

**HORIZONTAL CONTROL**  
MODIFIED COORDINATE SYSTEM - SEE SHEETS IN DRAWINGS

**VERTICAL DATUM**  
NAVD88

# GRANDVIEW RESERVE METROPOLITAN DISTRICT INTERCEPTOR SEWER CONSTRUCTION DOCUMENTS

## AND EROSION CONTROL PLANS COUNTY OF EL PASO, STATE OF COLORADO

### **LOCATION MAP**

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**PROJECT CONTACTS:**

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GREENWOOD VILLAGE, CO 80111  
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**GEOTECHNICAL ENGINEER**  
COMPANY: CTL | THOMPSON  
ADDRESS: 5170 MARK DABLING BLVD  
COLORADO SPRINGS, CO 80918  
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**TRAFFIC ENGINEER**  
LSC TRANSPORTATION CONSULTANTS INC.  
2504 EAST PIKES PEAK AVENUE, SUITE 304  
COLORADO SPRINGS, CO 80909  
TELE: 87191 693-2888  
ATTN: JEFFREY C. HODSON, P.E.  
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**SURVEYOR**  
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926 ELKTON DRIVE  
COLORADO SPRINGS, CO 80907  
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GRANDVIEW RESERVE METROPOLITAN DISTRICT  
1272 KELLY JOHNSON BLVD, SUITE 100  
COLORADO SPRINGS, CO 80921  
TELE: (719) 499-8416  
ATTN: PAUL HOWARD  
EMAIL: PAULINFINITY1@MSN.COM

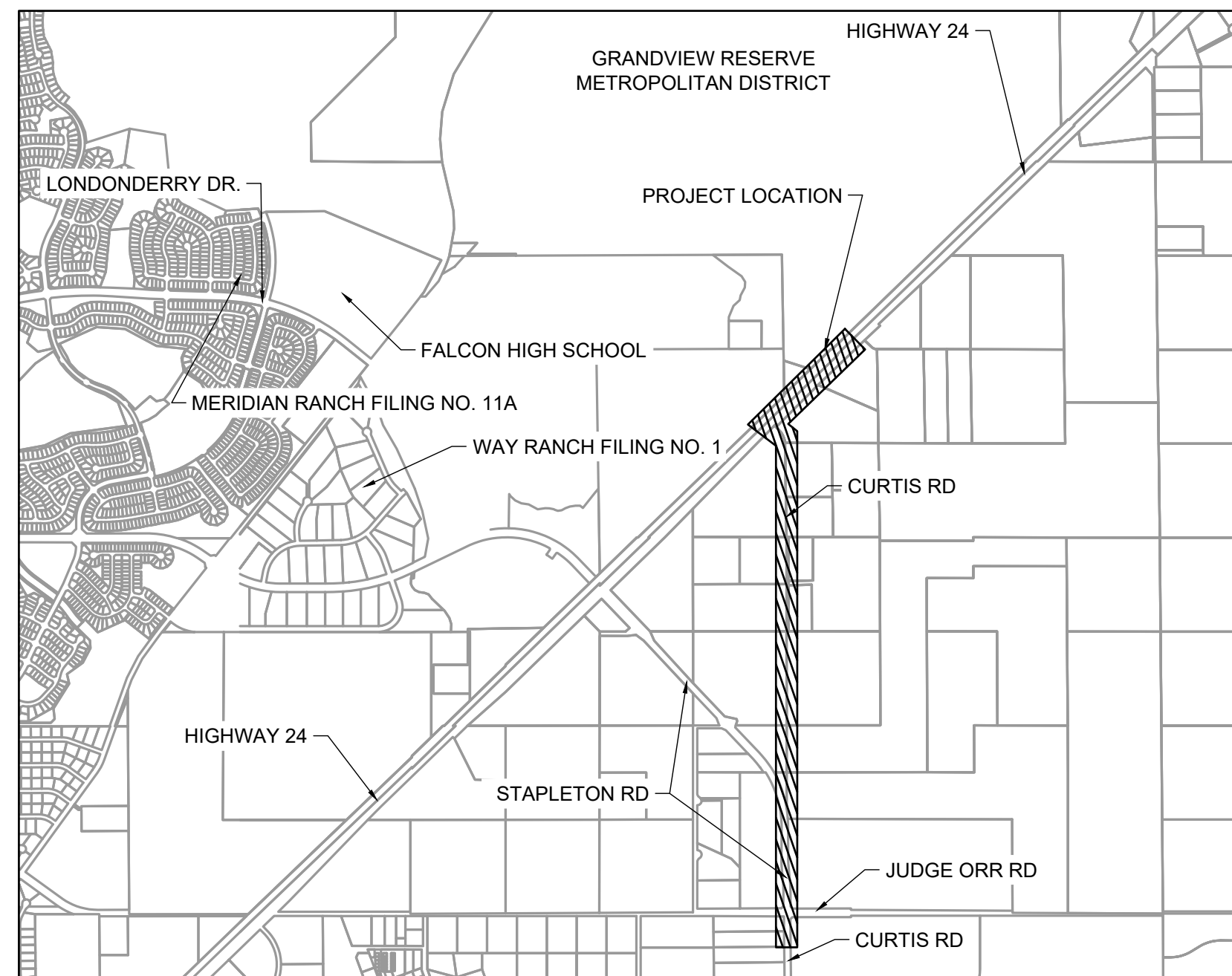
**WASTEWATER / WATER**  
WOODMEN HILLS METRO DISTRICT  
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**FIRE**  
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**COMMUNICATIONS**  
CENTURY LINK  
ZAYO  
USWEST



**VICINITY MAP**  
1"=2000'



1975 RESEARCH PARKWAY, SUITE 230 | COLORADO SPRINGS, CO 80920  
Phone: 719.300.4140 | Toll Free: 800.728.7805 | Fax: 713.965.0044 | HRGreen.com

**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.

Joshua Palmer

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

**ENGINEER'S STATEMENT (FOR GEC PLAN WITHIN CONSTRUCTION DRAWING SET):**

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 CONFORMANCE 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.

GREG PANZA, P.E. #37081 \_\_\_\_\_ DATE \_\_\_\_\_  
FOR AND ON BEHALF OF HR GREEN, INC.

**OWNER'S STATEMENT (FOR GEC PLAN WITHIN CONSTRUCTION DRAWING SET):**

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN AND ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATION

OWNER'S SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**ENGINEERS STATEMENT:**

THE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID DETAILS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE STATE OF COLORADO.

GREG PANZA, P.E. #37081 \_\_\_\_\_ DATE \_\_\_\_\_  
FOR AND ON BEHALF OF HR GREEN, INC.

**SEWER MAIN EXTENSIONS:**

ANY CHANGES OR ALTERATIONS AFFECTING THE GRADE, ALIGNMENT, ELEVATIONS 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 \_\_\_\_\_ DATE \_\_\_\_\_

PRINT NAME \_\_\_\_\_

DBA \_\_\_\_\_

ADDRESS \_\_\_\_\_

**DISTRICT APPROVALS:**

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

**WOODMEN HILLS METROPOLITAN DISTRICT  
WASTEWATER DESIGN APPROVAL:**

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

PROJECT NO. \_\_\_\_\_

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.

**PCD # PPR2421**

DRAWN BY: JMM	JOB DATE: 6/7/2024	BAR IS ONE INCH ON OFFICIAL DRAWINGS.
APPROVED: GP	JOB NUMBER: 201662.07	0 _____ 1"
CAD DATE: 6/7/2024		IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.
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NO.	DATE	BY	REVISION DESCRIPTION

**HRGreen**  
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GRANDVIEW RESERVE M.D. -  
INTERCEPTOR SEWER  
D.R. HORTON  
EL PASO COUNTY, CO

CONSTRUCTION DOCUMENTS  
COVER SHEET

SHEET  
G000



**LEGEND**



**DESIGN NOTES/SPECIFICATIONS (CONTINUED)**

9. CORROSION PROTECTIVE LINING SPECIFICATIONS FOR MANHOLES - EPOXY LINER

QUALITY ASSURANCE

- A.1. ALL COATINGS SHALL CONFORM TO OSHA REQUIREMENTS FOR ALLOWABLE EXPOSURE TO LEAD AND OTHER HAZARDOUS SUBSTANCES.
- A.2. MANUFACTURER SHALL BE A COMPANY THAT SPECIALIZES IN PRODUCING HIGH QUALITY INDUSTRIAL COATING MATERIALS.
- A.3. APPLICATOR: COMPANY THAT HAS SUCCESSFULLY COMPLETED COATING SYSTEMS APPLICATIONS SIMILAR IN MATERIAL AND EXTENT TO THOSE INDICATED. APPLICATOR SHALL BE ABLE TO SUPPLY SUITABLE EQUIPMENT TO PREPARE THE SURFACES AND APPLY THE PROTECTIVE COATING SYSTEM SPECIFIED WITHIN THIS ARTICLE.
- A.4. SINGLE SOURCE RESPONSIBILITY: PROVIDE COATING MATERIAL AND THINNERS PRODUCED BY THE SAME MANUFACTURER FOR EACH SYSTEM ON ALL SURFACES OF THE MANHOLE BENCH.
- A.5. FIELD PAINTING PRE-APPLICATION MEETING: HOLD A PRE-APPLICATION MEETING BEFORE THE START OF FIELD SURFACE PREPARATION AND COATING APPLICATION. REQUIRE ATTENDANCE OF PARTIES DIRECTLY AFFECTING WORK OF THIS SPECIAL PROVISION, INCLUDING THE ENGINEER, APPLICATOR, INSPECTOR, AND COATING MANUFACTURER'S REPRESENTATIVE. REVIEW THE SPECIFICATIONS TO INSURE EACH PARTY'S RESPONSIBILITIES ARE UNDERSTOOD. SUBJECTS TO BE DISCUSSED ARE: ENVIRONMENTAL REQUIREMENTS, PROTECTION OF SURFACES NOT SCHEDULED TO BE COATED, SURFACE PREPARATION, APPLICATION, REPAIR, FIELD QUALITY CONTROL, CLEANING, PROTECTION OF COATING SYSTEMS, COORDINATION WITH OTHER WORK AND ANY OTHER AREAS OF CONCERN EXPRESSED AT THE MEETING.
- A.6. DUST AND CONTAMINANTS: SCHEDULE COATING WORK TO AVOID EXCESSIVE DUST AND AIRBORNE CONTAMINANTS. PROTECT WORK AREAS FROM EXCESSIVE DUST AND AIRBORNE CONTAMINANTS DURING COATING APPLICATION AND CURING.

A. WARRANTY: FULL WARRANTY AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR TWO YEARS AFTER SUBSTANTIAL COMPLETION, INCLUDING ALL PARTS, LABOR, AND EXPENSES

B. PRODUCTS

- B.1. MANUFACTURERS: ITW POLYMER COATINGS, MAINSTAY, RAVEN, OR SAUERREISEN
- B.2. GENERAL:
  - B.2.1. APPLICATION METHOD SHALL BE DESIGNED AND INSTALLED USING TECHNIQUE RECOMMENDED BY THE MANUFACTURER.
  - B.2.2. COLORS SHALL BE AS SELECTED BY ENGINEER
  - B.2.3. UNLESS OTHERWISE NOTED, ITW POLYMERS COATINGS PRODUCTS ARE IDENTIFIED IN THIS EPOXY LINER SYSTEM TO ESTABLISH QUALITY AND TYPE DESIRED.
  - B.2.4. SYSTEM THICKNESS OR COVERAGE RATE IS RECOMMENDED BY ITW POLYMERS COATINGS. IF OTHER MANUFACTURERS ARE USED, MANUFACTURER REQUIREMENTS SHALL BE FOLLOWED, BUT IN NO CASE SHALL THICKNESS OR COVERAGE RATE BE LESS THAN ITW POLYMERS COATINGS.

B.3. PROPERTIES-MEET THE FOLLOWING:

PROPERTY	TEST METHOD	PERFORMANCE
COMPRESSIVE STRENGTH	ASTM C579	12,870 PSI
TENSILE STRENGTH	ASTM D638	6,690 PSI
FLEXURAL STRENGTH	ASTM D580	12,443 PSI
BOND STRENGTH	ASTM D4541	450 PSI

B.3.1. VOLUME OF SOLIDS: 100%

B.4. SURFACE PREPARATION:

- B.4.1. CONCRETE SURFACES SHALL BE ABRASIVE BLASTED IN ACCORDANCE WITH SSPC-SP13 TO PRODUCE A CLEAN AND ROUGHENED SURFACE FINISH. ALTERNATIVE SURFACE PREPARATION METHODS INCLUDE WET GRIT BLASTING, AND HIGH OR ULTRA-HIGH PRESSURE WATER JETTING.
- B.4.2. ALL LOOSE SURFACE CONTAMINATION SHALL BE COMPLETELY REMOVED BY VACUUMING OR HIGH PRESSURE WATER WASHING. THE SUBSTRATE MUST BE VISIBLY DRY BEFORE PROCEEDING. ANY SPECIFIC AREA THAT IS NOT VISIBLY DRY OR IS EXPERIENCING WATER PENETRATION (I.E., GROUND WATER SEEPAGE) SHALL BE SURFACE-DRIED UTILIZING FORCED AIR HEATING OR DEHUMIDIFICATION UNITS. MOISTURE VAPOR TRANSMISSION SHOULD BE 3 POUNDS OR LESS PER 1000 SQUARE FEET OVER A 24 HOUR TIME PERIOD, AS CONFIRMED THROUGH A CALCIUM CHLORIDE TEST PER ASTM E-1907. QUANTITATIVE RELATIVE HUMIDITY (RH) TESTING, ASTM F-2170, SHOULD CONFIRM CONCRETE RH RESULTS BELOW 75%.
- B.4.3. PROVIDE A SURFACE PROFILE OF ICRI CSP-3 TO ICRI CSP-5.

B.5. SYSTEM:

- B.5.1. CONCRETE RESURFACING: ROUGH CONCRETE, SPALLED CONCRETE OR CONCRETE SURFACES WITH VOIDS AND/OR BUG HOLES MUST BE RESURFACED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
- B.5.2. PRIMER COAT: 1 COAT/125 TO 175 SQUARE FEET PER GALLON (SFFG) "POLYSPEC MMP PRIMER, TRANSPARENT AMBER" BY ITW POLYMERS COATINGS.
- B.5.3. INTERMEDIATE COAT: 1 COAT/40.0 TO 60.0 DRY FILM THICKNESS (MILS/COAT) "TUFFREZ 240, GRAY" BY ITW POLYMERS COATINGS.
- B.5.4. TOP COAT: 1 COAT/40.0 TO 60.0 DRY FILM THICKNESS (MILS/COAT) "TUFFREZ 240, GRAY" BY ITW POLYMERS COATINGS.

B.6. THINNING AND MIXING:

- B.6.1. EPOXY LINER MATERIALS SHALL BE MIXED WITH A POWER MIXER OF SUFFICIENT SIZE TO ENSURE COMPLETE DISPERSION OF PIGMENTS AND BLENDING OF REACTIVE COMPONENTS.
- B.6.2. EPOXY LINER MATERIALS SHALL NOT BE THINNED UNLESS SPECIFICALLY ALLOWED BY THE MANUFACTURER'S RECOMMENDATIONS.

B.7. EPOXY INSTALLATION

- B.7.1. EXAMINATION:
  - B.7.1.1. EXAMINE AREAS AND CONDITIONS UNDER WHICH THE EPOXY LINER SYSTEM IS TO BE APPLIED. NOTIFY CONTRACTOR AND ENGINEER OF AREAS OR CONDITIONS THAT ARE NOT ACCEPTABLE. DO NOT BEGIN SURFACE PREPARATION OR APPLICATION UNTIL UNACCEPTABLE AREAS OR CONDITIONS HAVE BEEN CORRECTED.
  - B.7.1.2. PROTECT SURROUNDING AREAS AND SURFACES NOT SCHEDULED TO BE COATED FROM DAMAGE DURING SURFACE PREPARATION AND APPLICATION OF EPOXY LINER SYSTEM. IMMEDIATELY REMOVE EPOXY LINER SYSTEM THAT FALL ON SURROUNDING AREAS AND SURFACES NOT SCHEDULED TO BE COATED.
  - B.7.1.3. ALL EPOXY LINER MATERIALS SHALL BE MIXED AND APPLIED AT TEMPERATURES IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE MANUFACTURER'S RECOMMENDATION.
    - B.7.1.3.1. EPOXY LINER MATERIALS SHALL NOT BE APPLIED IN INCLEMENT WEATHER CONDITIONS.
    - B.7.1.3.2. AMBIENT TEMPERATURES MUST BE BETWEEN 40°F AND 85°F DURING APPLICATION OF EPOXY LINER MATERIALS. RELATIVE HUMIDITY MUST BE BELOW 85%.
    - B.7.1.3.3. THE MINIMUM SUBSTRATE TEMPERATURE AT THE TIME OF APPLICATION SHALL BE 45°F. THE MAXIMUM SUBSTRATE TEMPERATURE AT THE TIME OF APPLICATION SHALL BE 100°F.
    - B.7.1.3.4. AT THE TIME OF APPLICATION, THE SUBSTRATE TEMPERATURE MUST BE AT LEAST 5°F ABOVE THE DEW POINT.
    - B.7.1.3.5. DURING APPLICATION, THE SUBSTRATE TEMPERATURE MUST BE DECLINING.
  - B.7.1.4. ADEQUATE LIGHTING SHALL BE PROVIDED TO SUFFICIENTLY LIGHT UP ALL AREAS TO BE WORKED ON WITHOUT INCLUSION OF SHADOW AREAS. ADEQUATE LIGHTING SHALL BE CONSIDERED A MINIMUM OF 20 FOOT CANDLES IN ALL AREAS IN WHICH WORK OR INSPECTION PROCESSES ARE OCCURRING.

- B.7.1.5. EPOXY LINER MATERIALS SHALL NOT BE APPLIED WINDY CONDITIONS. CONTRACTOR SHALL ENSURE WINDBLOWN MATTER IS PREVENTED FROM CONTAMINATING FRESHLY COATED SURFACES.
  - B.7.1.6. KEEP CONTAINERS CLOSED WHEN NOT IN USE TO AVOID CONTAMINATION.
  - B.7.1.7. DO NOT USE MIXED EPOXY LINER MATERIALS BEYOND POT LIFE LIMITS.
  - B.7.1.8. APPLY MULTIPLE COATS WITHIN MANUFACTURER'S RECOMMENDED RECOAT TIMEFRAME.
  - B.7.1.9. USE APPLICATION EQUIPMENT, TOOLS, PRESSURE SETTINGS, AND TECHNIQUES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
  - B.7.1.10. UNIFORMLY APPLY EPOXY LINER MATERIALS AT SPREADING RATE REQUIRED TO ACHIEVE SPECIFIED DFT.
  - B.7.1.11. APPLY EPOXY LINER MATERIALS TO BE FREE OF FILM DEFECTS THAT WOULD ADVERSELY AFFECT PERFORMANCE OF THE LINER SYSTEM.
- B.7.2. REPAIRS:**
- B.7.2.1. DAMAGED MATERIALS: REPAIR OR REPLACE DAMAGED MATERIALS AND SURFACES NOT SCHEDULED TO BE COATED.
  - B.7.2.2. DAMAGED LINER SYSTEM: REPAIR DAMAGED EPOXY LINER MATERIALS.
    - B.7.2.2.1. REPAIRS SHALL BE MADE WITH THE EPOXY LINER SYSTEM, SURFACE PREPARATION, AND COAT THICKNESS SPECIFIED IN ARTICLE 120141A.02. A.
    - B.7.2.2.2. COMPLETE REPLACEMENT OF THE EPOXY LINER MAY BE REQUIRED BY ENGINEER IF THE DAMAGED OR UNSATISFACTORY AREA EXCEEDS 2% OF THE TOTAL COATED SURFACE AREA. PRIOR TO ANY REPAIR WORK, THE SURFACE SHALL BE CLEANED IN ACCORDANCE WITH SSPC-SP 1.
    - B.7.2.2.4. INTACT AREAS AROUND THE DAMAGED AREA SHALL BE FEATHERED BY EITHER HAND SANDING, POWER TOOL CLEANING, OR ABRASIVE BLAST CLEANING PRIOR TO THE APPLICATION OF THE EPOXY LINER.
  - B.7.2.3. LINER SYSTEM DEFECTS: COMPLETELY REPLACE THE DEFECTIVE EPOXY LINER WITH THE EPOXY LINER SYSTEM, SURFACE PREPARATION, AND COAT THICKNESS SPECIFIED IN ARTICLE 120141A.02. A.
- B.8. TESTING EQUIPMENT AND PROCEDURES**
- B.8.1. PROVIDE ON THE PROJECT SITE, TESTING EQUIPMENT NECESSARY TO TEST THE FOLLOWING. EQUIPMENT SHALL BE IN CALIBRATION AND PROPER WORKING ORDER. EQUIPMENT SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS OR AS DIRECTED BY THE ENGINEER. THE ENGINEER SHALL BE NOTIFIED OF TIME OF TESTING SO THAT HE MIGHT BE PRESENT TO WITNESS TESTING. KEEP A DAILY LOG OF ENVIRONMENTAL CONDITIONS, WORK SCHEDULE, AND ANY OTHER PERTINENT INFORMATION. THE LOG SHALL BE TURNED OVER TO THE ENGINEER AT THE END OF THE PROJECT TO BE INCLUDED IN THE PERMANENT RECORD. PROVIDE QUALIFIED PERSONNEL TO PERFORM THE FOLLOWING TESTING:
    - B.8.1.1. MONITORING AMBIENT TEMPERATURE.
    - B.8.1.2. DETECTING OIL OR WATER IN COMPRESSED AIR.
    - B.8.1.3. DETERMINING DEGREE OF CLEANLINESS FOR BLAST CLEANED SURFACES.
    - B.8.1.4. MEASURING NON-VISIBLE CONTAMINANTS ON CONCRETE SURFACES.
    - B.8.1.5. MEASURING CONCRETE SURFACE PROFILE.
    - B.8.1.6. MONITORING THE MIXING AND THINNING OF EPOXY LINER MATERIALS.
    - B.8.1.7. MEASURING WET FILM THICKNESS OF EPOXY LINER MATERIALS.
    - B.8.1.8. MEASURING EPOXY LINER MATERIAL ADHESION USING PORTABLE ADHESION TESTERS (DESTRUCTIVE TEST TO BE PERFORMED ONLY WHEN REQUIRED).
    - B.8.1.9. DISCONTINUITY OR HOLIDAY TESTING OF EPOXY LINER MATERIALS.
    - B.8.1.10. TESTING FOR CURE OF EPOXY LINER MATERIALS

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 APPROVED: GP      JOB NUMBER: 201662.07  
 CAD DATE: 6/11/2024  
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 IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

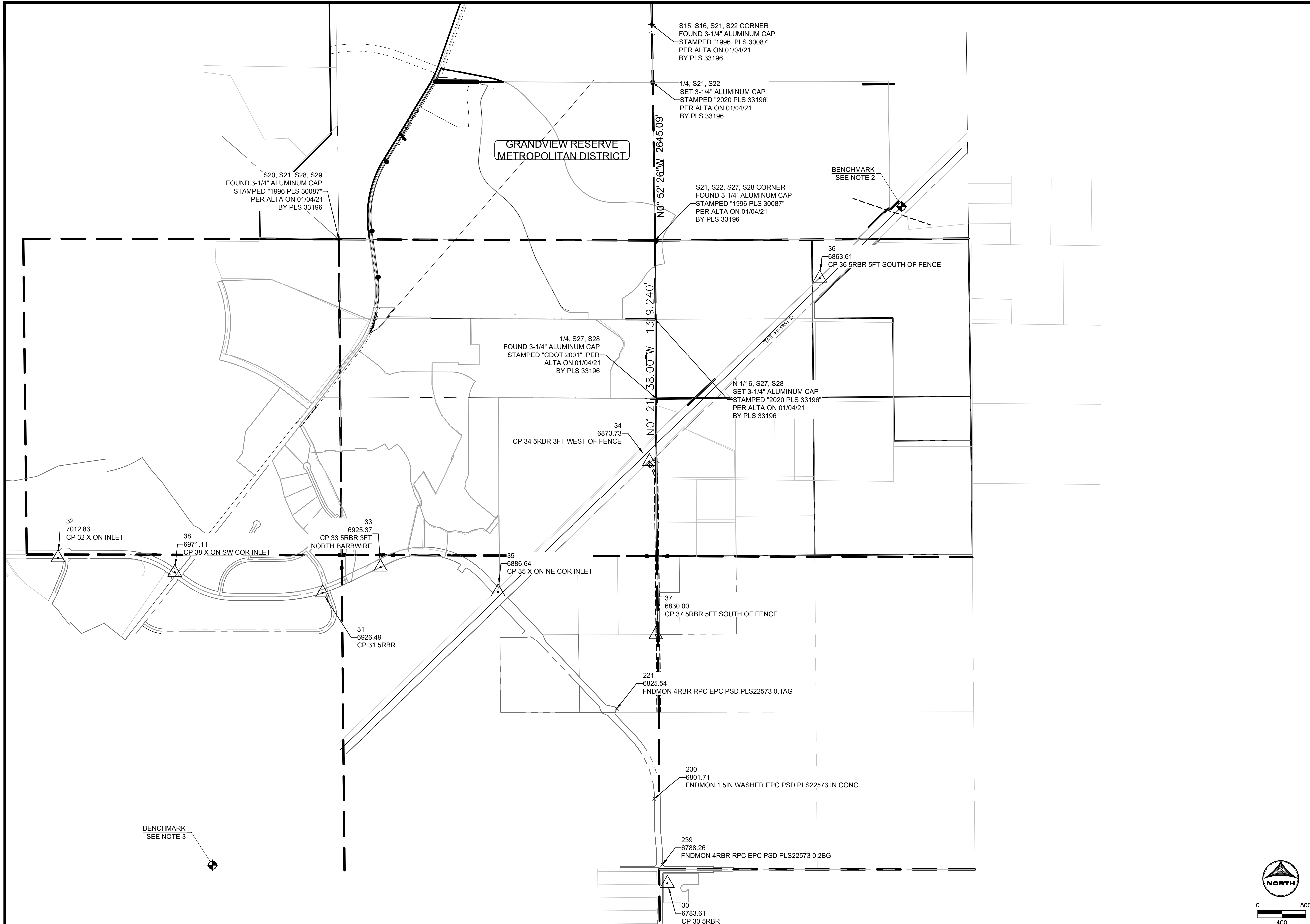
NO.	DATE	BY	REVISION DESCRIPTION

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 COLORADO SPRINGS CO 80920  
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 FAX: 713.965.0044

GRANDVIEW RESERVE M.D. - INTERCEPTOR SEWER  
**D.R. HORTON**  
 EL PASO COUNTY, CO

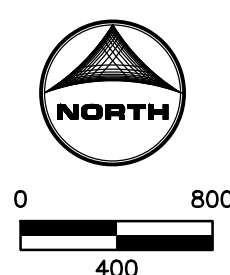
CONSTRUCTION DOCUMENTS  
 LEGEND

SHEET  
**G002**



- KEYMAP**
- PROJECT LEGEND:**
- PROPERTY LINE
  - - - SECTION LINE
  - ⊕ BENCHMARK
  - △ CONTROL POINTS
  - × FOUND MONUMENTS

- NOTES:**
1. BASIS OF BEARINGS: THE EAST LINE OF SECTION 21, BEING MONUMENTED AT THE SOUTHEAST CORNER BY A 3-1/4" ALUMINUM SURVEYOR'S CAP STAMPED "PS INC PLS 30087 1996", BEING APPROPRIATELY MARKED, AND BEING MONUMENTED AT THE NORTHEAST CORNER BY A 3-1/4" ALUMINUM SURVEYOR'S CAP STAMPED "PS INC PLS 30087 1996", BEING APPROPRIATELY MARKED, BEING ASSUMED TO BEAR NORTH 00 DEGREES 52 MINUTES 26 SECONDS WEST, A DISTANCE OF 5290.17 FEET.
  2. BENCHMARK:  
 DESIGNATION = F 24  
 PID = JK0240  
 DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT  
 CONTROL POINT COORDINATE SYSTEM:  
 NAVD88  
 NORTHING: 1421049.58  
 EASTING: 3273631.70  
 ELEVATION: 6866.33
  3. BENCHMARK:  
 DESIGNATION = E 24  
 PID = JK0239  
 DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT  
 CONTROL POINT COORDINATE SYSTEM:  
 NAVD88  
 NORTHING: 1410031.47  
 EASTING: 3262112.16  
 ELEVATION: 6902.18



**811** UNCC  
 CALL BEFORE YOU DIG  
 811 OR  
 1-800-922-1987  
 Utility Notification  
 Center of Colorado

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 INTERCEPTOR SEWER  
 D.R. HORTON  
 EL PASO COUNTY, CO

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CONSTRUCTION DOCUMENTS  
 SURVEY CONTROL PLAN

SHEET  
**G003**

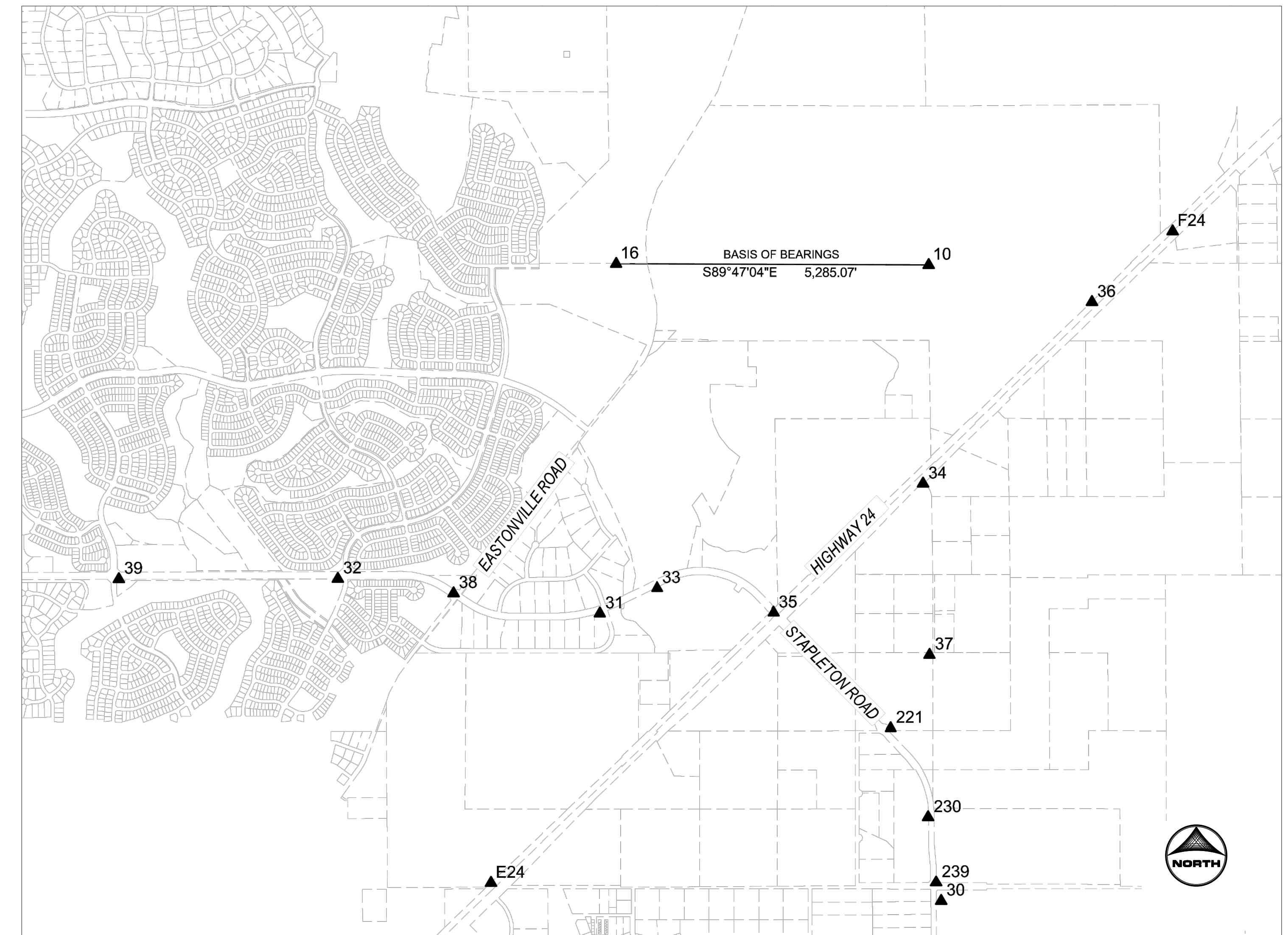
# GRANDVIEW PROJECT COORDINATES

**PROJECT COORDINATE NOTES:**

THE PROJECT COORDINATES FOR GRANDVIEW WERE ESTABLISHED BY AN ENGINEERING AND SURVEYING CONSULTANT PRIOR TO EDWARD-JAMES SURVEYING'S (EJSI) INVOLVEMENT IN THE PROJECT. IN LATE 2005, EJSI WAS PROVIDED WITH PROJECT COORDINATES FOR SEVERAL SECTION CORNERS THROUGHOUT THE PROJECT AREA. EJSI CALIBRATED TO THE PROJECT COORDINATE SYSTEM AND BEGAN WORKING ON SEVERAL PROJECTS IN THE AREA. RECENTLY, IT HAS BEEN REQUESTED THAT A CORRELATION BETWEEN THE PROJECT COORDINATES AND STATE PLANE CENTRAL BE ESTABLISHED. IN ORDER TO ACCOMPLISH THIS, EJSI SURVEYED THE LOCATION OF TWO NGS MONUMENTS (E24 AND F24) USING THE PROJECT CALIBRATION. BELOW ARE THE STEPS REQUIRED TO CONVERT PROJECT COORDINATE TO STATE PLANE CENTRAL COORDINATES.

TO GET FROM STATE PLANE COORDINATES TO PROJECT COORDINATES, COMPLETE THE FOLLOWING STEPS:

1. SCALE THE STATE PLANE COORDINATES BY 1.0003921722 USING THE STATE PLANE COORDINATE FOR E24 AS THE POINT OF ORIGIN.
2. TRANSLATE THE SCALED COORDINATE FROM THE STATE PLANE COORDINATE FOR E24 TO THE PROJECT COORDINATE FOR E24.
3. ROTATE THE SCALED AND TRANSLATED COORDINATE HOLDING THE PROJECT COORDINATE FOR E24 AND ROTATING CLOCKWISE BY 0°00'26".



POINT NO.	CO STATE PLANE CENTRAL COORDINATES		GRANDVIEW PROJECT COORDINATES		NAVD 88 ELEVATION	DESCRIPTION	LATITUDE	LONGITUDE
	NORTHING	EASTING	NORTHING	EASTING				
E 24	1409946.25	3261914.04	1410031.47	3262112.16	6,902.18	NGS E 24 (PID JK0239) - 3-1/4" BRASS DISK IN CONCRETE MONUMENT	N38°57'19.11389"	W104°34'44.20466"
F 24	1420961.49	3273427.68	1421049.58	3273631.70	6,866.33	NGS F 24 (PID JK0240) - 3-1/4" BRASS DISK IN CONCRETE MONUMENT	N38°59'06.81100"	W104°32'16.97772"
10	1420391.37	3269307.86	1420479.76	3269510.19	6,920.40	NORTHEAST CORNER SECTION 28 (3-1/4" AL CAP "PS INC LS 30087 1996")		
16	1420410.59	3264024.90	1420499.65	3264225.16	7,011.44	NORTHWEST CORNER SECTION 28 (3-1/4" AL CAP "PS INC LS 30087 1996")		
30	1409644.75	3269516.52	1409728.89	3269717.58	6,783.61	CP 30 NO. 5 REBAR		
31	1414500.64	3263750.88	1414587.41	3263950.29	6,926.49	CP 31 NO. 5 REBAR		
32	1415086.52	3259329.87	1415174.09	3259527.63	7,012.83	CP 32 "X" ON INLET		
33	1414929.81	3264719.53	1415016.64	3264919.38	6,925.37	CP 33 NO. 5 REBAR		
34	1416695.18	3269211.50	1416782.13	3269413.33	6,873.73	CP 34 NO. 5 REBAR		
35	1414515.45	3266686.82	1414601.86	3266887.39	6,886.64	CP 35 "X" ON NE CORNER OF INLET		
36	1419764.51	3272060.60	1419852.30	3272263.94	6,863.61	CP 36 NO. 5 REBAR		
37	1413802.62	3269320.13	1413888.42	3269521.64	6,830.00	CP 37 NO. 5 REBAR		
38	1414841.57	3261282.31	1414928.79	3261480.80	6,971.11	CP 38 "X" ON SOUTHWEST CORNER INLET		
39	1415081.32	3255628.10	1415169.35	3255824.40	7,059.26	CP 39 "X" ON TBC		
221	1412563.13	3268665.62	1412648.52	3268866.71	6,825.54	NO. 4 REBAR AND RED PLASTIC CAP "EPC PSD PLS22573"		
230	1411056.50	3269297.63	1411141.23	3269498.78	6,801.71	NAIL AND 1-1/2" WASHER IN CONCRETE "EPC PSD PLS 22573"		
239	1409955.40	3269433.32	1410039.67	3269634.39	6,788.26	NO. 4 REBAR AND RED PLASTIC CAP "EPC PSD PLS 22573"		

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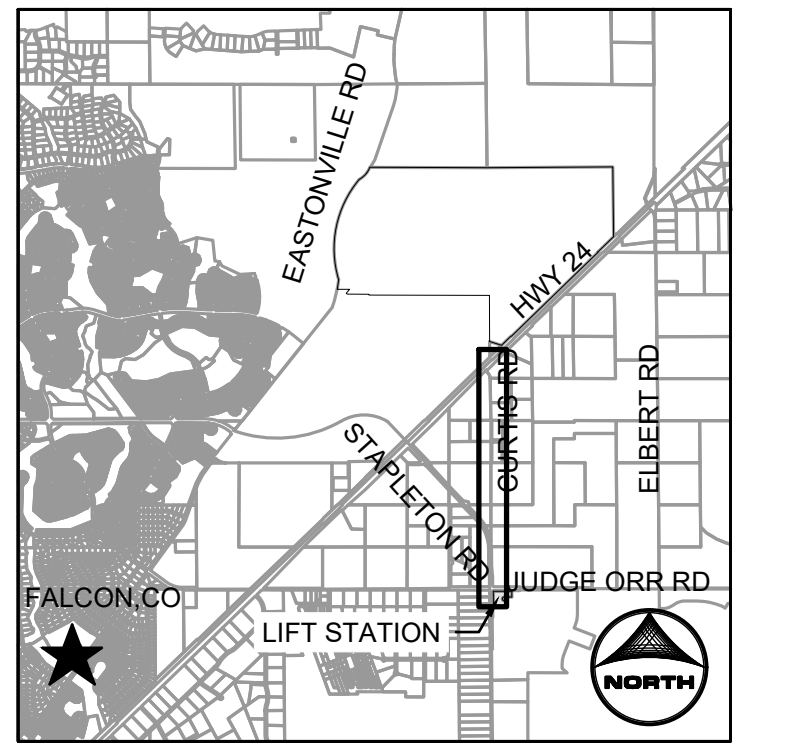
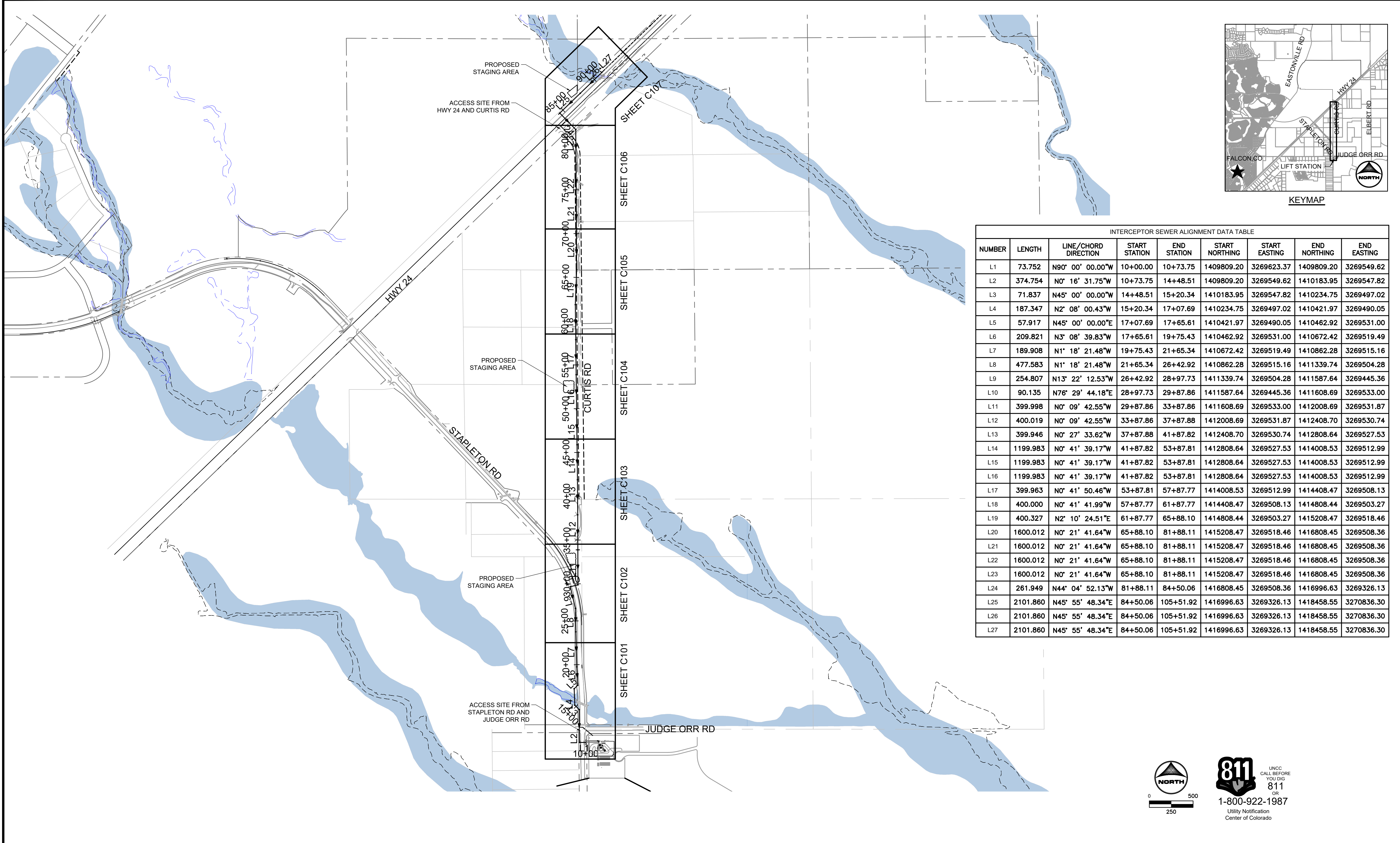
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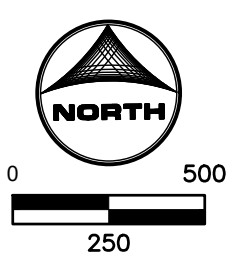
CONSTRUCTION DOCUMENTS  
 SURVEY COORDINATES

SHEET  
**G004**



KEYMAP

INTERCEPTOR SEWER ALIGNMENT DATA TABLE								
NUMBER	LENGTH	LINE/CHORD DIRECTION	START STATION	END STATION	START NORTHING	START EASTING	END NORTHING	END EASTING
L1	73.752	N90° 00' 00.00"W	10+00.00	10+73.75	1409809.20	3269623.37	1409809.20	3269549.62
L2	374.754	N0° 16' 31.75"W	10+73.75	14+48.51	1409809.20	3269549.62	1410183.95	3269547.82
L3	71.837	N45° 00' 00.00"W	14+48.51	15+20.34	1410183.95	3269547.82	1410234.75	3269497.02
L4	187.347	N2° 08' 00.43"W	15+20.34	17+07.69	1410234.75	3269497.02	1410421.97	3269490.05
L5	57.917	N45° 00' 00.00"E	17+07.69	17+65.61	1410421.97	3269490.05	1410462.92	3269531.00
L6	209.821	N3° 08' 39.83"W	17+65.61	19+75.43	1410462.92	3269531.00	1410672.42	3269519.49
L7	189.908	N1° 18' 21.48"W	19+75.43	21+65.34	1410672.42	3269519.49	1410862.28	3269515.16
L8	477.583	N1° 18' 21.48"W	21+65.34	26+42.92	1410862.28	3269515.16	1411339.74	3269504.28
L9	254.807	N13° 22' 12.53"W	26+42.92	28+97.73	1411339.74	3269504.28	1411587.64	3269445.36
L10	90.135	N76° 29' 44.18"E	28+97.73	29+87.86	1411587.64	3269445.36	1411608.69	3269533.00
L11	399.998	N0° 09' 42.55"W	29+87.86	33+87.86	1411608.69	3269533.00	1412008.69	3269531.87
L12	400.019	N0° 09' 42.55"W	33+87.86	37+87.88	1412008.69	3269531.87	1412408.70	3269530.74
L13	399.946	N0° 27' 33.62"W	37+87.88	41+87.82	1412408.70	3269530.74	1412808.64	3269527.53
L14	1199.983	N0° 41' 39.17"W	41+87.82	53+87.81	1412808.64	3269527.53	1414008.53	3269512.99
L15	1199.983	N0° 41' 39.17"W	41+87.82	53+87.81	1412808.64	3269527.53	1414008.53	3269512.99
L16	1199.983	N0° 41' 39.17"W	41+87.82	53+87.81	1412808.64	3269527.53	1414008.53	3269512.99
L17	399.963	N0° 41' 50.46"W	53+87.81	57+87.77	1414008.53	3269512.99	1414408.47	3269508.13
L18	400.000	N0° 41' 41.99"W	57+87.77	61+87.77	1414408.47	3269508.13	1414808.44	3269503.27
L19	400.327	N2° 10' 24.51"E	61+87.77	65+88.10	1414808.44	3269503.27	1415208.47	3269518.46
L20	1600.012	N0° 21' 41.64"W	65+88.10	81+88.11	1415208.47	3269518.46	1416808.45	3269508.36
L21	1600.012	N0° 21' 41.64"W	65+88.10	81+88.11	1415208.47	3269518.46	1416808.45	3269508.36
L22	1600.012	N0° 21' 41.64"W	65+88.10	81+88.11	1415208.47	3269518.46	1416808.45	3269508.36
L23	1600.012	N0° 21' 41.64"W	65+88.10	81+88.11	1415208.47	3269518.46	1416808.45	3269508.36
L24	261.949	N44° 04' 52.13"W	81+88.11	84+50.06	1416808.45	3269508.36	1416996.63	3269326.13
L25	2101.860	N45° 55' 48.34"E	84+50.06	105+51.92	1416996.63	3269326.13	1418458.55	3270836.30
L26	2101.860	N45° 55' 48.34"E	84+50.06	105+51.92	1416996.63	3269326.13	1418458.55	3270836.30
L27	2101.860	N45° 55' 48.34"E	84+50.06	105+51.92	1416996.63	3269326.13	1418458.55	3270836.30



HR GREEN Xrns: XV-Row; XV-Util; xgl-1-dh01-Gr; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Utility; Pgr-Key; XC-Degr; XC-Initial-EC; 01-DC-Align-Frm; 01-DC-San-Frm; XV-Degr; XV-Fema; 01-DC-San-Cr

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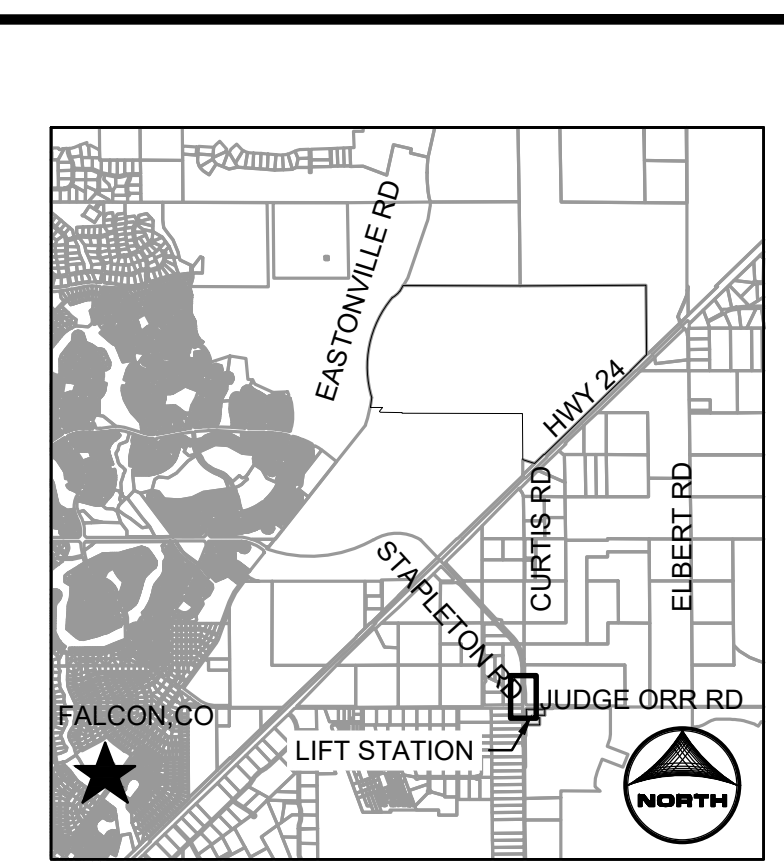
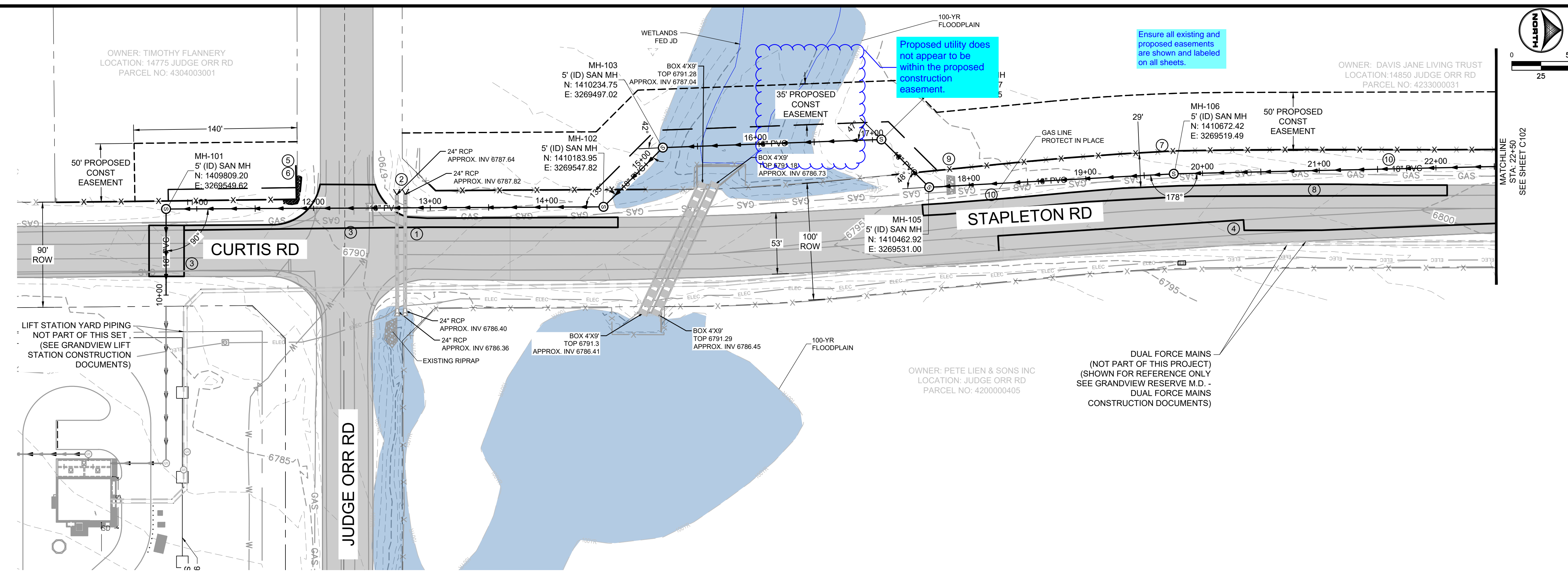
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CONSTRUCTION DOCUMENTS  
 OVERALL SITE PLAN & HORIZONTAL ALIGNMENT DATA

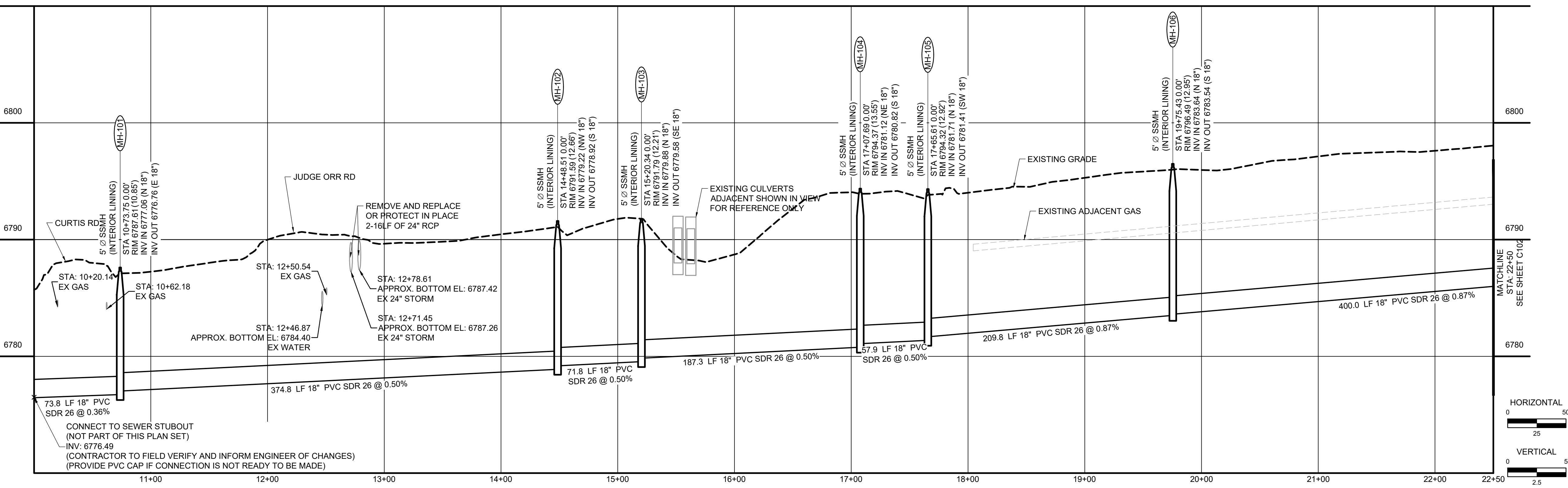
SHEET  
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HR GREEN Xrns: XV-Row: XV-Util: xg-1-dh01-Cr: XC-Lift-Station: XC-Electrical: XC-Driveway: XC-Utility: P&P-Key: XC-Dagn: XC-Initial-EC: 01-DC-Sm-Cr: XV-Fema: XV-Degr: XC-Row: XC-Hatching: EPC Parcels: Cr-Remove/Replace



- GENERAL NOTES:**
- SEE G.002 FOR WOODMEN HILLS WATER AND WASTEWATER SYSTEM STANDARDS AND INSTALLATION NOTES.
  - CONTRACTOR SHALL PROTECT EXISTING ROADWAY WHERE NOT INDICATED FOR REMOVAL AND REPLACEMENT. DAMAGES OUTSIDE OF DESIGNATED REMOVAL LIMITS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

- KEY NOTES:** Shown as 24" on plans
- PROTECT IN PLACE OR REMOVE AND REINSTALL STORM SEWER. EXISTING PIPES ARE ELLIPTICAL PIPE 3' WIDE AND 2' TALL.
  - PROTECT IN PLACE OR REMOVE AND REINSTALL FLARED ENDS.
  - REMOVE AND REPLACE ASPHALT PAVEMENT, AND WHITE AND YELLOW PAVEMENT MARKINGS.
  - REMOVALS FOR FORCE MAIN INSTALLATION (NOT PART OF THIS PROJECT).
  - PROTECT IN PLACE OR REMOVE AND REINSTALL BARBED WIRE FENCING AND WOOD POSTS.
  - PROTECT IN PLACE OR REMOVE AND REINSTALL STONES.
  - PROTECT IN PLACE OR REMOVE AND REINSTALL BARBED WIRE FENCING AND STEEL POSTS.
  - REMOVE AND REPLACE ASPHALT PAVEMENT.
  - PROTECT IN PLACE OR REMOVE AND REINSTALL RIP RAP.
  - GAS LINE, PROTECT IN PLACE.



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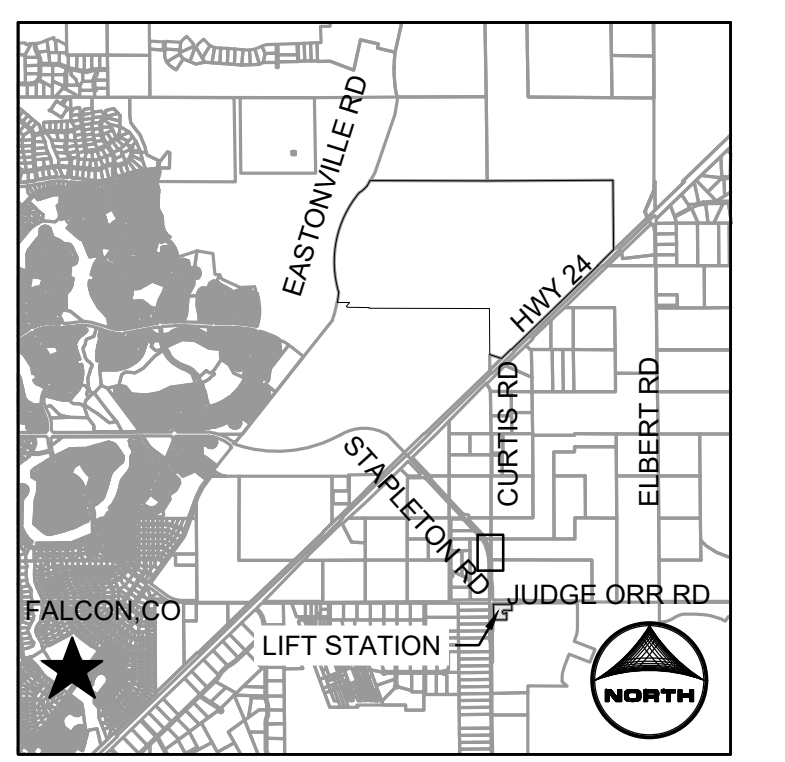
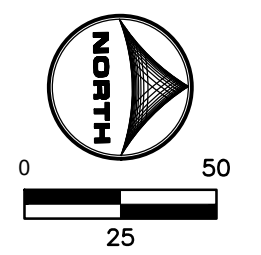
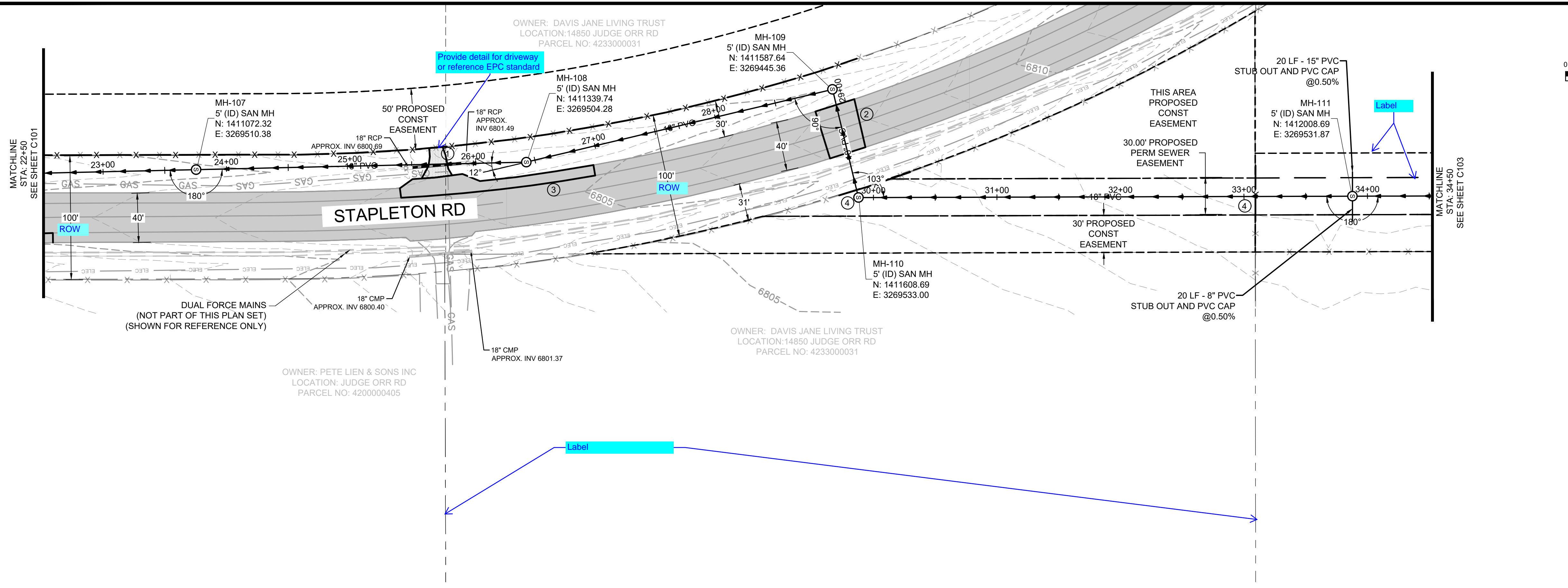
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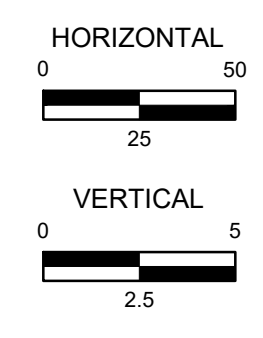
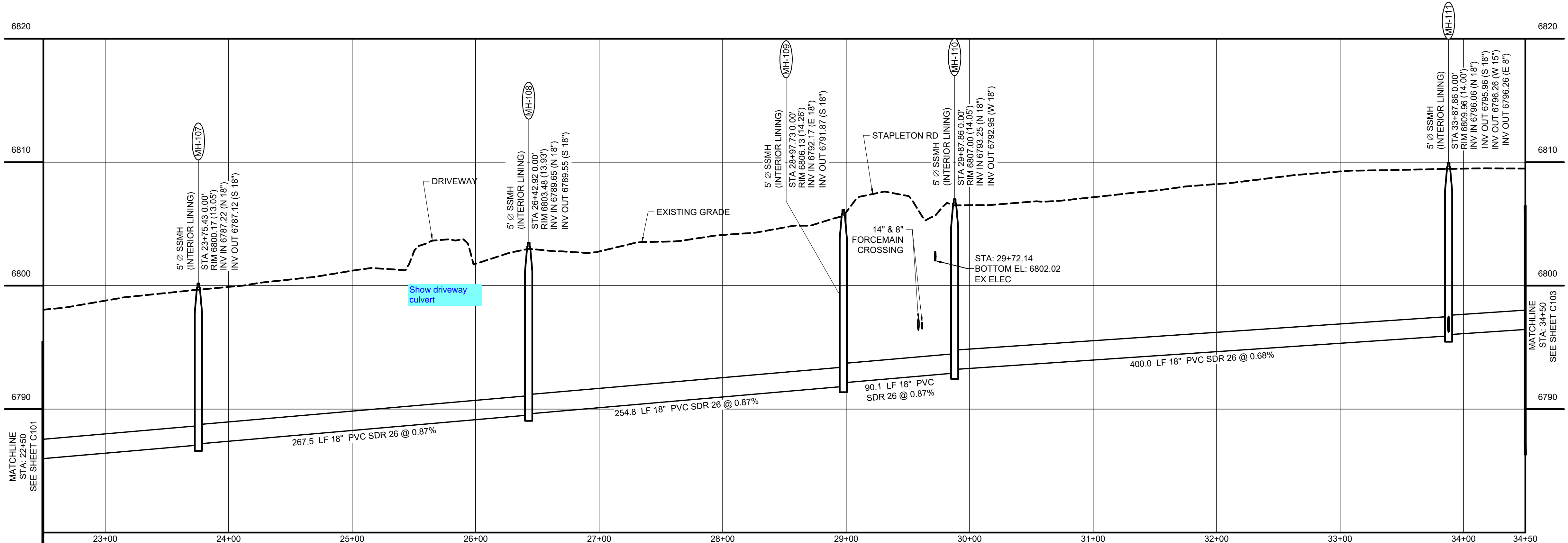
CONSTRUCTION DOCUMENTS  
GRAVITY LINE PLAN AND PROFILE

SHEET  
C101

HR GREEN Xrefs: XV-Row; XV-Lit; xg1-1-dh01-G; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Uti; P&P\_Key; XC-Dagn; XC-Initial-EC; 01-DD-5m-Cr; XI-Fema; XI-Degr; XC-Row; XC-Hatching; EPC Parcels; Cr\_Remove/Replace



- GENERAL NOTES:
- SEE G.002 FOR WOODMEN HILLS WATER AND WASTEWATER SYSTEM STANDARDS AND INSTALLATION NOTES.
  - CONTRACTOR SHALL PROTECT EXISTING ROADWAY WHERE NOT INDICATED FOR REMOVAL AND REPLACEMENT. DAMAGES OUTSIDE OF DESIGNATED REMOVAL LIMITS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
- KEY NOTES:
- REMOVE AND REPLACE DRIVEWAY (GRAVEL & ASPHALT) AND STORM CULVERT.
  - REMOVE AND REPLACE ASPHALT PAVEMENT, AND WHITE AND YELLOW PAVEMENT MARKINGS.
  - REMOVE AND REPLACE ASPHALT PAVEMENT.
  - PROTECT IN PLACE OR REMOVE AND REINSTALL BARBED WIRE FENCING AND STEEL POSTS.



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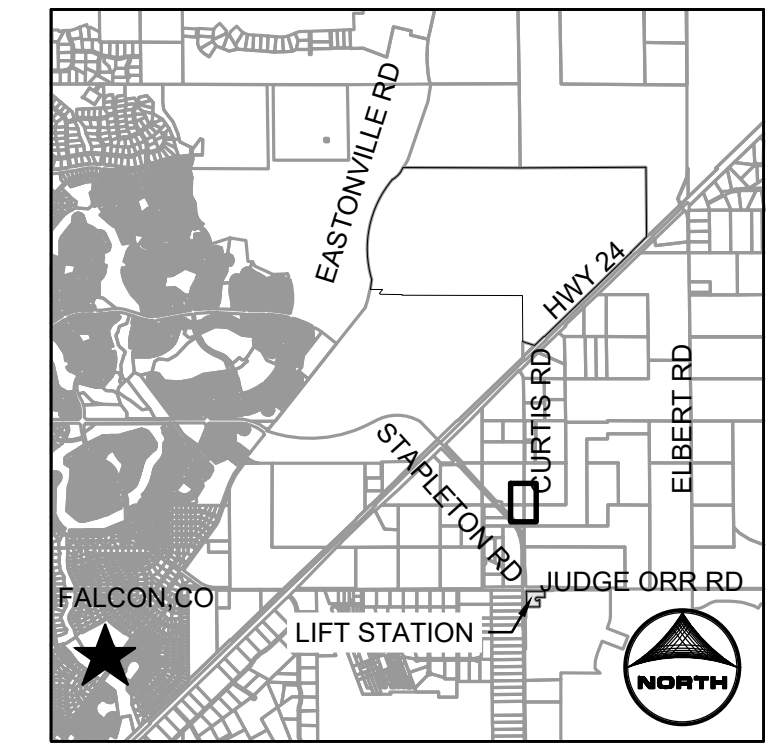
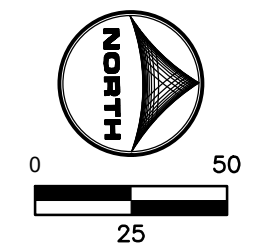
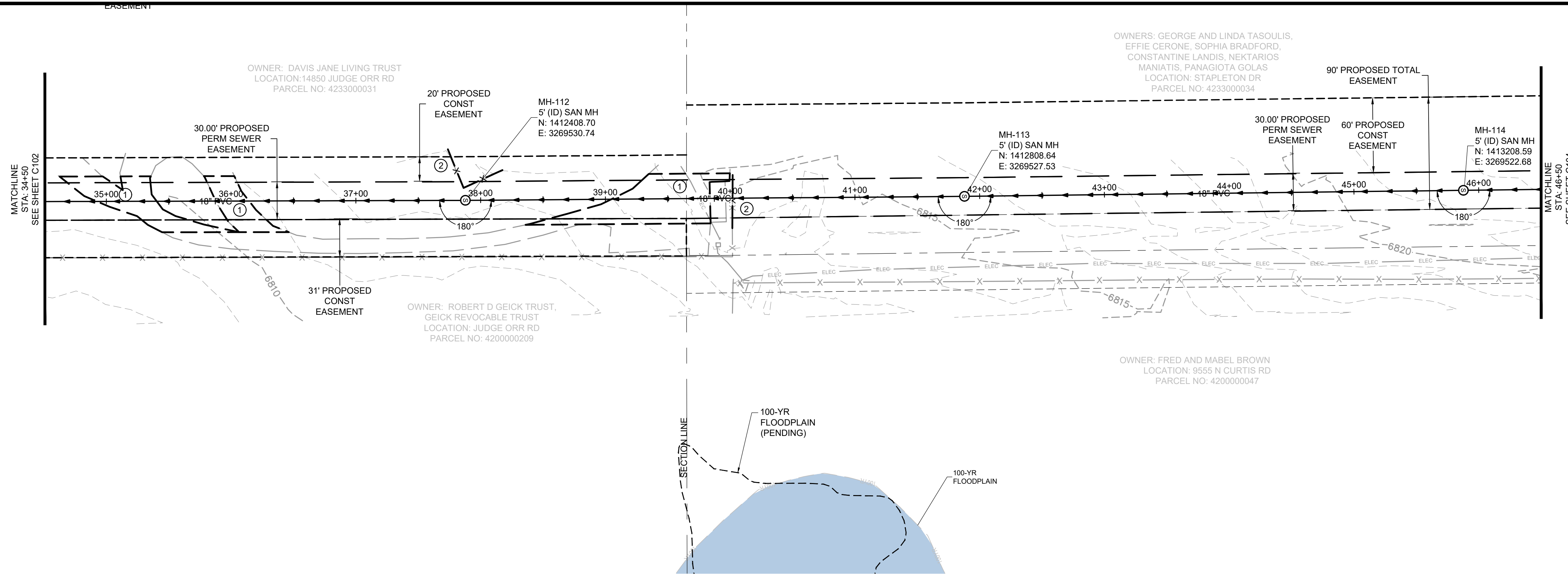
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CONSTRUCTION DOCUMENTS  
GRAVITY LINE PLAN AND PROFILE

SHEET  
**C102**

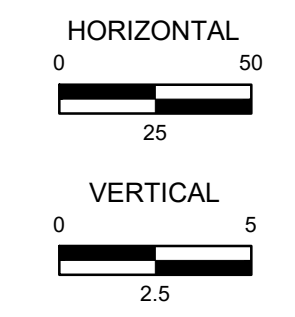
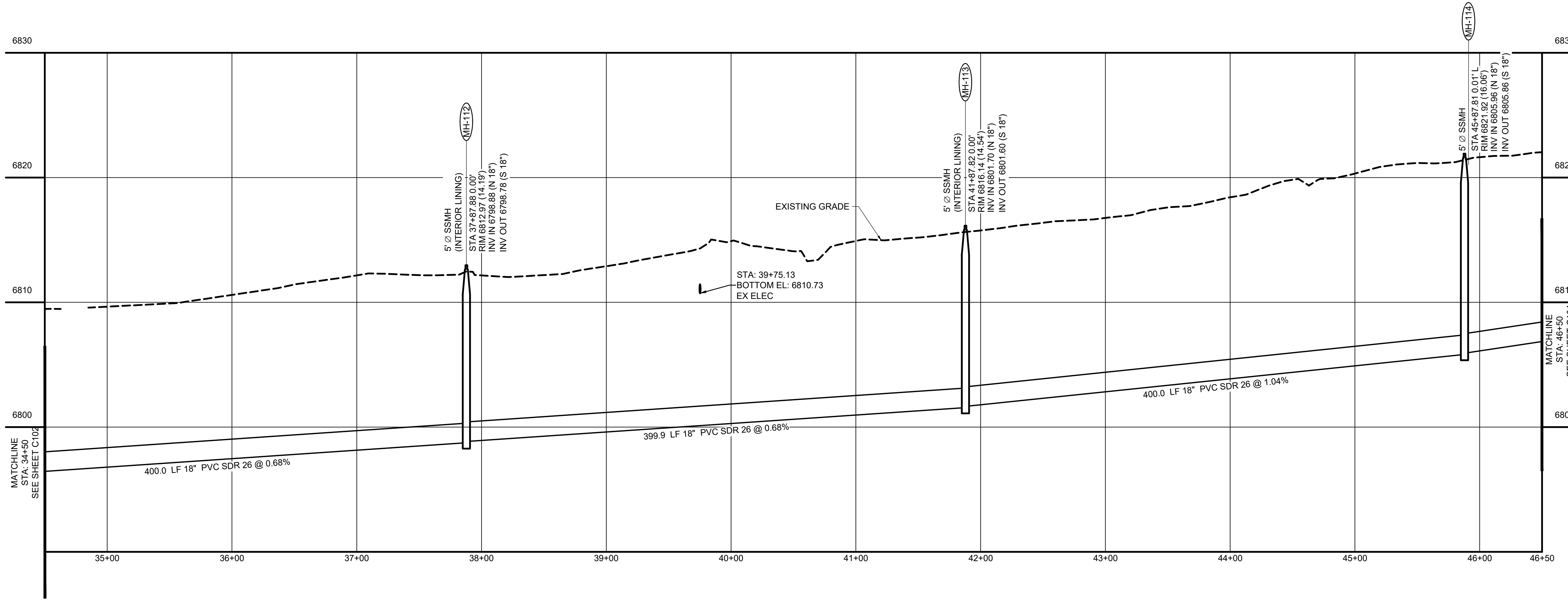


HR GREEN Xrefs: XV-Row; XV-Lit; xg1-1-dh01-G; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Uti; P&P\_Key; XC-Dagn; XC-Initial-EC; 01-DD-San-Cr; XV-Fema; XV-Degn; XC-Rew; XC-Hatching; EPC Parcels; Cr\_RemoveReplace



KEYMAP

- GENERAL NOTES:
- SEE G.002 FOR WOODMEN HILLS WATER AND WASTEWATER SYSTEM STANDARDS AND INSTALLATION NOTES.
  - CONTRACTOR SHALL PROTECT EXISTING ROADWAY WHERE NOT INDICATED FOR REMOVAL AND REPLACEMENT. DAMAGES OUTSIDE OF DESIGNATED REMOVAL LIMITS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
- KEY NOTES:
- REMOVE AND REPLACE GRAVEL DRIVEWAY.
  - PROTECT IN PLACE OR REMOVE AND REINSTALL BARBED WIRE FENCING AND STEEL POSTS.



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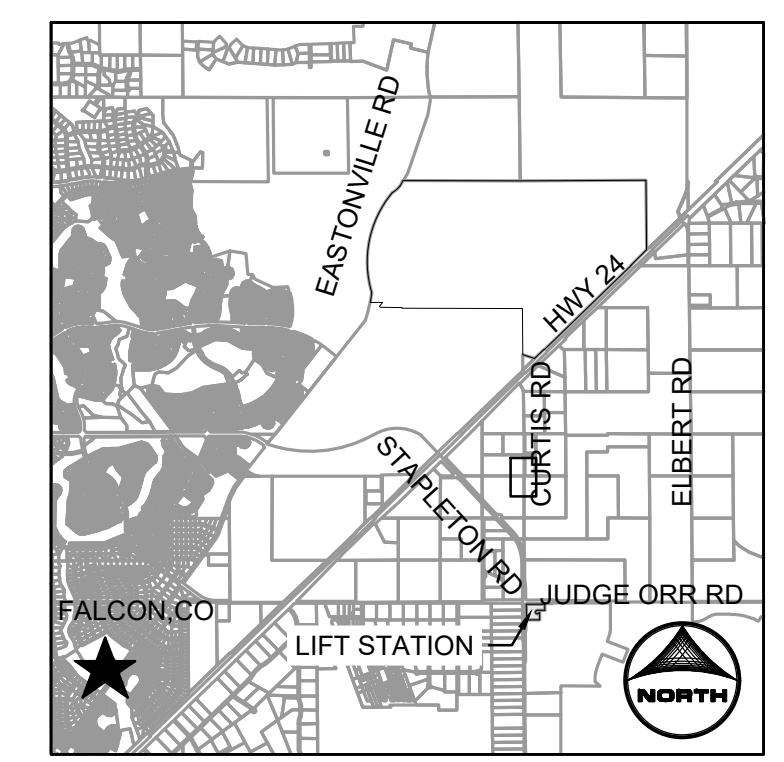
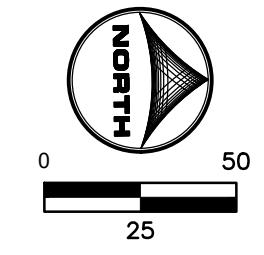
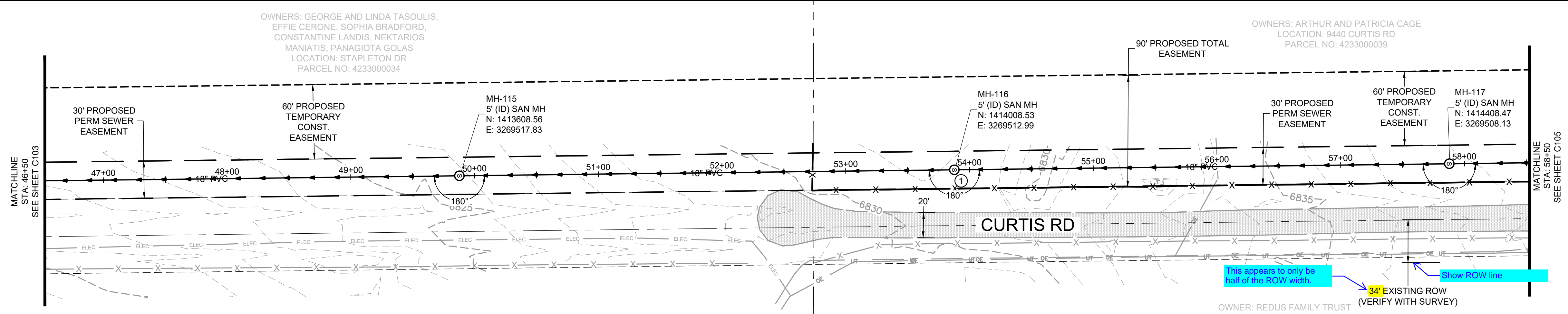
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CONSTRUCTION DOCUMENTS  
GRAVITY LINE PLAN AND PROFILE

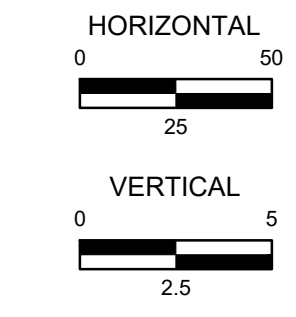
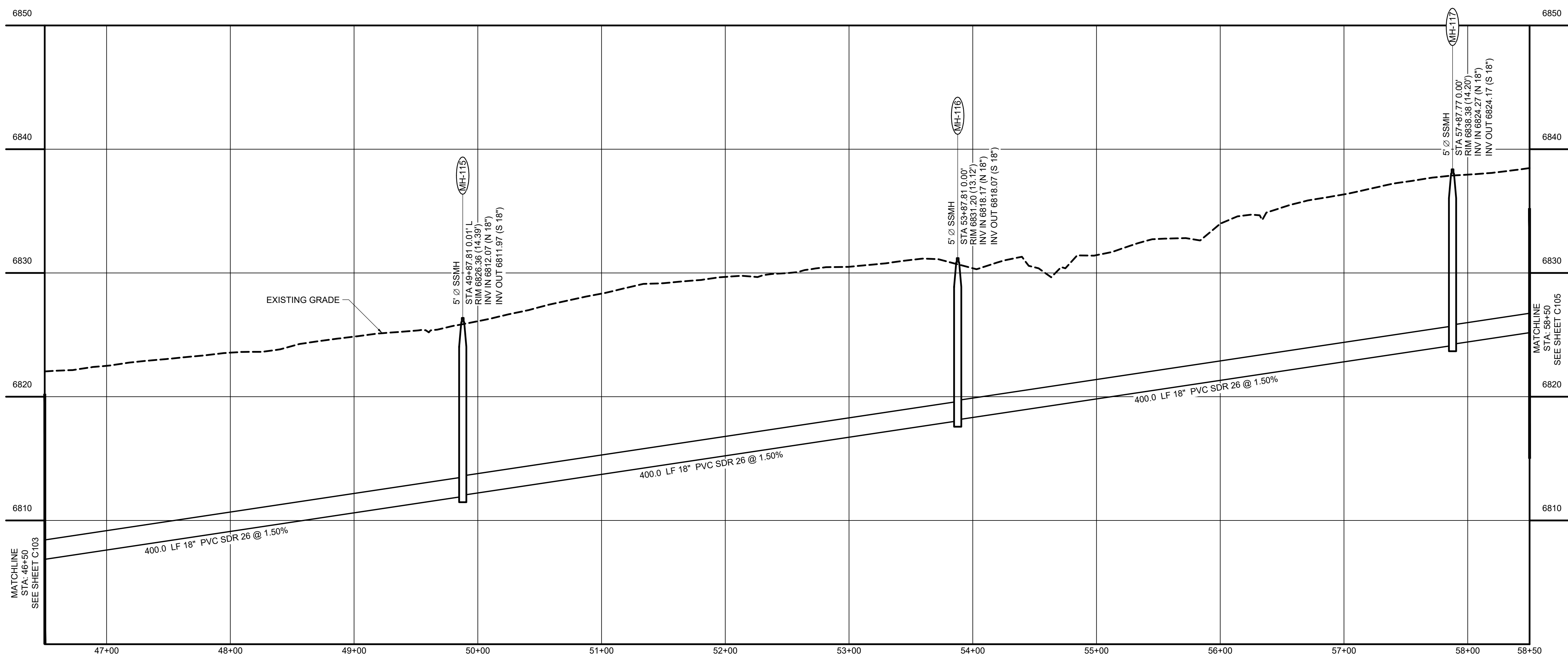
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HR GREEN Xrefs: XV-Row; XV-Lift; xg1-1-dh01-G; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Uti; P&P\_Key; XC-Dagn; XC-Initial-EC; 01-DD-Sm-Cr; XV-Fema; XV-Dagn; XC-Row; XC-Hatching; EPC Parcels; Cr\_RemoveReplace



KEYMAP

- GENERAL NOTES:
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- KEY NOTES:
- PROTECT IN PLACE OR REMOVE AND REINSTALL BARBED WIRE FENCING AND STEEL POSTS.



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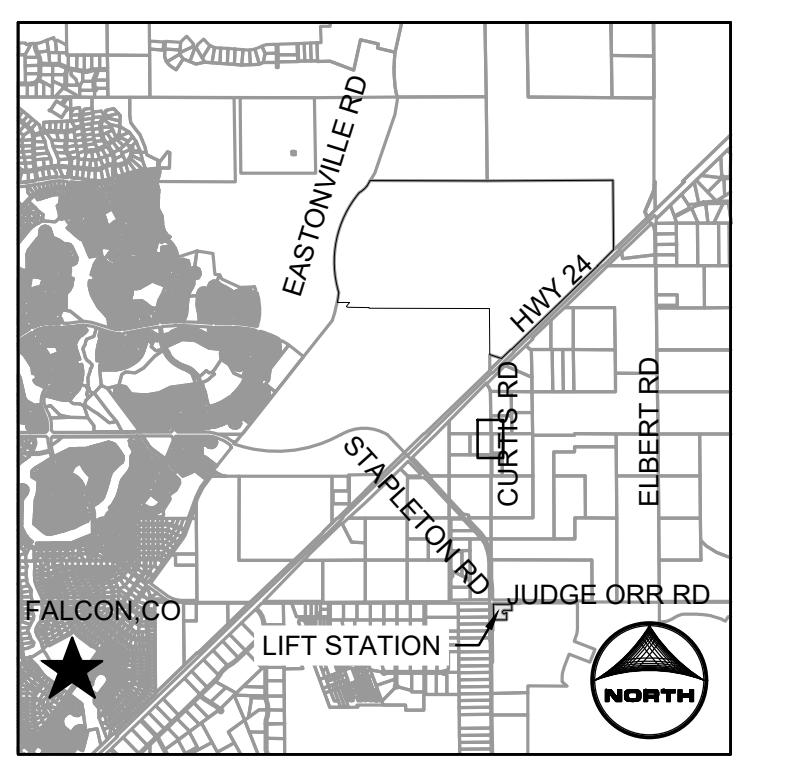
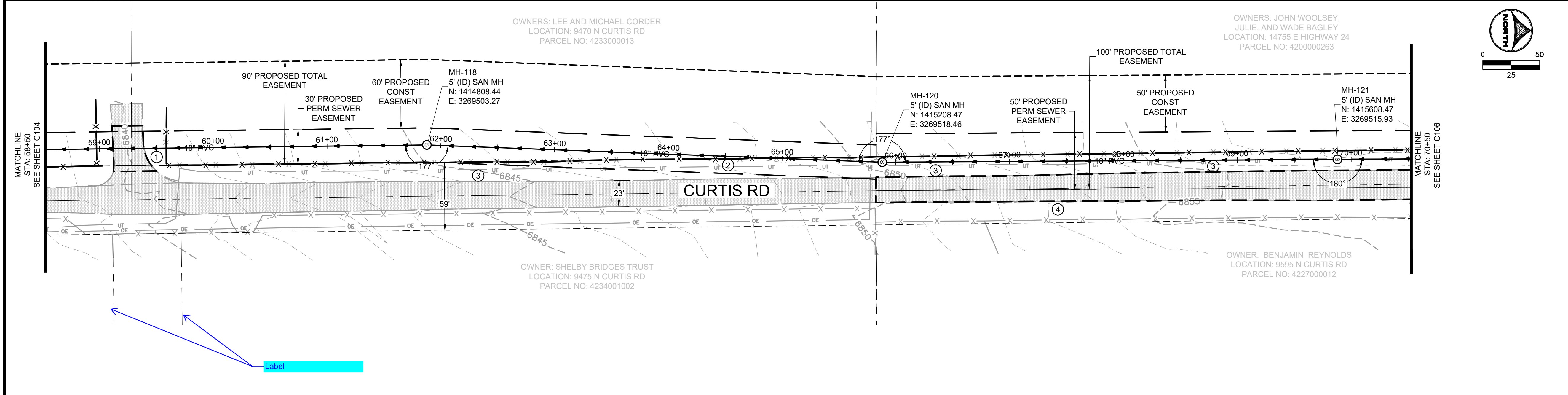
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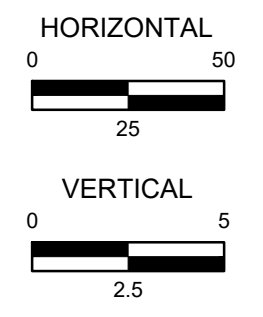
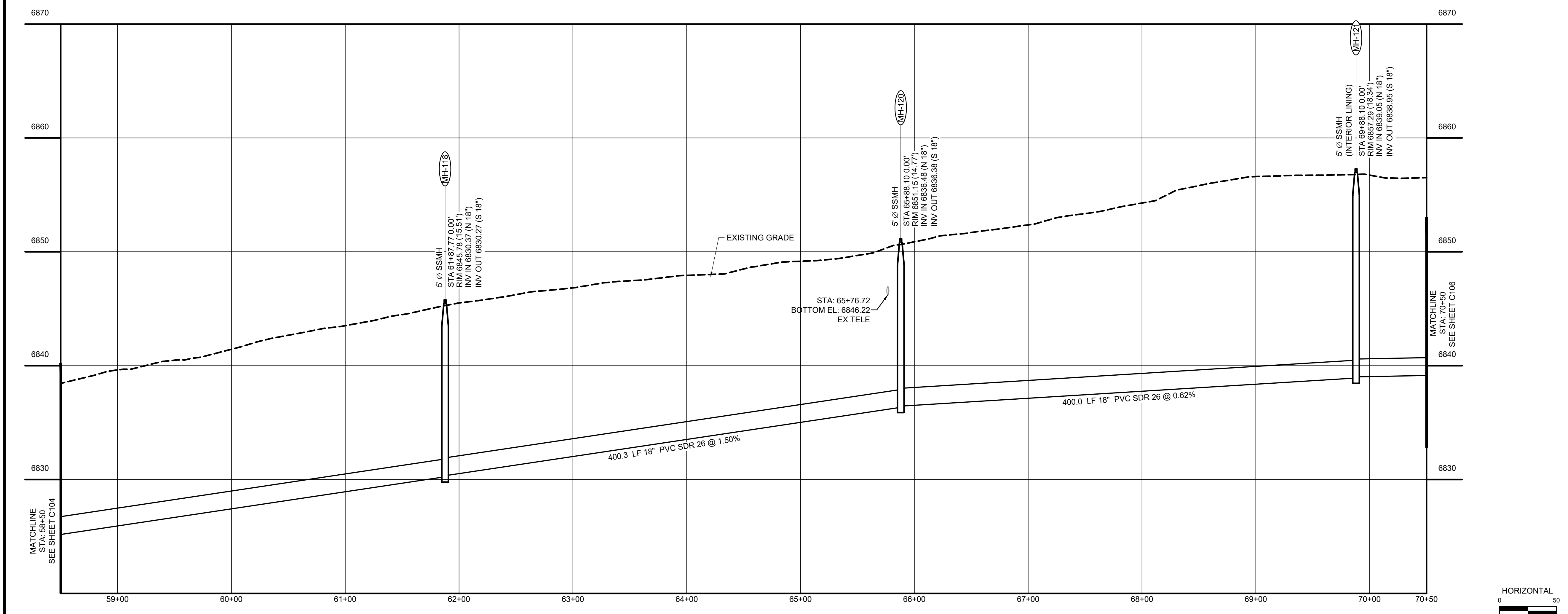
SHEET  
**C104**



**KEYMAP**

- GENERAL NOTES:**
- SEE G.002 FOR WOODMEN HILLS WATER AND WASTEWATER SYSTEM STANDARDS AND INSTALLATION NOTES.
  - CONTRACTOR SHALL PROTECT EXISTING ROADWAY WHERE NOT INDICATED FOR REMOVAL AND REPLACEMENT. DAMAGES OUTSIDE OF DESIGNATED REMOVAL LIMITS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

- KEY NOTES:**
- REMOVE AND REPLACE GRAVEL DRIVEWAY.
  - PROTECT IN PLACE OR REMOVE AND REINSTALL BARBED WIRE FENCING AND STEEL POSTS.
  - PROTECT UTILITY IN PLACE OR RELOCATE AS NECESSARY FOR CONSTRUCTION.
  - REMOVE AND REPLACE GRAVEL SURFACING.



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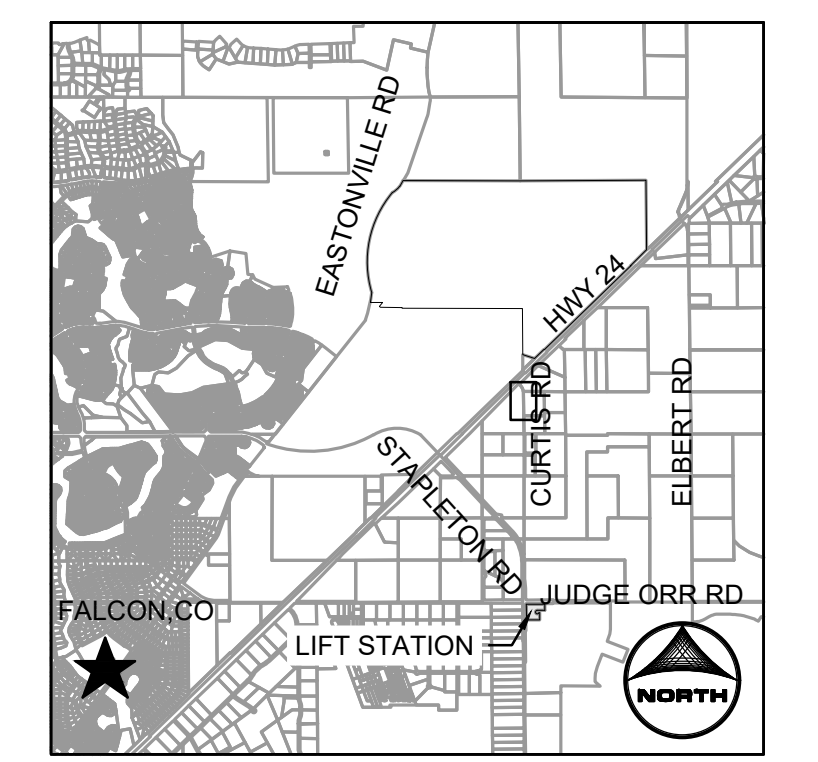
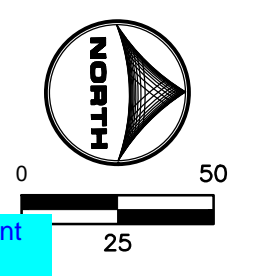
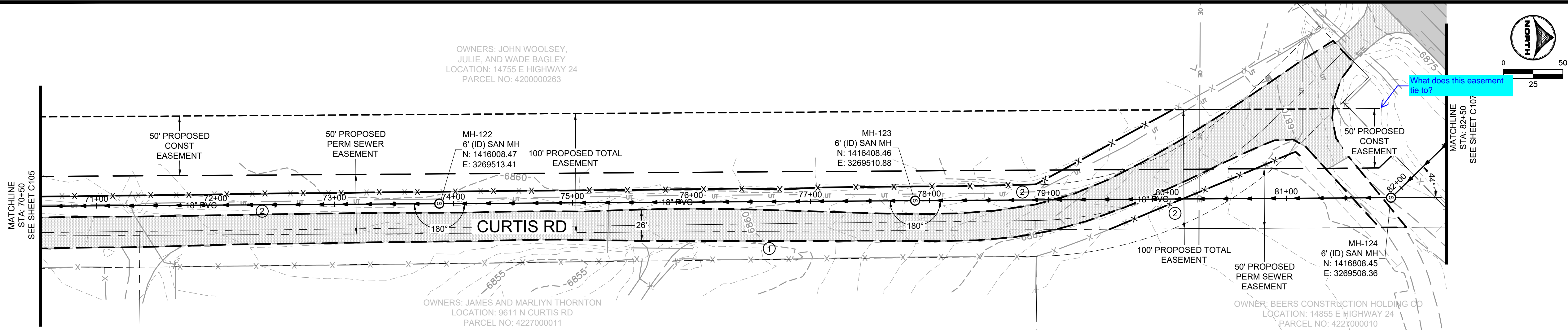
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CONSTRUCTION DOCUMENTS  
 GRAVITY LINE PLAN AND PROFILE

SHEET  
**C105**

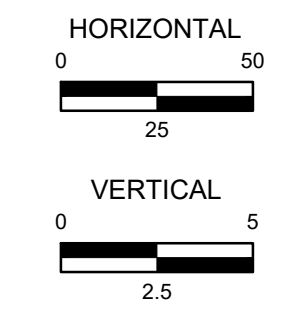
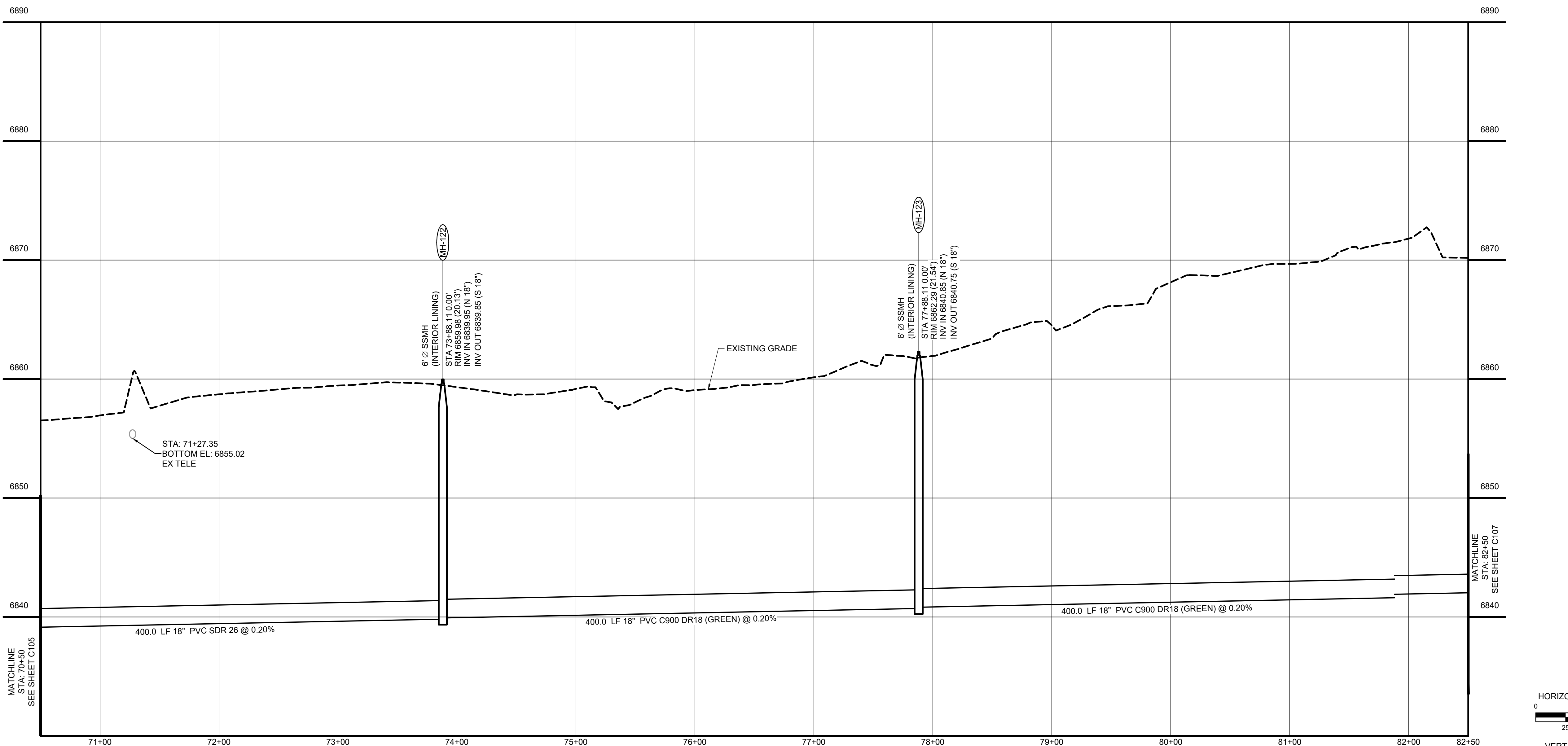
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HR GREEN Xrefs: XV-Row; XV-Lit; xg1-1-dh01-G; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Uti; P&P\_Key; XC-Dagn; XC-Initial-EC; 01-DD-San-Cr; XV-Fema; XV-Degn; XC-Row; XC-Hatching; EPC Parcels; Cr-Remove/Replace



KEYMAP

- GENERAL NOTES:
- SEE G.002 FOR WOODMENHILLS WATER AND WASTEWATER SYSTEM STANDARDS AND INSTALLATION NOTES.
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- KEY NOTES:
- REMOVE AND REPLACE GRAVEL SURFACING.
  - PROTECT UTILITY IN PLACE OR RELOCATE AS NECESSARY FOR CONSTRUCTION.



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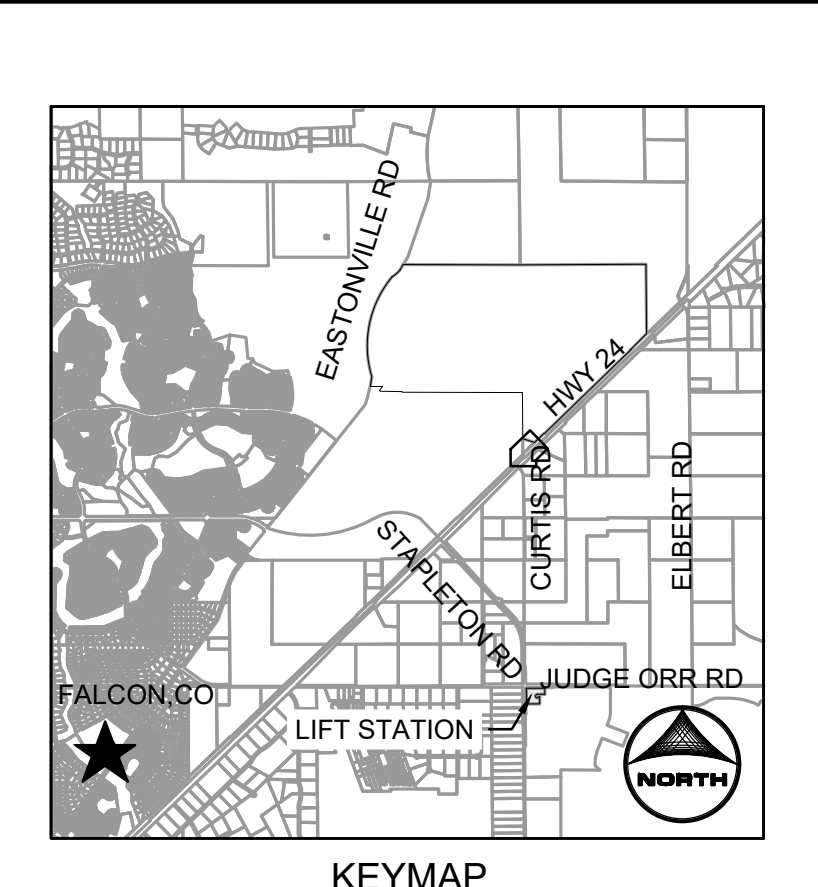
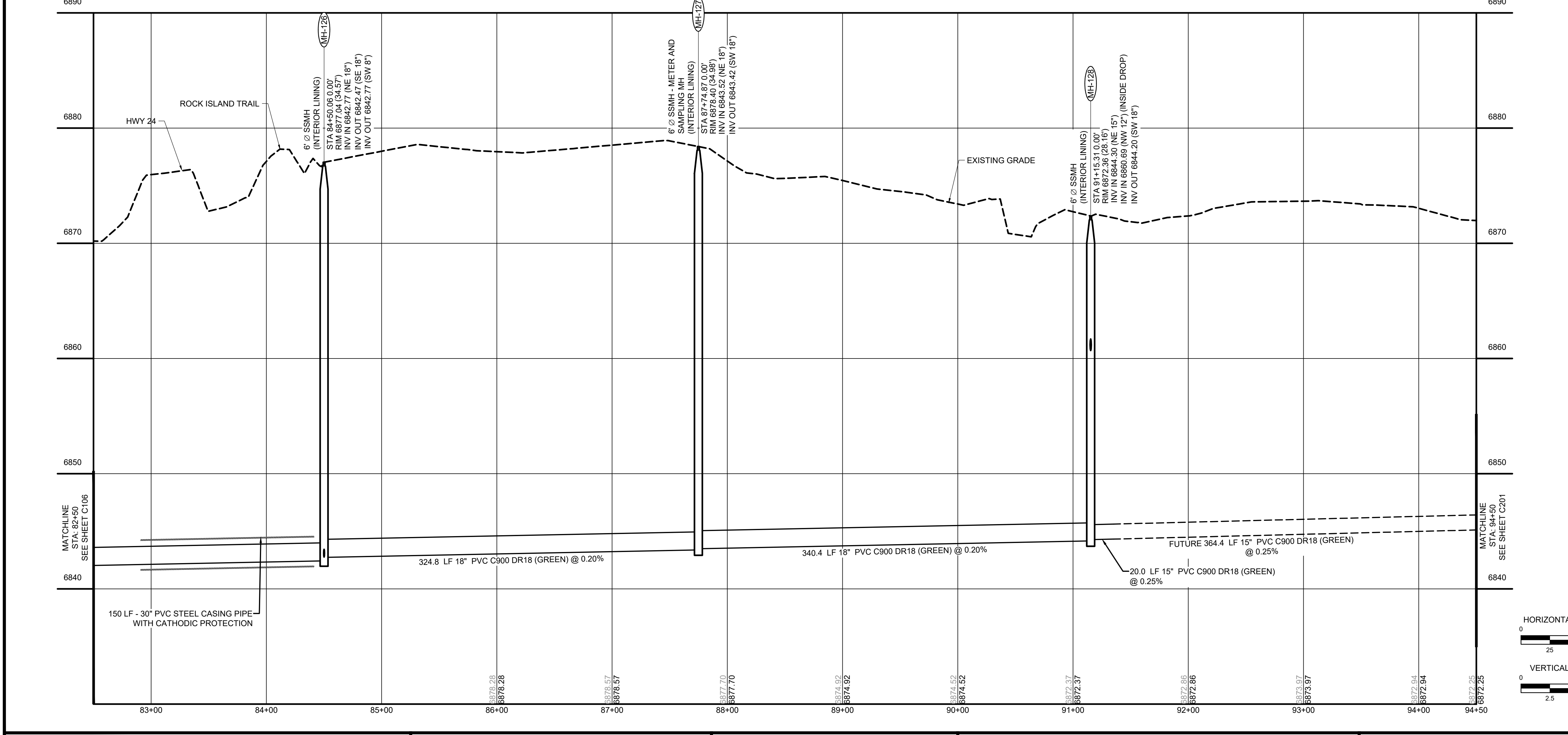
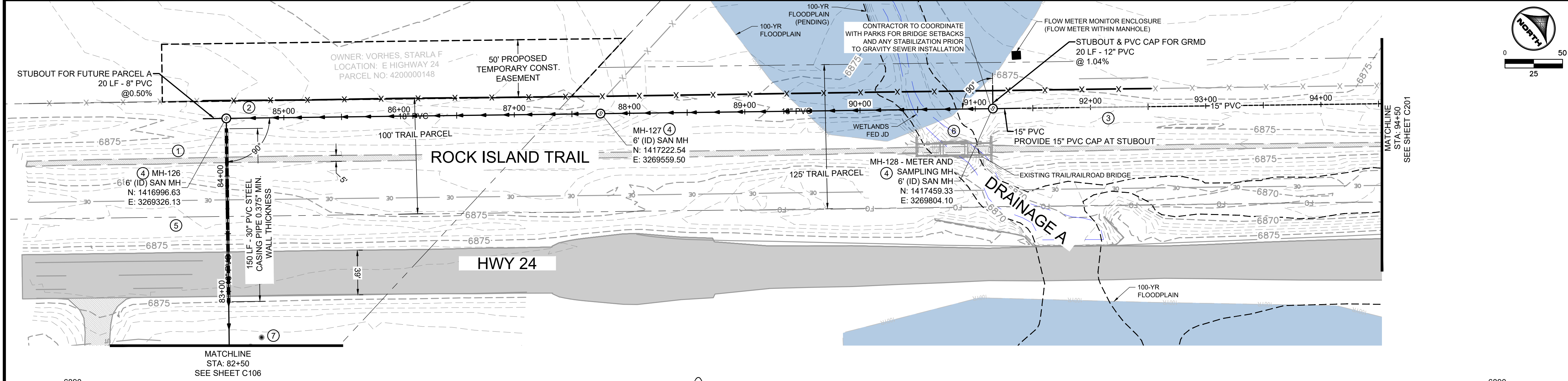
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CONSTRUCTION DOCUMENTS  
GRAVITY LINE PLAN AND PROFILE

SHEET  
C106

HR GREEN Xrefs: XV-Row: XV-Utl: xgl-1-dh01-G; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Utl; P&P\_Key; XC-Dagn; XC-Initial-EC; 01-DD-San-Cr; XV-Fema; XV-Dagn; XC-Row; XC-Hatching; EPC Parcels; Gr\_RemoveReplace



- GENERAL NOTES:**
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  - CONTRACTOR SHALL PROTECT EXISTING ROADWAY WHERE NOT INDICATED FOR REMOVAL AND REPLACEMENT. DAMAGES OUTSIDE OF DESIGNATED REMOVAL LIMITS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

- KEY NOTES:**
- PROTECT IN PLACE OR REMOVE AND REPLACE GRAVEL SURFACING.
  - PROTECT IN PLACE OR REMOVE AND REINSTALL BARBED WIRE FENCING AND STEEL POSTS.
  - METER MANHOLE. SEE CONSTRUCTION NOTES ON G001. CONTRACTOR SHALL CONNECT TO EXISTING POWER SUPPLY AS PROVIDED BY MOUNTAIN VIEW ELECTRIC ASSOCIATION.
  - MH-126 THOUGH MH-128: MH RIMS SHALL NOT EXCEED 2" ABOVE FINISHED GRADE.
  - CAUTION - FIBER OPTIC WITHIN THIS AREA. EXACT LOCATION UNKNOWN
  - CONTRACTOR SHALL PROTECT HISTORICAL RAILROAD BRIDGE DURING CONSTRUCTION OF PROPOSED UTILITIES. NO MOVEMENT, NO SETTLEMENT AND NO UNDERMINING OF EXISTING STRUCTURE ALLOWED.
  - PROTECT IN PLACE OR REMOVE TREE.

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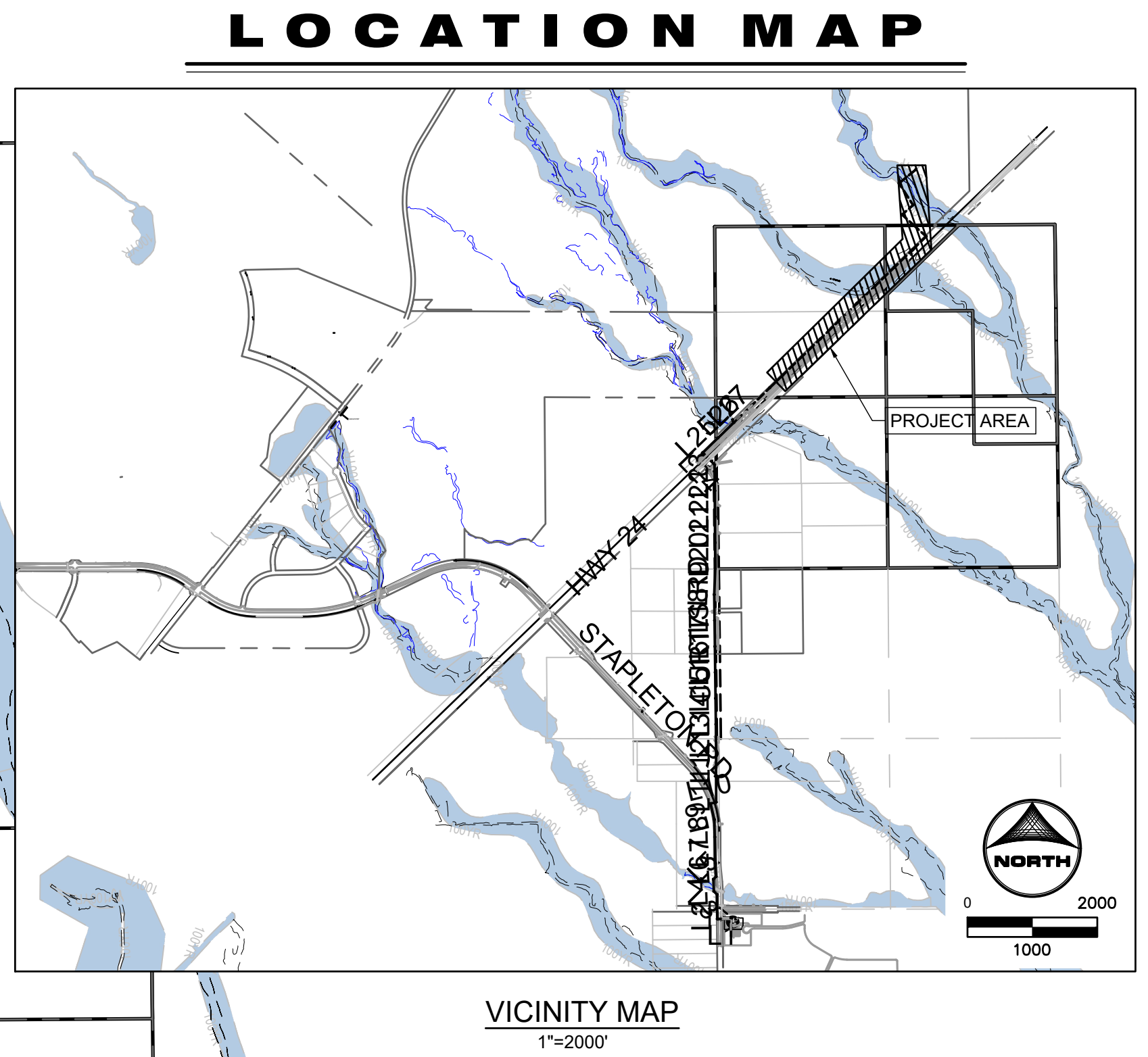
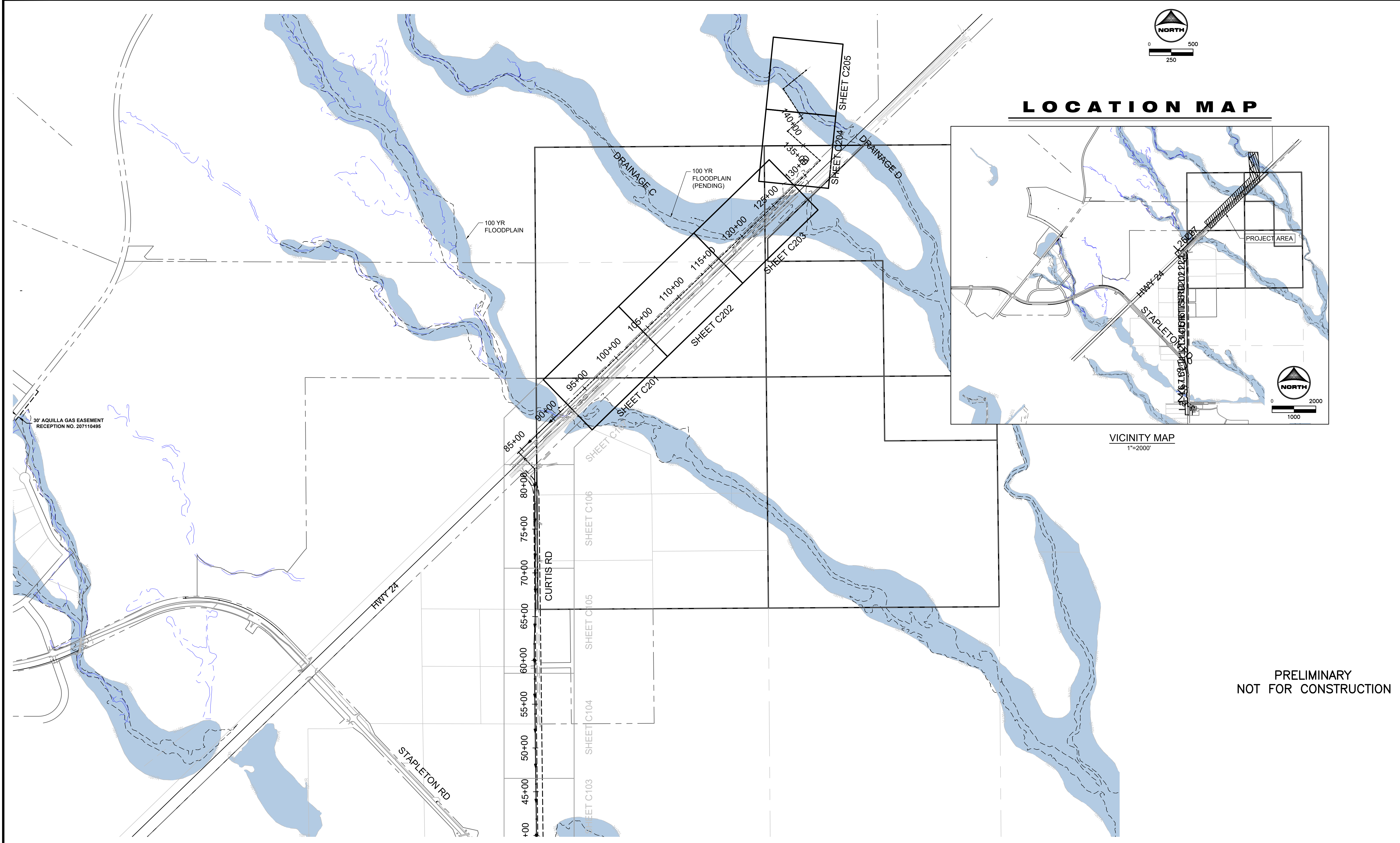
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 GRAVITY LINE PLAN AND PROFILE

SHEET  
**C107**

HR GREEN Xrns: XV-Row; XV-Util; xgl-1-dh01-Gr; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Utility; P&F-Key; XC-Dgn; XC-Initial-EC; 01-DC-Align-Frm; 01-DC-San-Frm; 01-DC-San-Cr; 01-DC-San-Cr; epc-parcels; xv-dgn\_662



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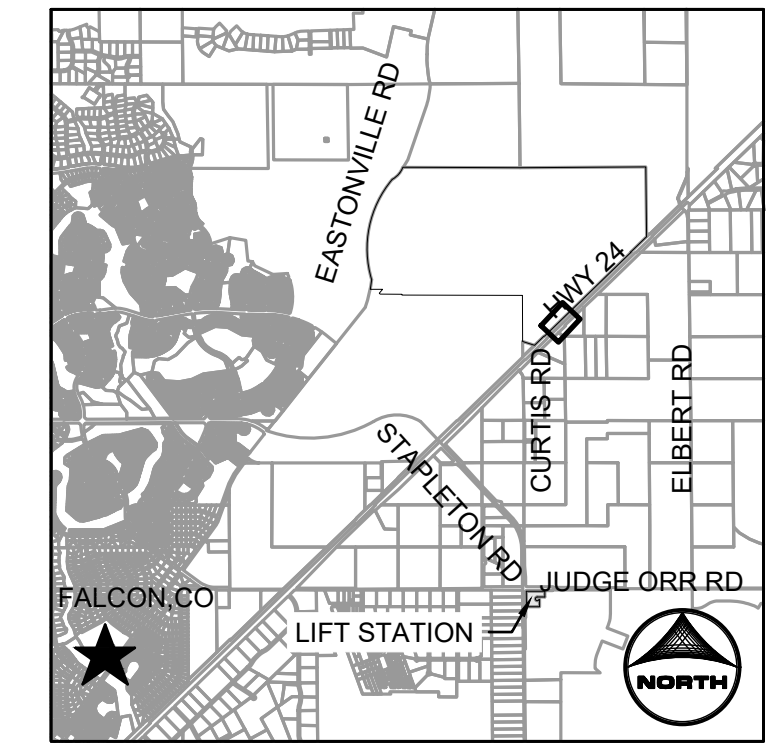
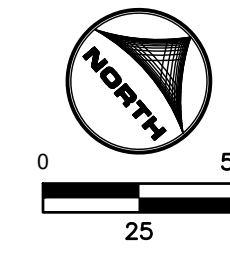
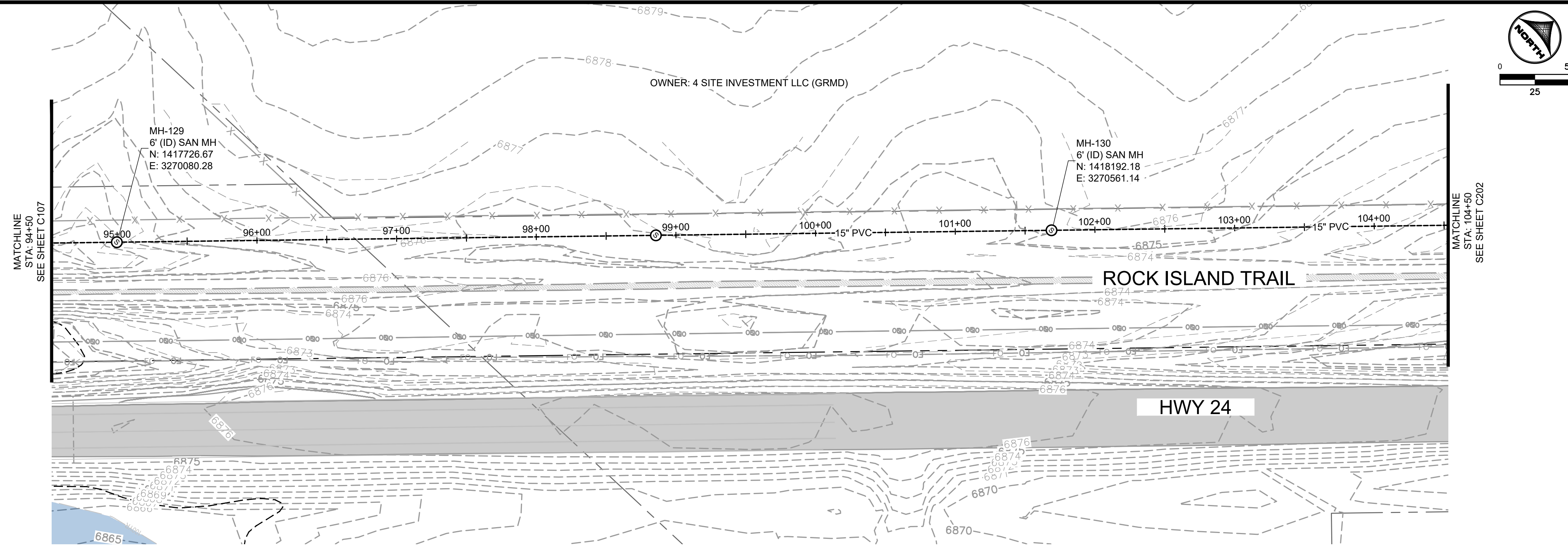
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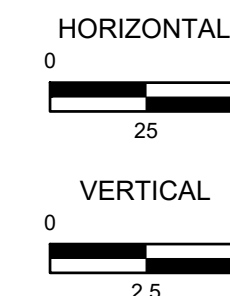
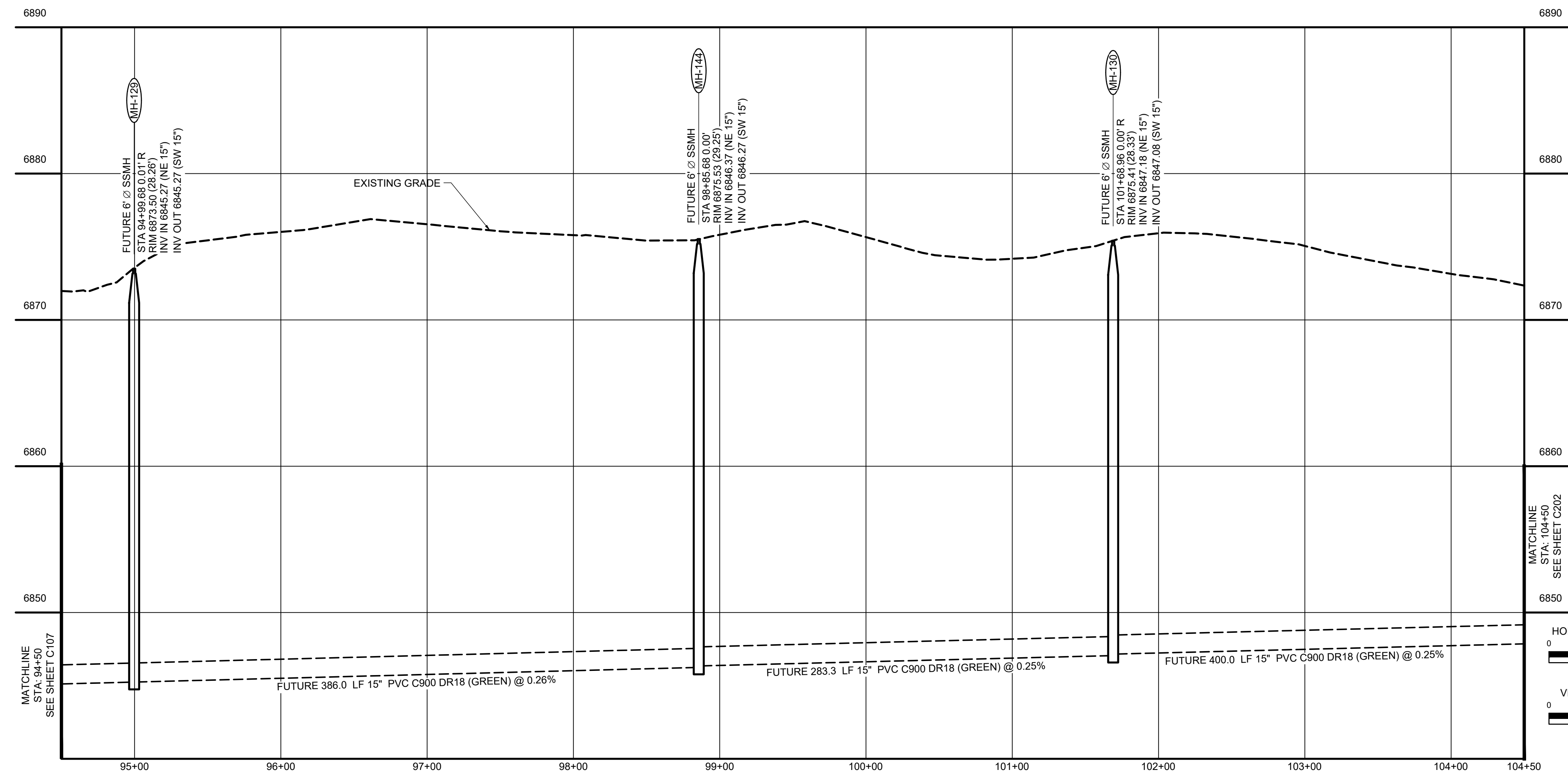
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SHEET  
**C200**

HR GREEN Xrefs: XV-Util; xgt-1-dn01-gr; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Util; P&P\_Key; XC-Degr; XC-Initial-EC; 01-DC-San-Gr; XV-Degr; XV-Fema; XC-Rov; XC-Hatching; dr-surf-grndview; Gr\_Key Plan-Future; xv-degn\_562; XV-Row



KEYMAP



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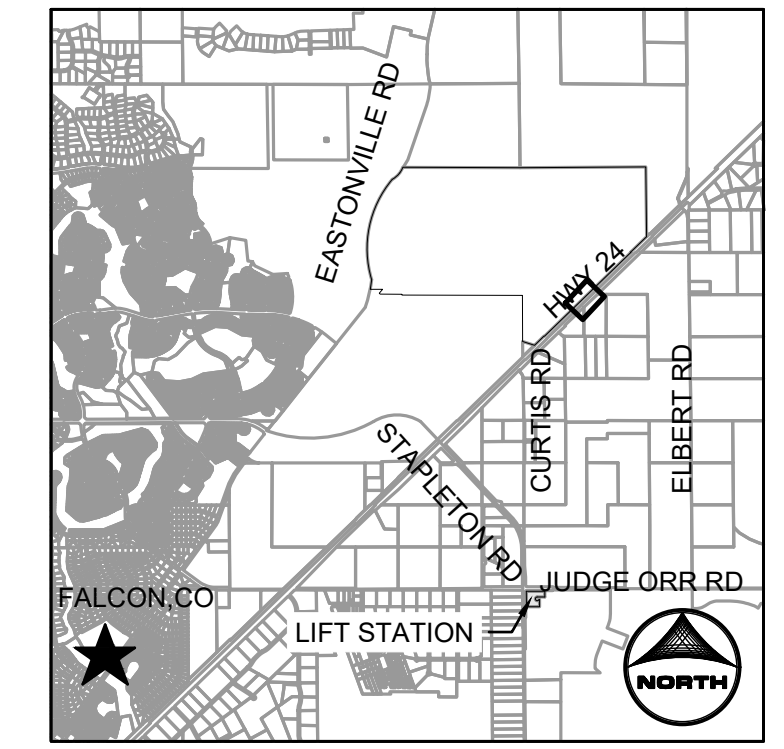
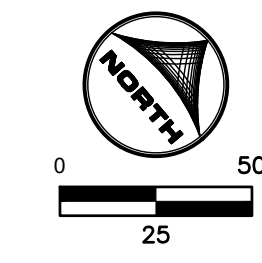
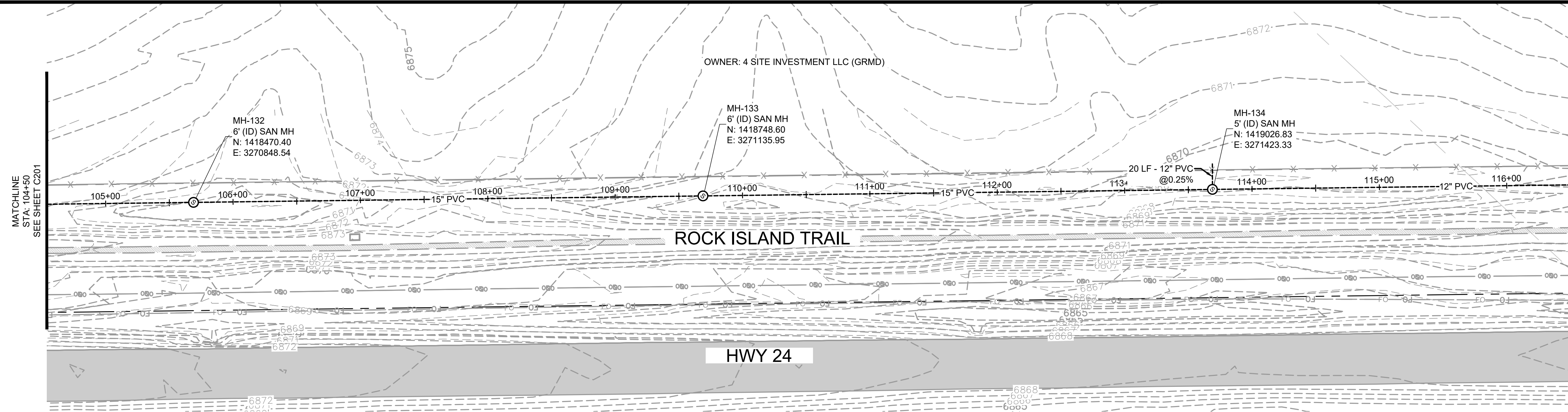
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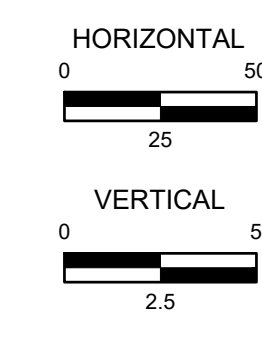
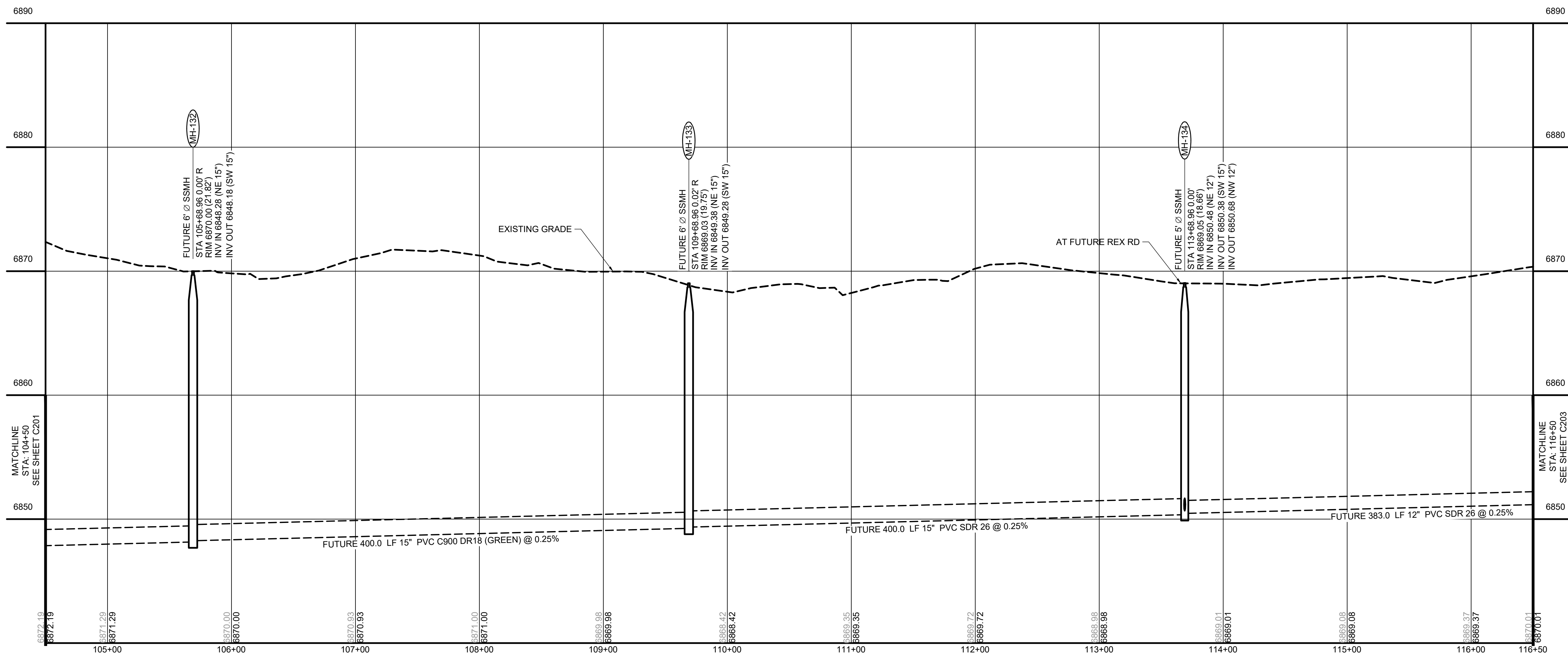
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 FUTURE - GRAVITY LINE

SHEET  
**C201**

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KEYMAP



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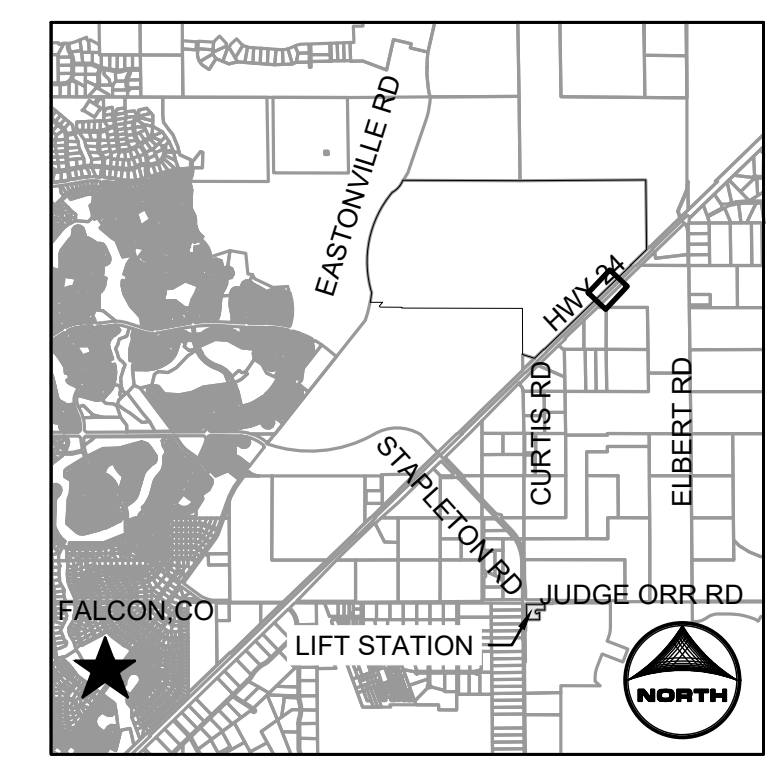
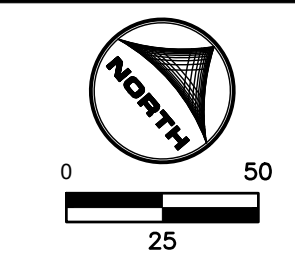
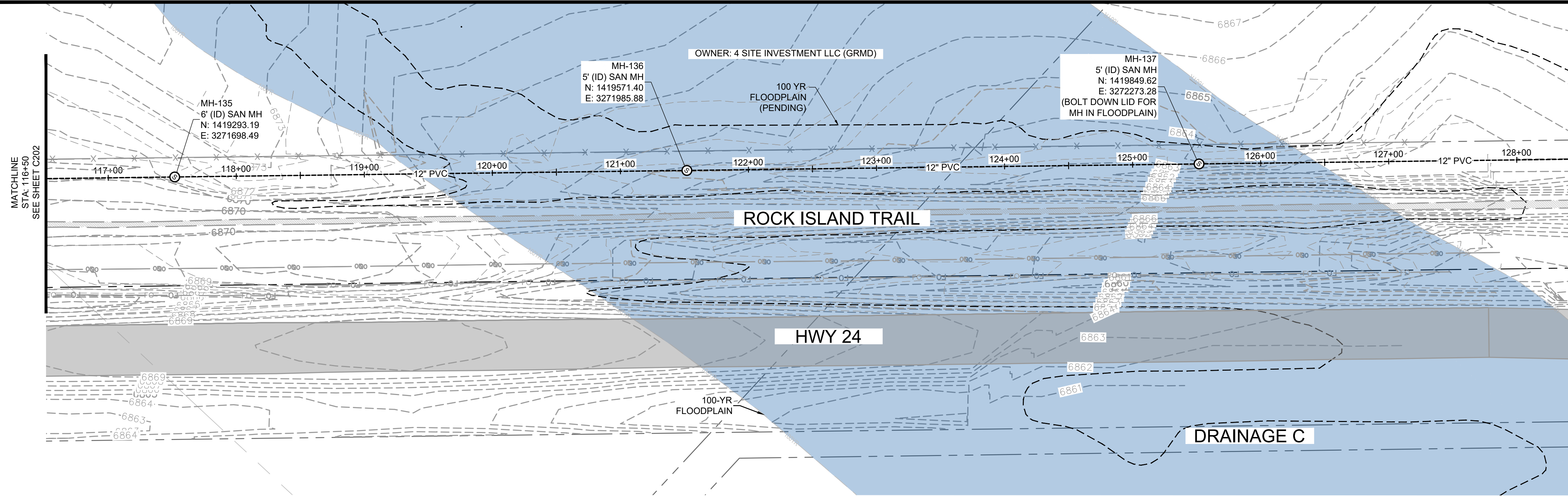


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 FUTURE - GRAVITY LINE

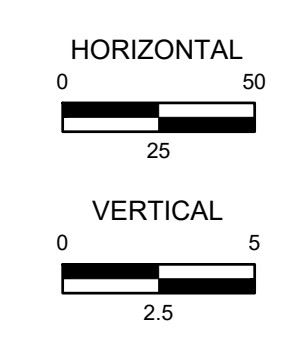
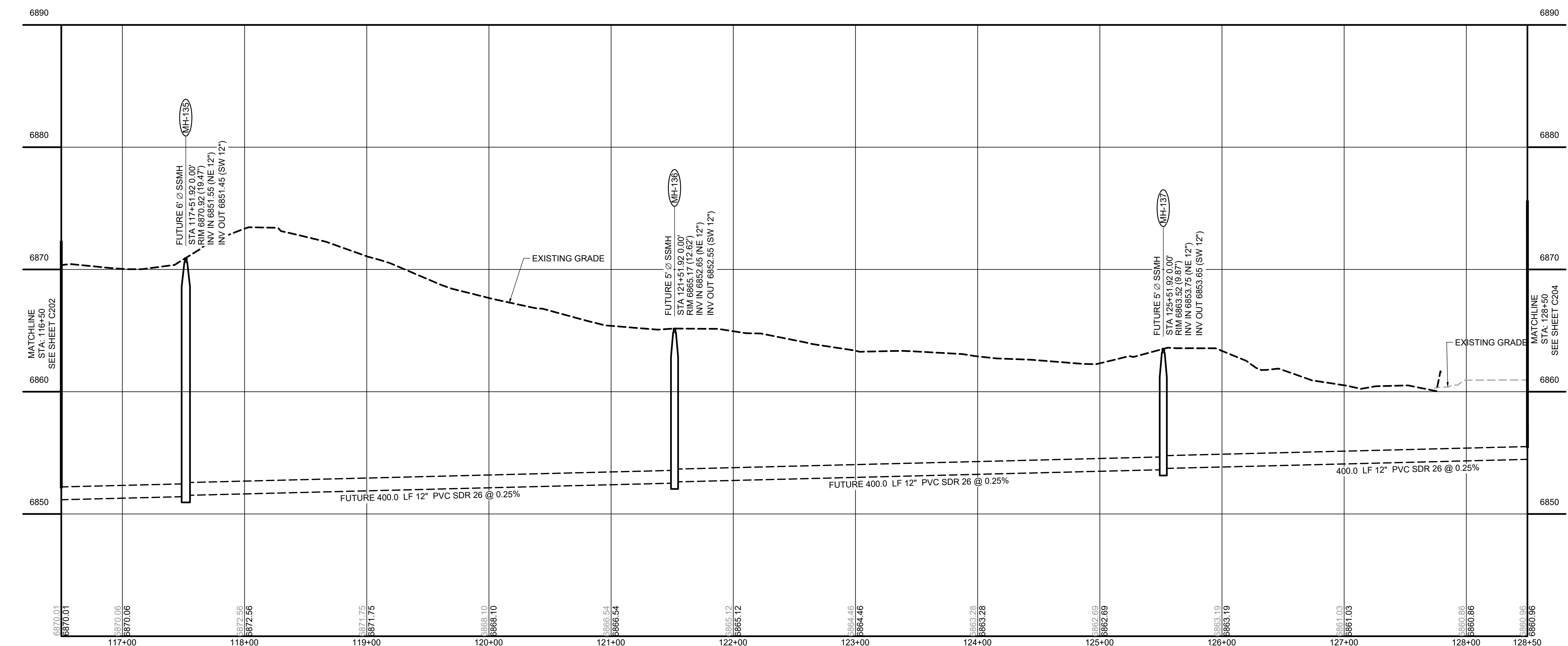
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HR GREEN Xrefs: XV-Util; xg1-1-dn01-gr; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Utility; P&P-Key; XC-Degr; XC-Initial-EC; 01-DC-San-Gr; XV-Degr; XV-Fema; XC-Row; XC-Hatching; dr-surf-gndview; Gr-Key Plan-Future; xv-degn\_582; XV-Row



KEYMAP



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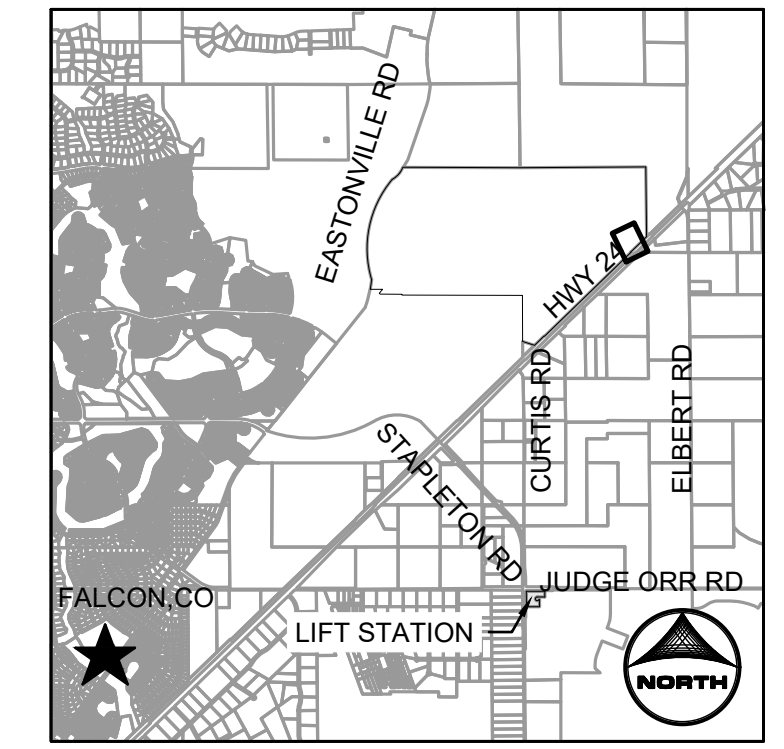
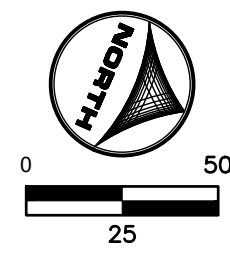
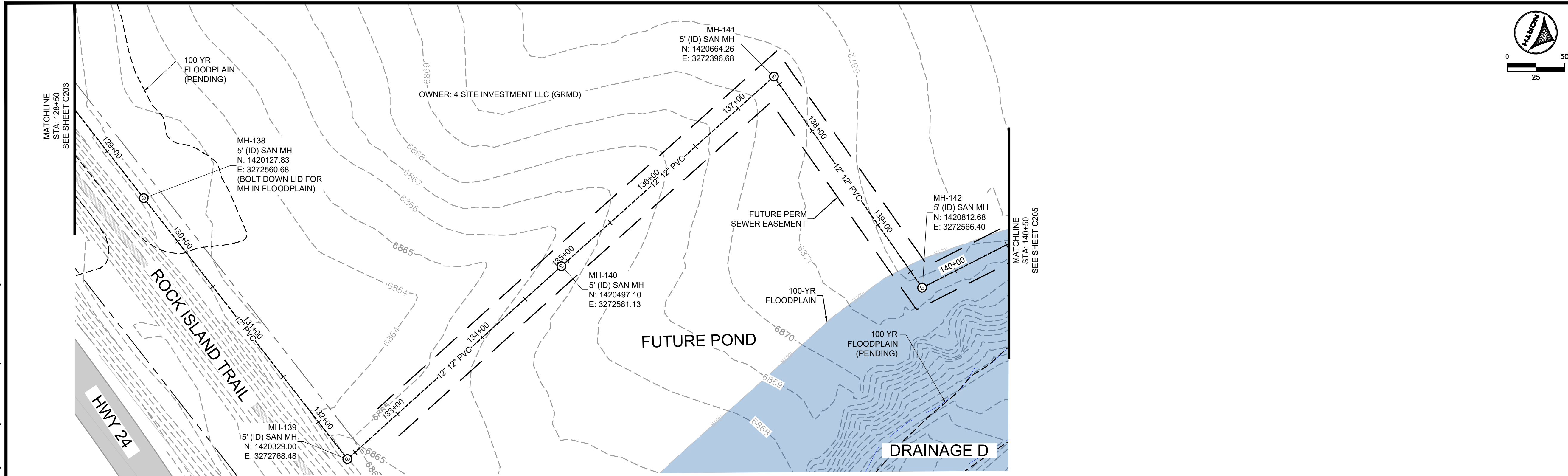
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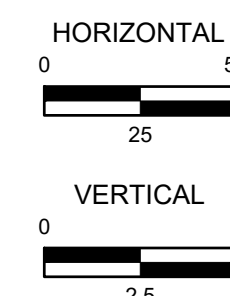
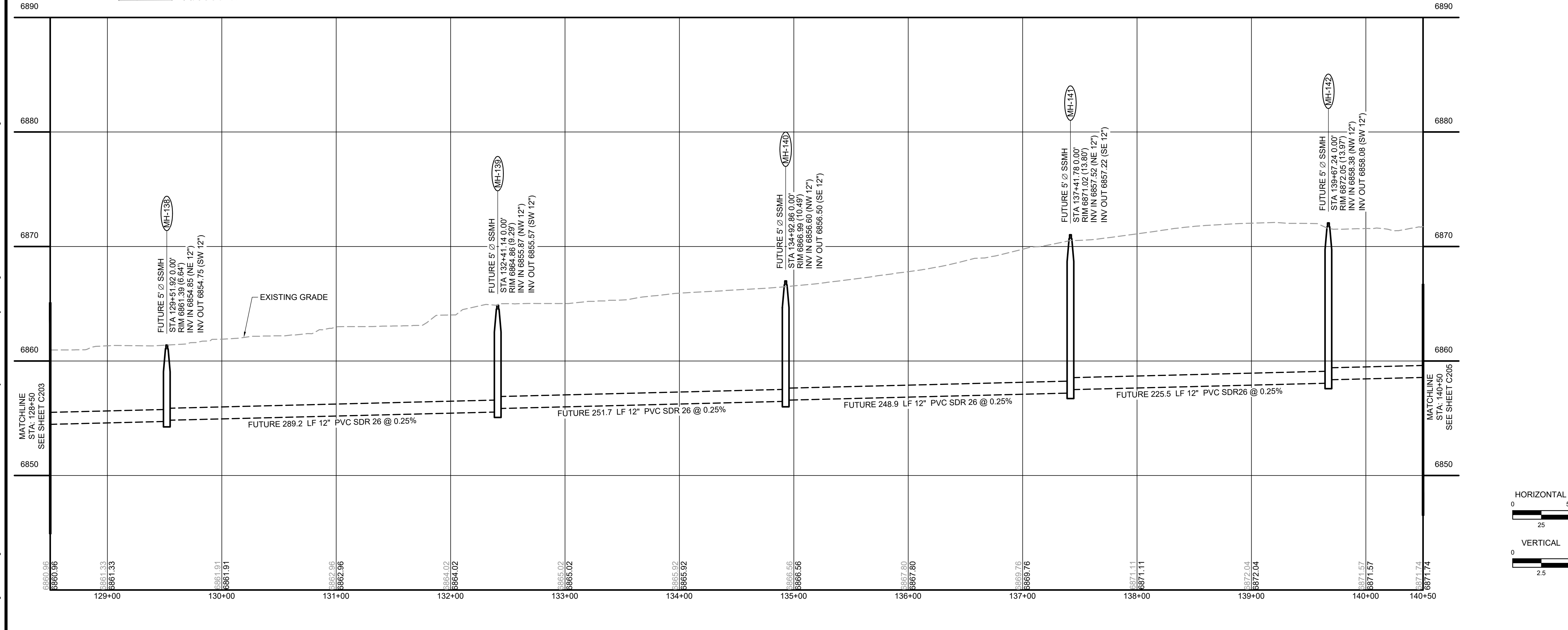
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 FUTURE - GRAVITY LINE

SHEET  
**C203**

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KEYMAP



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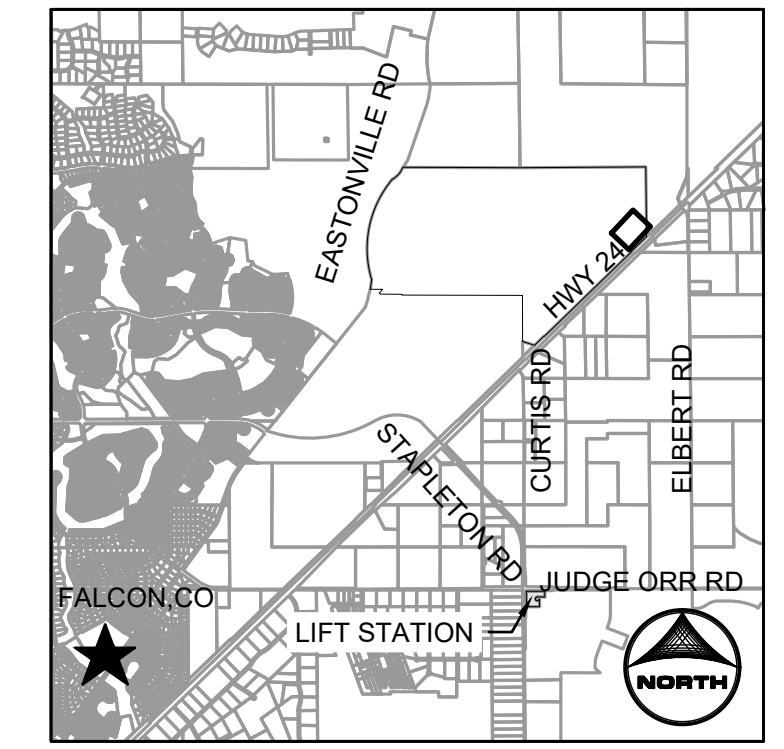
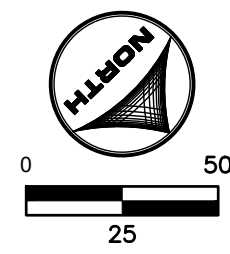
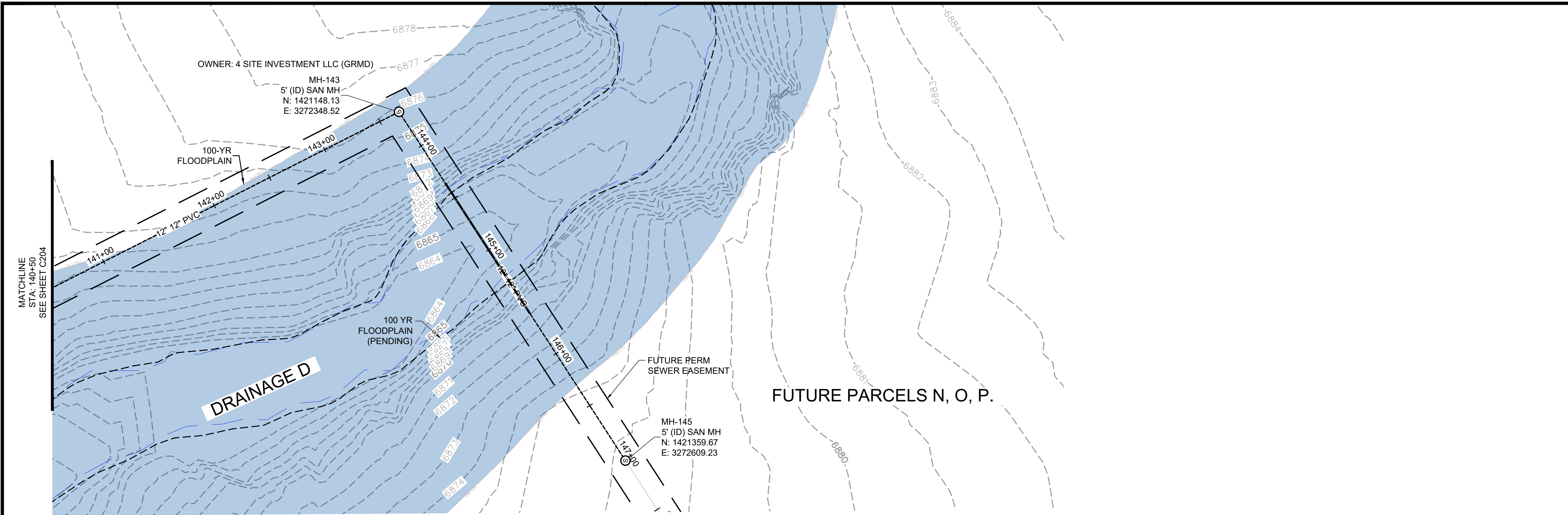
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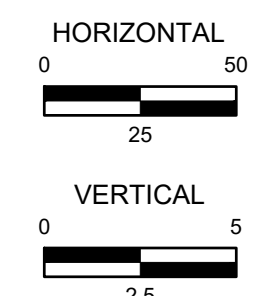
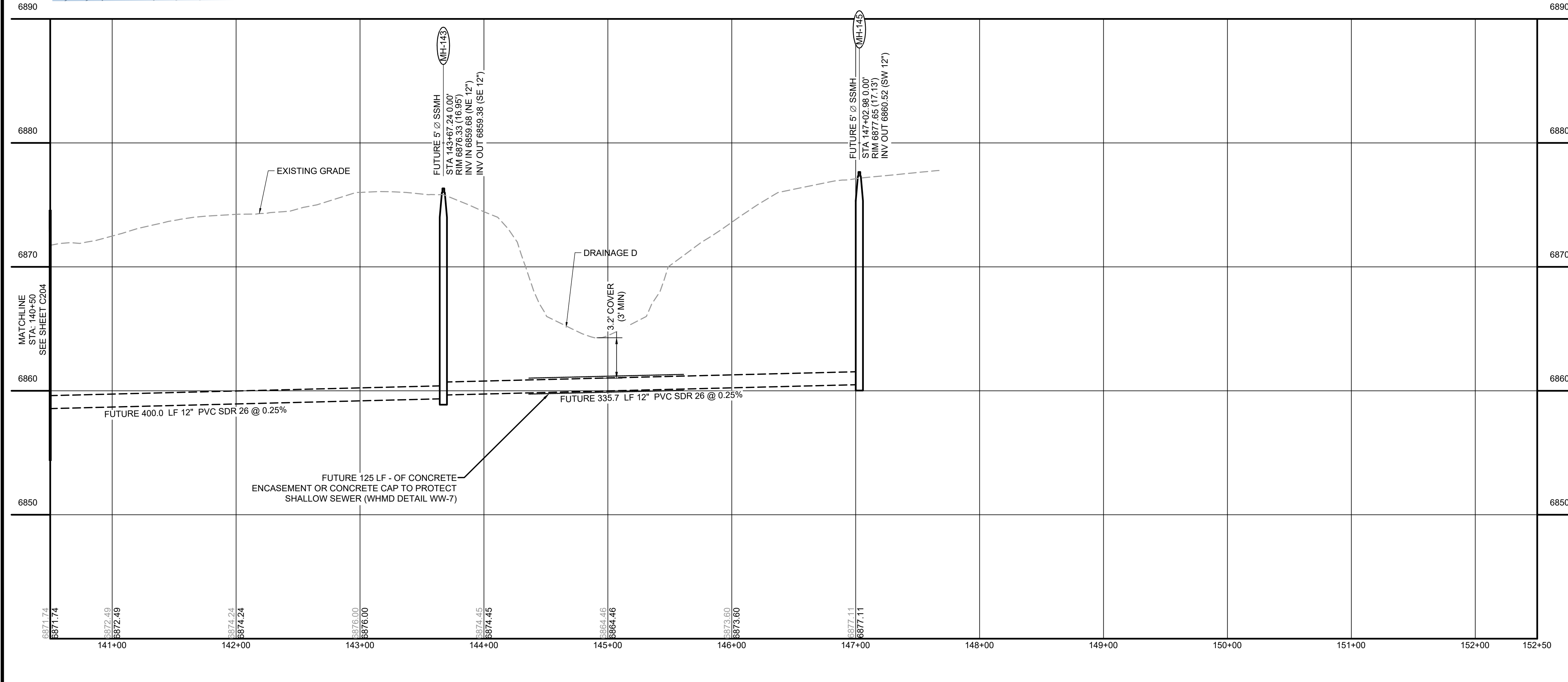
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 FUTURE - GRAVITY LINE

SHEET  
 C204

HR GREEN Xrefs: XV-Util; xg1-1-dn01-gr; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Utility; P&P\_Key; XC-Degr; XC-Initial-EC; 01-DC-Sen-Gr; XV-Degr; XV-Fema; XC-Rov; XC-Hatching; dr-surf-grndview; Gr\_Key Plan-Future; xv-degr\_582; XV-Row



KEYMAP



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CONSTRUCTION DOCUMENTS  
 FUTURE - GRAVITY LINE

SHEET  
**C205**

## STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL SHEETS:

- STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.
- 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.
- A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
- ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.
- CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.
- ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.
- TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.
- FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.
- ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
- COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENEED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
- ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF SITE.
- CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.
- DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER, SUCH WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
- EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES


- STEEPER THAN 3:1.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
- TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
- THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.
- NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ONSITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
- BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ONSITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
- NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
- OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY \_\_\_\_\_ AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:  
  
COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT  
WATER QUALITY CONTROL DIVISION  
WQCD - PERMITS  
4300 CHERRY CREEK DRIVE SOUTH  
DENVER, CO 80246-1530  
ATTN: PERMITS UNIT  
  
SEND MUD MAT SPECIFICATION TO MIKAYLA HARTFORD AT MIKAYLAHARTFORD@ELPASO.COM TO ENSURE MUD MAT USE IS ACCEPTABLE IN EL PASO COUNTY.

## PERMANENT SEED SPECS

- SPECIAL SEED MIX #1 - TBD SPECIAL ON PRIVATE LAND - LANDOWNER WILL WATER.
- SEE LEGEND AND EROSION CONTROL DETAILS FOR SEED MIX/TYPE.

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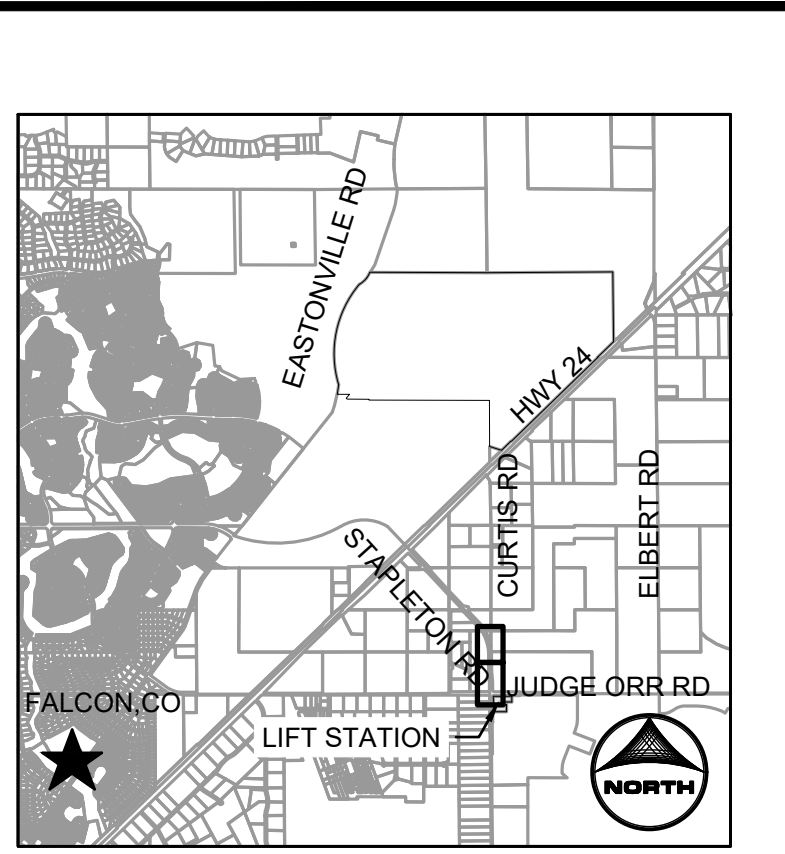
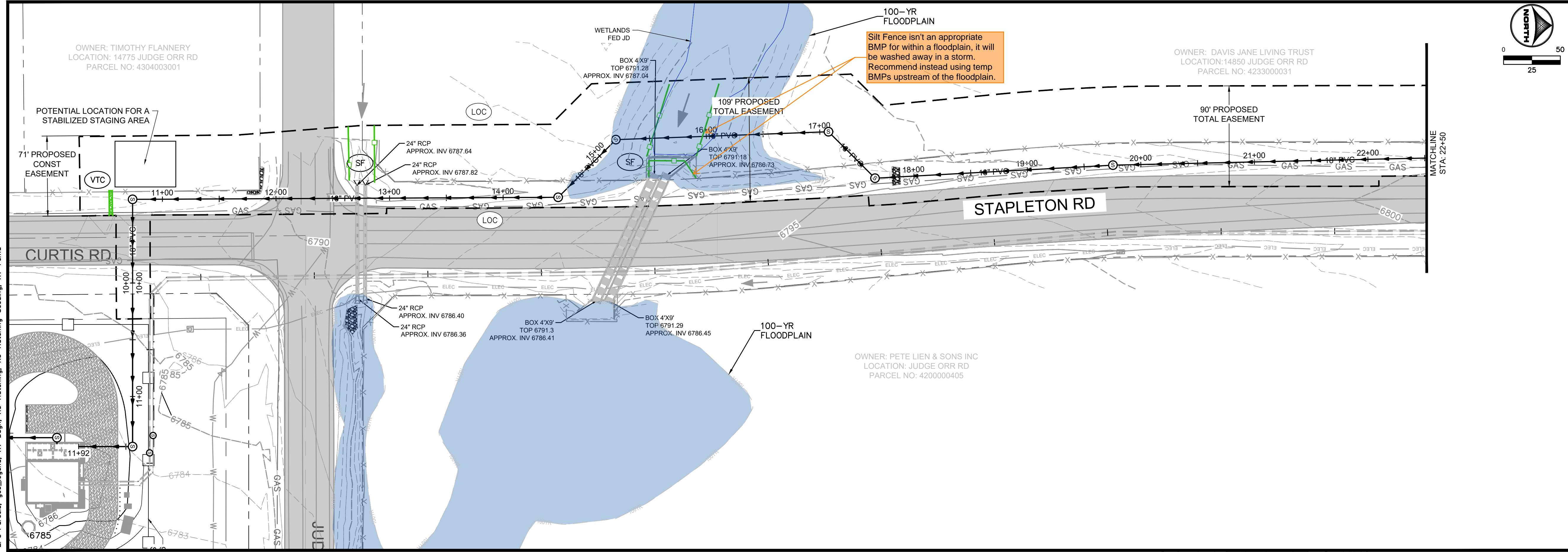
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 COLORADO SPRINGS CO 80920  
 PHONE: 719.300.4140  
 FAX: 713.965.0044

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 INTERCEPTOR SEWER  
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 EL PASO COUNTY, CO



CONSTRUCTION DOCUMENTS  
 GRADING AND EROSION CONTROL NOTES

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**C300**



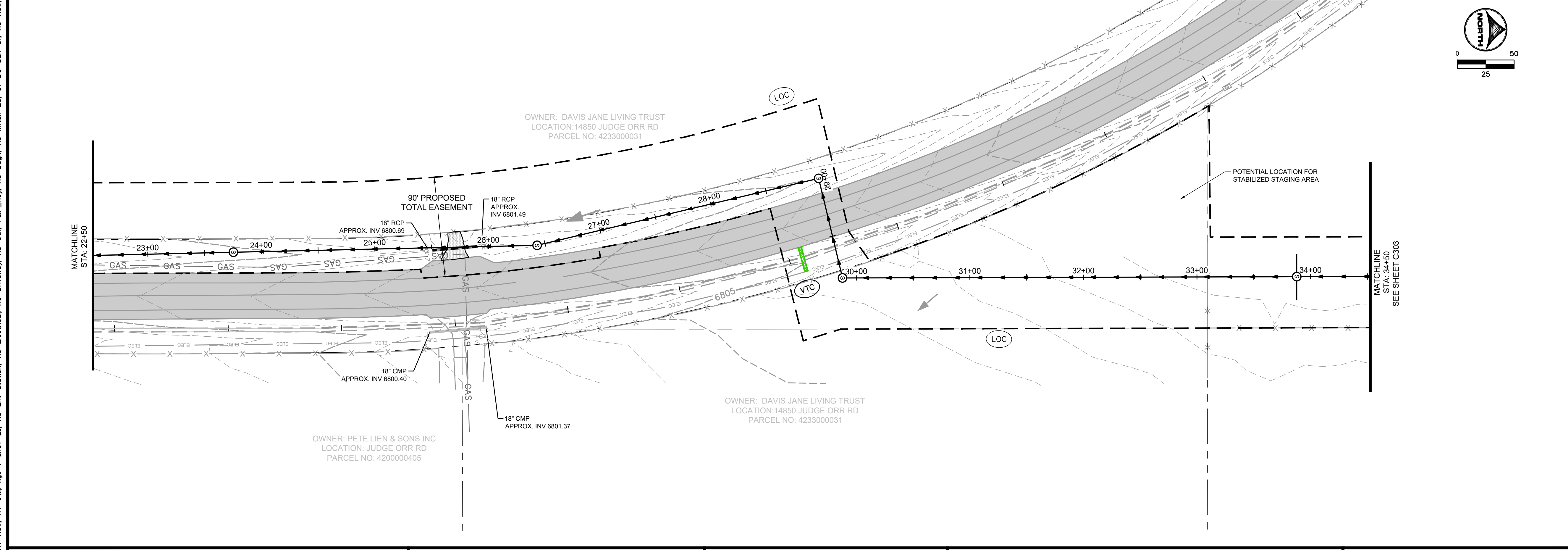
KEYMAP

GENERAL NOTES:

- CONTRACTOR SHALL REPLACE THE AREA OF CONSTRUCTION TO THE EXISTING, PRE-CONSTRUCTION GRADE.

GEC LEGEND:

- CWA CONCRETE WASHOUT AREA
- ED/DS EARTH DIKE & DRAINAGE SWALE
- IP INLET PROTECTION
- CIP CULVERT INLET PROTECTION
- SF SILT FENCE
- EL EROSION CONTROL LOG
- SSA STABILIZED STAGING AREA
- SP STOCKPILE PROTECTION
- VTC MUD MATS/VEHICLE TRACKING CONTROL
- LOC LIMITS OF CONSTRUCTION/DISTURBANCE
- PSM PERMANENT SEEDING AND MULCHING UPLAND SEED MIX
- PSM PERMANENT SEEDING AND MULCHING WETLAND SEED MIX
- PSM PERMANENT SEEDING AND MULCHING SPECIAL SEED MIX #1. SEE NOTES
- PT PORTABLE TOILET
- CD CHECK DAM
- ECB EROSION CONTROL BLANKET
- NS NEW SURFACING
- EX FLOW DIRECTION
- EX FLOODPLAIN



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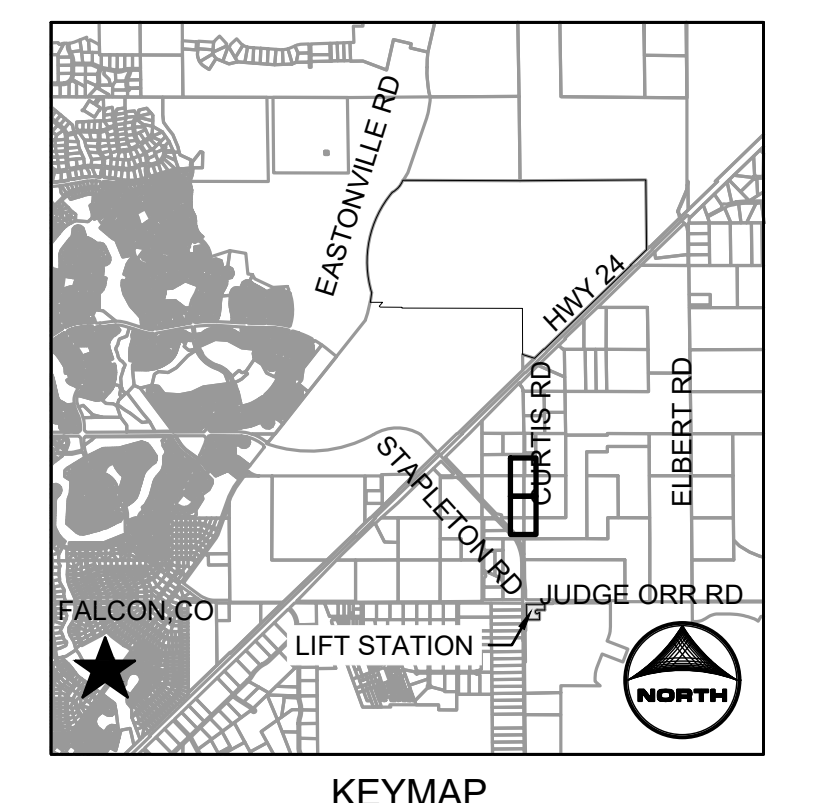
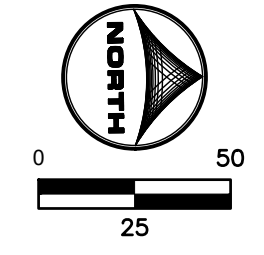
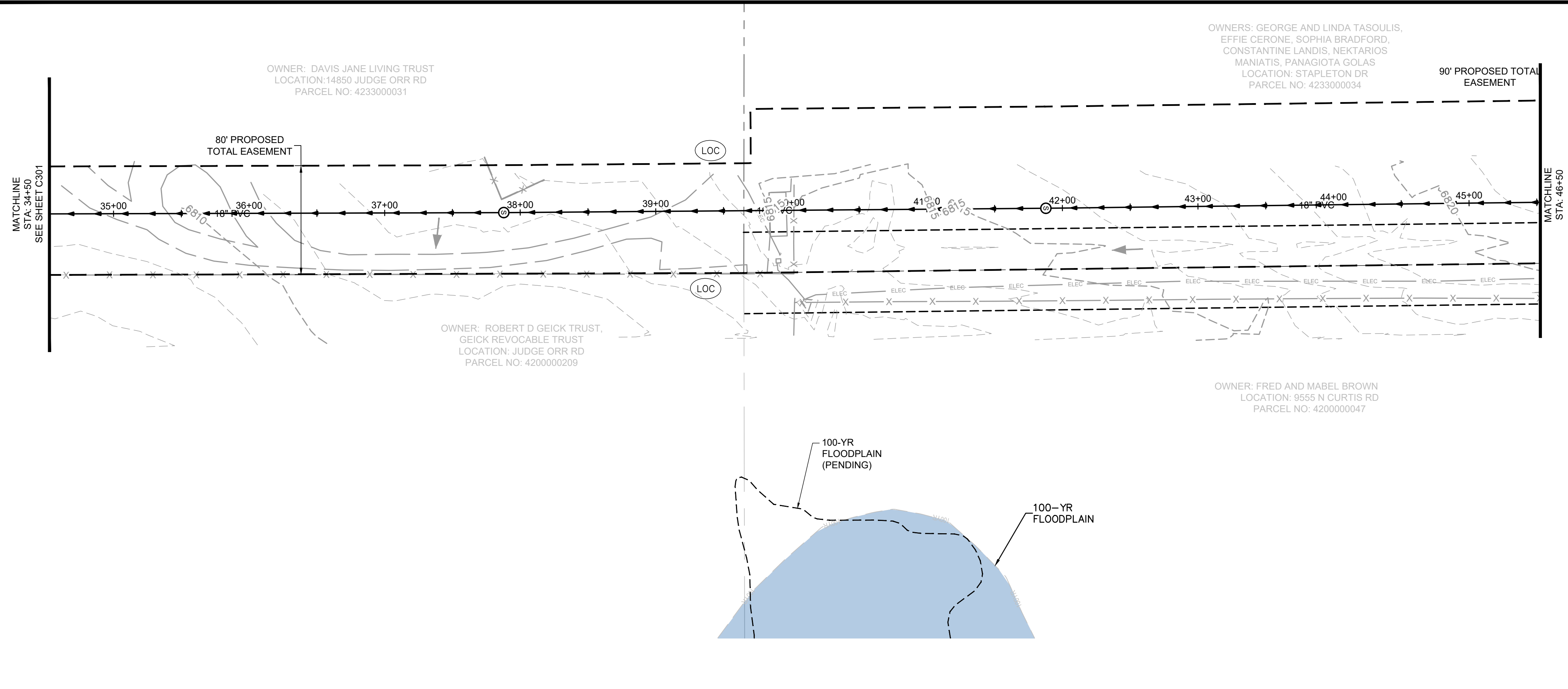
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CONSTRUCTION DOCUMENTS  
EROSION CONTROL INITIAL-INTERIM PLAN

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HR GREEN Xrefs: XV-Row; XV-Util; xg1-1-dh01-Ls; XC-Lift-Station; XC-Electrical; XC-Driveway; XC-Util; P&P-Key; XC-Dagn; XC-Initial-EC; 01-DC-Sm-Cr; XC-Row; EPC Parcels; gce\_Legend; XV-Dagn; XC-Hatching; XC-Hatching-Seeding; XV-Fema

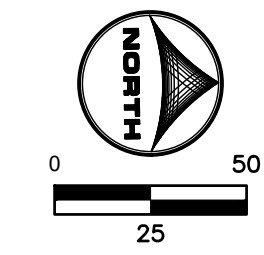
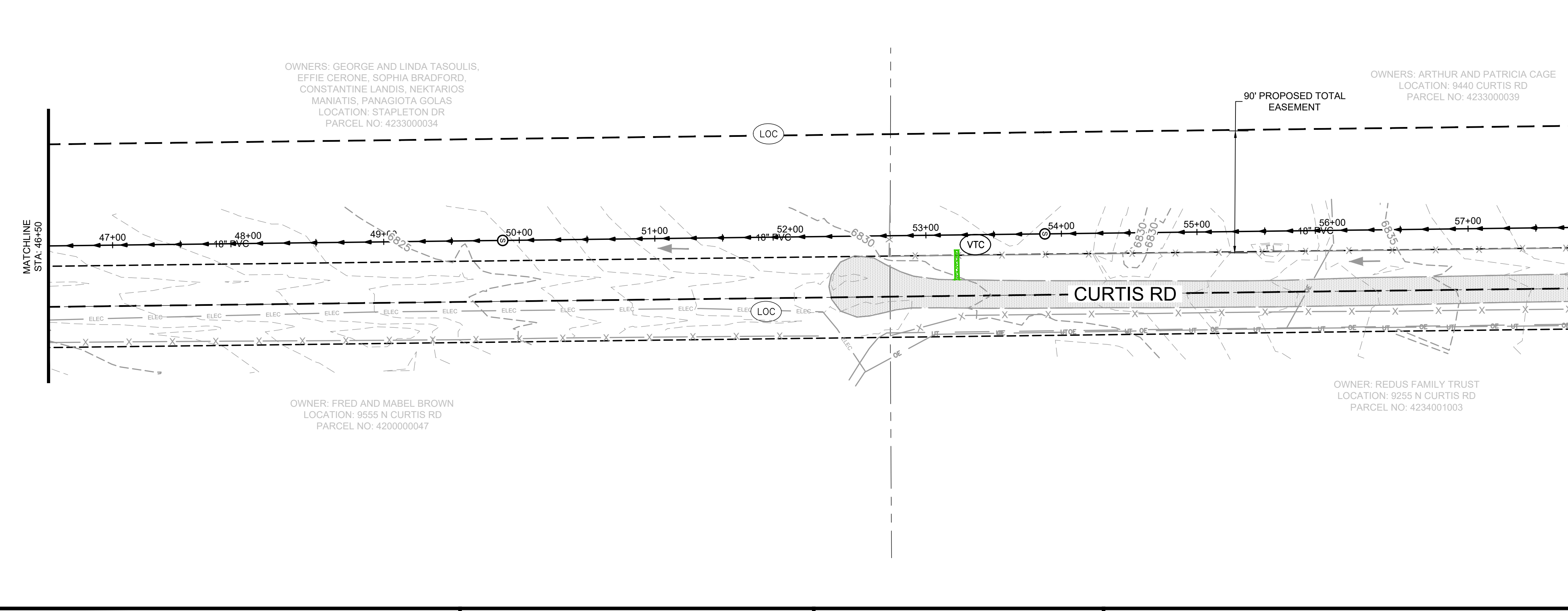
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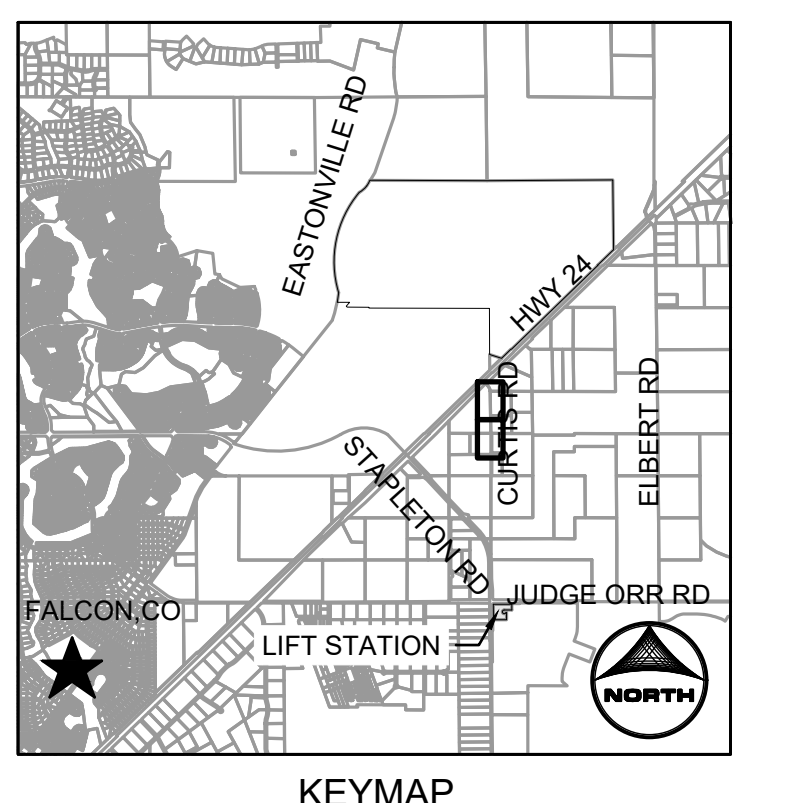
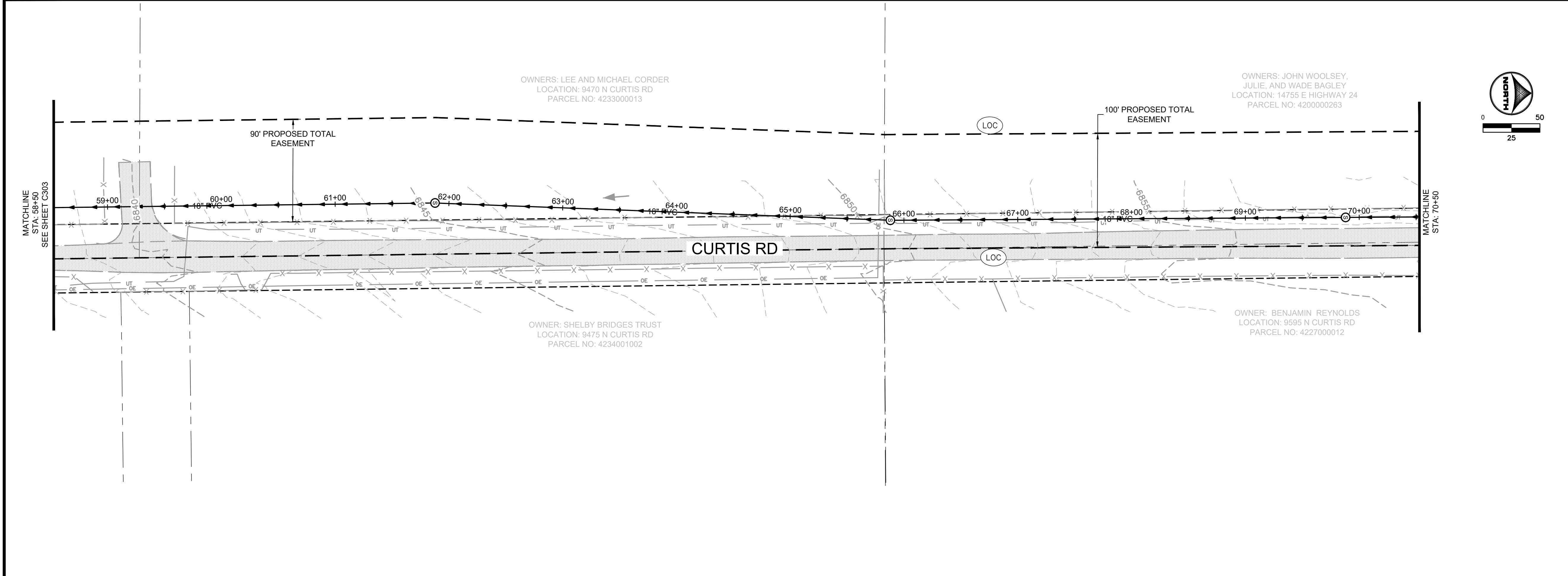


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EROSION CONTROL INITIAL-INTERIM PLAN

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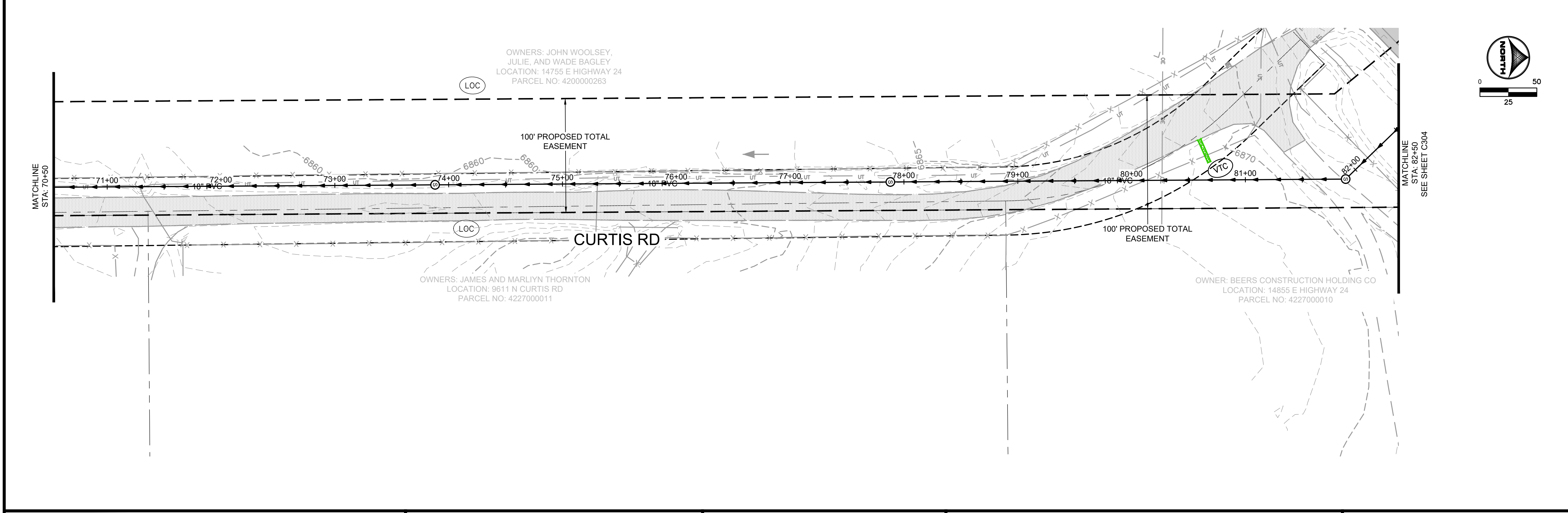


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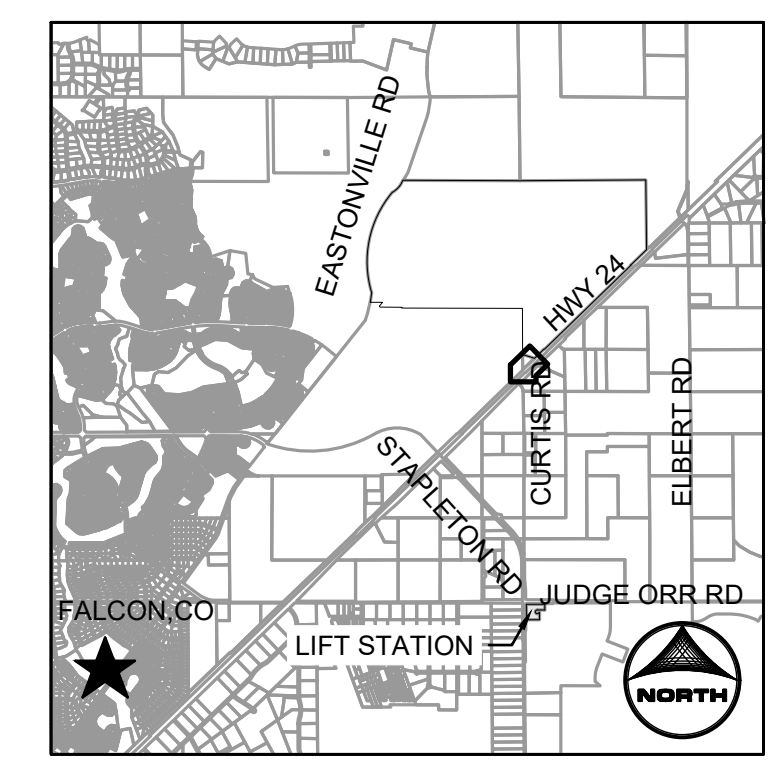
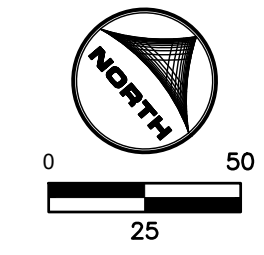
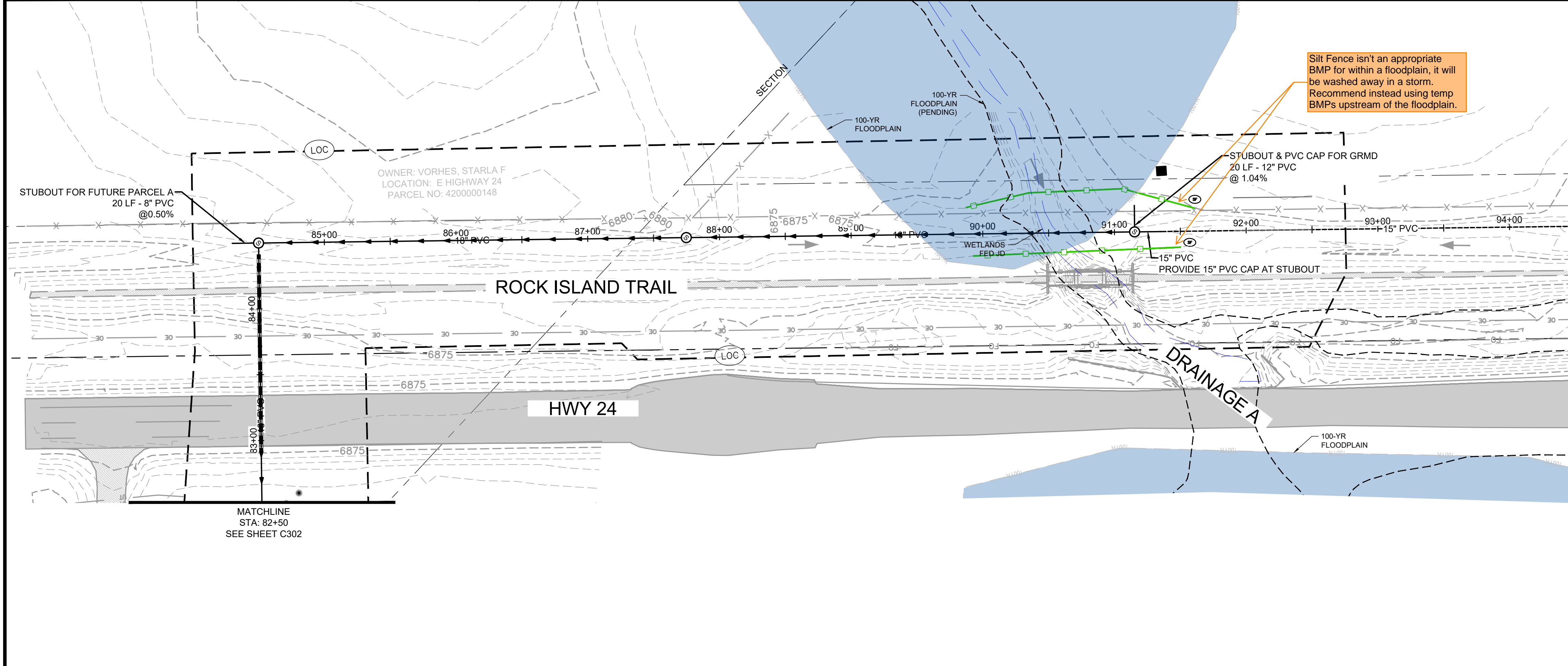
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CONSTRUCTION DOCUMENTS  
 EROSION CONTROL INITIAL-INTERIM PLAN

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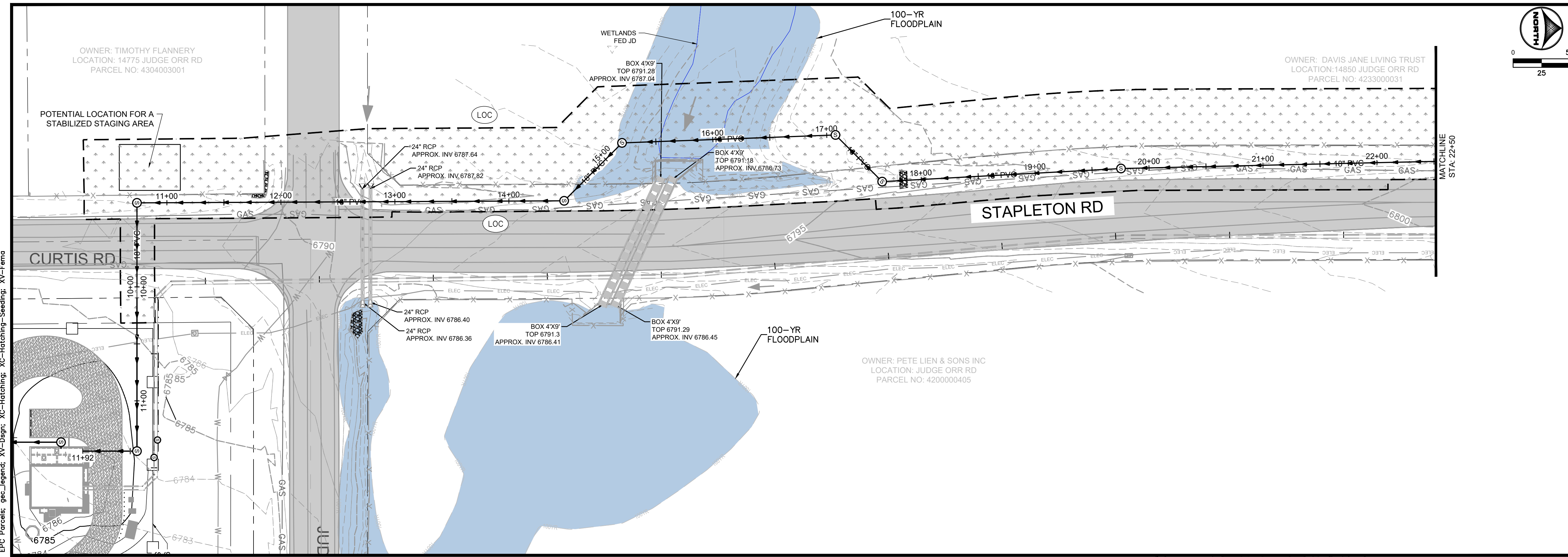
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CONSTRUCTION DOCUMENTS  
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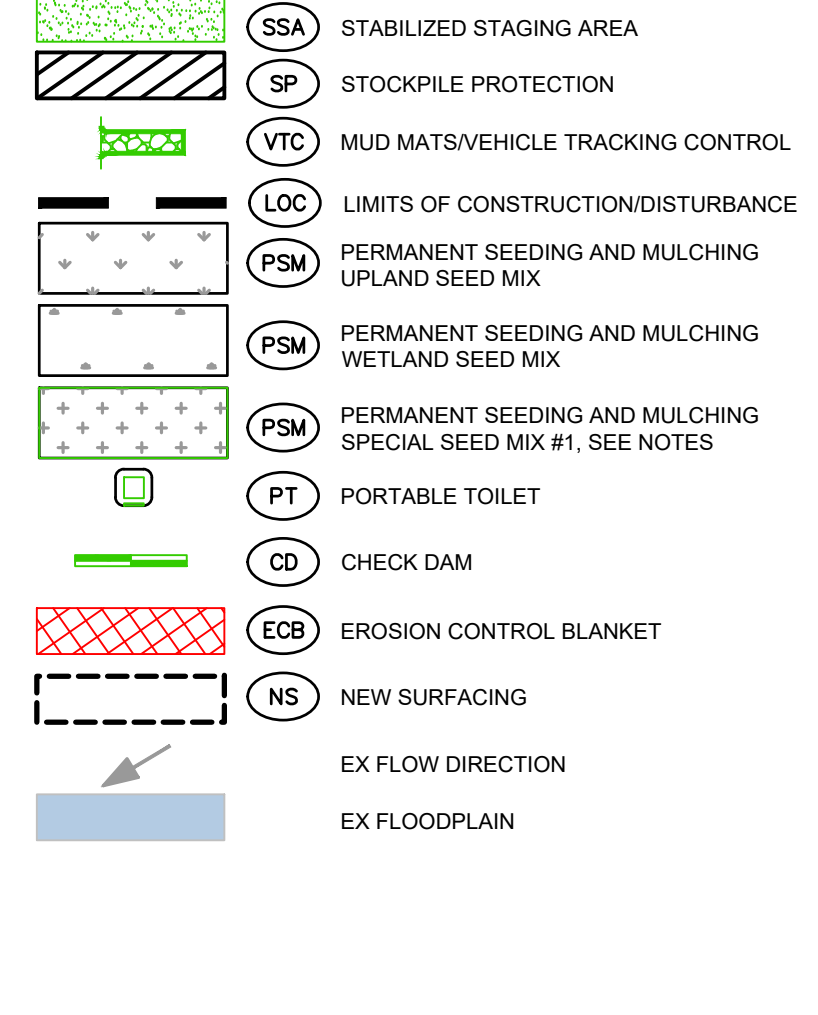
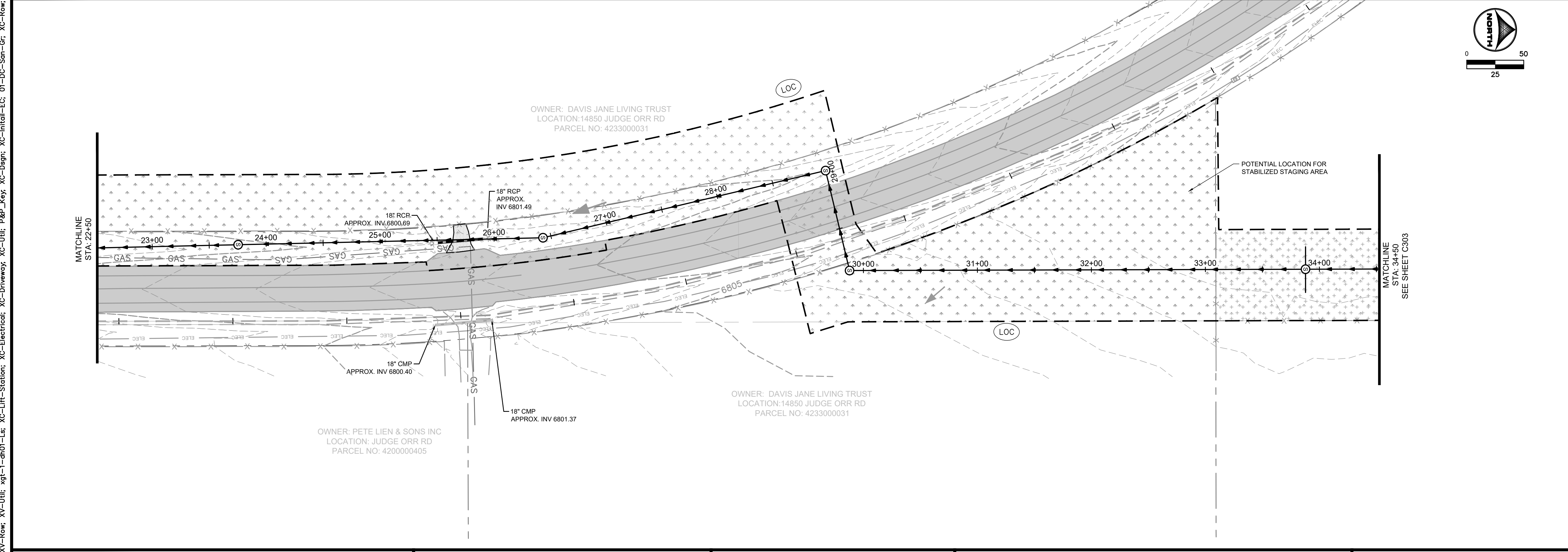
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- PSM PERMANENT SEEDING AND MULCHING UPLAND SEED MIX
- PSM PERMANENT SEEDING AND MULCHING WETLAND SEED MIX
- PSM PERMANENT SEEDING AND MULCHING SPECIAL SEED MIX #1. SEE NOTES
- PT PORTABLE TOILET
- CD CHECK DAM
- ECB EROSION CONTROL BLANKET
- NS NEW SURFACING
- EX FLOW DIRECTION
- EX FLOODPLAIN



**KEYMAP**

**GENERAL NOTES:**

- CONTRACTOR SHALL REPLACE THE AREA OF CONSTRUCTION TO THE EXISTING, PRE-CONSTRUCTION GRADE.

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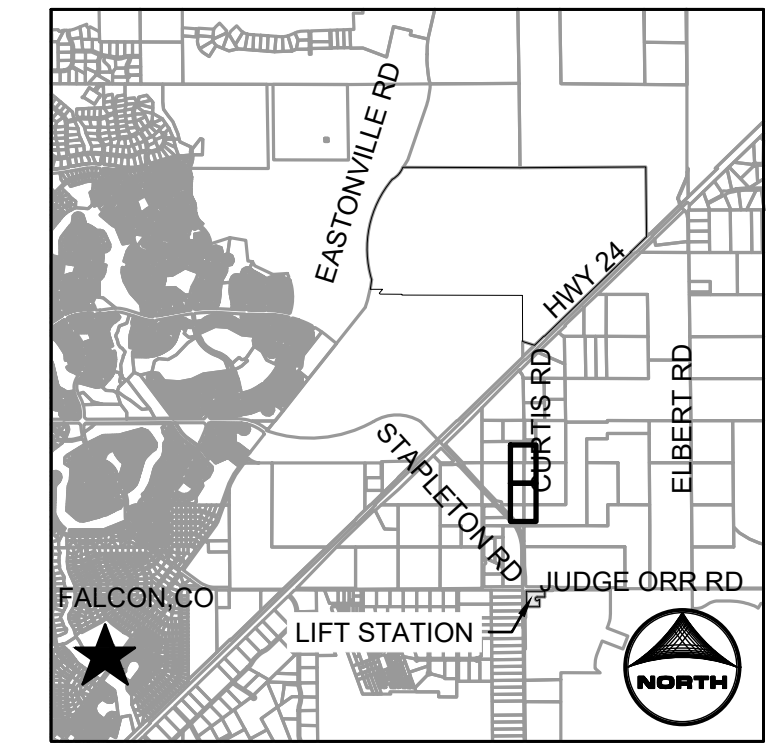
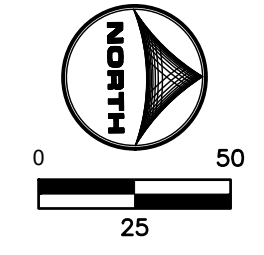
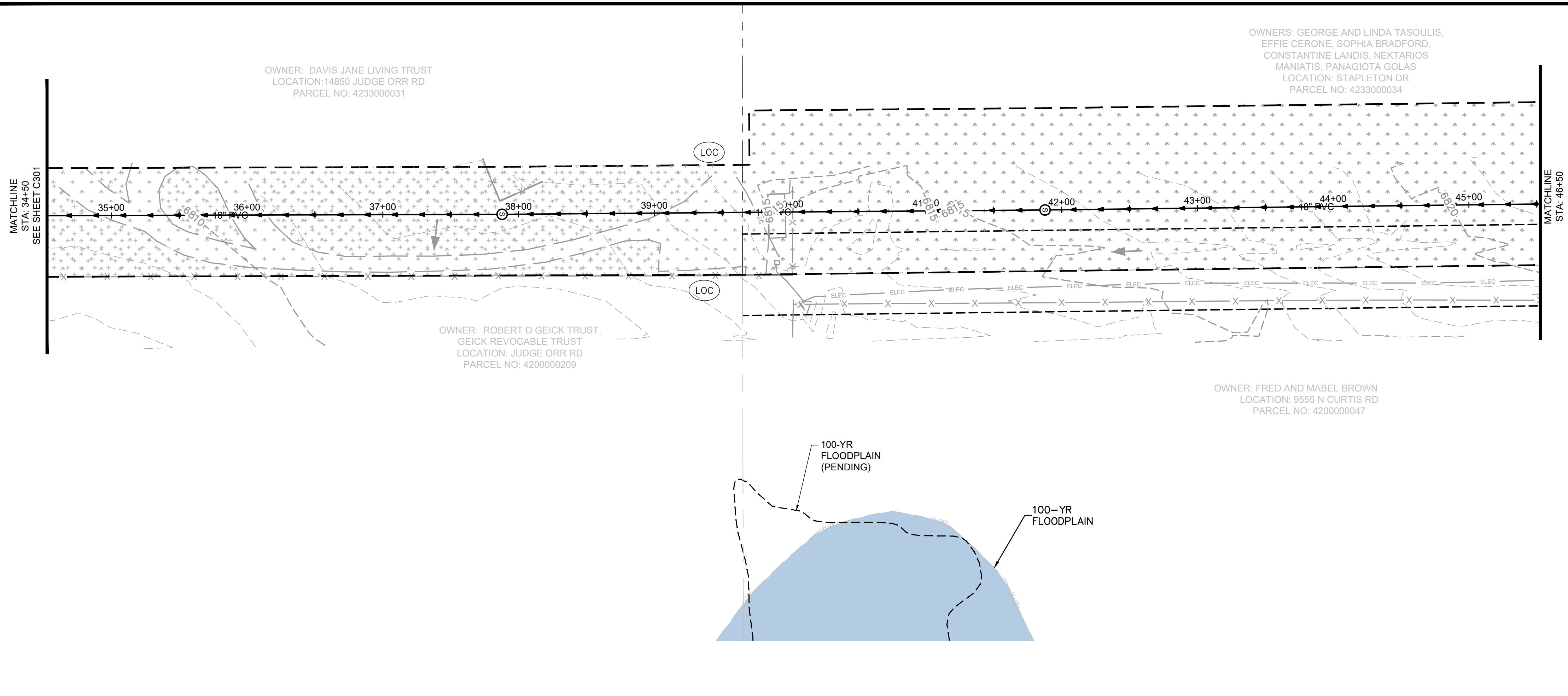
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SHEET  
**C305**

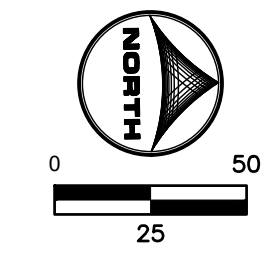
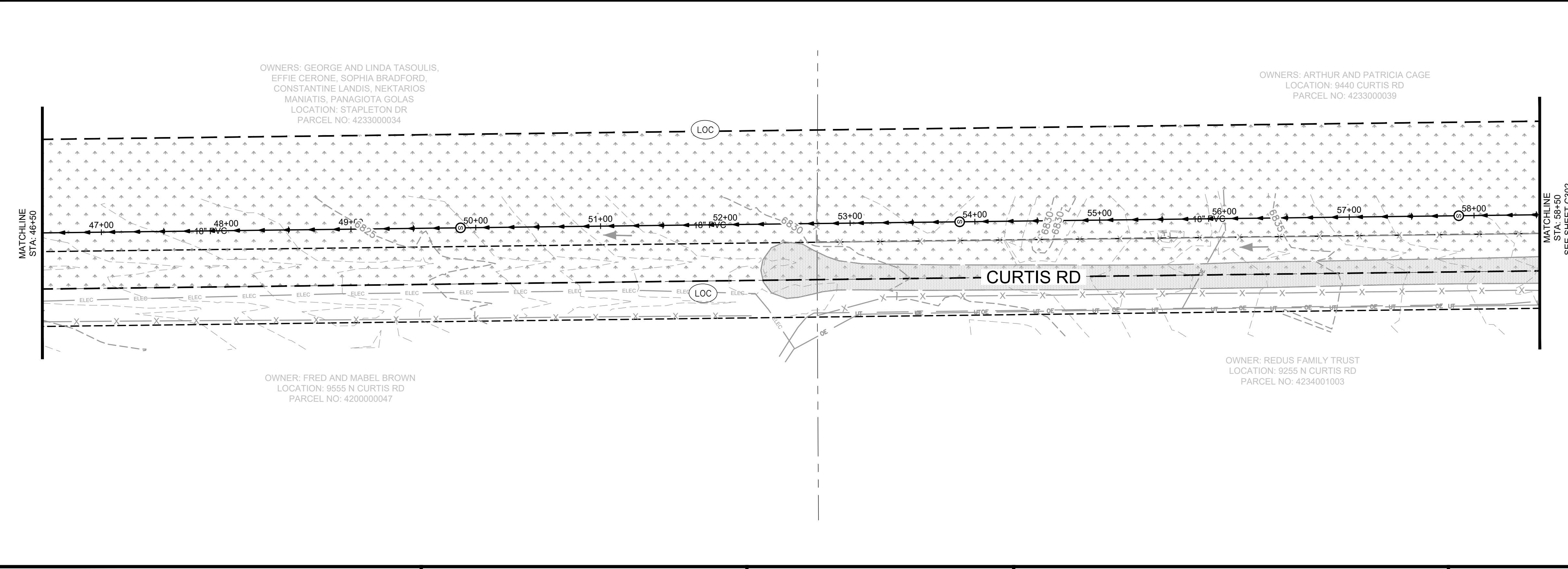
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KEYMAP

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- CONTRACTOR SHALL REPLACE THE AREA OF CONSTRUCTION TO THE EXISTING, PRE-CONSTRUCTION GRADE.

- GEC LEGEND:**
- CWA CONCRETE WASHOUT AREA
  - ED/DS EARTH DIKE & DRAINAGE SWALE
  - IP INLET PROTECTION
  - CIP CULVERT INLET PROTECTION
  - SF SILT FENCE
  - EL EROSION CONTROL LOG
  - SSA STABILIZED STAGING AREA
  - SP STOCKPILE PROTECTION
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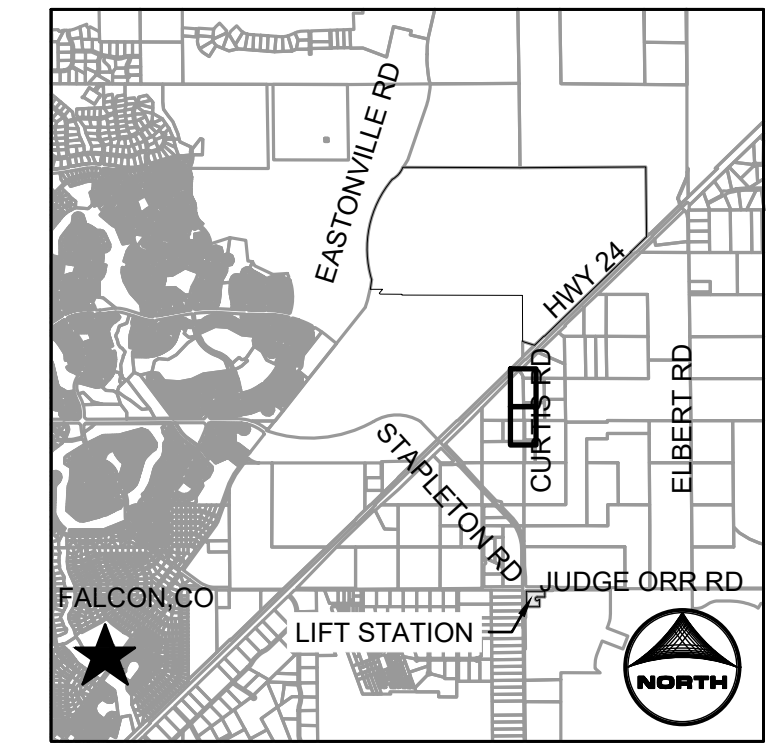
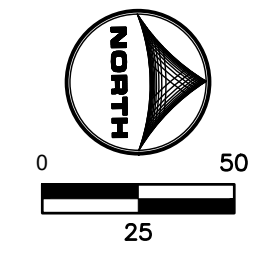
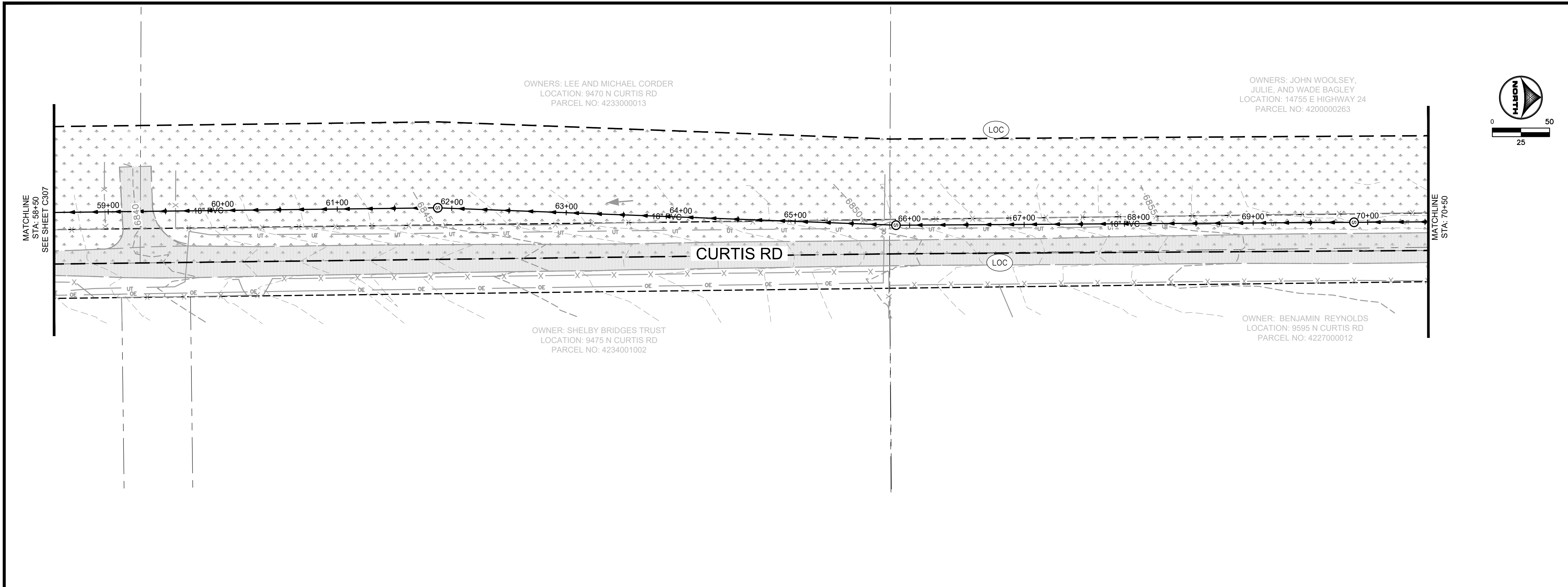
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**C306**

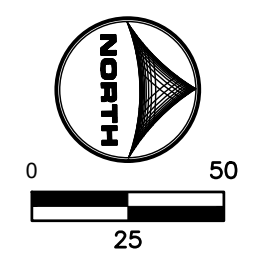
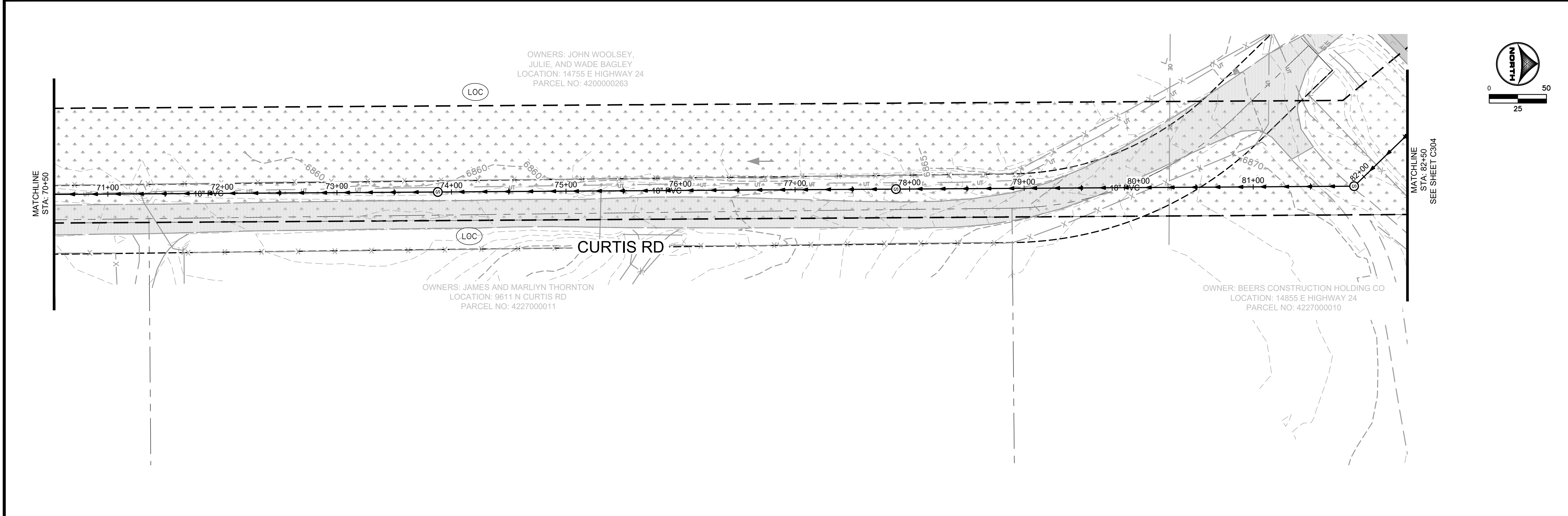


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KEYMAP

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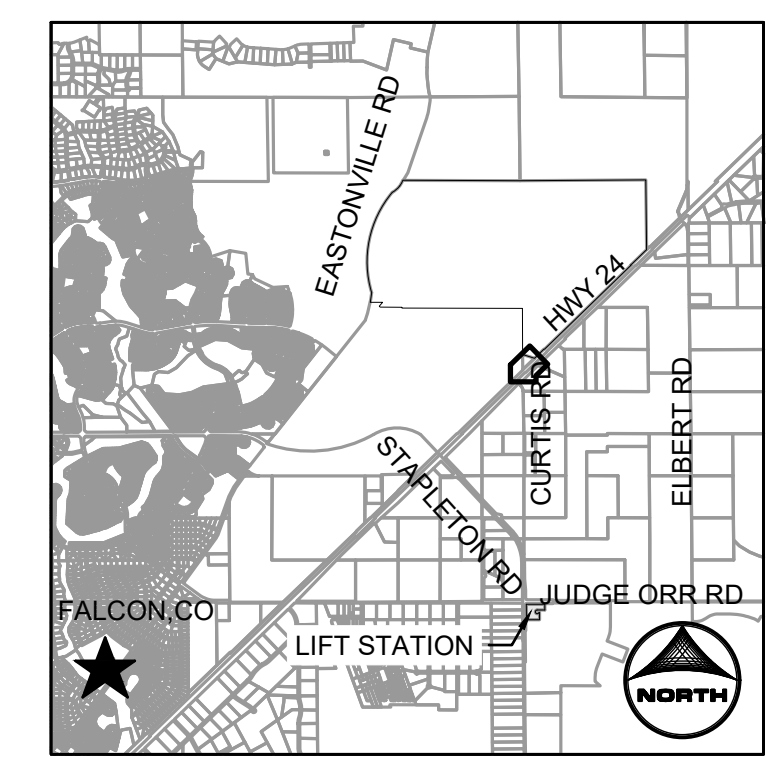
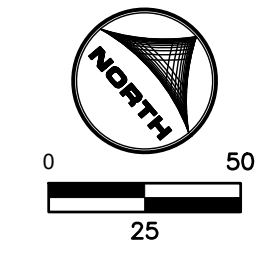
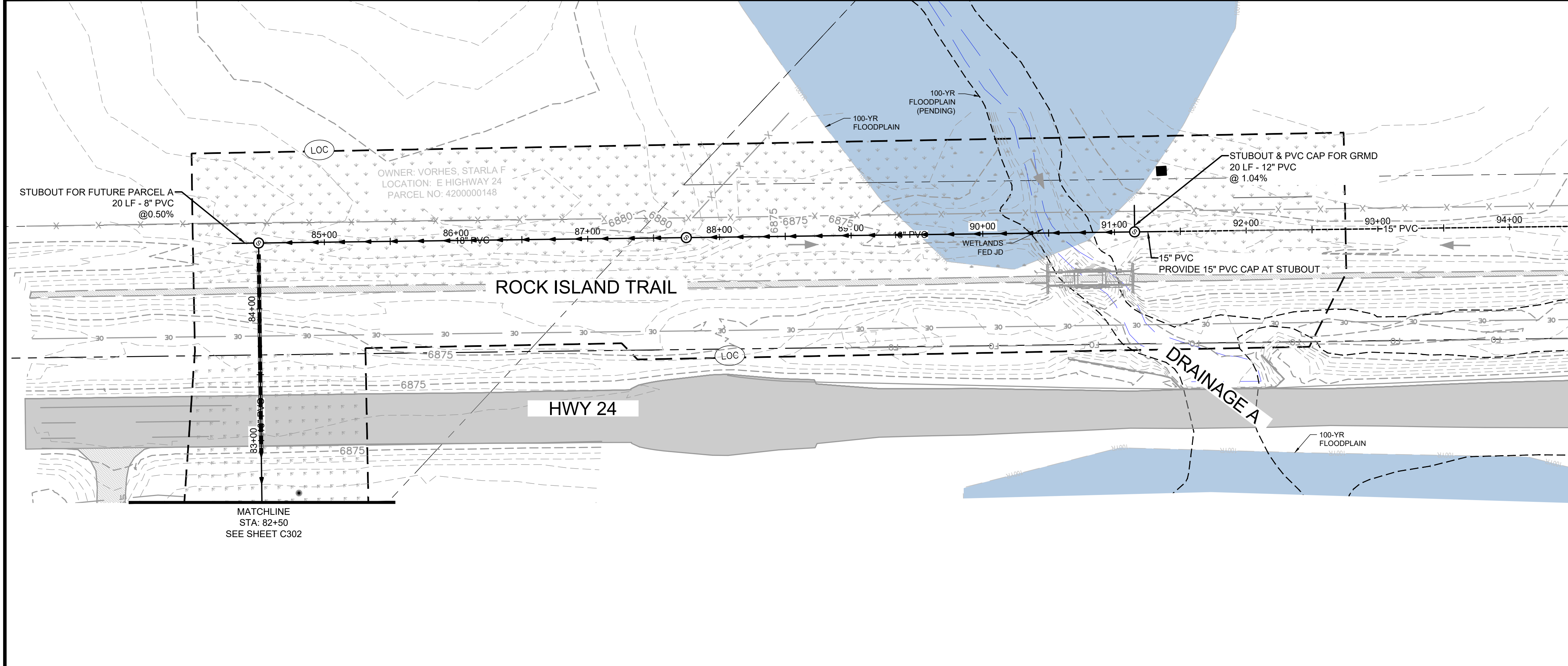
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KEYMAP

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- CONTRACTOR SHALL REPLACE THE AREA OF CONSTRUCTION TO THE EXISTING, PRE-CONSTRUCTION GRADE.

**GEC LEGEND:**

	(CWA)	CONCRETE WASHOUT AREA
	(ED/DS)	EARTH DIKE & DRAINAGE SWALE
	(IP)	INLET PROTECTION
	(CIP)	CULVERT INLET PROTECTION
	(SF)	SILT FENCE
	(EL)	EROSION CONTROL LOG
	(SSA)	STABILIZED STAGING AREA
	(SP)	STOCKPILE PROTECTION
	(VTC)	MUD MATS/VEHICLE TRACKING CONTROL
	(LOC)	LIMITS OF CONSTRUCTION/DISTURBANCE
	(PSM)	PERMANENT SEEDING AND MULCHING UPLAND SEED MIX
	(PSM)	PERMANENT SEEDING AND MULCHING WETLAND SEED MIX
	(PSM)	PERMANENT SEEDING AND MULCHING SPECIAL SEED MIX #1, SEE NOTES
	(PT)	PORTABLE TOILET
	(CD)	CHECK DAM
	(ECB)	EROSION CONTROL BLANKET
	(NS)	NEW SURFACING
		EX FLOW DIRECTION
		EX FLOODPLAIN



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Single Lot Access Vehicle Tracking Control Mats

### Single Lot Access VTC (Mud Mats)

**Description and Purpose**  
A stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

**Suitable Applications**  
Use at construction sites:  
• Where dirt on mud can be tracked onto public roads.  
• Where a single-family lot needs a temporary access point.

**Limitations**  
• Entrances and exits require periodic cleaning and maintenance.  
• This BMP should be used in conjunction with street sweeping on adjacent public right of way.  
• Entrances and exits should be constructed on level ground only or sloping away from paved surfaces.

**Implementation**  
• Construct on level ground or sloping down and away from paved surfaces where possible.  
• For individual lots VTC perimeter may be reduced to minimum 8' x 15' due to space limitation. This is for access to single family lots only.)  
• Limit the points of entrance/exit to the construction site.  
• Properly grade each construction entrance/exit to prevent runoff from leaving the construction site.  
• Route runoff from stabilized entrances/exits through a sediment trapping device before discharge.  
• Require that all employees, subcontractors, and suppliers to utilize the stabilized construction access when lot access is necessary.  
• Educate all employees, subcontractors, and suppliers on keeping vehicles off-site wherever possible.  
• Limit access to only access that is absolutely necessary.

**Inspection and Maintenance**  
• Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMPs are under way, inspect in accordance with the specified inspection schedule in the site SWMP.  
• Visually inspect local roads adjacent to the site daily. Sweep or vacuum to remove visible accumulated sediment.  
• Check for damage and repair as needed.  
• Remove accumulated sediment.  
• Reset and regrade at 1.04% slope or greater.  
• Remove any sediments.

TYPICAL TRENCH DETAIL FOR PIPE SEGMENTS WITH LESS THAN 1.04% SLOPE  
SCALE: N.T.S.

TYPICAL TRENCH DETAIL FOR PIPE SEGMENTS WITH LESS THAN 1.04% SLOPE  
SCALE: N.T.S.

El Paso County, CO Engineering Criteria Manual

### Lot Access-VTC (mud mats)

**AGES Mud Mat Specifications**  
Each mat is made up of a double layer of high strength woven fabric that is stitched in such a way to encapsulate the reinforcing members that run perpendicular to the direction of traffic. These reinforcing ribs are secured individually within each pocket. There are approx. 24-30 pockets that each holds 1 bamboo post of approx. 2" diameter. This combination of reinforcing member and confining fabric result in a portable mat that can be rolled up for transport and ease of deployment. AGES Mud Mats can be used in construction site access, agriculture, golf & parks, other soft or sensitive ground condition areas where vehicle access is required.

**PROPERTY TEST PROCEDURE VALUE**

Grain Length Strength	ASTM D4232	302.6 lbs
Apparent Breaking Elongation	ASTM D4232	29% / 15%
Tensile Tearing Strength	ASTM D4232	407.4 lbs
Tensile Puncture Strength	ASTM D4232	114.3 lbs
Water Absorbency	ASTM D2296	40.89 g/g
Permeability Coefficient	ASTM D4211	20 US Sphes 1.0/2.0mm
Compressive Modulus	ASTM D4211	25.14 gpa
Moisture Content	ASTM D4248	408.14 %
Shrinkage	Visual: Grayscale	100% Polarization

APPROXIMATE DIMENSIONS PER MAT  
Size (Overall approx.) 15' x 15'  
Rolling Size (width) 11.5' x 11.5' (roll)  
Weight (approx.) 60 lbs

Source: AGES Mud Mats

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El Paso County, CO Engineering Criteria Manual

### Rubber Vehicle Tracking Control Pads

**WRONG!** Do not install over jagged/rocky ground or soil

**BEST!** Preferably installed over level ground

**NOTES**  
1. VVVVVV NO PICK (ROWS)  
2. INSTALL MAT RAISED TAB SIDE UP  
3. EXPANDIBLE AS NECESSARY

Tracking Pad Details  
10/28/2016 Page 1 of 1

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### Synthetic Sediment Control Log with Tailpiece

#### The Heavyweight Wattle

**Description and Purpose**  
A synthetic sediment control log. Outer cover of silt filtration fabric surrounding an inner core of full rebound foam covered by a 6 mil plastic sleeve. Designed to be used where hard surfaces contact disturbed areas for ponding and on-site soil retention.

**Suitable Applications** — The Heavyweight Wattle may be suitable:  
• Where hard surfaces contact soil.

**Limitations**  
• The Heavyweight Wattle is not effective when the flap is not properly pinned and backfilled.  
• The Heavyweight Wattle has a limited sediment capture zone and should only be used for lower volume sheet flows.  
• The Heavyweight Wattle is not a substitute for adequate tracking pads and construction egress.

**Installation**

**While crews remove concrete forms, install wattle immediately afterwards.**

Wattle to be installed upon removal of concrete forms:  
1. Lay the Heavyweight wattle directly on top of sidewalk, dropping tail of wattle behind sidewalk area.  
2. Connect wattle together to form a continuous barrier.  
3. Pin tail section into soil with fasteners behind sidewalk approximately every three feet.  
4. Overlap the connection points and use ties (fasteners) in this area.  
5. Back-fill area behind sidewalk.  
6. Site in compliance.

**Fastener Recommendation:** Use #64 nails or The Heavyweight wattle pins.

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### Erosion Log Check Dams

**REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE HALF OF EXPOSED LOG HEIGHT. INSPECTIONS SHALL BE PERFORMED FREQUENTLY FOR PROPER FUNCTION.**

EROSION LOGS SHOULD BE KEYPED IN TO PREVENT UNDER-CUTTING

**PLAN VIEW**  
POINTS A SHALL BE HIGHER THAN POINT B

**ELEVATION**  
EROSION LOG DETAIL DITCH INSTALLATION  
NOTE: EROSION LOGS SHALL BE TIGHTLY ABUTTED WITH NO GAPS.

1/1/08  
DATE APPROVED: John A. McCarty  
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### Concrete Washout Structure

**PLAN VIEW**  
TRUCK ACCESS

**SECTION A-A**  
MAXIMUM STORAGE (% OF VOLUME AREA)

**NOTES:**  
1. SIGN MATERIAL, EXCAVATION, AND RESTORATION ARE INCLUDED IN THE COST OF THE CONCRETE WASHOUT STRUCTURE.  
2. EROSION BARRIERS MAY BE USED AS AN ALTERNATIVE FOR THE BERM.

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### Erion Log Barrier

**PLAN VIEW**  
EROSION LOG STAKED INTO FILL SLOPE

**SECTION A-A**  
EROSION LOG SHOULD BE KEYPED IN TO PREVENT UNDER-CUTTING

**NOTE:**  
REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE HALF OF EXPOSED LOG HEIGHT. INSPECTIONS SHALL BE PERFORMED FREQUENTLY FOR PROPER FUNCTION.

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### Erosion Log Barrier

**SECTION A-A**  
EROSION LOG APPLICATION

**TYPICAL STAKE INSTALLATION**

EROSION LOGS CAN ALSO BE USED ACROSS LONG SLOPES TO REDUCE EROSION AND SEDIMENT MOVEMENT

**NOTES:**  
REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE HALF OF EXPOSED LOG HEIGHT. INSPECTIONS SHALL BE PERFORMED FREQUENTLY FOR PROPER FUNCTION.  
EROSION LOGS SHOULD BE KEYPED IN TO PREVENT UNDER-CUTTING  
WHEN MORE THAN ONE EROSION LOG IS NEEDED, ENDS MUST BE TIGHTLY ABUTTED.

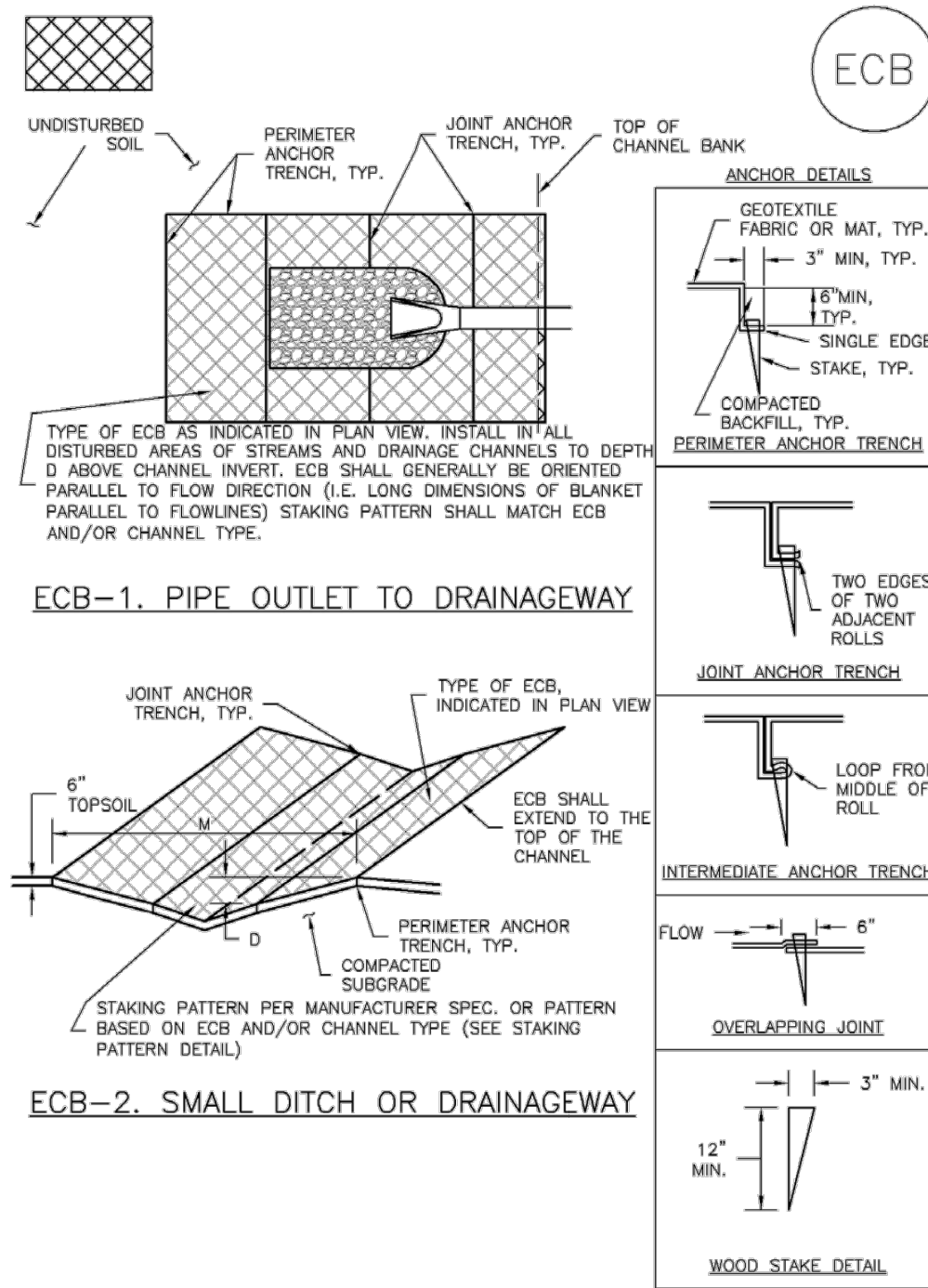
USE TWO WOOD STAKES 1 1/2" x 1 1/2" (NOMINAL) x SUFFICIENT LENGTH TO BE EMBEDDED AT LEAST 4" INTO THE SOIL AT ALL EROSION LOG ENDS OR JOINTS  
USE A STAKE EVERY 24" AND CONTINUE ALTERNATE ORIENTATION THROUGHOUT THE LENGTH OF THE EROSION LOG

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FILE NAME: SD\_3-87

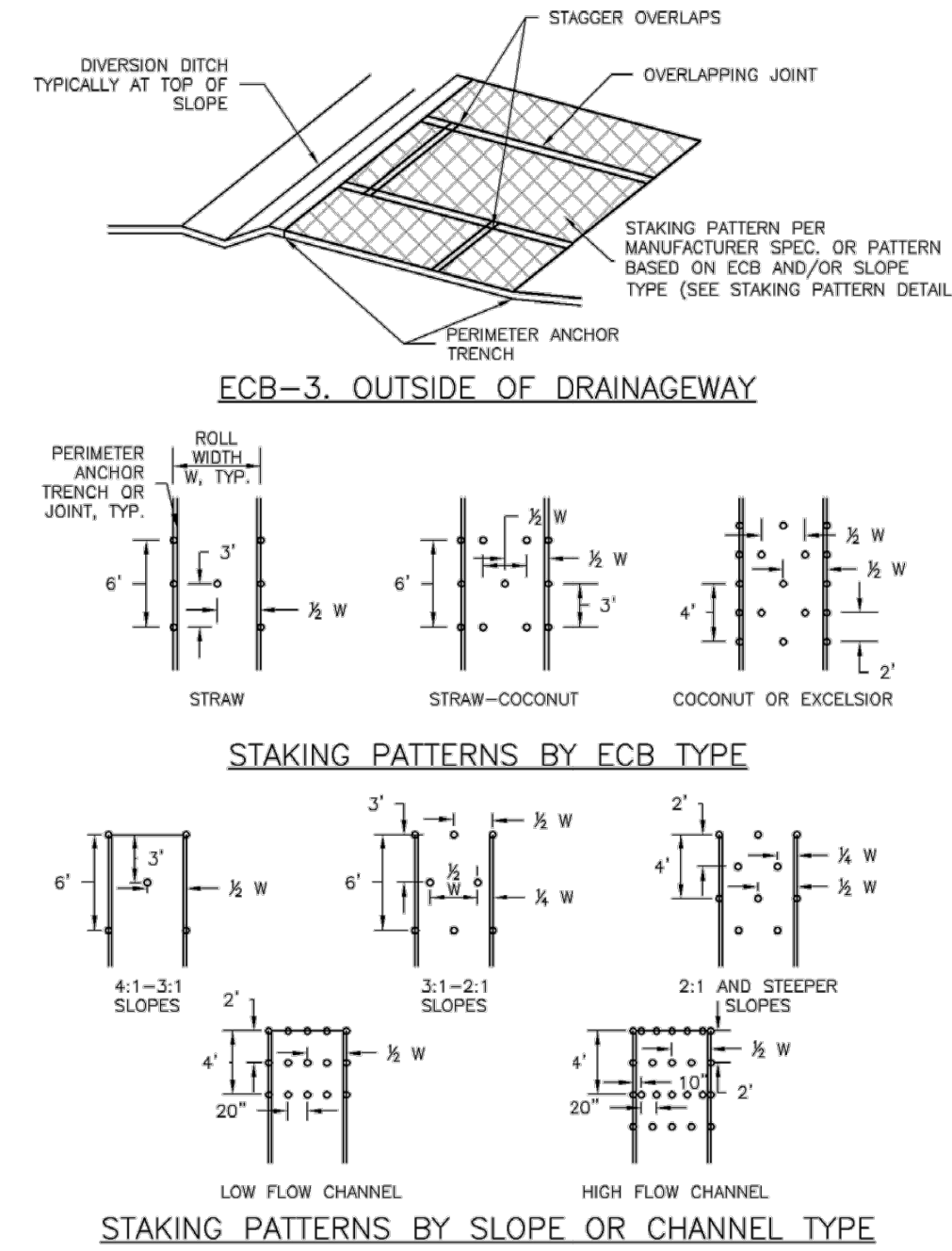
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EC-6 Rolled Erosion Control Products (RECP)



Roller Erosion Control Products (RECP) EC-6



EC-6 Rolled Erosion Control Products (RECP)

EROSION CONTROL BLANKET INSTALLATION NOTES

- SEE PLAN VIEW FOR:
  - LOCATION OF ECB.
  - TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCELSIOR).
  - AREA, A IN SQUARE YARDS OF EACH TYPE OF ECB.
- 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
- IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
- PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
- JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.
- INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
- OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
- MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
- ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBs SHALL BE RESEEDED AND MULCHED.
- DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGeway STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

TABLE ECB-1. ECB MATERIAL SPECIFICATIONS

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING*
STRAW**	-	100%	-	DOUBLE/NATURAL
STRAW-COCONUT	30% MIN	70% MAX	-	DOUBLE/NATURAL
COCONUT	100%	-	-	DOUBLE/NATURAL
EXCELSIOR	-	-	100%	DOUBLE/NATURAL

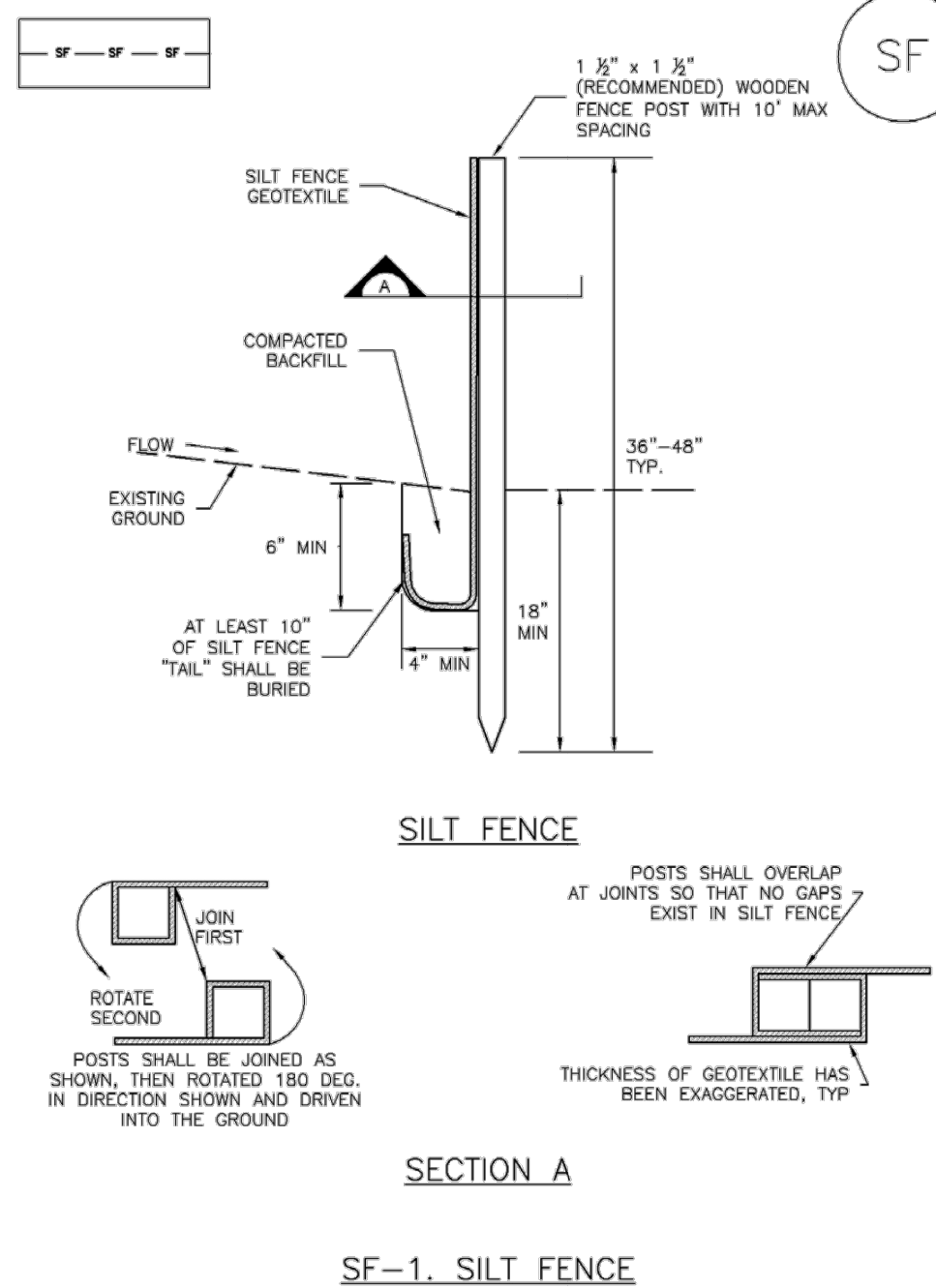
\*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNELS.  
\*\*ALTERNATE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS.

Roller Erosion Control Products (RECP) EC-6

EROSION CONTROL BLANKET MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
  - ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATE A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO AND TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

Silt Fence (SF) SC-1



SC-1 Silt Fence (SF)

SILT FENCE INSTALLATION NOTES

- SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
- A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.
- COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTATION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
- SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
- SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.
- AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').
- SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENT IS APPROXIMATELY 6".
- REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
- SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
- WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF ALBUQU, NOT AVAILABLE IN AUTOCAD)

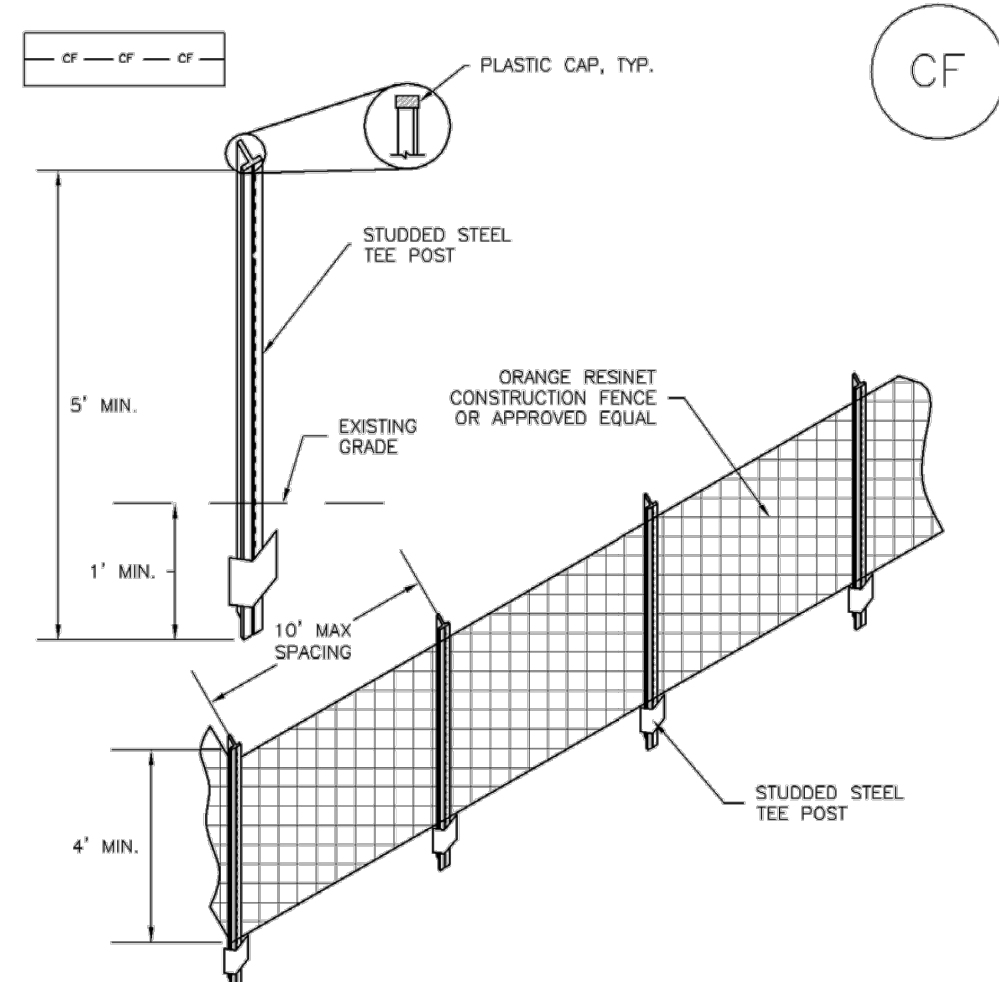
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NO.	DATE	BY	REVISION DESCRIPTION

HR Green - COLORADO SPRINGS  
1975 RESEARCH PARKWAY | SUITE 230  
COLORADO SPRINGS CO 80920  
PHONE: 719.300.4140  
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GRANDVIEW RESERVE M.D. -  
INTERCEPTOR SEWER  
D.R. HORTON  
EL PASO COUNTY, CO





CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

- SEE PLAN VIEW FOR: -LOCATION OF CONSTRUCTION FENCE.
- CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
- STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
- CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CONSTRUCTION FENCE MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM LDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

Appendix A. Seed Mix Tables

Upland Native Seed Mixes (drill seed rates)

Table A-1. Upland area seed mix - loamy to clay soils

Common Name	Scientific Name	Growth Season	Growth Form	% Mix	Lb/ac (PLS)
<b>Grasses</b>					
Blue grama	<i>Bouteloua gracilis</i>	Warm	Sod	25	1.8
Sand dropseed	<i>Sporobolus cryptandrus</i>	Warm	Bunch	20	0.2
Sideoats grama	<i>Bouteloua curtipendula</i>	Warm	Sod	20	6.3
Western wheatgrass	<i>Pascopyrum smithii</i>	Cool	Sod	15	8.2
Buffalograss	<i>Bouteloua dactyloides</i>	Warm	Sod	10	10.7
Inland saltgrass	<i>Distichlis spicata</i>	Warm	Sod	5	0.6
<b>Herbaceous/Wildflowers</b>					
Pasture sage	<i>Artemisia frigida</i>			1	0.01
Blanket flower	<i>Gaillardia aristata</i>			1	0.5
Prairie coneflower	<i>Ratibida columnifera</i>			1	0.1
Purple prairieclover	<i>Dalea (Petalostemum) purpurea</i>			1	0.3
Blue flax	<i>Linum lewisii</i>			1	0.4
<b>TOTAL PLS POUNDS/ACRE</b>				<b>100</b>	<b>29.11</b>

<sup>1</sup>PLS = Pure Live Seed - If broadcast seeding, double the rate

Table A-2. Upland area seed mix - sandy soil

Common Name	Scientific Name	Growth Season	Growth Form	% Mix	Lb/ac (PLS)
<b>Grasses</b>					
Switchgrass	<i>Panicum virgatum</i>	Warm	Sod/Bunch	15	2.3
Prairie sandreed	<i>Calamovilfa longifolia</i>	Warm	Sod	10	2.2
Sideoats grama	<i>Bouteloua curtipendula</i>	Warm	Sod	10	3.1
Blue grama	<i>Bouteloua gracilis</i>	Warm	Sod	10	0.7
Indian ricegrass	<i>Oryzopsis hymenoides</i>	Cool	Bunch	10	4.3
Western wheatgrass	<i>Pascopyrum smithii</i>	Cool	Sod	10	5.5
Little bluestem	<i>Schizachyrium scoparium</i>	Warm	Bunch	10	2.3
Sand dropseed	<i>Sporobolus cryptandrus</i>	Warm	Bunch	10	0.1
Green needlegrass	<i>Stipa viridula</i>	Cool	Bunch	10	3.3
<b>Herbaceous/Wildflowers</b>					
Pasture sage	<i>Artemisia frigida</i>			1	0.1
Blanket flower	<i>Gaillardia aristata</i>			2	0.9
Tansy aster	<i>Maceranthera tanacetifolia</i>			2	0.2
<b>TOTAL PLS POUNDS/ACRE</b>				<b>100</b>	<b>25</b>

<sup>1</sup>PLS = Pure Live Seed - If broadcast seeding, double the rate

Table A-3. Upland/transitional area seed mix - alkali soil

Common Name	Scientific Name	Growth Season	Growth Form	% Mix	Lb/ac (PLS)
Blue grama	<i>Bouteloua gracilis</i>	Warm	Sod	20	1.5
Sideoats grama	<i>Bouteloua curtipendula</i>	Warm	Sod	15	4.7
Slender wheatgrass	<i>Elymus trachycalus</i>	Cool	Bunch	15	5.7
Alkali sacaton	<i>Sporobolus airoides</i>	Warm	Sod/Bunch	15	0.5
Inland saltgrass	<i>Distichlis spicata</i>	Warm	Sod	15	1.7
Western wheatgrass	<i>Pascopyrum smithii</i>	Cool	Sod	10	5.5
Sand dropseed	<i>Sporobolus cryptandrus</i>	Warm	Bunch	10	0.1
<b>TOTAL PLS POUNDS/ACRE</b>				<b>100</b>	<b>19.7</b>

<sup>1</sup>PLS = Pure Live Seed - If broadcast seeding, double the rate

Wetland Native Seed Mixes

Table A-8. Wetland seed mix - loamy to sandy soils (Recommended for detention ponds and less eroding wetland areas.)

Common Name	Scientific Name	Growth Season	Growth Form	% Mix	Wetland Indicator*	Lb/ac (PLS) <sup>1</sup>
<b>Grasses and Herbaceous Species</b>						
American Sloughgrass	<i>Beckmannia syzigachne</i>	Cool	Sod	15	OBL	0.8
Prairie cordgrass	<i>Spartina pectinata</i>	Warm	Sod	15	FACW	4.6
Switchgrass	<i>Panicum virgatum</i>	Warm	Sod/Bunch	15	FAC	2.3
Western wheatgrass	<i>Pascopyrum smithii</i>	Cool	Sod	10	FACU	5.5
Fowl mannagrass	<i>Glyceria striata</i>	Cool	Sod	10	OBL	3.3
Hardstem bulrush	<i>Scirpus acutus</i>			10	OBL	1.6
Baltic rush	<i>Juncus balticus</i>			10	OBL	0.1
Creeping spikerush	<i>Eleocharis palustris</i>			10	OBL	1.0
<b>Wildflowers</b>						
Blue vervain	<i>Verbena hastata</i>			2.5	FACW	0.1
Nuttall's sunflower	<i>Helianthus nuttallii</i>			2.5	FAC	0.5
<b>TOTAL PLS POUNDS/ACRE</b>				<b>100</b>		<b>19.8</b>

<sup>1</sup>PLS = Pure Live Seed - If broadcast seeding, double the rate

Table A-9. Wetland seed mix - clay and alkali soils (Recommended for detention ponds and wetland areas.)

Common Name	Scientific Name	Growth Season	Growth Form	% Mix	Wetland Indicator*	Lb/ac (PLS) <sup>1</sup>
<b>Grasses and Herbaceous Species</b>						
Alkali sacaton	<i>Sporobolus airoides</i>	Warm	Bunch	10	FAC	0.4
Inland saltgrass	<i>Distichlis spicata</i>	Warm	Sod	10	FACW	1.2
Nuttall's alkali grass	<i>Puccinellia nuttalliana</i>	Cool	Bunch	10	OBL	0.2
Prairie cordgrass	<i>Spartina pectinata</i>	Warm	Sod	10	FACW	3.0
Slender wheatgrass	<i>Elymus trachycalus spp.</i>	Cool	Bunch	10	FACU	3.8
Western wheatgrass	<i>Pascopyrum smithii</i>	Cool	Sod	10	FACU	5.5
Fowl mannagrass	<i>Glyceria striata</i>	Cool	Sod	10	OBL	3.3
Hardstem bulrush	<i>Scirpus acutus</i>			10	OBL	1.6
Baltic rush	<i>Juncus balticus</i>			10	OBL	0.1
Creeping spikerush	<i>Eleocharis palustris</i>			10	OBL	1.0
<b>TOTAL PLS POUNDS/ACRE</b>						<b>20.1</b>

<sup>1</sup>PLS = Pure Live Seed - If broadcast seeding, double the rate

Note: Wildflowers species not recommended for clay or alkali soils.

Wetland Indicator Key for Tables A-8 and A-9:

- FAC = Facultative - Equally occurs in both wetlands and uplands.
- FACU = Facultative Upland - Occurs mostly in uplands, but can occur in wetlands about 1/3 of the time.
- FACW = Facultative Wetlands - Occurs mostly in wetlands, but can occur in uplands about 1/3 of the time.
- OBL = Obligate Wetlands - Almost always occurs in wetlands.
- OPL = Uplands - Almost always occurs in uplands.

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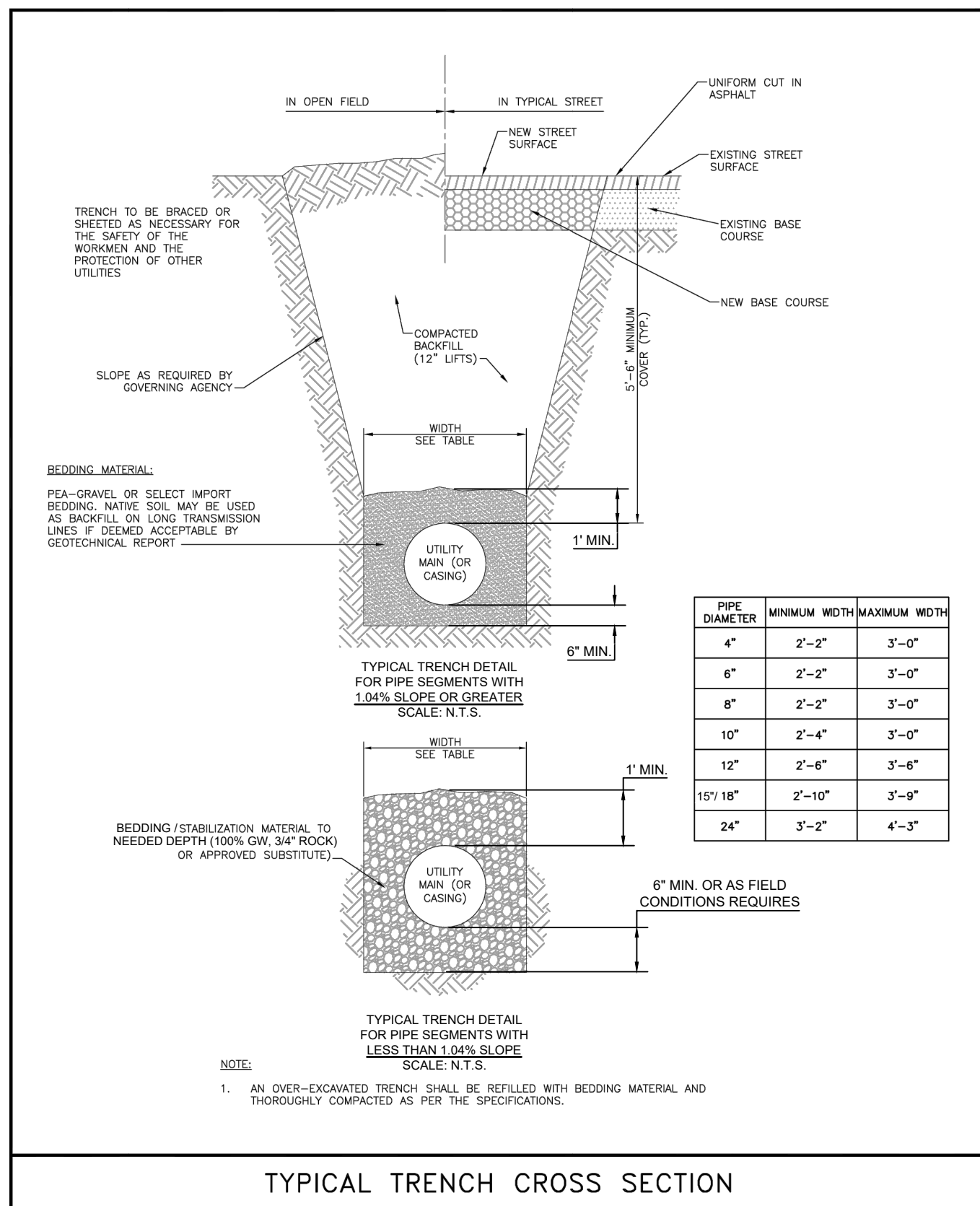
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EL PASO COUNTY, CO

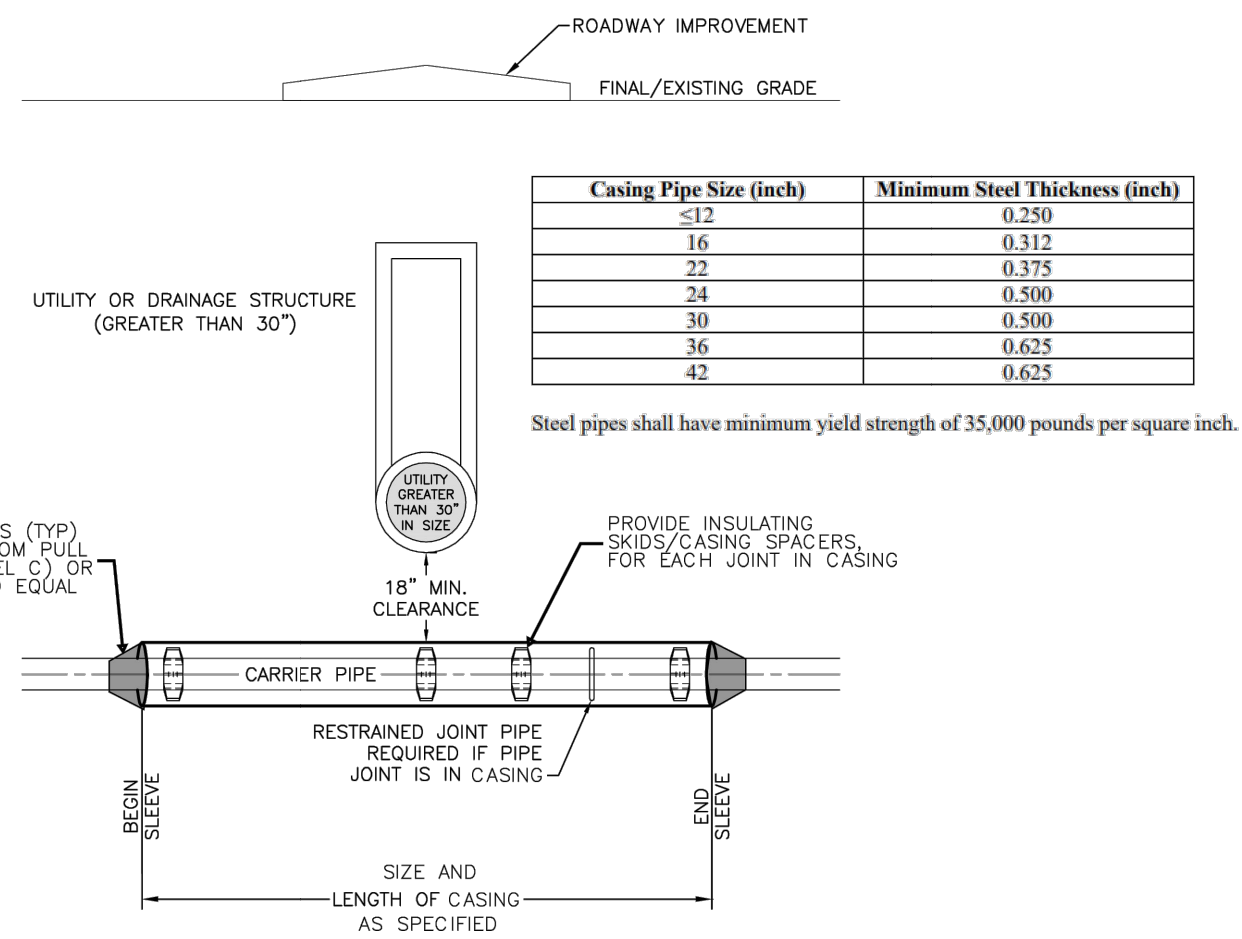
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EROSION CONTROL DETAILS

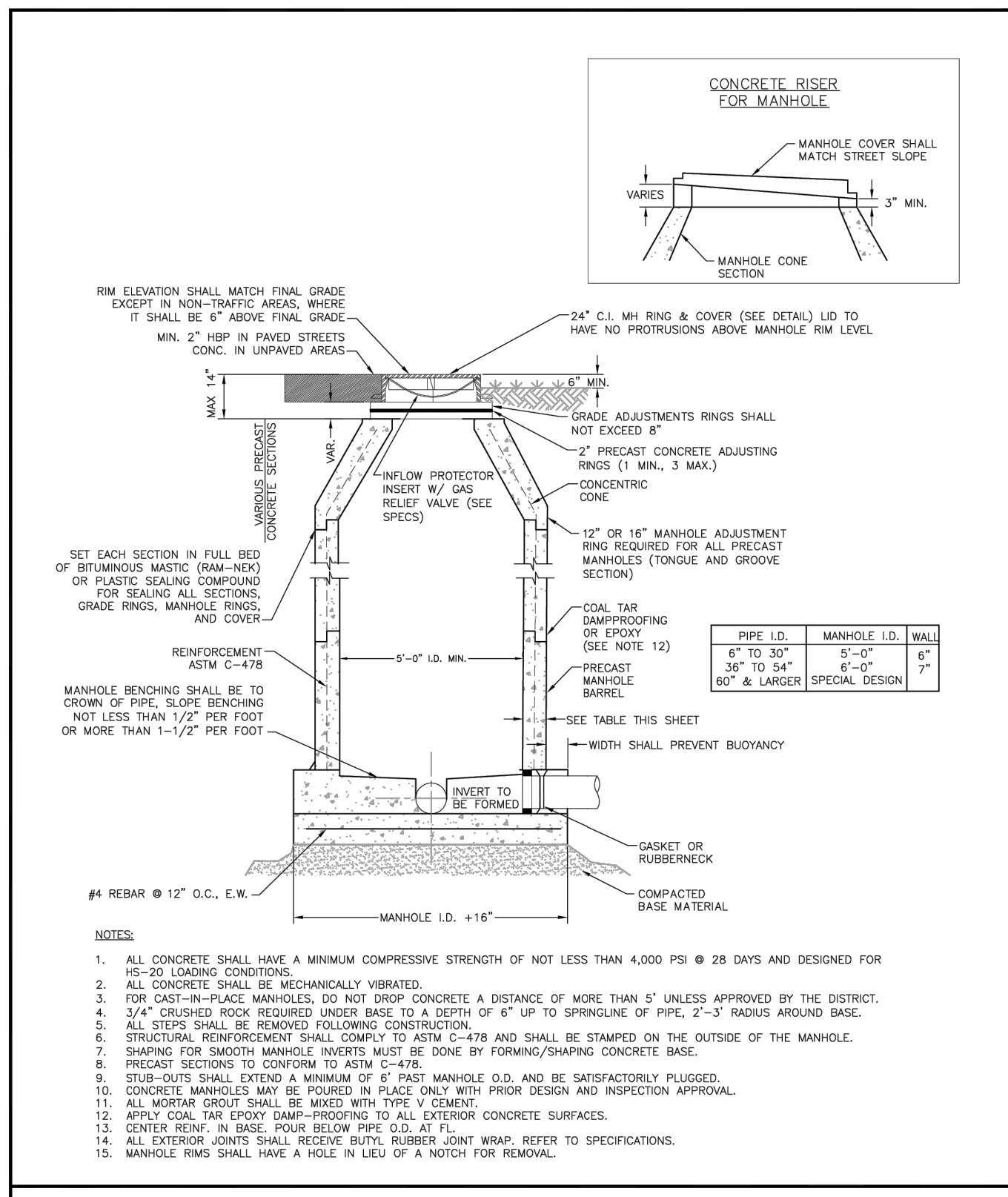
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TYPICAL TRENCH CROSS SECTION



CASING PIPE DETAIL



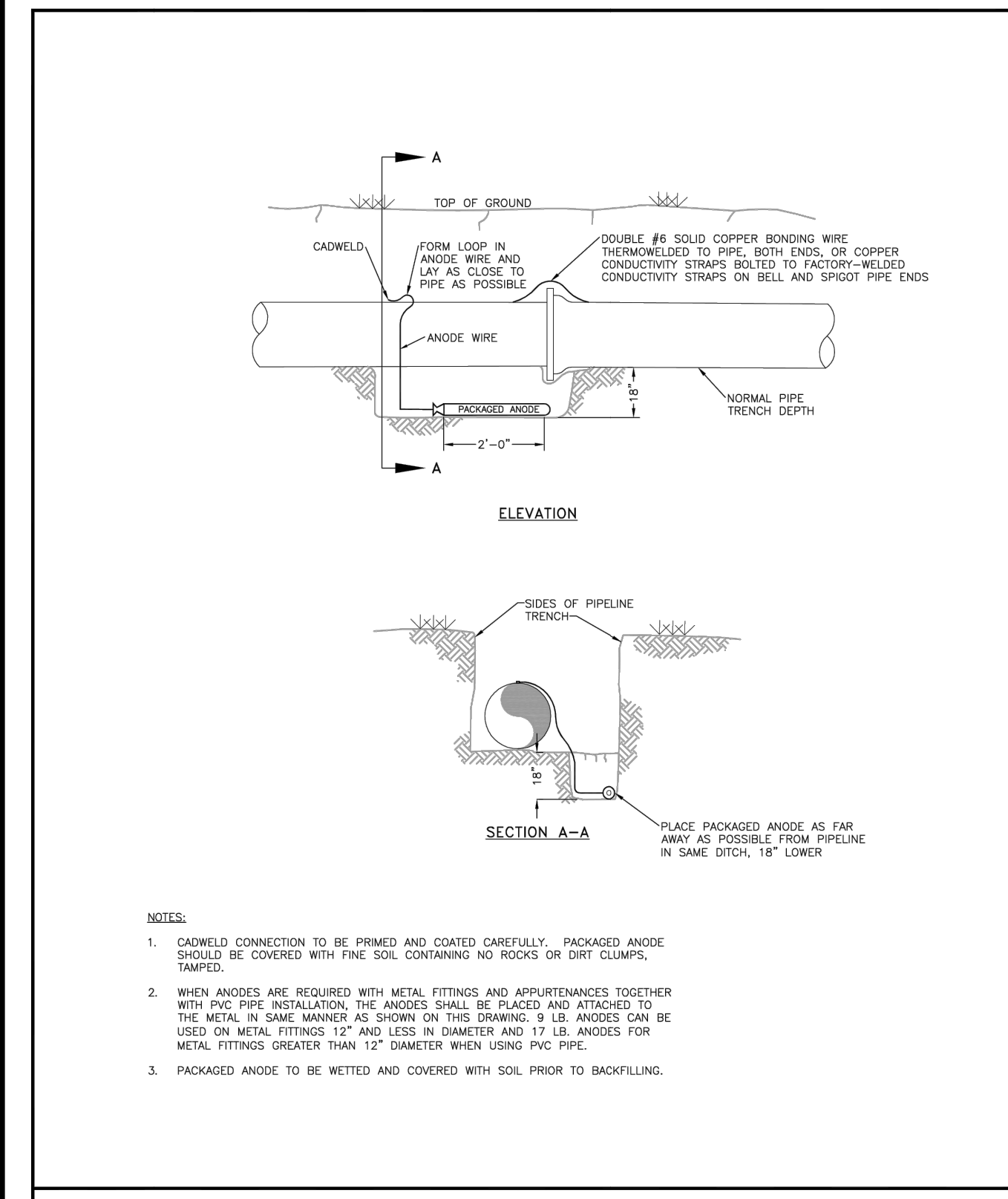
PRECAST MANHOLE

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 Date: MARCH 2011  
 Scale: N.T.S.

Revised: DECEMBER 2021

WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS

WW-2



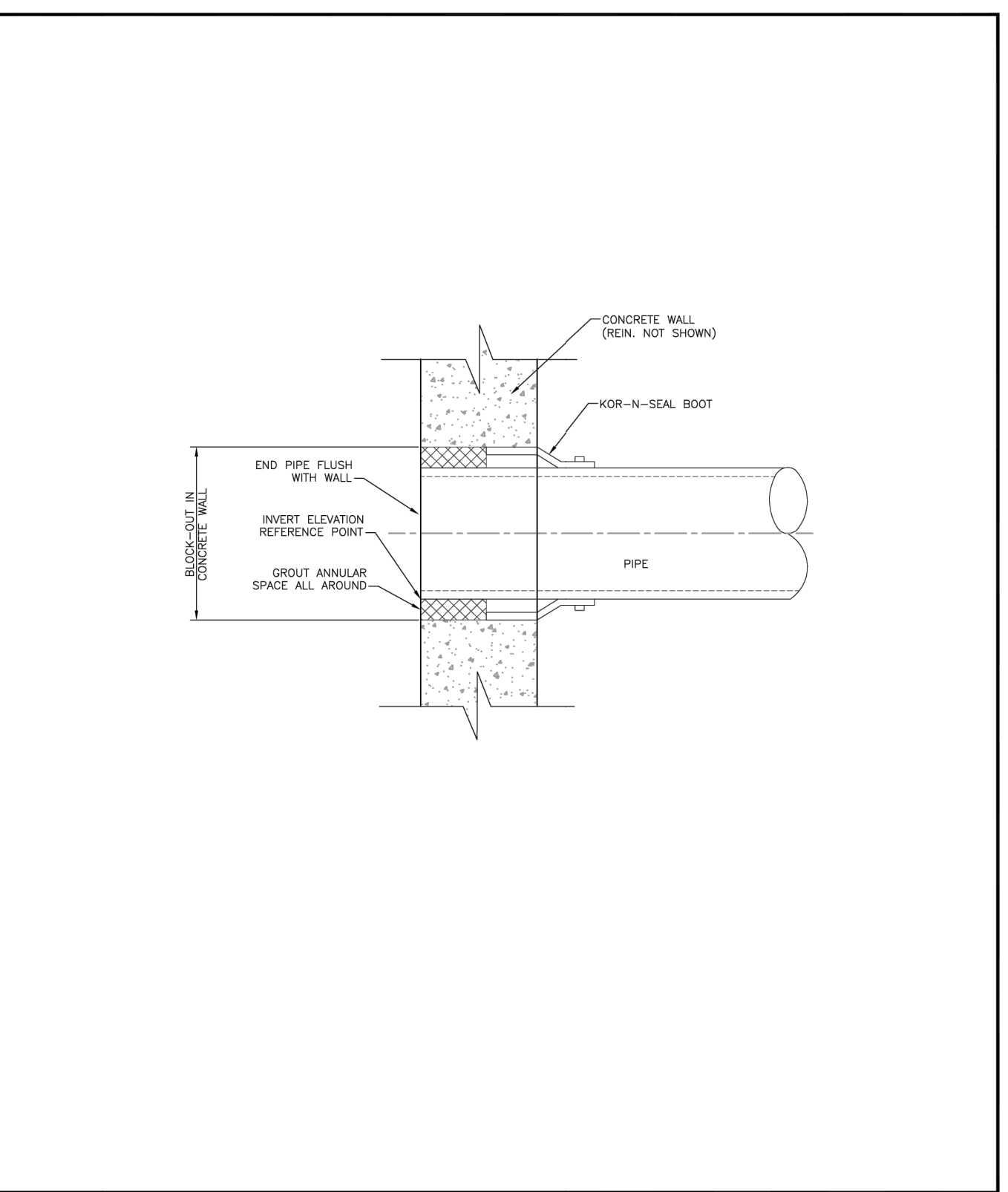
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 Date: MARCH 2011  
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Revised: DECEMBER 2021

WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS

WW-10



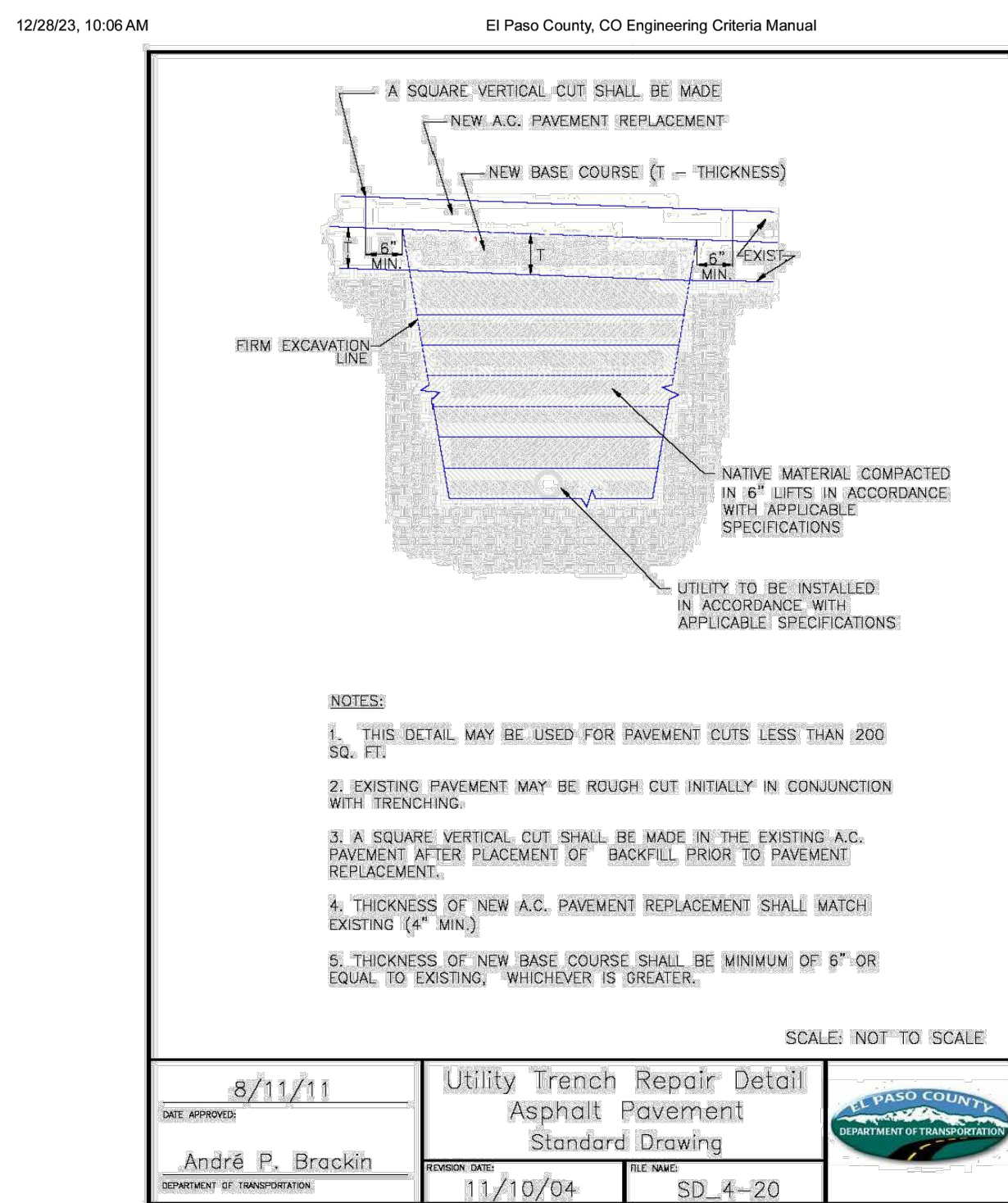
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Revised: DECEMBER 2021

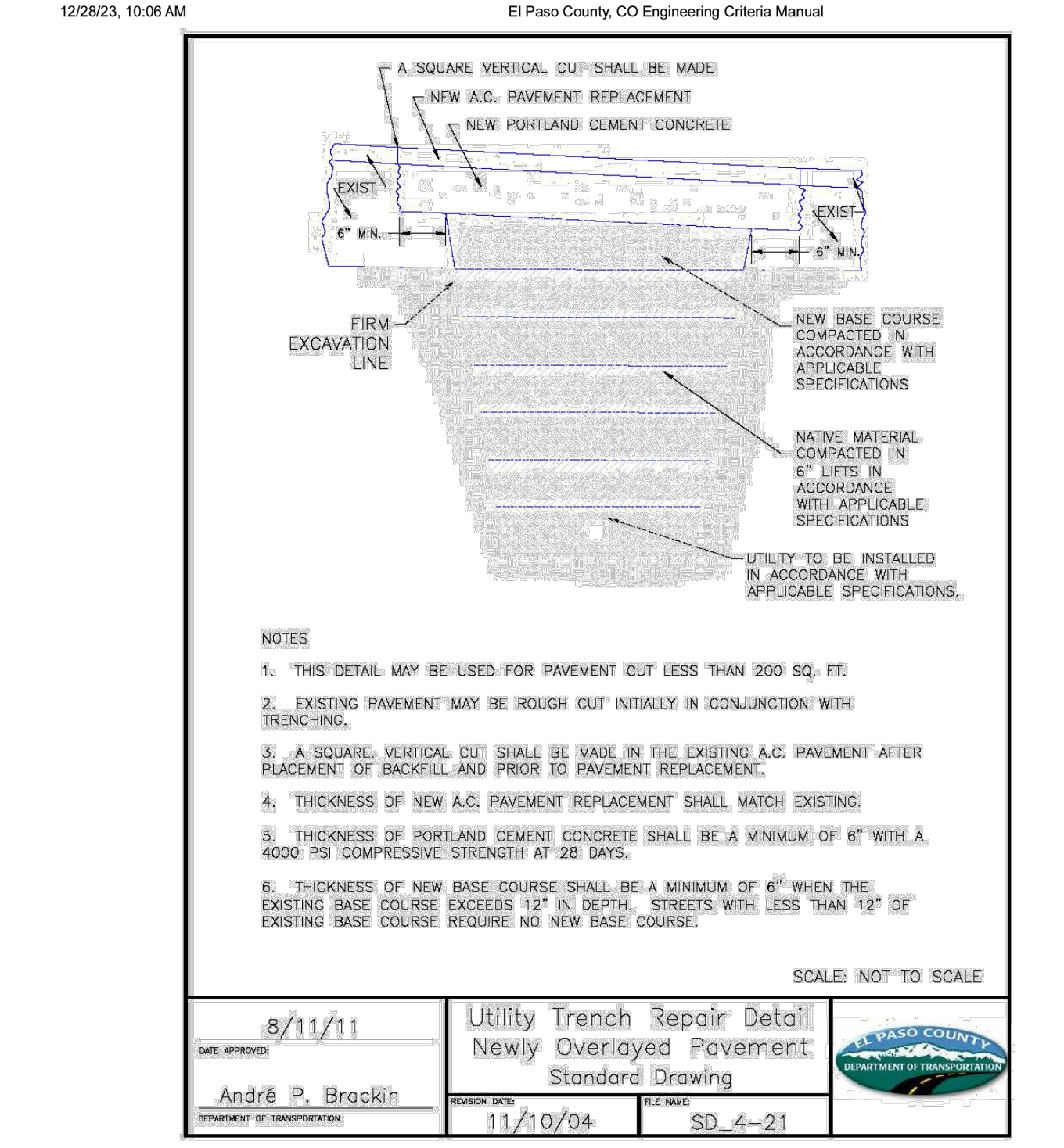
WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS

WW-16



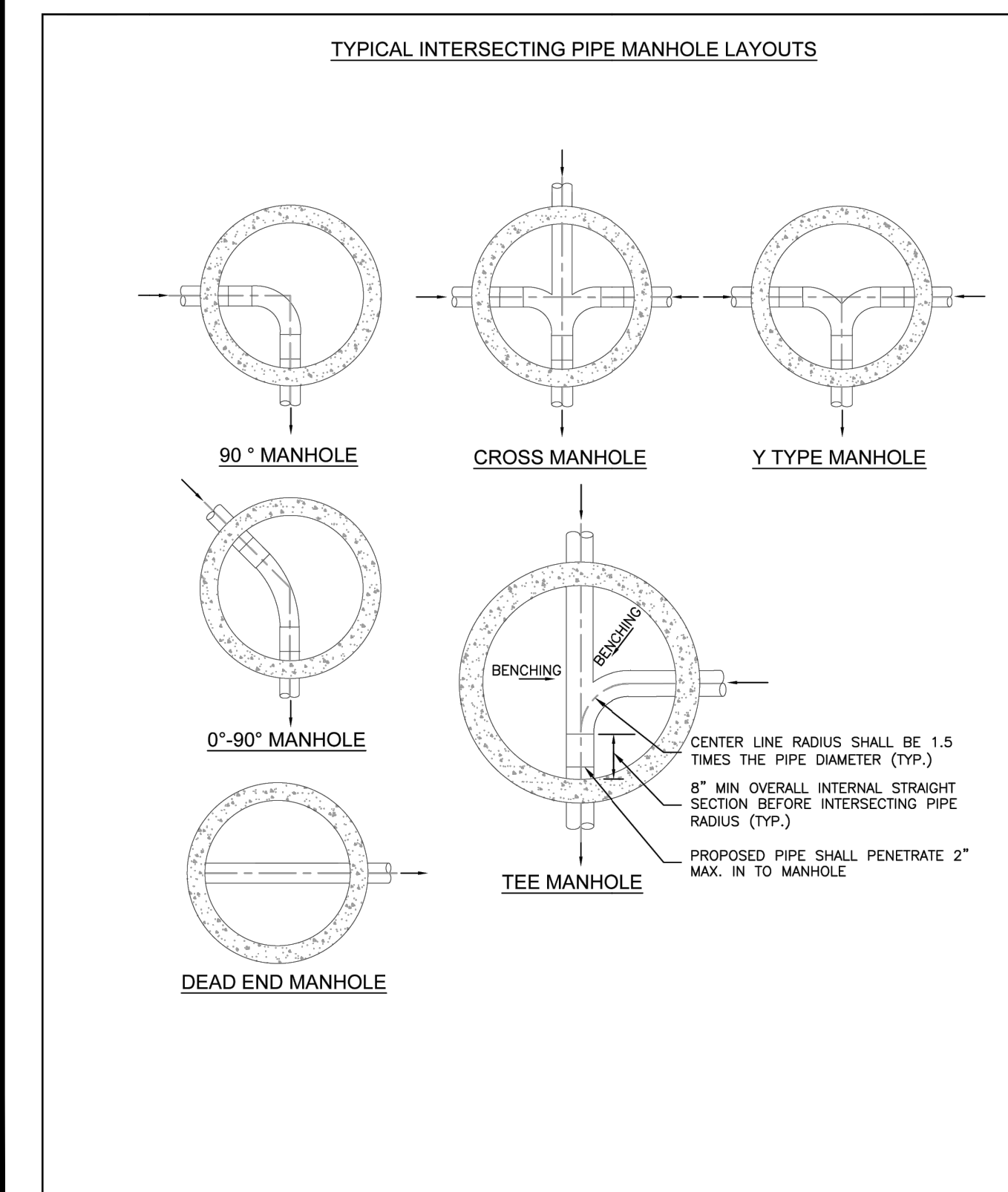
Utility Trench Repair Detail  
 Asphalt Pavement  
 Standard Drawing

8/11/11  
 André P. Bracklin  
 11/10/04  
 SD\_4-20



Utility Trench Repair Detail  
 Newly Overlaid Pavement  
 Standard Drawing

8/11/11  
 André P. Bracklin  
 11/10/04  
 SD\_4-21



TYPICAL MANHOLE LAYOUTS AND INTERSECTIONS

Colorado Springs Utilities  
 It's how we're connected

C3-2  
 DATED: 5/2015

DRAWN BY: JMM  
 APPROVED: GP  
 CAD DATE: 5/16/2024  
 CAD FILE: \\hrgreen.com\HRGID\2020\201662.07\CAD\Drawings\Grav\LineGr\_Details

JOB DATE: 3/29/2024  
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 COLORADO SPRINGS CO 80920  
 PHONE: 719.300.4140  
 FAX: 713.965.0044

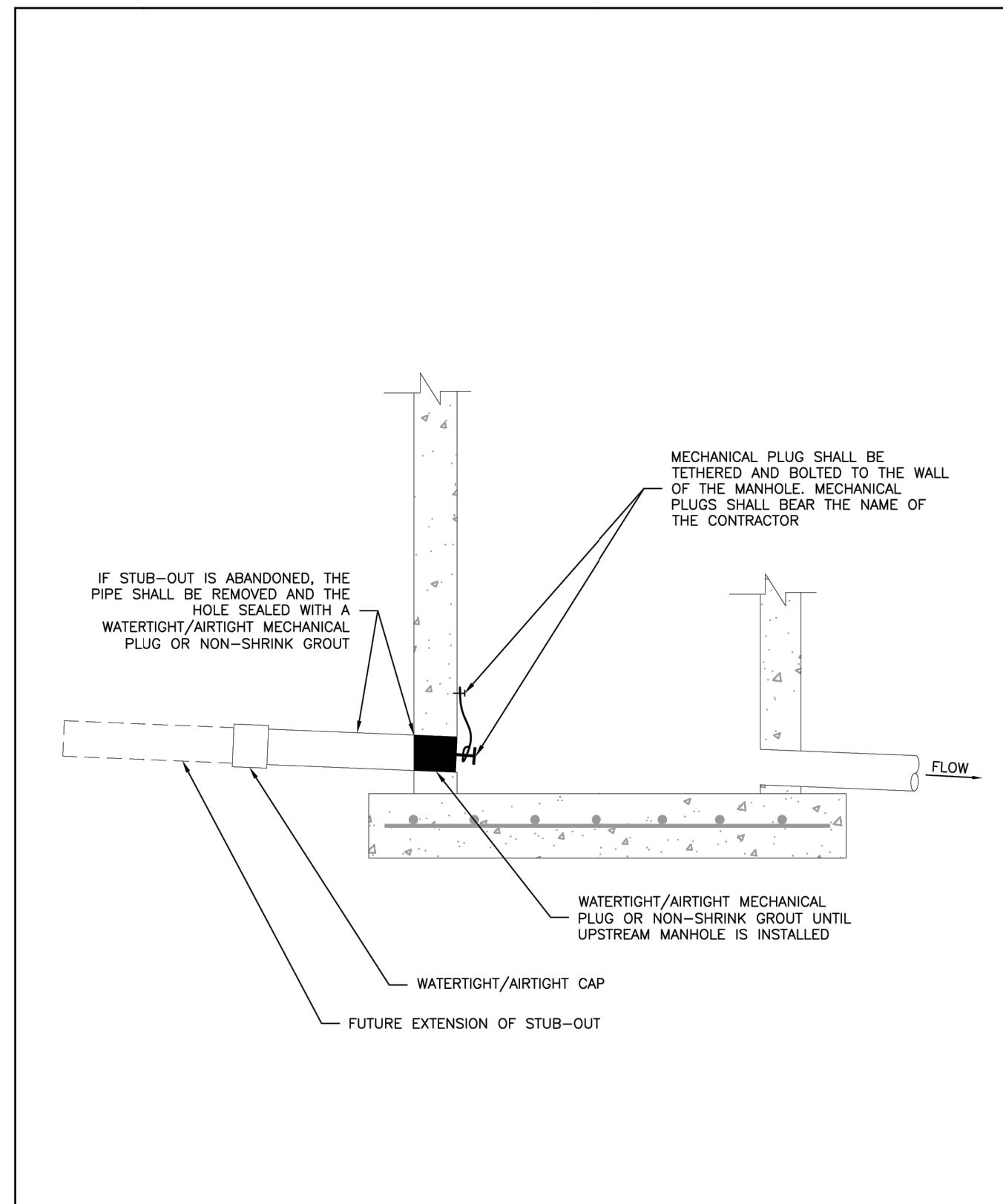
GRANDVIEW RESERVE M.D. -  
 INTERCEPTOR SEWER  
 D.R. HORTON  
 EL PASO COUNTY, CO

D-R HORTON  
 America's Builder

CONSTRUCTION DOCUMENTS  
 DETAILS

SHEET  
 C701

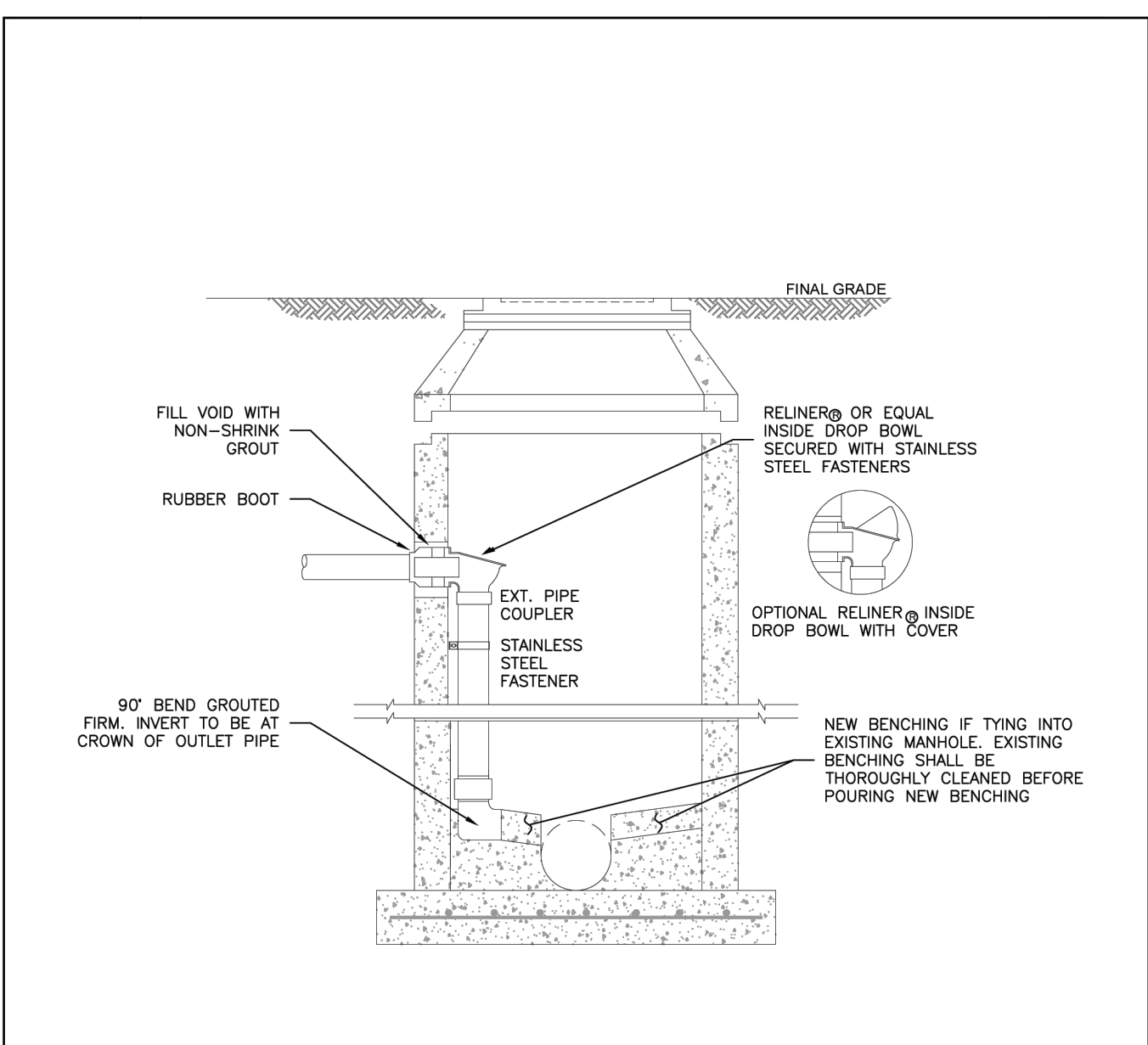




WASTEWATER MAIN STUB-OUT FROM MANHOLE

C3-4

DATED: 5/2015



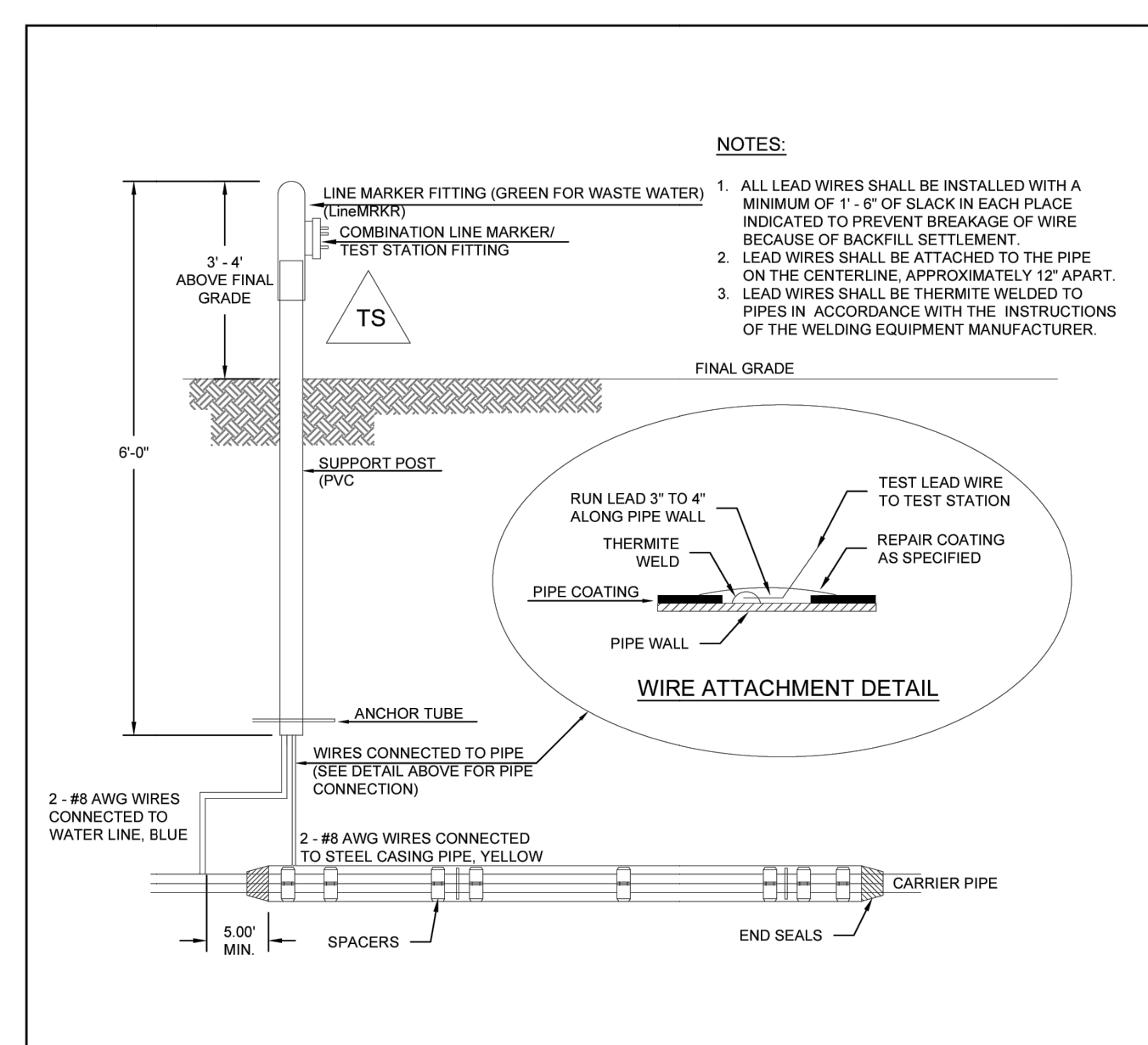
NOTES:

- SEE DETAIL DRAWING WW-2 FOR MANHOLE REQUIREMENTS.
- DROP MANHOLES ARE NOT ALLOWED ON 10" AND LARGER PIPELINES. DROP MANHOLES SHALL BE REVIEWED AND APPROVED ON A CASE BY CASE BASIS BY WASTEWATER PLANNING AND ENGINEERING STAFF.
- ALL INTERIOR CONCRETE SURFACES SHALL BE EPOXY COATED. CONCRETE SHALL BE FULLY CURED PRIOR TO COATING (TYPICAL 30 DAYS).
- MINIMUM SIZE FOR A DROP MANHOLE IS 5' DIAMETER MANHOLE.
- MANHOLES WITH 8" OR LESS OF INTERNAL DROP SHALL HAVE ONE STRAP AT THE TOP AND ONE AT THE BOTTOM OF THE DROP SECTION.
- 1/4" - 2" STRAPS TO BE ANCHORED WITH 1/2" GALVANIZED LUG BOLTS IN TO WALL (TYP).

INTERNAL DROP MANHOLE WITH DROP GREATER THAN 24"

C3-6

DATED: 1/2017



NOTES:

- ALL LEAD WIRES SHALL BE INSTALLED WITH A MINIMUM OF 1'-6" OF SLACK IN EACH PLACE INDICATED TO PREVENT BREAKAGE OF WIRE BECAUSE OF BACKFILL SETTLEMENT.
- LEAD WIRES SHALL BE ATTACHED TO THE PIPE ON THE CENTERLINE, APPROXIMATELY 12" APART.
- LEAD WIRES SHALL BE THERMITE WELDED TO PIPES IN ACCORDANCE WITH THE INSTRUCTIONS OF THE WELDING EQUIPMENT MANUFACTURER.

TYPICAL DETAIL FOR TEST STATION WITH STEEL SLEEVE INSTALLATION

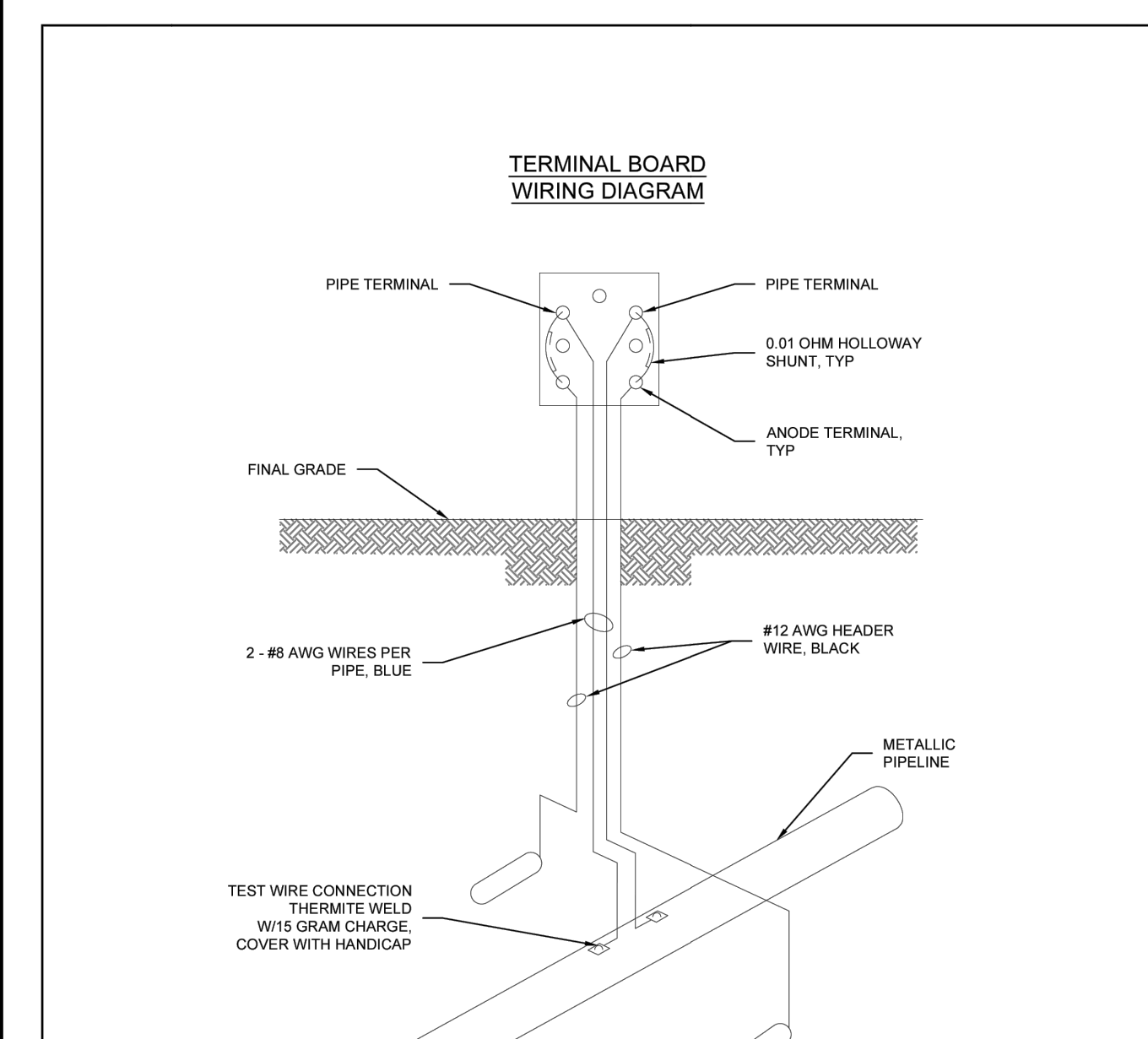
NOTES:

- THE CASING SHALL BE CATHODICALLY PROTECTED UNDER THE DIRECTION OF THE COLORADO SPRINGS UTILITIES INSPECTOR. SEE SECTION 2.5.G.
- EXAMPLE CAN VARY DUE TO SITE CONDITIONS AND COLORADO SPRINGS UTILITIES INSPECTORS' DIRECTION.
- SEE STANDARD DETAIL DRAWING C2-4 - STEEL CASING INSTALLATION.
- CONTRACTOR TO COORDINATE W/ COLORADO SPRINGS UTILITIES TO WIRE TERMINAL BOARD.
- THERMITE WELD WIRES TO PIPE W/ 15 GRAM CHARGE. INSTALL COPPER SLEEVE WHEN WIRE IS #10 AWG OR SMALLER.
- THERMITE WELD CONNECTIONS AND ANY BARE METAL SHALL BE COVERED WITH PRIMERLESS HANDICAP OR CORROSION TAPE.
- CONTRACTOR TO VERIFY CONTINUITY OF ALL WIRES TO TERMINAL BOARD PRIOR TO FINAL ACCEPTANCE.

INSTALLATION OF CATHODIC PROTECTION TEST STATION AT A CASING PIPE

C5-5

DATED: 07/2022



NOTES:

- THE CONTRACTOR SHALL COORDINATE WITH COLORADO SPRINGS UTILITIES TO WIRE TERMINAL BOARD.
- THERMITE WELD WIRES TO PIPE WITH A 15 GRAM CHARGE. INSTALL A COPPER SLEEVE WHEN WIRE IS #10 AWG OR SMALLER.
- THERMITE WELD CONNECTIONS AND ANY BARE METAL SHALL BE COVERED WITH PRIMERLESS HANDICAP OR CORROSION TAPE.
- CONTRACTOR TO VERIFY CONTINUITY OF ALL WIRES TO TERMINAL BOARD PRIOR TO FINAL ACCEPTANCE.

INSTALLATION OF CATHODIC PROTECTION TEST STATION AT AN ANODE

C5-6

DATED: 07/2022

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CAD DATE: 5/16/2024 IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

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COLORADO SPRINGS CO 80920  
PHONE: 719.300.4140  
FAX: 713.965.0044

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EL PASO COUNTY, CO



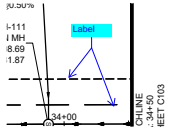
CONSTRUCTION DOCUMENTS

DETAILS

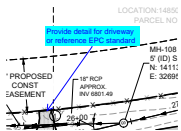
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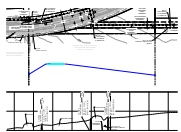
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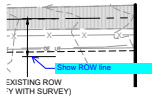
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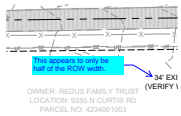
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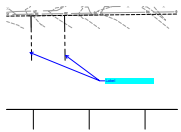
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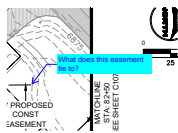
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**Author:** CDurham  
**Date:** 7/29/2024 5:30:41 PM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**



**Subject:** Callout  
**Page Label:** [10] C104 GRAVITY LINE PLAN AND PROFILE This appears to only be half of the ROW width.  
**Author:** CDurham  
**Date:** 7/29/2024 5:32:49 PM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**



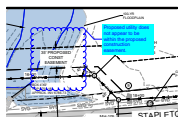
**Subject:** Callout  
**Page Label:** [11] C105 GRAVITY LINE PLAN AND PROFILE Label  
**Author:** CDurham  
**Date:** 7/29/2024 5:33:31 PM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**



**Subject:** Callout  
**Page Label:** [12] C106 GRAVITY LINE PLAN AND PROFILE  
**Author:** CDurham  
**Date:** 7/29/2024 5:34:17 PM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**

What does this easement tie to?

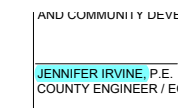
Cloud+ (1)



**Subject:** Cloud+  
**Page Label:** [7] C101 GRAVITY LINE PLAN AND PROFILE  
**Author:** CDurham  
**Date:** 7/29/2024 5:21:53 PM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**

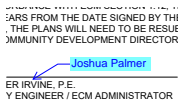
Proposed utility does not appear to be within the proposed construction easement.

Engineer (5)



**Subject:** Engineer  
**Page Label:** [1] G000 COVER SHEET  
**Author:** Bret  
**Date:** 7/26/2024 9:57:23 AM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**

JENNIFER IRVINE,



**Subject:** Engineer  
**Page Label:** [1] G000 COVER SHEET  
**Author:** Bret  
**Date:** 7/26/2024 9:57:36 AM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**

Joshua Palmer

# PPR2421

**Subject:** Engineer  
**Page Label:** [1] G000 COVER SHEET  
**Author:** Bret  
**Date:** 7/26/2024 9:57:54 AM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**

PPR2421



**Subject:** Engineer  
**Page Label:** [7] C101 GRAVITY LINE PLAN AND PROFILE  
**Author:** Bret  
**Date:** 7/26/2024 10:11:29 AM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**

ELLIPTICAL  
 PIPE 3' WIDE AND 2' TALL

IDE OF DESIGNATED REMOVAL LIMITS  
BE REPLACED AT CONTRACTOR'S  
USE.

Shown as 24" on plans

ECT IN PLACE OR REMOVE AND REINSTALL  
M SEWER. EXISTING PIPES ARE ELLIPTICAL  
1' WIDE AND 2' TALL.

ECT IN PLACE OR REMOVE AND REINSTALL  
10' PIPES.

**Subject:** Engineer

**Page Label:** [7] C101 GRAVITY LINE PLAN AND PROFILE

Shown as 24" on plans

**Author:** Bret

**Date:** 7/26/2024 10:11:55 AM

**Status:**

**Color:** ■

**Layer:**

**Space:**

---

### Highlight (1)

---

**34' EX**  
**(VERIFY)**

**Subject:** Highlight

**Page Label:** [10] C104 GRAVITY LINE PLAN AND PROFILE 34'

**Author:** CDurham

**Date:** 7/29/2024 5:32:05 PM

**Status:**

**Color:** ■

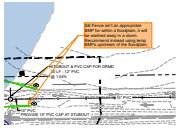
**Layer:**

**Space:**

---

### SW - Textbox with Arrow (2)

---



**Subject:** SW - Textbox with Arrow

**Page Label:** [24] C304 EROSION CONTROL INTIAL PLAN

**Author:** Glenn Reese - EPC Stormwater

**Date:** 7/29/2024 5:13:52 PM

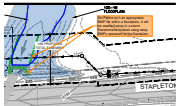
**Status:**

**Color:** ■

**Layer:**

**Space:**

Silt Fence isn't an appropriate BMP for within a floodplain, it will be washed away in a storm. Recommend instead using temp BMPs upstream of the floodplain.



**Subject:** SW - Textbox with Arrow

**Page Label:** [21] C301 EROSION CONTROL INTIAL PLAN

**Author:** Glenn Reese - EPC Stormwater

**Date:** 7/29/2024 5:14:38 PM

**Status:**

**Color:** ■

**Layer:**

**Space:**

Silt Fence isn't an appropriate BMP for within a floodplain, it will be washed away in a storm. Recommend instead using temp BMPs upstream of the floodplain.

---

### Text Box (4)

---

Ensure all existing and proposed easements are shown and labeled on all sheets.

**Subject:** Text Box

**Page Label:** [7] C101 GRAVITY LINE PLAN AND PROFILE

Ensure all existing and proposed easements are shown and labeled on all sheets.

**Author:** CDurham

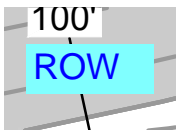
**Date:** 7/29/2024 5:22:52 PM

**Status:**

**Color:** ■

**Layer:**

**Space:**



**Subject:** Text Box

**Page Label:** [8] C102 GRAVITY LINE PLAN AND PROFILE ROW

**Author:** CDurham

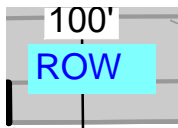
**Date:** 7/29/2024 5:26:19 PM

**Status:**

**Color:** ■

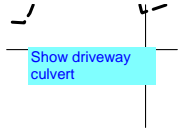
**Layer:**

**Space:**



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**Subject:** Text Box  
**Page Label:** [8] C102 GRAVITY LINE PLAN AND PROFILE ROW  
**Author:** CDurham  
**Date:** 7/29/2024 5:26:09 PM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**



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**Subject:** Text Box  
**Page Label:** [8] C102 GRAVITY LINE PLAN AND PROFILE Show driveway culvert  
**Author:** CDurham  
**Date:** 7/29/2024 5:27:44 PM  
**Status:**  
**Color:** ■  
**Layer:**  
**Space:**