## CONSTRUCTION

OF

# GULF COAST CANAL CLAYBAR SIPHON

### **FOR**

## SABINE RIVER AUTHORITY

## ORANGE COUNTY, TEXAS

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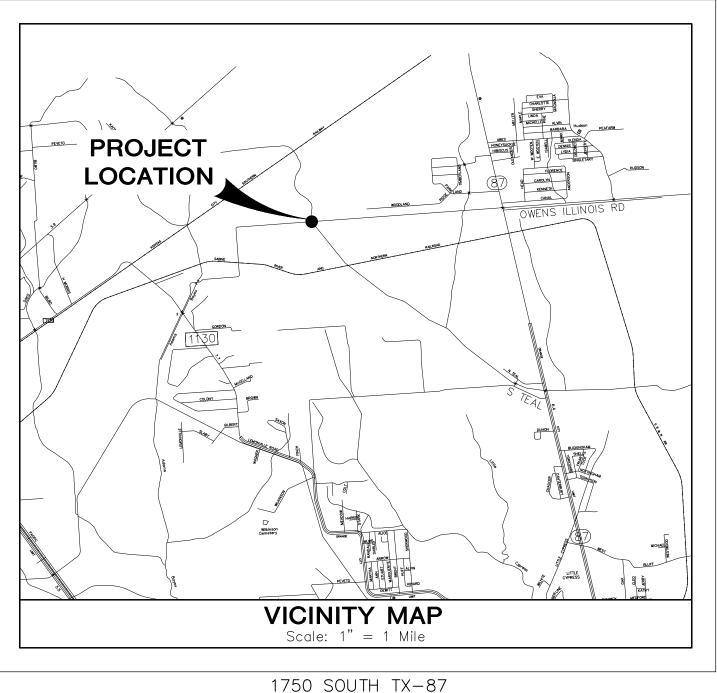
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ORANGE, TEXAS 77630

ONE-CALL NOTIFICATION SYSTEM
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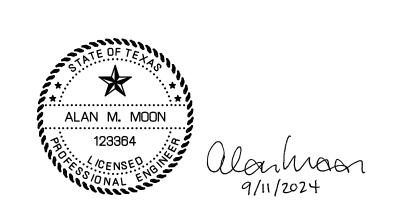
(713) 223-4567 (in Houston)

(New Statewide Number Outside Houston)

1-(800) 344-8377

**AUGUST 2024**QUIDDITY JOB No. 17314-0004-01





SHEET No.

1 OF 19

#### GENERAL CONSTRUCTION NOTES:

- 1. All work performed shall comply with current National specifications and standard practices, approved project plans and specifications and all applicable City and County standards, codes and ordinances.
- 2. Upon completion of all construction projects, the Contractor shall restore existing facilities (i.e. property) to equal or better than original site conditions prior to construction.
- The Contractor shall furnish all materials, equipment, and labor for this
  project. The Contractor shall furnish all materials, equipment, excavation,
  installation and backfilling of raw water conveyance siphons and related
  appurtenances as shown on the plans and/or described in the
  specifications.
- The loading, unloading and handling of all pipes, appurtenances, and other accessories shall be in accordance with the manufacturer's recommended practices and shall at all times be performed with care to avoid any damage to the material. The Contractor can use SRA property for storage areas for materials and equipment.
- 5. The Contractor shall be responsible for safeguarding and protecting all material and equipment stored on the job site. The Contractor shall be responsible for the storage of materials in a safe and workmanlike manner to prevent injuries, during and after working hours, until project completion.
- 6. The Contractor shall provide sheeting, shoring and bracing necessary to protect workmen and existing utilities during all phases of construction, as may be required by O.S.H.A., Federal, State and local laws, codes and ordinances.
- 7. All testing procedures used on this project shall conform to specifications. The testing expenses shall be borne by the Contractor. Should any test results not meet the testing standards, it is the Contractor's responsibility to remove or replace such materials and installations so that testing standards are met. Additional testing to certify compliance with testing standards shall be at the Contractor's sole expense.
- 8. The approximate location of existing utilities are given for reference only. Before commencing the work on this contract, the Contractor shall verify by field investigation the actual locations of all utility facilities within and adjacent to the limits of the work that may be affected by the project work. The Contractor shall be responsible prior to excavation to determine if conflicts exist. The Contractor shall notify the Project Manager or Authority at once of any conflict prior to commencing any construction. Conflicts which result due to negligence by the Contractor to locate, horizontally and vertically, existing utilities which are shown on the construction drawings, or which the Contractor has been given notice or has knowledge, shall be the sole responsibility of the Contractor. The cost of remedial work, removal of portions of the work or extensive design changes occasioned by the failure of the Contractor to verify the location of existing utilities as described above shall be borne by the Contractor.
- 9. The Contractor shall be fully responsible for any and all damage to existing public or private utility lines, including but not limited to paving, water lines, wastewater collection systems, storm sewer and traffic signals during construction. All damages shall be repaired in accordance with current editions of applicable governing entity. Repairs shall be at no cost to the Sabine River Authority.
- The Contractor shall not unload any track—type construction machinery on any existing pavement or cross over any existing pavement or curb during any project.
- The Contractor shall provide the Engineer detailed "Record Drawings," in reproductive form, upon completion of a project prior to final payment.
- The Contractor shall give notification to the Sabine River Authority for inspection of work in a timely manner. No completed work will be covered without approval. Contractor shall notify the following forty—eight (48) hours prior to beginning construction:

   Quiddity Engineering (713) 777—5337
- B. Sabine River Authority (409) 746—2111
- 13. Contractor shall notify all utility companies in the area at least 72 hours prior to commencing work in any right—of—way or existing easement. A verification number from the one—call utility coordinating committee is
- A. Texas811 (dia test) 1 (800) 344—8377
- B. CenterPoint Energy Natural Gas (713) 659-2111, 1 (800) 752-8036
- C. Entergy Power 1 (800) 368-3749
- D. AT&T Texas/SWBT 1 (800) 344-8377
   E. Drainage District (409) 745-3004
- 15. The Contractor shall hold harmless the Sabine River Authority and all its representatives from all suits, actions, or claims, of any character, brought on account of any injuries or damages sustained by any person or property in consequence of any neglect in safeguarding the work or through the use of unacceptable material in the construction of the improvements, or on account of any act of omission by the said Contractor. The Contractor shall not be released from said responsibility until the project shall have been completed and accepted, and so much of the money due the Contractor under and by virtue of his contract may be retained by the City or his surety may be held until such claims have been settled and suitable evidence to that effect furnished to the Authority.
- 16. Unless specifically authorized by the Owner, Contractor shall confine all work efforts within the designated area. Contractor shall exercise extreme care near adjacent property to protect any existing trees, structures, fences, and other existing features. Contractor shall be responsible for adequately protecting existing structures, utilities, trees, and other adjoining facilities and property, and repair and replace due to damage caused by Contractor at Contractor's sole expense. Restoration shall be as good as or better than prior to starting work.

#### GENERAL CONSTRUCTION NOTES CONT.:

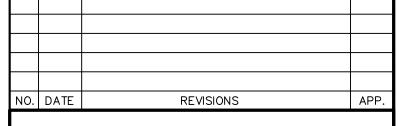
- 17. Owner shall provide horizontal and vertical control monuments. Contractor shall be responsible for construction staking for project.
- 18. These plans, prepared by Quiddity Engineering, do not extend to or include the designs or systems pertaining to the safety of the Contractor or its employees, agents, or representatives in the performance of the work. The seal of the Registered Professional Engineer hereon does not extend to any such systems that may now or hereafter be incorporated in these plans. The Contractor shall prepare or obtain appropriate safety systems, including the plans and specifications required by House Bill 1569, as currently amended, enacted by the Texas Legislature and current O.S.H.A. Standards for Trench Safety.
- 19. Prior to bidding the project, the Contractor shall inspect the site and satisfy himself that conditions of the site of this project are acceptable for construction.
- 20. Extra bank sand as directed by Engineer shall be from an approved source. Use sand that is free from clay lumps, organic or other deleterious material, and having a plasticity index of four (4) or less.
- 21. Access to driveways must be maintained during construction.
- 22. No open trenches are to be left unattended overnight.
- 23. Any excess soil that is not hauled off may be used as fill for ruts and backfill to reshape drainage ditch, any fill shall be placed and graded to facilitate drainage, existing surface drainage shall not be impaired.
- 24. All material such as trees, dirt, shrubs, roots, broken concrete asphalt, and other debris encountered and removed during construction shall become the property of the Contractor and shall be disposed of by Contractor at Contractor's expense. All excess spoils shall be disposed of by the Contractor, at no separate pay.
- 25. All siphon pipe and other drainage facilities shall be protected from damage during construction operations, culverts, etc. Damage as a result of Contractor's negligence shall be replaced at Contractor's expense.
- 26. Ingress and egress adjacent to the project shall be maintained by the Contractor at all times. The Contractor will be responsible for keeping mud and debris off existing public streets adjacent to the site. The Contractor shall be responsible for closing and securing all access gates when entering and leaving site.
- 27. The Contractor shall be responsible for coordinating all material testing required for the project through an Owner approved testing laboratory. The Owner shall pay for all material testing.

#### **UTILITY CONSTRUCTION NOTES:**

- 1. Contractor shall include cost of shoring in bid price for trench safety.
- 2. Trench safety boxes shall not be placed in pipe zone.
- 3. Existing overhead power poles and support guy wires exist along project alignment. Where a guy wire impedes the path of construction, the Contractor shall brace the existing power pole and temporarily relocate the guy wire. This work shall be coordinated with the appropriate utility company. This work is incidental to the contract.
- 4. Working hours shall be from 7:00 a.m. to 6:00 p.m. Monday through Friday. The Contractor shall request approval of the Engineer a minimum of 48—hours prior to working on the weekends and/or holidays.
- 5. Establishment of control points will be provided by the Owner or their representative. Alignment, centerline curve data, and stationing to be determined from approved recorded plat or road right—of—way. The Contractor will be responsible for coordinating this work with the field project representative.
- The Contractor shall return all existing paving and driveways to original or better condition at no additional cost to the owner unless otherwise noted or specifically called out as a pay item.
- 7. No discharge of groundwater into the raw water canal shall be allowed.

#### FILL/GRADING NOTES:

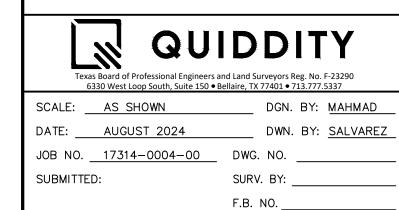
- General Contractor and all subcontractors shall verify the suitability of all existing and proposed site conditions including grades and dimensions before start of construction. The Engineer shall be notified immediately of any discrepancies.
- 2. Before starting construction, Contractor shall verify benchmark elevation and notify Engineer of any discrepancy and/or conflict that is found.
- 3. Contractor shall protect all manhole covers, valve covers, vault lids, fire hydrants, power poles, guy wires, telephone boxes that are to remain in place and undisturbed during construction.
- 4. All existing concrete paving, sidewalk, and curb demolition shall be removed and disposed of by Contractor. Disposal shall be at an approved off—site, lawful location, unless directed otherwise by the Owner.
- 5. Areas that are to receive fill shall be prepared as follows (No Separate Pay):
  - A. Areas that are to receive fill will be stripped to a depth of 3". Strippings shall be stockpiled and then spread evenly on surface
- B. Prior to placement of fill on stripped areas, the Contractor shall proof roll using a pneumatic roller (12 ton or approved equal) (No Separate Pay). Should soft unstable areas appear, the Contractor shall remove unstable material as directed by the Engineer. The Contractor shall replace this with a suitable material compacted as required (No Separate Pay for a depth up to 1.5 foot).
- C. Fill shall be placed in maximum loose lifts of eight inches (8") or less and compacted to a minimum density of 95% using AASHTO Standard Method T-99.



SABINE RIVER AUTHORITY
ORANGE COUNTY, TEXAS

GULF COAST CANAL-CLAYBAR SIPHON

GENERAL CONSTRUCTION NOTES

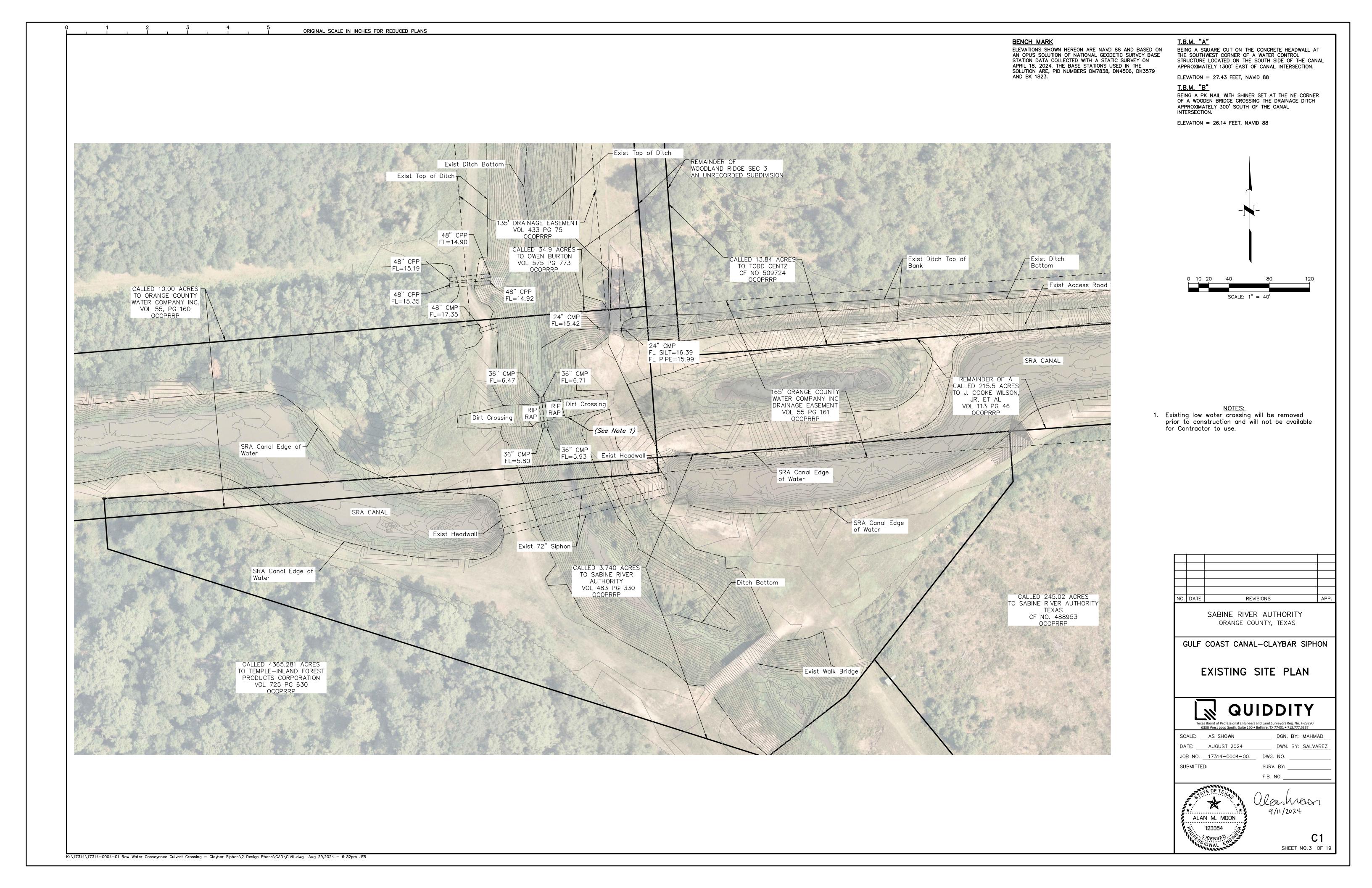


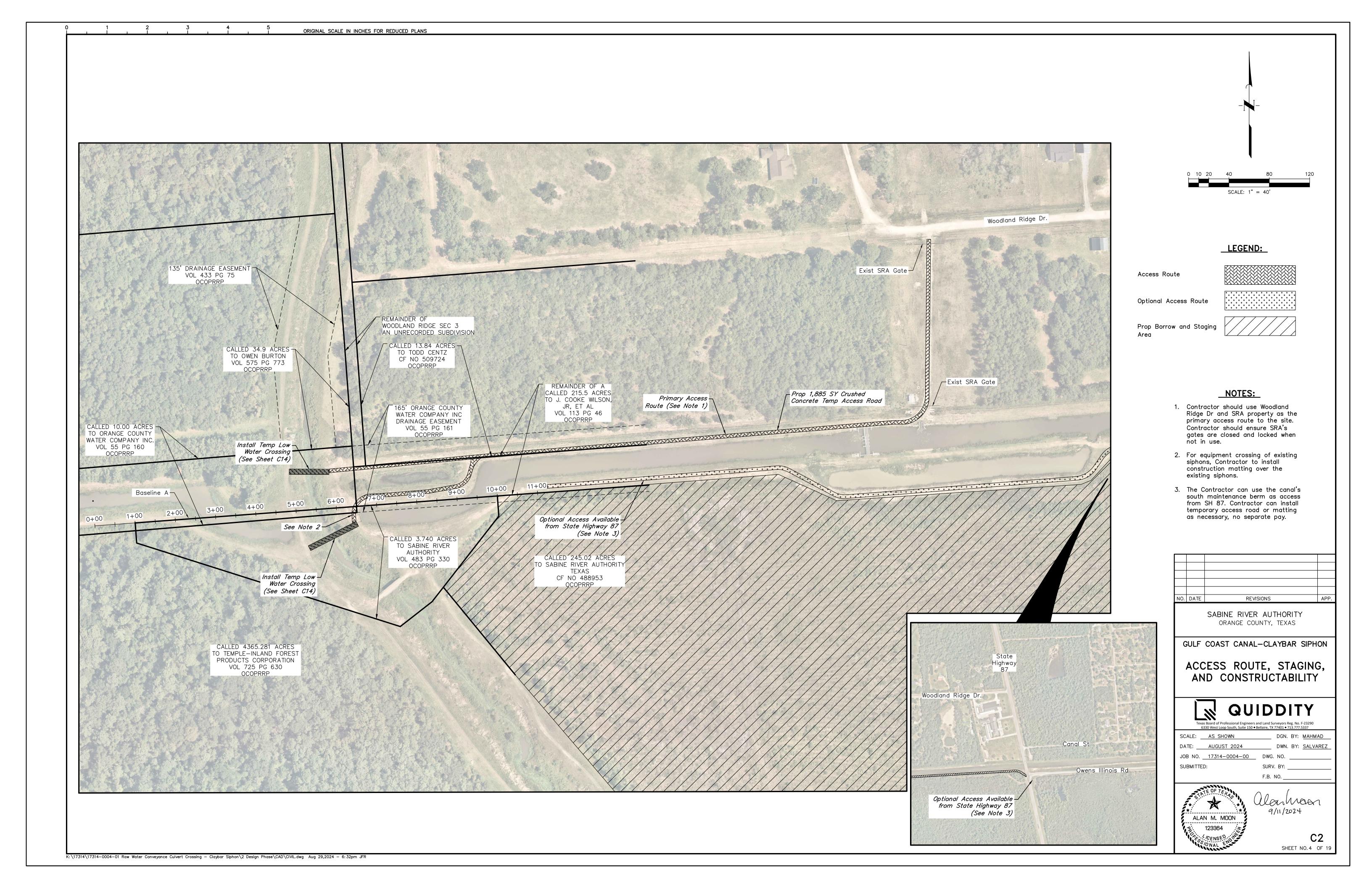


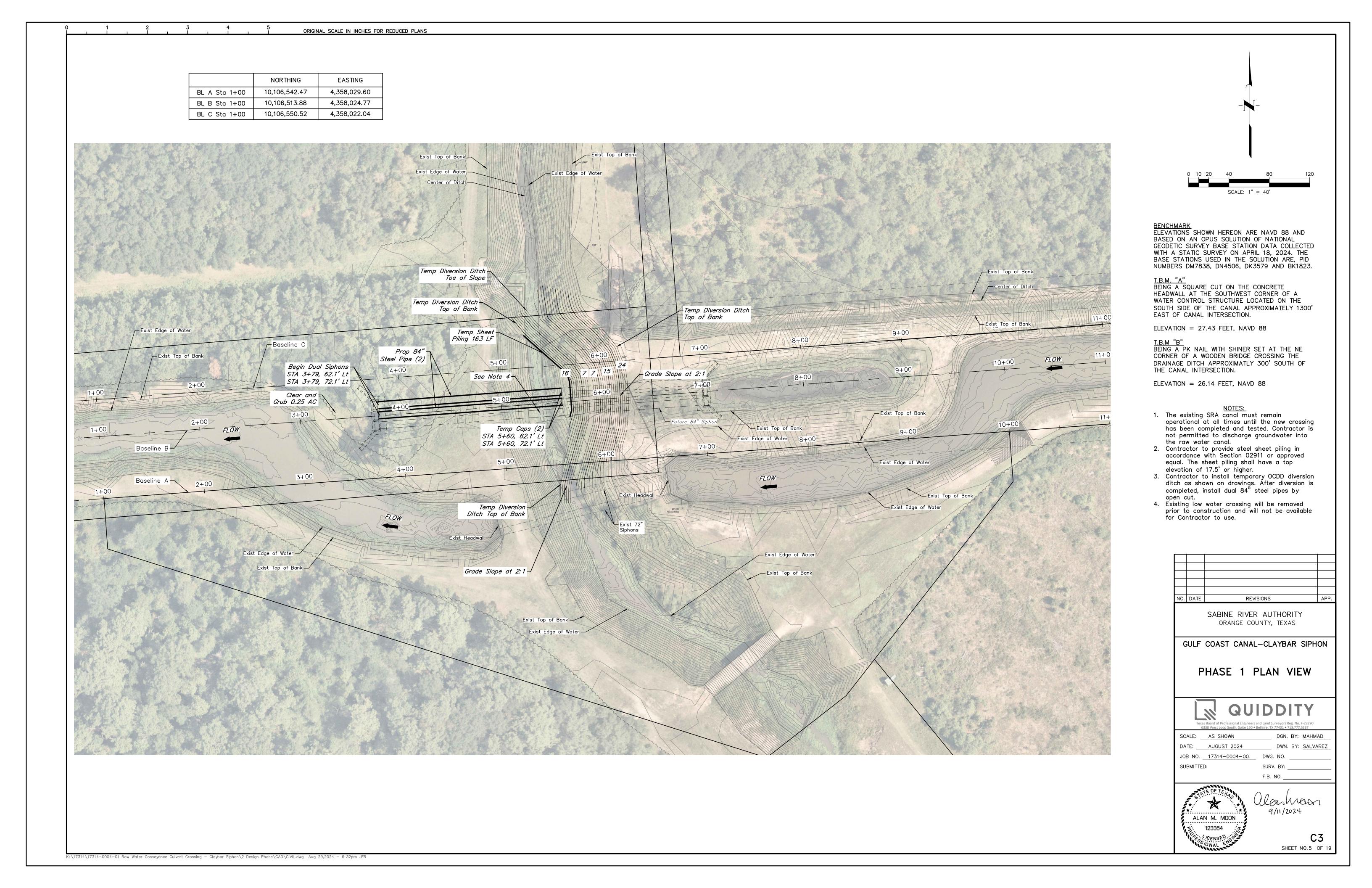
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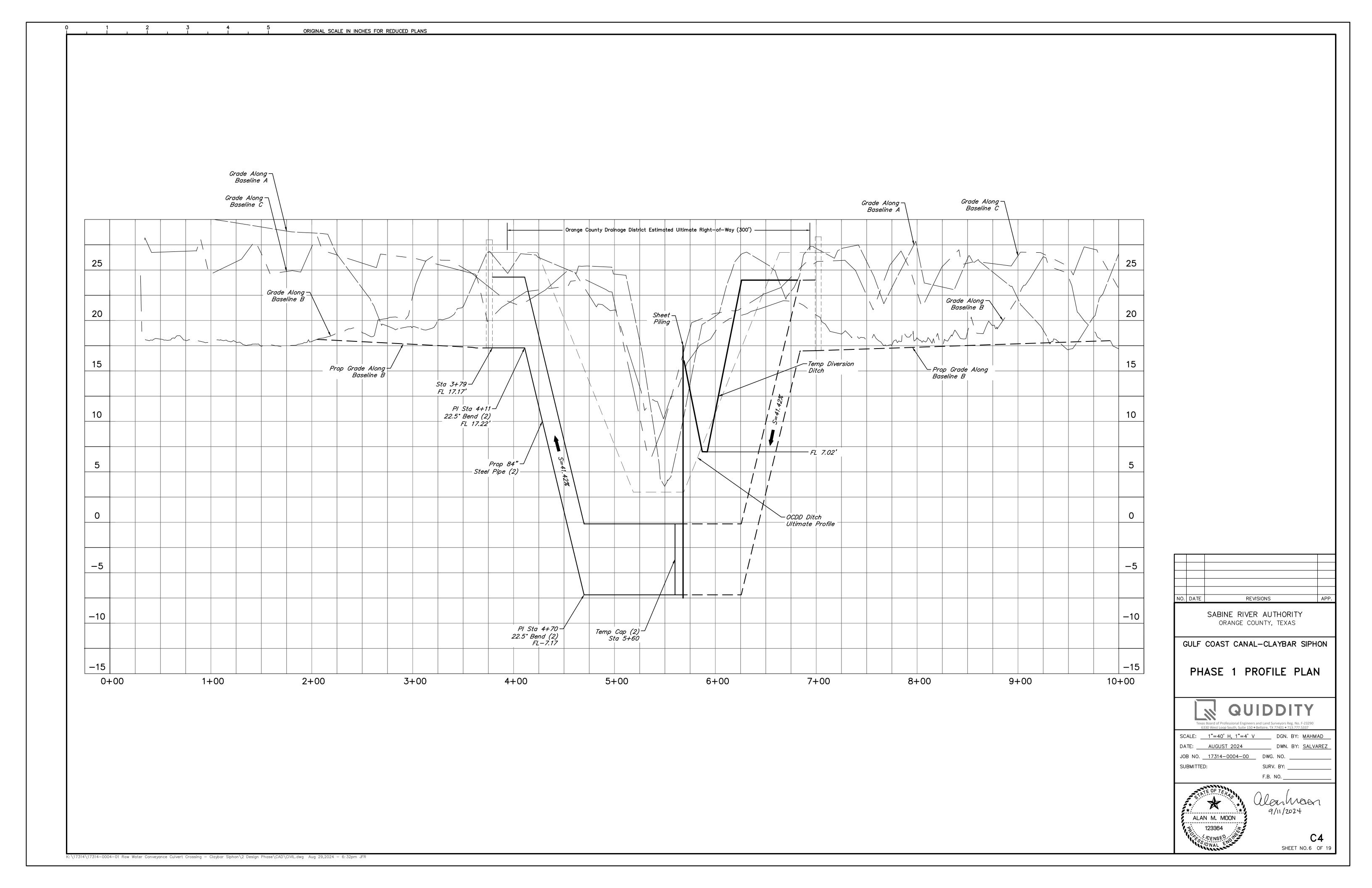
SHEET NO.2 OF 19

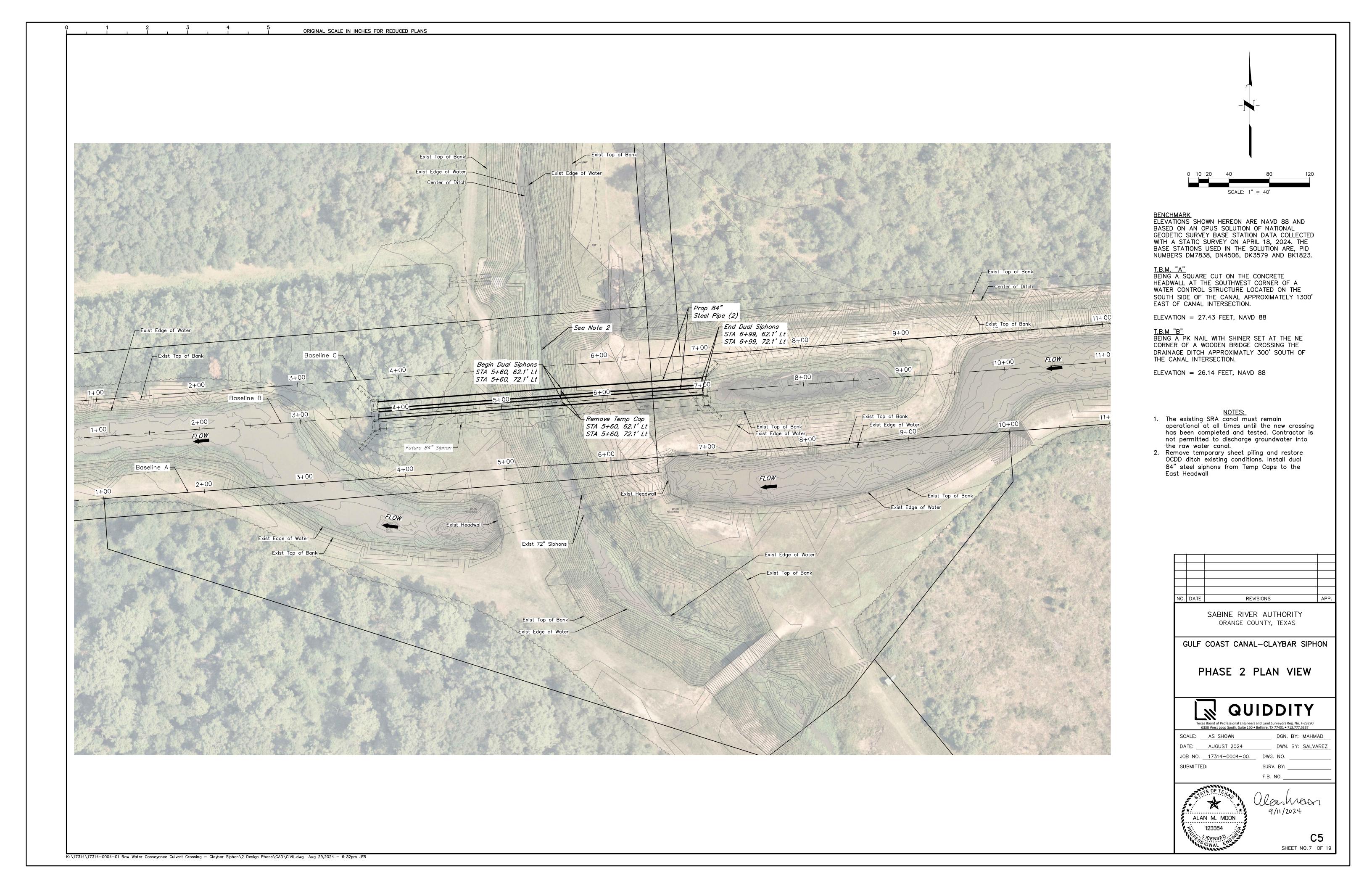
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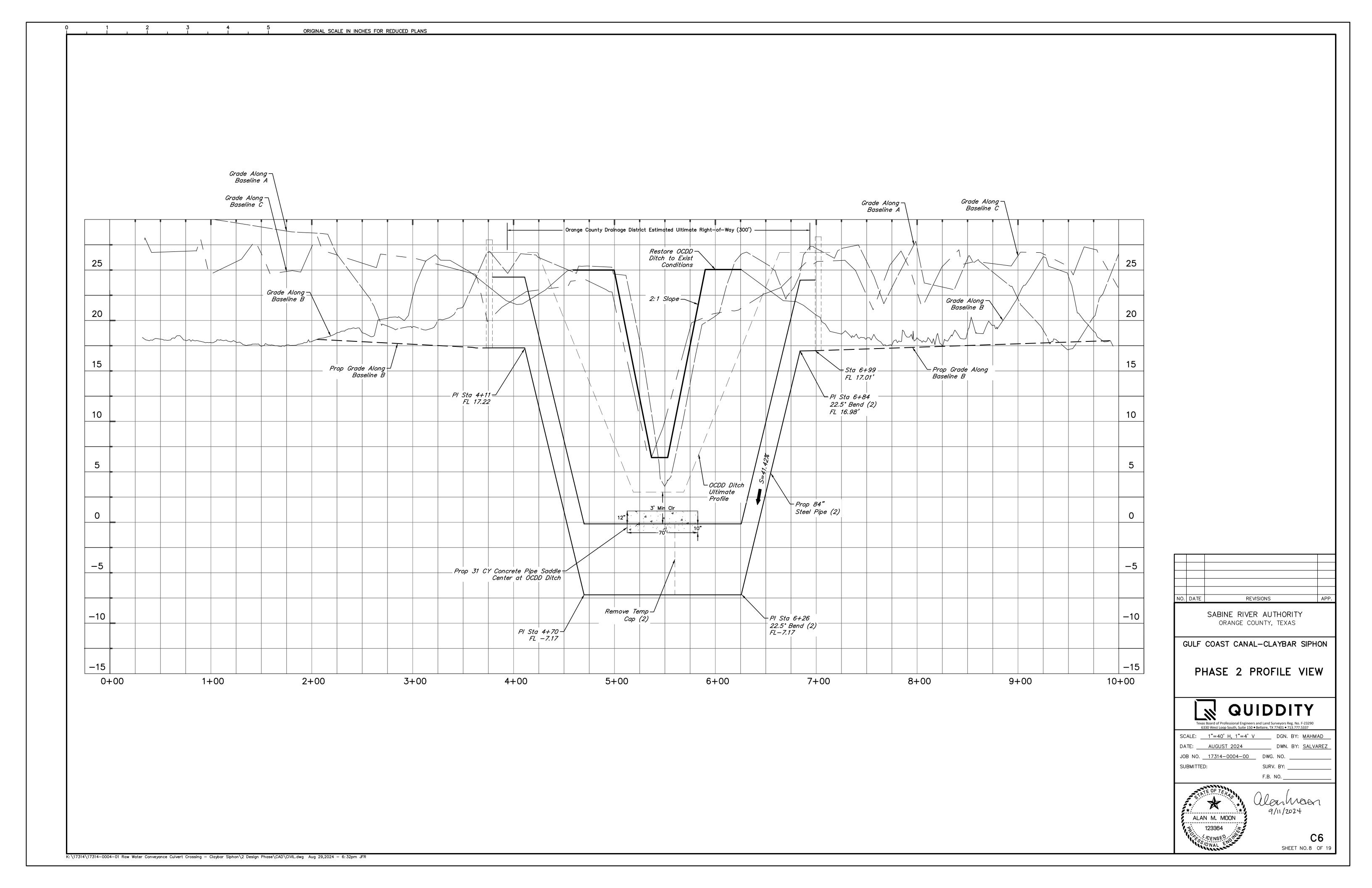


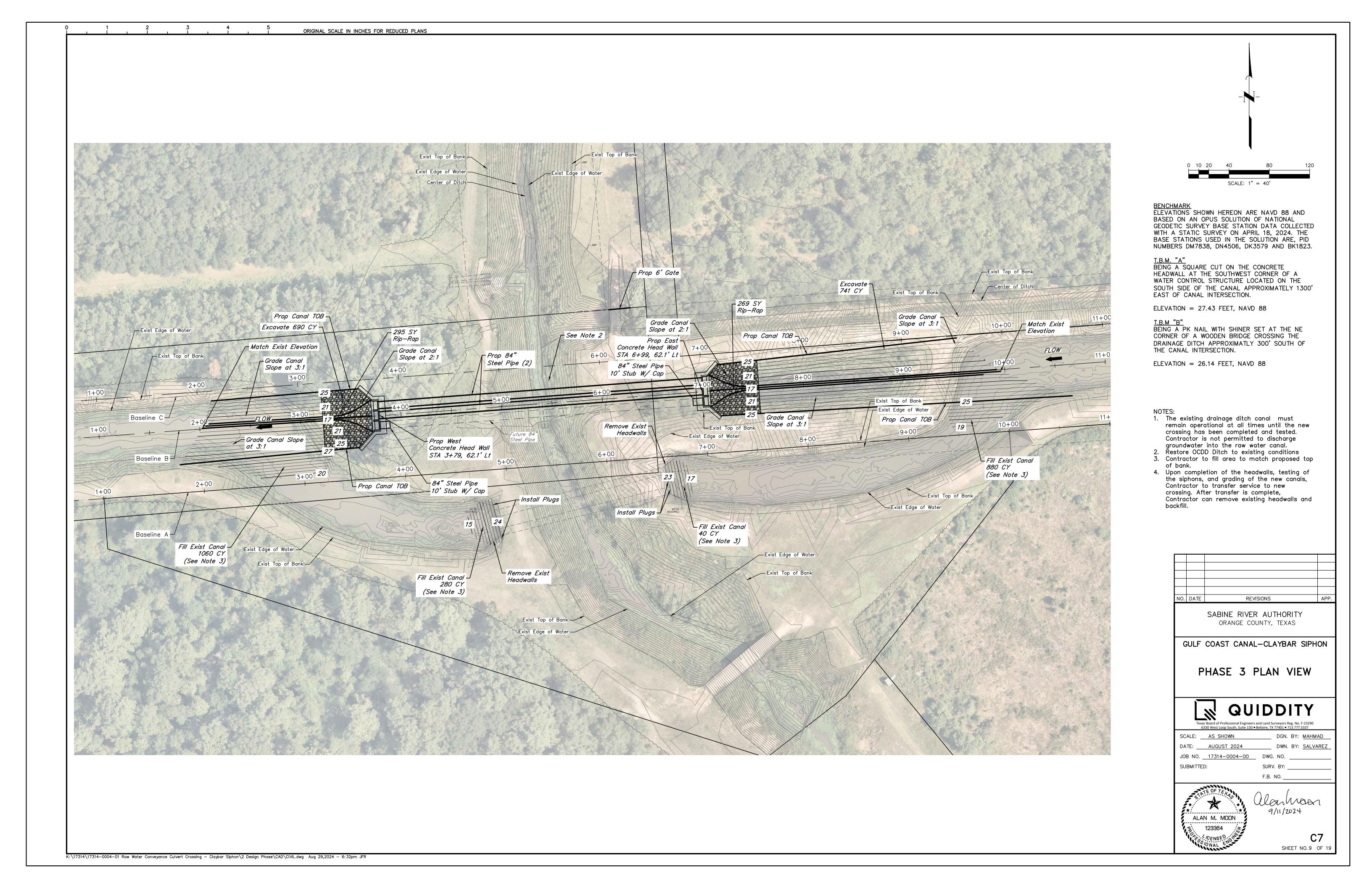


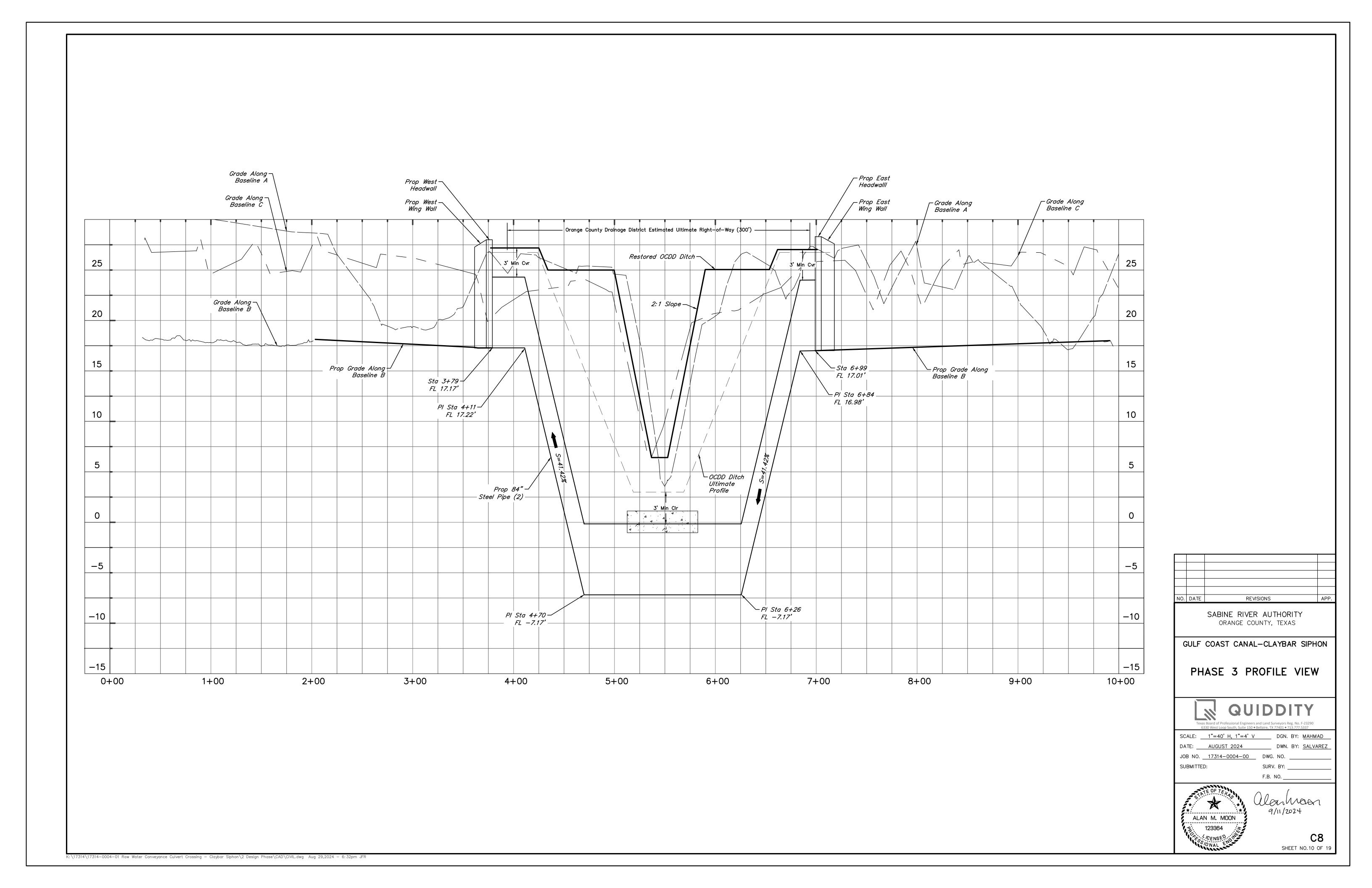


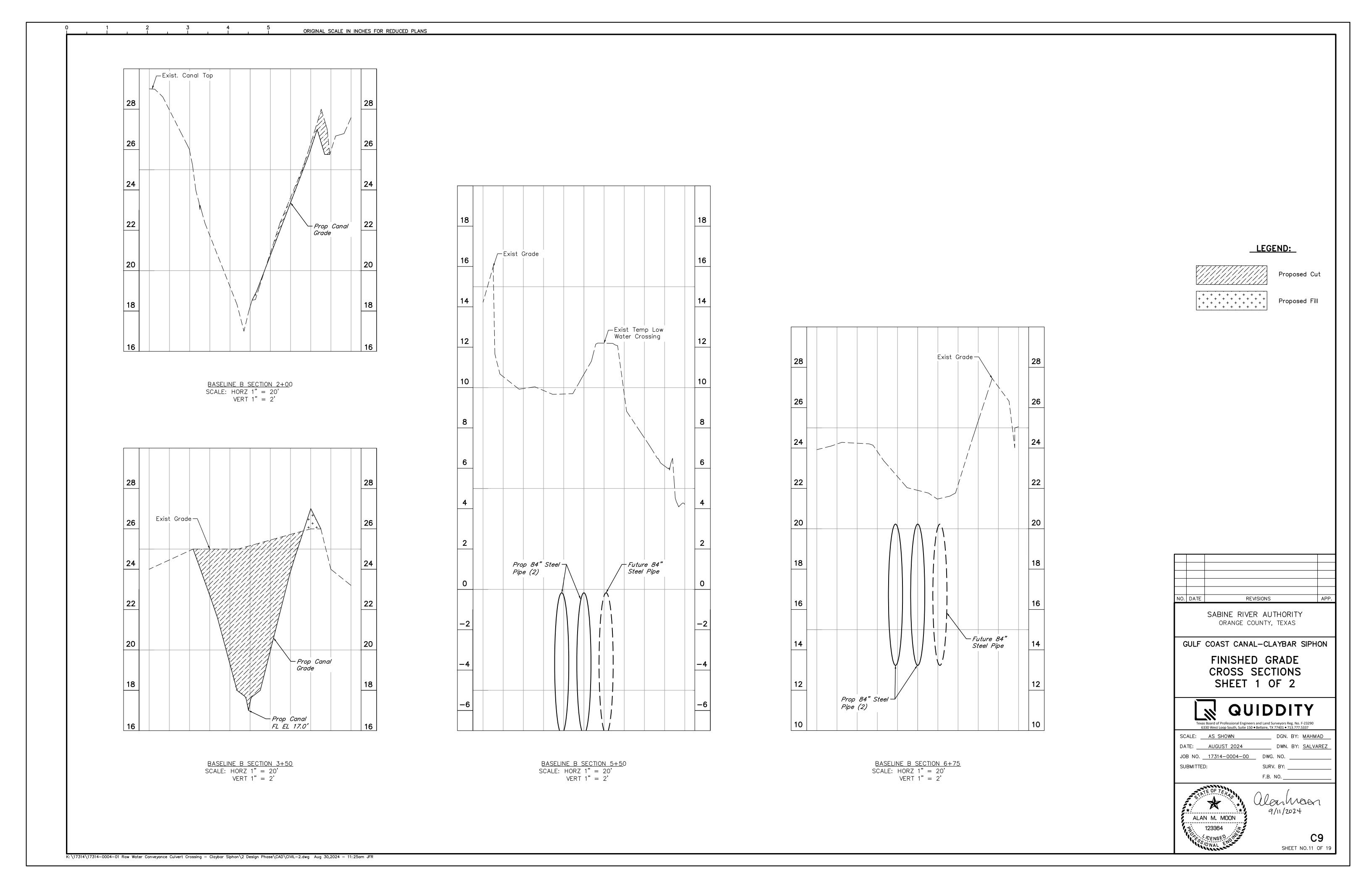




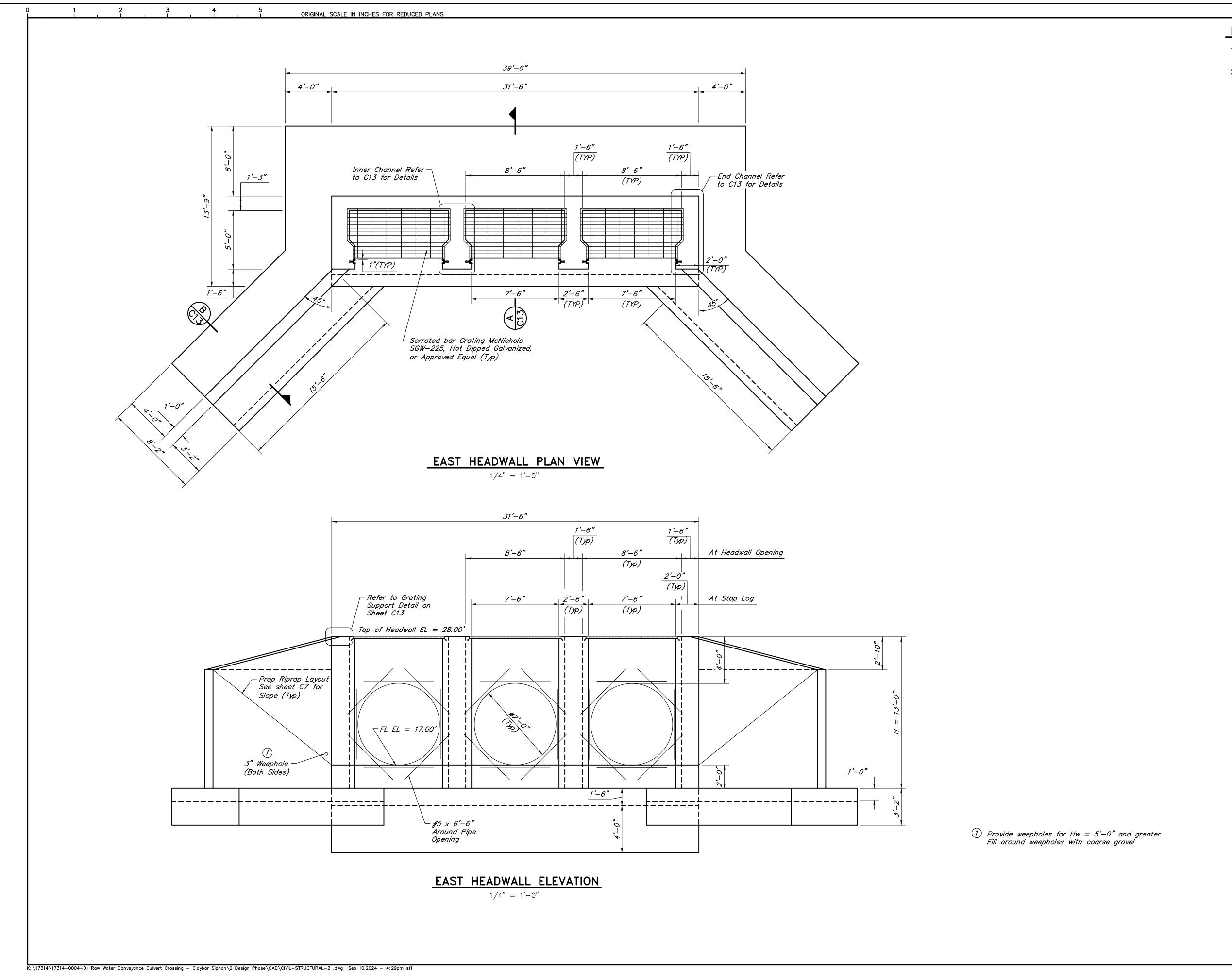






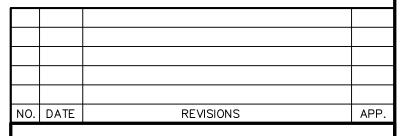


ORIGINAL SCALE IN INCHES FOR REDUCED PLANS LEGEND: Proposed Cut Proposed Fill Exist. Canal Top — Exist. Canal Top \_Exist Grade Prop Canal — Grade Prop Canal + Prop Canal — FL EL 17.0' FL EL 17.0' BASELINE B SECTION 10+00 SCALE: HORZ 1" = 20' VERT 1" = 2' NO. DATE REVISIONS BASELINE B SECTION 8+00 SCALE: HORZ 1" = 20' BASELINE B SECTION 9+50 SCALE: HORZ 1" = 20' VERT 1" = 2' SABINE RIVER AUTHORITY VERT 1" = 2'ORANGE COUNTY, TEXAS GULF COAST CANAL-CLAYBAR SIPHON FINISHED GRADE CROSS SECTIONS SHEET 2 OF 2 SCALE: AS SHOWN DGN. BY: MAHMAD DATE: AUGUST 2024 DWN. BY: SALVAREZ JOB NO. <u>17314-0004-00</u> DWG. NO. \_\_ SUBMITTED: SURV. BY: \_\_\_\_ F.B. NO. \_\_\_\_ alonhan 9/11/2024 ALAN M. MOON C10 SHEET NO.12 OF 19 K:\17314\17314-0004-01 Raw Water Conveyance Culvert Crossing - Claybar Siphon\2 Design Phase\CAD\CIVIL-2.dwg Aug 30,2024 - 11:25am JFR



### NOTES:

- 1. Stop logs shall be provided by Owner.
- 2. Contractor shall coordinate with grating fabricator and with setting of concrete forms to ensure that the minimum specified clearance between the edge of grating and the edge of the stop log frame is provided. The stop log frames shall be accessible from the grating when the handrail/kickplate section is removed such that the stop logs can be installed and removed without impediment.



SABINE RIVER AUTHORITY
ORANGE COUNTY, TEXAS

GULF COAST CANAL-CLAYBAR SIPHON

EAST HEADWALL



 SCALE:
 AS SHOWN
 DGN. BY: FFOROUZZANIA

 DATE:
 AUGUST 2024
 DWN. BY: SFUENTES

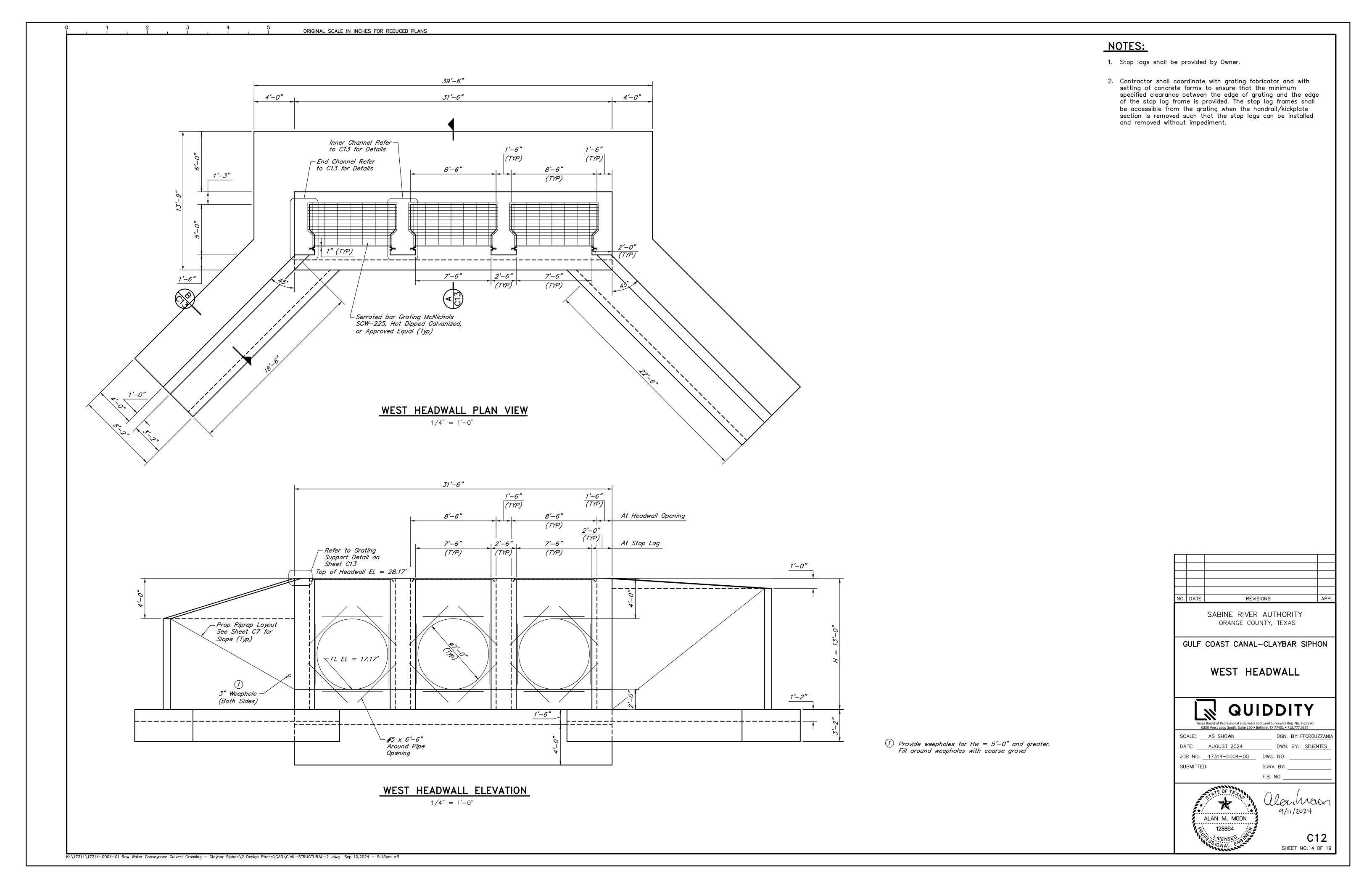
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 DWG. NO.

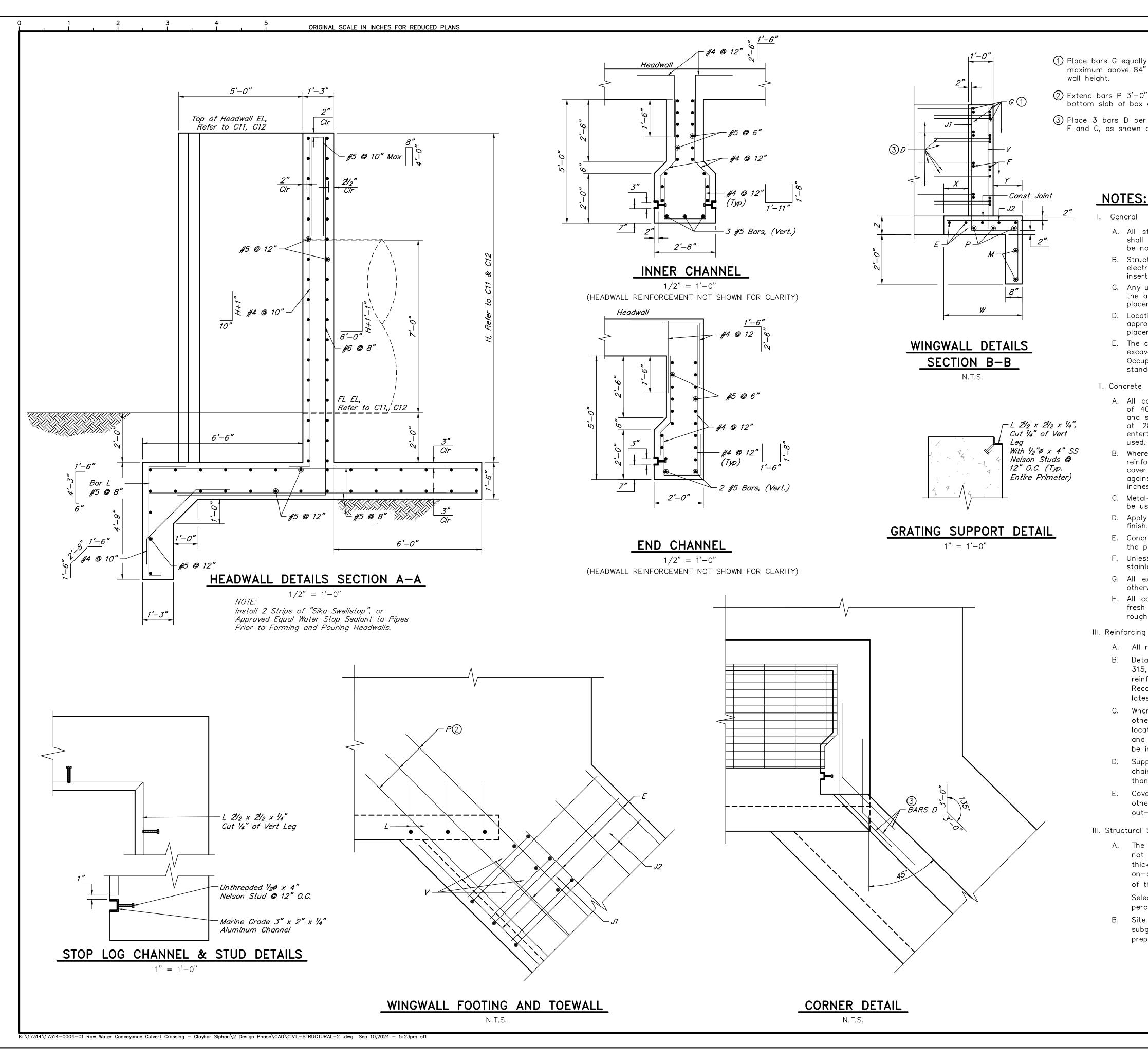
 SUBMITTED:
 SUBV. BY:



alonhaon 9/11/2024

**C11**SHEET NO.13 OF 19





(1) Place bars G equally spaced at 8" maximum above 84" pipe within wing

② Extend bars P 3'-0" minimum into bottom slab of box culvert.

3 Place 3 bars D per each row of bars F and G, as shown on corner detail.

	TABLE OF DIMENSIONS AND REINFORCING STEEL									
	Dimensions					Variable Reinforcing				
s	Maximum Wingwall	147	V	V	7	Bars J1		Baı	Bars J2	
	Wingwall Height Hw	W	X	Y	Z	ize	Spa	ize	Spa	

8'-2" 4'-0" 3'-2" 1'-2" #8

- A. All structural plan dimensions are interpreted from and shall be verified with the civil drawings. The engineer shall be notified if discrepancies exist.
- B. Structural drawings to be coordinated with civil, electrical, and mechanical drawings for all openings, inserts, and related items.
- C. Any unusual conditions encountered shall be brought to the attention of the engineer prior to concrete
- D. Locations of construction joints not shown shall be approved by the engineer prior to concrete
- E. The contractor shall adhere to the trench and excavation safety requirements set forth in the Occupational Safety and Health Administration (OSHA) standards 29 CFR, part 1926, subpart P, excavations.

#### II. Concrete

- A. All concrete shall have a minimum compressive strength of 4000psi at 28 days in accordance with ASTM C-39and shall have a minimum modulus of rupture of 350 psi at 28 days in accordance with ASTM C-78. An air entertainment agent shall be used. Fly ash shall not be
- B. Where concrete is placed against forms or seal slabs reinforcing bars shall have a minimum of 2 inches clear cover unless shown otherwise. Where concrete is placed against earth, reinforcing bars shall have a minimum of 3 inches clear cover.
- C. Metal—keyed construction joints and sawed joints may not be used.
- D. Apply float finish to slab surfaces to receive a trowel
- E. Concrete faces shall not deviate more than 3/16" from the plan dimensions.
- F. Unless noted, anchor bolts and expansion bolts shall be stainless steel.
- G. All exposed edges shall be chamfered 3/4" unless noted
- H. All construction joints shall be thoroughly cleaned before fresh concrete is placed. Construction joints shall be roughened to a ¼" amplitude.

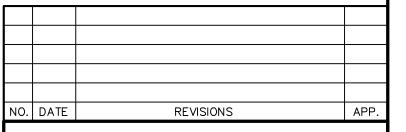
#### III. Reinforcing Steel

- A. All reinforcing steel shall be ASTM A-615, Grade 60.
- B. Detailing of reinforcing shall be in accordance with ACI 315, latest edition, unless shown otherwise. Placing of reinforcing shall be in accordance with C.R.S.I.," Recommended Practice for placing of reinforcing bars", latest edition.
- C. Where it is necessary to splice reinforcement at locations other than those shown on the drawings, the splice locations shall be approved by the engineer. Lap splices and embedment lengths, not shown on the drawings, shall be in accordance with C.R.S.I., latest edition.
- D. Support for the reinforcement shall be by metal high chairs either galv. or plastic tipped and spaced not more than six feet center to center.
- E. Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out—to—out bar.

#### III. Structural Subgrade

- A. The fill soils should be placed on prepared surfaces in lifts not to exceed 8 inches loose measure, with compacted thicknesses not to exceed 6 inches. Select fill soils and on—site soils should be compacted to at least 95 percent of the Standard Effort (ASTM D698) maximum dry density. Select fill soils should be moisture adjusted to within 2 percent of the optimum moisture content.
- B. Site grading, fill material, properties, excavation, and subgrade preparation, shall follow geotechnical report prepared by Terracon on August 21, 2024.

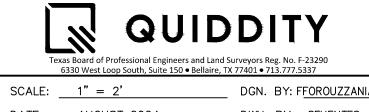
TABLE OF WINGWALL REINFORCING						
Bar	Size	Spa				
D	#6	1'-0"				
E	#4	1'-0"				
F	#4	1'-0"				
G	#6	8"				
М	#4	~				
Р	#4	1'-0"				
V	#4	1'-0"				



SABINE RIVER AUTHORITY ORANGE COUNTY, TEXAS

GULF COAST CANAL-CLAYBAR SIPHON

STRUCTURAL DETAILS



DATE: AUGUST 2024 DWN. BY: SFUENTES JOB NO. 17314-0004-00 DWG. NO. SUBMITTED: SURV. BY:

F.B. NO. \_\_\_\_



C13

