

**Dallas to Houston High-Speed Rail  
Draft Environmental Impact Statement**

**Appendix G:  
Dallas to Houston High-Speed Rail  
Passenger Service from Houston to Dallas  
Final Draft Conceptual Engineering  
Plans and Details  
Set 6 of 21**



**TEXAS  
CENTRAL**

## Transmittal

To	Megan Inman, AECOM	Date	November 17, 2017
Copies	FRA: K. Wright AECOM: J. Smiley TCRR: A. Greer File: HOU TCR	TRA Number	00211
From	Christopher Taylor, Arup		
Subject	FINAL DRAFT CONCEPTUAL ENGINEERING DESIGN DOCUMENTATION – FDCE v7 Transmittal Final Version for Publication with Draft Environmental Impact Statement (DEIS) FDCE for Public Release		

### We Are Sending You: ENTER DOCUMENT TYPE CODE(S) ONLY

Date of Document	DEIS Appendix	Set # of #	Title of Document or Drawing Title
11/17/17	-	-	234180-AFN-TRA-00211 FDCEv7.PDF (this transmittal)
<b>REPORTS</b>			
9/15/17	F	1 of 2	TCRR FDCE v7 REPORT.PDF ( <i>Final Draft Conceptual Engineering Report v7 – Project Definition for publication with Draft EIS</i> )
9/15/17	F	2 of 2	TCRR CONSTRUCTABILITY v4 REPORT.PDF
<b>TCRR FDCE v7 DWGS VOLUME 1 (<i>General Sheets and Typical Sections</i>)</b>			
9/15/17	G	1 of 21	TCRR FDCE v7 DWGS VOLUME 1.PDF ( <i>General Sheets and Typical Sections</i> )
<b>TCRR FDCE v7 DWGS VOLUME 2 (<i>Railway Alignment Plan and Profile Sheets</i>)</b>			
9/15/17	G	2 of 21	TCRR FDCE v7 DWGS VOLUME 2-1.PDF ( <i>Houston Segment</i> )
9/15/17	G	3 of 21	TCRR FDCE v7 DWGS VOLUME 2-2.PDF ( <i>West of Teague Segment</i> )
9/15/17	G	4 of 21	TCRR FDCE v7 DWGS VOLUME 2-3.PDF ( <i>IH-45 Segment</i> )
9/15/17	G	5 of 21	TCRR FDCE v7 DWGS VOLUME 2-4.PDF ( <i>Navarro West Segment</i> )
9/15/17	G	6 of 21	TCRR FDCE v7 DWGS VOLUME 2-5.PDF ( <i>Navarro East Segment</i> )
9/15/17	G	7 of 21	TCRR FDCE v7 DWGS VOLUME 2-6.PDF ( <i>Ellis West Segment</i> )
9/15/17	G	8 of 21	TCRR FDCE v7 DWGS VOLUME 2-7.PDF ( <i>Ellis East Segment</i> )
9/15/17	G	9 of 21	TCRR FDCE v7 DWGS VOLUME 2-8.PDF ( <i>Dallas Segment</i> )
<b>TCRR FDCE v7 DWGS VOLUME 3 (<i>Stations, Maintenance Facilities, and Railway Systems Sheets</i>)</b>			
9/15/17	G	10 of 21	TCRR FDCE v7 DWGS VOLUME 3-1.PDF ( <i>Stations</i> )
9/15/17	G	11 of 21	TCRR FDCE v7 DWGS VOLUME 3-2.PDF ( <i>Maintenance Facilities, Yards and Shops</i> )
9/15/17	G	12 of 21	TCRR FDCE v7 DWGS VOLUME 3-3.PDF ( <i>Rail Systems</i> )
<b>TCRR FDCE v7 DWGS VOLUME 4 (<i>Roadway Plan Sheets</i>)</b>			
9/15/17	G	13 of 21	TCRR FDCE v7 DWGS VOLUME 4-1.PDF ( <i>Houston Segment</i> )
9/15/17	G	14 of 21	TCRR FDCE v7 DWGS VOLUME 4-2.PDF ( <i>West of Teague Segment</i> )
9/15/17	G	15 of 21	TCRR FDCE v7 DWGS VOLUME 4-3.PDF ( <i>IH-45 Segment</i> )
9/15/17	G	16 of 21	TCRR FDCE v7 DWGS VOLUME 4-4.PDF ( <i>Navarro West Segment</i> )
9/15/17	G	17 of 21	TCRR FDCE v7 DWGS VOLUME 4-5.PDF ( <i>Navarro East Segment</i> )

Document Format	Date of Document	Number of Copies	Title of Document or Drawing Title
9/15/17	G	18 of 21	TCRR FDCE v7 DWGS VOLUME 4-6.PDF ( <i>Ellis West Segment</i> )
9/15/17	G	19 of 21	TCRR FDCE v7 DWGS VOLUME 4-7.PDF ( <i>Ellis East Segment</i> )
9/15/17	G	20 of 21	TCRR FDCE v7 DWGS VOLUME 4-8.PDF ( <i>Dallas Segment</i> )
TCRR FDCE v7 DWGS VOLUME 5 ( <i>Wildlife Crossing Sheets</i> )			
9/15/17	G	21 of 21	TCRR FDCE v7 DWGS VOLUME 5.PDF ( <i>Wildlife Crossing Sheets</i> )

These are transmitted as checked below:

- Deliverable                       For Information                       As requested                       For your use  
 For approval                       For Review and Comment                       Return                       Other: Publication with DEIS

**REMARKS:**

The files transmitted herewith represent a final submittal of the Final Draft Conceptual Engineering (FDCE) design report and drawings for the Dallas to Houston High-Speed Rail Project. This v7 submittal of the FDCE report is intended for distribution on the FRA website with the Draft EIS (DEIS) for public review.



Delivered VIA     Outlook Email     Hand Delivery     Courier     PMS Notification     USPS

**PREPARED BY:** Christopher Taylor                      **Date:** November 17, 2017

**IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE.**



**TEXAS  
CENTRAL**



**DALLAS TO HOUSTON HIGH-SPEED RAIL**  
PASSENGER SERVICE FROM HOUSTON TO DALLAS

**FINAL DRAFT  
CONCEPTUAL ENGINEERING PLANS AND DETAILS**  
VOLUME 2 - RAILWAY ALIGNMENT PLAN AND PROFILE SHEETS

SEPTEMBER 15, 2017



U.S. Department of Transportation  
**Federal Railroad Administration**

**ARUP**

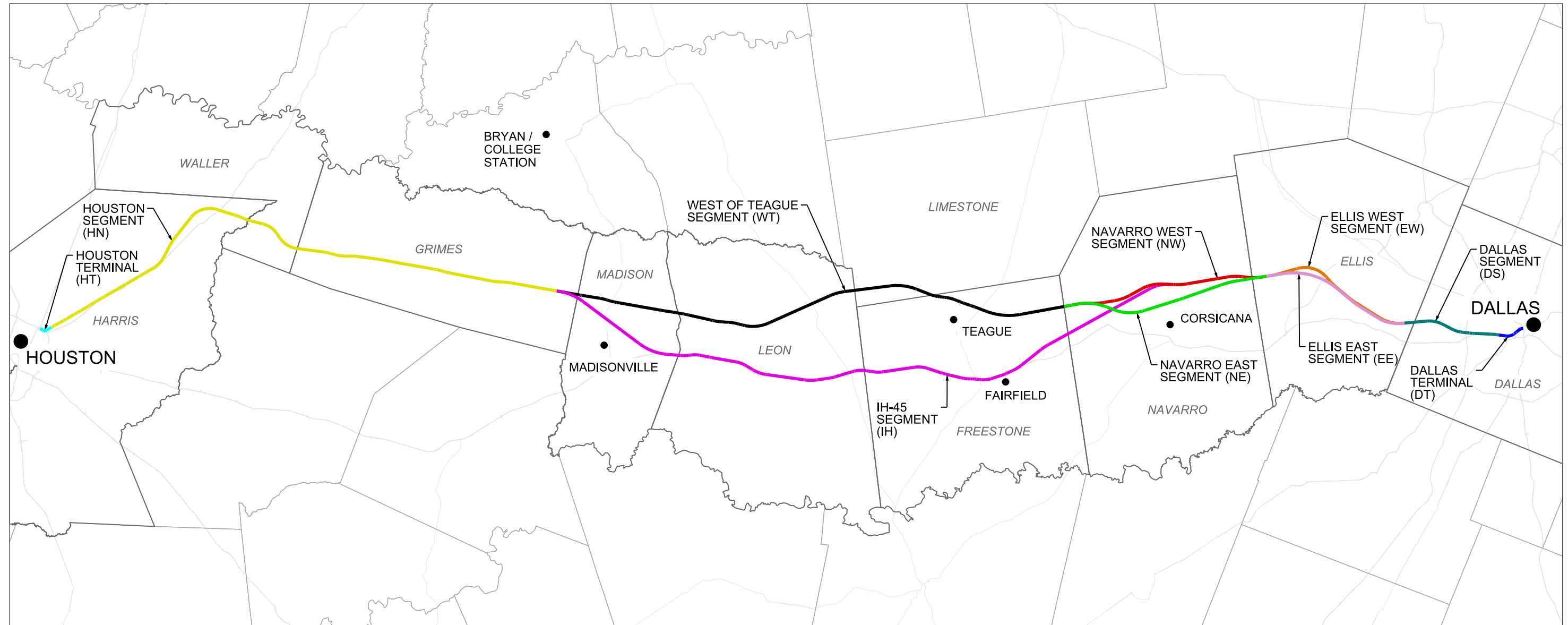
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www.arup.com  
Texas Registered Engineering Firm: F-1990

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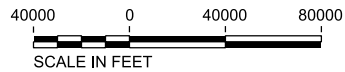
COVER SHEET





ALIGNMENT ALTERNATIVE	OE SEGMENT ID	SEGMENT NAMES	SEGMENT ABBREVIATION
A	5, 4A, 3A, 2A, 1	DALLAS SEGMENT, ELLIS WEST SEGMENT, NAVARRO WEST SEGMENT, WEST OF TEAGUE SEGMENT, HOUSTON SEGMENT	DS, EW, NW, WT, HN
B	5, 4A, 3B, 2A, 1	DALLAS SEGMENT, ELLIS WEST SEGMENT, NAVARRO EAST SEGMENT, WEST OF TEAGUE SEGMENT, HOUSTON SEGMENT	DS, EW, NE, WT, HN
C	5, 4A, 2B, 1	DALLAS SEGMENT, ELLIS WEST SEGMENT, IH-45 SEGMENT, HOUSTON SEGMENT	DS, EW, IH, HN
D	5, 4B, 3A, 2A, 1	DALLAS SEGMENT, ELLIS EAST SEGMENT, NAVARRO WEST SEGMENT, WEST OF TEAGUE SEGMENT, HOUSTON SEGMENT	DS, EE, NW, WT, HN
E	5, 4B, 3A, 2A, 1	DALLAS SEGMENT, ELLIS EAST SEGMENT, NAVARRO EAST SEGMENT, WEST OF TEAGUE SEGMENT, HOUSTON SEGMENT	DS, EE, NE, WT, HN
F	5, 4B, 2B, 1	DALLAS SEGMENT, ELLIS EAST SEGMENT, IH-45 SEGMENT, HOUSTON SEGMENT	DS, EE, IH, HN

NOTES:  
 1. REFER TO FDCE v5 FOR SEGMENT NAMES AND ALIGNMENT ALTERNATIVES.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**D. THOMPSON**  
 DRAWN BY  
**D. THOMPSON**  
 CHECKED BY  
**R. BURNS**  
 IN CHARGE  
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**09/15/2017**

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Client  
  
**TEXAS CENTRAL**  
 1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**GENERAL LOCATION PLAN**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No: 234180 Drawing No: GEN-00-00002 Rev: 01

VOLUME 1 - GENERAL SHEETS & TYPICAL SECTIONS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Includes sections 1-1 GENERAL, 1-2 RAILWAY TYPICAL SECTIONS, 1-3 ROADWAY AND GRADE SEPARATION TYPICAL SECTIONS, 1-4 CIVIL STRUCTURES TYPICAL DETAILS, 1-5 CIVIL UTILITIES TYPICAL DETAILS, and 1-6 GENERAL - ALIGNMENT CURVE DATA TABLES.

VOLUME 2 - RAILWAY ALIGNMENT PLAN AND PROFILE SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Section 2-1 HOUSTON SEGMENT, listing drawings CVL-HN-01101 through CVL-HN-01108-2.

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Section 2-2 WEST OF TEAGUE SEGMENT, listing drawings CVL-HN-01107-3 through CVL-HN-01180.

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Section 2-2 WEST OF TEAGUE SEGMENT, listing drawings CVL-WT-01250 through CVL-WT-01296.

Table with columns: REV, DATE, BY, CHK, APP, DESCRIPTION. Revision table for the drawing.

Table with columns: DESIGNED BY, DRAWN BY, CHECKED BY, IN CHARGE, DATE. Design and drawing information.



Table with columns: Drawing Title, Scale, Drawing Status, Job No, Drawing No, Rev. Project information.



VOLUME 2 - RAILWAY ALIGNMENT PLAN AND PROFILE SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Includes sections for 2-2 WEST OF TEAGUE SEGMENT and 2-3 IH-45 SEGMENT.

Table with columns: Drawing No., Description. Lists drawings for IH-45 SEGMENT - CIVIL - PLAN AND PROFILE across various stationing points.

Table with columns: Drawing No., Description. Lists drawings for NAVARRO WEST SEGMENT - CIVIL - PLAN AND PROFILE and 2-5 NAVARRO EAST SEGMENT.

Table with columns: REV, DATE, BY, CHK, APP, DESCRIPTION. Revision table for the drawing.

Table with columns: DESIGNED BY, DRAWN BY, CHECKED BY, IN CHARGE, DATE. Designer information table.



Table with columns: Drawing Title, Scale, Drawing Status, Job No, Drawing No, Rev. Project information table.



HOUSTON SEGMENT - CIVIL - KEY MAP - Sheet 2 of 4 - HN1 1024+00 TO HN1 2082+00

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Lists drawing numbers and descriptions for segments 2-6, 2-7, and 2-8.

VOLUME 3 - STATIONS, MAINTENANCE FACILITIES AND RAILWAY SYSTEMS SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Lists drawing numbers and descriptions for stations, maintenance facilities, and railway systems sheets.

Table with columns: Drawing ID, Description. Lists drawing numbers and descriptions for various station options, industrial stations, and maintenance facilities.

Table with columns: REV, DATE, BY, CHK, APP, DESCRIPTION. Includes a design log and a metadata table with fields like DESIGNED BY, DRAWN BY, CHECKED BY, IN CHARGE, DATE.

Project information block containing logos for ARUP, FREESE & NICHOLS, and TEXAS CENTRAL. Includes drawing title 'GENERAL INDEX SHEET 3 OF 5', scale 'NO SCALE', and drawing status 'FINAL DRAFT'.

PLOT TIME: 9/25/2017 5:41:24 PM



**VOLUME 3 - STATIONS, MAINTENANCE FACILITIES AND RAILWAY SYSTEMS SHEETS**

DRAWING NO.	DRAWING DESCRIPTIONS
	<b>3-2 MAINTENANCE FACILITIES, YARDS AND SHOPS</b>
MNT-DS-04040	DALLAS SEGMENT - MAINTENANCE FACILITIES - DALLAS SOUTH TMF - SHEET 2 OF 3
MNT-DS-04041	DALLAS SEGMENT - MAINTENANCE FACILITIES - DALLAS SOUTH TMF - SHEET 3 OF 3
MNT-DS-04042	DALLAS SEGMENT - MAINTENANCE FACILITIES - DALLAS NORTH TMF - SHEET 1 OF 2
MNT-DS-04043	DALLAS SEGMENT - MAINTENANCE FACILITIES - DALLAS NORTH TMF - SHEET 2 OF 2
MNT-DS-04044	DALLAS SEGMENT - MAINTENANCE FACILITIES - MOW FACILITY DS-3 - LAYOUT
	<b>3-3 RAILWAY SYSTEMS</b>
SYS-00-01000	GENERAL - RAILWAY SYSTEMS - TYPICAL LAYOUT PLAN SHEET 1 OF 3
SYS-00-01001	GENERAL - RAILWAY SYSTEMS - TYPICAL LAYOUT PLAN SHEET 2 OF 3
SYS-00-01002	GENERAL - RAILWAY SYSTEMS - TYPICAL LAYOUT PLAN SHEET 3 OF 3
SYS-00-02000	GENERAL - RAILWAY SYSTEMS - FACILITY SPACING - ALIGNMENT ALTERNATIVE A
SYS-00-02001	GENERAL - RAILWAY SYSTEMS - FACILITY SPACING - ALIGNMENT ALTERNATIVE B
SYS-00-02002	GENERAL - RAILWAY SYSTEMS - FACILITY SPACING - ALIGNMENT ALTERNATIVE C
SYS-00-02003	GENERAL - RAILWAY SYSTEMS - FACILITY SPACING - ALIGNMENT ALTERNATIVE D
SYS-00-02004	GENERAL - RAILWAY SYSTEMS - FACILITY SPACING - ALIGNMENT ALTERNATIVE E
SYS-00-02005	GENERAL - RAILWAY SYSTEMS - FACILITY SPACING - ALIGNMENT ALTERNATIVE F
SYS-00-03000	GENERAL - RAILWAY SYSTEMS - FACILITY LOCATION

**VOLUME 4 - ROADWAY PLAN SHEETS**

DRAWING NO.	DRAWING DESCRIPTIONS
	<b>4-1 HOUSTON SEGMENT</b>
RDY-HN-01101	HOUSTON SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 1 OF 4 - STA. HN1 10+00 TO HN1 1030+00
RDY-HN-01102	HOUSTON SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 2 OF 4 - STA. HN1 1030+00 TO HN1 2070+00
RDY-HN-01103	HOUSTON SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 3 OF 4 - STA. HN1 2070+00 TO HN2 790+00
RDY-HN-01104	HOUSTON SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 4 OF 4 - STA. HN2 790+00 TO HN2 2073+80
RDY-HN-04001	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HT1 20+00 TO HT1 110+00
RDY-HN-04002	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 10+00 TO HN1 90+00
RDY-HN-04003	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 90+00 TO HN1 180+00
RDY-HN-04004	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 180+00 TO HN1 270+00
RDY-HN-04005	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 270+00 TO HN1 360+00
RDY-HN-04006	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 360+00 TO HN1 450+00
RDY-HN-04007	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 450+00 TO HN1 540+00
RDY-HN-04008	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 540+00 TO HN1 630+00
RDY-HN-04009	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 630+00 TO HN1 720+00
RDY-HN-04010	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 720+00 TO HN1 810+00
RDY-HN-04011	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 810+00 TO HN1 900+00
RDY-HN-04012	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 900+00 TO HN1 990+00
RDY-HN-04013	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 990+00 TO HN1 1080+00
RDY-HN-04014	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1080+00 TO HN1 1170+00
RDY-HN-04015	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1170+00 TO HN1 1260+00
RDY-HN-04016	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1260+00 TO HN1 1350+00
RDY-HN-04017	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1350+00 TO HN1 1440+00
RDY-HN-04018	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1440+00 TO HN1 1530+00
RDY-HN-04019	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1530+00 TO HN1 1620+00
RDY-HN-04020	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1620+00 TO HN1 1710+00
RDY-HN-04021	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1710+00 TO HN1 1800+00
RDY-HN-04022	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1800+00 TO HN1 1890+00
RDY-HN-04023	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1890+00 TO HN1 1980+00
RDY-HN-04024	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 1980+00 TO HN1 2070+00
RDY-HN-04025	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 2070+00 TO HN1 2160+00
RDY-HN-04026	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 2160+00 TO HN1 2250+00
RDY-HN-04027	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 2250+00 TO HN1 2340+00
RDY-HN-04028	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN1 2340+00 TO HN1 2387+62
RDY-HN-04029	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 10+00 TO HN2 100+00
RDY-HN-04030	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 100+00 TO HN2 190+00
RDY-HN-04031	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 190+00 TO HN2 280+00
RDY-HN-04032	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 280+00 TO HN2 370+00
RDY-HN-04033	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 370+00 TO HN2 460+00
RDY-HN-04034	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 460+00 TO HN2 550+00
RDY-HN-04035	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 550+00 TO HN2 640+00
RDY-HN-04036	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 640+00 TO HN2 730+00
RDY-HN-04037	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 730+00 TO HN2 820+00
RDY-HN-04038	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 820+00 TO HN2 910+00
RDY-HN-04039	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 910+00 TO HN2 1000+00
RDY-HN-04040	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1000+00 TO HN2 1090+00
RDY-HN-04041	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1090+00 TO HN2 1180+00
RDY-HN-04042	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1180+00 TO HN2 1270+00
RDY-HN-04043	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1270+00 TO HN2 1360+00
RDY-HN-04044	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1360+00 TO HN2 1450+00
RDY-HN-04045	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1450+00 TO HN2 1540+00
RDY-HN-04046	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1540+00 TO HN2 1630+00

RDY-HN-04047	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1630+00 TO HN2 1720+00
RDY-HN-04048	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1720+00 TO HN2 1810+00
RDY-HN-04049	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1810+00 TO HN2 1900+00
RDY-HN-04050	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1900+00 TO HN2 1990+00
RDY-HN-04051	HOUSTON SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. HN2 1990+00 TO 2073+80
	<b>4-2 WEST OF TEAGUE SEGMENT</b>
RDY-WT-01101	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 1 OF 4 WT 10+00 TO WT 1120+00
RDY-WT-01102	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 2 OF 4 WT 1120+00 TO WT 2240+00
RDY-WT-01103	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 3 OF 4 WT 2240+00 TO WT 3360+00
RDY-WT-01104	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 4 OF 4 WT 3360+00 TO WT 4118+87
RDY-WT-04001	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 10+00 TO WT 100+00
RDY-WT-04002	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 100+00 TO WT 190+00
RDY-WT-04003	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 190+00 TO WT 280+00
RDY-WT-04004	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 280+00 TO WT 370+00
RDY-WT-04005	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 370+00 TO WT 460+00
RDY-WT-04006	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 460+00 TO WT 550+00
RDY-WT-04007	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 550+00 TO WT 640+00
RDY-WT-04008	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 640+00 TO WT 730+00
RDY-WT-04009	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 730+00 TO WT 820+00
RDY-WT-04010	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 820+00 TO WT 910+00
RDY-WT-04011	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 910+00 TO WT 1000+00
RDY-WT-04012	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1000+00 TO WT 1090+00
RDY-WT-04013	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1090+00 TO WT 1180+00
RDY-WT-04014	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1180+00 TO WT 1270+00
RDY-WT-04015	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1270+00 TO WT 1360+00
RDY-WT-04016	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1360+00 TO WT 1450+00
RDY-WT-04017	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1450+00 TO WT 1540+00
RDY-WT-04018	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1540+00 TO WT 1630+00
RDY-WT-04019	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1630+00 TO WT 1720+00
RDY-WT-04020	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1720+00 TO WT 1810+00
RDY-WT-04021	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1810+00 TO WT 1900+00
RDY-WT-04022	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1900+00 TO WT 1990+00
RDY-WT-04023	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 1990+00 TO WT 2080+00
RDY-WT-04024	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2080+00 TO WT 2170+00
RDY-WT-04025	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2170+00 TO WT 2260+00
RDY-WT-04026	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2260+00 TO WT 2350+00
RDY-WT-04027	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2350+00 TO WT 2440+00
RDY-WT-04028	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2440+00 TO WT 2530+00
RDY-WT-04029	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2530+00 TO WT 2620+00
RDY-WT-04030	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2620+00 TO WT 2710+00
RDY-WT-04031	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2710+00 TO WT 2800+00
RDY-WT-04032	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2800+00 TO WT 2890+00
RDY-WT-04033	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2890+00 TO WT 2980+00
RDY-WT-04034	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 2980+00 TO WT 3070+00
RDY-WT-04035	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3070+00 TO WT 3160+00
RDY-WT-04036	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3160+00 TO WT 3250+00
RDY-WT-04037	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3250+00 TO WT 3340+00
RDY-WT-04038	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3340+00 TO WT 3430+00
RDY-WT-04039	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3430+00 TO WT 3520+00
RDY-WT-04040	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3520+00 TO WT 3610+00
RDY-WT-04041	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3610+00 TO WT 3700+00
RDY-WT-04042	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3700+00 TO WT 3790+00
RDY-WT-04043	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3790+00 TO WT 3880+00
RDY-WT-04044	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3880+00 TO WT 3970+00
RDY-WT-04045	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 3970+00 TO WT 4060+00
RDY-WT-04046	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. WT 4060+00 TO WT 4118+87
RDY-WT-04047	WEST OF TEAGUE SEGMENT - CIVIL HIGHWAY - MATCHLINE RDY-WT-04011
	<b>4-3 IH-45 SEGMENT</b>
RDY-IH-01101	IH-45 SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 1 OF 5 IH1 10+00 TO IH1 1120+00
RDY-IH-01102	IH-45 SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 2 OF 5 IH1 1120+00 TO IH1 2240+00
RDY-IH-01103	IH-45 SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 3 OF 5 IH1 2240+00 TO IH1 3360+00
RDY-IH-01104	IH-45 SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 4 OF 5 IH1 3360+00 TO IH2 224+00
RDY-IH-01105	IH-45 SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 5 OF 5 IH2 224+00 TO IH2 913+96
RDY-IH1-04001	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 10+00 TO IH1 100+00
RDY-IH1-04002	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 100+00 TO IH1 190+00
RDY-IH1-04003	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 190+00 TO IH1 280+00
RDY-IH1-04004	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 280+00 TO IH1 370+00
RDY-IH1-04005	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 370+00 TO IH1 460+00
RDY-IH1-04006	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 460+00 TO IH1 550+00
RDY-IH1-04007	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 550+00 TO IH1 640+00
RDY-IH1-04008	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 640+00 TO IH1 730+00
RDY-IH1-04009	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 730+00 TO IH1 820+00
RDY-IH1-04010	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 820+00 TO IH1 910+00
RDY-IH1-04011	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 910+00 TO IH1 1000+00

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY <b>D. THOMPSON</b>
DRAWN BY <b>D. THOMPSON</b>
CHECKED BY <b>R. BURNS</b>
IN CHARGE <b>C. TAYLOR</b>
DATE <b>09/15/2017</b>



Drawing Title  
**GENERAL INDEX SHEET 4 OF 5**

Scale NO SCALE	Drawing Status <b>FINAL DRAFT</b>
Job No 234180	Drawing No GEN-00-00006
	Rev 01



VOLUME 4 - ROADWAY PLAN SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Lists drawings 1H-45 SEGMENT and 4-4 NAVARRO WEST SEGMENT.

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Lists drawings 4-5 NAVARRO EAST SEGMENT, 4-6 ELLIS WEST SEGMENT, 4-7 ELLIS EAST SEGMENT, and 4-8 DALLAS SEGMENT.

VOLUME 5 - WILDLIFE CROSSING SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Lists drawings 5-1 WILDLIFE CROSSING TYPICAL SECTIONS.

Table with columns: REV, DATE, BY, CHK, APP, DESCRIPTION. Revision table for drawing 4-4.

Table with columns: DESIGNED BY, DRAWN BY, CHECKED BY, IN CHARGE, DATE. Design information for drawing 4-4.

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Drawing Title: GENERAL INDEX SHEET 5 OF 5.

Scale: NO SCALE. Drawing Status: FINAL DRAFT. Job No: 234180. Drawing No: GEN-00-00007. Rev: 01.

PLOT TIME: 9/25/2017 5:41:28 PM



GENERAL NOTES:

1. THESE DRAWINGS ACCOMPANY FINAL DRAFT CONCEPTUAL ENGINEERING REPORT (FDCE) V7 REPORT DATED SEPTEMBER 15, 2017.
2. DRAWING SET INCLUDES FIVE (5) VOLUMES.
3. CONCEPTUAL ENGINEERING WAS DEVELOPED TO IDENTIFY PROJECT LIMIT OF DISTURBANCE (LOD), OR "PROJECT FOOTPRINT". CONCEPTUAL ENGINEERING DRAWINGS AND FDCE REPORT ARE ISSUED TO PROVIDE PROJECT DEFINITION FOR ENVIRONMENTAL ANALYSES ONLY. FINAL DESIGN WOULD BE DEVELOPED TO MITIGATE ANY IMPACTS IDENTIFIED THROUGH ENVIRONMENTAL ANALYSES, NOT FOR CONSTRUCTION.
4. FOR STANDARD GENERAL ABBREVIATIONS, SEE DRAWING GEN-00-0009.
5. FOR STANDARD GENERAL SYMBOLS, SEE DRAWINGS GEN-00-0009.
6. "ORIGINAL GROUND" SHOWN ON PROFILES REFERS TO THE APPROXIMATE EXISTING GROUND LINE AT HSR CENTERLINE AS SHOWN ON PLAN AND PROFILE DRAWINGS.
7. ALL HORIZONTAL AND VERTICAL DISTANCES ARE IN US CUSTOMARY UNITS EXCEPT AS NOTED OTHERWISE.
8. GENERAL NOTES FOR PROJECT ELEMENTS INCLUDED ON GENERAL NOTES PAGES. REFER TO INDIVIDUAL DISCIPLINE DRAWINGS FOR ADDITIONAL NOTES.

BASEMAPPING NOTES:

1. DTM DATA SHOWN ON THE DRAWINGS WAS OBTAINED FROM THE TEXAS NATURAL RESOURCES INFORMATION SYSTEM (TNRIS) AND HOUSTON-GALVESTON AREA COUNCIL (HGAC).
  - DALLAS COUNTY LIDAR, 2009, SOURCED FROM TNRIS.
  - HGAC LIDAR, 2008.
  - TNRIS LIDAR, 2009-2013.
  - TNRIS STRATMAP CONTOURS, 1997.
2. LIDAR SOURCES WERE FILTERED TO SHOW ONLY BARE EARTH, AND SUPPLEMENTED BY CONTOUR DATA WHERE LIDAR SOURCES WERE NOT AVAILABLE.
3. NAD 83 HORIZONTAL CONTROL DATUM WAS USED FOR HORIZONTAL COORDINATE VALUES.
4. NAVD 88 VERTICAL DATUM WAS USED FOR ELEVATION VALUES.
5. ALL DATA HAS BEEN REPROJECTED TO TEXAS STATE PLANE, SOUTH CENTRAL, CENTRAL, AND NORTH CENTRAL ZONES, US SURVEY FEET.
6. AERIAL IMAGERY WAS OBTAINED FROM ARCGIS ONLINE SERVICES. SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEX, GETMAPPING, AEROGRIID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
7. THE BACKGROUND IMAGERY ON THE PLAN SHEETS MAY SHOW BUILDINGS AND OTHER INFRASTRUCTURE FEATURES THAT HAVE SUBSEQUENTLY BEEN REMOVED AND/OR DEMOLISHED, WHERE IT HAS BEEN VERIFIED THAT BUILDINGS HAVE BEEN REMOVED, THE AERIAL IMAGERY ON THE PLAN SHEET IS MARKED WITH HATCHING.

LOD NOTES:

1. THE PROJECT LOD WAS DEVELOPED TO DEFINE A CONSERVATIVE ESTIMATE OF THE POTENTIAL "PROJECT FOOTPRINT" FOR ENVIRONMENTAL ANALYSIS AND DOES NOT REPRESENT THE FINAL HSR RIGHT-OF-WAY (ROW), PROPERTY WITHIN THE LOD MAY BE RETURNED TO ADJACENT LANDOWNERS OR OTHER PRIVATE PARTIES FOLLOWING PROJECT CONSTRUCTION OR MAY BE TRANSFERRED TO ROADWAY OR UTILITY AUTHORITY AS APPROPRIATE. PROPOSED PROJECT WORKS WITHIN PRIVATE PROPERTIES WOULD BE SUBJECT TO NEGOTIATION WITH LANDOWNERS. ANY TEMPORARY OR PERMANENT USE OF LAND OWNED BY TXDOT, COUNTY, MUNICIPAL, OR OTHER PUBLIC ENTITIES WOULD REQUIRE APPROPRIATE APPROVALS.
2. LOD USED FOR EIS ANALYSIS FOOTPRINT.

TRACK NOTES:

1. THE ALIGNMENT SHOWN ON THE PLAN AND PROFILE DRAWINGS REPRESENTS THE CENTERLINE OF THE TWO-TRACK HSR MAINLINE TRACKS.
2. THE PROFILE SHOWN ON THE PLAN AND PROFILE DRAWINGS REPRESENTS THE TOP OF THE LOWER RAIL THROUGH HORIZONTAL CURVES AND SPIRALS FOR THE TWO-TRACK HSR SYSTEM.
3. THE PROPOSED HSR SYSTEM INCLUDES TWO TRACKS WITH ADDITIONAL TRACKS AT STATIONS, MAINTENANCE OF WAY, AND TRAINSET MAINTENANCE FACILITIES, AS SHOWN ON DRAWINGS.
4. MAINLINE CROSSOVERS ARE PROVIDED AT THE ENTRANCE AND EXIT OF ALL STATIONS, MAINTENANCE OF WAY (MOW) FACILITIES, AND TRAINSET MAINTENANCE FACILITIES (TMFS).

PLAN AND PROFILE GENERAL NOTES:

1. SECTION TYPE DETAIL SHOWN ON PROFILE SHEETS REPRESENT A SIMPLIFIED SUMMARY OF THE MAJOR STRUCTURAL TYPE OF THE PROPOSED HSR. THE ACTUAL PLAN DIMENSIONS TAKE PRECEDENCE OVER THE SECTION TYPE IDENTIFIED IN PROFILE.
2. ALL EXISTING AND PROPOSED STRUCTURAL ELEMENTS SHOWN ARE BASED ON CONCEPTUAL ENGINEERING DESIGN AND AERIAL IMAGERY AND MAY BE REVISED BASED ON MORE ADVANCED SURVEY AND DESIGNS.
3. SEE SHEET GEN-00-00010 FOR A KEY TO INFORMATION SHOWN ON PLAN AND PROFILE DRAWINGS.
4. LIMITS OF SPECIAL TRACK WORK ARE INDICATED ON THE PLAN SHEETS. ADDITIONAL DETAILS FOR MAINTENANCE OF WAY FACILITIES AND TRAINSET MAINTENANCE FACILITIES ARE SHOWN ON THE VOLUME 3 DRAWINGS.

ROADWAY NOTES:

1. EXISTING ROADWAY LOCATIONS ARE APPROXIMATE BASED ON AERIAL MAPS.
2. PROPOSED ROADWAY WORKS, INCLUDING NEW ROADWAYS, RECONFIGURATION AND REALIGNMENTS OF EXISTING ROADWAYS, AND ROADWAY REMOVALS ARE CONCEPTUAL IN NATURE AND WERE DEVELOPED TO IDENTIFY GENERAL CONFIGURATION AND LOCATION FOR ENVIRONMENTAL IMPACT ANALYSES. ROADWAY WORKS WOULD BE DETAILED DURING FINAL DESIGN AND WOULD COMPLY WITH APPLICABLE STATE, CITY, COUNTY, OR LOCAL REQUIREMENTS.
3. SEE SHEET GEN-00-00011 FOR A KEY TO INFORMATION SHOWN ON ROADWAY PLAN DRAWINGS.
4. ROADWAY GEOMETRY IS BASED ON TXDOT ROADWAY DESIGN MANUAL. ROAD DESIGN SPEEDS MATCH EXISTING POSTED SPEED LIMITS OR MATCH DESIGN SPEED DETERMINED FROM TXDOT ROADWAY FUNCTIONAL CLASSIFICATION SPEED GUIDELINES, WHICHEVER IS GREATER.
5. SUPERELEVATION TRANSITION LENGTHS WERE NOT DETAILED IN ROADWAY APPROACH DESIGN.
6. SEE DRAWINGS CVL-00-03030 TO CVL-00-03036 FOR TYPICAL ROADWAY CROSS SECTIONS.
7. ROADWAY REMOVALS ARE NOT SHOWN ON RAIL PLAN AND PROFILE SHEETS, REFER TO ROADWAY PLAN SHEETS IN VOLUME 3 FOR ALL ROADWAY REMOVALS.
8. NOT ALL PRIVATE ROADS AND DRIVEWAYS ARE REPRESENTED ON THE RAIL PLAN AND PROFILE SHEETS.
9. THE CLEARANCE ENVELOPES SHOWN ON THE RAIL PLAN AND PROFILE SHEETS REPRESENT THE APPROXIMATE ROADWAY CLEARANCE ENVELOPE. THE BOTTOM OF THE CLEARANCE ENVELOPE REPRESENTS THE TOP OF THE ROADWAY PAVEMENT. CLEARANCE ENVELOPE DOES NOT INCLUDE ROADWAY STRUCTURAL ELEMENTS.
10. ROADWAY ELEVATIONS FOR ROADWAY OVER RAILWAY CROSSING DO NOT REPRESENT THE PROPOSED ROADWAY ELEVATION, BUT RATHER THE MINIMUM HEIGHT REQUIRED FOR CLEARANCES, INCLUDING ALLOWANCES FOR ROADWAY STRUCTURAL ELEMENTS. SEE FDCE REPORT FOR ADDITIONAL INFORMATION.
11. ROADWAY TYPICAL SECTIONS ACCOUNT FOR THE NECESSARY SPACE TO CONSTRUCT TEMPORARY ROADWAYS DURING CONSTRUCTION. CLOSE COORDINATION WITH ROADWAY AUTHORITIES, COMMUNITIES, AND EMERGENCY RESPONSE ENTITIES WOULD BE UNDERTAKEN DURING FINAL DESIGN AND CONSTRUCTION TO ENSURE ACCESS DURING THE CONSTRUCTION PHASE.
12. USE OF TXDOT RIGHT-OF-WAY FOR PERMANENT IMPROVEMENTS WILL REQUIRED THE APPROPRIATE APPROVAL FROM TXDOT.

TYPICAL SECTIONS NOTES:

1. SECTIONS ILLUSTRATE TYPICAL REQUIREMENTS TO GUIDE CONCEPTUAL ENGINEERING DESIGN DEVELOPMENT. LOCATION SPECIFIC CONDITIONS WOULD ESTABLISH REQUIREMENTS AT EACH LOCATION AND OVERALL WIDTH OF LIMIT OF DISTURBANCE WOULD VARY AS IDENTIFIED ON DIMENSION LINES AND IN NOTES.
2. OFFSET BETWEEN INFRASTRUCTURE ELEMENTS SUCH AS DISTANCE BETWEEN EMBANKMENT, FENCES, DRAINAGE SWALE, ACCESS ROAD, ETC. WOULD VARY BASED ON LOCAL REQUIREMENTS AND SITE SPECIFIC CONDITIONS.
3. TYPICAL ROADWAY DRAINAGE SYSTEM PROVIDED AS SHOWN IN TYPICAL SECTIONS. LOCATION SPECIFIC CONFIGURATION AND SIZE WOULD BE ADVANCED DURING MORE DETAILED DESIGN.
4. LOCATION SPECIFIC CONDITIONS WOULD DICTATE FENCING REQUIREMENTS.
5. EMBANKMENT HEIGHTS AND CUT DEPTHS VARY WITH SURROUNDING GRADE AND RAIL PROFILE ELEVATION.
6. CRASH BARRIERS NOT SHOWN. LOCATION SPECIFIC CONDITIONS WILL DICTATE CRASH BARRIER REQUIREMENTS TO ENSURE SAFETY AND TO SATISFY APPLICABLE REGULATORY REQUIREMENTS.
7. SUBSURFACE GROUND IMPROVEMENTS ARE NOT SHOWN AND WILL BE BASED ON SITE SPECIFIC REQUIREMENTS.
8. RAIL HEIGHT VARIES WITH SURROUNDING GRADE AND RAIL PROFILE. THE BOTTOM OF SUBBALLAST SHALL BE NO LESS THAN 2FT ABOVE 100 YEAR FLOODPLAIN.

UTILITIES NOTES:

1. REFER TO THE FDCE REPORT FOR A LIST OF MAJOR UTILITY CROSSINGS, THEIR ASSUMED SIZE, AND ASSOCIATED LOCATIONS ALONG THE ALIGNMENT.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY AND ARE BASED ON INFORMATION RECEIVED, AS DOCUMENTED IN THE FINAL DRAFT CONCEPTUAL ENGINEERING REPORT.
3. NO FIELD SURVEYS HAVE BEEN CONDUCTED TO LOCATE AND VERIFY UTILITY LOCATIONS.
4. NOT ALL EXISTING UNDERGROUND UTILITIES HAVE BEEN SHOWN. REFER TO THE FDCE REPORT FOR MAJOR UTILITIES INCLUDED IN PROJECT MAPPING.
5. LOD NOT SHOWN FOR UTILITIES THAT ARE NOT IMPACTED BY THE ALIGNMENT. ONLY MAJOR UTILITIES THAT ARE PROTECTED, RELOCATED OR ELEVATED ARE SHOWN ON THE PLAN AND PROFILE VIEW, REFER TO DRAWING NO. CUT-00-0100 FOR TYPICAL UTILITY CROSSING DETAILS. UTILITY LODS FOR FUTURE PROPOSED CONNECTIONS TO TPSS FACILITIES ARE SHOWN.
6. FOR PARALLEL TRANSMISSION LINE CROSSINGS OVER NEW ELEVATED ROADWAYS, A LOD IS SHOWN ON THE PLAN ONLY. REFER TO DRAWING NO. CUT-00-0100 FOR TYPICAL UTILITY CROSSING DETAILS.
7. MANY UTILITY CONFLICTS ALONG THE HEMPSTEAD ROAD CORRIDOR IN HOUSTON WOULD BE RESOLVED DURING FINAL DESIGN. A CONTINUOUS LOD IS SHOWN ON THE DRAWINGS TO REPRESENT THAT UTILITIES WOULD BE RELOCATED ON ONE OR BOTH SIDES OF THE ROADWAY AS REQUIRED. ALL WORK WOULD BE COORDINATED WITH UTILITY PROVIDERS TO MINIMIZE IMPACTS AND COORDINATE WITH OTHER PLANNED UTILITY PROJECTS ALONG CORRIDOR.
8. FOR UTILITY WORK REQUIRED BY UTILITY COMPANIES, EACH UTILITY OWNER WOULD DEVELOP THE DESIGN IN ACCORDANCE WITH APPLICABLE DESIGN STANDARDS AND REGULATORY AGENCY REVIEW PROCESSES.

DRAINAGE NOTES:

1. PROPOSED DETENTION BASIN LOCATIONS AND DIMENSIONS SHOWN ARE APPROXIMATE AND ARE INTENDED FOR PRELIMINARY PLANNING AND ENVIRONMENTAL IMPACT ANALYSIS PURPOSES ONLY. SITE SPECIFIC CONFIGURATIONS WOULD BE DEVELOPED DURING FINAL DESIGN IN ACCORDANCE WITH APPLICABLE REQUIREMENTS.
2. EXISTING CULVERTS ARE NOT SHOWN.
3. PROPOSED TRACK AND ROADWAY STORMWATER DRAINAGE WOULD BE DEVELOPED DURING FINAL DESIGN IN ACCORDANCE WITH APPLICABLE REQUIREMENTS. REFER TO TYPICAL SECTION DRAWINGS FOR PROPOSED CONFIGURATIONS.
4. EXISTING STORMWATER FACILITIES ARE NOT SHOWN.
5. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) WATER QUALITY CRITERIA WOULD BE MET FOR STORMWATER RUNOFF AND PROTECTION OF EXISTING WATER RESOURCES.
6. CONSTRUCTION OF THE RAIL MAY REQUIRE THE RECONFIGURATION OF PONDS OR STOCK TANKS IMMEDIATELY ADJACENT TO THE RAIL CORRIDOR. IN CASES WHERE THE CURRENT DESIGN NECESSITATES A FULL RELOCATION OF THE POND, ALLOWANCES HAVE BEEN MADE WITHIN THE LOD. IN CASES WHERE THE FULL RELOCATION OF THE POND IS NOT REQUIRED UNDER THE CURRENT DESIGN, ADDITIONAL LANDOWNER NEGOTIATIONS WILL BE REQUIRED TO DETERMINE LAND OWNER PREFERENCES.

STRUCTURES GENERAL NOTES:

1. TYPICAL SECTIONS WERE DEVELOPED TO IDENTIFY GENERAL ARRANGEMENTS AND ALLOWANCES FOR STRUCTURAL ELEMENTS. TYPICAL SECTIONS WERE USED AS THE BASIS FOR DEVELOPMENT OF LOD FOR ENVIRONMENTAL ANALYSIS.
2. APPROXIMATE HSR VIADUCT AND BRIDGE STRUCTURE LIMITS AND DEPTHS ARE SHOWN ON THE PROFILES TO SUPPORT ENVIRONMENTAL IMPACT ANALYSIS. LIMITS OF STRUCTURES AND EMBANKMENTS WOULD BE REFINED DURING FINAL DESIGN.
3. PLAN AND PROFILE DRAWINGS DO NOT SHOW LIMITS OF STRUCTURES IN PLAN VIEW. SITE SPECIFIC STRUCTURAL DESIGN WOULD BE DEVELOPED DURING FINAL ENGINEERING IN ACCORDANCE WITH APPLICABLE REQUIREMENTS. DESIGN OF FOUNDATIONS, ABUTMENTS, PIERS AND OTHER STRUCTURES WOULD BE DEVELOPED TO MITIGATE ANY IMPACTS IDENTIFIED THROUGH ENVIRONMENTAL ANALYSIS.
4. HSR PROFILE WAS DEVELOPED TO PROVIDE A MINIMUM 3FT VERTICAL CLEAR DISTANCE FROM ESTIMATED 100 YEAR FLOOD LEVEL TO BRIDGE SOFFIT FOR RIVER AND FLOODPLAIN CROSSINGS. FINAL DESIGN WOULD BE DEVELOPED TO MEET OR EXCEED THIS REQUIREMENT.
5. SPECIAL STRUCTURES WOULD BE REQUIRED TO MITIGATE IMPACTS OR ADDRESS UNIQUE SITE SPECIFIC ISSUES SUCH AS LONG SPANS, CROSSOVER STRUCTURES, AND STRADDLE BENTS TO AVOID OR MITIGATE IMPACTS. THE CONSTRUCTABILITY REPORT IDENTIFIES SPECIAL STRUCTURE LOCATIONS. PLAN AND PROFILE DRAWINGS IDENTIFY ADDITIONAL LOD EXPECTED FOR CONSTRUCTION STAGING AND WORKING AREAS FOR SPECIAL STRUCTURES.

SYSTEMS GENERAL NOTES:

1. SYSTEMS SCHEMATICS, SHOWN ON SHEETS SYS-00-02000 THROUGH SYS-00-02005, SHOW LOCATIONS OF SYSTEMS FACILITIES THAT HAVE BEEN INCLUDED FOR EACH END-TO-END ALTERNATIVE.
2. AREA FOR SYSTEMS FACILITY SITES HAVE BEEN INCLUDED WITHIN THE PROJECT LOD. THESE AREAS ARE GENERICALLY CALLED OUT AS "RAIL SYSTEMS SITES" ON THE PLAN AND PROFILE SHEETS, REFER TO FDCE REPORT TO DETERMINE THE SPECIFIC FACILITY TYPE AT EACH INDIVIDUAL LOCATION.
3. TYPICAL LAYOUT PLANS FOR EACH OF THE SYSTEMS FACILITIES ARE INCLUDED IN SHEETS SYS-00-01000 THROUGH SYS-00-01002.
4. LOD DEVELOPED FOR ENVIRONMENTAL IMPACT ANALYSIS OF SYSTEMS SITES INCLUDED SPACE FOR A DRIVEWAY AND SPACE TO PARK A LIMITED NUMBER OF MAINTENANCE VEHICLES.
5. SYSTEMS BUILDINGS WOULD BE DETAILED DURING FINAL DESIGN TO CONSIDER SITE SPECIFIC CONDITIONS, BE CONTEXT SENSITIVE, AND MINIMIZE VISUAL IMPACT. THE RADIO MAST AT COMMUNICATION FACILITIES WOULD BE APPROXIMATELY 50FT (15M) ABOVE THE TOP OF RAIL ELEVATION.
6. TPSS WOULD BE CONNECTED TO THE NEAREST 138KV TRANSMISSION LINES DESIGNED BY UTILITY PROVIDER AND SUBJECT TO ENVIRONMENTAL REVIEW.

FACILITY NOTES:

1. PROPOSED HSR FACILITIES WOULD INCLUDE STATIONS AND ASSOCIATED PARKING GARAGES, MAINTENANCE OF WAY (MOW) FACILITIES, TRAINSET MAINTENANCE FACILITIES (TMF), AND RAILWAY SYSTEMS SITES, INCLUDING TRACTION POWER SUPPLY FACILITIES, SIGNAL HOUSES, AND COMMUNICATIONS HOUSES. LOCATIONS, LIMITS OF DISTURBANCE, AND AREAS SHOWN FOR THE VARIOUS PROPOSED FACILITIES ARE FOR PRELIMINARY PLANNING PURPOSES ONLY.
2. ALL FACILITIES WOULD BE POWERED FROM THE LOCAL UTILITY GRID.
3. ACCESS, SECURITY, AND UTILITY PROVISION REQUIREMENTS FOR ALL FACILITIES WOULD BE DETAILED DURING FINAL DESIGN.

CONSTRUCTION CONSIDERATION NOTES:

1. CONSTRUCTION REQUIREMENTS WERE CONSIDERED DURING DEVELOPMENT OF THE CONCEPTUAL ENGINEERING AND ARE DOCUMENTED IN THE PROJECT CONSTRUCTABILITY REPORT.
2. TEMPORARY CONSTRUCTION AREAS REQUIRED FOR CONSTRUCTION ACCESS, CONSTRUCTION STAGING, AND PRECASTING FACILITIES WERE IDENTIFIED DURING DEVELOPMENT OF THE CONCEPTUAL ENGINEERING. CONSTRUCTION STAGING AREAS AND PRECAST FACILITIES ARE INCLUDED IN THE PROJECT LOD.
3. SPECIAL STRUCTURES REQUIRED TO MITIGATE IMPACTS OR ADDRESS UNIQUE SITE SPECIFIC ISSUES SUCH AS LONG SPANS, CROSSOVER STRUCTURES, AND STRADDLE BENTS ARE IDENTIFIED IN THE CONSTRUCTABILITY REPORT.
4. MEASURES REQUIRED TO MITIGATE NOISE, TRAFFIC, AND OTHER ENVIRONMENTAL IMPACTS WOULD BE IDENTIFIED THROUGH THE ENVIRONMENTAL ANALYSES. MORE DETAILED DESIGN INCLUDING DEVELOPMENT OF MAINTENANCE AND PROTECTION OF TRAFFIC AND OTHER CONSTRUCTION SPECIFIC PLANS AND PROCEDURES WOULD BE REQUIRED TO SECURE APPLICABLE PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY <b>D. THOMPSON</b>
DRAWN BY <b>D. THOMPSON</b>
CHECKED BY <b>R. BURNS</b>
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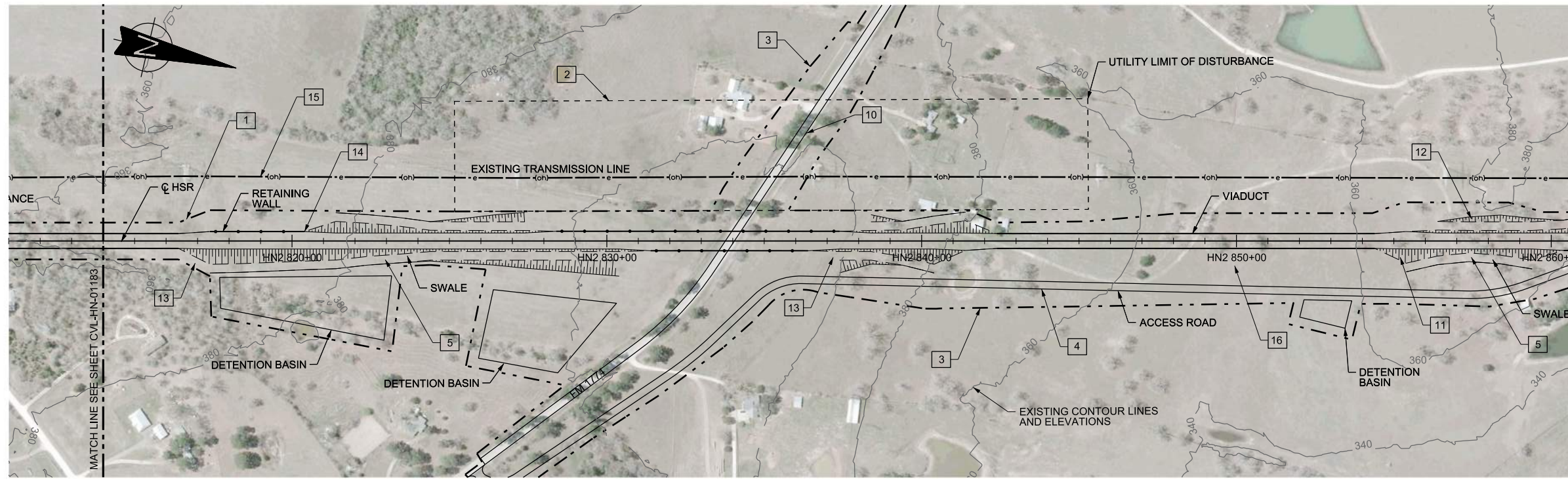


Client	Drawing Title
	<b>GENERAL NOTES</b>

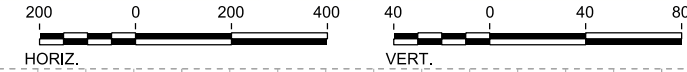
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Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	GEN-00-00008	01	



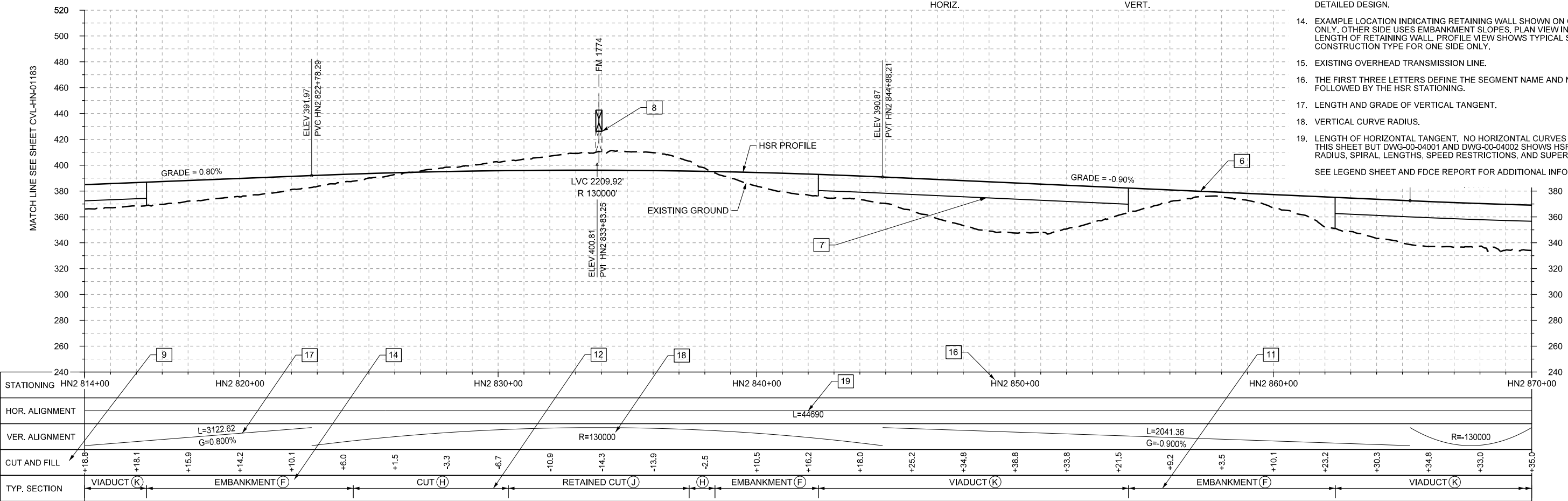




PLAN



- NOTES:
- LIMIT OF DISTURBANCE (LOD) FOR THE PROJECT. LOD VARIES BASED ON IMPACT AT EACH LOCATION LOD USED FOR ENVIRONMENTAL ANALYSIS.
  - UTILITY LIMIT OF DISTURBANCE. TRANSMISSION LINE TO BE RAISED AS NECESSARY TO SUIT THE GRADE SEPARATION OF THE ROADWAY. REFER TO UTILITY TYPICAL DETAILS.
  - LOD IS OFFSET FROM THE EDGE OF PROPOSED ROADWAY TO ACCOMMODATE SIDE SLOPES ASSOCIATED WITH THE GRADE SEPARATION OF THE ROADWAY AND ACCESS ROAD.
  - DETAILS ON THE TYPE AND WIDTH OF THE ACCESS ROAD ARE SHOWN IN TYPICAL SECTIONS IN VOLUME 1.
  - SWALE EXTENTS SHOWN ON RAIL PLAN SHEETS ARE ONLY GENERATED BY COMPUTER MODEL FOR EMBANKMENT CONSTRUCTION TYPE AND WOULD EXTEND BEYOND THE LIMITS SHOWN. FINAL EXTENTS AND ARRANGEMENTS OF SWALES WOULD BE DEVELOPED DURING FINAL DESIGN AND BE BASED ON SITE SPECIFIC CONDITIONS AND REQUIREMENTS. LOCATION AND CONFIGURATION OF SWALES FOR OTHER CONSTRUCTION TYPES ARE SHOWN ON THE TYPICAL SECTIONS.
  - PROFILE OF THE HSR ALIGNMENT AT TOP OF RAIL.
  - START, END, AND APPROXIMATE UNDERSIDE OF VIADUCT STRUCTURES. TYPICAL STRUCTURE DEPTH SHOWN.
  - CLEARANCE BOX INDICATING GRADE SEPARATION BETWEEN RAIL AND ROADWAY ALIGNMENT. CLEARANCE BOX SHOWS APPROXIMATE SPACE OCCUPIED BY EXISTING OR PROPOSED ROADWAYS OR FREIGHT RAIL LINES. FOR DETAILS ON REQUIRED CLEARANCES REFER TO FDCE REPORT.
  - CUT AND FILL VALUES SHOW HEIGHT OF HSR PROFILE AT THE TOP OF RAIL ELEVATION RELATIVE TO GROUND. CUT AND FILL IS CUSTOMARY NOMENCLATURE. HOWEVER VALUES ARE NOT INTENDED TO PROVIDE DEPTHS OF EXCAVATIONS OR HEIGHTS OF EARTHWORKS. WHERE TOP OF RAIL IS WITHIN 6 FEET OF EXISTING GROUND A CUT SECTION MAY BE REQUIRED TO ACCOMMODATE DEPTH OF TRACK STRUCTURE AND DRAINAGE. LIMITS WILL VARY BY LOCATION AND SITE SPECIFIC TOPOGRAPHY. TYPICAL SECTIONS IN VOLUME 1 ILLUSTRATE RELATIONSHIP BETWEEN TOP OF RAIL LEVEL AND TRACK STRUCTURE.
  - REALIGNED OR REPROFILED ROADWAY.
  - EXTENTS OF RAIL EMBANKMENT SLOPES REFER TO SECTIONS.
  - EXTENTS OF CUT SLOPES REFER TO SECTIONS.
  - TRANSITION ZONE BETWEEN CONSTRUCTION TYPES. DETAILS OF TRANSITIONS ARE NOT SHOWN AND WILL BE DEVELOPED DURING MORE DETAILED DESIGN.
  - EXAMPLE LOCATION INDICATING RETAINING WALL SHOWN ON ONE SIDE ONLY. OTHER SIDE USES EMBANKMENT SLOPES. PLAN VIEW INDICATES LENGTH OF RETAINING WALL. PROFILE VIEW SHOWS TYPICAL SECTION CONSTRUCTION TYPE FOR ONE SIDE ONLY.
  - EXISTING OVERHEAD TRANSMISSION LINE.
  - THE FIRST THREE LETTERS DEFINE THE SEGMENT NAME AND NUMBER FOLLOWED BY THE HSR STATIONING.
  - LENGTH AND GRADE OF VERTICAL TANGENT.
  - VERTICAL CURVE RADIUS.
  - LENGTH OF HORIZONTAL TANGENT. NO HORIZONTAL CURVES SHOWN ON THIS SHEET BUT DWG-00-04001 AND DWG-00-04002 SHOWS HSR CURVE RADIUS, SPIRAL, LENGTHS, SPEED RESTRICTIONS, AND SUPERELEVATIONS.
- SEE LEGEND SHEET AND FDCE REPORT FOR ADDITIONAL INFORMATION.



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY <b>J. ENRIQUEZ</b>
DRAWN BY <b>P. TONKIN</b>
CHECKED BY <b>R. BURNS</b>
IN CHARGE <b>C. TAYLOR</b>
DATE <b>09/15/2017</b>

Arup Texas, Inc.  
10370 Richmond Ave., Suite 475  
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Texas Registered Engineering Firm: F-1990

2711 North Haskell Ave., Suite 3300  
Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

Client  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**GENERAL**

**RAIL ANNOTATION TO CLARIFY DESIGN INTENT**

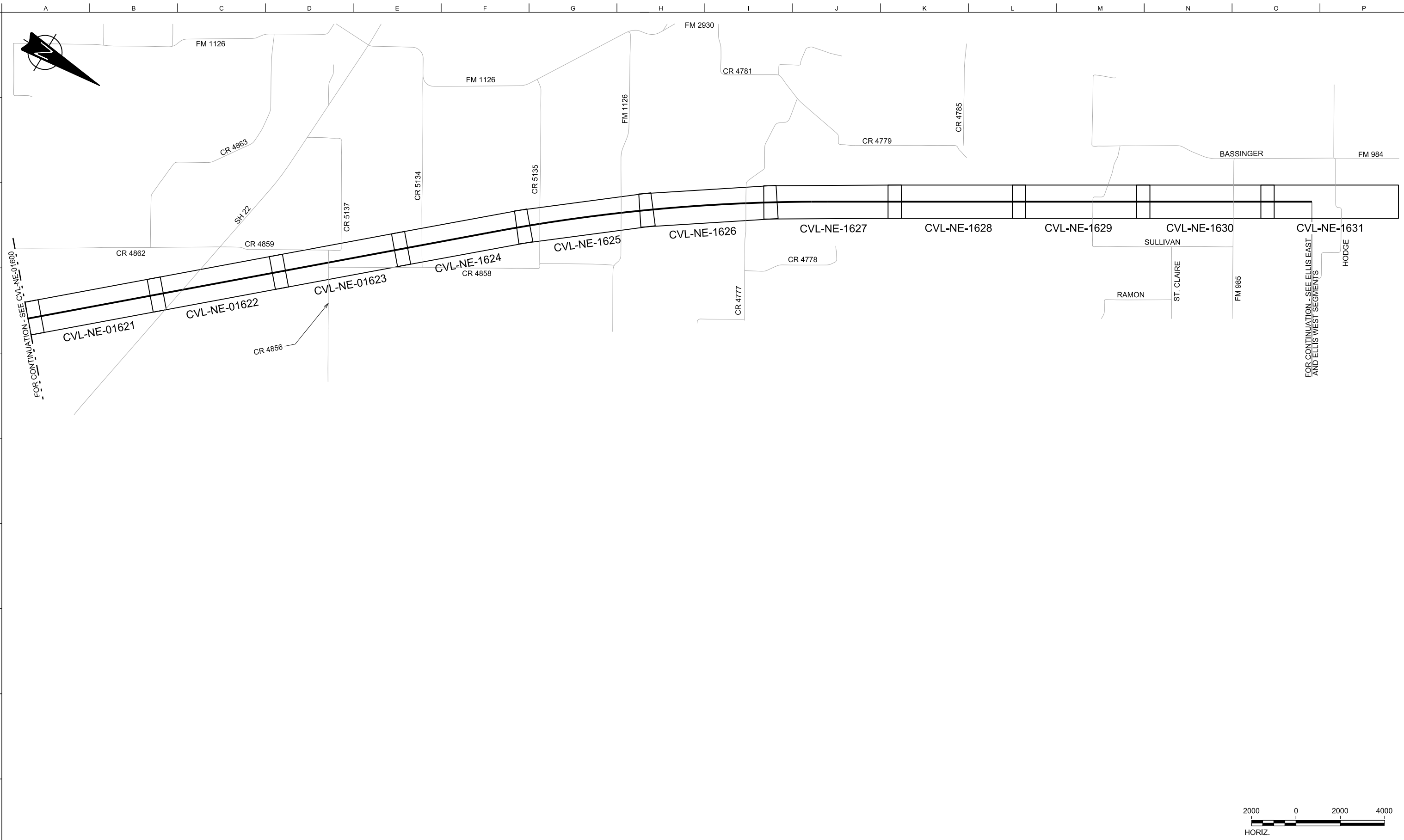
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Drawing Status  
**FINAL DRAFT**

Job No <b>234180</b>	Drawing No <b>GEN-00-00010</b>	Rev <b>01</b>
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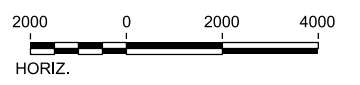
2-5  
NAVARRO EAST SEGMENT





FOR CONTINUATION - SEE CVL-NE-01600

FOR CONTINUATION - SEE ELLIS EAST AND ELLIS WEST SEGMENTS



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**  
DRAWN BY  
**R. GIBBINS**  
CHECKED BY  
**K. SEYMOUR**  
IN CHARGE  
**C. TAYLOR**  
DATE  
**09/15/2017**

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Arup Texas, Inc.  
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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client  
  
**TEXAS CENTRAL**  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

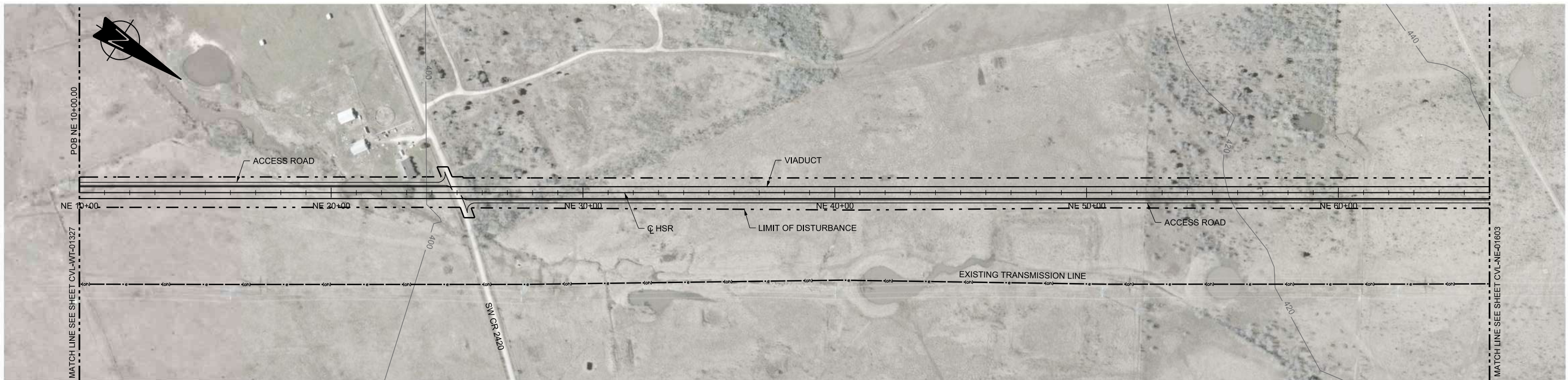
Drawing Title  
**NAVARRO EAST SEGMENT  
CIVIL  
KEY MAP - SHEET 2 OF 2  
NE 1074+00 TO NE 1644+02**

Scale  
AS SHOWN

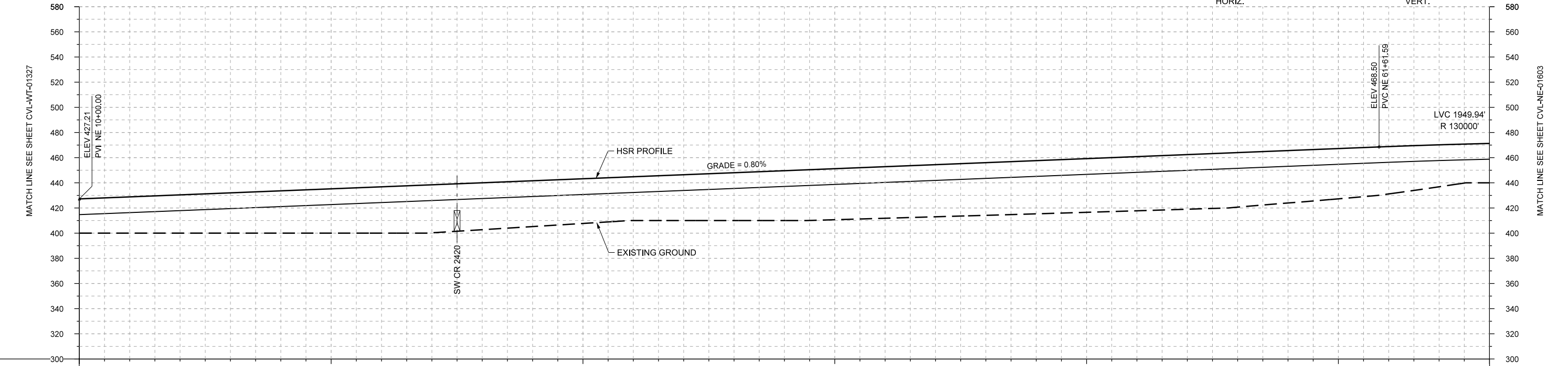
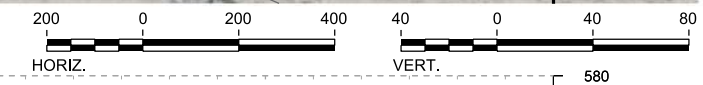
Drawing Status  
**FINAL DRAFT**

Job No 234180	Drawing No CVL-NE-01601	Rev 01
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PLAN



PROFILE

STATIONING	NE 10+00	NE 20+00	NE 30+00	NE 40+00	NE 50+00	NE 60+00	NE 66+00																						
HOR. ALIGNMENT	L=10018																												
VER. ALIGNMENT	L=5161.59 G=0.800%																												
CUT AND FILL	+27.2	+28.8	+30.4	+32.0	+33.6	+35.2	+36.8	+38.1	+37.3	+36.4	+35.5	+34.8	+36.4	+38.0	+39.6	+40.5	+41.0	+41.4	+41.8	+42.3	+42.6	+43.0	+43.4	+43.3	+41.6	+40.0	+37.6	+33.4	+31.3
TYP. SECTION	VIADUCT (K)																												

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

**ARUP**  
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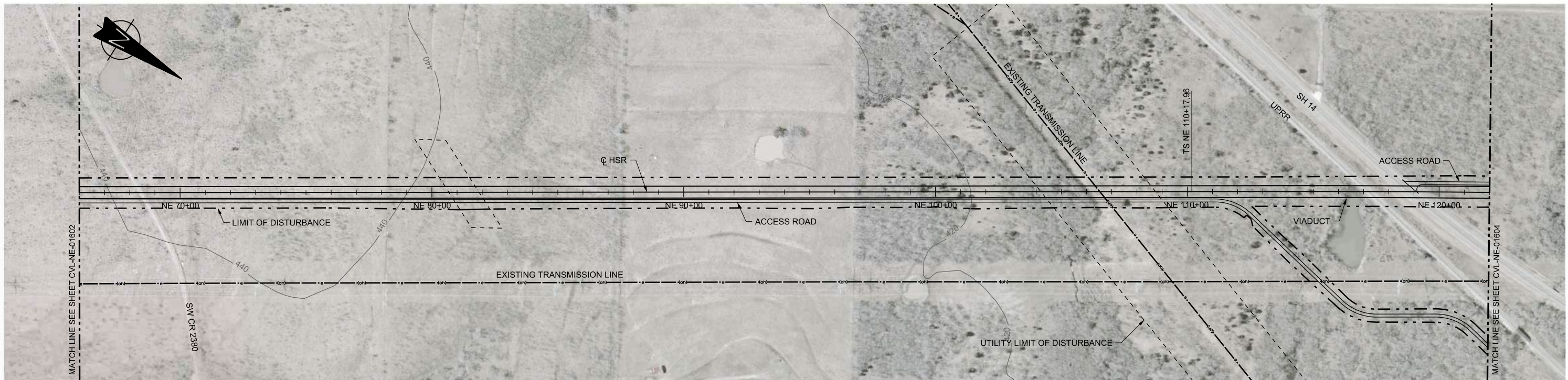
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1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

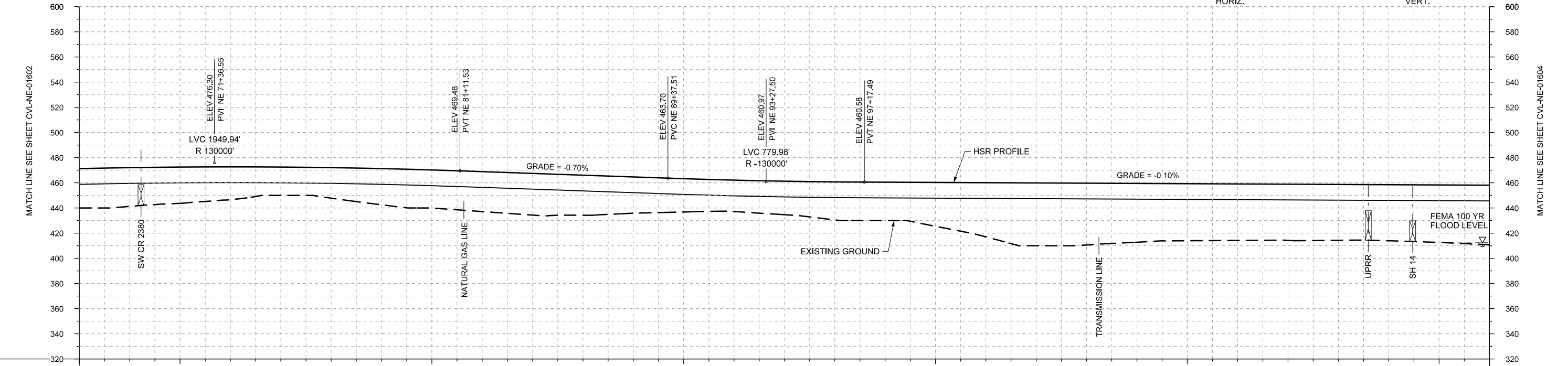
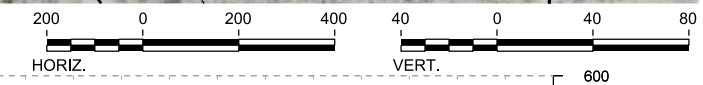
Drawing Title  
**NAVARRO EAST SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 NE 10+00 TO NE 66+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-NE-01602	01	





PLAN



PROFILE

STATIONING	NE 66+00	NE 70+00	NE 80+00	NE 90+00	NE 100+00	NE 110+00	NE 120+00	NE 122+00
HOR. ALIGNMENT	L=10018						L=1350	
VER. ALIGNMENT	R=130000			L=825.98 G=-0.700%		R=-130000		
CUT AND FILL	+31.3	+30.7	+28.8	+26.1	+22.5	+24.3	+28.8	+30.3
TYP. SECTION	VIADUCT (K)							

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**



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Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

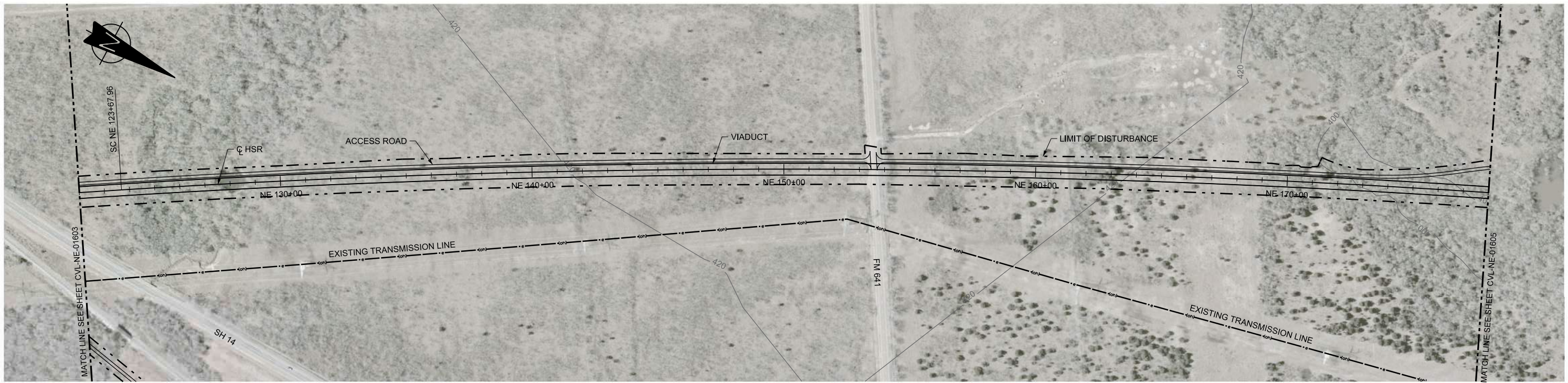


Client  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

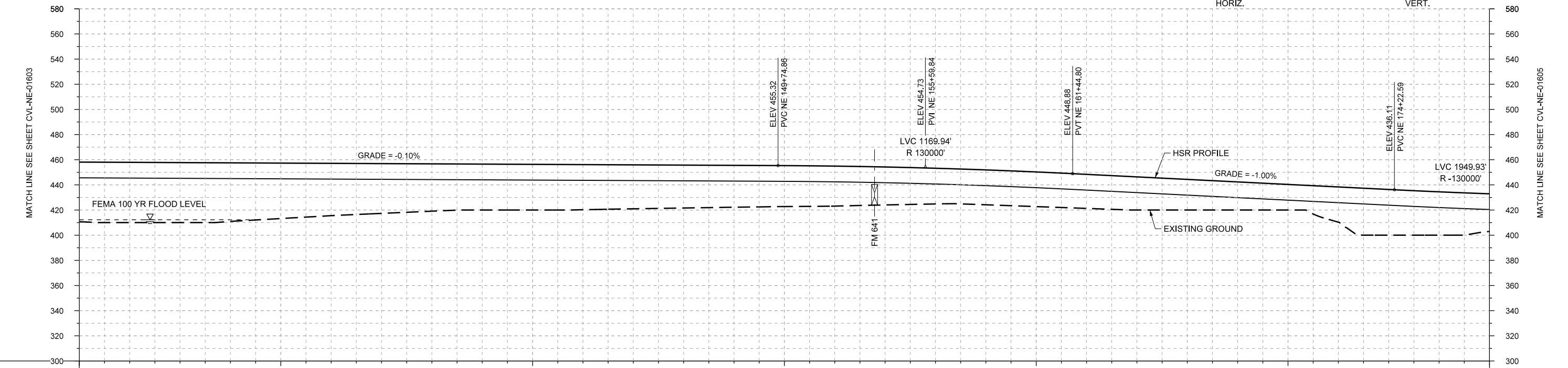
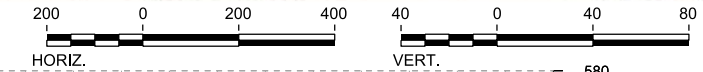
Drawing Title  
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 66+00 TO NE 122+00**

Scale AS SHOWN	Drawing Status <b>FINAL DRAFT</b>
Job No 234180	Drawing No CVL-NE-01603
	Rev 01





PLAN



PROFILE

STATIONING	NE 122+00	NE 130+00	NE 140+00	NE 150+00	NE 160+00	NE 170+00	NE 178+00
HOR. ALIGNMENT	L=1350		R=42000 L=21312			R=130000	
VER. ALIGNMENT	L=5257.37 G=-0.100%		R=130000			L=1277.79 G=-1.000%	
CUT AND FILL	+47.4	+47.9	+47.7	+46.6	+44.1	+41.6	+39.6
							+37.6
							+36.5
							+36.3
							+35.9
							+34.9
							+34.1
							+33.3
							+32.5
							+31.8
							+30.2
							+28.4
							+27.8
							+27.6
							+27.0
							+26.3
							+24.3
							+22.3
							+20.3
							+20.0
							+18.3
							+14.5
							+10.0
TYP. SECTION	VIADUCT (K)						

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY <b>F. DAGRIN</b>
DRAWN BY <b>R. GIBBINS</b>
CHECKED BY <b>K. SEYMOUR</b>
IN CHARGE <b>C. TAYLOR</b>
DATE <b>09/15/2017</b>

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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

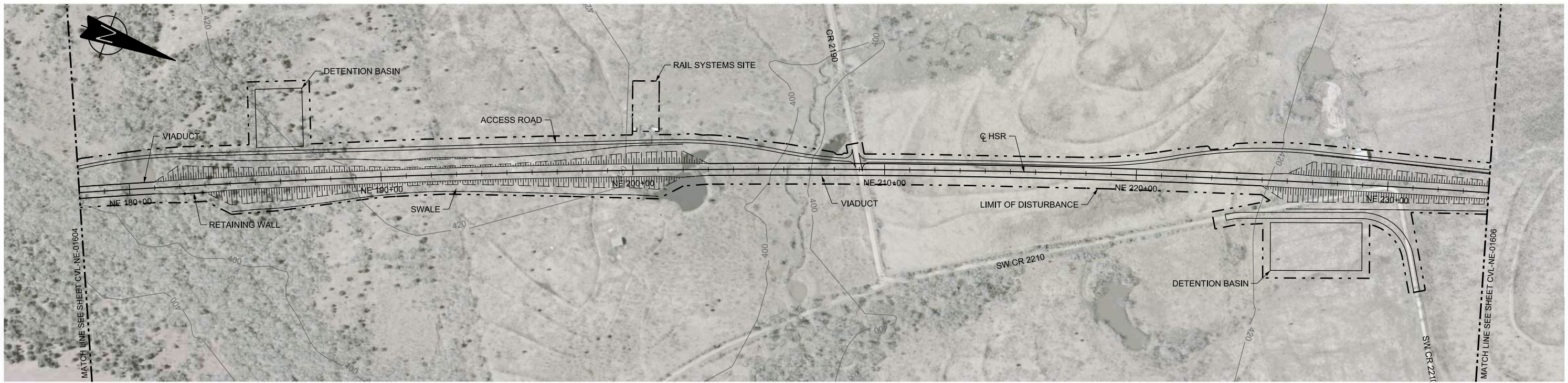
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 122+00 TO NE 178+00**

Scale  
AS SHOWN

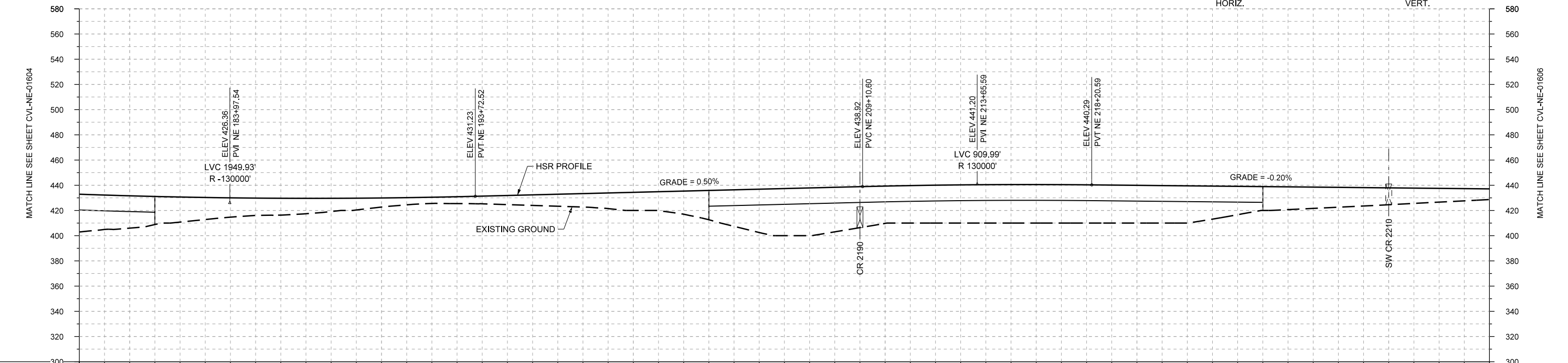
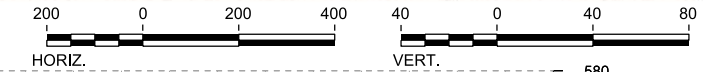
Drawing Status  
**FINAL DRAFT**

Job No 234180	Drawing No CVL-NE-01604	Rev 01
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PLAN



PROFILE

STATIONING	NE 178+00	NE 180+00	NE 190+00	NE 200+00	NE 210+00	NE 220+00	NE 230+00	NE 234+00																					
HOR. ALIGNMENT					R=42000 L=21312																								
VER. ALIGNMENT	R=130000			L=1538.08 G=0.500%	R=130000		L=7035.58 G=-0.200%																						
CUT AND FILL	+30.0	+25.6	+19.9	+16.3	+13.4	+10.5	+7.2	+4.9	+6.1	+8.4	+10.7	+14.4	+18.4	+29.0	+37.4	+35.4	+29.6	+30.0	+30.4	+30.5	+30.3	+29.9	+29.4	+22.5	+18.0	+15.7	+13.4	+10.9	+8.4
TYP. SECTION	VIADUCT (E)		EMBANKMENT (A)										VIADUCT (E)		EMBANKMENT (A)														

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

**ARUP**

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Tel (214) 217 2200 Fax (214) 217 2201  
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Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

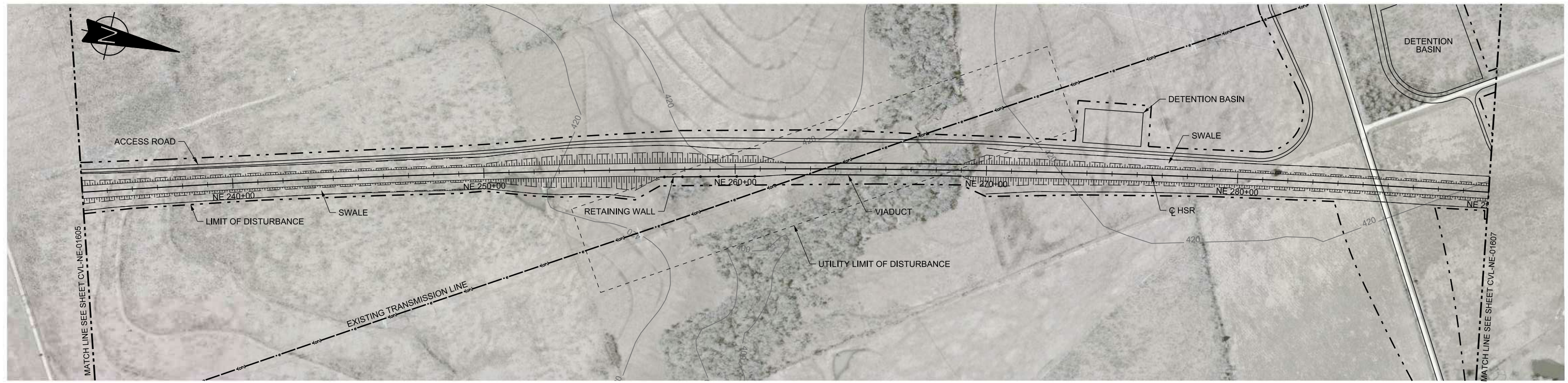
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

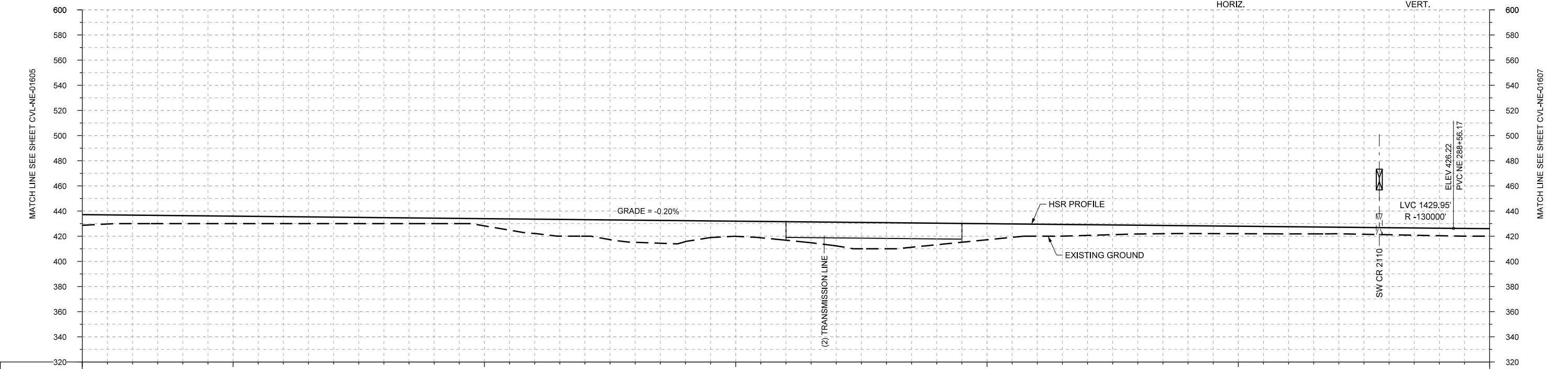
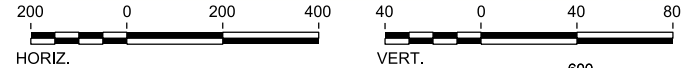
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 178+00 TO NE 234+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-NE-01605	01	





PLAN



STATIONING	NE 234+00	NE 240+00	NE 250+00	NE 260+00	NE 270+00	NE 280+00	NE 290+00																						
HOR. ALIGNMENT				R=42000 L=21312																									
VER. ALIGNMENT				L=7035.58 G=-0.200%			R=130000																						
CUT AND FILL	+8.4	+6.7	+6.3	+5.9	+5.5	+5.1	+4.7	+4.3	+5.7	+11.4	+13.1	+17.6	+18.6	+12.0	+14.7	+18.8	+20.7	+17.1	+12.7	+9.5	+8.5	+7.0	+6.2	+5.9	+5.7	+5.2	+5.6	+5.9	+6.0
TYP. SECTION	EMBANKMENT (A)				CUT (C)		EMBANKMENT (A)				VIADUCT (E)		EMBANKMENT (A)																

PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY	F. DAGRIN
DRAWN BY	R. GIBBINS
CHECKED BY	K. SEYMOUR
IN CHARGE	C. TAYLOR
DATE	09/15/2017

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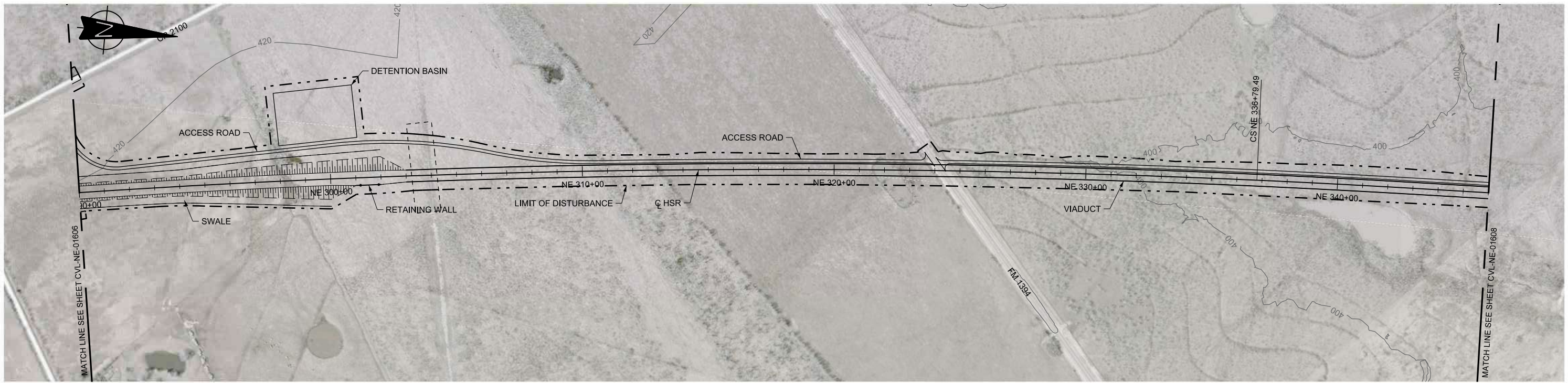
**FREESSE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

Client  
  
 1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

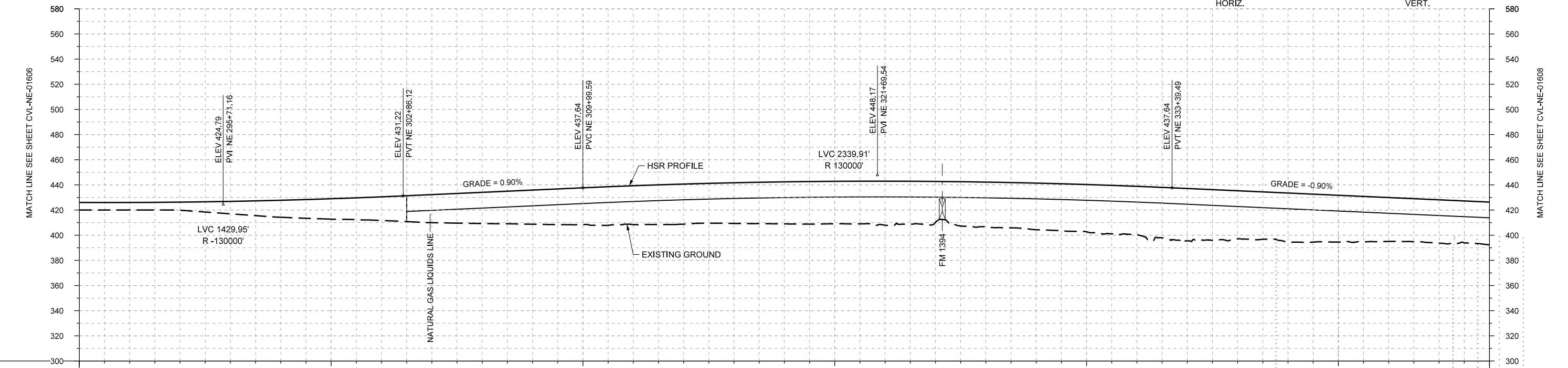
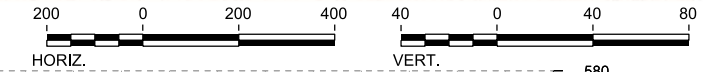
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**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 234+00 TO NE 290+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-NE-01606
Rev	01

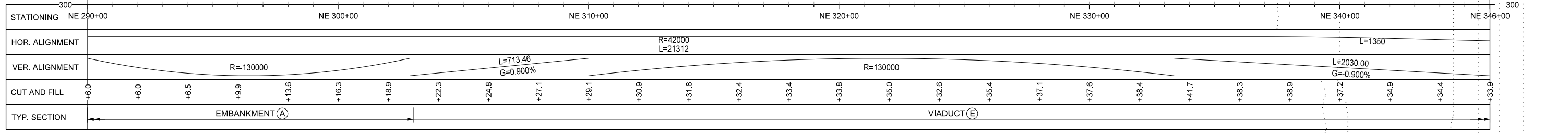




PLAN



PROFILE



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**  
DRAWN BY  
**R. GIBBINS**  
CHECKED BY  
**K. SEYMOUR**  
IN CHARGE  
**C. TAYLOR**  
DATE  
**09/15/2017**

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10370 Richmond Ave., Suite 475  
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Texas Registered Engineering Firm: F-1990

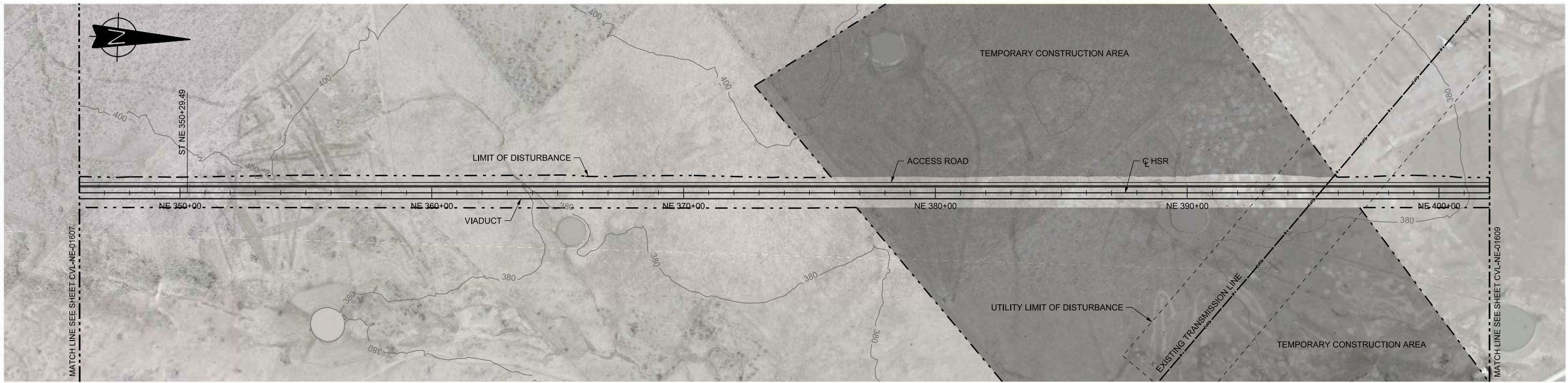
**FREESSE AND NICHOLS**  
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Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

Client  
**TEXAS CENTRAL**  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

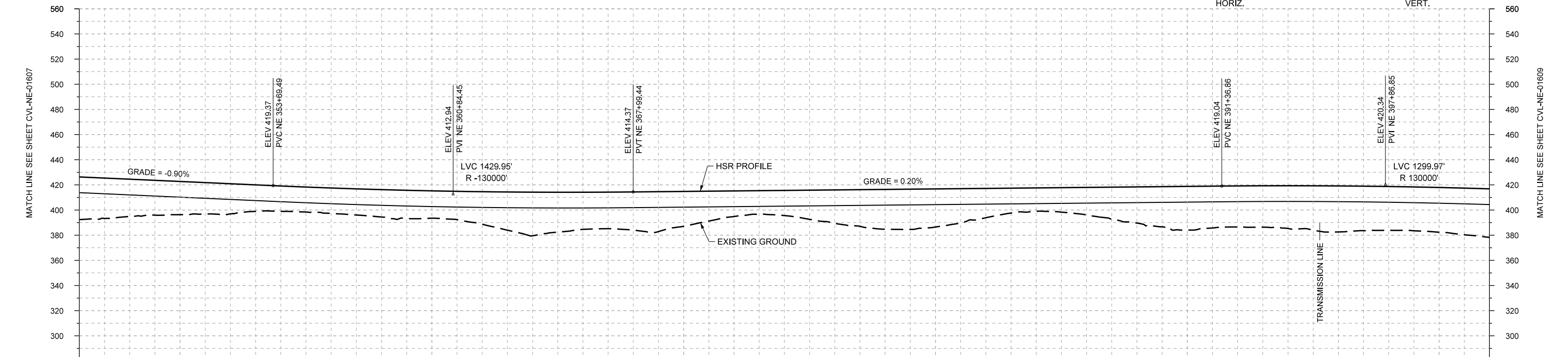
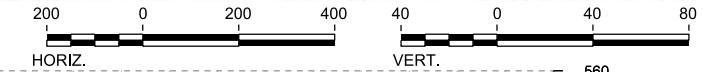
Drawing Title  
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 290+00 TO NE 346+00**

Scale  
**AS SHOWN**  
Drawing Status  
**FINAL DRAFT**  
Job No: **234180** Drawing No: **CVL-NE-01607** Rev: **01**





PLAN



PROFILE

STATIONING	NE 346+00	NE 350+00	NE 360+00	NE 370+00	NE 380+00	NE 390+00	NE 400+00	NE 402+00																					
HOR. ALIGNMENT	L=1350		L=5855																										
VER. ALIGNMENT	L=2030.00 G=-0.900%		R=-130000		L=2337.42 G=0.200%		R=130000																						
CUT AND FILL	+33.9	+29.4	+26.4	+24.1	+20.1	+20.2	+21.7	+21.7	+25.8	+34.6	+29.5	+30.3	+27.7	+20.4	+20.0	+26.7	+31.7	+30.3	+23.4	+18.7	+22.0	+28.8	+34.8	+32.8	+34.0	+36.5	+34.9	+35.6	+38.6
TYP. SECTION	VIADUCT (E)																												

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY	F. DAGRIN
DRAWN BY	R. GIBBINS
CHECKED BY	K. SEYMOUR
IN CHARGE	C. TAYLOR
DATE	09/15/2017

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 Texas Registered Engineering Firm: F-2144

Client

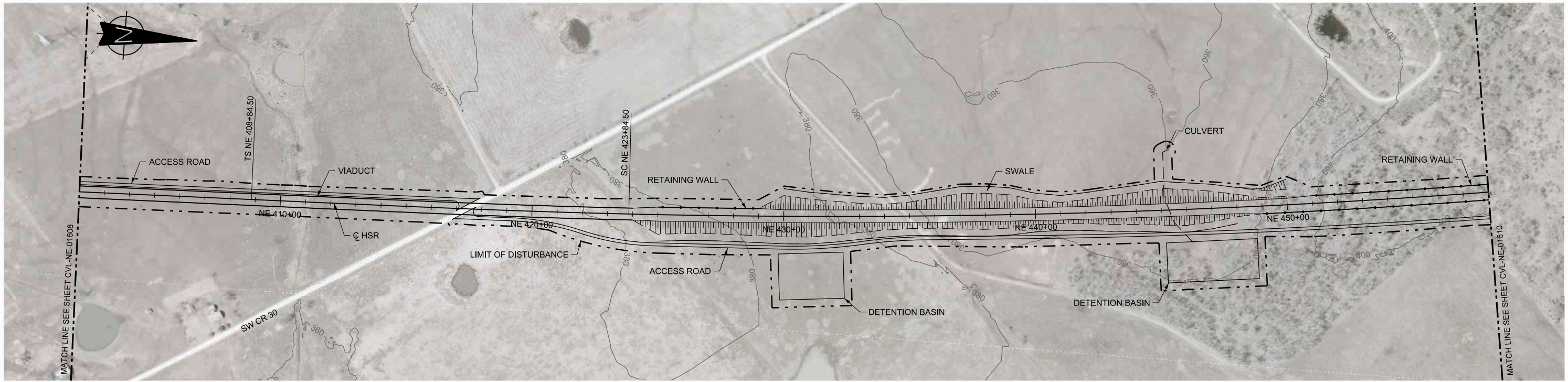
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

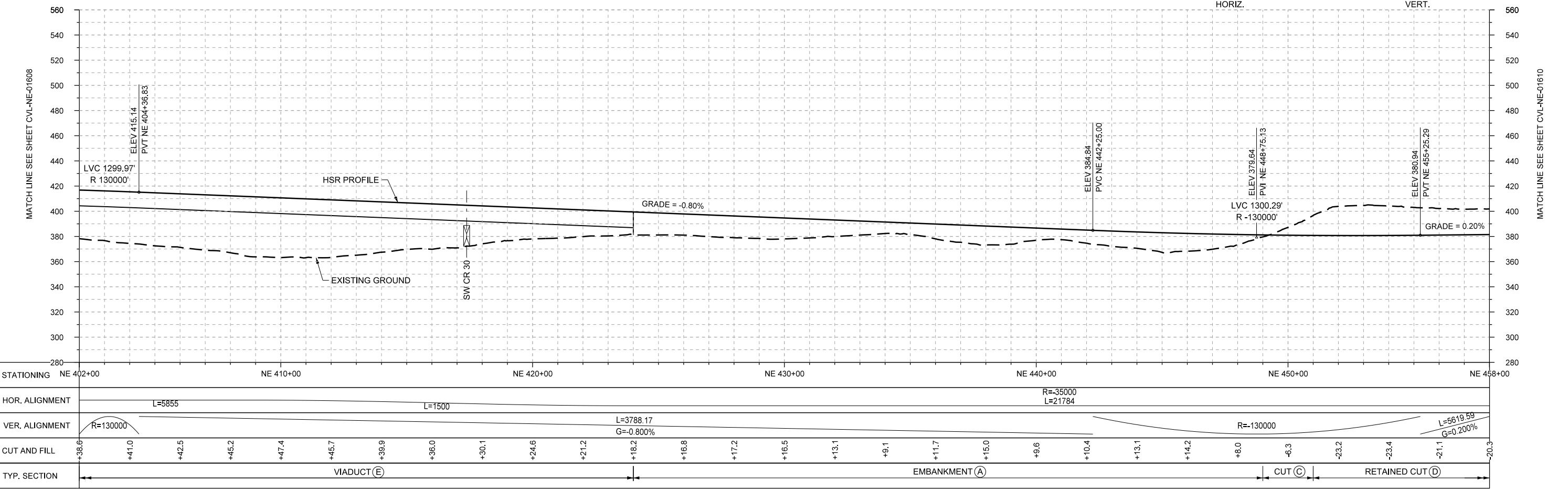
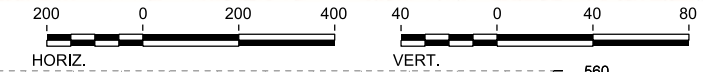
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 346+00 TO NE 402+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-NE-01608
Rev	01





PLAN



PROFILE

STATIONING	NE 402+00	NE 410+00	NE 420+00	NE 430+00	NE 440+00	NE 450+00	NE 458+00	
HOR. ALIGNMENT	L=5855		L=1500		R=35000 L=21784			
VER. ALIGNMENT	R=130000		L=3788.17 G=-0.800%		R=130000			
CUT AND FILL	+36.6	+41.0	+42.5	+45.2	+47.4	+45.7	+39.9	
TYP. SECTION	VIADUCT (E)				EMBANKMENT (A)		CUT (C) RETAINED CUT (D)	

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

**ARUP**

Arup Texas, Inc.  
10370 Richmond Ave., Suite 475  
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Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freesse.com  
Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

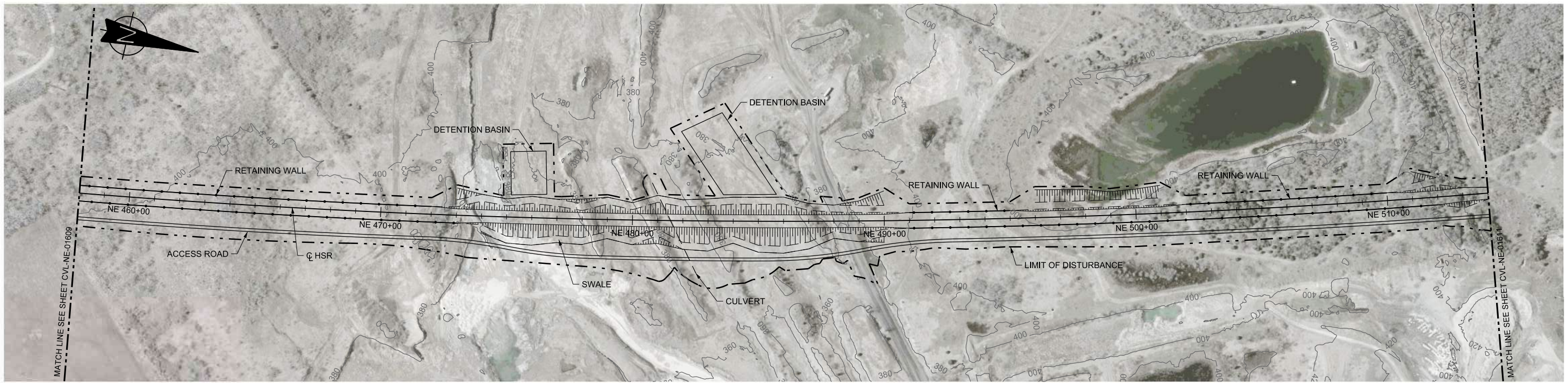
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 402+00 TO NE 458+00**

Scale  
AS SHOWN

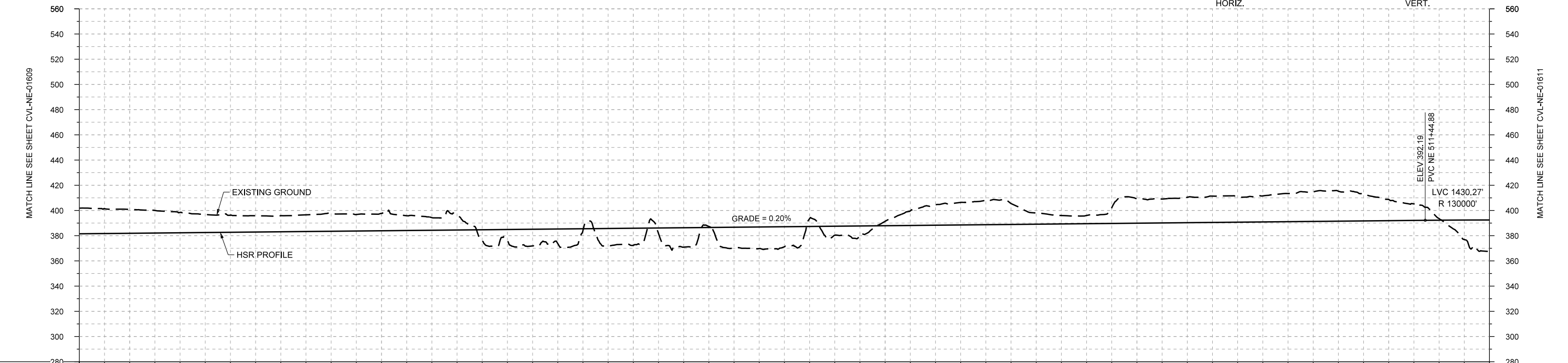
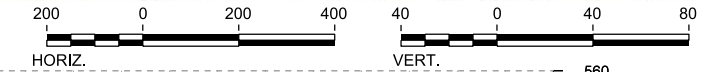
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-NE-01609	01





PLAN



PROFILE

STATIONING	NE 458+00	NE 460+00		NE 470+00		NE 480+00		NE 490+00		NE 500+00		NE 510+00	NE 514+00																
HOR. ALIGNMENT													R=35000 L=21784																
VER. ALIGNMENT													L=5619.59 G=0.200%																
CUT AND FILL	-20.3	-18.9	-18.1	-13.6	-12.7	-13.9	-13.8	-10.0	+9.1	+13.2	+1.4	+13.5	+15.4	+16.5	+15.9	+7.2	-3.5	-16.3	-16.5	-8.9	-6.5	-19.5	-20.2	-20.3	-22.3	-23.8	-16.8	-1.3	+25.4
TYP. SECTION													RETAINED CUT (D)			EMBANKMENT (A)			CUT (C)		RETAINED CUT (D)		CUT (C)		RETAINED CUT (D)				

DESIGNED BY	F. DAGRIN
DRAWN BY	R. GIBBINS
CHECKED BY	K. SEYMOUR
IN CHARGE	C. TAYLOR
DATE	09/15/2017

REV	DATE	BY	CHK	APP	DESCRIPTION

Arup Texas, Inc.  
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Texas Registered Engineering Firm: F-1990

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Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 458+00 TO NE 514+00**

Scale

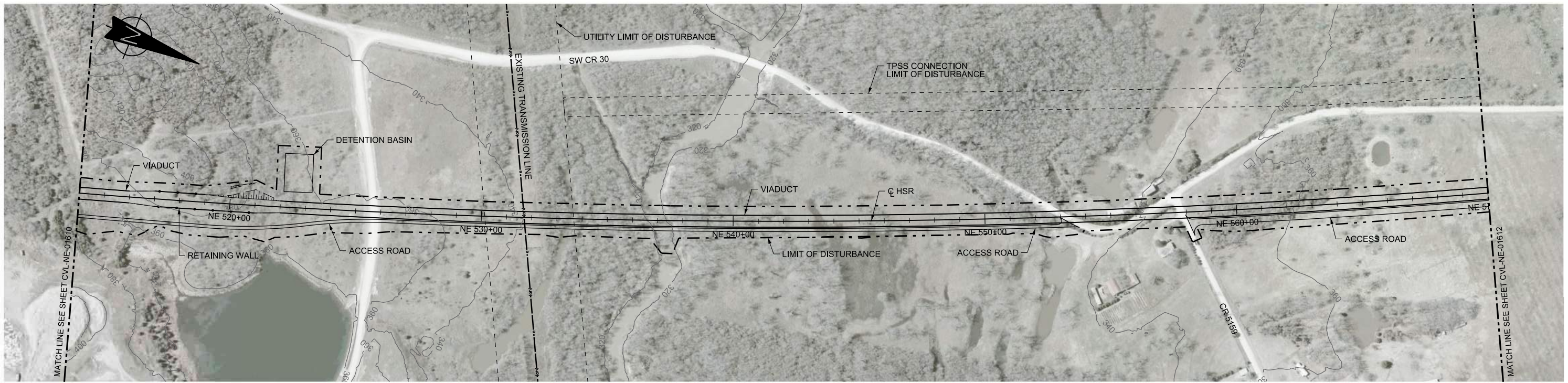
AS SHOWN

Drawing Status

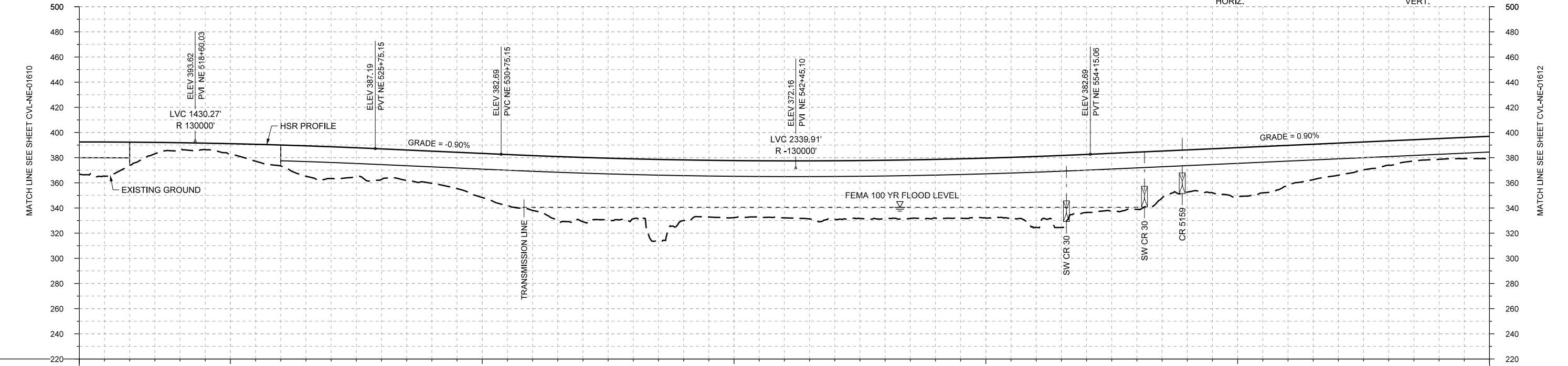
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-NE-01610	01





PLAN



PROFILE

STATIONING	NE 514+00	NE 520+00	NE 530+00	NE 540+00	NE 550+00	NE 560+00	NE 570+00																						
HOR. ALIGNMENT				R=35000 L=21784																									
VER. ALIGNMENT	R=130000			L=500.00 G=-0.900%	R=130000		L=2465.08 G=0.900%																						
CUT AND FILL	+25.4	+18.7	+5.1	+8.2	+16.6	+25.2	+24.4	+25.7	+35.1	+43.6	+51.1	+47.6	+43.3	+45.4	+45.2	+46.4	+46.5	+46.6	+47.5	+56.5	+46.2	+45.5	+33.6	+38.9	+31.5	+25.5	+19.5	+16.5	+17.8
TYP. SECTION	(E)		RETAINED FILL (B)				VIADUCT (E)																						

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client  
**TEXAS CENTRAL**  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 514+00 TO NE 570+00**

Scale  
**AS SHOWN**

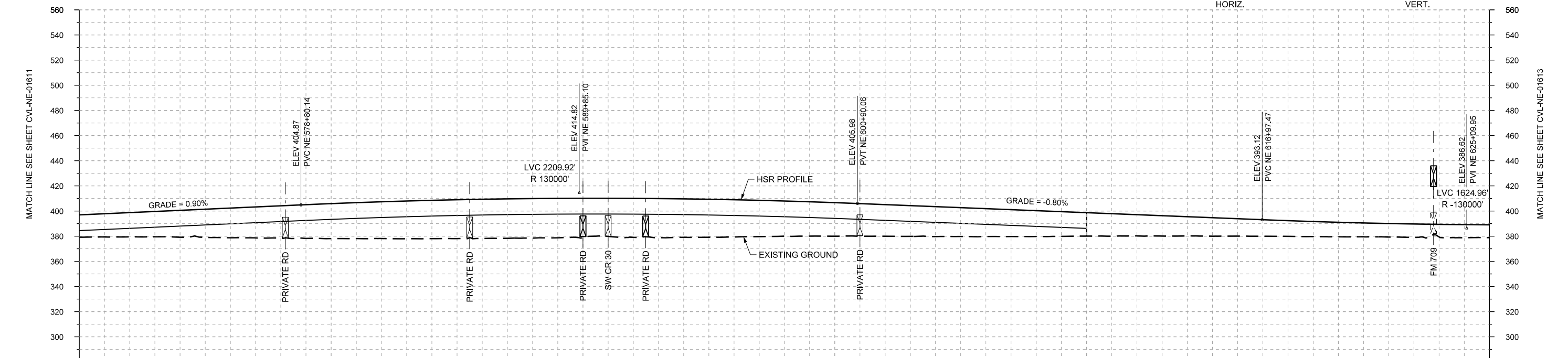
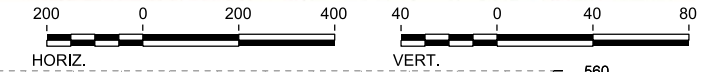
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-NE-01611	01





PLAN



PROFILE

STATIONING	NE 570+00	NE 580+00	NE 590+00	NE 600+00	NE 610+00	NE 620+00	NE 626+00
HOR. ALIGNMENT	R=35000 L=21784						
VER. ALIGNMENT	L=2465.08 G=0.900%		R=130000			L=1607.42 G=-0.800%	
CUT AND FILL	+17.8	+19.3	+21.4	+23.7	+25.7	+27.8	+29.2
TYP. SECTION	VIADUCT (E)				EMBANKMENT (A)		

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

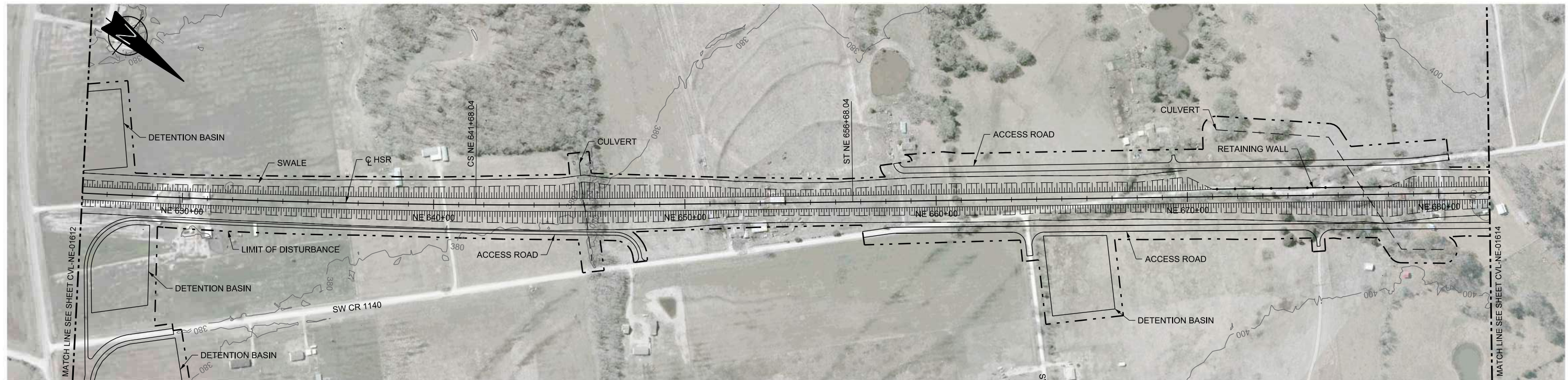
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

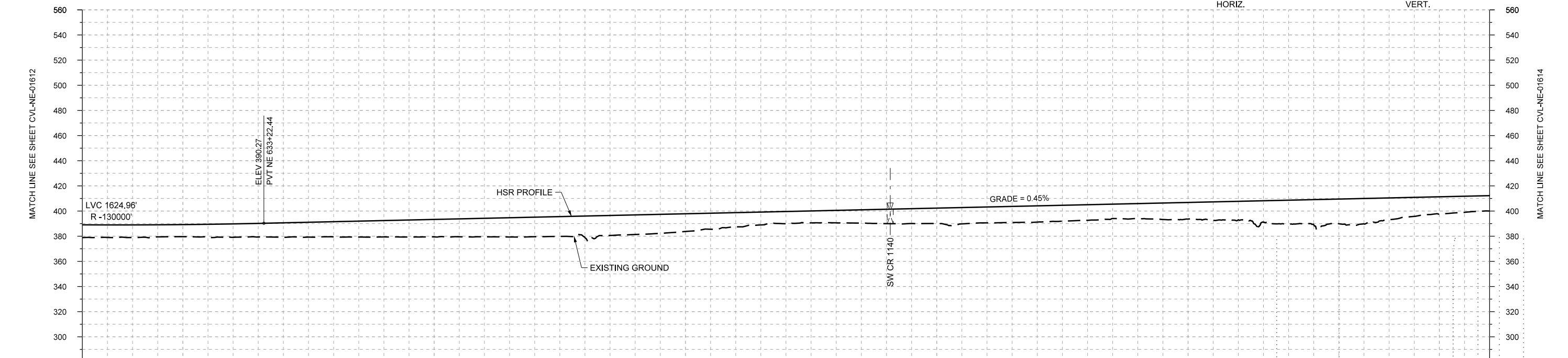
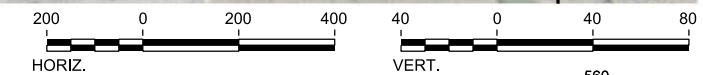
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 570+00 TO NE 626+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-NE-01612	01	





PLAN



STATIONING	NE 626+00	NE 630+00	NE 640+00	NE 650+00	NE 660+00	NE 670+00	NE 680+00	NE 682+00																					
HOR. ALIGNMENT	R=35000 L=21784		L=1500			L=28646																							
VER. ALIGNMENT	R=130000					L=7211.47 G=0.450%																							
CUT AND FILL	+10.1	+10.1	+9.6	+10.7	+11.5	+12.0	+13.0	+13.9	+14.7	+15.5	+17.1	+15.5	+14.1	+11.3	+9.7	+9.9	+11.4	+12.2	+12.6	+12.9	+12.4	+11.8	+13.2	+14.7	+19.0	+19.6	+17.3	+13.7	+12.2
TYP. SECTION	EMBANKMENT (A)																												

PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

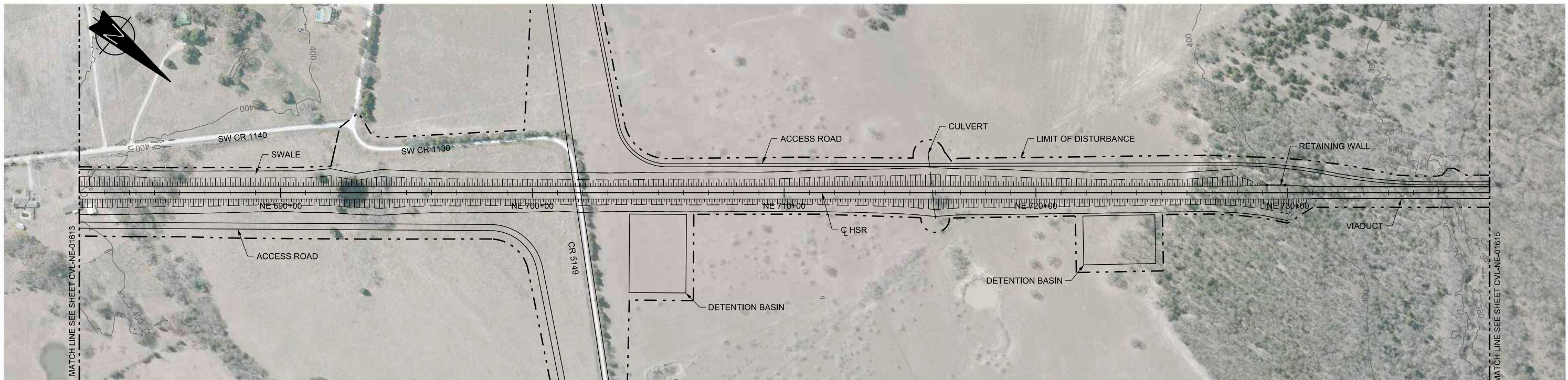
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 626+00 TO NE 682+00**

Scale  
AS SHOWN

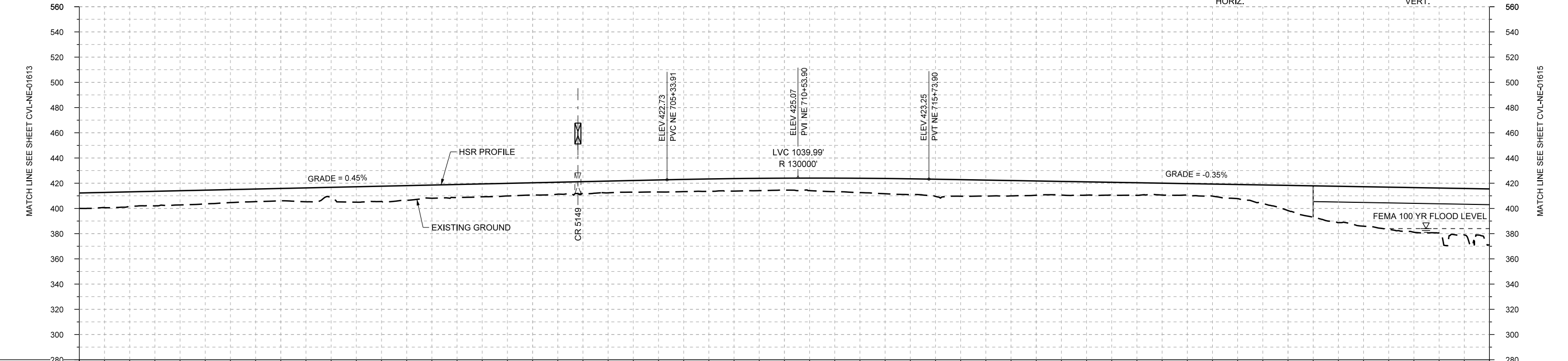
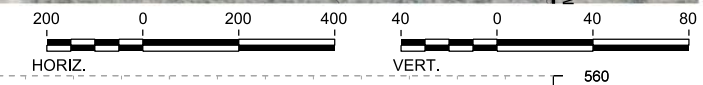
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-NE-01613	01





PLAN



PROFILE

STATIONING	NE 682+00	NE 690+00	NE 700+00	NE 710+00	NE 720+00	NE 730+00	NE 738+00																						
HOR. ALIGNMENT	L=28646																												
VER. ALIGNMENT	L=7211.47 G=0.450%		R=130000			L=2893.81 G=-0.350%																							
CUT AND FILL	+12.2	+11.5	+11.2	+10.3	+8.7	+8.0	+12.2	+10.4	+10.2	+9.7	+9.7	+9.2	+9.7	+10.0	+9.5	+10.7	+12.1	+13.7	+12.7	+11.4	+10.6	+10.0	+9.2	+11.2	+20.0	+28.9	+33.5	+35.6	+44.4
TYP. SECTION	EMBANKMENT (A)															VIADUCT (E)													

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

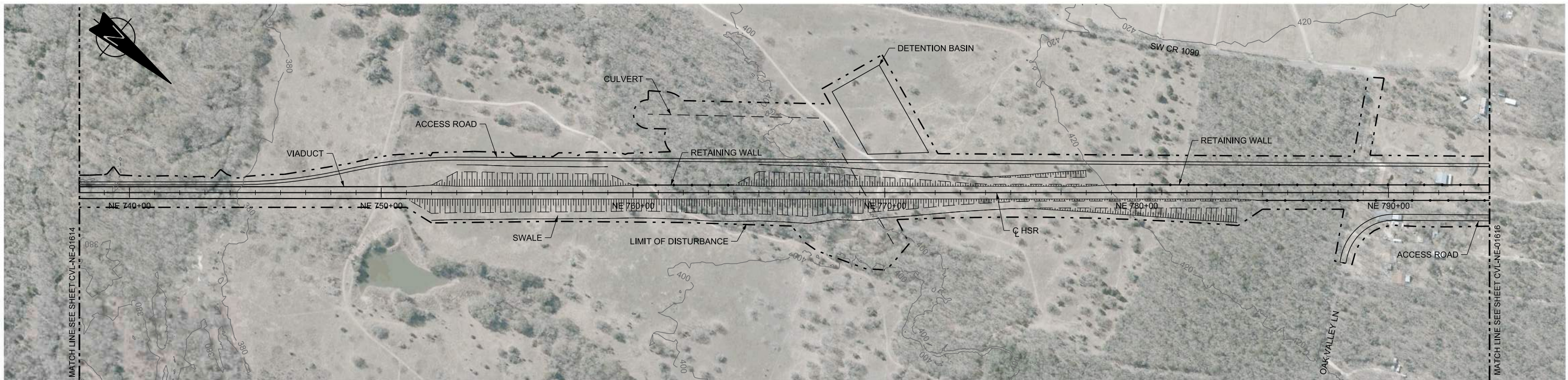
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 682+00 TO NE 738+00**

Scale  
AS SHOWN

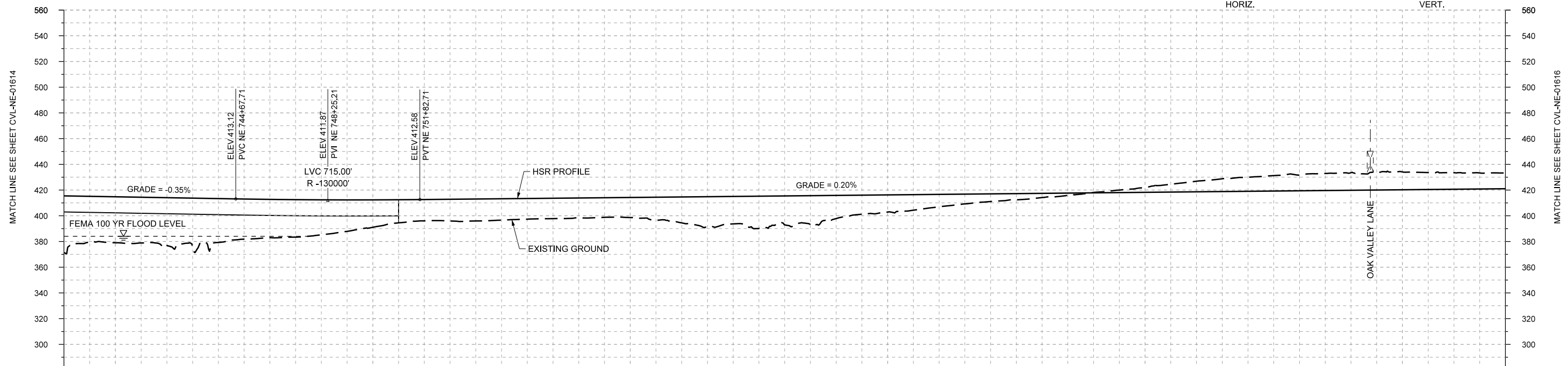
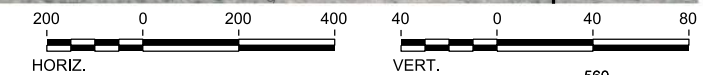
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-NE-01614	01





PLAN



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY <b>F. DAGRIN</b>
DRAWN BY <b>R. GIBBINS</b>
CHECKED BY <b>K. SEYMOUR</b>
IN CHARGE <b>C. TAYLOR</b>
DATE <b>09/15/2017</b>

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 www.freese.com  
 Texas Registered Engineering Firm: F-2144

Client  
  
**TEXAS CENTRAL**  
 1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

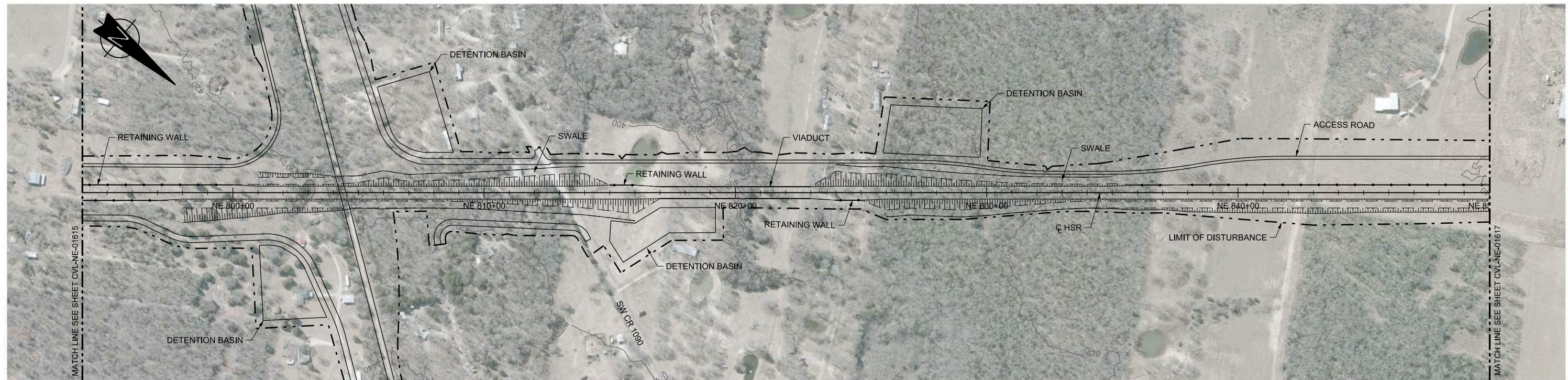
Drawing Title  
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 738+00 TO NE 794+00**

Scale  
 AS SHOWN

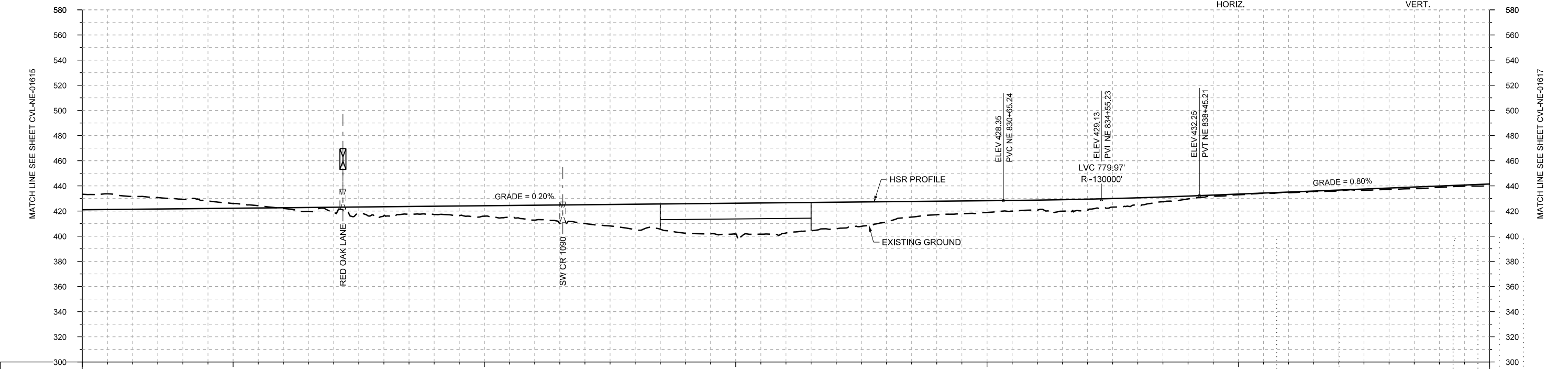
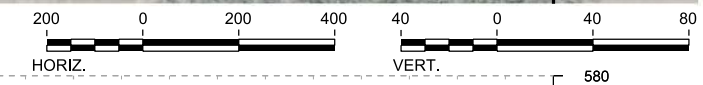
Drawing Status  
**FINAL DRAFT**

Job No 234180	Drawing No CVL-NE-01615	Rev 01
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PLAN



PROFILE

STATIONING	NE 794+00	NE 800+00	NE 810+00	NE 820+00	NE 830+00	NE 840+00	NE 850+00																						
HOR. ALIGNMENT	L=28646																												
VER. ALIGNMENT	L=7882.53 G=0.200%			R=-130000		L=4180.25 G=0.800%																							
CUT AND FILL	-12.3	-10.1	-7.5	-3.8	+0.6	+4.2	+7.1	+6.5	+8.3	+11.8	+15.0	+20.0	+23.4	+24.5	+24.1	+21.1	+18.0	+10.7	+9.3	+8.3	+8.7	+6.0	+2.3	+0.6	+0.5	+0.7	+1.1	+1.1	+1.5
TYP. SECTION	D		CUT C		EMBANKMENT A				VIADUCT E				EMBANKMENT A				CUT C												

DESIGNED BY	F. DAGRIN
DRAWN BY	R. GIBBINS
CHECKED BY	K. SEYMOUR
IN CHARGE	C. TAYLOR
DATE	09/15/2017

REV	DATE	BY	CHK	APP	DESCRIPTION

**ARUP**

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Texas Registered Engineering Firm: F-2144

Client

1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 794+00 TO NE 850+00**

Scale

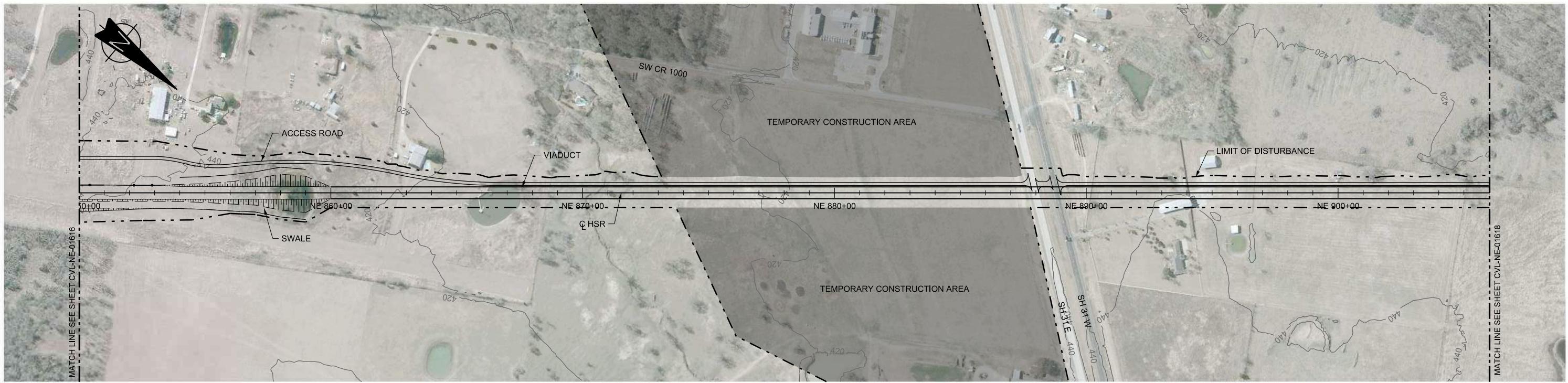
AS SHOWN

Drawing Status

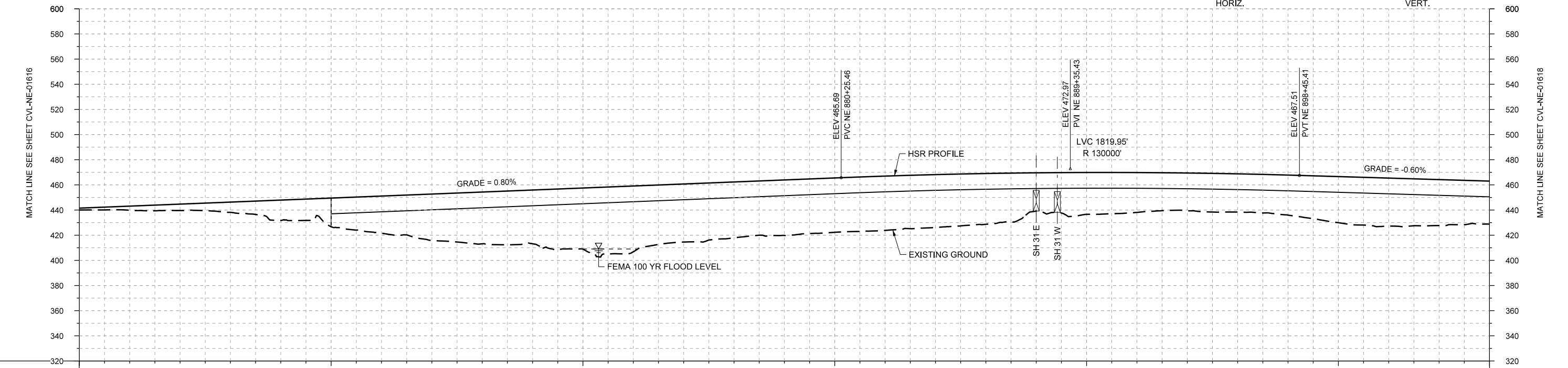
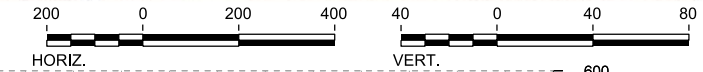
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-NE-01616	01





PLAN



PROFILE

STATIONING	NE 850+00	NE 860+00	NE 870+00	NE 880+00	NE 890+00	NE 900+00	NE 906+00																						
HOR. ALIGNMENT	L=28646																												
VER. ALIGNMENT	L=4180.25 G=0.800%			R=130000			L=3161.42 G=-0.600%																						
CUT AND FILL	+1.5	+3.3	+5.1	+8.1	+16.3	+22.8	+29.4	+36.9	+41.2	+42.7	+48.6	+52.3	+46.1	+44.4	+44.1	+43.2	+43.2	+42.0	+40.3	+30.5	+33.2	+31.7	+30.0	+30.3	+31.9	+36.7	+38.2	+36.6	+34.2
TYP. SECTION	CUT (C)			EMBANKMENT (A)				VIADUCT (E)																					

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

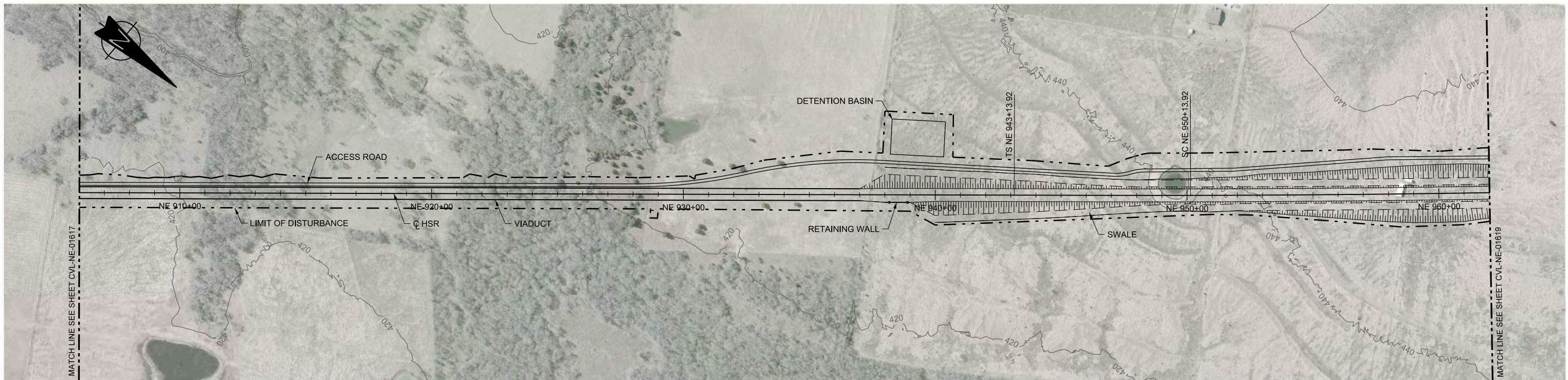
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

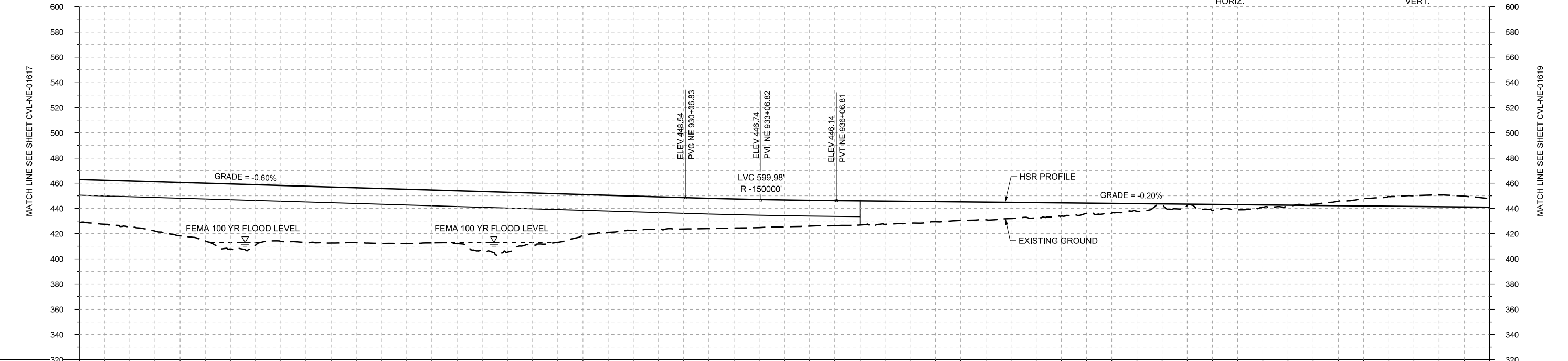
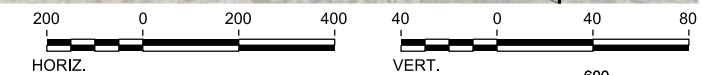
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 850+00 TO NE 906+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-NE-01617	01	





PLAN



PROFILE

STATIONING	NE 906+00	NE 910+00	NE 920+00	NE 930+00	NE 940+00	NE 950+00	NE 960+00	NE 962+00																				
HOR. ALIGNMENT			L=28646					R=80000 L=1975																				
VER. ALIGNMENT	L=3161.42 G=-0.600%		R=-150000			L=700		L=6370.07 G=-0.200%																				
CUT AND FILL	+34.2	+36.5	+42.3	+51.6	+44.4	+43.6	+41.9	+46.9	+41.3	+32.5	+27.2	+24.9	+23.1	+21.4	+19.9	+18.5	+16.0	+14.0	+12.1	+8.2	+6.0	+1.1	+4.1	+1.1	-3.4	-7.6	-9.2	-6.7
TYP. SECTION	VIADUCT (E)										EMBANKMENT (A)						CUT (C)											

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
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Arup Texas, Inc.  
10370 Richmond Ave., Suite 475  
Houston, Texas 77042 USA  
Tel (713) 783 2787 Fax (713) 343 1467  
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Texas Registered Engineering Firm: F-1990



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Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

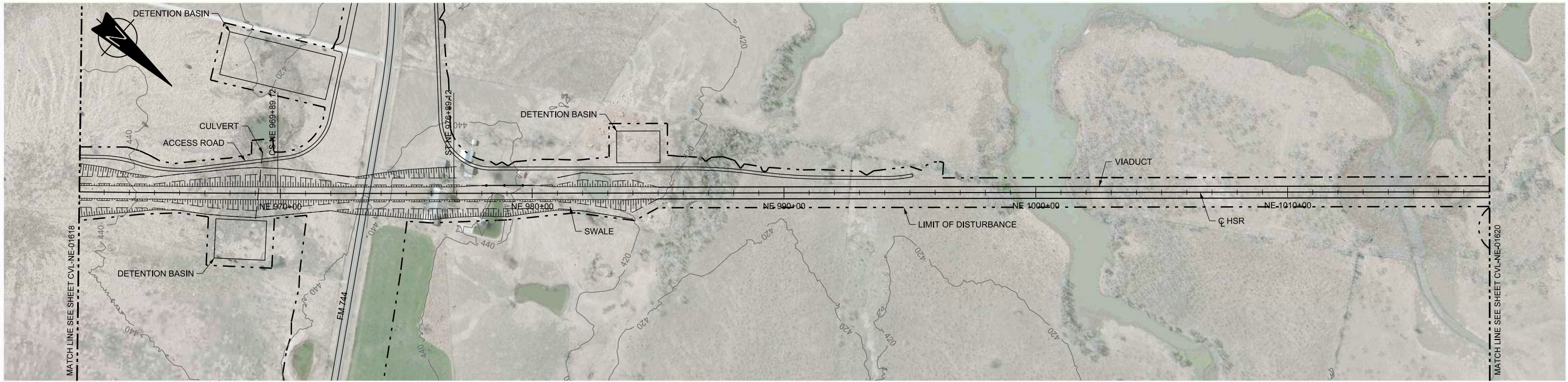


1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

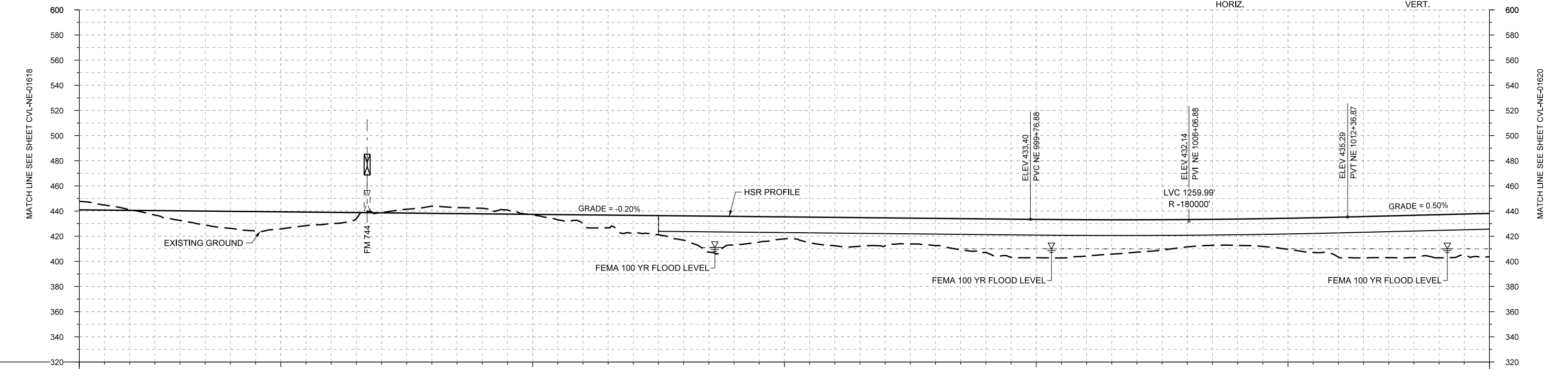
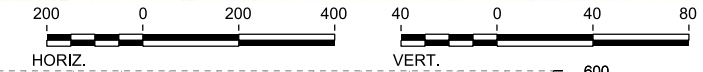
Drawing Title  
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 906+00 TO NE 962+00**

Scale AS SHOWN	Drawing Status <b>FINAL DRAFT</b>	
Job No 234180	Drawing No CVL-NE-01618	Rev 01





PLAN



PROFILE

STATIONING	NE 962+00	NE 970+00	NE 980+00	NE 990+00	NE 1000+00	NE 1010+00	NE 1018+00																						
HOR. ALIGNMENT	R=80000 L=1975		L=700		L=30419																								
VER. ALIGNMENT			L=6370.07 G=-0.200%		R=180000																								
CUT AND FILL	-6.7	-0.6	+7.6	+13.6	+13.6	+9.0	-0.2	-5.6	-4.5	+0.4	+6.7	+14.5	+19.4	+22.8	+17.5	+22.6	+22.3	+21.8	+26.7	+30.5	+26.9	+25.8	+21.7	+20.9	+24.7	+31.7	+33.2	+34.3	+34.4
TYP. SECTION	CUT (C)		EMBANKMENT (A)			CUT (C)		EMBANKMENT (A)			VIADUCT (E)																		

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

**ARUP**  
Arup Texas, Inc.  
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2711 North Haskell Ave., Suite 3300  
Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

Client  
**TEXAS CENTRAL**  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

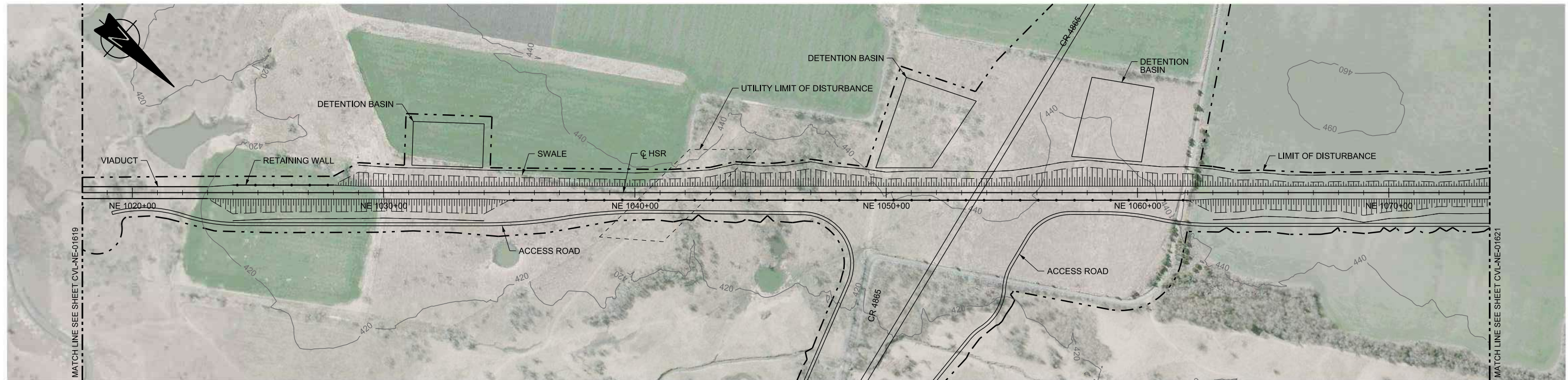
Drawing Title  
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 962+00 TO NE 1018+00**

Scale  
AS SHOWN

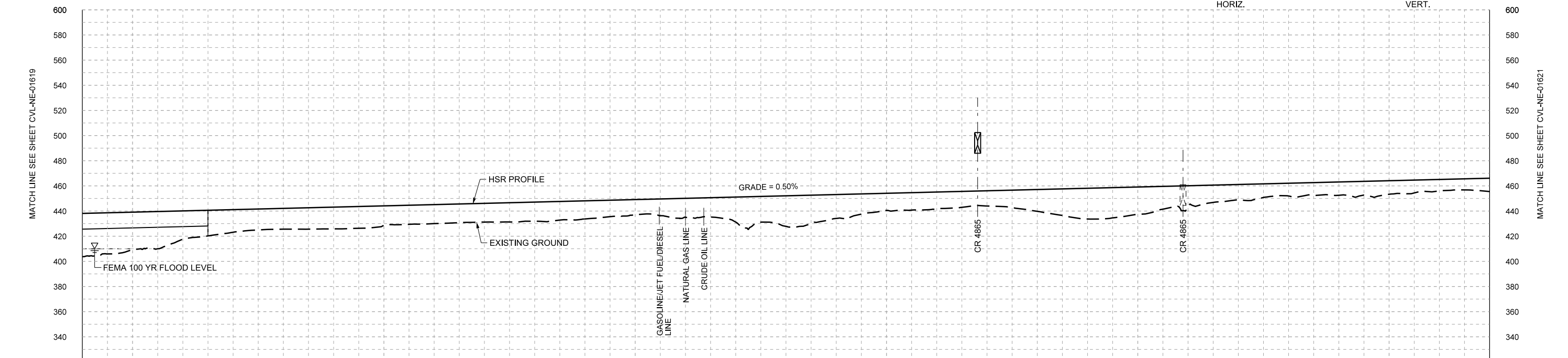
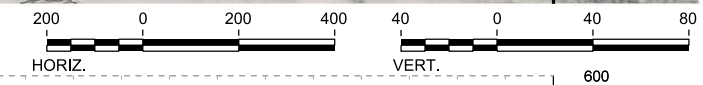
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-NE-01619	01





PLAN



STATIONING	NE 1018+00	NE 1020+00	NE 1030+00	NE 1040+00	NE 1050+00	NE 1060+00	NE 1070+00	NE 1074+00																					
HOR. ALIGNMENT	L=30419																												
VER. ALIGNMENT	L=12683.21 G=0.500%																												
CUT AND FILL	+34.4	+29.8	+22.4	+17.9	+16.5	+17.3	+15.4	+15.1	+14.9	+15.2	+14.4	+12.3	+15.0	+19.9	+24.3	+19.0	+13.6	+13.7	+12.1	+17.3	+24.4	+21.7	+17.2	+12.2	+10.1	+10.6	+10.8	+9.1	+10.6
TYP. SECTION	VIADUCT (E)			EMBANKMENT (A)																									

PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY	F. DAGRIN
DRAWN BY	R. GIBBINS
CHECKED BY	K. SEYMOUR
IN CHARGE	C. TAYLOR
DATE	09/15/2017

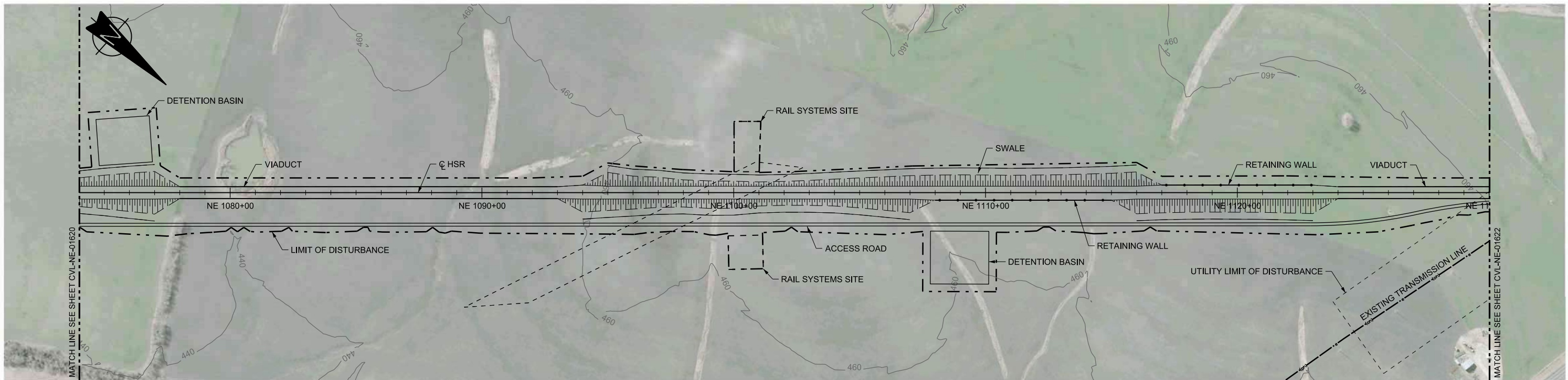
**ARUP**  
 Arup Texas, Inc.  
 10370 Richmond Ave., Suite 475  
 Houston, Texas 77042 USA  
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 Dallas, Texas 75204  
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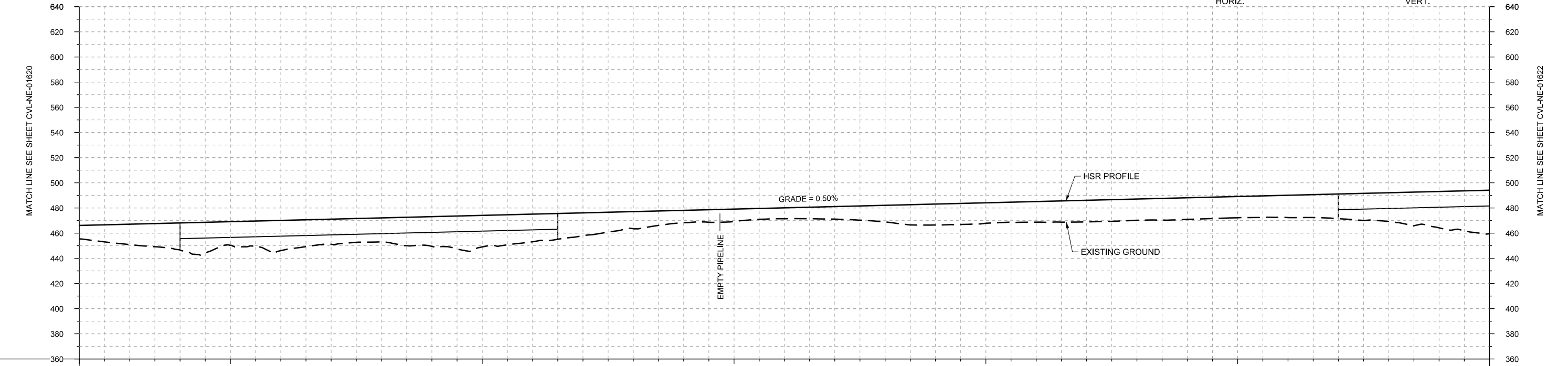
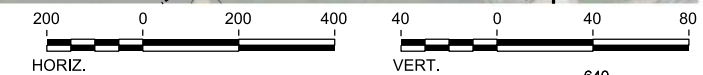
Client  
  
 1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 1018+00 TO NE 1074+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-NE-01620
Rev	01



PLAN



PROFILE

STATIONING	NE 1074+00	NE 1080+00	NE 1090+00	NE 1100+00	NE 1110+00	NE 1120+00	NE 1130+00																						
HOR. ALIGNMENT	L=30419																												
VER. ALIGNMENT	L=12683.21 G=0.500%																												
CUT AND FILL	+10.6	+16.2	+21.6	+18.8	+24.0	+20.0	+18.1	+23.6	+25.0	+22.0	+18.1	+13.6	+9.8	+9.9	+8.7	+10.0	+13.2	+16.6	+16.2	+16.4	+17.1	+16.9	+17.1	+16.9	+17.7	+19.7	+22.9	+28.9	+34.5
TYP. SECTION	EMBANKMENT (A)			VIADUCT (E)										EMBANKMENT (A)			VIADUCT (E)												

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

**ARUP**

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Tel (214) 217 2200 Fax (214) 217 2201  
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Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

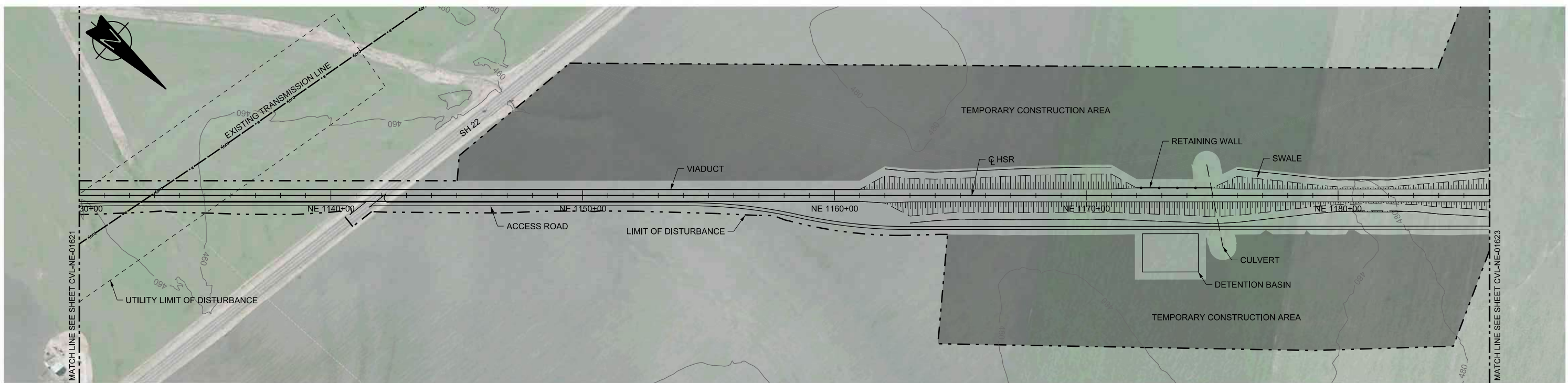
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

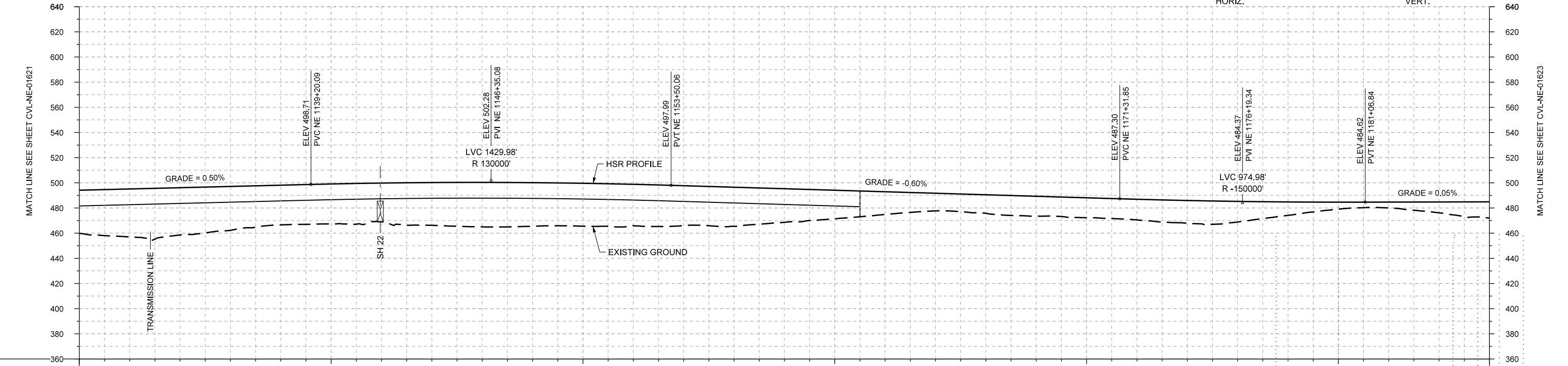
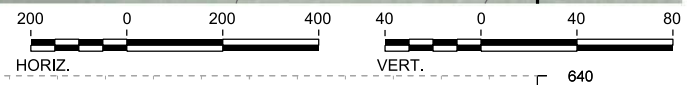
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 1074+00 TO NE 1130+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-NE-01621	01	





PLAN



PROFILE

STATIONING	NE 1130+00	NE 1140+00	NE 1150+00	NE 1160+00	NE 1170+00	NE 1180+00	NE 1186+00																						
HOR. ALIGNMENT	L=30419																												
VER. ALIGNMENT	L=12683.21 G=0.500%		R=130000		L=1781.79 G=-0.600%		R=150000 L=2921.50 G=0.050%																						
CUT AND FILL	+34.5	+38.1	+37.6	+34.9	+31.5	+31.8	+30.8	+34.0	+35.3	+34.7	+34.1	+32.9	+31.8	+31.1	+26.7	+22.7	+18.1	+14.0	+14.8	+15.8	+15.8	+16.4	+16.0	+16.4	+10.7	+5.5	+4.7	+8.7	+12.9
TYP. SECTION	VIADUCT (E)										EMBANKMENT (A)										EMBANKMENT (A)								

DESIGNED BY	F. DAGRIN
DRAWN BY	R. GIBBINS
CHECKED BY	K. SEYMOUR
IN CHARGE	C. TAYLOR
DATE	09/15/2017

REV	DATE	BY	CHK	APP	DESCRIPTION

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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 1130+00 TO NE 1186+00

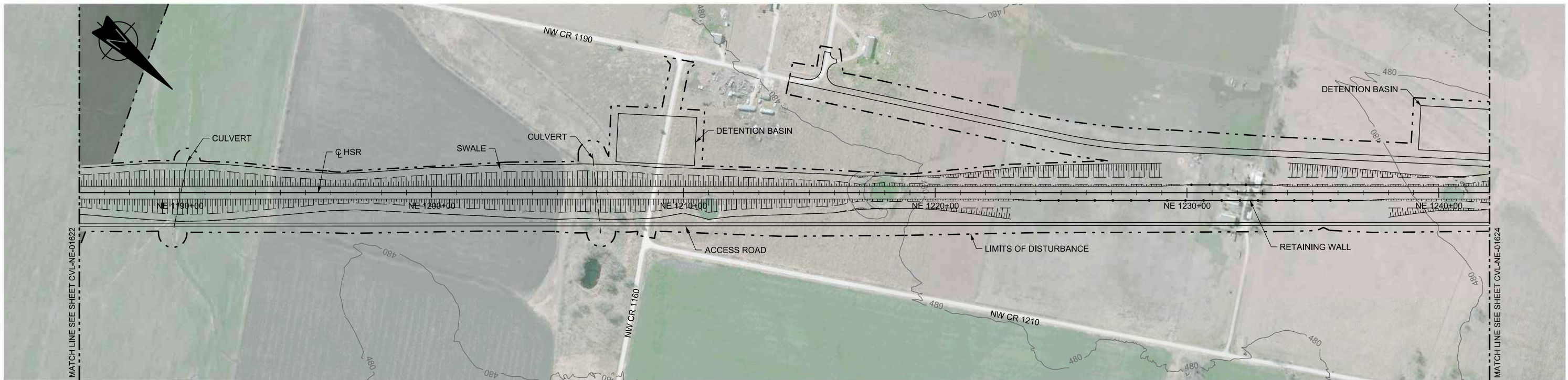
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AS SHOWN

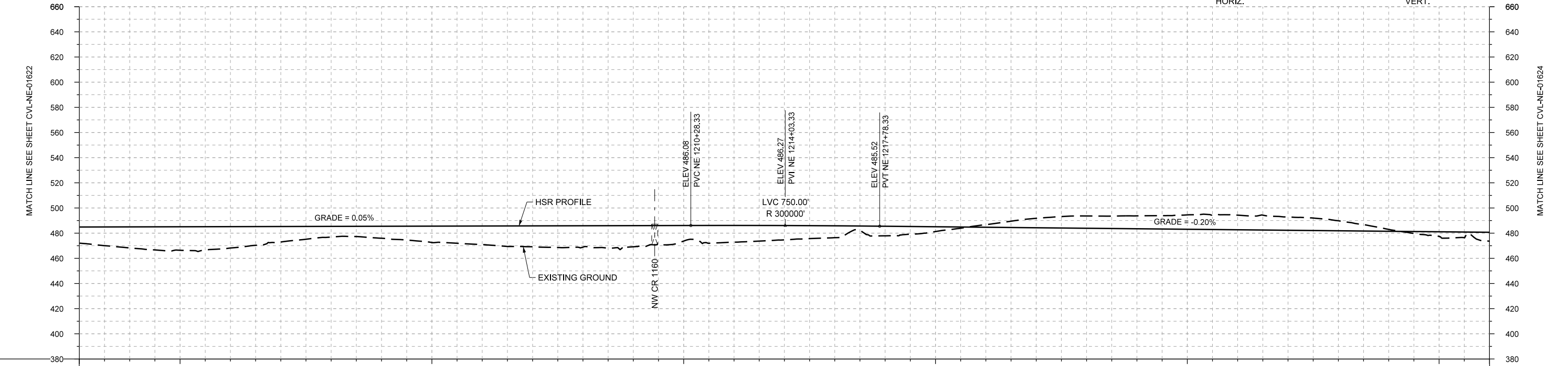
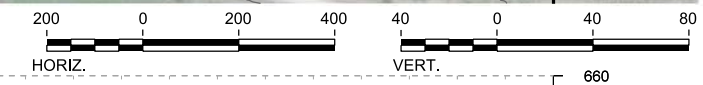
Drawing Status

FINAL DRAFT

Job No	Drawing No	Rev
234180	CVL-NE-01622	01



PLAN



PROFILE

STATIONING	NE 1186+00	NE 1190+00	NE 1200+00	NE 1210+00	NE 1220+00	NE 1230+00	NE 1240+00	NE 1242+00													
HOR. ALIGNMENT	L=30419																				
VER. ALIGNMENT	L=2921.50 G=0.050%				R=300000		L=3939.80 G=-0.200%														
CUT AND FILL	+12.9	+16.8	+18.7	+17.0	+12.4	+13.3	+11.4	+9.4	+7.6	+3.8	-2.0	-7.5	-9.7	-10.2	-11.4	-11.6	-10.6	-7.9	-1.5	+3.7	+7.1
TYP. SECTION	EMBANKMENT (A)										CUT (C)			RETAINED CUT (D)		CUT (C)		(A)			

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

**ARUP**

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Dallas, Texas 75204  
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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

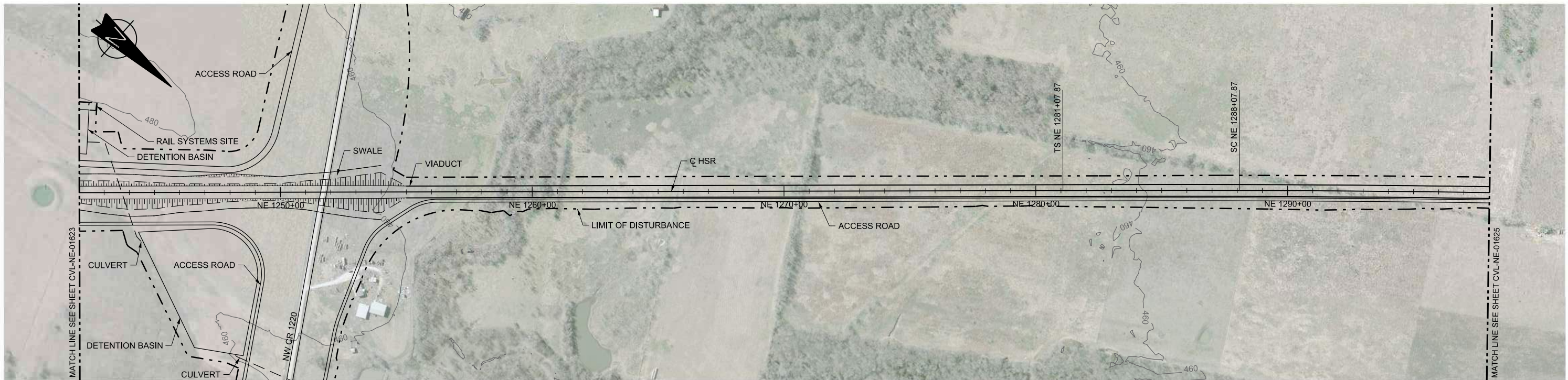
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

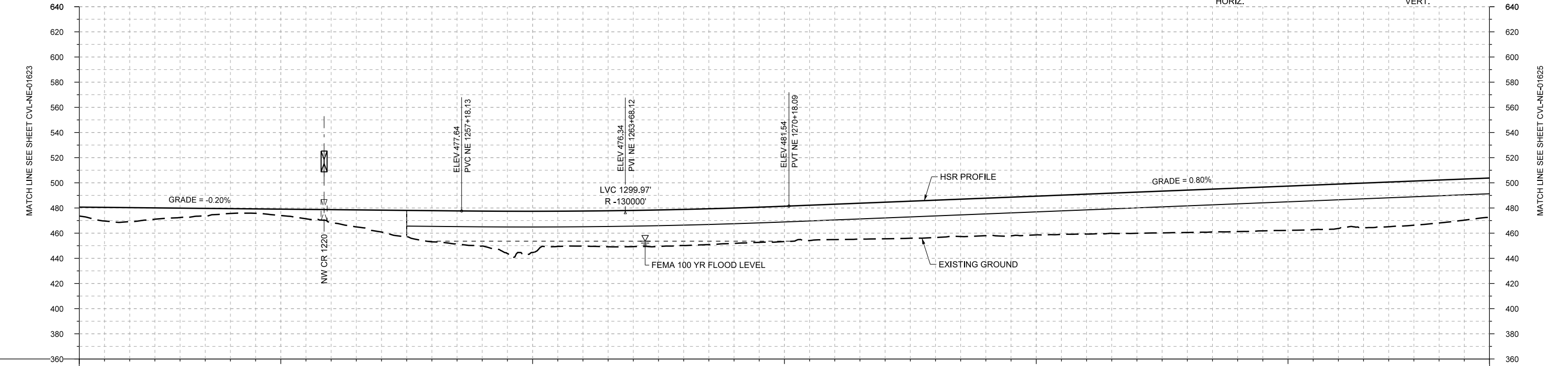
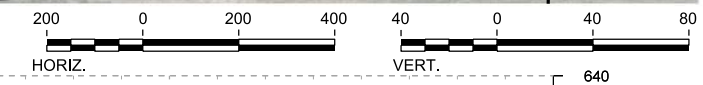
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 1186+00 TO NE 1242+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-NE-01623	01	





PLAN



PROFILE

STATIONING	NE 1242+00	NE 1250+00	NE 1260+00	NE 1270+00	NE 1280+00	NE 1290+00	NE 1298+00																						
HOR. ALIGNMENT	L=30419			L=700		R=80000 L=14042																							
VER. ALIGNMENT	L=3939.80 G=-0.200%		R=-130000			L=6417.71 G=0.800%																							
CUT AND FILL	+7.1	+11.2	+7.5	+3.9	+5.1	+10.4	+17.4	+24.8	+27.8	+32.7	+27.9	+28.8	+28.7	+28.2	+28.1	+28.2	+28.1	+29.7	+29.8	+30.8	+31.7	+32.7	+33.7	+34.5	+35.2	+35.3	+35.5	+34.1	+31.2
TYP. SECTION	EMBANKMENT (A)			CUT (C)		EMBANKMENT (A)		VIADUCT (E)																					

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**



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Texas Registered Engineering Firm: F-2144



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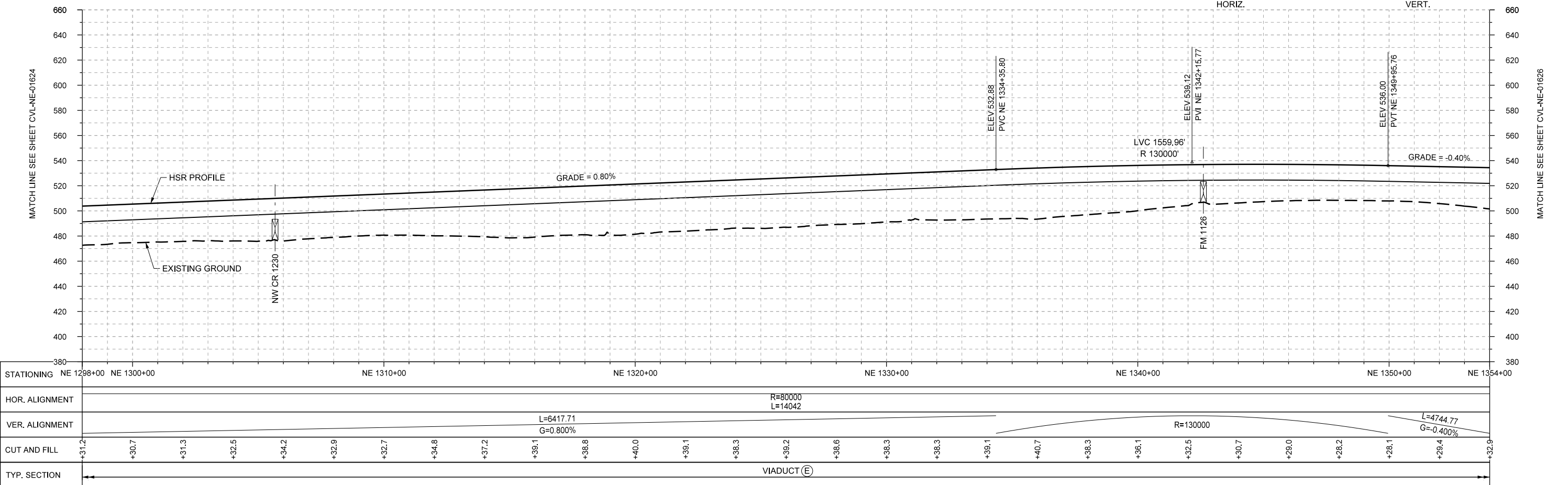
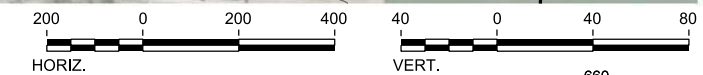
Drawing Title  
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 1242+00 TO NE 1298+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	234180	Drawing No	CVL-NE-01624
Rev			01





PLAN



PROFILE

STATIONING	NE 1298+00	NE 1300+00	NE 1310+00	NE 1320+00	NE 1330+00	NE 1340+00	NE 1350+00	NE 1354+00
HOR. ALIGNMENT	R=80000 L=14042							
VER. ALIGNMENT	L=6417.71 G=0.800%							
CUT AND FILL	+31.2	+30.7	+31.3	+32.5	+34.2	+32.9	+32.7	+34.8
TYP. SECTION	VIADUCT (E)							
	+37.2	+38.1	+38.8	+40.0	+38.1	+38.3	+38.2	+38.6
	+39.1	+40.7	+38.3	+36.1	+32.5	+30.7	+28.2	+28.1
	+29.4	+32.9	L=4744.77 G=-0.400%					

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY <b>F. DAGRIN</b>
DRAWN BY <b>R. GIBBINS</b>
CHECKED BY <b>K. SEYMOUR</b>
IN CHARGE <b>C. TAYLOR</b>
DATE <b>09/15/2017</b>

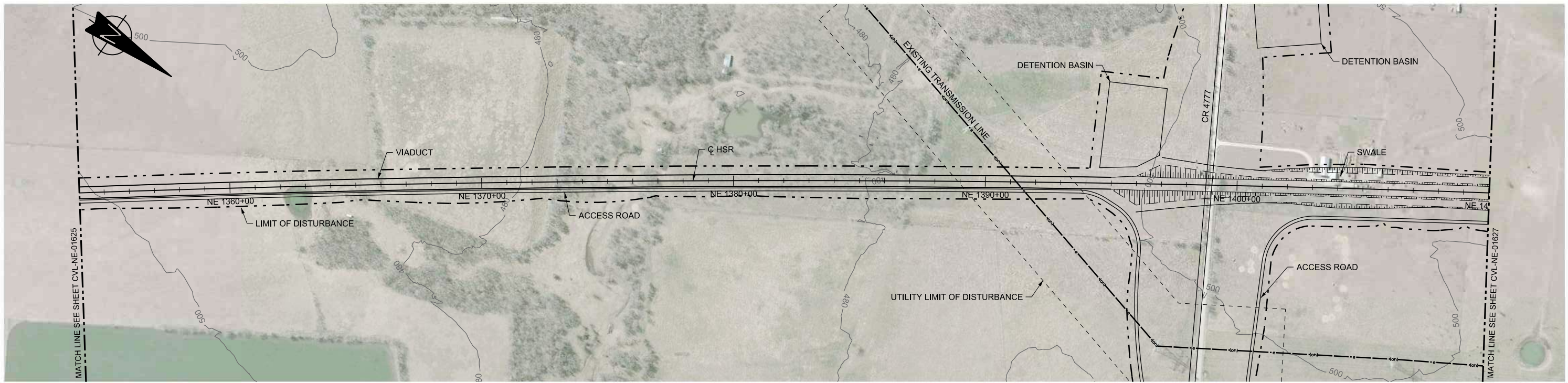
**ARUP**  
 Arup Texas, Inc.  
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 Houston, Texas 77042 USA  
 Tel (713) 783 2787 Fax (713) 343 1467  
 www.arup.com  
 Texas Registered Engineering Firm: F-1990

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 Dallas, Texas 75204  
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 www.freese.com  
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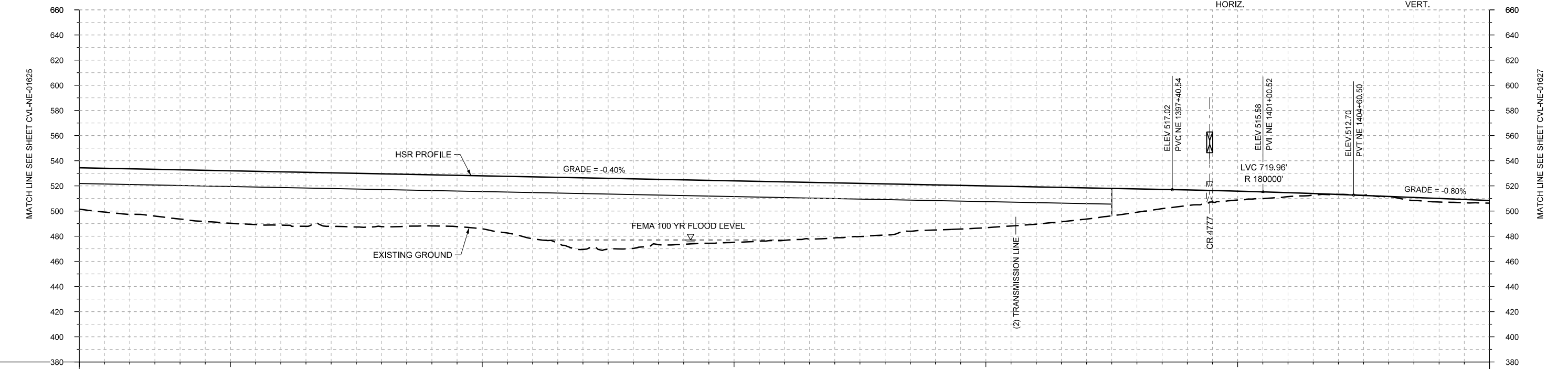
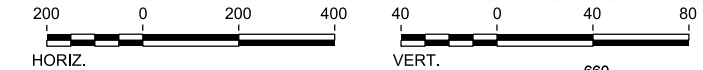
Client  
  
**TEXAS CENTRAL**  
 1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 1298+00 TO NE 1354+00**

Scale AS SHOWN	Drawing Status <b>FINAL DRAFT</b>
Job No 234180	Drawing No CVL-NE-01625
	Rev 01



PLAN



PROFILE

STATIONING	NE 1354+00	NE 1360+00	NE 1370+00	NE 1380+00	NE 1390+00	NE 1400+00	NE 1410+00																						
HOR. ALIGNMENT					R=80000 L=14042																								
VER. ALIGNMENT					L=4744.77 G=-0.400%	R=180000	L=9427.16 G=-0.800%																						
CUT AND FILL	+32.9	+36.2	+39.2	+41.7	+42.6	+42.7	+42.0	+40.7	+42.2	+43.2	+56.9	+55.3	+51.2	+48.8	+46.5	+43.7	+40.7	+35.9	+33.3	+29.7	+24.8	+18.5	+12.5	+7.0	+3.1	-0.1	+0.4	+2.8	+2.1
TYP. SECTION	VIADUCT (E)										EMBANKMENT (A)					CUT (C)													

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY	F. DAGRIN
DRAWN BY	R. GIBBINS
CHECKED BY	K. SEYMOUR
IN CHARGE	C. TAYLOR
DATE	09/15/2017

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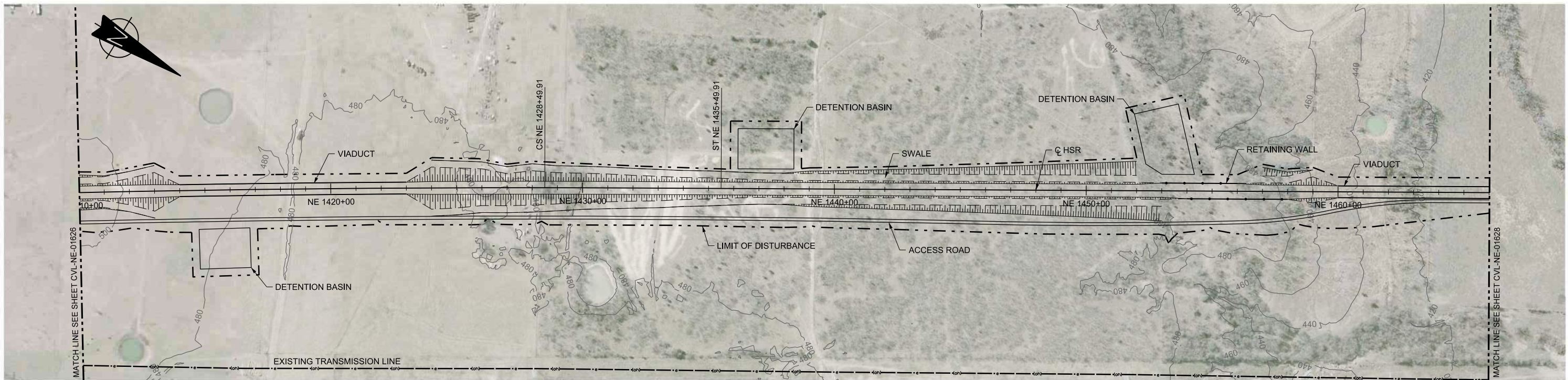
**FRESE AND NICHOLS**  
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 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
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 Texas Registered Engineering Firm: F-2144

Client  
  
 1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

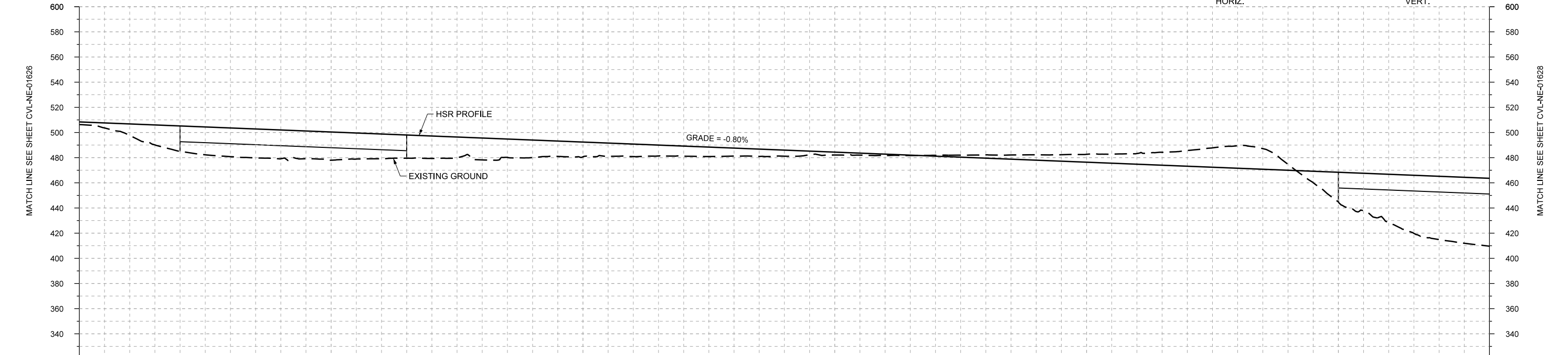
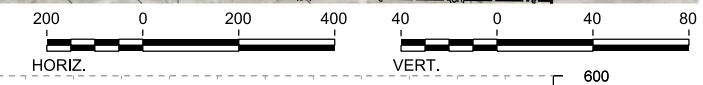
Drawing Title  
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 1354+00 TO NE 1410+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-NE-01626
Rev	01





PLAN



PROFILE

STATIONING	NE 1410+00	NE 1420+00	NE 1430+00	NE 1440+00	NE 1450+00	NE 1460+00	NE 1466+00																						
HOR. ALIGNMENT	R=80000 L=14042		L=700	L=9427.16 G=-0.800%																									
VER. ALIGNMENT																													
CUT AND FILL	+2.1	+9.2	+20.3	+22.8	+22.9	+22.5	+19.7	+17.8	+17.4	+13.9	+11.7	+9.9	+7.9	+6.3	+4.8	+2.3	+1.1	-0.7	-2.6	-4.3	-6.3	-8.5	-12.5	-17.9	-4.7	+23.6	+38.4	+50.3	+54.0
TYP. SECTION	EMBANKMENT (A)		VIADUCT (E)		EMBANKMENT (A)		CUT (C)			RETAINED CUT (D)		CUT (C)		VIADUCT (E)															

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**



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www.freese.com  
Texas Registered Engineering Firm: F-2144

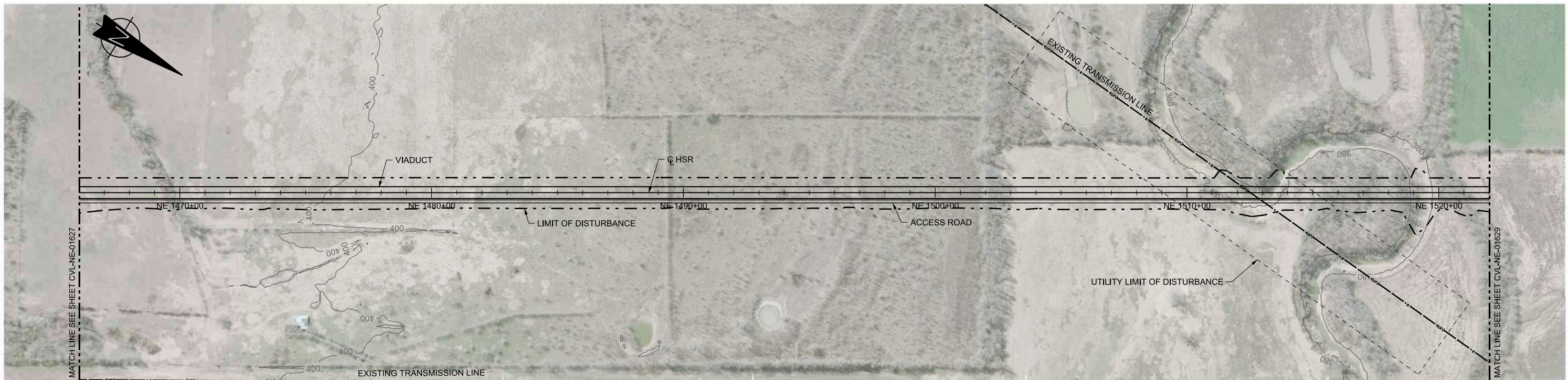


1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

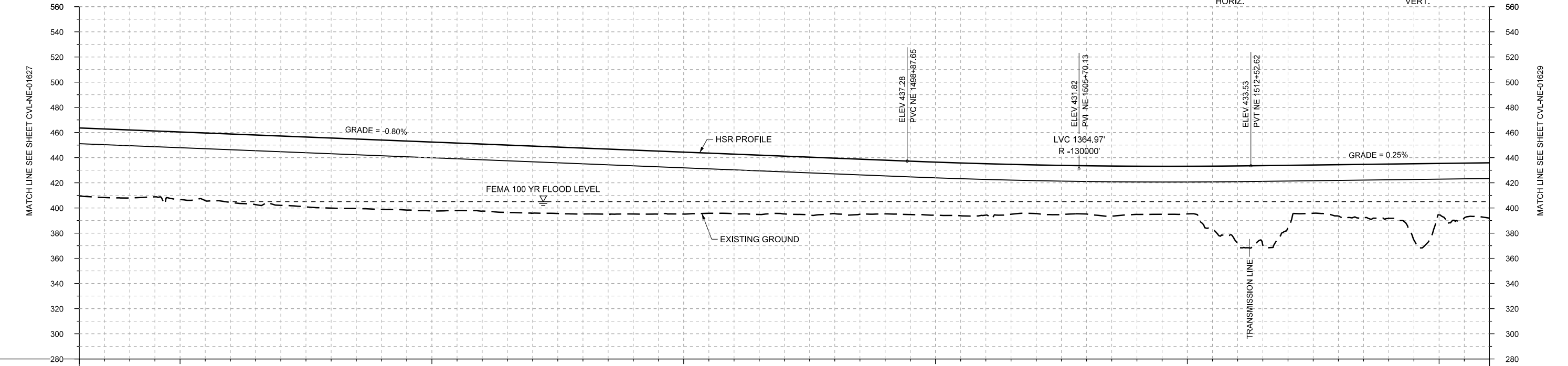
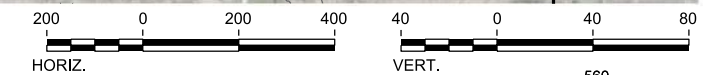
Drawing Title  
**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 1410+00 TO NE 1466+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-NE-01627	01	





PLAN



PROFILE

STATIONING	NE 1466+00	NE 1470+00	NE 1480+00	NE 1490+00	NE 1500+00	NE 1510+00	NE 1520+00	NE 1522+00
HOR. ALIGNMENT	L=21852							
VER. ALIGNMENT	L=9427.16 G=-0.800%							
CUT AND FILL	+54.0	+54.0	+53.7	+54.4	+55.1	+55.7	+55.1	+54.8
								+53.3
								+53.4
								+52.4
								+50.8
								+49.3
								+47.4
								+45.9
								+44.1
								+42.7
								+42.1
								+40.9
								+38.7
								+38.3
								+36.3
								+37.8
								+62.2
								+48.7
								+40.9
								+43.1
								+40.9
								+43.8
TYP. SECTION	VIADUCT (E)							

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

**ARUP**

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Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

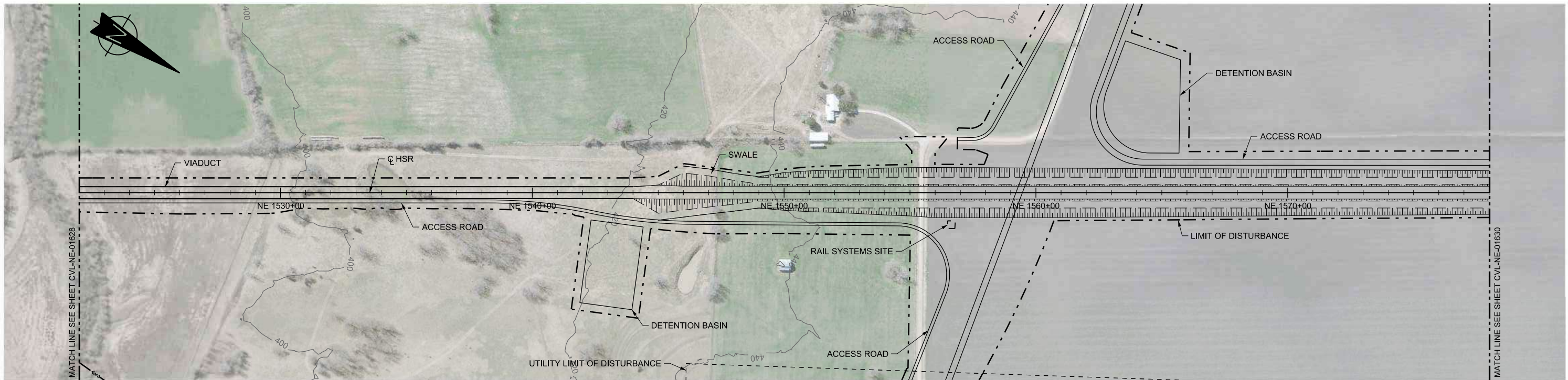
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

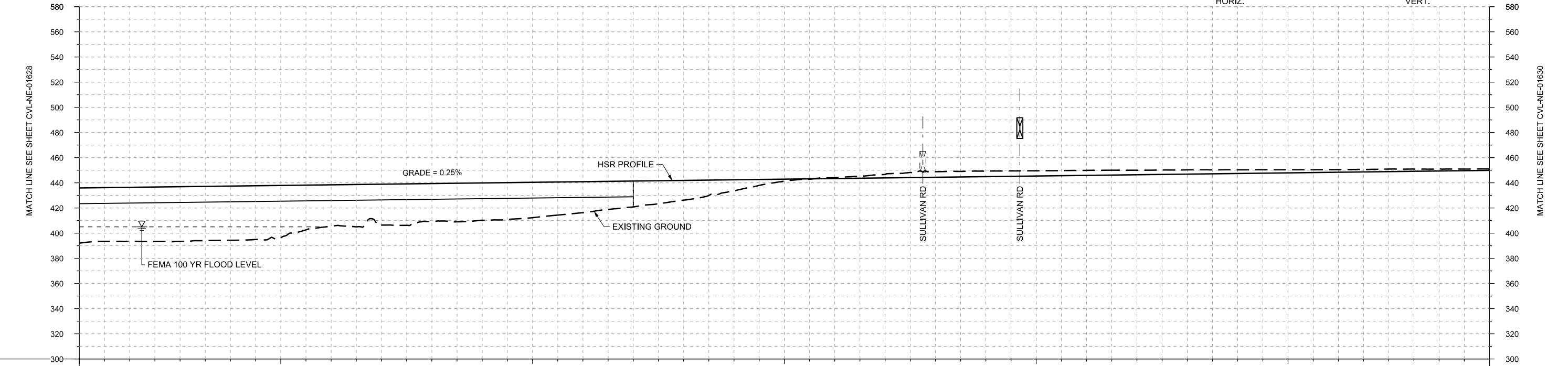
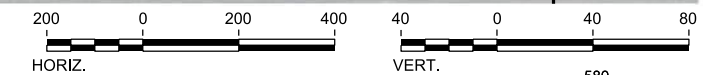
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 1466+00 TO NE 1522+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-NE-01628
Rev	01





PLAN



PROFILE

STATIONING	NE 1522+00	NE 1530+00	NE 1540+00	NE 1550+00	NE 1560+00	NE 1570+00	NE 1578+00																						
HOR. ALIGNMENT	L=21852																												
VER. ALIGNMENT	L=11538.50 G=0.250%																												
CUT AND FILL	+43.8	+43.0	+43.5	+43.1	+41.6	+32.9	+32.5	+30.0	+29.7	+28.1	+24.6	+20.6	+15.7	+8.7	+1.5	-0.6	-2.7	-4.4	-4.4	-4.2	-4.0	-3.6	-3.4	-2.9	-2.5	-2.1	-2.0	-1.6	-1.1
TYP. SECTION	VIADUCT (E)										EMBANKMENT (A)			CUT (C)															

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

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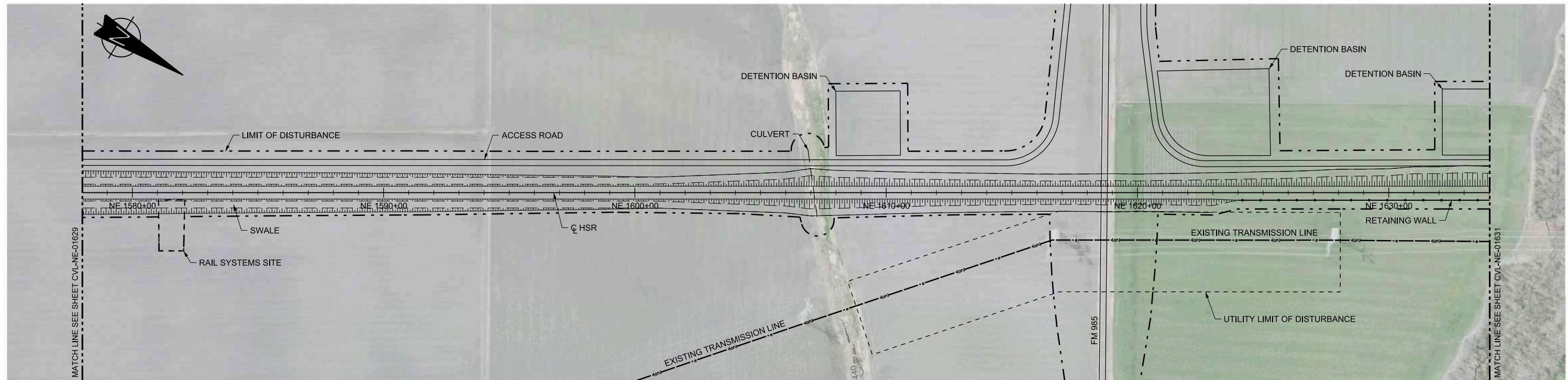
Client  
  
**TEXAS CENTRAL**  
 1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 1522+00 TO NE 1578+00**

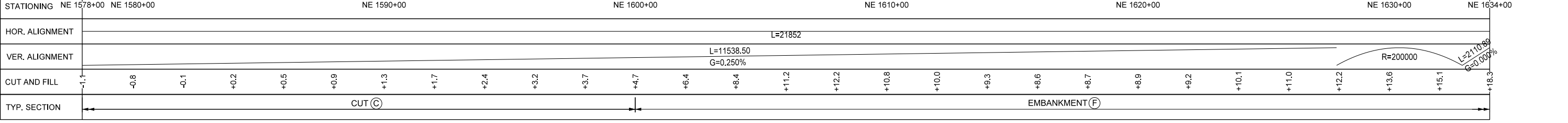
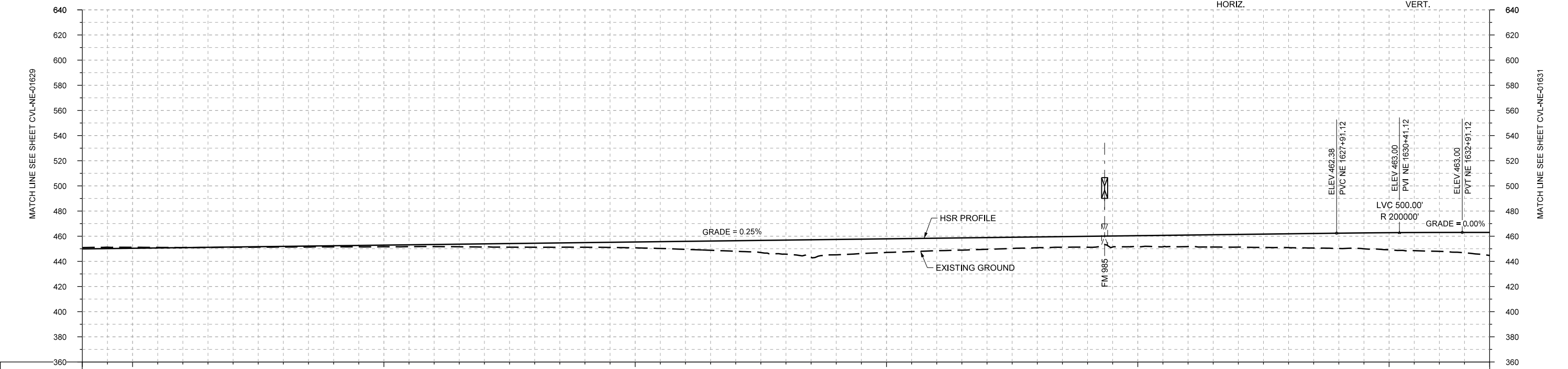
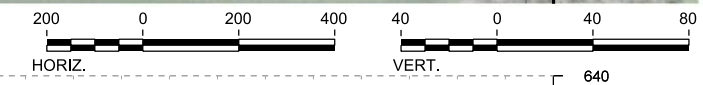
Scale  
**AS SHOWN**

Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-NE-01629	01



PLAN



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**  
DRAWN BY  
**R. GIBBINS**  
CHECKED BY  
**K. SEYMOUR**  
IN CHARGE  
**C. TAYLOR**  
DATE  
**09/15/2017**

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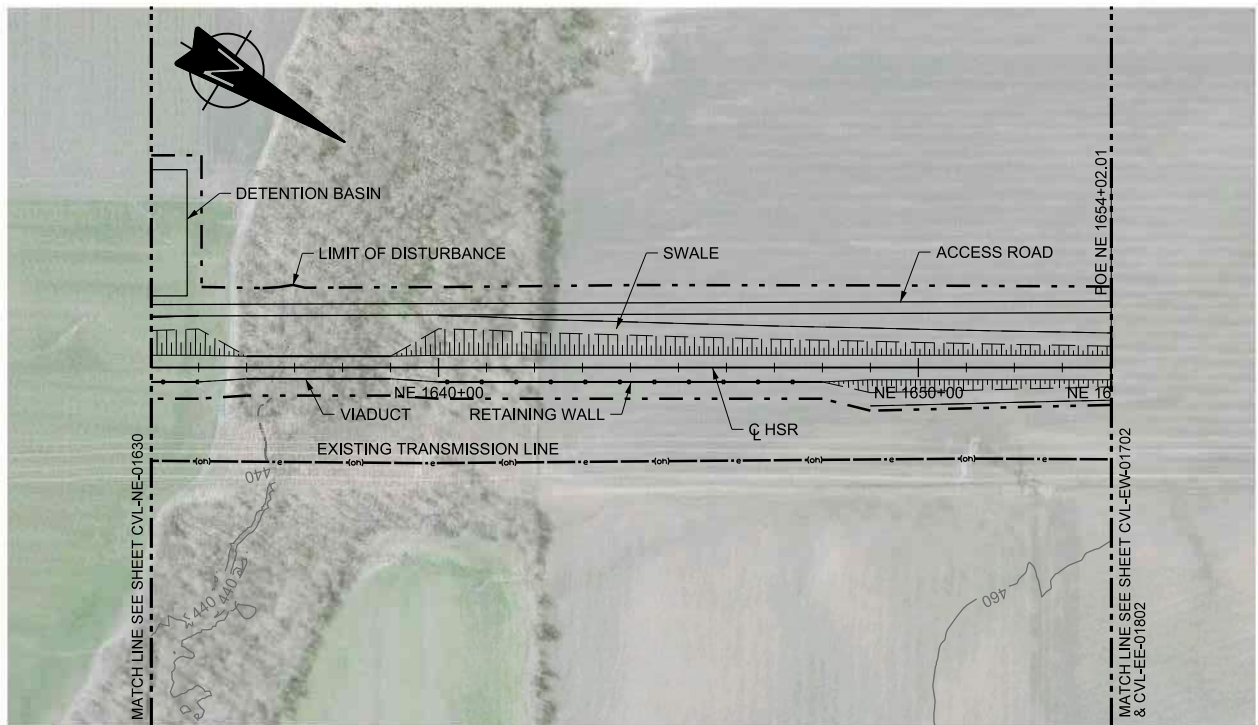
**FRESE AND NICHOLS**  
2711 North Haskell Ave., Suite 3300  
Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

Client  
**TEXAS CENTRAL**  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

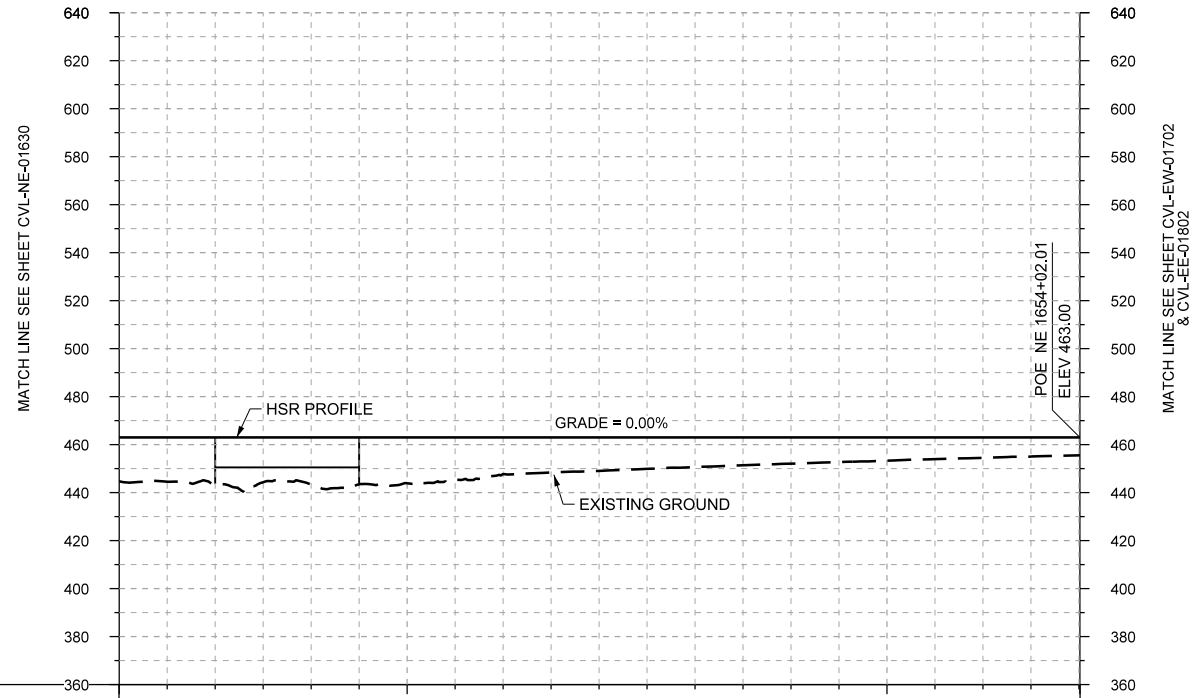
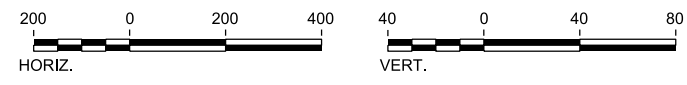
Drawing Title  
**NAVARRO EAST SEGMENT CIVIL PLAN AND PROFILE NE 1578+00 TO NE 1634+00**

Scale  
AS SHOWN  
Drawing Status  
**FINAL DRAFT**  
Job No: 234180  
Drawing No: CVL-NE-01630  
Rev: 01



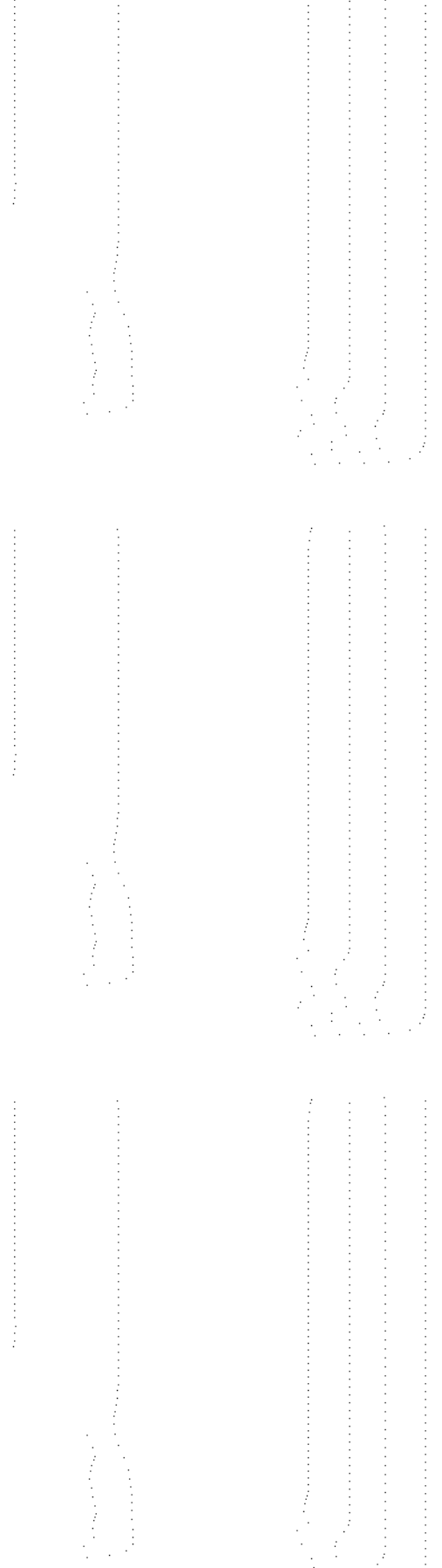


PLAN



STATIONING	NE 1634+00	NE 1640+00	NE 1650+00	NE 1654+02							
HOR. ALIGNMENT	L=21852										
VER. ALIGNMENT	L=2110.89 G=0.000%										
CUT AND FILL	+18.3	+19.4	+19.7	+19.1	+15.3	+14.0	+12.3	+10.9	+9.7	+8.5	+7.5
TYP. SECTION	ⓕ		Ⓚ		ⓕ						

PROFILE



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

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Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

**NAVARRO EAST SEGMENT  
CIVIL  
PLAN AND PROFILE  
NE 1634+00 TO NE 1654+02**

Scale  
**AS SHOWN**

Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-NE-01631	01