

LOOKOUT MOUNTAIN WATER DISTRICT

MAIN REPLACEMENT PROJECT 2025

EL RANCHO AND STORAGE TANK SECTIONS

MAY 2025

SHEET INDEX

C0.1	GENERAL NOTES	C2.0	STA 0+00 TO 2+00 - STORAGE TANK SECTION
C0.2	SPECIFICATIONS AND TESTING	C2.1	STA 2+00 TO 4+00 - STORAGE TANK SECTION
C0.3	PROJECT LOCATION MAP AND STAGING AREAS	C2.2	STA 4+00 TO 6+00 - STORAGE TANK SECTION
C1.0	STA 0+00 TO 2+00 - EL RANCHO SECTION	C2.3	STA 6+00 TO 8+00 - STORAGE TANK SECTION
C1.1	STA 2+00 TO 4+00 - EL RANCHO SECTION	C2.4	STA 8+00 TO 10+00 - STORAGE TANK SECTION
C1.2	STA 4+00 TO 6+00 - EL RANCHO SECTION	C2.5	STA 10+00 TO 12+00 - STORAGE TANK SECTION
C1.3	STA 6+00 TO 8+00 - EL RANCHO SECTION	C2.6	STA 12+00 TO 14+00 - STORAGE TANK SECTION
C1.4	STA 8+00 TO 10+00 - EL RANCHO SECTION	C2.7	STA 14+00 TO 16+27.66 - STORAGE TANK SECTION
C1.5	STA 10+00 TO 12+00 - EL RANCHO SECTION	C2.8	DETAILS - STORAGE TANK SECTION
C1.6	STA 12+00 TO 14+00 - EL RANCHO SECTION	C3.0	DETAILS - GENERAL
C1.7	STA 14+00 TO 16+00 - EL RANCHO SECTION	C3.1	DETAILS - THRUST BLOCKS
C1.8	STA 16+00 TO 18+00 - EL RANCHO SECTION		
C1.9	DETAILS - EL RANCHO SECTION		

ENGINEER

WILLIAM A. RAATZ, P.E.
W2 ENGINEERS, LLC
19255 WEST 84TH PLACE
ARVADA, COLORADO 80007



W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025
JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

SHEET NUMBER
COVER

C:\USERS\WILLR\DESKTOP\W2\PROJECTS\LOOKOUT MOUNTAIN\PHASE 01\W2 MAIN REPLACEMENT PROJECT 2025.DWG

NOTES:

1.

CONTRACTOR SHALL COORDINATE ALL WORK WITH LOOKOUT MOUNTAIN WATER DISTRICT (DISTRICT). CONTRACTOR SHALL PROVIDE AT LEAST TEN (10) BUSINESS DAYS NOTICE PRIOR TO MOBILIZATION. A PRE-CONSTRUCTION MEETING IS REQUIRED AND SHALL BE SCHEDULED AT LEAST TWO (2) BUSINESS DAYS PRIOR TO START OF CONSTRUCTION.
2.

ALL WORK SHALL CONFORM TO LOOKOUT MOUNTAIN WATER DISTRICT STANDARDS (DISTRICT STANDARDS) UNLESS OTHERWISE ADDRESSED, AND OTHER REFERENCED AND APPLICABLE STANDARDS AND CODES.
3.

DESIGN DOCUMENTS ARE AVAILABLE TO THE CONTRACTOR AS FOLLOWS:

3.1.

DESIGN DRAWINGS ARE AVAILABLE IN PDF AND AUTOCAD FILE FORMATS.

3.2.

SURVEY DRAWINGS (TOPOGRAPHIC EXHIBIT) WERE COMPLETED BY FLATIRONS, INC. AND ARE AVAILABLE IN PDF AND AUTOCAD FILE FORMATS.
4.

CONTRACTOR SHALL UTILIZE STAGING AREA IDENTIFIED ON DRAWINGS (SEE SHEET C0.3).
5.

CONTRACTOR SHALL AT THEIR EXPENSE OBTAIN ALL NECESSARY LICENSES, PERMITS, BONDS, ETC. WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK, INCLUDING BUT NOT LIMITED TO BUILDING PERMITS, RIGHT OF WAY PERMITS, TRAFFIC CONTROL PERMITS, GROUNDWATER DISCHARGE PERMITS, STORMWATER DISCHARGE PERMITS, ETC.
6.

CONTRACTOR SHALL USE EROSION CONTROL BEST MANAGEMENT PRACTICES ALONG AND AROUND THE WORK AREA(S), STAGING AREA(S), AND OTHER AREA(S) AFFECTED BY THE PROJECT.
7.

CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND SECURITY REQUIREMENTS OF THE WORK AREA. EMPLOYEES, SUBCONTRACTORS, EQUIPMENT, AND MATERIALS SHALL COMPLY WITH APPLICABLE REGULATIONS AND OSHA REQUIREMENTS.
8.

CONTRACTOR SHALL USE APPROPRIATE TRAFFIC CONTROL SIGNAGE, BARRICADES, AND PERSONNEL MEETING MUTCD STANDARDS AND AS NEEDED TO ENSURE PUBLIC SAFETY AND A SAFE WORKING ENVIRONMENT. CONTRACTOR SHALL MAINTAIN OPEN ACCESS ON ALL PUBLIC ROADS AT ALL TIMES.
9.

CONTRACTOR SHALL PERFORM CONSTRUCTION SURVEYING AND VERIFY ALL LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING AND PROPOSED FEATURES. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING FACILITIES, UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE DRAWINGS. CONTRACTOR SHALL NOTIFY DISTRICT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH ANY WORK.
10.

CONTRACTOR SHALL LOCATE ALL UTILITIES IN THE WORK AREA UTILIZING THE UTILITY NOTIFICATION CENTER OF COLORADO (811 OR WWW.UNCC.ORG), DISTRICT PERSONNEL, AND PRIVATE UTILITY LOCATE SERVICES AS REQUIRED. CONTRACTOR SHALL POT HOLE UTILITY CROSSINGS AND THOSE ADJACENT AND WITHIN 5 FEET OF THE EDGE OF TRENCH. CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGES AND COSTS INCURRED TO REPAIR AND RESTORE UTILITIES. LOCATION OF UTILITIES ON CONSTRUCTION DRAWINGS ARE BASED ON UTILITY LOCATES, SURVEYING, AND POTHOLING.
11.

CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE DISTRICT, ENGINEER, REGULATORY AGENCIES/AUTHORITIES, AND OTHER RELEVANT PARTIES AT LEAST 48 HOURS IN ADVANCE OF ANY WORK REQUIRING OBSERVATIONS, INSPECTIONS, APPROVALS, OR OTHER NOTIFICATION, AND SHALL NOT PROCEED UNTIL THE APPROPRIATE RESPONSE IS RECEIVED.
12.

CONTRACTOR SHALL INCLUDE AND COORDINATE MATERIALS TESTING (COMPACTION TESTING, ETC.) WITH A DISTRICT-APPROVED INDEPENDENT TESTING SUBCONTRACTOR.
13.

CONTRACTOR SHALL COLLECT, TRANSPORT, AND PROPERLY DISPOSE OF ALL WASTE MATERIAL (SOIL, ROCK, TRASH, ETC.) FROM THE SITE.
14.

CONTRACTOR SHALL PROTECT TREES IN THE WORK AND STAGING AREAS, AND SHALL REQUEST AND RECEIVE PERMISSION FROM THE DISTRICT PRIOR TO REMOVING ANY TREES.
15.

EXISTING VALVES AND FIRE HYDRANTS SHALL ONLY BE OPERATED BY THE DISTRICT'S OPERATIONS

CONTRACTOR.

16.

CONTRACTOR SHALL MAINTAIN AN ONSITE COPY OF THE CONSTRUCTION DRAWINGS, SPECIFICATIONS, STANDARDS, AND OTHER CONTRACT DOCUMENTS.
17.

CONTRACTOR SHALL MAINTAIN A SET OF RECORD DRAWINGS, NOTING DISCREPANCIES FROM CONSTRUCTION DRAWINGS, AND PROVIDE TO DISTRICT AT THE END OF THE PROJECT.
18.

CONTRACTOR SHALL WARRANT ALL WORK TO BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF TWO (2) YEARS FROM THE DATE OF ACCEPTANCE BY THE DISTRICT.

W2E

W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

GENERAL NOTES

SHEET NUMBER
C0.1

C:\USERS\ILLR\Desktop\W2E\PROJECTS\LWMWD\MAIN PHASE 01\LWMWD MAIN REPLACEMENT PROJECT 2025.DWG

SPECIFICATIONS:

1. ALL HARDWARE (NUTS, BOLTS, RODS, WASHERS, ETC.) SHALL BE STAINLESS STEEL.
2. NOT ALL FITTINGS AND ADAPTERS ARE SHOWN ON THESE DRAWINGS, AND THE CONTRACTOR SHALL BE REQUIRED TO DETERMINE A SUITABLE METHOD FOR CONNECTIONS AND TRANSITIONS INDICATED, WHICH SHALL BE APPROVED BY ENGINEER.
3. POLYVINYL CHLORIDE (PVC) PIPE SHALL COMPLY WITH AWWA C900. PVC PIPE SHALL BE A MINIMUM OF DR18 RATED FOR 235 PSI.
4. DUCTILE IRON PIPE (DIP) SHALL COMPLY WITH AWWA C150 AND C151 WITH CEMENT MORTAR LINING (AWWA C104) AND ASPHALT COATING. DIP SHALL BE THICKNESS CLASS 52 WITH A PRESSURE RATING OF 350 PSI.
5. BYPASS PIPE OR HOSE SHALL BE 4-INCH NOMINAL DIAMETER RATED FOR 150 PSI AND NSF 61 CERTIFIED. CONTRACTOR SHALL INCLUDE CONNECTIONS FOR SERVICE LINES (WHERE NEEDED) AND DISINFECT PIPE OR HOSE PRIOR TO USE.
6. DUCTILE IRON FITTINGS SHALL COMPLY WITH AWWA C110 WITH CEMENT MORTAR LINING (AWWA C104) AND ASPHALT COATING, UTILIZING RESTRAINED MECHANICAL JOINTS (UNLESS OTHERWISE SPECIFIED).
7. GATE VALVES SHALL COMPLY WITH AWWA C509 WITH FUSION BONDED EPOXY COATING (AWWA C550; INTERIOR AND EXTERIOR) WITH A 2-INCH SQUARE NUT AND OPEN LEFT (COUNTERCLOCKWISE).
8. FIRE HYDRANTS SHALL BE MUELLER SUPER CENTURION MODEL A-423 (SEE DISTRICT STANDARDS FOR ADDITIONAL DETAILS).
9. ALL JOINTS IN PIPE, FITTINGS, AND VALVES SHALL BE RESTRAINED (SEE DISTRICT STANDARDS FOR ADDITIONAL DETAILS).
- 10.KICKBLOCKS SHALL BE USED PER THE STANDARD DETAILS AND WHERE INDICATED ON DRAWINGS.
- 11.INSTALLATION OF PIPE AND APPURTENANCES SHALL BE IN ACCORDANCE WITH AWWA C600.
- 12.RESTRAINED COUPLINGS SHALL BE ROMAC STYLE 501 WITH RESTRAINTS OR ENGINEER-APPROVED EQUAL.
- 13.TAPPING SLEEVES SHALL BE ROMAC STYLE SST OR ENGINEER-APPROVED EQUAL.
- 14.AIR/VACUUM VALVES SHALL BE DEZURIK APCO AVV-140 WITH MUSHROOM CAP OR ENGINEER-APPROVED EQUAL.
- 15.VALVE BOXES SHALL BE 6-INCH DIAMETER CAST IRON UTILIZING A LID, TOP SECTION, EXTENSION, STEM, BOTTOM, AND BASE AND BE ADJUSTABLE. ALL VALVES SHALL HAVE VALVE BOXES CENTERED ON THE ASSOCIATED VALVE NUT AND WITHIN 1/4-INCH TO 1/8-INCH BELOW TOP OF ASPHALT OR GRADE.
- 15.PIPE BEDDING MATERIAL SHALL BE SQUEEGEE OR WELL GRADED SAND ($\frac{3}{8}$ " MINUS).
- 16.GRANULAR BEDDING MATERIAL AND IMPORT FILL SHALL CONFORM TO ASTM D448 SIZE NUMBER 67.
- 17.EXISTING SOILS MAY BE USED FOR STANDARD BACKFILL MATERIAL PROVIDED IT CONTAINS MATERIALS NO LARGER THAN 3-INCH. ROCK LARGER THAN 3-INCH MAY BE DISPERSED ONSITE.
- 18.BEDDING AND BACKFILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR.
- 19.TRACER WIRE SHALL BE SOLID COPPER 12 AWG WITH BLUE INSULATION AND TAPED DIRECTLY TO PIPE. TEST STATIONS SHALL BE SETUP AT ALL FIRE HYDRANTS, VALVES, AND SERVICE LINES, AND WHERE INDICATED ON THE DRAWINGS.
- 20.POLYETHYLENE WRAP (8-MIL THICKNESS) SHALL COMPLY WITH AWWA C105 AND BE USED FOR ALL DIP, FITTINGS, AND VALVES.
- 21.WARNING TAPE SHALL BE LABELED "CAUTION - WATER LINE BELOW" AND PLACED 12 INCHES ABOVE TOP OF PIPE (WHERE EXCAVATION OCCURS).
- 22.STANDARD DETAILS FOR TRENCHES ARE ON SHEET C3.0.

- 23.MANHOLES SHALL COMPLY WITH ASTM C478 SPECIFICATIONS AND MEET HS-20 LOADING.
- 24.NON-SHRINK GROUT SHALL CONFORM TO ASTM C1107.
- 25.BITUMINOUS MASTIC SHALL BE RAMNEK OR APPROVED EQUAL.
- 26.RING AND COVER SHALL BE CAST IRON MEETING ASTM A48. COVER SHALL BE LABELED "WATER".
- 27.ASPHALT PATCHING AND PAVING (IF REQUIRED) SHALL CONFORM TO COLORADO DEPARTMENT OF TRANSPORATION REQUIREMENTS.

TESTING:

1. CONDUCT COMPACTION TESTING AT THE FOLLOWING LOCATIONS AND FREQUENCIES:

1.1. AT EXCAVATED AREAS, A MINIMUM OF TWO TESTS PER AREA.
2. PRESSURE TESTING IS REQUIRED FOR ALL PIPE, FITTINGS, AND VALVES. PRESSURE TESTING SHALL COMPLY WITH AWWA C600. PRESSURE TESTING SHALL BE CONDUCTED AT A PRESSURE OF 175 PSI.
3. DISINFECTION AND BACTERIOLOGICAL TESTING IS REQUIRED FOR ALL PIPE, FITTINGS, AND VALVES.

3.1. DISINFECTION SHALL COMPLY WITH AWWA C651.

3.2. BACTERIOLOGICAL TESTING SHALL BE COORDINATED WITH THE DISTRICT'S OPERATIONS CONTRACTOR. THE DISTRICT WILL COLLECT SAMPLES AND DELIVER TO THEIR PREFERRED LABORATORY AT THE DISTRICT'S EXPENSE.

3.3. HIGH STRENGTH CHLORINATED WATER MUST BE DECHLORINATED PRIOR TO SURFACE DISCHARGE.



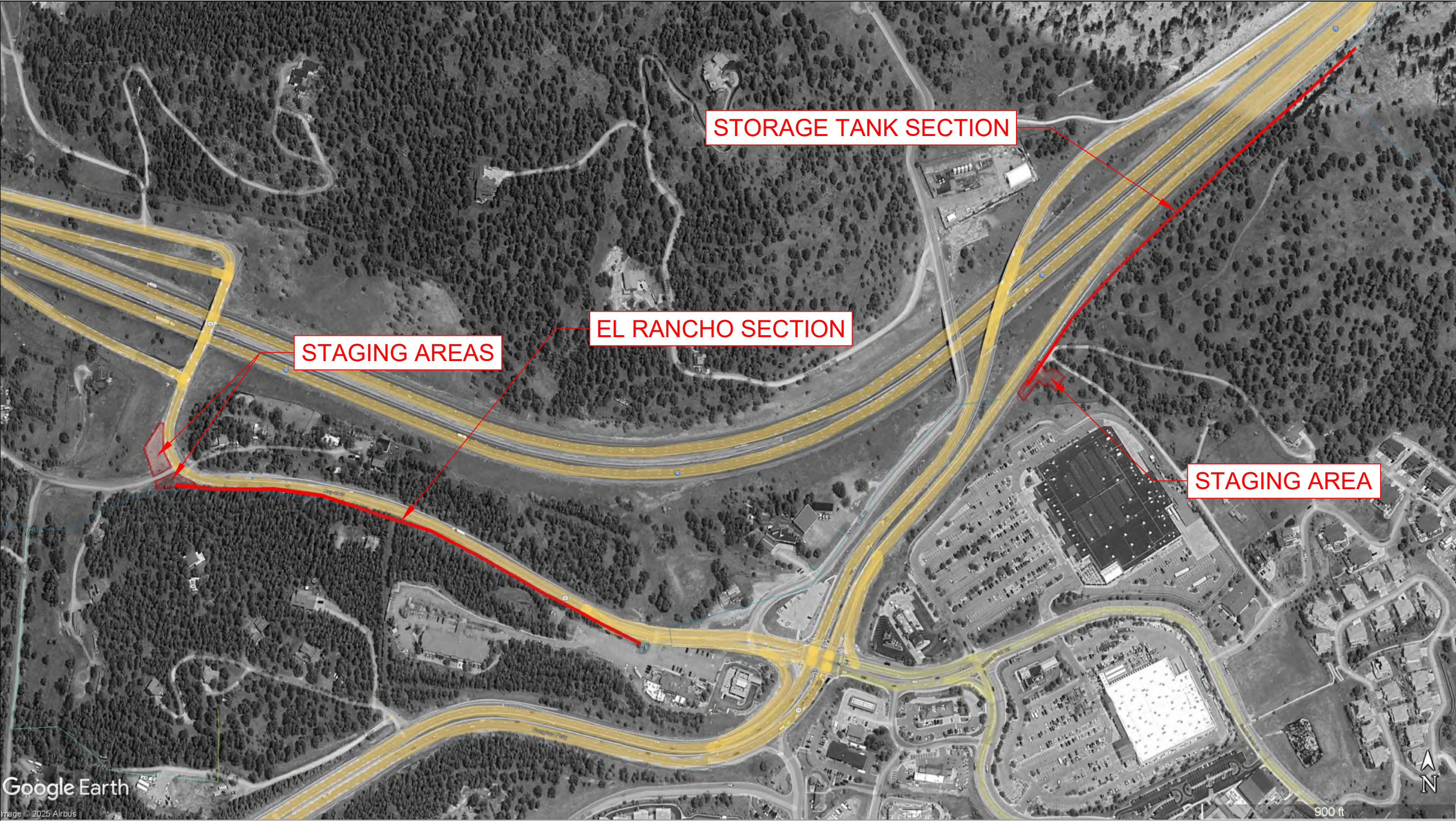
W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025
JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

SPECIFICATIONS
AND TESTING

SHEET NUMBER
C0.2





W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

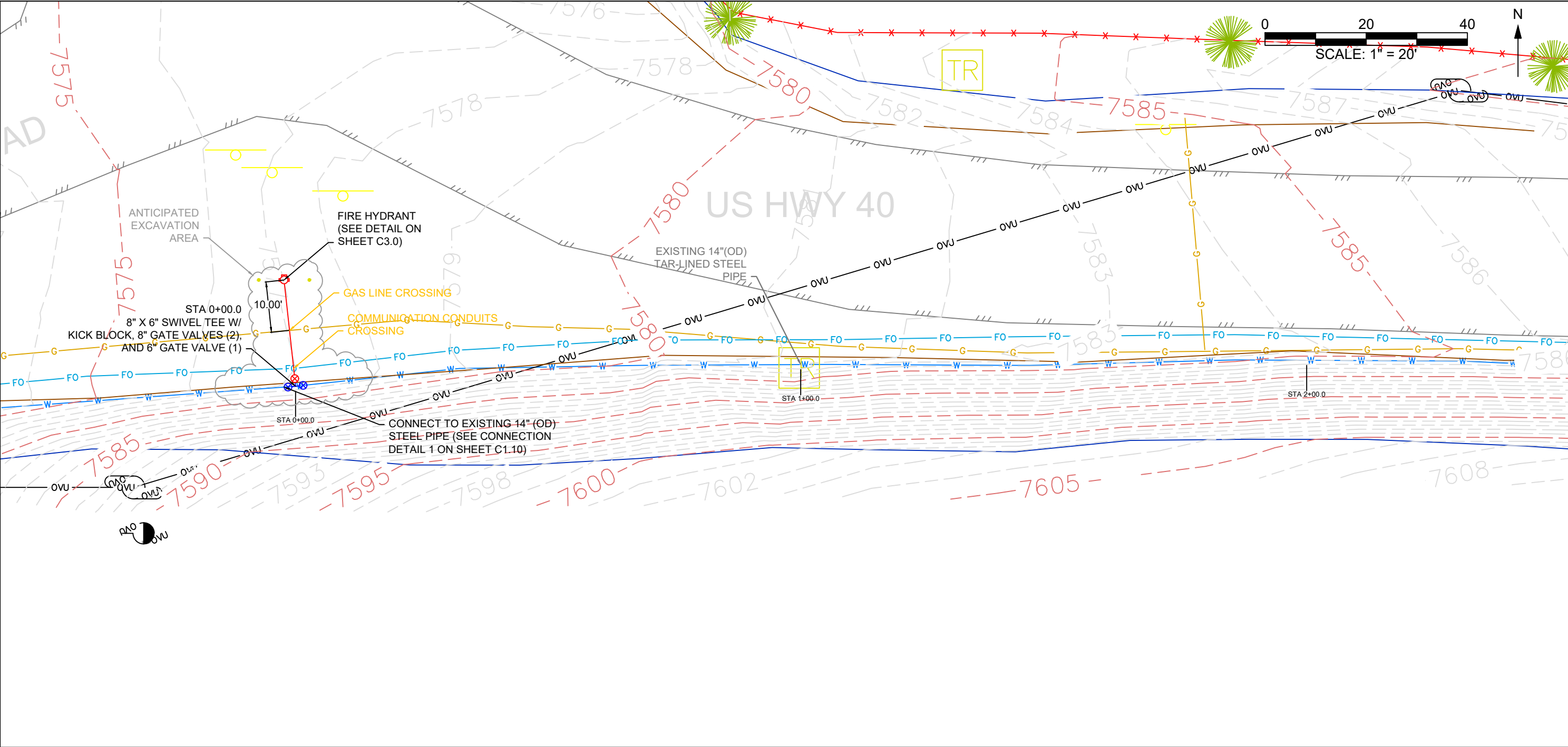
MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

STATUS: IFB DATE: 13 MAY 2025 BY: WAR
PROJECT LOCATION MAP AND STAGING AREAS
SHEET NUMBER C0.3

C:\USERS\WILLR\Desktop\W2E\PROJECTS\LMD\MAIN PHASE 01\MD\MAIN REPLACEMENT PROJECT 2025.DWG

- NOTES:**
- 1. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).
 - 2. STAGING AREAS ARE WITHIN CDOT ROW AND CITY AND COUNTY OF DENVER (DENVER) PROPERTY. CONTRACTOR SHALL COMPLY WITH ALL CDOT AND DENVER REQUIREMENTS.



EL RANCHO SECTION NOTES:

- 1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+00.0 TO STA 18+00.0.
- 2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
- 3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
 - 3.1. THE GAS LINE, COMMUNICATION CONDUITS, AND STORM PIPE ARE DIRECTLY OVER AND/OR ADJACENT TO THE WATER LINE IN SEVERAL AREAS ALONG US HWY 40.
 - 3.2. THE STORM PIPE IS DIRECTLY OVER THE WATER LINE FROM STA 16+09.3 TO STA 18+00.0 (AND BEYOND).
- 4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).



W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

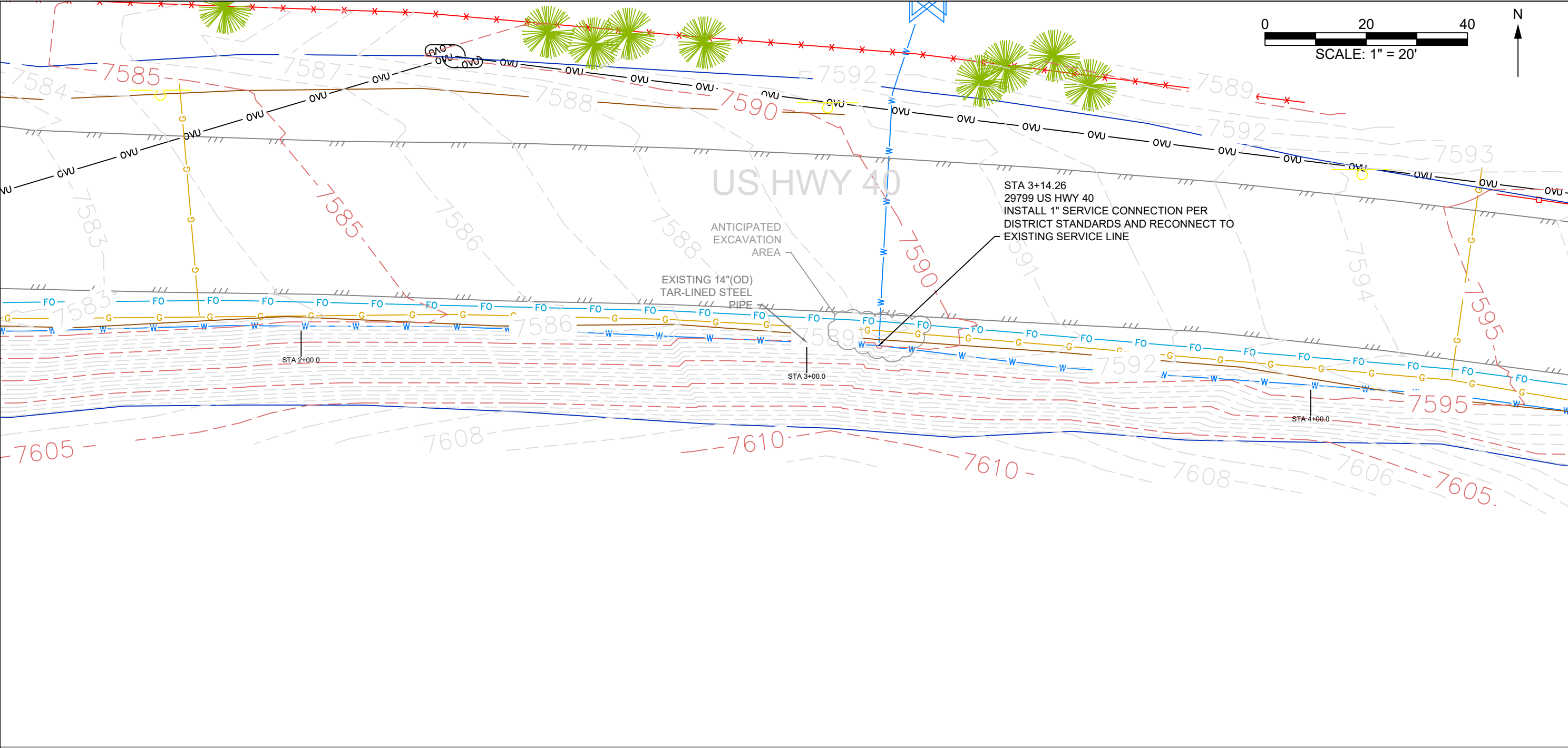
MAIN REPLACEMENT PROJECT 2025
JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 0+00.0 TO STA 2+00.0
EL RANCHO SECTION

SHEET NUMBER
C1.0

C:\USERS\ILLR\DESKTOP\W2E\PROJECTS\LW\DWG\MAIN PHASE 01\W2 MAIN REPLACEMENT PROJECT 2025.DWG



W2E

W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 2+00.0 TO STA 4+00.0
EL RANCHO SECTION

SHEET NUMBER
C1.1

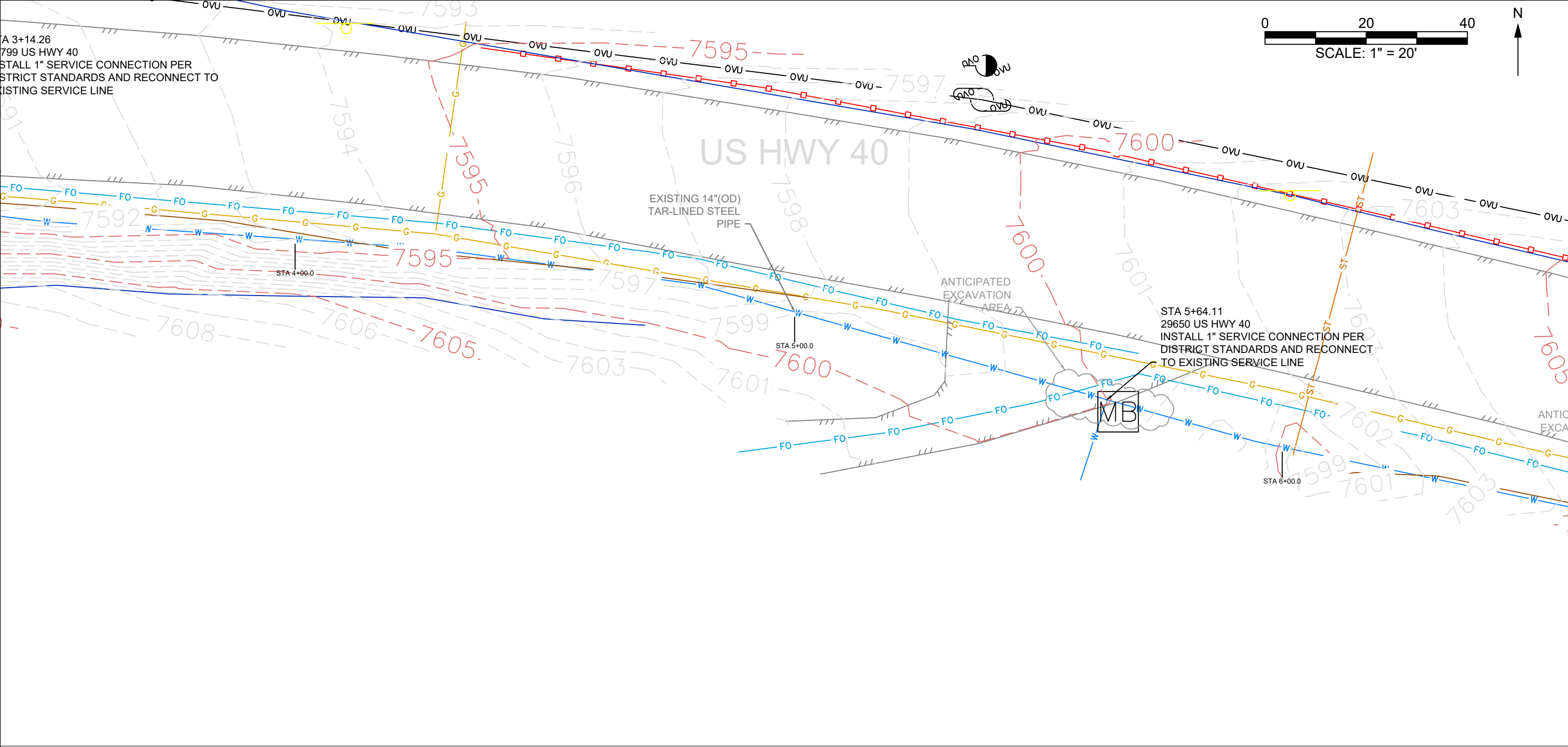
C:\USERS\ILLR\Desktop\W2E\PROJECTS\LMD\MAIN PHASE 01\MD MAIN REPLACEMENT PROJECT 2025.DWG

EL RANCHO SECTION NOTES:

1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+00.0 TO STA 18+00.0.
2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.

3.1. THE GAS LINE, COMMUNICATION CONDUITS, AND STORM PIPE ARE DIRECTLY OVER AND/OR ADJACENT TO THE WATER LINE IN SEVERAL AREAS ALONG US HWY 40.

3.2. THE STORM PIPE IS DIRECTLY OVER THE WATER LINE FROM STA 16+09.3 TO STA 18+00.0 (AND BEYOND).
4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).



W2E

W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

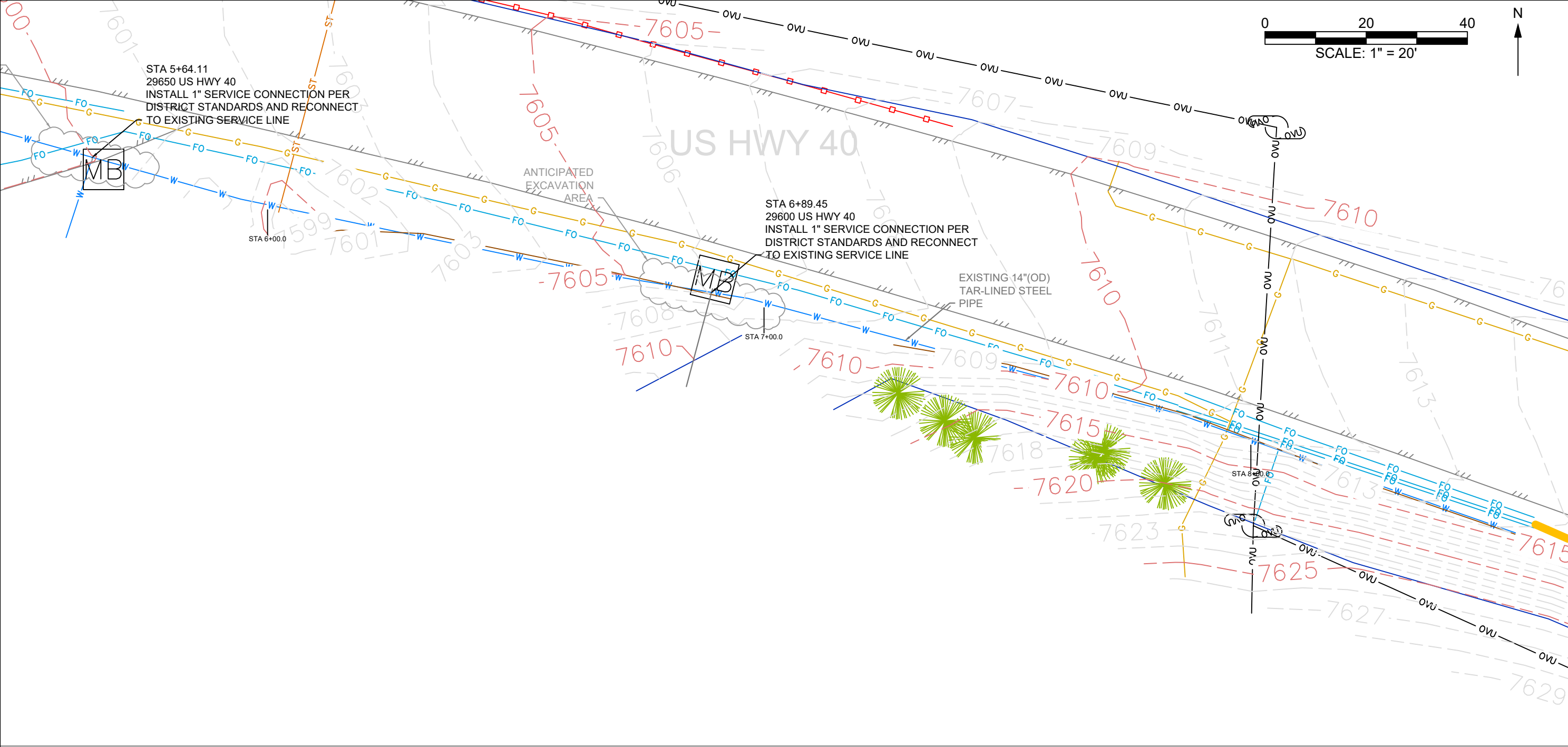
STA 4+00.0 TO STA 6+00.0
EL RANCHO SECTION

SHEET NUMBER
C1.2

C:\USERS\ILLR\DESKTOP\W2E\PROJECTS\LMD\MAIN PHASE 01\MD\MAIN REPLACEMENT PROJECT 2025.DWG

EL RANCHO SECTION NOTES:

- CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+00.0 TO STA 18+00.0.
- CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
- CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
 - THE GAS LINE, COMMUNICATION CONDUITS, AND STORM PIPE ARE DIRECTLY OVER AND/OR ADJACENT TO THE WATER LINE IN SEVERAL AREAS ALONG US HWY 40.
 - THE STORM PIPE IS DIRECTLY OVER THE WATER LINE FROM STA 16+09.3 TO STA 18+00.0 (AND BEYOND).
- WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).



W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

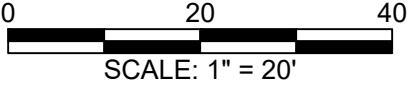
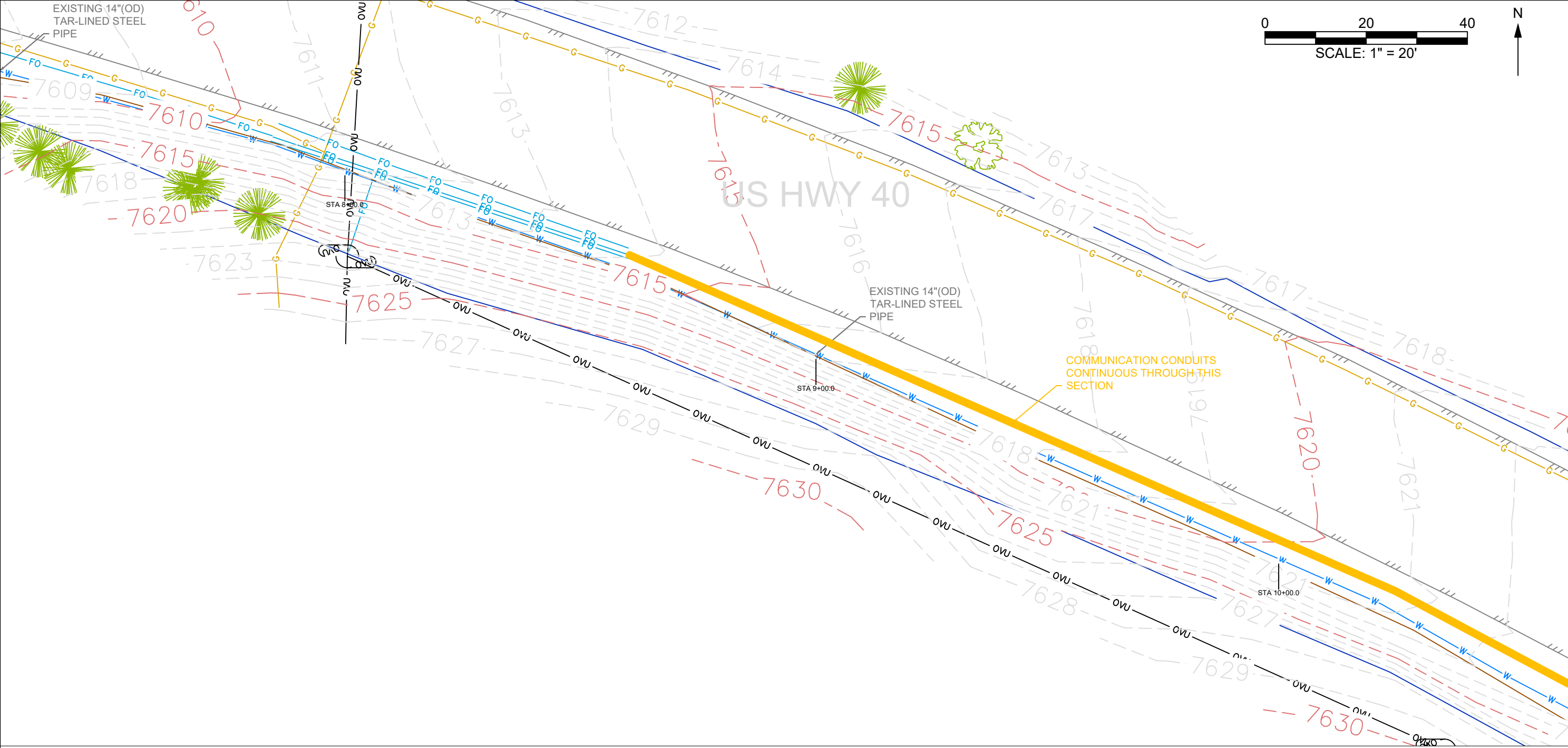
STA 6+00.0 TO STA 8+00.0
EL RANCHO SECTION

SHEET NUMBER
C1.4

C:\USERS\ILLR\DESKTOP\W2E\PROJECTS\LMD\MAIN\PHASE 0\LMWD MAIN REPLACEMENT PROJECT 2025.DWG

EL RANCHO SECTION NOTES:

- CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+00.0 TO STA 18+00.0.
- CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
- CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
 - THE GAS LINE, COMMUNICATION CONDUITS, AND STORM PIPE ARE DIRECTLY OVER AND/OR ADJACENT TO THE WATER LINE IN SEVERAL AREAS ALONG US HWY 40.
 - THE STORM PIPE IS DIRECTLY OVER THE WATER LINE FROM STA 16+09.3 TO STA 18+00.0 (AND BEYOND).
- WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).



W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025
JEFFERSON COUNTY, COLORADO

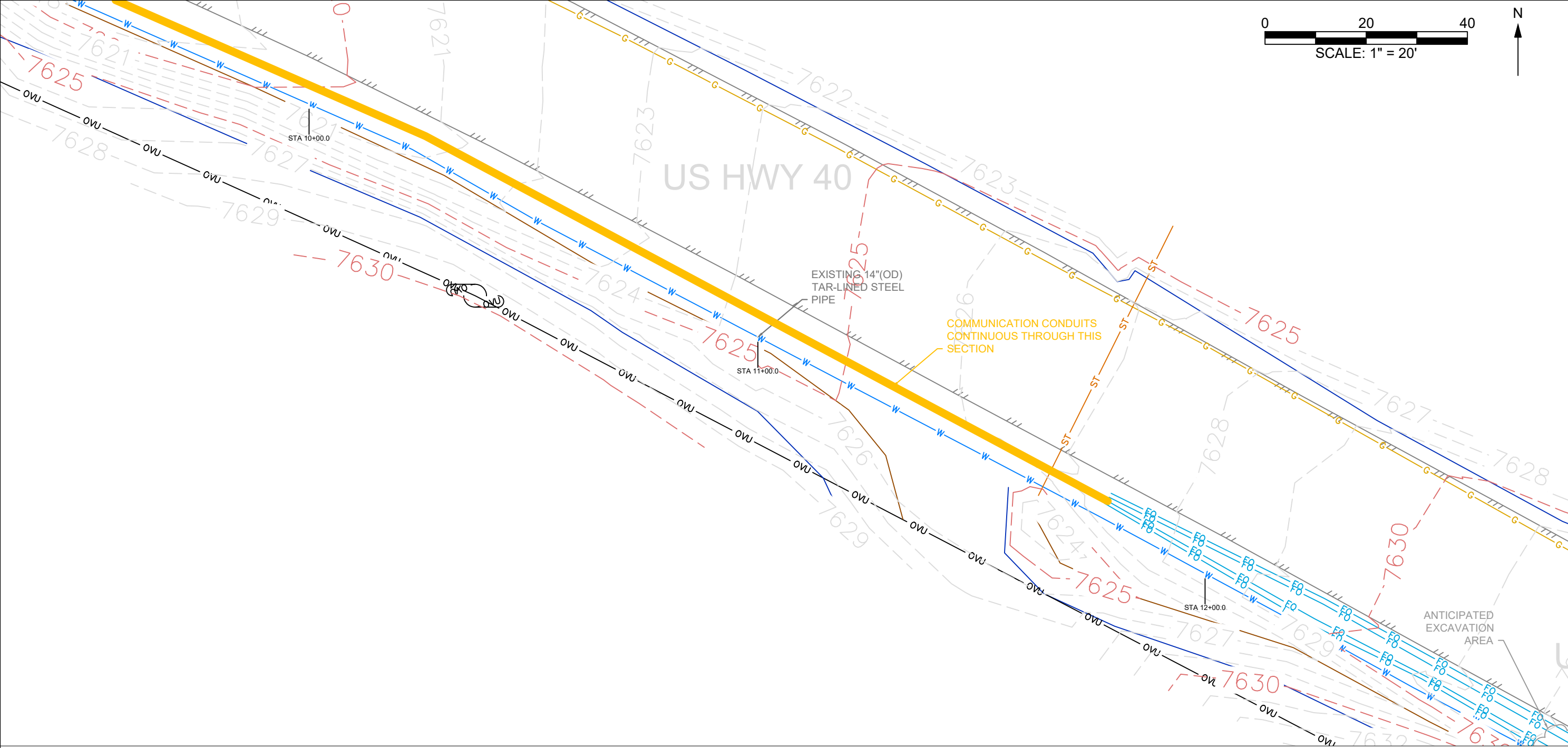
EL RANCHO SECTION NOTES:

- 1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+00.0 TO STA 18+00.0.
- 2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
- 3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
 - 3.1. THE GAS LINE, COMMUNICATION CONDUITS, AND STORM PIPE ARE DIRECTLY OVER AND/OR ADJACENT TO THE WATER LINE IN SEVERAL AREAS ALONG US HWY 40.
 - 3.2. THE STORM PIPE IS DIRECTLY OVER THE WATER LINE FROM STA 16+09.3 TO STA 18+00.0 (AND BEYOND).
- 4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 8+00.0 TO STA 10+00.0
EL RANCHO SECTION

SHEET NUMBER
C1.4



W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 10+00.0 TO STA 12+00.0
EL RANCHO SECTION

SHEET NUMBER
C1.5

C:\USERS\ILLR\DESKTOP\W2E\PROJECTS\LMD\MAIN PHASE 01\MDWD MAIN REPLACEMENT PROJECT 2025.DWG

EL RANCHO SECTION NOTES:

1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+00.0 TO STA 18+00.0.

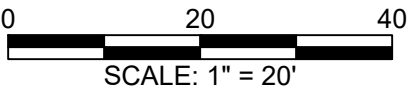
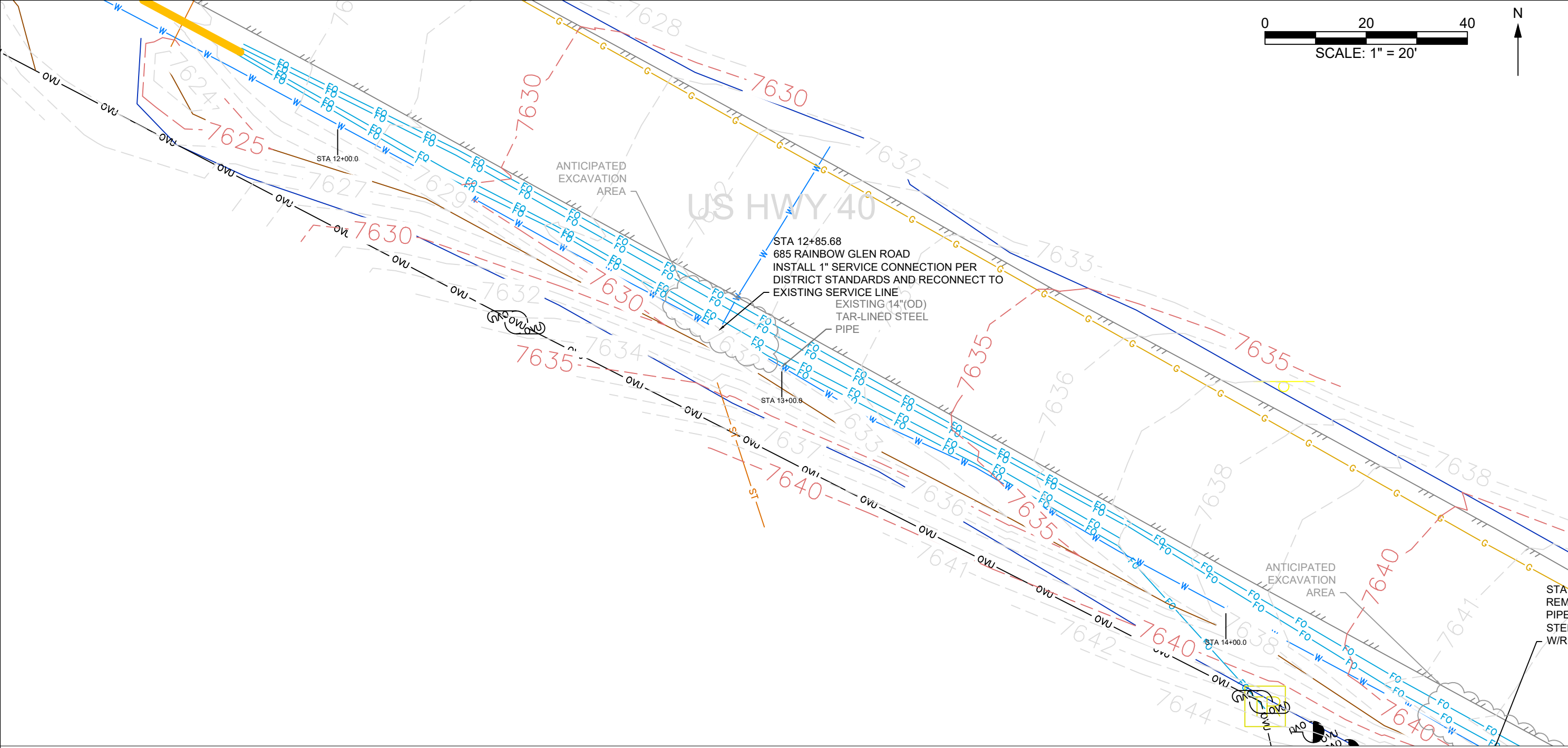
2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.

3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.

3.1. THE GAS LINE, COMMUNICATION CONDUITS, AND STORM PIPE ARE DIRECTLY OVER AND/OR ADJACENT TO THE WATER LINE IN SEVERAL AREAS ALONG US HWY 40.

3.2. THE STORM PIPE IS DIRECTLY OVER THE WATER LINE FROM STA 16+09.3 TO STA 18+00.0 (AND BEYOND).

4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).



W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

EL RANCHO SECTION NOTES:

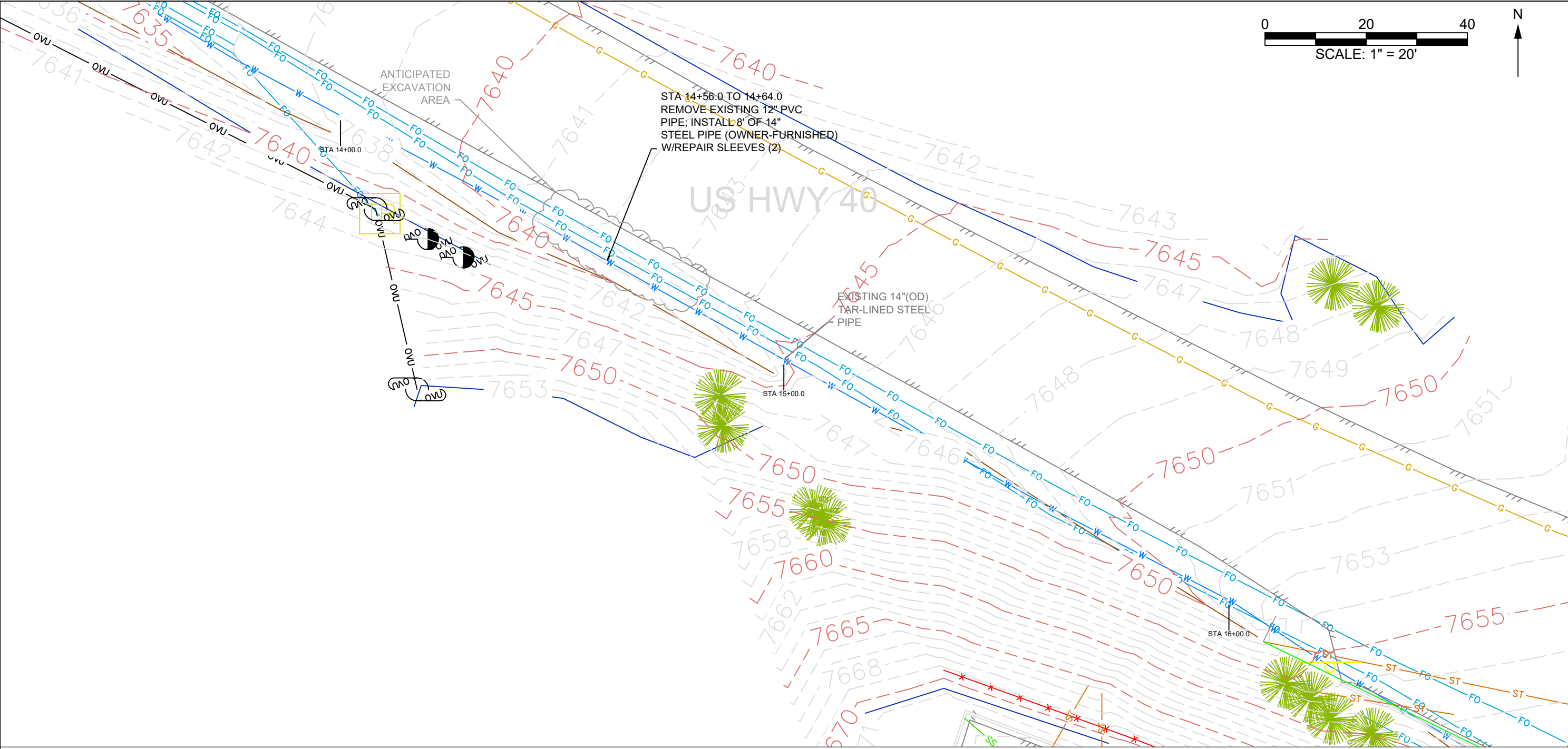
1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+00.0 TO STA 18+00.0.
2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
 - 3.1. THE GAS LINE, COMMUNICATION CONDUITS, AND STORM PIPE ARE DIRECTLY OVER AND/OR ADJACENT TO THE WATER LINE IN SEVERAL AREAS ALONG US HWY 40.
 - 3.2. THE STORM PIPE IS DIRECTLY OVER THE WATER LINE FROM STA 16+09.3 TO STA 18+00.0 (AND BEYOND).
4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 12+00.0 TO STA 14+00.0
EL RANCHO SECTION

SHEET NUMBER
C1.6

C:\USERS\ILLIDESKTOP\W2E\PROJECTS\LMD\MAIN PHASE 01\MD\MAIN REPLACEMENT PROJECT 2025.DWG



W2E

W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

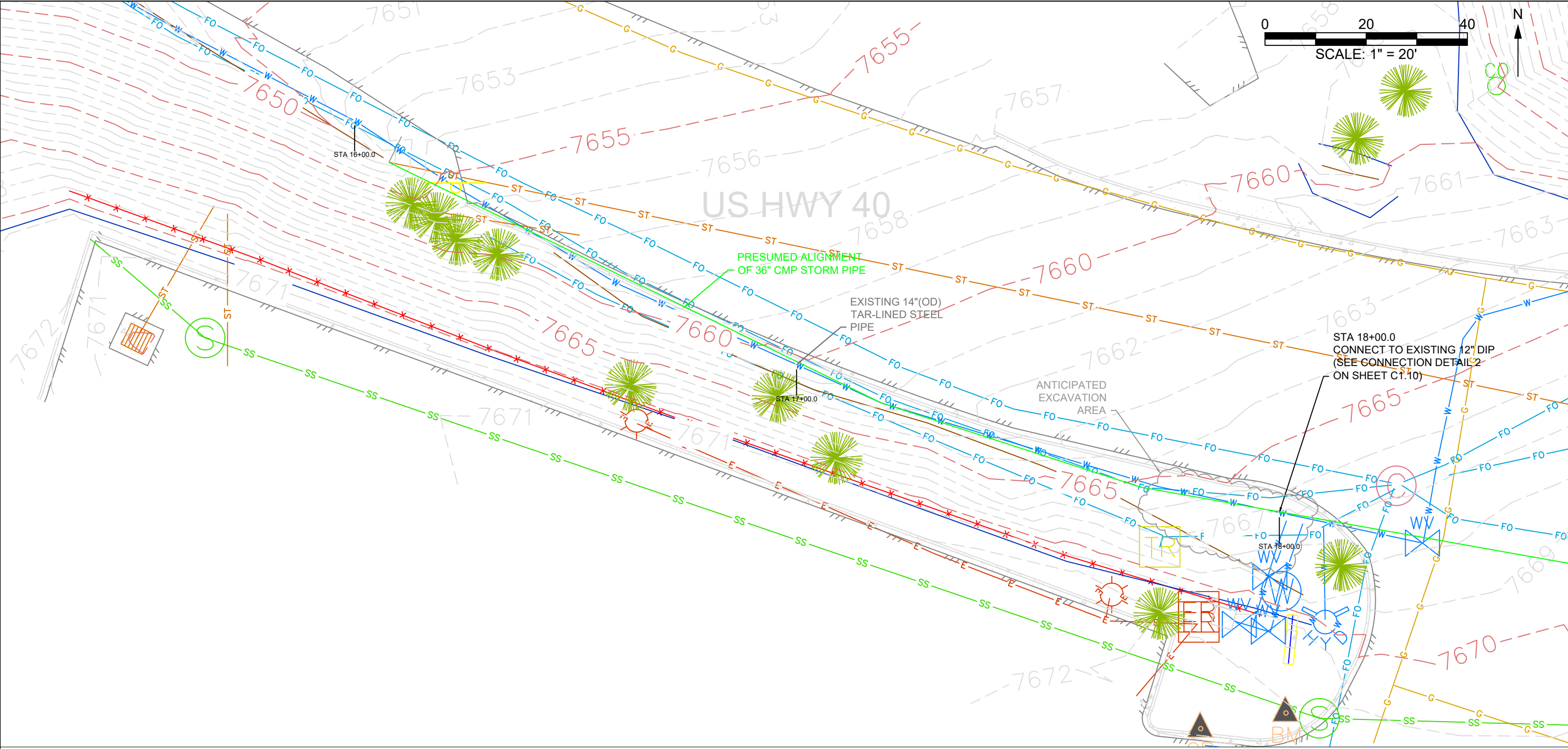
STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 14+00.0 TO STA 16+00.0
EL RANCHO SECTION

SHEET NUMBER
C1.7

C:\USERS\ILLR\Desktop\W2E\PROJECTS\LMD\MAIN PHASE 01\MD\MAIN REPLACEMENT PROJECT 2025.DWG

- EL RANCHO SECTION NOTES:
- CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+00.0 TO STA 18+00.0.
 - CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
 - CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
 - THE GAS LINE, COMMUNICATION CONDUITS, AND STORM PIPE ARE DIRECTLY OVER AND/OR ADJACENT TO THE WATER LINE IN SEVERAL AREAS ALONG US HWY 40.
 - THE STORM PIPE IS DIRECTLY OVER THE WATER LINE FROM STA 16+09.3 TO STA 18+00.0 (AND BEYOND).
 - WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).



W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 16+00.0 TO STA 18+00.0
EL RANCHO SECTION

SHEET NUMBER
C1.8

EL RANCHO SECTION NOTES:

1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+00.0 TO STA 18+00.0.

2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.

3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.

3.1. THE GAS LINE, COMMUNICATION CONDUITS, AND STORM PIPE ARE DIRECTLY OVER AND/OR ADJACENT TO THE WATER LINE IN SEVERAL AREAS ALONG US HWY 40.

3.2. THE STORM PIPE IS DIRECTLY OVER THE WATER LINE FROM STA 16+09.3 TO STA 18+00.0 (AND BEYOND).

4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).



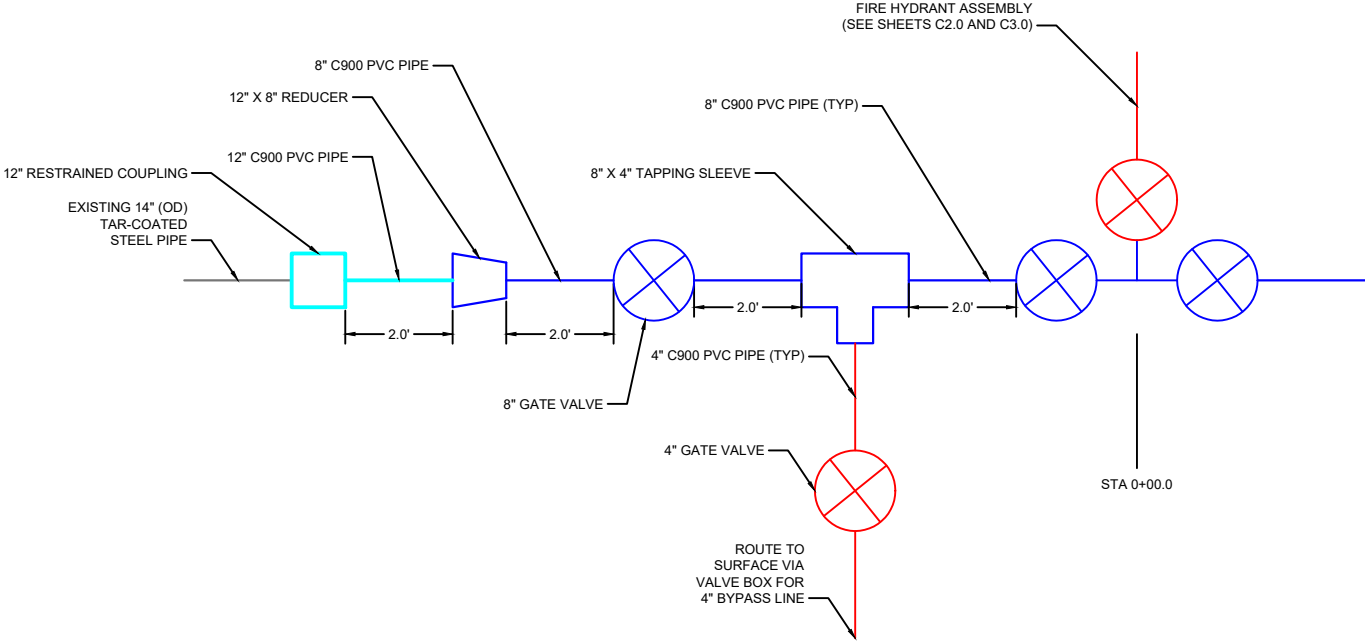
W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025
JEFFERSON COUNTY, COLORADO

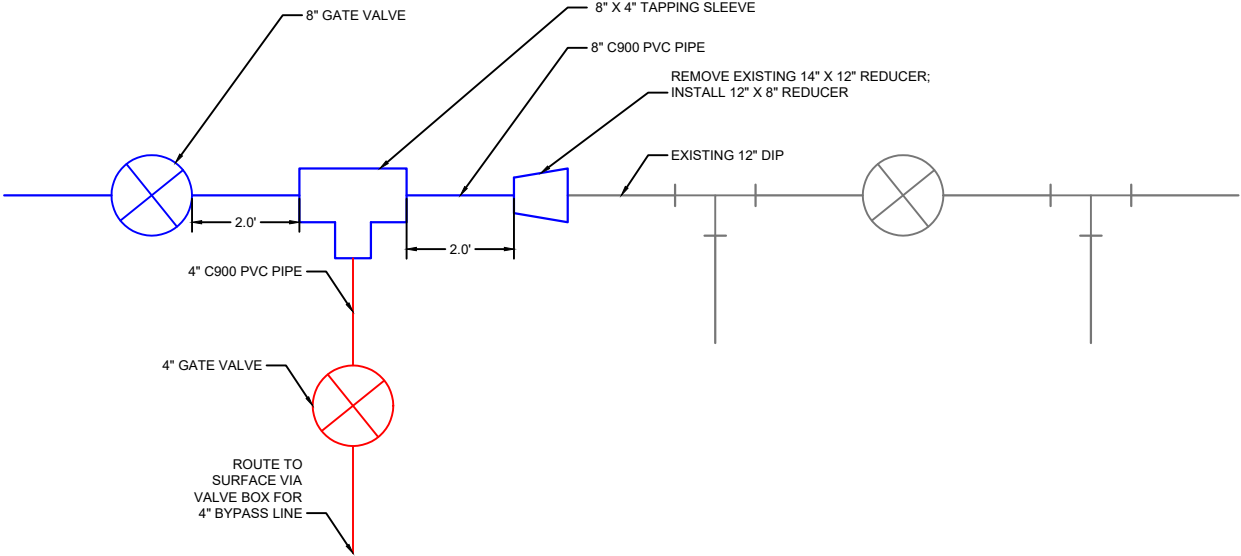
STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

DETAILS
EL RANCHO SECTION

SHEET NUMBER
C1.9

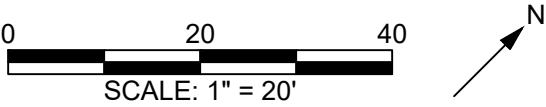


CONNECTION DETAIL 1

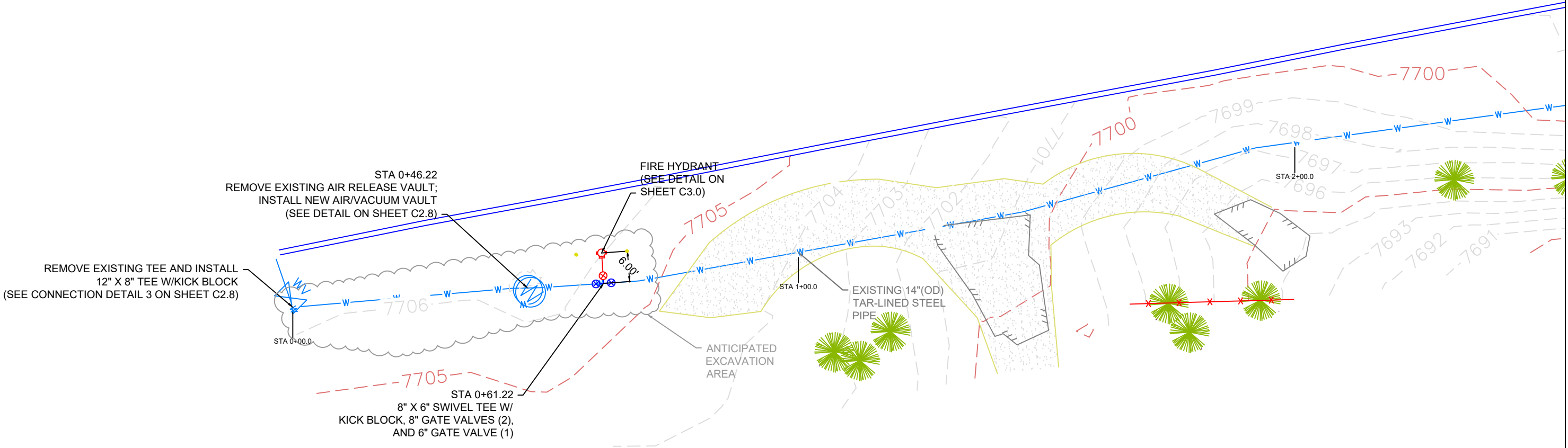


CONNECTION DETAIL 2

C:\USERS\ILLRDESKTOP\W2E\PROJECTS\LMD\MAIN\PHASE 0\LMWD MAIN REPLACEMENT PROJECT 2025.DWG



W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007



STORAGE TANK SECTION NOTES:

1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+0.00 TO STA 16+27.66.
2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).
5. STAGING AREA IS WITHIN CDOT ROW AND CITY AND COUNTY OF DENVER (DENVER) PROPERTY. CONTRACTOR SHALL COMPLY WITH ALL CDOT AND DENVER REQUIREMENTS.
6. CONTRACTOR SHALL NOT ENTER OR EXIT WORK AREAS DIRECTLY FROM I-70.

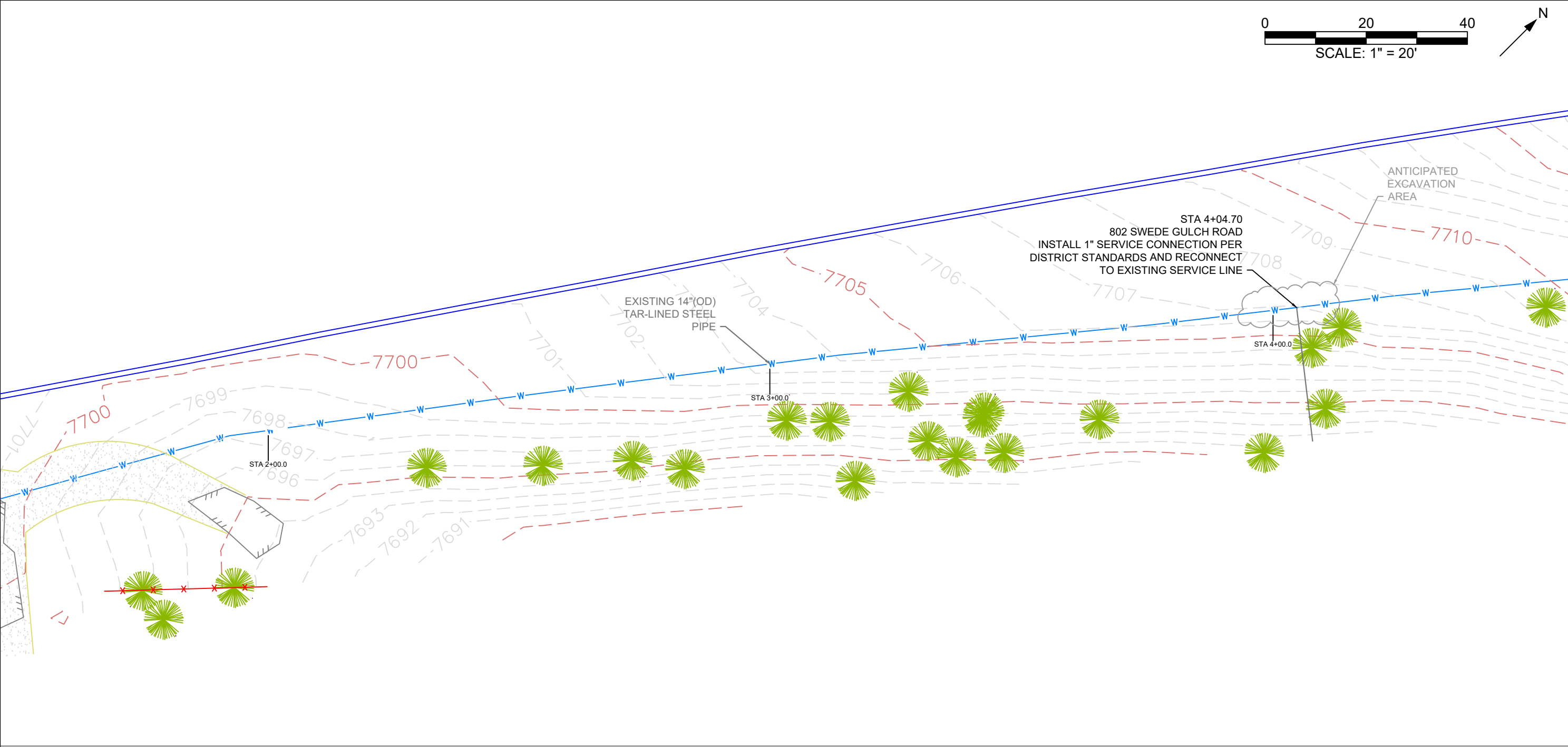
MAIN REPLACEMENT PROJECT 2025
JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 0+00.0 TO STA 2+00.0
STORAGE TANK SECTION

SHEET NUMBER
C2.0

C:\USERS\ILLID\DESKTOP\W2E\PROJECTS\LMD\MAIN PHASE 01\MDWD MAIN REPLACEMENT PROJECT 2025.DWG



W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

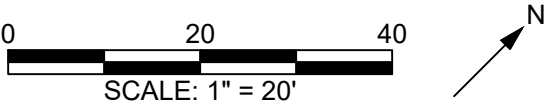
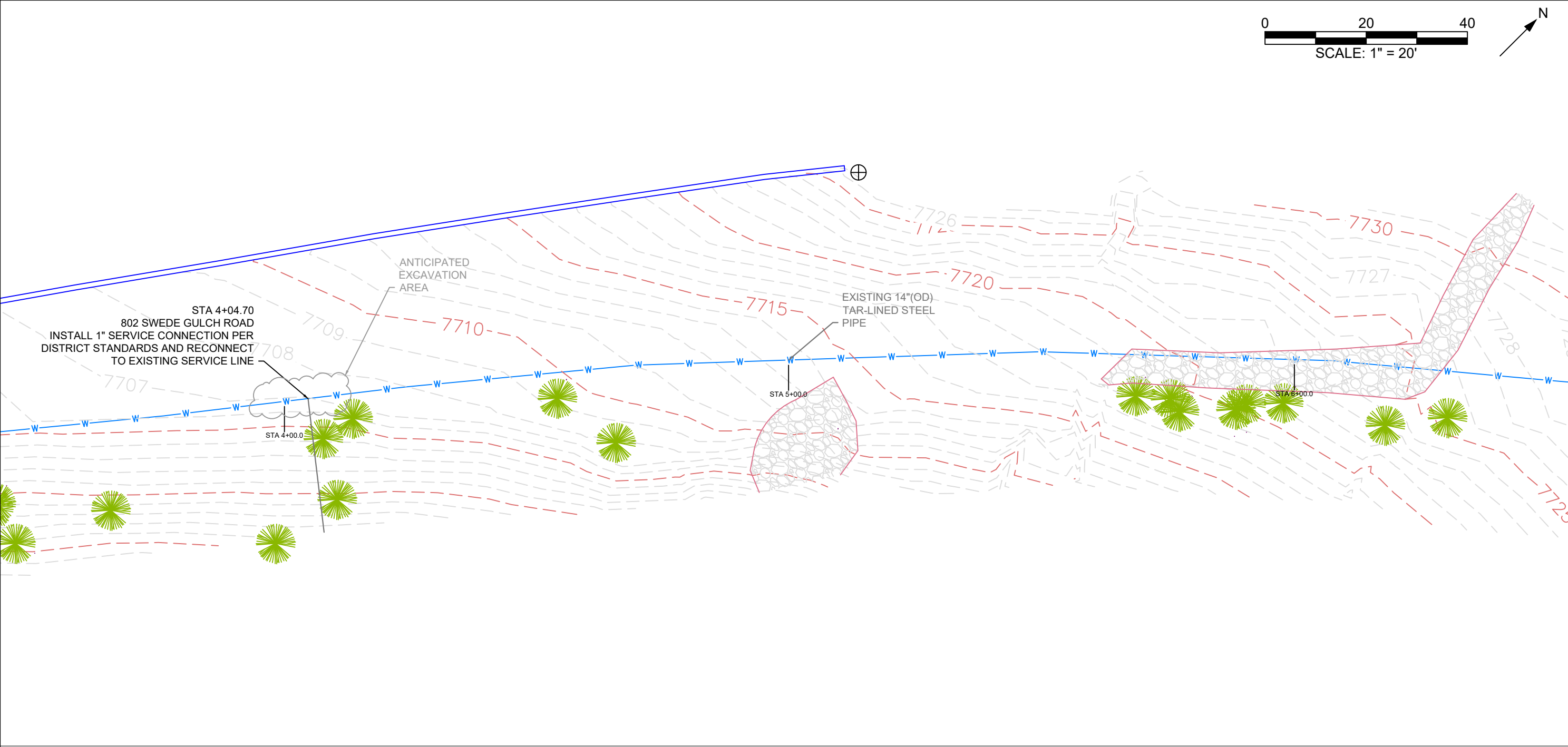
STA 2+00.0 TO STA 4+00.0
STORAGE TANK SECTION

SHEET NUMBER
C2.1

C:\USERS\ILLID\DESKTOP\PROJECTS\LMD\MAIN PHASE 01\MD\MAIN REPLACEMENT PROJECT 2025.DWG

STORAGE TANK SECTION NOTES:

1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+0.00 TO STA 16+27.66.
2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).
5. STAGING AREA IS WITHIN CDOT ROW AND CITY AND COUNTY OF DENVER (DENVER) PROPERTY. CONTRACTOR SHALL COMPLY WITH ALL CDOT AND DENVER REQUIREMENTS.
6. CONTRACTOR SHALL NOT ENTER OR EXIT WORK AREAS DIRECTLY FROM I-70.





W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025
JEFFERSON COUNTY, COLORADO

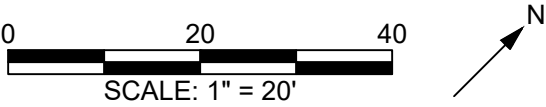
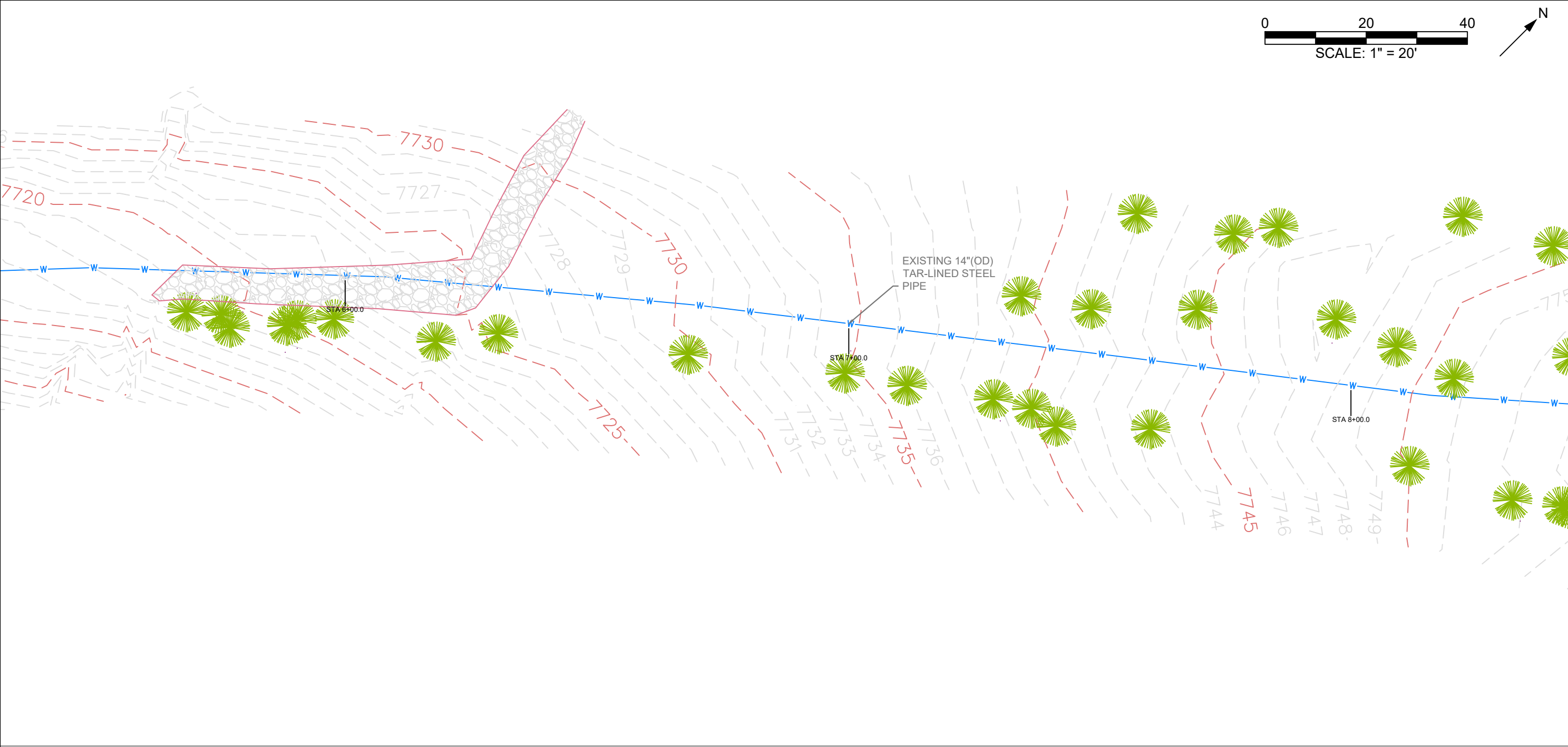
STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 4+00.0 TO STA 6+00.0
STORAGE TANK SECTION

SHEET NUMBER
C2.2

STORAGE TANK SECTION NOTES:

1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+0.00 TO STA 16+27.66.
2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).
5. STAGING AREA IS WITHIN CDOT ROW AND CITY AND COUNTY OF DENVER (DENVER) PROPERTY. CONTRACTOR SHALL COMPLY WITH ALL CDOT AND DENVER REQUIREMENTS.
6. CONTRACTOR SHALL NOT ENTER OR EXIT WORK AREAS DIRECTLY FROM I-70.





W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

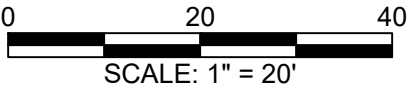
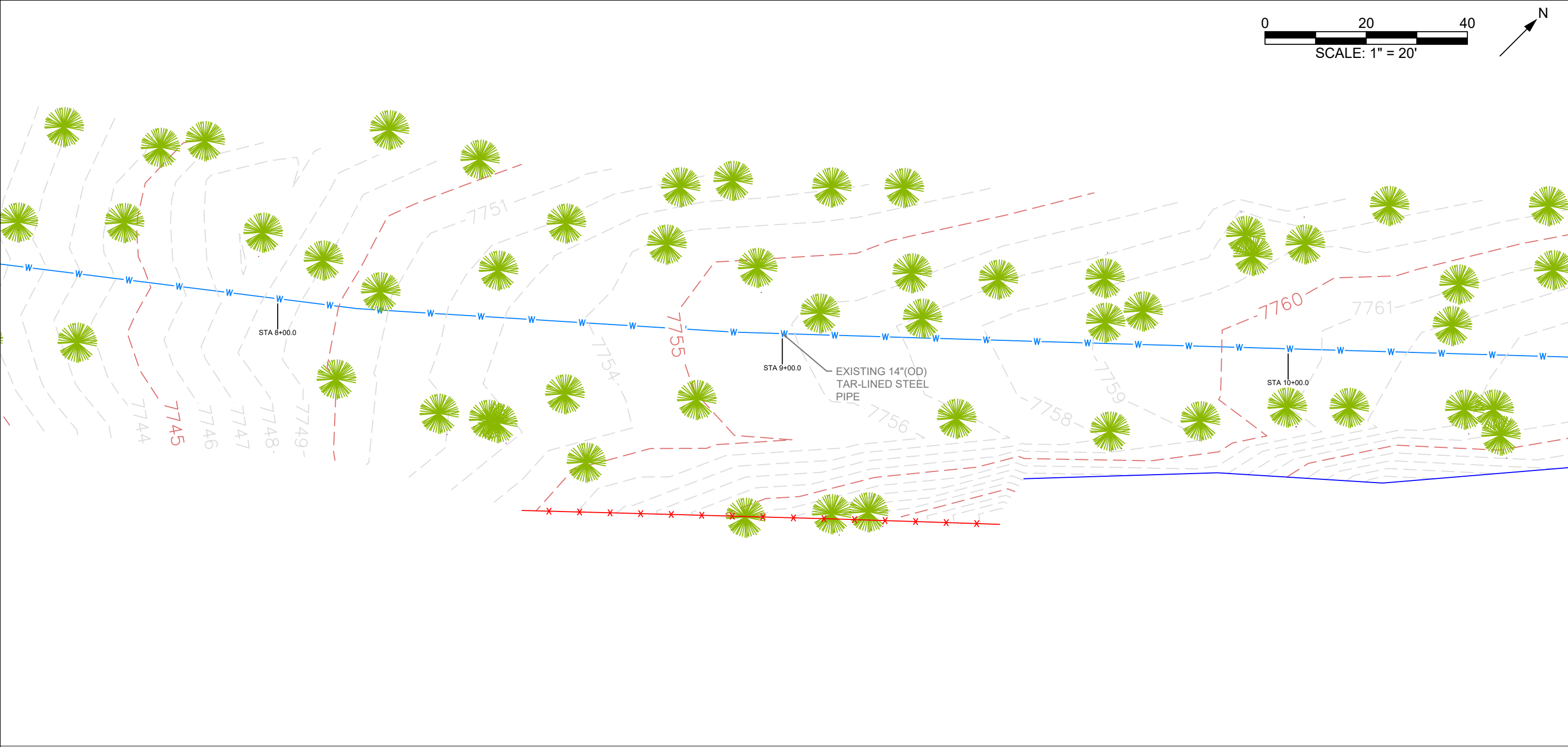
JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 6+00.0 TO STA 8+00.0
STORAGE TANK SECTION

SHEET NUMBER
C2.3

- STORAGE TANK SECTION NOTES:
- CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+0.00 TO STA 16+27.66.
 - CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
 - CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
 - WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).
 - STAGING AREA IS WITHIN CDOT ROW AND CITY AND COUNTY OF DENVER (DENVER) PROPERTY. CONTRACTOR SHALL COMPLY WITH ALL CDOT AND DENVER REQUIREMENTS.
 - CONTRACTOR SHALL NOT ENTER OR EXIT WORK AREAS DIRECTLY FROM I-70.



W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

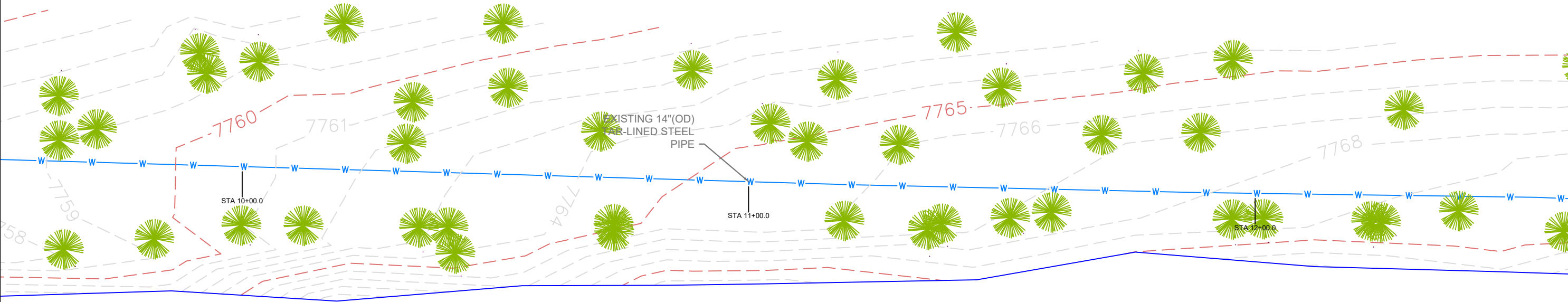
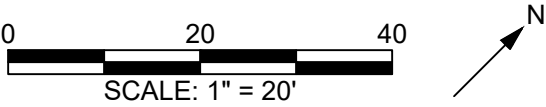
STORAGE TANK SECTION NOTES:

1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+0.00 TO STA 16+27.66.
2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).
5. STAGING AREA IS WITHIN CDOT ROW AND CITY AND COUNTY OF DENVER (DENVER) PROPERTY. CONTRACTOR SHALL COMPLY WITH ALL CDOT AND DENVER REQUIREMENTS.
6. CONTRACTOR SHALL NOT ENTER OR EXIT WORK AREAS DIRECTLY FROM I-70.

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

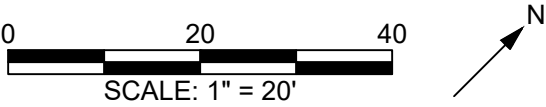
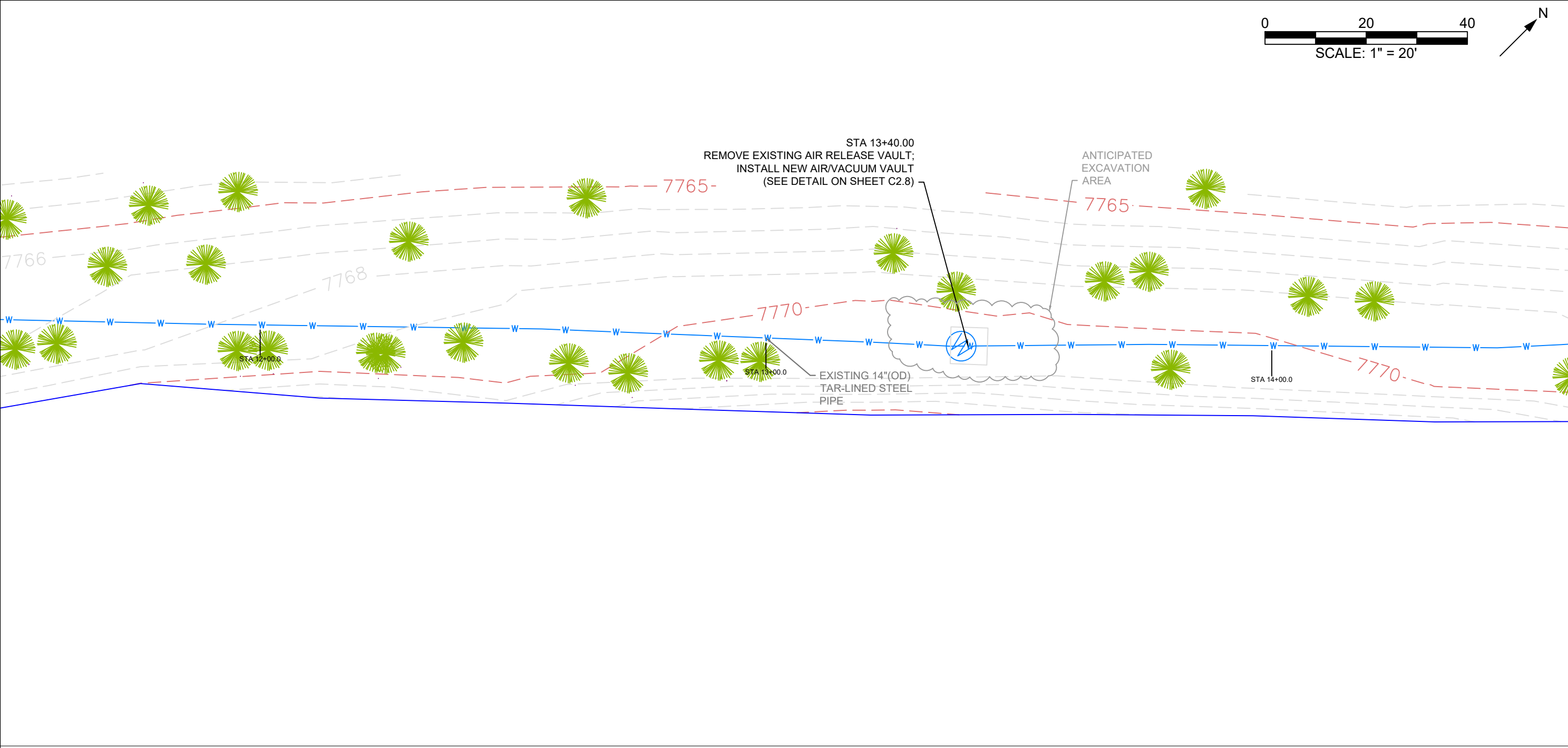
STA 8+00.0 TO STA 10+00.0
STORAGE TANK SECTION

SHEET NUMBER
C2.4



- STORAGE TANK SECTION NOTES:**
1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+0.00 TO STA 16+27.66.
 2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
 3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
 4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).
 5. STAGING AREA IS WITHIN CDOT ROW AND CITY AND COUNTY OF DENVER (DENVER) PROPERTY. CONTRACTOR SHALL COMPLY WITH ALL CDOT AND DENVER REQUIREMENTS.
 6. CONTRACTOR SHALL NOT ENTER OR EXIT WORK AREAS DIRECTLY FROM I-70.

MAIN REPLACEMENT PROJECT 2025
JEFFERSON COUNTY, COLORADO





W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

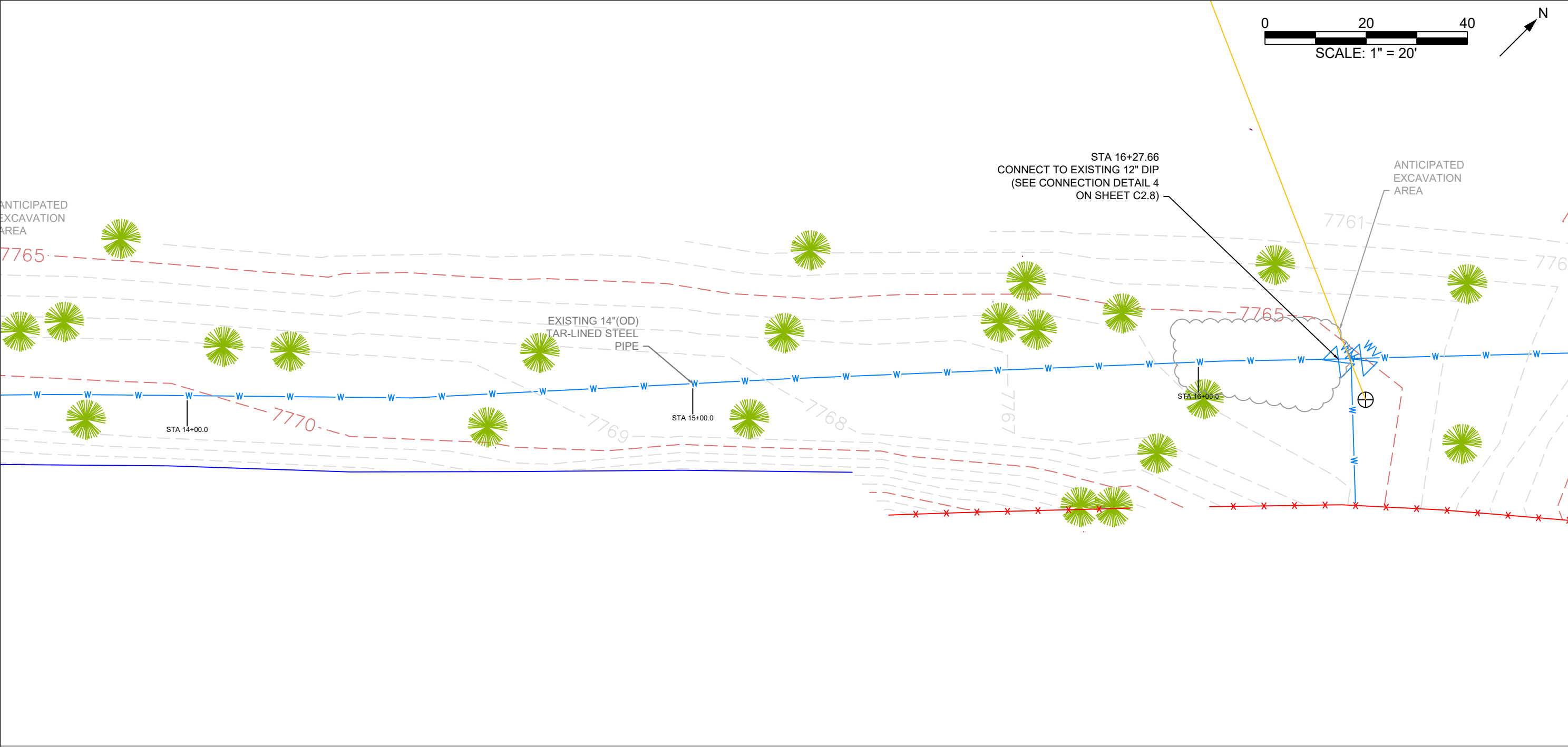
JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 12+00.0 TO STA 14+00.0
STORAGE TANK SECTION

SHEET NUMBER
C2.6

- STORAGE TANK SECTION NOTES:
1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+0.00 TO STA 16+27.66.
 2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
 3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
 4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).
 5. STAGING AREA IS WITHIN CDOT ROW AND CITY AND COUNTY OF DENVER (DENVER) PROPERTY. CONTRACTOR SHALL COMPLY WITH ALL CDOT AND DENVER REQUIREMENTS.
 6. CONTRACTOR SHALL NOT ENTER OR EXIT WORK AREAS DIRECTLY FROM I-70.



W2E

W2 Engineers, LLC
19255 West 84th Place
Arvada, Colorado 80007

MAIN REPLACEMENT PROJECT 2025

JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

STA 14+00.0 TO STA 16+27.66
STORAGE TANK SECTION

SHEET NUMBER
C2.7

C:\USERS\ILLIDESKTOP\W2E\PROJECTS\LMD\MAIN\PHASE 0\LMWD MAIN REPLACEMENT PROJECT 2025.DWG

STORAGE TANK SECTION NOTES:

1. CONTRACTOR SHALL INSTALL 8" FUSIBLE C900 PVC PIPE IN EXISTING 14" TAR-LINED STEEL PIPE FROM STA 0+0.00 TO STA 16+27.66.
2. CONTRACTOR SHALL INSTALL APPURTENANCES AND PERFORM ADDITIONAL WORK AS NOTED ON THESE DRAWINGS. SEE SHEET C0.2 FOR SPECIFICATIONS AND TESTING REQUIREMENTS AND SHEETS C1.9, C2.8, C3.0 AND C3.1 FOR DETAILS.
3. CONTRACTOR SHALL HYDROEXCAVATE AND LOCATE ALL UTILITIES IN EXCAVATION AREAS.
4. WATER LINE IS WITHIN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) RIGHT-OF-WAY (ROW).
5. STAGING AREA IS WITHIN CDOT ROW AND CITY AND COUNTY OF DENVER (DENVER) PROPERTY. CONTRACTOR SHALL COMPLY WITH ALL CDOT AND DENVER REQUIREMENTS.
6. CONTRACTOR SHALL NOT ENTER OR EXIT WORK AREAS DIRECTLY FROM I-70.

MAIN REPLACEMENT PROJECT 2025

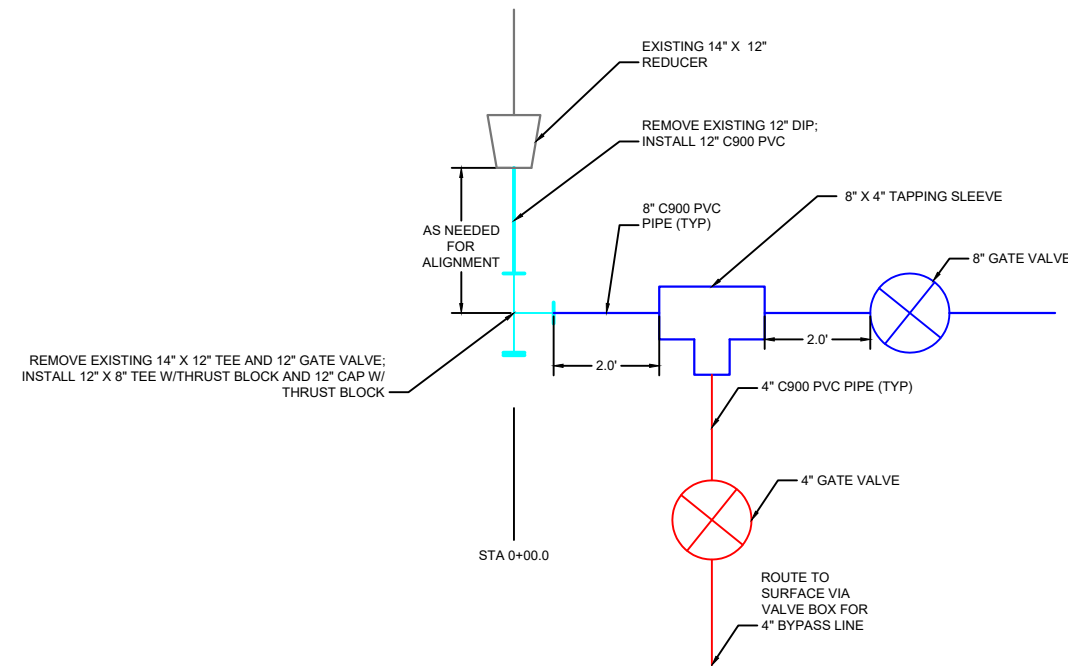
JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

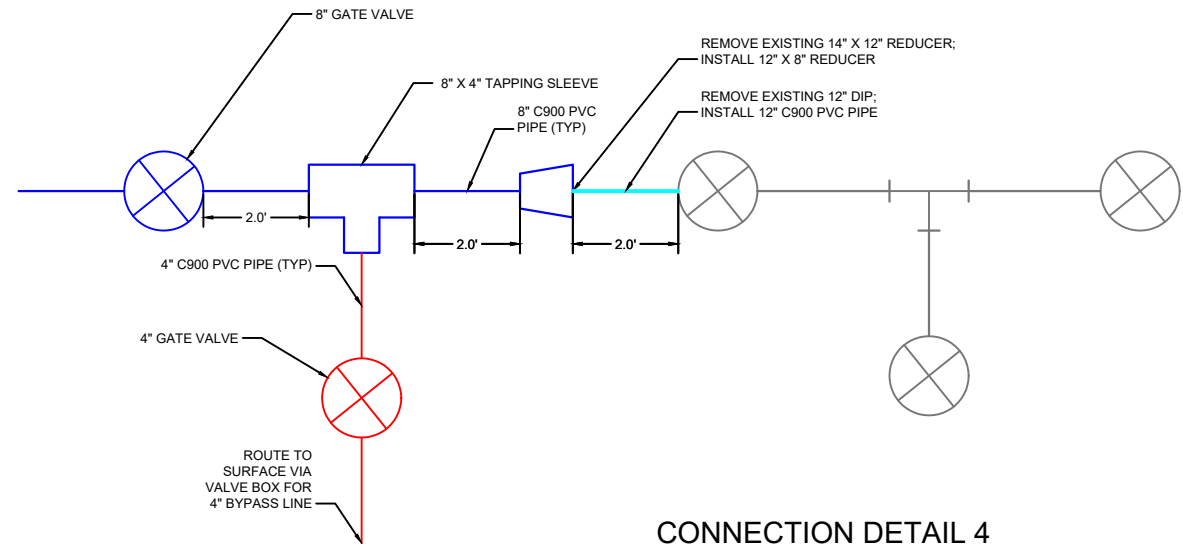
DETAILS
STORAGE TANK SECTION

SHEET NUMBER

C2.8



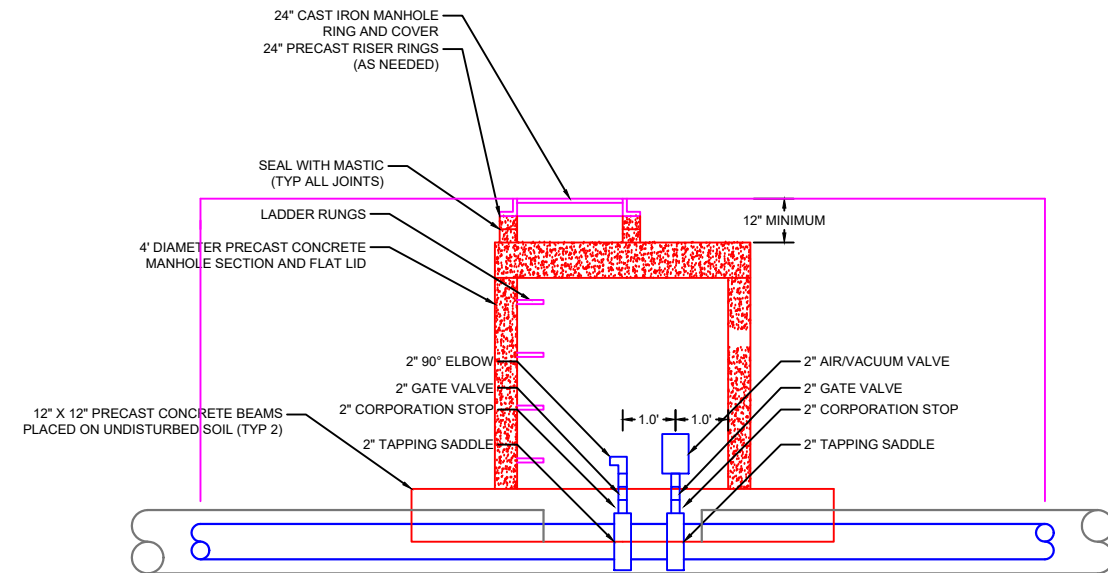
CONNECTION DETAIL 3



CONNECTION DETAIL 4

NOTES:

1. ALL MANHOLE COMPONENTS SHALL BE RATED FOR H2O LOADING.
2. PIPE JOINTS SHALL BE 9" (MINIMUM) FROM CENTER OF MANHOLE.
3. AIR/VACUUM VALVE SHALL BE DEZURIK APCO AVV-140 WITH MUSHROOM CAP.
4. ALL FITTINGS SHALL BE BRASS.
5. LADDER RUNGS SHALL BE ALIGNED WITH MANHOLE OPENING AND EACH OTHER, AND 12" ON CENTER.
6. CUT TOP OF EXISTING 14" TAR-LINED AND TAR-COATED STEEL PIPE AT SPRING LINE.
7. BACKFILL ANNULUS TO TOP OF 14" STEEL PIPE WITH PIPE BEDDING.



AIR/VACUUM VALVE VAULT DETAIL

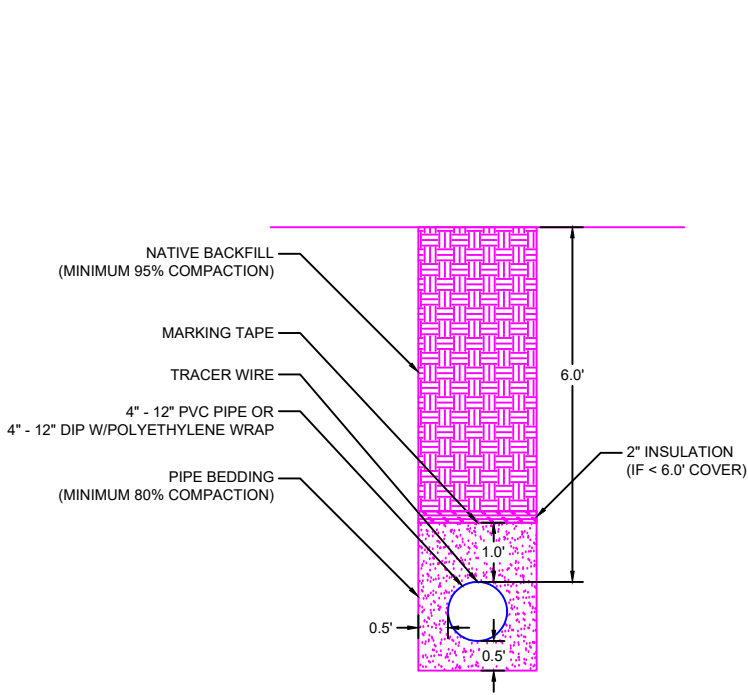
MAIN REPLACEMENT PROJECT 2025
JEFFERSON COUNTY, COLORADO

STATUS: IFB
DATE: 13 MAY 2025
BY: WAR

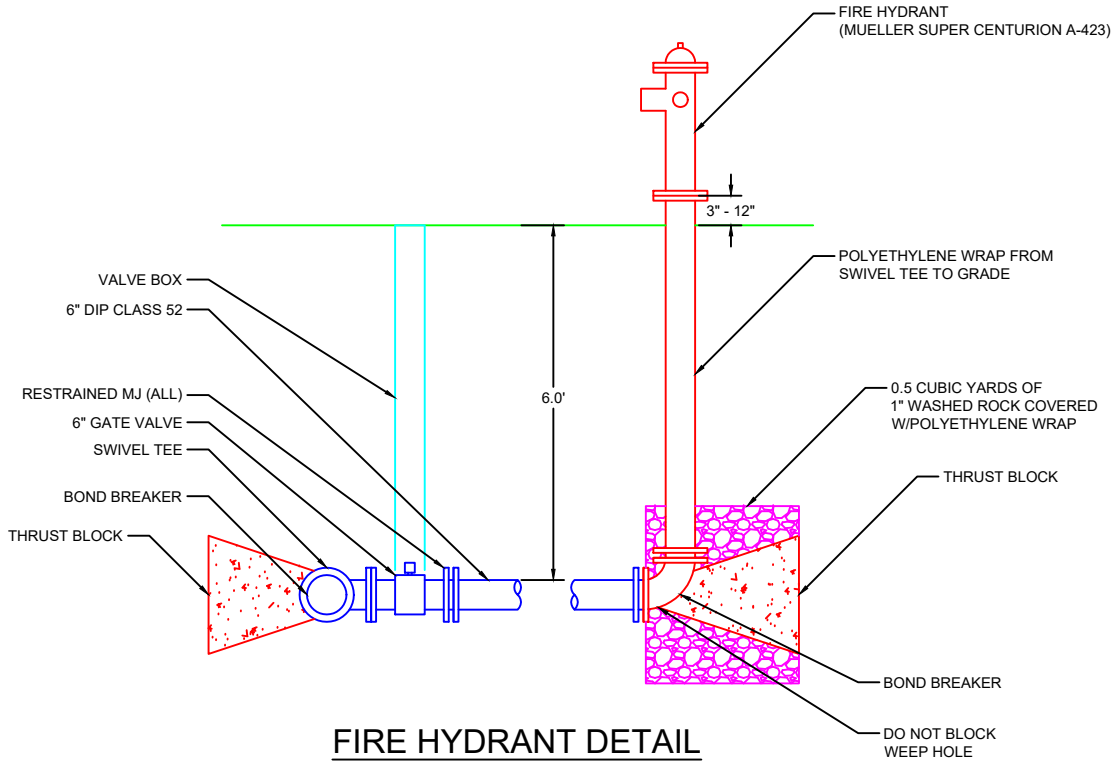
DETAILS
GENERAL

SHEET NUMBER
C3.0

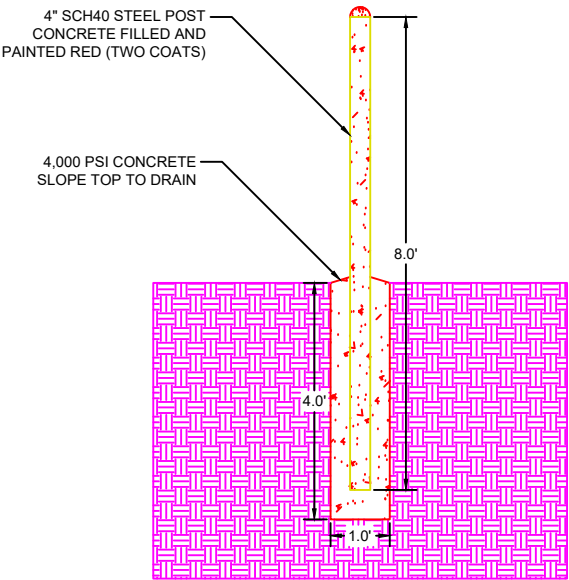
C:\USERS\WILLR\DESKTOP\W2E\PROJECTS\LWMD\MAIN\PHASE 01\WMD MAIN REPLACEMENT PROJECT 2025.DWG



TYPICAL TRENCH DETAIL



FIRE HYDRANT DETAIL



4" STEEL BOLLARD DETAIL

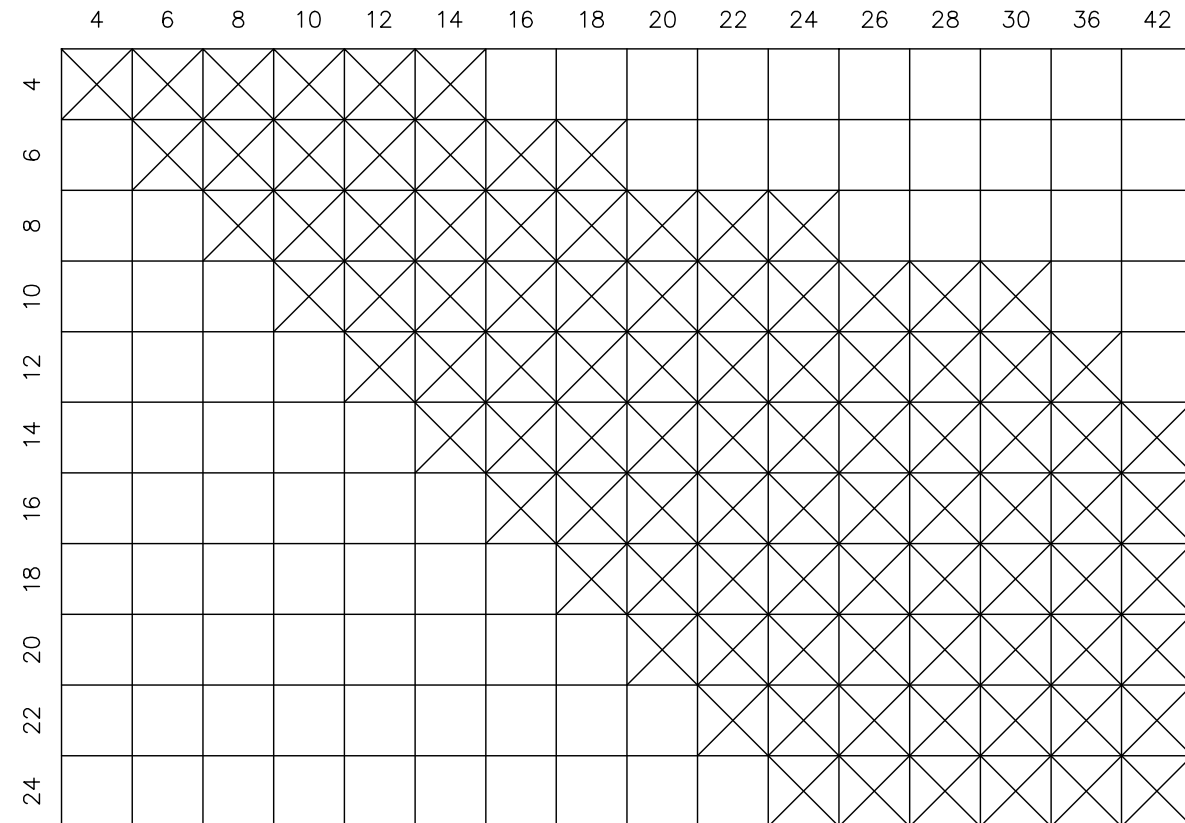
CONCRETE THRUST BLOCKS

WATER MAIN AND TAP SIZE COMBINATIONS WHICH REQUIRE A CONC THRUST BLOCK BEHIND THE MAIN AT THE TAPPING SLEEVE OR SADDLE

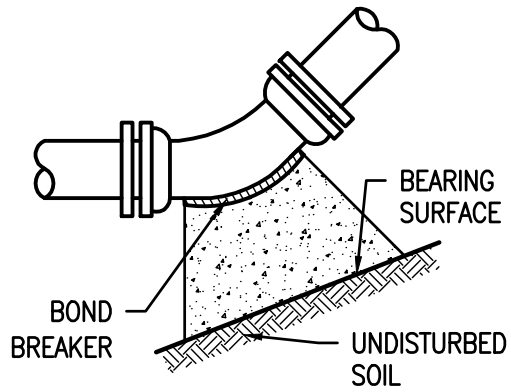
ALL WATER MAINS



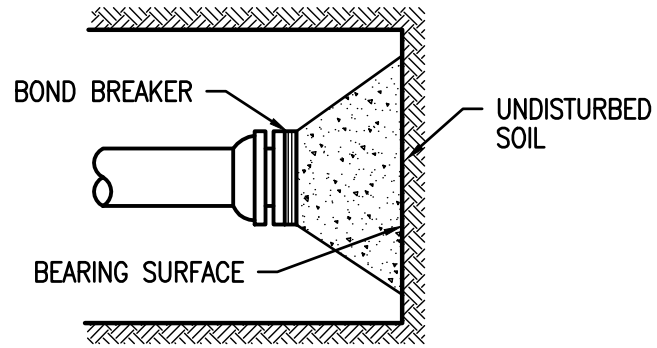
INDICATED CONC THRUST BLOCK REQD
MAIN SIZE (INCHES)



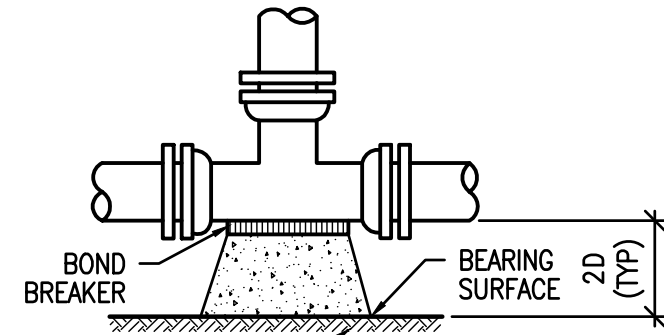
ANY THRUST BLOCK REQUIREMENTS FOR WATER MAIN AND TAP SIZE COMBINATIONS OTHER THAN THOSE SHOWN ABOVE WILL REQUIRE SPECIAL DESIGN APPROVAL BY THE ENGINEER.



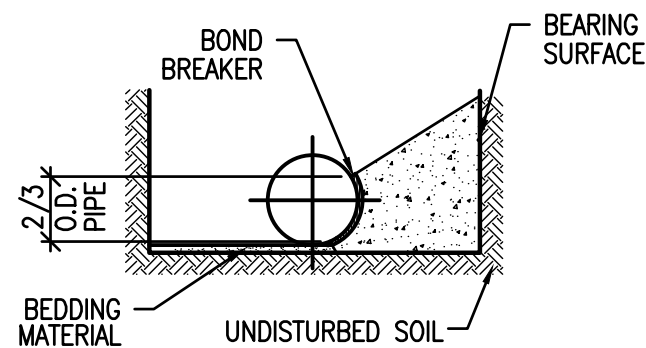
11-1/4°, 22-1/2°, 45° & 90° BENDS



DEAD END



TEE



TYPICAL CROSS SECTION

NOTES:

1. BEARING SURFACES SHOWN IN CHART ARE MINIMUM
2. BASED ON 150 PSI INTERNAL PIPE PRESSURE PLUS WATER HAMMER
4", 6", 8", & 12" WATER HAMMER = 110 PSI
16", 20" AND 24" WATER HAMMER = 70 PSI
3. BASED ON 3000psf SOIL BEARING CAPACITY

SIZE OF PIPE	SURFACE AREA (SQ FT)				
	TEE OR DEAD END	BENDS			
		11-1/4°	22-1/2°	45°	90°
4"	1.50	1.00	1.00	1.00	N/A
6"	3.00	1.00	1.25	2.25	N/A
8"	5.25	1.00	2.00	4.00	N/A
12"	11.25	2.25	4.50	8.75	N/A
16"	19.00	3.50	7.50	14.50	27.00
20"	25.00	5.00	10.00	19.50	35.50
24"	36.00	7.00	14.00	27.75	51.00

**MINIMUM BEARING SURFACE AREA
(IN SQUARE FEET)**