

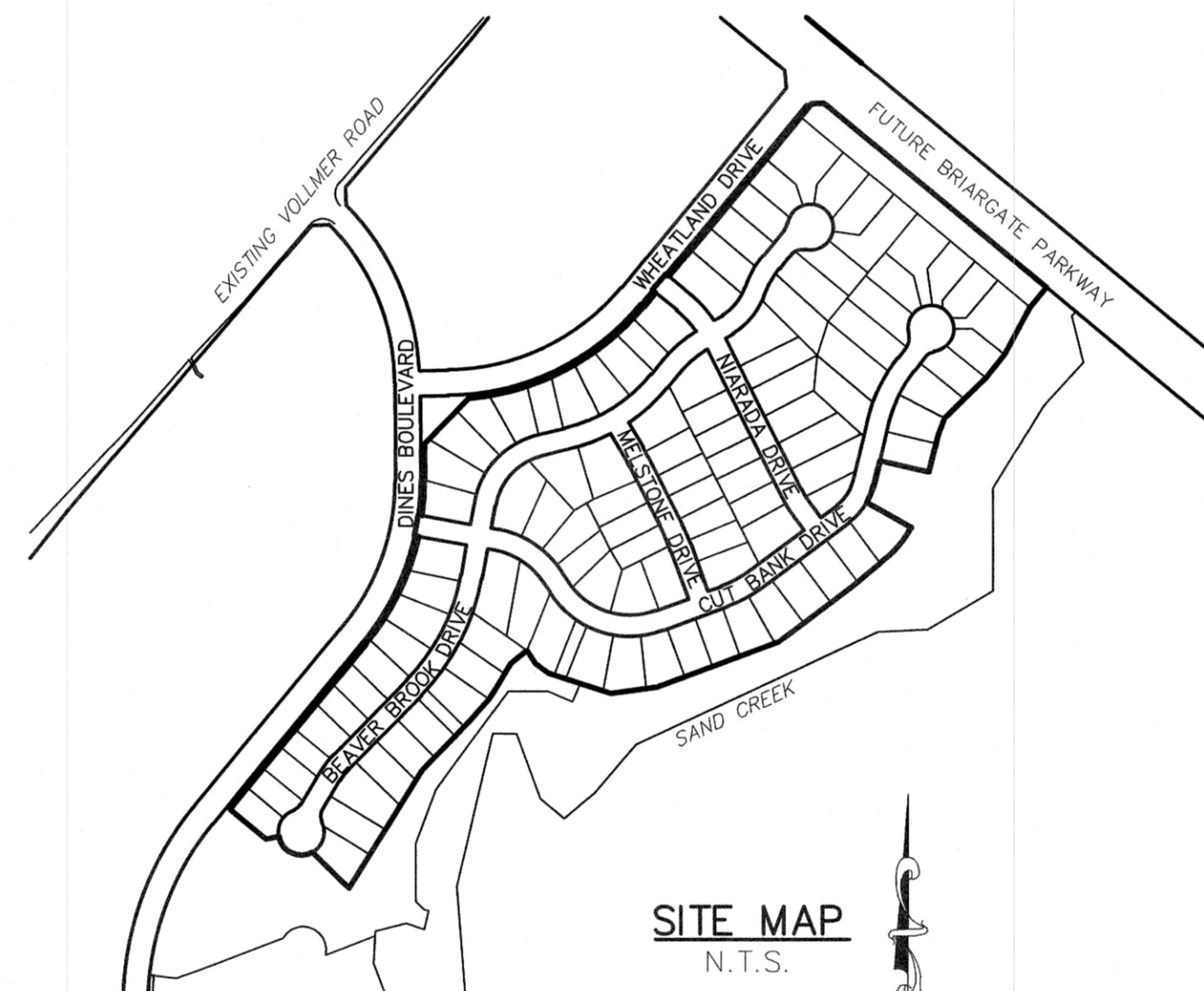
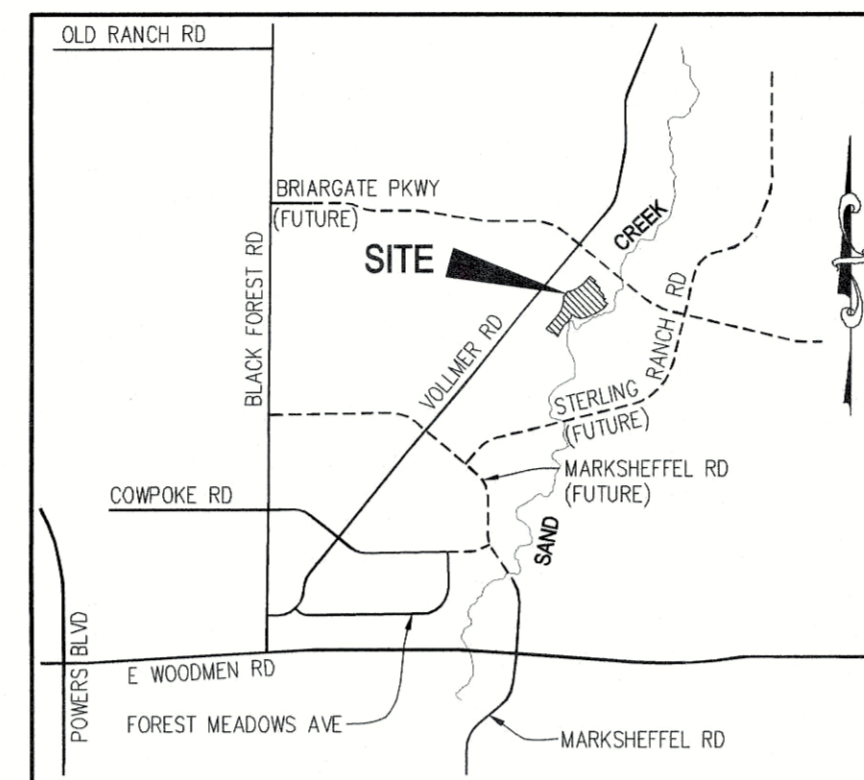
# HOMESTEAD AT STERLING RANCH FILING NO. 2

## COUNTY OF EL PASO, STATE OF COLORADO SANITARY SEWER PLAN

FEBRUARY 2019

### GENERAL NOTES

1. ALL UTILITY CONSTRUCTION TO BE CONDUCTED IN CONFORMANCE WITH THE CURRENT WOODMEN HILLS METROPOLITAN DISTRICT SPECIFICATIONS.
2. ALL PLANS ON THE JOB SITE SHALL BE SIGNED BY THE DISTRICT AND THE DISTRICT'S ENGINEER. ANY REVISION TO THE PLANS SHALL BE SO NOTED WITH THE OLD DRAWING MARKED NOT VALID.
3. ALL STATIONING IS CENTERLINE UNLESS OTHERWISE NOTED. ALL ELEVATIONS ARE CENTERLINE UNLESS OTHERWISE NOTED.
4. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE DISTRICT. THE DISTRICT RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO ITS STANDARDS AND SPECIFICATIONS.
5. ALL WATER AND SEWER SERVICE LOCATIONS SHALL BE CLEARLY MARKED ON EITHER THE CURB HEAD OR THE FACE OF THE CURB, WITH AN "S" FOR SEWER AND A "W" FOR WATER.
6. DUCTILE IRON PIPES, INCLUDING FITTINGS, VALVES AND FIRE HYDRANTS, SHALL BE WRAPPED WITH POLYETHYLENE TUBING, DOUBLE BONDED AT EACH JOINT AND ELECTRICALLY ISOLATED. BONDING AND ANODE CONNECTIONS SHALL BE THOROUGHLY COATED WITH BITUMINOUS COATINGS.
7. ALL DUCTILE IRON PIPE LESS THAN 12 INCHES AND FITTINGS SHALL HAVE CATHODIC PROTECTION USING TWO NO. 6 WIRES WITH 17 LB MAGNESIUM ANODES EVERY 400 FEET AND 9 LB MAGNESIUM ANODES AT EACH FITTING. ALL DUCTILE IRON PIPE 12 INCHES AND GREATER AND FITTINGS SHALL HAVE CATHODIC PROTECTION USING TWO NO. 6 WIRES WITH 17 LB MAGNESIUM ANODES EVERY 300 FEET AND 9 LB MAGNESIUM ANODES AT EACH FITTING.
8. ALL PIPE MATERIAL, BACKFILL AND INSTALLATION SHALL CONFORM TO THE APPLICABLE SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS, COLORADO DEPARTMENT OF TRANSPORTATION, EL PASO COUNTY DEPARTMENT OF TRANSPORTATION, COLORADO SPRINGS UTILITIES AND THE GEOTECHNICAL ENGINEER.
9. COMPACTION TESTS SHALL BE 95% STANDARD PROCTOR AS DETERMINED BY ASTM D698, UNLESS OTHERWISE PROVIDED BY THE DISTRICT OR HIGHER STANDARD AS IMPOSED BY ANOTHER AGENCIES HAVING RIGHT-OF-WAY JURISDICTION. THIS SHALL INCLUDE ALL VALVES, FIRE HYDRANT RUNS, WATER & SEWER SERVICE LINES AND MANHOLES. ALL REPORTS SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL.
10. THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY. THE LOCATION OF ALL UTILITIES SHALL BE FIELD VERIFIED PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. THE DISTRICT SHALL BE NOTIFIED OF ANY DEVIATIONS TO THE LINE AND/OR GRADE AS DEPICTED ON THE PLANS. CONTRACTOR SHALL SUBMIT TO THE DISTRICT AND THE ENGINEER OF RECORD A REPORT OF THE FIELD VERIFIED INFORMATION PRIOR TO THE START OF CONSTRUCTION.
11. ALL BENDS SHALL BE FIELD STAKED PRIOR TO THE START OF CONSTRUCTION.
12. BENDS, DEFLECTION & CUT PIPE LENGTHS SHALL BE USED TO HOLD HORIZONTAL ALIGNMENT OF SEWER AND WATER LINES TO NO MORE THAN 0.5' FROM THE DESIGNED ALIGNMENT. CONSTRUCTION STAKES TO BE AT 25' INTERVALS ALONG CURVES TO ASSURE LOCATION OF PIPE LINE CONSTRUCTION.
13. AT ALL LOCATIONS WHERE CAP AND STUB IS NOTED ON DRAWINGS, PROVIDE A PLUG AT THE END OF THE PIPE JOINT NEAREST THE SPECIFIED STATION. PROVIDE A REVERSE ANCHOR AT ALL WATER LINE PLUGS.
14. ALL UNUSED SALVAGED WATER UTILITY MATERIAL SHALL BE RETURNED TO THE METROPOLITAN DISTRICT AS REQUESTED.
15. AT THE CONTRACTOR'S EXPENSE, ALL UTILITY MAINS SHALL BE SUPPORTED AND PROTECTED SUCH THAT THEY SHALL FUNCTION CONTINUOUSLY DURING CONSTRUCTION OPERATIONS. SHOULD A UTILITY MAIN FAIL AS A RESULT OF THE CONTRACTOR'S OPERATION, IT SHALL BE REPLACED IMMEDIATELY BY THE CONTRACTOR OR BY THE DISTRICT AT FULL COST OF LABOR AND MATERIALS TO THE CONTRACTOR/DEVELOPER.
16. PUMPING OR BYPASS OPERATIONS SHALL BE REVIEWED AND APPROVED BY BOTH THE DISTRICT AND THE DISTRICT ENGINEER PRIOR TO EXECUTION.
17. THE CONTRACTOR SHALL REPLACE OR REPAIR DAMAGE TO ALL SURFACE IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO FENCES, LANDSCAPING, CURB AND GUTTER AND/OR ASPHALT THAT MAY BE CAUSED DURING CONSTRUCTION.
18. ALL CONTRACTORS WORKING ON OR NEAR A WATER OR SEWER FACILITY (TO INCLUDE SERVICE LINE) SHALL HAVE LIABILITY INSURANCE NAMING THE DISTRICT AS AN ADDITIONAL INSURED AND SHALL PROVIDE A CURRENT COPY OF WORKERS COMPENSATION INSURANCE ON FILE WITH THE DISTRICT. NO WORK CAN PROCEED WITHOUT CURRENT CERTIFICATES ON FILE AT THE DISTRICTS' OFFICE.
19. THE CONTRACTOR SHALL NOTIFY THE DISTRICT AND ALL AFFECTED UTILITY COMPANIES ADJACENT TO THE PROPOSED UTILITY CONSTRUCTION A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO THE START OF CONSTRUCTION. A WEEKLY CONSTRUCTION MEETING SHALL BE REQUIRED WITH THE CONTRACTOR, DISTRICT ENGINEER AND ALL OTHER PARTIES AS DEEMED NECESSARY BY THE DISTRICT.
20. COMMENCEMENT OF CONSTRUCTION OF WATER/SEWER SYSTEMS WITHIN THE METROPOLITAN DISTRICT:
  - a. PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING IS REQUIRED A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCEMENT OF WORK. A REPRESENTATIVE OF THE OWNER OR DEVELOPER, A REPRESENTATIVE OF THE CONTRACTOR AND DESIGN ENGINEER ARE REQUIRED TO ATTEND. CONTACT THE DISTRICT TO SCHEDULE THE PRE-CONSTRUCTION MEETING. NO PRE-CONSTRUCTION MEETING CAN BE SCHEDULED PRIOR TO FOUR (4) SIGNED/ APPROVED PLAN SETS ARE RECEIVED BY THE DISTRICT.
  - b. THE CONTRACTOR IS REQUIRED TO NOTIFY THE DISTRICT A MINIMUM OF 48 HOURS AND A MAXIMUM OF 2 WEEKS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY AFFECTED UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION ADJACENT TO THE KNOWN UTILITY LINES.
21. TESTING OF FACILITIES:
  - a. THE CONTRACTOR SHALL NOTIFY THE DISTRICT A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO THE START OF ANY TESTING.
  - b. ALL SECTIONS OF WATER LINE ARE TO MEET THE FOLLOWING PRESSURE TESTING REQUIREMENTS:
    - TEST 100% OF ALL LINES
    - MUST PASS PRESSURE TEST TO 200 PSI FOR TWO HOURS (UNLESS OTHERWISE APPROVED ON THE PLANS).
  - c. ALL SANITARY SEWER FACILITIES ARE TO MEET THE FOLLOWING TESTING REQUIREMENTS
    - ALL LINES SHALL BE JET CLEANED PRIOR TO VACUUM OR PRESSURE TESTING
    - ALL MANHOLES SHALL BE VACUUM TESTED WITH DISTRICT STAFF PRESENT PRIOR TO CCTV INSPECTION.
    - SEWER MAINS TO BE PRESSURE TEST PRIOR TO CCTV INSPECTION
    - ALL LINES SHALL BE CCTV INSPECTED AND VIDEO SHALL TO BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL.
22. PRELIMINARY ACCEPTANCE SHALL BE DEFINED AS THE POINT IN TIME THAT THE DISTRICT ACCEPTS THE FACILITY FOR USE. ALL SURFACE IMPROVEMENTS AND RESTORATION SHALL BE COMPLETED WITHIN 30 DAYS OF COMMENCEMENT. SHOULD THE CONTRACTOR FAIL TO COMPLETE ALL SURFACE IMPROVEMENTS AND RESTORATION WITHIN 30 DAYS OF COMMENCEMENT OF SERVICE, THE DISTRICT, AT THEIR DISCRETION, MAY ELECT TO COMPLETE THE IMPROVEMENTS AT THE CONTRACTORS COST.
23. FINAL ACCEPTANCE BY THE DISTRICT OF ANY LINE OR SYSTEM SHALL NOT OCCUR UNTIL COMPLETION OF FINAL ASPHALT LAYERS AND/OR FINAL COMPLETION AND/OR RESTORATION OF ALL SURFACE IMPROVEMENTS. THE WARRANTY PERIOD FOR ALL FACILITIES PRIOR TO FINAL ACCEPTANCE SHALL BE 24 MONTHS COMMENCING AFTER PRELIMINARY ACCEPTANCE.
24. ACCEPTANCE:
  - a. THE DISTRICT MAY GIVE PRELIMINARY ACCEPTANCE ONCE ALL OF THE TESTS ON ALL THE LINES HAVE BEEN COMPLETED AND A WALK-THRU HAS OCCURRED.
  - b. A SECOND ACCEPTANCE MAY OCCUR ONCE FIRST LIFT OF ASPHALT GOES DOWN AND A SECOND WALK-THRU OF THE SYSTEM OCCURS. IF ALL FACILITIES ARE CLEAN AND ACCESSIBLE, A FINAL ACCEPTANCE MAY OCCUR (THE DISTRICT MAY REQUIRE CLEANING AND RE-VIDEO OF THE SYSTEM, DEPENDING ON THE SEVERITY OF THE CONTAMINATION).
25. ALL WATER AND SEWER MAINS, INCLUDING SERVICE LINES, SHALL HAVE "AS-BUILT" DRAWINGS PREPARED AND APPROVED PRIOR TO PRELIMINARY ACCEPTANCE BY THE DISTRICT.
26. ALL COMMERCIAL/BUSINESS DEVELOPMENTS SHALL HAVE AN EIGHT INCH (MIN.) WATER MAIN LOOPED THROUGH THE PROPOSED PROPERTY WITH GATE VALVES LOCATED WHERE THE MAIN ENTERS THE PROPERTY LINE. AN EIGHT INCH SEWER MAIN SHALL BE INSTALLED FOR SERVICE TO COMMERCIAL/BUSINESS DEVELOPMENTS, AND A MANHOLE SHALL BE LOCATED WHERE THE MAIN ENTERS THE PROPERTY. THE END OF THE MAINS SHALL BE MARKED WITH THE APPROPRIATE COLORED CARSONITE MARKER ALONG WITH TRACER WIRE.
27. AFTER REVIEW AND APPROVAL OF PLANS FOR THE EXTENSION OF LINES, FACILITIES AND/OR SERVICES, CONSTRUCTION MUST BE COMMENCED WITHIN 18 MONTHS FOR RESIDENTIAL SUBDIVISIONS AND 12 MONTHS FOR ANY COMMERCIAL INSTALLATIONS.
28. INSPECTION FEES: CALL THE DISTRICT (719-495-2500) FOR FEE SCHEDULE.



### WASTEWATER SYSTEM INSTALLATION NOTES

1. SANITARY SEWER LENGTHS ARE MH CENTER-MH CENTER. ALL SANITARY SEWER PIPES SHALL BE SDR 35 PVC OR EQUAL SEWER LINES MAY NOT EXCEED 7% GRADE FOR ANY SIZE WITHOUT PRIOR APPROVAL OF THE DISTRICT. ALL NEWLY CONSTRUCTED RESIDENTIAL SANITARY SEWER TAPS SHALL USE PRE-MANUFACTURED IN-LINE PVC PUSH-ON WYES. TAPPING SADDLES MAY ONLY BE USED FOR TAPPING PRE-EXISTING MAINS.
2. ALL SANITARY SEWER MANHOLES SHALL BE WRAPPED WITH RU116 - RUBR-NEK JOINT WRAP OR EQUIVALENT AND COATED.
3. COMMENCEMENT OF USE OF SEWER LINES AND/OR SYSTEMS:
  - a. NO SANITARY SEWER FACILITY SHALL BE PLACED IN SERVICE UNTIL AFTER THE COMPLETION OF ALL JET CLEANING, PRESSURE TESTING, CCTV INSPECTION, COMPACTION TESTING AND AS-BUILT DRAWINGS ARE SUBMITTED AND APPROVED BY THE DISTRICT.
  - b. NO SANITARY SEWER FACILITY SHALL BE PLACED IN SERVICE UNTIL ALL SERVICE LINES ARE COMPLETED AND THE FIRST LIFT OF ASPHALT IS COMPLETED OVER THE LINE. IN THE CASE WHERE NO ASPHALT IS TO BE PLACED OVER THE LINE, ANY REQUIRED SURFACE IMPROVEMENTS SHALL BE COMPLETED PRIOR TO USE OF THE FACILITY.
  - c. ALL NECESSARY EASEMENTS (PLATTED OR DEEDED) ARE DEDICATED, EXECUTED BY THE DISTRICT, AND RECORDED.
  - d. DOWNSTREAM PLUG CAN BE REMOVED ONCE FIRST LIFT OF ASPHALT IS DOWN AND THE ABOVE REQUIREMENTS ARE MET.

### 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

### LEGEND

- |       |                         |
|-------|-------------------------|
| ROW   | RIGHT OF WAY            |
| FL-FL | FLOWLINE TO FLOWLINE    |
| BOP   | BOTTOM OF PIPE          |
| TOP   | TOP OF PIPE             |
| SS    | SANITARY SEWER          |
| STM   | STORM SEWER             |
| WL    | WATER                   |
| STA   | STATION                 |
| 9     | LOT NUMBER              |
| BT    | BEGIN TRANSITION        |
| ET    | END TRANSITION          |
| PCR   | POINT OF CURB RETURN    |
| PRC   | POINT OF REVERSE CURVE  |
| PCC   | POINT OF COMPOUND CURVE |
| PC    | POINT OF CURVE          |
| PT    | POINT OF TANGENT        |
| *     | SPECIAL BEDDING NOTES   |

### 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.  
20 BOULDER CRESCENT, SUITE 110  
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

### DESIGN ENGINEER'S STATEMENT:

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

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

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

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

### WATER & SEWER MAIN EXTENTIONS

ANY CHANGES OR ALTERATIONS AFFECTING THE GRADE, ALIGNMENT, ELEVATION AND/OR DEPTH OF COVER OF ANY WATER OR SEWER MAINS OR OTHER APPURTENANCE SHOWN ON THIS DRAWING SHALL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ALL OPERATIONAL DAMAGES AND DEFECTS IN INSTALLATION AND MATERIAL FOR MAINS AND SERVICES FROM THE DATE OF APPROVAL UNTIL FINAL ACCEPTANCE IS ISSUED.

SIGNED: *James F. Morley*  
JAMES F. MORLEY

DATE: 4/27/2020

### DISTRICT APPROVALS

THE STERLING RANCH METROPOLITAN DISTRICT RECOGNIZES THE DESIGN ENGINEER AS HAVING RESPONSIBILITY FOR THE DESIGN AND HAS LIMITED ITS SCOPE OF REVIEW ACCORDINGLY.

### STERLING RANCH METROPOLITAN DISTRICT WASTEWATER DESIGN APPROVAL

DATE: 4/27/2020

BY: *Virgil A. Sanchez*

PROJECT NO. 09-007

IN CASE OF ERRORS OR OMISSIONS WITH THE WATER DESIGN AS SHOWN ON THIS DOCUMENT THE STANDARDS AS DEFINED IN THE "RULES AND REGULATIONS FOR INSTALLATION OF WASTEWATER MAINS AND SERVICES" SHALL RULE.

APPROVAL EXPIRES 180 DAYS FROM DESIGN APPROVAL.

### SHEET INDEX

- |         |  |
|---------|--|
| SHEET 1 | TITLE SHEET  |
| SHEET 2 | PLAN & PROFILE - BEAVER BROOK DRIVE STA 1+00.00 TO 15+00.00  |
| SHEET 3 | PLAN & PROFILE - BEAVER BROOK DRIVE STA 15+00.00 TO 23+14.80 |
| SHEET 4 | PLAN & PROFILE - CUT BANK DRIVE STA 3+13.48 TO 18+17.33      |
| SHEET 5 | PLAN & PROFILE - MELSTONE DRIVE STA 0+00.00 TO 4+46.06       |
|         | NARADA DRIVE STA 0+00.00 TO 4+80.89                          |



HOMESTEAD AT STERLING RANCH FILING NO. 2

SANITARY SEWER PLANS

PROJECT NO. 09-007 DATE: 02/13/2019  
DESIGNED BY: JWP HORIZONTAL: N/A  
DRAWN BY: JWP VERTICAL: N/A  
CHECKED BY: GW

SS01

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



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

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



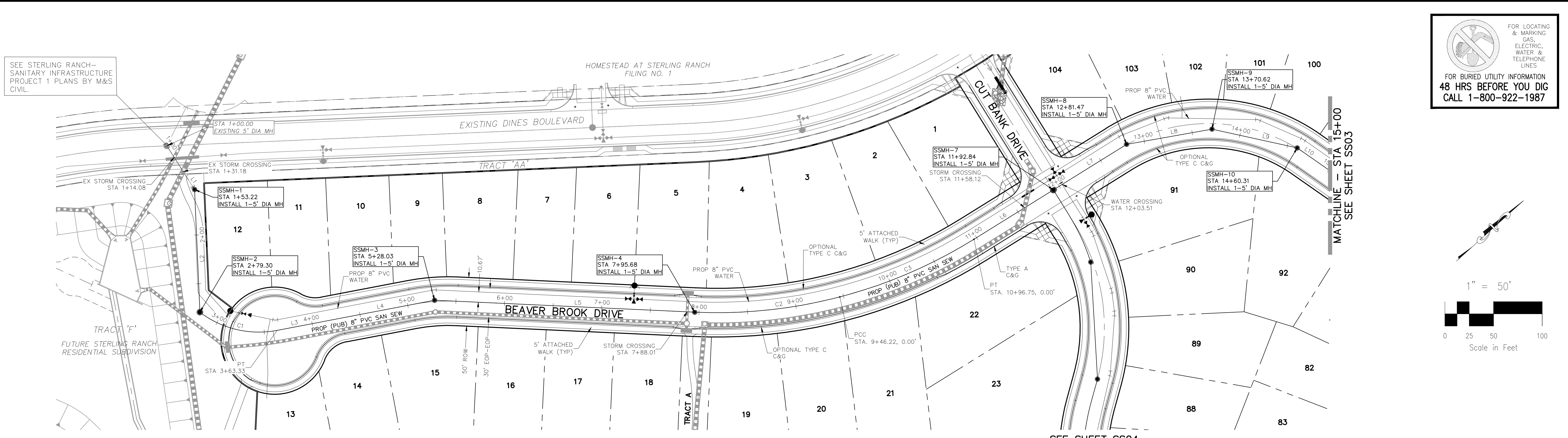
REVISIONS: NO. DATE: DESCRIPTION:

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CAUTION



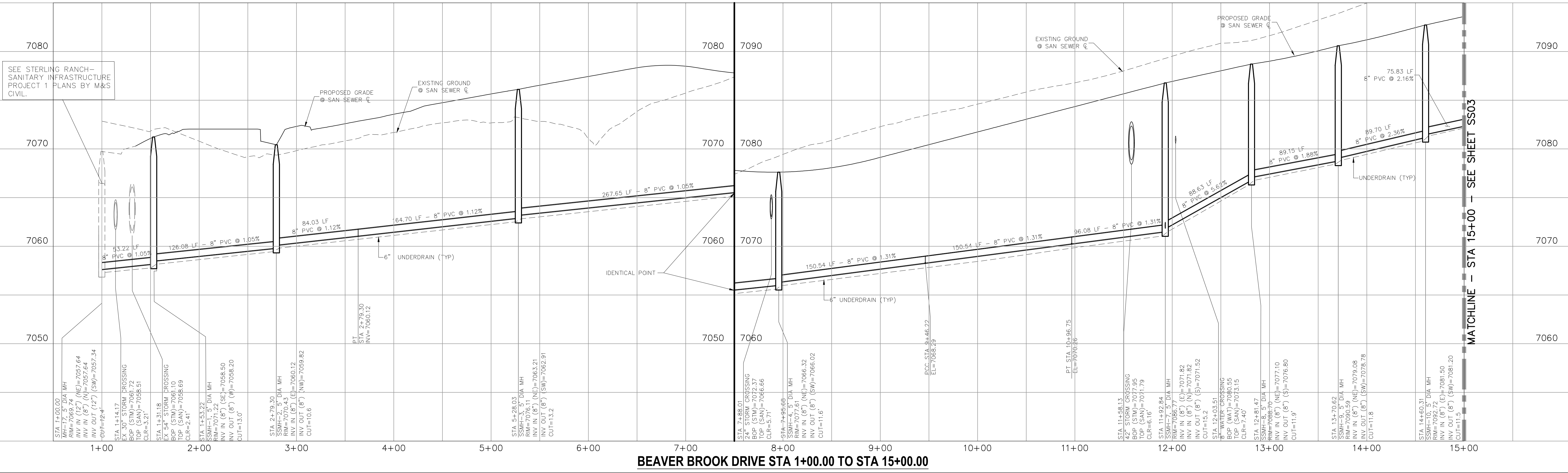
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**BEAVER BROOK DRIVE  
STA 1+00.00 TO STA 15+00.00**

LINE	LENGTH	DIRECTION
L1	53.22'	S80°26'12"E
L2	126.08'	S50°26'12"E
L3	164.70'	N31°11'28"E
L4	164.70'	N31°11'28"E
L5	267.65'	N44°38'31"E
L6	96.08'	N10°08'30"E
L7	88.63'	N10°08'30"E
L8	89.15'	N31°50'00"E
L9	89.70'	N54°27'43"E
L10	75.83'	N76°55'15"E

CURVE	DELTA	RADIUS	LENGTH
C1	48°08'52"	100.00'	84.03'
C2	17°15'01"	500.00'	150.54'
C3	17°15'01"	500.00'	150.54'



**BEAVER BROOK DRIVE STA 1+00.00 TO STA 15+00.00**

SEE STERLING RANCH - SANITARY INFRASTRUCTURE PROJECT 1 PLANS BY M&S CIVIL.

**MATCHLINE - STA 15+00 - SEE SHEET SS03**

**MATCHLINE - STA 1+00 - SEE SHEET SS04**

CAUTION

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

PROJECT NO. 09-007
DATE: 02/13/2019

DESIGNED BY: JWP
HORIZONTAL SCALE: 1"=50'

DRAWN BY: JWP
VERTICAL SCALE: 1"=5'

CHECKED BY: GW
SHEET 2 OF 5

**SS02**

**HOMESTEAD AT STERLING RANCH FILING NO. 2  
SANITARY SEWER PLANS**

20 BOULDER CRESCENT, SUITE 110  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.4485

**CIVIL CONSULTANTS, INC.**

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

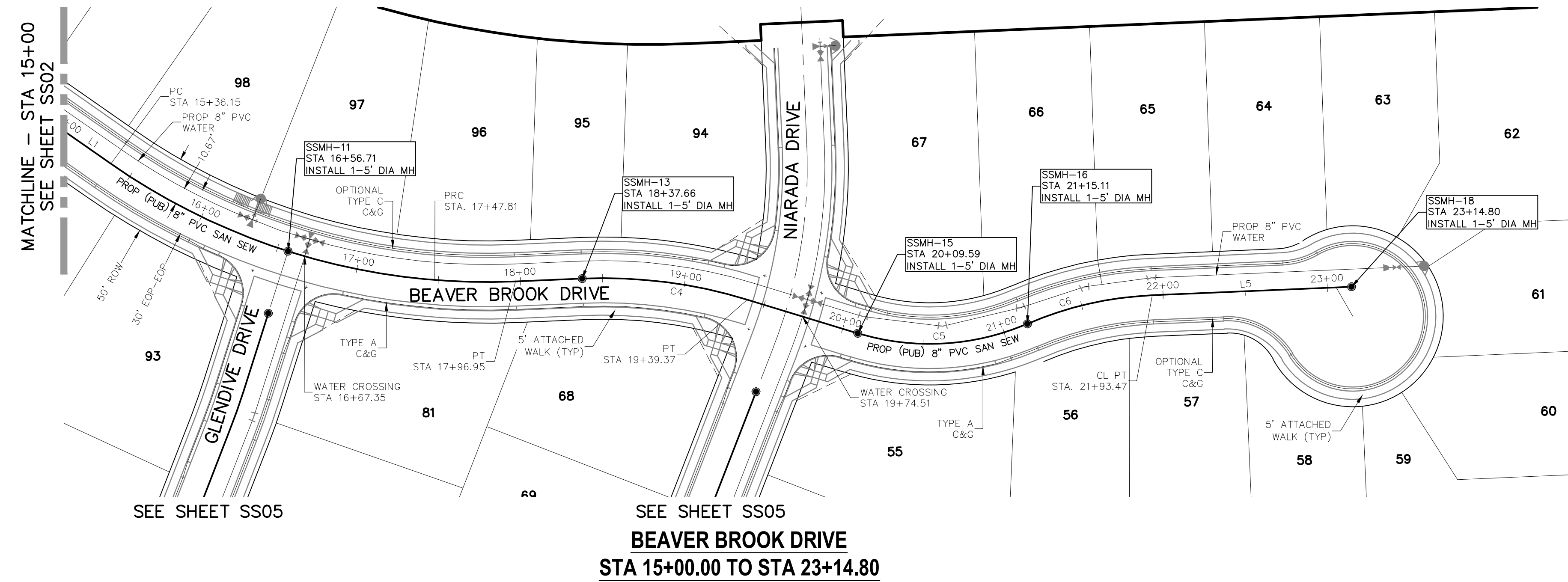
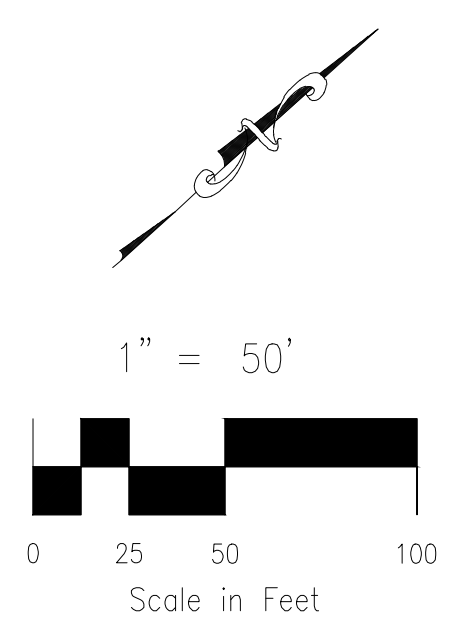
PROFESSIONAL ENGINEER  
NO. 37160  
MARC A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:

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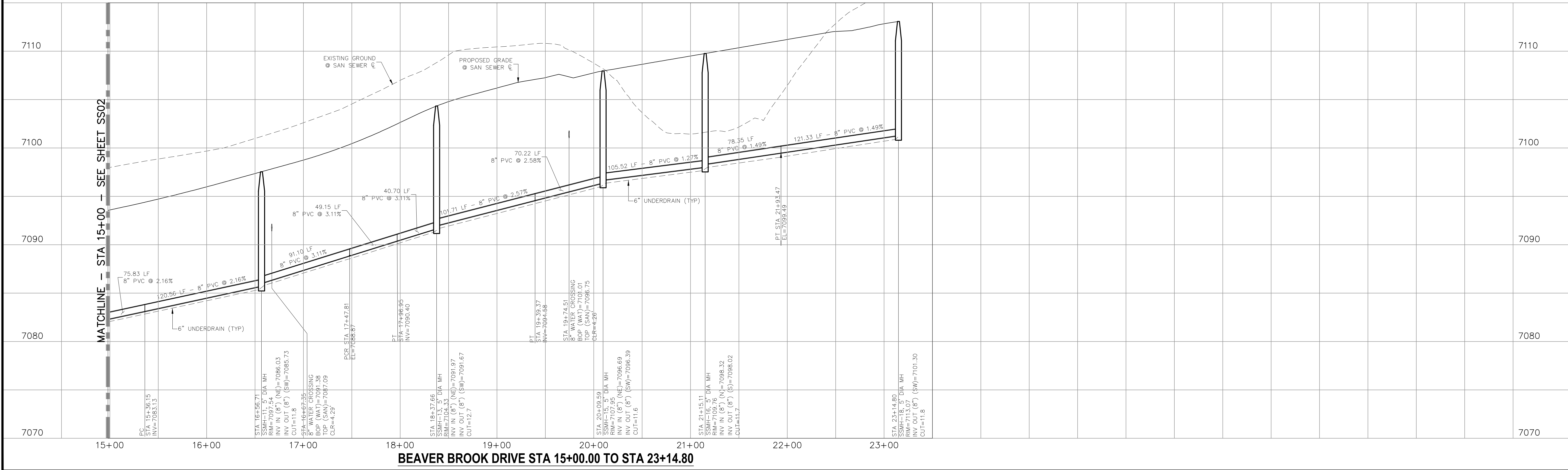




**BEAVER BROOK DRIVE  
STA 15+00.00 TO STA 23+14.80**

LINE	LENGTH	DIRECTION
L1	75.83'	N76°55'15"E
L5	121.33'	N39°33'48"E

CURVE	DELTA	RADIUS	LENGTH
C4	19°25'32"	300.00'	101.71'
C5	40°18'23"	150.00'	105.52'
C6	20°52'51"	215.00'	78.35'



**BEAVER BROOK DRIVE STA 15+00.00 TO STA 23+14.80**

**HOMESTEAD AT STERLING RANCH FILING NO. 2**

**SANITARY SEWER PLANS**

PROJECT NO. 09-007 DATE: 02/13/2019

DESIGNED BY: JWP SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'

DRAWN BY: JWP SHEET 3 OF 5

CHECKED BY: GW SS03

20 BOULDER CRESCENT SUITE 110  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.4485

**M&S CIVIL CONSULTANTS, INC.**

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

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

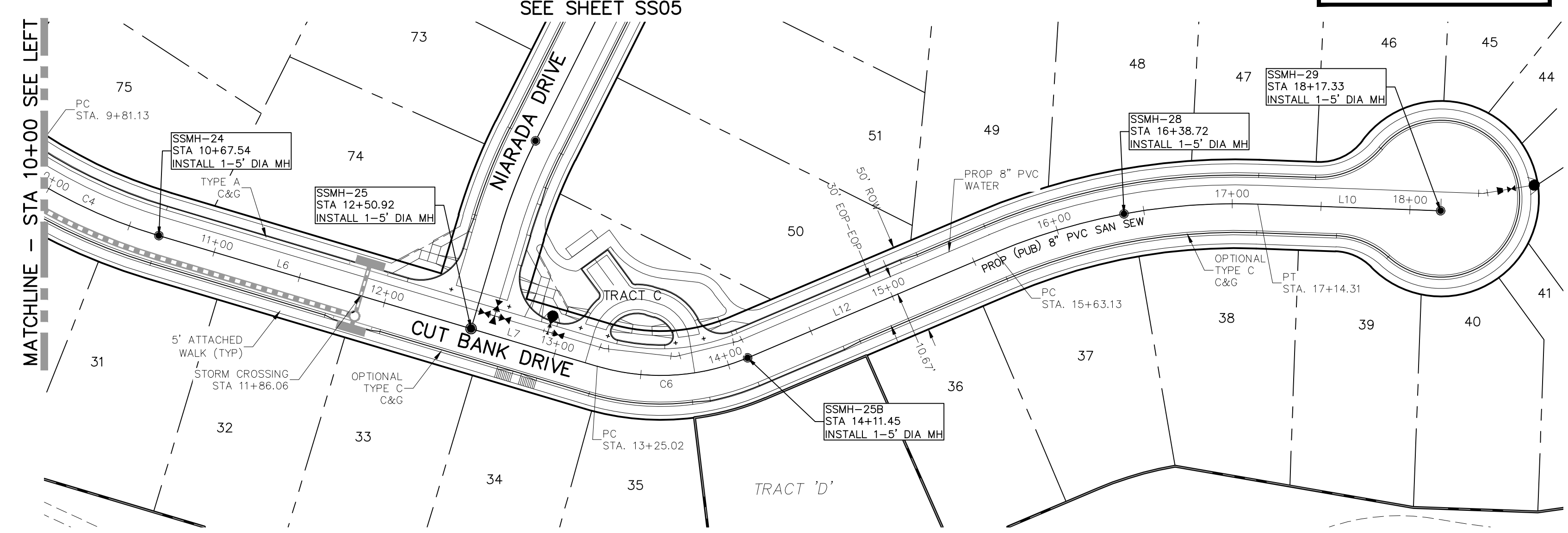
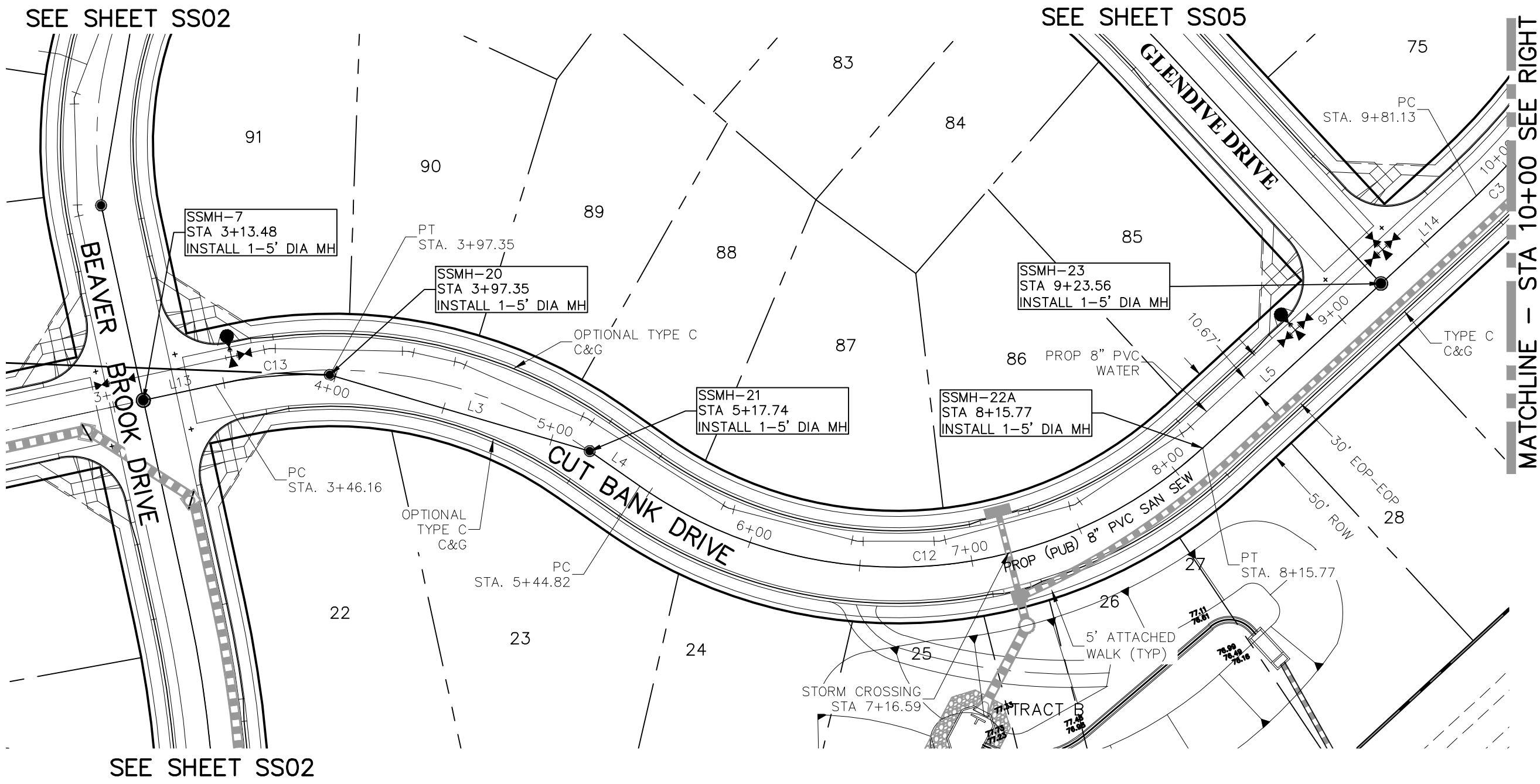
REVISIONS:

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

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**CAUTION**





**CUT BANK DRIVE  
STA 3+13.48 TO STA 18+17.33**

- \*NOTE:**  
SLOPES LESS THAN 1.0% WILL REQUIRE SELECT BEDDING AND SPECIAL COMPACTION METHODS. THE FOLLOWING PRACTICES SHALL BE USED.
- AFTER COMPLETION OF THE TRENCH EXCAVATION AND PROPER PREPARATION OF THE FOUNDATION, SIX INCHES (6") OF BEDDING MATERIAL SHALL BE PLACED ON THE TRENCH BOTTOM FOR SUPPORT UNDER THE PIPE AND COMPACTED.
  - BELL HOLES SHALL BE DUG DEEP ENOUGH TO PROVIDE A MINIMUM OF TWO INCHES (2") BETWEEN THE BELL AND THE BEDDING MATERIAL.
  - AFTER THE PIPE IS ADJUSTED FOR LINE AND GRADE, AND THE JOINT IS MADE, THE BEDDING MATERIAL SHALL BE CAREFULLY PLACED AND TAMPED UNDER THE HAUNCHES OF THE PIPE AND IN THE PREVIOUSLY DUG BELL HOLES.
  - LIMITS OF BEDDING SHALL BE FROM SIX INCHES (6") BELOW THE BOTTOM OF PIPE TO TWELVE INCHES (12") ABOVE THE TOP OF THE PIPE.
  - BEDDING MATERIAL SHALL BE A CLEAN SQUEEGEE SAND FREE OF CORROSIVE PROPERTIES AND SHALL CONFORM TO THE FOLLOWING GRADATION LIMITS.
  - FOUNDATION MATERIAL SHALL BE UNIFORMLY GRADED WASHED ROCK CONFORMING TO THE FOLLOWING SIEVE ANALYSIS. A MINIMUM OF TWELVE INCHES (12") OF FOUNDATION MATERIAL SHALL BE PLACED BELOW THE PIPE TO THE TRENCH BOTTOM.

**NOTE:**  
NO SERVICES SHALL BE ALLOWED ON ANY DEAD END SANITARY SEWER STUBS

**SANITARY SEWER LINE TABLE**

LINE	LENGTH	DIRECTION
L3	120.39'	S51°16'16"E
L4	27.07'	S32°39'15"E
L5	107.80'	N69°43'31"E

**SANITARY SEWER CURVE TABLE**

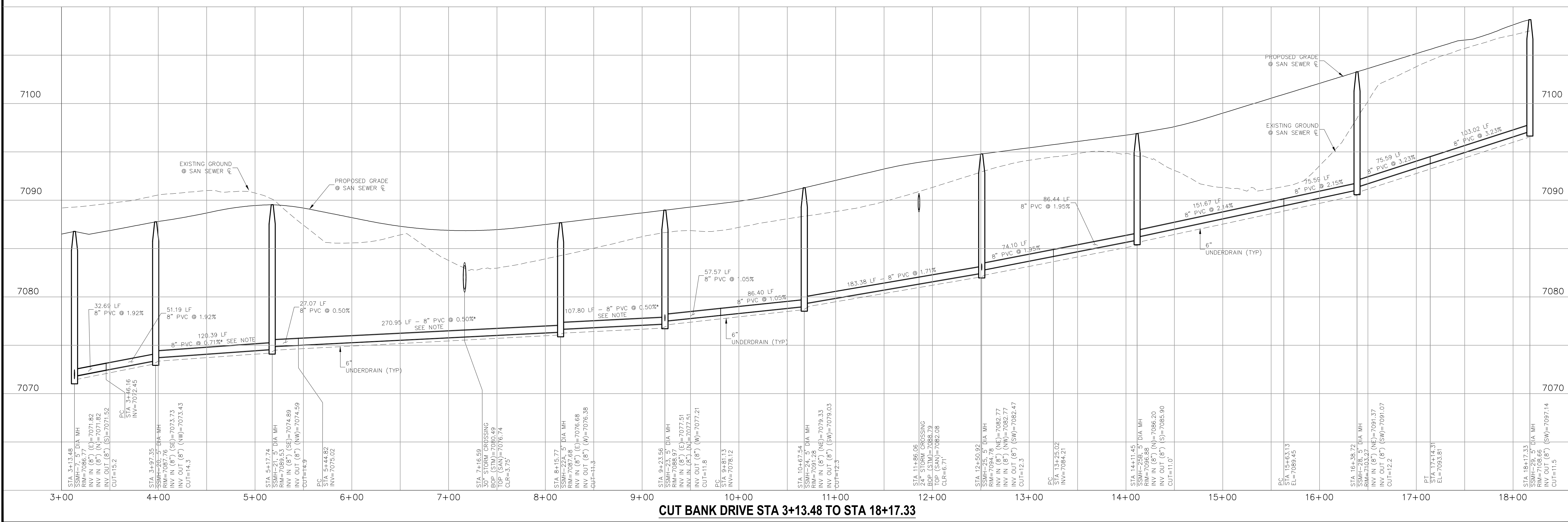
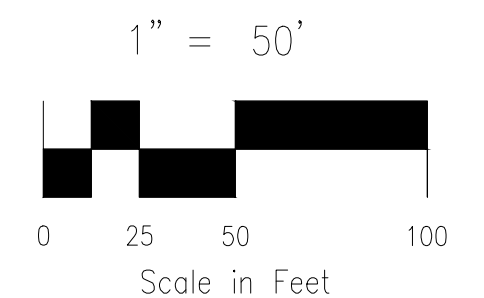
CURVE	DELTA	RADIUS	LENGTH
C3	16°30'07"	300.00'	86.40'

**SANITARY SEWER LINE TABLE**

LINE	LENGTH	DIRECTION
L6	183.38'	N53°13'24"E
L7	74.10'	N53°13'24"E
L10	103.02'	N38°42'46"E
L12	151.67'	N13°36'16"E
L13	32.69'	S79°51'55"E
L14	57.57'	N69°43'31"E

**SANITARY SEWER CURVE TABLE**

CURVE	DELTA	RADIUS	LENGTH
C4	16°30'07"	300.00'	86.40'
C6	39°37'09"	125.00'	86.44'
C12	77°37'14"	200.00'	270.95'
C13	14°40'43"	199.81'	51.19'



**CUT BANK DRIVE STA 3+13.48 TO STA 18+17.33**

**HOMESTEAD AT STERLING RANCH FILING NO. 2**

**SANITARY SEWER PLANS**

DATE: 02/13/2019

PROJECT NO. 09-007

SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'

DESIGNED BY: JWP

DRAWN BY: JWP

CHECKED BY: GW

SHEET 4 OF 5

SS04

20 BOULDER CRESCENT SUITE 110  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.4485

**CIVIL CONSULTANTS, INC.**

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

PROFESSIONAL REGISTERED ENGINEER  
STATE OF COLORADO  
NO. 31160  
VIRGIL A. SANCHEZ, P.E., NO. 37160

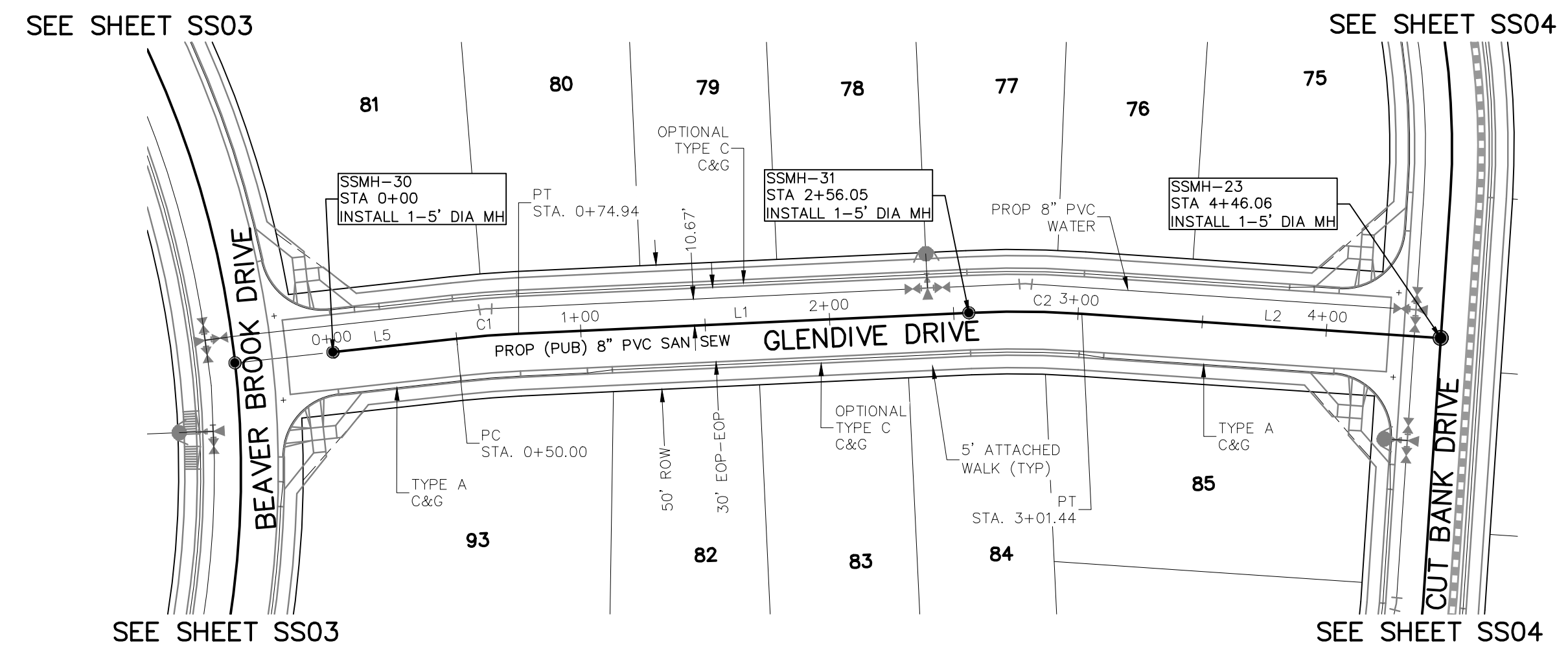
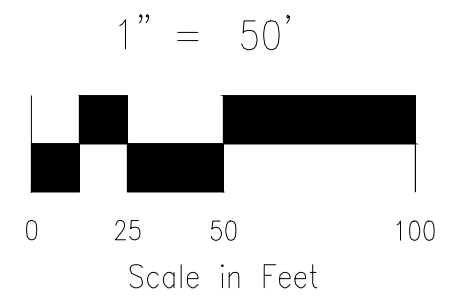
REVISIONS:

NO.	DATE	BY	DESCRIPTION

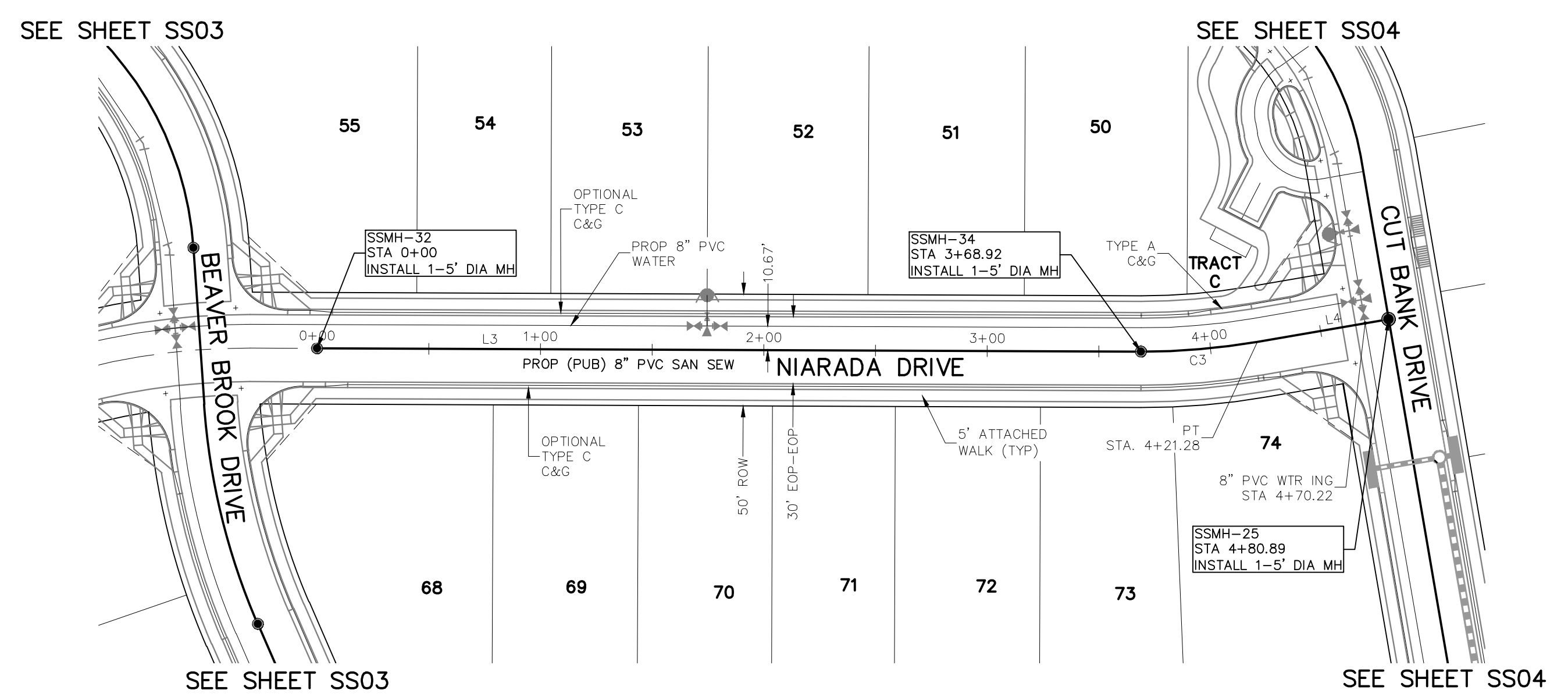
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

**CAUTION**





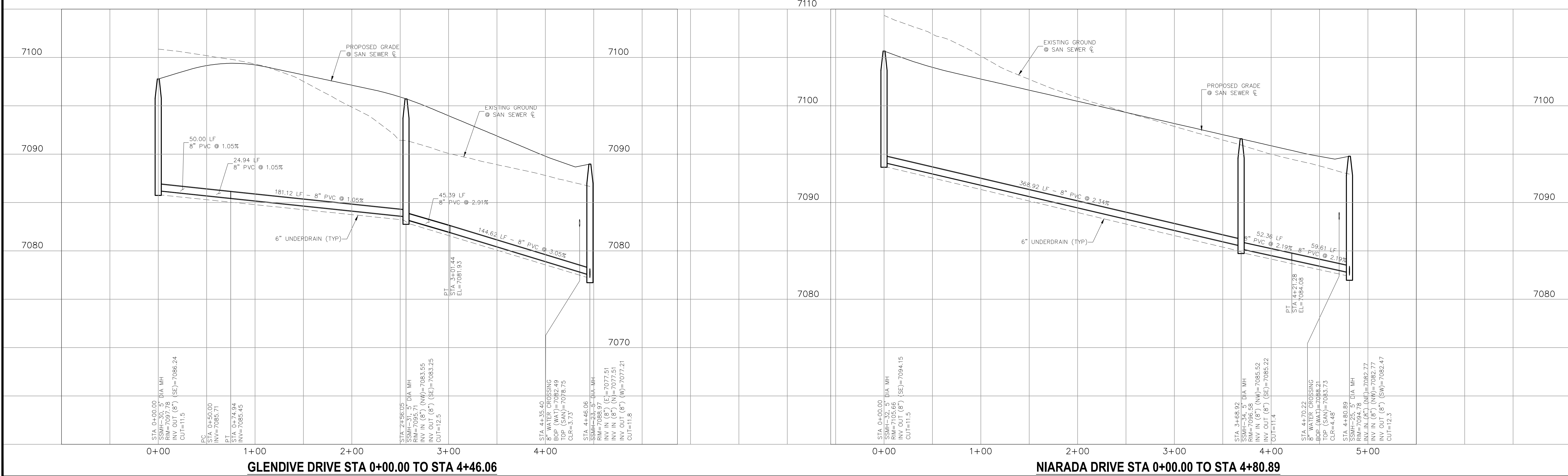
**GLENDIVE DRIVE  
STA 0+00.00 TO STA 4+46.06**



**NIARADA DRIVE  
STA 0+00.00 TO STA 4+80.89**

LINE	LENGTH	DIRECTION
L1	181.12'	S26°46'34"E
L2	144.62'	S20°16'29"E
L3	368.92'	S26°46'34"E
L4	59.61'	S36°46'36"E
L5	50.00'	S30°20'54"E

CURVE	DELTA	RADIUS	LENGTH
C1	3°34'20"	400.00'	24.94'
C2	6°30'05"	400.00'	45.39'
C3	10°00'02"	300.00'	52.36'



**GLENDIVE DRIVE STA 0+00.00 TO STA 4+46.06**

**NIARADA DRIVE STA 0+00.00 TO STA 4+80.89**

**HOMESTEAD AT STERLING RANCH FILING NO. 2**  
**SANITARY SEWER PLANS**  
 DATE: 02/13/2019  
 PROJECT NO. 09-007  
 SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'  
 DESIGNED BY: JWP  
 DRAWN BY: JWP  
 CHECKED BY: GW

20 BOULDER CRESCENT SUITE 110  
 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

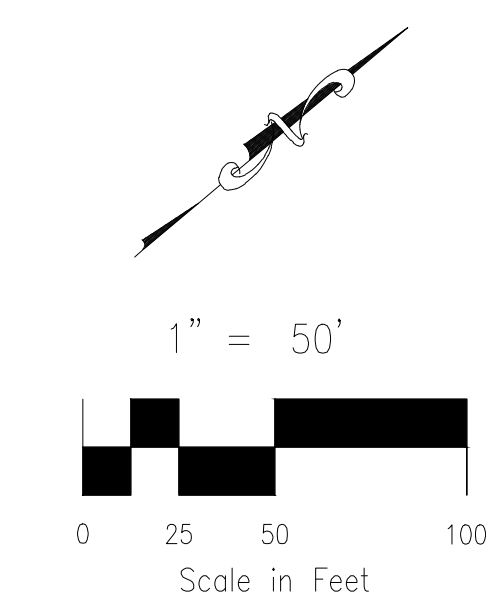
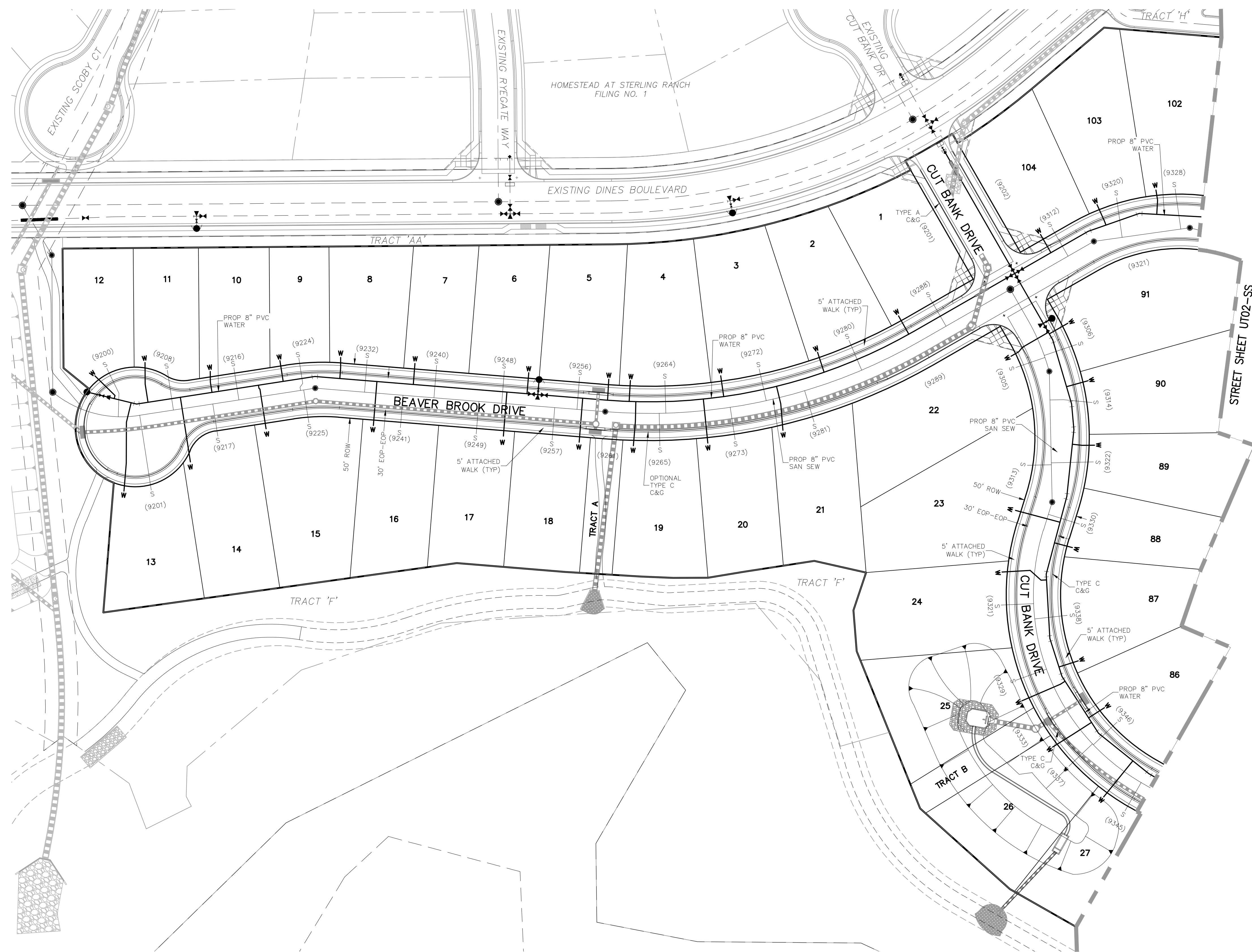
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

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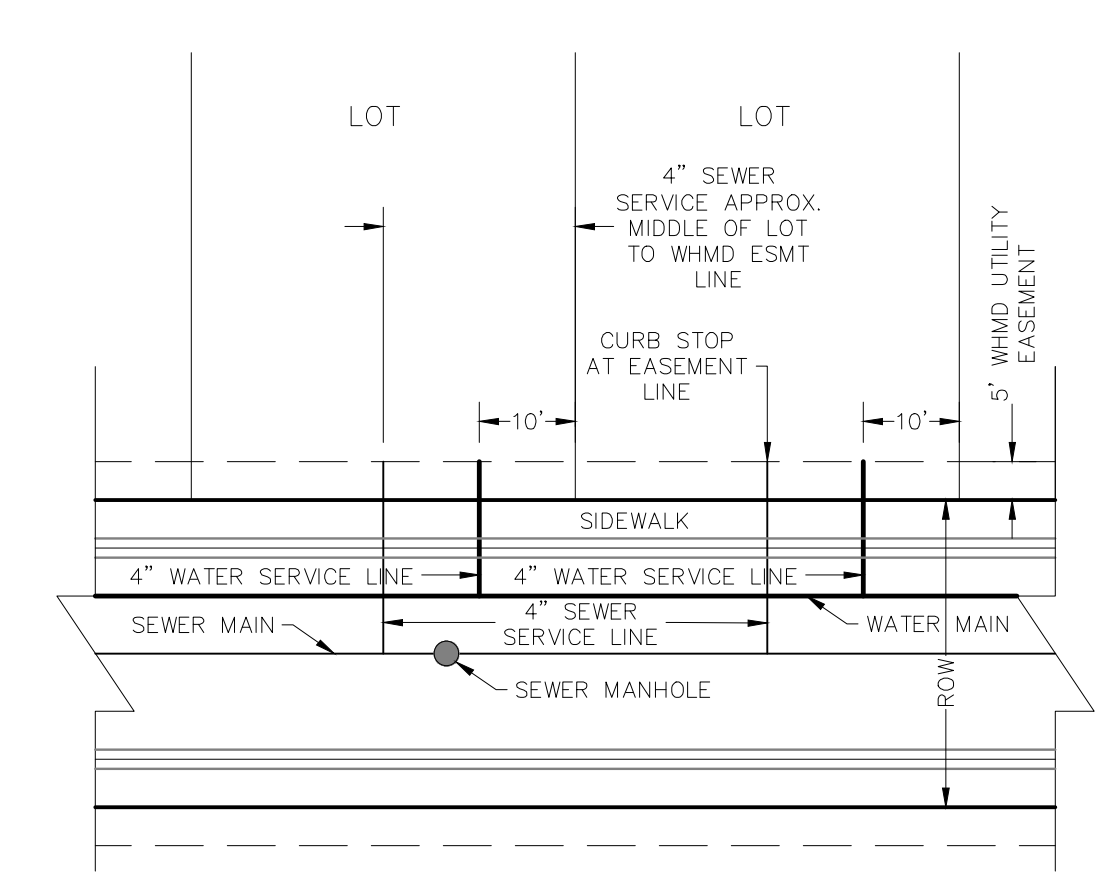
**CAUTION**

File: 0:\08007A\Sterling Ranch No 6\Eng\Const Draw\Sewer Plans\SS05.dwg Plotstamp: 7/30/2019 5:25 PM



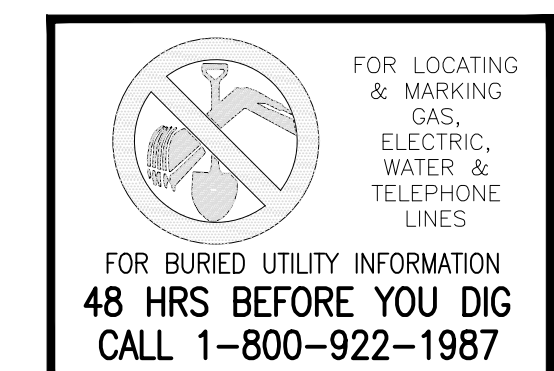


- NOTES:**
1. WATER SERVICE TO BE 10' FROM "DOWNSTREAM" PROPERTY LINE AND EXTENDED TO WHMD UTILITY EASEMENT LINE.
  2. SEWER SERVICE TO BE PLACED APPROXIMATELY IN THE MIDDLE OF THE LOT AND EXTENDED TO WHMD UTILITY EASEMENT LINE.
  3. SERVICE SHALL BE MARKED WITH 2"x4" POST AT TERMINATION POINT FOR LOCATION DURING CONNECTION TO RESIDENCE. POSTS SHALL BE SPRAY-PAINTED BLUE FOR WATER AND GREEN FOR SEWER.



**STREET ABBREVIATIONS**

CBD	CUT BANK DRIVE
BBD	BEAVER BROOK DRIVE
GDD	GLENDIVE DRIVE
ND	NIARADA DRIVE



**HOMESTEAD AT STERLING RANCH FILING NO. 2**

**WATER PLANS**

PROJECT NO. 09-007 DATE: 04/01/2018

DESIGNED BY: JWP SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'

DRAWN BY: JWP SHEET 6 OF 7

CHECKED BY: GW UT01-SS

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

**M&S CIVIL CONSULTANTS, INC.**

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

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

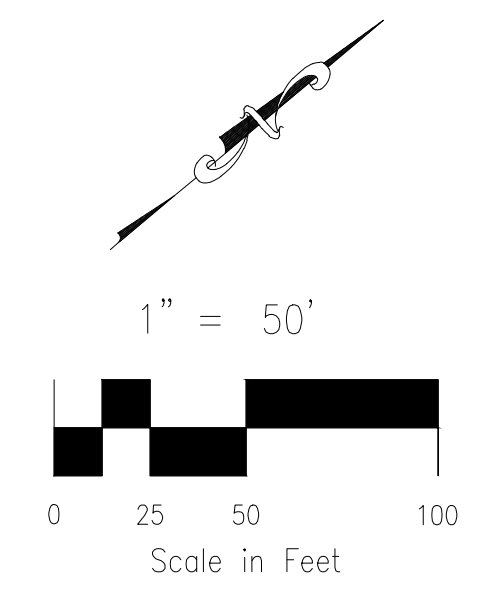
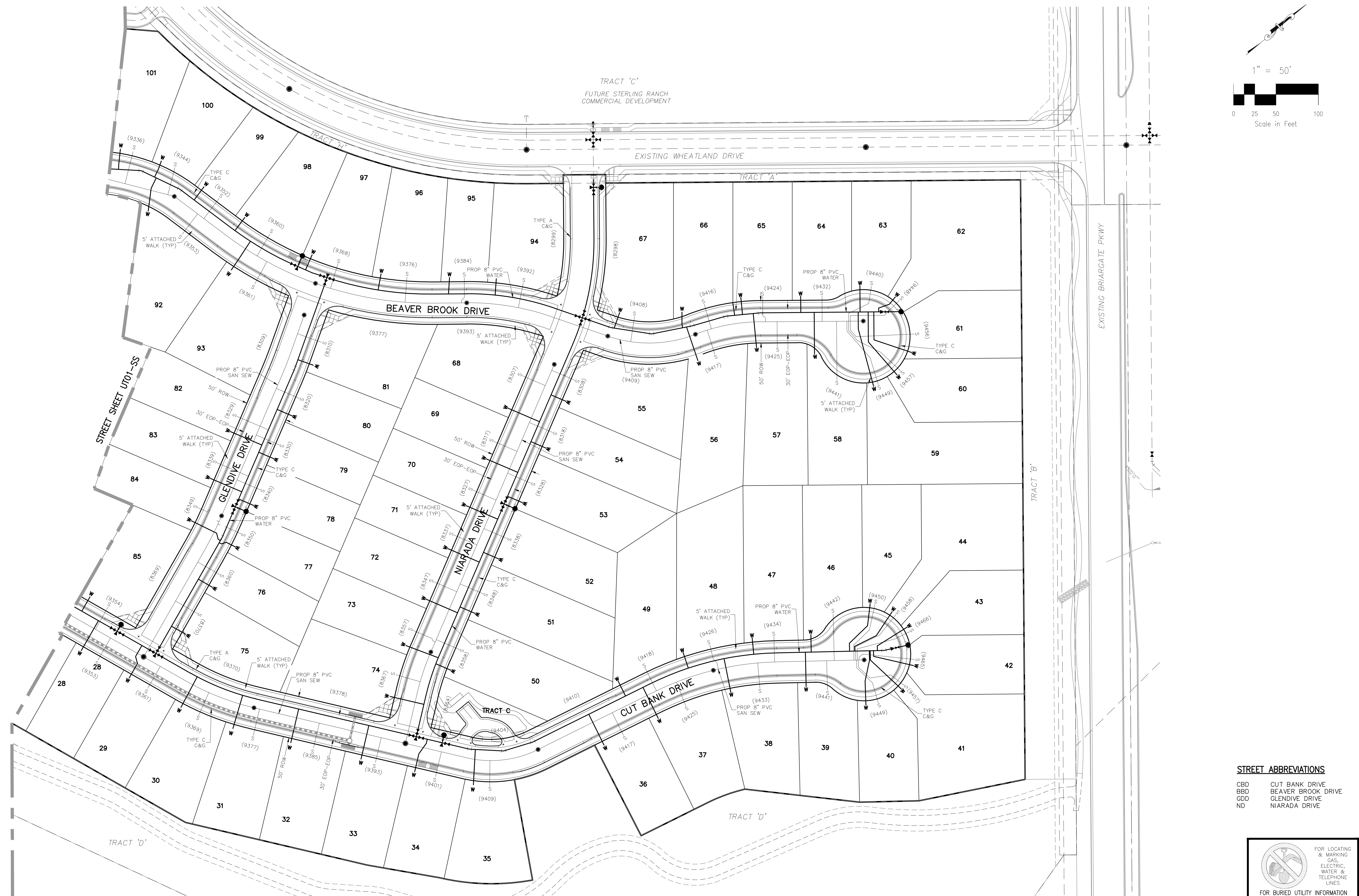
REGISTERED PROFESSIONAL ENGINEER  
NO. 37160

NO.	DATE	BY	DESCRIPTION

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

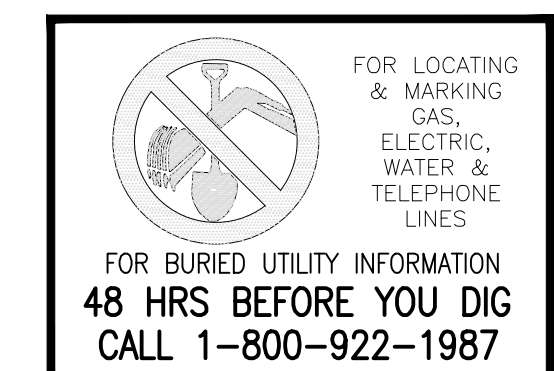
**CAUTION**





**STREET ABBREVIATIONS**

CBD	CUT BANK DRIVE
BBD	BEAVER BROOK DRIVE
GDD	GLENDIVE DRIVE
ND	NIARADA DRIVE



<b>HOMESTEAD AT STERLING RANCH FILING NO. 2</b>	
<b>WATER PLANS</b>	
PROJECT NO. 09-007	DATE: 04/01/2018
DESIGNED BY: JWP	SCALE: HORIZONTAL: 1"=50'
DRAWN BY: JWP	VERTICAL: 1"=5'
CHECKED BY: GW	SHEET 7 OF 7
<b>UT02-SS</b>	

20 BOULDER CRESCENT, SUITE 110  
 COLORADO SPRINGS, CO 80903  
 PHONE: 719.555.4485

**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	APPROV. BY	DATE

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**CAUTION**