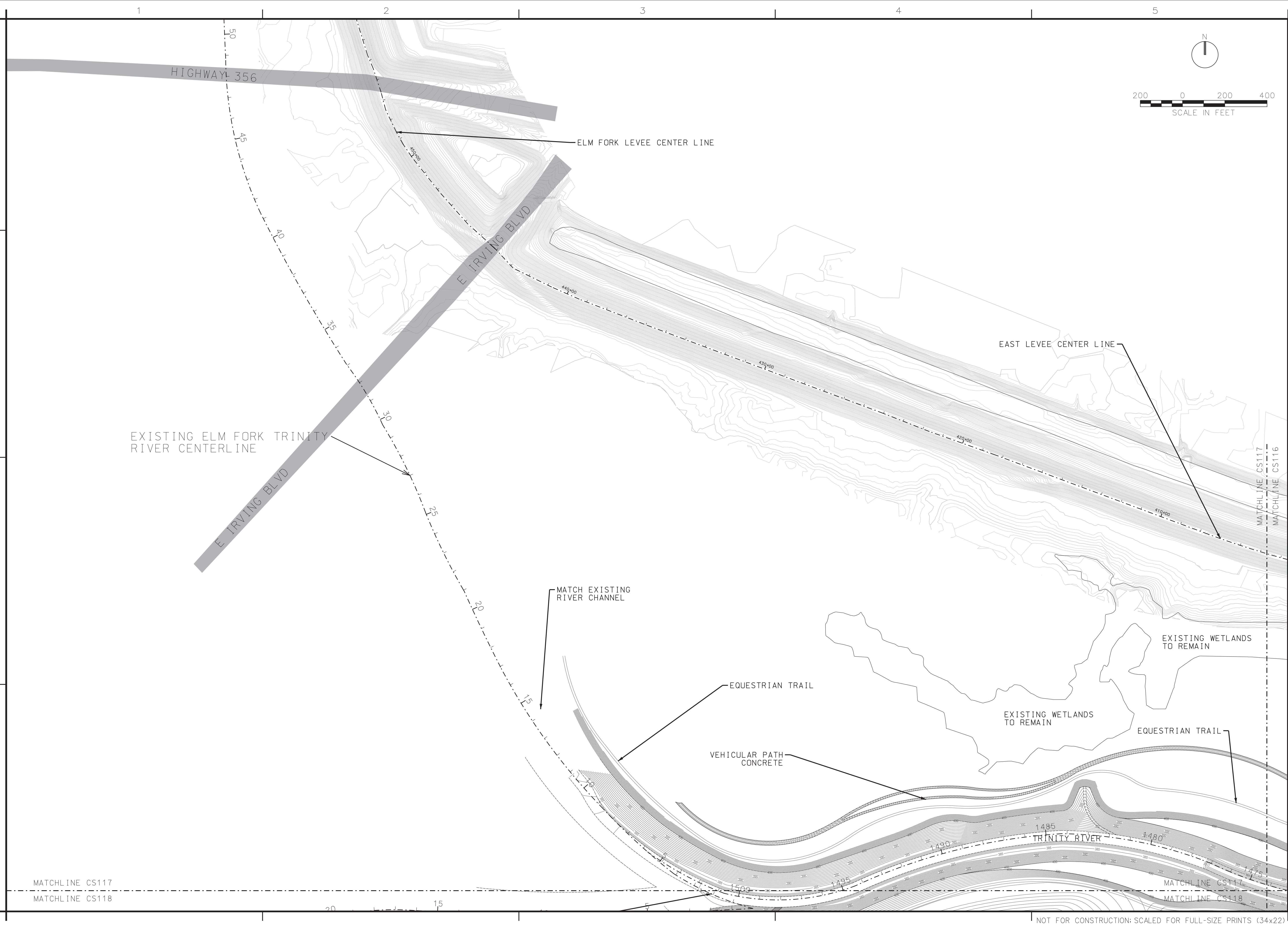
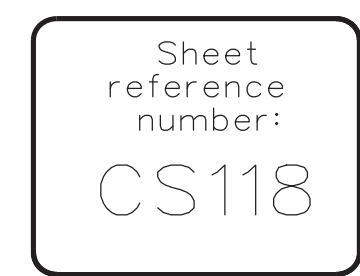
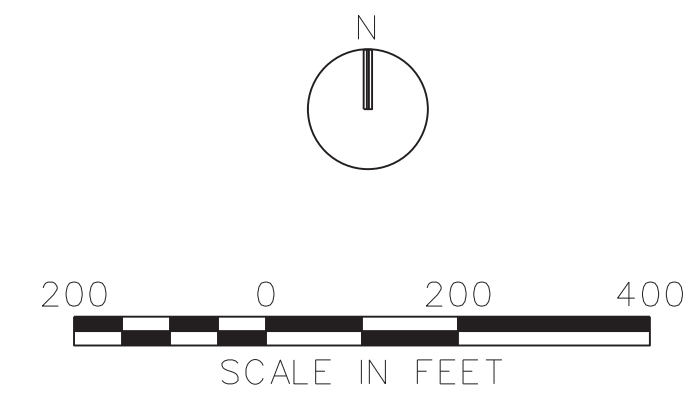
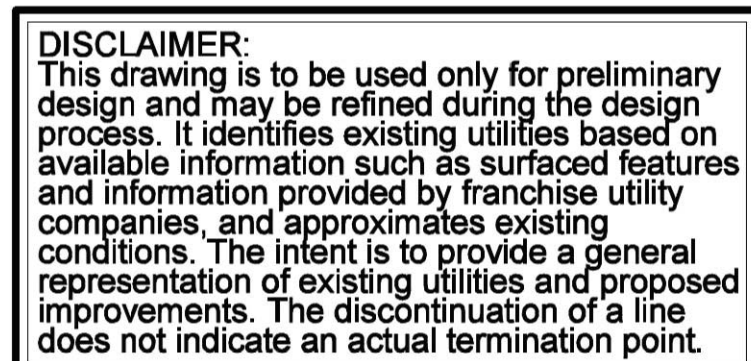




3. LOCATION OF ABLE PUMP STATION HAS CHANGED SINCE 2009 SUBMITTAL. SEE CS SHEETS FOR LOCATION INFORMATION.

4. REPURPOSING OF PIPE AND INSTALLATION OF NEW PIPE SECTIONS WILL NEED TO BE COMPLY WITH CONSTRUCTION GOALS AND SCHEDULE OF FUTURE WETLAND CELLS.

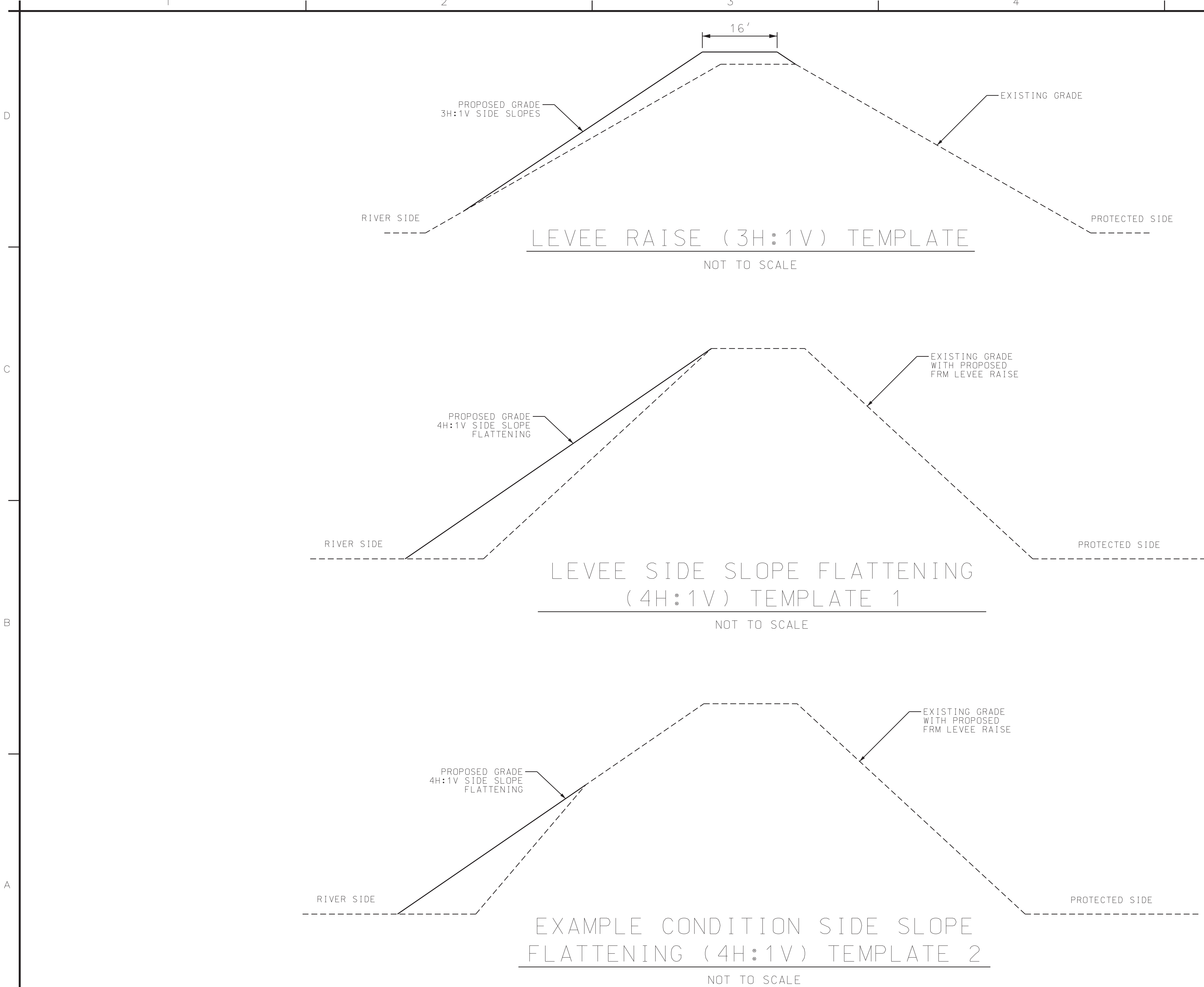
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U.S. ARMY ENGINEER DISTRICT, CORPS OF ENGINEERS FORT WORTH, TEXAS	Designed by:	Date:	Rev:
	Dwn by:	Sol No.	
ENGINEERING/ CONSTRUCTION DIVISION DESIGN BRANCH	Reviewed by:	Contr. No.	
	Submitted by:	By name:	
	DAVID G. BROWN, P.E. CHIEF, CIVIL SECTION	Plot date: 7/15/2013 Plot scale:	

DALLAS FLOODWAY LEVEES
FEASIBILITY STUDY
DALLAS, TEXAS

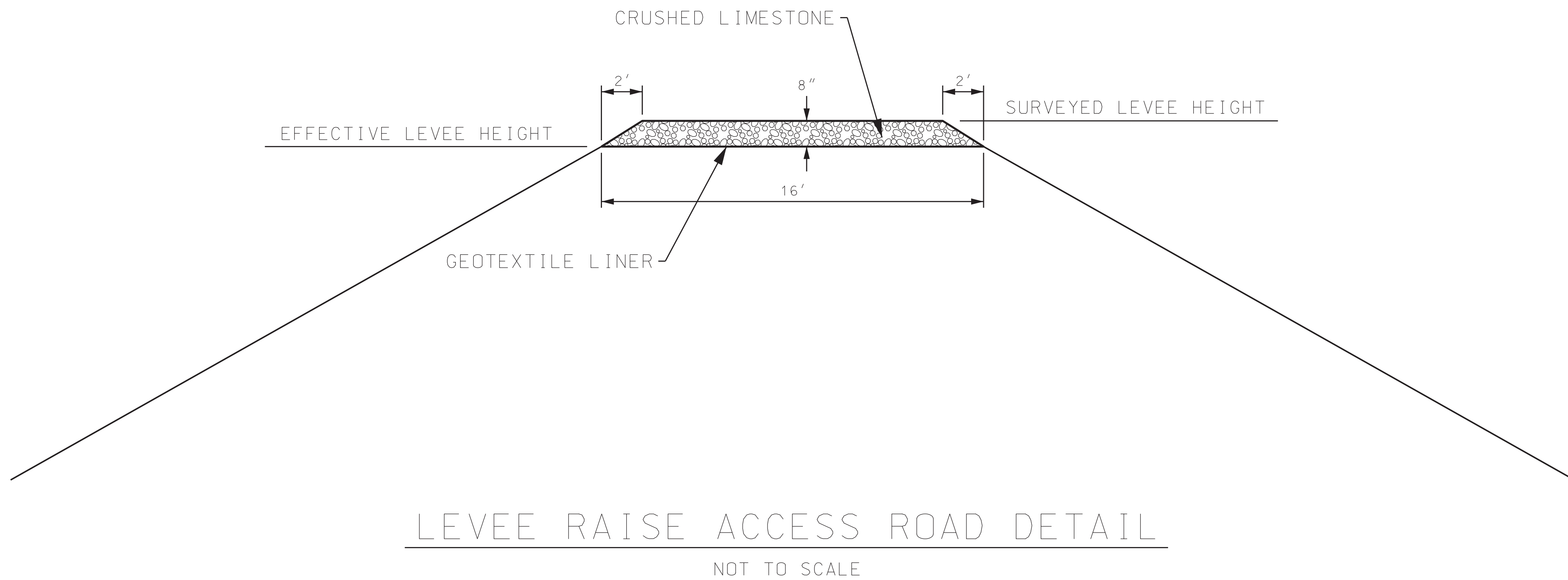
CENTRAL WASTEWATER TREATMENT
PLANT EFFLUENT 60" PIPE
PLAN VIEW LAYOUT

Sheet
reference
number:
CU101





Sheet
reference
number:
C-502



NOTES:

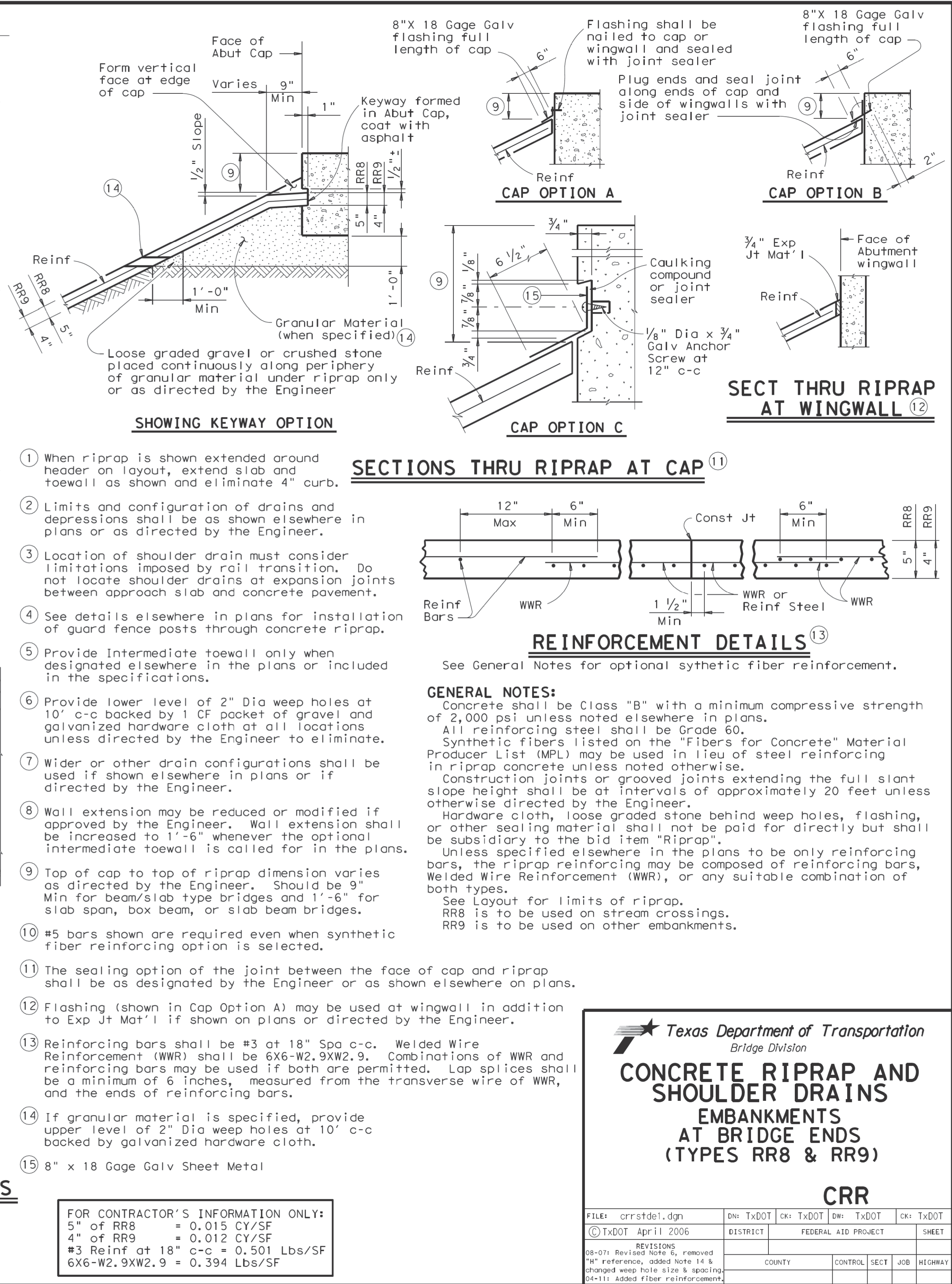
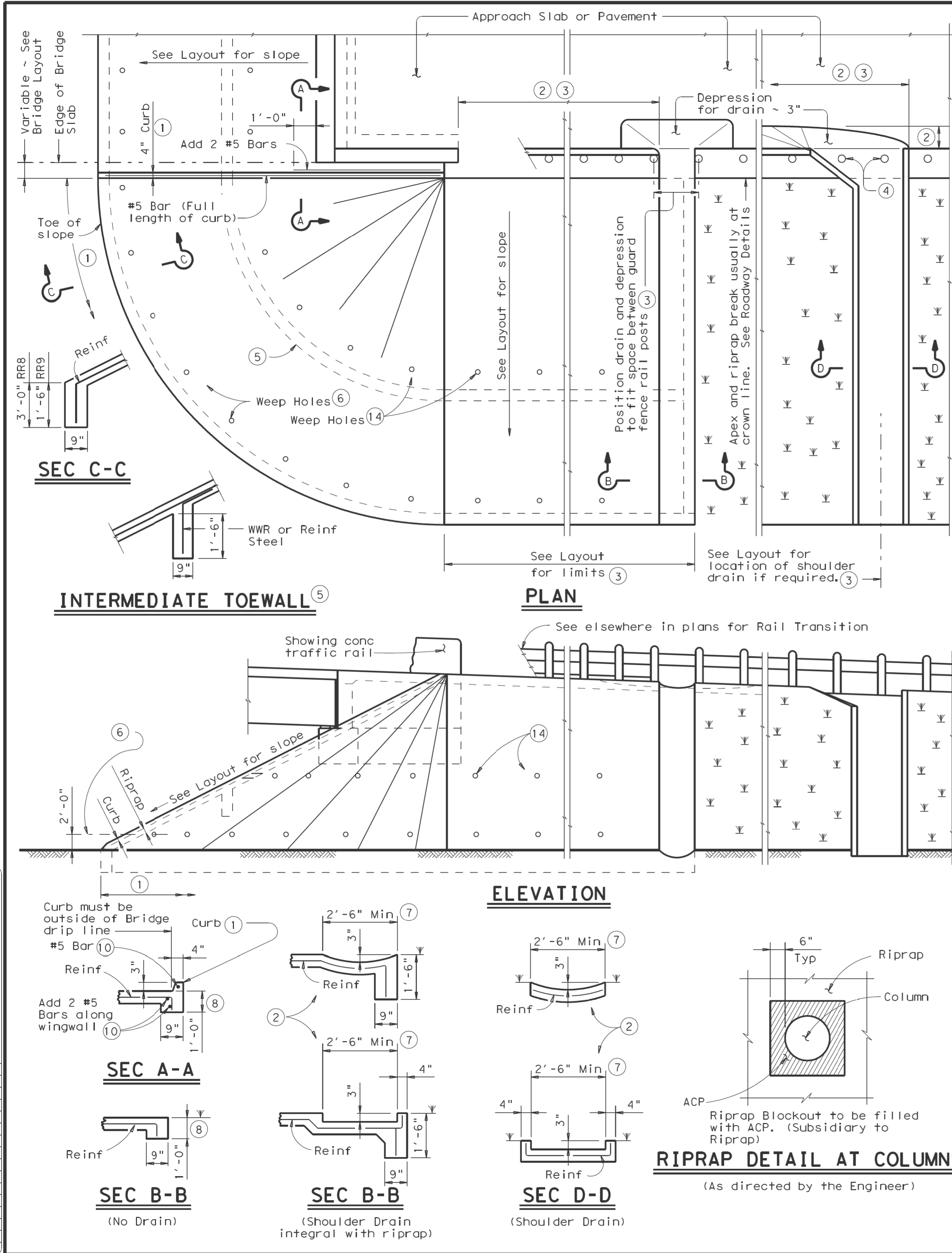
1. FRM BORROW PIT CROSS SECTION IS USED IN FLOOD RISK MANAGEMENT EXCAVATION ONLY. IT IS MODELED AFTER A TYPICAL CROSS SECTION OF THE WETLAND CELLS IN THE DALLAS FLOODWAY EXTENSION PROJECT.
2. THE FRM BORROW PIT CROSS SECTION DOES NOT APPLY TO OTHER WRDA FEATURES SUCH AS, SLOPE FLATTENING, IDP, OR BVP FEATURES.

DISCLAIMER: of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TXDOT for any purpose whatsoever. TXDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

LEVELS DISPLAYED	PATH:
1	
2	
3	
4	
5	

NOTES:

- THE PLANS SHOWN HERE ARE TYPICAL DETAILS FROM TXDOT AND WILL BE REVISED PRIOR TO FULL DESIGN.
- DETAILS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY FOR A FEASIBILITY LEVEL OF STUDY AND WERE USED FOR QUANTITY GENERATION.

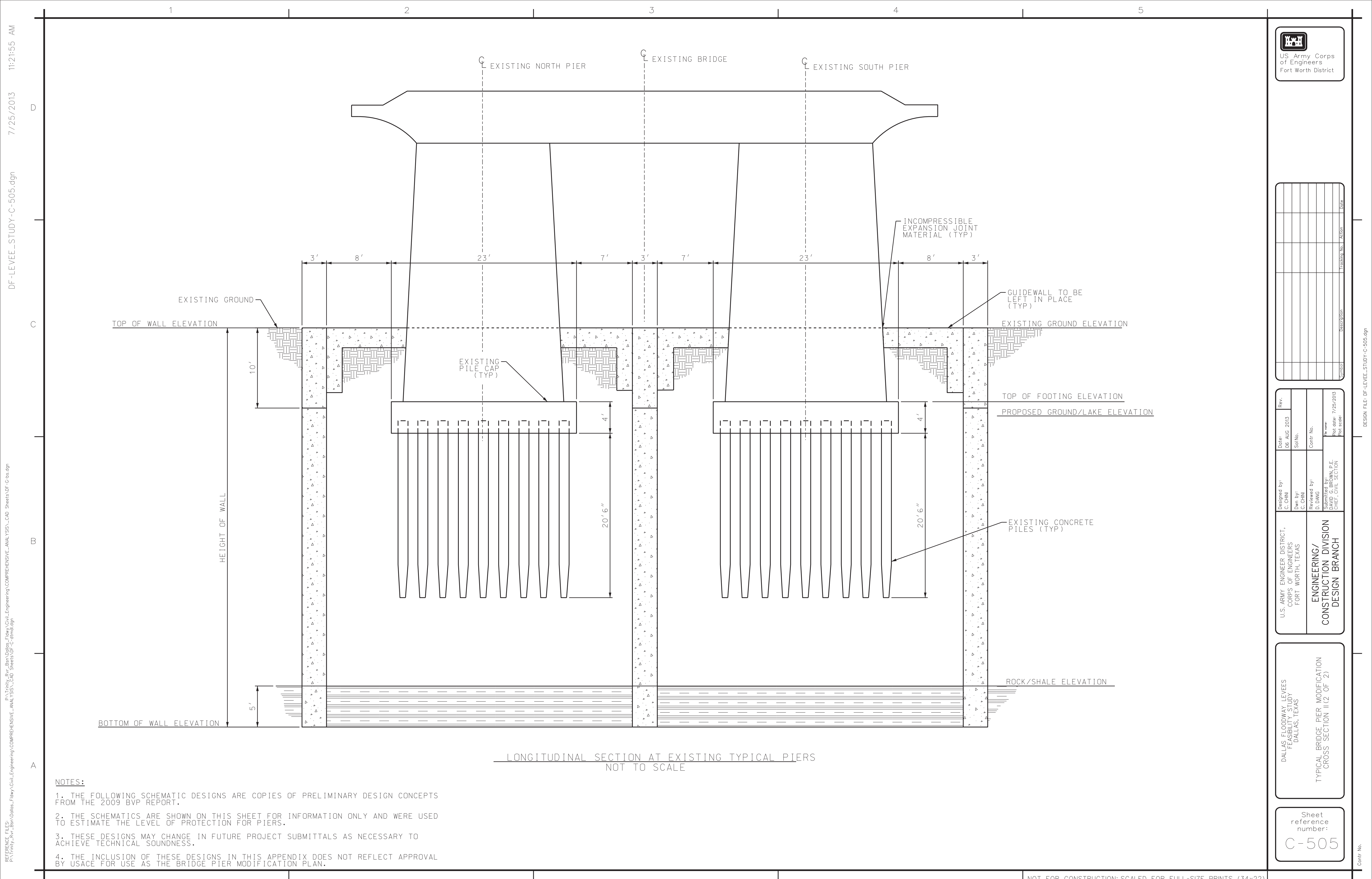


- When riprap is shown extended around header on layout, extend slab and toewall as shown and eliminate 4" curb.
- Limits and configuration of drains and depressions shall be as shown elsewhere in plans or as directed by the Engineer.
- Location of shoulder drain must consider limitations imposed by rail transition. Do not locate shoulder drains at expansion joints between approach slab and concrete pavement.
- See details elsewhere in plans for installation of guard fence posts through concrete riprap.
- Provide Intermediate toewall only when designated elsewhere in the plans or included in the specifications.
- Provide lower level of 2" Dia weep holes at 10' c-c backed by 1 CF packet of gravel and galvanized hardware cloth at all locations unless directed by the Engineer to eliminate.
- Wider or other drain configurations shall be used if shown elsewhere in plans or if directed by the Engineer.
- Wall extension may be reduced or modified if approved by the Engineer. Wall extension shall be increased to 1'-6" whenever the optional intermediate toewall is called for in the plans.
- Top of cap to top of riprap dimension varies as directed by the Engineer. Should be 9" Min for beam/slab type bridges and 1'-6" for slab span, box beam, or slab beam bridges.
- #5 bars shown are required even when synthetic fiber reinforcing option is selected.
- The sealing option of the joint between the face of cap and riprap shall be as designated by the Engineer or as shown elsewhere in plans.
- Flashing (shown in Cap Option A) may be used at wingwall in addition to Exp Jt Mat'l if shown on plans or directed by the Engineer.
- Reinforcing bars shall be #3 at 18" Spa c-c. Welded Wire Reinforcement (WWR) shall be 6X6-W2.9XW2.9. Combinations of WWR and reinforcing bars may be used if both are permitted. Lap splices shall be a minimum of 6 inches, measured from the transverse wire of WWR, and the ends of reinforcing bars.
- If granular material is specified, provide upper level of 2" Dia weep holes at 10' c-c backed by galvanized hardware cloth.
- 8" x 18 Gage Galv Sheet Metal

FOR CONTRACTOR'S INFORMATION ONLY:
5" of RR8 = 0.015 CY/SF
4" of RR9 = 0.012 CY/SF
#3 Reinf at 18" c-c = 0.501 Lbs/SF
6X6-W2.9XW2.9 = 0.394 Lbs/SF

CONCRETE RIPRAP AND SHOULDER DRAINS
EMBANKMENTS AT BRIDGE ENDS (TYPES RR8 & RR9)
CRR

FILE: crrstdel.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT	CK: TxDOT
© TxDOT April 2006	DISTRICT	FEDERAL AID PROJECT	SHEET	
REVISIONS				
08-07: Revised Note 6, removed "H" reference, added Note 14 & changed weep hole size & spacing				
04-11: Added fiber reinforcement				
COUNTY	CONTROL	SECT	JOB	HIGHWAY



NOTES:

1. THE FOLLOWING SCHEMATIC DESIGNS ARE COPIES OF PRELIMINARY DESIGN CONCEPTS FROM THE 2009 BVP REPORT.
2. THE SCHEMATICS ARE SHOWN ON THIS SHEET FOR INFORMATION ONLY AND WERE USED TO ESTIMATE THE LEVEL OF PROTECTION FOR PIERS.
3. THESE DESIGNS MAY CHANGE IN FUTURE PROJECT SUBMITTALS AS NECESSARY TO ACHIEVE TECHNICAL SOUNDNESS.
4. THE INCLUSION OF THESE DESIGNS IN THIS APPENDIX DOES NOT REFLECT APPROVAL BY USACE FOR USE AS THE BRIDGE PIER MODIFICATION PLAN.



US Army Corps
of Engineers
Fort Worth District

Symbol	Description	Tracking No.	Action	Date

Designed by: C. CHIN	Date: 05 AUG 2013	Rev.
Dwn by: C. CHIN	SoNo.	
Reviewed by: D. DANG	Contr. No.	
Submitted by: DAVID G. BROWN, P.E. CHIEF, CIVIL SECTION	Plot date: 7/25/2013	Plot scale:

U.S. ARMY ENGINEER DISTRICT,
CORPS OF ENGINEERS
FORT WORTH, TEXAS

ENGINEERING/
CONSTRUCTION DIVISION
DESIGN BRANCH

DALLAS FLOODWAY LEVEES
FEASIBILITY STUDY
DALLAS, TEXAS

TYPICAL BRIDGE PIER MODIFICATION
CROSS SECTION II (2 OF 2)

Sheet
reference
number:
C-505

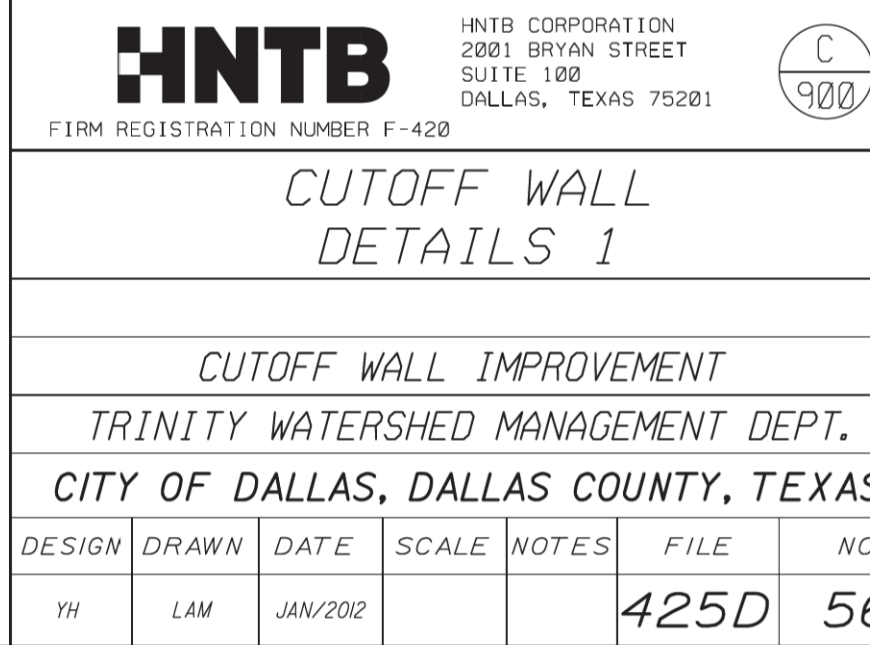


SOIL-BENTONITE AND JET GROUT WINDOW CUTOFF WALL INTERFACE DETAIL

N.T.S.

NOTES:

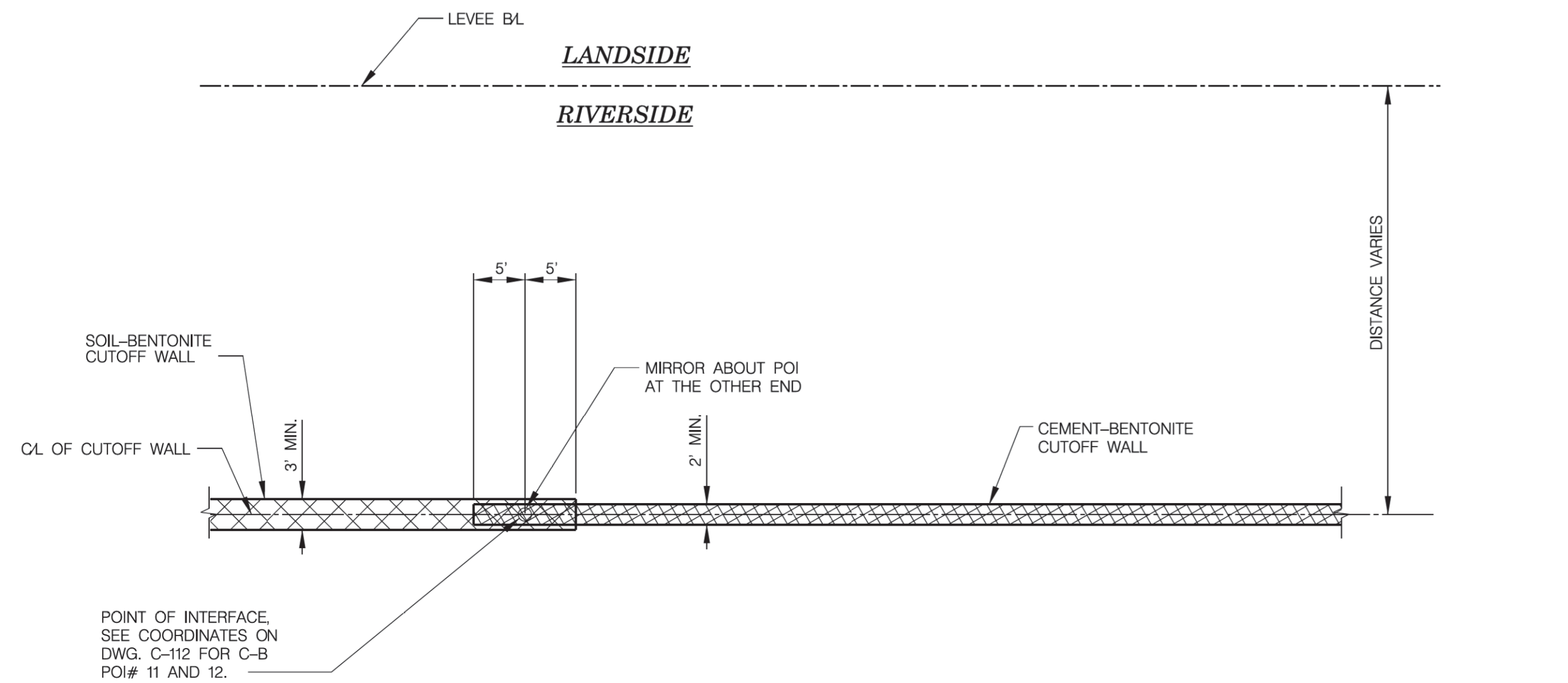
1. LOCATION AND SIZE OF UTILITY SHALL BE FIELD VERIFIED BY CONTRACTOR. SEE GENERAL NOTES ON C-401 FOR MORE INFORMATION.
2. SEE DWG. C-113 TO C-119 FOR UTILITY CONTACT INFORMATION.
3. TO BE DETERMINED BY CONTRACTOR IN COORDINATION WITH UTILITY OWNERS AND APPROVED BY ENGINEER.
4. MINIMUM VERTICAL EXTENT TO GROUT ZONE.
5. BOTTOM ELEVATIONS ARE PROVIDED FOR GENERAL REFERENCE PURPOSE ONLY.
6. CONTRACTOR SHALL FIELD VERIFY THE TRENCH DEPTH AT EACH INTERFACE LOCATION.
7. CONTRACTOR SHALL NOT DAMAGE EXISTING UTILITY LINES AND ITS SURROUNDING PROTECTION MATERIAL AND SUPPORTING STRUCTURE IF ANY.
8. CONTRACTOR SHALL CONTACT UTILITY OWNER FOR ANY WORK WITHIN 25 FT. OF EACH UTILITY AT LEAST 48 HOURS PRIOR TO WORKING IN THE AREA.
9. CONTRACTOR SHALL NOTIFY DWU WHEN JET GROUTING IN THE VICINITY OF WATER LINES WITH 48 HOURS NOTICE SO THAT DWU REPRESENTATIVE PREPARED TO CLOSE DOWN COORDINATE WITH THE DISTRICT 67000 DISTRICT.
10. DWU REQUIRES TO REVIEW ANY JET GROUTING SUBMITTALS DURING CONSTRUCTION FOR AREAS IN THE VICINITY OF WATER LINES.



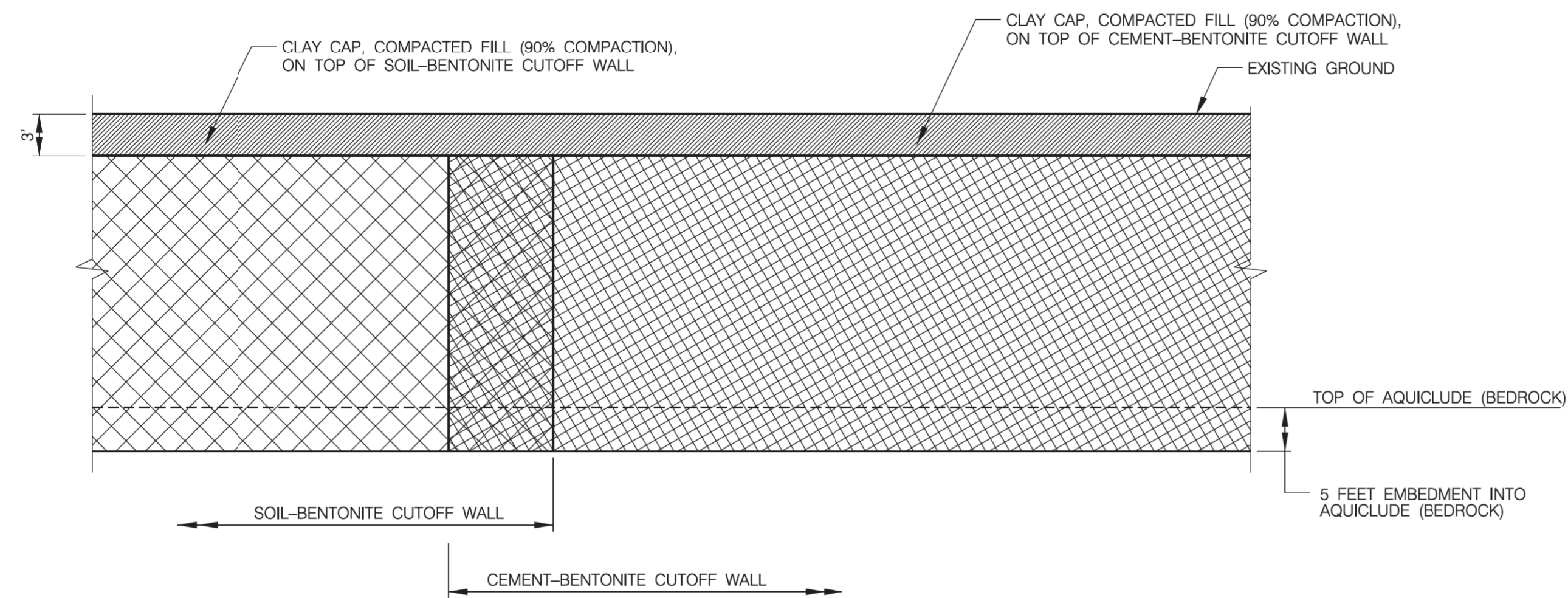
NOTES:

1. THE PLANS SHOWN HERE ARE TYPICAL DETAILS FROM HNTB FOR THE CITY OF DALLAS' CUT-OFF WALL PROJECTS AND WILL BE REVISED PRIOR TO FULL DESIGN.
2. DETAILS ARE SHOWN FOR INFORMATIONAL PURPOSES AS A FEASIBILITY LEVEL OF STUDY AND WERE USED FOR QUANTITY GENERATION.
3. SEE SHEETS CS103-CS05 OR CS112-CS114 FOR LOCATIONS OF PROPOSED CUT-OFF WALLS ALONG THE EAST LEVEE.

Sheet
reference
number:
C-506

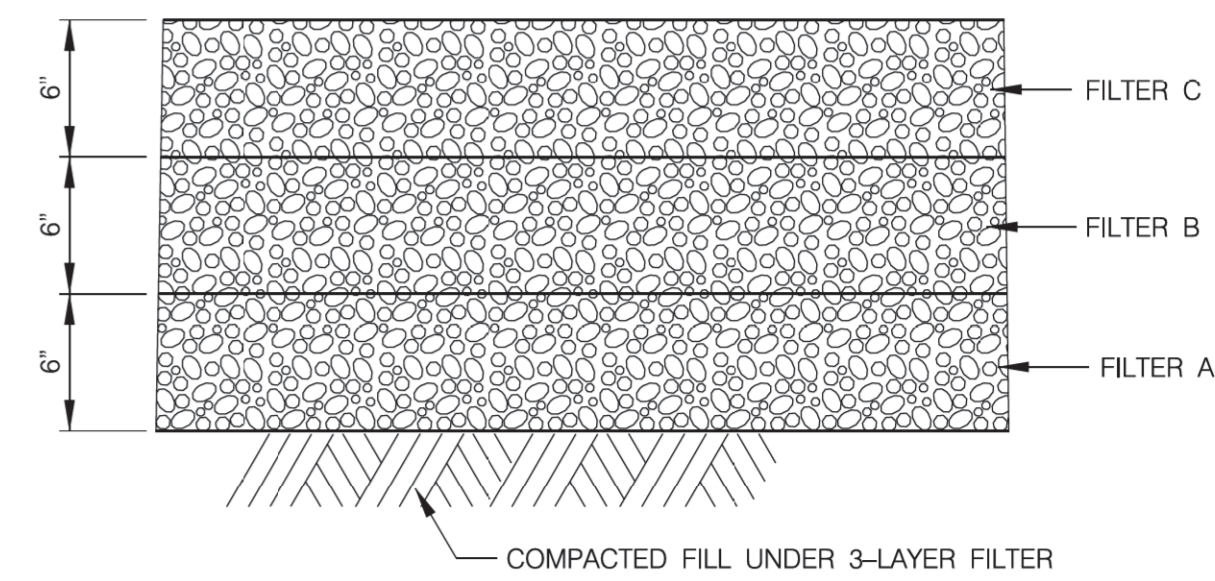


PLAN VIEW

PROFILE VIEW

CEMENT-BENTONITE AND SOIL-BENTONITE CUTOFF WALL INTERFACE DETAIL

N.T.S.



3-LAYER FILTER DETAIL

N.T.S.

FILTER C

	MIN. (MM)	MAX. (MM)
D100	50	75
D90	35	60
D50	30	55
D30	28	52
D15	25	50

FILTER B

	MIN. (MM)	MAX. (MM)
D100	22.0	40.0
D90	12.0	24.0
D50	3.6	10.0
D30	2.0	6.8
D15	1.5	5.0

FILTER A

	MIN. (MM)	MAX. (MM)
D100	5.00	40.00
D90	1.80	4.00
D50	0.41	1.00
D30	0.20	0.41
D15	0.12	0.24

3-LAYER FILTER GRADATION TABLES



HNTB
FIRM REGISTRATION NUMBER F-420

HNTB CORPORATION
2001 BRYAN STREET
SUITE 100
DALLAS, TEXAS 75201

CUTOFF WALL
DETAILS 2

CUTOFF WALL IMPROVEMENT

TRINITY WATERSHED MANAGEMENT DEPT.

CITY OF DALLAS, DALLAS COUNTY, TEXAS

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
YH	LAM	JAN/2012			425D	56



S Army Corps
f Engineers
ort Worth District

[illegible]

U.S. ARMY ENGINEER DISTRICT, CORPS OF ENGINEERS FORT WORTH, TEXAS	Designed by:	06 AUG 2013	rev.
	Drawn by:	SoInG	
ENGINEERING/ CONSTRUCTION DIVISION DESIGN BRANCH	Reviewed by:	Contr. No.	
	Submitted by: WAIN, P F	File number	
	Checked by: CHIEF, CURR. SECTION	Plot date: 7/25/2013	
		Plot scale:	

CITY OF DALLAS CUT-OFF WALL
TYPICAL DETAIL II(2 OF 2)

Sheet
reference
number:

C-507

Contr. No.

DESIGN FILE: DF-LEVEE_STUDY-C-507.dgn