

REHABILITATION OF DRAINAGE STRUCTURES AT EFD

Construction Safety and Phasing Plan (CSPP)

HAS Project No. 954

August 2023

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Appendix A – Construction Safety and Phasing Plan Drawings

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1. Background

1.1. Project Overview

Ellington Field (EFD) is a joint operation base airport in the Houston Airport System that supports U.S. Military, NASA, and a variety of general aviation tenants. This project includes the design services to reconstruct two headwalls/culverts at EFD Ditch C culverts on the south side of the airfield, and a headwall on the northeast corner of the airfield.

1.2. Construction Safety Documents

This preliminary engineering safety document is derived from the FAA Advisory Circular (AC) 150/2370-2G, *Operational Safety on Airports During Construction*. These requirements provide the guidelines for implementation of procedures to increase safety during engineering services and construction. This Construction Safety and Phasing Plan (CSPP) has been developed in conjunction with Houston Airport Systems and Ellington Airport Operations to minimize operational impacts, coordinate work areas, determine project site access requirements, and establish necessary procedures to perform the work.

The following general safety objectives were identified as priorities for the field work tasks. The contractor shall be responsible for controlling its operations and the operations of subcontractors (at all levels) and suppliers as they comply with the requirements of this document and as listed below:

- Maximize safety of aircraft operations
- Keep the airport operational for all users
- Provide for aircraft operational safety
- Maintain airfield operations within agreed parameters
- Minimize delays to aircraft operations
- Minimize delays to survey and investigative operations
- Minimize airport operation and survey and investigative activity conflict

2. Coordination

Per FAA AC 150/5370-12B, *Quality Management for Federally Funded Airport Construction Projects*, meetings will be conducted to ensure the Owner, the Engineer, the Contractor, and other interested parties are aware of design, safety, and construction requirements and have an understanding of their individual responsibilities, as well as the technical and legal requirements of the contract.

- **Pre-Construction Meeting:** HAS and EFD will conduct a pre-construction meeting prior to issuance of construction Notice to Proceed (NTP). Attendees will include the HAS and EFD staff, design engineer, resident project representative (RPR), construction observation staff, project superintendent and foreman of prime contractor, as well as the project foreman for any subcontractor employed by the prime contractor.
- **Contractor Progress Meetings:** Weekly progress meeting are mandatory. The day of the week for these meeting will be determined by agreement between the airport management, the construction manager, and the contractor. At a minimum, the meeting will be attended by the Project Superintendent, Constructing Superintendent, Foreman of Active Work (including subcontractors), and the Contractor's QC representative.
- **Scope or Schedule Changes:** Changes in the scope and/or duration of the project may necessitate revisions to the CSPP. Changes to this document require review and approval by the airport operator and the FAA prior to implementation. In addition, the RPR shall coordinate proposed changes with all applicable local or federal government agencies (i.e., EPA, OSHA, TSA, state environmental agencies, etc.)
- **FAA Air Traffic Organization (ATO), NASA, and other Stakeholder Coordination:** Coordination with the Ellington Field FAA air traffic control tower will be coordinated by the airport's airfield operations division. NASA and other stakeholders will be notified in advance of any pavement closures via the Notice to Airman (NOTAM) process as well as routine coordination meetings with airport operations staff.

3. Phasing

Phase Elements: The overall phasing of the project is shown on sheets G-005 and G-006 in Appendix A.

The following considerations were made when developing phasing and sequencing of the project:

- No unauthorized interruption to daytime aircraft operations will be allowed.
- Maintain Vehicle Service Road operational access.

4. Areas and Operations Affected by the Construction Activity

4.1. Identification of Affected Areas

Airside facilities will generally not be affected by work activities except for particular supply delivery routes that will utilize the Runway 35L overrun to accommodate larger vehicles. Contractors will be required to coordinate with Airport Operations as detailed in Sections 2 and 6 of this document prior to impacting operations on the Airport.

4.2. Runway Safety Areas

Contractors shall not enter the safety area of an active runway. Runway crossings, where necessary, shall be conducted by airport movement area trained individuals or escorted by such individuals.

Table 1. Summary of Declared Distances

Runway	Runway Length (ft)	TORA	TODA	ASDA	LDA
Runway 4	8,001	8,001	8,001	8,001	8,001
Runway 22	8,001	8,001	8,001	8,001	8,001
Runway 35R	4,609	4,609	4,609	4,609	4,609
Runway 17L	4,609	4,609	4,609	4,609	4,609
Runway 35L	9,001	9,001	9,001	9,001	9,001
Runway 17R	9,001	9,001	9,001	9,001	9,001

Declared distances are not currently in use at EFD. Contractors will not utilize temporary declared distances to shorten any runway in order to perform work inside the normal RSA.

5. Protection of Navigation Aids (NAVAIDs)

Aircraft navigational aids (NAVAIDs) provide visual and electronic information which is used by pilots to operate and land aircraft at the airport. The anticipated work activities could potentially have negative impacts to the functionality and serviceability of NAVAIDs.

US Department of Defense owns, operates, and maintains the instrument approach lighting system (ILS) for Runway 17R-35L. The FAA owns, operates, and maintain the ILS for Runway 22. These systems should be protected at all times and interference with NAVAIDs must be avoided. Coordination with DOD and FAA will be performed by Airport Operations.

6. Contractor Access

6.1. Location of Stockpiled Construction Materials

Any stockpiled construction materials shall be within the prescribed staging areas as shown on sheet G-004 in Appendix A. All existing materials excavated during the project shall be removed and disposed of off-site, outside of the AOA.

6.2. Vehicle and Pedestrian Operations

The project documents include several requirements for vehicle and pedestrian safety as summarized below.

6.2.1. Access to Airport Operations Area (AOA)

The airport operations area is defined by the perimeter fence surrounding the airfield. Contractor access into the AOA is limited to Gate W21. No person shall enter the AOA, or any other restricted area, except authorized personnel assigned to duty therein and personnel escorted by an appropriately badged escort.

6.2.2. Mechanisms to Prevent Improper Movement

Contractor operations within the AOA are limited to the work areas shown on the project phasing plans and designated access routes. Construction vehicles and personnel must not cross into any runway or taxiway object free area (ROFA and TOFA, respectively) at any time without an escort from airport operations personnel or ATC approval.

6.2.3. Parking Areas for Personal Vehicles and Equipment

Contractor employee personal vehicles may not be parked or driven in the AOA. Contractor vehicles and equipment are allowed inside of the project work area within the AOA. Equipment staging and parking shall be in the contractor staging area as shown on sheet G-004 in Appendix A.

6.2.4. Access and Haul Routes

Contractor access and hauling operations are strictly limited to the haul routes as shown on sheet G-004 in Appendix A. The contractor shall be escorted by airport operations to and from the staging area to the work area each day. Larger delivery vehicles, particularly for the delivery of the concrete box culverts, shall be escorted across the Runway 35L overrun to access the project site.

6.2.5. Contractor Vehicle Marking and Lighting

All vehicles and equipment operating within the AOA must be identified by company logo or name on each side of the vehicle. Each contractor vehicle must have a yellow/amber rotating beacon affixed to the uppermost part of the vehicle. Light must be visible from any direction, day and night, including from the air. Specialized construction equipment does not require rotating beacon lights. Contractor vehicle marking and lighting is the sole responsibility of the contractor.

6.2.6. Airport Rules for Ground Vehicle Operations

The contractor shall follow all rules of operation implemented by the owner for driving on the airport, including, but not limited to:

- All employees driving jobsite motor vehicles shall have a valid driver's license for the class of vehicle driven.
- Proof of adequate company insurance as specified in the contract must be present for each vehicle.
- Block or chock vehicle wheels when parked on inclines.
- All vehicles must be shut off when unoccupied.
- Drivers are required to observe the "Right of Way" rule. Yield to other drivers whose driving actions demand the right of way.
- Contractor personnel operating vehicles on the AOA shall complete a driver training class presented by the airport and successfully pass the airport's written driving test.
- Aircraft and emergency vehicles shall always have the right of way.

6.3. Radio Communications

Contractors may utilize two-way radios during the project provided that they do not interfere with existing Airport and FAA communication equipment, and frequencies.

The contractor will not be permitted to contact the ATCT when accessing the project site/work areas. These communications will be coordinated and performed by airport operations.

6.4. Airport Security

Ellington Airport maintains an active security program, and security is of primary importance. The project will take place within the AOA. The contractor shall designate personnel to attend airport security training and be badged as discussed below. It is the contractor's responsibility to maintain a safe and secure work area. The contractor is to notify the Owner immediately if a breach in security, intentionally or accidentally, does occur.

6.4.1. Security Badging Requirements

The contractor will be required to obtain security badging in accordance with Owner requirements when working within the AOA. The contractors are directly responsible to the Owner for authorizing his/her employees' access into the AOA.

The contractor shall account for ID badges that are issued to its employees. The contractor shall collect all Airport ID badges from its employees at the conclusion of the site investigation and return them to the Airport. A fine of up to \$500 shall be imposed for any lost Airport ID badge.

6.4.2. Maintenance of the Secured Area of the Airport

Access into the AOA shall be via gate W21 as identified on Sheet G-004 in Appendix A. These are automatic gates and will require an airport escort for access.

7. Wildlife Management

The Contractors will be expected to take steps to carefully control and continuously remove waste or loose materials that might attract wildlife. Contractors' personnel must be aware of and avoid activities that can create wildlife hazards on airports, such as:

- Trash: Food scraps must be collected from personnel activity.
- Standing Water: Water shall not be allowed to collect and pool for more than any single 24-hour period.
- Tall Grass and Seeds: Not applicable to this project.
- Poorly Maintained Fencing and Gates: The Contractors must maintain airport security during site investigations. The Contractors shall immediately report any damage to the gates or fences. The Contractors will be responsible for repairs to any gates or fences caused by negligence by the Contractor.
- Disruption of Existing Wildlife Habitat: Not applicable to this project.

8. Foreign Object Debris (FOD) Management

Debris, waste, and loose material capable of causing damage to aircraft, landing gear, propellers or being ingested into jet engines shall be properly controlled and picked up at all times. If these materials are observed, the Contractors shall remove them immediately.

The Contractors shall take appropriate steps to prevent FOD within the AOA such as:

- Training: The contractors shall provide training to all employees working within the AOA on effective FOD management. Training shall include description and consequences of FOD, FOD awareness, and housekeeping procedures.

- Housekeeping: Preventing FOD from occurring is the most effective form FOD management. The Contractors must monitor work activities and proactively develop a plan to prevent FOD from occurring. Typical FOD prevention measures include the use of covered trash containers, zero tolerance of littering, and tying down items which may be easily wind-blown.
- Ground vehicle tire inspections: Prior to crossing active airfield pavement, the Contractors must perform a vehicle tire check for any loose rocks that may be in the tread. Tires covered in mud must be cleaned prior to crossing active pavement to prevent tracking of dirt and rock.
- Pavement sweeps: Prior to opening sections of pavement within a work area to aircraft traffic, the Contractors will be required to sweep the entire pavement surface (including paved shoulders). The use of metal bristled brooms are prohibited. Compressed air and vacuums can be used to clean pavement surfaces as well.
- FOD Inspections: Refer to Section 11 for FOD inspection requirements.

9. Hazardous Materials Management

During the project, there may be hazardous materials discovered on the site. Such materials may be in the form of asbestos in the underground utilities, underground fuel storage units, contaminated soil, or other unknown hazardous materials. If such materials are discovered, the Contractors shall immediately report to Airport Operations and Texas Commission of Environmental Quality (TCEQ). Reporting is to conform to TCEQ requirements. All spill containment/remediation shall be coordinated and performed to current TCEQ and the City of Houston environmental department requirements. In the event of a spill, the Contractors shall notify Airport Operations and TCEQ.

10. Notification of Construction Activities

In the event of an emergency, the Contractor shall be required to contact emergency services by calling the **Airport Operations Duty line at 281-433-1612**.

In the event of an aircraft emergency, severe weather conditions, or any issue as determined by the Airport that may affect aircraft operations, the Contractors' personnel and/or equipment may be required to immediately vacate the area(s) affected. Points of contact for the various parties involved with the project shall be established at the pre-construction meeting.

FAA Form 7460 – Notice of Construction Activity On or Near an Airport, has been filed for by the Airport Representative. Notice of temporary construction activity will be filed by the contractor prior to work activities if any equipment over 25 feet in height is required for the execution of work.

Advance notice of construction activities that modify the existing operation of the perimeter road shall be given to Airport Operations a minimum of 48 hours in advance, or at the weekly progress meetings, whichever is earliest. Additional notification and/or coordination with Airport Operations, TSA and other airport staff may be required for specific construction items. These notification requirements will be discussed at the weekly progress meeting.

11. Inspection Requirements

Construction activity will be monitored per FAA Advisory Circular 150/5370-12 for labor and the installation of project materials. FAA form 5370-1 – Construction Progress and Inspection Report will be completed daily and compiled weekly for all days/weeks the contractor performs work.

A preliminary/punch-list inspection will be performed by the project superintendent, constructing superintendent, the contractor's QC representative, RPR, engineer of record, and the airport project manager prior to substantial completion. A final walkthrough will be performed by the same personnel to verify all items from the preliminary walkthrough have been completed and the job can be closed out.

During the site investigation, there will be several routine inspections conducted by the Owner and/or their agent(s) including but not limited to:

- **FOD Inspection:** The Contractor shall keep the project site and vehicles clean, employing a “clean as you go” approach throughout their work.
- **Airport Operations Daily Inspection:** These inspections include an inspection of all airfield-paved areas and safety areas to ensure compliance with FAR Part 139.327.
- **Contractor Inspection:** Prior to opening work areas and pavement to aircraft operations, the Contractor must coordinate with the Owner for inspection of work area. Pavements must be free of all dirt, sand, gravel, wire bristles or any other objects that could cause damage to aircraft engines. All soil areas must be free of dirt clods, ruts, or surface irregularities that could damage an aircraft should it leave the pavement. Owner will conduct daily inspections to assure all traffic control devices are in proper location and working order.

12. Underground Utilities

The Contractor shall notify all utility companies and locate all services a minimum of 48 hours prior to beginning work in the area. In the event of damage to underground utilities, whether shown on the plans, the contractor shall make and expedite repairs to re-establish full service of the affected utilities at no additional cost.

Existing utilities are shown from available utility records and observable surface features. Actual locations may vary, and utilities not shown on the plans may exist. Contractor shall coordinate with local utility companies and airport maintenance personnel for assistance in locating all underground utilities in the project vicinity prior to commencing construction activities.

13. Penalties

Failure on the part of the Contractor(s) to adhere to ATCT instruction, the airport safety plan, or any of the other prescribed requirements may have consequences that jeopardize the health, safety or lives of customers and employees at the airport. The Airport may issue warnings on the first offense based upon the circumstances of the incident. Individuals involved in non-compliance violations may be required to surrender their Airport ID badges and/or be prohibited from working at the airport, pending an investigation of the matter.

Payment of all fines assessed to the Ellington Airport due to violations by the Contractor(s) of FAA security or staff requirements shall be the sole responsibility of the Contractor(s).

Penalties for violations related to airport safety and security procedures may be imposed up to a maximum of \$500.00 per day and/or removal of airport badge and personnel from the project.

Note: project shutdown or misdemeanor citations may be issued on a first offense. When construction operations are suspended, activity shall not resume until all deficiencies are rectified.

14. Special Conditions

Not Applicable.

15. Runway and Taxiway Visual Aids – Marking, Lighting, Signs and Visual NAVAIDs

The runway and taxiway marking, lighting, signs and NAVAIDs will not be modified by this work. No runway and/or taxiway closures are anticipated for this project. In the event one is required, closures will be clearly identified by the placement of runway closure markers and the temporary disabling of lighting, as required by the Airport. Runway closures shall be performed by EFD operations and maintenance staff following its standard procedures for routine runway closures.

16. Marking and Signs for Access Routes

The Contractor access route is shown on sheet G-004 in Appendix A. All access shall be under escort of Ellington Airport Operations and shall therefore not require special marking or signs to be installed.

17. Hazard Marking and Lighting

No hazard marking or lighting requirements anticipated for this project.

18. Work Zone Lighting for Nighttime Construction

Nighttime work is not anticipated for this project. If initiated, the Contractor's nighttime lighting equipment and procedures will be subject to Airport approval.

Lights shall be down-fire aimed, in a manner as to not interfere with ATCT or pilots' lines of sight. Location and light intensity will be approved by the Airport.

19. Protection of Runway and Taxiway Safety Areas

Safety area encroachments, improper ground vehicle operations and unmarked or uncovered holes and trenches in the vicinity of aircraft operation surfaces and construction areas are the three most recurring threats to safety during construction. Protection of runway and taxiway safety areas, object free areas, and approach/departure surfaces shall be a standing requirement for duration of site investigation work.

19.1.1. Runway Safety Area (RSA)

This project will not require work within the RSA. No work will be permitted within an active runway safety area.

19.1.2. Runway Object Free Area (ROFA)

This project will not require work within the ROFA.

19.1.3. Taxiway Safety Area (TSA)

This project will not require work within the TSA. No work shall be permitted within an active taxiway safety area.

19.1.4. Taxiway Object Free Area (TOFA)

This project will not require work within the TOFA. No work shall be permitted within an active TOFA.

19.1.5. Obstacle Free Zone (OFZ)

This project will not require work within the OFZ. Construction personnel, material, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations. The OFZ is a defined volume of airspace centered about and above the runway centerline with dimensions as defined in [FAA AC 150/5300-13A](#).

19.1.6. Runway approach/departure surfaces

This project is not anticipated to impact the runway approach or departure surfaces. All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces as defined in FAA AC 150/5300-13A. Objects that do not penetrate these surfaces may still be obstructions to air navigation and may affect standard instrument approach procedures. Coordinate with the FAA through the appropriate FAA airports Regional or District Office.

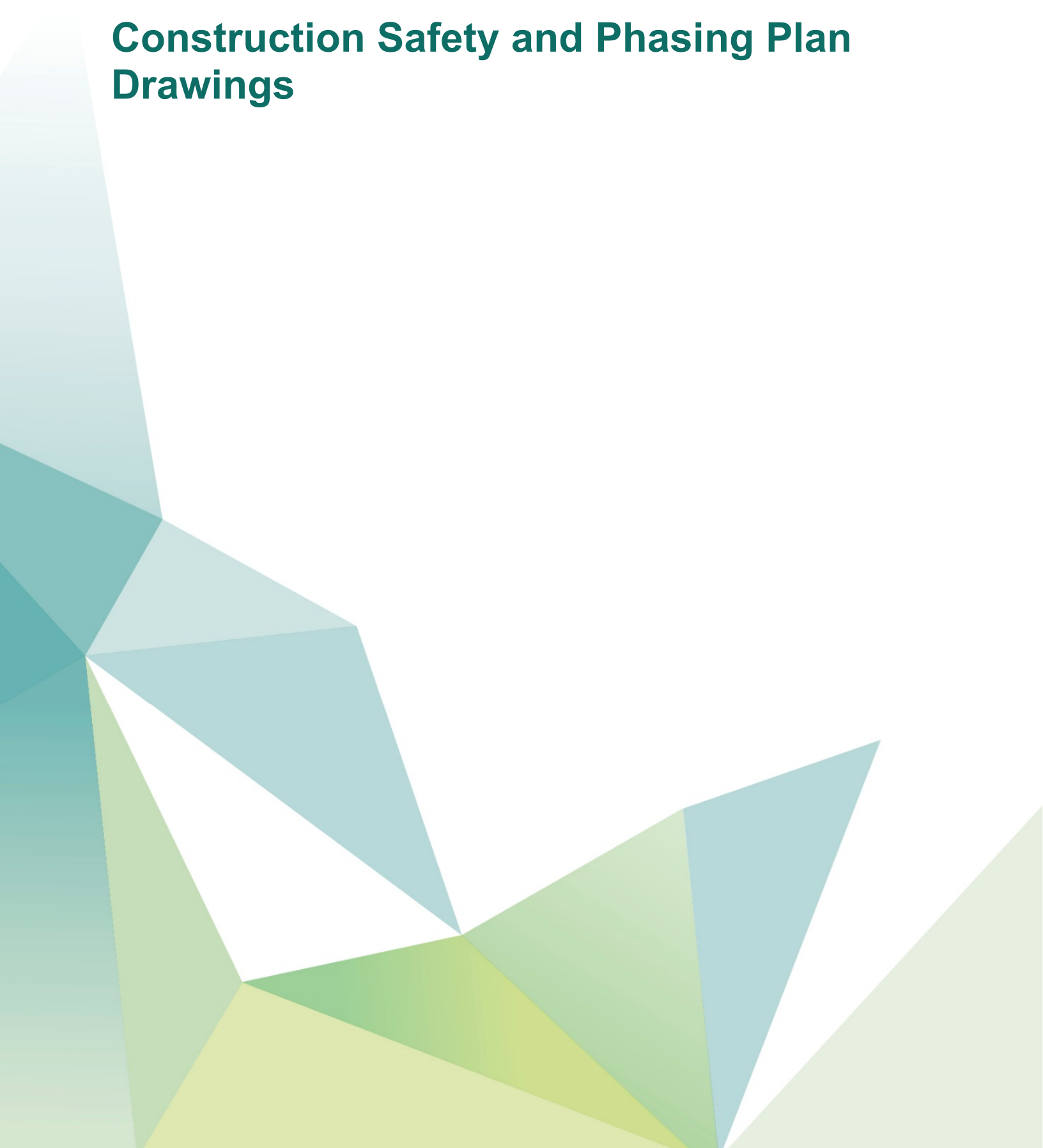
20. Other Limitations on Construction

Miscellaneous limitations on site investigation and survey include, but are not limited to:

- No interruptions to aircraft operations
- No blasting is allowed
- The maximum height of equipment is 25'
- If weather or tenant operations require the use of a previously closed portion(s) of pavements, the contractor will pull back their operations in a timely fashion to allow the use. This may require terminating work within a particular work area and relocating to another, available area. These pull-back operations will be directed by Airport Operations.

Appendix A:

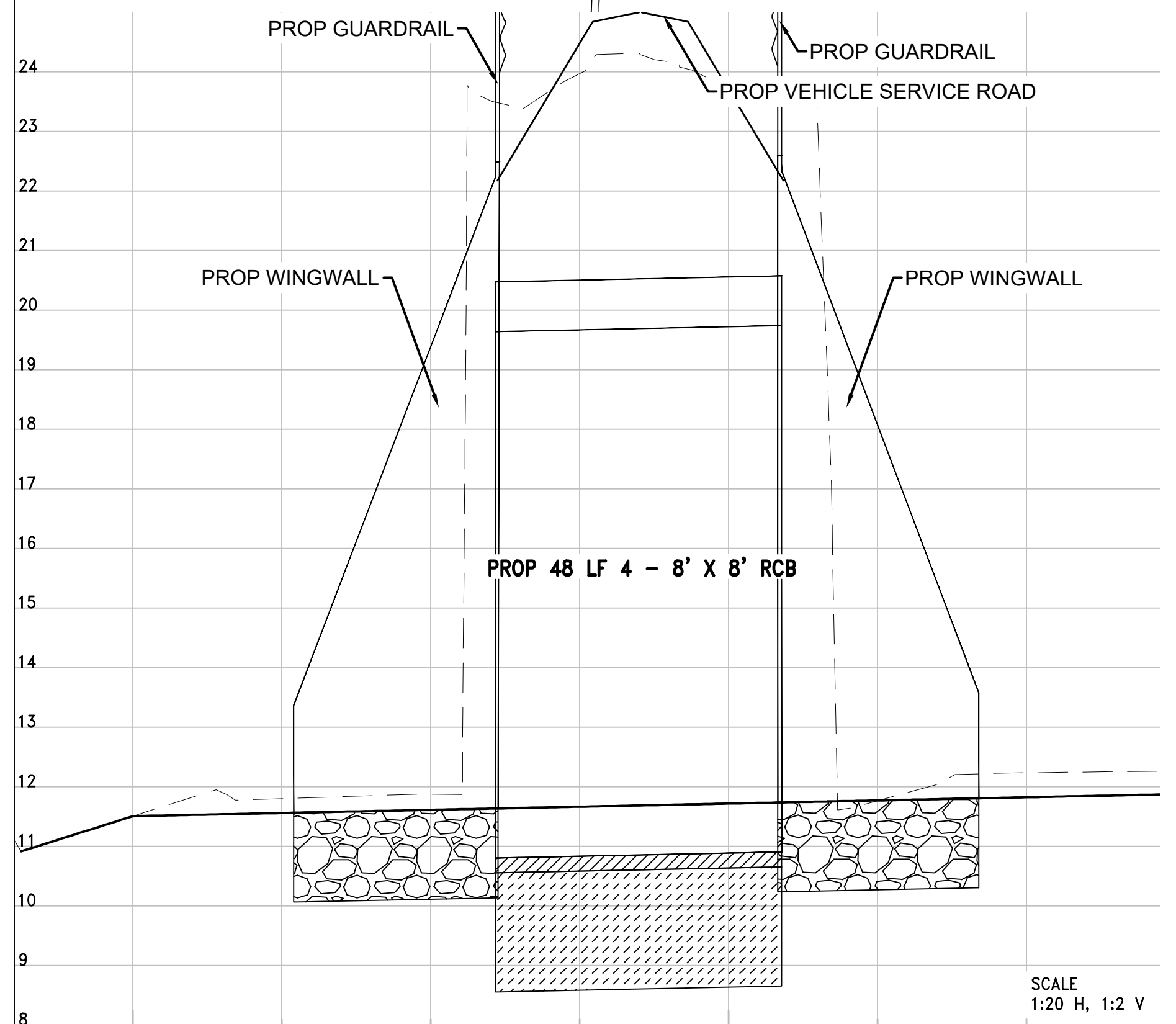
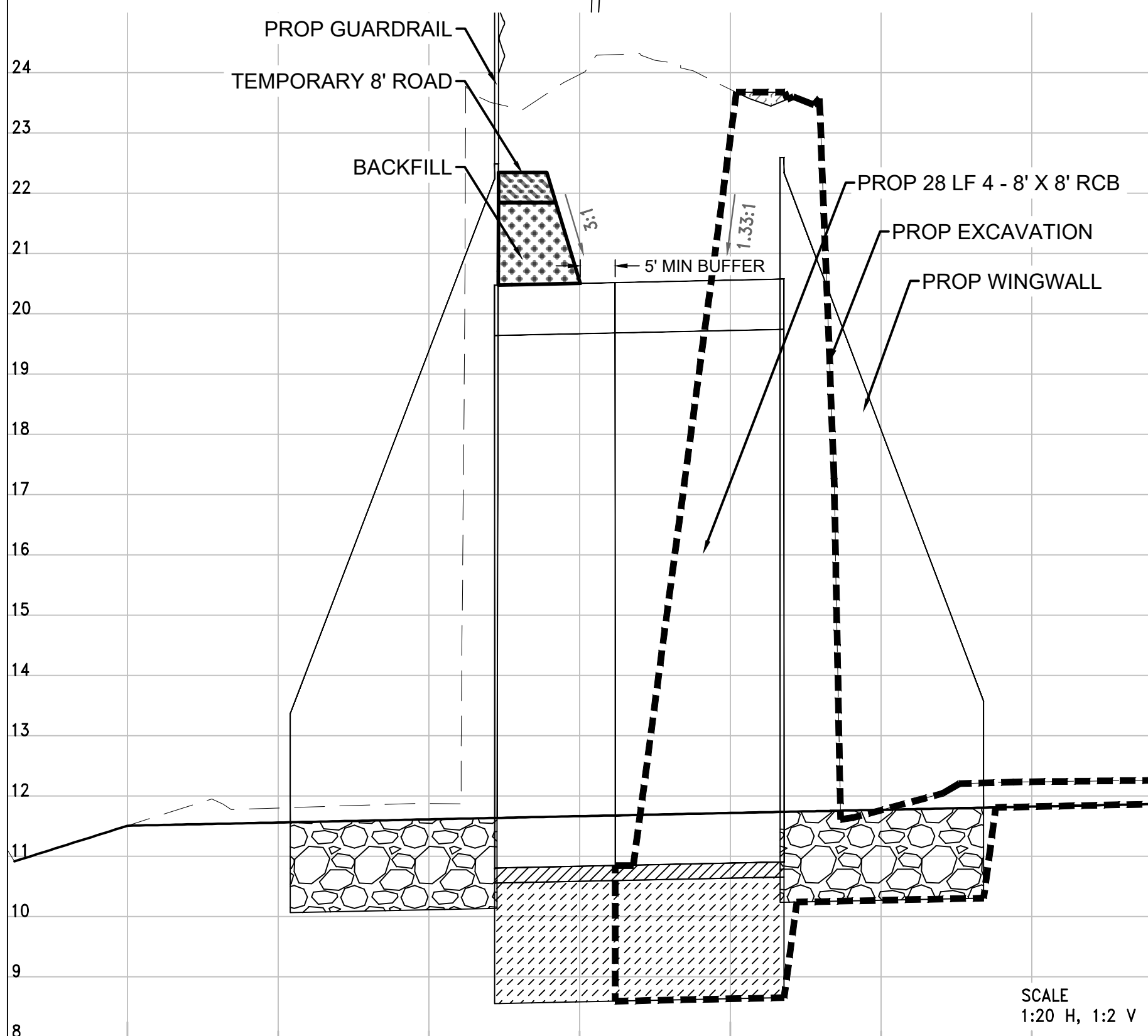
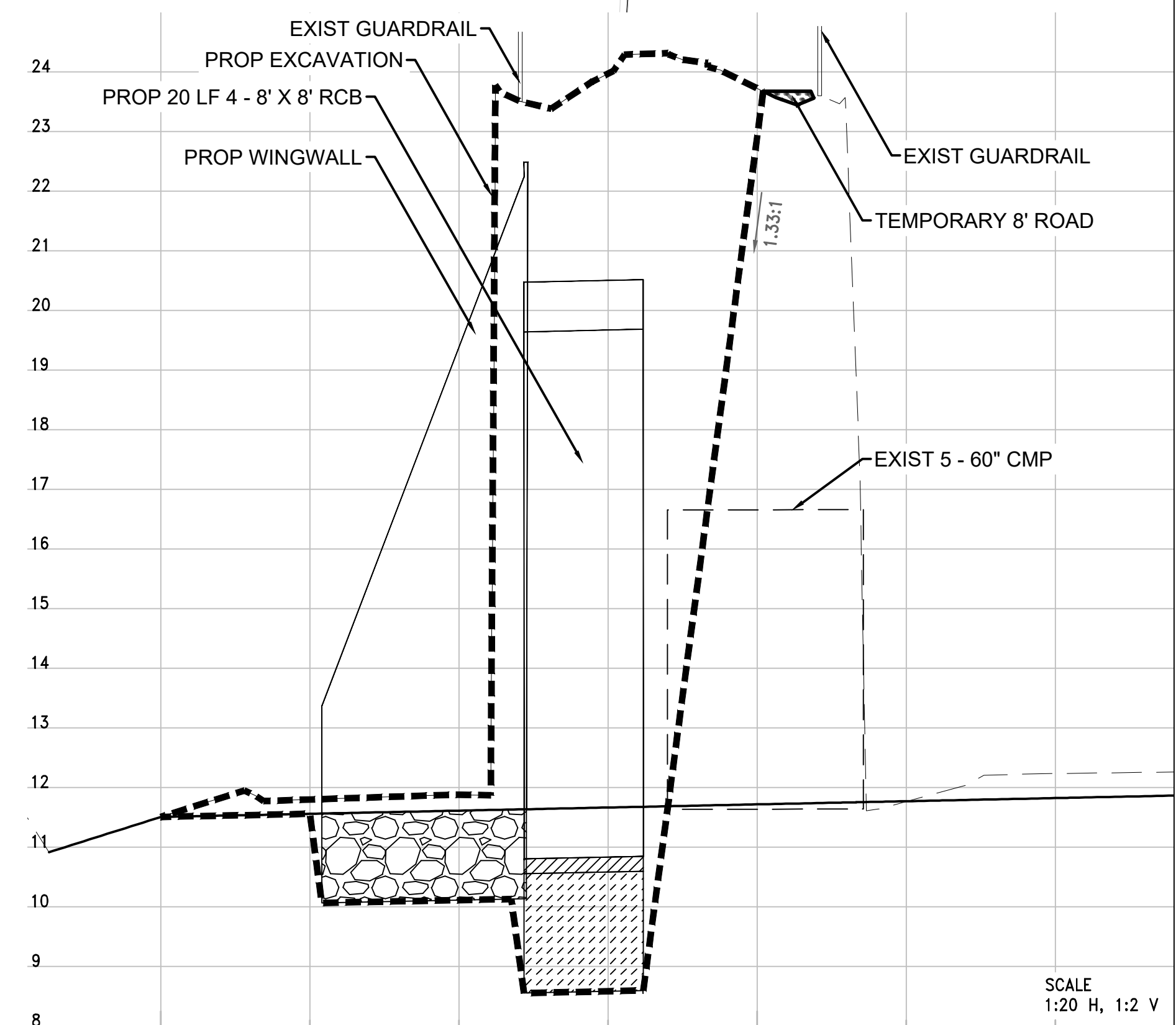
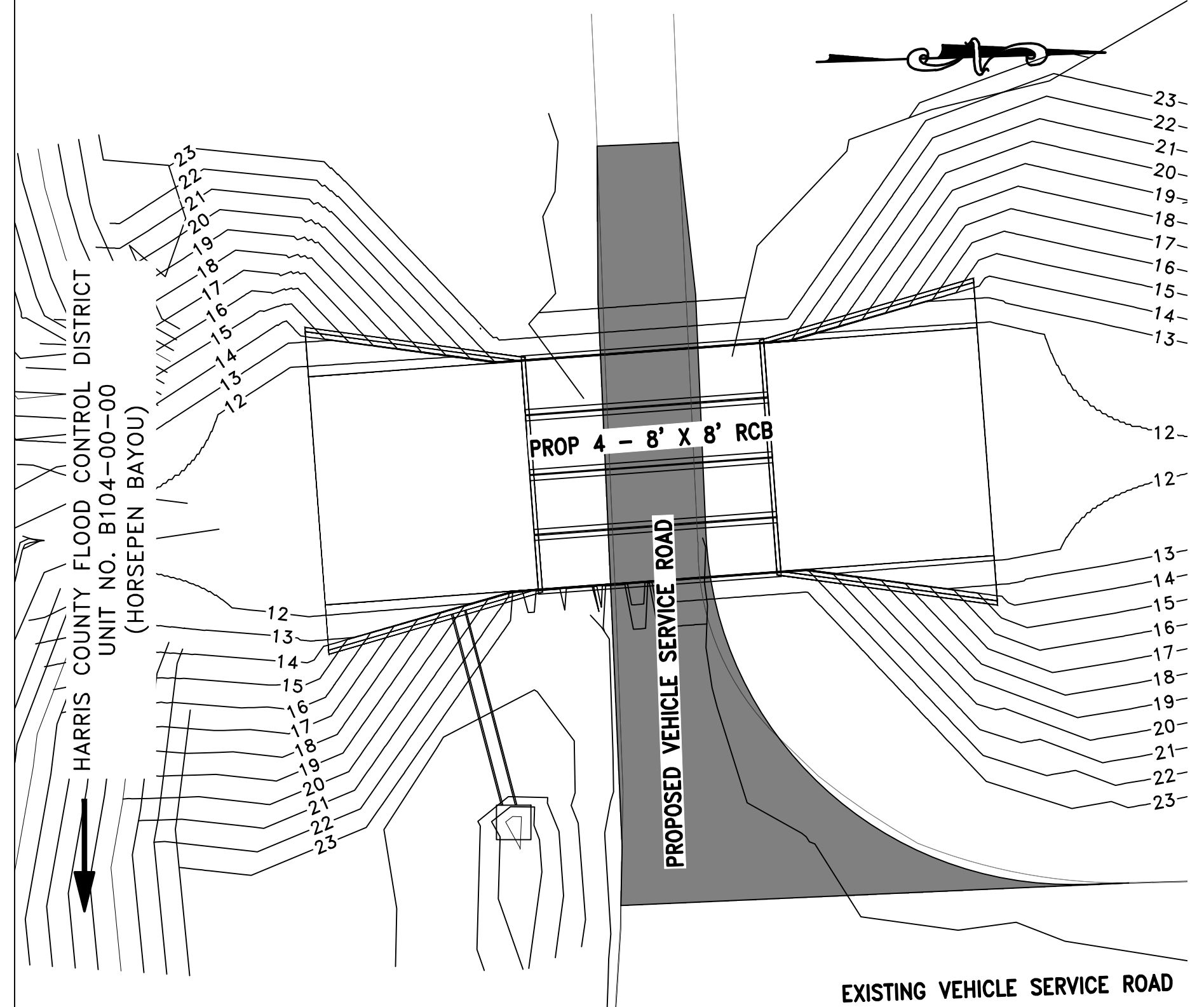
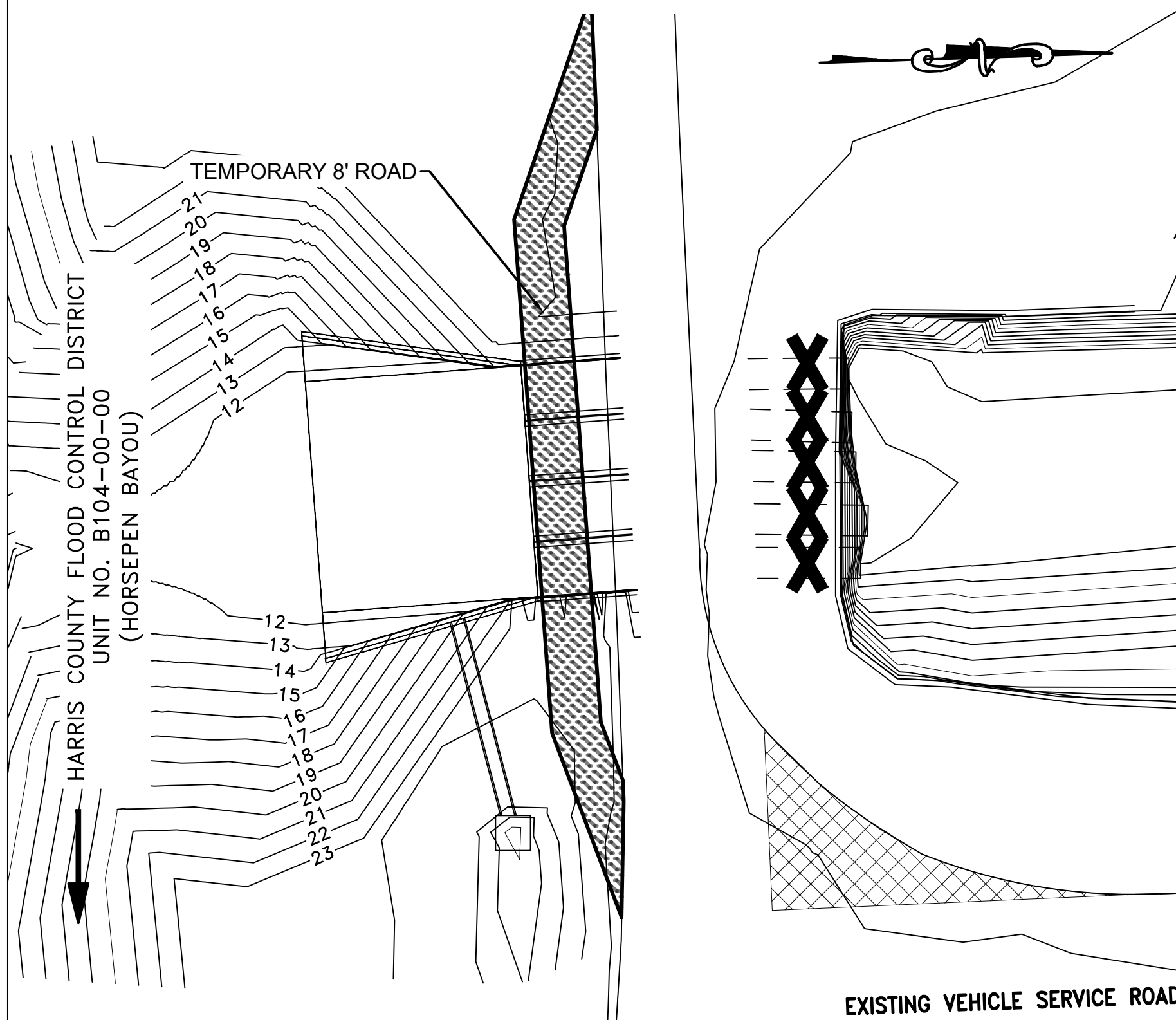
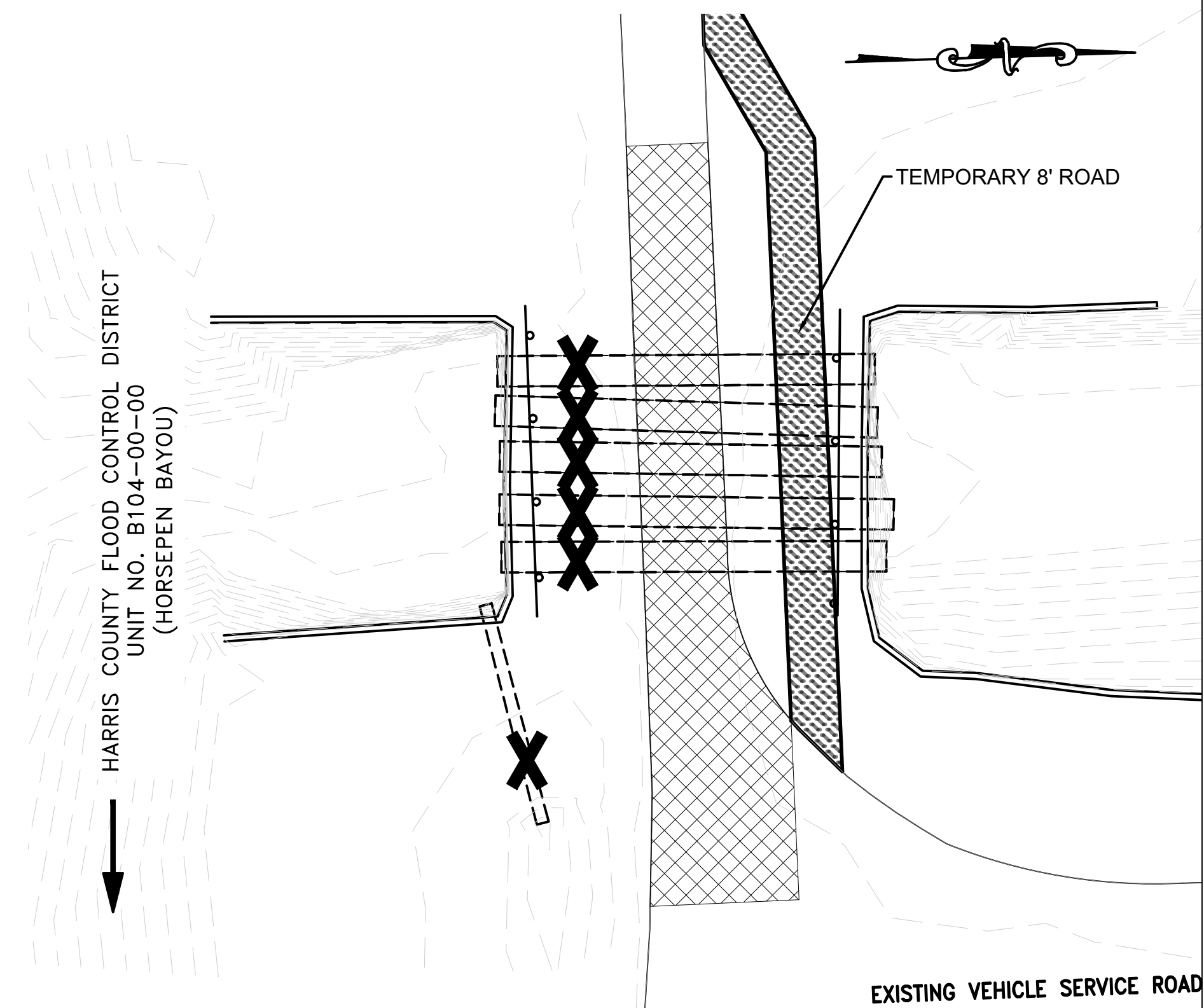
Construction Safety and Phasing Plan Drawings



CONSTRUCTION PHASE 1

CONSTRUCTION PHASE 2

COMPLETE



SCALE 1:20 H, 1:2 V

SCALE 1:20 H, 1:2 V

SCALE 1:20 H, 1:2 V

LEGEND

- REMOVE EXIST STRUCTURE
- DEMOLISH EXIST PVMT
- PROP EXCAVATION
- TEMP ROADWAY
- PROP PVMT
- PROP BACKFILL

NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, CONSTRUCTING, AND MAINTAINING SAFE EXCAVATIONS. SEE GEOTECHNICAL REPORT, SECTION 5.1.4 FOR EXCAVATION STABILITY RECOMMENDATIONS.
- CONSTRUCTION PHASE 1**
1. DEMOLISH EXIST GUARDRAILS
 2. CONSTRUCT TEMP 8' ROADWAY (NORTH SIDE). PROVIDE TRAFFIC CONTROL TO REDIRECT TRAFFIC TO TEMPORARY ROAD.
 3. EXCAVATE, DEMOLISH EXIST CMPS, AND RECONSTRUCT 16 LF NEW 4 - 8' X 8' RCB AND WINGWALL (SOUTH SIDE).

- CONSTRUCTION PHASE 2**
1. CONSTRUCT TEMP 8' ROADWAY (SOUTH SIDE) ON TOP OF NEWLY CONSTRUCTED 4 - 8' X 8' RCBS. PROVIDE TRAFFIC CONTROL TO REDIRECT TRAFFIC TO TEMPORARY ROAD.
 2. DEMOLISH TEMP 8' ROADWAY (NORTH SIDE)
 3. EXCAVATE, DEMOLISH EXIST CMPS, AND RECONSTRUCT 24 LF NEW 4 - 8' X 8' RCB AND WINGWALL (NORTH SIDE).

- CONSTRUCTION PHASE 3**
1. DEMOLISH TEMP 8' ROADWAY (SOUTH SIDE)
 2. RECONSTRUCT NEW VEHICLE SERVICE ROAD
 3. INSTALL NEW GUARDRAILS
 4. ESTABLISH TURF

Houston Airport System
 GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

EDGE ENGINEERING

10351 STELLA LINK RD
 HOUSTON, TEXAS 77025
 512-767-1009
 TBPE Firm No. 20690

REVISIONS		
NO.	DESCRIPTION	DATE BY

ELLINGTON AIRPORT (EFD) SOUTH CULVERT RECONSTRUCTION AND SOUTH CONSTRUCTION SAFETY AND PHASING PLAN

PROJECT MGR:	HSC
DESIGNER:	HSC
DRAWN BY:	HSC
CHECK BY:	NRP
SCALE:	---
DATE:	5/12/2023

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 DOCUMENTS DEPICTED
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 CONSTRUCTION.

HOWARD CHANG
 TEXAS P.E. NO. 117939

APPROVED BY: _____
 DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO.	100082467
A.I.P. NO.	
C.I.P. NO.	
H.A.S. NO.	954
SHEET NO.	

HAS FILED: EDGE ENGINEERING\PROJECTS - POORWAYS\HAS-981-14\THINS_LFD_CULVERTS\6-CAD SHEETS\HAS_DOT_SHEET PHASING.DWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

ELLINGTON AIRPORT (EFD)
NORTH CULVERT RECONSTRUCTION AND NORTH CONSTRUCTION SAFETY AND PHASING PLAN

PROJECT MGR:	JV
DESIGNER:	JDP
DRAWN BY:	JDP
CHECK BY:	AC
SCALE:	
DATE:	06/21/2023

JOHN VERBURG
TEXAS REGISTRATION 125465
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OR CONSTRUCTION.
06/21/2023

**95% DESIGN DEVELOPMENT
NOT APPROVED
FOR CONSTRUCTION**

APPROVED BY: _____

DIRECTOR
HOUSTON AIRPORT SYSTEM

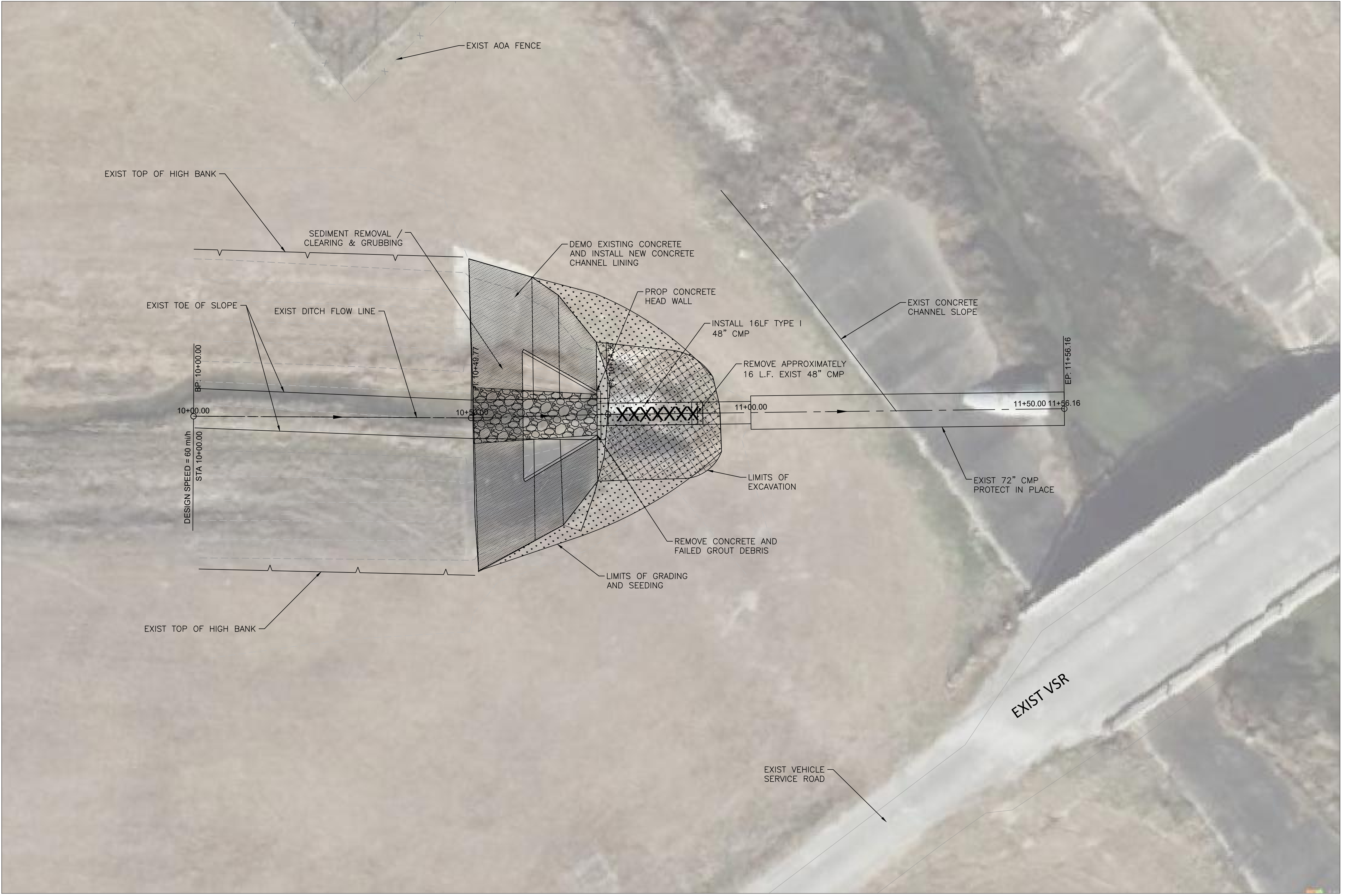
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C.I.P. NO. _____

H.A.S. NO.
954

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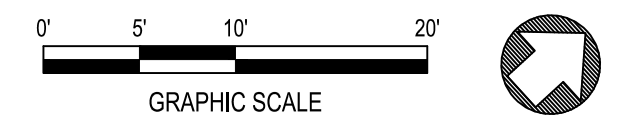


LEGEND

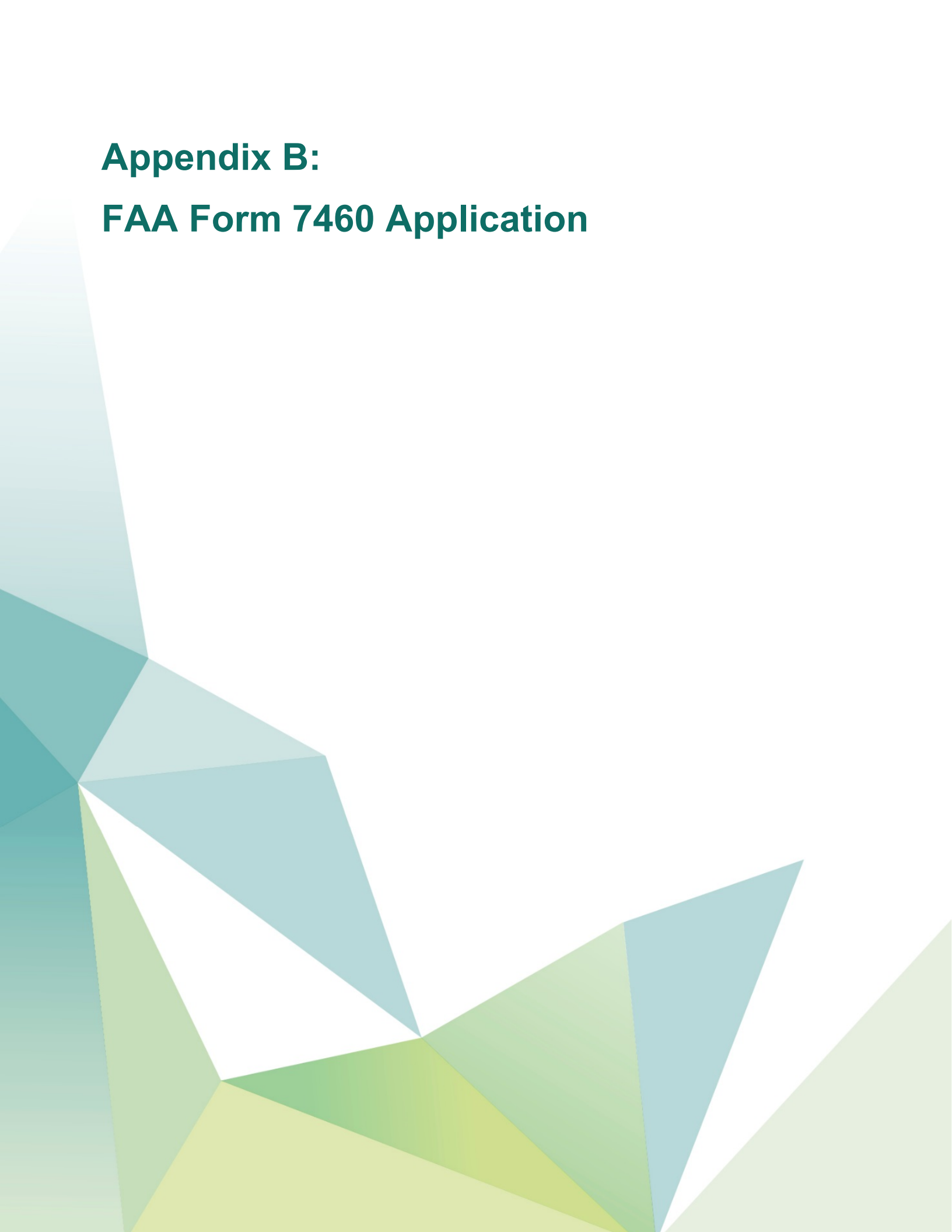
---	EXISTING DITCH FLOW LINE
XXX	PIPE REMOVAL
XXXX	EXCAVATION
XXXX	SEDIMENT REMOVAL / CLEARING & GRUBBING
XXXX	CONCRETE CHANNEL LINING
XXXX	PROPOSED SEEDING
XXXX	RIPRAP

NOTES

1. PHASE 3 (30 CALENDAR DAYS)
2. SAWCUT AND REMOVE EXISTING HEADWALL AND SECTION(S) OF EXISTING PIPE
3. INSTALL PROPOSED PIPE AND NEW HEADWALL



HAS FILE: C:\PW\WORK\ATKINS\ATKINS\G00C4236\DOT06118\E231715C-G-006.DWG
PLOT DATE: 2023-06-22



Appendix B:
FAA Form 7460 Application



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