

JORDAN VALLEY WATER CONSERVANCY DISTRICT

BELL CANYON DIVERSION FLOW MEASUREMENT STRUCTURE

PROJECT #4186

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3	L-2	CANAL LOCATION
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Know what's below.

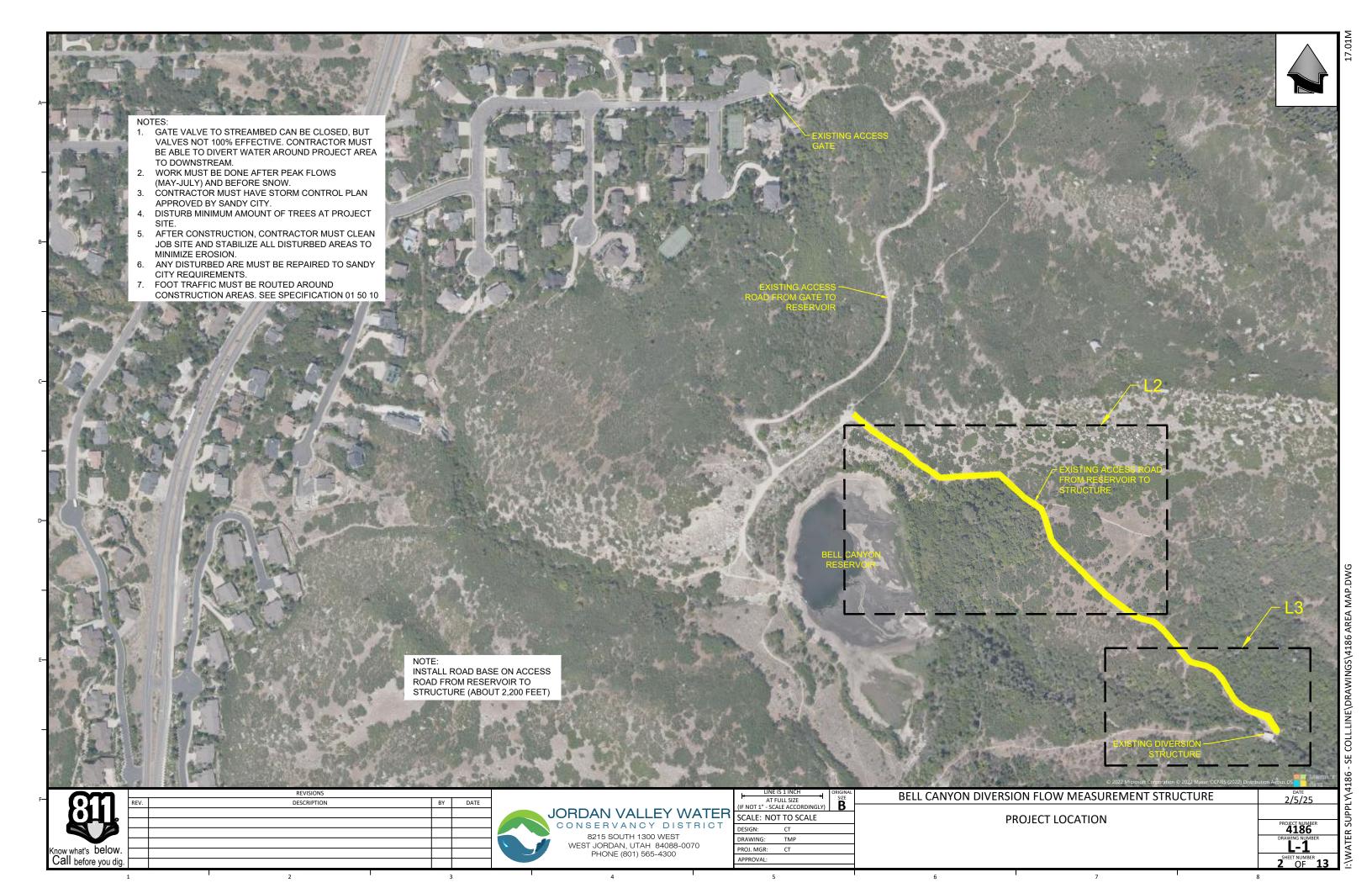
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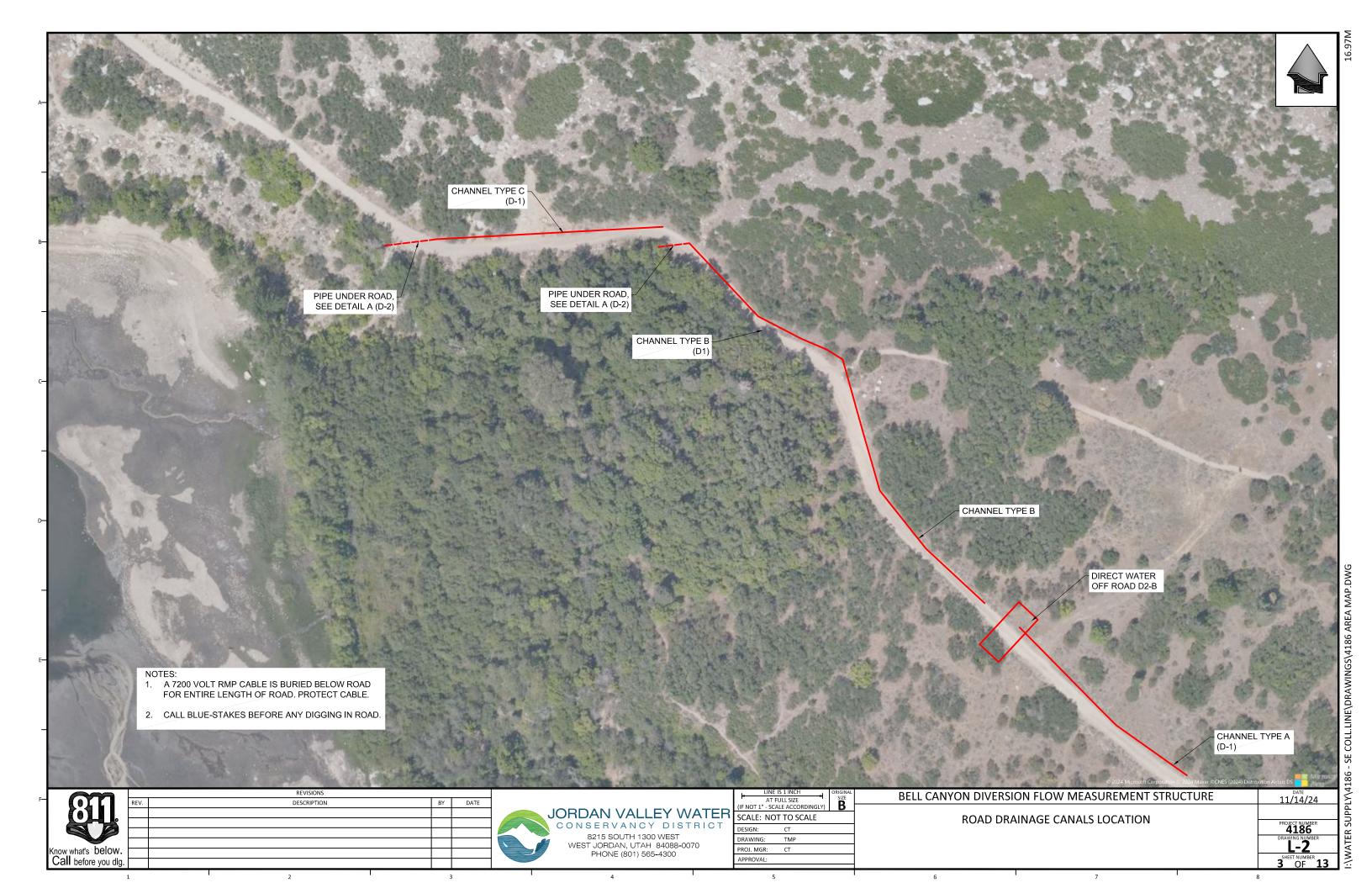
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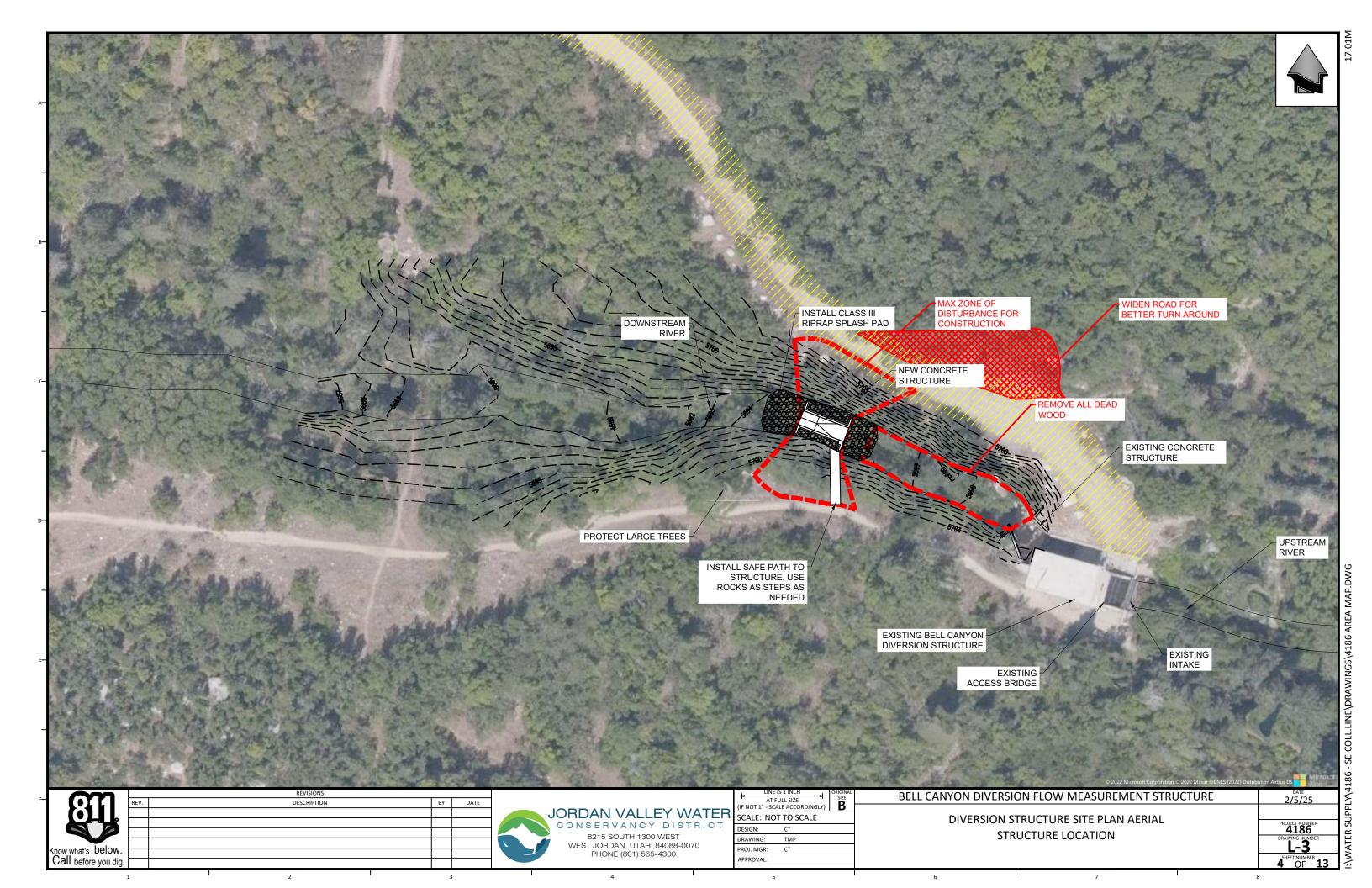
JORDAN VALLEY WATER
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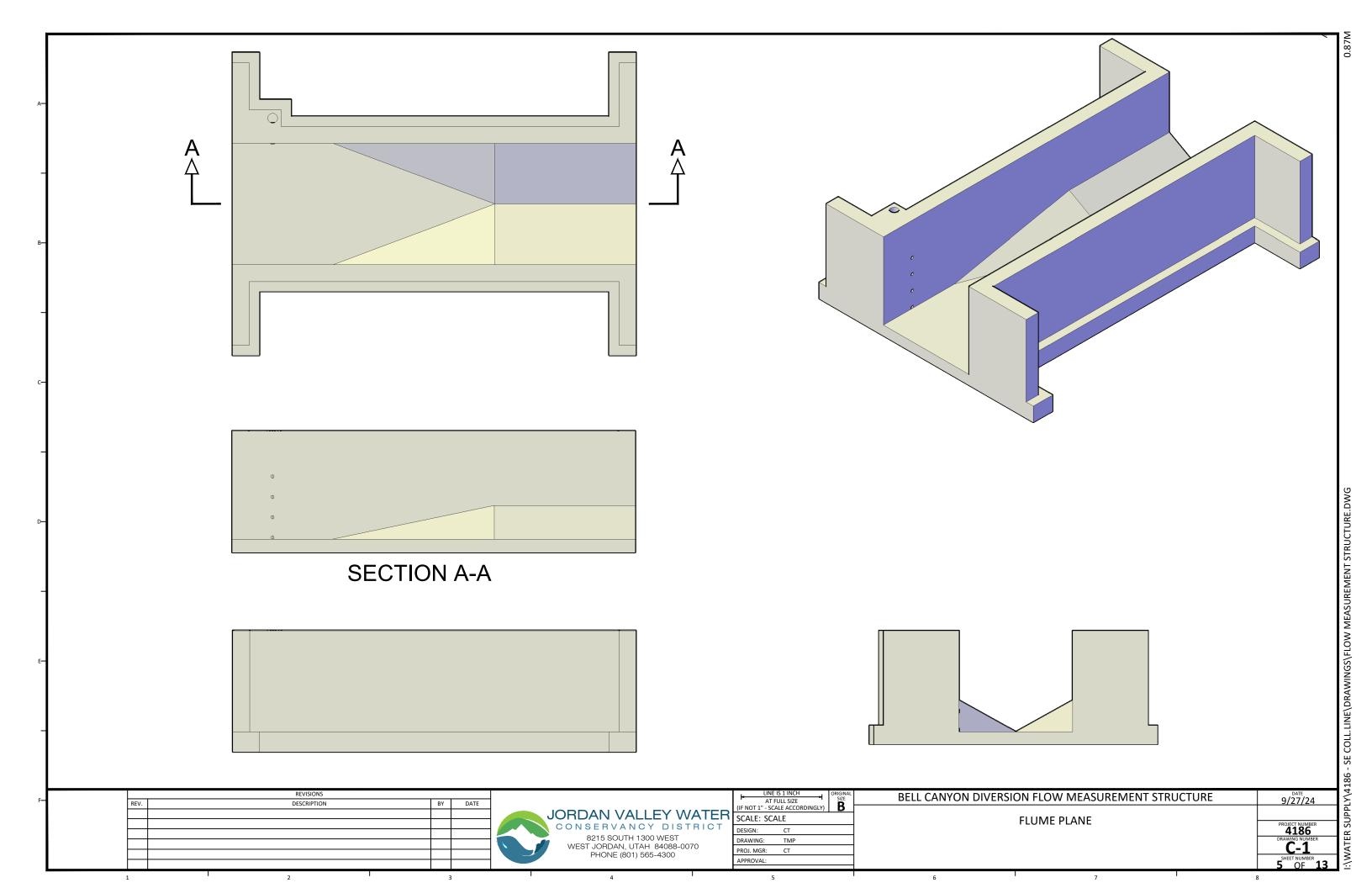
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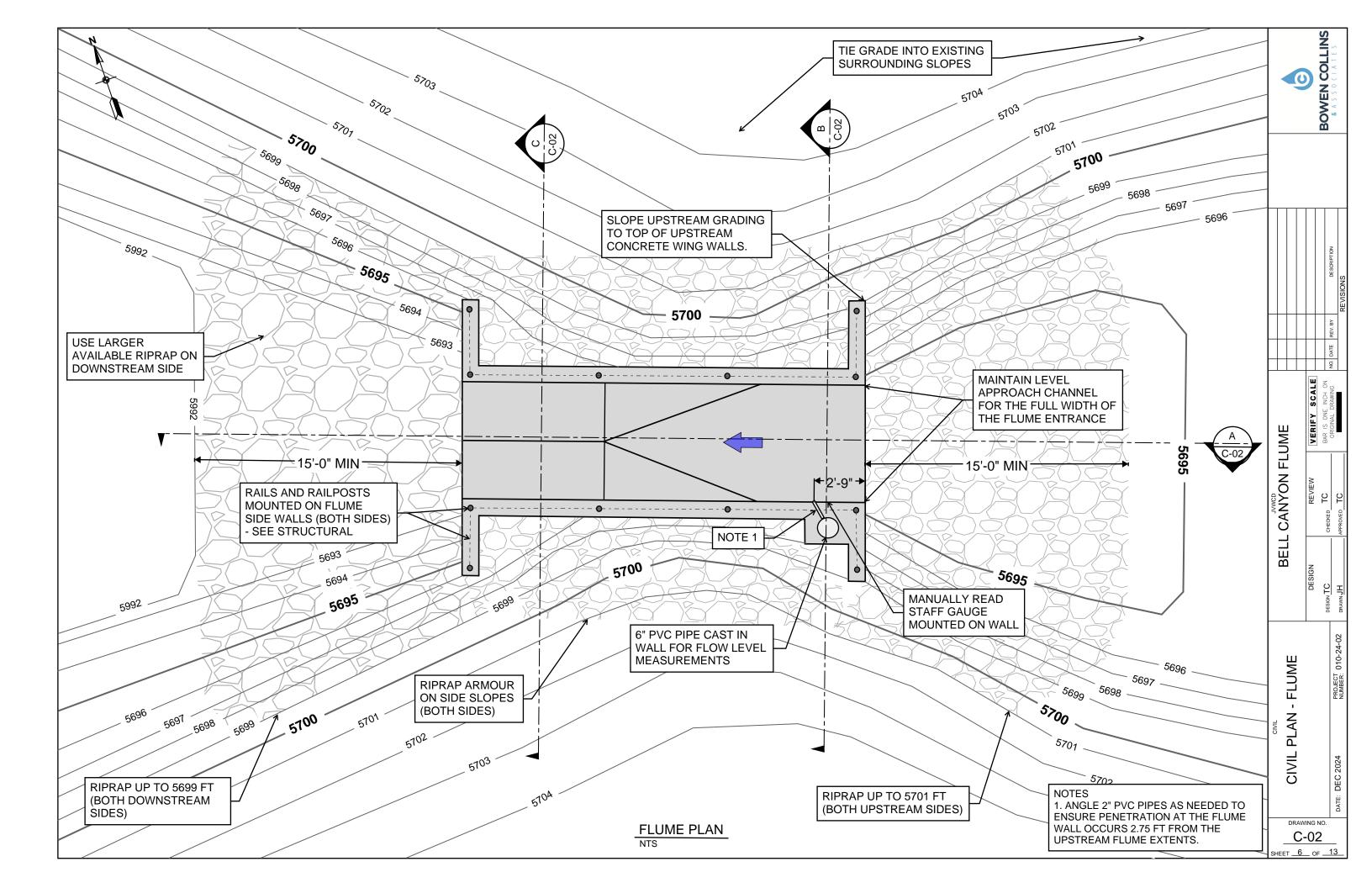
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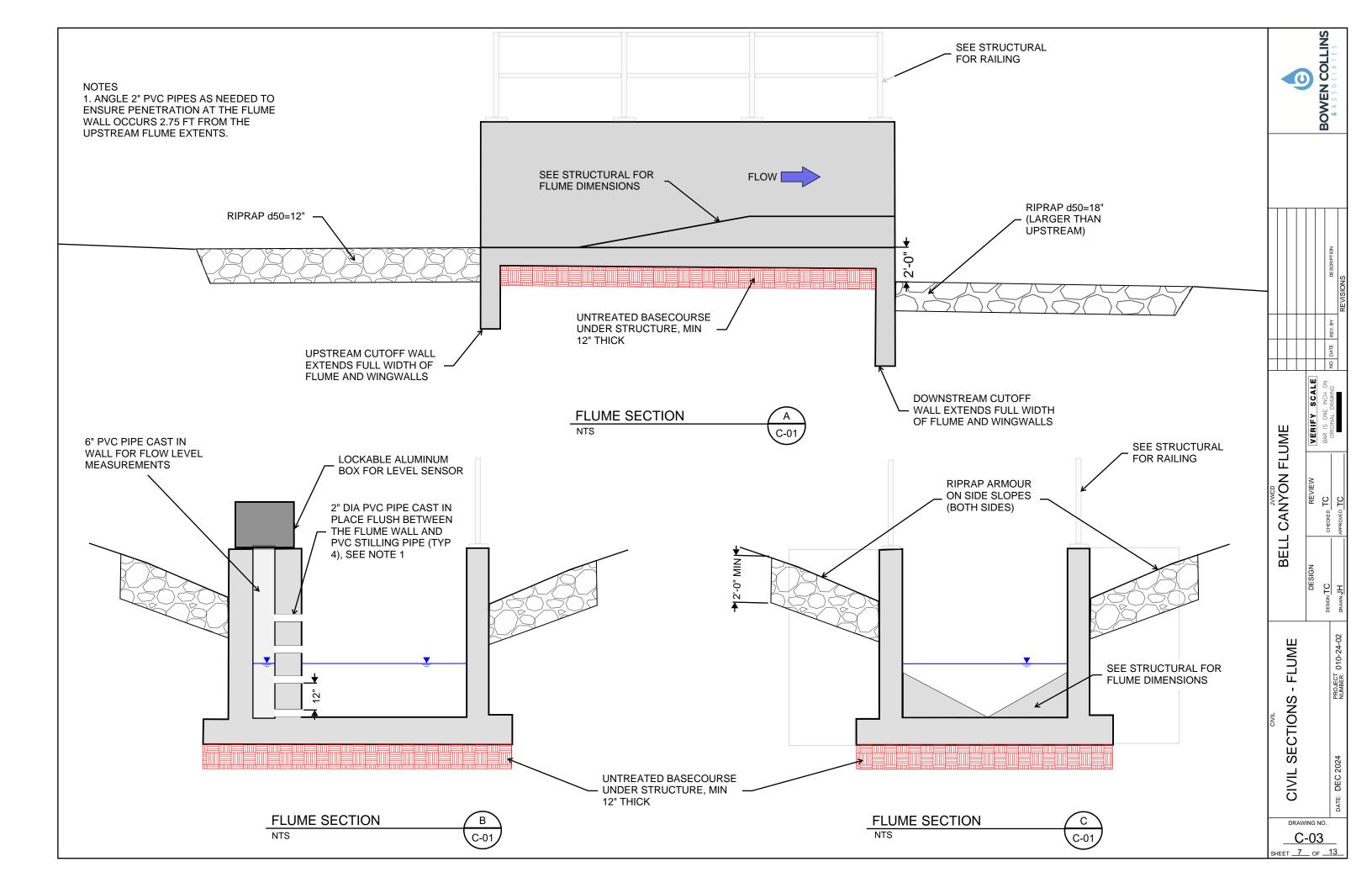


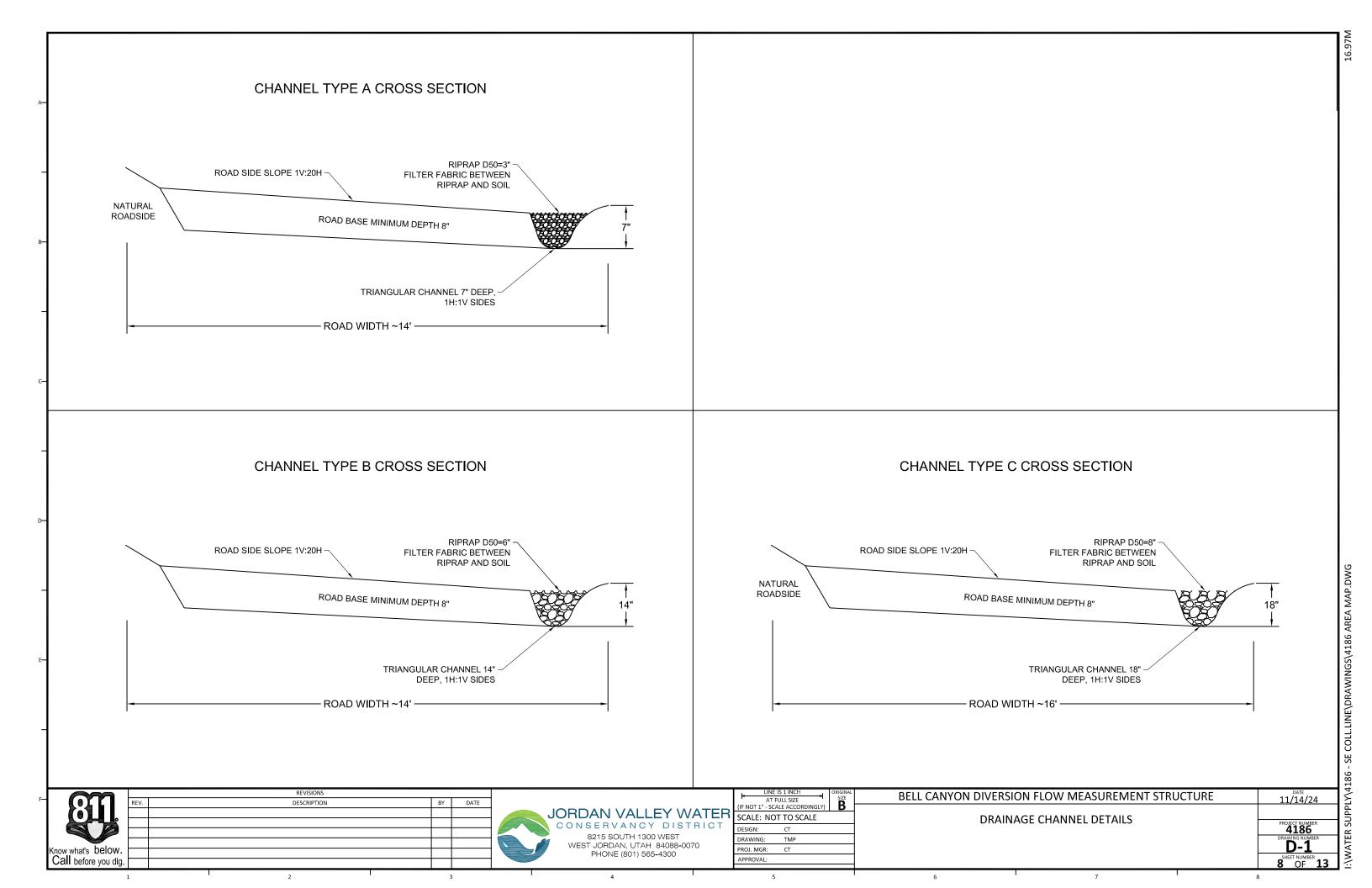


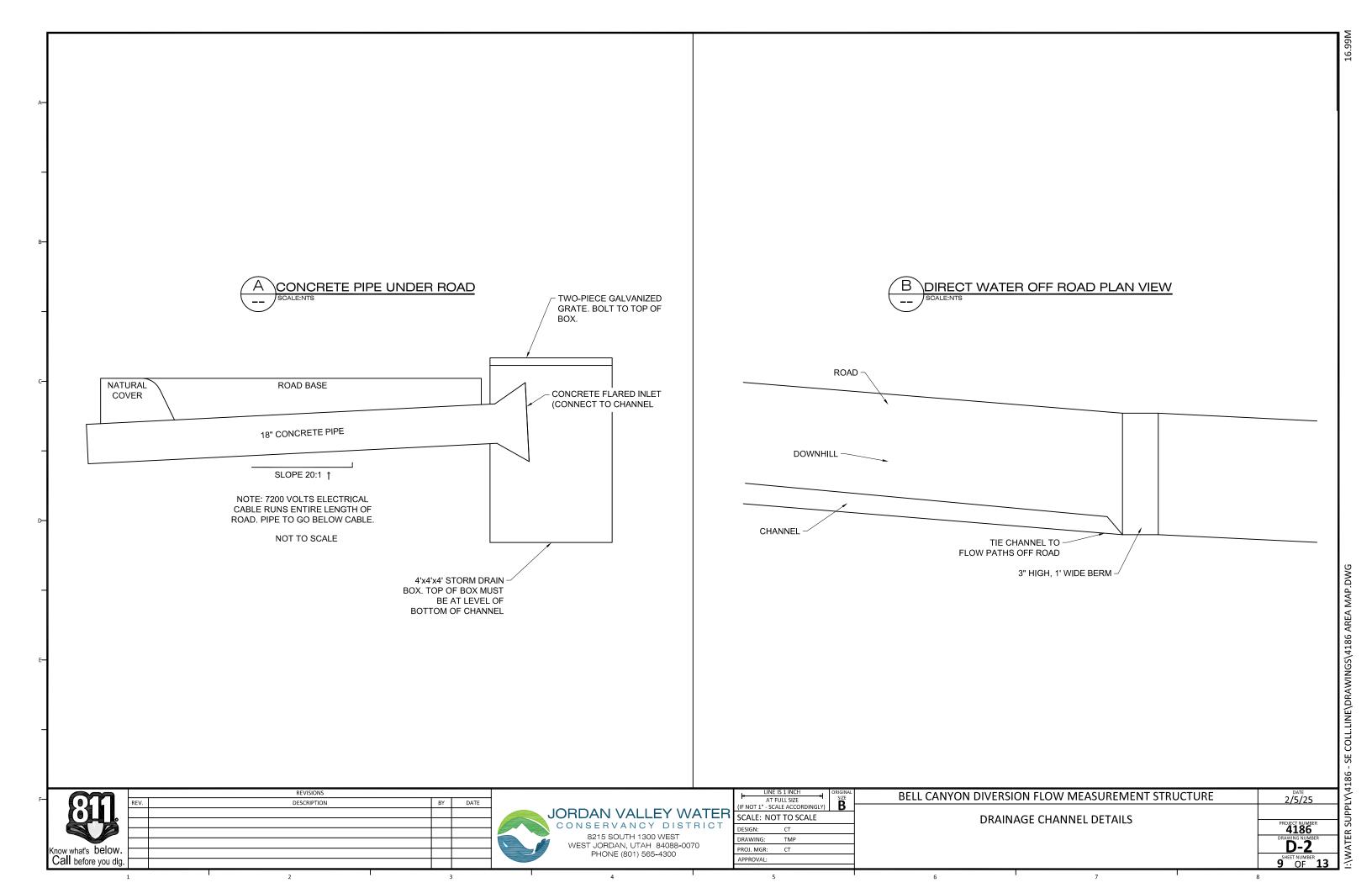


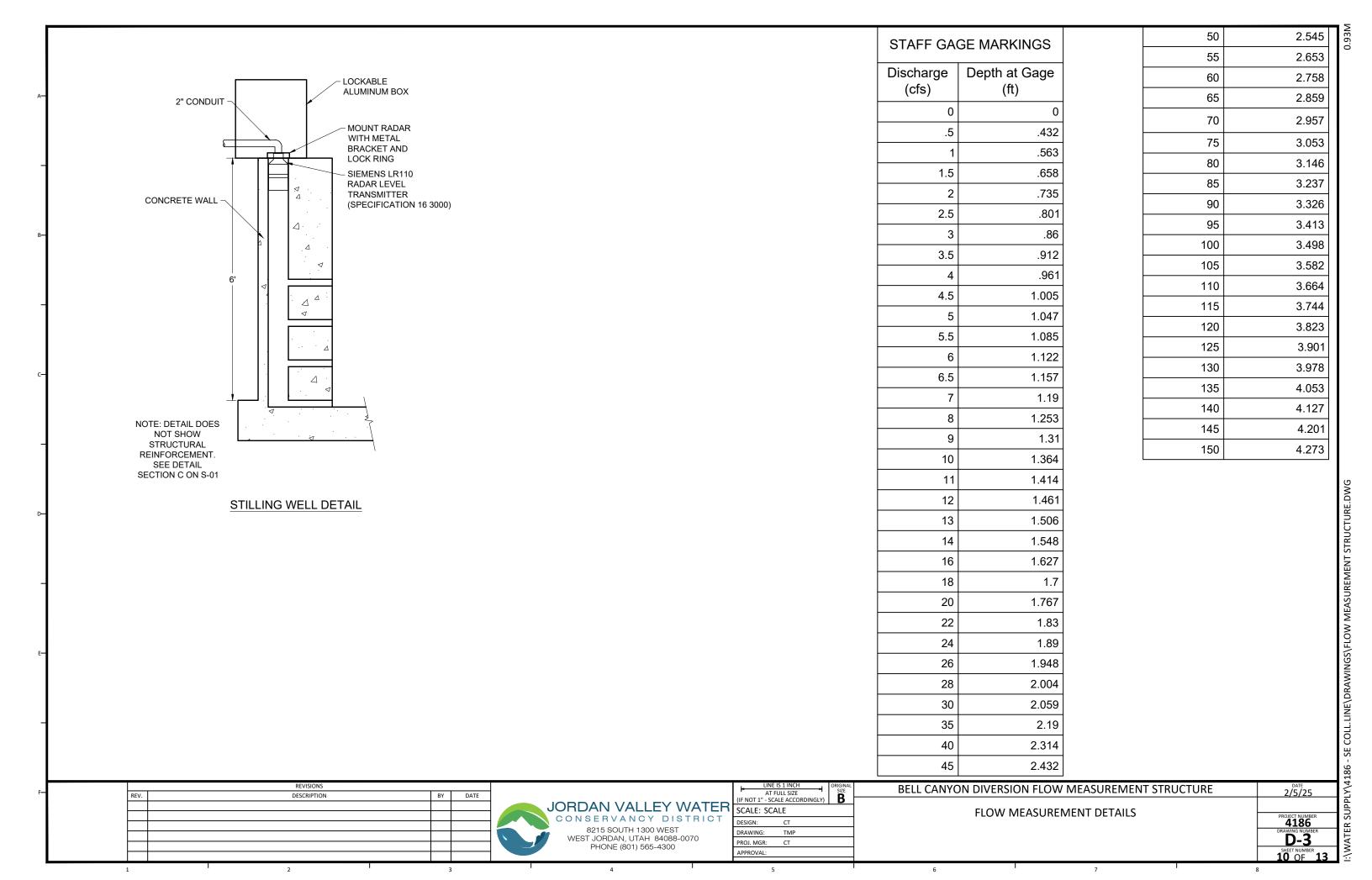


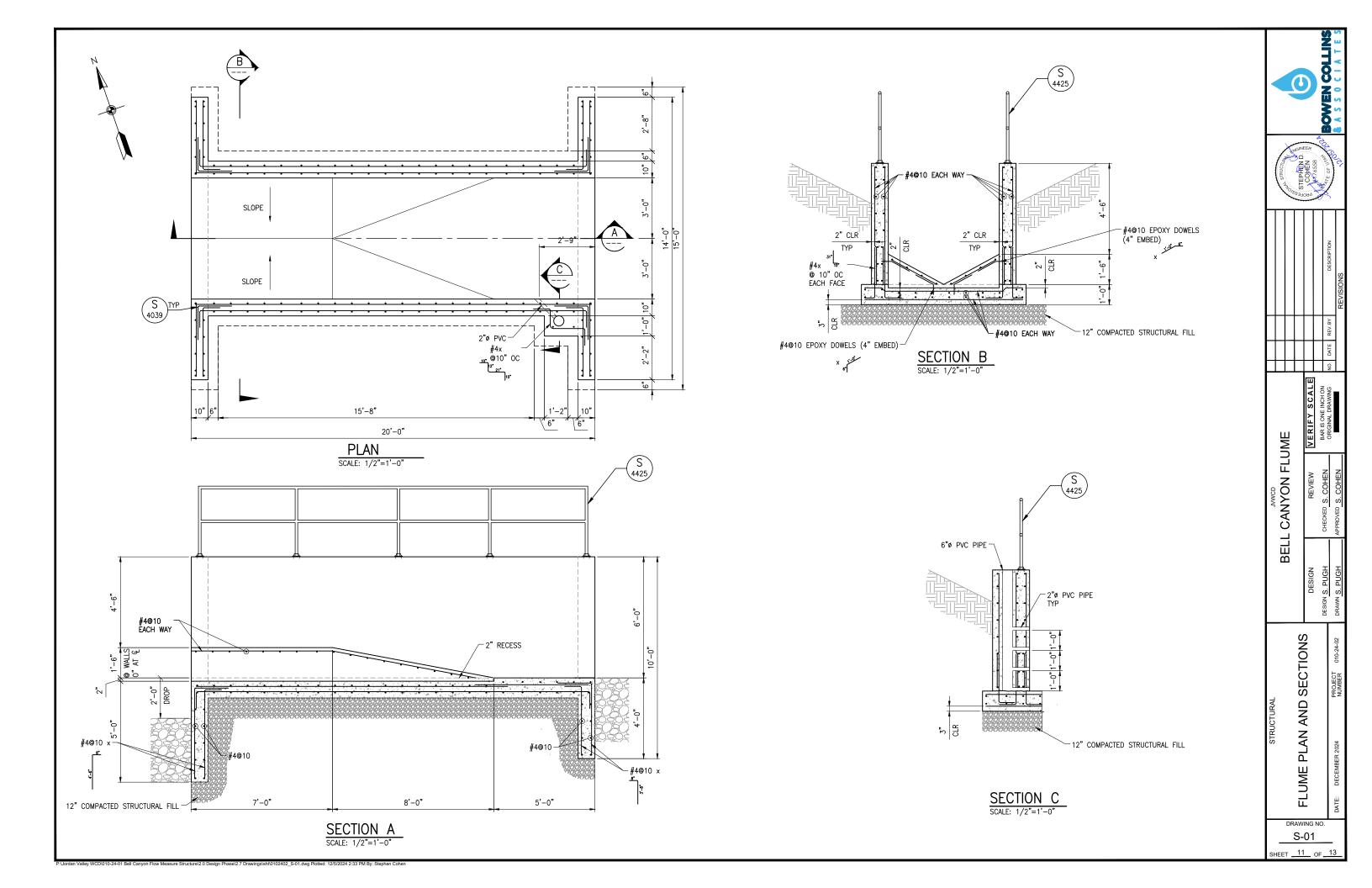












GENERAL STRUCTURAL NOTES

GENERAL

- 1 THE SPECIFICATIONS AND REQUIREMENTS INDICATED ON THIS SHEET ARE INTENDED AS A BASIC SUMMARY OF THE MATERIAL CONSTRUCTION AND INSPECTION REQUIREMENTS FOR THIS PROJECT. ADDITIONAL REQUIREMENTS ARE GIVEN IN THE PROJECT SPECIFICATIONS. IN THE EVENT OF A CONFLICT BETWEEN THESE GENERAL NOTES AND THE REQUIREMENTS GIVEN IN THE PROJECT SPECIFICATIONS, THE ENGINEER SHALL BE CONTACTED TO DETERMINE WHICH PROVISION GOVERNS
- 2. EMBEDDED ITEMS, SUCH AS PIPE SLEEVES SHALL ALL BE RIGIDLY INSTALLED IN PLACE BEFORE THE CONCRETE IS POURED. SEE CIVIL DRAWINGS FOR ITEMS REQUIRING SLEEVES AND EMBEDMENTS IN CONCRETE, WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS
- 3. NO STRUCTURAL MEMBER SHALL BE CUT FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER
- 4. DESIGN DETAILS AS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND APPLY TO ALL SIMILAR SITUATIONS OCCURRING ON THE PROJECT, WHETHER OR NOT THEY ARE SPECIFICALLY REFERENCED IN EACH LOCATION. CONSULT THE ENGINEER FOR CONCURRENCE PRIOR TO CONSTRUCTION.
- SUBMIT DRAWINGS AND RECEIVE REVIEW OF ALL STRUCTURAL RELATED SHOP DRAWINGS PRIOR TO ERECTION OR CONSTRUCTION.
- 6. APPLICABLE BUILDING CODE FOR THE PROJECT IS THE ACI 318-14, ANY CHANGES MADE DURING CONSTRUCTION TO THE APPROVED CONSTRUCTION DOCUMENTS SHALL BE APPROVED BY THE ENGINEER AND SHALL BE RESUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL AS AN AMENDED SET OF CONSTRUCTION DOCUMENTS.

SITE PREPARATION NOTES

- 1. NO GEOTECHNICAL INVESTIGATION HAS BEEN PREPARED FOR THIS PROJECT. SITE PREPARATION NOTES FOR THIS PROJECT ARE BASED ON TYPICAL REQUIREMENTS FOR PROJECTS WITH SIMILAR ASSUMED SOIL CONDITIONS AND SIMILAR CONSTRUCTION. IF DURING SITE PREPARATION, THE SUBSURFACE SOILS CONDITIONS ARE FOUND UNSUITABLE FOR THE PROPOSED CONSTRUCTION, MODIFICATIONS TO THESE RECOMMENDATIONS MAY BE NECESSARY, AS DIRECTED BY THE OWNER'S TESTING LABORATORY.
- 2. ALL SURFACE MATERIALS SUCH AS VEGETATION (INCLUDING THE ROOT ZONE), TOPSOIL, DEBRIS, NON-ENGINEERED FILL, BOULDERS LARGER THAN 12" AND ANY OTHER DELETERIOUS MATERIALS SHALL BE REMOVED FROM WITHIN THE BUILDING PAD AREA. THESE STRIPPED SOILS ARE CONSIDERED UNSUITABLE FOR STRUCTURAL FILL.
- 3. AFTER SURFACE MATERIALS HAVE BEEN REMOVED, THE EXPOSED SUBGRADE SHALL BE SCARIFIED TO A MINIMUM OF DEPTH OF 8 INCHES AND COMPACTED TO THE REQUIREMENTS OF STRUCTURAL FILL. IF SOFT OR LOOSE AREAS ARE ENCOUNTERED DURING THE SCARIEVING AND COMPACTION PROCESS. THEY MUST BE COMPLETELY REMOVED AND REPLACED WITH STRUCTURAL FILL TO A MAXIMUM DEPTH OF TWO FEET
- 4. ALL WALL FOOTINGS SHALL BE SUPPORTED UPON 12 INCHES OF STRUCTURAL FILL EXTENDING TO FIRM UNDISTURBED SOILS. IF FIRM UNDISTURBED SOILS BECOME LOOSE OR DISTURBED, THEY SHALL BE REMOVED AND REPLACED WITH COMPACTED STRUCTURAL FILL PRIOR TO PLACEMENT OF CONCRETE. THE OWNER'S TESTING LABORATORY SHALL OBSERVE THE NATURAL SOILS AT THE TIME OF FOOTING EXCAVATION, PRIOR TO PLACEMENT OF FORMWORK OR REINFORCING STEEL, TO DETERMINE THE SUITABLITIY OF THE UNDISTURBED SOILS FOR
- 5. STRUCTURAL FILL, IF REQUIRED, SHALL CONSIST OF GRANULAR SOILS CLASSIFIED AS GW, GP, SWISP IN ACCORDANCE WITH ASTMID 2487. THESE GRANLII AR SOILS SHALL CONSIST OF 6 INCH MINUS, CLEAN, GRANURAL SOIL WITH NO MORE THAN 30 PERCENT RETAINED ON THE 3/4" SIEVE AND NO MORE THAT 12 PERCENT PASSING THE #200 SIEVE.
- WHERE REQUIRED, STRUCTURAL FILL BELOW FOOTINGS AND BELOW SLAB ON GRADE SHALL BE PLACED IN MAXIMUM 8 INCH LOOSE LIFTS AND COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557 AND SHALL BE COMPACTED AT A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT.
- 7. COMPACTION OF STRUCTURAL FILL SHALL BE OBSERVED AND TESTED BY OWNER'S TESTING LABORATORY TO ENSURE THAT THE ABOVE REQUIREMENTS ARE ACHIEVED

FORMWORK, SHORING, AND BRACING

- 1. CONFORM TO ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK" FOR DESIGN AND CONSTRUCTION OF CONCRETE FORMWORK AND BRACING. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF FORMWORK AND BRACING.
- 2. STRUCTURES AS SHOWN ON THESE DRAWINGS INDICATE THE FINAL CONDITION ONLY AND DO NOT INCLUDE THE NECESSARY COMPONENTS OR EQUIPMENT FOR STRUCTURAL STABILITY DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR WORK RELATED TO CONSTRUCTION ERECTION METHODS, BRACING, SHORING, RIGGING, GUYS, SCAFFOLDING, FORMWORK, AND OTHER WORK AIDS REQUIRED TO SAFELY PERFORM THE WORK SHOWN

FOOTINGS

1. NO FOOTINGS SHALL BE PLACED IN WATER OR ON FROZEN GROUND.

CONCRETE

- 1. ALL CONCRETE CONSTRUCTION TO CONFORM TO ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE," INCLUDING BAR BENDS AND HOOKS UNLESS SPECIFICALLY DETAILED OTHERWISE ON THESE DRAWINGS
- 2. THE MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 4,500 PSI.
- 3. A STATEMENT OF MIX DESIGN FOR ALL CONCRETE SHALL BE SUBMITTED TO AND REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK

4. THE VARIOUS CONCRETE ITEMS ARE ASSIGNED TO THE FOLLOWING EXPOSURE CATEGORIES AND CLASSES PER SECTION 19.3 OF ACI 318-19

- 5. USE CEMENT CONFORMING TO ASTM C595, TYPE IL (10) (MS)
- 6. ALL CONSTRUCTION JOINTS, EXPANSION JOINTS, AND OTHER TYPES OF JOINTS, OTHER THAN THOSE SPECIFICALLY SHOWN ON THE DRAWINGS TO BE APPROVED BY THE ENGINEER PRIOR
- 7. PROVIDE 3/4-INCH CHAMFER AT ALL EXPOSED EDGES AND CORNERS UNLESS NOTED
- 8 BEFORE PLACING THE SECOND POUR AT CONSTRUCTION JOINTS REMOVE LAITANCE THOROUGHLY CLEAN AND ROUGHEN ALL JOINT SURFACES TO A MINIMUM AMPLITUDE OF 1/4
- 9. UNLESS NOTED OTHERWISE ON THE DRAWINGS, REINFORCE CONCRETE WALLS AS FOLLOWS:

VERT REINF HORIZ REINF #4 @ 10" EACH FACE #4 @ 10" EACH FACE 10" WALL

REINFORCEMENT STEEL

- 1. PROVIDE REINFORCEMENT STEEL CONFORMING TO ASTM A615, GRADE 60.
- 2. DIMENSIONS GIVEN FOR REINFORCING BARS ARE TO BAR CENTERS LINI ESS NOTED OTHERWISE. BAR COVER IS THE CLEAR DISTANCE BETWEEN BAR AND CONCRETE SURFACE CLEARANCE FOR REINFORCEMENT BARS PER THE FOLLOWING UNLESS SHOWN OTHERWISE

WHEN PLACED AGAINST GROUND FORMED SURFACES IN CONTACT WITH THE GROUND OR EXPOSED TO THE WEATHER

- 3. CONTINUE WALL CORNER AND WALL INTERSECTION REINFORCEMENT BARS AROUND CORNERS AND THROUGH COLUMNS OR PILASTERS. EXTEND REINFORCEMENT INTO CONNECTING WALLS AND LAP ON THE OPPOSITE FACE OF THE CONNECTING WALLS.
- 4 UNI ESS OTHERWISE NOTED, ALL HOOKS SHOWN ARE 90° STANDARD HOOK AS DEFINED IN ACI 318-19
- 5. LAP VERTICAL WALL BARS WITH DOWELS FROM BELOW AND EXTEND THROUGH SLABS ABOVE TO TOP FACE. BEND AND/OR LAP TO TOP SLAB REINFORCEMENT AS INDICATED.
- 6. UNLESS OTHERWISE INDICATED, CONTRACTOR MAY SPLICE CONTINUOUS SLAB OR LONGITUDINAL BEAM BARS AT LOCATIONS OF HIS CHOOSING, EXCEPT THAT TOP BAR SPLICES ARE TO BE LOCATED AT MIDSPAN AND BOTTOM BAR SPLICES ARE TO BE LOCATED AT SUPPORTS. MINIMUM LAP REQUIREMENTS ARE AS FOLLOWS UNLESS OTHERWISE INDICATED.

LAP LENGTHS* – CONCRETE								
BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE DESIGN STRENGTH = 4500 PSI								
LAP LENGTH	1'-7"	2'-0"	2'-4"	3'-4"	3'-9"	4'-10"	5'-9"	7'-0'
ASSUMES 2" MINIMUM CLEARANCE TO SURFACE								

LOADING CRITERIA

1. LATERAL EARTH PRESSURE (EFP) TRAFFIC SURCHARGE 2 FT OF FARTH HYDROSTATIC FLUID PRESSURE

2. ALLOWABLE SOIL BEARING CAPACITY 1 500 PSF

62.4 PCF

MANUFACTURER'S STD

SPECIAL INSPECTIONS

- 1. SPECIAL INSPECTION IN ACCORDANCE WITH APPROPRIATE SECTIONS OF IBC 2021, CHAPTER 17 IS REQUIRED FOR THE PROJECT
- 2. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE, TO THE BUILDING OFFICIAL AND THE
- 3. A CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION SHALL BE COMPLETED AND SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO ERECTION OF PREFABRICATED COMPONENTS. SPECIAL INSPECTION REQUIRED PER IBC SECTION 1704.2
- 4. SPECIAL INSPECTION ITEMS REQUIRED PER LIST BELOW. CONTINUOUS OR PERIODIC INSPECTIONS IS DESIGNATED WITH A (C) OR (P).

CONCRETE: (TABLE 1705.3, 2021 IBC)

- A. PLACING REINFORCEMENT STEEL.
- WELDING REINFORCEMENT STEEL (IF APPROVED BY ENGINEER) PLACING ANCHOR BOLTS AND EMBEDDED PLATES.
- D. VERIEY APPLICABLE CONCRETE MIX BEING USED
- SAMPLING CONCRETE FOR STRENGTH TESTS. F. CURING TECHNIQUES AND APPLICATION.
- SOILS: (IBC TABLE 1705.6)

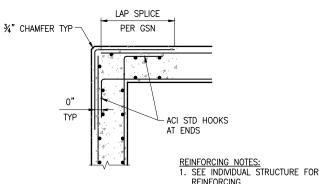
 A. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE FOR FOOTING SUPPORT.--

- E. PRIOR TO PLACEMENT OF COMPACTED FILL OBSERVE SUBGRADE
- AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY. VERIFY PROPER USE OF COMPACTED FILL INCLUDING PROPER MATERIALS, COMPACTION DENSITIES AND LIFT THICKNESS.

STRUCTURAL OBSERVATION

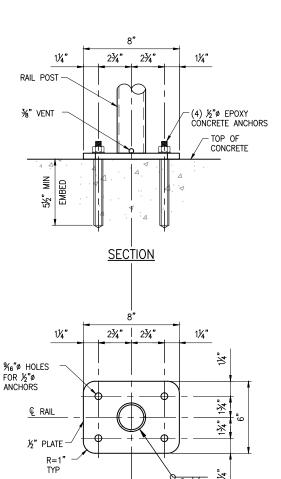
BOWEN COLLINS & ASSOCIATES SHALL BE NOTIFIED BY THE CONTRACTOR 5 BUSINESS DAYS BEFORE THE COMPLETION OF THE ITEMS LISTED IN THIS SECTION SO THAT STRUCTURAL OBSERVATION MAY BE PERFORMED IN ACCORDANCE WITH IBC SECTION 1704.5. THE OBSERVATIONS WILL BE PERFORMED AT THE DISCRETION OF BOWEN COLLINS & ASSOCIATES COMPLETED OBSERVATION REPORTS WILL BE SUBMITTED TO THE BUILDING OFFICIAL.

1. REBAR PRIOR TO CONCRETE PLACEMENT



2. DETAIL IS TYPICAL AT ALL CONCRETE CORNERS AND INTERSECTIONS UNLESS SHOWN OTHERWISE

WALL REINFORCING AT CORNERS



<u>PLAN</u>

TWO-RAIL GUARDRAIL

3. PLACE RAIL POSTS OPPOSITE EACH OTHER WHEN POSSIBLE AND WHERE GUARDRAILS ARE PARALLEL

4. ALL GUARDRAILS ARE FIXED UNLESS OTHERWISE NOTED ON DRAWING

6. RAILS FOR THIS PROJECT ARE TO BE HOT-DIP GALVANIZED STEEL

5. ALL JOINTS IN STEEL RAIL SHALL BE COPED, WELDED, AND GROUND SMOOTH

MANUFACTURER'S STD HEAVY

OR DETAIL S/4437 W/ (4) ½"ø GALV ANCHORS.

RAILING ANCHORAGE

FLUME CANYON

FL

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GENERAL DRAWING NO GS-01 SHEET 12 OF 13

4437

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