

Drawling Title

- 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: TCRR SWG-2014-00412

R. ZARATE E. FERGERSON R. ALDREDGE IN CHARGE R. ZARATE

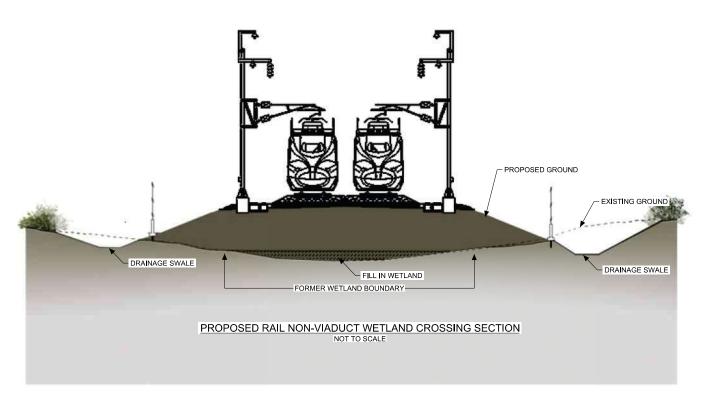




DETAIL 1 **RAIL NON-VIADUCT CULVERTED** STREAM CROSSING

NOT TO SCALE Drawing Status NOT FOR CONSTRUCTION Drawing No 234180 FIGURE 17 03 PLOT TIME: Sep. 29, 2衛IIMB\$:41:35 PM





Drawling Title

- 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 SWG-2014-00412 R. ZARATE

E. FERGERSON





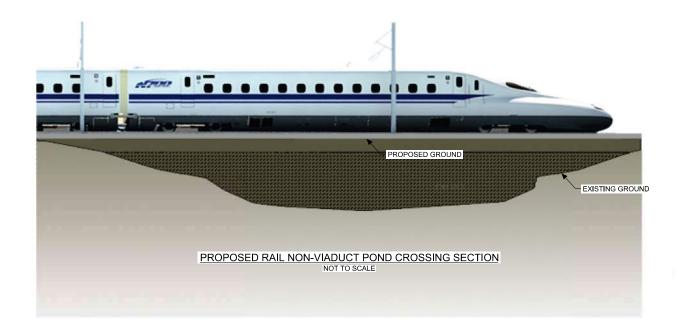
DETAIL 2 RAIL NON-VIADUCT WETLAND CROSSING

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

R. ALDREDGE

IN CHARGE R. ZARATE

SEP 2017



EXISTING POND SECTION

NOTES:

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

R. ZARATE E. FERGERSON R. ALDREDGE R. ZARATE





Drawling Title

DETAIL 3 RAIL NON-VIADUCT POND CROSSING

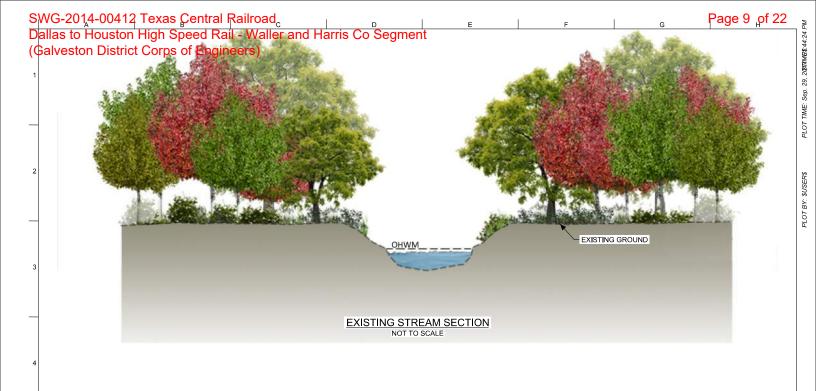
Scale					
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Drawing Status					
NOT FOR CONSTRUCTION					
Job No	Drawing No	Rev			

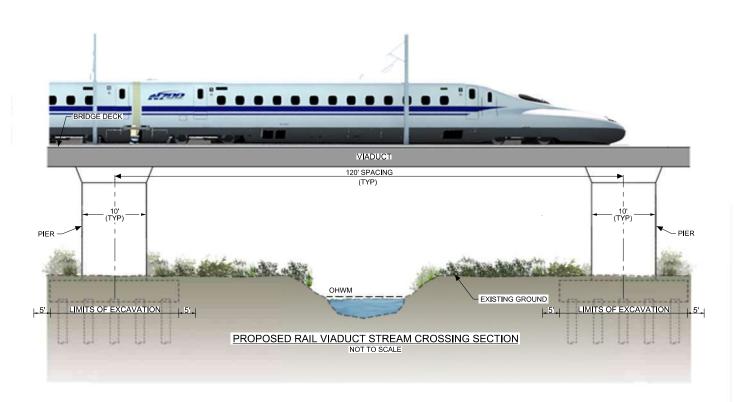
FIGURE 19

234180

03

PLOT TIME: Sep. 29, 2衛加州日本43:33 PM





Drawing Title

DETAILS ARE PROVIDED FOR VISUALIZATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
 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 SWG-2014-00412 R. ZARATE

E. FERGERSON

FREESE NICHOLS Dallas, Texas 75204 Fel (214) 217 2200 Fax (214) 217 2201 www.freese.com



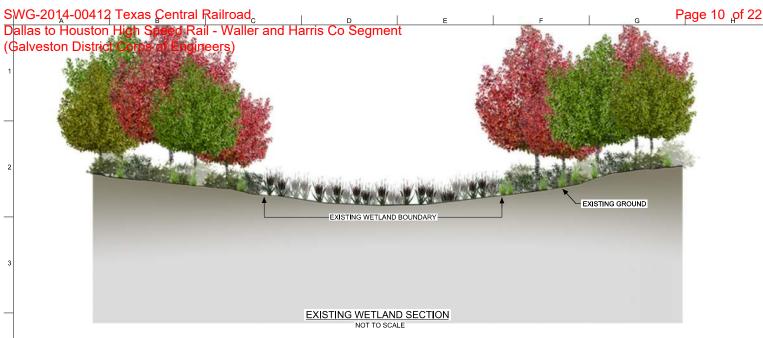
DETAIL 4 RAIL VIADUCT STREAM CROSSING

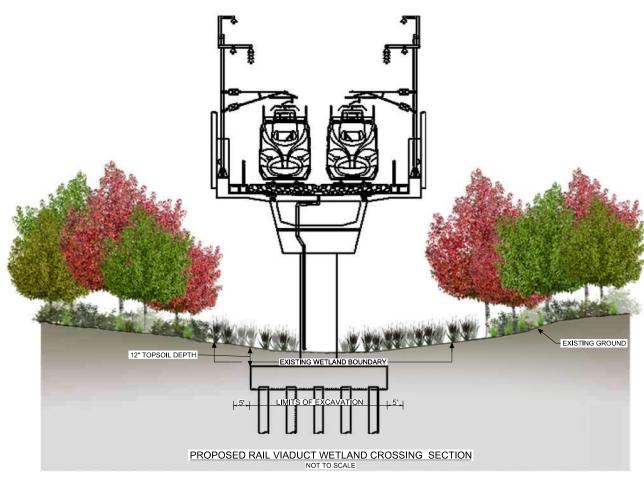
NOT TO SCALE Drawing Status NOT FOR CONSTRUCTION Drawing No 234180 FIGURE 20 03

R. ALDREDGE

IN CHARGE R. ZARATE

SEP 2017





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ONLY AND ARE NOT MEANT FOR CONSTRUCTION.
2.REFER TO PLAN VIEW TO DETERMINE SPECIFIC TYPE OF WETLAND CROSSING.
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THE AFFECTED AREAS RETURNED TO PRE-CONSTRUCTION
ELEVATIONS AS SOON AS PRACTICABLE AFTER CONSTRUCTION.

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

R. ZARATE E. FERGERSON R. ALDREDGE R ZARATE

ARUP

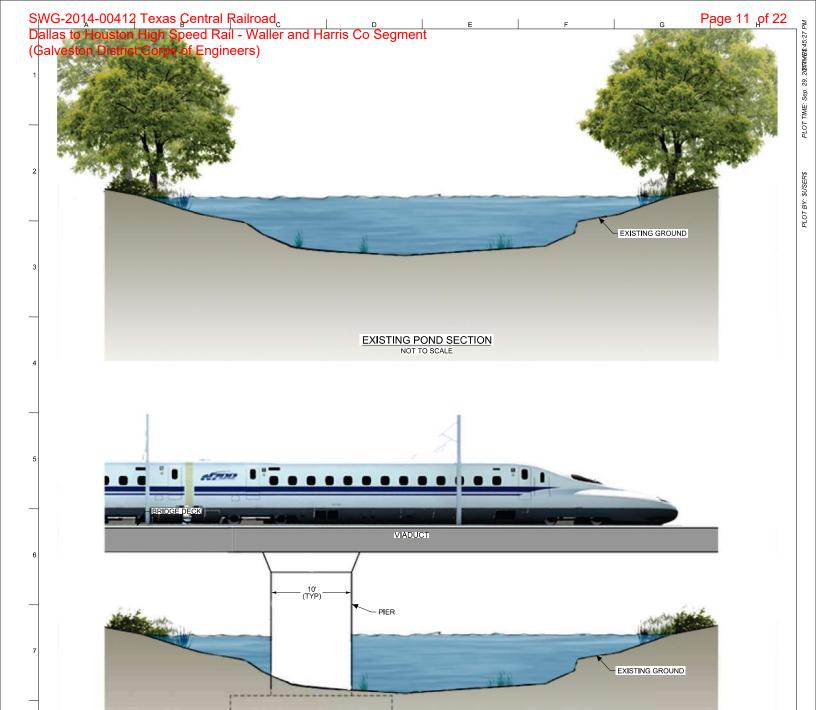
FREESE NICHOLS



DETAIL 5 RAIL VIADUCT WETLAND CROSSING

Drawling Title

NOT TO SCALE Drawing Status NOT FOR CONSTRUCTION Job No Drawing No 234180 FIGURE 21 03 PLOT TIME: Sep. 29, 203171ME45:45:02 PM



NOTES:

Drawing Title

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.

R. ZARATE E. FERGERSON R. ALDREDGE R. ZARATE

SEP 2017

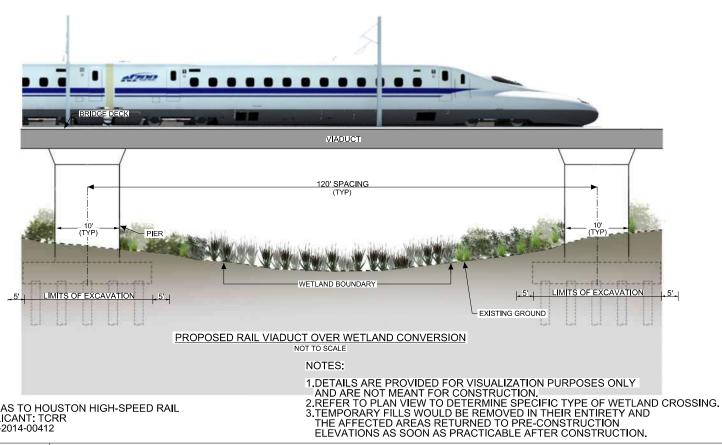


PROPOSED RAIL VIADUCT POND CROSSING SECTION NOT TO SCALE

> **DETAIL 6** RAIL VIADUCT POND CROSSING

NOT TO SCALE Drawing Status NOT FOR CONSTRUCTION Drawing No 234180 FIGURE 22 03 (\$alveston District Corps of Engineers)





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

R. ZARATE E. FERGERSON R. ALDREDGE R ZARATE

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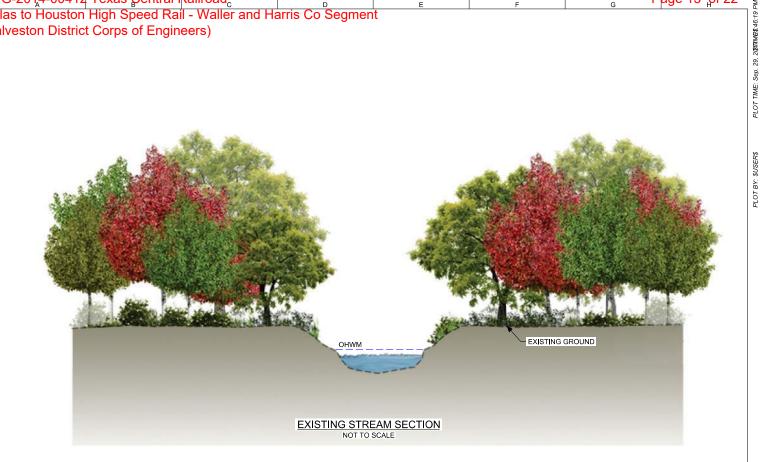


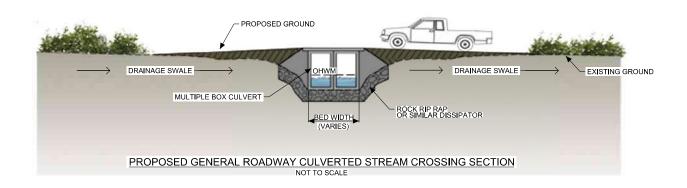


DETAIL 7 RAIL VIADUCT WETLAND CONVERSION

Drawing Title

NOT TO SCALE Drawing Status NOT FOR CONSTRUCTION Job No Drawing No 234180 FIGURE 23 03 PLOT TIME: Sep. 29, 200171MB15:45:48 PM





NOTES:

Drawling Title

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 2.ALL STREAMS WILL BE PROPERLY CULVERTED TO MAINTAIN DOWNSTREAM FLOWS.

R. ZARATE E. FERGERSON R. ALDREDGE IN CHARGE R. ZARATE





DETAIL 8 GENERAL ROADWAY CULVERTED STREAM CROSSING

NOT TO SCALE Drawing Status NOT FOR CONSTRUCTION Drawing No 234180 FIGURE 24 03 (¢alveston District Corps of Engineers)





NOTES:

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2.REFER TO PLAN VIEW TO DETERMINE SPECIFIC TYPE OF WETLAND CROSSING.

Drawling Title

DALLAS TO HOUSTON HIGH-SPEED RAIL APPLICANT: TCRR SWG-2014-00412 R. ZARATE

E. FERGERSON



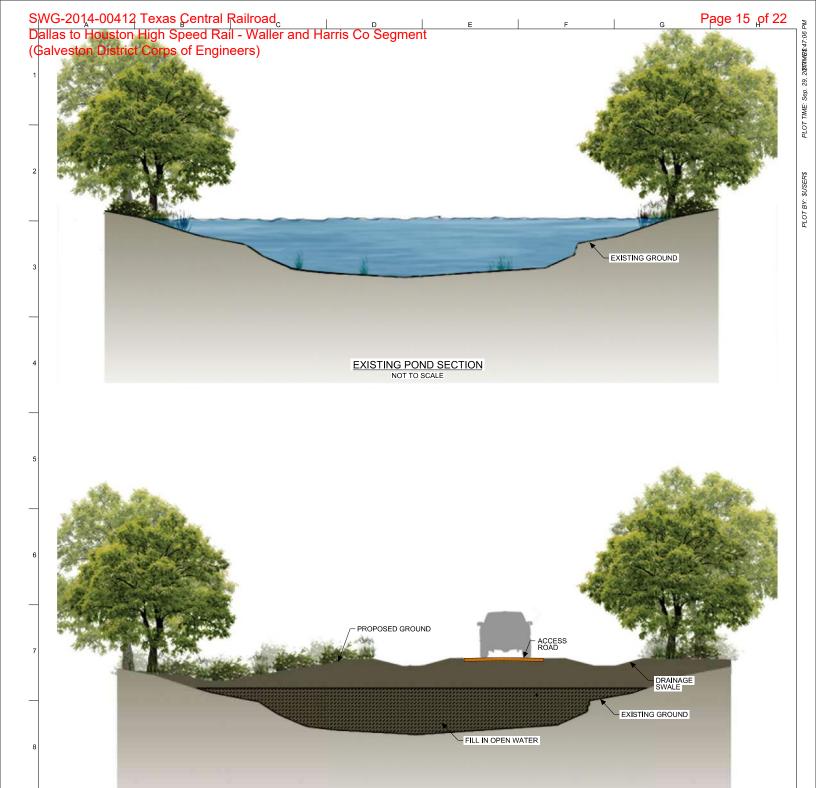
DETAIL 9 ACCESS ROAD WETLAND FILL

Scale NOT TO SCALE					
Drawing Status NOT FOR CONSTRUCTION					
Job No	lo Drawing No Rev				
234180	FIGURE 25	03			

R. ALDREDGE

IN CHARGE R. ZARATE

PLOT TIME: Sep. 29, 2衛加州B\$:46:41 PM



NOTES:

Drawing Title

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

SEP 2017

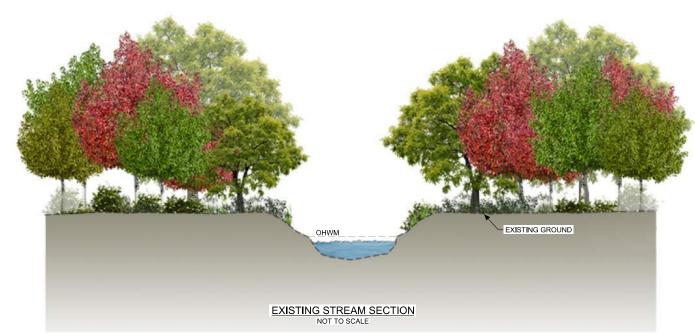
ARUP
Arup Texas, Inc.
10370 Richmond Ave., Sulte 475
Houston, Texas 77042 USA
Tel (173) 783 2787 Fax (713) 343 1467

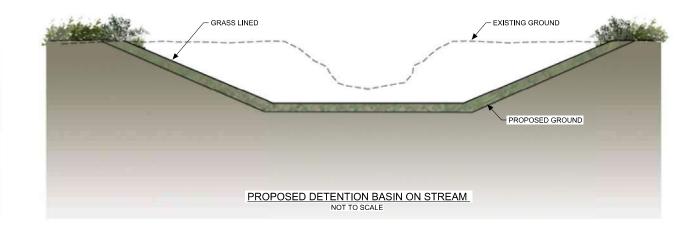
FREESE SUICHOLS
2711 North Haskell Ave, Suite 3300
Dallas, Texas 75204
Tel (214) 217 2200 Fax (214) 217 2201
www.froses.com
Texas Registered Engineering Firm: F-2144



PROPOSED ACCESS ROAD POND FILL SECTION

DETAIL 10 ACCESS ROAD POND FILL





NOTES:

Drawing Title

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

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SEP 2017



DETAIL 11 **DETENTION BASIN** ON STREAM

NOT TO SCALE Drawing Status NOT FOR CONSTRUCTION Drawing No 234180

FIGURE 27

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03

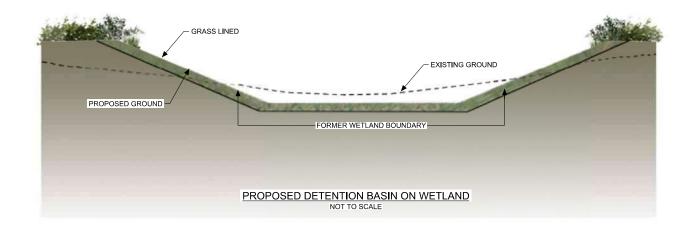
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PLOT TIME: Sep. 29, 2衛加州日本47:59 PM

PLOT BY: \$USER\$

(¢alveston District Corps of Engineers)





NOTES:

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

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R. ZARATE E. FERGERSON R. ALDREDGE R. ZARATE

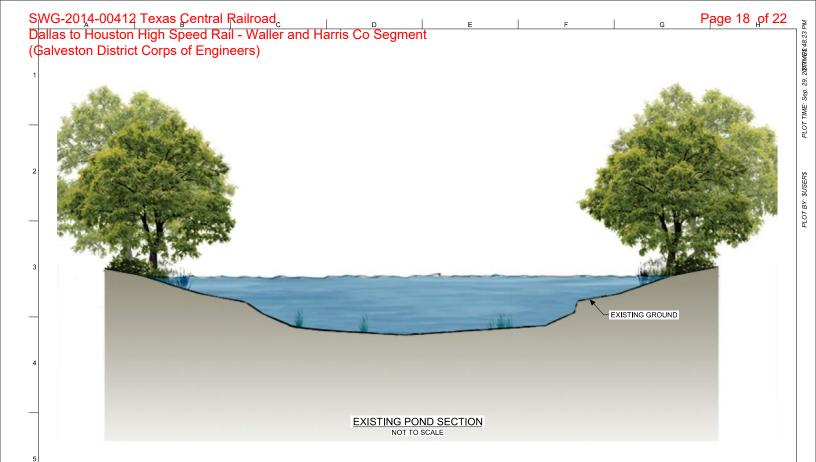




DETAIL 12 DETENTION BASIN ON WETLAND

Drawing Title

NOT TO SCALE Drawing Status NOT FOR CONSTRUCTION Drawing No 234180 FIGURE 28 03





NOTES:

Drawling Title

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

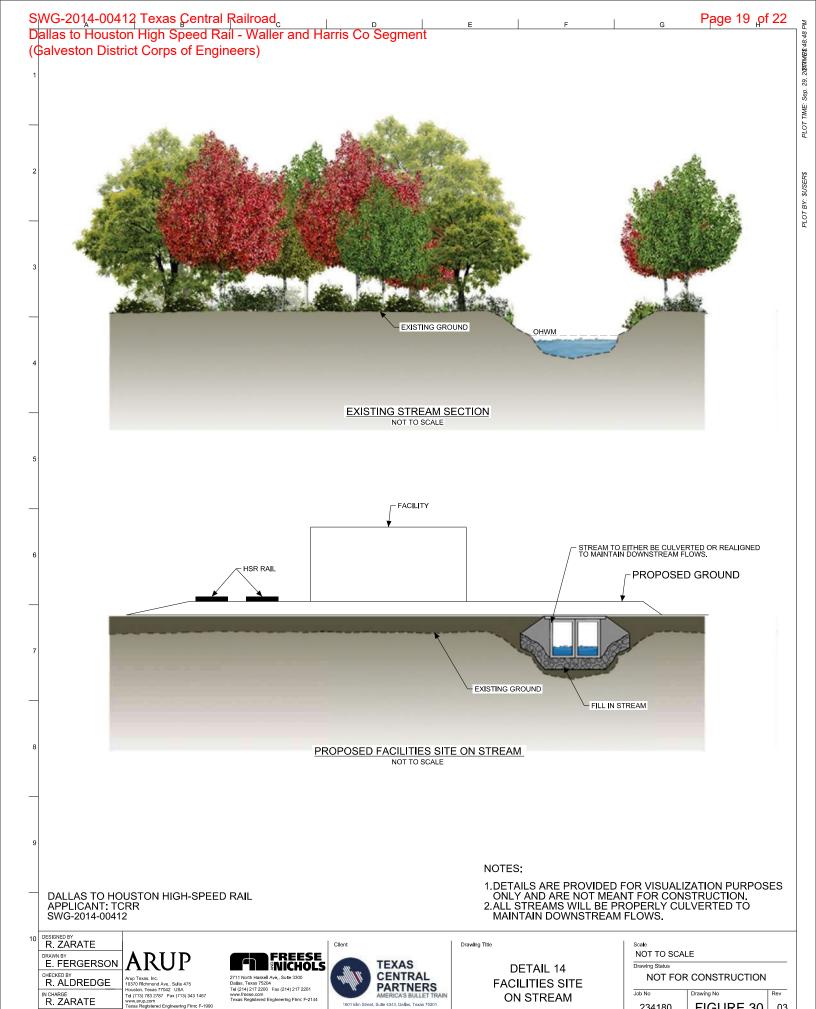
DESIGNED BY
R. ZARATE
DRAWN BY
E. FERGERSON
CHECKED BY
R. ALDREDGE
IN CHARGE
R. ZARATE

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Any Toxas, Inc.
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WAYNES BRIDSHEW Findeeding Firm F-136





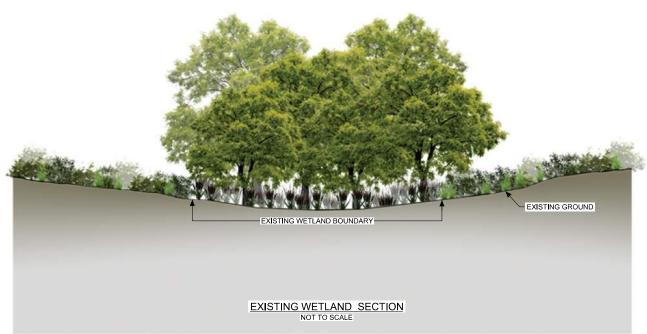
DETAIL 13 DETENTION BASIN ON POND

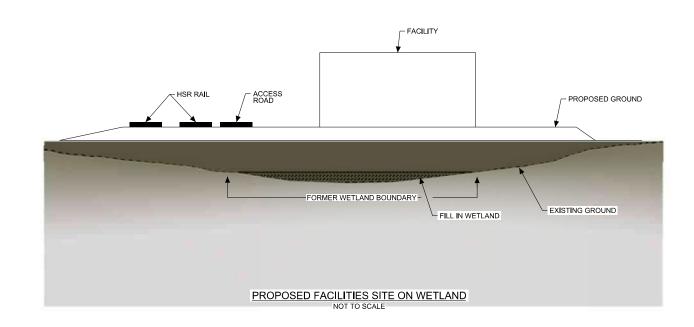


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FIGURE 30

234180





NOTES:

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2.REFER TO PLAN VIEW TO DETERMINE SPECIFIC TYPE OF WETLAND CROSSING.

R. ZARATE E. FERGERSON R. ALDREDGE R. ZARATE

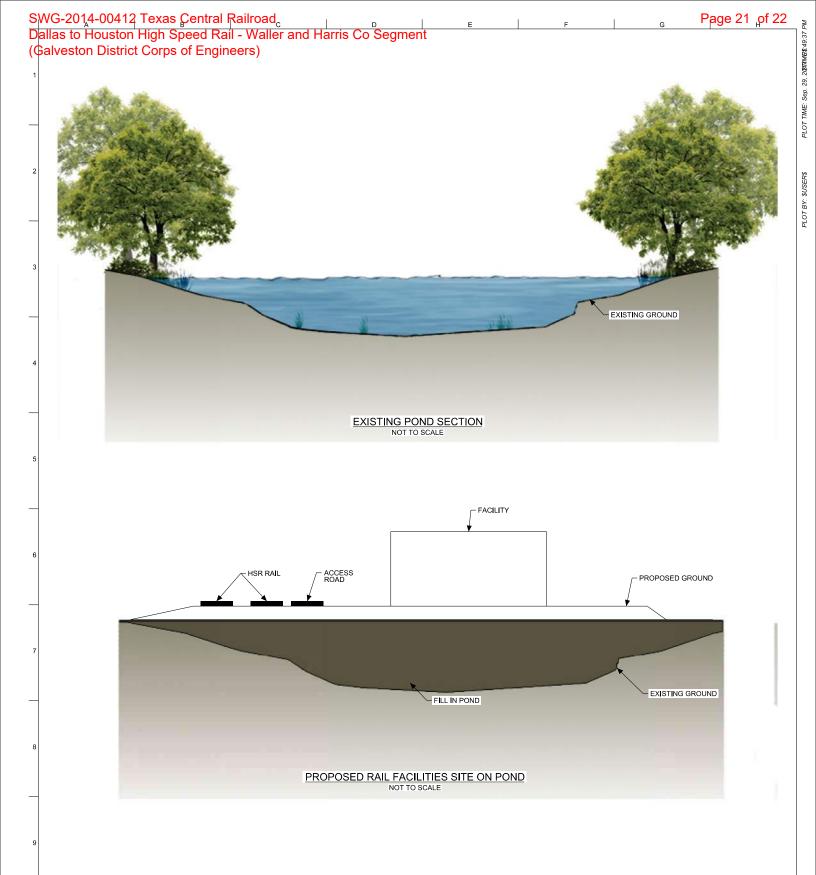




DETAIL 15 FACILITIES SITE ON WETLAND

Drawing Title

NOT TO SCALE Drawing Status NOT FOR CONSTRUCTION Drawing No 234180 FIGURE 31 03



NOTES:

Drawing Title

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

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R. ALDREDGE
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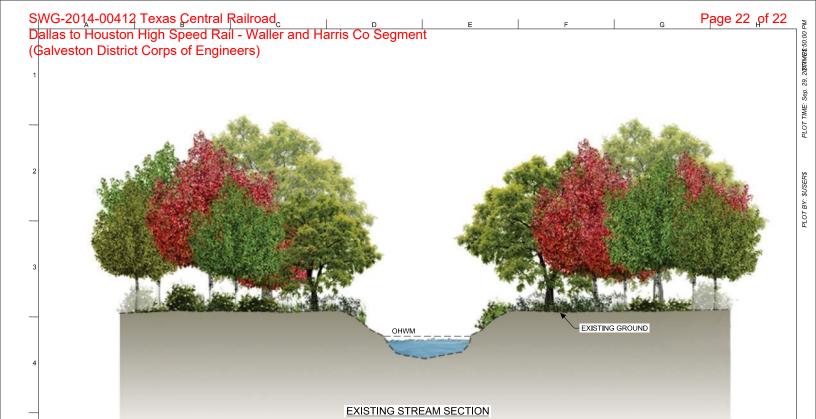
DETAIL 16 FACILITIES SITE ON POND NOT TO SCALE

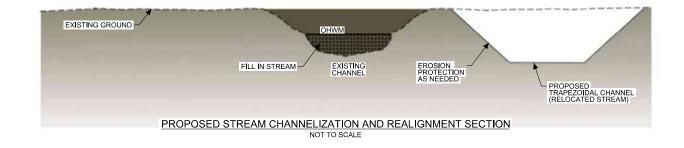
Drawing Status

NOT FOR CONSTRUCTION

Job No Drawing No Rev

234180 FIGURE 32 03





NOTES:

Drawling Title

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

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E. FERGERSON
CMECKED BY
R. ALDREDGE
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Houston, Toxas 77042 USA

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welve anapus Equineering Firm F-1990





DETAIL 17 STREAM CHANNELIZATION AND REALIGNMENT

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