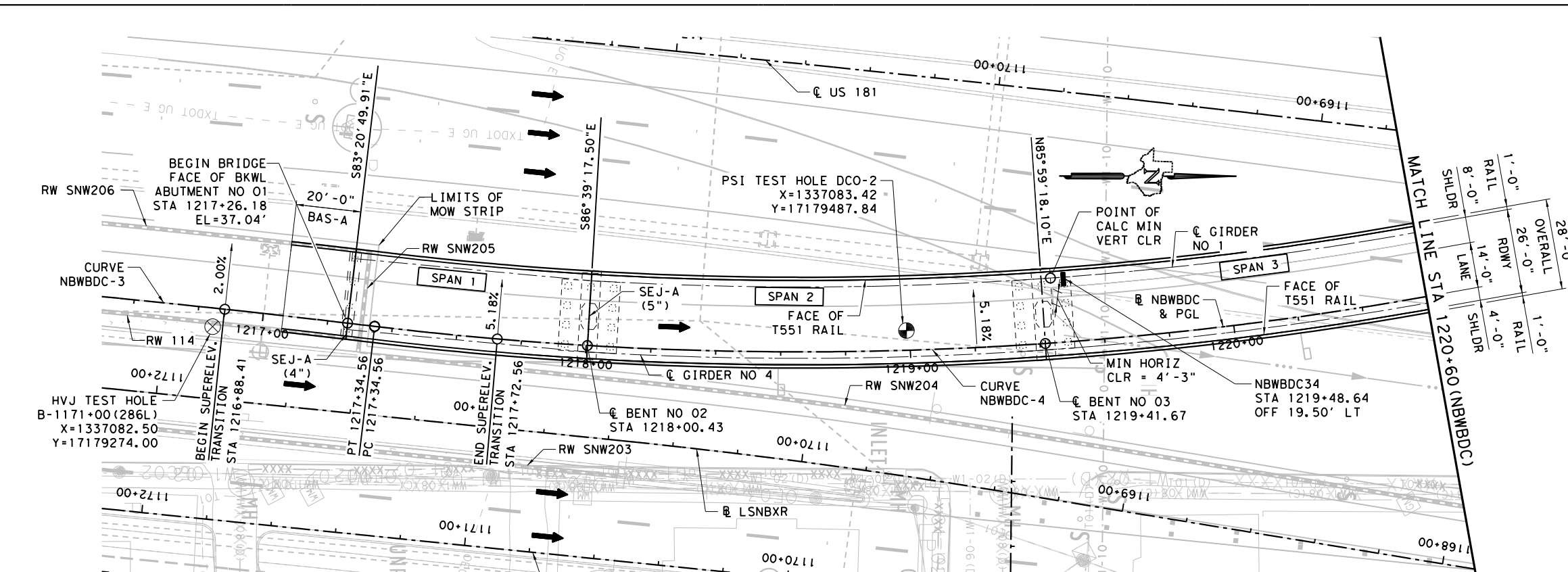


- NOTES:
1. SEE "GENERAL NOTES" SHEETS FOR GENERAL NOTES.
  2. ROADWAY HORIZONTAL AND VERTICAL GEOMETRY, WIDTH, SUPERELEVATION, TRAFFIC DIRECTION, EXISTING GROUND LINE, PROPOSED GROUND LINE, RIGHT OF WAY AND DRAINAGE DATA PROVIDED BY STANTEC. TOPO DATA PROVIDED BY CIVIL CORP. UTILITY DATA PROVIDED BY KCI.
  3. ALL DIMENSIONS ARE EITHER HORIZONTAL OR VERTICAL AND MUST BE CORRECTED FOR GRADE, CROWN AND/OR SUPERELEVATION.
  4. ALL SUPERELEVATION TRANSITIONS ARE LINEAR.
  5. FOR CONCRETE GIRDER SPANS, "D" DENOTES BENTS WITH DOWEL BARS AND SLOTTED HOLES AT ENDS OF EXTERIOR GIRDER ONLY.
  6. PILE TIP ELEVATIONS SHALL BE VERIFIED IN THE FIELD BY THE GEOTECHNICAL ENGINEER OF RECORD OR AN AUTHORIZED REPRESENTATIVE BASED UPON ACTUAL SOIL CONDITIONS ENCOUNTERED AT EACH PILE LOCATION.
  7. CONTRACTOR TO FIELD VERIFY LOCATIONS OF EXISTING STRUCTURES AND UTILITIES PRIOR TO CONSTRUCTION.
  8. SEE "TYPICAL SECTION" SHEET FOR TYPICAL SECTIONS.
  9. SEE "BORING LOG DATA" SHEETS FOR BORING LOG INFORMATION.
  10. SEE "FOUNDATION LAYOUT" SHEETS FOR DRAINAGE AND UTILITY INFORMATION.
  11. SEE SIGNAGE SHEETS FOR SIGN LOCATIONS AND BRIDGE MOUNT DETAILS.
  12. SOIL EXPLORATION DATA PROVIDED BY PSI.
  13. SEE HVJ GEOTECHNICAL DATA REPORT DATED 9/29/2014 FOR HVJ BORING DATA.
  14. BRIDGE NOT DESIGNED FOR OVERLAY LOAD.
- ① INCLUDES ADDITIONAL RAIL LENGTH AT GORE AREA.



CURVE NBWBDC-3		CURVE NBWBDC-4	
P.I. STATION	1215+07.47	P.I. STATION	1229+62.75
DELTA	6°42'23.14" (RT)	DELTA	96°18'10.07" (LT)
DEGREE	1°28'29.65"	DEGREE	5°12'31.35"
TANGENT	227.61'	TANGENT	1,228.18'
LENGTH	454.70'	LENGTH	1,848.88'
RADIUS	3,884.72'	RADIUS	1,100.00'
P.C. STATION	1212+79.86	P.C. STATION	1217+34.56
P.T. STATION	1217+34.56	P.T. STATION	1235+83.44

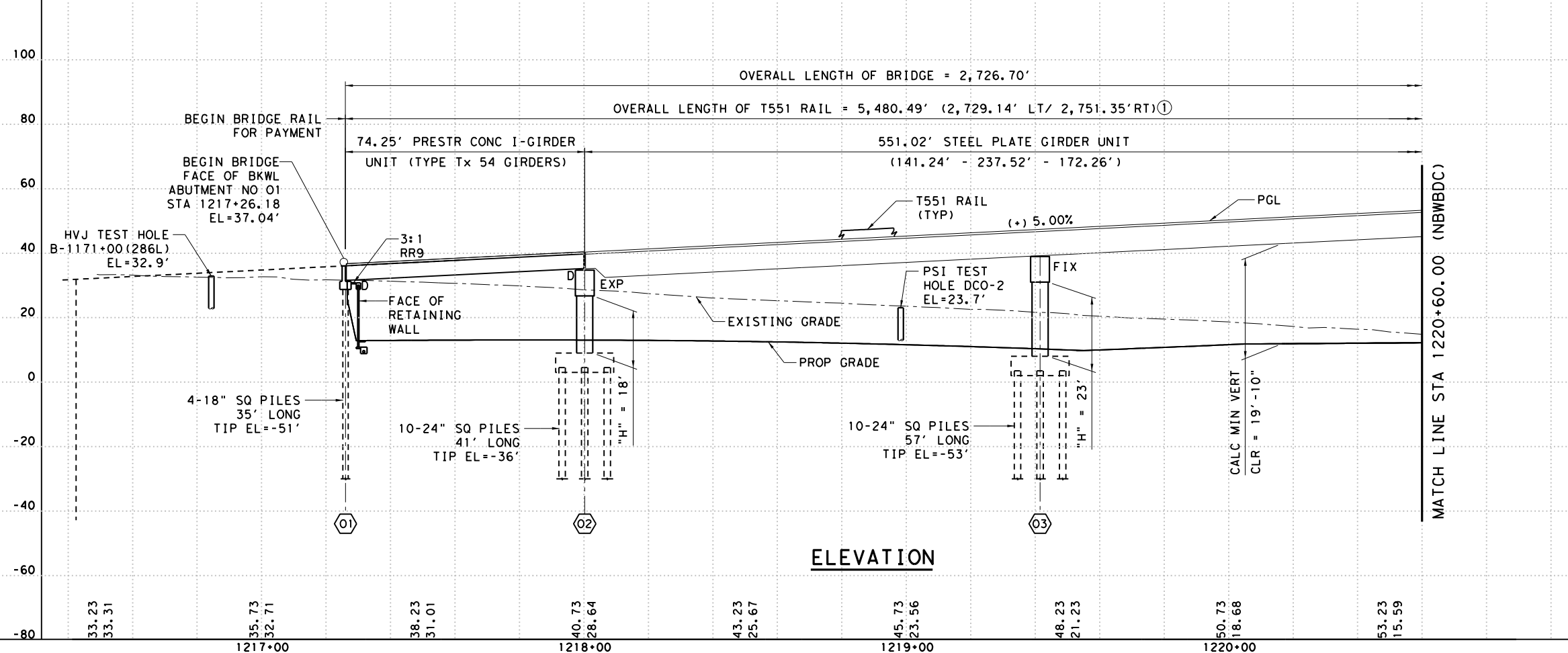
PLAN

ALL BENTS AND ABUTMENT RADIAL TO ALIGNMENT

DESIGN DATA  
NBI NO xx-xxx-xxxx-xxx-xx  
FUNC CLASS: DIRECT CONNECTOR  
DESIGN SPEED: 45 MPH  
ADT: BRIDGE DC-0  
(2023) = 6,890  
(2035) = 7,510

LEGEND

- ➡ PROPOSED TRAFFIC FLOW  
➡ EXISTING TRAFFIC FLOW  
● PSI BORE HOLE  
⊗ HVJ BORE HOLE  
HL-93 LOADING



ELEVATION

FIGG BRIDGE ENGINEERS, INC.  
PRELIMINARY - FOR INTERIM REVIEW ONLY

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CESAR FERNANDES 98112 07/31/2017  
TBPE FIRM #F-4883 P.E. NO. DATE

NO.	DATE	REVISION	APPROVED

FLATIRON/DAGADOS LLC

FIGG  
TBPE, FIRM # F-4883

Texas Department of Transportation  
US 181 HARBOR BRIDGE  
BRIDGE LAYOUT

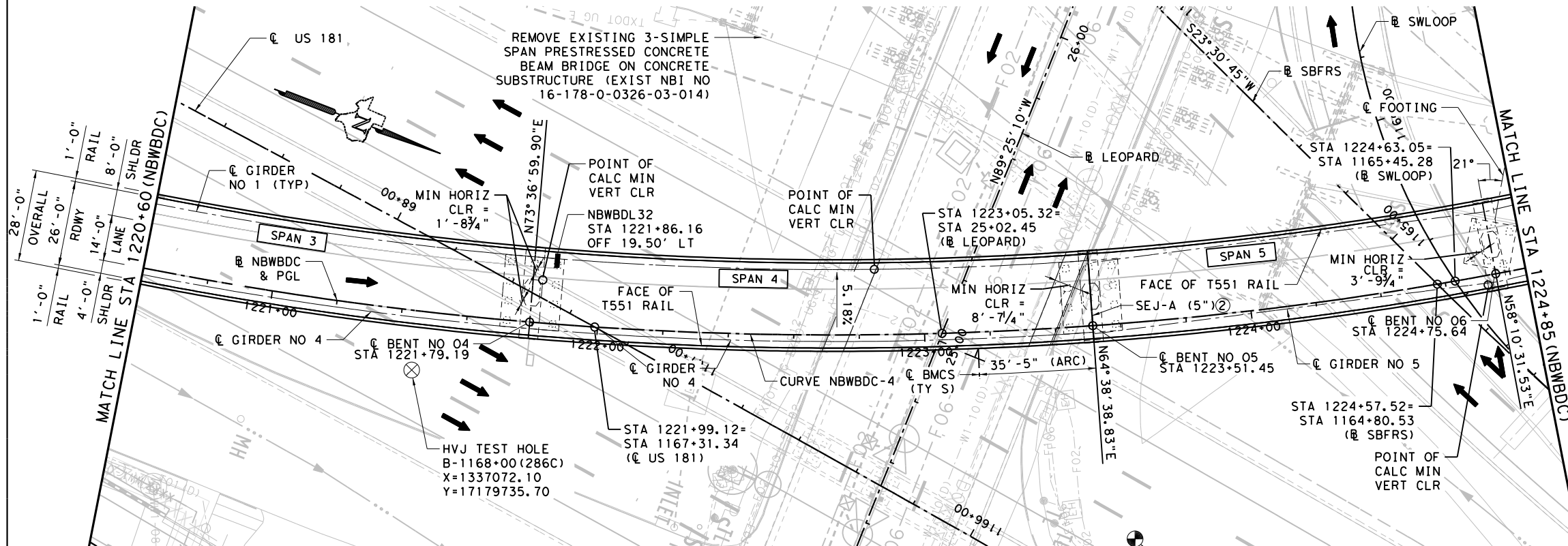
DIRECT CONNECTOR  
SH 286 NB TO IH 37 NB  
BRIDGE 15, CONN "O"

SCALE: 1"=40'-0" SHEET 1 OF 7

DESIGN SNO	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	X	(See Title Sheet)	US 181
MJR	STATE	DISTRICT	COUNTY
CHECK RLS	TEXAS	CRP	NUECES
CHECK	CONTROL	SECTION	JOB
CF	0101	06	095

RB15  
001

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DATE: 7/31/2017  
TIME: 11:20:20 PM  
USER: rshinn



CURVE NBWBDC-4  
P.I. STATION = 1229+62.75  
DELTA = 96°18'10.07" (LT)  
DEGREE = 5°12'31.35"  
TANGENT = 1,228.18'  
LENGTH = 1,848.88'  
RADIUS = 1,100.00'  
P.C. STATION = 1217+34.56  
P.T. STATION = 1235+83.44

DESIGN DATA  
NBI NO xx-xxx-xxxx-xxx-xx  
FUNC CLASS: DIRECT CONNECTOR  
DESIGN SPEED: 45 MPH  
ADT: BRIDGE DC-0  
(2023) = 6,890  
(2035) = 7,510

PLAN

ALL BENTS RADIAL TO ALIGNMENT

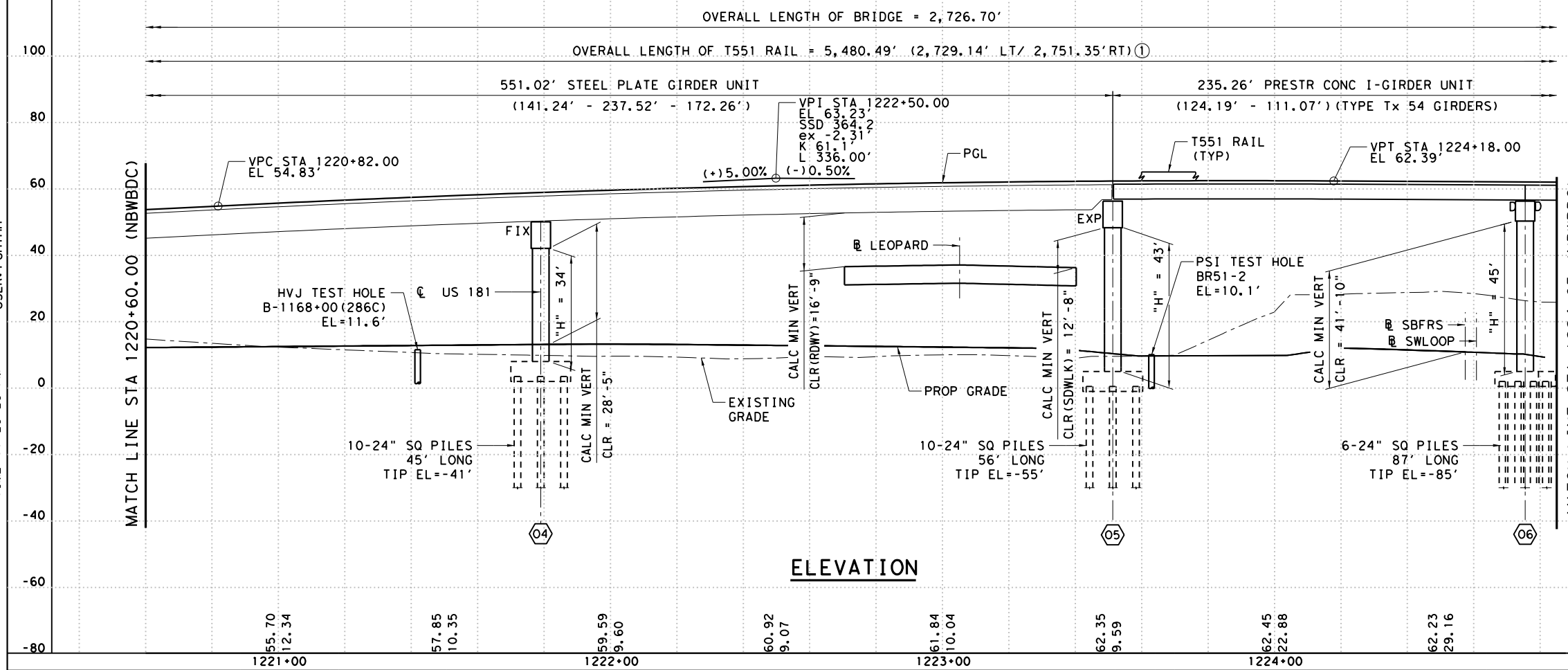
PROPOSED TRAFFIC FLOW  
EXISTING TRAFFIC FLOW

PSI BORE HOLE  
HVJ BORE HOLE

HL-93 LOADING

LEGEND

- NOTES:
- SEE "GENERAL NOTES" SHEETS FOR GENERAL NOTES.
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  - SOIL EXPLORATION DATA PROVIDED BY PSI.
  - SEE HVJ GEOTECHNICAL DATA REPORT DATED 9/29/2014 FOR HVJ BORING DATA.
  - BRIDGE NOT DESIGNED FOR OVERLAY LOAD.
- ① INCLUDES ADDITIONAL RAIL LENGTH AT GORE AREA.  
② D.S. BROWN SEAL TYPE A2R-XTRA, SHOWN ON SEJ-A STANDARD SHEET, MUST BE USED AT THIS LOCATION. INSTALLATION OPENING MUST BE BETWEEN 2 3/4" AND 3 3/4".



ELEVATION

FIGG BRIDGE ENGINEERS, INC.  
PRELIMINARY - FOR INTERIM REVIEW ONLY

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CESAR FERNANDES 98112 07/31/2017  
TBPE FIRM #F-4883 P.E. NO. DATE

NO.	DATE	REVISION	APPROVED



US 181 HARBOR BRIDGE  
BRIDGE LAYOUT

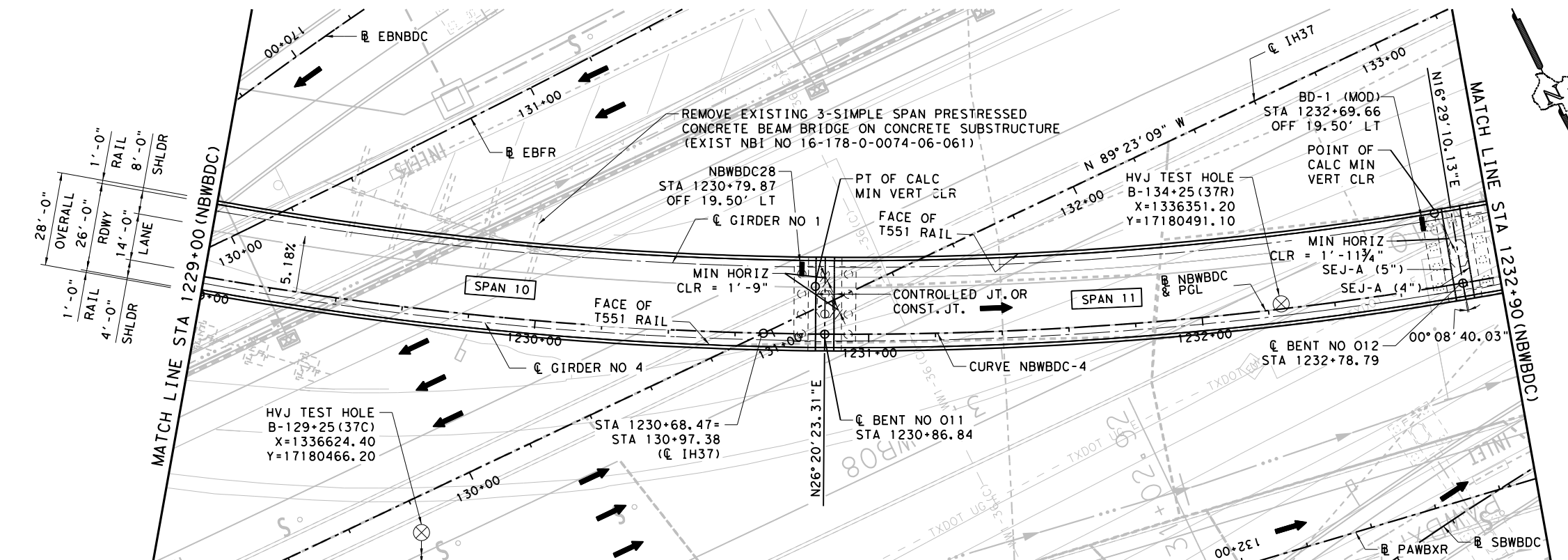
DIRECT CONNECTOR  
SH 286 NB TO IH 37 NB  
BRIDGE 15, CONN "O"

SCALE: 1" =40'-0"			SHEET 2 OF 7	
DESIGN SNO	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
GRAPHICS MJR	X	(See Title Sheet)		US 181
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK RLS	TEXAS	CRP	NUECES	RB15 002
CHECK	CONTROL	SECTION	JOB	
CF	0101	06	095	

PRELIMINARY NOT FOR CONSTRUCTION, JULY 2017



- NOTES:
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  10. SEE "FOUNDATION LAYOUT" SHEETS FOR DRAINAGE AND UTILITY INFORMATION.
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  12. SOIL EXPLORATION DATA PROVIDED BY PSI.
  13. SEE HVJ GEOTECHNICAL DATA REPORT DATED 9/29/2014 FOR HVJ BORING DATA.
  14. BRIDGE NOT DESIGNED FOR OVERLAY LOAD.
- ① INCLUDES ADDITIONAL RAIL LENGTH AT GORE AREA.



CURVE NBWBDC-4  
P.I. STATION 1229+62.75  
DELTA 96°18'10.07" (LT)  
DEGREE 5°12'31.35"  
TANGENT 1,228.18'  
LENGTH 1,848.88'  
RADIUS 1,100.00'  
P.C. STATION 1217+34.56  
P.T. STATION 1235+83.44

DESIGN DATA  
NBI NO xx-xxx-xxxx-xxx-xx  
FUNC CLASS: DIRECT CONNECTOR  
DESIGN SPEED: 45 MPH  
ADT: BRIDGE DC-0  
(2023) = 6,890  
(2035) = 7,510

PLAN

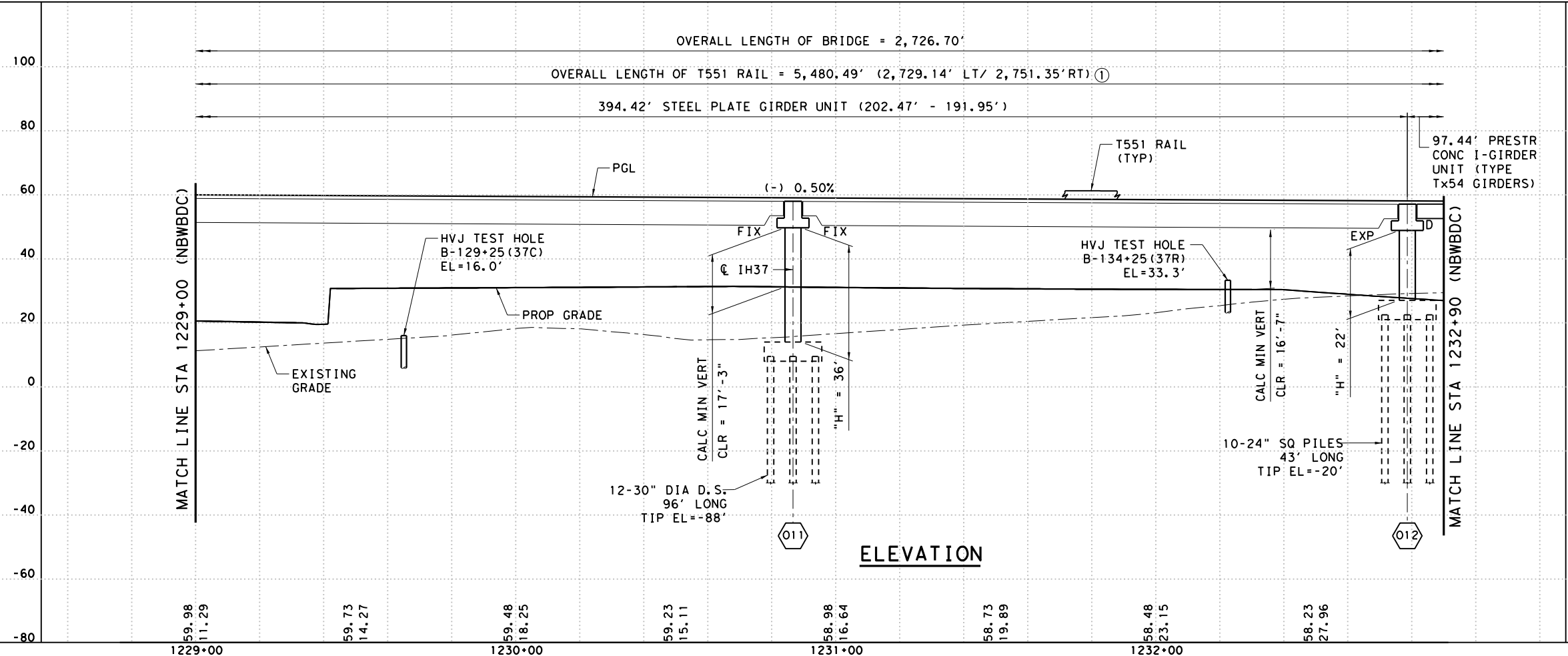
ALL BENTS RADIAL TO ALIGNMENT  
UNLESS NOTED OTHERWISE

LEGEND

→ PROPOSED TRAFFIC FLOW  
← EXISTING TRAFFIC FLOW

PSI BORE HOLE  
HVJ BORE HOLE

HL-93 LOADING



ELEVATION

FIGG BRIDGE ENGINEERS, INC.  
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CESAR FERNANDES 98112 07/31/2017  
TBPE FIRM #F-4883 P.E. NO. DATE

NO.	DATE	REVISION	APPROVED

FLATIRON/DAGADOS LLC

Texas Department of Transportation

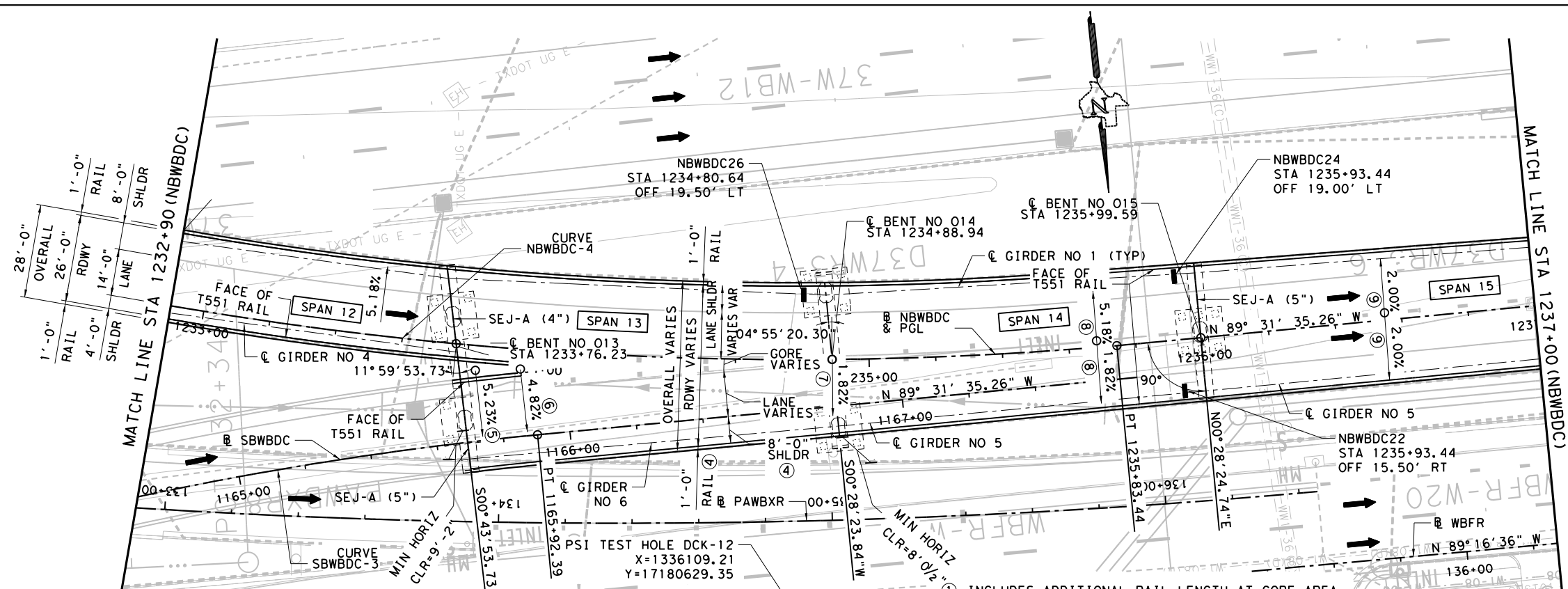
US 181 HARBOR BRIDGE  
BRIDGE LAYOUT

DIRECT CONNECTOR  
SH 286 NB TO IH 37 NB  
BRIDGE 15, CONN "O"

SCALE: 1"=40'-0" SHEET 4 OF 7

DESIGN SNO	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	X	(See Title Sheet)	US 181
CHECK RLS	STATE	DISTRICT	COUNTY
CHECK	TEXAS	CRP	NUECES
CF	CONTROL	SECTION	JOB

RB15  
004



CURVE NBWBDC-4	
P.I. STATION	1229+62.75
DELTA	96° 18' 10.07" (LT)
DEGREE	5° 12' 31.35"
TANGENT	1,228.18'
LENGTH	1,848.88'
RADIUS	1,100.00'
P.C. STATION	1217+34.56
P.T. STATION	1235+83.44

CURVE SBWBDC-3	
P.I. STATION	1160+31.57
DELTA	70° 02' 16.58" (RT)
DEGREE	5° 19' 47.42"
TANGENT	753.25'
LENGTH	1,314.07'
RADIUS	1,075.00'
P.C. STATION	1152+78.32
P.T. STATION	1165+92.39

**DESIGN DATA**  
NBI NO XX-XXX-XXXX-XX-XXX  
FUNC CLASS: DIRECT CONNECTOR  
DESIGN SPEED: 45 MPH  
ADT: BRIDGE DC-0  
(2023) = 6,890  
(2035) = 7,510

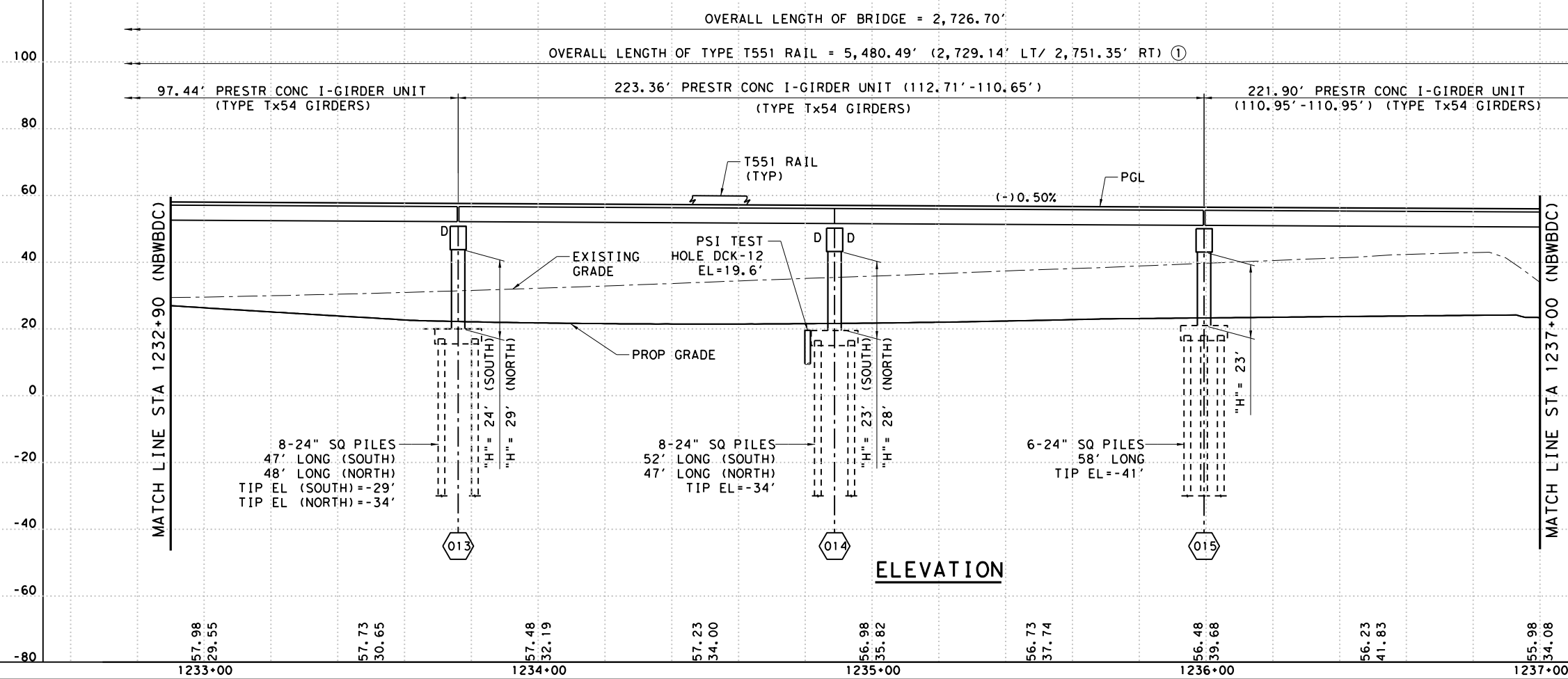
**PLAN**

- ① INCLUDES ADDITIONAL RAIL LENGTH AT GORE AREA.
- ④ MEASURED PERPENDICULAR TO SBWBDC.
- ⑤ BEGIN SUPERELEVATION TRANSITION STA 1165+74.39 (SBWBDC).
- ⑥ BEGIN / END SUPERELEVATION TRANSITION STA 1165+87.12 (SBWBDC).
- ⑦ END SUPERELEVATION TRANSITION STA 1234+89.60.
- ⑧ BEGIN SUPERELEVATION TRANSITION STA 1235+65.44.
- ⑨ END SUPERELEVATION TRANSITION STA 1236+55.34.

- NOTES:**
- SEE "GENERAL NOTES" SHEETS FOR GENERAL NOTES.
  - ROADWAY HORIZONTAL AND VERTICAL GEOMETRY, WIDTH, SUPERELEVATION, TRAFFIC DIRECTION, EXISTING GROUND LINE, PROPOSED GROUND LINE, RIGHT OF WAY AND DRAINAGE DATA PROVIDED BY STANTEC. TOPO DATA PROVIDED BY CIVIL CORP. UTILITY DATA PROVIDED BY KCI.
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  - ALL SUPERELEVATION TRANSITIONS ARE LINEAR.
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  - SEE "FOUNDATION LAYOUT" SHEETS FOR DRAINAGE AND UTILITY INFORMATION.
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  - SOIL EXPLORATION DATA PROVIDED BY PSI.
  - SEE HVJ GEOTECHNICAL DATA REPORT DATED 9/29/2014 FOR HVJ BORING DATA.
  - BRIDGE NOT DESIGNED FOR OVERLAY LOAD.

**LEGEND**

- ← PROPOSED TRAFFIC FLOW
- ⇌ EXISTING TRAFFIC FLOW
- ⊙ PSI BORE HOLE
- ⊗ HVJ BORE HOLE
- HL-93 LOADING



**ELEVATION**

FIGG BRIDGE ENGINEERS, INC.  
PRELIMINARY - FOR INTERIM REVIEW ONLY

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CESAR FERNANDES 98112 07/31/2017  
TBPE FIRM #F-4883 P.E. NO. DATE

NO.	DATE	REVISION	APPROVED

**FLATIRON/DAGADOS LLC**

**FIGG**  
TBPE, FIRM # F-4883

**Texas Department of Transportation**

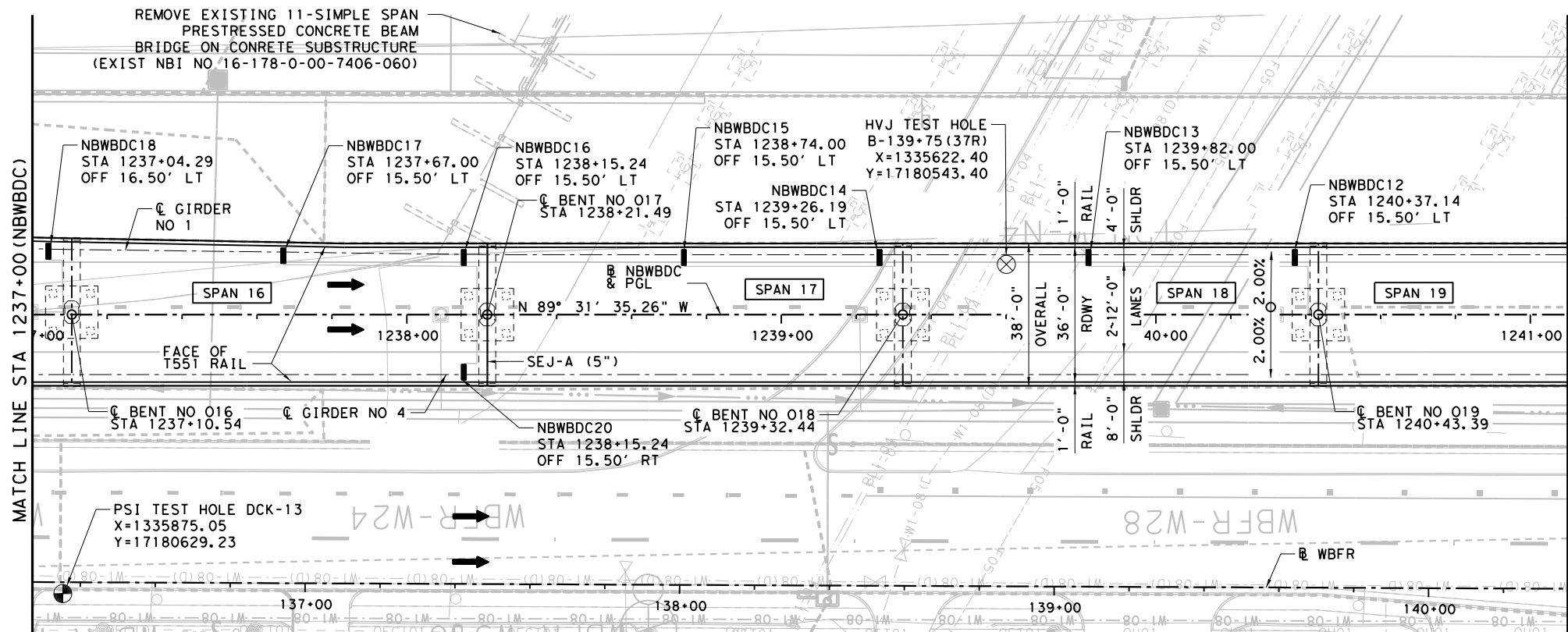
US 181 HARBOR BRIDGE  
**BRIDGE LAYOUT**

DIRECT CONNECTOR  
SH 286 NB TO IH 37 NB  
BRIDGE 15, CONN "O"

SCALE: 1"=40'-0" SHEET 5 OF 7

DESIGN SNO	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
GRAPHICS MJR	X	(See Title Sheet)	US 181
CHECK RLS	STATE	DISTRICT	COUNTY
CHECK CF	TEXAS	CRP	NUECES
	CONTROL	SECTION	JOB
	0101	06	095

RB15  
**005**



- NOTES:
1. SEE "GENERAL NOTES" SHEETS FOR GENERAL NOTES.
  2. ROADWAY HORIZONTAL AND VERTICAL GEOMETRY, WIDTH, SUPERELEVATION, TRAFFIC DIRECTION, EXISTING GROUND LINE, PROPOSED GROUND LINE, RIGHT OF WAY AND DRAINAGE DATA PROVIDED BY STANTEC. TOPO DATA PROVIDED BY CIVIL CORP. UTILITY DATA PROVIDED BY KCI.
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  12. SOIL EXPLORATION DATA PROVIDED BY PSI.
  13. SEE HVJ GEOTECHNICAL DATA REPORT DATED 9/29/2014 FOR HVJ BORING DATA.
  14. BRIDGE NOT DESIGNED FOR OVERLAY LOAD.
- ① INCLUDES ADDITIONAL RAIL LENGTH AT GORE AREA.

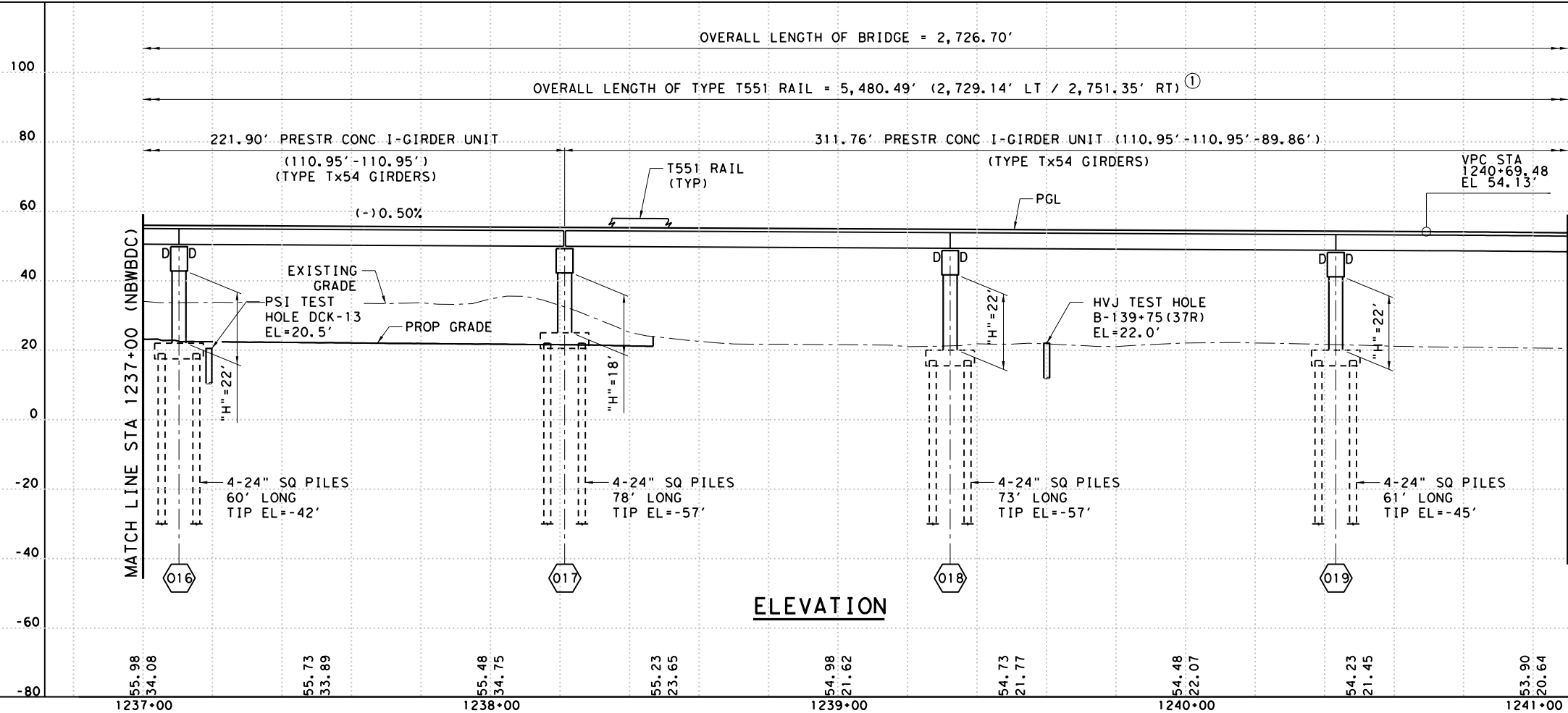
DESIGN DATA  
NBI NO xx-xxx-xxxx-xxx-xx  
FUNC CLASS: DIRECT CONNECTOR  
DESIGN SPEED: 45 MPH  
ADT: BRIDGE DC-0  
(2023) = 6,890  
(2035) = 7,510

PLAN

ALL BENTS PERPENDICULAR TO ALIGNMENT.  
ALL BENTS BEARING AT N 0° 28' 24.74" E.

LEGEND

- ← PROPOSED TRAFFIC FLOW  
→ EXISTING TRAFFIC FLOW  
● PSI BORE HOLE  
⊗ HVJ BORE HOLE  
HL-93 LOADING



ELEVATION

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TBPE FIRM #F-4883 P.E. NO. DATE

FLATIRON DRAGADOS LLC

FIGG  
TBPE, FIRM # F-4883

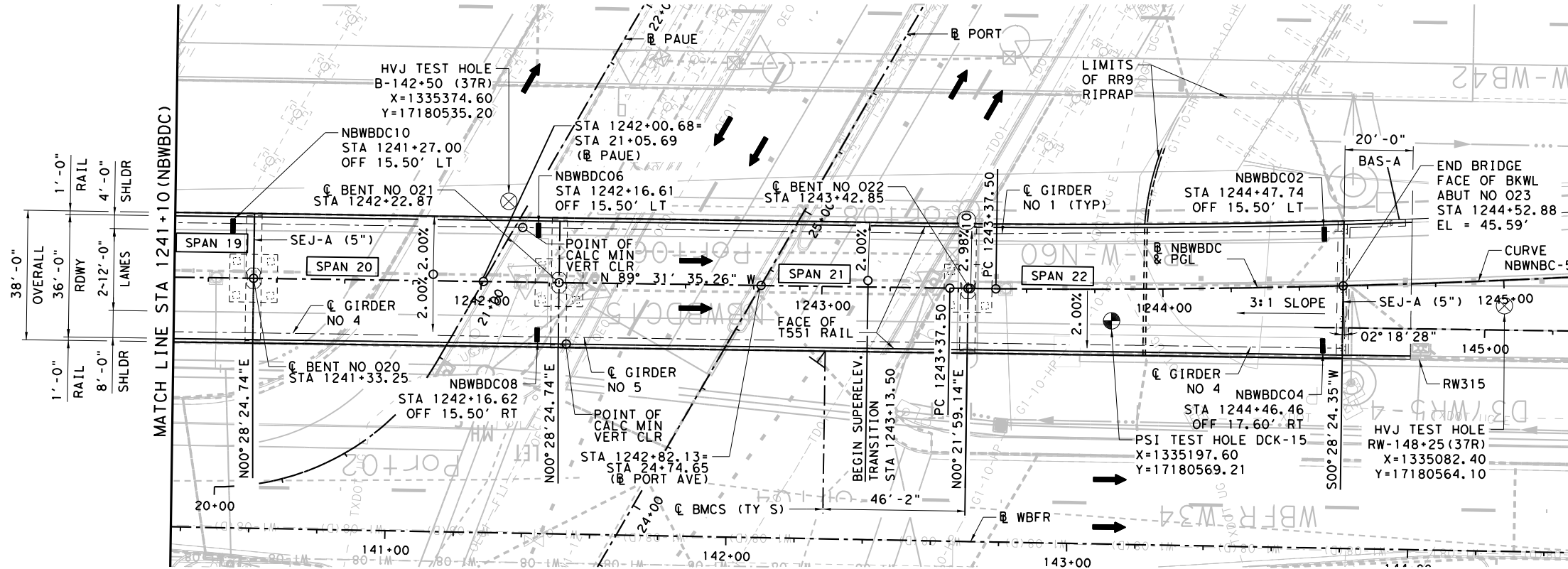
Texas Department of Transportation  
2017

US 181 HARBOR BRIDGE  
BRIDGE LAYOUT

DIRECT CONNECTOR  
SH 286 NB TO IH 37 NB  
BRIDGE 15, CONN "O"

SCALE: 1"=40'-0"		SHEET 6 OF 7	
DESIGN SNO	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
GRAPHICS MJR	X	(See Title Sheet)	US 181
CHECK RLS	STATE	DISTRICT	COUNTY
CHECK CF	TEXAS	CRP	NUECES
	CONTROL	SECTION	JOB
	0101	06	095

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DATE: 7/31/2017  
TIME: 11:22:52 PM  
USER: rshinn



CURVE NBWBC-5  
P.I. STATION 1244+48.44  
DELTA 4° 26' 06.94" (LT)  
DEGREE 2° 00' 00.00"  
TANGENT 110.94'  
LENGTH 221.76'  
RADIUS 2,864.79'  
P.C. STATION 1243+37.50  
P.T. STATION 1245+59.26

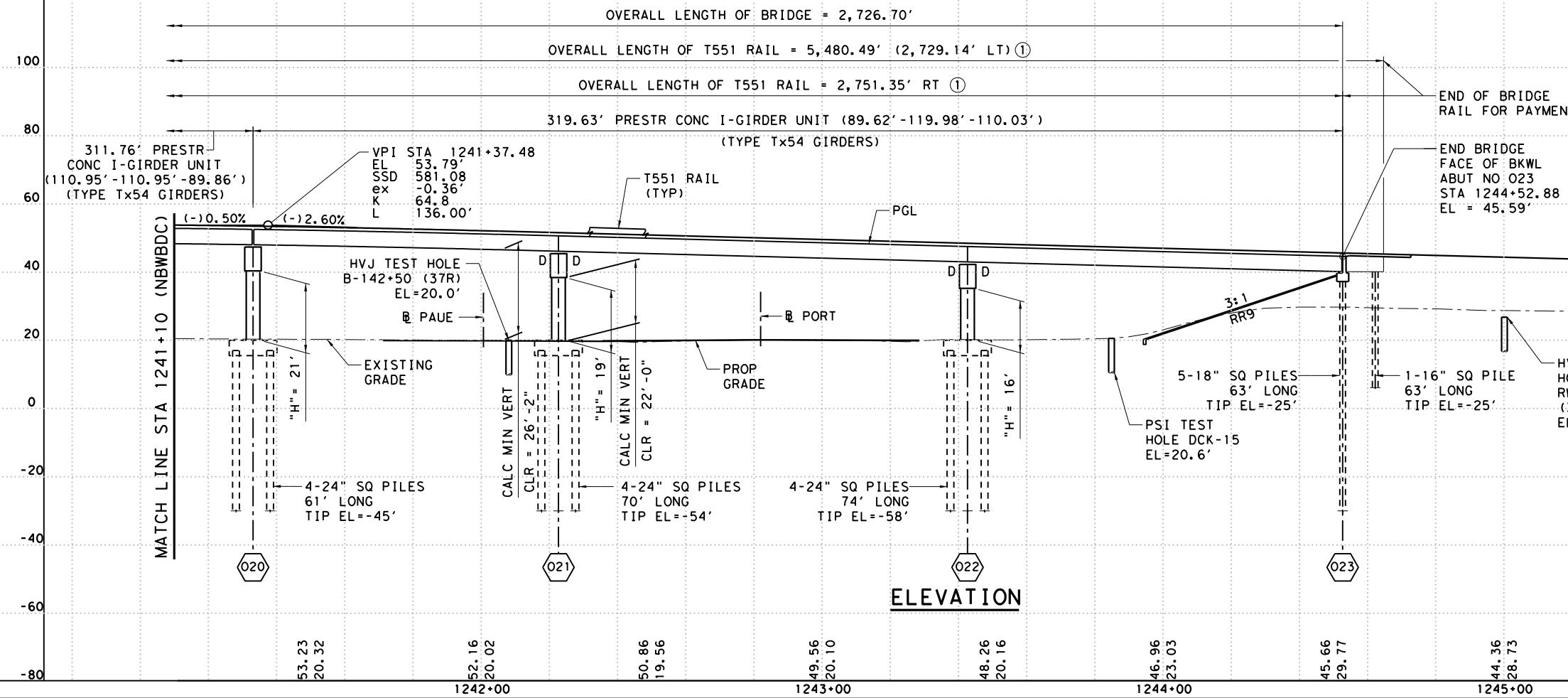
DESIGN DATA  
NBI NO XX-XXX-XXXX-XX-XXX  
FUNC CLASS: DIRECT CONNECTOR  
DESIGN SPEED: 45 MPH  
ADT: BRIDGE DC-0  
(2023) = 6,890  
(2035) = 7,510

### PLAN

ALL BENTS AND ABUTMENT PERPENDICULAR TO ALIGNMENT UNLESS NOTED OTHERWISE.

**LEGEND**  
→ PROPOSED TRAFFIC FLOW  
← EXISTING TRAFFIC FLOW  
● PSI BORE HOLE  
⊗ HVJ BORE HOLE  
HL-93 LOADING

- NOTES:**
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  - SEE HVJ GEOTECHNICAL DATA REPORT DATED 9/29/2014 FOR HVJ BORING DATA.
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- ① INCLUDES ADDITIONAL RAIL LENGTH AT GORE AREA.  
⑩ END SUPERELEVATION TRANSITION STA 1243+43.50.



### ELEVATION

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CESAR FERNANDES 98112 07/31/2017  
TBPE FIRM #F-4883 P.E. NO. DATE

NO.	DATE	REVISION	APPROVED

FLATIRON/DRAGADOS LLC	FIGG
TBPE, FIRM # F-4883	TBPE, FIRM # F-4883

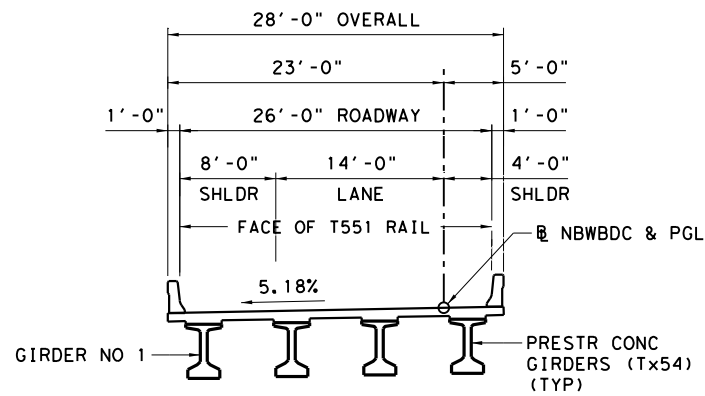


## US 181 HARBOR BRIDGE BRIDGE LAYOUT

DIRECT CONNECTOR  
SH 286 NB TO IH 37 NB  
BRIDGE 15, CONN "O"

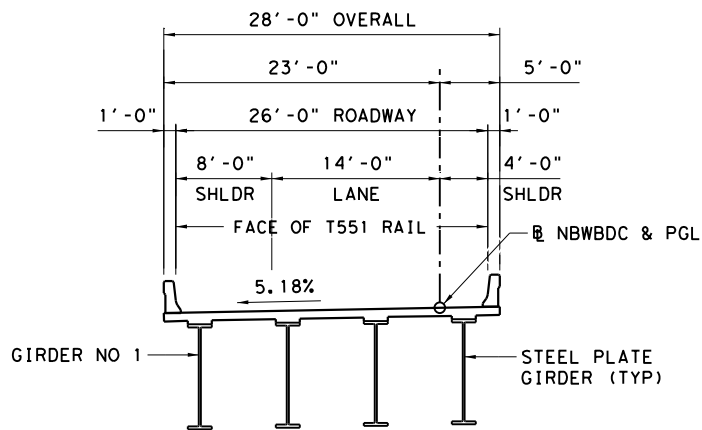
DESIGN SNO	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
GRAPHICS	X	(See Title Sheet)		US 181
MJR	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK RLS	TEXAS	CRP	NUECES	RB15
CHECK	CONTROL	SECTION	JOB	007
CS	0101	06	095	

PRELIMINARY NOT FOR CONSTRUCTION, JULY 2017



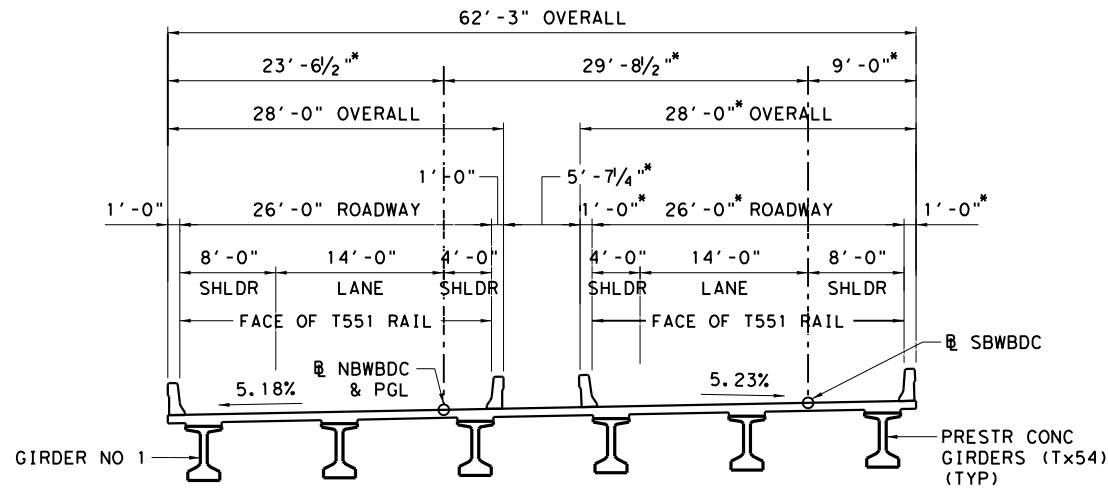
TRANSVERSE SECTION

SPANS 1, 5 THRU 9 & 12  
(4 GIRDERS SHOWN, 5 GIRDERS IN SPAN 5)



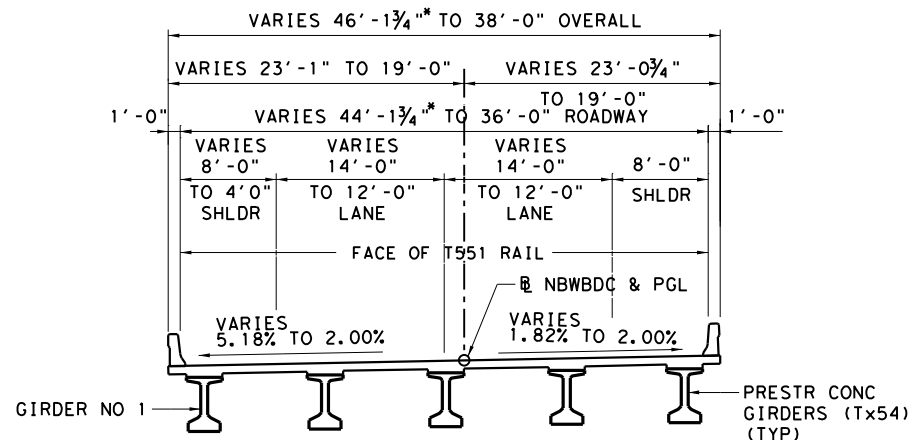
TRANSVERSE SECTION

SPANS 2 THRU 4 & 10 THRU 11



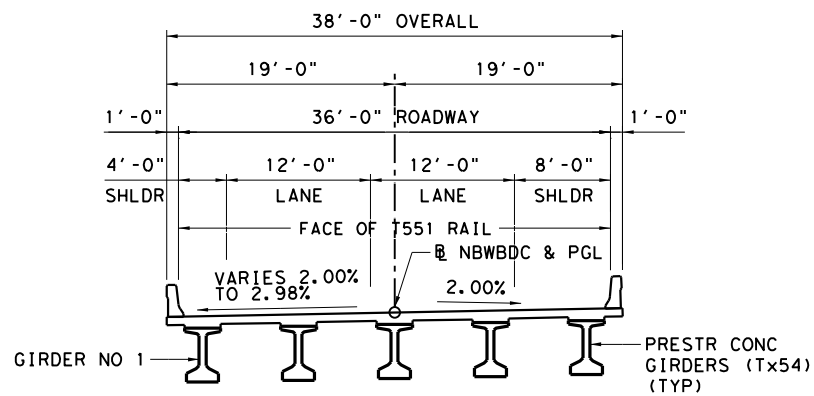
TRANSVERSE SECTION

SPAN 13 AT BENT 13



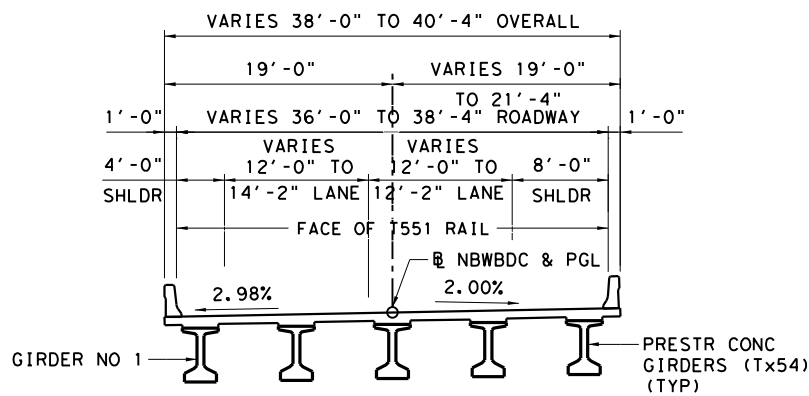
TRANSVERSE SECTION

SPANS 14, 15 & 16  
(5 GIRDERS SHOWN, 4 GIRDERS IN SPAN 16)



TRANSVERSE SECTION

SPANS 17 THRU 21  
(5 GIRDERS SHOWN, 4 GIRDERS IN SPANS 17 THRU 20)






TRANSVERSE SECTION

SPAN 22

- NOTES:
1. SEE "GENERAL NOTES" SHEETS FOR GENERAL NOTES.
  - \*2. ALL DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO NBWBDC EXCEPT AS NOTED BY "\*" WHICH ARE MEASURED ALONG SUBSTRUCTURE CENTERLINES.
  3. SEE T551 STANDARD FOR RAIL DETAILS.

HL-93 LOADING

NO.		DATE	REVISION	APPROVED
 FLATIRON/DRAGADOS LLC			 FIGG TBPE, FIRM # F-4883	
 <b>Texas Department of Transportation</b> ® 2017				
US 181 HARBOR BRIDGE				
TYPICAL SECTIONS				
DIRECT CONNECTOR				
SH 286 NB TO IH 37 NB				
BRIDGE 15, CONN "0"				
SCALE: 1/16" = 1'-0"			SHEET 1 OF 1	
DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
SNO	X	(See Title Sheet)		IH 37
GRAPHICS	MJR	STATE	DISTRICT	COUNTY
CHECK	TEXAS	CRP	NUECES	
RLS	CONTROL	SECTION	JOB	
CHECK	0101	06	095	
CF				
			RB15	
			008	

FIGG BRIDGE ENGINEERS, INC.  
PRELIMINARY FOR INTERIM REVIEW ONLY

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT  
INTENDED FOR REGULATORY APPROVAL, PERMIT, BIDDING  
OR CONSTRUCTION PURPOSES. THEY WERE PREPARED  
BY OR UNDER THE SUPERVISION OF:

CESAR FERNANDES 98112 07/31/2017  
TBPE FIRM #F-4883 P.E. NO. DATE