

A TYPICAL EMBANKMENT

NOTES:

1. FOR DIMENSIONS OF TYPICAL TWO TRACK HSR SYSTEM, SEE DRAWING CVL-00-03020. FOR GENERAL NOTES ON TYPICAL SECTIONS, SEE DRAWINGS GEN-00-00008.
2. CENTERLINE HSR ALIGNMENT IS CENTERLINE OF TWO TRACK HSR ALIGNMENT AS SHOWN IN VOLUME 1 PLAN AND PROFILE DRAWINGS.
3. IT IS ASSUMED THAT AN ACCESS ROAD WOULD BE PROVIDED ON AT LEAST ONE SIDE OF THE HSR LINE. LOCATION AND CONFIGURATION OF THE ACCESS ROAD WILL VARY BASED ON SITE SPECIFIC CONSTRAINTS AND REQUIREMENTS. ALIGNMENT OF ACCESS ROAD INDEPENDENT OF HSR. FOR DETAILS SEE THE ACCESS ROAD TYPICAL SECTIONS AND ROADWAY PLANS.
4. DRAINAGE SWALE SIZE AND LOCATION WILL BE BASED ON SITE SPECIFIC CONSTRAINTS, TOPOGRAPHY, AND DRAINAGE REQUIREMENTS. A TYPICAL MINIMUM SWALE WIDTH OF 25 FT HAS BEEN PROVIDED AS SHOWN.
5. THE TRACKWAY WILL BE ENTIRELY SECURED BETWEEN DALLAS AND HOUSTON TO PREVENT UNAUTHORIZED ACCESS OR INTRUSION ON TO THE OPERATING RAILWAY. SOUND BARRIERS WILL BE PROVIDED WHERE REQUIRED TO MITIGATE NOISE IMPACTS AS IDENTIFIED THROUGH DETAILED ENVIRONMENTAL ANALYSIS. WHERE ON ELEVATED STRUCTURE TRACKWAY FENCING MAY BE REPLACED WITH FALL PREVENTION RAILINGS BASED ON SITE SPECIFIC CONDITIONS.
6. FENCE LIMITS, LOCATION, HEIGHT, EMBEDMENT, AND OTHER DETAILS WILL BE DEVELOPED DURING MORE DETAILED DESIGN. DETAILS FOR FENCING AND OTHER INTRUSION PROTECTION MEASURES WILL BE INFORMED BY HAZARDS AND RISKS ANALYSIS AND WOULD BE DEVELOPED IN CLOSED COORDINATION WITH APPLICABLE REGULATORY AUTHORITIES AND COMPLY WITH APPLICABLE REQUIREMENTS.
7. CONCEPTUAL SECTION SHOWN WITH SIDE SLOPES ON BOTH SIDES. RETAINING WALLS MAY BE UTILIZED ON ONE OR BOTH SIDES OF THE EMBANKMENT AS NECESSARY TO MINIMIZE IMPACTS TO ADJACENT PROPERTIES, UTILITIES, INFRASTRUCTURE OR ENVIRONMENTALLY SENSITIVE AREAS. SEE RETAINED FILL TYPICAL SECTION FOR DETAILS. LOCATION SPECIFIC CONFIGURATION WOULD BE ADVANCED DURING MORE DETAILED DESIGN.
8. A TYPICAL MINIMUM OF 10FT FOR CONSTRUCTION ACCESS HAS BEEN PROVIDED ON EACH SIDE OF CIVIL WORKS AS SHOWN FOR THE PURPOSES OF ENVIRONMENTAL ANALYSIS.
9. EMBANKMENT HEIGHT VARIES WITH SURROUNDING GRADE AND RAIL PROFILE.

FIGURE 1

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
J. SERRANO

DRAWN BY
J. BORGHESI

CHECKED BY
K. SEYMOUR

IN CHARGE
C. TAYLOR

DATE
09/15/2017

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412

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 & 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

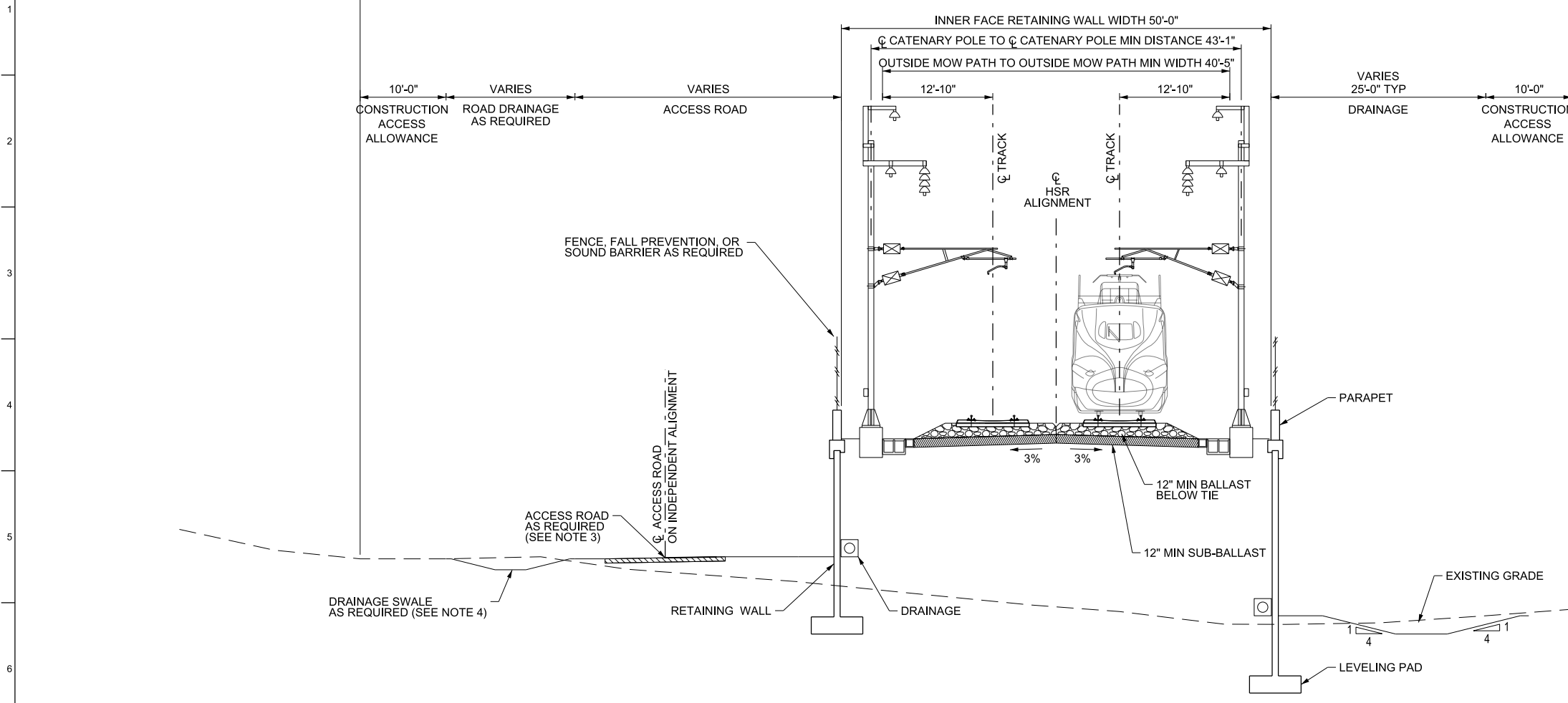
TEXAS CENTRAL

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

Drawing Title

GENERAL CIVIL RAIL TYPICAL SECTIONS

Scale 1 1/4" = 10'		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No CVL-00-03001	Rev 01



B TYPICAL RETAINED FILL

NOTES:

1. FOR DIMENSIONS OF TYPICAL TWO TRACK HSR SYSTEM, SEE DRAWING CVL-00-03020. FOR GENERAL NOTES ON TYPICAL SECTIONS, SEE DRAWINGS GEN-00-00008.
2. CENTERLINE HSR ALIGNMENT IS CENTERLINE OF TWO TRACK HSR ALIGNMENT AS SHOWN IN VOLUME 1 PLAN AND PROFILE DRAWINGS.
3. IT IS ASSUMED THAT AN ACCESS ROAD WOULD BE PROVIDED ON AT LEAST ONE SIDE OF THE HSR LINE. LOCATION AND CONFIGURATION OF THE ACCESS ROAD WILL VARY BASED ON SITE SPECIFIC CONSTRAINTS AND REQUIREMENTS. ALIGNMENT OF ACCESS ROAD INDEPENDENT OF HSR. FOR DETAILS SEE THE ACCESS ROAD TYPICAL SECTIONS AND ROADWAY PLANS.
4. DRAINAGE SWALE SIZE AND LOCATION WILL BE BASED ON SITE SPECIFIC CONSTRAINTS, TOPOGRAPHY, AND DRAINAGE REQUIREMENTS. A TYPICAL MINIMUM SWALE WIDTH OF 25 FT HAS BEEN PROVIDED AS SHOWN.
5. THE TRACKWAY WILL BE ENTIRELY SECURED BETWEEN DALLAS AND HOUSTON TO PREVENT UNAUTHORIZED ACCESS OR INTRUSION ON TO THE OPERATING RAILWAY. SOUND BARRIERS WILL BE PROVIDED WHERE REQUIRED TO MITIGATE NOISE IMPACTS AS IDENTIFIED THROUGH DETAILED ENVIRONMENTAL ANALYSIS. WHERE ON ELEVATED STRUCTURE TRACKWAY FENCING MAY BE REPLACED WITH FALL PREVENTION RAILINGS BASED ON SITE SPECIFIC CONDITIONS.
6. FENCE LIMITS, LOCATION, HEIGHT, EMBEDMENT, AND OTHER DETAILS WILL BE DEVELOPED DURING MORE DETAILED DESIGN. DETAILS FOR FENCING AND OTHER INTRUSION PROTECTION MEASURES WILL BE INFORMED BY HAZARDS AND RISKS ANALYSIS AND WOULD BE DEVELOPED IN CLOSED COORDINATION WITH APPLICABLE REGULATORY AUTHORITIES AND COMPLY WITH APPLICABLE REQUIREMENTS.
7. CONCEPTUAL SECTION SHOWN WITH RETAINING WALLS ON BOTH SIDES. ENVIRONMENTALLY SENSITIVITIES, UTILITIES, INFRASTRUCTURE, AND OTHER CONSIDERATIONS MAY ALLOW FOR SIDE SLOPES ON ONE SIDE OF THE RETAINED FILL. SEE EMBANKMENT TYPICAL SECTION FOR DETAILS. LOCATION SPECIFIC CONFIGURATION WOULD BE ADVANCED DURING MORE DETAILED DESIGN.
8. A TYPICAL MINIMUM OF 10FT FOR CONSTRUCTION ACCESS HAS BEEN PROVIDED ON EACH SIDE OF CIVIL WORKS AS SHOWN FOR THE PURPOSES OF ENVIRONMENTAL ANALYSIS.
9. RETAINING WALL DETAILS TO BE DEVELOPED DURING MORE ADVANCED DESIGN BASED UPON SITE SPECIFIC CONDITIONS AND GEOTECHNICAL INVESTIGATIONS. MECHANICALLY STABILIZED EARTH (MSE) WALLS ASSUMED FOR CONCEPTUAL ENGINEERING.

FIGURE 2

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
J. SERRANO

DRAWN BY
J. BORGHESI

CHECKED BY
K. SEYMOUR

IN CHARGE
C. TAYLOR

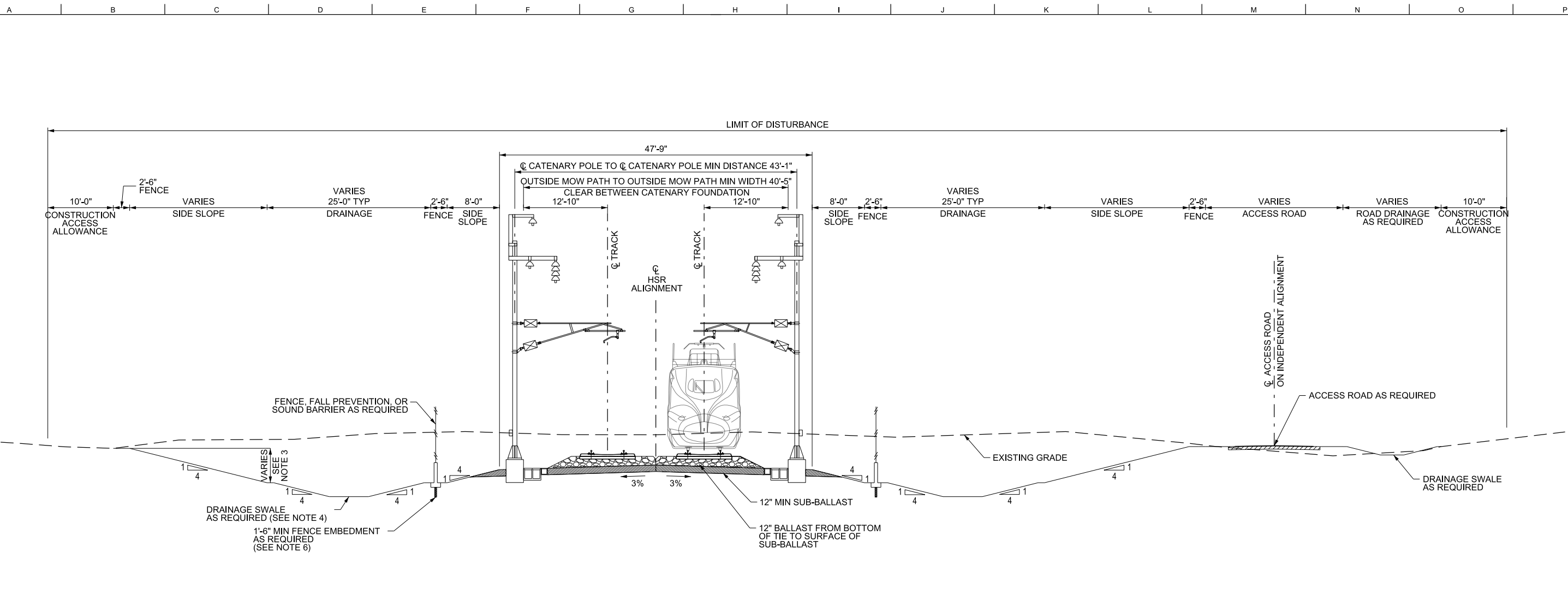
DATE
09/15/2017

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412



Drawing Title
GENERAL CIVIL RAIL TYPICAL SECTIONS

Scale 1 1/4" = 10'		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No CVL-00-03002	Rev 01



C TYPICAL CUT

NOTES:

1. FOR DIMENSIONS OF TYPICAL TWO TRACK HSR SYSTEM, SEE DRAWING CVL-00-03020. FOR GENERAL NOTES ON TYPICAL SECTIONS, SEE DRAWINGS GEN-00-00008.
2. CENTERLINE HSR ALIGNMENT IS CENTERLINE OF TWO TRACK HSR ALIGNMENT AS SHOWN IN VOLUME 1 PLAN AND PROFILE DRAWINGS.
3. IT IS ASSUMED THAT AN ACCESS ROAD WOULD BE PROVIDED ON AT LEAST ONE SIDE OF THE HSR LINE. LOCATION AND CONFIGURATION OF THE ACCESS ROAD WILL VARY BASED ON SITE SPECIFIC CONSTRAINTS AND REQUIREMENTS. ALIGNMENT OF ACCESS ROAD INDEPENDENT OF HSR. FOR DETAILS SEE THE ACCESS ROAD TYPICAL SECTIONS AND ROADWAY PLANS.
4. DRAINAGE SWALE SIZE AND LOCATION WILL BE BASED ON SITE SPECIFIC CONSTRAINTS, TOPOGRAPHY, AND DRAINAGE REQUIREMENTS. A TYPICAL MINIMUM SWALE WIDTH OF 25 FT HAS BEEN PROVIDED AS SHOWN.
5. THE TRACKWAY WILL BE ENTIRELY SECURED BETWEEN DALLAS AND HOUSTON TO PREVENT UNAUTHORIZED ACCESS OR INTRUSION ON TO THE OPERATING RAILWAY. SOUND BARRIERS WILL BE PROVIDED WHERE REQUIRED TO MITIGATE NOISE IMPACTS AS IDENTIFIED THROUGH DETAILED ENVIRONMENTAL ANALYSIS. WHERE ON ELEVATED STRUCTURE TRACKWAY FENCING MAY BE REPLACED WITH FALL PREVENTION RAILINGS BASED ON SITE SPECIFIC CONDITIONS.
6. FENCE LIMITS, LOCATION, HEIGHT, EMBEDMENT, AND OTHER DETAILS WILL BE DEVELOPED DURING MORE DETAILED DESIGN. DETAILS FOR FENCING AND OTHER INTRUSION PROTECTION MEASURES WILL BE INFORMED BY HAZARDS AND RISKS ANALYSIS AND WOULD BE DEVELOPED IN CLOSED COORDINATION WITH APPLICABLE REGULATORY AUTHORITIES AND COMPLY WITH APPLICABLE REQUIREMENTS.
7. CONCEPTUAL SECTION SHOWN WITH SIDE SLOPES ON BOTH SIDES. RETAINING WALLS MAY BE UTILIZED ON ONE OR BOTH SIDES AS NECESSARY TO MINIMIZE IMPACTS TO ADJACENT PROPERTIES, UTILITIES, INFRASTRUCTURE OR ENVIRONMENTALLY SENSITIVE AREAS. SEE RETAINED CUT TYPICAL SECTION FOR DETAILS. LOCATION SPECIFIC CONFIGURATION WOULD BE ADVANCED DURING MORE DETAILED DESIGN.
8. A TYPICAL MINIMUM OF 10FT FOR CONSTRUCTION ACCESS HAS BEEN PROVIDED ON EACH SIDE OF CIVIL WORKS AS SHOWN FOR THE PURPOSES OF ENVIRONMENTAL ANALYSIS.
9. CUT DEPTH VARIES WITH SURROUNDING GRADE AND RAIL PROFILE. THE BOTTOM OF SUBBALLAST SHALL BE NO LESS THAN 2FT ABOVE 100 YEAR FLOODPLAIN.

FIGURE 3

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
J. SERRANO

DRAWN BY
J. BORGHESI

CHECKED BY
K. SEYMOUR

IN CHARGE
C. TAYLOR

DATE
09/15/2017

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412

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 & 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

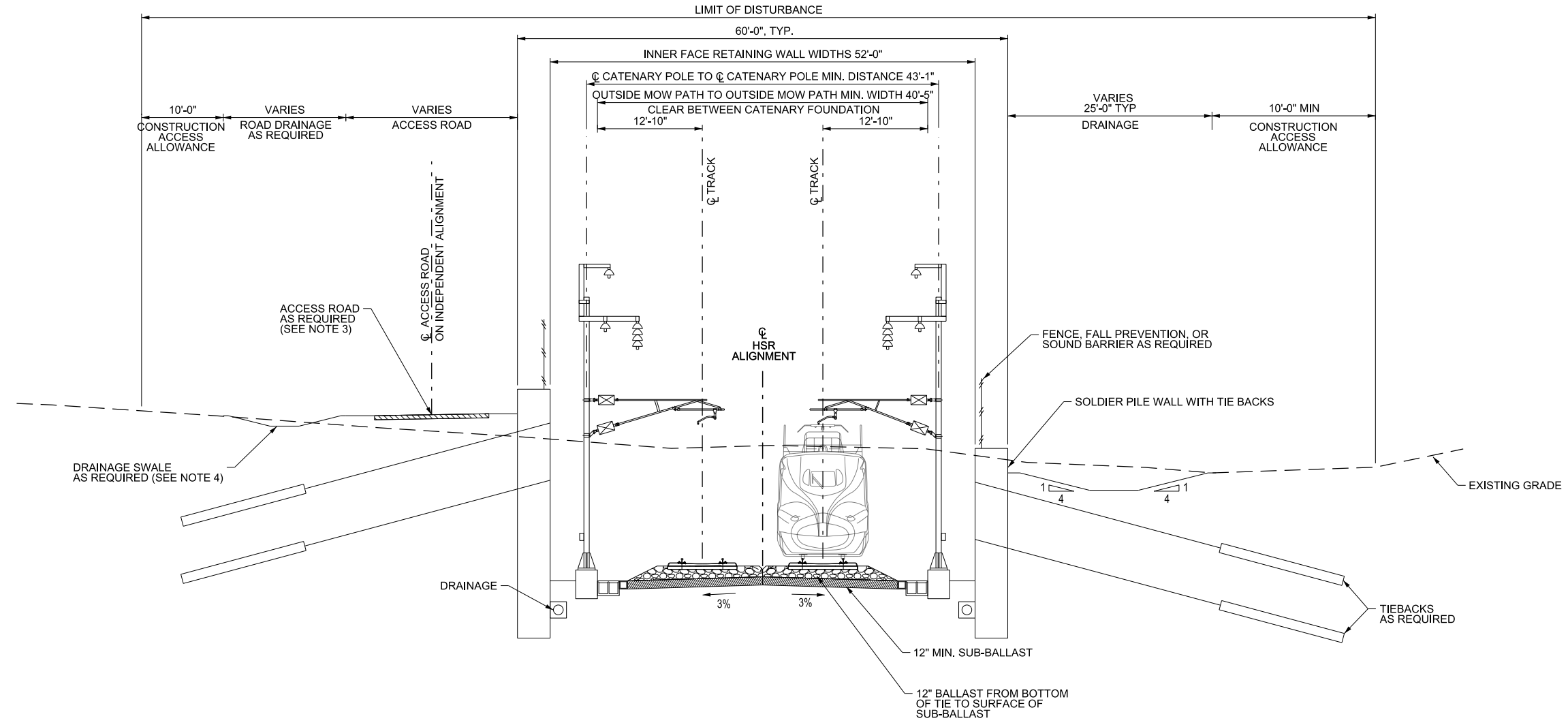
TEXAS CENTRAL

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

Drawing Title

GENERAL CIVIL RAIL TYPICAL SECTIONS

Scale 1 1/4" = 10'		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No CVL-00-03003	Rev 01



D TYPICAL RETAINED CUT

NOTES:

- FOR DIMENSIONS OF TYPICAL TWO TRACK HSR SYSTEM, SEE DRAWING CVL-00-03020. FOR GENERAL NOTES ON TYPICAL SECTIONS, SEE DRAWINGS GEN-00-00008.
- CENTERLINE HSR ALIGNMENT IS CENTERLINE OF TWO TRACK HSR ALIGNMENT AS SHOWN IN VOLUME 1 PLAN AND PROFILE DRAWINGS.
- IT IS ASSUMED THAT AN ACCESS ROAD WOULD BE PROVIDED ON AT LEAST ONE SIDE OF THE HSR LINE. LOCATION AND CONFIGURATION OF THE ACCESS ROAD WILL VARY BASED ON SITE SPECIFIC CONSTRAINTS AND REQUIREMENTS. ALIGNMENT OF ACCESS ROAD INDEPENDENT OF HSR. FOR DETAILS SEE THE ACCESS ROAD TYPICAL SECTIONS AND ROADWAY PLANS.
- DRAINAGE SWALE SIZE AND LOCATION WILL BE BASED ON SITE SPECIFIC CONSTRAINTS, TOPOGRAPHY, AND DRAINAGE REQUIREMENTS. A TYPICAL MINIMUM SWALE WIDTH OF 25 FT HAS BEEN PROVIDED AS SHOWN.
- THE TRACKWAY WILL BE ENTIRELY SECURED BETWEEN DALLAS AND HOUSTON TO PREVENT UNAUTHORIZED ACCESS OR INTRUSION ON TO THE OPERATING RAILWAY. SOUND BARRIERS WILL BE PROVIDED WHERE REQUIRED TO MITIGATE NOISE IMPACTS AS IDENTIFIED THROUGH DETAILED ENVIRONMENTAL ANALYSIS. WHERE ON ELEVATED STRUCTURE TRACKWAY FENCING MAY BE REPLACED WITH FALL PREVENTION RAILINGS BASED ON SITE SPECIFIC CONDITIONS.
- FENCE LIMITS, LOCATION, HEIGHT, EMBEDMENT, AND OTHER DETAILS WILL BE DEVELOPED DURING MORE DETAILED DESIGN. DETAILS FOR FENCING AND OTHER INTRUSION PROTECTION MEASURES WILL BE INFORMED BY HAZARDS AND RISKS ANALYSIS AND WOULD BE DEVELOPED IN CLOSED COORDINATION WITH APPLICABLE REGULATORY AUTHORITIES AND COMPLY WITH APPLICABLE REQUIREMENTS.
- CONCEPTUAL SECTION SHOWN WITH RETAINING WALLS ON BOTH SIDES. ENVIRONMENTALLY SENSITIVITIES, UTILITIES, INFRASTRUCTURE, AND OTHER CONSIDERATIONS MAY ALLOW FOR SIDE SLOPES ON ONE SIDE OF THE RETAINED CUT. SEE TYPICAL CUT SECTION FOR DETAILS. LOCATION SPECIFIC CONFIGURATION WOULD BE ADVANCED DURING MORE DETAILED DESIGN.
- A TYPICAL MINIMUM OF 10FT FOR CONSTRUCTION ACCESS HAS BEEN PROVIDED ON EACH SIDE OF CIVIL WORKS AS SHOWN FOR THE PURPOSES OF ENVIRONMENTAL ANALYSIS.

FIGURE 4

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
J. SERRANO

DRAWN BY
J. BORGHESI

CHECKED BY
K. SEYMOUR

IN CHARGE
C. TAYLOR

DATE
09/15/2017

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412

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

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

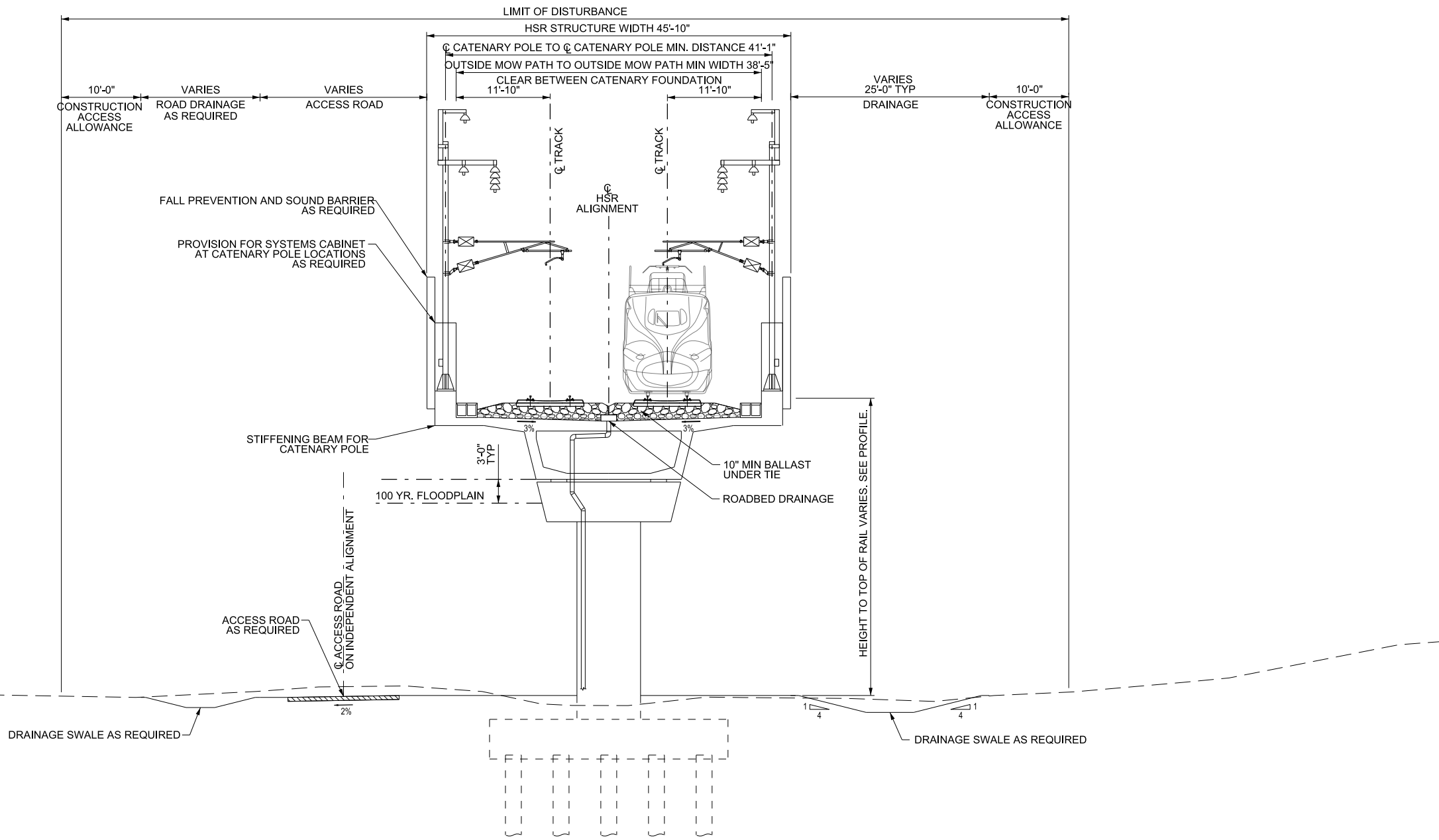
TEXAS CENTRAL

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

Drawing Title

GENERAL CIVIL RAIL TYPICAL SECTIONS

Scale 1 1/4" = 10'		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No CVL-00-03004	Rev 01



E TYPICAL VIADUCT

NOTES:

- FOR DIMENSIONS OF TYPICAL TWO TRACK HSR SYSTEM, SEE DRAWING CVL-00-03020. FOR GENERAL NOTES ON TYPICAL SECTIONS, SEE DRAWINGS GEN-00-00008.
- CENTERLINE HSR ALIGNMENT IS CENTERLINE OF TWO TRACK HSR ALIGNMENT AS SHOWN IN VOLUME 1 PLAN AND PROFILE DRAWINGS.
- IT IS ASSUMED THAT AN ACCESS ROAD WOULD BE PROVIDED ON AT LEAST ONE SIDE OF THE HSR LINE. LOCATION AND CONFIGURATION OF THE ACCESS ROAD WILL VARY BASED ON SITE SPECIFIC CONSTRAINTS AND REQUIREMENTS. ALIGNMENT OF ACCESS ROAD INDEPENDENT OF HSR. FOR DETAILS SEE THE ACCESS ROAD TYPICAL SECTIONS AND ROADWAY PLANS.
- DRAINAGE SWALE SIZE AND LOCATION WILL BE BASED ON SITE SPECIFIC CONSTRAINTS, TOPOGRAPHY, AND DRAINAGE REQUIREMENTS. A TYPICAL MINIMUM SWALE WIDTH OF 25 FT HAS BEEN PROVIDED AS SHOWN. THE PLACEMENT OF DRAINAGE SWALES IN WATERS OF THE U.S. WILL BE AVOIDED AND, IF UNAVOIDABLE, MINIMIZED AND CONSTRUCTED TO NOT DRAIN IN WATERS OF THE U.S.
- THE TRACKWAY WILL BE ENTIRELY SECURED BETWEEN DALLAS AND HOUSTON TO PREVENT UNAUTHORIZED ACCESS OR INTRUSION ON TO THE OPERATING RAILWAY. SOUND BARRIERS WILL BE PROVIDED WHERE REQUIRED TO MITIGATE NOISE IMPACTS AS IDENTIFIED THROUGH DETAILED ENVIRONMENTAL ANALYSIS. WHERE ON ELEVATED STRUCTURE TRACKWAY FENCING MAY BE REPLACED WITH FALL PREVENTION RAILINGS BASED ON SITE SPECIFIC CONDITIONS.
- FENCE LIMITS, LOCATION, HEIGHT, EMBEDMENT, AND OTHER DETAILS WILL BE DEVELOPED DURING MORE DETAILED DESIGN. DETAILS FOR FENCING AND OTHER INTRUSION PROTECTION MEASURES WILL BE INFORMED BY HAZARDS AND RISKS ANALYSIS AND WOULD BE DEVELOPED IN CLOSED COORDINATION WITH APPLICABLE REGULATORY AUTHORITIES AND COMPLY WITH APPLICABLE REQUIREMENTS.
- A TYPICAL MINIMUM OF 10FT FOR CONSTRUCTION ACCESS HAS BEEN PROVIDED ON EACH SIDE OF CIVIL WORKS AS SHOWN FOR THE PURPOSES OF ENVIRONMENTAL ANALYSIS.
- FOUNDATION REQUIREMENTS WILL VARY BASED ON SITE SPECIFIC CONDITIONS INCLUDING VIADUCT HEIGHT AND GEOTECHNICAL CONDITIONS.
- STAIRCASES NOT SHOWN WOULD BE PROVIDED AS REQUIRED TO SATISFY EMERGENCY ACCESS/EGRESS REQUIREMENTS. STAIRCASE LOCATIONS AND CONFIGURATIONS WOULD BE DEVELOPED DURING MORE DETAILED DESIGN IN CLOSE COORDINATION WITH EMERGENCY PROVIDERS AND BASED ON SITE SPECIFIC CONDITIONS, MAINTENANCE AND SAFETY REQUIREMENTS, AND ACCESS ROAD LOCATION.
- SITE SPECIFIC VIADUCT SPANS, VIADUCT DEPTHS, AND COLUMN WIDTHS SHALL BE DETERMINED DURING MORE DETAILED DESIGN. FOR CONCEPTUAL DESIGN, SPANS ARE ASSUMED TO BE 120 FT, VIADUCT DEPTH IS ASSUMED TO BE 13.5 FT, AND COLUMNS ARE ASSUMED TO BE RECTANGULAR IN SHAPE AND BETWEEN 28 SQUARE FT AND 196 SQUARE FT.

FIGURE 5

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
J. SERRANO
DRAWN BY
J. BORGHESI
CHECKED BY
K. SEYMOUR
IN CHARGE
C. TAYLOR
DATE
09/15/2017

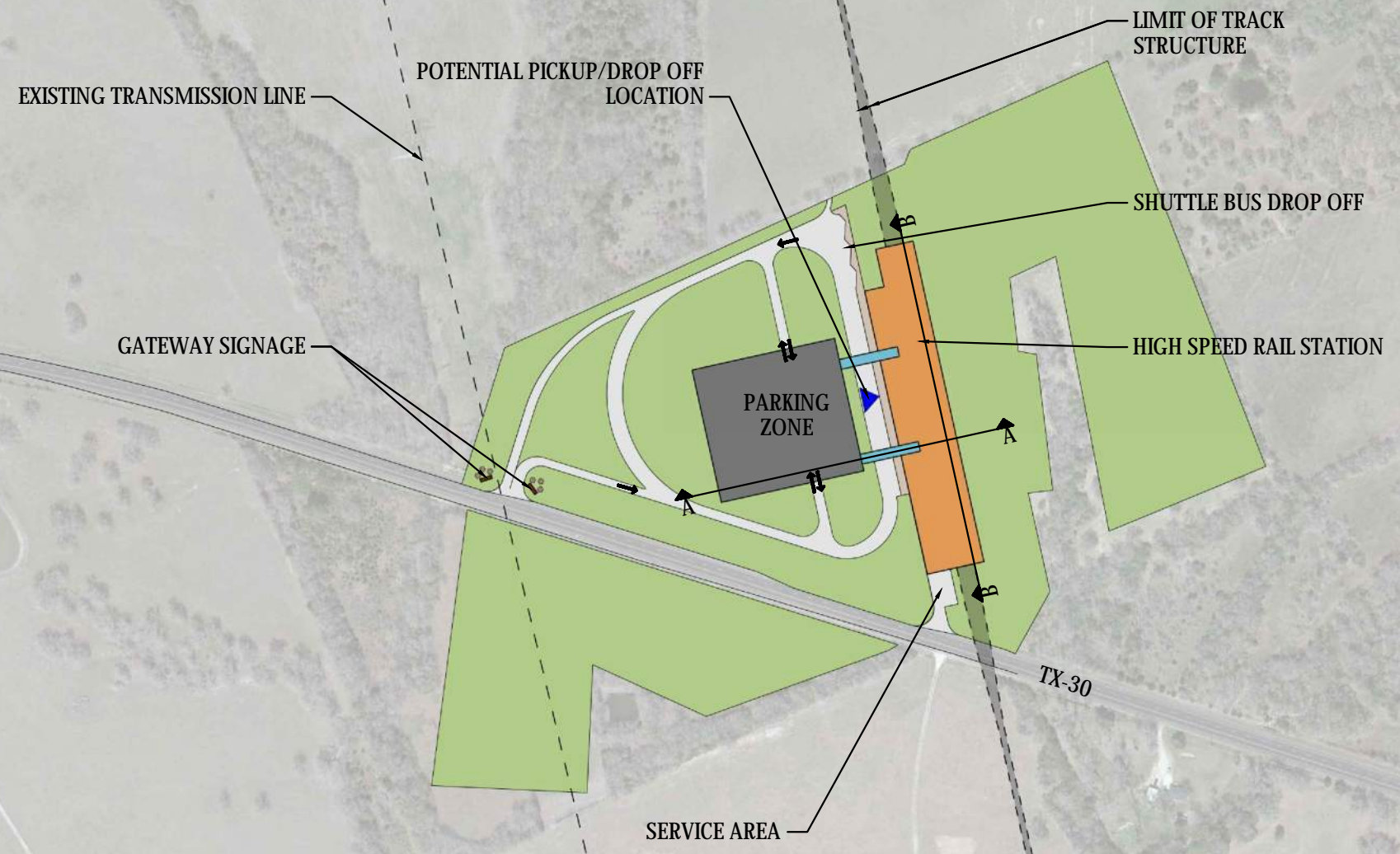
DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412



Drawing Title
GENERAL CIVIL RAIL TYPICAL SECTIONS

Scale 1 1/4" = 10'		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No CVL-00-03005	Rev 01

- NOTES:
1. THIS STATION AREA PLAN IS INTENDED TO ILLUSTRATE POTENTIAL ROADWAY NETWORK IMPROVEMENTS, PARKING AREAS, ELEVATED PEDESTRIAN CONCOURSES, AND GROUND LEVEL PLAZAS TO SERVE PROPOSED HSR STATION. DETAILED COORDINATION WITH LOCAL AGENCIES AND PUBLIC STAKEHOLDERS, AND APPLICABLE REGULATORY BODIES WILL BE UNDERTAKEN DURING MORE DETAILED PLANNING AND DESIGN TO FULLY INTEGRATE URBAN AND TRANSPORTATION PLANNING ELEMENTS WITH LOCAL DEVELOPMENT GOALS.
 2. PARKING CAPACITY PROVIDED AT STATION WAS BASED ON TCRR RIDERSHIP ANALYSES FOR THE MAXIMUM PARKING DEMAND IDENTIFIED THROUGH 2050. SEE FDCE REPORT FOR MORE INFORMATION.
 3. REFER TO STATION FLOOR PLANS AND CROSS SECTIONS FOR MORE DETAILS.
 4. REFER TO FDCE REPORT FOR PARKING ALLOWANCES.



LEGEND:

- PASSENGER DROP-OFF & PICK UP (Blue triangle)
- PARKING ZONE (Grey rectangle)
- STATION (Orange rectangle)
- PEDESTRIAN BRIDGE (Blue rectangle)

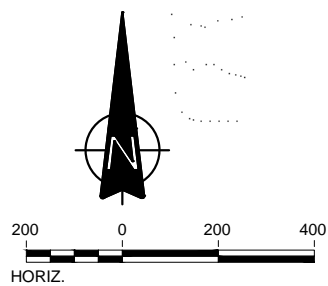


FIGURE 9

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
K. DRESNER

DRAWN BY
S. BUNDY

CHECKED BY
K. MILLICAN

IN CHARGE
C. TAYLOR

DATE
09/15/2017

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412

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 & 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

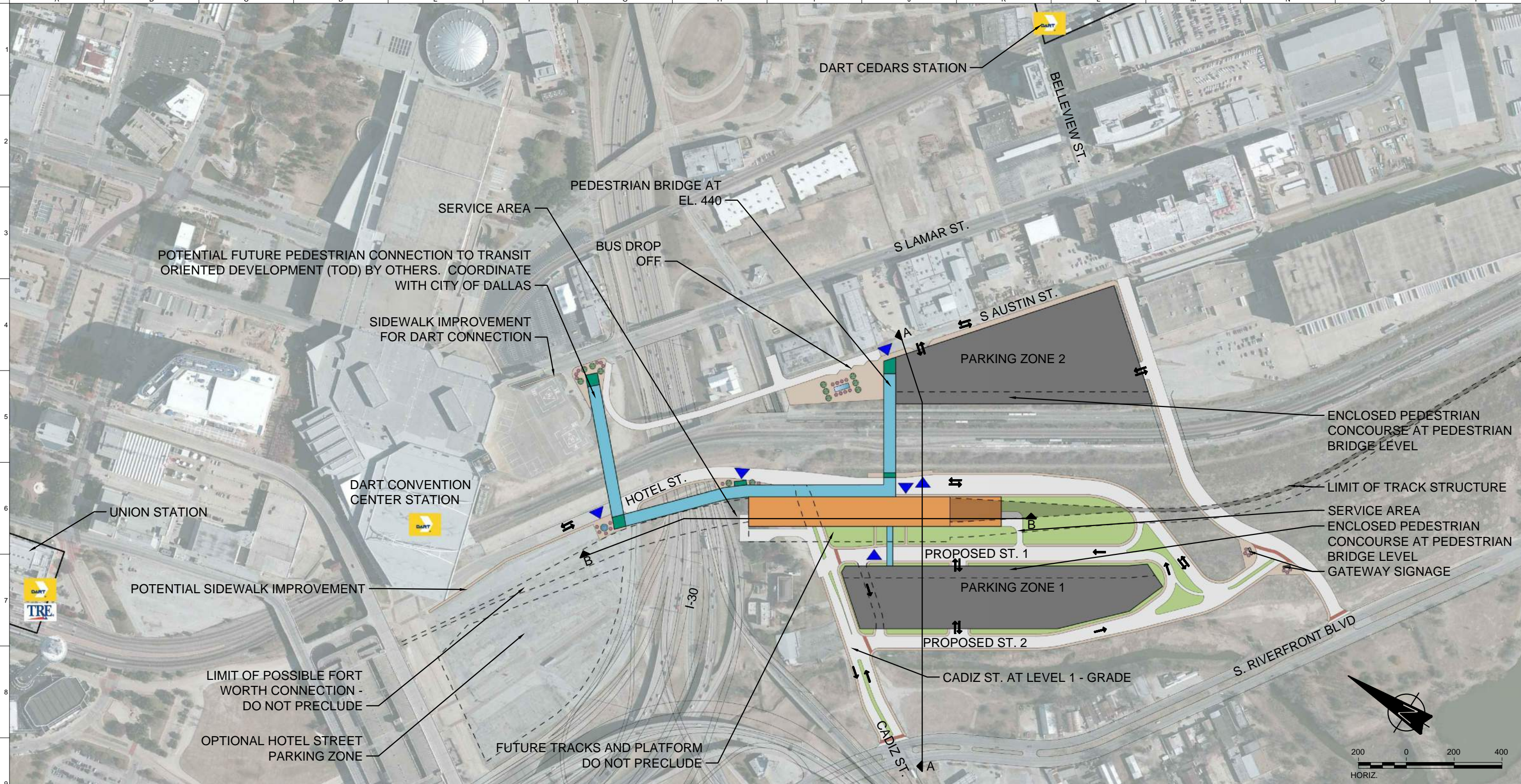
TEXAS CENTRAL

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

Drawing Title

**HOUSTON SEGMENT STATIONS
BRAZOS VALLEY STATION
STATION AREA PLAN**

Scale AS SHOWN		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No STA-HN-01031	Rev 01



POTENTIAL FUTURE PEDESTRIAN CONNECTION TO TRANSIT ORIENTED DEVELOPMENT (TOD) BY OTHERS. COORDINATE WITH CITY OF DALLAS

SIDEWALK IMPROVEMENT FOR DART CONNECTION

SERVICE AREA

BUS DROP OFF

PEDESTRIAN BRIDGE AT EL. 440

DART CEDARS STATION

BELLEVUE ST.

S LAMAR ST.

S AUSTIN ST.

PARKING ZONE 2

ENCLOSED PEDESTRIAN CONCOURSE AT PEDESTRIAN BRIDGE LEVEL

LIMIT OF TRACK STRUCTURE

SERVICE AREA ENCLOSED PEDESTRIAN CONCOURSE AT PEDESTRIAN BRIDGE LEVEL

GATEWAY SIGNAGE

UNION STATION

DART CONVENTION CENTER STATION

HOTEL ST.

PROPOSED ST. 1

PARKING ZONE 1

PROPOSED ST. 2

CADIZ ST. AT LEVEL 1 - GRADE

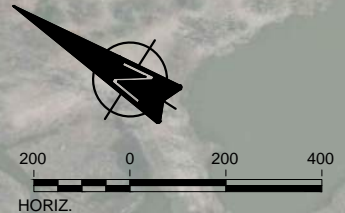
S. RIVERFRONT BLVD

POTENTIAL SIDEWALK IMPROVEMENT

LIMIT OF POSSIBLE FORT WORTH CONNECTION - DO NOT PRECLUDE

OPTIONAL HOTEL STREET PARKING ZONE

FUTURE TRACKS AND PLATFORM DO NOT PRECLUDE



NOTES:

1. THIS STATION AREA PLAN IS INTENDED TO ILLUSTRATE POTENTIAL ROADWAY NETWORK IMPROVEMENTS, PARKING AREAS, ELEVATED PEDESTRIAN CONCOURSES, VERTICAL CIRCULATION TOWERS, AND GROUND LEVEL PLAZAS TO SERVE PROPOSED HSR STATION. DETAILED COORDINATION WITH THE CITY OF DALLAS, DART, LOCAL AGENCY AND PUBLIC STAKEHOLDERS, AND APPLICABLE REGULATORY BODIES WILL BE UNDERTAKEN DURING MORE DETAILED PLANNING AND DESIGN TO FULLY INTEGRATE URBAN AND TRANSPORTATION PLANNING ELEMENTS WITH LOCAL DEVELOPMENT GOALS.
2. PARKING CAPACITY PROVIDED AT STATION WAS BASED ON TCRR RIDERSHIP ANALYSES FOR THE MAXIMUM PARKING DEMAND IDENTIFIED THROUGH 2050. SEE FDCE REPORT FOR MORE INFORMATION.
3. PARKING CAPACITY ALLOCATION SHOWN WAS INTENDED TO SUPPORT TRAFFIC IMPACT ANALYSES. ULTIMATE PARKING CAPACITY REQUIREMENTS AND ALLOCATION WOULD BE CLOSELY COORDINATED WITH THE CITY OF DALLAS DURING MORE DETAILED DESIGN DEVELOPMENT TO ENSURE COORDINATION WITH LOCAL URBAN DEVELOPMENT GOALS.
4. REFER TO STATION FLOOR PLANS, CROSS SECTIONS, AND RENDERINGS FOR MORE DETAILS. REFER TO FDCE REPORT FOR PARKING ALLOWANCES.
5. THE PROJECT CURRENTLY PROPOSES BUILDING ONLY FOUR TERMINAL TRACKS TO SUPPORT THE INITIAL SERVICE LEVEL. THE DESIGNS OF THE STATION AREA PLANS, ROADWAYS, PARKING, AND TRACK ALIGNMENT WERE DEVELOPED FOR THE PEAK SERVICE LEVEL AND DO NOT PRECLUDE A FUTURE EXPANSION TO A SIX-TRACK TERMINAL. USE OF THE SIX-TRACK TERMINAL DESIGN IN THE FDCE IS INTENDED TO PROVIDE A CONSERVATIVE FOOTPRINT FOR ENVIRONMENTAL ANALYSES SO THAT IMPACTS OF POTENTIAL FUTURE TERMINAL CAPACITY EXPANSION WOULD BE CONSIDERED. SEE FDCE REPORT FOR ADDITIONAL DETAIL.

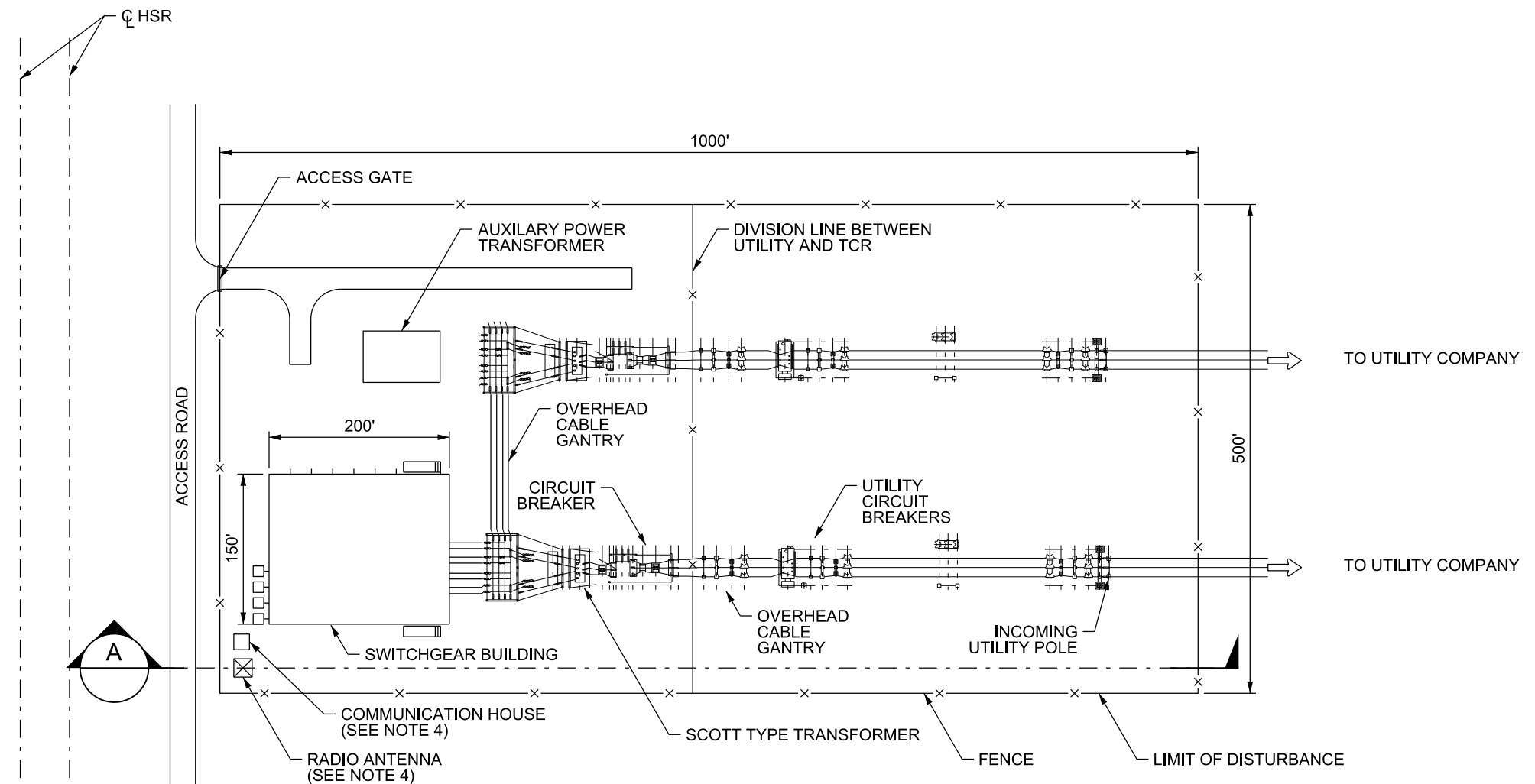
LEGEND:

- PASSENGER DROP-OFF & PICK UP ▲
- PEDESTRIAN PLAZA
- PARKING ZONE
- STATION
- LIMITS OF HSR STRUCTURE
- PEDESTRIAN BRIDGE
- VERTICAL CIRCULATION



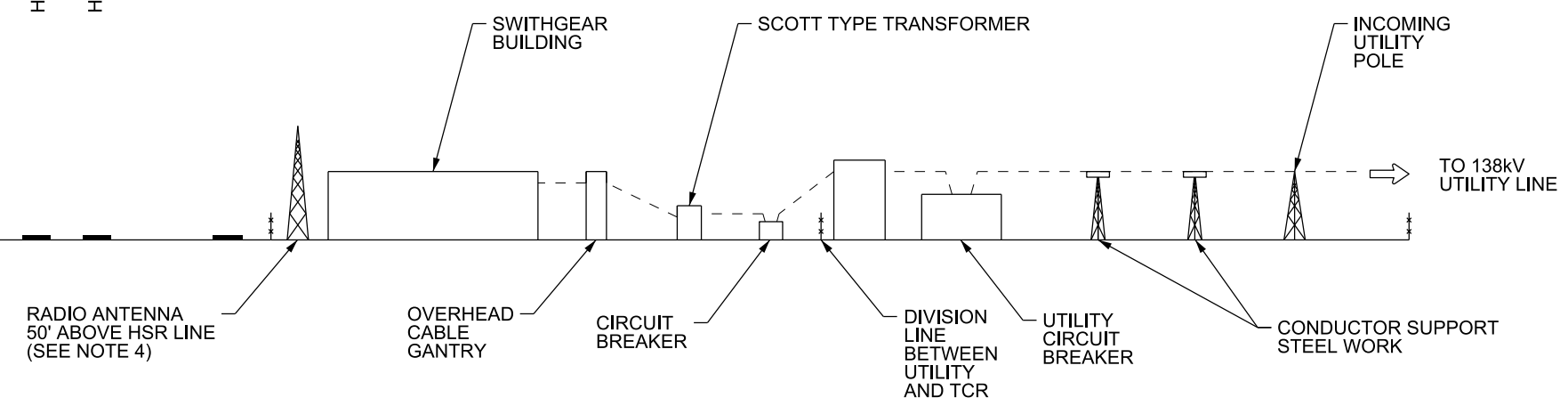
FIGURE 10

<table border="1"> <tr> <td>DESIGNED BY</td> <td>K. DRESNER</td> </tr> <tr> <td>DRAWN BY</td> <td>S. BUNDY</td> </tr> <tr> <td>CHECKED BY</td> <td>K. MILLICAN</td> </tr> <tr> <td>IN CHARGE</td> <td>C. TAYLOR</td> </tr> <tr> <td>DATE</td> <td>09/15/2017</td> </tr> </table>					DESIGNED BY	K. DRESNER	DRAWN BY	S. BUNDY	CHECKED BY	K. MILLICAN	IN CHARGE	C. TAYLOR	DATE	09/15/2017	<p>DALLAS TO HOUSTON HIGH SPEED RAIL APPLICANT: TCRR SWF-2011-00483 SWG-2014-00412</p>		<p>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</p>		<p>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</p>		<p>Client</p> <p>1409 South Lamar Street, Suite 1022, Dallas, Texas 75215</p>		<p>Drawing Title</p> <p>DALLAS SEGMENT STATIONS DALLAS STATION STATION AREA PLAN</p>			<p>Scale</p> <p>AS SHOWN</p> <p>Drawing Status</p> <p>NOT FOR CONSTRUCTION</p>		
DESIGNED BY	K. DRESNER																											
DRAWN BY	S. BUNDY																											
CHECKED BY	K. MILLICAN																											
IN CHARGE	C. TAYLOR																											
DATE	09/15/2017																											
REV	DATE	BY	CHK	APP	DESCRIPTION	Job No	Drawing No	Rev																				
						234180	STA-DS-01041	01																				



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 DEPENDING ON THE COMPLEXITY OF THE TRACK LOCATION BEING CONTROLLED AND THE AMOUNT OF 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.



ELEVATION A-A

FIGURE 11

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
J. HAMMOND
DRAWN BY
J. GAIBORT
CHECKED BY
T. SMITH
IN CHARGE
C. TAYLOR
DATE
09/15/2017

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412

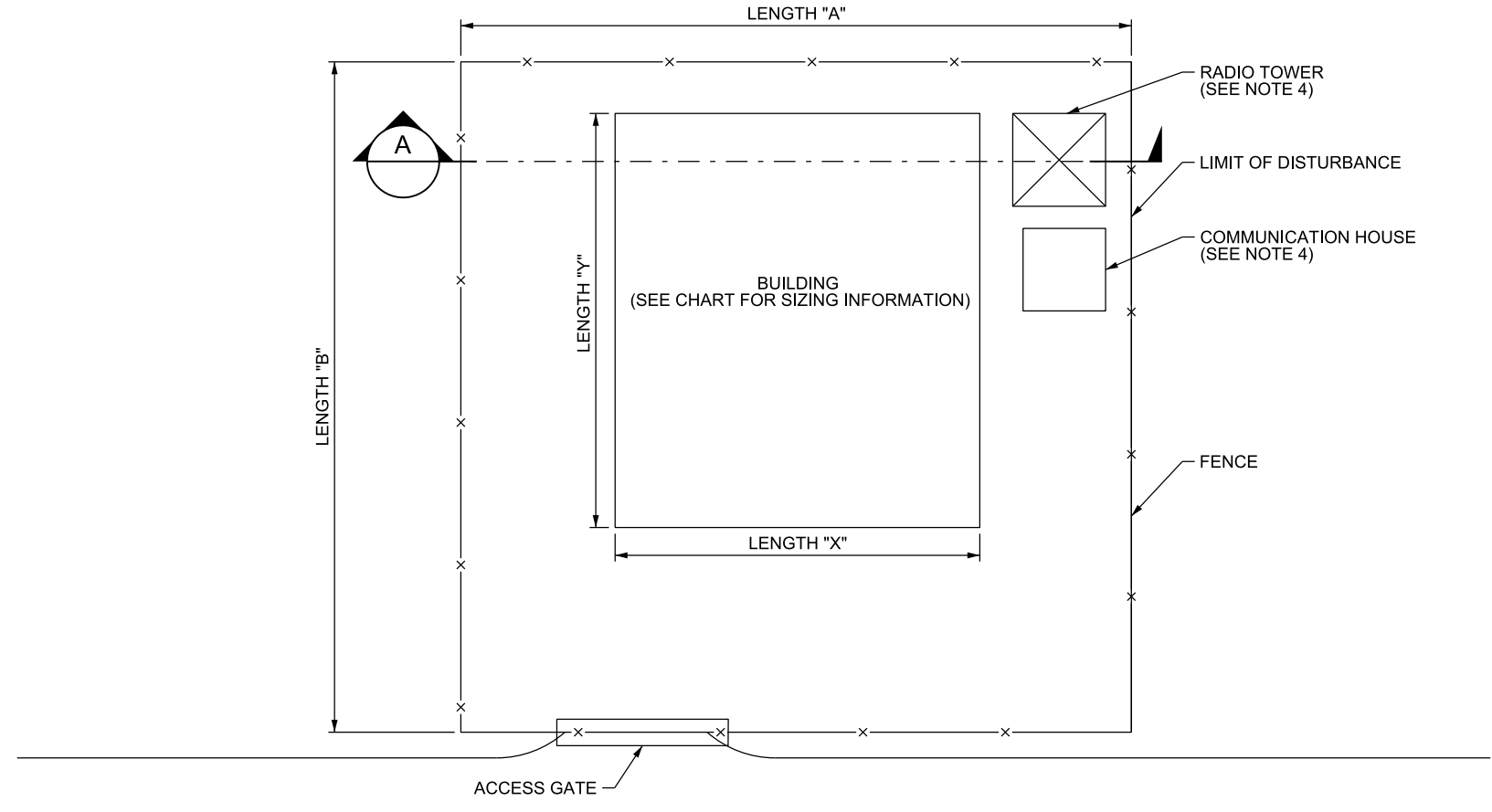
ARUP
Arup Texas, Inc.
10370 Richmond Ave., Suite 475
Houston, Texas 77042 USA
Tel (713) 783 2787 Fax (713) 343 1467
www.arup.com
Texas Registered Engineering Firm: F-1990

FREESSE & 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

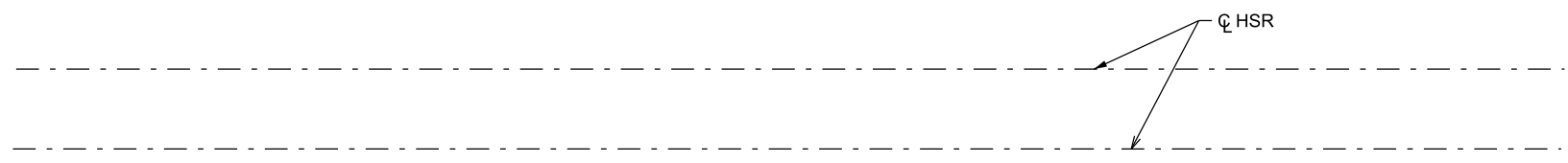
Drawing Title
GENERAL RAILWAY TYPICAL LAYOUT PLAN

Scale NOT TO SCALE		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No SYS-00-01000	Rev 01

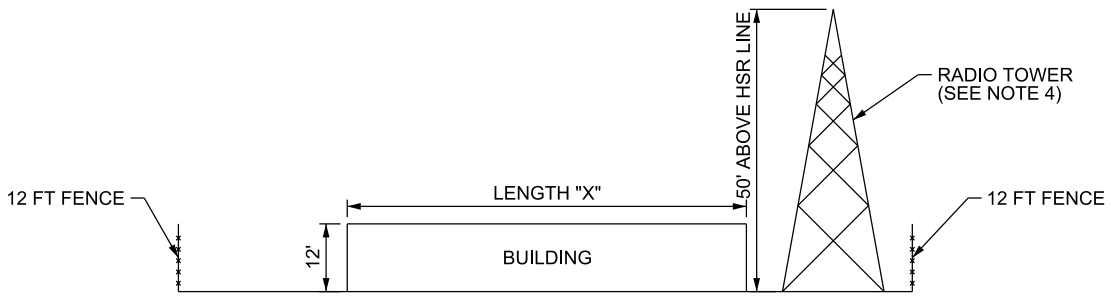


NOTES:

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 CREW AND CONTROL SYSTEMS WITHIN THE TRAIN AND MAINTENANCE CREWS OPERATING ALONG THE ROW IN CLOSE PROXIMITY. 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

FIGURE 12

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
J. HAMMOND
DRAWN BY
T. SMELCER
CHECKED BY
T. SMITH
IN CHARGE
C. TAYLOR
DATE
09/15/2017

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412

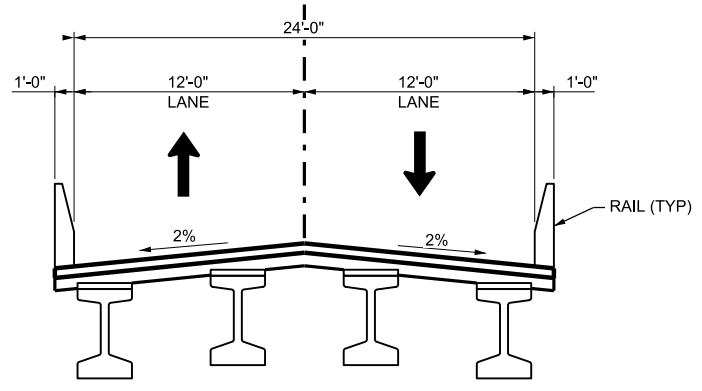
ARUP
Arup Texas, Inc.
10370 Richmond Ave., Suite 475
Houston, Texas 77042 USA
Tel (713) 783 2787 Fax (713) 343 1467
www.arup.com
Texas Registered Engineering Firm: F-1990

FREESSE & 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

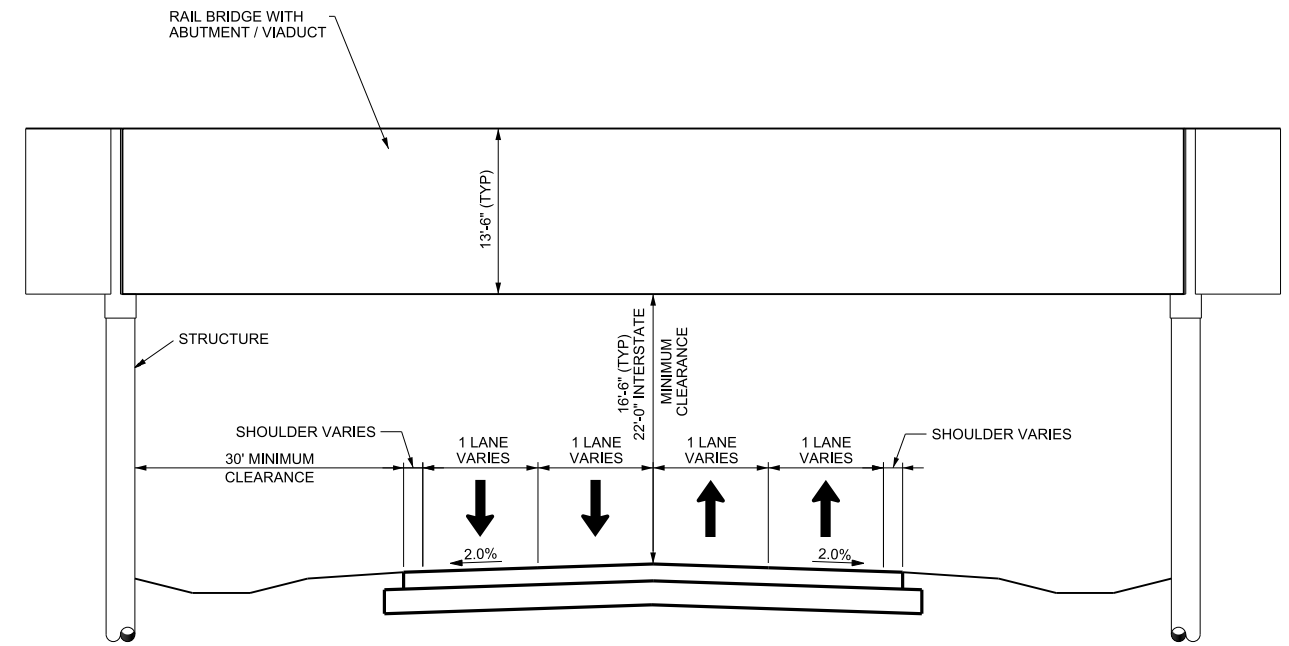
Client
TEXAS CENTRAL
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title
GENERAL RAILWAY TYPICAL LAYOUT PLAN

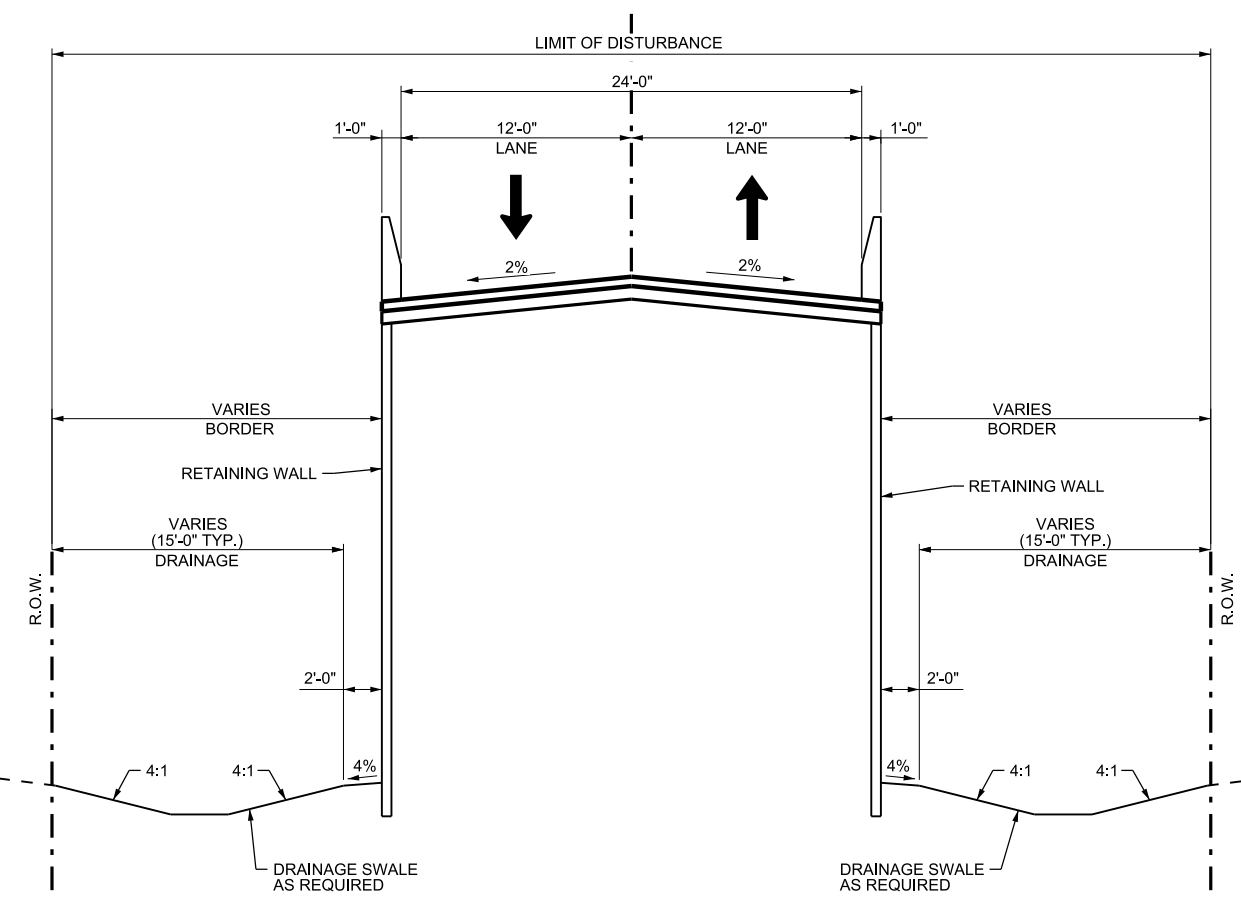
Scale
NOT TO SCALE
Drawing Status
NOT FOR CONSTRUCTION
Job No: **234180** Drawing No: **SYS-00-01002** Rev: **01**



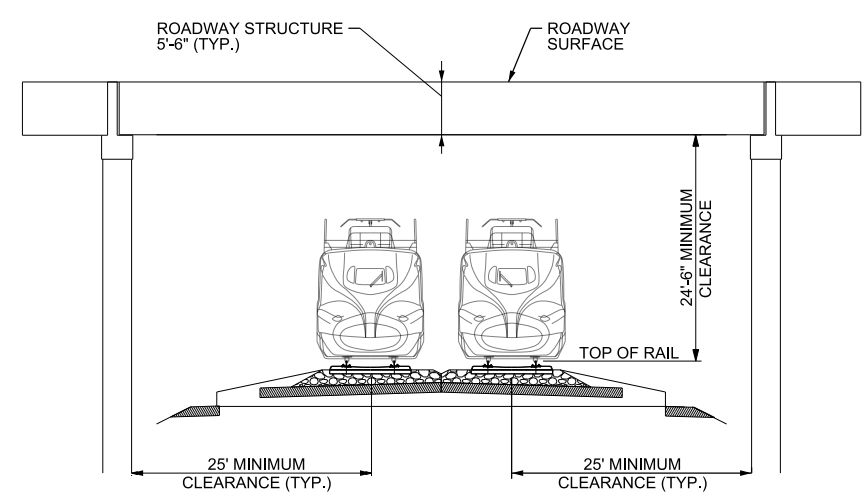
11 TYPICAL COUNTY ROAD AND ACCESS ROAD BRIDGE SECTION
NOT TO SCALE



12 TYPICAL RAIL OVER ROAD
NOT TO SCALE



13 TYPICAL RETAINING WALL SECTION
NOT TO SCALE



14 TYPICAL ROAD OVER RAIL
NOT TO SCALE

NOTES:

- SECTION INTENDED TO ILLUSTRATE TYPICAL CLEARANCES USED IN DEVELOPMENT OF HSR PROFILE AT ROADWAY GRADE SEPARATIONS. DETAILED COORDINATION WOULD OCCUR DURING ADVANCED DESIGN WITH APPLICABLE ROADWAY AUTHORITY TO ENSURE DESIGN SATISFIES BOTH EXISTING CLEARANCE REQUIREMENTS AND LONG TERM ROADWAY IMPROVEMENT PLANS CORRECTLY.
- INTERSTATE / CONNECTOR UNDERPASS WOULD MAINTAIN A MINIMUM OF 22' VERTICAL CLEAR DISTANCE FROM PROFILE GRADE TO RAILWAY BRIDGE SOFFIT.
- VIADUCT CONFIGURATION SHOWN FOR HSR STRUCTURAL CONFIGURATION WILL VARY BASED ON SITE SPECIFIC CONDITIONS AND COULD INCLUDE VIADUCT OR RAIL BRIDGE WITH ABUTMENTS.
- OCS WILL BE MOUNTED UNDER BRIDGE STRUCTURE. STRUCTURE DEPTH SHOWN USED FOR PLANNING PURPOSES TO ESTABLISH PROPOSED ROADWAY SURFACE ELEVATIONS. ROADWAY STRUCTURE DEPTH WILL VARY BY LOCATION BASED ON SITE SPECIFIC CONDITIONS. ROADWAY WIDTH AND SPAN LENGTH.
- ROADWAY CROSS-SLOPE IS ASSUMED TO BE NORMAL (2%) CROWN, EXCEPT WHERE SUPERELEVATION IS REQUIRED.
- RETAINING WALL DESIGN WOULD VARY BY LOCATION GIVEN SITE SPECIFIC CONDITIONS.

FIGURE 13

REV	DATE	BY	CHK	APP	DESCRIPTION

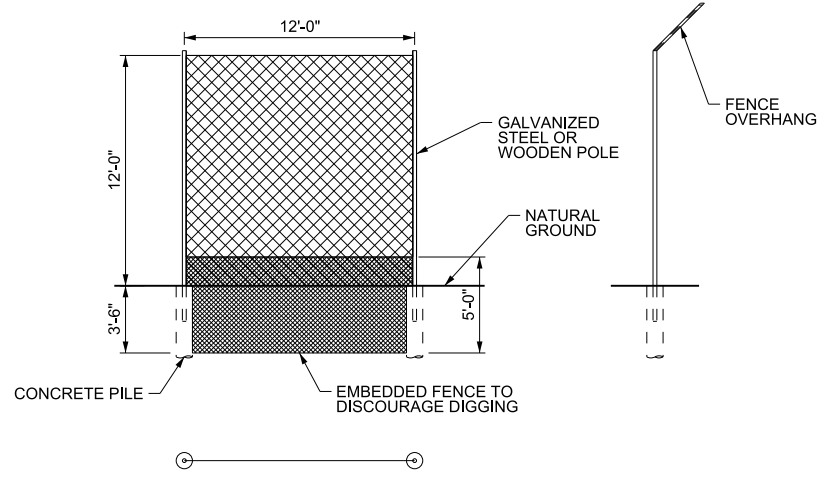
DESIGNED BY
T. SANSONE
DRAWN BY
M. MARROQUIN
CHECKED BY
S. BURGESS
IN CHARGE
C. TAYLOR
DATE
09/15/2017

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCR
SWF-2011-00483
SWG-2014-00412

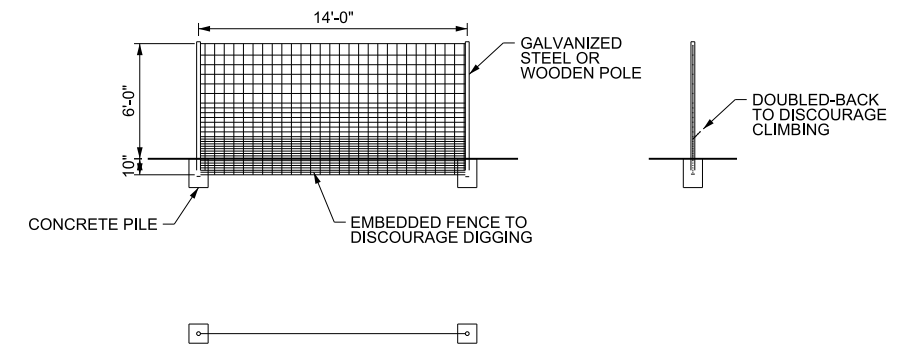


Drawing Title
GENERAL CIVIL HIGHWAY TYPICAL SECTIONS

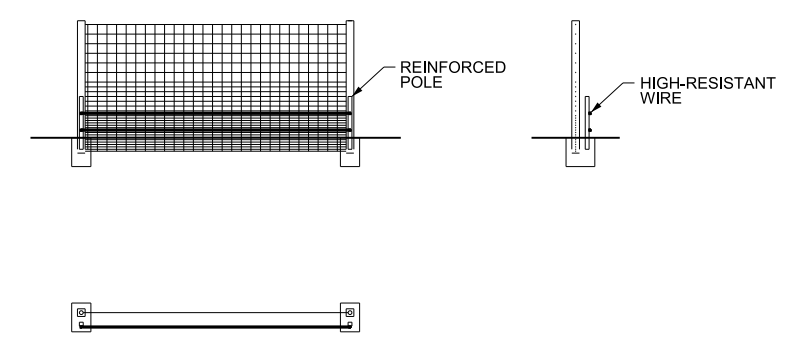
Scale NOT TO SCALE		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No CVL-00-03033	Rev 01



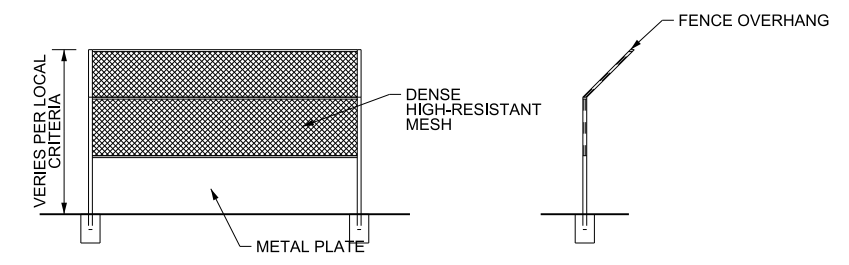
STANDARD FENCE FOR LARGE ANIMALS



STANDARD FENCE FOR SMALL ANIMALS



REINFORCED FENCE



ANTI-VANDALISM FENCE

FIGURE 14

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. ALDREDGE

DRAWN BY
M. KINZIR

CHECKED BY
R. ZARATE

IN CHARGE
C. TAYLOR

DATE

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412

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 & 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

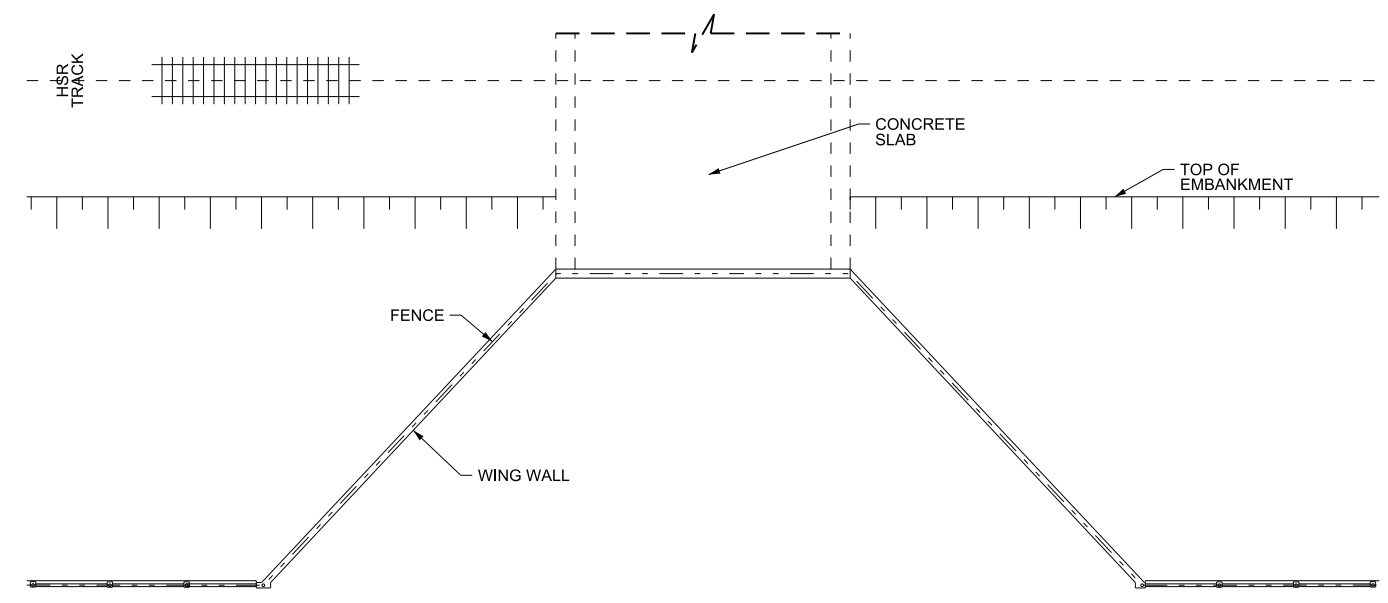
Drawing Title

GENERAL WILDLIFE CROSSINGS FENCE DETAILS

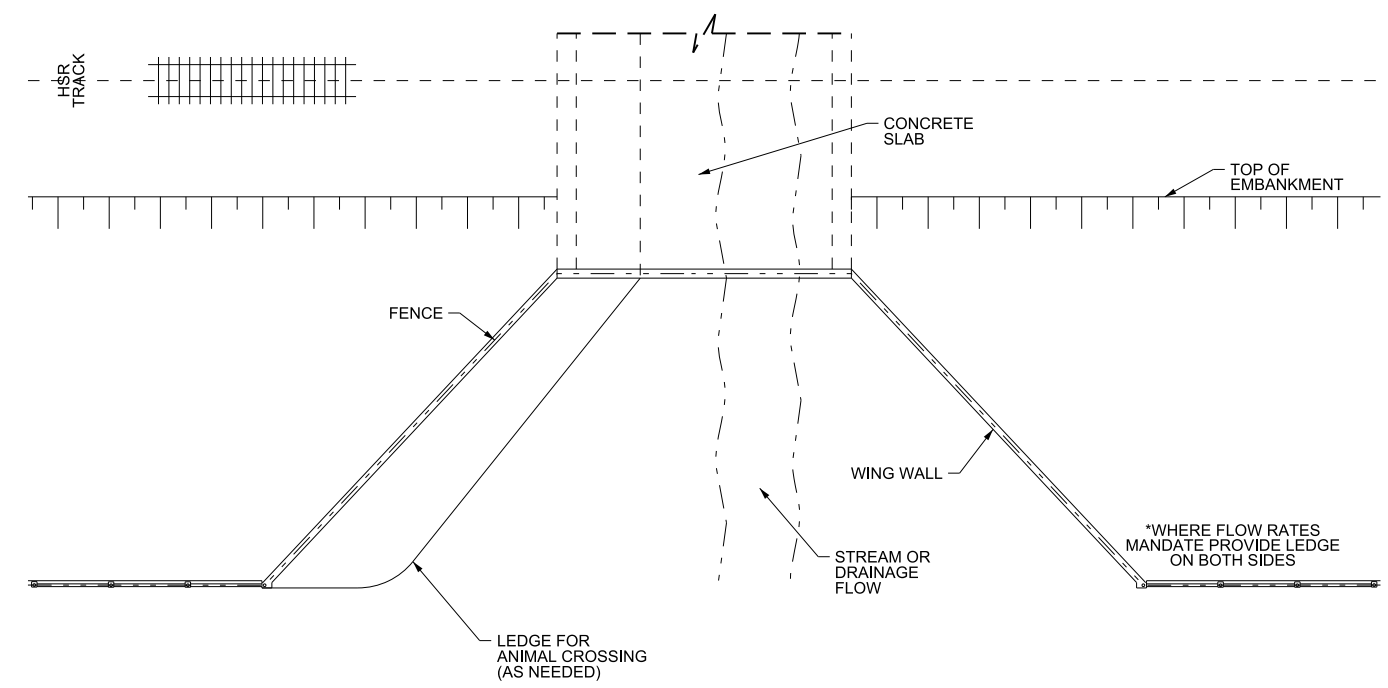
Scale
1" = 10'

Drawing Status
NOT FOR CONSTRUCTION

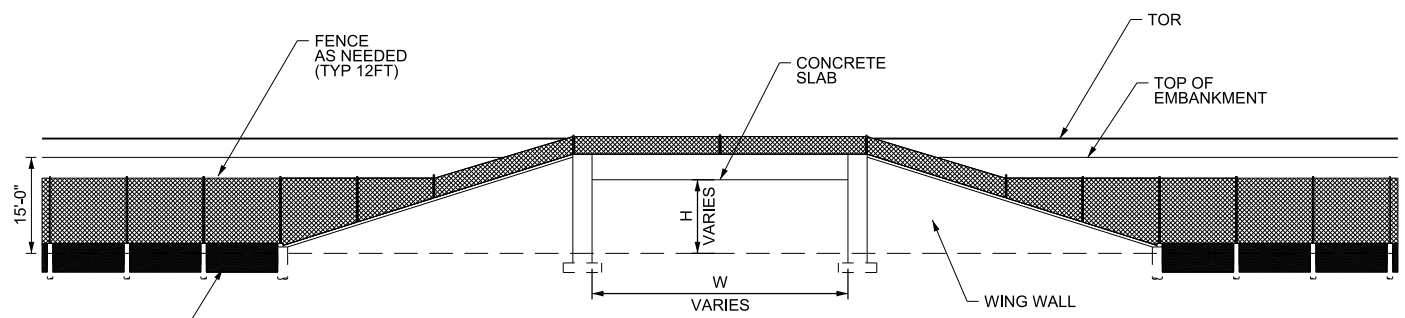
Job No	Drawing No	Rev
234180	WLC-00-04002	00



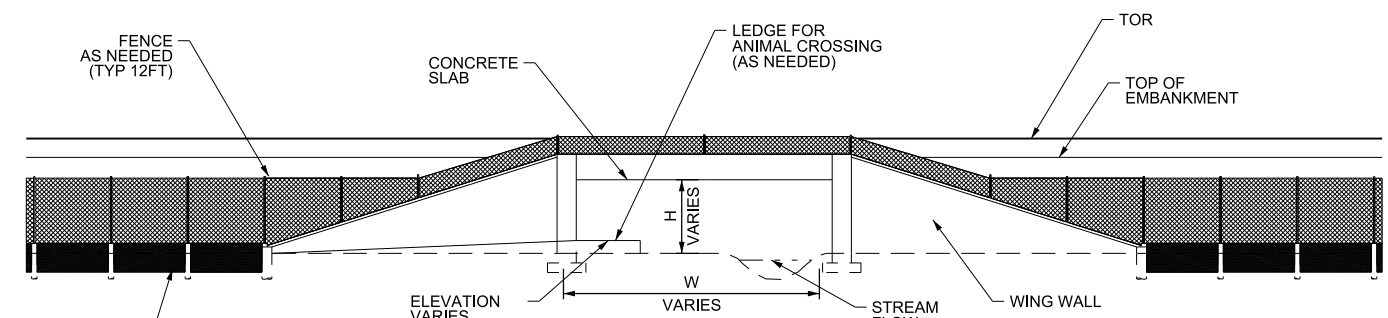
**DRYLAND CROSSING PLAN
CATTLE/LARGE WILDLIFE**



**STREAM CROSSING PLAN
CATTLE/LARGE WILDLIFE**



**DRYLAND CROSSING
CATTLE/LARGE WILDLIFE
TYPICAL SECTION**



**STREAM CROSSING
CATTLE/LARGE WILDLIFE
TYPICAL SECTION**

FIGURE 15

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. ALDREDGE
DRAWN BY
M. KINZIR
CHECKED BY
R. ZARATE
IN CHARGE
C. TAYLOR
DATE

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412

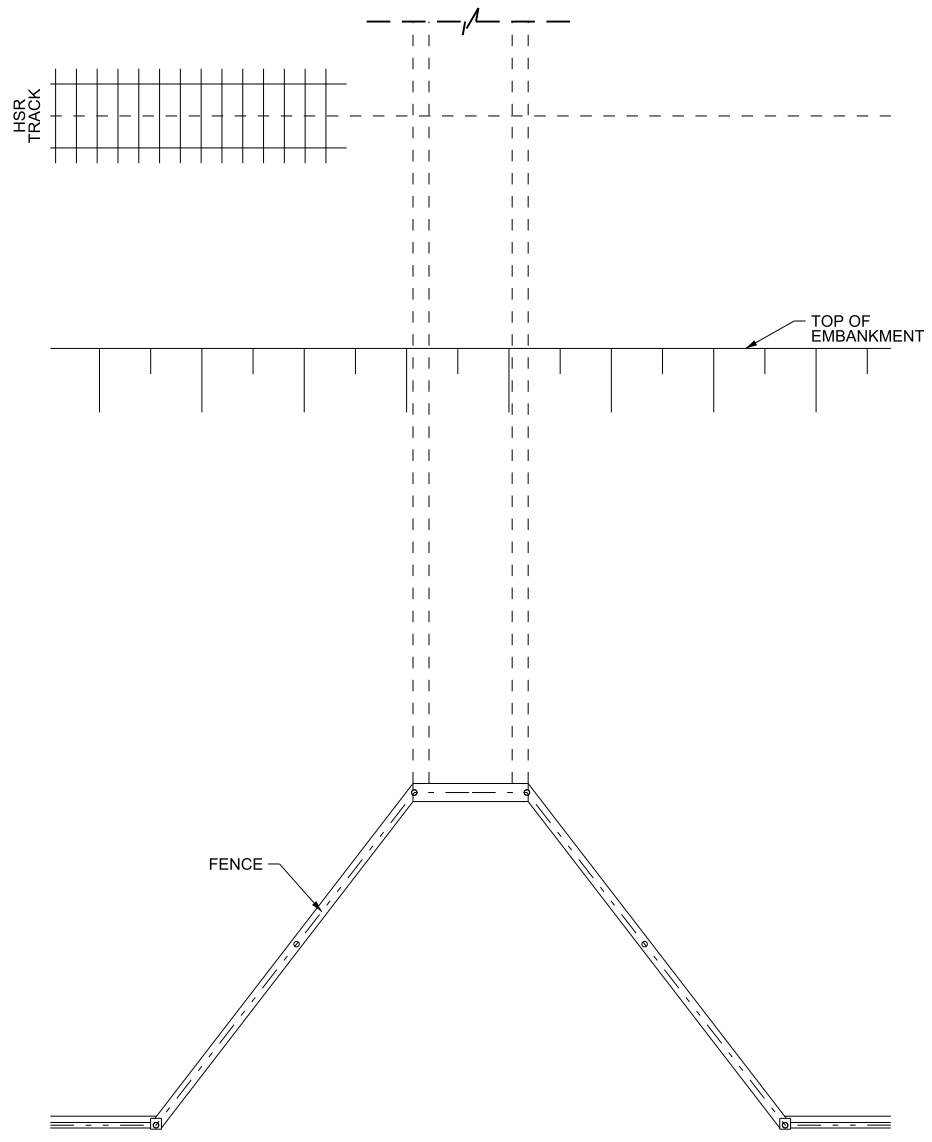
ARUP
Arup Texas, Inc.
10370 Richmond Ave., Suite 475
Houston, Texas 77042 USA
Tel (713) 783 2787 Fax (713) 343 1467
www.arup.com
Texas Registered Engineering Firm: F-1990

FREESSE & 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

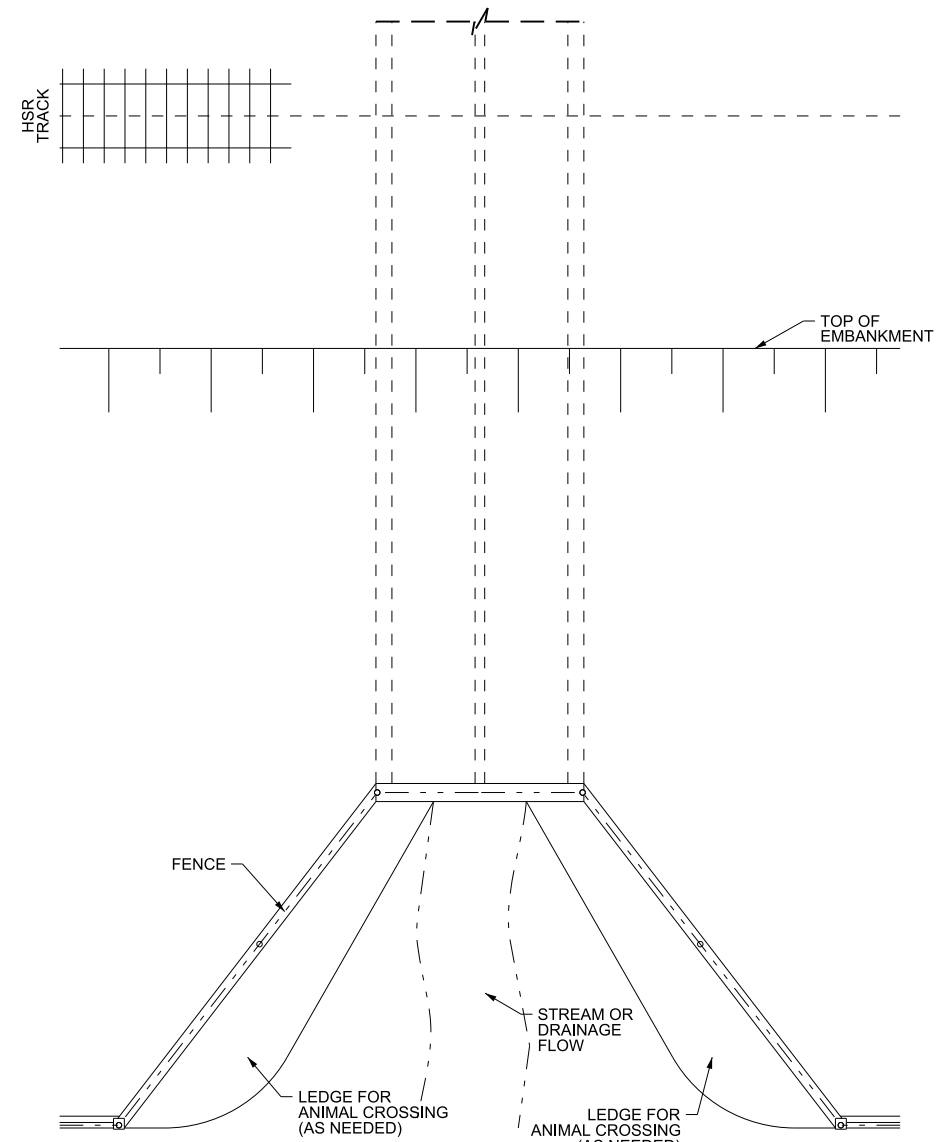
Client
TEXAS CENTRAL
1409 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title
**GENERAL WILDLIFE CROSSINGS
TYPICAL SECTION**

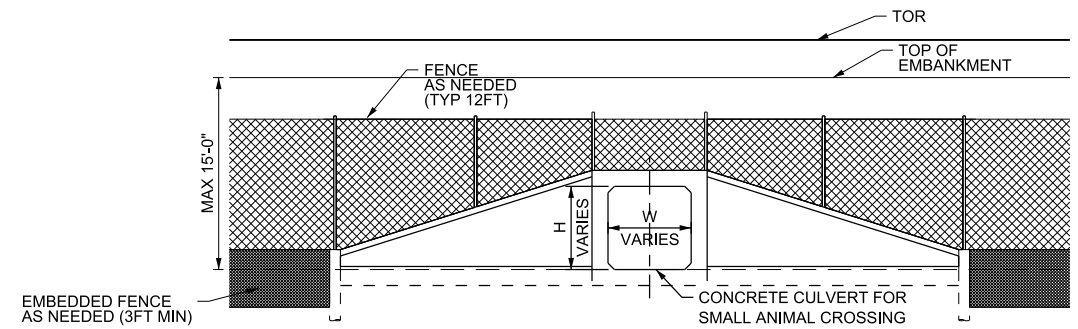
Scale
1" = 30'
Drawing Status
NOT FOR CONSTRUCTION
Job No: **234180** Drawing No: **WLC-00-04000** Rev: **00**



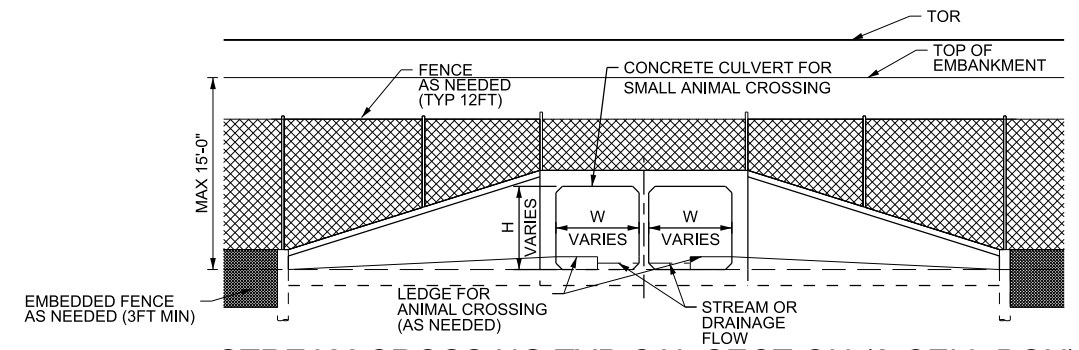
**DRYLAND CROSSING PLAN (SINGLE-CELL BOX)
SMALL ANIMAL (MAMMAL, REPTILE, OR AMPHIBIAN)**



**STREAM CROSSING PLAN (2-CELL BOX)
SMALL ANIMAL (MAMMAL, REPTILE, OR AMPHIBIAN)**



**DRYLAND CROSSING TYPICAL SECTION (2-CELL BOX)
SMALL ANIMAL (MAMMAL, REPTILE, OR AMPHIBIAN)**



**STREAM CROSSING TYPICAL SECTION (2-CELL BOX)
SMALL ANIMAL (MAMMAL, REPTILE, OR AMPHIBIAN)**

*BASED ON FLOW RATES A MORE COST EFFECTIVE ALTERNATIVE MAY BE RECOMMENDED

FIGURE 16

REV	DATE	BY	CHK	APP	DESCRIPTION

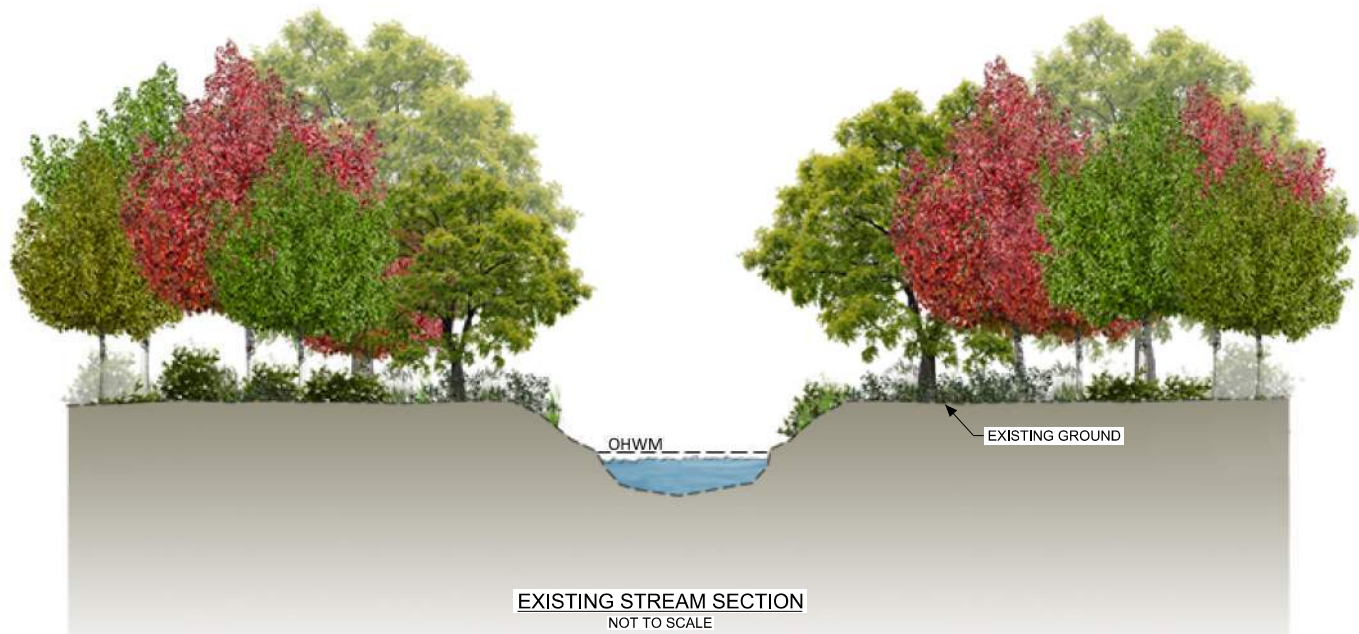
DESIGNED BY
R. ALDREDGE
DRAWN BY
M. KINZIR
CHECKED BY
R. ZARATE
IN CHARGE
C. TAYLOR
DATE

DALLAS TO HOUSTON
HIGH SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483
SWG-2014-00412

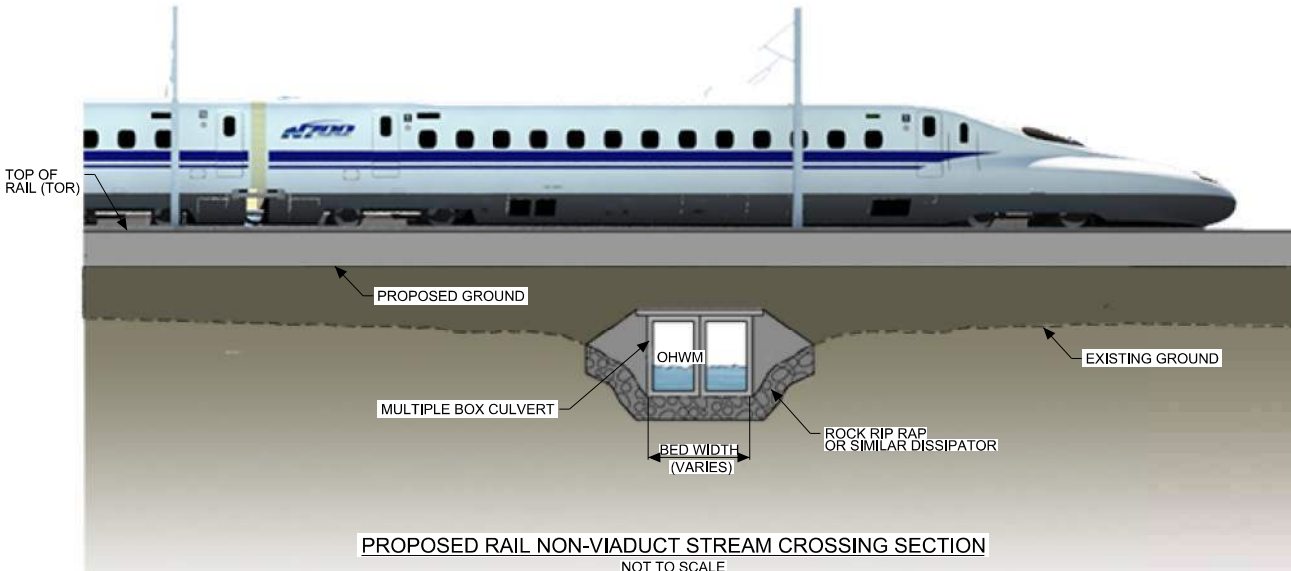


Drawing Title
**GENERAL
WILDLIFE CROSSINGS
TYPICAL SECTION**

Scale 1" = 30'		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No WLC-00-04001	Rev 00



EXISTING STREAM SECTION
NOT TO SCALE



PROPOSED RAIL NON-VIADUCT STREAM CROSSING SECTION
NOT TO SCALE

- NOTES:**
1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
 2. ALL STREAMS WILL BE PROPERLY CULVERTED TO MAINTAIN DOWNSTREAM FLOWS.
 3. NON-VIADUCT CONSISTS OF EMBANKMENT, CUT, RETAINED FILL AND RETAINED CUT.

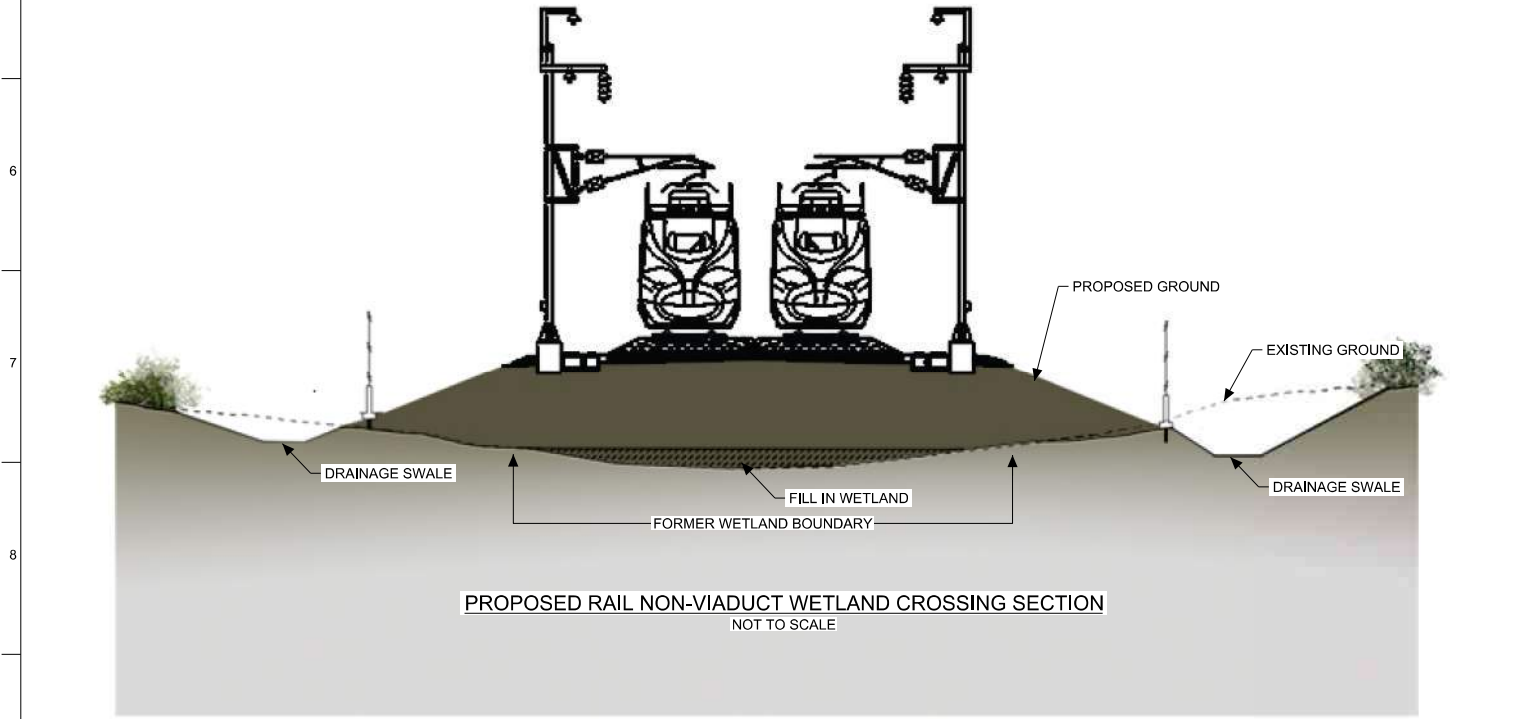
DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCCR
 SWF-2011-00483

DESIGNED BY	R. ZARATE
DRAWN BY	E. FERGERSON
CHECKED BY	R. ALDREDGE
IN CHARGE	R. ZARATE
DATE	SEP 2017



Drawing Title
**DETAIL 1
 RAIL NON-VIADUCT
 CULVERTED
 STREAM CROSSING**

Scale NOT TO SCALE		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No FIGURE 17	Rev 03



- NOTES:**
1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
 2. NON-VIADUCT CONSISTS OF EMBANKMENT, CUT, RETAINED FILL AND RETAINED CUT.
 3. REFER TO PLAN VIEW TO DETERMINE SPECIFIC TYPE OF WETLAND CROSSING.

DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

DESIGNED BY
R. ZARATE

DRAWN BY
E. FERGERSON

CHECKED BY
R. ALDREDGE

IN CHARGE
R. ZARATE

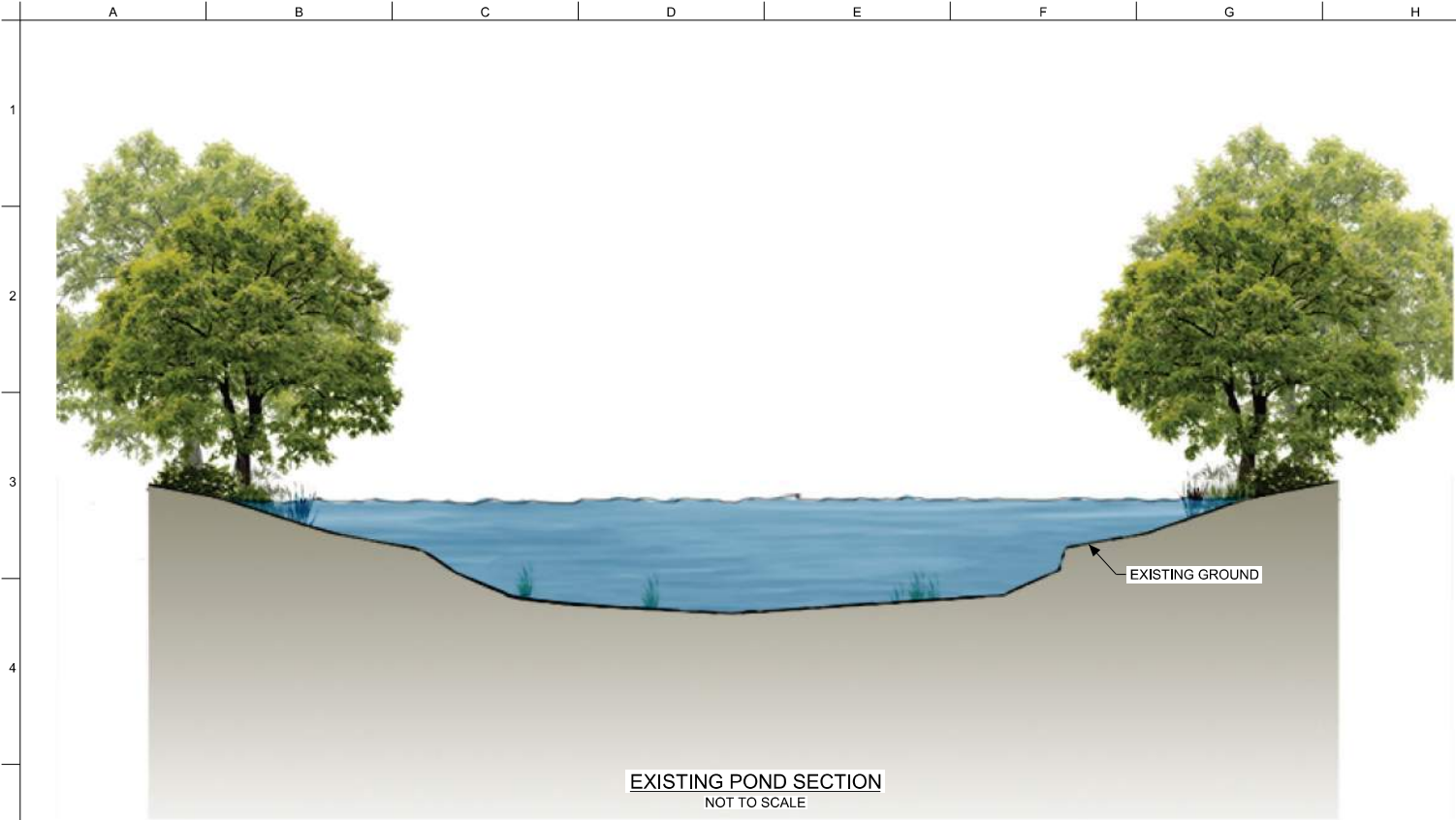
DATE
SEP 2017



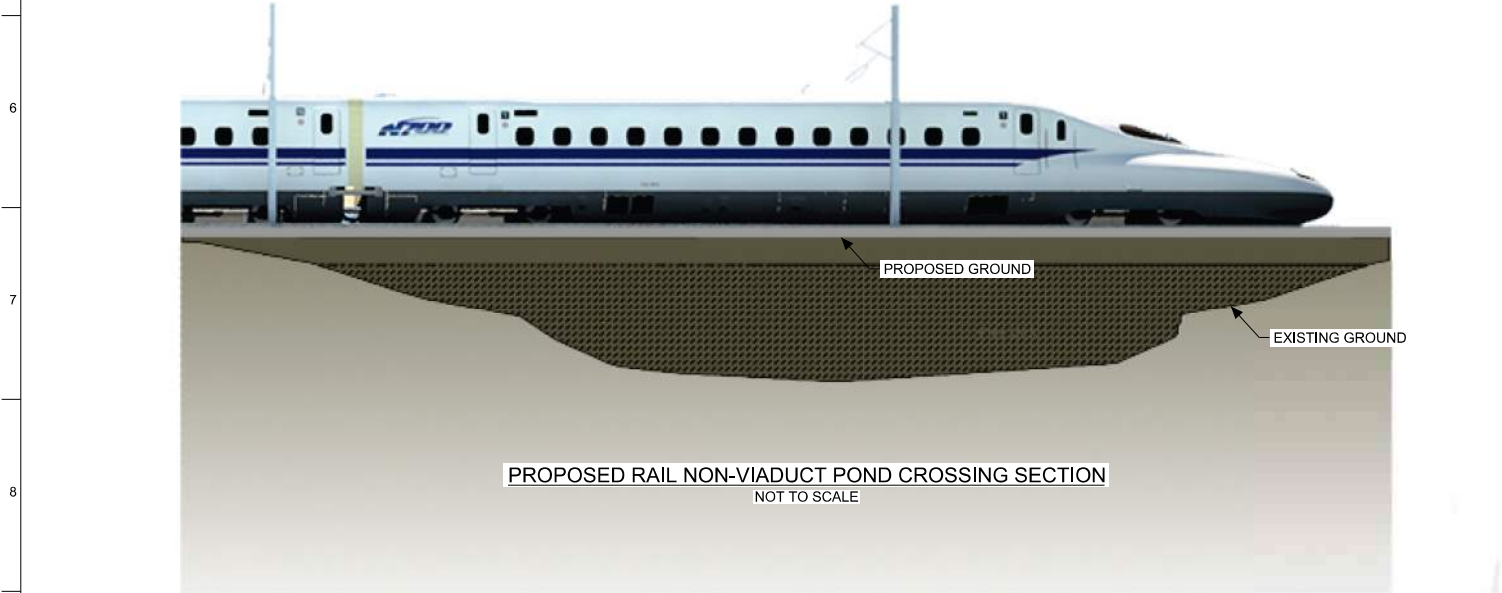
Drawing Title

**DETAIL 2
 RAIL NON-VIADUCT
 WETLAND CROSSING**

Scale NOT TO SCALE		
Drawing Status NOT FOR CONSTRUCTION		
Job No 234180	Drawing No FIGURE 18	Rev 03



EXISTING POND SECTION
NOT TO SCALE



PROPOSED RAIL NON-VIADUCT POND CROSSING SECTION
NOT TO SCALE

NOTES:

- 1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
- 2. NON-VIADUCT CONSISTS OF EMBANKMENT, CUT, RETAINED FILL AND RETAINED CUT.

DALLAS TO HOUSTON HIGH-SPEED RAIL
APPLICANT: TCRR
SWF-2011-00483

DESIGNED BY
R. ZARATE

DRAWN BY
E. FERGERSON

CHECKED BY
R. ALDREDGE

IN CHARGE
R. ZARATE

DATE
SEP 2017



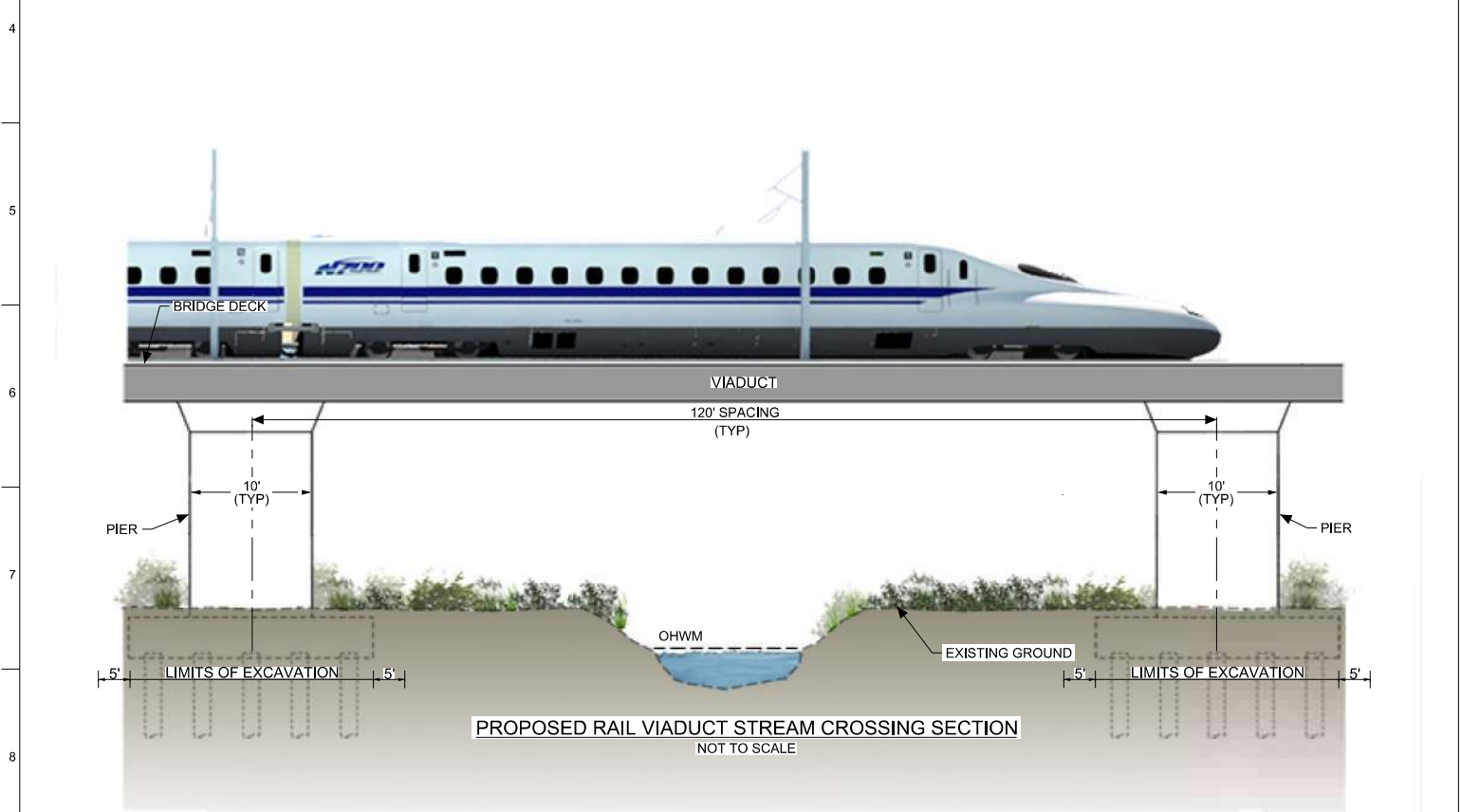
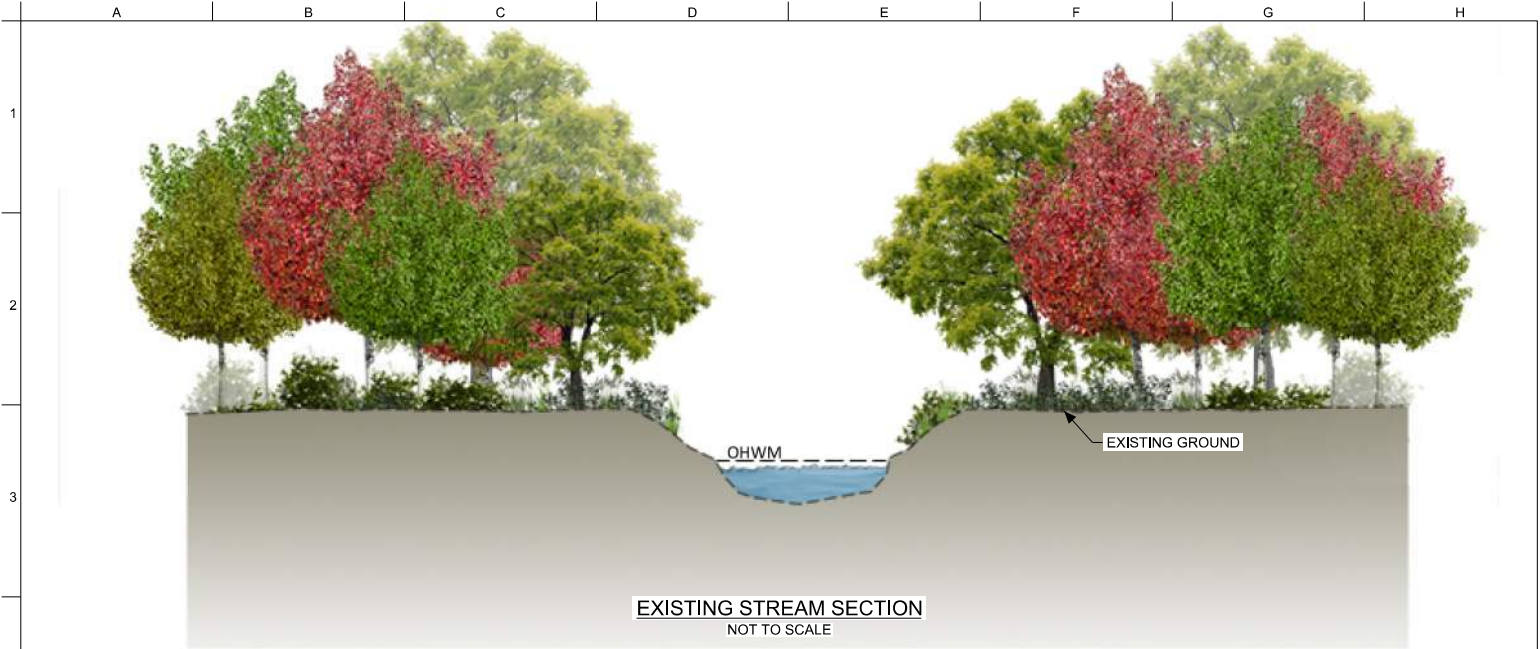
Drawing Title

**DETAIL 3
RAIL NON-VIADUCT
POND CROSSING**

Scale
NOT TO SCALE

Drawing Status
NOT FOR CONSTRUCTION

Job No 234180	Drawing No FIGURE 19	Rev 03
-------------------------	--------------------------------	------------------



NOTES:

- 1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
- 2. TEMPORARY FILLS WOULD BE REMOVED IN THEIR ENTIRETY AND THE AFFECTED AREAS RETURNED TO PRE-CONSTRUCTION ELEVATIONS AS SOON AS PRACTICABLE AFTER CONSTRUCTION.

DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCR
 SWF-2011-00483

DESIGNED BY
R. ZARATE

DRAWN BY
E. FERGERSON

CHECKED BY
R. ALDREDGE

IN CHARGE
R. ZARATE

DATE
SEP 2017

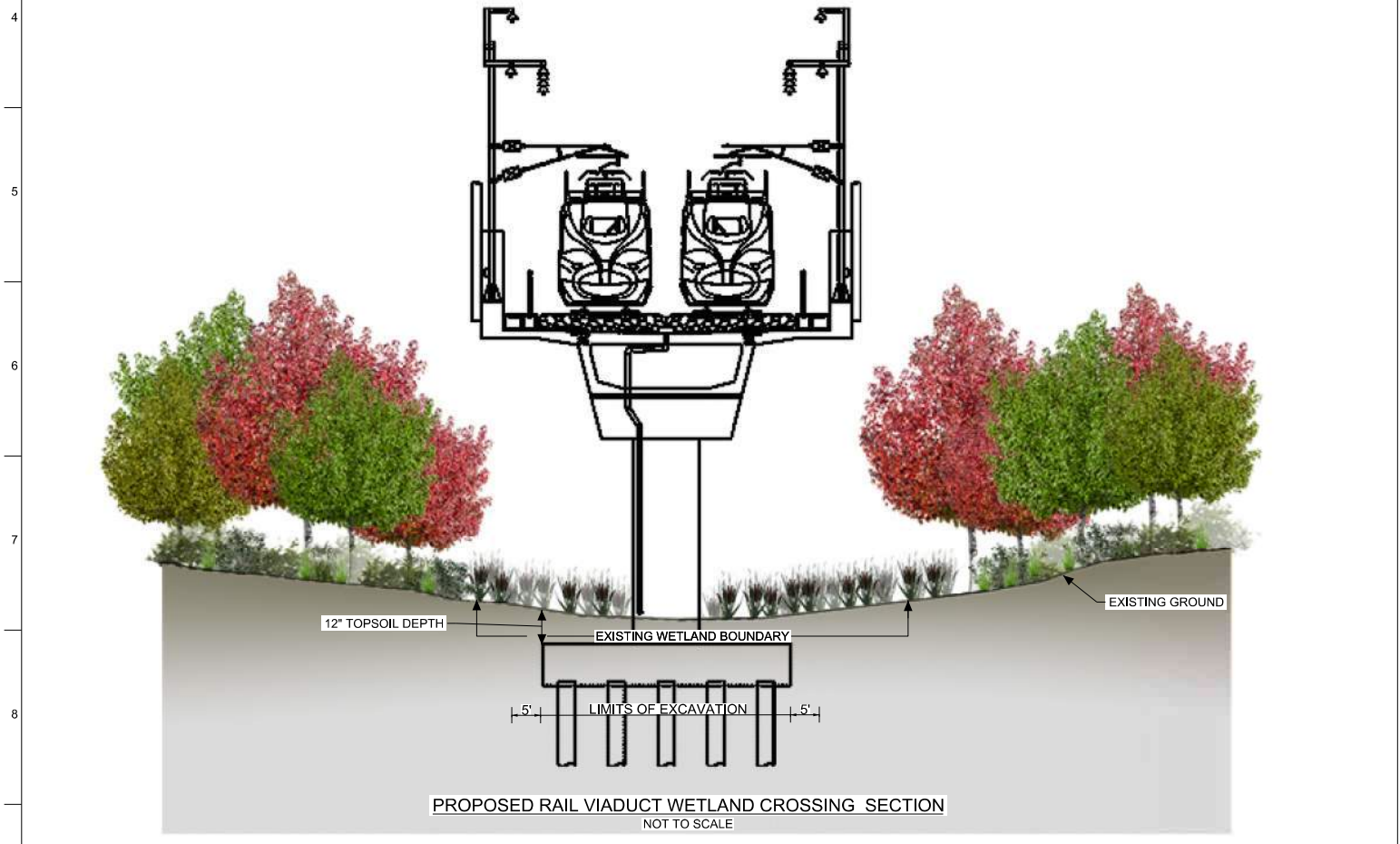


Drawing Title
**DETAIL 4
 RAIL VIADUCT
 STREAM CROSSING**

Scale
NOT TO SCALE

Drawing Status
NOT FOR CONSTRUCTION

Job No 234180	Drawing No FIGURE 20	Rev 03
-------------------------	--------------------------------	------------------



NOTES:

1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
2. REFER TO PLAN VIEW TO DETERMINE SPECIFIC TYPE OF WETLAND CROSSING.
3. TEMPORARY FILLS WOULD BE REMOVED IN THEIR ENTIRETY AND THE AFFECTED AREAS RETURNED TO PRE-CONSTRUCTION ELEVATIONS AS SOON AS PRACTICABLE AFTER CONSTRUCTION.

DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

DESIGNED BY
R. ZARATE

DRAWN BY
E. FERGERSON

CHECKED BY
R. ALDREDGE

IN CHARGE
R. ZARATE

DATE
SEP 2017

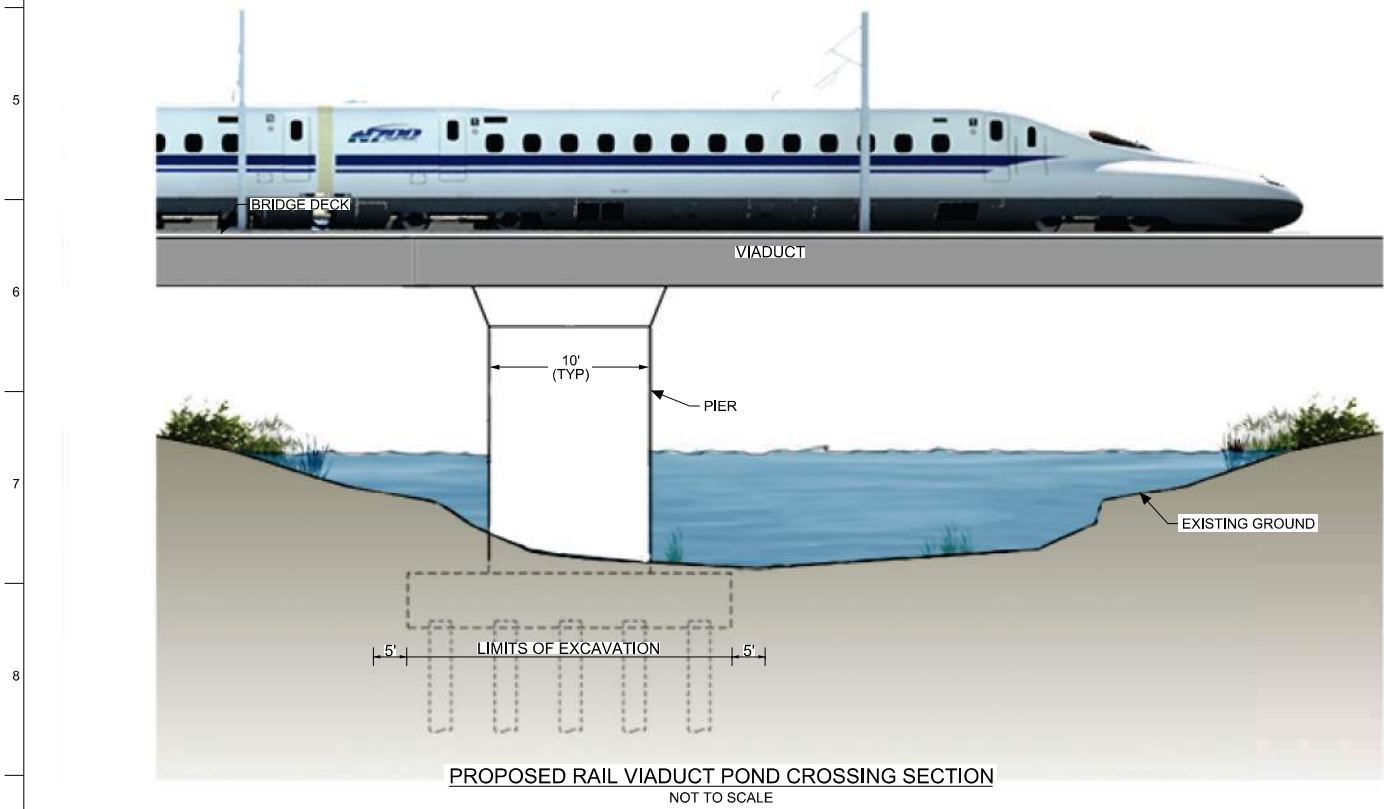
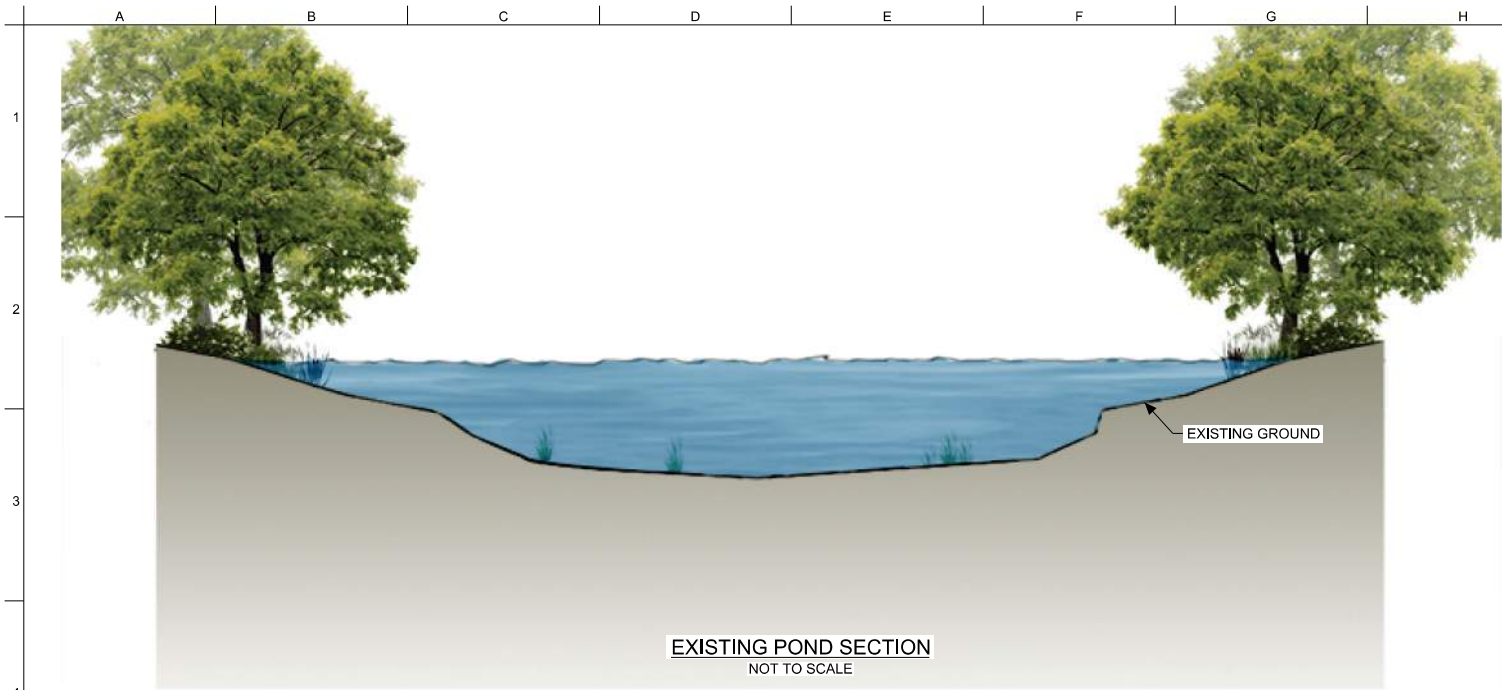


Drawing Title
**DETAIL 5
 RAIL VIADUCT
 WETLAND CROSSING**

Scale
NOT TO SCALE

Drawing Status
NOT FOR CONSTRUCTION

Job No 234180	Drawing No FIGURE 21	Rev 03
-------------------------	--------------------------------	------------------



NOTES:

1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
2. TEMPORARY FILLS WOULD BE REMOVED IN THEIR ENTIRETY AND THE AFFECTED AREAS RETURNED TO PRE-CONSTRUCTION ELEVATIONS AS SOON AS PRACTICABLE AFTER CONSTRUCTION.

DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

DESIGNED BY
R. ZARATE
 DRAWN BY
E. FERGERSON
 CHECKED BY
R. ALDREDGE
 IN CHARGE
R. ZARATE
 DATE
SEP 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 & NICHOLS
 2711 North Haskell Ave., Suite 3300
 Dallas, Texas 75204
 Tel (214) 217 2200 Fax (214) 217 2201
 www.freesse.com
 Texas Registered Engineering Firm; F-2144

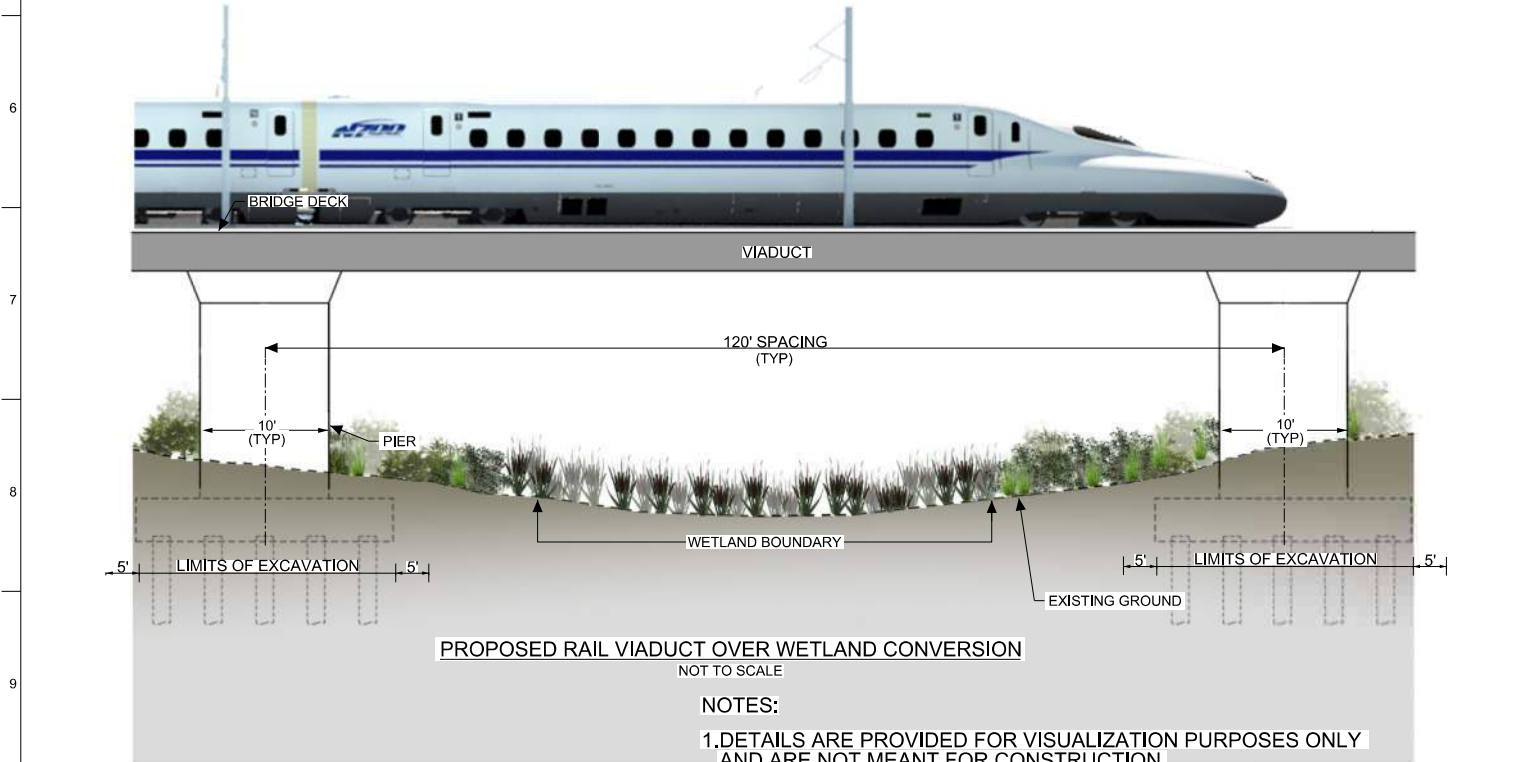
Client

TEXAS CENTRAL PARTNERS
 AMERICA'S BULLET TRAIN
 1601 Elm Street, Suite 4343, Dallas, Texas 75201

Drawing Title
**DETAIL 6
 RAIL VIADUCT
 POND CROSSING**

Scale
NOT TO SCALE
 Drawing Status
NOT FOR CONSTRUCTION

Job No 234180	Drawing No FIGURE 22	Rev 03
-------------------------	--------------------------------	------------------



- NOTES:
1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
 2. REFER TO PLAN VIEW TO DETERMINE SPECIFIC TYPE OF WETLAND CROSSING.
 3. TEMPORARY FILLS WOULD BE REMOVED IN THEIR ENTIRETY AND THE AFFECTED AREAS RETURNED TO PRE-CONSTRUCTION ELEVATIONS AS SOON AS PRACTICABLE AFTER CONSTRUCTION.

DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCCR
 SWF-2011-00483

DESIGNED BY
R. ZARATE

DRAWN BY
E. FERGERSON

CHECKED BY
R. ALDREDGE

IN CHARGE
R. ZARATE

DATE
SEP 2017



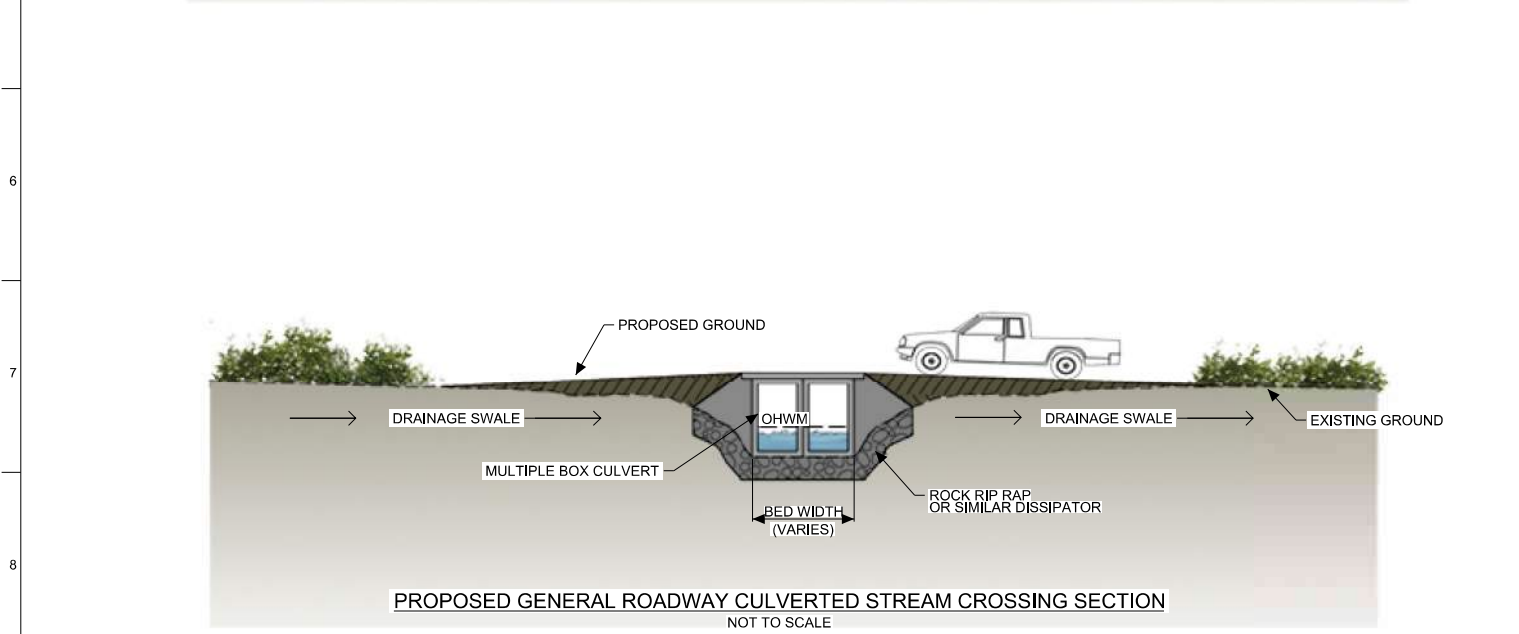
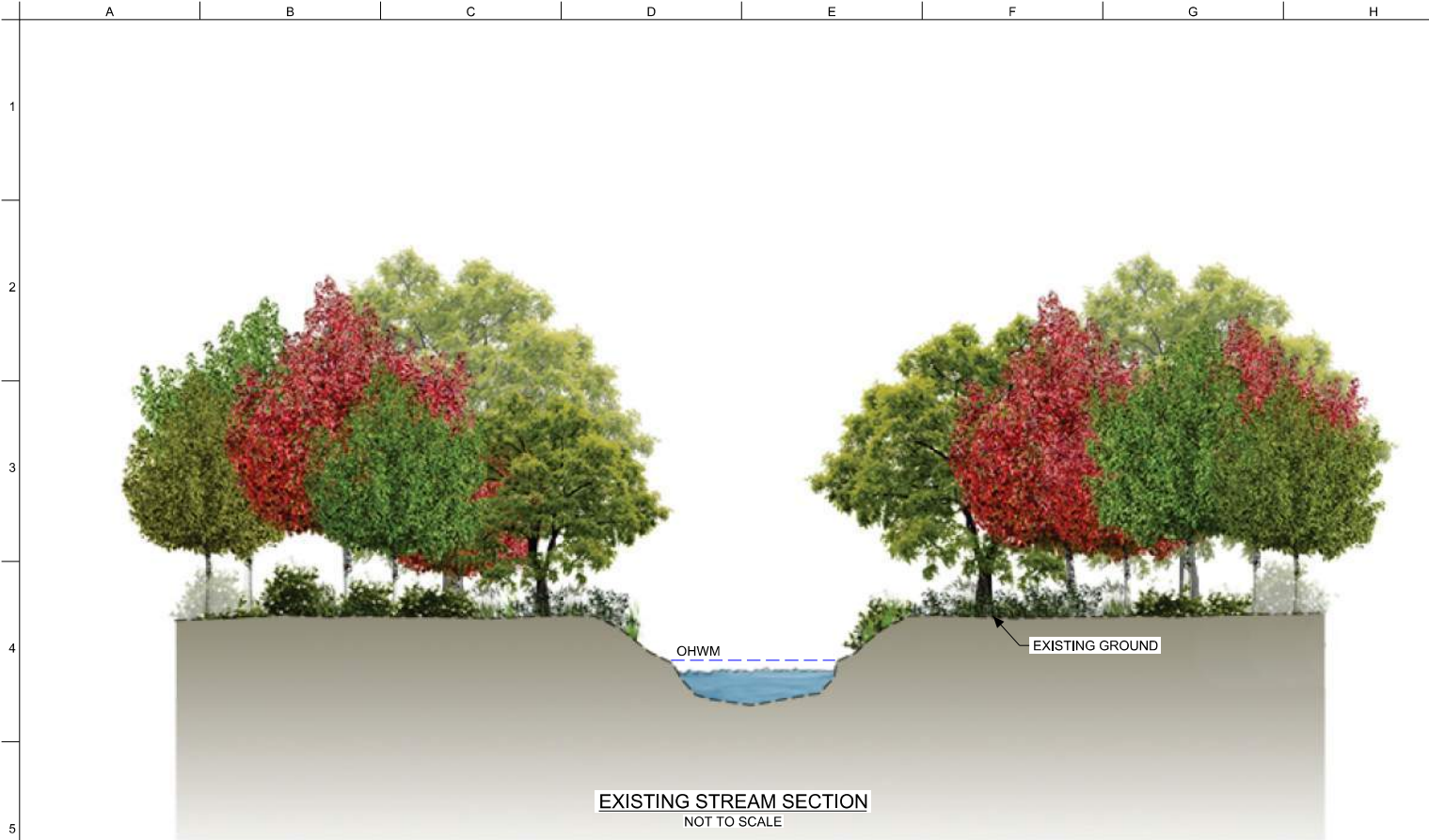
Drawing Title

**DETAIL 7
 RAIL VIADUCT
 WETLAND CONVERSION**

Scale
NOT TO SCALE

Drawing Status
NOT FOR CONSTRUCTION

Job No 234180	Drawing No FIGURE 23	Rev 03
-------------------------	--------------------------------	------------------



NOTES:

1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
2. ALL STREAMS WILL BE PROPERLY CULVERTED TO MAINTAIN DOWNSTREAM FLOWS.

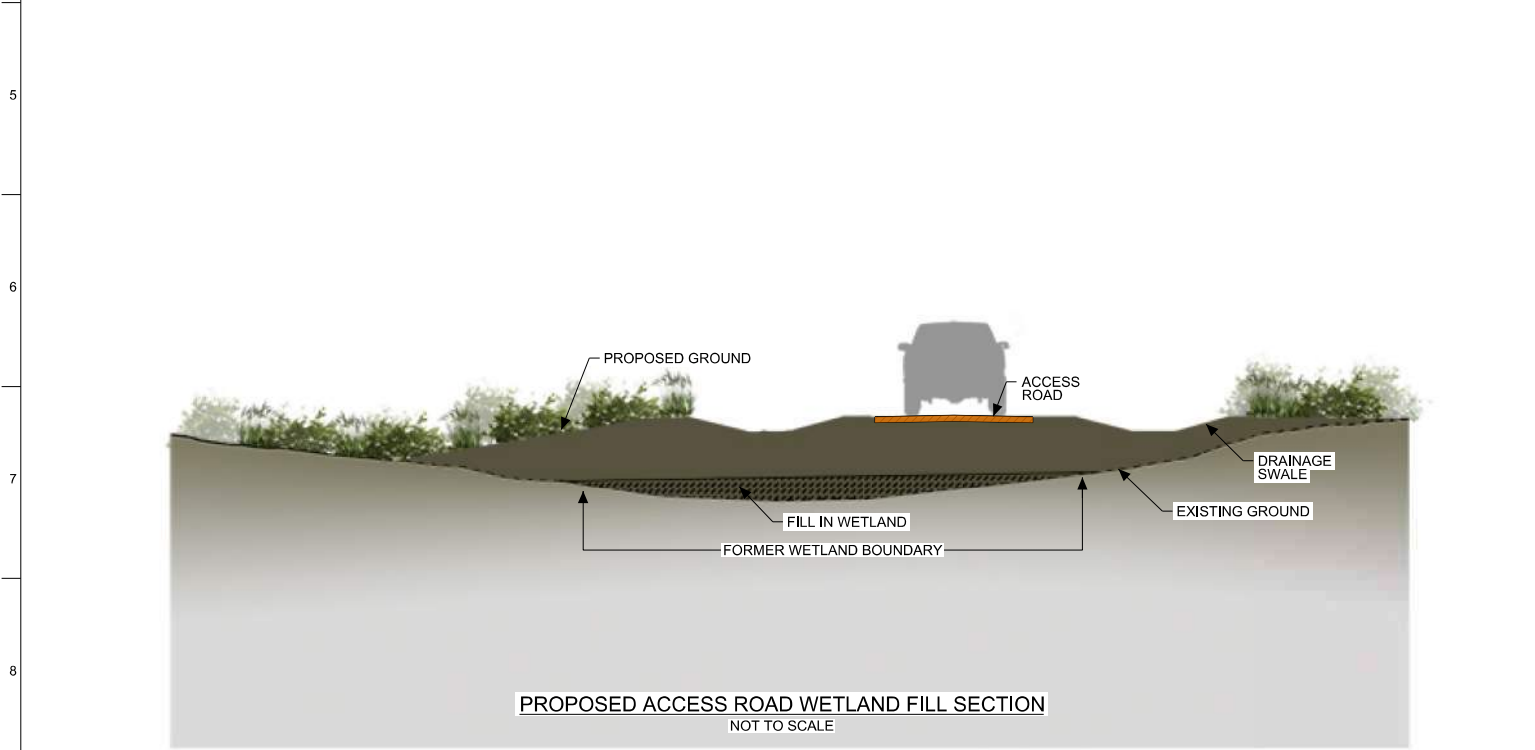
DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

DESIGNED BY
R. ZARATE
 DRAWN BY
E. FERGERSON
 CHECKED BY
R. ALDREDGE
 IN CHARGE
R. ZARATE
 DATE
SEP 2017



Drawing Title
**DETAIL 8
 GENERAL ROADWAY
 CULVERTED
 STREAM CROSSING**

Scale
NOT TO SCALE
 Drawing Status
NOT FOR CONSTRUCTION
 Job No: **234180** | Drawing No: **FIGURE 24** | Rev: **03**



NOTES:
 1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
 2. REFER TO PLAN VIEW TO DETERMINE SPECIFIC TYPE OF WETLAND CROSSING.

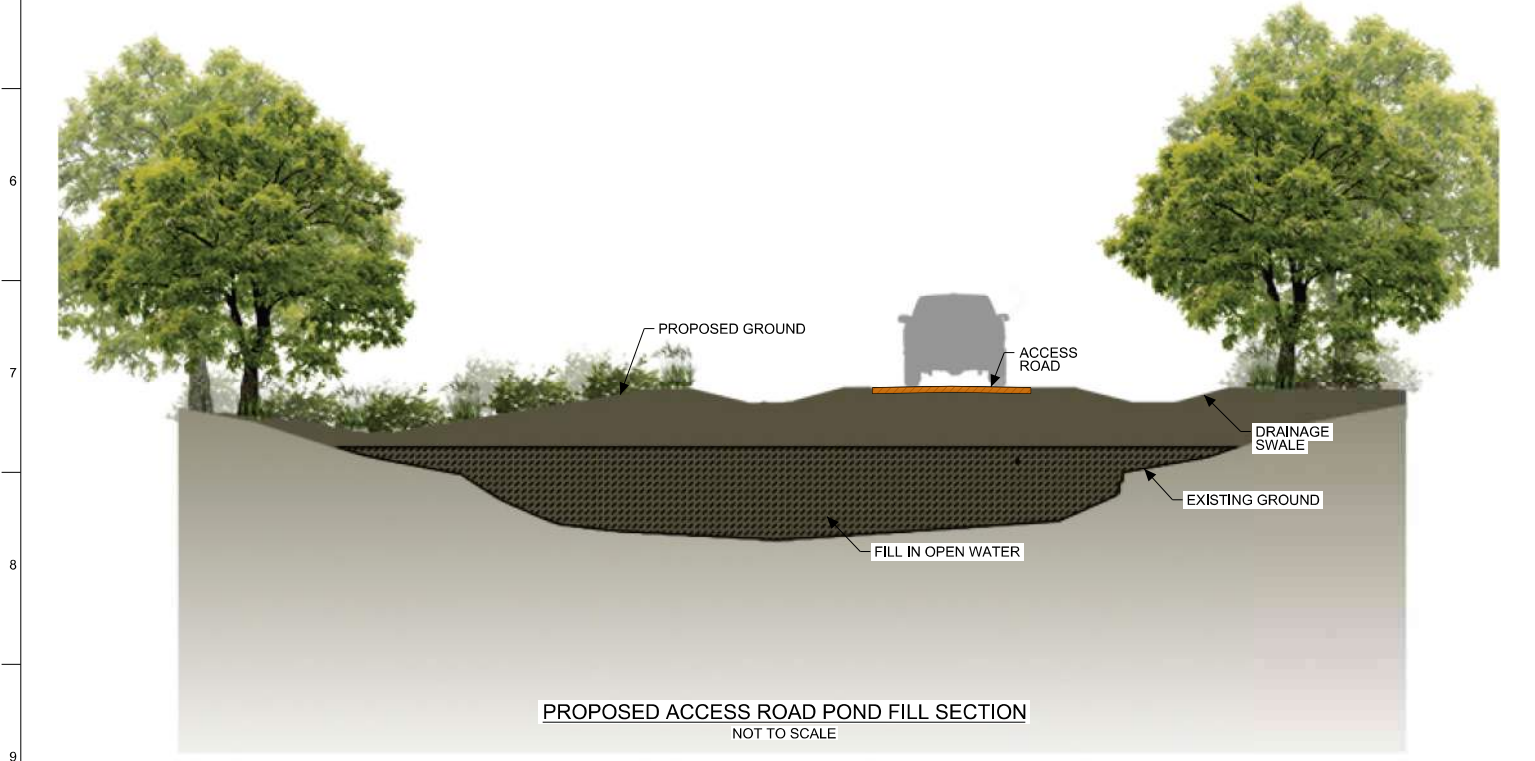
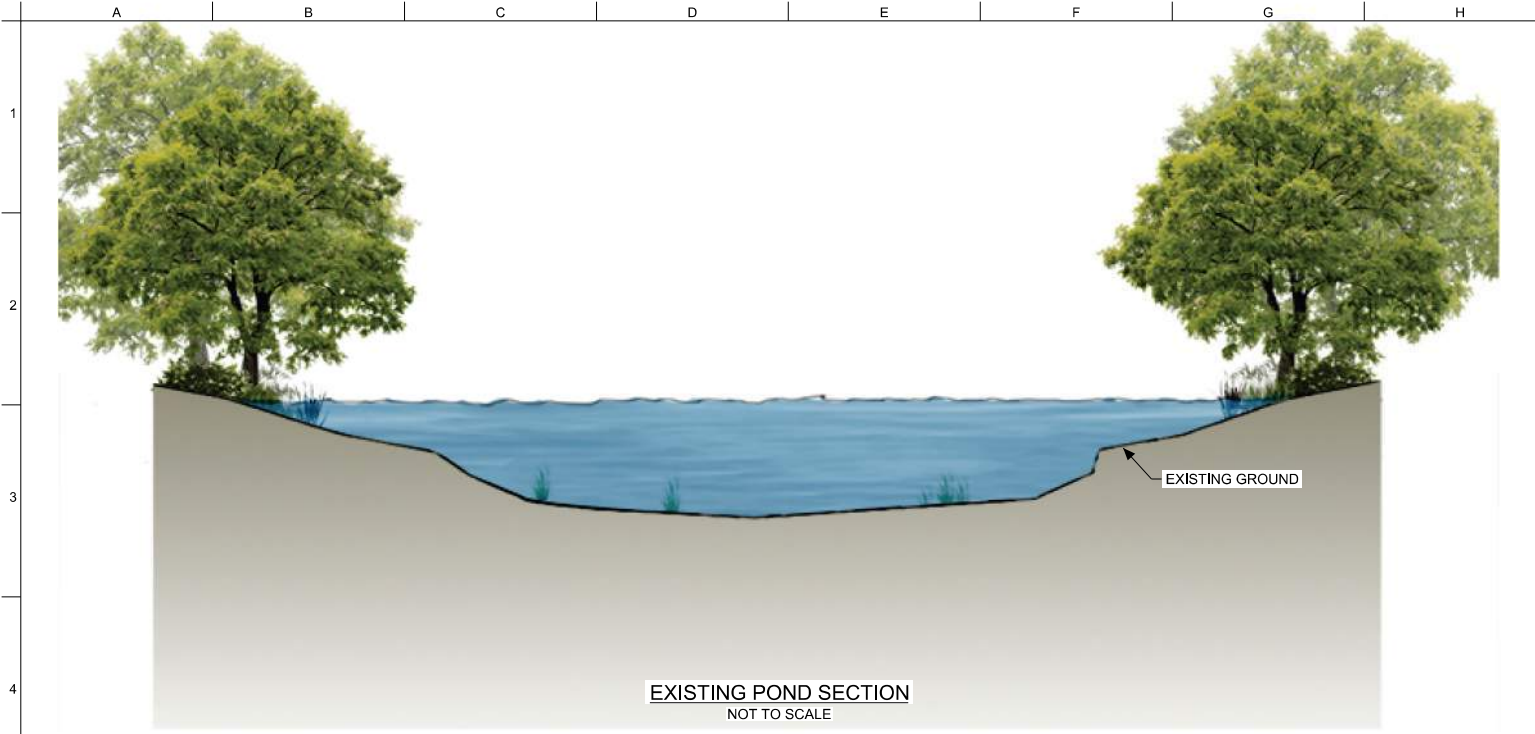
DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

DESIGNED BY
R. ZARATE
 DRAWN BY
E. FERGERSON
 CHECKED BY
R. ALDREDGE
 IN CHARGE
R. ZARATE
 DATE
SEP 2017



Drawing Title
**DETAIL 9
 ACCESS ROAD
 WETLAND FILL**

Scale
NOT TO SCALE
 Drawing Status
NOT FOR CONSTRUCTION
 Job No: **234180** | Drawing No: **FIGURE 25** | Rev: **03**



DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

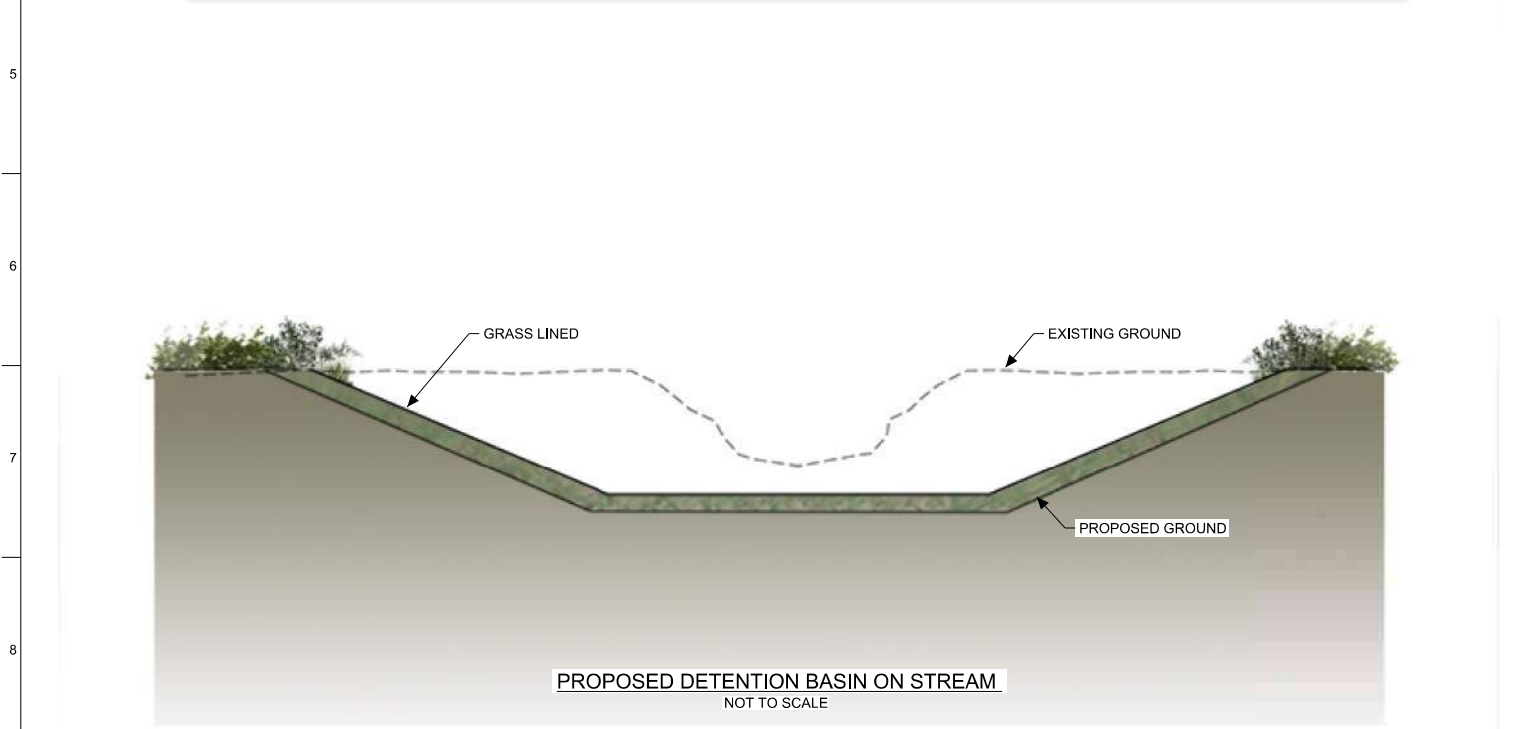
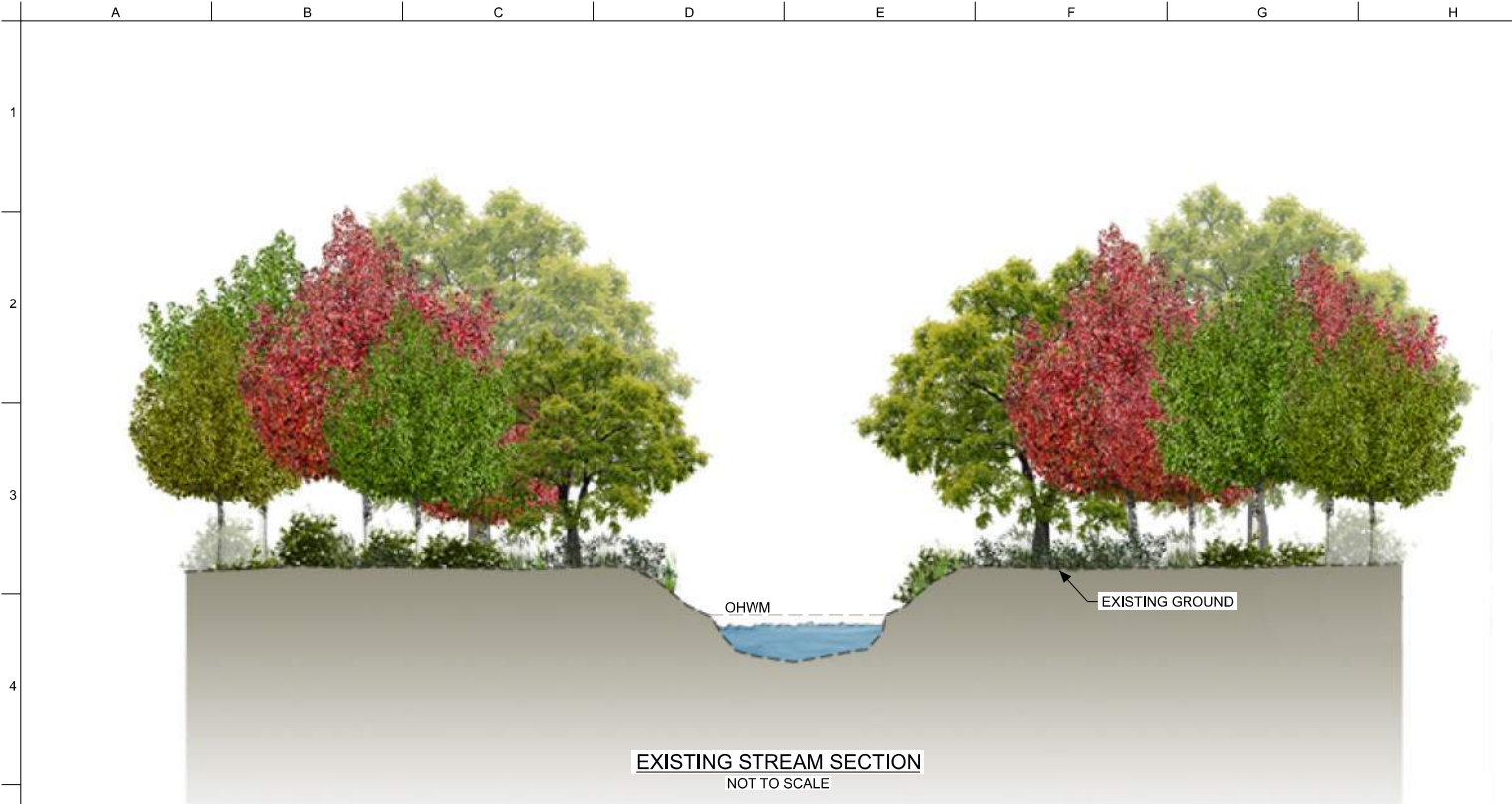
NOTES:
 1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.

DESIGNED BY
R. ZARATE
 DRAWN BY
E. FERGERSON
 CHECKED BY
R. ALDREDGE
 IN CHARGE
R. ZARATE
 DATE
SEP 2017



Drawing Title
**DETAIL 10
 ACCESS ROAD
 POND FILL**

Scale
NOT TO SCALE
 Drawing Status
NOT FOR CONSTRUCTION
 Job No: **234180** | Drawing No: **FIGURE 26** | Rev: **03**



DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

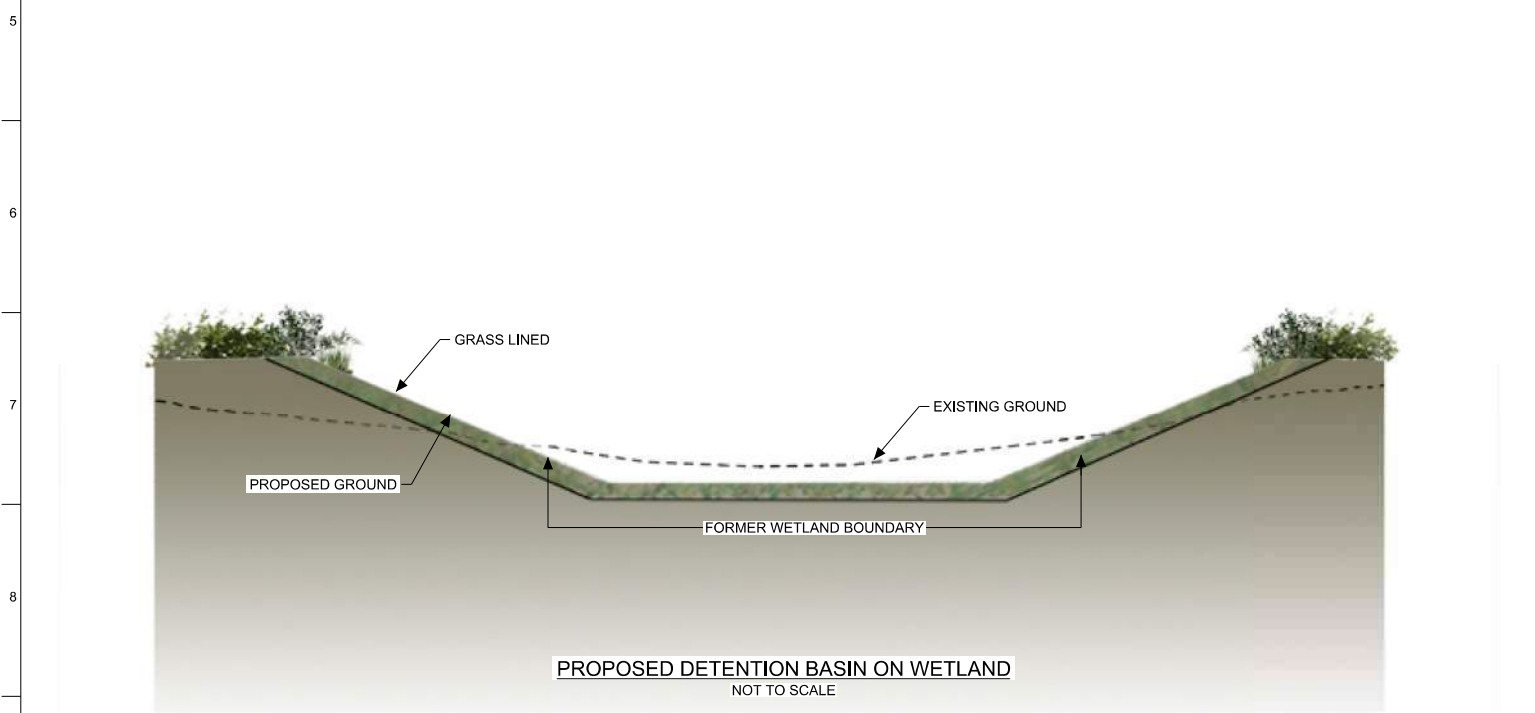
NOTES:
 1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.

DESIGNED BY
R. ZARATE
 DRAWN BY
E. FERGERSON
 CHECKED BY
R. ALDREDGE
 IN CHARGE
R. ZARATE
 DATE
SEP 2017



Drawing Title
**DETAIL 11
 DETENTION BASIN
 ON STREAM**

Scale
NOT TO SCALE
 Drawing Status
NOT FOR CONSTRUCTION
 Job No: **234180** | Drawing No: **FIGURE 27** | Rev: **03**



NOTES:

1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
2. REFER TO PLAN VIEW TO DETERMINE SPECIFIC TYPE OF WETLAND CROSSING.

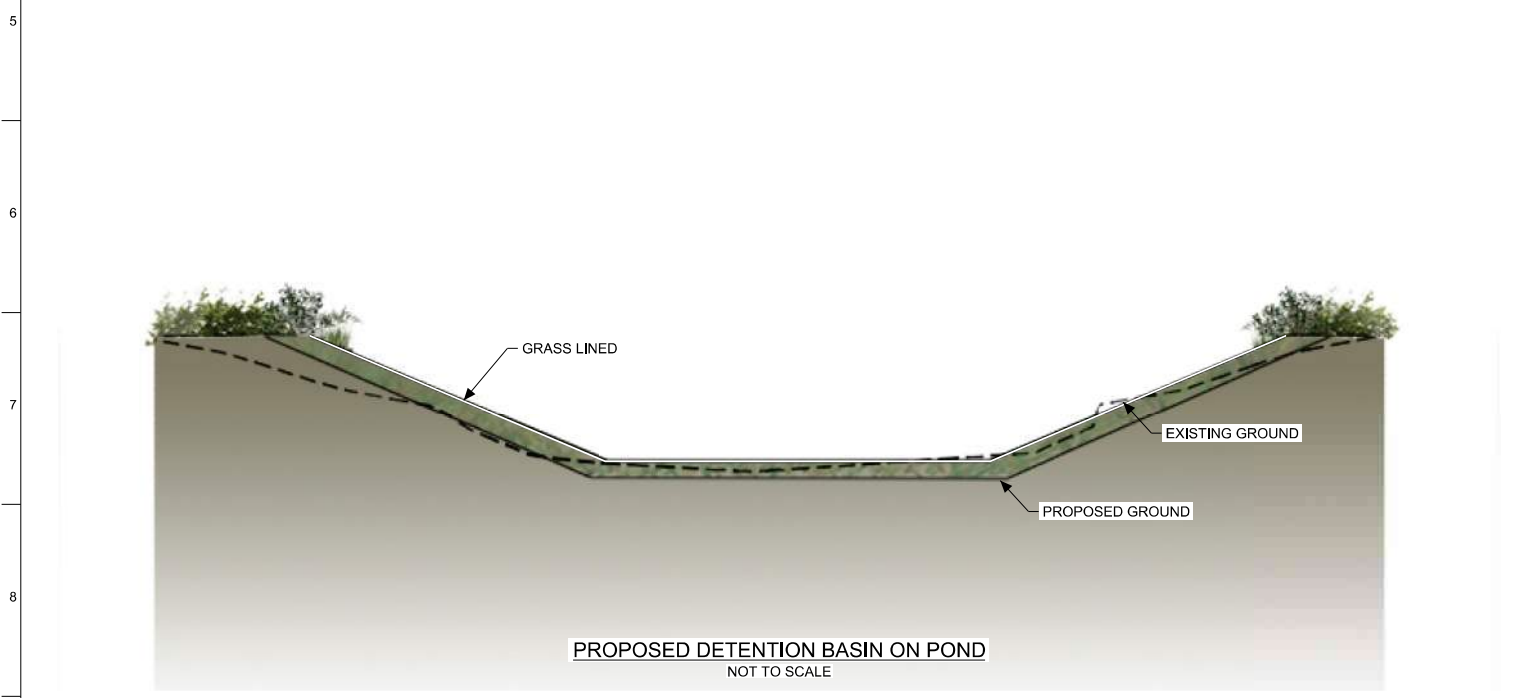
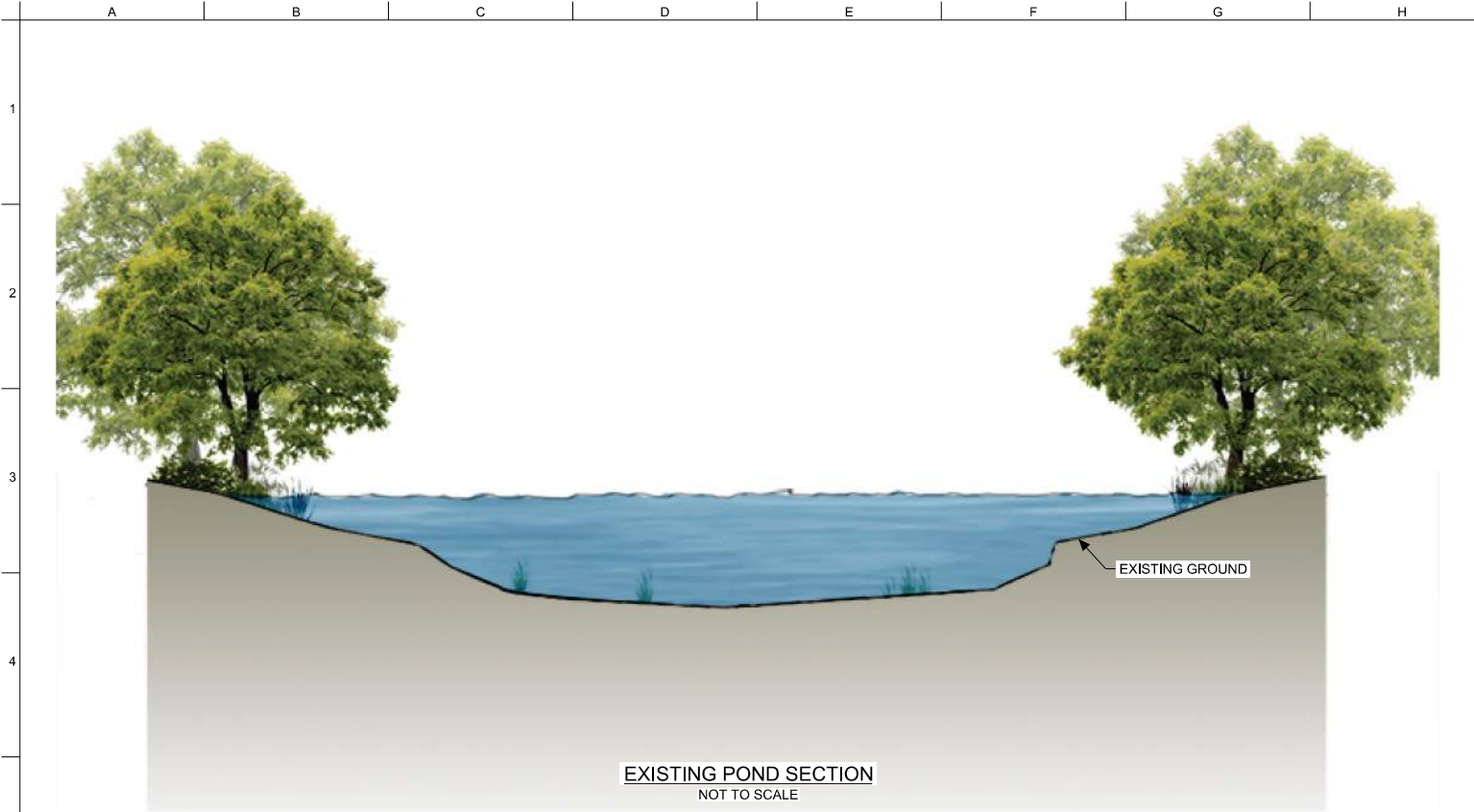
DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

DESIGNED BY
R. ZARATE
 DRAWN BY
E. FERGERSON
 CHECKED BY
R. ALDREDGE
 IN CHARGE
R. ZARATE
 DATE
SEP 2017



Drawing Title
**DETAIL 12
 DETENTION BASIN
 ON WETLAND**

Scale
NOT TO SCALE
 Drawing Status
NOT FOR CONSTRUCTION
 Job No: **234180** | Drawing No: **FIGURE 28** | Rev: **03**



- NOTES:
1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
 2. POND DEWATERED TO PROVIDE DETENTION CAPACITY.

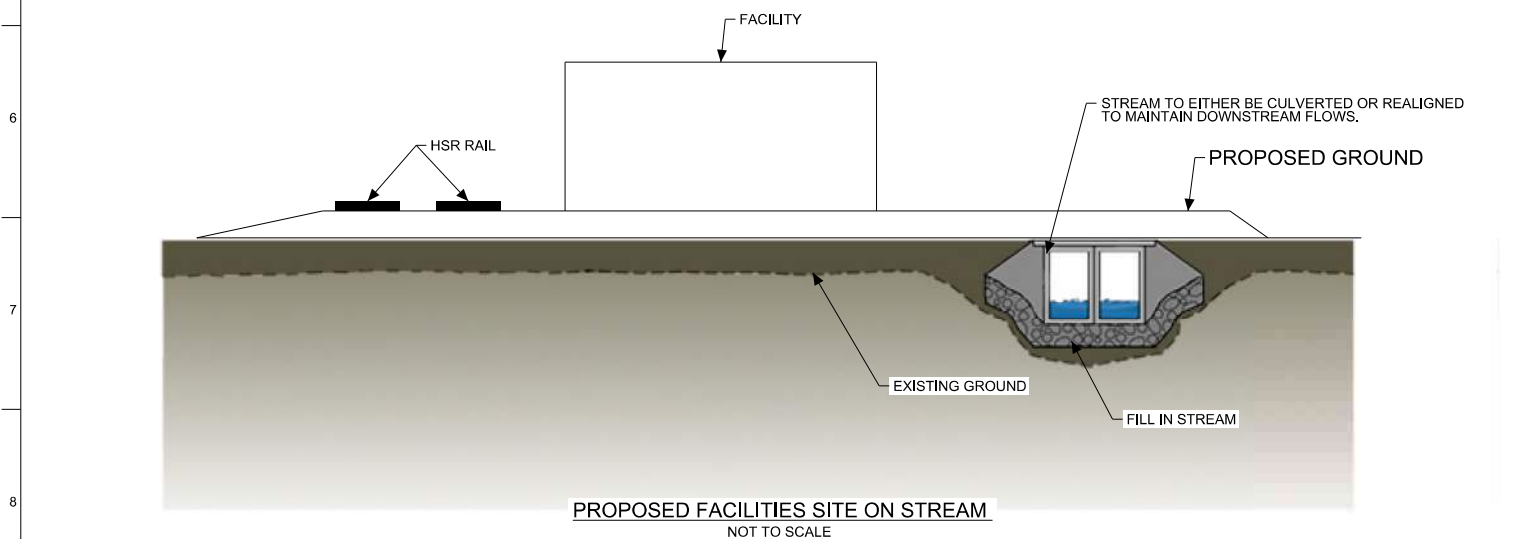
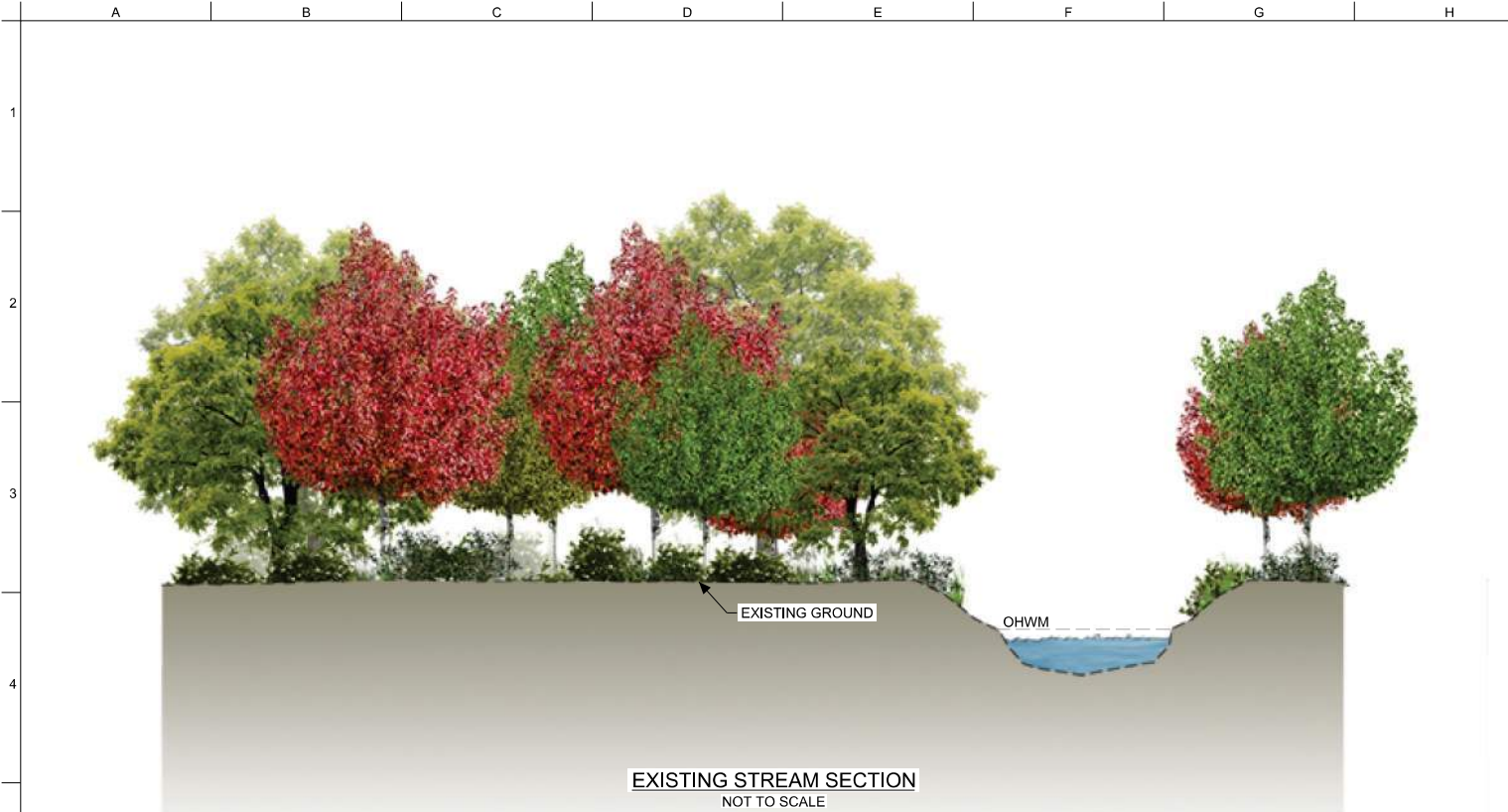
DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

DESIGNED BY
R. ZARATE
 DRAWN BY
E. FERGERSON
 CHECKED BY
R. ALDREDGE
 IN CHARGE
R. ZARATE
 DATE
SEP 2017



Drawing Title
**DETAIL 13
 DETENTION BASIN
 ON POND**

Scale
NOT TO SCALE
 Drawing Status
NOT FOR CONSTRUCTION
 Job No
234180
 Drawing No
FIGURE 29
 Rev
03



- NOTES:**
1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
 2. ALL STREAMS WILL BE PROPERLY CULVERTED TO MAINTAIN DOWNSTREAM FLOWS.

DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

DESIGNED BY
R. ZARATE

DRAWN BY
E. FERGERSON

CHECKED BY
R. ALDREDGE

IN CHARGE
R. ZARATE

DATE
SEP 2017



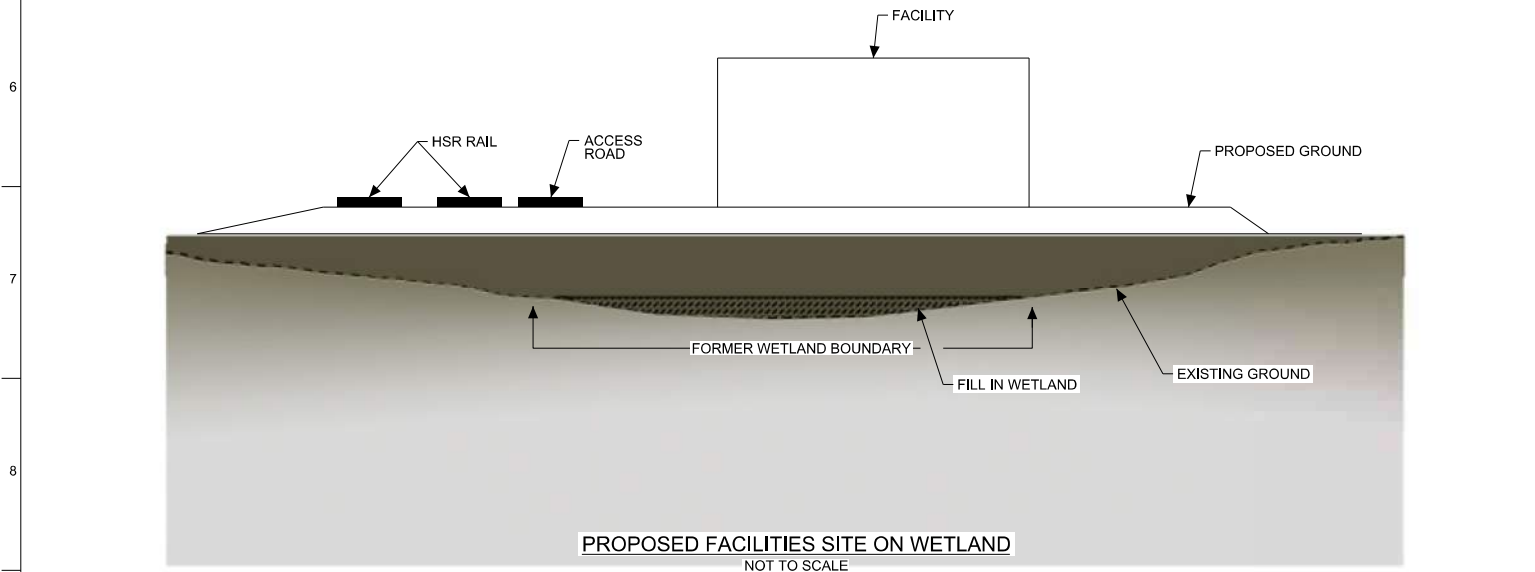
Drawing Title

**DETAIL 14
 FACILITIES SITE
 ON STREAM**

Scale
NOT TO SCALE

Drawing Status
NOT FOR CONSTRUCTION

Job No 234180	Drawing No FIGURE 30	Rev 03
-------------------------	--------------------------------	------------------



NOTES:
 1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
 2. REFER TO PLAN VIEW TO DETERMINE SPECIFIC TYPE OF WETLAND CROSSING.

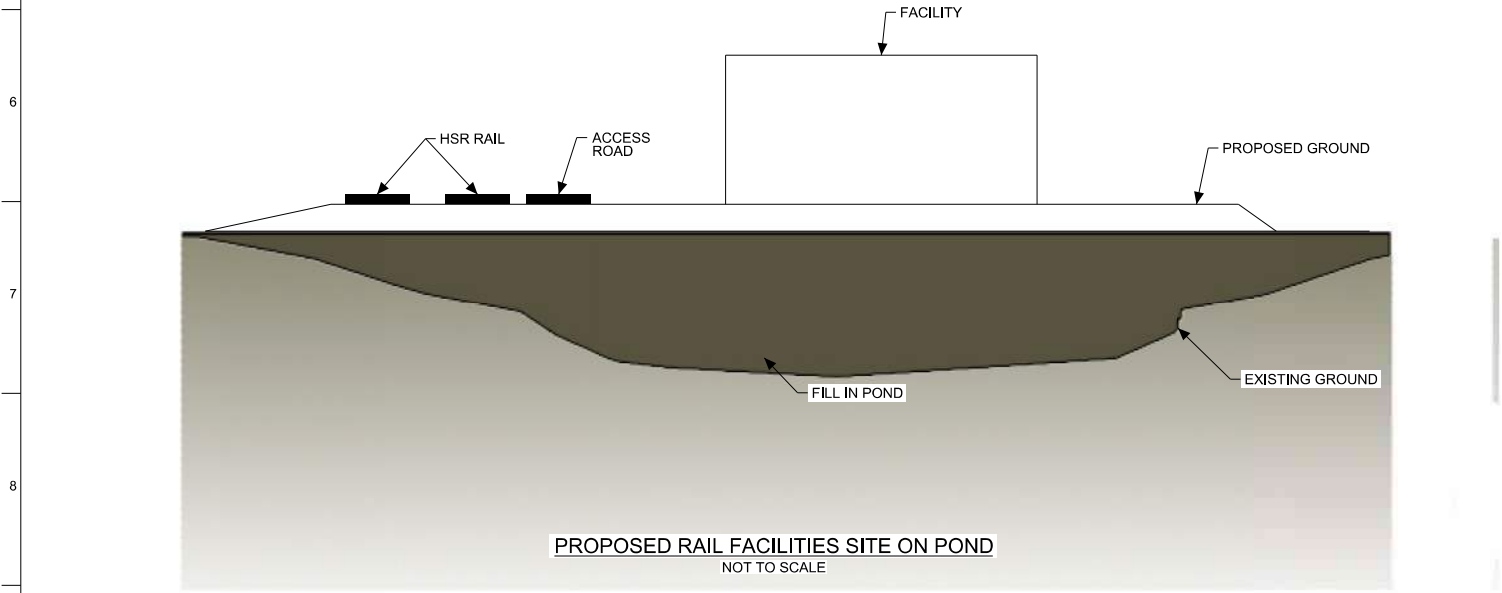
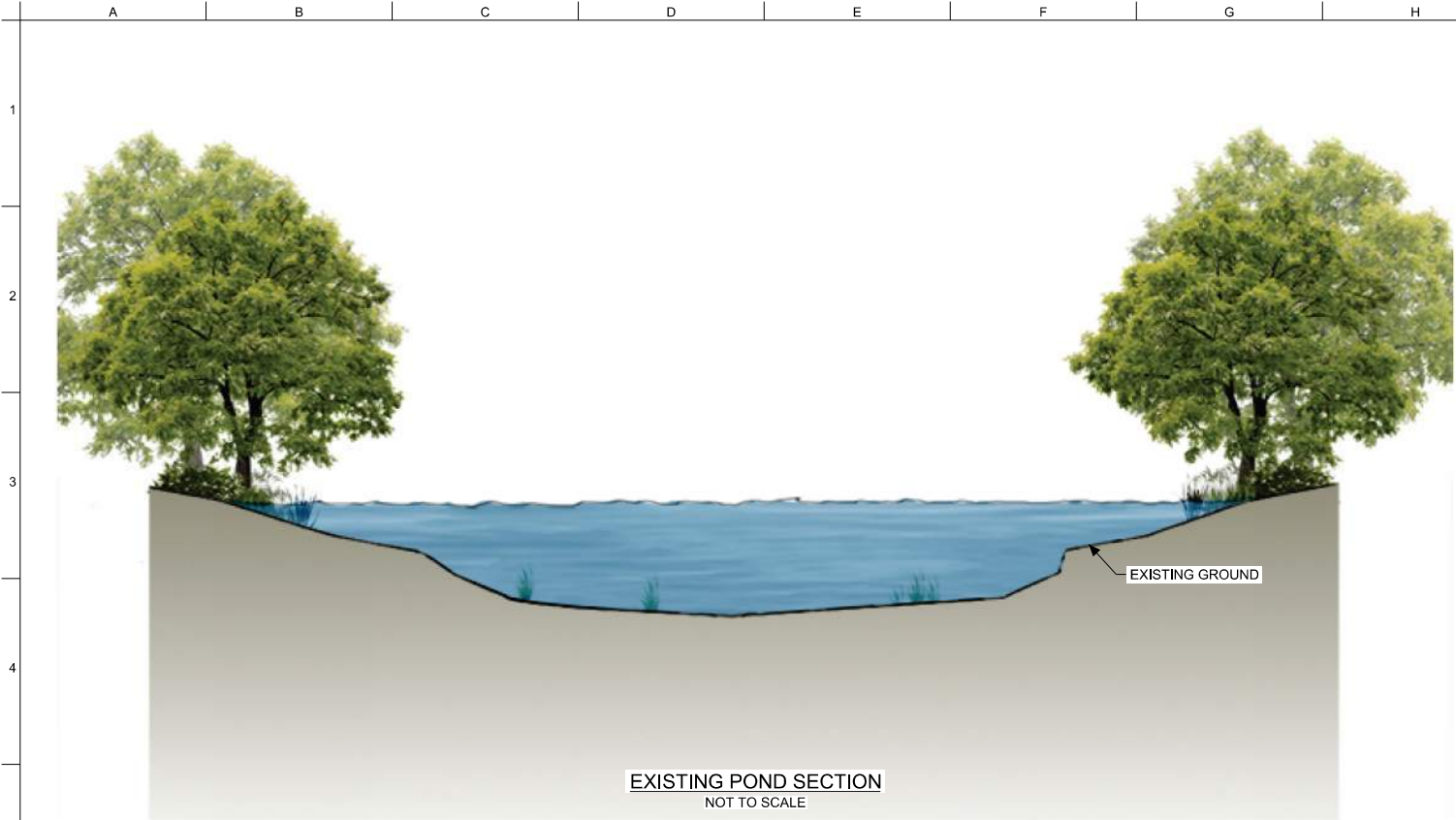
DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

DESIGNED BY
R. ZARATE
 DRAWN BY
E. FERGERSON
 CHECKED BY
R. ALDREDGE
 IN CHARGE
R. ZARATE
 DATE
SEP 2017



Drawing Title
**DETAIL 15
 FACILITIES SITE
 ON WETLAND**

Scale
 NOT TO SCALE
 Drawing Status
NOT FOR CONSTRUCTION
 Job No. **234180** | Drawing No. **FIGURE 31** | Rev. **03**



DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

NOTES:

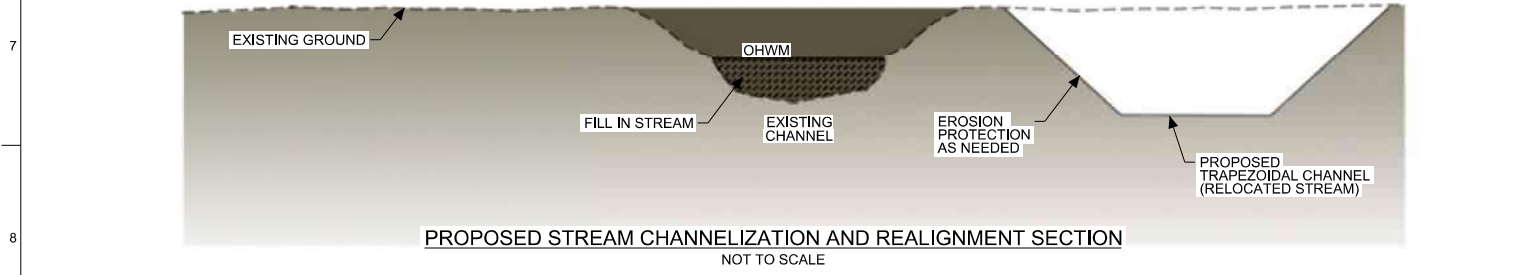
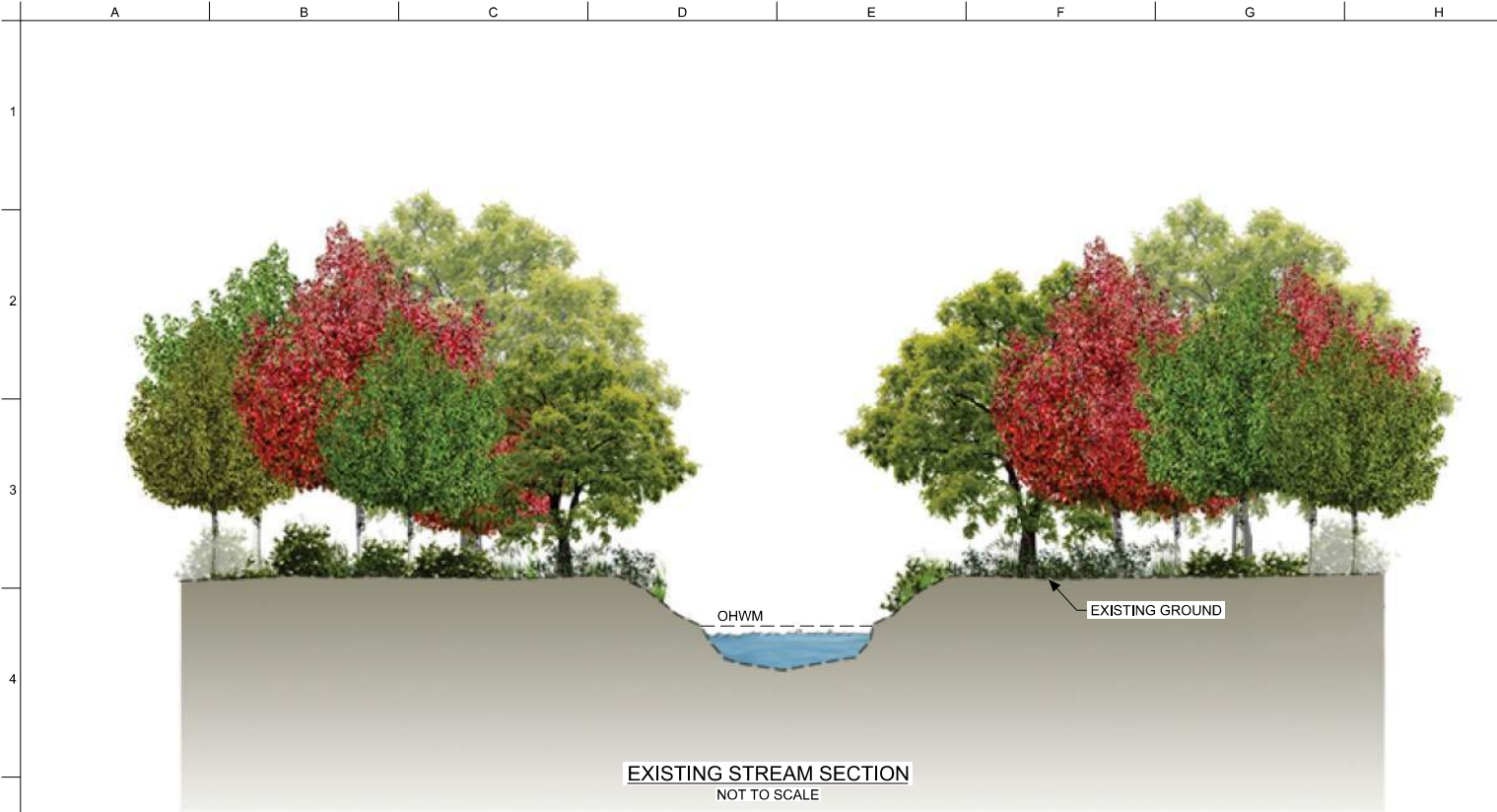
1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.

DESIGNED BY
R. ZARATE
 DRAWN BY
E. FERGERSON
 CHECKED BY
R. ALDREDGE
 IN CHARGE
R. ZARATE
 DATE
SEP 2017



Drawing Title
**DETAIL 16
 FACILITIES SITE
 ON POND**

Scale
NOT TO SCALE
 Drawing Status
NOT FOR CONSTRUCTION
 Job No: **234180** | Drawing No: **FIGURE 32** | Rev: **03**



DALLAS TO HOUSTON HIGH-SPEED RAIL
 APPLICANT: TCRR
 SWF-2011-00483

NOTES:
 1. DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.

DESIGNED BY
R. ZARATE
 DRAWN BY
E. FERGERSON
 CHECKED BY
R. ALDREDGE
 IN CHARGE
R. ZARATE
 DATE
SEP 2017



Drawing Title
**DETAIL 17
 STREAM CHANNELIZATION
 AND REALIGNMENT**

Scale
NOT TO SCALE
 Drawing Status
NOT FOR CONSTRUCTION
 Job No. **234180** | Drawing No. **FIGURE 33** | Rev. **03**