

**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 4 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 (General Sheets and Typical Sections)</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 (Railway Alignment Plan and Profile Sheets)</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 (Stations, Maintenance Facilities, and Railway Systems Sheets)</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 (Roadway Plan Sheets)</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**

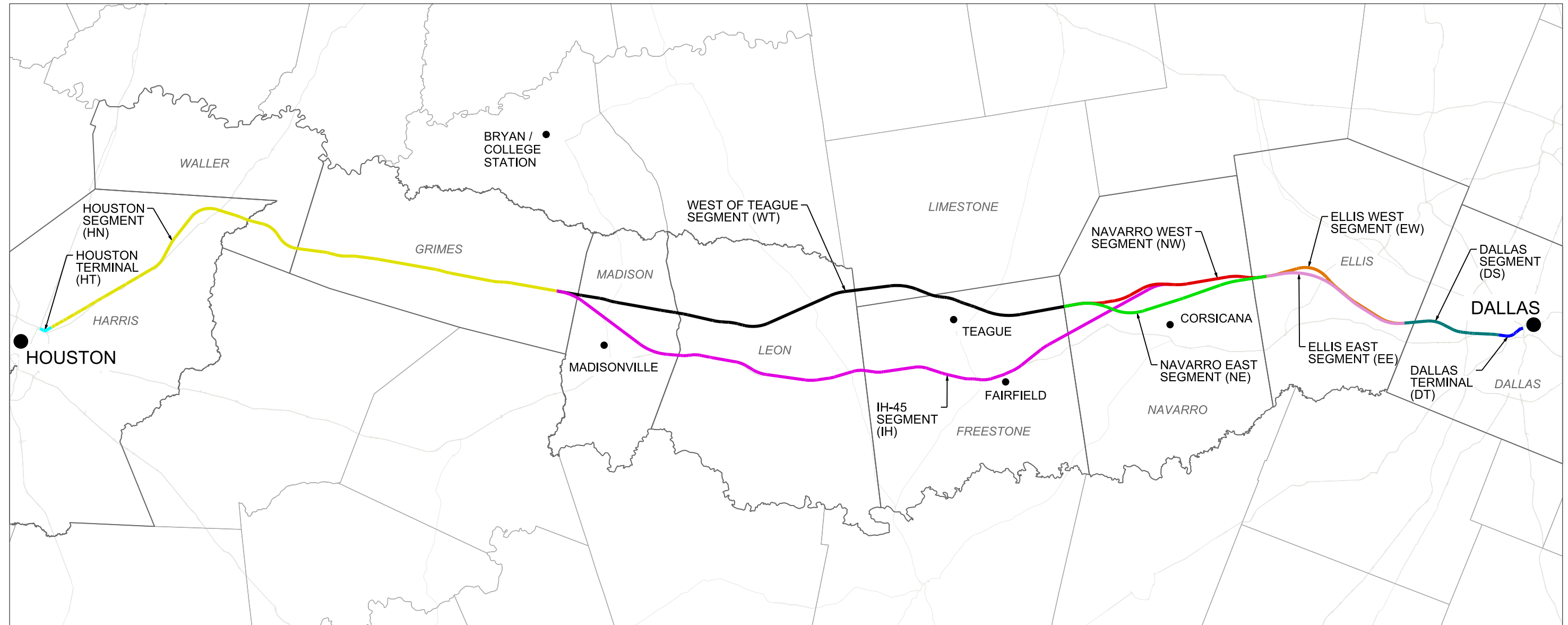
**ARUP**

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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  
**C. TAYLOR**

DATE  
**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 <b>234180</b>	Drawing No <b>GEN-00-00002</b>	Rev <b>01</b>
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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 from CVL-HN-01101 to CVL-HN-01108-2.

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Section 2-1 HOUSTON SEGMENT, listing drawings from CVL-HN-01107-3 to CVL-HN-01180.

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Section 2-2 WEST OF TEAGUE SEGMENT, listing drawings from CVL-WT-01250 to 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. Designer information table.



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



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 individual drawing numbers and their corresponding descriptions for various segments.

Table with columns: Drawing No., Description. Lists individual drawing numbers and their corresponding descriptions for various segments.

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 various segments including Ellis West, Ellis East, and Dallas.

VOLUME 3 - STATIONS, MAINTENANCE FACILITIES AND RAILWAY SYSTEMS SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Lists drawing numbers and descriptions for station and maintenance facilities.

Table with columns: Drawing No., 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 revision table and a design information table with fields for Designer, Drawn, Checked, In Charge, and Date.

Project information block containing logos for ARUP, FREESE & NICHOLS, and TEXAS CENTRAL. Includes client name, drawing title (GENERAL INDEX SHEET 3 OF 5), scale (NO SCALE), drawing status (FINAL DRAFT), job number (234180), drawing number (GEN-00-00005), and revision (01).

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

PLOT BY: N-YPWICS01S



VOLUME 3 - STATIONS, MAINTENANCE FACILITIES AND RAILWAY SYSTEMS SHEETS

Table with 2 columns: DRAWING NO. and DRAWING DESCRIPTIONS. Includes sections for 3-2 MAINTENANCE FACILITIES, YARDS AND SHOPS and 3-3 RAILWAY SYSTEMS.

VOLUME 4 - ROADWAY PLAN SHEETS

Table with 2 columns: DRAWING NO. and DRAWING DESCRIPTIONS. Includes section for 4-1 HOUSTON SEGMENT with numerous drawing entries.

Table with 2 columns: Drawing No. and Description. Includes sections for 4-2 WEST OF TEAGUE SEGMENT, 4-3 IH-45 SEGMENT, and 4-4 HOUSTON SEGMENT.

Table with 5 columns: REV, DATE, BY, CHK, APP, DESCRIPTION. Revision table for the drawing.

Table with 2 columns: Field Name and Value. Includes fields for DESIGNED BY, DRAWN BY, CHECKED BY, IN CHARGE, and DATE.



Table with 3 columns: Field Name and Value. Includes Drawing Title (GENERAL INDEX SHEET 4 OF 5), Scale (NO SCALE), Drawing Status (FINAL DRAFT), Job No (234180), Drawing No (GEN-00-00006), and Rev (01).

PLOT TIME: 9/25/2017 5:42:37 PM

PLOT BY: MYPWCS01S



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 09/15/2017.

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



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>
IN CHARGE <b>C. TAYLOR</b>
DATE <b>09/15/2017</b>



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Client	Drawing Title
	<b>GENERAL NOTES</b>
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215	

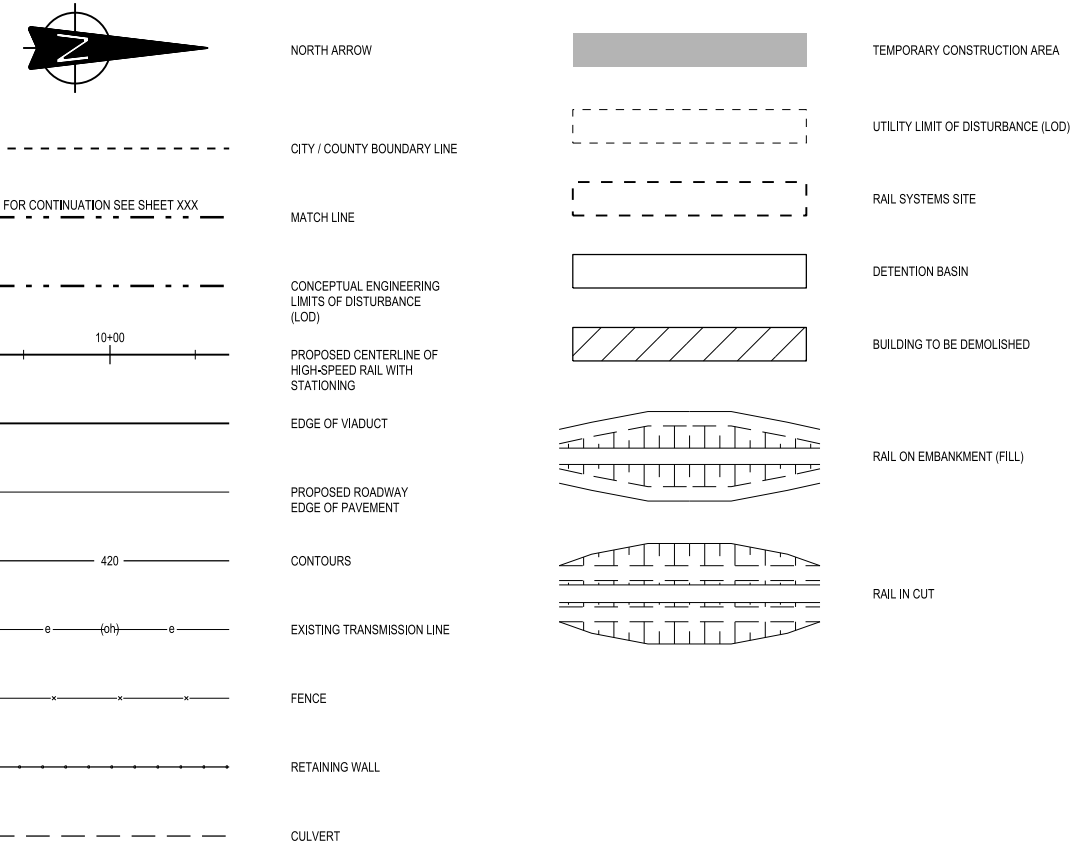
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Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	GEN-00-00008	01	

**ABBREVIATIONS**

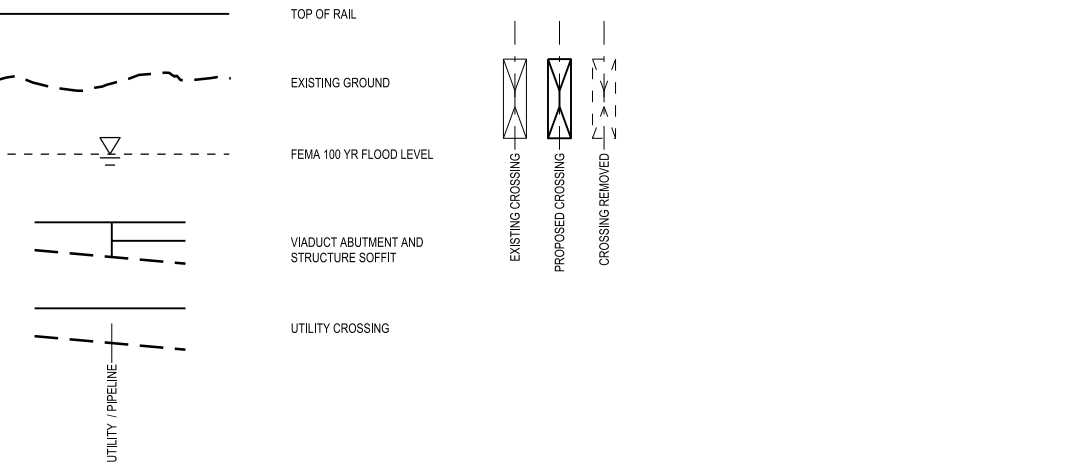
**LEGEND**

1	ALT ALIGN APPROX ATP AVE	ALTERNATE ALIGNMENT APPROXIMATE AUTOTRANSFORMER POST AVENUE	TBD TCEQ	TO BE DETERMINED TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2	BLVD BNSF BOT	BOULEVARD BURLINGTON NORTH SANTE FE RAILROAD BOTTOM	TEMP TMF TPSS TS TYP TOR	TEMPORARY TRAINSET MAINTENANCE FACILITY TRACTION POWER SUBSTATION TANGENT SPIRAL TYPICAL TOP OF RAIL
3	CH CO RD CL C CO CR CS CVL	COMMUNICATION HOUSE COUNTY ROAD CENTERLINE CENTERLINE COUNTY COUNTY ROAD CURVE TO SPIRAL CIVIL	US UPRR VAR VERT, V WB WT XING YR	UNITED STATES, UNITED STATES HIGHWAY UNION PACIFIC RAILROAD VARIABLE VERTICAL WESTBOUND WEST OF TEAGUE CROSSING YEAR
4	DIA DIST DR DRG DS DSN DSS DT DWY	DIAMETER DISTANCE, DISTRICT DRIVE DRAWING DALLAS SEGMENT DALLAS SEGMENT NORTH DALLAS SEGMENT SOUTH DALLAS TERMINUS SEGMENT DRIVEWAY		
5	Ea EE ELECT ELEV EMB ENGR EPA Eu EW EXIST, EX. EXT	ACTUAL SUPERELEVATION ELLIS EAST SEGMENT ELECTRIC ELEVATION EMBANKMENT ENGINEER ENVIRONMENTAL PROTECTION AGENCY UNBALANCED SUPERELEVATION ELLIS WEST SEGMENT EXISTING EXTERIOR		
6	FDN FEMA FG FIG FL FM FRS FTG FWY	FOUNDATION FEDERAL EMERGENCY MANAGEMENT AGENCY FINISHED GRADE FIGURE FLOW LINE FARM TO MARKET ROAD FREIGHT RAIL SIDING FOOTING FREEWAY		
7	G GEN	GRADIENT GENERAL		
8	H HN HNN HNS HORIZ, H HRW HSR HT HWY	HEIGHT, HIGHWAY BRIDGE HOUSTON SEGMENT HOUSTON SEGMENT NORTH HOUSTON SEGMENT SOUTH HORIZONTAL HIGHWAY RETAINING WALL HIGH SPEED RAIL HOUSTON TERMINUS SEGMENT HIGHWAY		
9	IH ISH	INTERSTATE HIGHWAY INTERMEDIATE SIGNAL HOUSE		
10	KV	KILOVOLT		
11	L LN LOD LVC	LENGTH LANE LIMITS OF DISTURBANCE LENGTH OF VERTICAL CURVE		
12	MAINT MAX MOW MIN MISC MPH MSH	MAINTENANCE MAXIMUM MAINTENANCE-OF-WAY MINIMUM MISCELLANEOUS MILES PER HOUR MAIN SIGNAL HOUSE		
13	NB NE NED NHD NLCD NO NTS N/A NW NWJ NWJH	NORTHBOUND NAVARRO EAST SEGMENT NATIONAL ELEVATION DATASET NATIONAL HYDROGRAPHY DATASET NATIONAL LAND COVER DATASET NUMBER NOT TO SCALE NOT APPLICABLE NAVARRO WEST SEGMENT, NOISE WALL NATIONAL WETLANDS INVENTORY PORTION OF NAVARRO WEST ASSOCIATED WITH IH-45 SEGMENT		
14	OCS OD OG OH OPP	OVERHEAD CATENARY SYSTEM OUTSIDE DIAMETER ORIGINAL GRADE OVERHEAD OPPOSITE		
15	PKWY POB POE PVMT PVC PVI PVT	PARKWAY POINT OF BEGINNING POINT OF END PAVEMENT POINT VERTICAL CURVATURE POINT VERTICAL INTERSECTION POINT VERTICAL TANGENT		
16	R RD RDWY RM ROW RR, R/R RTE RWY	RADIUS, RAIL BRIDGE ROAD ROADWAY RANCH TO MARKET ROAD RIGHT OF WAY RAILROAD ROUTE RAILWAY		
17	SC SH SO SP SSH SSP ST STA STD SYM	SPIRAL CURVE STATE HIGHWAY SIDING OFF SECTIONING POST SUB-SIGNAL HOUSE SUB-SECTIONING POST STREET, SPIRAL TO TANGENT STATION STANDARD SYMMETRICAL		

**PLAN**



**PROFILE**



**NOTE:**

1. FOR ADDITIONAL DETAIL REGARDING INFORMATION SHOWN ON DRAWINGS, SEE RAIL ANNOTATION TO CLARIFY DESIGN INTENT, DRAWING GEN-00-00010. SEE ROAD ANNOTATION TO CLARIFY DESIGN INTENT, DRAWING GEN-00-00011.

DESIGNED BY <b>D. THOMPSON</b>
DRAWN BY <b>D. THOMPSON</b>
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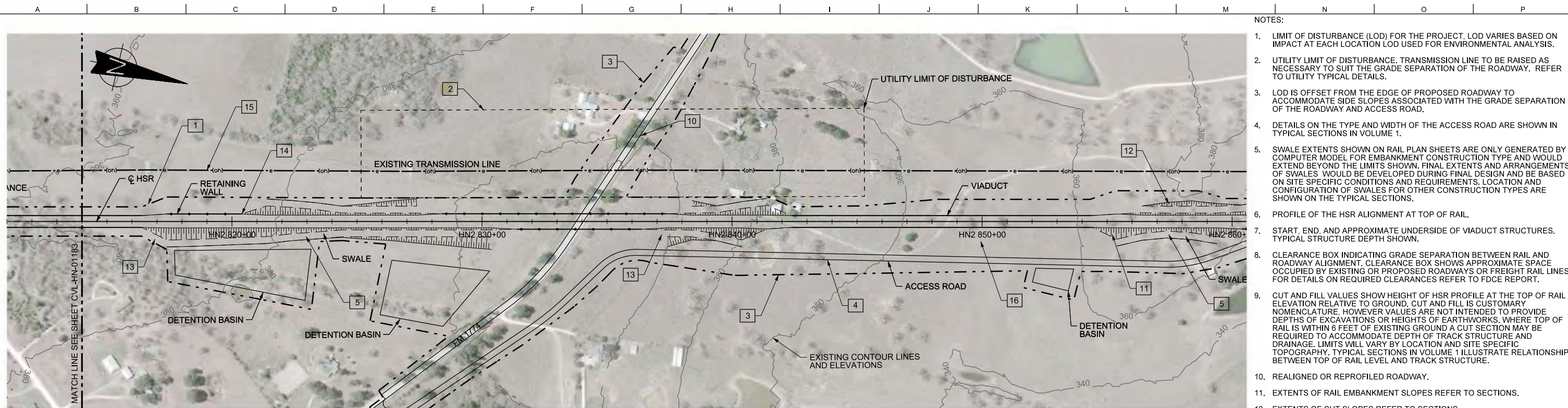
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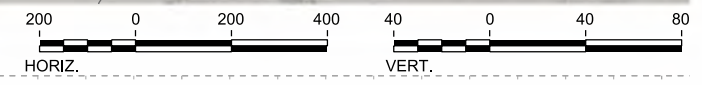
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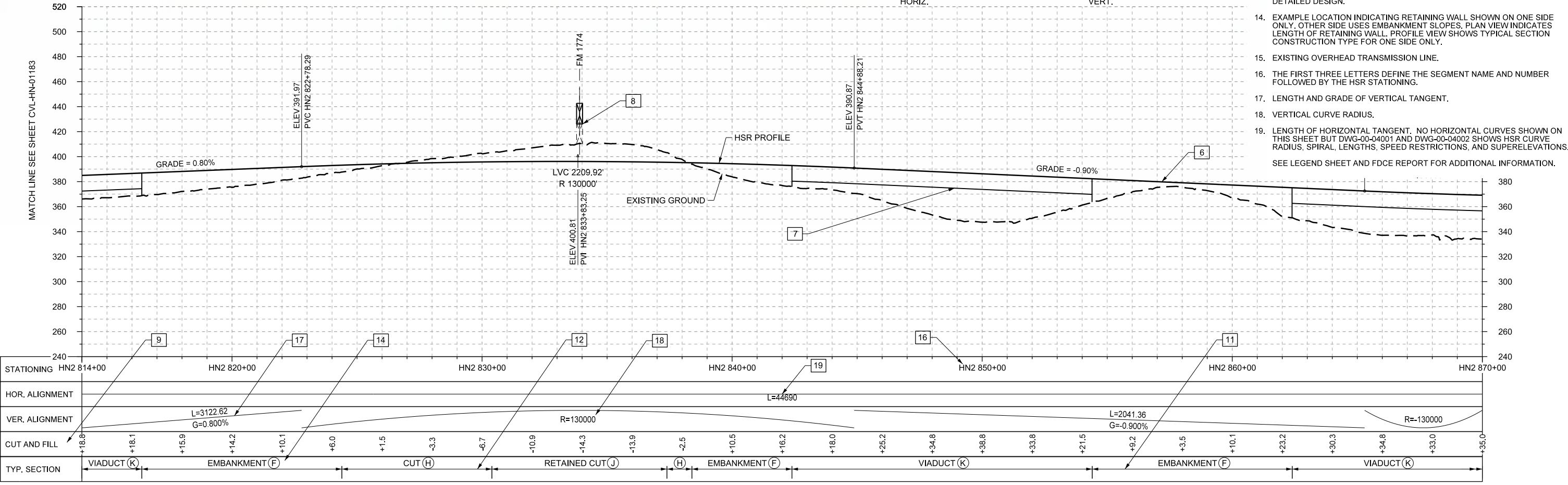




PLAN



- 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

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>

REV	DATE	BY	CHK	APP	DESCRIPTION

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

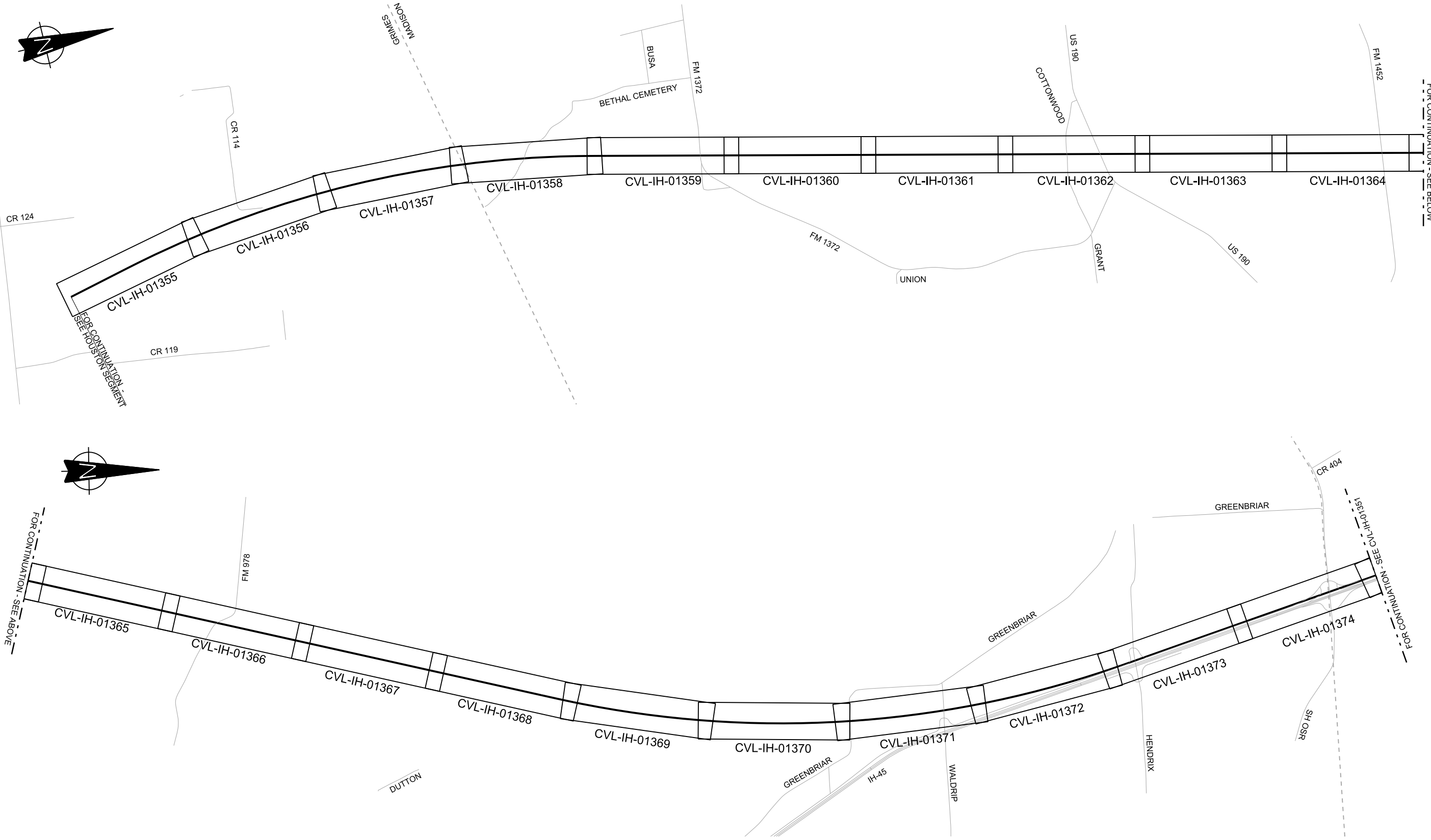
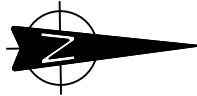
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**GENERAL**  
**RAIL ANNOTATION TO CLARIFY DESIGN INTENT**

Scale  
**AS SHOWN**

Drawing Status  
**FINAL DRAFT**

Job No <b>234180</b>	Drawing No <b>GEN-00-00010</b>	Rev <b>01</b>
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2-3  
IH-45 SEGMENT



FOR CONTINUATION - SEE BELOW

FOR CONTINUATION - SEE ABOVE

FOR CONTINUATION - SEE ABOVE



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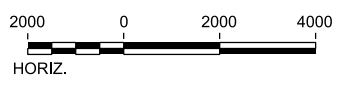
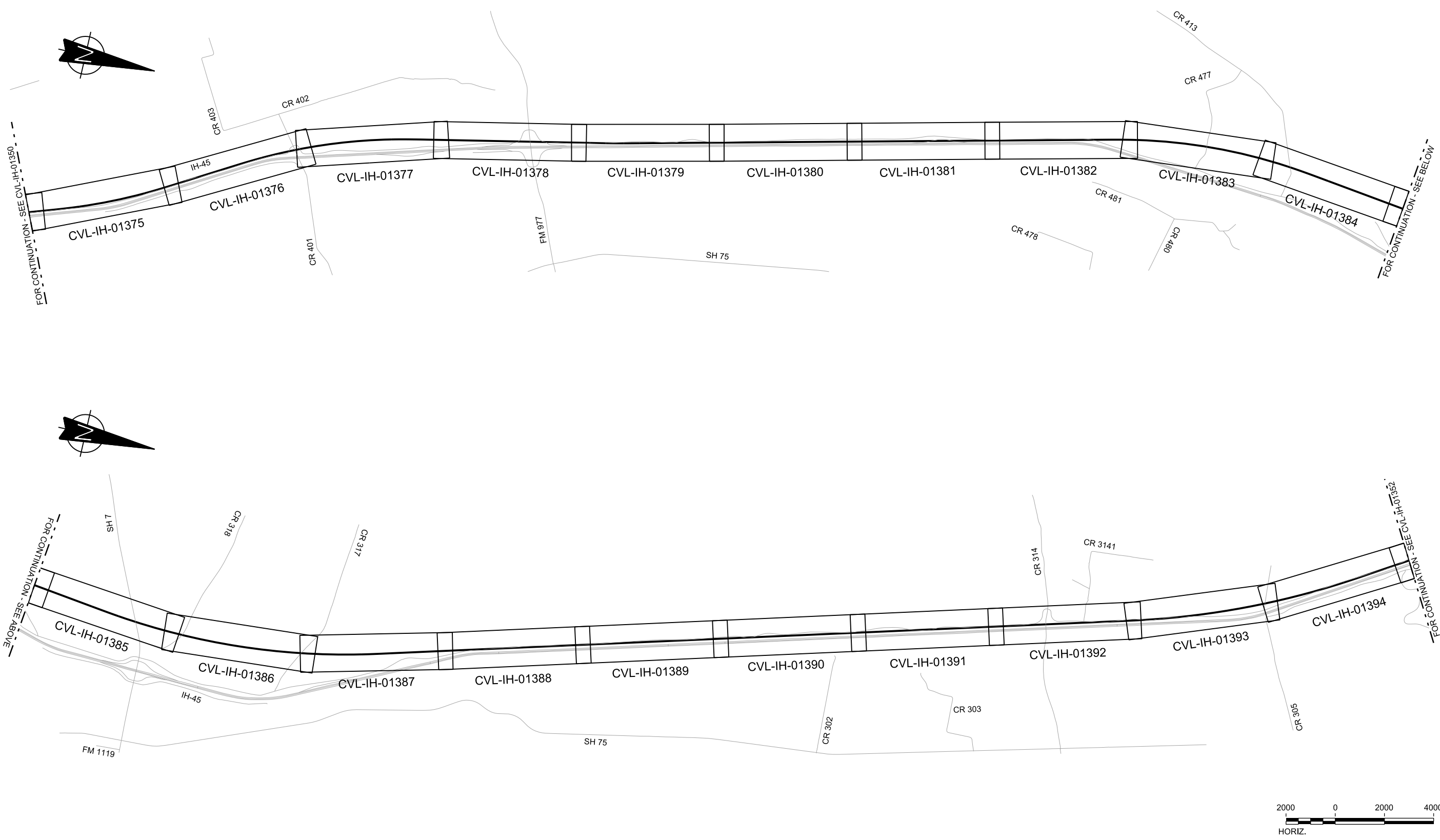
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Client  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**IH (45) SEGMENT  
CIVIL  
KEY MAP - SHEET 1 OF 5  
IH1 10+00 TO IH1 1130+00**

Scale AS SHOWN		
Drawing Status FINAL DRAFT		
Job No 234180	Drawing No CVL-IH-01350	Rev 01



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

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**09/15/2017**



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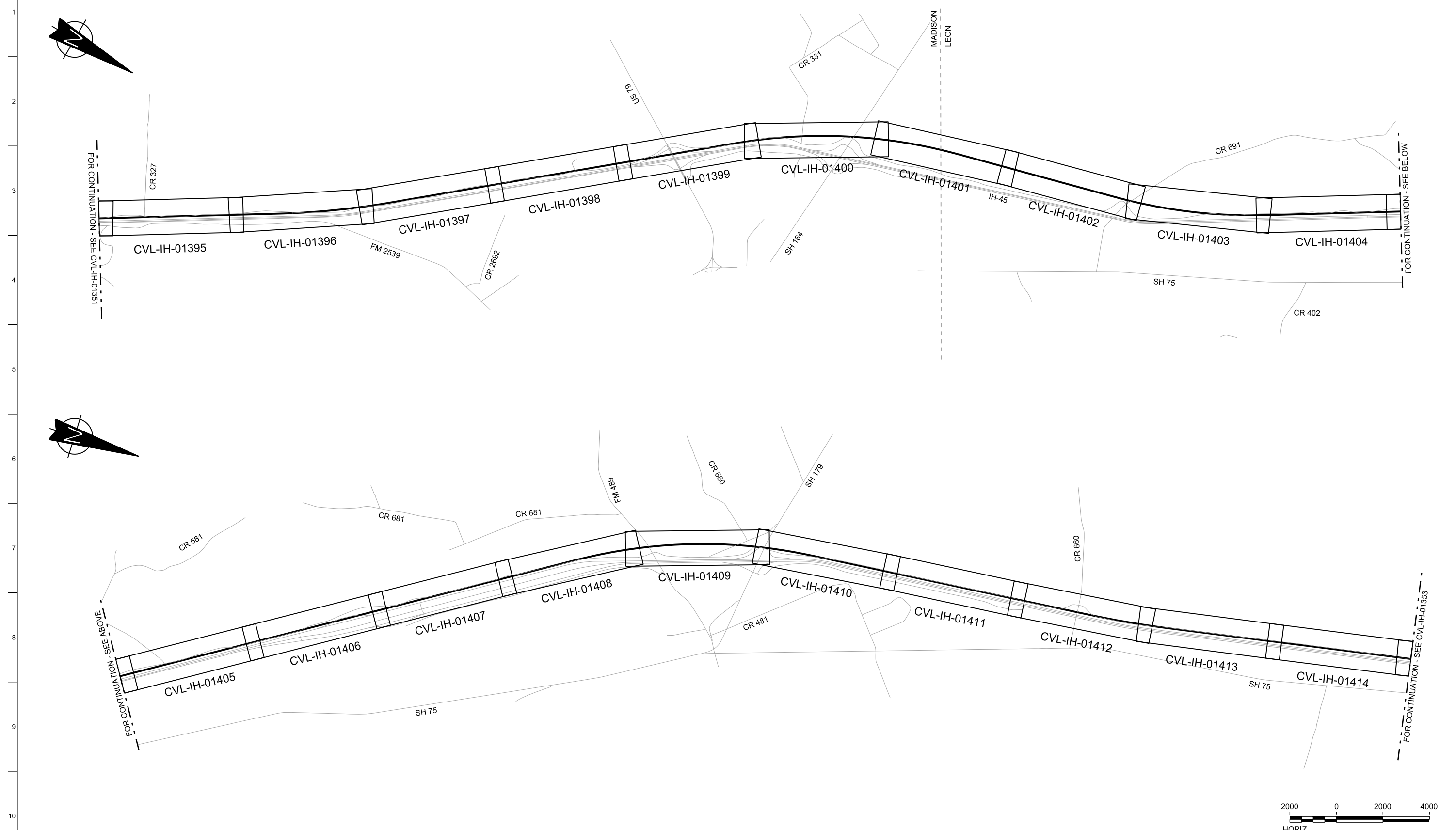
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1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
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CIVIL  
KEY MAP - SHEET 2 OF 5  
IH1 1130+00 TO IH1 2250+00**

Scale AS SHOWN		
Drawing Status FINAL DRAFT		
Job No 234180	Drawing No CVL-IH-01351	Rev 01



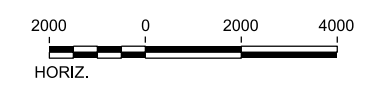


FOR CONTINUATION - SEE CVL-IH-01351

FOR CONTINUATION - SEE BELOW

FOR CONTINUATION - SEE ABOVE

FOR CONTINUATION - SEE CVL-IH-01353



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
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IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

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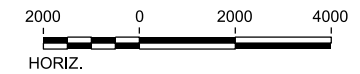
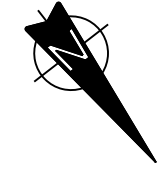
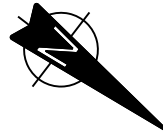
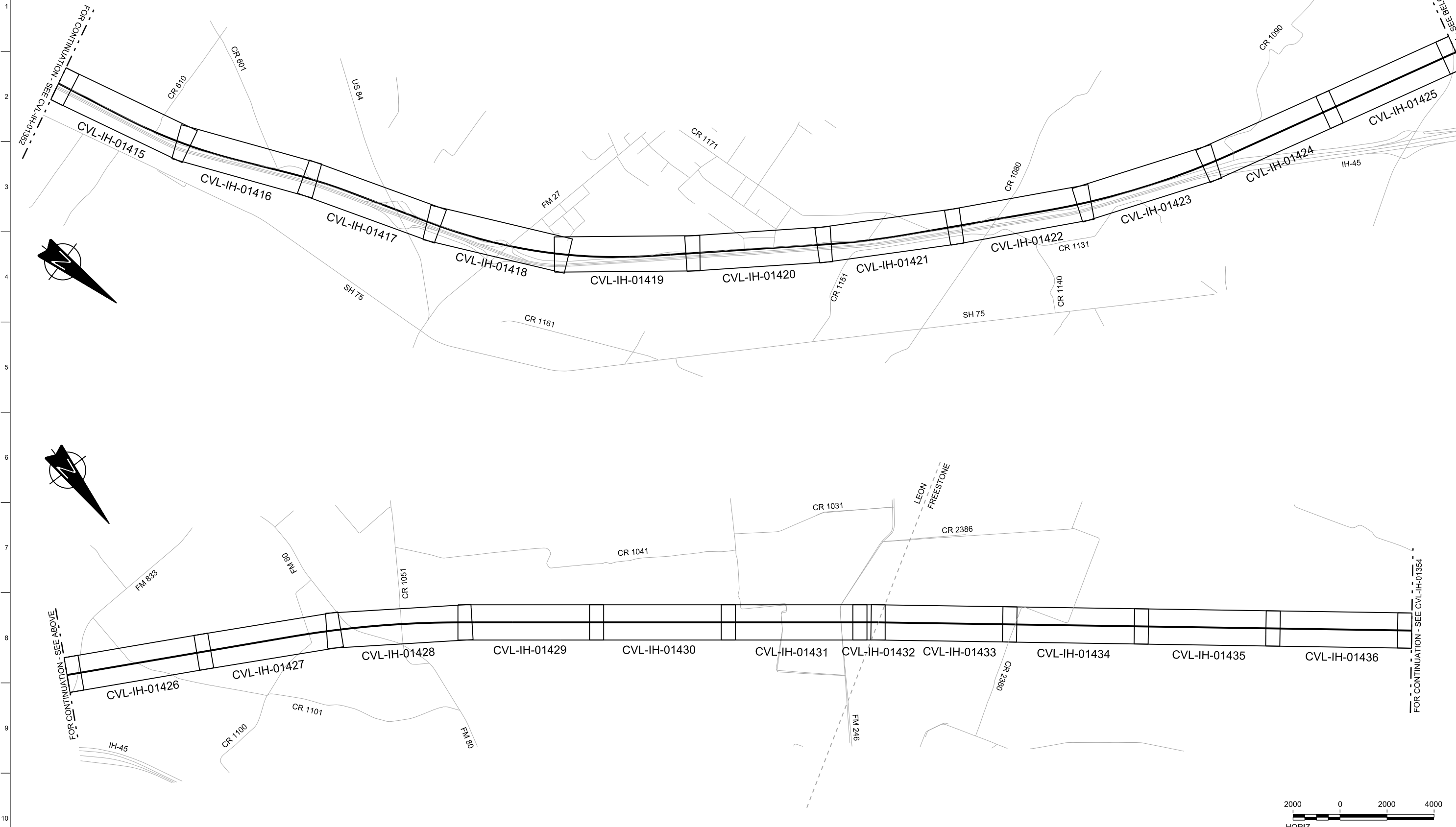
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1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

**IH (45) SEGMENT  
CIVIL  
KEY MAP - SHEET 3 OF 5  
IH1 2250+00 TO IH1 3370+00**

Scale AS SHOWN		
Drawing Status FINAL DRAFT		
Job No 234180	Drawing No CVL-IH-01352	Rev 01



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

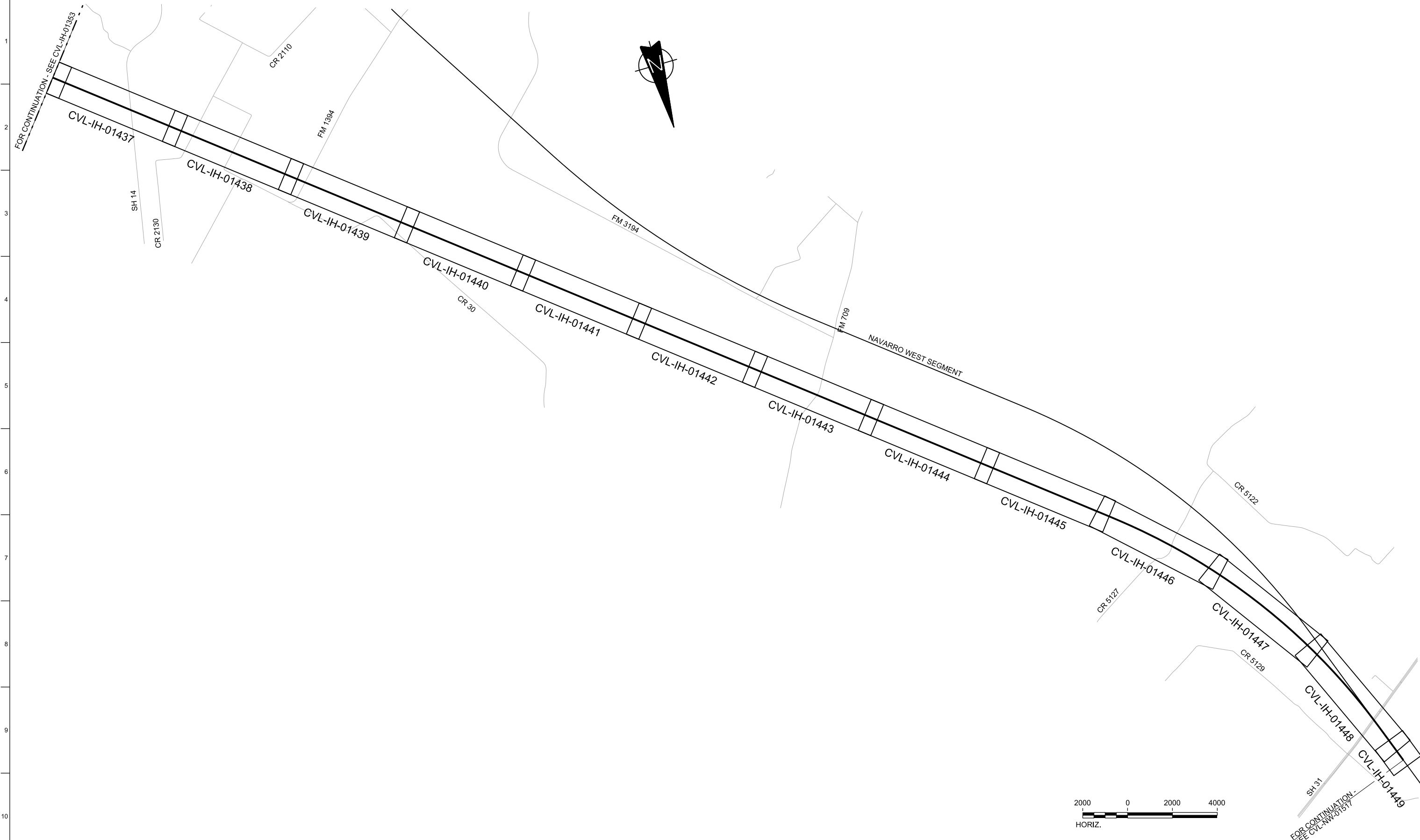
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

**IH (45) SEGMENT  
CIVIL  
KEY MAP - SHEET 4 OF 5  
IH1 3370+00 TO IH2 234+00**

Scale AS SHOWN		
Drawing Status FINAL DRAFT		
Job No 234180	Drawing No CVL-IH-01353	Rev 01





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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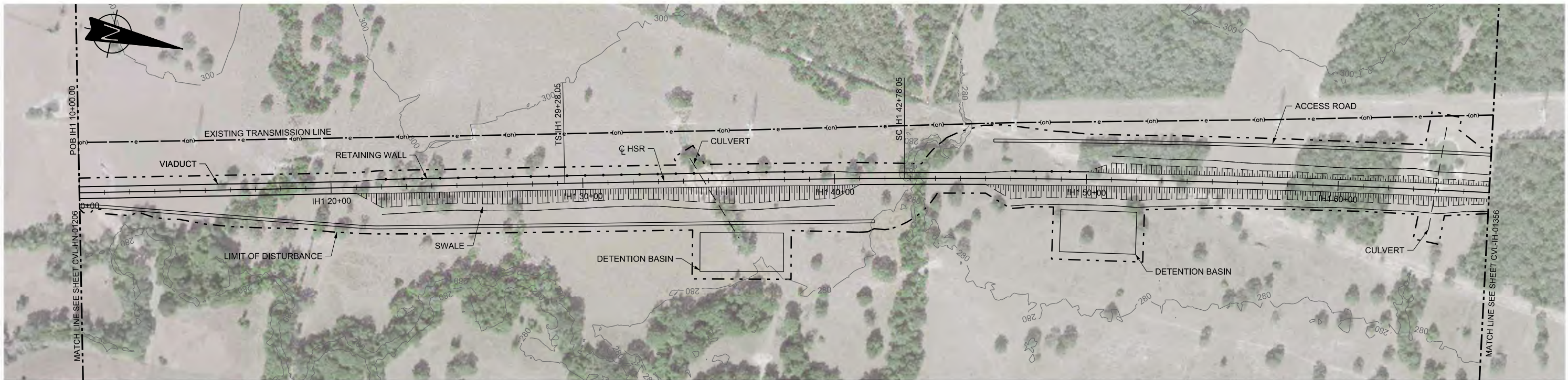
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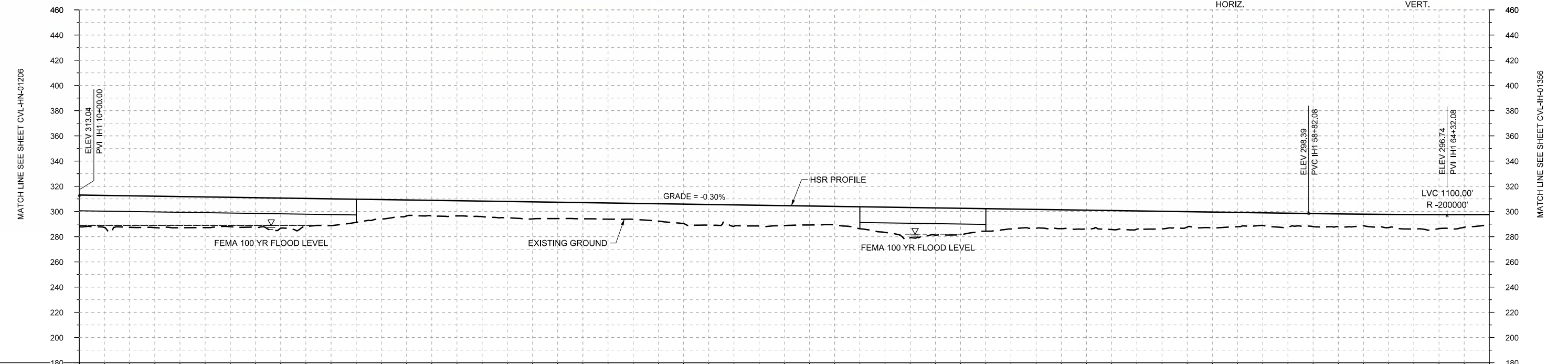
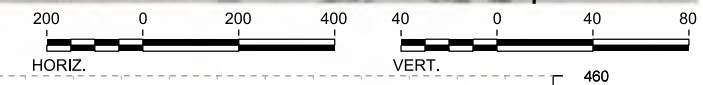
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**IH (45) SEGMENT  
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KEY MAP - SHEET 5 OF 5  
IH2 234+00 TO IH2 913+96**

Scale AS SHOWN		
Drawing Status FINAL DRAFT		
Job No 234180	Drawing No CVL-IH-01354	Rev 01



PLAN



PROFILE

STATIONING	IH1 10+00	IH1 20+00	IH1 30+00	IH1 40+00	IH1 50+00	IH1 60+00	IH1 66+00																						
HOR. ALIGNMENT	L=1928		L=1350			R=42000 L=18296																							
VER. ALIGNMENT			L=4882.08 G=-0.300%			R=200000																							
CUT AND FILL	+25.2	+24.9	+24.7	+23.3	+23.9	+21.2	+15.3	+12.4	+12.3	+13.5	+12.8	+12.6	+15.5	+15.9	+15.8	+14.7	+20.0	+21.7	+17.9	+15.0	+15.4	+14.5	+12.2	+11.3	+11.4	+10.1	+10.4	+11.1	+8.2
TYP. SECTION	VIADUCT (K)				EMBANKMENT (F)								VIADUCT (K)		EMBANKMENT (F)														

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  
 Tel (713) 783 2787 Fax (713) 343 1467  
 www.arup.com  
 Texas Registered Engineering Firm: F-1990

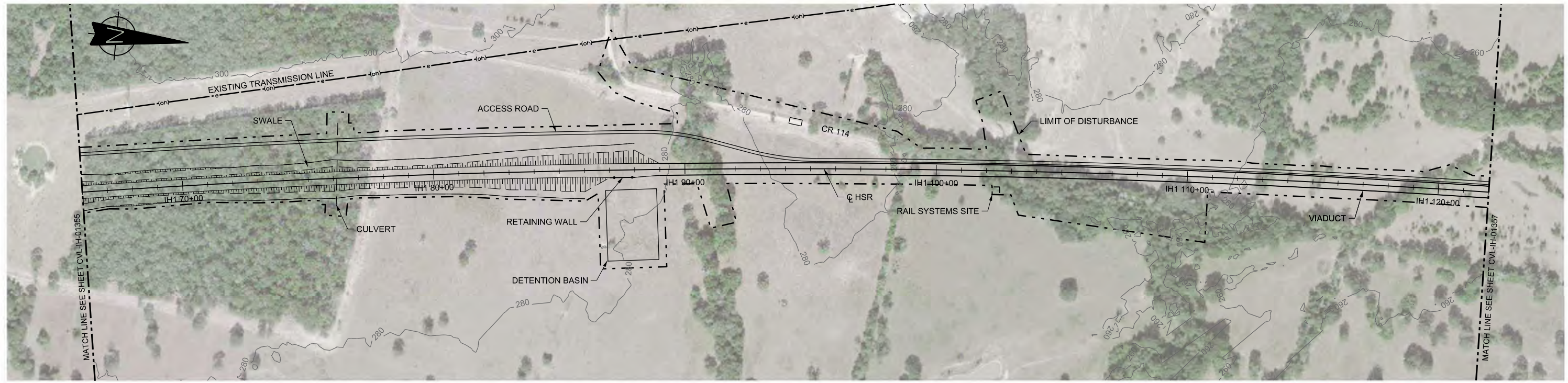
**FREESSE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

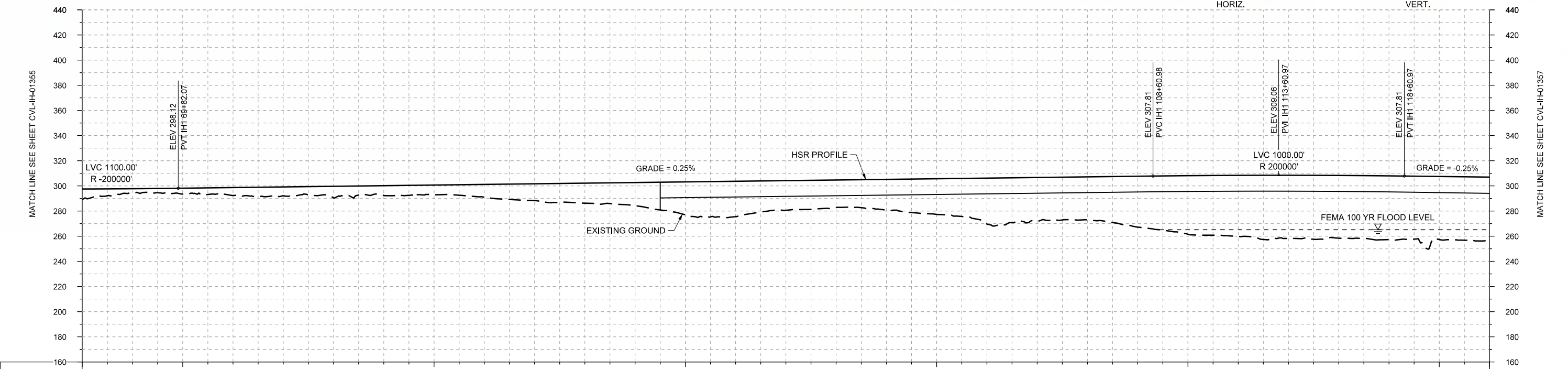
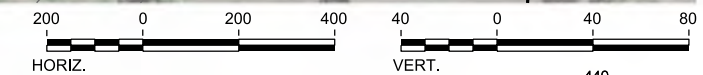
Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH1 10+00 TO IH1 66+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01355	01	





PLAN



STATIONING	IH1 66+00	IH1 70+00	IH1 80+00	IH1 90+00	IH1 100+00	IH1 110+00	IH1 120+00	IH1 122+00																					
HOR. ALIGNMENT					R=42000 L=18296																								
VER. ALIGNMENT	R=200000		L=3878.90 G=0.250%				R=200000		L=12624.04 G=-0.250%																				
CUT AND FILL	+8.2	+3.0	+4.7	+6.3	+7.1	+9.2	+7.8	+7.8	+10.3	+13.4	+16.0	+16.5	+26.6	+28.2	+23.6	+21.8	+24.5	+28.4	+36.6	+34.3	+34.3	+40.5	+46.6	+46.6	+50.2	+49.9	+50.7	+50.1	+50.8
TYP. SECTION	CUT (H)		EMBANKMENT (F)										VIADUCT (E)																

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.  
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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

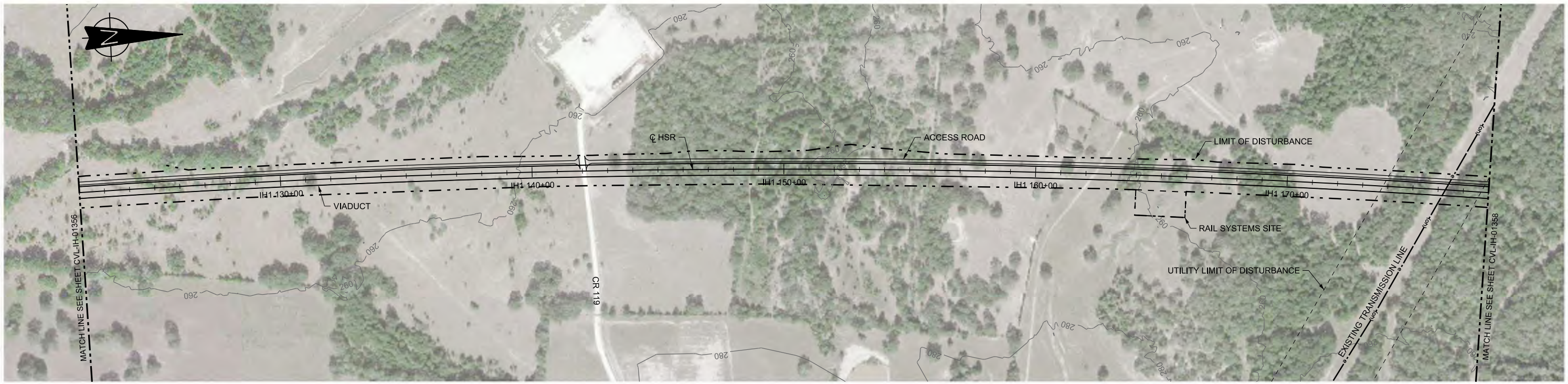
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 66+00 TO IH1 122+00**

Scale  
AS SHOWN

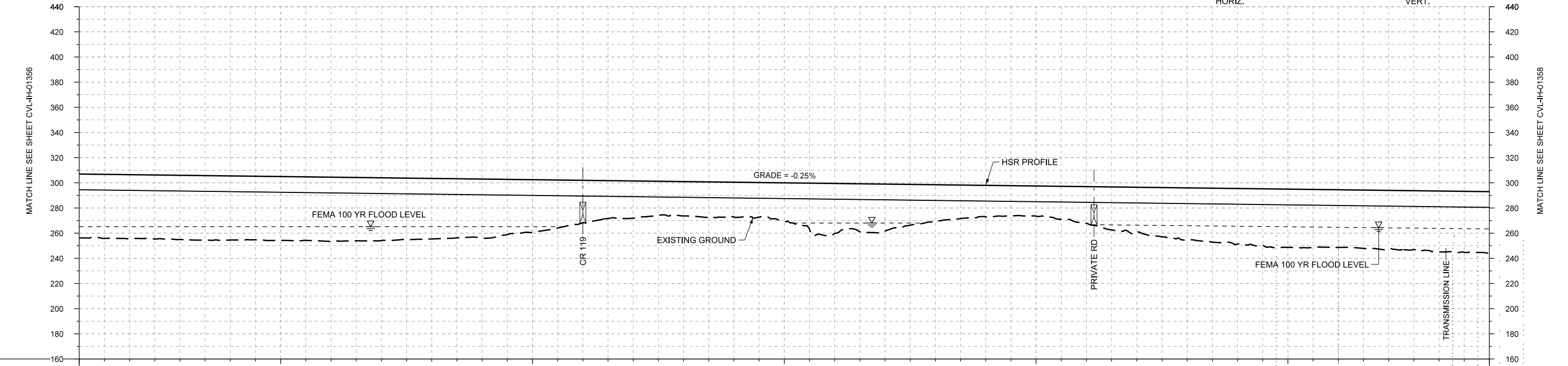
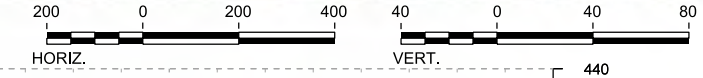
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01356	01





PLAN



PROFILE

STATIONING	IH1 122+00		IH1 130+00				IH1 140+00				IH1 150+00				IH1 160+00				IH1 170+00				IH1 178+00																					
HOR. ALIGNMENT																					R=42000		L=18296																					
VER. ALIGNMENT																					L=12624.04		G=-0.250%																					
CUT AND FILL	+50.8	+51.0	+51.1	+51.0	+50.8	+51.1	+49.9	+48.1	+47.1	+41.9	+33.9	+29.6	+27.3	+27.7	+30.4	+39.8	+37.5	+29.1	+25.1	+24.0	+29.1	+35.8	+41.4	+44.3	+46.3	+45.9	+48.8	+48.4	+49.1															
TYP. SECTION	VIADUCT (E)																																											

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

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 122+00 TO IH1 178+00**

Scale  
AS SHOWN

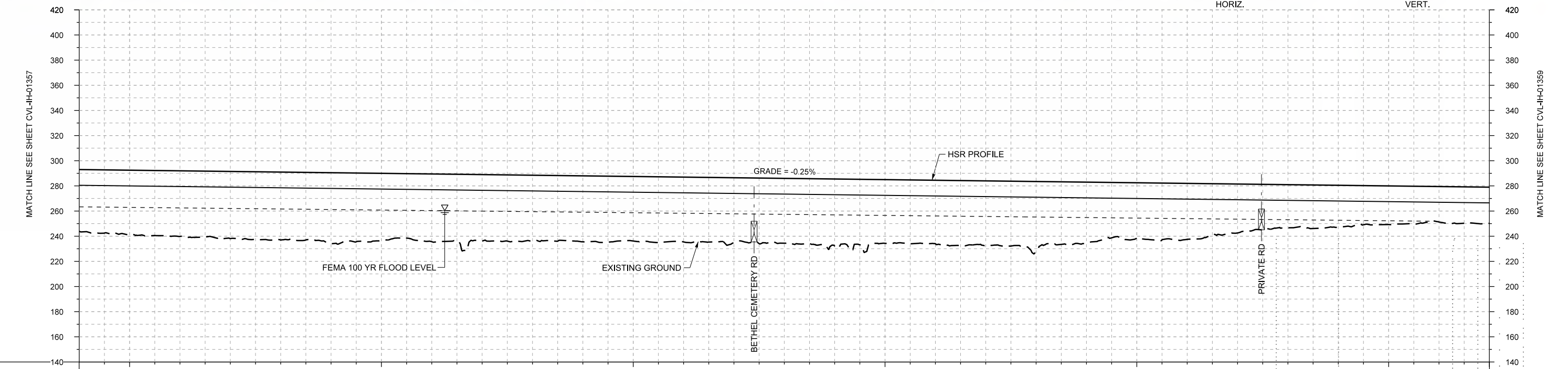
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01357	01





PLAN



PROFILE

STATIONING	IH1 178+00	IH1 180+00	IH1 190+00	IH1 200+00	IH1 210+00	IH1 220+00	IH1 230+00	IH1 234+00																					
HOR. ALIGNMENT					R=42000 L=18296																								
VER. ALIGNMENT					L=12624.04 G=-0.250%																								
CUT AND FILL	+49.1	+51.0	+52.2	+53.4	+54.1	+55.4	+53.4	+53.9	+52.8	+52.2	+52.5	+51.3	+51.6	+51.8	+51.6	+53.4	+50.7	+50.5	+51.3	+55.9	+48.5	+44.1	+44.5	+38.9	+34.4	+33.4	+30.7	+28.2	+28.7
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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 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

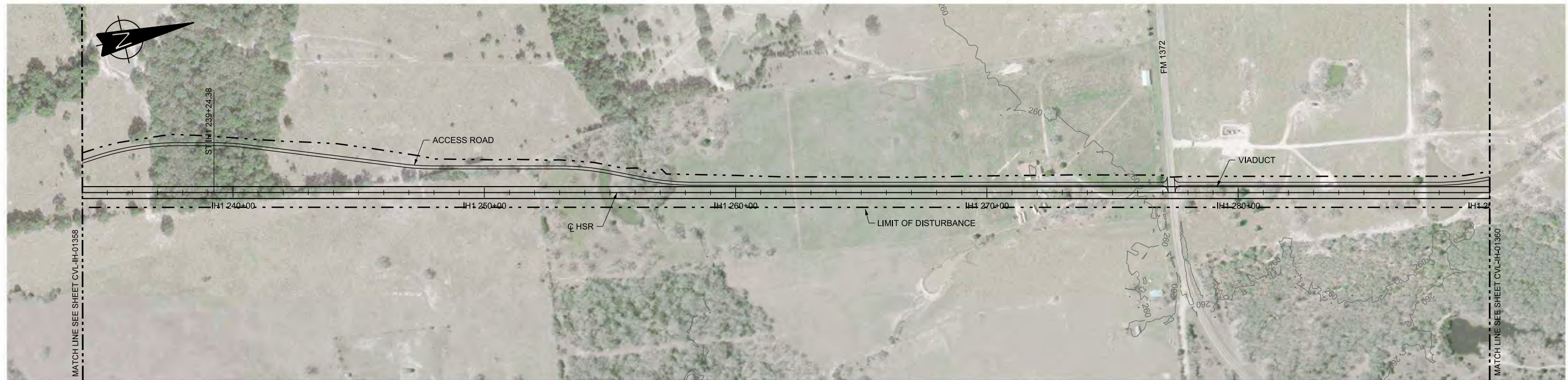
Drawing Title  
**IH (45) SEGMENT CIVIL  
 PLAN AND PROFILE  
 IH1 178+00 TO IH1 234+00**

Scale  
**AS SHOWN**

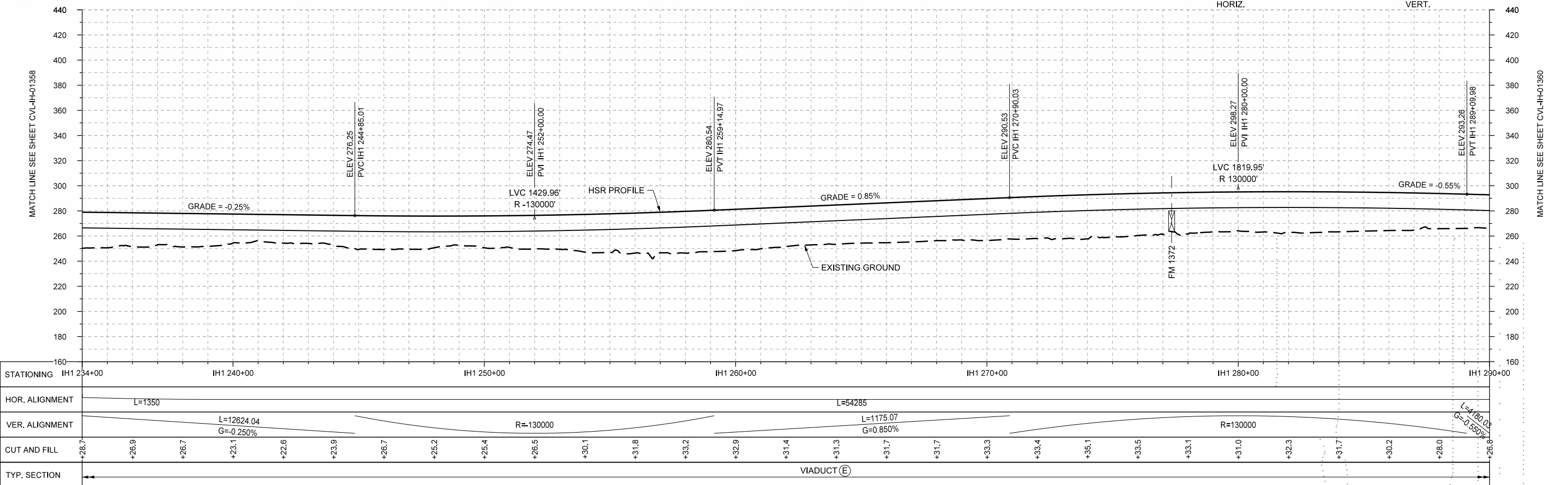
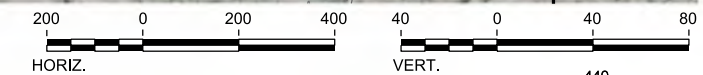
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01358	01





PLAN



PROFILE

STATIONING	IH1 234+00	IH1 240+00	IH1 250+00	IH1 260+00	IH1 270+00	IH1 280+00	IH1 290+00
HOR. ALIGNMENT	L=1350		L=54285			L=180.03 G=-0.550%	
VER. ALIGNMENT	L=12624.04 G=-0.250%		R=130000			L=1175.07 G=0.850%	
CUT AND FILL	+26.7	+26.9	+26.7	+23.1	+22.6	+23.9	+26.7
TYP. SECTION	←		VIADUCT (E)			→	

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

Client

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

Drawing Title

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 234+00 TO IH1 290+00**

Scale

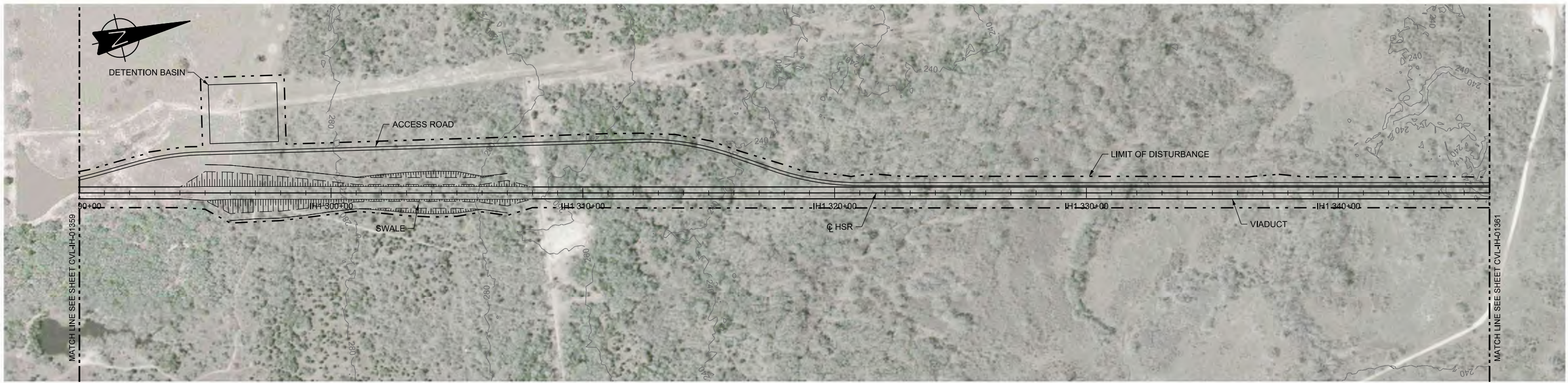
AS SHOWN

Drawing Status

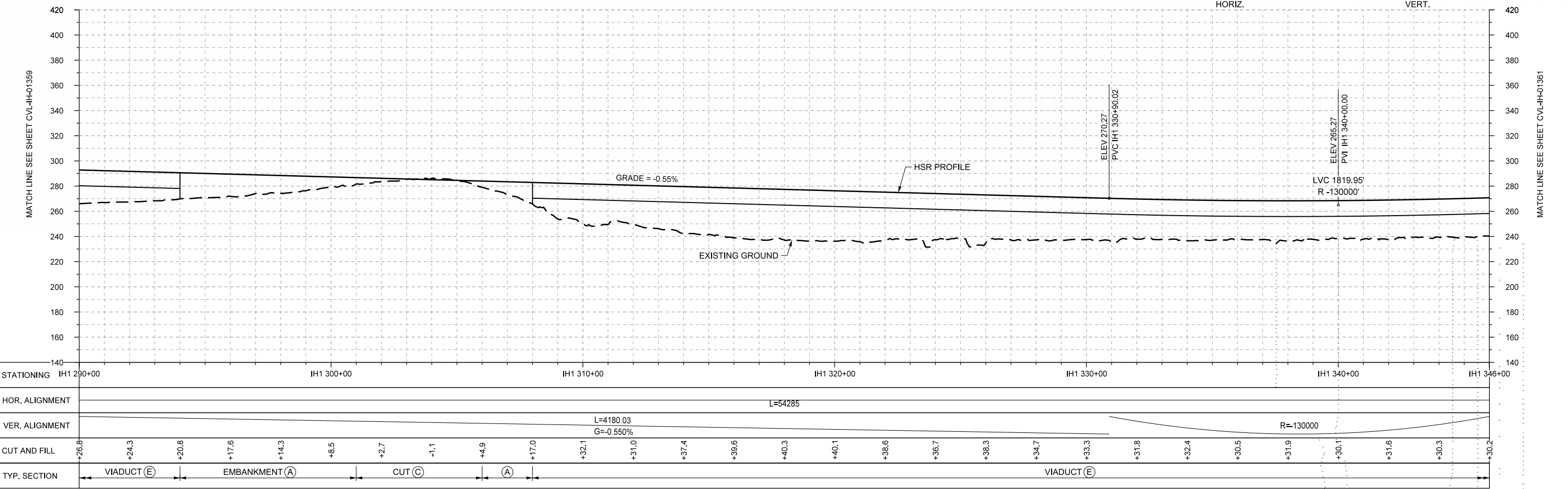
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01359	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**

**ARUP**

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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

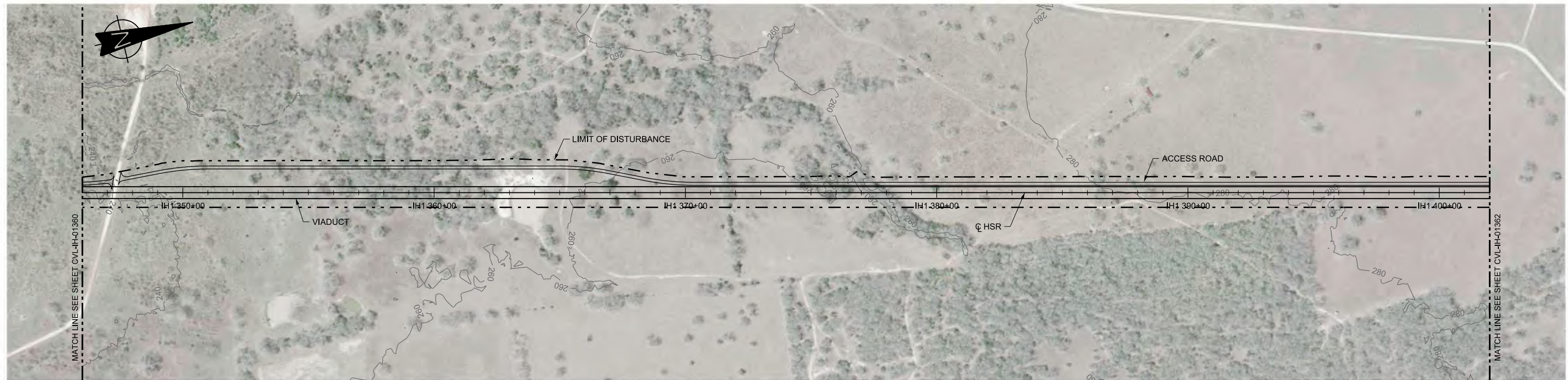
**IH (45) SEGMENT CIVIL  
PLAN AND PROFILE  
IH1 290+00 TO IH1 346+00**

Scale  
**AS SHOWN**

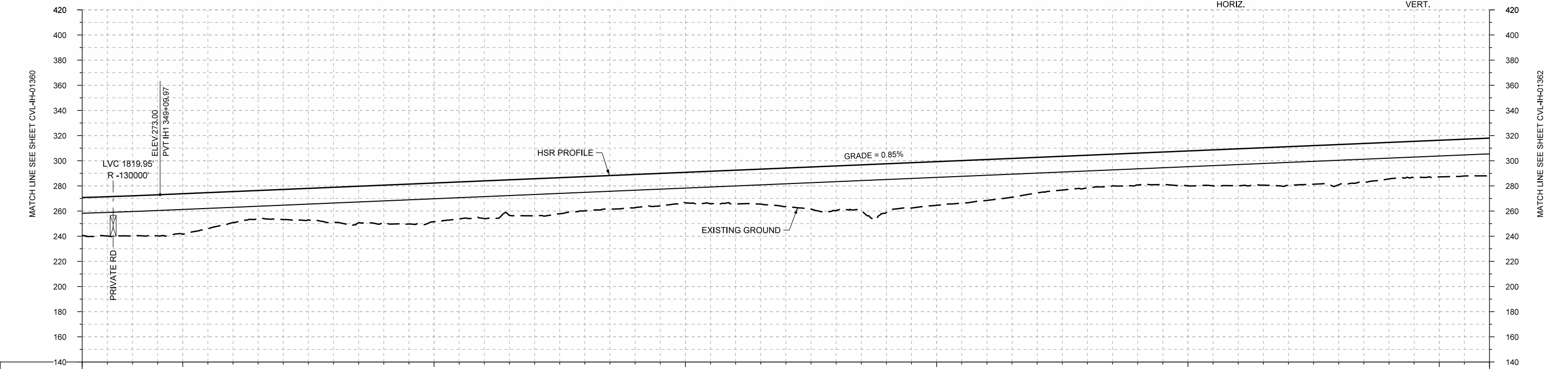
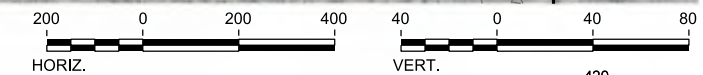
Drawing Status  
**FINAL DRAFT**

Job No <b>234180</b>	Drawing No <b>CVL-IH-01360</b>	Rev <b>01</b>
-------------------------	-----------------------------------	------------------





PLAN



STATIONING	IH1 346+00	IH1 350+00	IH1 360+00	IH1 370+00	IH1 380+00	IH1 390+00	IH1 400+00	IH1 402+00																				
HOR. ALIGNMENT	L=54285																											
VER. ALIGNMENT	R=-130000      L=6687.58 G=0.850%																											
CUT AND FILL	+30.2	+32.0	+32.2	+24.8	+23.9	+26.3	+29.6	+30.0	+29.5	+27.2	+26.4	+24.2	+27.1	+30.6	+35.6	+38.7	+34.8	+32.6	+28.3	+26.0	+25.4	+27.8	+29.3	+30.8	+32.0	+28.1	+26.1	+30.0
TYP. SECTION	VIADUCT (E)																											

PROFILE

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**  
 Arup Texas, Inc.  
 10370 Richmond Ave., Suite 475  
 Houston, Texas 77042 USA  
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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

Client

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

Drawing Title

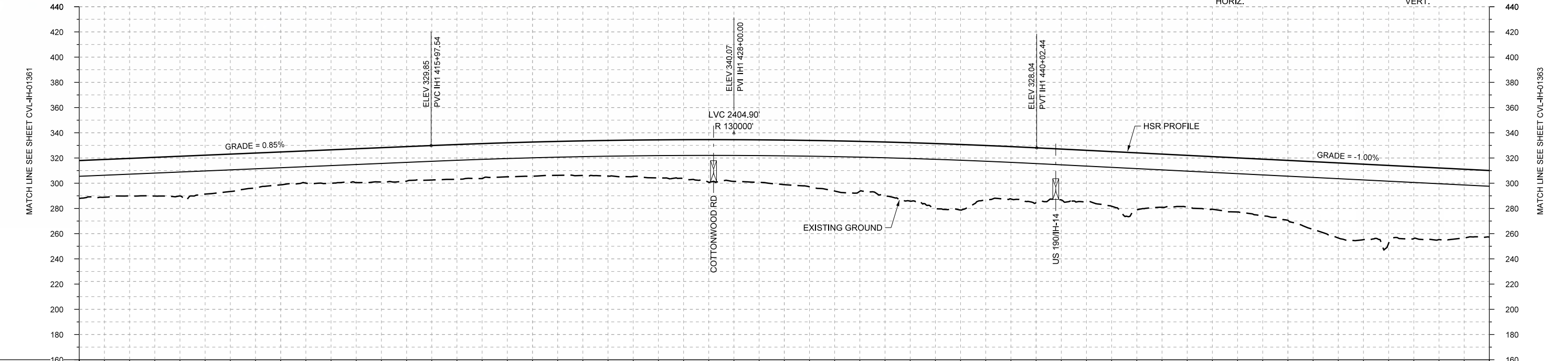
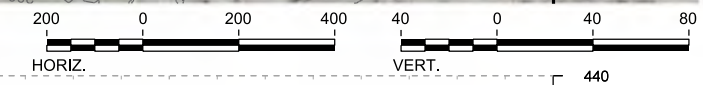
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH1 346+00 TO IH1 402+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01361
Rev	01





PLAN



PROFILE

STATIONING	IH1 402+00	IH1 410+00	IH1 420+00	IH1 430+00	IH1 440+00	IH1 450+00	IH1 458+00
HOR. ALIGNMENT	L=54285						
VER. ALIGNMENT	L=6687.58 G=0.850%			R=130000		L=3207.94 G=-1.000%	
CUT AND FILL	+30.0	+29.7	+31.6	+29.7	+26.1	+26.5	+27.3
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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 10370 Richmond Ave., Suite 475  
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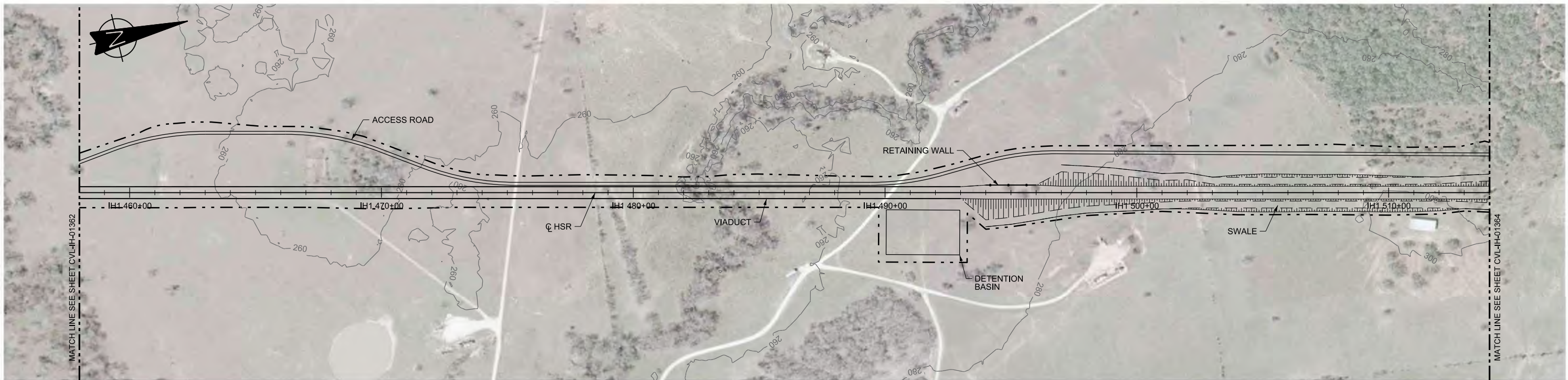
**FREESSE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

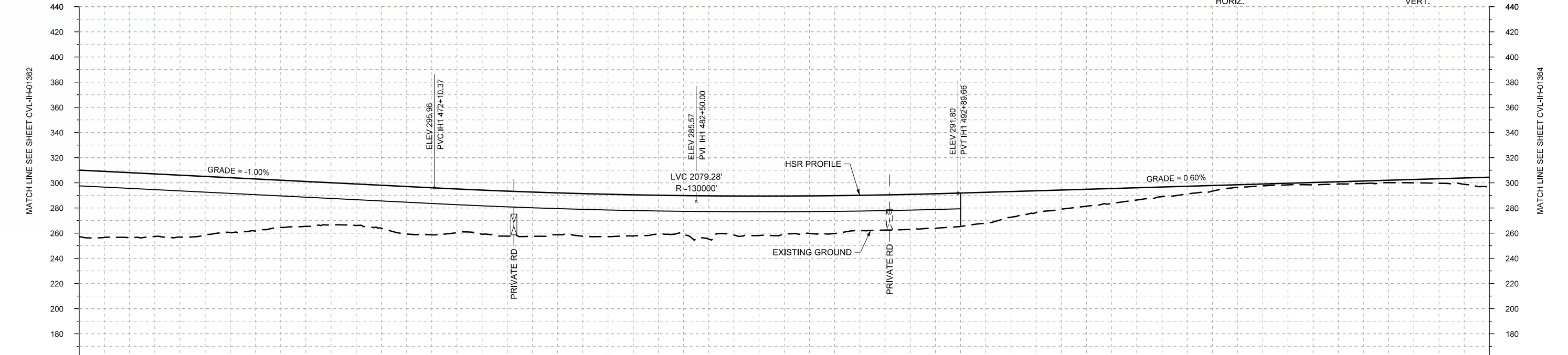
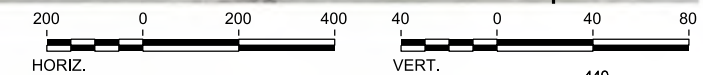
Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH1 402+00 TO IH1 458+00**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No: 234180 Drawing No: CVL-IH-01362 Rev: 01





PLAN



PROFILE

STATIONING	IH1 458+00	IH1 460+00	IH1 470+00	IH1 480+00	IH1 490+00	IH1 500+00	IH1 510+00	IH1 514+00																					
HOR. ALIGNMENT	L=54285																												
VER. ALIGNMENT	L=3207.94 G=-1.000%		R=-130000			L=6023.46 G=0.600%																							
CUT AND FILL	+52.9	+51.5	+49.3	+43.7	+37.5	+33.5	+34.1	+37.4	+35.0	+35.2	+33.9	+32.7	+30.1	+30.9	+30.5	+30.1	+28.0	+27.4	+24.6	+17.3	+13.5	+9.8	+6.2	+2.2	+1.3	+1.9	+2.0	+3.7	+7.6
TYP. SECTION	VIADUCT (E)										EMBANKMENT (A)					CUT (C)					(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

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

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

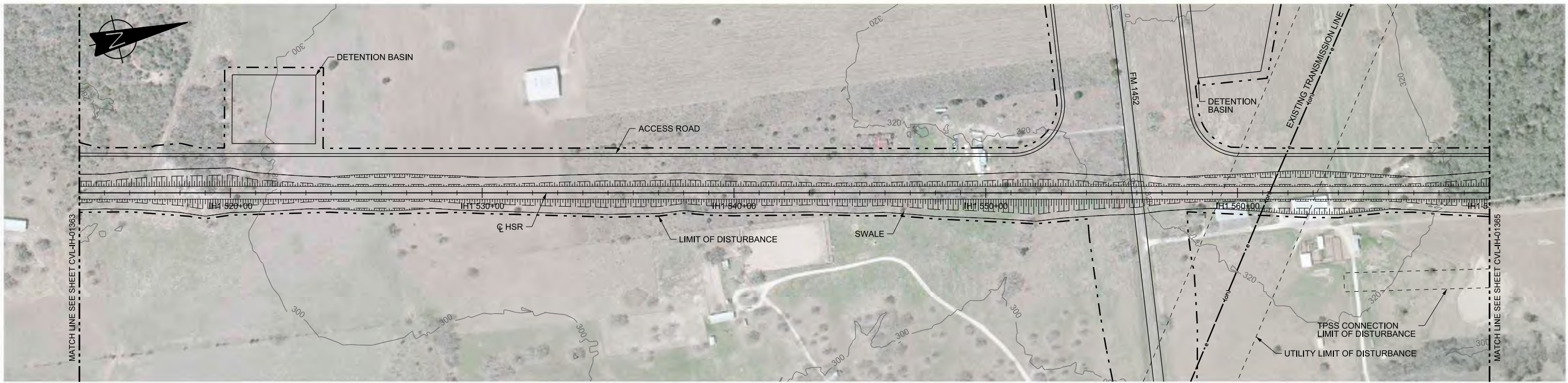
Drawing Title  
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 458+00 TO IH1 514+00**

Scale  
AS SHOWN

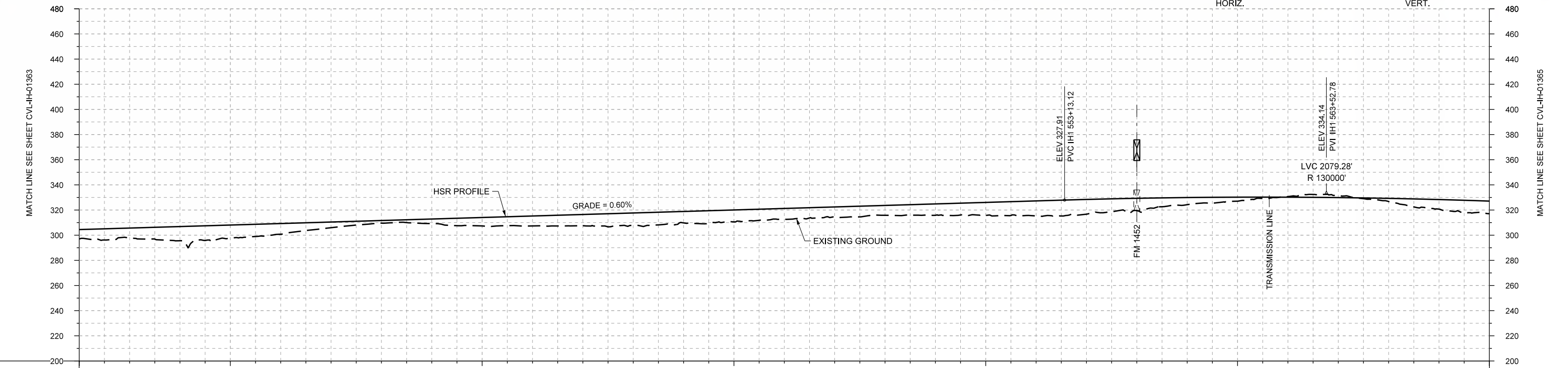
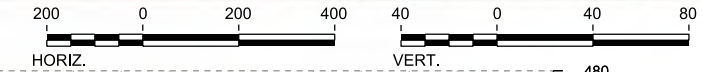
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01363	01





PLAN



PROFILE

STATIONING	IH1 514+00	IH1 520+00	IH1 530+00	IH1 540+00	IH1 550+00	IH1 560+00	IH1 570+00																						
HOR. ALIGNMENT	L=54285																												
VER. ALIGNMENT	L=6023.46 G=0.600%																												
CUT AND FILL	+7.6	+7.8	+11.2	+10.4	+8.4	+4.4	+2.0	+3.6	+6.6	+7.8	+9.0	+9.9	+9.0	+9.4	+8.5	+8.3	+7.8	+9.0	+10.4	+11.9	+11.7	+9.8	+5.7	+3.2	-0.4	-1.5	+2.5	+7.6	+10.1
TYP. SECTION	EMBANKMENT (A)				CUT (C)		EMBANKMENT (A)										CUT (C)		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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 www.arup.com  
 Texas Registered Engineering Firm: F-1990

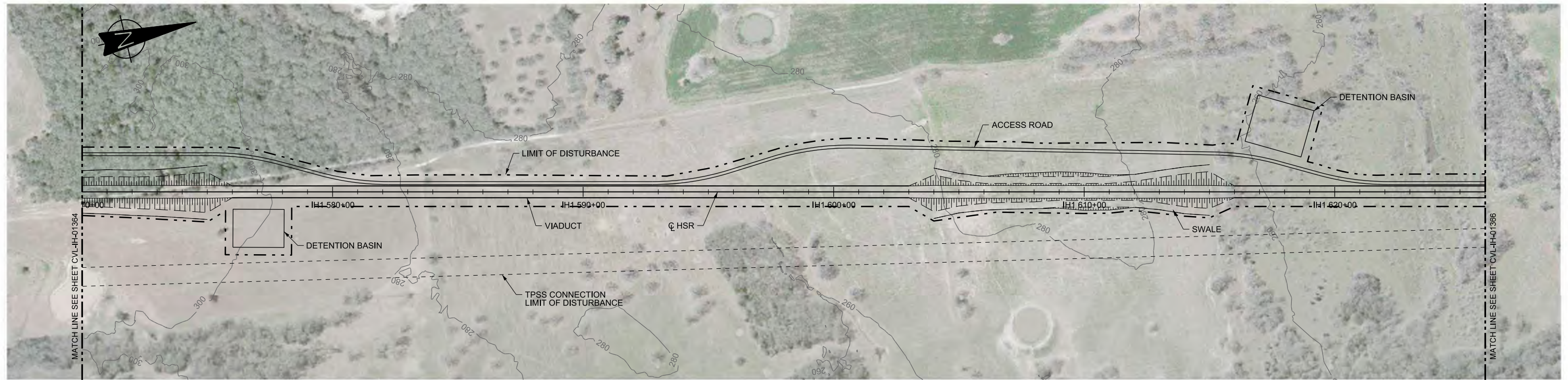
**FRESE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
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 Texas Registered Engineering Firm: F-2144

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

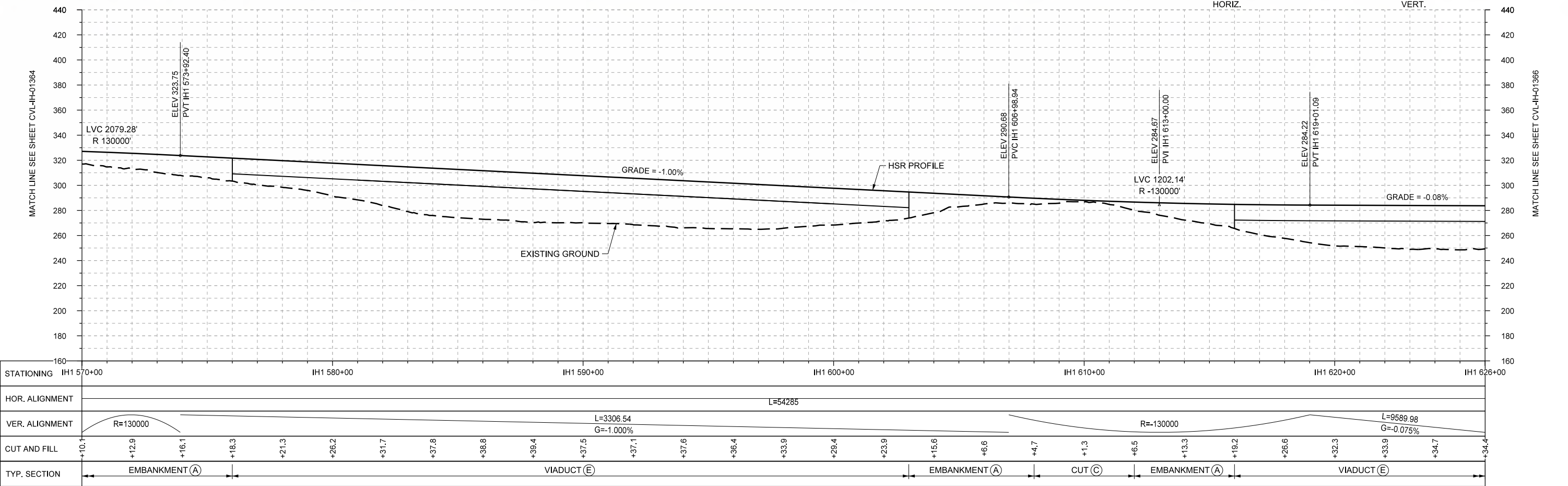
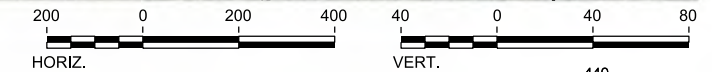
Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH1 514+00 TO IH1 570+00**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No: 234180 Drawing No: CVL-IH-01364 Rev: 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>



Arup Texas, Inc.  
10370 Richmond Ave., Suite 475  
Houston, Texas 77042 USA  
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www.arup.com  
Texas Registered Engineering Firm: F-1990



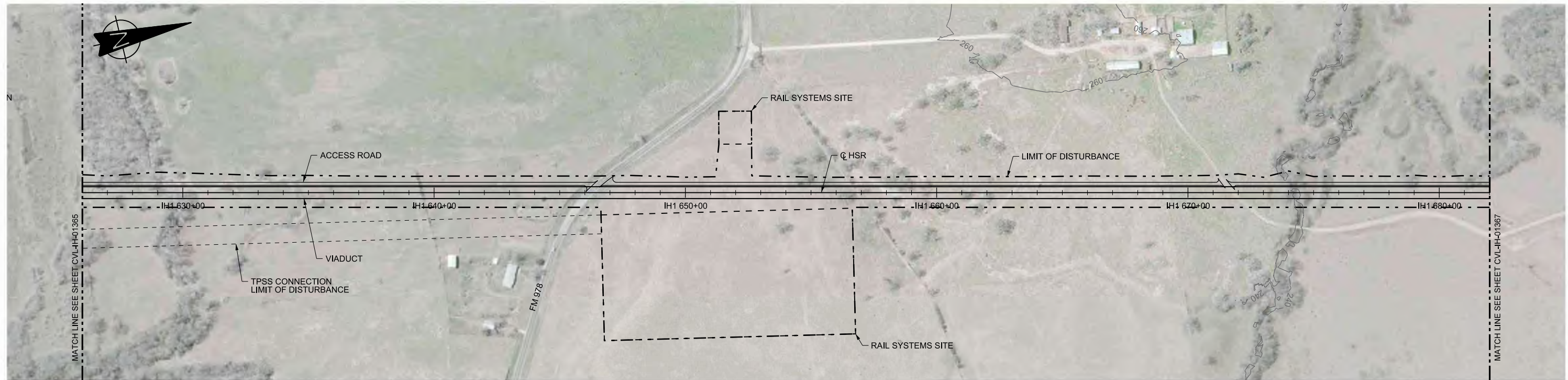
2711 North Haskell Ave., Suite 3300  
Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144



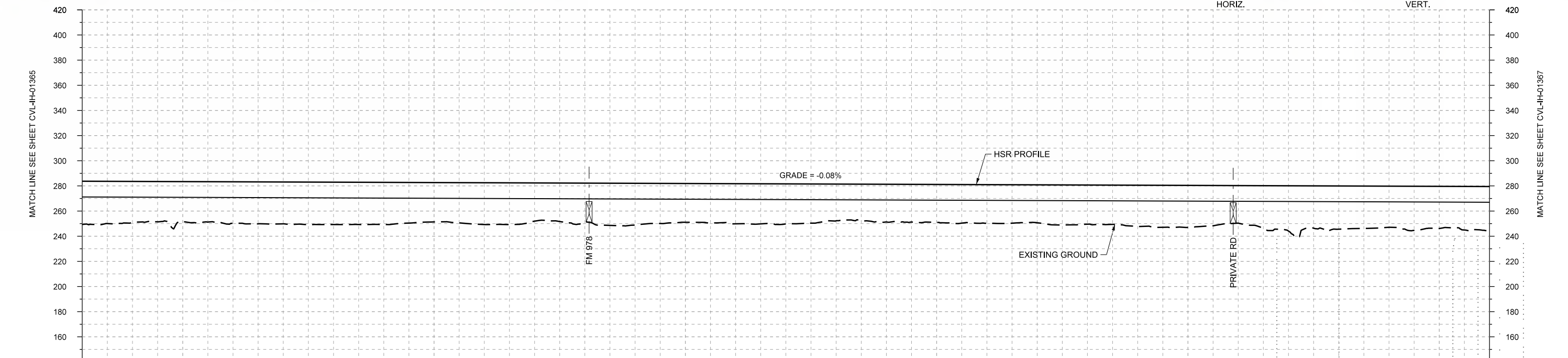
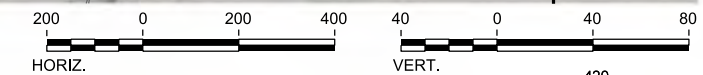
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**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 570+00 TO IH1 626+00**

Scale <b>AS SHOWN</b>	Drawing Status <b>FINAL DRAFT</b>	
Job No <b>234180</b>	Drawing No <b>CVL-IH-01365</b>	Rev <b>01</b>





PLAN



STATIONING	IH1 626+00	IH1 630+00	IH1 640+00	IH1 650+00	IH1 660+00	IH1 670+00	IH1 680+00	IH1 682+00																					
HOR. ALIGNMENT	L=54285																												
VER. ALIGNMENT	L=9589.98 G=-0.075%																												
CUT AND FILL	+34.4	+32.5	+31.8	+32.9	+33.3	+33.6	+33.5	+31.3	+33.2	+30.3	+30.6	+33.1	+30.8	+31.9	+31.8	+29.1	+30.0	+30.1	+30.7	+30.1	+31.2	+32.7	+33.4	+29.8	+36.0	+34.3	+32.7	+33.5	+36.2
TYP. SECTION	VIADUCT (E)																												

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

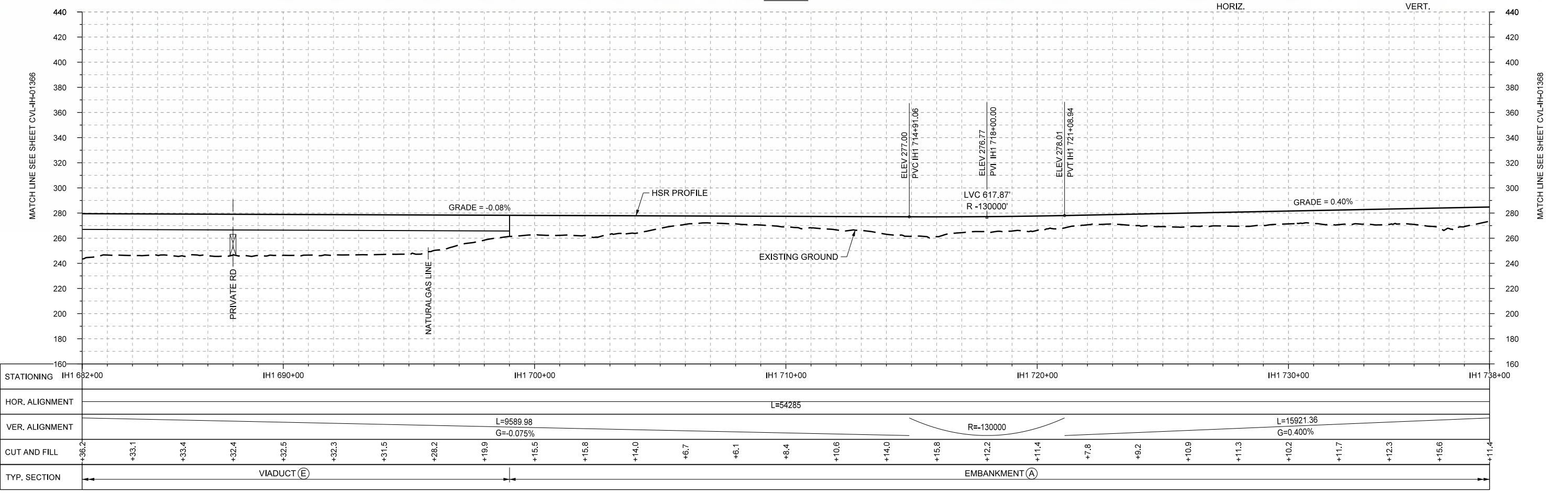
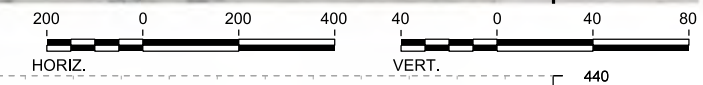
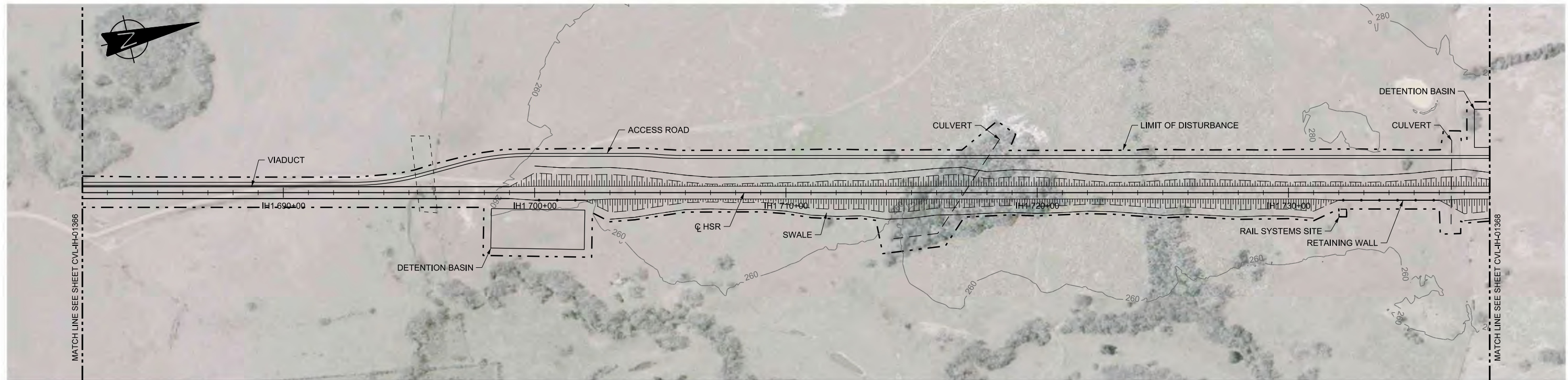
Drawing Title

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 626+00 TO IH1 682+00**

Scale  
AS SHOWN

Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01366	01



PLOT BY: NYPWCS01S PLOT TIME: 9/24/2017 2:27:09 PM

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

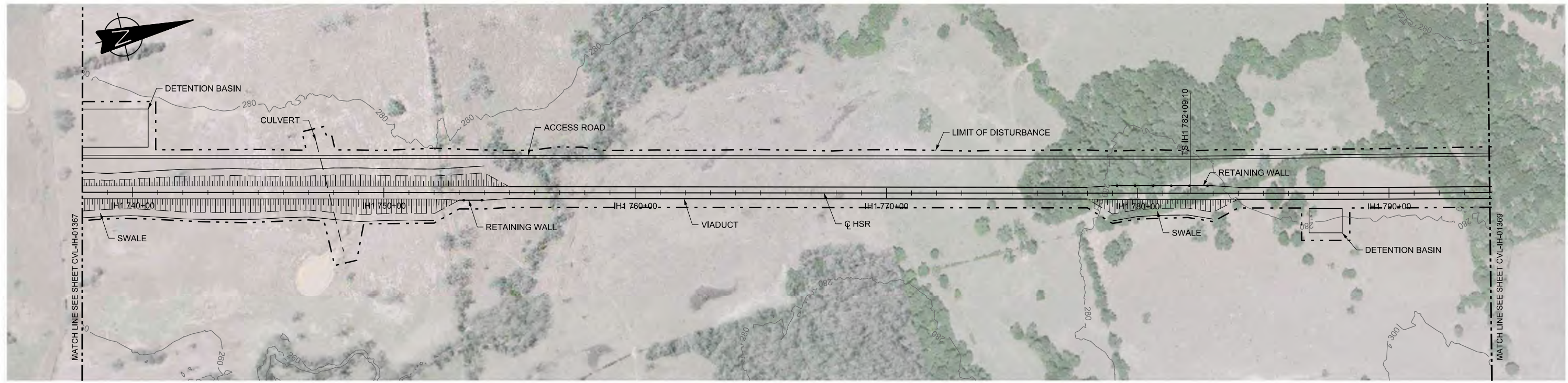
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

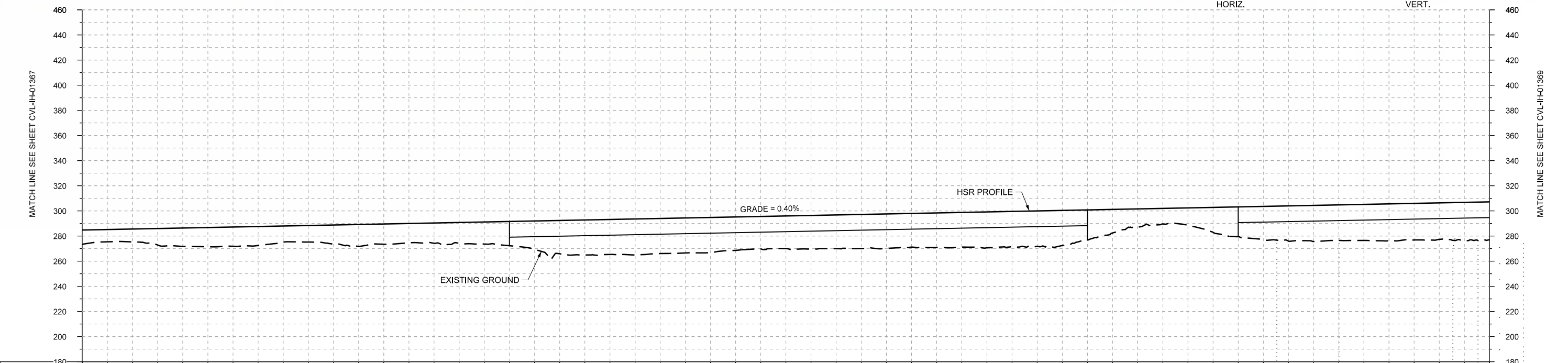
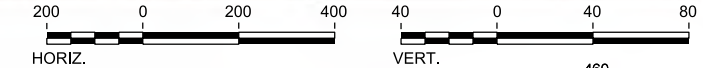
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CIVIL  
PLAN AND PROFILE  
IH1 682+00 TO IH1 738+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01367	01	





PLAN



STATIONING	IH1 738+00	IH1 740+00	IH1 750+00	IH1 760+00	IH1 770+00	IH1 780+00	IH1 790+00	IH1 794+00																						
HOR. ALIGNMENT	L=54285																													
VER. ALIGNMENT	L=15921.36 G=0.400%																													
CUT AND FILL	+11.4	+10.3	+14.7	+15.4	+12.9	+15.2	+16.1	+16.1	+17.5	+22.6	+27.9	+26.6	+27.9	+26.6	+25.9	+26.8	+27.5	+27.5	+26.5	+26.2	+23.9	+14.5	+13.8	+23.7	+26.0	+26.3	+26.4	+29.0	+30.4	
TYP. SECTION	EMBANKMENT (A)										VIADUCT (E)										EMBANKMENT (A)						VIADUCT (E)			

PROFILE

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

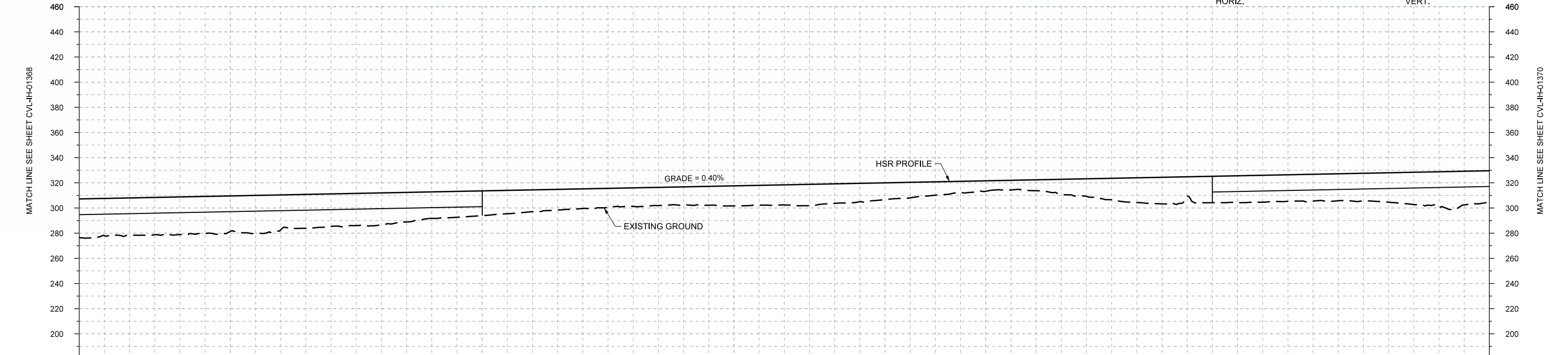
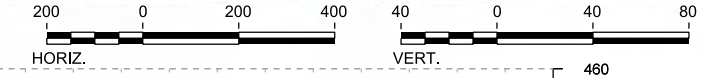
Drawing Title  
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 738+00 TO IH1 794+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01368
Rev	01





PLAN



PROFILE

STATIONING	IH1 794+00	IH1 800+00	IH1 810+00	IH1 820+00	IH1 830+00	IH1 840+00	IH1 850+00																						
HOR. ALIGNMENT	L=1350			R=42000 L=22142																									
VER. ALIGNMENT				L=15921.36 G=0.400%																									
CUT AND FILL	+30.4	+29.6	+29.9	+28.3	+27.7	+26.0	+25.3	+21.1	+19.7	+17.3	+15.6	+14.7	+14.5	+15.9	+15.9	+15.5	+13.4	+10.7	+8.3	+8.7	+13.9	+19.7	+15.5	+21.4	+21.1	+21.5	+23.4	+28.0	+25.1
TYP. SECTION	VIADUCT (E)				EMBANKMENT (A)								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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 Texas Registered Engineering Firm: F-2144

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

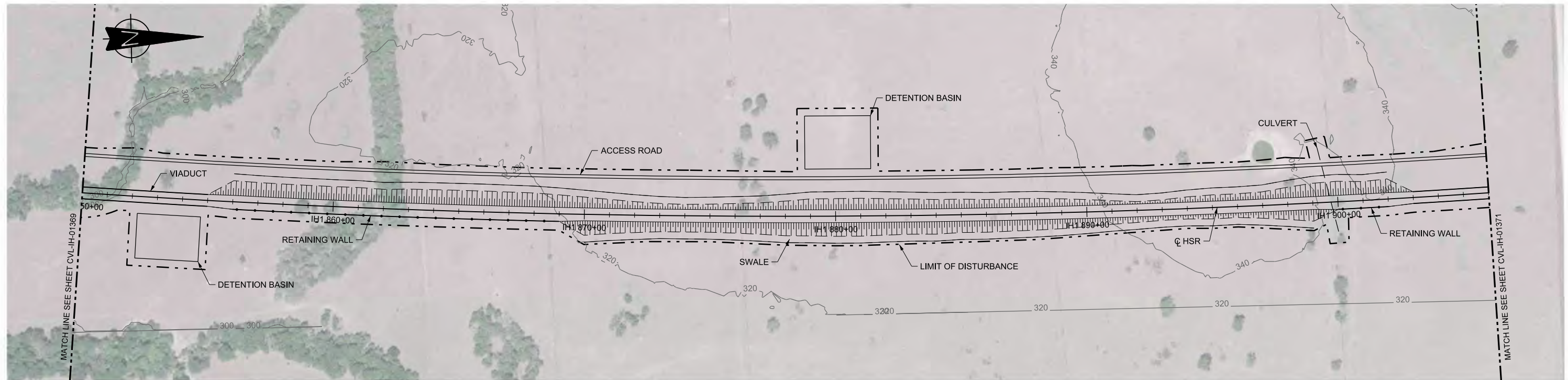
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 CIVIL  
 PLAN AND PROFILE  
 IH1 794+00 TO IH1 850+00**

Scale  
**AS SHOWN**

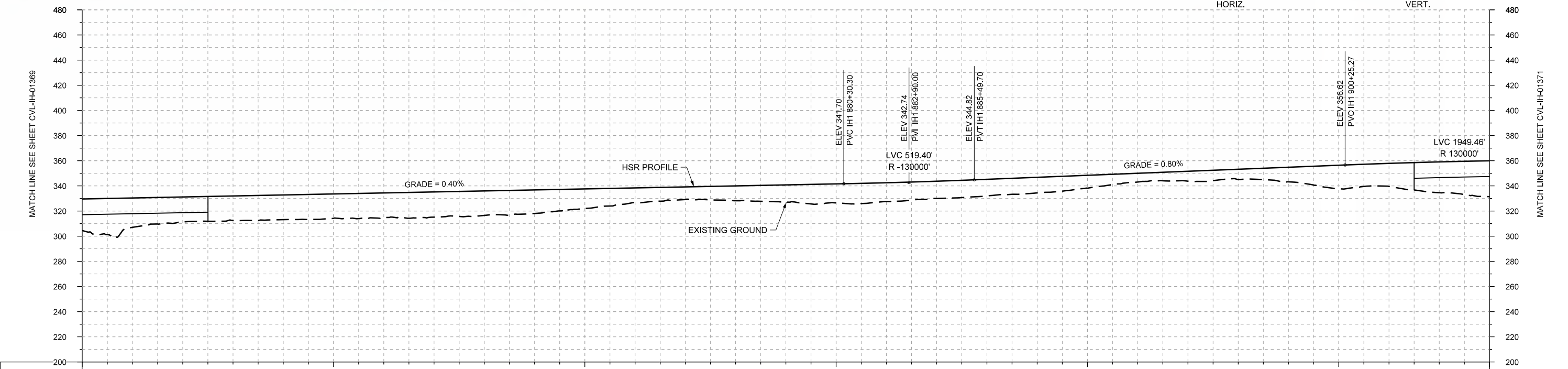
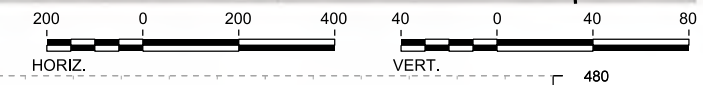
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01369	01





PLAN



STATIONING	IH1 850+00	IH1 860+00	IH1 870+00	IH1 880+00	IH1 890+00	IH1 900+00	IH1 906+00
HOR. ALIGNMENT	R=42000 L=22142						
VER. ALIGNMENT	L=15921.36 G=0.400%						
CUT AND FILL	+25.1	+23.4	+19.9	+19.4	+19.6	+19.4	+19.4
TYP. SECTION	VIADUCT (E)		EMBANKMENT (A)				VIADUCT (E)

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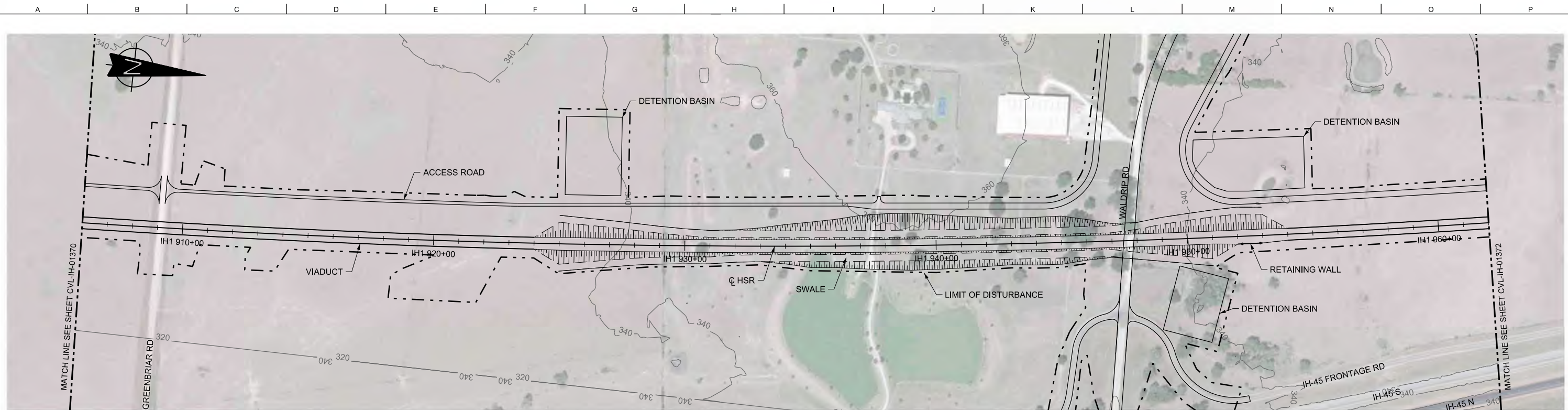
Client  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 850+00 TO IH1 906+00**

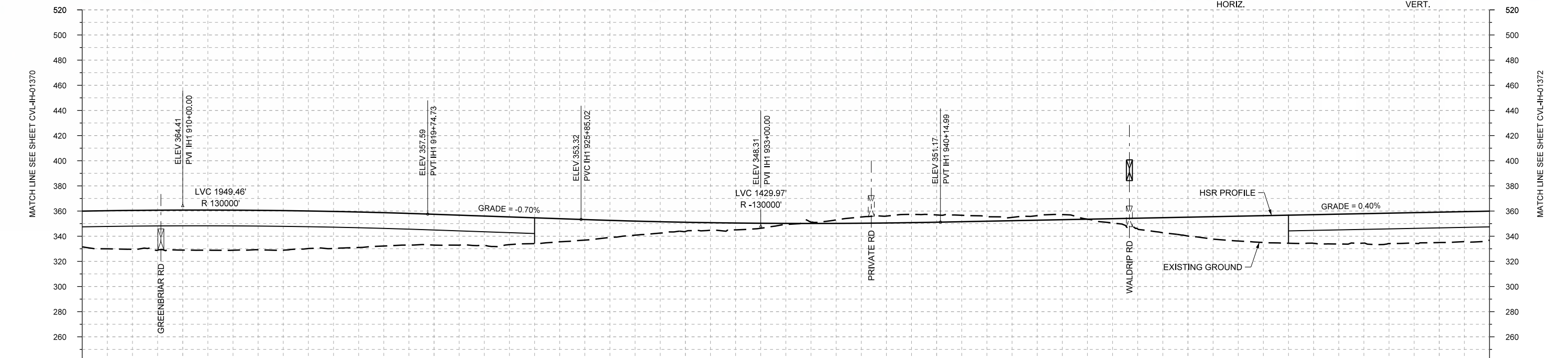
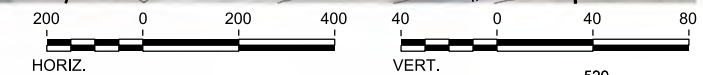
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Drawing Status  
**FINAL DRAFT**

Job No 234180	Drawing No CVL-IH-01370	Rev 01
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PLAN



STATIONING	IH1 906+00	IH1 910+00	IH1 920+00	IH1 930+00	IH1 940+00	IH1 950+00	IH1 960+00	IH1 962+00				
HOR. ALIGNMENT	R=42000 L=22142											
VER. ALIGNMENT	R=130000		L=610.29 G=-0.700%			R=130000						
CUT AND FILL	+28.5	+31.0	+31.8	+31.9	+31.4	+29.4	+26.5	+24.5				
TYP. SECTION	VIADUCT (E)			EMBANKMENT (A)			CUT (C)		EMBANKMENT (A)		VIADUCT (E)	

PROFILE

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

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 906+00 TO IH1 962+00**

Scale  
AS SHOWN

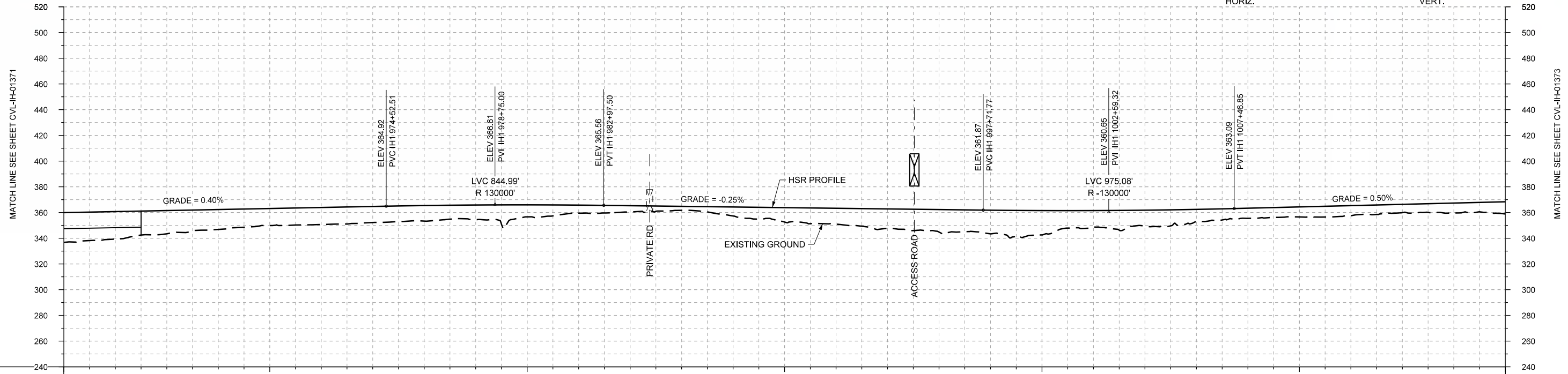
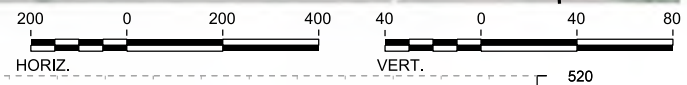
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01371	01





PLAN



PROFILE

STATIONING	IH1 962+00	IH1 970+00	IH1 980+00	IH1 990+00	IH1 1000+00	IH1 1010+00	IH1 1018+00																					
HOR. ALIGNMENT					R=42000 L=22142	L=1350																						
VER. ALIGNMENT	L=3437.51 G=0.400%		R=130000		L=1474.27 G=-0.250%		L=2878.12 G=0.500%																					
CUT AND FILL	+23.1	+21.4	+18.0	+15.4	+13.2	+12.5	+12.1	+11.4	+9.4	+6.2	+4.7	+3.0	+7.0	+11.2	+12.5	+15.1	+17.5	+18.4	+18.9	+12.8	+12.3	+9.4	+8.0	+7.9	+7.9	+6.5	+7.8	+9.5
TYP. SECTION	VIADUCT (E)		EMBANKMENT (P)										CUT (R)		EMBANKMENT (P)													

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

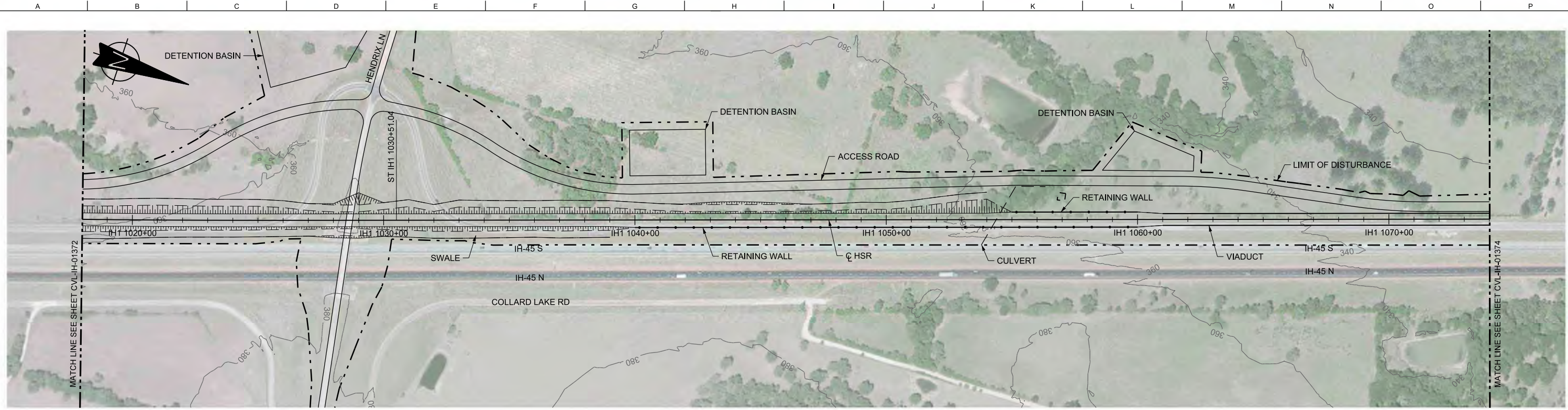
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Scale  
AS SHOWN

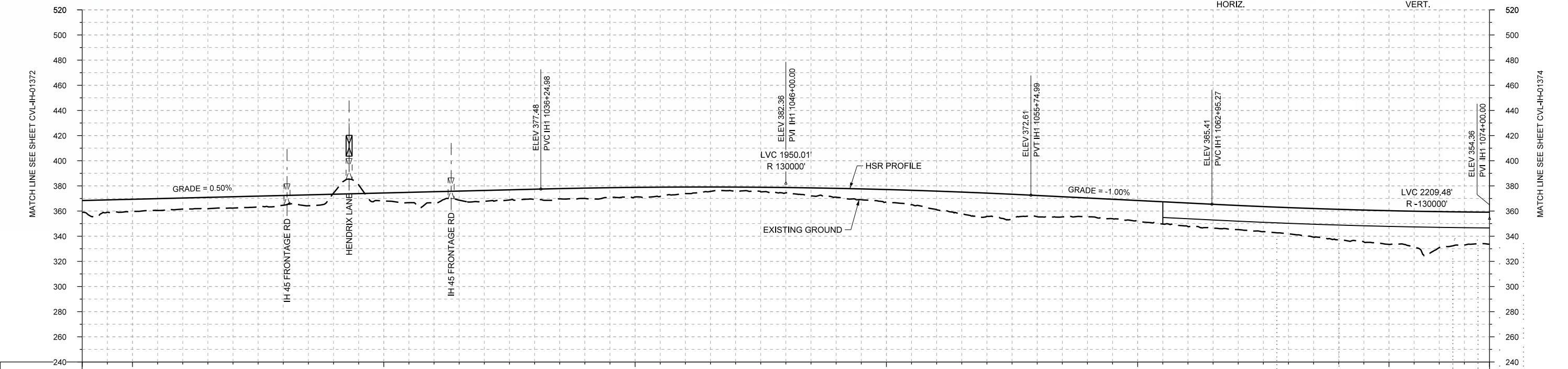
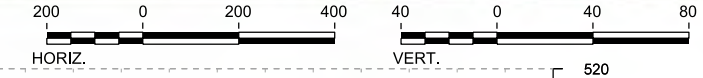
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01372	01





PLAN



PROFILE

STATIONING	IH1 1018+00	IH1 1020+00	IH1 1030+00	IH1 1040+00	IH1 1050+00	IH1 1060+00	IH1 1070+00	IH1 1074+00																					
HOR. ALIGNMENT	L=1350		L=2878.12 G=0.500%			L=9965		L=720.28 G=-1.000%																					
VER. ALIGNMENT			R=130000					R=-130000																					
CUT AND FILL	+9.5	+9.7	+8.8	+9.0	+7.8	-0.9	+6.4	+8.8	+8.6	+8.1	+8.2	+7.6	+5.2	+3.1	+4.3	+7.0	+9.9	+14.7	+18.5	+18.9	+14.9	+16.4	+18.7	+19.2	+20.8	+24.2	+28.8	+28.6	+25.4
TYP. SECTION	EMBANKMENT (P)		(R)	EMBANKMENT (P)		(Q)	CUT (R)	(Q)	EMBANKMENT (P)		RETAINED FILL (Q)		VIADUCT (T)																

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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Texas Registered Engineering Firm: F-2144

Client

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

Drawing Title

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 1018+00 TO IH1 1074+00**

Scale

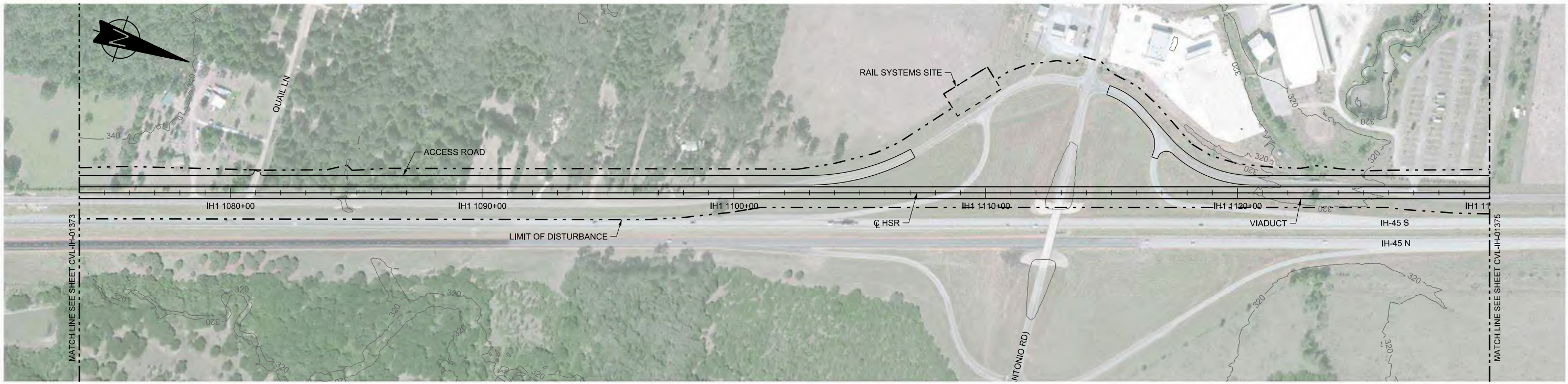
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Drawing Status

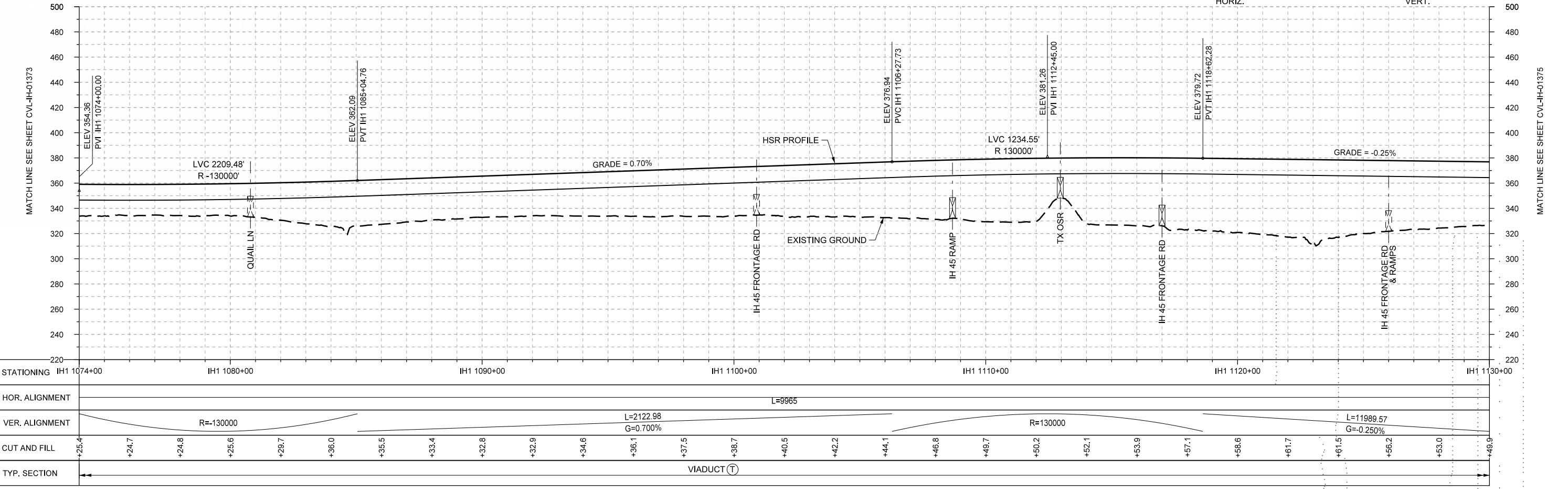
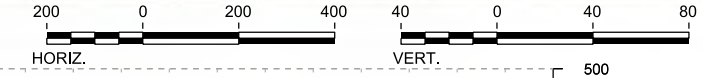
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01373	01





PLAN



PROFILE

STATIONING	IH1 1074+00	IH1 1080+00	IH1 1090+00	IH1 1100+00	IH1 1110+00	IH1 1120+00	IH1 1130+00
HOR. ALIGNMENT	L=9965						
VER. ALIGNMENT	R=130000		L=2122.98 G=0.700%			R=130000	
CUT AND FILL	+25.4	+24.7	+24.8	+25.6	+29.7	+36.0	+35.5
TYP. SECTION	VIADUCT (T)						

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

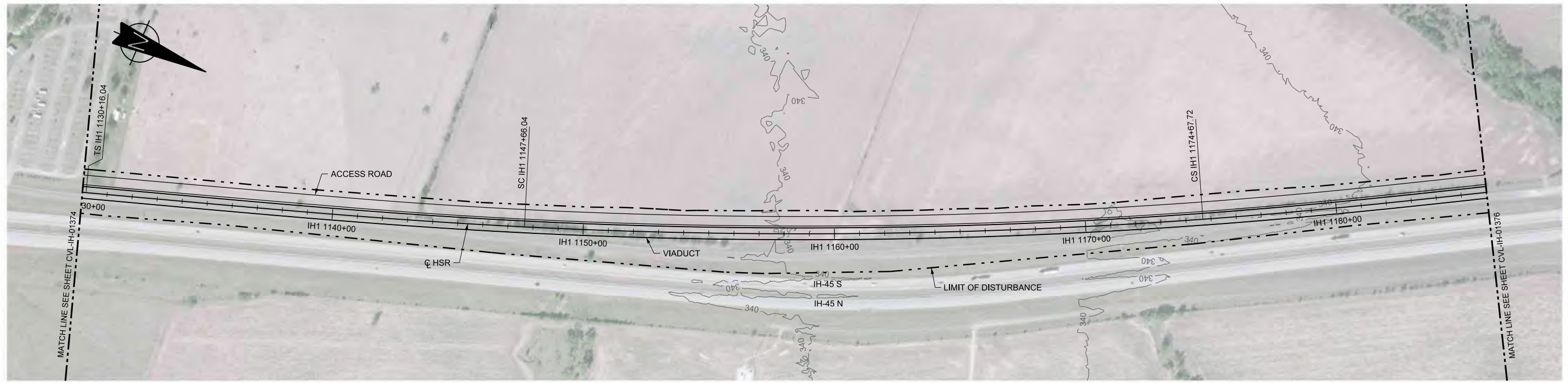
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**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
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Scale  
**AS SHOWN**

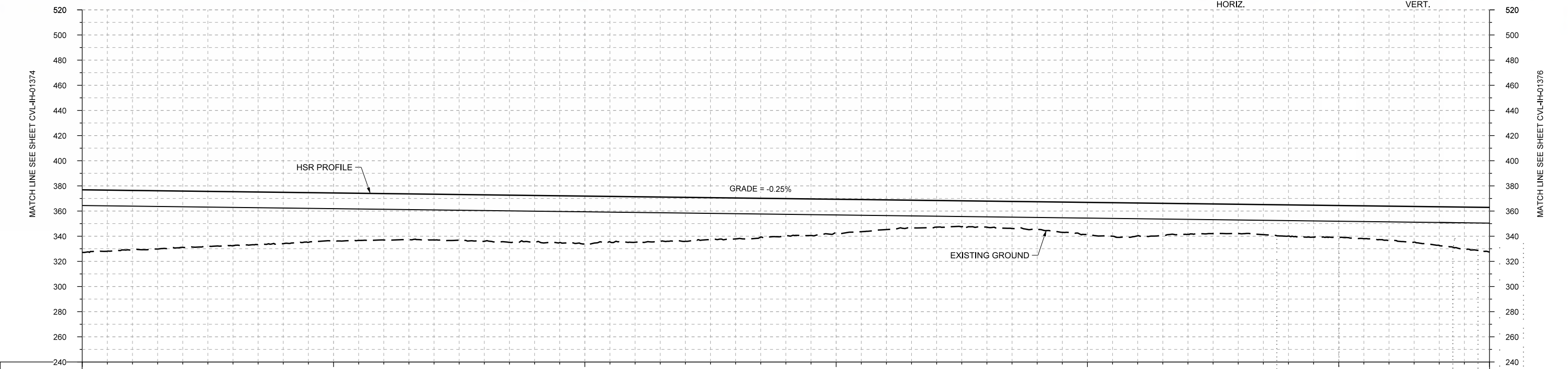
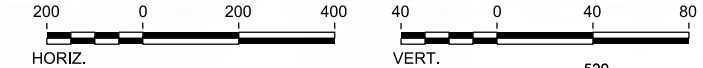
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01374	01





PLAN



STATIONING	IH1 1130+00	IH1 1140+00	IH1 1150+00	IH1 1160+00	IH1 1170+00	IH1 1180+00	IH1 1186+00																						
HOR. ALIGNMENT	L=9965		R=22000 L=2702		L=1750																								
VER. ALIGNMENT	L=1750		L=11989.57 G=-0.250%		L=1750																								
CUT AND FILL	+45.9	+47.3	+44.8	+43.0	+40.8	+38.1	+36.9	+36.4	+37.0	+37.4	+36.2	+36.2	+35.0	+32.6	+29.7	+26.5	+23.6	+21.2	+20.7	+22.5	+25.5	+26.1	+24.4	+23.2	+24.8	+25.5	+27.6	+30.8	+35.5
TYP. SECTION	VIADUCT (T)																												

PROFILE

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.  
10370 Richmond Ave., Suite 475  
Houston, Texas 77042 USA  
Tel (713) 783 2787 Fax (713) 343 1467  
www.arup.com  
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

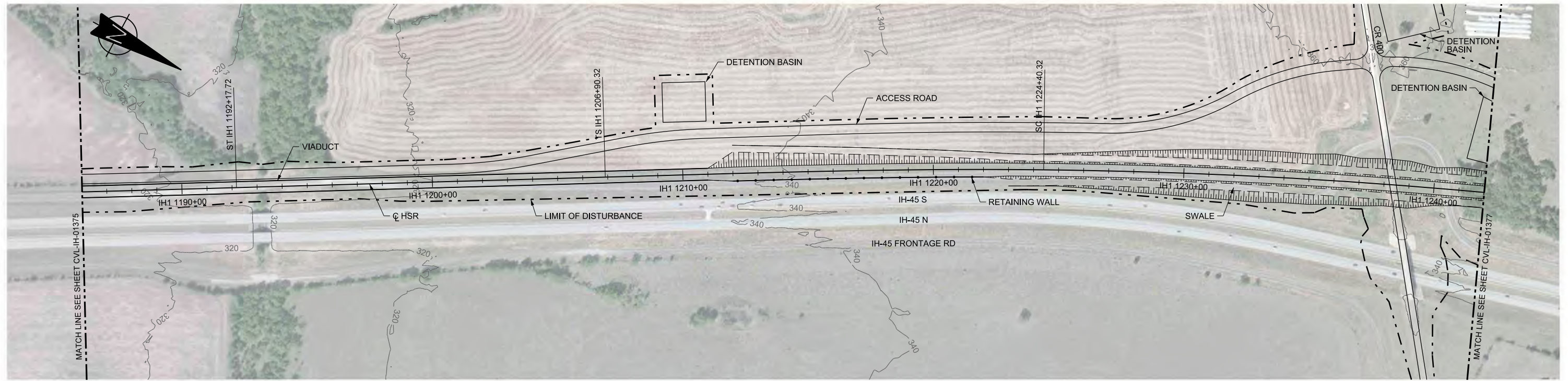
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 1130+00 TO IH1 1186+00**

Scale  
AS SHOWN

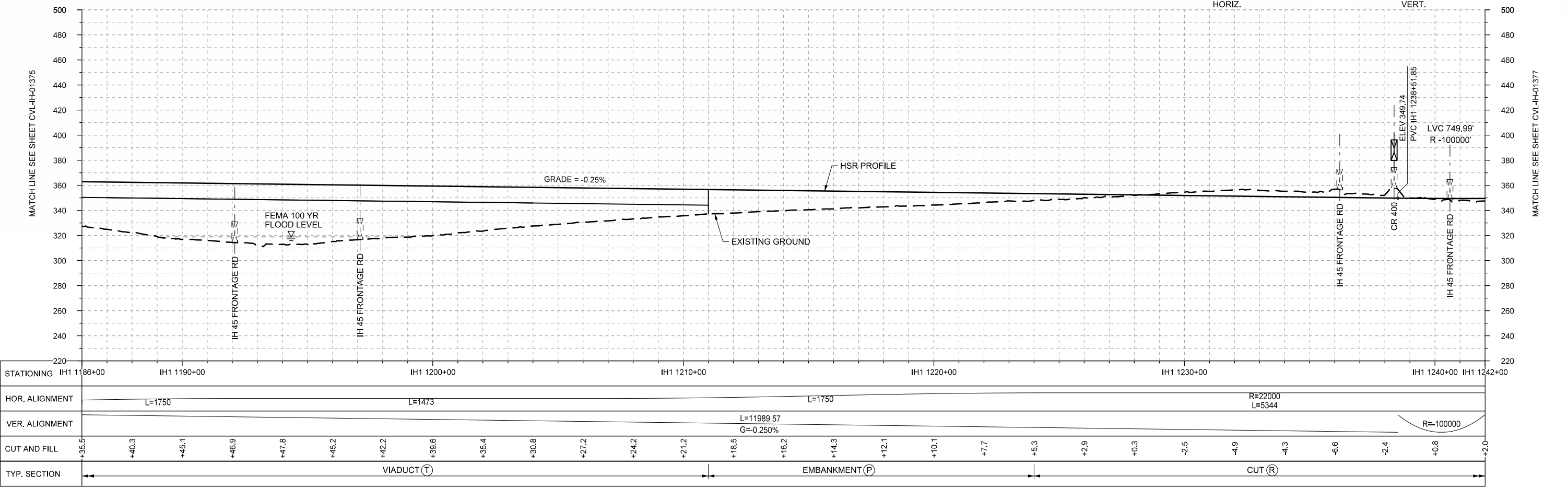
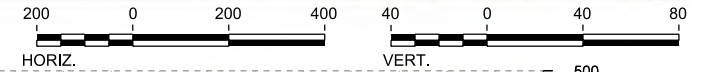
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01375	01





PLAN



PROFILE

STATIONING	IH1 1186+00	IH1 1190+00	IH1 1200+00	IH1 1210+00	IH1 1220+00	IH1 1230+00	IH1 1240+00	IH1 1242+00																					
HOR. ALIGNMENT	L=1750		L=1473		L=1750		R=22000 L=5344																						
VER. ALIGNMENT			L=11989.57 G=-0.250%				R=100000																						
CUT AND FILL	+35.5	+40.3	+45.1	+46.9	+47.8	+45.2	+42.2	+39.6	+35.4	+30.8	+27.2	+24.2	+21.2	+18.5	+16.2	+14.3	+12.1	+10.1	+7.7	+5.3	+2.9	+0.3	-2.5	-4.9	-4.3	-6.6	-2.4	+0.8	-2.0
TYP. SECTION	VIADUCT (T)										EMBANKMENT (P)										CUT (R)								

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

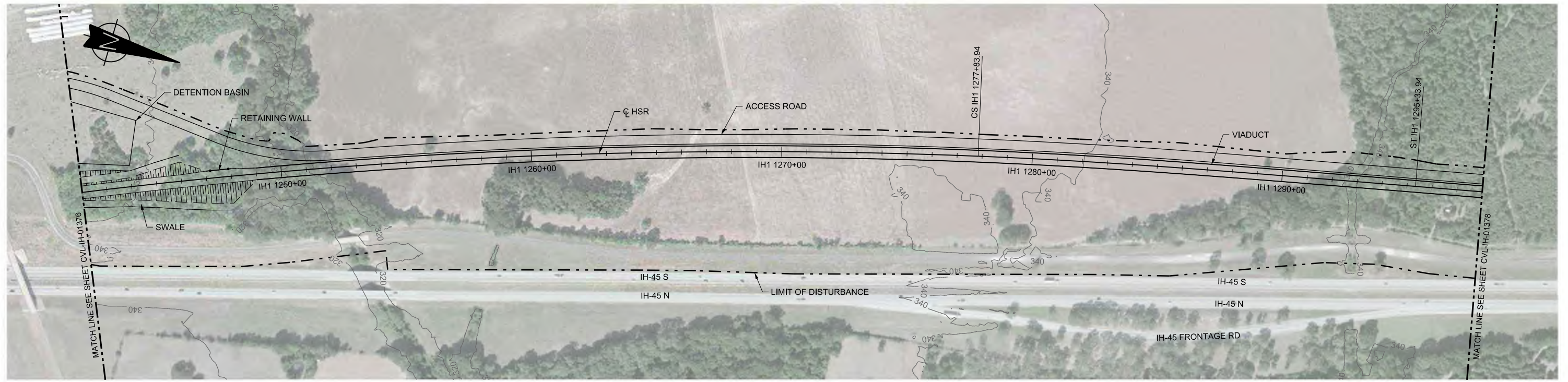
**FREESSE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

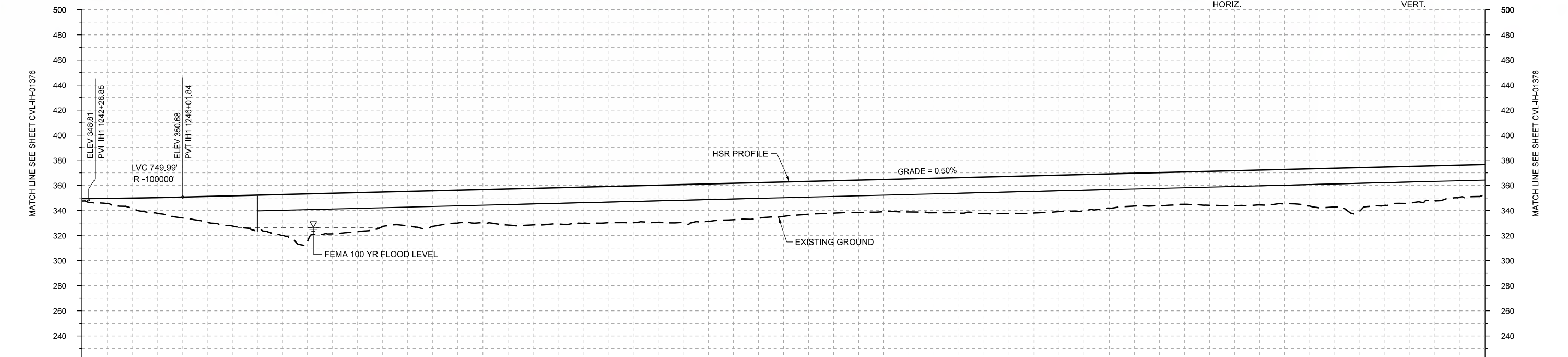
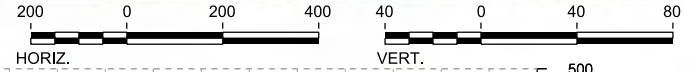
Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH1 1186+00 TO IH1 1242+00**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No 234180 Drawing No CVL-IH-01376 Rev 01





PLAN



STATIONING	IH1 1242+00	IH1 1250+00	IH1 1260+00	IH1 1270+00	IH1 1280+00	IH1 1290+00	IH1 1298+00																						
HOR. ALIGNMENT			R=22000 L=5344			L=1750	L=6320																						
VER. ALIGNMENT	R=-100000			L=5448.17 G=0.500%																									
CUT AND FILL	+2.0	+8.1	+16.6	+24.1	+32.7	+32.4	+27.5	+28.4	+26.6	+29.2	+28.9	+29.5	+30.4	+29.1	+27.4	+25.8	+25.7	+27.5	+29.2	+28.7	+28.9	+26.2	+25.8	+27.9	+27.4	+30.9	+30.6	+28.0	+25.3
TYP. SECTION	(R)	EMBANKMENT (P)		VIADUCT (T)																									

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**

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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**

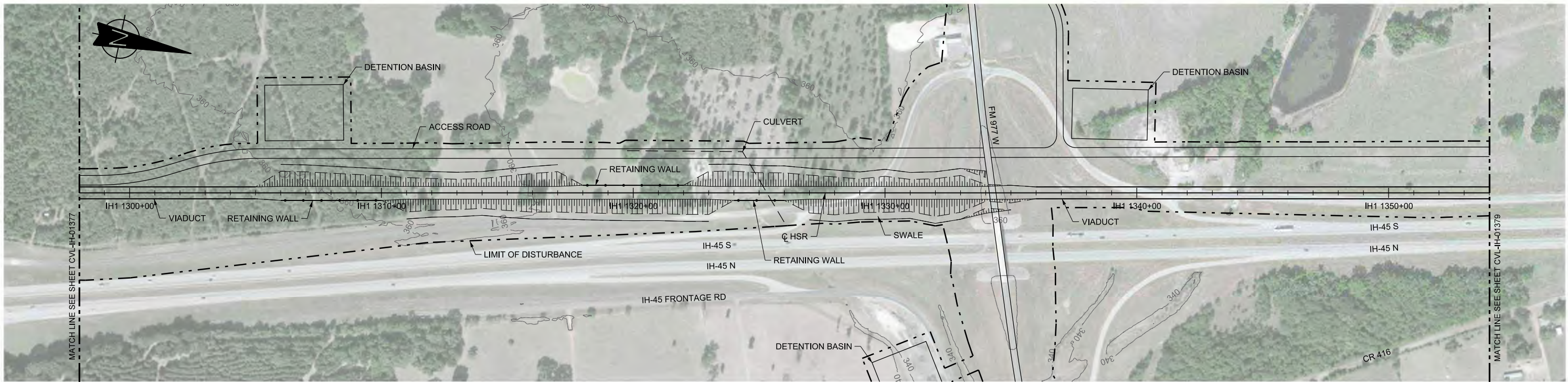
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

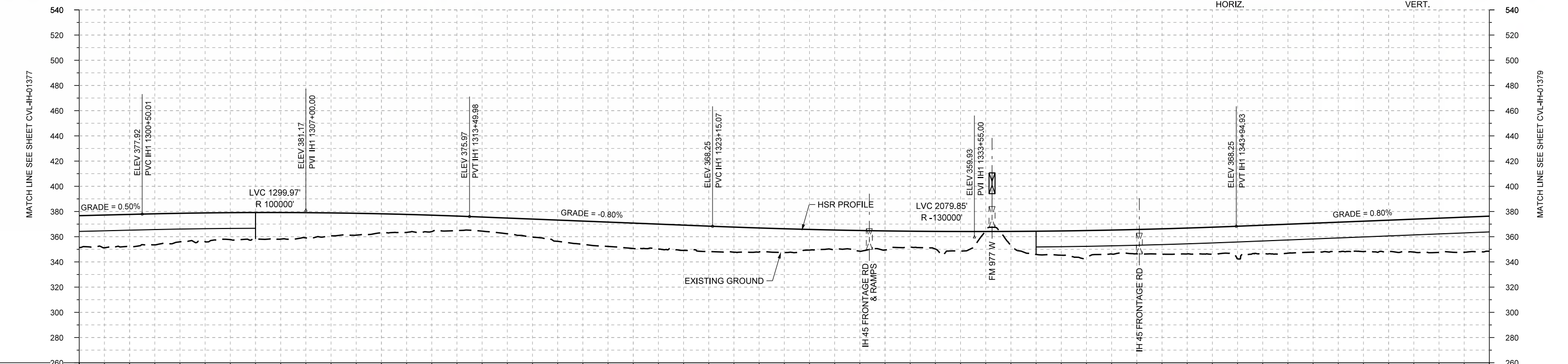
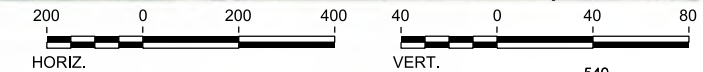
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CIVIL  
PLAN AND PROFILE  
IH1 1242+00 TO IH1 1298+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01377
Rev	01





PLAN



PROFILE

STATIONING	IH1 1298+00	IH1 1300+00	IH1 1310+00	IH1 1320+00	IH1 1330+00	IH1 1340+00	IH1 1350+00	IH1 1354+00	
HOR. ALIGNMENT	L=8320								
VER. ALIGNMENT	L=5448.17 G=0.500%		R=100000			L=965.10 G=-0.800%		R=130000	
CUT AND FILL	+25.3	+25.6	+22.7	+21.4	+21.1	+18.2	+15.1	+13.1	
TYP. SECTION	VIADUCT (T)			EMBANKMENT (P)				VIADUCT (T)	

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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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

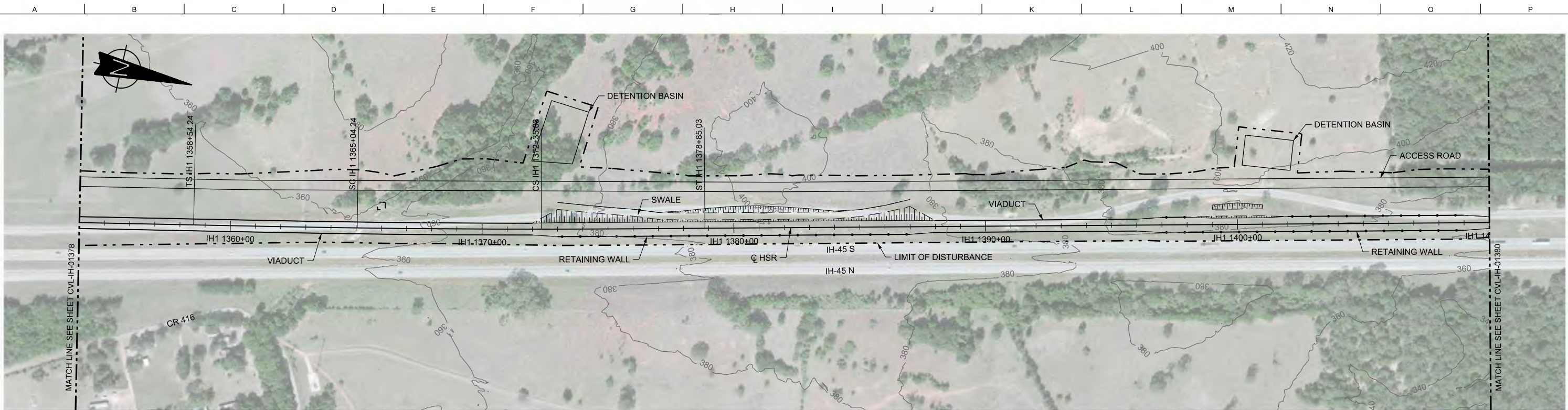
Drawing Title  
**IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
**IH1 1298+00 TO IH1 1354+00**

Scale  
**AS SHOWN**

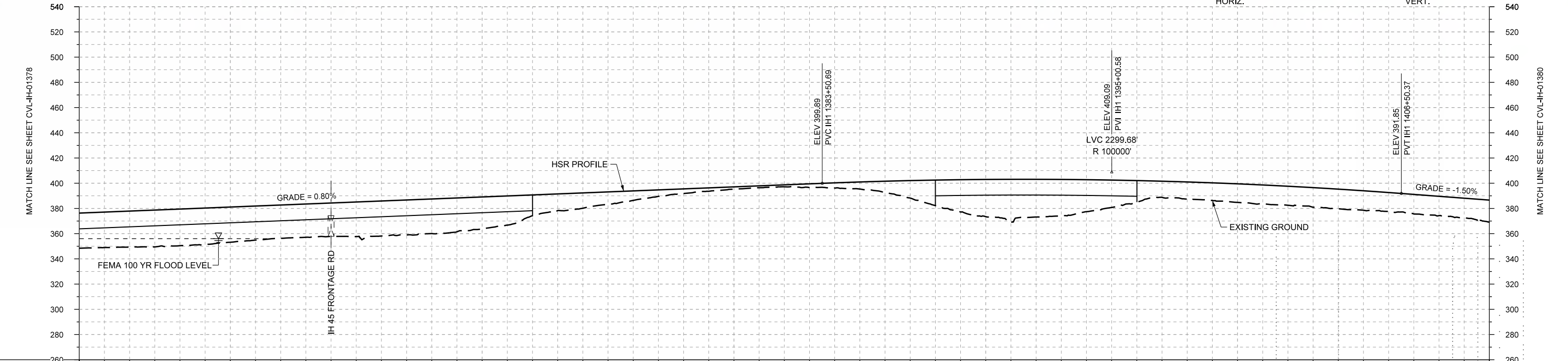
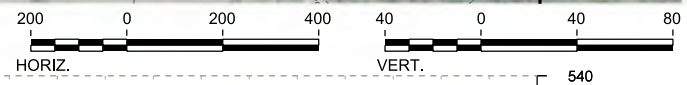
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01378	01





PLAN



PROFILE

STATIONING	IH1 1354+00		IH1 1360+00		IH1 1370+00		IH1 1380+00		IH1 1390+00		IH1 1400+00		IH1 1410+00																
HOR. ALIGNMENT	L=6320		L=650		R=-50000 L=731		L=650		L=18445		L=1686.05 G=-1.500%																		
VER. ALIGNMENT					L=3955.77 G=0.800%				R=100000																				
CUT AND FILL	+27.9	+26.6	+28.1	+27.9	+26.4	+26.5	+27.8	+27.4	+25.4	+18.6	+12.2	+7.6	+3.7	+1.8	+1.6	+4.1	+8.9	+20.3	+29.5	+29.9	+25.4	+17.1	+13.7	+14.7	+15.1	+15.6	+15.2	+15.4	+17.6
TYP. SECTION	VIADUCT (T)				EMBANKMENT (P)				CUT (R)		EMBANKMENT (P)		VIADUCT (T)		RETAINED FILL (Q)		CUT (R)		RETAINED FILL (Q)										

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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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

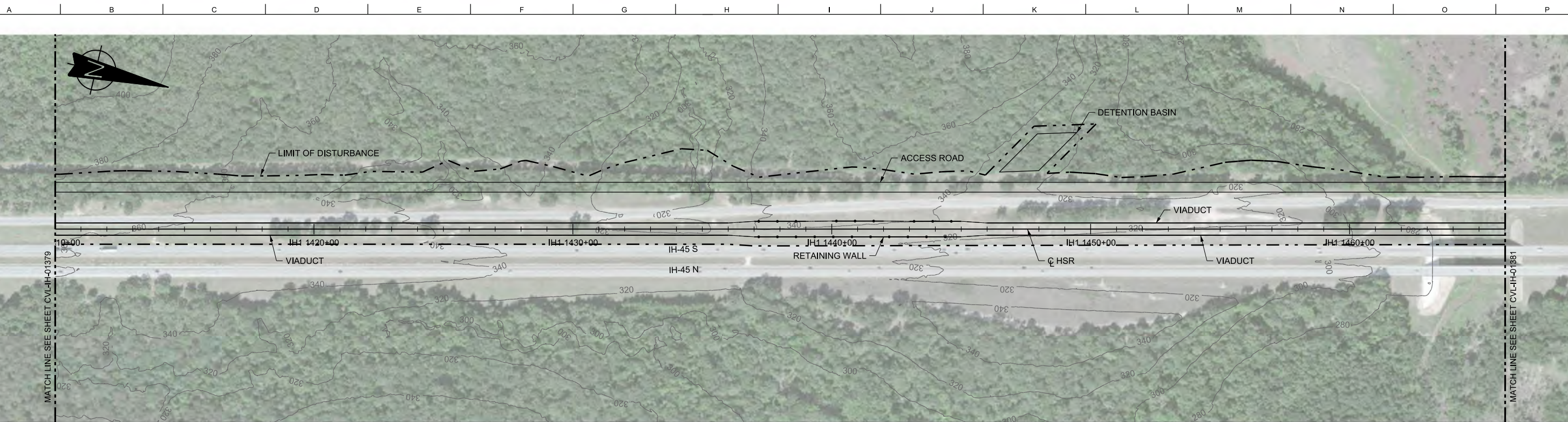
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CIVIL  
PLAN AND PROFILE  
IH1 1354+00 TO IH1 1410+00**

Scale  
AS SHOWN

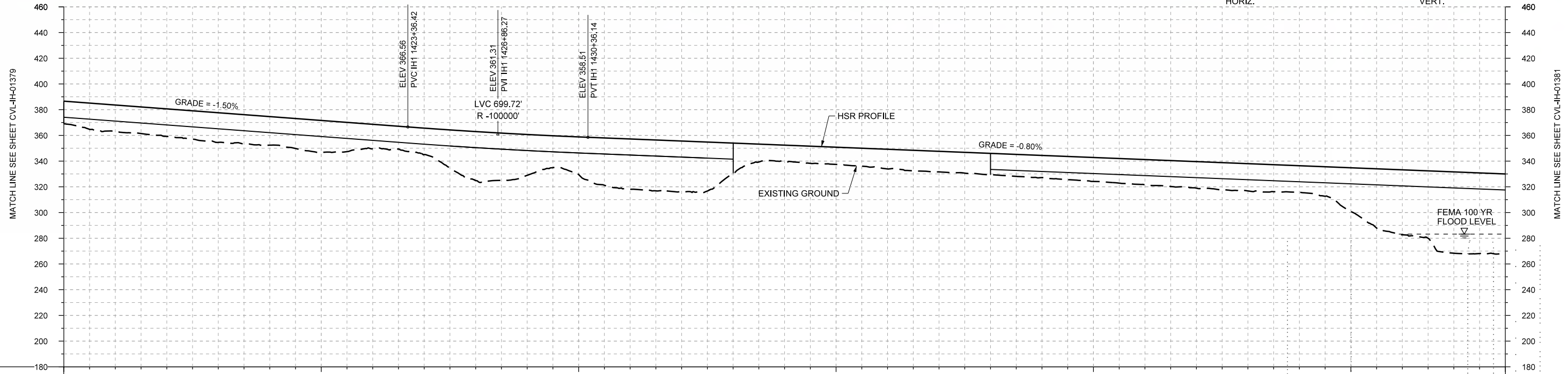
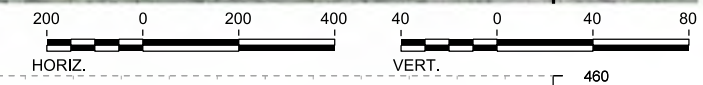
Drawing Status  
**FINAL DRAFT**

Job No	234180	Drawing No	CVL-IH-01379	Rev	01
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PLAN



PROFILE

STATIONING	IH1 1410+00	IH1 1420+00	IH1 1430+00	IH1 1440+00	IH1 1450+00	IH1 1460+00	IH1 1466+00																						
HOR. ALIGNMENT	L=18445																												
VER. ALIGNMENT	L=1686.05 G=-1.500%		R=100000		L=3811.93 G=-0.800%																								
CUT AND FILL	+17.6	+21.0	+21.4	+23.1	+22.2	+25.0	+19.0	+20.5	+38.1	+31.8	+29.3	+39.1	+39.7	+23.5	+12.7	+13.4	+15.3	+16.0	+16.6	+17.2	+18.6	+19.6	+20.7	+21.2	+20.7	+34.0	+50.6	+63.3	+62.2
TYP. SECTION	VIADUCT (T)										RETAINED FILL (Q)						VIADUCT (T)												

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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 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

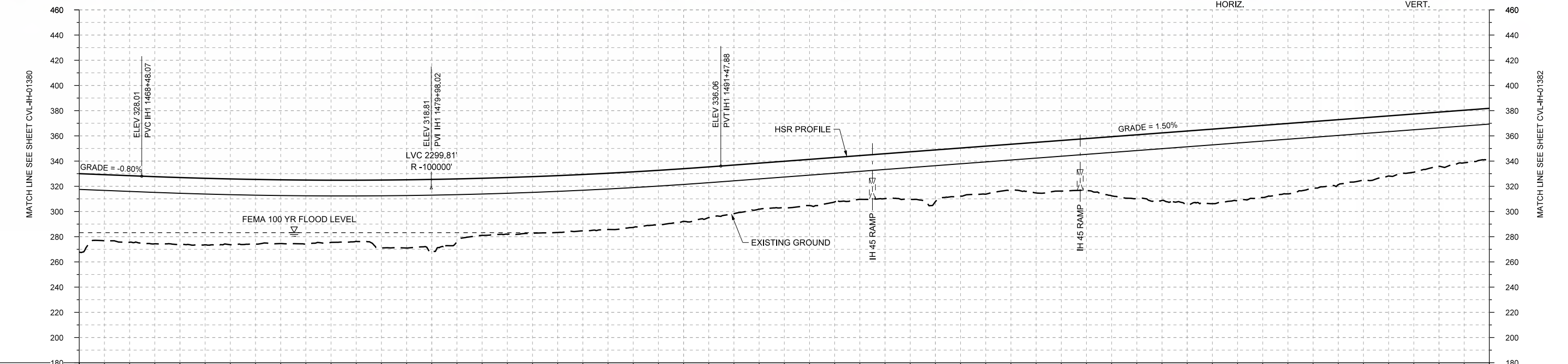
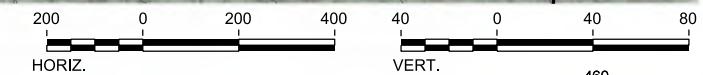
Drawing Title  
**IH (45) SEGMENT CIVIL  
 PLAN AND PROFILE  
 IH1 1410+00 TO IH1 1466+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	234180	Drawing No	CVL-IH-01380
Rev			01





PLAN



PROFILE

STATIONING	IH1 1466+00	IH1 1470+00	IH1 1480+00	IH1 1490+00	IH1 1500+00	IH1 1510+00	IH1 1520+00	IH1 1522+00																					
HOR. ALIGNMENT	L=18445																												
VER. ALIGNMENT	L=3811.93 G=-0.800%			R=100000			L=4624.51 G=1.500%																						
CUT AND FILL	+62.2	+52.8	+53.1	+52.2	+50.6	+49.4	+53.8	+57.6	+45.3	+44.8	+44.7	+44.1	+41.8	+38.5	+36.8	+35.2	+35.6	+41.0	+38.1	+40.1	+41.2	+50.5	+57.8	+58.3	+55.8	+51.5	+47.7	+42.9	+40.7
TYP. SECTION	VIADUCT (T)																												

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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 Texas Registered Engineering Firm: F-2144

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

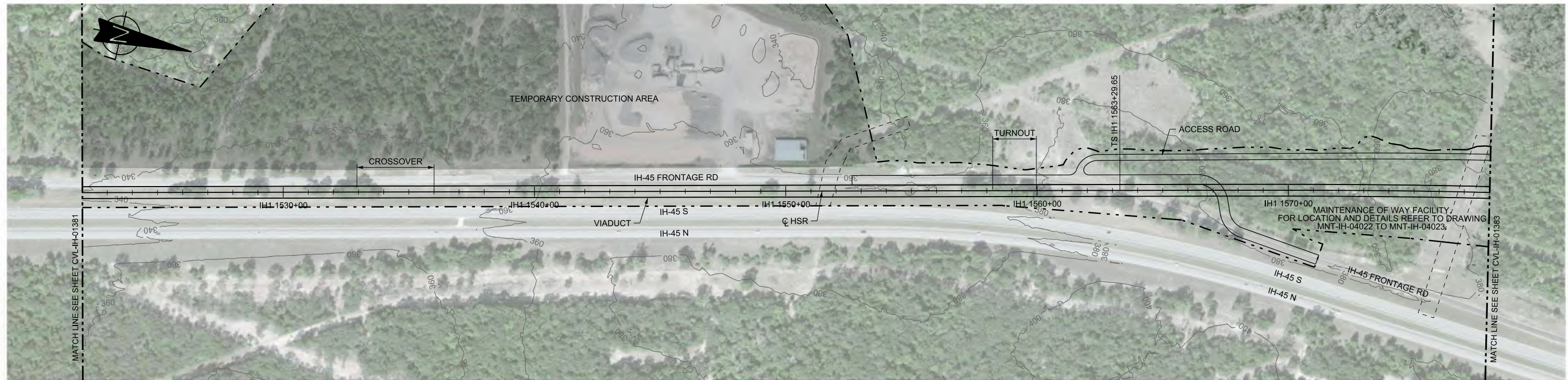
Drawing Title  
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**PLAN AND PROFILE**  
**IH1 1466+00 TO IH1 1522+00**

Scale  
AS SHOWN

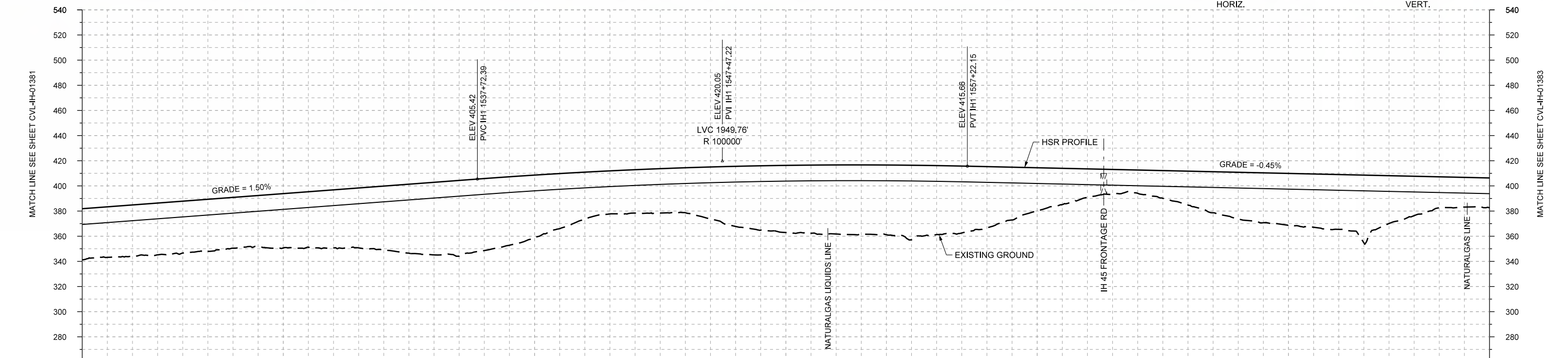
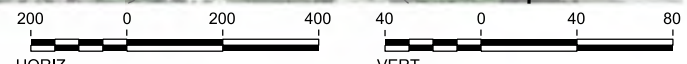
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01381	01





PLAN



STATIONING	IH1 1522+00	IH1 1530+00	IH1 1540+00	IH1 1550+00	IH1 1560+00	IH1 1570+00	IH1 1578+00																						
HOR. ALIGNMENT	L=18445			L=1750																									
VER. ALIGNMENT	L=4624.51 G=1.500%			R=100000		L=10760.26 G=-0.450%																							
CUT AND FILL	+46.7	+40.3	+41.2	+40.4	+43.1	+46.2	+50.9	+57.7	+57.2	+49.5	+37.2	+34.5	+35.7	+47.8	+53.4	+54.9	+55.4	+54.8	+48.7	+34.4	+22.7	+18.5	+26.9	+37.7	+41.1	+43.6	+38.0	+24.6	+23.8
TYP. SECTION	VIADUCT (T)																												

PROFILE

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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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

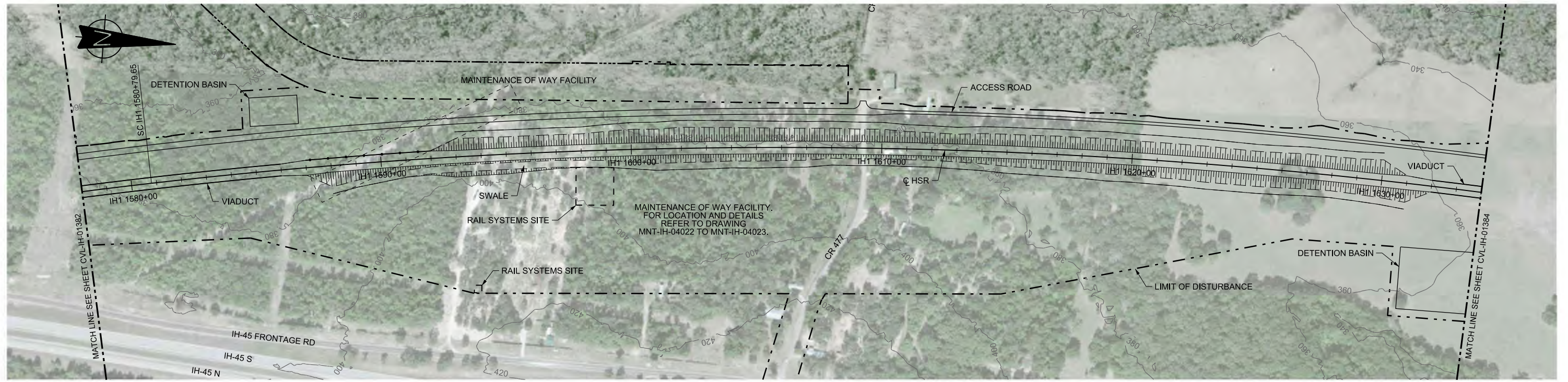
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CIVIL  
PLAN AND PROFILE  
IH1 1522+00 TO IH1 1578+00**

Scale  
AS SHOWN

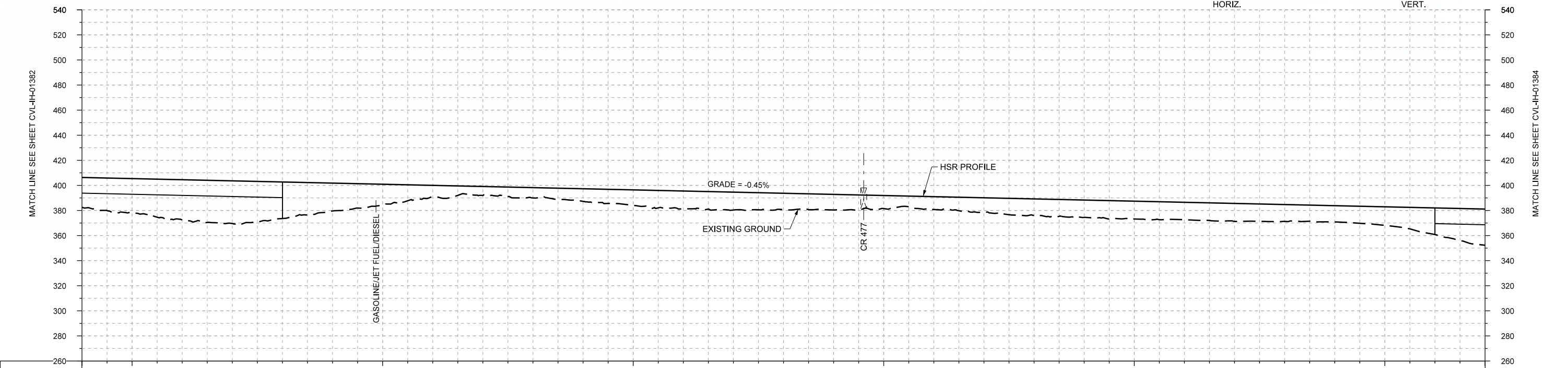
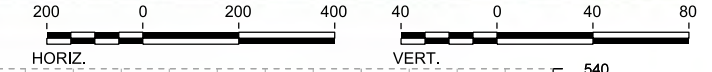
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01382	01





PLAN



STATIONING	IH1 1578+00	IH1 1580+00	IH1 1590+00	IH1 1600+00	IH1 1610+00	IH1 1620+00	IH1 1630+00	IH1 1634+00																					
HOR. ALIGNMENT	L=1750				R=22000 L=6246																								
VER. ALIGNMENT					L=10760.26 G=-0.450%																								
CUT AND FILL	+23.8	+27.3	+32.1	+34.0	+29.1	+22.2	+16.6	+9.3	+7.1	+8.2	+10.0	+12.3	+14.2	+14.2	+13.0	+12.4	+10.4	+10.2	+11.6	+13.3	+13.8	+14.2	+13.9	+14.3	+13.4	+12.9	+14.8	+21.2	+28.8
TYP. SECTION	VIADUCT (T)				(B)	EMBANKMENT (A)												VIADUCT (E)											

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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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

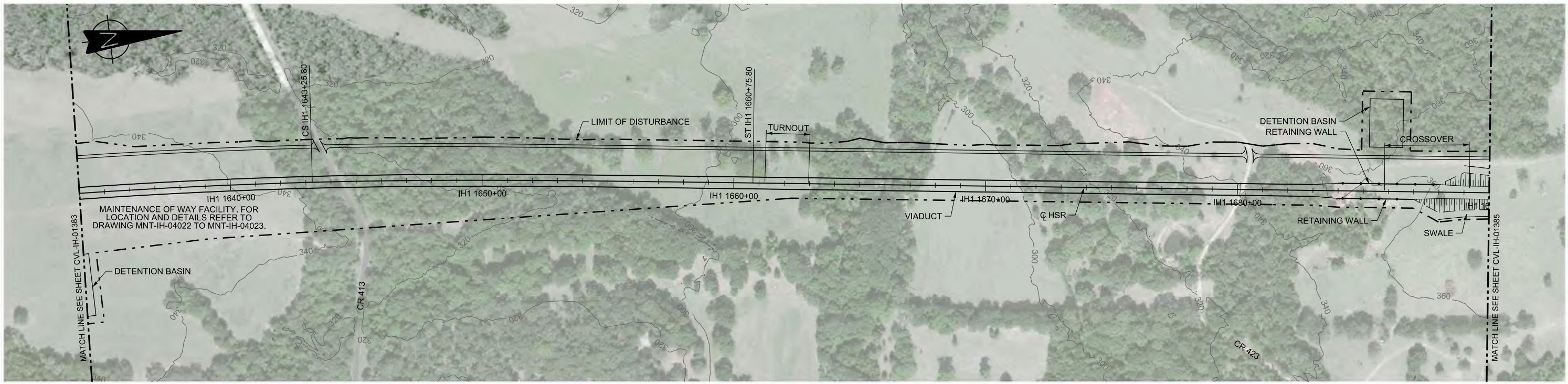
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CIVIL  
PLAN AND PROFILE  
IH1 1578+00 TO IH1 1634+00**

Scale  
AS SHOWN

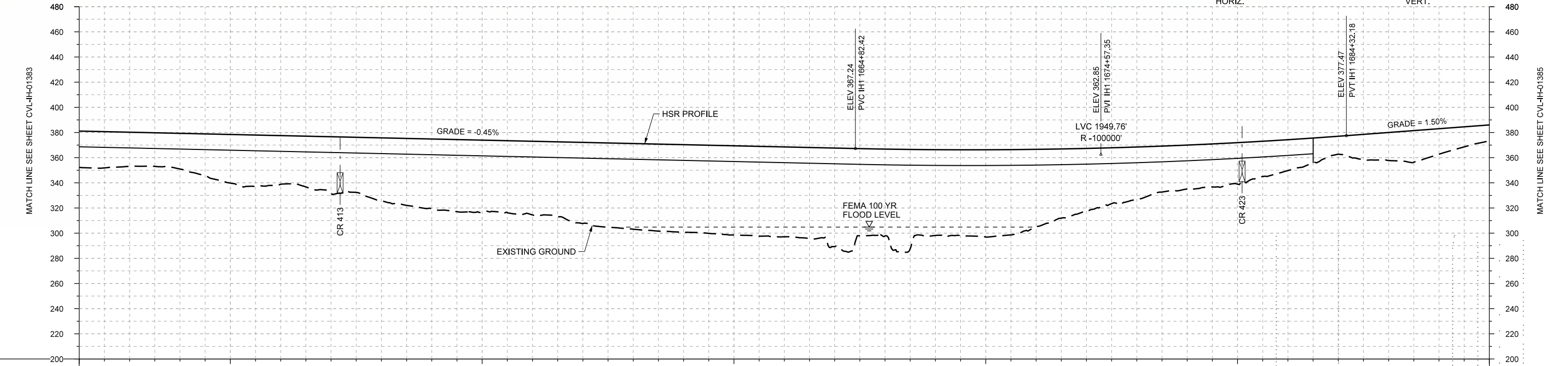
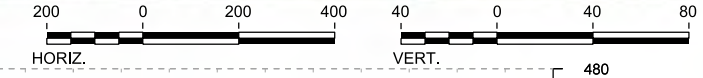
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01383	01





PLAN



PROFILE

STATIONING	IH1 1634+00	IH1 1640+00	IH1 1650+00	IH1 1660+00	IH1 1670+00	IH1 1680+00	IH1 1690+00																					
HOR. ALIGNMENT	R=22000 L=6246		L=1750		L=5118																							
VER. ALIGNMENT			L=10760.26 G=-0.450%		R=100000		L=5435.15 G=1.500%																					
CUT AND FILL	+28.8	+27.0	+28.3	+38.6	+38.7	+44.7	+50.1	+55.6	+57.0	+58.5	+64.4	+68.1	+69.6	+70.8	+71.4	+78.3	+69.0	+68.1	+69.3	+49.2	+41.7	+34.8	+33.0	+24.6	+14.3	+22.3	+20.3	+12.6
TYP. SECTION	VIADUCT (E)												RETAINED FILL (B)			(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**

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

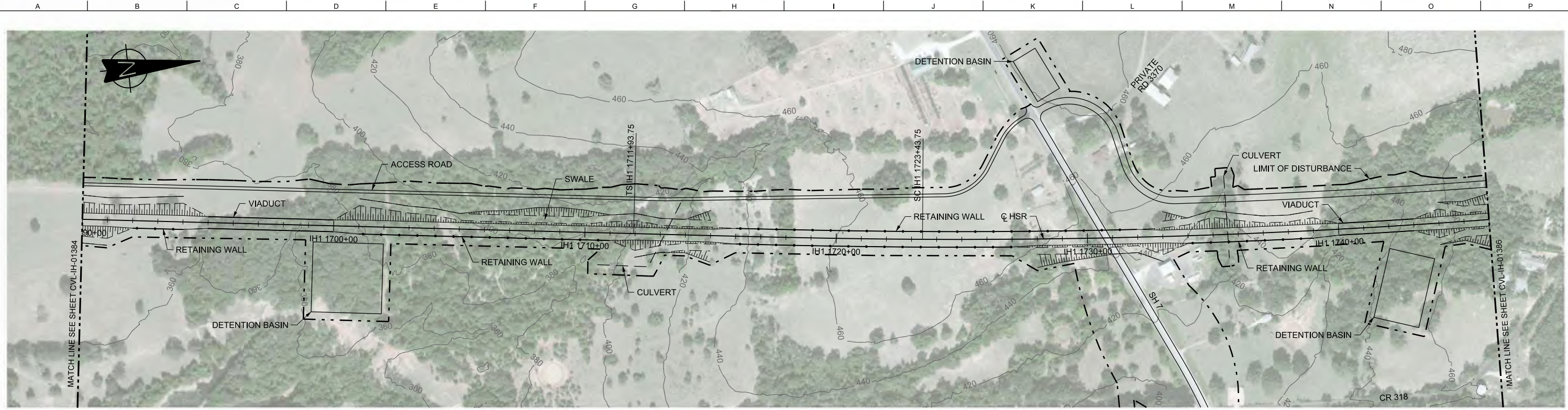
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 1634+00 TO IH1 1690+00**

Scale  
AS SHOWN

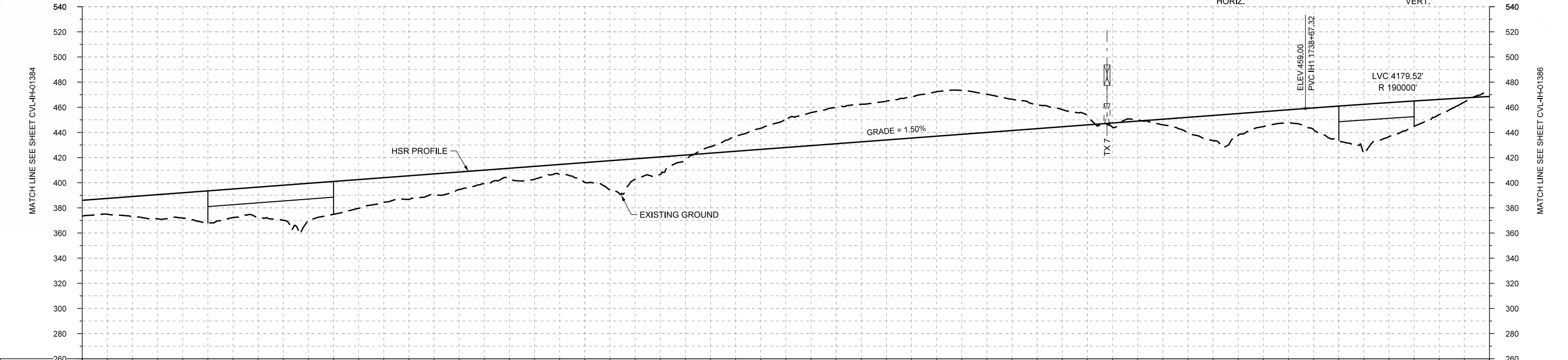
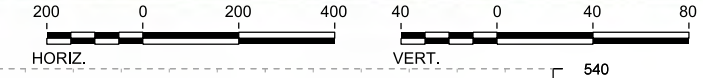
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01384	01





PLAN



PROFILE

STATIONING	IH1 1690+00		IH1 1700+00		IH1 1710+00		IH1 1720+00		IH1 1730+00		IH1 1740+00		IH1 1746+00																
HOR. ALIGNMENT	L=5118																												
VER. ALIGNMENT	L=5435.15 G=1.500%																												
CUT AND FILL	+12.6	+16.2	+20.2	+22.7	+27.9	+26.2	+19.5	+16.4	+11.0	+10.2	+15.8	+16.2	+4.0	-11.8	-22.3	-28.9	-30.9	-35.4	-30.3	-19.3	-6.8	-1.0	+11.7	+17.4	+10.2	+27.6	+27.1	+12.0	-4.7
TYP. SECTION	EMBANKMENT (A)		VIADUCT (E)		EMBANKMENT (A)		(B)	CUT (C)		(B)	EMBANKMENT (A)		CUT (C)		RETAINED CUT (D)				CUT (C)		(D)	EMBANKMENT (A)		VIADUCT (E)		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

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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

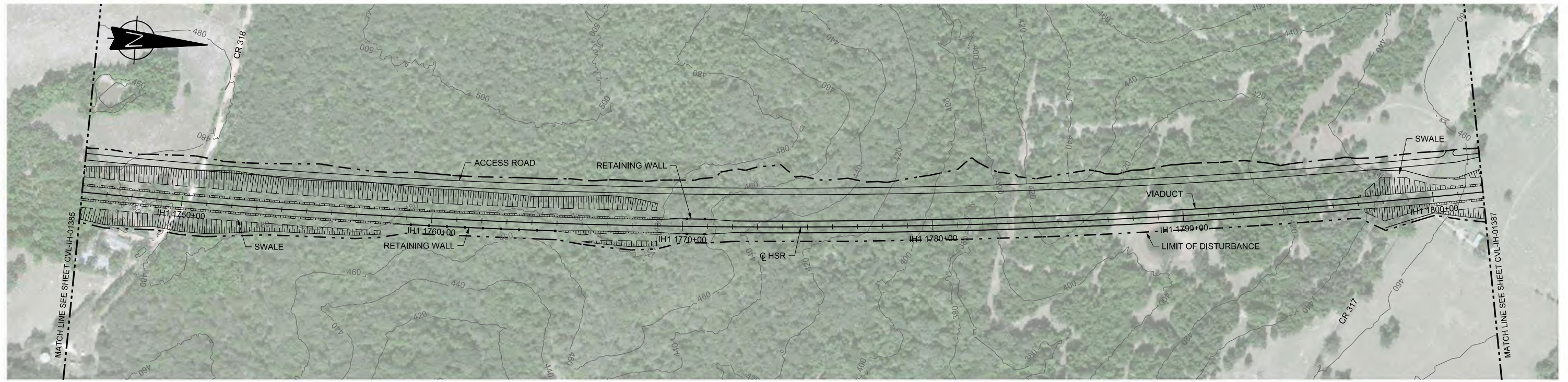
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CIVIL  
PLAN AND PROFILE  
IH1 1690+00 TO IH1 1746+00**

Scale  
AS SHOWN

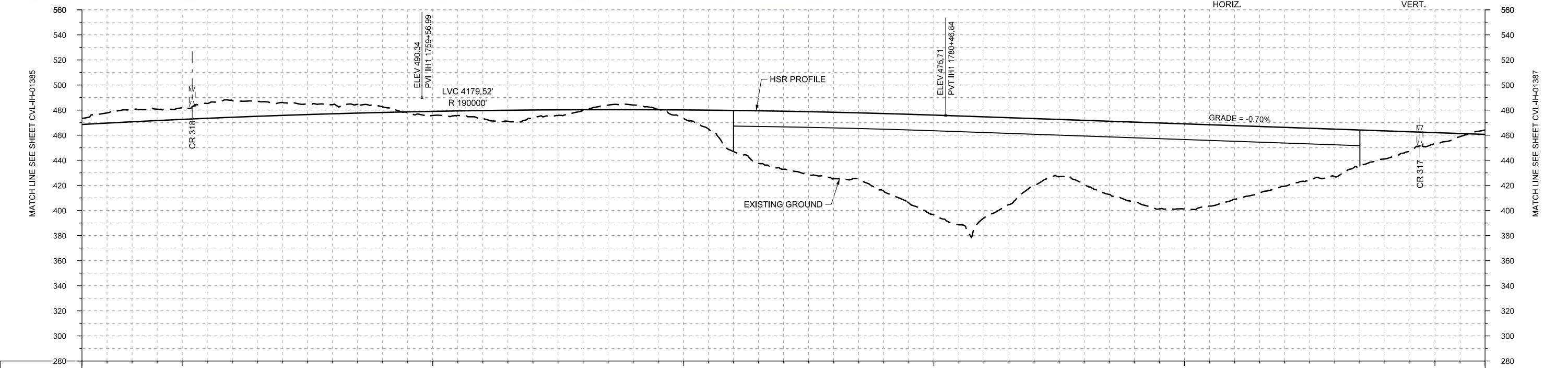
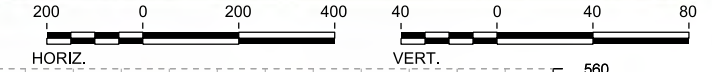
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01385	01





PLAN



STATIONING	IH1 1746+00	IH1 1750+00	IH1 1760+00	IH1 1770+00	IH1 1780+00	IH1 1790+00	IH1 1800+00	IH1 1802+00																					
HOR. ALIGNMENT	R=28000 L=10051																												
VER. ALIGNMENT	R=190000																												
CUT AND FILL	-1.7	-9.9	-9.3	-13.3	-10.3	-7.3	-4.4	+3.3	+6.5	+6.1	+0.6	-3.8	+6.7	+32.8	+46.2	+53.0	+61.8	+79.6	+80.6	+59.5	+51.0	+63.6	+67.9	+58.7	+46.9	+37.8	+22.3	+8.8	-3.6
TYP. SECTION	CUT (C)										(B)		VIADUCT (E)						EMBANKMENT (A)				(C)						

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

Client

**TEXAS CENTRAL**

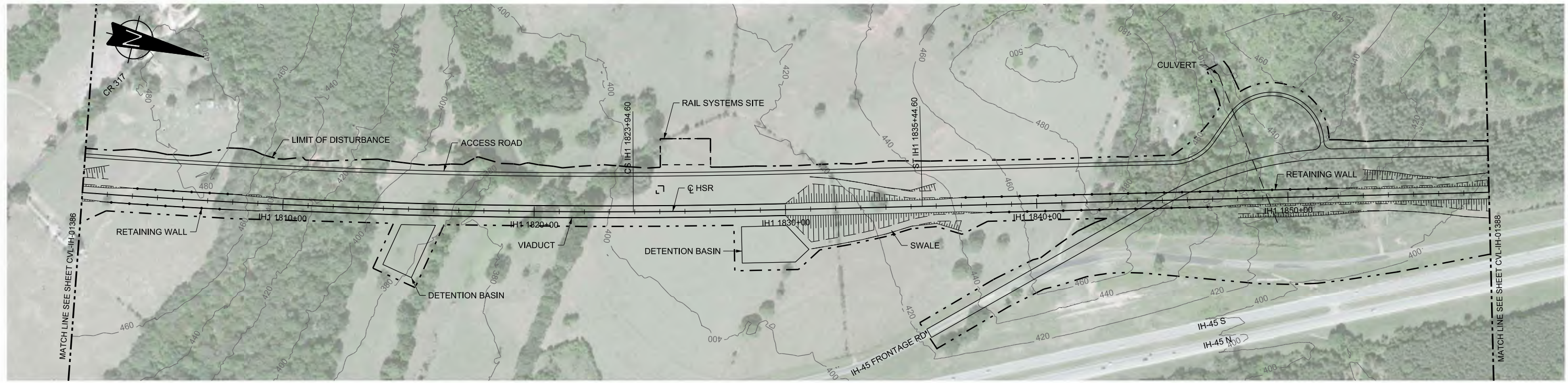
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

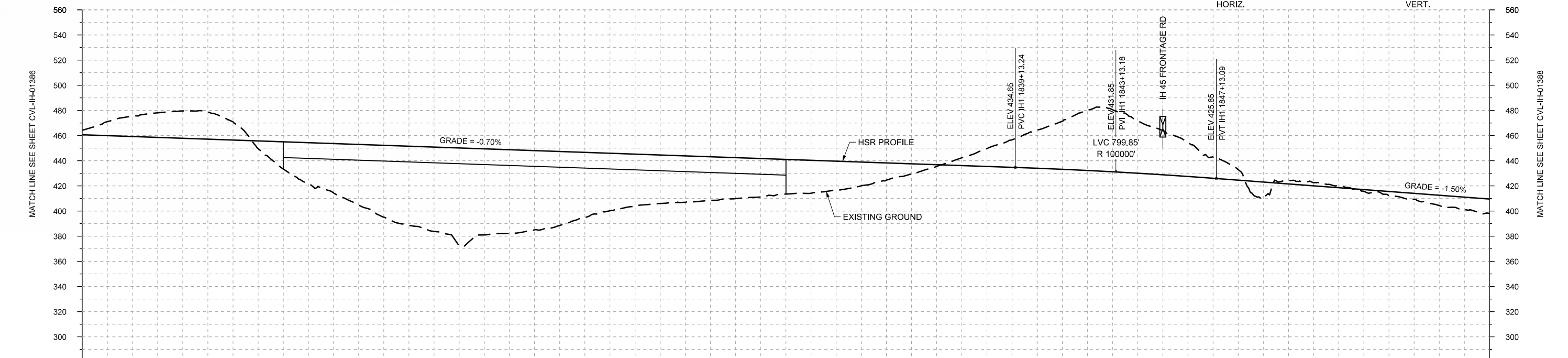
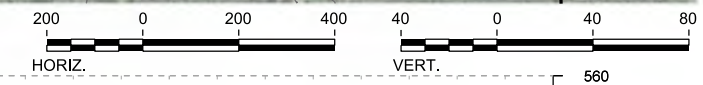
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 1746+00 TO IH1 1802+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01386	01	





PLAN



STATIONING	IH1 1802+00	IH1 1810+00	IH1 1820+00	IH1 1830+00	IH1 1840+00	IH1 1850+00	IH1 1858+00																							
HOR. ALIGNMENT	R=28000 L=10051		L=1150		L=29598																									
VER. ALIGNMENT	L=5866.40 G=-0.700%		R=100000		L=6968.56 G=-1.500%																									
CUT AND FILL	-3.6	-16.3	-21.8	-14.5	+21.6	+39.2	+57.1	+67.0	+68.4	+62.9	+51.5	+40.9	+36.9	+32.5	+27.5	+22.6	+13.6	+1.3	-14.3	-30.4	-47.8	-41.6	-27.0	-8.4	-2.6	-1.5	+3.4	+8.2	+11.4	
TYP. SECTION	RETAINED CUT (D)		VIADUCT (E)		EMBANKMENT (A)		CUT (C)		RETAINED CUT (D)		CUT (C)		EMBANKMENT (A)																	

PROFILE

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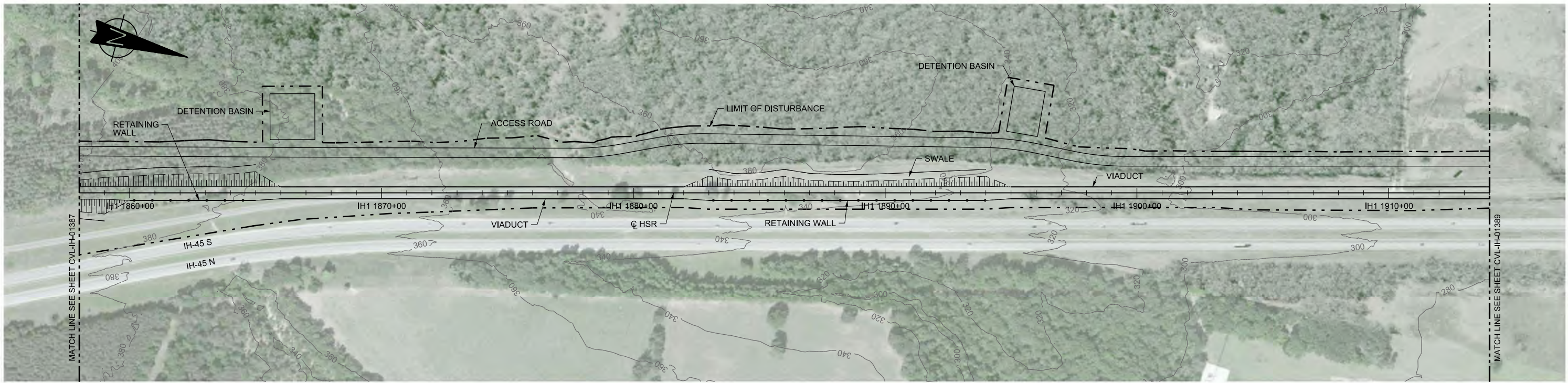
**FRESE AND NICHOLS**  
2711 North Haskell Ave., Suite 3300  
Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

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

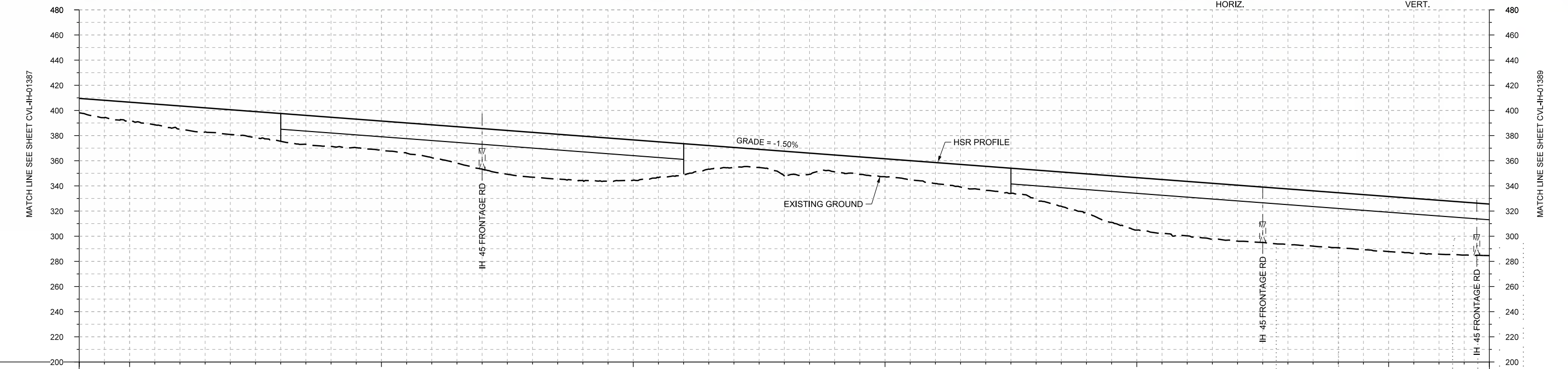
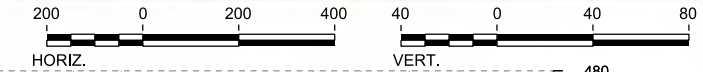
Drawing Title  
**IH (45) SEGMENT CIVIL  
PLAN AND PROFILE  
IH1 1802+00 TO IH1 1858+00**

Scale  
AS SHOWN  
Drawing Status  
**FINAL DRAFT**  
Job No 234180 Drawing No CVL-IH-01387 Rev 01





PLAN



PROFILE

STATIONING	IH1 1858+00	IH1 1860+00	IH1 1870+00	IH1 1880+00	IH1 1890+00	IH1 1900+00	IH1 1910+00	IH1 1914+00																					
HOR. ALIGNMENT	L=29598																												
VER. ALIGNMENT	L=6968.56 G=-1.500%																												
CUT AND FILL	+11.4	+15.4	+18.5	+19.6	+22.0	+23.1	+22.9	+26.1	+32.2	+35.6	+35.2	+32.0	+24.6	+15.8	+19.5	+13.3	+14.2	+16.6	+19.0	+22.9	+31.2	+41.7	+43.2	+44.4	+44.2	+43.6	+43.7	+42.8	+41.0
TYP. SECTION	EMBANKMENT (P)			VIADUCT (T)				EMBANKMENT (P)				VIADUCT (T)																	

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

**TEXAS CENTRAL**

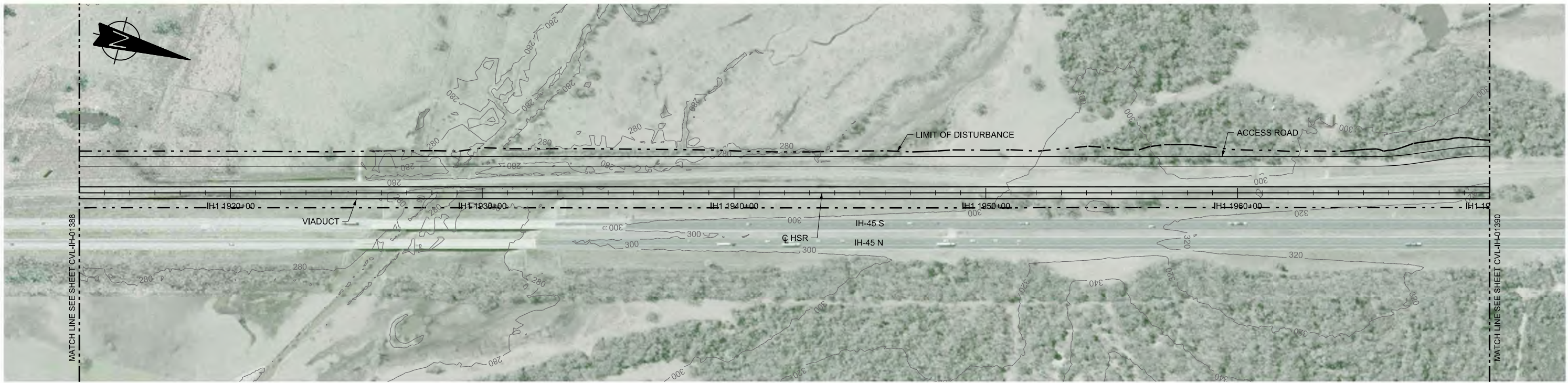
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

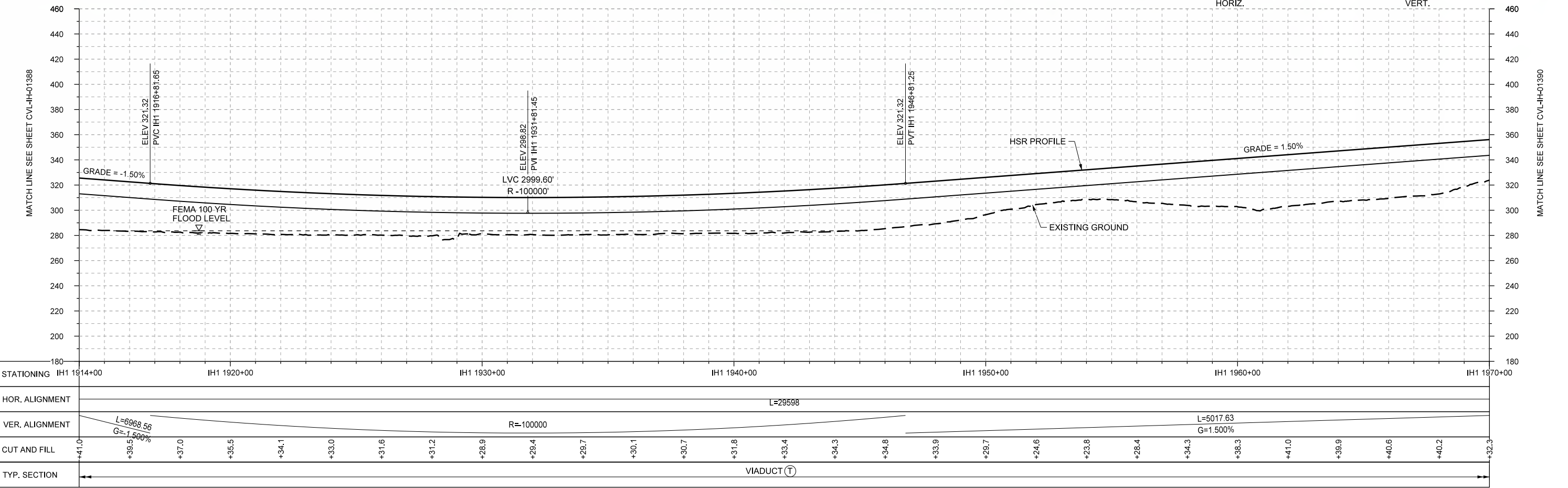
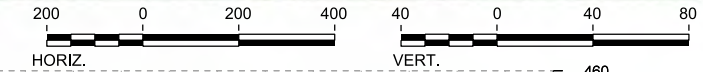
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 1858+00 TO IH1 1914+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01388
Rev	01





PLAN



PROFILE

STATIONING	IH1 1914+00	IH1 1920+00	IH1 1930+00	IH1 1940+00	IH1 1950+00	IH1 1960+00	IH1 1970+00
HOR. ALIGNMENT	L=29598						
VER. ALIGNMENT	L=6968.56 G=-1.500%						
CUT AND FILL	+41.0	+39.5	+37.0	+36.5	+34.1	+33.0	+31.6
TYP. SECTION	VIADUCT (T)						

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**

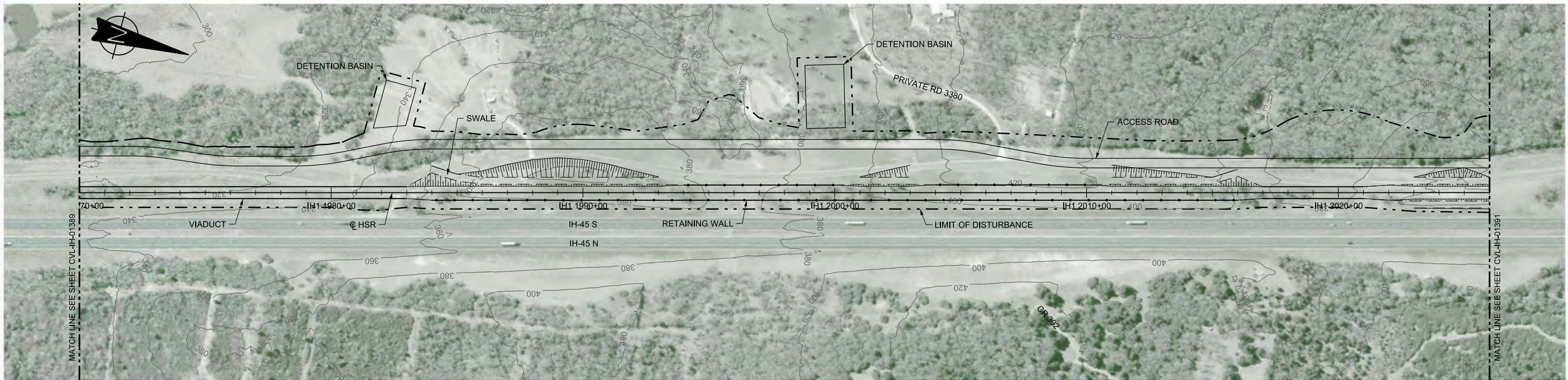
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

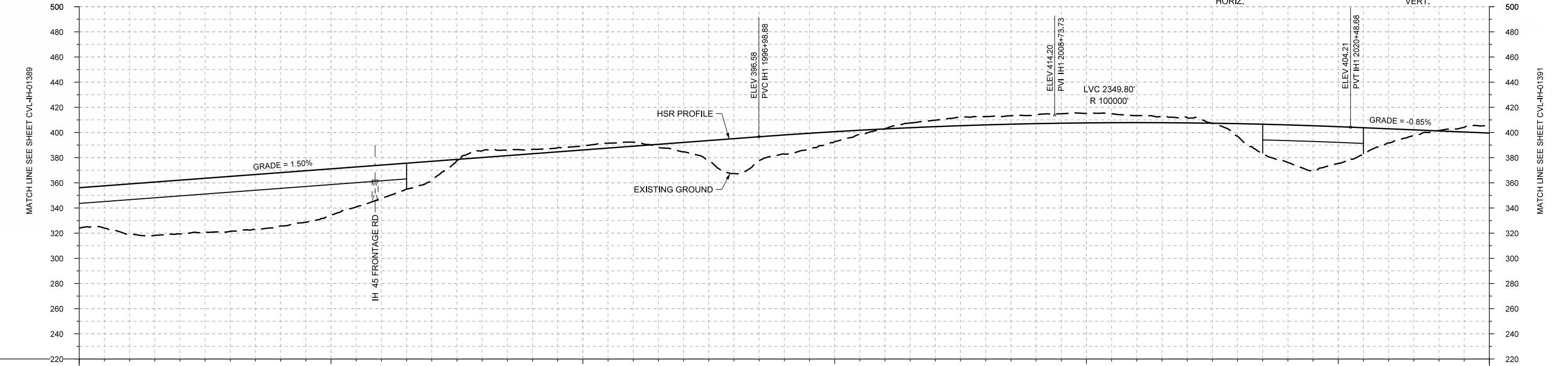
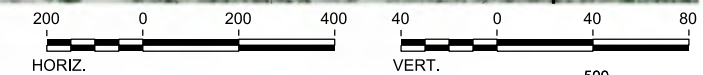
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 1914+00 TO IH1 1970+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01389	01	





PLAN



PROFILE

STATIONING	IH1 1970+00	IH1 1980+00	IH1 1990+00	IH1 2000+00	IH1 2010+00	IH1 2020+00	IH1 2026+00
HOR. ALIGNMENT	L=29598						
VER. ALIGNMENT	L=5017.63 G=1.500%						
CUT AND FILL	+32.3	+40.0	+42.7	+43.7	+42.5	+36.8	+26.5
			+15.2	-5.4	-3.5	-3.3	-3.2
			+7.5	+27.7	+15.1	+7.9	-0.1
							-5.2
TYP. SECTION	VIADUCT (T)		(P)	(Q)	CUT (R)		RETAINED FILL (Q)
							CUT (R)
							RETAINED CUT (S)
							CUT (R)
							(Q)
							VIADUCT (T)
							CUT (R)

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

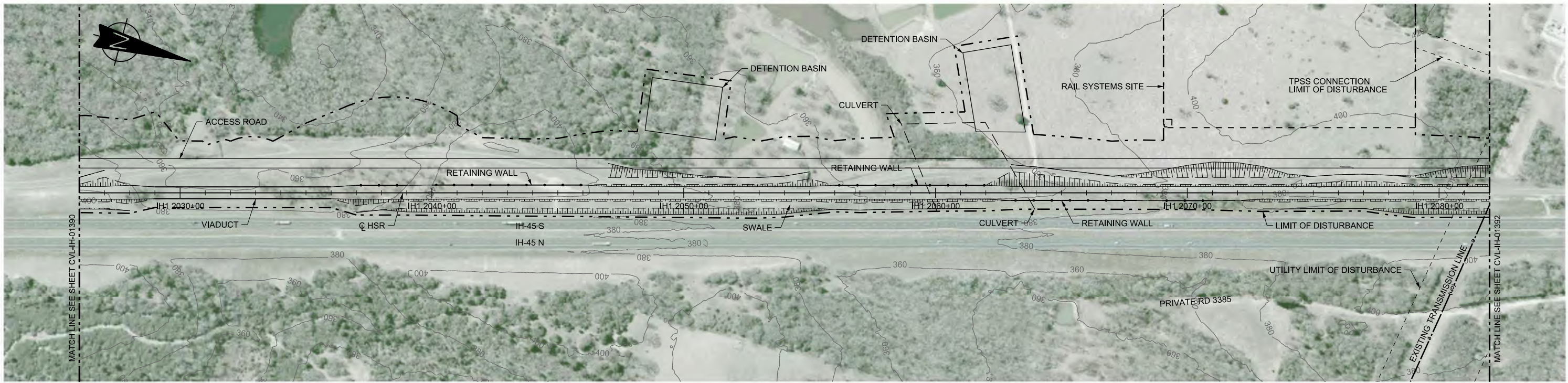
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

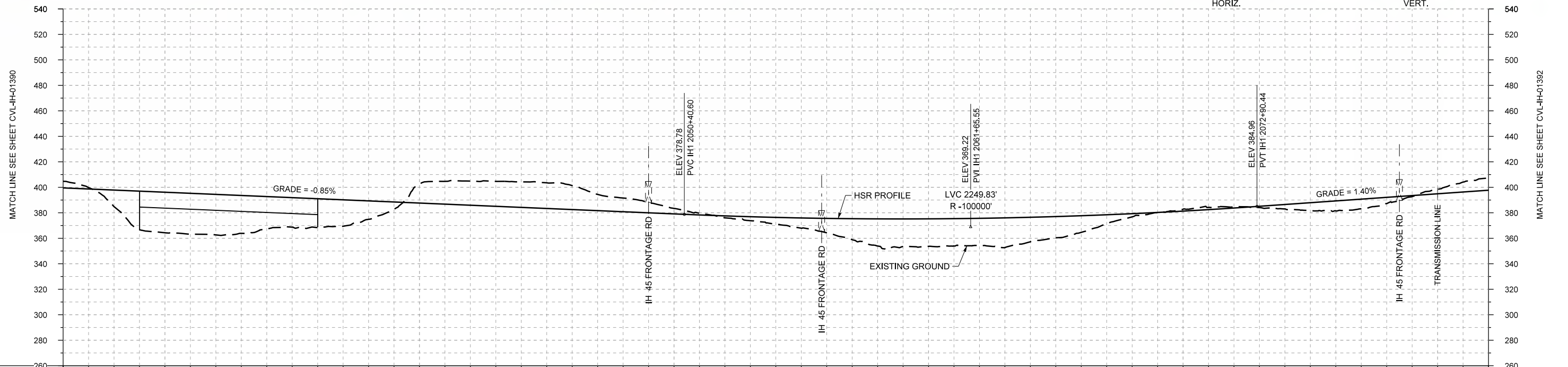
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 1970+00 TO IH1 2026+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01390
Rev	01





PLAN



PROFILE

STATIONING	IH1 2026+00	IH1 2030+00	IH1 2040+00	IH1 2050+00	IH1 2060+00	IH1 2070+00	IH1 2080+00	IH1 2082+00																					
HOR. ALIGNMENT	L=29598																												
VER. ALIGNMENT	L=2991.93 G=-0.850%				R=100000		L=2958.25 G=1.400%																						
CUT AND FILL	-5.2	+13.0	+31.8	+31.8	+25.4	+22.5	+14.5	-14.8	-19.0	-20.0	-18.8	-10.8	-4.3	+1.6	+5.4	+11.3	+21.2	+21.5	+21.4	+19.3	+13.1	+2.5	-1.5	-0.9	+3.4	+7.9	+4.9	-3.4	-9.5
TYP. SECTION	CUT (R)		VIADUCT (T)		P		Q		CUT (R)				EMBANKMENT (P)				Q		CUT (R)		EMBANKMENT (P)		CUT (R)						

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

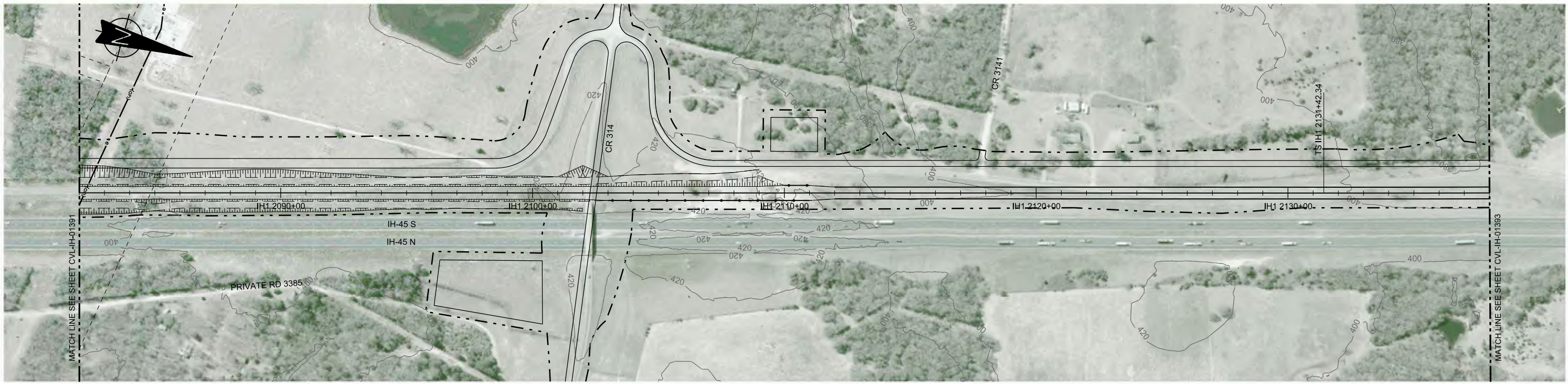
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2026+00 TO IH1 2082+00**

Scale  
AS SHOWN

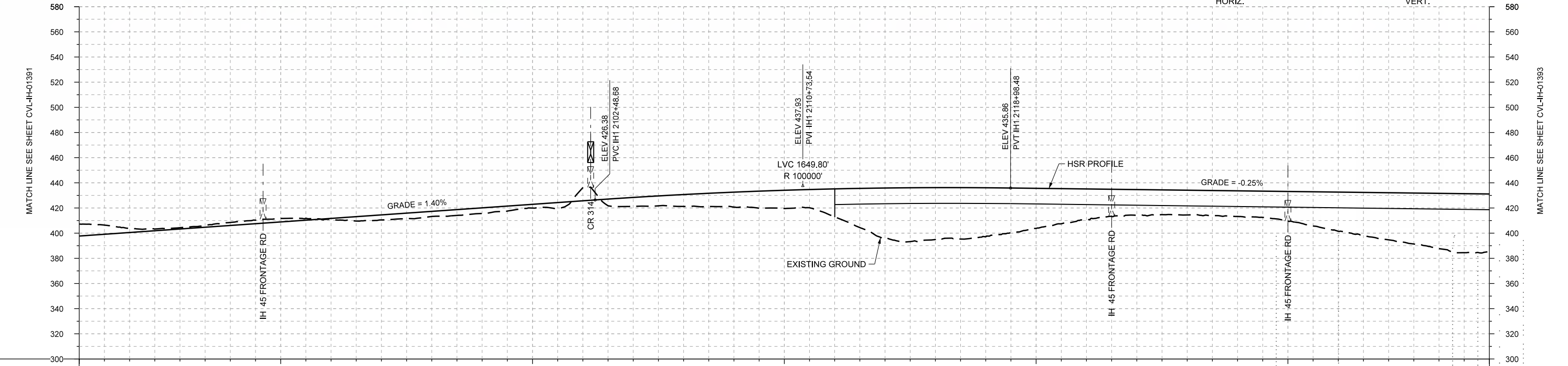
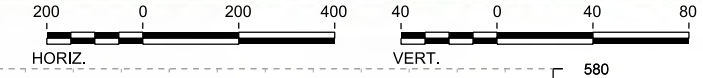
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01391	01





PLAN



PROFILE

STATIONING	IH1 2082+00	IH1 2090+00	IH1 2100+00	IH1 2110+00	IH1 2120+00	IH1 2130+00	IH1 2138+00																						
HOR. ALIGNMENT	L=29598																												
VER. ALIGNMENT	L=2958.25 G=1.400%			R=100000		L=6028.18 G=-0.250%																							
CUT AND FILL	-0.5	-3.3	-1.0	-2.4	-2.8	+0.6	+4.0	+4.0	+4.5	+3.0	-10.4	+7.1	+9.5	+11.9	+14.5	+22.2	+40.2	+41.3	+39.0	+31.8	+24.4	+20.6	+19.6	+20.3	+23.5	+31.1	+37.4	+43.9	+45.7
TYP. SECTION	CUT (R)				(P)	CUT (R)	EMBANKMENT (P)			RETAINED FILL (Q)	VIADUCT (T)																		

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

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2082+00 TO IH1 2138+00**

Scale

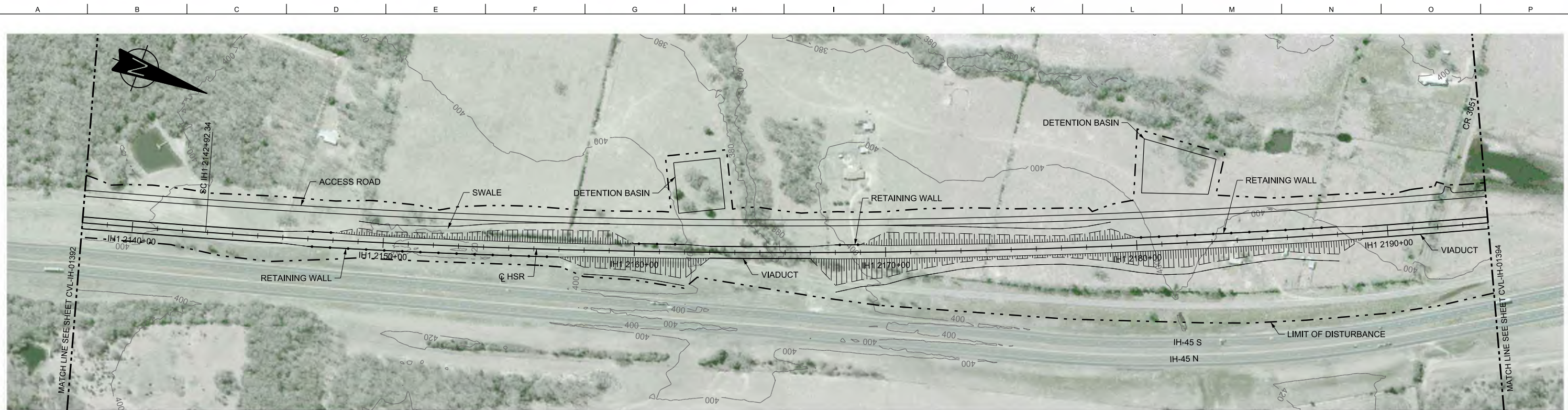
AS SHOWN

Drawing Status

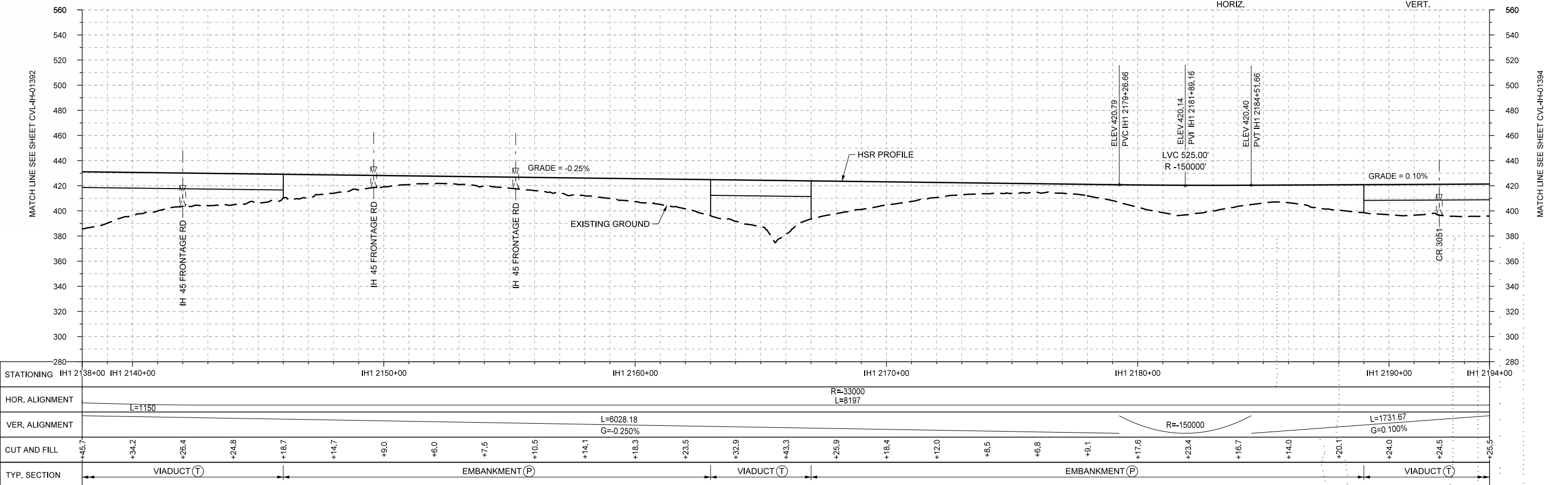
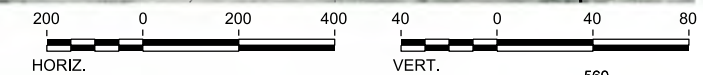
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01392	01





PLAN



PROFILE

STATIONING	IH1 2138+00	IH1 2140+00	IH1 2150+00	IH1 2160+00	IH1 2170+00	IH1 2180+00	IH1 2190+00	IH1 2194+00																							
HOR. ALIGNMENT	L=1150		R=33000 L=8197			R=150000																									
VER. ALIGNMENT			L=6028.18 G=-0.250%			L=1731.67 G=0.100%																									
CUT AND FILL	+45.7	+34.2	+26.4	+24.8	+16.7	+14.7	+9.0	+6.0	+7.5	+10.5	+14.1	+16.3	+23.5	+32.9	+43.3	+25.9	+18.4	+12.0	+8.5	+6.8	+9.1	+17.6	+23.4	+16.7	+14.0	+20.1	+24.0	+24.5	+25.5		
TYP. SECTION	VIADUCT (T)		EMBANKMENT (P)			VIADUCT (T)		EMBANKMENT (P)			VIADUCT (T)			EMBANKMENT (P)			VIADUCT (T)			EMBANKMENT (P)			VIADUCT (T)			EMBANKMENT (P)			VIADUCT (T)		

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**

Arup Texas, Inc.  
10370 Richmond Ave., Suite 475  
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Texas Registered Engineering Firm: F-2144

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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

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2138+00 TO IH1 2194+00**

Scale

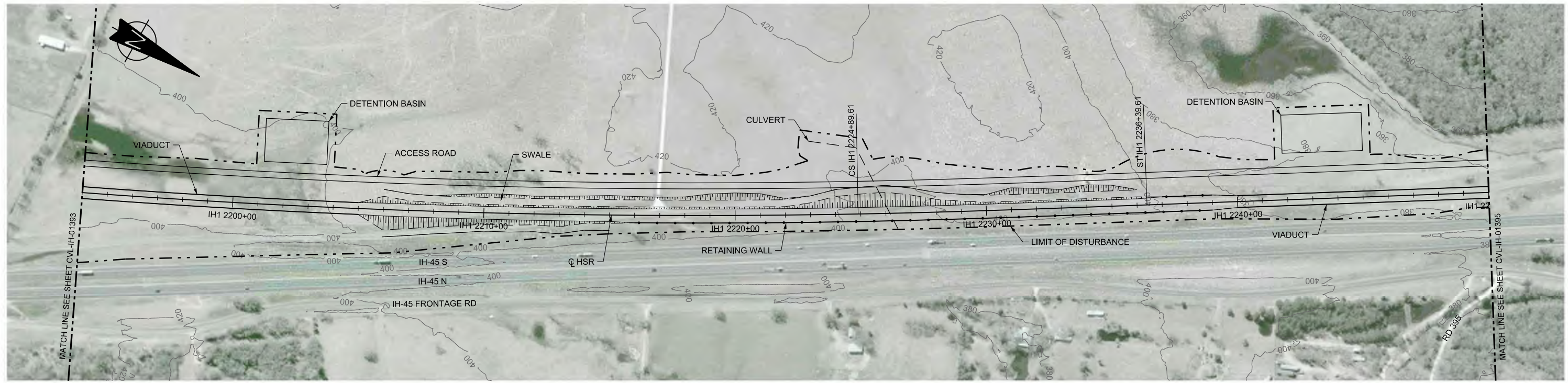
AS SHOWN

Drawing Status

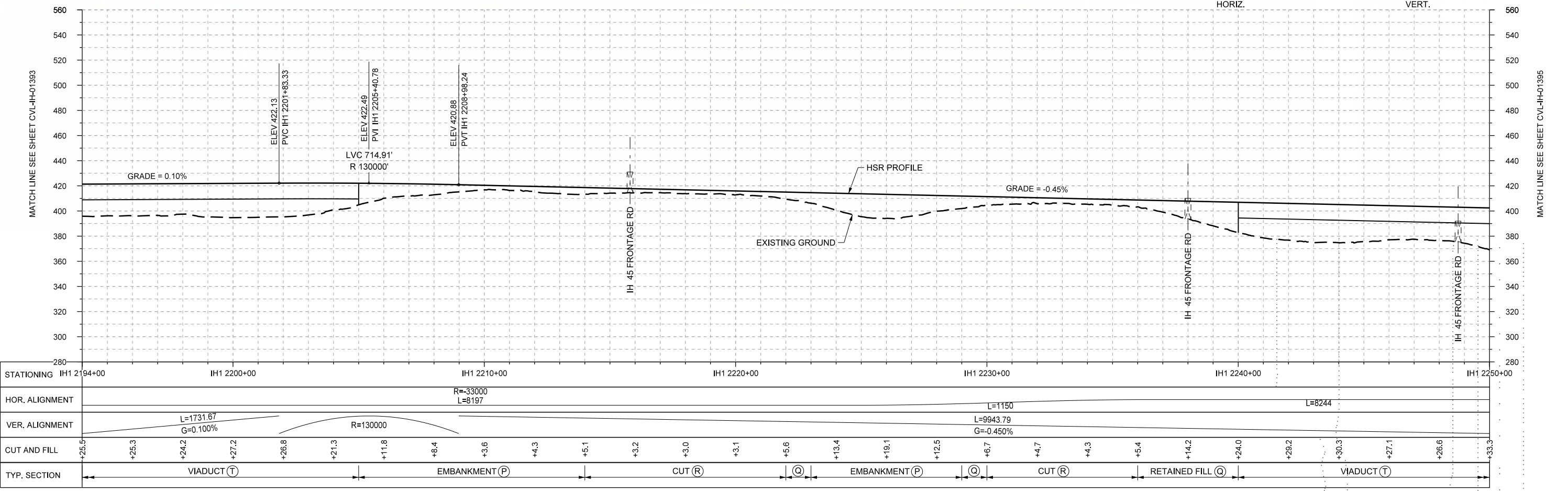
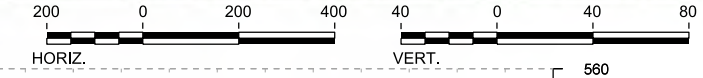
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01393	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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Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

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

Drawing Title

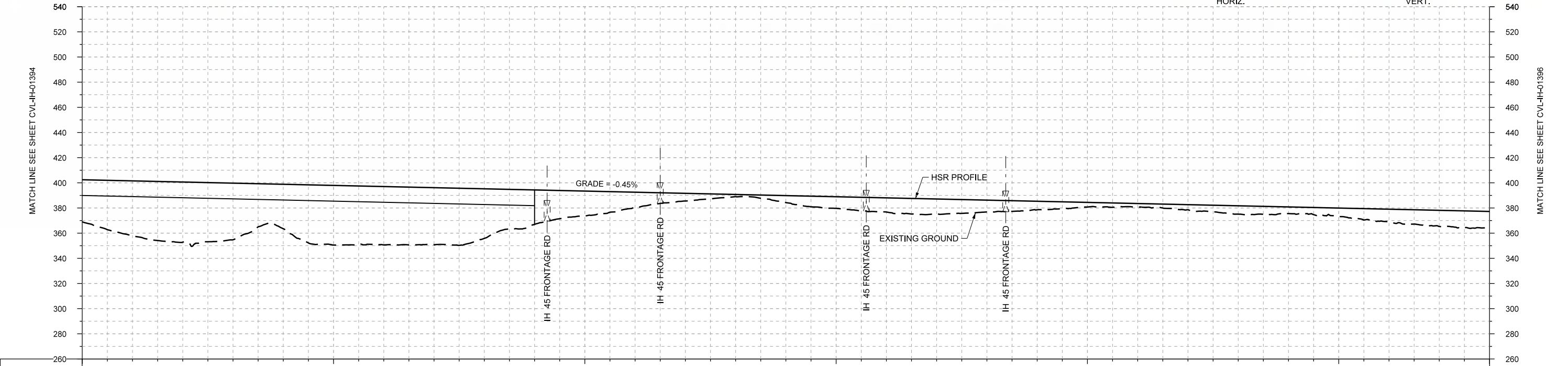
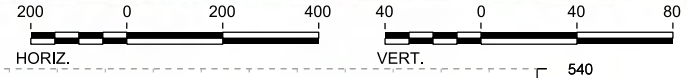
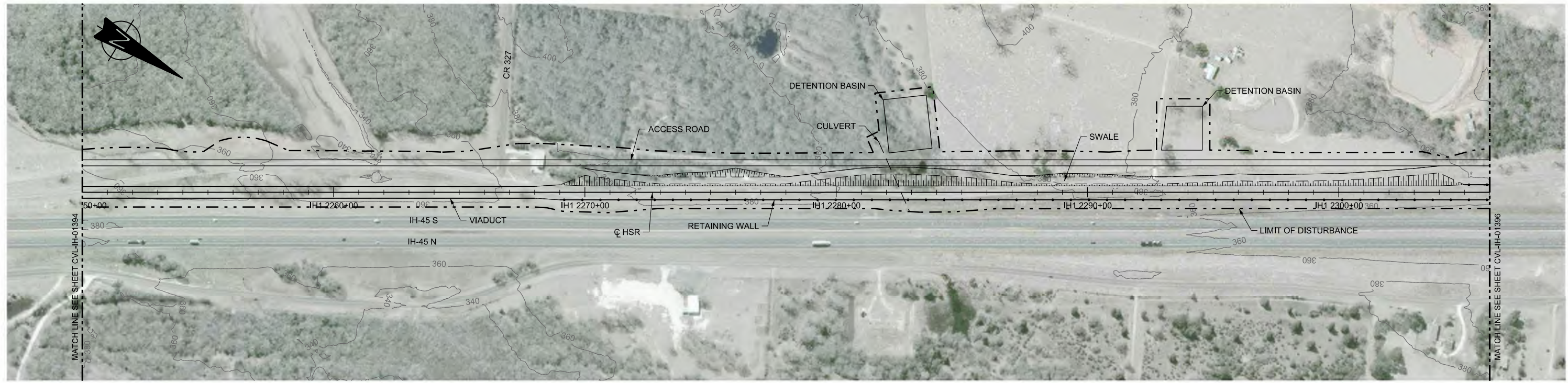
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2194+00 TO IH1 2250+00**

Scale  
AS SHOWN

Drawing Status  
**FINAL DRAFT**

Job No 234180	Drawing No CVL-IH-01394	Rev 01
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STATIONING	IH1 2250+00	IH1 2260+00	IH1 2270+00	IH1 2280+00	IH1 2290+00	IH1 2300+00	IH1 2306+00																						
HOR. ALIGNMENT	L=8244																												
VER. ALIGNMENT	L=9943.79 G=-0.450%																												
CUT AND FILL	+33.3	+43.7	+47.8	+45.0	+35.3	+47.4	+46.4	+45.3	+39.4	+27.3	+19.8	+11.8	+6.0	+1.7	+5.5	+9.2	+11.2	+11.9	+9.4	+6.8	+3.7	+2.8	+4.0	+6.6	+5.3	+6.8	+9.9	+12.8	+13.6
TYP. SECTION	VIADUCT (T)			EMBANKMENT (P)		CUT (R)		EMBANKMENT (P)		CUT (R)		EMBANKMENT (P)		CUT (R)		EMBANKMENT (P)		CUT (R)		EMBANKMENT (P)		CUT (R)		EMBANKMENT (P)		CUT (R)		EMBANKMENT (P)	

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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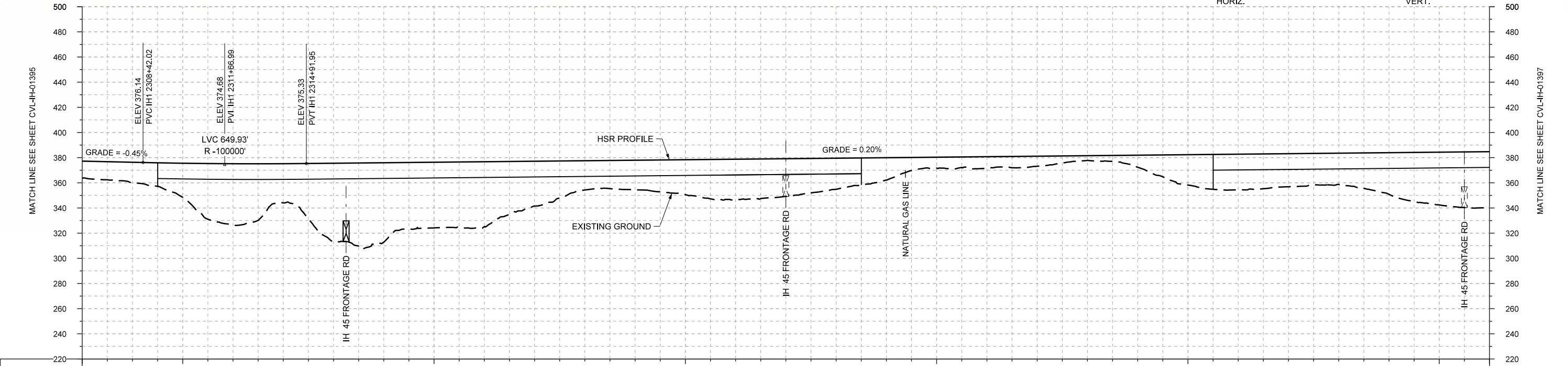
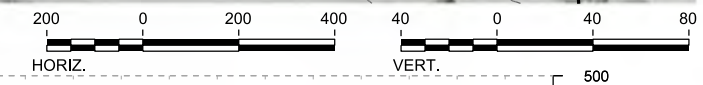
Drawing Title  
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2250+00 TO IH1 2306+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01395
Rev	01





PLAN



STATIONING	IH1 2306+00	IH1 2310+00	IH1 2320+00	IH1 2330+00	IH1 2340+00	IH1 2350+00	IH1 2360+00	IH1 2362+00																					
HOR. ALIGNMENT	L=8244		L=1150			R=33000 L=3595																							
VER. ALIGNMENT	L=9943.79 G=-0.450%		R=100000			L=10377.89 G=0.200%																							
CUT AND FILL	+13.6	+16.0	+27.1	+48.9	+31.1	+62.4	+63.1	+52.1	+51.6	+35.6	+23.2	+23.4	+27.8	+32.0	+30.0	+24.7	+17.7	+8.5	+8.9	+7.9	+3.7	+9.5	+24.1	+26.3	+26.2	+24.9	+33.1	+41.9	+44.6
TYP. SECTION	RETAINED FILL (Q)		VIADUCT (T)			EMBANKMENT (P)			VIADUCT (T)																				

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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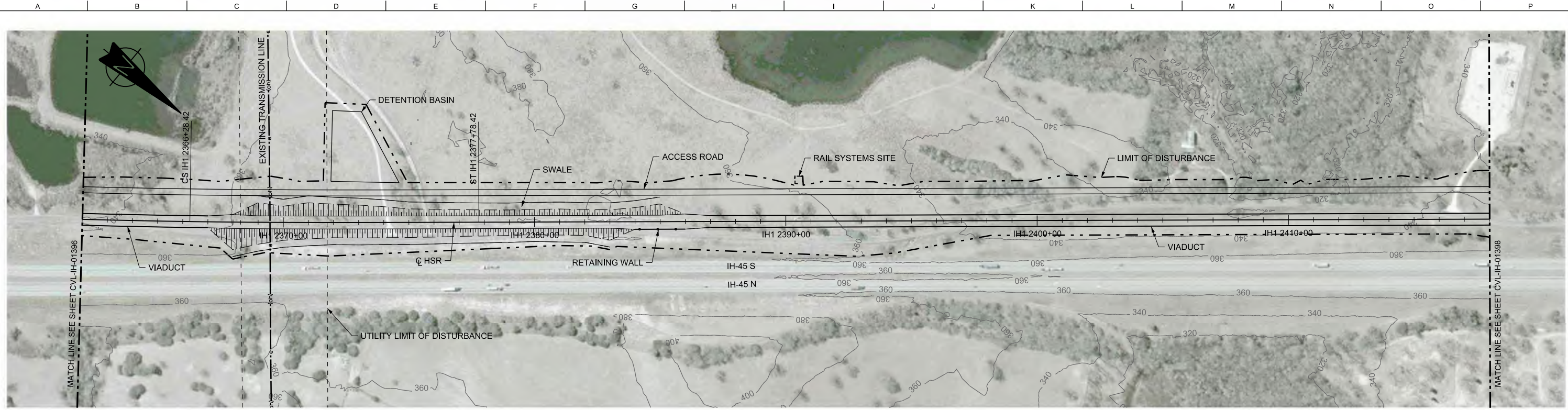


Client  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

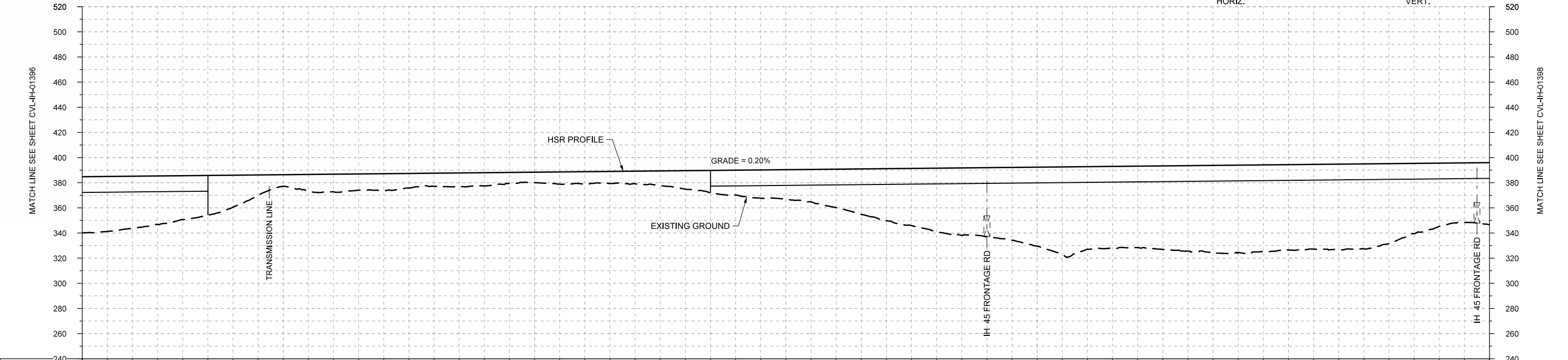
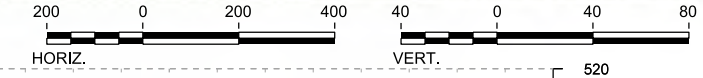
Drawing Title  
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2306+00 TO IH1 2362+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01396	01	





PLAN



STATIONING	IH1 2362+00	IH1 2370+00	IH1 2380+00	IH1 2390+00	IH1 2400+00	IH1 2410+00	IH1 2418+00																						
HOR. ALIGNMENT	R=33000 L=3595		L=1150		L=13653																								
VER. ALIGNMENT					L=10377.89 G=0.200%																								
CUT AND FILL	+44.6	+41.5	+34.9	+25.4	+9.1	+14.0	+13.6	+10.3	+10.4	+8.2	+9.3	+10.0	+14.7	+19.8	+23.4	+30.6	+41.4	+50.5	+54.7	+62.8	+65.7	+64.7	+68.0	+68.7	+67.8	+67.9	+63.6	+50.3	+48.3
TYP. SECTION	VIADUCT (T)		EMBANKMENT (P)										VIADUCT (T)																

PROFILE

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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Dallas, Texas 75204  
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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

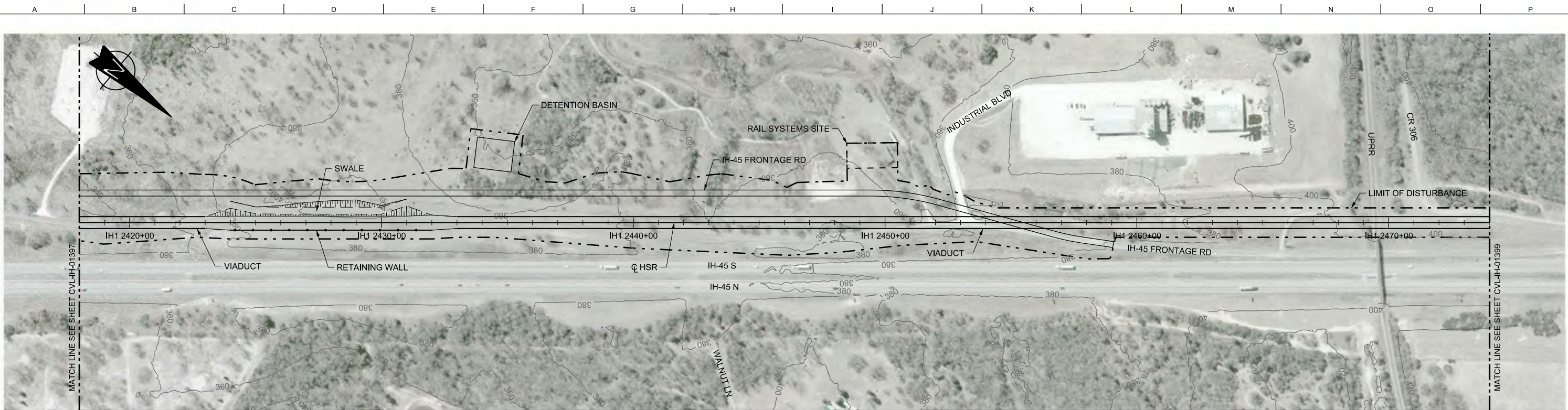
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2362+00 TO IH1 2418+00**

Scale  
AS SHOWN

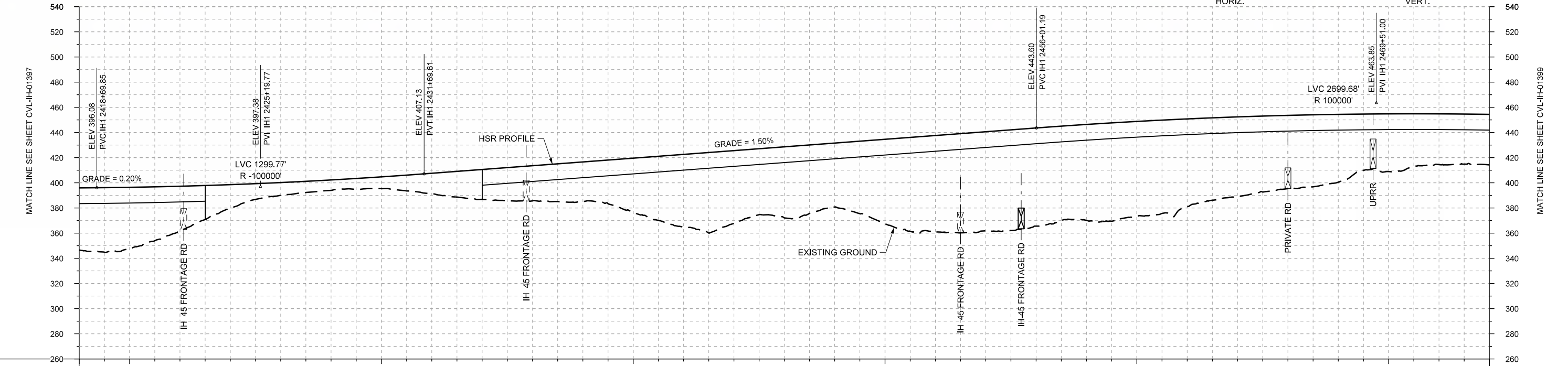
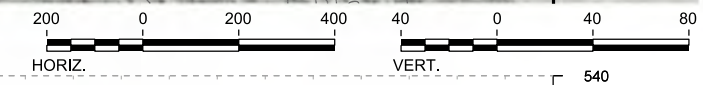
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01397	01





PLAN



PROFILE

STATIONING	IH1 2418+00	IH1 2420+00	IH1 2430+00	IH1 2440+00	IH1 2450+00	IH1 2460+00	IH1 2470+00	IH1 2474+00																					
HOR. ALIGNMENT	L=13653																												
VER. ALIGNMENT	L=1097.88 G=0.200%		R=100000			L=2431.58 G=1.500%		R=100000																					
CUT AND FILL	+49.3	+48.4	+38.0	+18.4	+10.2	+8.3	+9.3	+16.3	+23.8	+27.9	+31.6	+43.2	+58.1	+57.7	+56.5	+50.9	+67.2	+76.6	+78.8	+78.0	+76.3	+75.6	+68.8	+63.4	+56.2	+53.9	+45.9	+40.3	+40.1
TYP. SECTION	VIADUCT (T)		(P)	(Q)	CUT (R)		RETAINED FILL (Q)										VIADUCT (T)												

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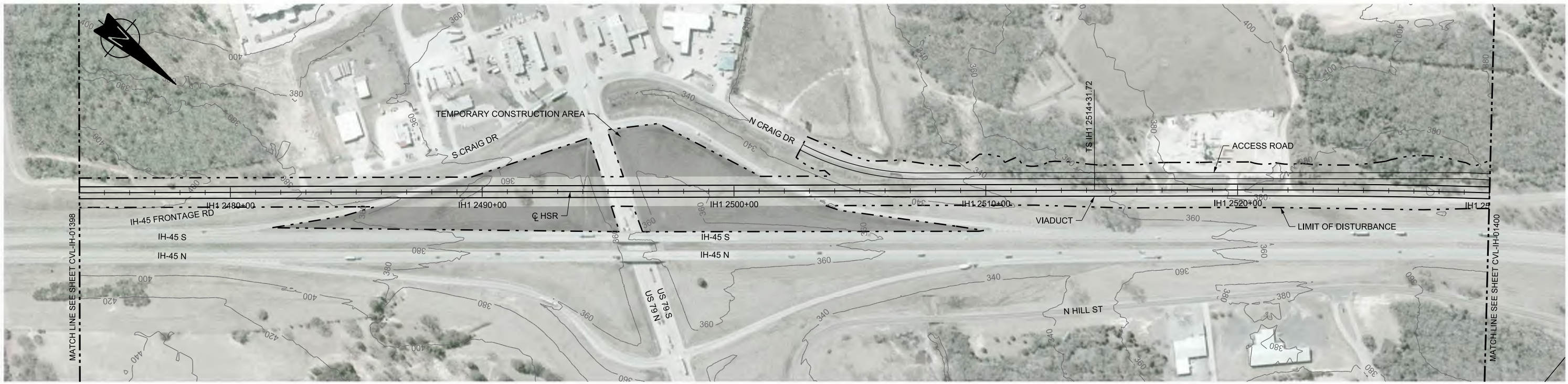
**FREESSE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
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 Texas Registered Engineering Firm: F-2144

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

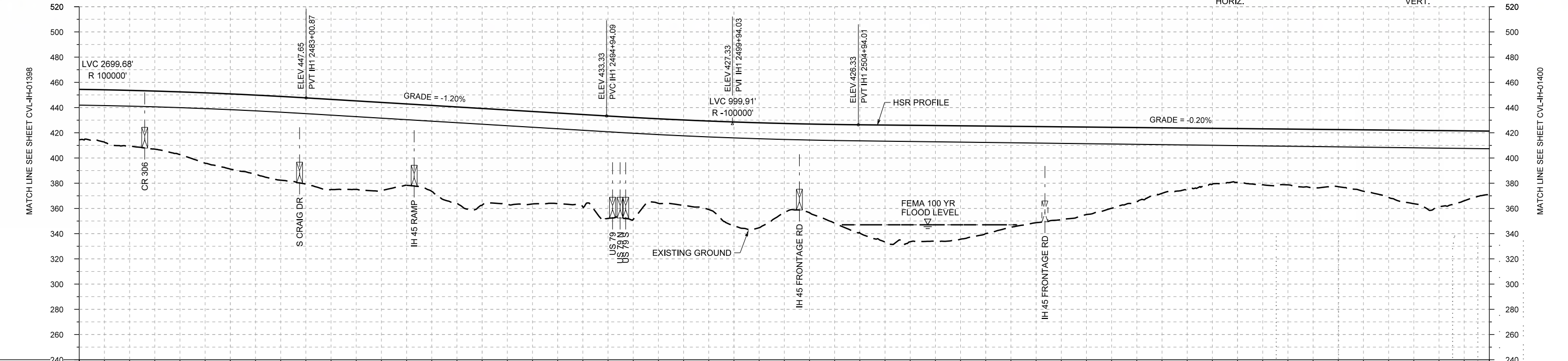
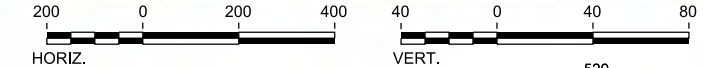
Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH1 2418+00 TO IH1 2474+00**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No 234180 Drawing No CVL-IH-01398 Rev 01





PLAN



PROFILE

STATIONING	IH1 2474+00	IH1 2480+00	IH1 2490+00	IH1 2500+00	IH1 2510+00	IH1 2520+00	IH1 2530+00
HOR. ALIGNMENT	L=13653						L=1750
VER. ALIGNMENT	R=100000		L=1193.22 G=-1.200%			R=100000	
CUT AND FILL	+40.1	+44.4	+43.7	+59.6	+66.4	+71.5	+70.1
TYP. SECTION	VIADUCT (T)						
	+68.2	+73.4	+73.3	+80.9	+67.8	+82.3	+70.6
	+78.2	+69.4	+58.8	+43.3	+42.7	+44.2	+45.2
	+53.5	+60.4	+50.1				

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-1990

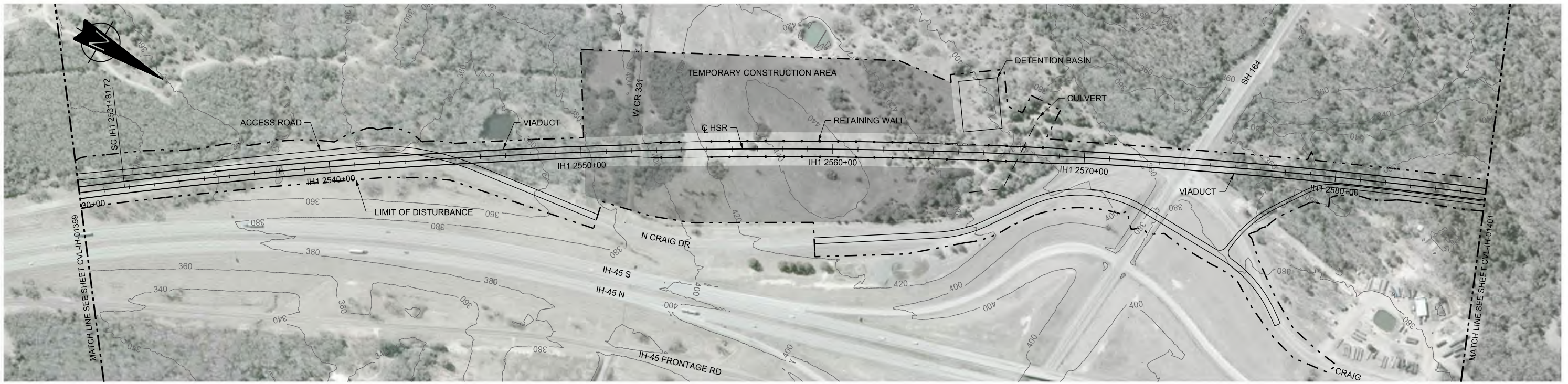
**FREESSE AND NICHOLS**  
2711 North Haskell Ave., Suite 3300  
Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

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

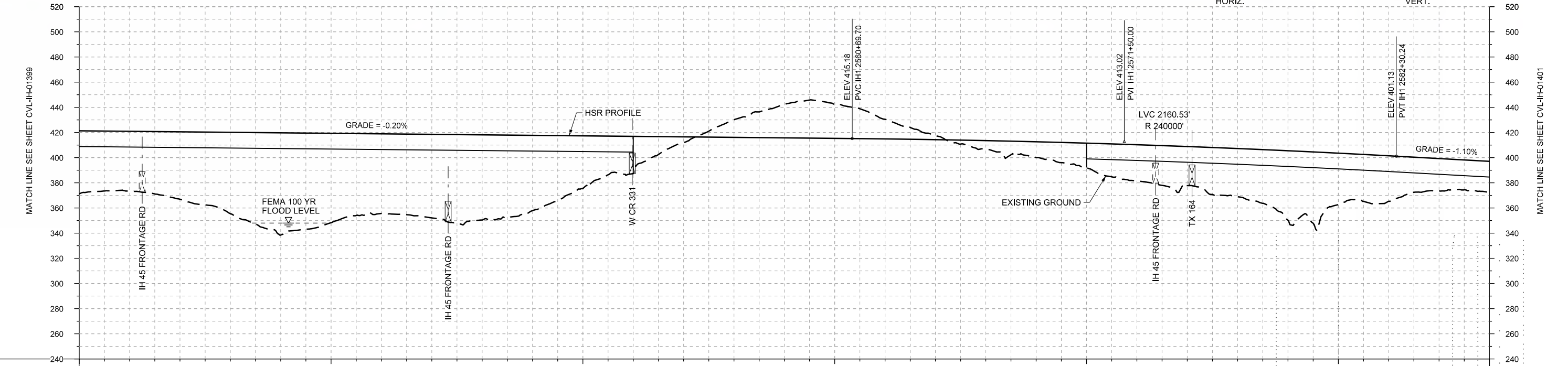
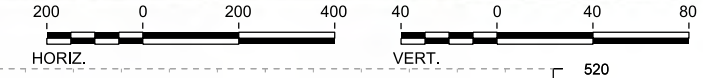
Drawing Title  
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PLAN AND PROFILE  
IH1 2474+00 TO IH1 2530+00**

Scale AS SHOWN	Drawing Status <b>FINAL DRAFT</b>
Job No 234180	Drawing No CVL-IH-01399
Rev 01	





PLAN



PROFILE

STATIONING	IH1 2530+00	IH1 2540+00	IH1 2550+00	IH1 2560+00	IH1 2570+00	IH1 2580+00	IH1 2586+00																						
HOR. ALIGNMENT	L=1750		R=22000 L=7857																										
VER. ALIGNMENT	L=5575.70 G=-0.200%																												
CUT AND FILL	+50.1	+47.5	+53.5	+64.6	+81.2	+71.0	+63.3	+66.4	+67.7	+59.8	+41.8	+29.7	+4.4	-14.0	-26.4	-27.0	-15.6	-3.2	+6.4	+12.5	+19.3	+28.8	+31.0	+38.3	+55.2	+40.9	+36.2	+25.7	+24.9
TYP. SECTION	VIADUCT (T)				(B)		RETAINED CUT (D)				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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Client  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

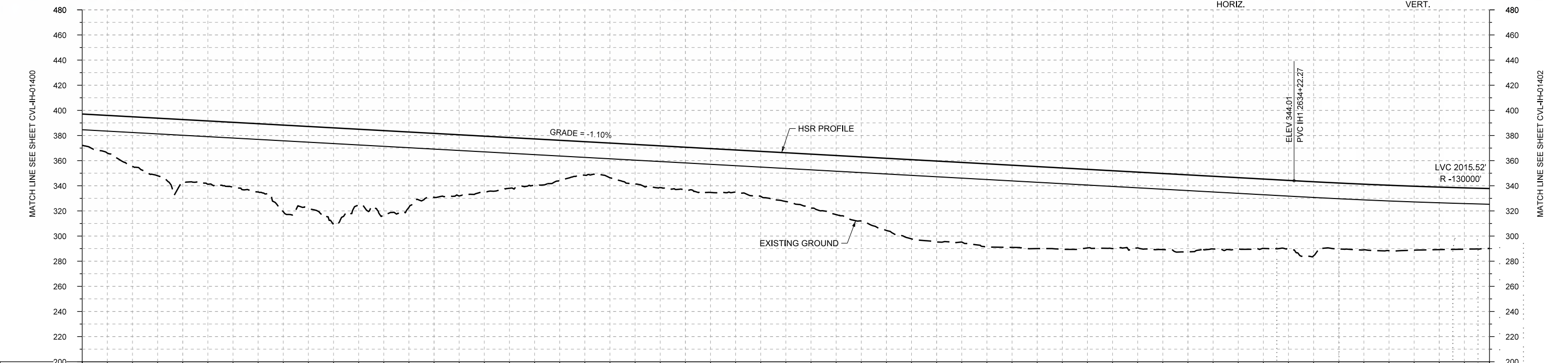
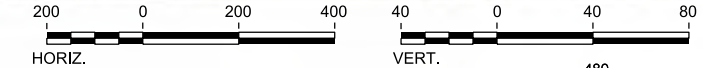
Drawing Title  
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2530+00 TO IH1 2586+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01400
Rev	01





PLAN



STATIONING	IH1 2586+00	IH1 2590+00	IH1 2600+00	IH1 2610+00	IH1 2620+00	IH1 2630+00	IH1 2640+00	IH1 2642+00																					
HOR. ALIGNMENT	R=22000 L=7857				L=1750		L=5342																						
VER. ALIGNMENT					L=5192.03 G=-1.100%		R=130000																						
CUT AND FILL	+24.9	+38.6	+48.7	+51.6	+66.9	+76.0	+67.7	+50.9	+44.6	+37.2	+26.7	+31.7	+34.0	+33.6	+36.8	+47.1	+57.5	+64.4	+66.3	+65.3	+62.6	+60.4	+61.3	+56.7	+54.4	+52.4	+52.1	+49.7	+47.5
TYP. SECTION	VIADUCT (E)																												

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

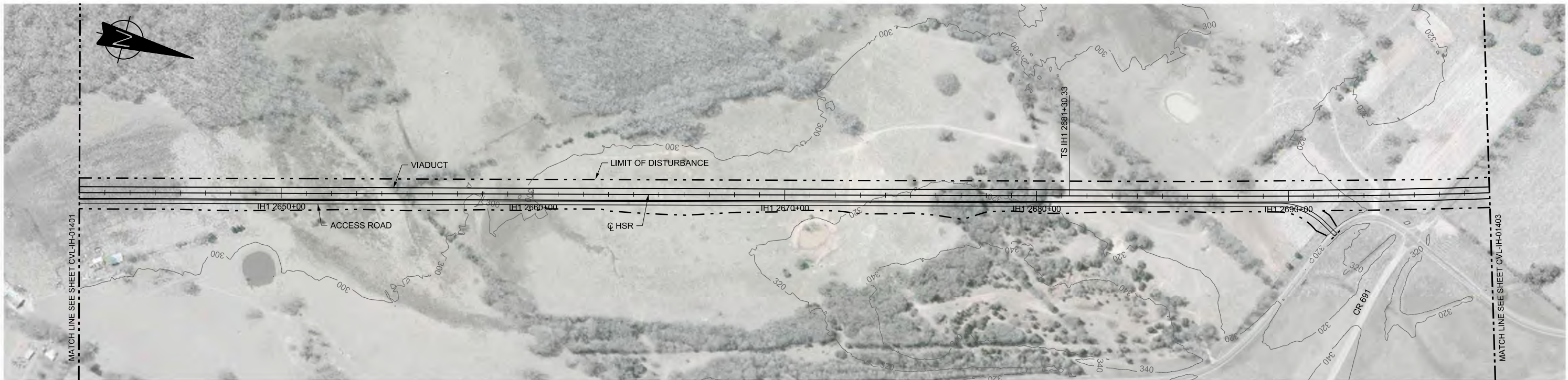
Drawing Title  
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**PLAN AND PROFILE**  
**IH1 2586+00 TO IH1 2642+00**

Scale  
**AS SHOWN**

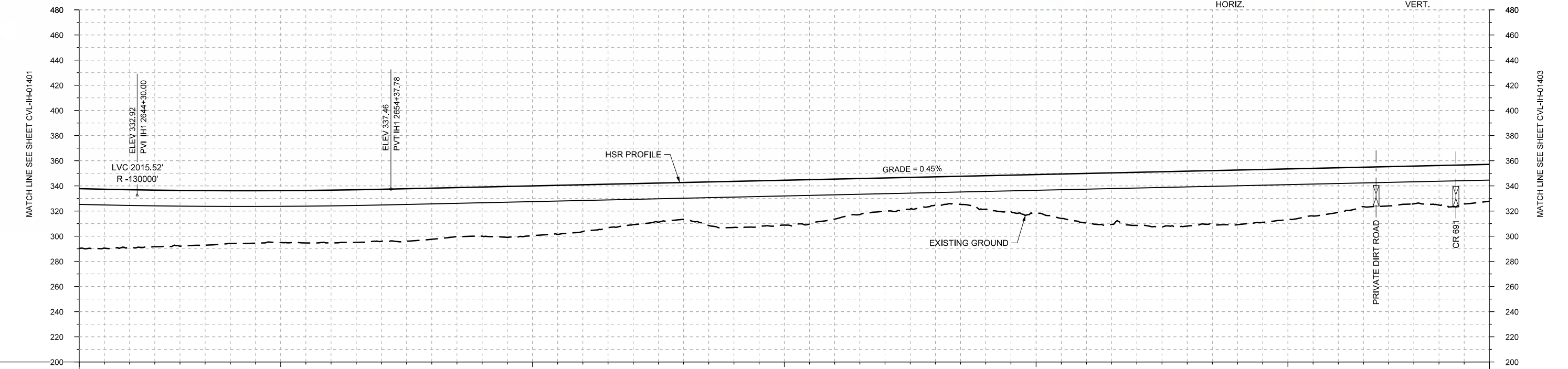
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01401	01





PLAN



PROFILE

STATIONING	IH1 2642+00	IH1 2650+00	IH1 2660+00	IH1 2670+00	IH1 2680+00	IH1 2690+00	IH1 2698+00
HOR. ALIGNMENT	L=53342						L=1750
VER. ALIGNMENT	R=-130000						L=6350.11 G=0.450%
CUT AND FILL	+47.5	+45.9	+44.4	+41.8	+41.3	+41.7	+41.4
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  
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Client

**TEXAS CENTRAL**

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

Drawing Title

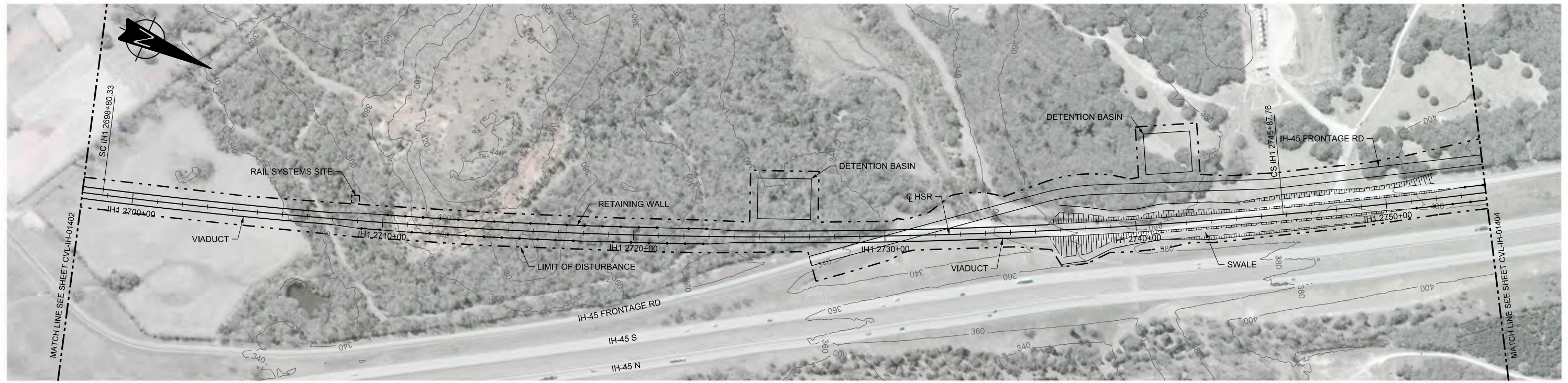
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2642+00 TO IH1 2698+00**

Scale  
AS SHOWN

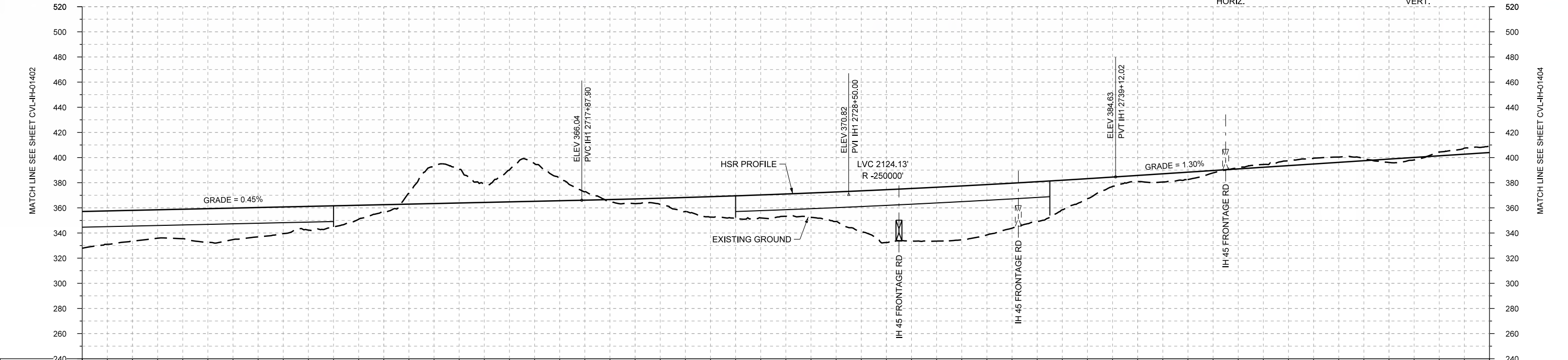
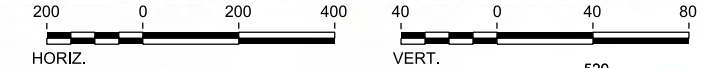
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01402	01





PLAN



STATIONING	IH1 2698+00	IH1 2700+00	IH1 2710+00	IH1 2720+00	IH1 2730+00	IH1 2740+00	IH1 2750+00	IH1 2754+00																					
HOR. ALIGNMENT	L=1750		R=22000 L=4707			L=1750																							
VER. ALIGNMENT	L=6350.11 G=0.450%		R=-250000			L=6925.17 G=1.300%																							
CUT AND FILL	+29.3	+24.6	+23.5	+25.0	+21.2	+18.8	+5.9	-29.9	-14.3	-30.0	-6.7	+3.8	+11.1	+17.3	+17.7	+23.5	+42.0	+42.9	+40.1	+31.7	+15.9	+4.7	+5.9	-0.9	-3.9	-4.2	+2.7	-2.9	-5.1
TYP. SECTION	VIADUCT (E)		(B)	RETAINED CUT (D)			RETAINED FILL (B)		VIADUCT (T)	EMBANKMENT (P)		CUT (R)				(Q)													

PROFILE

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

2711 North Haskell Ave., Suite 3300  
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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

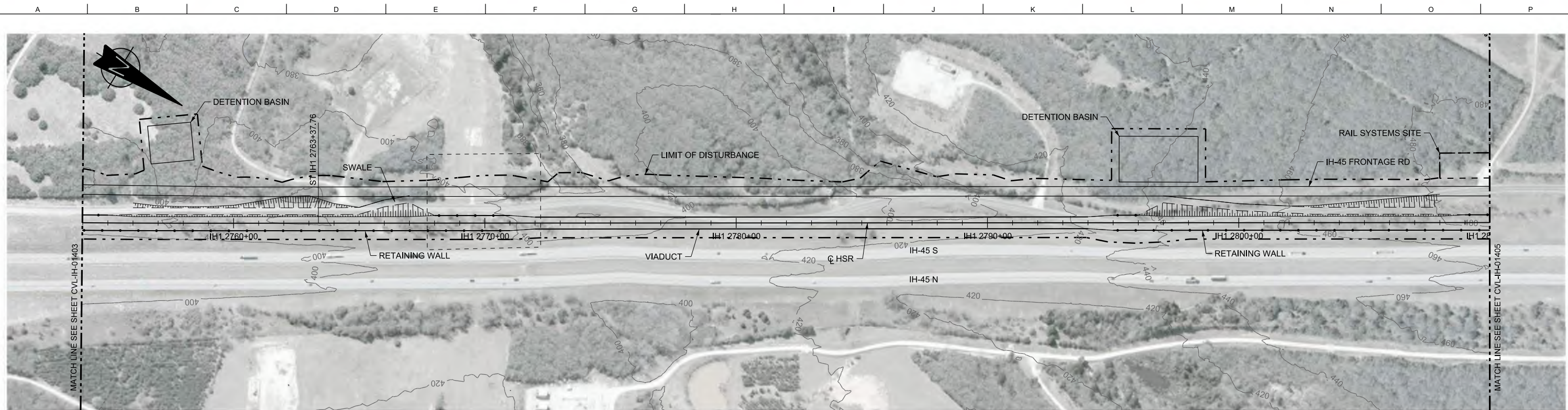
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2698+00 TO IH1 2754+00**

Scale  
AS SHOWN

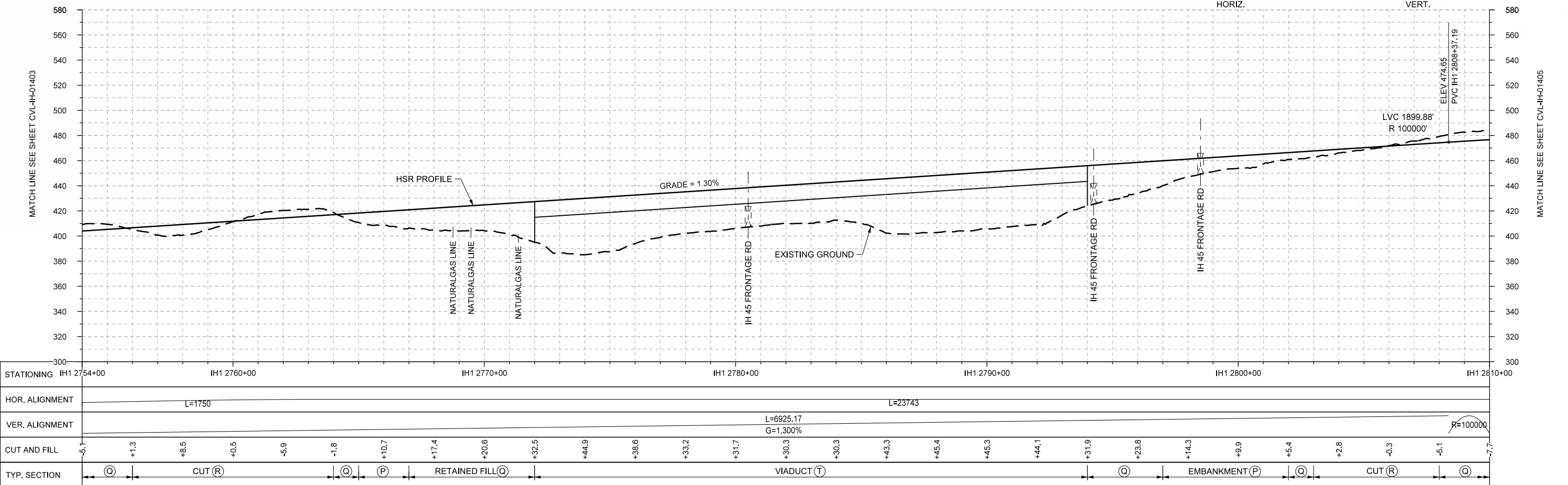
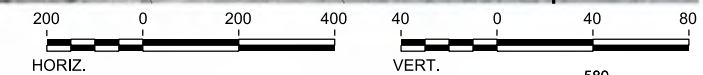
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01403	01





PLAN



PROFILE

STATIONING	IH1 2754+00	IH1 2760+00	IH1 2770+00	IH1 2780+00	IH1 2790+00	IH1 2800+00	IH1 2810+00																						
HOR. ALIGNMENT	L=1750			L=23743																									
VER. ALIGNMENT				L=6925.17 G=1.300%																									
CUT AND FILL	-5.1	+1.3	+8.5	+0.5	-5.9	-1.8	+10.7	+17.4	+20.6	+32.5	+44.9	+38.6	+33.2	+31.7	+30.3	+30.3	+43.3	+45.4	+45.3	+44.1	+31.9	+23.8	+14.3	+9.9	+5.4	+2.8	-0.3	-5.1	-7.7
TYP. SECTION	Q	CUT (R)			Q	P	RETAINED FILL (Q)			VIADUCT (T)					Q	EMBANKMENT (P)		Q	CUT (R)		Q								

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**  
 Arup Texas, Inc.  
 10370 Richmond Ave., Suite 475  
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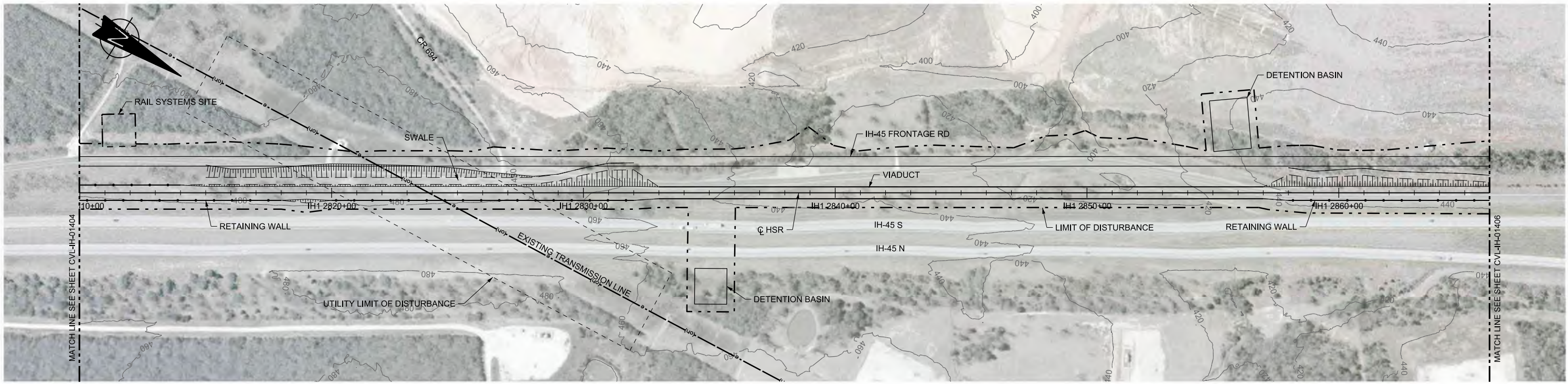
**FRESE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

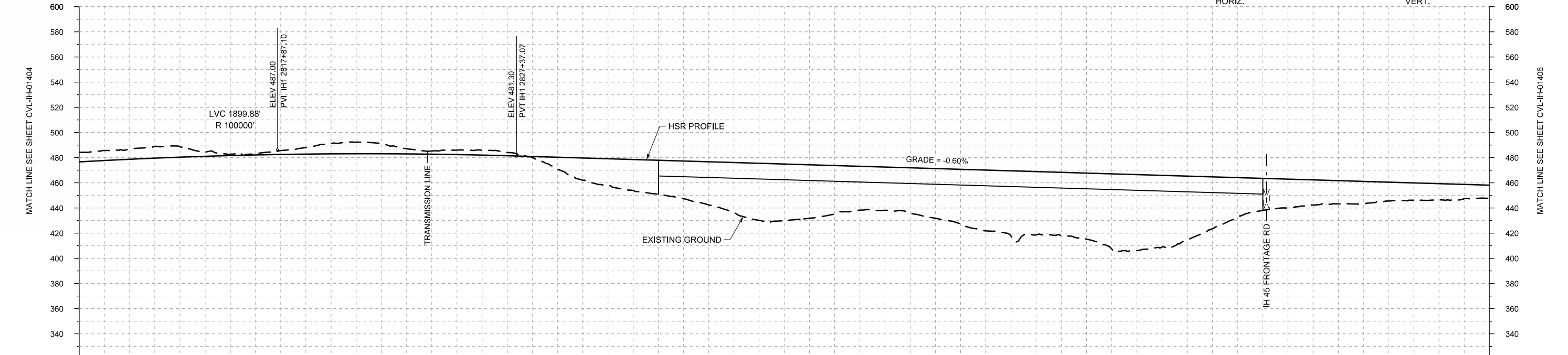
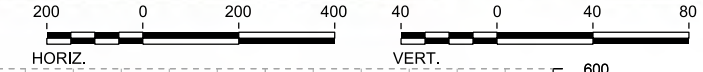
Drawing Title  
**IH (45) SEGMENT CIVIL**  
**PLAN AND PROFILE**  
**IH1 2754+00 TO IH1 2810+00**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No: 234180 Drawing No: CVL-IH-01404 Rev: 01





PLAN



PROFILE

STATIONING	IH1 2810+00	IH1 2820+00	IH1 2830+00	IH1 2840+00	IH1 2850+00	IH1 2860+00	IH1 2866+00																						
HOR. ALIGNMENT	L=23743																												
VER. ALIGNMENT	R=100000			L=11557.91 G=-0.600%																									
CUT AND FILL	-7.7	-7.8	-8.4	-1.0	-3.2	-8.3	-7.9	-2.5	-3.9	+0.8	+17.6	+24.6	+29.9	+39.9	+45.0	+38.5	+34.3	+39.5	+46.3	+50.2	+52.5	+60.4	+50.7	+31.4	+22.8	+18.4	+15.0	+12.9	+10.2
TYP. SECTION	RETAINED FILL (Q)			CUT (R)				(Q)	EMBANKMENT (P)			VIADUCT (T)					EMBANKMENT (P)												

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

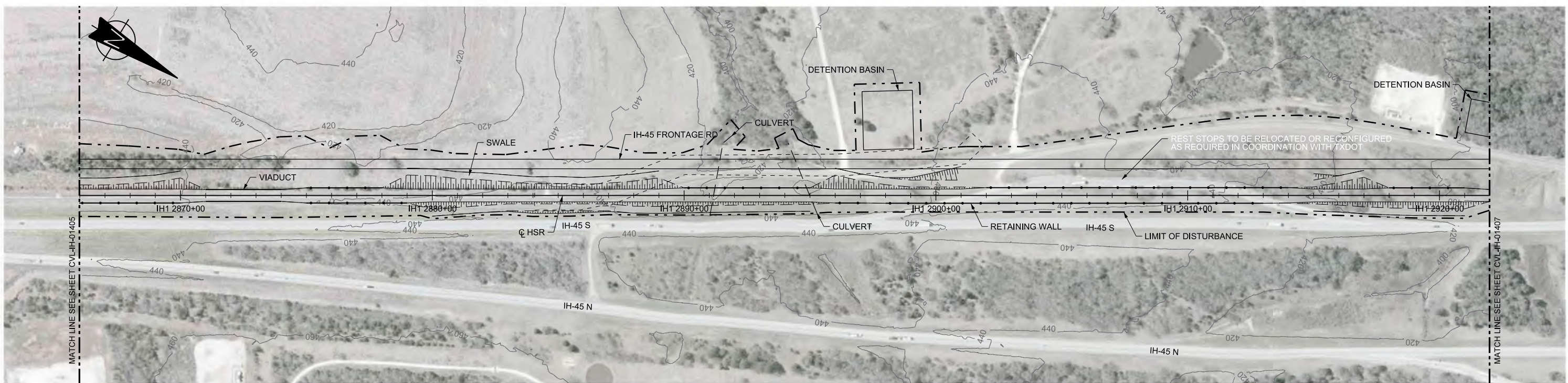
Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH1 2810+00 TO IH1 2866+00**

Scale  
**AS SHOWN**

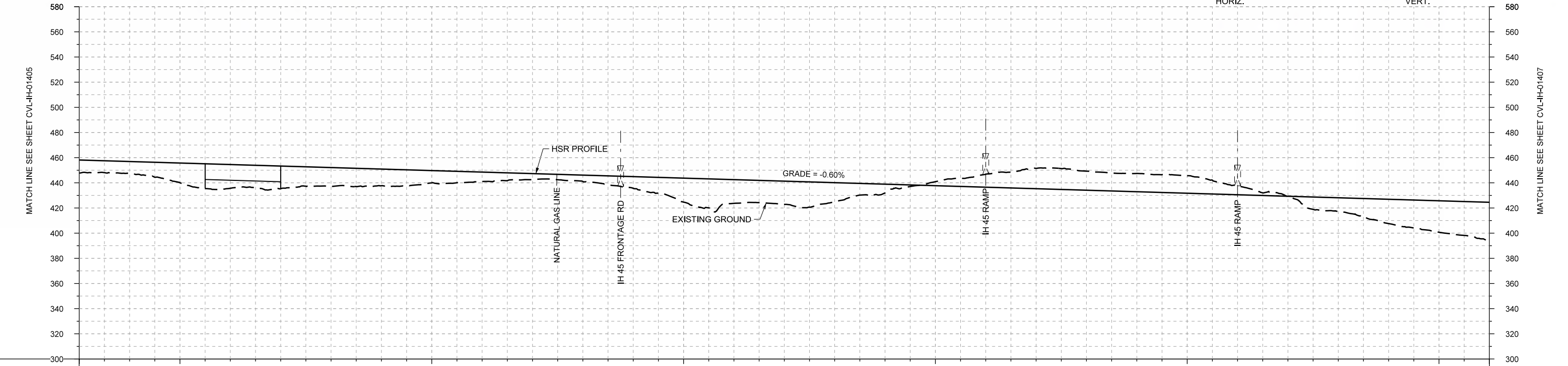
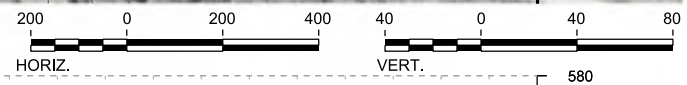
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01405	01





PLAN



PROFILE

STATIONING	IH1 2866+00	IH1 2870+00	IH1 2880+00	IH1 2890+00	IH1 2900+00	IH1 2910+00	IH1 2920+00	IH1 2922+00																					
HOR. ALIGNMENT	L=23743																												
VER. ALIGNMENT	L=11557.91 G=-0.600%																												
CUT AND FILL	+10.2	+9.3	+15.6	+18.8	+18.0	+14.8	+13.2	+9.7	+7.5	+4.8	+5.1	+9.3	+18.1	+18.8	+18.4	+15.1	+7.0	-3.2	-10.3	-16.2	-15.1	-14.5	-13.9	-7.1	-0.3	+11.0	+19.3	+25.0	+30.8
TYP. SECTION	EMBANKMENT (P)		VIADUCT (T)		RETAINED FILL (Q)		EMBANKMENT (P)		(S)		CUT (R)		RETAINED CUT (S)				EMBANKMENT (P)												

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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Dallas, Texas 75204  
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Texas Registered Engineering Firm: F-2144

Client

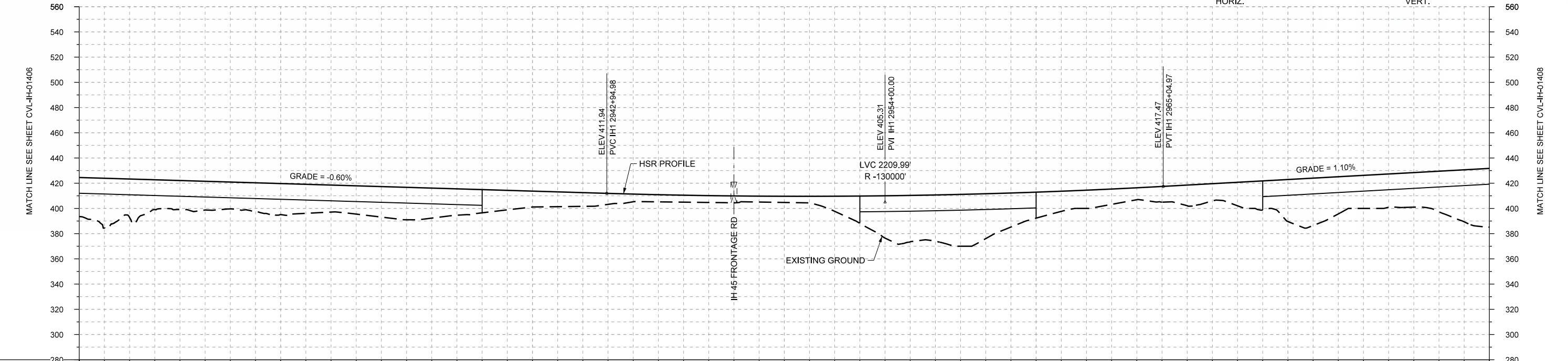
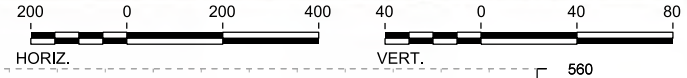
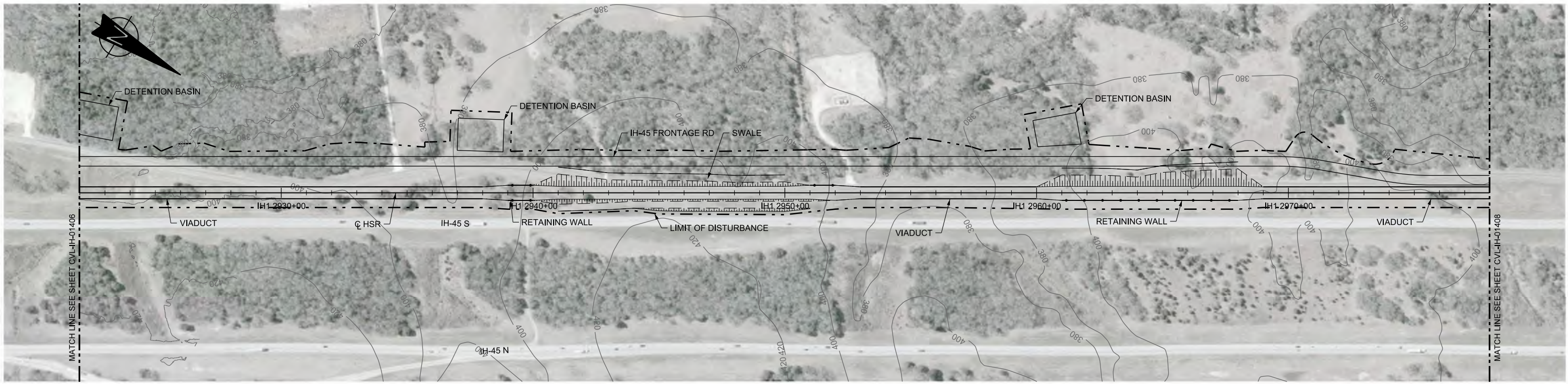
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2866+00 TO IH1 2922+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01406	01	





STATIONING	IH1 2922+00	IH1 2930+00	IH1 2940+00	IH1 2950+00	IH1 2960+00	IH1 2970+00	IH1 2978+00																						
HOR. ALIGNMENT	L=23743																												
VER. ALIGNMENT	L=11557.91 G=-0.600%			R=-130000		L=9195.44 G=1.100%																							
CUT AND FILL	+30.8	+30.5	+23.0	+21.3	+24.6	+21.4	+24.2	+23.8	+18.4	+12.6	+10.9	+6.1	+5.5	+5.5	+4.9	+12.0	+33.6	+36.7	+36.6	+20.6	+14.5	+9.5	+16.3	+16.6	+33.4	+29.5	+26.4	+32.2	+46.6
TYP. SECTION	VIADUCT (T)			(Q)	EMBANKMENT (P)			RETAINED FILL (Q)	VIADUCT (T)			EMBANKMENT (P)			VIADUCT (T)														

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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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**

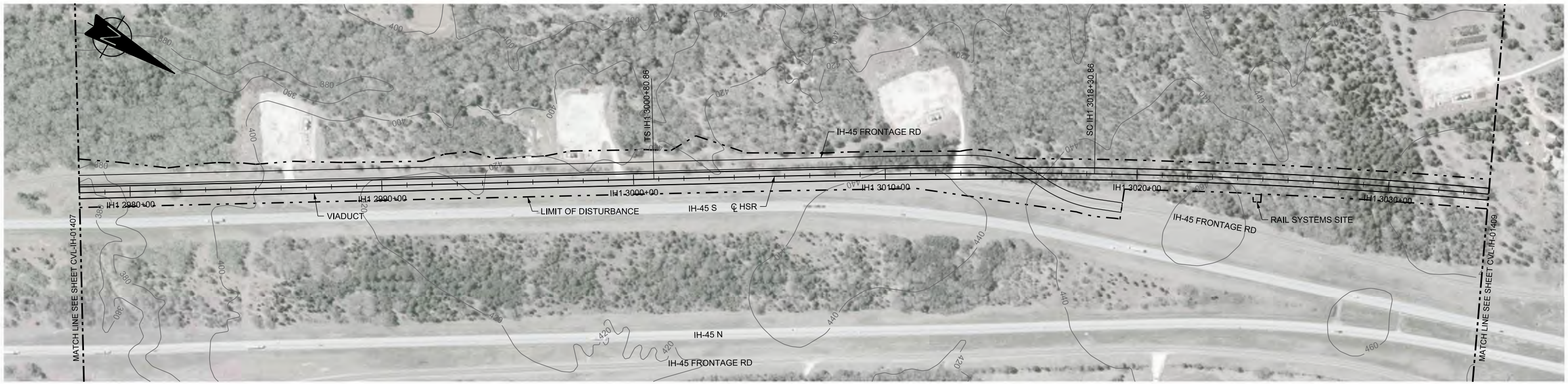
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

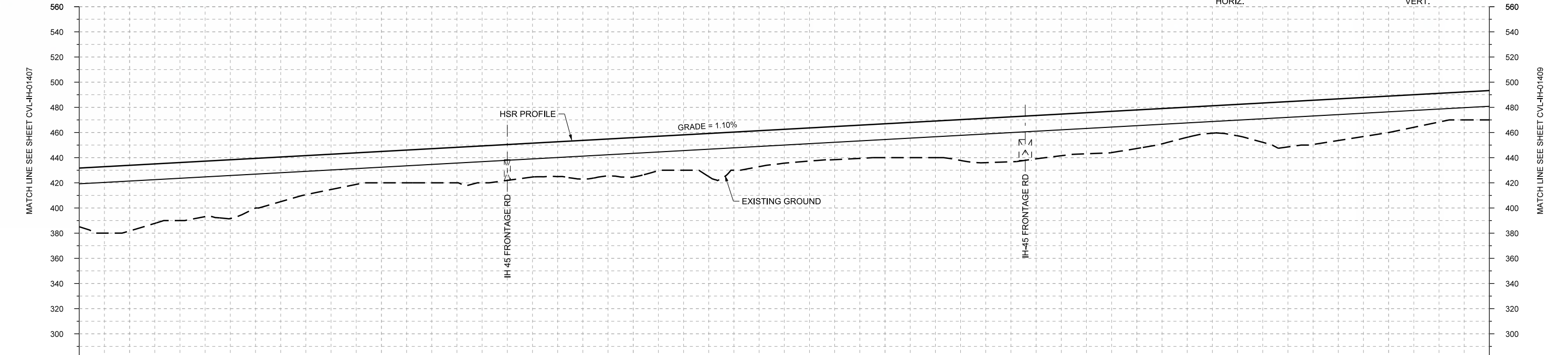
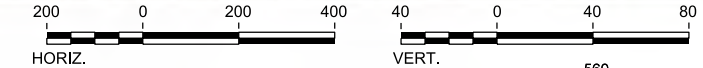
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 2922+00 TO IH1 2978+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01407	01	





PLAN



PROFILE

STATIONING	IH1 2978+00	IH1 2980+00	IH1 2990+00	IH1 3000+00	IH1 3010+00	IH1 3020+00	IH1 3030+00	IH1 3034+00																					
HOR. ALIGNMENT	L=23743				L=1750	R=22000 L=8373																							
VER. ALIGNMENT					L=9195.44 G=1.100%																								
CUT AND FILL	+46.6	+52.2	+46.1	+46.7	+35.5	+26.0	+24.9	+27.1	+29.3	+28.9	+30.8	+31.4	+28.1	+30.3	+26.9	+26.3	+26.9	+29.1	+35.3	+34.4	+32.6	+30.6	+23.9	+25.0	+36.0	+33.1	+28.9	+22.8	+23.3
TYP. SECTION	VIADUCT (T)																												

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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 10370 Richmond Ave., Suite 475  
 Houston, Texas 77042 USA  
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 www.arup.com  
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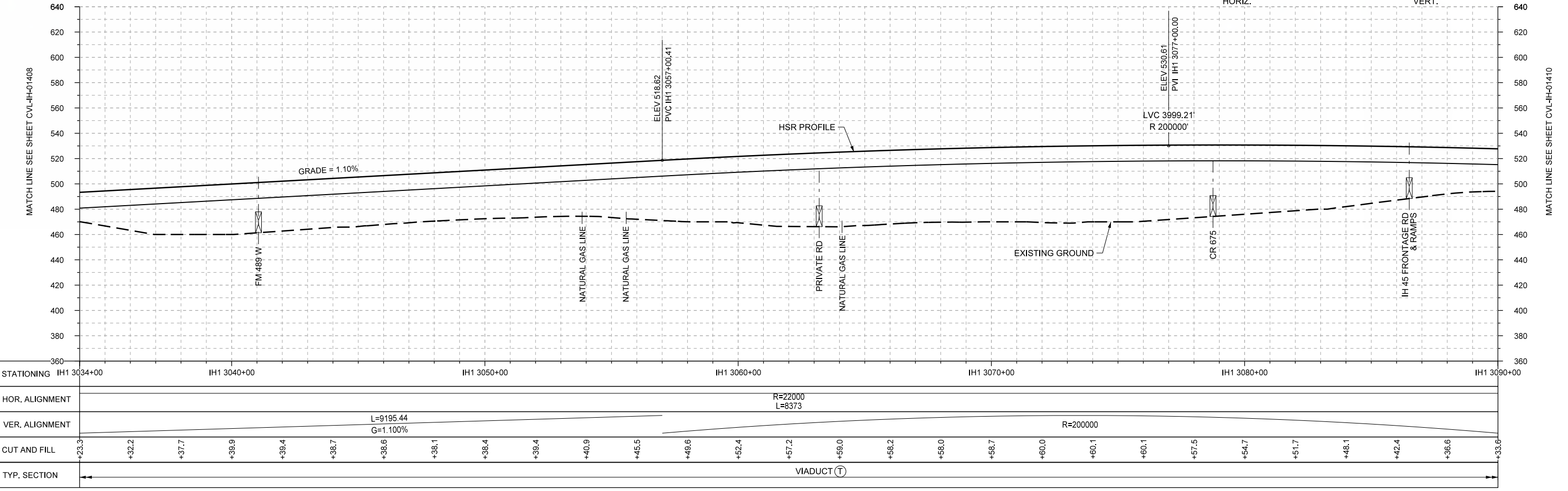
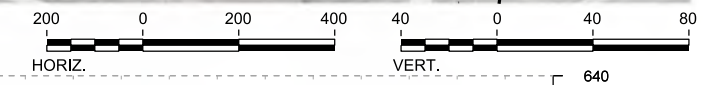
**FRESE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

Drawing Title  
**IH (45) SEGMENT CIVIL**  
**PLAN AND PROFILE**  
**IH1 2978+00 TO IH1 3034+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01408
Rev	01





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

Client

**TEXAS CENTRAL**

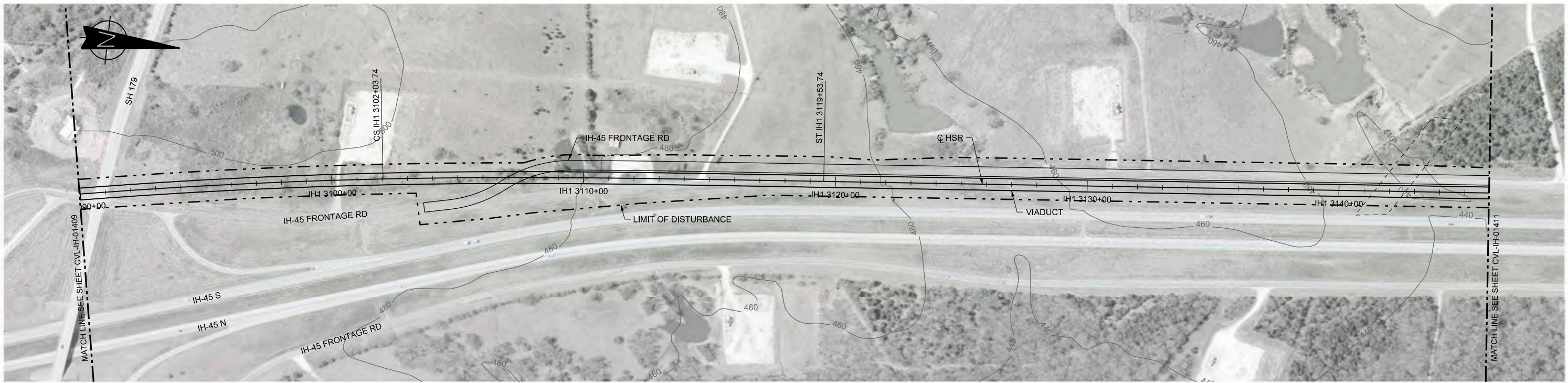
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

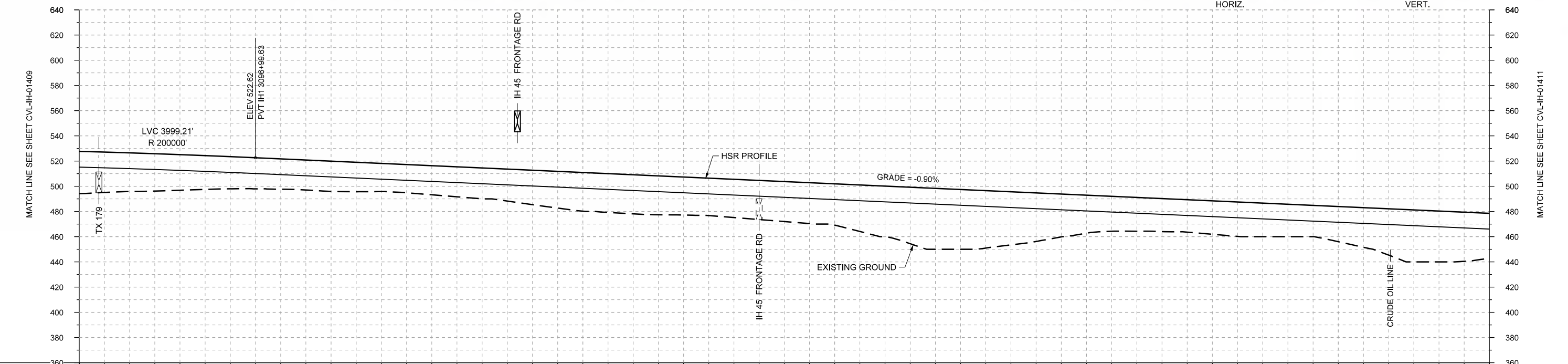
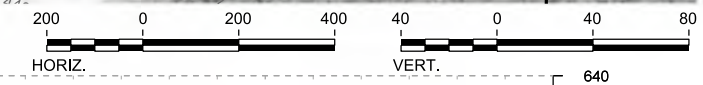
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CIVIL  
PLAN AND PROFILE  
IH1 3034+00 TO IH1 3090+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01409	01	





PLAN



PROFILE

STATIONING	IH1 3090+00	IH1 3100+00	IH1 3110+00	IH1 3120+00	IH1 3130+00	IH1 3140+00	IH1 3146+00																						
HOR. ALIGNMENT	R=22000 L=8373		L=1750		L=8893.09 G=-0.900%																								
VER. ALIGNMENT	R=200000																												
CUT AND FILL	+33.6	+30.6	+28.3	+26.5	+24.1	+24.0	+22.3	+23.1	+24.5	+27.3	+30.7	+31.0	+30.1	+30.3	+31.7	+32.7	+40.1	+48.3	+45.6	+38.5	+30.1	+26.8	+25.7	+27.3	+25.7	+27.9	+36.7	+40.3	+35.7
TYP. SECTION	VIADUCT (T)																												

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

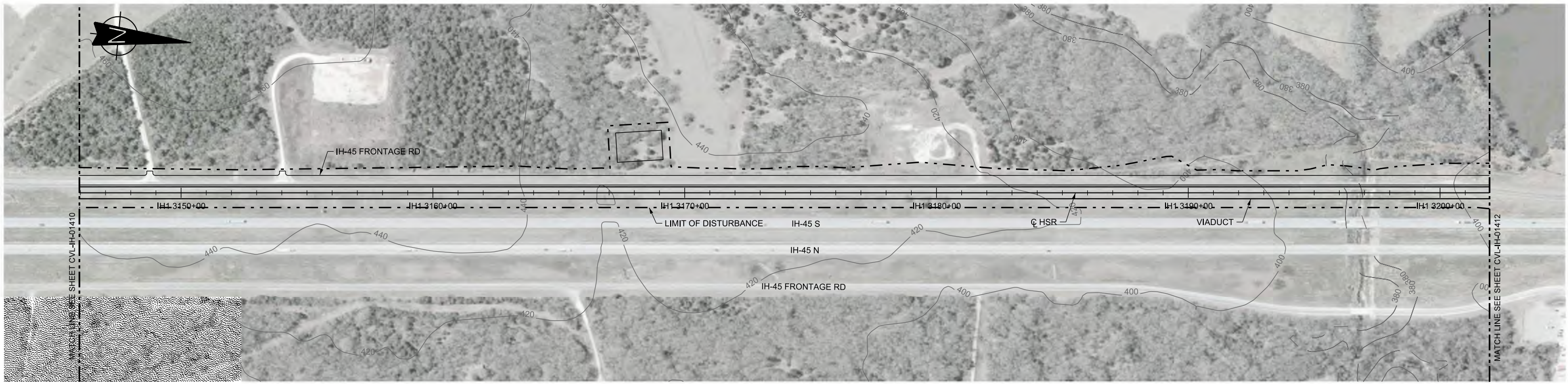
Drawing Title  
**IH (45) SEGMENT CIVIL PLAN AND PROFILE IH1 3090+00 TO IH1 3146+00**

Scale  
AS SHOWN

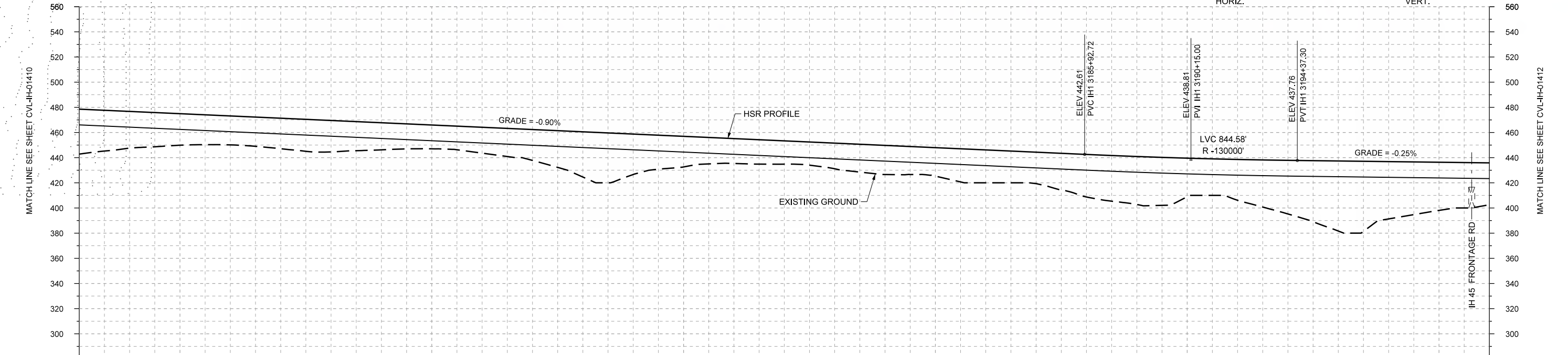
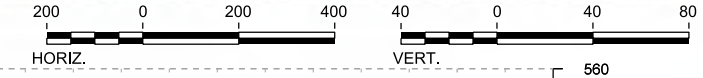
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01410	01





PLAN



PROFILE

STATIONING	IH1 3146+00	IH1 3150+00	IH1 3160+00	IH1 3170+00	IH1 3180+00	IH1 3190+00	IH1 3200+00	IH1 3202+00
HOR. ALIGNMENT	L=10678							
VER. ALIGNMENT	L=8893.09 G=-0.900%							
CUT AND FILL	+35.7	+29.1	+25.0	+23.0	+24.2	+25.0	+21.5	+18.9
	+20.5	+24.5	+35.9	+32.1	+24.3	+19.7	+18.5	+20.3
	+23.1	+22.6	+26.1	+25.0	+33.8	+38.1	+30.5	+32.5
	+42.7	+55.6	+45.5	+38.2	+33.2	R=-130000		
TYP. SECTION	VIADUCT (T)							

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.  
10370 Richmond Ave., Suite 475  
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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

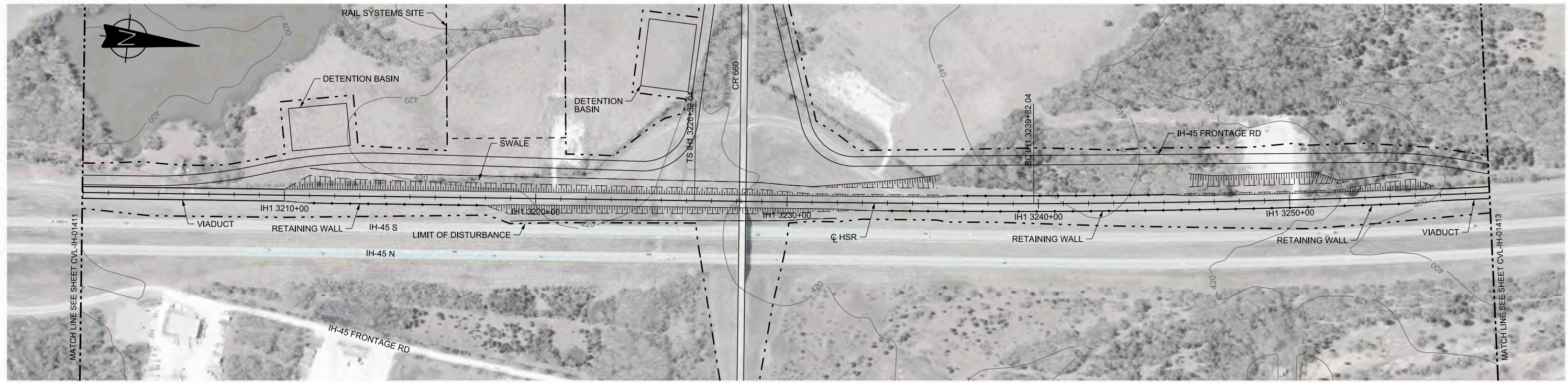
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 3146+00 TO IH1 3202+00**

Scale  
AS SHOWN

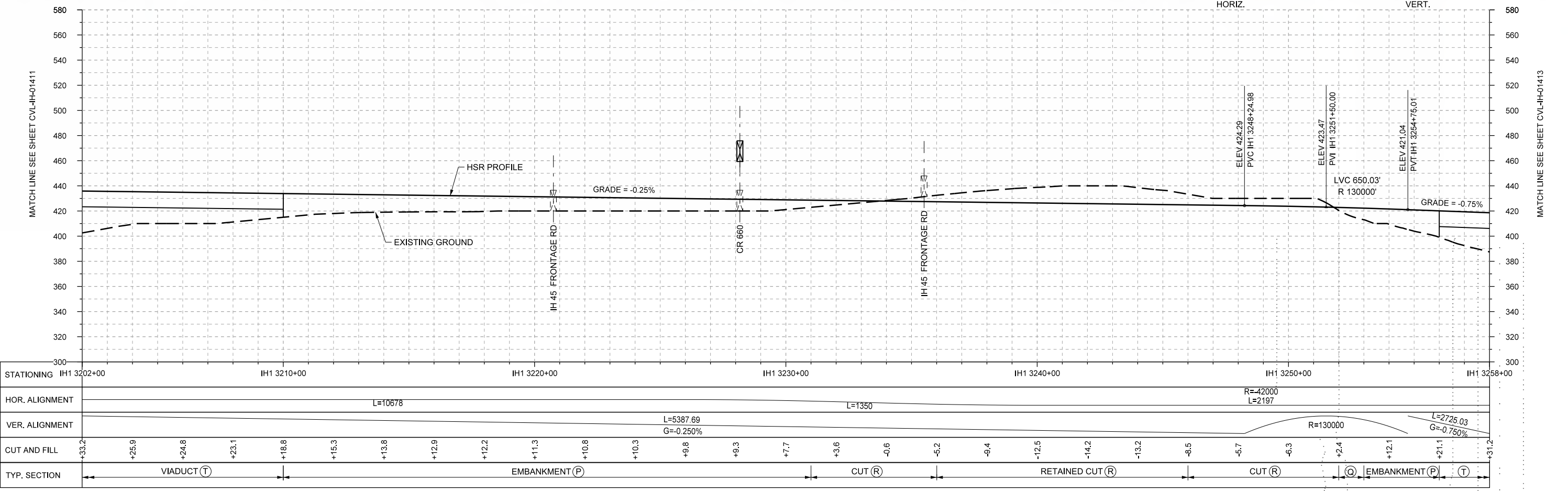
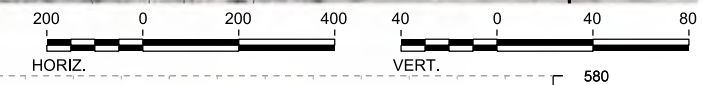
Drawing Status  
**FINAL DRAFT**

Job No	234180	Drawing No	CVL-IH-01411	Rev	01
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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>

Arup Texas, Inc.  
10370 Richmond Ave., Suite 475  
Houston, Texas 77042 USA  
Tel (713) 783 2787 Fax (713) 343 1467  
www.arup.com  
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

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 3202+00 TO IH 1 3258+00**

Scale  
AS SHOWN

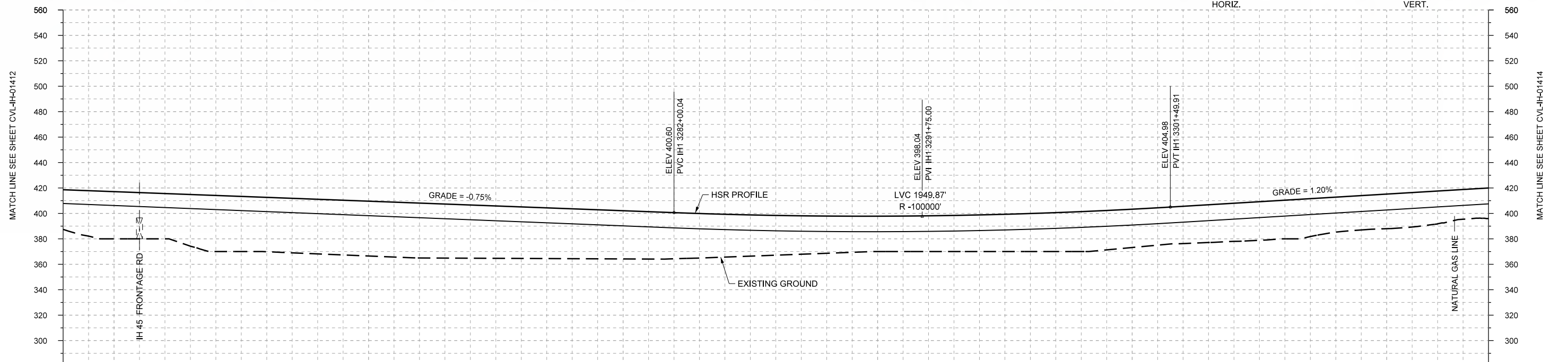
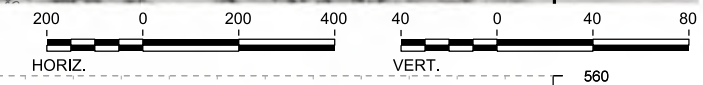
Drawing Status  
**FINAL DRAFT**

Job No 234180	Drawing No CVL-IH-01412	Rev 01
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PLAN



STATIONING	IH1 3258+00	IH1 3260+00	IH1 3270+00	IH1 3280+00	IH1 3290+00	IH1 3300+00	IH1 3310+00	IH1 3314+00																					
HOR. ALIGNMENT	R=42000 L=2197		L=1350		L=11452																								
VER. ALIGNMENT			L=2725.03 G=-0.750%		R=100000			L=2582.41 G=1.200%																					
CUT AND FILL	+31.2	+37.1	+35.6	+44.1	+42.8	+43.0	+43.1	+43.2	+41.8	+40.5	+39.2	+37.9	+36.3	+33.7	+31.3	+29.3	+27.8	+28.1	+28.8	+29.9	+31.4	+30.1	+29.3	+30.0	+30.4	+27.5	+27.2	+25.8	+24.1
TYP. SECTION	VIADUCT (T)																												

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**

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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**

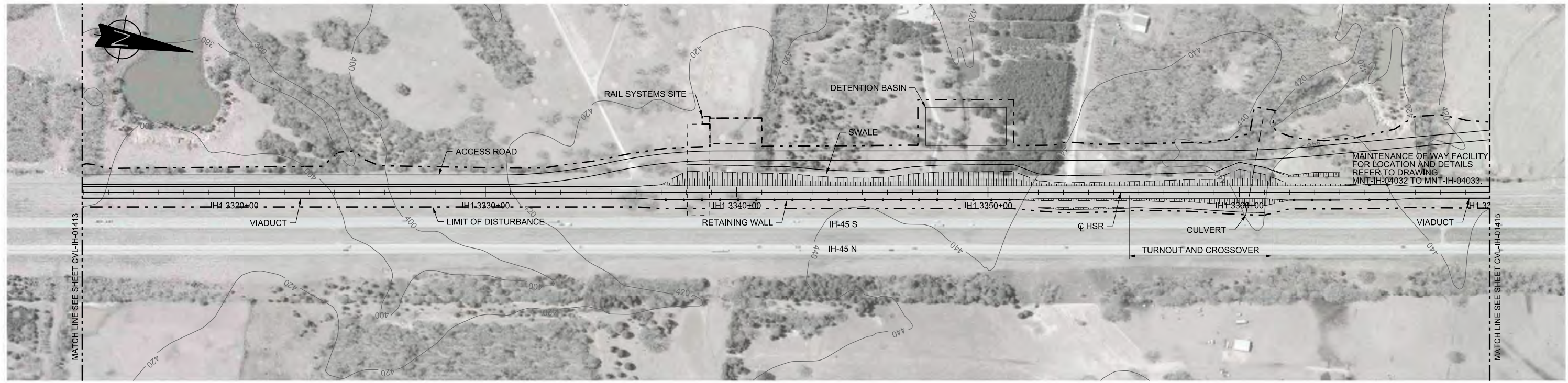
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

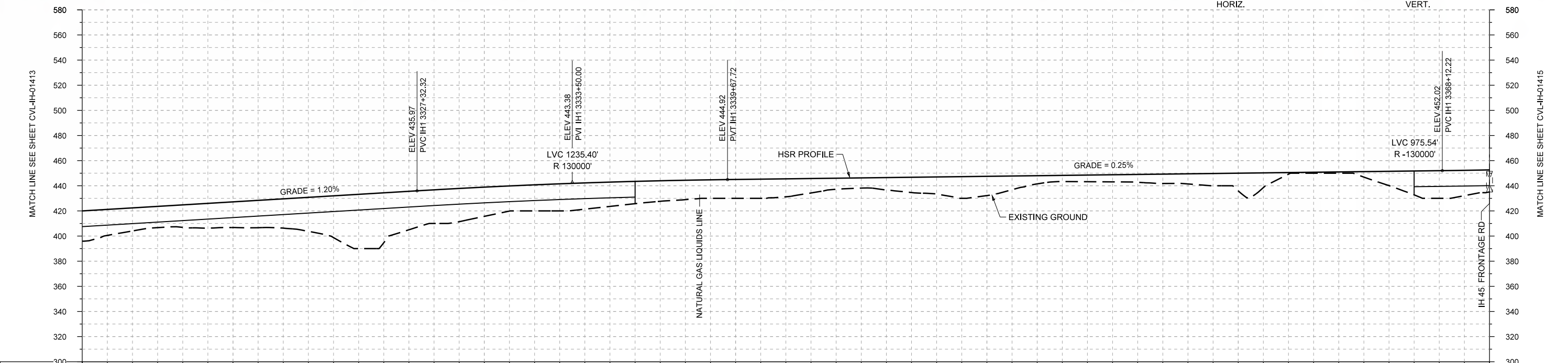
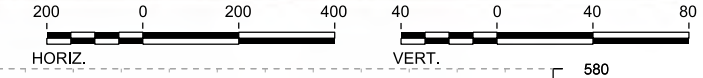
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CIVIL  
PLAN AND PROFILE  
IH1 3258+00 TO IH1 3314+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01413	01	





PLAN



PROFILE

STATIONING	IH1 3314+00	IH1 3320+00	IH1 3330+00	IH1 3340+00	IH1 3350+00	IH1 3360+00	IH1 3370+00
HOR. ALIGNMENT	L=11452						
VER. ALIGNMENT	L=2582.41 G=1.200%		R=130000			L=2844.50 G=0.250%	
CUT AND FILL	+24.1	+18.4	+17.9	+20.4	+23.3	+33.3	+39.7
TYP. SECTION	VIADUCT (T)			(Q)	EMBANKMENT (P)		CUT (R)

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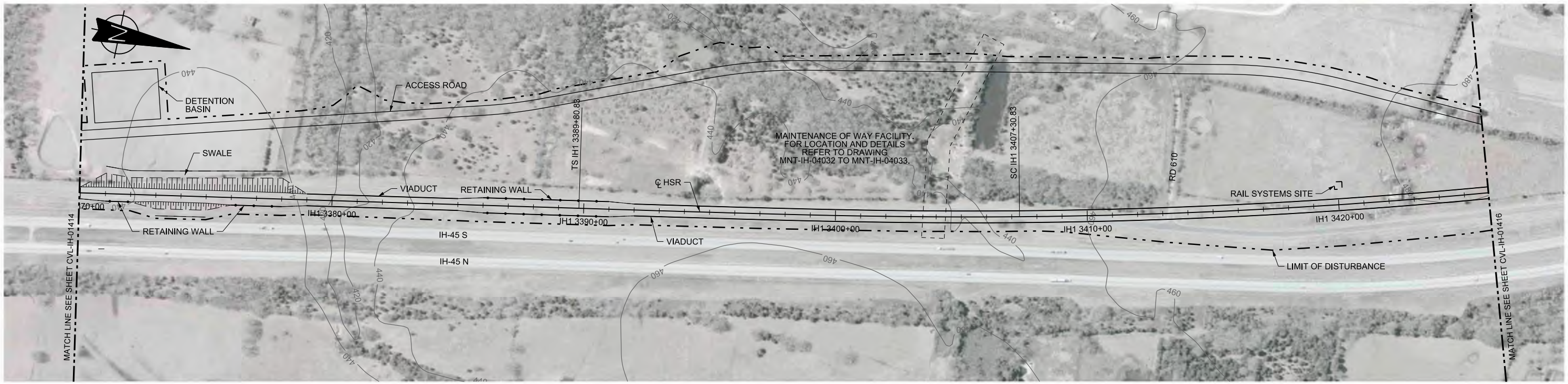
**FREES NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

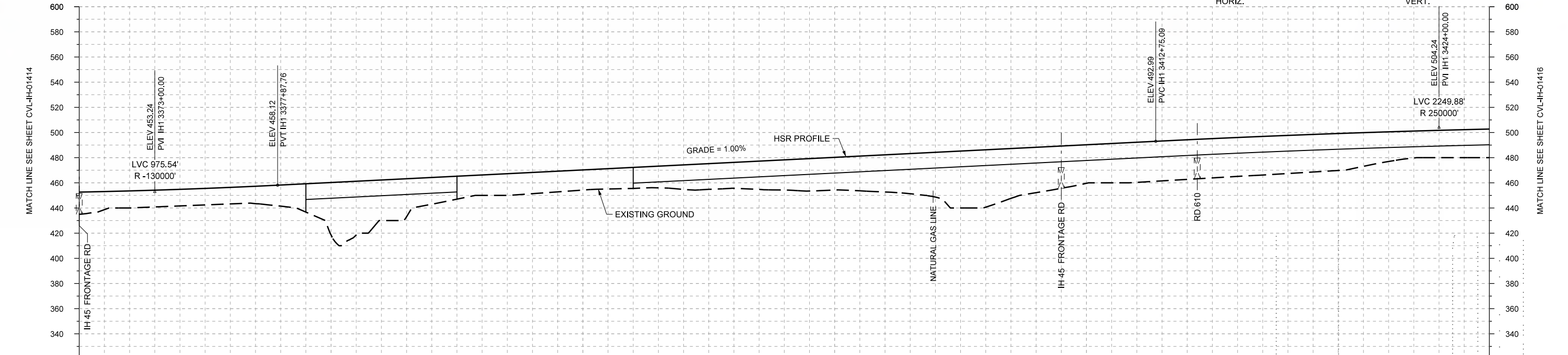
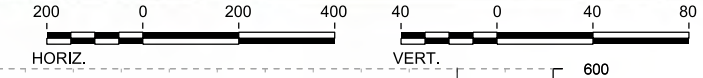
Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH1 3314+00 TO IH1 3370+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01414
Rev	01





PLAN



PROFILE

STATIONING	IH1 3370+00	IH1 3380+00	IH1 3390+00	IH1 3400+00	IH1 3410+00	IH1 3420+00	IH1 3426+00
HOR. ALIGNMENT	L=11452		L=1750				
VER. ALIGNMENT	R=130000		L=3487.33 G=1.000%		R=22000 L=3388		
CUT AND FILL	+17.6	+13.6	+13.2	+13.2	+16.8	+41.6	+32.2
TYP. SECTION	EMBANKMENT (P)		VIADUCT (T)		RETAINED FILL (Q)		VIADUCT (T)

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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10370 Richmond Ave., Suite 475  
Houston, Texas 77042 USA  
Tel (713) 783 2787 Fax (713) 343 1467  
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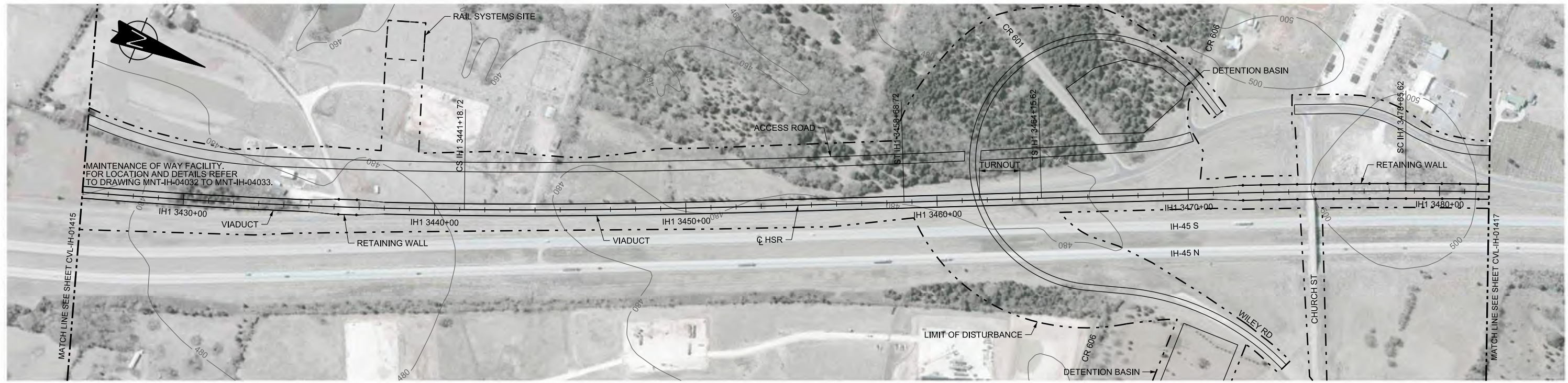
**FREESSE AND NICHOLS**  
2711 North Haskell Ave., Suite 3300  
Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

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

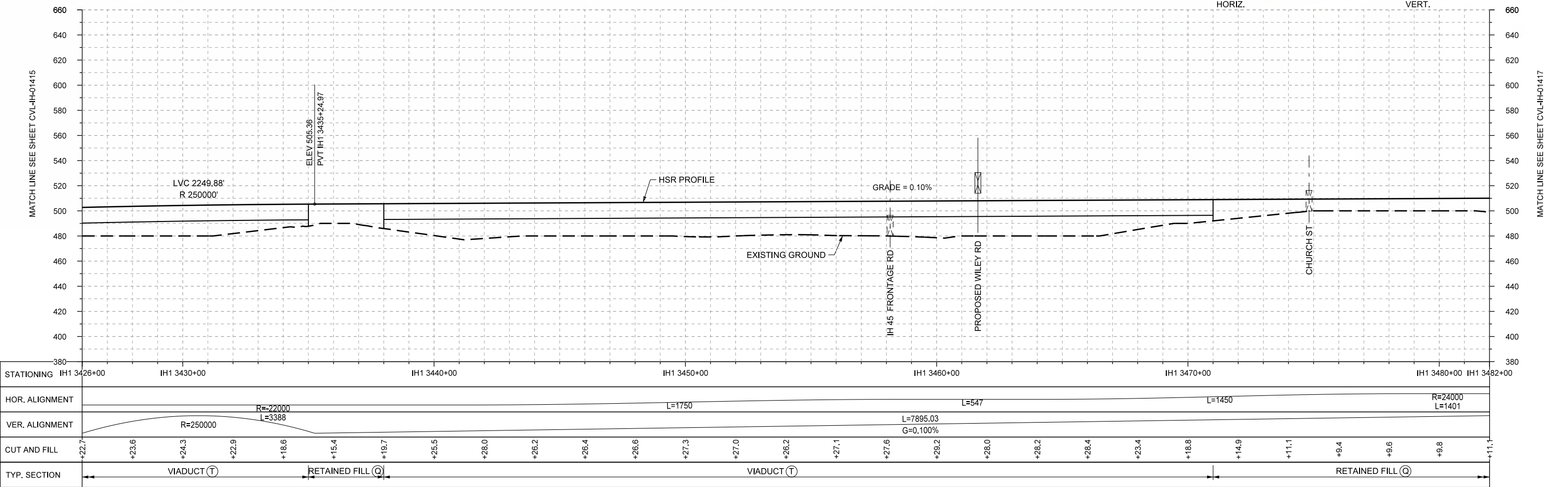
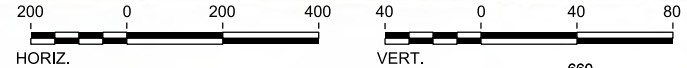
Drawing Title  
**IH (45) SEGMENT CIVIL  
PLAN AND PROFILE  
IH1 3370+00 TO IH1 3426+00**

Scale  
AS SHOWN  
Drawing Status  
**FINAL DRAFT**  
Job No. 234180 Drawing No. CVL-IH-01415 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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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

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

Drawing Title

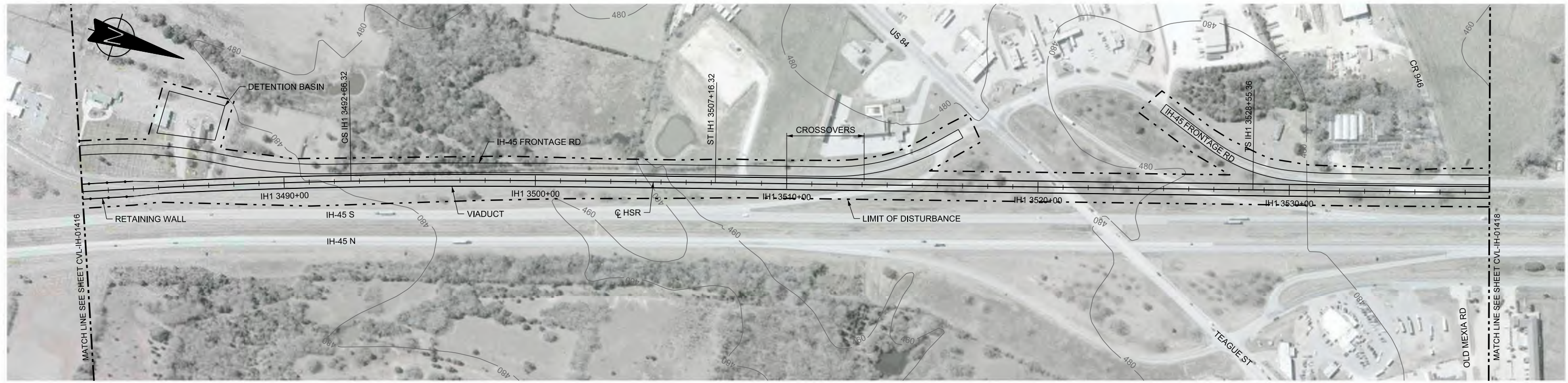
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CIVIL  
PLAN AND PROFILE  
IH1 3426+00 TO IH1 3482+00**

Scale  
AS SHOWN

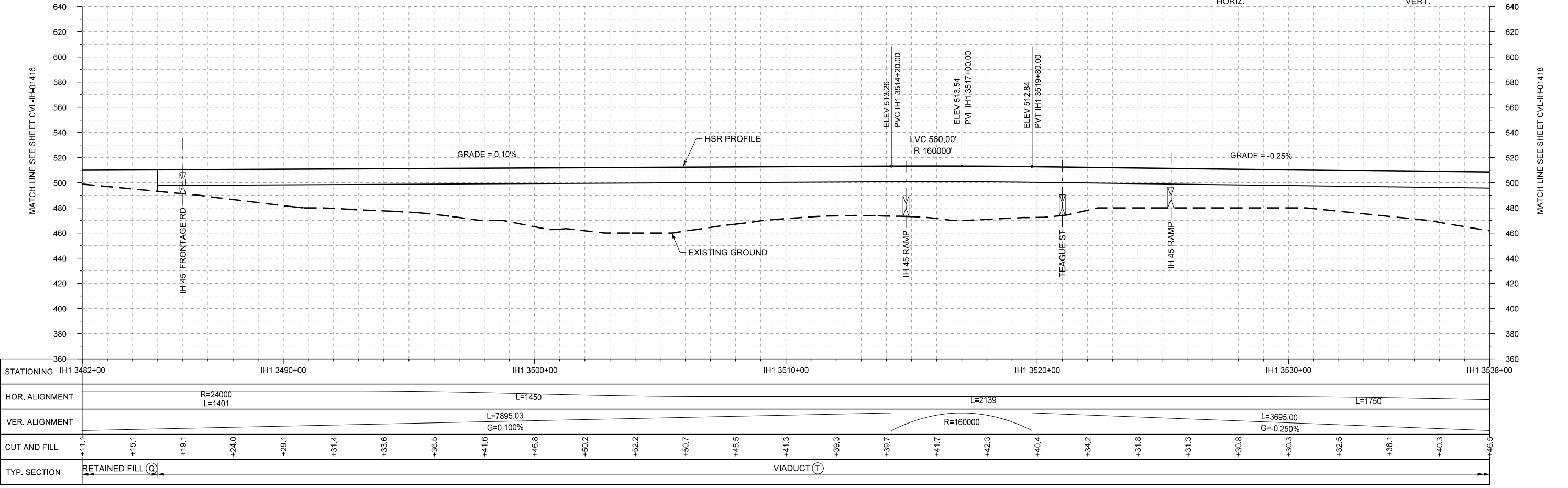
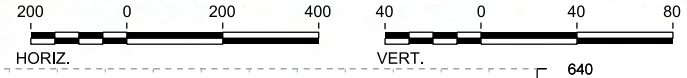
Drawing Status  
**FINAL DRAFT**

Job No 234180	Drawing No CVL-IH-01416	Rev 01
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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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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

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

Drawing Title

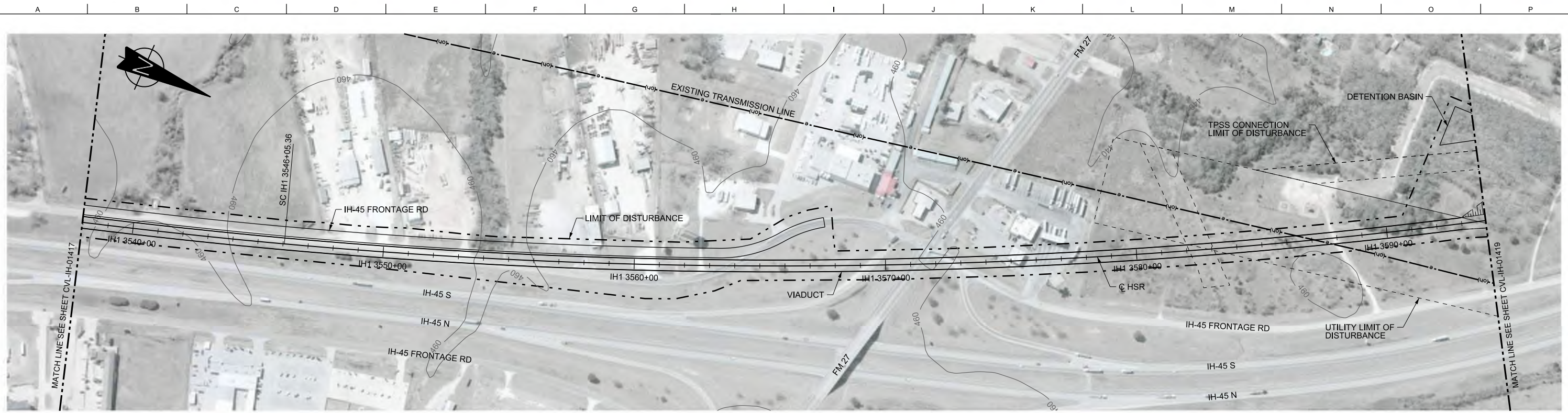
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CIVIL  
PLAN AND PROFILE  
IH1 3482+00 TO IH1 3538+00**

Scale  
AS SHOWN

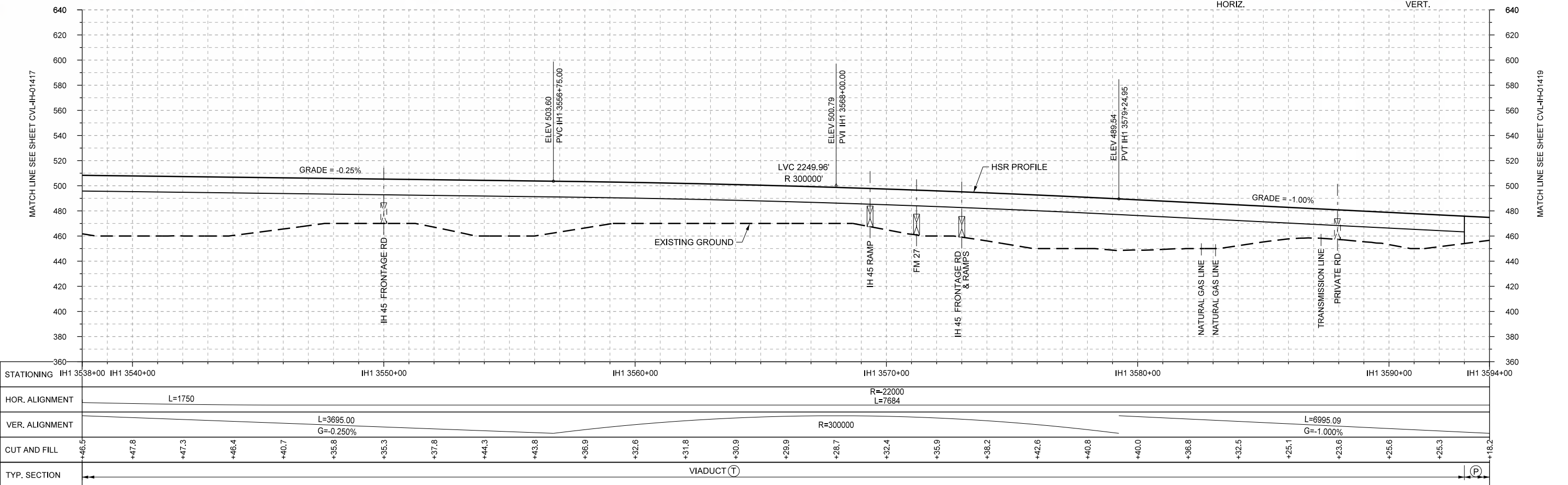
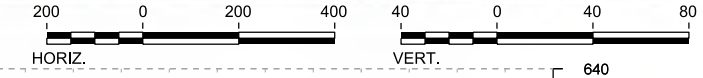
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01417	01





PLAN



PROFILE

STATIONING	IH1 3538+00	IH1 3540+00	IH1 3550+00	IH1 3560+00	IH1 3570+00	IH1 3580+00	IH1 3590+00	IH1 3594+00																					
HOR. ALIGNMENT	L=1750			R=22000 L=7684			L=6995.09 G=-1.000%																						
VER. ALIGNMENT	L=3695.00 G=-0.250%																												
CUT AND FILL	+46.5	+47.8	+47.3	+46.4	+40.7	+35.8	+35.3	+37.8	+44.3	+43.8	+36.9	+32.6	+31.8	+30.9	+29.9	+28.7	+32.4	+35.9	+36.2	+42.6	+40.8	+40.0	+36.8	+32.5	+25.1	+23.6	+25.6	+25.3	+16.2
TYP. SECTION	VIADUCT (T)															(P)													

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.  
10370 Richmond Ave., Suite 475  
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  
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

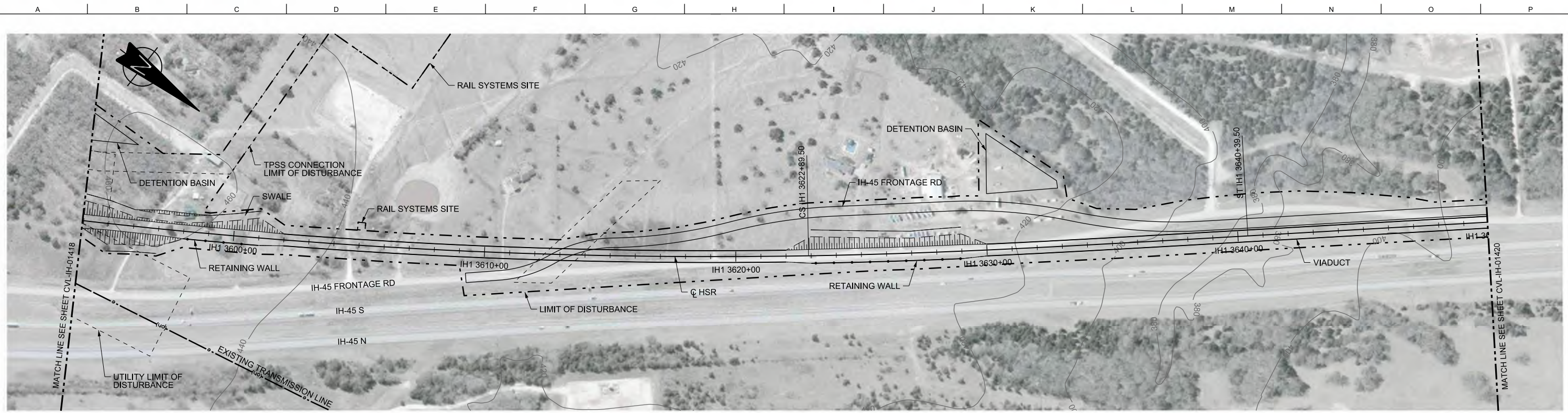
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CIVIL  
PLAN AND PROFILE  
IH1 3538+00 TO IH1 3594+00**

Scale  
AS SHOWN

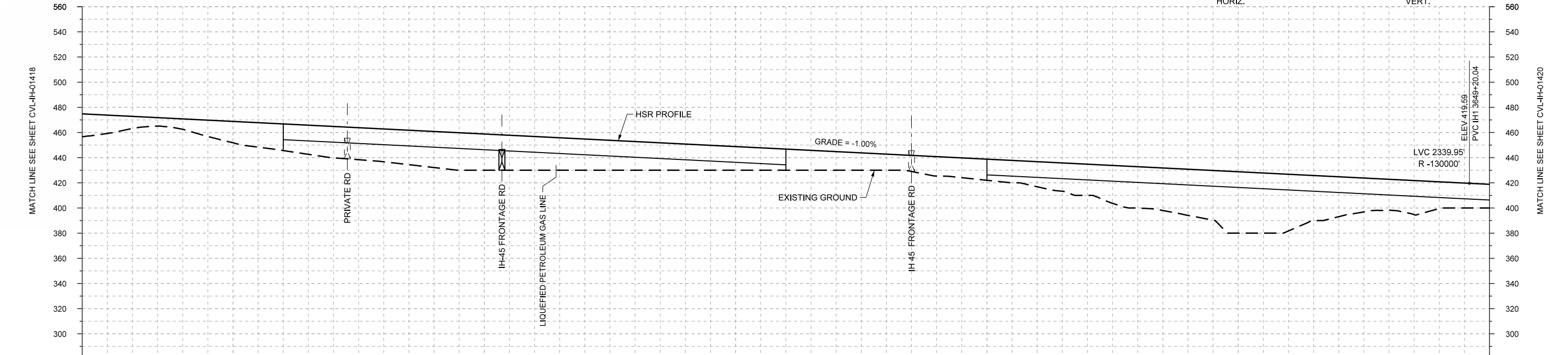
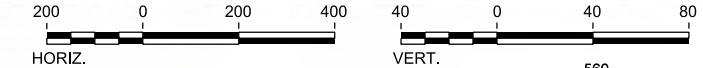
Drawing Status  
**FINAL DRAFT**

Job No	234180	Drawing No	CVL-IH-01418	Rev	01
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PLAN



STATIONING	IH1 3594+00		IH1 3600+00										IH1 3610+00			IH1 3620+00					IH1 3630+00					IH1 3640+00					IH1 3650+00	
HOR. ALIGNMENT			R=22000 L=7684													L=6995.09 G=-1.000%					L=1750					L=6048						
VER. ALIGNMENT																										R=130000						
CUT AND FILL	+18.2	+9.6	+8.3	+17.0	+21.2	+25.0	+26.1	+26.7	+28.8	+28.8	+24.8	+22.8	+20.8	+18.8	+16.8	+14.8	+12.8	+15.4	+16.8	+19.9	+24.8	+33.0	+36.7	+48.8	+45.0	+31.7	+24.5	+21.3	+18.8			
TYP. SECTION	EMBANKMENT (P)										VIADUCT (T)			EMBANKMENT (P)					VIADUCT (T)													

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.  
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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**

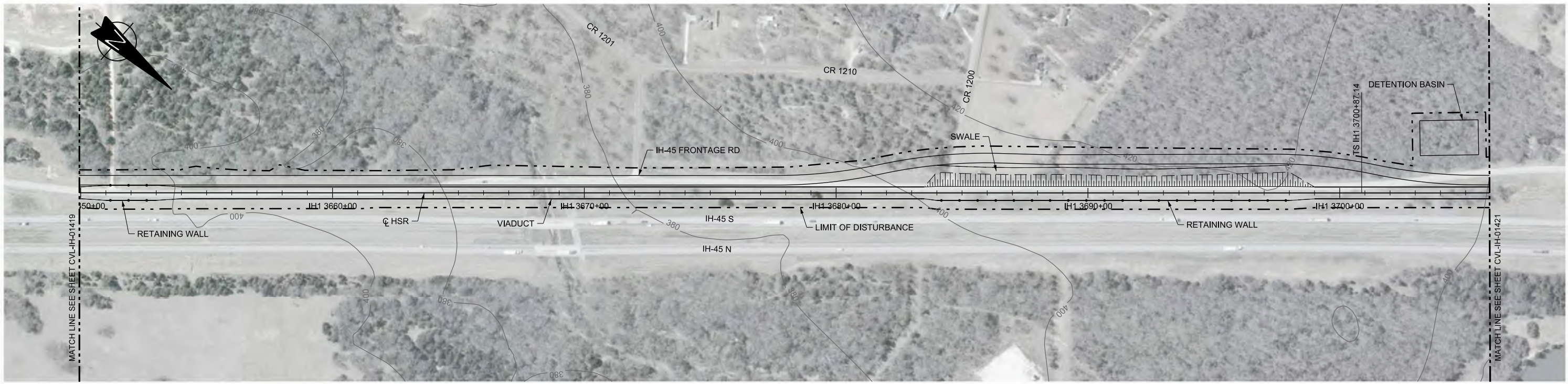
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

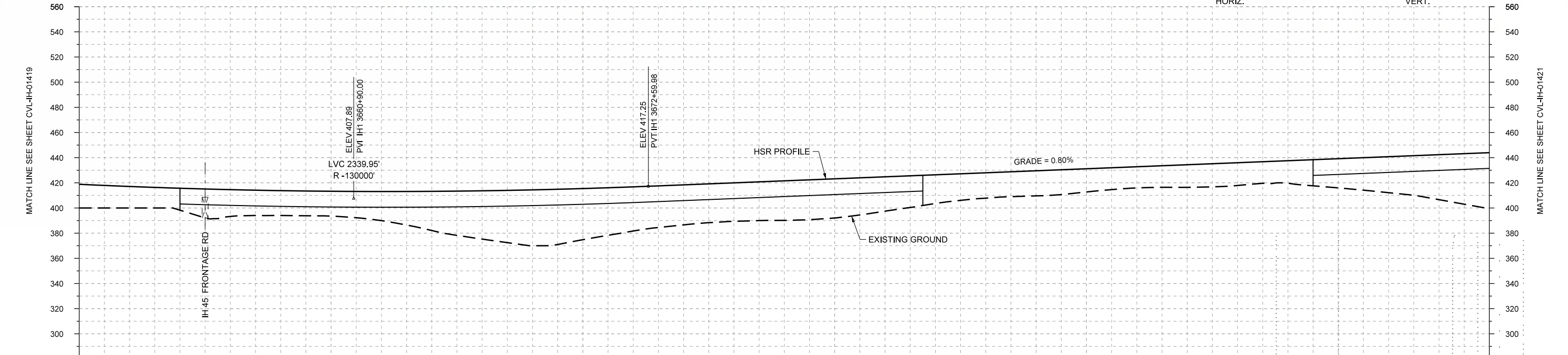
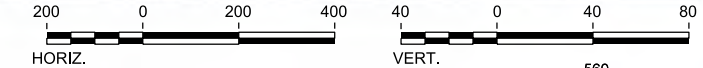
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 3594+00 TO IH1 3650+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01419	01	





PLAN



PROFILE

STATIONING	IH1 3650+00	IH1 3660+00	IH1 3670+00	IH1 3680+00	IH1 3690+00	IH1 3700+00	IH1 3706+00
HOR. ALIGNMENT	L=6048						L=1150
VER. ALIGNMENT	R=130000						L=8799.29 G=0.800%
CUT AND FILL	+18.8	+17.1	+17.4	+21.4	+19.8	+19.8	+23.1
TYP. SECTION	EMBANKMENT (P)		VIADUCT (T)			EMBANKMENT (P)	

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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 Texas Registered Engineering Firm: F-1990

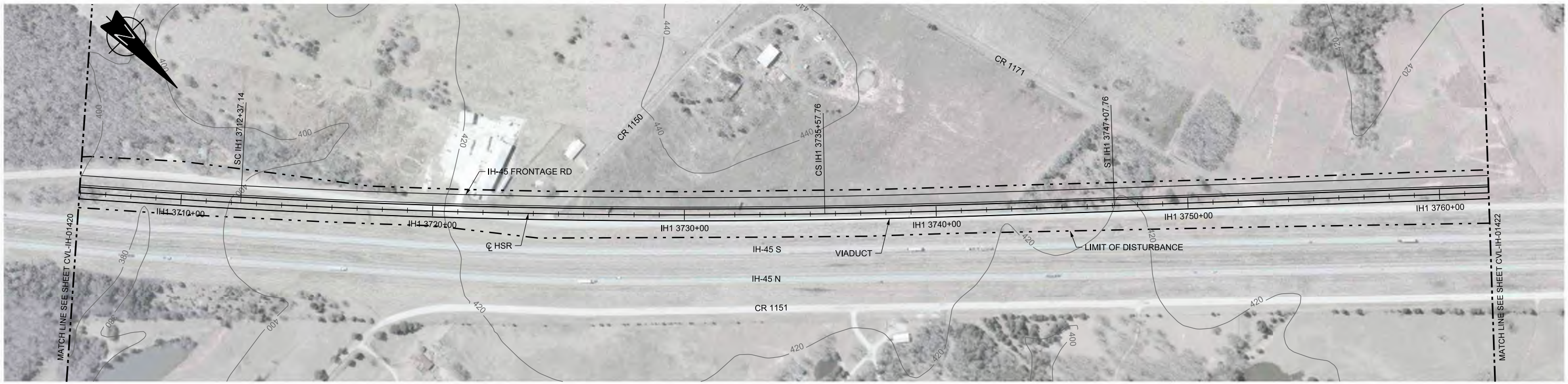
**FREESSE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

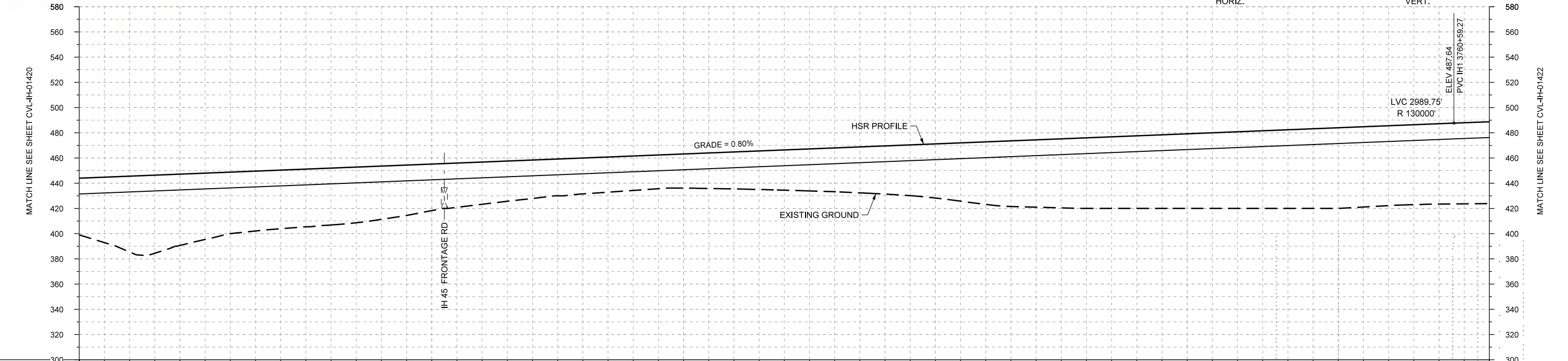
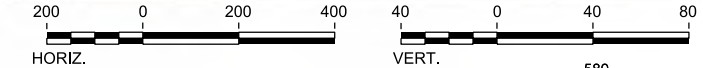
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**PLAN AND PROFILE**  
 IH1 3650+00 TO IH1 3706+00

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No 234180 Drawing No CVL-IH-01420 Rev 01





PLAN



PROFILE

STATIONING	IH1 3706+00	IH1 3710+00	IH1 3720+00	IH1 3730+00	IH1 3740+00	IH1 3750+00	IH1 3760+00	IH1 3762+00																					
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VER. ALIGNMENT			L=8799.29 G=0.800%				R=130000																						
CUT AND FILL	+45.0	+60.1	+56.6	+48.8	+46.5	+45.1	+42.3	+36.9	+33.5	+30.5	+28.5	+27.3	+27.1	+29.3	+32.0	+34.8	+38.3	+43.0	+49.6	+53.4	+56.0	+57.6	+59.2	+60.8	+62.4	+64.0	+63.4	+63.8	+64.9
TYP. SECTION	VIADUCT (T)																												

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

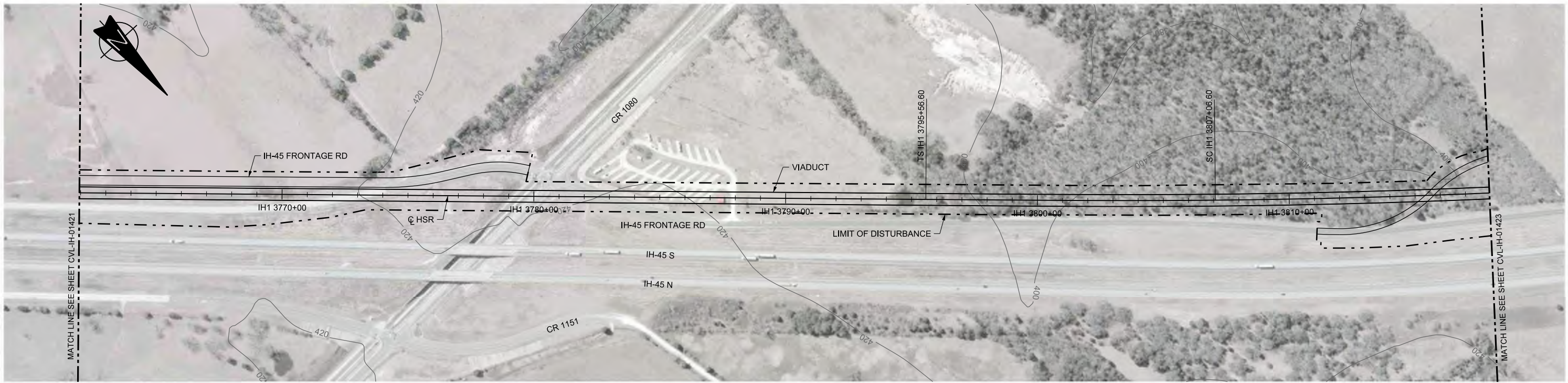
**FRESE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

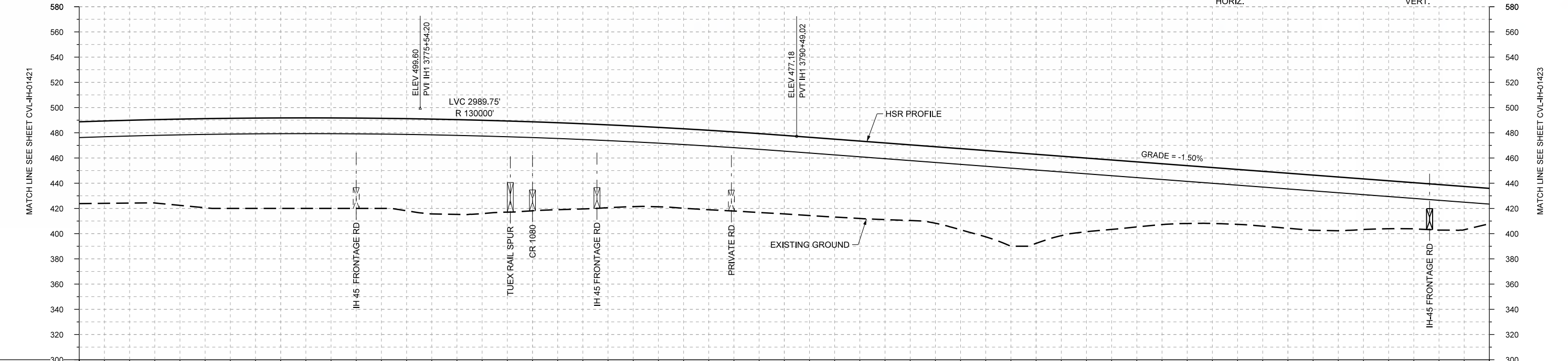
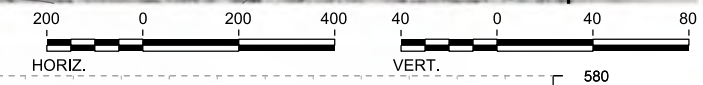
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**PLAN AND PROFILE**  
 IH1 3706+00 TO IH1 3762+00

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No: 234180  
 Drawing No: CVL-IH-01421  
 Rev: 01





PLAN



PROFILE

STATIONING	IH1 3762+00	IH1 3770+00	IH1 3780+00	IH1 3790+00	IH1 3800+00	IH1 3810+00	IH1 3818+00
HOR. ALIGNMENT	L=4849			L=1150		R=33000 L=7257	
VER. ALIGNMENT	R=130000			L=6021.84 G=-1.500%			
CUT AND FILL	+64.9	+65.7	+68.4	+71.5	+71.8	+71.8	+71.5
TYP. SECTION	VIADUCT (T)						

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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Texas Registered Engineering Firm: F-1990

**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**

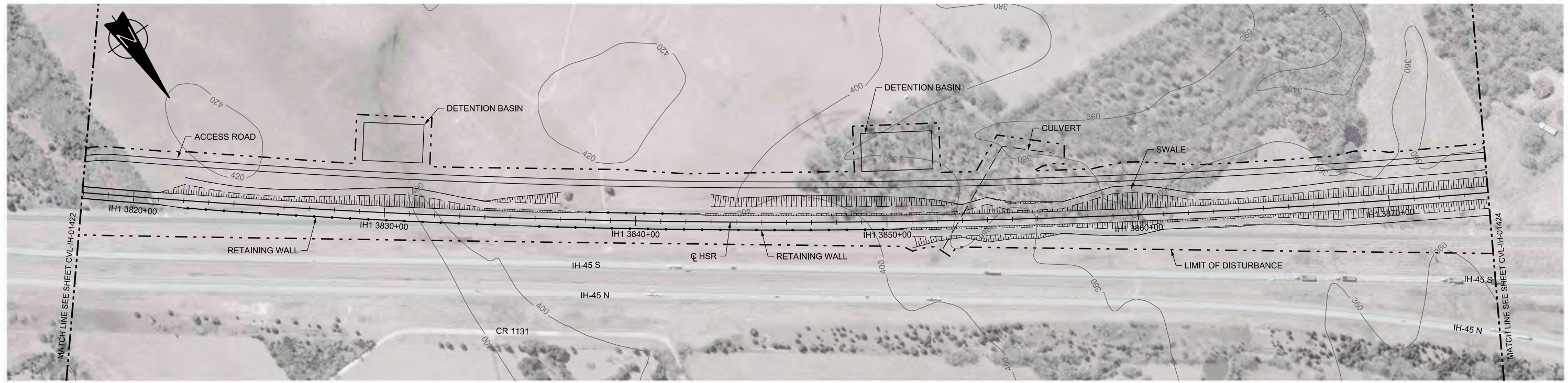
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

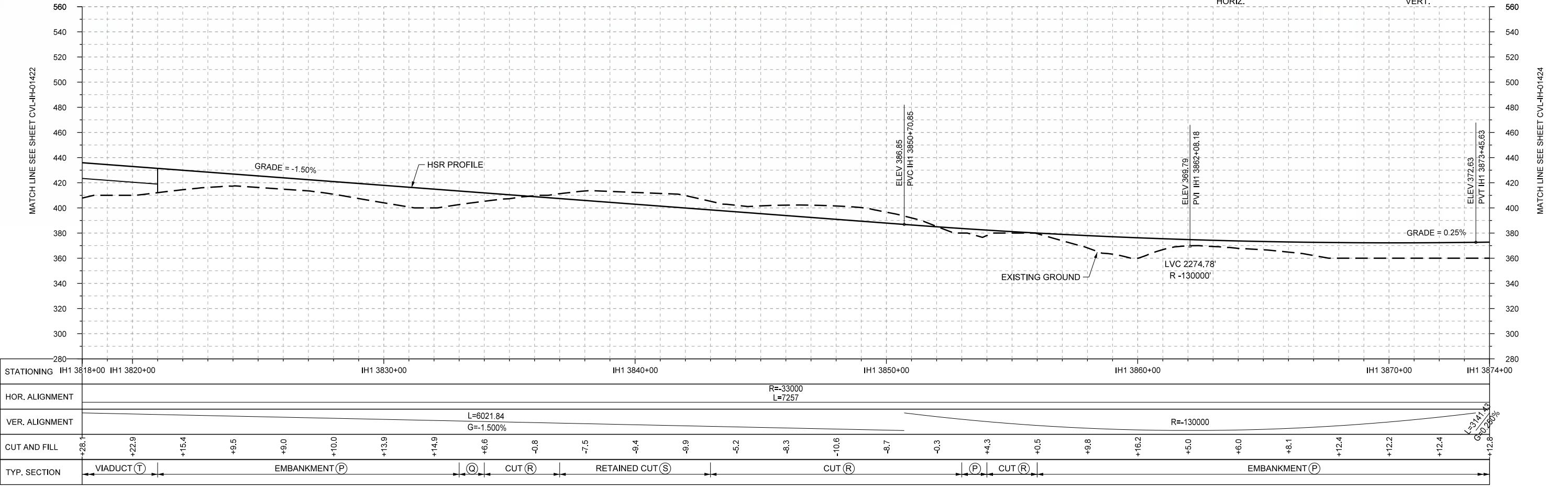
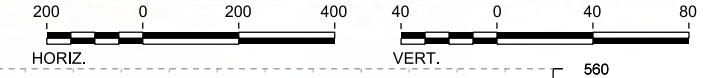
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 3762+00 TO IH1 3818+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01422
Rev	01





PLAN



PROFILE

STATIONING	IH1 3818+00	IH1 3820+00	IH1 3830+00	IH1 3840+00	IH1 3850+00	IH1 3860+00	IH1 3870+00	IH1 3874+00																					
HOR. ALIGNMENT	R=-33000 L=7257																												
VER. ALIGNMENT	L=6021.84 G=-1.500%				R=130000																								
CUT AND FILL	+28.1	+22.9	+15.4	+9.5	+9.0	+10.0	+13.9	+14.9	+6.6	-0.8	-7.5	-9.4	-9.9	-5.2	-8.3	-10.6	-8.7	-0.3	+4.3	+0.5	+9.8	+16.2	+5.0	+6.0	+8.1	+12.4	+12.2	+12.4	+12.8
TYP. SECTION	VIADUCT (T)		EMBANKMENT (P)			(Q)	CUT (R)	RETAINED CUT (S)													(P)	CUT (R)		EMBANKMENT (P)					

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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Houston, Texas 77042 USA  
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www.arup.com  
Texas Registered Engineering Firm: F-1990

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

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

Drawing Title

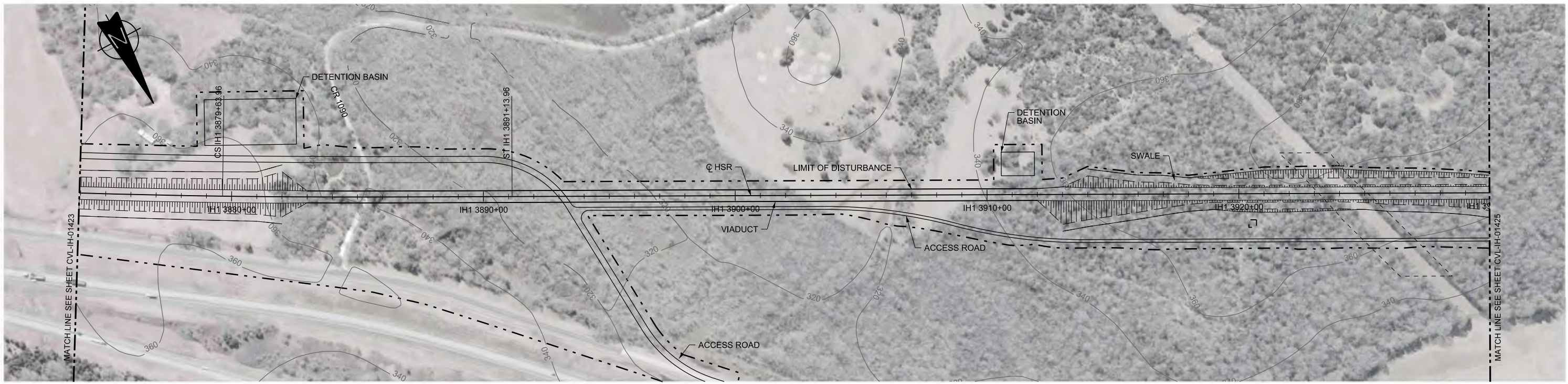
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 3818+00 TO IH1 3874+00**

Scale  
AS SHOWN

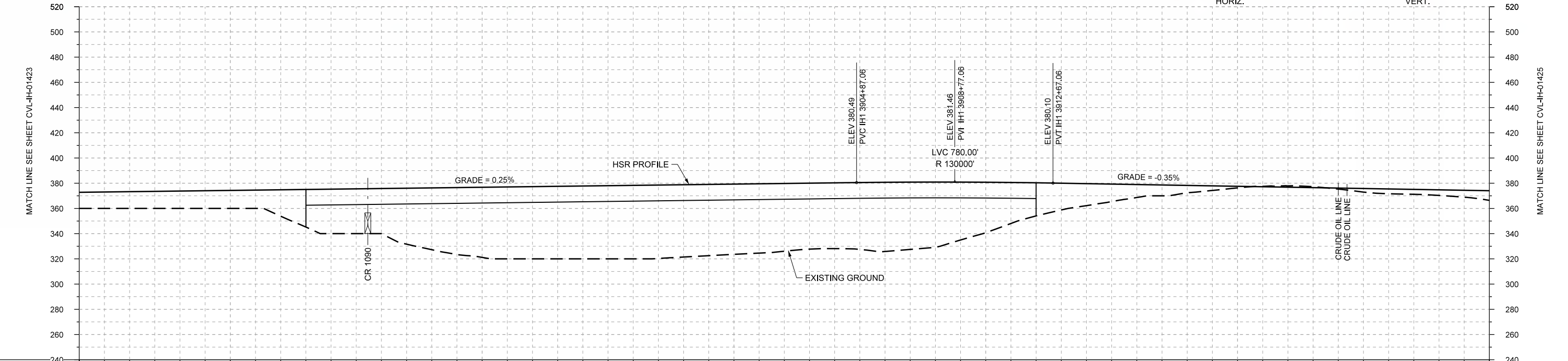
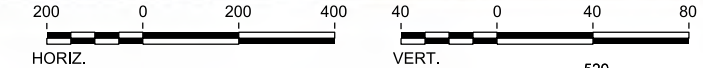
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01423	01





PLAN



PROFILE

STATIONING	IH1 3874+00	IH1 3880+00	IH1 3890+00	IH1 3900+00	IH1 3910+00	IH1 3920+00	IH1 3930+00																						
HOR. ALIGNMENT	R=33000 L=7257		L=1150			L=18241																							
VER. ALIGNMENT	L=3141.43 G=0.250%			R=130000		L=3079.10 G=-0.350%																							
CUT AND FILL	+12.8	+13.3	+13.8	+14.3	+21.0	+35.3	+35.8	+49.0	+55.6	+57.3	+57.8	+58.3	+57.4	+55.7	+53.7	+52.2	+54.9	+51.8	+40.0	+26.3	+17.4	+10.2	+5.8	+1.2	-1.1	+0.8	+3.7	+4.4	+7.6
TYP. SECTION	EMBANKMENT (P)				VIADUCT (E)				EMBANKMENT (A)				CUT (C)		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

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

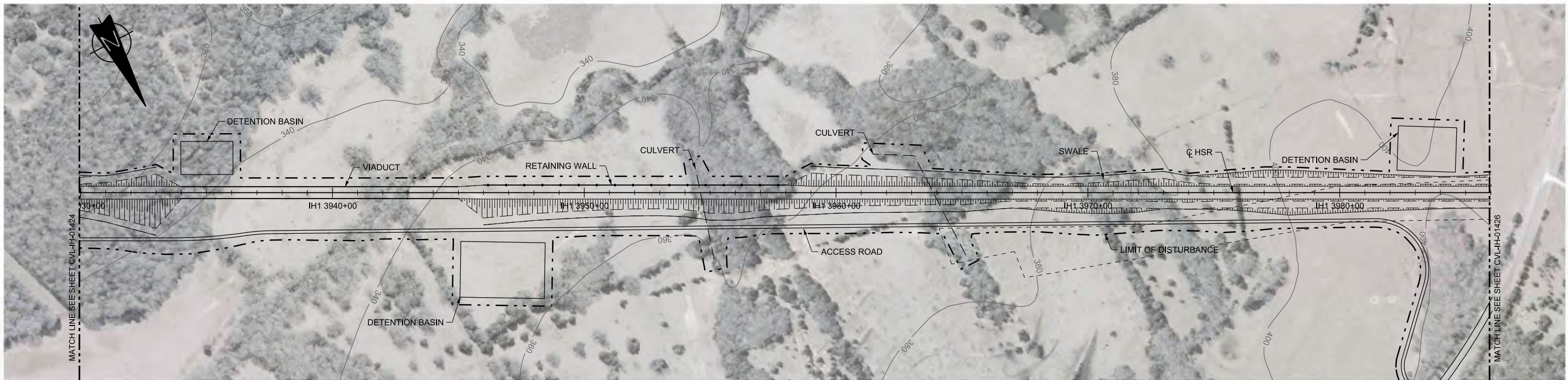
**FRESE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

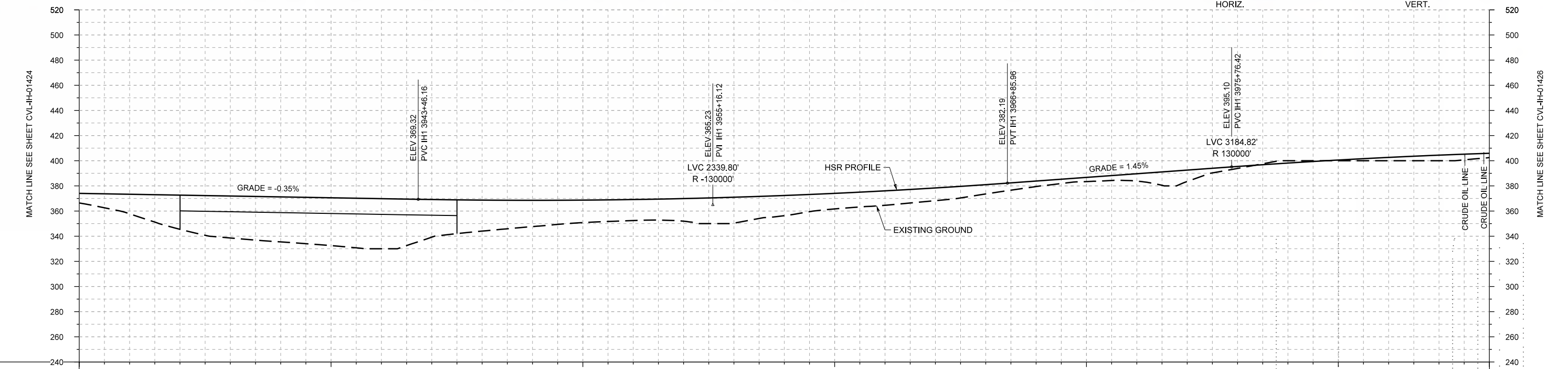
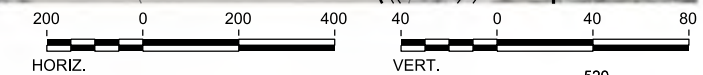
Drawing Title  
**IH (45) SEGMENT CIVIL**  
**PLAN AND PROFILE**  
**IH1 3874+00 TO IH1 3930+00**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No 234180 Drawing No CVL-IH-01424 Rev 01





PLAN



PROFILE

STATIONING	IH1 3930+00	IH1 3940+00	IH1 3950+00	IH1 3960+00	IH1 3970+00	IH1 3980+00	IH1 3986+00
HOR. ALIGNMENT	L=18241						
VER. ALIGNMENT	L=3079.10 G=-0.350%		R=130000			L=890.46 G=1.450%	
CUT AND FILL	+7.6	+15.5	+27.1	+33.3	+35.7	+38.0	+39.8
TYP. SECTION	EMBANKMENT (A)		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**

**ARUP**  
Arup Texas, Inc.  
10370 Richmond Ave., Suite 475  
Houston, Texas 77042 USA  
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www.arup.com  
Texas Registered Engineering Firm: F-1990

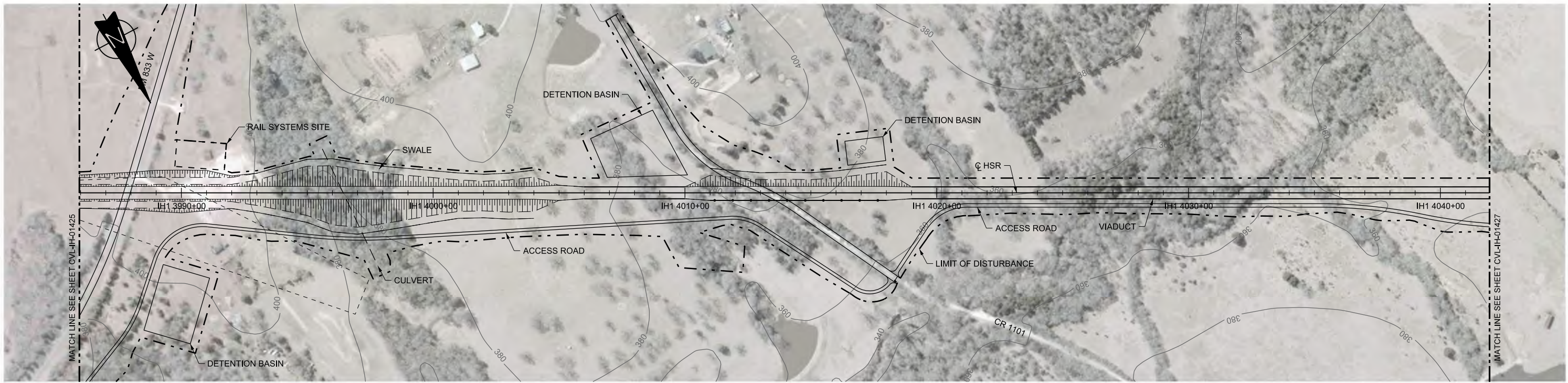
**FRESE AND NICHOLS**  
2711 North Haskell Ave., Suite 3300  
Dallas, Texas 75204  
Tel (214) 217 2200 Fax (214) 217 2201  
www.freese.com  
Texas Registered Engineering Firm: F-2144

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

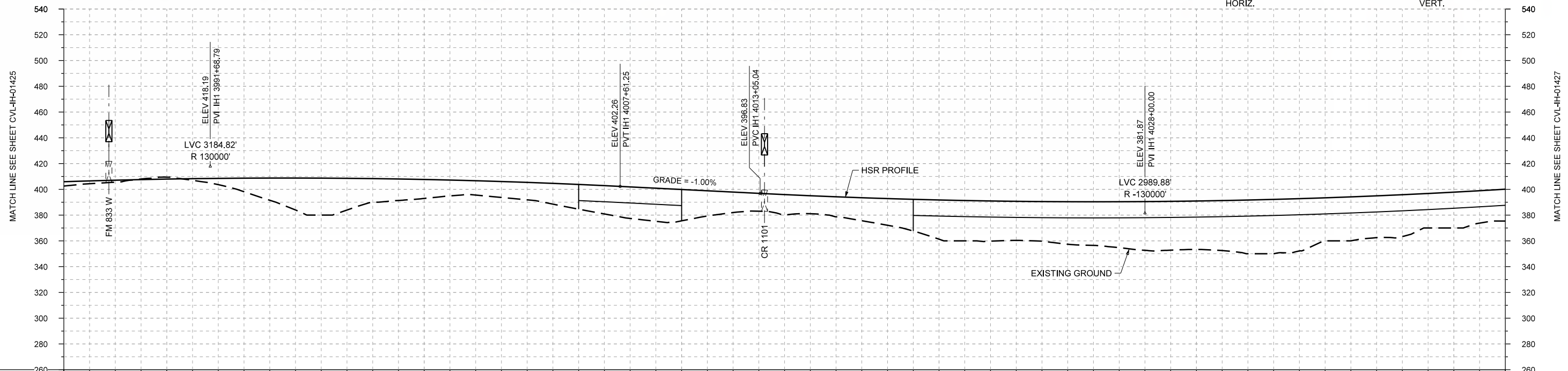
Drawing Title  
**IH (45) SEGMENT CIVIL PLAN AND PROFILE IH1 3930+00 TO IH1 3986+00**

Scale  
**AS SHOWN**  
Drawing Status  
**FINAL DRAFT**  
Job No. **234180** Drawing No. **CVL-IH-01425** Rev. **01**





PLAN



PROFILE

STATIONING	IH1 3986+00	IH1 3990+00	IH1 4000+00	IH1 4010+00	IH1 4020+00	IH1 4030+00	IH1 4040+00	IH1 4042+00																					
HOR. ALIGNMENT																													
VER. ALIGNMENT	R=130000 L=543.79 G=-1.000% R=-130000																												
CUT AND FILL	+3.4	+1.5	-1.5	+4.9	+17.2	+28.7	+18.3	+14.7	+11.2	+13.6	+19.2	+24.5	+24.4	+15.9	+15.9	+15.6	+20.7	+30.4	+31.2	+30.7	+33.8	+37.8	+37.6	+41.7	+40.6	+34.1	+32.4	+27.8	+24.7
TYP. SECTION	CUT (C)		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**



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 Texas Registered Engineering Firm: F-2144

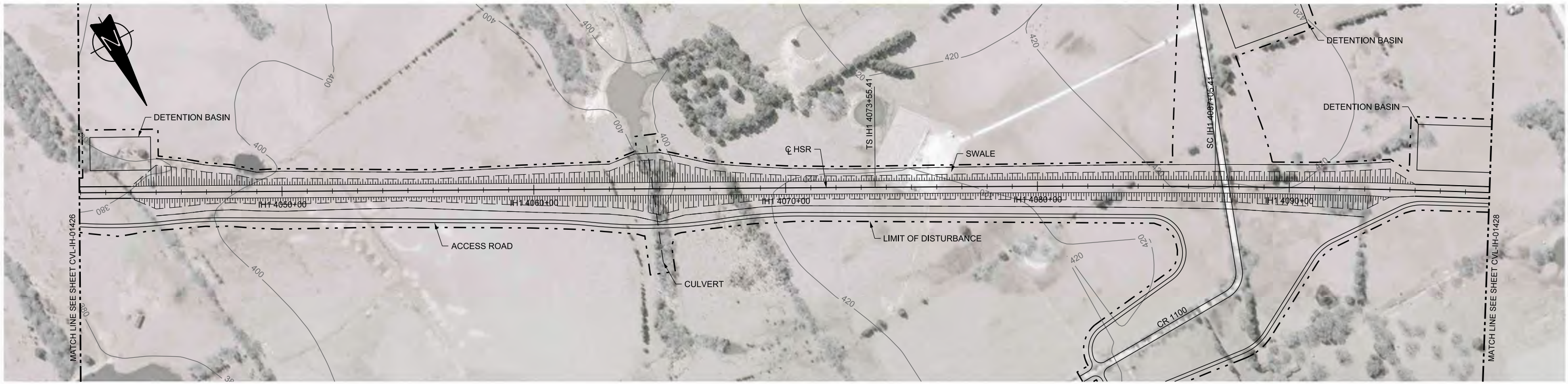


Client  
 1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

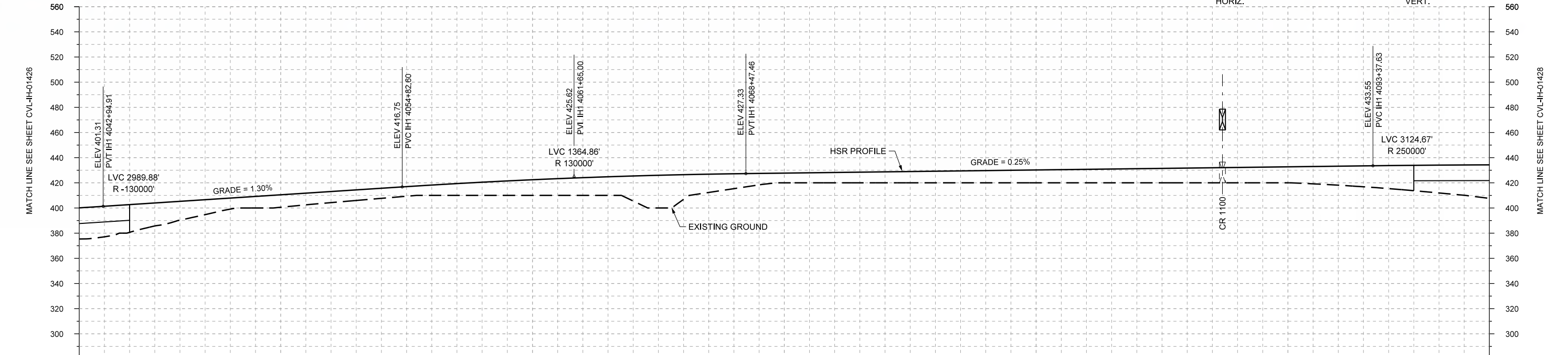
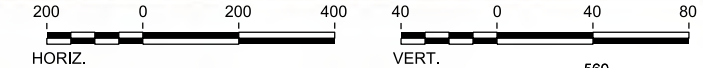
Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH1 3986+00 TO IH1 4042+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01426	01	





PLAN



PROFILE

STATIONING	IH1 4042+00	IH1 4050+00	IH1 4060+00	IH1 4070+00	IH1 4080+00	IH1 4090+00	IH1 4098+00																						
HOR. ALIGNMENT	L=18241				L=1350		R=42000 L=5758																						
VER. ALIGNMENT	R=130000	L=1187.69 G=1.300%	R=130000	L=2490.17 G=0.250%			R=250000																						
CUT AND FILL	+24.7	+22.0	+15.0	+8.8	+8.9	+8.8	+8.0	+8.2	+10.5	+12.4	+14.1	+19.9	+19.7	+11.8	+7.7	+8.2	+8.7	+9.2	+9.7	+10.2	+10.7	+11.2	+11.7	+12.2	+12.7	+15.1	+18.3	+22.2	+26.7
TYP. SECTION	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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www.freese.com  
Texas Registered Engineering Firm: F-2144

Client

**TEXAS CENTRAL**

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

Drawing Title

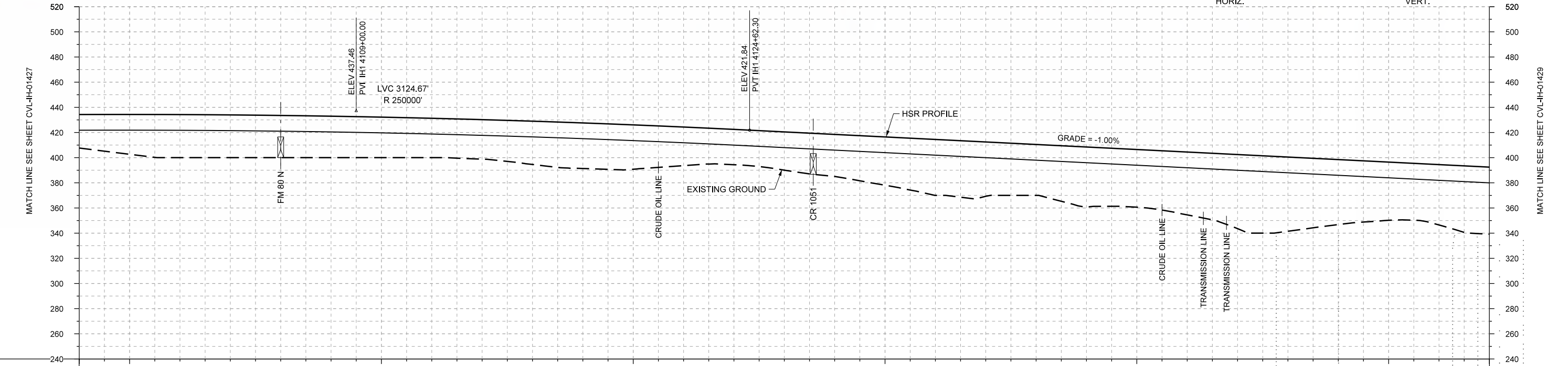
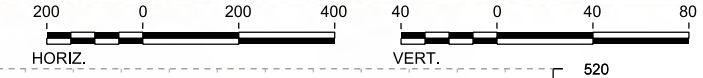
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 4042+00 TO IH1 4098+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01427	01	





PLAN



PROFILE

STATIONING	IH1 4098+00	IH1 4100+00	IH1 4110+00	IH1 4120+00	IH1 4130+00	IH1 4140+00	IH1 4150+00	IH1 4154+00																					
HOR. ALIGNMENT	R=42000 L=5758				L=1350																								
VER. ALIGNMENT	R=250000				L=7187.82 G=-1.000%																								
CUT AND FILL	+26.7	+31.6	+34.2	+33.9	+33.5	+32.9	+32.2	+31.3	+31.4	+34.4	+36.2	+35.2	+30.7	+28.1	+30.5	+33.4	+38.4	+44.5	+43.2	+40.5	+47.6	+45.9	+50.0	+58.9	+59.0	+51.7	+48.3	+48.0	+53.4
TYP. SECTION	VIADUCT (E)																												

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

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 4098+00 TO IH1 4154+00**

Scale

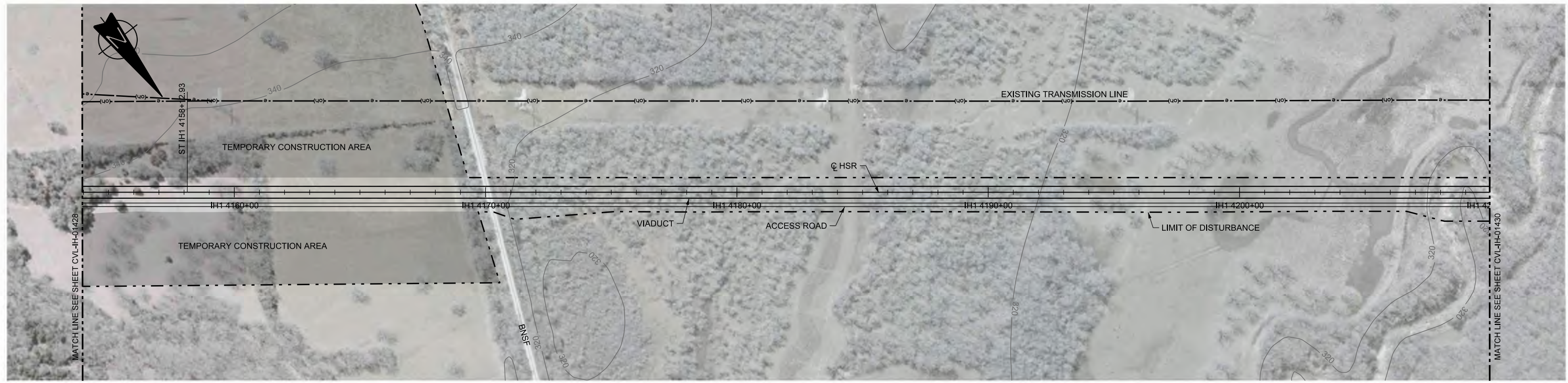
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Drawing Status

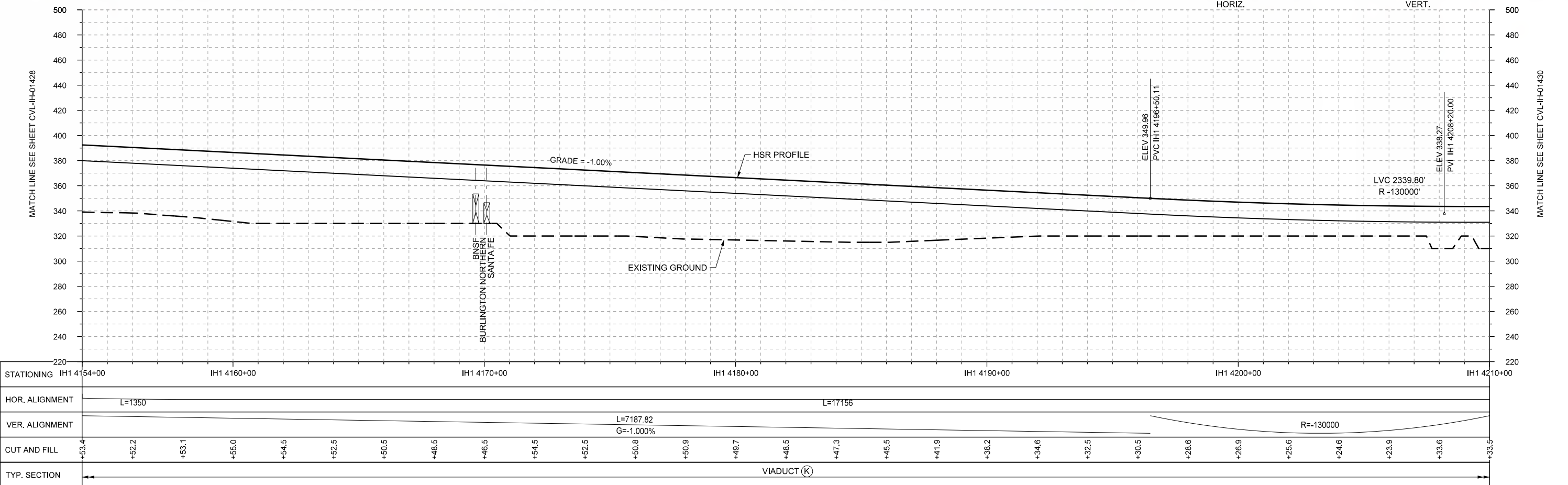
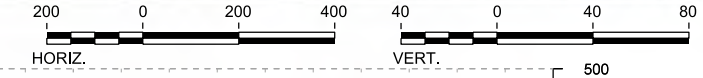
**FINAL DRAFT**

Job No	234180	Drawing No	CVL-IH-01428	Rev	01
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PLAN



PROFILE

STATIONING	IH1 4154+00	IH1 4160+00	IH1 4170+00	IH1 4180+00	IH1 4190+00	IH1 4200+00	IH1 4210+00																						
HOR. ALIGNMENT	L=1350		L=17156																										
VER. ALIGNMENT			L=7187.82 G=-1.000%			R=130000																							
CUT AND FILL	+53.4	+52.2	+53.1	+55.0	+54.5	+52.5	+50.5	+48.5	+46.5	+54.5	+52.5	+50.8	+50.9	+49.7	+48.5	+47.3	+45.5	+41.9	+36.2	+34.6	+32.5	+30.5	+28.6	+26.9	+25.6	+24.6	+23.9	+33.6	+33.5
TYP. SECTION	VIADUCT (K)																												

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.  
10370 Richmond Ave., Suite 475  
Houston, Texas 77042 USA  
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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

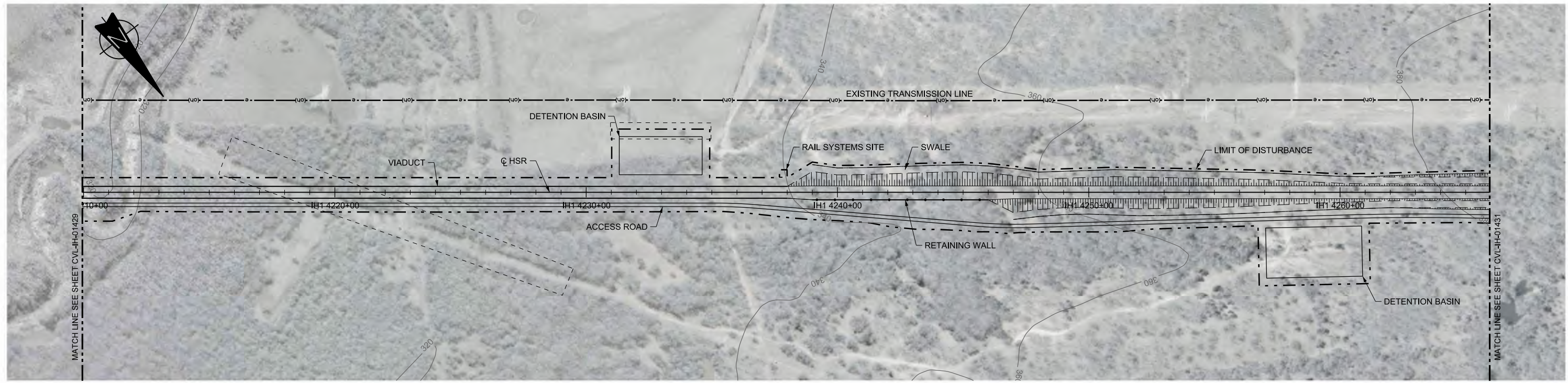
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 4154+00 TO IH1 4210+00**

Scale  
AS SHOWN

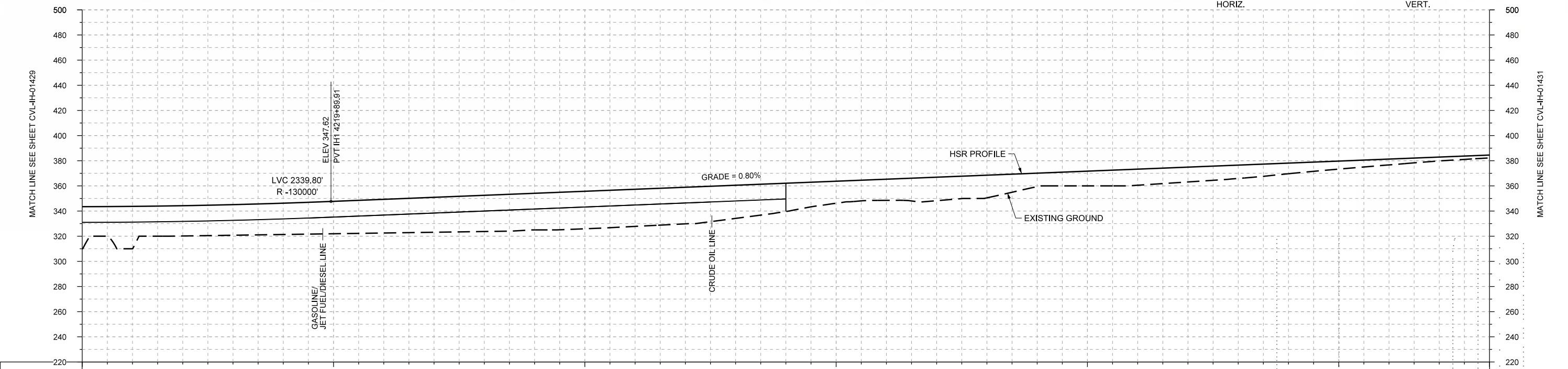
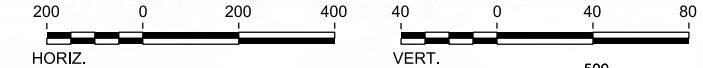
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01429	01





PLAN



PROFILE

STATIONING	IH1 4210+00	IH1 4220+00	IH1 4230+00	IH1 4240+00	IH1 4250+00	IH1 4260+00	IH1 4266+00																						
HOR. ALIGNMENT	L=17156																												
VER. ALIGNMENT	R=-130000		L=5002.62 G=0.800%																										
CUT AND FILL	+33.5	+33.7	+24.0	+24.3	+24.9	+25.8	+26.8	+27.8	+28.8	+29.1	+29.8	+29.5	+28.1	+26.3	+22.5	+17.5	+16.8	+16.7	+16.0	+10.7	+11.7	+12.8	+11.8	+10.6	+8.4	+6.4	+4.6	+3.1	+2.3
TYP. SECTION	VIADUCT (K)										EMBANKMENT (F)										CUT (H)								

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

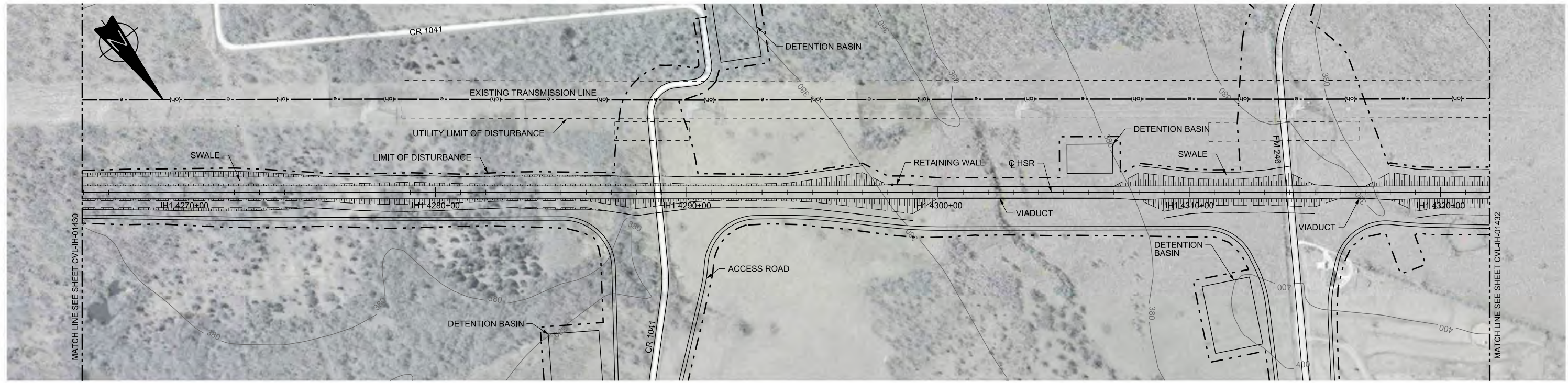
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 4210+00 TO IH1 4266+00**

Scale  
AS SHOWN

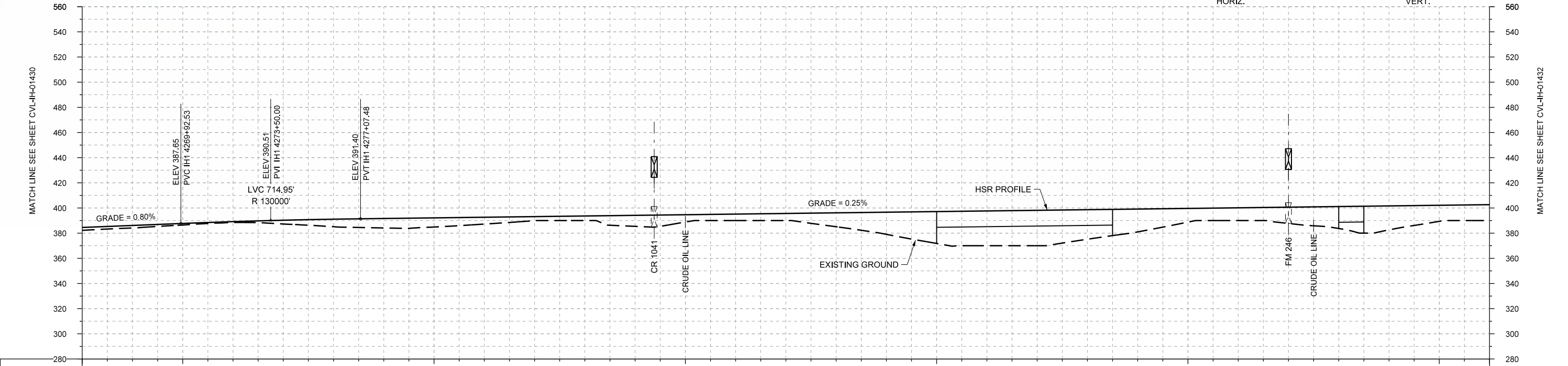
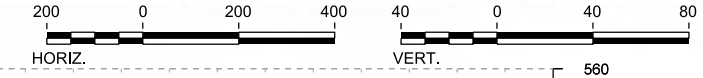
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01430	01





PLAN



STATIONING	IH1 4266+00	IH1 4270+00	IH1 4280+00	IH1 4290+00	IH1 4300+00	IH1 4310+00	IH1 4320+00	IH1 4322+00																					
HOR. ALIGNMENT	L=17156																												
VER. ALIGNMENT	L=5002.62 G=0.800%		R=130000			L=5261.67 G=0.250%																							
CUT AND FILL	+2.3	+2.0	+1.3	+0.7	+3.0	+6.0	+7.5	+7.2	+5.4	+3.2	+3.6	+8.7	+5.8	+5.1	+5.6	+11.0	+17.6	+25.3	+27.6	+28.1	+23.4	+18.1	+10.8	+10.1	+12.9	+17.4	+19.0	+12.7	+12.6
TYP. SECTION	CUT (H)			EMBANKMENT (F)			CUT (H)			EMBANKMENT (F)			VIADUCT (K)			EMBANKMENT (F)			EMBANKMENT (F)			EMBANKMENT (F)			EMBANKMENT (F)				

PROFILE

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



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

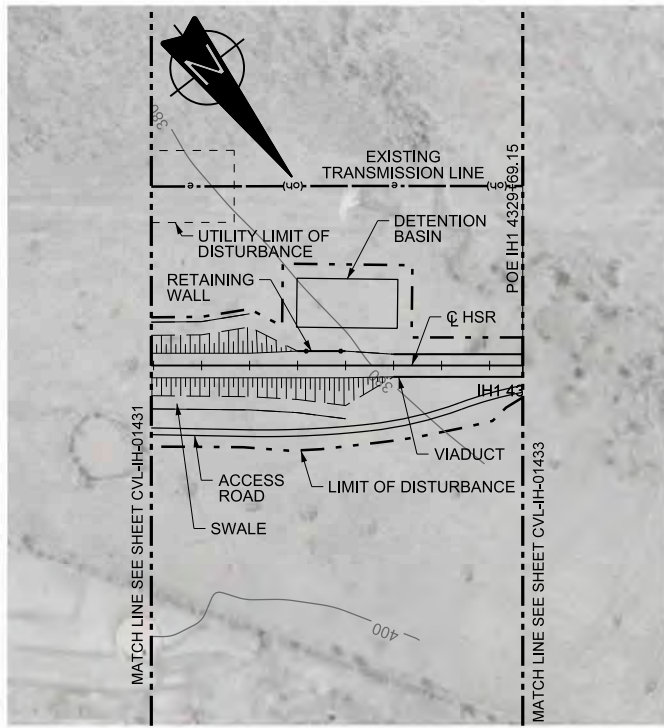


Client  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

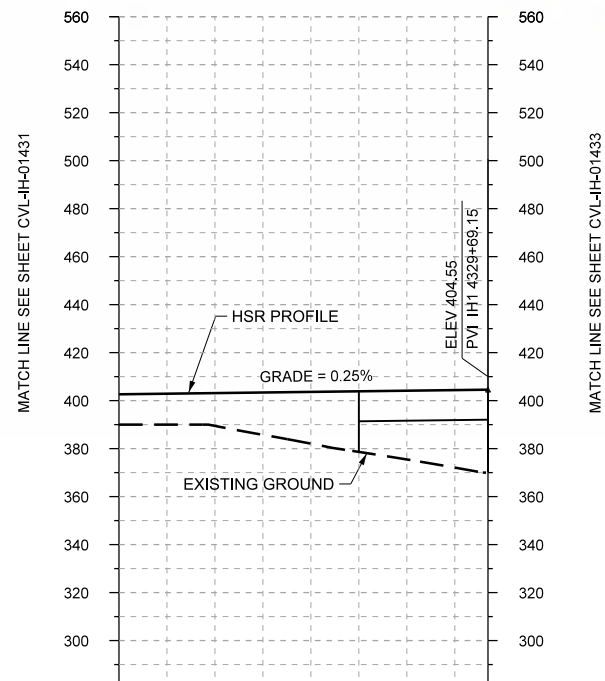
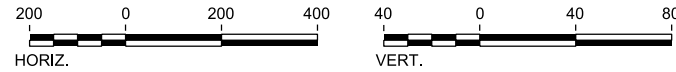
Drawing Title  
IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH1 4266+00 TO IH1 4322+00

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01431
Rev	01



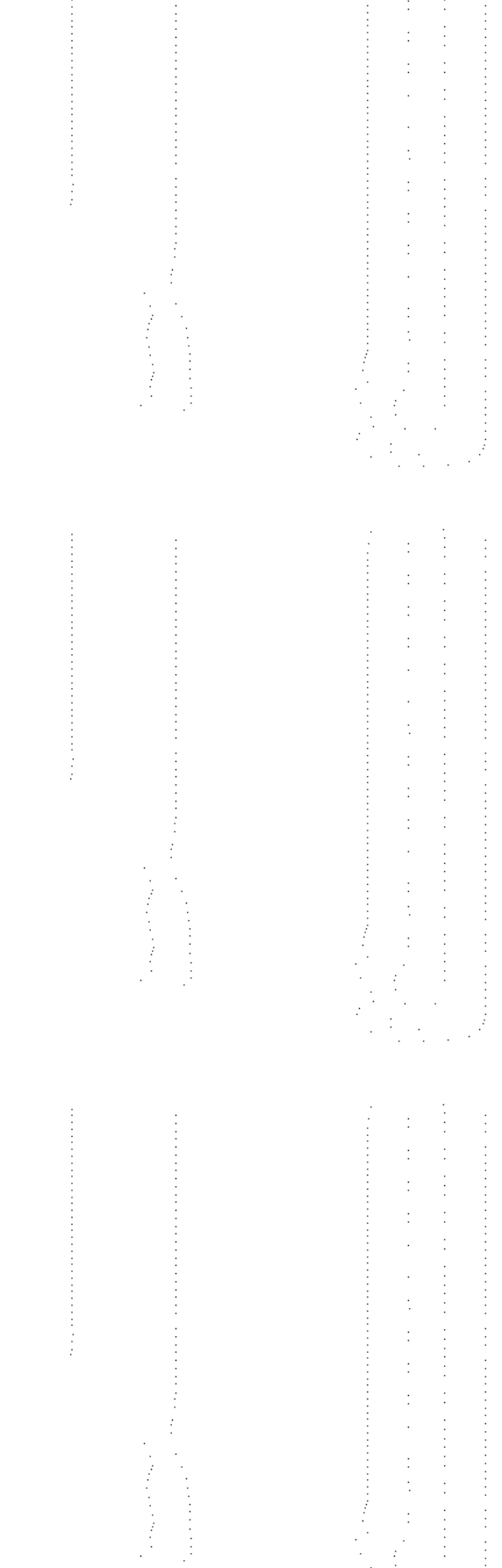


PLAN



STATIONING	IH1 4322+00		IH1 4329+69	
HOR. ALIGNMENT	L=17156			
VER. ALIGNMENT	L=5261.67 G=0.250%			
CUT AND FILL	+12.6	+13.6	+21.5	+28.6
TYP. SECTION	EMBANKMENT (F)		(K)	

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  
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 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
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 www.freese.com  
 Texas Registered Engineering Firm: F-2144

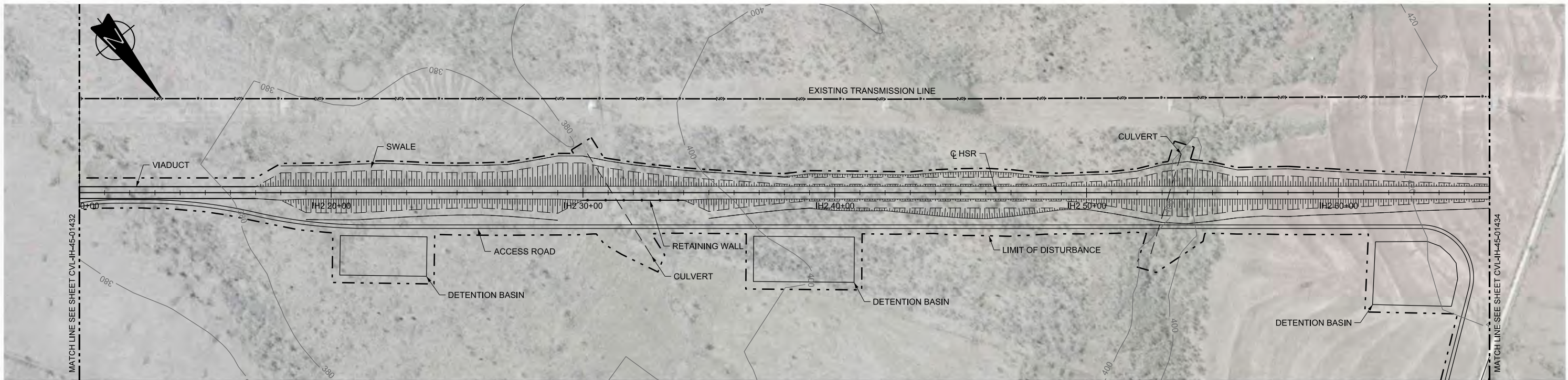
Client  
  
 1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH1 4322+00 TO IH1 4329+69**

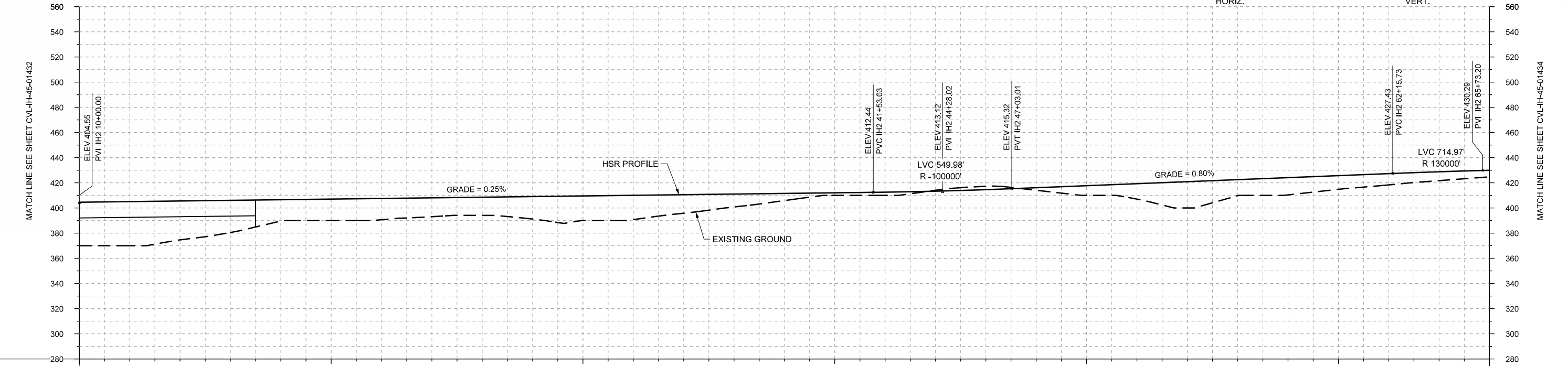
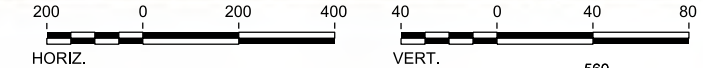
Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  

Job No	Drawing No	Rev
234180	CVL-IH-01432	01





PLAN



PROFILE

STATIONING	IH2 10+00	IH2 20+00	IH2 30+00	IH2 40+00	IH2 50+00	IH2 60+00	IH2 66+00		
HOR. ALIGNMENT	L=72305								
VER. ALIGNMENT	L=3153.03 G=0.250%			R=-100000		L=1512.72 G=0.800%			
CUT AND FILL	+34.6	+35.1	+31.0	+25.6	+17.0	+17.1	+17.0		
				+15.0	+14.5	+17.9	+19.6		
				+16.3	+14.8	+10.3	+5.7		
				+2.1	+2.6	-0.7	-2.7		
				+2.0	+7.7	+12.3	+20.9		
				+12.8	+13.7	+10.9	+9.0		
				+7.1	+5.2				
TYP. SECTION	VIADUCT (K)		EMBANKMENT (F)			CUT (H)		EMBANKMENT (F)	

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

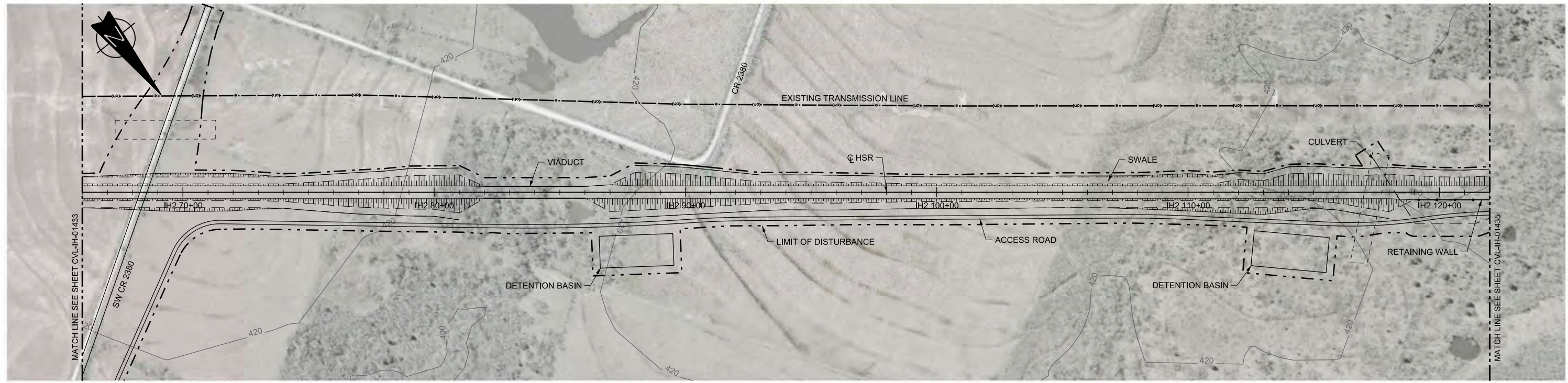
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH2 10+00 TO IH2 66+00**

Scale  
AS SHOWN

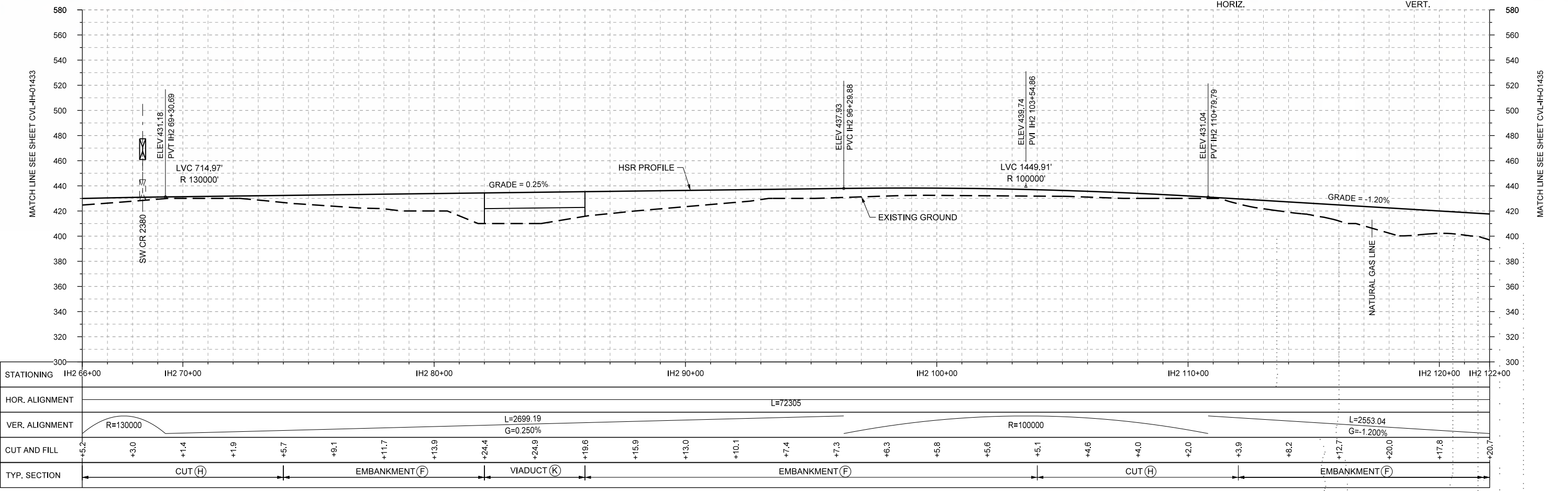
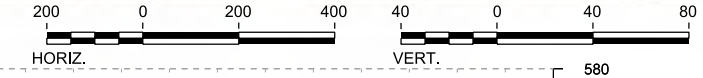
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01433	01





PLAN



PROFILE

STATIONING	IH2 66+00	IH2 70+00	IH2 80+00	IH2 90+00	IH2 100+00	IH2 110+00	IH2 120+00	IH2 122+00																					
HOR. ALIGNMENT	L=72305																												
VER. ALIGNMENT	R=130000		L=2699.19 G=0.250%			R=100000		L=2553.04 G=-1.200%																					
CUT AND FILL	+5.2	+3.0	+1.4	+1.9	+5.7	+9.1	+11.7	+13.9	+24.4	+24.9	+19.6	+15.9	+13.0	+10.1	+7.4	+7.3	+6.3	+5.8	+5.6	+5.1	+4.6	+4.0	+2.0	+3.9	+8.2	+12.7	+20.0	+17.8	+20.7
TYP. SECTION	CUT (H)		EMBANKMENT (F)			VIADUCT (K)	EMBANKMENT (F)			CUT (H)		EMBANKMENT (F)																	

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**  
 Arup Texas, Inc.  
 10370 Richmond Ave., Suite 475  
 Houston, Texas 77042 USA  
 Tel (713) 783 2787 Fax (713) 343 1467  
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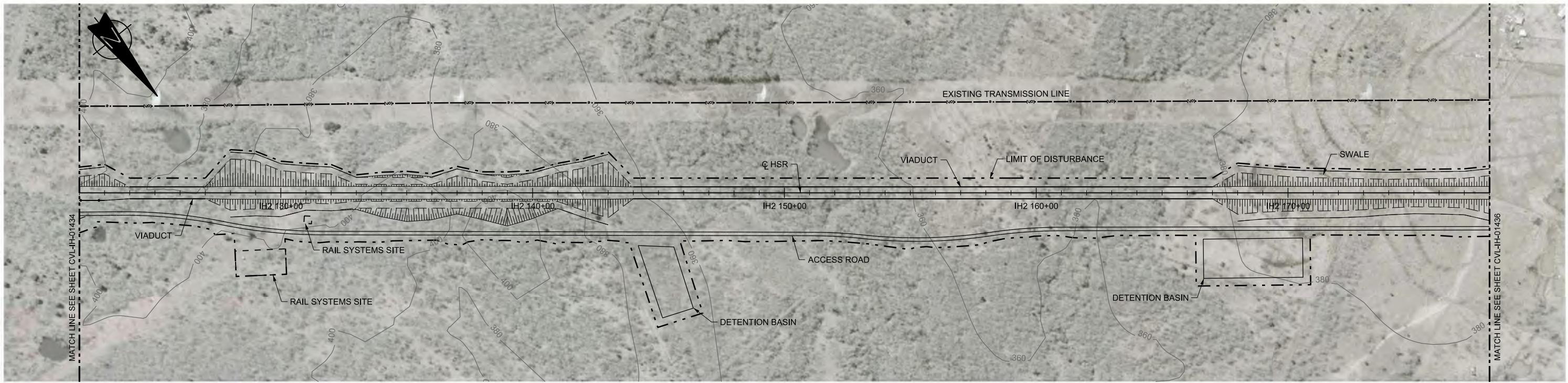
**FREESSE AND NICHOLS**  
 2711 North Haskell Ave., Suite 3300  
 Dallas, Texas 75204  
 Tel (214) 217 2200 Fax (214) 217 2201  
 www.freese.com  
 Texas Registered Engineering Firm: F-2144

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

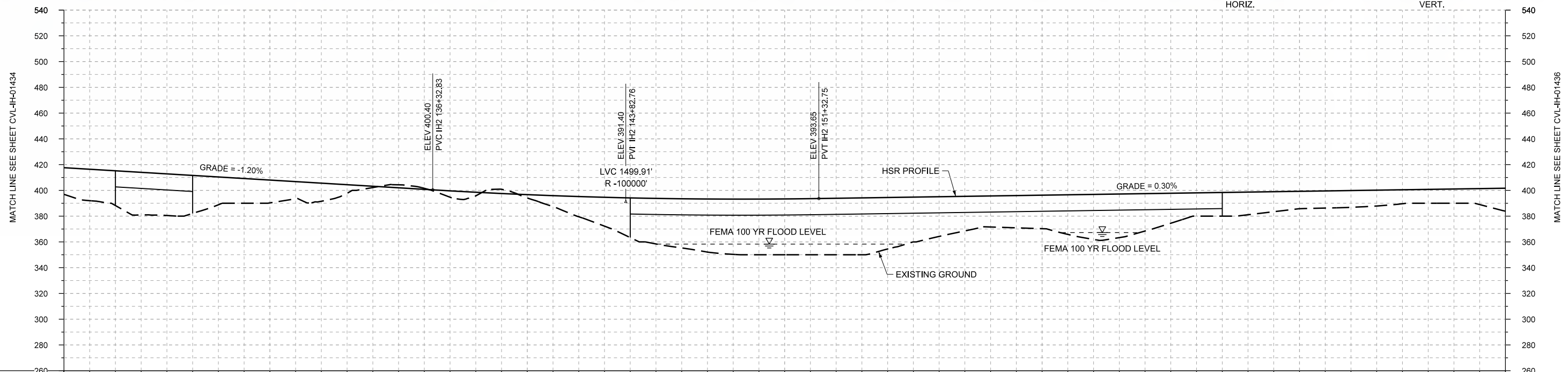
Drawing Title  
**IH (45) SEGMENT CIVIL**  
**PLAN AND PROFILE**  
**IH2 66+00 TO IH2 122+00**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No. 234180 Drawing No. CVL-IH-01434 Rev. 01





PLAN



PROFILE

STATIONING	IH2 122+00	IH2 130+00	IH2 140+00	IH2 150+00	IH2 160+00	IH2 170+00	IH2 178+00																						
HOR. ALIGNMENT	L=72305																												
VER. ALIGNMENT	L=2553.04 G=-1.200%			R=100000		L=10742.60 G=0.300%																							
CUT AND FILL	+20.7	+27.0	+32.3	+21.6	+17.7	+14.0	+1.0	-0.8	+2.8	+2.6	+15.7	+30.8	+38.2	+42.9	+43.3	+43.9	+40.0	+30.9	+24.1	+28.0	+35.0	+29.1	+18.1	+17.6	+13.6	+13.1	+10.9	+11.1	+17.9
TYP. SECTION	(F)	VIADUCT (K)	EMBANKMENT (F)	CUT (H)	(F)	CUT (H)	EMBANKMENT (F)										VIADUCT (K)												EMBANKMENT (F)

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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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

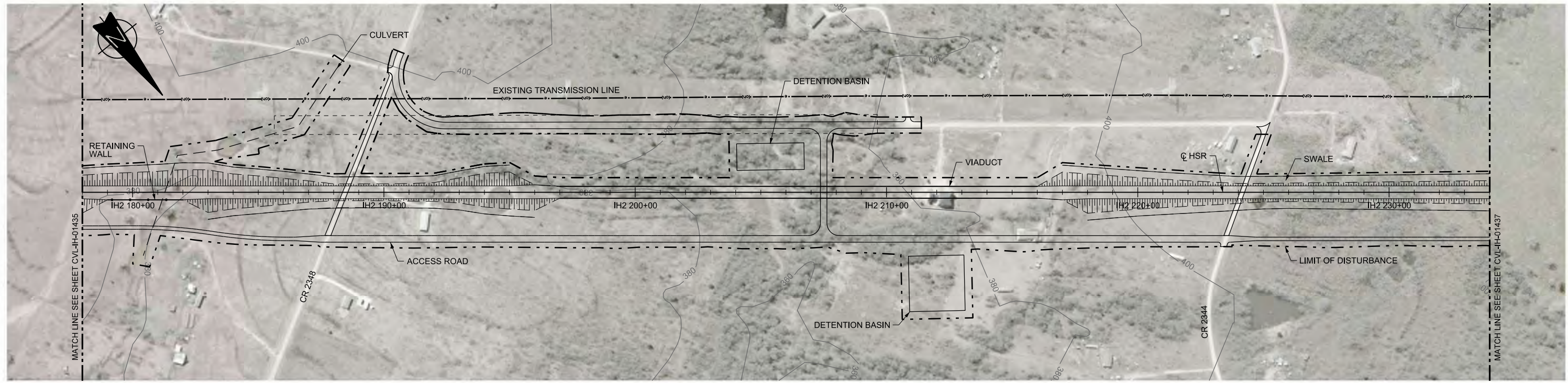
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH2 122+00 TO IH2 178+00**

Scale  
AS SHOWN

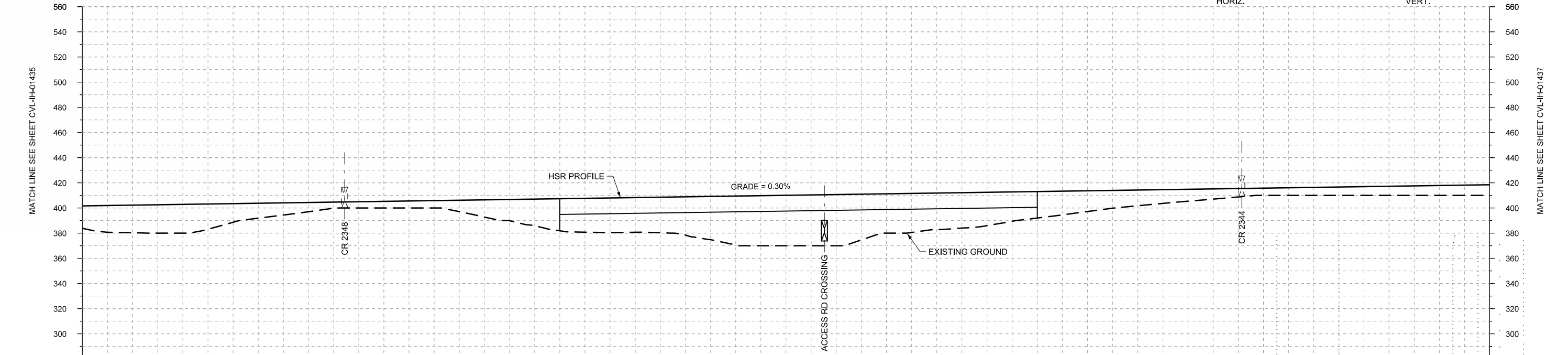
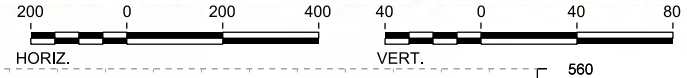
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01435	01





PLAN



STATIONING	IH2 178+00	IH2 180+00	IH2 190+00	IH2 200+00	IH2 210+00	IH2 220+00	IH2 230+00	IH2 234+00																					
HOR. ALIGNMENT	L=72305																												
VER. ALIGNMENT	L=10742.60 G=0.300%																												
CUT AND FILL	+17.9	+22.0	+22.9	+14.9	+8.7	+4.8	+5.3	+5.9	+13.8	+21.2	+27.0	+27.6	+30.4	+38.9	+40.1	+40.7	+31.3	+29.1	+26.5	+21.1	+16.5	+12.5	+9.5	+6.8	+6.1	+6.7	+7.3	+7.9	+8.5
TYP. SECTION	EMBANKMENT (F)				CUT (H)		EMBANKMENT (F)				VIADUCT (K)				EMBANKMENT (F)														

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

Client

**TEXAS CENTRAL**

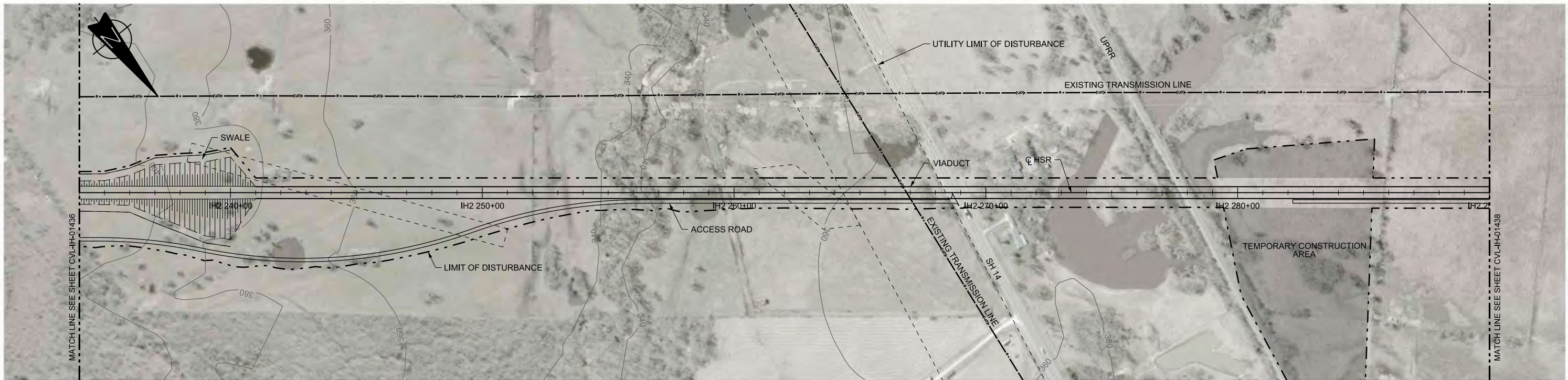
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

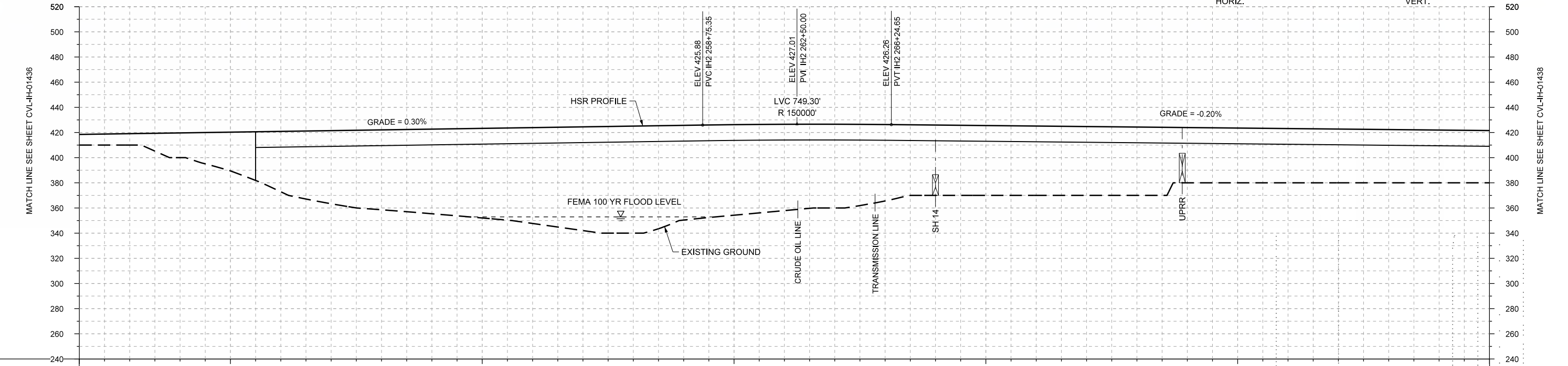
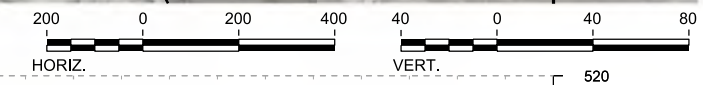
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH2 178+00 TO IH2 234+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01436
Rev	01





PLAN



PROFILE

STATIONING	IH2 234+00	IH2 240+00	IH2 250+00	IH2 260+00	IH2 270+00	IH2 280+00	IH2 290+00																						
HOR. ALIGNMENT	L=72305																												
VER. ALIGNMENT	L=10742.60 G=0.300%			R=150000		L=15855.07 G=-0.200%																							
CUT AND FILL	+8.5	+9.1	+19.7	+30.8	+46.0	+58.1	+63.5	+67.3	+71.2	+76.2	+82.5	+85.1	+75.3	+71.9	+66.6	+66.5	+60.7	+55.9	+55.5	+55.1	+54.7	+54.3	+43.9	+43.5	+43.1	+42.7	+42.3	+41.9	+41.5
TYP. SECTION	EMBANKMENT (F)										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  
**TEXAS CENTRAL**  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

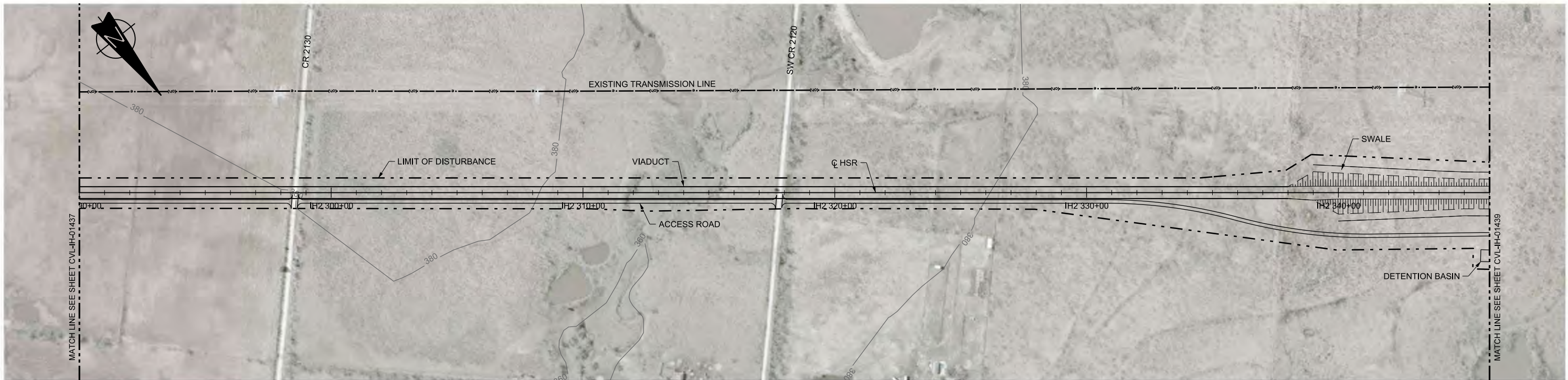
Drawing Title  
**IH (45) SEGMENT CIVIL PLAN AND PROFILE IH2 234+00 TO IH2 290+00**

Scale  
**AS SHOWN**

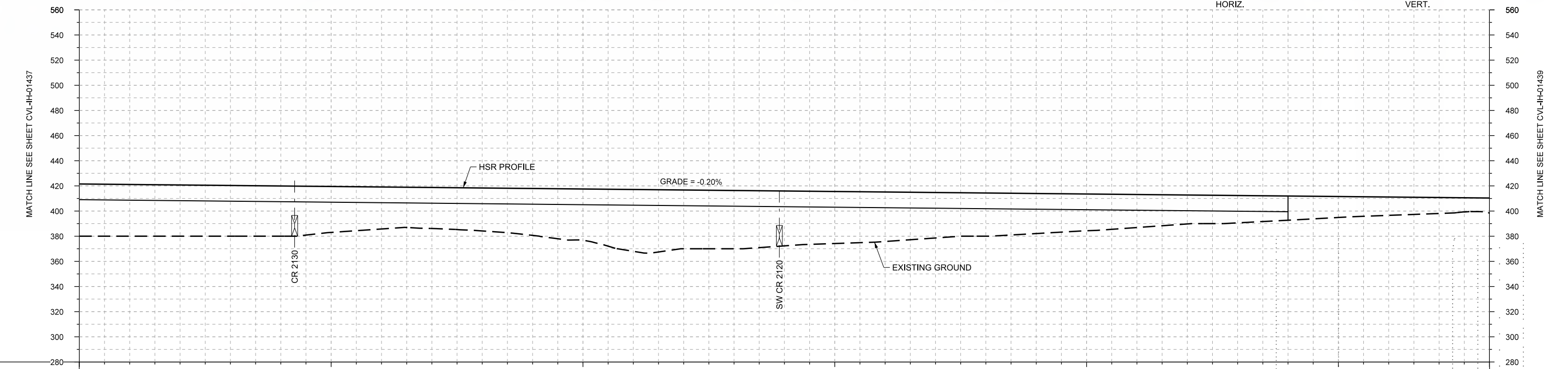
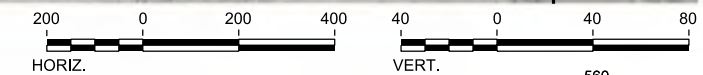
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01437	01





PLAN



PROFILE

STATIONING	IH2 290+00	IH2 300+00	IH2 310+00	IH2 320+00	IH2 330+00	IH2 340+00	IH2 346+00																						
HOR. ALIGNMENT	L=72305																												
VER. ALIGNMENT	L=15855.07 G=-0.200%																												
CUT AND FILL	+41.5	+41.1	+40.7	+40.3	+39.9	+36.5	+33.4	+32.6	+34.1	+37.3	+40.7	+49.1	+46.7	+46.3	+43.6	+41.3	+39.3	+36.1	+34.3	+31.8	+29.1	+26.2	+23.0	+21.7	+19.2	+16.6	+14.5	+12.6	+11.9
TYP. SECTION	VIADUCT (K)												EMBANKMENT (F)																

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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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

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH2 290+00 TO IH2 346+00**

Scale  
AS SHOWN

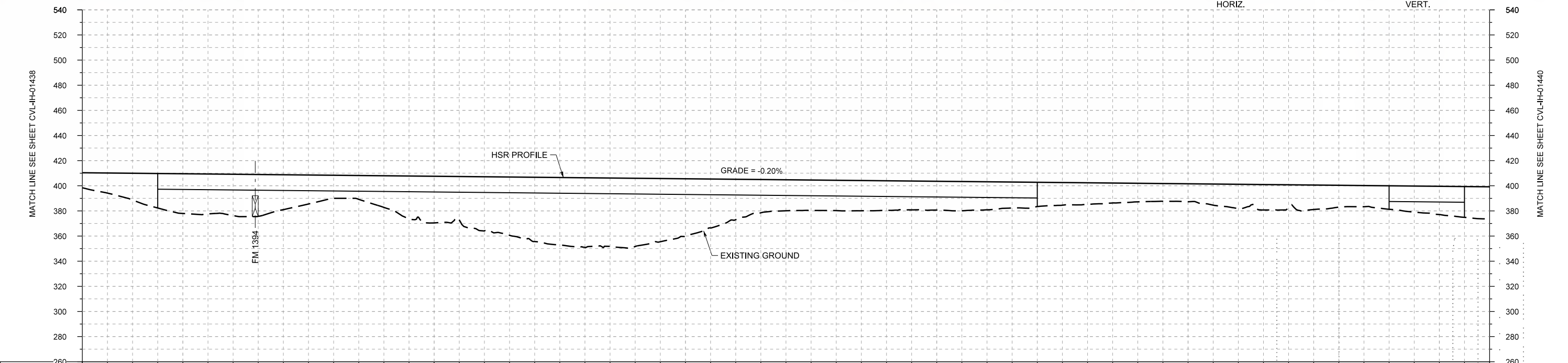
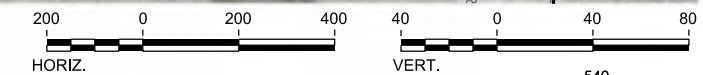
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01438	01





PLAN



STATIONING	IH2 346+00	IH2 350+00	IH2 360+00	IH2 370+00	IH2 380+00	IH2 390+00	IH2 400+00	IH2 402+00																					
HOR. ALIGNMENT	L=72305																												
VER. ALIGNMENT	L=15855.07 G=-0.200%																												
CUT AND FILL	+11.9	+21.2	+31.5	+32.8	+27.7	+16.3	+25.2	+37.2	+43.1	+51.2	+55.4	+54.3	+45.5	+32.2	+24.7	+24.1	+23.6	+22.9	+22.3	+19.4	+17.1	+14.8	+14.3	+19.4	+17.8	+17.4	+18.7	+22.5	+26.0
TYP. SECTION	EMBANKMENT (F)		VIADUCT (K)										EMBANKMENT (F)				VIADUCT (K)		(F)										

PROFILE

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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Dallas, Texas 75204  
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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

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH2 346+00 TO IH2 402+00**

Scale

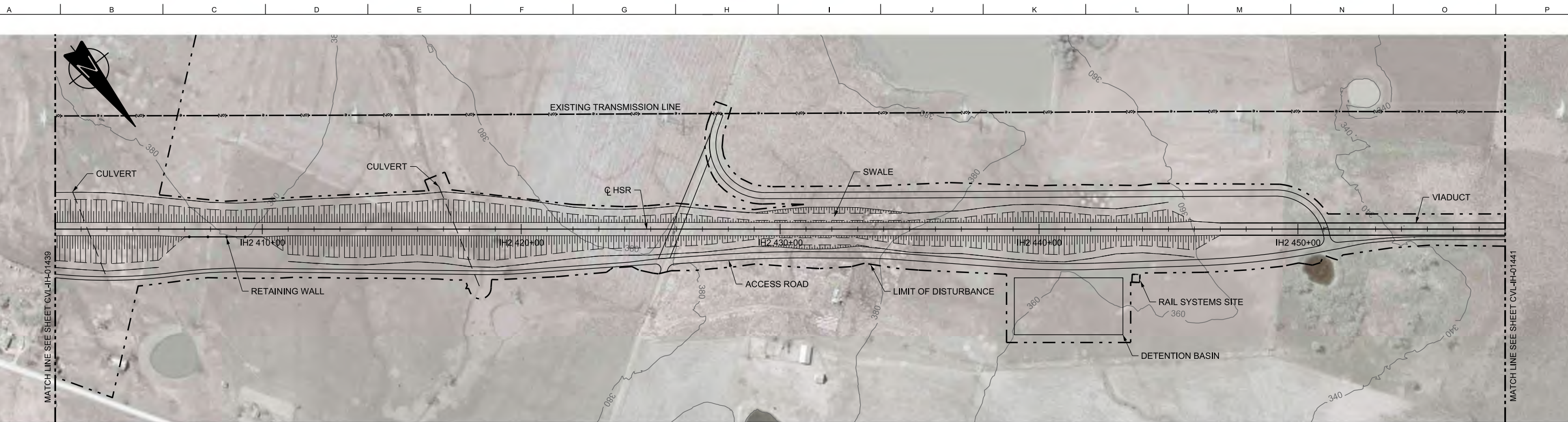
AS SHOWN

Drawing Status

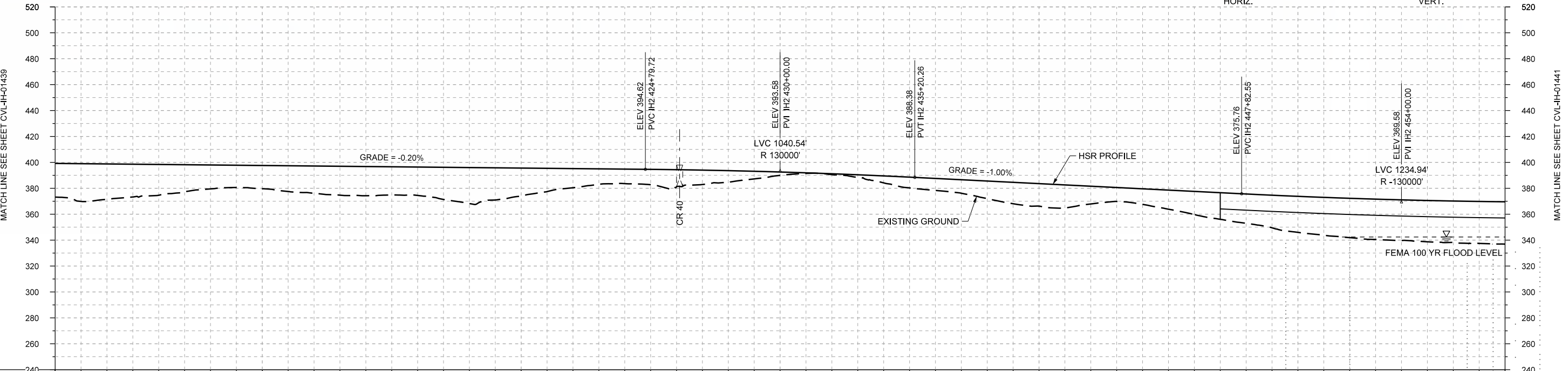
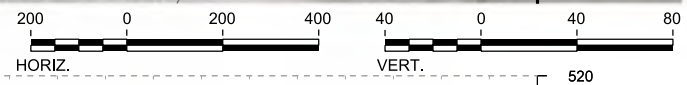
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01439	01





PLAN



PROFILE

STATIONING	IH2 402+00	IH2 410+00	IH2 420+00	IH2 430+00	IH2 440+00	IH2 450+00	IH2 458+00																						
HOR. ALIGNMENT	L=72305																												
VER. ALIGNMENT	L=15855.07 G=-0.200%			R=130000		L=1262.29 G=1.000%																							
CUT AND FILL	+26.0	+27.3	+23.8	+18.5	+18.0	+21.1	+22.6	+21.9	+27.9	+21.5	+14.8	+11.2	+13.0	+9.2	+2.5	+0.7	+5.3	+9.3	+13.6	+17.4	+13.7	+12.0	+17.9	+22.6	+27.8	+30.4	+31.4	+32.1	+32.7
TYP. SECTION	EMBANKMENT (F)										CUT (H)		EMBANKMENT (F)					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**

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

**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

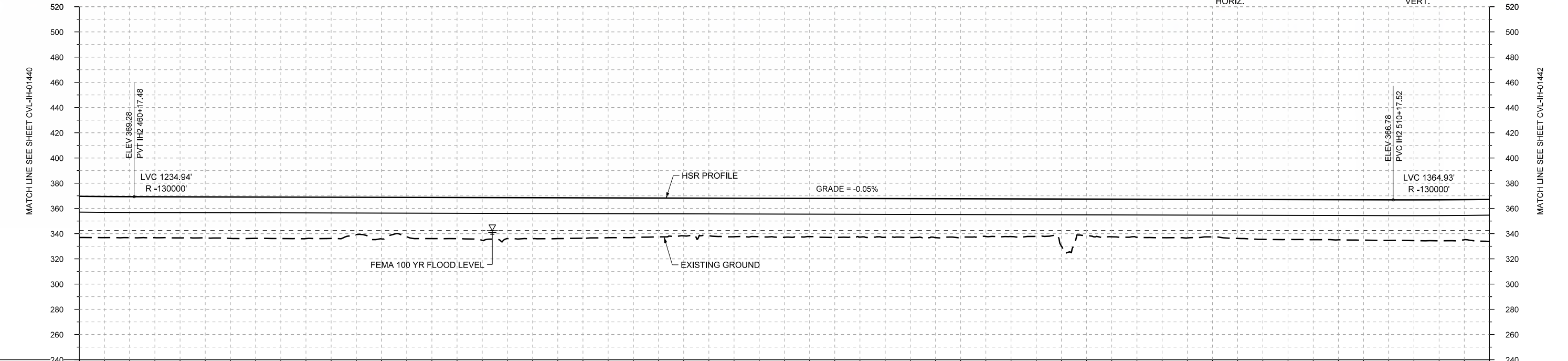
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH2 402+00 TO IH2 458+00**

Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01440
Rev	01





PLAN



PROFILE

STATIONING	IH2 458+00	IH2 460+00		IH2 470+00		IH2 480+00		IH2 490+00		IH2 500+00		IH2 510+00	IH2 514+00																
HOR. ALIGNMENT	L=72305																												
VER. ALIGNMENT	L=5000.03 G=-0.050%																												
CUT AND FILL	+32.7	+32.5	+32.6	+32.9	+32.9	+32.7	+33.0	+32.6	+33.9	+32.5	+32.1	+31.4	+30.0	+30.6	+30.9	+30.9	+30.7	+30.9	+29.8	+29.7	+28.8	+30.2	+30.6	+30.9	+31.7	+31.8	+32.2	+32.5	+33.3
TYP. SECTION	VIADUCT (K)																												

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

DRAWN BY  
**R. GIBBINS**

CHECKED BY  
**K. SEYMOUR**

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**C. TAYLOR**

DATE  
**09/15/2017**



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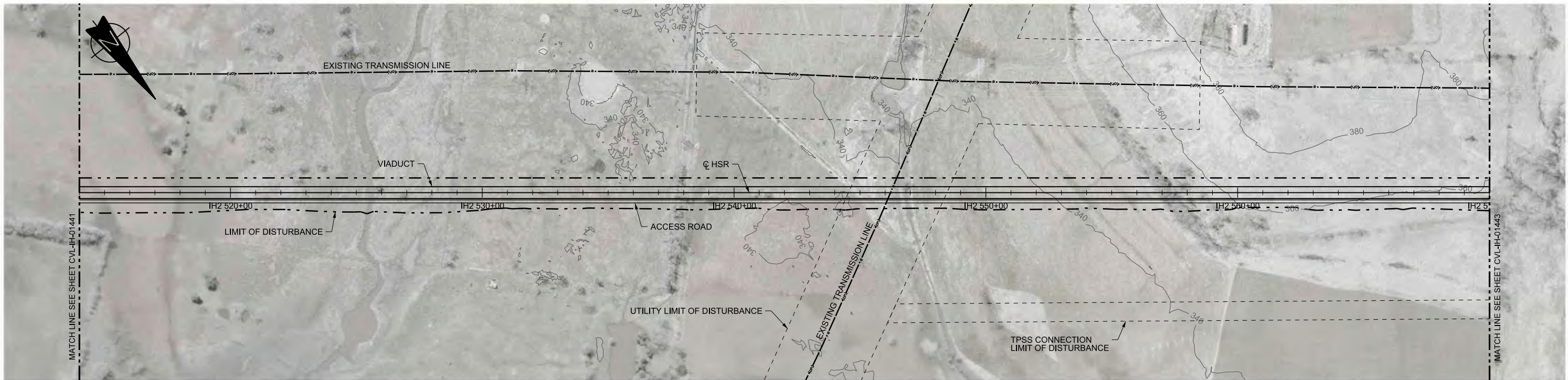


Client  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

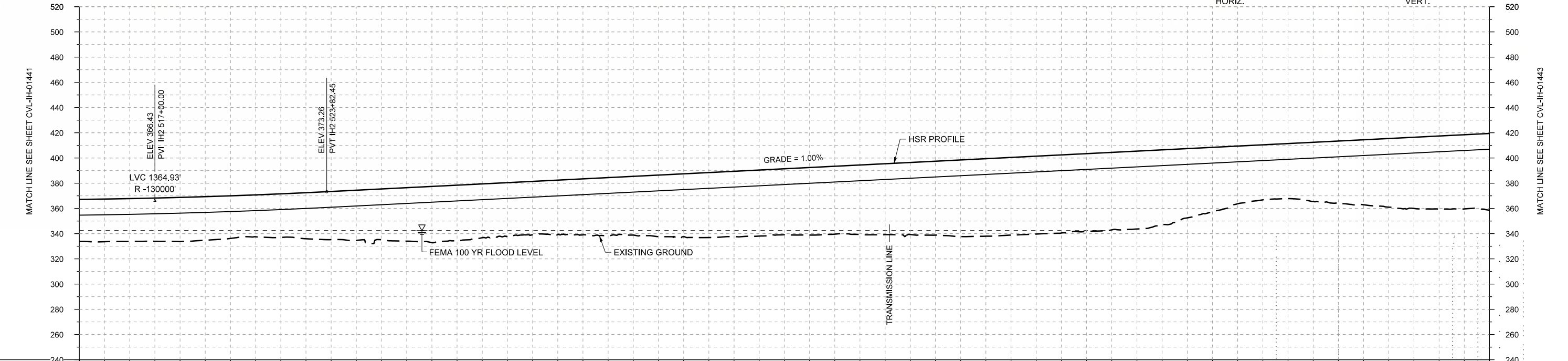
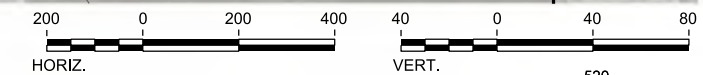
Drawing Title  
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH2 458+00 TO IH2 514+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01441	01	





PLAN



PROFILE

STATIONING	IH2 514+00	IH2 520+00	IH2 530+00	IH2 540+00	IH2 550+00	IH2 560+00	IH2 570+00																						
HOR. ALIGNMENT	L=72305																												
VER. ALIGNMENT	R=130000			L=6317.30 G=1.000%																									
CUT AND FILL	+33.3	+34.0	+35.0	+33.8	+34.6	+36.2	+40.3	+44.5	+42.6	+42.3	+44.4	+46.5	+49.8	+51.8	+52.3	+53.8	+56.2	+56.6	+61.4	+61.7	+61.7	+61.7	+54.9	+45.7	+43.6	+49.1	+54.4	+57.9	+60.9
TYP. SECTION	VIADUCT (K)																												

REV	DATE	BY	CHK	APP	DESCRIPTION

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

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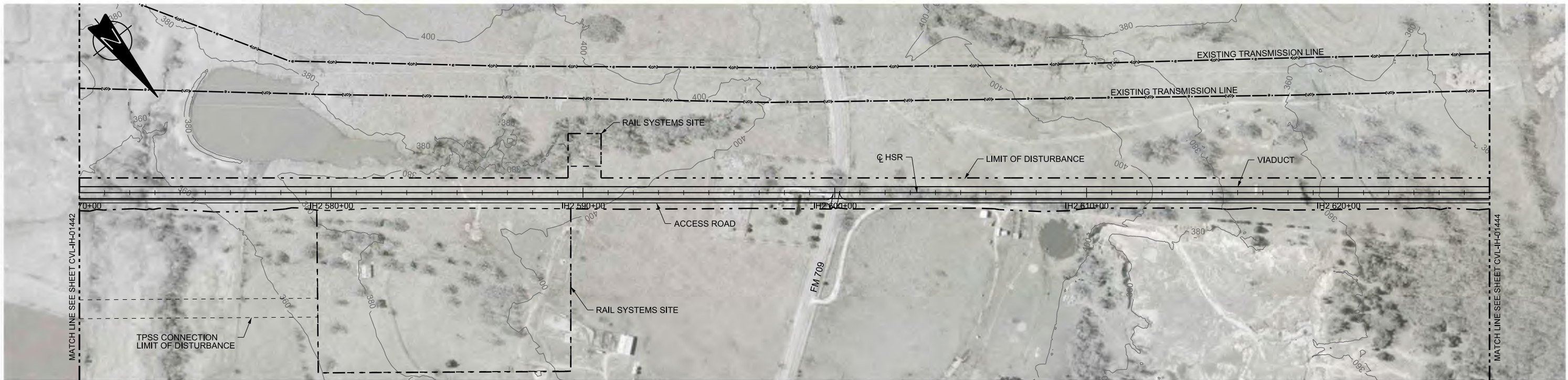
**FREESSE AND NICHOLS**  
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 Dallas, Texas 75204  
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 Texas Registered Engineering Firm: F-2144

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

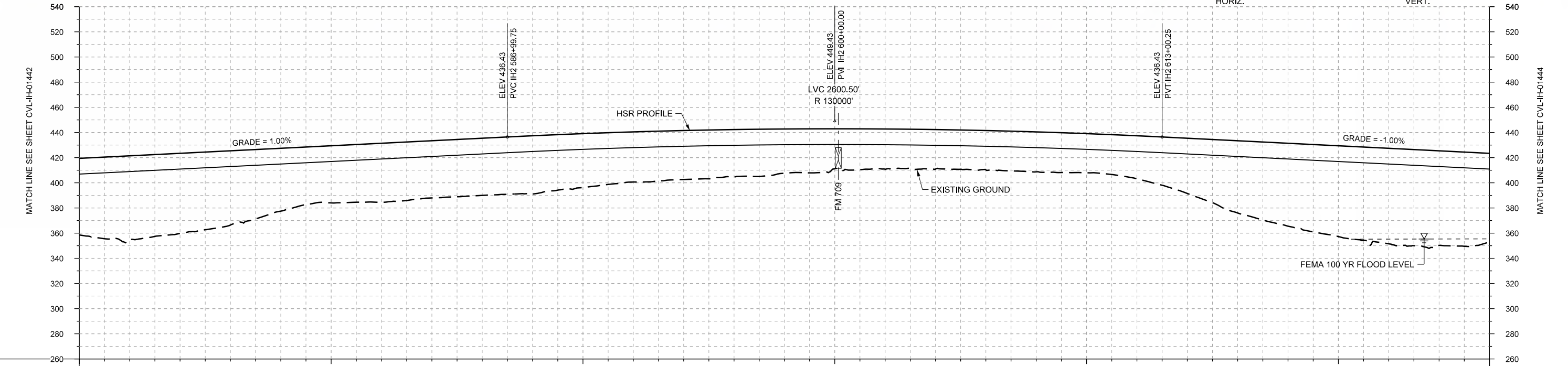
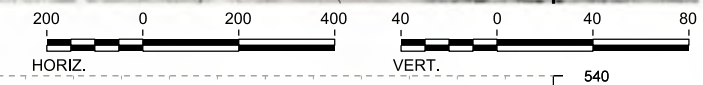
Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH2 514+00 TO IH2 570+00**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No 234180 Drawing No CVL-IH-01442 Rev 01





PLAN



PROFILE

STATIONING	IH2 570+00	IH2 580+00	IH2 590+00	IH2 600+00	IH2 610+00	IH2 620+00	IH2 626+00																					
HOR. ALIGNMENT	L=72305																											
VER. ALIGNMENT	L=6317.30 G=1.000%			R=130000		L=4901.98 G=-1.000%																						
CUT AND FILL	+60.9	+66.5	+63.6	+58.9	+49.9	+45.4	+46.9	+45.4	+45.4	+48.2	+42.9	+39.9	+38.9	+37.6	+35.2	+31.7	+32.0	+31.4	+31.2	+31.8	+34.2	+43.9	+57.4	+65.9	+72.1	+73.9	+75.1	+70.6
TYP. SECTION	VIADUCT (K)																											

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY	F. DAGRIN
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IN CHARGE	C. TAYLOR
DATE	09/15/2017

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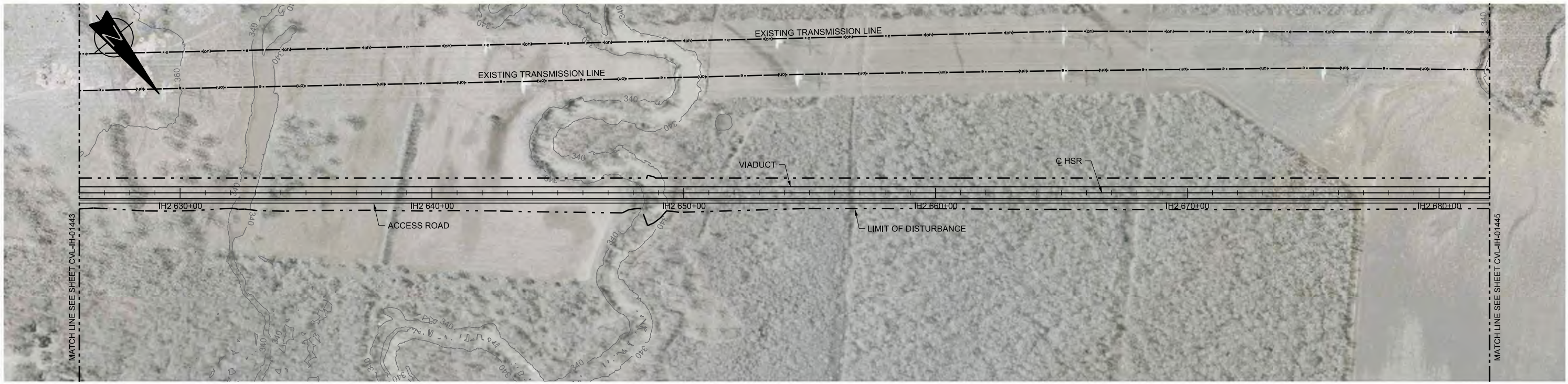
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Client  
  
 1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

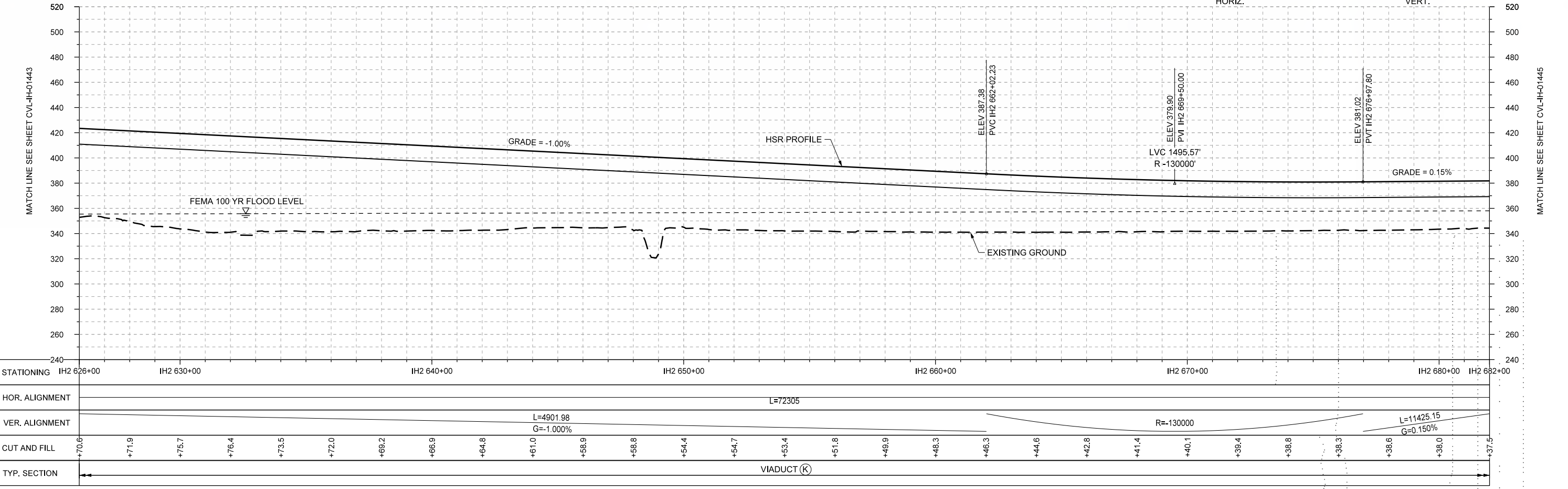
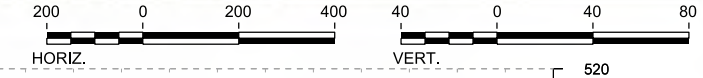
Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH2 570+00 TO IH2 626+00**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  
 Job No: 234180 Drawing No: CVL-IH-01443 Rev: 01





PLAN



PROFILE

STATIONING	IH2 626+00	IH2 630+00	IH2 640+00	IH2 650+00	IH2 660+00	IH2 670+00	IH2 680+00	IH2 682+00																					
HOR. ALIGNMENT	L=72305																												
VER. ALIGNMENT	L=4901.98 G=-1.000%				R=130000		L=11425.15 G=0.150%																						
CUT AND FILL	+70.6	+71.9	+75.7	+76.4	+73.5	+72.0	+69.2	+66.9	+64.8	+61.0	+58.9	+56.8	+54.4	+54.7	+53.4	+51.8	+49.9	+48.3	+46.3	+44.6	+42.8	+41.4	+40.1	+39.4	+38.8	+38.3	+38.6	+38.0	+37.5
TYP. SECTION	VIADUCT (K)																												

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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Client

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

Drawing Title

**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH2 626+00 TO IH2 682+00**

Scale

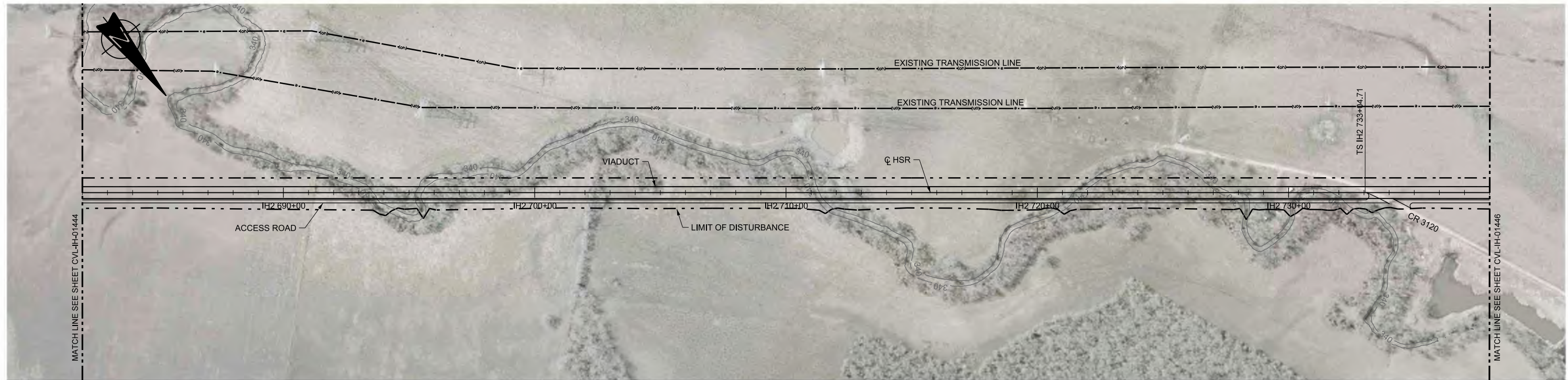
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Drawing Status

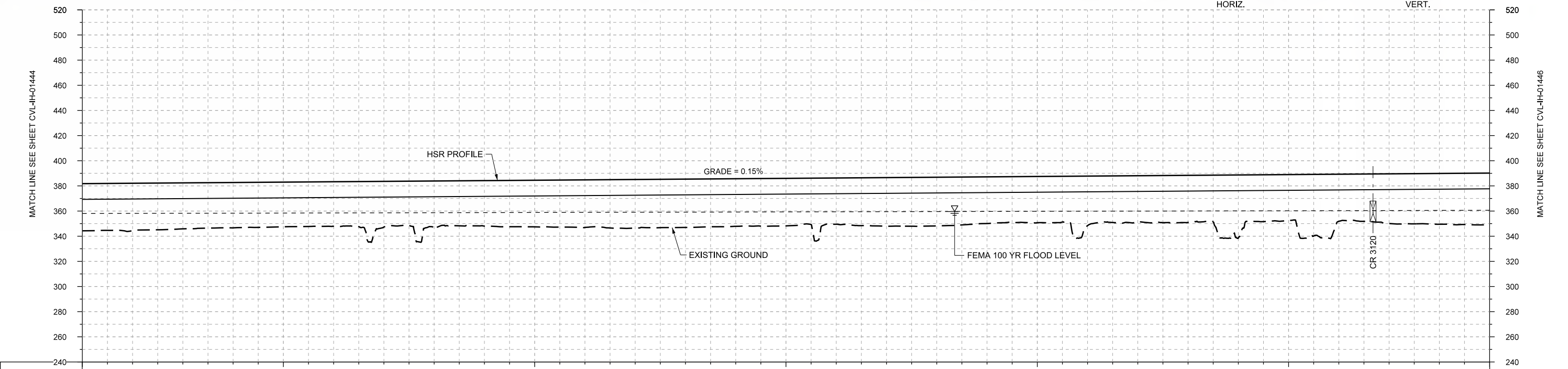
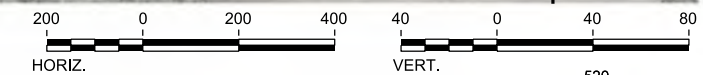
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01444	01





PLAN



STATIONING	IH2 682+00	IH2 690+00	IH2 700+00	IH2 710+00	IH2 720+00	IH2 730+00	IH2 738+00
HOR. ALIGNMENT	L=72305						L=2000
VER. ALIGNMENT	L=11425.15						L=2000
CUT AND FILL	+37.5	+37.7	+36.5	+36.1	+35.5	+35.4	+36.3
	+36.8	+36.2	+37.1	+37.9	+36.6	+36.5	+37.8
	+36.8	+36.2	+37.1	+37.9	+36.6	+36.5	+37.8
TYP. SECTION	VIADUCT (K)						+41.2

PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**F. DAGRIN**

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**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

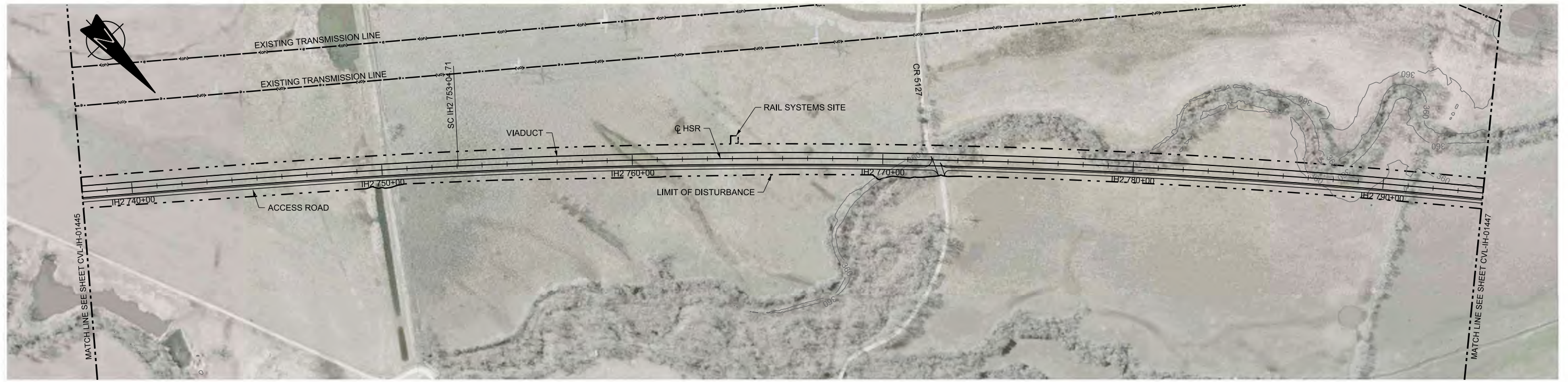
**IH (45) SEGMENT  
CIVIL  
PLAN AND PROFILE  
IH2 682+00 TO IH2 738+00**

Scale  
AS SHOWN

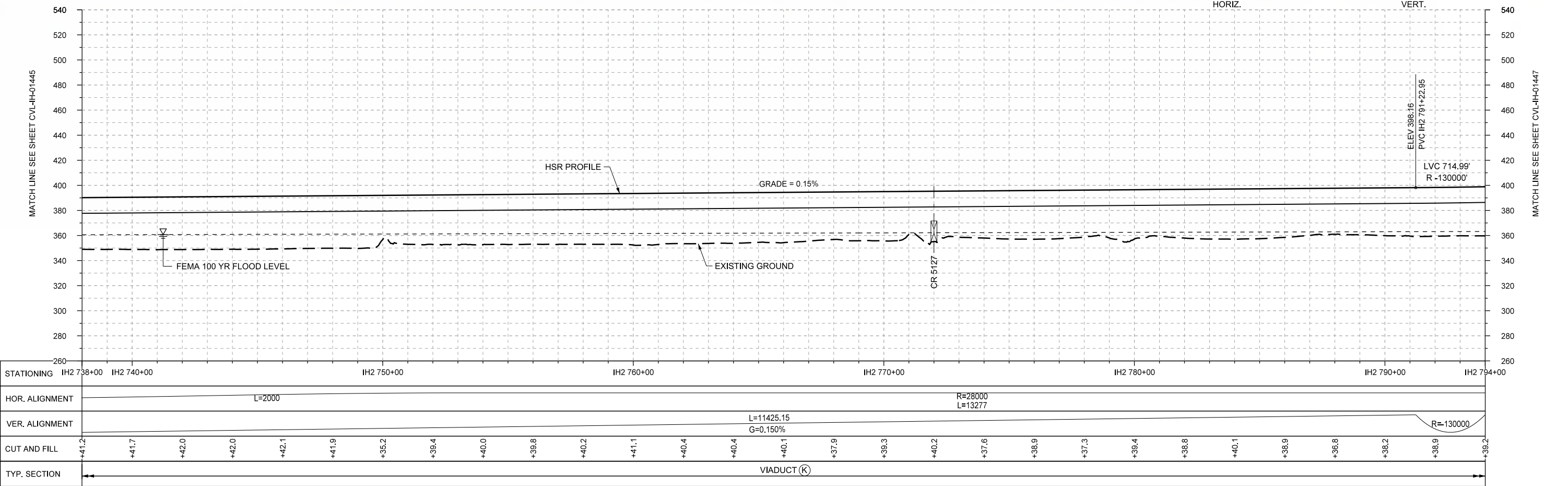
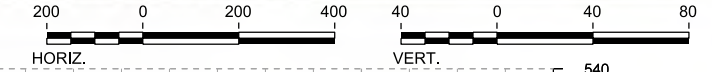
Drawing Status  
**FINAL DRAFT**

Job No	Drawing No	Rev
234180	CVL-IH-01445	01





PLAN



PROFILE

STATIONING	IH2 738+00	IH2 740+00	IH2 750+00	IH2 760+00	IH2 770+00	IH2 780+00	IH2 790+00	IH2 794+00																					
HOR. ALIGNMENT	L=2000				R=28000 L=13277																								
VER. ALIGNMENT					L=11425.15 G=0.150%																								
CUT AND FILL	+41.2	+41.7	+42.0	+42.0	+42.1	+41.9	+35.2	+39.4	+40.0	+39.8	+40.2	+41.1	+40.4	+40.4	+40.1	+37.9	+39.3	+40.2	+37.6	+39.9	+37.3	+39.4	+38.8	+40.1	+38.9	+38.8	+38.2	+38.9	+38.2
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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Client

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

Drawing Title

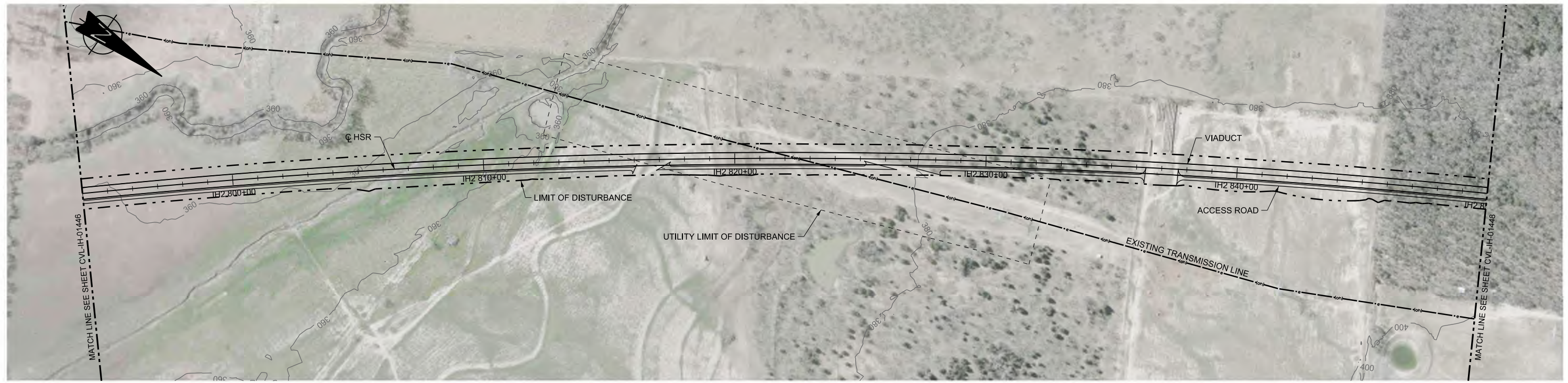
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 CIVIL  
 PLAN AND PROFILE  
 IH2 738+00 TO IH2 794+00**

Scale  
 AS SHOWN

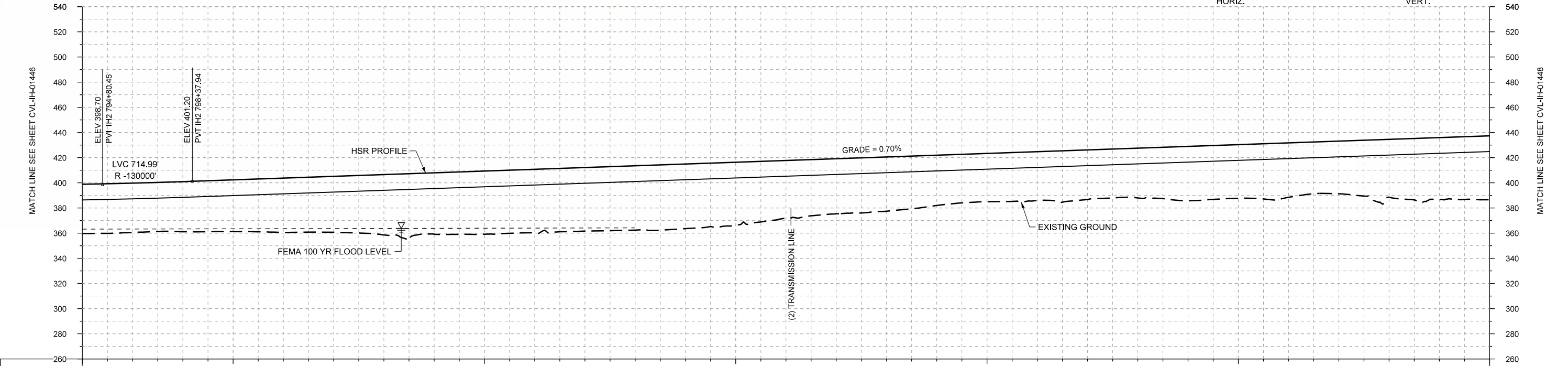
Drawing Status  
**FINAL DRAFT**

Job No	234180	Drawing No	CVL-IH-01446	Rev	01
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PLAN



STATIONING	IH2 794+00	IH2 800+00	IH2 810+00	IH2 820+00	IH2 830+00	IH2 840+00	IH2 850+00																						
HOR. ALIGNMENT	R=28000 L=13277																												
VER. ALIGNMENT	R=-130000 L=6317.07 G=0.700%																												
CUT AND FILL	+39.2	+39.2	+39.8	+41.1	+43.2	+44.4	+47.9	+48.7	+50.1	+50.5	+50.5	+51.1	+51.3	+50.0	+45.8	+43.8	+43.1	+39.9	+38.3	+38.7	+39.3	+39.5	+43.2	+42.6	+43.2	+41.8	+48.0	+49.1	+50.8
TYP. SECTION	VIADUCT (K)																												

PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
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**C. TAYLOR**

DATE  
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Client

**TEXAS CENTRAL**

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

Drawing Title

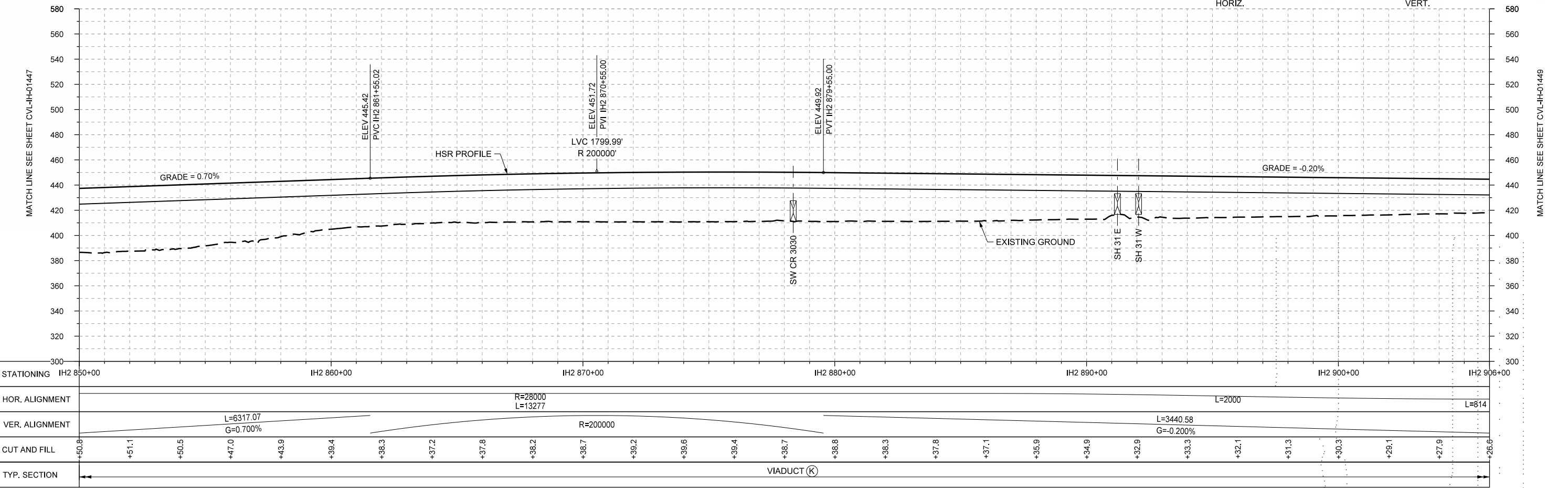
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CIVIL  
PLAN AND PROFILE  
IH2 794+00 TO IH2 850+00**

Scale	AS SHOWN		
Drawing Status	FINAL DRAFT		
Job No	Drawing No	Rev	
234180	CVL-IH-01447	01	





PLAN



PROFILE

STATIONING	IH2 850+00	IH2 860+00	IH2 870+00	IH2 880+00	IH2 890+00	IH2 900+00	IH2 906+00																						
HOR. ALIGNMENT			R=28000 L=13277			L=2000	L=814																						
VER. ALIGNMENT		L=6317.07 G=0.700%	R=200000			L=3440.58 G=-0.200%																							
CUT AND FILL	+50.8	+51.1	+50.5	+47.0	+43.9	+39.4	+38.3	+37.2	+37.8	+38.2	+36.7	+35.2	+39.6	+39.4	+36.7	+38.8	+38.3	+37.8	+37.1	+35.9	+34.9	+32.9	+33.3	+32.1	+31.3	+30.3	+28.1	+27.9	+26.6
TYP. SECTION	VIADUCT (K)																												

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
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Drawing Title

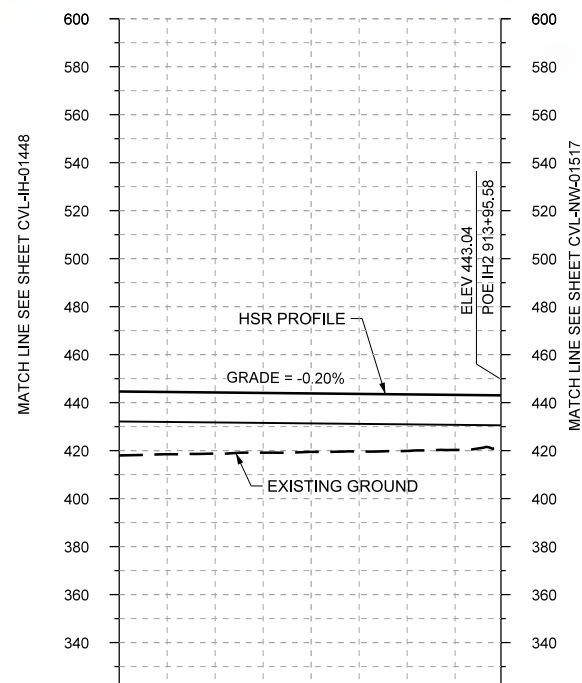
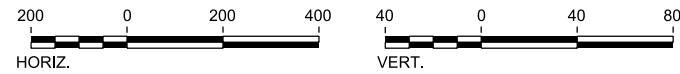
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Scale	AS SHOWN
Drawing Status	FINAL DRAFT
Job No	234180
Drawing No	CVL-IH-01448
Rev	01



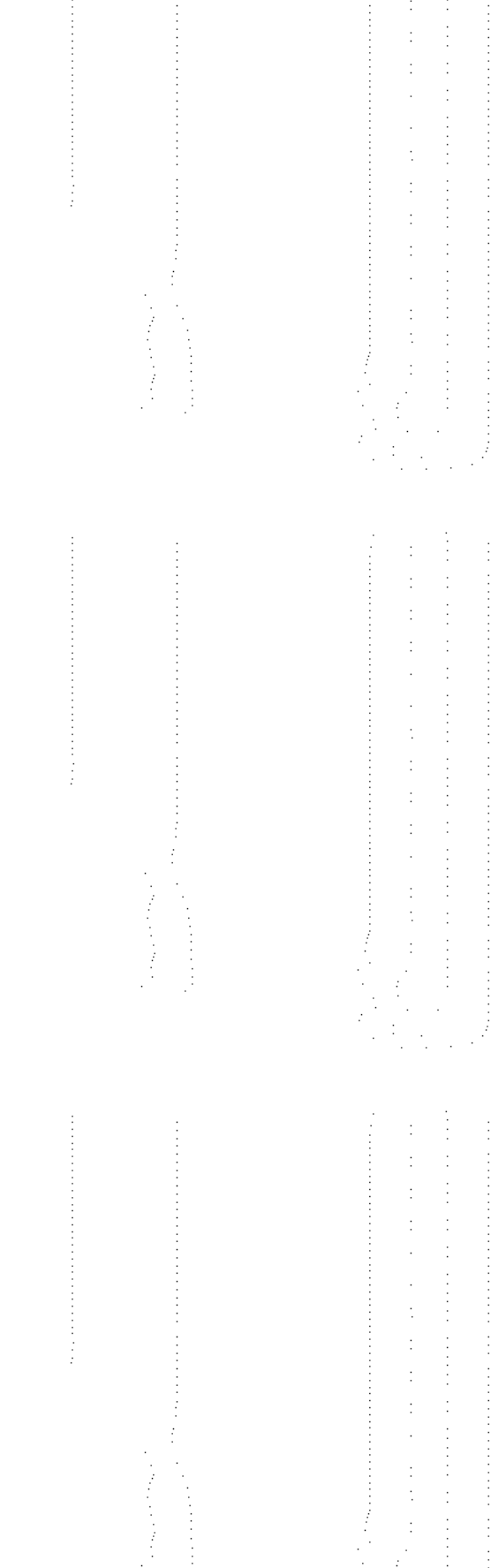


PLAN



STATIONING	IH2 906+00	IH2 910+00	IH2 913+95.58
HOR. ALIGNMENT	L=814		
VER. ALIGNMENT	L=3440.58 G=-0.200%		
CUT AND FILL	+26.6	+25.4	+21.3
TYP. SECTION	VIADUCT (K)		

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

Drawing Title  
**IH (45) SEGMENT  
 CIVIL  
 PLAN AND PROFILE  
 IH2 906+00 TO IH2 913+96**

Scale  
 AS SHOWN  
 Drawing Status  
**FINAL DRAFT**  

Job No	Drawing No	Rev
234180	CVL-IH-01449	01