

HOMESTEAD AT STERLING RANCH FILING NO. 2

COUNTY OF EL PASO, STATE OF COLORADO

STREET IMPROVEMENT PLANS

NOVEMBER 2019

AGENCIES

OWNER/DEVELOPER: SR LAND, LLC
20 BOULDER CRESCENT, SUITE 201
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY (719) 471-1742

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: STERLING RANCH METRO DISTRICT ENGINEERS
JDS-HYDRO CONSULTANTS
545 E. PIKES PEAK AVE., SUITE 300
COLORADO SPRINGS, CO 80903
JOHN MCGINN (719) 668-8769

FIRE DISTRICT: BLACK FOREST FIRE PROTECTION DISTRICT
11445 TEACHOUT ROAD
COLORADO SPRINGS, CO 80908
CHIEF BRYAN JACK (719) 495-4300

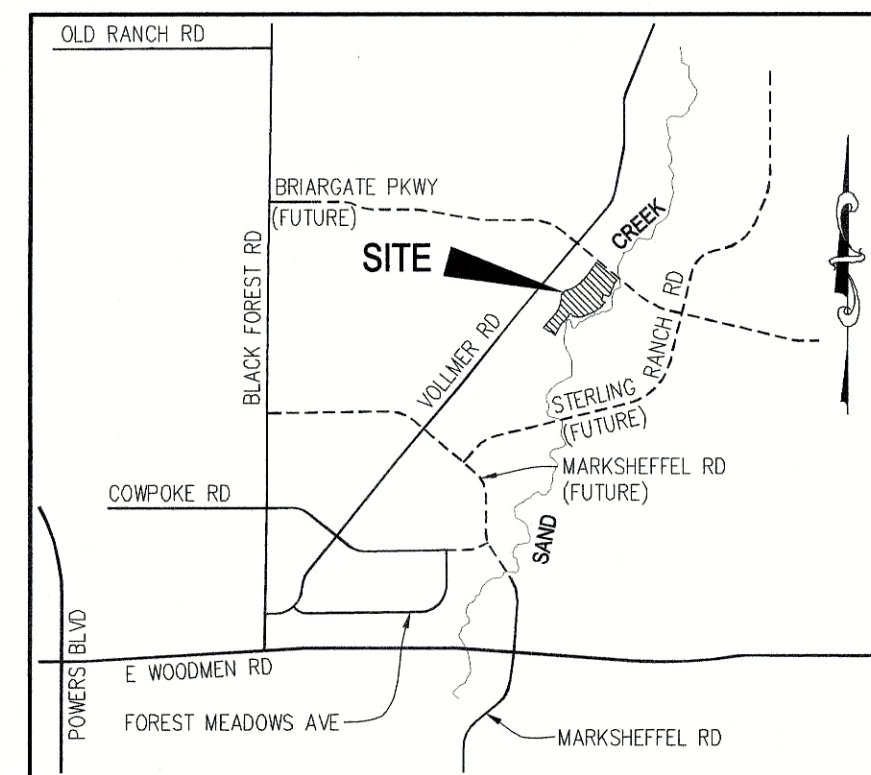
GAS DEPARTMENT: COLORADO SPRINGS UTILITIES
7710 DURANT DR.
COLORADO SPRINGS, CO 80947
TIM WENDT (719) 668-3556

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

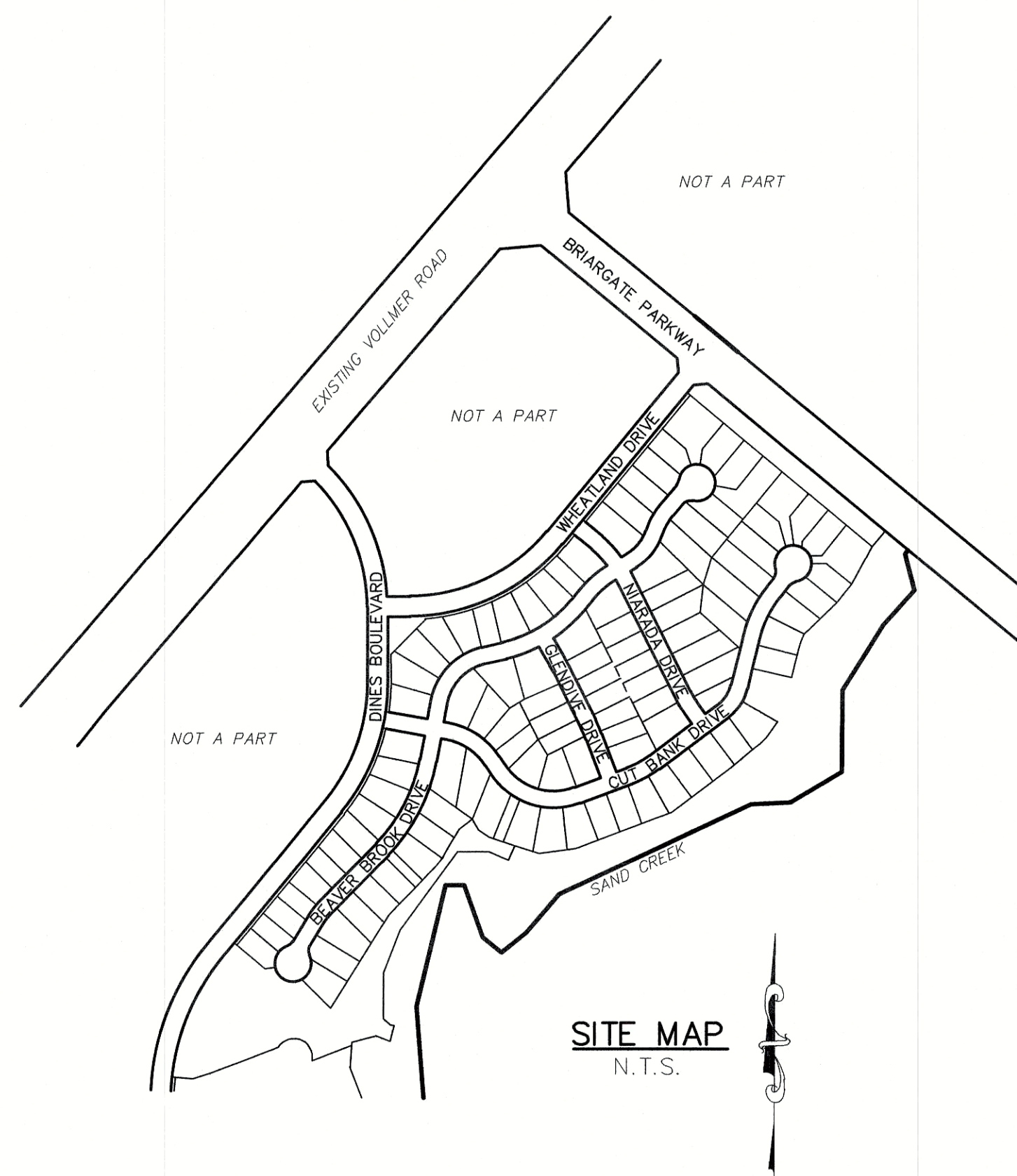
COMMUNICATIONS: QWEST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922-1987
AT&T (LOCATORS) (719) 635-3674

BENCHMARKS

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
NORTHING = 411416.273
EASTING = 235167.071
ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
NORTHING = 410095.404
EASTING = 235052.131
ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDIVISION
NORTHING = 411399.962
EASTING = 233849.817
ELEVATION = 7030.82



VICINITY MAP
N.T.S.



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CONSTRUCTION PLAN REFERENCE:

SEE APPROVED PLANS 30 JAN 2018 BY M&S CIVIL CONSULTANTS, INC. FOR:
 - STERLING RANCH VOLLMER RD. (NORTH)
 - WHEATLAND DRIVE CONSTRUCTION TO BRIARGATE PARKWAY
 - BRIARGATE PARKWAY WHEATLAND TO VOLLMER CONSTRUCTION.

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 DATE
 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.

NAME: James F. Morley DATE: 11-20-19

DBA: SR LAND, LLC

ADDRESS: 20 BOULDER CRESCENT SITE 210, COLORADO SPRINGS, CO 80903

EL PASO COUNTY:

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

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

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

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



STERLING RANCH METROPOLITAN DISTRICT:

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

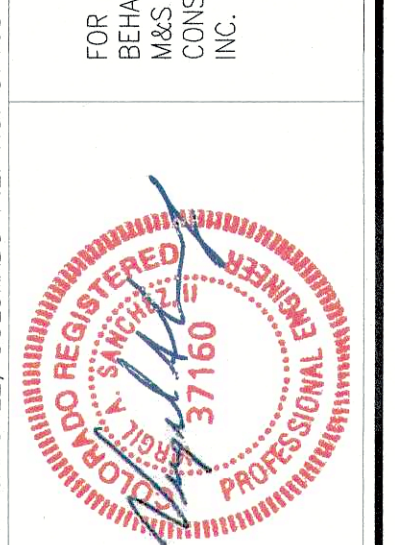
Virgil A. Sanchez 11/20/19
 FOR AND ON BEHALF OF THE STERLING RANCH METRO. DISTRICT DATE

HOMESTEAD AT STERLING RANCH FILING NO. 2
 STREET IMPROVEMENT PLANS
 PROJECT NO: 09-007 SCALE: HORIZONTAL: N/A VERTICAL: N/A
 DESIGNED BY: VAS DATE: 11/19/2019
 DRAWN BY: JMP SHEET 1 OF 9
 CHECKED BY: DLM S101

20 BOULDER CRESCENT, SUITE 110
 COLORADO SPRINGS, CO 80903
 PHONE: 719.955.5485



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



APPROVED
 By: Elizabeth Nijkamp
 Date: 03/05/2020
 El Paso County Planning & Community Development

NO.	DATE	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.

SF-19-004

CAUTION

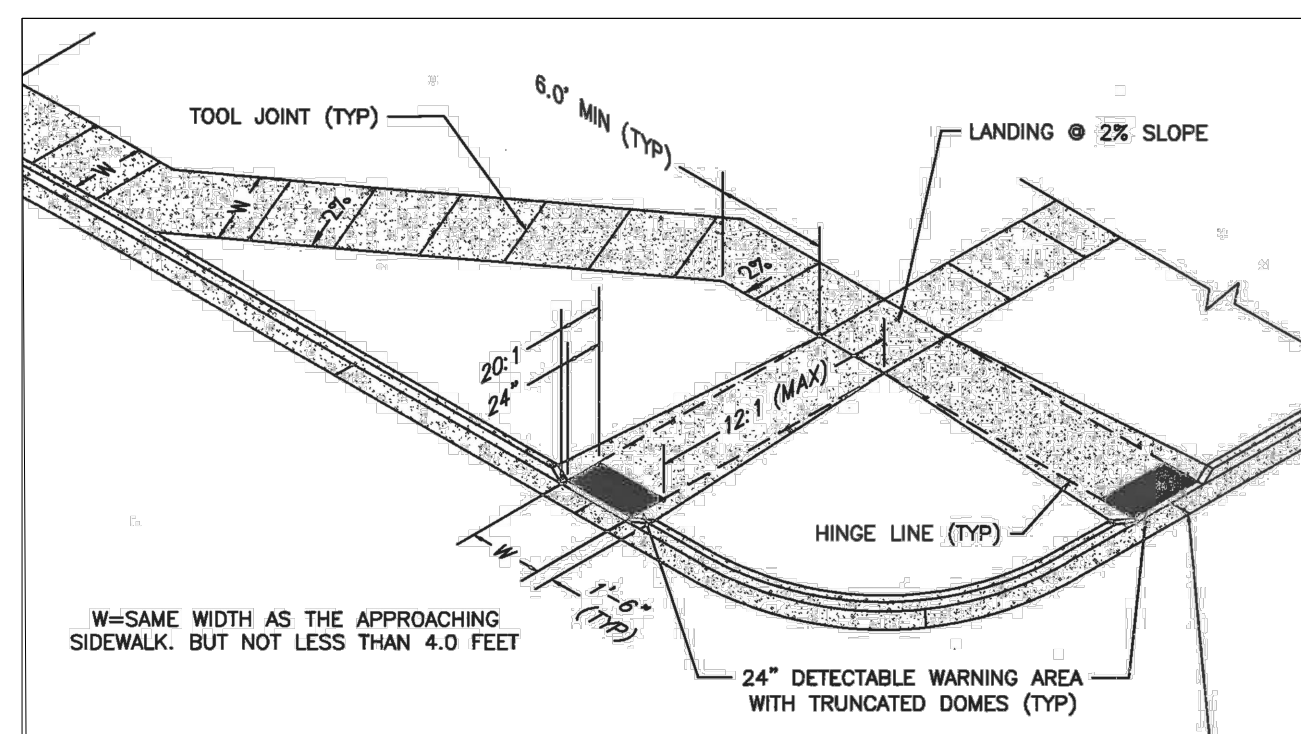


GENERAL CONSTRUCTION NOTES:

- 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 ACCESSES 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.

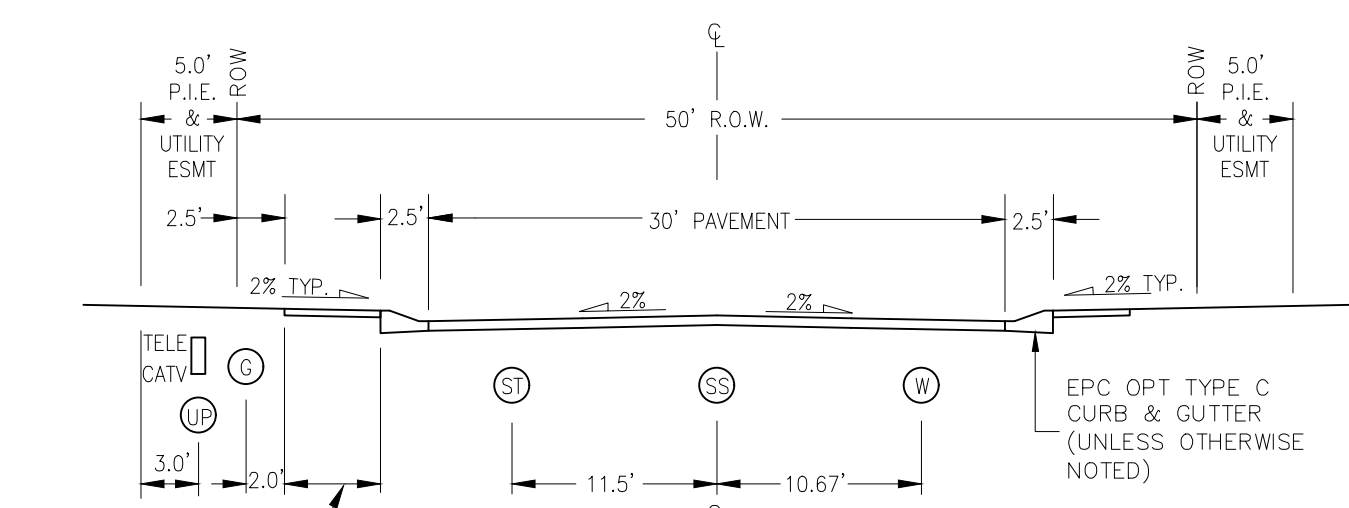
SIGNING AND STRIPING NOTES:

- 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 DESIGN. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SLIPBASE SYSTEM.
- 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 DEVELOPMENT SERVICES (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 PCD PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.



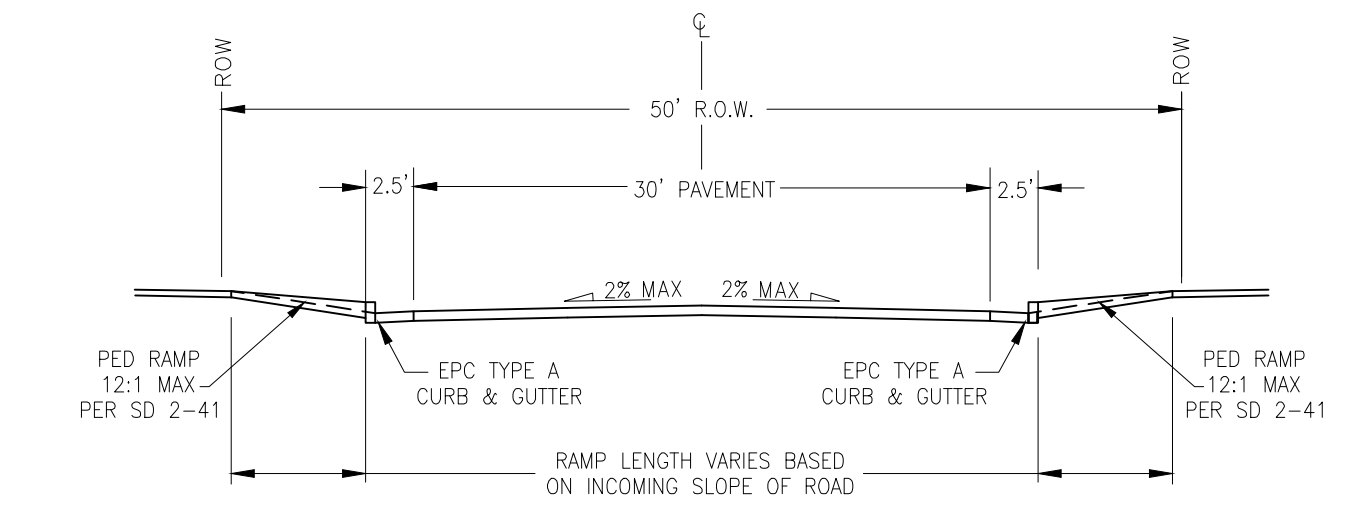
- PEDESTRIAN RAMP NOTES**
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT ENGINEERING CRITERIA MANUAL AND ADA REQUIREMENTS.
 - CONTRACTOR TO NOTIFY ENGINEERING DIVISION INSPECTION STAFF 48 HOURS PRIOR TO CONCRETE PLACEMENT.
 - PEDESTRIAN RAMP CONSTRUCTION SHALL BE A MINIMUM 4,500 PSI CONCRETE, MINIMUM 4" THICK, NON-COLORED, NON-SOURED, 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 6" 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 RAMP SHALL BE PERPENDICULAR TO TRAFFIC WITH THE EXCEPTION OF MID-BLOCK OR TERMINAL RAMP WHICH MAY BE PARALLEL. SUBJECT TO APPROVAL.
 - AVOID PLACING DRAINAGE STRUCTURES, TRAFFIC SIGNAL/BOXING, UTILITIES/JUNCTION BOXES, OR OTHER OBSTRUCTIONS WITHIN PROPOSED RAMP AREAS.
- GENERAL NOTES**
- WHERE THE 1"-6" FLARED SIDING OF A PERPENDICULAR CURB RAMP IS (AND 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 RAMPS ON OPPOSITE CORNERS SHALL BE REVERSED BEFORE CONSTRUCTING NEW RAMPS.
 - AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMPS, EXCLUSIVE OF THE FLARE SIDING, SHALL BE TOTALLY CONTAINED WITHIN THE MARKINGS.

PEDESTRIAN INTERSECTION RAMP (SD 2-41)
SCALE: NTS



URBAN LOCAL CROSS SECTION
SCALE: NTS

POSTED SPEED 25 MPH
DESIGN SPEED 25 MPH

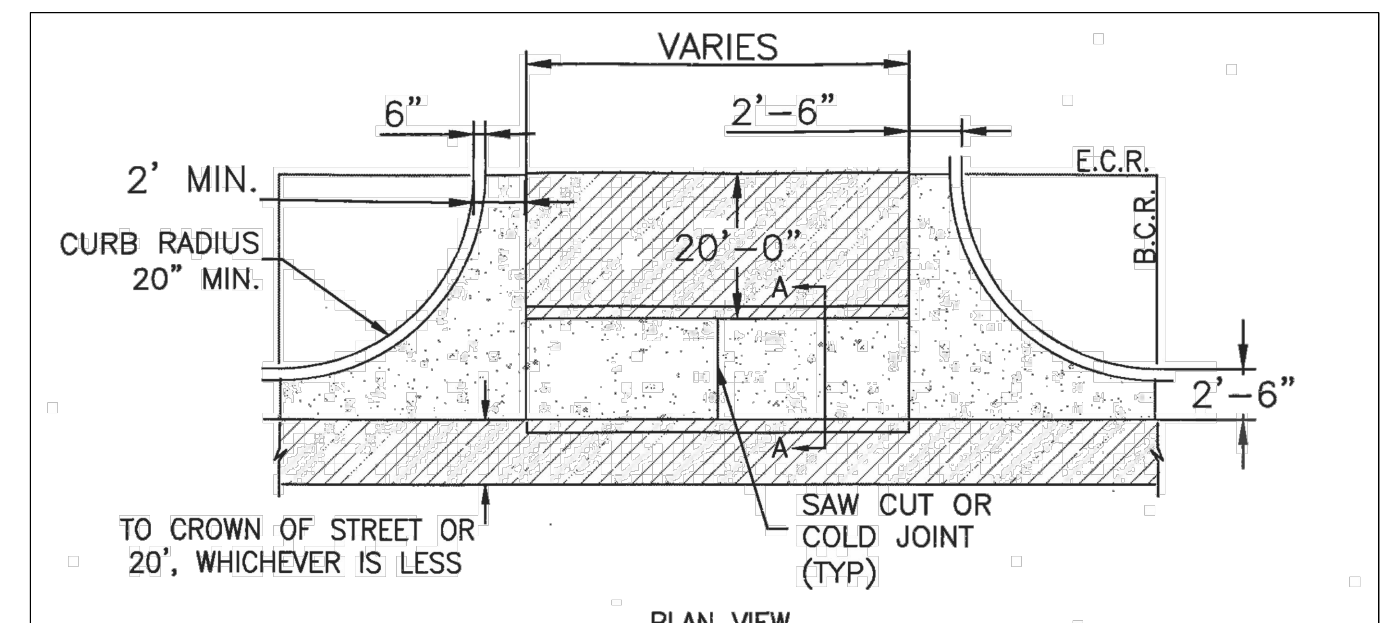


PEDESTRIAN RAMP TO PEDESTRIAN RAMP STREET SECTION
SCALE: NTS

SPECIAL CONTRACTOR'S NOTE:
CONTRACTOR SHALL CONSTRUCT ALL PEDESTRIAN RAMPS, SIDEWALKS AND RAMP TO RAMP STREET CROSSINGS PER THE PEDESTRIAN INTERSECTION RAMP SD-2-41, PARALLEL PEDESTRIAN RAMP SD-2-50, AND PER THE CDOT ACCESSIBLE PEDESTRIAN DESIGN GUIDELINE CHAPTER 12.

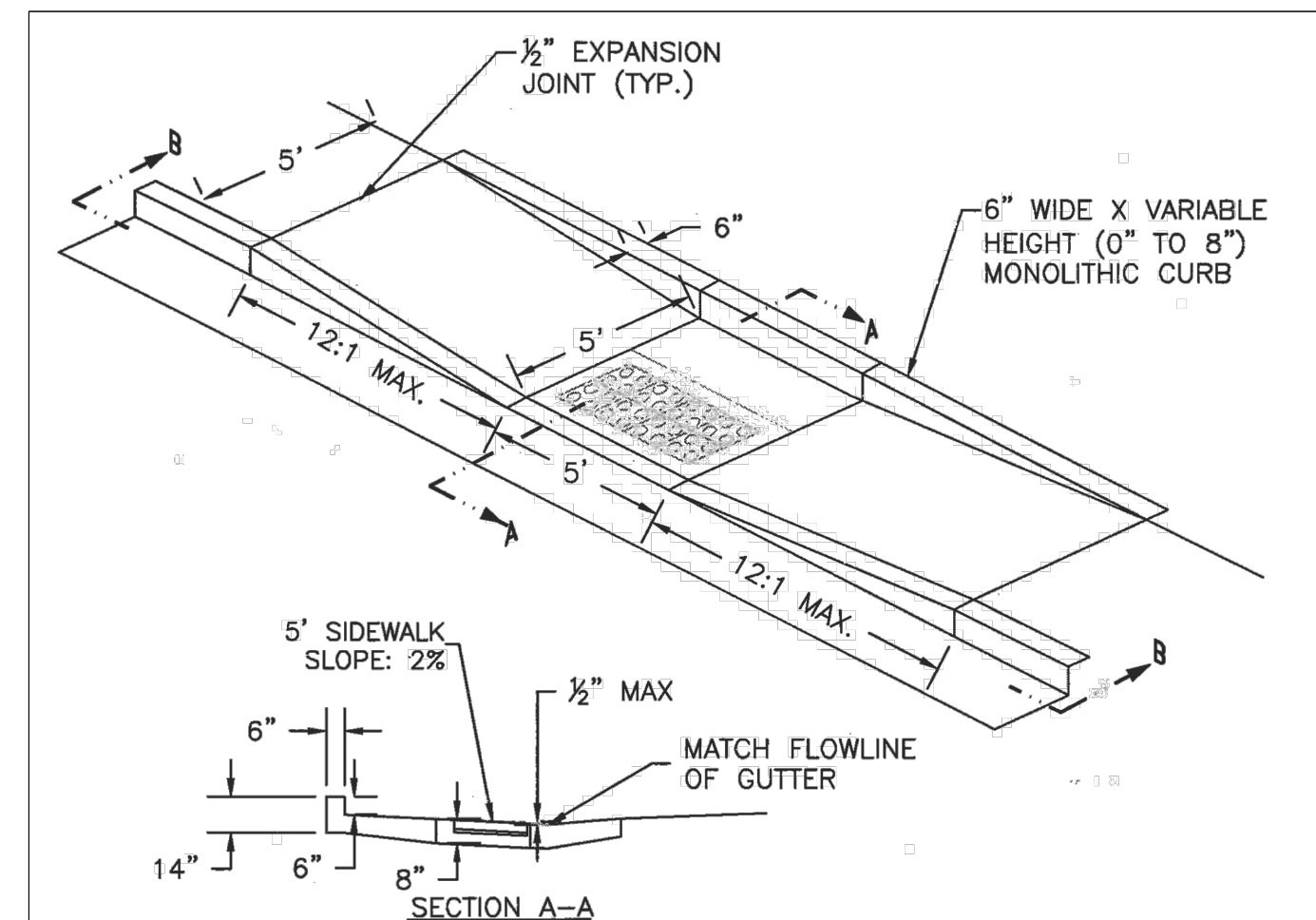
STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

- 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 WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND 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.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY PCD AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY PCD, 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.

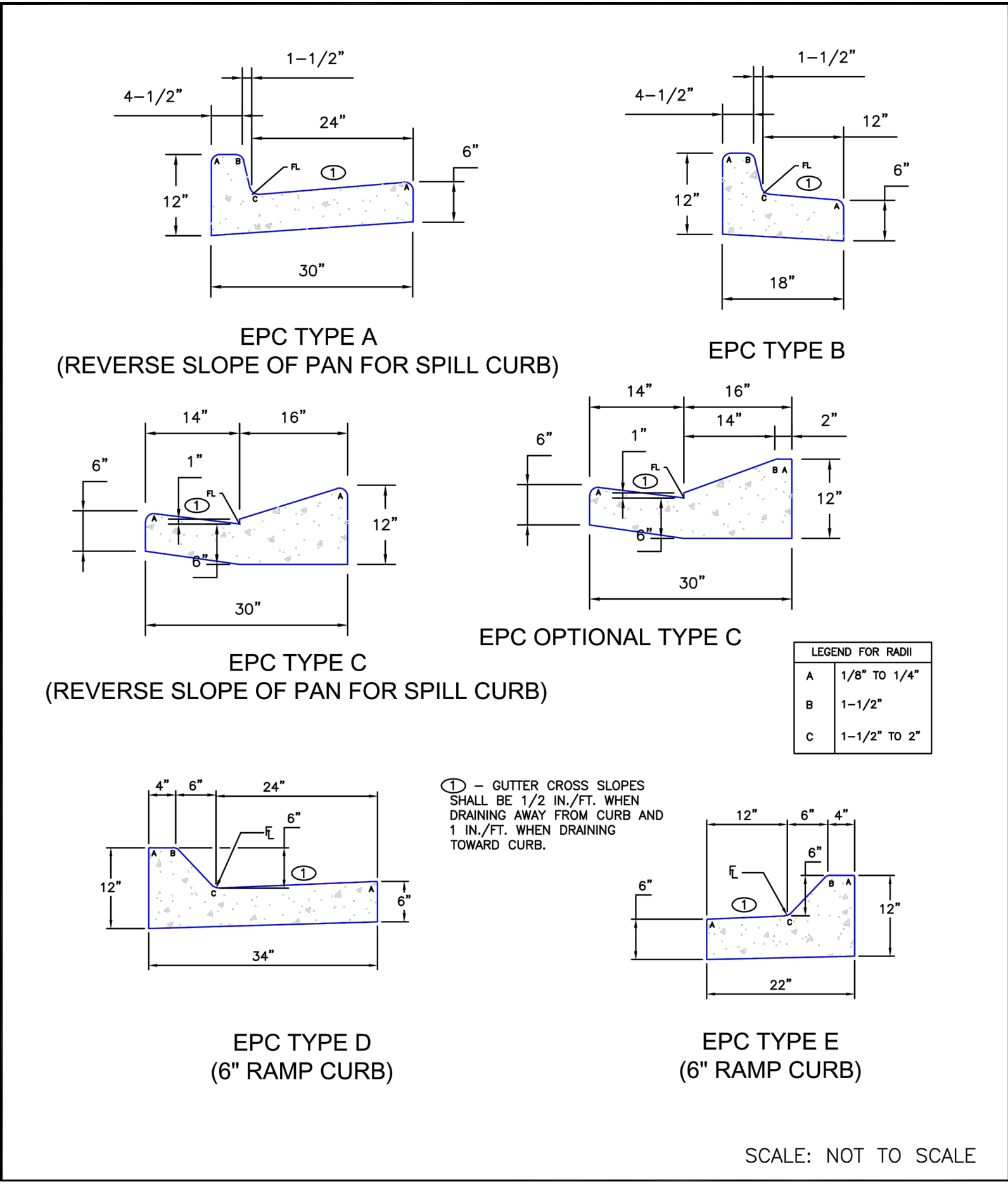


- NOTES**
- W - WIDTH SHALL BE 6' FOR LOCAL, 8' FOR COLLECTORS, AND 10' FOR ARTERIAL ROADS.
 - T - SQUARED-OFF RETURN TO BE POURED MONOLITHICALLY, 8" PCC FOR LOCAL ROADS, 9" FOR COLLECTORS WITH 6x6 - 4.4 W.W.F. OR #4 REINFORCING BAR @ 18" EACH WAY.
 - ▨ = 3" MINIMUM ASPHALT DEPTH (2 LIFTS).
 - DESIGN TO SPECIFY ELEVATIONS AT PI AND PCR.

TYPICAL CROSS PAN LAYOUT DETAIL (SD 2-26)
SCALE: NTS



PARALLEL PEDESTRIAN RAMP DETAIL (SD 2-50)
SCALE: NTS



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

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

HOMESTEAD AT STERLING RANCH FILING NO. 2

NOTE & DETAIL SHEET

PROJECT NO. 09-007 FILE: \Map\Const\Eng\Street Plans\SD2.dwg DATE: 11/19/2019

DESIGNED BY: VAS SCALE: N/A

DRAWN BY: JWP HORIZ: N/A

CHECKED BY: DLN VERT: N/A

SHEET 2 OF 9

SI02

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

CIVIL CONSULTANTS, INC.

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

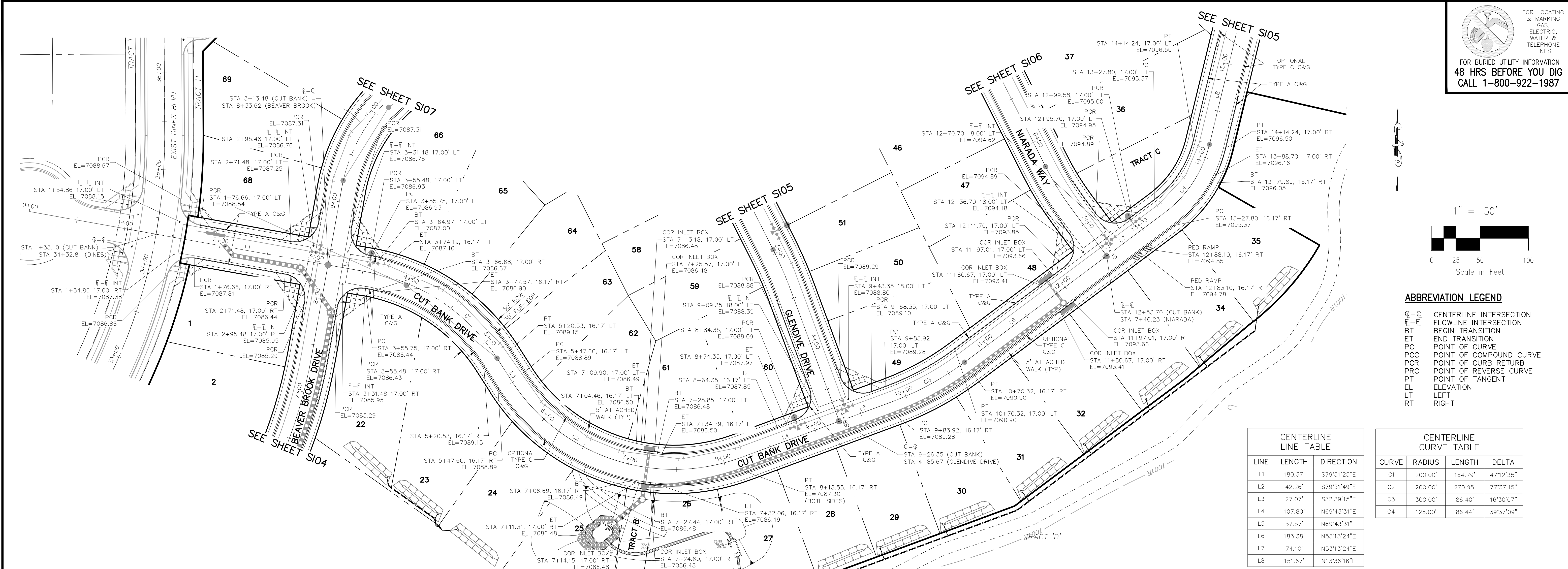
REGISTERED PROFESSIONAL ENGINEER
NO. 31160
STATE OF COLORADO

APPROVED BY: DATE:

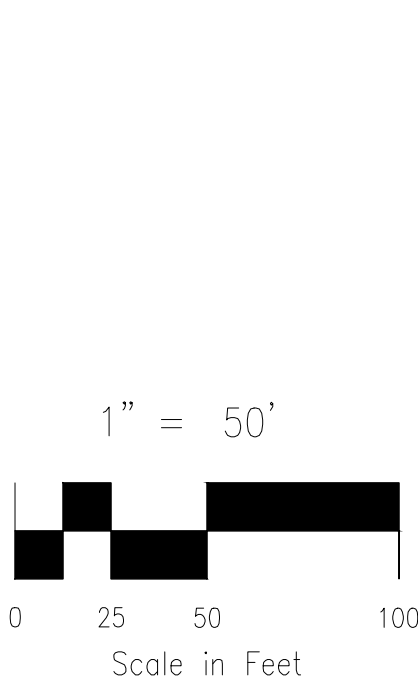
REVISIONS: NO. DATE: BY: DESCRIPTION:

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



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



ABBREVIATION LEGEND

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

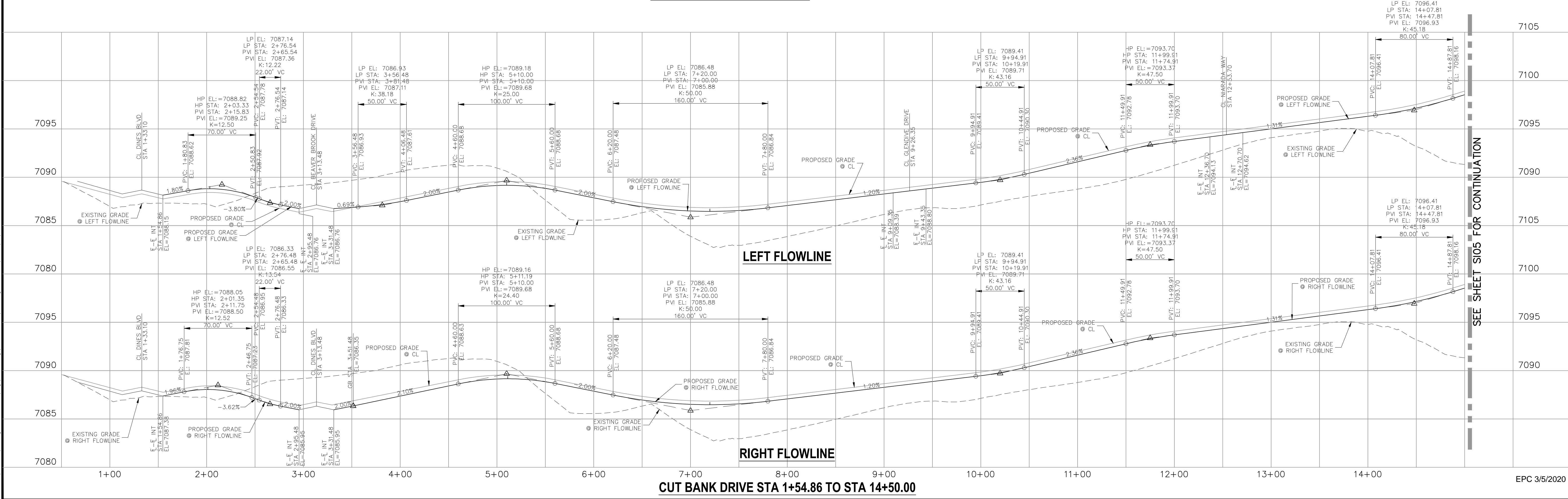
CENTERLINE LINE TABLE

LINE	LENGTH	DIRECTION
L1	180.37'	S79°51'25"E
L2	42.26'	S79°51'49"E
L3	27.07'	S32°39'15"E
L4	107.80'	N69°43'31"E
L5	57.57'	N69°43'31"E
L6	183.36'	N53°13'24"E
L7	74.10'	N53°13'24"E
L8	151.67'	N13°36'16"E

CENTERLINE CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA
C1	200.00'	164.79'	47°12'35"
C2	200.00'	270.95'	77°37'15"
C3	300.00'	86.40'	16°37'07"
C4	125.00'	86.44'	39°37'09"

**CUT BANK DRIVE
 STA 1+54.86 TO STA 14+50.00**



SEE SHEET S105 FOR CONTINUATION

HOMESTEAD AT STERLING RANCH FILING NO. 2
STREET IMPROVEMENT PLANS
 PROJECT NO. 09-007 FILE: \Lang\Const\Eng\Street & Storm Plans\S103.dwg
 DESIGNED BY: VAS SCALE DATE: 11/19/2019
 DRAWN BY: JWP HORIZ: 1"=50'
 CHECKED BY: JMS VERT: 1"=5'

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.

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

REVISIONS:

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.

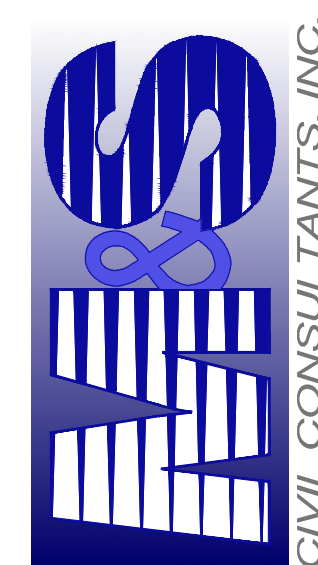
CAUTION

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

HOMESTEAD AT STERLING RANCH FILING NO. 2
STREET IMPROVEMENT PLANS

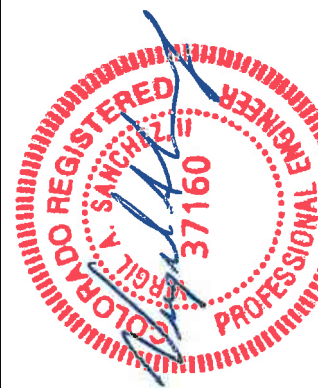
PROJECT NO. 09-007 FILE: \alg\Const\Draw\Street & Storm Plans\SIO4.dwg
DESIGNED BY: VAS SCALE DATE: 11/19/2019
DRAWN BY: JWP HORIZ: 1"=50'
CHECKED BY: JMM VERT: 1"=5'

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



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

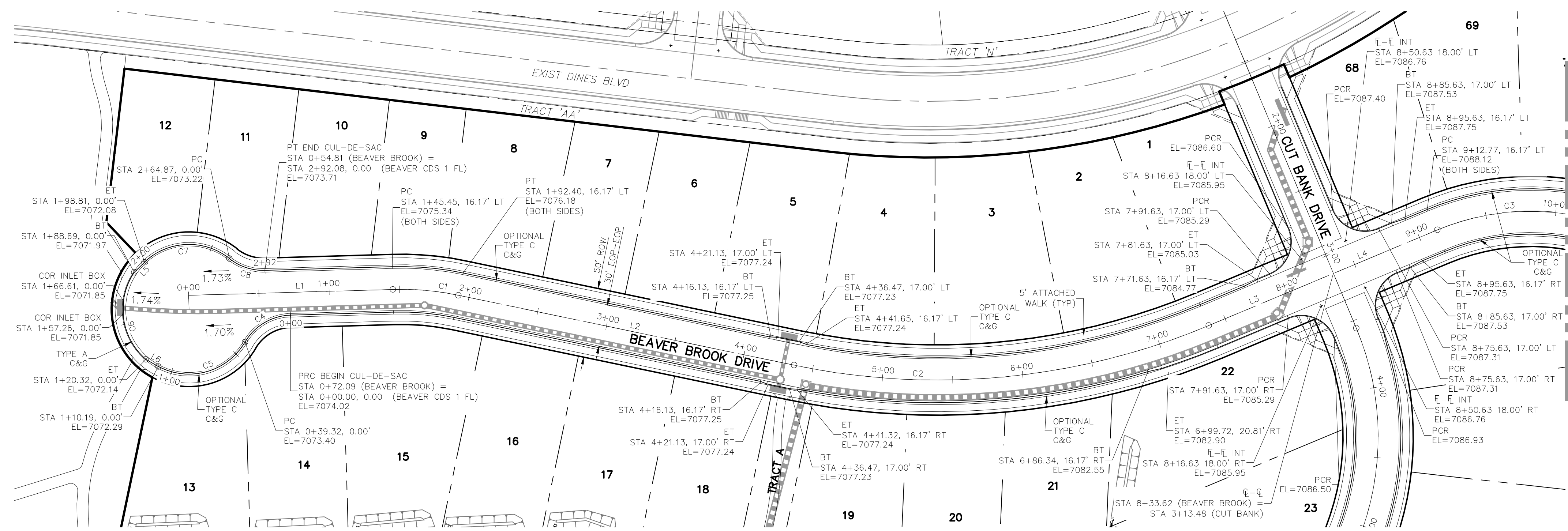
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.



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

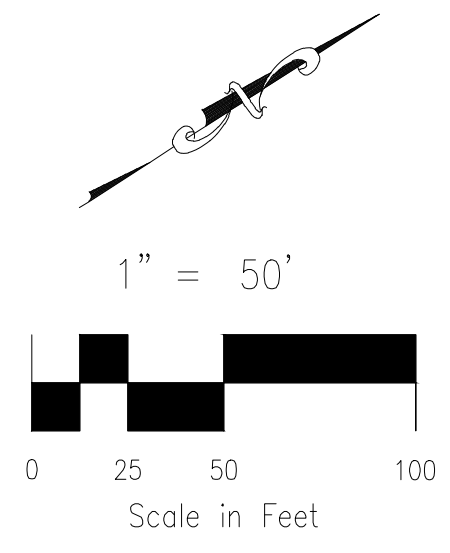
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION



**BEAVER BROOK DRIVE
STA 0+54.81 TO STA 10+00.00**

MATCHLINE - STA 10+00 SEE SHEET SIO7



ABBREVIATION LEGEND

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

CENTERLINE LINE TABLE

LINE	LENGTH	DIRECTION
L1	145.45'	N31°11'28"E
L2	244.07'	N44°38'31"E
L3	96.08'	N10°08'30"E
L4	80.30'	N10°08'30"E

CENTERLINE CURVE TABLE

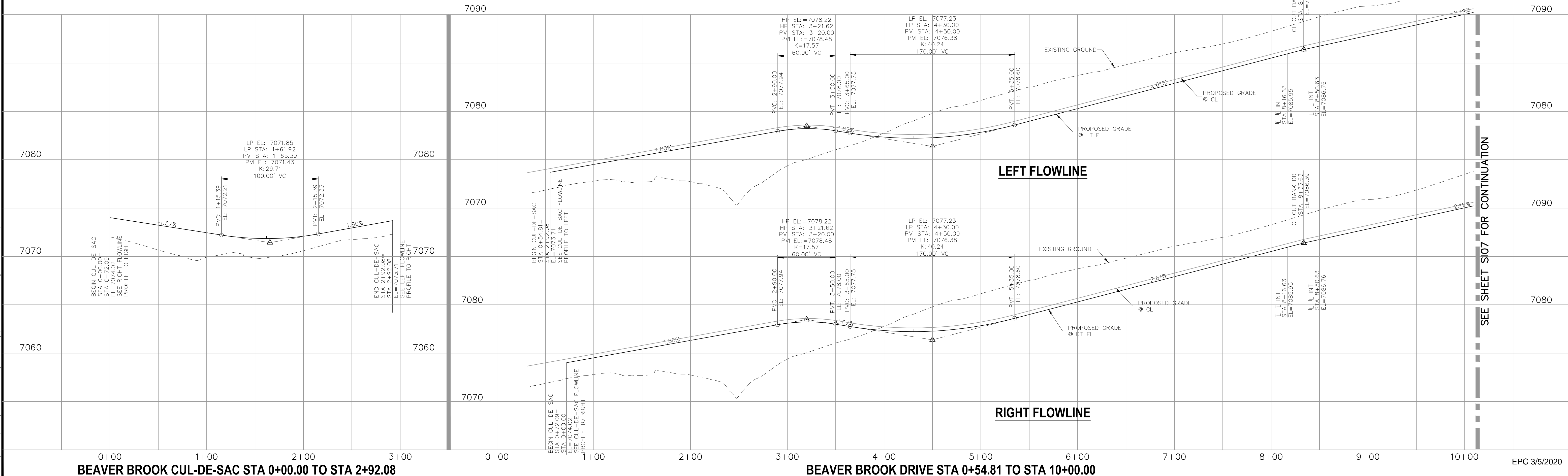
CURVE	RADIUS	LENGTH	DELTA
C1	200.00'	46.95'	13°27'03"
C2	500.00'	301.07'	34°30'01"
C3	173.25'	201.93'	66°46'45"

CURB FLOWLINE LINE TABLE

LINE	LENGTH	DIRECTION
L5	10.12'	N12°09'35"W
L6	10.12'	S62°40'13"W

CURB FLOWLINE CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA
C4	38.83'	39.32'	58°00'27"
C5	46.17'	70.88'	87°57'46"
C6	47.00'	68.37'	83°20'50"
C7	46.17'	66.06'	81°58'55"
C8	38.83'	27.22'	40°09'16"



SEE SHEET SIO7 FOR CONTINUATION

BEAVER BROOK CUL-DE-SAC STA 0+00.00 TO STA 2+92.08

BEAVER BROOK DRIVE STA 0+54.81 TO STA 10+00.00

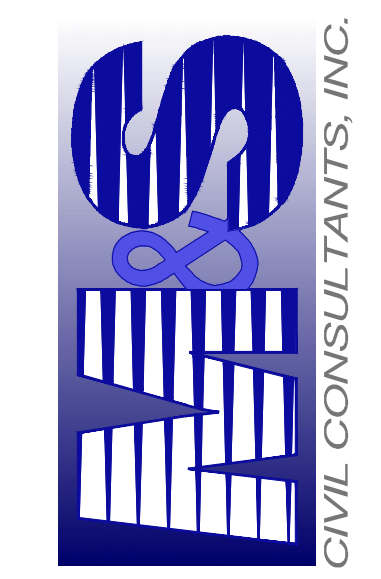
EPC 3/5/2020

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

HOMESTEAD AT STERLING RANCH FILING NO. 2
 STREET IMPROVEMENT PLANS

PROJECT NO. 09-007 FILE: \Lang\Const\Draw\Street & Storm Plans\SIO5.dwg
 DATE: 11/19/2019
 DESIGNED BY: VAS SCALE: 1"=50'
 DRAWN BY: JWP HORIZ: 1"=50'
 CHECKED BY: SIO5 VERT: 1"=5'

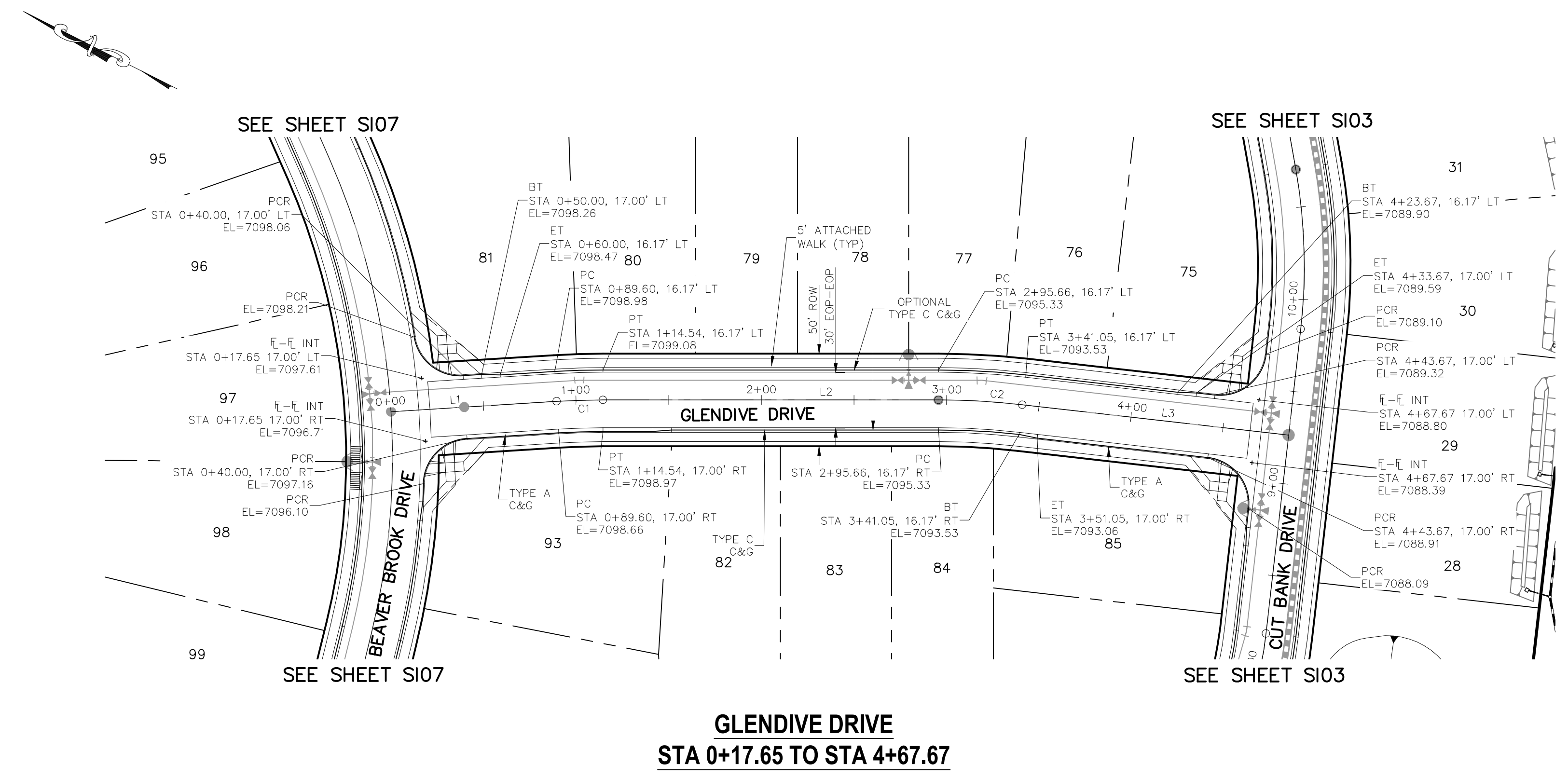
20 BOULDER CRESCENT SUITE 110
 COLORADO SPRINGS, CO 80903
 PHONE: 719.555.5485



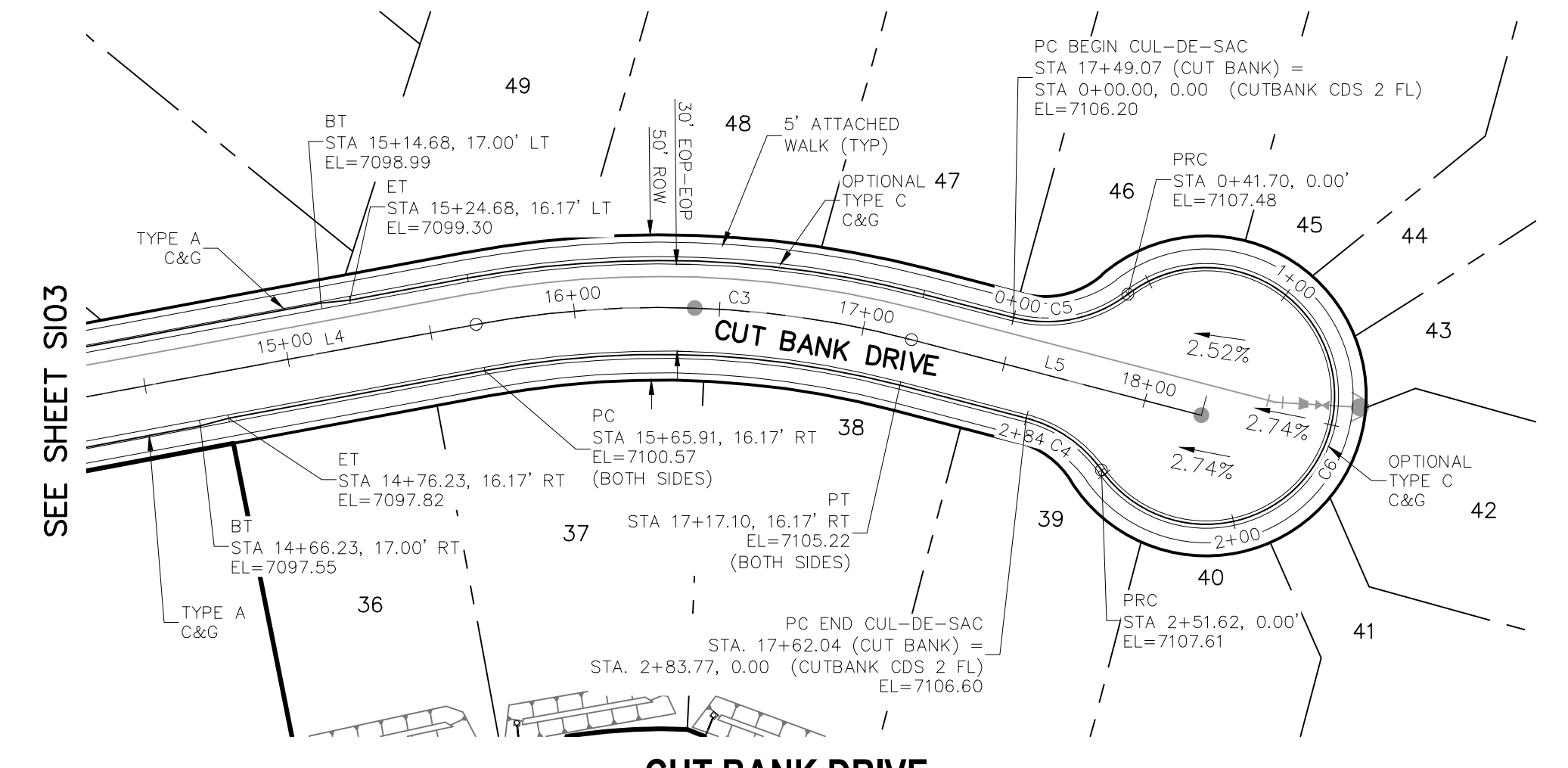
FOR AND ON BEHALF OF
 M&S CIVIL CONSULTANTS, INC.
 VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

NO.	DATE	BY	DESCRIPTION

CAUTION



GLENDIVE DRIVE
 STA 0+17.65 TO STA 4+67.67



CUT BANK DRIVE
 STA 14+50.00 TO STA 17+62.04

ABBREVIATION LEGEND

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

CENTERLINE LINE TABLE

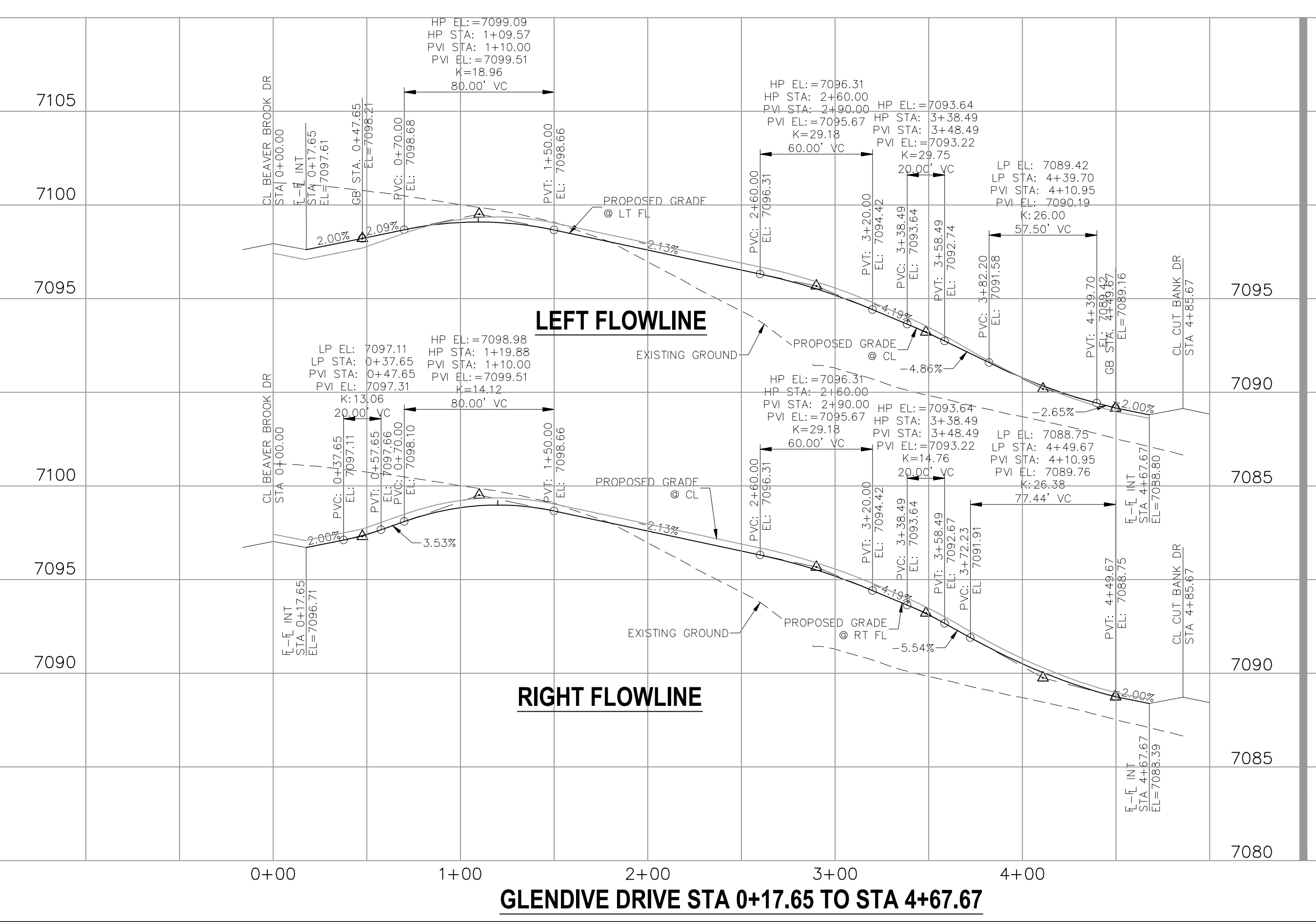
LINE	LENGTH	DIRECTION
L1	89.60'	S30°20'54"E
L2	181.12'	S26°46'34"E
L3	144.62'	S20°16'29"E
L4	151.67'	N13°36'16"E
L5	103.02'	N38°42'46"E

CENTERLINE CURVE TABLE

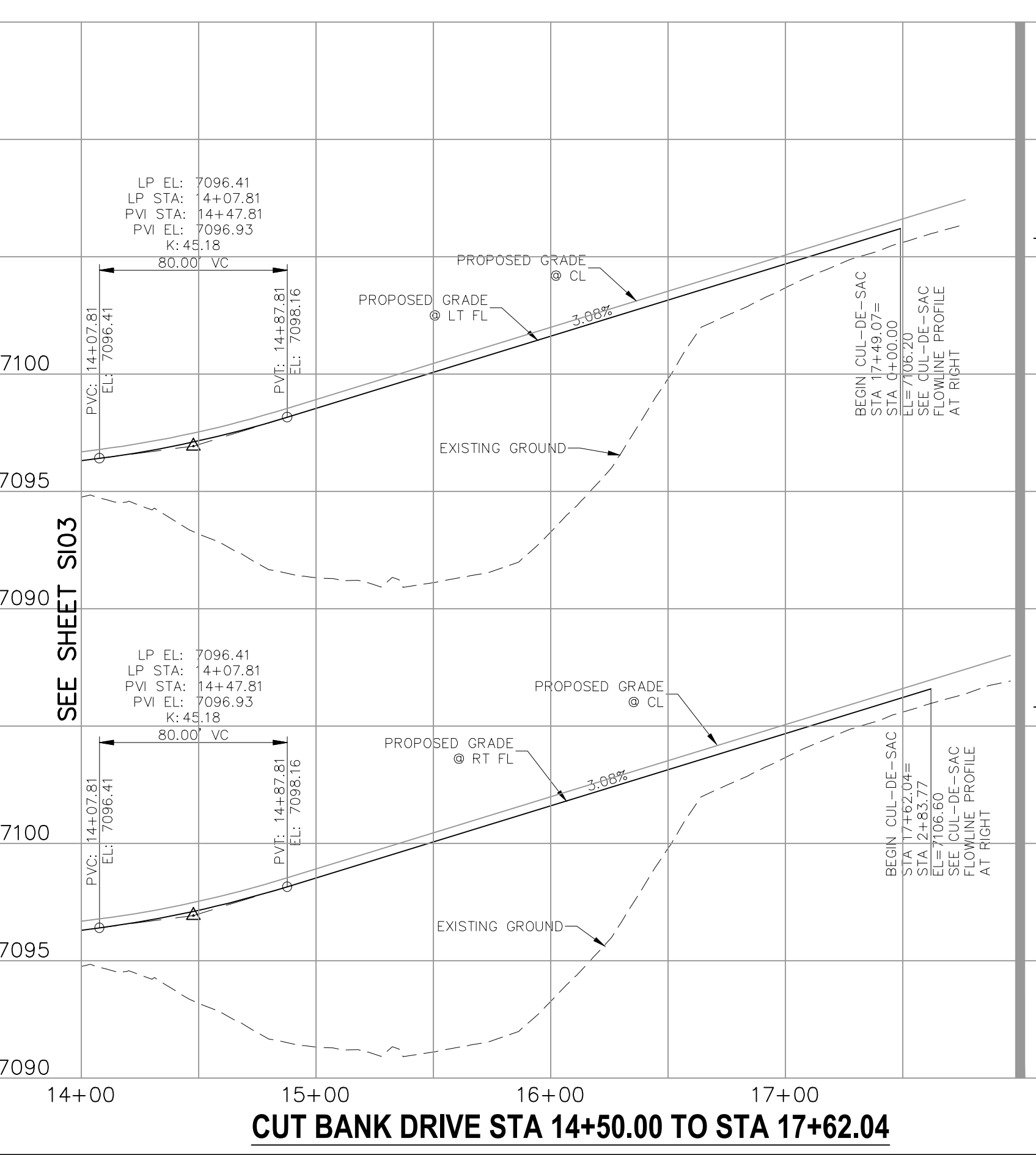
CURVE	RADIUS	LENGTH	DELTA
C3	345.00'	151.19'	25°06'31"
C1	400.00'	24.94'	3°34'20"
C2	400.00'	45.39'	6°30'05"

CURB FLOWLINE CURVE TABLE

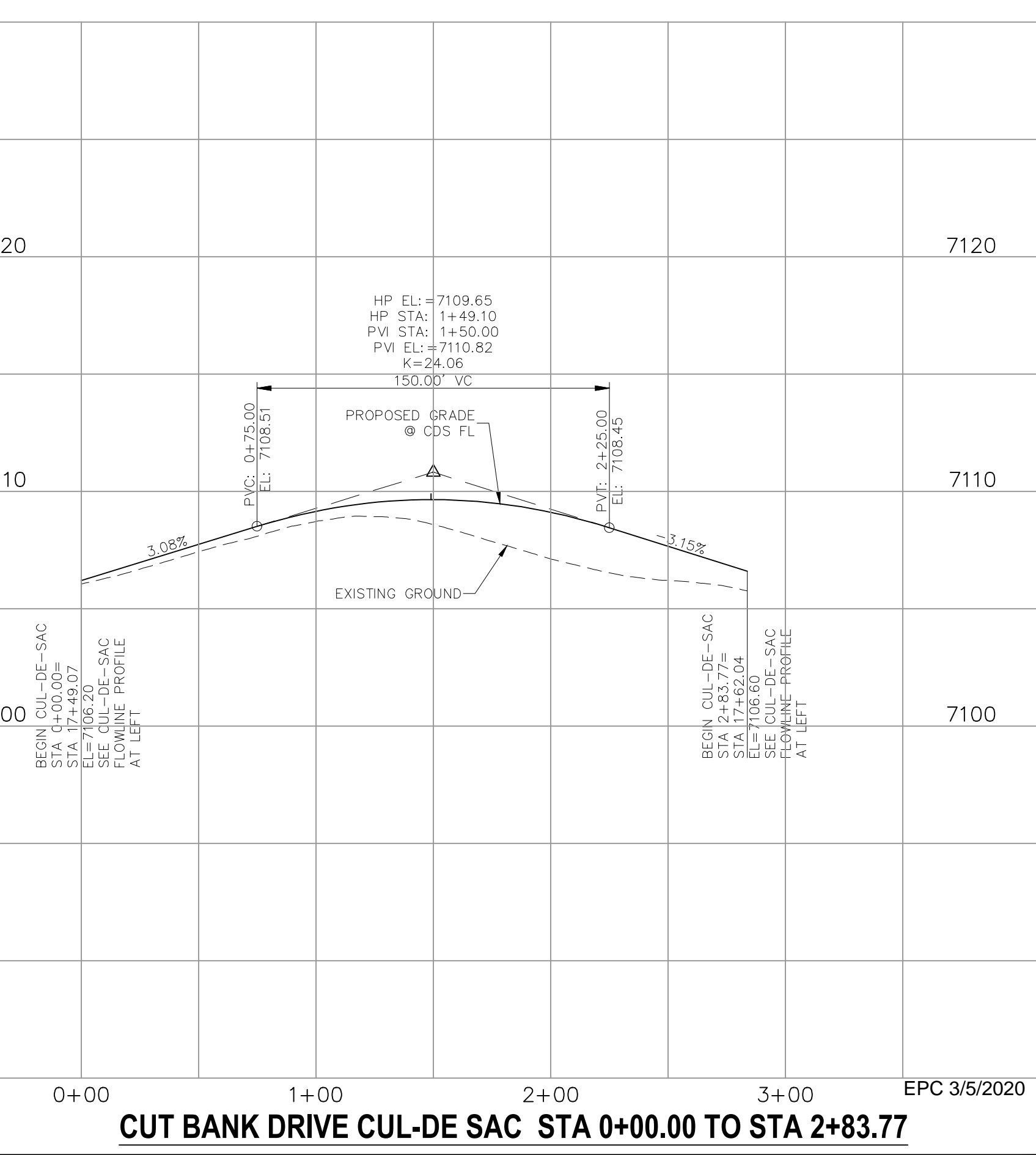
CURVE	RADIUS	LENGTH	DELTA
C5	45.83'	41.70'	52°07'58"
C4	45.83'	32.15'	40°11'12"
C6	44.17'	209.92'	272°19'11"



GLENDIVE DRIVE STA 0+17.65 TO STA 4+67.67



CUT BANK DRIVE STA 14+50.00 TO STA 17+62.04



CUT BANK DRIVE CUL-DE SAC STA 0+00.00 TO STA 2+83.77

File: c:\09007A\Sterling Ranch No. 6\Lang\Const\Draw\Street Plans\SIO5.dwg Plotstamp: 12/12/2019 4:15 PM

EPC 3/5/2020

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
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CALL 1-800-922-1987

HOMESTEAD AT STERLING RANCH FILING NO. 2
STREET IMPROVEMENT PLANS

PROJECT NO. 09-007 FILE: \alg\Const\Draw\Street & Storm Plans\SIO6.dwg
DESIGNED BY: VAS SCALE DATE: 11/19/2019
DRAWN BY: JWP HORIZ: 1"=50'
CHECKED BY: JWP DIM VERT: 1"=5'

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



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

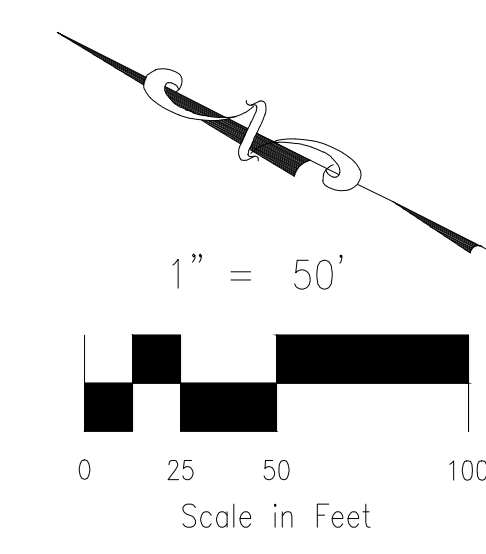
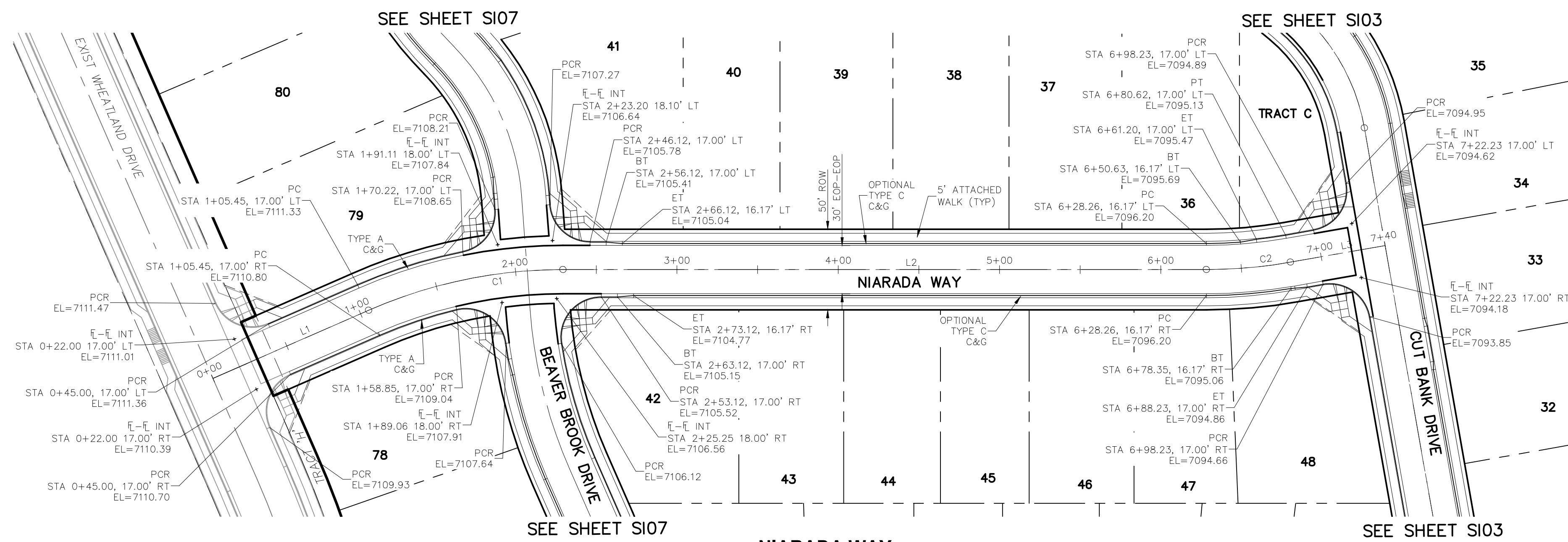
FOR AND ON BEHALF OF
M&S CIVIL CONSULTANTS, INC.



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



**NIARADA WAY
STA 0+22.00 TO STA 7+22.23**

ABBREVIATION LEGEND

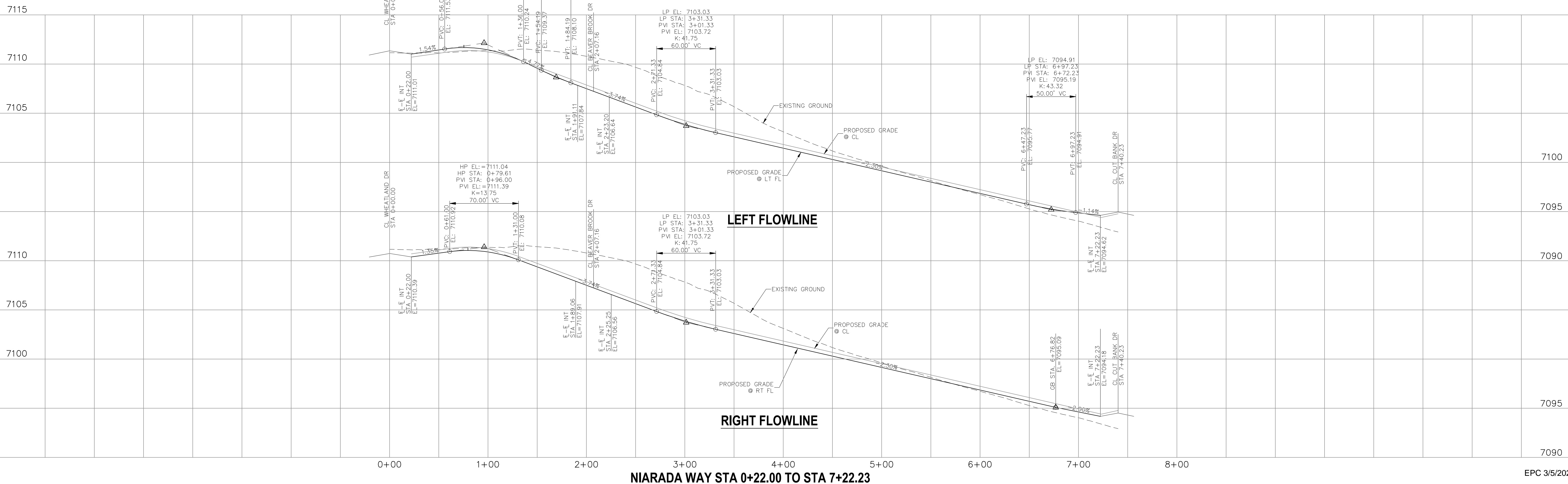
C-C	CENTERLINE INTERSECTION
F-I	FLOWLINE INTERSECTION
BT	BEGIN TRANSITION
ET	END TRANSITION
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCR	POINT OF CURB RETURN
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
EL	ELEVATION
LT	LEFT
RT	RIGHT

CENTERLINE LINE TABLE

LINE	LENGTH	DIRECTION
L1	105.45'	S50°26'12"E
L2	398.93'	S26°46'34"E
L3	59.61'	S36°46'36"E

CENTERLINE CURVE TABLE

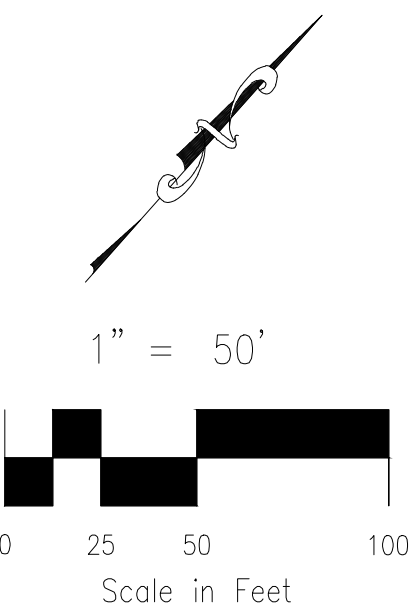
CURVE	RADIUS	LENGTH	DELTA
C1	300.00'	123.89'	23°39'38"
C2	300.00'	52.36'	10°00'02"



NIARADA WAY STA 0+22.00 TO STA 7+22.23

EPC 3/5/2020

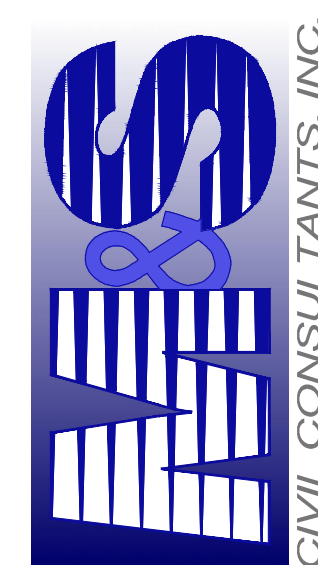
FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
 FOR BURIED UTILITY INFORMATION
 48 HRS BEFORE YOU DIG
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HOMESTEAD AT STERLING RANCH FILING NO. 2
 STREET IMPROVEMENT PLANS

PROJECT NO. 09-007 FILE: \Lang\Const\Draw\Street & Storm Plans\S07.dwg
 DESIGNED BY: JMS SCALE: DATE: 11/19/2019
 DRAWN BY: VWP HORIZ: 1"=50'
 CHECKED BY: DLM VERT: 1"=5'

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



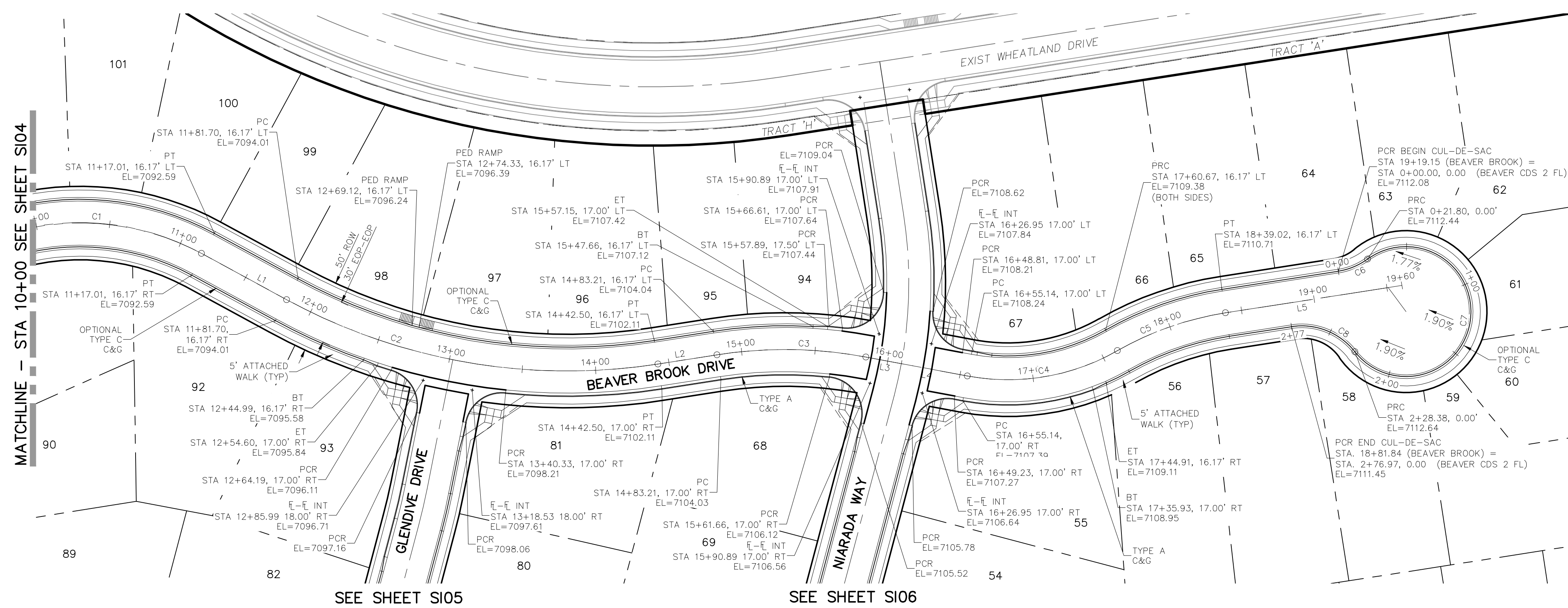
FOR AND ON BEHALF OF
 M&S CIVIL CONSULTANTS, INC.

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

NO.	DATE	BY	DESCRIPTION

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CAUTION



BEAVER BROOK DRIVE
 STA 10+00.00 TO STA 19+19.15

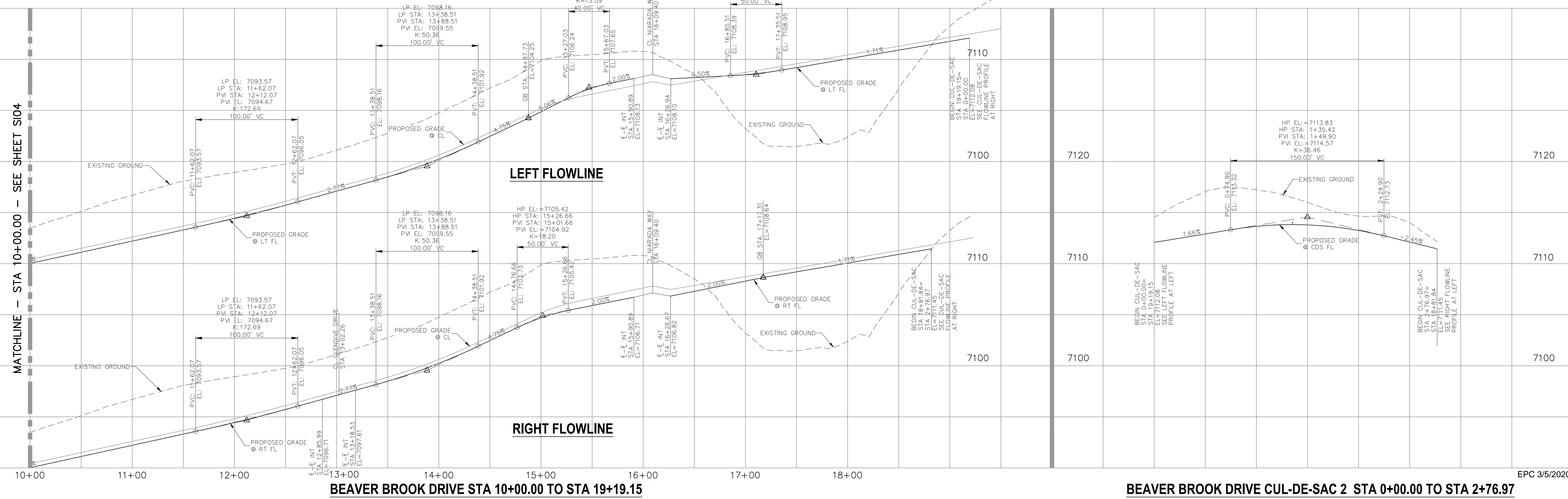
ABBREVIATION LEGEND

- C-C CENTERLINE INTERSECTION
- FL-FL FLOWLINE INTERSECTION
- BT BEGIN TRANSITION
- ET END TRANSITION
- PC POINT OF CURVE
- PCR 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	65.84'	N76°55'15"E
L2	40.70'	N39°33'48"E
L3	24.48'	N58°59'20"E
L4	45.74'	N58°59'20"E
L5	121.33'	N39°33'48"E

CURVE	RADIUS	LENGTH	DELTA
C1	173.25'	201.93'	66°46'45"
C2	400.00'	260.81'	37°21'28"
C3	300.00'	101.71'	19°25'32"
C4	150.00'	105.52'	40°18'23"
C5	215.00'	78.35'	20°52'51"

CURVE	RADIUS	LENGTH	DELTA
C6	45.83'	21.80'	27°14'53"
C8	45.83'	48.59'	60°44'31"
C7	44.17'	206.58'	267°59'24"

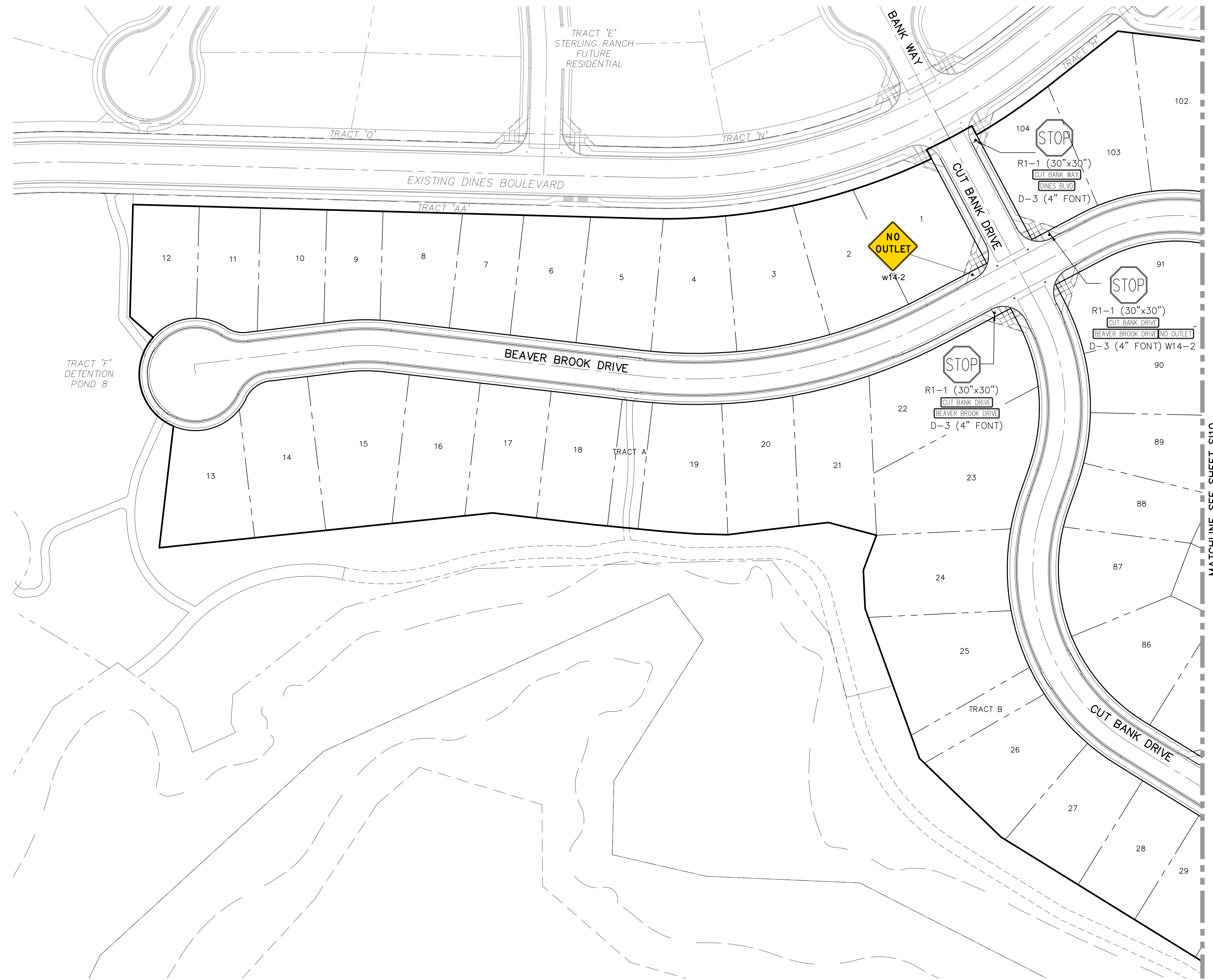
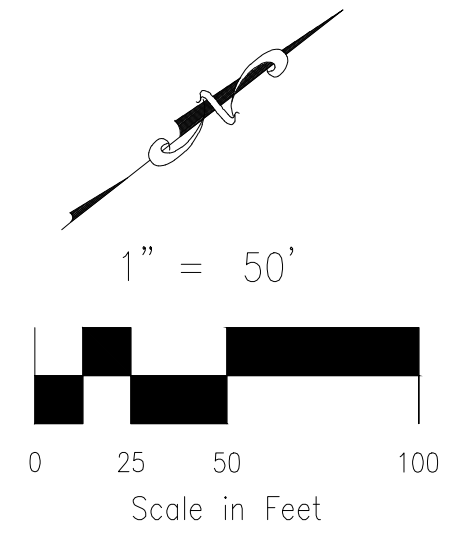


BEAVER BROOK DRIVE STA 10+00.00 TO STA 19+19.15

BEAVER BROOK DRIVE CUL-DE-SAC 2 STA 0+00.00 TO STA 2+76.97

EPC 3/5/2020

File: 0:\00071\Sterling Ranch No 6\Map\Const Draw\Street Plans\S009.dwg PlotDate: 11/20/2019 10:41 AM



NO.	DATE	BY	DESCRIPTION	APPROV. BY	DATE

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

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

M&S
CIVIL CONSULTANTS, INC.

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

HOMESTEAD AT STERLING RANCH FILING NO. 2

SIGNAGE & STRIPING PLAN

PROJECT NO. 09-007 SCALE: DATE: 11/19/2019

DESIGNED BY: VAS HORIZONTAL: 1"=50'

DRAWN BY: JWP VERTICAL: N/A

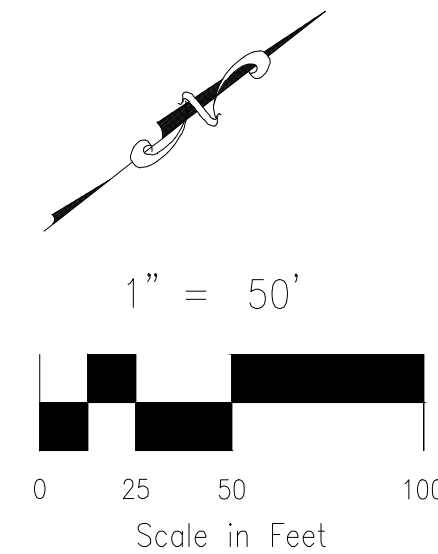
CHECKED BY: DIM N/A

SHEET 8 OF 9 S109

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:\000071\Sterling Ranch No 6\Map\Const Draw\Street Plans\S10.dwg Plotstamp: 11/20/2019 10:39 AM



MATCHLINE SEE SHEET S109



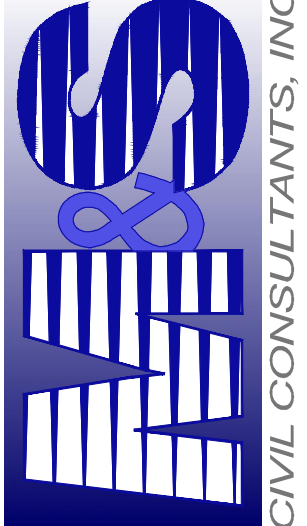
EPC 3/5/2020

HOMESTEAD AT STERLING RANCH FILING NO. 2

SIGNAGE & STRIPING PLAN

PROJECT NO. 09-007
DESIGNED BY: VAS
DRAWN BY: JWP
CHECKED BY: DLN
SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A
DATE: 11/19/2019
SHEET 9 OF 9
S110

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485



CIVIL CONSULTANTS, INC.

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

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



NO.	DATE	BY	DESCRIPTION	APPROVED BY	DATE

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CAUTION

HOMESTEAD AT STERLING RANCH FIL. NO. 2

COUNTY OF EL PASO, STATE OF COLORADO

STORM SEWER PLANS

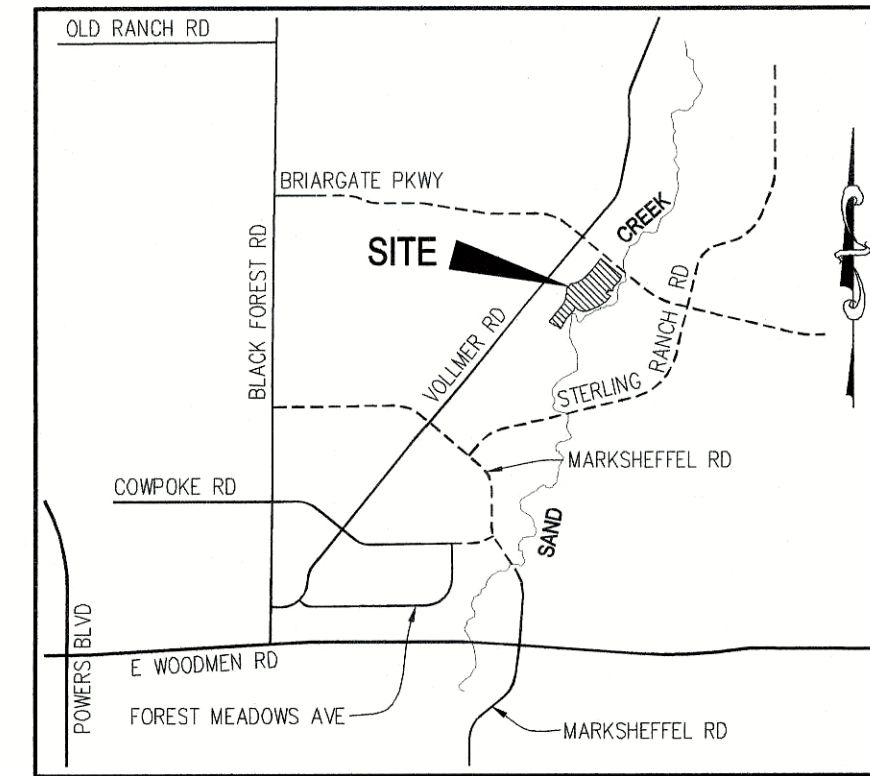
NOVEMBER 2019

AGENCIES

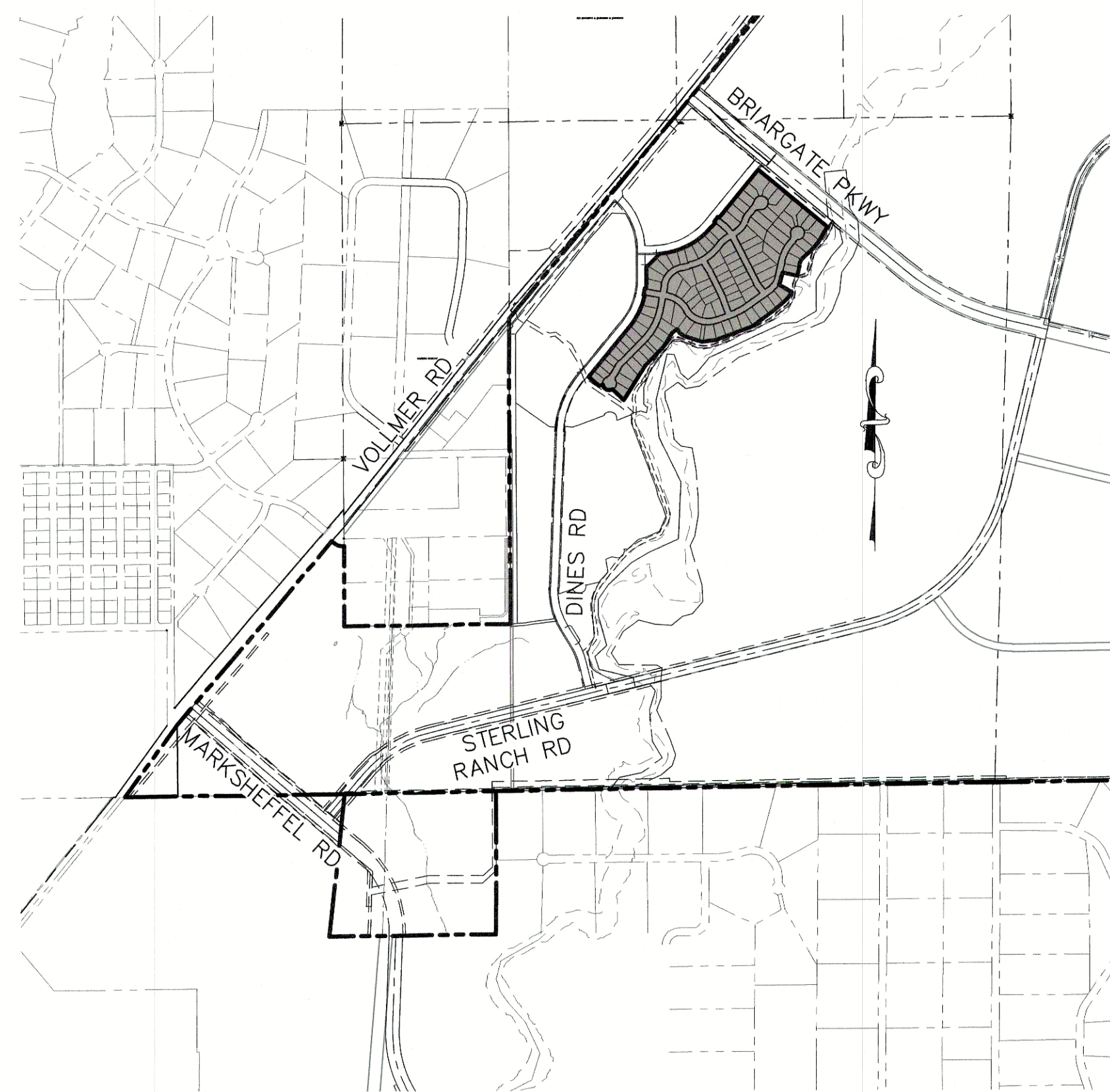
- OWNER/DEVELOPER:** SR LAND, LLC
20 BOULDER CRESCENT, SUITE 201
COLORADO SPRINGS, CO 80903
JIM MORLEY (719) 471-1742
- CIVIL ENGINEER:** M & S CIVIL CONSULTANTS, INC.
102 E. PIKES PEAK, 5TH FLOOR
COLORADO SPRINGS, CO 80903
VIRGIL A. SANCHEZ P.E. (719) 955-5485
- COUNTY ENGINEERING:** EL PASO COUNTY DEVELOPMENT SERVICES
2880 INTERNATIONAL CIRCLE, SUITE 110
COLORADO SPRINGS, CO 80910
JEFF RICE, P.E. (719) 520-6300
- TRAFFIC ENGINEERING:** EL PASO COUNTY PUBLIC SERVICES & TRANS. DEPT.
3275 AKERS DRIVE
COLORADO SPRINGS, CO 80922
JENNIFER IRVINE P.E. (719) 520-6460
- WATER RESOURCES:** STERLING RANCH METRO DISTRICT ENGINEERS
JDS-HYDRO CONSULTANTS
545 E. PIKES PEAK AVE., SUITE 300
COLORADO SPRINGS, CO 80903
JOHN MCGINN (719) 668-8769
- FIRE DISTRICT:** BLACK FOREST FIRE PROTECTION DISTRICT
11445 TEACHOUT ROAD
COLORADO SPRINGS, CO 80908
CHIEF BRYAN JACK (719) 495-4300
- 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

BENCHMARKS

- THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
NORTHING = 411416.273
EASTING = 235167.071
ELEVATION = 7023.42
- THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PANNEE RANCHEROS SUBDIVISION
NORTHING = 410095.404
EASTING = 235052.131
ELEVATION = 7000.40
- THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDIVISION
NORTHING = 411399.962
EASTING = 233849.817
ELEVATION = 7030.82



VICINITY MAP
N.T.S.



SITE MAP
N.T.S.

SHEET INDEX

- SHEET 1 TITLE SHEET
- SHEET 2 STORM SEWER NOTES & DETAILS
- SHEET 3 STORM SEWER NOTES & DETAILS
- SHEET 4 PLAN & PROFILE - STORM 1, STORM 2
- SHEET 5 PLAN & PROFILE - STORM 3, STORM 4
- SHEET 6 PLAN & PROFILE - STORM 5, STORM 6, STORM 7
- SHEET 7 FULL SPECTRUM DETENTION (FSD) POND 1
- SHEET 8 FULL SPECTRUM DETENTION (FSD) POND 1 - DETAILS
- SHEET 9 SPILLWAY & RUNDOWN DETAILS, 42" FOREBAY DETAILS
- SHEET 10 24" OUTFALL DETAILS AND BERM KEY
- SHEET 11 SAND FILTER PONDS LOTS 13-24
- SHEET 12 SAND FILTER PONDS LOTS 28-41
- SHEET 13 OUTFALL STRUCTURE AND DETAILS
- SHEET 14 SAND FILTER DETAILS

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 DATE
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.

NAME: Jim Morley DATE: 11-20-19

DBA: SR LAND, LLC

ADDRESS: 20 BOULDER CRESCENT, SITE 210, COLORADO SPRINGS, 80903

EL PASO COUNTY:

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

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

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

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



STERLING RANCH METROPOLITAN DISTRICT:

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

Virgil A. Sanchez DATE: 11/20/19
FOR AND ON BEHALF OF THE STERLING RANCH METRO. DISTRICT

NOTE: ALL STORM SEWER PIPES, CONNECTIONS AND MANHOLES, ETC. THAT ARE INSTALLED WITHIN THE PUBLIC RIGHT OF WAY SHALL BE CONSIDERED "PUBLIC" AND SHALL BE OWNED AND MAINTAINED BY EL PASO COUNTY. ALL STORM SEWER PIPES, CONNECTIONS, MANHOLES AND OUTLETS THAT ARE INSTALLED OUTSIDE OF THE PUBLIC RIGHT OF WAY SHALL BE CONSIDERED "PRIVATE" AND SHALL BE OWNED AND MAINTAINED BY THE STERLING RANCH METROPOLITAN DISTRICT.

EPC 3/5/2020

SF-19-004

HOMESTEAD AT STERLING RANCH FIL. NO. 2	
STORM SEWER PLANS	
PROJECT NO. 09-007	FILE: \\vg\Const\Eng\Storm Plans\ST01.dwg
DESIGNED BY: CMN	SCALE: N/A
DRAWN BY: CMN	HORIZ: N/A
CHECKED BY: VAS	VERT: N/A
DATE: 11/19/2019	SHEET 1 OF 14
	ST01

102 E. PIKES PEAK AVE. 5TH FLOOR
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

M & S
CIVIL CONSULTANTS, INC.

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

NO.	DATE	BY	DESCRIPTION

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

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

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 DEPARTMENT OF PUBLIC WORKS AND MUTCD CRITERIA.
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 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 BENDS AND WYES SHOWN ON THE PLAN SHALL BE PREFABRICATED.
- HORIZONTAL AND VERTICAL BENDS ARE INDICATED ON THE PLANS.
- JOINTS SHALL BE IN ACCORDANCE WITH ASTM C443 "STANDARD SPECIFICATIONS FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKET." IN NO CASE SHALL THE MAXIMUM JOINT OPENING FOR STRAIGHT ALIGNMENT EXCEED 1 INCH OR ONE AND ONE-HALF INCH ON CURVED ALIGNMENT.
- INLET DIMENSIONS SHOWN ON PLANS REFER TO DISTANCES FROM INSIDE FACES OF BOX BETWEEN THE WIDTHS AND LENGTHS.
- MANHOLE WIDTHS AND LENGTHS SHOWN ON PLAN REFER TO THE EXTERIOR WALL DIMENSIONS.
- ALL STORM SEWER SHALL BE A MINIMUM OF CLASS III REINFORCED CONCRETE PIPE. SPECIFIC SEGMENTS OF STORM SEWER SHALL BE REQUIRED TO BE CONSTRUCTED OF A MINIMUM OF 5000 PSI CONCRETE DUE TO EXCESSIVE VELOCITIES. REFER TO ADDITIONAL NOTES WITHIN CONSTRUCTION PLANS.
- SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
- THE MH RING (FRAME) SHALL BE SET IN A BED OF GROUT. THE FRAME SHALL BE SURROUNDED WITH A GROUT IN UNPAVED AREA, OR A CONCRETE COLLAR IN PAVED AREA.
- PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO ASTM C 478 (AASHTO M 199).
- CAST IN PLACE MANHOLES SHALL BE CLASS B CONCRETE.
- STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
- ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI. VERTICAL STEEL SHALL BE PLACED AT 1/4 OF WALL. ALL BARS SHALL HAVE A 2" MINIMUM CLEARANCE.
- FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE OR APPROVED GROUT.
- STUB-OUTS SHALL EXTEND 4 FT MINIMUM BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
- CHECK WITH THE LOCAL GOVERNMENT AUTHORITY FOR ANY ADDITIONAL STORM SEWER SPECIFICATIONS, DETAILS, OR REGULATIONS.
- THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.
- THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PREFABRICATED STRUCTURES TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

SOIL RIPRAP NOTES:

- THE SOIL MATERIAL SHALL BE NATIVE OR TOPSOIL AND MIXED WITH SIXTY FIVE PERCENT (65%) RIPRAP AND THIRTY FIVE PERCENT (35%) SOIL BY VOLUME.
- SOIL RIPRAP SHALL CONSIST OF A UNIFORM MIXTURE OF SOIL AND RIPRAP WITHOUT VOIDS.
- CONTRACTOR SHALL COOPERATE WITH ENGINEER IN OBTAINING AND PROVIDED SAMPLES OF ALL SPECIFIED MATERIALS.
- CONTRACTOR SHALL SUBMIT CERTIFIED LABORATORY TEST CERTIFICATES FOR ALL ITEMS REQUIRED FOR SOIL RIPRAP.
- RIPRAP USED SHALL BE THE TYPE DESIGNATED ON THE DRAWINGS AND SHALL CONFORM TO TABLE SHOWN TO THE RIGHT.
- THE RIPRAP DESIGNATION AND TOTAL THICKNESS OF RIPRAP SHALL BE AS SHOWN ON THE DRAWINGS. THE MAXIMUM STONE SIZE SHALL NOT LARGER THAN THE THICKNESS OF THE RIPRAP.
- NEITHER WIDTH NOR THICKNESS OF A SINGLE STONE OF RIPRAP SHALL BE LESS THAN ONE-THIRD (1/3) OF ITS LENGTH.
- THE SPECIFIC GRAVITY OF THE RIPRAP SHALL BE TWO AND ONE-HALF (2.5) OR GREATER.
- MINIMUM DENSITY FOR ACCEPTABLE RIPRAP SHALL BE ONE HUNDRED AND SIXTY FIVE (165) POUNDS PER CUBIC FOOT.
- RIPRAP SPECIFIC GRAVITY SHALL BE ACCORDING TO THE BULK-SATURATED, SURFACE-DRY BASIS, IN ACCORDANCE WITH AASHTO T85.
- BROKEN CONCRETE OR ASPHALT PAVEMENT SHALL NOT BE ACCEPTABLE FOR USE IN THE WORK.
- ROUNDED RIPRAP (RIVER ROCK) IS NOT ACCEPTABLE, UNLESS SPECIFICALLY DESIGNATED ON THE DRAWINGS.

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 (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



HOMESTEAD AT STERLING RANCH FIL. NO. 2

STORM SEWER NOTES & DETAILS

PROJECT NO. 09-007 DATE: 11/19/2019

DESIGNED BY: CMM SCALE: N/A

DRAWN BY: CMM HORIZONTAL: N/A

CHECKED BY: VAS VERTICAL: N/A

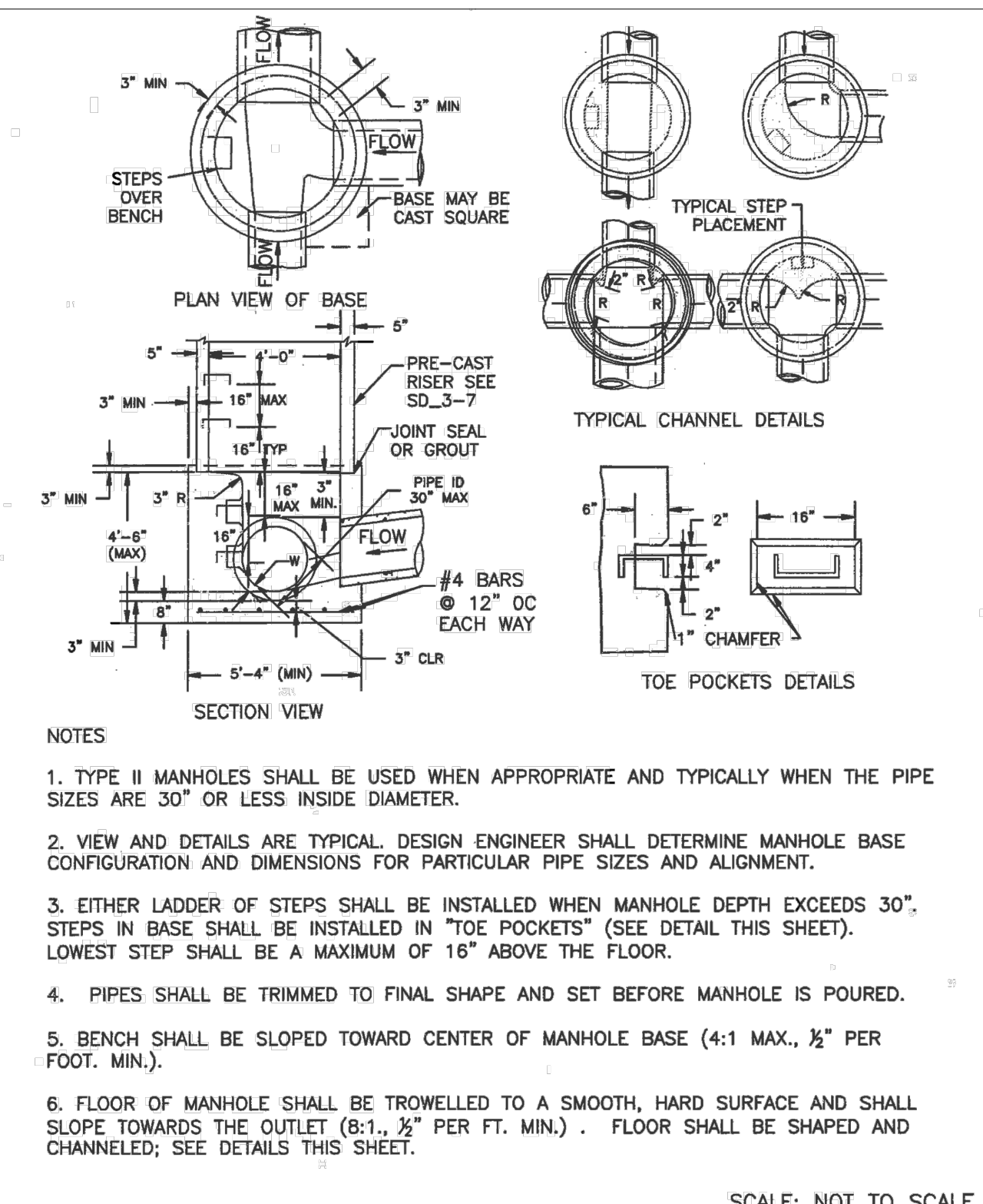
SHEET 2 OF 14 ST02

102 E. PINE PEAK AVE., 5TH FLOOR
 COLORADO SPRINGS, CO 80903
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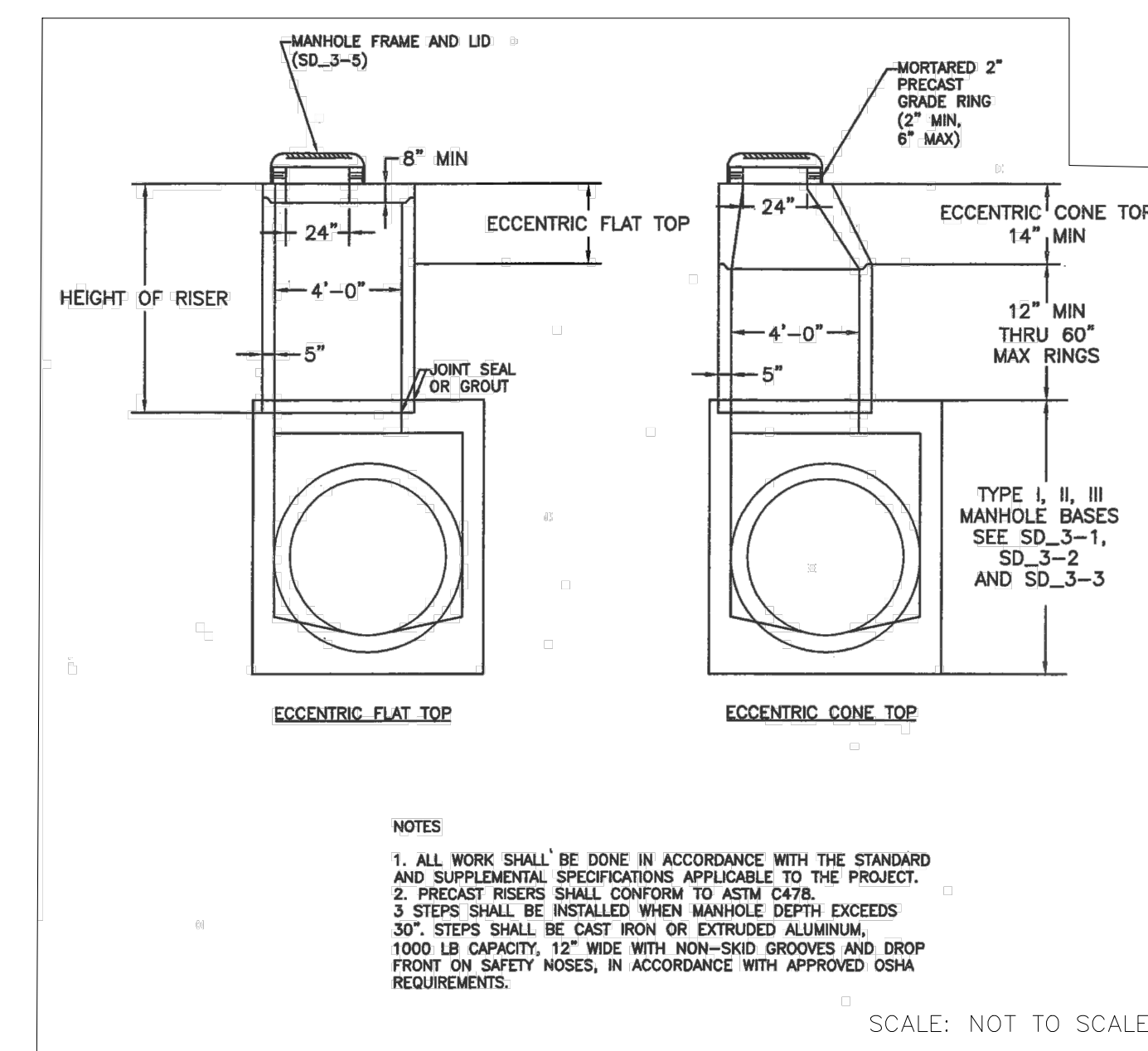
CIVIL CONSULTANTS, INC.

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

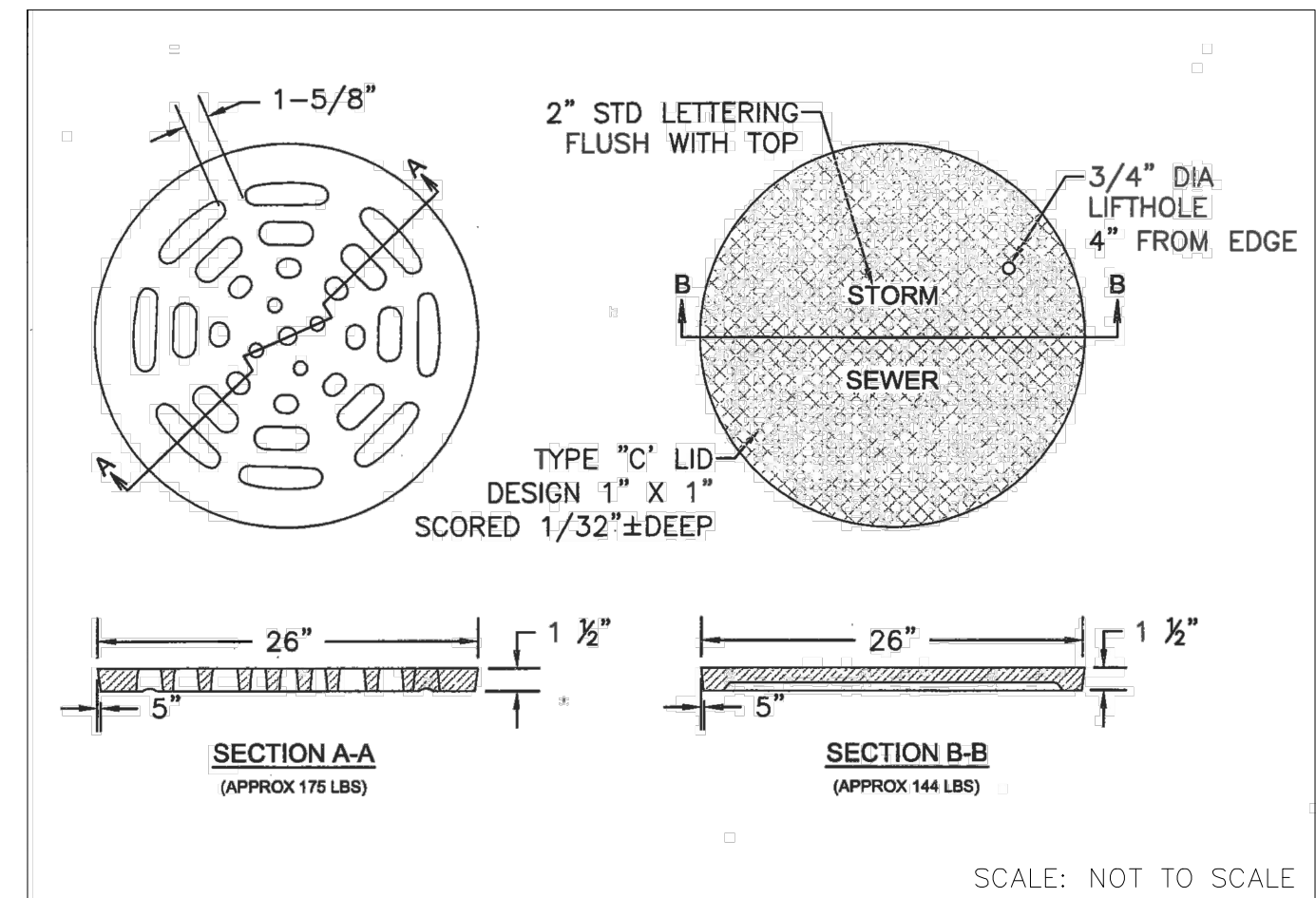
PROFESSIONAL ENGINEER



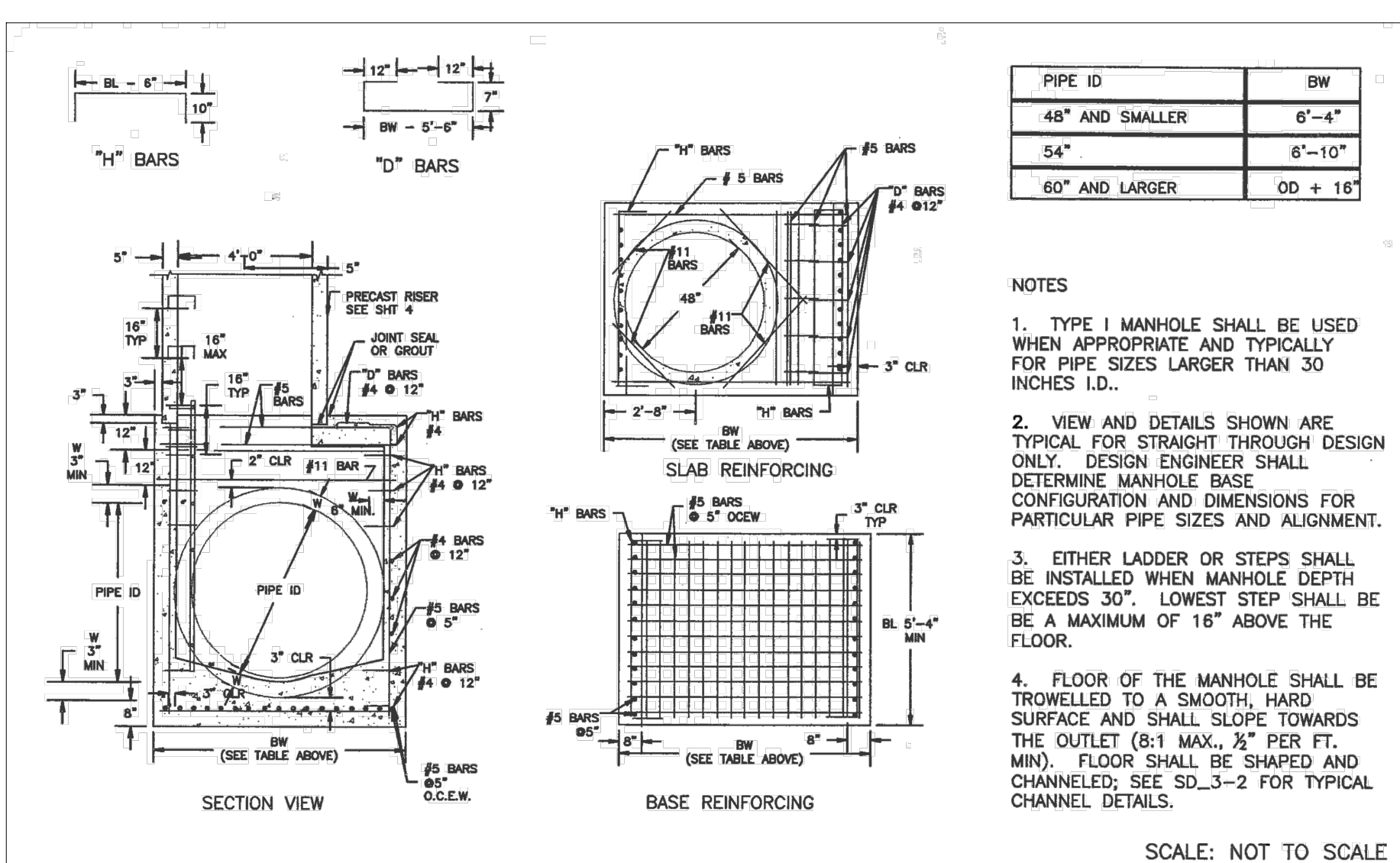
STORM SEWER MANHOLE DETAIL TYPE II SD 3-2



STORM SEWER MANHOLE RISER AND COVER DETAIL TYPE SD 3-7



STORM SEWER MANHOLE LID DETAILS SD 3-2



STORM SEWER MANHOLE DETAIL TYPE I SD 3-1

File: 0:\080071A\Sterling Ranch No 6\Eng\Const\Draw\Storm Plans\ST02.dwg Plotstamp: 11/19/2019 7:42 AM

REVISIONS:

NO.	DATE	BY	DESCRIPTION

DATE: _____

APPROVED BY: _____

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

GENERAL NOTES: SEE SHEET 2.

FOR LENGTH (L) 10 FT. OR MORE, PROVIDE MAINTENANCE ACCESS AT BOTH ENDS WITH AN ADDITIONAL MANHOLE RING AND COVER. STATION POINT AT MIDPOINT OF INLET ALONG FLOWLINE.

WHEN A TYPE R INLET IS USED WITH MOUNTABLE CURB AND GUTTER, 5' F.T. TRANSITION SHALL BE CONSTRUCTED. TRANSITION SHALL BE PAID FOR AS CURB AND GUTTER.

TRANSITION CURB: MOUNTABLE CURB FACE, 5' TRANSITION, BARRIER CURB FACE.

TRANSITION CURB: FOR A 1'-0" PAN SLOPE 2% PER FT.

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

Computer File Information: Creation Date: 07/04/12, Initials: DD, Last Modification Date: 07/04/12, Initials: LTA, Full Path: www.coloradodot.info/business/designsupport, Drawing File Name: 6040120202.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.

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.

CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.

EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 1/4" IN CURB AND GUTTER CORNERS SHALL BE FINISHED TO MATCH THE EXISTING CURB AND GUTTER BEYOND 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.

ALL MANHOLE COVERS SHALL BE CAST WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE AND A FISH SYMBOL. THE SURFACE OF THE MANHOLE COVER SHALL HAVE A NON-SLIP PATTERN.

NO DUMPING DRAINS TO STREAM

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

MARK	BAR #	SIZE	O.C. SPACING	TYPE	ALL INLETS			INLETS: H ≤ 5 FT.			INLETS: H > 5 FT.		
					L = 5 FT.	L = 10 FT.	L = 15 FT.	L = 5 FT.	L = 10 FT.	L = 15 FT.	L = 5 FT.	L = 10 FT.	L = 15 FT.
401	4	11"	II	11	15	21	15	21	26	11	15	21	
402	4	11"	II	7	7	7	7	7	7	7	7	7	
403	4	9"	II	7	7	7	7	7	7	7	7	7	
405	4	6"	VI	11	8-10"	21	8-10"	7	8-10"	11	8-10"	11	
406	4	6"	VIII	11	8-10"	21	8-10"	7	8-10"	11	8-10"	11	
407	4	9"	II	7	7	7	7	7	7	7	7	7	
408	4	12"	II	3	8-10"	3	11-10"	3	16-10"	3	11-10"	3	
409	4	8"	II	6	5-10"	6	10-10"	6	15-10"	6	10-10"	6	
410	4	11"	VII	11	11	11	11	11	11	11	11	11	
411	4	11"	II	3	5-2"	3	5-2"	3	10-2"	3	5-2"	3	
412	4	11"	II	3	2-9"	3	2-9"	3	2-9"	3	2-9"	3	
413	4	9"	II	3	7-10"	7	15-10"	7	15-10"	7	15-10"	7	
501	5	5/8"	IV	11	3-4"	22	3-4"	33	3-4"	22	3-4"	33	
502	5	5/8"	III	11	3-4"	22	3-4"	33	3-4"	11	11-5"	17	
503	5	5/8"	II	5	3-6"	16	3-6"	27	3-6"	6	3-6"	6	
504	5	9/16"	IX	11	11	11	11	11	11	11	11	11	
601	6	2 1/2"	V	2	8-10"	2	8-10"	2	8-10"	2	8-10"	4	
602	6	2 1/2"	V	2	8-10"	2	8-10"	2	8-10"	2	8-10"	4	
603	6	2 1/2"	V	2	8-10"	2	8-10"	2	8-10"	2	8-10"	4	
604	6	2 1/2"	V	2	8-10"	2	8-10"	2	8-10"	2	8-10"	4	

TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"

"H"	LENGTH	NO. REQ'D.	REGULAR	DROP BOX	L = 5 FT.		L = 10 FT.		L = 15 FT.	
					CONC. U.S. YDS.	STEEL LBS.	CONC. U.S. YDS.	STEEL LBS.	CONC. U.S. YDS.	STEEL LBS.
3'-0"	2'-8"	1-8"	10	7	3.2	285	5.3	497	7.4	706
3'-6"	3'-2"	2'-2"	10	7	3.4	305	5.7	528	7.9	747
4'-0"	3'-6"	2'-6"	12	9	3.7	326	6.0	559	8.4	786
4'-6"	4'-2"	3'-2"	12	9	3.9	334	6.4	571	8.8	803
5'-0"	4'-6"	3'-6"	14	11	4.1	354	6.7	602	9.3	844
5'-6"	5'-2"	4'-2"	16	13	4.4	375	7.0	627	9.7	860
6'-0"	5'-6"	4'-6"	16	13	4.6	382	7.2	636	9.9	860
6'-6"	6'-2"	5'-2"	18	15	4.8	402	7.5	657	10.3	880
7'-0"	6'-6"	5'-6"	20	17	5.0	423	7.8	684	10.7	897
7'-6"	7'-2"	6'-2"	20	17	5.3	430	8.1	694	11.0	907
8'-0"	7'-6"	6'-6"	22	19	5.5	451	8.4	711	11.4	927
8'-6"	8'-2"	7'-2"	24	21	5.7	471	8.7	732	11.8	944
9'-0"	8'-6"	7'-6"	24	21	6.0	479	9.0	741	12.1	954
9'-6"	9'-2"	8'-2"	26	23	6.2	499	9.3	762	12.5	974
10'-0"	9'-6"	8'-6"	28	25	6.4	520	9.6	789	12.9	992
10'-6"	10'-2"	9'-2"	28	25	6.7	527	8.3	759	9.7	1001
11'-0"	10'-6"	9'-6"	30	27	7.0	547	8.5	779	9.9	1022

Computer File Information: Creation Date: 07/04/12, Initials: DD, Last Modification Date: 07/04/12, Initials: LTA, Full Path: www.coloradodot.info/business/designsupport, Drawing File Name: 6040120202.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.

STANDARD PLAN NO. M-604-12, Sheet No. 2 of 2.

GENERAL NOTES:

DIMENSIONS OF END SECTIONS MAY VARY SLIGHTLY FROM THOSE SHOWN ON THE TABLES DUE TO DIFFERENT MANUFACTURERS' CONFIGURATIONS.

CONCRETE END SECTIONS SHALL BE FURNISHED WITH TONGUE OR GROOVE AS REQUIRED.

DESIGN LENGTH OF PIPE OR SIDE DRAIN IS BASED ON LENGTH OF END SECTION SHOWN IN TABLE. ANY ADDITIONAL PIPE REQUIRED TO PROVIDE THE DESIGN LENGTH SHALL BE FURNISHED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.

THE INSIDE CONFIGURATION AND THE JOINT OF CONCRETE END SECTION AND PIPE SHALL MATCH ON THE PLANS.

END SECTIONS FOR CMP ARCH PIPE SHALL MATCH THE DIMENSIONS OF THE PIPE SHOWN ON THE PLANS.

GALVANIZED TOE PLATE AS SHOWN IS REQUIRED ON END SECTIONS FOR CORRUGATED STEEL PIPE AND SHALL BE THE SAME THICKNESS AS END SECTIONS. THE TOE PLATE SHALL BE FIELD-BOLTED TO END SECTION WITH 3/8" GALVANIZED BOLTS, NUTS AND WASHERS.

GALVANIZED STEEL SHALL CONFORM TO AASHTO M 111, M 218 OR M 232.

FOR TYPE SD END SECTIONS, BARS SHALL BE FABRICATED FROM NPS-3 GALVANIZED STEEL SCHEDULE 40 PIPE WHICH SHALL CONFORM TO ASTM A 53.

FOR A TYPE SD END SECTION, THE INSTALLATION OF ALTERNATIVE 1 OR ALTERNATIVE 2 END SECTION SHALL BE THE CONTRACTOR'S OPTION.

CONCRETE PIPE JOINT FASTENERS, WHERE SHOWN ON PLANS, SHALL BE INSTALLED SO THAT A MINIMUM OF 15 LINEAR FEET OF THE OUTLET END OF THE PIPE ARE MECHANICALLY LOCKED TOGETHER. END SECTION LENGTHS WHEN USED, SHALL BE INCLUDED IN THE 15 LF REQUIREMENT.

CONNECTIONS OF METAL END SECTIONS TO PLASTIC PIPE SHALL BE APPROVED BY THE ENGINEER. PLASTIC END SECTIONS SHALL NOT BE USED.

THE END SECTION STYLE, EITHER REGULAR OR SAFETY, SHALL BE AS SHOWN ON THE PLANS.

Computer File Information: Creation Date: 07/04/12, Initials: DD, Last Modification Date: 07/04/12, Initials: LTA, Full Path: www.coloradodot.info/business/designsupport, Drawing File Name: 601010102.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.

STANDARD PLAN NO. M-603-10, Sheet No. 1 of 2.

HOMESTEAD AT STERLING RANCH FIL. NO. 2

STORM SEWER NOTES & DETAILS

PROJECT NO. 09-007 DATE: 11/19/2019

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

DESIGNED BY: CMN DRAWN BY: GIN CHECKED BY: VAS

SHEET 3 OF 14 ST03

102 E. PEEKS PEAK AVE., 5TH FLOOR COLORADO SPRINGS, CO 80903 PHONE: 719.555.4485

CIVIL CONSULTANTS, INC.

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

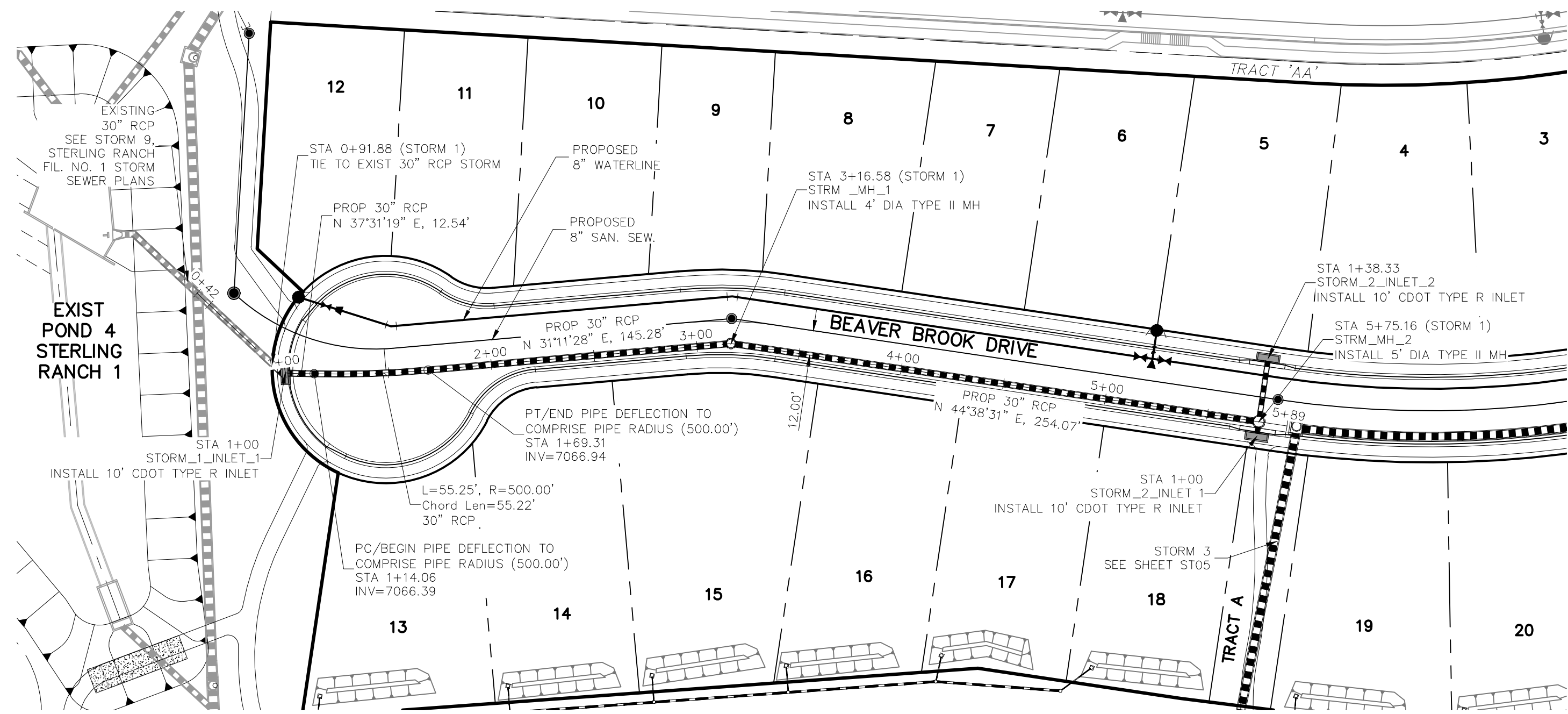
REGISTERED PROFESSIONAL ENGINEER NO. 31160

REVISIONS: NO., DATE, BY, DESCRIPTION

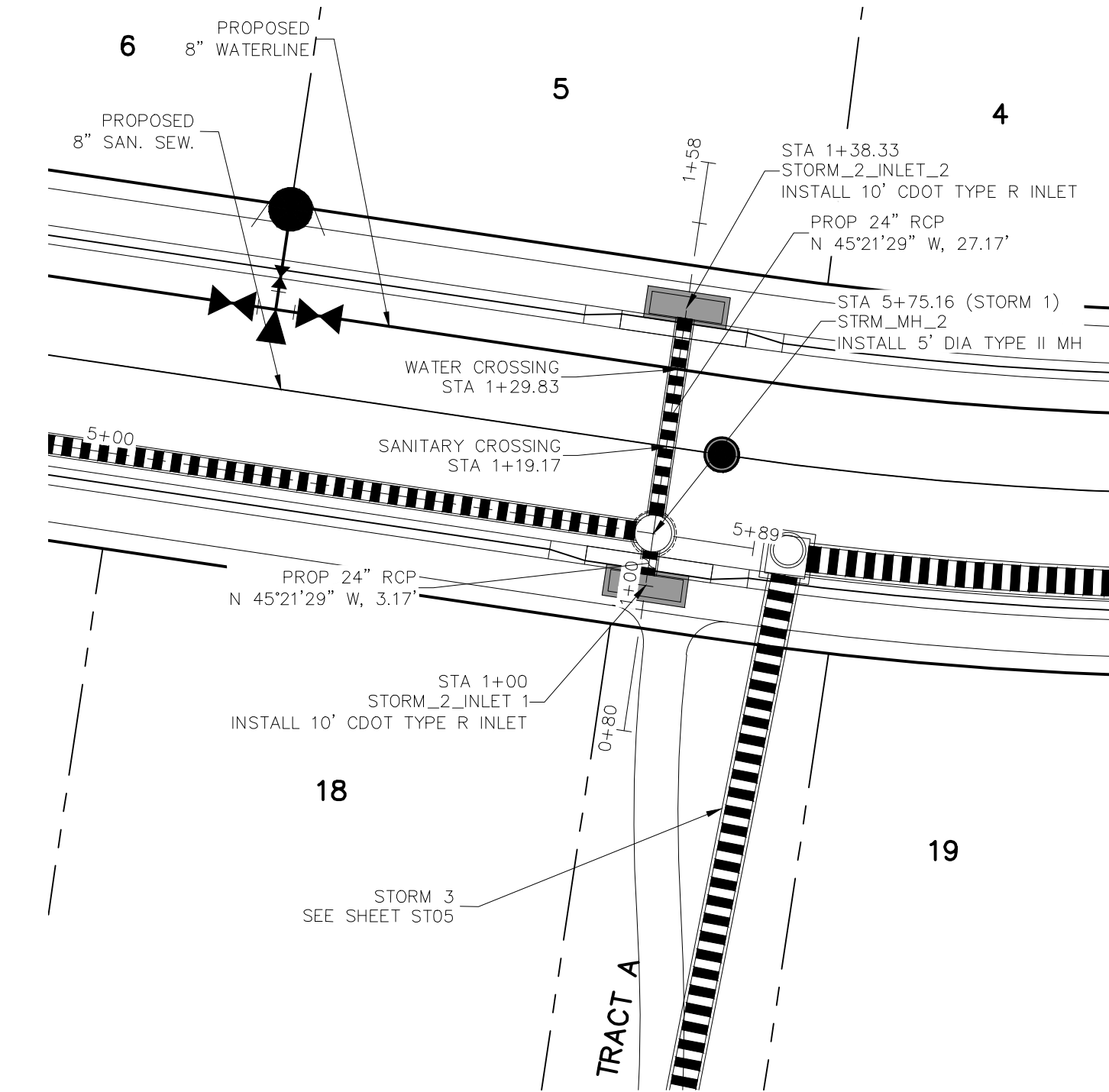
EPC 3/5/2020

CAUTION

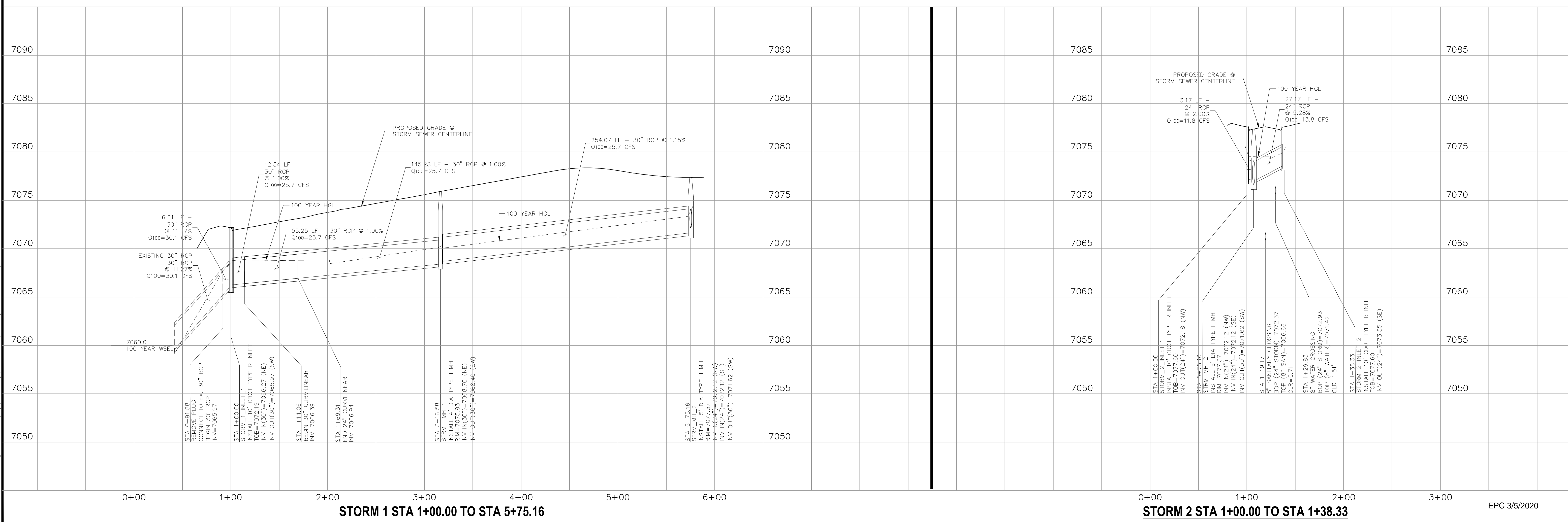
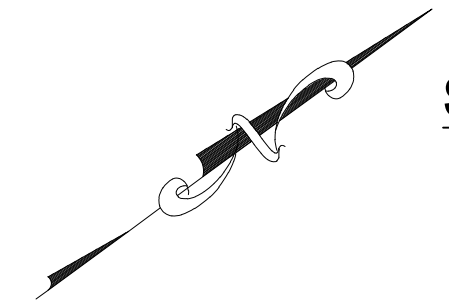
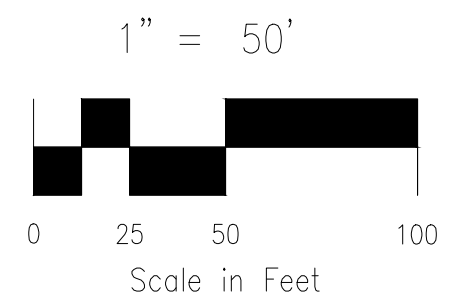
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STORM 1 (PUBLIC)
STA 1+00.00 TO STA 5+75.16



STORM 2 (PUBLIC)
STA 1+00.00 TO STA 1+38.33
 SCALE: 1"=20'



STORM 1 STA 1+00.00 TO STA 5+75.16

STORM 2 STA 1+00.00 TO STA 1+38.33

EPC 3/5/2020

HOMESTEAD AT STERLING RANCH FIL. NO. 2

STORM SEWER PLANS

PROJECT NO. 09-007 FILE: \Lang\Const\Eng\Street & Storm Plans\ST04.dwg DATE: 11/19/2019

DESIGNED BY: CMN SCALE: SHEET 4 OF 14

DRAWN BY: CMN HORIZ: 1"=50'

CHECKED BY: VAS VERT: 1"=5'

102 E. Pikes Peak Ave., 5th Floor
 Colorado Springs, CO 80903
 PHONE: 719.555.4485

CIVIL CONSULTANTS, INC.

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

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

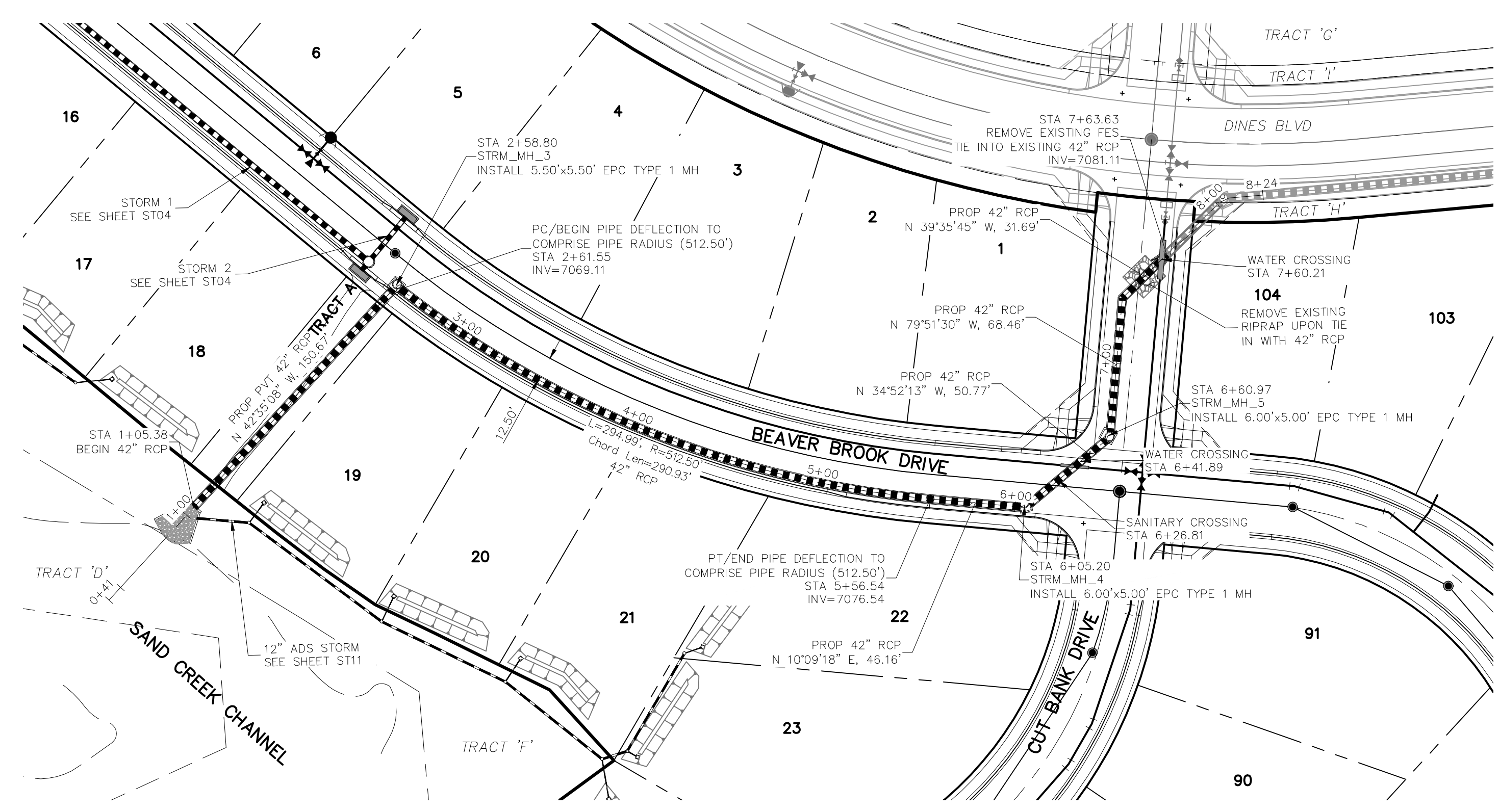
REGISTERED PROFESSIONAL ENGINEER
 STATE OF COLORADO
 37160

REVISIONS:

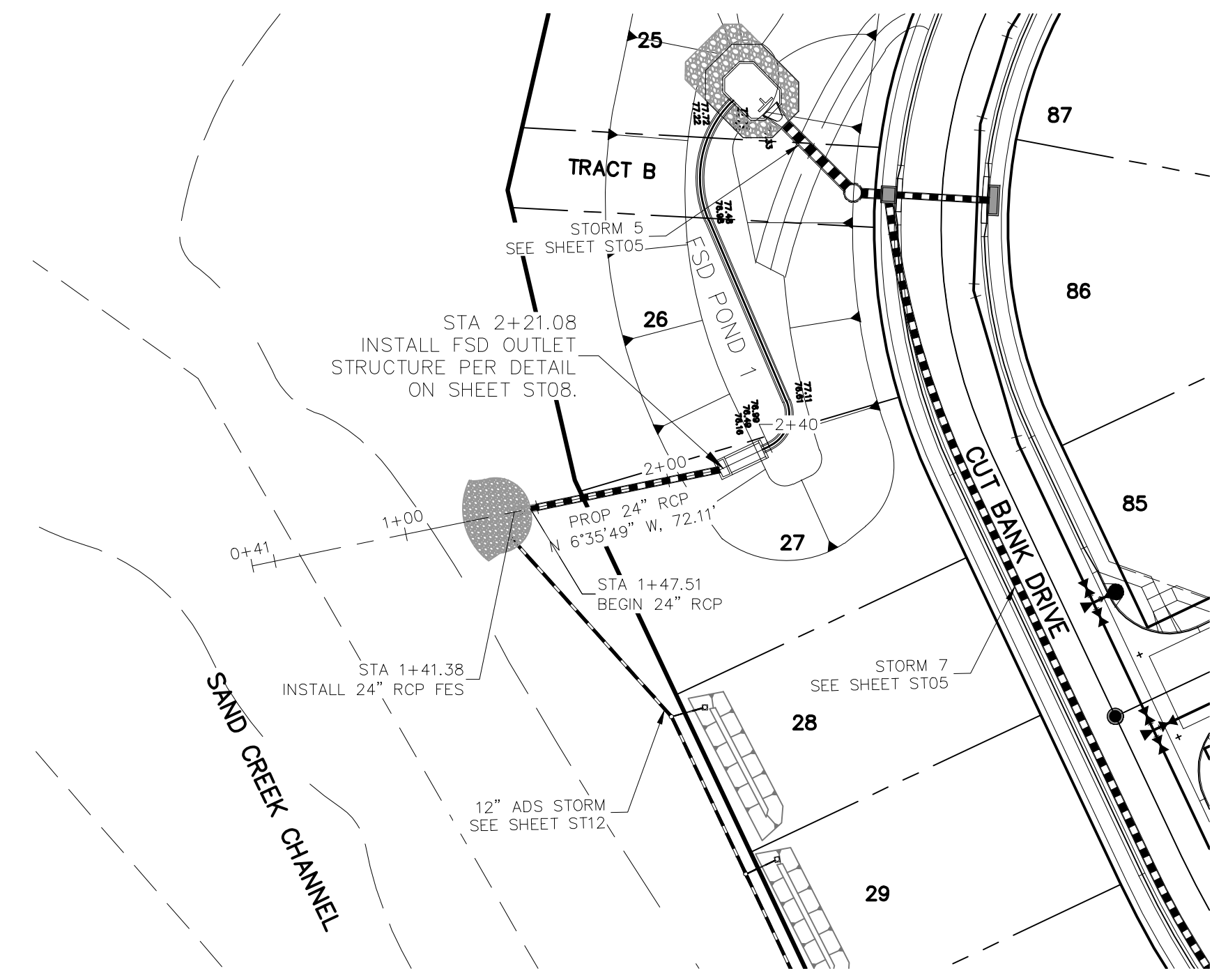
NO.	DATE	BY	DESCRIPTION	APPROV. BY	DATE

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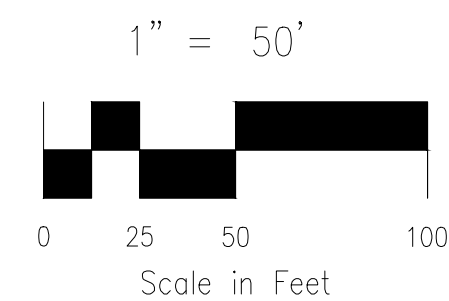
CAUTION



STORM 3 (PUBLIC & PRIVATE)
STA 1+00.00 TO STA 7+63.63



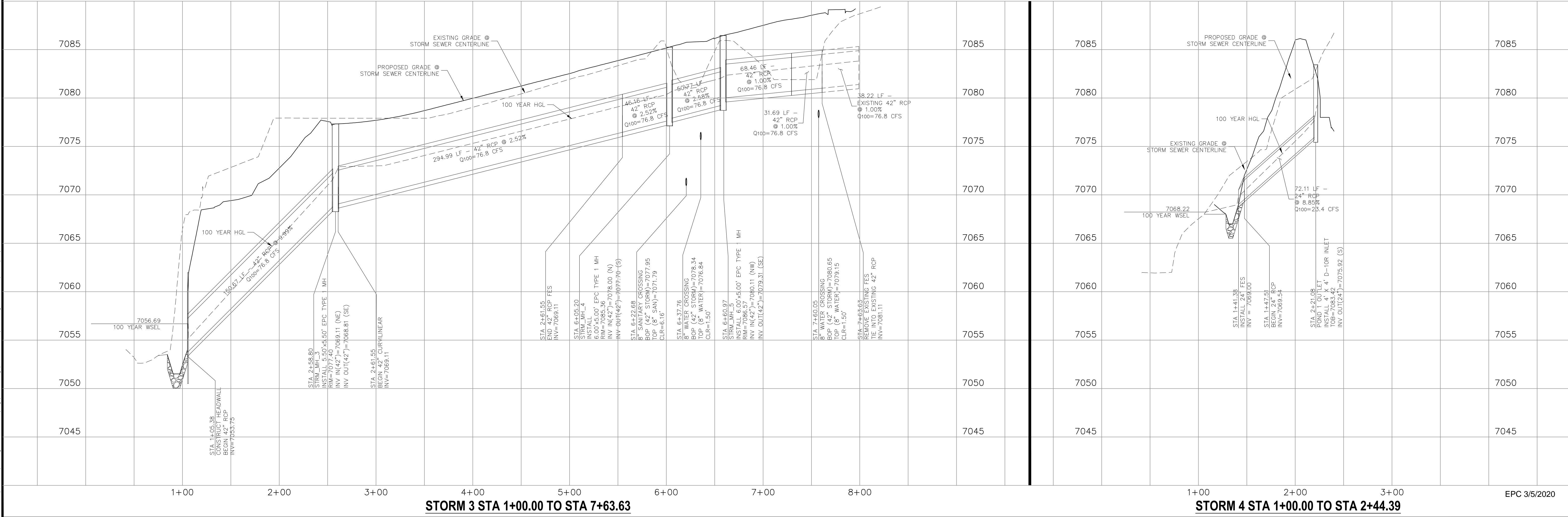
STORM 4 (PRIVATE)
STA 1+00.00 TO STA 2+44.39



NOTES:
 STA 1+05.58 TO STA 1+29.58
 (NEXT FULL JOINT) TIE PIPE
 SEGMENTS TOGETHER W/4" X
 CANOPY TYPE ROD LUG JOINT
 FASTENERS.

REINFORCED CONCRETE PIPE INSTALLED
 BETWEEN STA 1+05.58 AND STA 2+58.80
 SHALL BE FABRICATED USING A CONCRETE
 MIX DESIGN THAT RESULTS IN A MIN. 5000 PSI
 COMPRESSIVE STRENGTH.

File: c:\09007A\Sterling Ranch No. 6\Map\Const\Map\Storm Plans\ST03.dwg Plotstamp: 11/19/2019 9:21 AM



STORM 3 STA 1+00.00 TO STA 7+63.63

STORM 4 STA 1+00.00 TO STA 2+44.39

EPC 3/5/2020

HOMESTEAD AT STERLING RANCH FIL. NO. 2
STORM SEWER PLANS & PROFILES

PROJECT NO. 09-007 FILE: \Map\Const\Map\Storm Plans\ST05.dwg DATE: 11/19/2019
 DESIGNED BY: CMN SCALE: _____
 DRAWN BY: CMN HORIZ: 1"=50'
 CHECKED BY: VAS VERT: 1"=5'

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

CIVIL CONSULTANTS, INC.

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

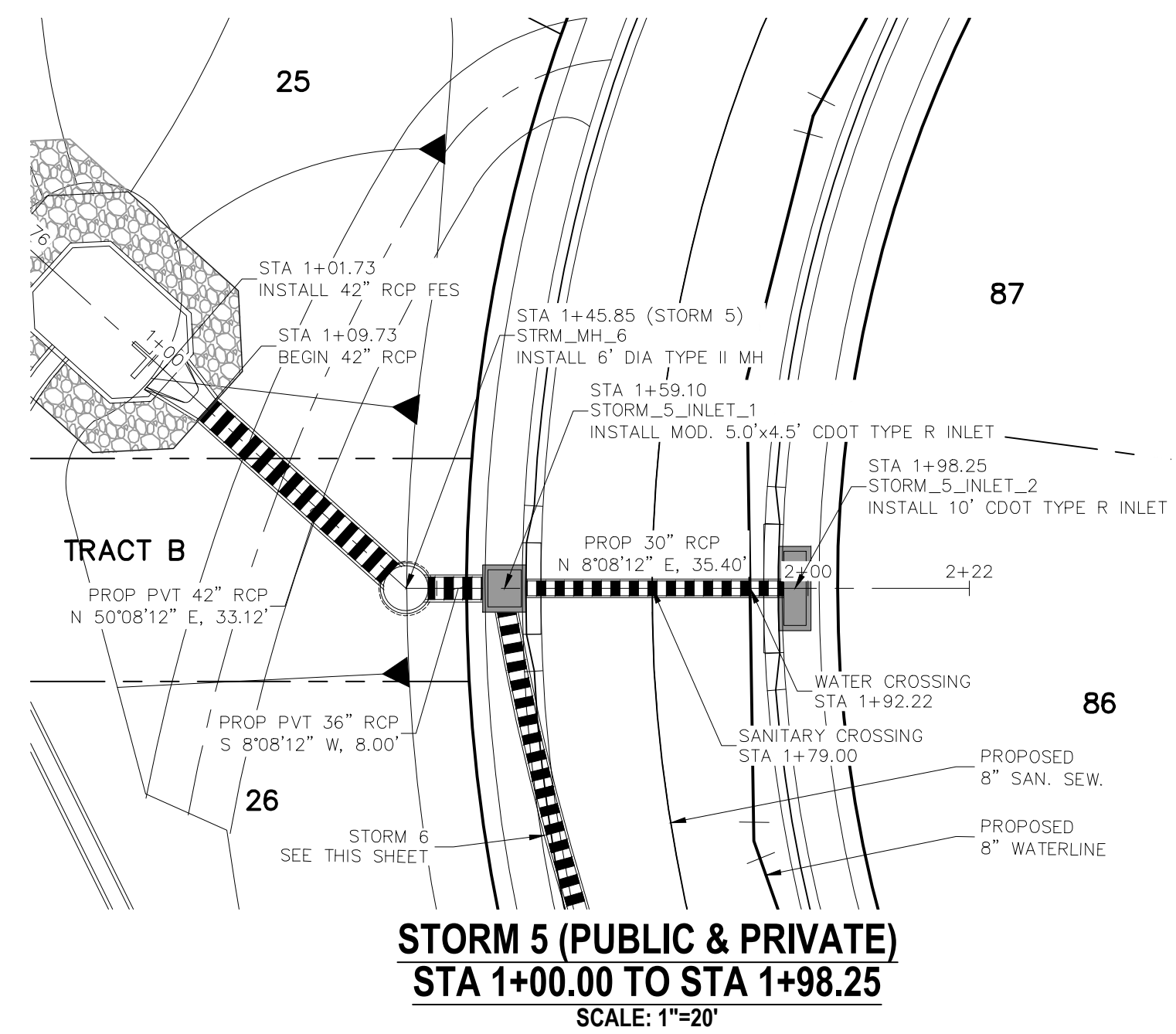
Virgil A. Sanchez, Colorado P.E. No. 37160

NO.	DATE	BY	DESCRIPTION	APPROV'D BY	DATE

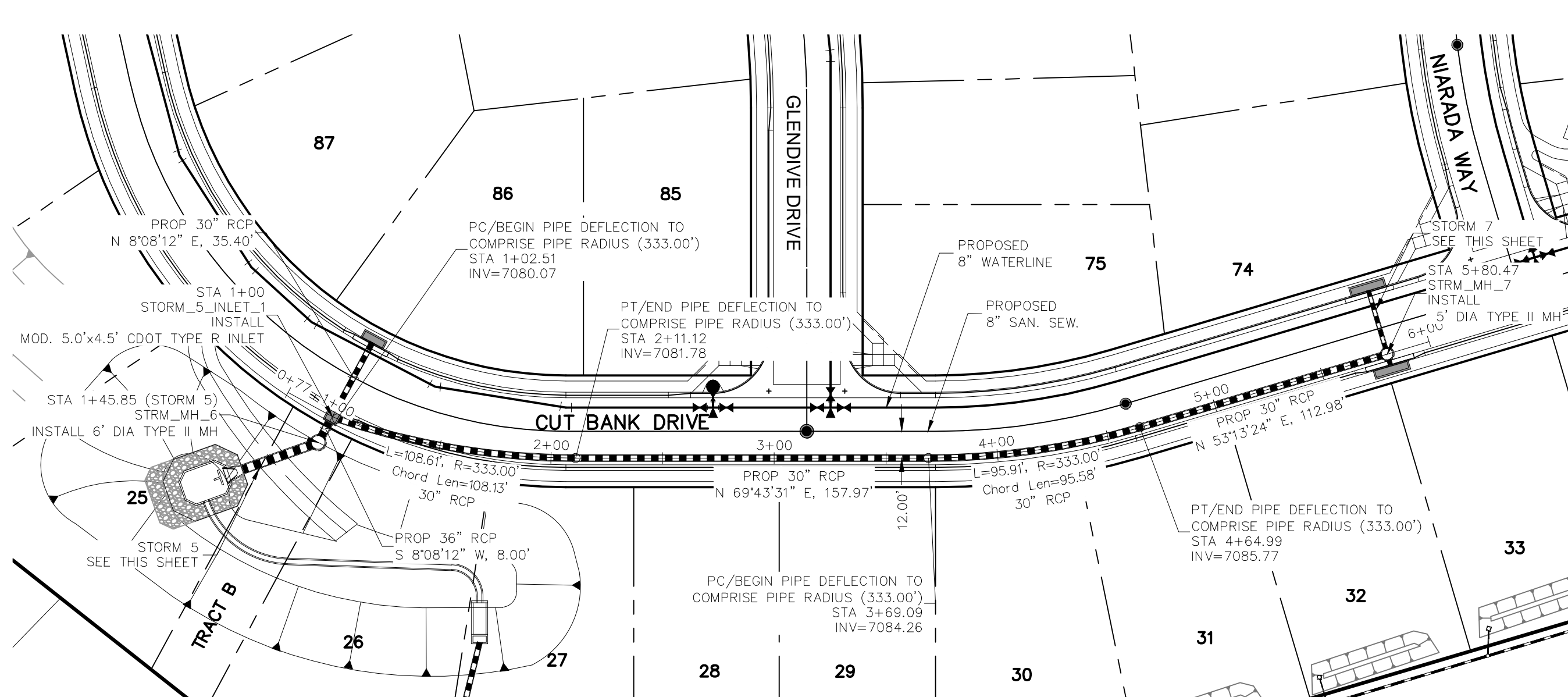
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

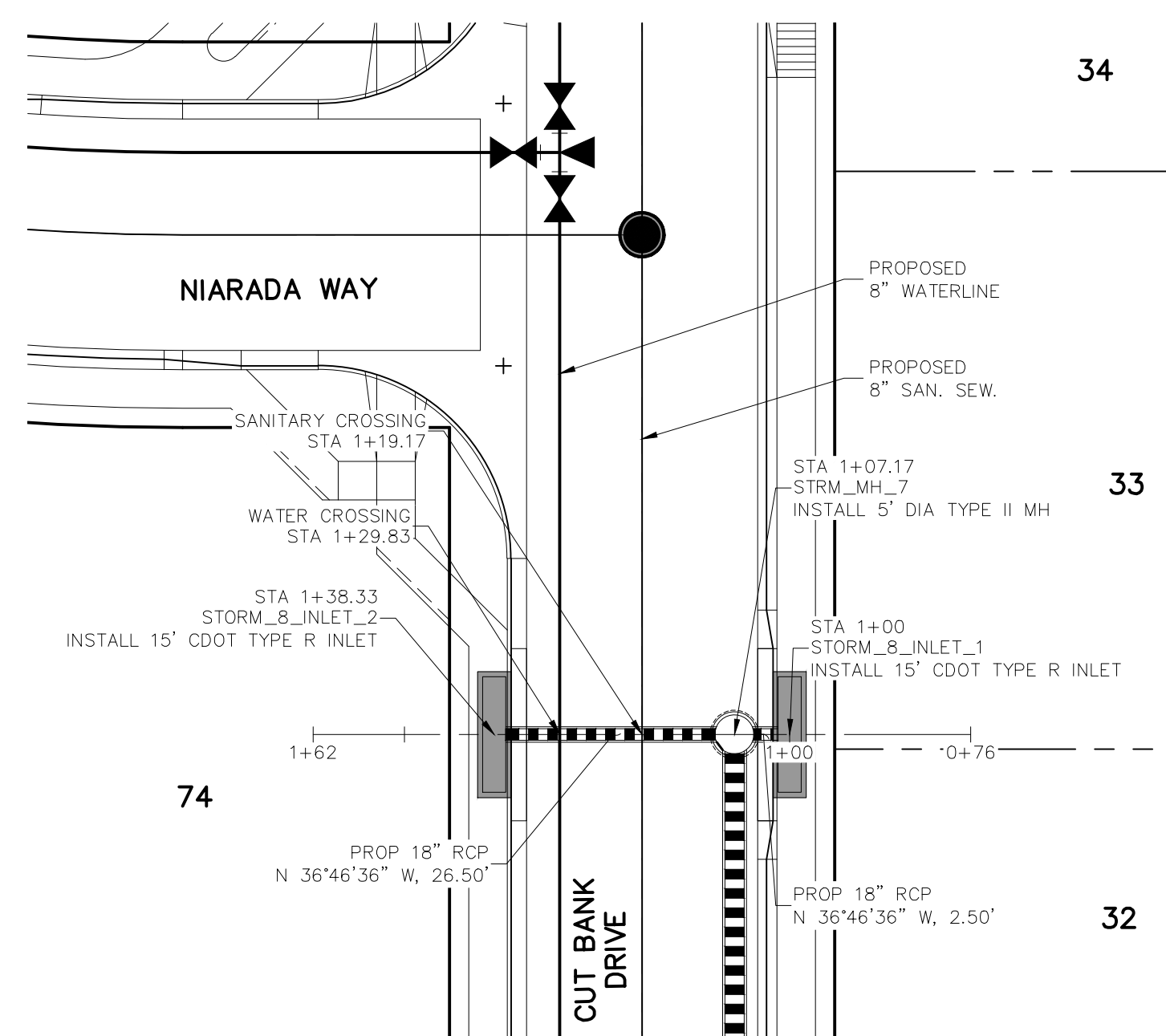
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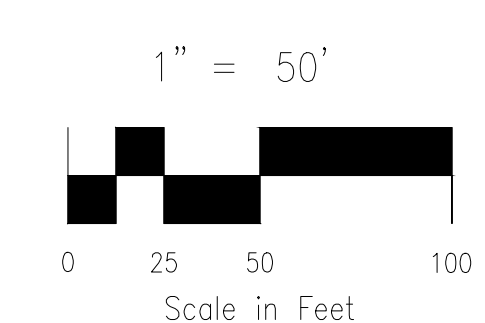
STORM 5 (PUBLIC & PRIVATE)
STA 1+00.00 TO STA 1+98.25
 SCALE: 1"=20'



STORM 6 (PUBLIC)
STA 1+00.00 TO STA 5+80.47



STORM 7 (PUBLIC)
STA 1+00 TO STA 1+38.33
 SCALE: 1"=20'



STATION	EXISTING GRADE @ STORM SEWER CENTERLINE	PROPOSED GRADE @ STORM SEWER CENTERLINE	100 YEAR HGL	PROPOSED GRADE @ STORM SEWER CENTERLINE	EXISTING GRADE @ STORM SEWER CENTERLINE	PROPOSED GRADE @ STORM SEWER CENTERLINE	100 YEAR HGL	PROPOSED GRADE @ STORM SEWER CENTERLINE	EXISTING GRADE @ STORM SEWER CENTERLINE	PROPOSED GRADE @ STORM SEWER CENTERLINE	100 YEAR HGL
0+00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00
1+00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00
2+00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00
3+00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00
4+00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00
5+00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00
6+00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00
0+00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00
1+00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00
2+00	7080.00	7080.00	7080.00	7080.00	7080.00	7080.00	7080.00	7080.00	7080.00	7080.00	7080.00
3+00	7075.00	7075.00	7075.00	7075.00	7075.00	7075.00	7075.00	7075.00	7075.00	7075.00	7075.00
4+00	7070.00	7070.00	7070.00	7070.00	7070.00	7070.00	7070.00	7070.00	7070.00	7070.00	7070.00
5+00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00	7065.00
6+00	7060.00	7060.00	7060.00	7060.00	7060.00	7060.00	7060.00	7060.00	7060.00	7060.00	7060.00
0+00	7095.00	7095.00	7095.00	7095.00	7095.00	7095.00	7095.00	7095.00	7095.00	7095.00	7095.00
1+00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00	7090.00
2+00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00	7085.00

STORM 5 STA 1+00.00 TO STA 1+98.25

STORM 6 STA 1+00.00 TO STA 5+80.47

STORM 7 STA 1+00.00 TO STA 1+38.33

EPC 3/5/2020

HOMESTEAD AT STERLING RANCH FIL. NO. 2

STORM SEWER PLANS & PROFILES

PROJECT NO. 09-007 FILE: \Lang\Const\DWG\Street & Storm Plans\ST06.dwg DATE: 11/19/2019

DESIGNED BY: CMN SCALE: 1"=50'

DRAWN BY: CMN HORIZ: 1"=50'

CHECKED BY: VAS VERT: 1"=5'

102 E. PINE PEAK AVE., 5TH FLOOR
 COLORADO SPRINGS, CO 80903
 PHONE: 719.555.4485

MAS CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF MAS CIVIL CONSULTANTS, INC.

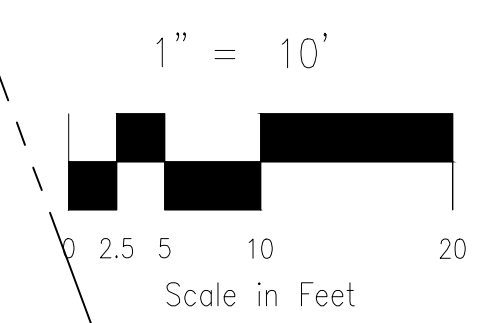
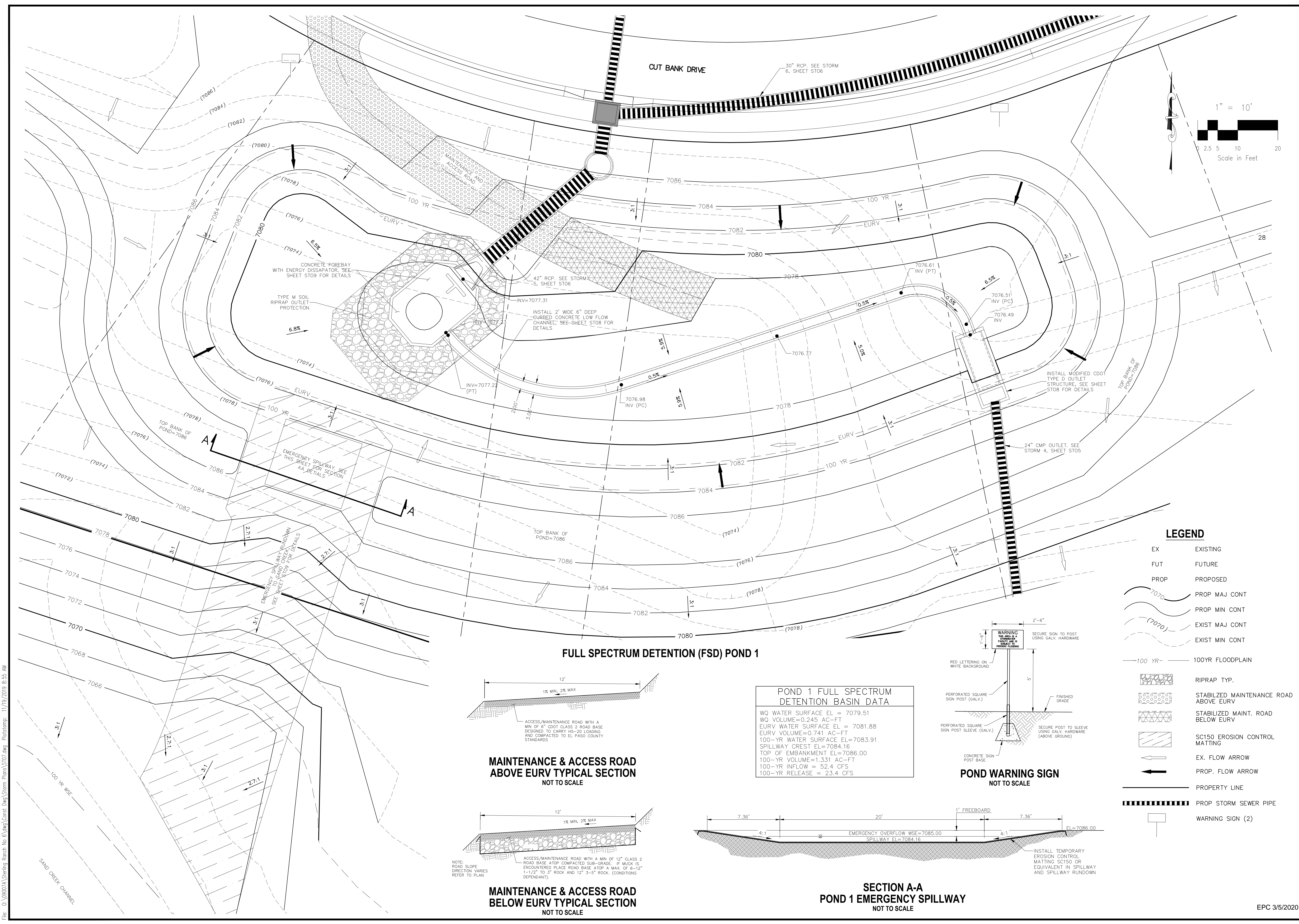
Virgil A. Sanchez, Colorado P.E. No. 37160

REVISIONS:

NO.	DATE	BY	DESCRIPTION	APPROV. BY	DATE

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CAUTION

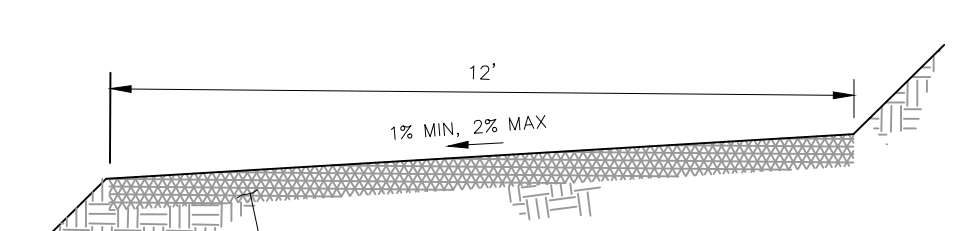


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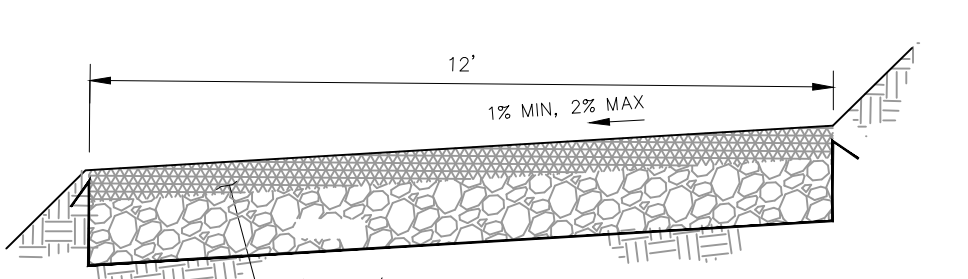
- EX EXISTING
- FUT FUTURE
- PROP PROPOSED
- 7070 PROP MAJ CONT
- (7070) PROP MIN CONT
- 7070 EXIST MAJ CONT
- (7070) EXIST MIN CONT
- 100 YR 100YR FLOODPLAIN
- RIPRAP TYP.
- STABILIZED MAINTENANCE ROAD ABOVE EURV
- STABILIZED MAINT. ROAD BELOW EURV
- SC150 EROSION CONTROL MATTING
- EX. FLOW ARROW
- PROP. FLOW ARROW
- PROPERTY LINE
- PROP STORM SEWER PIPE
- WARNING SIGN (2)

FULL SPECTRUM DETENTION (FSD) POND 1

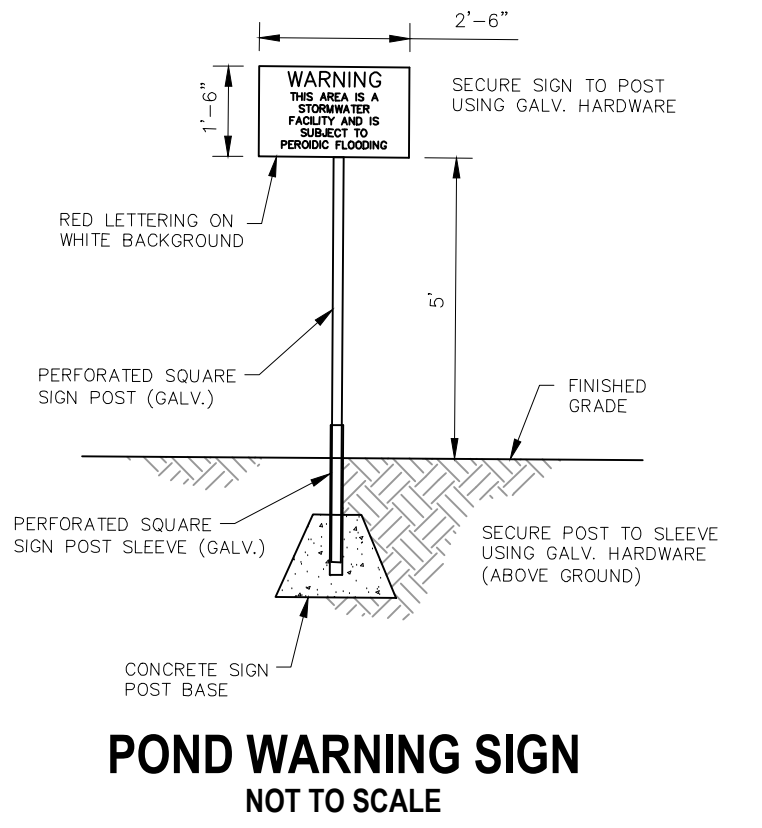
POND 1 FULL SPECTRUM DETENTION BASIN DATA	
WQ WATER SURFACE EL =	7079.51
EURV WATER SURFACE EL =	7081.88
EURV VOLUME=	0.741 AC-FT
100-YR WATER SURFACE EL=	7083.91
SPILLWAY CREST EL=	7084.16
TOP OF EMBANKMENT EL=	7086.00
100-YR VOLUME=	1,331 AC-FT
100-YR INFLOW =	52.4 CFS
100-YR RELEASE =	23.4 CFS



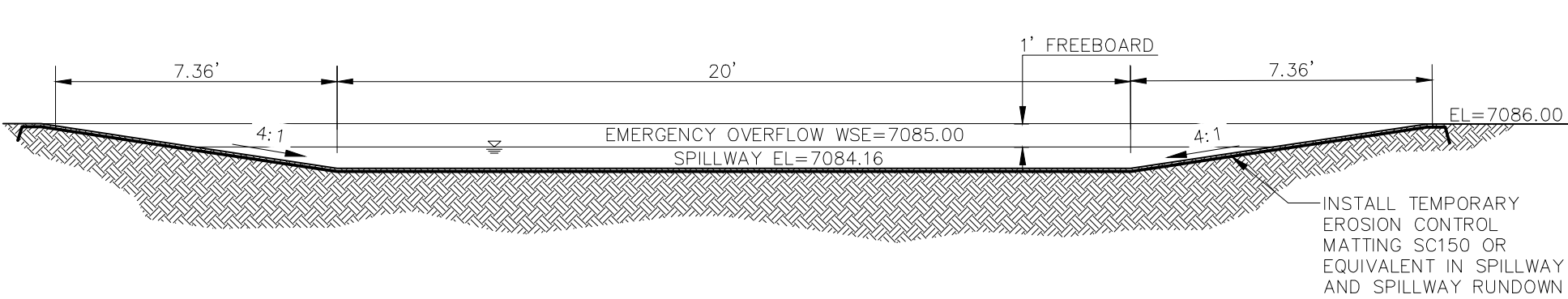
MAINTENANCE & ACCESS ROAD ABOVE EURV TYPICAL SECTION
NOT TO SCALE



MAINTENANCE & ACCESS ROAD BELOW EURV TYPICAL SECTION
NOT TO SCALE



POND WARNING SIGN
NOT TO SCALE



SECTION A-A POND 1 EMERGENCY SPILLWAY
NOT TO SCALE

HOMESTEAD AT STERLING RANCH FIL. NO. 2
FULL SPECTRUM DETENTION POND 1

PROJECT NO. 09-007 FILE: \eng\const\eng\st07.dwg DATE: 11/19/2019
 DESIGNED BY: CMN SCALE: N/A
 DRAWN BY: CMN HORIZ: 1"=10'
 CHECKED BY: VAS VERT: N/A SHEET 7 OF 14 ST07

102 E. Pikes Peak Ave., 3rd Floor
 Colorado Springs, CO 80903
 PHONE: 719.555.5485

MAS & S
 CIVIL CONSULTANTS, INC.

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

Virgil A. Sanchez, Colorado P.E. No. 37160

REVISIONS:

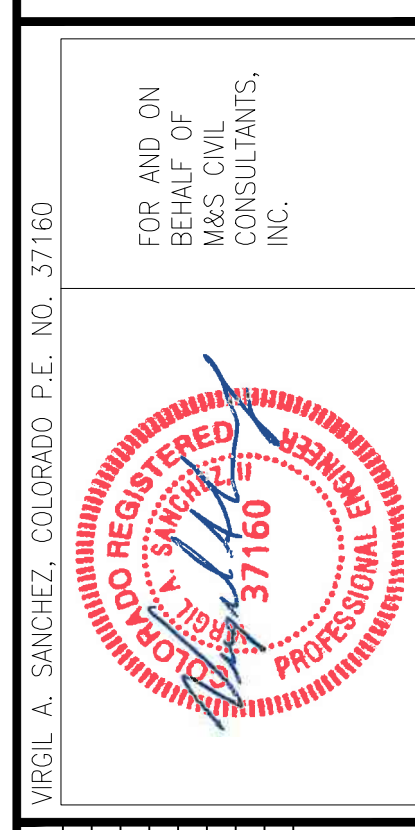
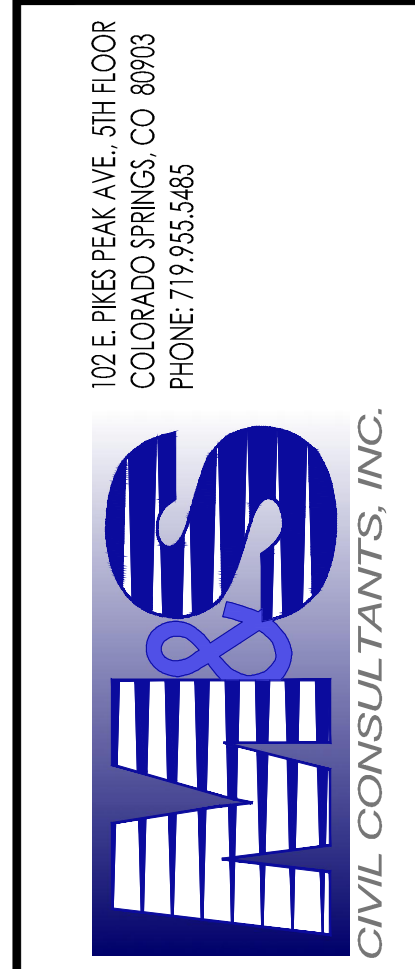
NO.	DATE	BY	DESCRIPTION

DATE: _____

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CAUTION

EPC 3/5/2020

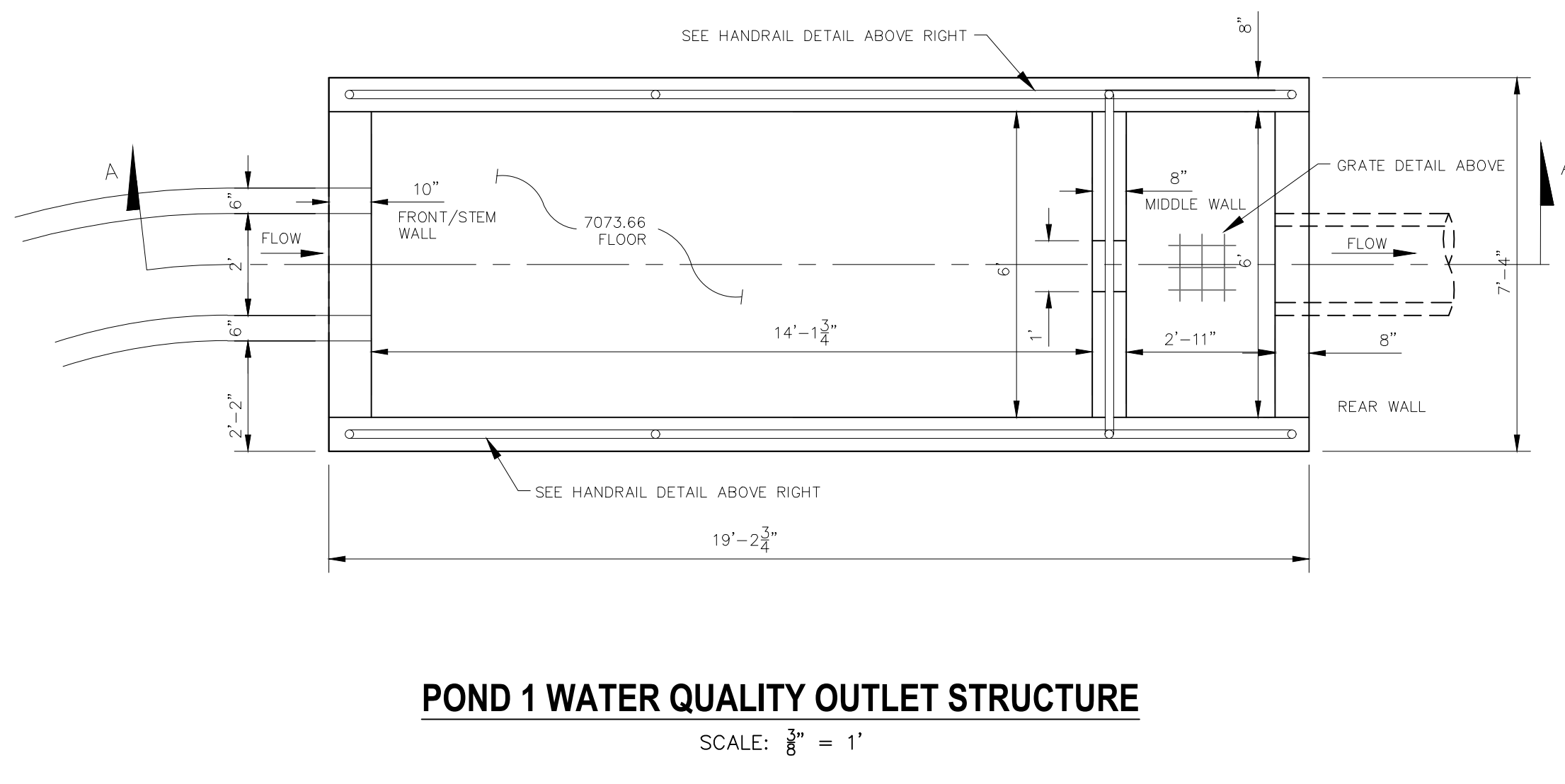
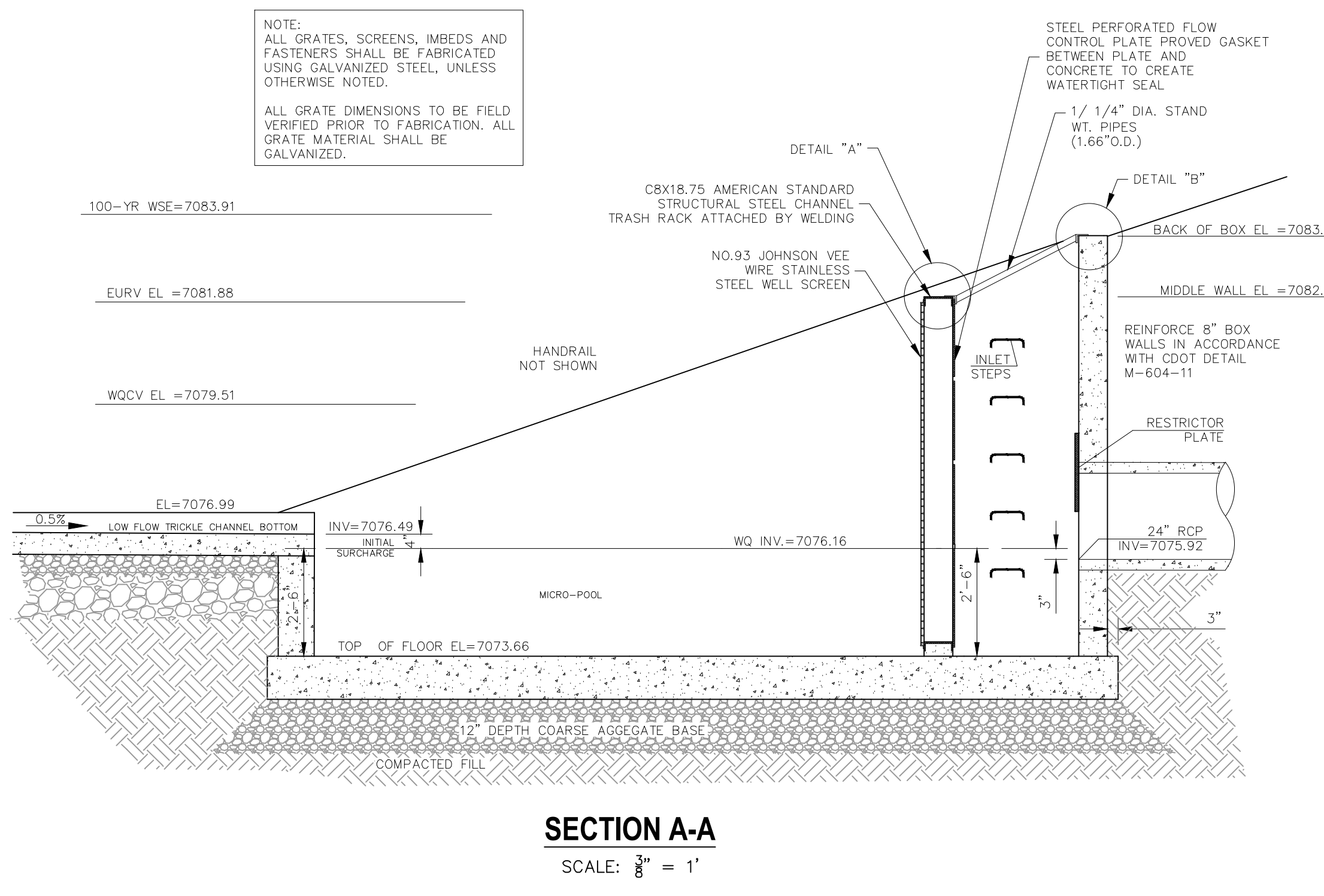
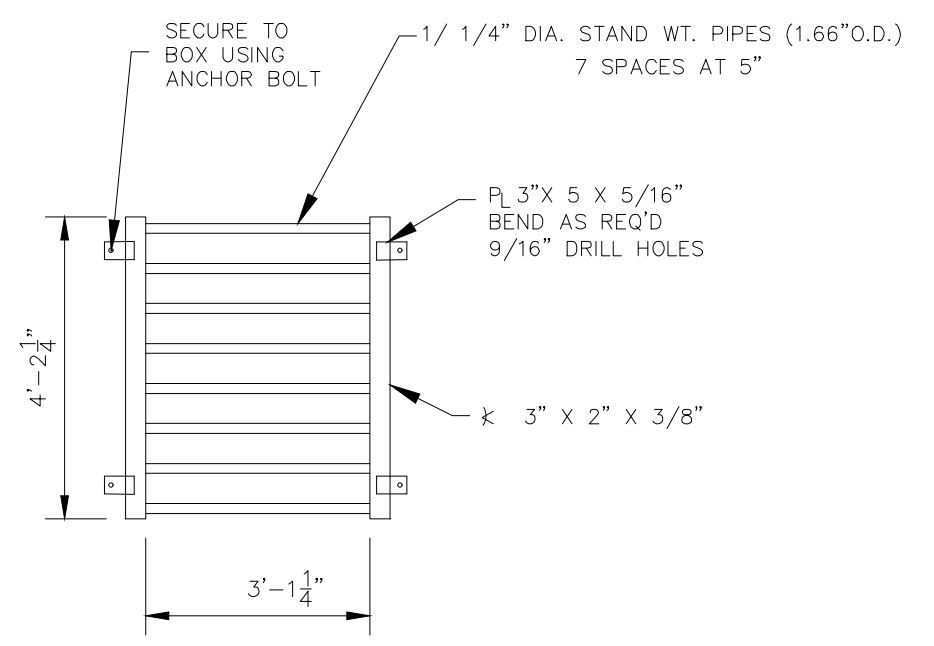
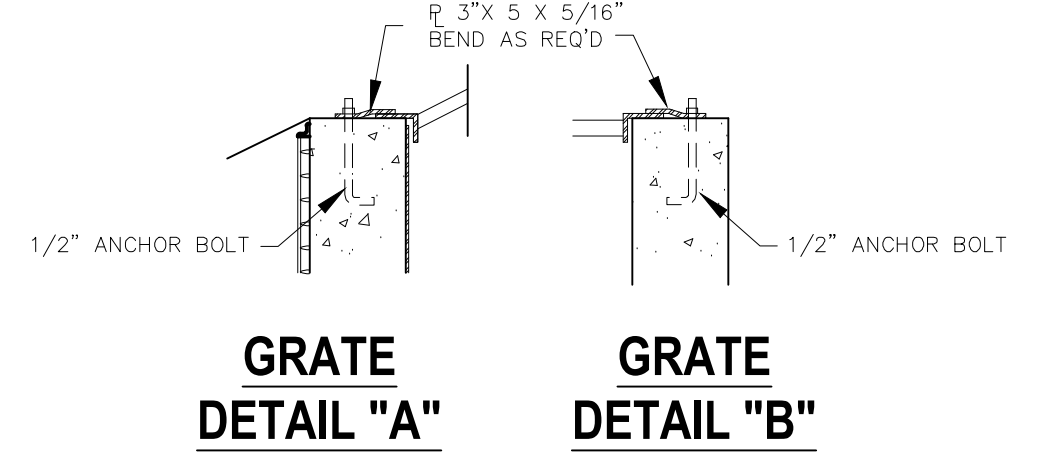
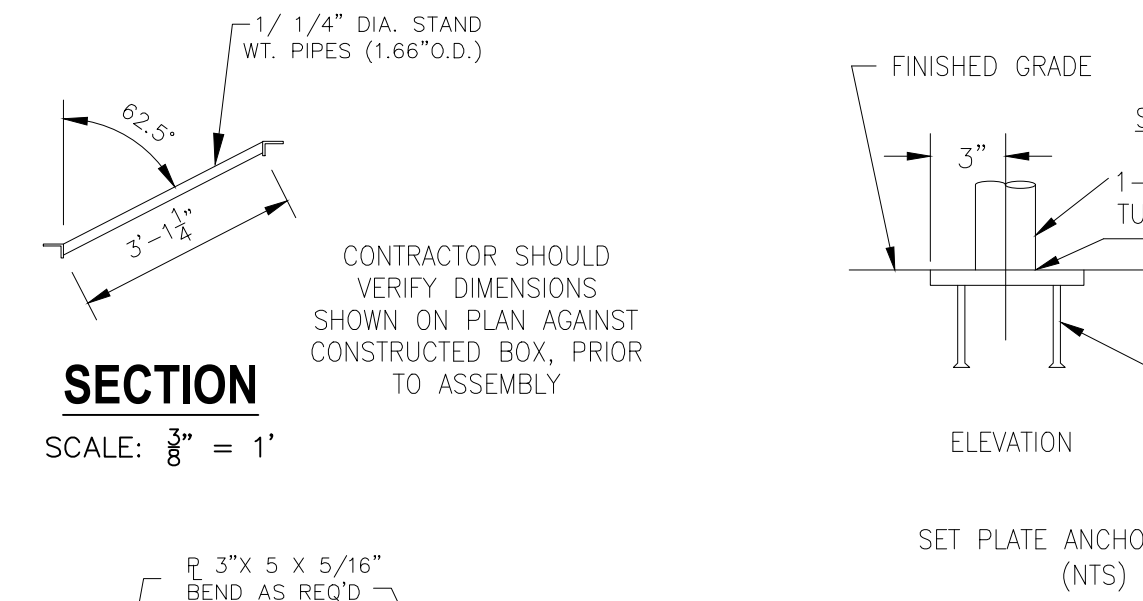
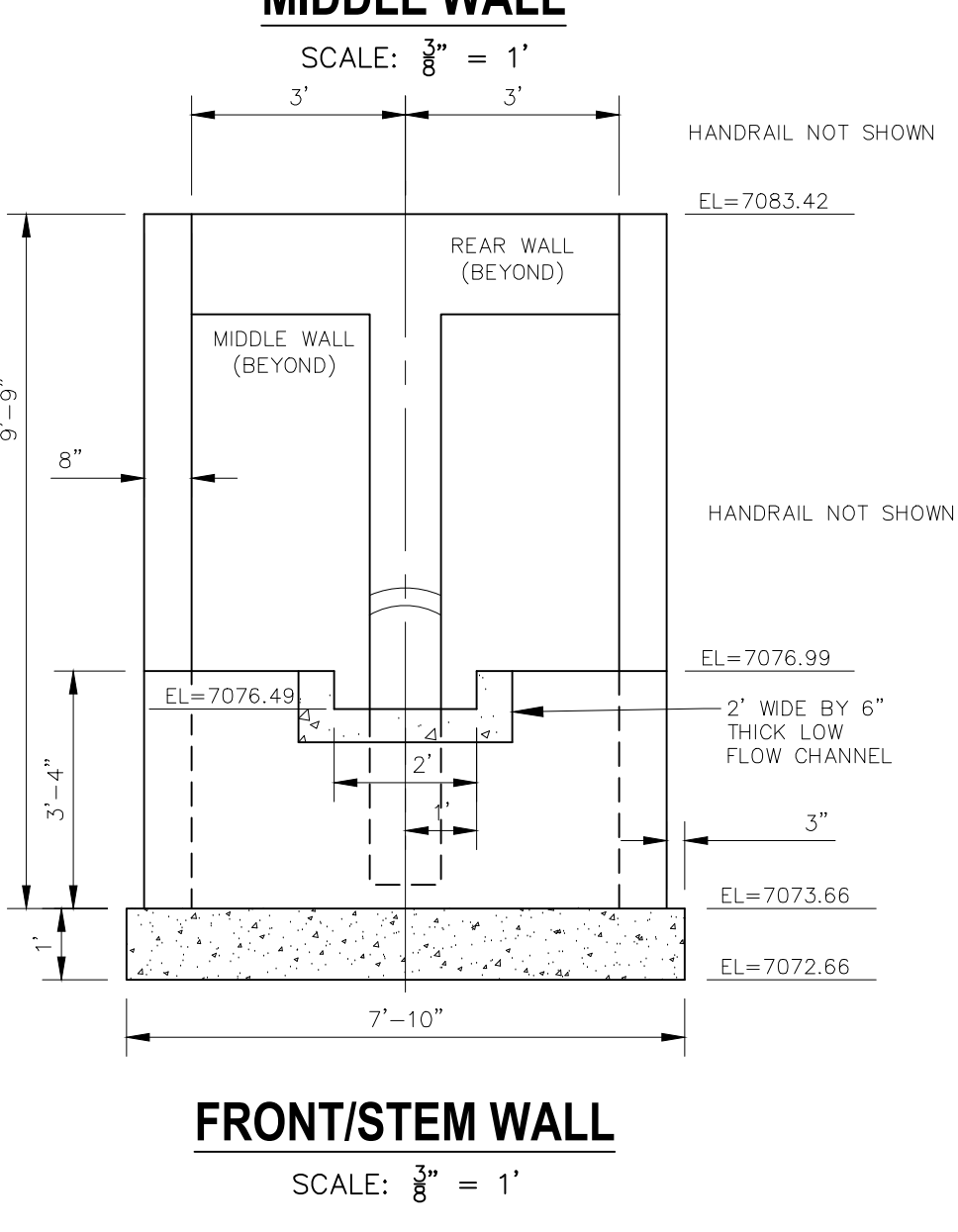
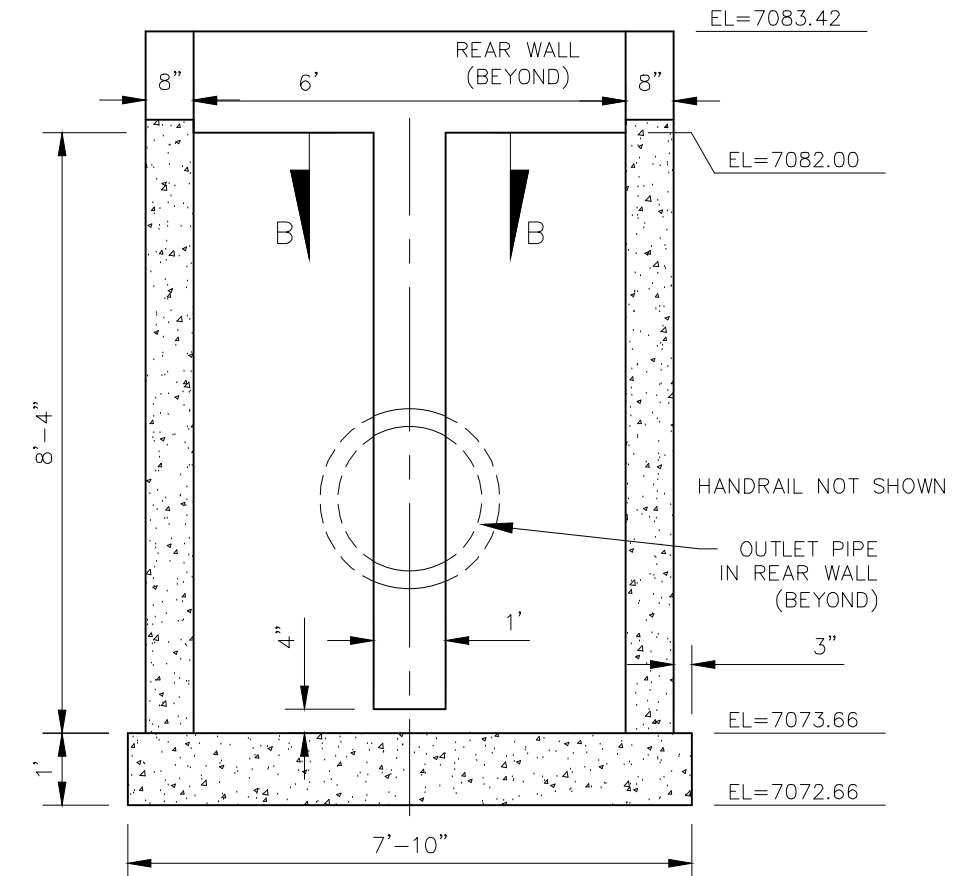
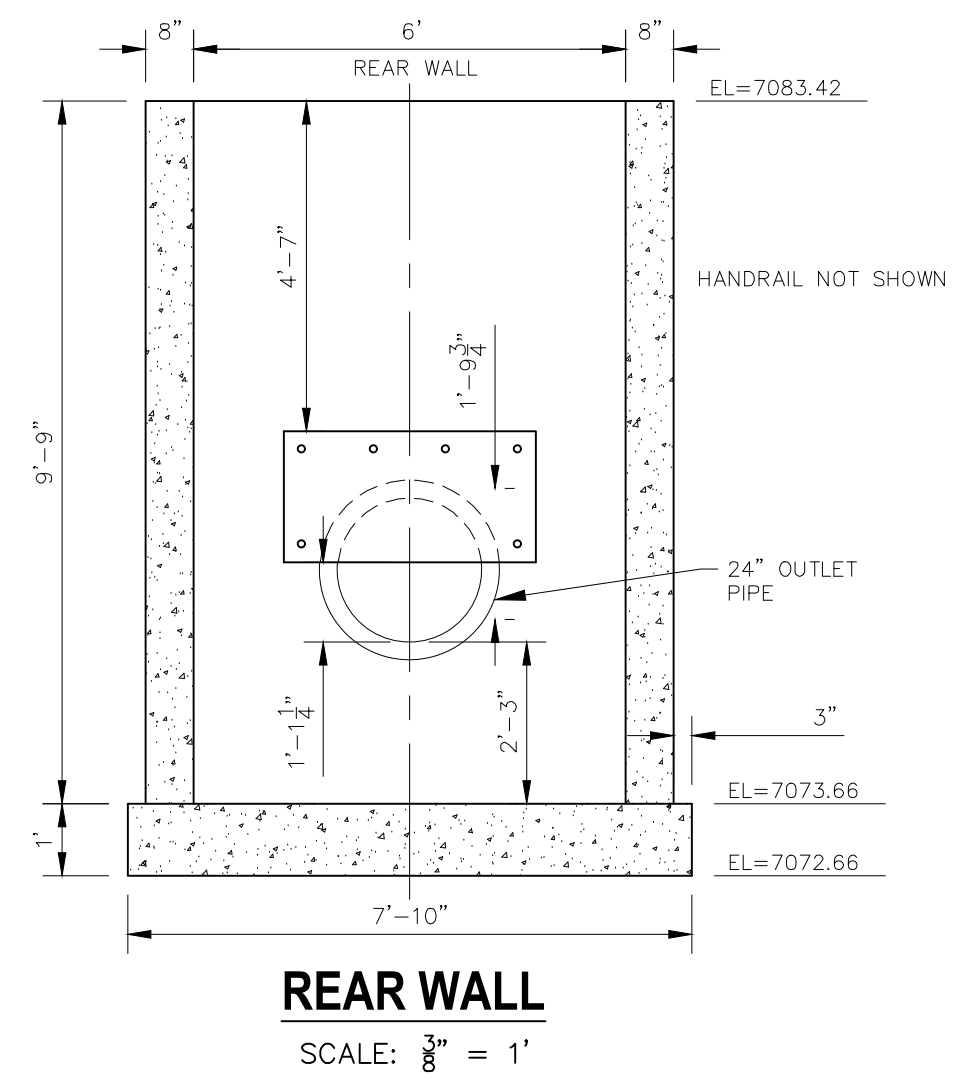
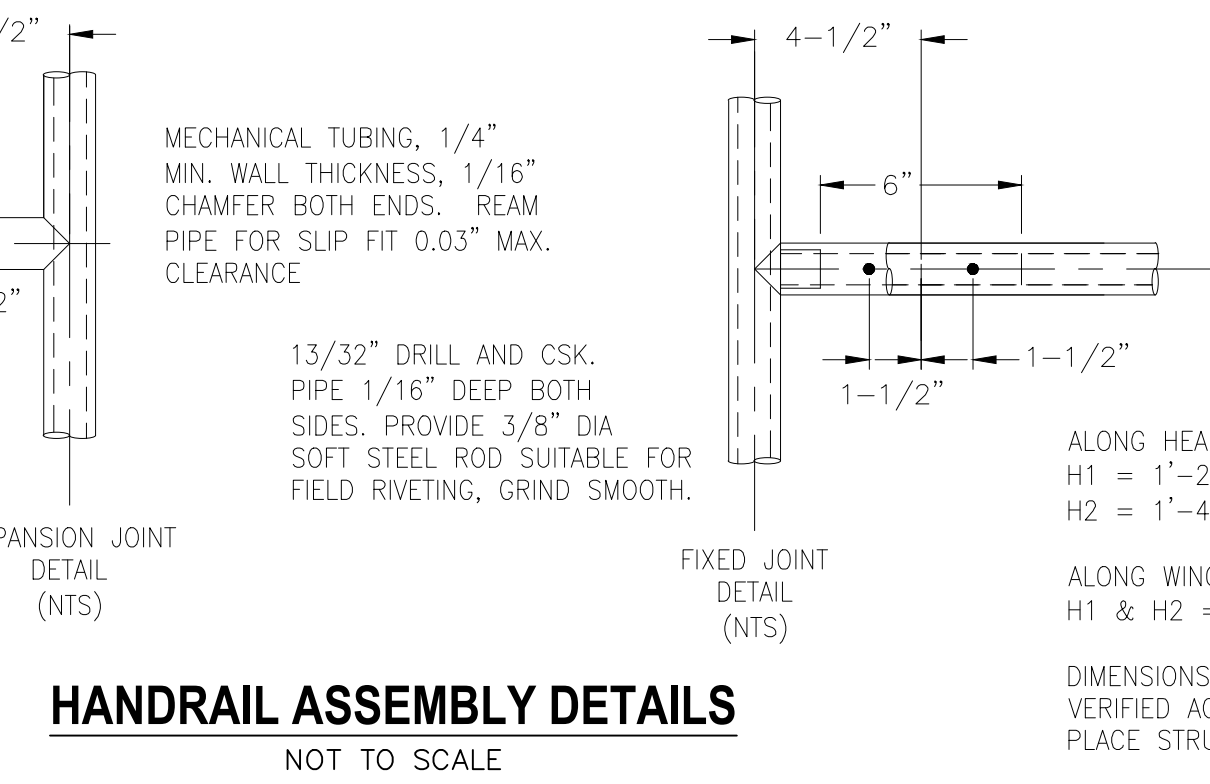
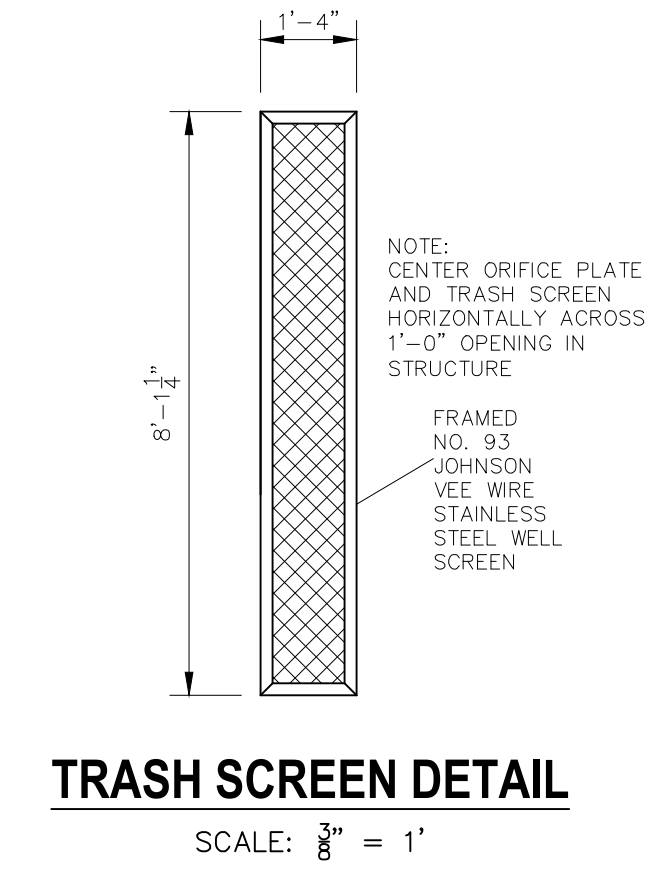
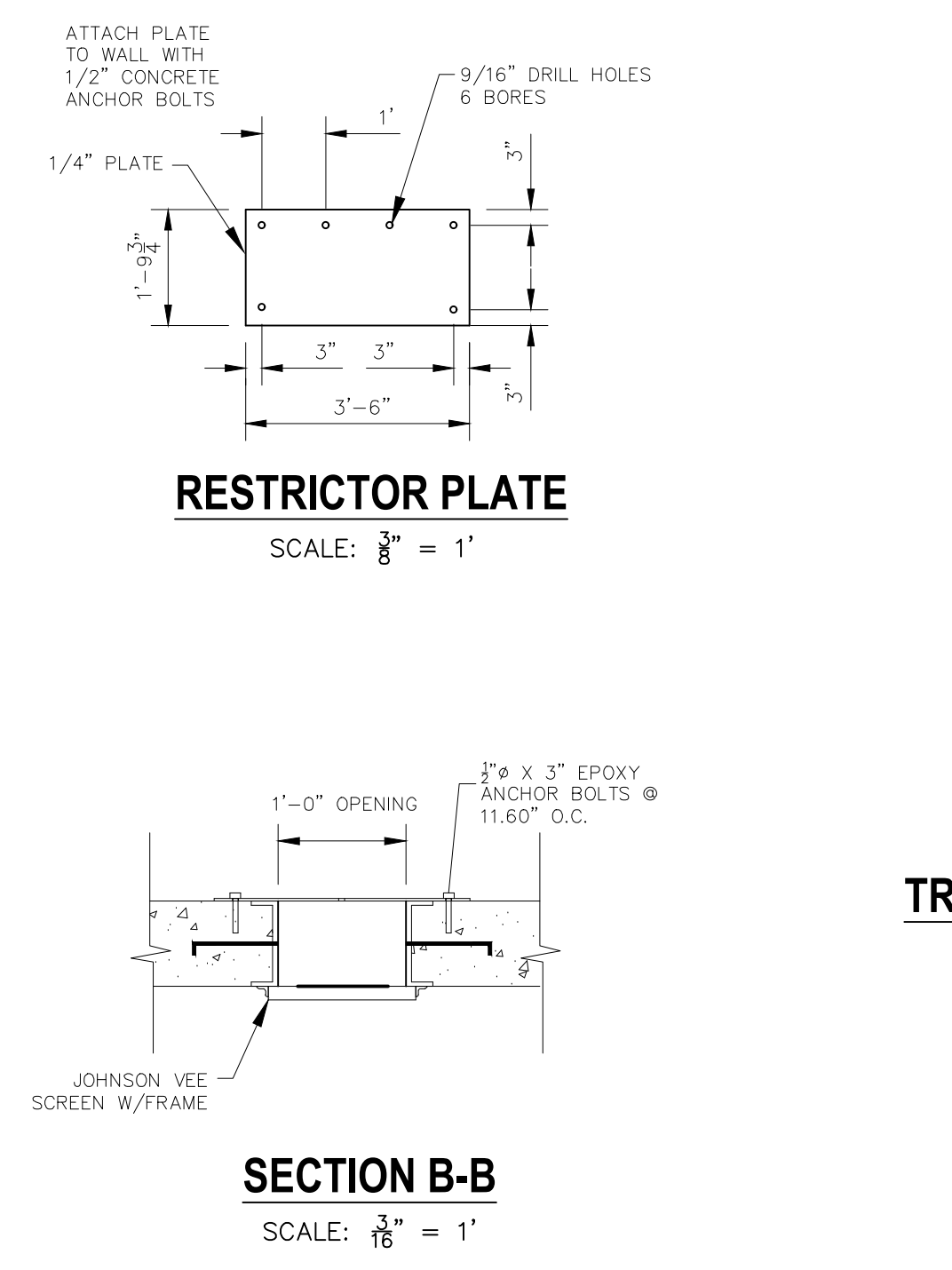
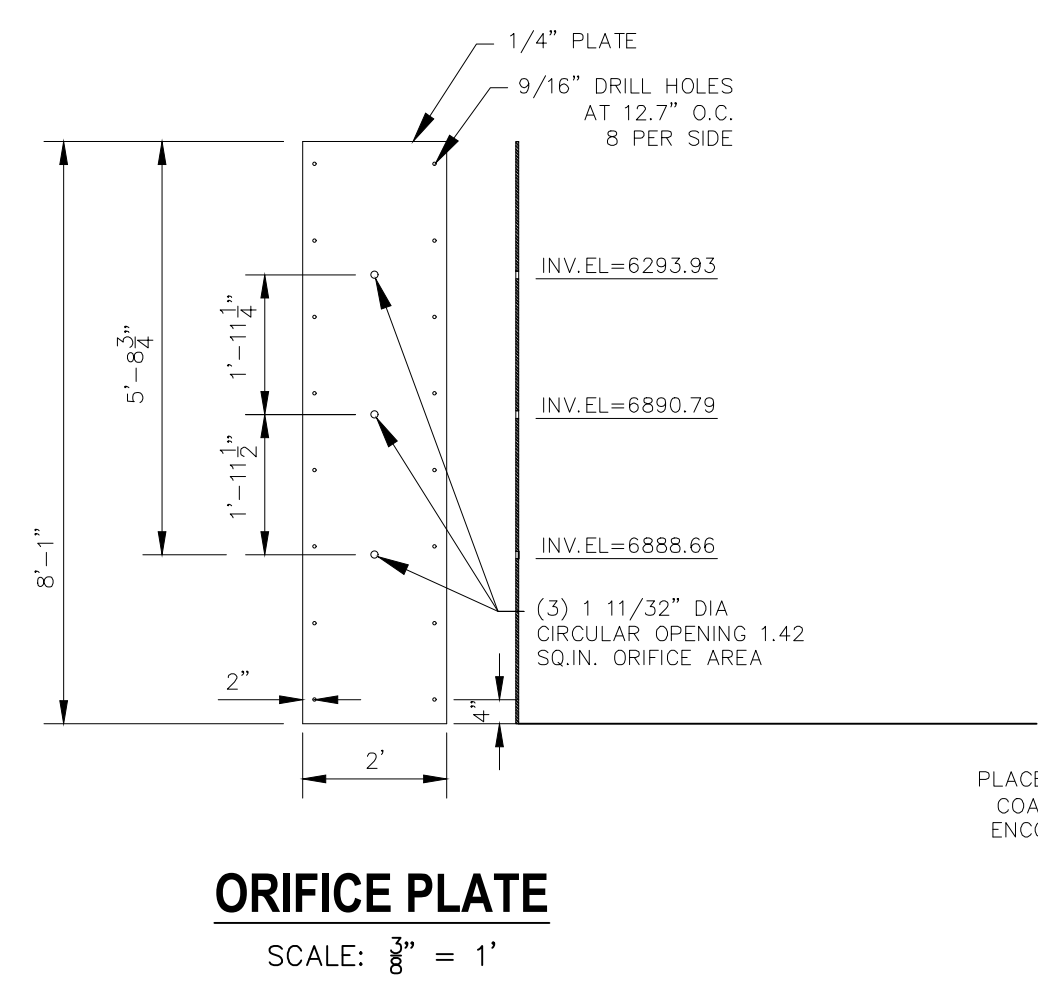
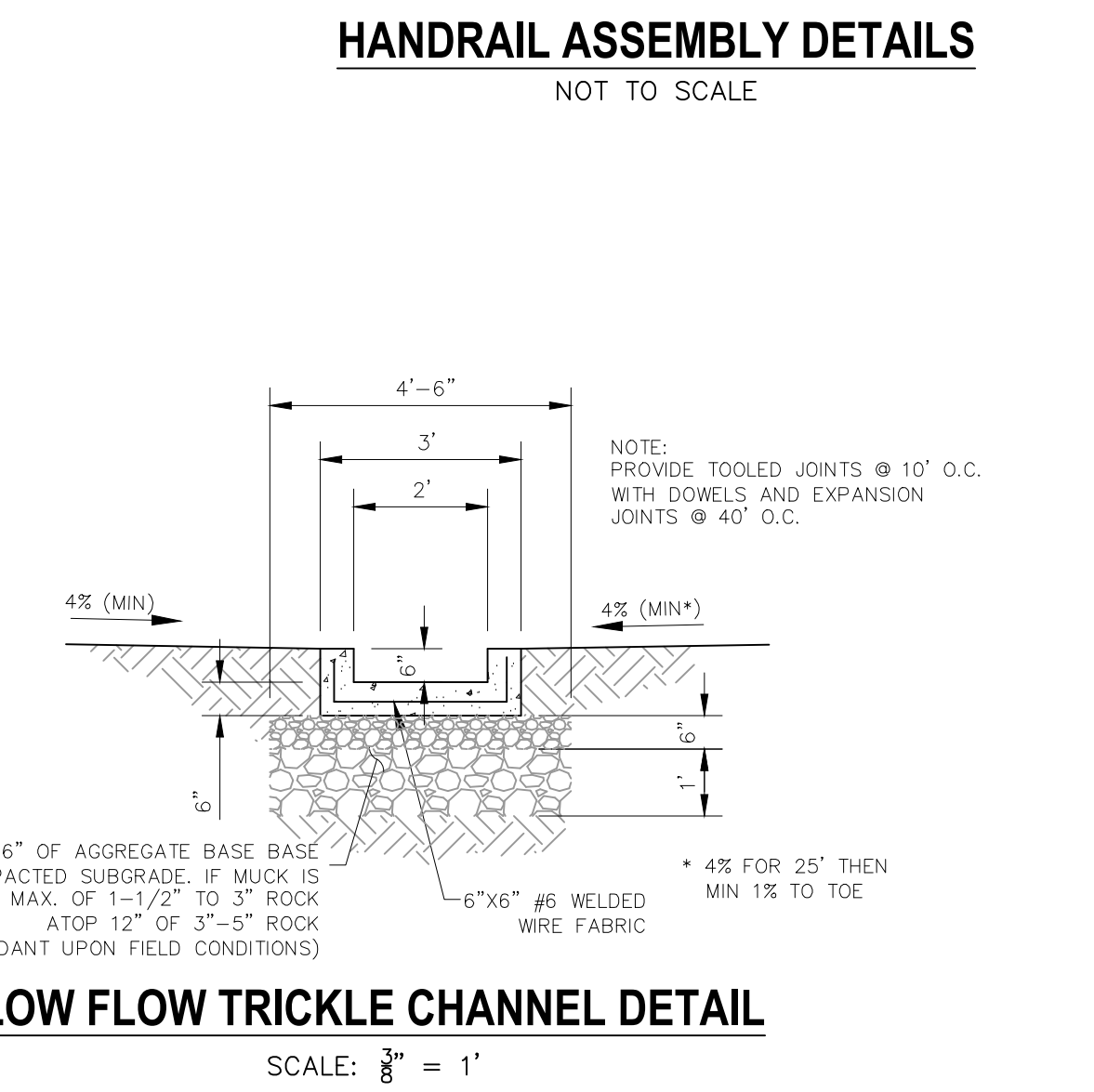
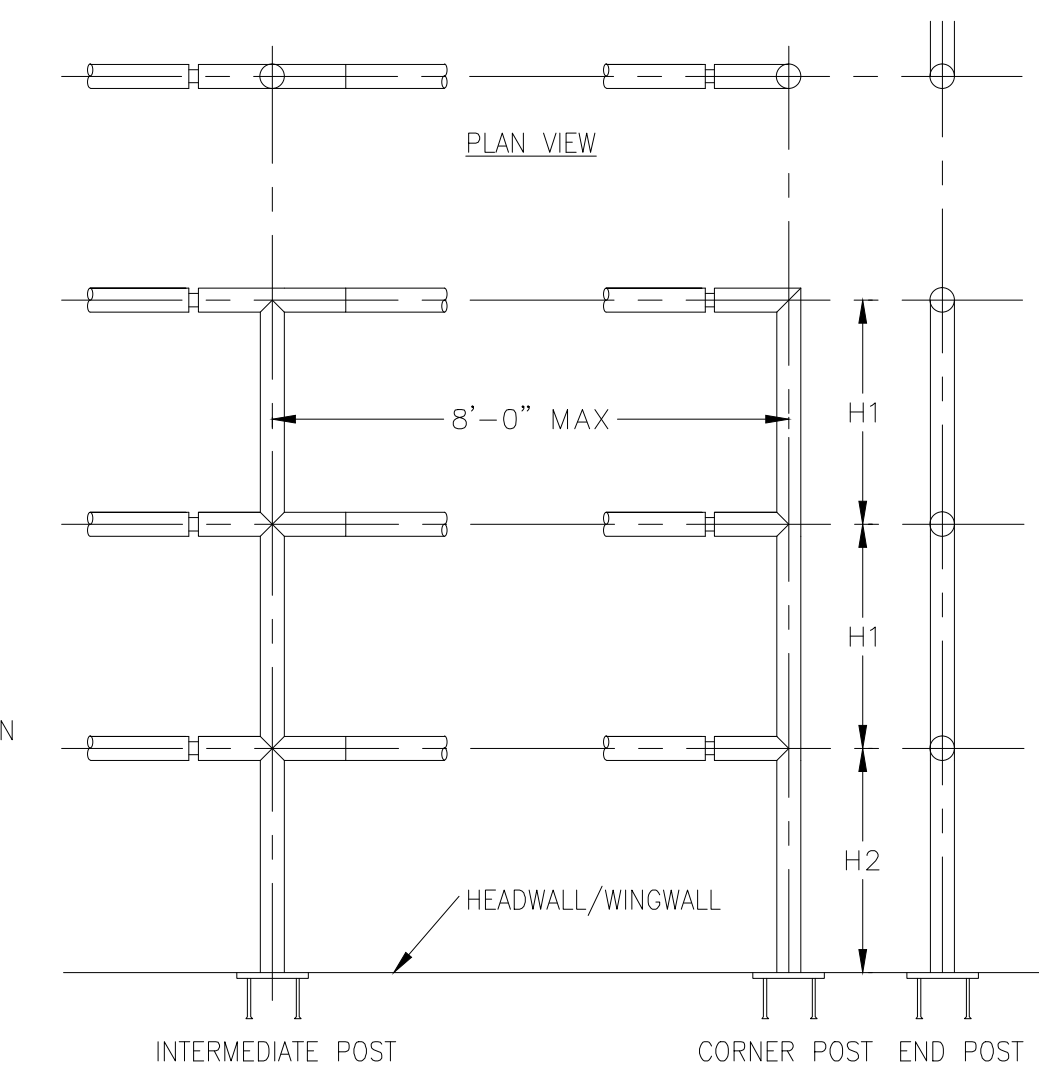


NO.	DATE	BY	DESCRIPTION

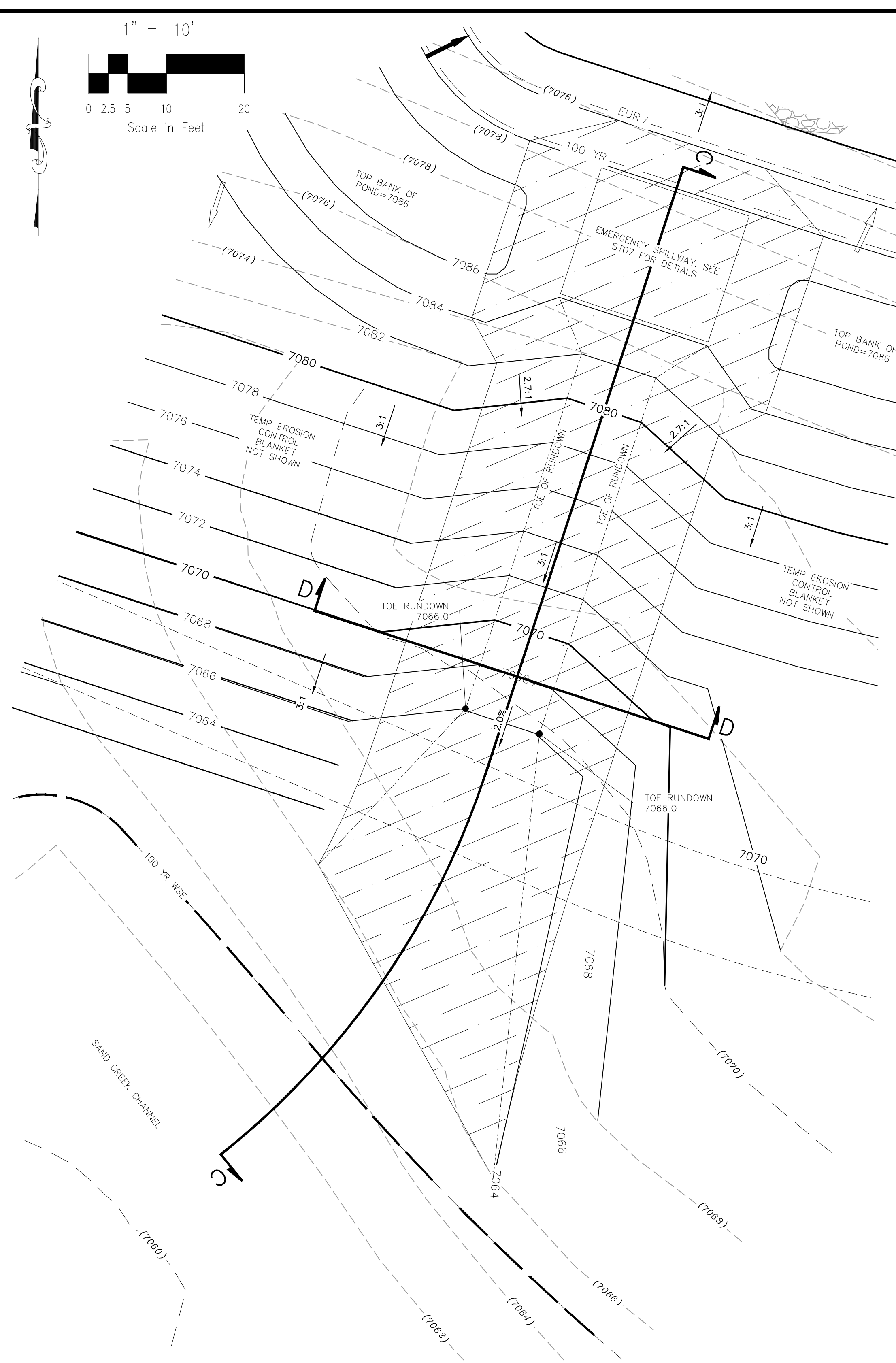
APPROVED BY: _____ DATE: _____

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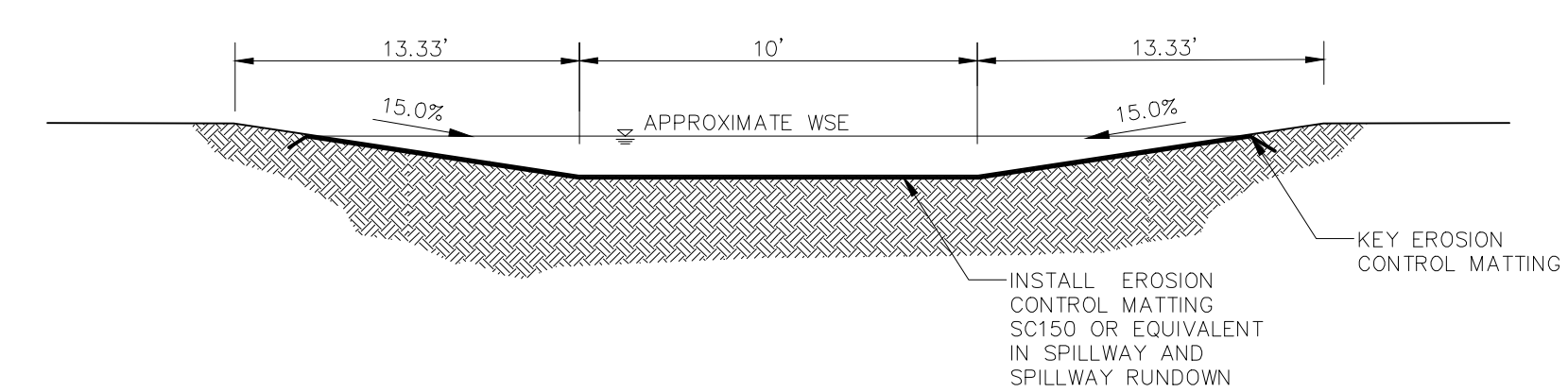
CAUTION



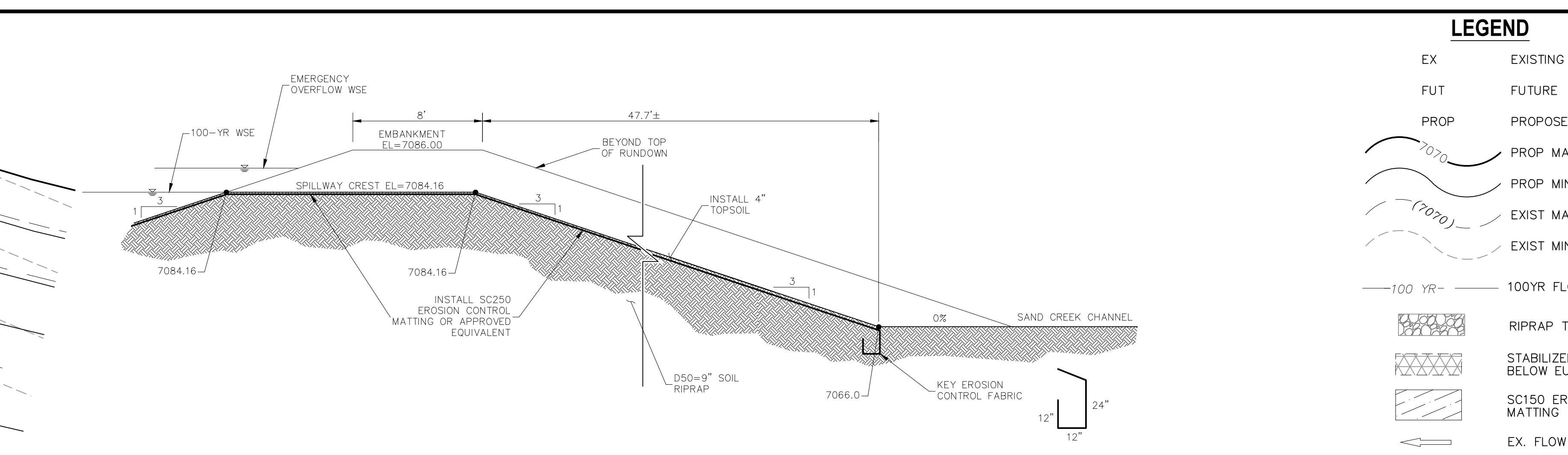
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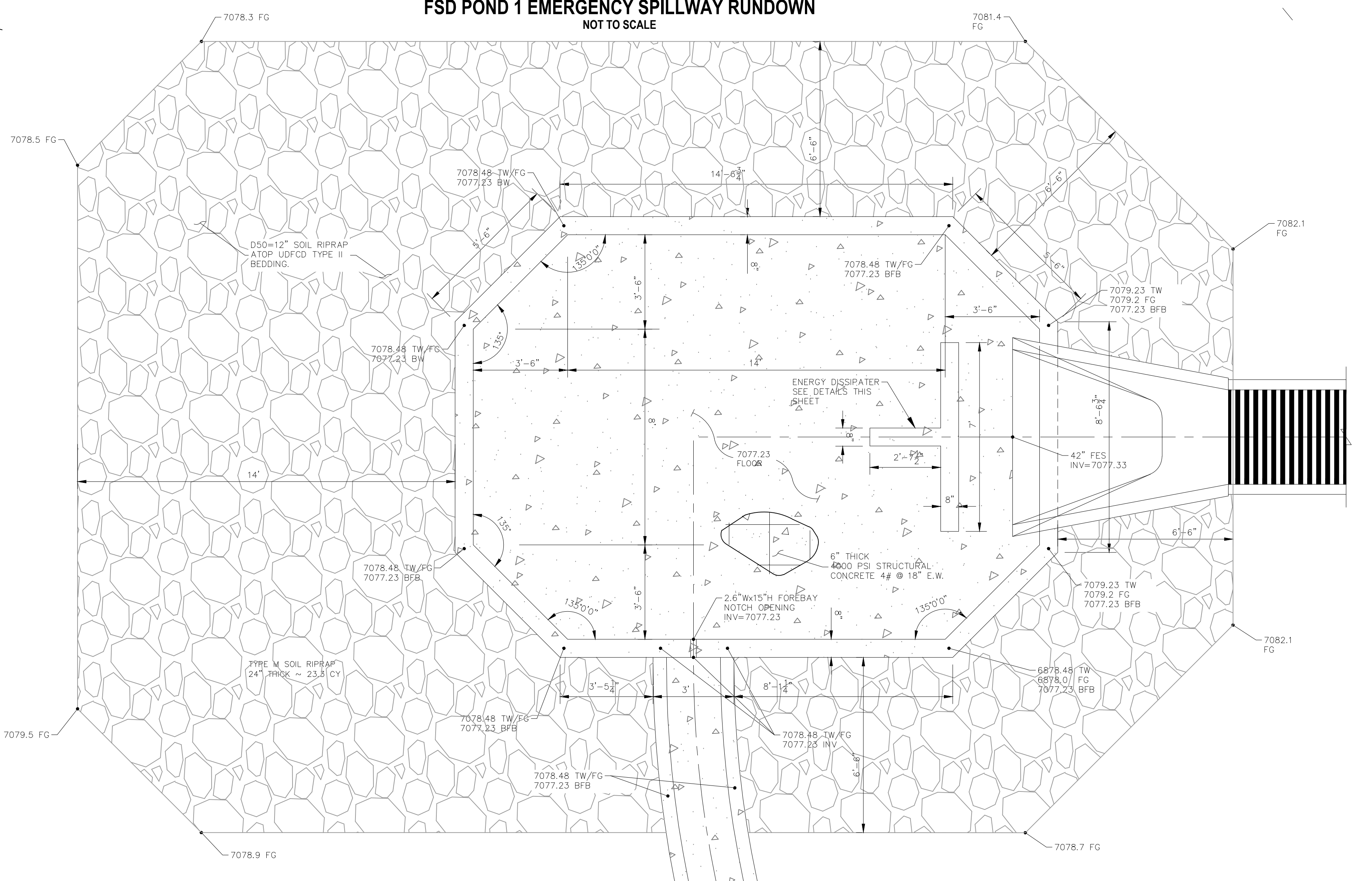
FDS POND 1 EMERGENCY SPILLWAY AND RUNDOWN TO SAND CREEK CHANNEL
1"=10'



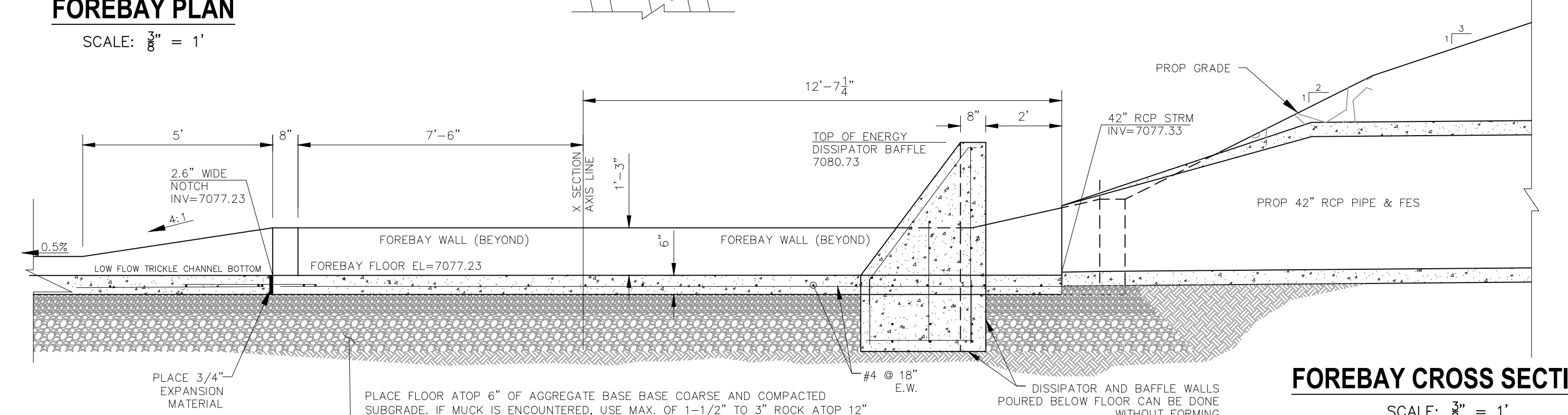
SECTION D-D
FSD POND 1 EMERGENCY SPILLWAY RUNDOWN
NOT TO SCALE



SECTION C-C
FSD POND 1 EMERGENCY SPILLWAY RUNDOWN
NOT TO SCALE



FOREBAY PLAN
SCALE: 3/8" = 1'



FOREBAY CROSS SECTION
SCALE: 3/8" = 1'

LEGEND

- EX EXISTING
- FUT FUTURE
- PROP PROPOSED
- 7070 PROP MAJ CONT
- 7070 PROP MIN CONT
- 7070 EXIST MAJ CONT
- 7070 EXIST MIN CONT
- 100 YR 100YR FLOODPLAIN
- RIPRAP TYP.
- STABILIZED MAINT. ROAD BELOW EURV
- SC150 EROSION CONTROL MATTING
- EX. FLOW ARROW
- PROP. FLOW ARROW

HOMESTEAD AT STERLING RANCH FIL. NO. 2
SPILLWAY RUNDOWN & FOREBAY DETAIL

PROJECT NO. 09-007 FILE: \Map\Const\Draw\Storm Plans\ST09.dwg DATE: 11/19/2019
DESIGNED BY: CMN SCALE: N/A
DRAWN BY: CMN HORIZ: 1"=10'
CHECKED BY: VAS VERT: N/A

ST09
SHEET 9 OF 14

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

M&S
CIVIL CONSULTANTS, INC.

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

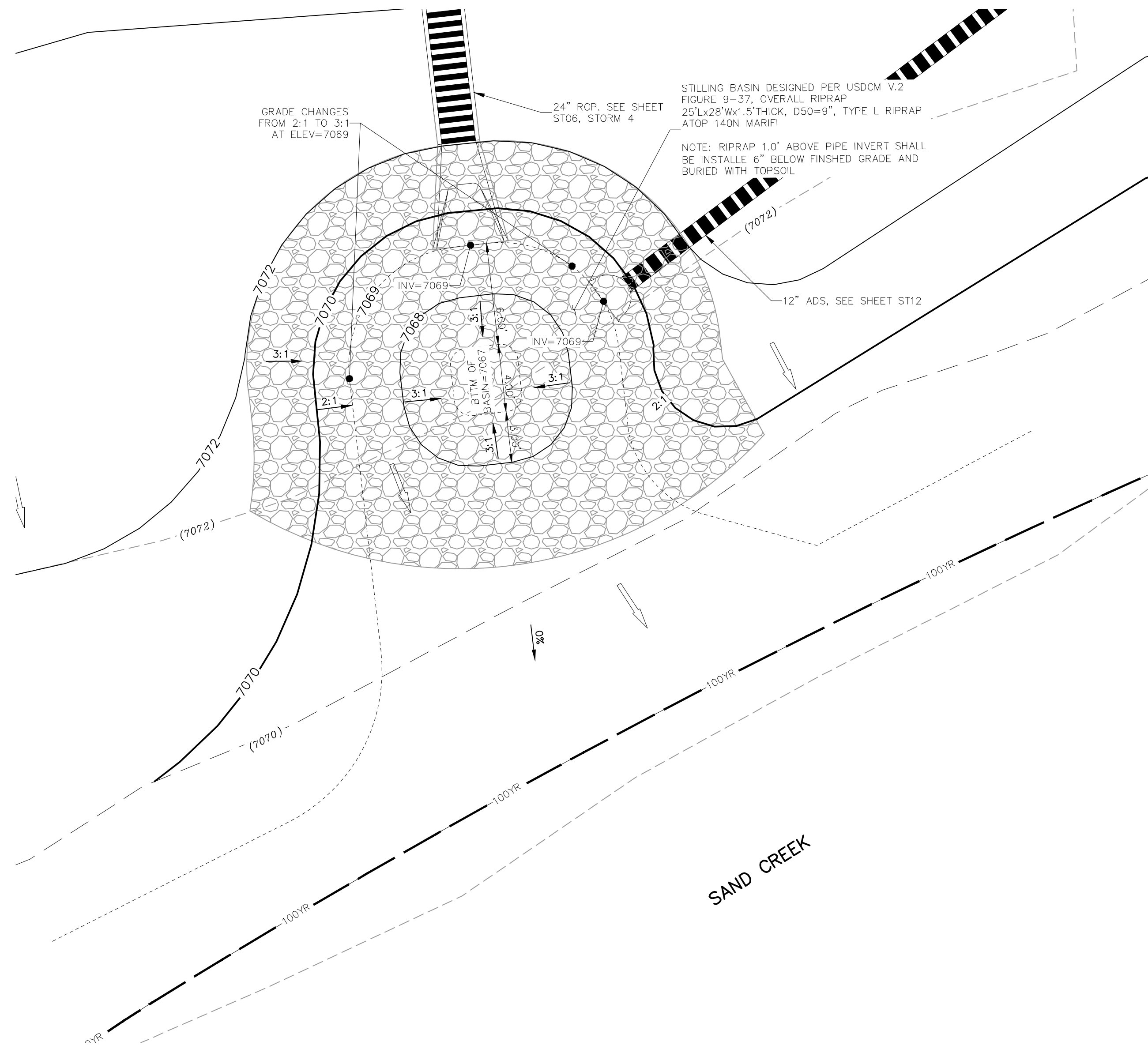
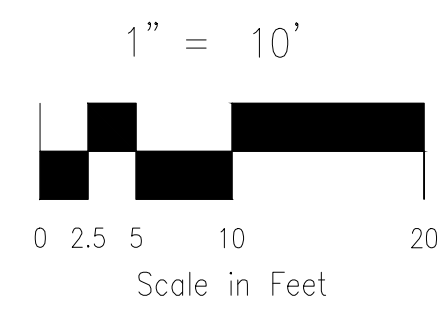
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

NO.	DATE	BY	DESCRIPTION

APPROVD. 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



24" OUTFALL INTO SAND CREEK
1"=5'

LEGEND

- EX EXISTING
- FUT FUTURE
- PROP PROPOSED
- (7070)— PROP MAJ CONT
- (7069)— PROP MIN CONT
- (7070)— EXIST MAJ CONT
- (7069)— EXIST MIN CONT
- 100 YR— 100YR FLOODPLAIN
- [RIPRAP SYMBOL] RIPRAP TYP.
- ← EX. FLOW ARROW
- PROP. FLOW ARROW
- PROPERTY LINE
- [DASHED LINE] PROP STORM SEWER PIPE

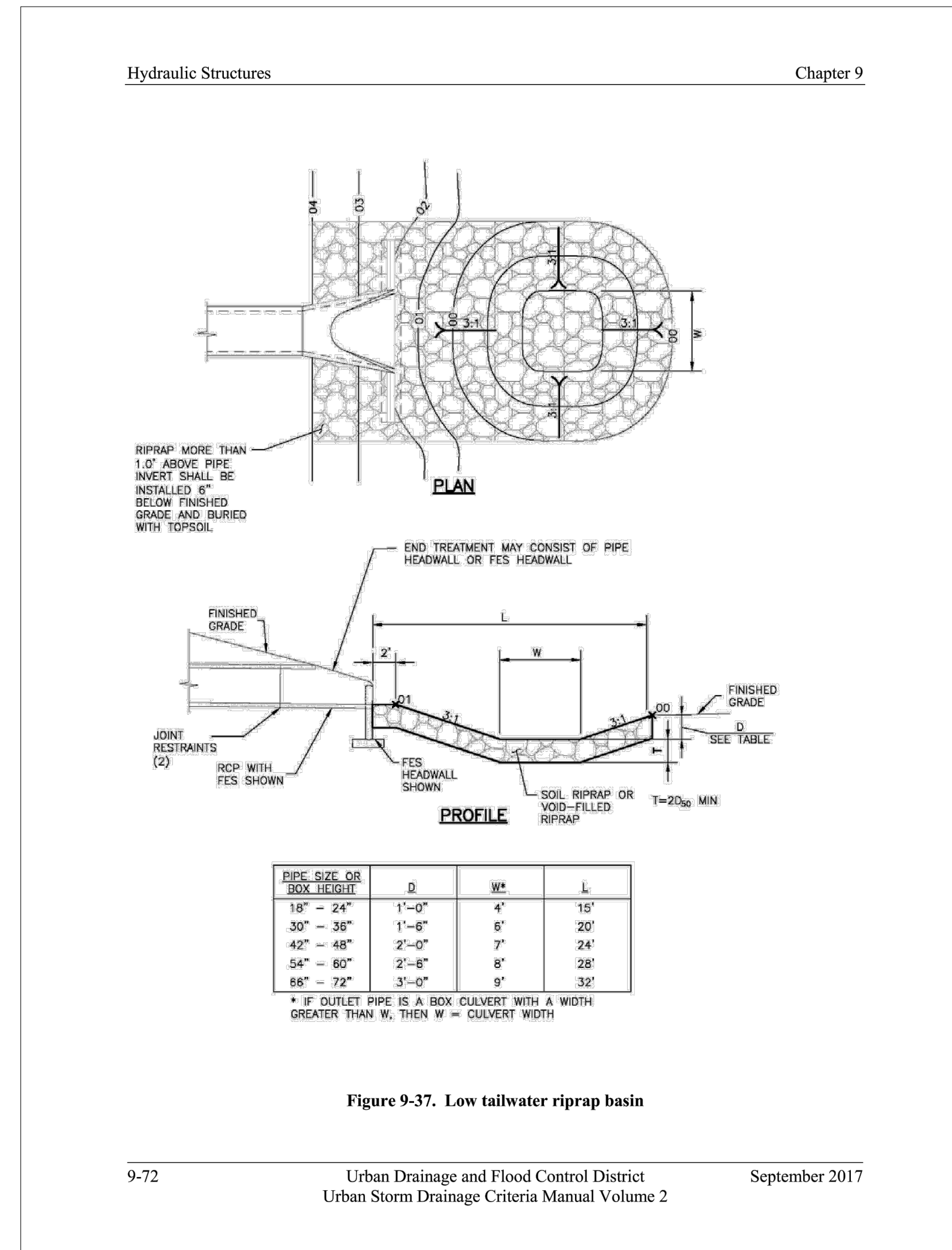
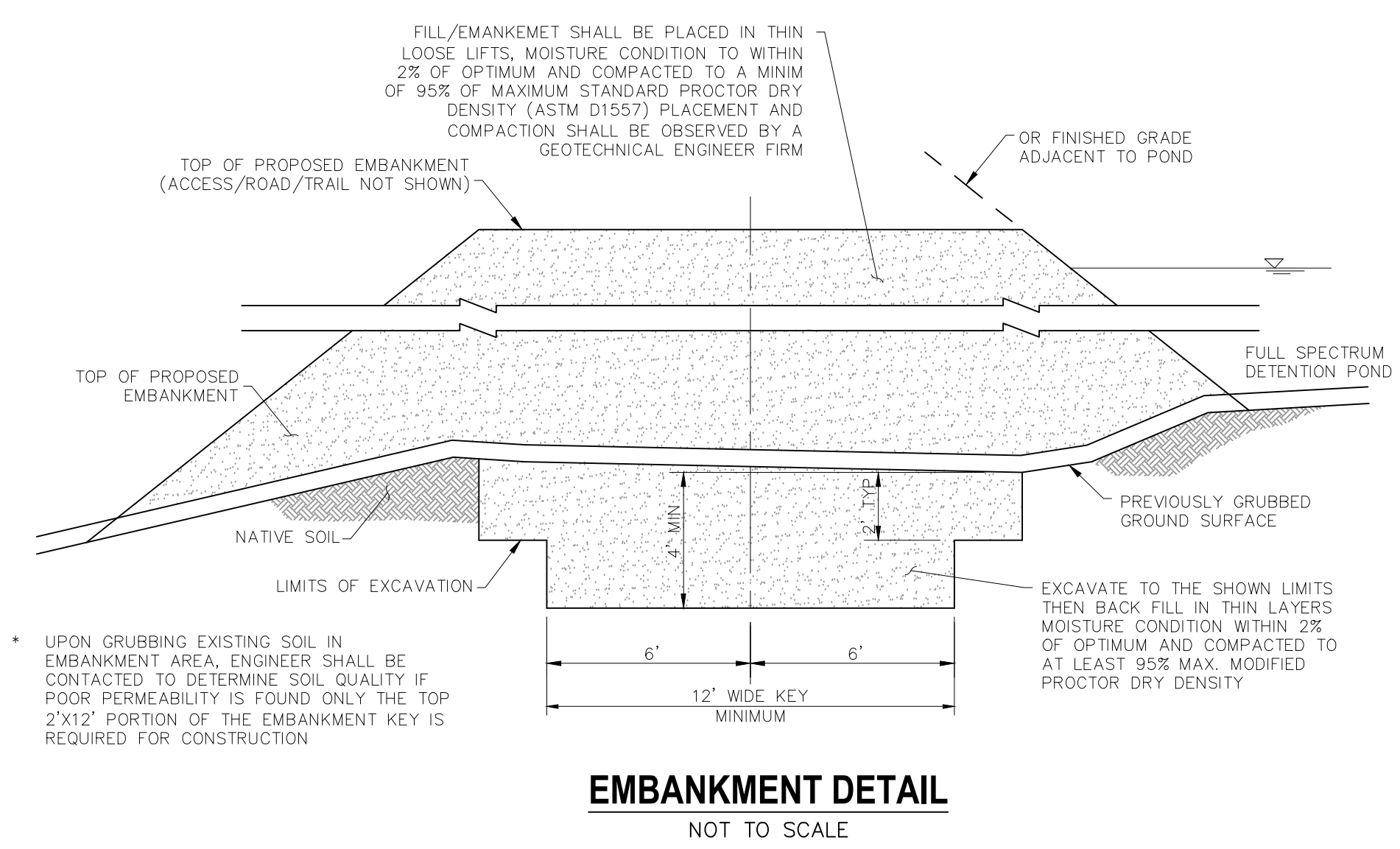


Figure 9-37. Low tailwater riprap basin

9-72 Urban Drainage and Flood Control District September 2017
Urban Storm Drainage Criteria Manual Volume 2

UDFCD V.2 FIGURE 9-37
NTS



EMBANKMENT DETAIL
NOT TO SCALE

HOMESTEAD AT STERLING RANCH FIL. NO. 2
24" OUTFALL DETAIL & BERM KEY
PROJECT NO. 09-007 FILE: \Lang\Const\Eng\Street & Storm Plans\ST10.dwg DATE: 11/19/2019
DESIGNED BY: CMM SCALE: N/A
DRAWN BY: CMM HORIZ: 1"=10'
CHECKED BY: VAS VERT: N/A

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

CIVIL CONSULTANTS, INC.

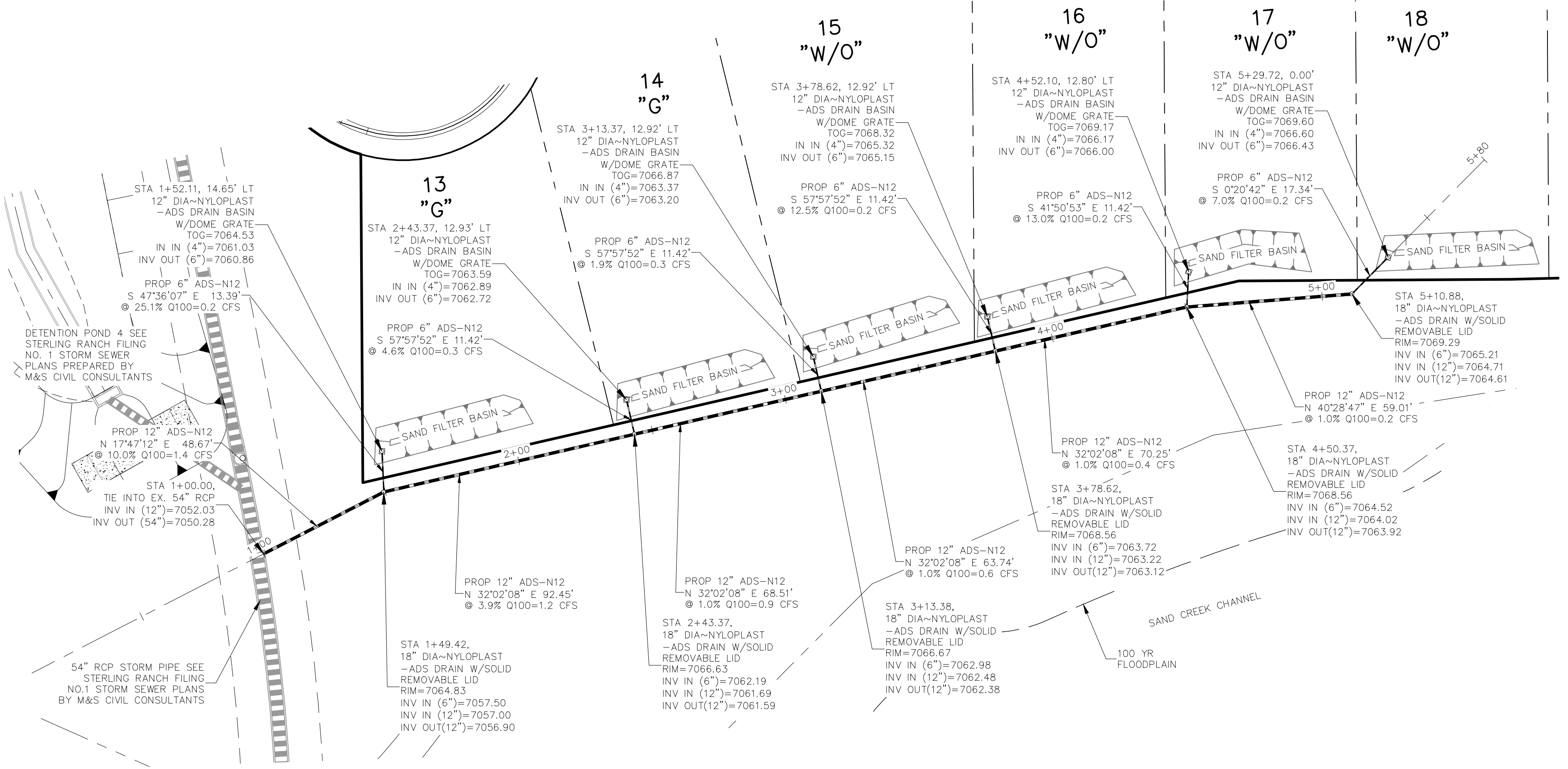
FOR AND ON BEHALF OF
M&S CIVIL CONSULTANTS, INC.

Virgil A. Sanchez, Colorado P.E. No. 37160

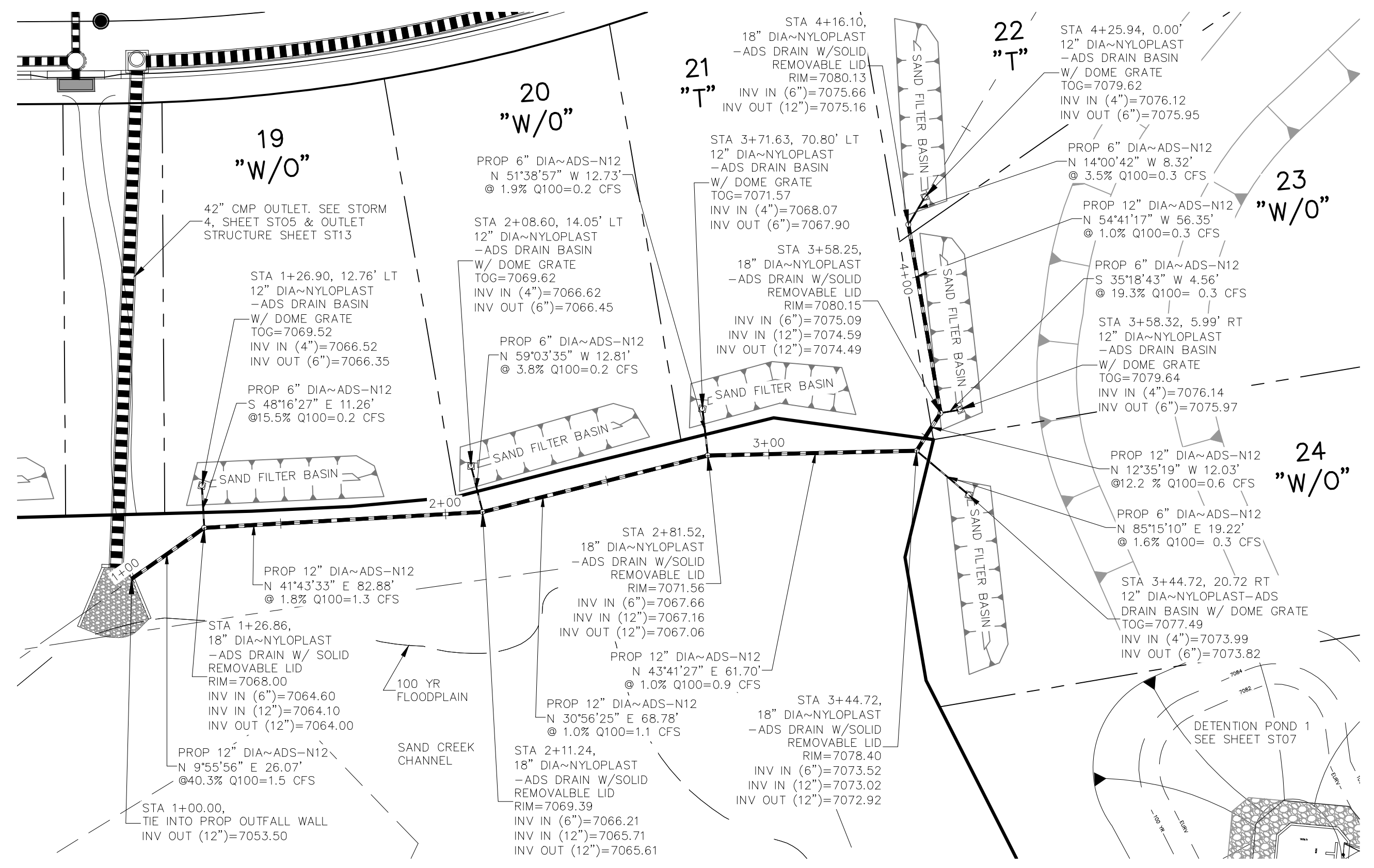
NO.	DATE	BY	DESCRIPTION	APPROVED BY	DATE

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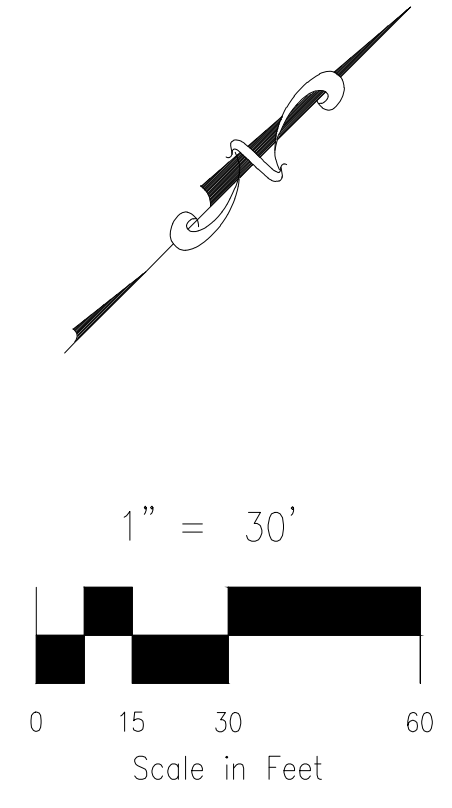
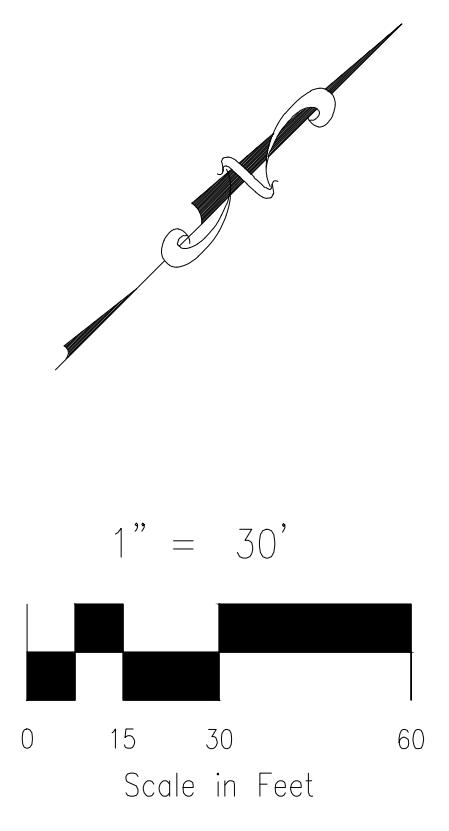
CAUTION



LOTS 13-18 STORM SEWER (PRIVATE)
SCALE 1"=30'



LOTS 19-24 STORM SEWER (PRIVATE)
SCALE 1"=30'



HOMESTEAD AT STERLING RANCH FIL. NO. 2
SAND FILTER PONDS LOTS 13-24

PROJECT NO. 09-007	FILE: Lang\Const\Eng\Street & Storm Plans\ST11.dwg	DATE: 11/19/2019
DESIGNED BY: CMM	SCALE: N/A	SHEET 11 OF 14
DRAWN BY: CMM	HORIZ: 1"=10'	ST11
CHECKED BY: VAS	VERT: N/A	

102 E. Pikes Peak Ave., 3rd Floor
Colorado Springs, CO 80903
PHONE: 719.555.4485

CIVIL CONSULTANTS, INC.

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

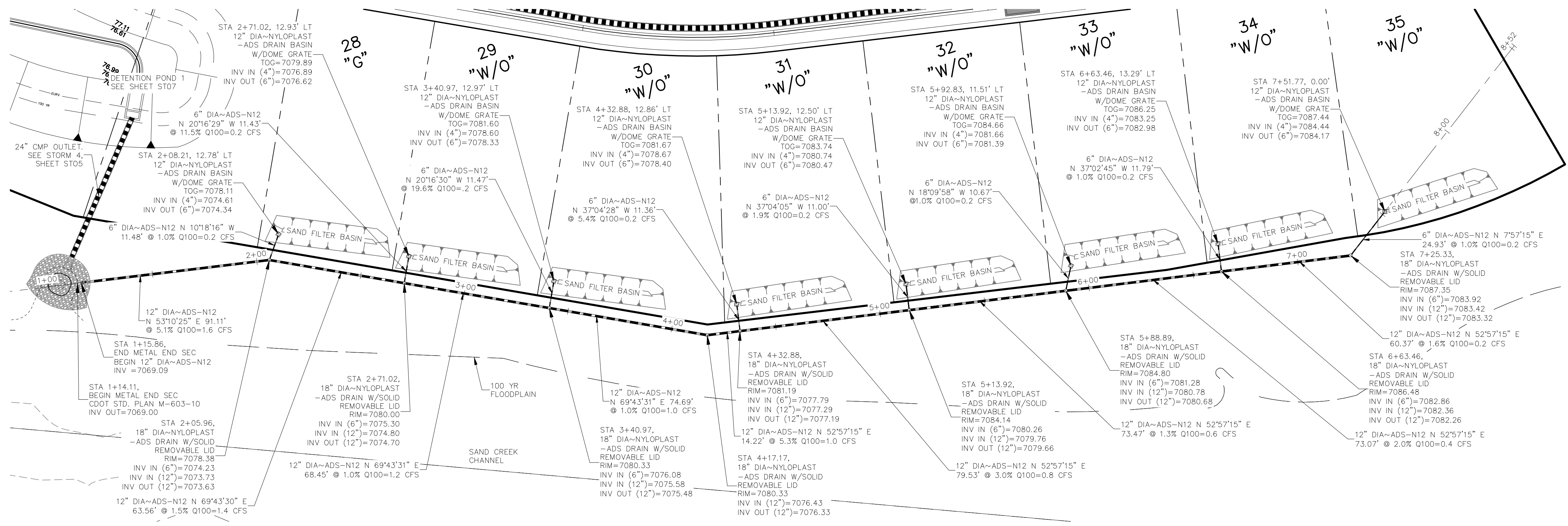
MARCIL A. SANCHEZ, COLORADO P.E. NO. 37160

NO.	DATE	BY	DESCRIPTION	APPROV. BY	DATE

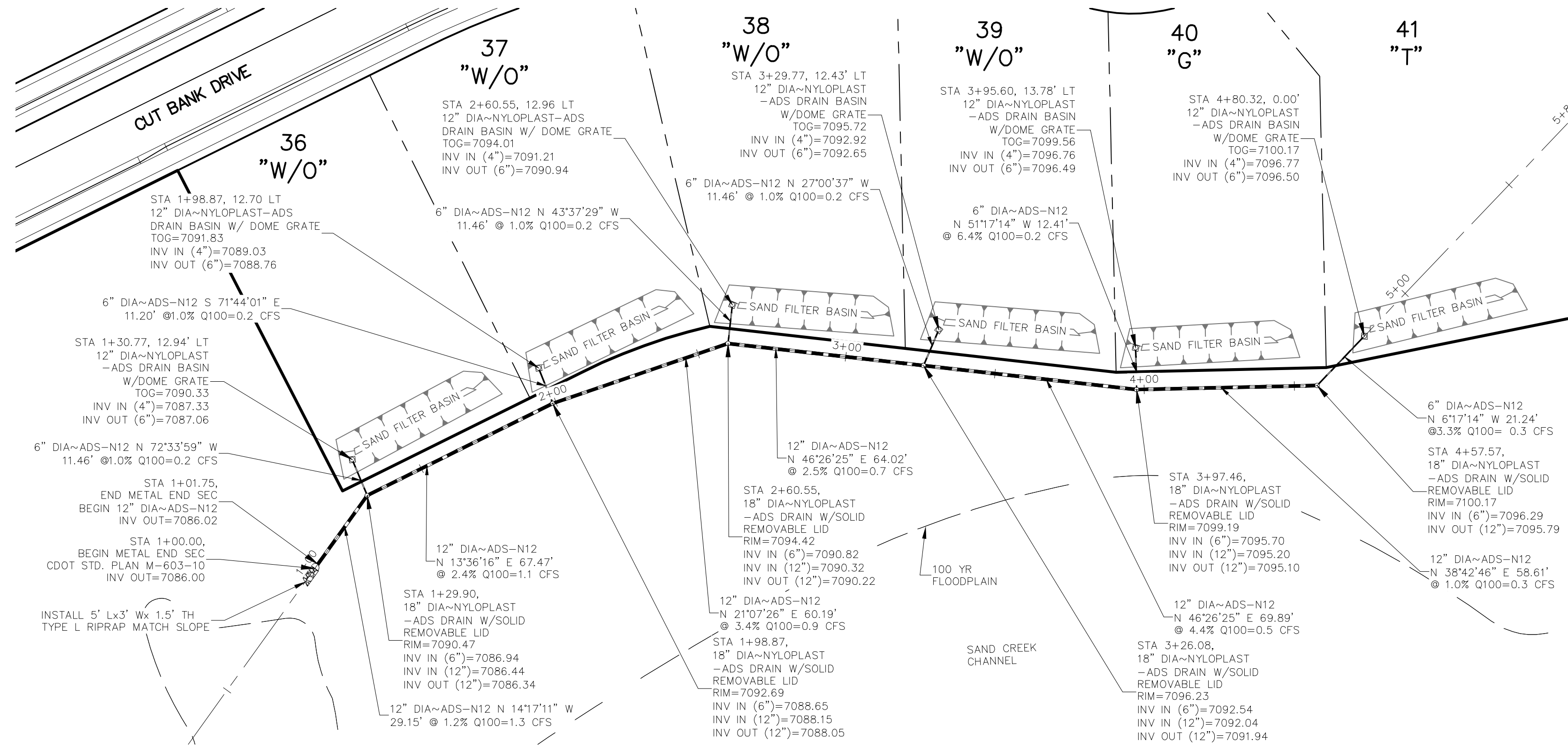
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CAUTION

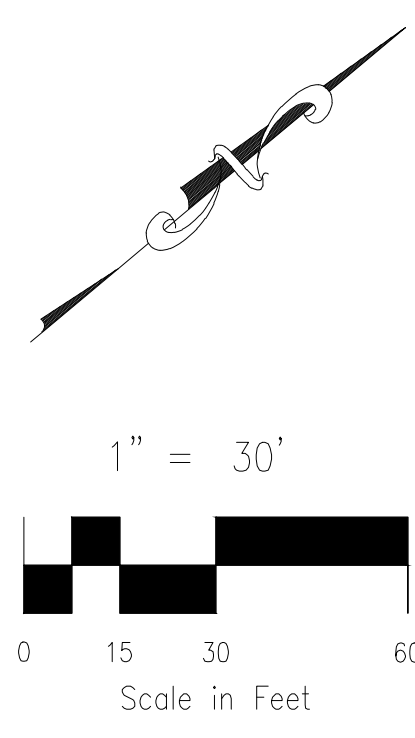
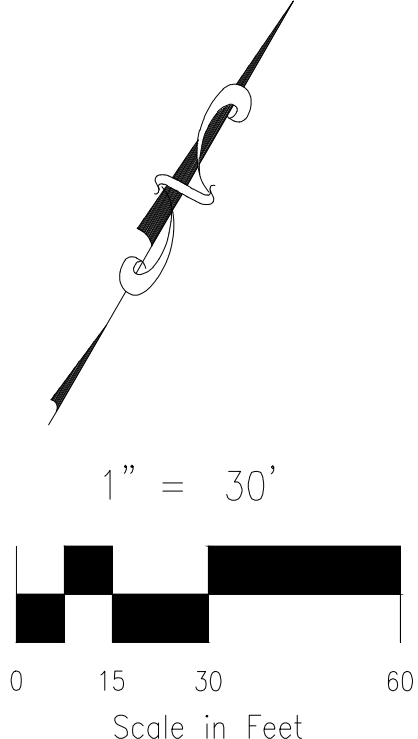
File: c:\09007A\Sterling Ranch No. 6\Map\Const\Eng\Storm Plans\ST11.dwg Plotstamp: 11/19/2019 9:44 AM



LOTS 28-35 STORM SEWER (PRIVATE)
SCALE 1"=30'



LOTS 36-41 STORM SEWER (PRIVATE)
SCALE 1"=30'



HOMESTEAD AT STERLING RANCH FIL. NO. 2

SAND FILTER PONDS LOTS 28-41

PROJECT NO. 09-007	FILE: \eng\Const\Draw\Storm Plans\ST12.dwg	DATE: 11/19/2019
DESIGNED BY: CMM	SCALE: N/A	SHEET 12 OF 14
DRAWN BY: CMM	HORIZ: 1"=10'	ST12
CHECKED BY: VAS	VERT: N/A	

102 E. PINE PEAK AVE., 3RD FLOOR
COLORADO SPRINGS, CO 80903
PHONE: 719.555.4485

CIVIL CONSULTANTS, INC.

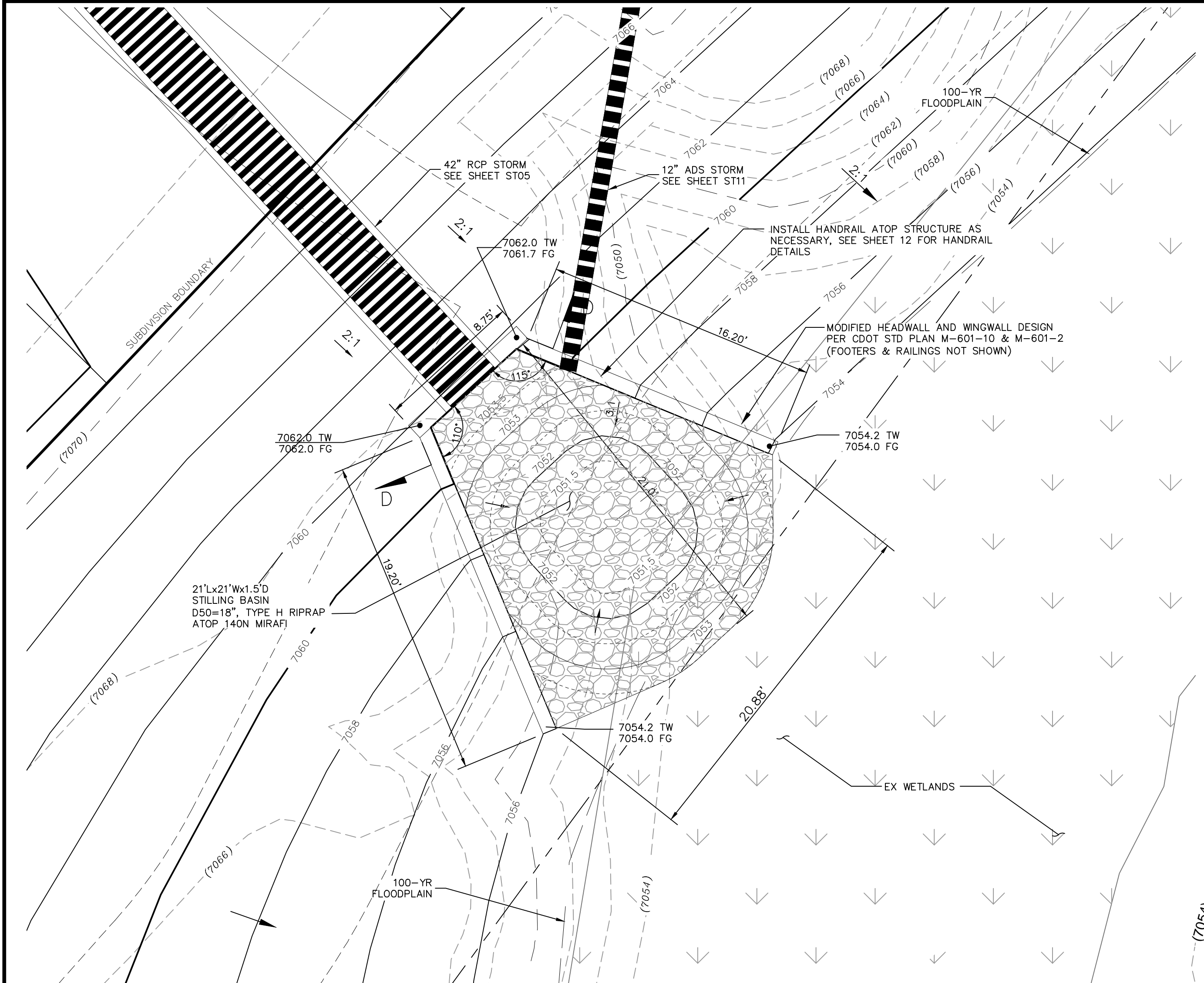
FOR AND ON BEHALF OF
M&S CIVIL CONSULTANTS, INC.

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

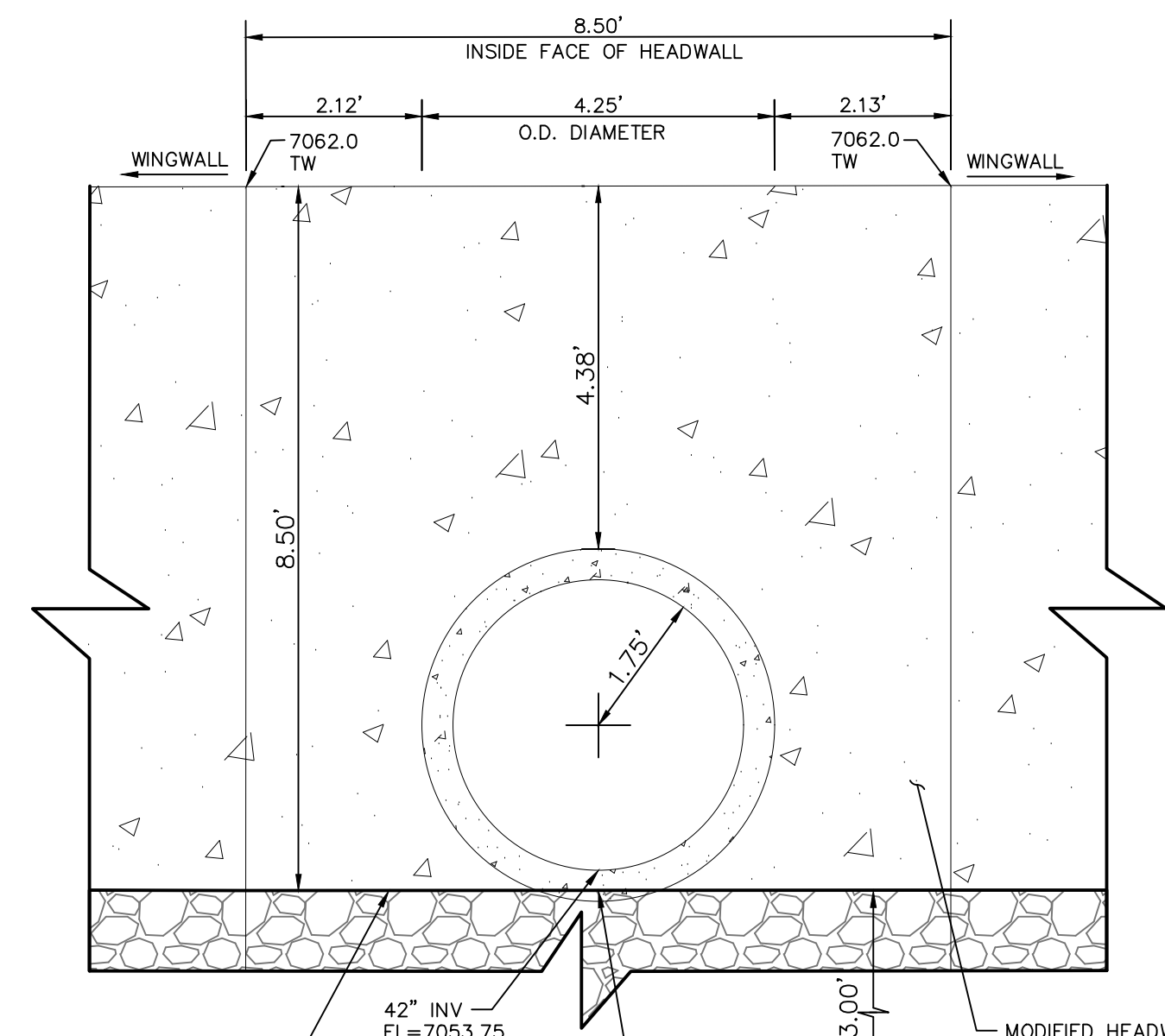
NO.	DATE	BY	DESCRIPTION	APPROVED BY	DATE

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CAUTION



STORM 1 - 42" OUTFALL STILLING BASIN W/ HEADWALL & WINDWALLS
SCALE 1" = 5'



42" OUTFALL HEADWALL SECTION D-D
NOT TO SCALE

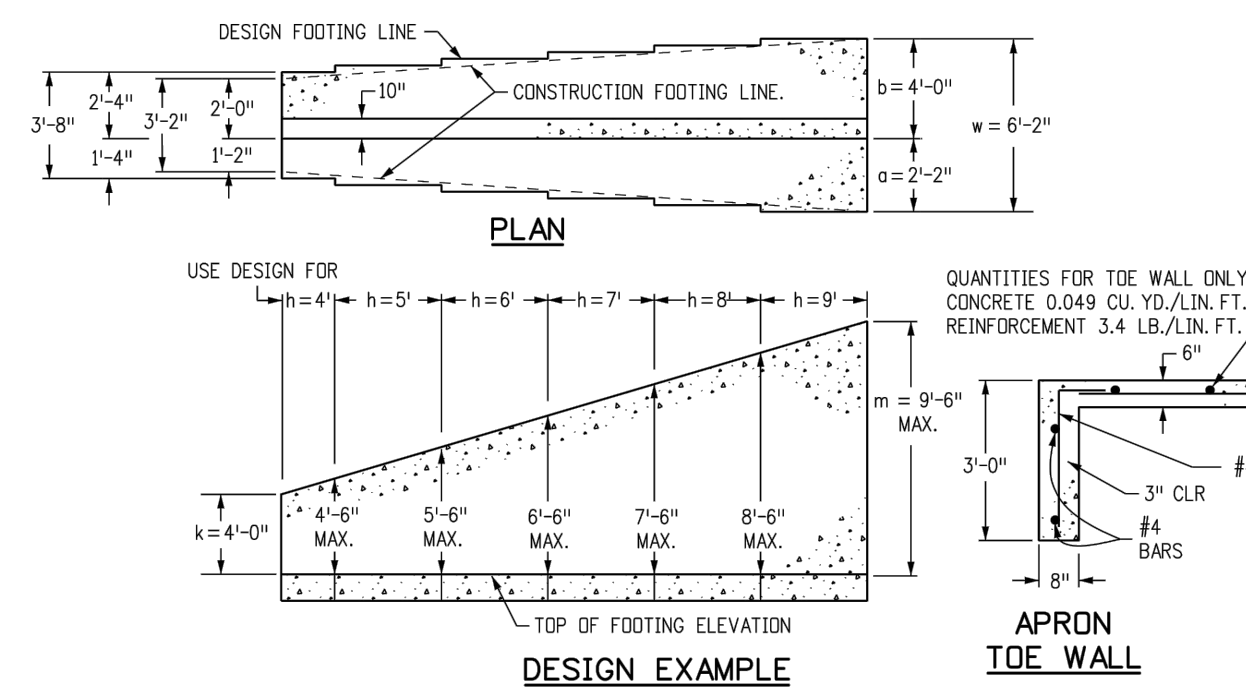
GENERAL NOTES

- ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 1/4" IN.
- WINGWALL FOOTINGS AND FLOOR OF BOX CULVERT SHALL BE PLACED MONOLITHICALLY.
- DIMENSIONS "H", "B", "R", "R", "R", "R", "R", "R", "R", "R" FOR WINGWALLS SHALL BE AS SHOWN ON THE PLANS.
- REINFORCING STEEL SHALL BE GRADE 60.
- THE MINIMUM SPLICE LENGTH FOR COMMON BAR SIZES SHALL BE:

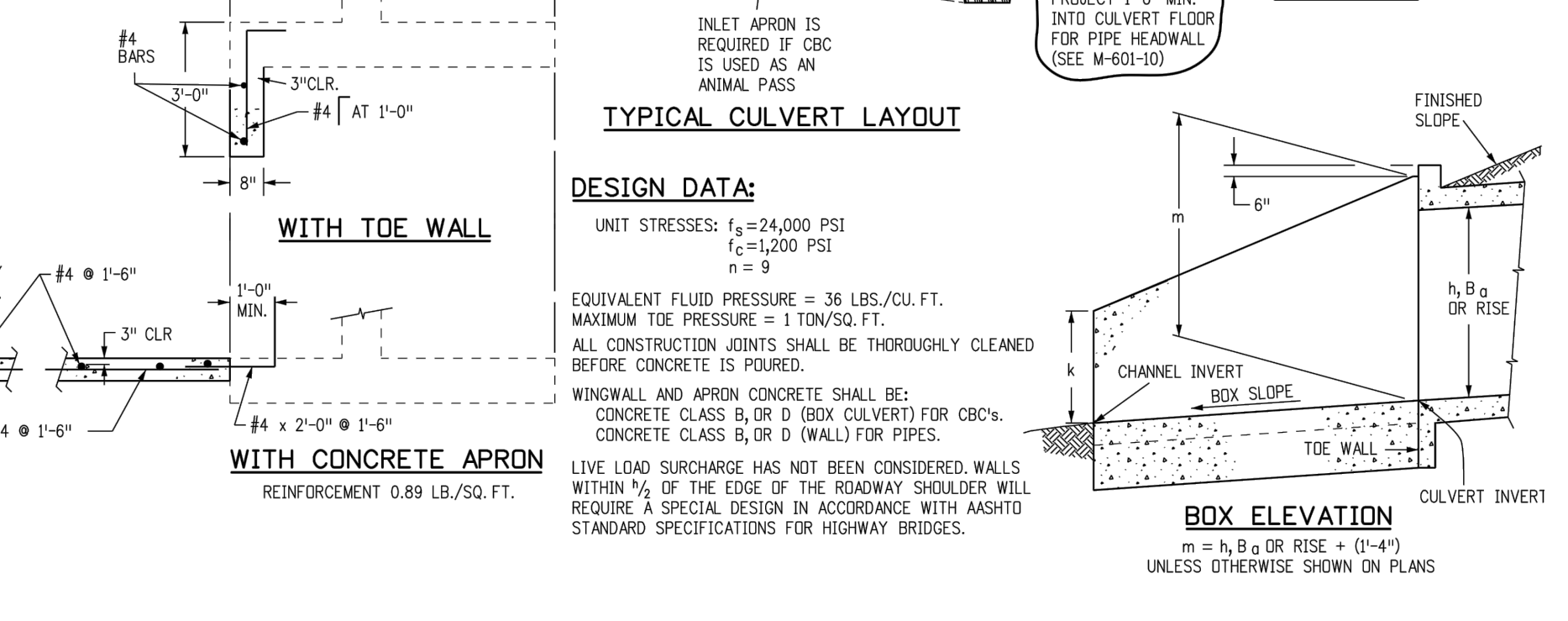
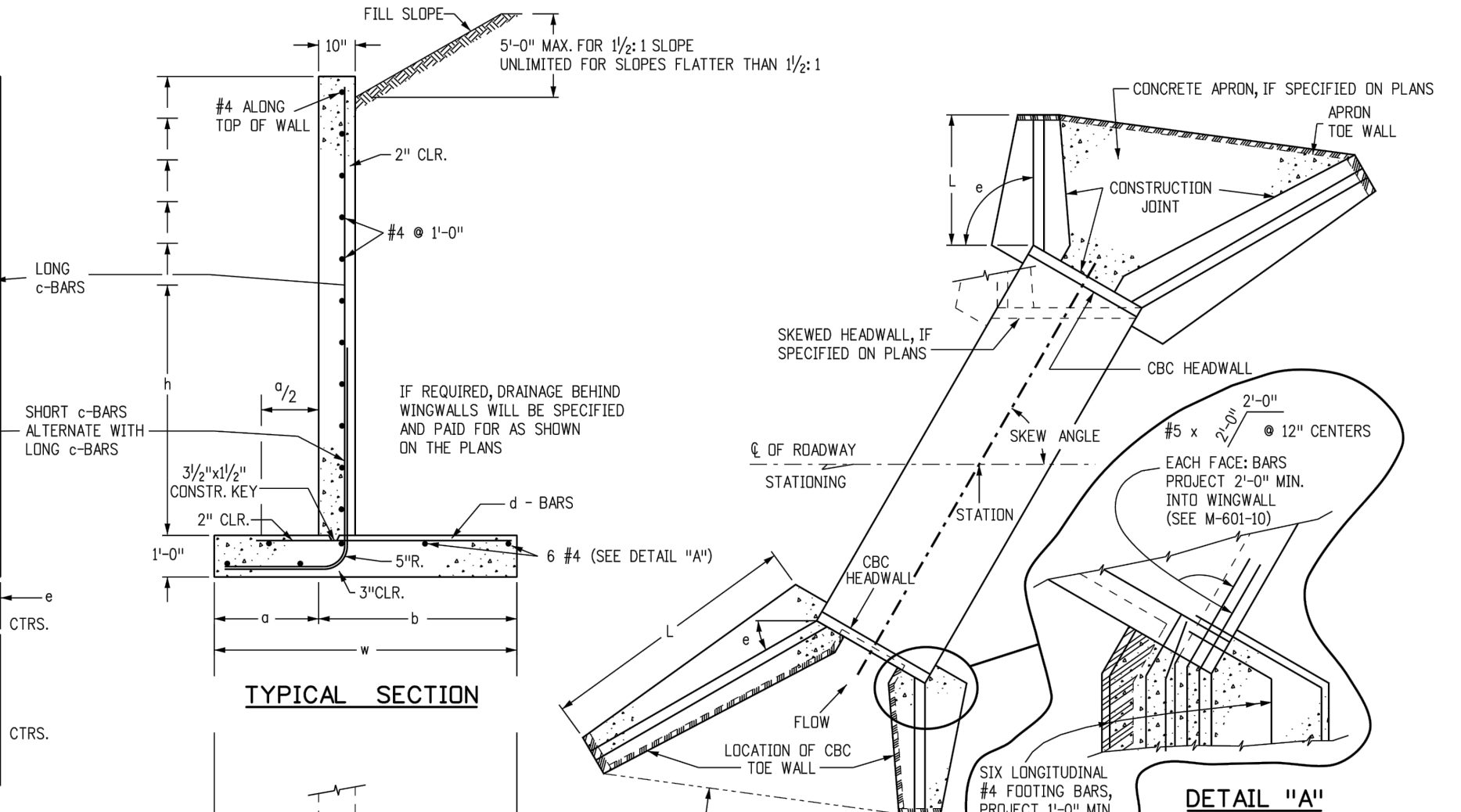
BAR	#4	#5	#6
SPLICE LENGTH	1'-3"	1'-7"	2'-0"

e	CTRS.										
	1'-6"	1'-6"	1'-6"	1'-6"	1'-4"	1'-3"	9"	10"	11"	7"	7"
a	1'-0"	1'-2"	1'-4"	1'-6"	1'-8"	1'-10"	2'-0"	2'-2"	2'-4"	2'-6"	2'-8"
b	1'-8"	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"	5'-0"
w	2'-8"	3'-2"	3'-8"	4'-2"	4'-8"	5'-2"	5'-8"	6'-2"	6'-8"	7'-2"	7'-8"
c & d BARS	#4@1'-6"	#4@1'-6"	#4@1'-6"	#4@1'-6"	#4@1'-4"	#5@1'-3"	#5@1'-3"	#6@9"	#6@9"	#6@9"	#6@9"
CONC. CURVED L.F.	0.161	0.210	0.259	0.308	0.358	0.407	0.457	0.506	0.556	0.604	0.654
REIN. LB./L.F.	8.0	9.3	10.7	12.1	14.3	16.4	18.5	20.6	22.8	24.9	27.1

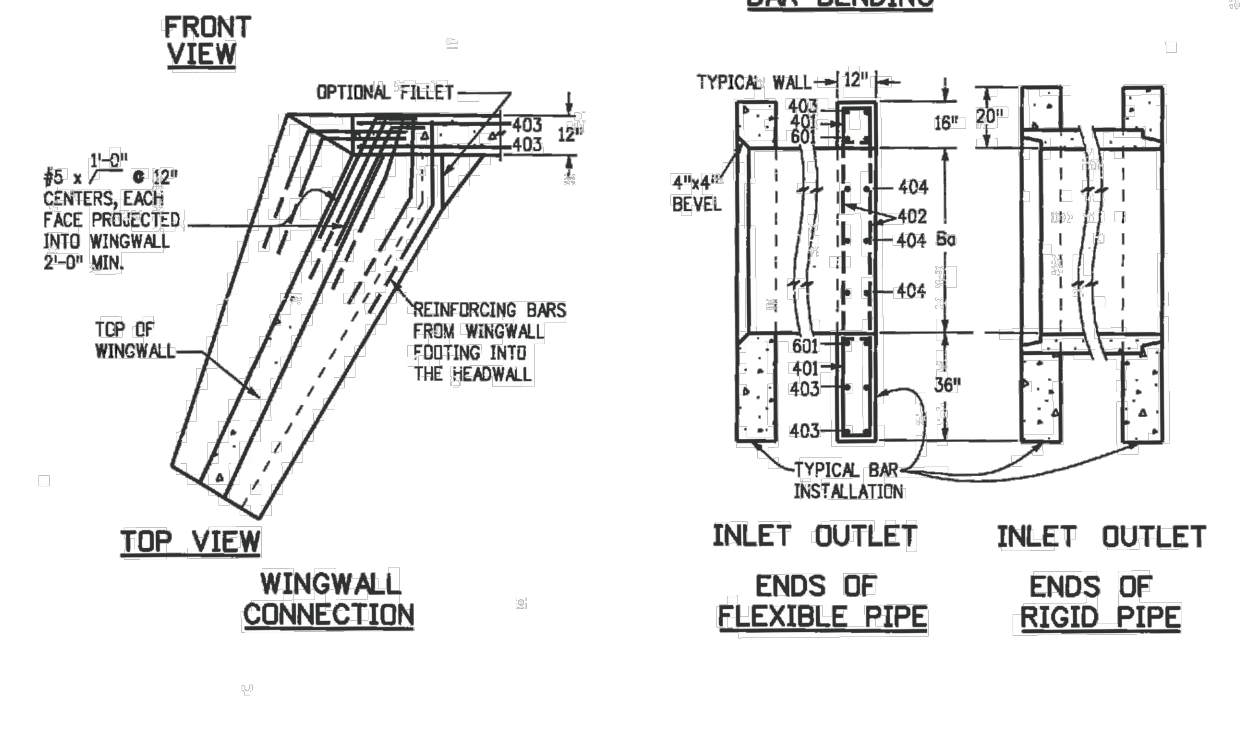
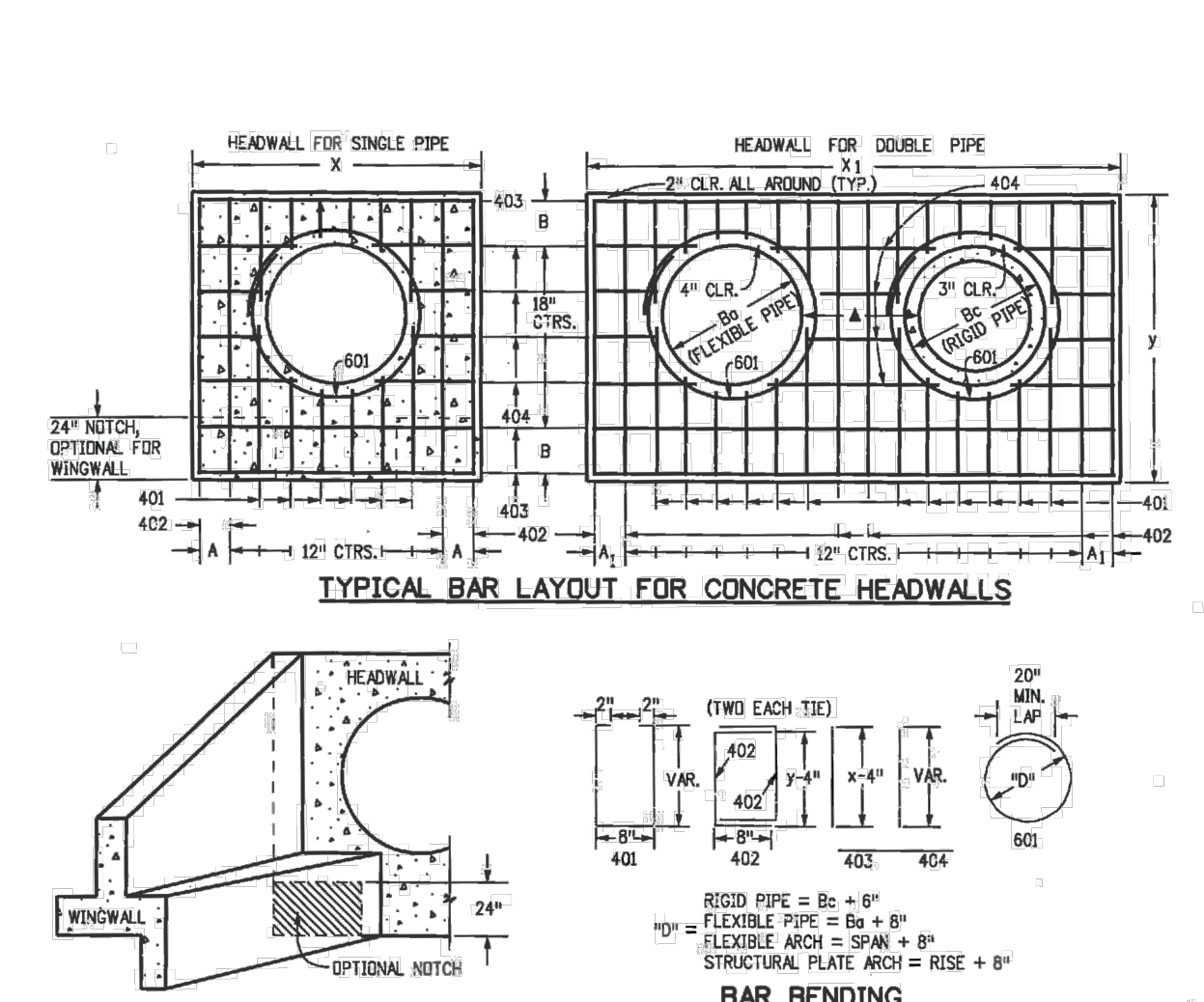
DESIGN TABLE



OUTLET STRUCTURE WINGWALL REINFORCING DETAILS
CDOT M-601-20
NOT TO SCALE



OUTLET STRUCTURE HEADWALL FOR PIPES REINFORCING DETAILS
CDOT M-601-10 (MODIFIED)
NOT TO SCALE



OUTLET STRUCTURE HEADWALL FOR PIPES REINFORCING DETAILS
CDOT M-601-10 (MODIFIED)
NOT TO SCALE

HEADWALL FOR RIGID ROUND PIPE

B	B ₁	X	A	A ₁	A ₂	Y	B ₂	B ₃	CONCRETE		STEEL	
									CU	YD	DLB	DLB
42	51	8-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	9-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	10-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	11-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	12-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	13-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	14-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	15-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	16-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	17-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	18-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	19-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	20-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	21-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	22-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	23-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	24-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	25-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	26-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	27-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	28-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	29-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414
60	72	30-0	17	17-0	10	11-5	11	21	2-35	3-99	236	414

HEADWALL FOR FLEXIBLE PIPE ARCH

EQUIV. SPAN	SPAN	RISE	X	A	A ₁	A ₂	Y	B	CONCRETE		STEEL	
									CU	YD	DLB	DLB
72	81	59	10-8	8 1/2	20-8	7	9-3	17 1/2	2.72	5.10	250	467
78	87	65	11-3	10 1/2	21-8	7	9-7	18 1/2	2.85	5.34	275	534
84	93	71	11-8	11	22-10	8	9-11	19 1/2	3.08	5.79	290	547
90	103	77	12-7	12 1/2	24-2	11	10-3	15	3.30	6.21	321	581
96	112	83	13-4	13 1/2	25-8	11	10-7	16 1/2	3.52	6.65	314	606
102	117	89	13-9	14 1/2	26-6	11	10-1	17 1/2	3.63	6.88	358	672
108	128	95	14-8	15 1/2	28-4	12	11-3	18 1/2	3.86	7.51	376	699

HEADWALL FOR FLEXIBLE ROUND PIPE

EQUIV. SPAN	SPAN	RISE	X	A	A ₁	A ₂	Y	B	CONCRETE		STEEL	
									CU	YD	DLB	DLB
54	6-3	7	15-3	11 1/4	8-10	18	2.18	3.81	211	358		
60	9-3	10	15-0	11	10-10	18	2.28	4.25	237	396		
66	9-6	7	17-9	9 1/2	9-10	12	2.58	4.70	252	454		
72	10-0	10	16-0	10	10-15	15	2.78	5.17	295	472		
78	10-8	6	17-9	10	10-10	18	2.88	5.36	274	459		
84	11-0	10	17-0	10	11-4	12	3.18	5.95	297	553		
90	11-8	7	18-0	10	11-0	14	3.40	6.36	317	577		
96	12-0	10	17-0	10	12-8	18	3.62	6.79	321	567		
102	12-6	7	18-0	10	12-0	12	3.86	7.23	364	693		
108	13-0	10	18-0	10	12-0	12	3.86	7.23	364	693		

HEADWALL FOR STRUCTURAL PLATE ARCH

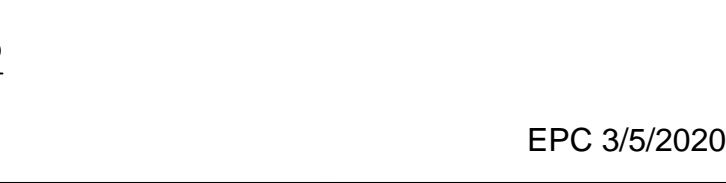
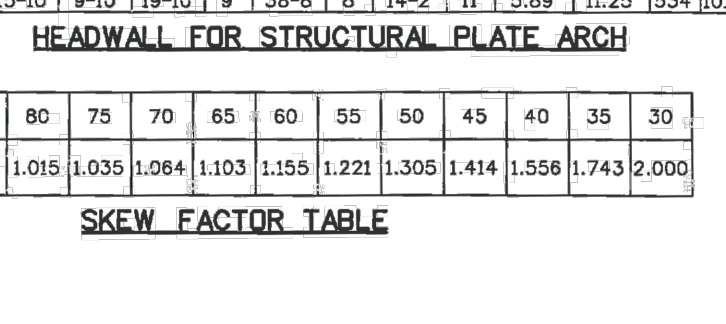
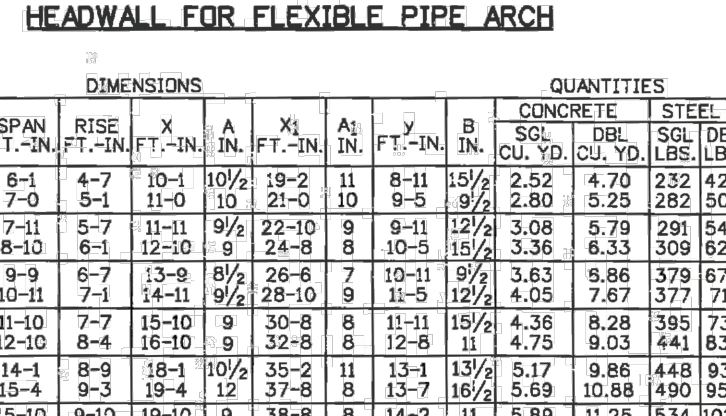
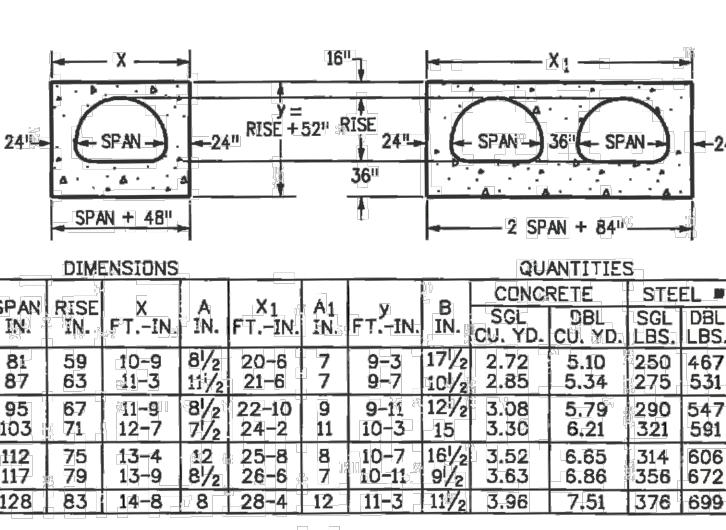
EQUIV. SPAN	SPAN	RISE	X	A	A ₁	A ₂	Y	B	CONCRETE		STEEL	
									CU	YD	DLB	DLB
96	9-1	4-7	10-1	10 1/2	19-2	11	8-11	15 1/2	2.52	4.70	232	424
75	7-0	3-1	11-0	11 1/2	21-0	10	9-3	16 1/2	2.80	5.25	282	509
84	7-11	6-7	11-11	12 1/2	22-10	8	9-11	12 1/2	3.08	5.79	291	540
83	6-10	6-1	12-0	13	24-8	8	10-5	15 1/2	3.36	6.33	309	622
102	9-9	6-7	13-8	13 1/2	26-8	7	10-11	16 1/2	3.63	6.86	379	673
111	10-11	7-1	14-11	14 1/2	28-10	9	11-5	18 1/2	4.05	7.67	377	711
120	11-0	7-7	15-0	15 1/2	30-8	8	11-11	19 1/2	4.36	8.28	395	731
132	12-0	8-4	16-0	16 1/2	32-8	8	12-8	15	4.75	9.03	441	839
141	14-1	8-9	18-0	18 1/2	35-2	11	13-1	13 1/2	5.17	9.86	448	931
150	15-4	9-4	19-4	19 1/2	37-8	8	13-7	16 1/2	5.69	10.89	490	953
159	15-10	9-10	19-10	19 1/2	38-8	8	14-2	11	5.89	11.25	534	1019

SKREW FACTOR TABLE

SKREW ANGLE A°	90	85	80	75	70	65	60	55	50	45	40	35	30
FACTOR (CODES A)	1.000	1.004	1.015	1.035	1.064	1.103	1.155	1.221	1.305	1.414	1.556	1.743	2.000

GENERAL NOTES

- CONCRETE SHALL BE CLASS B.
- HEADWALL SHALL BE PERPENDICULAR TO THE PIPE & UNLESS OTHERWISE SHOWN ON THE PLANS, FABRICATED DIMENSIONS AND QUANTITIES MUST BE ADJUSTED FOR SKEWED INSTALLATIONS.
- FOR WINGWALL DETAILS, SEE STANDARD PLAN M-601-20.
- VOLUME OCCUPIED BY PIPE HAS BEEN DEDUCTED FROM STEEL AND CONCRETE QUANTITIES.
- EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 1/4" IN.
- ALL REINFORCING BARS SHALL HAVE A 2 IN. MINIMUM CLEARANCE.
- WHEN TWO OR MORE PIPES ARE LAID SIDE BY SIDE, THEY SHALL BE PLACED SO THAT THE ADJACENT PIPES WILL BE 1/2" INSIDE DIAMETER APART OR 1/4" INSIDE SPAN APART, OR 3 FT. APART (INCLUDING WALL THICKNESS), WHICHEVER IS LESS.
- ADD 0.89 X (X OR Y) (LB.) WHEN APRON IS REQUIRED.



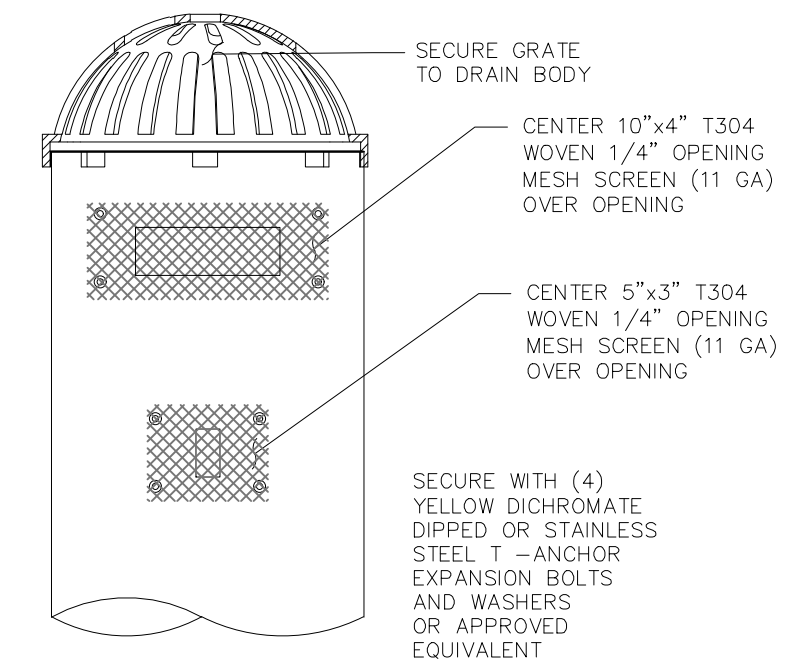
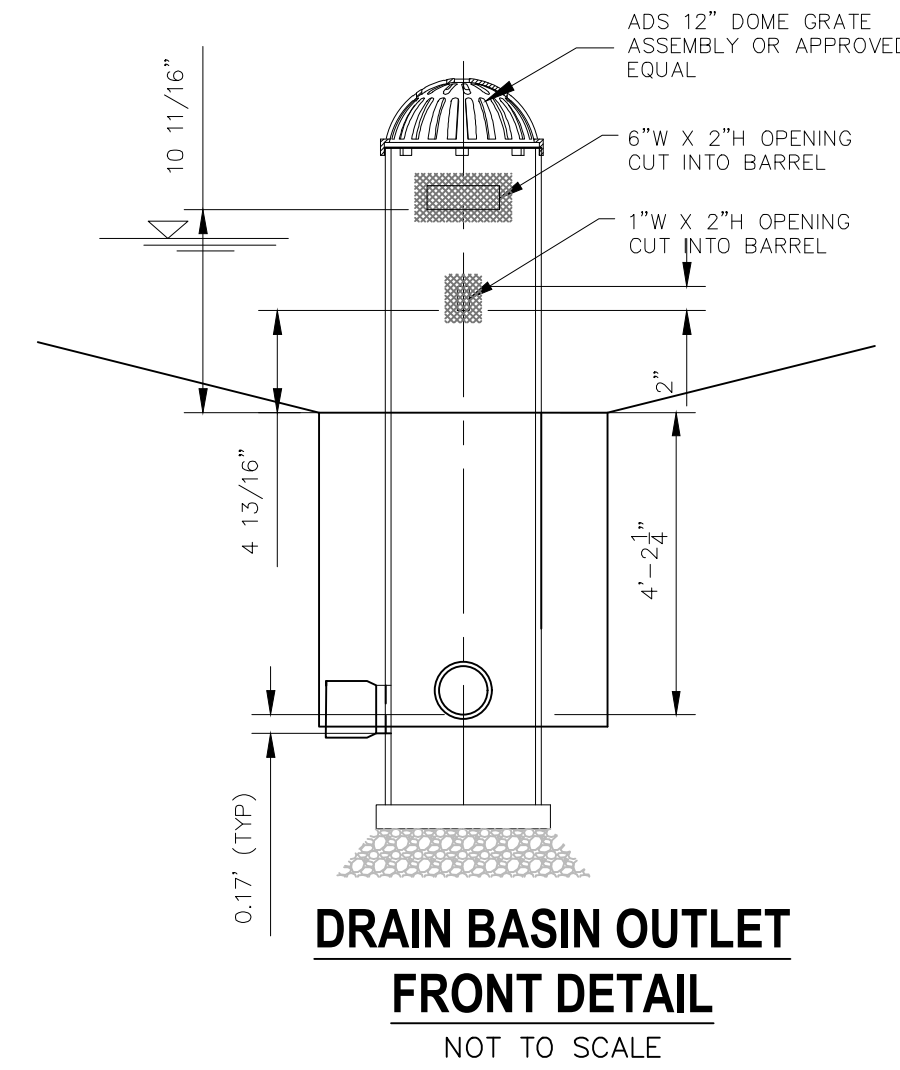
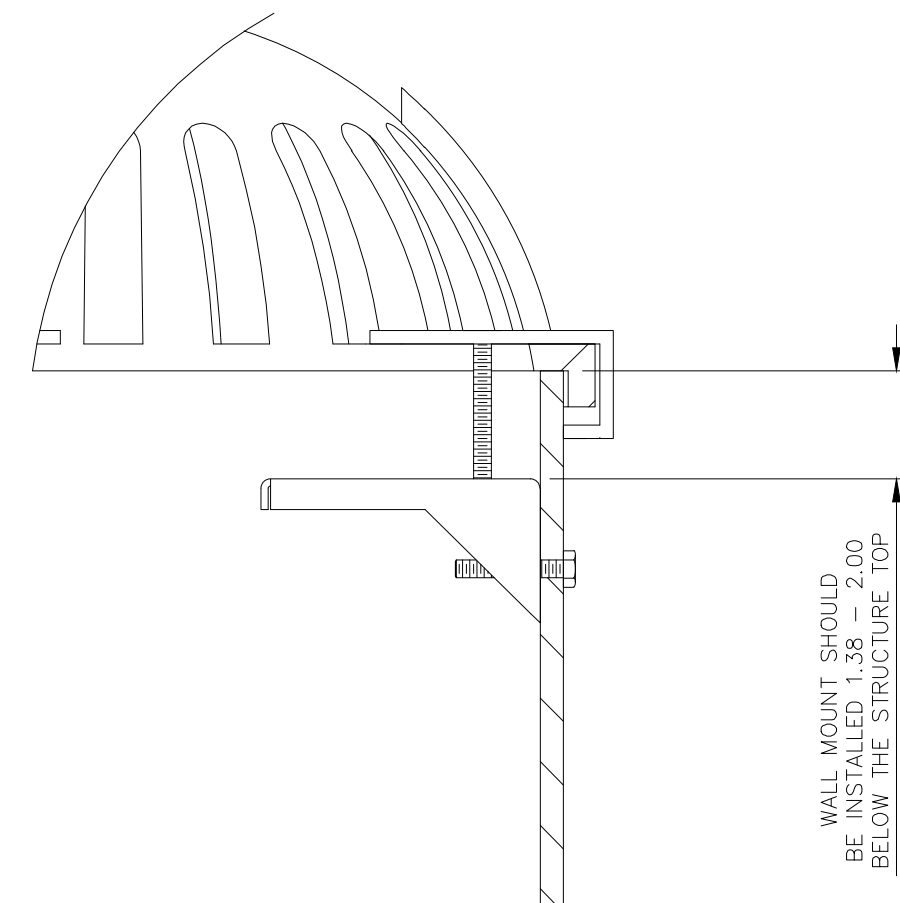
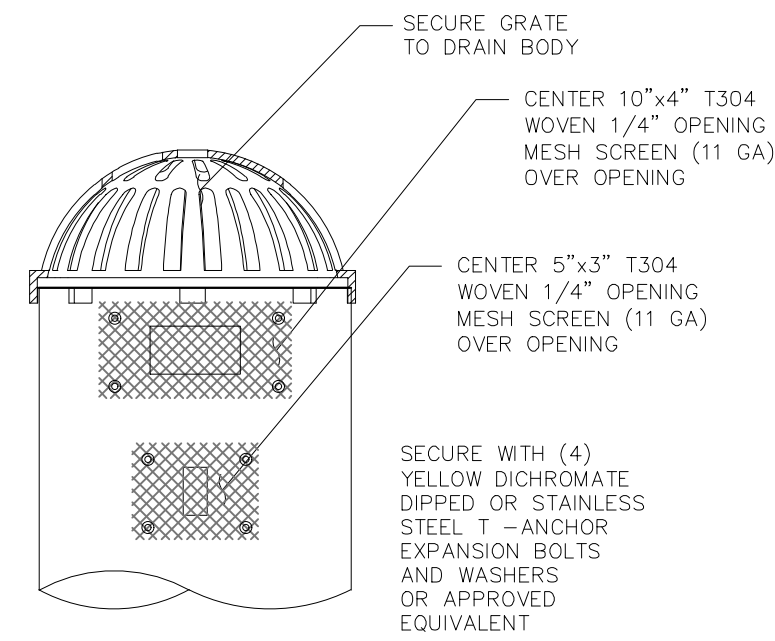
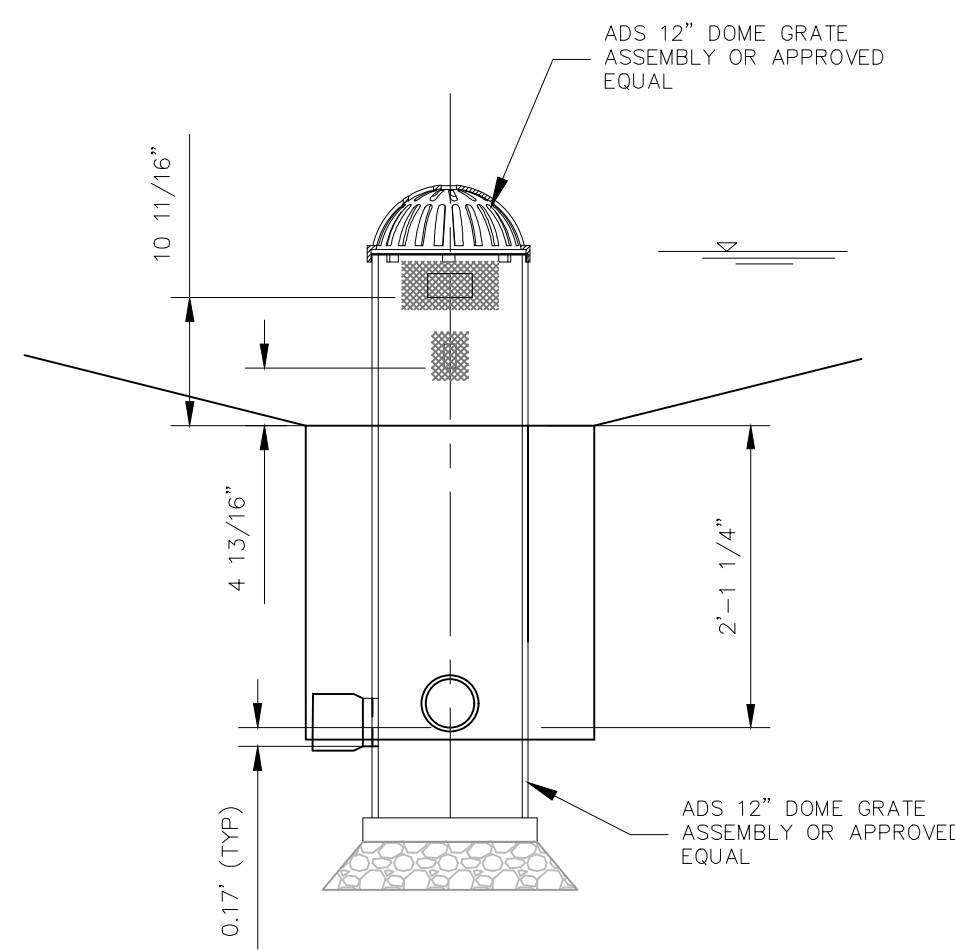
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HOMESTEAD AT STERLING RANCH FIL. NO. 2
OUTLET STRUCTURE DETAILS
PROJECT NO. 09-007 FILE: \Map\Const\Draw\Storm Plans\ST13.dwg
DESIGNED BY: CMM SCALE: DATE: 11/19/2019
DRAWN BY: CMM HORIZ: 1"=10'
CHECKED BY: VAS VERT: N/A SHEET 13 OF 14 ST13

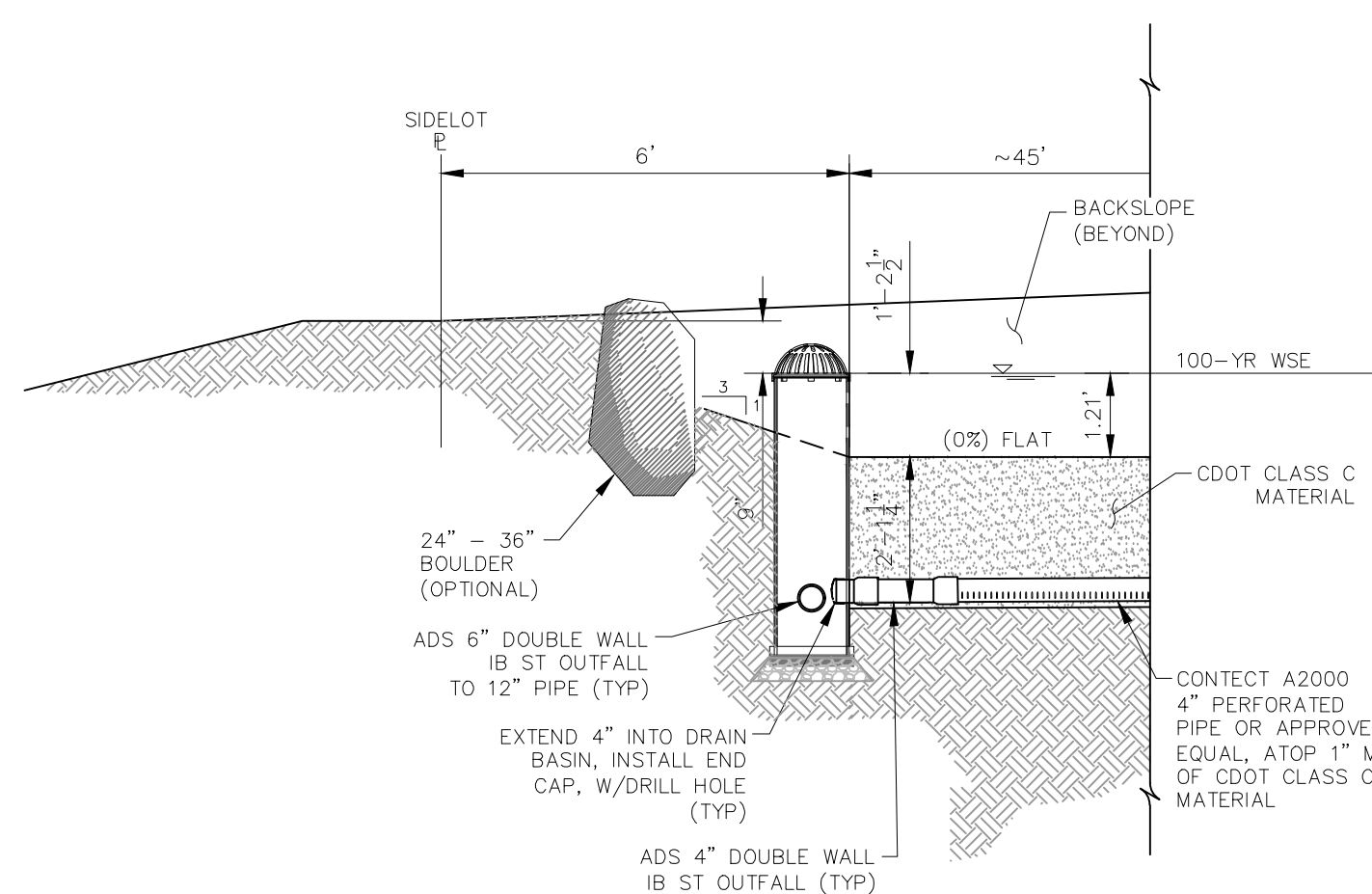
102 E. Pikes Peak Ave., 3rd Floor
Colorado Springs, CO 80903
PHONE: 719.555.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF
M&S CIVIL CONSULTANTS, INC.
REGISTERED PROFESSIONAL ENGINEER
NO. 37160
EXPIRES 12/31/2020

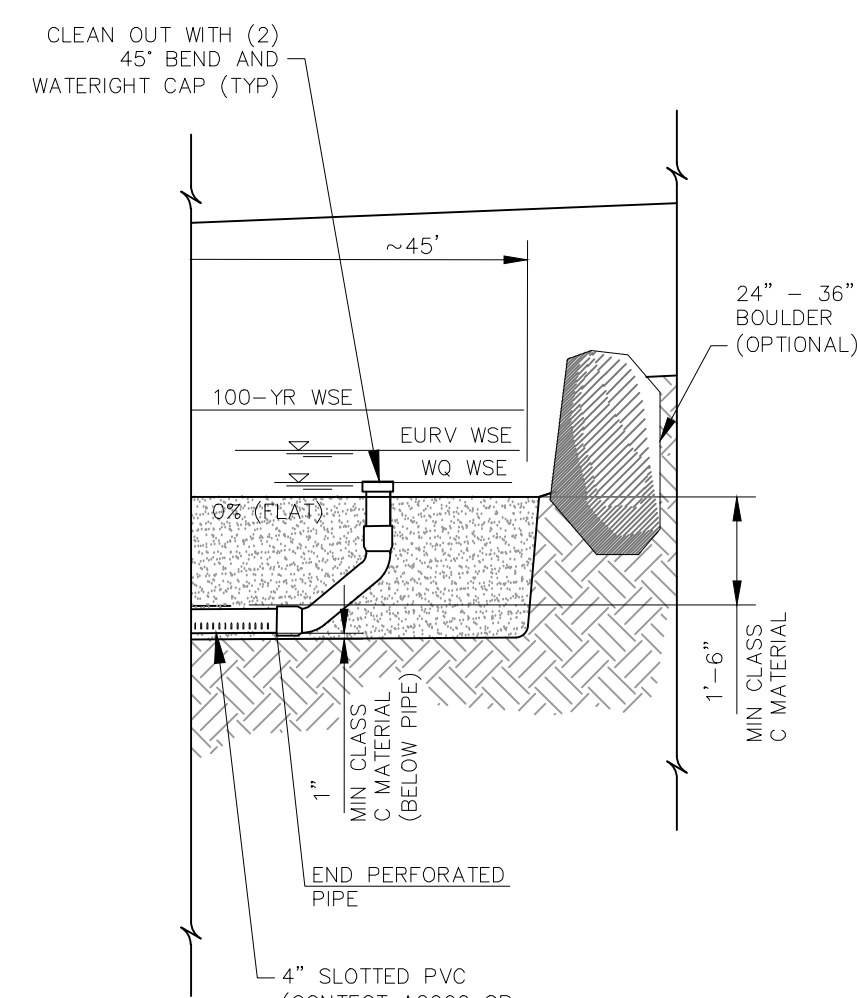
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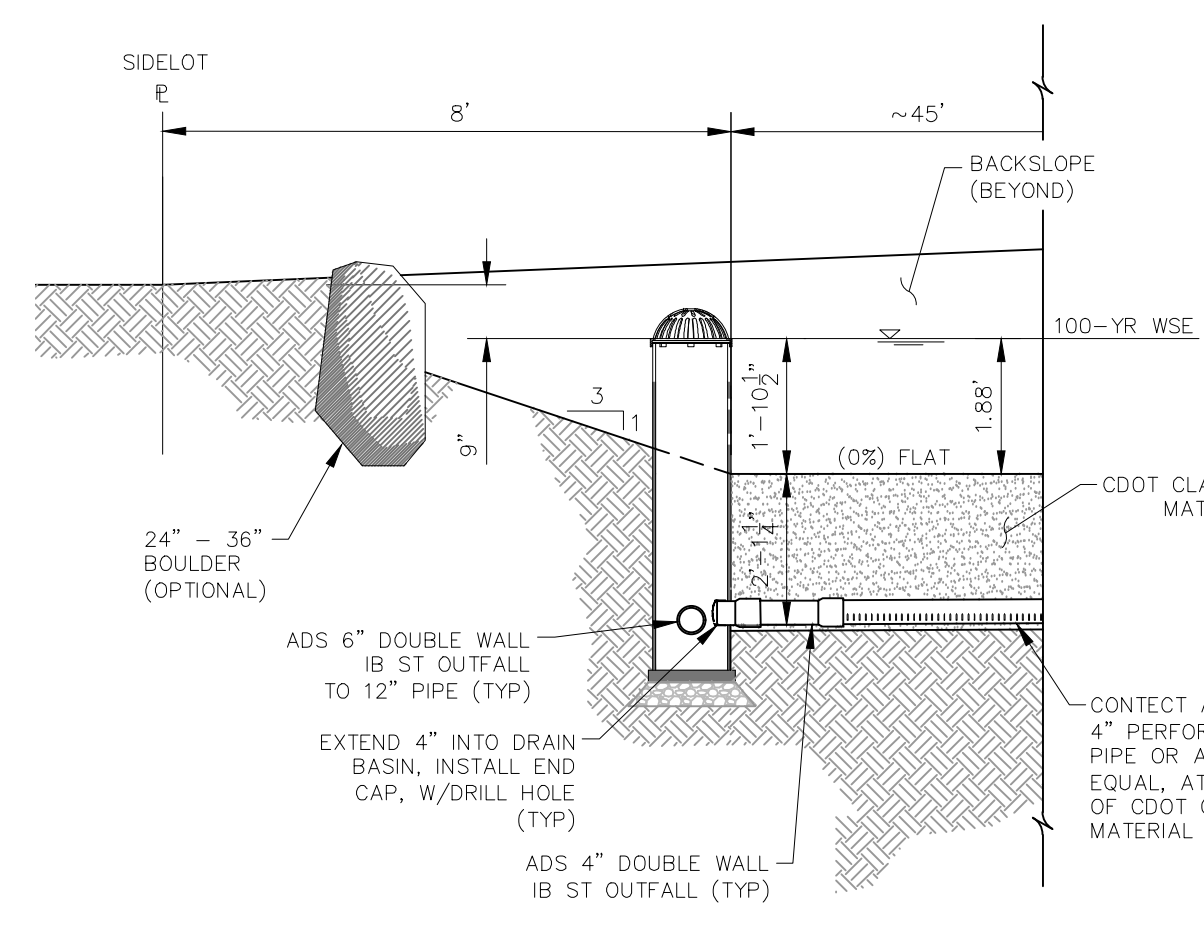
SCREEN DETAILS
NOT TO SCALE



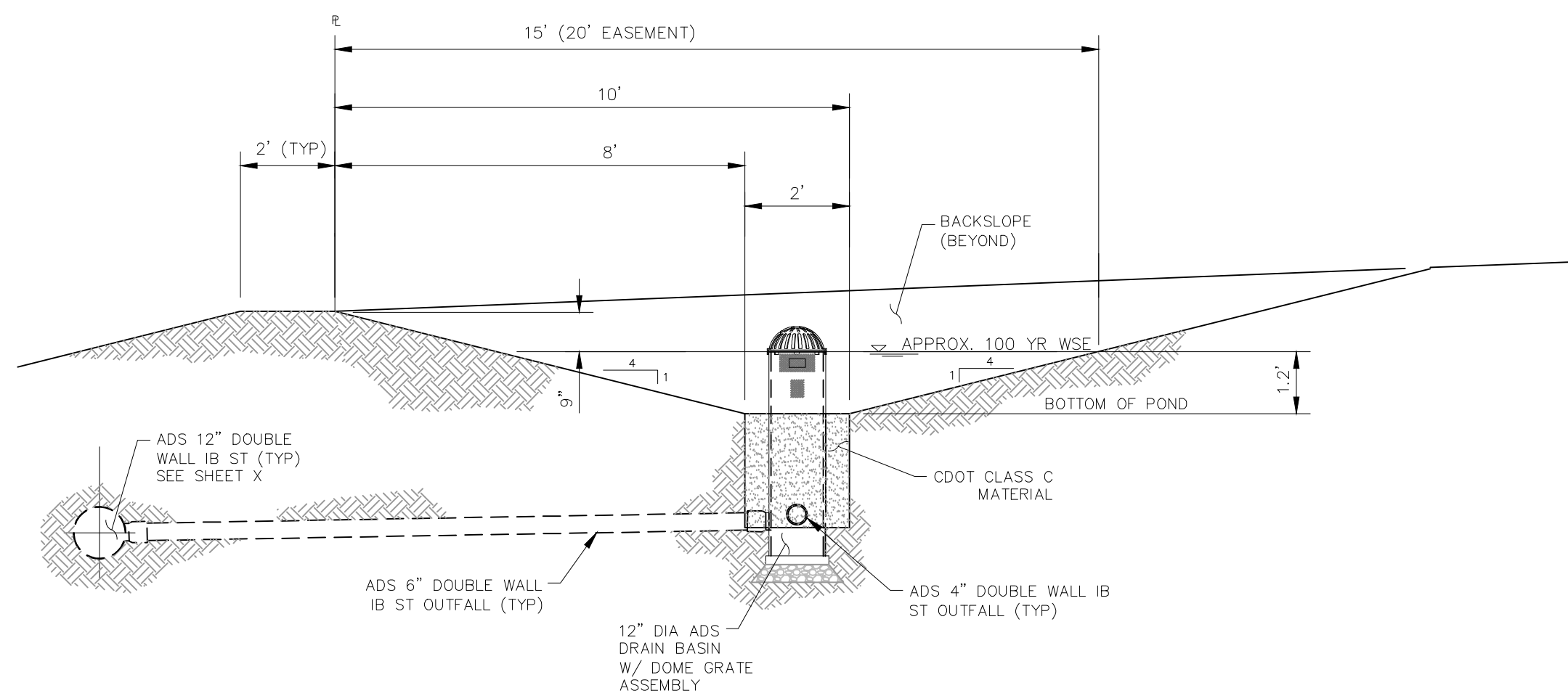
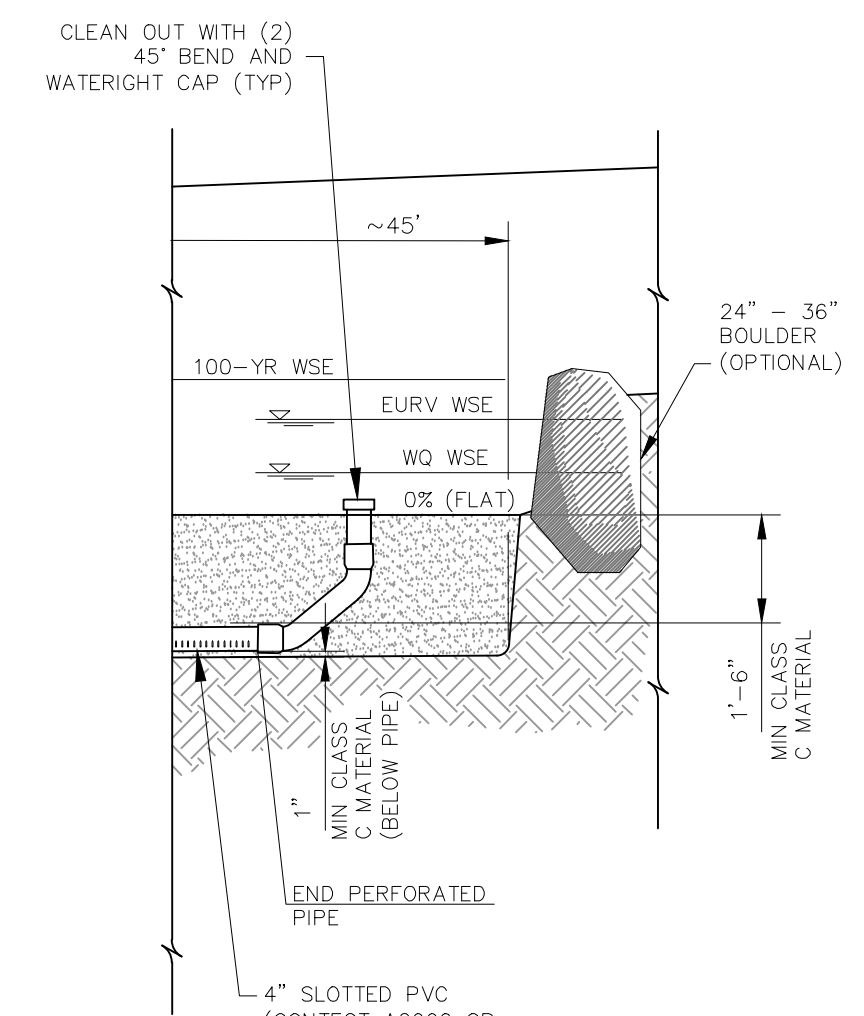
LONGITUDINAL CROSS SECTION DETAILS
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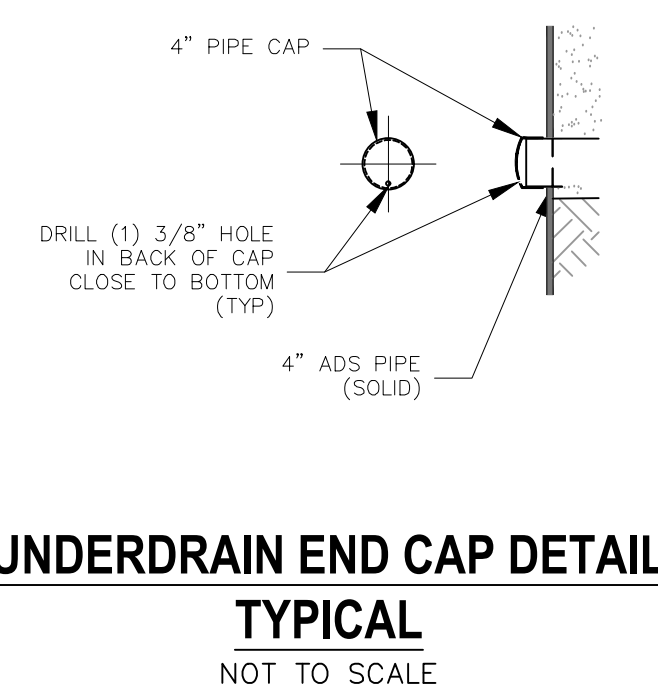
LOCKABLE DOME GRATE ASSEMBLY DETAILS
TYPICAL
NOT TO SCALE



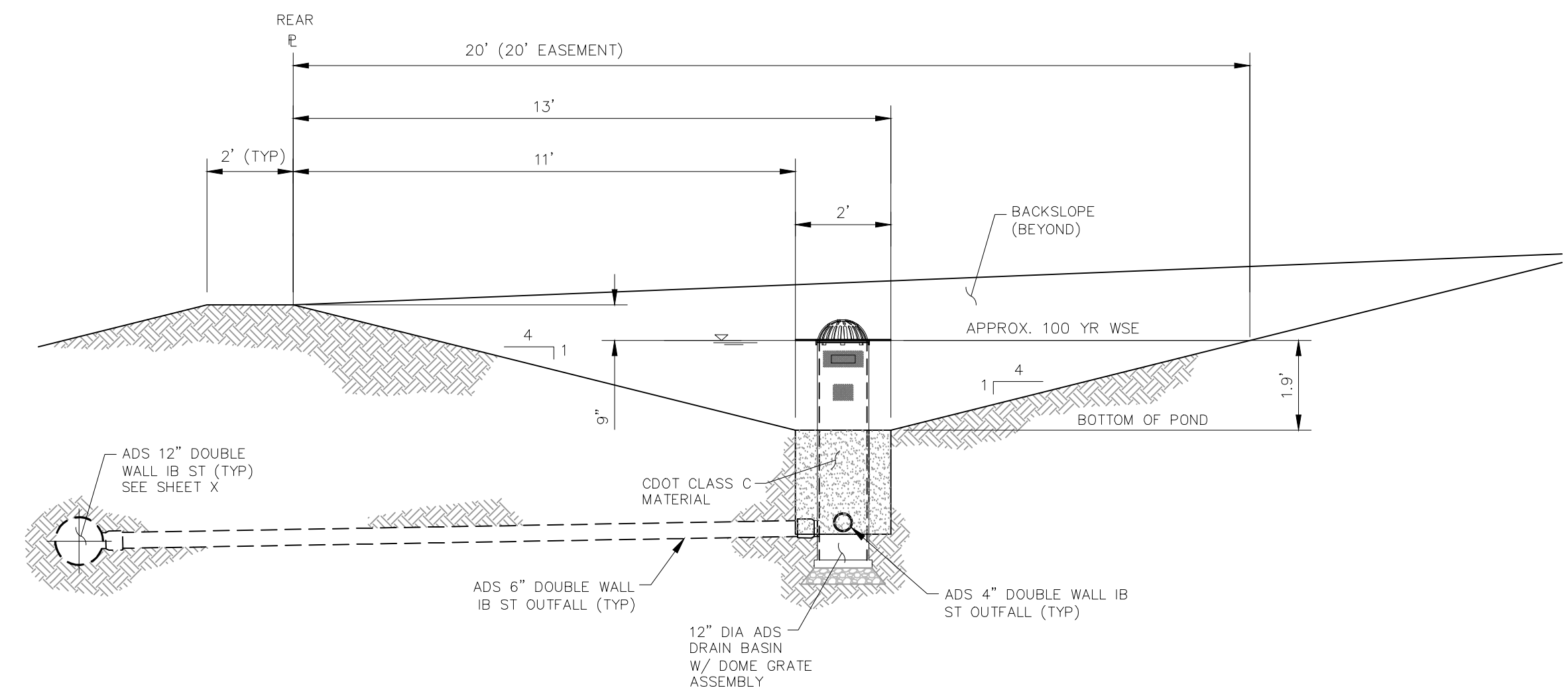
LONGITUDINAL CROSS SECTION DETAILS
NOT TO SCALE



TYPICAL SAND FILTER CROSS SECTION - LOTS 13, 16-20, & 28-40
NOT TO SCALE



UNDERDRAIN END CAP DETAIL
TYPICAL
NOT TO SCALE



TYPICAL SAND FILTER CROSS SECTION - LOTS 14, 15, 21-24 & 41
NOT TO SCALE

File: c:\09007A\Sterling Ranch No. 6\Map\Const\Draw\Storm Plans\ST14.dwg Plotstamp: 11/19/2019 8:22 AM

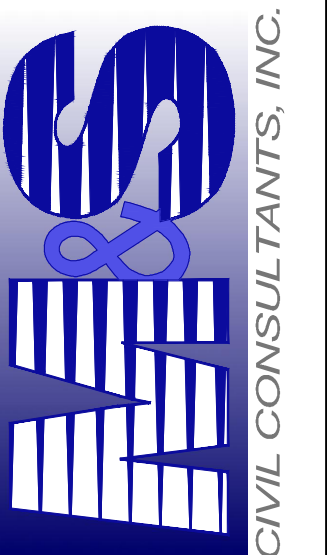
HOMESTEAD AT STERLING RANCH FIL. NO. 2

SAND FILTER DETAILS

PROJECT NO. 09-007 FILE: \Lang\Const\Draw\Storm Plans\ST14.dwg DATE: 11/19/2019

DESIGNED BY: CMN SCALE: SHEET 14 OF 14 ST14
DRAWN BY: CMN HORIZ: 1"=10'
CHECKED BY: CMN VERT: N/A

102 E. Pikes Peak Ave., 3rd Floor
Colorado Springs, CO 80903
PHONE: 719.555.5485



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

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



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CAUTION

EPC 3/5/2020