

# COPPER CHASE AT STERLING RANCH

## COUNTY OF EL PASO, STATE OF COLORADO

### UTILITIES PLAN - INCLUDING UTILITY SERVICE PLAN

AUGUST 2023

#### GENERAL NOTES

- ALL UTILITY CONSTRUCTION TO BE CONDUCTED IN CONFORMANCE WITH THE CURRENT STERLING RANCH METROPOLITAN DISTRICT (SRMD, THE DISTRICT) SPECIFICATIONS.
- 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.
- ALL STATIONING IS CENTERLINE UNLESS OTHERWISE NOTED. ALL ELEVATIONS ARE CENTERLINE UNLESS OTHERWISE NOTED.
- 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.
- 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.
- 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.
- 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.
- 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.
- COMPACTION TESTS SHALL BE 95% STANDARD PROCTOR AS DETERMINED BY ASTM D698, UNLESS OTHERWISE APPROVED 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.
- 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.
- ALL BENDS SHALL BE FIELD STAKED PRIOR TO THE START OF CONSTRUCTION.
- 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.
- 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.
- ALL UNUSED SALVAGED WATER UTILITY MATERIAL SHALL BE RETURNED TO THE METROPOLITAN DISTRICT AS REQUESTED.
- 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.
- PUMPING OR BYPASS OPERATIONS SHALL BE REVIEWED AND APPROVED BY BOTH THE DISTRICT AND THE DISTRICT ENGINEER PRIOR TO EXECUTION.
- 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.
- 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 DISTRICT'S OFFICE.
- 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.
- COMMENCEMENT OF CONSTRUCTION OF WATER/SEWER SYSTEMS WITHIN THE METROPOLITAN DISTRICT:
  - 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.
  - 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.
- TESTING OF FACILITIES:
  - THE CONTRACTOR SHALL NOTIFY THE DISTRICT A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO THE START OF ANY TESTING.
  - 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).
  - 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 BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL.

#### 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 PANWEE 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

#### SHEET INDEX

SHEET	TITLE SHEET	DATE
SHEET 1	TITLE SHEET	
SHEET 2	SANITARY SEWER PLAN & PROFILE - BLUE FEATHER LOOP SANITARY 1	STA 1+00.00 TO 14+00.00
SHEET 3	SANITARY SEWER PLAN & PROFILE - BLUE FEATHER LOOP SANITARY 1	STA 14+00.00 TO 17+61.40
SHEET 4	SANITARY SEWER PLAN & PROFILE - BLUE FEATHER LOOP SANITARY 2	STA 0+25.00 TO 11+38.30
SHEET 5	SANITARY SEWER PLAN & PROFILE - LOST TRAIL DRIVE	STA 1+00.00 TO 5+63.23
SHEET 6	WATER MAIN PLAN	
SHEET 7	WATER PROFILES	
SHEET 8	UTILITY SERVICE PLAN	
SHEET 9	UTILITY DETAILS	

#### BASIS OF BEARINGS

THE BASIS OF BEARINGS IS THE WESTERLY LINE OF TRACT E, "STERLING RANCH FILING NO. 2" AS RECORDED UNDER RECEPTION NO. 222714894 IN THE EL PASO COUNTY, COLORADO RECORDS. SAID LINE IS MONUMENTED AT EACH END WITH A SET NO. 5 REBAR AND ORANGE CAP STAMPED "M&S CIVIL PLUS 22996" AND BEARS N40°10'47"E A DISTANCE OF 657.33 FEET. THE UNIT OF MEASUREMENT FOR ALL DISTANCES IS THE U.S. SURVEY FOOT.

#### 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  
 WATER DESIGN APPROVAL  
 DATE: 9/27/23 BY: [Signature]

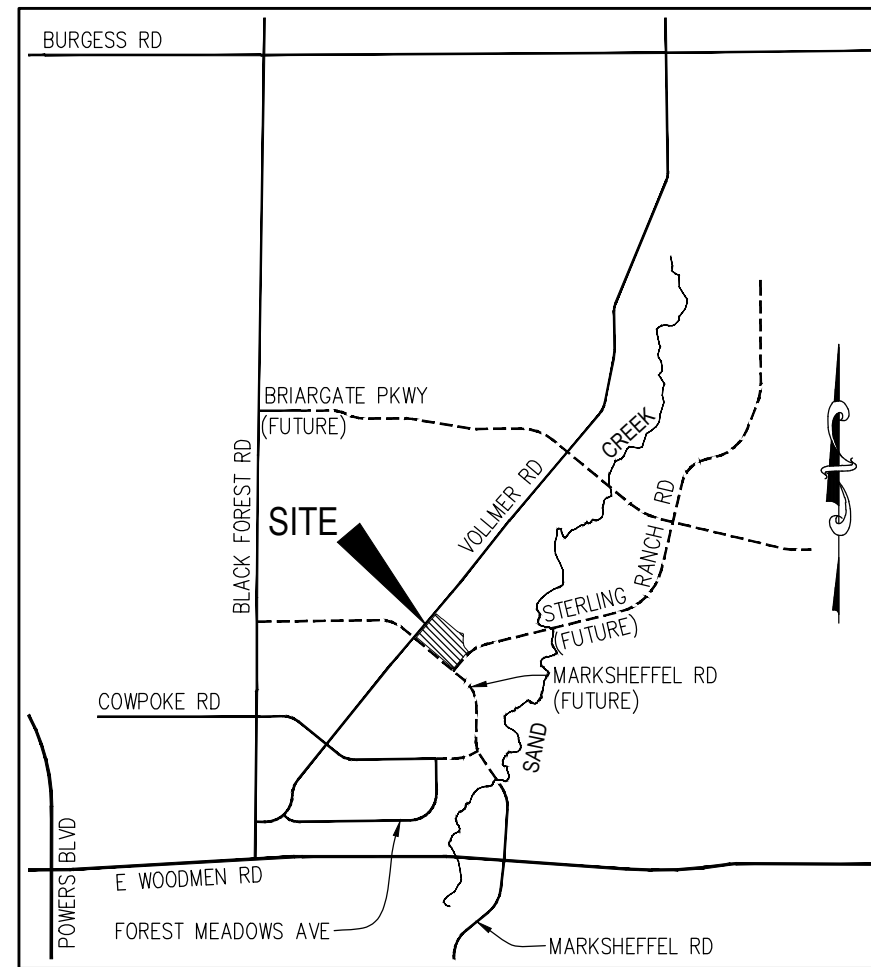
IN CASE OF ERRORS OR OMISSIONS WITH THE WATER DESIGN AS SHOWN ON THIS DOCUMENT THE STANDARDS AS DEFINED IN THE "RULES AND REGULATIONS FOR INSTALLATION OF WATER MAINS AND SERVICES" SHALL RULE.

#### FIRE AUTHORITY APPROVAL

THE NUMBER OF FIRE HYDRANTS AND HYDRANT LOCATIONS SHOWN ON THIS WATER INSTALLATION PLAN ARE CORRECT AND ADEQUATE TO SATISFY THE FIRE PROTECTION REQUIREMENTS AS SPECIFIED BY THE FIRE DISTRICT SERVING THE PROPERTY NOTED ON THE PLANS.

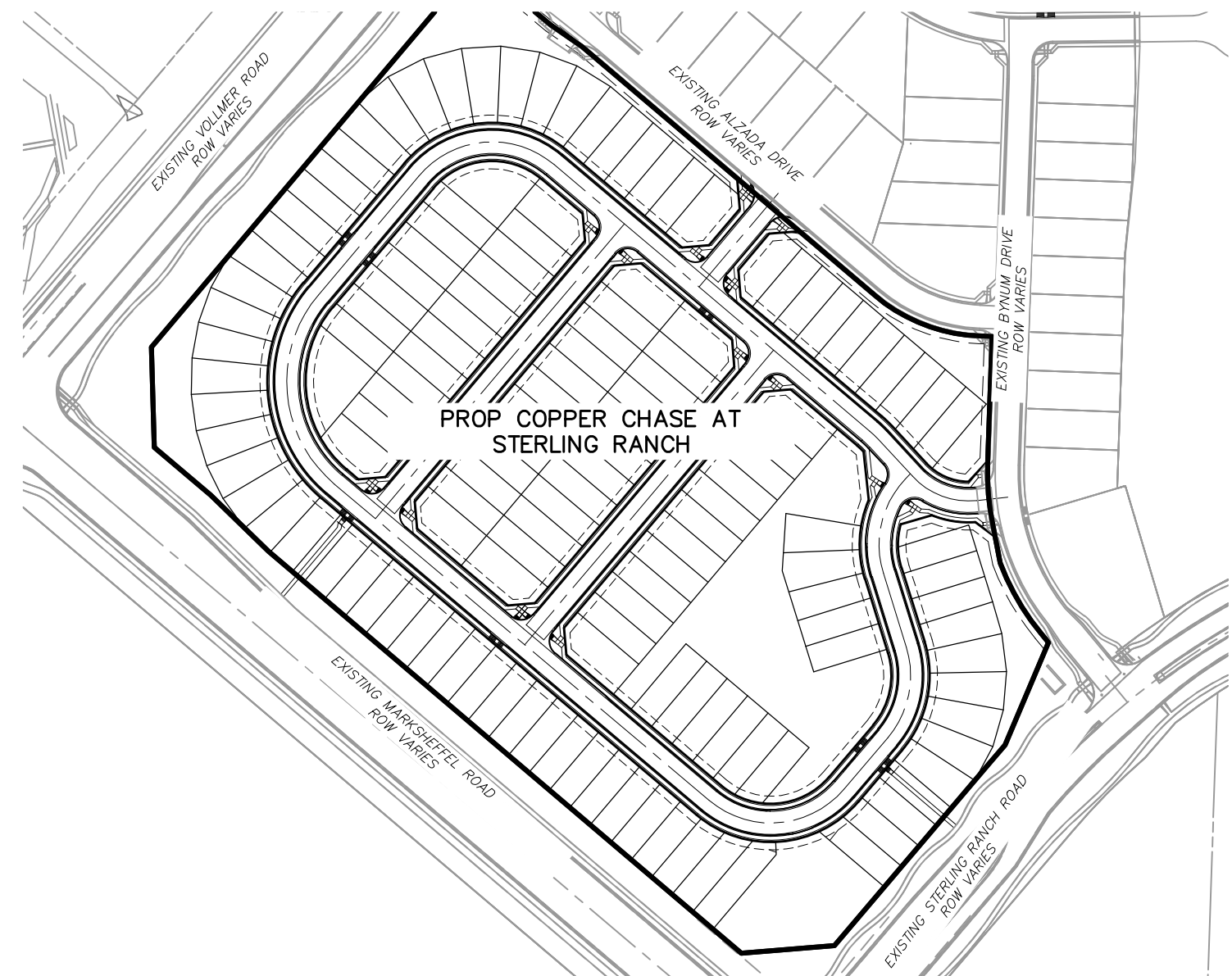
BLACK FOREST FIRE RESCUE PROTECTION DISTRICT

SIGNED: [Signature] DATE: [Blank]  
 BLACK FOREST FIRE RESCUE PROTECTION DISTRICT



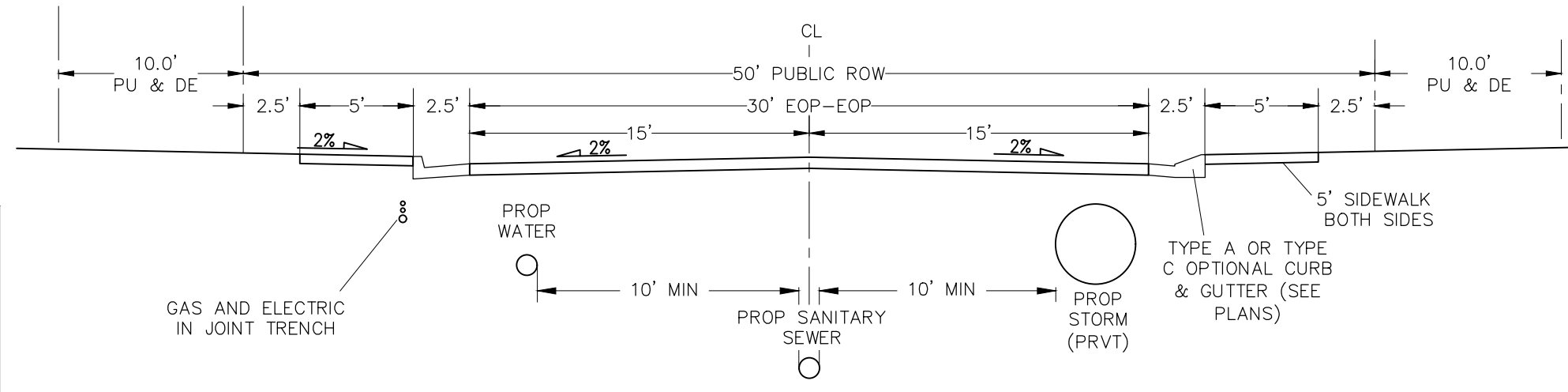
VICINITY MAP

N.T.S.



SITE MAP

N.T.S.



TYPICAL INTERNAL ACCESS ROADS PUBLIC 30' MAT  
 N.T.S.

#### AGENCIES

OWNER:	CHALLENGER HOMES 8605 EXPLORER DRIVE, SUITE 250 COLORADO SPRINGS, CO 80920 JIM BYERS (719) 602-5192
CIVIL ENGINEER:	M & S CIVIL CONSULTANTS, INC. 212 N WAHSATCH AVENUE, SUITE 305 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 GILBERT LAFORCE (719)-520-7945
TRAFFIC ENGINEERING:	EL PASO COUNTY PUBLIC SERVICES & TRANS. DEPT. 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JOSH PALMER, 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
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:

THESE UTILITY SYSTEM PLANS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR UTILITY SYSTEM PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY THE NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THESE PLANS.



08-10-23

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

#### OWNER/DEVELOPER'S STATEMENT:

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THESE UTILITY SYSTEM PLANS.

[Signature]

08-10-23

JIM BYERS, CHALLENGER HOMES VP COMMUNITY DEVELOPMENT  
 8605 EXPLORER DRIVE, COLORADO SPRINGS, CO 80910

#### 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.

JOSH PALMER, P.E.  
 COUNTY ENGINEER / ECM ADMINISTRATOR

DATE

#### WATER & SEWER MAIN EXTENSIONS

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: [Signature] DATE: 08-10-23  
 OWNER/DEVELOPER

PRINT NAME: JIM BYERS

DBA: CHALLENGER COLORADO, LLC

ADDRESS: 8605 EXPLORER DRIVE, SUITE 250, COLORADO SPRINGS, CO 80920

PUDSP-22-002

COPPER CHASE AT STERLING RANCH

UTILITY PLANS

DATE: 08/05/2023

SCALE: HORIZONTAL: 1"=50'

VERTICAL: 1"=5'

PROJECT NO.: 09014

DESIGNED BY: CWV

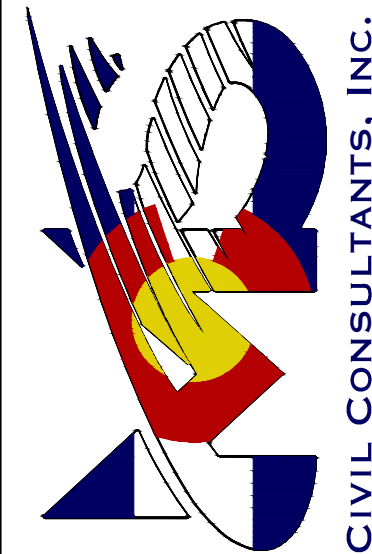
DRAWN BY: TAU

CHECKED BY: VAS

WT01

SHEET 1 OF 9

212 N WAHSATCH AVE, STE 305  
 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



DATE:

APPROVED BY:

DATE:

DATE:

DATE:

DATE:

DATE:

DATE:

DATE:

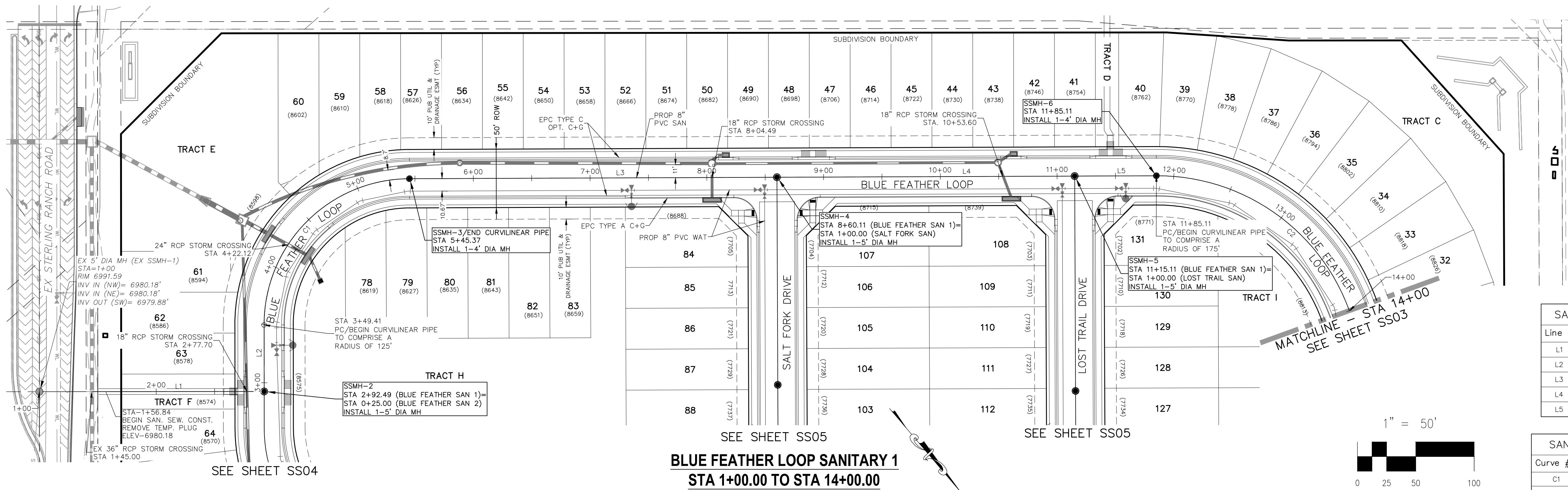
DATE:

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





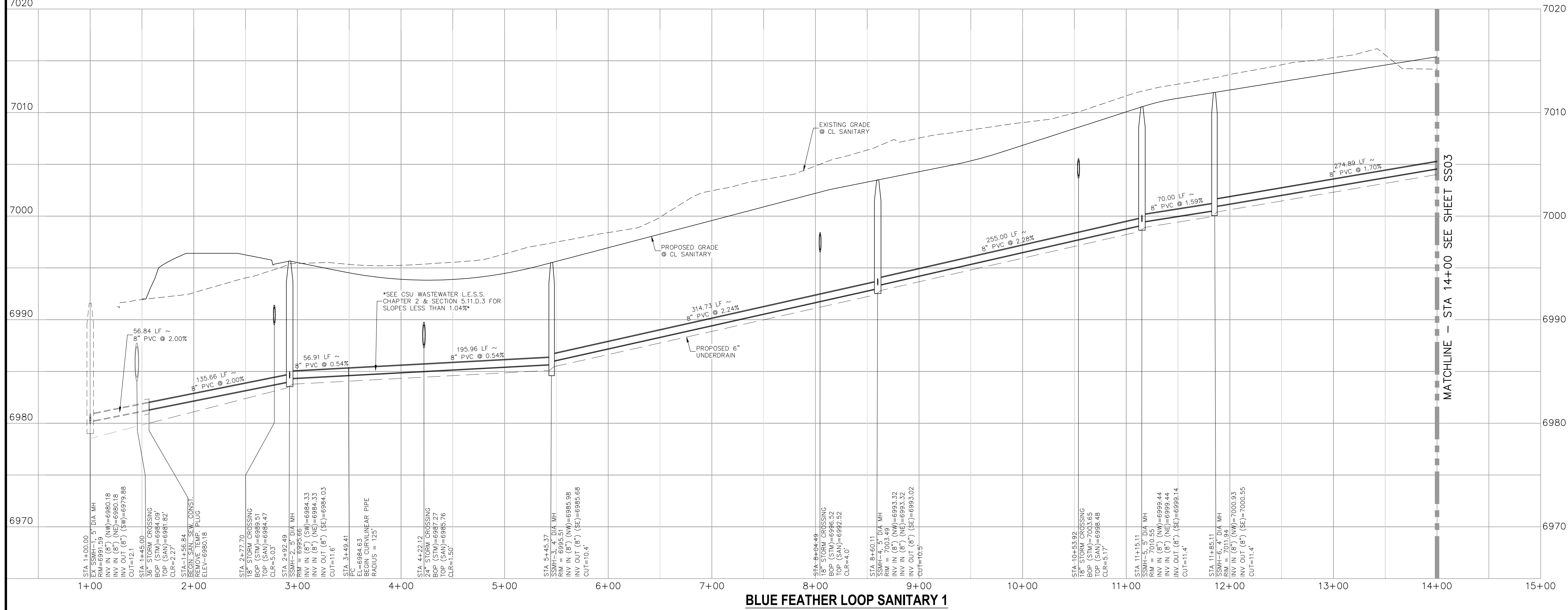
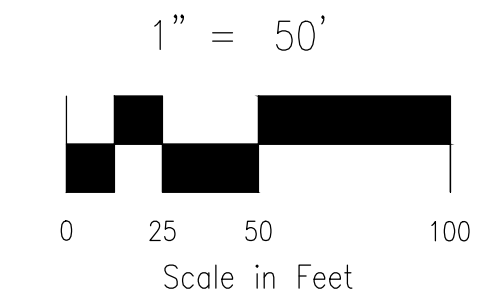
**BLUE FEATHER LOOP SANITARY 1  
STA 1+00.00 TO STA 14+00.00**

**SANITARY LINE TABLE**

Line #	Length	Direction
L1	147.46	N49° 38' 28.98"W
L2	56.91	S40° 21' 31.02"W
L3	314.73	N49° 49' 10.81"W
L4	255.00	N49° 49' 10.81"W
L5	70.00	N49° 49' 10.80"W

**SANITARY CURVE TABLE**

Curve #	Length	Radius	Delta
C1	195.96	125.00	89.82
C2	274.89	175.00	90.00



**BLUE FEATHER LOOP SANITARY 1**

**COPPER CHASE AT STERLING RANCH**  
**SANITARY SEWER PLANS**  
 PROJECT NO. 09-014 DATE: 08/05/2023  
 SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'  
 DESIGNED BY: CWV DRAWN BY: CWV CHECKED BY: VAS SHEET 2 OF 9 SS02

212 N. WAHATCH AVE, STE 305  
 COLORADO SPRINGS, CO 80903  
 PHONE: 719.555.5485

**CIVIL CONSULTANTS, INC.**

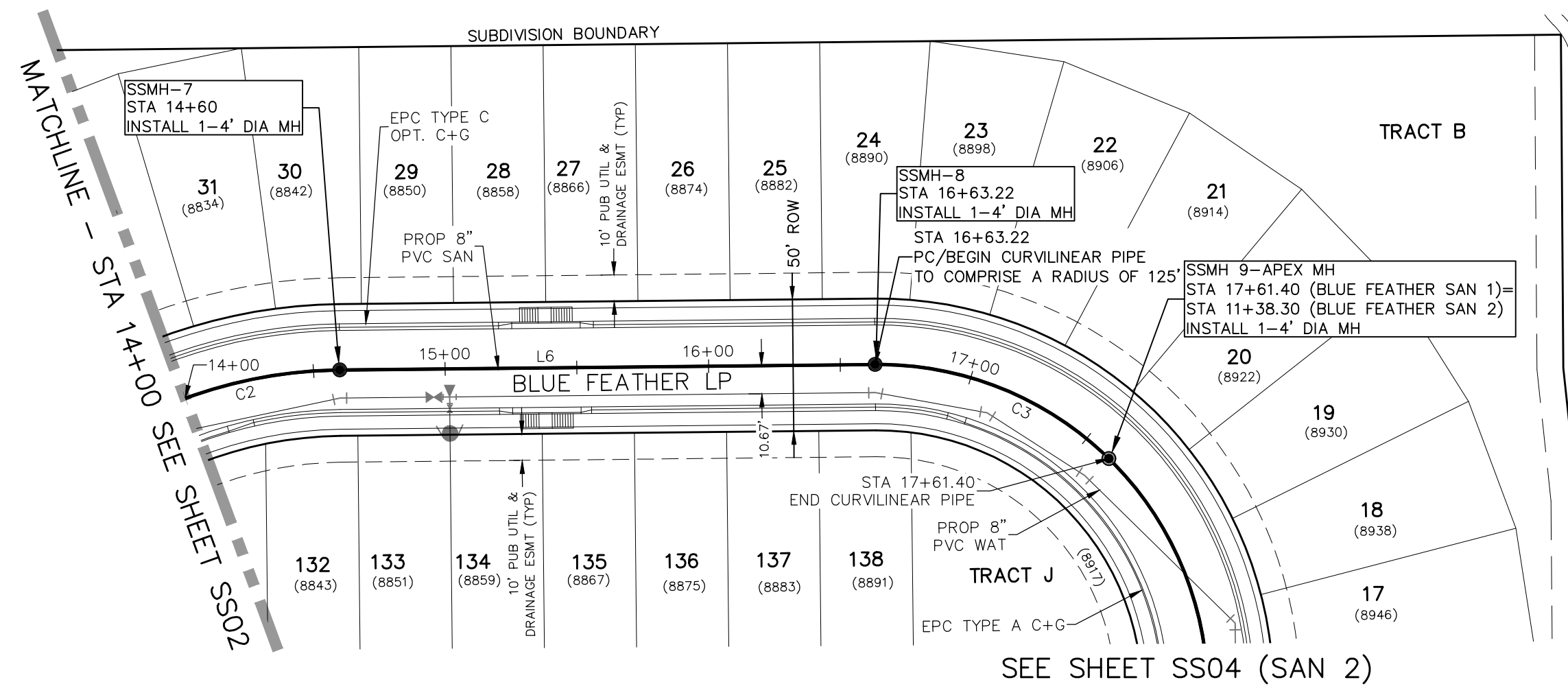
VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160

FOR AND ON BEHALF OF MKS CIVIL CONSULTANTS, INC.

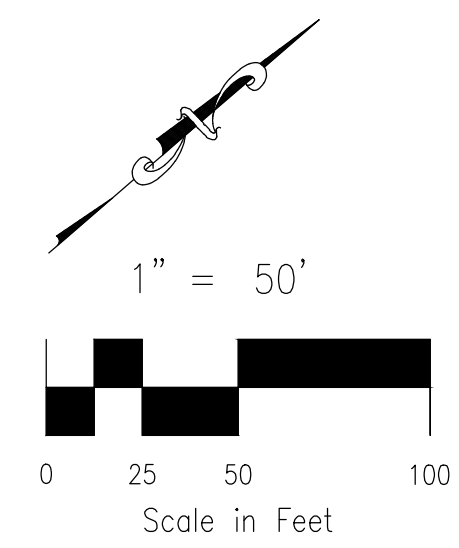
NO. DATE: BY: DESCRIPTION: APPROV'D. BY: DATE:

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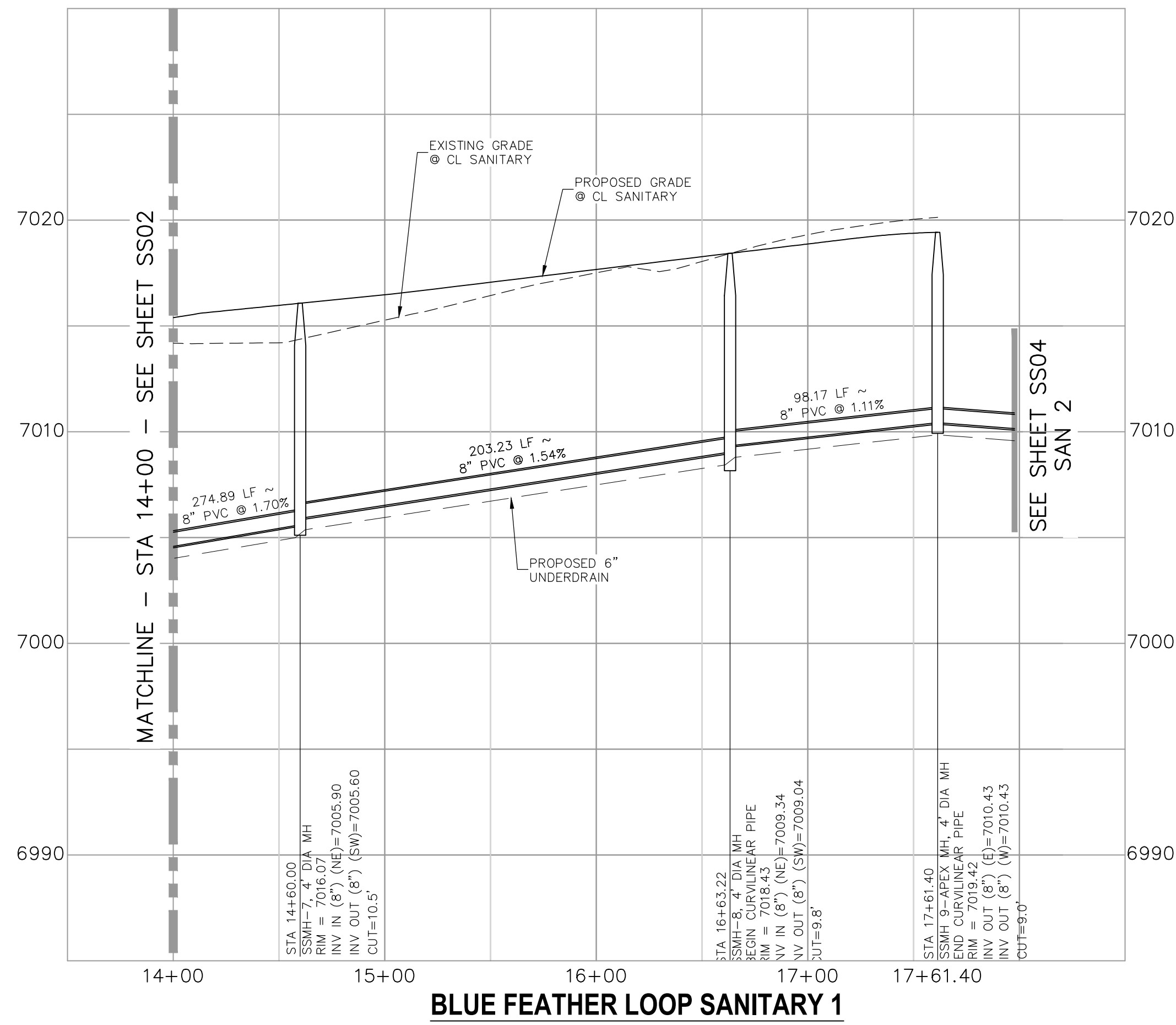


**BLUE FEATHER LOOP SANITARY 1**  
**STA 14+00.00 TO STA 17+61.40**



SANITARY LINE TABLE		
Line #	Length	Direction
L6	203.23	N40° 10' 49.19"E

SANITARY CURVE TABLE			
Curve #	Length	Radius	Delta
C2	274.89	175.00	90.00
C3	98.17	125.00	45.00



<b>COPPER CHASE AT STELRING RANCH</b>	
<b>SANITARY SEWER PLANS</b>	
PROJECT NO. 09-014	DATE: 08/05/2023
DESIGNED BY: CWV	SCALE: HORIZONTAL: 1"=50'
DRAWN BY: CWV	VERTICAL: 1"=5'
CHECKED BY: VAS	SHEET 3 OF 9
<b>SS03</b>	

212 N. WASHATCH AVE., STE. 305  
 COLORADO SPRINGS, CO 80903  
 PHONE: 719.555.5465

**CIVIL CONSULTANTS, INC.**

FOR AND ON BEHALF OF  
 MKS CIVIL CONSULTANTS, INC.

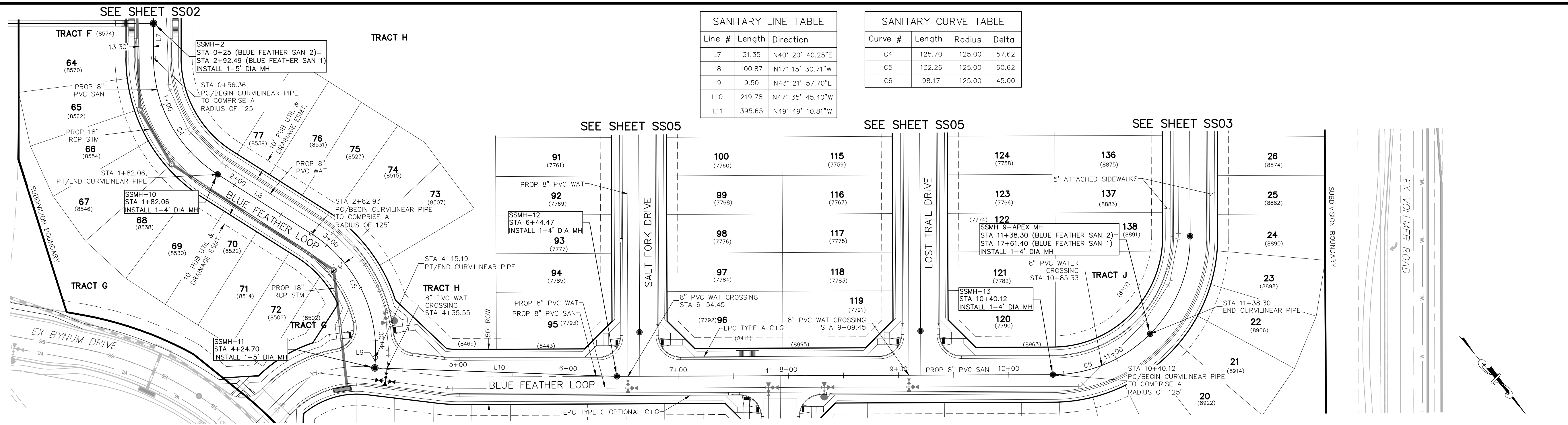
**PROFESSIONAL ENGINEER**  
 VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160

NO.	DATE	BY	DESCRIPTION	APPRO'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

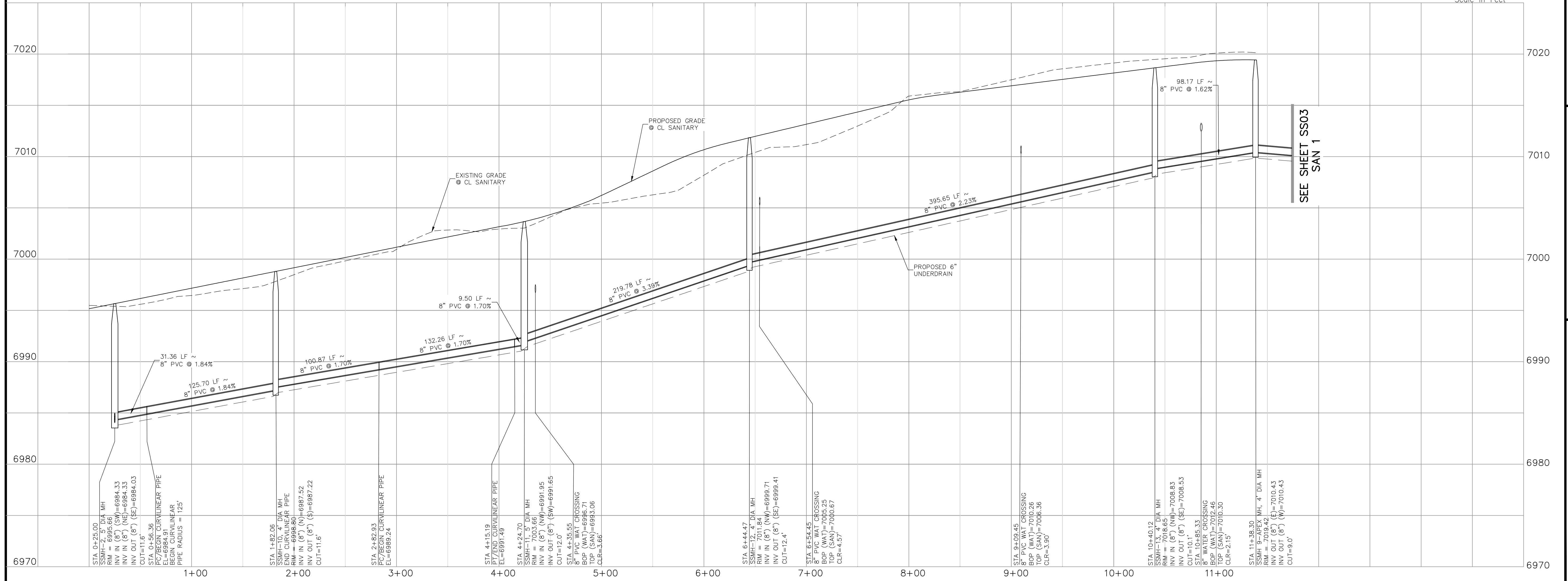
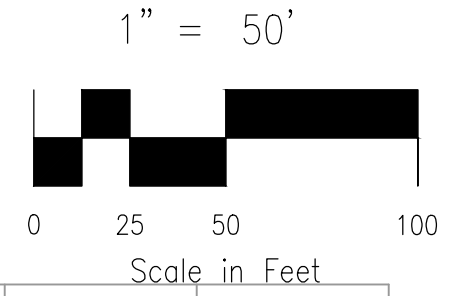




**BLUE FEATHER LOOP SANITARY 2**  
**STA 0+25.00 TO STA 11+38.30**

Line #	Length	Direction
L7	31.35	N40° 20' 40.25"E
L8	100.87	N17° 15' 30.71"W
L9	9.50	N43° 21' 57.70"E
L10	219.78	N47° 35' 45.40"W
L11	395.65	N49° 49' 10.81"W

Curve #	Length	Radius	Delta
C4	125.70	125.00	57.62
C5	132.26	125.00	60.62
C6	98.17	125.00	45.00



**BLUE FEATHER LOOP SANITARY 2**

<b>COPPER CHASE AT STERLING RANCH</b>		<b>SANITARY SEWER PLANS</b>	
PROJECT NO. 09-014		DATE: 08/05/2023	
DESIGNED BY: CWV		SCALE: HORIZONTAL: 1"=50'	
DRAWN BY: CWV		VERTICAL: 1"=5'	
CHECKED BY: VAS		SHEET 4 OF 9	
212 N. WASHCATCH AVE, STE 305 COLORADO SPRINGS, CO 80903 PHONE: 719.555.5485		<b>SS04</b>	

**CIVIL CONSULTANTS, INC.**

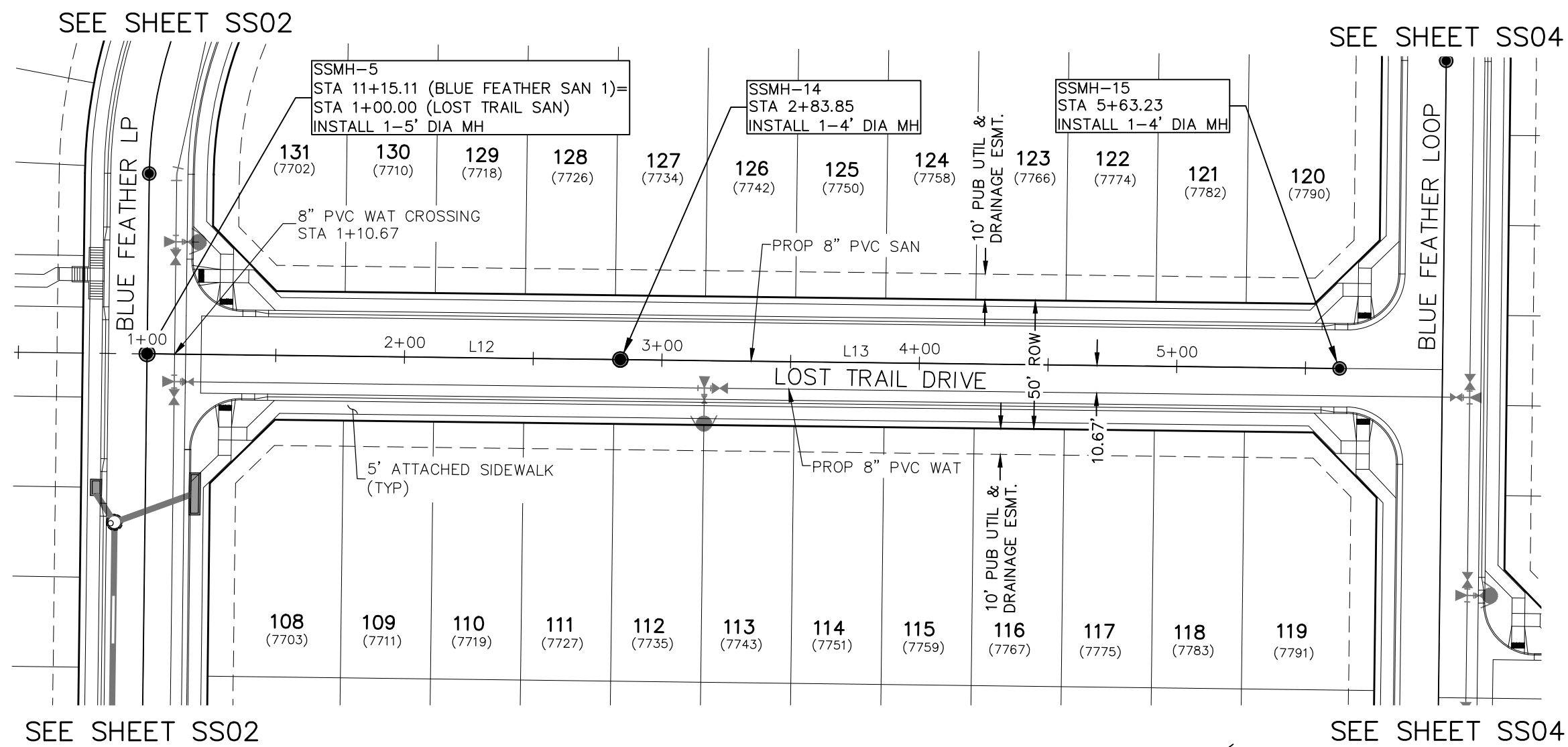
FOR AND ON BEHALF OF  
 MKS CIVIL CONSULTANTS, INC.

NO.	DATE	BY	DESCRIPTION

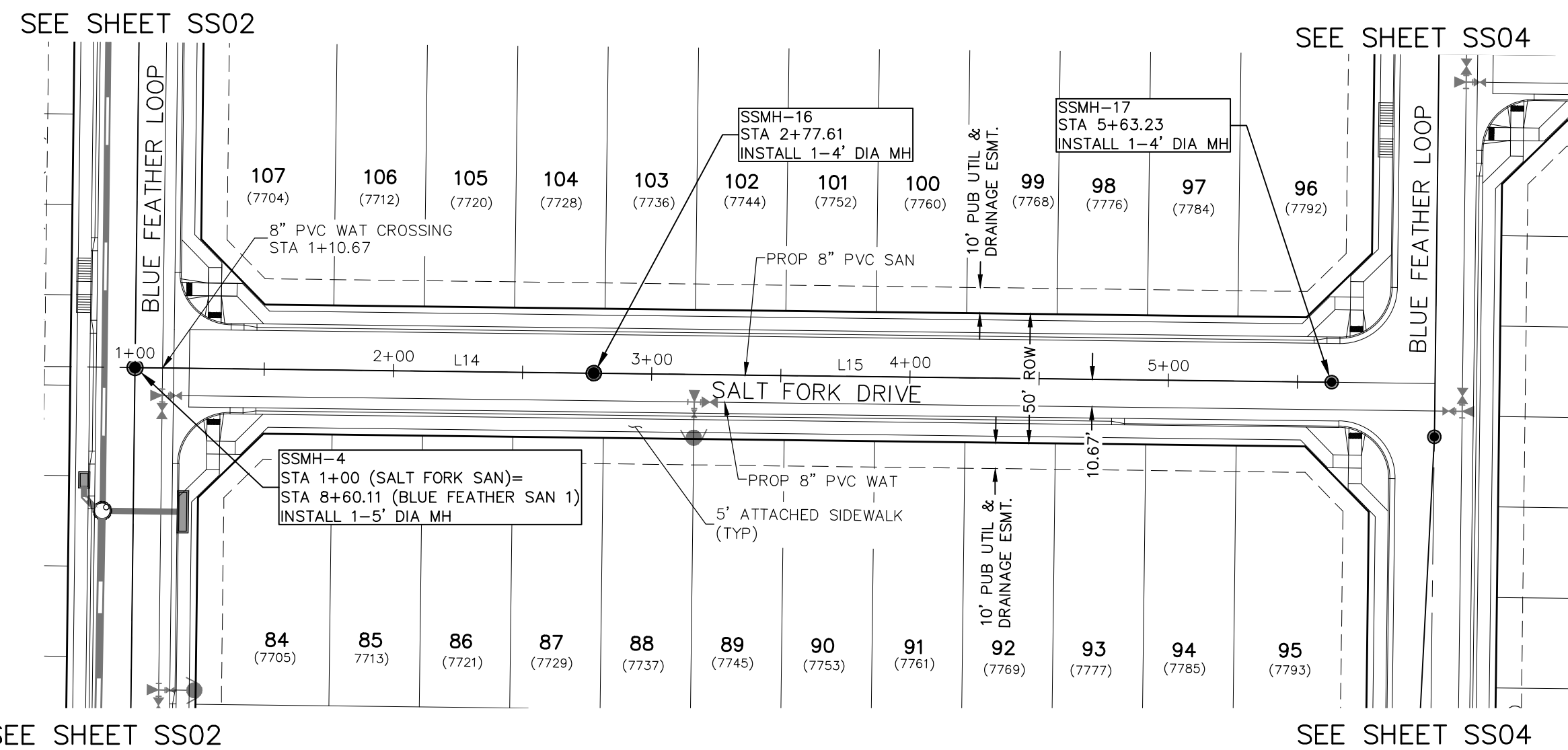
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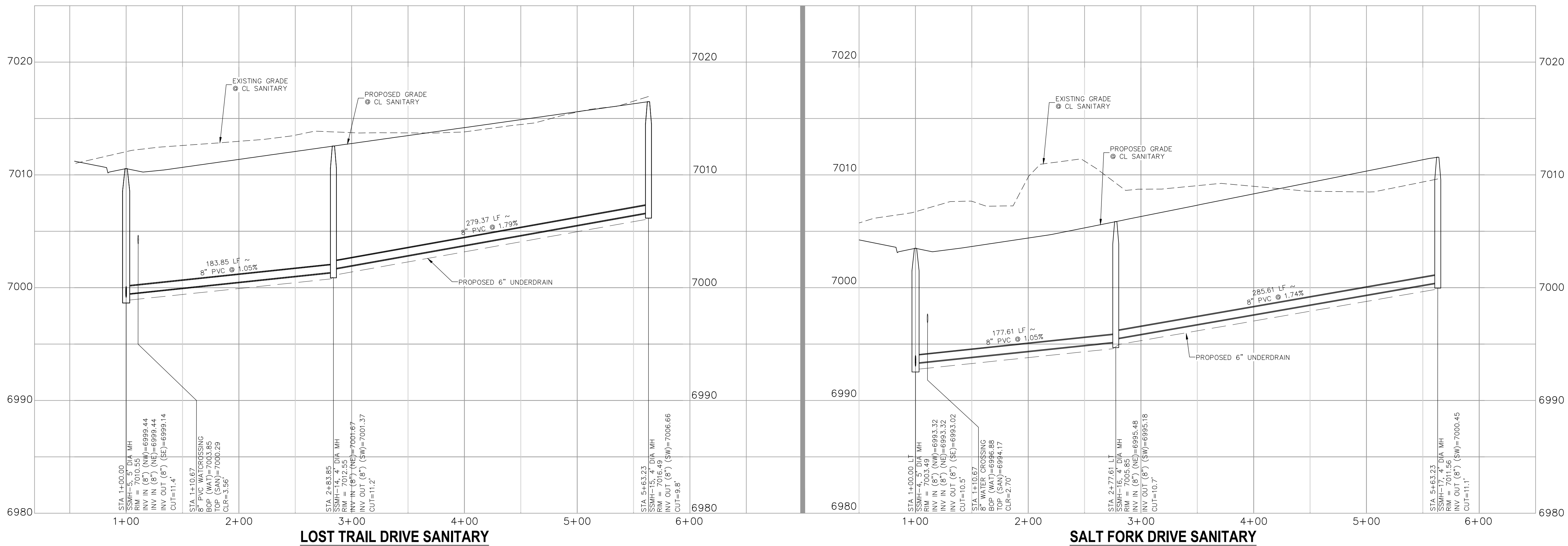


**LOST TRAIL DRIVE SANITARY  
STA 1+00.00 TO STA 5+63.23**



**SALT FORK DRIVE SANITARY  
STA 1+00.00 TO STA 5+63.23**

PARCEL LINE TABLE		
Line #	Length	Direction
L12	183.85	N40° 10' 49.19"E
L13	279.37	N40° 10' 49.19"E
L14	177.61	N40° 10' 49.19"E
L15	285.61	N40° 10' 49.19"E



**LOST TRAIL DRIVE SANITARY**

**SALT FORK DRIVE SANITARY**

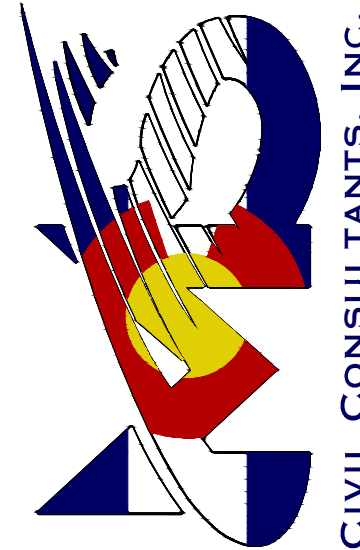
COPPER CHASE AT STERLING RANCH  
SANITARY SEWER PLANS

PROJECT NO. 09-014  
DESIGNED BY: CW  
DRAWN BY: CW  
CHECKED BY: VAS

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


DATE: 08/05/2023  
SHEET 5 OF 9  
SS05

212 N. WASHCATCH AVE, STE 305  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.5485



**CIVIL CONSULTANTS, INC.**

FOR AND ON BEHALF OF  
MKS CIVIL CONSULTANTS, INC.

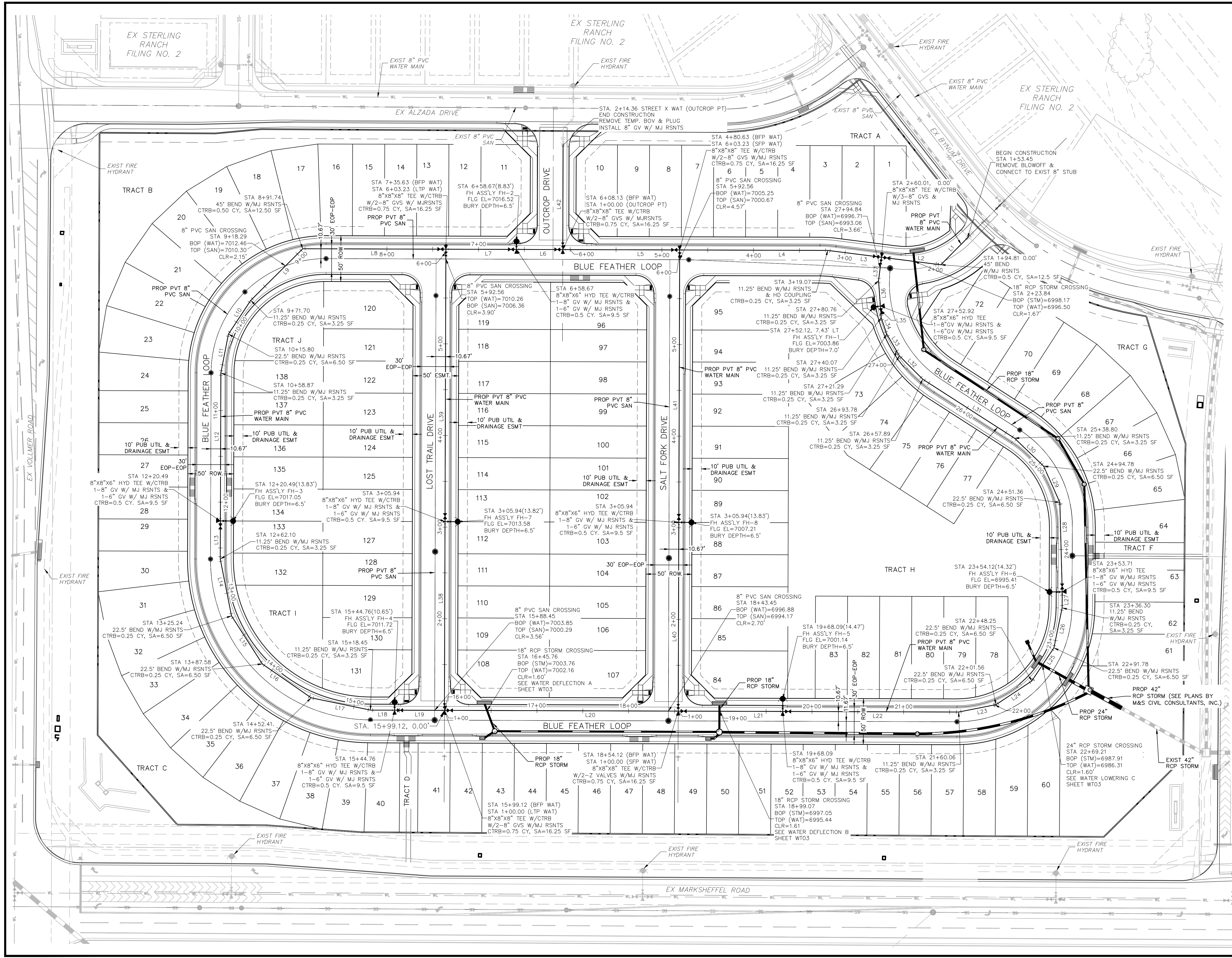


NO.	DATE	BY	DESCRIPTION	APPROV'D. BY	DATE

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CAUTION

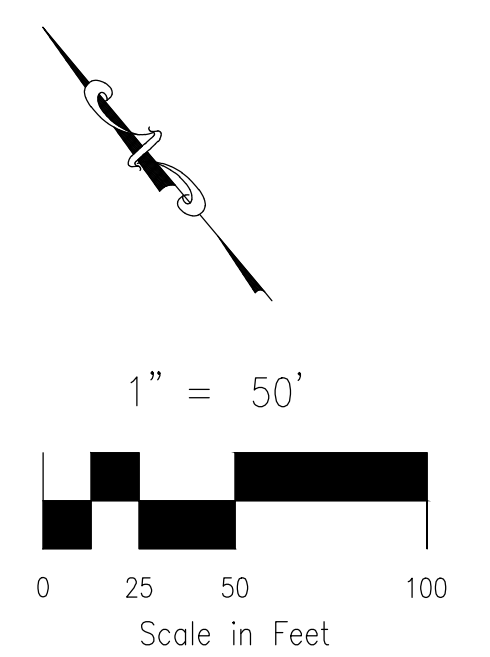




WATER CL LINE TABLE		
LINE	LENGTH	DIRECTION
L1	41.37	S84° 45' 52.15"W
L2	65.20	N42° 44' 53.31"W
L3	59.06	N42° 44' 53.31"W
L4	161.56	N49° 49' 03.22"W
L5	127.50	N49° 49' 10.26"W
L6	50.54	N49° 49' 12.18"W
L7	76.96	N49° 49' 10.81"W
L8	156.12	N49° 49' 10.81"W
L9	79.95	S85° 13' 22.43"W
L10	44.10	S73° 26' 56.78"W
L11	43.08	S51° 02' 19.13"W
L12	161.61	S40° 10' 49.19"W
L13	41.61	S40° 10' 49.19"W
L14	63.13	S28° 48' 06.52"W
L15	62.36	S7° 21' 34.28"W
L16	64.83	S15° 15' 42.96"E
L17	66.03	S38° 13' 43.75"E
L18	26.31	S49° 49' 10.81"E
L19	54.36	S49° 49' 10.81"E
L20	255.00	S49° 49' 10.81"E

WATER CL LINE TABLE		
LINE	LENGTH	DIRECTION
L21	113.97	S49° 49' 10.62"E
L22	191.97	S49° 49' 10.92"E
L23	41.51	S61° 14' 07.47"E
L24	46.68	S83° 27' 39.97"E
L25	43.54	N73° 47' 14.03"E
L26	44.52	N51° 35' 06.76"E
L27	17.41	N40° 21' 31.02"E
L28	97.65	N38° 29' 54.10"E
L29	43.42	N15° 53' 15.90"E
L30	44.02	N6° 09' 31.83"W
L31	119.09	N17° 15' 30.71"W
L32	35.89	N4° 56' 21.27"W
L33	27.51	N9° 58' 36.28"E
L34	18.79	N21° 05' 44.64"E
L35	12.85	N35° 50' 15.25"E
L36	27.84	N35° 50' 15.25"E
L37	25.67	N47° 15' 06.71"E
L38	205.94	N40° 10' 49.04"E
L39	297.28	N40° 10' 49.19"E
L40	205.94	N40° 10' 49.19"E

WATER CL LINE TABLE		
LINE	LENGTH	DIRECTION
L41	297.28	N40° 10' 49.18"E
L42	114.36	N40° 10' 49.87"E



**COPPER CHASE AT STERLING RANCH WATER PLANS**

DATE: 08/05/2023  
SCALE: HORIZONTAL: 1"=50'  
VERTICAL: N/A

PROJECT NO. 09-014  
DESIGNED BY: CW  
DRAWN BY: CW  
CHECKED BY: VAS

210 N. WAHATCH AVE, STE 305  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.5465

CIVIL CONSULTANTS, INC.

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

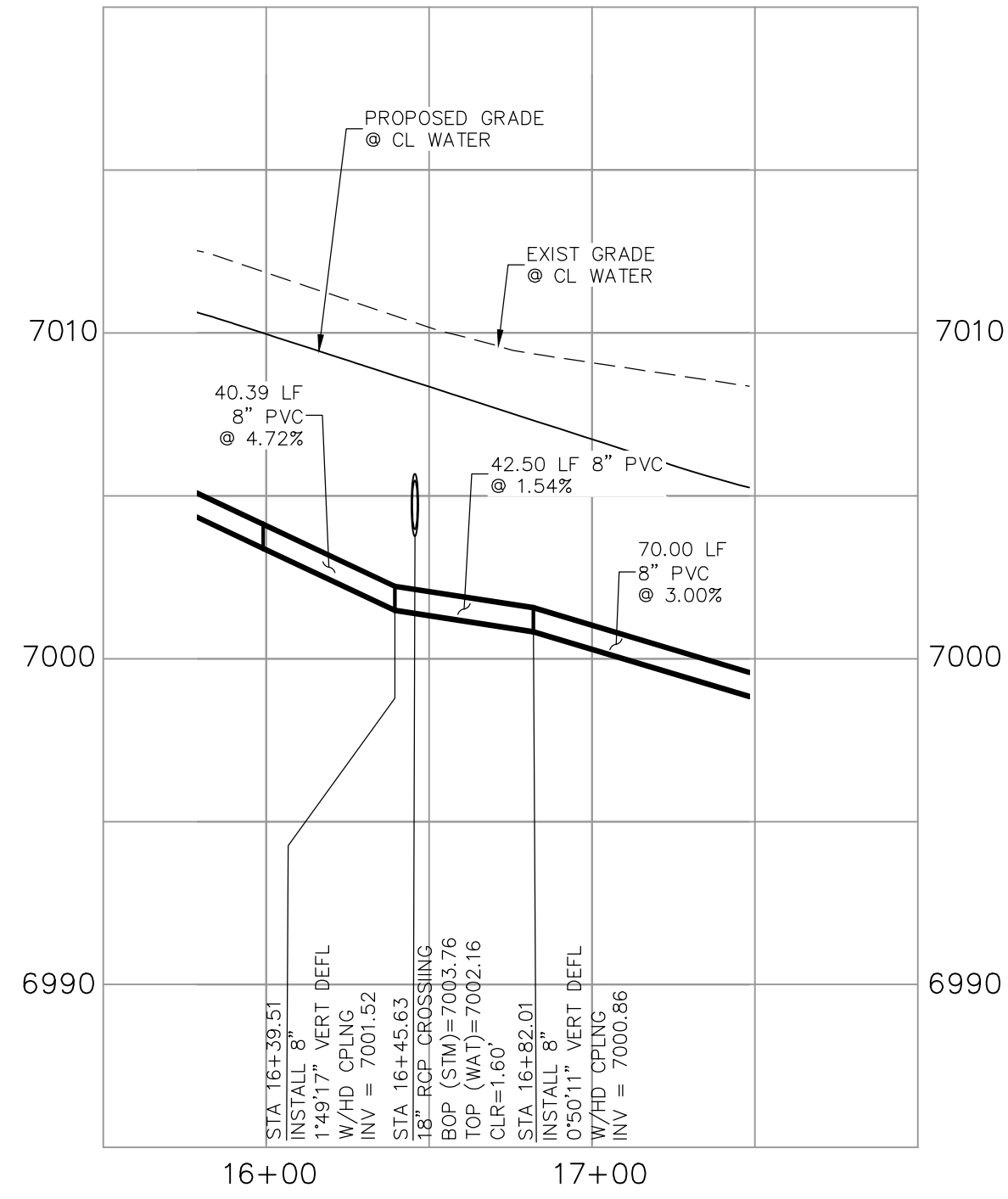
Virgil A. Sanchez, Colorado, P.E. No. 37160

REV. NO.	DATE	BY	DESCRIPTION

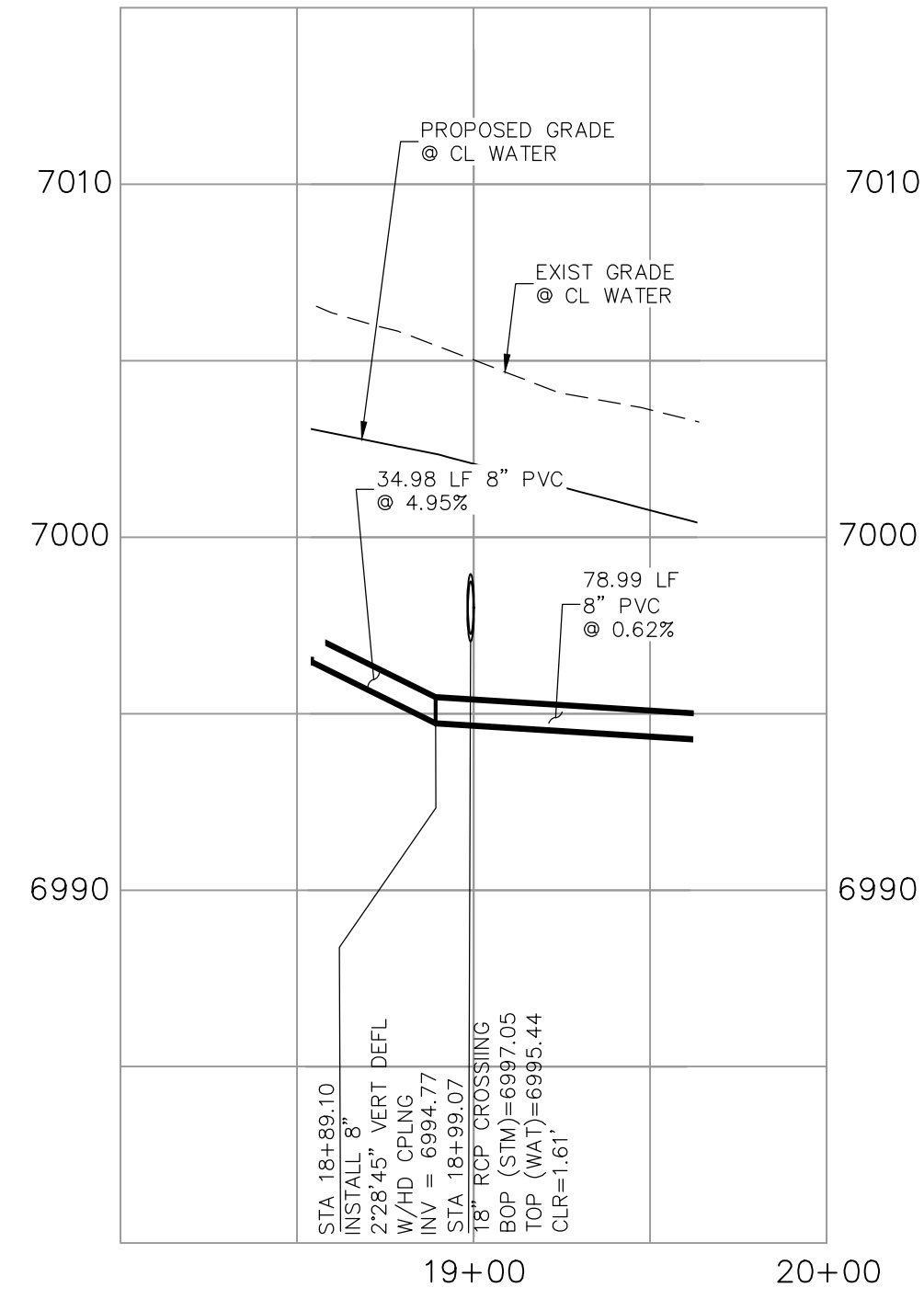
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CAUTION

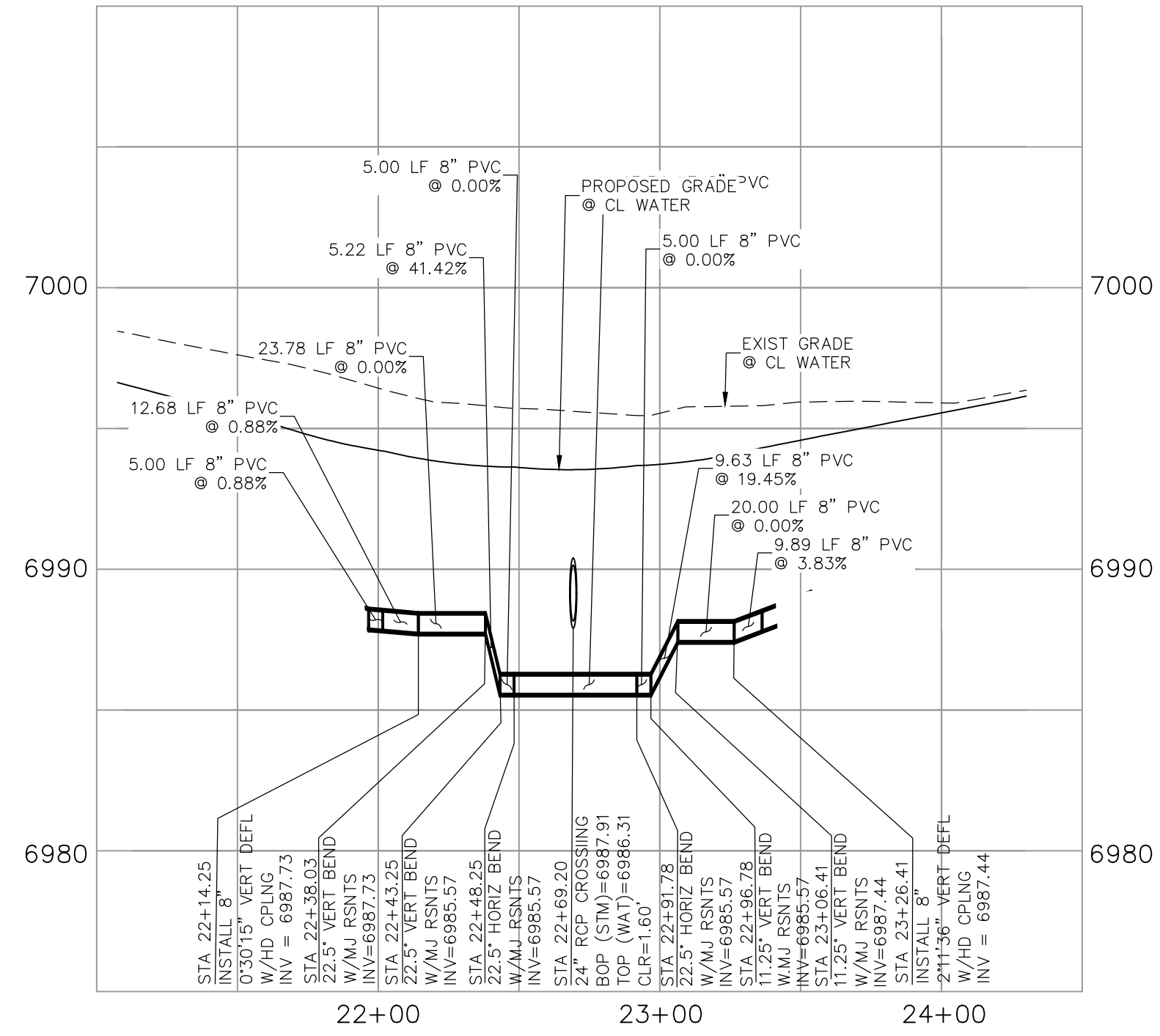




**BLUE FEATHER LOOP  
WATER DEFLECTION A  
STA 16+39.51**



**BLUE FEATHER LOOP  
WATER HALF DEFLECTION B  
STA 18+89.10**



**BLUE FEATHER LOOP  
WATER LOWERING C  
STA 22+38.03**

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

FOR AND ON  
BEHALF OF  
WKS CIVIL  
CONSULTANTS,  
INC.

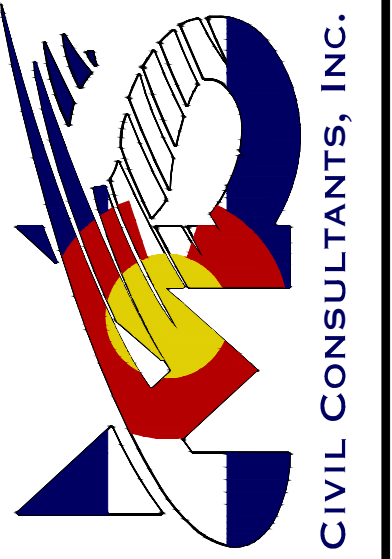


NO.	DATE	BY	DESCRIPTION	APPR'D. BY	DATE

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CAUTION

212 N. WASHATCH AVE., STE 305  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.5465



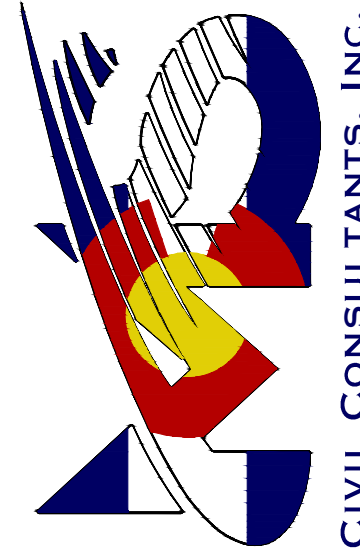
**COPPER CHASE AT STERLING RANCH**  
**WATER LOWERING/DEFLECTION DETAILS**

PROJECT NO. 09-014  
SCALE: HORIZONTAL: 1"=50'  
VERTICAL: 1"=5'  
DESIGNED BY: CWV  
DRAWN BY: CWV  
CHECKED BY: VAS  
DATE: 08/05/2023  
SHEET 7 OF 9  
WT03



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

**COPPER CHASE AT STERLING RANCH**  
**UTILITY SERVICE PLANS**  
 PROJECT NO. 09014  
 DATE: 08/05/2023  
 SCALE: HORIZONTAL: 1"=50'  
 VERTICAL: 1"=5'  
 DESIGNED BY: CWV  
 DRAWN BY: TAU  
 CHECKED BY: VAS  
**UT01**  
 SHEET 8 OF 9

212 N. WASHCATCH AVE., STE 305  
 COLORADO SPRINGS, CO 80903  
 PHONE: 719.555.5465  
  
**CIVIL CONSULTANTS, INC.**

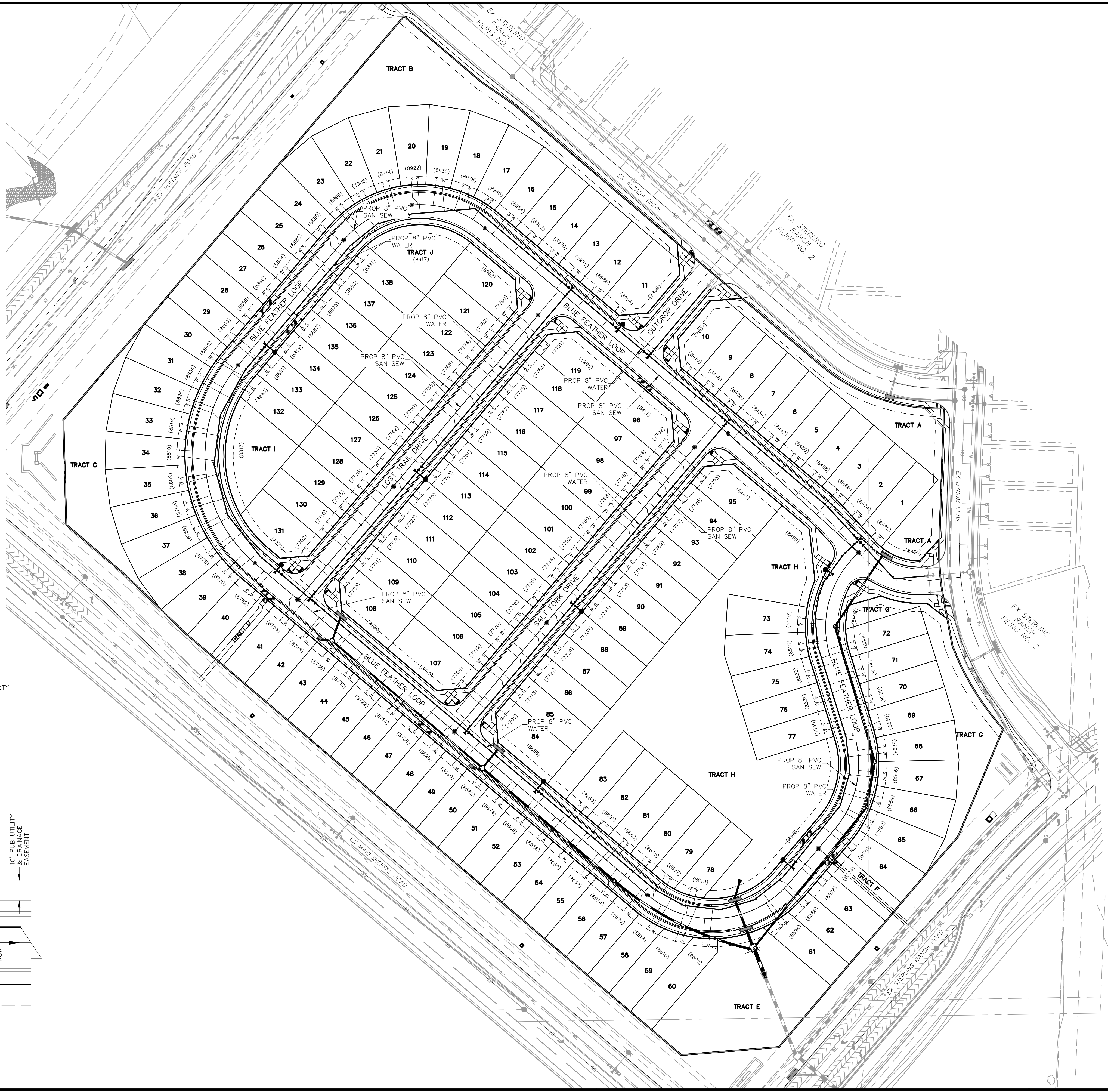
FOR AND ON BEHALF OF  
 MRS. CIVIL CONSULTANTS, INC.  
  
 VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160

NO.	DATE	BY	DESCRIPTION

APPRO'D. BY: \_\_\_\_\_ DATE: \_\_\_\_\_

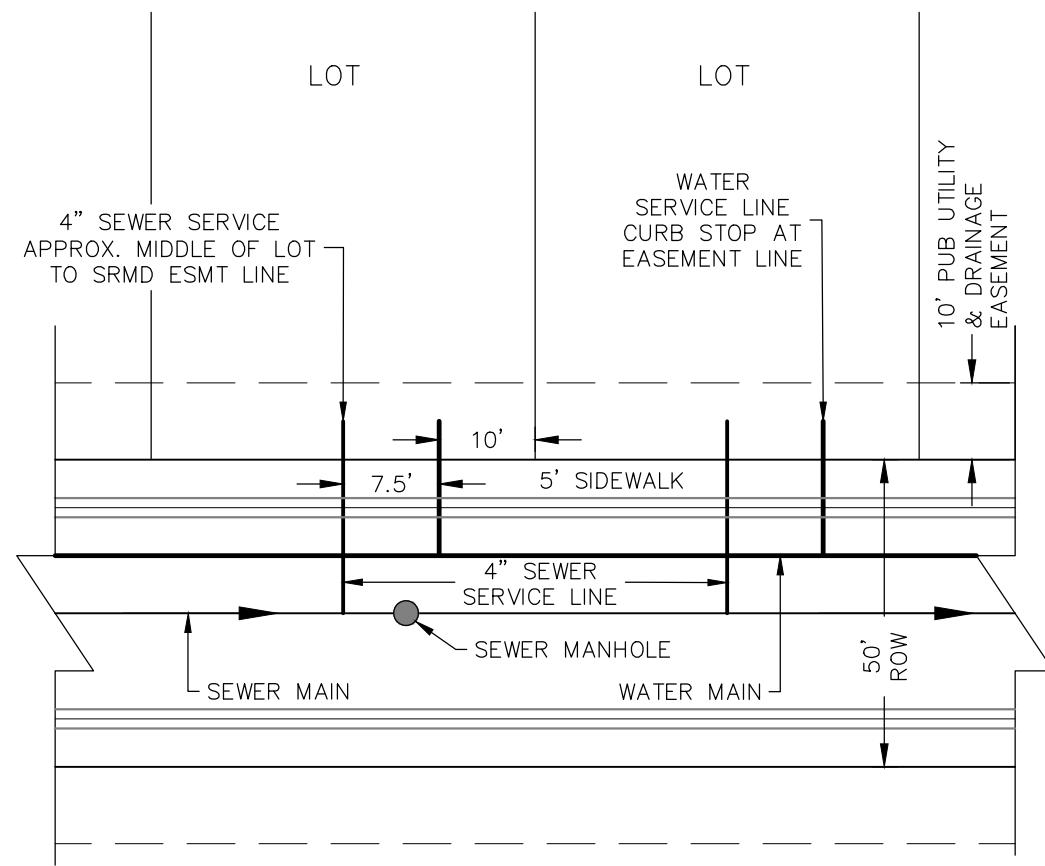
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**CAUTION**



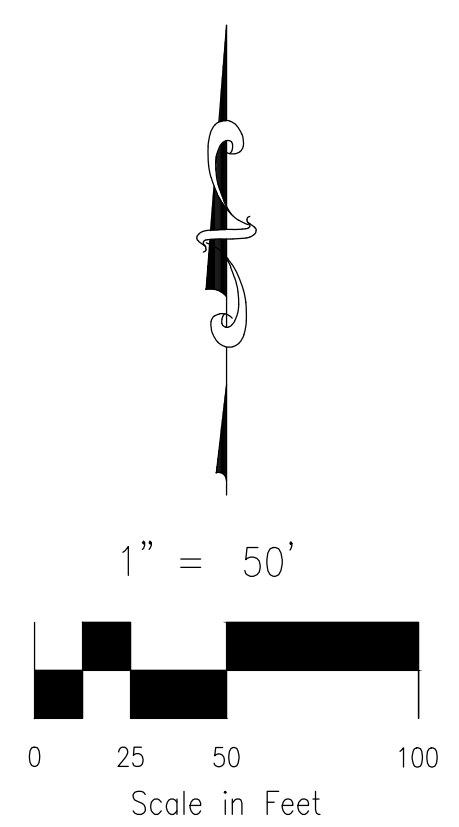
**NOTES:**

1. WATER SERVICE TO BE 10' FROM "DOWNSTREAM" PROPERTY LINE AND EXTENDED TO SRMD UTILITY EASEMENT LINE.
2. SEWER SERVICE TO BE PLACED APPROXIMATELY IN THE MIDDLE OF THE LOT AND EXTENDED TO SRMD 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.



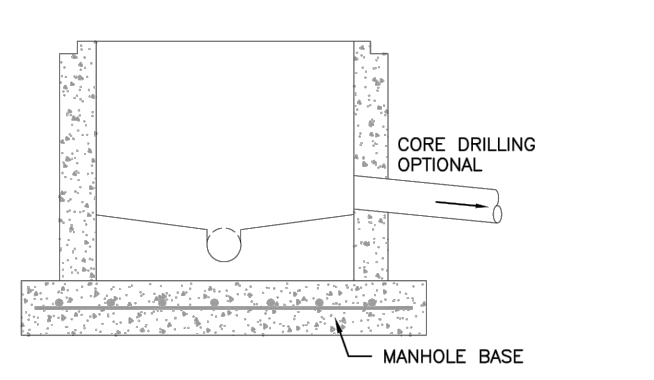
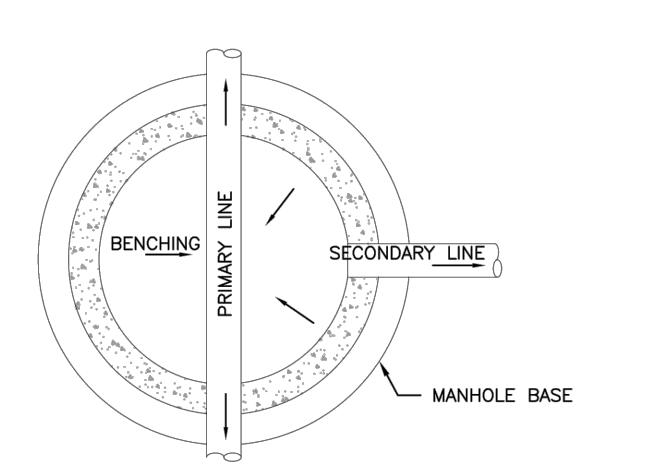
**UTILITY SERVICE LOCATIONS**

NTS



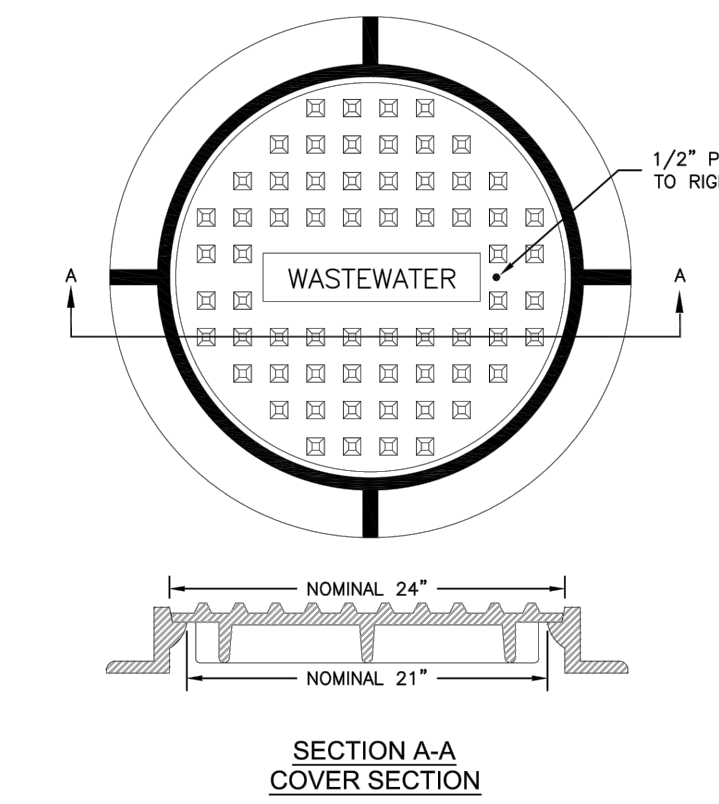


File: C:\Users\epierce\Documents\090144A\CHALLENGER\_PUD\DWG\CONSTR\DWG\UTILITY SERVICE PLAN\UT02.dwg Plotstamp: 8/7/2023 1:54 PM



APEX MANHOLE

C3-12  
DATED: 1/2017

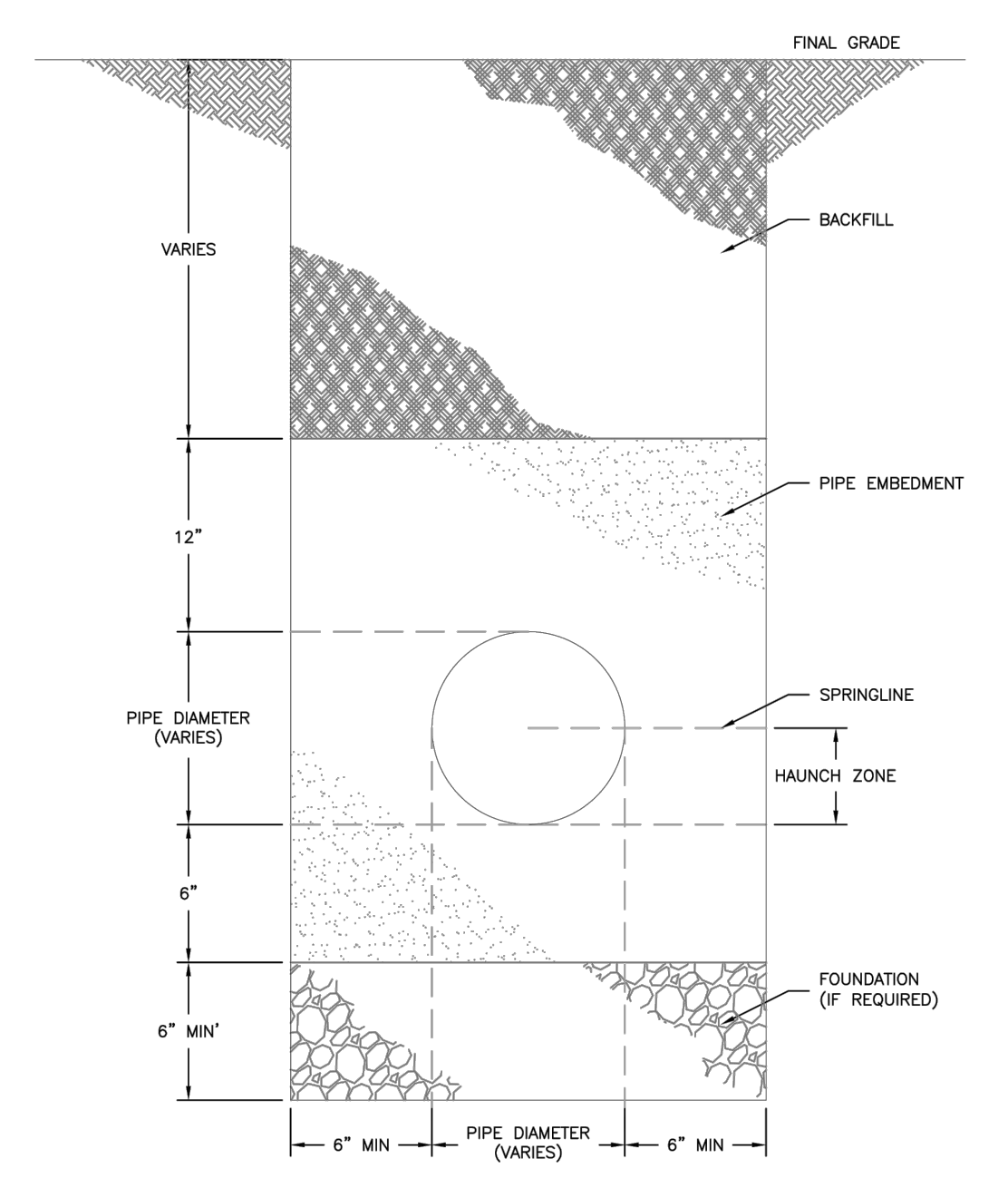


SECTION A-A  
COVER SECTION

NOTES:  
1. SEE CHAPTER 4 FOR ADDITIONAL INFORMATION AND SPECIFIC DIMENSIONS.

STANDARD MANHOLE RING AND COVER  
IN TRAFFIC AREAS

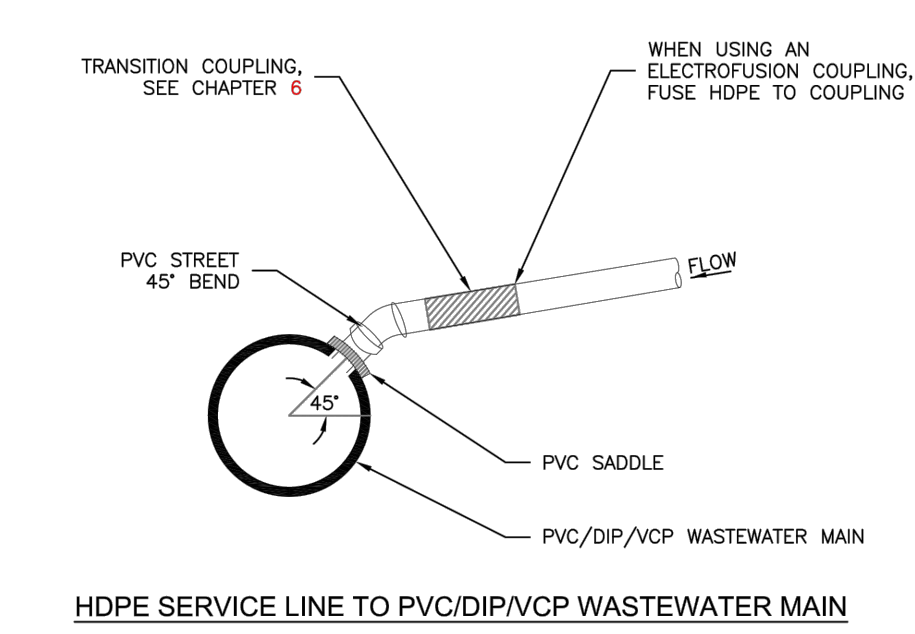
C3-9  
DATED: 5/2015



NOTE:  
1. TRENCH BACKFILL SHALL CONFORM TO THE SPECIFICATIONS OF THE AUTHORITY HAVING JURISDICTION AND ASTM D2321.

TYPICAL TRENCH SECTION

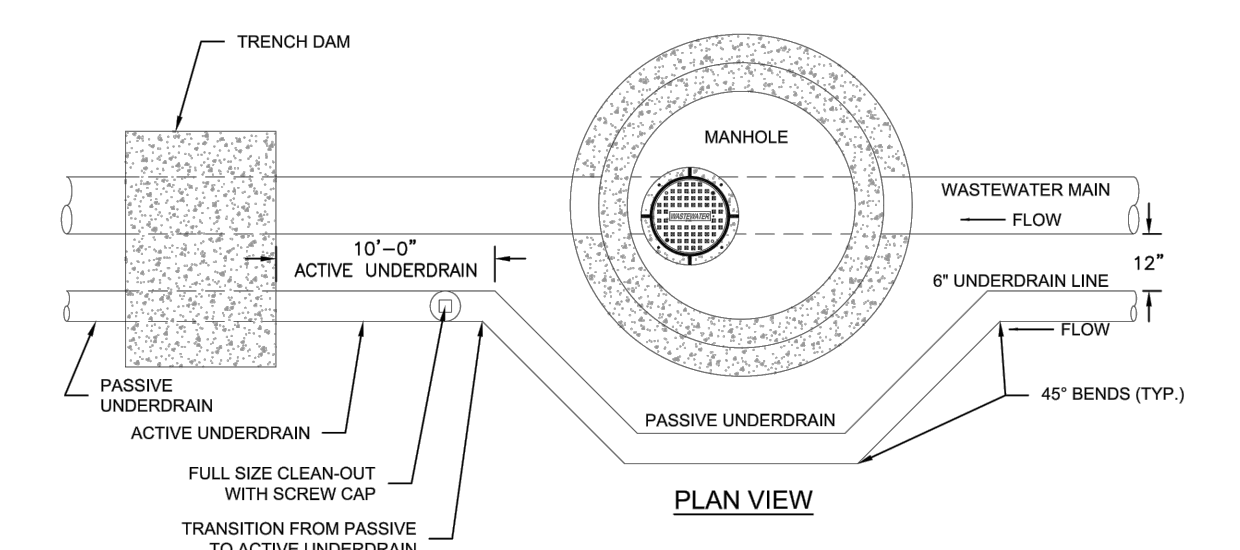
C2-1  
DATED: 5/2015



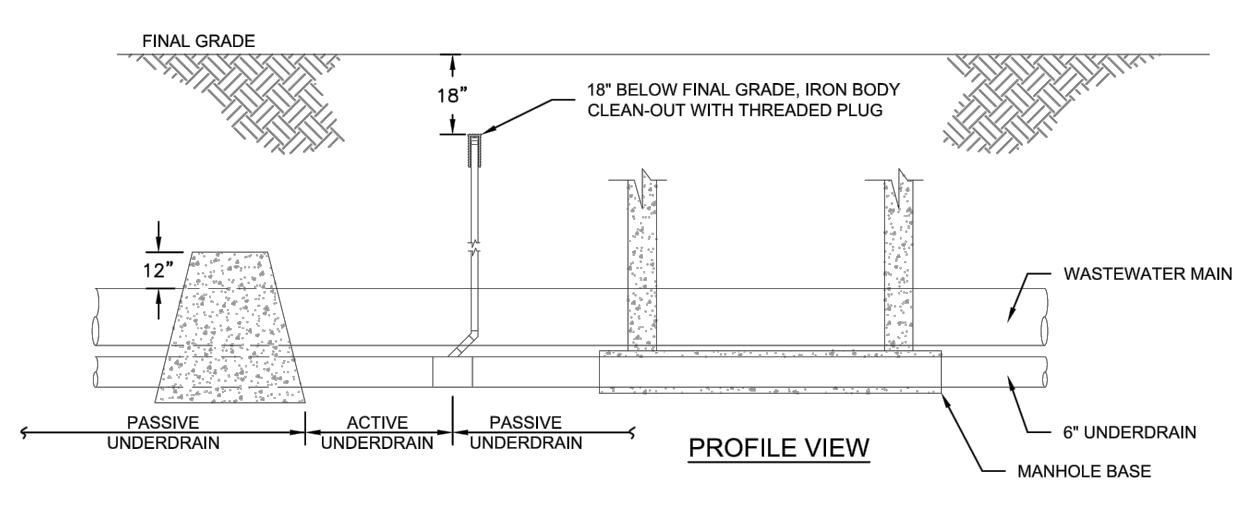
HDPE SERVICE LINE TO PVC/DIP/VCP WASTEWATER MAIN

HDPE SERVICE LINE CONNECTION  
TO PVC/DIP/VCP WASTEWATER MAIN

D1-9  
DATED: 5/2015



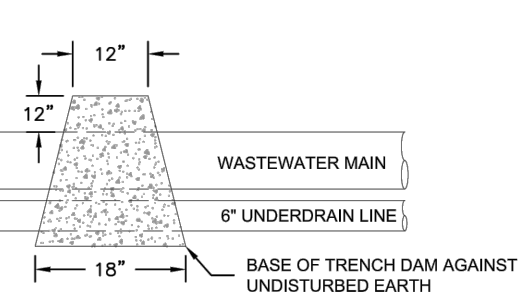
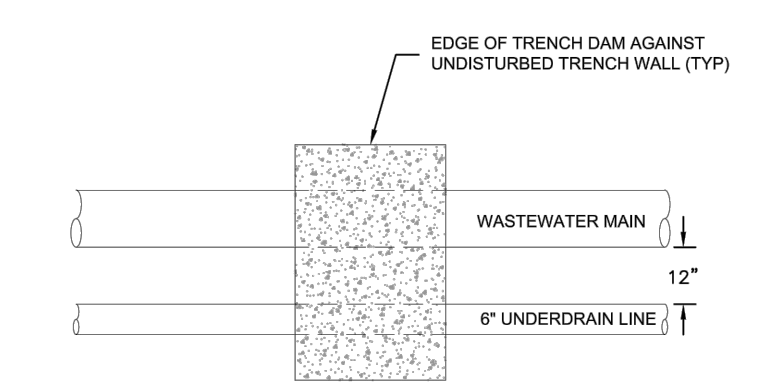
PLAN VIEW



PROFILE VIEW

PASSIVE GROUNDWATER  
UNDERDRAIN SCHEMATIC

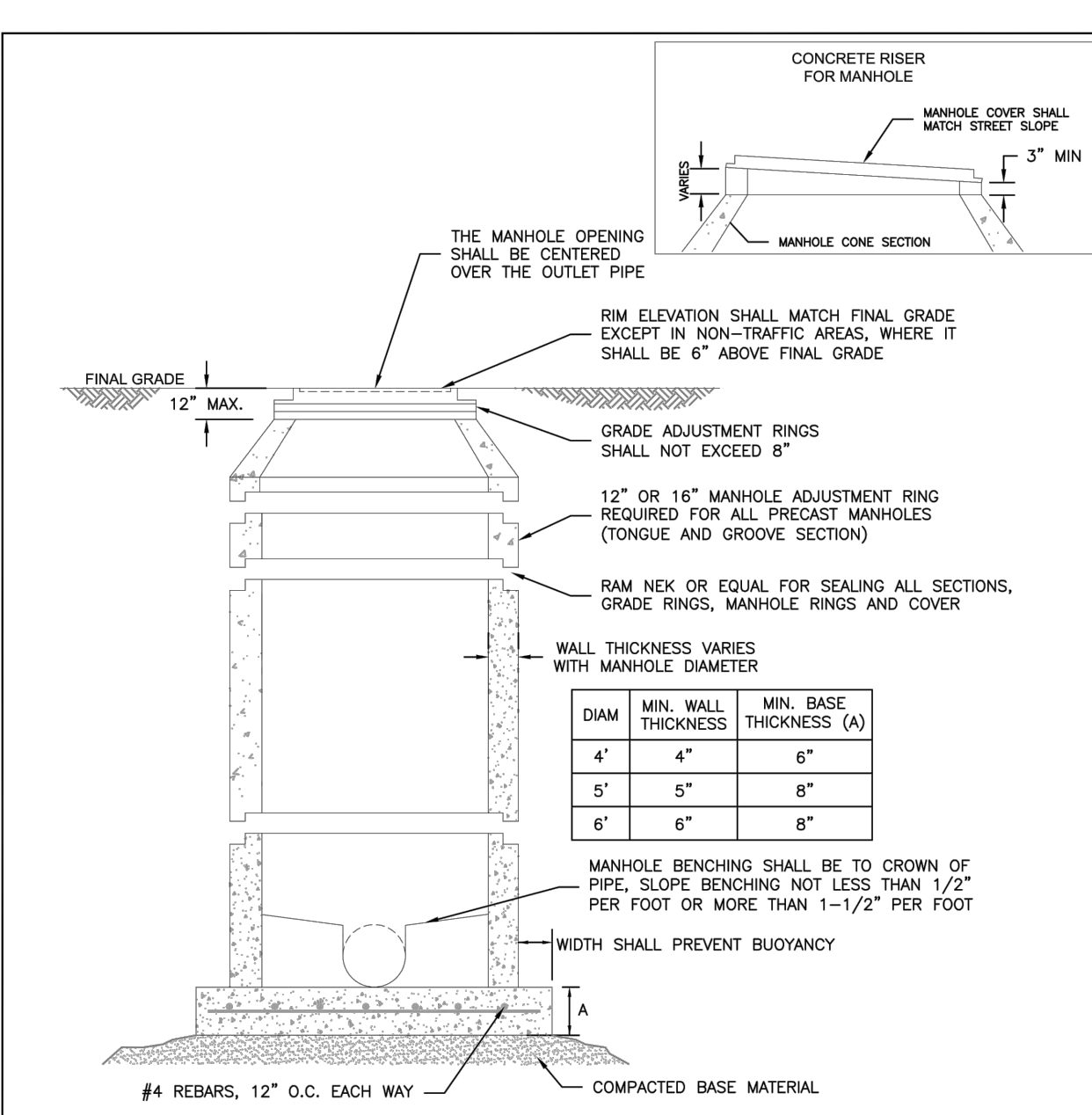
C6-1  
DATED: 5/2015



UNDERDRAIN TRENCH DAM

NOTES:  
1. TRENCH DAMS ARE REQUIRED AT THE TRANSITION FROM ACTIVE UNDERDRAINS TO PASSIVE UNDERDRAINS.

C6-2  
DATED: 5/2015



NOTES:  
1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI @ 28 DAYS AND DESIGNED FOR HS-20 LOADING CONDITIONS.  
2. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED.  
3. FOR CAST IN PLACE MANHOLES, DO NOT DROP CONCRETE A DISTANCE OF MORE THAN 5' UNLESS APPROVED BY COLORADO SPRINGS UTILITIES.  
3/4\"/>

STANDARD CONCRETE MANHOLE

C3-1  
DATED: 5/2015

PIPE SIZE AND MATERIAL	ALLOWABLE DEFLECTION	PIPE LENGTH AND CORRESPONDING RADIUS							
		20'	18'	16'	14'	12'	10'	8'	6'
4" - 12" DIP	4'10"	286'	258'	229'	200'	172'	143'	115'	100'
14" - 18" DIP	3'12"	358'	322'	287'	251'	215'	179'	143'	107'
18" - 36" DIP	2'24"	477'	430'	382'	334'	286'	239'	191'	143'
4" - 36" SDR 35 PVC	3'00"	382'	344'	306'	267'	230'	191'	153'	115'

NOTES:  
1. COLORADO SPRINGS UTILITIES USES A 1.25 SAFETY FACTOR FOR DIP SLIP JOINT DEFLECTION FROM THE MANUFACTURER'S ALLOWABLE DEFLECTION.  
2. SDR 35 PVC SHALL NOT BE DEFLECTED WITHOUT THE USE OF FABRICATED 3" BENDS.  
3. MINIMUM RADIUS FOR DIP AND SDR 35 PVC SHALL BE 100'.

MINIMUM RADIUS FOR DIP AND PVC PIPE

C2-2  
DATED: 5/2015

COPPER CHASE AT STERLING RANCH

UTILITY DETAILS

PROJECT NO. 090144 DATE: 08/05/2023

DESIGNED BY: CWV HORIZONTAL: N/A

DRAWN BY: TAU VERTICAL: N/A

CHECKED BY: VAS SHEET 9 OF 9

UT02

212 N. WAHATCH AVE, STE 305  
COLORADO SPRINGS, CO 80903  
PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 371160

FOR AND ON BEHALF OF MKS CIVIL CONSULTANTS, INC.

NO. DATE: BY: DESCRIPTION: APPROV'D. BY: DATE:

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CAUTION