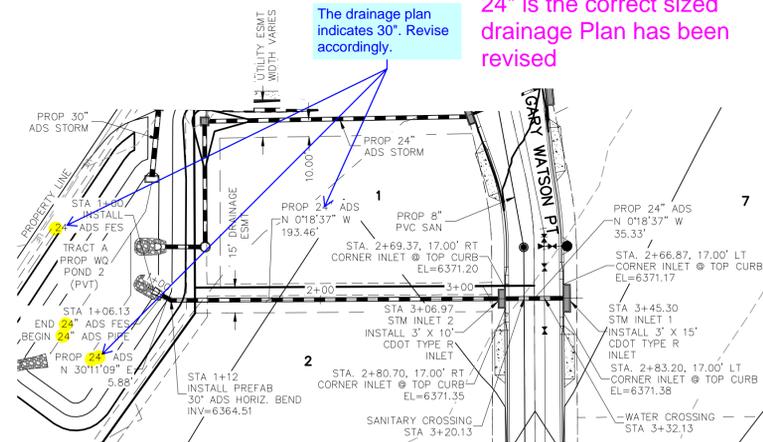


UPDATED

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

The drainage plan indicates 30". Revise accordingly.

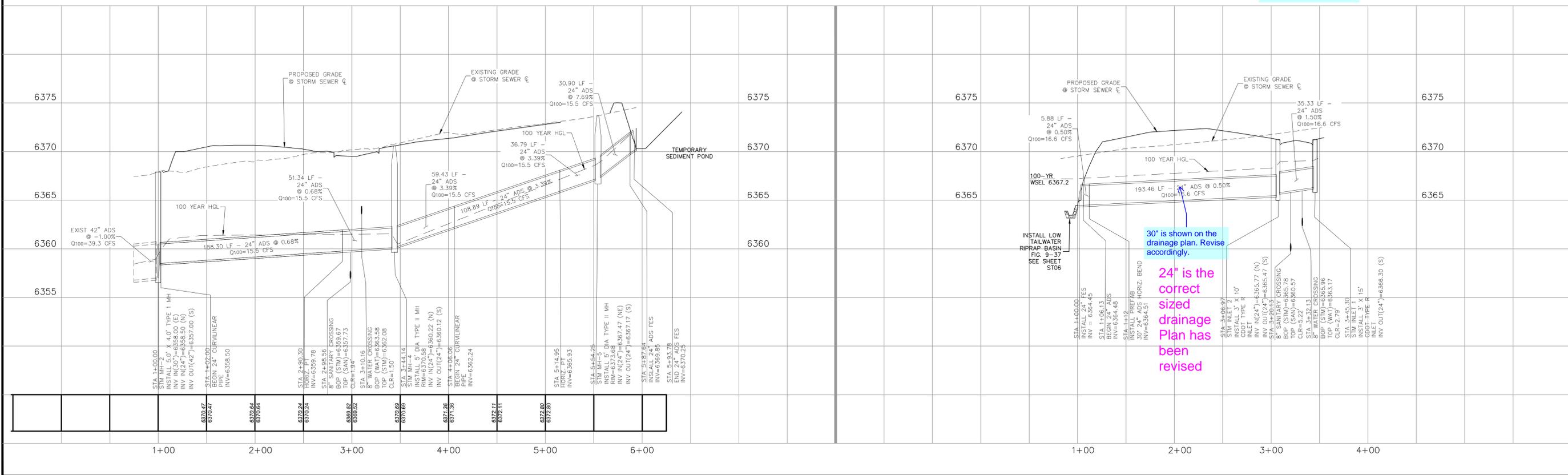
24" is the correct sized drainage Plan has been revised



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

added  
Identify the vertical scale

File: 0:\440374-CBP-F2-Lots 1-8\dwg\Const\DWG\STREET AND STORM\ST02.dwg Plotstamp: 4/29/2020 6:43 PM



30" is shown on the drainage plan. Revise accordingly.

24" is the correct sized drainage Plan has been revised

**Claremont Business Park 2 Filing No. 1**  
**STORM SEWER PLAN & PROFILE**  
 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 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

REVISIONS:  
 NO. DATE BY DESCRIPTION

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**CAUTION**

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

UPDATED

**Claremont Business Park 2 Filing No. 1**  
**STORM SEWER PLAN AND PROFILE**  
 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 7 OF 12  
 ST03

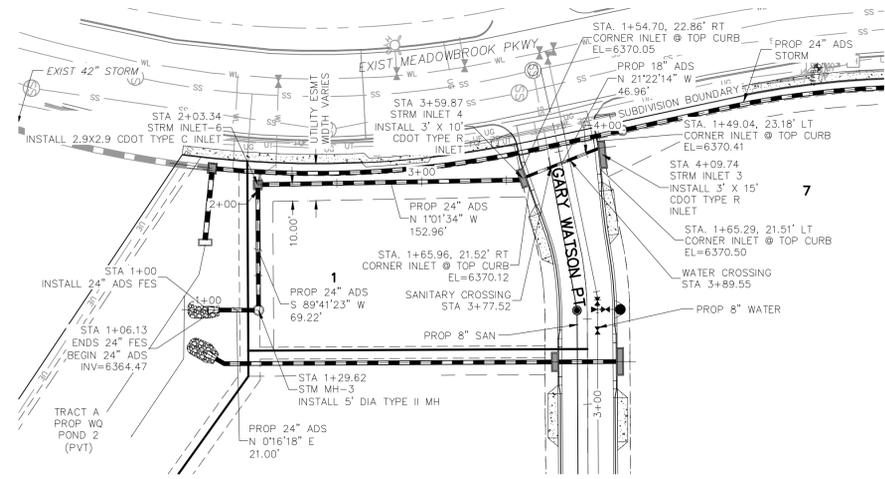
102 E. Pikes Peak Ave., Ste 500  
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 PHONE: 719.555.5485  
  
 CIVIL CONSULTANTS, INC.

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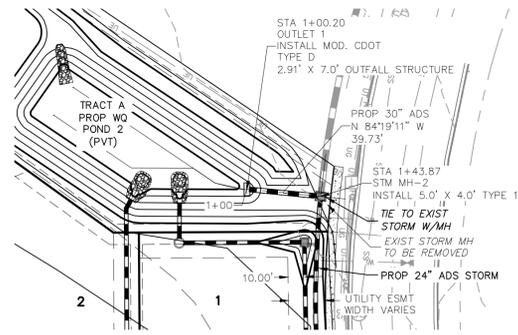
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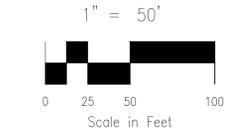
CAUTION



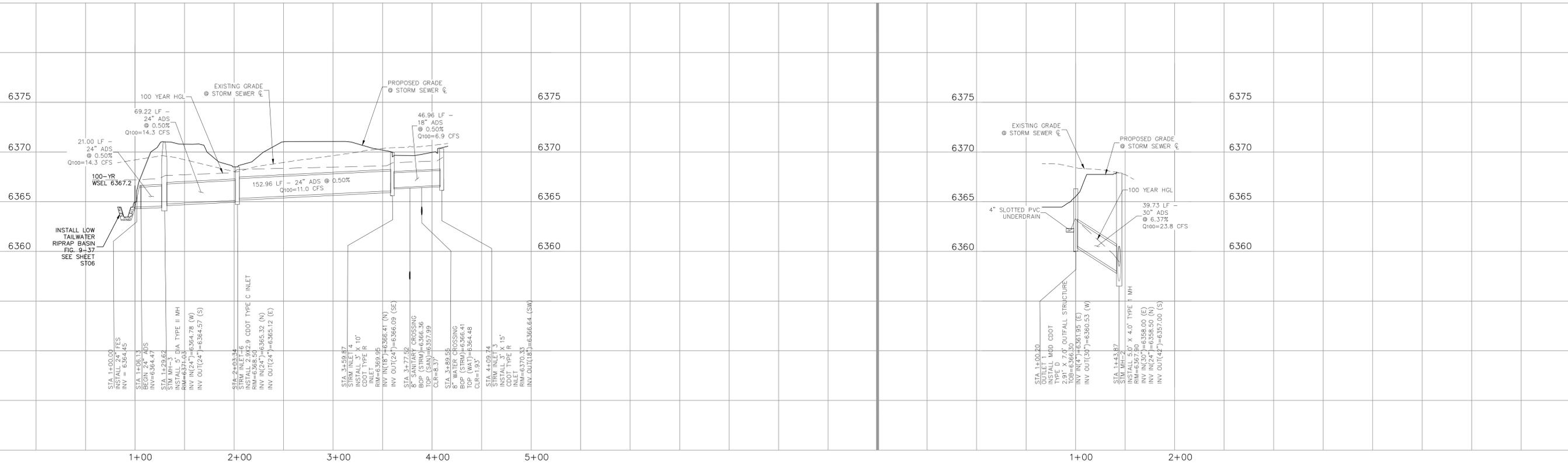
**STORM 10**  
**STA 1+00.00 TO STA 4+07.61**  
**(PRIVATE)**



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

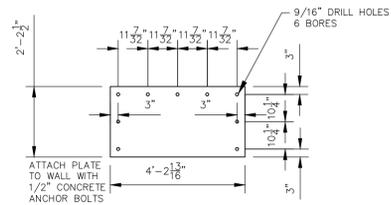


added  
 Please also identify the vertical scale



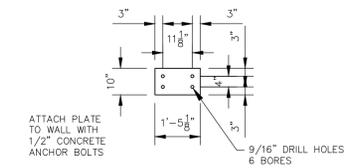
File: 0:\440374-CBP-F2-Lots 1-8\dwg\Const\Draw\STORM\ST03.dwg PlotStamp: 4/29/2020 6:39 PM





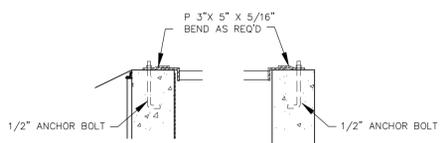
**RESTRICTOR PLATE~30"  
OUTFALL PIPE**

NOT TO SCALE

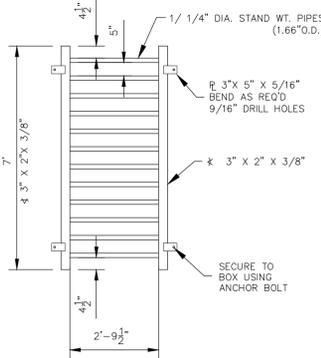


**RESTRICTOR PLATE~4" UNDERDRAIN**

NOT TO SCALE

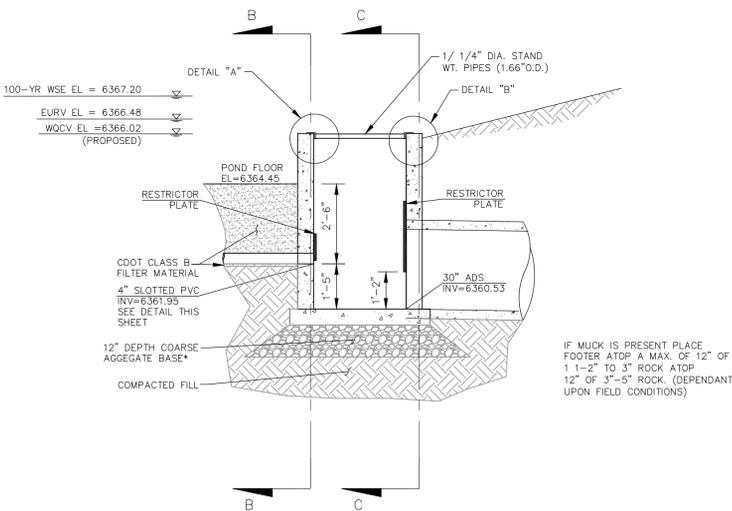


**GRATE  
DETAIL "A"      GRATE  
DETAIL "B"**

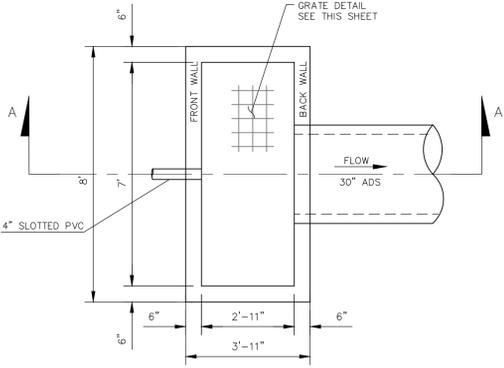


**GRATE PLAN  
NOT TO SCALE**

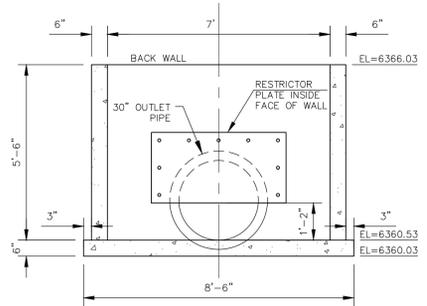
NOTE:  
ALL GRATES,  
IMBEDS, AND  
FASTENERS SHALL  
BE FABRICATED  
USING GALVANIZED  
STEEL UNLESS  
OTHERWISE NOTED.  
  
ALL GRATE  
DIMENSIONS TO BE  
FIELD VERIFIED  
PRIOR TO  
FABRICATION. ALL  
GRATE MATERIAL  
SHALL BE  
GALVANIZED.



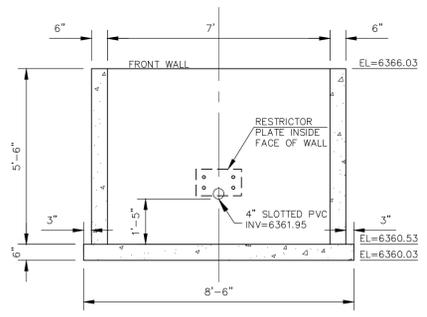
**SECTION A-A  
NOT TO SCALE**



**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)

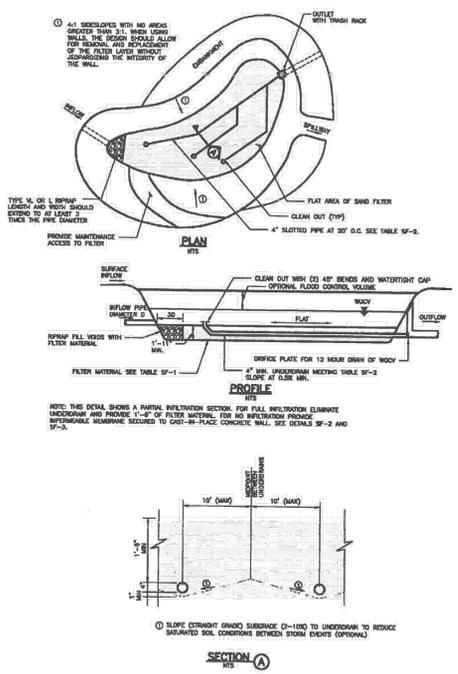
Sieve Size	CDOT Class B filter material	CDOT Class C filter material
	Mass Percent Passing Square Mesh Sieves	
37.5 mm (1.5")	100	
19.0 mm (0.75")		100
4.75 mm (No. 4)	20-60	60-100
1.18 mm (No. 16)	10-30	
300 um (No. 50)	0-10	10-30
150 um (No. 100)		0-10
75 um (No. 200)	0-3	0-3

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

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

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

UPDATED

Claremont Business Park 2 Filing No. 1

PROJECT NO. 44-037  
SCALE: N/A  
DESIGNED BY: GW  
DRAWN BY: CLP  
CHECKED BY: VAS  
DATE: 04/28/2020  
SHEET 9 OF 12  
ST05

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



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

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



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



### STEEL GRATE QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH (FT.)	WEIGHT PER FT. (LBS.)	TOTAL WEIGHT (LBS.)
4	5/8" x 7/8" BEAM	40'	7.70	308
2	3/4" x 1/2" FLAT	26 1/2'	2.98	13
2	3" x 1/2" FLAT	26 1/2'	2.55	12
TOTAL LBS. = 323				

### QUANTITIES FOR ONE INLET

H (CONC. CU. YDS.)	STEEL (LBS.)	NO. STEPS	NO. REIN. BARS
2'-0"	0.3	75	0
3'-0"	1.0	80	0
3'-6"	1.2	86	0
4'-0"	1.3	92	1
4'-6"	1.4	106	2
5'-0"	1.5	122	2
5'-6"	1.7	137	2
6'-0"	1.8	142	3
6'-6"	1.9	158	3
7'-0"	2.0	163	3
7'-6"	2.2	179	4
8'-0"	2.3	184	4
8'-6"	2.4	199	4
9'-0"	2.5	205	5
9'-6"	2.7	220	5
10'-0"	3.0	235	6
11'-0"	3.4	251	6

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

MARK	NO.	REQ'D.	HEIGHT	LENGTH
401	2	2-3"	7-11"	
402	6	2-7"	8-7"	
403	3	1/4"	15-0"	

### GENERAL NOTES

- INLET TYPE C IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
- CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
- REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED #4 AND SHALL HAVE A MINIMUM 2 IN. 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 4" W x 6" W x 6" W x 6" W x 6" 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. 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

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 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 AROUND PIPE AS REQUIRED.

### QUANTITIES FOR ONE INLET

H (CONC. CU. YDS.)	STEEL (LBS.)	NO. STEPS	NO. REIN. BARS
2'-0"	0.3	75	0
3'-0"	1.0	80	0
3'-6"	1.2	86	0
4'-0"	1.3	92	1
4'-6"	1.4	106	2
5'-0"	1.5	122	2
5'-6"	1.7	137	2
6'-0"	1.8	142	3
6'-6"	1.9	158	3
7'-0"	2.0	163	3
7'-6"	2.2	179	4
8'-0"	2.3	184	4
8'-6"	2.4	199	4
9'-0"	2.5	205	5
9'-6"	2.7	220	5
10'-0"	3.0	235	6
11'-0"	3.4	251	6

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

MARK	NO.	REQ'D.	HEIGHT	LENGTH
401	2	2-3"	7-11"	
402	6	2-7"	8-7"	
403	3	1/4"	15-0"	

### 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 AROUND PIPE AS REQUIRED.

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### Sheet Revisions

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### Colorado Department of Transportation

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 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, A 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.

### Computer File Information

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

### Sheet Revisions

Date:	Comments:

### Colorado Department of Transportation

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 Phone: (303) 757-9083  
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### 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.

### Computer File Information

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

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Date:	Comments:

### Colorado Department of Transportation

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### 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

PROJECT NO. 44-037  
 SCALE: HORIZONTAL: N/A  
 VERTICAL: N/A  
 DATE: 04/20/2020  
 SHEET 11 OF 12  
 ST07

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:	BY:	DESCRIPTION:

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CAUTION

