

# **Dallas to Houston High-Speed Rail Final Environmental Impact Statement**

## **Appendix G: Dallas to Houston High-Speed Rail Passenger Service from Houston to Dallas Final Conceptual Engineering Plans and Details Set 11 of 14**



**TEXAS  
CENTRAL**



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

**FINAL CONCEPTUAL ENGINEERING  
PLANS AND DETAILS**  
PROJECT DEFINITION FOR FINAL ENVIRONMENTAL IMPACT STATEMENT  
VOLUME 3 - STATIONS, MAINTENANCE FACILITIES, AND RAILWAY  
SYSTEM SHEETS

JULY 1, 2019

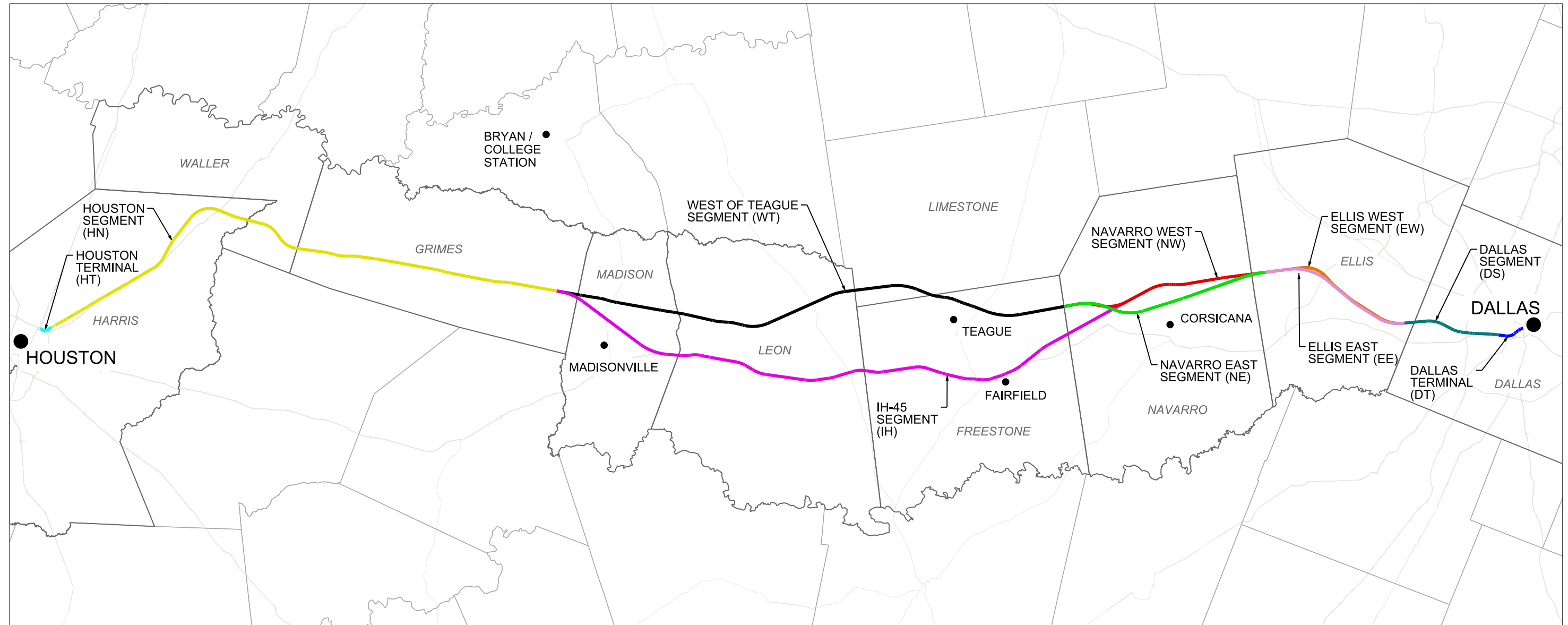


**ARUP**  
Arup Texas, Inc.  
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Houston, Texas 77042 USA  
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Texas Registered Engineering Firm: F-1990

**FRESE  
NICHOLS**  
2711 North Haskell Ave., Suite 3300  
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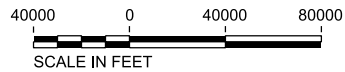
COVER SHEET





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

- NOTES:  
 1. REFER TO FCE REPORT 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  
**02/25/2019**

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DALLAS TO HOUSTON HIGH-SPEED RAIL  
 FINAL CONCEPTUAL ENGINEERING

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

Drawing Title  
**GENERAL LOCATION PLAN**

Scale  
AS SHOWN

Drawing Status  
**FINAL**

Job No 234180	Drawing No GEN-00-00002	Rev 01
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VOLUME 2A - RAILWAY ALIGNMENT PLAN AND PROFILE SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Contains drawing details for 2A-2 WEST OF TEAGUE SEGMENT.

VOLUME 2A - RAILWAY ALIGNMENT PLAN AND PROFILE SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Contains drawing details for 2A-2 WEST OF TEAGUE SEGMENT, 2A-3 NAVARRO WEST SEGMENT, and 2A-4 ELLIS WEST SEGMENT.

VOLUME 2A - RAILWAY ALIGNMENT PLAN AND PROFILE SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Contains drawing details for 2A-4 ELLIS WEST SEGMENT and 2A-5 DALLAS SEGMENT.

Table with columns: REV, DATE, BY, CHK, APP, DESCRIPTION. Revision table for drawing 2A-2.

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



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

PLOT TIME: 5/31/2019 9:49:27 AM

PLOT BY: N-YPWICS\01CS



VOLUME 2B - RAILWAY ALIGNMENT PLAN AND PROFILE SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Contains drawing numbers CVL-IH-01350 to CVL-IH-01420 and their descriptions.

VOLUME 2B - RAILWAY ALIGNMENT PLAN AND PROFILE SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Contains drawing numbers CVL-IH-01421 to CVL-IH-01442 and CVL-NE-01600 to CVL-NE-01631.

VOLUME 2B - RAILWAY ALIGNMENT PLAN AND PROFILE SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Contains drawing numbers CVL-EE-01814 to CVL-EE-01823 and their descriptions.

Table with columns: REV, DATE, BY, CHK, APP, DESCRIPTION. Includes a revision table and a design log.

DESIGNED BY: D. THOMPSON
DRAWN BY: D. THOMPSON
CHECKED BY: R. BURNS
IN CHARGE: C. TAYLOR
DATE: 02/25/2019



Scale: NO SCALE
Drawing Status: FINAL
Job No: 234180
Drawing No: GEN-00-00005
Rev: 01

PLOT TIME: 5/24/2018 3:22:14 PM
PLOT BY: M-YPWC501S

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

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Includes sections 3A-1 STATIONS, 3A-2 MAINTENANCE FACILITIES, YARDS AND SHOPS, 3A-3 RAILWAY FACILITIES, and 3A-4 ROADWAY FACILITIES.

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

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Includes sections 3B-1 STATIONS (NOT USED), 3B-2 MAINTENANCE FACILITIES, YARDS AND SHOPS, and 3B-3 RAILWAY FACILITIES.

VOLUME 4B - NOT USED
VOLUME 4B - ROADWAY PLAN SHEETS

Table with columns: DRAWING NO., DRAWING DESCRIPTIONS. Section 4B-1 IH-45 SEGMENT.

Table with columns: REV, DATE, BY, CHK, APP, DESCRIPTION. Includes design and in-charge information.

Logos for ARUP, FREESE & NICHOLS, and TEXAS CENTRAL. Includes drawing title 'GENERAL INDEX SHEET 4 OF 5', scale 'NO SCALE', and drawing number 'GEN-00-00006'.

PLOT TIME: 5/24/2018 3:22:19 PM
PLOT BY: NYPWICS01S



**VOLUME 4B - ROADWAY PLAN SHEETS**

DRAWING NO.	DRAWING DESCRIPTIONS
<b>4B-1 IH-45 SEGMENT</b>	
RDY-IH1-04035	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3070+00 TO IH1 3160+00
RDY-IH1-04036	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3160+00 TO IH1 3250+00
RDY-IH1-04037	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3250+00 TO IH1 3340+00
RDY-IH1-04038	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3340+00 TO IH1 3430+00
RDY-IH1-04039	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3430+00 TO IH1 3520+00
RDY-IH1-04040	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3520+00 TO IH1 3610+00
RDY-IH1-04041	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3610+00 TO IH1 3700+00
RDY-IH1-04042	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3700+00 TO IH1 3790+00
RDY-IH1-04043	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3790+00 TO IH1 3880+00
RDY-IH1-04044	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3880+00 TO IH1 3970+00
RDY-IH1-04045	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 3970+00 TO IH1 4060+00
RDY-IH1-04046	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 4060+00 TO IH1 4150+00
RDY-IH1-04047	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 4150+00 TO IH1 4240+00
RDY-IH1-04048	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH1 4240+00 TO IH1 4329+69
RDY-IH2-04049	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH2 10+00 TO IH2 100+00
RDY-IH2-04050	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH2 100+00 TO IH2 190+00
RDY-IH2-04051	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH2 190+00 TO IH2 280+00
RDY-IH2-04052	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH2 280+00 TO IH2 370+00
RDY-IH2-04053	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH2 370+00 TO IH2 460+00
RDY-IH2-04054	IH-45 SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. IH2 460+00 TO IH2 540+81
<b>4B-2 NAVARRO EAST SEGMENT</b>	
RDY-NE-01101	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 1 OF 2 NE 10+00 TO NE 1070+00
RDY-NE-01102	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 2 OF 2 NE 1070+00 TO NE 1652+05
RDY-NE-04001	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 10+00 TO NE 100+00
RDY-NE-04002	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 100+00 TO NE 190+00
RDY-NE-04003	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 190+00 TO NE 280+00
RDY-NE-04004	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 280+00 TO NE 370+00
RDY-NE-04005	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 370+00 TO NE 460+00
RDY-NE-04006	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 460+00 TO NE 550+00
RDY-NE-04007	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 550+00 TO NE 640+00
RDY-NE-04008	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 640+00 TO NE 730+00
RDY-NE-04009	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 730+00 TO NE 820+00
RDY-NE-04010	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 820+00 TO NE 910+00
RDY-NE-04011	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 910+00 TO NE 1000+00
RDY-NE-04011A	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - MATCHLINE RDY-NE-04011
RDY-NE-04012	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 1000+00 TO NE 1090+00
RDY-NE-04013	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 1090+00 TO NE 1180+00
RDY-NE-04014	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 1180+00 TO NE 1270+00
RDY-NE-04015	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 1270+00 TO NE 1360+00
RDY-NE-04016	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 1360+00 TO NE 1450+00
RDY-NE-04017	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 1450+00 TO NE 1540+00
RDY-NE-04018	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 1540+00 TO NE 1630+00
RDY-NE-04019	NAVARRO EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. NE 1630+00 TO NE 1652+05
<b>4B-3 ELLIS EAST SEGMENT</b>	
RDY-EE-01101	ELLIS EAST SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 1 OF 2 EE 9+56 TO EE 1064+00
RDY-EE-01102	ELLIS EAST SEGMENT - CIVIL HIGHWAY - KEY MAP - SHEET 2 OF 2 EE 1064+00 TO EE 1232+15
RDY-EE-04001	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 9+56 TO EE 100+00
RDY-EE-04002	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 100+00 TO EE 190+00
RDY-EE-04003	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 190+00 TO EE 280+00
RDY-EE-04004	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 280+00 TO EE 370+00
RDY-EE-04005	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 370+00 TO EE 460+00
RDY-EE-04006	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 460+00 TO EE 550+00
RDY-EE-04007	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 550+00 TO EE 640+00
RDY-EE-04008	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 640+00 TO EE 730+00
RDY-EE-04009	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 730+00 TO EE 820+00
RDY-EE-04010	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 820+00 TO EE 910+00
RDY-EE-04011	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 910+00 TO EE 1000+00
RDY-EE-04012	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 1000+00 TO EE 1090+00
RDY-EE-04013	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 1090+00 TO EE 1180+00
RDY-EE-04014	ELLIS EAST SEGMENT - CIVIL HIGHWAY - PLAN VIEW - STA. EE 1180+00 TO EE 1232+15

**Volume 5A - WILDLIFE CROSSING SHEETS**

DRAWING NO.	DRAWING DESCRIPTIONS
<b>Volume 5A</b>	
WLC-DS-04001	DS SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 1 OF 23)
WLC-DS-04002	DS SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 2 OF 23)
WLC-DS-04003	DS SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 3 OF 23)
WLC-EW-04001	EW SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 4 OF 23)
WLC-EW-04002	EW SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 5 OF 23)
WLC-NW-04001	NW SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 6 OF 23)
WLC-NW-04002	NW SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 7 OF 23)
WLC-NW-04003	NW SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 8 OF 23)
WLC-WT-04001	WT SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 9 OF 23)
WLC-WT-04002	WT SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 10 OF 23)
WLC-WT-04003	WT SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 11 OF 23)
WLC-WT-04004	WT SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 12 OF 23)
WLC-WT-04005	WT SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 13 OF 23)
WLC-WT-04006	WT SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 14 OF 23)
WLC-WT-04007	WT SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 15 OF 23)
WLC-HN-04001	HN SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 16 OF 23)
WLC-HN-04002	HN SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 17 OF 23)
WLC-HN-04003	HN SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 18 OF 23)
WLC-HN-04004	HN SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 19 OF 23)
WLC-HN-04005	HN SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 20 OF 23)
WLC-HN-04006	HN SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 21 OF 23)
WLC-HN-04007	HN SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 22 OF 23)
WLC-HN-04008	HN SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 23 OF 23)

**VOLUME 5B - WILDLIFE CROSSING SHEETS**

DRAWING NO.	DRAWING DESCRIPTIONS
<b>Volume 5B</b>	
WLC-EE-04001	EE SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 1 OF 15)
WLC-EE-04002	EE SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 2 OF 15)
WLC-NE-04001	NE SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 3 OF 15)
WLC-NE-04002	NE SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 4 OF 15)
WLC-NE-04003	NE SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 5 OF 15)
WLC-IH-04001	IH-45 SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 6 OF 15)
WLC-IH-04002	IH-45 SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 7 OF 15)
WLC-IH-04003	IH-45 SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 8 OF 15)
WLC-IH-04004	IH-45 SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 9 OF 15)
WLC-IH-04005	IH-45 SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 10 OF 15)
WLC-IH-04006	IH-45 SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 11 OF 15)
WLC-IH-04007	IH-45 SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 12 OF 15)
WLC-IH-04008	IH-45 SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 13 OF 15)
WLC-IH-04009	IH-45 SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 14 OF 15)
WLC-IH-04010	IH-45 SEGMENT THSR - POTENTIAL WILDLIFE CROSSINGS (SHEET 15 OF 15)

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>02/25/2019</b>



Drawing Title	Scale
<b>GENERAL INDEX SHEET 5 OF 5</b>	<b>NO SCALE</b>
Drawing Status	Job No
<b>FINAL</b>	<b>234180</b>
Drawing No	Rev
<b>GEN-00-00007</b>	<b>01</b>

GENERAL NOTES:

- 1. THESE DRAWINGS ACCOMPANY FINAL CONCEPTUAL ENGINEERING (FCE) REPORT.
- 2. DRAWING SET INCLUDES FIVE (5) VOLUMES. AFTER RELEASE OF THE DRAFT EIS (DEIS), WHICH IDENTIFIED ALTERNATIVE A AS THE PREFERRED ALTERNATIVE. ADDITIONAL DESIGN DEVELOPMENT AND REFINEMENT OF ALTERNATIVE A WAS UNDERTAKEN TO MITIGATE IMPACTS AND TO IMPROVE CONSTRUCTABILITY. THIS REPORT ADDRESSES THE REFINED DESIGN APPROACHES AND DETAILS FOR THE SEGMENTS IN BUILD ALTERNATIVE A, FOR ALL OTHER SEGMENTS NOT A PART OF THE PREFERRED ALTERNATIVE (ELLIS EAST, NAVARRO EAST, AND IH-45 SEGMENTS), NO CHANGES TO DESIGN WAS ADVANCED OTHER THAN ALIGNMENT REVISIONS REQUIRED TO ACCOUNT FOR ALIGNMENT REVISIONS ADVANCED IN ALTERNATIVE A. TO FACILITATE COMPARISON FOR IMPACT ANALYSIS. THE APPENDICES TO THE FCE REPORT INCLUDES ALL SEGMENTS. THE DRAWING SET HAS BEEN ORGANIZED INTO VOLUMES 1A-5A AND 1B-5B, WITH THE PREFERRED ALTERNATIVE DESIGN DRAWINGS INCLUDED IN THE 1A-5A VOLUMES.
- 3. CONCEPTUAL ENGINEERING WAS DEVELOPED TO IDENTIFY PROJECT LIMIT OF DISTURBANCE (LOD), OR "PROJECT FOOTPRINT". CONCEPTUAL ENGINEERING DRAWINGS AND FCE 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 DRAWING 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 (TNRS) AND HOUSTON-GALVESTON AREA COUNCIL (HGAC).
  - DALLAS COUNTY LIDAR, 2009, SOURCED FROM TNRS.
  - HGAC LIDAR, 2008.
  - TNRS LIDAR, 2009-2013.
  - TNRS 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, AEROGRID, 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, DEMOLISHED, RECONFIGURED, OR CONSTRUCTED. 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).
- 2. LOD USED FOR EIS ANALYSIS FOOTPRINT. 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.

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 FACILITIES, 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 (TMF).

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 IMAGERY BACKGROUNDS.
- 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-00-03034B FOR TYPICAL ROADWAY CROSS SECTIONS.
- 7. FOR SEGMENTS HH, WT, NW, EW, AND DS, ROADWAY REMOVALS ARE SHOWN ON RAIL PLAN AND PROFILE SHEETS. FOR SEGMENTS IH, NE, AND EE, ROADWAY REMOVALS ARE NOT SHOWN ON RAIL PLAN AND PROFILE SHEETS. REFER TO ROADWAY PLAN SHEETS IN VOLUME 4 FOR SEGMENT 2B, 3B, AND 4B 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 CROSSINGS DO NOT REPRESENT THE PROPOSED ROADWAY ELEVATION, BUT RATHER THE MINIMUM HEIGHT REQUIRED FOR CLEARANCES, INCLUDING ALLOWANCES FOR ROADWAY STRUCTURAL ELEMENTS. SEE FCE 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 REQUIRE THE APPROPRIATE APPROVAL FROM TXDOT.
- 13. PLANNED ROADS, SUCH AS MTFP ROADS IN HOUSTON, ARE SHOWN IN PROFILES IN VOLUME 2, BUT ARE NOT SHOWN IN PLAN IN VOLUME 2. AS THESE ROADS ARE PLANNED AND NOT EXISTING, THE AERIAL IMAGERY BACKGROUNDS DO NOT SHOW THESE ROADS. PLANNED ROADS ARE SHOWN IN THE FCE REPORT APPENDIX B: ROAD SEPARATION DATABASE.

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 FCE 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 AND ARE BASED ON INFORMATION RECEIVED, AS DOCUMENTED IN THE FINAL 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 FCE 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 COORDINATION WITH LANDOWNER WILL BE UNDERTAKEN TO DEVELOP IMPROVEMENTS CONSIDERING LANDOWNER 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-00-02006, 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 FCE 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-00-01006.
- 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.

DESIGNED BY	D. THOMPSON
DRAWN BY	D. THOMPSON
CHECKED BY	R. BURNS
IN CHARGE	C. TAYLOR
DATE	02/25/2019

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY	D. THOMPSON
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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING



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

Drawing Title

GENERAL NOTES

Scale  
NO SCALE

Drawing Status

FINAL

Job No  
234180

Drawing No  
GEN-00-00008

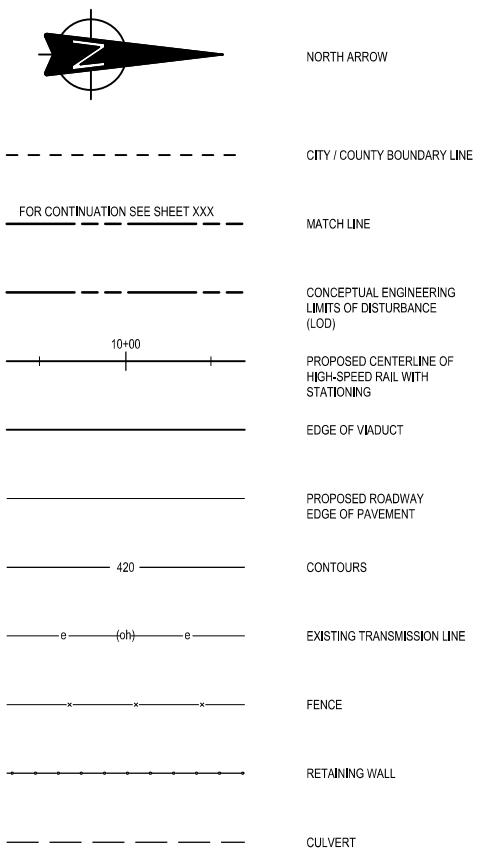
Rev  
01

**ABBREVIATIONS**

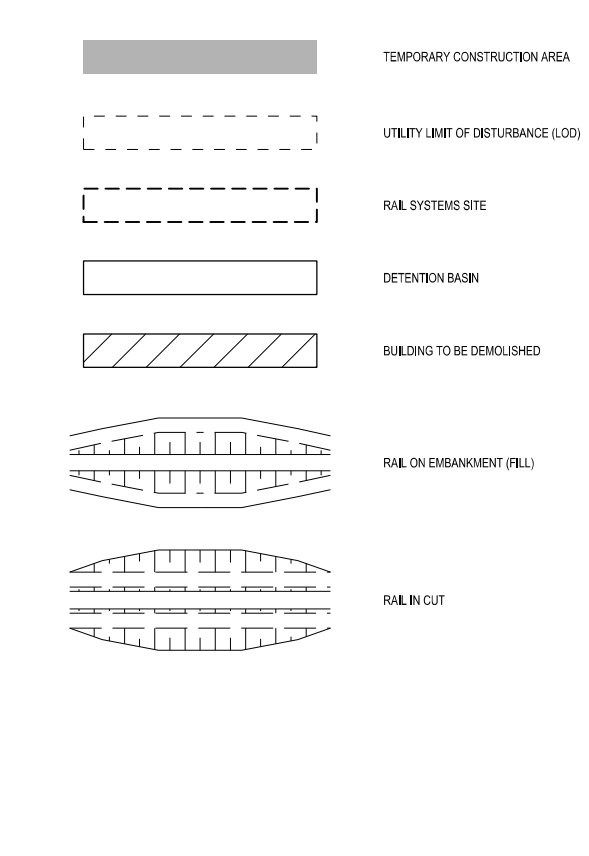
**LEGEND**

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

**PLAN**

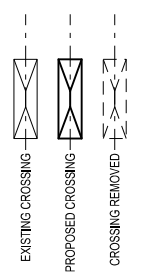
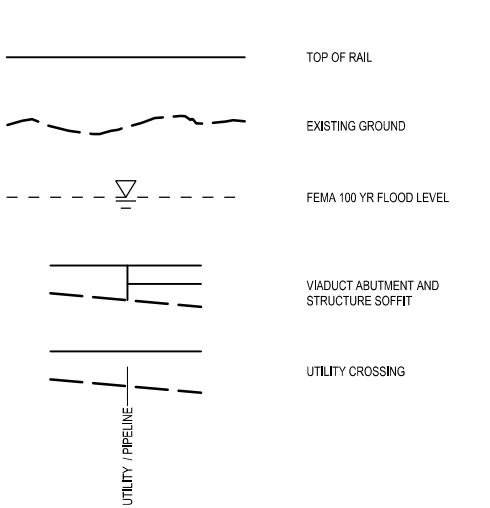


**LEGEND**



NOTE:  
 1. FOR ADDITIONAL DETAIL REGARDING INFORMATION SHOWN ON DRAWINGS, SEE RAIL ANNOTATION TO CLARIFY DESIGN INTENT, DRAWING GEN-00-00010. FOR SEGMENTS IH, NE, AND EE, SEE ROAD ANNOTATION TO CLARIFY DESIGN INTENT, DRAWING GEN-00-00011.

**PROFILE**



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>02/25/2019</b>



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DALLAS TO HOUSTON HIGH-SPEED RAIL  
 FINAL CONCEPTUAL ENGINEERING



Drawing Title  
**GENERAL ABBREVIATIONS AND LEGEND**

Scale <b>NO SCALE</b>		
Drawing Status <b>FINAL</b>		
Job No <b>234180</b>	Drawing No <b>GEN-00-00009</b>	Rev <b>01</b>



# VOLUME 3B

## STATIONS, MAINTENANCE FACILITIES, AND RAILWAY SYSTEMS SHEETS (SEGMENTS IH, NE, EE)

**NOTE:**

AFTER RELEASE OF THE DRAFT EIS (DEIS), WHICH IDENTIFIED ALTERNATIVE A AS THE PREFERRED ALTERNATIVE, ADDITIONAL DESIGN DEVELOPMENT AND REFINEMENT OF ALTERNATIVE A WAS UNDERTAKEN TO MITIGATE IMPACTS AND TO IMPROVE CONSTRUCTABILITY. THIS REPORT ADDRESSES THE REFINED DESIGN APPROACHES AND DETAILS FOR THE SEGMENTS IN BUILD ALTERNATIVE A. FOR ALL OTHER SEGMENTS NOT A PART OF THE PREFERRED ALTERNATIVE (ELLIS EAST, NAVARRO EAST, AND IH-45 SEGMENTS), NO CHANGES TO DESIGN WERE ADVANCED OTHER THAN ALIGNMENT REVISIONS REQUIRED TO ACCOUNT FOR ALIGNMENT REVISIONS ADVANCED IN ALTERNATIVE A. TO FACILITATE COMPARISON FOR IMPACT ANALYSIS, THE APPENDICES TO THE FCE REPORT INCLUDES ALL SEGMENTS. THE DRAWING SET HAS BEEN ORGANIZED INTO VOLUMES 1A-5A AND 1B-5B, WITH THE PREFERRED ALTERNATIVE DESIGN DRAWINGS INCLUDED IN THE 1A-5A VOLUMES.

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**K. SEYMOUR**

DRAWN BY  
**D. THOMPSON**

CHECKED BY  
**R. BURNS**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING



**TEXAS CENTRAL**

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Drawing Title  
**GENERAL**

Scale <b>NO SCALE</b>		
Drawing Status <b>FINAL</b>		
Job No <b>234180</b>	Drawing No <b>GEN-00-0000</b>	Rev <b>01</b>

# 3B-1

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# NOT USED

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**K. SEYMOUR**

DRAWN BY  
**D. THOMPSON**

CHECKED BY  
**R. BURNS**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**



Drawing Title  
**GENERAL**

Scale <b>NO SCALE</b>		
Drawing Status <b>FINAL</b>		
Job No <b>234180</b>	Drawing No <b>GEN-00-0000</b>	Rev <b>01</b>

# 3B-2

## MAINTENANCE FACILITIES, YARDS, AND SHOPS

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**K. SEYMOUR**

DRAWN BY  
**D. THOMPSON**

CHECKED BY  
**R. BURNS**

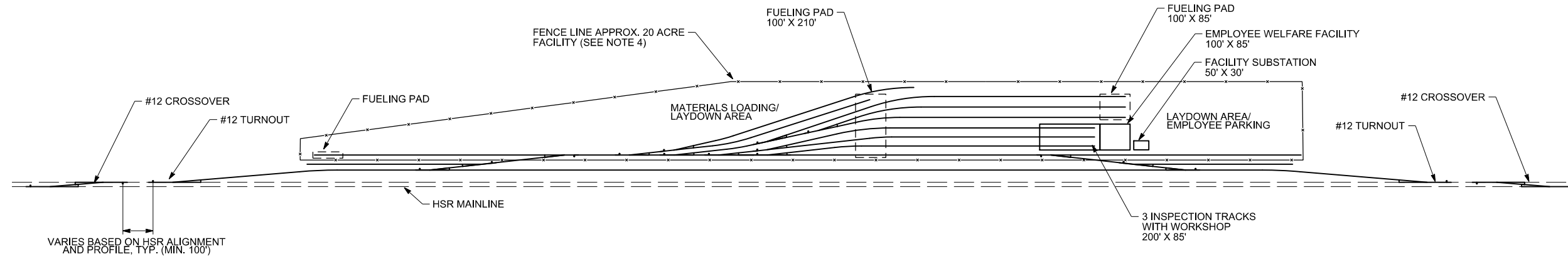
IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

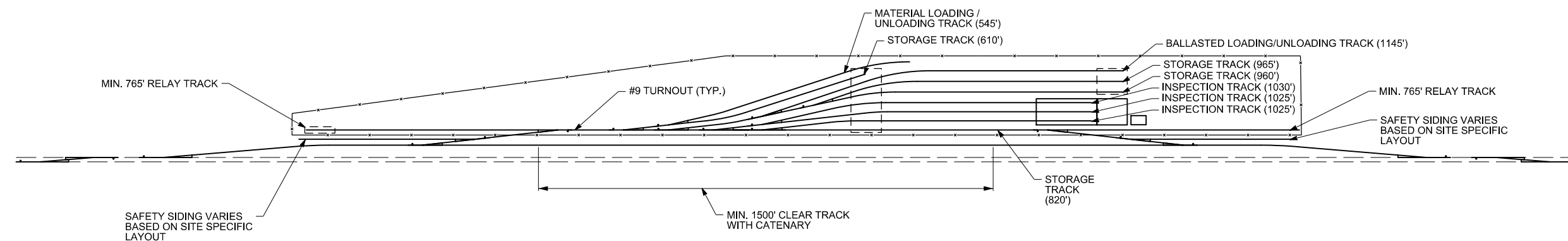


Drawing Title  
**GENERAL**

Scale <b>NO SCALE</b>		
Drawing Status <b>FINAL</b>		
Job No <b>234180</b>	Drawing No <b>GEN-00-0000</b>	Rev <b>01</b>



TYPICAL SPACE ALLOCATION PLAN



TYPICAL TRACK LAYOUT PLAN

NOTES:

- ALL TURNOUTS WITHIN MOW FACILITY ARE NO. 9 UNLESS NOTED OTHERWISE. ALL TURNOUTS CONNECTING A MOW OR TMF TO A MAINLINE ARE NO. 12 UNLESS OTHERWISE NOTED.
- NO. 12 CROSSOVERS WILL BE LOCATED ON MAINLINE TRACKS ON EITHER SIDE OF MOW FACILITY.
- TRACK LENGTHS SHOWN MEASURED FROM FOULING POINT.
- SPACE REQUIREMENTS WILL VARY BASED ON SITE SPECIFIC CONSTRAINTS INCLUDING ROADWAY ACCESS, GRADING, DRAINAGE AND ELECTRICAL FACILITIES.
- DETAILS OF THE FENCING, GAPS, ACCESS GATES, AND CONNECTIONS WITH MAINLINE FENCING WILL BE DEVELOPED DURING MORE DETAILED DESIGN. FENCING AND OTHER INTRUSION PROTECTION MEASURES FOR MAINLINE HSR NOT SHOWN.
- MINIMUM TRACK SPACING IN MOW FACILITY WAS 30FT. MOW TRACK OFFSET FROM THE MAINLINE WAS 40FT.
- FINAL DESIGN WOULD BE DEVELOPED WITH UTILITIES, LANDOWNERS, AND OTHER STAKEHOLDER COORDINATION. SITE SPECIFIC LAYOUTS WOULD BE DEVELOPED DURING MORE DETAILED DESIGN AND COORDINATE WITH OPERATIONS AND MAINTENANCE PLAN.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**C. ZWIEBEL**

DRAWN BY  
**C. ZWIEBEL**

CHECKED BY  
**C. TAYLOR**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**



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Texas Registered Engineering Firm: F-2144

DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING



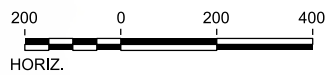
Drawing Title  
**IH, EE  
MAINTENANCE FACILITIES  
TYPICAL MOW FACILITY**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-00-02012	Rev 01





- NOTES:
- SEE SHEET MNT-00-02012 FOR MOW NOTES.
  - POTENTIAL FREIGHT RAIL CONNECTION TO BE FURTHER DEVELOPED DURING MORE DETAILED DESIGN IN COORDINATION WITH FREIGHT RAILROAD.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**T. WAGNER**

DRAWN BY  
**A. LUKACS**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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FINAL CONCEPTUAL ENGINEERING

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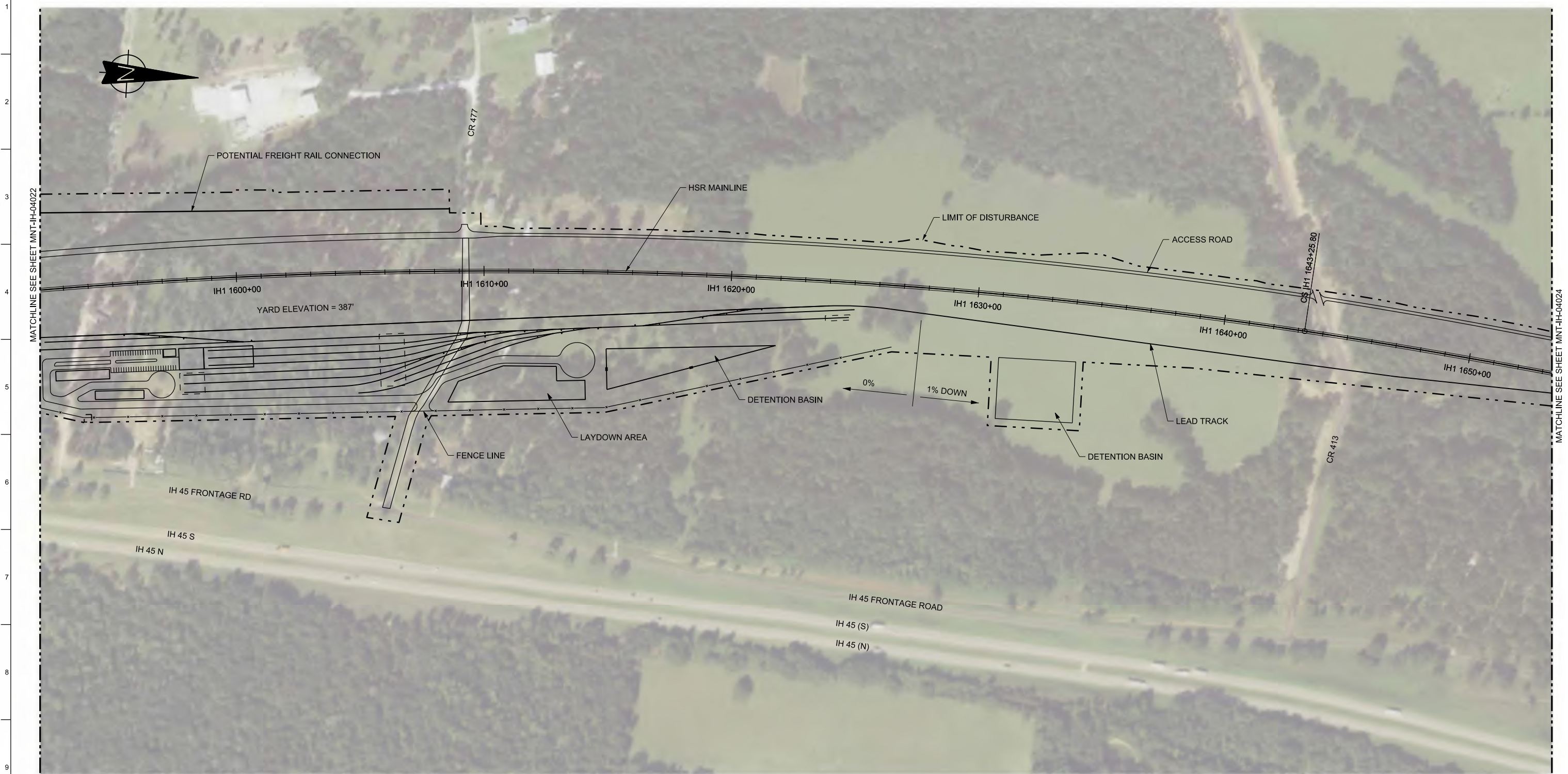
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**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
MOW FACILITY IH-1  
LAYOUT - SHEET 1 OF 3**

Scale  
AS SHOWN

Drawing Status  
**FINAL**

Job No 234180	Drawing No MNT-IH-04022	Rev 01
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- NOTES:
- SEE SHEET MNT-00-02012 FOR MOW NOTES.
  - POTENTIAL FREIGHT RAIL CONNECTION TO BE FURTHER DEVELOPED DURING MORE DETAILED DESIGN IN COORDINATION WITH FREIGHT RAILROAD.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**T. WAGNER**

DRAWN BY  
**A. LUKACS**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**



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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

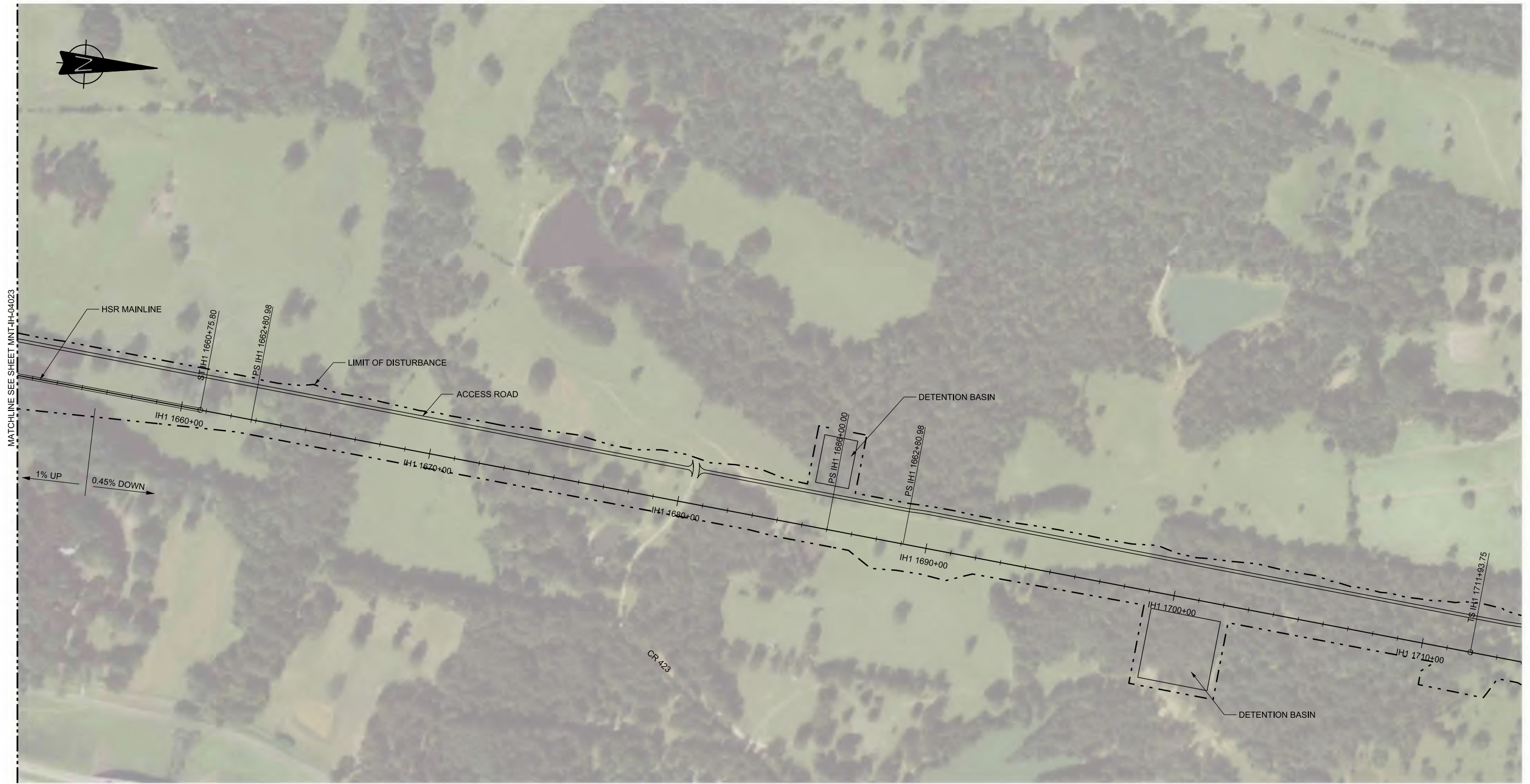


1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

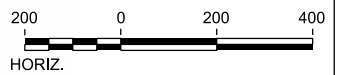
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MAINTENANCE FACILITIES  
MOW FACILITY IH-1  
LAYOUT - SHEET 2 OF 3**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04023	Rev 01





NOTES:  
1. SEE SHEET MNT-00-02012 FOR MOW NOTES.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**T. WAGNER**

DRAWN BY  
**A. LUKACS**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

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Drawing Title  
**IH (45) SEGMENT  
CIVIL  
MOW FACILITY IH-1  
LAYOUT - SHEET 3 OF 3**

Scale  
AS SHOWN

Drawing Status  
**FINAL**

Job No <b>234180</b>	Drawing No <b>MNT-IH-04024</b>	Rev <b>01</b>
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- NOTES:
1. THIS SHEET REPRESENTS FREIGHT RAIL CONNECTION WITH MOW. FOR MOW DETAIL REFER TO SHEETS MNT-IH-04022 AND MNT-IH-04023.
  2. POTENTIAL FREIGHT RAIL CONNECTION TO BE FURTHER DEVELOPED DURING MORE DETAILED DESIGN IN COORDINATION WITH FREIGHT RAILROAD.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. COLQUHOUN**

DRAWN BY  
**M. JALBERT**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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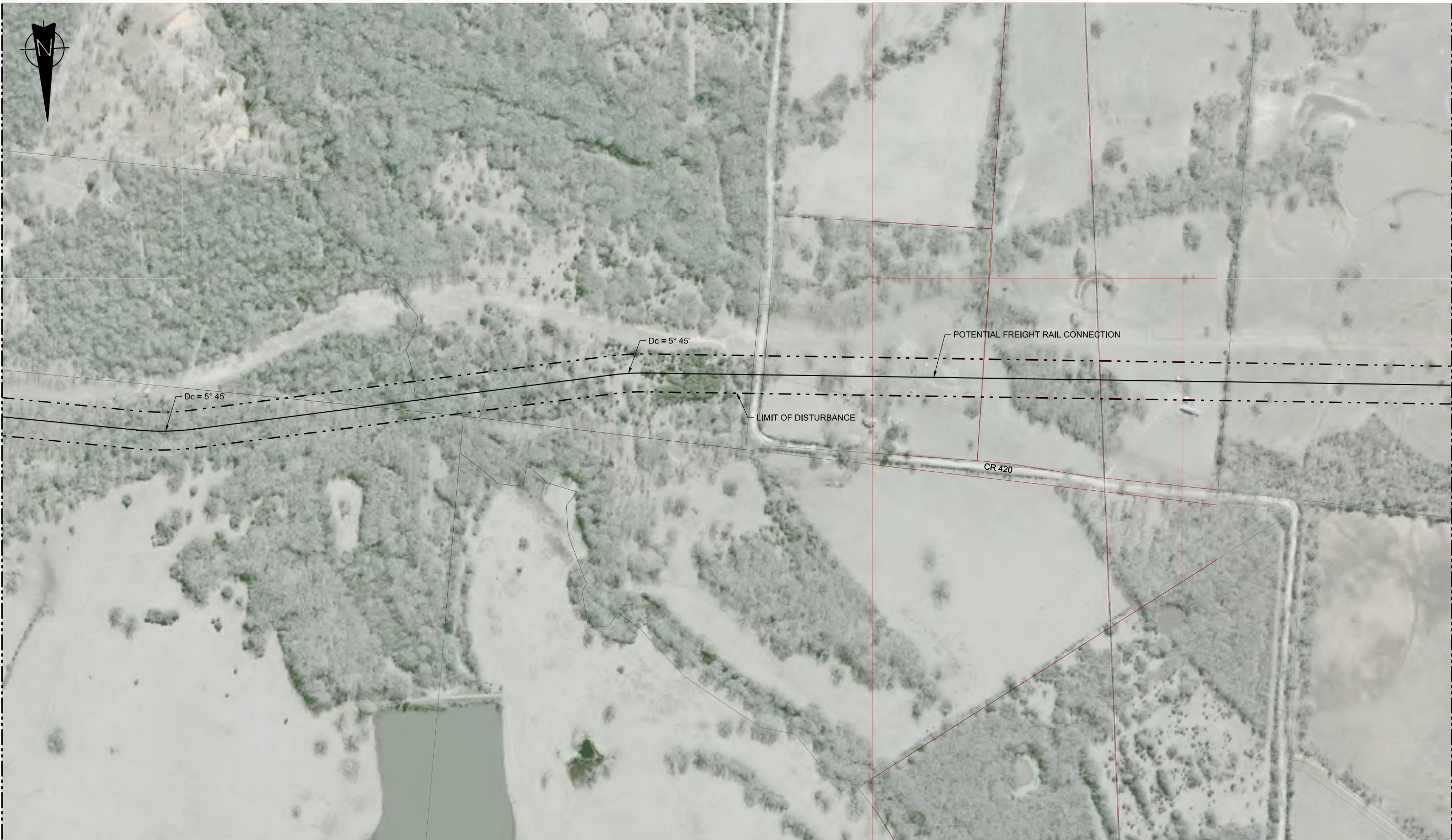
DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

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

Drawing Title  
**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
TRACK CONNECTION  
LAYOUT - SHEET 1 OF 8**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04025	Rev 01





- NOTES:
1. THIS SHEET REPRESENTS FREIGHT RAIL CONNECTION WITH MOW. FOR MOW DETAIL REFER TO SHEETS MNT-IH-04022 AND MNT-IH-04023.
  2. POTENTIAL FREIGHT RAIL CONNECTION TO BE FURTHER DEVELOPED DURING MORE DETAILED DESIGN IN COORDINATION WITH FREIGHT RAILROAD.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. COLQUHOUN**

DRAWN BY  
**M. JALBERT**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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FINAL CONCEPTUAL ENGINEERING

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Drawing Title  
**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
TRACK CONNECTION  
LAYOUT - SHEET 2 OF 8**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04026	Rev 01





- NOTES:
- THIS SHEET REPRESENTS FREIGHT RAIL CONNECTION WITH MOW. FOR MOW DETAIL REFER TO SHEETS MNT-IH-04022 AND MNT-IH-04023.
  - POTENTIAL FREIGHT RAIL CONNECTION TO BE FURTHER DEVELOPED DURING MORE DETAILED DESIGN IN COORDINATION WITH FREIGHT RAILROAD.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. COLQUHOUN**

DRAWN BY  
**M. JALBERT**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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FINAL CONCEPTUAL ENGINEERING

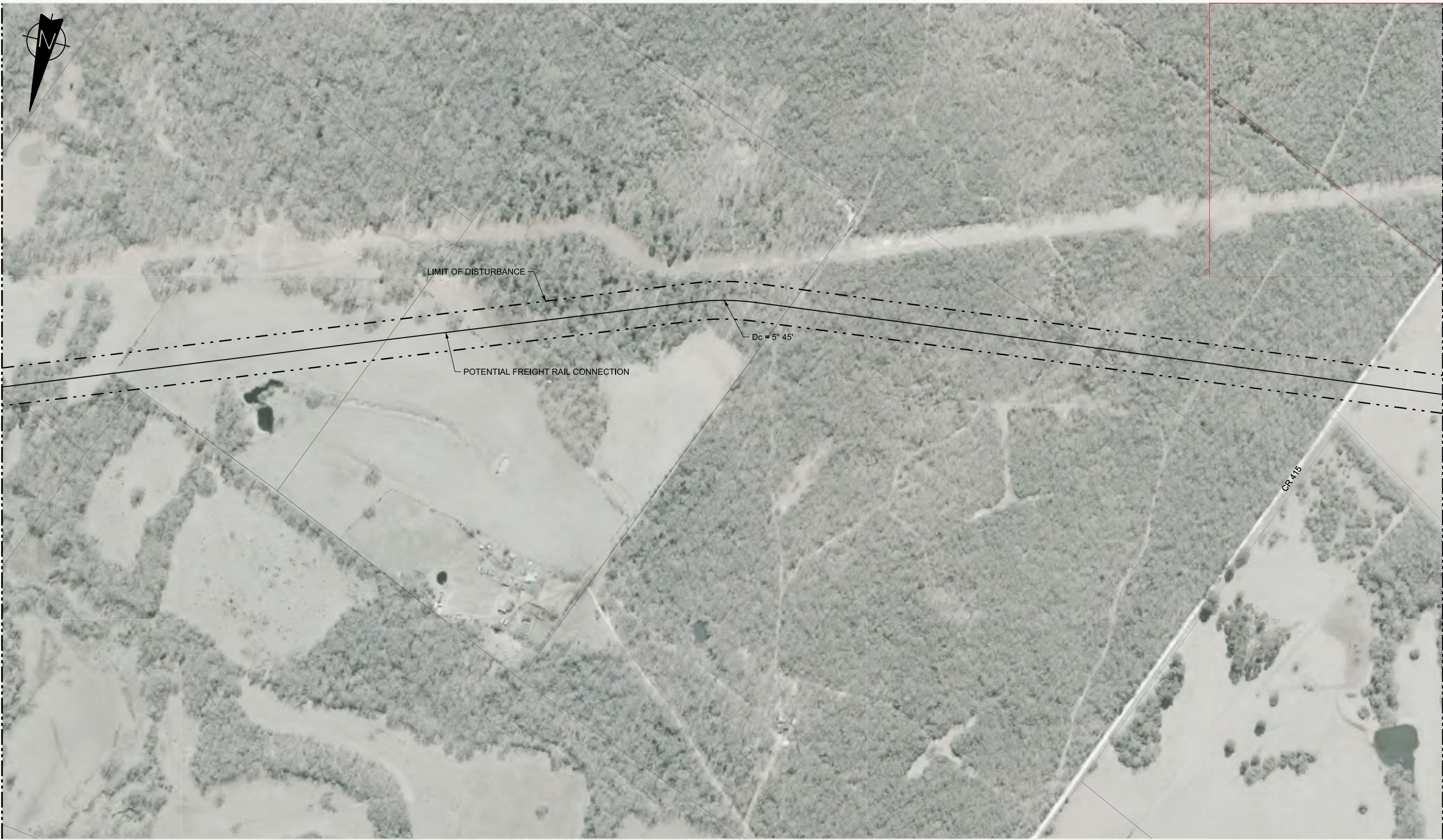
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
TRACK CONNECTION  
LAYOUT - SHEET 3 OF 8**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04027	Rev 01





NOTES:

- THIS SHEET REPRESENTS FREIGHT RAIL CONNECTION WITH MOW. FOR MOW DETAIL REFER TO SHEETS MNT-IH-04022 AND MNT-IH-04023.
- POTENTIAL FREIGHT RAIL CONNECTION TO BE FURTHER DEVELOPED DURING MORE DETAILED DESIGN IN COORDINATION WITH FREIGHT RAILROAD.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. COLQUHOUN**

DRAWN BY  
**M. JALBERT**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**



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FINAL CONCEPTUAL ENGINEERING



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

Drawing Title  
**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
TRACK CONNECTION  
LAYOUT - SHEET 4 OF 8**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04028	Rev 01





NOTES:

1. THIS SHEET REPRESENTS FREIGHT RAIL CONNECTION WITH MOW. FOR MOW DETAIL REFER TO SHEETS MNT-IH-04022 AND MNT-IH-04023.
2. POTENTIAL FREIGHT RAIL CONNECTION TO BE FURTHER DEVELOPED DURING MORE DETAILED DESIGN IN COORDINATION WITH FREIGHT RAILROAD.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. COLQUHOUN**

DRAWN BY  
**M. JALBERT**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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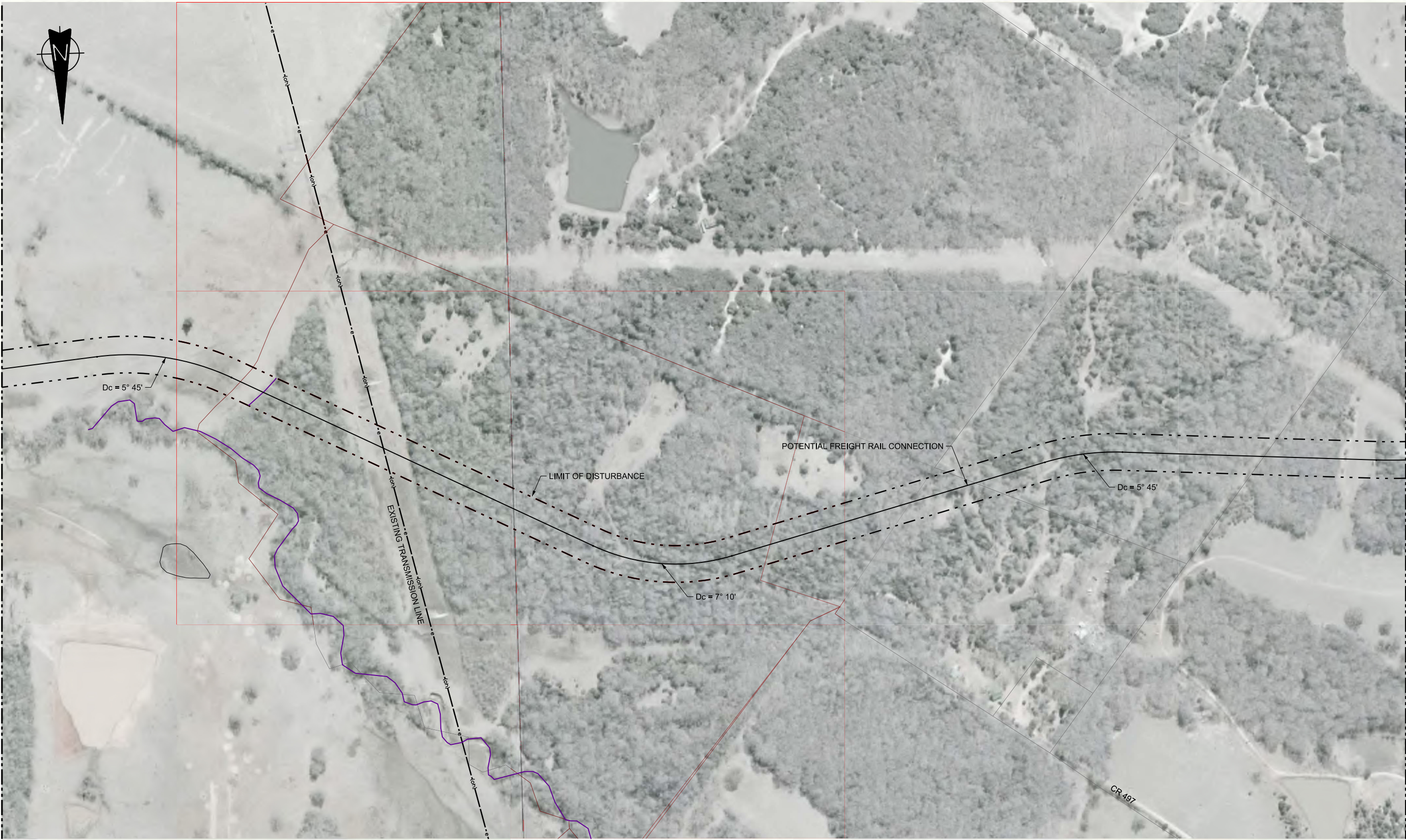
DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

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Drawing Title  
**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
TRACK CONNECTION  
LAYOUT - SHEET 5 OF 8**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04029	Rev 01





MATCHLINE SEE SHEET MNT-IH-04029

MATCHLINE SEE SHEET MNT-IH-04031



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. COLQUHOUN**  
DRAWN BY  
**M. JALBERT**  
CHECKED BY  
**M. SPIRIDIGLIOZZI**  
IN CHARGE  
**C. TAYLOR**  
DATE  
**2/25/2019**

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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING  
**TEXAS CENTRAL**  
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
TRACK CONNECTION  
LAYOUT - SHEET 6 OF 8**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04030	Rev 01



MATCHLINE SEE SHEET MNT-IH-04032



MATCHLINE SEE SHEET MNT-IH-04030

NOTES:

1. THIS SHEET REPRESENTS FREIGHT RAIL CONNECTION WITH MOW. FOR MOW DETAIL REFER TO SHEETS MNT-IH-04022 AND MNT-IH-04023.
2. POTENTIAL FREIGHT RAIL CONNECTION TO BE FURTHER DEVELOPED DURING MORE DETAILED DESIGN IN COORDINATION WITH FREIGHT RAILROAD.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. COLQUHOUN**

DRAWN BY  
**M. JALBERT**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

**TEXAS CENTRAL**

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

Drawing Title  
**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
TRACK CONNECTION  
LAYOUT - SHEET 7 OF 8**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04031	Rev 01





- NOTES:
1. THIS SHEET REPRESENTS FREIGHT RAIL CONNECTION WITH MOW. FOR MOW DETAIL REFER TO SHEETS MNT-IH-04022 AND MNT-IH-04023.
  2. POTENTIAL FREIGHT RAIL CONNECTION TO BE FURTHER DEVELOPED DURING MORE DETAILED DESIGN IN COORDINATION WITH FREIGHT RAILROAD.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. COLQUHOUN**

DRAWN BY  
**M. JALBERT**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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FINAL CONCEPTUAL ENGINEERING

**TEXAS CENTRAL**

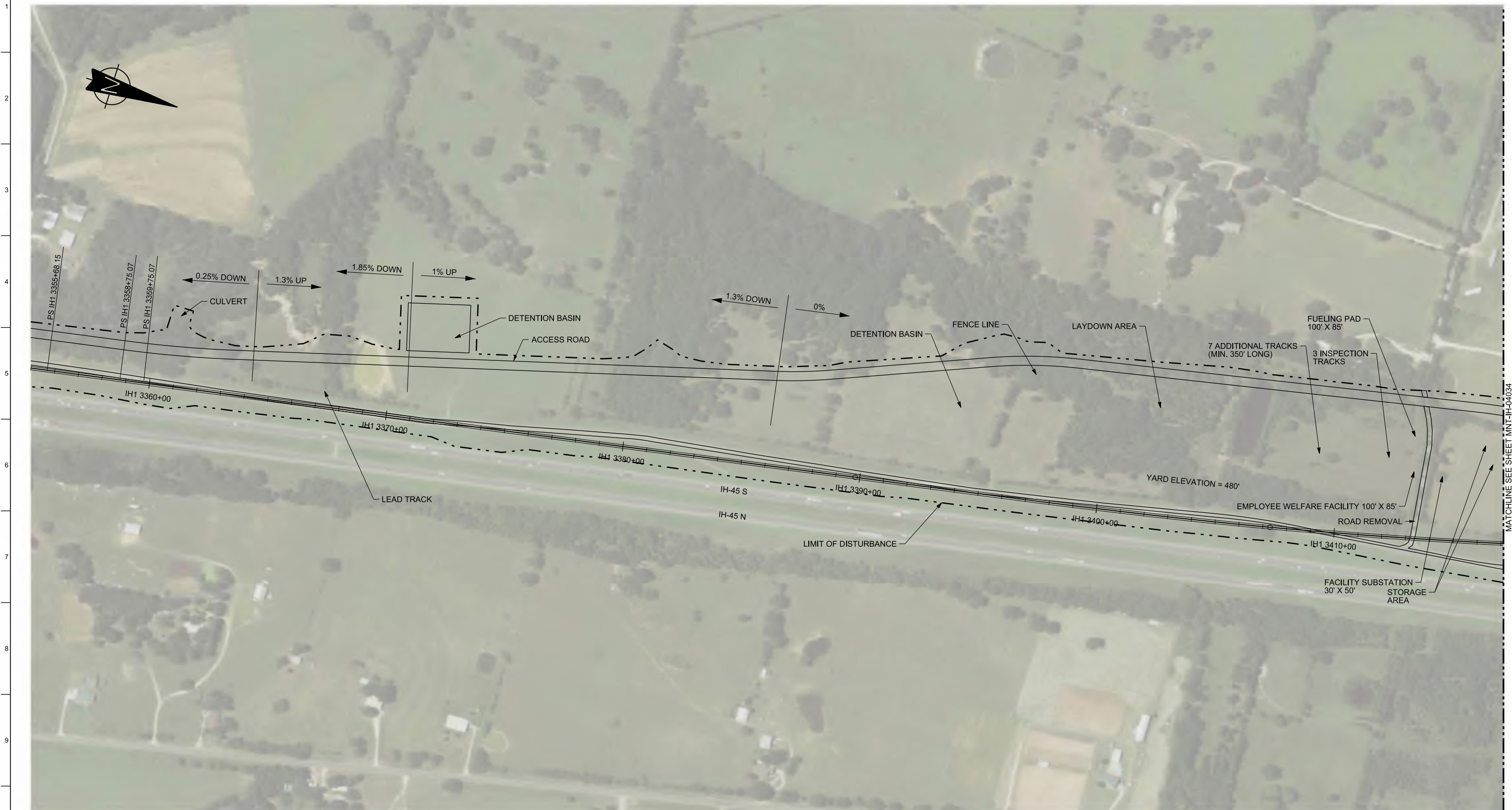
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title

**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
TRACK CONNECTION  
LAYOUT - SHEET 8 OF 8**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04032	Rev 01





NOTES:  
1. SEE SHEET MNT-00-02012 FOR MOW NOTES.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**T. WAGNER**

DRAWN BY  
**A. LUKACS**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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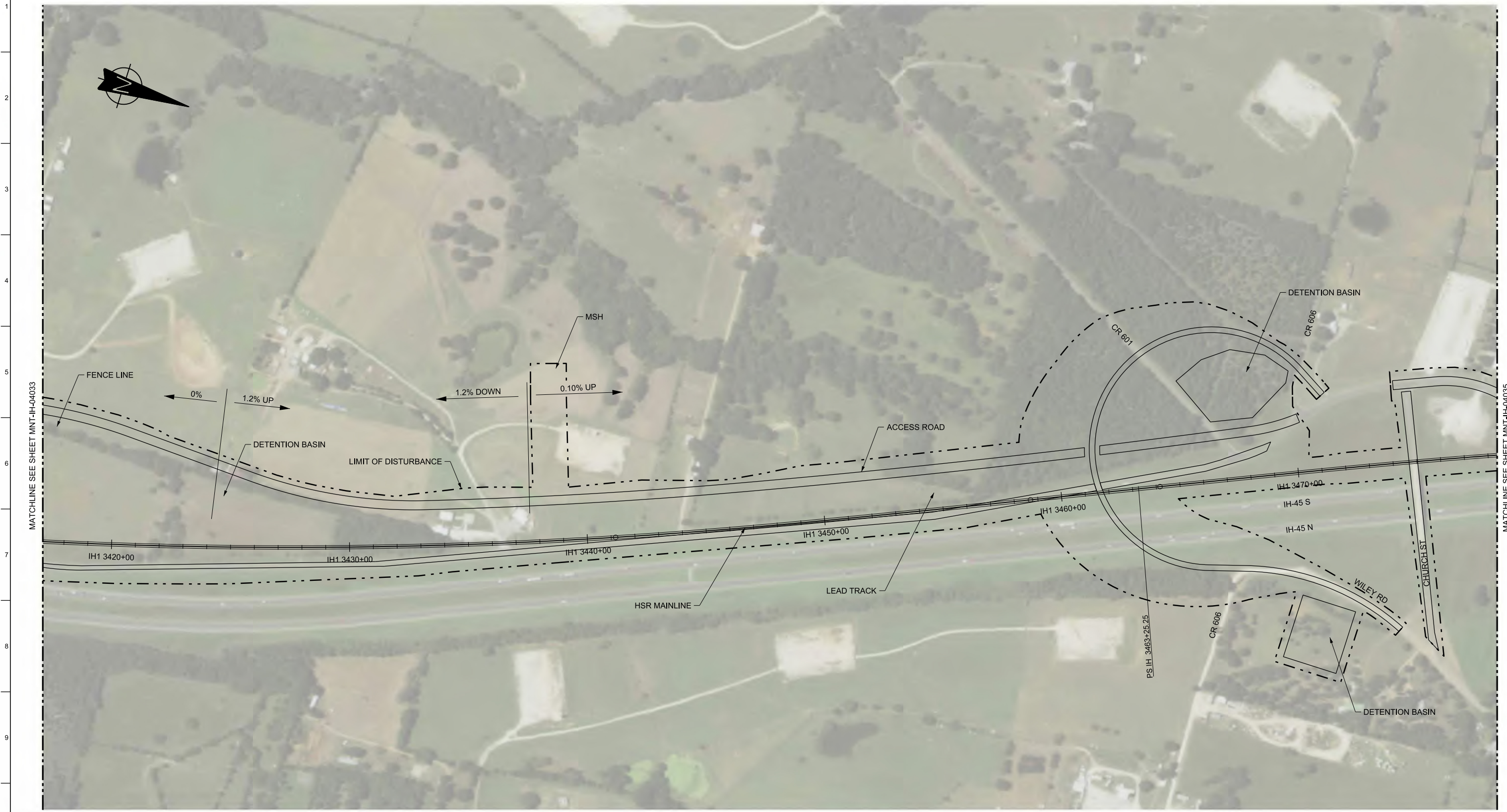
DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

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

Drawing Title  
**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
MOW FACILITY IH-2  
LAYOUT - SHEET 1 OF 3**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04033	Rev 01

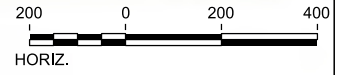




MATCHLINE SEE SHEET MNT-IH-04033

MATCHLINE SEE SHEET MNT-IH-04035

NOTES:  
1. SEE SHEET MNT-00-02012 FOR MOW NOTES.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**T. WAGNER**

DRAWN BY  
**A. LUKACS**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**



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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

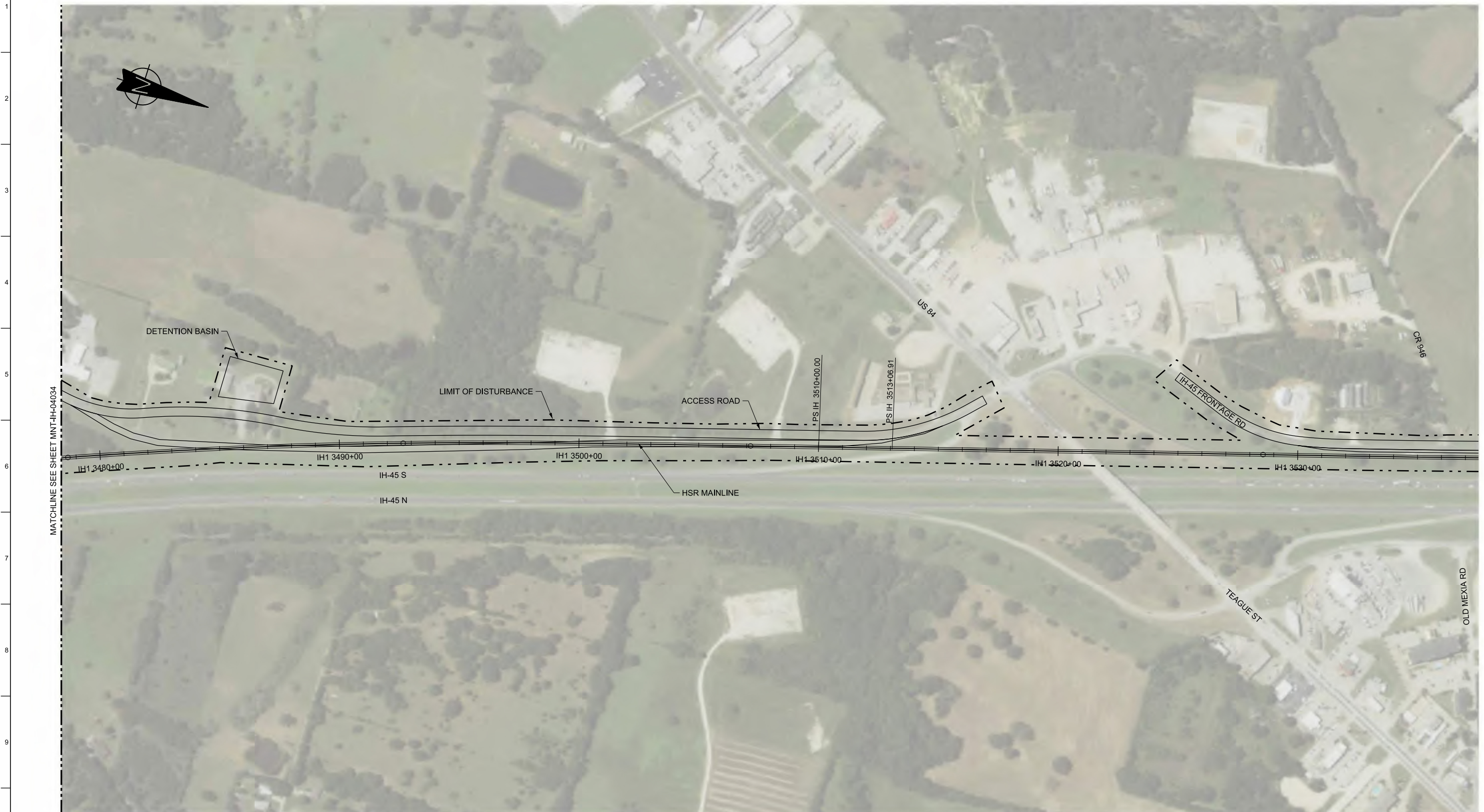


1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**IH (45) SEGMENT  
MAINTENANCE FACILITIES  
MOW FACILITY IH-2  
LAYOUT - SHEET 2 OF 3**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04034	Rev 01





MATCHLINE SEE SHEET MNT-IH-04034

NOTES:  
 1. SEE SHEET MNT-00-02012 FOR MOW NOTES.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**T. WAGNER**

DRAWN BY  
**A. LUKACS**

CHECKED BY  
**M. SPIRIDIGLIOZZI**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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 FINAL CONCEPTUAL ENGINEERING

**TEXAS CENTRAL**

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

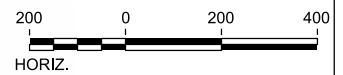
Drawing Title  
**IH (45) SEGMENT  
 MAINTENANCE FACILITIES  
 MOW FACILITY IH-2  
 LAYOUT - SHEET 3 OF 3**

Scale AS SHOWN		
Drawing Status FINAL		
Job No 234180	Drawing No MNT-IH-04035	Rev 01





NOTES:  
 1. SEE SHEET MNT-00-02012 FOR MOW NOTES.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**C. ZWIEBEL**

DRAWN BY  
**C. ZWIEBEL**

CHECKED BY  
**T. WAGNER**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

**ARUP**

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 Tel (713) 783 2787 Fax (713) 343 1467  
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 Texas Registered Engineering Firm: F-2144

DALLAS TO HOUSTON HIGH-SPEED RAIL  
 FINAL CONCEPTUAL ENGINEERING

**TEXAS CENTRAL**

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

Drawing Title  
**ELLIS EAST SEGMENT  
 MAINTENANCE FACILITIES  
 MOW FACILITY EE-1  
 LAYOUT**

Scale  
AS SHOWN

Drawing Status  
**FINAL**

Job No <b>234180</b>	Drawing No <b>MNT-EE-04038</b>	Rev <b>01</b>
-------------------------	-----------------------------------	------------------

# 3B-3

---

# RAILWAY FACILITIES

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**K. SEYMOUR**

DRAWN BY  
**D. THOMPSON**

CHECKED BY  
**R. BURNS**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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

DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING



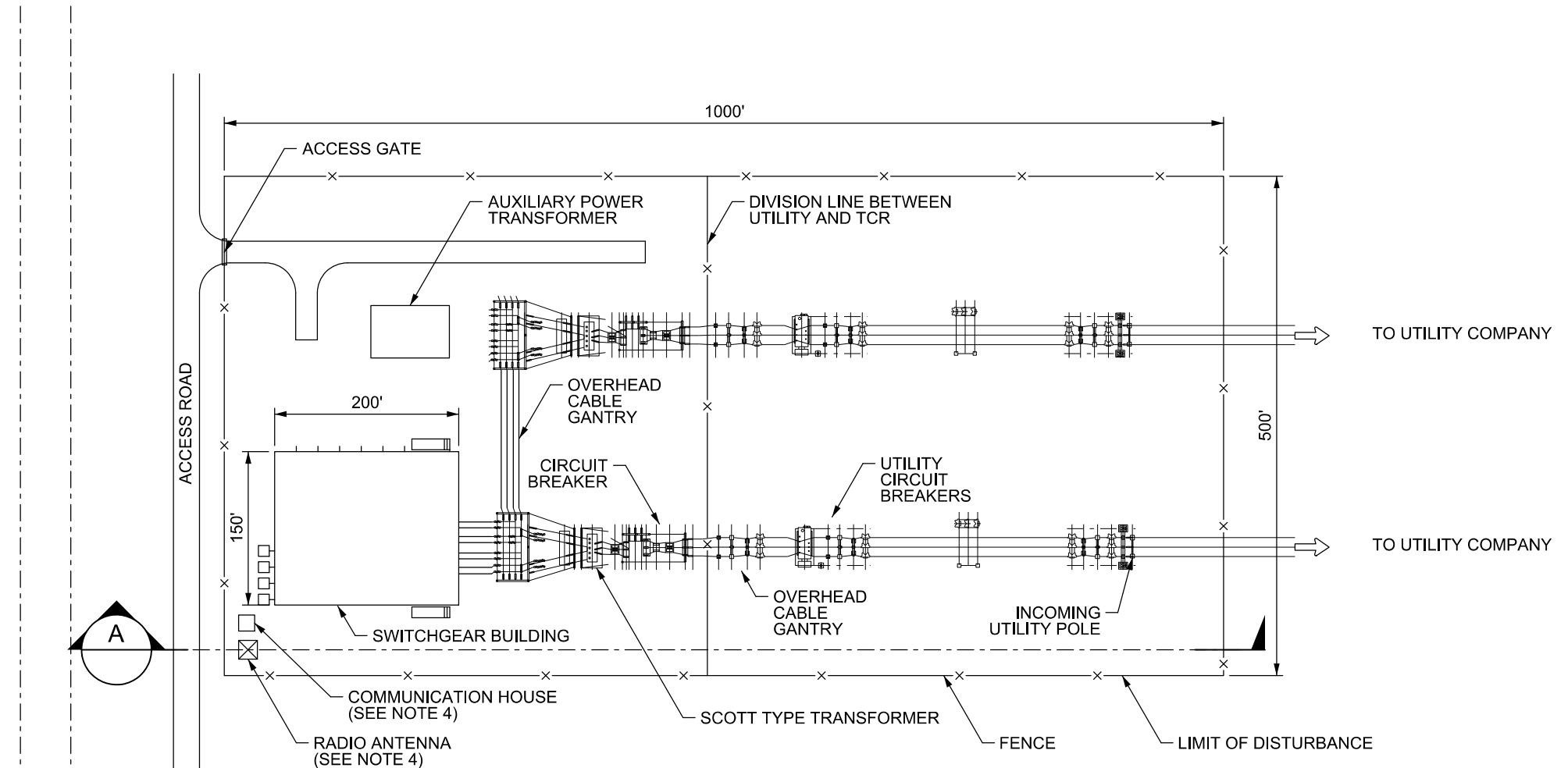
**TEXAS CENTRAL**

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

Drawing Title  
**GENERAL**

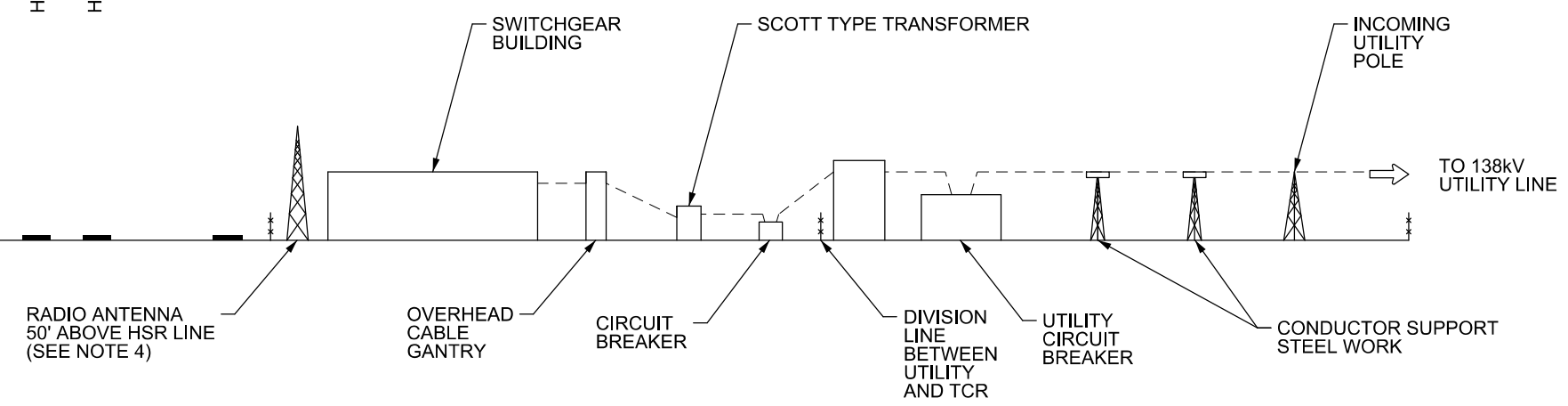
Scale <b>NO SCALE</b>		
Drawing Status <b>FINAL</b>		
Job No <b>234180</b>	Drawing No <b>GEN-00-0000</b>	Rev <b>01</b>





### TYPICAL TRACTION POWER SUBSTATION (TPSS)

- NOTES:
1. TYPICAL ARRANGEMENT OF TRACTION POWER SUBSTATION SHOWN FOR PURPOSES OF ENVIRONMENTAL IMPACT ANALYSES. SITE WILL INCLUDE ALLOWANCE FOR UTILITY SUBSTATIONS, ALL OF THE REQUIRED TRACTION POWER DISTRIBUTION EQUIPMENT, PARKING, AND OTHER SITE FEATURES.
  2. POWER SUPPLY NEEDS AND ASSOCIATED INFRASTRUCTURE REQUIREMENTS AT EACH LOCATION WILL BE DETERMINED THROUGH DETAILED OPERATIONAL AND TRACTION POWER DEMAND ANALYSES.
  3. SITE SPECIFIC CONSTRAINTS AT EACH LOCATION WILL INFLUENCE EQUIPMENT ARRANGEMENTS EQUIPMENT REQUIRED AT EACH LOCATION.
  4. COMMUNICATION HOUSES AND ASSOCIATED RADIO ANTENNA WILL BE INTEGRATED INTO TPSS FACILITIES AS SHOWN WHERE PRACTICABLE TO MINIMIZE ROW REQUIREMENTS AND IMPACTS. SEE DRAWING SYS-00-01002 FOR COMMUNICATIONS FACILITIES LAYOUTS.
  5. ACCESS ROAD LOCATION RELATIVE TO SITE ARRANGEMENTS VARIES BY LOCATION. SEE PLAN AND PROFILE DRAWINGS FOR LOCATIONS AND ASSOCIATED LIMIT OF DISTURBANCE.
  6. ORIENTATION OF EXISTING UTILITY SERVICES RELATIVE TO SUBSTATION VARIES BY LOCATION. SEE PLAN AND PROFILE DRAWINGS FOR TRANSMISSION LINE CONNECTIONS. FINAL CONFIGURATION WILL BE DETERMINED BY UTILITY.
  7. SITE SPECIFIC DESIGN MAY VARY DEPENDING ON REQUIRED UTILITY CONNECTION WIDTH AND IF LOOP CONNECTION IS REQUIRED.



### ELEVATION A-A

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. HAMMOND**

DRAWN BY  
**J. GAIBORT**

CHECKED BY  
**T. SMITH**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

**TEXAS CENTRAL**

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

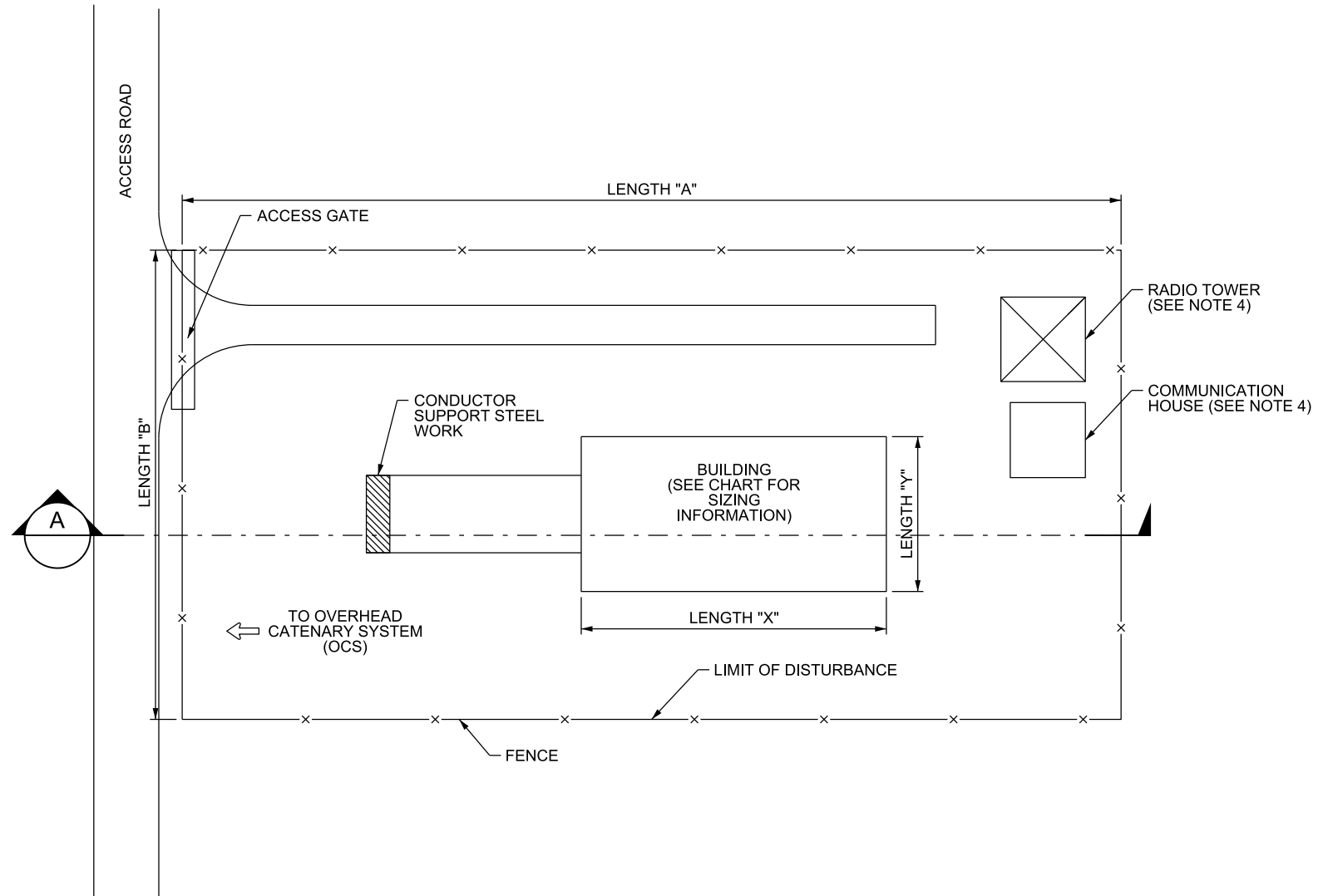
Drawing Title

**IH, NE, EE  
RAILWAY FACILITIES  
TPSS  
TYPICAL LAYOUT PLAN**

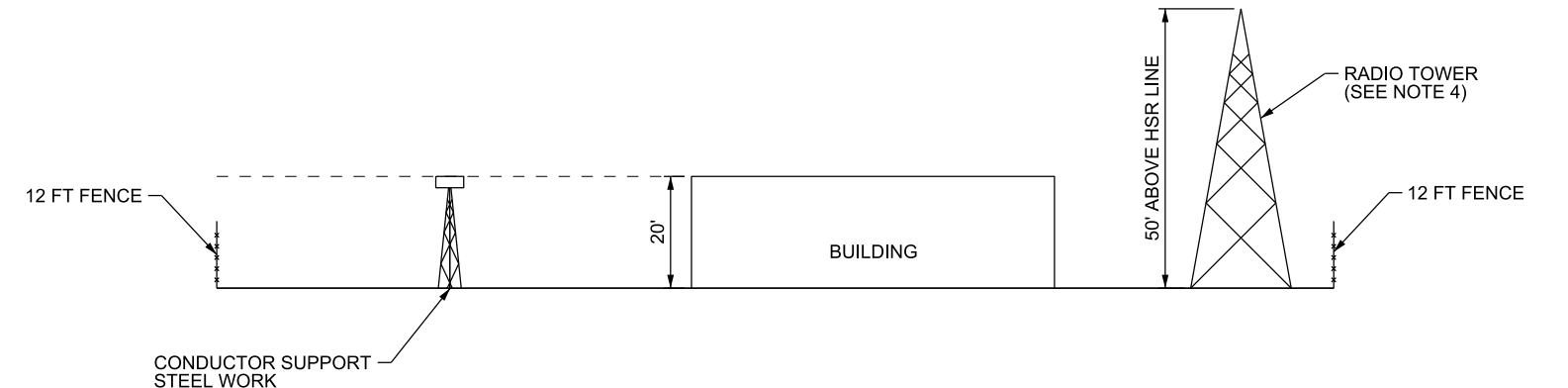
Scale NOT TO SCALE		
Drawing Status <b>FINAL</b>		
Job No 234180	Drawing No SYS-00-01010	Rev 01

- NOTES:**
1. TYPICAL ARRANGEMENT OF SECTIONING POST/SUB-SECTIONING POST/ AUTO TRANSFORMER POST SHOWN FOR PURPOSES OF ENVIRONMENTAL IMPACT ANALYSES.
  2. SITE SPECIFIC CONSTRAINTS AT EACH LOCATION WILL INFLUENCE EQUIPMENT ARRANGEMENTS DEPENDING ON THE AMOUNT OF EQUIPMENT REQUIRED AT EACH LOCATION.
  3. POWER SUPPLY NEEDS AND ASSOCIATED INFRASTRUCTURE REQUIREMENTS AT EACH LOCATION WILL BE DETERMINED THROUGH DETAILED OPERATIONAL AND TRACTION POWER DEMAND ANALYSES.
  4. COMMUNICATION HOUSES AND ASSOCIATED RADIO ANTENNA WILL BE INTEGRATED INTO TRACTION POWER FACILITIES AS SHOWN WHERE PRACTICABLE TO MINIMIZE ROW REQUIREMENTS AND IMPACTS. SEE DRAWING SYS-00-01002 FOR COMMUNICATIONS FACILITIES LAYOUTS.
  5. ACCESS ROAD LOCATION RELATIVE TO SITE ARRANGEMENTS VARIES BY LOCATION. SEE PLAN AND PROFILE DRAWINGS FOR LOCATIONS AND ASSOCIATED LIMIT OF DISTURBANCE.

POWER FACILITIES ADJACENT TO ROW					
FACILITY NAME	TLA	BUILDING		YARD	
		X (FT)	Y (FT)	A (FT)	B (FT)
AUTO TRANSFORMER POST	ATP	65.5	33	130	100
SECTIONING POST	SP	65.5	33	200	130
SUB-SECTIONING POST	SSP	65.5	33	200	100



**POWER FACILITIES ADJACENT TO ROW**



**ELEVATION A-A**

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. HAMMOND**

DRAWN BY  
**C. ZWIEBEL**

CHECKED BY  
**T. SMITH**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

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

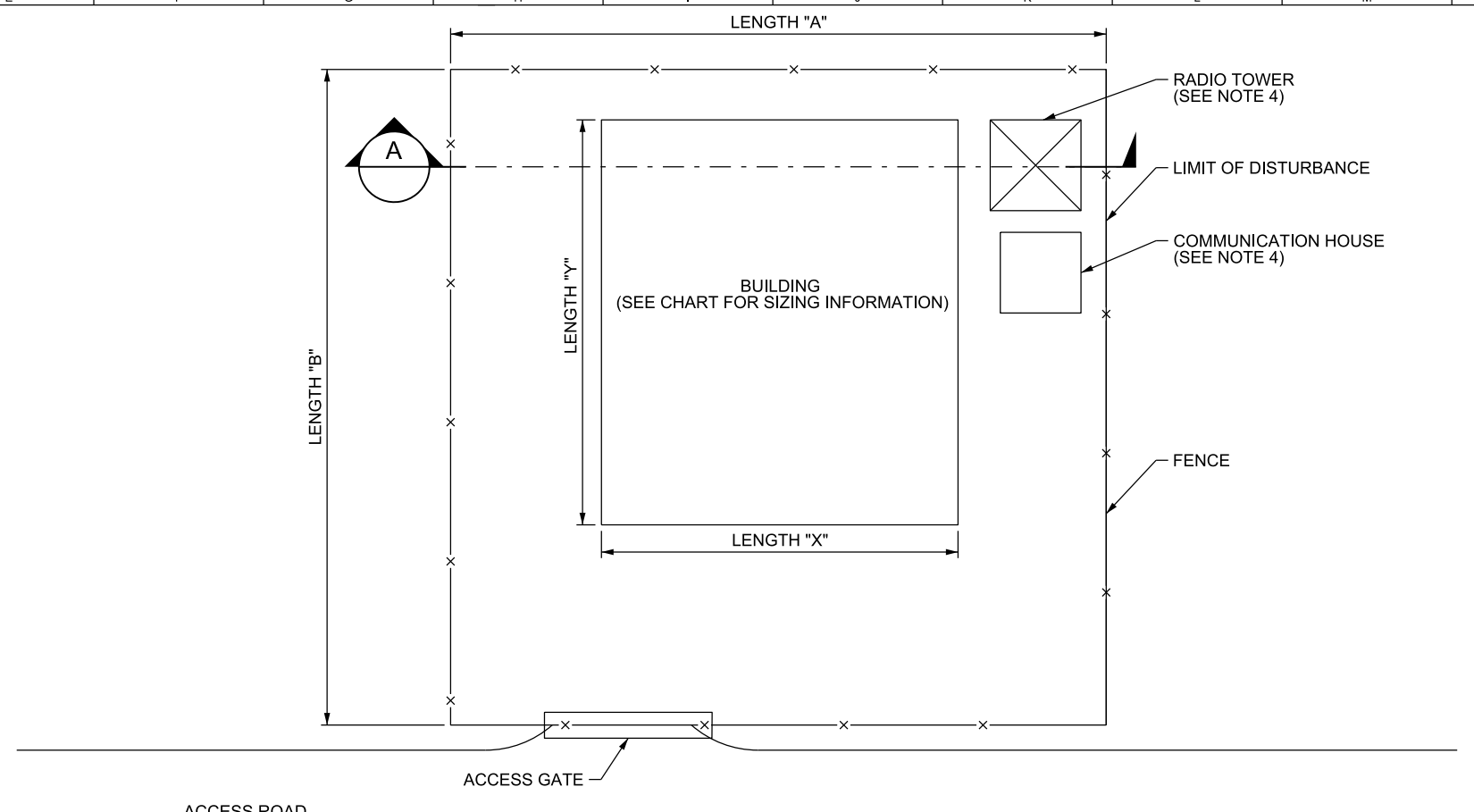
Drawing Title

**IH, NE, EE  
RAILWAY FACILITIES  
SP, SPP, ATP  
TYPICAL LAYOUT PLAN**

Scale  
**NOT TO SCALE**

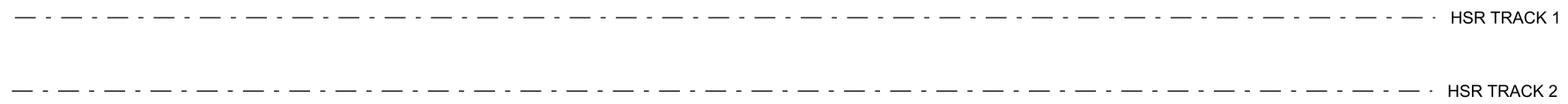
Drawing Status  
**FINAL**

Job No <b>234180</b>	Drawing No <b>SYS-00-01011</b>	Rev <b>01</b>
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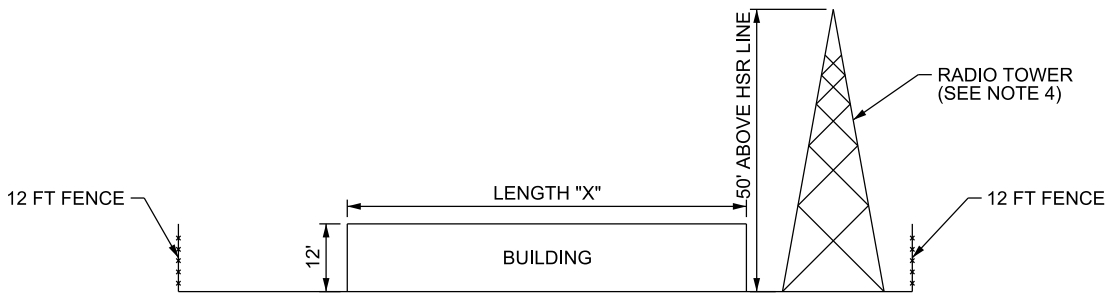


NOTES:

1. TYPICAL ARRANGEMENT OF SIGNALING AND COMMUNICATIONS FACILITIES SHOWN FOR PURPOSES OF ENVIRONMENTAL IMPACT ANALYSES.
2. SITE SPECIFIC CONSTRAINTS AT EACH LOCATION WILL INFLUENCE EQUIPMENT ARRANGEMENTS DEPENDING ON THE COMPLEXITY OF THE TRACK LOCATION BEING CONTROLLED AND THE AMOUNT OF EQUIPMENT REQUIRED AT EACH LOCATION.
3. SIGNALING AND COMMUNICATIONS NEEDS AND ASSOCIATED INFRASTRUCTURE REQUIREMENTS AT EACH LOCATION WILL BE DETERMINED THROUGH DETAILED SYSTEM ANALYSES DURING MORE ADVANCED DESIGN.
4. COMMUNICATION HOUSES AND ASSOCIATED RADIO ANTENNA WILL BE INTEGRATED INTO SIGNALING FACILITIES AS SHOWN WHERE PRACTICABLE TO MINIMIZE ROW REQUIREMENTS AND IMPACTS.
5. ACCESS ROAD LOCATION RELATIVE TO SITE ARRANGEMENTS VARIES BY LOCATION. SEE PLAN AND PROFILE DRAWINGS FOR LOCATIONS AND ASSOCIATED LIMIT OF DISTURBANCE.
6. THESE FACILITIES WILL BE LOCATED CLOSE TO THE ROW TO SUPPORT CONNECTIONS TO THE TRACK AND TO FACILITATE RADIO COMMUNICATIONS WITH CONTROL SYSTEMS WITHIN THE TRAIN AND MAINTENANCE CREWS ALONG THE ROW. SEE PLAN AND PROFILE DRAWINGS FOR LOCATIONS AND ASSOCIATED LIMIT OF DISTURBANCE.



**SIGNALING AND COMMUNICATIONS FACILITIES ADJACENT TO ROW**



**ELEVATION A-A**

SIGNALING AND COMMUNICATIONS FACILITIES ADJACENT TO ROW					
FACILITY NAME	TLA	BUILDING		YARD	
		X (FT)	Y (FT)	A (FT)	B (FT)
COMMUNICATION HOUSE	CH	16	16	25	30
SUB-SIGNAL HOUSE	SSH	50	50	60	80
MAIN SIGNAL HOUSE	MSH	100	40	130	100
INTERMEDIATE SIGNAL HOUSE	ISH	100	40	130	130

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. HAMMOND**

DRAWN BY  
**C. ZWIEBEL**

CHECKED BY  
**T. SMITH**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

**TEXAS CENTRAL**

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

Drawing Title

**IH, NE, EE  
RAILWAY FACILITIES  
MSH, SSH, ISH, CH  
TYPICAL LAYOUT PLAN**

Scale  
**NOT TO SCALE**

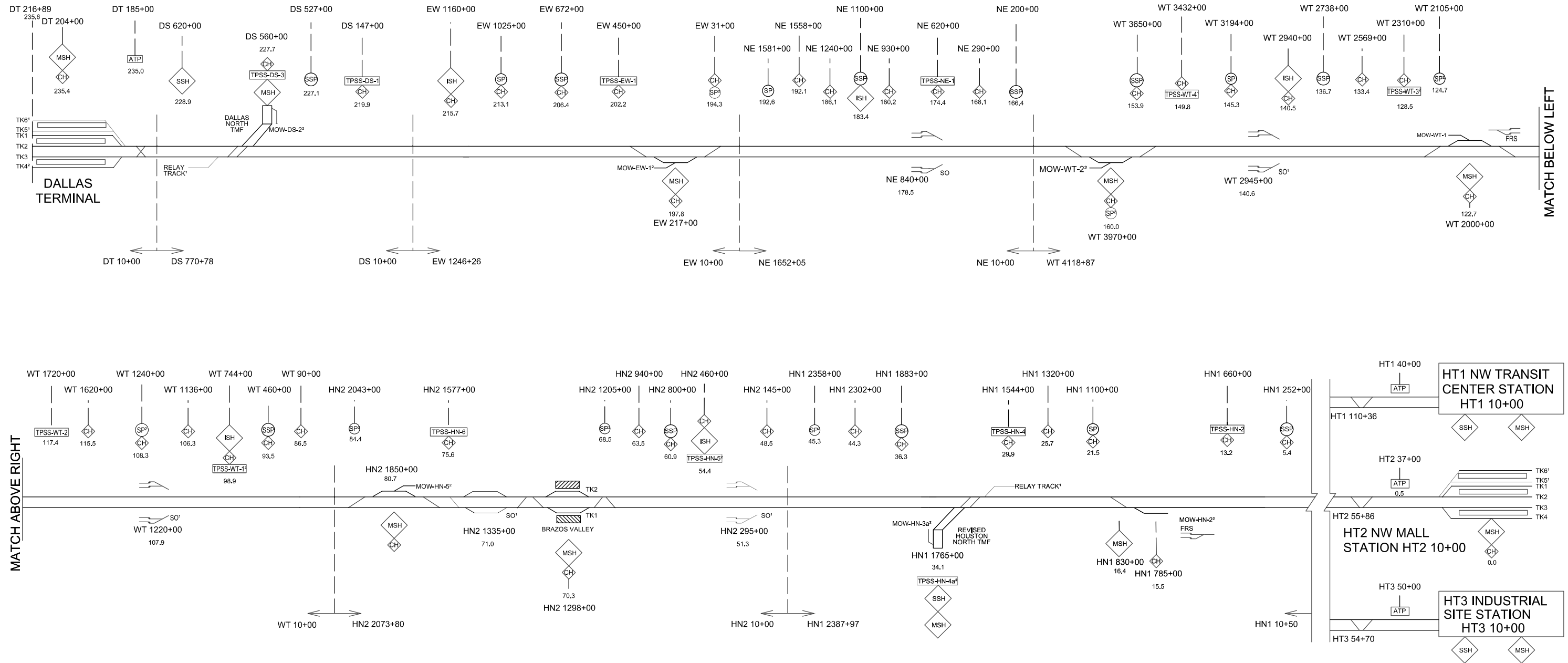
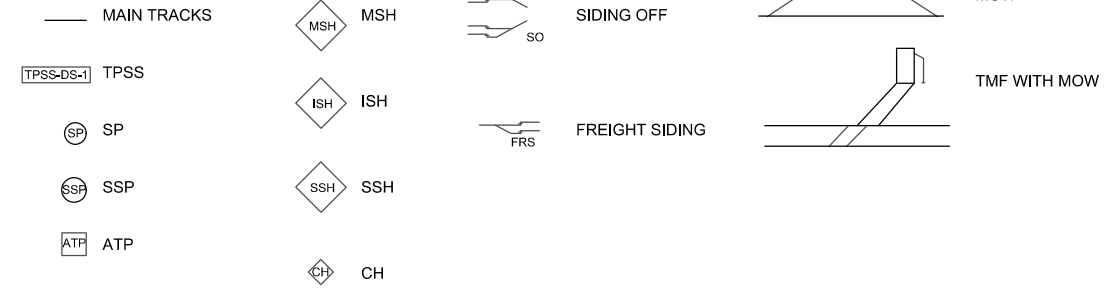
Drawing Status  
**FINAL**

Job No <b>234180</b>	Drawing No <b>SYS-00-01012</b>	Rev <b>01</b>
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NOTES:

- 1. REFER TO GEN-00-0009 IN VOLUME 1A FOR DEFINITION OF ABBREVIATIONS
  - 2. SYSTEMS SCHEMATIC INCLUDES THREE STATION TERMINAL ALTERNATIVES IN HOUSTON (NORTHWEST TRANSIT CENTER, NORTHWEST MALL, AND INDUSTRIAL SITE) AND INCLUDES ONE TMF ALTERNATIVE LOCATION FOR BOTH HOUSTON AND DALLAS. ALL ALIGNMENT ALTERNATIVES WOULD USE THE SAME TMF SITES.
  - 3. MILE MARKERS INDICATE DISTANCE FROM HOUSTON TERMINAL. ALL MILE MARKERS ARE TAKEN FROM THE NW MALL TERMINAL SITE (HT2).
  - 4. SEE FCE REPORT FOR FULL LIST OF AND MORE INFORMATION ON SYSTEMS FACILITIES, INCLUDING COMMUNICATION HOUSES.
  - 5. SIDING DETAILS CAN BE FOUND ON SHEET MNT-00-02023 IN VOLUME 1A.
  - 6. SMALLER FACILITIES AT MOWS, TMFS, AND STATIONS ARE SHOWN AT THE MOW/TMF/STATION STATIONING IN THIS SCHEMATIC. MORE PRECISE STATIONING CAN BE FOUND ON SYS-00-30000.
  - 7. CO-LOCATED FACILITIES ARE SHOWN AT THE SAME STATIONING IN THIS SCHEMATIC. MORE PRECISE STATIONING CAN BE FOUND ON SYS-00-03000 FOR ALIGNMENT ALTERNATIVE, AND SYS-00-03010 FOR ALL OTHER ALIGNMENT ALTERNATIVES.
- \*FACILITY WOULD BE FSL AND NOT IN ISL.  
\*FACILITY WOULD BE UPGRADED IN FSL.

LEGEND



MATCH ABOVE RIGHT

MATCH BELOW LEFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. HAMMOND**

DRAWN BY  
**C. ZWIEBEL**

CHECKED BY  
**T. WAGNER**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**



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Texas Registered Engineering Firm: F-2144

DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING



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

Drawing Title  
**GENERAL RAILWAY FACILITIES FACILITY SPACING ALIGNMENT ALTERNATIVE B**

Scale  
**NOT TO SCALE**

Drawing Status  
**FINAL**

Job No <b>234180</b>	Drawing No <b>SYS-00-02002</b>	Rev <b>01</b>
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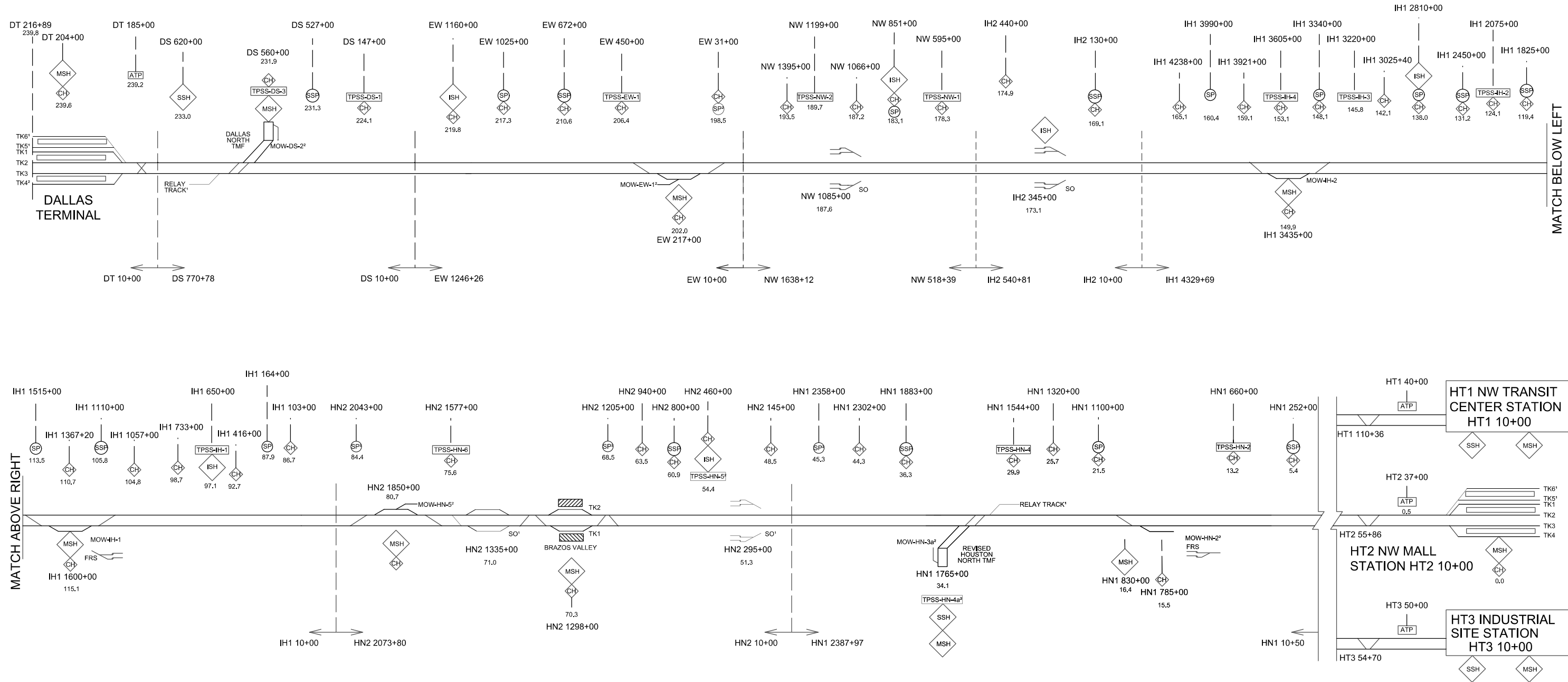
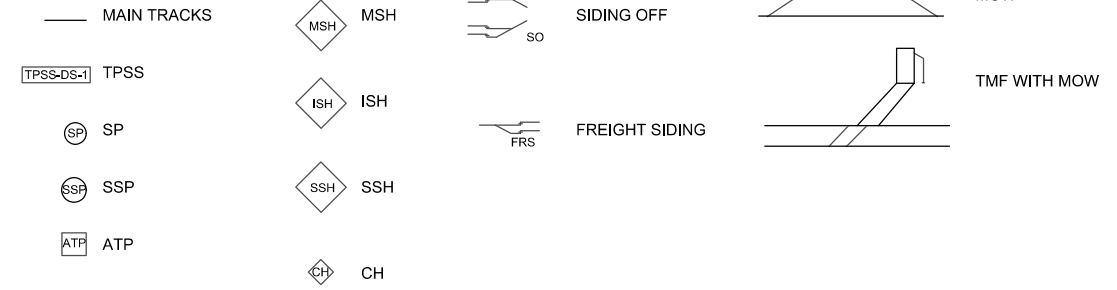


NOTES:

- 1. REFER TO GEN-00-0009 IN VOLUME 1A FOR DEFINITION OF ABBREVIATIONS
- 2. SYSTEMS SCHEMATIC INCLUDES THREE STATION TERMINAL ALTERNATIVES IN HOUSTON (NORTHWEST TRANSIT CENTER, NORTHWEST MALL, AND INDUSTRIAL SITE) AND INCLUDES ONE TMF ALTERNATIVE LOCATION FOR BOTH HOUSTON AND DALLAS. ALL ALIGNMENT ALTERNATIVES WOULD USE THE SAME TMF SITES.
- 3. MILE MARKERS INDICATE DISTANCE FROM HOUSTON TERMINAL. ALL MILE MARKERS ARE TAKEN FROM THE NW MALL TERMINAL SITE (HT2).
- 4. SEE FCE REPORT FOR FULL LIST OF AND MORE INFORMATION ON SYSTEMS FACILITIES, INCLUDING COMMUNICATION HOUSES.
- 5. SIDING DETAILS CAN BE FOUND ON SHEET MNT-00-02023 IN VOLUME 1A.
- 6. SMALLER FACILITIES AT MOWS, TMFS, AND STATIONS ARE SHOWN AT THE MOW/TMF/STATION STATIONING IN THIS SCHEMATIC. MORE PRECISE STATIONING CAN BE FOUND ON SYS-00-30000.
- 7. CO-LOCATED FACILITIES ARE SHOWN AT THE SAME STATIONING IN THIS SCHEMATIC. MORE PRECISE STATIONING CAN BE FOUND ON SYS-00-03000 FOR ALIGNMENT ALTERNATIVE, AND SYS-00-03010 FOR ALL OTHER ALIGNMENT ALTERNATIVES.

\*FACILITY WOULD BE FSL AND NOT IN ISL.  
 \*FACILITY WOULD BE UPGRADED IN FSL.

LEGEND



MATCH ABOVE RIGHT

MATCH BELOW LEFT

REV	DATE	BY	CHK	APP	DESCRIPTION

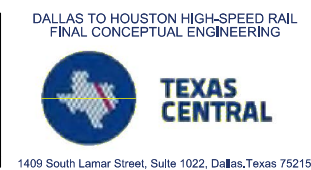
DESIGNED BY  
**J. HAMMOND**

DRAWN BY  
**C. ZWIEBEL**

CHECKED BY  
**T. WAGNER**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**



Drawing Title  
**GENERAL RAILWAY FACILITIES FACILITY SPACING ALIGNMENT ALTERNATIVE C**

Scale  
NOT TO SCALE

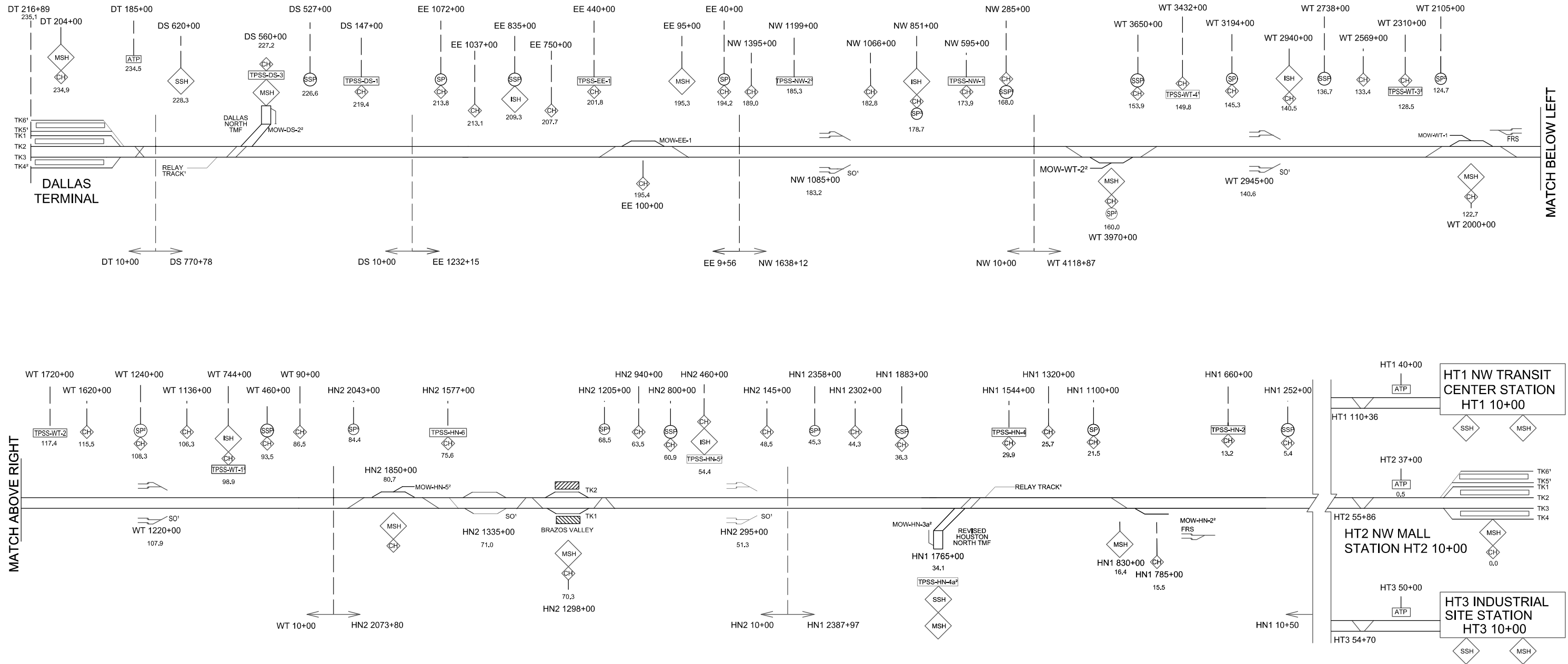
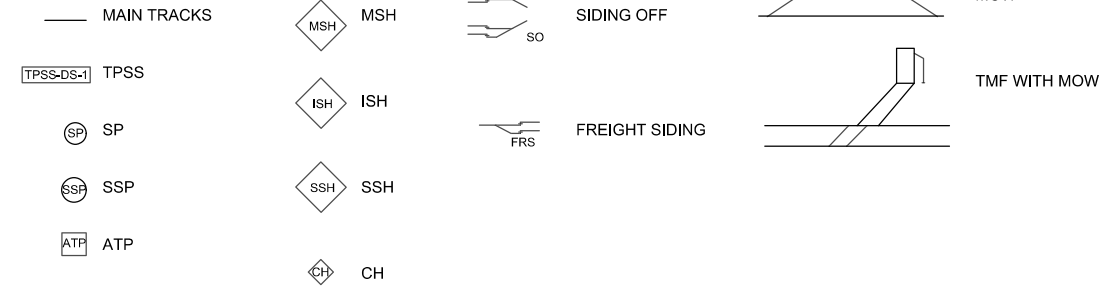
Drawing Status  
**FINAL**

Job No 234180	Drawing No SYS-00-02003	Rev 01
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NOTES:

- 1. REFER TO GEN-00-0009 IN VOLUME 1A FOR DEFINITION OF ABBREVIATIONS
  - 2. SYSTEMS SCHEMATIC INCLUDES THREE STATION TERMINAL ALTERNATIVES IN HOUSTON (NORTHWEST TRANSIT CENTER, NORTHWEST MALL, AND INDUSTRIAL SITE) AND INCLUDES ONE TMF ALTERNATIVE LOCATION FOR BOTH HOUSTON AND DALLAS. ALL ALIGNMENT ALTERNATIVES WOULD USE THE SAME TMF SITES.
  - 3. MILE MARKERS INDICATE DISTANCE FROM HOUSTON TERMINAL. ALL MILE MARKERS ARE TAKEN FROM THE NW MALL TERMINAL SITE (HT2).
  - 4. SEE FCE REPORT FOR FULL LIST OF AND MORE INFORMATION ON SYSTEMS FACILITIES, INCLUDING COMMUNICATION HOUSES.
  - 5. SIDING DETAILS CAN BE FOUND ON SHEET MNT-00-02023 IN VOLUME 1A.
  - 6. SMALLER FACILITIES AT MOWS, TMFS, AND STATIONS ARE SHOWN AT THE MOW/TMF/STATION STATIONING IN THIS SCHEMATIC. MORE PRECISE STATIONING CAN BE FOUND ON SYS-00-30000.
  - 7. CO-LOCATED FACILITIES ARE SHOWN AT THE SAME STATIONING IN THIS SCHEMATIC. MORE PRECISE STATIONING CAN BE FOUND ON SYS-00-03000 FOR ALIGNMENT ALTERNATIVE, AND SYS-00-03010 FOR ALL OTHER ALIGNMENT ALTERNATIVES.
- \*FACILITY WOULD BE FSL AND NOT IN ISL.  
\*FACILITY WOULD BE UPGRADED IN FSL.

LEGEND



MATCH ABOVE RIGHT

MATCH BELOW LEFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. HAMMOND**

DRAWN BY  
**C. ZWIEBEL**

CHECKED BY  
**T. WAGNER**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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Texas Registered Engineering Firm: F-2144

DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

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

Drawing Title  
**GENERAL RAILWAY FACILITIES FACILITY SPACING ALIGNMENT ALTERNATIVE D**

Scale  
**NOT TO SCALE**

Drawing Status  
**FINAL**

Job No <b>234180</b>	Drawing No <b>SYS-00-02004</b>	Rev <b>01</b>
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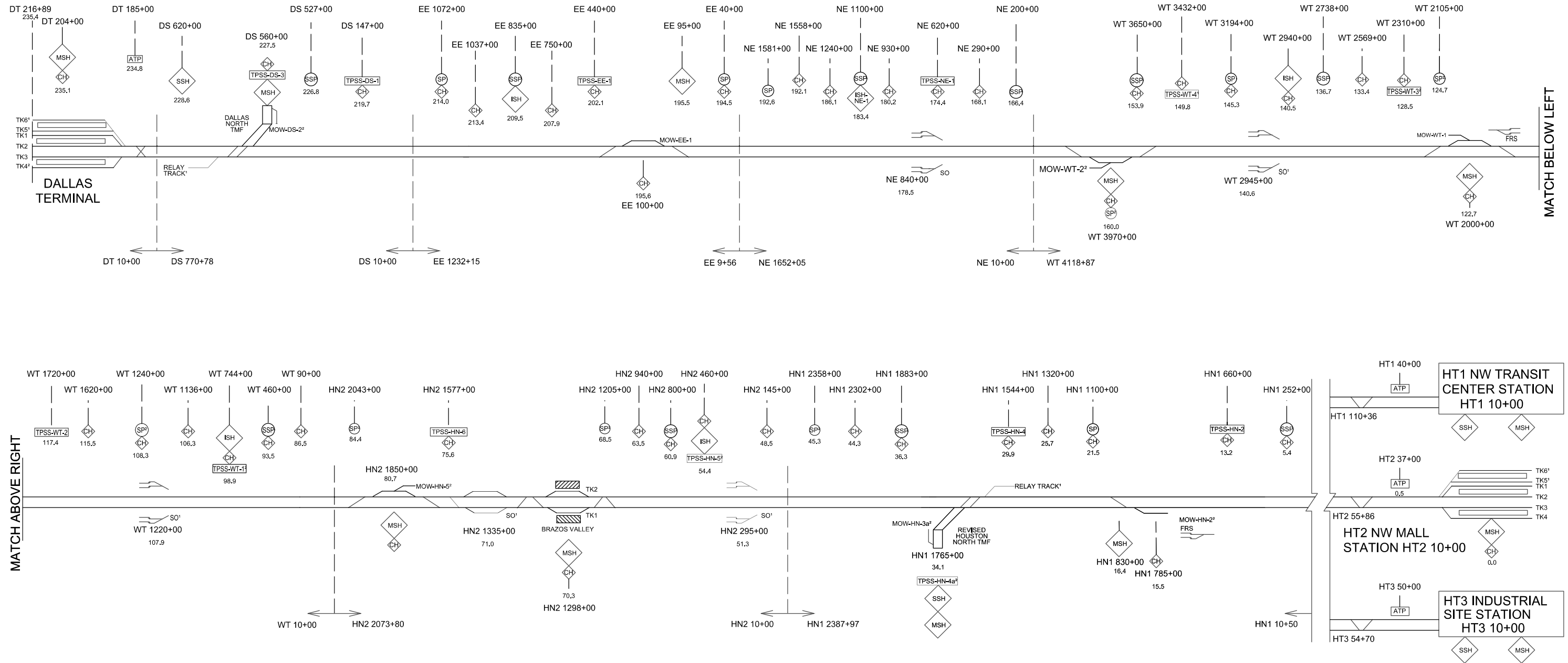
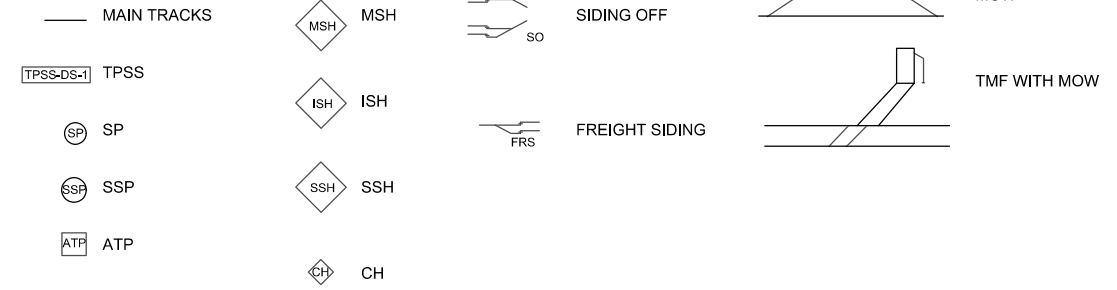


NOTES:

- 1. REFER TO GEN-00-0009 IN VOLUME 1A FOR DEFINITION OF ABBREVIATIONS
- 2. SYSTEMS SCHEMATIC INCLUDES THREE STATION TERMINAL ALTERNATIVES IN HOUSTON (NORTHWEST TRANSIT CENTER, NORTHWEST MALL, AND INDUSTRIAL SITE) AND INCLUDES ONE TMF ALTERNATIVE LOCATION FOR BOTH HOUSTON AND DALLAS. ALL ALIGNMENT ALTERNATIVES WOULD USE THE SAME TMF SITES.
- 3. MILE MARKERS INDICATE DISTANCE FROM HOUSTON TERMINAL. ALL MILE MARKERS ARE TAKEN FROM THE NW MALL TERMINAL SITE (HT2).
- 4. SEE FCE REPORT FOR FULL LIST OF AND MORE INFORMATION ON SYSTEMS FACILITIES, INCLUDING COMMUNICATION HOUSES.
- 5. SIDING DETAILS CAN BE FOUND ON SHEET MNT-00-02023 IN VOLUME 1A.
- 6. SMALLER FACILITIES AT MOWS, TMFS, AND STATIONS ARE SHOWN AT THE MOW/TMF/STATION STATIONING IN THIS SCHEMATIC. MORE PRECISE STATIONING CAN BE FOUND ON SYS-00-30000.
- 7. CO-LOCATED FACILITIES ARE SHOWN AT THE SAME STATIONING IN THIS SCHEMATIC. MORE PRECISE STATIONING CAN BE FOUND ON SYS-00-03000 FOR ALIGNMENT ALTERNATIVE, AND SYS-00-03010 FOR ALL OTHER ALIGNMENT ALTERNATIVES.

\*FACILITY WOULD BE FSL AND NOT IN ISL.  
 \*FACILITY WOULD BE UPGRADED IN FSL.

LEGEND



MATCH ABOVE RIGHT

MATCH BELOW LEFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
**J. HAMMOND**

DRAWN BY  
**C. ZWIEBEL**

CHECKED BY  
**T. WAGNER**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**

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DALLAS TO HOUSTON HIGH-SPEED RAIL  
FINAL CONCEPTUAL ENGINEERING

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

Drawing Title  
**GENERAL RAILWAY FACILITIES FACILITY SPACING ALIGNMENT ALTERNATIVE E**

Scale  
**NOT TO SCALE**

Drawing Status  
**FINAL**

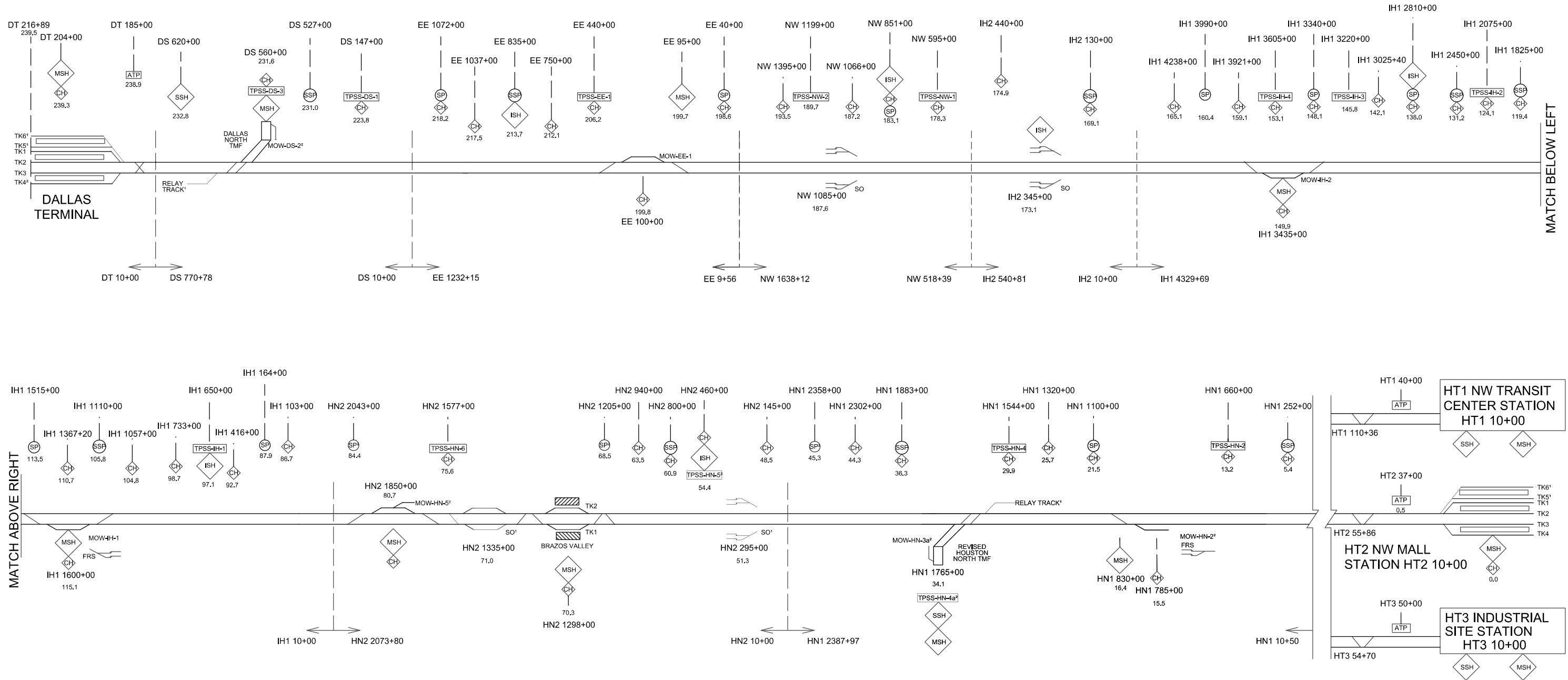
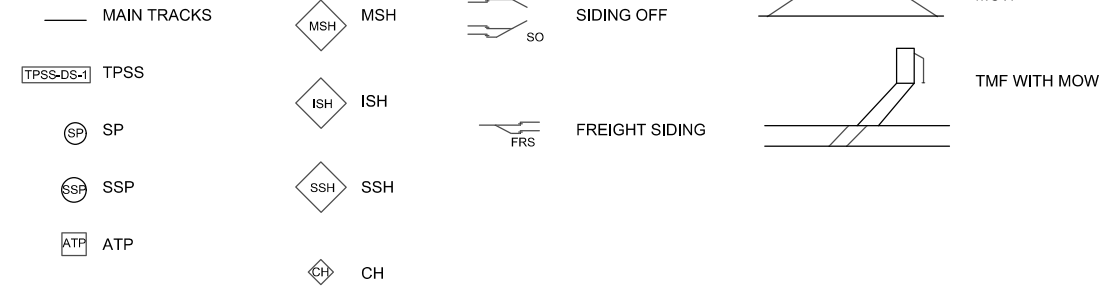
Job No <b>234180</b>	Drawing No <b>SYS-00-02005</b>	Rev <b>01</b>
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NOTES:

- 1. REFER TO GEN-00-0009 IN VOLUME 1A FOR DEFINITION OF ABBREVIATIONS
- 2. SYSTEMS SCHEMATIC INCLUDES THREE STATION TERMINAL ALTERNATIVES IN HOUSTON (NORTHWEST TRANSIT CENTER, NORTHWEST MALL, AND INDUSTRIAL SITE) AND INCLUDES ONE TMF ALTERNATIVE LOCATION FOR BOTH HOUSTON AND DALLAS. ALL ALIGNMENT ALTERNATIVES WOULD USE THE SAME TMF SITES.
- 3. MILE MARKERS INDICATE DISTANCE FROM HOUSTON TERMINAL. ALL MILE MARKERS ARE TAKEN FROM THE NW MALL TERMINAL SITE (HT2).
- 4. SEE FCE REPORT FOR FULL LIST OF AND MORE INFORMATION ON SYSTEMS FACILITIES, INCLUDING COMMUNICATION HOUSES.
- 5. SIDING DETAILS CAN BE FOUND ON SHEET MNT-00-02023 IN VOLUME 1A.
- 6. SMALLER FACILITIES AT MOWS, TMFS, AND STATIONS ARE SHOWN AT THE MOW/TMF/STATION STATIONING IN THIS SCHEMATIC. MORE PRECISE STATIONING CAN BE FOUND ON SYS-00-30000.
- 7. CO-LOCATED FACILITIES ARE SHOWN AT THE SAME STATIONING IN THIS SCHEMATIC. MORE PRECISE STATIONING CAN BE FOUND ON SYS-00-03000 FOR ALIGNMENT ALTERNATIVE, AND SYS-00-03010 FOR ALL OTHER ALIGNMENT ALTERNATIVES.

\*FACILITY WOULD BE FSL AND NOT IN ISL.  
 \*FACILITY WOULD BE UPGRADED IN FSL.

LEGEND



MATCH ABOVE RIGHT

MATCH BELOW LEFT

REV	DATE	BY	CHK	APP	DESCRIPTION

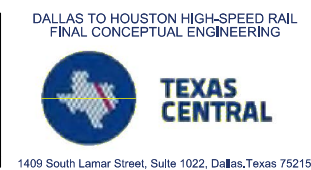
DESIGNED BY  
**J. HAMMOND**

DRAWN BY  
**S. MERENBACH**

CHECKED BY  
**T. WAGNER**

IN CHARGE  
**C. TAYLOR**

DATE  
**2/25/2019**



Drawing Title  
**GENERAL RAILWAY FACILITIES FACILITY SPACING ALIGNMENT ALTERNATIVE F**

Scale  
**NOT TO SCALE**

Drawing Status  
**FINAL**

Job No <b>234180</b>	Drawing No <b>SYS-00-02006</b>	Rev <b>01</b>
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						ALIGNMENT ALTERNATIVES					
						A (miles)	B (miles)	C (miles)	D (miles)	E (miles)	F (miles)
SECTION	COUNTY	FACILITY TYPE	SYSTEMS FACILITY	APPROX. STATIONING	MILE MARKER	MILE MARKER	MILE MARKER	MILE MARKER	MILE MARKER	MILE MARKER	
NE	Navarro	Power	SSP-NE-010	NE 200+00		166.4				166.4	
NE	Navarro	Comms	CH-NE-010	NE 290+00		168.1				168.1	
NE	Navarro	Comms	CH-NE-020	NE 610+00		174.2				174.2	
NE	Navarro	Power	TPSS-NE-1	NE 620+00		174.4				174.4	
NE	Navarro	Other	SO-NE-010	NE 840+00		178.5				178.5	
NE	Navarro	Comms	CH-NE-030	NE 930+00		180.2				180.2	
NE	Navarro	Power	SSP-NE-020	NE 1100+00		183.4				183.4	
NE	Navarro	Signals	ISH-NE-010	NE 1100+00		183.4				183.4	
NE	Navarro	Comms	CH-NE-040	NE 1240+40		186.1				186.1	
NE	Ellis	Comms	CH-NE-050	NE 1558+00		192.1				192.1	
NE	Ellis	Power	SP-NE-010	NE 1581+00		192.6				192.6	

						ALIGNMENT ALTERNATIVES					
						A (miles)	B (miles)	C (miles)	D (miles)	E (miles)	F (miles)
SECTION	COUNTY	FACILITY TYPE	SYSTEMS FACILITY	APPROX. STATIONING	MILE MARKER	MILE MARKER	MILE MARKER	MILE MARKER	MILE MARKER	MILE MARKER	
EE	Ellis	Power	SP-EE-010	EE 40+00				194.2	194.5	198.6	
EE	Ellis	Comms	CH-EE-010	EE 40+00				194.2	194.5	198.6	
EE	Ellis	Signals	MSH-EE-010	EE 95+00				195.3	195.5	199.7	
EE	Ellis	Other	MOW-EE-1	EE 100+00				195.4	195.6	199.8	
EE	Ellis	Comms	CH-EE-020	EE 100+00				195.4	195.6	199.8	
EE	Ellis	Power	TPSS-EE-1	EE 440+00				201.8	202.1	206.2	
EE	Ellis	Comms	CH-EE-030	EE 440+00				201.8	202.1	206.2	
EE	Ellis	Comms	CH-EE-040	EE 750+00				207.7	207.9	212.1	
EE	Ellis	Power	SSP-EE-010	EE 835+00				209.3	209.5	213.7	
EE	Ellis	Signals	ISH-EE-010	EE 835+00				209.3	209.5	213.7	
EE	Ellis	Comms	CH-EE-050	EE 1037+00				213.1	213.4	217.5	
EE	Ellis	Power	SP-EE-020	EE 1072+00				213.8	214.0	218.2	
EE	Ellis	Comms	CH-EE-060	EE 1072+00				213.8	214.0	218.2	

						ALIGNMENT ALTERNATIVES					
						A (miles)	B (miles)	C (miles)	D (miles)	E (miles)	F (miles)
SECTION	COUNTY	FACILITY TYPE	SYSTEMS FACILITY	APPROX. STATIONING	MILE MARKER	MILE MARKER	MILE MARKER	MILE MARKER	MILE MARKER	MILE MARKER	
IH1	Grimes	Comms	CH-IH-010	IH1 103+00				86.7		86.7	
IH1	Grimes	Power	SP-IH-010	IH1 164+00				87.9		87.9	
IH1	Madison	Comms	CH-IH-020	IH1 416+80				92.7		92.7	
IH1	Madison	Power	TPSS-IH-1	IH1 650+00				97.1		97.1	
IH1	Madison	Signals	ISH-IH-010	IH1 650+00				97.1		97.1	
IH1	Madison	Comms	CH-IH-030	IH1 733+60				98.7		98.7	
IH1	Madison	Comms	CH-IH-040	IH1 1057+00				104.8		104.8	
IH1	Madison	Power	SSP-IH-010	IH1 1110+00				105.8		105.8	
IH1	Leon	Comms	CH-IH-050	IH1 1367+20				110.7		110.7	
IH1	Leon	Power	SP-IH-020	IH1 1515+00				113.5		113.5	
IH1	Leon	Other	MOW-IH-1	IH1 1600+00				115.1		115.1	
IH1	Leon	Signals	MSH-IH-010	IH1 1600+00				115.1		115.1	
IH1	Leon	Comms	CH-IH-060	IH1 1600+00				115.1		115.1	
IH1	Leon	Power	SSP-IH-020	IH1 1825+00				119.4		119.4	
IH1	Leon	Comms	CH-IH-070	IH1 1825+00				119.4		119.4	
IH1	Leon	Power	TPSS-IH-2	IH1 2075+00				124.1		124.1	
IH1	Leon	Comms	CH-IH-080	IH1 2075+00				124.1		124.1	
IH1	Leon	Comms	CH-IH-090	IH1 2391+80				130.1		130.1	
IH1	Leon	Power	SSP-IH-030	IH1 2450+00				131.2		131.2	
IH1	Freestone	Comms	CH-IH-100	IH1 2708+60				136.1		136.1	
IH1	Freestone	Power	SP-IH-030	IH1 2810+00				138.0		138.0	
IH1	Freestone	Signals	ISH-IH-020	IH1 2810+00				138.0		138.0	
IH1	Freestone	Comms	CH-IH-110	IH1 3025+40				142.1		142.1	
IH1	Freestone	Power	TPSS-IH-3	IH1 3220+00				145.8		145.8	
IH1	Freestone	Power	SP-IH-040	IH1 3340+00				148.1		148.1	
IH1	Freestone	Comms	CH-IH-120	IH1 3340+00				148.1		148.1	
IH1	Freestone	Other	MOW-IH-2	IH1 3435+00				149.9		149.9	
IH1	Freestone	Signals	MSH-IH-020	IH1 3435+00				149.9		149.9	
IH1	Freestone	Comms	CH-IH-130	IH1 3435+00				149.9		149.9	
IH1	Freestone	Power	TPSS-IH-4	IH1 3605+00				153.1		153.1	
IH1	Freestone	Comms	CH-IH-140	IH1 3605+00				153.1		153.1	
IH1	Freestone	Comms	CH-IH-150	IH1 3921+00				159.1		159.1	
IH1	Freestone	Power	SP-IH-050	IH1 3990+00				160.4		160.4	
IH1	Freestone	Comms	CH-IH-160	IH1 4238+00				165.1		165.1	
IH2	Navarro	Power	SSP-IH-040	IH2 130+00				169.1		169.1	
IH2	Navarro	Comms	CH-IH-170	IH2 130+00				169.1		169.1	
IH2	Navarro	Other	SO-IH-010	IH2 345+00				173.1		173.1	
IH2	Navarro	Signals	ISH-IH-030	IH2 345+00				173.1		173.1	
IH2	Navarro	Signals	CH-IH-180	IH2 440+00				174.9		174.9	

- NOTES:
- THESE TABLES SHOW TABULARLY THE SYSTEMS FACILITIES LOCATIONS, SYSTEMS SCHEMATICS, SHOWN ON SHEETS SYS-00-02000 THROUGH SYS-00-02005. SHOW GRAPHICALLY THE LOCATIONS OF SYSTEMS FACILITIES THAT HAVE BEEN INCLUDED FOR EACH END-TO-END ALTERNATIVE.
  - SEE SHEETS SYS-00-02000 THROUGH SYS-00-02005 FOR ADDITIONAL NOTES.

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DRAWN BY	C. ZWIEBEL
CHECKED BY	C. TAYLOR
IN CHARGE	C. TAYLOR
DATE	2/25/2019

REV	DATE	BY	CHK	APP	DESCRIPTION



Drawing Title  
**IH, NE, EE  
RAILWAY FACILITIES  
FACILITY LOCATIONS**

Scale	NTS
Drawing Status	FINAL
Job No	234180
Drawing No	SYS-00-03010
Rev	01