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Volume 3 of 4

STATE OF TEXAS DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT

CSJ: 2121-01-104

FEDERAL AID PROJECT NO. F 2B24(096)

IH 10 WIDENING PROJECT EL PASO COUNTY

NET LENGTH OF ROADWAY= 18,900 FT.= 3.580 MI.
NET LENGTH OF BRIDGE = 1,100 FT.= 0.210 MI.
NET LENGTH OF PROJECT= 20,000 FT.= 3.790 MI.

DESIGN SPEED = 70 MPH
A. D. T. (2023) = 119,600
A. D. T. (2043) = 160,700
FUNCTIONAL CLASS: URBAN FREEWAY

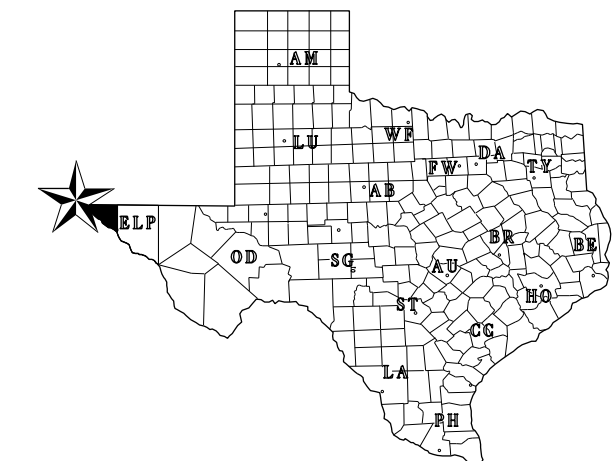
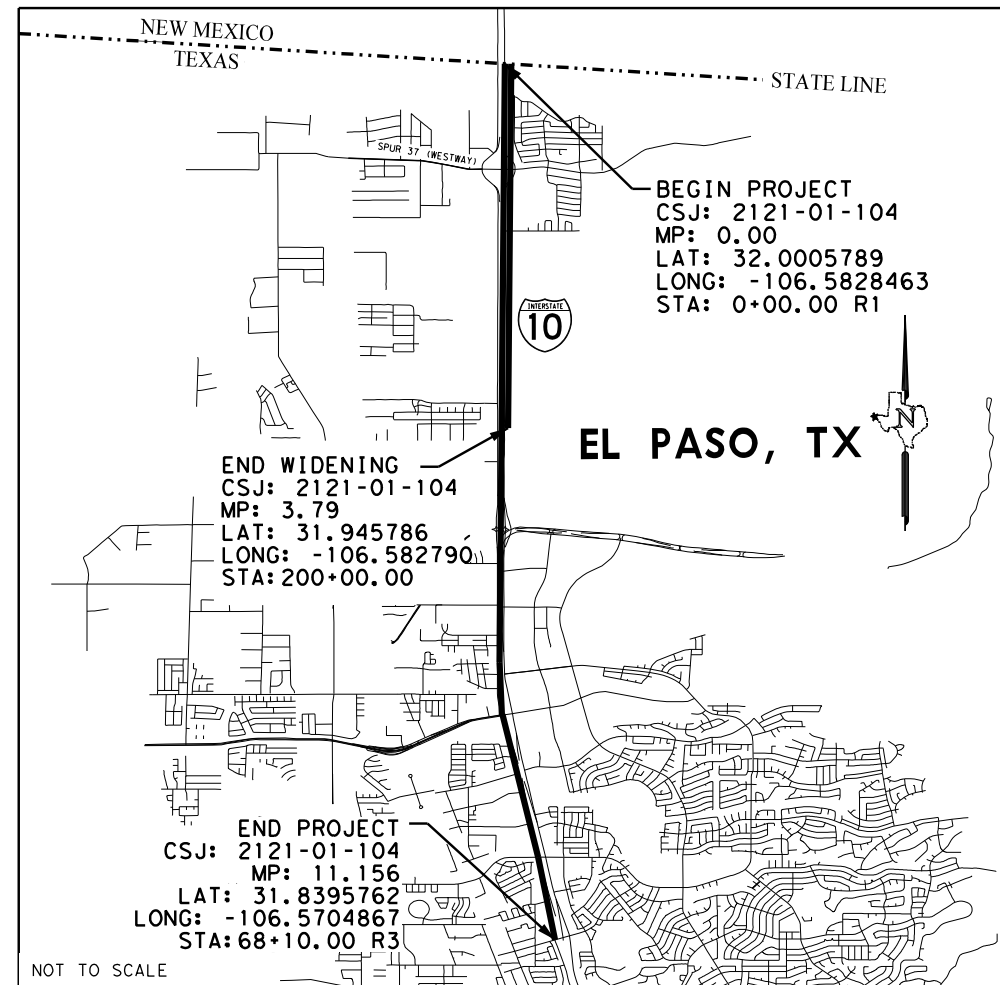
FEDERAL AID PROJECT NO.			
F 2B24 (096)			
CONT	SECT	JOB	HIGHWAY
2121	01	104	IH 10
DIST		COUNTY	SHEET NO.
ELP		EL PASO	1

FINAL PLANS

CONTRACTOR: _____
LETTING DATE: MAY 2, 2024
TIME CHARGES BEGAN: _____
DATE CONTRACTOR BEGAN WORK: _____
DATE WORK WAS ACCEPTED: _____
TOTAL DAYS CHARGED: _____
ORIGINAL CONTRACT AMOUNT: \$ _____
AMOUNT OF CONTRACT AMENDMENTS: \$ _____
FINAL CONTRACT COST: \$ _____

_____ 20 _____
AREA ENGINEER

LIMITS:
FROM: 0.22 MI. W OF FM 1905 (ANTONIO ST) TO: 0.83 MI. E. OF SPUR 37
FOR THE CONSTRUCTION OF: WF-WIDEN FREEWAY
CONSISTING OF: EXPAND FROM 4 TO 6 LANES AND OPERATIONAL IMPROVEMENTS
FROM: 0.22 MI. W OF FM 1905 (ANTONIO ST) TO SPUR 37; INCIDENTALS TO INCLUDE
LANDSCAPE IMPROVEMENTS FROM 0.22 MI. W. OF FM 1905 (ANTONIO ST) TO SH 20 (MESA ST)



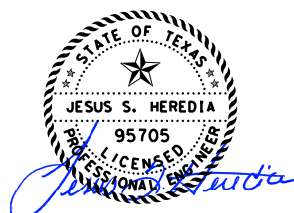
RECOMMENDED FOR LETTING: 3/5/2024
DocuSigned by:
Eduardo Perales, P.E.
SAFETY REVIEW BOARD CHAIRMAN

RECOMMENDED FOR LETTING: 3/5/2024
DocuSigned by:
L. Raul Ortega Jr., P.E.
DISTRICT DIRECTOR OF TRANSPORTATION
PLANNING AND DEVELOPMENT

APPROVED FOR LETTING: 3/5/2024
DocuSigned by:
Tommy ... P.E.
AREA ENGINEER

EXCEPTIONS: NONE
EQUATIONS: STA. 566+43.75 R1 (IH 10) BK=STA. 567+81.33 R2 (IH 10) AH
EQUATIONS: STA. 576+00.00 R2 (IH 10) BK=STA. 13+47.44 R3 (IH 10) AH
RAILROAD: N/A
TDLR: N/A

REQUIRED SIGNS SHALL BE IN ACCORDANCE WITH BC (1) - 21 THRU BC (12) - 21 AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".





3/4/2024



SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, OCTOBER 23 2023)

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** 939	CMV-19	1094	LOS MOCHIS RW_WB03A ESTHETIC TREATMENTS FOUNDATION DETAILS
** 940	CMV(SD)-19	1095	LOS MOCHIS AESTHETIC TREATMENTS MOUNTAIN DESIGN DETAILS
**940A-940F	D & OM(1)-20 TO D & OM(6)-20	1096	LOS MOCHIS AESTHETIC TREATMENTS SUPPORT ASSEMBLY LAYOUT
** 940G	D & OM(VIA)-20	1097	LOS MOCHIS AESTHETIC TREATMENTS SUPPORT ASSEMBLY DETAILS
** 941-946	FPM(1)-22 TO FPM(6)-22	1098-1101	LOS MOCHIS AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT
** 947-953	MC(1)-22 TO MC(7)-22	1102	LOOP 375 RW "A" AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT
** 954-960	MS(1)-22 TO MS(7)-22	1103	LOOP 375 RW "B" AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT
** 961	PM(3)-20	1104	LOOP 375 AESTHETIC TREATMENTS FOUNDATION DETAILS
** 962	RS(1)-13	1105	LOOP 375 AESTHETIC TREATMENTS MOUNTAIN DESIGN DETAILS
** 963	PM(SHIELD-1)-17	1106-1109	LOOP 375 AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT
** 963A	SMD(GEN)-08	1110	ARTCRAFT AESTHETICS TREATMENTS PROJECT LAYOUT
**963B-963E	SMD(2-1)-08 TO SMD(2-4)-08	1111	ARTCRAFT RWE01 AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT
**963F-963G	SMD(8W1)-08 TO SMD(8W2)-08	1112	ARTCRAFT RWE02 AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT
**963H-963J	SMD(SLIP-1)-08 TO SMD(SLIP-3)-08	1113	ARTCRAFT AESTHETIC TREATMENTS FOUNDATION DETAILS
** 963K	SMD(TY G)-08	1114	ARTCRAFT AESTHETIC TREATMENTS MOUNTAIN DESIGN DETAILS
**963L-963P	TSR(1)-13 TO TSR(5)-13	1115-1117	ARTCRAFT AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT
		1118	THORN AESTHETIC TREATMENTS PROJECT LAYOUT
		1119	THORN RW_EB10 AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT
		1120	THORN RW_WB08 AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT
964	TRAFFIC ITEMS-ITS ITS CONSTRUCTION NOTES	1121	THORN AESTHETIC TREATMENTS MOUNTAIN DESIGN DETAILS
965	ITS KEY MAP	1122	THORN AESTHETIC TREATMENTS SUPPORT ASSEMBLY LAYOUT
966-986	ITS LAYOUTS	1123	THORN AESTHETIC TREATMENTS SUPPORT ASSEMBLY DETAILS
987	ITS FIBER SYSTEM LAYOUT	1124-1126	THORN AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT
988-992	ITS FIBER COMMUNICATION SCHEMATICS	1127	STAR PLATE REINFORCEMENT DETAILS
993	ITS HUB NETWORK CHASSIS DETAILS	1128	AESTHETIC TREATMENTS MOUNTAIN DESIGN LAYOUT PROFILE CORNER DETAILS
994-999	ITS FIBER TERMINATION CHARTS		
1000-1001	ITS MISC. DETAILS		

NO.		DATE		REVISION		APPROV.	
 F-12040							
 ©2024							
IH 10 WIDENING (NM/SPUR 37)							
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STATE	DISTRICT	COUNTY					
TEXAS	ELP	EL PASO					
CONTROL	SECTION	JOB	HIGHWAY				
2121	01	104	IH 10				

INDEX OF SHEETS

SHEET

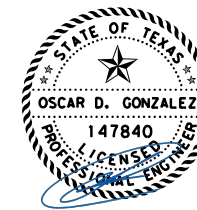
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AESTHETIC LIGHTING

1129	AESTHETIC ILLUMINATION NOTES
1130	AESTHETIC ILLUMINATION KEY MAP
1131-1133	AESTHETIC ILLUMINATION LAYOUT LOS MOCHIS
1134	AESTHETIC ILLUMINATION LOS MOCHIS FIXTURE ARRANGEMENT
1135-1137	AESTHETIC ILLUMINATION LAYOUT LOOP 375
1138-1139	AESTHETIC ILLUMINATION LAYOUT ARTCRAFT RD
1140-1142	AESTHETIC ILLUMINATION LAYOUT THORN AVE
1143	AESTHETIC ILLUMINATION THORN AVE FIXTURE ARRANGEMENT
1144-1145	AESTHETIC ILLUMINATION DETAILS
1146-1147	AESTHETIC ILLUMINATION CIRCUIT DIAGRAM

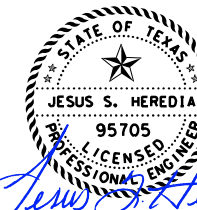
LANDSCAPING

1148-1203	LANDSCAPING LAYOUT
1204-1208	LANDSCAPING DETAILS



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ON THIS SHEET (>>) HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

OSCAR D. GONZALEZ 3/28/2024
NAME DATE



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ON THIS SHEET (\$) HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

JESUS S. HEREDIA 3/28/2024
NAME DATE



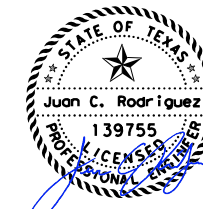
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ADRIANA C SUSTAITA 3/28/2024
NAME DATE



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ON THIS SHEET (*) HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

SERGIO MENDEZ 3/28/2024
NAME DATE



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ON THIS SHEET (>) HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

JUAN C. RODRIGUEZ 3/28/2024
NAME DATE



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ON THIS SHEET (***) HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

LEONARDO LEDESMA 3/28/2024
NAME DATE

NO.	DATE	REVISION	APPROV.
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IH 10 WIDENING (NM/SPUR 37)

GENERAL INDEX OF SHEETS

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6	SEE TITLE SHEET	5A	
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH 10

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 PLOTDRIVER: pdfv8.plt
 PENTABLE: \$PEN TABLE FILE\$

UTILITY OWNER	LINE STYLE "D"	LINE STYLE "C"	LINE STYLE "B"	UTILITIES FEATURES
WATER EL PASO WATER UTILITIES (EPWU) WATER	W1-XX-D	W1-XX-C	W1-XX	☐ ELECTRIC PULL BOX ☒ ELECTRIC TOWER ↓ GUY DOWN WIRE ● POWER POLE ○ POWER POLE W/RISER ○ MONO POLE ⚡ GAS VALVE Ⓜ GAS MARKER Ⓜ GAS METER ☐ TELEPHONE HAND HOLE ☒ TELEPHONE PEDESTAL ☒ TELEPHONE VAULT BOX ⊙ TELEPHONE MANHOLE ⚡ TELEPHONE MARKER ● TRAFFIC SIGNAL POLE ● TEST HOLE
WASTEWATER EL PASO WATER UTILITIES (EPWU) WASTEWATER	WW1-XX-D	WW1-XX-C	WW1-XX	
RECLAIMED WATER EL PASO WATER UTILITIES (EPWU) RECLAIMED WATER	W1-XX-D	W1-XX-C	W1-XX	
GAS TEXAS GAS SERVICE	G1-XX-D	G1-XX-C	G1-XX	
KINDER MORGAN	G2-XX-D	G2-XX-C	G2-XX	
MAGELLAN MIDSTREAM	G3-XX-D	G3-XX-C	G3-XX	
VINTON PIPELINE	G4-XX-D	G4-XX-C	G4-XX	
ONEOK INC	G5-XX-D	G5-XX-C	G5-XX	
ELECTRIC EPEC DISTRIBUTION (OH)	E1-1-D	E1-1-C	E1-1	
EPEC DISTRIBUTION (UG)	E1-2-D	E1-2-C	E1-2	
EPEC TRANSMISSION (OH)	E2-1-D	E2-1-C	E2-1	
TELEPHONE AT&T TEXAS (OH)	T1-1-D	T1-1-C	T1-1	
AT&T TEXAS (UG)	T1-2-D	T1-2-C	T1-2	
CHARTER COMMUNICATIONS (OH)	T2-1-D	T2-1-C	T2-1	
CHARTER COMMUNICATIONS (UG)	T2-2-D	T2-2-C	T2-2	
CONTERRA COMMUNICATIONS (OH)	T3-1-D	T3-1-C	T3-1	
CONTERRA COMMUNICATIONS (UG)	T3-2-D	T3-2-C	T3-2	
MCI COMMUNICATIONS (OH)	T4-1-D	T4-1-C	T4-1	
MCI COMMUNICATIONS (UG)	T4-2-D	T4-2-C	T4-2	
SPRINT/NEXTEL CORPORATION (UG)	T5-2-D	T5-2-C	T5-2	

GENERAL NOTES:

- THE HORIZONTAL LOCATION OF UTILITIES SHOWN ON THESE DRAWINGS IS ARRIVED AT BY THE USE OF DESIGNATING EQUIPMENT. THESE UTILITY LINES WERE NOT UNCOVERED TO VERIFY EXACT HORIZONTAL LOCATIONS. IN REGARDS TO THE 3D FORMAT OF UTILITIES, THE HORIZONTAL LOCATION IS DERIVED FROM QLB BUT MAKE IT KNOWN THAT THE VERTICAL LOCATIONS ARE DERIVED FROM THE APPROXIMATE ASSUMED DEPTH OF UTILITY. UNLESS AT THE QLA LOCATION WHERE THAT EXACT POINT IS CONSIDERED ACTUAL.
- THE ACCURACY OF THE HORIZONTAL LOCATION OF UTILITY LINES SHOWN ON THESE PLANS CAN BE INFLUENCED BY FACTORS BEYOND COBBFENDLEY'S CONTROL, SUCH AS CONDUCTIVITY OF MATERIALS AND THEIR SURROUNDINGS, SOIL MOISTURE CONTENT, PROXIMITY OF OTHER UNDERGROUND UTILITIES OR STRUCTURES, DEPTH OF UTILITY, ETC. THEREFORE, ONLY THE ACCURACY OBTAINED BY ACTUAL EXCAVATION OF UTILITIES CAN BE GUARANTEED APPLICABLE TO ENGINEERING AND/OR SURVEYING STANDARDS.
- AS-BUILT DRAWINGS WERE USED TO COMPARE DESIGNATED LOCATIONS TO CONSTRUCTION AS-BUILT LOCATIONS.
- THE USE OF THE HORIZONTAL LOCATIONS OF THE UTILITIES SHOWN ON THESE PLANS DOES NOT RELIEVE THE CONTRACTOR FROM THE DUTY TO COMPLY WITH APPLICABLE UTILITY DAMAGE PREVENTION LAWS AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, GIVING NOTIFICATION TO UTILITY OWNER'S "ONE-CALL" CENTERS BEFORE EXCAVATION.
- PLANS WERE PREPARED ON FIELD INVESTIGATION DATA FROM 2021. CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UTILITIES FIELD LOCATED.

UTILITY QUALITY LEVELS

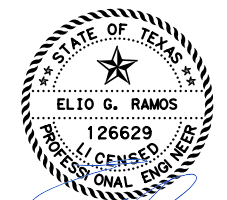
(AS DEFINED FROM ASCE PUBLICATION CI/ASCE STANDARD 38-02)

QUALITY LEVEL "D"
INFORMATION DERIVED FROM EXISTING RECORDS AND/OR ORAL RECOLLECTIONS.

QUALITY LEVEL "C"
INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL "D" INFORMATION.

QUALITY LEVEL "B"
INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. THIS INFORMATION IS SURVEYED TO PROJECT TOLERANCES AND TIED TO PROJECT SURVEY CONTROL.

QUALITY LEVEL "A"
PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES AT A SPECIFIC POINT. DIAMETERS SHOWN ARE VERIFIED VISUALLY AND MAY NOT BE EXACT OR MAY BE DOCUMENTED AS PER RECORDS MEANING A TYPICAL 60 INCH DIAMETER PIPE WILL NOT BE EXPOSED OF BOTH SIDES OF ITS WIDTH BY A STANDARD TEST HOLE. THIS INFORMATION IS SURVEYED TO PROJECT TOLERANCES AND TIED TO PROJECT SURVEY CONTROL.



2/29/2024



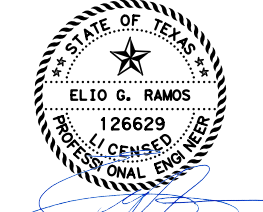
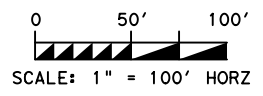
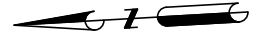
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LEGEND

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FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		503
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10

LEGEND

W1-XX-D	EPWU WATER
WW1-XX-D	EPWU WASTEWATER
W1-XX-D	EPWU RECLAIMED WATER
G1-XX-D	TEXAS GAS SERVICE
G2-XX-D	KINDER MORGAN
G3-XX-D	MAGELLAN MIDSTREAM
G4-XX-D	VINTON PIPELINE
G5-XX-D	ONEOK INC.
E1-1-C	EPEC DISTRIBUTION (OH)
E1-2-D	EPEC DISTRIBUTION (UG)
E2-1-C	EPEC TRANSMISSION (OH)
T1-1-D	AT&T TEXAS (OH)
T1-2-D	AT&T TEXAS (UG)
T2-1-D	CHARTER COMMUNICATIONS (OH)
T2-2-D	CHARTER COMMUNICATIONS (UG)
T3-1-D	CONTERRA COMMUNICATIONS (OH)
T3-2-D	CONTERRA COMMUNICATIONS (UG)
T4-1-D	MCI COMMUNICATIONS (OH)
T4-2-D	MCI COMMUNICATIONS (UG)
T5-2-D	SPRINT/NEXTEL CORPORATION (UG)



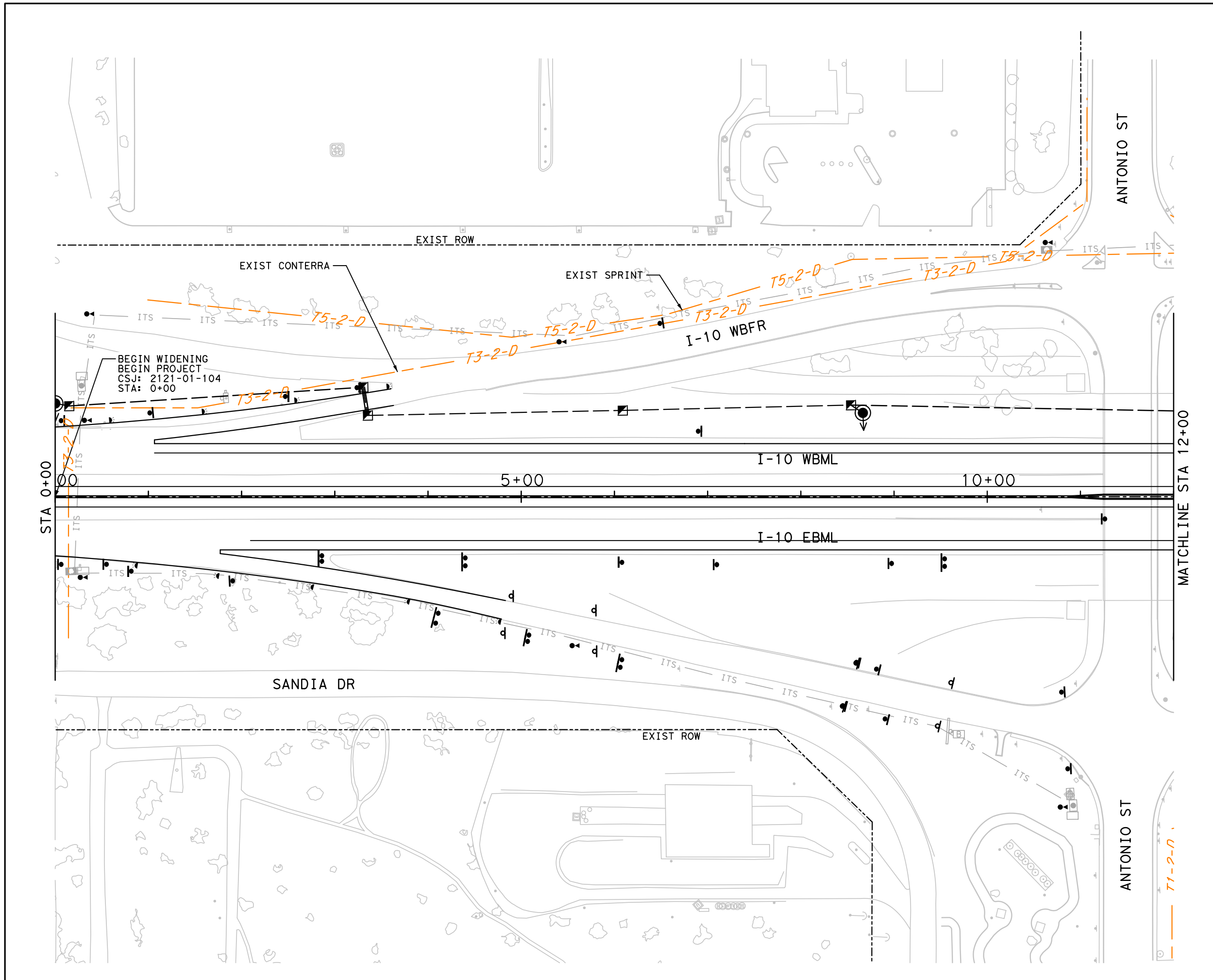
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IH 10 WIDENING PROJECT
EXISTING UTILITY LAYOUT
 STA 0+00 TO STA 12+00

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FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		504
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



BEGIN WIDENING
 BEGIN PROJECT
 CSJ: 2121-01-104
 STA: 0+00

MATCHLINE STA 12+00

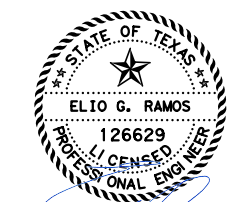
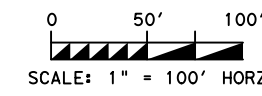
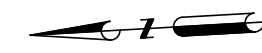
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ANTONIO ST

T1-2-D

LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



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IH 10 WIDENING PROJECT

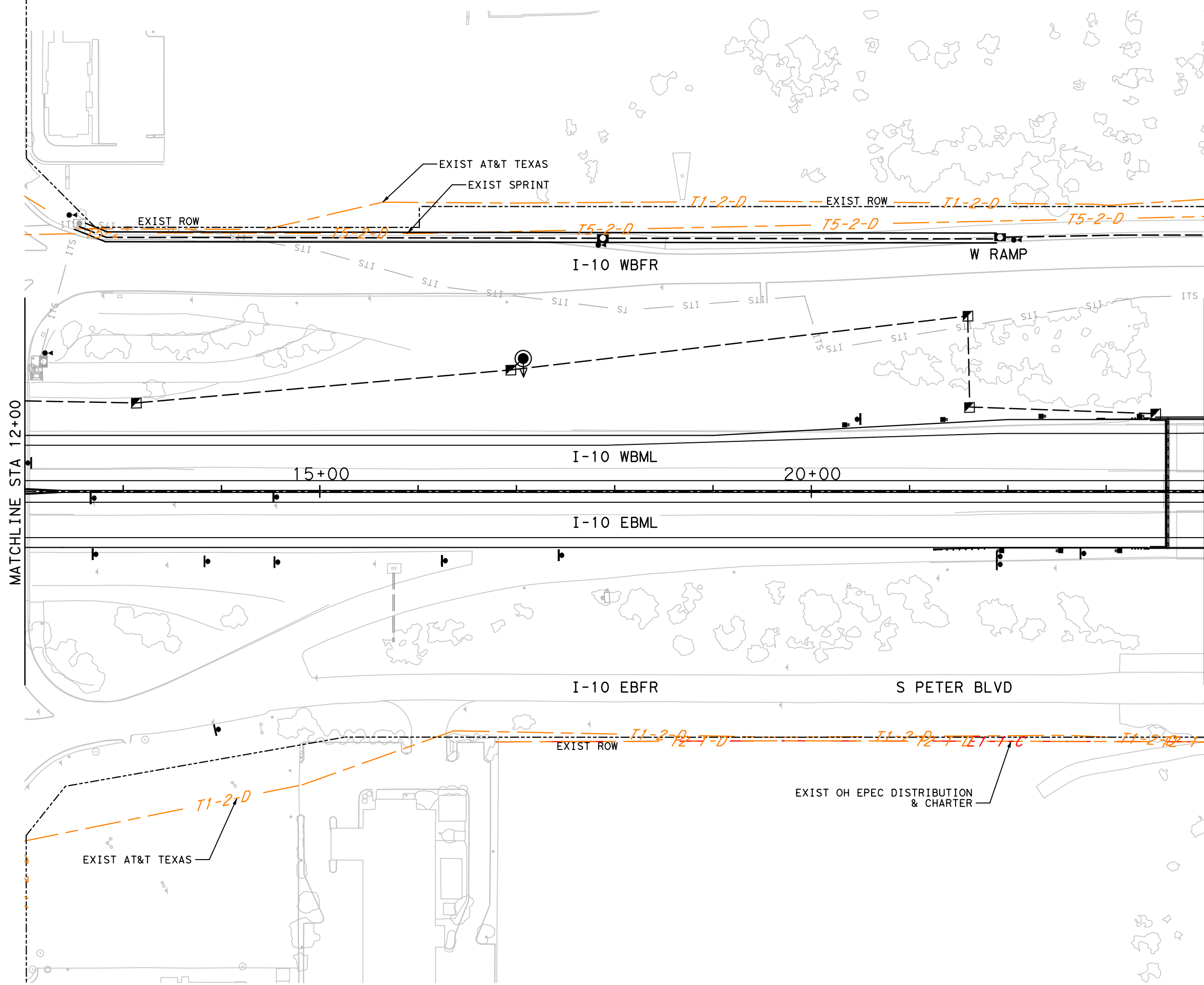
EXISTING UTILITY LAYOUT
STA 12+00 TO STA 24+00

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FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		505
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10

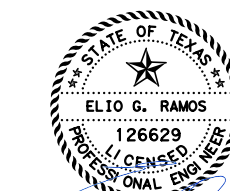
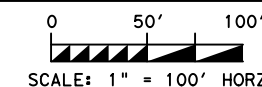
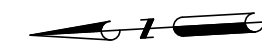
MATCHLINE STA 12+00

MATCHLINE STA 24+00



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

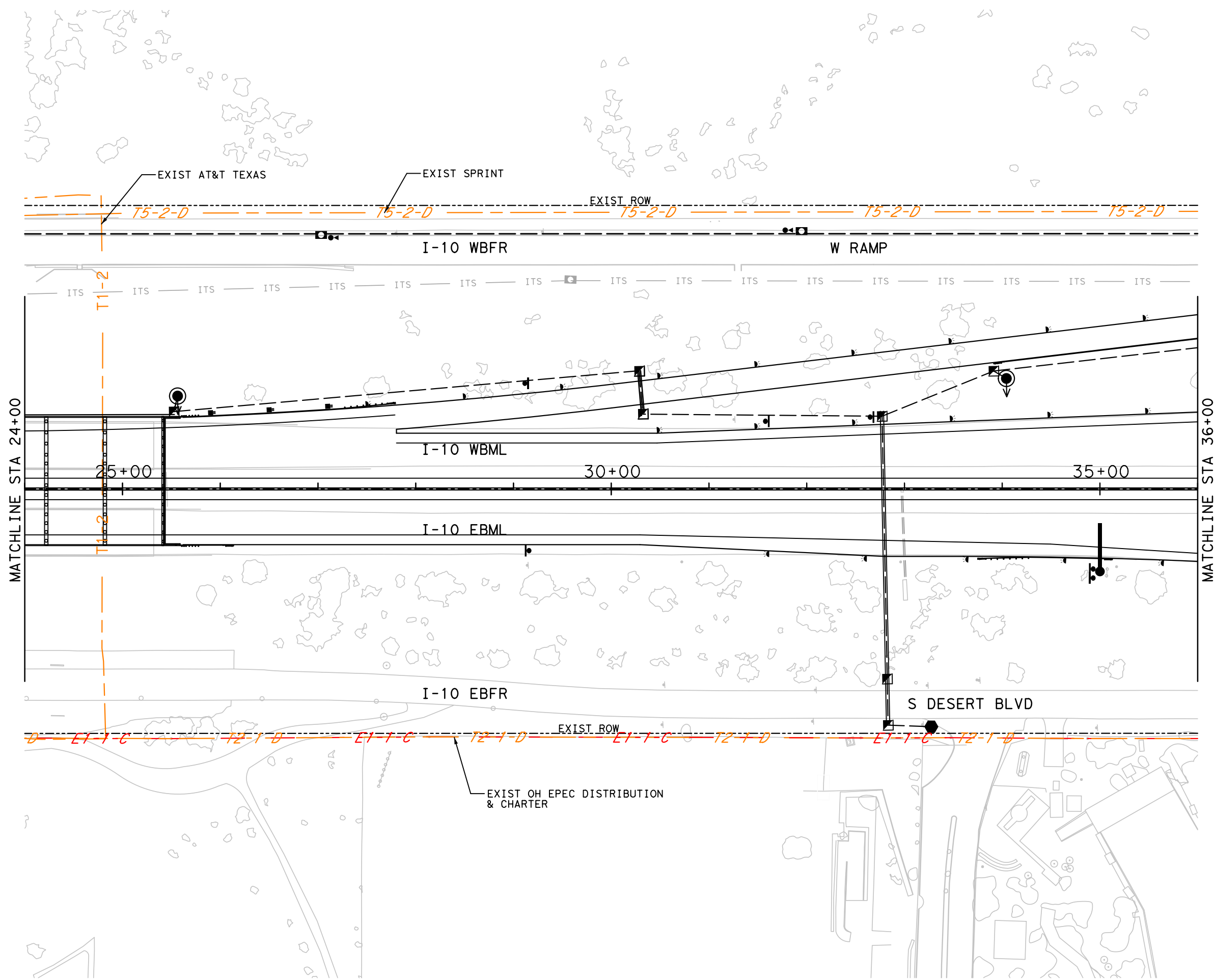


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 24+00 TO STA 36+00

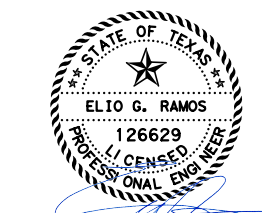
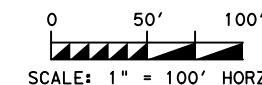
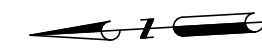
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6	SEE TITLE SHEET		506
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

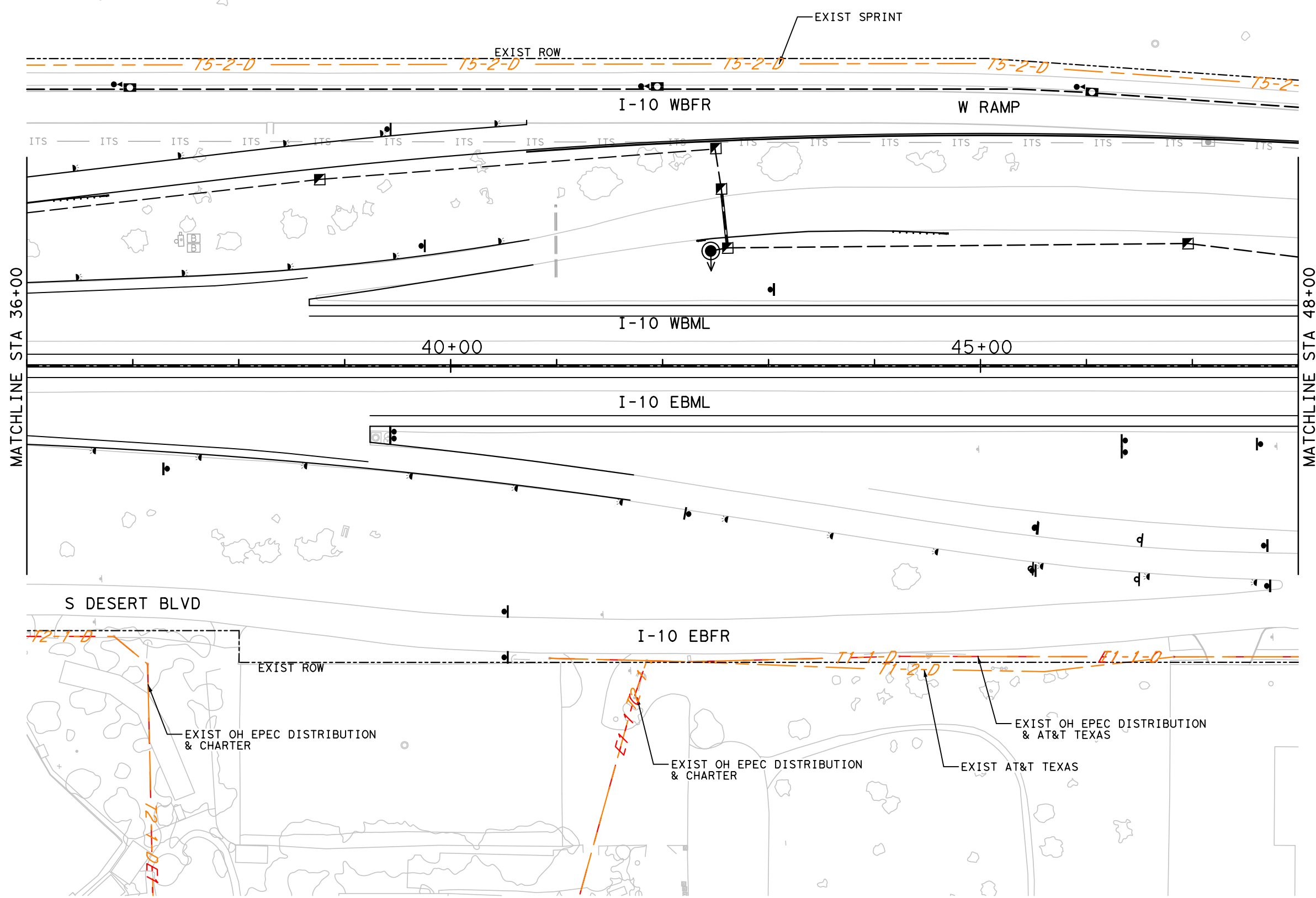


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 36+00 TO STA 48+00

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FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		507
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



MATCHLINE STA 36+00

MATCHLINE STA 48+00

S DESERT BLVD

EXIST OH EPEC DISTRIBUTION & CHARTER

EXIST OH EPEC DISTRIBUTION & CHARTER

EXIST AT&T TEXAS

EXIST OH EPEC DISTRIBUTION & AT&T TEXAS

EXIST SPRINT

EXIST ROW

I-10 WBFR

W RAMP

I-10 WBML

I-10 EBML

I-10 EBFR

40+00

45+00

75-2-D

75-2-D

75-2-D

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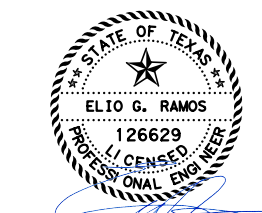
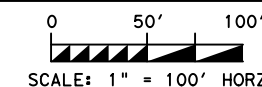
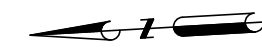
11-1-D

E1-1-D

12-1-DE1

LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



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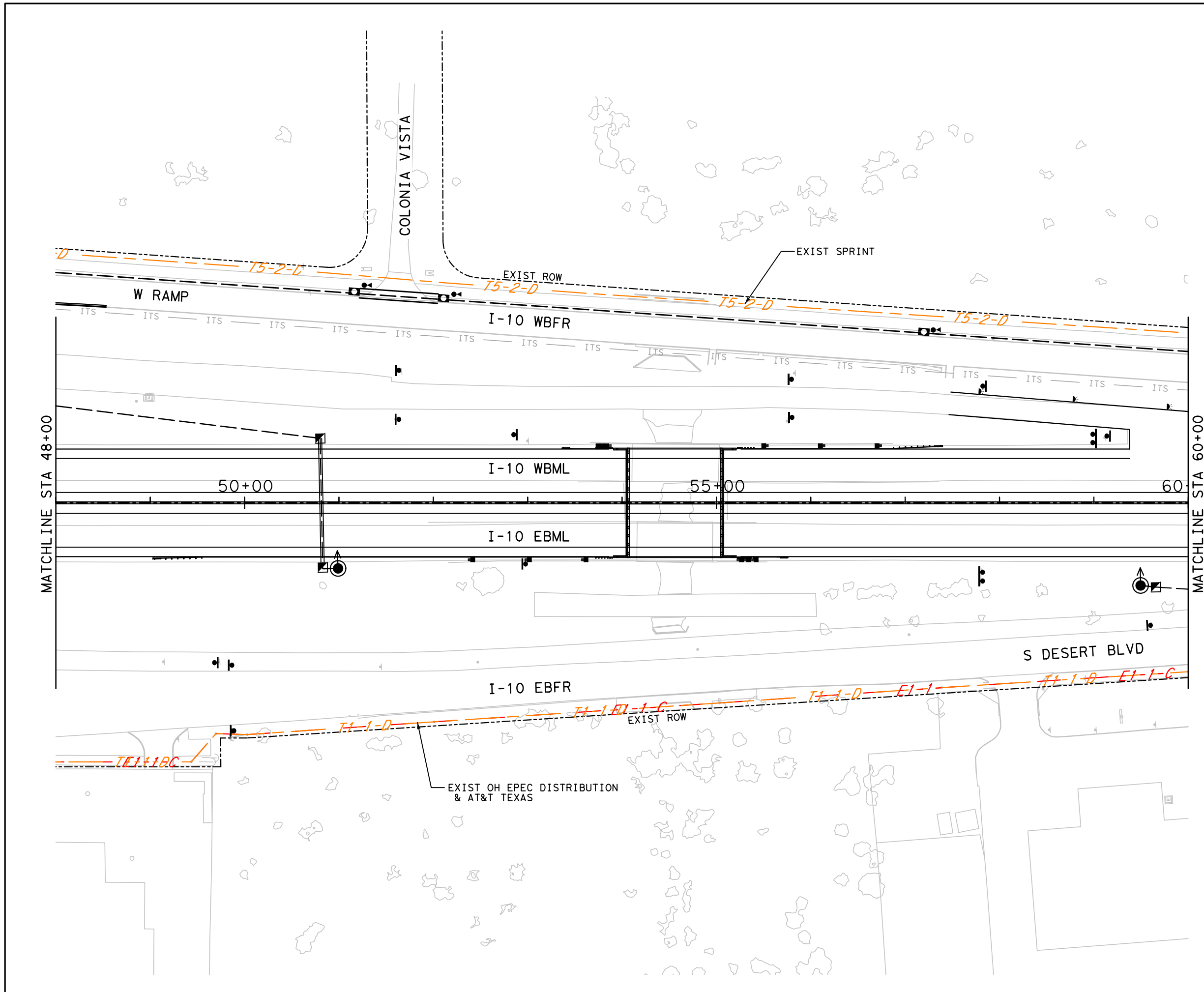


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 48+00 TO STA 60+00

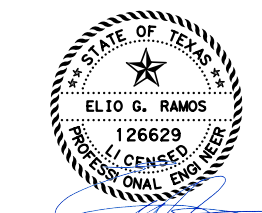
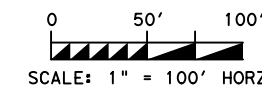
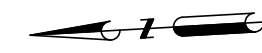
PAGE 06 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		508
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

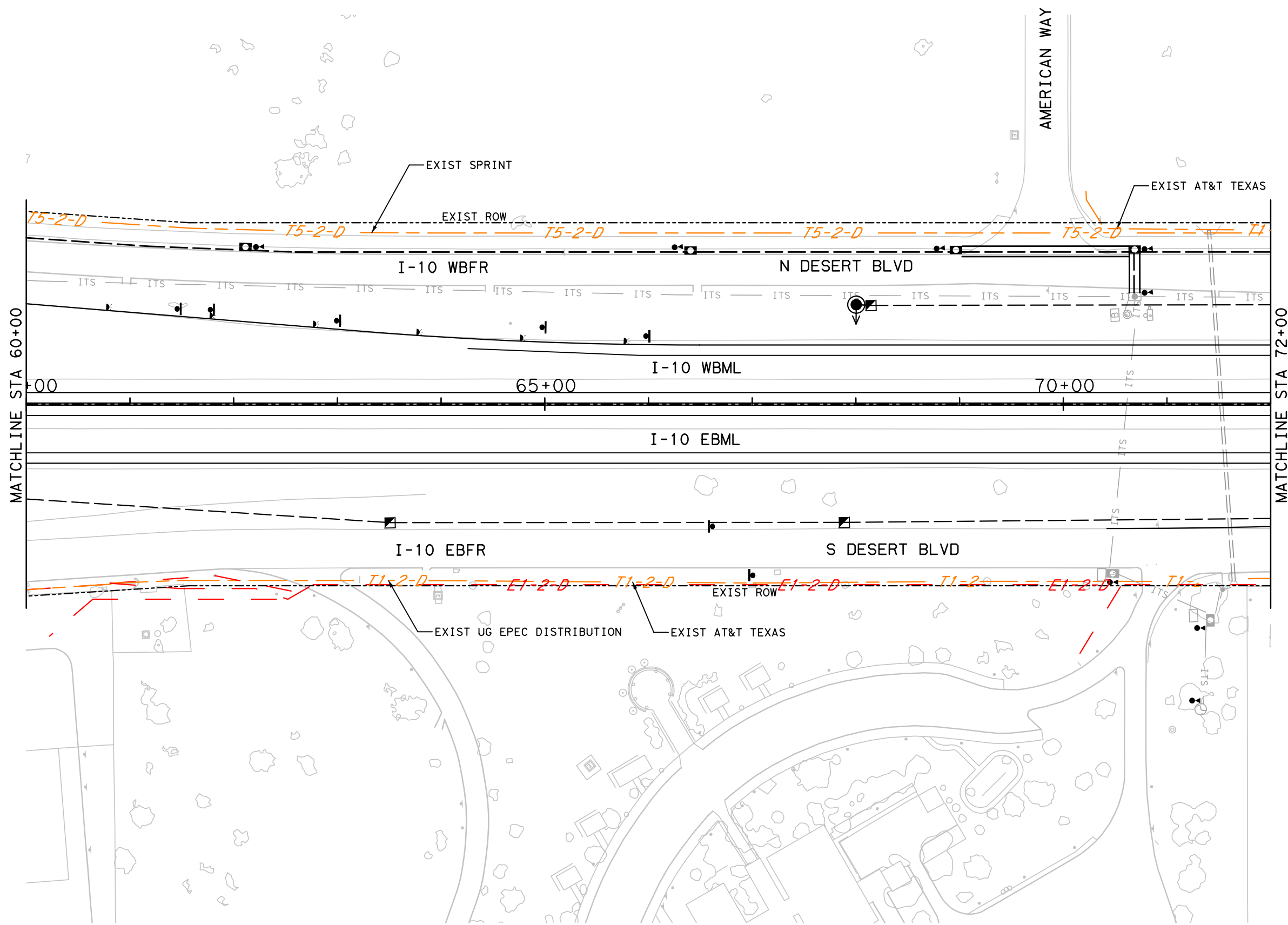


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 60+00 TO STA 72+00

PAGE 07 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		509
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



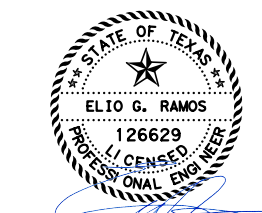
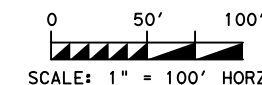
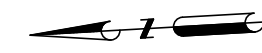
MATCHLINE STA 60+00

MATCHLINE STA 72+00

AMERICAN WAY

LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

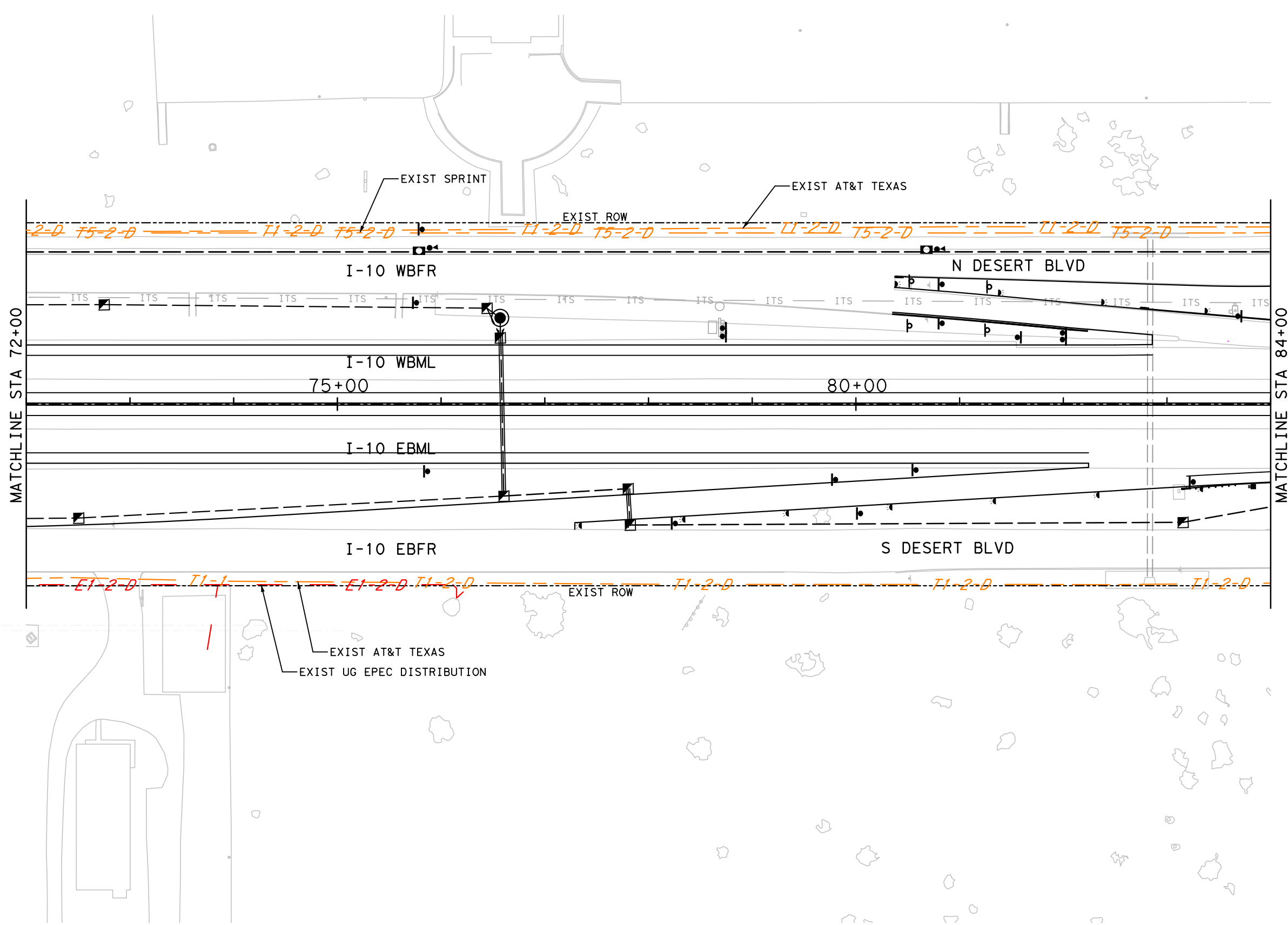


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 72+00 TO STA 84+00

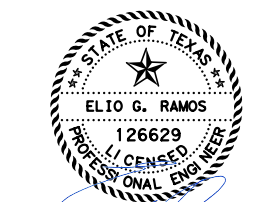
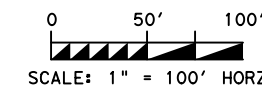
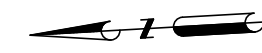
PAGE 08 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		510
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



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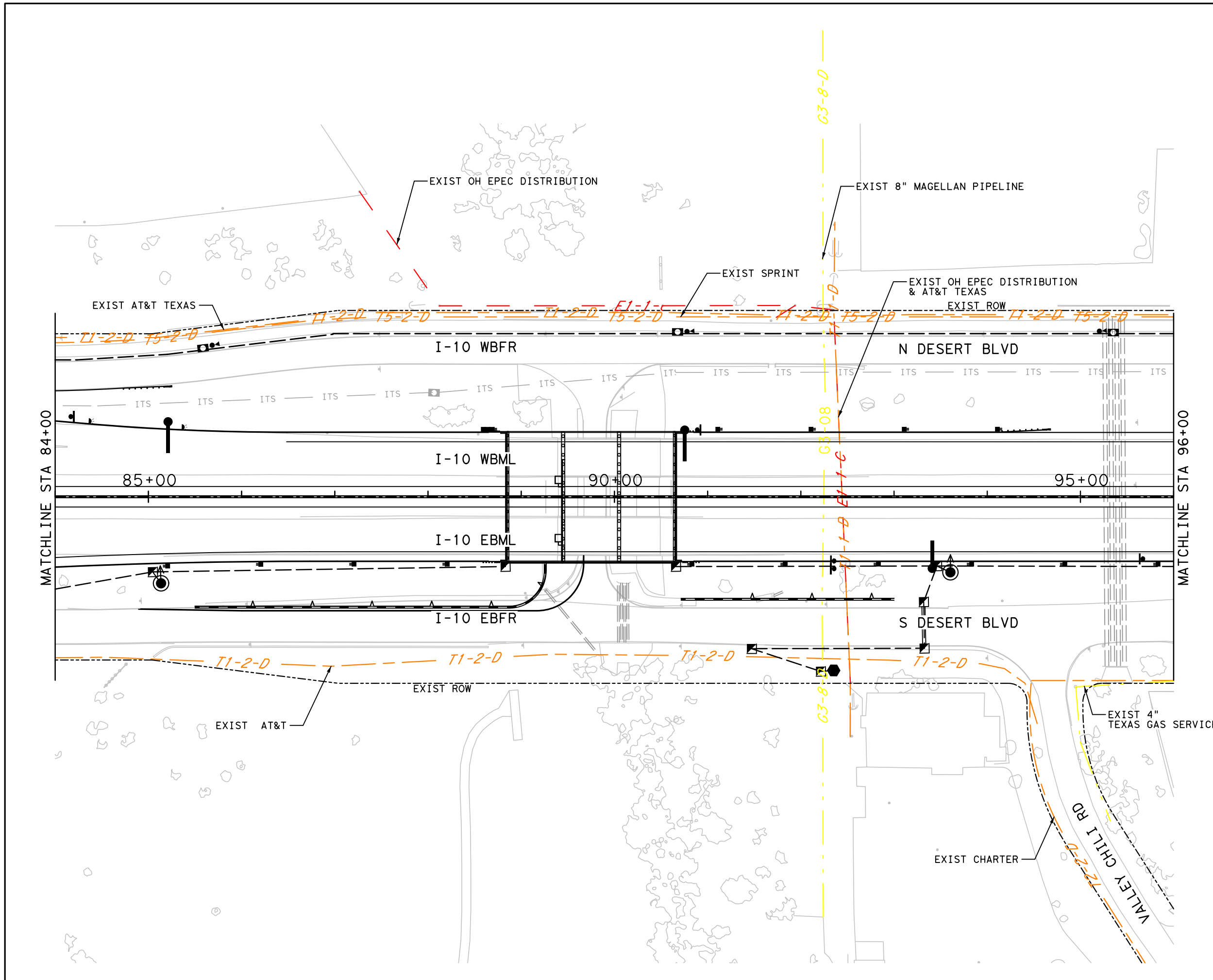


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 84+00 TO STA 96+00

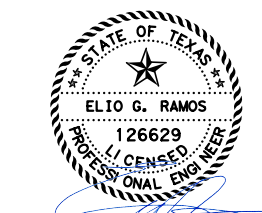
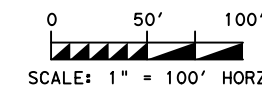
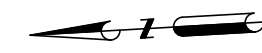
PAGE 09 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		511
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



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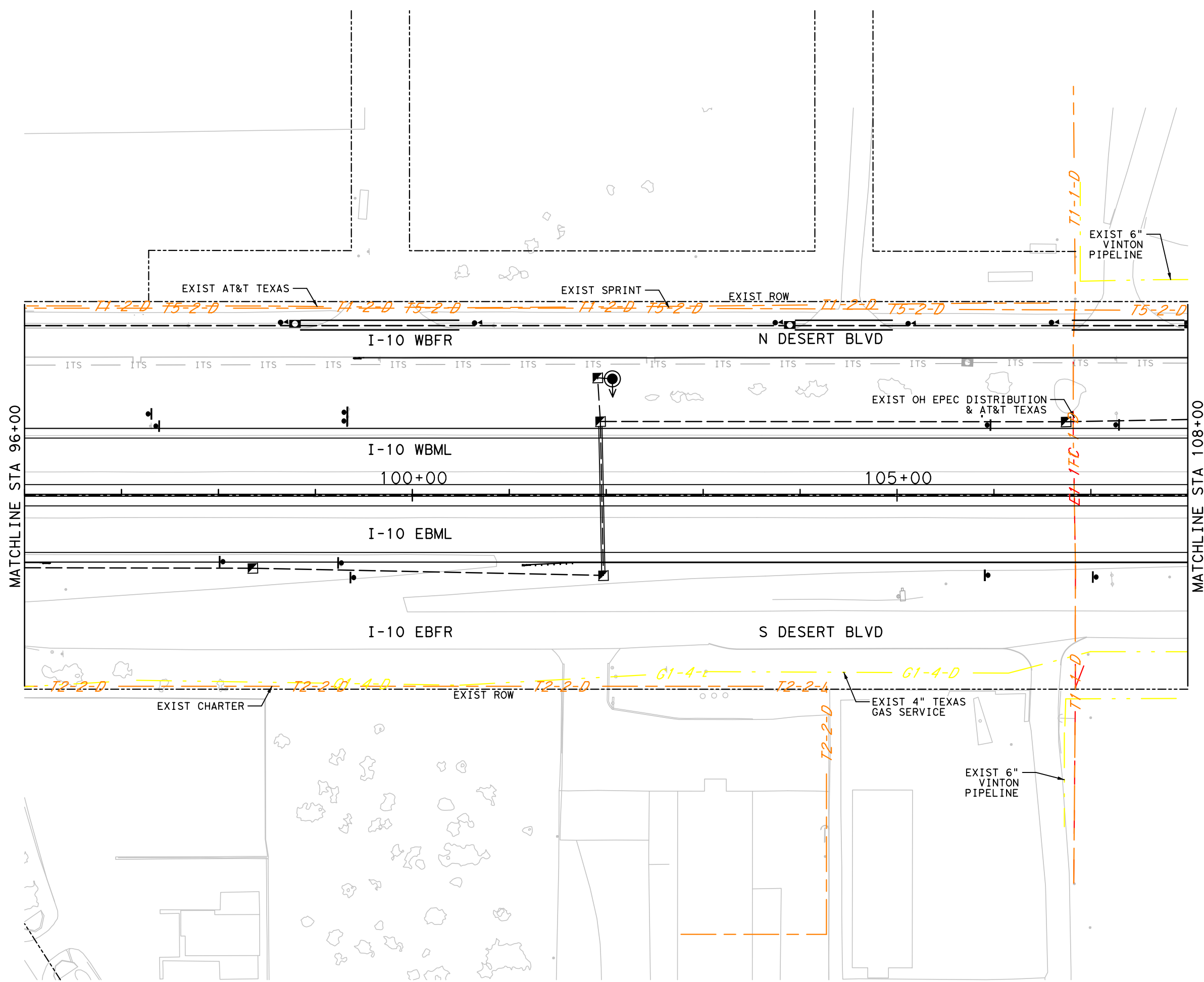


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 96+00 TO STA 108+00

PAGE 10 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT	SHEET NO.	
6	SEE TITLE SHEET	512	
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10

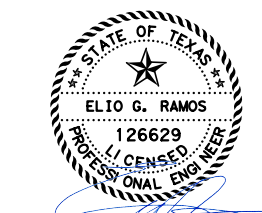
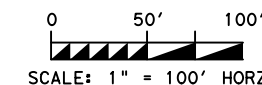
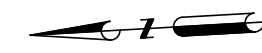


MATCHLINE STA 96+00

MATCHLINE STA 108+00

LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

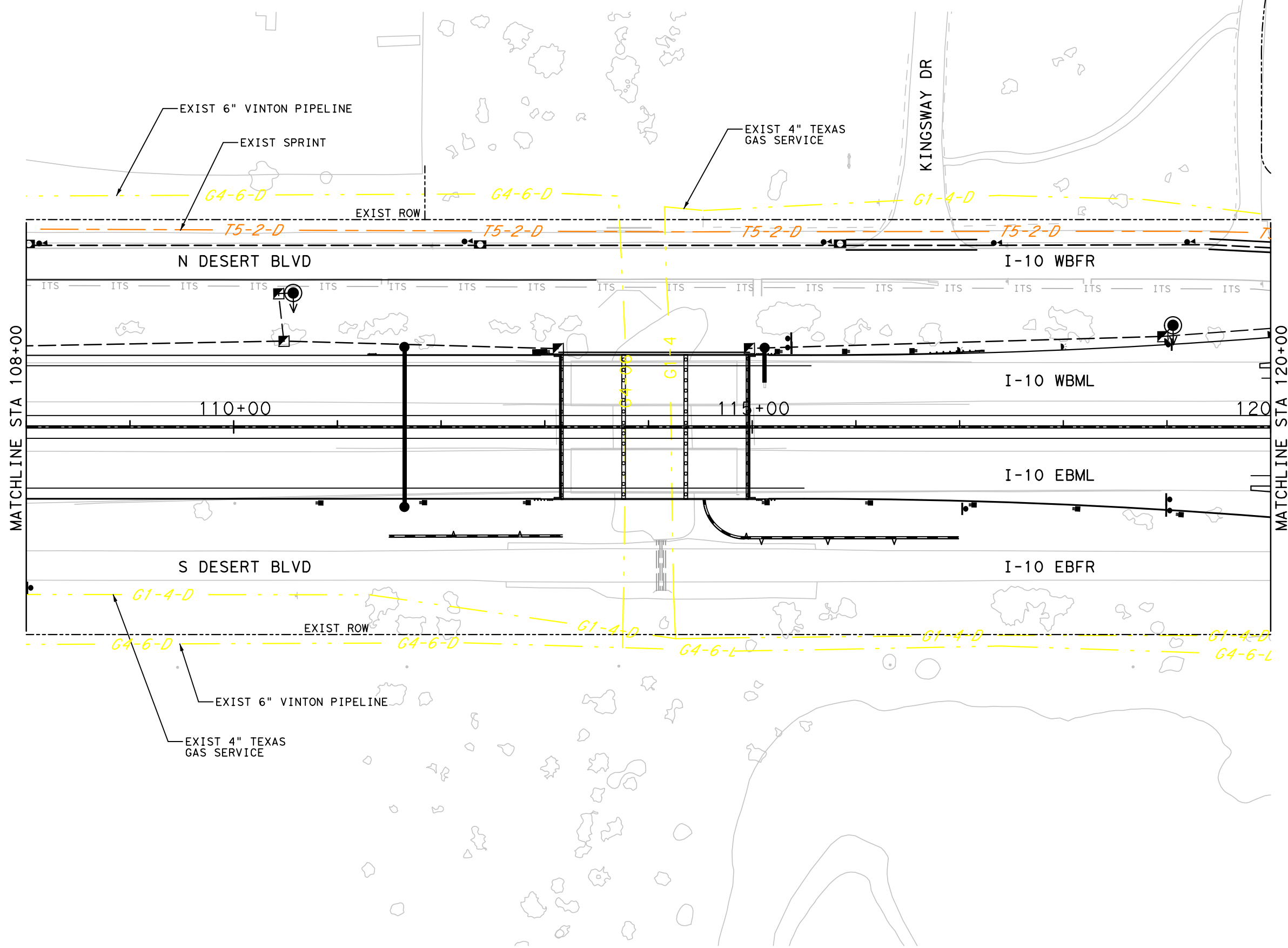


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 108+00 TO STA 120+00

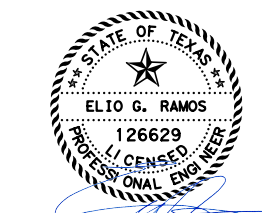
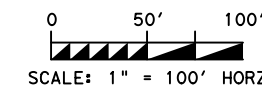
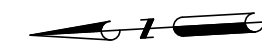
PAGE 11 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		513
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

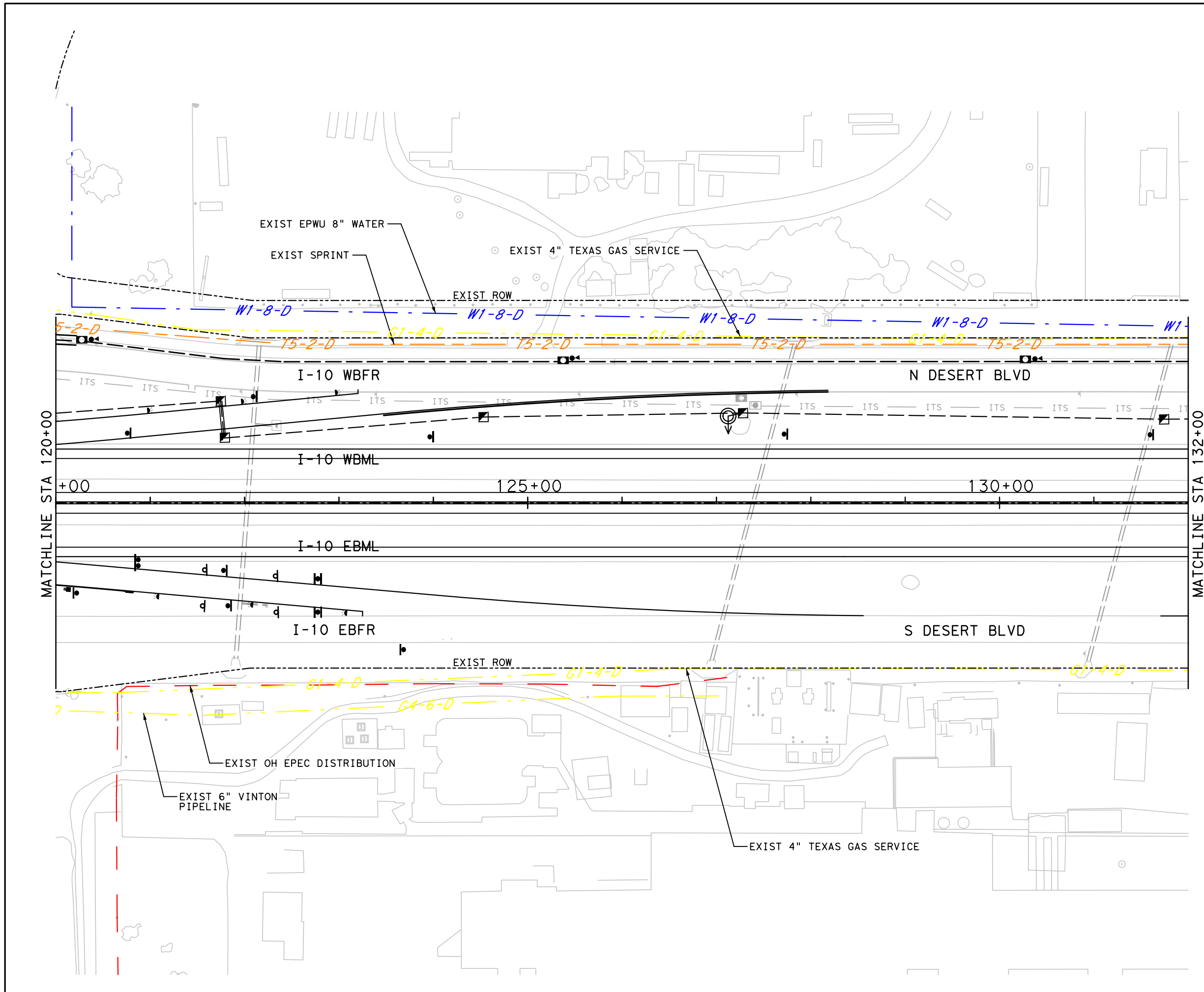


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 120+00 TO STA 132+00

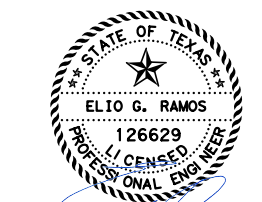
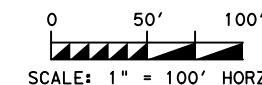
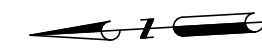
PAGE 12 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		514
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

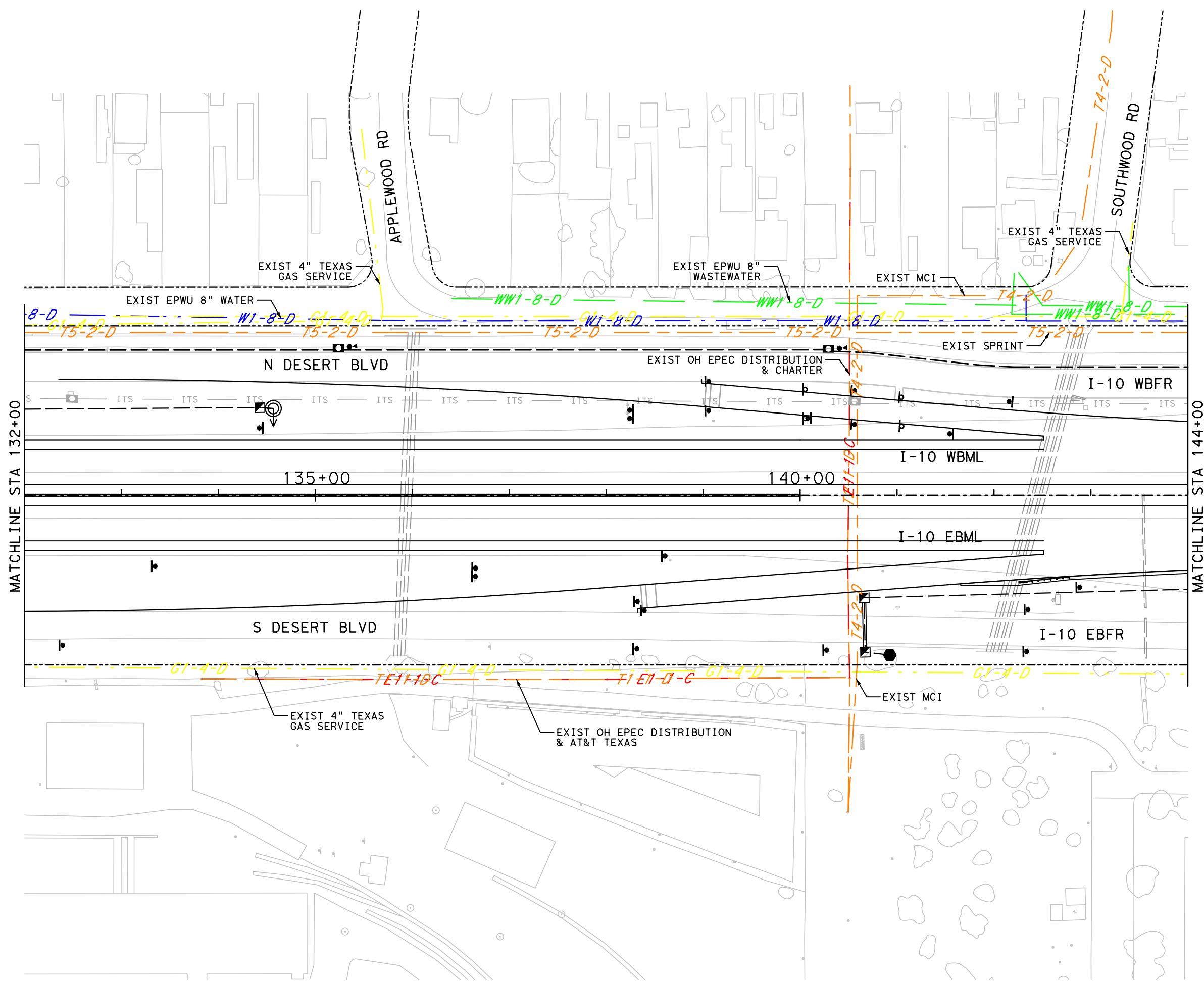


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 132+00 TO STA 144+00

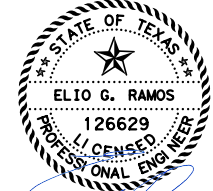
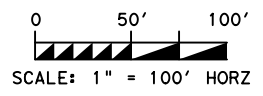
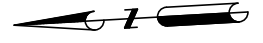
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FED RD DIV NO.	FEDERAL AID PROJECT	SHEET NO.	
6	SEE TITLE SHEET	515	
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

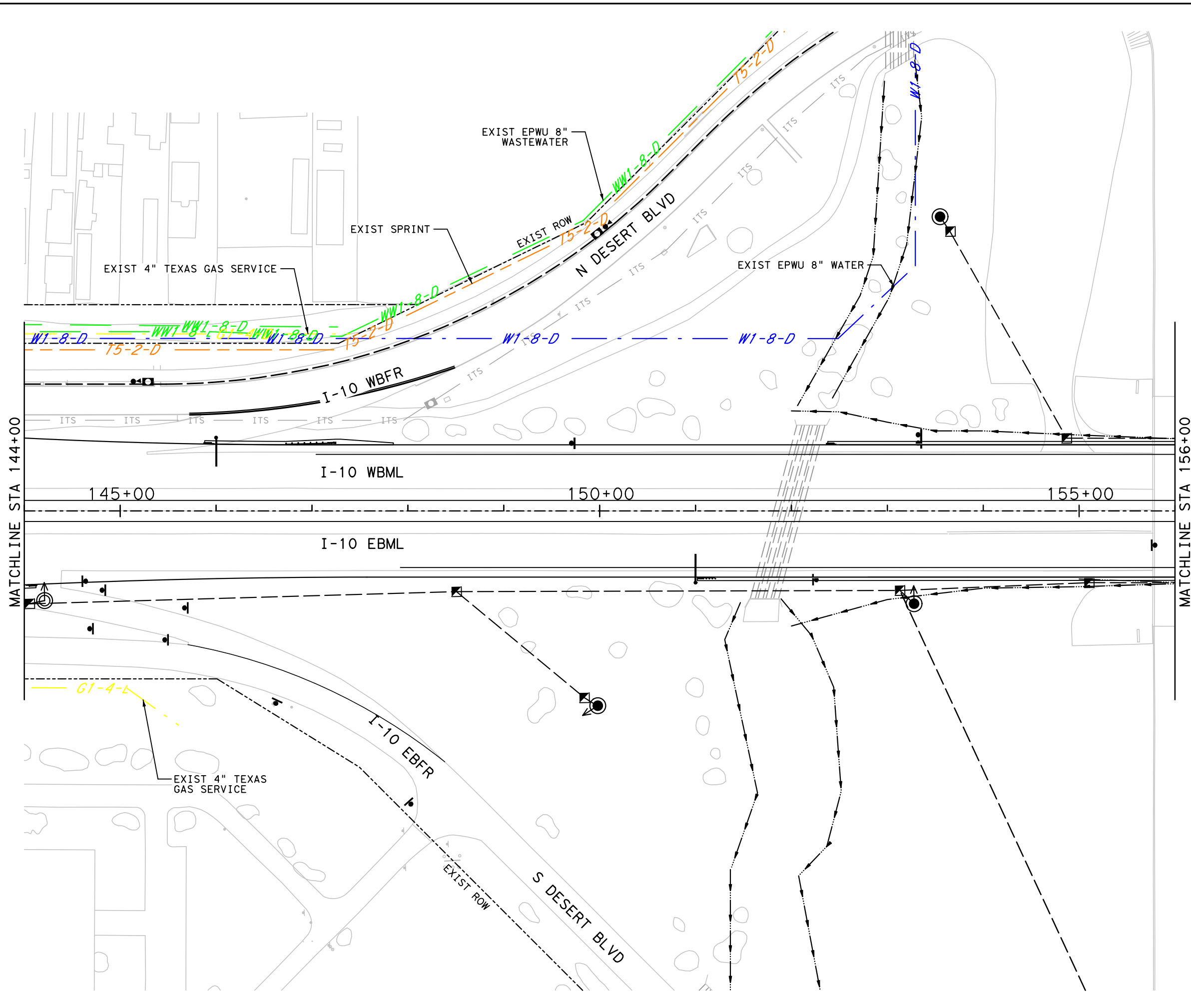


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 144+00 TO STA 156+00

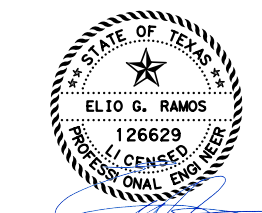
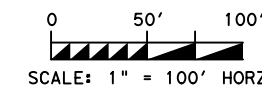
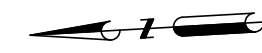
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FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		516
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

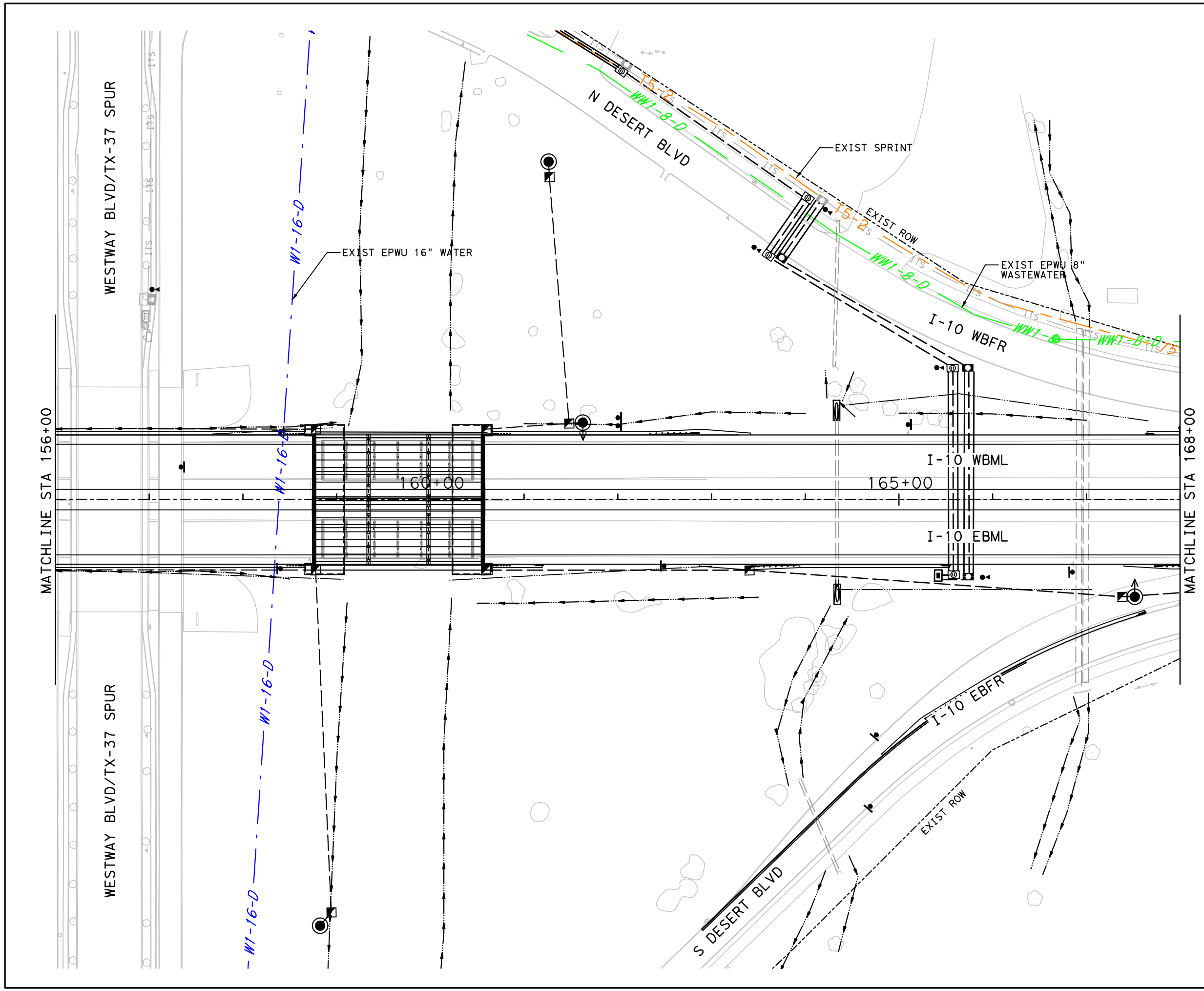


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 156+00 TO STA 168+00

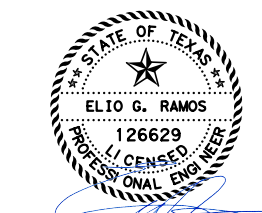
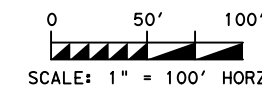
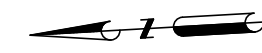
PAGE 15 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		517
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

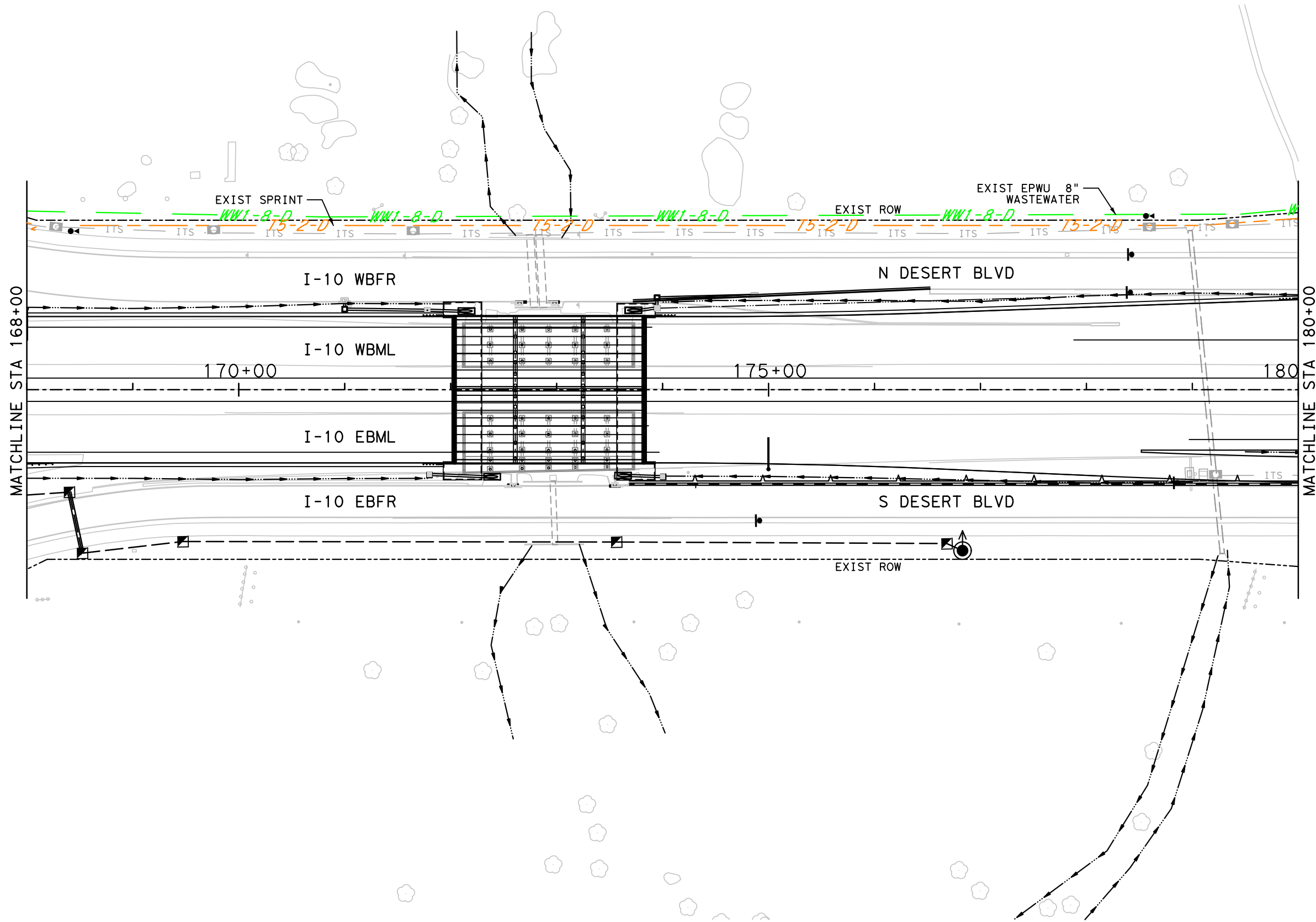


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 168+00 TO STA 180+00

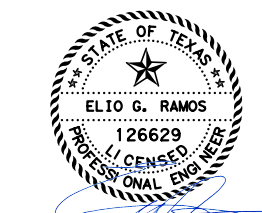
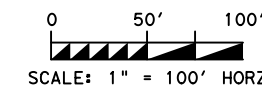
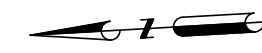
PAGE 16 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		518
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

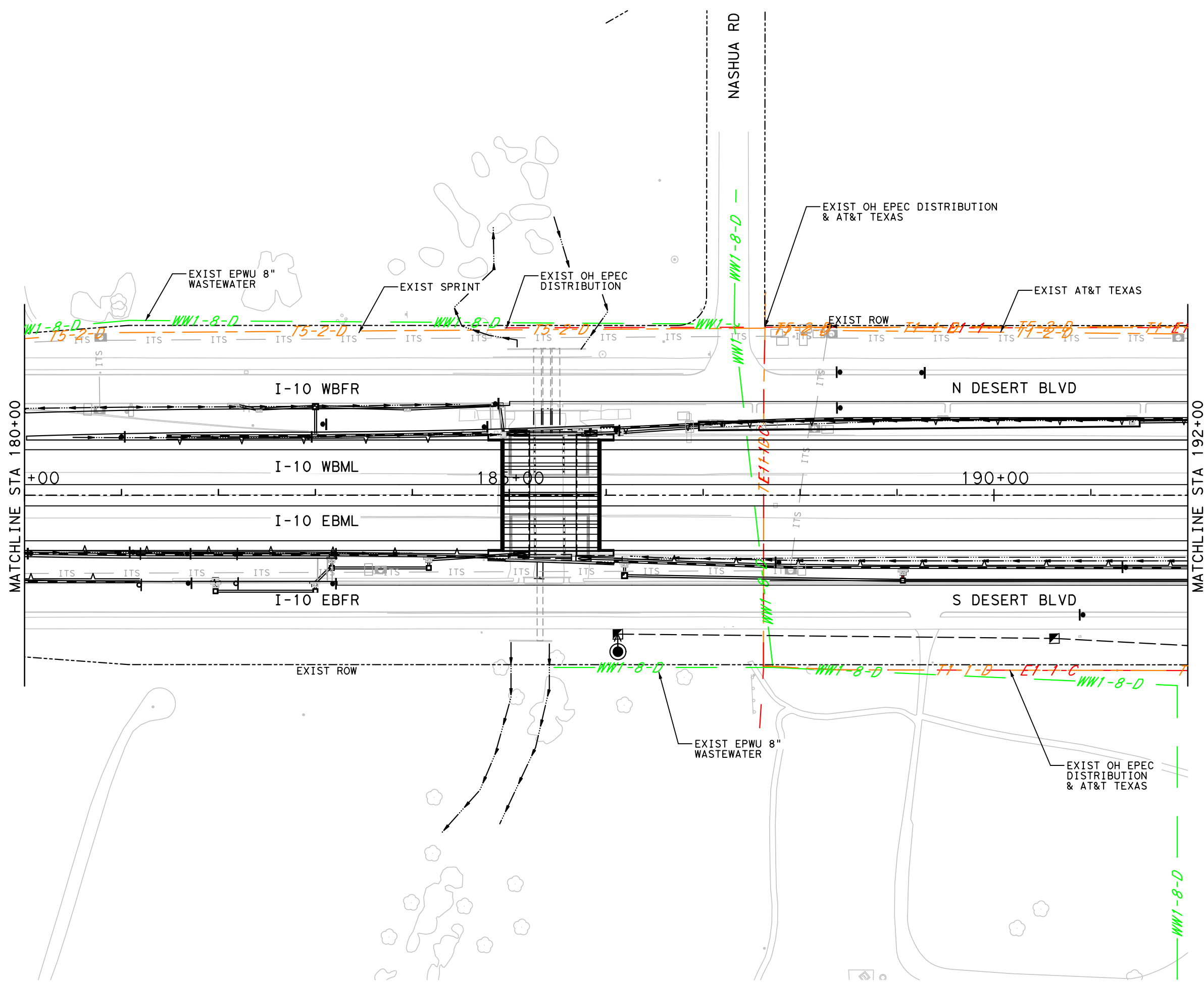


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 180+00 TO STA 192+00

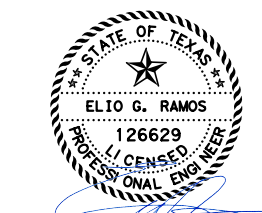
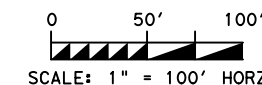
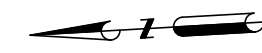
PAGE 17 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		519
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



LEGEND

- WATER
- W1-XX-D EPWU WATER
- WASTEWATER
- WW1-XX-D EPWU WASTEWATER
- RECLAIMED WATER
- W1-XX-D EPWU RECLAIMED WATER
- GAS
- G1-XX-D TEXAS GAS SERVICE
- G2-XX-D KINDER MORGAN
- G3-XX-D MAGELLAN MIDSTREAM
- G4-XX-D VINTON PIPELINE
- G5-XX-D ONEOK INC.
- ELECTRIC
- E1-1-C EPEC DISTRIBUTION (OH)
- E1-2-D EPEC DISTRIBUTION (UG)
- E2-1-C EPEC TRANSMISSION (OH)
- TELEPHONE
- T1-1-D AT&T TEXAS (OH)
- T1-2-D AT&T TEXAS (UG)
- T2-1-D CHARTER COMMUNICATIONS (OH)
- T2-2-D CHARTER COMMUNICATIONS (UG)
- T3-1-D CONTERRA COMMUNICATIONS (OH)
- T3-2-D CONTERRA COMMUNICATIONS (UG)
- T4-1-D MCI COMMUNICATIONS (OH)
- T4-2-D MCI COMMUNICATIONS (UG)
- T5-2-D SPRINT/NEXTEL CORPORATION (UG)



2/29/2024

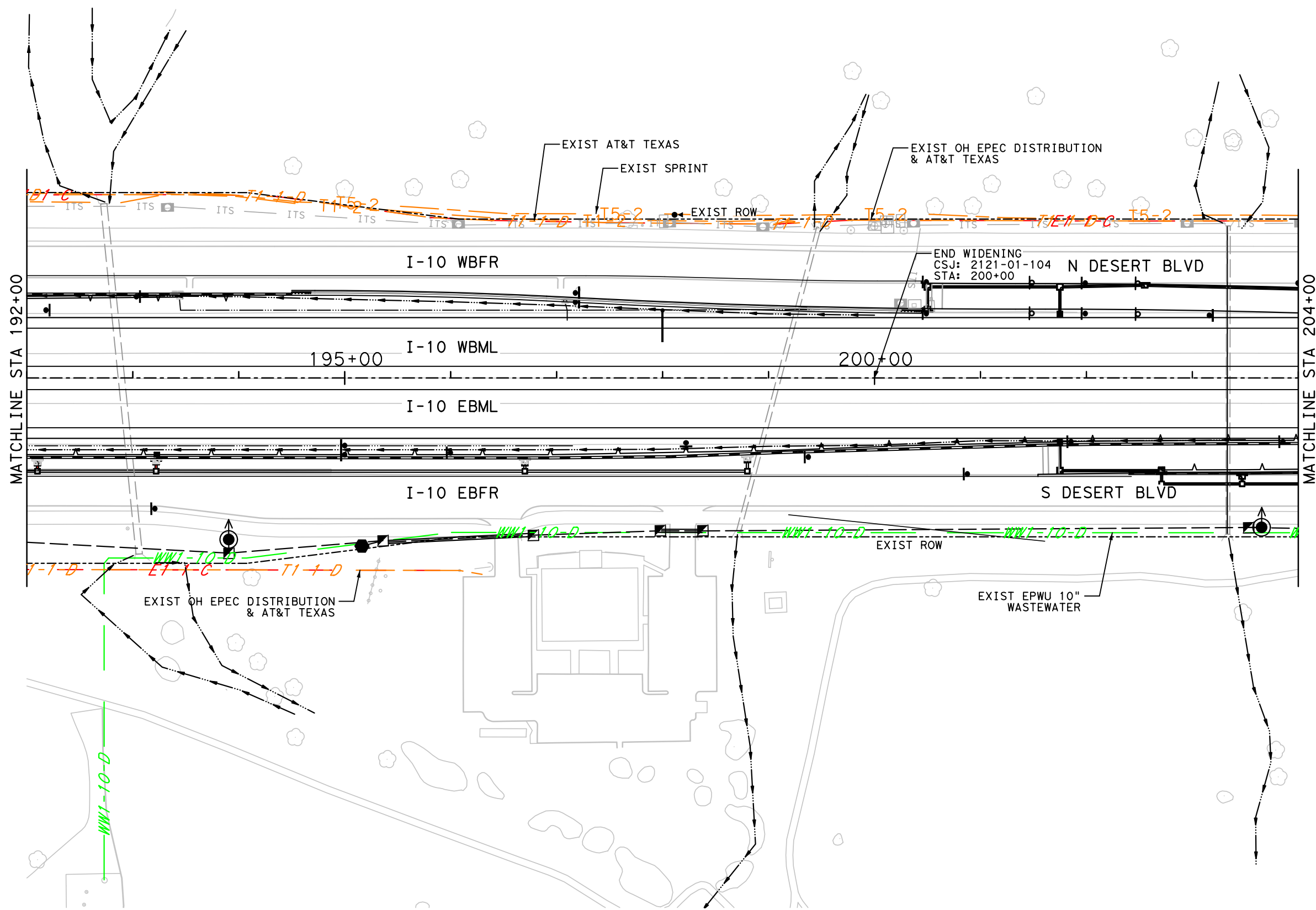


IH 10 WIDENING PROJECT

EXISTING UTILITY LAYOUT
STA 192+00 TO STA 204+00

PAGE 18 OF 18

FED RD DIV NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		520
STATE	DISTRICT	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY
2121	01	104	IH-10



MATCHLINE STA 192+00

MATCHLINE STA 204+00

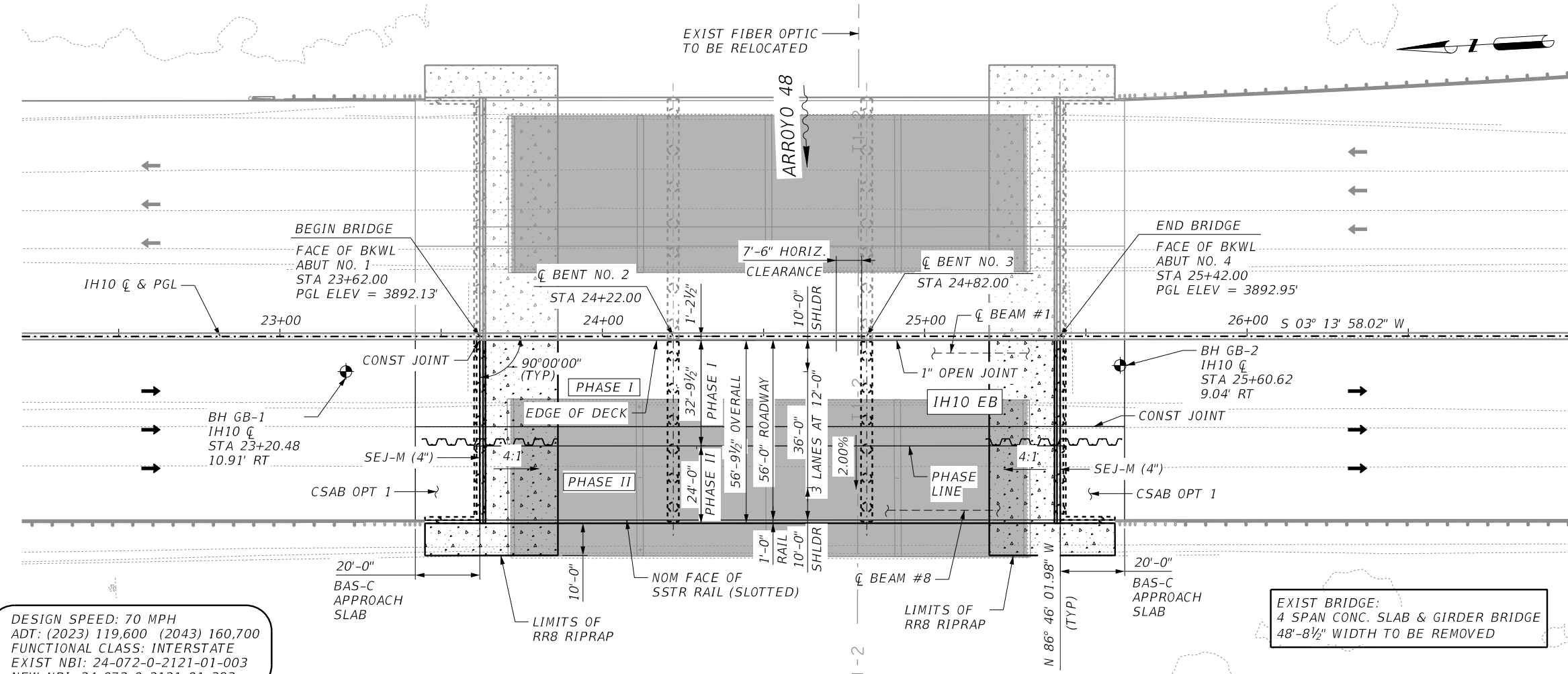
GENERAL NOTES

- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ⊕ - DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

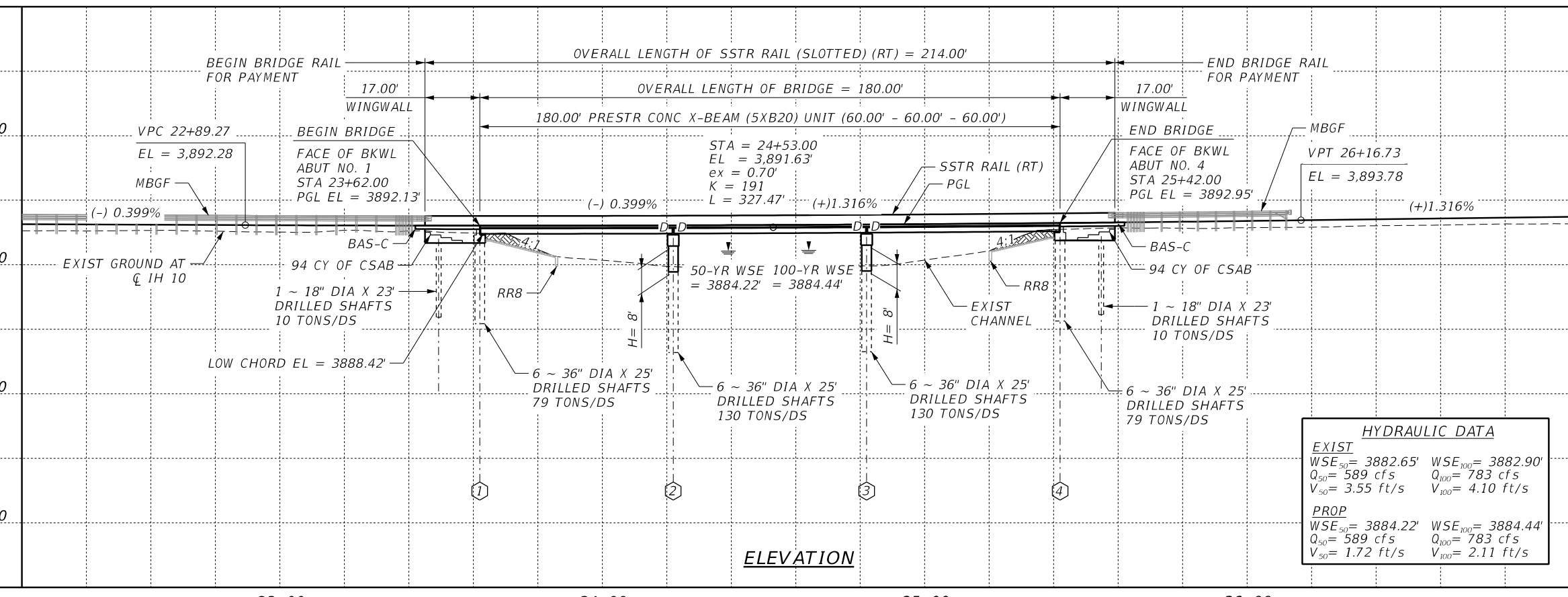
LEGEND

- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING

DESIGN SPEED: 70 MPH
ADT: (2023) 119,600 (2043) 160,700
FUNCTIONAL CLASS: INTERSTATE
EXIST NBI: 24-072-0-2121-01-003
NEW NBI: 24-072-0-2121-01-393

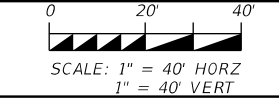


PLAN



ELEVATION

HL93 LOADING



Steve Wilkerson
2/29/2024

CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)

BRIDGE LAYOUT
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

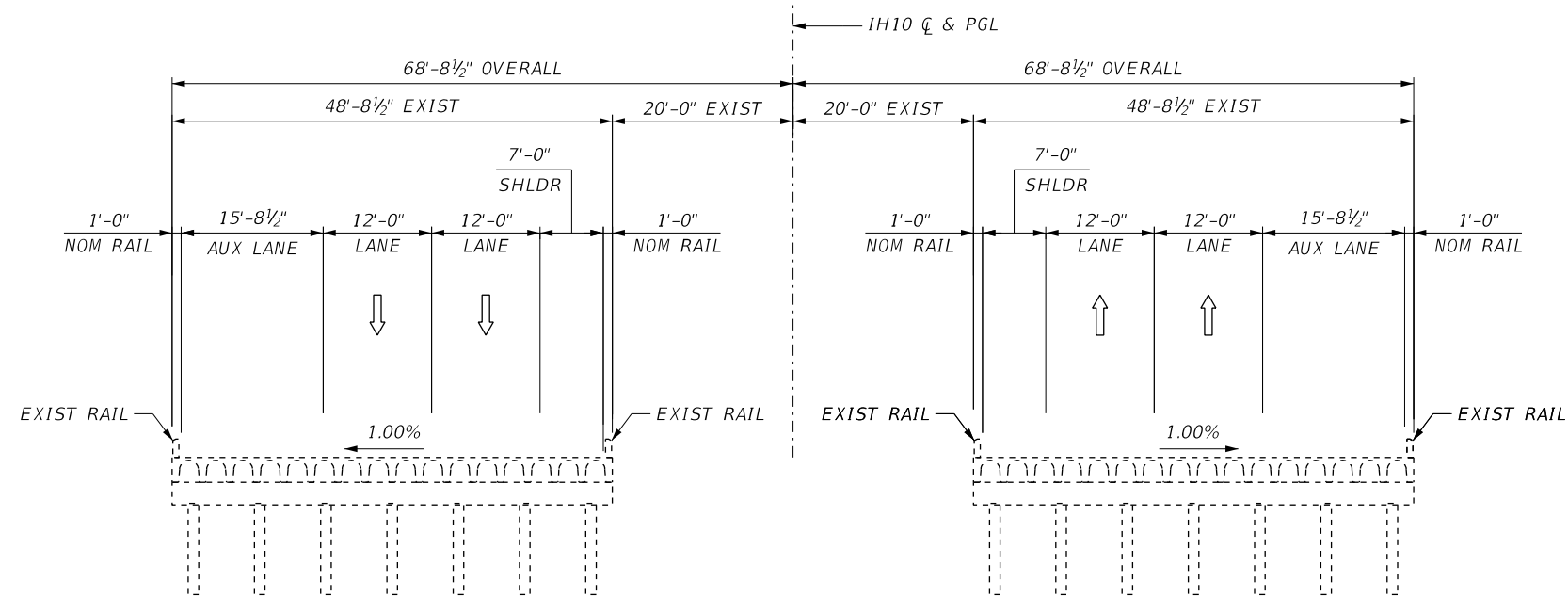
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6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.		
104	521		

HYDRAULIC DATA

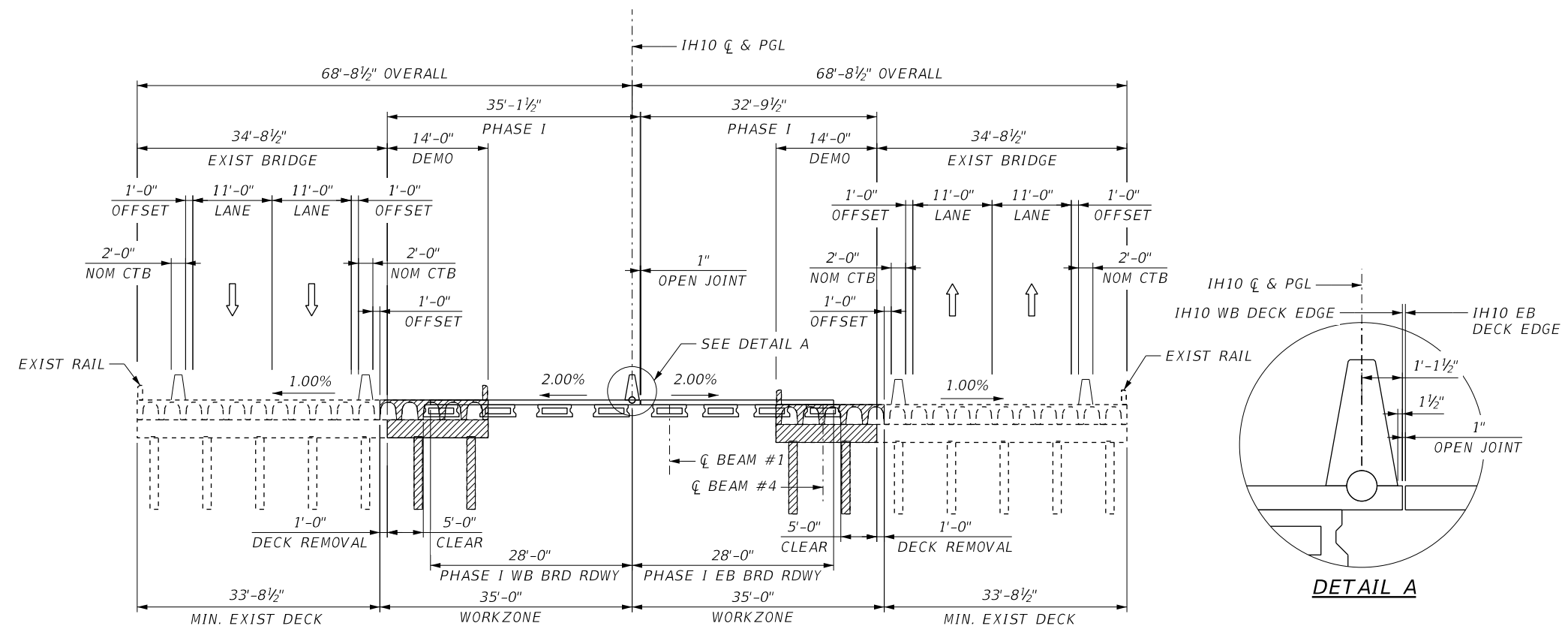
EXIST		PROP	
WSE ₅₀ = 3882.65'	WSE ₁₀₀ = 3882.90'	WSE ₅₀ = 3884.22'	WSE ₁₀₀ = 3884.44'
Q ₅₀ = 589 cfs	Q ₁₀₀ = 783 cfs	Q ₅₀ = 589 cfs	Q ₁₀₀ = 783 cfs
V ₅₀ = 3.55 ft/s	V ₁₀₀ = 4.10 ft/s	V ₅₀ = 1.72 ft/s	V ₁₀₀ = 2.11 ft/s

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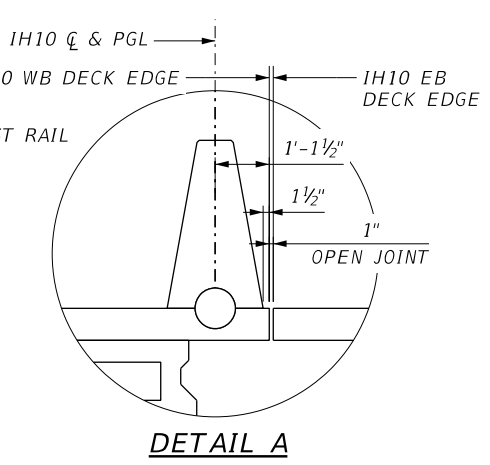
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EXIST SECTION



PHASE I SECTION



DETAIL A

- LEGEND**
- ↑ EXISTING TRAFFIC FLOW ARROW
 - ↑ PROPOSED TRAFFIC FLOW ARROW
 - ▨ DEMOLITION OF EXIST BRIDGE

HL93 LOADING

NOT TO SCALE



Wirat Wanichakorn
2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	522

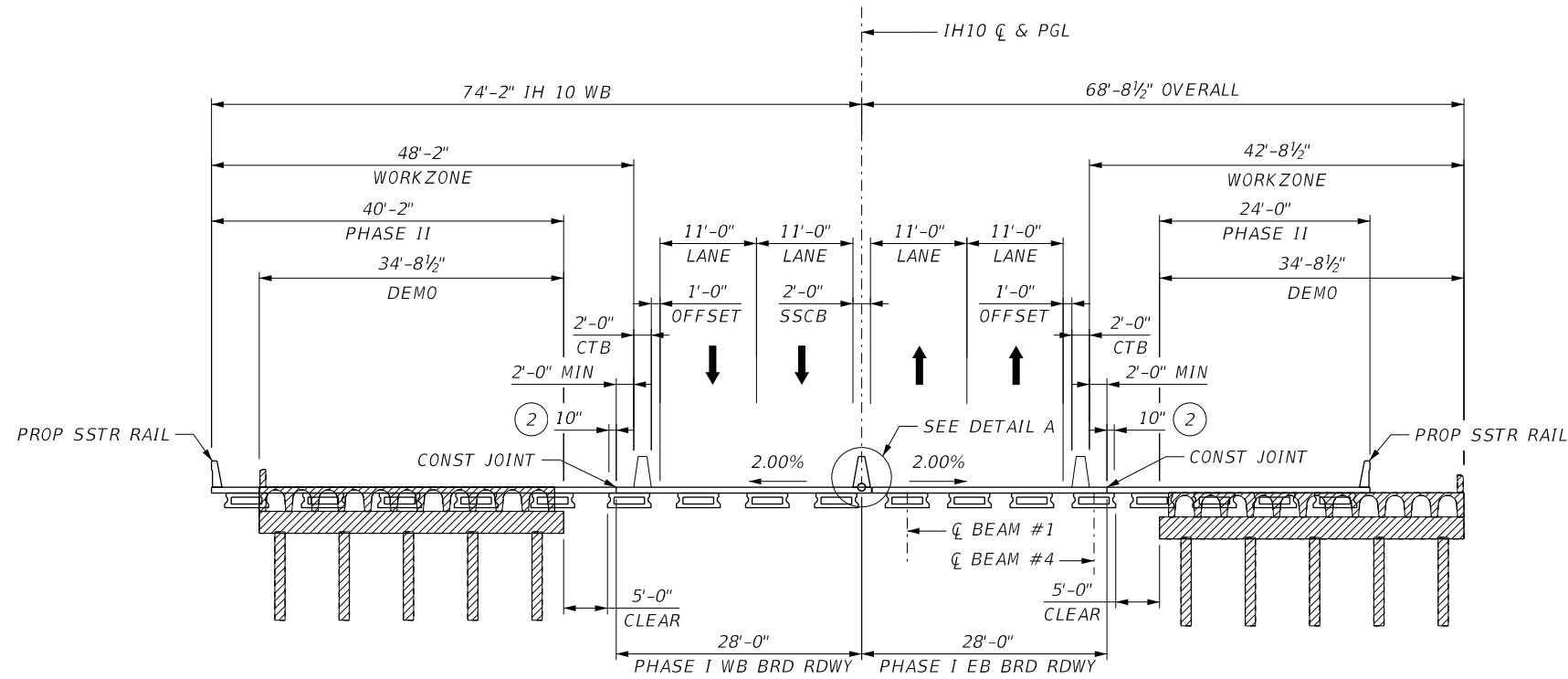
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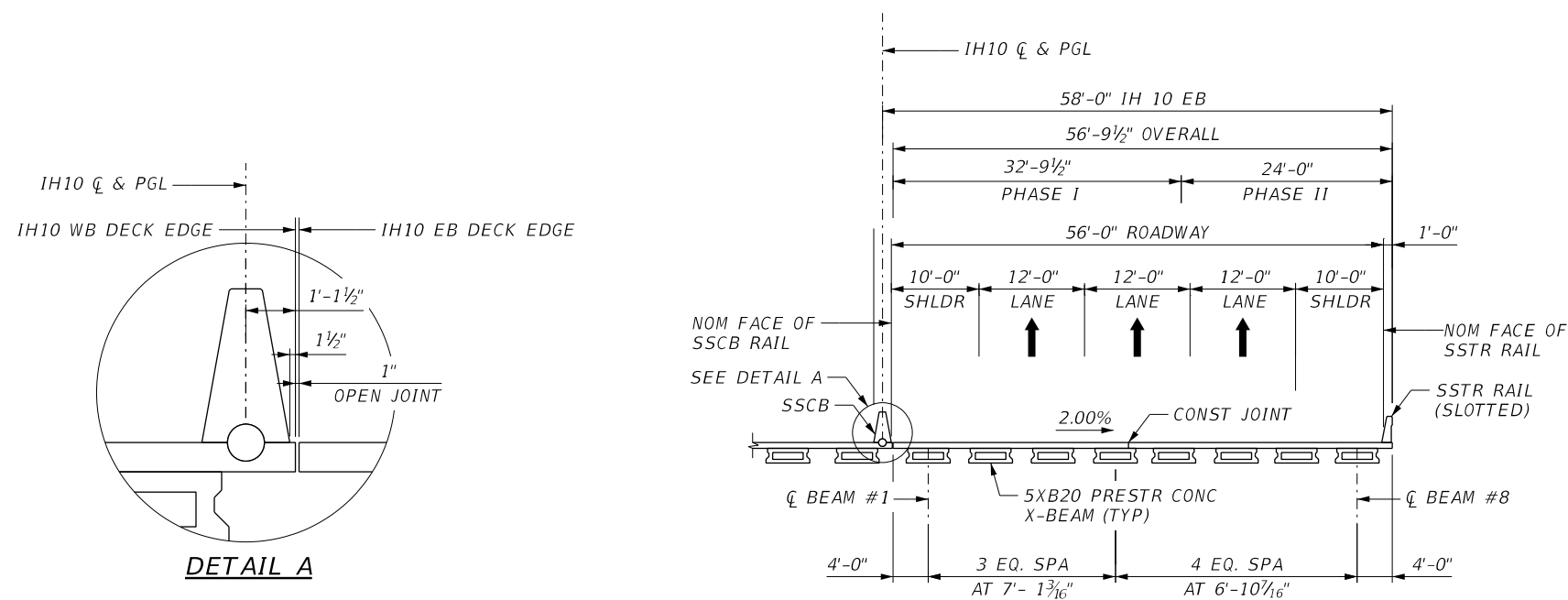
LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE

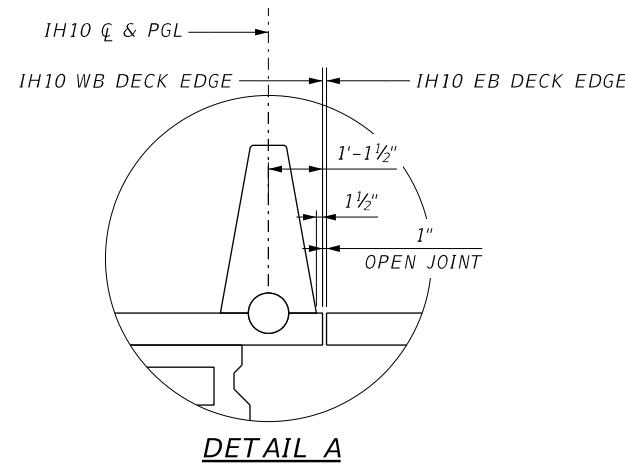


PHASE II SECTION

② EDGE OF DECK TO EDGE OF TOP OF BEAM.



IH 10 EB FINAL SECTION



DETAIL A

HL93 LOADING

NOT TO SCALE



Wirat Wanichakorn 2/29/2024

NO.	DATE	REVISION	APPROV.

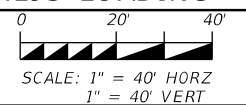


**IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)**

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	523

HL93 LOADING



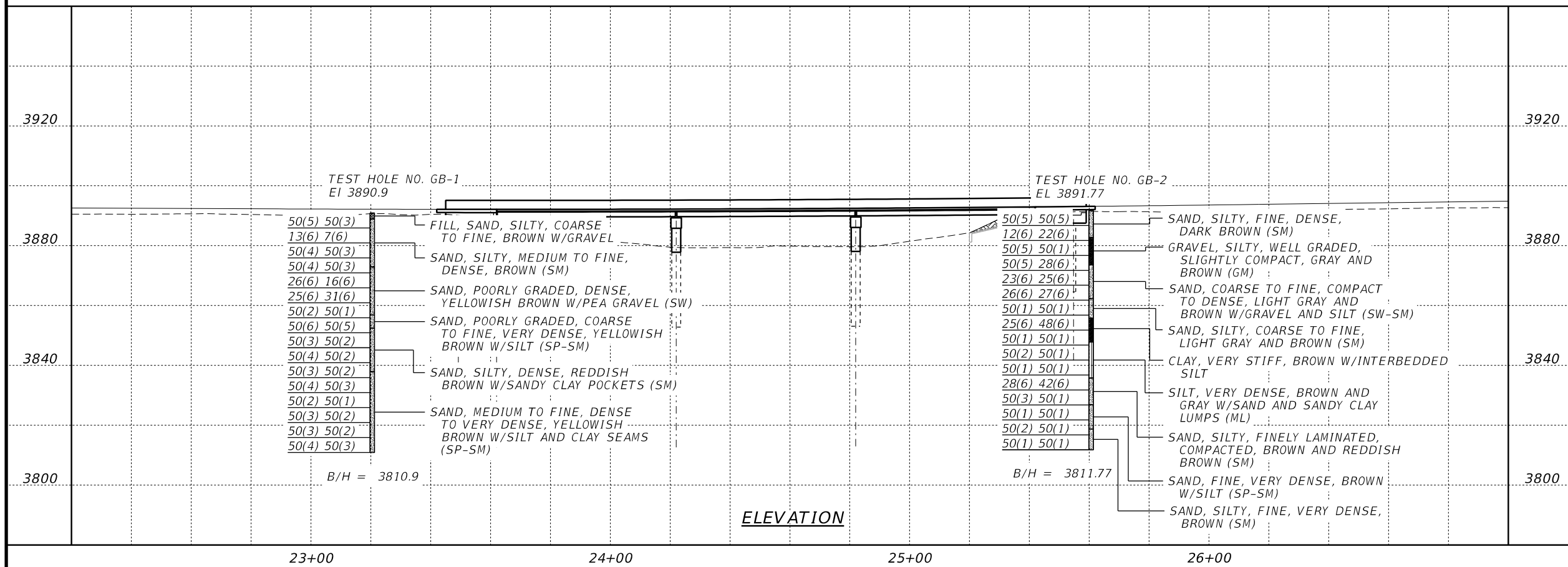
Wirat Wanichakorn
2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)
BORING LOGS
ARROYO 48 RELIEF #AA & #AB BRIDGE
IH 10 EB & IH 10 WB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	524



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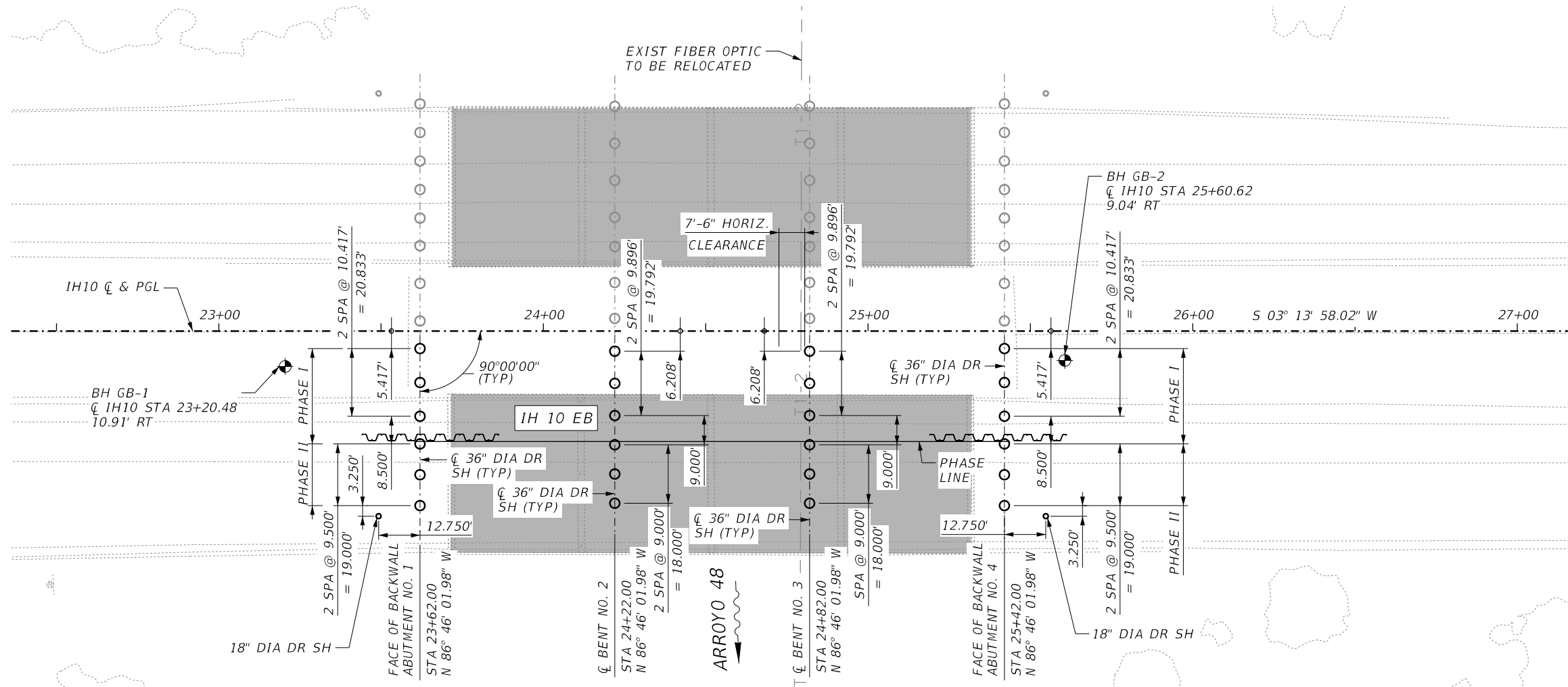
GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.
3. DRILLED SHAFT INSTALLATION WILL REQUIRE THE USE OF SLURRY DISPLACEMENT METHODS AND SURFACE CASING. THE SURFACE CASING IS TEMPORARY AND SHALL BE RETRIEVED AS OUTLINED IN TXDOT STANDARD SPECIFICATIONS.

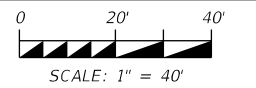


LEGEND

- = BORE HOLE
- = DRILLED SHAFT
- = TEMP SPL SHORING



HL93 LOADING



Wirat Wanichakorn
3/28/2024

FOUNDATION LOADS	
ABUT/BENT	TONS/SHAFT
1 & 4	79
2 & 3	130
WINGWALL	10

CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)

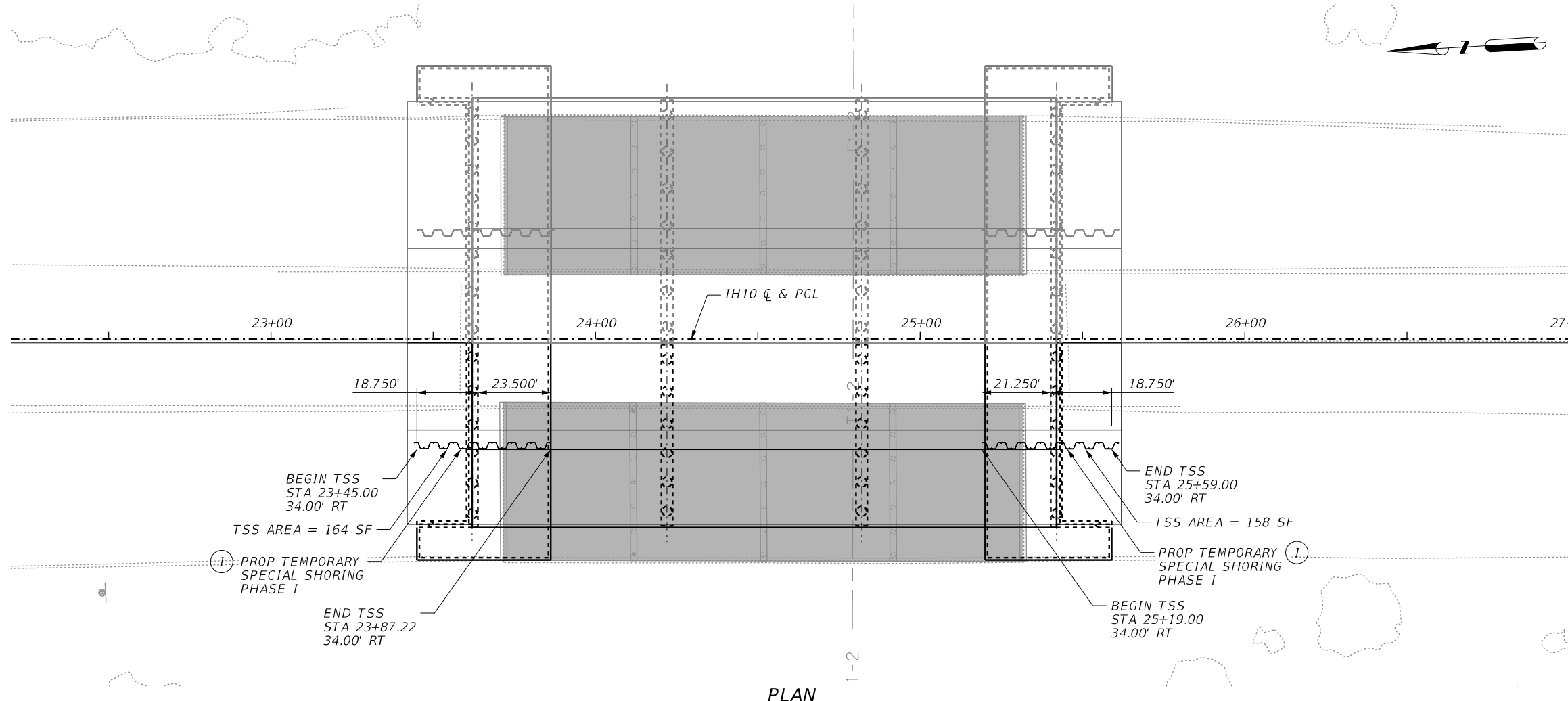
FOUNDATION LAYOUT
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	525

LEGEND

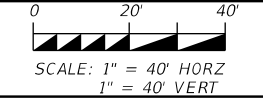
TEMPORARY SPL SHORING



PLAN

1 PAID FOR UNDER ITEM 403 TEMPORARY SPL SHORING.

HL93 LOADING



Steve Groves 2/29/2024

NO.	DATE	REVISION	APPROV.

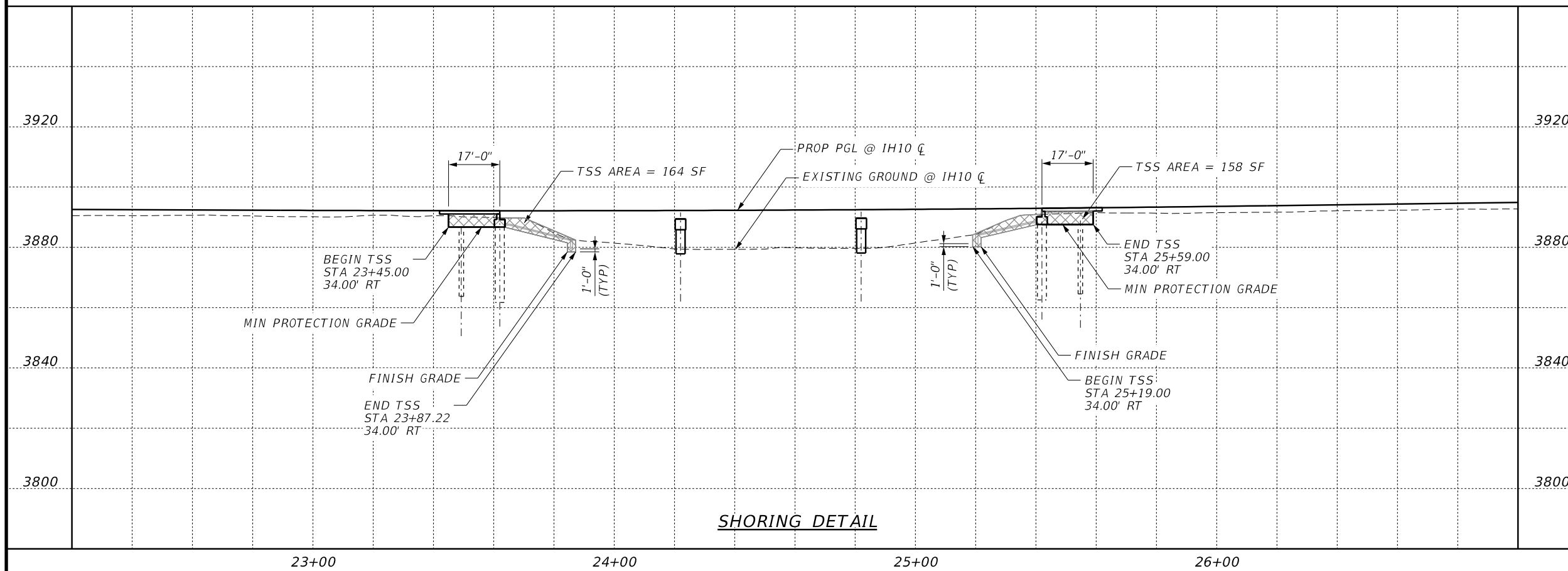
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ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	526



SHORING DETAIL

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BEARING SEAT ELEVATIONS

				PHASE I				PHASE II				
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	
1	ABUT	1	(FWD)	L	3889.274	3889.132	3888.990	3888.848	3888.710	3888.573	3888.435	3888.298
			R	3889.154	3889.012	3888.870	3888.728	3888.590	3888.453	3888.315	3888.178	
2	BENT	2	(BK)	L	3889.355	3889.213	3889.071	3888.928	3888.791	3888.654	3888.516	3888.379
			R	3889.235	3889.093	3888.951	3888.808	3888.671	3888.534	3888.396	3888.259	
	2	(FWD)	L	3889.361	3889.219	3889.076	3888.934	3888.797	3888.660	3888.522	3888.385	
		R	3889.241	3889.099	3888.956	3888.814	3888.677	3888.540	3888.402	3888.265		
3	BENT	3	(BK)	L	3889.623	3889.481	3889.339	3889.197	3889.060	3888.922	3888.785	3888.647
			R	3889.503	3889.361	3889.219	3889.077	3888.940	3888.802	3888.665	3888.527	
	3	(FWD)	L	3889.635	3889.493	3889.351	3889.209	3889.072	3888.934	3888.797	3888.659	
		R	3889.515	3889.373	3889.231	3889.089	3888.952	3888.814	3888.677	3888.539		
4	ABUT	4	(BK)	L	3890.080	3889.938	3889.796	3889.654	3889.516	3889.379	3889.241	3889.104
			R	3889.960	3889.818	3889.676	3889.534	3889.396	3889.259	3889.121	3888.984	



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BEARING SEAT ELEVATIONS
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

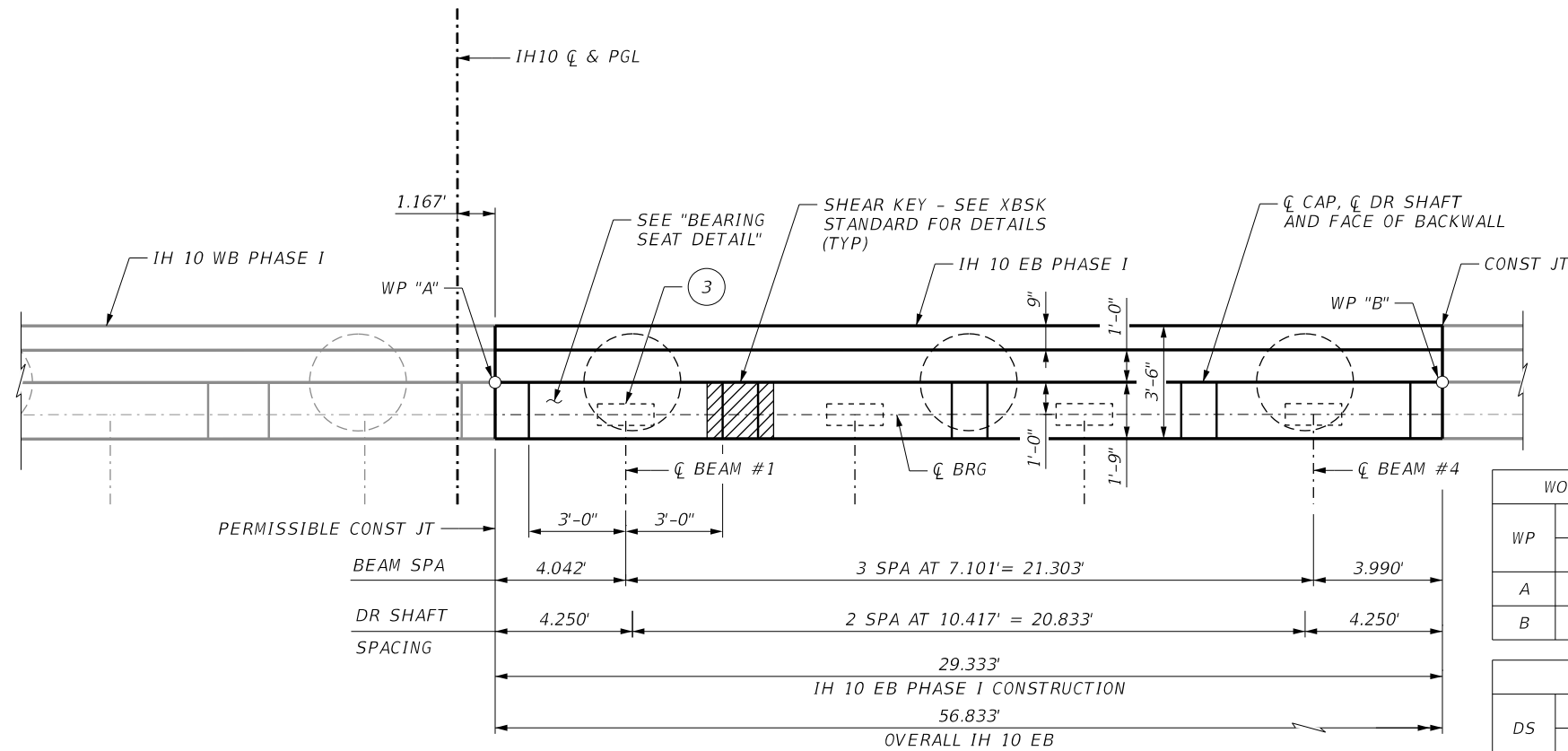
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	527

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

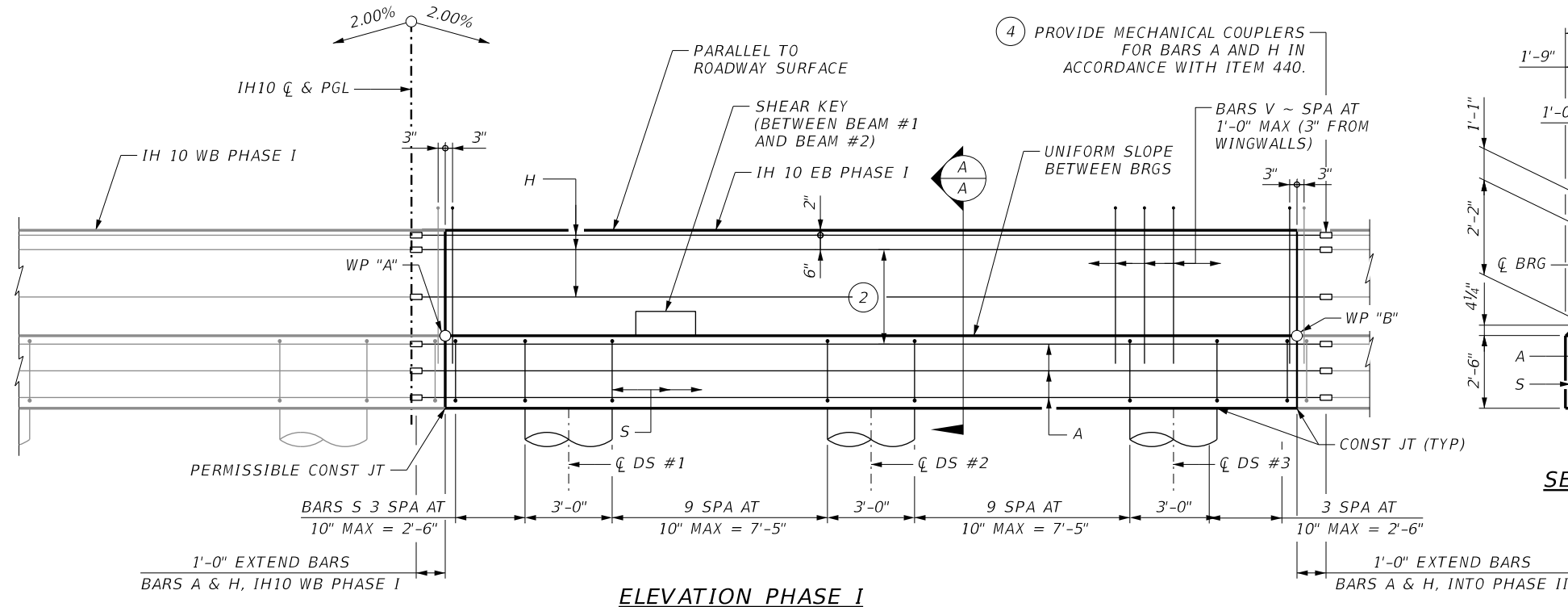
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



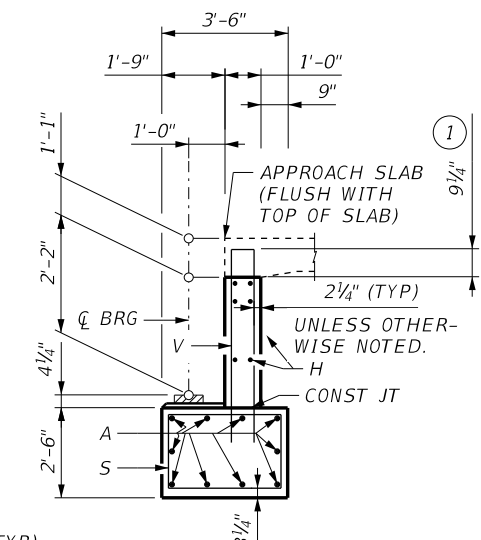
WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
A	3889.169'	3889.979'
B	3888.582'	3889.392'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
1	3886.584'	3887.394'
2	3886.375'	3887.185'
3	3886.167'	3886.977'

PLAN PHASE I

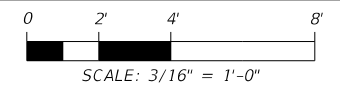


ELEVATION PHASE I



SECTION A-A

HL93 LOADING



Wirat Wanichakorn
2/29/2024

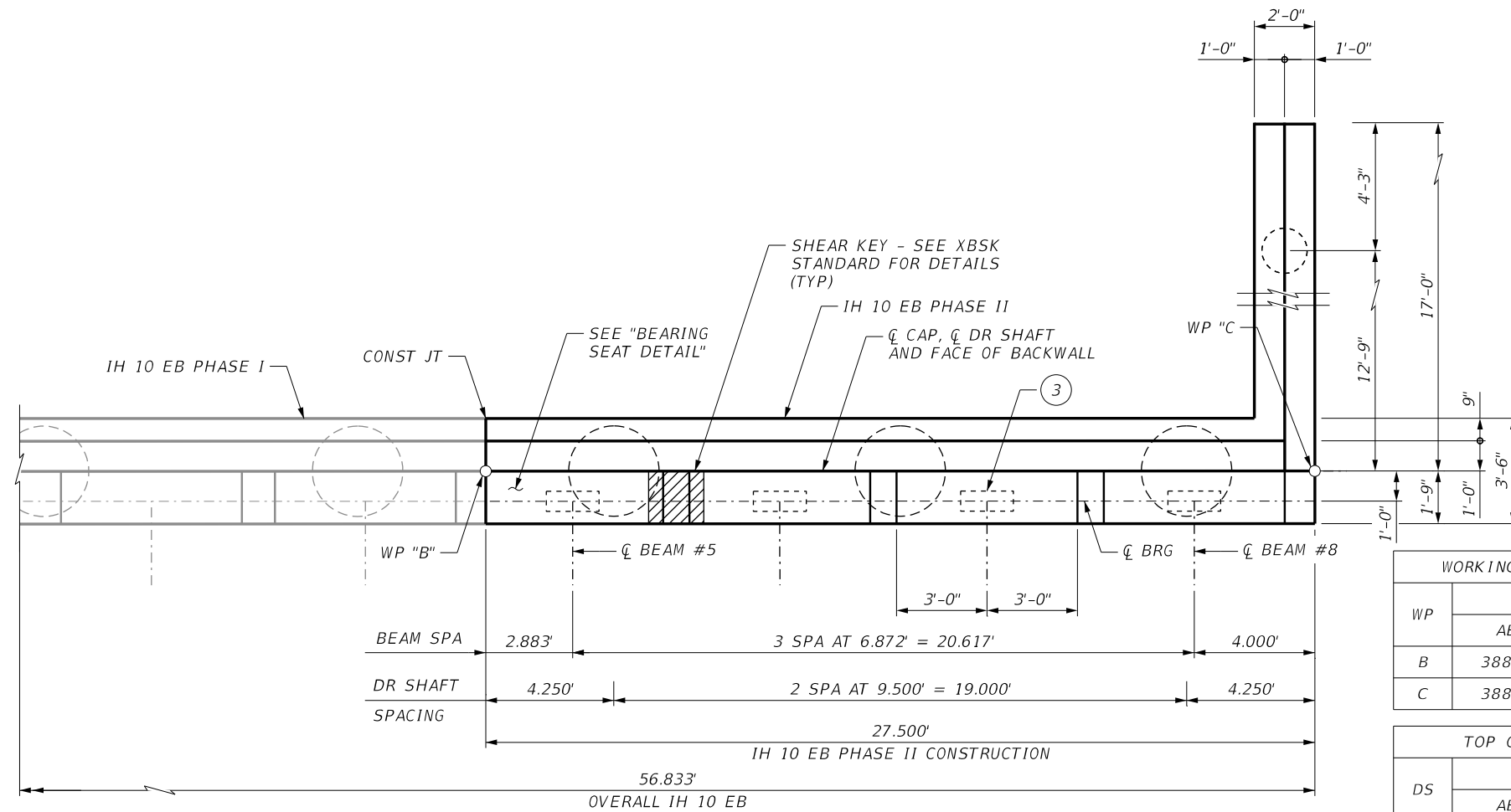
CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)**

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	528



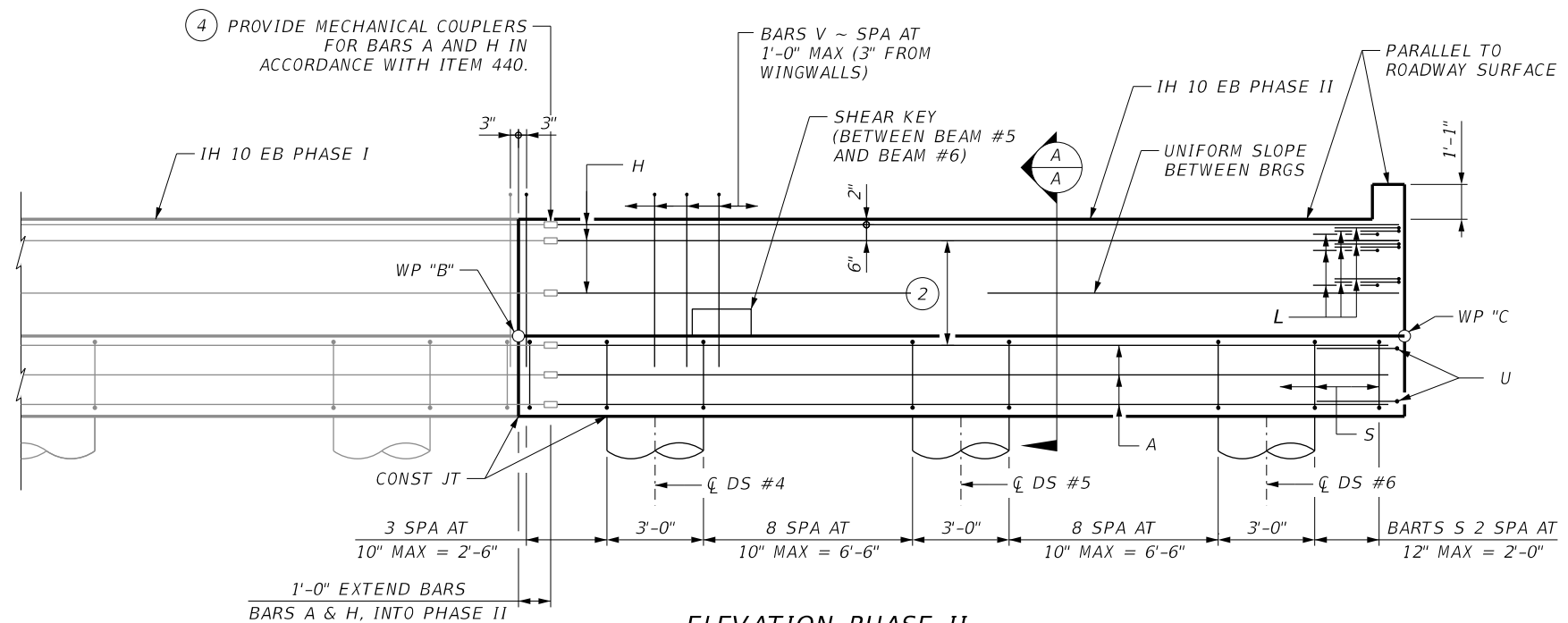
PLAN PHASE II

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
B	3888.582'	3889.392'
C	3888.032'	3888.842'

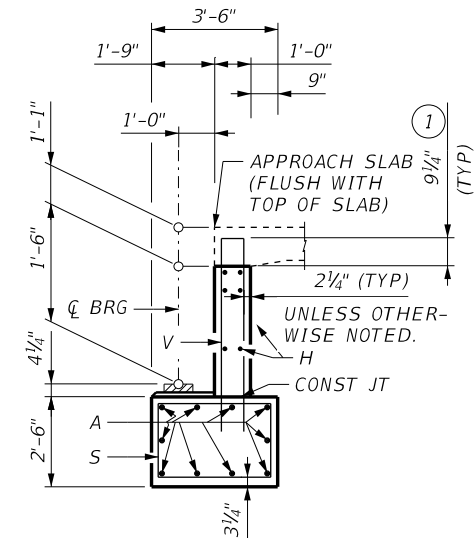
TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
4	3885.997'	3886.807'
5	3885.807'	3886.617'
6	3885.617'	3886.427'
WW	3885.552'	3886.362'

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH F'C = 3,600 PSI.
 - ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
 - ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
 - SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
 - SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

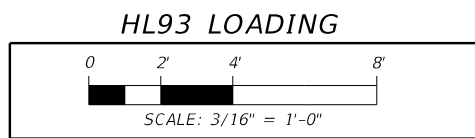
- KEYED NOTES**
- INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.
 - SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



ELEVATION PHASE II



SECTION A-A



STATE OF TEXAS
 WIRAT WANICHAKORN
 96609
 LICENSED PROFESSIONAL ENGINEER
 Steve Winkler
 2/29/2024

CivilCorp
 ENGINEERS • SURVEYORS
 2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
 TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
 ABUTMENT NO. 1 & 4
 PHASE II
 ARROYO 48 RELIEF #AA BRIDGE
 IH 10 EB
 (STA 23+62 TO STA 25+42)

SHEET 1 OF 1

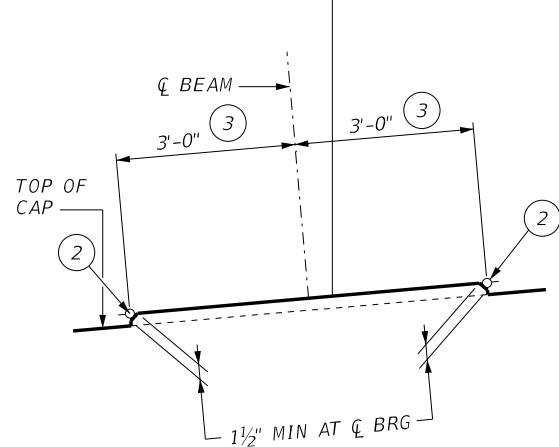
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	529

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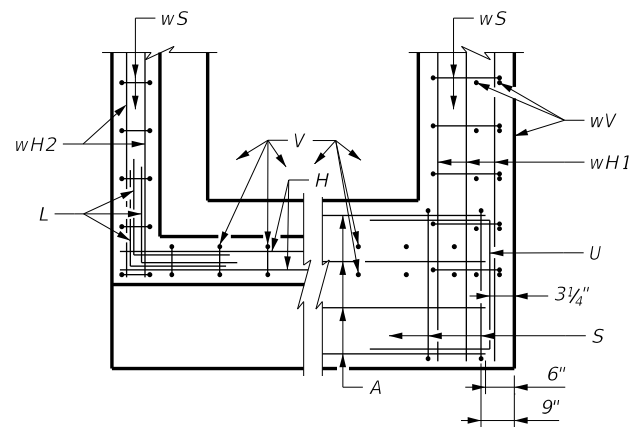
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LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



BACKWALL

CAP

CORNER DETAILS

TABLE OF ESTIMATED QUANTITIES PHASE I (ONE ABUT)

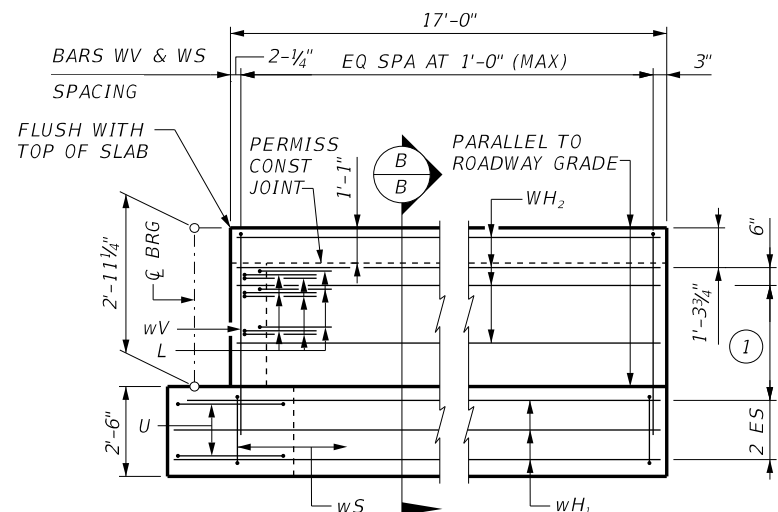
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31'-4"	1,665
H	6	#6	31'-4"	282
S	26	#5	11'-5"	305
V	30	#5	8'-4"	261
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,514
CONC (ABUT)			CY	11.8

TABLE OF ESTIMATED QUANTITIES PHASE II (ONE ABUT)

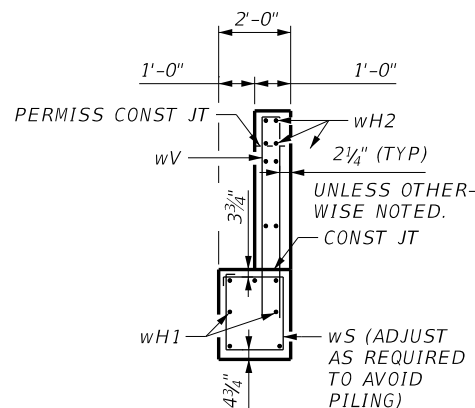
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	26'-0"	1,381
H	6	#6	26'-3"	237
L	9	#6	4'-0"	54
S	24	#5	11'-5"	284
U	4	#6	8'-0"	48
V	27	#5	8'-4"	237
wH1	7	#6	18'-6"	194
wH2	8	#6	16'-9"	200
wS	18	#4	7'-8"	92
wV	18	#5	8'-7"	161
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,889
CONC (ABUT)			CY	16.0

KEYED NOTES

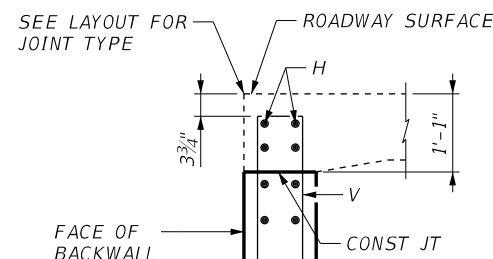
- ① SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- ② RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ③ MEASURED ALONG CL OF BEARING.



WINGWALL ELEVATION

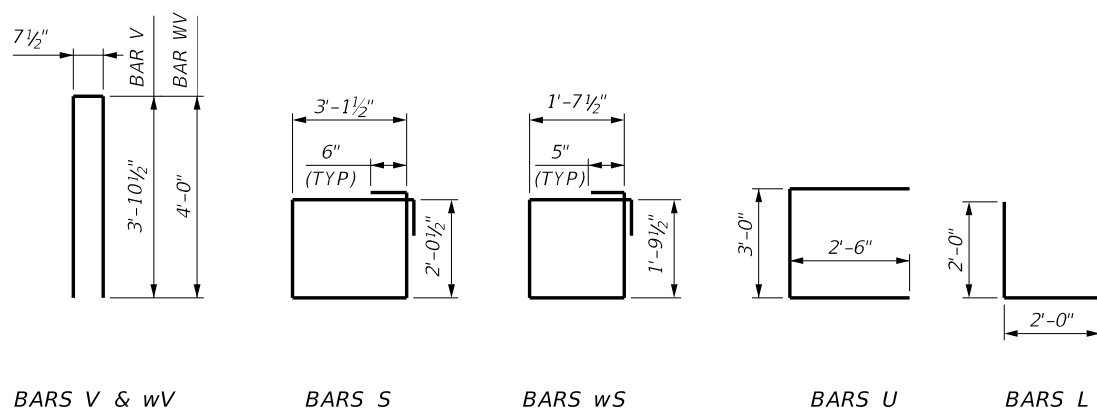


SECTION B-B



BACKWALL DETAIL

(WITH APPROACH SLAB)



HL93 LOADING

NOT TO SCALE

Wirat Wanichakorn 2/29/2024

NO.	DATE	REVISION	APPROV.

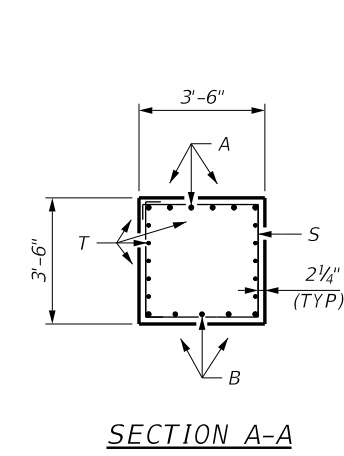
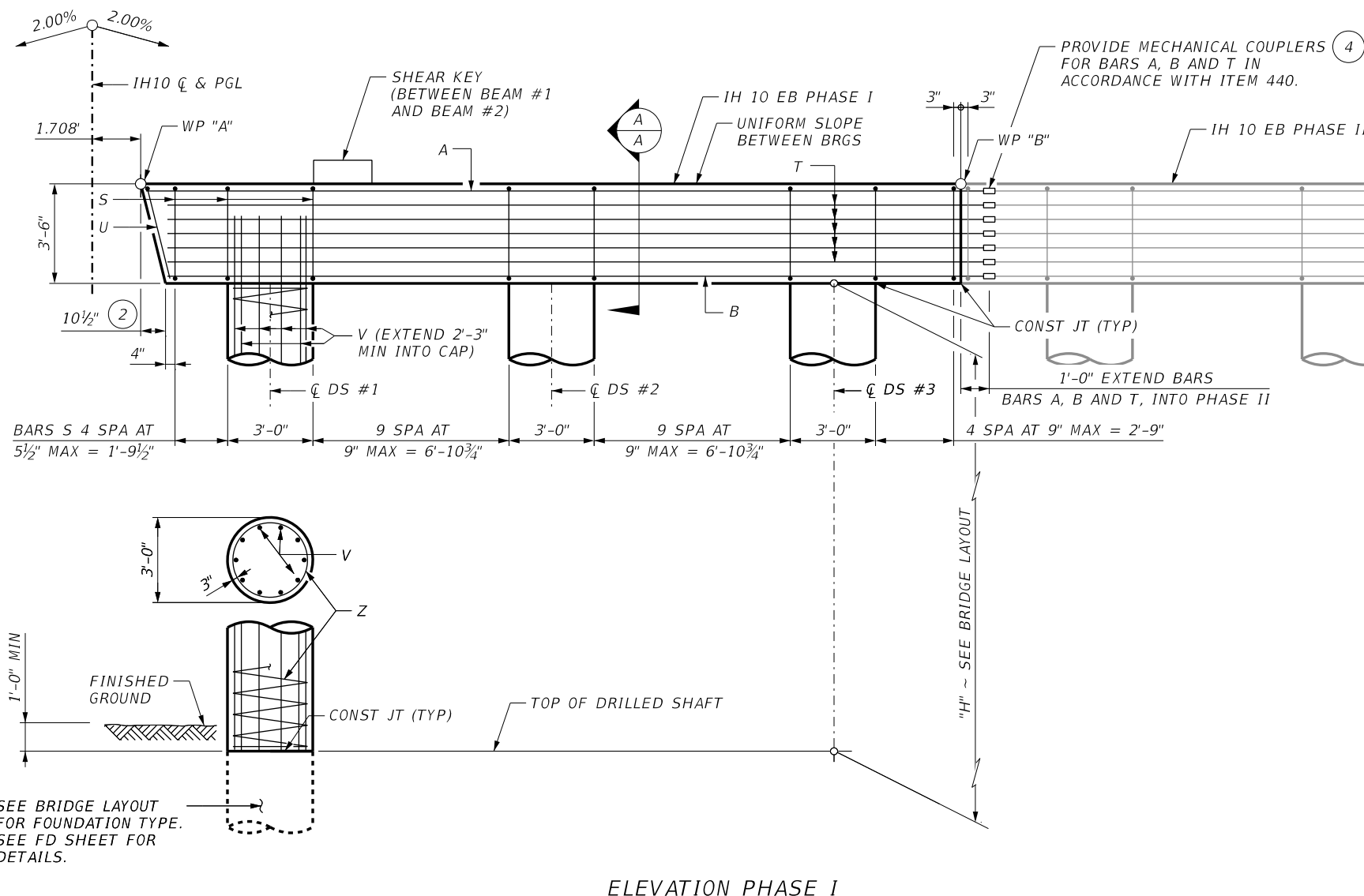
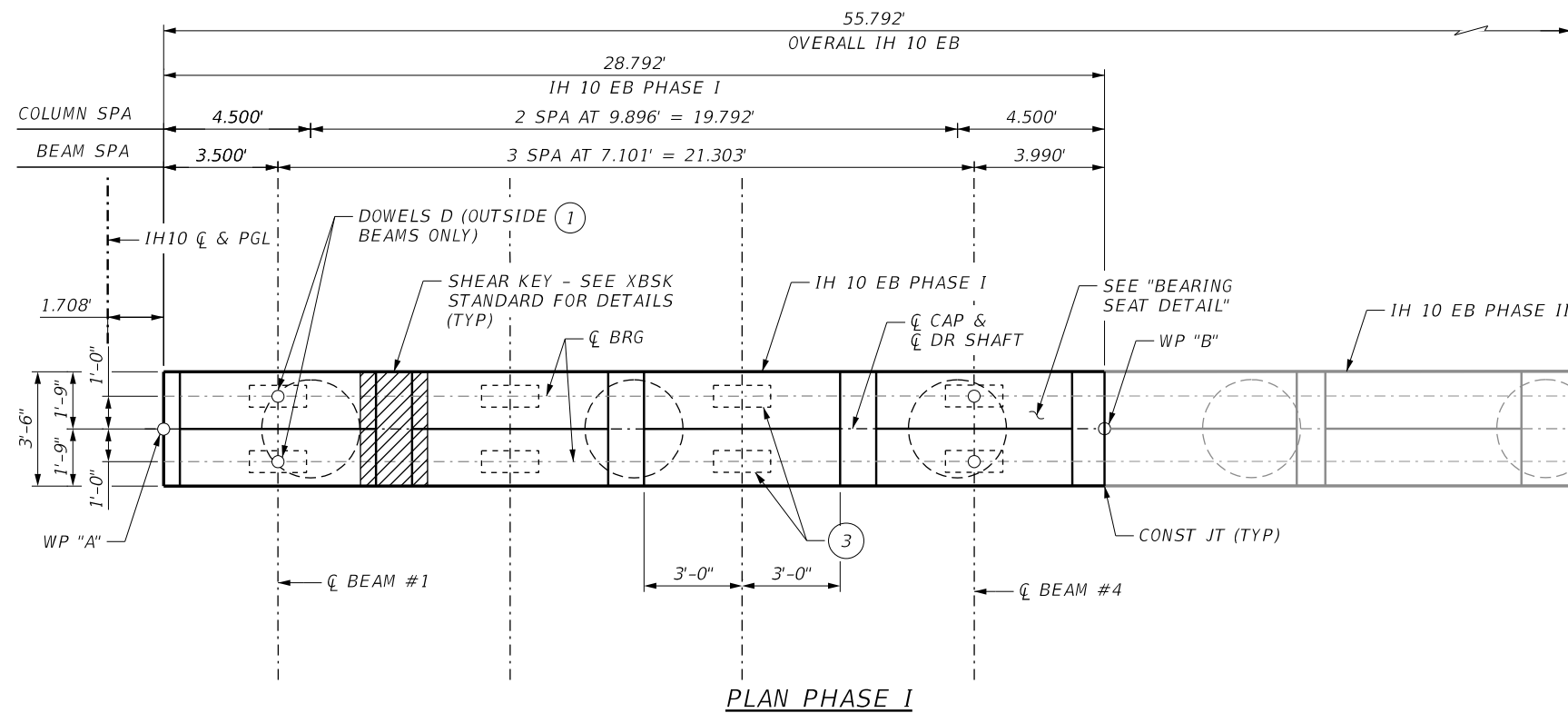
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TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I & II
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	530



- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
 - GALVANIZE DOWEL BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".

HL93 LOADING

Steve Groves 2/29/2024

WORKING POINT ELEVATIONS		
WP	ELEV	
	BENT 2	BENT 3
A	3889.238'	3889.507'
B	3888.662'	3888.931'

TOP OF COLUMN ELEVATIONS		
COL	ELEV	
	BENT 2	BENT 3
1	3885.648'	3885.917'
2	3885.450'	3885.719'
3	3885.252'	3885.521'

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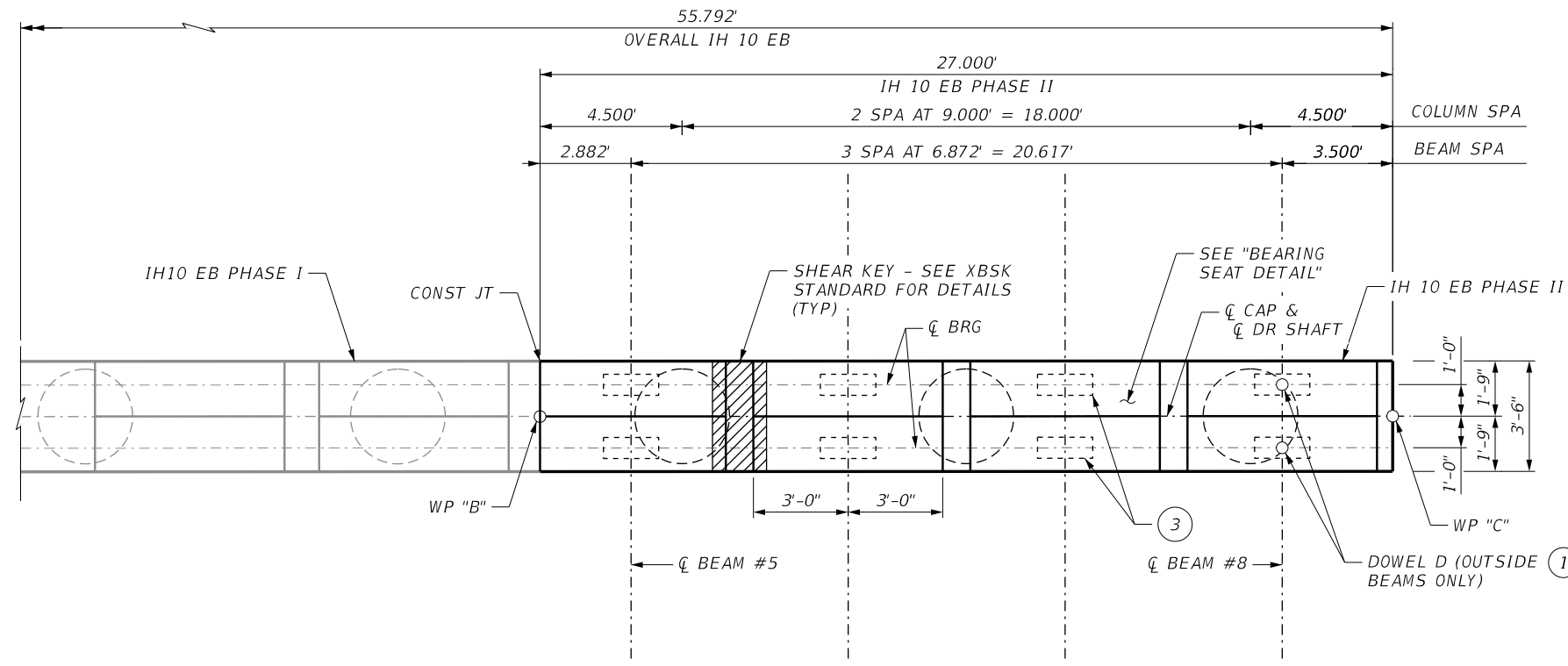
Texas Department of Transportation

**IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)**

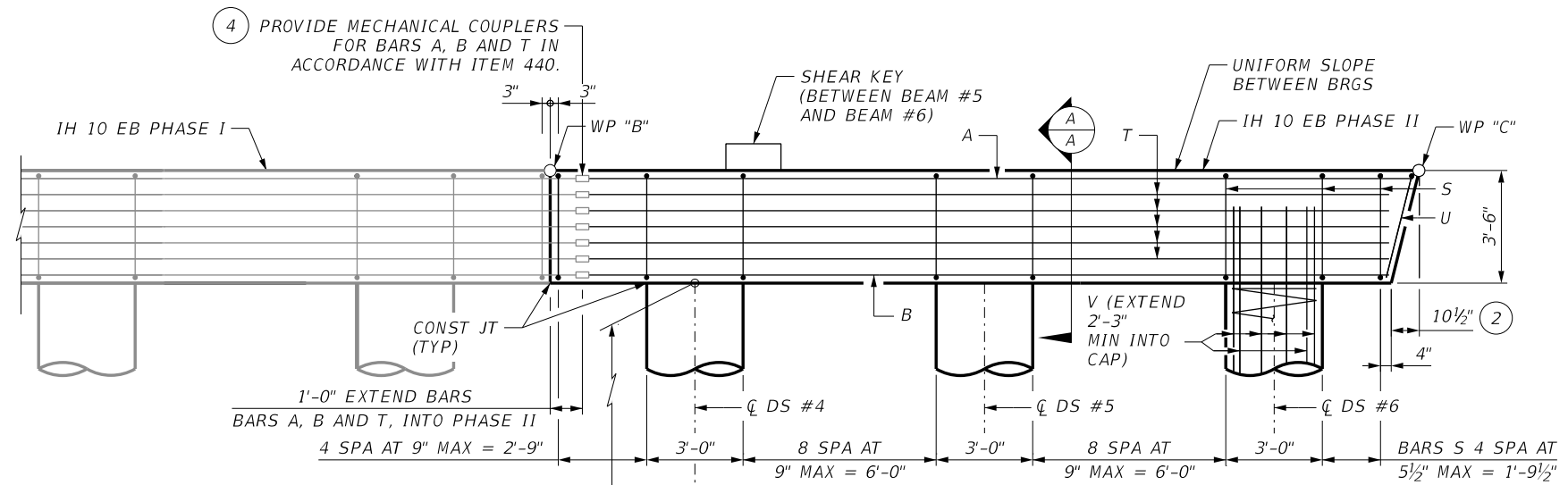
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			531

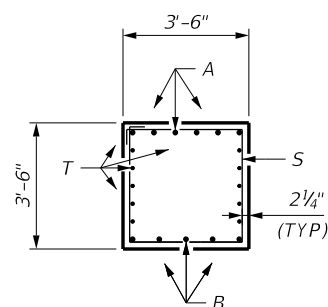
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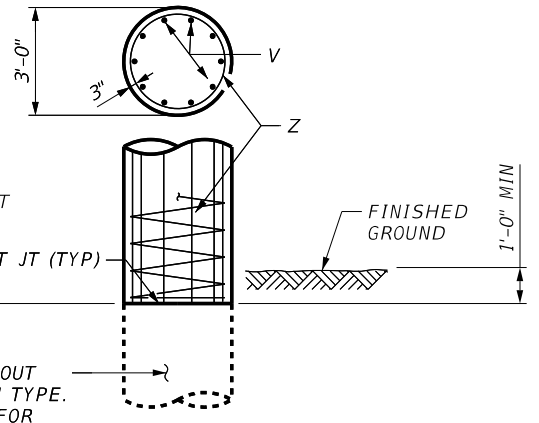
PLAN PHASE II



ELEVATION PHASE II



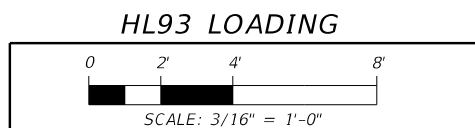
SECTION A-A



SEE BRIDGE LAYOUT FOR FOUNDATION TYPE. SEE FD SHEET FOR DETAILS.

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
 - GALVANIZE DOWEL BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



Wirat Wanichakorn 2/29/2024

WORKING POINT ELEVATIONS		
WP	ELEV	
	BENT 2	BENT 3
B	3888.662'	3888.931'
C	3888.122'	3888.391'

TOP OF COLUMN ELEVATIONS		
COL	ELEV	
	BENT 2	BENT 3
4	3885.072'	3885.341'
5	3884.892'	3885.161'
6	3884.712'	3884.981'

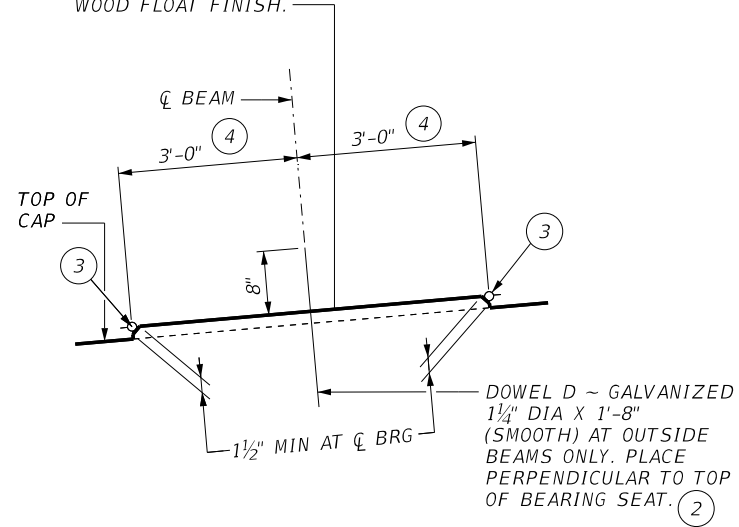


IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE II
 ARROYO 48 RELIEF #AA BRIDGE
 IH 10 EB
 (STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	532

LEVEL ALONG A LINE PERPENDICULAR TO
 CL BENT. UNIFORM SLOPE BETWEEN LEFT
 AND RIGHT BEARING SEAT ELEVATIONS WITH
 WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN
 AND FREE OF ALL LOOSE MATERIAL
 BEFORE PLACING BEARING PAD.)

**TABLE OF ESTIMATED QUANTITIES PHASE I
 (ONE BENT) (1)**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	29' - 7"	959
B	5	#11	28' - 10"	786
D	4	#9	1' - 8"	32
S	30	#5	13' - 6"	438
T	10	#5	28' - 10"	309
U	1	#5	9' - 8"	11
V	30	#9	10' - 3"	1,071
Z	3	#3	142' - 4"	161
ITEM			UNIT	QUANTITY
Reinforcing Steel			LB	3,766
Conc (Cap)			CY	13.7
Conc (Column)			CY	6.3

**TABLE OF ESTIMATED QUANTITIES PHASE II
 (ONE BENT) (1)**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	25' - 9"	845
B	5	#11	25' - 0"	664
D	2	#9	1' - 8"	16
S	28	#5	13' - 6"	409
T	10	#5	25' - 0"	261
U	1	#5	9' - 8"	11
V	30	#9	10' - 3"	1,071
Z	3	#3	142' - 4"	161
ITEM			UNIT	QUANTITY
Reinforcing Steel			LB	3,437
Conc (Cap)			CY	12.7
Conc (Column)			CY	6.3

KEYED NOTES

- (1) QUANTITIES SHOWN ARE BASED ON AN "H" VALUE OF 8'. FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
 BARS V LENGTH, 1'-0"
 BARS Z LENGTH, 15.740'
 REINFORCING STEEL, 120 LB
 CLASS "C" CONC (COL), 0.785 CY
- (2) OMIT DOWELS D AT THE END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- (3) RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED ELSEWHERE.
- (4) MEASURED A LONG CL OF BEARING.

HL93 LOADING

NOT TO SCALE



Wirat Wanichakorn
 2/29/2024

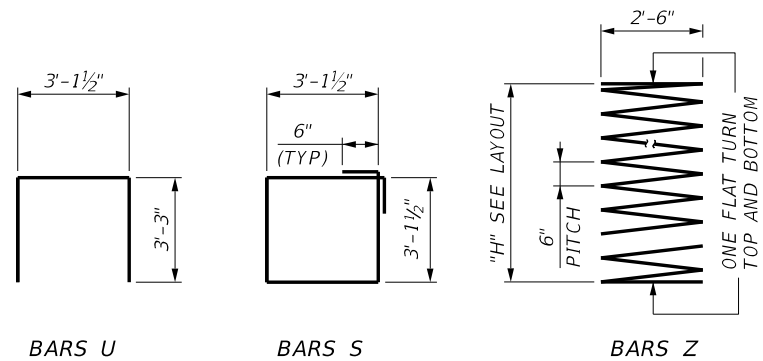
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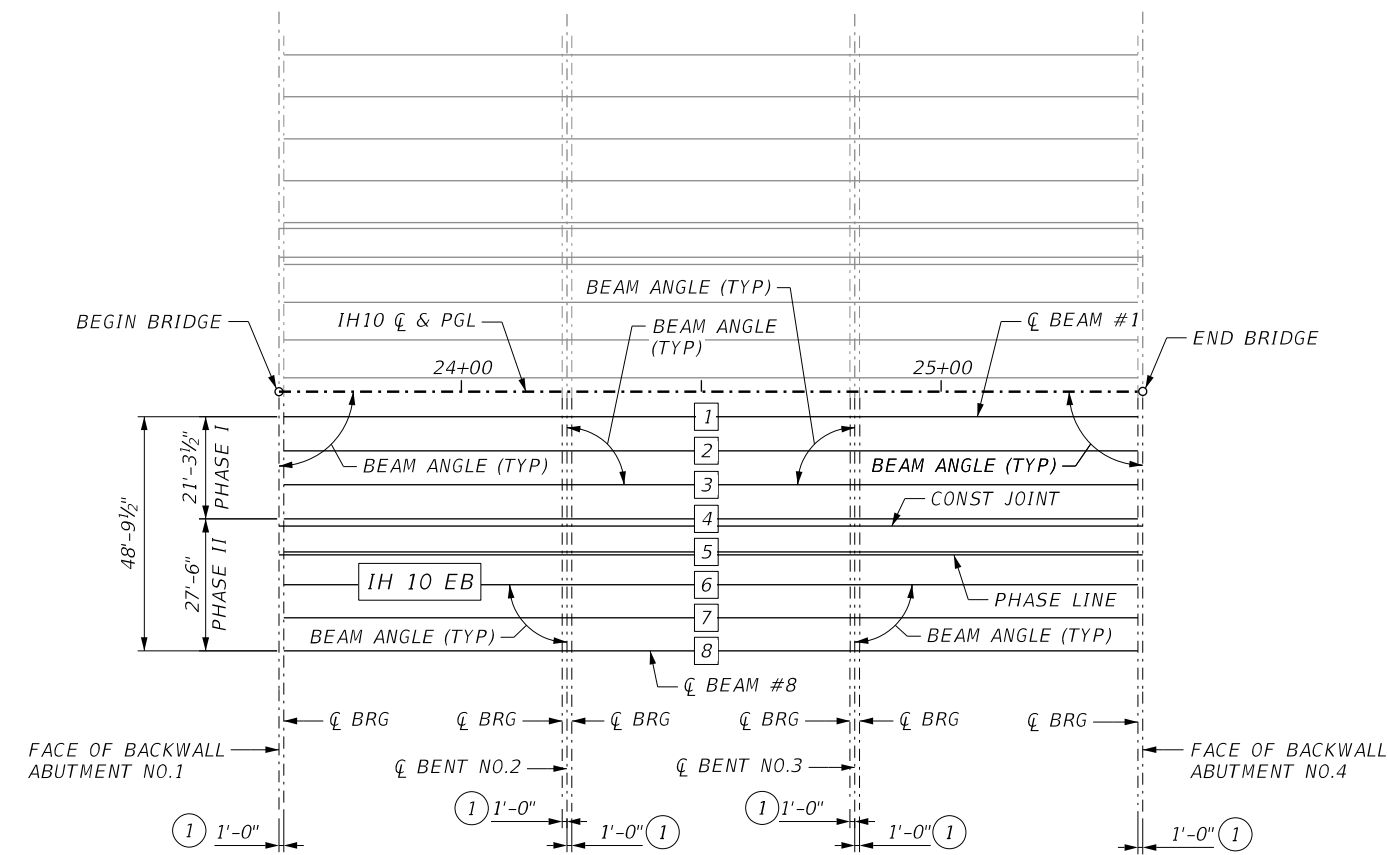


IH 10 WIDENING (NMSL/SPUR 37)
 BENT NO. 2 & 3
 PHASE I & II
 ARROYO 48 RELIEF #AA BRIDGE
 IH 10 EB
 (STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	533





- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- ③ BEAM SPACING IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X-BEAMS.

SPAN 1 (5XB20 BEAMS) **SPAN 2** (5XB20 BEAMS) **SPAN 3** (5XB20 BEAMS)
FRAMING PLAN

BEAM REPORT, SPAN 1

	HORIZONTAL DISTANCE C-C BENT	BEAM REPORT, SPAN 1 HORIZONTAL DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
PHASE I	BEAM 1	60.0000	59.5001	0.00139
	BEAM 2	60.0000	59.5001	0.00140
	BEAM 3	60.0000	59.5001	0.00140
	BEAM 4	60.0000	59.5001	0.00139
PHASE II	BEAM 5	60.0000	59.5001	0.00139
	BEAM 6	60.0000	59.5001	0.00139
	BEAM 7	60.0000	59.5001	0.00139
	BEAM 8	60.0000	59.5001	0.00139

BENT NO. 1 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC. (CL BENT)	BEAM SPAC. (CL BENT)	BEAM ANGLE (CL BENT)
SPAN 1 PHASE I	BEAM 1	0.0000	90 0 0.00
	BEAM 2	7.1007	90 0 0.00
	BEAM 3	7.1007	90 0 0.00
	BEAM 4	7.1007	90 0 0.00
SPAN 1 PHASE II	BEAM 5	6.8724	90 0 0.00
	BEAM 6	6.8724	90 0 0.00
	BEAM 7	6.8724	90 0 0.00
	BEAM 8	6.8724	90 0 0.00
TOTAL	48.7917		

BENT NO. 3 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC. (CL BENT)	BEAM SPAC. (CL BENT)	BEAM ANGLE (CL BENT)
SPAN 2 PHASE I	BEAM 1	0.0000	90 0 0.00
	BEAM 2	7.1007	90 0 0.00
	BEAM 3	7.1007	90 0 0.00
	BEAM 4	7.1007	90 0 0.00
SPAN 2 PHASE II	BEAM 5	6.8724	90 0 0.00
	BEAM 6	6.8724	90 0 0.00
	BEAM 7	6.8724	90 0 0.00
	BEAM 8	6.8724	90 0 0.00
TOTAL	48.7917		

BEAM REPORT, SPAN 2

	HORIZONTAL DISTANCE C-C BENT	BEAM REPORT, SPAN 2 HORIZONTAL DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
PHASE I	BEAM 1	60.0000	59.5006	0.00453
	BEAM 2	60.0000	59.5006	0.00453
	BEAM 3	60.0000	59.5006	0.00453
	BEAM 4	60.0000	59.5006	0.00453
PHASE II	BEAM 5	60.0000	59.5006	0.00453
	BEAM 6	60.0000	59.5006	0.00453
	BEAM 7	60.0000	59.5006	0.00453
	BEAM 8	60.0000	59.5006	0.00453

BENT NO. 2 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC. (CL BENT)	BEAM SPAC. (CL BENT)	BEAM ANGLE (CL BENT)
SPAN 1 PHASE I	BEAM 1	0.0000	90 0 0.00
	BEAM 2	7.1007	90 0 0.00
	BEAM 3	7.1007	90 0 0.00
	BEAM 4	7.1007	90 0 0.00
SPAN 1 PHASE II	BEAM 5	6.8724	90 0 0.00
	BEAM 6	6.8724	90 0 0.00
	BEAM 7	6.8724	90 0 0.00
	BEAM 8	6.8724	90 0 0.00
TOTAL	48.7917		

BENT NO. 3 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC. (CL BENT)	BEAM SPAC. (CL BENT)	BEAM ANGLE (CL BENT)
SPAN 3 PHASE I	BEAM 1	0.0000	90 0 0.00
	BEAM 2	7.1007	90 0 0.00
	BEAM 3	7.1007	90 0 0.00
	BEAM 4	7.1007	90 0 0.00
SPAN 3 PHASE II	BEAM 5	6.8724	90 0 0.00
	BEAM 6	6.8724	90 0 0.00
	BEAM 7	6.8724	90 0 0.00
	BEAM 8	6.8724	90 0 0.00
TOTAL	48.7917		

BEAM REPORT, SPAN 3

	HORIZONTAL DISTANCE C-C BENT	BEAM REPORT, SPAN 3 HORIZONTAL DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
PHASE I	BEAM 1	60.0000	59.5017	0.00800
	BEAM 2	60.0000	59.5017	0.00800
	BEAM 3	60.0000	59.5017	0.00800
	BEAM 4	60.0000	59.5017	0.00800
PHASE II	BEAM 5	60.0000	59.5017	0.00800
	BEAM 6	60.0000	59.5017	0.00800
	BEAM 7	60.0000	59.5017	0.00800
	BEAM 8	60.0000	59.5017	0.00800

BENT NO. 2 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC. (CL BENT)	BEAM SPAC. (CL BENT)	BEAM ANGLE (CL BENT)
SPAN 2 PHASE I	BEAM 1	0.0000	90 0 0.00
	BEAM 2	7.1007	90 0 0.00
	BEAM 3	7.1007	90 0 0.00
	BEAM 4	7.1007	90 0 0.00
SPAN 2 PHASE II	BEAM 5	6.8724	90 0 0.00
	BEAM 6	6.8724	90 0 0.00
	BEAM 7	6.8724	90 0 0.00
	BEAM 8	6.8724	90 0 0.00
TOTAL	48.7917		

BENT NO. 4 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC. (CL BENT)	BEAM SPAC. (CL BENT)	BEAM ANGLE (CL BENT)
SPAN 3 PHASE I	BEAM 1	0.0000	90 0 0.00
	BEAM 2	7.1007	90 0 0.00
	BEAM 3	7.1007	90 0 0.00
	BEAM 4	7.1007	90 0 0.00
SPAN 3 PHASE II	BEAM 5	6.8724	90 0 0.00
	BEAM 6	6.8724	90 0 0.00
	BEAM 7	6.8724	90 0 0.00
	BEAM 8	6.8724	90 0 0.00
TOTAL	48.7917		

HL93 LOADING



Wirat Wanichakorn
2/29/2024



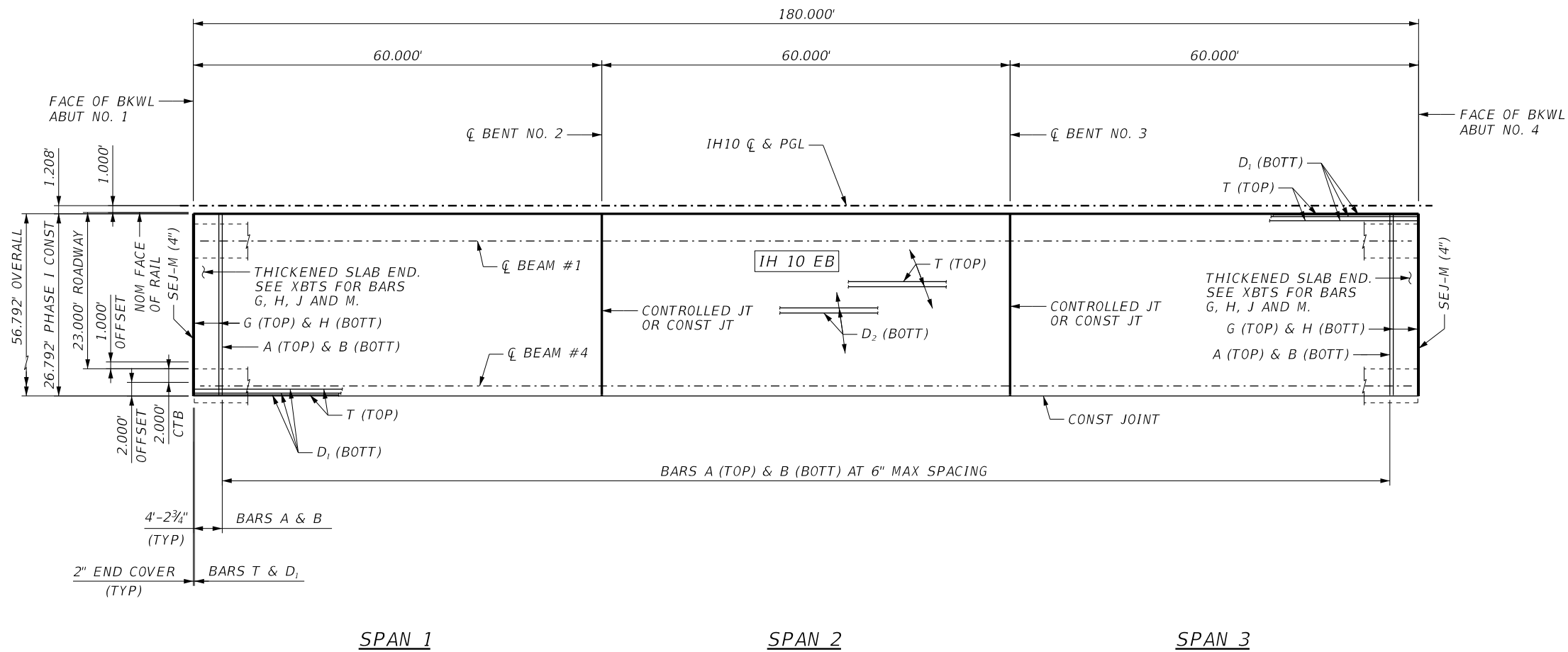
IH 10 WIDENING (NMSL/SPUR 37)
BEAM LAYOUT
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	534

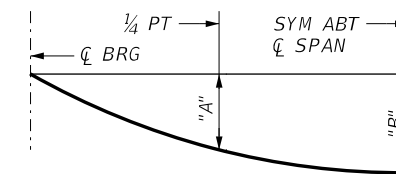
GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
- SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
- SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
- ALL REINFORCING MUST BE GRADE 60.
- CONCRETE STRENGTH F'C = 4,000 PSI.
- BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
- SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



PLAN PHASE I

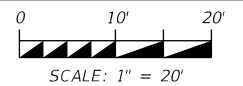
TABLE OF DEFLECTIONS PHASE I			
SPAN	BEAM NO.	"A"	"B"
		FT	FT
ALL	1	0.076	0.107
	2-3	0.073	0.102
	4	0.056	0.078



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY (EC = 5,000 KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



SCALE: 1" = 20'



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)**

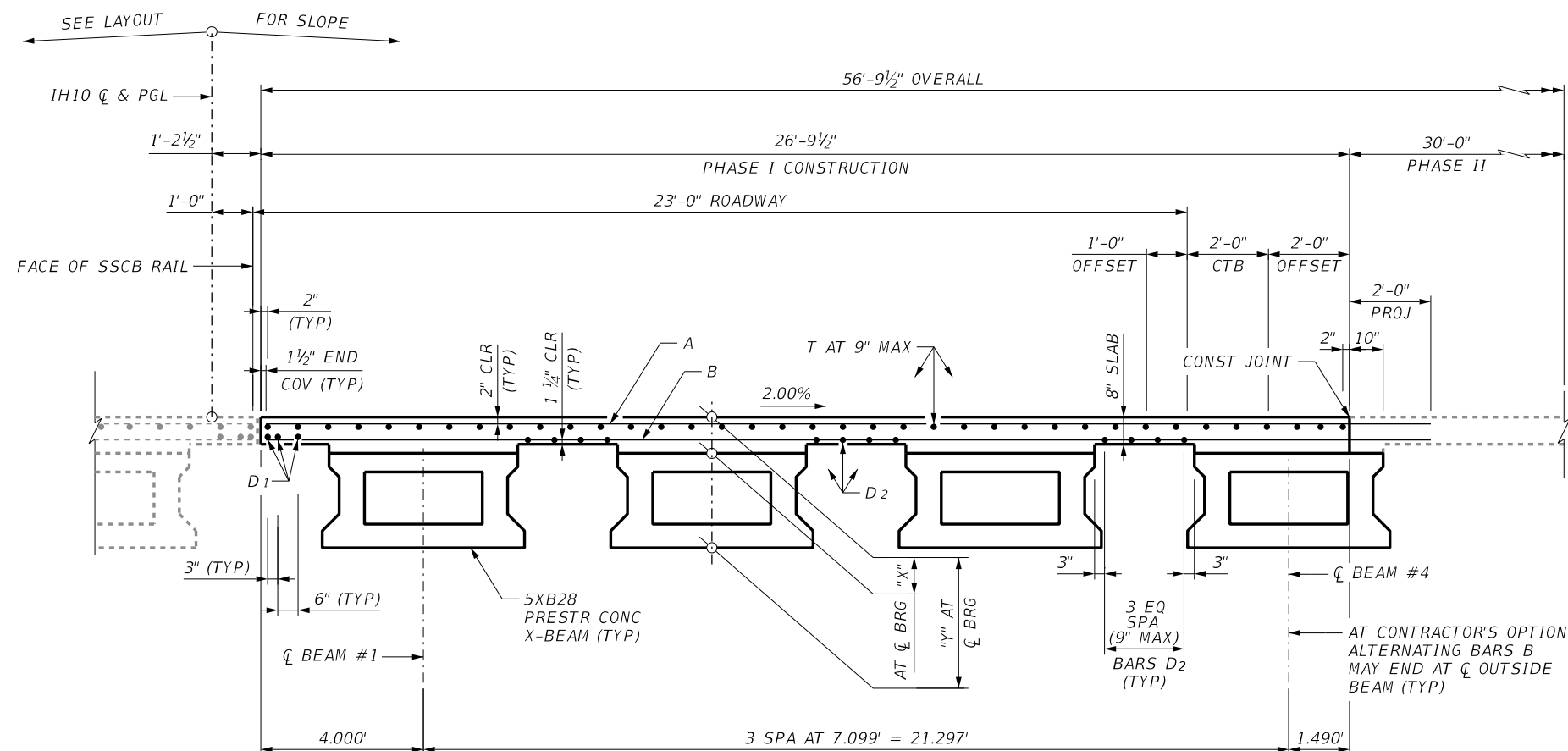
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	535

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

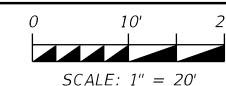


TYPICAL TRANSVERSE SECTION PHASE I
(5XB28) SPANS 1 THRU 3

SPAN NO.	REINF CONCRETE SLAB		5XB28 PRESTR CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	LF	CY	LB
1	1,608	238.00	45.7	10,449	
2	2,143	318.00	60.6	13,932	
3	1,608	238.01	45.7	10,449	
TOTAL	5,358	794.01	152.0	34,830	

SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	1-4	11"	31"

HL93 LOADING

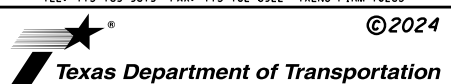


SCALE: 1" = 20'



Wirat Wanichakorn
2/29/2024

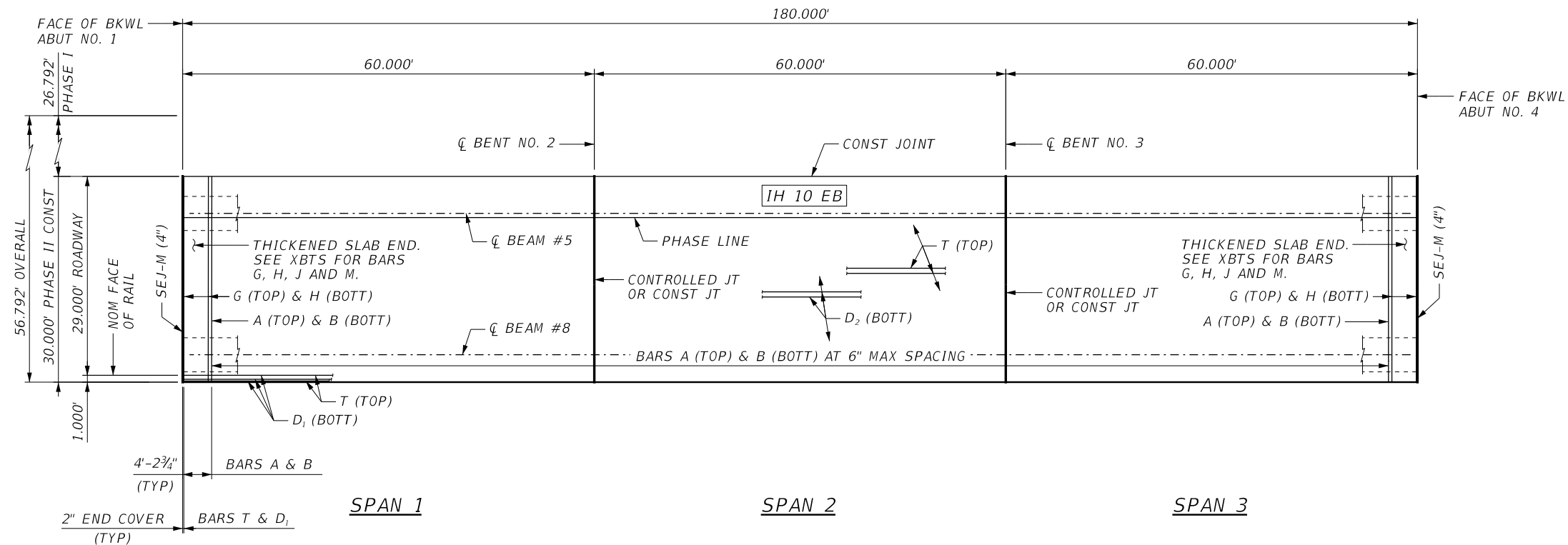
NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)

SHEET 2 OF 2

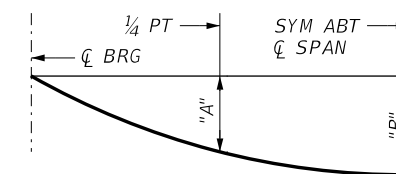
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	536



- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

PLAN PHASE II

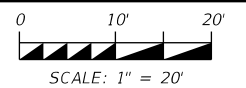
TABLE OF DEFLECTIONS PHASE II			
SPAN	BEAM NO.	"A"	"B"
		FT	FT
ALL	5-7	0.071	0.100
	8	0.076	0.106



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.

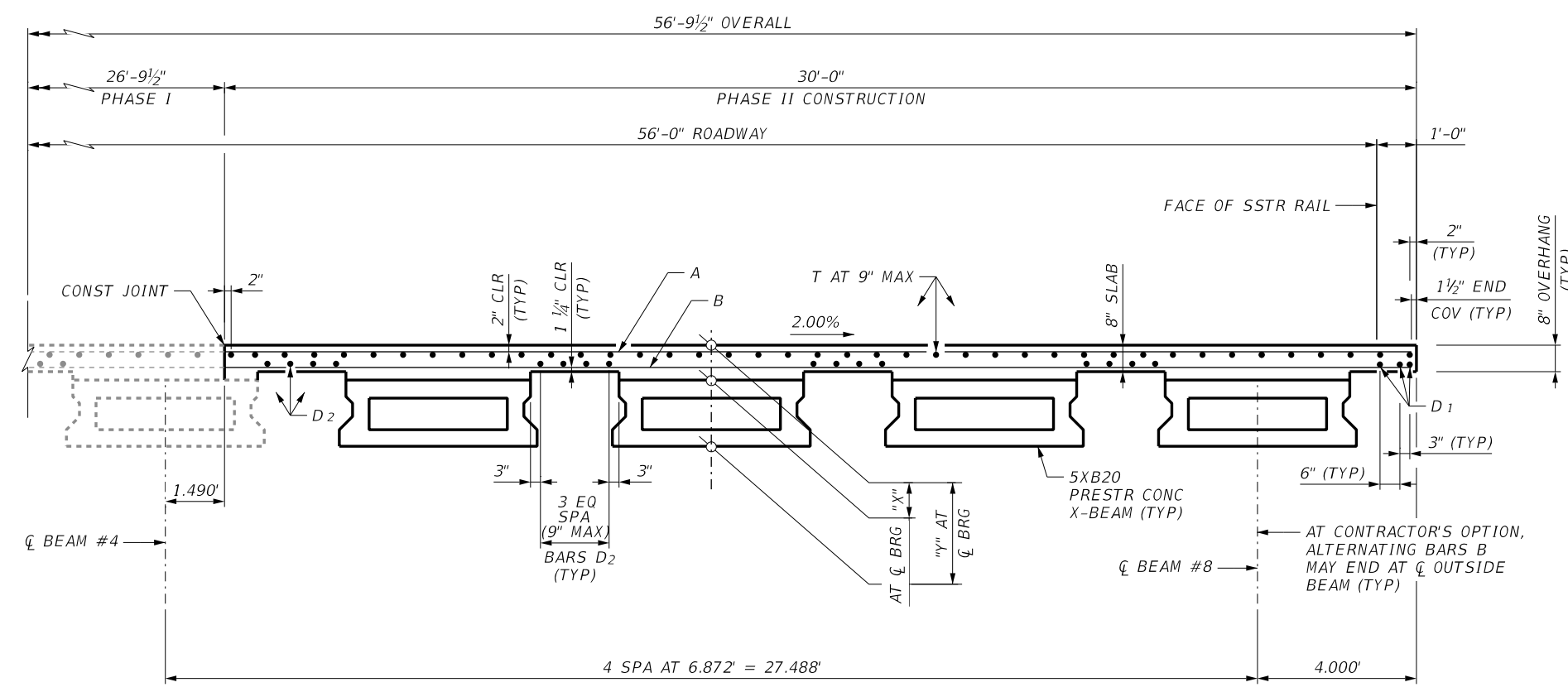


**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	537

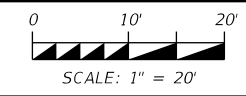
BAR TABLE PHASE I	
BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4



TYPICAL TRANSVERSE SECTION PHASE II
(5XB20) SPANS 1 THRU 3

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

HL93 LOADING



Wirat Wanichakorn
2/29/2024

TABLE OF ESTIMATED QUANTITIES PHASE II				
SPAN	REINF CONCRETE SLAB	5XB20 PRESTR CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
NO.	SF	LF	CY	LB
1	1,800	238.00	51.4	11,700
2	1,800	238.00	50.5	11,700
3	1,800	238.01	51.4	11,700
TOTAL	5,400	714.01	153.3	35,100

TABLE OF SECTION DEPTHS FOR PHASE II			
SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	5-8	11"	31"

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
ARROYO 48 RELIEF #AA BRIDGE
IH 10 EB
(STA 23+62 TO STA 25+42)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	538

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GENERAL NOTES

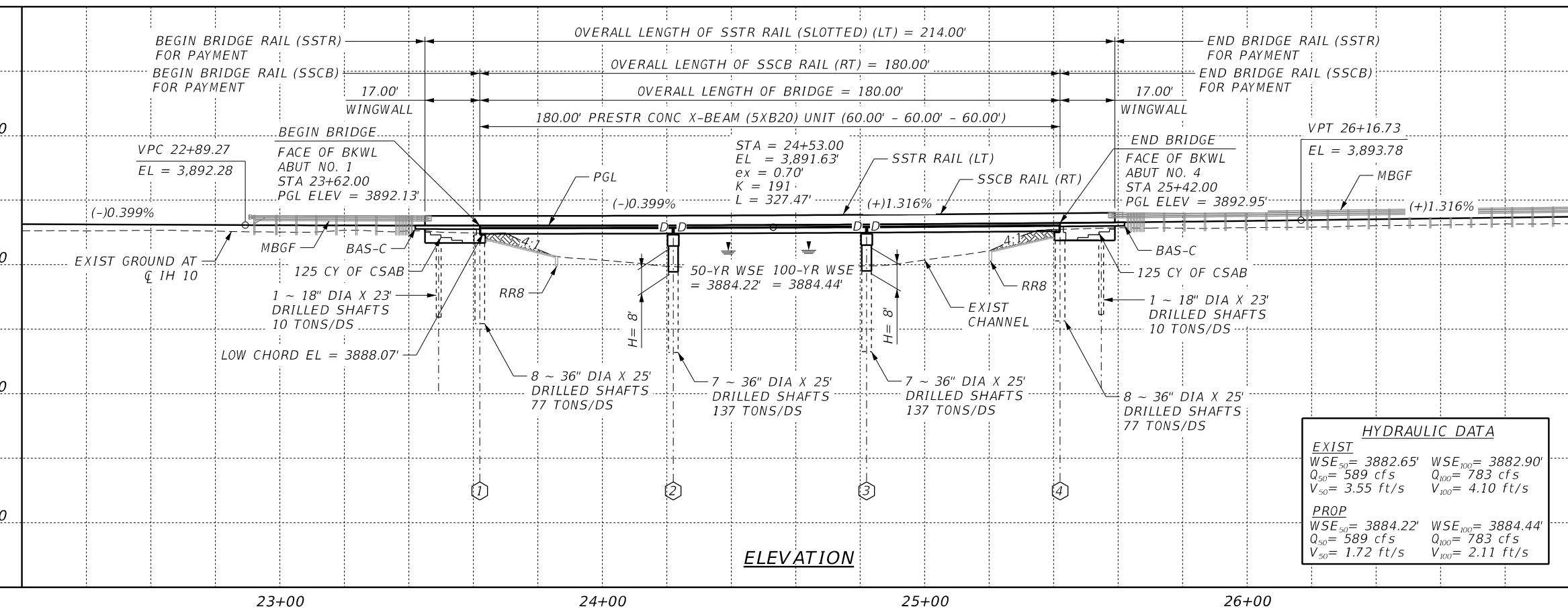
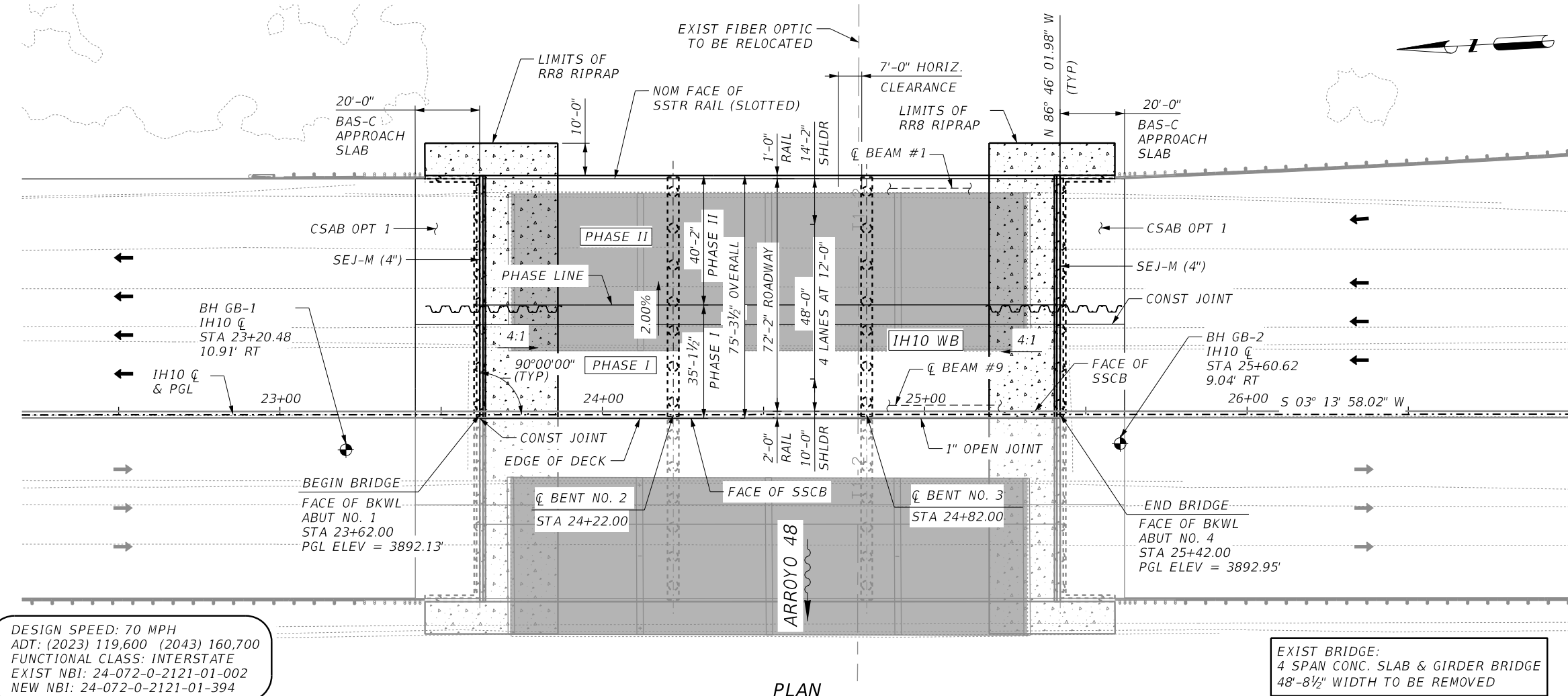
- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ⊕ - DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

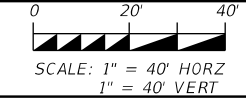
- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING

DESIGN SPEED: 70 MPH
 ADT: (2023) 119,600 (2043) 160,700
 FUNCTIONAL CLASS: INTERSTATE
 EXIST NBI: 24-072-0-2121-01-002
 NEW NBI: 24-072-0-2121-01-394

EXIST BRIDGE:
 4 SPAN CONC. SLAB & GIRDER BRIDGE
 48'-8 1/2" WIDTH TO BE REMOVED



HL93 LOADING



Wirat Wanichakorn
 2/29/2024

CivilCorp
 ENGINEERS • SURVEYORS
 2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
 TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE LAYOUT
 ARROYO 48 RELIEF #AB BRIDGE
 IH 10 WB
 (STA 23+62 TO STA 25+42)

HYDRAULIC DATA

EXIST		PROP	
WSE ₅₀ = 3882.65'	WSE ₁₀₀ = 3882.90'	WSE ₅₀ = 3884.22'	WSE ₁₀₀ = 3884.44'
Q ₅₀ = 589 cfs	Q ₁₀₀ = 783 cfs	Q ₅₀ = 589 cfs	Q ₁₀₀ = 783 cfs
V ₅₀ = 3.55 ft/s	V ₁₀₀ = 4.10 ft/s	V ₅₀ = 1.72 ft/s	V ₁₀₀ = 2.11 ft/s

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	539

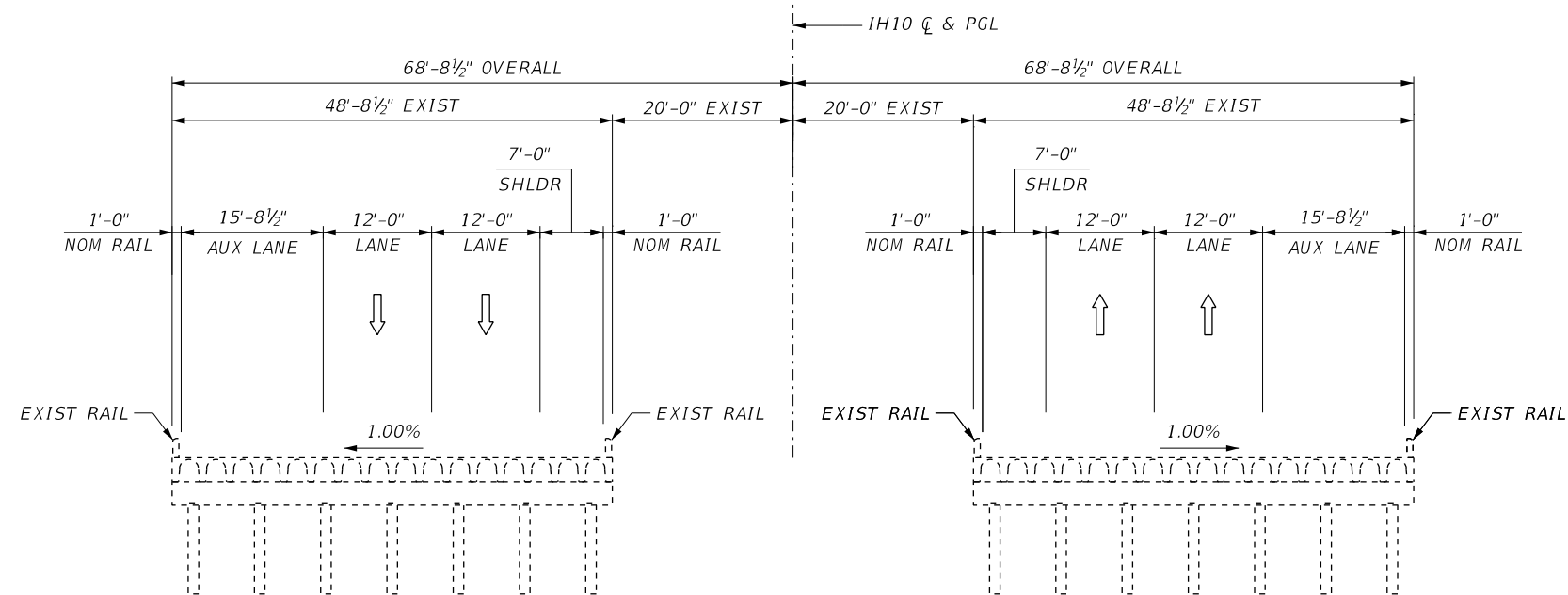
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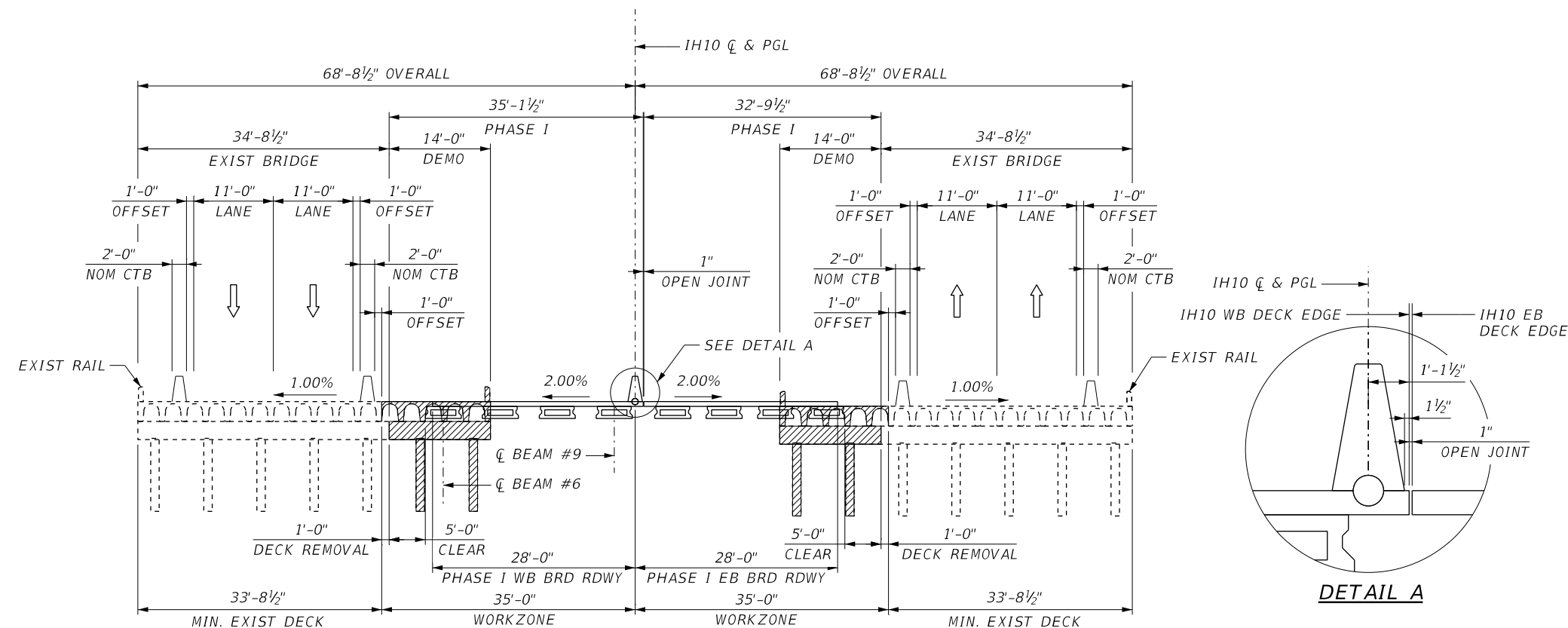
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LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



EXIST SECTION



PHASE I SECTION

HL93 LOADING

NOT TO SCALE



Wirat Wanichakorn
2/29/2024



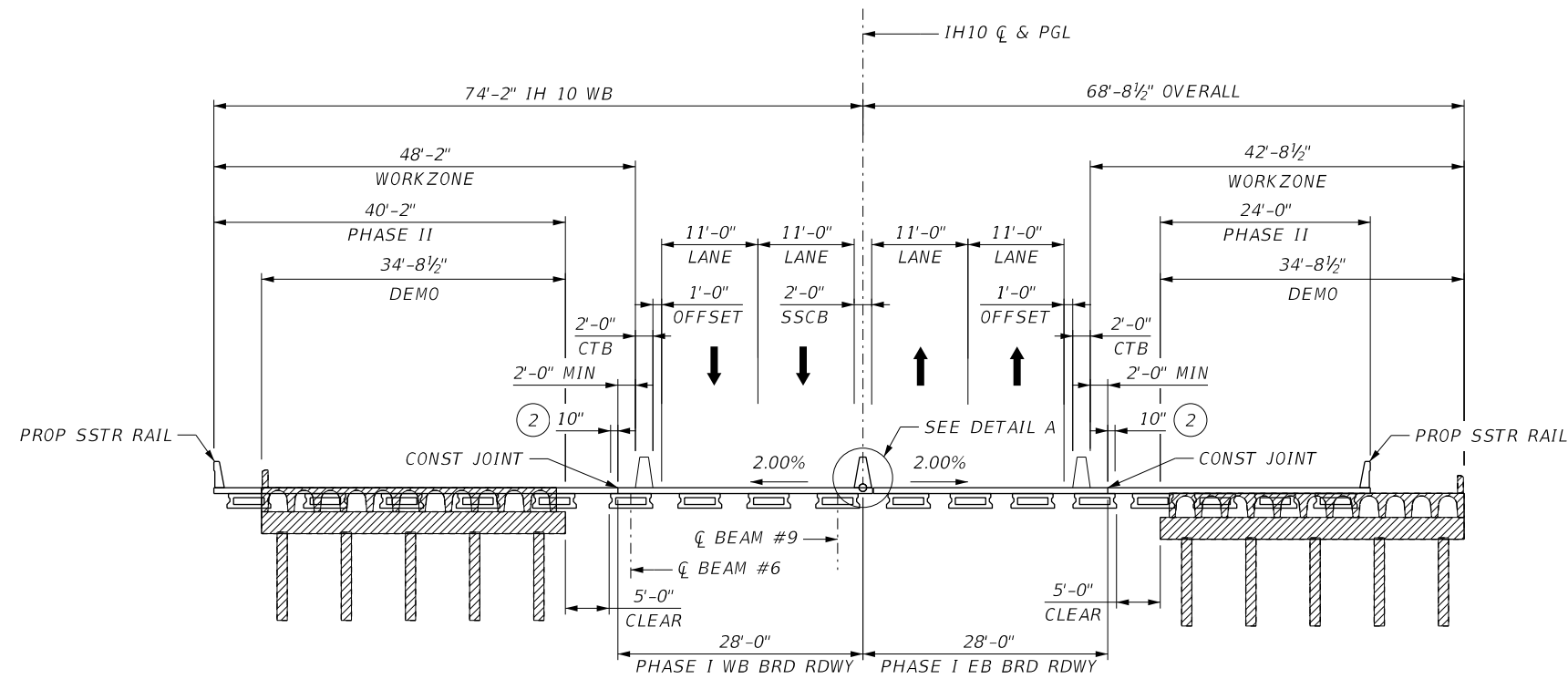
IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	540

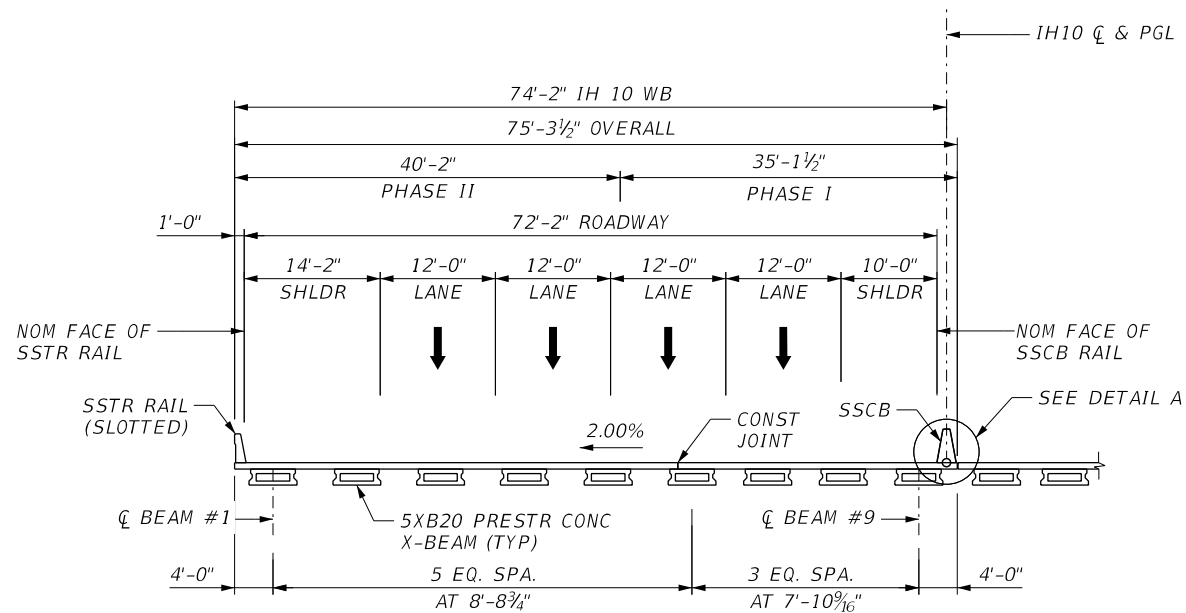
LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE

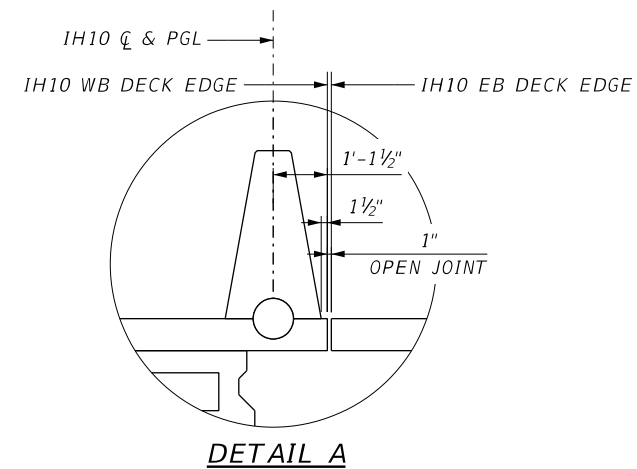


PHASE II SECTION

(2) EDGE OF DECK TO EDGE OF TOP OF BEAM.



IH 10 WB FINAL SECTION



HL93 LOADING

NOT TO SCALE



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.

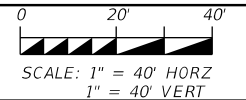


IH 10 WIDENING (NMSL/SPUR 37) BRIDGE
TYPICAL SECTIONS
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	541

HL93 LOADING



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.

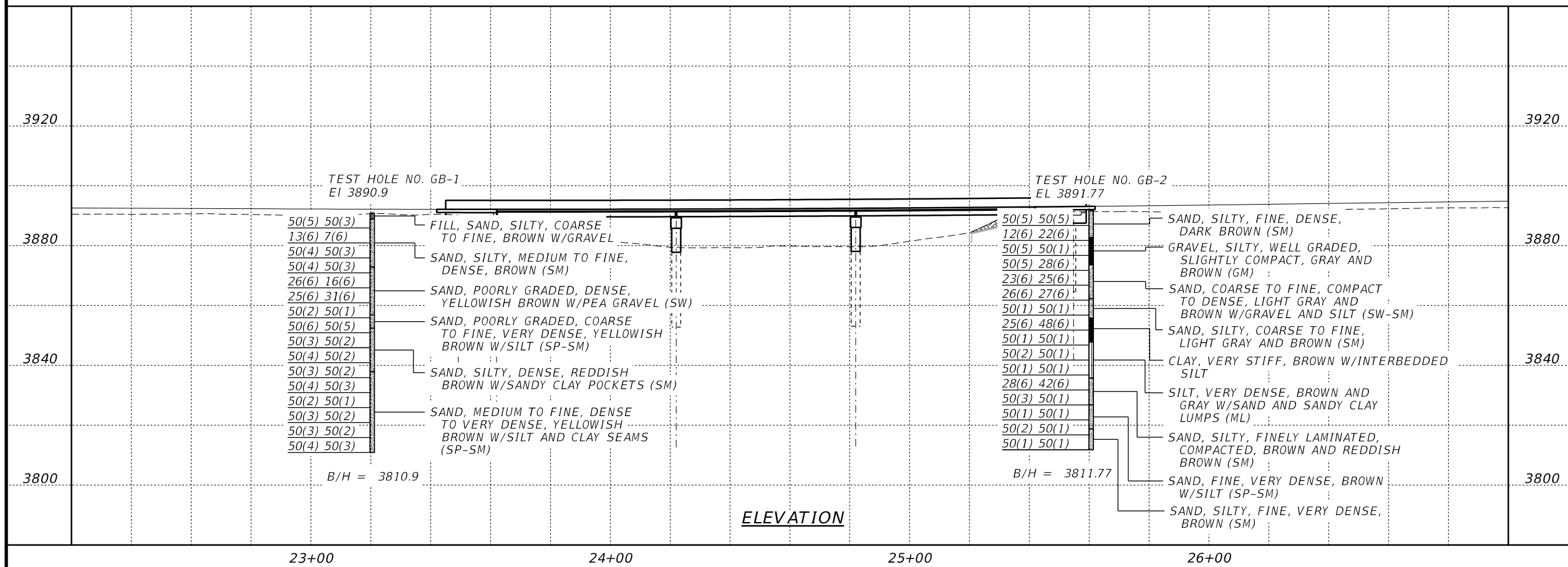
CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BORING LOGS
ARROYO 48 RELIEF #AA & #AB BRIDGE
IH 10 EB & IH 10 WB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	542



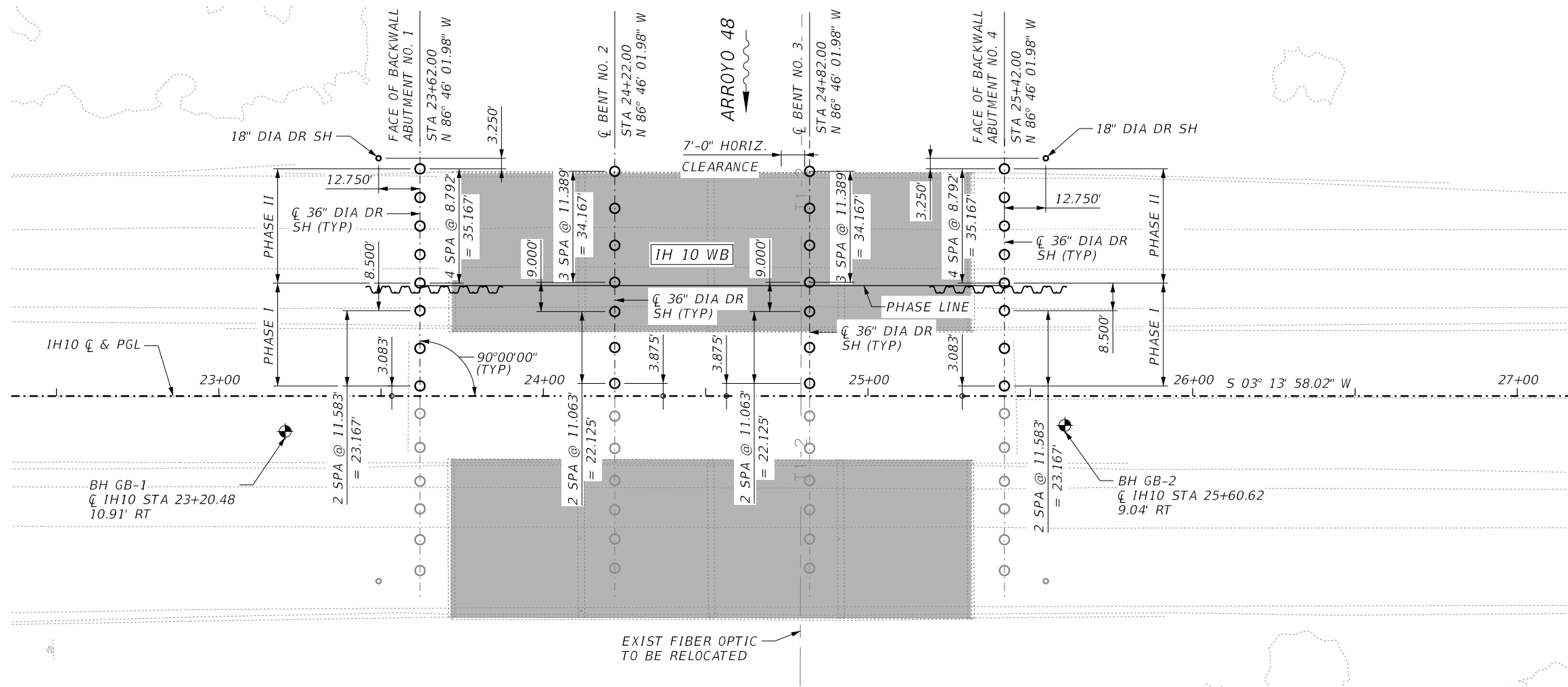
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GENERAL NOTES

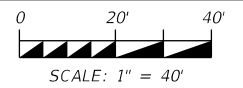
1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.
3. DRILLED SHAFT INSTALLATION WILL REQUIRE THE USE OF SLURRY DISPLACEMENT METHODS AND SURFACE CASING. THE SURFACE CASING IS TEMPORARY AND SHALL BE RETRIEVED AS OUTLINED IN TXDOT STANDARD SPECIFICATIONS.



LEGEND

- = BORE HOLE
- = DRILLED SHAFT
- = TEMP SPL SHORING

HL93 LOADING



Stuart Dickson
3/28/2024

FOUNDATION LOADS	
ABUT/BENT	TONS/SHAFT
1 & 4	77
2 & 3	137
WINGWALL	10



IH 10 WIDENING (NMSL/SPUR 37)

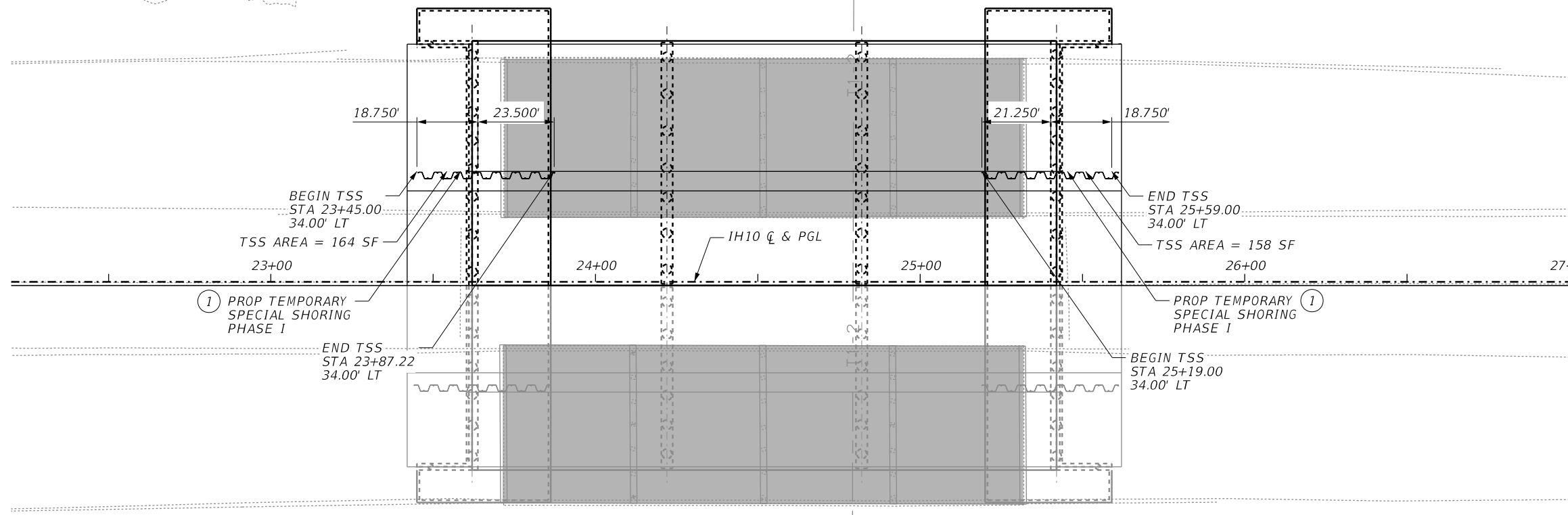
FOUNDATION LAYOUT
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	543

LEGEND

TEMPORARY SPL SHORING

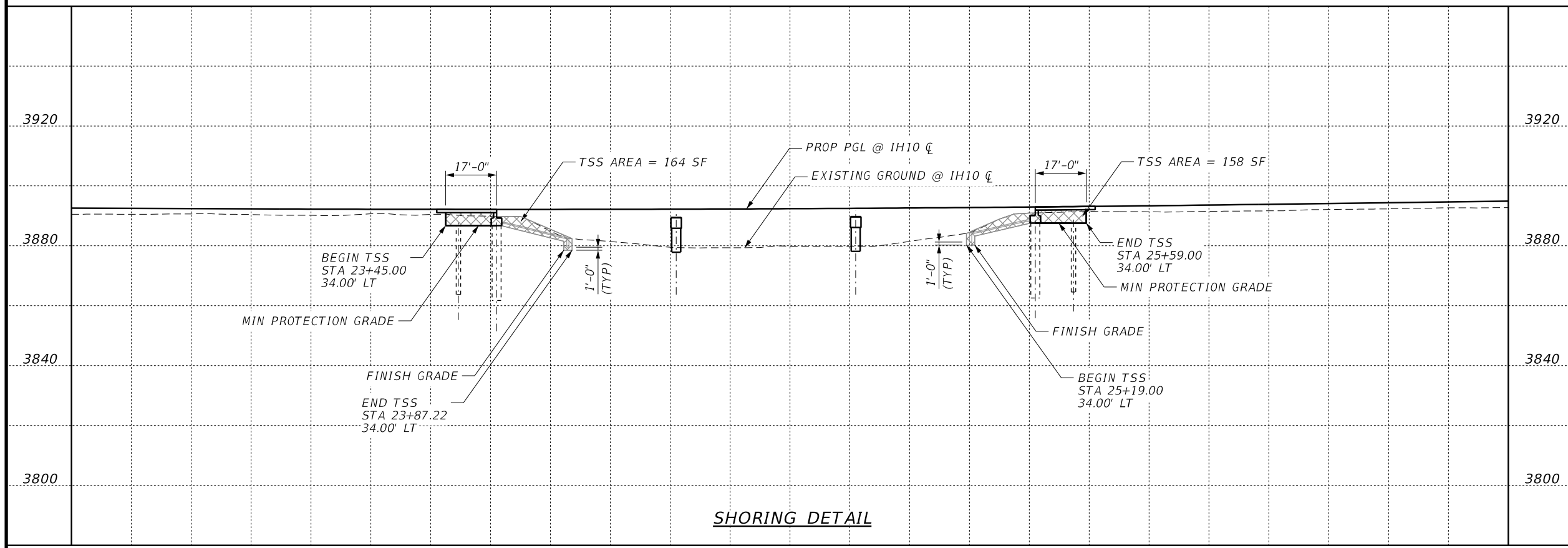
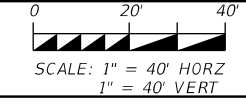


1 PROP TEMPORARY SPECIAL SHORING PHASE I

1 PAID FOR UNDER ITEM 403 TEMPORARY SPL SHORING.

PLAN

HL93 LOADING



Wirat Wanichakorn 2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
 ARROYO 48 RELIEF #AB BRIDGE
 IH 10 WB
 (STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	544

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BEARING SEAT ELEVATIONS

						PHASE II				PHASE I				
						BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9
BENT 1	1	ABUT	1	(FWD)	L	3887.834	3888.008	3888.183	3888.358	3888.532	3888.707	3888.864	3889.022	3889.180
BENT 1					R	3887.954	3888.128	3888.303	3888.478	3888.652	3888.827	3888.984	3889.142	3889.300
BENT 2	2	BENT	2	(BK)	L	3887.915	3888.089	3888.264	3888.439	3888.613	3888.788	3888.945	3889.103	3889.260
BENT 2					R	3888.035	3888.209	3888.384	3888.559	3888.733	3888.908	3889.065	3889.223	3889.380
BENT 2			2	(FWD)	L	3887.920	3888.095	3888.270	3888.444	3888.619	3888.794	3888.951	3889.109	3889.263
BENT 2					R	3888.040	3888.215	3888.390	3888.564	3888.739	3888.914	3889.071	3889.229	3889.383
BENT 3	3	BENT	3	(BK)	L	3888.183	3888.358	3888.533	3888.707	3888.882	3889.056	3889.214	3889.371	3889.529
BENT 3					R	3888.303	3888.478	3888.653	3888.827	3889.002	3889.176	3889.334	3889.491	3889.649
BENT 3			3	(FWD)	L	3888.195	3888.370	3888.545	3888.719	3888.894	3889.068	3889.226	3889.384	3889.541
BENT 3					R	3888.315	3888.490	3888.665	3888.839	3889.014	3889.188	3889.346	3889.504	3889.661
BENT 4	4	ABUT	4	(BK)	L	3888.640	3888.814	3888.989	3889.164	3889.338	3889.513	3889.670	3889.828	3889.986
BENT 4					R	3888.760	3888.934	3889.109	3889.284	3889.458	3889.633	3889.790	3889.948	3890.106



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.

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TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)

BEARING SEAT ELEVATIONS
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

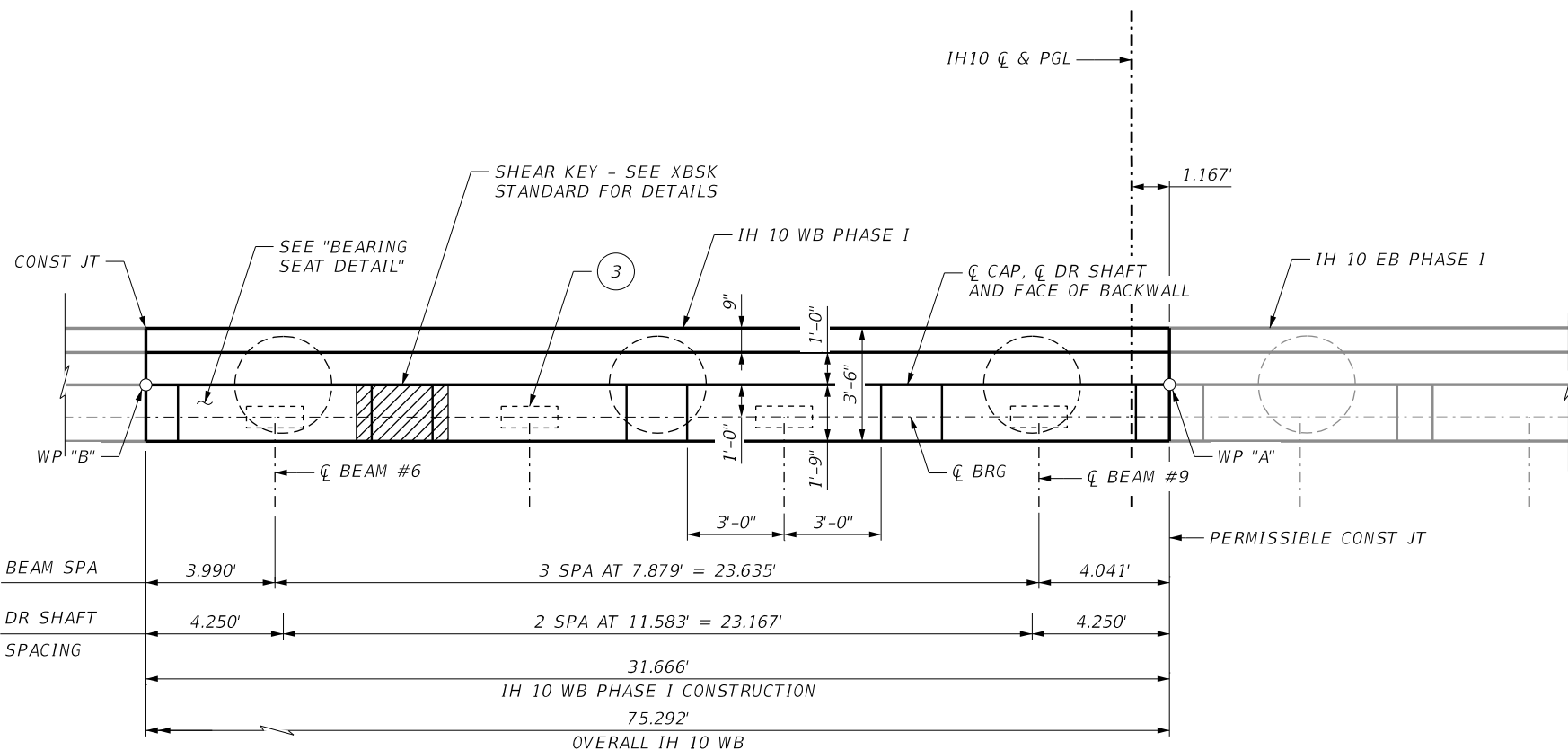
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	545

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH F'C = 3,600 PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

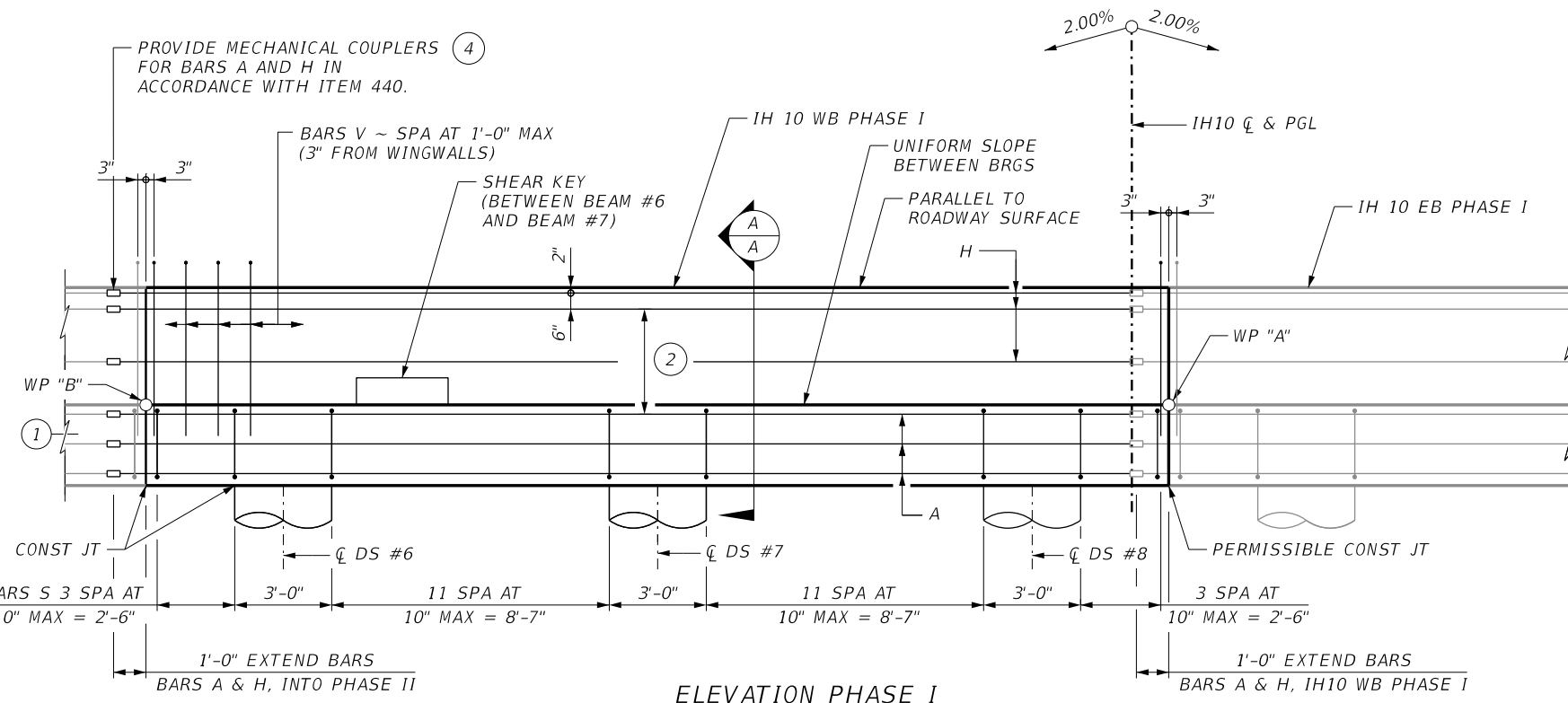
- INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



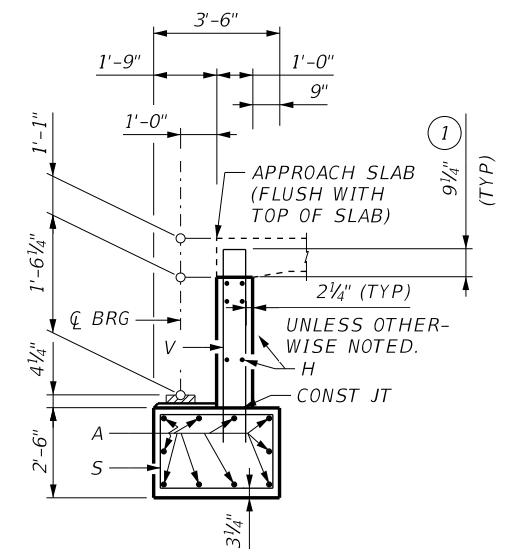
PLAN PHASE I

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
A	3889.195'	3890.005'
B	3888.561'	3889.371'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
6	3886.146'	3886.956'
7	3886.378'	3887.188'
8	3886.610'	3887.420'

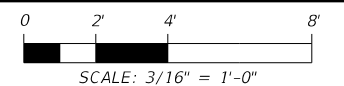


ELEVATION PHASE I



SECTION A-A

HL93 LOADING



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2/29/2024



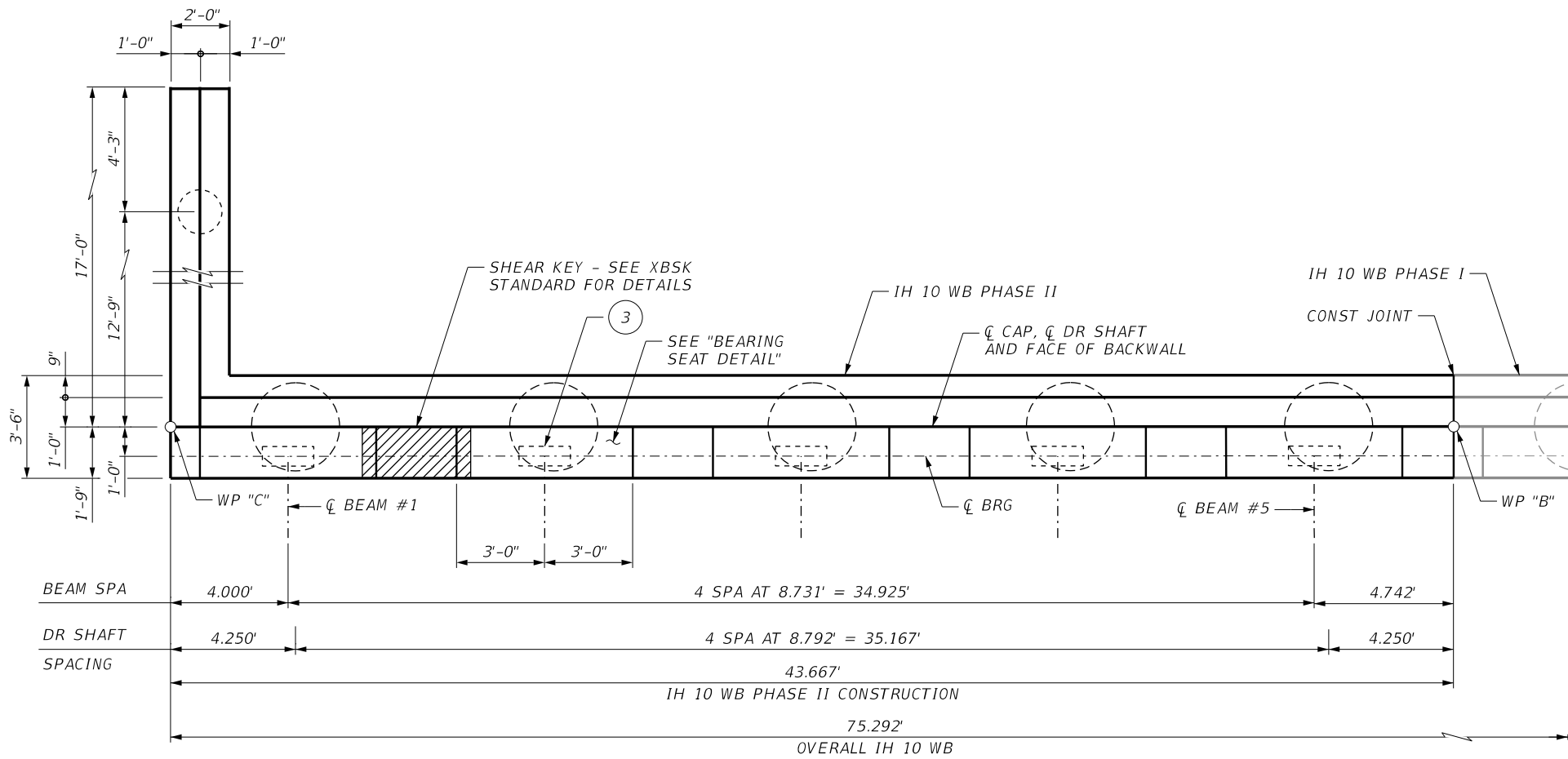
**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)**

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	546

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH F'C = 3,600 PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.



PLAN PHASE II

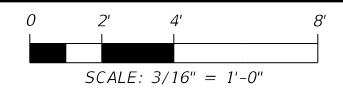
WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
B	3888.561'	3889.371'
C	3887.688'	3888.498'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
WW	3885.208'	3886.018'
1	3885.273'	3886.083'
2	3885.449'	3886.259'
3	3885.624'	3886.434'
4	3885.800'	3886.610'
5	3885.976'	3886.786'

KEYED NOTES

- INCREASE AS REQUIRED TO MAINTAIN 3/4" FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".

HL93 LOADING



Wirat Wanichakorn
2/29/2024

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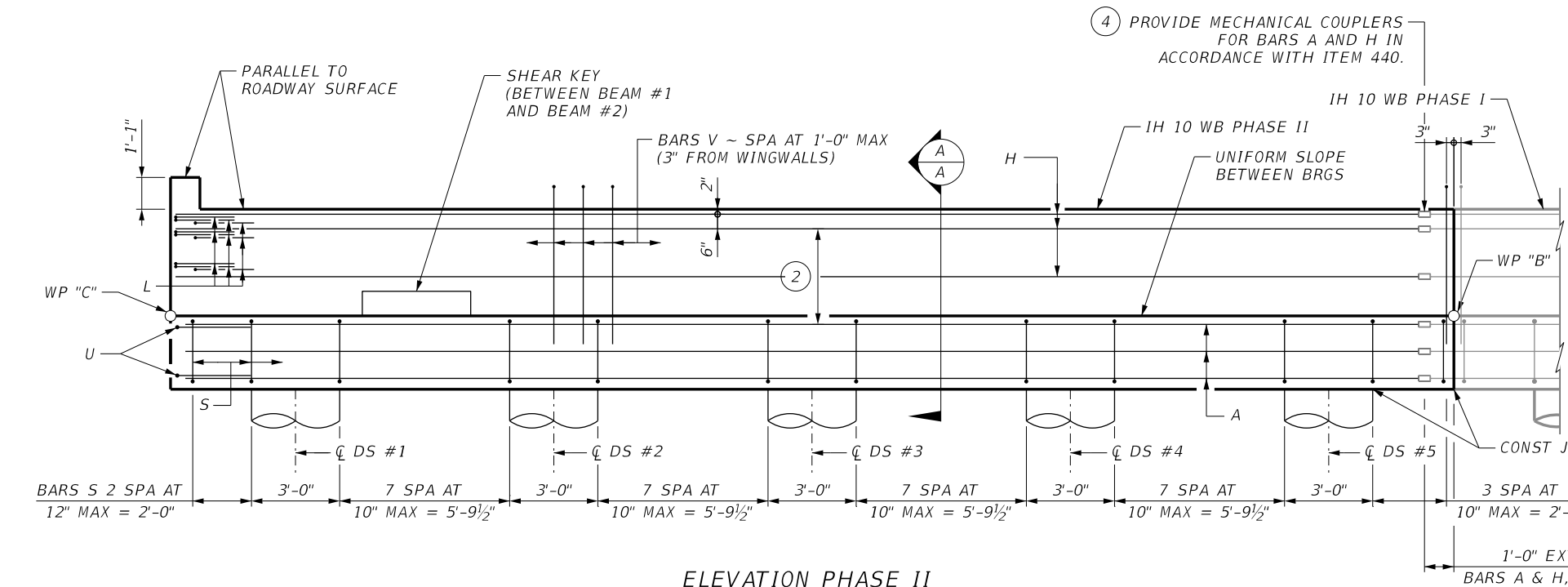
Texas Department of Transportation

**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE II
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)**

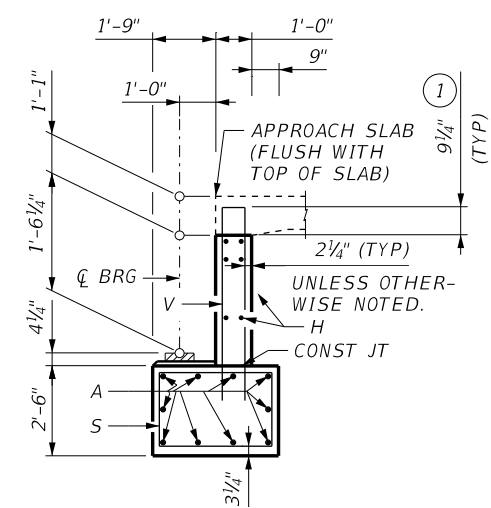
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	547

- PROVIDE MECHANICAL COUPLERS FOR BARS A AND H IN ACCORDANCE WITH ITEM 440.

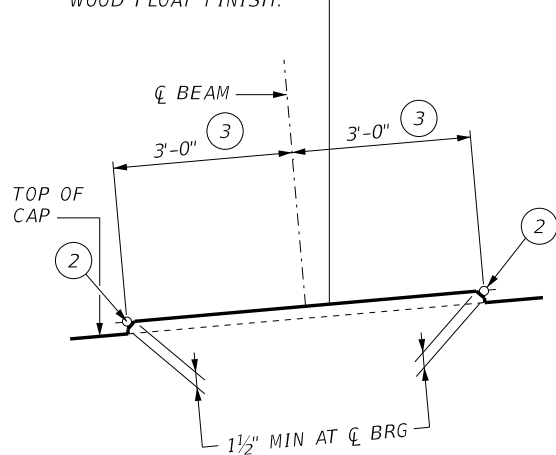


ELEVATION PHASE II



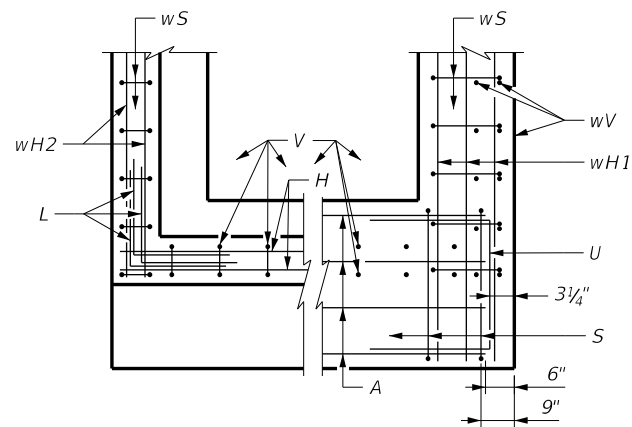
SECTION A-A

LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



BACKWALL

CAP

CORNER DETAILS

TABLE OF ESTIMATED QUANTITIES PHASE I (ONE ABUT)

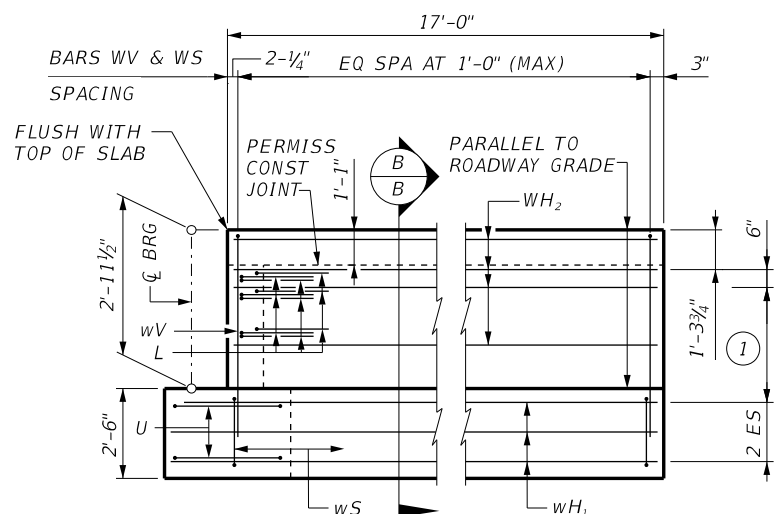
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31' - 8"	1,682
H	6	#6	31' - 8"	285
S	30	#5	11' - 5"	355
V	32	#5	8' - 4"	282
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,604
CONC (ABUT)			CY	12.6

TABLE OF ESTIMATED QUANTITIES PHASE II (ONE ABUT)

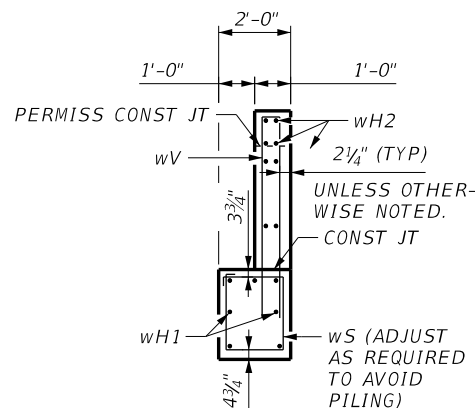
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	42' - 2"	2,238
H	6	#6	42' - 6"	383
L	9	#6	4' - 0"	54
S	38	#5	11' - 5"	449
U	4	#6	8' - 0"	48
V	43	#5	8' - 4"	377
wH1	7	#6	18' - 6"	194
wH2	8	#6	16' - 9"	200
wS	18	#4	7' - 8"	92
wV	18	#5	8' - 7"	161
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	4,196
CONC (ABUT)			CY	22.6

KEYED NOTES

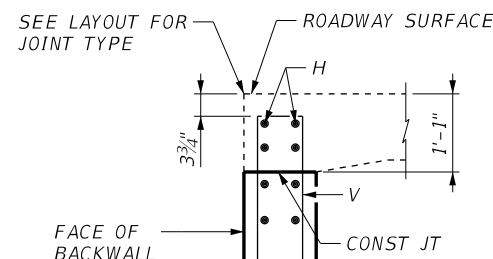
- ① SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- ② RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ③ MEASURED ALONG ϕ OF BEARING.



WINGWALL ELEVATION

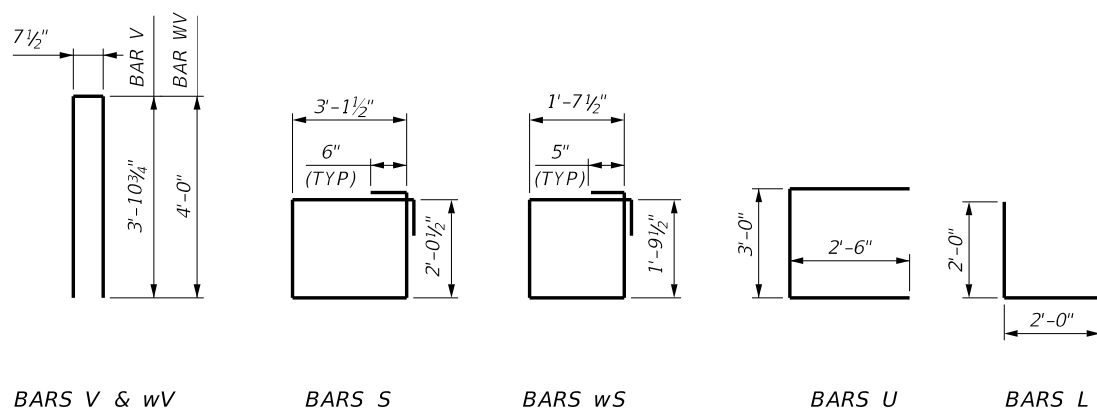


SECTION B-B



BACKWALL DETAIL

(WITH APPROACH SLAB)



BAR V & wV

BAR S

BAR wS

BAR U

BAR L

HL93 LOADING

NOT TO SCALE



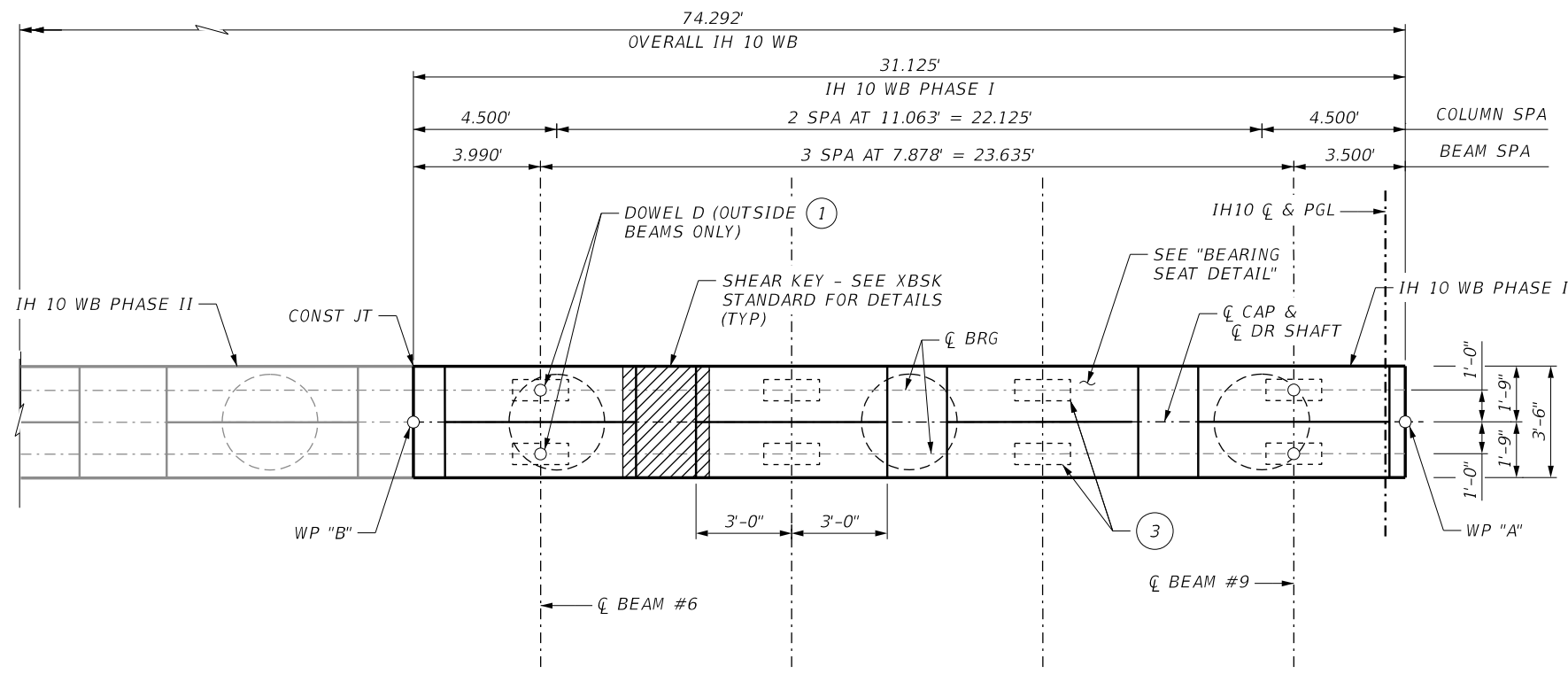
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2/29/2024



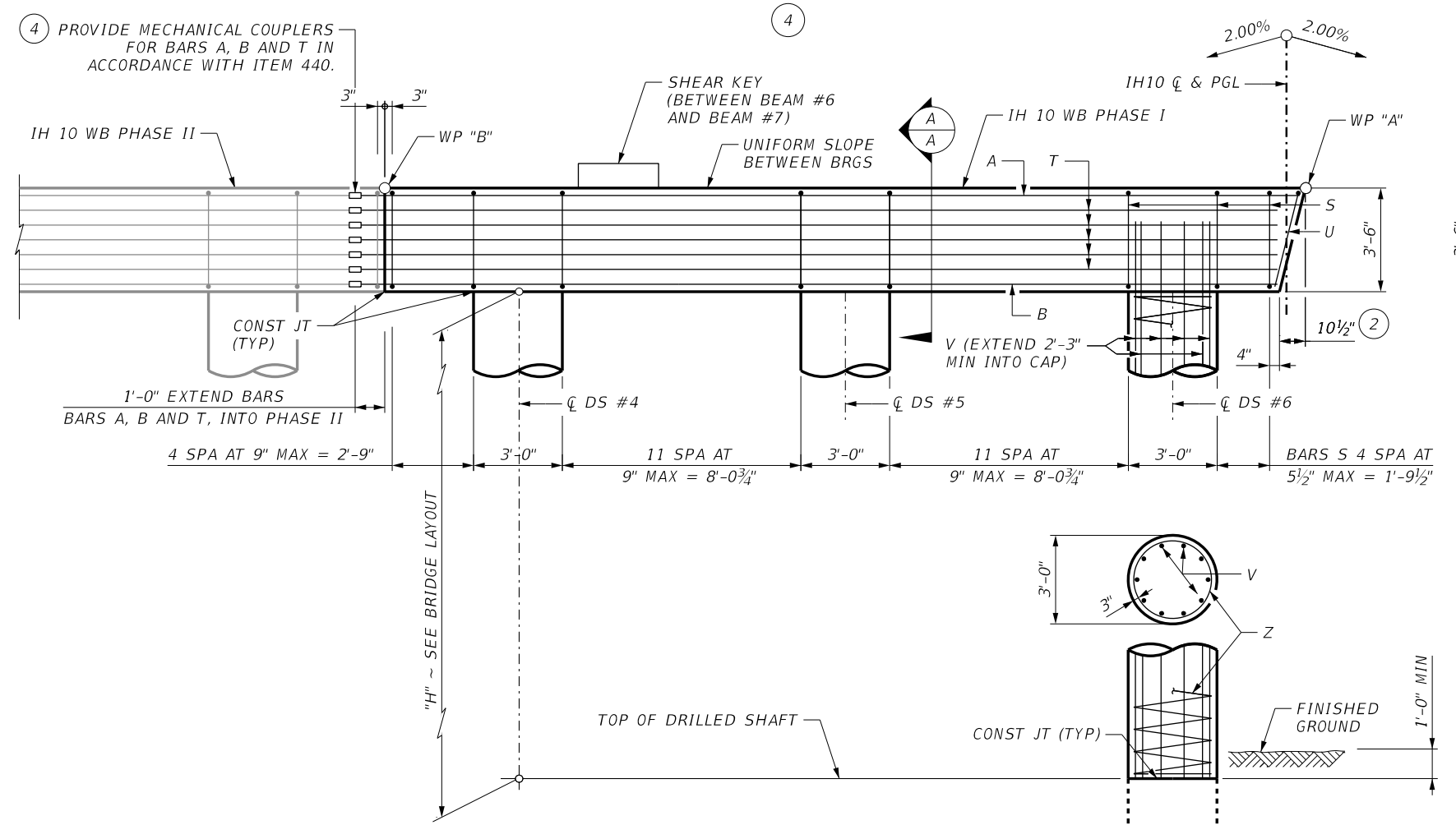
IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I & II
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	104	548



PLAN PHASE I



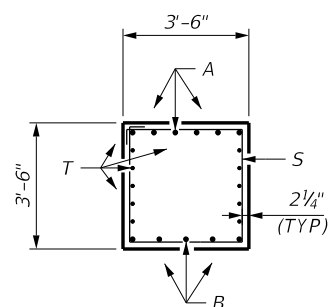
ELEVATION PHASE I

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH F'C = 3,600 PSI.
- ALL CAP REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- GALVANIZE DOWEL BARS D.
- COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



SECTION A-A

HL93 LOADING

2/29/2024

WORKING POINT ELEVATIONS		
WP	ELEV	
	BENT 2	BENT 3
A	3889.264'	3889.533'
B	3888.642'	3888.911'

TOP OF COLUMN ELEVATIONS		
COL	ELEV	
	BENT 2	BENT 3
5	3885.232'	3885.501'
6	3885.453'	3885.722'
7	3885.674'	3885.943'

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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)

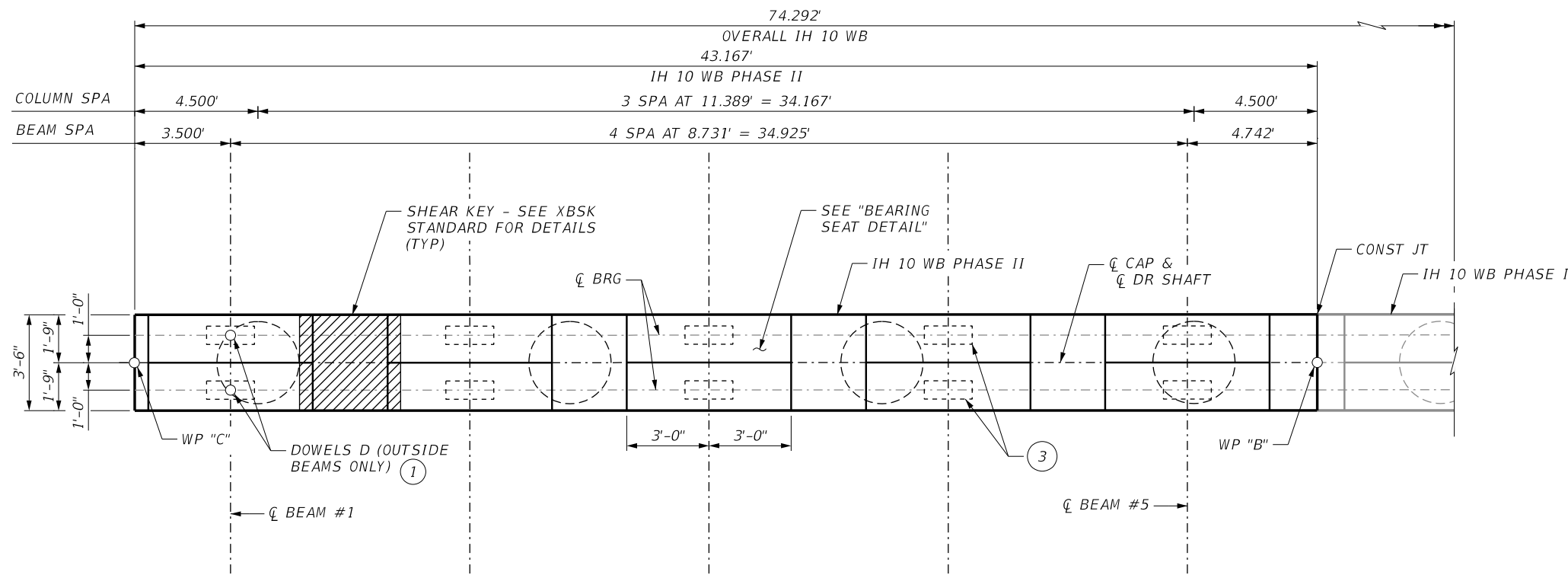
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			549

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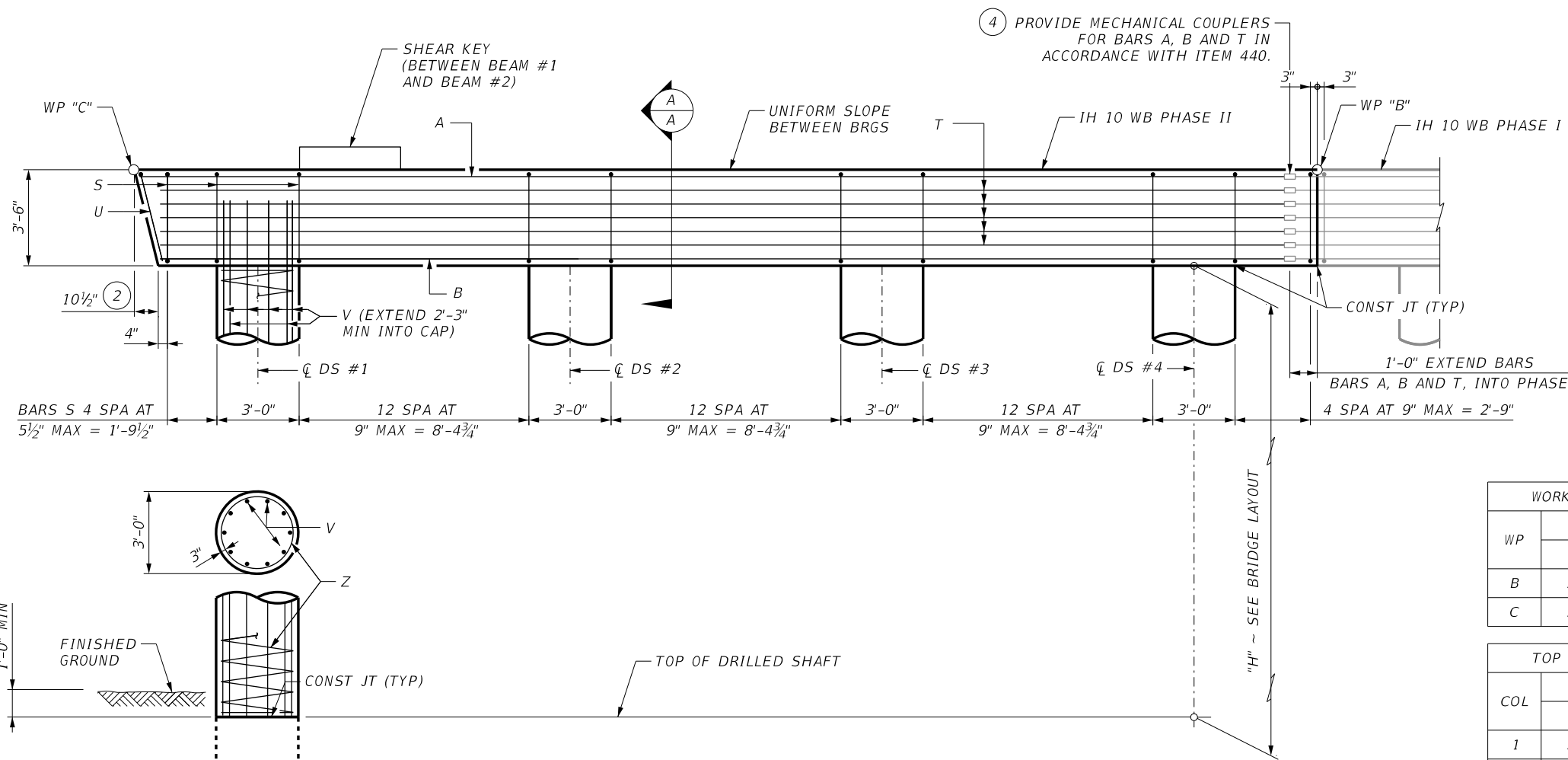
PLAN PHASE II

GENERAL NOTES

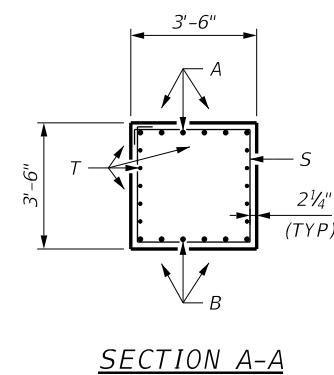
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- GALVANIZE DOWEL BARS D.
- COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".

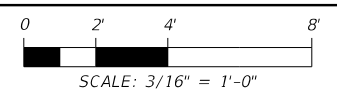


ELEVATION PHASE II



SECTION A-A

HL93 LOADING



SCALE: 3/16" = 1'-0"



Wirat Wanichakorn
2/29/2024

WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
B	3888.642'	3888.911'
C	3887.778'	3888.047'

TOP OF COLUMN ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
1	3884.368'	3884.637'
2	3884.596'	3884.865'
3	3884.824'	3885.093'
4	3885.052'	3885.321'

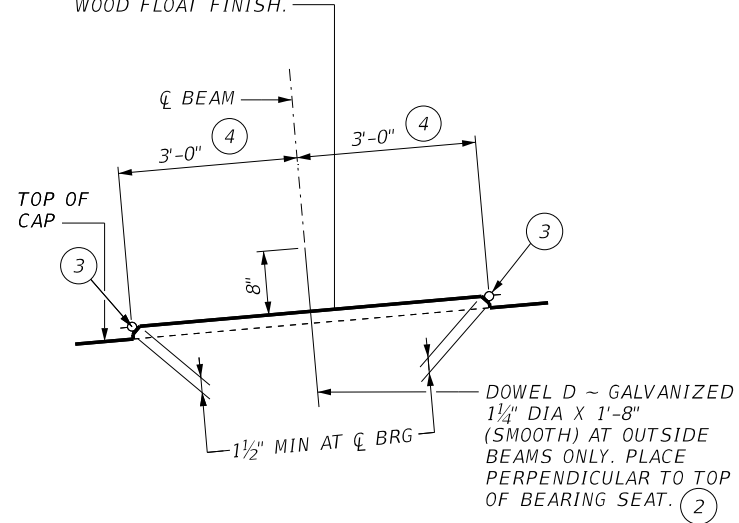


IH 10 WIDENING (NMSL/SPUR 37)
**BENT NO. 2 & 3
PHASE II**
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	550

LEVEL ALONG A LINE PERPENDICULAR TO
 CL BENT. UNIFORM SLOPE BETWEEN LEFT
 AND RIGHT BEARING SEAT ELEVATIONS WITH
 WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN
 AND FREE OF ALL LOOSE MATERIAL
 BEFORE PLACING BEARING PAD.)

**TABLE OF ESTIMATED QUANTITIES PHASE I
 (ONE BENT) (1)**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	31' - 11"	1,044
B	5	#11	31' - 2"	830
D	4	#9	1' - 8"	32
S	34	#5	13' - 6"	496
T	10	#5	31' - 2"	326
U	1	#5	9' - 8"	11
V	30	#9	10' - 3"	1,071
Z	3	#3	142' - 4"	161
ITEM			UNIT	QUANTITY
Reinforcing Steel			LB	3,971
Conc (Cap)			CY	14.5
Conc (Column)			CY	6.3

**TABLE OF ESTIMATED QUANTITIES PHASE II
 (ONE BENT) (1)**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	41' - 11"	1,365
B	5	#11	41' - 2"	1,098
D	2	#9	1' - 8"	16
S	49	#5	13' - 6"	715
T	10	#5	41' - 3"	431
U	1	#5	9' - 8"	11
V	40	#9	10' - 3"	1,428
Z	4	#3	142' - 4"	214
ITEM			UNIT	QUANTITY
Reinforcing Steel			LB	5,279
Conc (Cap)			CY	20.4
Conc (Column)			CY	8.4

KEYED NOTES

- (1) QUANTITIES SHOWN ARE BASED ON AN "H" VALUE OF 8'. FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
 BARS V LENGTH, 1'-0"
 BARS Z LENGTH, 31'-5"
 REINFORCING STEEL, 165 LB
 CLASS "C" CONC (COL), 0.79 CY
- (2) OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- (3) RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED ELSEWHERE.
- (4) MEASURED A LONG CL OF BEARING.

HL93 LOADING

NOT TO SCALE



Wirat Wanichakorn
 2/29/2024

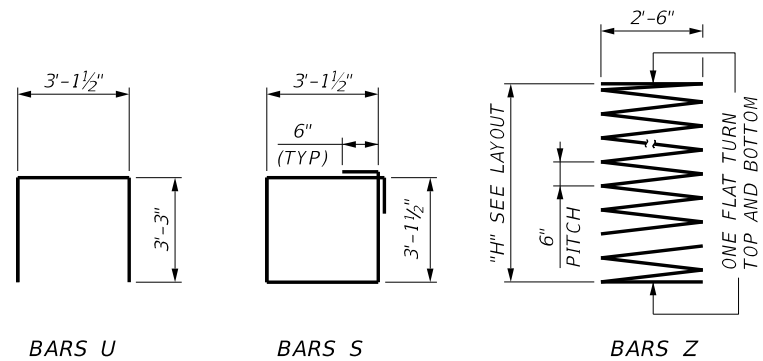
NO.	DATE	REVISION	APPROV.

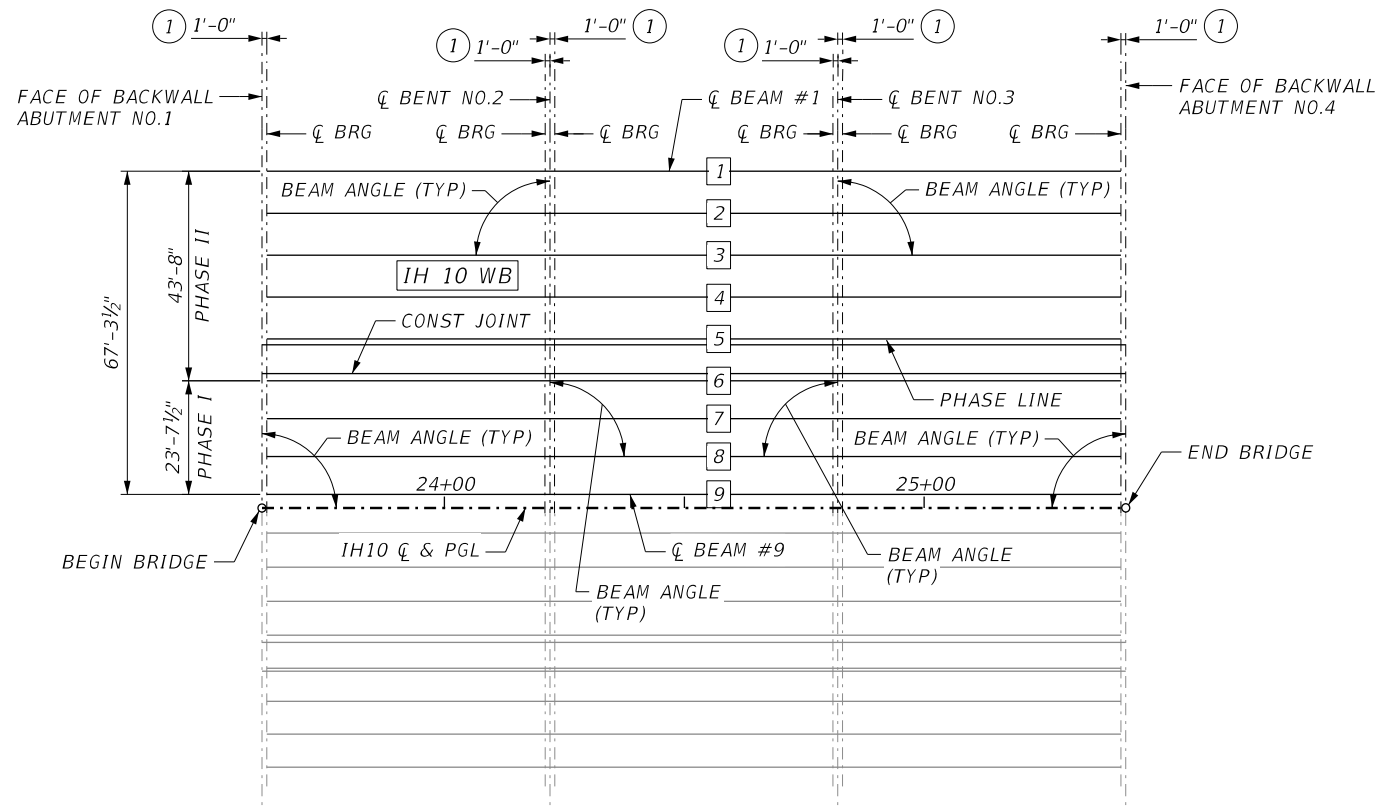


IH 10 WIDENING (NMSL/SPUR 37)
 BENT NO. 2 & 3
 PHASE I & II
 ARROYO 48 RELIEF #AB BRIDGE
 IH 10 WB
 (STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	551





- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- ③ BEAM SPACING IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X-BEAMS.

SPAN 1 **SPAN 2** **SPAN 3**
(5XB20 BEAMS) (5XB20 BEAMS) (5XB20 BEAMS)

FRAMING PLAN

BEAM REPORT, SPAN 1

	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE	
PHASE II	BEAM 1	60.0000	58.0000	59.5001	0.00140
	BEAM 2	60.0000	58.0000	59.5001	0.00139
	BEAM 3	60.0000	58.0000	59.5001	0.00139
	BEAM 4	60.0000	58.0000	59.5001	0.00140
	BEAM 5	60.0000	58.0000	59.5001	0.00139
PHASE I	BEAM 6	60.0000	58.0000	59.5001	0.00139
	BEAM 7	60.0000	58.0000	59.5001	0.00140
	BEAM 8	60.0000	58.0000	59.5001	0.00139
	BEAM 9	60.0000	58.0000	59.5001	0.00139

BENT NO. 1 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE
	(CL BENT)	(CL BENT)	(CL BENT)
	D	M	S
SPAN 1	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	8.7313	90 0 0.00
	BEAM 3	8.7313	90 0 0.00
	BEAM 4	8.7313	90 0 0.00
	BEAM 5	8.7313	90 0 0.00
PHASE I	BEAM 6	8.7313	90 0 0.00
	BEAM 7	7.8784	90 0 0.00
	BEAM 8	7.8784	90 0 0.00
	BEAM 9	7.8784	90 0 0.00
	TOTAL	67.2917	

BENT NO. 3 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE
	(CL BENT)	(CL BENT)	(CL BENT)
	D	M	S
SPAN 2	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	8.7313	90 0 0.00
	BEAM 3	8.7313	90 0 0.00
	BEAM 4	8.7313	90 0 0.00
	BEAM 5	8.7313	90 0 0.00
PHASE I	BEAM 6	8.7313	90 0 0.00
	BEAM 7	7.8784	90 0 0.00
	BEAM 8	7.8784	90 0 0.00
	BEAM 9	7.8784	90 0 0.00
	TOTAL	62.2917	

BEAM REPORT, SPAN 2

	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE	
PHASE II	BEAM 1	60.0000	58.0000	59.5006	0.00453
	BEAM 2	60.0000	58.0000	59.5006	0.00453
	BEAM 3	60.0000	58.0000	59.5006	0.00453
	BEAM 4	60.0000	58.0000	59.5006	0.00453
	BEAM 5	60.0000	58.0000	59.5006	0.00453
PHASE I	BEAM 6	60.0000	58.0000	59.5006	0.00453
	BEAM 7	60.0000	58.0000	59.5006	0.00453
	BEAM 8	60.0000	58.0000	59.5006	0.00453
	BEAM 9	60.0000	58.0000	59.5006	0.00453

BENT NO. 2 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE
	(CL BENT)	(CL BENT)	(CL BENT)
	D	M	S
SPAN 1	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	8.7313	90 0 0.00
	BEAM 3	8.7313	90 0 0.00
	BEAM 4	8.7313	90 0 0.00
	BEAM 5	8.7313	90 0 0.00
PHASE I	BEAM 6	8.7313	90 0 0.00
	BEAM 7	7.8784	90 0 0.00
	BEAM 8	7.8784	90 0 0.00
	BEAM 9	7.8784	90 0 0.00
	TOTAL	67.2917	

BENT NO. 3 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE
	(CL BENT)	(CL BENT)	(CL BENT)
	D	M	S
SPAN 3	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	8.7313	90 0 0.00
	BEAM 3	8.7313	90 0 0.00
	BEAM 4	8.7313	90 0 0.00
	BEAM 5	8.7313	90 0 0.00
PHASE I	BEAM 6	8.7313	90 0 0.00
	BEAM 7	7.8784	90 0 0.00
	BEAM 8	7.8784	90 0 0.00
	BEAM 9	7.8784	90 0 0.00
	TOTAL	62.2917	

BEAM REPORT, SPAN 3

	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE	
PHASE II	BEAM 1	60.0000	58.0000	59.5017	0.00766
	BEAM 2	60.0000	58.0000	59.5017	0.00766
	BEAM 3	60.0000	58.0000	59.5017	0.00767
	BEAM 4	60.0000	58.0000	59.5017	0.00766
	BEAM 5	60.0000	58.0000	59.5017	0.00766
PHASE I	BEAM 6	60.0000	58.0000	59.5017	0.00766
	BEAM 7	60.0000	58.0000	59.5017	0.00766
	BEAM 8	60.0000	58.0000	59.5017	0.00766
	BEAM 9	60.0000	58.0000	59.5017	0.00767

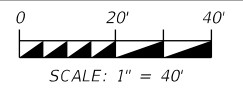
BENT NO. 2 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE
	(CL BENT)	(CL BENT)	(CL BENT)
	D	M	S
SPAN 2	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	8.7313	90 0 0.00
	BEAM 3	8.7313	90 0 0.00
	BEAM 4	8.7313	90 0 0.00
	BEAM 5	8.7313	90 0 0.00
PHASE I	BEAM 6	8.7313	90 0 0.00
	BEAM 7	7.8784	90 0 0.00
	BEAM 8	7.8784	90 0 0.00
	BEAM 9	7.8784	90 0 0.00
	TOTAL	67.2917	

BENT NO. 4 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE
	(CL BENT)	(CL BENT)	(CL BENT)
	D	M	S
SPAN 3	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	8.7313	90 0 0.00
	BEAM 3	8.7313	90 0 0.00
	BEAM 4	8.7313	90 0 0.00
	BEAM 5	8.7313	90 0 0.00
PHASE I	BEAM 6	8.7313	90 0 0.00
	BEAM 7	7.8784	90 0 0.00
	BEAM 8	7.8784	90 0 0.00
	BEAM 9	7.8784	90 0 0.00
	TOTAL	62.2917	

HL93 LOADING



Wirat Wanichakorn
2/29/2024

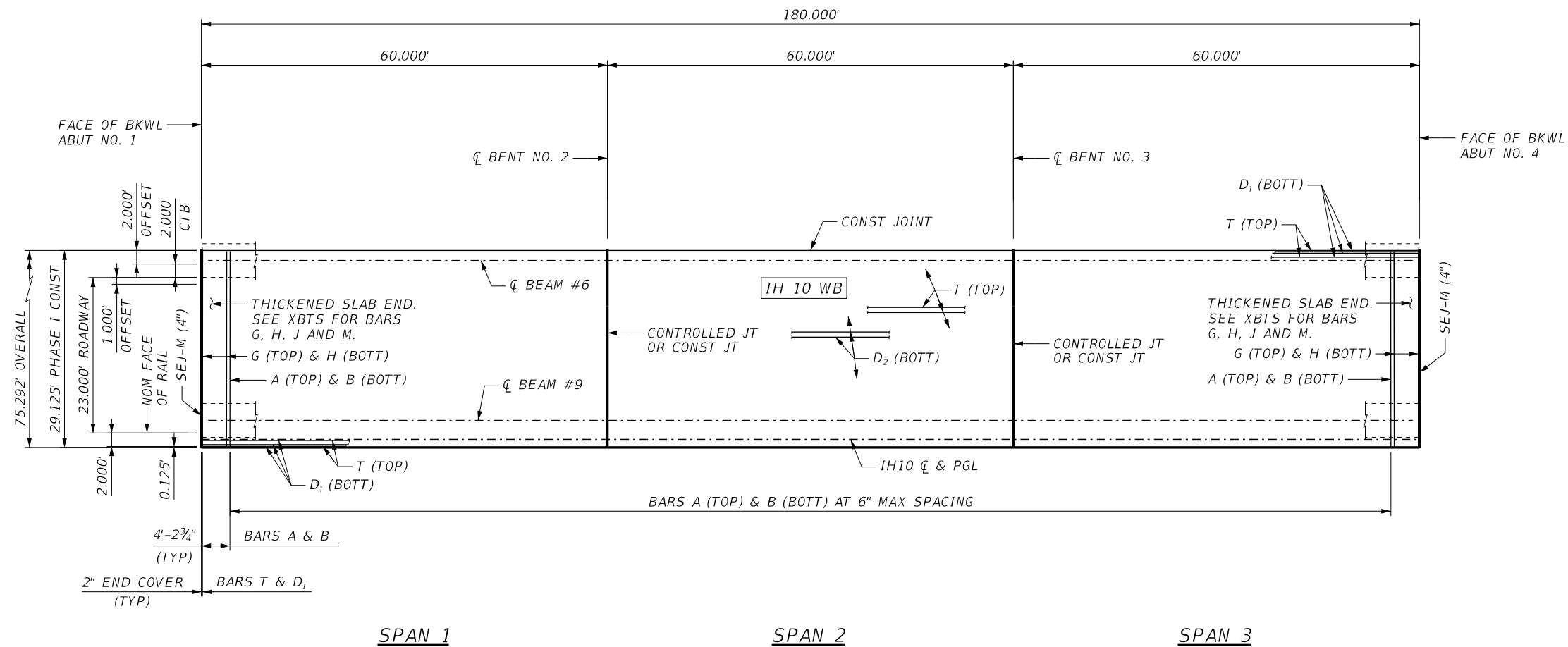


IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				552

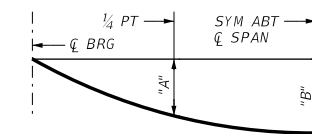


GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
- SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
- SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
- ALL REINFORCING MUST BE GRADE 60.
- CONCRETE STRENGTH $f'_c = 4,000$ PSI.
- BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
- SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

PLAN PHASE I

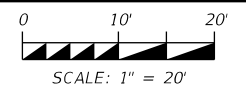
SPAN	BEAM NO.	"A"	"B"
		FT	FT
ALL	6	0.061	0.085
	7 & 8	0.081	0.113
	9	0.081	0.114



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



Steve Groves 2/29/2024

NO.	DATE	REVISION	APPROV.



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)**

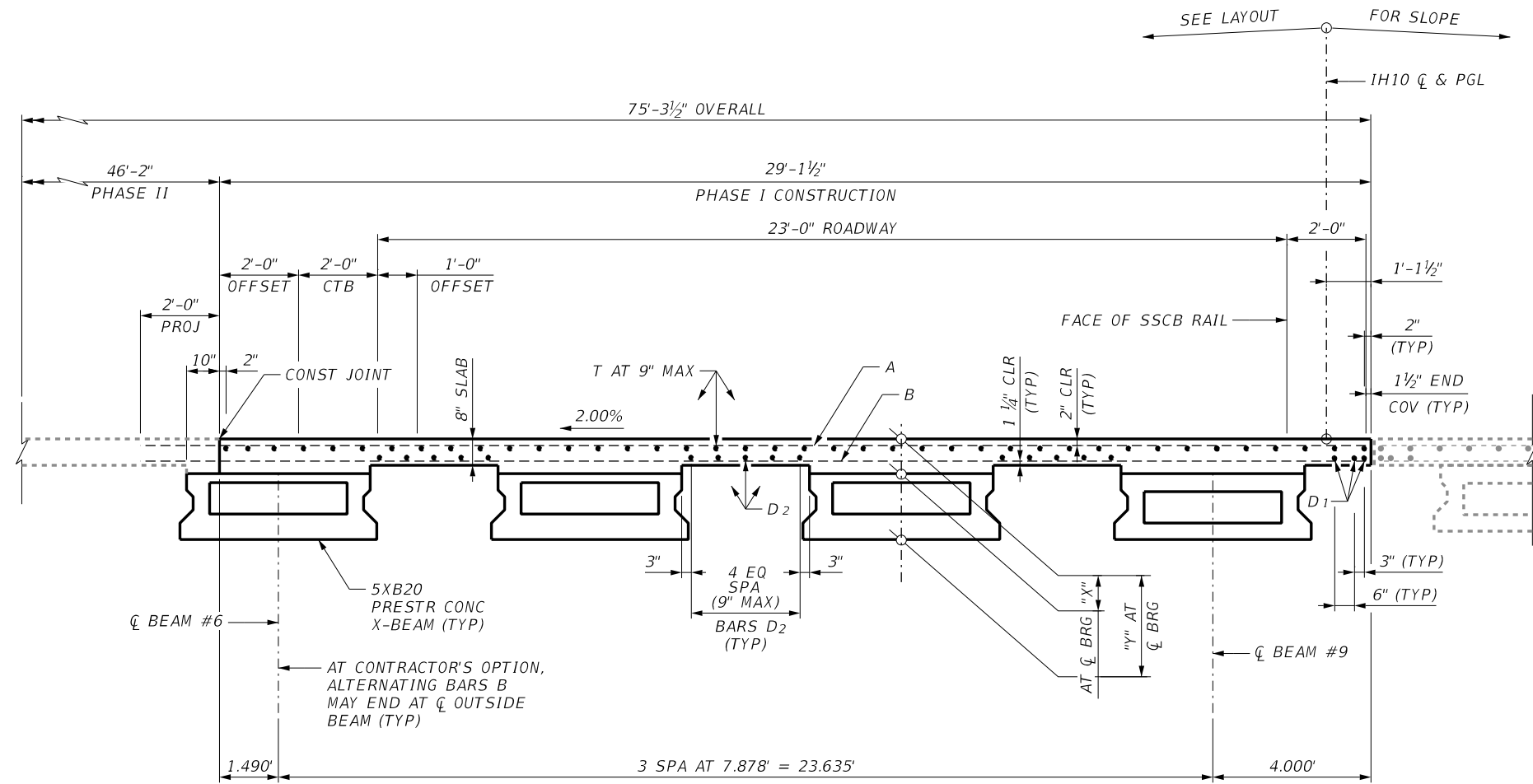
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	553

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.



TYPICAL TRANSVERSE SECTION PHASE I
(5XB20) SPANS 1 THRU 3

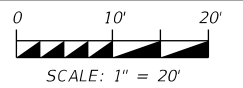
TABLE OF ESTIMATED QUANTITIES PHASE I

SPAN	REINF CONCRETE SLAB	5XB20 PREST CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	1,748	238.00	49.3	11,359
2	1,748	238.00	48.3	11,359
3	1,748	238.01	49.3	11,359
TOTAL	5,244	714.01	146.9	34,077

TABLE OF SECTION DEPTHS FOR PHASE I

SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	6-9	11 1/4"	31 1/4"

HL93 LOADING



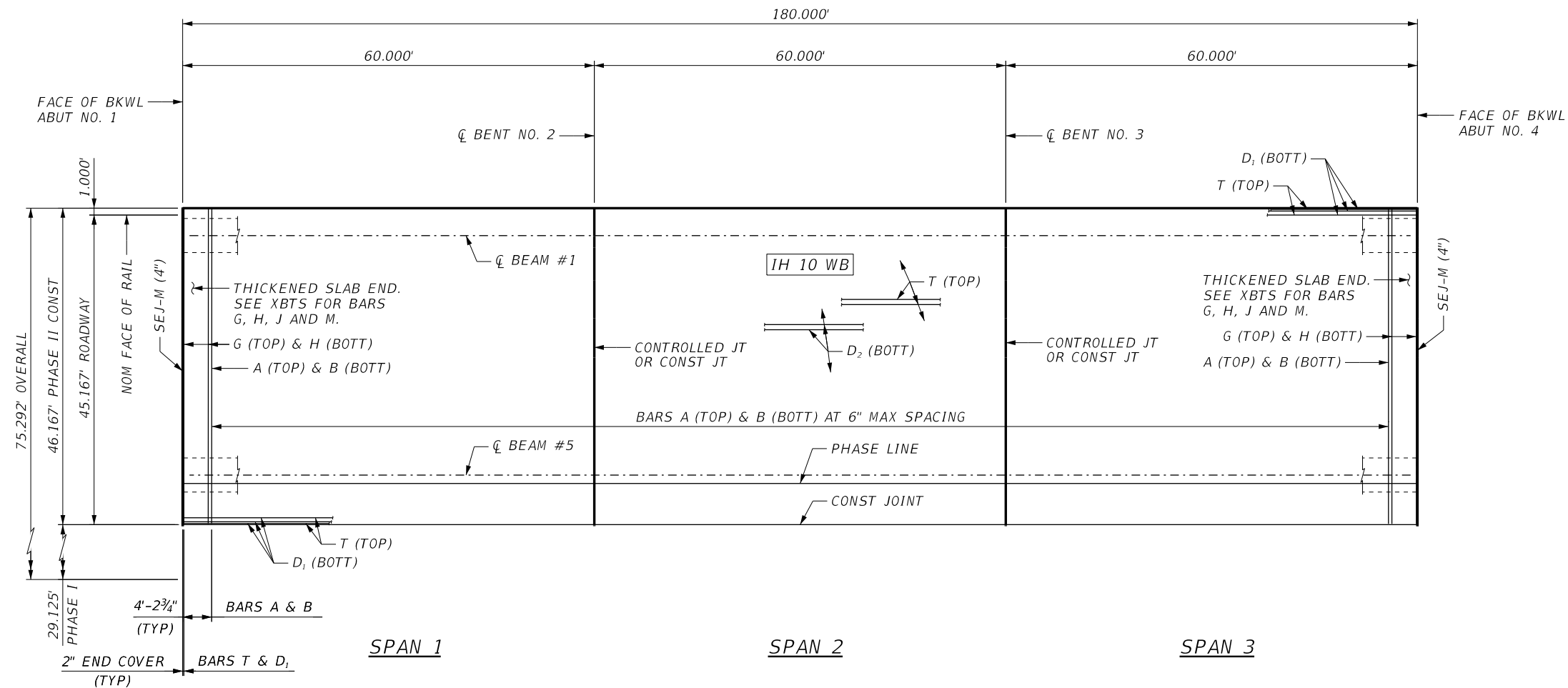
Wirat Wanichakorn
2/29/2024



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)**

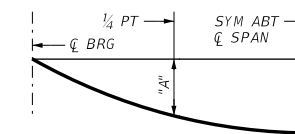
SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	554



PLAN PHASE II

TABLE OF DEFLECTIONS PHASE II			
SPAN	BEAM NO.	"A"	"B"
		FT	FT
ALL	1	0.085	0.119
	2-5	0.086	0.123



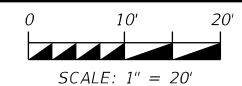
DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY (EC = 5,000 KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
- SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
- SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
- ALL REINFORCING MUST BE GRADE 60.
- CONCRETE STRENGTH $f'_c = 4,000$ PSI.
- BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
- SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

HL93 LOADING



SCALE: 1" = 20'



Steve Wilkerson 2/29/2024

NO.	DATE	REVISION	APPROV.

CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

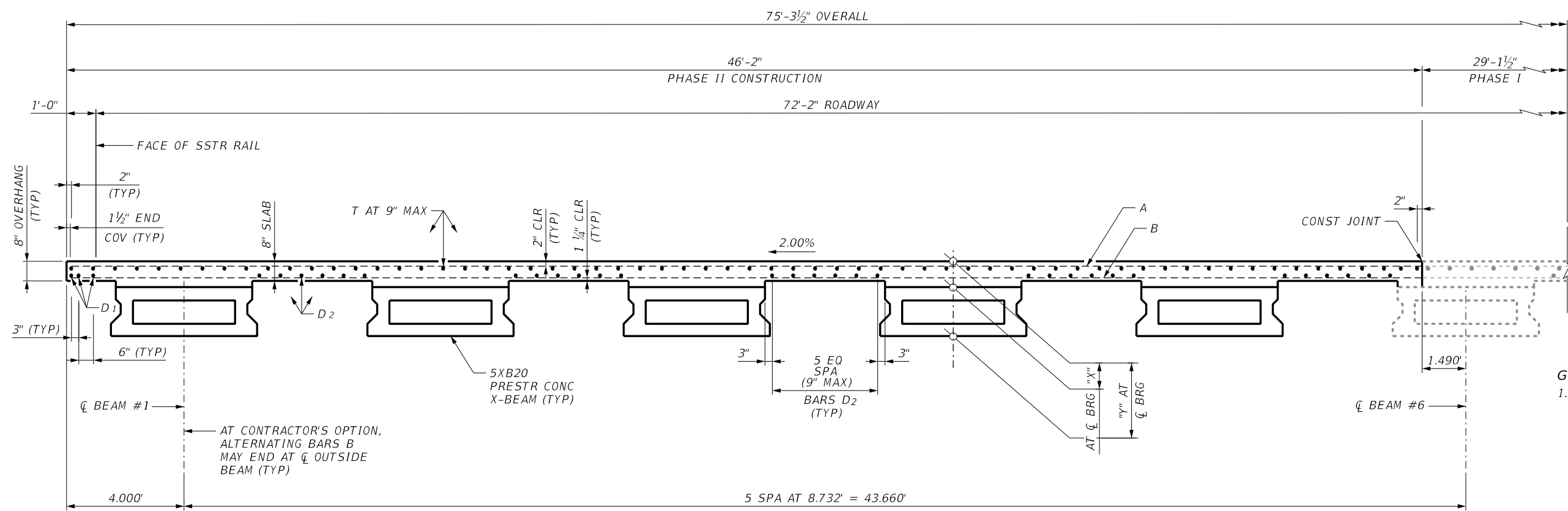
Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	555

BAR TABLE PHASE II	
BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4



GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

TYPICAL TRANSVERSE SECTION PHASE II
(5XB20) SPANS 1 THRU 3

HL93 LOADING

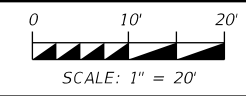


TABLE OF ESTIMATED QUANTITIES PHASE II				
SPAN	REINF CONCRETE SLAB	5XB20 PREST CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	2,770	297.50	81.2	18,006
2	2,770	297.50	79.7	18,006
3	2,770	297.51	87.2	18,006
TOTAL	8,310	892.51	242.1	54,018

TABLE OF SECTION DEPTHS FOR PHASE II			
SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	1-5	11 1/4"	31 1/4"

Professional Engineer Seal for Wirat Wanichakorn, License No. 96609, State of Texas. Signature of Steve Groves, dated 2/29/2024.

CivilCorp ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283
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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE X-BEAM (5XB20) UNITS
PHASE II
ARROYO 48 RELIEF #AB BRIDGE
IH 10 WB
(STA 23+62 TO STA 25+42)
SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	556

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GENERAL NOTES

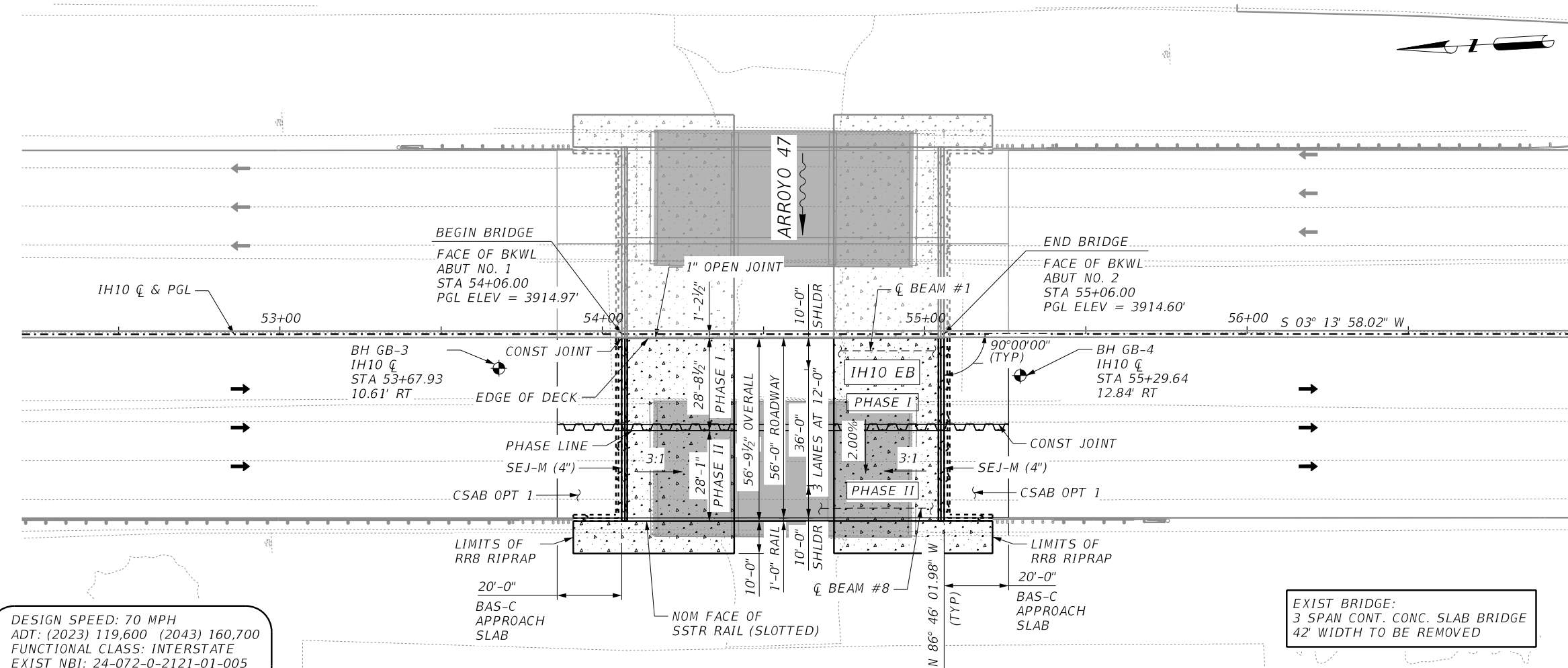
- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ⊕ - DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

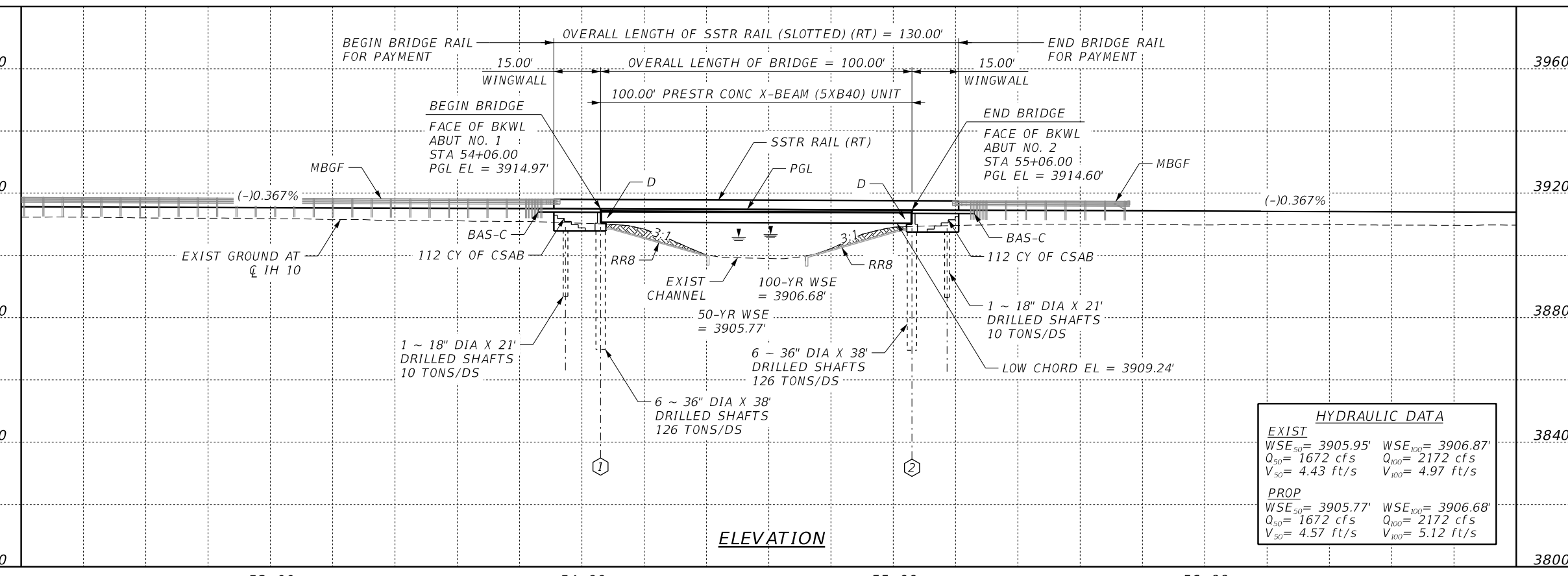
- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING

DESIGN SPEED: 70 MPH
ADT: (2023) 119,600 (2043) 160,700
FUNCTIONAL CLASS: INTERSTATE
EXIST NBI: 24-072-0-2121-01-005
NEW NBI: 24-072-0-2121-01-395

EXIST BRIDGE:
3 SPAN CONT. CONC. SLAB BRIDGE
42' WIDTH TO BE REMOVED

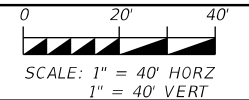


PLAN



ELEVATION

HL93 LOADING



Wirat Wanichakorn
2/29/2024

CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)

BRIDGE LAYOUT
ARROYO 47 RELIEF #BA BRIDGE
IH 10 EB
(STA 54+06 TO STA 55+06)

SHEET 1 OF 1

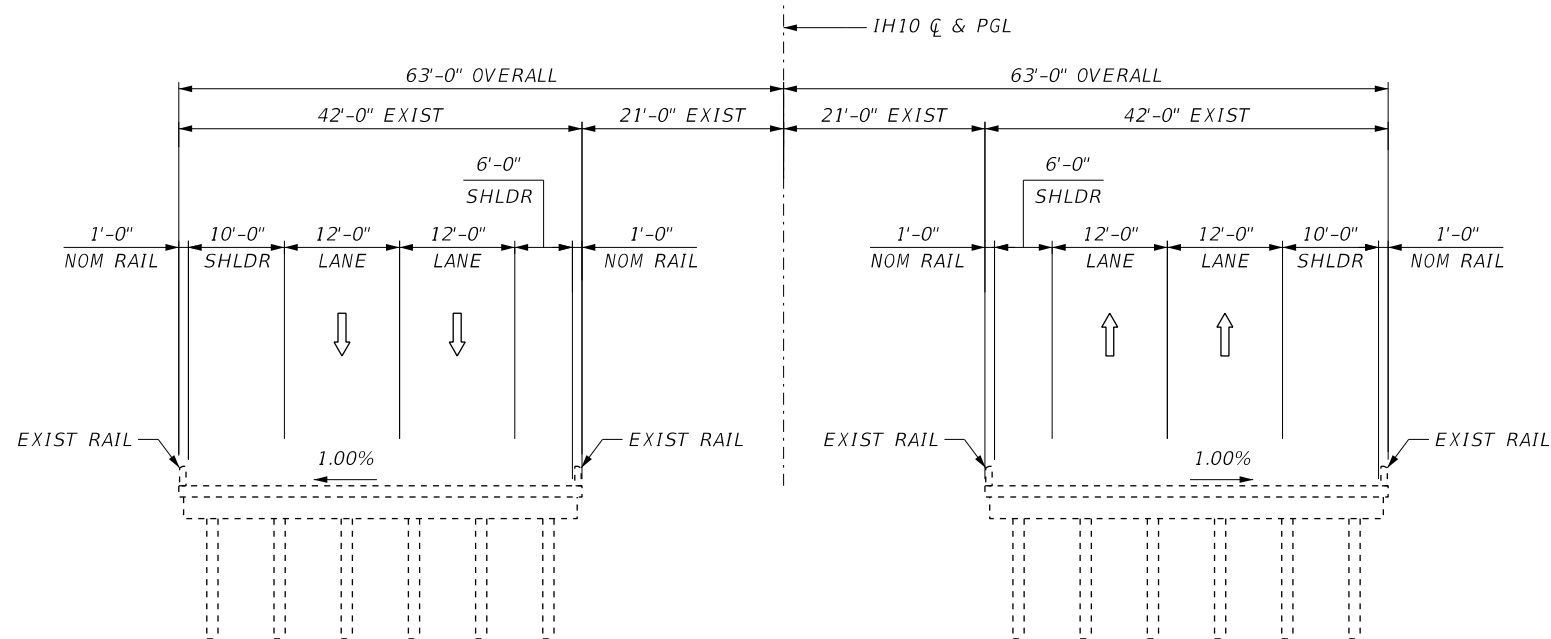
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				557

HYDRAULIC DATA

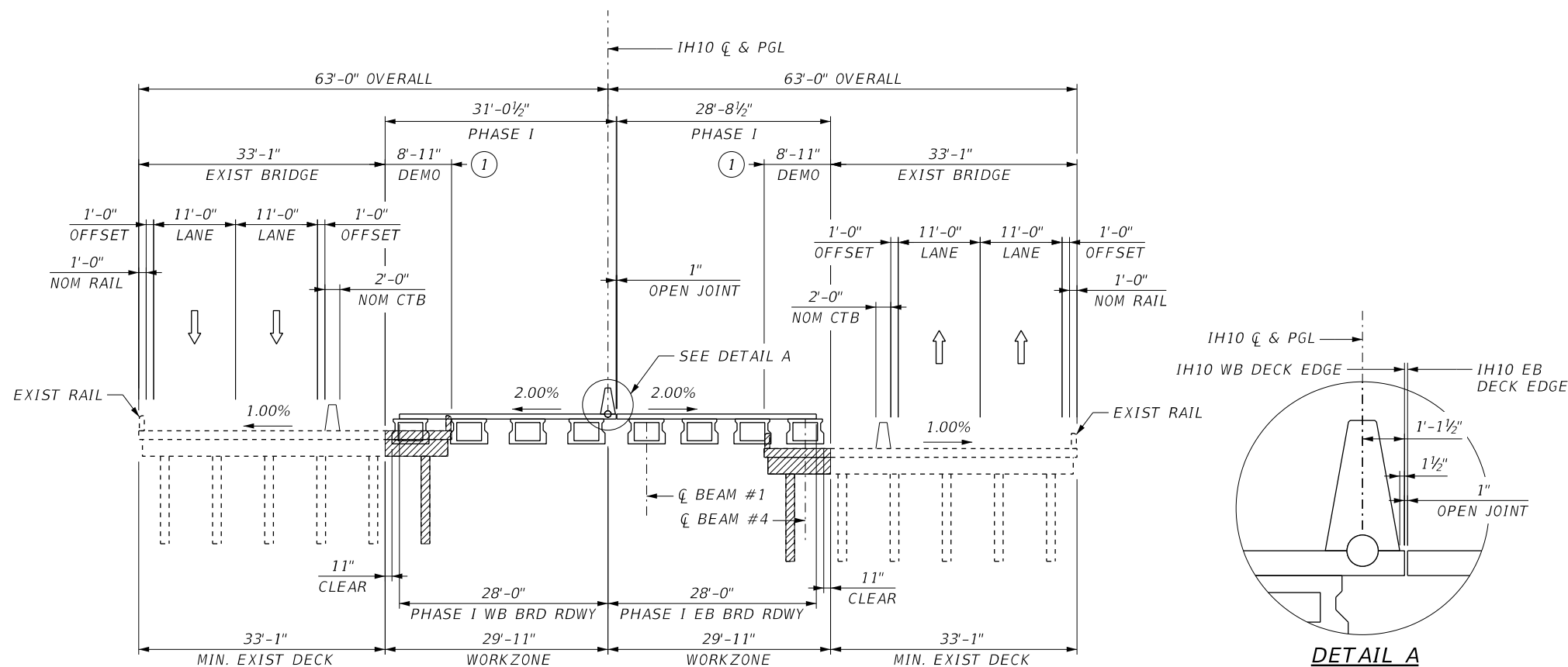
EXIST		WSE₁₀₀ = 3906.87'	
WSE ₅₀ = 3905.95'	Q ₅₀ = 1672 cfs	Q ₁₀₀ = 2172 cfs	V ₁₀₀ = 4.97 ft/s
V ₅₀ = 4.43 ft/s			
PROP		WSE₁₀₀ = 3906.68'	
WSE ₅₀ = 3905.77'	Q ₅₀ = 1672 cfs	Q ₁₀₀ = 2172 cfs	V ₁₀₀ = 5.12 ft/s
V ₅₀ = 4.57 ft/s			

LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE

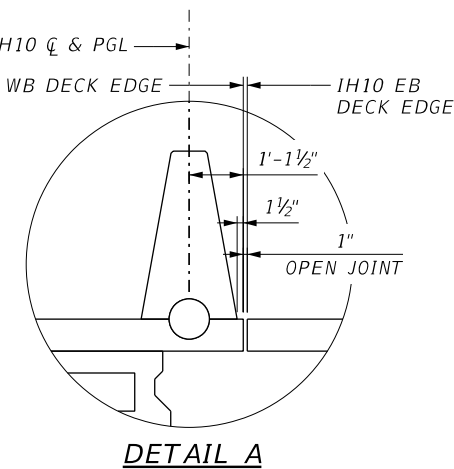


EXIST SECTION



PHASE I SECTION

- ① SAWCUT EXISTING CAP AS NECESSARY TO AVOID CONFLICT WITH BEAM. DO NOT CUT BEYOND LIMITS OF DEMOLITION. DO NOT REMOVE EXISTING COLUMNS NOT MARKED FOR DEMOLITION IN THIS PHASE.



DETAIL A

HL93 LOADING

NOT TO SCALE



Wirat Wanichakorn
2/29/2024



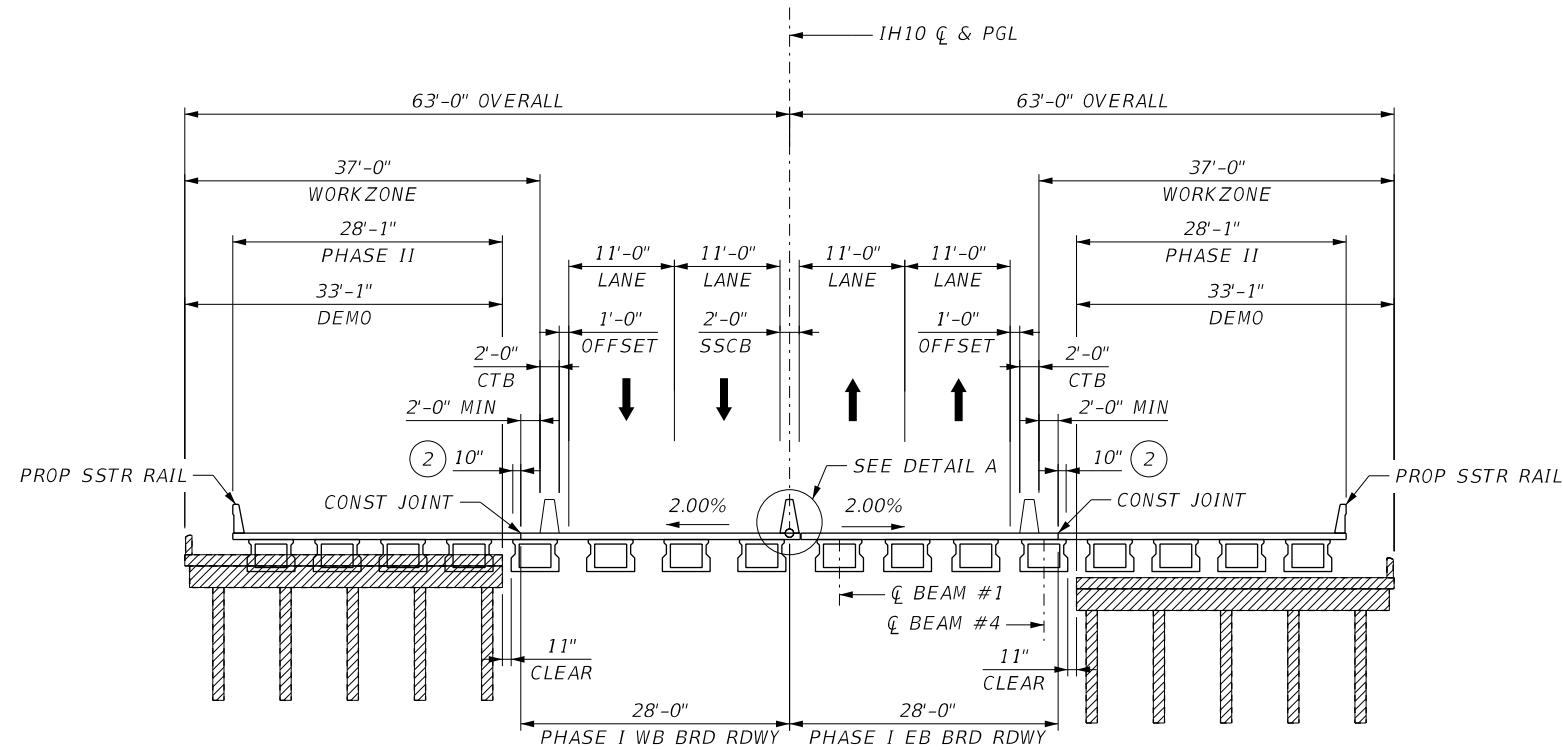
IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
ARROYO 47 RELIEF #BA BRIDGE
IH 10 EB
(STA 54+06 TO STA 55+06)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	558

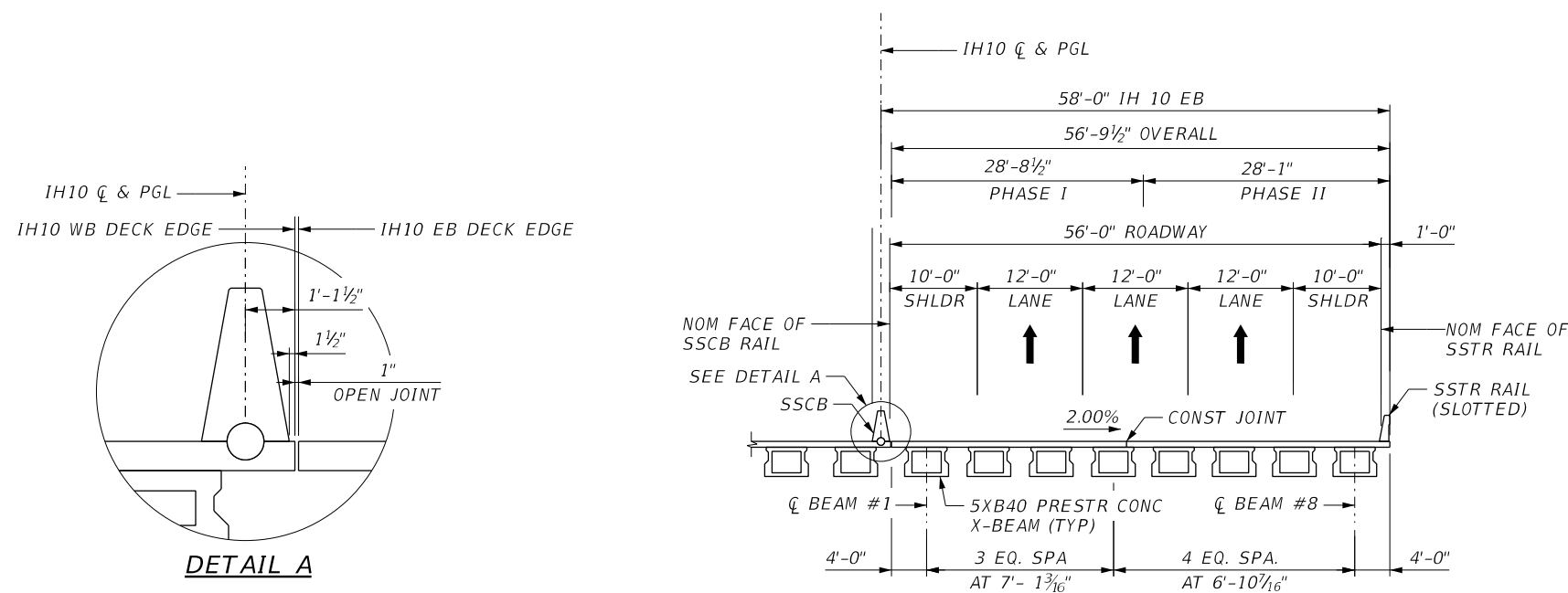
LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



PHASE II SECTION

(2) EDGE OF DECK TO EDGE OF TOP OF BEAM.



IH 10 EB FINAL SECTION

HL93 LOADING

NOT TO SCALE



Steve Groves 2/29/2024

NO.	DATE	REVISION	APPROV.

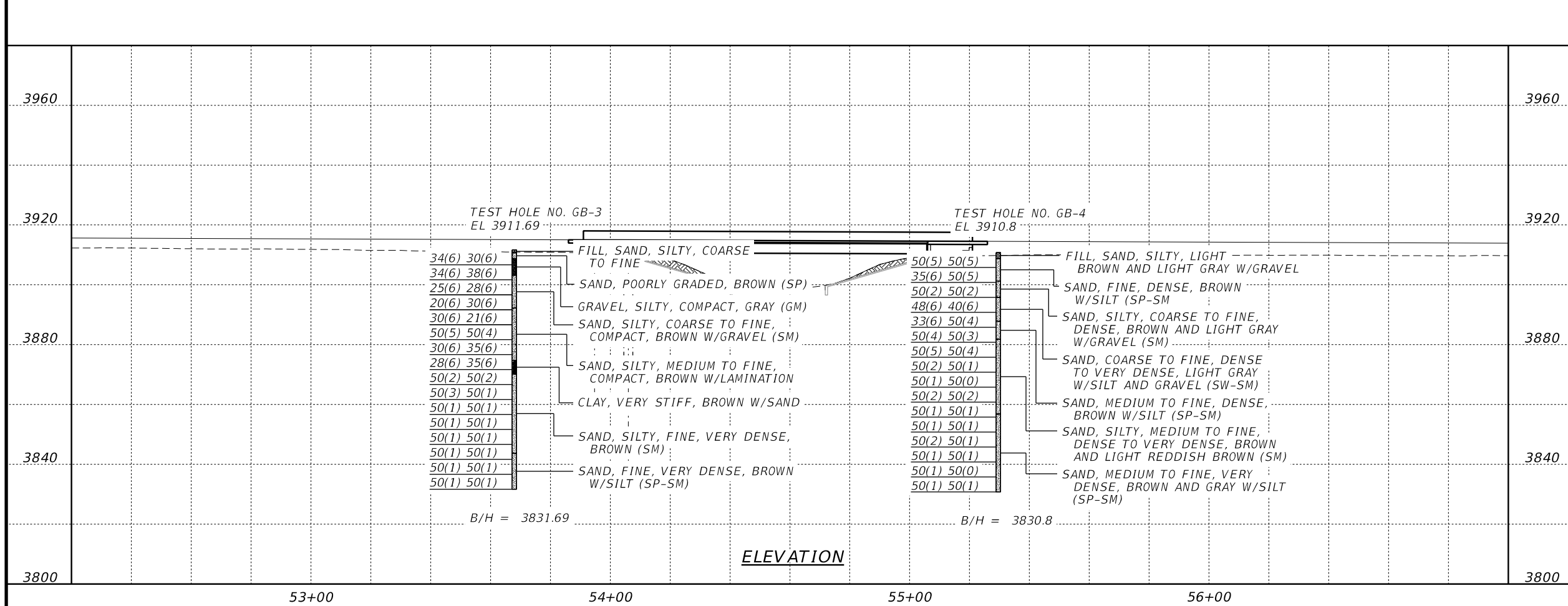


IH 10 WIDENING (NMSL/SPUR 37) BRIDGE
TYPICAL SECTIONS
ARROYO 47 RELIEF #BA BRIDGE
 IH 10 EB
 (STA 54+06 TO STA 55+06)

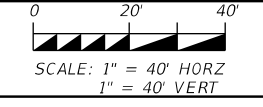
SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	104	559

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HL93 LOADING



Steve Wilkerson
 2/29/2024

NO.	DATE	REVISION	APPROV.

CivilCorp
 ENGINEERS • SURVEYORS
 2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
 TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BORING LOGS
 ARROYO 47 RELIEF #BA & #BB BRIDGE
 IH 10 EB & IH 10 WB
 (STA 54+06 TO STA 55+06)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	560

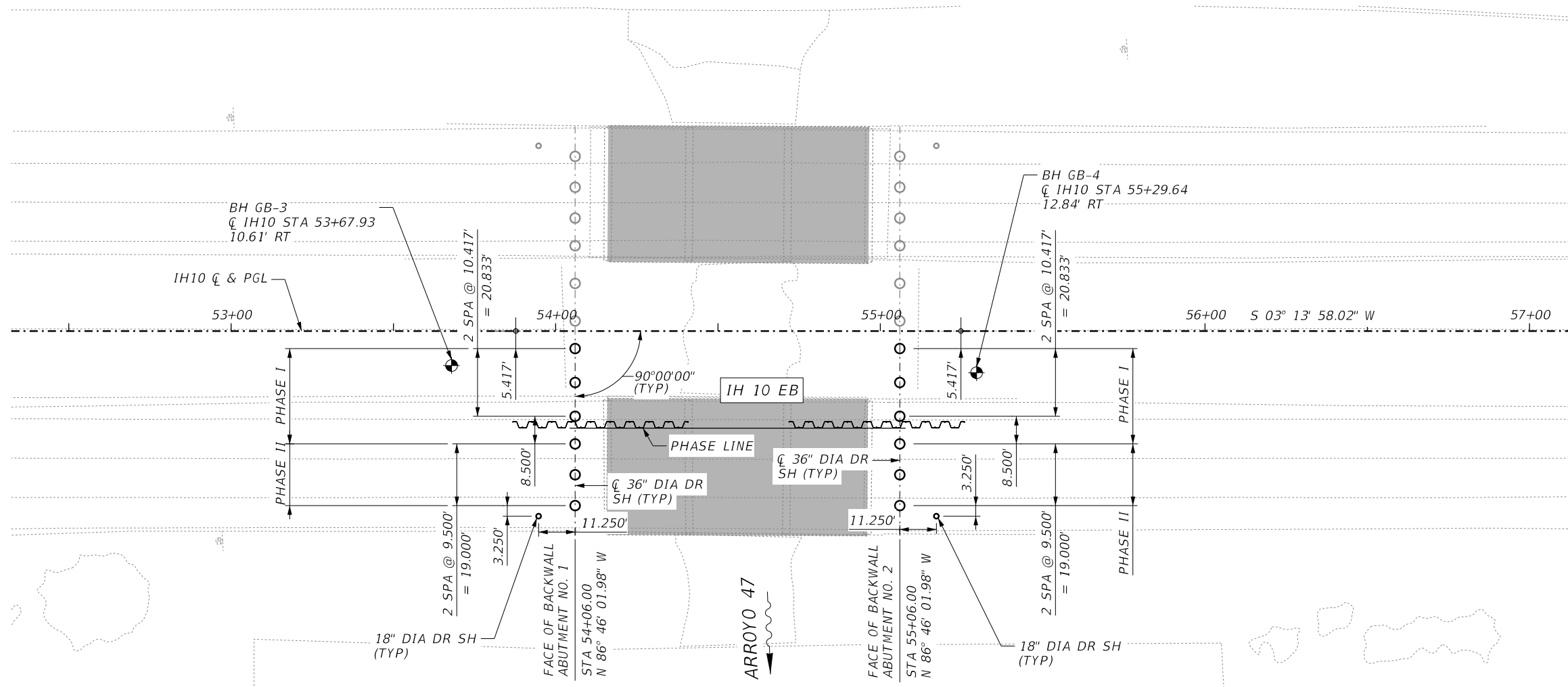
GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.
3. DRILLED SHAFT INSTALLATION WILL REQUIRE THE USE OF SLURRY DISPLACEMENT METHODS AND SURFACE CASING. THE SURFACE CASING IS TEMPORARY AND SHALL BE RETRIEVED AS OUTLINED IN TXDOT STANDARD SPECIFICATIONS.

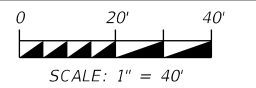


LEGEND

- = BORE HOLE
- = DRILLED SHAFT
- = TEMP SPL SHORING



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Wirat Wanichakorn
2/29/2024

FOUNDATION LOADS	
ABUT	TONS/SHAFT
1 & 2	126
WINGWALL	10

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IH 10 WIDENING (NMSL/SPUR 37)

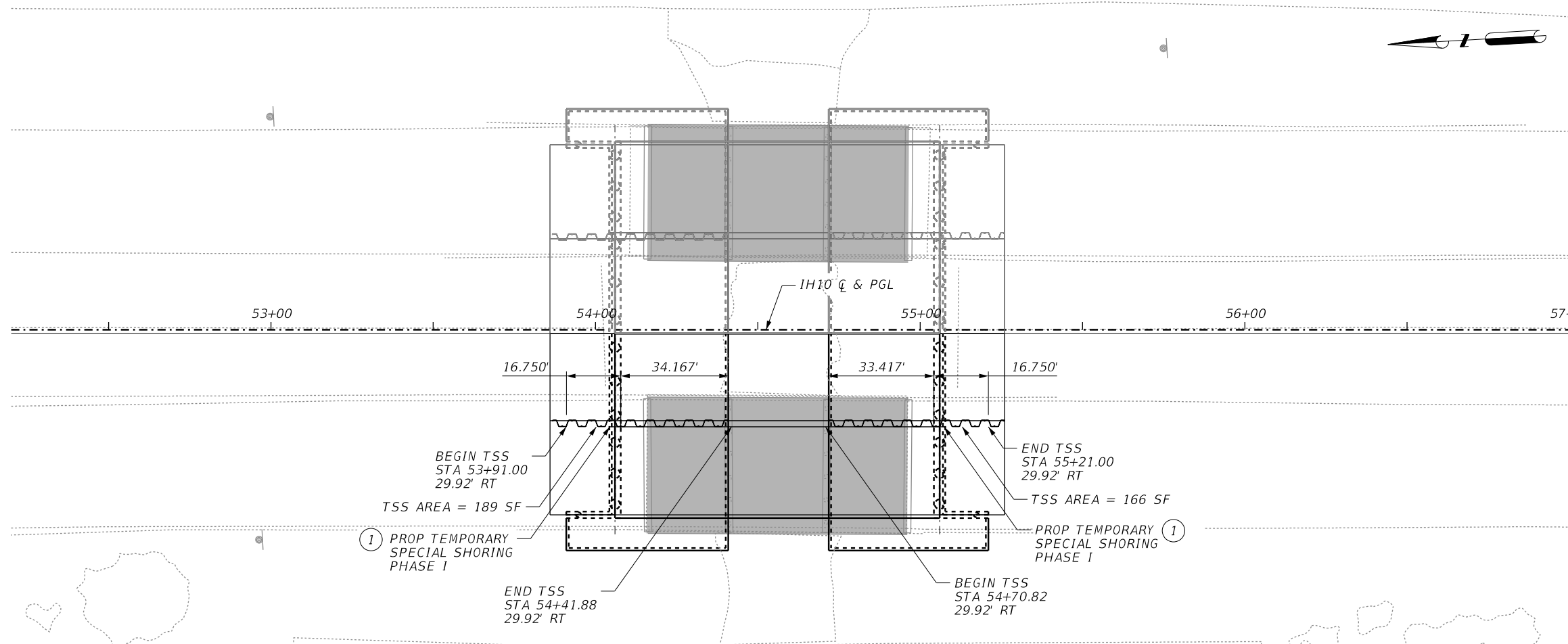
FOUNDATION LAYOUT
ARROYO 47 RELIEF #BA BRIDGE
IH 10 EB
(STA 54+06 TO STA 55+06)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	561

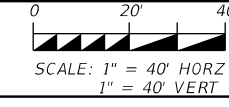
LEGEND

TEMPORARY SPL SHORING



1 PAID FOR UNDER ITEM 403 TEMPORARY SPL SHORING.

HL93 LOADING



Steve Wilkerson 2/29/2024

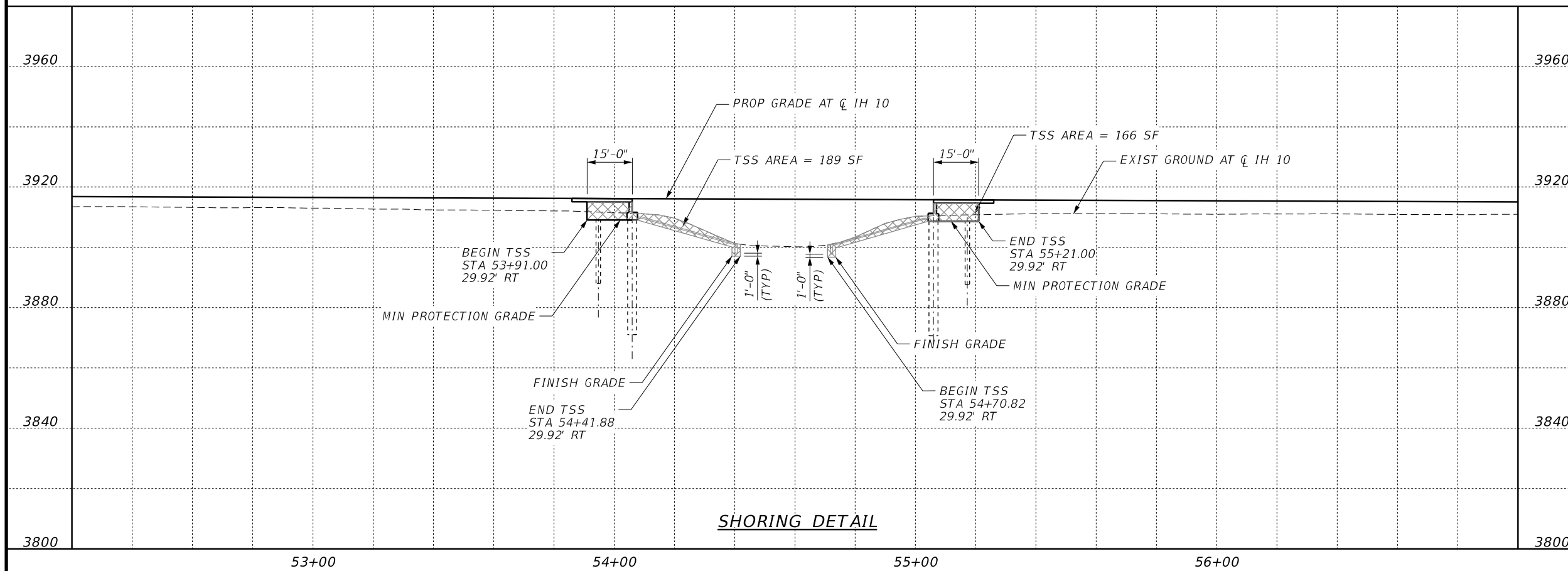
NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
 ARROYO 47 RELIEF #BA BRIDGE
 IH 10 EB
 (STA 54+06 TO STA 55+06)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				562



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BEARING SEAT ELEVATIONS

				PHASE I				PHASE II				
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	
1	ABUT	1	(FWD)	L	3910.457	3910.315	3910.173	3910.031	3909.894	3909.756	3909.619	3909.481
				R	3910.337	3910.195	3910.053	3909.911	3909.774	3909.636	3909.499	3909.361
2	ABUT	2	(BK)	L	3910.097	3909.955	3909.813	3909.671	3909.534	3909.396	3909.259	3909.121
				R	3909.977	3909.835	3909.693	3909.551	3909.414	3909.276	3909.139	3909.001



Wirat Wanichakorn

2/29/2024

NO.	DATE	REVISION	APPROV.



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IH 10 WIDENING (NMSL/SPUR 37)

BEARING SEAT ELEVATIONS
ARROYO 47 RELIEF #BA BRIDGE
IH 10 EB
(STA 54+06 TO STA 55+06)

SHEET 1 OF 1

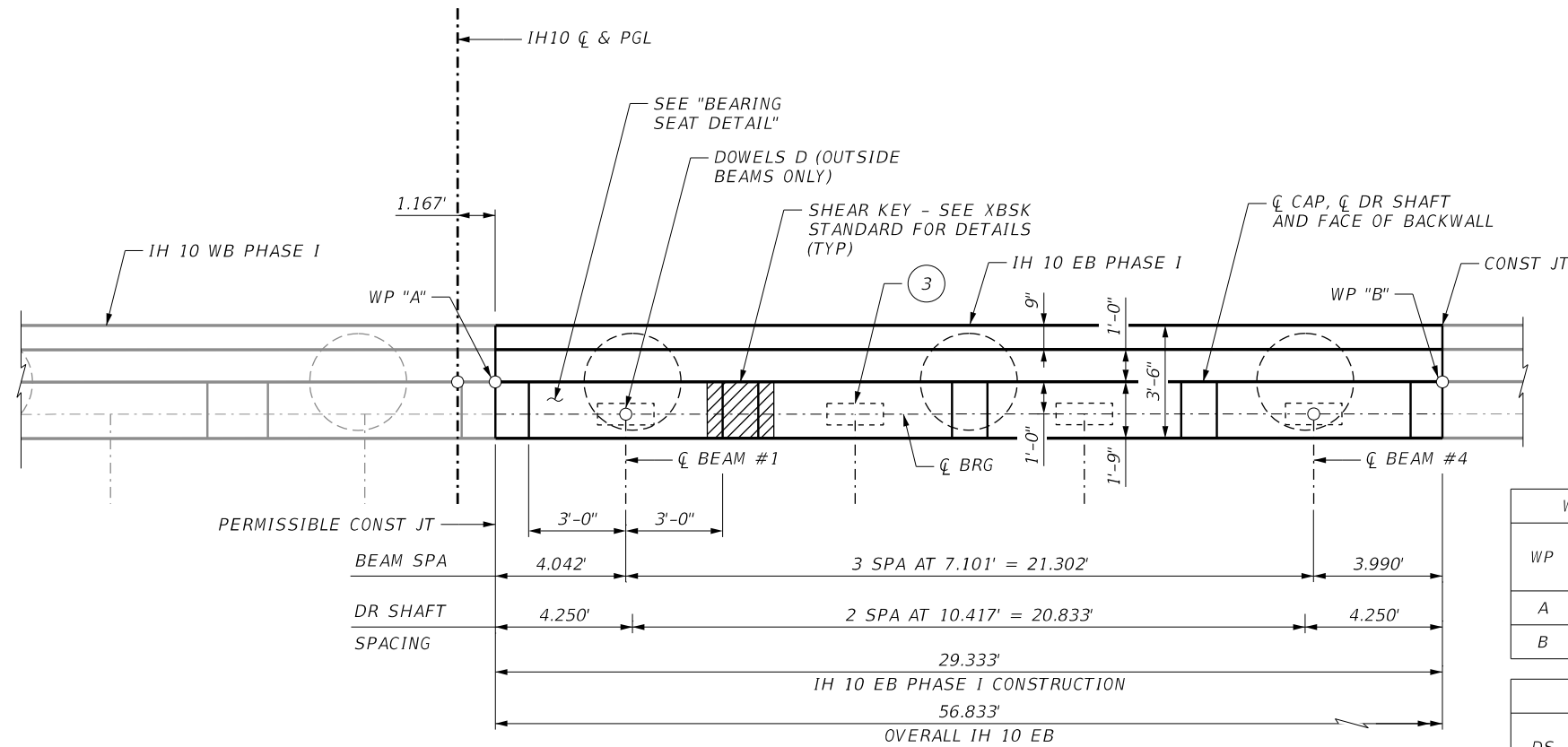
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	563

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH F'C = 3,600 PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

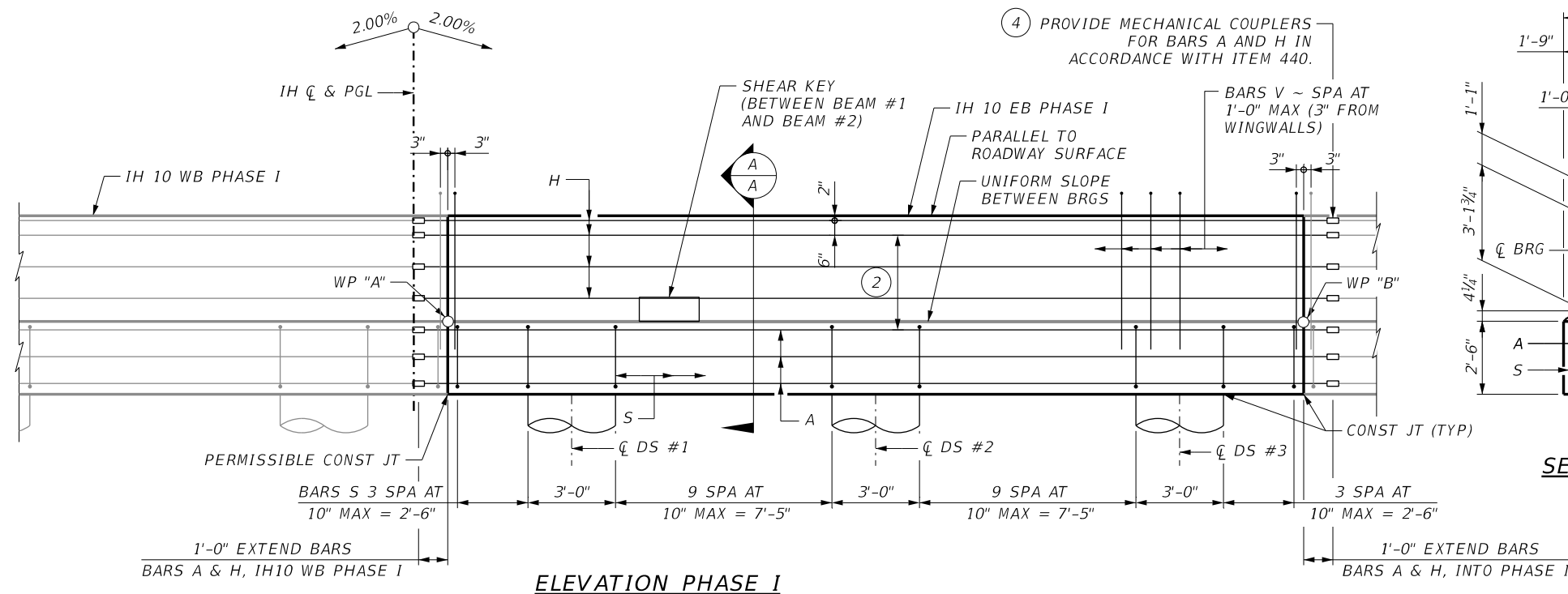
- INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB40 ~ 3 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



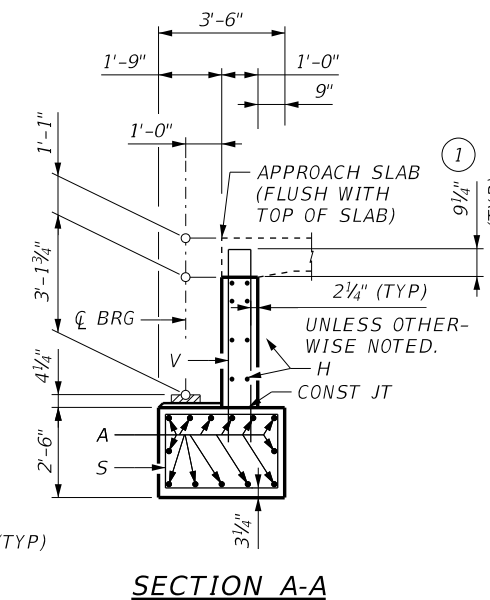
PLAN PHASE I

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 2
A	3910.355'	3909.996'
B	3909.769'	3909.409'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 2
1	3907.770'	3907.411'
2	3907.562'	3907.203'
3	3907.354'	3906.994'

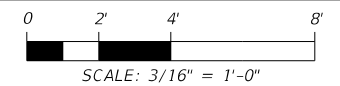


ELEVATION PHASE I



SECTION A-A

HL93 LOADING



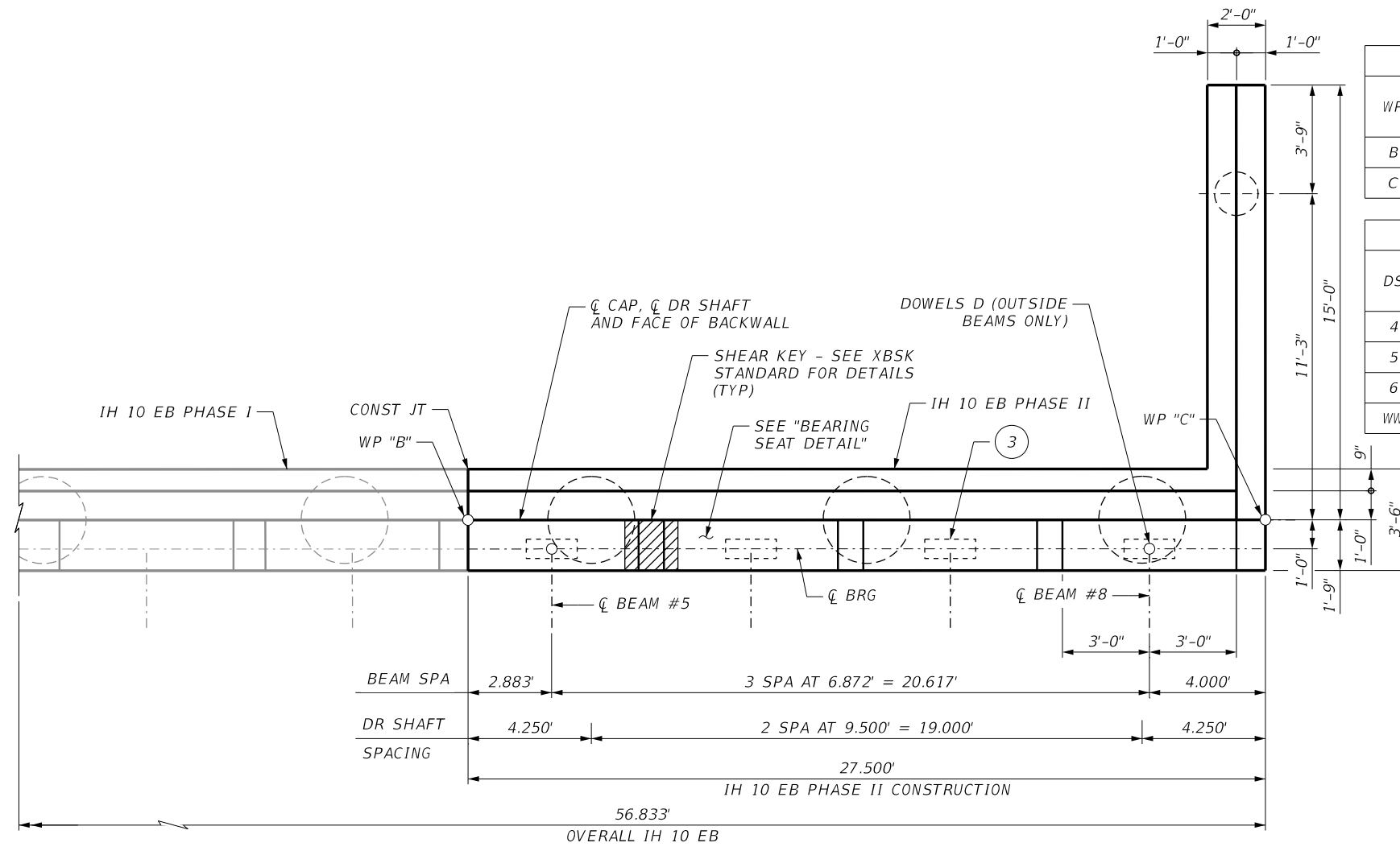
Wirat Wanichakorn
2/29/2024

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2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE I
ARROYO 47 RELIEF #BA BRIDGE
IH 10 EB
(STA 54+06 TO STA 55+06)**

SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASTO	2121	01	104	564



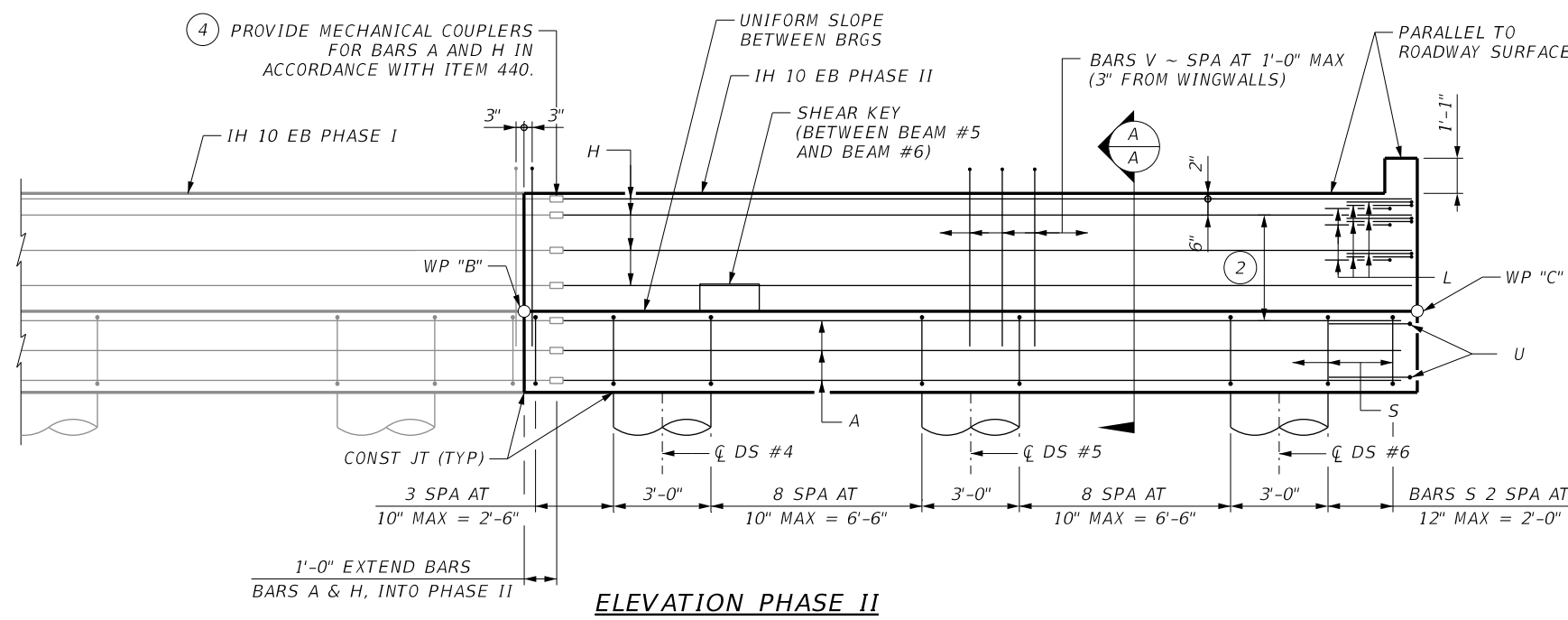
PLAN PHASE II

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 2
B	3909.769'	3909.409'
C	3909.219'	3908.859'

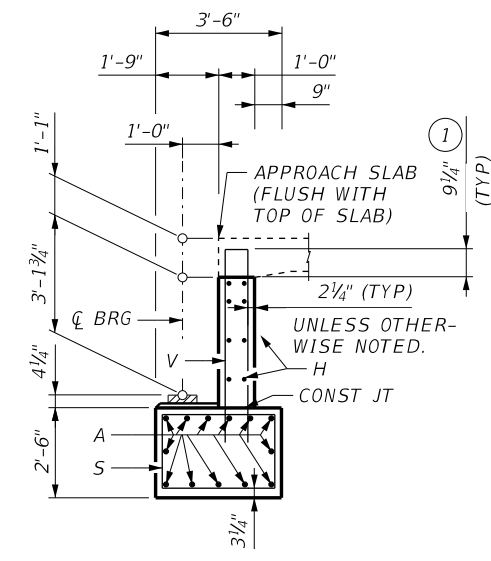
TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 2
4	3907.184'	3906.824'
5	3906.994'	3906.634'
6	3906.804'	3906.444'
WW	3906.739'	3906.379'

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH F'C = 3,600 PSI.
 - ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
 - ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
 - SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
 - SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

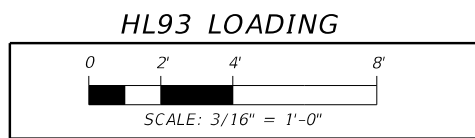
- KEYED NOTES**
- INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.
 - SPACING BASED ON BEAM TYPE: XB40 ~ 3 EQUAL SPACES
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



ELEVATION PHASE II



SECTION A-A
(WITH APPROACH SLAB)



STATE OF TEXAS
 WIRAT WANICHAKORN
 96609
 LICENSED PROFESSIONAL ENGINEER
 2/29/2024

CivilCorp
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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
 ABUTMENT NO. 1 & 2
 PHASE II
 ARROYO 47 RELIEF #BA BRIDGE
 IH 10 EB
 (STA 54+06 TO STA 55+06)

SHEET 1 OF 1

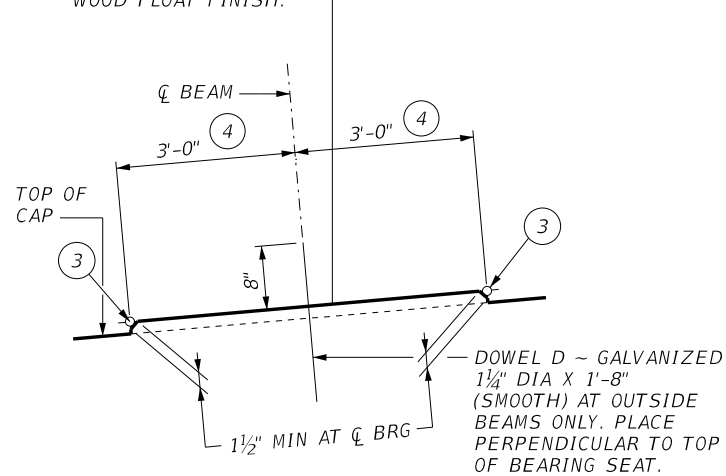
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	565

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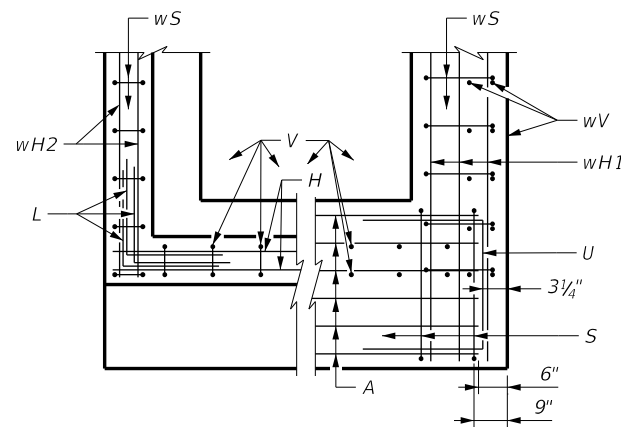
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LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



BACKWALL CAP

CORNER DETAILS

TABLE OF ESTIMATED QUANTITIES PHASE I (ONE ABUT)

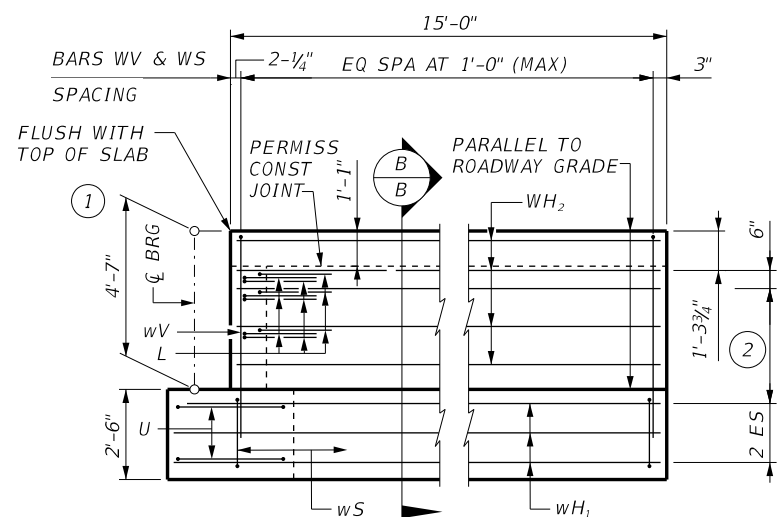
BAR	No.	SIZE	LENGTH	WEIGHT
A	12	#11	31'-4"	1,998
D	2	1 1/4"	1'-8"	14
H	8	#6	31'-4"	377
S	26	#5	11'-5"	307
V	30	#5	11'-8"	366
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,061
CONC (ABUT)			CY	14.8

TABLE OF ESTIMATED QUANTITIES PHASE II (ONE ABUT)

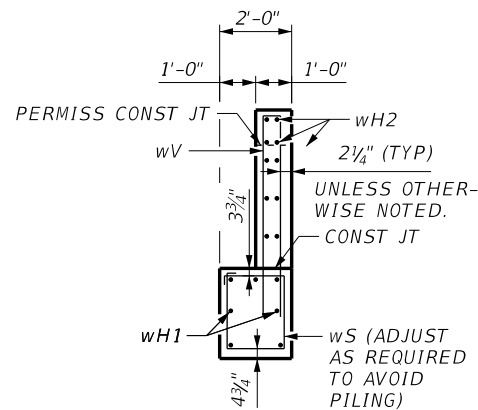
BAR	No.	SIZE	LENGTH	WEIGHT
A	12	#11	26'-0"	1,658
D	1	1 1/4"	1'-8"	7
H	8	#6	26'-3"	316
L	9	#6	4'-0"	54
S	24	#5	11'-5"	284
U	4	#6	8'-0"	48
V	27	#5	11'-8"	332
wH1	7	#6	16'-6"	173
wH2	10	#6	14'-8"	220
wS	16	#4	7'-8"	82
wV	16	#5	11'-8"	195
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,368
CONC (ABUT)			CY	19.7

KEYED NOTES

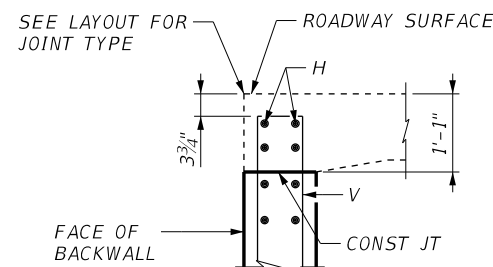
- ① SEE SPAN DETAILS FOR "Y" VALUE.
- ② SPACING BASED ON BEAM TYPE: XB40 - 3 EQUAL SPACES
- ③ RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ④ MEASURED ALONG CL OF BEARING.



WINGWALL ELEVATION

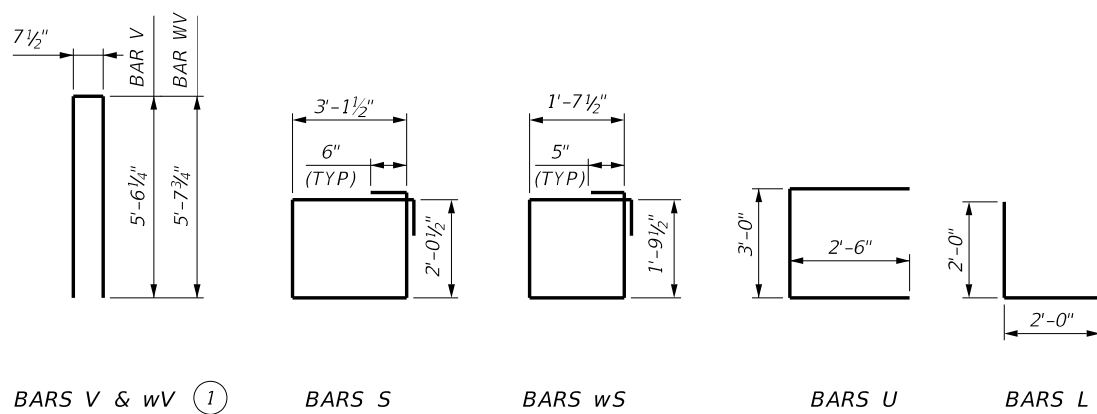


SECTION B-B



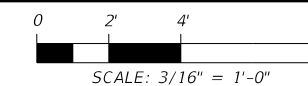
BACKWALL DETAIL

(WITH APPROACH SLAB)



BARS V & wV ① BARS S BARS wS BARS U BARS L

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Wirat Wanichakorn

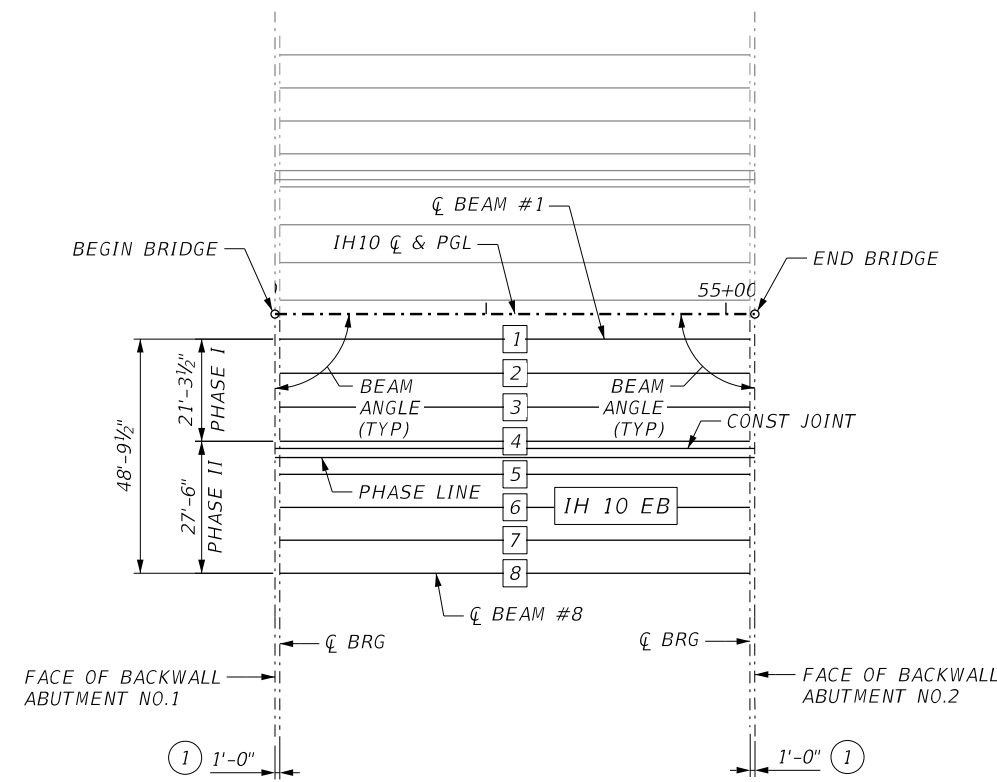
2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE I & II
 ARROYO 47 RELIEF #BA BRIDGE
 IH 10 EB
 (STA 54+06 TO STA 55+06)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	566



SPAN 1
(5XB40 BEAMS)
FRAMING PLAN

- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- ③ BEAM SPACING IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X-BEAMS.

BEAM REPORT, SPAN 1					
	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	BEAM BOT. BM. FLG.	BEAM SLOPE	
PHASE I	BEAM 1	100.0000	98.0000	99.5007	-0.00367
	BEAM 2	100.0000	98.0000	99.5007	-0.00367
	BEAM 3	100.0000	98.0000	99.5007	-0.00367
	BEAM 4	100.0000	98.0000	99.5007	-0.00367
PHASE II	BEAM 5	100.0000	98.0000	99.5007	-0.00367
	BEAM 6	100.0000	98.0000	99.5007	-0.00367
	BEAM 7	100.0000	98.0000	99.5007	-0.00367
	BEAM 8	100.0000	98.0000	99.5007	-0.00367

BENT NO. 1 (N 86 46 1.98 W)			
	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE
	(CL BENT)	(CL BENT)	(CL BENT)
SPAN 1			
PHASE I	BEAM 1	0.0000	90 0 0.00
	BEAM 2	7.1007	90 0 0.00
	BEAM 3	7.1007	90 0 0.00
	BEAM 4	7.1007	90 0 0.00
PHASE II	BEAM 5	6.8724	90 0 0.00
	BEAM 6	6.8724	90 0 0.00
	BEAM 7	6.8724	90 0 0.00
	BEAM 8	6.8724	90 0 0.00
TOTAL	48.2917		

BENT NO. 2 (N 86 46 1.98 W)			
	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE
	(CL BENT)	(CL BENT)	(CL BENT)
SPAN 1			
PHASE I	BEAM 1	0.0000	90 0 0.00
	BEAM 2	7.1007	90 0 0.00
	BEAM 3	7.1007	90 0 0.00
	BEAM 4	7.1007	90 0 0.00
PHASE II	BEAM 5	6.8724	90 0 0.00
	BEAM 6	6.8724	90 0 0.00
	BEAM 7	6.8724	90 0 0.00
	BEAM 8	6.8724	90 0 0.00
TOTAL	48.2917		

HL93 LOADING



SCALE: 1" = 40'



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.



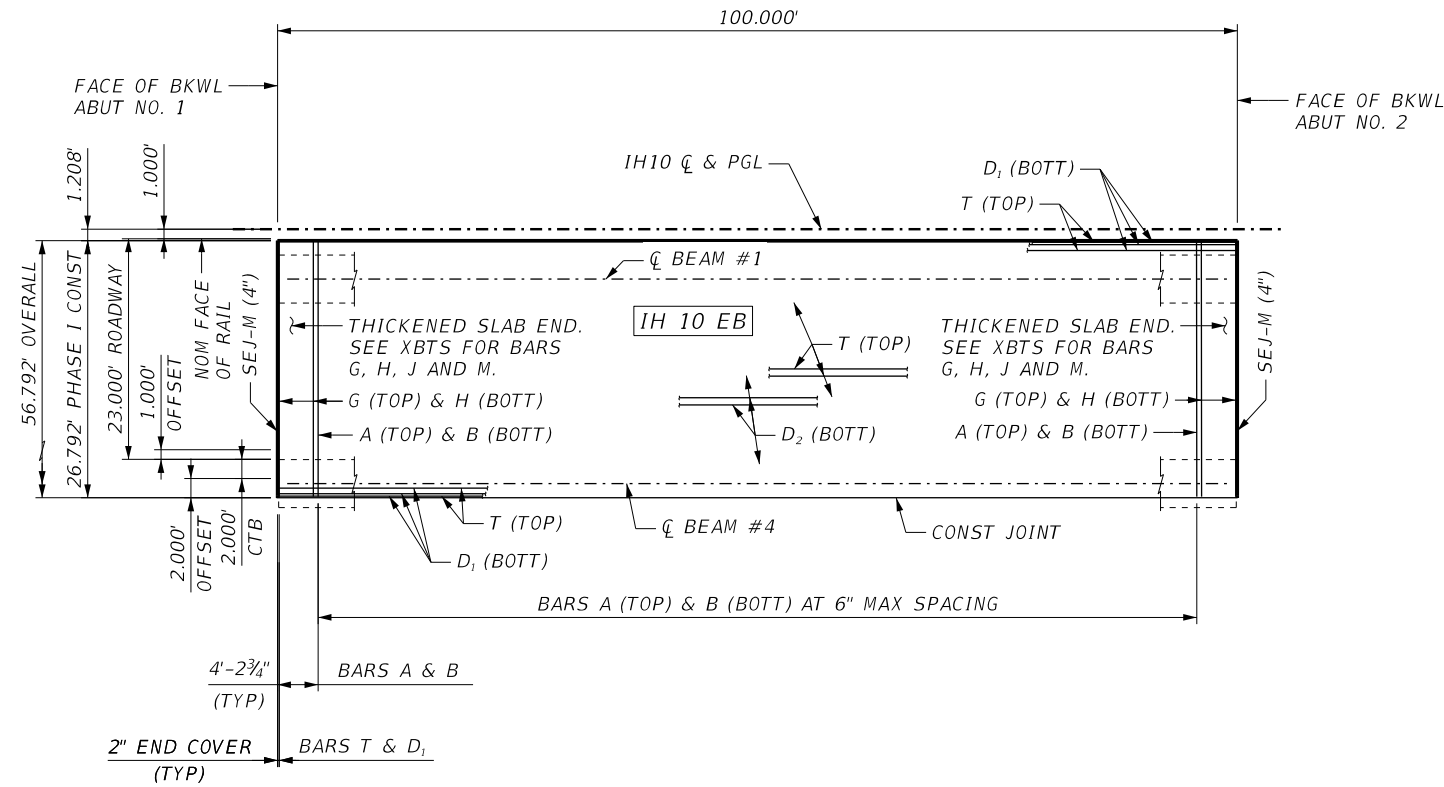
IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
ARROYO 47 RELIEF #BA BRIDGE
IH 10 EB
(STA 54+06 TO STA 55+06)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	104	567

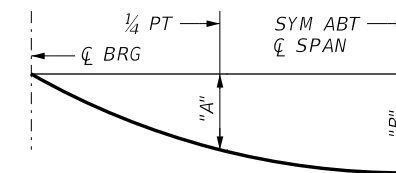
- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



SPAN 1

PLAN PHASE I

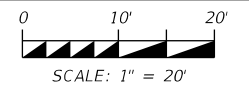
TABLE OF DEFLECTIONS PHASE I			
SPAN	BEAM NO.	"A"	"B"
		FT	FT
1	1	0.094	0.132
	2 & 3	0.092	0.129
	4	0.071	0.099



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



Steve Groves 2/29/2024

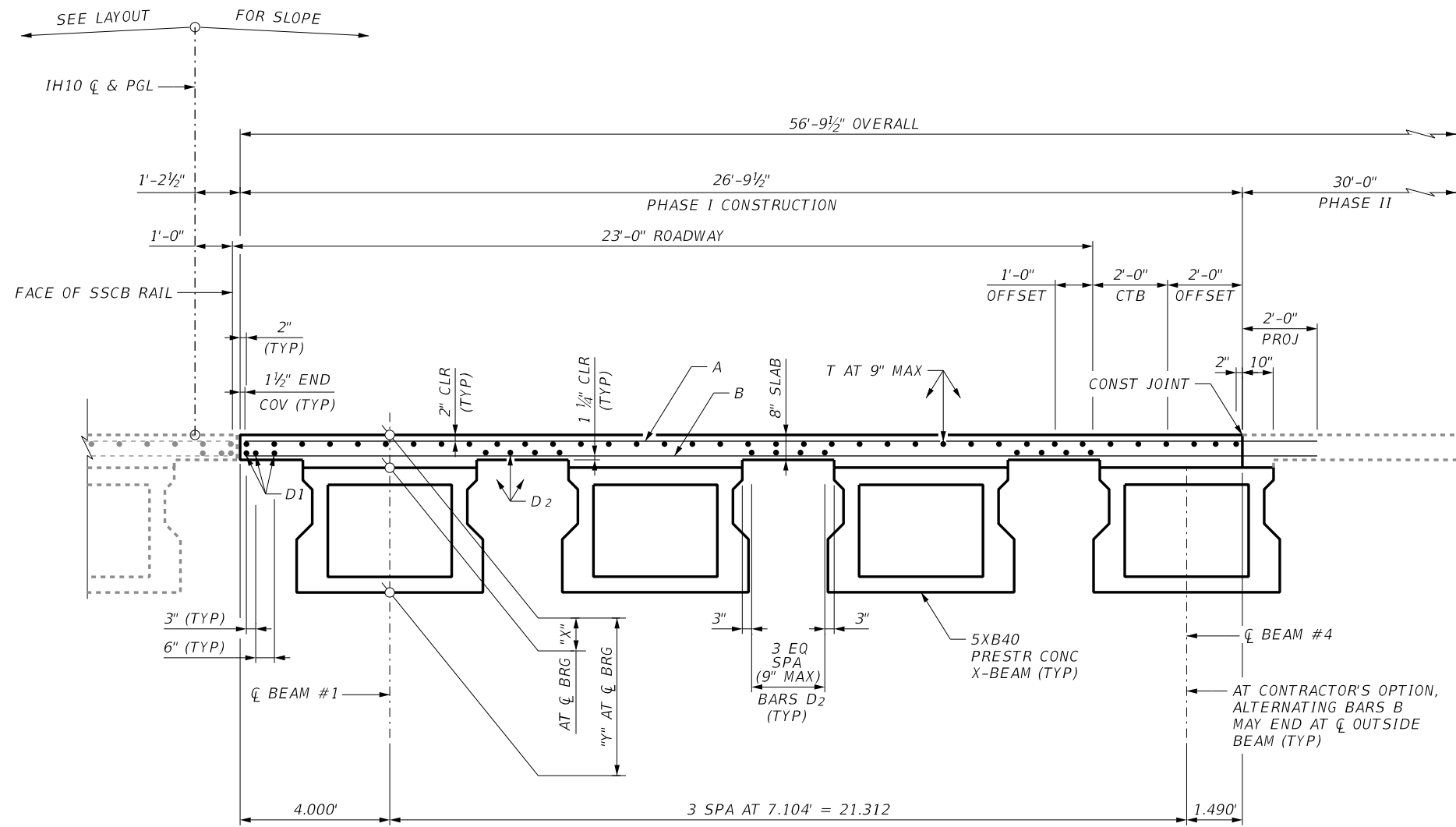
NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37) PRESTRESSED CONCRETE X-BEAM (5XB40) UNITS PHASE I
ARROYO 47 RELIEF #BA BRIDGE
 IH 10 EB
 (STA 54+06 TO STA 55+06)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	568



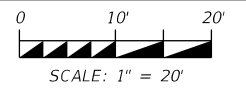
TYPICAL TRANSVERSE SECTION PHASE I
(5XB40) SPAN 1

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

HL93 LOADING



SCALE: 1" = 20'



Wirat Wanichakorn
2/29/2024

TABLE OF ESTIMATED QUANTITIES PHASE I

SPAN NO.	REINF CONCRETE SLAB	5XB40 PRESTR CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	2,679	398.00	75.6	17,415
TOTAL	2,679	398.00	75.6	17,415

TABLE OF SECTION DEPTHS FOR PHASE I

SPAN	BEAM NO.	"X"	"Y"
		IN	IN
1	1-4	10 3/4"	50 3/4"

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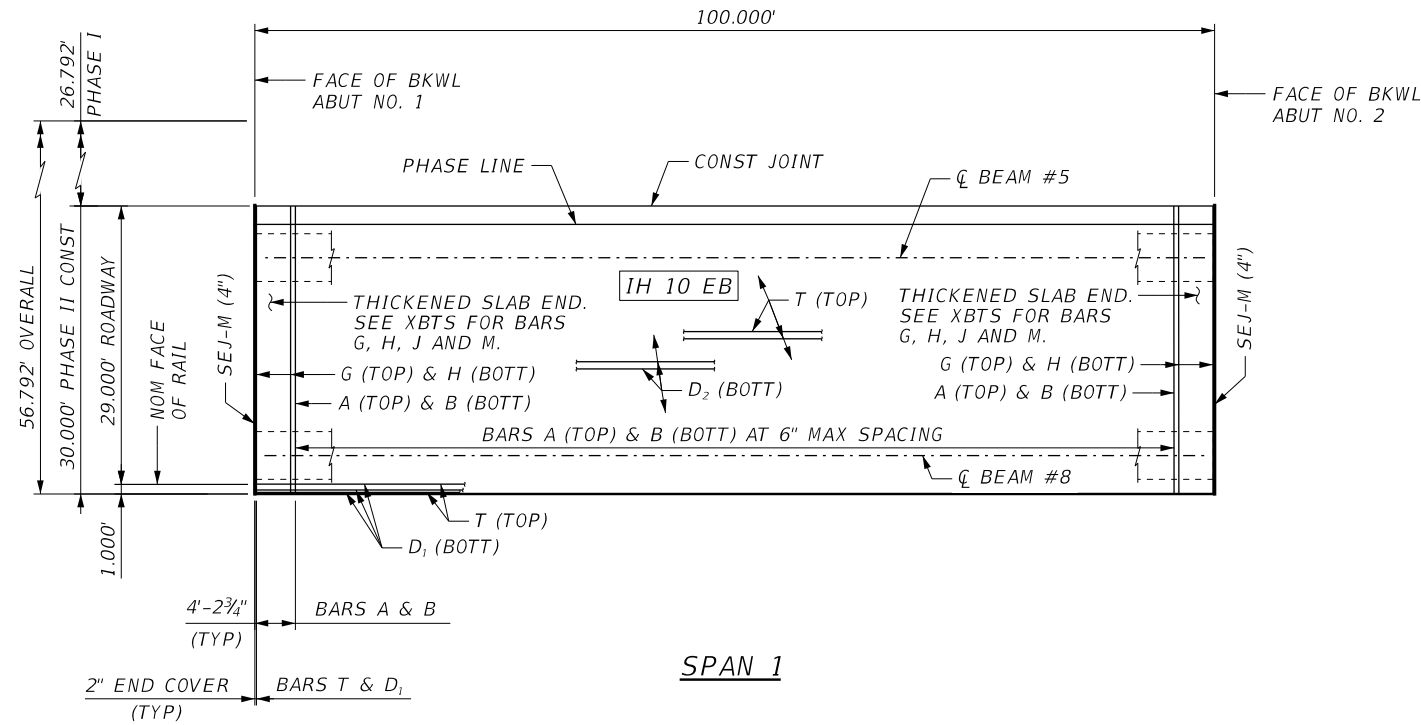
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IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB40) UNITS
PHASE I
ARROYO 47 RELIEF #BA BRIDGE
IH 10 EB
(STA 54+06 TO STA 55+06)

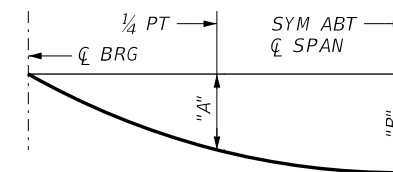
SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	569



PLAN PHASE II

TABLE OF DEFLECTIONS PHASE II			
SPAN	BEAM NO.	"A"	"B"
		FT	FT
1	5-7	0.090	0.126
	8	0.096	0.134

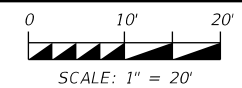


DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY (EC = 5,000 KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

HL93 LOADING



SCALE: 1" = 20'



Wirat Wanichakorn

2/29/2024

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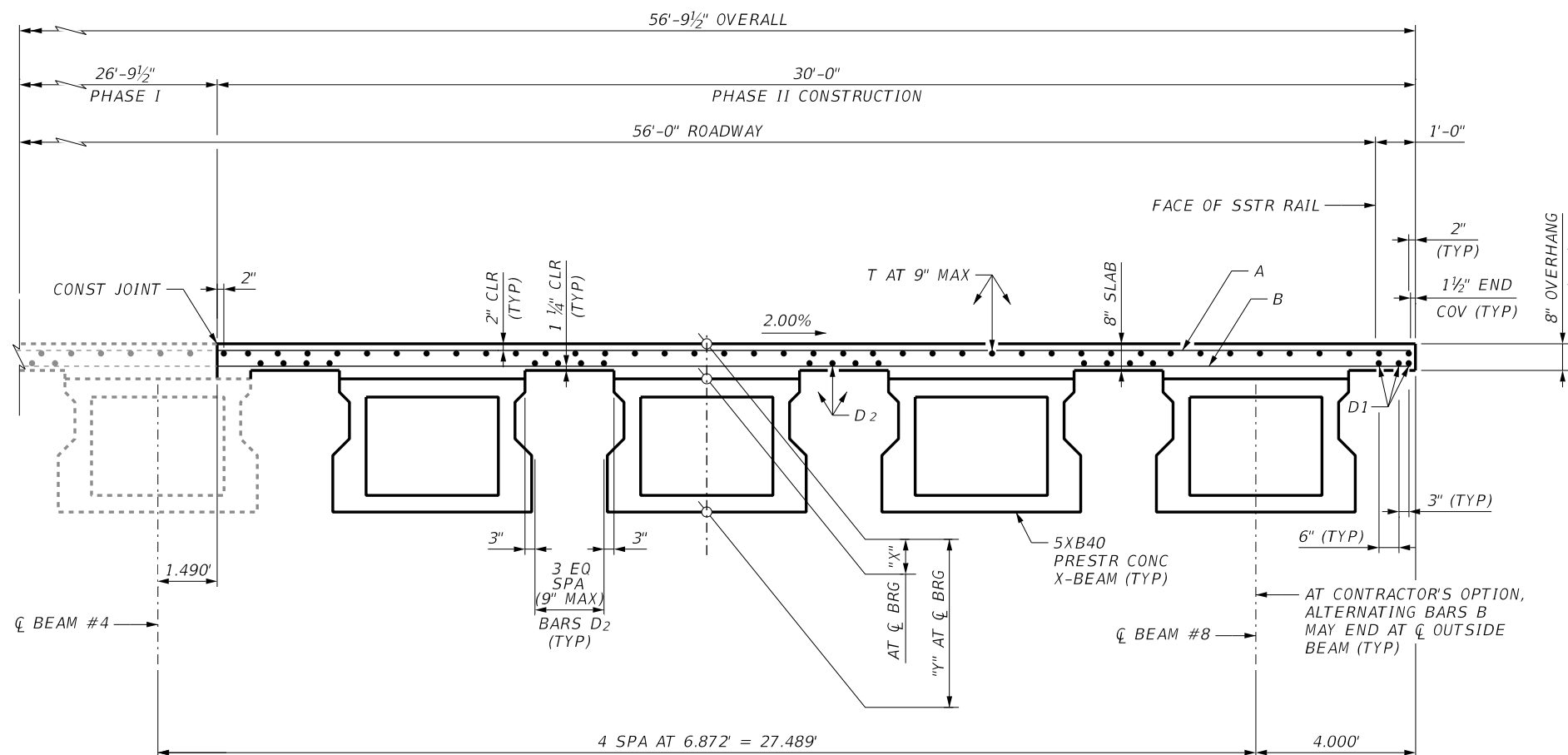


IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB40) UNITS
PHASE II
ARROYO 47 RELIEF #BA BRIDGE
IH 10 EB
(STA 54+06 TO STA 55+06)

SHEET 1 OF 2

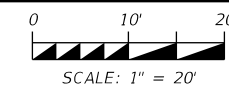
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6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	570

BAR TABLE PHASE I	
BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4



GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

HL93 LOADING



Wirat Wanichakorn 2/29/2024

TABLE OF ESTIMATED QUANTITIES PHASE II				
SPAN	REINF CONCRETE SLAB	5XB40 PRESTR CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
NO.	SF	LF	CY	LB
1	4,200	398.00	117.1	27,300
TOTAL	4,200	398.00	117.1	27,300

TABLE OF SECTION DEPTHS FOR PHASE II			
SPAN LENGTH	BEAM	"X"	"Y"
FT	NO.	IN	IN
1	5-8	10 3/4"	50 3/4"



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB40) UNITS
PHASE II
ARROYO 47 RELIEF #BA BRIDGE
IH 10 EB
(STA 54+06 TO STA 55+06)**

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	571

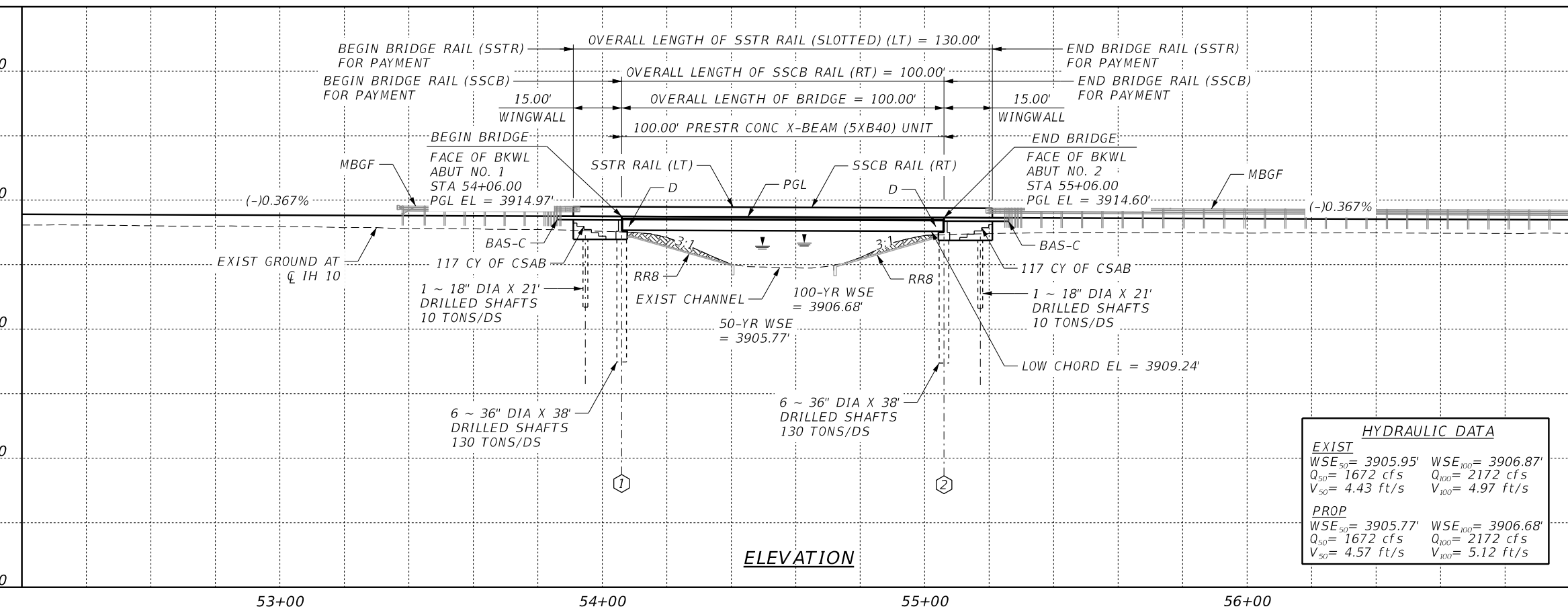
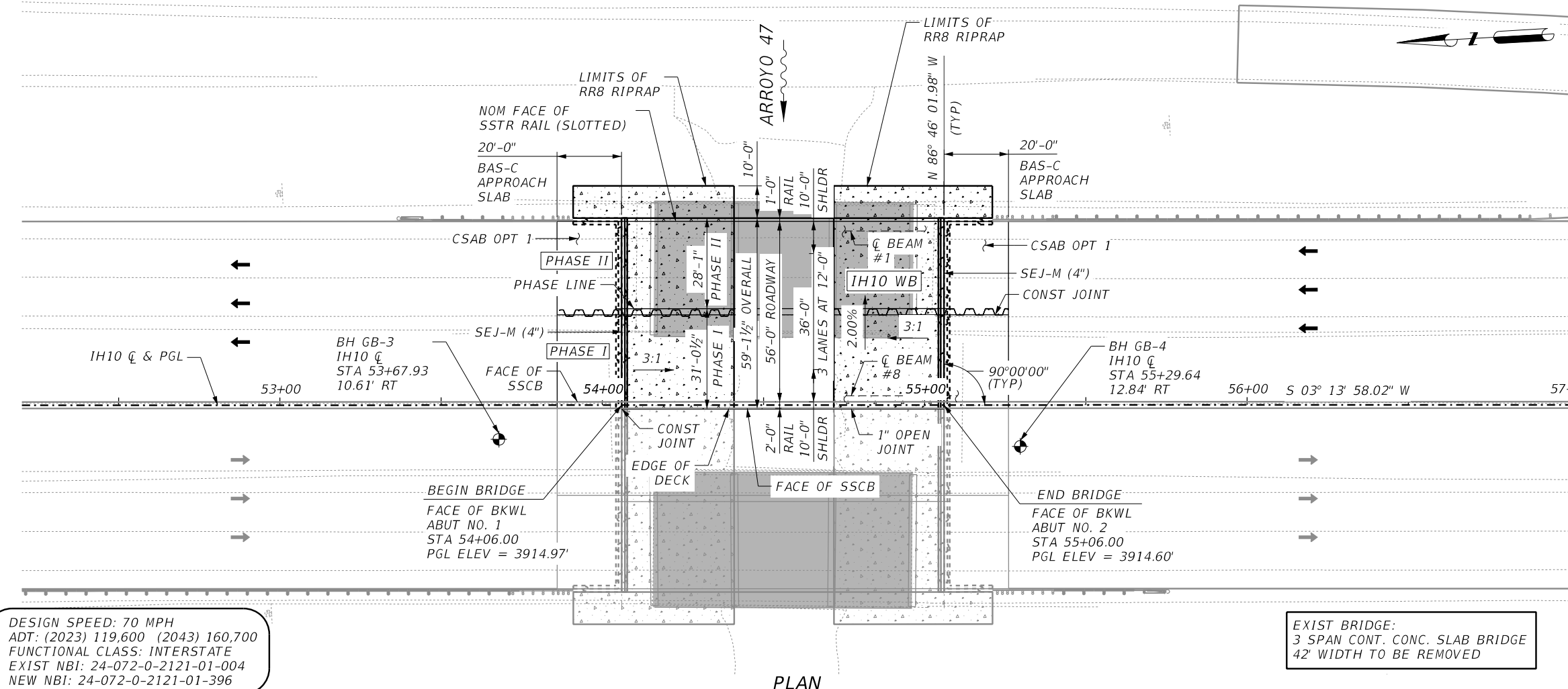
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GENERAL NOTES

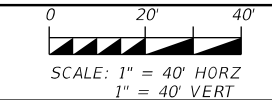
- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ⊕ - DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING



HL93 LOADING



Wirat Wanichakorn
2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE LAYOUT
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)

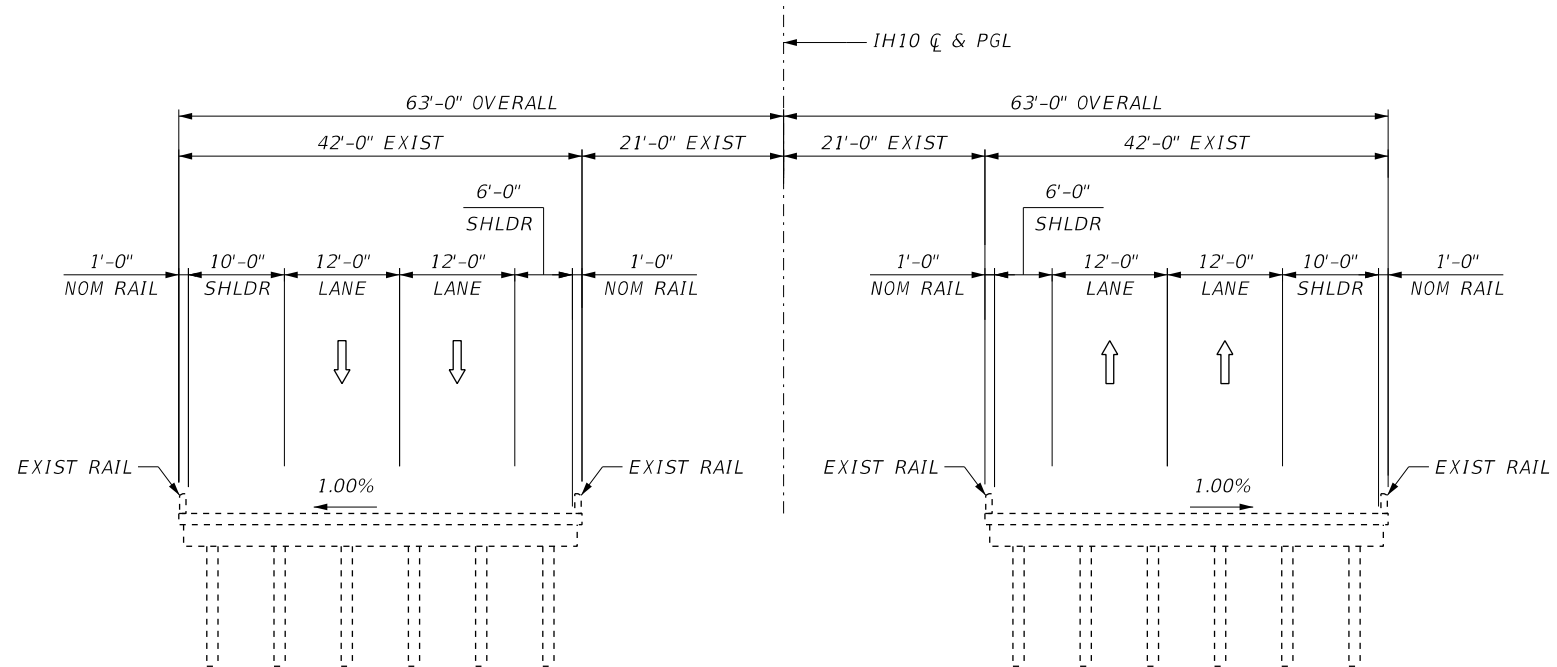
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	572

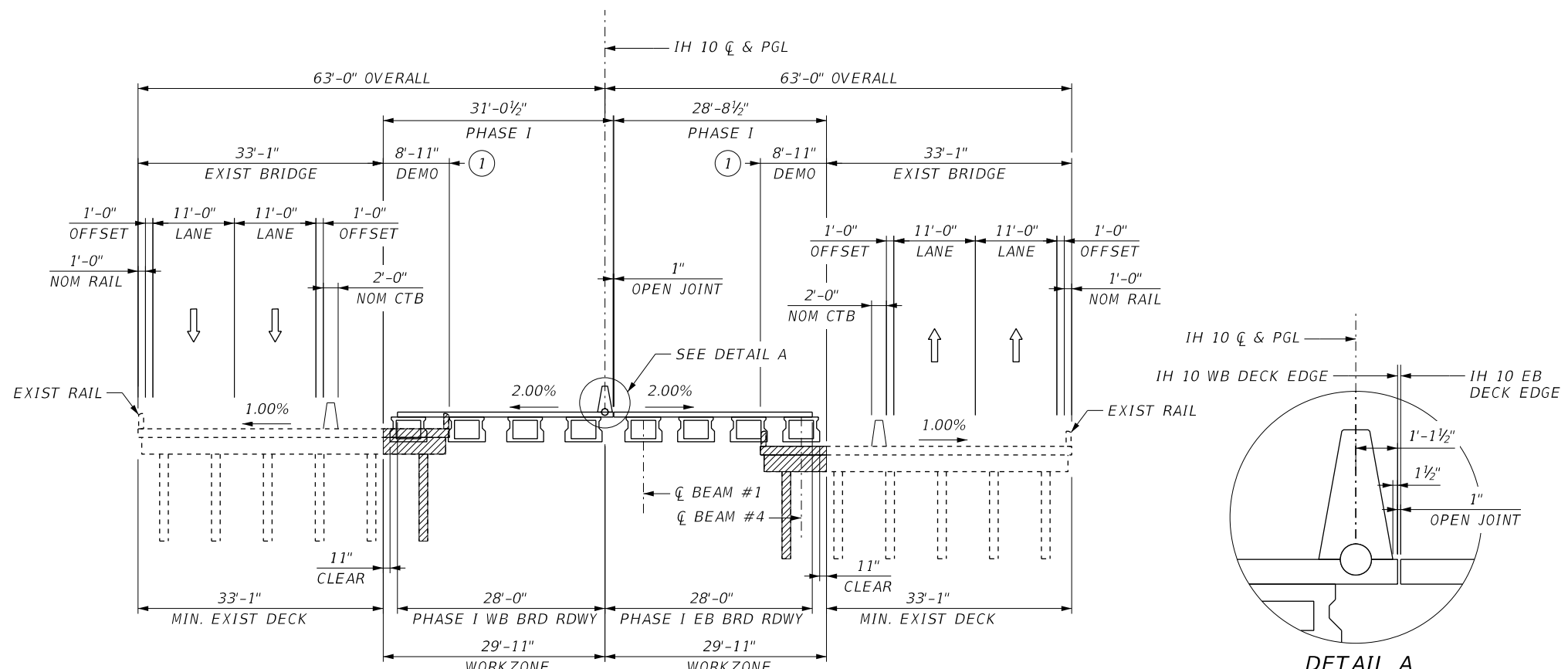
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EXIST SECTION



PHASE I SECTION

① SAWCUT EXISTING CAP AS NECESSARY TO AVOID CONFLICT WITH BEAM.
DO NOT CUT BEYOND LIMITS OF DEMOLITION.
DO NOT REMOVE EXISTING COLUMNS NOT MARKED FOR DEMOLITION IN THIS PHASE.

LEGEND
 ↑ EXISTING TRAFFIC FLOW ARROW
 ↑ PROPOSED TRAFFIC FLOW ARROW
 ▨ DEMOLITION OF EXIST BRIDGE

HL93 LOADING

NOT TO SCALE



Steve Groves 2/29/2024



IH 10 WIDENING (NMSL/SPUR 37) BRIDGE
TYPICAL SECTIONS
ARROYO 47 RELIEF #BB BRIDGE
 IH 10 WB
 (STA 54+06 TO STA 55+06)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	573

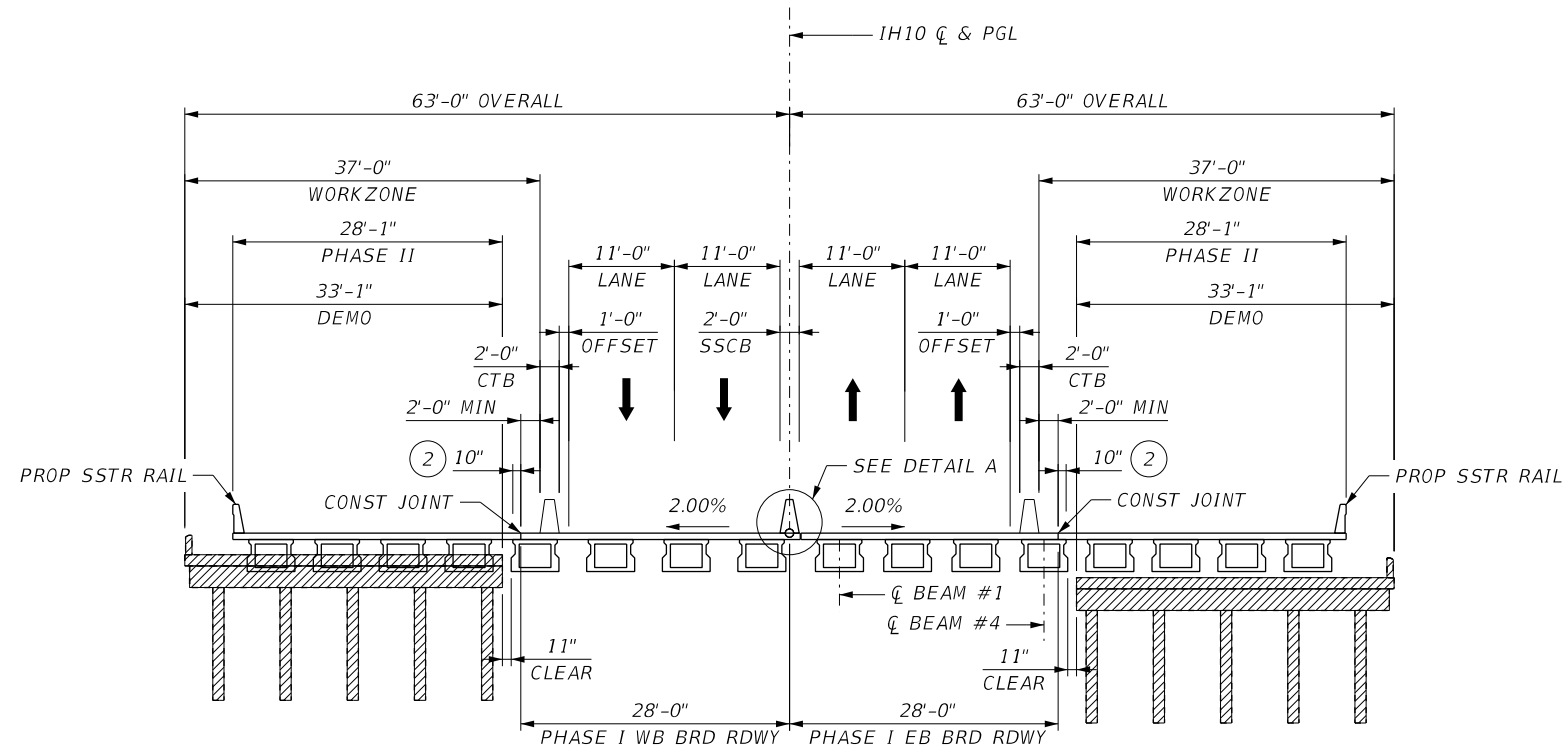
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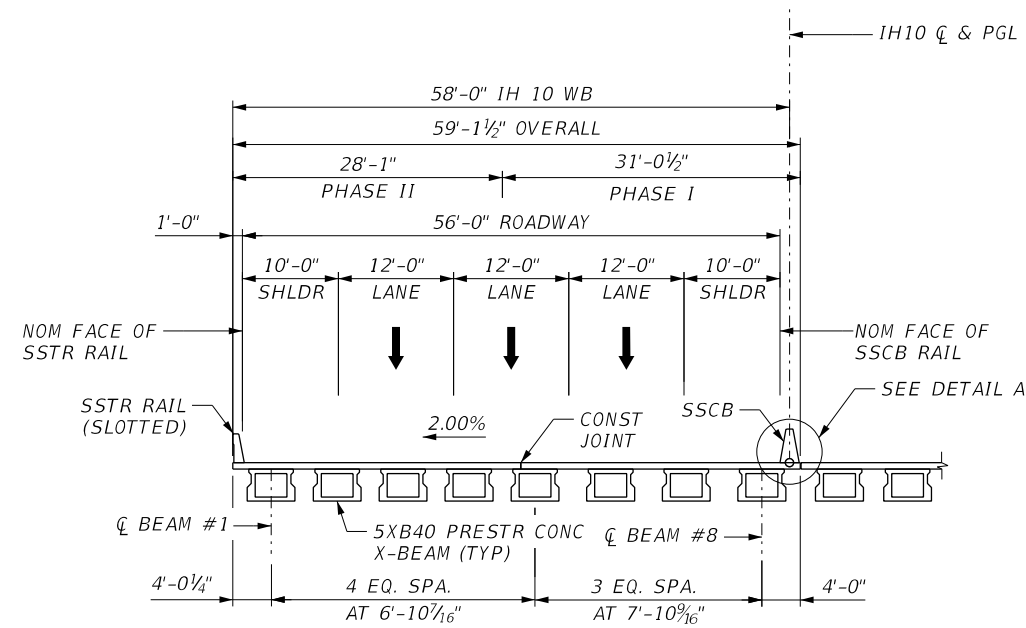
LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE

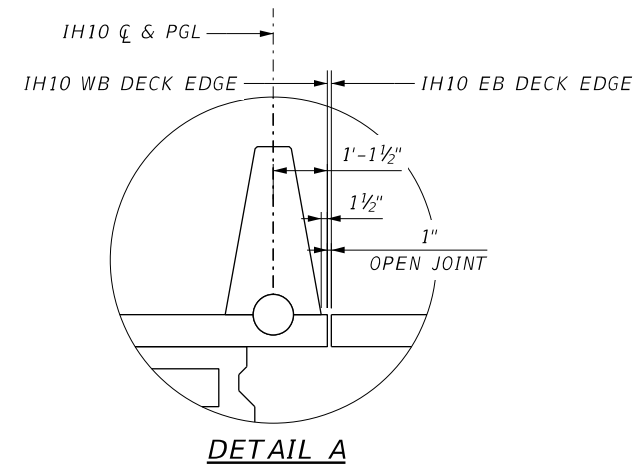


PHASE II SECTION

(2) EDGE OF DECK TO EDGE OF TOP OF BEAM.



IH 10 WB FINAL SECTION



HL93 LOADING

NOT TO SCALE



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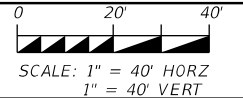


IH 10 WIDENING (NMSL/SPUR 37) BRIDGE
TYPICAL SECTIONS
ARROYO 47 RELIEF #BB BRIDGE
 IH 10 WB
 (STA 54+06 TO STA 55+06)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	574

HL93 LOADING



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NO.	DATE	REVISION	APPROV.

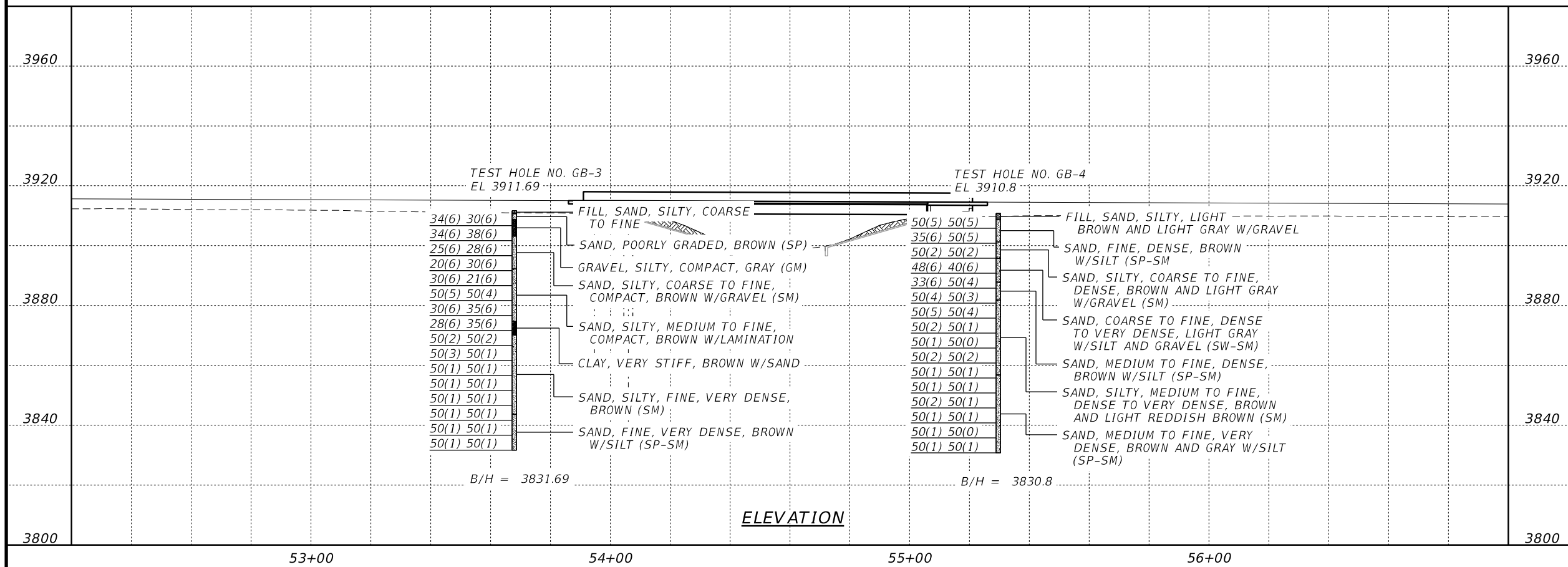
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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BORING LOGS
ARROYO 47 RELIEF #BA & #BB BRIDGE
IH 10 EB & IH 10 WB
(STA 54+06 TO STA 55+06)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.		
104	575		



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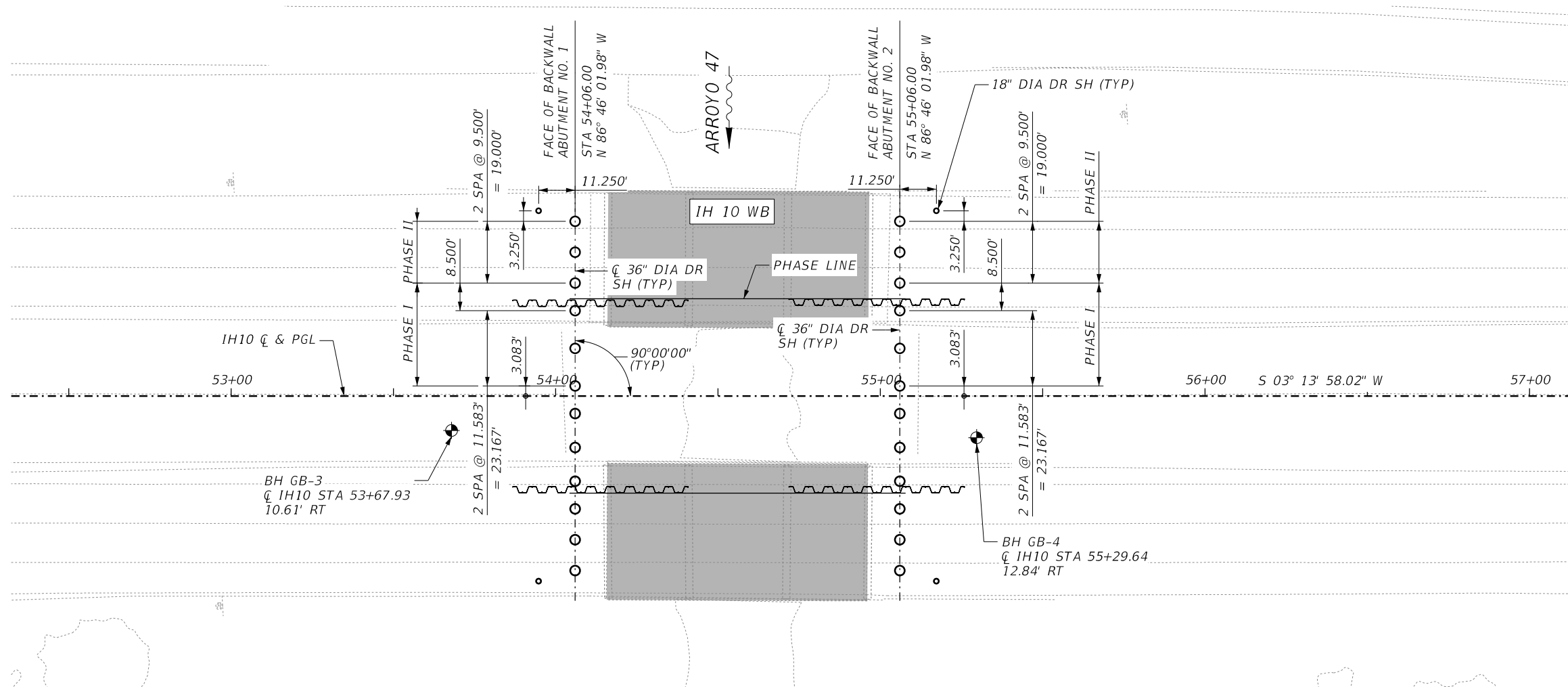


GENERAL NOTES

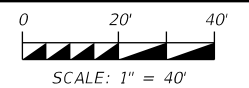
1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.
3. DRILLED SHAFT INSTALLATION WILL REQUIRE THE USE OF SLURRY DISPLACEMENT METHODS AND SURFACE CASING. THE SURFACE CASING IS TEMPORARY AND SHALL BE RETRIEVED AS OUTLINED IN TXDOT STANDARD SPECIFICATIONS.

LEGEND

- = BORE HOLE
- = DRILLED SHAFT
- = TEMP SPL SHORING



HL93 LOADING



SCALE: 1" = 40'



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

FOUNDATION LAYOUT
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)

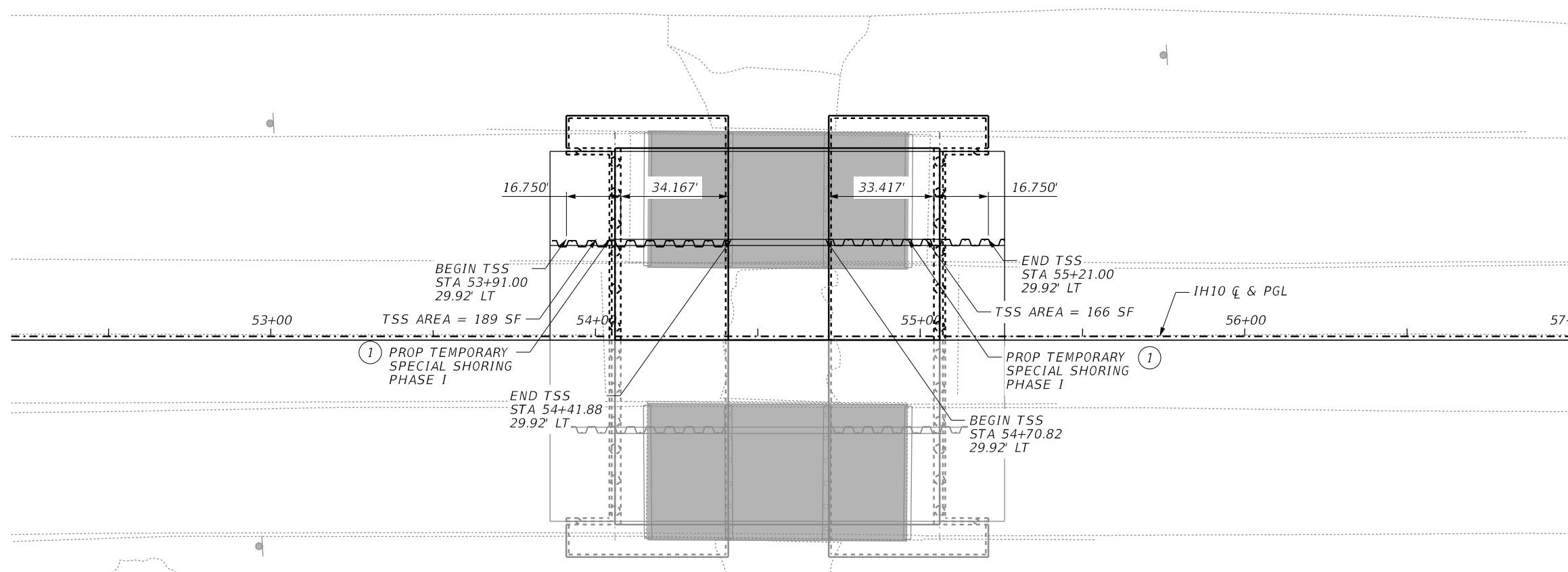
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO. SHEET NO.
ELP	EL PASO	2121	01	104 576

FOUNDATION LOADS	
ABUT/BENT	TONS/SHAFT
1 & 4	81
WINGWALL	10

LEGEND

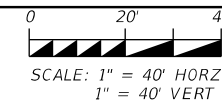
TEMPORARY SPL SHORING



PLAN

① PAID FOR UNDER ITEM 403 TEMPORARY SPL SHORING.

HL93 LOADING



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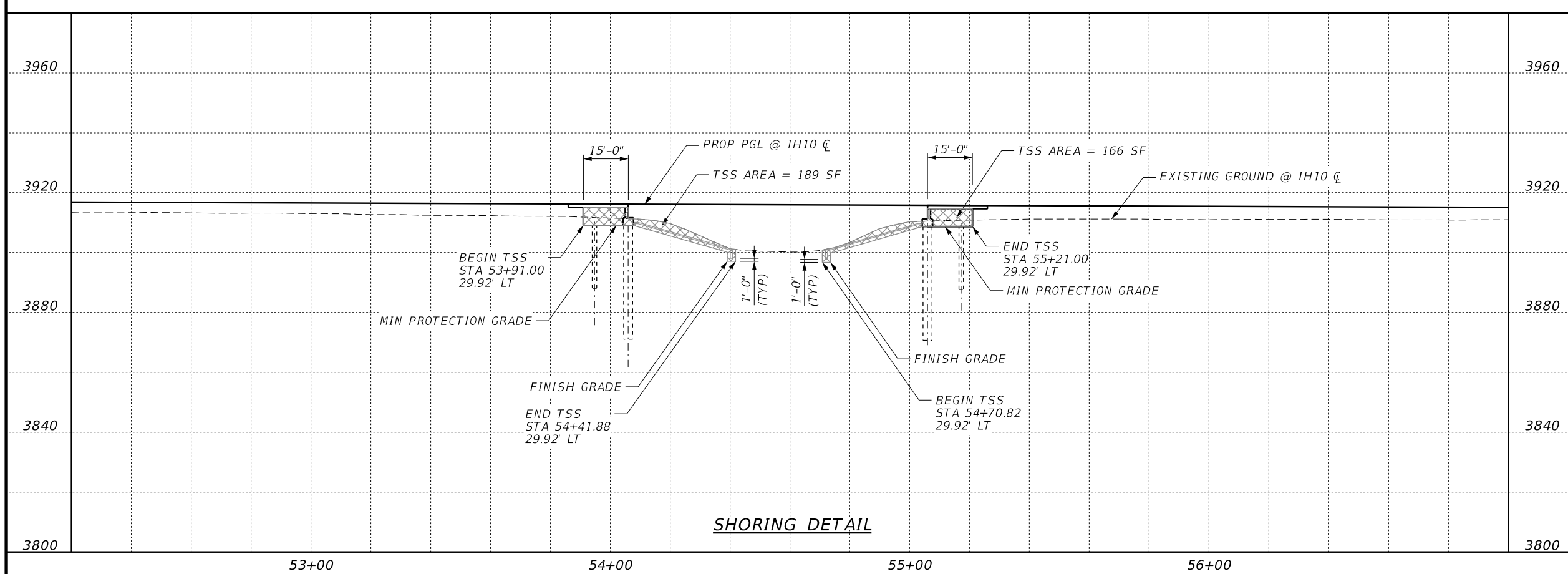
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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	577



SHORING DETAIL

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BEARING SEAT ELEVATIONS

				PHASE II				PHASE I				
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	
1	ABUT	1	(FWD)	L	3909.340	3909.478	3909.615	3909.753	3909.890	3910.048	3910.205	3910.363
				R	3909.460	3909.598	3909.735	3909.873	3910.010	3910.168	3910.325	3910.483
2	ABUT	2	(BK)	L	3908.981	3909.118	3909.256	3909.393	3909.530	3909.688	3909.846	3910.003
				R	3909.101	3909.238	3909.376	3909.513	3909.650	3909.808	3909.966	3910.123



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2/29/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BEARING SEAT ELEVATIONS
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)

SHEET 1 OF 1

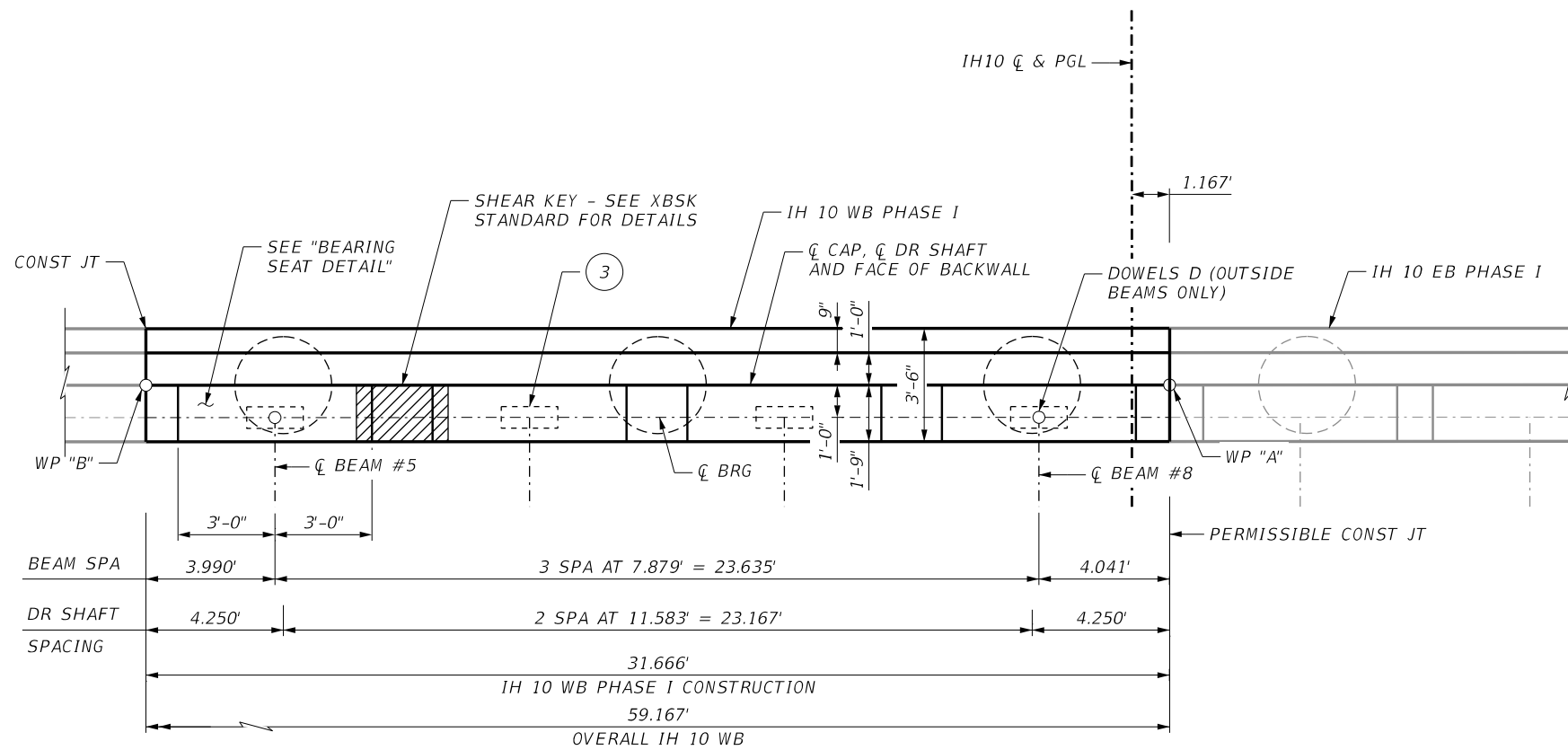
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6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	578

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH F'C = 3,600 PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

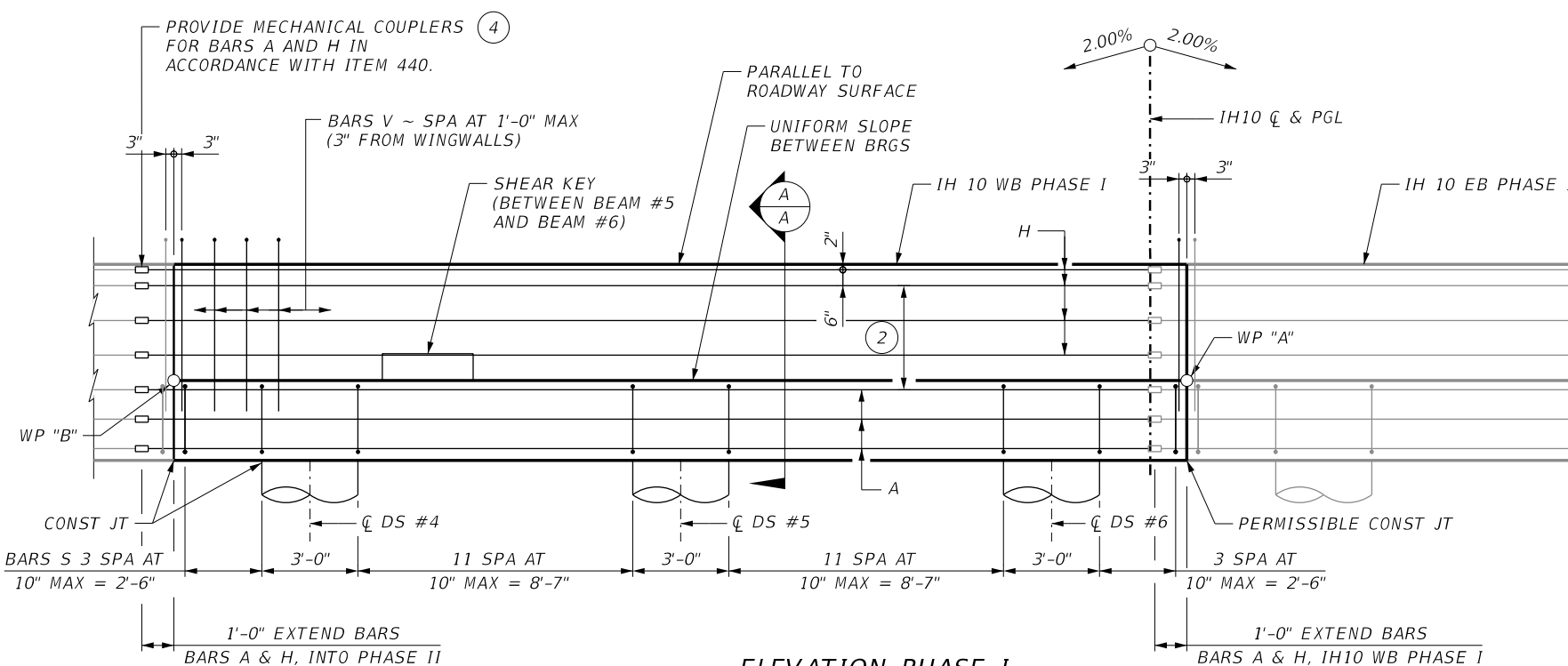
- INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB40 ~ 3 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



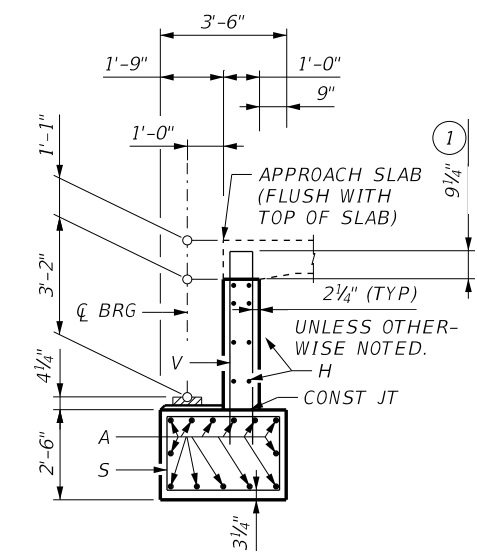
PLAN PHASE I

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 2
A	3910.381'	3910.022'
B	3909.748'	3909.388'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 2
4	3907.333'	3906.973'
5	3907.565'	3907.205'
6	3907.796'	3907.437'

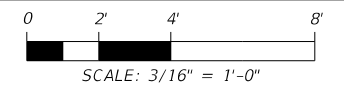


ELEVATION PHASE I



SECTION A-A

HL93 LOADING



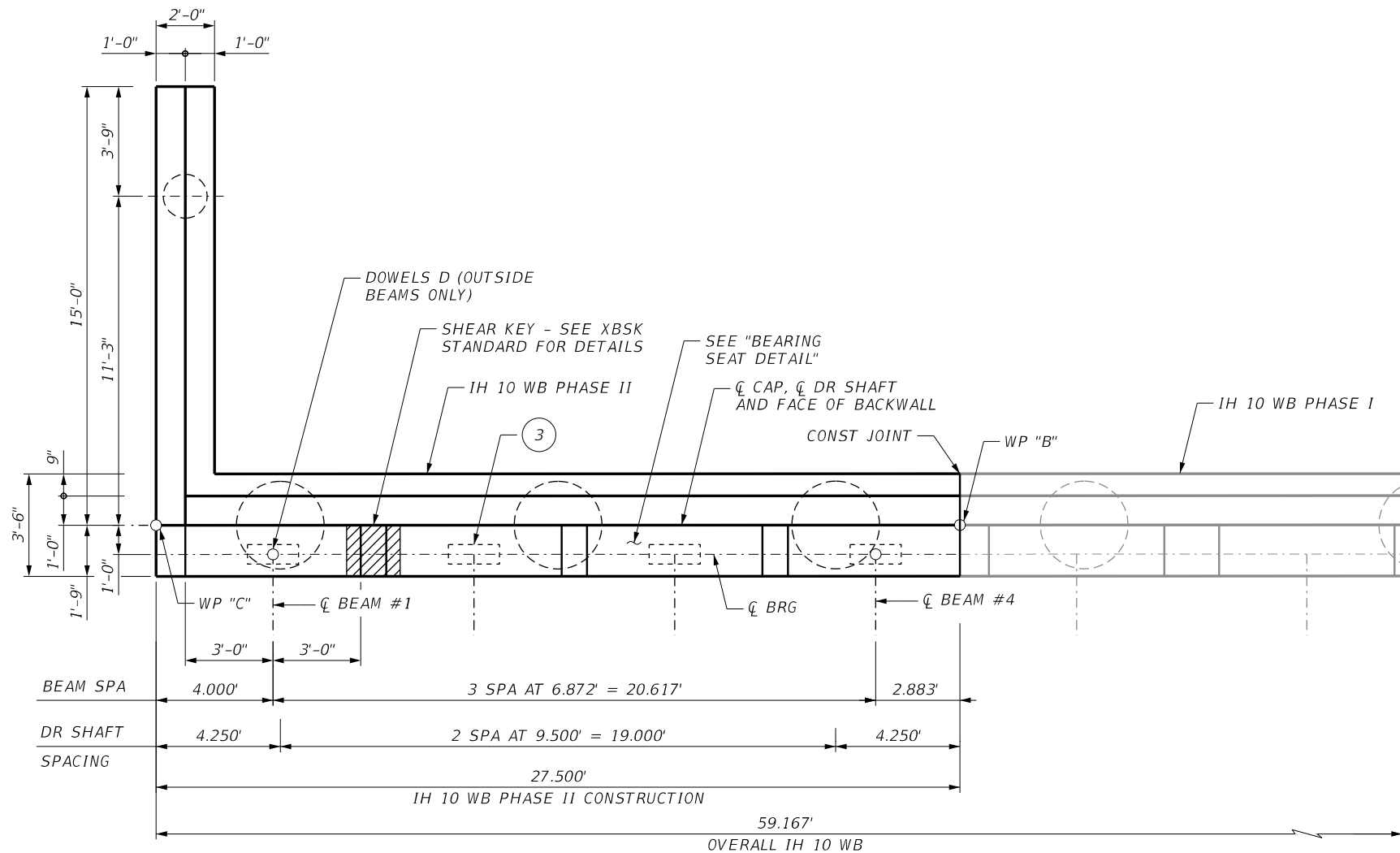
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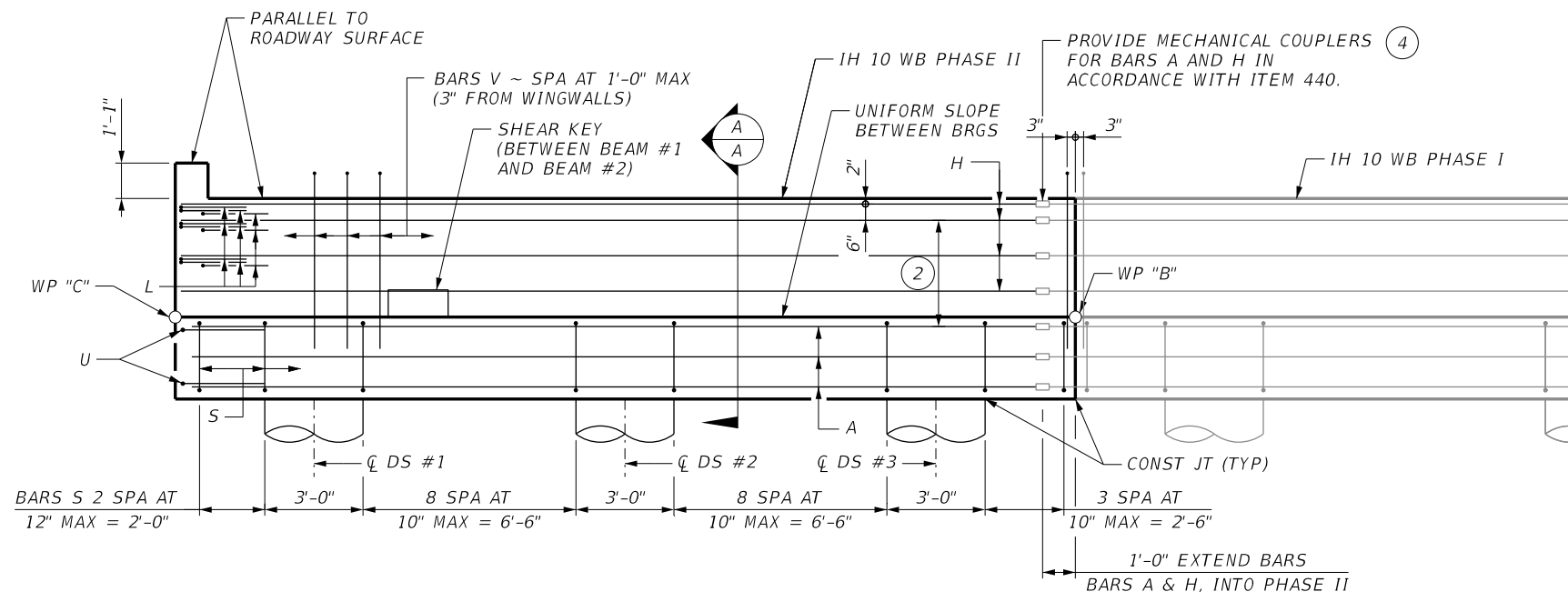
Texas Department of Transportation

**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE I
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)**

SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	579



PLAN PHASE II



ELEVATION PHASE II

PHASE 2		
WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 2
B	3909.748'	3909.388'
C	3909.198'	3908.838'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 2
WW	3906.718'	3906.358'
1	3906.783'	3906.423'
2	3906.973'	3906.613'
3	3907.163'	3906.803'

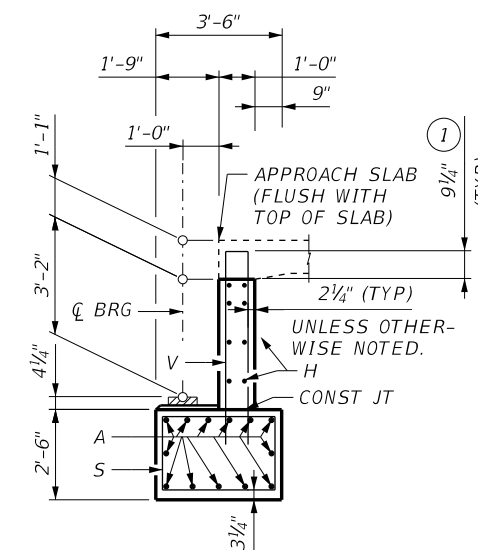
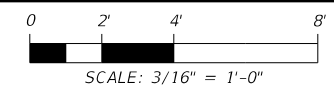
GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB40 ~ 3 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".

HL93 LOADING



SECTION A-A



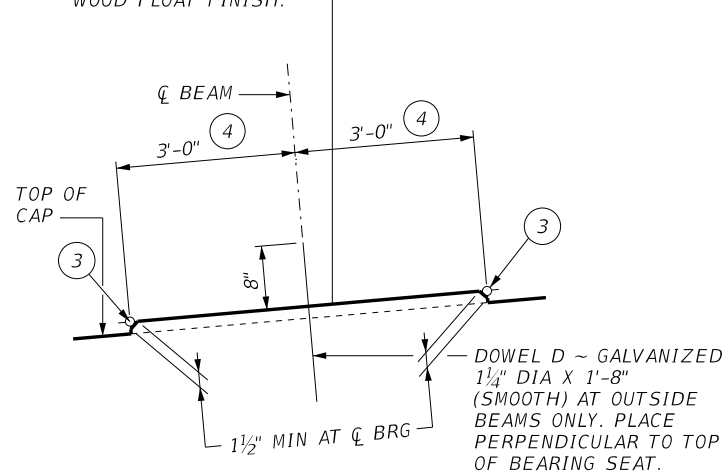
Wirat Wanichakorn
2/29/2024



**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE II
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)**

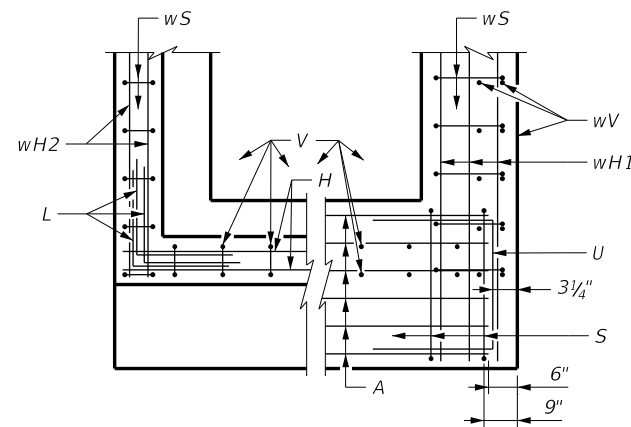
SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	580

LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



BACKWALL CAP

CORNER DETAILS

TABLE OF ESTIMATED QUANTITIES PHASE I (ONE ABUT)

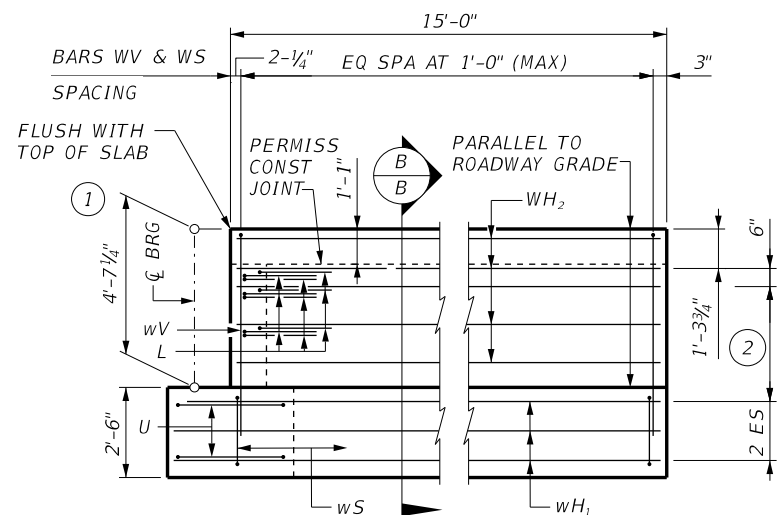
BAR	No.	SIZE	LENGTH	WEIGHT
A	13	#11	31' - 8"	2,187
D	2	1 1/4"	1' - 8"	14
H	8	#6	31' - 8"	381
S	30	#5	11' - 5"	355
V	32	#5	11' - 8"	394
ITEM		UNIT	QUANTITY	
REINFORCING STEEL		LB	3,331	
CONC (ABUT)		CY	15.9	

TABLE OF ESTIMATED QUANTITIES PHASE II (ONE ABUT)

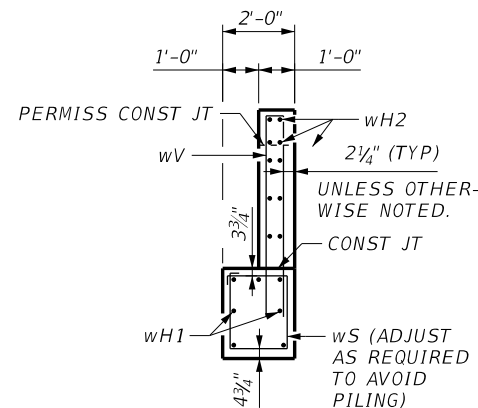
BAR	No.	SIZE	LENGTH	WEIGHT
A	13	#11	26' - 0"	1,796
D	1	1 1/4"	1' - 8"	7
H	8	#6	26' - 3"	316
L	9	#6	4' - 0"	54
S	24	#5	11' - 5"	284
U	4	#6	8' - 0"	48
V	27	#5	11' - 8"	332
wH1	7	#6	16' - 6"	173
wH2	10	#6	14' - 8"	220
wS	16	#4	7' - 8"	82
wV	16	#5	11' - 11"	199
ITEM		UNIT	QUANTITY	
REINFORCING STEEL		LB	3,510	
CONC (ABUT)		CY	19.8	

KEYED NOTES

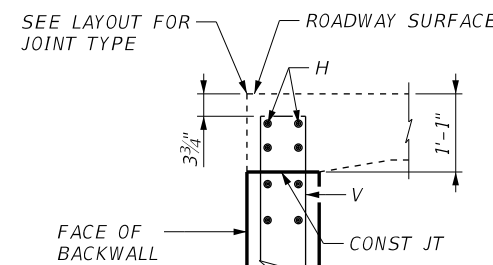
- ① SEE SPAN DETAILS FOR "Y" VALUE.
- ② SPACING BASED ON BEAM TYPE: XB40 ~ 3 EQUAL SPACES
- ③ RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ④ MEASURED ALONG CL OF BEARING.



WINGWALL ELEVATION

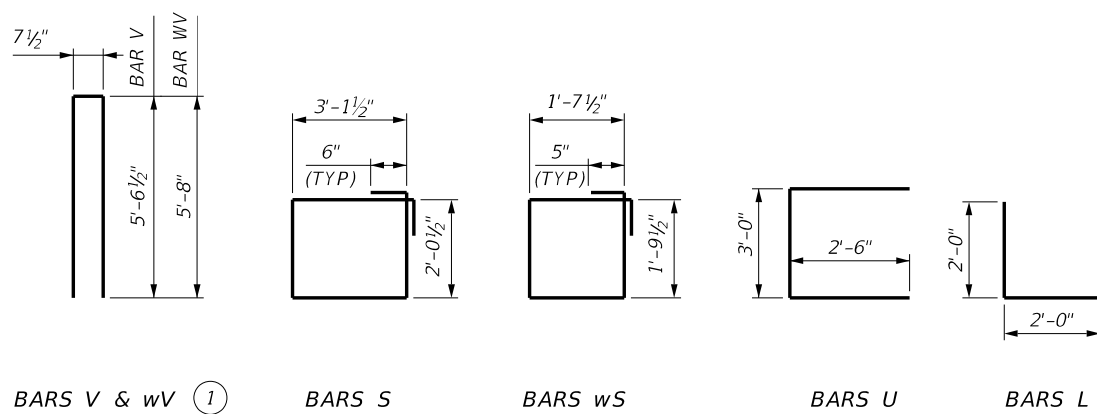


SECTION B-B

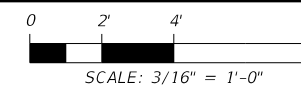


BACKWALL DETAIL

(WITH APPROACH SLAB)



HL93 LOADING



Wirat Wanichakorn

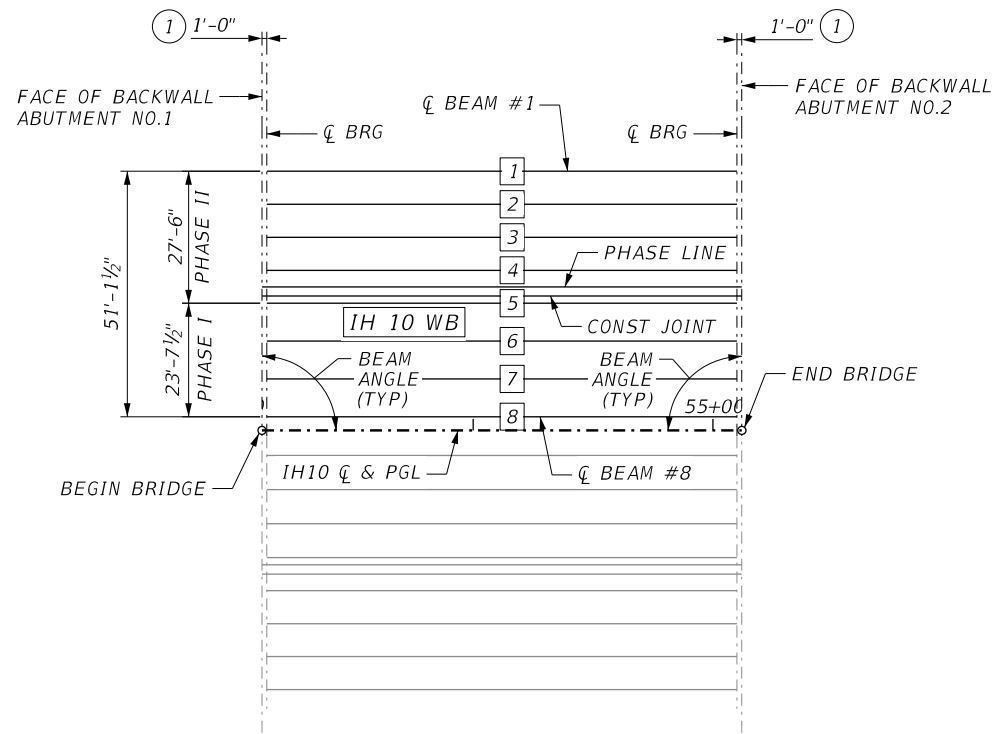
2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE I & II
 ARROYO 47 RELIEF #BB BRIDGE
 IH 10 WB
 (STA 54+06 TO STA 55+06)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	581



- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- ③ BEAM SPACING IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X-BEAMS.

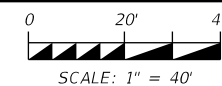
SPAN 1
(5XB40 BEAMS)
FRAMING PLAN

		BEAM REPORT, SPAN 1			
		HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
PHASE II	BEAM 1	100.0000	98.0000	99.5007	-0.00367
	BEAM 2	100.0000	98.0000	99.5007	-0.00367
	BEAM 3	100.0000	98.0000	99.5007	-0.00367
	BEAM 4	100.0000	98.0000	99.5007	-0.00367
PHASE I	BEAM 5	100.0000	98.0000	99.5007	-0.00367
	BEAM 6	100.0000	98.0000	99.5007	-0.00367
	BEAM 7	100.0000	98.0000	99.5007	-0.00367
	BEAM 8	100.0000	98.0000	99.5007	-0.00367

		BENT NO. 1 (N 86 46 1.98 W)		
		DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE
		(CL BENT)	(CL BENT)	(CL BENT)
		D	M	S
SPAN 1	PHASE II	BEAM 1	0.0000	90 0 0.00
	BEAM 2	6.8724	90 0 0.00	
	BEAM 3	6.8724	90 0 0.00	
	BEAM 4	6.8724	90 0 0.00	
	BEAM 5	6.8724	90 0 0.00	
PHASE I	BEAM 6	7.8785	90 0 0.00	
	BEAM 7	7.8785	90 0 0.00	
	BEAM 8	7.8785	90 0 0.00	
TOTAL		51.1250		

		BENT NO. 2 (N 86 46 1.98 W)		
		DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE
		(CL BENT)	(CL BENT)	(CL BENT)
		D	M	S
SPAN 1	PHASE II	BEAM 1	0.0000	90 0 0.00
	BEAM 2	6.8724	90 0 0.00	
	BEAM 3	6.8724	90 0 0.00	
	BEAM 4	6.8724	90 0 0.00	
	BEAM 5	6.8724	90 0 0.00	
PHASE I	BEAM 6	7.8785	90 0 0.00	
	BEAM 7	7.8785	90 0 0.00	
	BEAM 8	7.8785	90 0 0.00	
TOTAL		51.1250		

HL93 LOADING

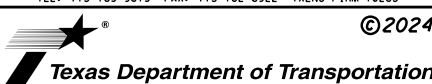


SCALE: 1" = 40'



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.



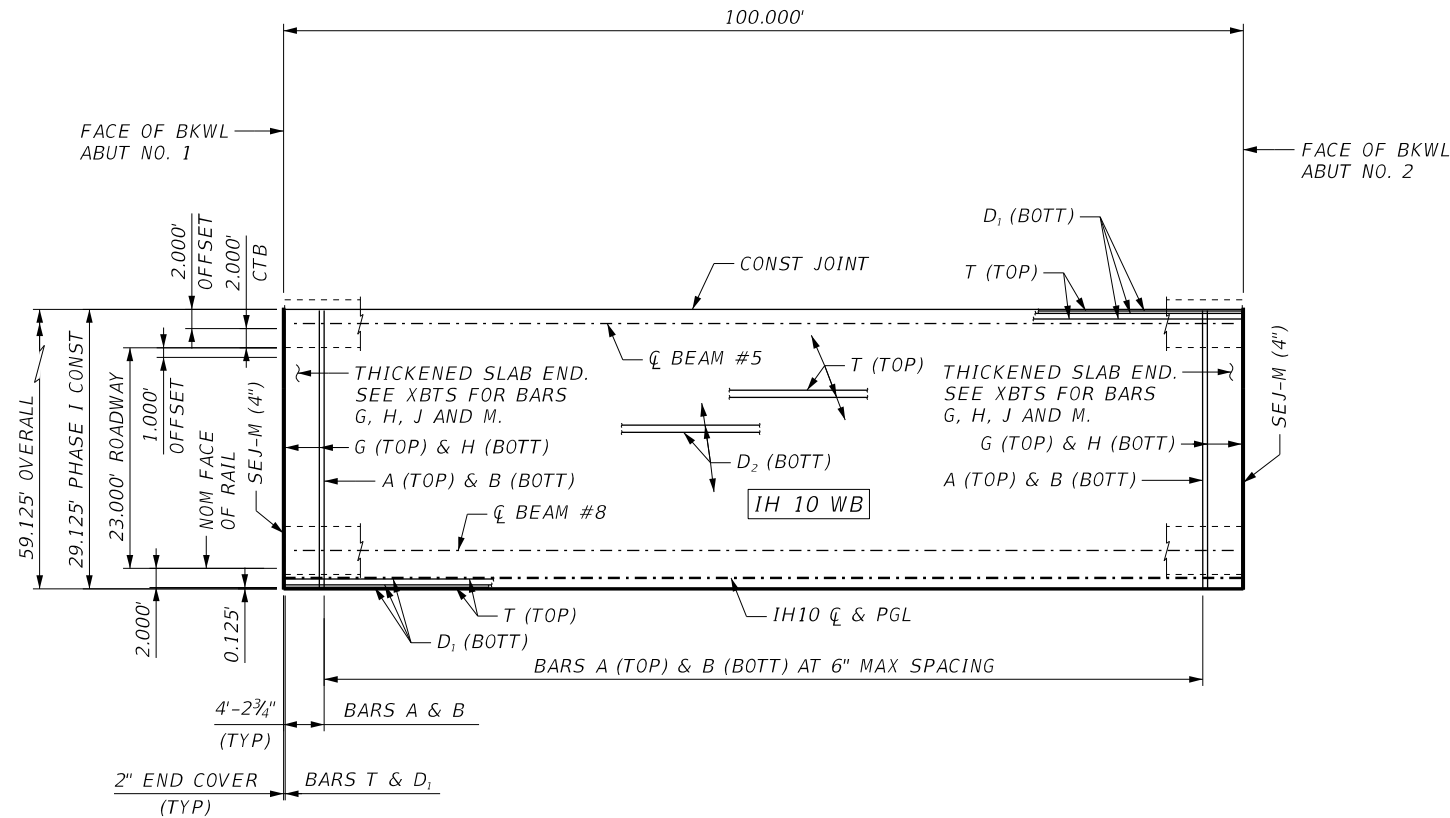
IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)

SHEET 1 OF 1

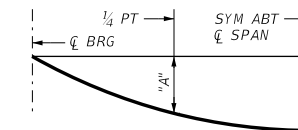
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				582

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



SPAN 1
PLAN PHASE I

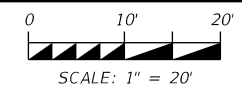
TABLE OF DEFLECTIONS PHASE I			
SPAN	BEAM NO.	"A"	"B"
		FT	FT
1	5	0.076	0.106
	6 & 7	0.102	0.143
	8	0.103	0.144



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



Wirat Wanichakorn
2/29/2024

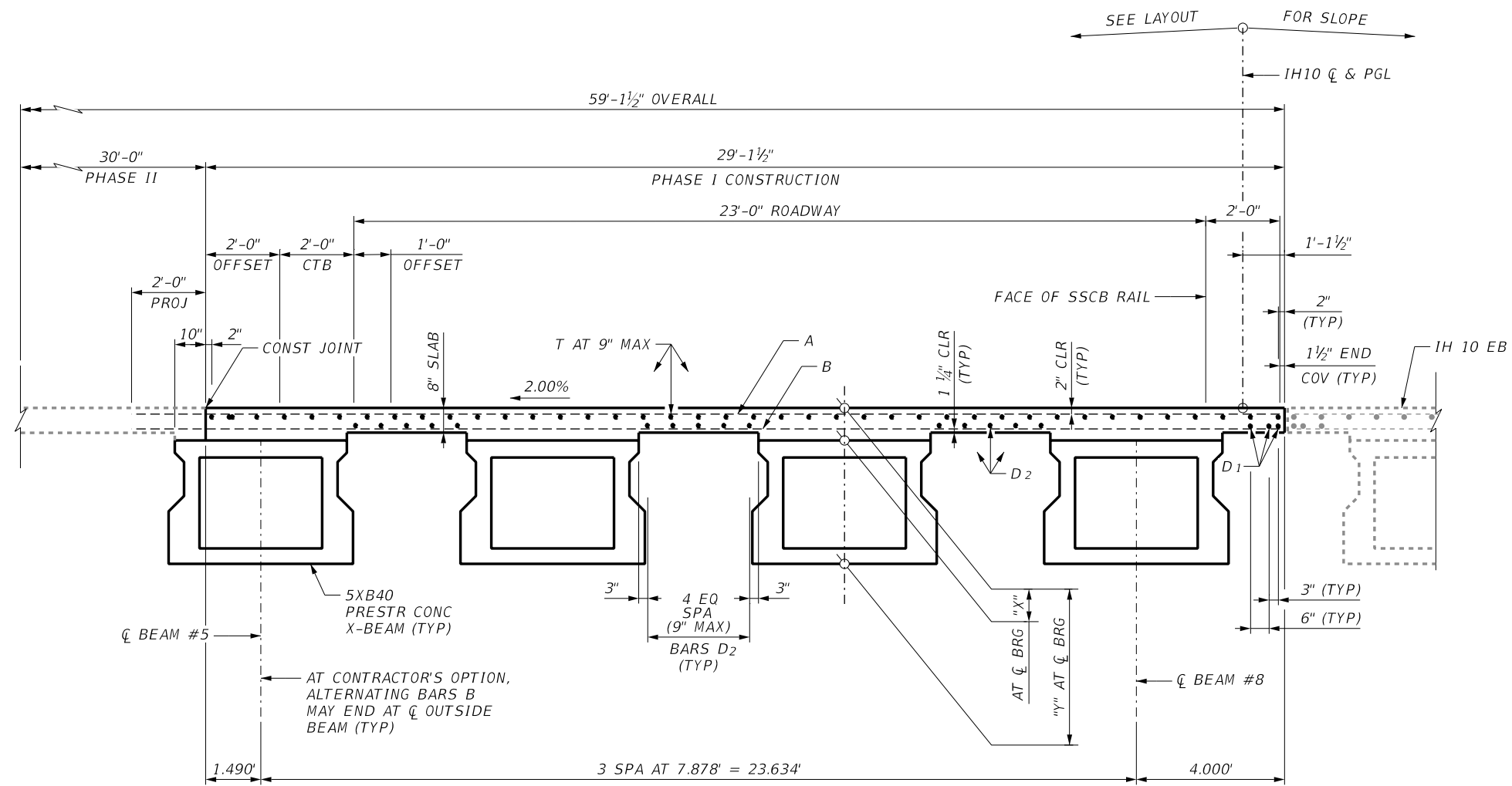
NO.	DATE	REVISION	APPROV.



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB40) UNITS
PHASE I
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	583



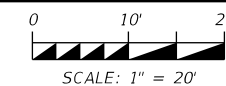
TYPICAL TRANSVERSE SECTION PHASE I
(5XB40) SPAN 1

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

HL93 LOADING



SCALE: 1" = 20'



Wirat Wanichakorn
3/28/2024

SPAN	REINF CONCRETE SLAB	5XB40 PREST CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	2,913	398.00	81.5	18,932
TOTAL	2,913	398.00	81.5	18,932

SPAN	BEAM NO.	"X"	"Y"
		IN	IN
1	5-8	11"	51"

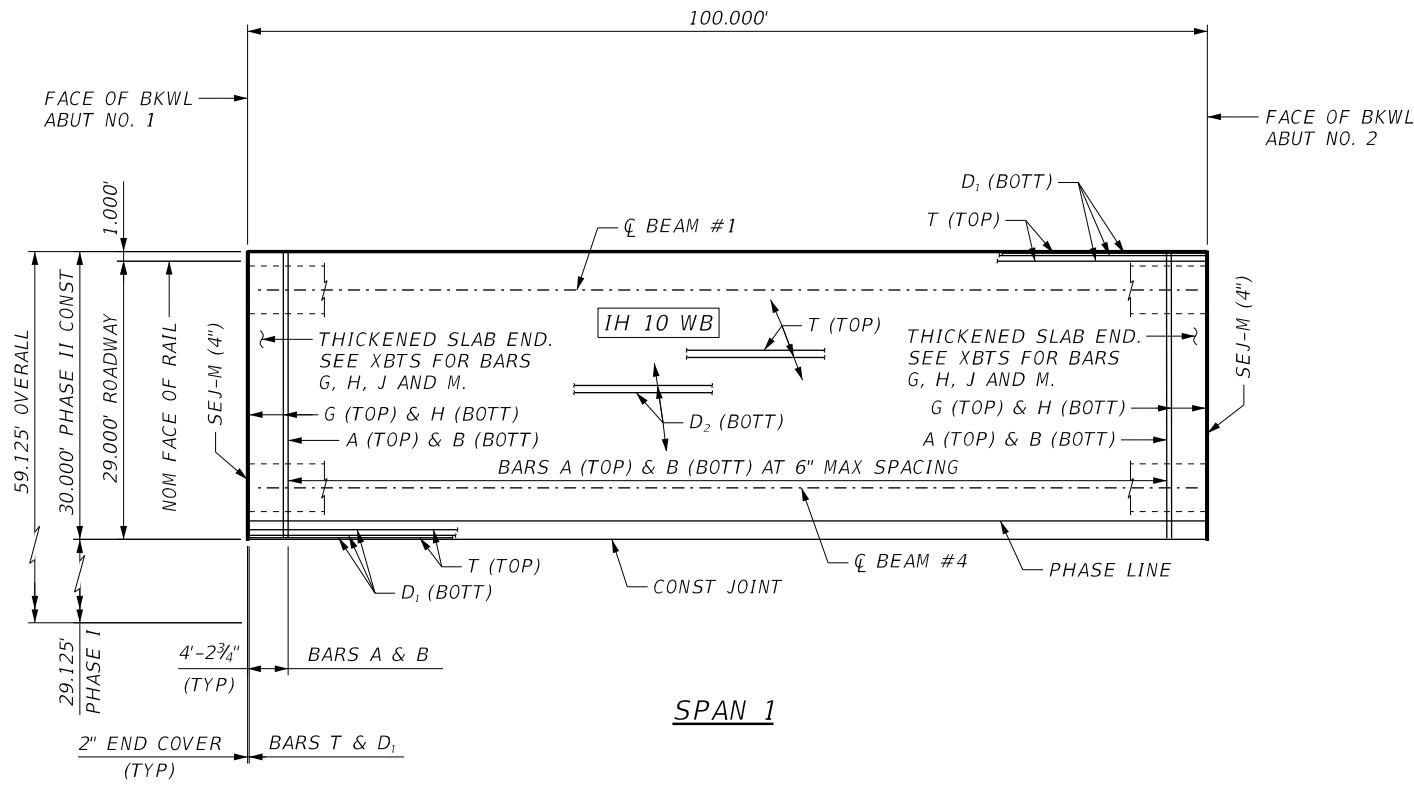


IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE X-BEAM (5XB40) UNITS
PHASE I
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)

SHEET 2 OF 2

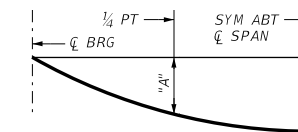
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	584

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



PLAN PHASE II

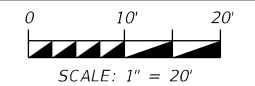
TABLE OF DEFLECTIONS PHASE II			
SPAN	BEAM NO.	"A"	"B"
		FT	FT
1	1	0.097	0.136
	2-4	0.091	0.128



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.

CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

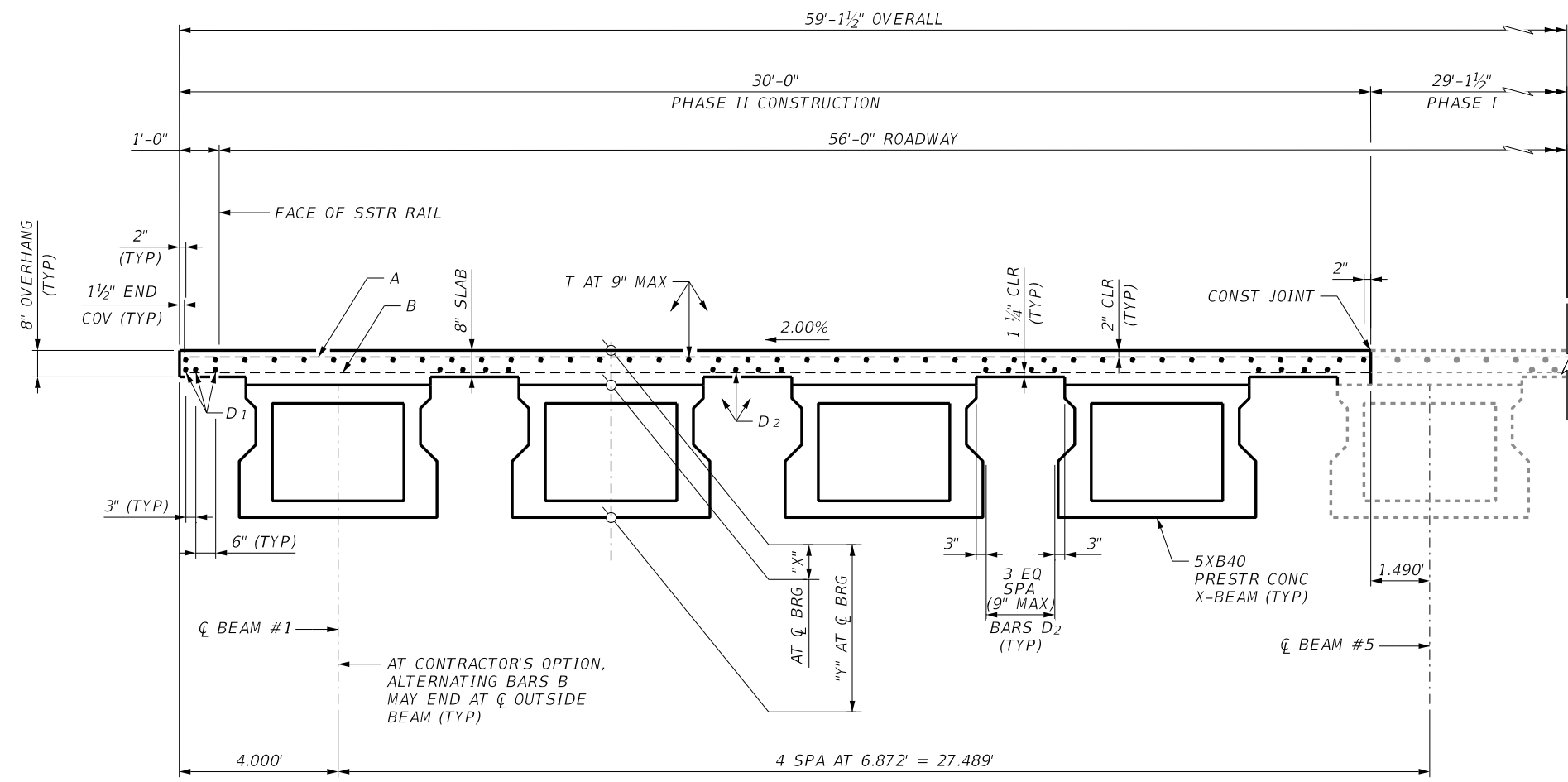


**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB40) UNITS
PHASE II
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	585

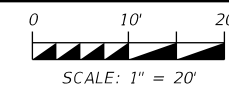
BAR TABLE PHASE II	
BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4



TYPICAL TRANSVERSE SECTION PHASE II
(5XB40) SPAN 1

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

HL93 LOADING



Steve Groves 2/29/2024

TABLE OF ESTIMATED QUANTITIES PHASE II				
SPAN	REINF CONCRETE SLAB	5XB40 PREST CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	3,000	398.00	85.1	19,500
TOTAL	3,000	398.00	85.1	19,500

TABLE OF SECTION DEPTHS FOR PHASE II			
SPAN	BEAM NO.	"X"	"Y"
		IN	IN
1	1-4	11"	51"



IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB40) UNITS
PHASE II
ARROYO 47 RELIEF #BB BRIDGE
IH 10 WB
(STA 54+06 TO STA 55+06)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	104	586

GENERAL NOTES

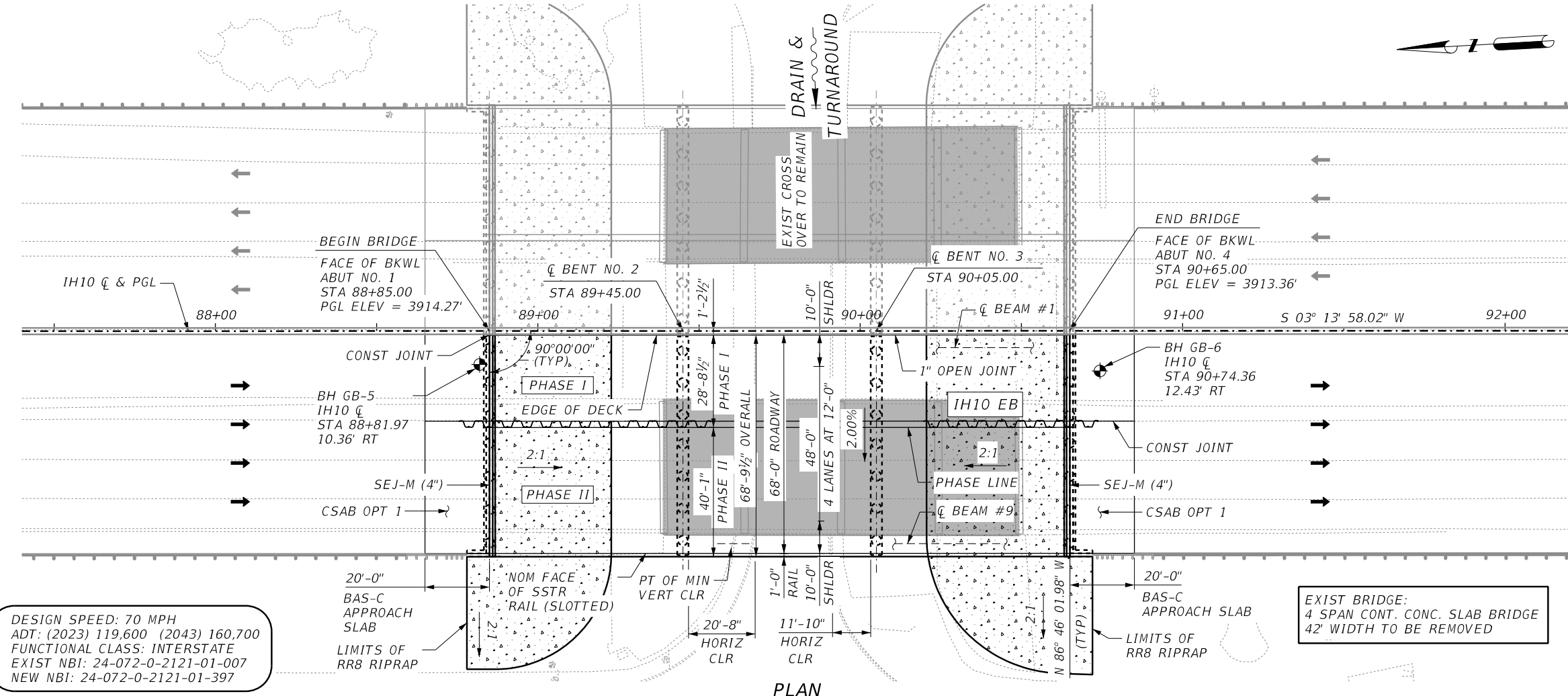
- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ⊙ - DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

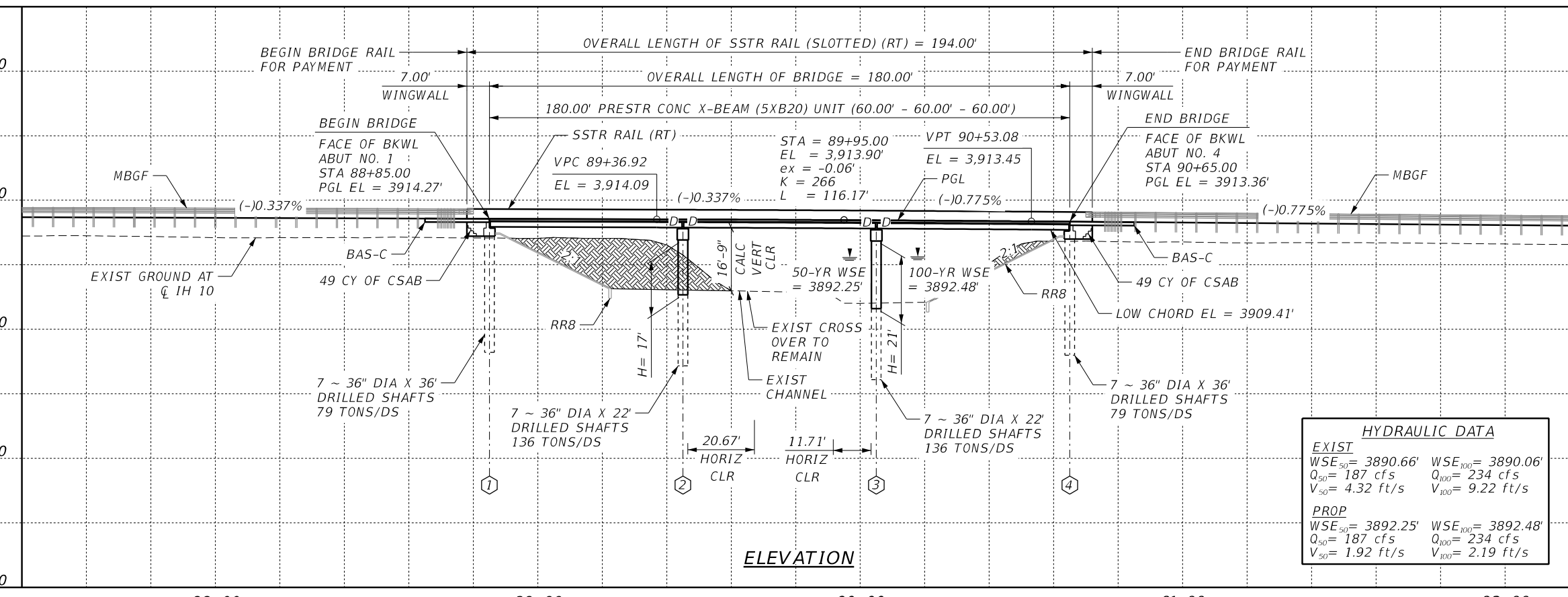
- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING

DESIGN SPEED: 70 MPH
ADT: (2023) 119,600 (2043) 160,700
FUNCTIONAL CLASS: INTERSTATE
EXIST NBI: 24-072-0-2121-01-007
NEW NBI: 24-072-0-2121-01-397

EXIST BRIDGE:
4 SPAN CONT. CONC. SLAB BRIDGE
42' WIDTH TO BE REMOVED

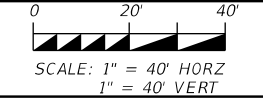


PLAN



ELEVATION

HL93 LOADING



Wirat Wanichakorn
3/28/2024



IH 10 WIDENING (NMSL/SPUR 37)

BRIDGE LAYOUT
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)

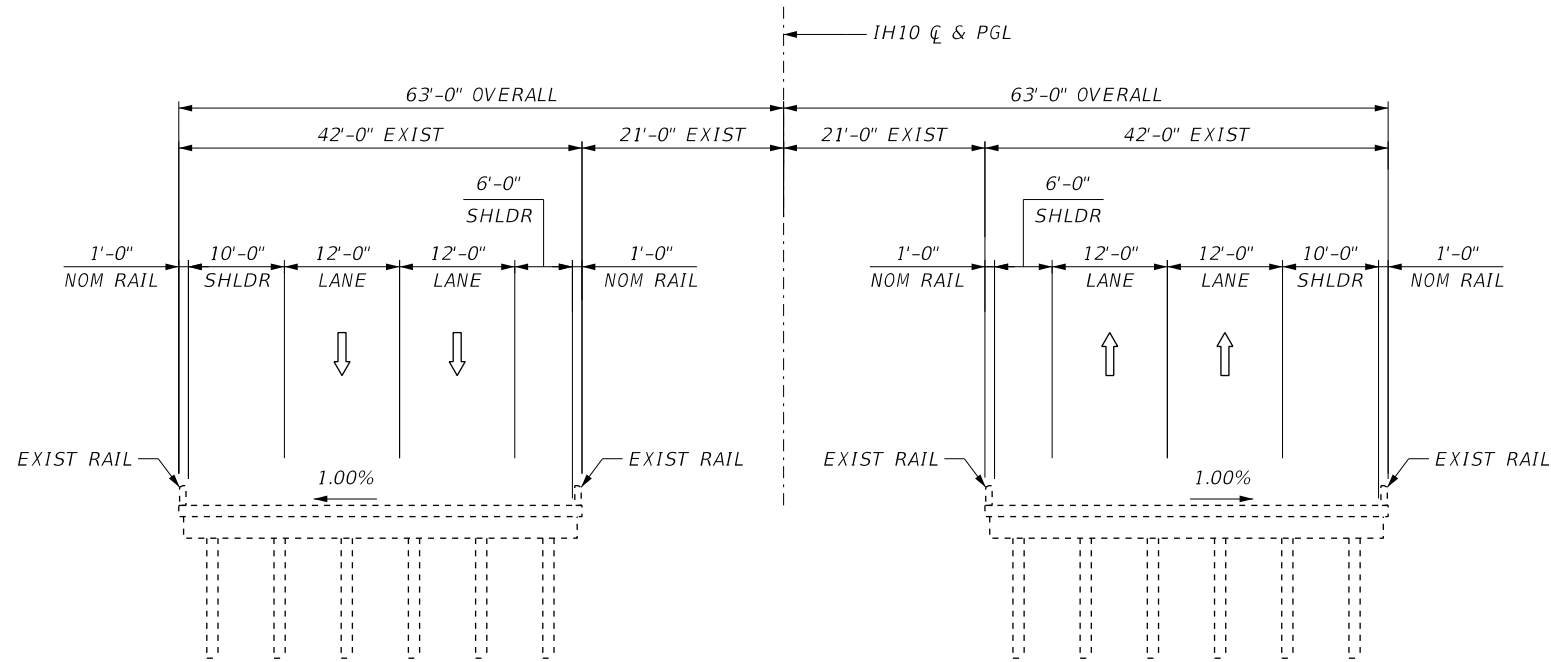
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.		
104	587		

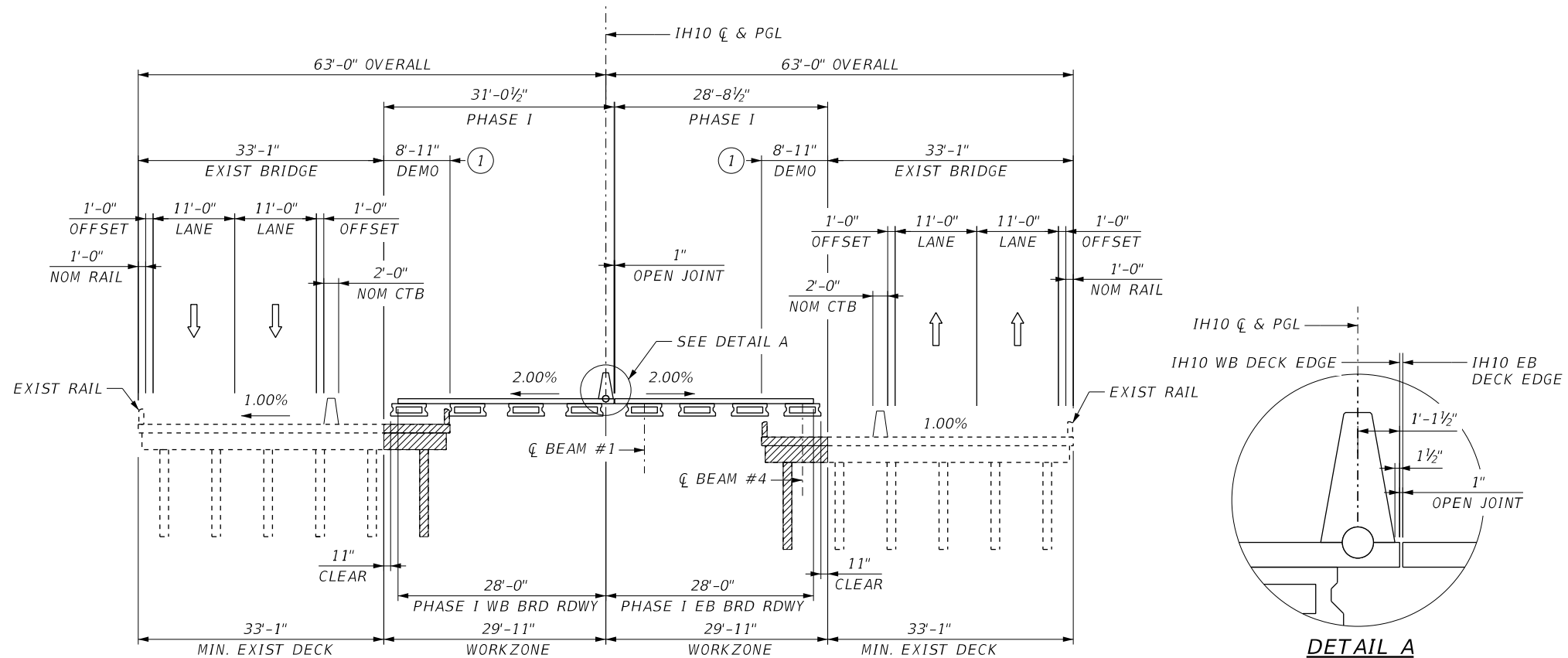
HYDRAULIC DATA			
EXIST			
WSE ₅₀ = 3890.66'	WSE ₁₀₀ = 3890.06'	Q ₅₀ = 187 cfs	Q ₁₀₀ = 234 cfs
V ₅₀ = 4.32 ft/s	V ₁₀₀ = 9.22 ft/s		
PROP			
WSE ₅₀ = 3892.25'	WSE ₁₀₀ = 3892.48'	Q ₅₀ = 187 cfs	Q ₁₀₀ = 234 cfs
V ₅₀ = 1.92 ft/s	V ₁₀₀ = 2.19 ft/s		

LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



EXIST SECTION



PHASE I SECTION

- ① SAWCUT EXISTING CAP AS NECESSARY TO AVOID CONFLICT WITH BEAM. DO NOT CUT BEYOND LIMITS OF DEMOLITION. DO NOT REMOVE EXISTING COLUMNS NOT MARKED FOR DEMOLITION IN THIS PHASE.

HL93 LOADING

NOT TO SCALE



Steve Wilkerson 3/28/2024

NO.	DATE	REVISION	APPROV.



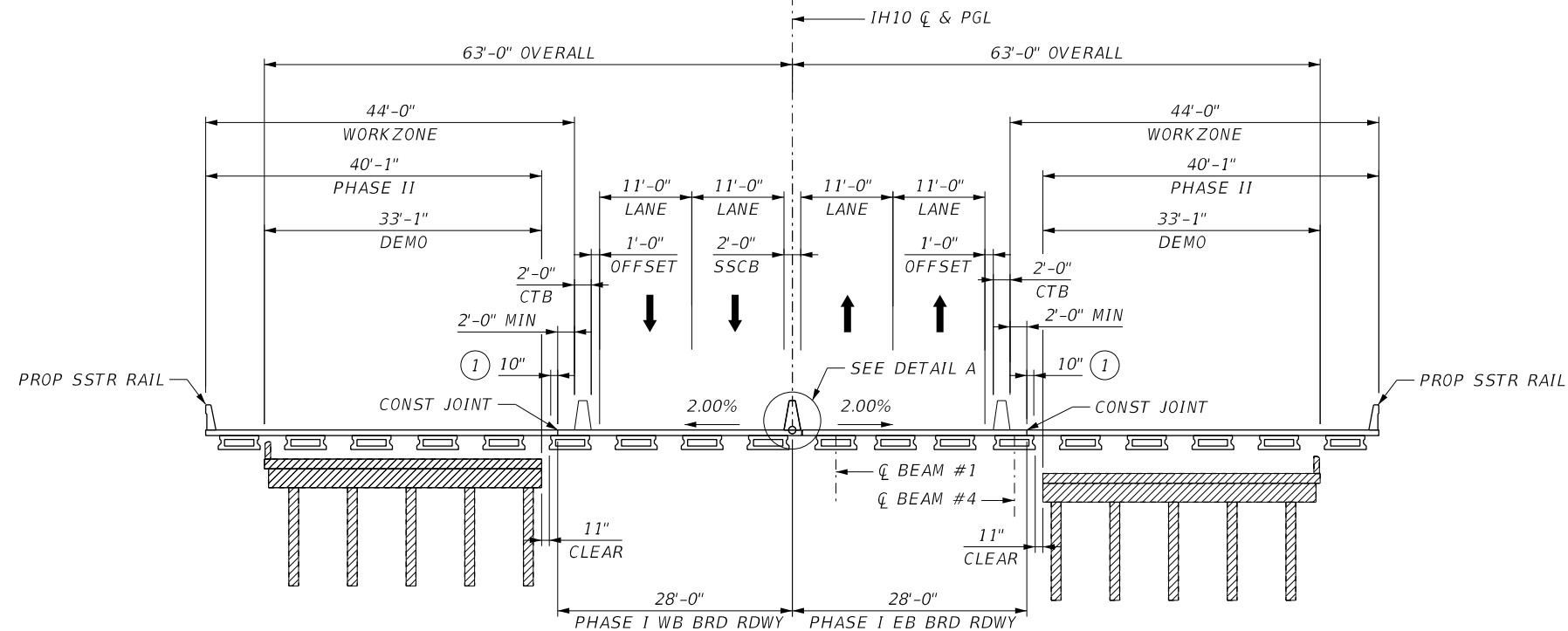
IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
 TYPICAL SECTIONS
 DRAIN & TURNAROUND #CA BRIDGE
 IH 10 EB
 (STA 88+85 TO STA 90+65)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	588

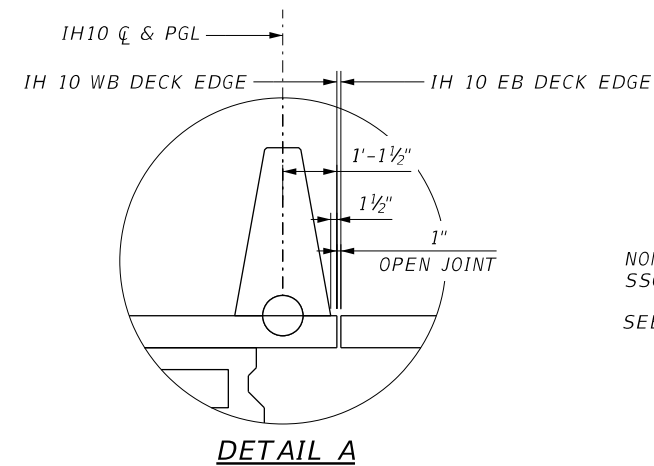
LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE

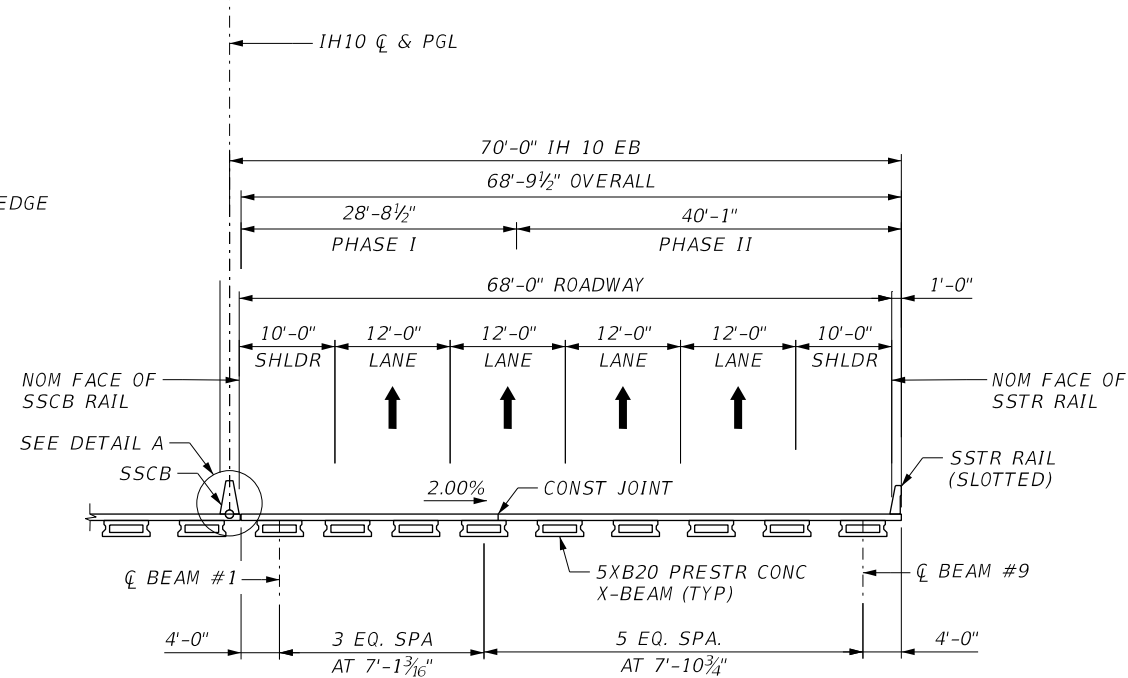


PHASE II SECTION

① EDGE OF DECK TO EDGE OF TOP OF BEAM.



DETAIL A



IH 10 EB FINAL SECTION

HL93 LOADING

NOT TO SCALE



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3/28/2024

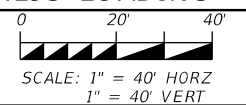


**IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)**

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	589

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3/28/2024

NO.	DATE	REVISION	APPROV.

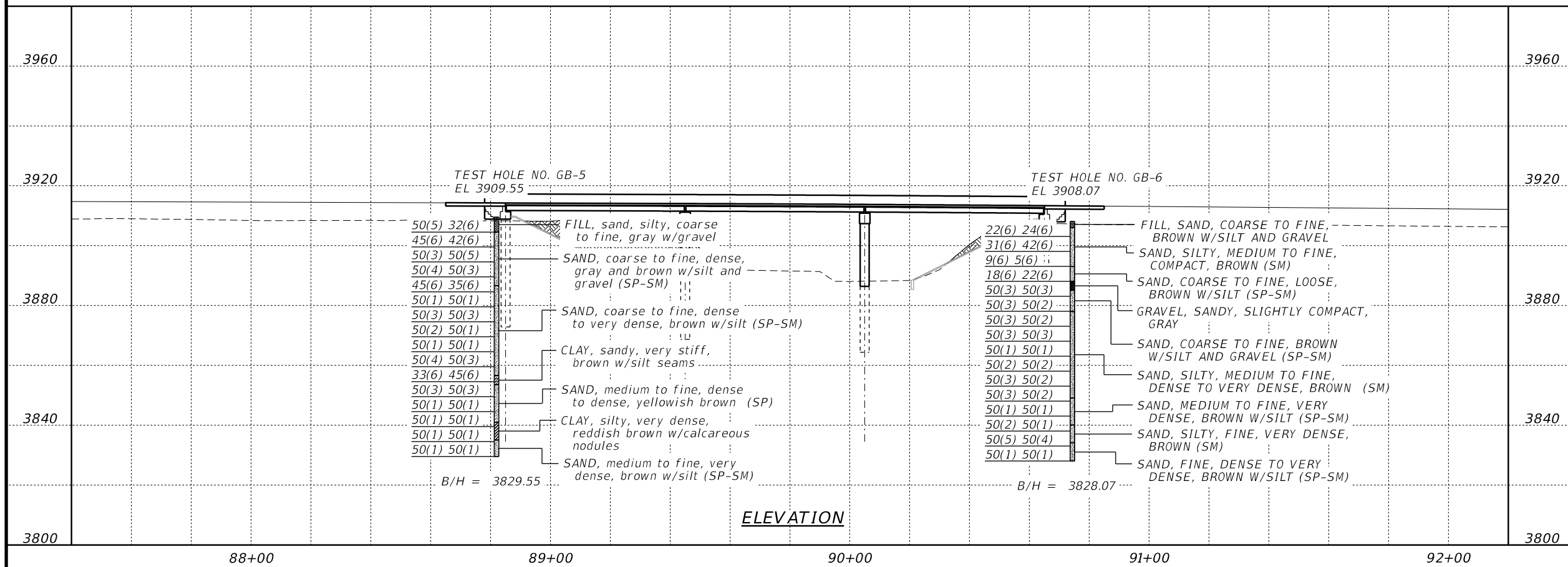


IH 10 WIDENING (NMSL/SPUR 37)

BORING LOGS
DRAIN & TURNAROUND
#CA & #CB BRIDGE
IH 10 EB & IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	590



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3/28/2024 3:08:56 PM

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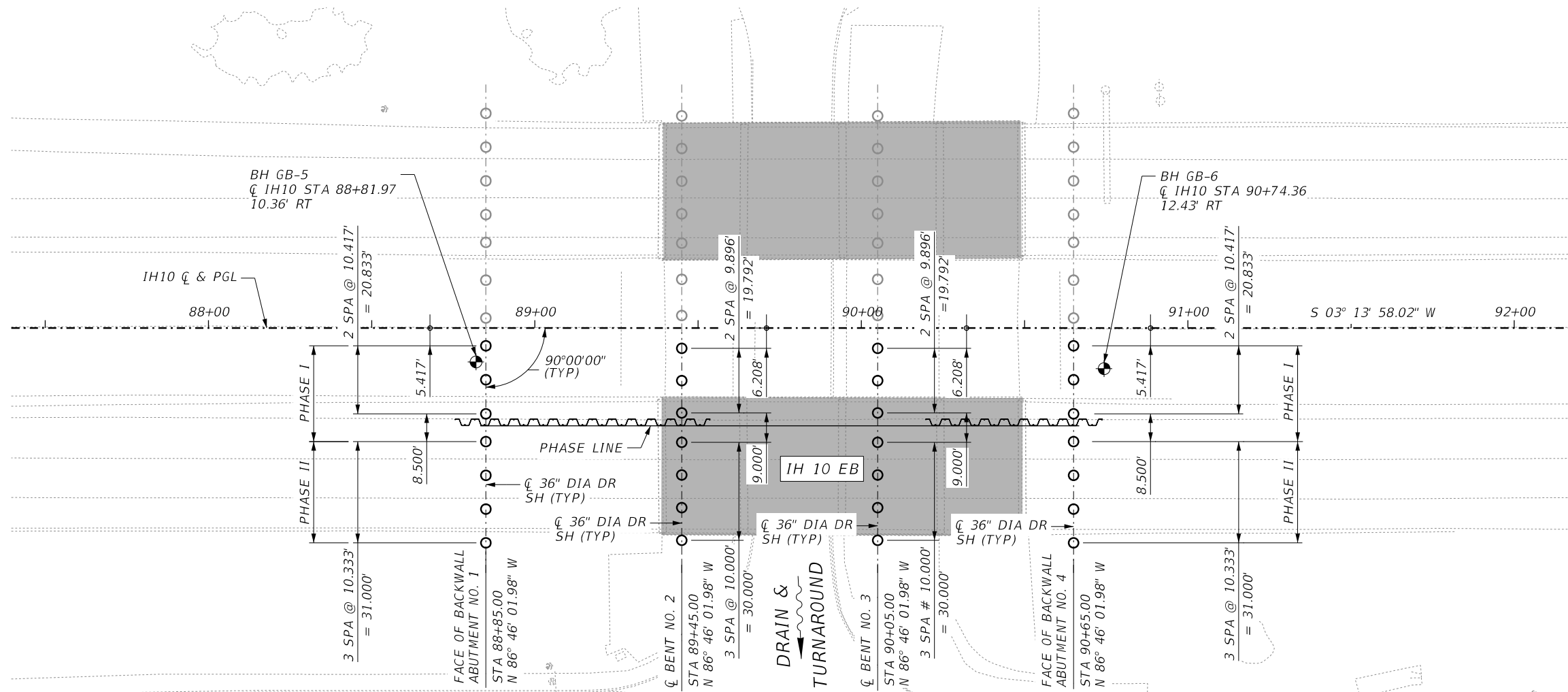
GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.
3. DRILLED SHAFT INSTALLATION WILL REQUIRE THE USE OF SLURRY DISPLACEMENT METHODS AND SURFACE CASING. THE SURFACE CASING IS TEMPORARY AND SHALL BE RETRIEVED AS OUTLINED IN TXDOT STANDARD SPECIFICATIONS.

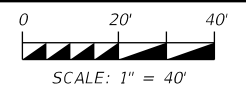


LEGEND

- = BORE HOLE
- = DRILLED SHAFT
- = TEMP SPL SHORING



HL93 LOADING



Wirat Wanichakorn
3/28/2024

FOUNDATION LOADS	
ABUT/BENT	TONS/SHAFT
1 & 4	79
2 & 3	136

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

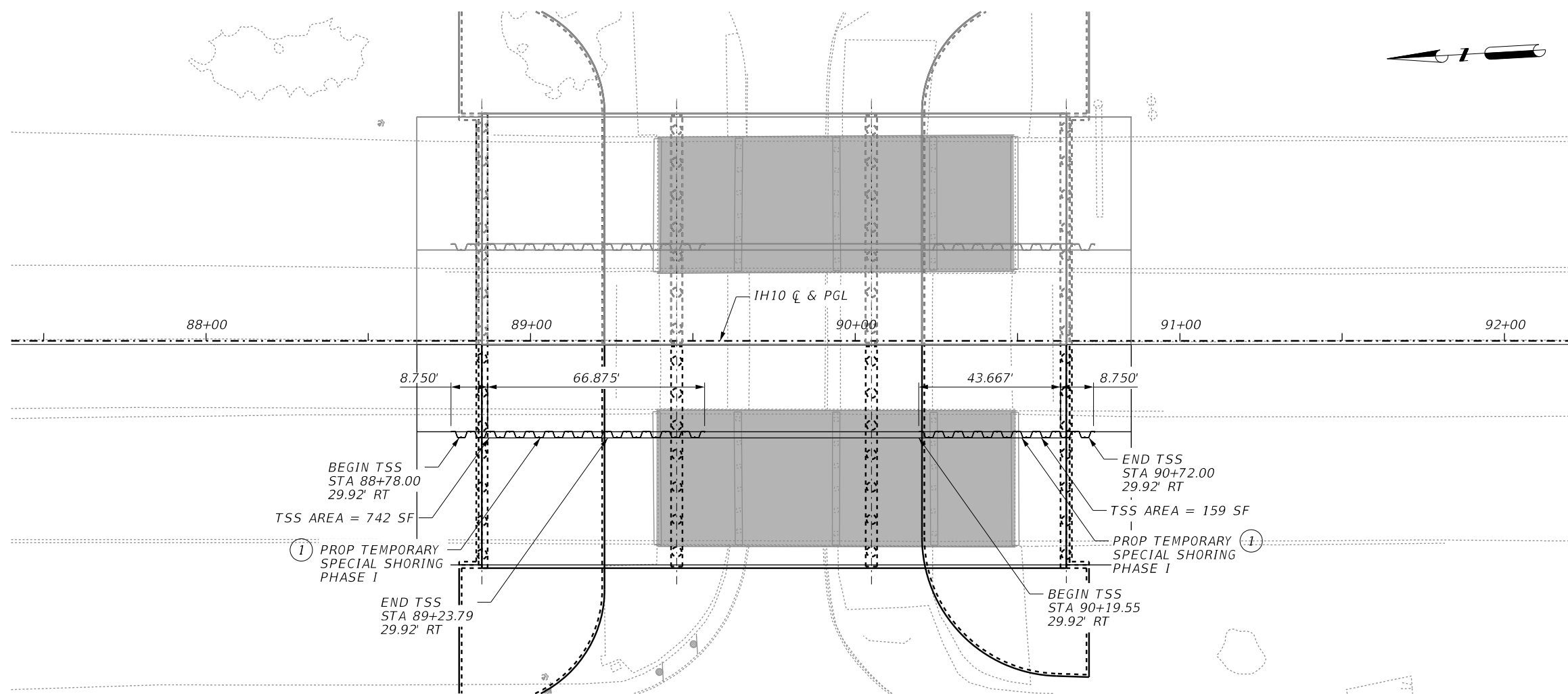
FOUNDATION LAYOUT
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	591

LEGEND

TEMPORARY SPL SHORING



BEGIN TSS
STA 88+78.00
29.92' RT
TSS AREA = 742 SF

1 PROP TEMPORARY
SPECIAL SHORING
PHASE I

END TSS
STA 89+23.79
29.92' RT

IH10 CL & PGL

END TSS
STA 90+72.00
29.92' RT
TSS AREA = 159 SF

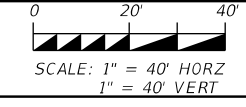
1 PROP TEMPORARY
SPECIAL SHORING
PHASE I

BEGIN TSS
STA 90+19.55
29.92' RT

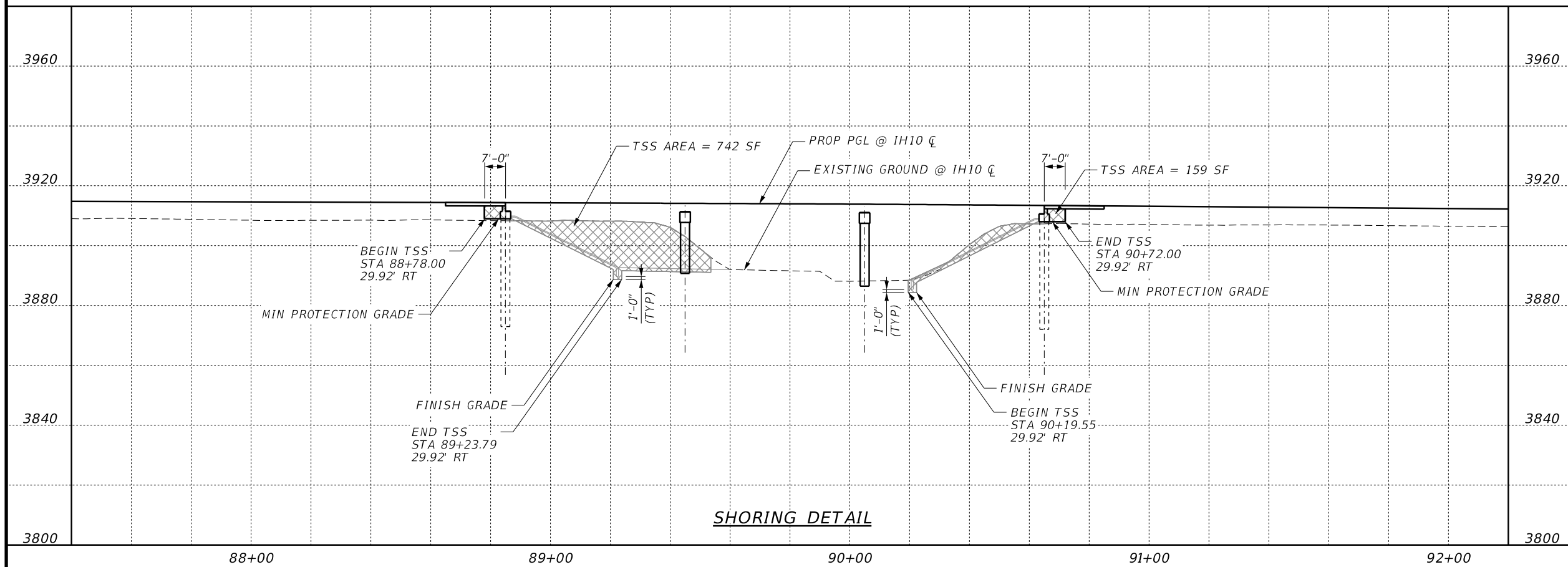
1 PAID FOR UNDER ITEM 403
TEMPORARY SPL SHORING.

PLAN

HL93 LOADING



Steve Wilkerson 3/28/2024



BEGIN TSS
STA 88+78.00
29.92' RT

MIN PROTECTION GRADE

FINISH GRADE
END TSS
STA 89+23.79
29.92' RT

TSS AREA = 742 SF

PROP PGL @ IH10 CL

EXISTING GROUND @ IH10 CL

TSS AREA = 159 SF

END TSS
STA 90+72.00
29.92' RT

MIN PROTECTION GRADE

FINISH GRADE

BEGIN TSS
STA 90+19.55
29.92' RT

SHORING DETAIL

CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL
SHORING LAYOUT
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	592

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BEARING SEAT ELEVATIONS

				PHASE I				PHASE II					
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	
1	ABUT	1	(FWD)	L	3911.406	3911.264	3911.122	3910.980	3910.822	3910.664	3910.506	3910.348	3910.190
			R	3911.286	3911.144	3911.002	3910.860	3910.702	3910.544	3910.386	3910.228	3910.070	
2	BENT	2	(BK)	L	3911.210	3911.068	3910.926	3910.784	3910.626	3910.468	3910.310	3910.152	3909.994
			R	3911.090	3910.948	3910.806	3910.664	3910.506	3910.348	3910.190	3910.032	3909.874	
	2	(FWD)	L	3911.203	3911.061	3910.919	3910.777	3910.619	3910.461	3910.303	3910.145	3909.987	
		R	3911.083	3910.941	3910.799	3910.657	3910.499	3910.341	3910.183	3910.025	3909.867		
3	BENT	3	(BK)	L	3910.928	3910.786	3910.644	3910.502	3910.344	3910.186	3910.028	3909.870	3909.712
			R	3910.808	3910.666	3910.524	3910.382	3910.224	3910.066	3909.908	3909.750	3909.592	
	3	(FWD)	L	3910.916	3910.774	3910.632	3910.490	3910.332	3910.174	3910.016	3909.858	3909.700	
		R	3910.796	3910.654	3910.512	3910.370	3910.212	3910.054	3909.896	3909.738	3909.580		
4	ABUT	4	(BK)	L	3910.510	3910.368	3910.226	3910.084	3909.926	3909.768	3909.610	3909.452	3909.294
			R	3910.390	3910.248	3910.106	3909.964	3909.806	3909.648	3909.490	3909.332	3909.174	



Wirat Wanichakorn
3/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BEARING SEAT ELEVATIONS
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

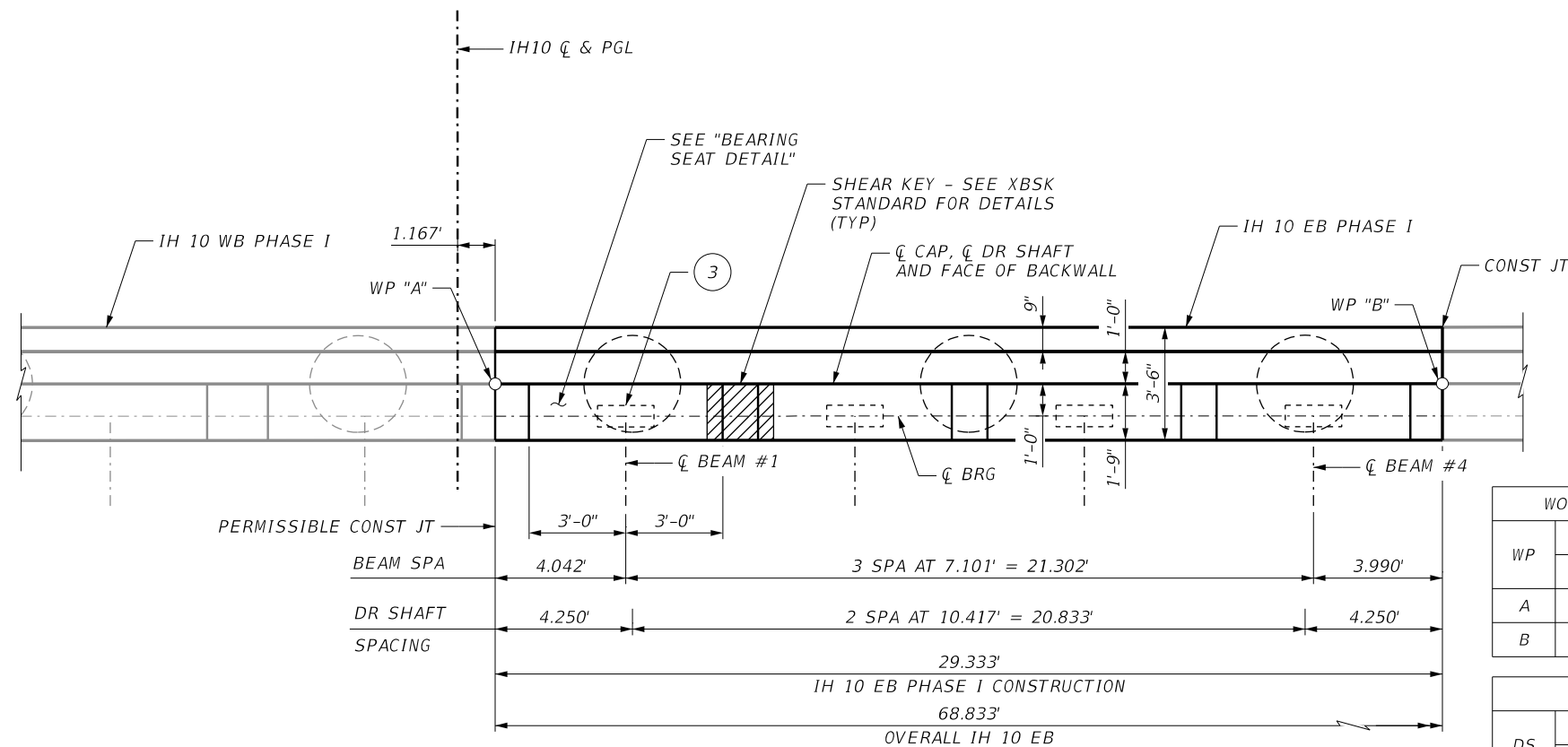
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	593

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH F'C = 3,600 PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPlicing TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

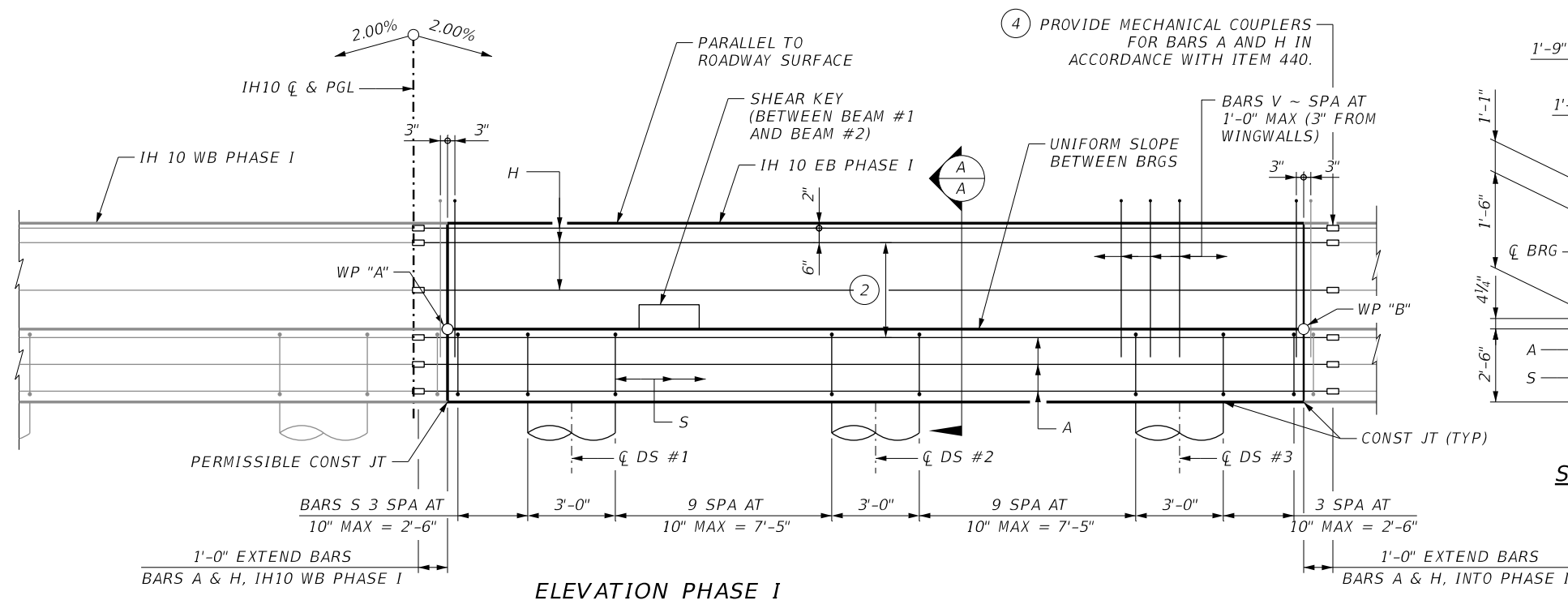
- INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



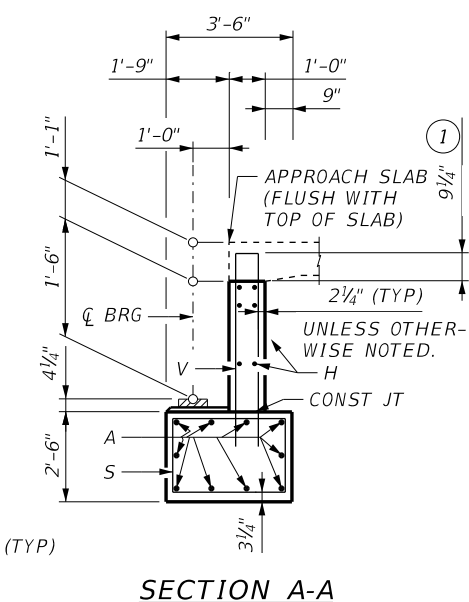
PLAN PHASE I

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
A	3911.305'	3910.390'
B	3910.719'	3909.803'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
1	3908.720'	3907.805'
2	3908.512'	3907.596'
3	3908.304'	3907.388'

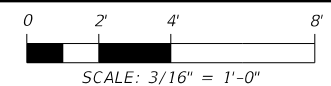


ELEVATION PHASE I



SECTION A-A

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3/28/2024



**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)**

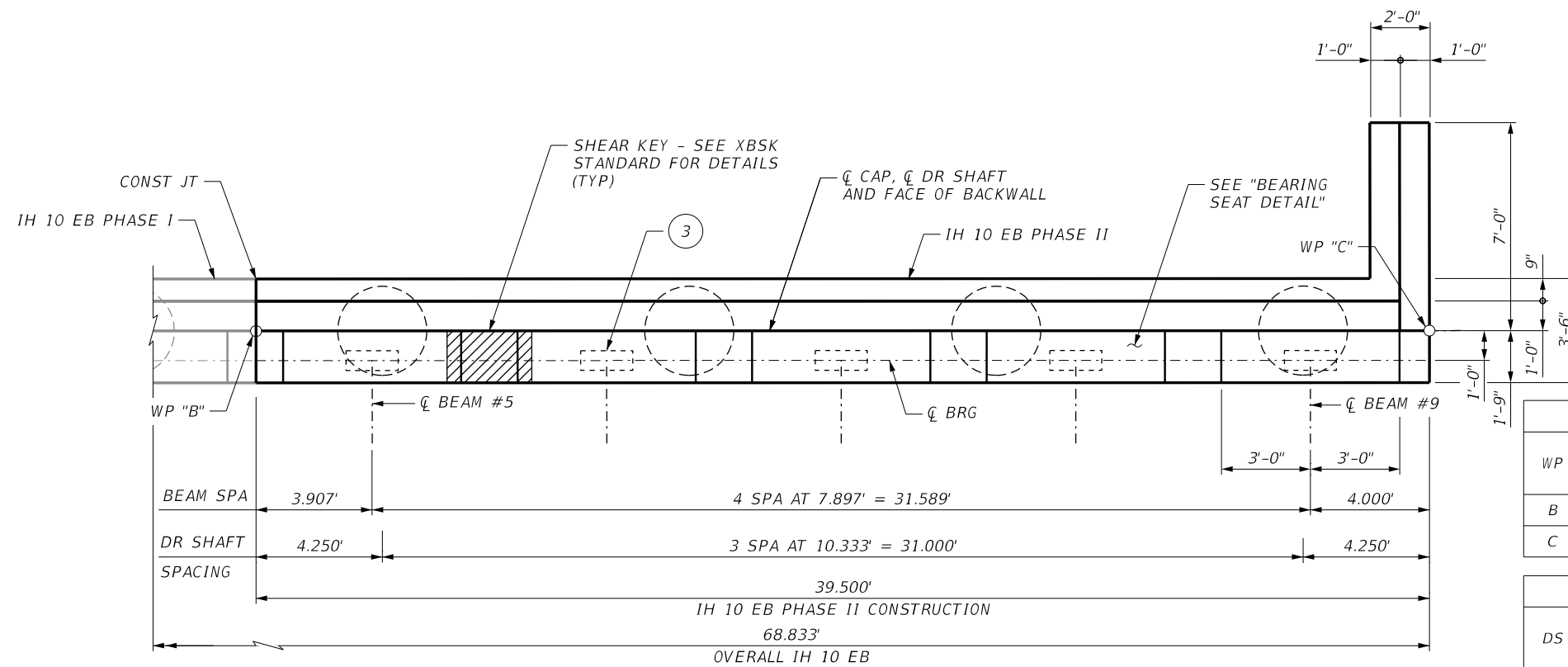
SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	594

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPlicing TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".

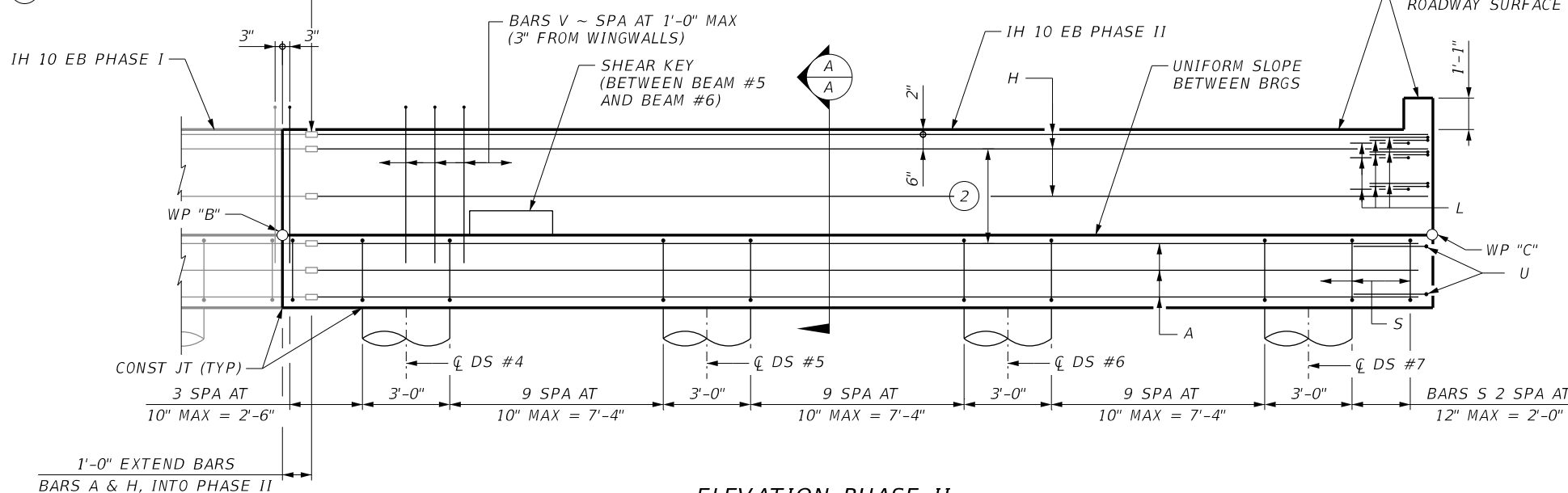


WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
B	3910.719'	3909.803'
C	3909.929'	3909.013'

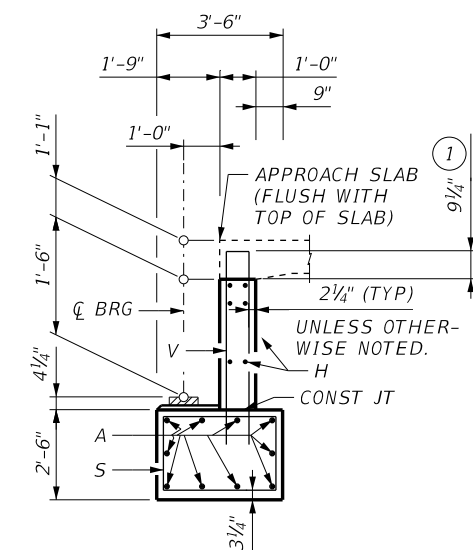
TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
4	3908.134'	3907.218'
5	3907.927'	3907.011'
6	3907.720'	3906.805'
7	3907.514'	3906.598'

PLAN PHASE II

PROVIDE MECHANICAL COUPLERS FOR BARS A AND H IN ACCORDANCE WITH ITEM 440.

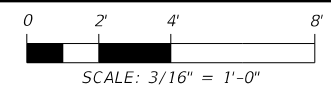


ELEVATION PHASE II



SECTION A-A

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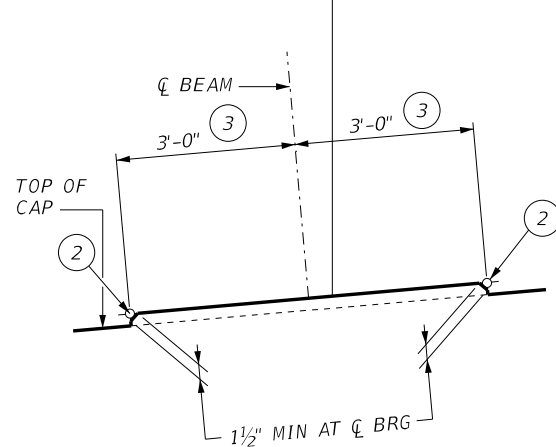


**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE II
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)**

SHEET 1 OF 1

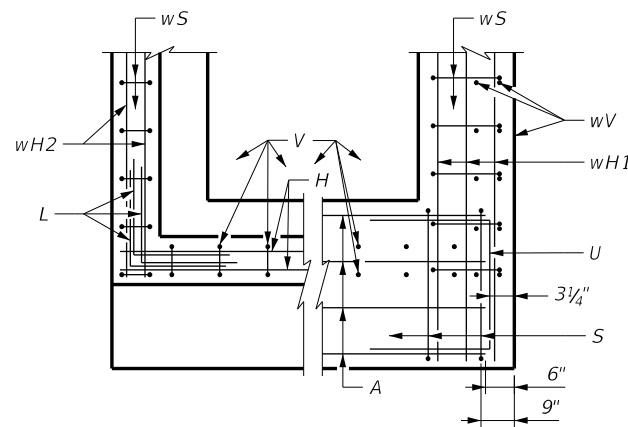
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				595

LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



**BACKWALL
CORNER DETAILS**

**TABLE OF ESTIMATED QUANTITIES
PHASE I (ONE ABUT)**

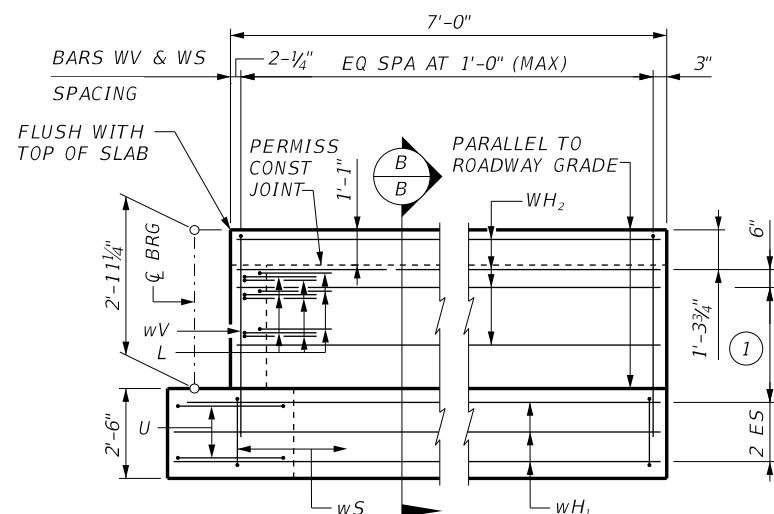
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31' - 4"	1,665
H	6	#6	31' - 4"	282
S	26	#5	11' - 5"	307
V	30	#5	8' - 4"	261
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,516
CONC (ABUT)			CY	11.8

**TABLE OF ESTIMATED QUANTITIES
PHASE II (ONE ABUT)**

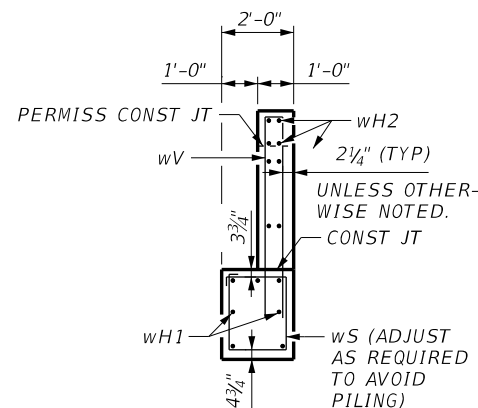
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	38' - 0"	2,019
H	6	#6	38' - 4"	345
L	9	#6	4' - 0"	54
S	36	#5	11' - 5"	425
U	4	#6	8' - 0"	48
V	39	#5	8' - 4"	341
wH1	7	#6	8' - 5"	88
wH2	8	#6	6' - 8"	80
wS	8	#4	7' - 8"	41
wV	8	#5	8' - 7"	72
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,514
CONC (ABUT)			CY	17.8

KEYED NOTES

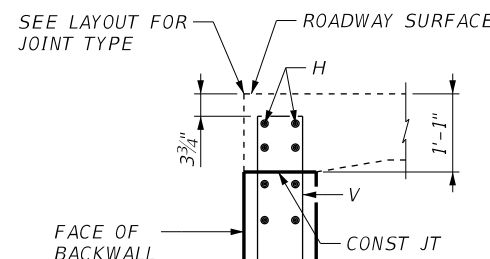
- ① SPACING BASED ON BEAM TYPE:
XB20 ~ 2 EQUAL SPACES
- ② RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ③ MEASURED ALONG ϕ OF BEARING



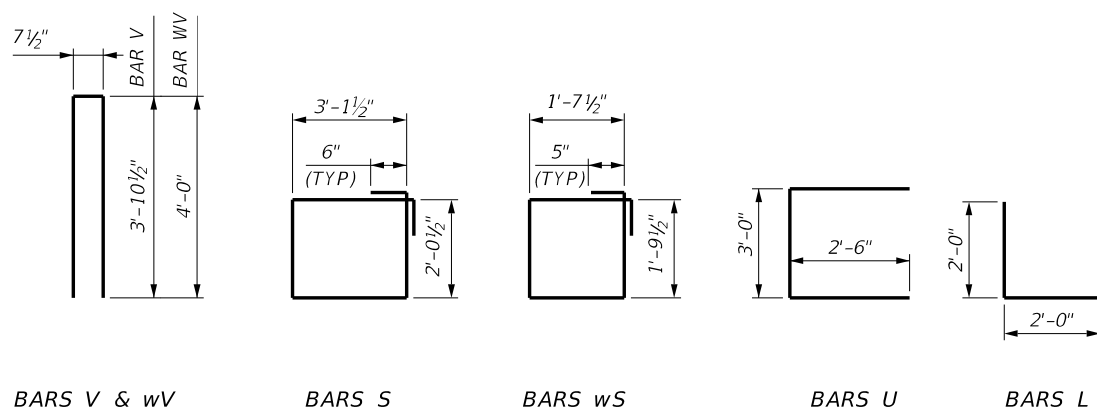
WINGWALL ELEVATION



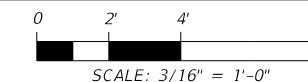
SECTION B-B



**BACKWALL DETAIL
(WITH APPROACH SLAB)**



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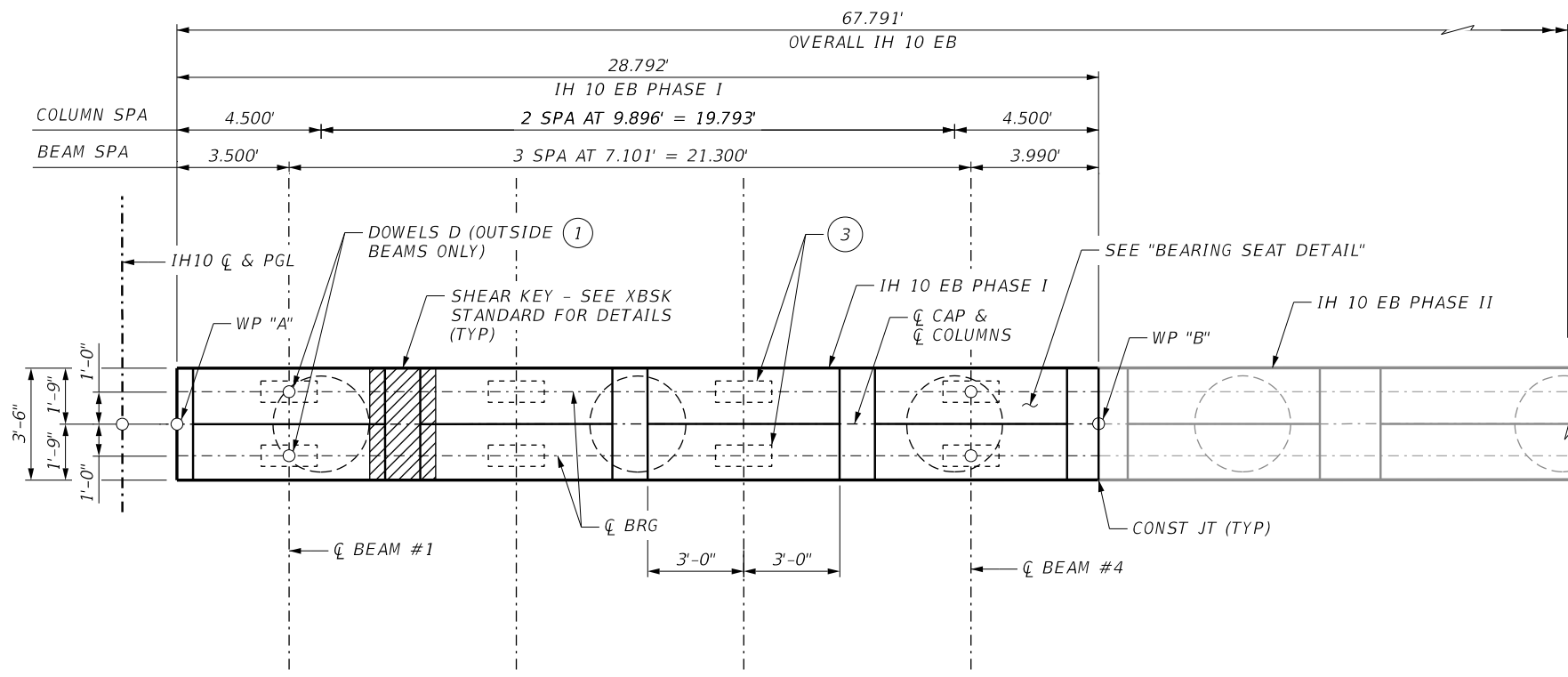
CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

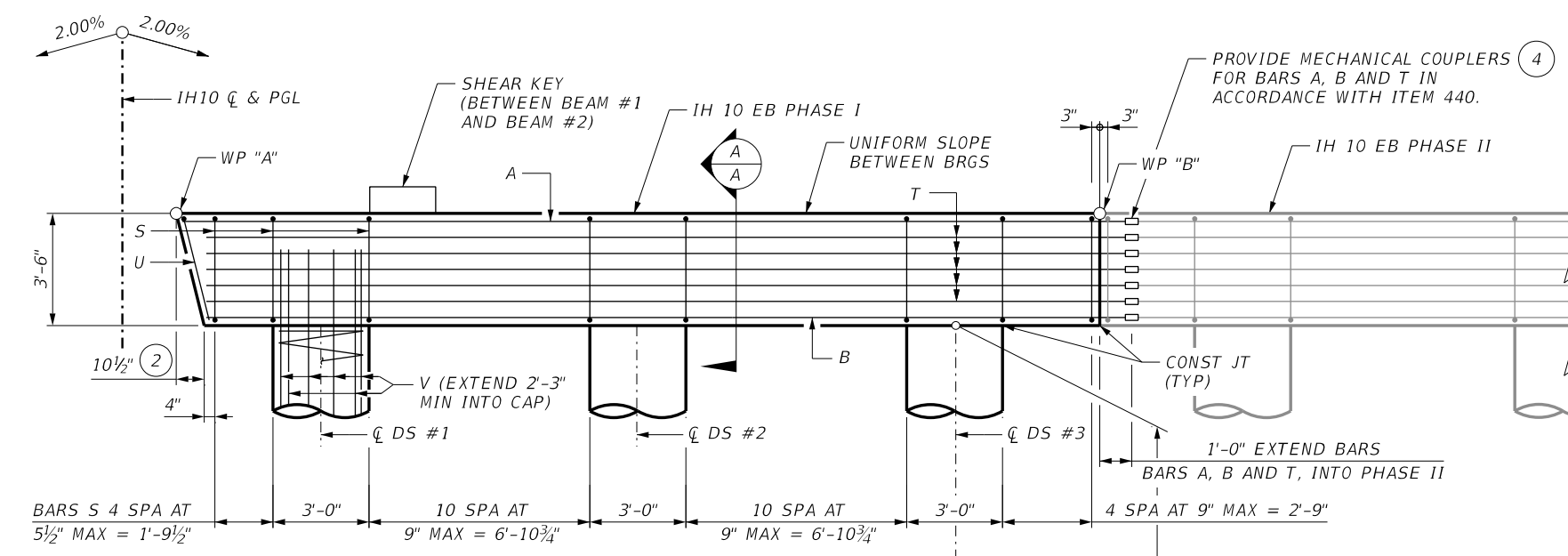
IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I & II
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

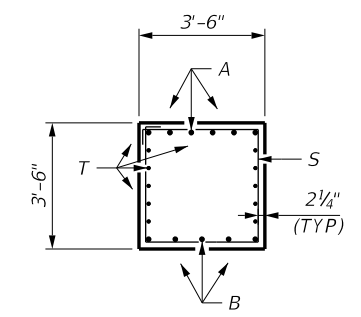
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	104	596



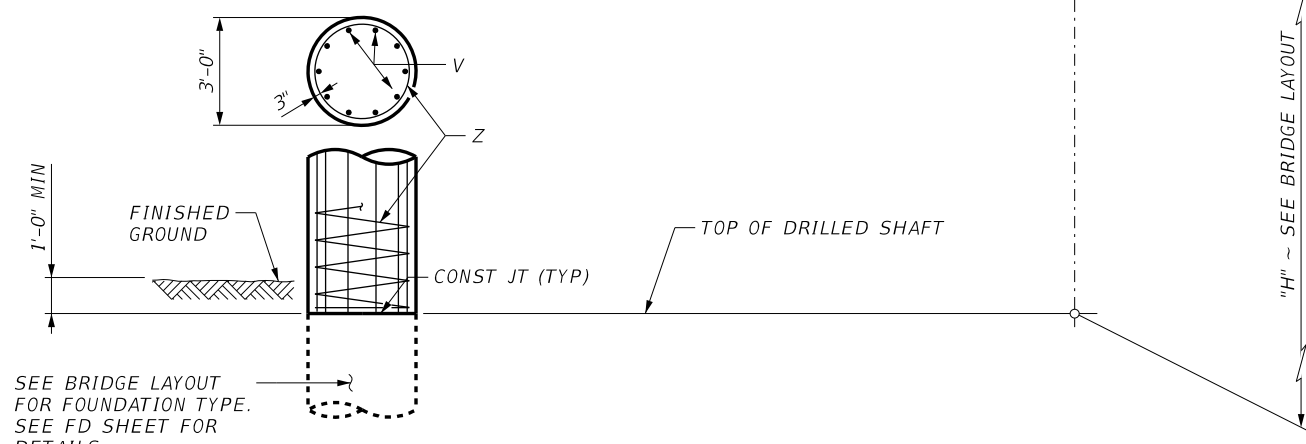
PLAN PHASE I



ELEVATION PHASE I



SECTION A-A



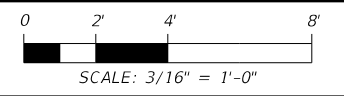
GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- GALVANIZE DOWEL BARS D.
- COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".

HL93 LOADING



Steve Groves
3/28/2024

WORKING POINT ELEVATIONS		
WP	ELEV	
	BENT 2	BENT 3
A	3911.091'	3910.806'
B	3910.515'	3910.230'

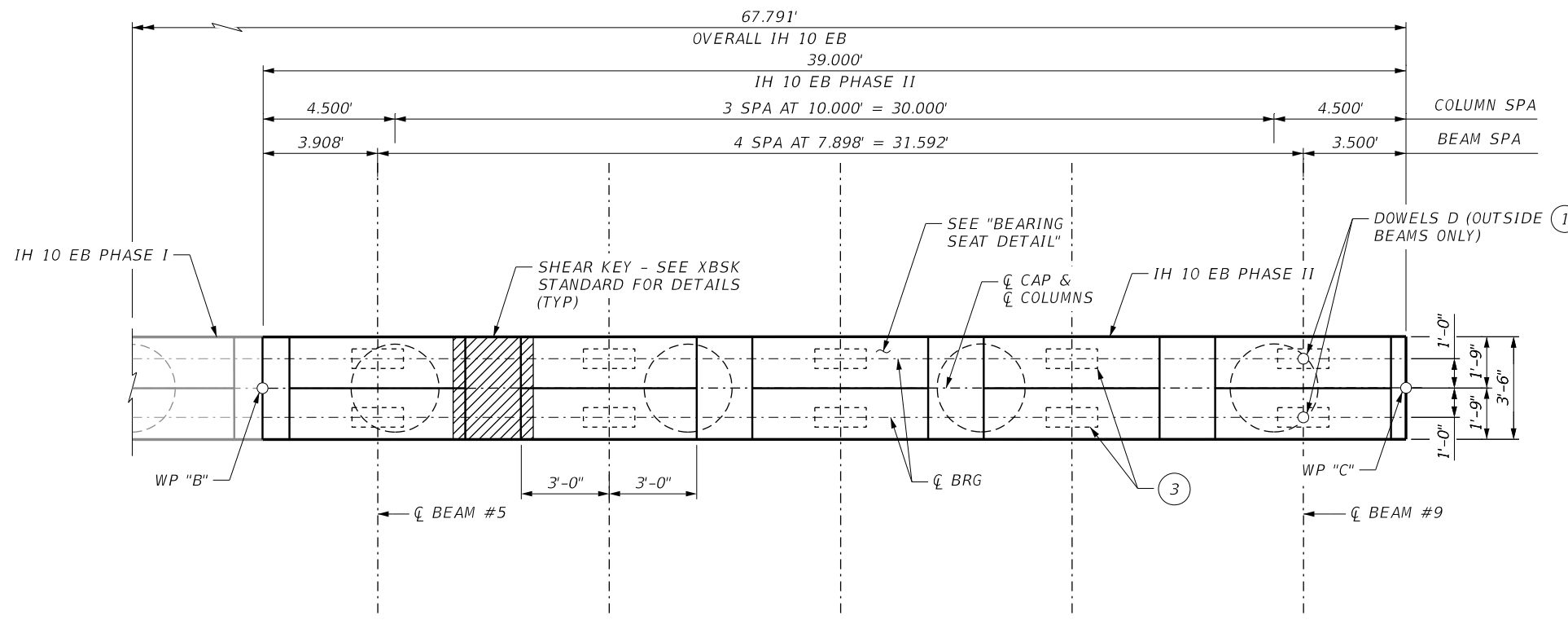
TOP OF COLUMN ELEVATIONS		
COL	ELEV	
	BENT 2	BENT 3
1	3907.501'	3907.216'
2	3907.303'	3907.018'
3	3907.105'	3906.820'

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IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

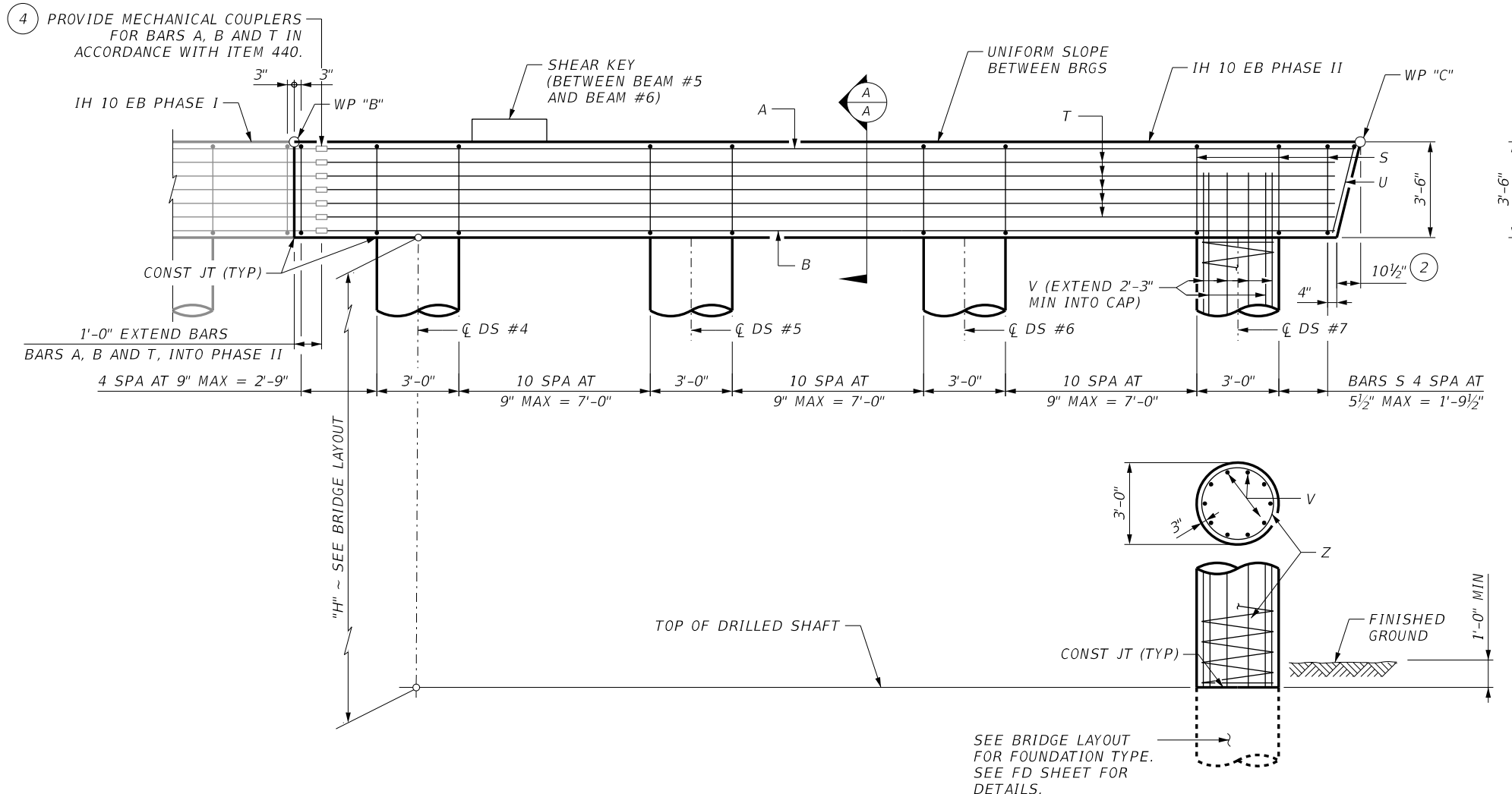
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			597



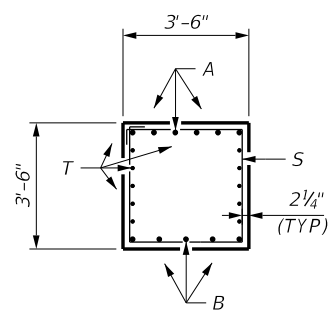
PLAN PHASE II

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
 - GALVANIZE DOWEL BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



ELEVATION PHASE II



SECTION A-A

HL93 LOADING

Steve Groves 3/28/2024

WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
B	3910.515'	3910.230'
C	3909.735'	3909.450'

TOP OF COLUMN ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
4	3906.925'	3906.640'
5	3906.725'	3906.440'
6	3906.525'	3906.240'
7	3906.325'	3906.040'

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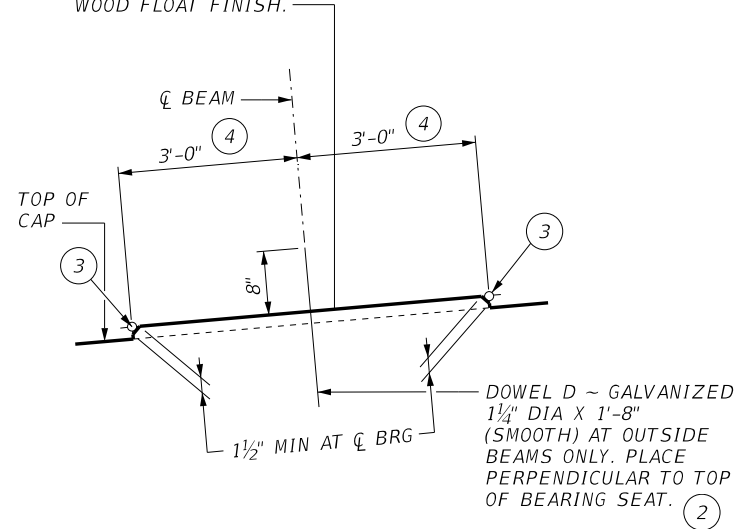
**IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE II
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)**

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			598

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LEVEL ALONG A LINE PERPENDICULAR TO
 CL BENT. UNIFORM SLOPE BETWEEN LEFT
 AND RIGHT BEARING SEAT ELEVATIONS WITH
 WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN
 AND FREE OF ALL LOOSE MATERIAL
 BEFORE PLACING BEARING PAD.)

**TABLE OF ESTIMATED QUANTITIES PHASE I
 (ONE BENT) (1)**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	29' - 7"	959
B	5	#11	28' - 10"	786
D	4	#9	1' - 8"	32
S	32	#5	13' - 6"	467
T	10	#5	28' - 10"	309
U	1	#5	9' - 8"	11
V	30	#9	21' - 3"	2,193
Z	3	#3	315' - 5"	356
ITEM		UNIT	QUANTITY	
Reinforcing Steel		LB	5,112	
Conc (Cap)		CY	13.7	
Conc (Column)		CY	14.9	

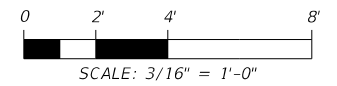
**TABLE OF ESTIMATED QUANTITIES PHASE II
 (ONE BENT) (1)**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	37' - 9"	1,227
B	5	#11	37' - 0"	983
D	2	#9	1' - 8"	16
S	43	#5	13' - 6"	628
T	10	#5	37' - 0"	386
U	1	#5	9' - 8"	11
V	40	#9	21' - 3"	2,924
Z	4	#3	315' - 5"	475
ITEM		UNIT	QUANTITY	
Reinforcing Steel		LB	6,650	
Conc (Cap)		CY	18.2	
Conc (Column)		CY	19.9	

KEYED NOTES

- (1) QUANTITIES SHOWN ARE BASED ON AN "H" VALUE OF 17'. FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
 BARS V LENGTH, 1'-0"
 BARS Z LENGTH, 15.740'
 REINFORCING STEEL, 120 LB
 CLASS "C" CONC (COL), 0.785 CY
- (2) OMIT DOWELS D AT THE END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- (3) RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED ELSEWHERE.
- (4) MEASURED A LONG CL OF BEARING.

HL93 LOADING



Wirat Wanichakorn
 3/28/2024

NO.	DATE	REVISION	APPROV.

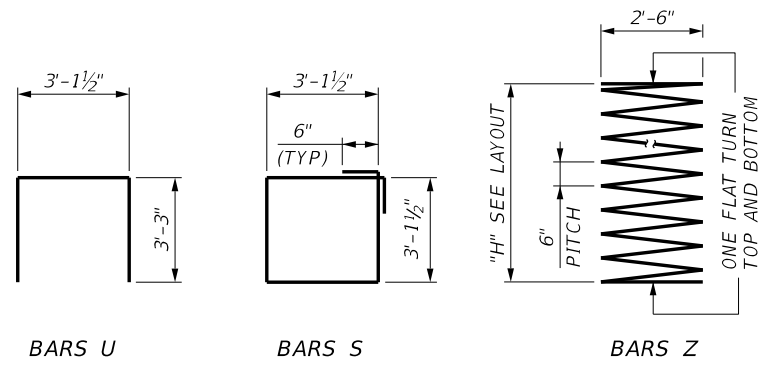
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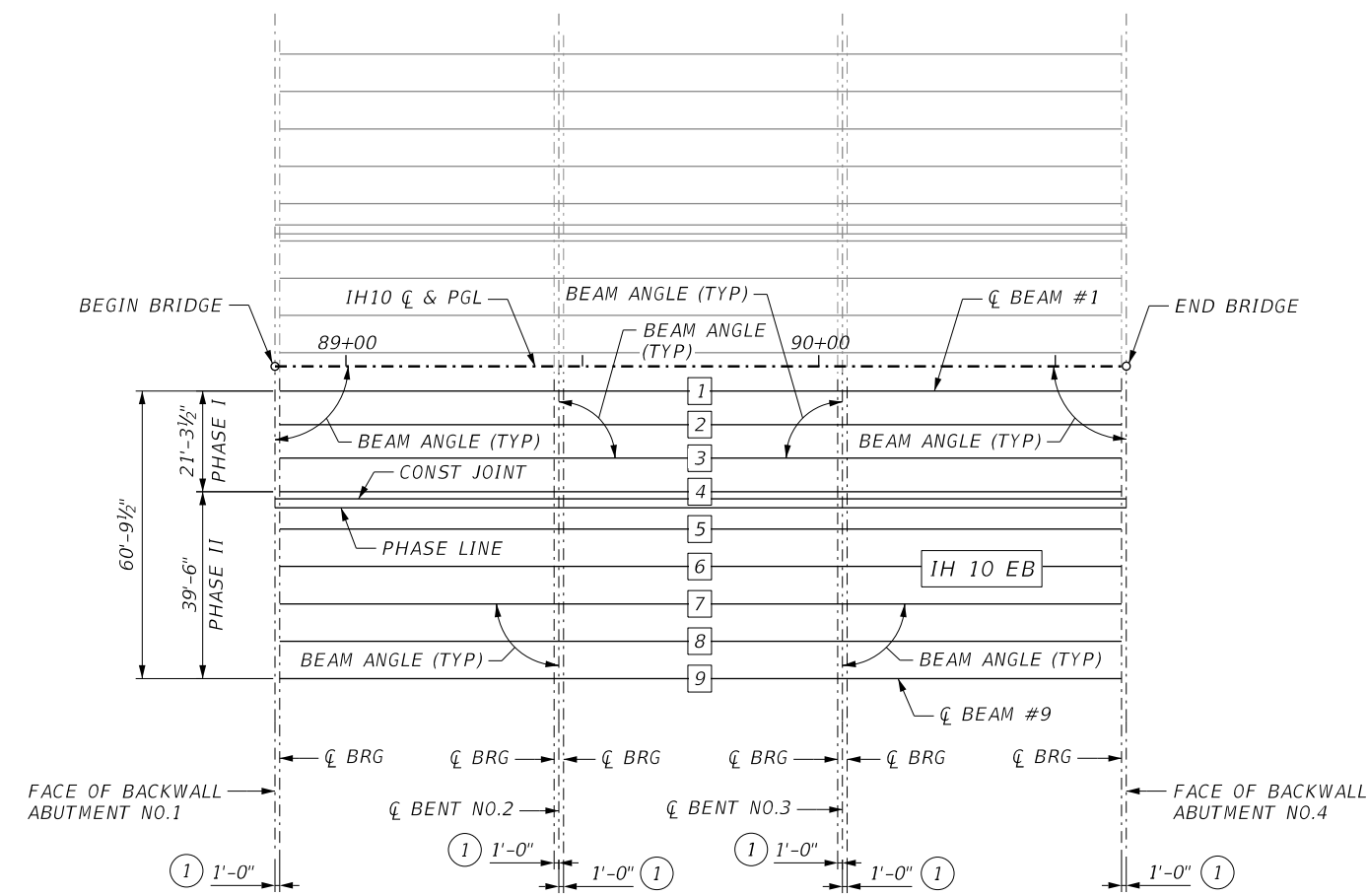
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IH 10 WIDENING (NMSL/SPUR 37)
 BENT NO. 2 & 3
 PHASE I & II
 DRAIN & TURNAROUND #CA BRIDGE
 IH 10 EB
 (STA 88+85 TO STA 90+65)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	599





- ① SEE ELASTOMERIC BEARING DETAILS (XBE) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- ③ BEAM SPACING IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X-BEAMS.

SPAN 1 (5XB20 BEAMS) **SPAN 2** (5XB20 BEAMS) **SPAN 3** (5XB20 BEAMS)
FRAMING PLAN

BEAM REPORT, SPAN 1				
	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG. ②	BEAM SLOPE
PHASE I	BEAM 1	60.0000	59.5003	-0.00338
	BEAM 2	60.0000	59.5003	-0.00338
	BEAM 3	60.0000	59.5003	-0.00338
	BEAM 4	60.0000	59.5003	-0.00338
PHASE II	BEAM 5	60.0000	59.5003	-0.00338
	BEAM 6	60.0000	59.5003	-0.00338
	BEAM 7	60.0000	59.5003	-0.00338
	BEAM 8	60.0000	59.5003	-0.00338
	BEAM 9	60.0000	59.5003	-0.00338

BENT NO. 1 (N 86 46 1.98 W)				
	DISTANCE BETWEEN STATION LINE AND BEAM 1. BEAM SPAC. ③	BEAM ANGLE (CL BENT) D M S	BEAM ANGLE (TYP) D M S	
PHASE I	BEAM 1	0.0000	90	0 0.00
	BEAM 2	7.1007	90	0 0.00
	BEAM 3	7.1007	90	0 0.00
	BEAM 4	7.1007	90	0 0.00
PHASE II	BEAM 5	7.8979	90	0 0.00
	BEAM 6	7.8979	90	0 0.00
	BEAM 7	7.8979	90	0 0.00
	BEAM 8	7.8979	90	0 0.00
	BEAM 9	7.8979	90	0 0.00
TOTAL		60.7917		

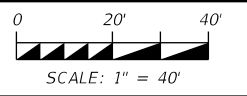
BENT NO. 3 (N 86 46 1.98 W)				
	DISTANCE BETWEEN STATION LINE AND BEAM 1. BEAM SPAC. ③	BEAM ANGLE (CL BENT) D M S	BEAM ANGLE (TYP) D M S	
PHASE I	BEAM 1	0.0000	90	0 0.00
	BEAM 2	7.1007	90	0 0.00
	BEAM 3	7.1007	90	0 0.00
	BEAM 4	7.1007	90	0 0.00
PHASE II	BEAM 5	7.8979	90	0 0.00
	BEAM 6	7.8979	90	0 0.00
	BEAM 7	7.8979	90	0 0.00
	BEAM 8	7.8979	90	0 0.00
	BEAM 9	7.8979	90	0 0.00
TOTAL		60.7917		

BEAM REPORT, SPAN 2				
	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG. ②	BEAM SLOPE
PHASE I	BEAM 1	60.0000	59.5007	-0.00474
	BEAM 2	60.0000	59.5007	-0.00474
	BEAM 3	60.0000	59.5007	-0.00474
	BEAM 4	60.0000	59.5007	-0.00474
PHASE II	BEAM 5	60.0000	59.5007	-0.00474
	BEAM 6	60.0000	59.5007	-0.00474
	BEAM 7	60.0000	59.5007	-0.00474
	BEAM 8	60.0000	59.5007	-0.00474
	BEAM 9	60.0000	59.5007	-0.00474

BENT NO. 2 (N 86 46 1.98 W)				
	DISTANCE BETWEEN STATION LINE AND BEAM 1. BEAM SPAC. ③	BEAM ANGLE (CL BENT) D M S	BEAM ANGLE (TYP) D M S	
PHASE I	BEAM 1	0.0000	90	0 0.00
	BEAM 2	7.1007	90	0 0.00
	BEAM 3	7.1007	90	0 0.00
	BEAM 4	7.1007	90	0 0.00
PHASE II	BEAM 5	7.8979	90	0 0.00
	BEAM 6	7.8979	90	0 0.00
	BEAM 7	7.8979	90	0 0.00
	BEAM 8	7.8979	90	0 0.00
	BEAM 9	7.8979	90	0 0.00
TOTAL		60.7917		

BENT NO. 4 (N 86 46 1.98 W)				
	DISTANCE BETWEEN STATION LINE AND BEAM 1. BEAM SPAC. ③	BEAM ANGLE (CL BENT) D M S	BEAM ANGLE (TYP) D M S	
PHASE I	BEAM 1	0.0000	90	0 0.00
	BEAM 2	7.1007	90	0 0.00
	BEAM 3	7.1007	90	0 0.00
	BEAM 4	7.1007	90	0 0.00
PHASE II	BEAM 5	7.8979	90	0 0.00
	BEAM 6	7.8979	90	0 0.00
	BEAM 7	7.8979	90	0 0.00
	BEAM 8	7.8979	90	0 0.00
	BEAM 9	7.8979	90	0 0.00
TOTAL		60.7917		

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IH 10 WIDENING (NMSL/SPUR 37)
BEAM LAYOUT
DRAIN & TURNAROUND #CA BRIDGE
 IH 10 EB
 (STA 88+85 TO STA 90+65)

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	600

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

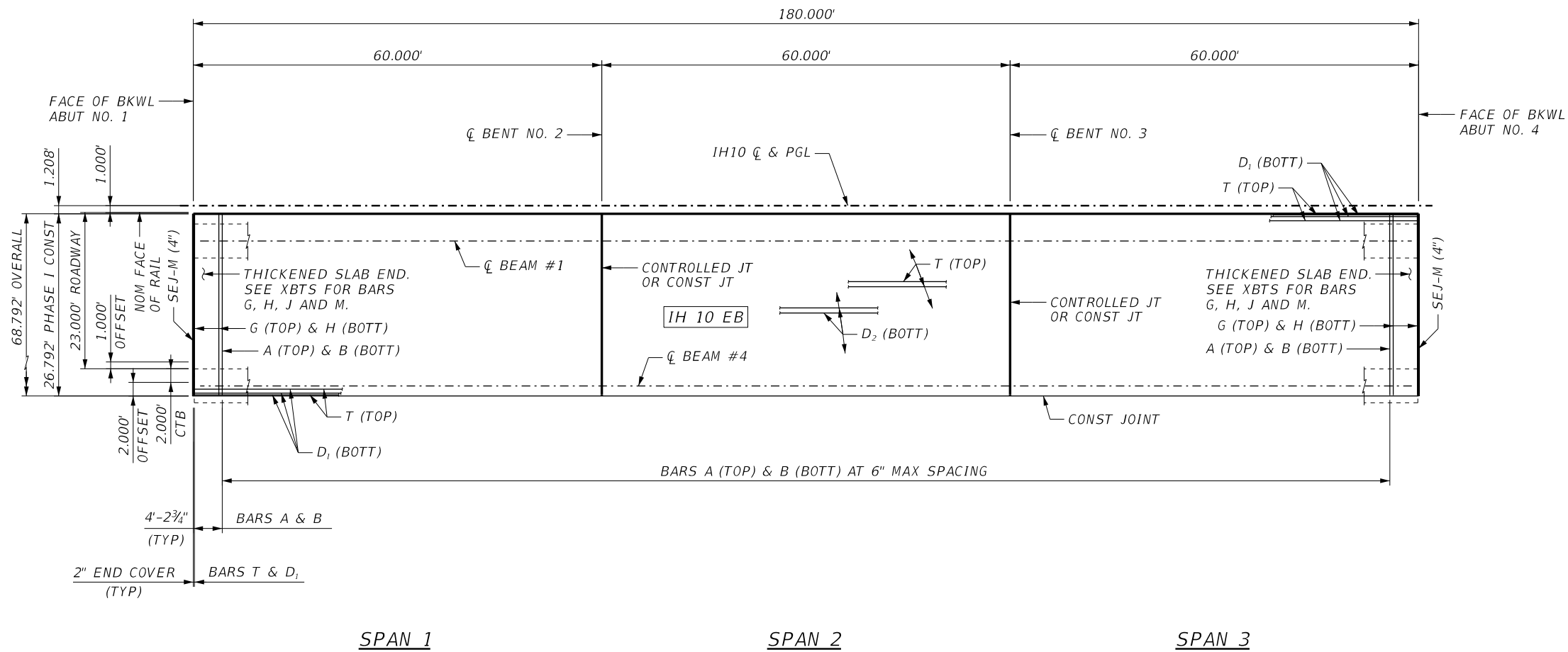
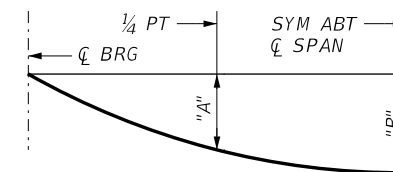


TABLE OF DEFLECTIONS PHASE I

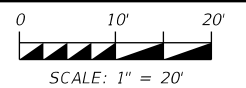
SPAN	BEAM NO.	"A"	"B"
		FT	FT
1	1	0.076	0.107
	2 & 3	0.073	0.102
	4	0.056	0.079
2 & 3	1	0.076	0.107
	2 & 3	0.073	0.102
	4	0.056	0.078



DEAD LOAD DEFLECTION DIAGRAM

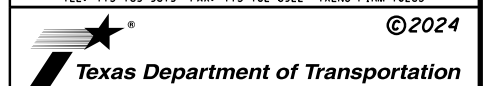
DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



Wirat Wanichakorn

3/28/2024



IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)

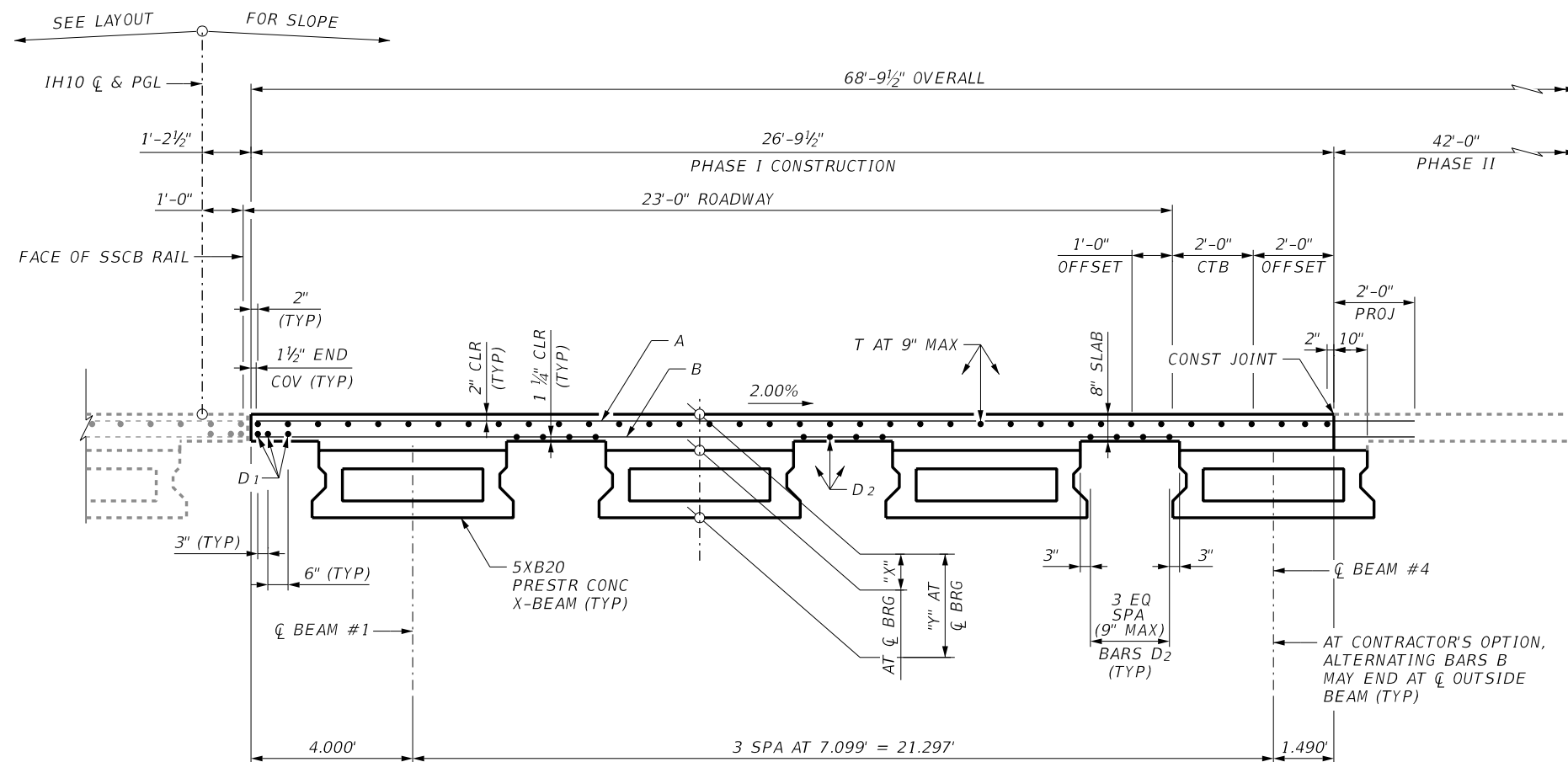
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	601

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

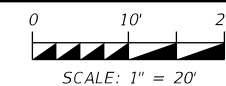


TYPICAL TRANSVERSE SECTION PHASE I
(5XB20) SPANS 1 THRU 3

SPAN NO.	REINF CONCRETE SLAB		5XB20 PRESTR CONCRETE X-BEAMS		TOTAL REINF STEEL	
	SF	LF	CY	LB		
1	1,608	238.00	45.7	10,449		
2	1,608	238.00	44.8	10,449		
3	1,608	238.01	45.7	10,449		
TOTAL	4,824	714.01	136.2	31,347		

SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	1-4	11"	31"

HL93 LOADING

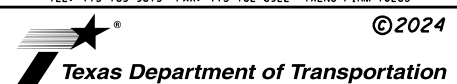


SCALE: 1" = 20'



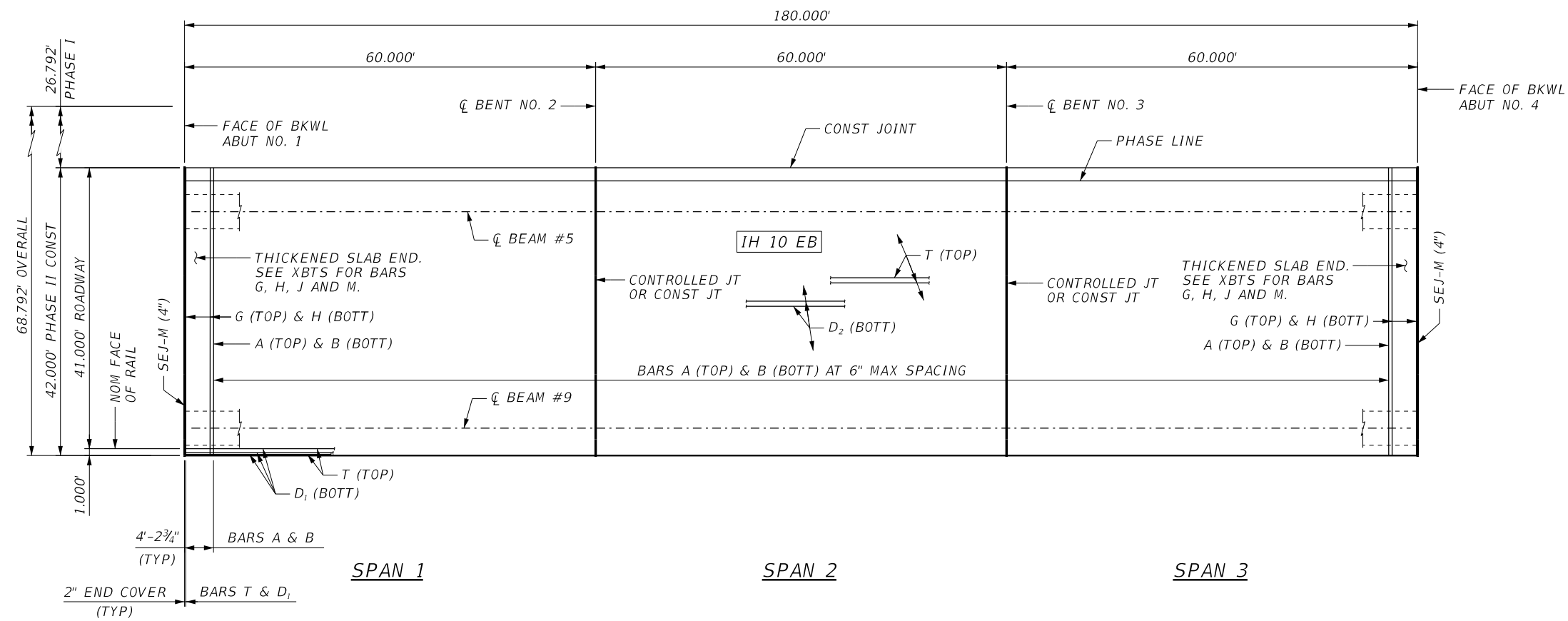
Wirat Wanichakorn 3/28/2024

NO.	DATE	REVISION	APPROV.



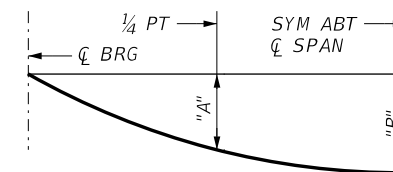
IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	602



PLAN PHASE II

TABLE OF DEFLECTIONS PHASE II			
SPAN	BEAM NO.	"A"	"B"
		FT	FT
ALL	5-9	0.080	0.112

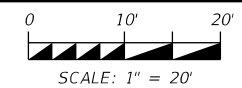


DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY (EC = 5,000 KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

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SCALE: 1" = 20'



Steve Groves
3/28/2024

NO.	DATE	REVISION	APPROV.

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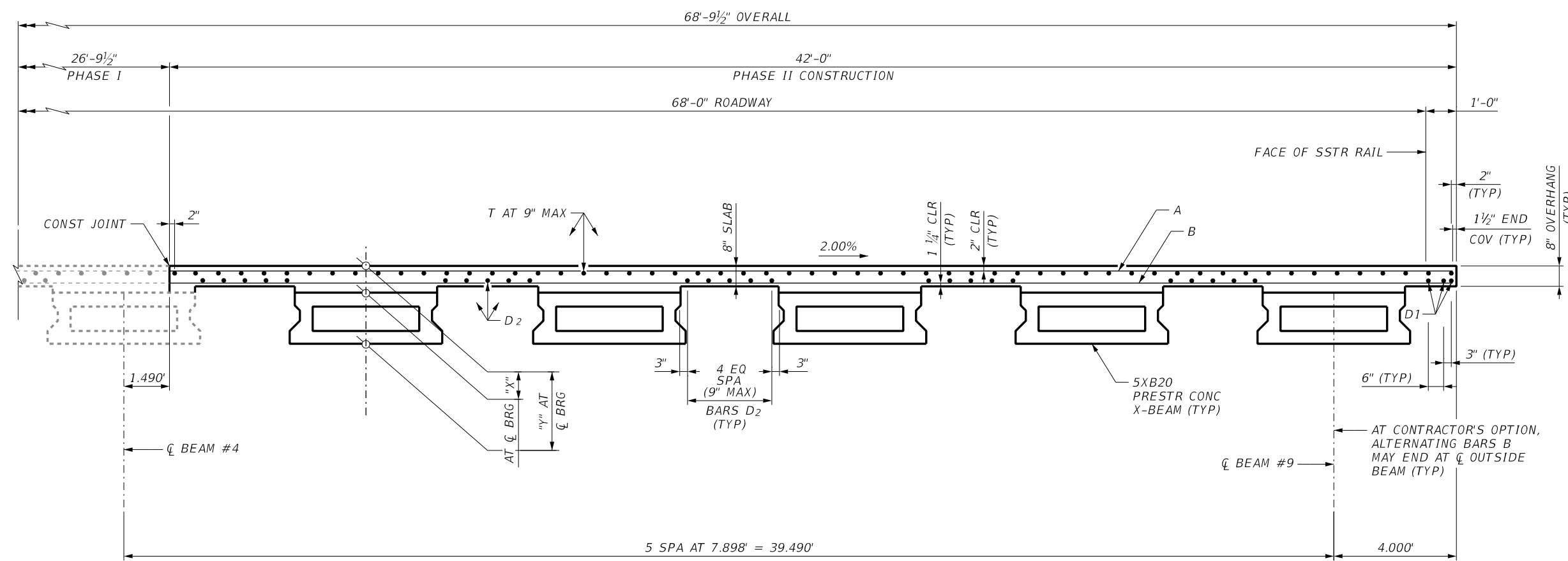
IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	603

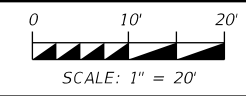
BAR TABLE PHASE I	
BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.



TYPICAL TRANSVERSE SECTION PHASE II
(5XB20) SPANS 1 THRU 3

HL93 LOADING



Wirat Wanichakorn
3/28/2024

TABLE OF ESTIMATED QUANTITIES PHASE II				
SPAN LENGTH	REINF CONCRETE SLAB	5XB20 PRESTR CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
NO.	SF	LF	CY	LB
1	2,520	297.50	70.8	16,380
2	2,520	297.50	69.4	16,380
3	2,520	297.51	70.8	16,380
TOTAL	7,560	892.51	211.0	49,140

TABLE OF SECTION DEPTHS FOR PHASE II			
SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	5-9	11"	31"

NO.	DATE	REVISION	APPROV.



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II**
DRAIN & TURNAROUND #CA BRIDGE
IH 10 EB
(STA 88+85 TO STA 90+65)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	604

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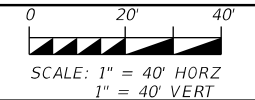
GENERAL NOTES

- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ⊕ - DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING

HL93 LOADING



Wirat Wanichakorn
3/28/2024

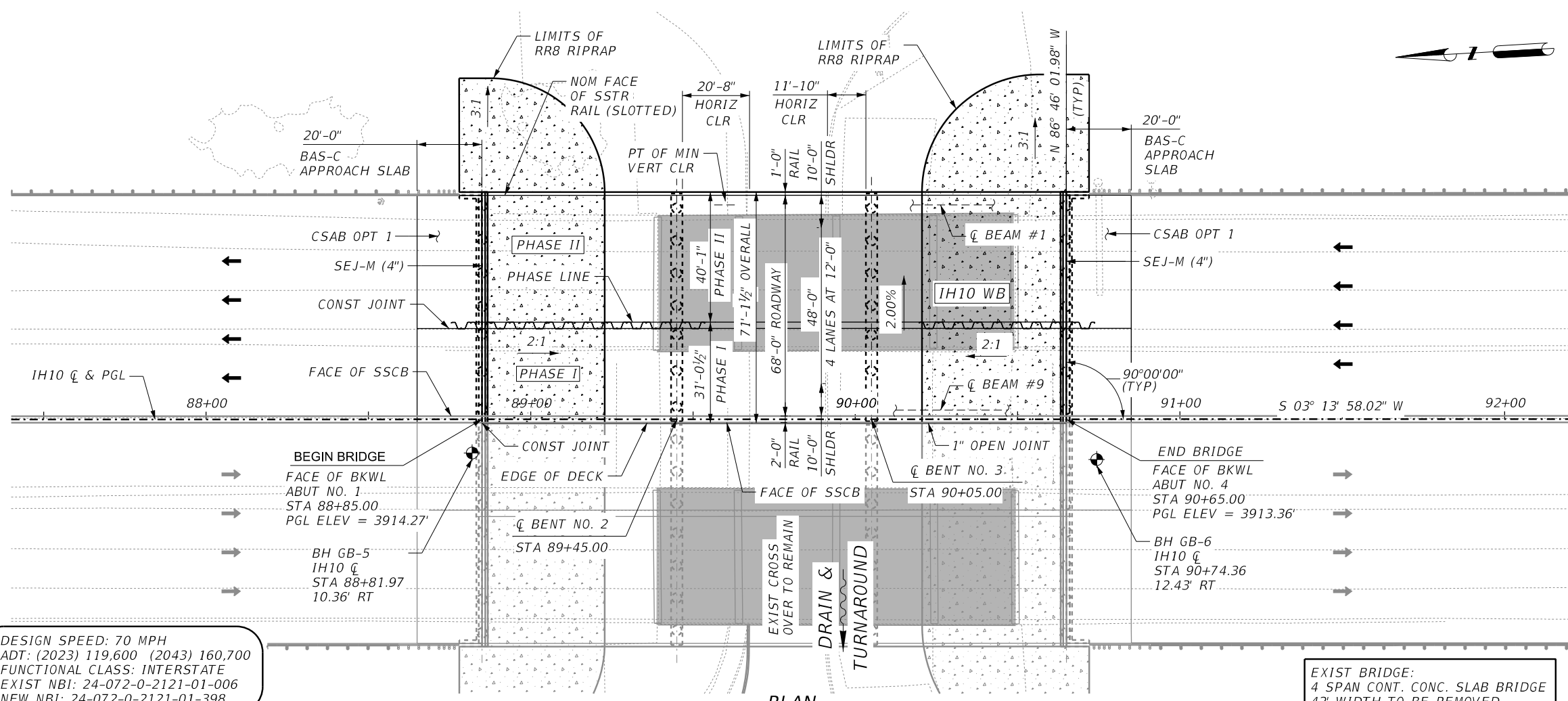
CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE LAYOUT
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

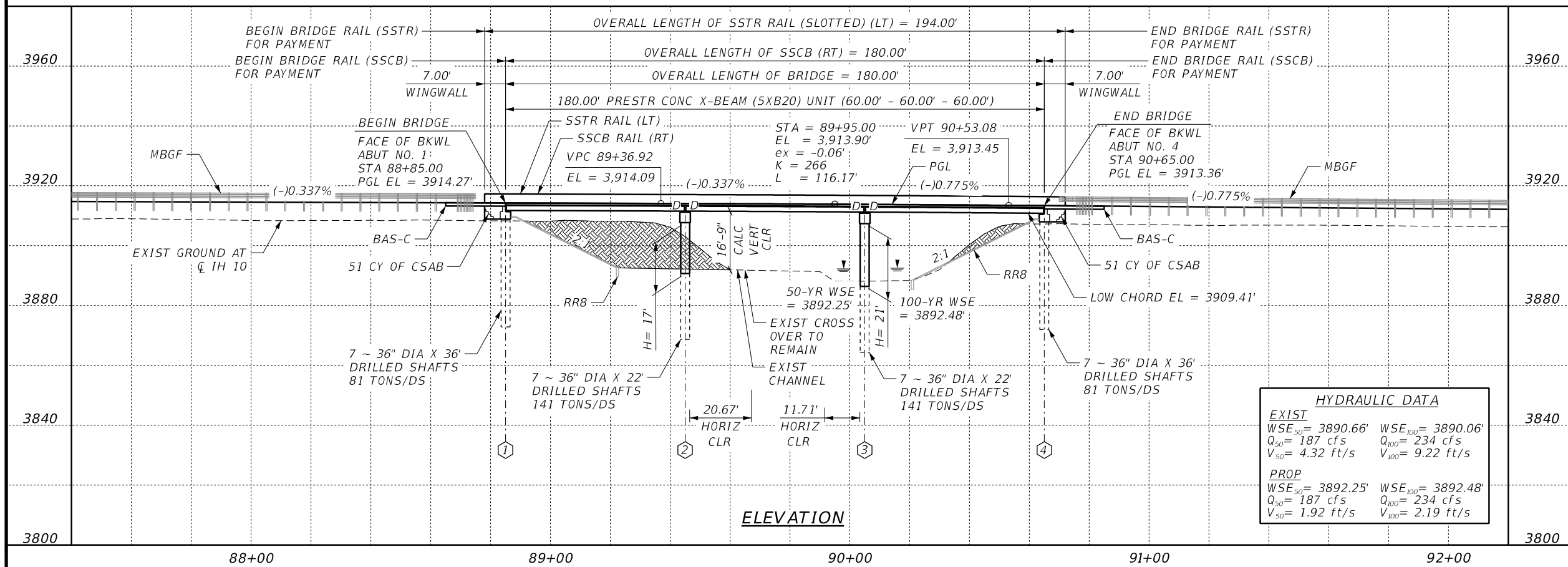
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.		
104	605		



DESIGN SPEED: 70 MPH
ADT: (2023) 119,600 (2043) 160,700
FUNCTIONAL CLASS: INTERSTATE
EXIST NBI: 24-072-0-2121-01-006
NEW NBI: 24-072-0-2121-01-398

EXIST BRIDGE:
4 SPAN CONT. CONC. SLAB BRIDGE
42' WIDTH TO BE REMOVED

PLAN



HYDRAULIC DATA

EXIST		PROF	
WSE ₅₀ = 3890.66'	WSE ₁₀₀ = 3890.06'	WSE ₅₀ = 3892.25'	WSE ₁₀₀ = 3892.48'
Q ₅₀ = 187 cfs	Q ₁₀₀ = 234 cfs	Q ₅₀ = 187 cfs	Q ₁₀₀ = 234 cfs
V ₅₀ = 4.32 ft/s	V ₁₀₀ = 9.22 ft/s	V ₅₀ = 1.92 ft/s	V ₁₀₀ = 2.19 ft/s

ELEVATION

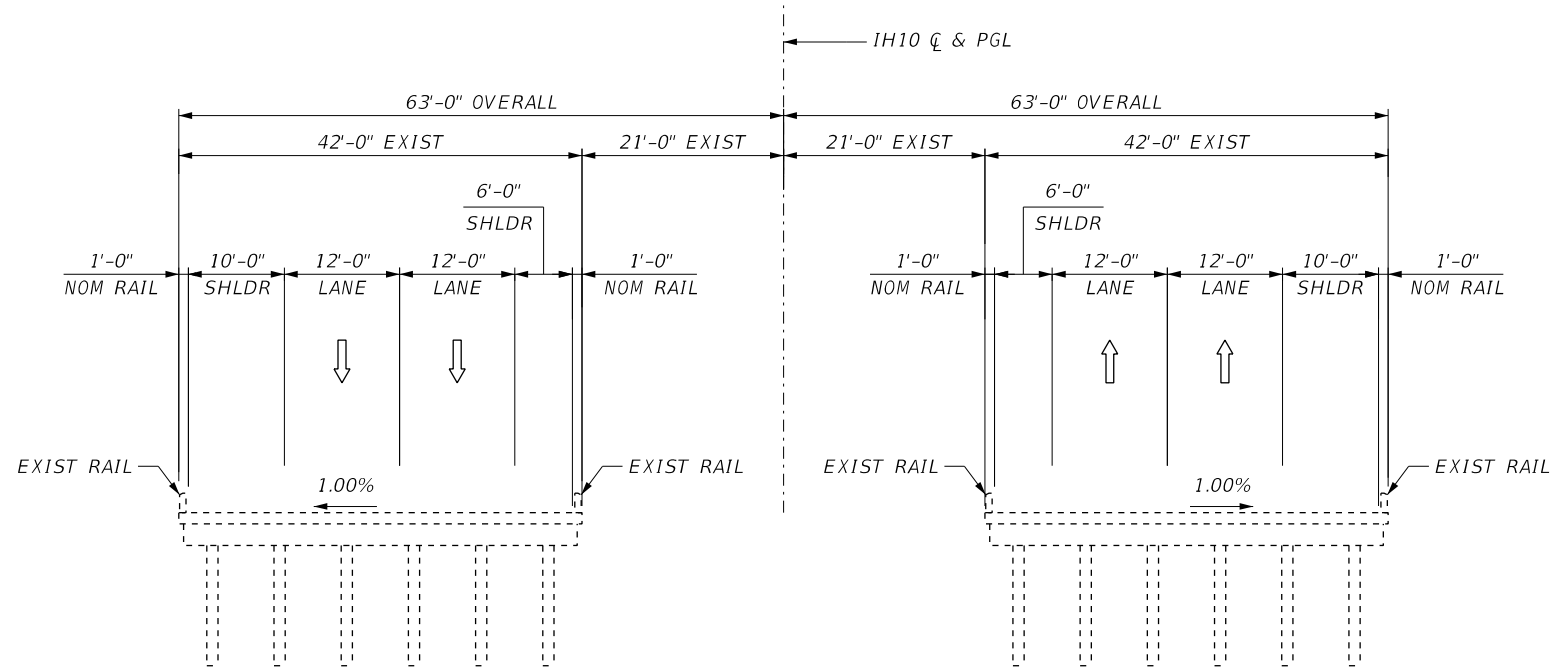
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 3/28/2024

3/28/2024 3:31:28 PM

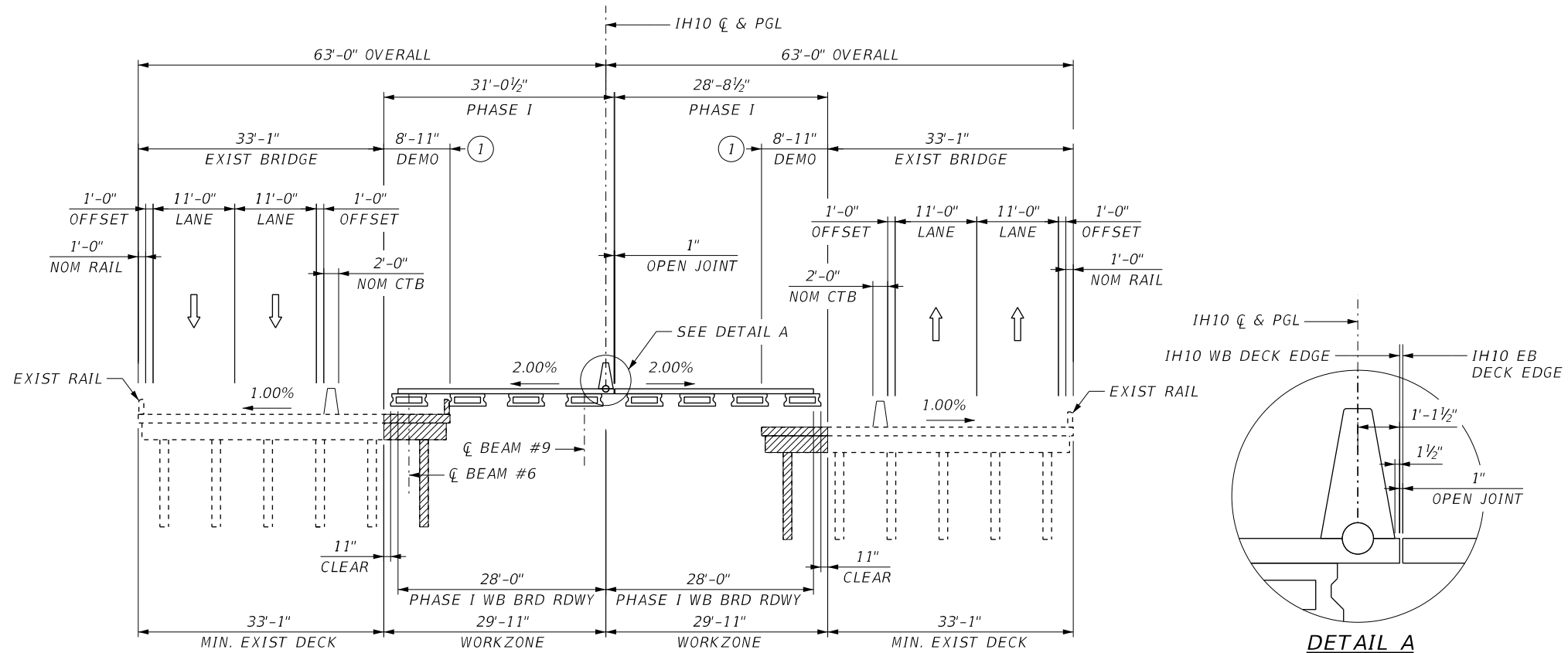
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LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



EXIST SECTION



PHASE I SECTION

- ① SAWCUT EXISTING CAP AS NECESSARY TO AVOID CONFLICT WITH BEAM. DO NOT CUT BEYOND LIMITS OF DEMOLITION. DO NOT REMOVE EXISTING COLUMNS NOT MARKED FOR DEMOLITION IN THIS PHASE.

HL93 LOADING

NOT TO SCALE



Steve Wilkerson 3/28/2024



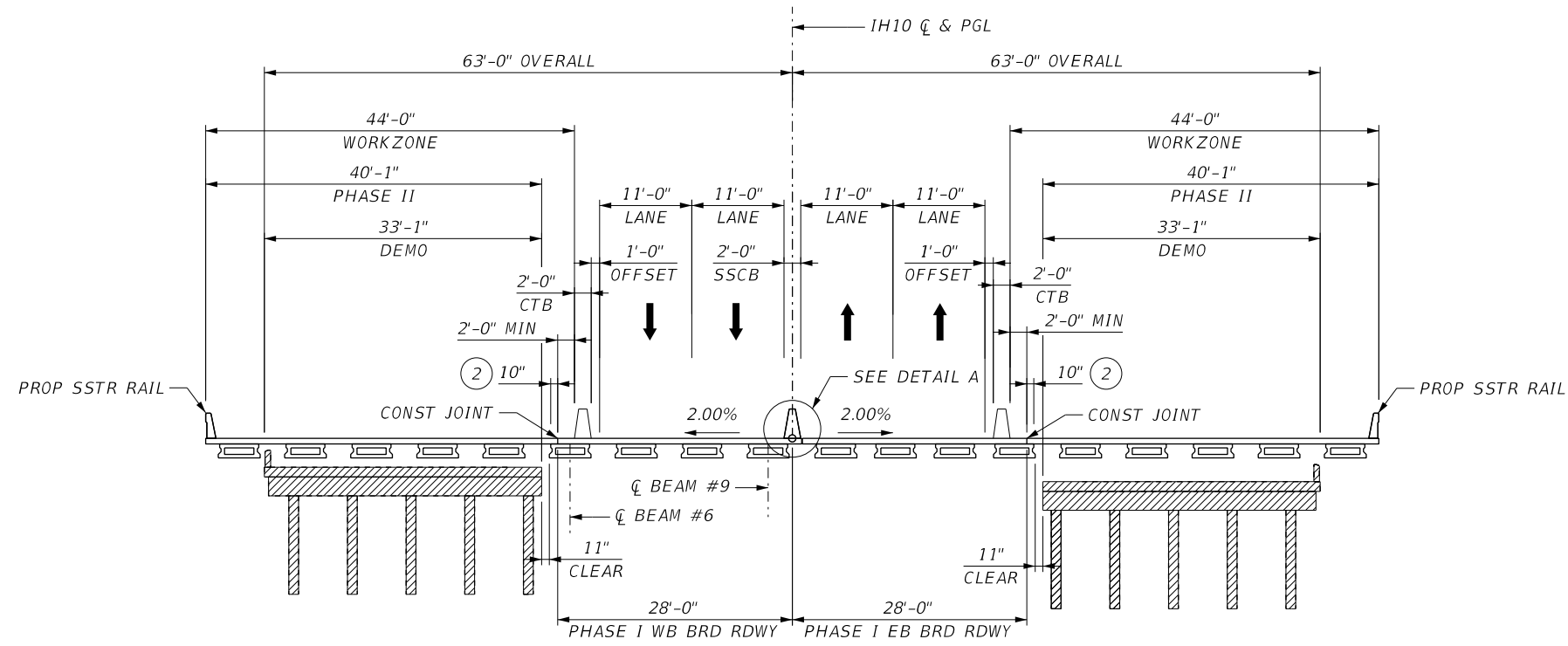
IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	606

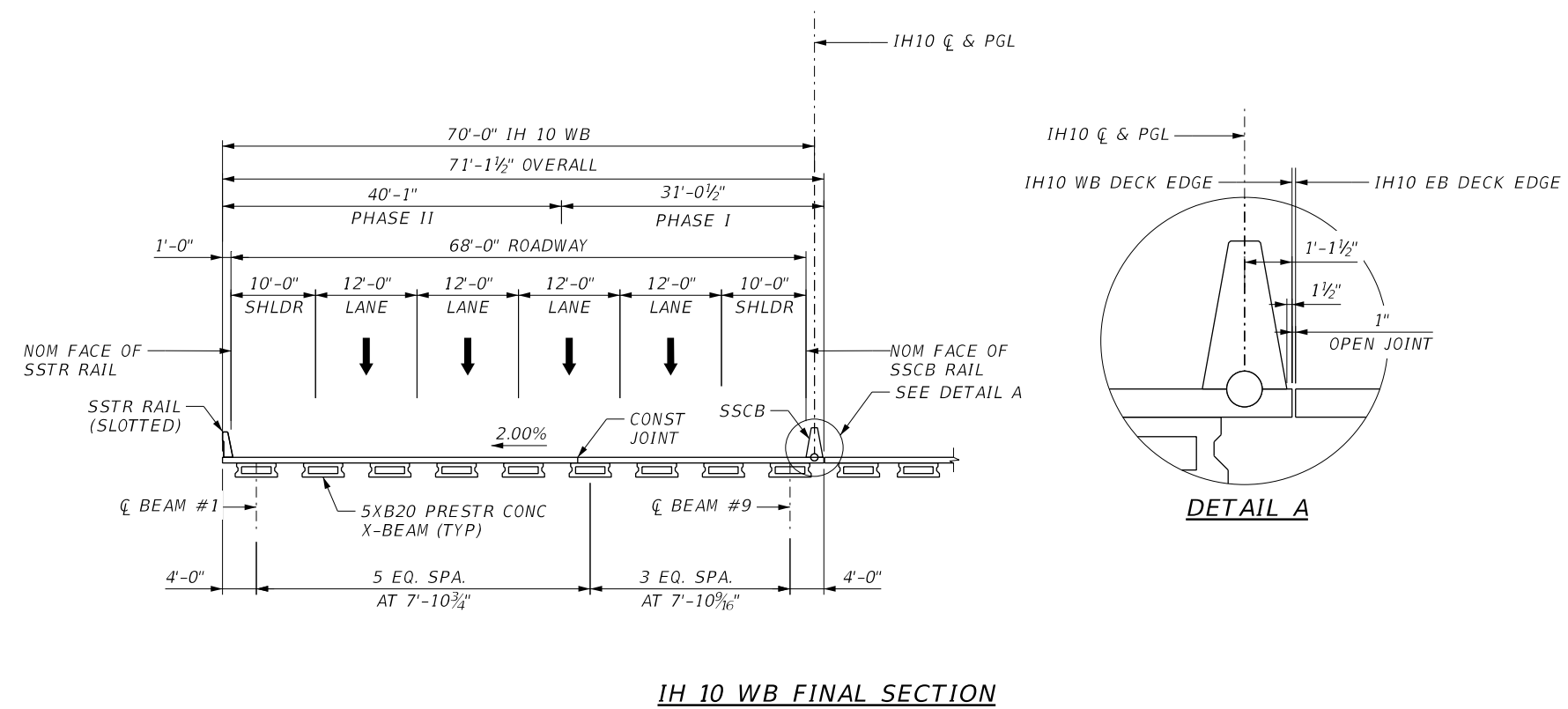
LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



PHASE II SECTION

(2) EDGE OF DECK TO EDGE OF TOP OF BEAM.



HL93 LOADING

NOT TO SCALE



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3/28/2024

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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 2 OF 2

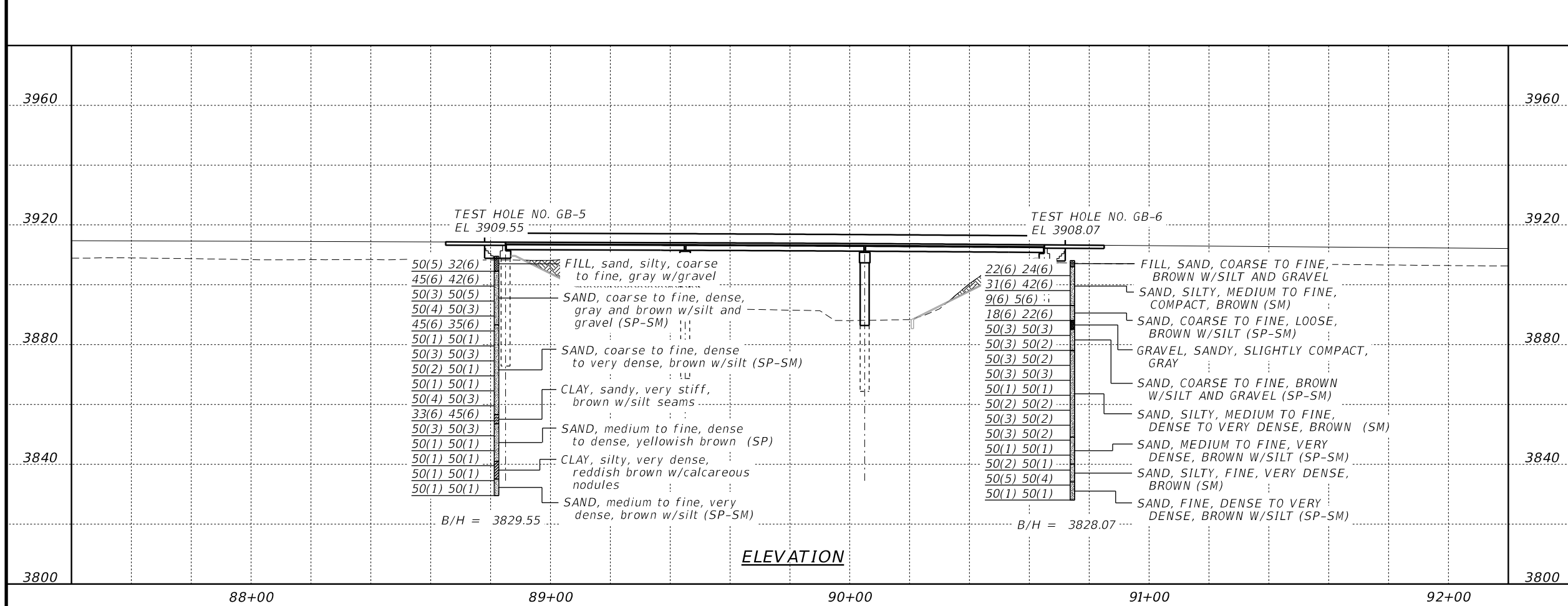
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	607

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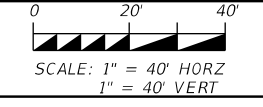
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 3/28/2024



HL93 LOADING



Stevie Wilkerson
 3/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BORING LOGS
 DRAIN & TURNAROUND
 #CA & #CB BRIDGE
 IH 10 EB & IH 10 WB
 (STA 88+85 TO STA 90+65)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10

STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	608



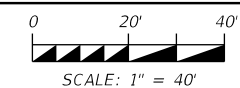
GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.
3. DRILLED SHAFT INSTALLATION WILL REQUIRE THE USE OF SLURRY DISPLACEMENT METHODS AND SURFACE CASING. THE SURFACE CASING IS TEMPORARY AND SHALL BE RETRIEVED AS OUTLINED IN TXDOT STANDARD SPECIFICATIONS.

LEGEND

- = BORE HOLE
- = DRILLED SHAFT
- = TEMP SPL SHORING

HL93 LOADING



Wirat Wanichakorn
3/28/2024

NO.	DATE	REVISION	APPROV.

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TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

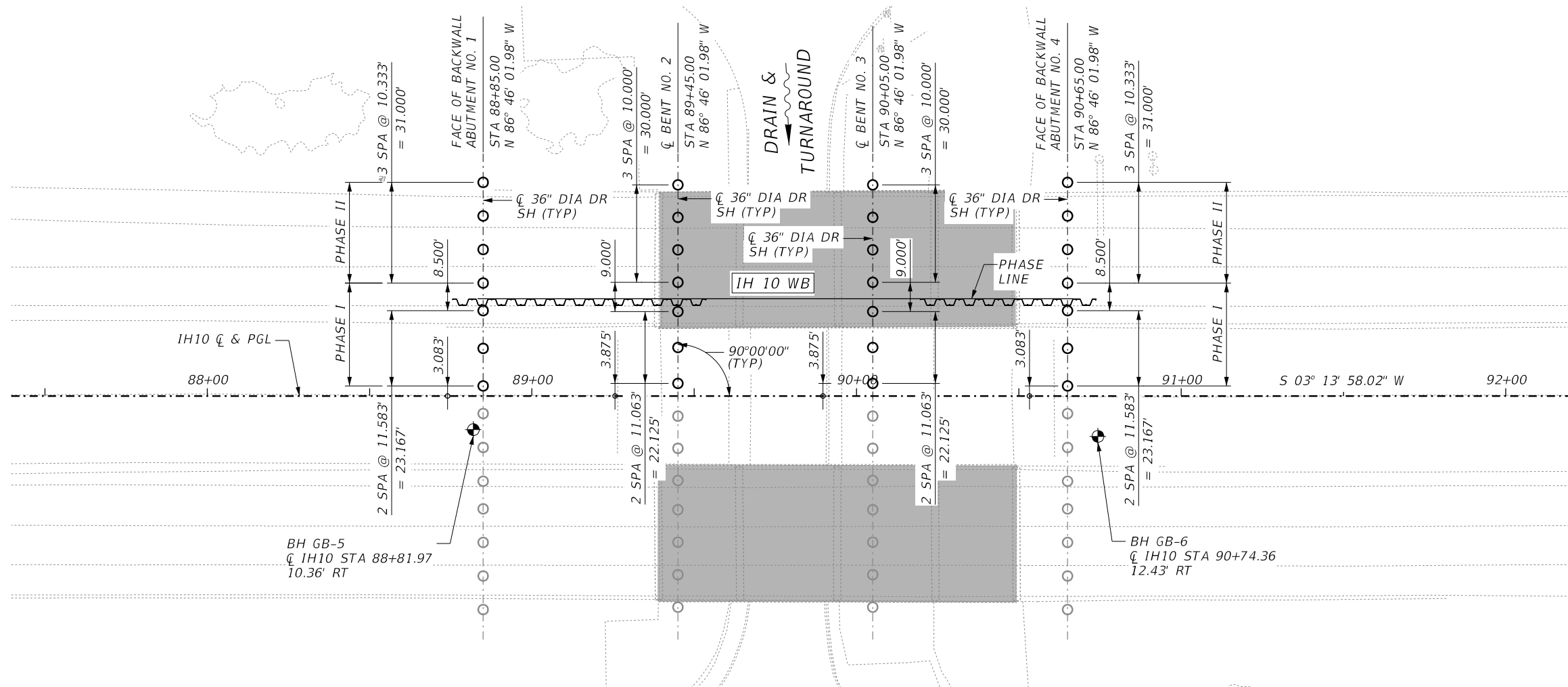


IH 10 WIDENING (NMSL/SPUR 37)

FOUNDATION LAYOUT
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	609

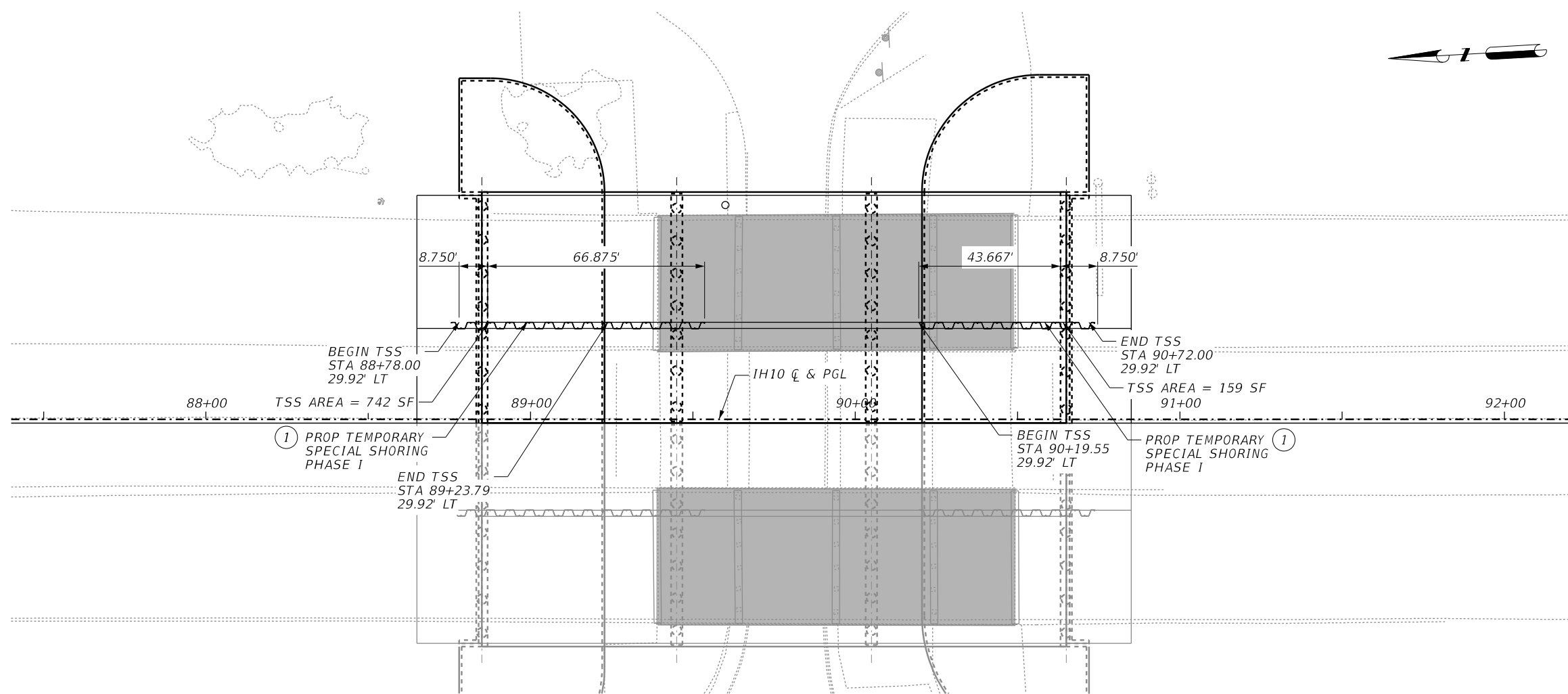


ABUT/BENT	TONS/SHAFT
1 & 4	81
2 & 3	141

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LEGEND

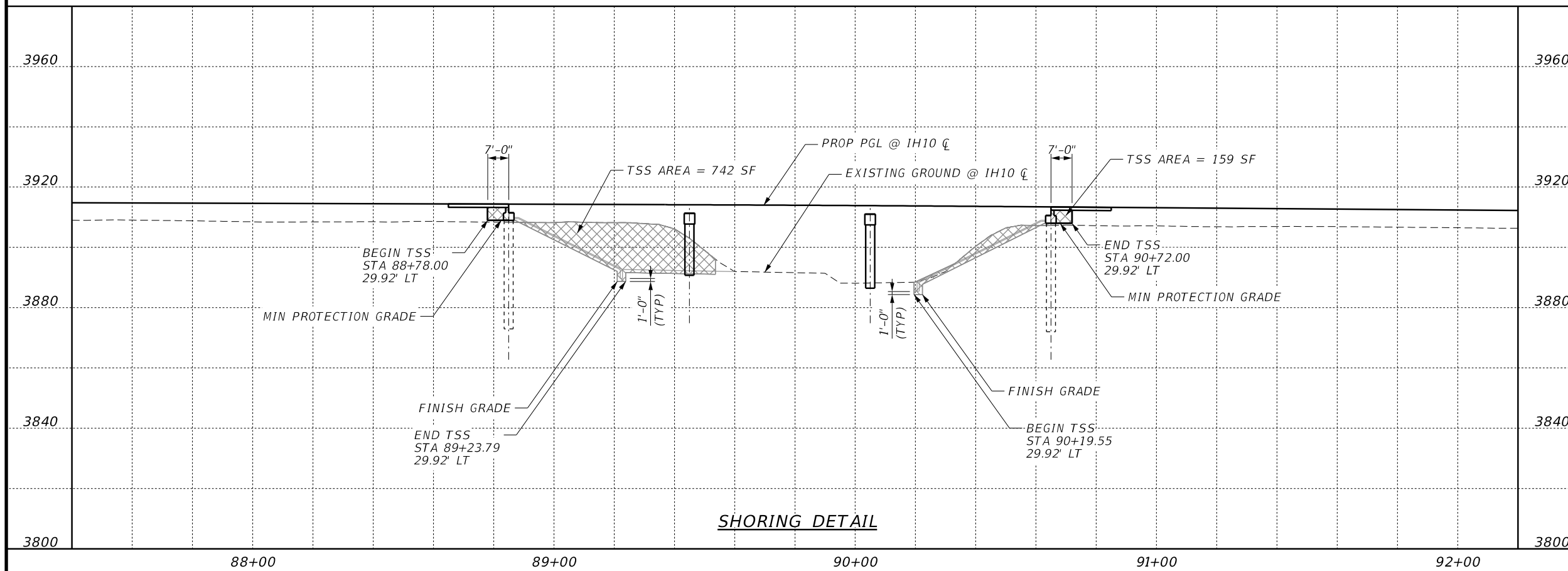
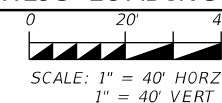
TEMPORARY SPL SHORING



PLAN

1 PAID FOR UNDER ITEM 403 TEMPORARY SPL SHORING.

HL93 LOADING



SHORING DETAIL



Steve Wilkerson 3/28/2024

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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	610

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BEARING SEAT ELEVATIONS

				PHASE II					PHASE I				
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	
1	ABUT	1	(FWD)	L	3910.070	3910.228	3910.386	3910.544	3910.702	3910.860	3911.018	3911.175	3911.333
			R	3910.190	3910.348	3910.506	3910.664	3910.822	3910.980	3911.138	3911.295	3911.453	
2	BENT	2	(BK)	L	3909.874	3910.032	3910.190	3910.348	3910.506	3910.664	3910.822	3910.979	3911.137
			R	3909.994	3910.152	3910.310	3910.468	3910.626	3910.784	3910.942	3911.099	3911.257	
		2	(FWD)	L	3909.867	3910.025	3910.183	3910.341	3910.499	3910.657	3910.815	3910.972	3911.130
			R	3909.987	3910.145	3910.303	3910.461	3910.619	3910.777	3910.935	3911.092	3911.250	
3	BENT	3	(BK)	L	3909.592	3909.750	3909.908	3910.066	3910.224	3910.382	3910.540	3910.697	3910.855
			R	3909.712	3909.870	3910.028	3910.186	3910.344	3910.502	3910.660	3910.817	3910.975	
		3	(FWD)	L	3909.580	3909.738	3909.896	3910.054	3910.212	3910.370	3910.528	3910.685	3910.843
			R	3909.700	3909.858	3910.016	3910.174	3910.332	3910.490	3910.648	3910.805	3910.963	
4	ABUT	4	(BK)	L	3909.174	3909.332	3909.490	3909.648	3909.806	3909.964	3910.121	3910.279	3910.436
			R	3909.294	3909.452	3909.610	3909.768	3909.926	3910.084	3910.241	3910.399	3910.556	



Wirat Wanichakorn
3/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BEARING SEAT ELEVATIONS
DRAIN & TURNAROUND #CB BRIDGE
 IH 10 WB
 (STA 88+85 TO STA 90+65)

SHEET 1 OF 1

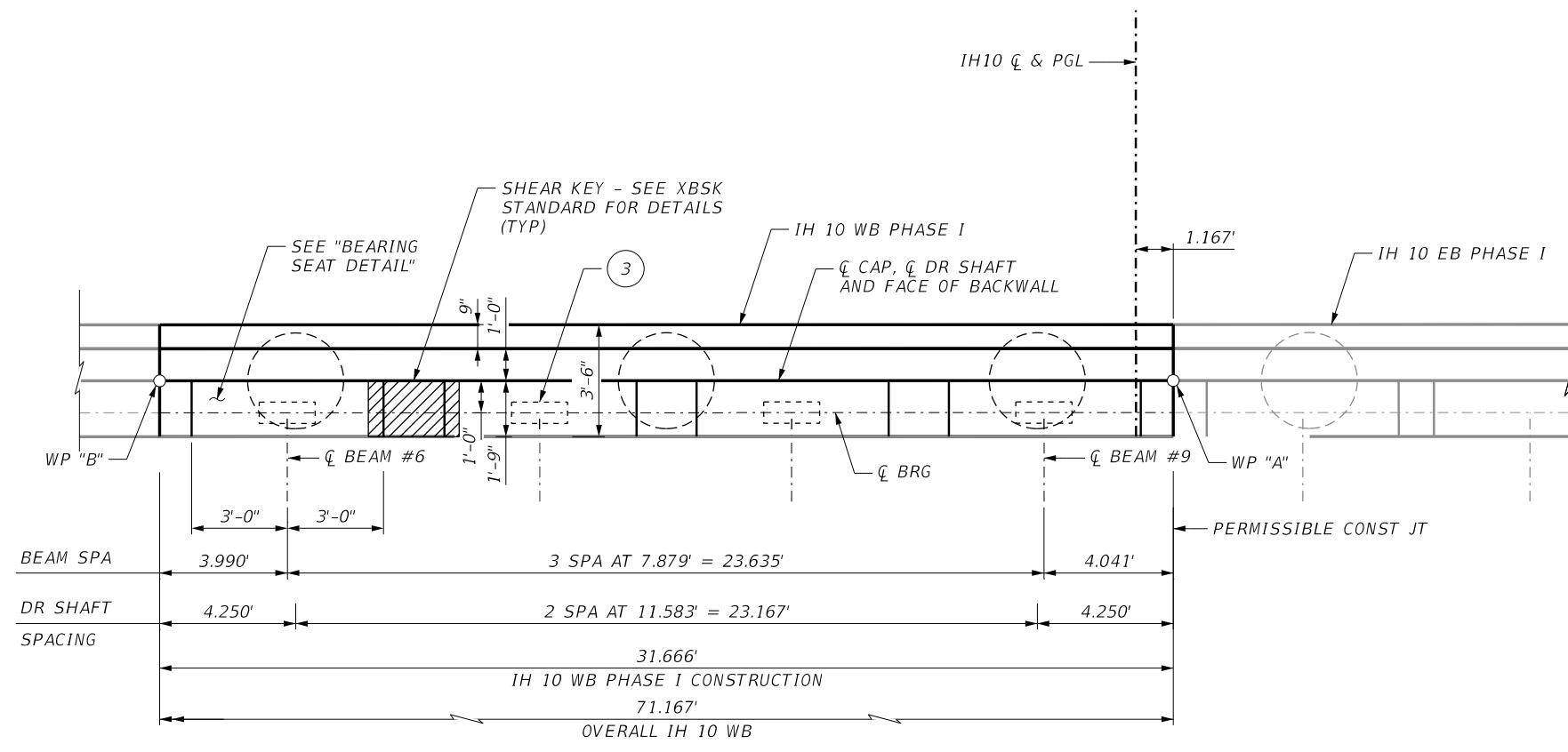
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	611

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPlicing TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

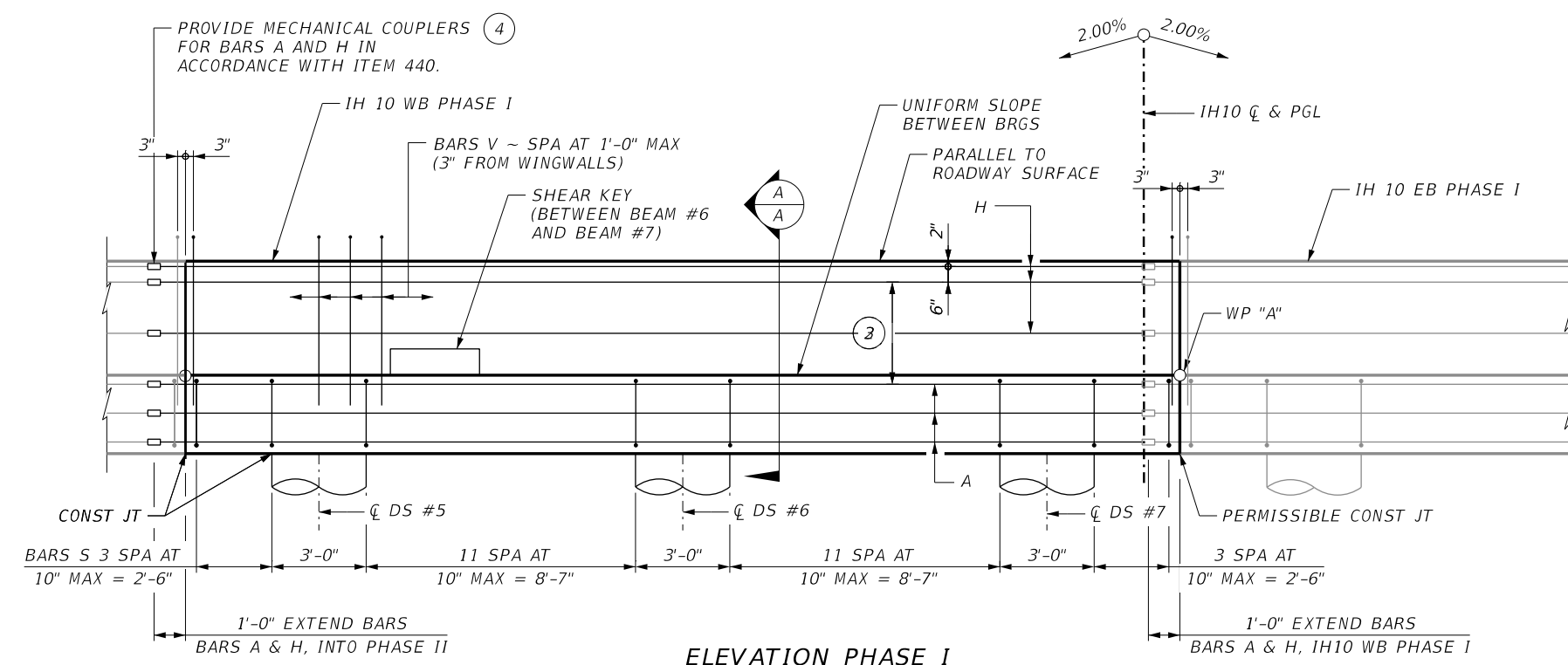
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



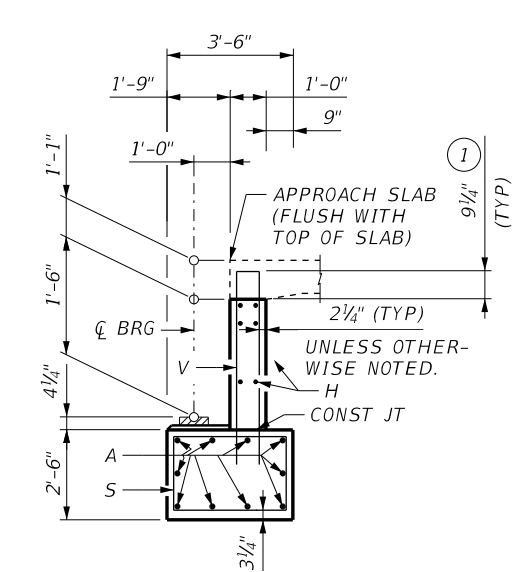
PLAN PHASE I

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
A	3911.352'	3910.436'
B	3910.719'	3909.803'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
5	3908.304'	3907.388'
6	3908.535'	3907.620'
7	3908.767'	3907.851'

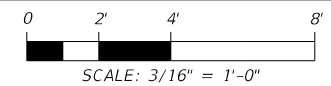


ELEVATION PHASE I



SECTION A-A

HL93 LOADING



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Texas Department of Transportation

**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)**

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	612

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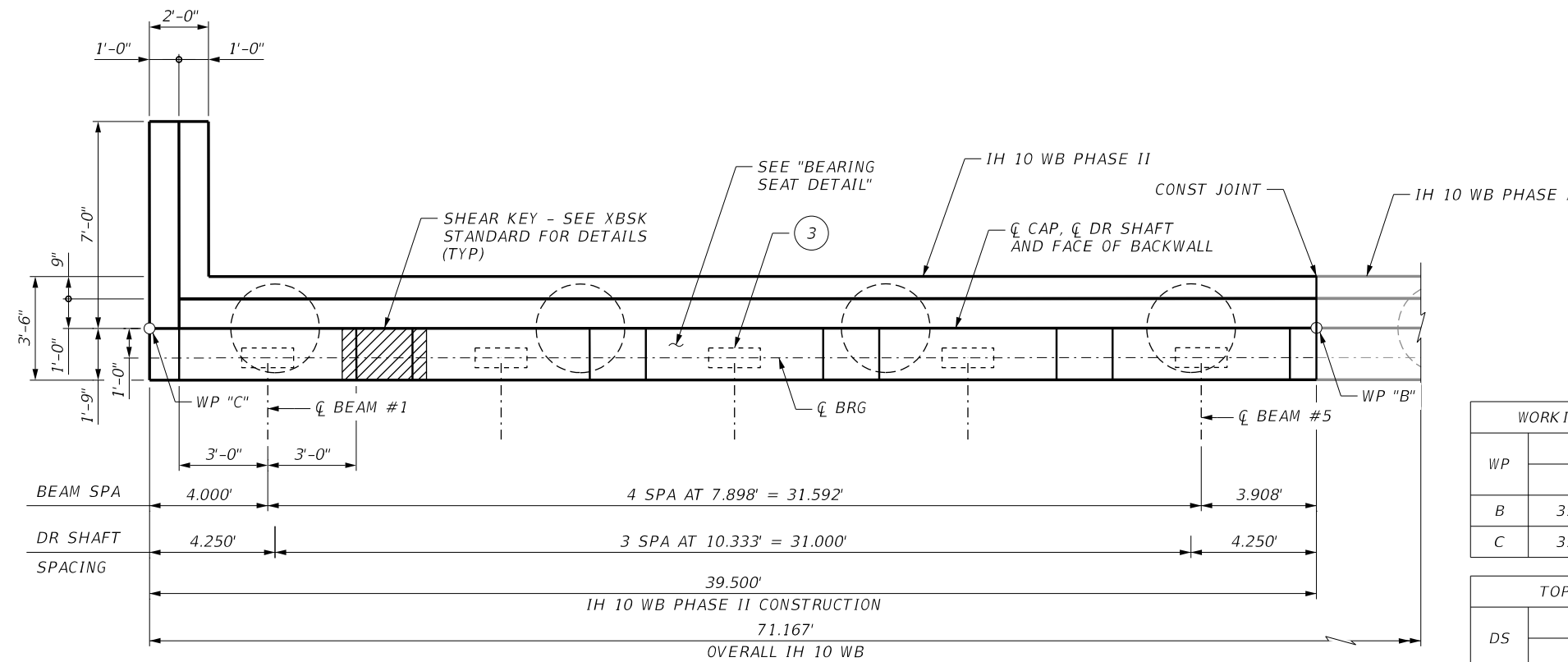
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GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPlicing TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".

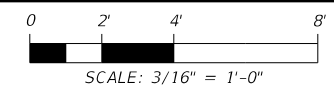


PLAN PHASE II

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
B	3910.719'	3909.803'
C	3909.929'	3909.013'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
1	3907.514'	3906.598'
2	3907.720'	3906.805'
3	3907.927'	3907.011'
4	3908.134'	3907.218'

HL93 LOADING



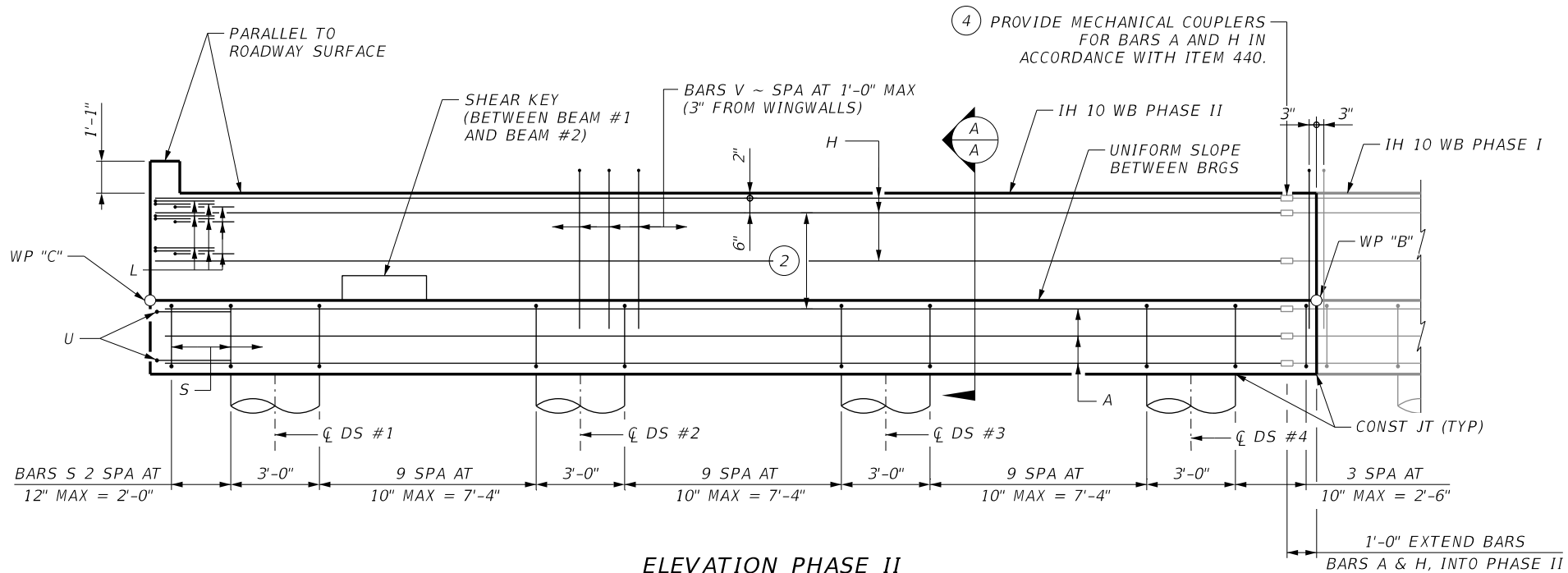
Wirat Wanichakorn
3/28/2024



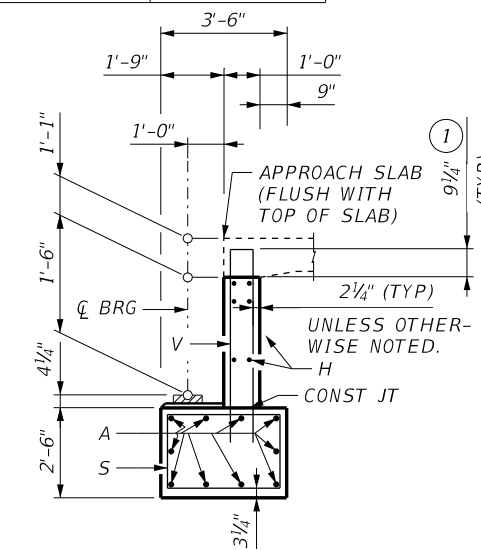
**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE II
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)**

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	104	613

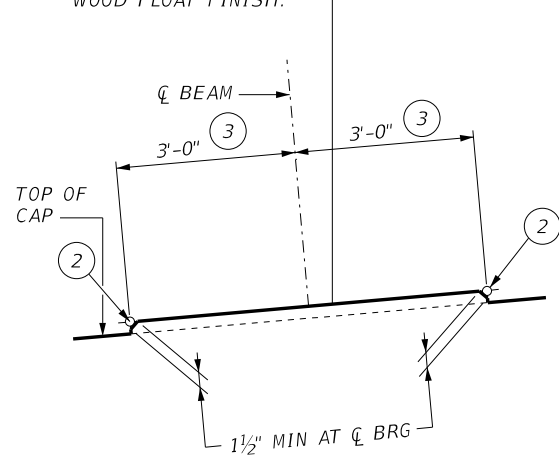


ELEVATION PHASE II



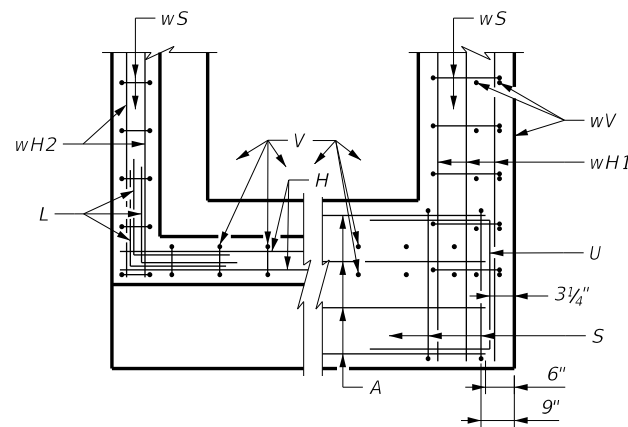
SECTION A-A

LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



BACKWALL CAP

CORNER DETAILS

TABLE OF ESTIMATED QUANTITIES PHASE I (ONE ABUT)

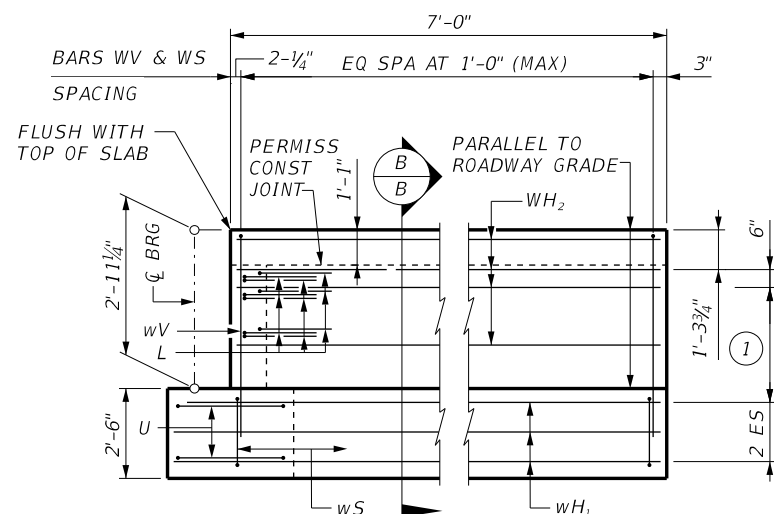
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31' - 8"	1,682
H	6	#6	31' - 8"	285
L	18	#6	4' - 0"	108
S	30	#5	11' - 5"	355
U	4	#6	8' - 0"	48
V	32	#5	8' - 4"	282
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,761
CONC (ABUT)			CY	12.6

TABLE OF ESTIMATED QUANTITIES PHASE II (ONE ABUT)

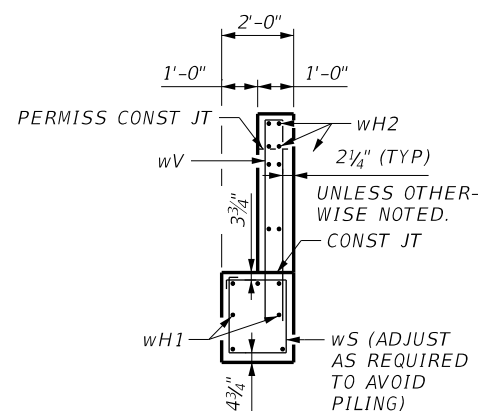
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	38' - 0"	2,019
H	6	#6	38' - 4"	345
L	9	#6	4' - 0"	54
S	36	#5	11' - 5"	425
U	4	#6	8' - 0"	48
V	39	#5	8' - 4"	341
wH1	7	#6	8' - 5"	88
wH2	8	#6	6' - 8"	80
wS	8	#4	7' - 8"	41
wV	8	#5	8' - 7"	72
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,514
CONC (ABUT)			CY	18.0

KEYED NOTES

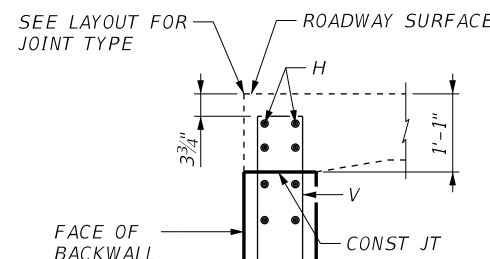
- ① SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- ② RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ③ MEASURED ALONG ϕ OF BEARING



WINGWALL ELEVATION

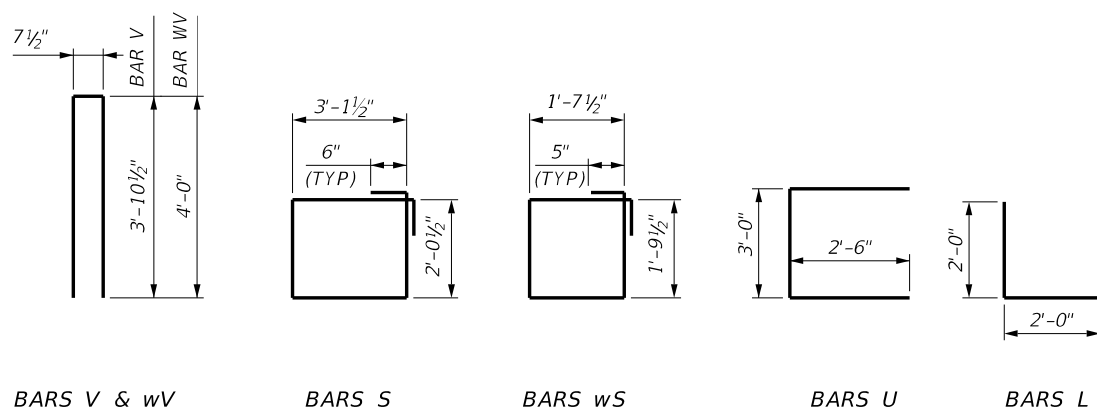


SECTION B-B

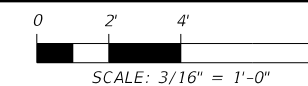


BACKWALL DETAIL

(WITH APPROACH SLAB)



HL93 LOADING



Steve Grove

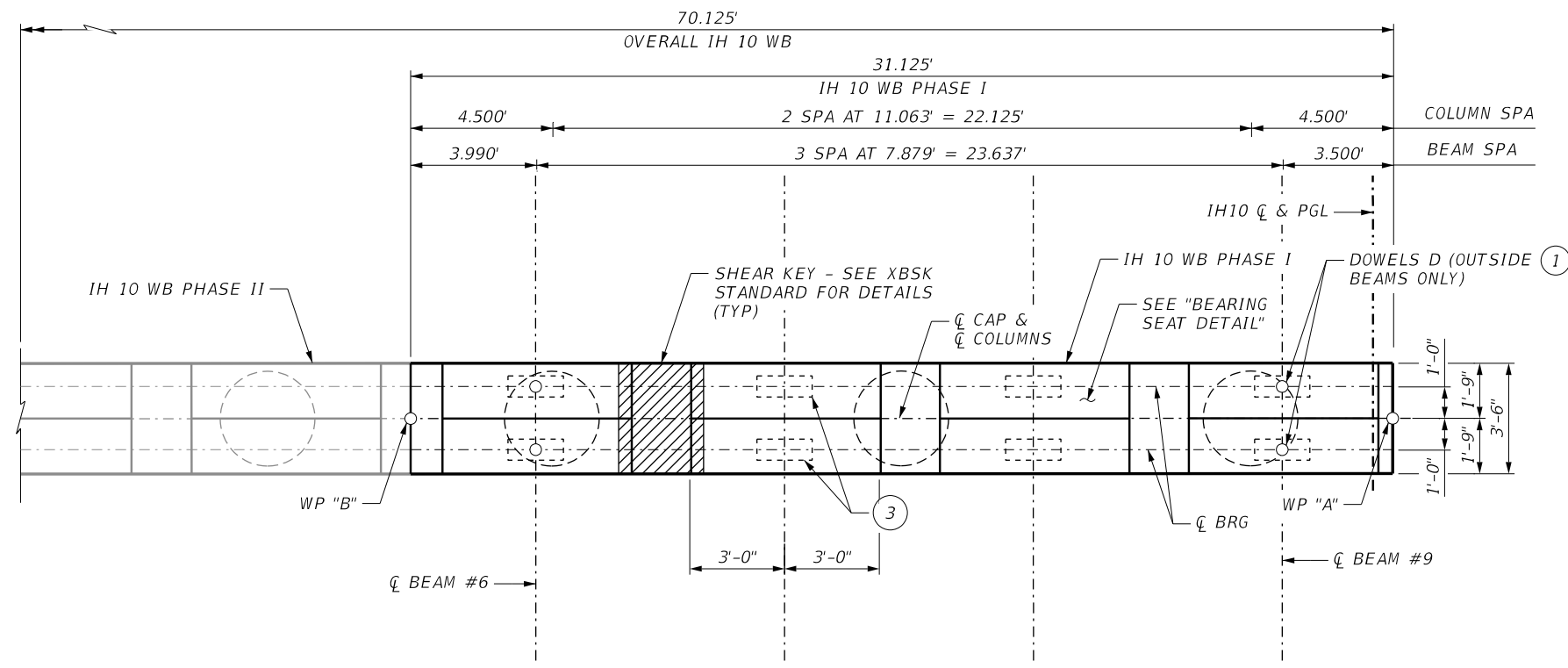
3/28/2024



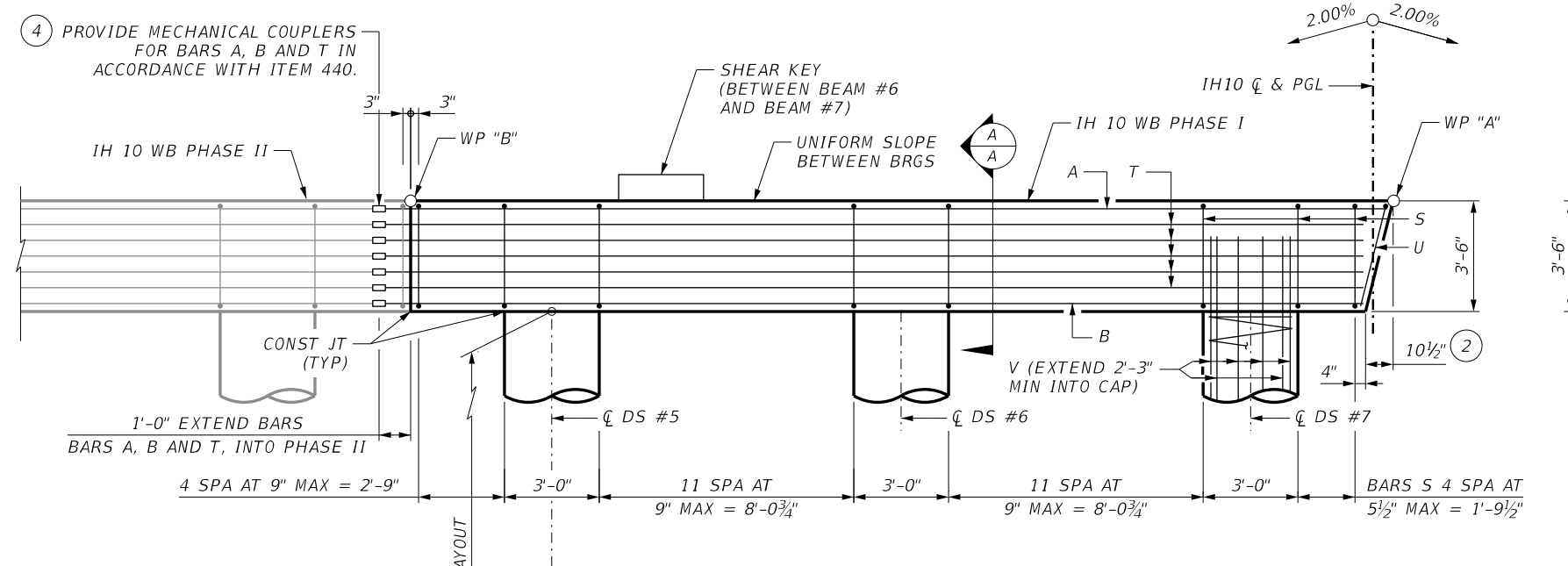
IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I & II
DRAIN & TURNAROUND #CB BRIDGE
 IH 10 WB
 (STA 88+85 TO STA 90+65)

SHEET 1 OF 1

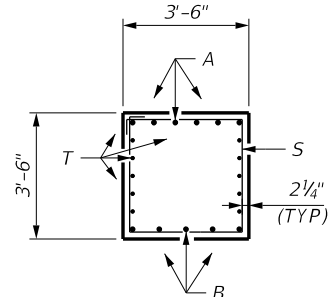
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6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	614



PLAN PHASE I



ELEVATION PHASE I



SECTION A-A

WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
A	3911.137'	3910.853'
B	3910.515'	3910.230'

TOP OF COLUMN ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
5	3907.105'	3906.820'
6	3907.326'	3907.041'
7	3907.547'	3907.263'

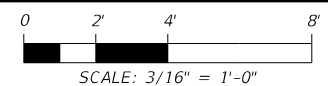
GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- GALVANIZE DOWEL BARS D.
- COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".

HL93 LOADING



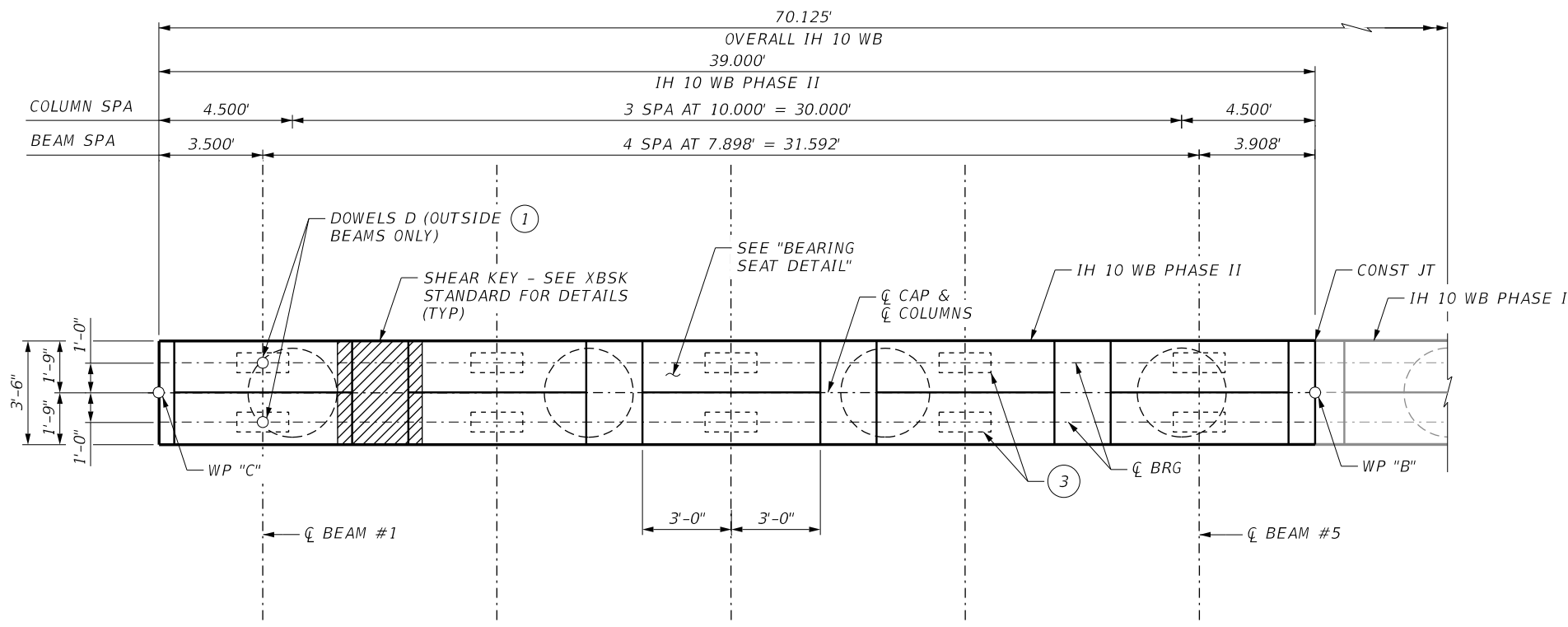
Wirat Wanichakorn
3/28/2024



IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

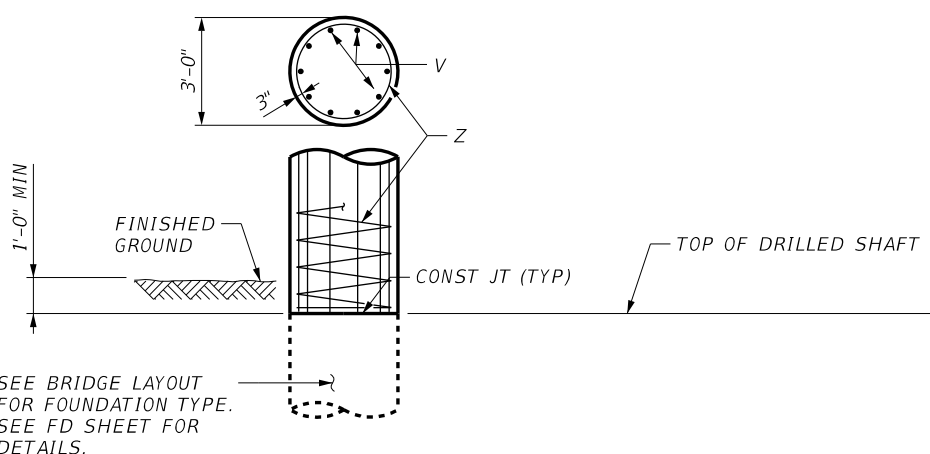
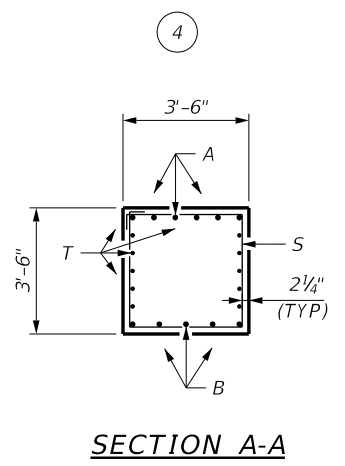
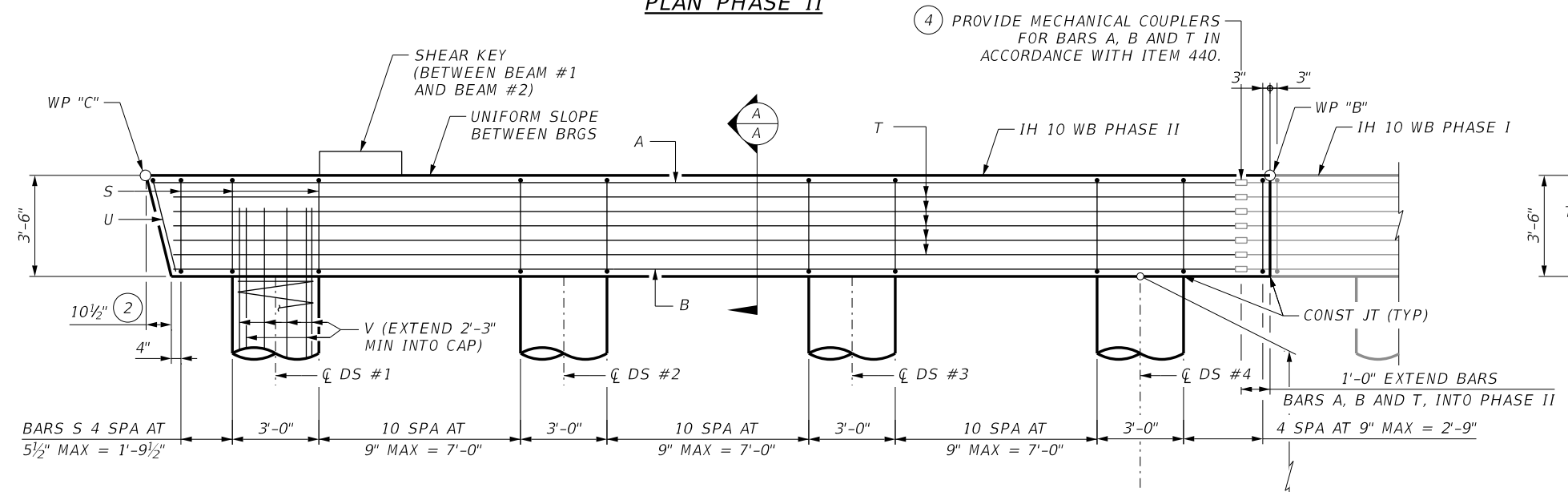
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	615



- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
 - GALVANIZE DOWEL BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".

PLAN PHASE II



ELEVATION PHASE II

WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
B	3910.515'	3910.230'
C	3909.735'	3909.450'

TOP OF COLUMN ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
1	3906.325'	3906.040'
2	3906.525'	3906.240'
3	3906.725'	3906.440'
4	3906.925'	3906.640'

HL93 LOADING

Steve Grove 3/28/2024

CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

**IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE II
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)**

SHEET 1 OF 1

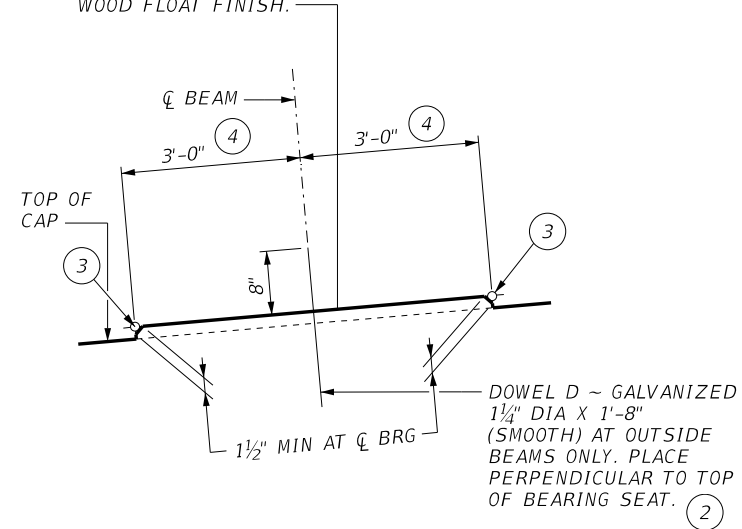
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6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			616

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LEVEL ALONG A LINE PERPENDICULAR TO
 CL BENT. UNIFORM SLOPE BETWEEN LEFT
 AND RIGHT BEARING SEAT ELEVATIONS WITH
 WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN
 AND FREE OF ALL LOOSE MATERIAL
 BEFORE PLACING BEARING PAD.)

**TABLE OF ESTIMATED QUANTITIES
 PHASE I (ONE BENT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	31' - 11"	1,044
B	5	#11	31' - 2"	830
D	4	#9	1' - 8"	32
S	34	#5	13' - 6"	496
T	10	#5	31' - 2"	326
U	1	#5	9' - 8"	11
V	30	#9	21' - 3"	2,193
Z	3	#3	315' - 5"	356
ITEM			UNIT	QUANTITY
Reinforcing Steel			LB	5,288
Conc (Cap)			CY	14.8
Conc (Column)			CY	14.9

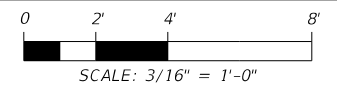
**TABLE OF ESTIMATED QUANTITIES
 PHASE II (ONE BENT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	37' - 9"	1,227
B	5	#11	37' - 0"	983
D	2	#9	1' - 8"	16
S	43	#5	13' - 6"	628
T	10	#5	37' - 0"	386
U	1	#5	9' - 8"	11
V	40	#9	21' - 3"	2,924
Z	4	#3	315' - 5"	475
ITEM			UNIT	QUANTITY
Reinforcing Steel			LB	6,650
Conc (Cap)			CY	18.2
Conc (Column)			CY	19.9

KEYED NOTES

- ① QUANTITIES SHOWN ARE BASED ON AN "H" VALUE OF 17'. FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
 BARS V LENGTH, 1'-0"
 BARS Z LENGTH, 15.740'
 REINFORCING STEEL, 120 LB
 CLASS "C" CONC (COL), 0.785 CY
- ② OMIT DOWELS D AT THE END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- ③ RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED ELSEWHERE.
- ④ MEASURED A LONG CL OF BEARING.

HL93 LOADING



SCALE: 3/16" = 1'-0"



Steve Groves
 3/28/2024

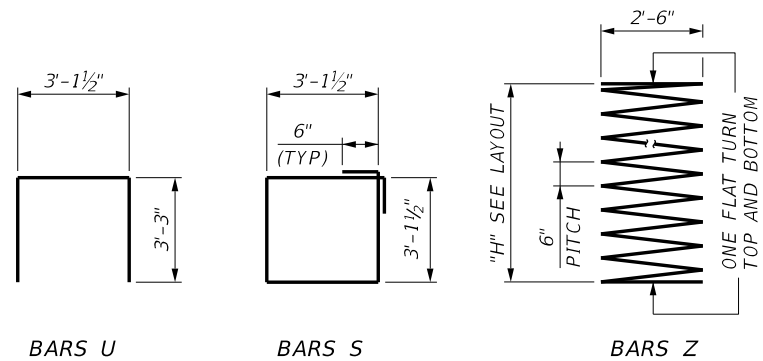
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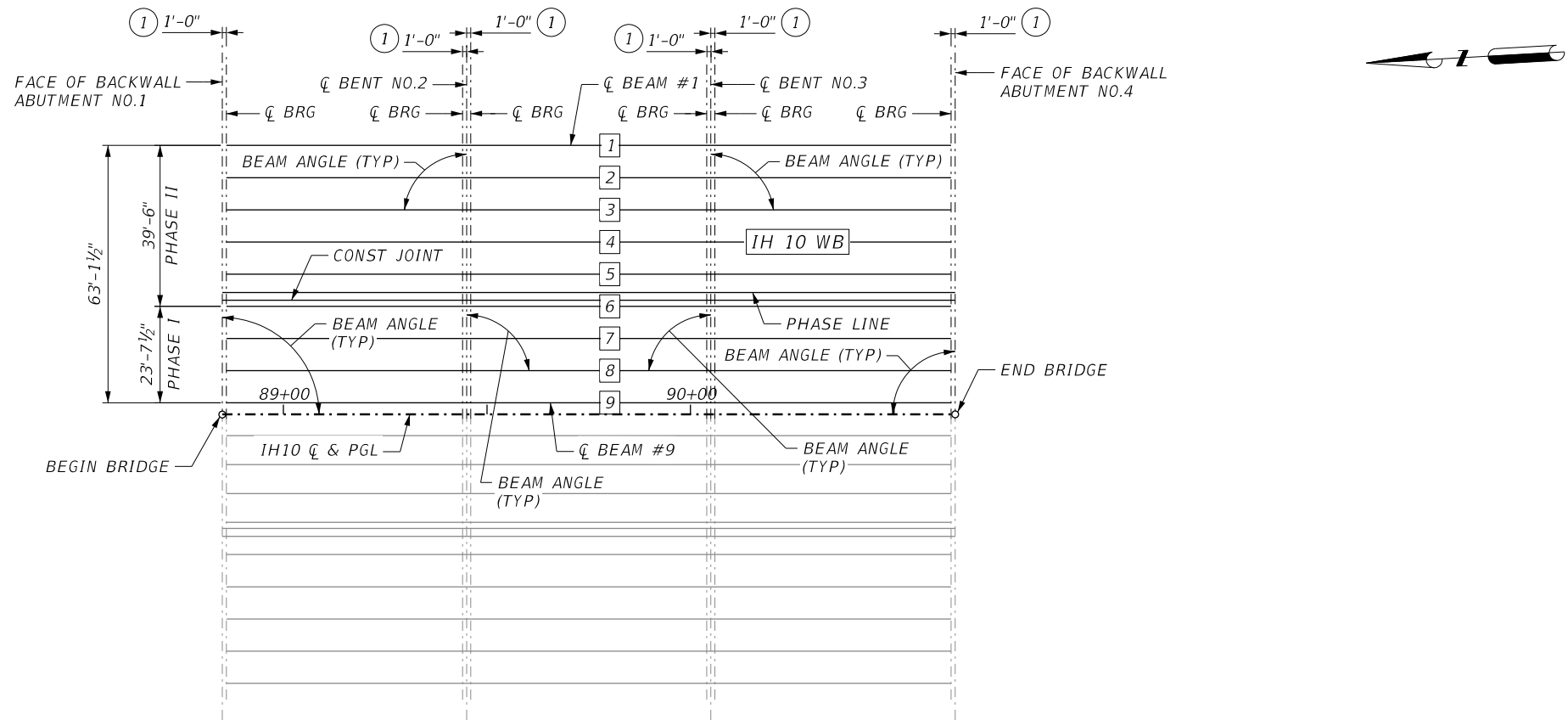


IH 10 WIDENING (NMSL/SPUR 37)
 BENT NO. 2 & 3
 PHASE I & II
 DRAIN & TURNAROUND #CB BRIDGE
 IH 10 WB
 (STA 88+85 TO STA 90+65)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	617





- ① SEE ELASTOMERIC BEARING DETAILS (XBE) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- ③ BEAM SPACING IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X-BEAMS.

SPAN 1 **SPAN 2** **SPAN 3**
 (5XB20 BEAMS) (5XB20 BEAMS) (5XB20 BEAMS)

FRAMING PLAN

	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
PHASE II				
BEAM 1	60.0000	58.0000	59.5003	-0.00338
BEAM 2	60.0000	58.0000	59.5003	-0.00338
BEAM 3	60.0000	58.0000	59.5003	-0.00338
BEAM 4	60.0000	58.0000	59.5003	-0.00338
BEAM 5	60.0000	58.0000	59.5003	-0.00338
PHASE I				
BEAM 6	60.0000	58.0000	59.5003	-0.00338
BEAM 7	60.0000	58.0000	59.5003	-0.00338
BEAM 8	60.0000	58.0000	59.5003	-0.00338
BEAM 9	60.0000	58.0000	59.5003	-0.00338

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 1			
BEAM 1	0.0000	90 0 0.00	
BEAM 2	7.8979	90 0 0.00	
BEAM 3	7.8979	90 0 0.00	
BEAM 4	7.8979	90 0 0.00	
BEAM 5	7.8979	90 0 0.00	
BEAM 6	7.8979	90 0 0.00	
PHASE II			
BEAM 7	7.8785	90 0 0.00	
BEAM 8	7.8785	90 0 0.00	
BEAM 9	7.8785	90 0 0.00	
TOTAL	63.1250		

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 2			
BEAM 1	0.0000	90 0 0.00	
BEAM 2	7.8979	90 0 0.00	
BEAM 3	7.8979	90 0 0.00	
BEAM 4	7.8979	90 0 0.00	
BEAM 5	7.8979	90 0 0.00	
BEAM 6	7.8979	90 0 0.00	
PHASE II			
BEAM 7	7.8785	90 0 0.00	
BEAM 8	7.8785	90 0 0.00	
BEAM 9	7.8785	90 0 0.00	
TOTAL	63.1250		

	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
PHASE II				
BEAM 1	60.0000	58.0000	59.5007	-0.00474
BEAM 2	60.0000	58.0000	59.5007	-0.00474
BEAM 3	60.0000	58.0000	59.5007	-0.00474
BEAM 4	60.0000	58.0000	59.5007	-0.00474
BEAM 5	60.0000	58.0000	59.5007	-0.00474
PHASE I				
BEAM 6	60.0000	58.0000	59.5007	-0.00474
BEAM 7	60.0000	58.0000	59.5007	-0.00474
BEAM 8	60.0000	58.0000	59.5007	-0.00474
BEAM 9	60.0000	58.0000	59.5007	-0.00474

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 1			
BEAM 1	0.0000	90 0 0.00	
BEAM 2	7.8979	90 0 0.00	
BEAM 3	7.8979	90 0 0.00	
BEAM 4	7.8979	90 0 0.00	
BEAM 5	7.8979	90 0 0.00	
BEAM 6	7.8979	90 0 0.00	
PHASE II			
BEAM 7	7.8785	90 0 0.00	
BEAM 8	7.8785	90 0 0.00	
BEAM 9	7.8785	90 0 0.00	
TOTAL	63.1250		

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 3			
BEAM 1	0.0000	90 0 0.00	
BEAM 2	7.8979	90 0 0.00	
BEAM 3	7.8979	90 0 0.00	
BEAM 4	7.8979	90 0 0.00	
BEAM 5	7.8979	90 0 0.00	
BEAM 6	7.8979	90 0 0.00	
PHASE II			
BEAM 7	7.8785	90 0 0.00	
BEAM 8	7.8785	90 0 0.00	
BEAM 9	7.8785	90 0 0.00	
TOTAL	63.1250		

	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
PHASE II				
BEAM 1	60.0000	58.0000	59.5015	-0.00701
BEAM 2	60.0000	58.0000	59.5015	-0.00701
BEAM 3	60.0000	58.0000	59.5015	-0.00701
BEAM 4	60.0000	58.0000	59.5015	-0.00701
BEAM 5	60.0000	58.0000	59.5015	-0.00701
PHASE I				
BEAM 6	60.0000	58.0000	59.5015	-0.00701
BEAM 7	60.0000	58.0000	59.5015	-0.00701
BEAM 8	60.0000	58.0000	59.5015	-0.00701
BEAM 9	60.0000	58.0000	59.5015	-0.00701

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 2			
BEAM 1	0.0000	90 0 0.00	
BEAM 2	7.8979	90 0 0.00	
BEAM 3	7.8979	90 0 0.00	
BEAM 4	7.8979	90 0 0.00	
BEAM 5	7.8979	90 0 0.00	
BEAM 6	7.8979	90 0 0.00	
PHASE II			
BEAM 7	7.8785	90 0 0.00	
BEAM 8	7.8785	90 0 0.00	
BEAM 9	7.8785	90 0 0.00	
TOTAL	63.1250		

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 3			
BEAM 1	0.0000	90 0 0.00	
BEAM 2	7.8979	90 0 0.00	
BEAM 3	7.8979	90 0 0.00	
BEAM 4	7.8979	90 0 0.00	
BEAM 5	7.8979	90 0 0.00	
BEAM 6	7.8979	90 0 0.00	
PHASE II			
BEAM 7	7.8785	90 0 0.00	
BEAM 8	7.8785	90 0 0.00	
BEAM 9	7.8785	90 0 0.00	
TOTAL	63.1250		

HL93 LOADING



Wirat Wanichakorn 3/28/2024



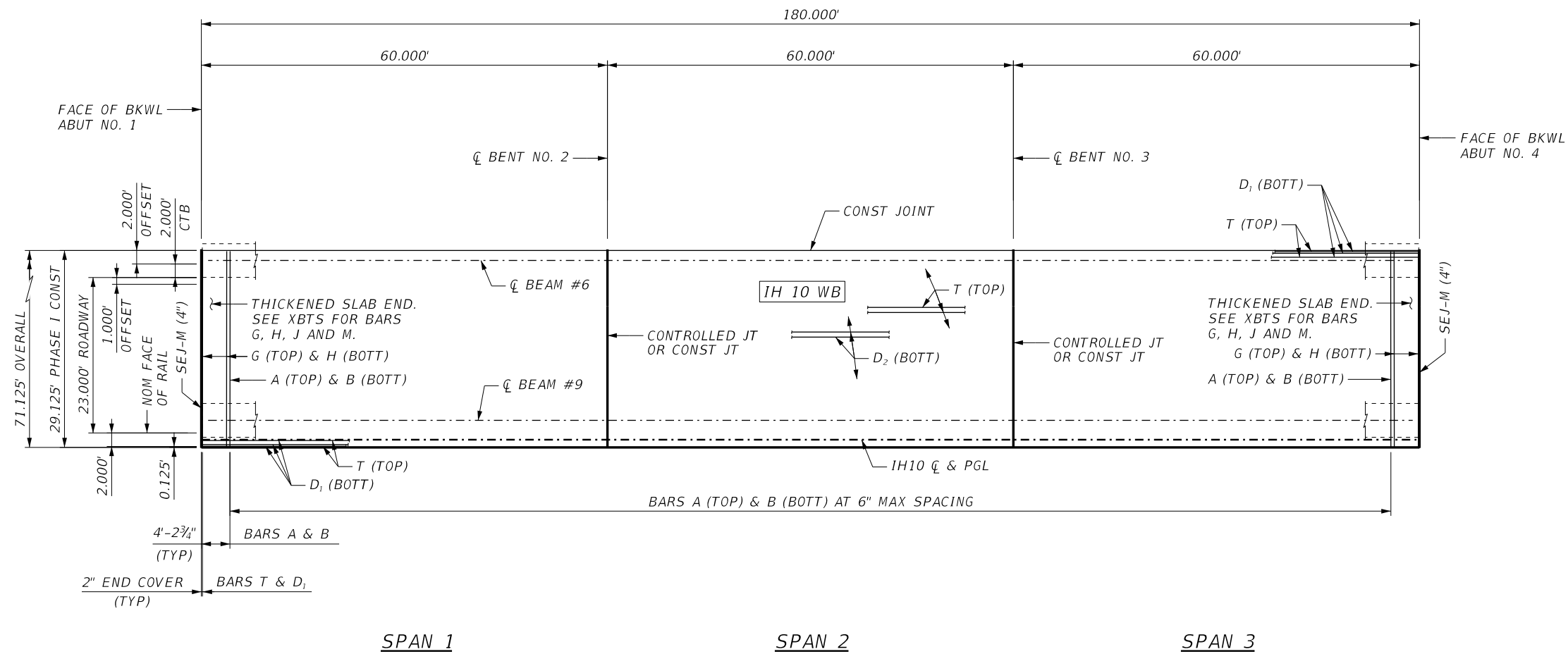
IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.		
104	618		

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



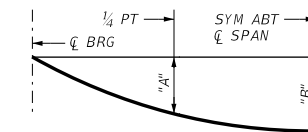
SPAN 1

SPAN 2

SPAN 3

PLAN PHASE I

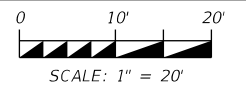
SPAN	BEAM NO.	"A"	"B"
		FT	FT
ALL	6	0.059	0.083
	7 & 8	0.079	0.111
	9	0.080	0.112



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



SCALE: 1" = 20'



Steve Groves 3/28/2024

NO.	DATE	REVISION	APPROV.

CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

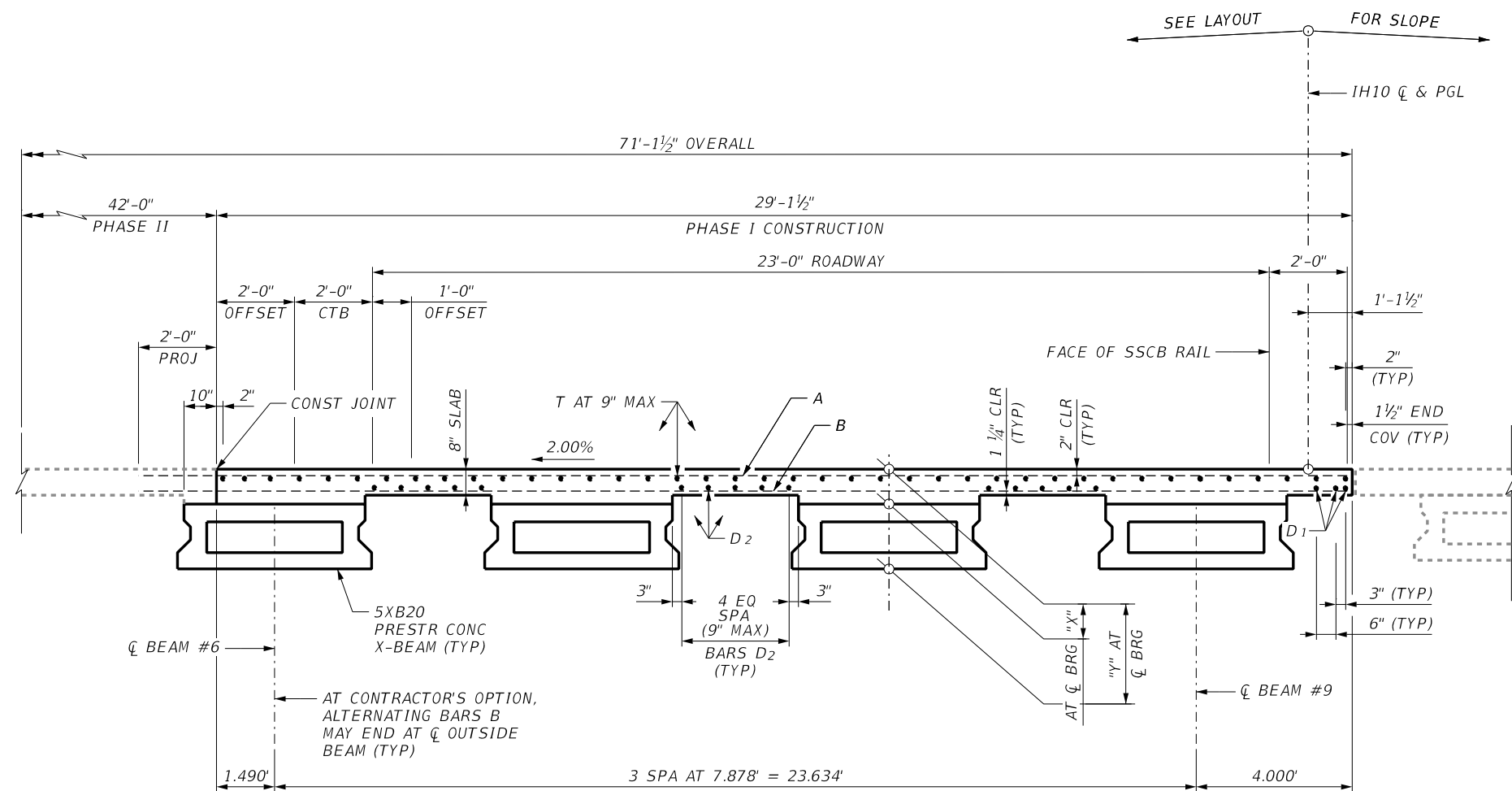
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	104	619

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.



TYPICAL TRANSVERSE SECTION PHASE I
(5XB20) SPANS 1 THRU 3

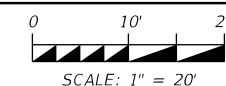
TABLE OF ESTIMATED QUANTITIES PHASE I

SPAN	REINF CONCRETE SLAB	5XB20 PRESTR CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	1,748	238.00	49.3	11,359
2	1,748	238.00	48.3	11,359
3	1,748	238.01	49.3	11,359
TOTAL	5,244	714.01	146.9	34,077

TABLE OF SECTION DEPTHS FOR PHASE I

SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	6-9	11"	31"

HL93 LOADING



SCALE: 1" = 20'



Wirat Wanichakorn
3/28/2024

NO.	DATE	REVISION	APPROV.

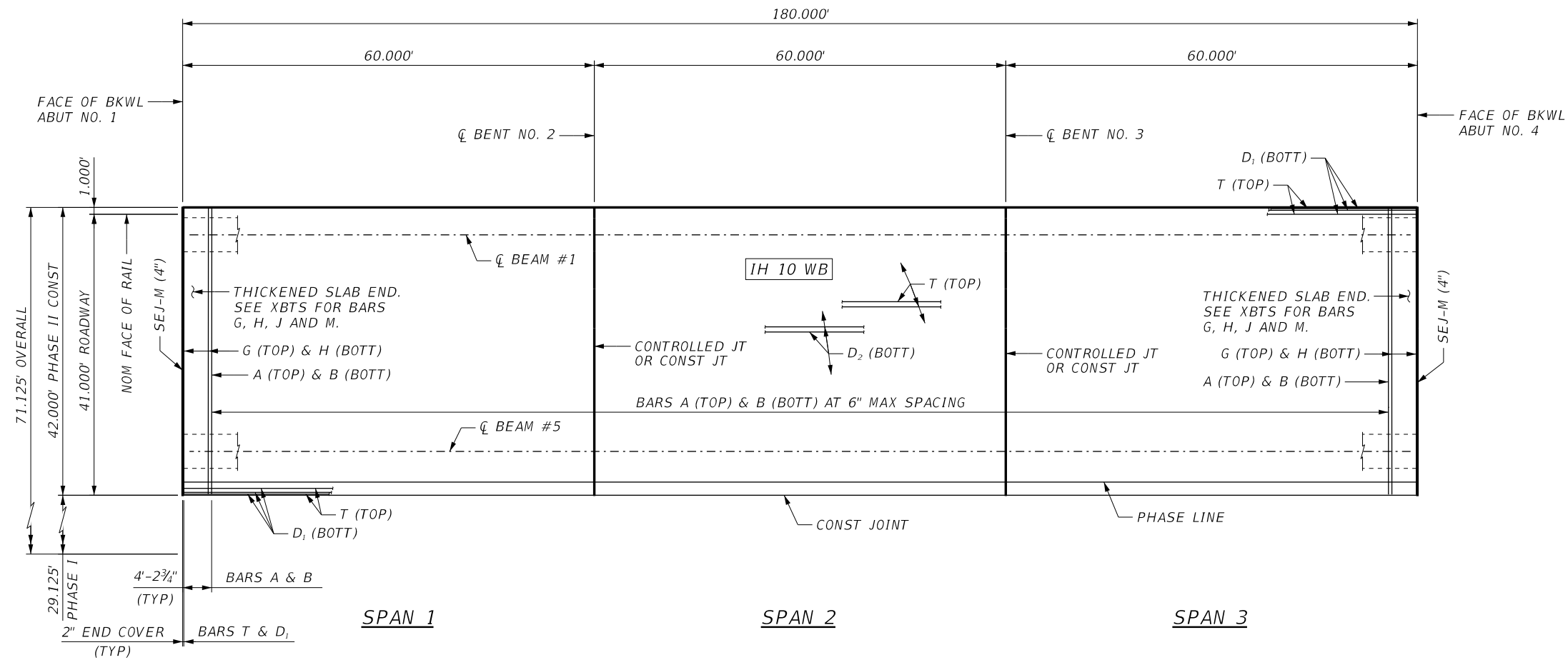


**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I**
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 2 OF 2

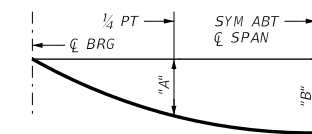
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	620

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



PLAN PHASE II

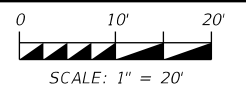
TABLE OF DEFLECTIONS PHASE II			
SPAN	BEAM NO.	"A"	"B"
		FT	FT
ALL	1-5	0.080	0.112



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



SCALE: 1" = 20'



Steve Groves 3/28/2024

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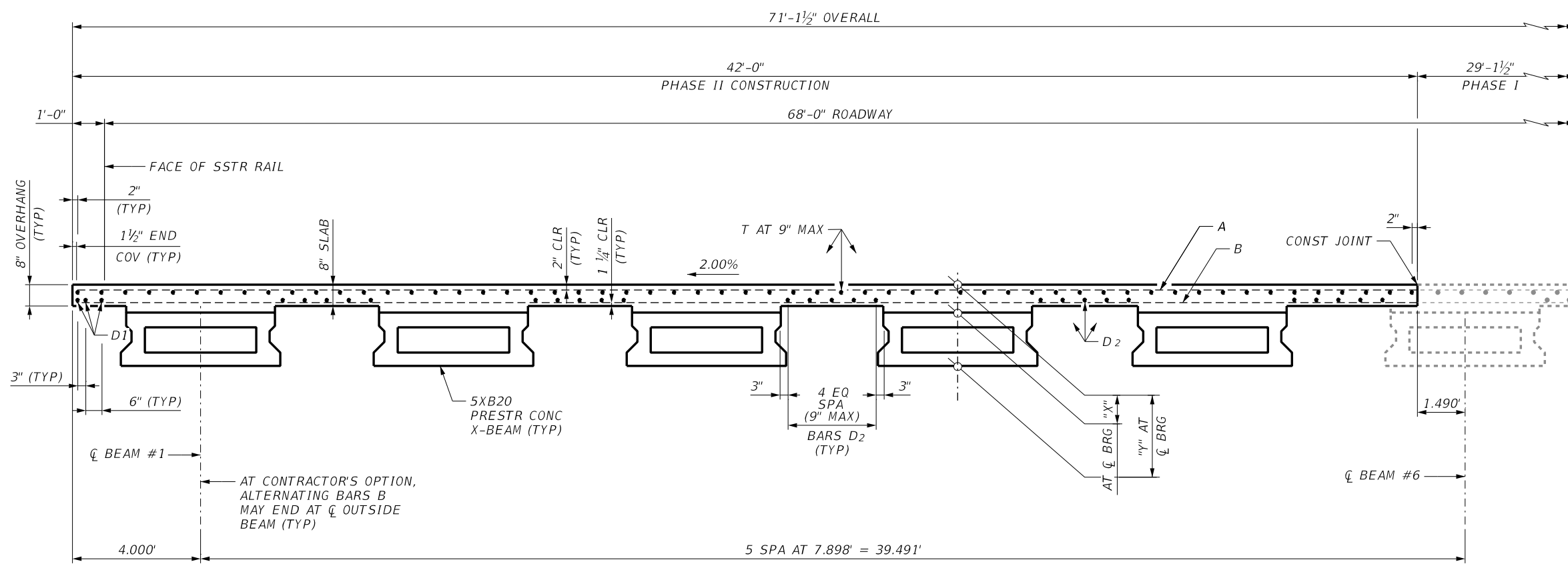
IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	621

BAR TABLE PHASE II	
BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.



TYPICAL TRANSVERSE SECTION PHASE II
(5XB20) SPANS 1 THRU 3

HL93 LOADING

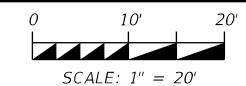


TABLE OF ESTIMATED QUANTITIES PHASE II				
SPAN	REINF CONCRETE SLAB	5XB20 PREST CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	2,520	297.50	70.8	16,380
2	2,520	297.50	69.5	16,380
3	2,520	297.51	70.8	16,380
TOTAL	7,560	892.51	211.1	49,140

TABLE OF SECTION DEPTHS FOR PHASE II			
SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	1-5	11"	31"

Professional Engineer Seal for Wirat Wanichakorn, License No. 96609, State of Texas. Signature of Steve Groves, dated 3/28/2024.

NO.	DATE	REVISION	APPROV.

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IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
DRAIN & TURNAROUND #CB BRIDGE
IH 10 WB
(STA 88+85 TO STA 90+65)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	104	622

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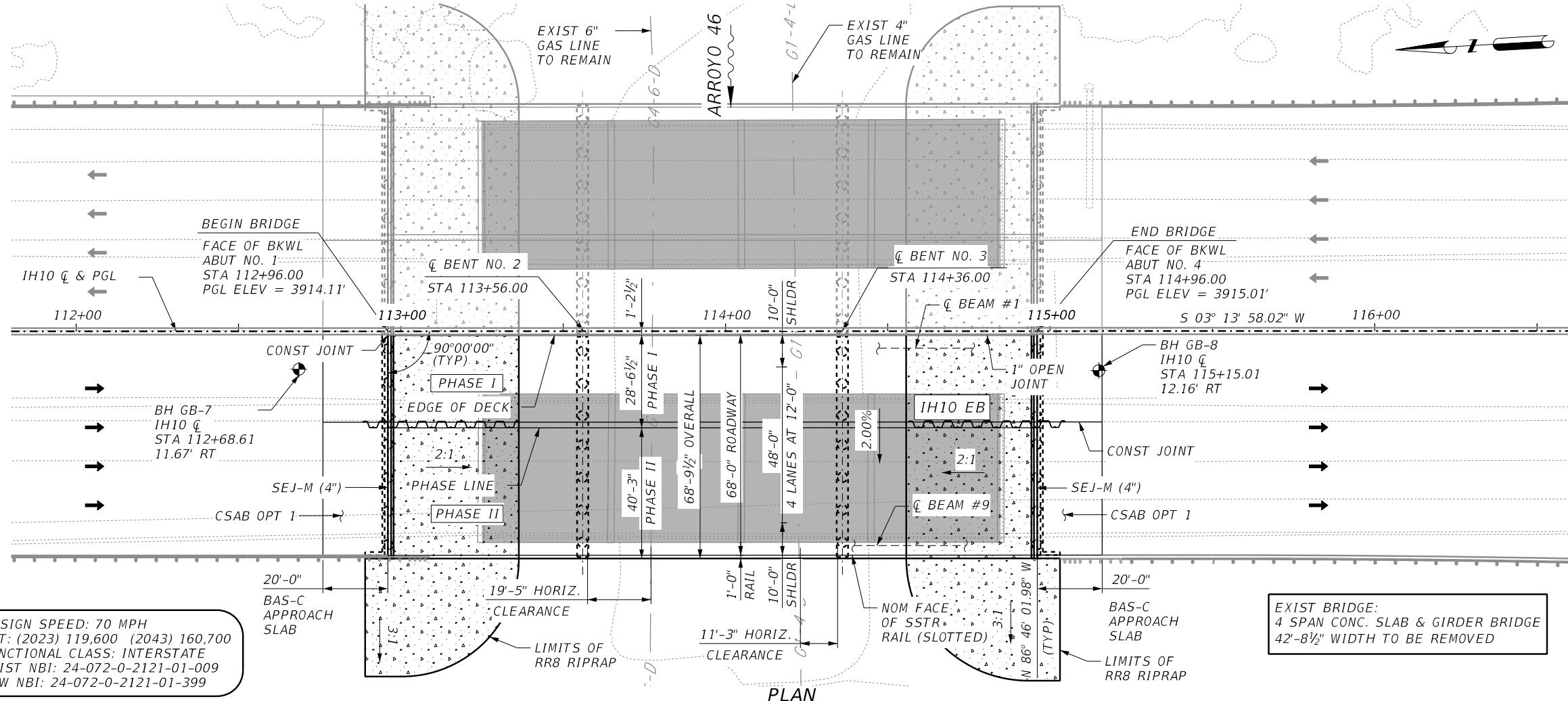
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GENERAL NOTES

- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ⊕ - DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

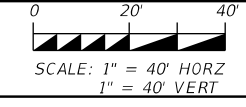
- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING



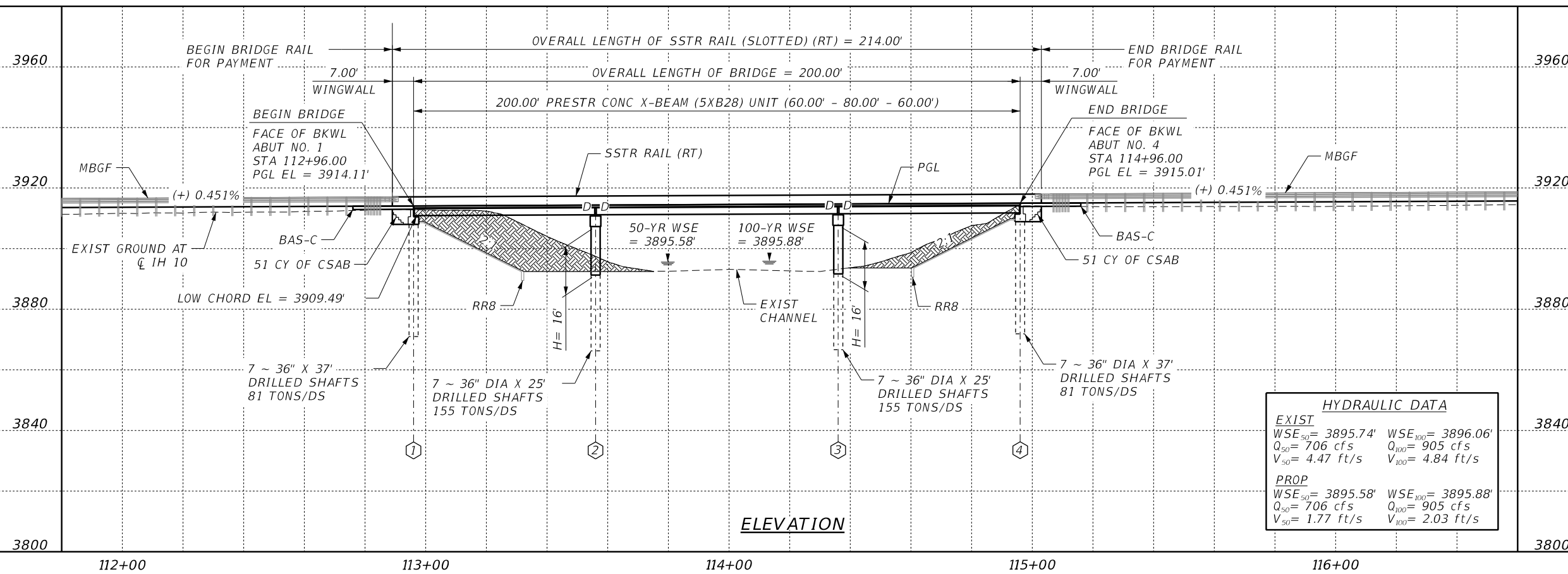
DESIGN SPEED: 70 MPH
 ADT: (2023) 119,600 (2043) 160,700
 FUNCTIONAL CLASS: INTERSTATE
 EXIST NBI: 24-072-0-2121-01-009
 NEW NBI: 24-072-0-2121-01-399

EXIST BRIDGE:
 4 SPAN CONC. SLAB & GIRDER BRIDGE
 42'-8 1/2" WIDTH TO BE REMOVED

HL93 LOADING



Wirat Wanichakorn
 2/29/2024



HYDRAULIC DATA

EXIST		PROF	
WSE ₅₀ = 3895.74'	WSE ₁₀₀ = 3896.06'	WSE ₅₀ = 3895.58'	WSE ₁₀₀ = 3895.88'
Q ₅₀ = 706 cfs	Q ₁₀₀ = 905 cfs	Q ₅₀ = 706 cfs	Q ₁₀₀ = 905 cfs
V ₅₀ = 4.47 ft/s	V ₁₀₀ = 4.84 ft/s	V ₅₀ = 1.77 ft/s	V ₁₀₀ = 2.03 ft/s

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IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE LAYOUT
 ARROYO 46 RELIEF #DA BRIDGE
 IH 10 EB
 (STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	623

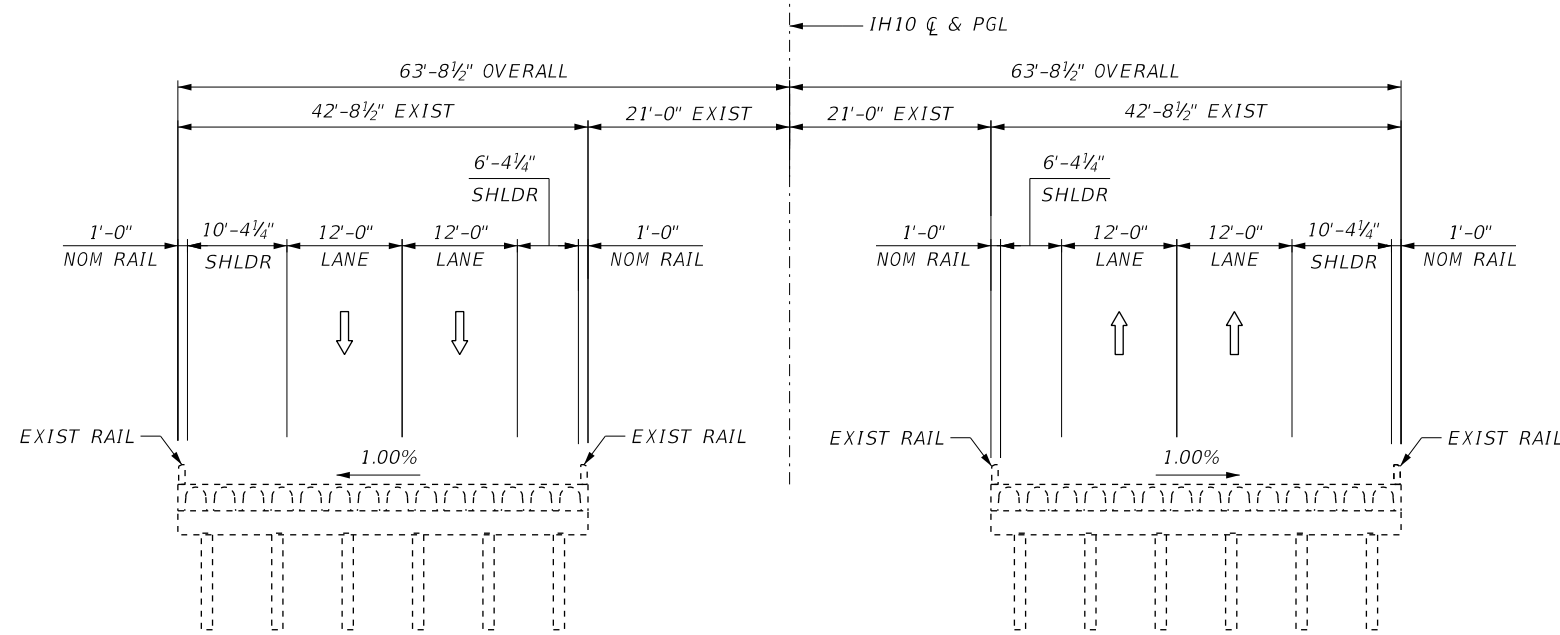
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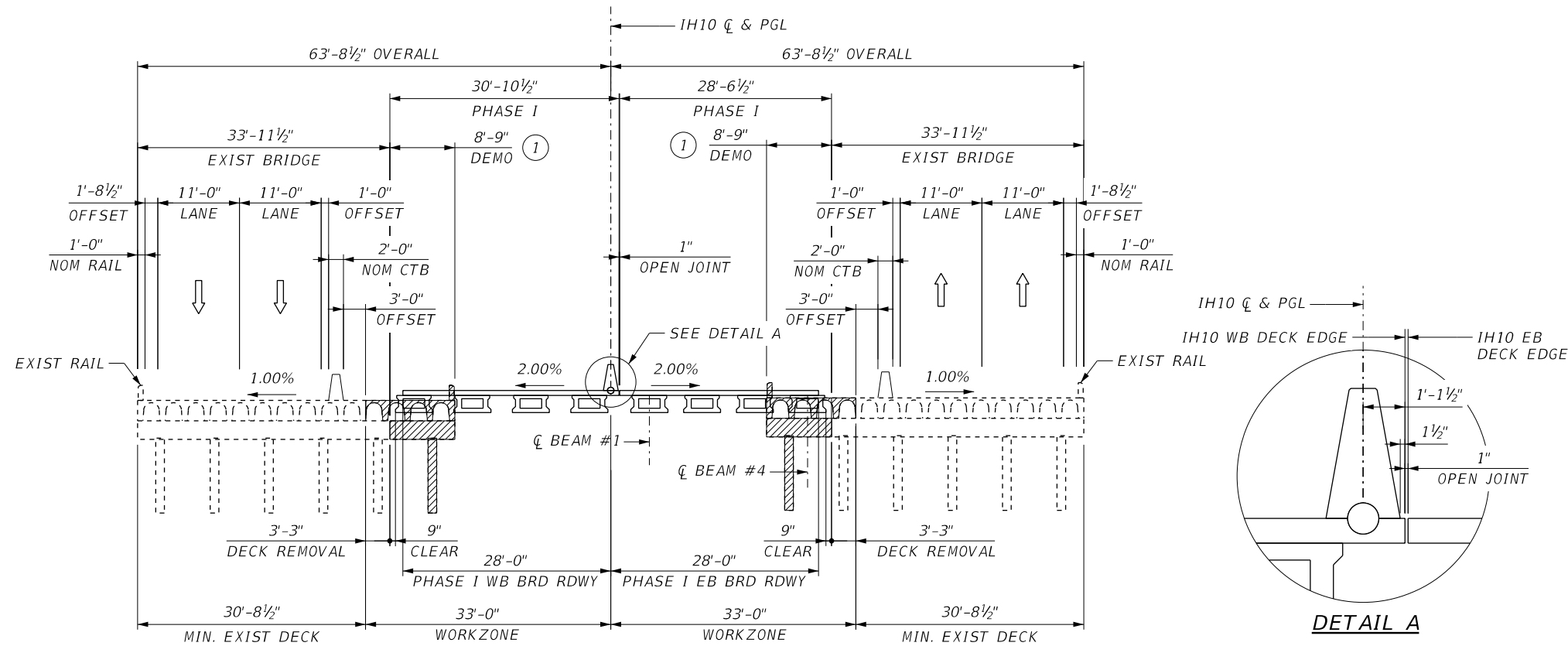
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LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



EXIST SECTION



PHASE I SECTION

- ① SAWCUT EXISTING CAP AS NECESSARY TO AVOID CONFLICT WITH BEAM. DO NOT CUT BEYOND LIMITS OF DEMOLITION. DO NOT REMOVE EXISTING COLUMNS NOT MARKED FOR DEMOLITION IN THIS PHASE.

HL93 LOADING

NOT TO SCALE



Wirat Wanichakorn
2/29/2024

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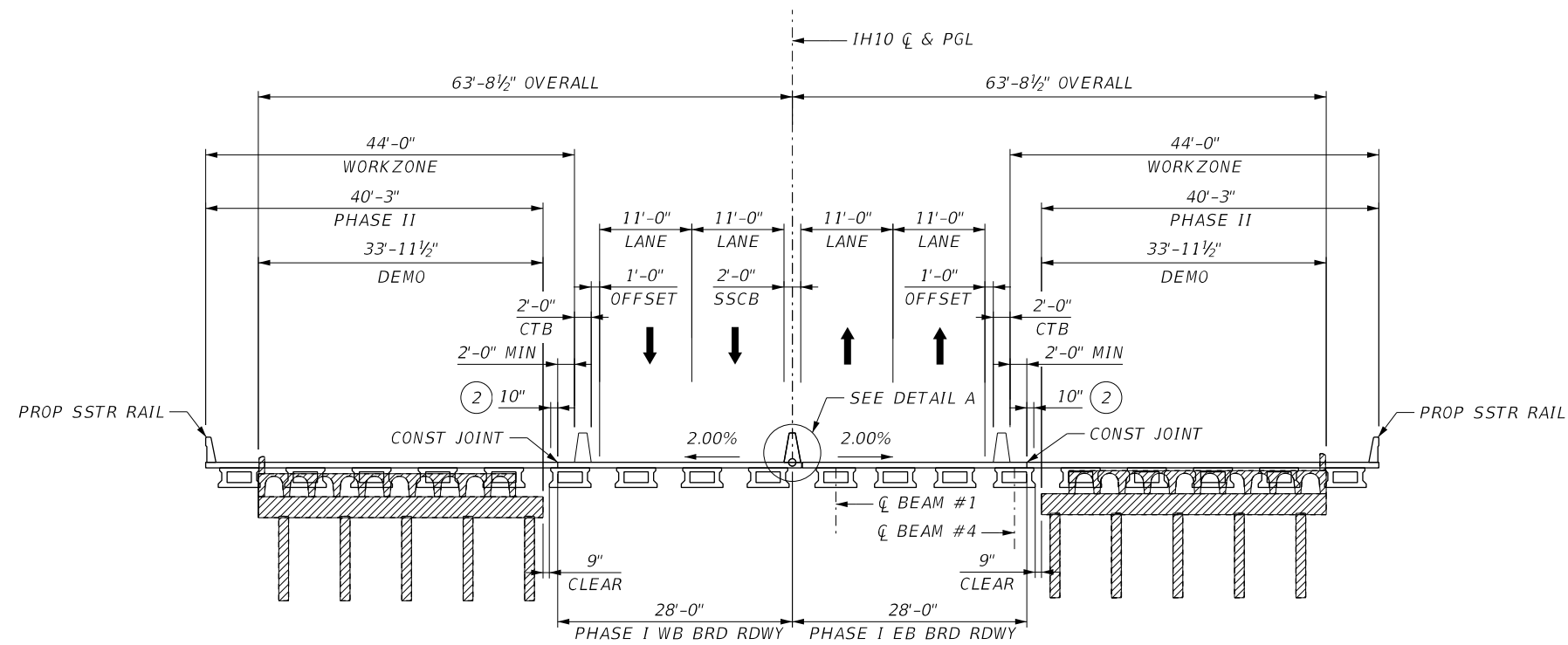
**IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	624

LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



PHASE II SECTION

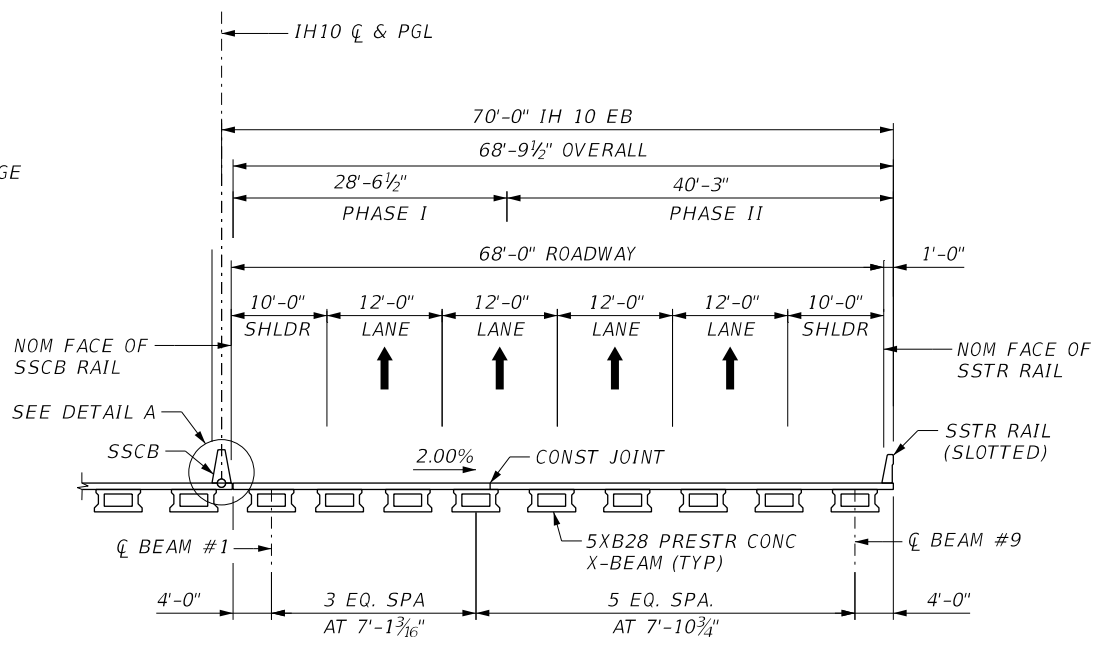
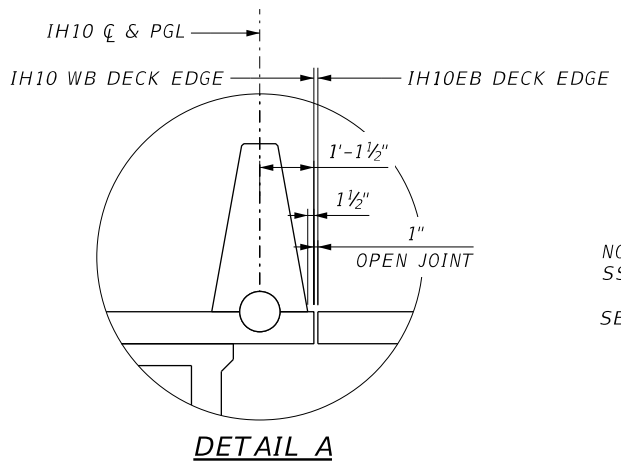
(2) EDGE OF DECK TO EDGE OF TOP OF BEAM.

HL93 LOADING

NOT TO SCALE



Steve Groves 2/29/2024



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IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

SHEET 2 OF 2

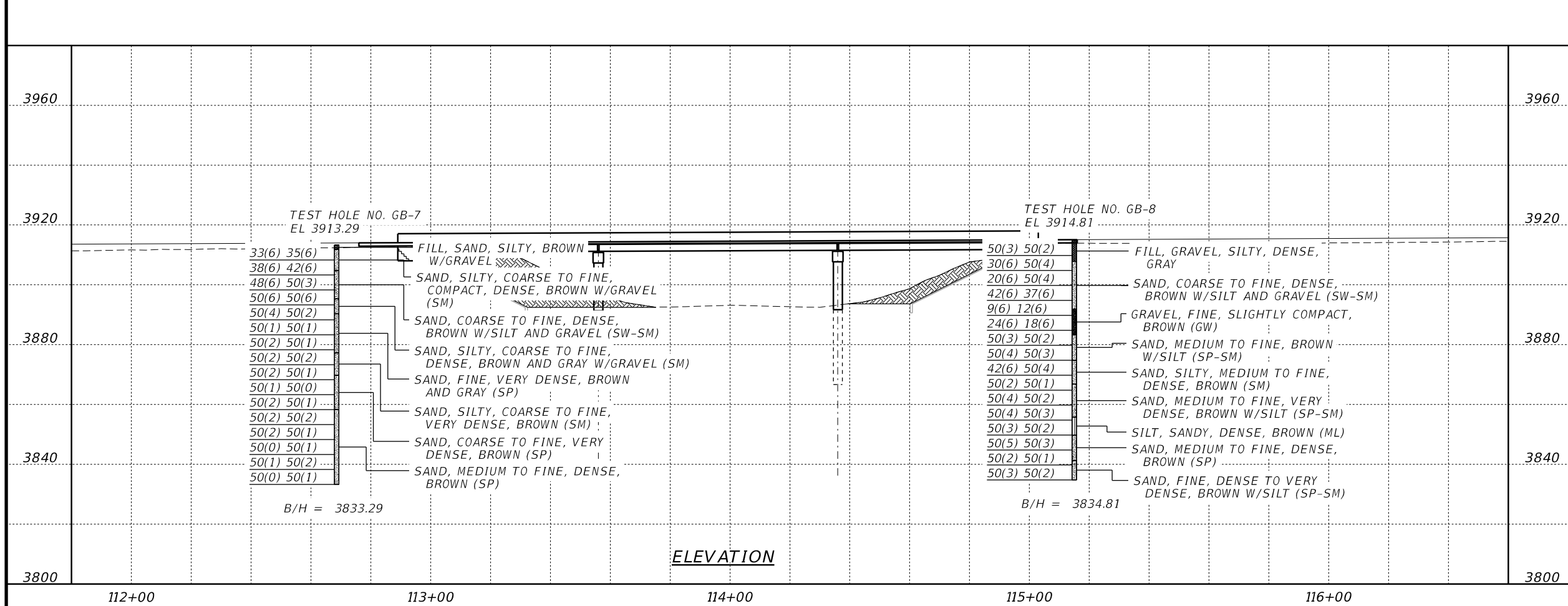
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6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				625

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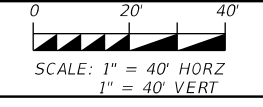
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HL93 LOADING



Stuart Hickman
 2/29/2024

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IH 10 WIDENING (NMSL/SPUR 37)
BORING LOGS
 ARROYO 46 RELIEF #DA & #DB BRIDGE
 IH 10 EB & IH 10 WB
 (STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10

STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	626



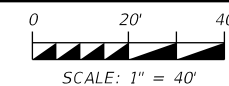
GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.
3. DRILLED SHAFT INSTALLATION WILL REQUIRE THE USE OF SLURRY DISPLACEMENT METHODS AND SURFACE CASING. THE SURFACE CASING IS TEMPORARY AND SHALL BE RETRIEVED AS OUTLINED IN TXDOT STANDARD SPECIFICATIONS.

LEGEND

- = BORE HOLE
- = DRILLED SHAFT
- = TEMP SPL SHORING

HL93 LOADING



Stuart Shickler 2/29/2024

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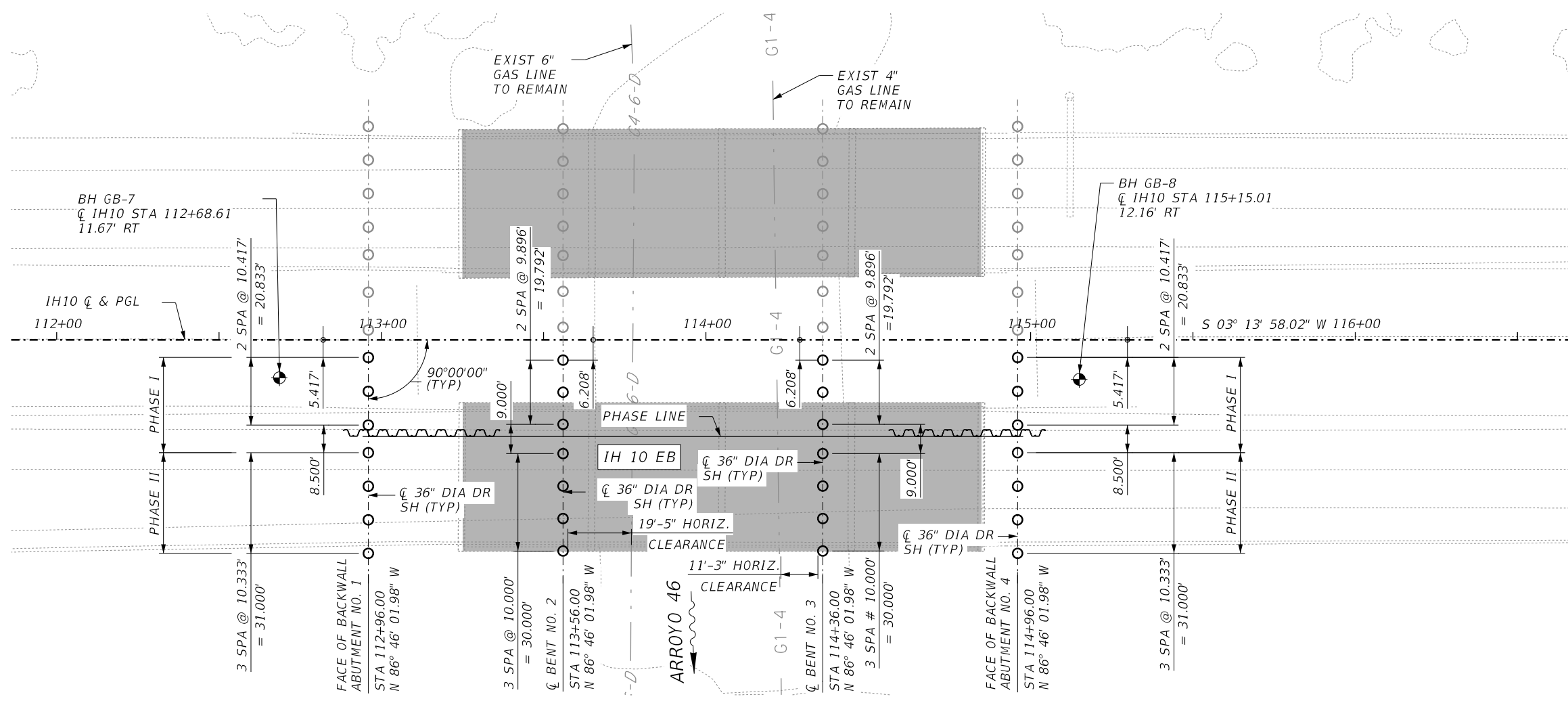
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IH 10 WIDENING (NMSL/SPUR 37)

FOUNDATION LAYOUT
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	627

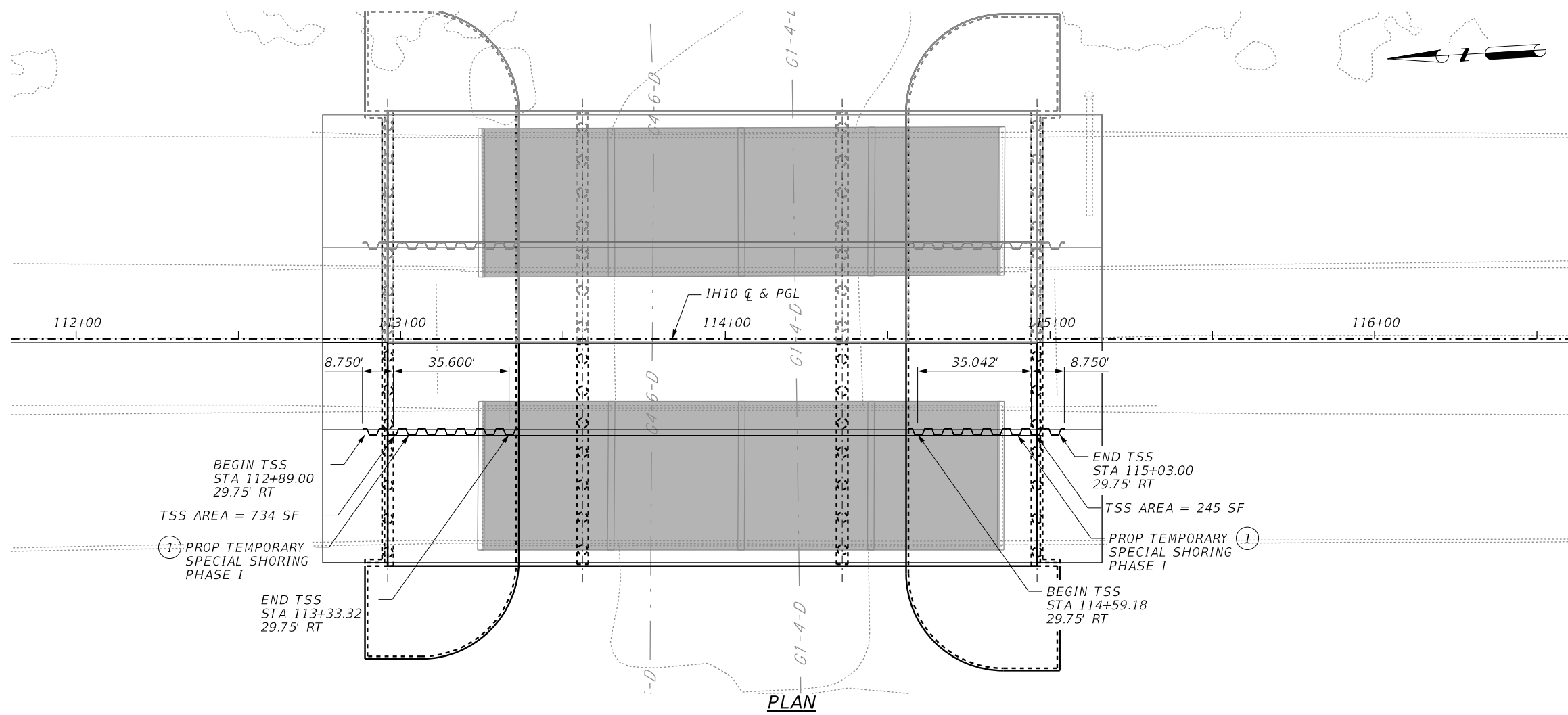
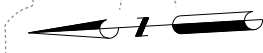


ABUT/BENT	TONS/SHAFT
1 & 4	79
2 & 3	135

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LEGEND

TEMPORARY SPL SHORING



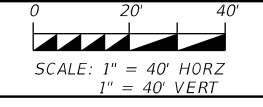
BEGIN TSS
STA 112+89.00
29.75' RT
TSS AREA = 734 SF
PROP TEMPORARY
SPECIAL SHORING
PHASE I
END TSS
STA 113+33.32
29.75' RT

END TSS
STA 115+03.00
29.75' RT
TSS AREA = 245 SF
PROP TEMPORARY
SPECIAL SHORING
PHASE I
BEGIN TSS
STA 114+59.18
29.75' RT

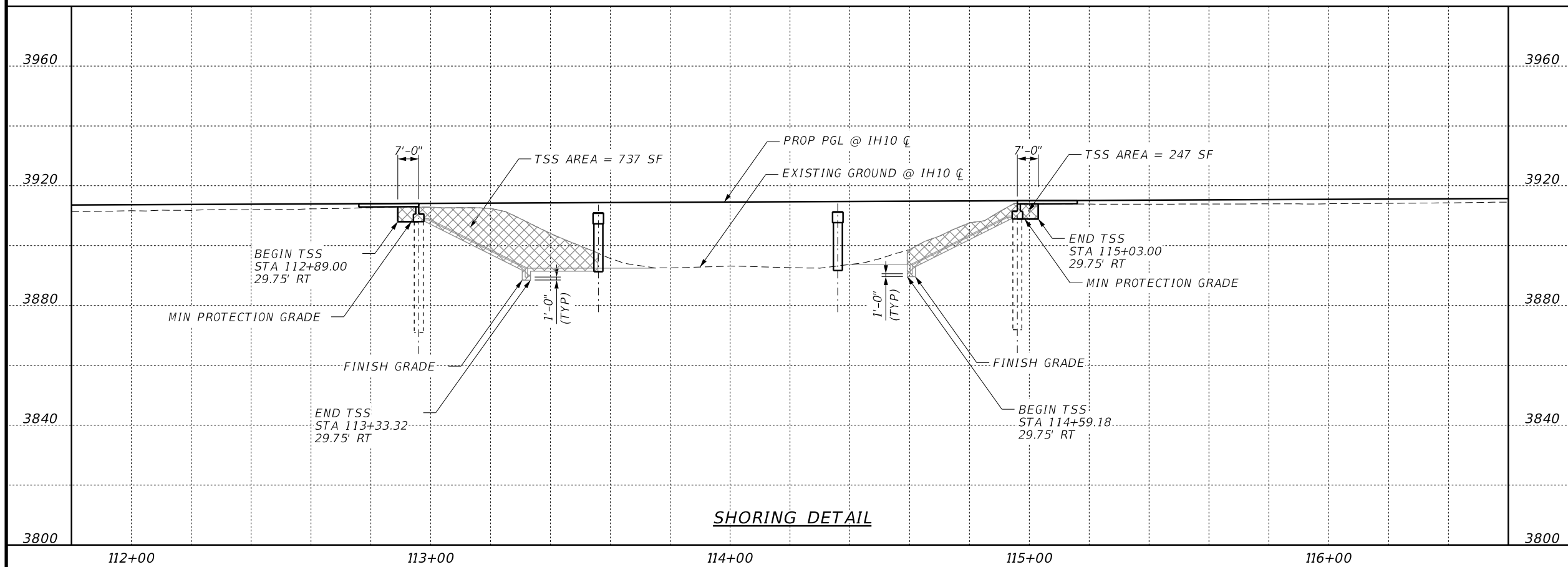
1 PAID FOR UNDER ITEM 403
TEMPORARY SPL SHORING.

PLAN

HL93 LOADING



Steve Groves
2/29/2024



SHORING DETAIL

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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	628

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BEARING SEAT ELEVATIONS

				PHASE I				PHASE II					
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	
1	ABUT	1	(FWD)	L	3910.589	3910.447	3910.305	3910.163	3910.005	3909.847	3909.689	3909.531	3909.373
			R	3910.469	3910.327	3910.185	3910.043	3909.885	3909.727	3909.569	3909.411	3909.253	
2	BENT	2	(BK)	L	3910.851	3910.709	3910.567	3910.425	3910.267	3910.109	3909.951	3909.793	3909.635
			R	3910.731	3910.589	3910.447	3910.305	3910.147	3909.989	3909.831	3909.673	3909.515	
		2	(FWD)	L	3910.860	3910.718	3910.576	3910.434	3910.276	3910.118	3909.960	3909.802	3909.644
			R	3910.740	3910.598	3910.456	3910.314	3910.156	3909.998	3909.840	3909.682	3909.524	
3	BENT	3	(BK)	L	3911.212	3911.070	3910.928	3910.786	3910.628	3910.470	3910.312	3910.154	3909.996
			R	3911.092	3910.950	3910.808	3910.666	3910.508	3910.350	3910.192	3910.034	3909.876	
		3	(FWD)	L	3911.221	3911.079	3910.937	3910.795	3910.637	3910.479	3910.321	3910.163	3910.005
			R	3911.101	3910.959	3910.817	3910.675	3910.517	3910.359	3910.201	3910.043	3909.885	
4	ABUT	4	(BK)	L	3911.483	3911.341	3911.199	3911.057	3910.899	3910.741	3910.583	3910.425	3910.267
			R	3911.363	3911.221	3911.079	3910.937	3910.779	3910.621	3910.463	3910.305	3910.147	



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BEARING SEAT ELEVATIONS
ARROYO 46 RELIEF #DA BRIDGE
 IH 10 EB
 (STA 112+96 TO STA 114+96)

SHEET 1 OF 1

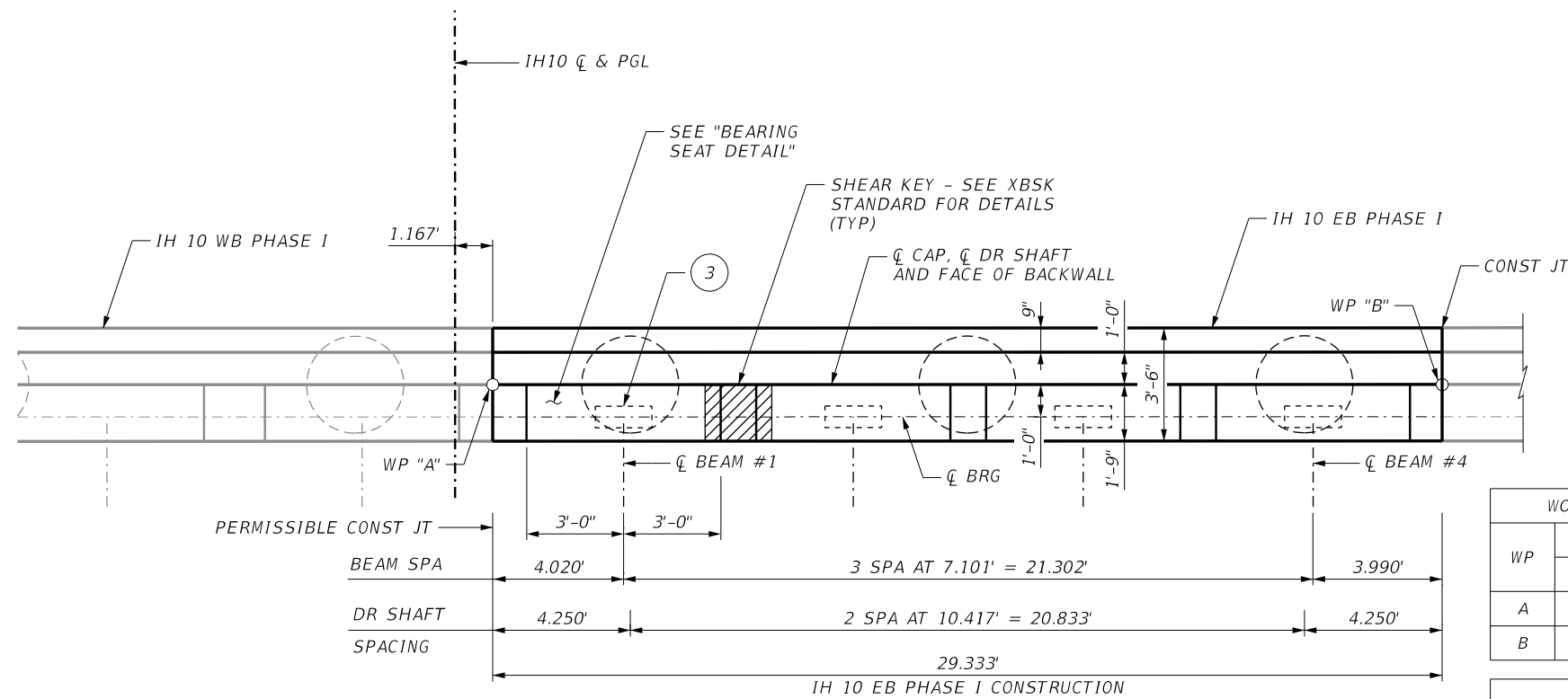
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6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	629

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $F'_C = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

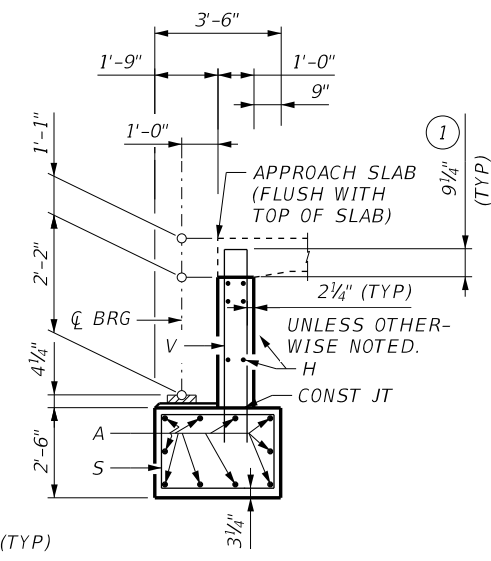
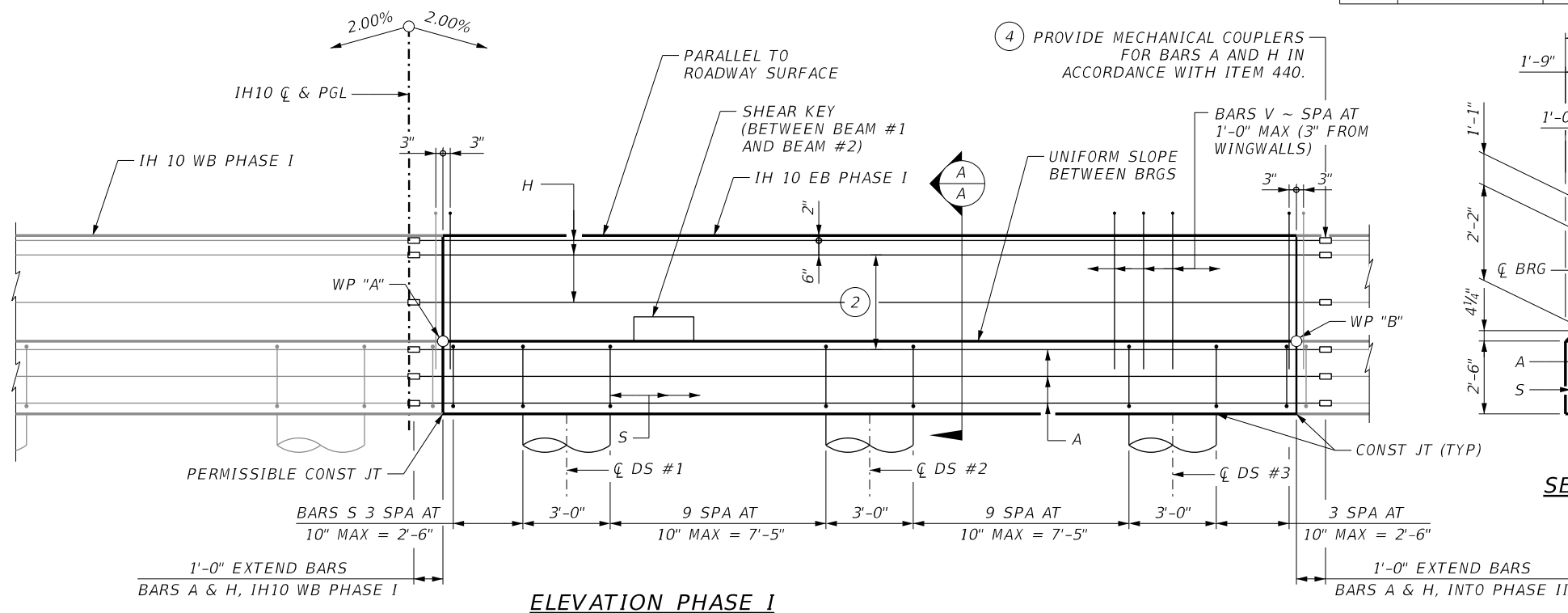
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB28 ~ 3 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
A	3910.483'	3911.386'
B	3909.897'	3910.799'

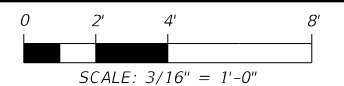
TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
1	3907.898'	3908.801'
2	3907.690'	3908.592'
3	3907.482'	3908.384'

PLAN PHASE I



SECTION A-A

HL93 LOADING



Steve Groves
2/29/2024



**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)**

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			630

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 2/29/2024

2/29/2024 2:58:33 PM

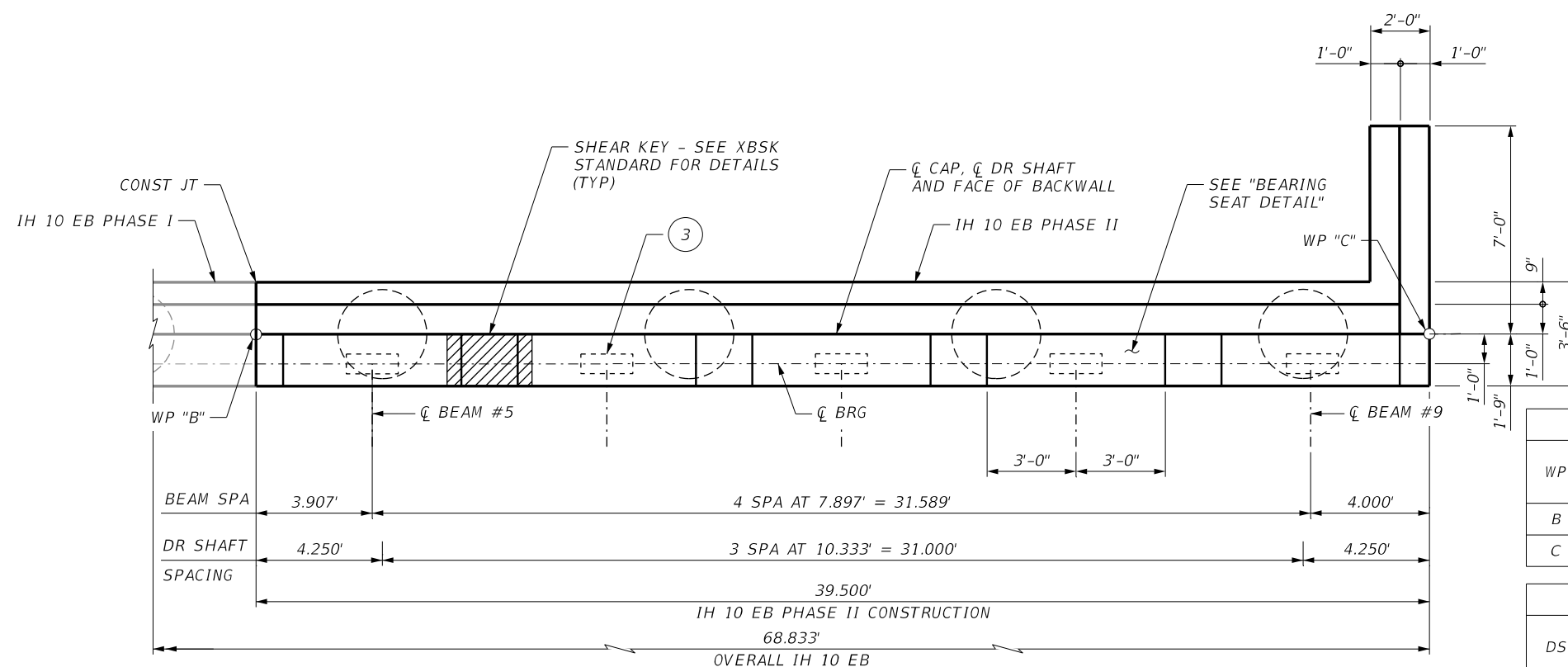
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GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB28 ~ 3 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".

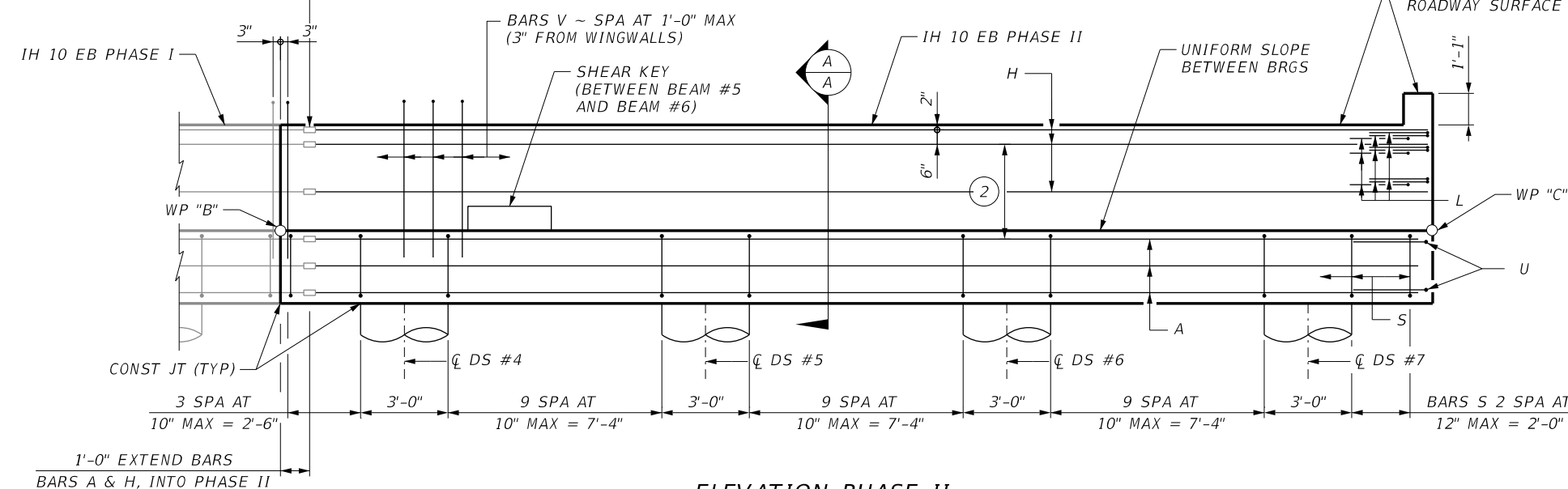


WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
B	3909.897'	3910.799'
C	3909.107'	3910.009'

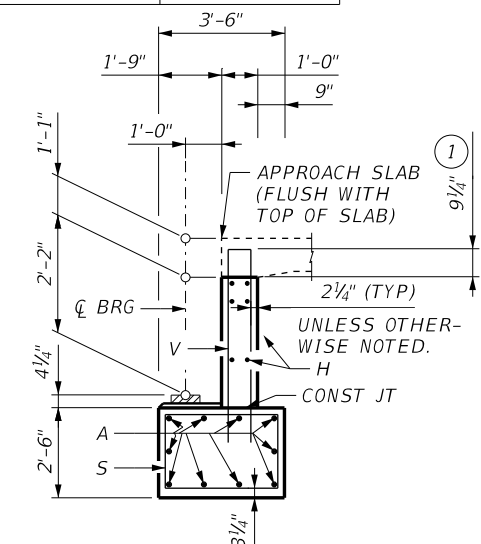
TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
4	3907.312'	3908.214'
5	3907.105'	3908.007'
6	3906.898'	3907.801'
7	3906.692'	3907.594'

PLAN PHASE II

PROVIDE MECHANICAL COUPLERS FOR BARS A AND H IN ACCORDANCE WITH ITEM 440.

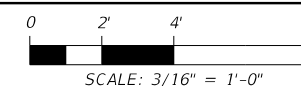


ELEVATION PHASE II



SECTION A-A

HL93 LOADING



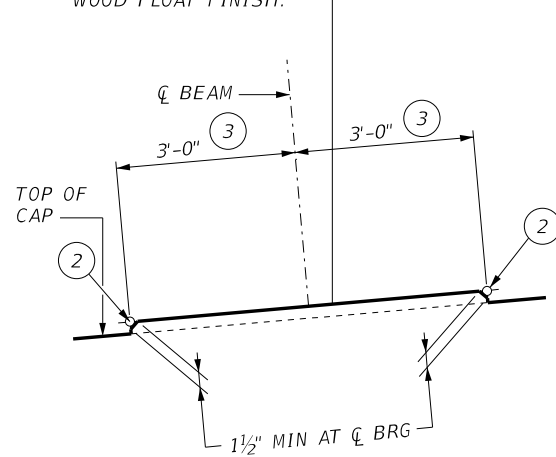
Wirat Wanichakorn
2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE II
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

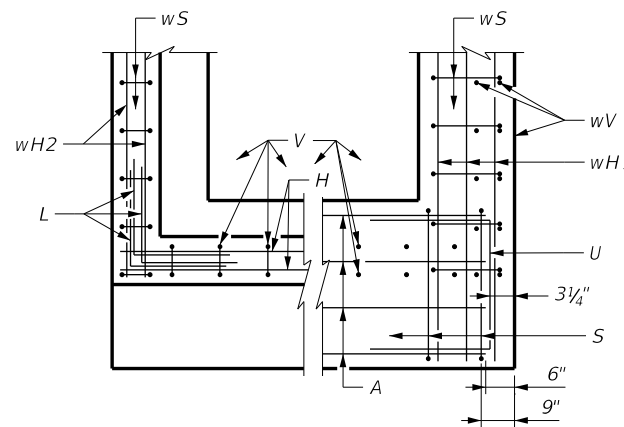
SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	631

LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



**BACKWALL
CORNER DETAILS**

**TABLE OF ESTIMATED QUANTITIES
PHASE I (ONE ABUT)**

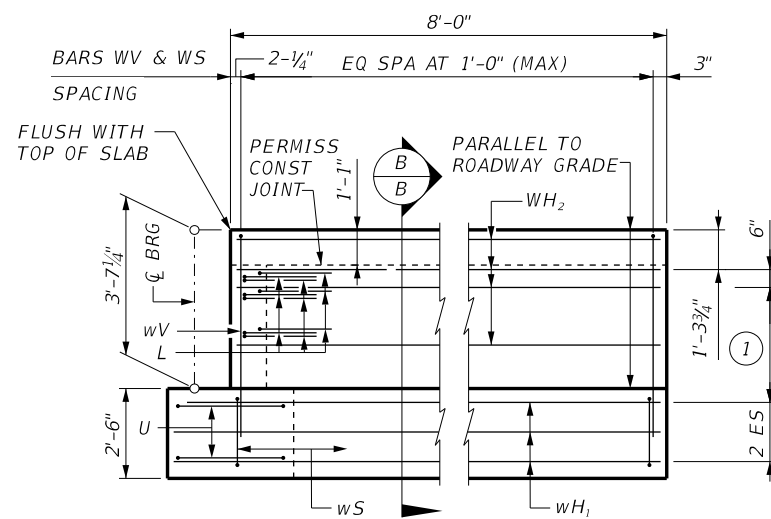
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31' - 4"	1,665
H	8	#6	31' - 4"	377
S	26	#5	11' - 5"	307
V	30	#5	9' - 8"	303
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,652
CONC (ABUT)			CY	12.5

**TABLE OF ESTIMATED QUANTITIES
PHASE II (ONE ABUT)**

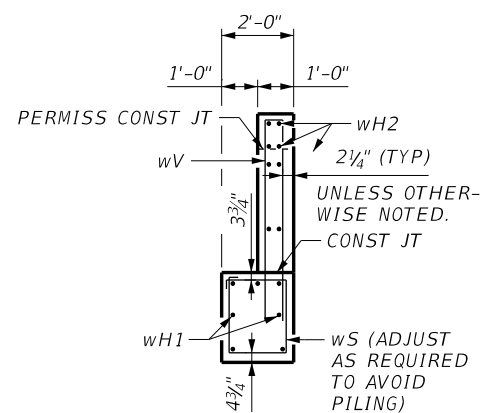
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	38' - 0"	2,019
H	8	#6	38' - 4"	461
L	9	#6	4' - 0"	54
S	36	#5	8' - 5"	314
U	4	#6	8' - 0"	48
V	39	#5	9' - 8"	396
wH1	7	#6	9' - 5"	99
wH2	8	#6	7' - 8"	92
wS	8	#4	7' - 8"	41
wV	8	#5	10' - 0"	83
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,607
CONC (ABUT)			CY	19.2

KEYED NOTES

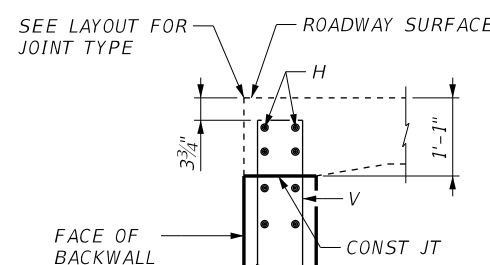
- ① SPACING BASED ON BEAM TYPE:
XB28 ~ 3 EQUAL SPACES
- ② RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ③ MEASURED ALONG ϕ OF BEARING



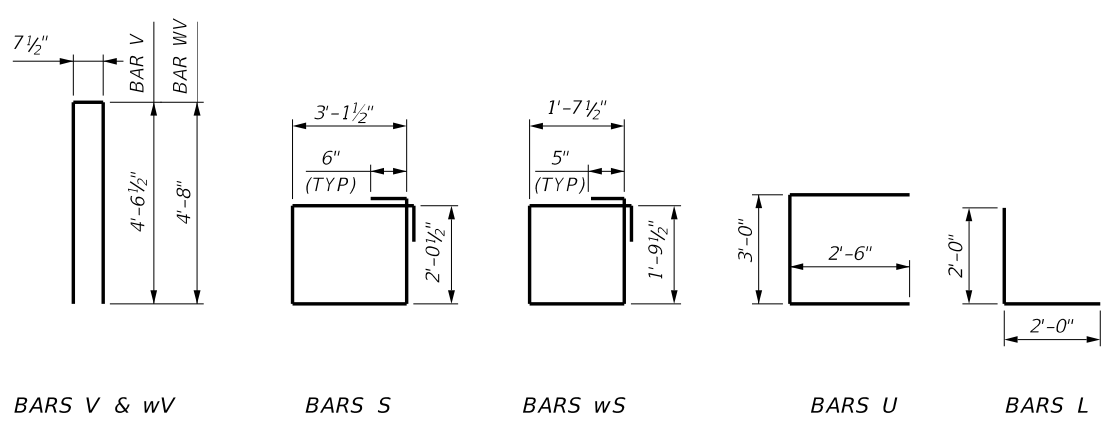
WINGWALL ELEVATION



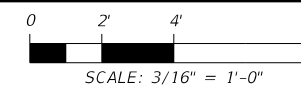
SECTION B-B



**BACKWALL DETAIL
(WITH APPROACH SLAB)**



HL93 LOADING



Steve Groves 2/29/2024

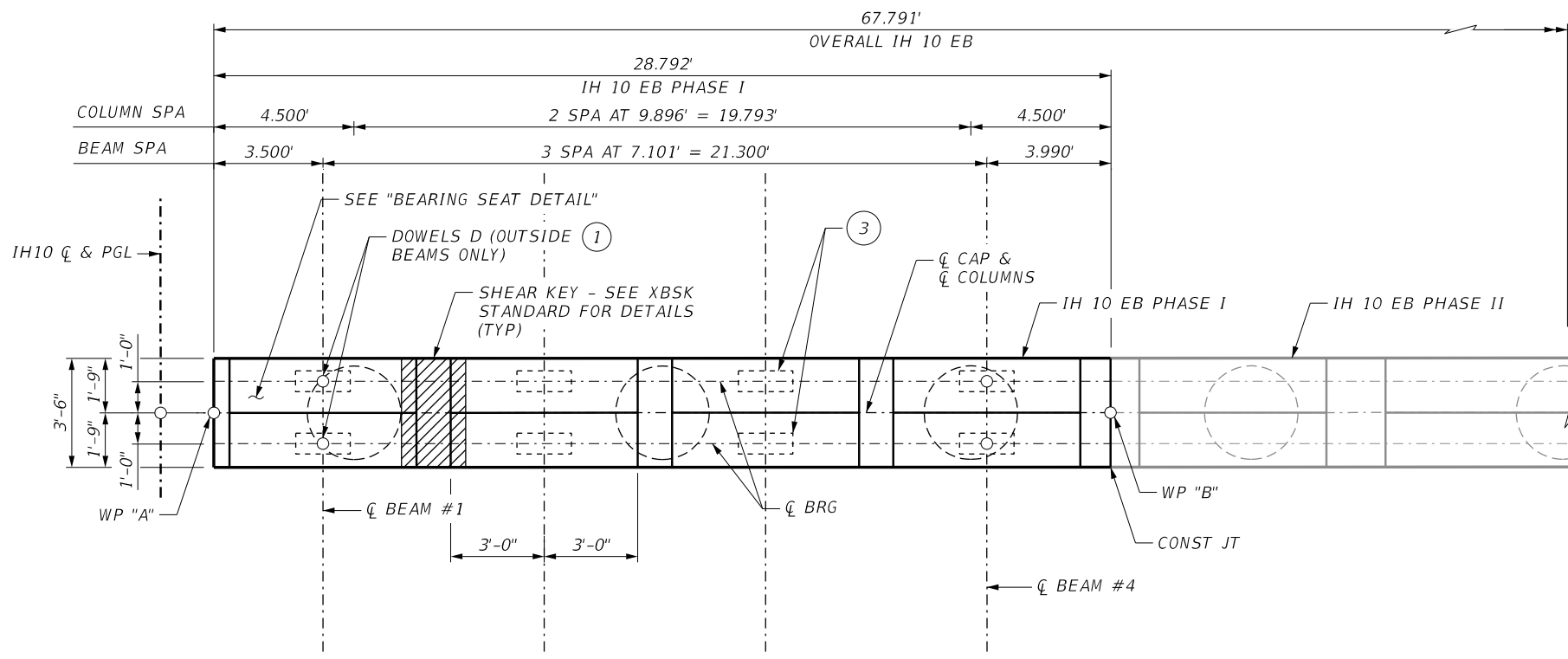
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TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

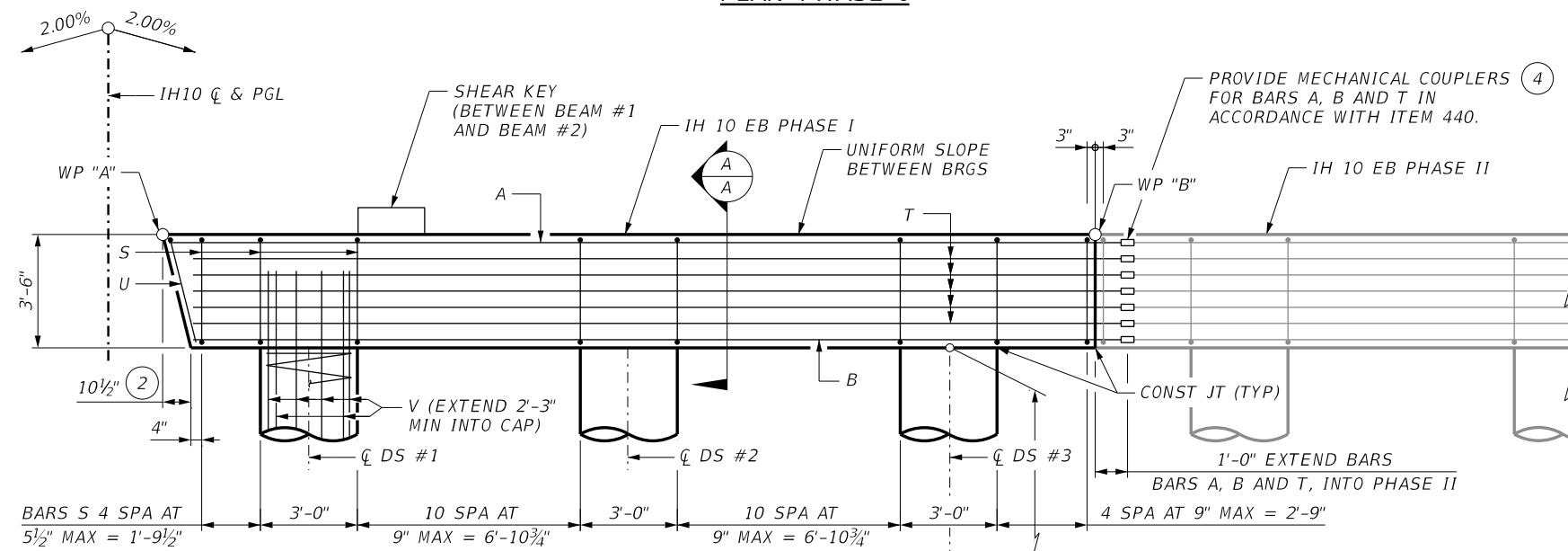
IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I & II
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

SHEET 1 OF 1

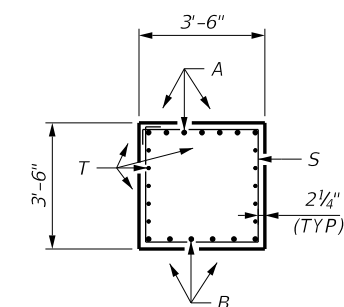
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	632



PLAN PHASE I



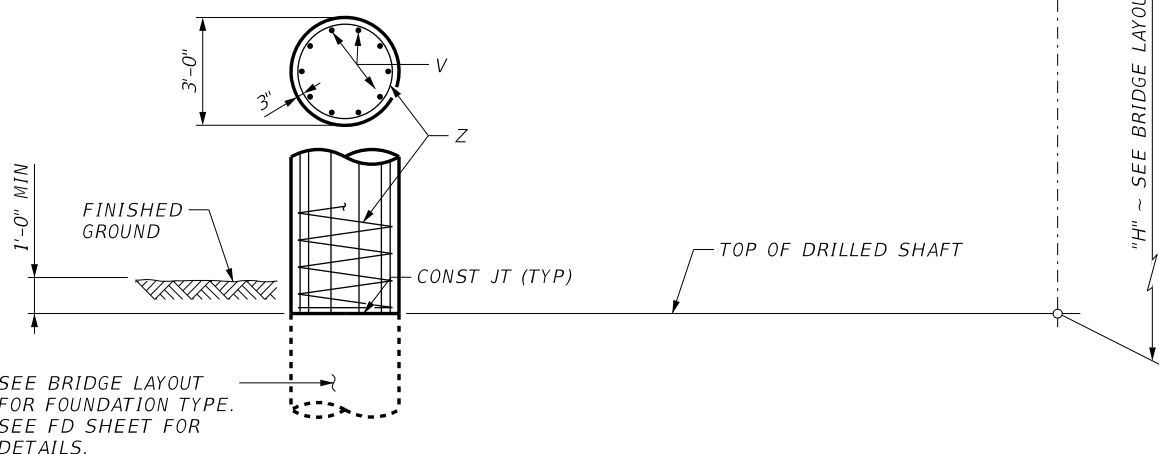
ELEVATION PHASE I



SECTION A-A

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $F'_C = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
 - GALVANIZE DOWEL BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
A	3910.824'	3911.095'
B	3910.248'	3910.519'

TOP OF COLUMN ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
1	3907.234'	3907.505'
2	3907.036'	3907.307'
3	3906.838'	3907.109'

HL93 LOADING

SCALE: 3/16" = 1'-0"

2/29/2024

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IH 10 WIDENING (NMSL/SPUR 37)
**BENT NO. 2 & 3
PHASE I**
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

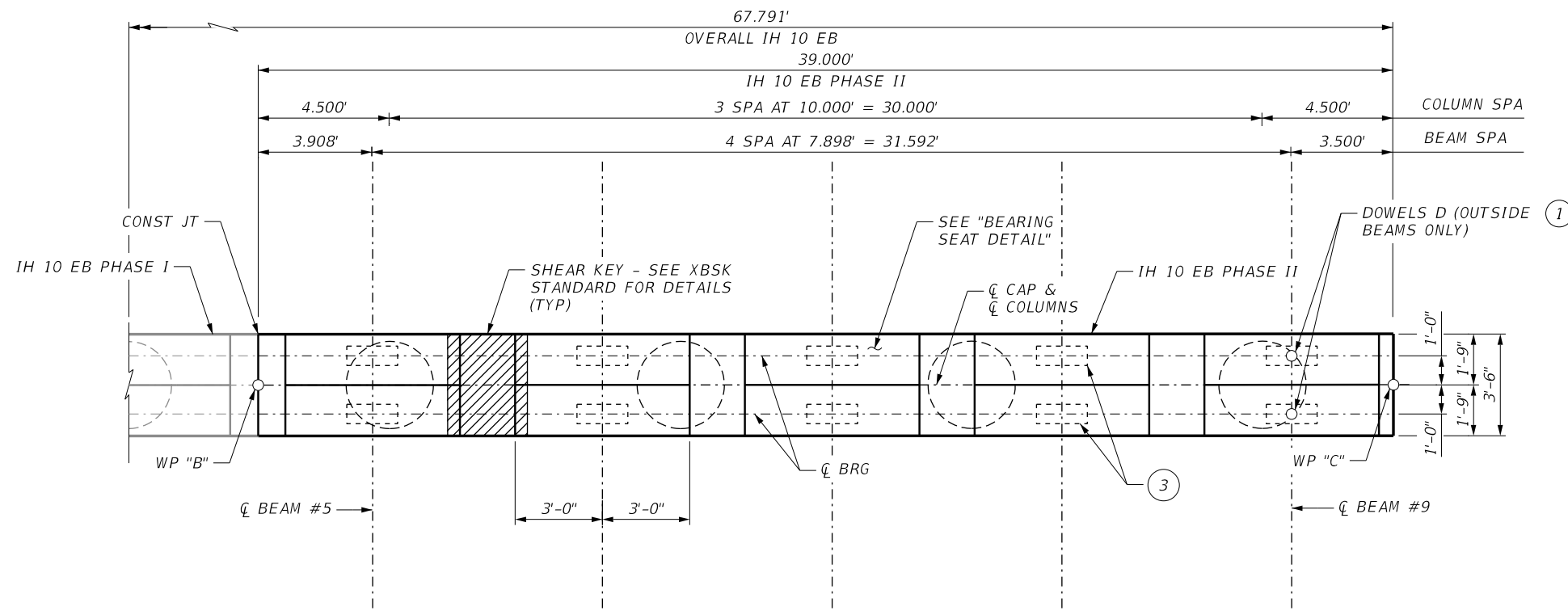
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			633

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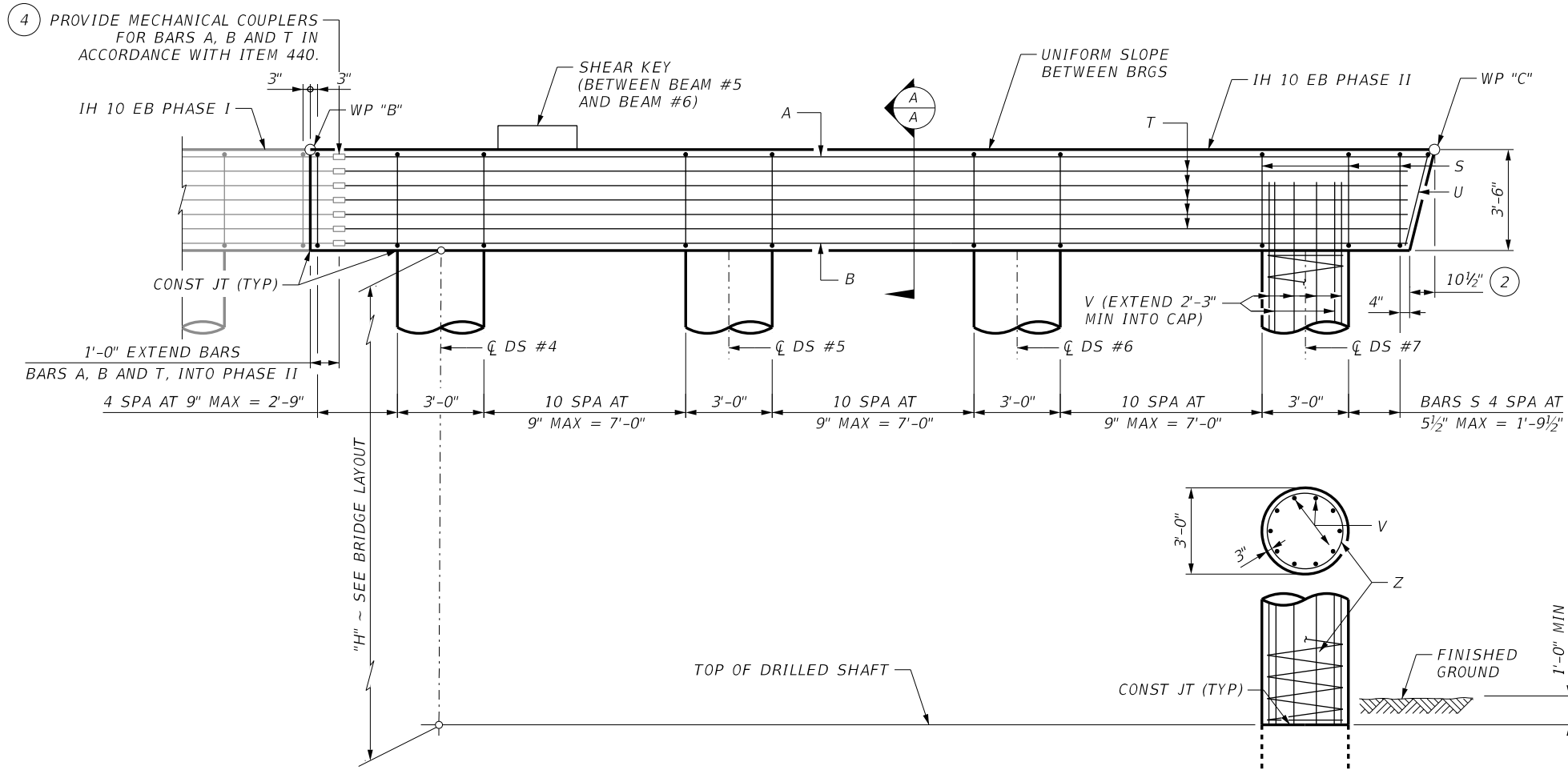
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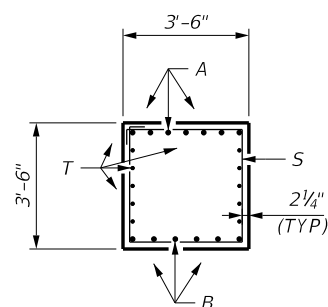
PLAN PHASE II

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
 - GALVANIZE DOWEL BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

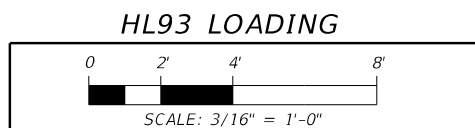
- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



ELEVATION PHASE II



SECTION A-A



STATE OF TEXAS
 WIRAT WANICHAKORN
 96609
 LICENSED PROFESSIONAL ENGINEER

W. Wirat Wanichakorn 2/29/2024

WP	ELEV	
	BENT 2	BENT 3
B	3910.248'	3910.519'
C	3909.468'	3909.739'

COL	ELEV	
	BENT 2	BENT 3
4	3907.325'	3907.596'
5	3907.125'	3907.396'
6	3906.925'	3907.196'
7	3906.725'	3906.996'

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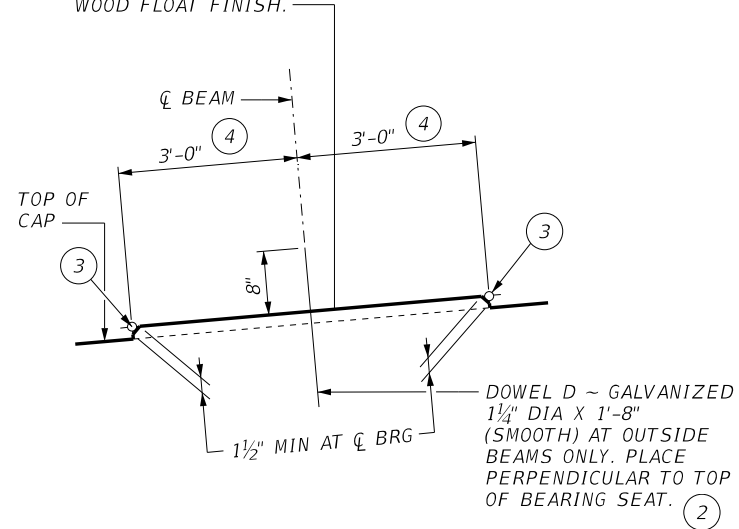
Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
 BENT NO. 2 & 3
 PHASE II
 ARROYO 46 RELIEF #DA BRIDGE
 IH 10 EB
 (STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			634

LEVEL ALONG A LINE PERPENDICULAR TO
 CL BENT. UNIFORM SLOPE BETWEEN LEFT
 AND RIGHT BEARING SEAT ELEVATIONS WITH
 WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN
 AND FREE OF ALL LOOSE MATERIAL
 BEFORE PLACING BEARING PAD.)

**TABLE OF ESTIMATED QUANTITIES PHASE I
 (ONE BENT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	7	#11	29' - 7"	1,119
B	6	#11	28' - 10"	943
D	4	#9	1' - 8"	32
S	32	#5	13' - 6"	467
T	10	#5	28' - 10"	309
U	1	#5	9' - 8"	11
V	30	#9	18' - 3"	1,887
Z	3	#3	268' - 3"	303
ITEM		UNIT	QUANTITY	
Reinforcing Steel		LB	5,070	
Conc (Cap)		CY	13.7	
Conc (Column)		CY	12.6	

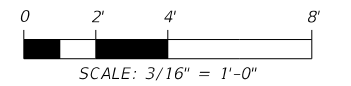
**TABLE OF ESTIMATED QUANTITIES PHASE II
 (ONE BENT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	7	#11	37' - 9"	1,432
B	6	#11	37' - 0"	1,179
D	2	#9	1' - 8"	16
S	43	#5	13' - 6"	628
T	10	#5	37' - 0"	386
U	1	#5	9' - 8"	11
V	40	#9	18' - 3"	2,516
Z	4	#3	268' - 3"	404
ITEM		UNIT	QUANTITY	
Reinforcing Steel		LB	6,571	
Conc (Cap)		CY	18.2	
Conc (Column)		CY	16.8	

KEYED NOTES

- ① QUANTITIES SHOWN ARE BASED ON AN "H" VALUE OF 17'. FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
 BARS V LENGTH, 1'-0"
 BARS Z LENGTH, 15.740'
 REINFORCING STEEL, 120 LB
 CLASS "C" CONC (COL), 0.785 CY
- ② OMIT DOWELS D AT THE END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- ③ RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED ELSEWHERE.
- ④ MEASURED A LONG CL OF BEARING.

HL93 LOADING



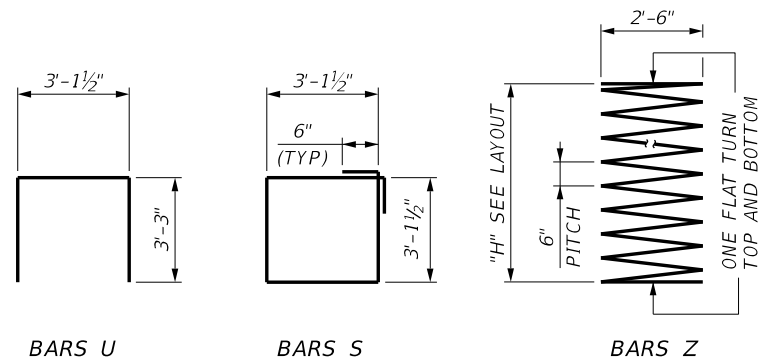
Wirat Wanichakorn
 2/29/2024

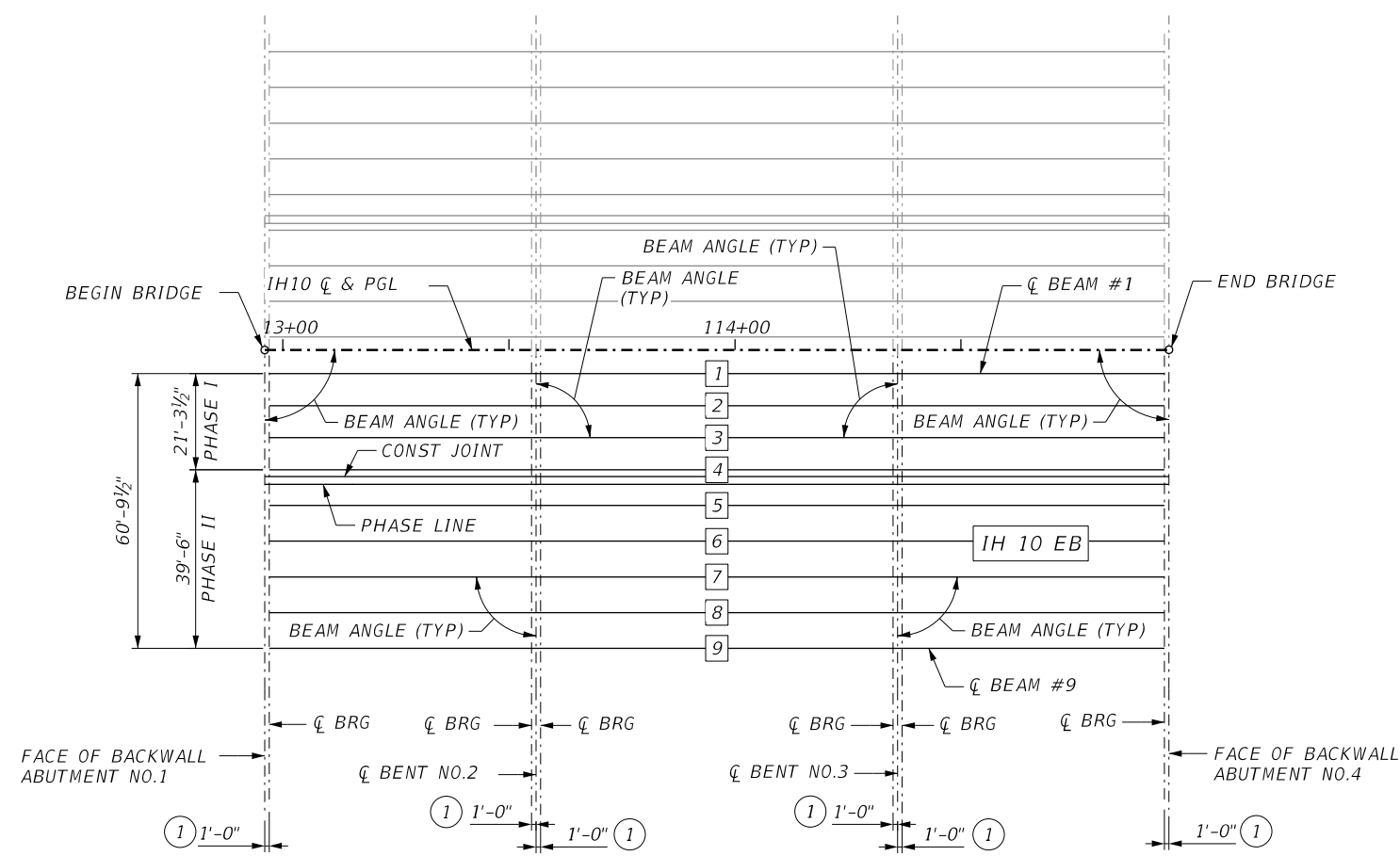
NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
 BENT NO. 2 & 3
 PHASE I & II
 ARROYO 46 RELIEF #DA BRIDGE
 IH 10 EB
 (STA 112+96 TO STA 114+96)

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	635





- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- ③ BEAM SPACING IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X-BEAMS.

SPAN 1
(5XB28 BEAMS)

SPAN 2
(5XB28 BEAMS)

SPAN 3
(5XB28 BEAMS)

FRAMING PLAN

BEAM REPORT, SPAN 1

	HORIZONTAL DISTANCE C-C BENT	HORIZONTAL DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG. ②	BEAM SLOPE	
PHASE I	BEAM 1	60.0000	58.0000	59.5006	0.00451
PHASE I	BEAM 2	60.0000	58.0000	59.5006	0.00451
PHASE I	BEAM 3	60.0000	58.0000	59.5006	0.00451
PHASE I	BEAM 4	60.0000	58.0000	59.5006	0.00451
PHASE II	BEAM 5	60.0000	58.0000	59.5006	0.00451
PHASE II	BEAM 6	60.0000	58.0000	59.5006	0.00451
PHASE II	BEAM 7	60.0000	58.0000	59.5006	0.00451
PHASE II	BEAM 8	60.0000	58.0000	59.5006	0.00451
PHASE II	BEAM 9	60.0000	58.0000	59.5006	0.00451

BENT NO. 1 (N 86 46 1.98 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 5.2083 R
BEAM SPAC. ③ BEAM ANGLE (CL BENT) D M S

SPAN 1	PHASE I	BEAM 1	0.0000	90 0 0.00
SPAN 1	PHASE I	BEAM 2	7.1007	90 0 0.00
SPAN 1	PHASE I	BEAM 3	7.1007	90 0 0.00
SPAN 1	PHASE I	BEAM 4	7.1007	90 0 0.00
SPAN 1	PHASE II	BEAM 5	7.8979	90 0 0.00
SPAN 1	PHASE II	BEAM 6	7.8979	90 0 0.00
SPAN 1	PHASE II	BEAM 7	7.8979	90 0 0.00
SPAN 1	PHASE II	BEAM 8	7.8979	90 0 0.00
SPAN 1	PHASE II	BEAM 9	7.8979	90 0 0.00
TOTAL			60.7917	

BENT NO. 3 (N 86 46 1.98 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 5.2083 R
BEAM SPAC. ③ BEAM ANGLE (CL BENT) D M S

SPAN 2	PHASE I	BEAM 1	0.0000	90 0 0.00
SPAN 2	PHASE I	BEAM 2	7.1007	90 0 0.00
SPAN 2	PHASE I	BEAM 3	7.1007	90 0 0.00
SPAN 2	PHASE I	BEAM 4	7.1007	90 0 0.00
SPAN 2	PHASE II	BEAM 5	7.8979	90 0 0.00
SPAN 2	PHASE II	BEAM 6	7.8979	90 0 0.00
SPAN 2	PHASE II	BEAM 7	7.8979	90 0 0.00
SPAN 2	PHASE II	BEAM 8	7.8979	90 0 0.00
SPAN 2	PHASE II	BEAM 9	7.8979	90 0 0.00
TOTAL			60.7917	

BEAM REPORT, SPAN 2

	HORIZONTAL DISTANCE C-C BENT	HORIZONTAL DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG. ②	BEAM SLOPE	
PHASE I	BEAM 1	80.0000	78.0000	79.5008	0.00451
PHASE I	BEAM 2	80.0000	78.0000	79.5008	0.00451
PHASE I	BEAM 3	80.0000	78.0000	79.5008	0.00451
PHASE I	BEAM 4	80.0000	78.0000	79.5008	0.00451
PHASE II	BEAM 5	80.0000	78.0000	79.5008	0.00451
PHASE II	BEAM 6	80.0000	78.0000	79.5008	0.00451
PHASE II	BEAM 7	80.0000	78.0000	79.5008	0.00451
PHASE II	BEAM 8	80.0000	78.0000	79.5008	0.00451
PHASE II	BEAM 9	80.0000	78.0000	79.5008	0.00451

BENT NO. 2 (N 86 46 1.98 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 5.2083 R
BEAM SPAC. ③ BEAM ANGLE (CL BENT) D M S

SPAN 1	PHASE I	BEAM 1	0.0000	90 0 0.00
SPAN 1	PHASE I	BEAM 2	7.1007	90 0 0.00
SPAN 1	PHASE I	BEAM 3	7.1007	90 0 0.00
SPAN 1	PHASE I	BEAM 4	7.1007	90 0 0.00
SPAN 1	PHASE II	BEAM 5	7.8979	90 0 0.00
SPAN 1	PHASE II	BEAM 6	7.8979	90 0 0.00
SPAN 1	PHASE II	BEAM 7	7.8979	90 0 0.00
SPAN 1	PHASE II	BEAM 8	7.8979	90 0 0.00
SPAN 1	PHASE II	BEAM 9	7.8979	90 0 0.00
TOTAL			60.7917	

BENT NO. 3 (N 86 46 1.98 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 5.2083 R
BEAM SPAC. ③ BEAM ANGLE (CL BENT) D M S

SPAN 3	PHASE I	BEAM 1	0.0000	90 0 0.00
SPAN 3	PHASE I	BEAM 2	7.1007	90 0 0.00
SPAN 3	PHASE I	BEAM 3	7.1007	90 0 0.00
SPAN 3	PHASE I	BEAM 4	7.1007	90 0 0.00
SPAN 3	PHASE II	BEAM 5	7.8979	90 0 0.00
SPAN 3	PHASE II	BEAM 6	7.8979	90 0 0.00
SPAN 3	PHASE II	BEAM 7	7.8979	90 0 0.00
SPAN 3	PHASE II	BEAM 8	7.8979	90 0 0.00
SPAN 3	PHASE II	BEAM 9	7.8979	90 0 0.00
TOTAL			60.7917	

BEAM REPORT, SPAN 3

	HORIZONTAL DISTANCE C-C BENT	HORIZONTAL DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG. ②	BEAM SLOPE	
PHASE I	BEAM 1	60.0000	58.0000	59.5006	0.00451
PHASE I	BEAM 2	60.0000	58.0000	59.5006	0.00451
PHASE I	BEAM 3	60.0000	58.0000	59.5006	0.00451
PHASE I	BEAM 4	60.0000	58.0000	59.5006	0.00451
PHASE II	BEAM 5	60.0000	58.0000	59.5006	0.00451
PHASE II	BEAM 6	60.0000	58.0000	59.5006	0.00451
PHASE II	BEAM 7	60.0000	58.0000	59.5006	0.00451
PHASE II	BEAM 8	60.0000	58.0000	59.5006	0.00451
PHASE II	BEAM 9	60.0000	58.0000	59.5006	0.00451

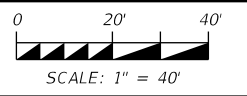
BENT NO. 2 (N 86 46 1.98 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 5.2083 R
BEAM SPAC. ③ BEAM ANGLE (CL BENT) D M S

SPAN 2	PHASE I	BEAM 1	0.0000	90 0 0.00
SPAN 2	PHASE I	BEAM 2	7.1007	90 0 0.00
SPAN 2	PHASE I	BEAM 3	7.1007	90 0 0.00
SPAN 2	PHASE I	BEAM 4	7.1007	90 0 0.00
SPAN 2	PHASE II	BEAM 5	7.8979	90 0 0.00
SPAN 2	PHASE II	BEAM 6	7.8979	90 0 0.00
SPAN 2	PHASE II	BEAM 7	7.8979	90 0 0.00
SPAN 2	PHASE II	BEAM 8	7.8979	90 0 0.00
SPAN 2	PHASE II	BEAM 9	7.8979	90 0 0.00
TOTAL			60.7917	

BENT NO. 4 (N 86 46 1.98 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 5.2083 R
BEAM SPAC. ③ BEAM ANGLE (CL BENT) D M S

SPAN 3	PHASE I	BEAM 1	0.0000	90 0 0.00
SPAN 3	PHASE I	BEAM 2	7.1007	90 0 0.00
SPAN 3	PHASE I	BEAM 3	7.1007	90 0 0.00
SPAN 3	PHASE I	BEAM 4	7.1007	90 0 0.00
SPAN 3	PHASE II	BEAM 5	7.8979	90 0 0.00
SPAN 3	PHASE II	BEAM 6	7.8979	90 0 0.00
SPAN 3	PHASE II	BEAM 7	7.8979	90 0 0.00
SPAN 3	PHASE II	BEAM 8	7.8979	90 0 0.00
SPAN 3	PHASE II	BEAM 9	7.8979	90 0 0.00
TOTAL			60.7917	

HL93 LOADING



Wirat Wanichakorn (Signature)
2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)

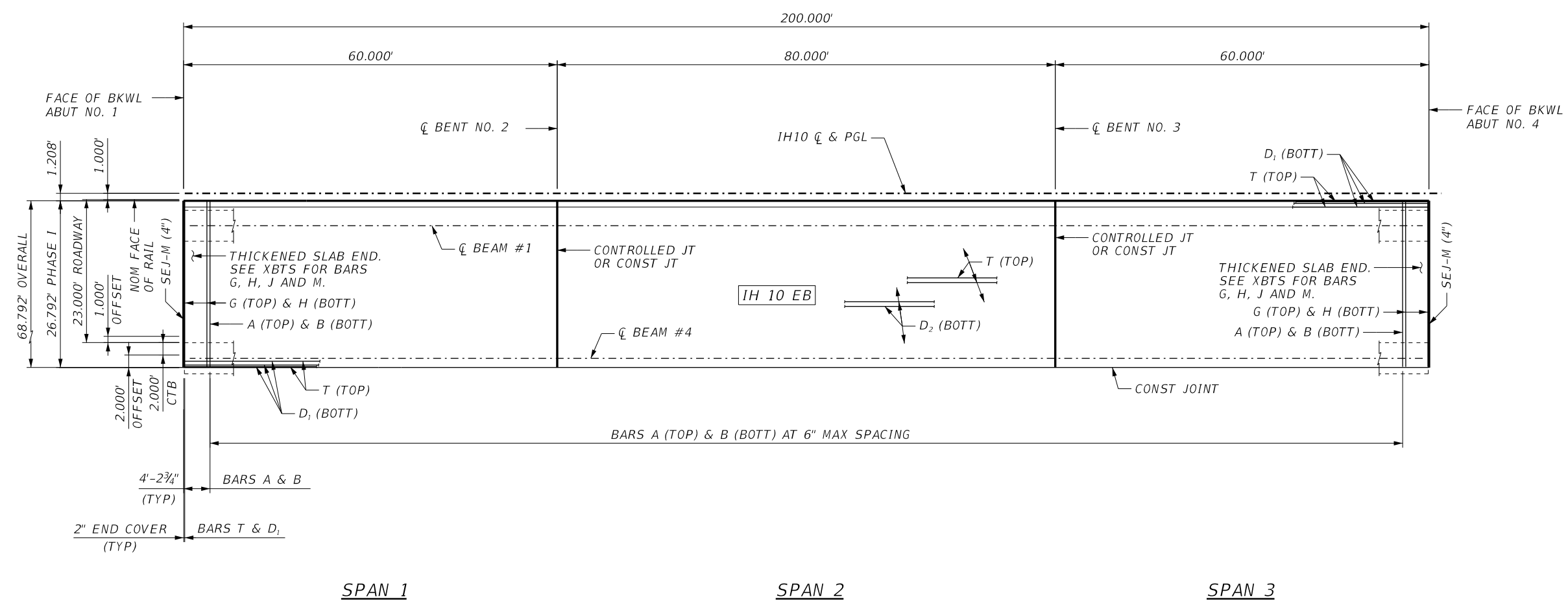
BEAM LAYOUT
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	636

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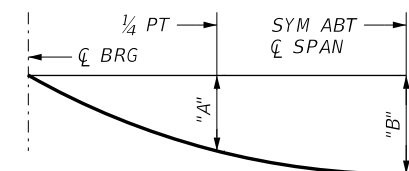
- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



PLAN PHASE I

TABLE OF DEFLECTIONS PHASE I

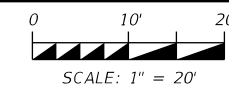
SPAN	BEAM NO.	"A"	"B"
		FT	FT
1 & 3	1	0.031	0.043
	2 & 3	0.029	0.041
	4	0.023	0.032
2	1	0.100	0.140
	2 & 3	0.096	0.134
	4	0.073	0.102



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



SCALE: 1" = 20'



Wirat Wanichakorn 2/29/2024

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CivilCorp
ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB28) UNITS
PHASE I
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

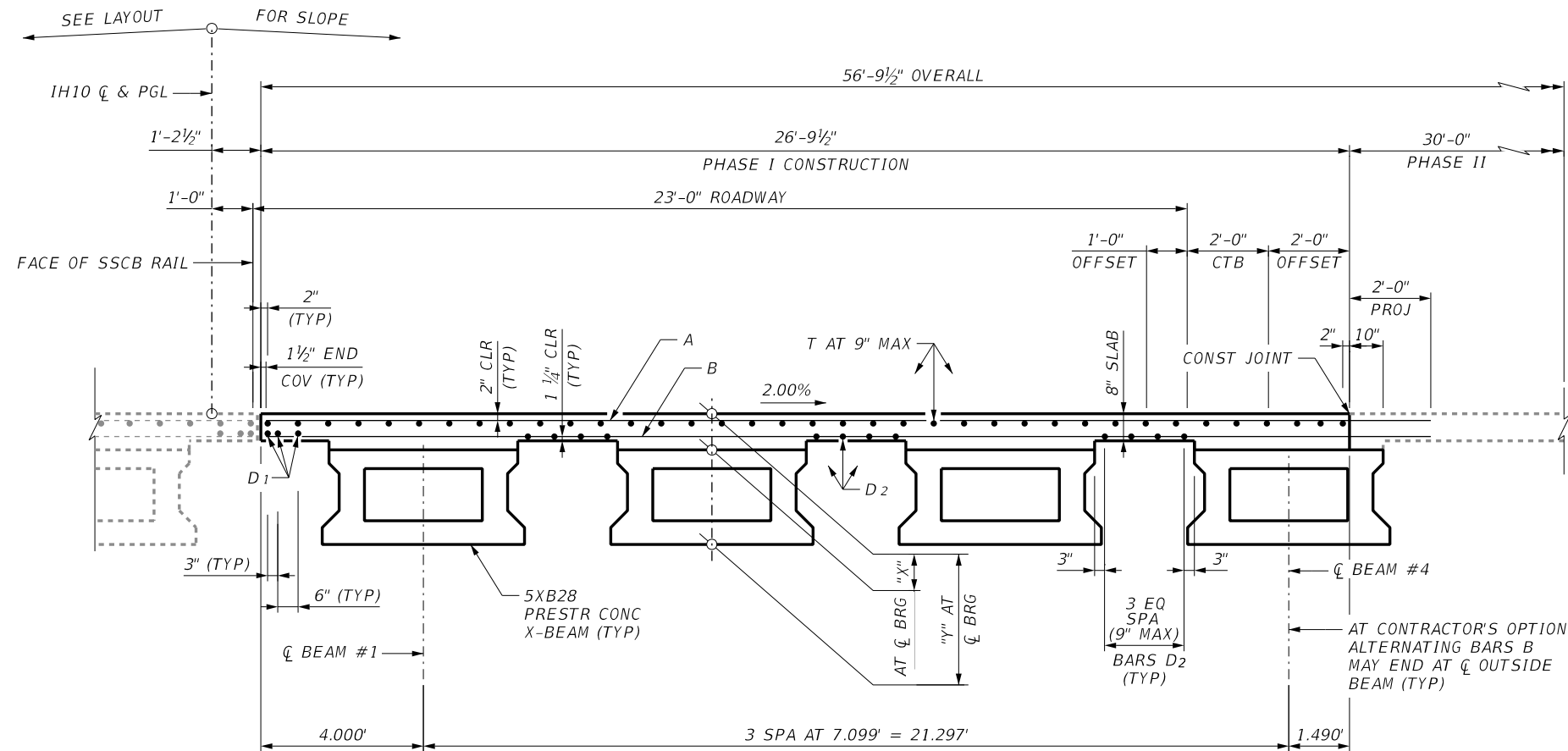
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	637

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

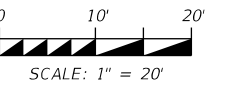


TYPICAL TRANSVERSE SECTION PHASE I
(5XB28) SPANS 1 THRU 3

SPAN NO.	REINF CONCRETE SLAB		5XB28 PRESTR CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	LF	CY	LB
1	1,608	238.00	45.7	10,449	
2	2,143	318.00	60.6	13,932	
3	1,608	238.01	45.7	10,449	
TOTAL	5,358	794.01	152.0	34,830	

SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	1-4	11"	31"

HL93 LOADING



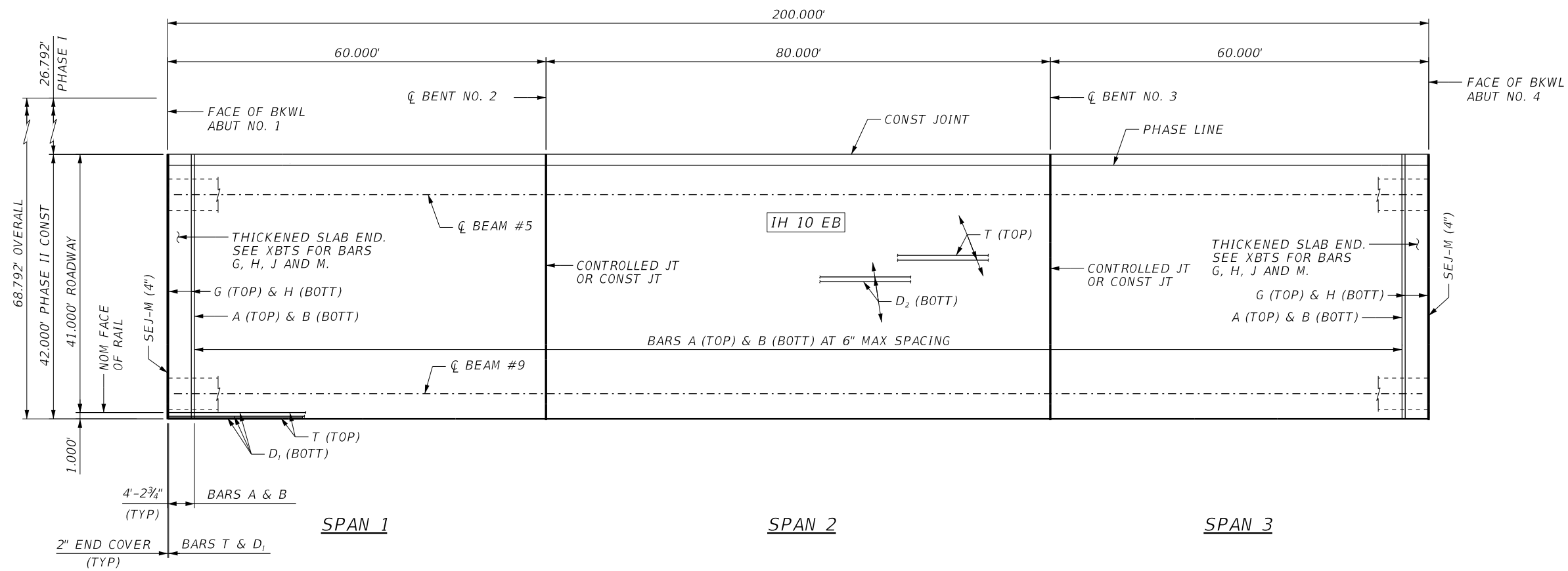
Wirat Wanichakorn 2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB28) UNITS
PHASE I
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

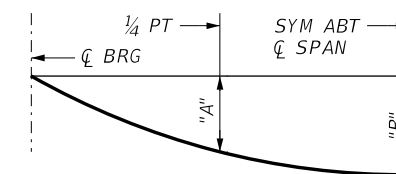
SHEET 2 OF 2		FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	638

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



PLAN PHASE II

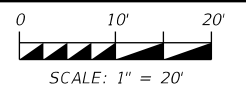
TABLE OF DEFLECTIONS PHASE II			
SPAN	BEAM NO.	"A"	"B"
		FT	FT
1 & 3	5-9	0.032	0.045
	2	0.104	0.146
2	5-8	0.105	0.147
	9		



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



SCALE: 1" = 20'



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.



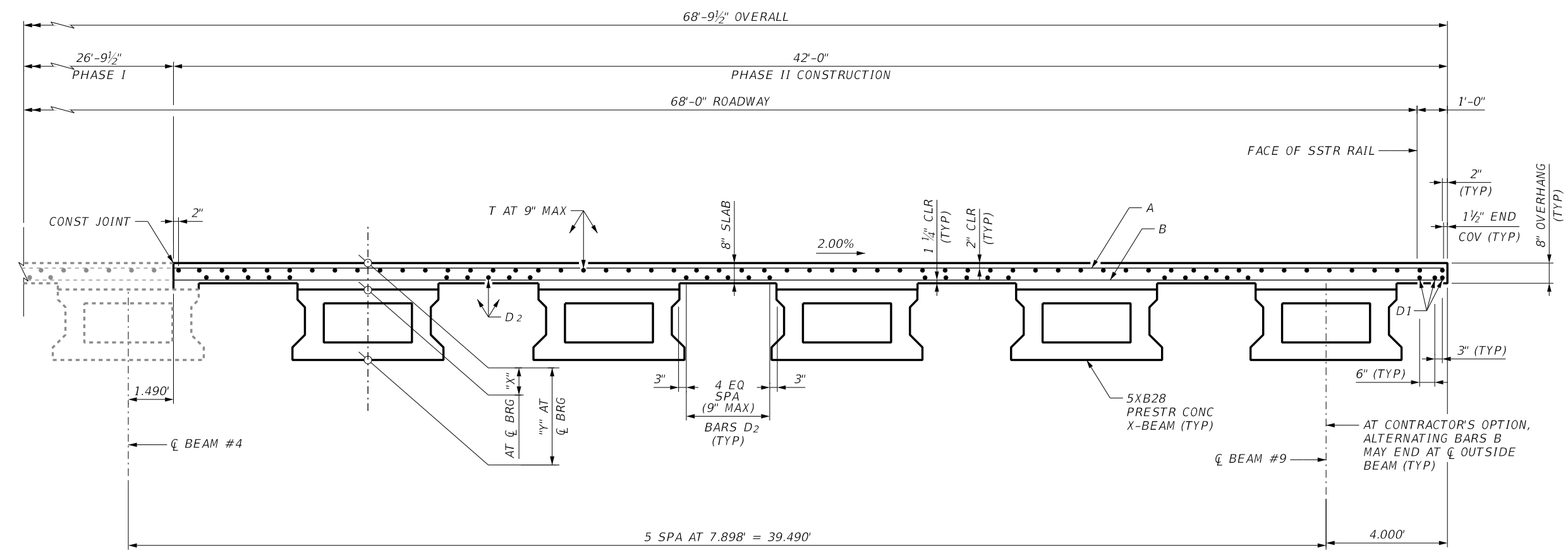
IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB28) UNITS
PHASE II
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

SHEET 1 OF 2		FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	639

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.



TYPICAL TRANSVERSE SECTION PHASE II
(5XB28) SPANS 1 THRU 3

HL93 LOADING

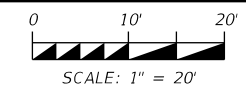


TABLE OF ESTIMATED QUANTITIES PHASE II

SPAN LENGTH	REINF CONCRETE SLAB	5XB28 PRESTR CONCRETE X-BEAMS	CLASS "S" CONCRETE		TOTAL REINF STEEL
			CY	LB	
NO.	SF	LF			
1	2,520	297.50	71.5	16,380	
2	3,360	397.50	93.7	21,840	
3	2,520	297.50	71.5	16,380	
TOTAL	8,400	992.51	236.7	54,600	

TABLE OF SECTION DEPTHS FOR PHASE II

SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	5-9	11"	39"

Wirat Wanichakorn 2/29/2024

NO.	DATE	REVISION	APPROV.

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2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB28) UNITS
PHASE II
ARROYO 46 RELIEF #DA BRIDGE
IH 10 EB
(STA 112+96 TO STA 114+96)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	104	640

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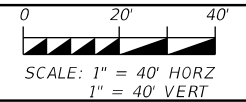
GENERAL NOTES

- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ⊕ - DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

-  STRUCTURE TO BE REMOVED
-  CHANNEL EXCAVATION
-  TEMP SPL SHORING

HL93 LOADING



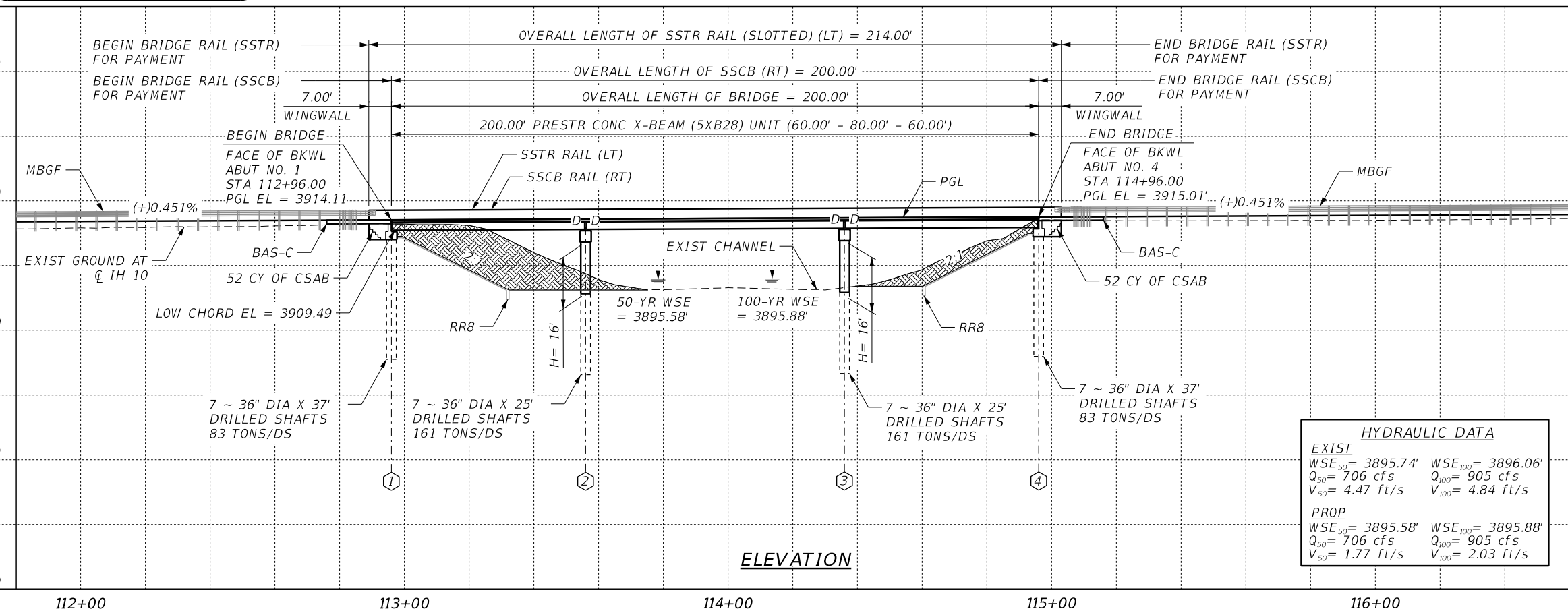
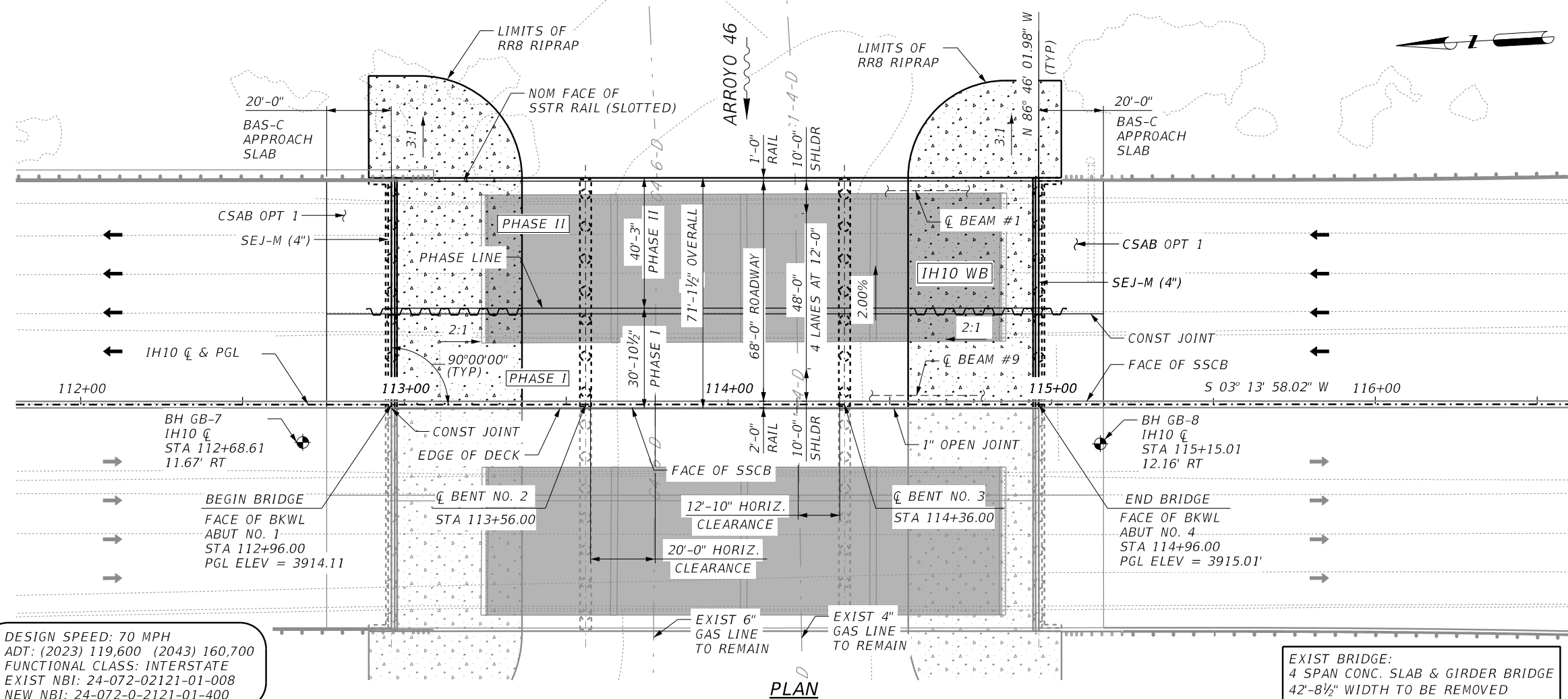
Steve Wilkerson
2/29/2024

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2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE LAYOUT
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)

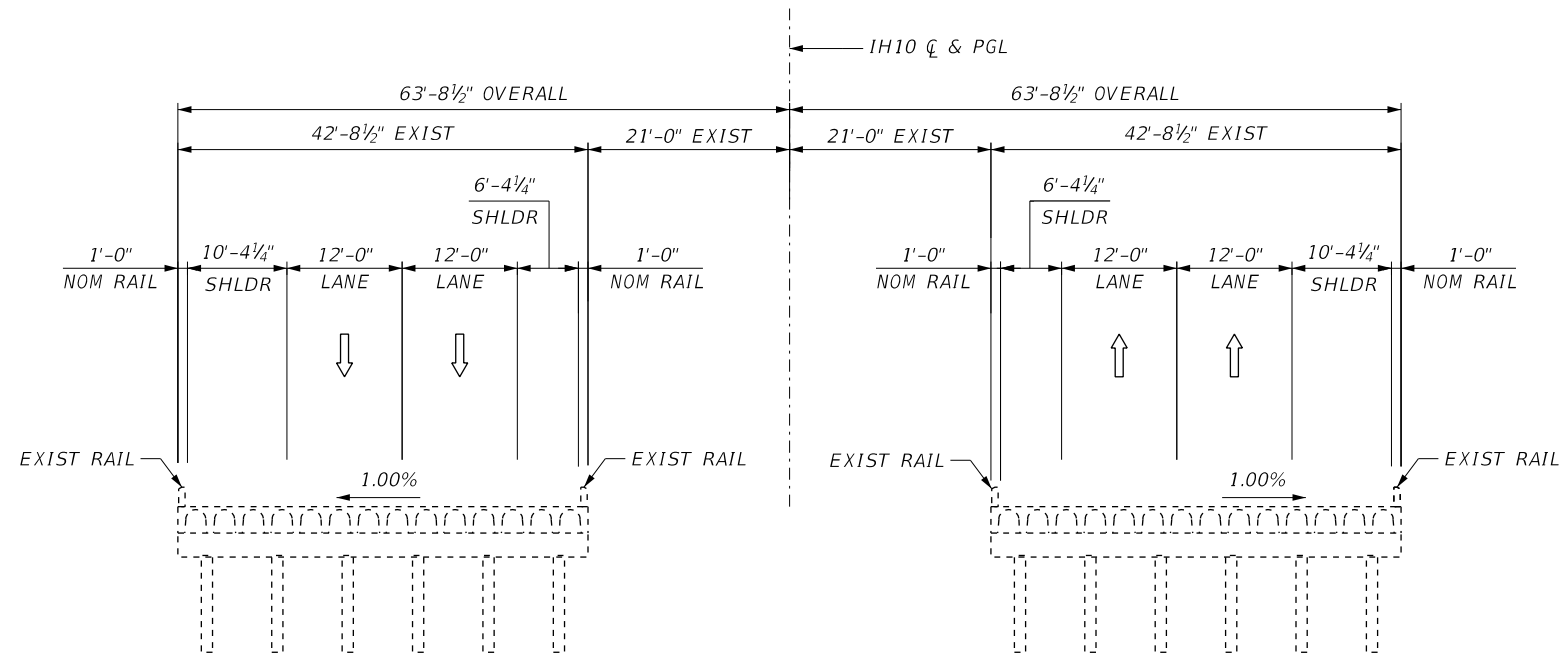
SHEET 1 OF 1		FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
		6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	641



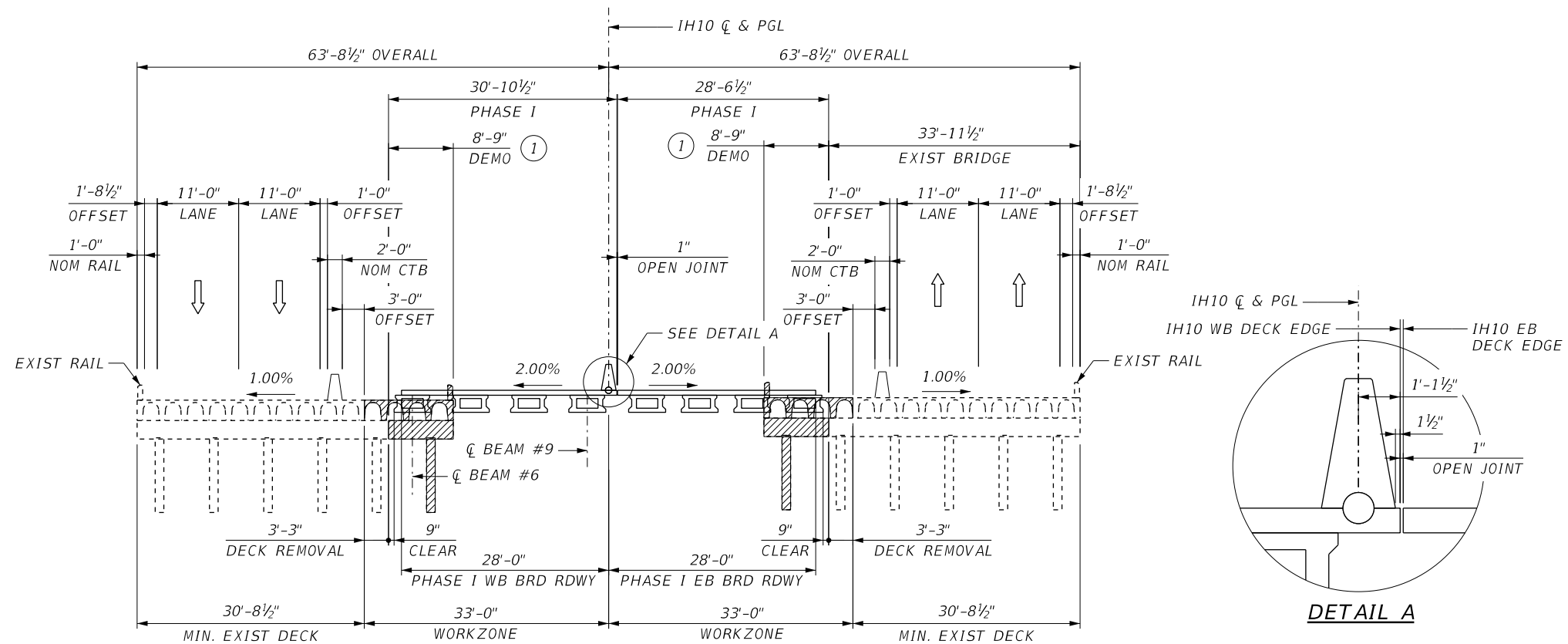
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LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



EXIST SECTION



PHASE I SECTION

- ① SAWCUT EXISTING CAP AS NECESSARY TO AVOID CONFLICT WITH BEAM. DO NOT CUT BEYOND LIMITS OF DEMOLITION. DO NOT REMOVE EXISTING COLUMNS NOT MARKED FOR DEMOLITION IN THIS PHASE.

HL93 LOADING

NOT TO SCALE



Steve Groves 2/29/2024

NO.	DATE	REVISION	APPROV.

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Texas Department of Transportation

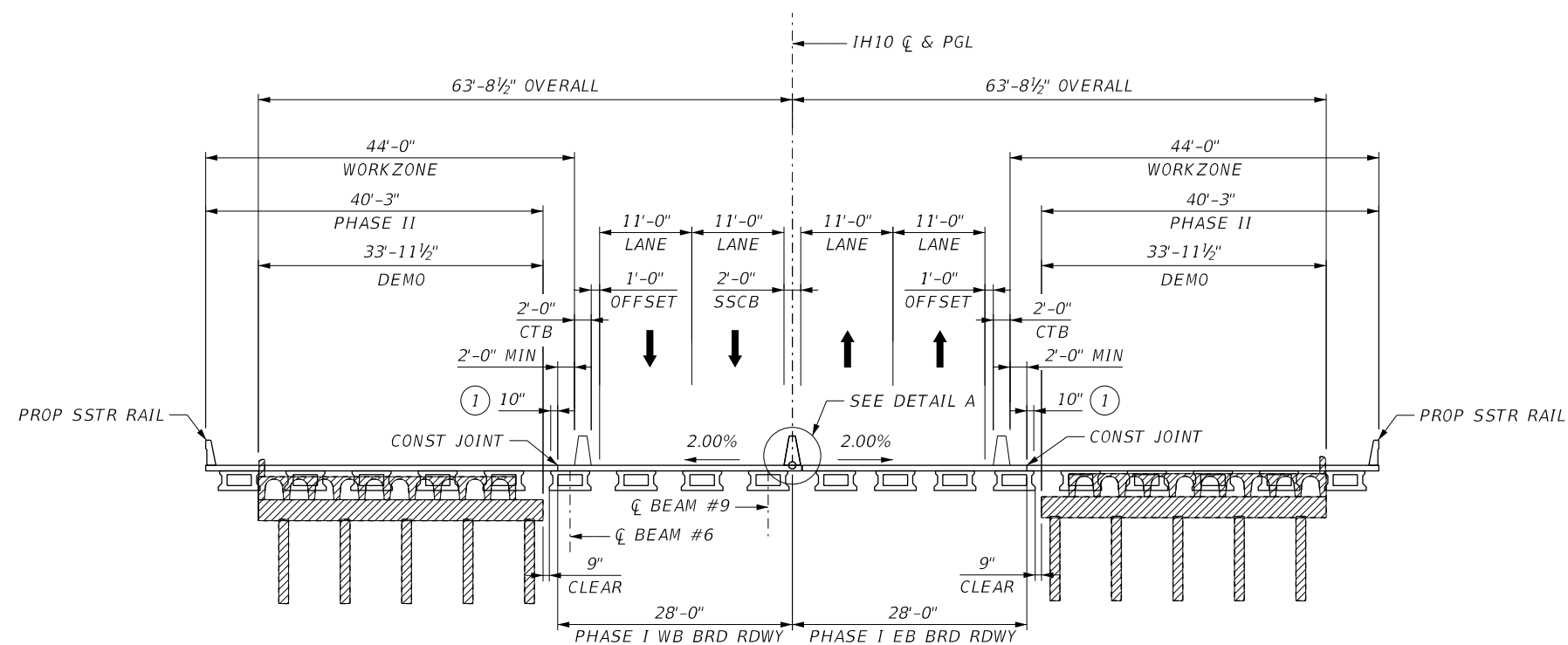
**IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	642

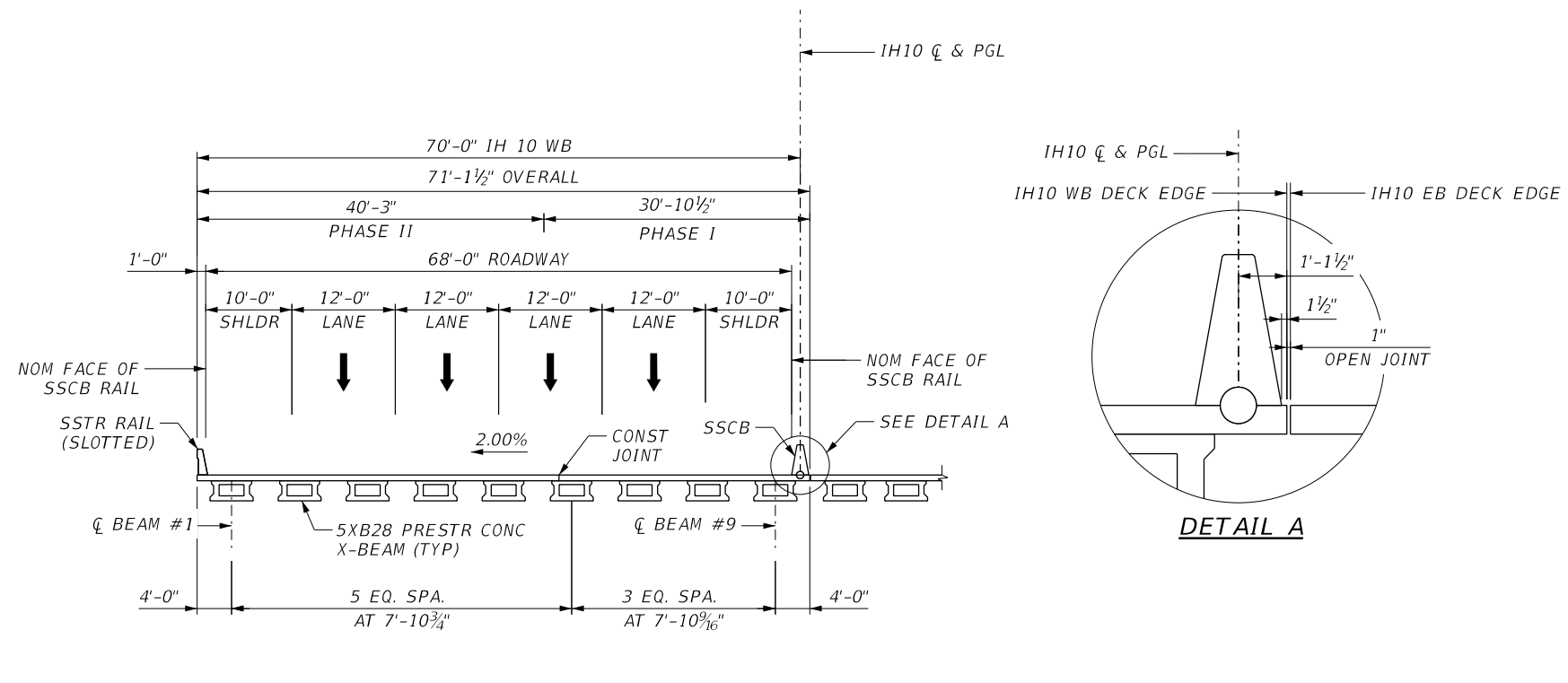
LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



PHASE II SECTION

(1) EDGE OF DECK TO EDGE OF TOP OF BEAM.



IH 10 WB FINAL SECTION

HL93 LOADING

NOT TO SCALE



Steve Groves 2/29/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37) BRIDGE
TYPICAL SECTIONS
ARROYO 46 RELIEF #DB BRIDGE
 IH 10 WB
 (STA 112+96 TO STA 114+96)

SHEET 2 OF 2

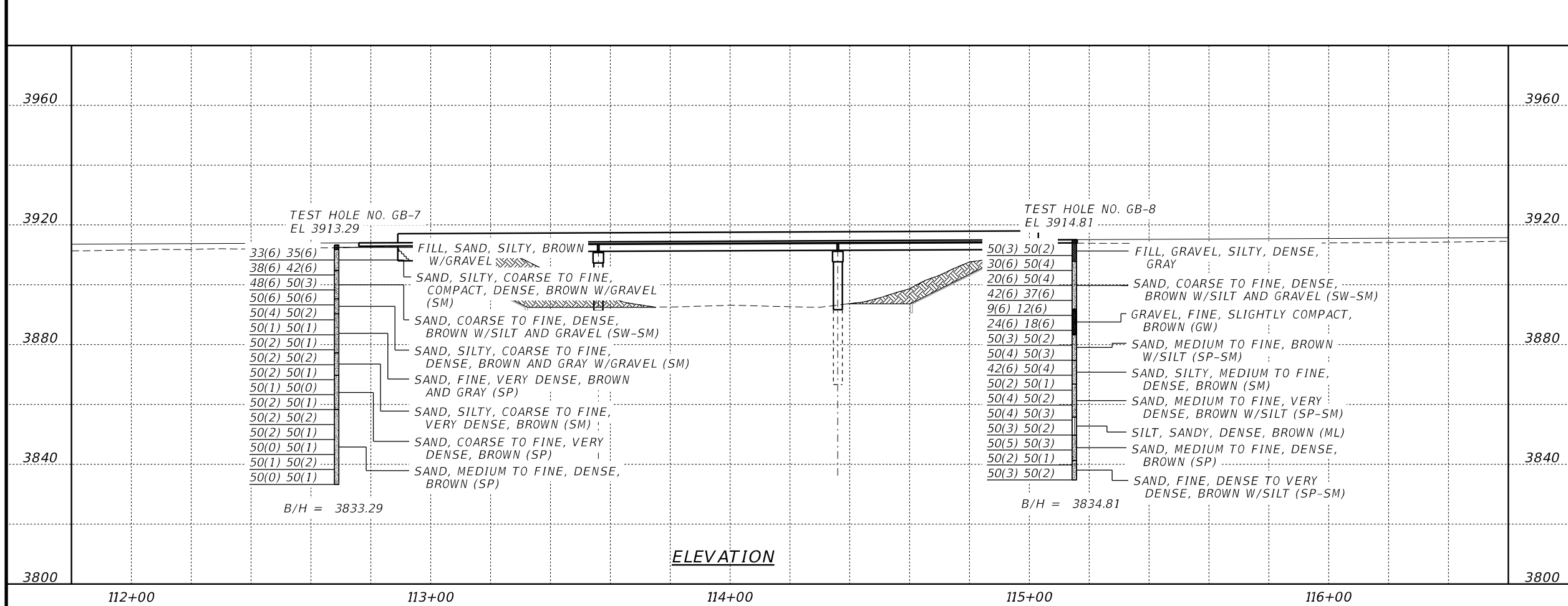
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6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	643

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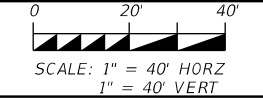
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HL93 LOADING



Steve Wilkerson
 2/29/2024

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Texas Department of Transportation
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IH 10 WIDENING (NMSL/SPUR 37)
BORING LOGS
 ARROYO 46 RELIEF #DA & #DB BRIDGE
 IH 10 EB & IH 10 WB
 (STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10

STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	644



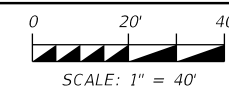
GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.
3. DRILLED SHAFT INSTALLATION WILL REQUIRE THE USE OF SLURRY DISPLACEMENT METHODS AND SURFACE CASING. THE SURFACE CASING IS TEMPORARY AND SHALL BE RETRIEVED AS OUTLINED IN TXDOT STANDARD SPECIFICATIONS.

LEGEND

- = BORE HOLE
- = DRILLED SHAFT
- = TEMP SPL SHORING

HL93 LOADING



Wirat Wanichakorn
3/28/2024

NO.	DATE	REVISION	APPROV.

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ENGINEERS • SURVEYORS
2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283

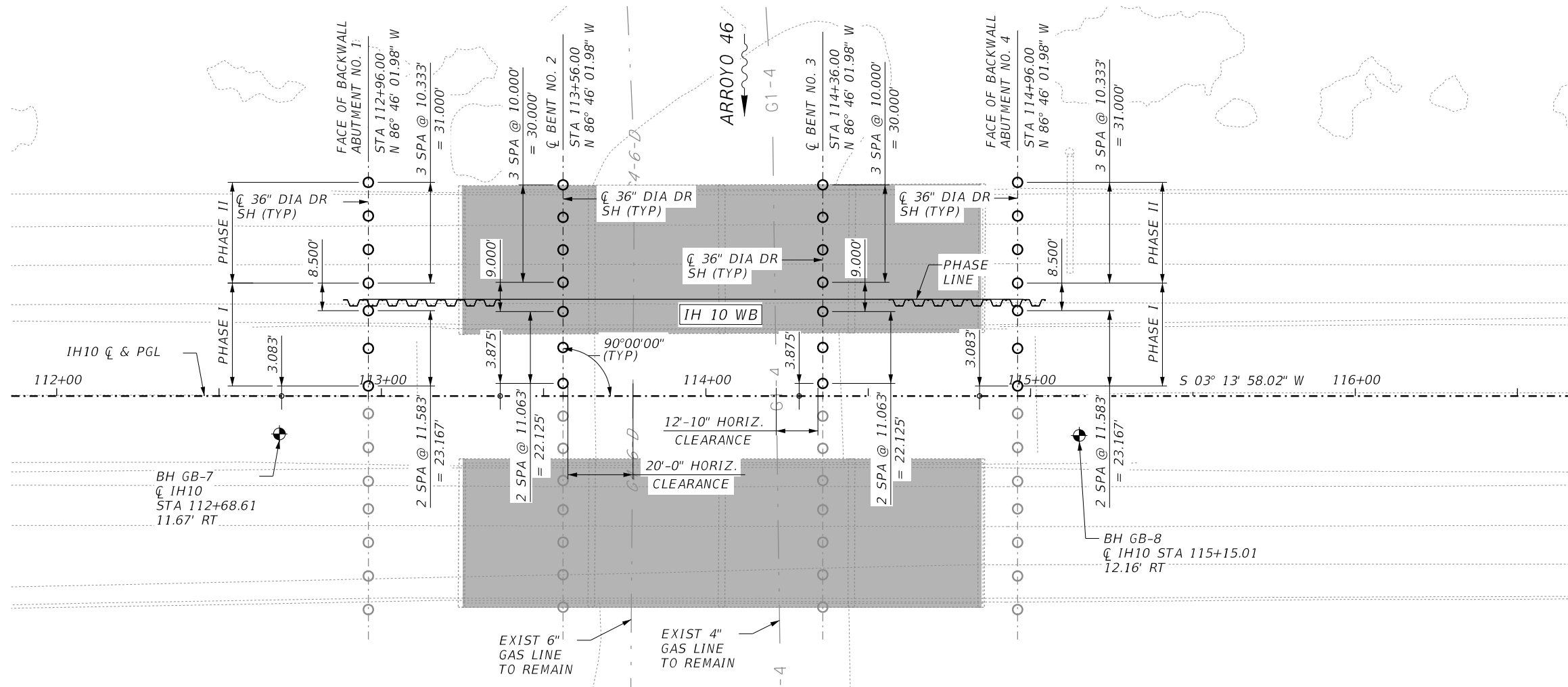


IH 10 WIDENING (NMSL/SPUR 37)

FOUNDATION LAYOUT
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	645



ABUT/BENT	TONS/SHAFT
1 & 4	81
2 & 3	140

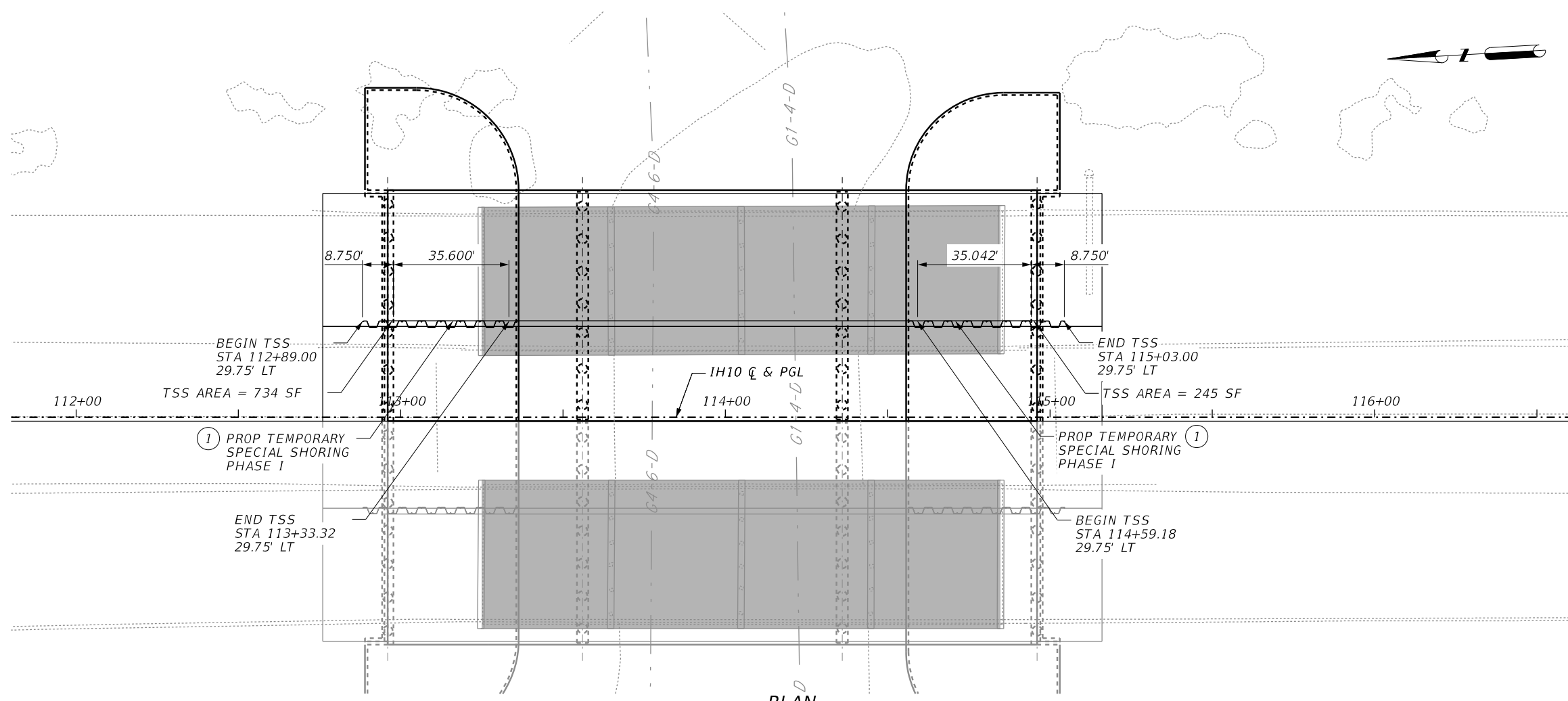
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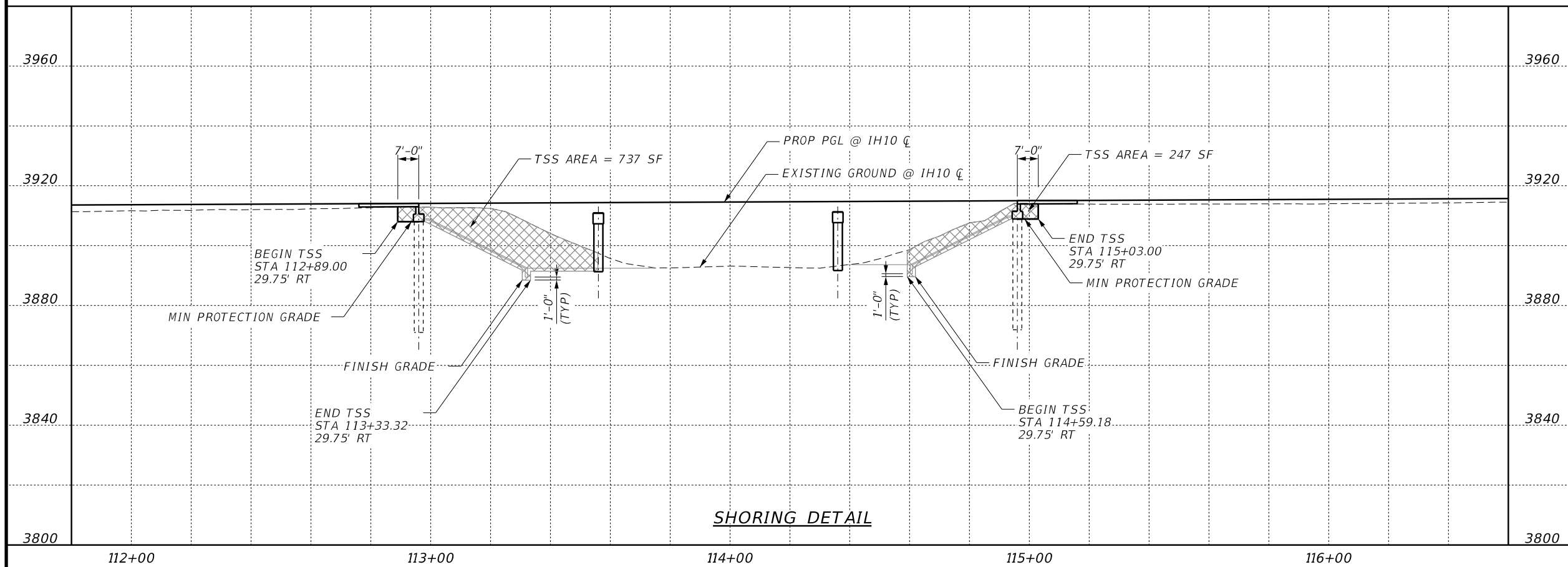
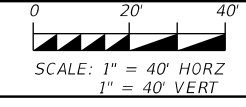
LEGEND

TEMPORARY SPL SHORING



1 PAID FOR UNDER ITEM 403 TEMPORARY SPL SHORING.

HL93 LOADING



Wirat Wanichakorn 2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
 ARROYO 46 RELIEF #DB BRIDGE
 IH 10 WB
 (STA 112+96 TO STA 114+96)

SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	646

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BEARING SEAT ELEVATIONS

				PHASE II					PHASE I				
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	
1	ABUT	1	(FWD)	L	3909.253	3909.411	3909.569	3909.727	3909.885	3910.043	3910.200	3910.358	3910.516
				R	3909.373	3909.531	3909.689	3909.847	3910.005	3910.163	3910.320	3910.478	3910.636
2	BENT	2	(BK)	L	3909.511	3909.669	3909.827	3909.985	3910.142	3910.300	3910.458	3910.616	3910.863
				R	3909.639	3909.797	3909.955	3910.113	3910.271	3910.429	3910.587	3910.744	3910.992
		2	(FWD)	L	3909.520	3909.678	3909.836	3909.994	3910.151	3910.309	3910.467	3910.625	3910.782
				R	3909.648	3909.806	3909.964	3910.122	3910.280	3910.438	3910.596	3910.753	3910.911
3	BENT	3	(BK)	L	3909.876	3910.034	3910.192	3910.350	3910.508	3910.666	3910.823	3910.981	3911.139
				R	3909.996	3910.154	3910.312	3910.470	3910.628	3910.786	3910.943	3911.101	3911.259
		3	(FWD)	L	3909.885	3910.043	3910.201	3910.359	3910.517	3910.675	3910.832	3910.990	3911.148
				R	3910.005	3910.163	3910.321	3910.479	3910.637	3910.795	3910.952	3911.110	3911.268
4	ABUT	4	(BK)	L	3910.150	3910.305	3910.463	3910.621	3910.779	3910.937	3911.095	3911.252	3911.410
				R	3910.270	3910.425	3910.583	3910.741	3910.899	3911.057	3911.214	3911.372	3911.529



Wirat Wanichakorn
2/29/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BEARING SEAT ELEVATIONS
ARROYO 46 RELIEF #DB BRIDGE
 IH 10 WB
 (STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	647

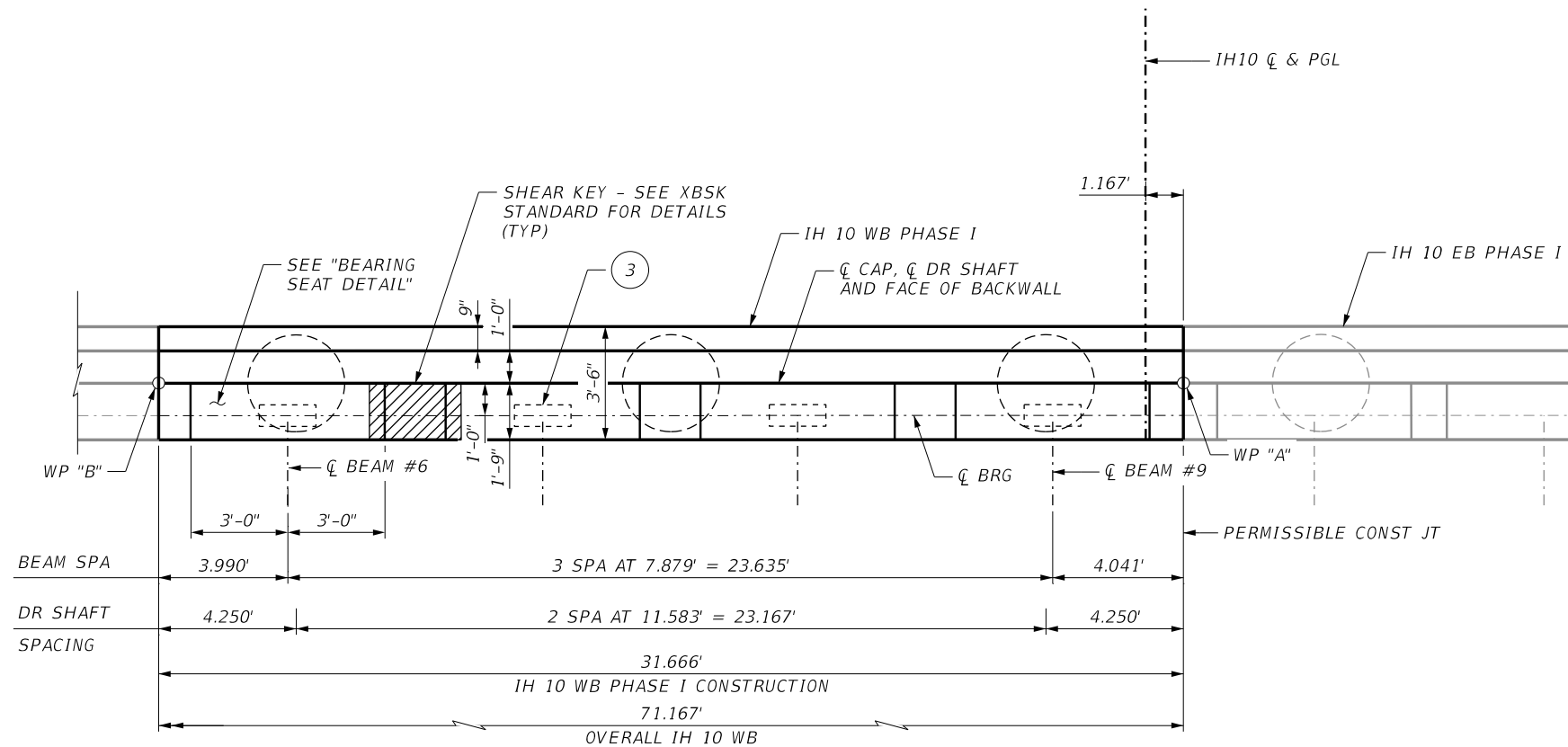
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GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

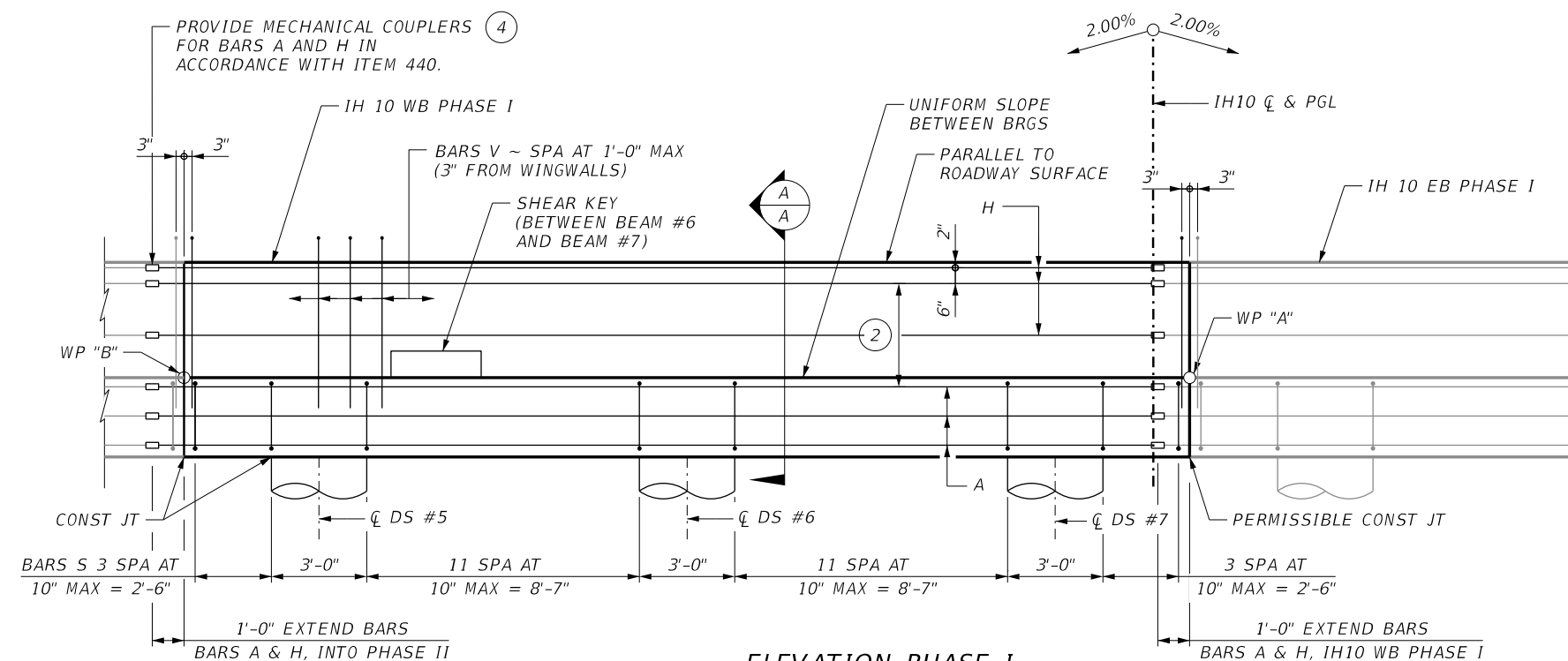
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB28 ~ 3 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



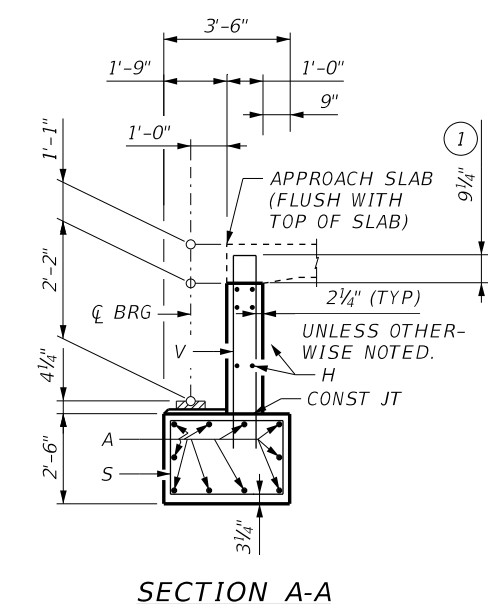
PLAN PHASE I

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
A	3910.530'	3911.432'
B	3909.897'	3910.799'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
5	3907.482'	3908.384'
6	3907.713'	3908.616'
7	3907.945'	3908.847'

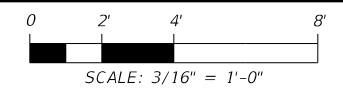


ELEVATION PHASE I



SECTION A-A

HL93 LOADING



Wirat Wanichakorn
2/29/2024



**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)**

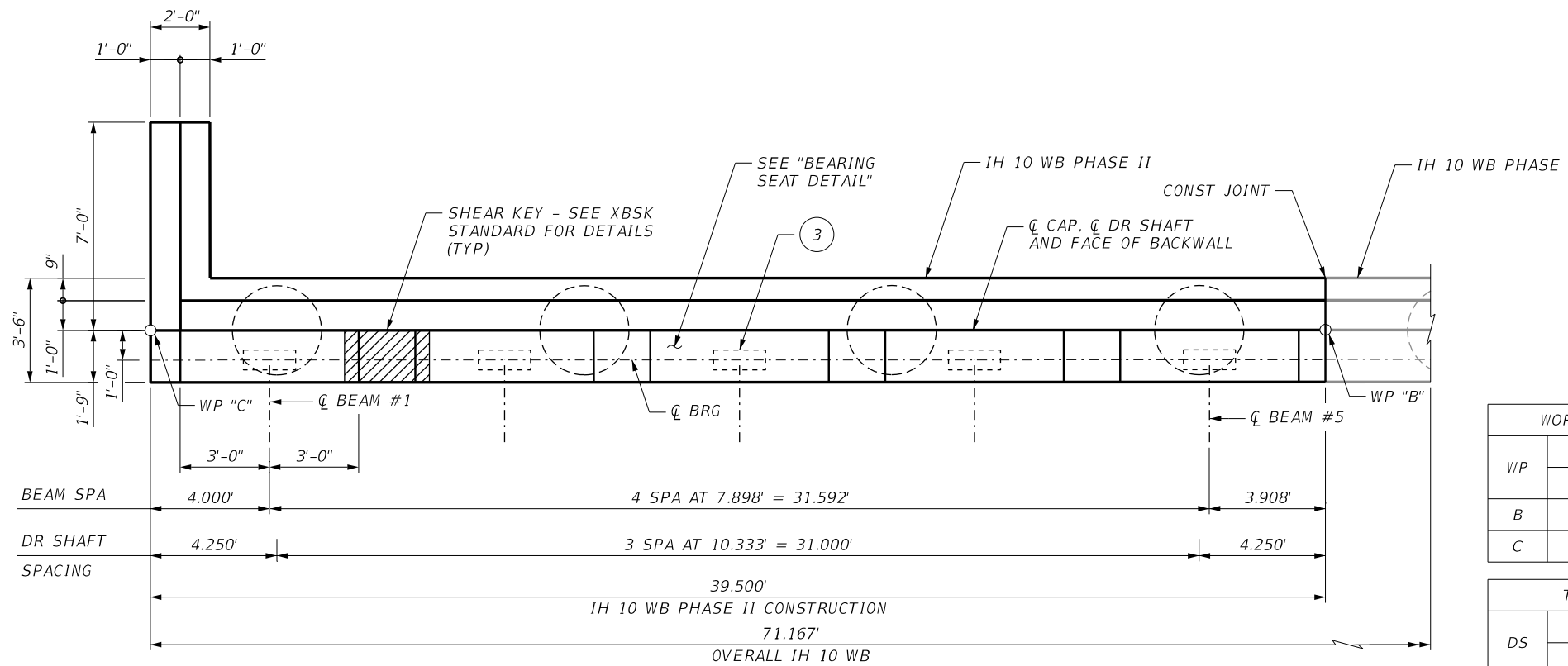
SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	648

GENERAL NOTES

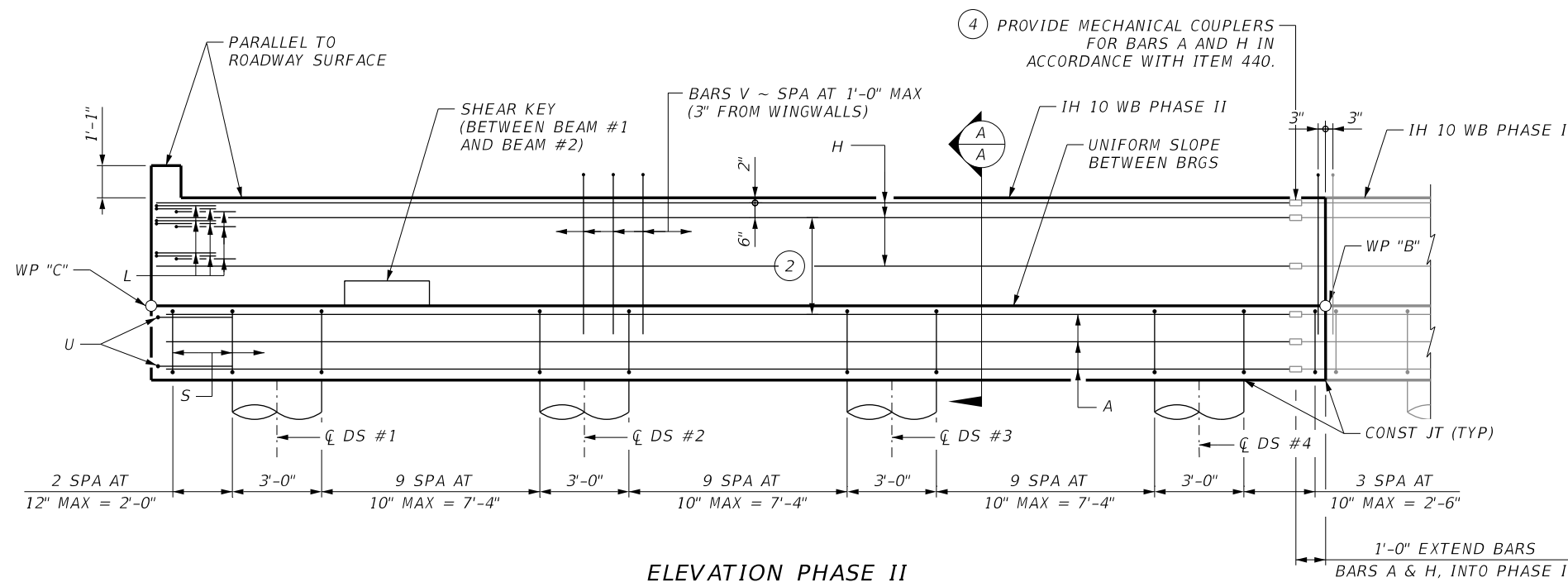
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB28 ~ 3 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



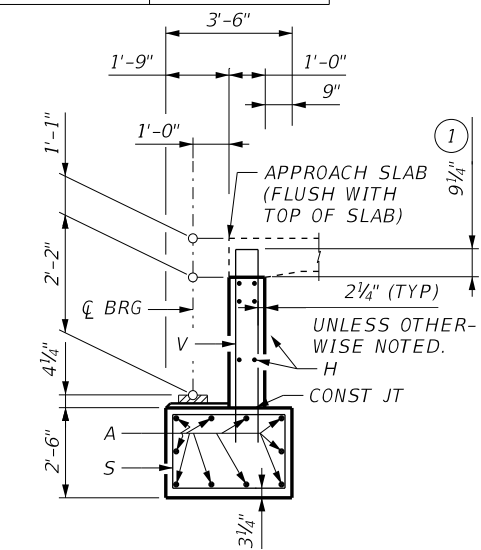
PLAN PHASE II



ELEVATION PHASE II

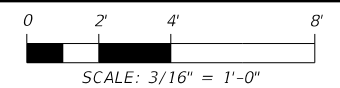
WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
B	3909.897'	3910.799'
C	3909.107'	3910.009'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
1	3906.692'	3907.594'
2	3906.898'	3907.801'
3	3907.105'	3908.007'
4	3907.312'	3908.214'



SECTION A-A

HL93 LOADING



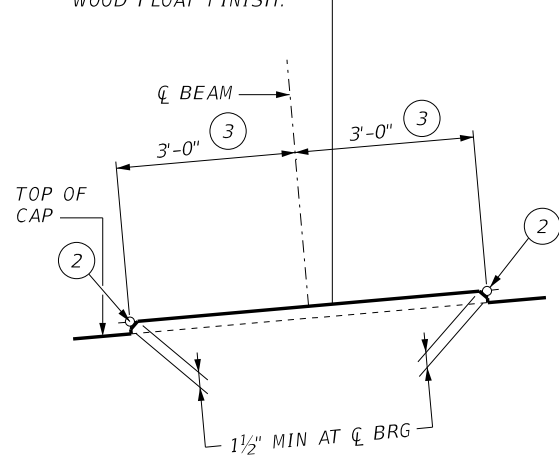
Wirat Wanichakorn
2/29/2024



**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE II
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)**

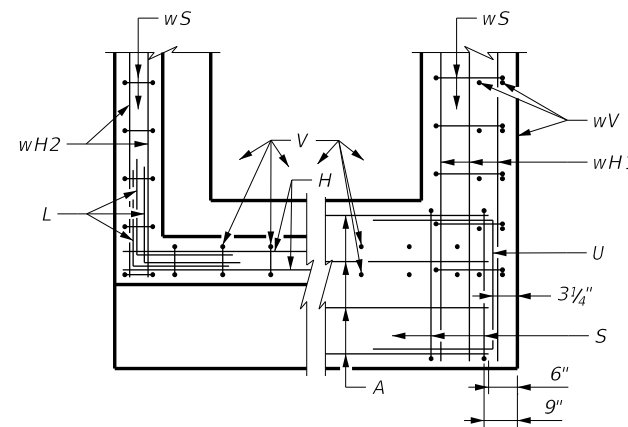
SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	649

LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



**BACKWALL
CORNER DETAILS**

**TABLE OF ESTIMATED QUANTITIES
PHASE I (ONE ABUT)**

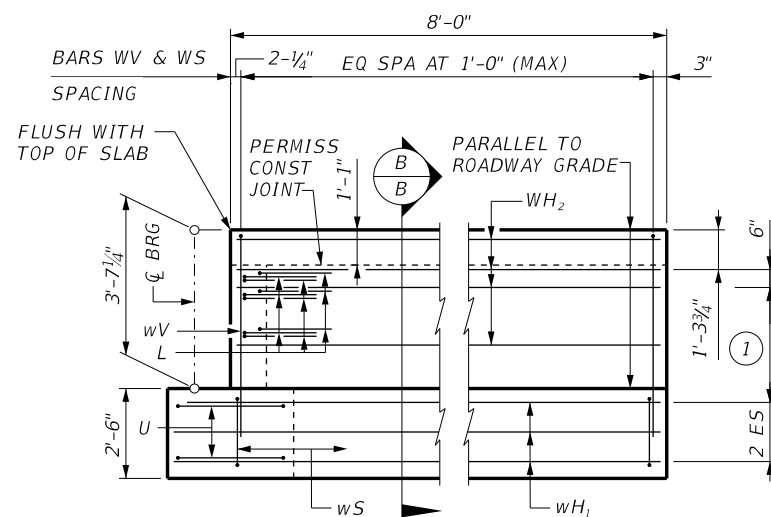
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31' - 8"	1,682
H	8	#6	31' - 8"	381
S	30	#5	11' - 5"	355
V	32	#5	9' - 8"	327
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,745
CONC (ABUT)			CY	13.4

**TABLE OF ESTIMATED QUANTITIES
PHASE II (ONE ABUT)**

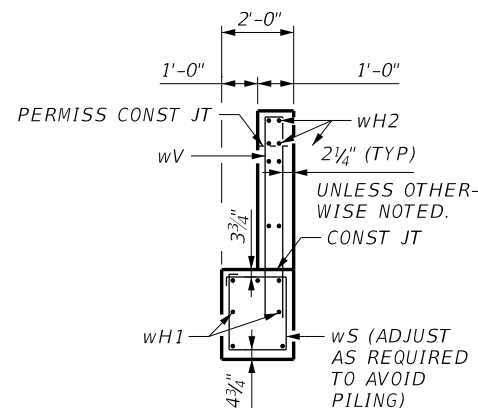
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	38' - 0"	2,019
H	8	#6	38' - 4"	461
L	9	#6	4' - 0"	54
S	36	#5	11' - 5"	425
U	4	#6	8' - 0"	48
V	39	#5	9' - 8"	396
wH1	7	#6	9' - 5"	99
wH2	8	#6	7' - 8"	92
wS	8	#4	7' - 8"	41
wV	8	#5	10' - 0"	83
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,718
CONC (ABUT)			CY	19.4

KEYED NOTES

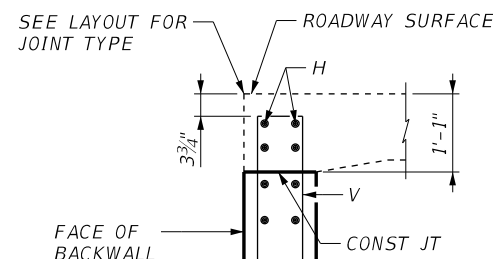
- ① SPACING BASED ON BEAM TYPE:
XB28 ~ 3 EQUAL SPACES
- ② RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ③ MEASURED ALONG ϕ OF BEARING



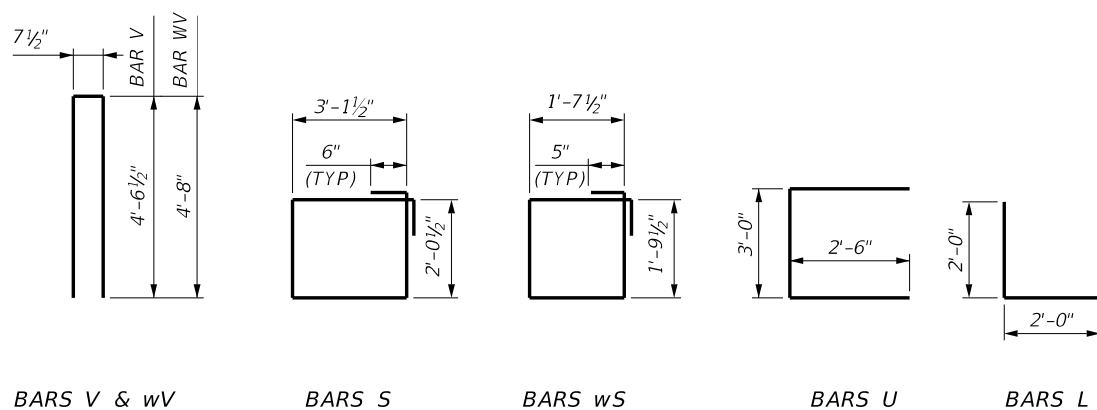
WINGWALL ELEVATION



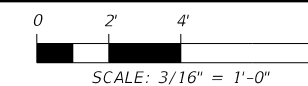
SECTION B-B



**BACKWALL DETAIL
(WITH APPROACH SLAB)**



HL93 LOADING



Steve Groves 2/29/2024



IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I & II
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)

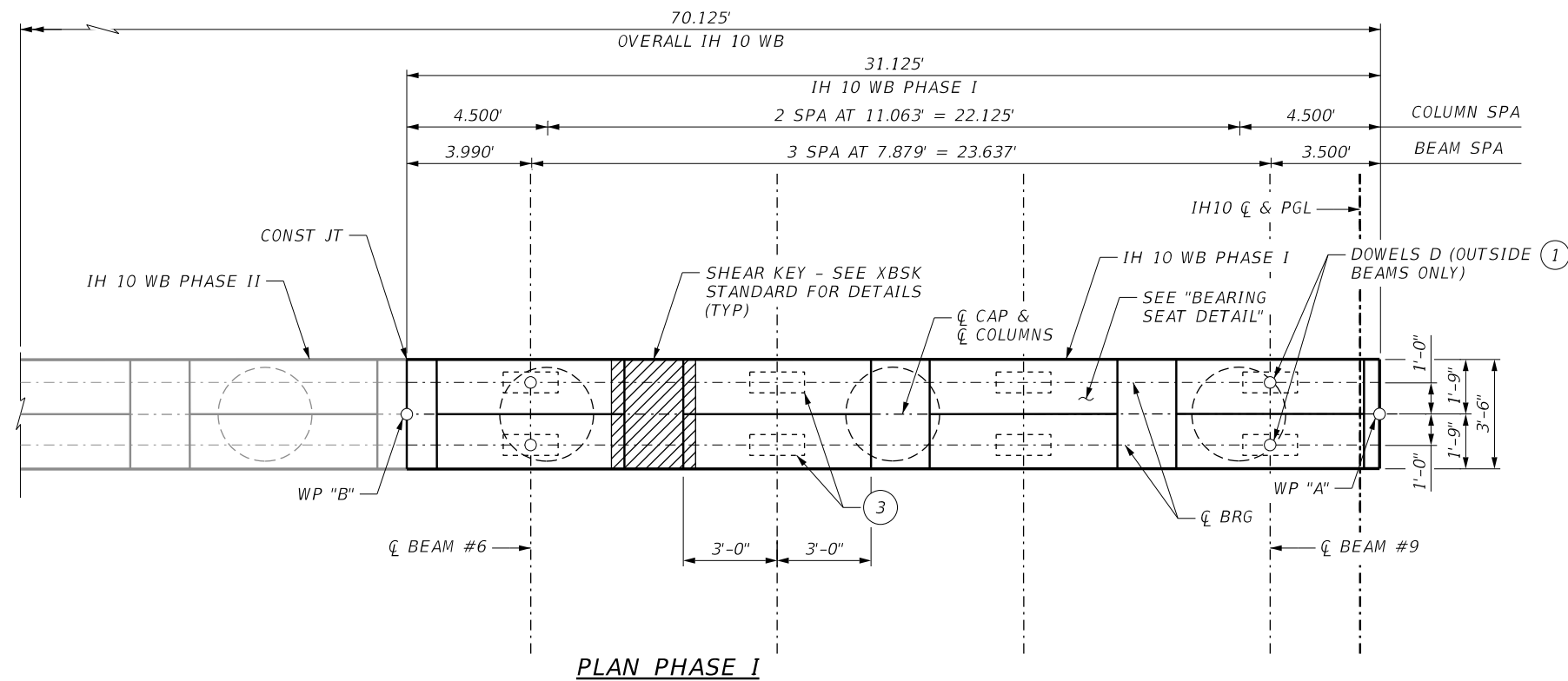
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	650

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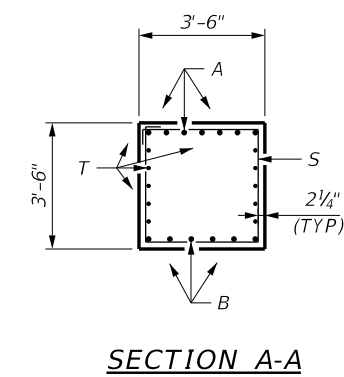
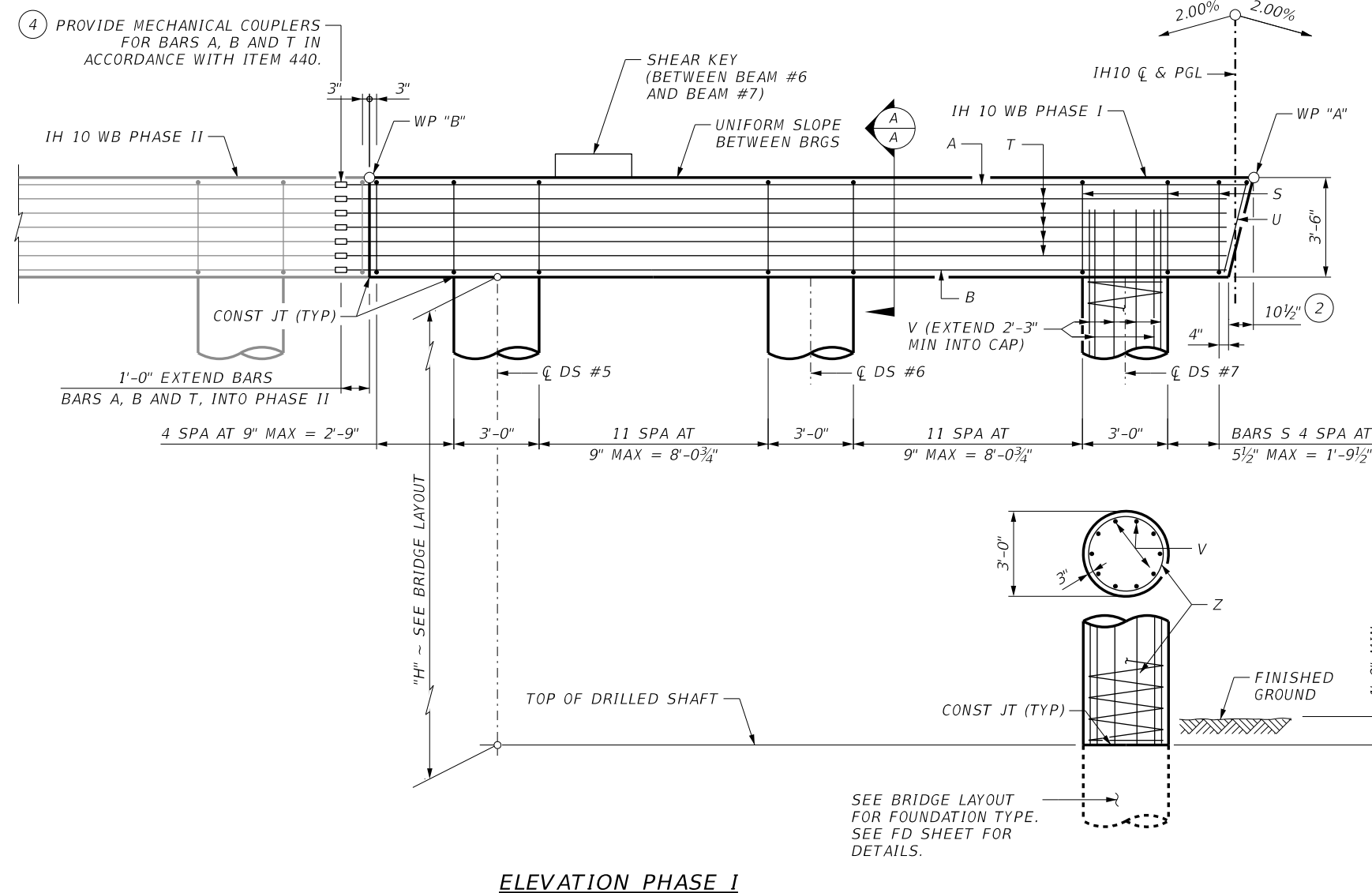


GENERAL NOTES

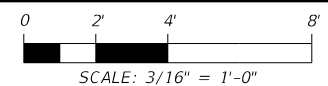
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH F'C = 3,600 PSI.
- ALL CAP REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- GALVANIZE DOWEL BARS D.
- COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



HL93 LOADING



Wirat Wanichakorn
2/29/2024

WORKING POINT ELEVATIONS		
WP	ELEV	
	BENT 2	BENT 3
A	3910.872'	3911.143'
B	3910.205'	3910.476'

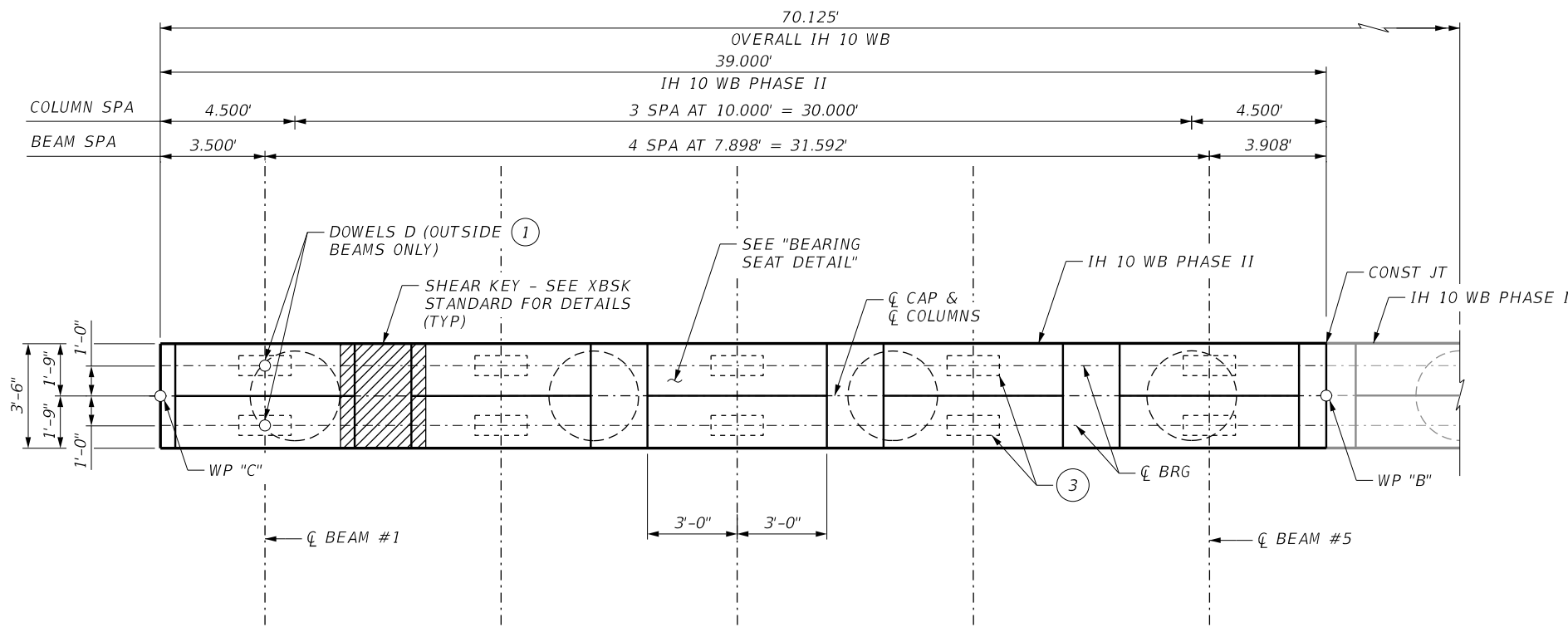
TOP OF COLUMN ELEVATIONS		
COL	ELEV	
	BENT 2	BENT 3
5	3906.801'	3907.072'
6	3907.038'	3907.309'
7	3907.275'	3907.546'



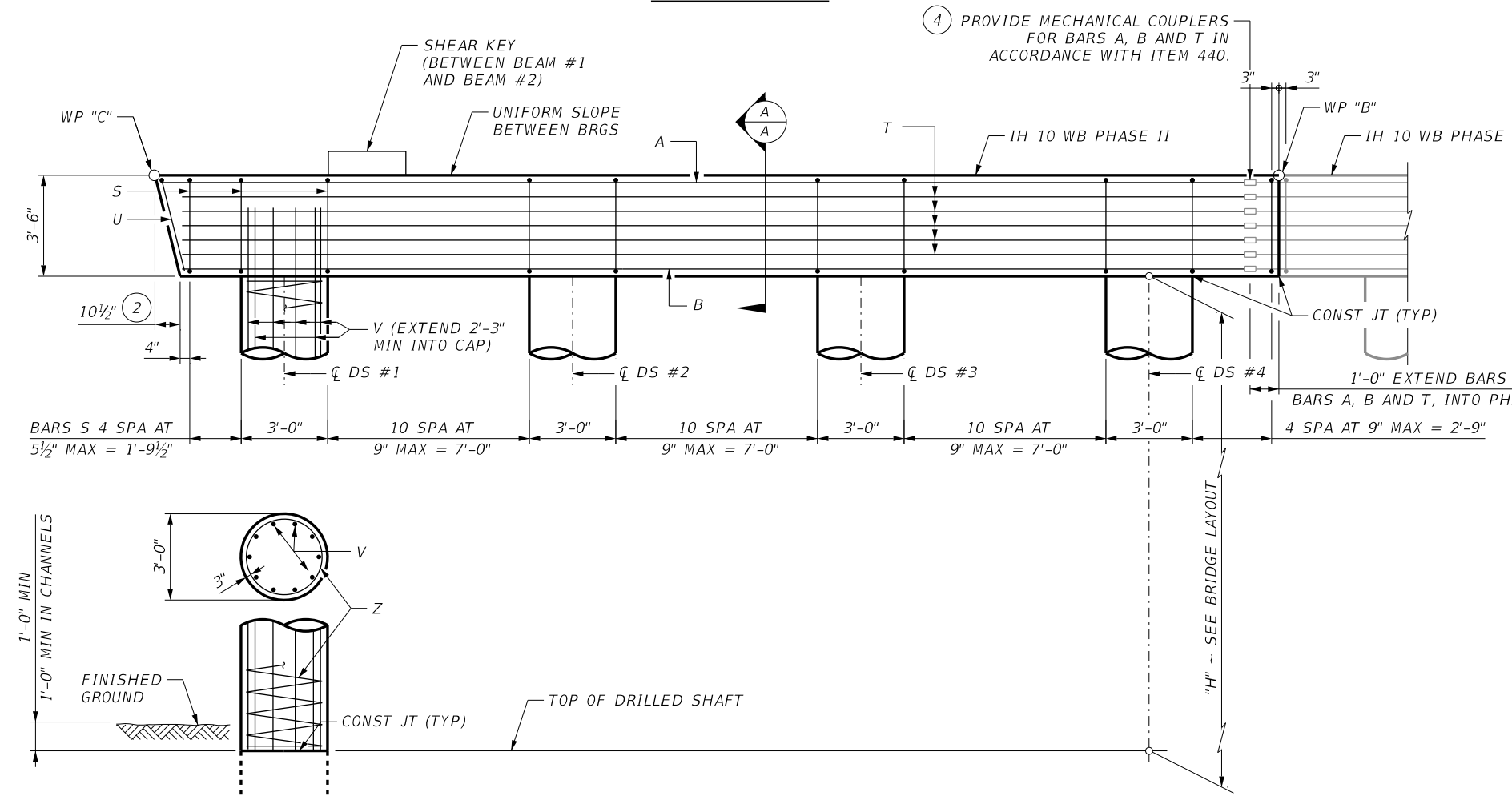
IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			651



PLAN PHASE II



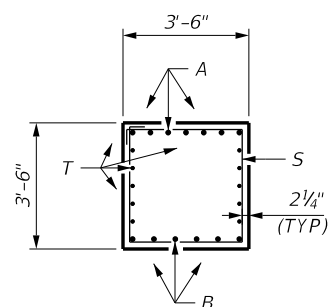
ELEVATION PHASE II

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP REINFORCING MUST BE GRADE 60.
- ALL REINFORCING STEEL SHALL BE EXPOXY COATED.
- GALVANIZE DOWEL BARS D.
- COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- LENGTHS SHOWN FOR BARS A, B AND T DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

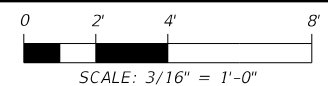
KEYED NOTES

- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL".



SECTION A-A

HL93 LOADING



Wirat Wanichakorn
2/29/2024

WORKING POINT ELEVATIONS		
WP	ELEV	
	BENT 2	BENT 3
B	3910.205'	3910.476'
C	3909.369'	3909.640'

TOP OF COLUMN ELEVATIONS		
COL	ELEV	
	BENT 2	BENT 3
1	3905.965'	3906.236'
2	3906.180'	3906.450'
3	3906.394'	3906.665'
4	3906.608'	3906.879'



IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE II
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)

SHEET 1 OF 1

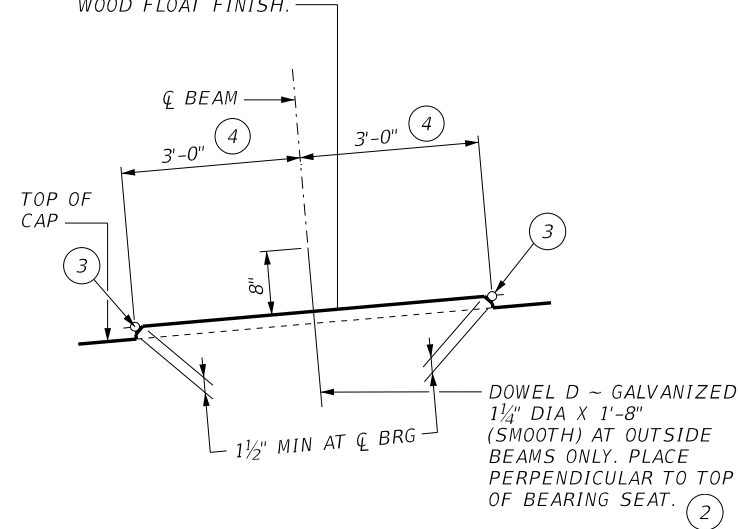
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			652

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LEVEL ALONG A LINE PERPENDICULAR TO
 CL BENT. UNIFORM SLOPE BETWEEN LEFT
 AND RIGHT BEARING SEAT ELEVATIONS WITH
 WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN
 AND FREE OF ALL LOOSE MATERIAL
 BEFORE PLACING BEARING PAD.)

**TABLE OF ESTIMATED QUANTITIES PHASE I
 (ONE BENT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	7	#11	31' - 11"	1,218
B	6	#11	31' - 2"	996
D	4	#9	1' - 8"	32
S	34	#5	13' - 6"	496
T	10	#5	31' - 2"	326
U	1	#5	9' - 8"	11
V	30	#9	18' - 3"	1,887
Z	3	#3	268' - 3"	303
ITEM		UNIT	QUANTITY	
Reinforcing Steel		LB	5,269	
Conc (Cap)		CY	14.8	
Conc (Column)		CY	12.6	

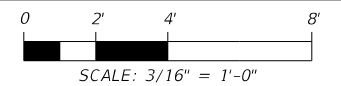
**TABLE OF ESTIMATED QUANTITIES PHASE II
 (ONE BENT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	7	#11	37' - 9"	1,432
B	6	#11	37' - 0"	1,179
D	2	#9	1' - 8"	16
S	43	#5	13' - 6"	628
T	10	#5	37' - 0"	386
U	1	#5	9' - 8"	11
V	40	#9	18' - 3"	2,516
Z	4	#3	268' - 3"	404
ITEM		UNIT	QUANTITY	
Reinforcing Steel		LB	6,571	
Conc (Cap)		CY	18.2	
Conc (Column)		CY	16.8	

KEYED NOTES

- ① QUANTITIES SHOWN ARE BASED ON AN "H" VALUE OF 17'. FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
 BARS V LENGTH, 1'-0"
 BARS Z LENGTH, 15.740'
 REINFORCING STEEL, 120 LB
 CLASS "C" CONC (COL), 0.785 CY
- ② OMIT DOWELS D AT THE END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- ③ RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED ELSEWHERE.
- ④ MEASURED A LONG CL OF BEARING.

HL93 LOADING



Wirat Wanichakorn
 2/29/2024

NO.	DATE	REVISION	APPROV.

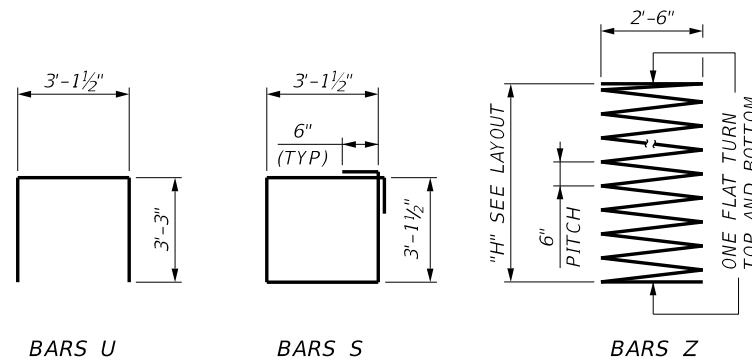
CivilCorp
 ENGINEERS • SURVEYORS
 2825 WILCREST DRIVE, SUITE 100, HOUSTON TEXAS 77042
 TEL: 713-785-9815 FAX: 713-782-6922 TXENG FIRM 10283



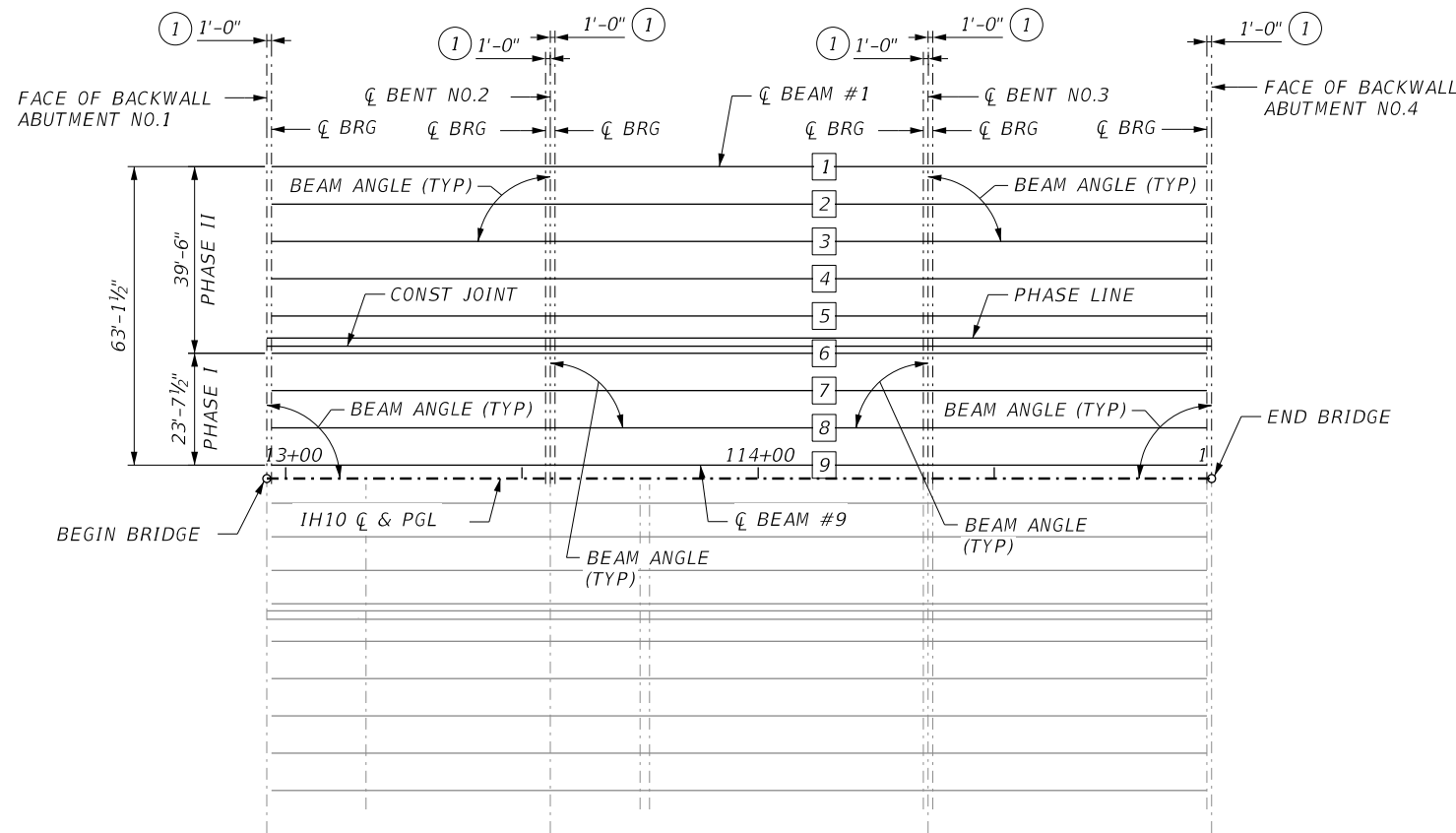
IH 10 WIDENING (NMSL/SPUR 37)
 BENT NO. 2 & 3
 PHASE I & II
 ARROYO 46 RELIEF #DB BRIDGE
 IH 10 WB
 (STA 112+96 TO STA 114+96)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	653



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 2/29/2024



SPAN 1 (5XB28 BEAMS) **SPAN 2** (5XB28 BEAMS) **SPAN 3** (5XB28 BEAMS)

- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- ③ BEAM SPACING IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X-BEAMS.

FRAMING PLAN

BEAM REPORT, SPAN 1

	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
PHASE II	BEAM 1	60.0000	58.0000	0.00451
PHASE II	BEAM 2	60.0000	58.0000	0.00451
PHASE II	BEAM 3	60.0000	58.0000	0.00451
PHASE II	BEAM 4	60.0000	58.0000	0.00451
PHASE I	BEAM 5	60.0000	58.0000	0.00451
PHASE I	BEAM 6	60.0000	58.0000	0.00451
PHASE I	BEAM 7	60.0000	58.0000	0.00451
PHASE I	BEAM 8	60.0000	58.0000	0.00451
PHASE I	BEAM 9	60.0000	58.0000	0.00451

BENT NO. 1 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 1	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	7.8979	90 0 0.00
PHASE II	BEAM 3	7.8979	90 0 0.00
PHASE II	BEAM 4	7.8979	90 0 0.00
PHASE II	BEAM 5	7.8979	90 0 0.00
PHASE I	BEAM 6	7.8979	90 0 0.00
PHASE I	BEAM 7	7.8785	90 0 0.00
PHASE I	BEAM 8	7.8785	90 0 0.00
PHASE I	BEAM 9	7.8785	90 0 0.00
TOTAL		63.1250	

BENT NO. 3 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 2	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	7.8979	90 0 0.00
PHASE II	BEAM 3	7.8979	90 0 0.00
PHASE II	BEAM 4	7.8979	90 0 0.00
PHASE II	BEAM 5	7.8979	90 0 0.00
PHASE I	BEAM 6	7.8979	90 0 0.00
PHASE I	BEAM 7	7.8785	90 0 0.00
PHASE I	BEAM 8	7.8785	90 0 0.00
PHASE I	BEAM 9	7.8785	90 0 0.00
TOTAL		63.1250	

BEAM REPORT, SPAN 2

	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
PHASE II	BEAM 1	80.0000	78.0000	0.00451
PHASE II	BEAM 2	80.0000	78.0000	0.00451
PHASE II	BEAM 3	80.0000	78.0000	0.00451
PHASE II	BEAM 4	80.0000	78.0000	0.00451
PHASE I	BEAM 5	80.0000	78.0000	0.00451
PHASE I	BEAM 6	80.0000	78.0000	0.00451
PHASE I	BEAM 7	80.0000	78.0000	0.00451
PHASE I	BEAM 8	80.0000	78.0000	0.00451
PHASE I	BEAM 9	80.0000	78.0000	0.00451

BENT NO. 2 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 1	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	7.8979	90 0 0.00
PHASE II	BEAM 3	7.8979	90 0 0.00
PHASE II	BEAM 4	7.8979	90 0 0.00
PHASE II	BEAM 5	7.8979	90 0 0.00
PHASE I	BEAM 6	7.8979	90 0 0.00
PHASE I	BEAM 7	7.8785	90 0 0.00
PHASE I	BEAM 8	7.8785	90 0 0.00
PHASE I	BEAM 9	7.8785	90 0 0.00
TOTAL		63.1250	

BENT NO. 3 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 3	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	7.8979	90 0 0.00
PHASE II	BEAM 3	7.8979	90 0 0.00
PHASE II	BEAM 4	7.8979	90 0 0.00
PHASE II	BEAM 5	7.8979	90 0 0.00
PHASE I	BEAM 6	7.8979	90 0 0.00
PHASE I	BEAM 7	7.8785	90 0 0.00
PHASE I	BEAM 8	7.8785	90 0 0.00
PHASE I	BEAM 9	7.8785	90 0 0.00
TOTAL		63.1250	

BEAM REPORT, SPAN 3

	HORIZONTAL DISTANCE C-C BENT	TRUE DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
PHASE II	BEAM 1	60.0000	58.0000	0.00451
PHASE II	BEAM 2	60.0000	58.0000	0.00451
PHASE II	BEAM 3	60.0000	58.0000	0.00451
PHASE II	BEAM 4	60.0000	58.0000	0.00451
PHASE I	BEAM 5	60.0000	58.0000	0.00451
PHASE I	BEAM 6	60.0000	58.0000	0.00451
PHASE I	BEAM 7	60.0000	58.0000	0.00451
PHASE I	BEAM 8	60.0000	58.0000	0.00451
PHASE I	BEAM 9	60.0000	58.0000	0.00451

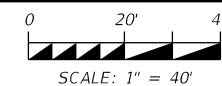
BENT NO. 2 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 2	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	7.8979	90 0 0.00
PHASE II	BEAM 3	7.8979	90 0 0.00
PHASE II	BEAM 4	7.8979	90 0 0.00
PHASE II	BEAM 5	7.8979	90 0 0.00
PHASE I	BEAM 6	7.8979	90 0 0.00
PHASE I	BEAM 7	7.8785	90 0 0.00
PHASE I	BEAM 8	7.8785	90 0 0.00
PHASE I	BEAM 9	7.8785	90 0 0.00
TOTAL		63.1250	

BENT NO. 4 (N 86 46 1.98 W)

	DISTANCE BETWEEN STATION LINE AND BEAM 1.	BEAM SPAC.	BEAM ANGLE (CL BENT)
SPAN 3	BEAM 1	0.0000	90 0 0.00
PHASE II	BEAM 2	7.8979	90 0 0.00
PHASE II	BEAM 3	7.8979	90 0 0.00
PHASE II	BEAM 4	7.8979	90 0 0.00
PHASE II	BEAM 5	7.8979	90 0 0.00
PHASE I	BEAM 6	7.8979	90 0 0.00
PHASE I	BEAM 7	7.8785	90 0 0.00
PHASE I	BEAM 8	7.8785	90 0 0.00
PHASE I	BEAM 9	7.8785	90 0 0.00
TOTAL		63.1250	

HL93 LOADING



Wirat Wanichakorn
2/29/2024



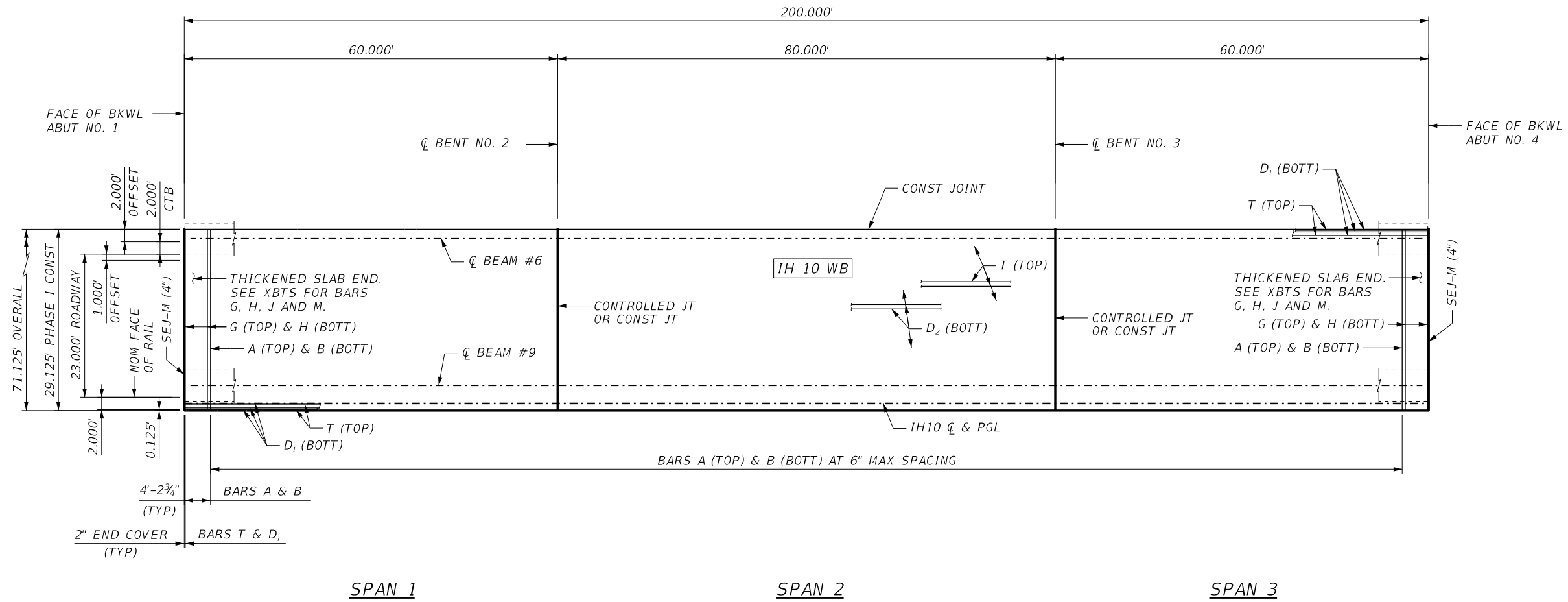
IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
ARROYO 46 RELIEF #DB BRIDGE
 IH 10 WB
 (STA 112+96 TO STA 114+96)

SHEET 1 OF 1

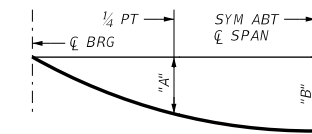
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	654

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



PLAN PHASE I

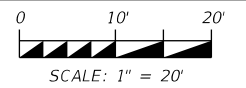
SPAN	BEAM NO.	"A"	"B"
		FT	FT
1 & 3	6	0.024	0.034
	7-9	0.033	0.046
2	6	0.077	0.108
	7 & 8	0.103	0.145
	9	0.104	0.146



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DEFLECTIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



SCALE: 1" = 20'



Wirat Wanichakorn 2/29/2024

NO.	DATE	REVISION	APPROV.



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB28) UNITS
PHASE I
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)**

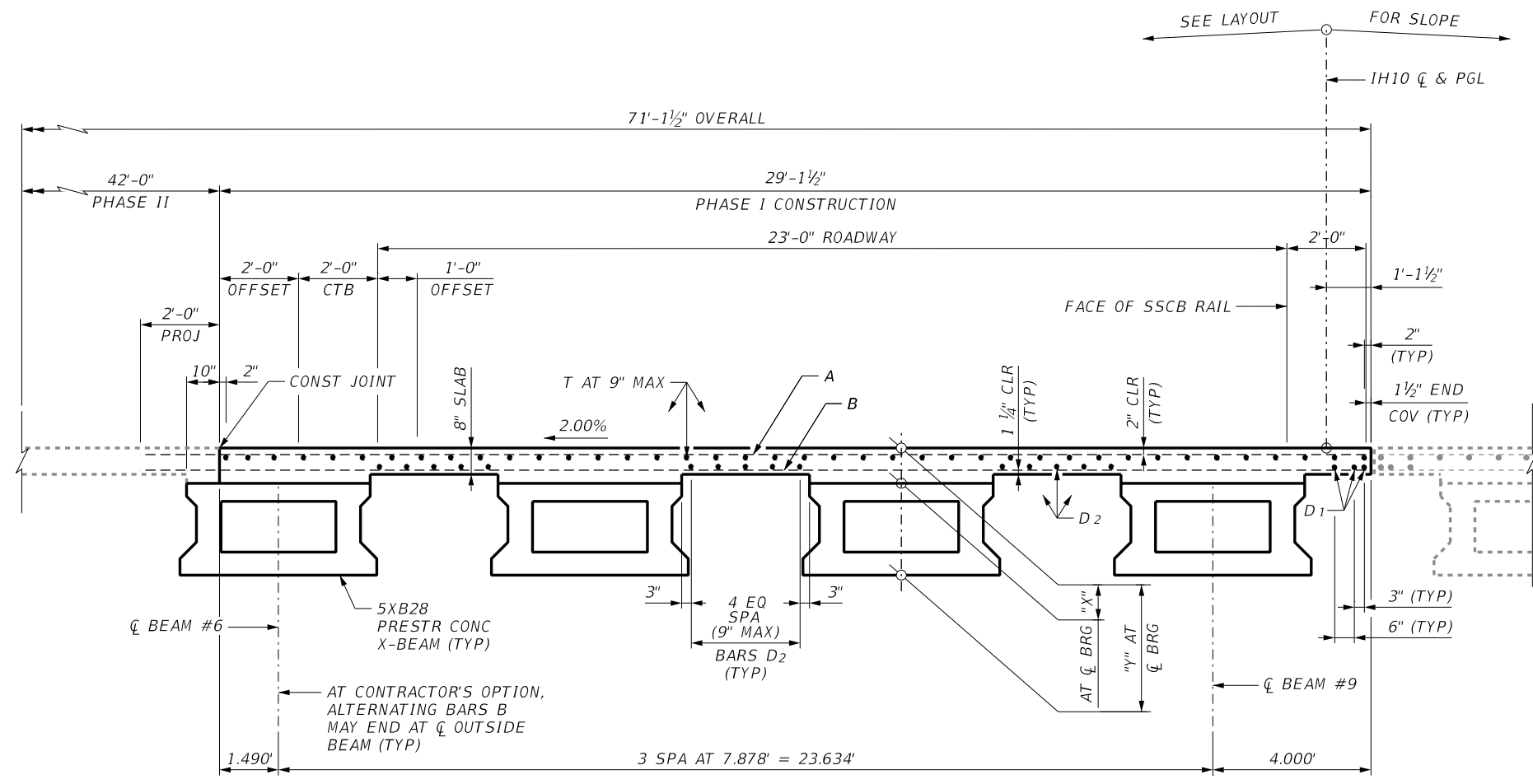
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	655

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.



TYPICAL TRANSVERSE SECTION PHASE I
(5XB28) SPANS 1 THRU 3

HL93 LOADING

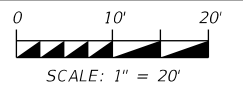


TABLE OF ESTIMATED QUANTITIES PHASE I

SPAN	REINF CONCRETE SLAB	5XB28 PRESTR CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	1,748	238.00	49.2	11,359
2	2,330	318.00	65.5	15,145
3	1,748	238.00	49.2	11,359
TOTAL	5,825	794.00	164.0	37,863

TABLE OF SECTION DEPTHS FOR PHASE I

SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	6-9	11"	39"



Wirat Wanichakorn
2/29/2024

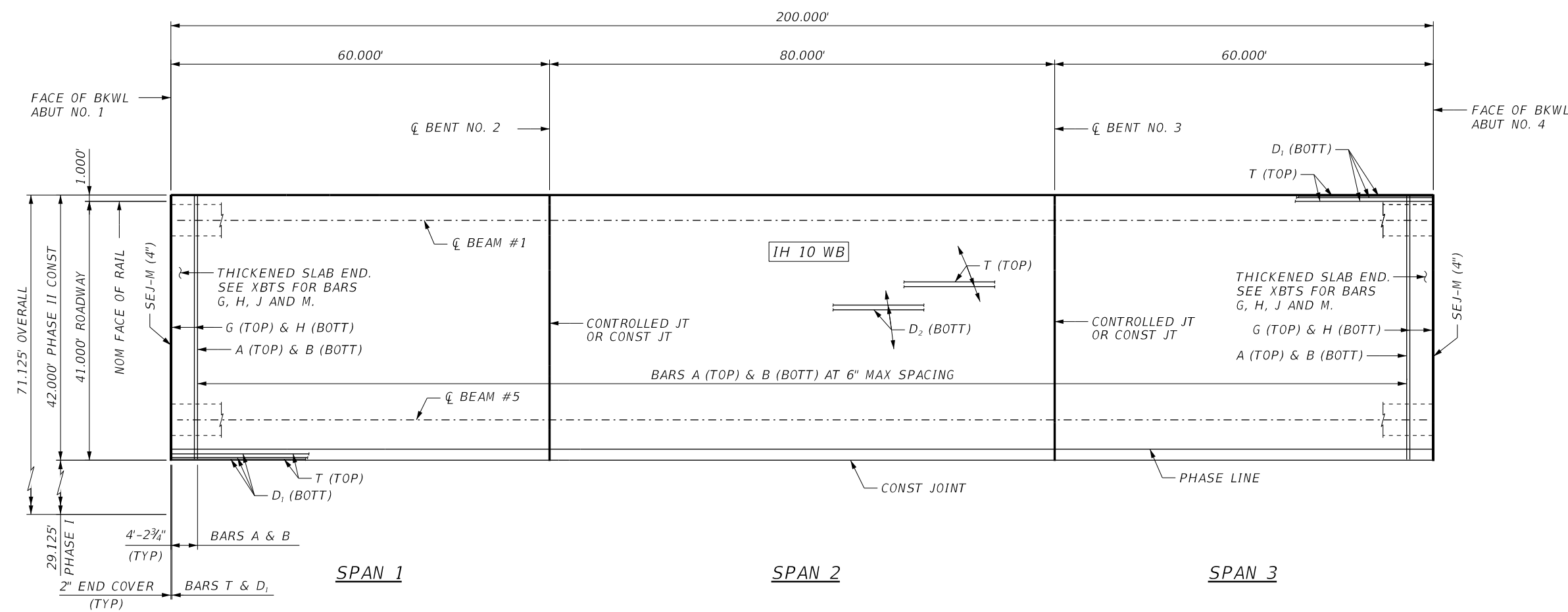


**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB28) UNITS
PHASE I
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)**

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	SHEET NO.	
104	656	656	

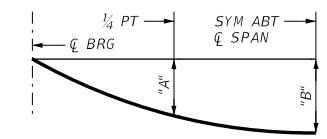
- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



PLAN PHASE II

TABLE OF DEFLECTIONS PHASE II

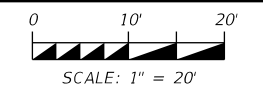
SPAN	BEAM NO.	"A"	"B"
		FT	FT
1 & 3	1-5	0.032	0.045
2	1	0.105	0.147
	2-5	0.104	0.146



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB AND HAUNCH ONLY ($E_c = 5,000$ KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

HL93 LOADING



SCALE: 1" = 20'



Wirat Wanichakorn 2/29/2024

NO.	DATE	REVISION	APPROV.



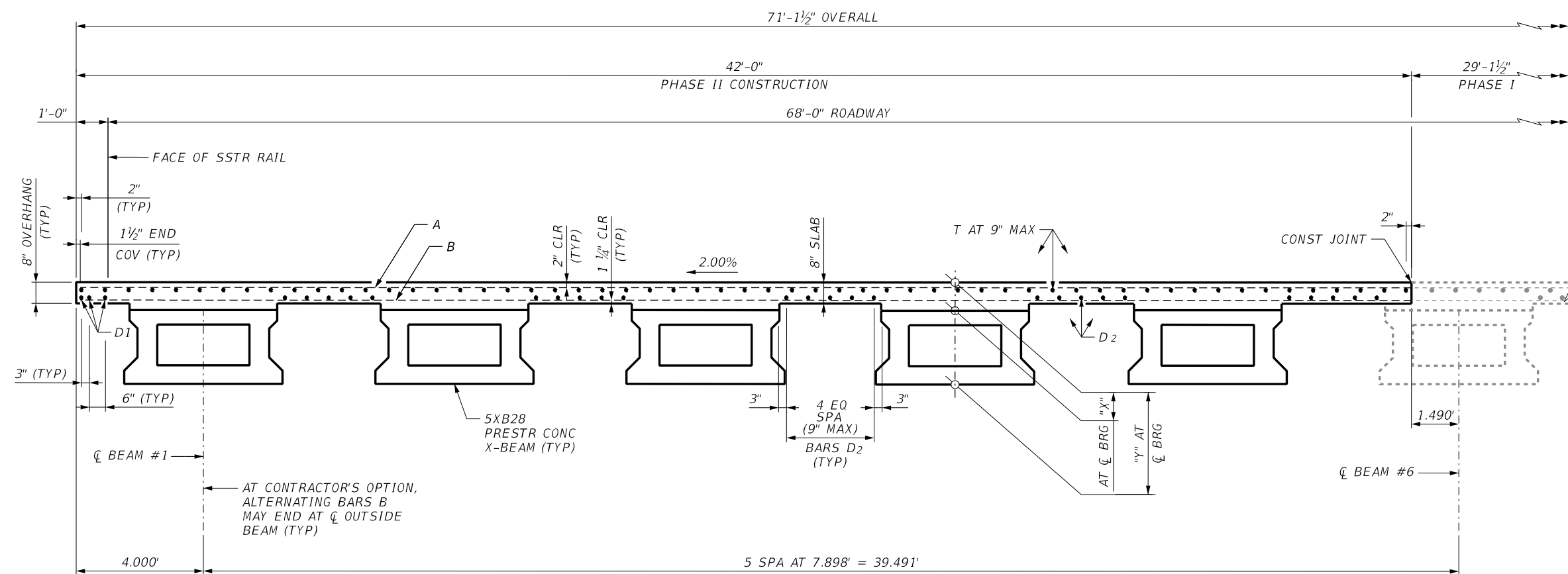
**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB28) UNITS
PHASE II
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	657

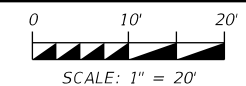
BAR TABLE PHASE II	
BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.



TYPICAL TRANSVERSE SECTION PHASE II
(5XB28) SPANS 1 THRU 3

HL93 LOADING



Wirat Wanichakorn
2/29/2024

TABLE OF ESTIMATED QUANTITIES PHASE II				
SPAN	REINF CONCRETE SLAB	5XB28 PREST CONCRETE X-BEAMS	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	2,520	297.50	71.5	16,380
2	3,360	397.50	93.7	21,840
3	2,520	297.50	71.5	16,380
TOTAL	8,400	992.50	236.7	54,600

TABLE OF SECTION DEPTHS FOR PHASE II			
SPAN	BEAM NO.	"X"	"Y"
		IN	IN
ALL	1-5	11"	39"

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB28) UNITS
PHASE II
ARROYO 46 RELIEF #DB BRIDGE
IH 10 WB
(STA 112+96 TO STA 114+96)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	658

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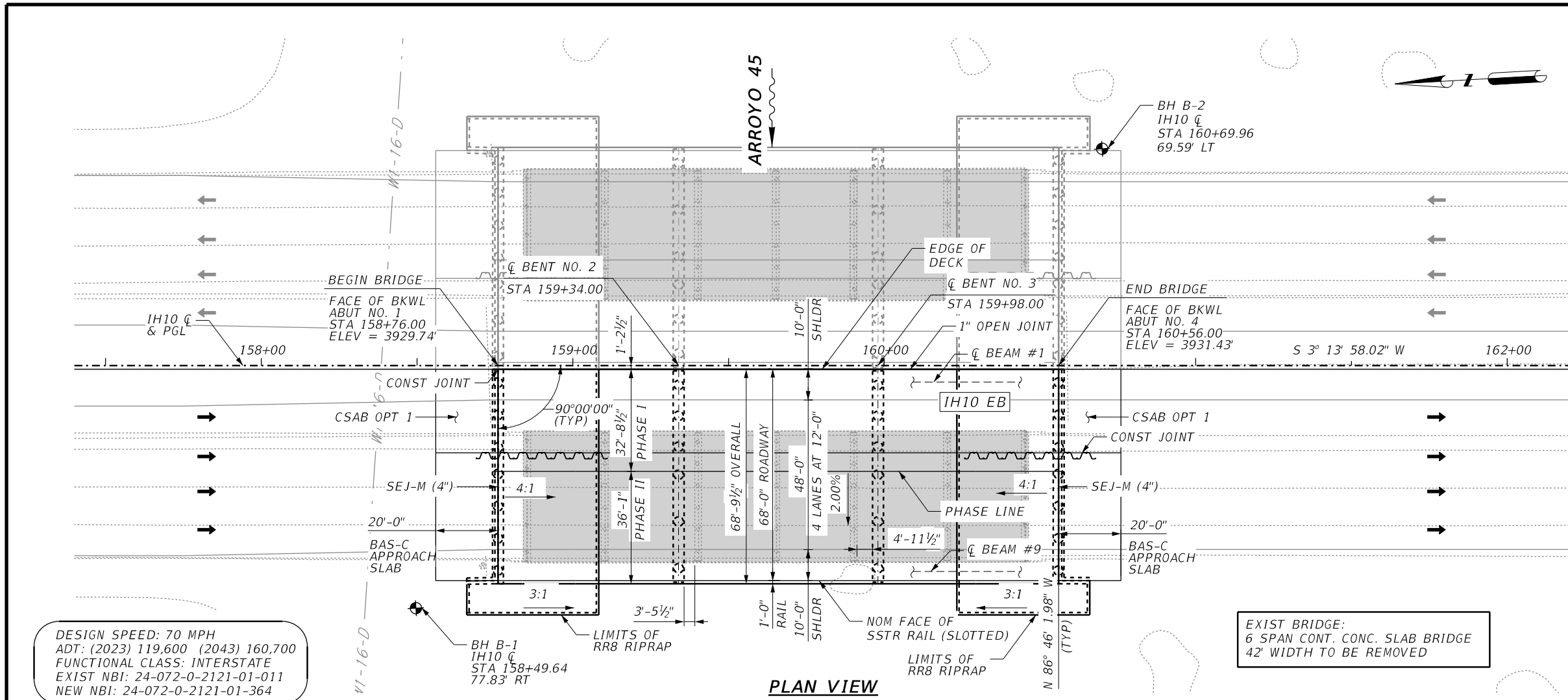
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GENERAL NOTES

- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ◆ DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "PHASED BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING

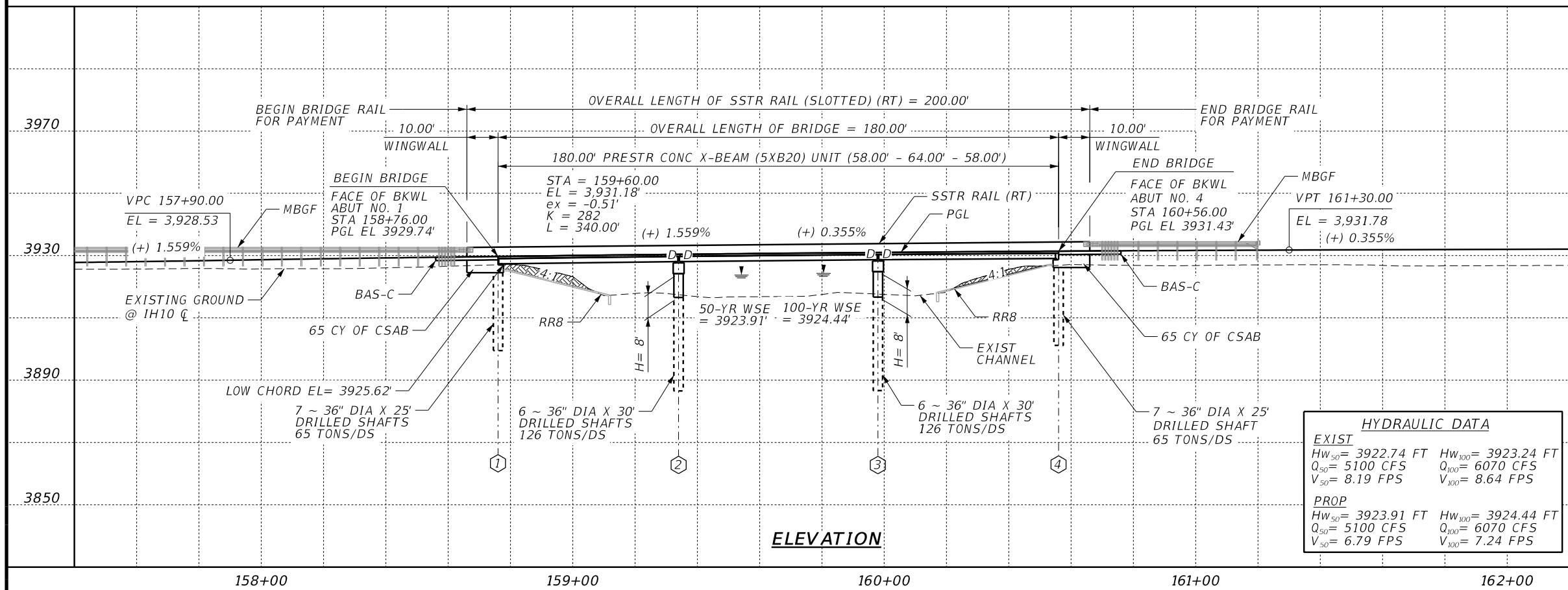
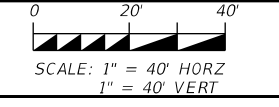


PLAN VIEW

DESIGN SPEED: 70 MPH
ADT: (2023) 119,600 (2043) 160,700
FUNCTIONAL CLASS: INTERSTATE
EXIST NBI: 24-072-0-2121-01-011
NEW NBI: 24-072-0-2121-01-364

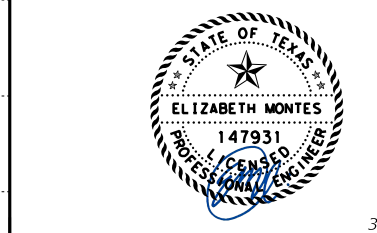
EXIST BRIDGE:
6 SPAN CONT. CONC. SLAB BRIDGE
42' WIDTH TO BE REMOVED

HL93 LOADING



ELEVATION

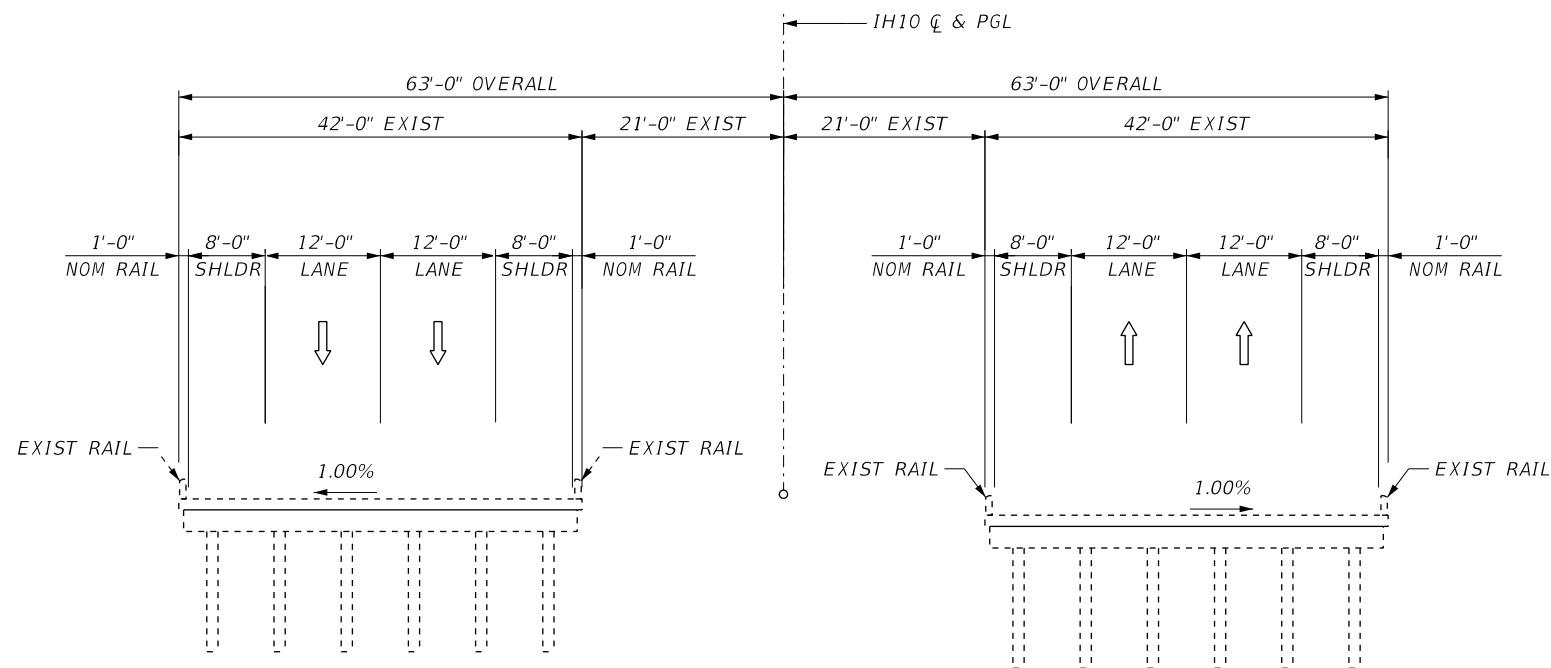
HYDRAULIC DATA			
EXIST			
Hw ₅₀ = 3922.74 FT	Hw ₁₀₀ = 3923.24 FT	Q ₅₀ = 5100 CFS	Q ₁₀₀ = 6070 CFS
V ₅₀ = 8.19 FPS	V ₁₀₀ = 8.64 FPS		
PROP			
Hw ₅₀ = 3923.91 FT	Hw ₁₀₀ = 3924.44 FT	Q ₅₀ = 5100 CFS	Q ₁₀₀ = 6070 CFS
V ₅₀ = 6.79 FPS	V ₁₀₀ = 7.24 FPS		



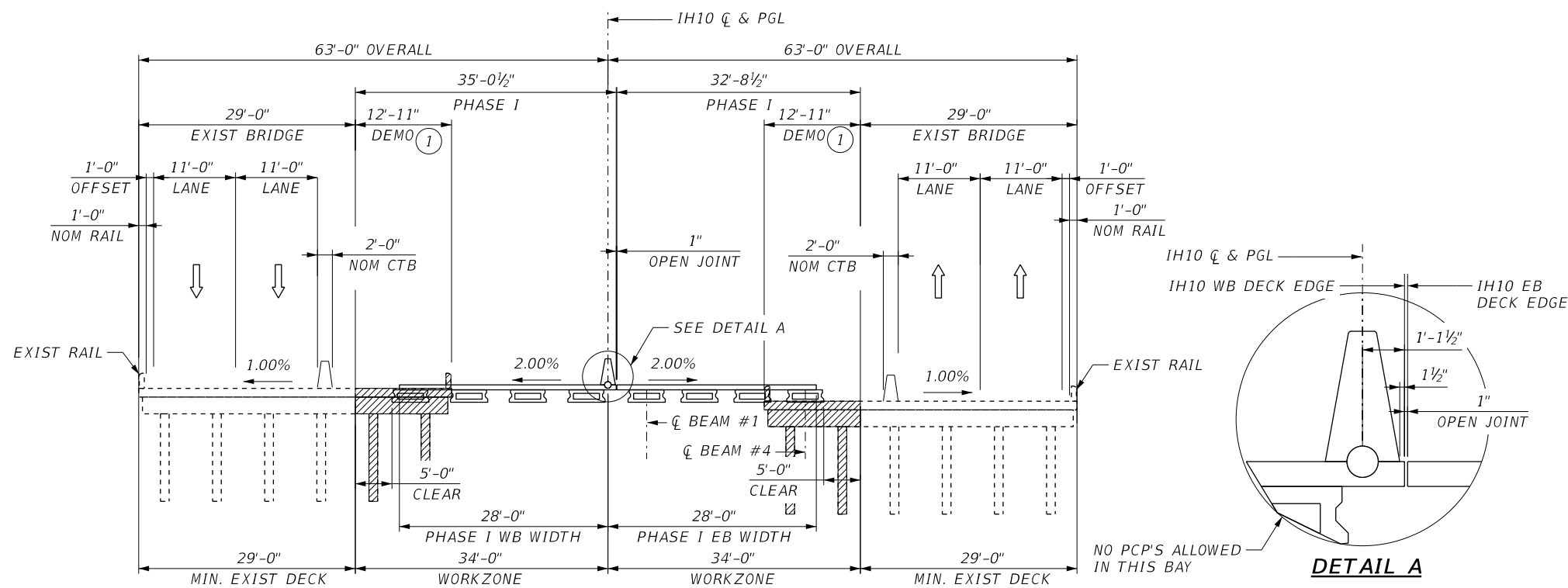
IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE LAYOUT
ARROYO 45 RELIEF #1A BRIDGE
IH10 EB
(STA 158+76 TO STA 160+56)

SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	659

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EXIST SECTION



PHASE I SECTION

① SAWCUT EXISTING CAP AS NECESSARY TO AVOID CONFLICT WITH BEAM. DO NOT CUT BEYOND LIMITS OF DEMOLITION. DO NOT REMOVE EXISTING COLUMNS NOT MARKED FOR DEMOLITION IN THIS PHASE.

GENERAL NOTES

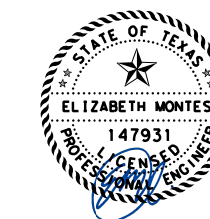
- CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE

HL93 LOADING

NOT TO SCALE



2/28/2024



F-12040



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IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
 TYPICAL SECTIONS
 ARROYO 45 RELIEF #1A BRIDGE
 IH10 EB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 2

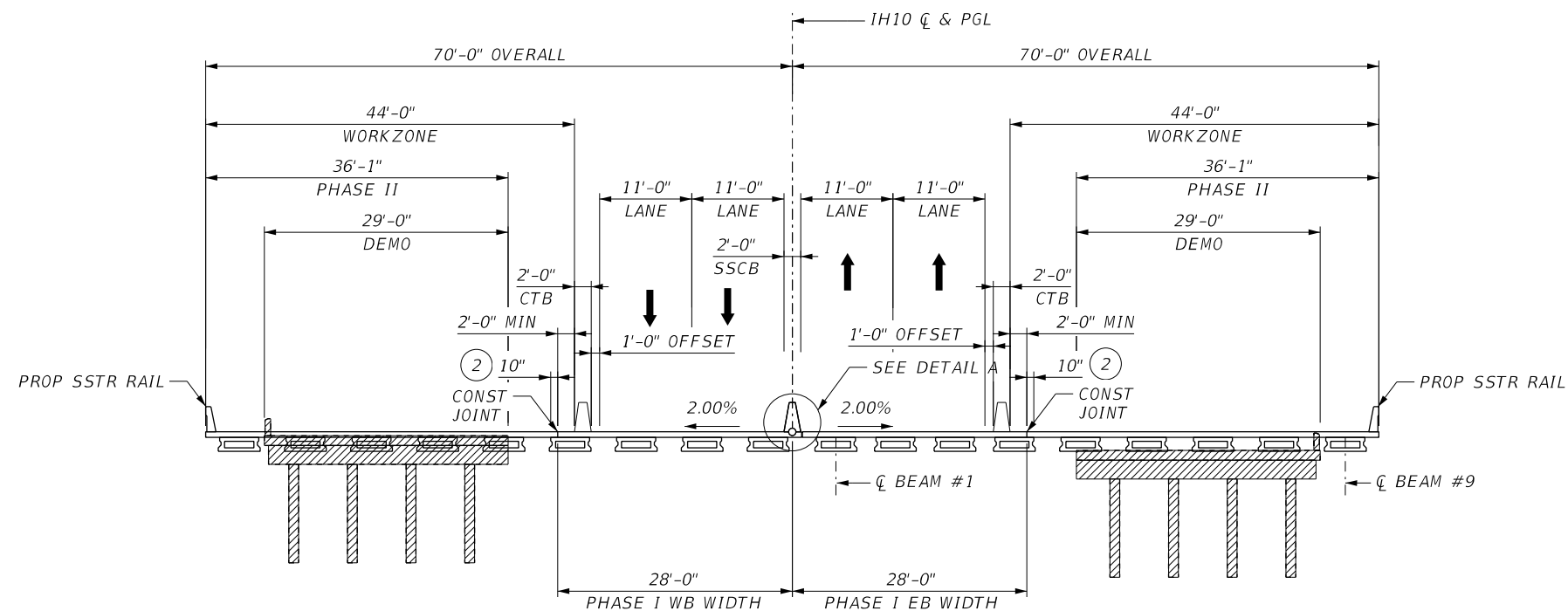
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	660

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

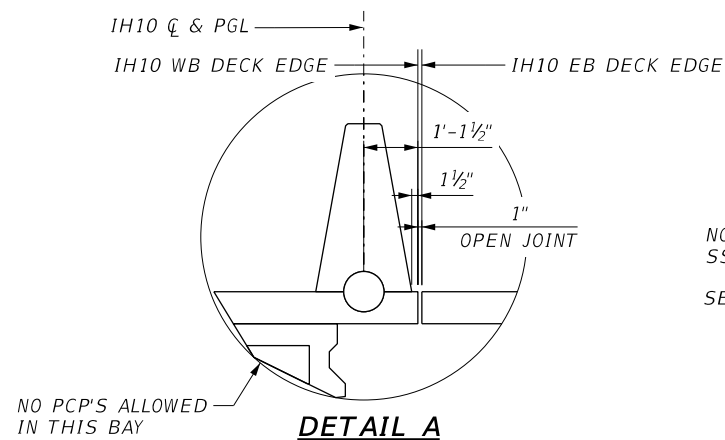
LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE

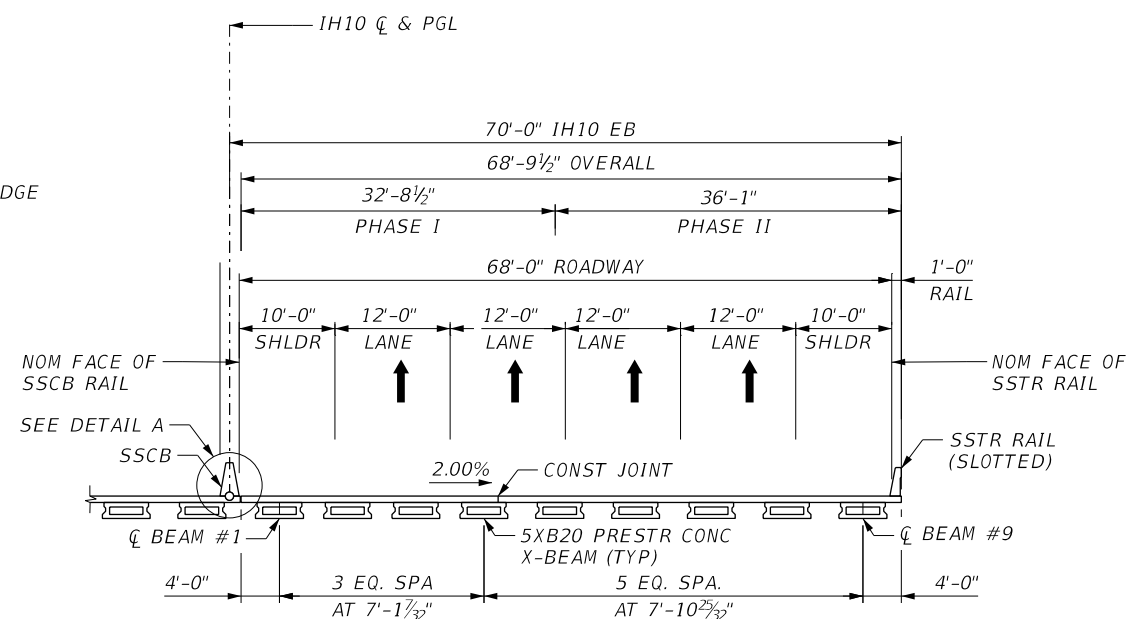


PHASE II SECTION

② EDGE OF DECK TO EDGE OF TOP OF BEAM.



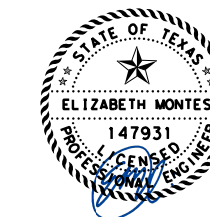
DETAIL A



I H10 EB FINAL SECTION

HL93 LOADING

NOT TO SCALE



2/28/2024



F-12040



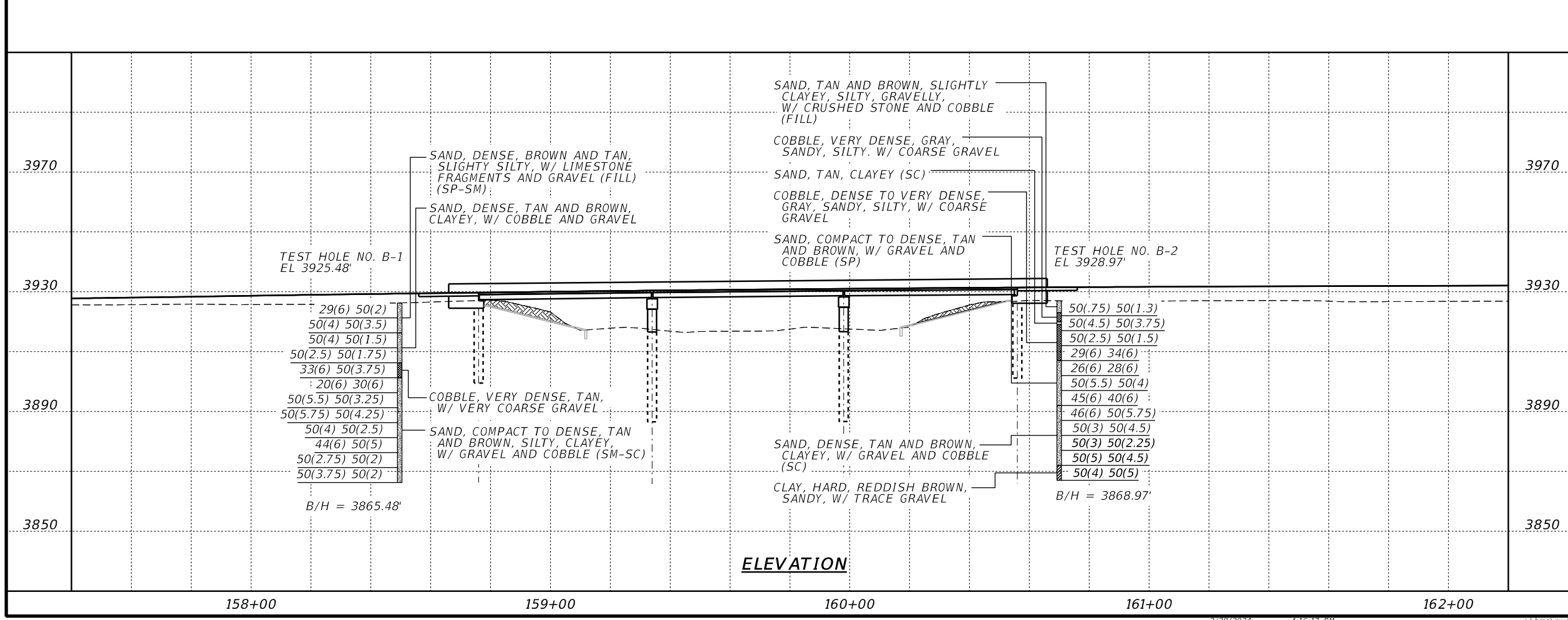
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I H 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
ARROYO 45 RELIEF #1A BRIDGE
 I H10 EB
 (STA 158+76 TO STA 160+56)

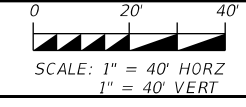
SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		I H 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO. SHEET NO.
ELP	EL PASO	2121	01	104 661

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2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BORING LOGS

ARROYO 45 RELIEF #1A & #1B BRIDGE
 IH10 EB & IH10 WB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	662

GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.



LEGEND

BORE HOLE

HL93 LOADING



2/28/2024

NO.	DATE	REVISION	APPROV.

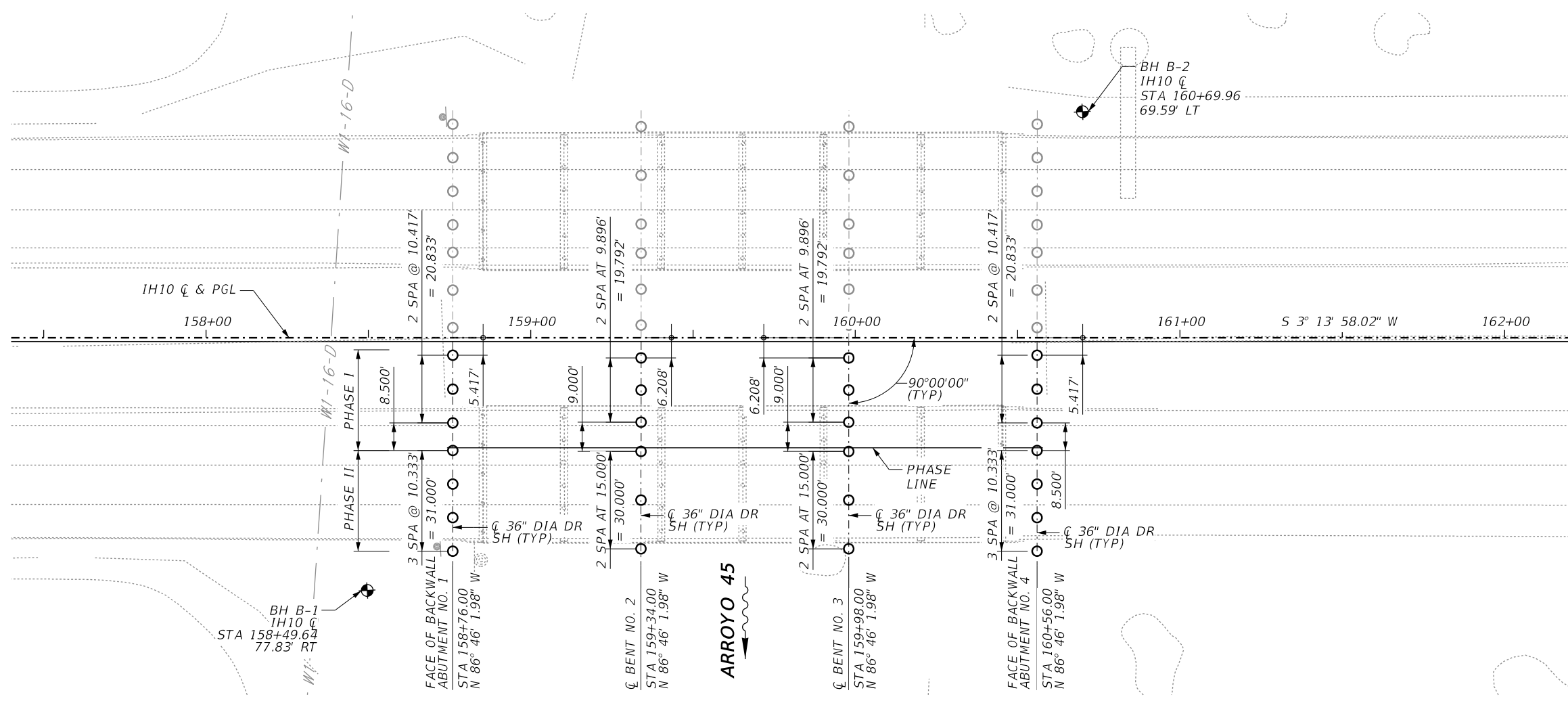


IH 10 WIDENING (NMSL/SPUR 37)

FOUNDATION LAYOUT
ARROYO 45 RELIEF #1A BRIDGE
IH10 EB
(STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	663

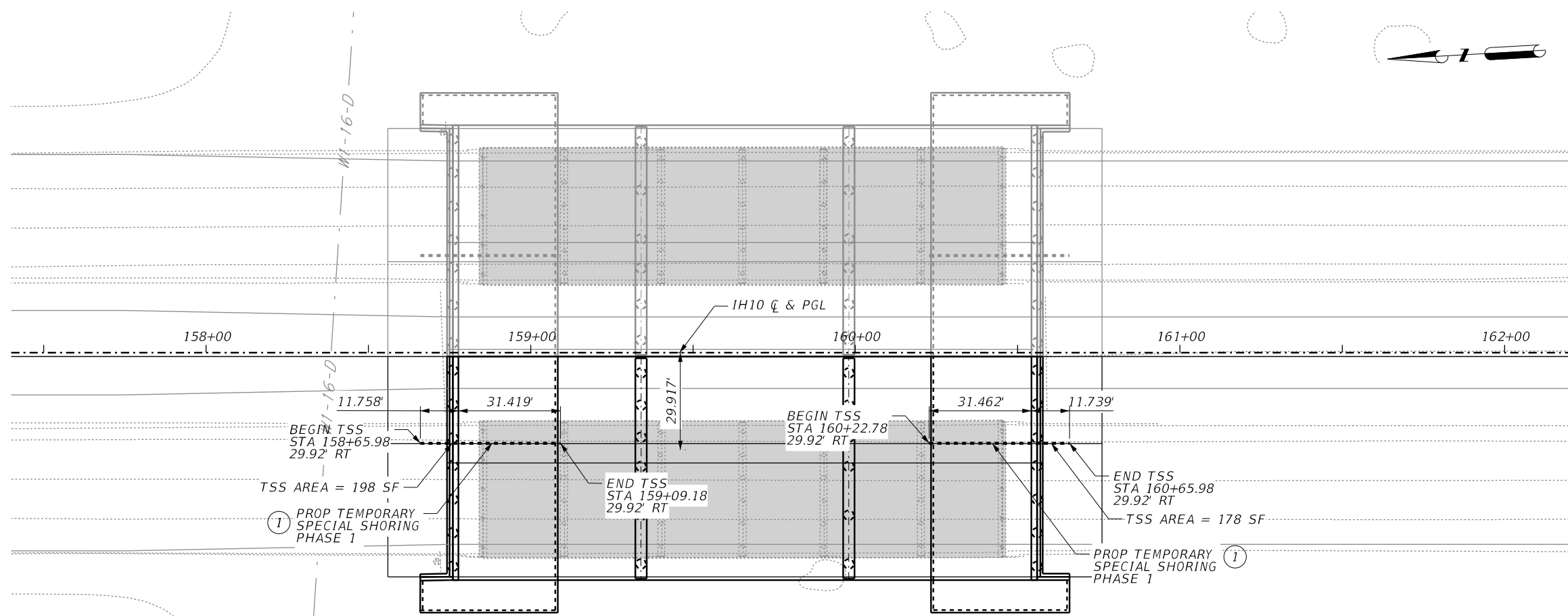


ABUT/BENT	TONS/SHAFT
1&4	65
2&3	126

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 2/28/2024

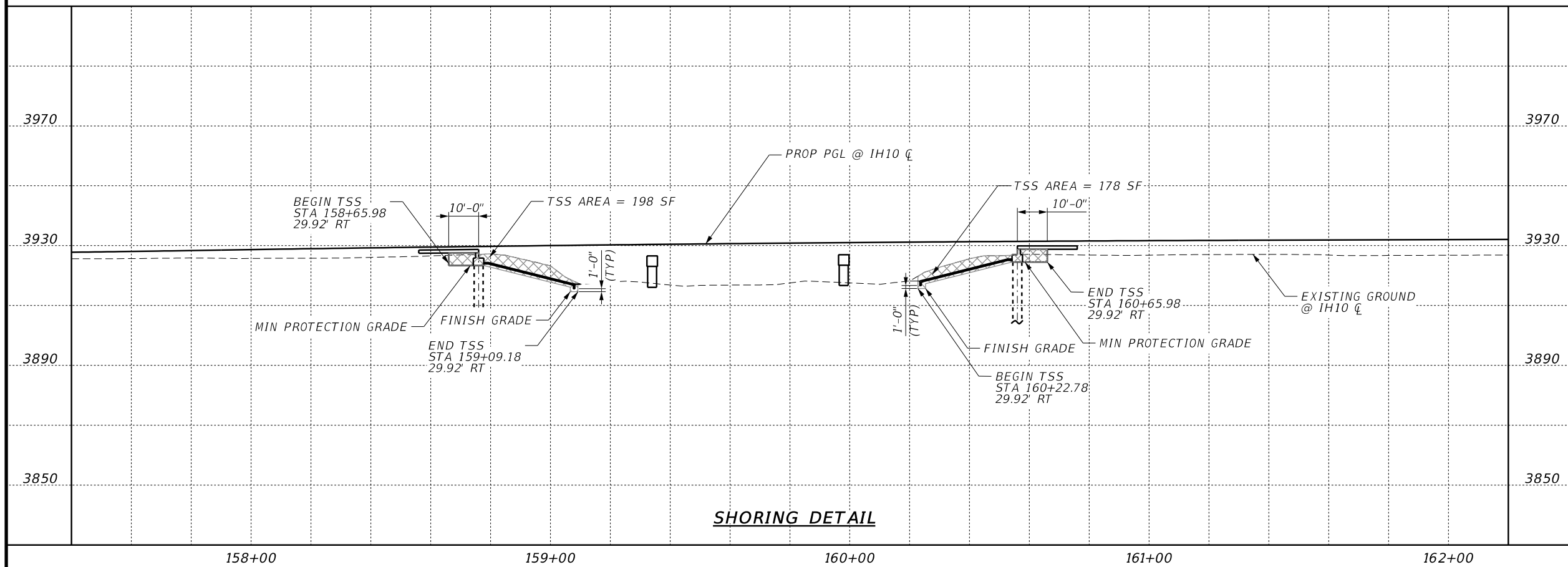
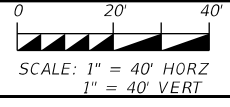
LEGEND

TEMPORARY SPL SHORING



PLAN VIEW

HL93 LOADING



SHORING DETAIL



2/28/2024



IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
 ARROYO 45 RELIEF #1A BRIDGE
 IH10 EB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	664

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				PHASE I				PHASE II					
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	
1	ABUT	1	(FWD)	L	3926.854	3926.712	3926.570	3926.428	3926.270	3926.112	3925.954	3925.796	3925.638
				R	3926.734	3926.592	3926.450	3926.308	3926.150	3925.992	3925.834	3925.676	3925.518
2	BENT	2	(BK)	L	3927.498	3927.356	3927.214	3927.072	3926.914	3926.756	3926.598	3926.440	3926.282
				R	3927.378	3927.236	3927.094	3926.952	3926.794	3926.636	3926.478	3926.320	3926.162
		2	(FWD)	L	3927.519	3927.377	3927.235	3927.093	3926.935	3926.777	3926.619	3926.461	3926.303
				R	3927.399	3927.257	3927.115	3926.973	3926.815	3926.657	3926.499	3926.341	3926.183
3	BENT	3	(BK)	L	3928.099	3927.957	3927.815	3927.673	3927.515	3927.357	3927.199	3927.041	3926.883
				R	3927.979	3927.837	3927.695	3927.553	3927.395	3927.237	3927.079	3926.921	3926.763
		3	(FWD)	L	3928.115	3927.973	3927.831	3927.689	3927.531	3927.373	3927.215	3927.057	3926.899
				R	3927.995	3927.853	3927.711	3927.569	3927.411	3927.253	3927.095	3926.937	3926.779
4	ABUT	4	(BK)	L	3928.517	3928.375	3928.233	3928.091	3927.933	3927.775	3927.617	3927.459	3927.301
				R	3928.397	3928.255	3928.113	3927.971	3927.813	3927.655	3927.497	3927.339	3927.181



2/28/2024

NO.	DATE	REVISION	APPROV.

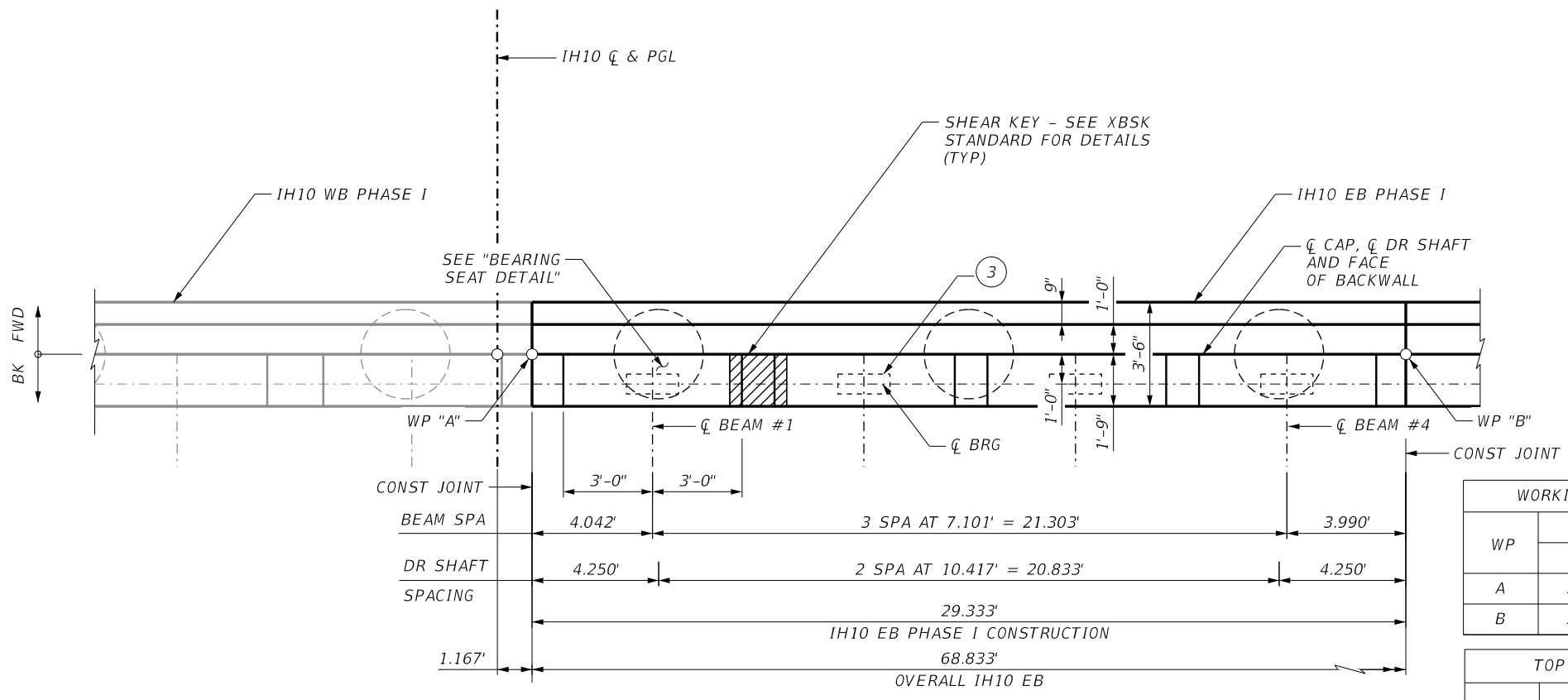


IH 10 WIDENING (NMSL/SPUR 37)
BEARING SEAT ELEVATIONS
ARROYO 45 RELIEF #1A BRIDGE
 IH10 EB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	665

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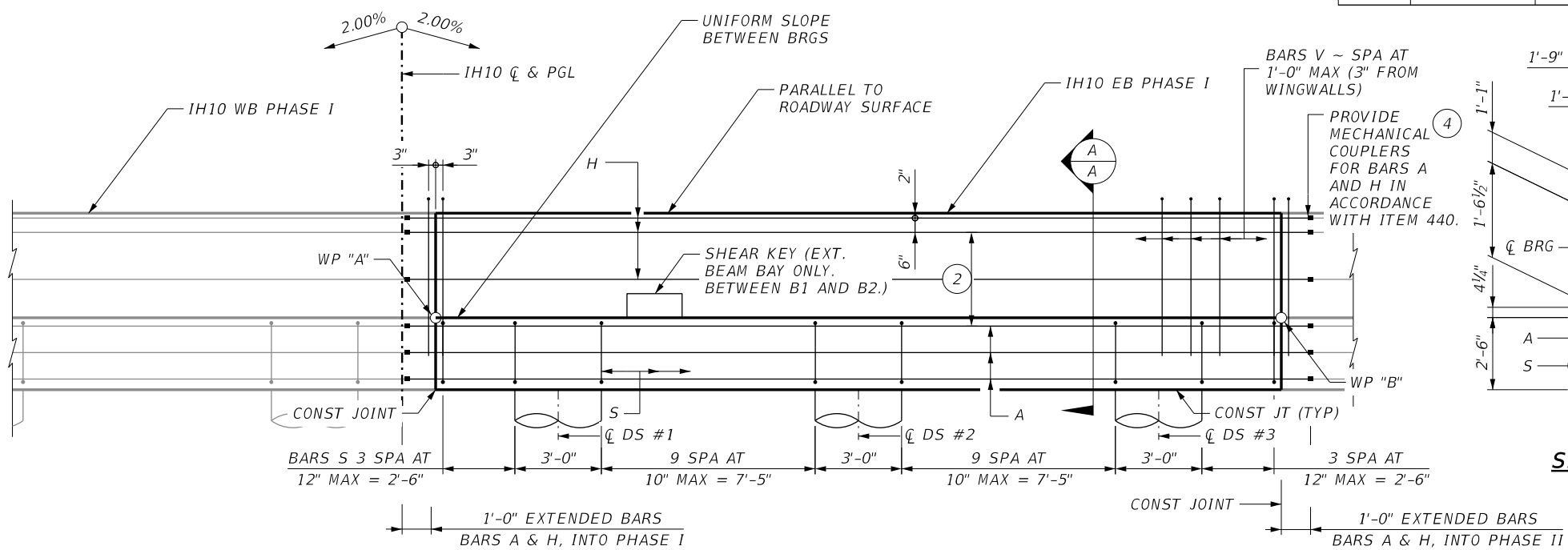
WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
A	3926.74'	3928.42'
B	3926.15'	3927.84'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 2
1	3924.15'	3925.84'
2	3923.94'	3925.63'
3	3923.74'	3925.42'

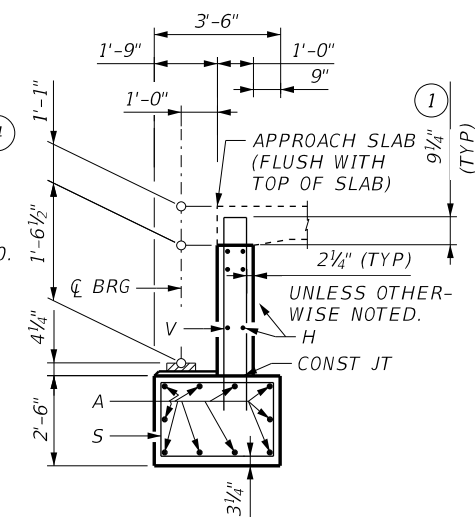
- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
 - SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
 - SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."

PLAN PHASE I



ELEVATION PHASE I



SECTION A-A

HL93 LOADING

2/28/2024

NO.	DATE	REVISION	APPROV.

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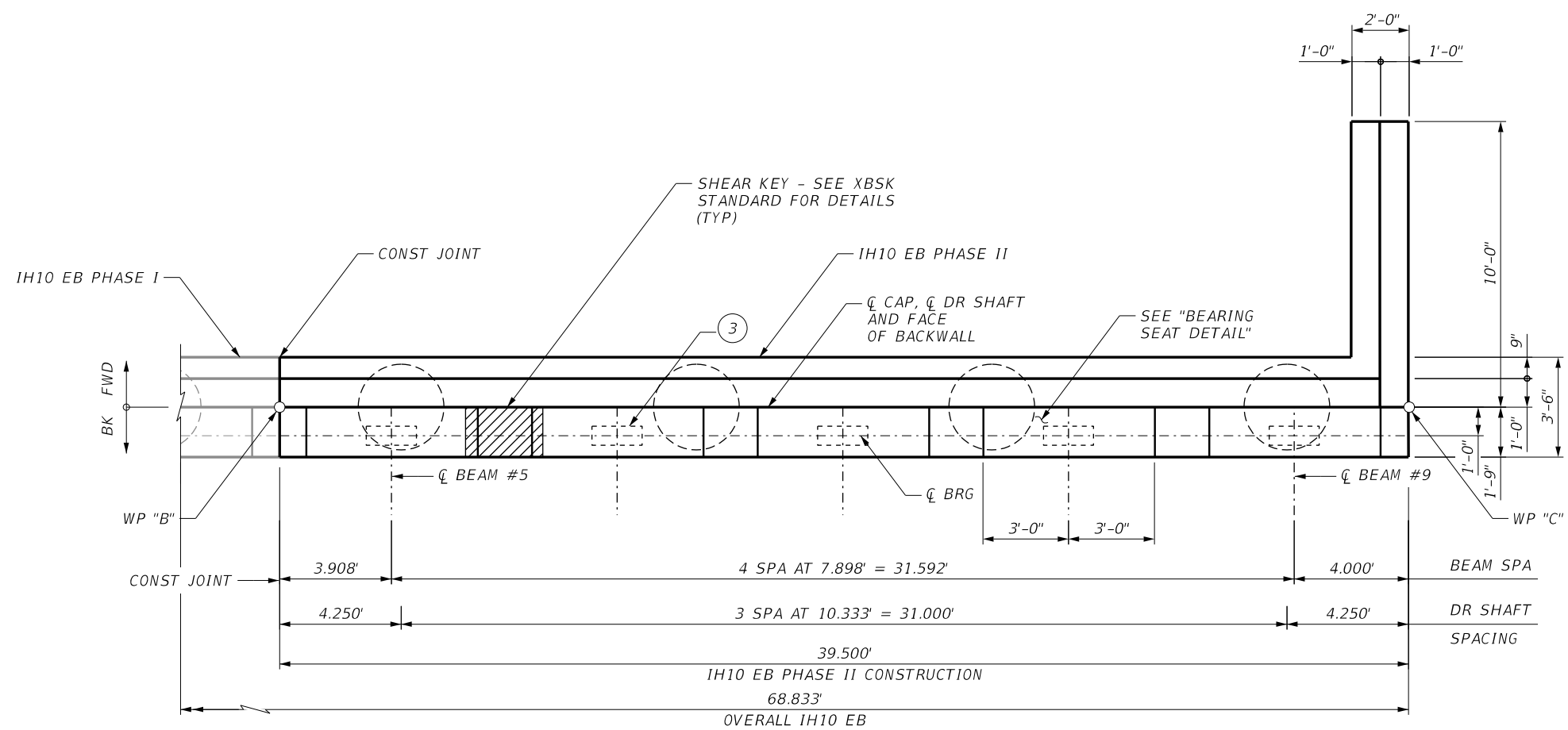
Texas Department of Transportation

**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I
ARROYO 45 RELIEF #1A BRIDGE
IH10 EB
(STA 158+76 TO STA 160+56)**

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			666

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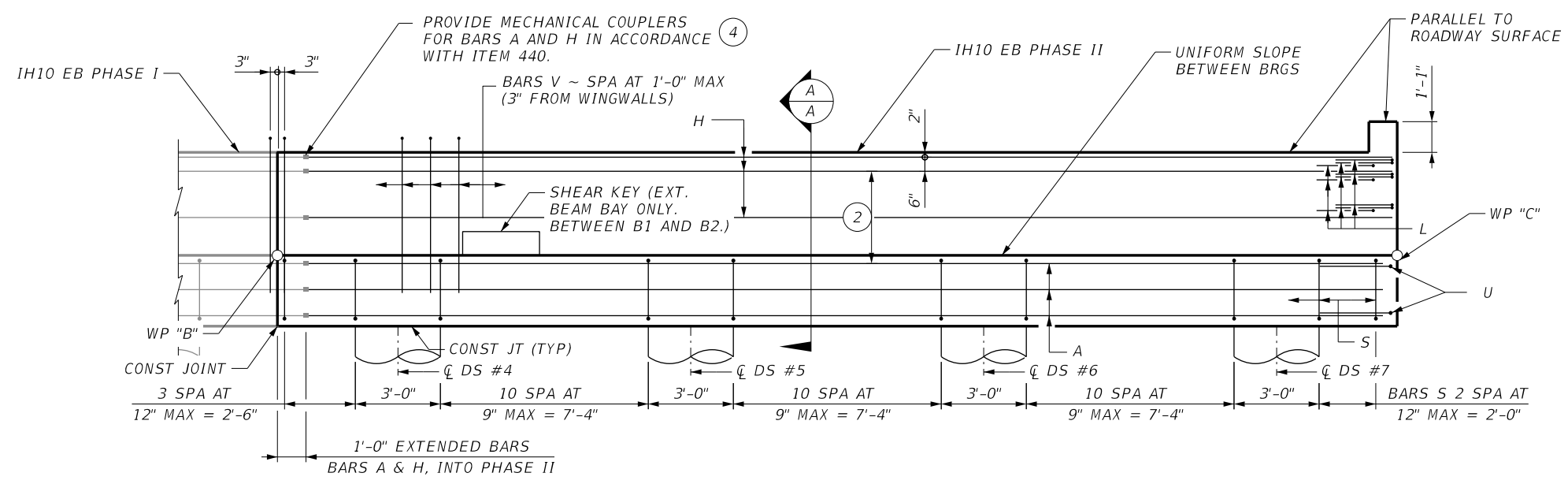
WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
B	3926.15'	3927.84'
C	3925.36'	3927.05'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
4	3923.57'	3925.25'
5	3923.36'	3925.04'
6	3923.15'	3924.84'
7	3922.95'	3924.63'

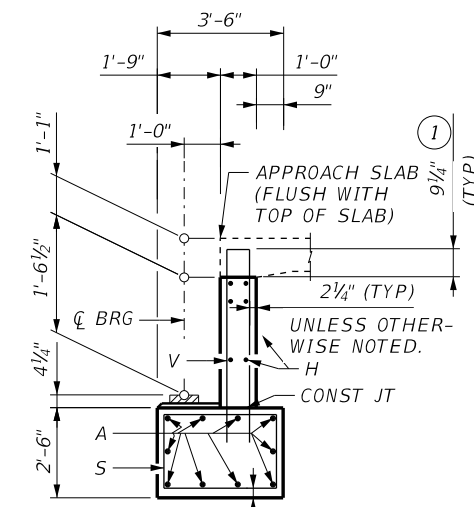
- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
 - SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
 - SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."

PLAN PHASE II

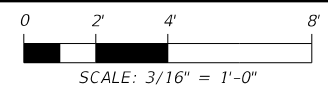


ELEVATION PHASE II



SECTION A-A

HL93 LOADING

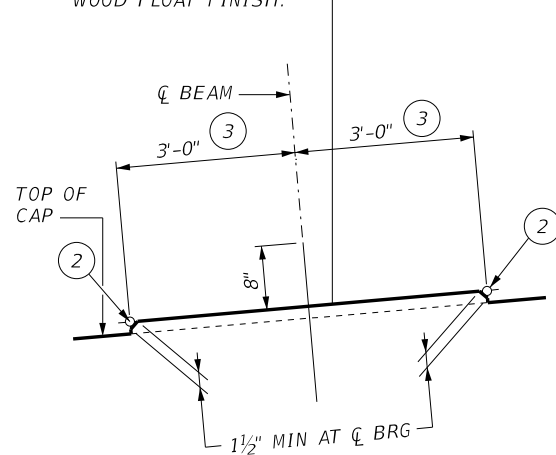


IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE II
 ARROYO 45 RELIEF #1A BRIDGE
 IH10 EB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

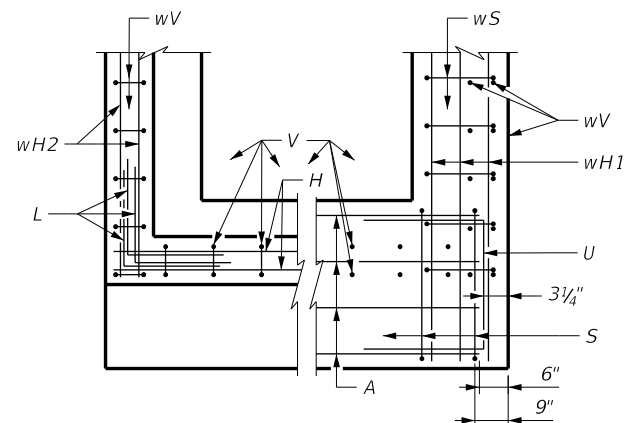
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	667

LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



**BACKWALL
CORNER DETAILS**

**TABLE OF ESTIMATED QUANTITIES
PHASE I (ONE ABUT)**

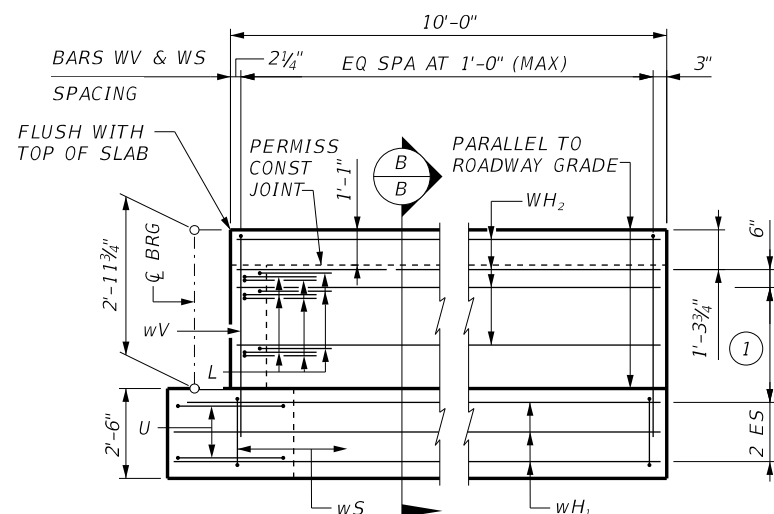
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31'-4"	1,665
H	6	#6	31'-4"	282
S	28	#5	11'-4"	331
V	30	#5	8'-6"	264
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,543
CONC (ABUT)			CY	11.8

**TABLE OF ESTIMATED QUANTITIES
PHASE II (ONE ABUT)**

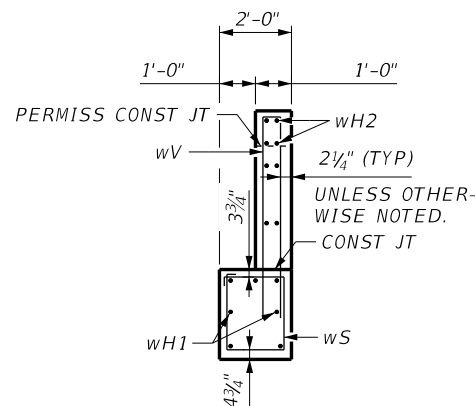
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	38'-0"	2,019
H	6	#6	38'-4"	345
L	9	#6	4'-0"	54
S	40	#5	11'-4"	473
U	2	#6	8'-0"	24
V	40	#5	8'-6"	355
wH1	7	#6	11'-5"	120
wH2	8	#6	9'-8"	116
wS	11	#4	7'-8"	56
wV	11	#5	8'-9"	100
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,663
CONC (ABUT)			CY	18.8

KEYED NOTES

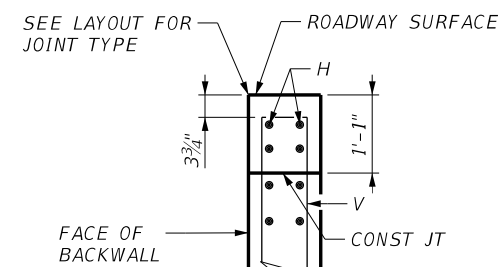
- ① SPACING BASED ON BEAM TYPE:
XB20 - 2 EQUAL SPACES
- ② RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ③ MEASURED ALONG ϕ OF BEARING.



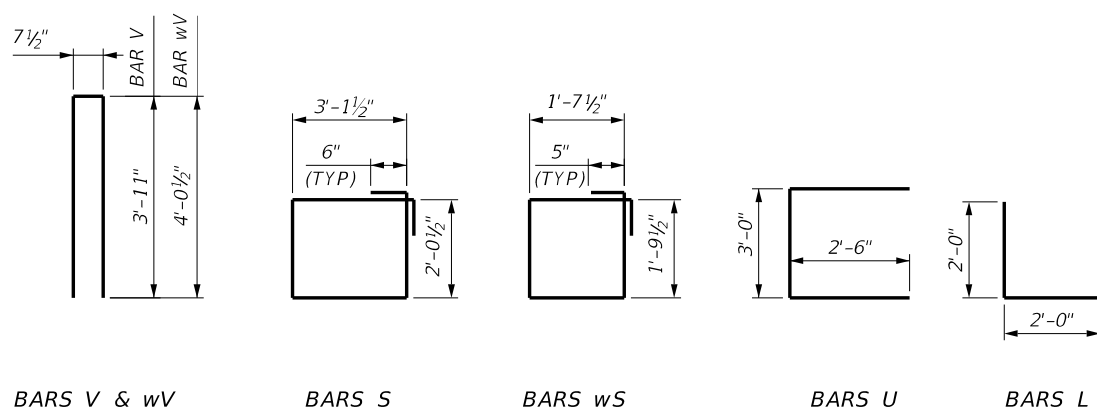
WINGWALL ELEVATION



SECTION B-B



**BACKWALL DETAIL
(WITH APPROACH SLAB)**



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NOT TO SCALE

2/28/2024

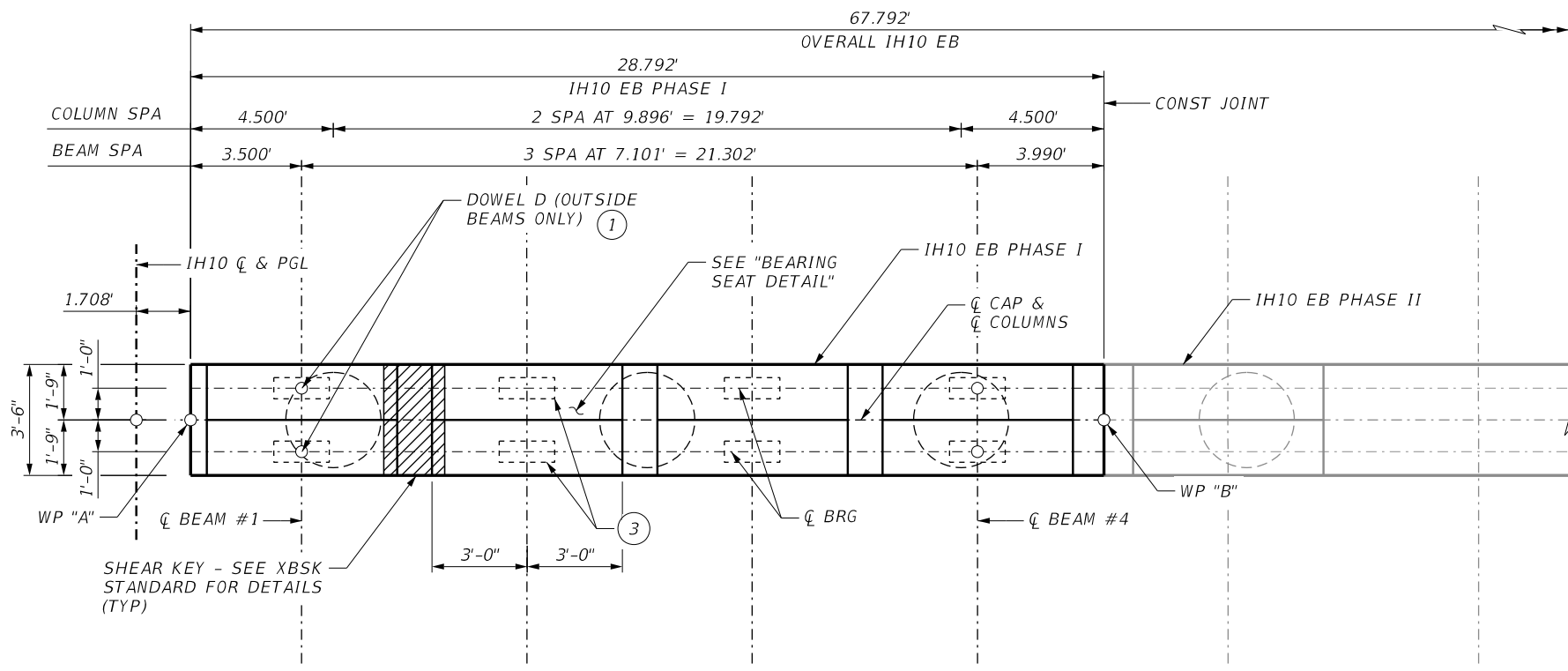
NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
**ABUTMENT NO. 1 & 4
 PHASE I & II**
 ARROYO 45 RELIEF #1A BRIDGE
 IH10 EB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	668

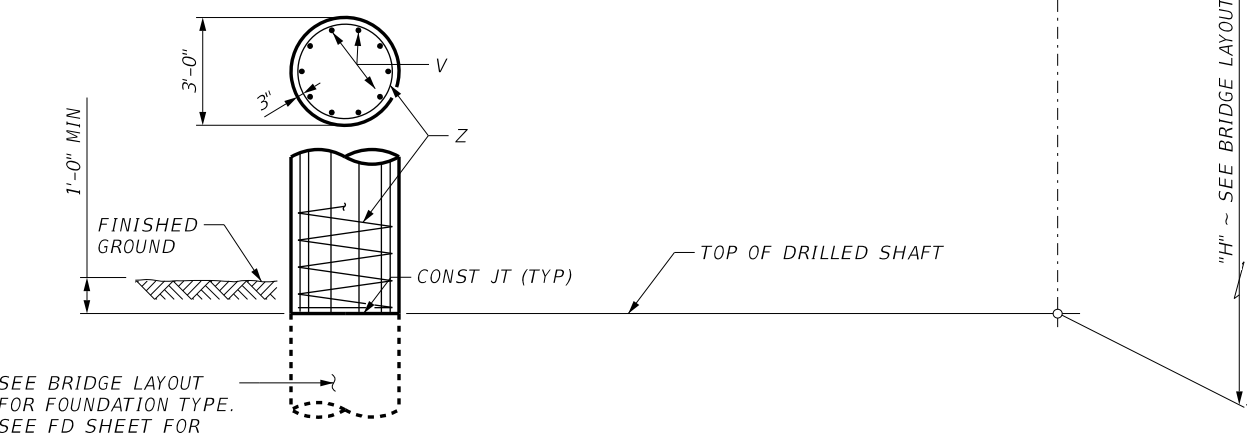
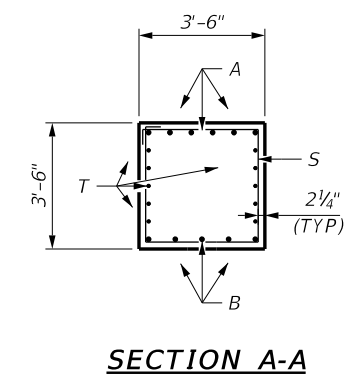
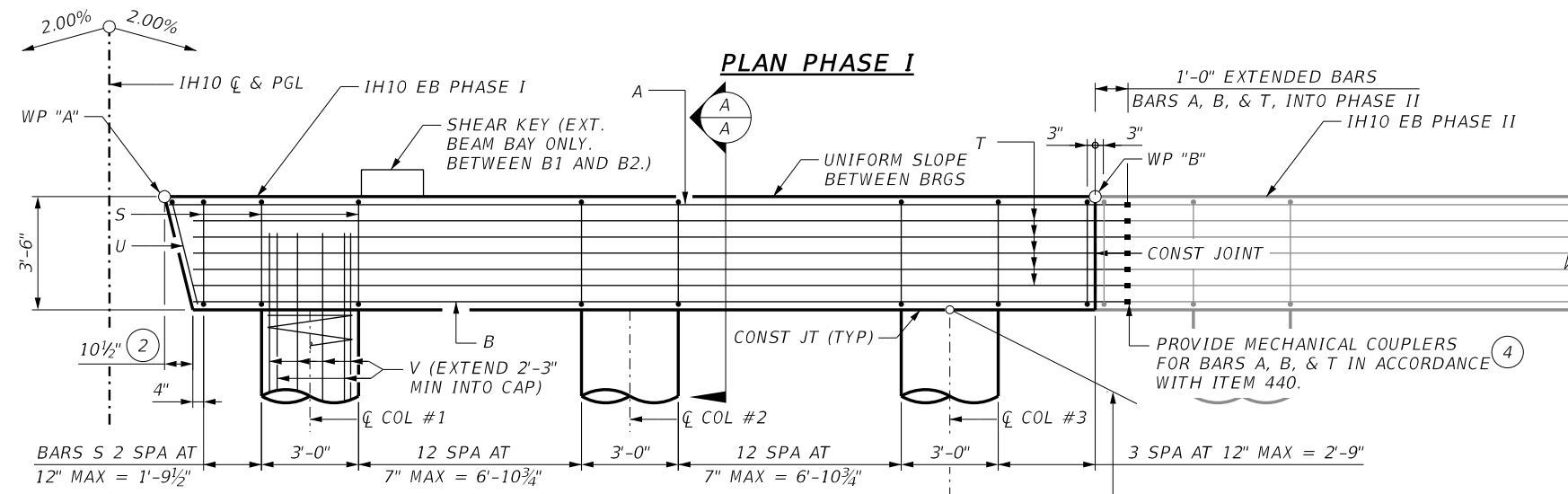


GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP REINFORCING MUST BE GRADE 60.
- GALVANIZE DOWEL BARS D.
- COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES. LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPlicing TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
A	3927.40'	3927.99'
B	3926.82'	3927.42'

TOP OF COL ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
1	3923.81'	3924.40'
2	3923.61'	3924.21'
3	3923.41'	3924.01'

HL93 LOADING

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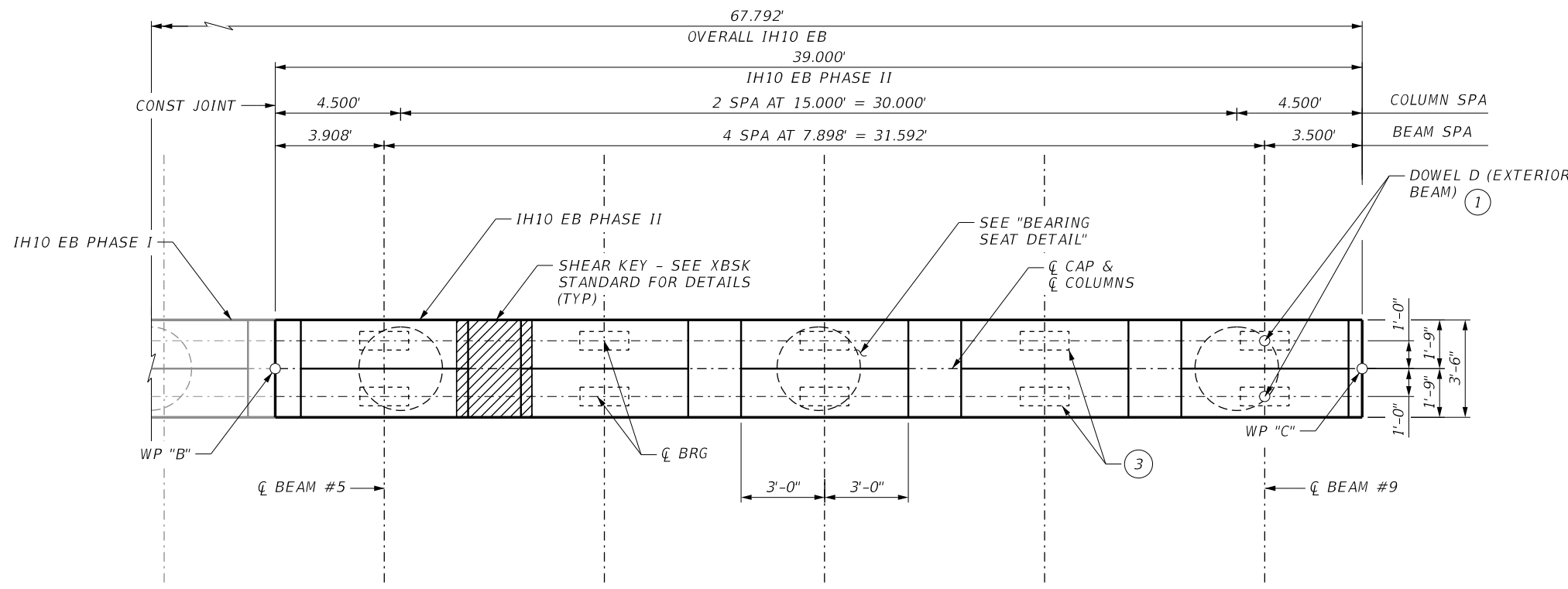
Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I
ARROYO 45 RELIEF #1A BRIDGE
 IH10 EB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			669

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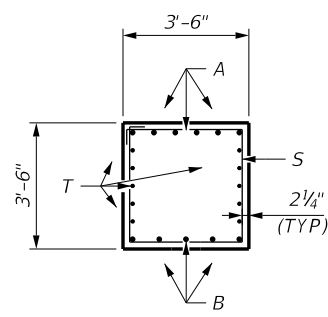
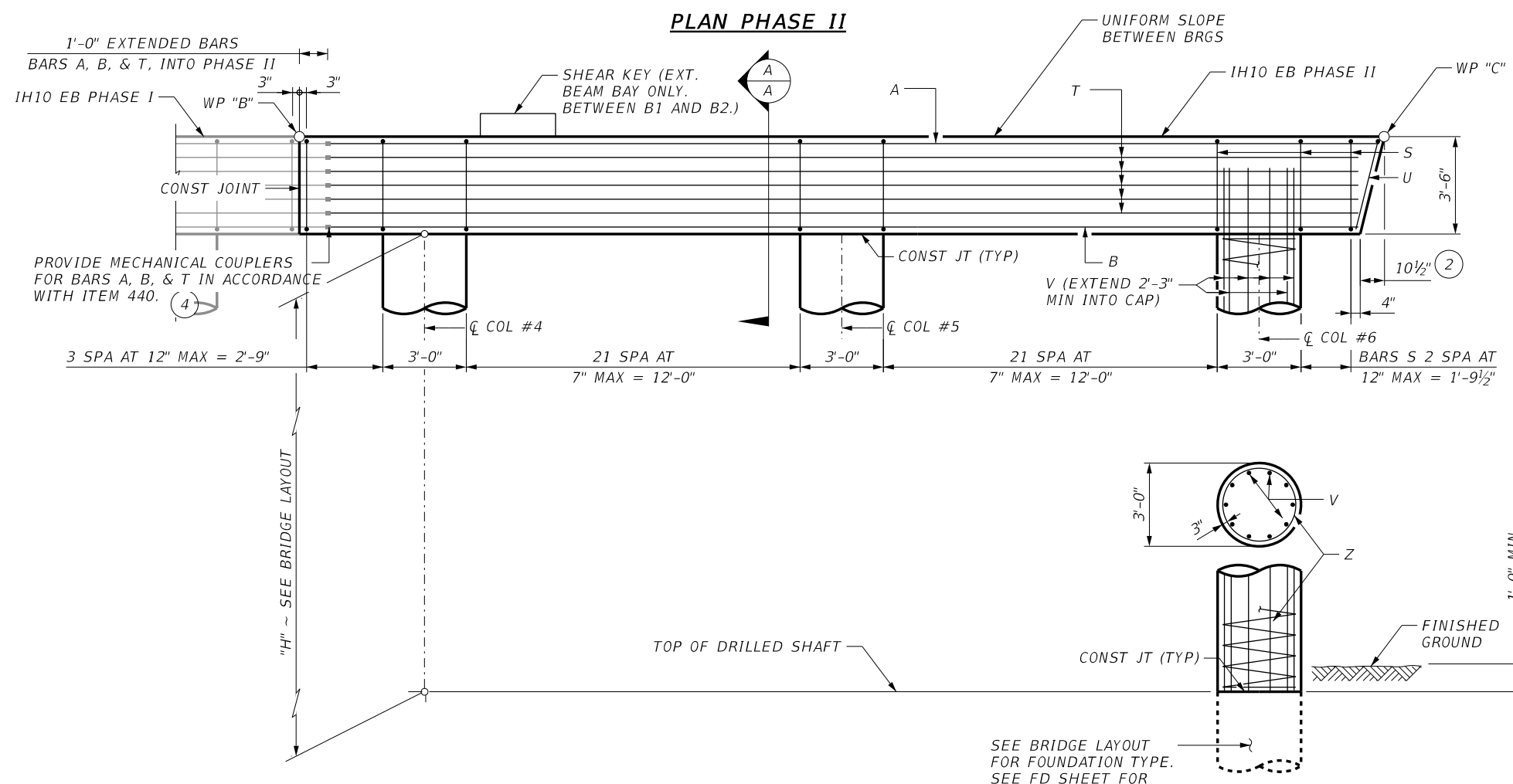


GENERAL NOTES

1. DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
2. CONCRETE STRENGTH $f'_c = 3,600$ PSI.
3. ALL CAP REINFORCING MUST BE GRADE 60.
4. GALVANIZE DWEL BARS D.
5. COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
6. SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
7. SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
8. LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- ① OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- ② MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
- ③ PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- ④ MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



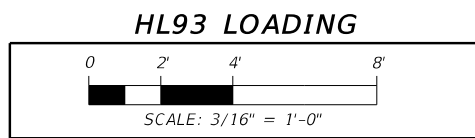
SECTION A-A

WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
B	3926.82'	3927.42'
C	3926.04'	3926.64'

TOP OF COL ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
4	3923.23'	3923.83'
5	3922.93'	3923.53'
6	3922.63'	3923.23'



STATE OF TEXAS
 ELIZABETH MONTES
 147931
 PROFESSIONAL ENGINEER
 2/28/2024

NO.	DATE	REVISION	APPROV.

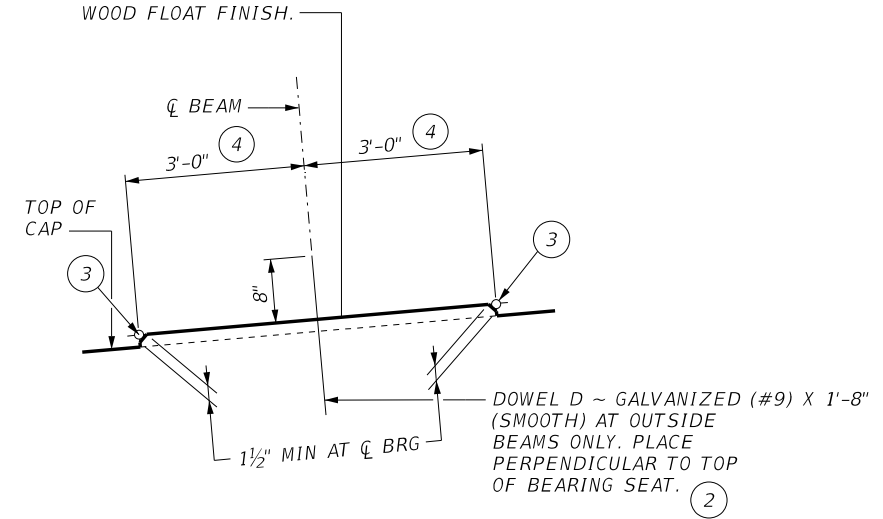
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IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE II
 ARROYO 45 RELIEF #1A BRIDGE
 IH10 EB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			670

LEVEL ALONG A LINE PERPENDICULAR TO
 CL BENT. UNIFORM SLOPE BETWEEN LEFT
 AND RIGHT BEARING SEAT ELEVATIONS WITH
 WOOD FLOAT FINISH.



BEARING SEAT DETAIL
 (BEARING SURFACE MUST BE CLEAN
 AND FREE OF ALL LOOSE MATERIAL
 BEFORE PLACING BEARING PAD.)

**TABLE OF ESTIMATED QUANTITIES PHASE I
 (ONE BNT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	29'-7"	942
B	5	#11	28'-10"	765
D	4	1 1/4"	1'-8"	28
S	33	#5	13'-6"	465
T	10	#5	28'-10"	300
U	1	#5	9'-8"	10
V	30	#9	10'-3"	1,046
Z	3	#3	274'-11"	310
ITEM		UNIT	QUANTITY	
Reinforcing Steel		LB	3,865	
Conc (Cap)		CY	13.5	

**TABLE OF ESTIMATED QUANTITIES PHASE II
 (ONE BNT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	37'-9"	1,203
B	5	#11	37'-0"	983
D	2	1 1/4"	1'-8"	14
S	51	#5	13'-6"	718
T	10	#5	37'-0"	386
U	1	#5	9'-8"	10
V	30	#9	10'-3"	1,046
Z	3	#3	274'-11"	310
ITEM		UNIT	QUANTITY	
Reinforcing Steel		LB	4,670	
Conc (Cap)		CY	18.2	

KEYED NOTES

- ① QUANTITIES SHOWN ARE BASED ON AN "H" VALUE OF 8'. FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
 BARS V LENGTH, 1'-0"
 BARS Z LENGTH, 23'-7"
 REINFORCING STEEL, 160 LB
 CLASS "C" CONC (COL), 0.79 CY
- ② OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- ③ RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED ELSEWHERE.
- ④ MEASURED A LONG CL OF BEARING.

HL93 LOADING

NOT TO SCALE

2/28/2024

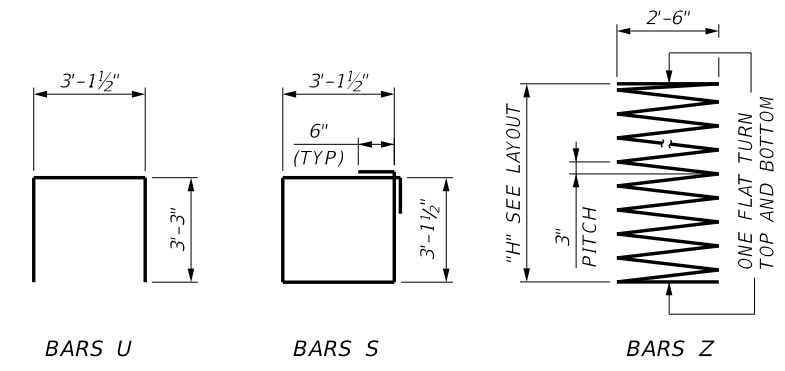
NO.	DATE	REVISION	APPROV.

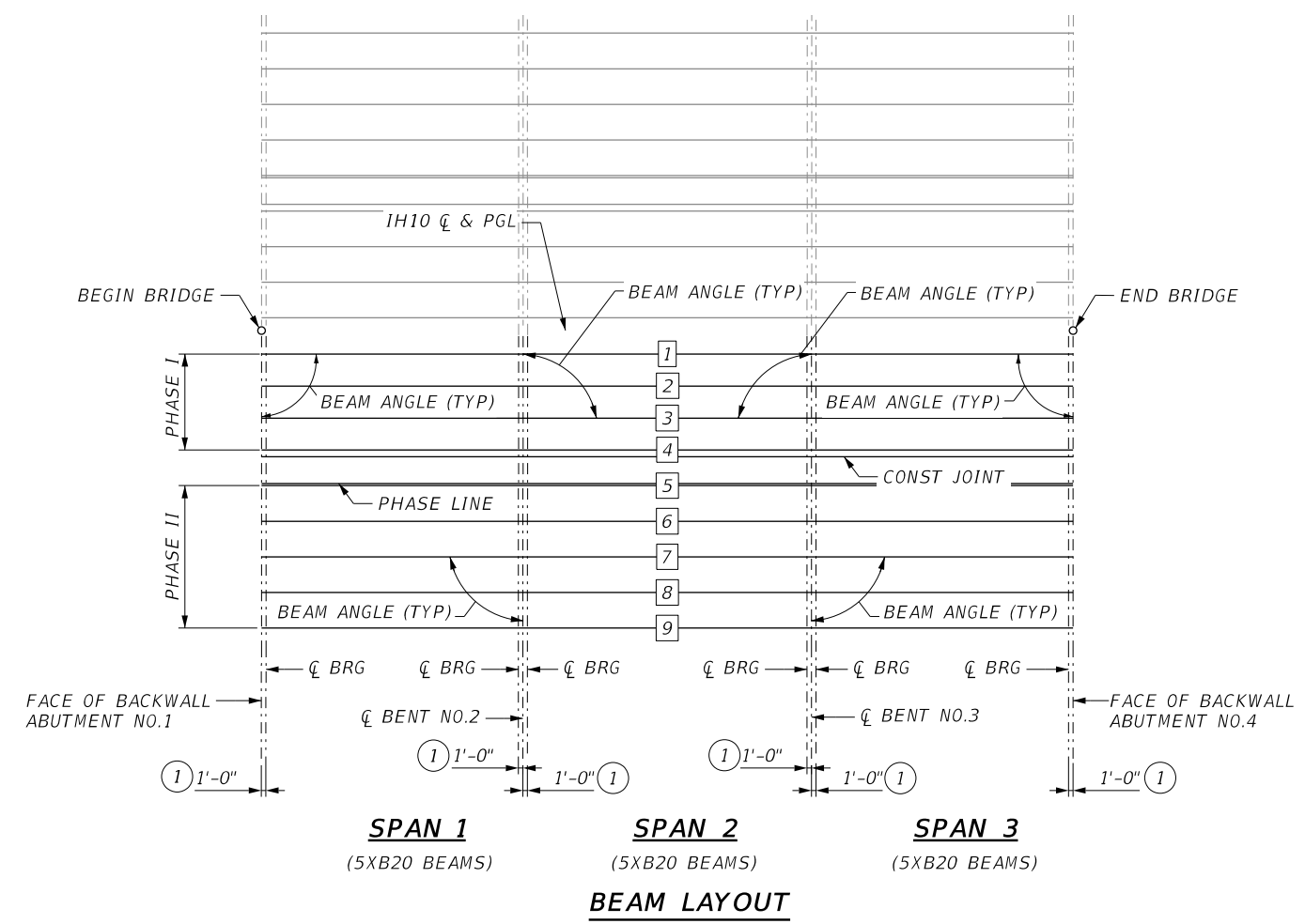
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IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I & II
 ARROYO 45 RELIEF #1A BRIDGE
 IH10 EB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	671

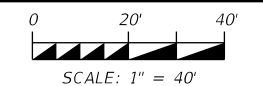




KEYED NOTES

- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.

HL93 LOADING



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
ARROYO 45 RELIEF #1A BRIDGE
 IH10 EB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	672

BEAM REPORT

PHASE I

BEAM REPORT, SPAN 1

	HORIZONTAL DISTANCE	C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
BEAM 1	58.000	56.000	57.500	57.500	0.0115
BEAM 2	58.000	56.000	57.500	57.500	0.0115
BEAM 3	58.000	56.000	57.500	57.500	0.0115
BEAM 4	58.000	56.000	57.500	57.500	0.0115

BEAM REPORT, SPAN 2

	HORIZONTAL DISTANCE	C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
BEAM 1	64.000	62.000	63.500	63.500	0.0093
BEAM 2	64.000	62.000	63.500	63.500	0.0093
BEAM 3	64.000	62.000	63.500	63.500	0.0093
BEAM 4	64.000	62.000	63.500	63.500	0.0093

BEAM REPORT, SPAN 3

	HORIZONTAL DISTANCE	C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
BEAM 1	58.000	56.000	57.500	57.500	0.0072
BEAM 2	58.000	56.000	57.500	57.500	0.0072
BEAM 3	58.000	56.000	57.500	57.500	0.0072
BEAM 4	58.000	56.000	57.500	57.500	0.0072

PHASE II

BEAM REPORT, SPAN 1

	HORIZONTAL DISTANCE	C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
BEAM 5	58.000	56.000	57.500	57.500	0.0115
BEAM 6	58.000	56.000	57.500	57.500	0.0115
BEAM 7	58.000	56.000	57.500	57.500	0.0115
BEAM 8	58.000	56.000	57.500	57.500	0.0115
BEAM 9	58.000	56.000	57.500	57.500	0.0115

BEAM REPORT, SPAN 2

	HORIZONTAL DISTANCE	C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
BEAM 5	64.000	62.000	63.500	63.500	0.0093
BEAM 6	64.000	62.000	63.500	63.500	0.0093
BEAM 7	64.000	62.000	63.500	63.500	0.0093
BEAM 8	64.000	62.000	63.500	63.500	0.0093
BEAM 9	64.000	62.000	63.500	63.500	0.0093

BEAM REPORT, SPAN 3

	HORIZONTAL DISTANCE	C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG.	BEAM SLOPE
BEAM 5	58.000	56.000	57.500	57.500	0.0072
BEAM 6	58.000	56.000	57.500	57.500	0.0072
BEAM 7	58.000	56.000	57.500	57.500	0.0072
BEAM 8	58.000	56.000	57.500	57.500	0.0072
BEAM 9	58.000	56.000	57.500	57.500	0.0072

BENT REPORT

PHASE I

ABUTMENT NO. 1 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 1					
BEAM 1	0.000	90	0	0	
BEAM 2	7.101	90	0	0	
BEAM 3	7.101	90	0	0	
BEAM 4	7.100	90	0	0	
TOTAL	21.302				

BENT NO. 2 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 1					
BEAM 1	0.000	90	0	0	
BEAM 2	7.101	90	0	0	
BEAM 3	7.101	90	0	0	
BEAM 4	7.100	90	0	0	
TOTAL	21.302				

BENT NO. 2 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 2					
BEAM 1	0.000	90	0	0	
BEAM 2	7.101	90	0	0	
BEAM 3	7.101	90	0	0	
BEAM 4	7.100	90	0	0	
TOTAL	21.302				

BENT NO. 3 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 2					
BEAM 1	0.000	90	0	0	
BEAM 2	7.101	90	0	0	
BEAM 3	7.101	90	0	0	
BEAM 4	7.100	90	0	0	
TOTAL	21.302				

BENT NO. 3 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 3					
BEAM 1	0.000	90	0	0	
BEAM 2	7.101	90	0	0	
BEAM 3	7.101	90	0	0	
BEAM 4	7.100	90	0	0	
TOTAL	21.302				

ABUTMENT NO. 4 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 3					
BEAM 1	0.000	90	0	0	
BEAM 2	7.101	90	0	0	
BEAM 3	7.101	90	0	0	
BEAM 4	7.100	90	0	0	
TOTAL	21.302				

BENT REPORT

PHASE II

ABUTMENT NO. 1 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 1					
BEAM 5	7.898	90	0	0	
BEAM 6	7.898	90	0	0	
BEAM 7	7.898	90	0	0	
BEAM 8	7.898	90	0	0	
BEAM 9	7.898	90	0	0	
TOTAL	39.490				

BENT NO. 2 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 1					
BEAM 5	7.898	90	0	0	
BEAM 6	7.898	90	0	0	
BEAM 7	7.898	90	0	0	
BEAM 8	7.898	90	0	0	
BEAM 9	7.898	90	0	0	
TOTAL	39.490				

BENT NO. 2 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 2					
BEAM 5	7.898	90	0	0	
BEAM 6	7.898	90	0	0	
BEAM 7	7.898	90	0	0	
BEAM 8	7.898	90	0	0	
BEAM 9	7.898	90	0	0	
TOTAL	39.490				

BENT NO. 3 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 2					
BEAM 5	7.898	90	0	0	
BEAM 6	7.898	90	0	0	
BEAM 7	7.898	90	0	0	
BEAM 8	7.898	90	0	0	
BEAM 9	7.898	90	0	0	
TOTAL	39.490				

BENT NO. 3 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 3					
BEAM 5	7.898	90	0	0	
BEAM 6	7.898	90	0	0	
BEAM 7	7.898	90	0	0	
BEAM 8	7.898	90	0	0	
BEAM 9	7.898	90	0	0	
TOTAL	39.490				

ABUTMENT NO. 4 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		BEAM SPAC.	BEAM ANGLE		
D	M	S	D	M	S
SPAN 3					
BEAM 5	7.898	90	0	0	
BEAM 6	7.898	90	0	0	
BEAM 7	7.898	90	0	0	
BEAM 8	7.898	90	0	0	
BEAM 9	7.898	90	0	0	
TOTAL	39.490				

KEYED NOTES

- 2 BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- 3 BEAM SPACING SHOWN IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X BEAMS.

HL93 LOADING

NOT TO SCALE

2/28/2024

NO.	DATE	REVISION	APPROV.

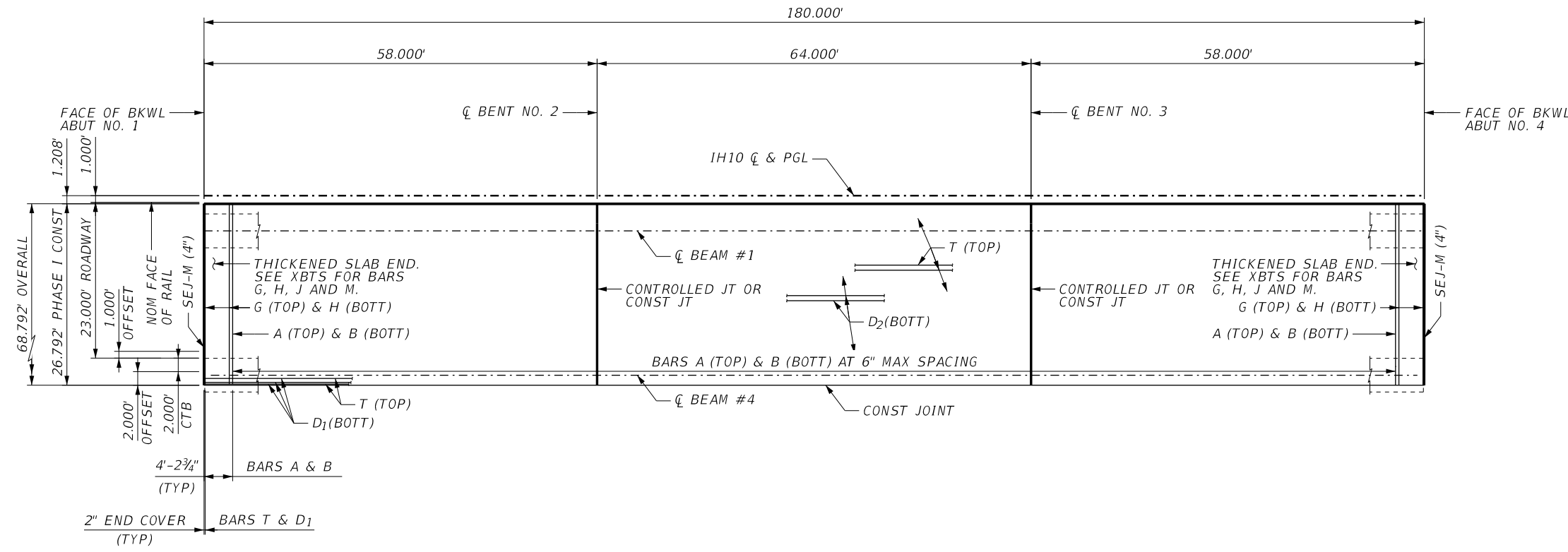


IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
ARROYO 45 RELIEF #1A BRIDGE
 IH10 EB
 (STA 158+76 TO STA 160+56)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	673



SPAN 1

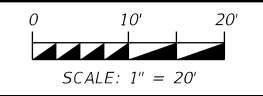
SPAN 2

SPAN 3

PLAN PHASE I

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

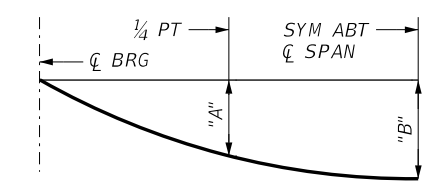
HL93 LOADING



2/28/2024

TABLE OF DEFLECTIONS PHASE I

SPAN	BEAM	"A"	"B"
NO.	NO.	FT	FT
1	1,4	0.053	0.076
	2,3	0.050	0.072
2	1	0.080	0.114
	2,3	0.076	0.107
	4	0.080	0.113
3	1,4	0.054	0.077
	2,3	0.051	0.073



DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY ($E_c = 5,000$ KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

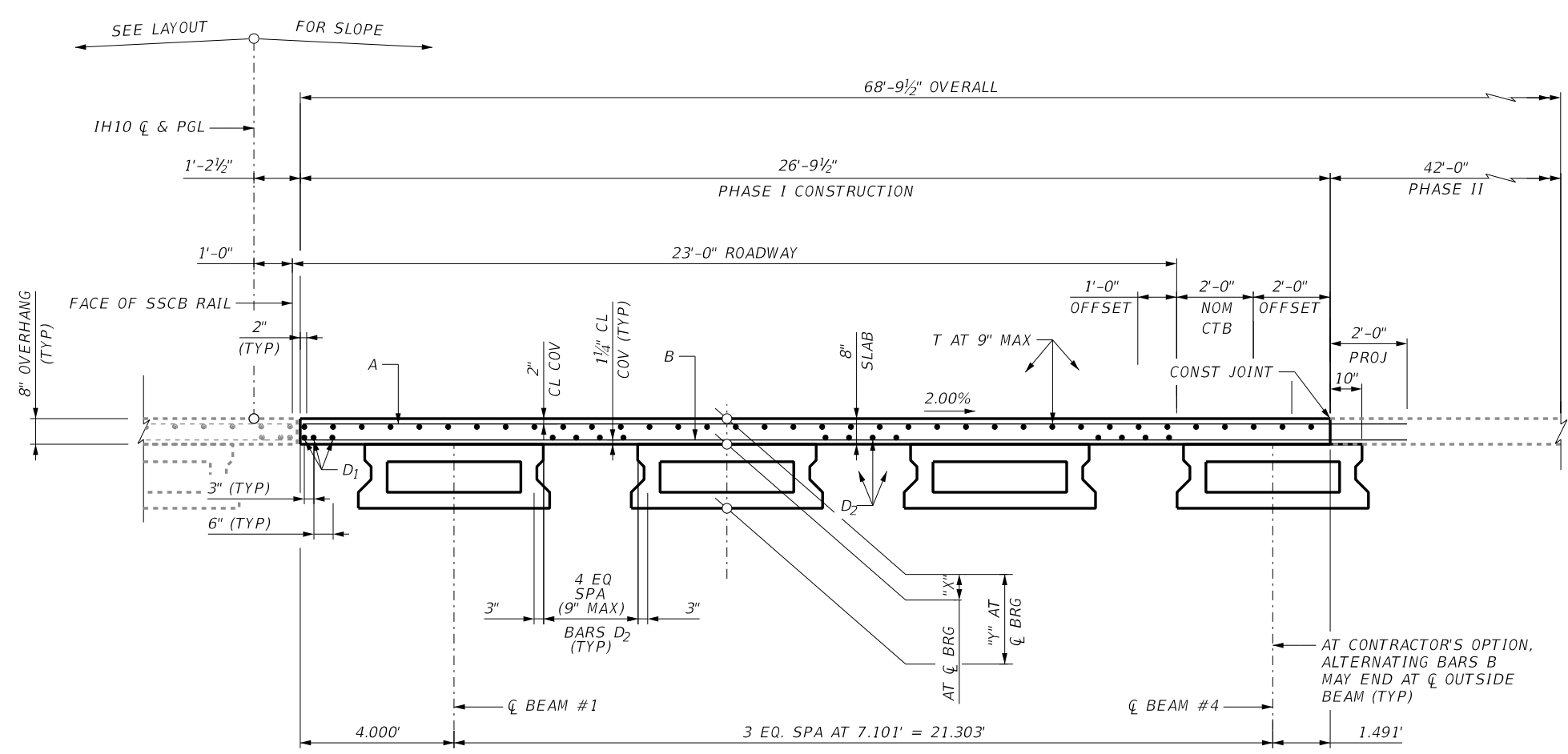


IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
ARROYO 45 RELIEF #1A BRIDGE
IH10 EB
(STA 158+76 TO STA 160+56)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	674

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TYPICAL TRANSVERSE SECTION PHASE I
(5XB20) SPANS 1 THRU 3

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

HL93 LOADING

NOT TO SCALE



2/28/2024

TABLE OF ESTIMATED QUANTITIES PHASE I

SPAN	REINF CONCRETE SLAB	PRESTR CONCRETE X-BEAMS (5XB20)	CLASS "S" CONCRETE	TOTAL REINF STEEL
NO.	NO.	LF	CY	LB
1	1,554	232.00	45.83	10,101
2	1,715	256.00	45.65	11,146
3	1,554	232.00	45.83	10,101
TOTAL	4,823	720.00	137.31	31,348

TABLE OF SECTION DEPTHS FOR PHASE I

SPAN	BEAM	"X"	"Y"
NO.	NO.	IN	IN
1	1-4	11 1/2	31 1/2
2	1-4	11 1/2	31 1/2
3	1-4	11 1/2	31 1/2

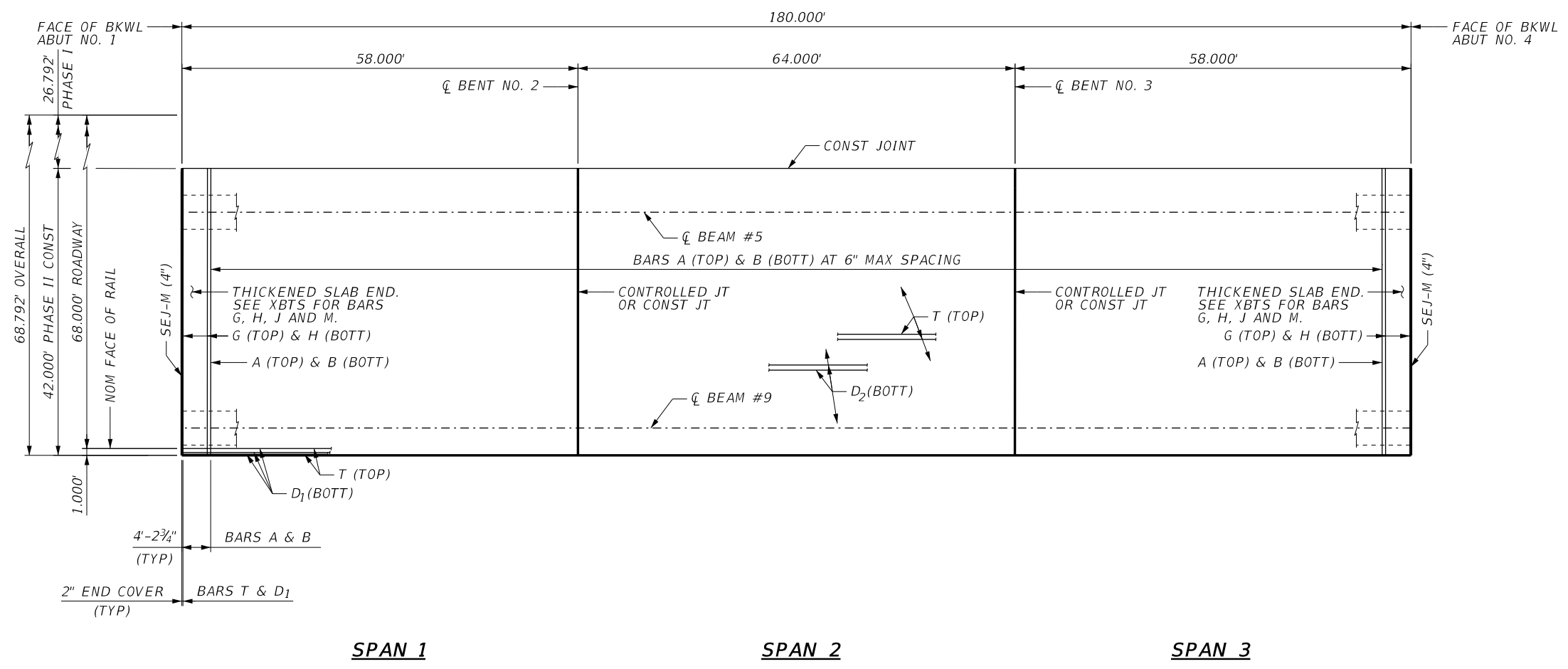


**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
ARROYO 45 RELIEF #1A BRIDGE
IH10 EB
(STA 158+76 TO STA 160+56)**

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	675

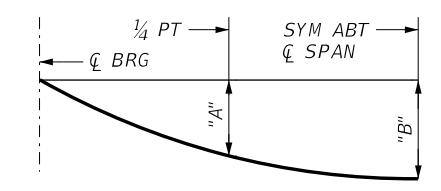
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PLAN PHASE II

TABLE OF DEFLECTIONS PHASE II

SPAN	BEAM	"A"	"B"
NO.	NO.	FT	FT
1	5-9	0.056	0.080
2	5-8	0.084	0.120
	9	0.085	0.120
3	5-9	0.057	0.081



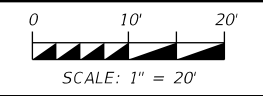
DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY (EC = 5,000 KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH F'C = 4,000 PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:

EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

HL93 LOADING



2/28/2024



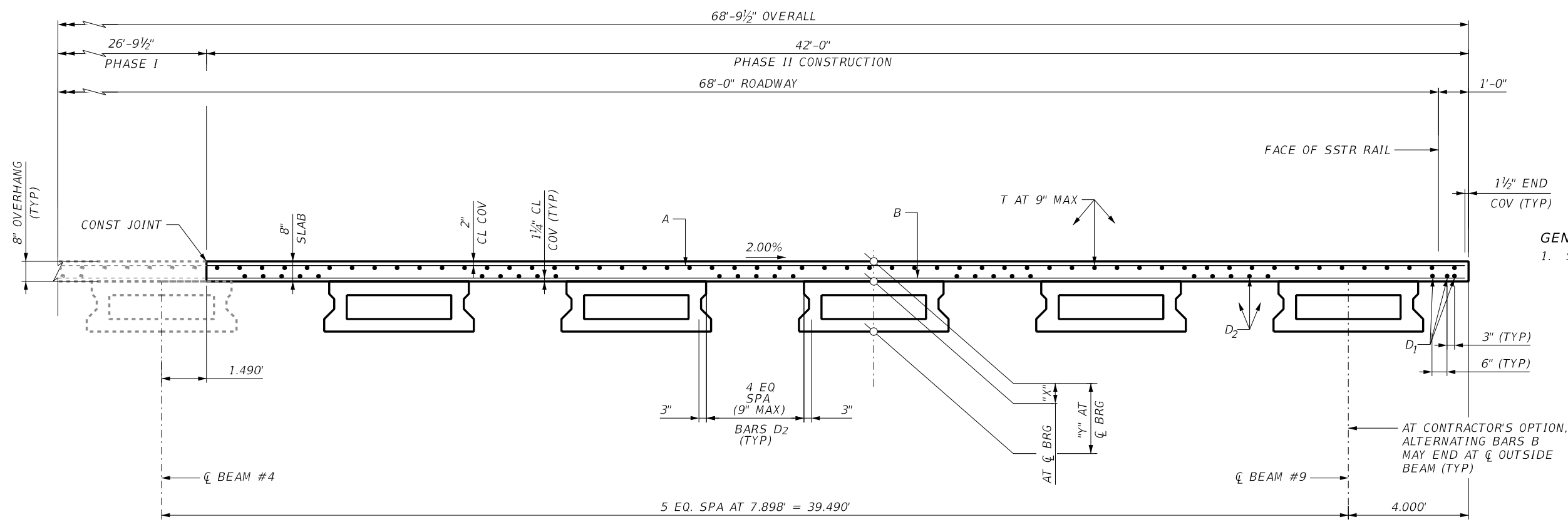
**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
ARROYO 45 RELIEF #1A BRIDGE
IH10 EB
(STA 158+76 TO STA 160+56)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	676

BAR TABLE PHASE II

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4



GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

TYPICAL TRANSVERSE SECTION PHASE II
(5XB20) SPANS 1 THRU 3

HL93 LOADING

NOT TO SCALE



TABLE OF ESTIMATED QUANTITIES PHASE II

SPAN NO.	REINF CONCRETE SLAB		PRESTR CONCRETE X-BEAMS (5XB20)		CLASS "S" CONCRETE		TOTAL REINF STEEL	
	SF	LF	CY	LB				
1	2,436	290.00	69.89	15,834				
2	2,688	320.00	69.25	17,472				
3	2,436	290.00	69.89	15,834				
TOTAL	7,560	900.00	209.05	49,140				

TABLE OF SECTION DEPTHS FOR PHASE II

SPAN NO.	BEAM NO.	"X" IN	"Y" IN
1	5-9	11 1/2	31 1/2
2	5-9	11 1/2	31 1/2
3	5-9	11 1/2	31 1/2

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
ARROYO 45 RELIEF #1A BRIDGE
IH10 EB
(STA 158+76 TO STA 160+56)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	677

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2/28/2024

GENERAL NOTES

- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ⊕ - DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "PHASED BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING

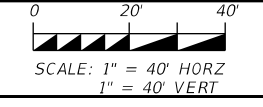
DESIGN SPEED: 70 MPH
ADT: (2023) 119,600 (2043) 160,700
FUNCTIONAL CLASS: INTERSTATE
EXIST NBI: 24-072-0-2121-01-010
NEW NBI: 24-072-0-2121-01-365

BH B-1
IH10 C
STA 158+49.64
77.83° RT

EXIST BRIDGE:
6 SPAN CONT. CONC. SLAB BRIDGE
42' WIDTH TO BE REMOVED

PLAN VIEW

HL93 LOADING

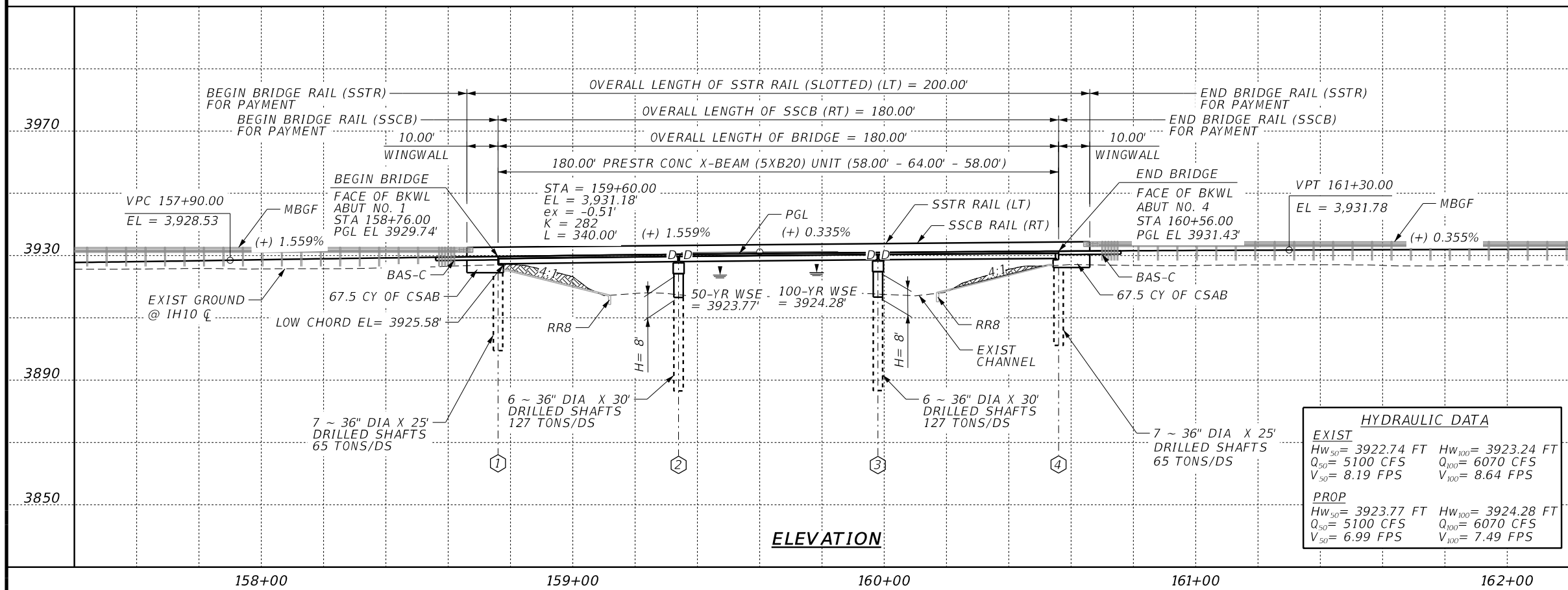


3/21/2024



IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE LAYOUT
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)

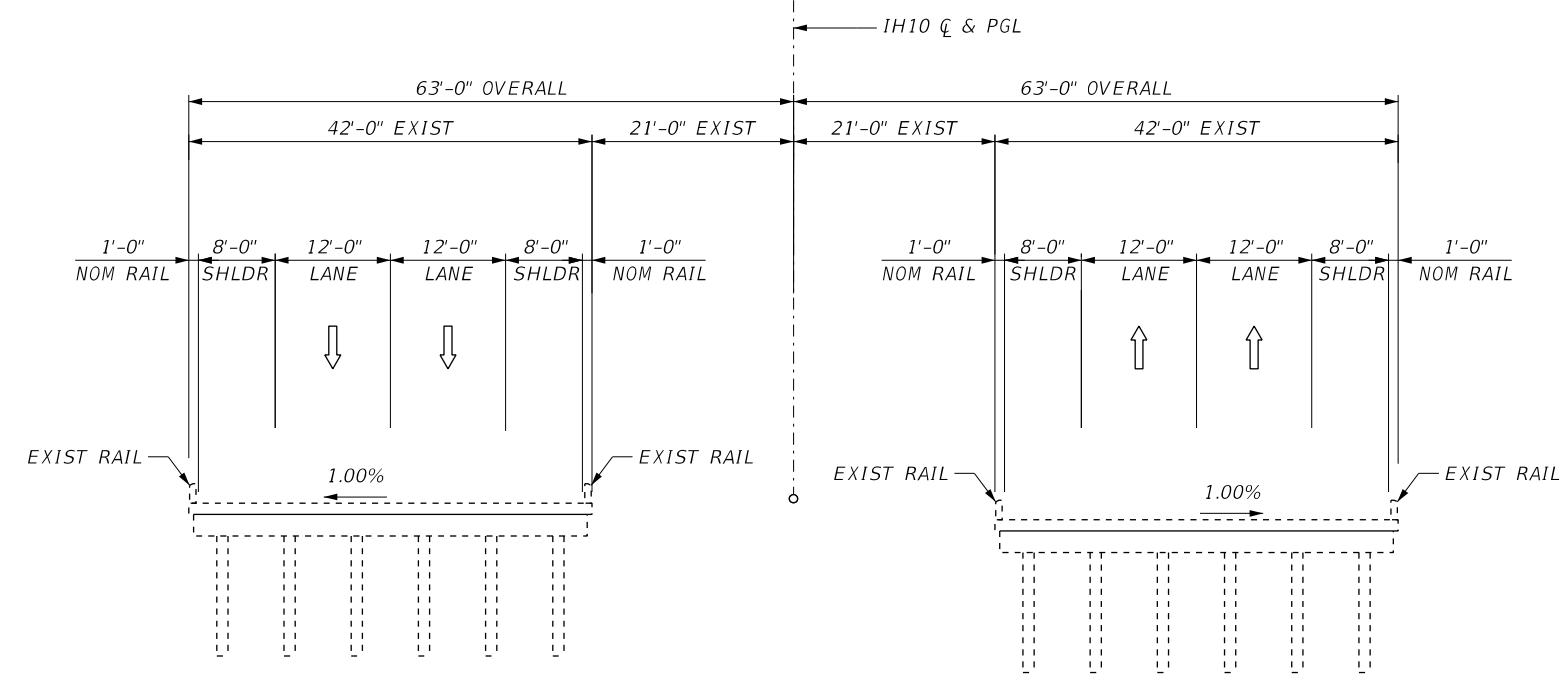
SHEET 1 OF 1		FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
		6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	678



HYDRAULIC DATA

EXIST		PROP	
Hw ₅₀ = 3922.74 FT	Hw ₁₀₀ = 3923.24 FT	Hw ₅₀ = 3923.77 FT	Hw ₁₀₀ = 3924.28 FT
Q ₅₀ = 5100 CFS	Q ₁₀₀ = 6070 CFS	Q ₅₀ = 5100 CFS	Q ₁₀₀ = 6070 CFS
V ₅₀ = 8.19 FPS	V ₁₀₀ = 8.64 FPS	V ₅₀ = 6.99 FPS	V ₁₀₀ = 7.49 FPS

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EXIST SECTION

GENERAL NOTES

- CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

LEGEND

- EXISTING TRAFFIC FLOW ARROW
- PROPOSED TRAFFIC FLOW ARROW
- DEMOLITION OF EXIST BRIDGE

HL93 LOADING

NOT TO SCALE



2/28/2024

NO.	DATE	REVISION	APPROV.

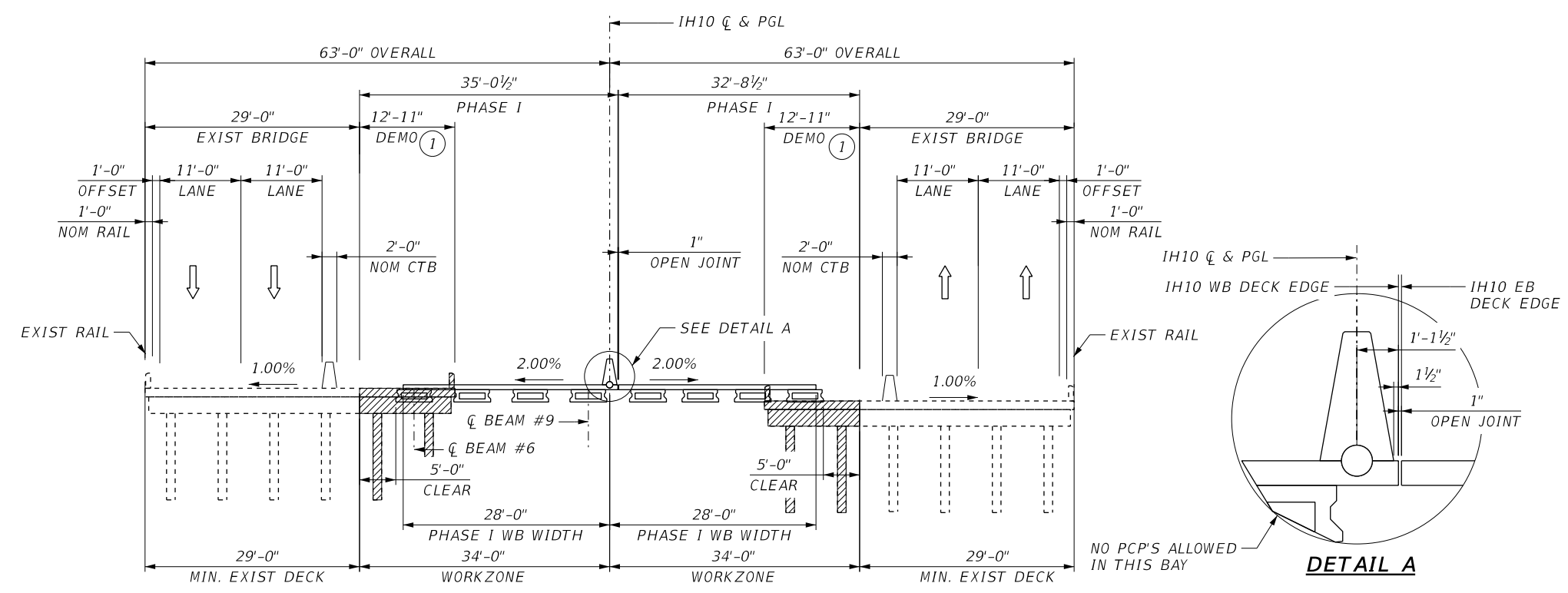


Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
 TYPICAL SECTIONS
 ARROYO 45 RELIEF #1B BRIDGE
 IH10 WB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	679



PHASE I SECTION

- SAWCUT EXISTING CAP AS NECESSARY TO AVOID CONFLICT WITH BEAM. DO NOT CUT BEYOND LIMITS OF DEMOLITION. DO NOT REMOVE EXISTING COLUMNS NOT MARKED FOR DEMOLITION IN THIS PHASE.

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 2/28/2024




2/28/2024 4:23:29 PM

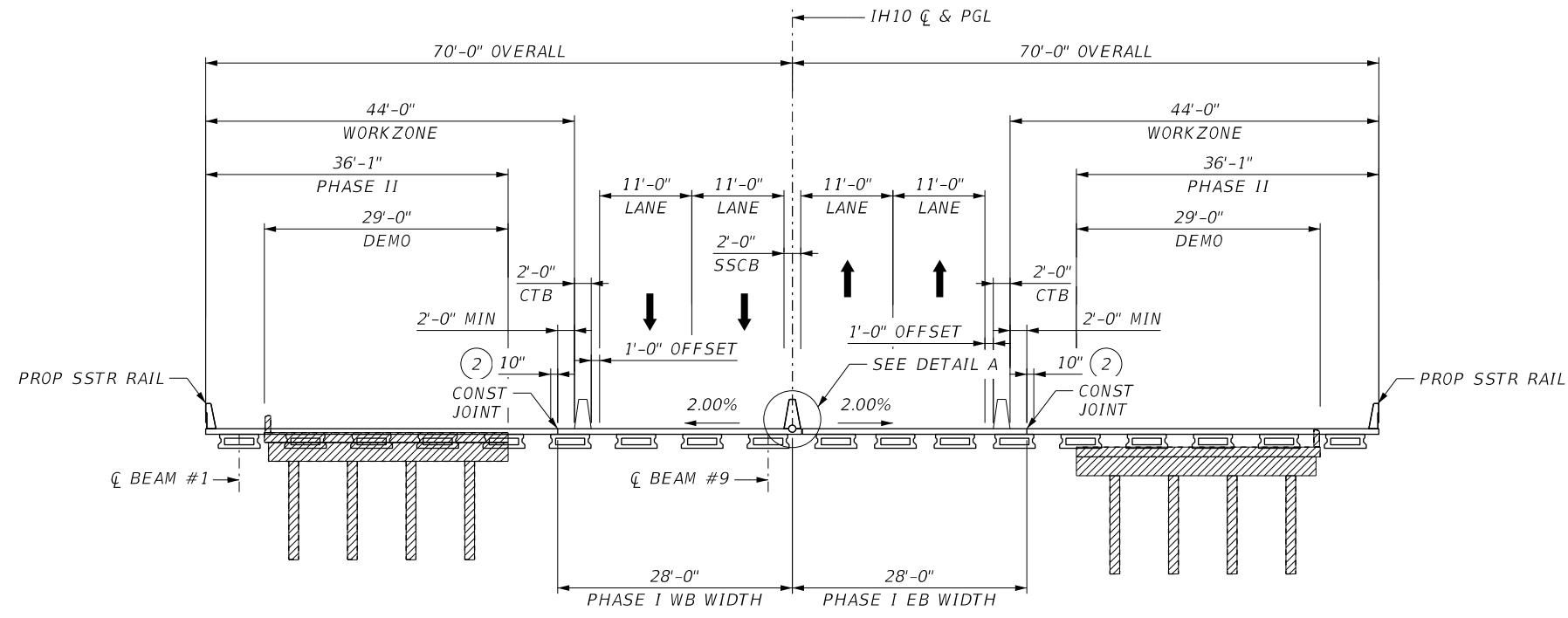
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GENERAL NOTES

- CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

LEGEND

-  EXISTING TRAFFIC FLOW ARROW
-  PROPOSED TRAFFIC FLOW ARROW
-  DEMOLITION OF EXIST BRIDGE



PHASE II SECTION

② EDGE OF DECK TO EDGE OF TOP OF BEAM.

HL93 LOADING

NOT TO SCALE



2/28/2024

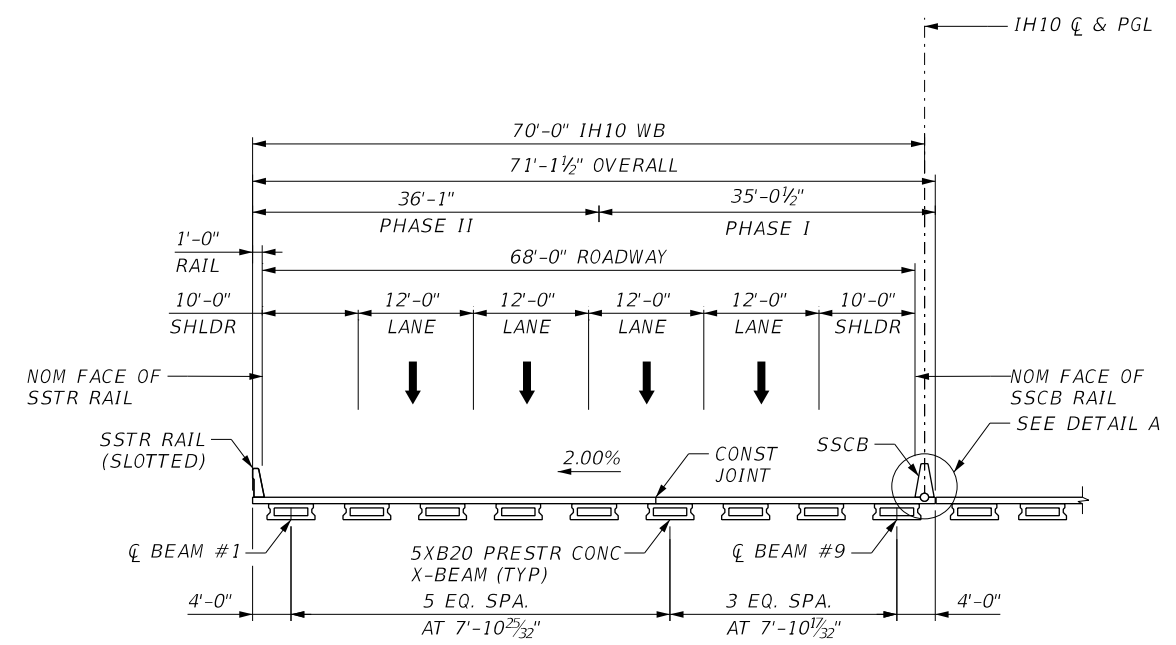
NO.	DATE	REVISION	APPROV.



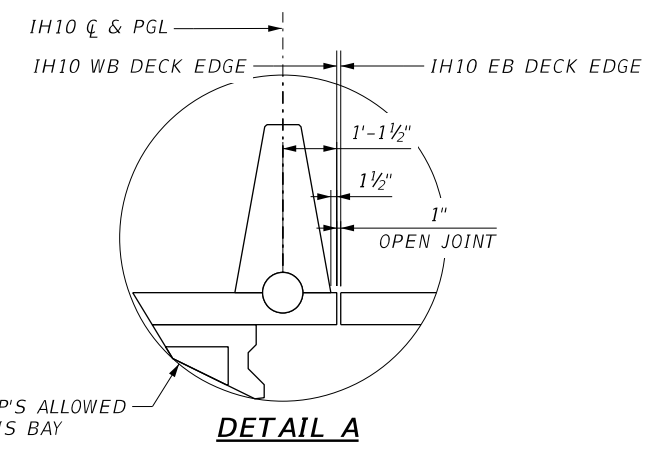
**IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)**

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO. SHEET NO.
ELP	EL PASO	2121	01	104 680



IH10 WB FINAL SECTION

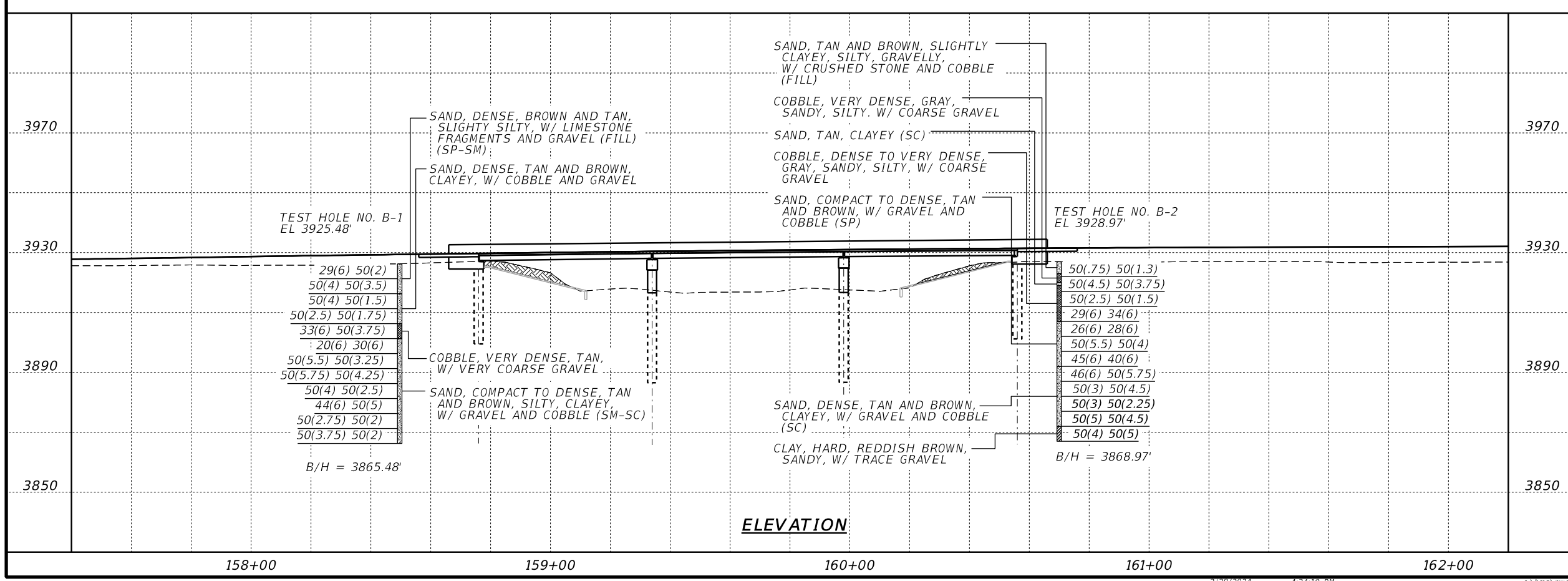


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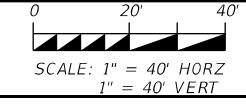
DETAIL A

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HL93 LOADING



NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BORING LOGS

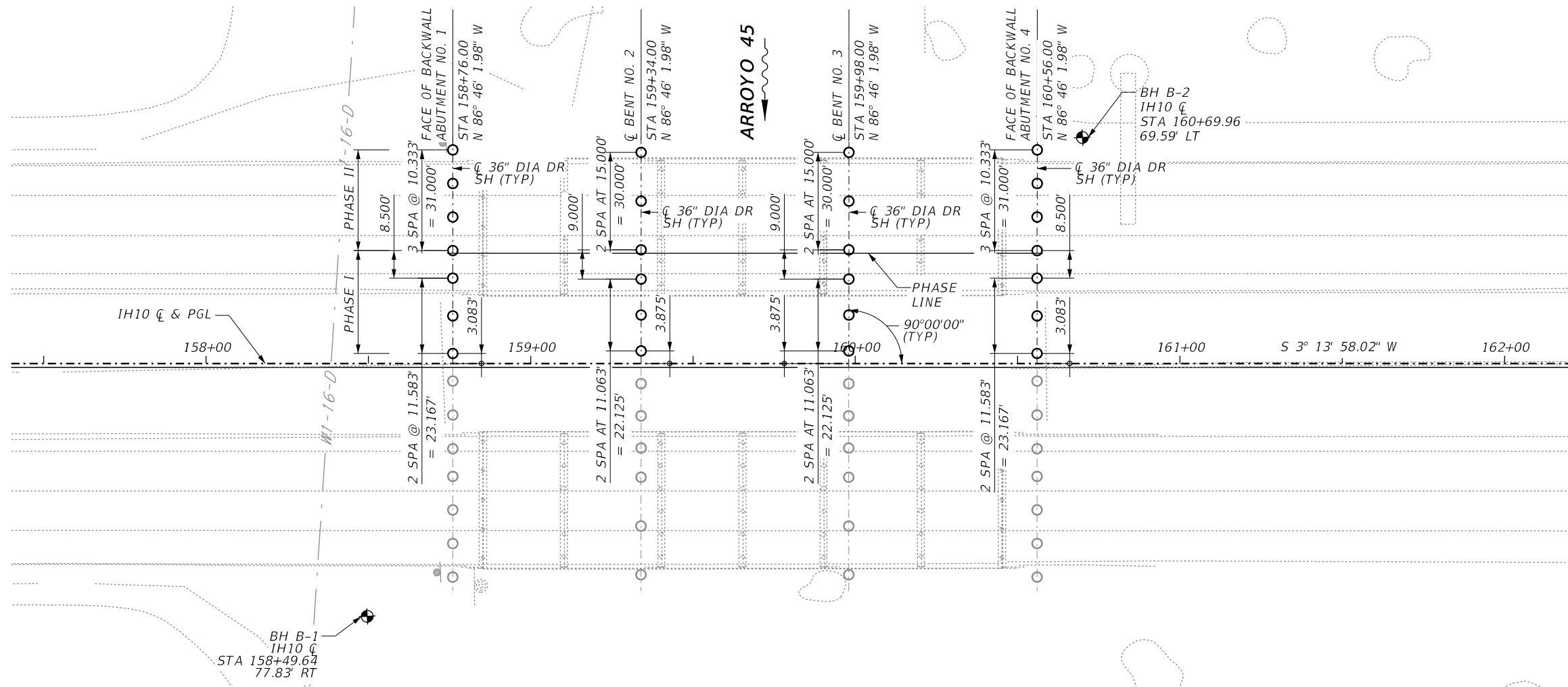
ARROYO 45 RELIEF #1A & #1B BRIDGE
 IH10 EB & IH10 WB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				681

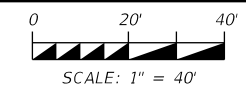
GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.



LEGEND
 BORE HOLE

HL93 LOADING



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

FOUNDATION LAYOUT
 ARROYO 45 RELIEF #1B BRIDGE
 IH10 WB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FOUNDATION LOADS	
ABUT/BENT	TONS/SHAFT
1&4	65
2&3	127

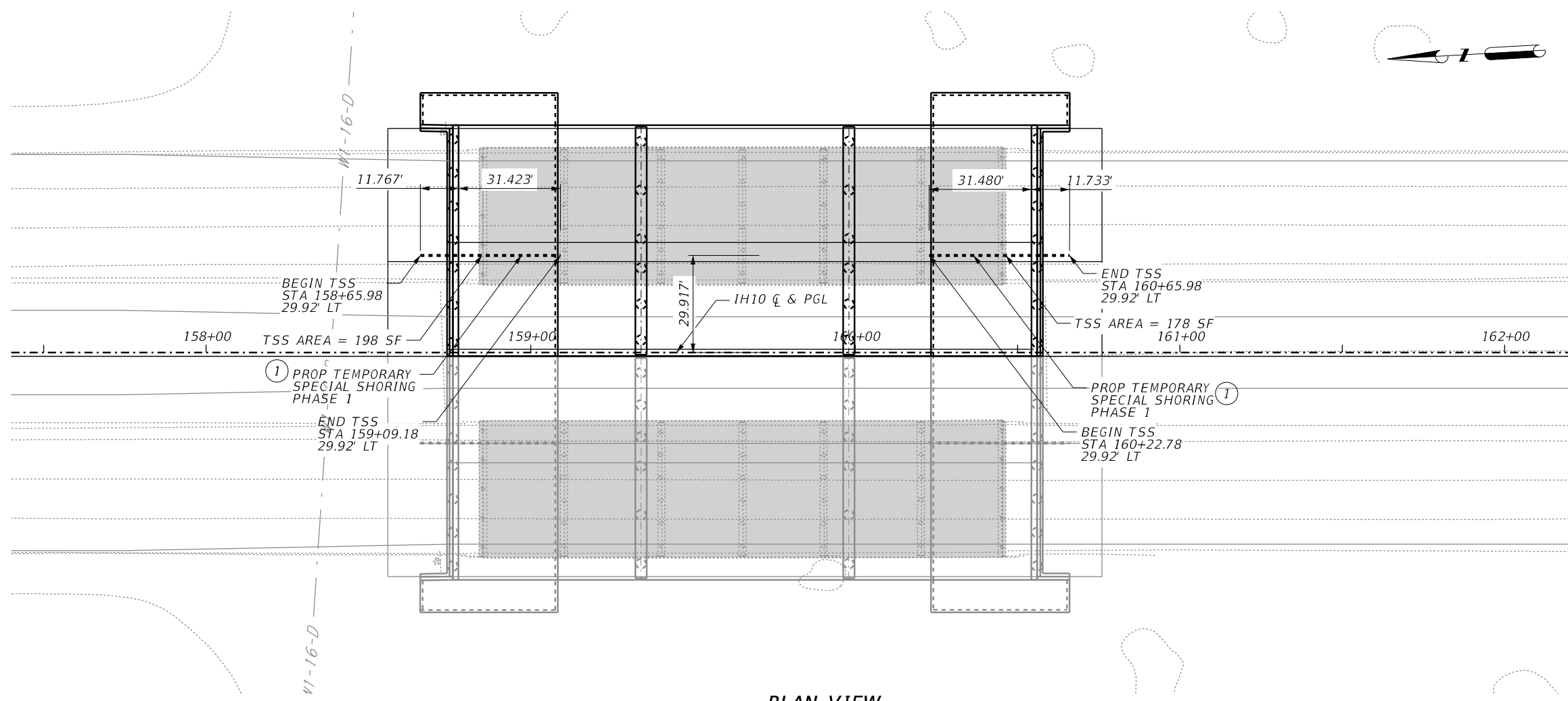
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LEGEND

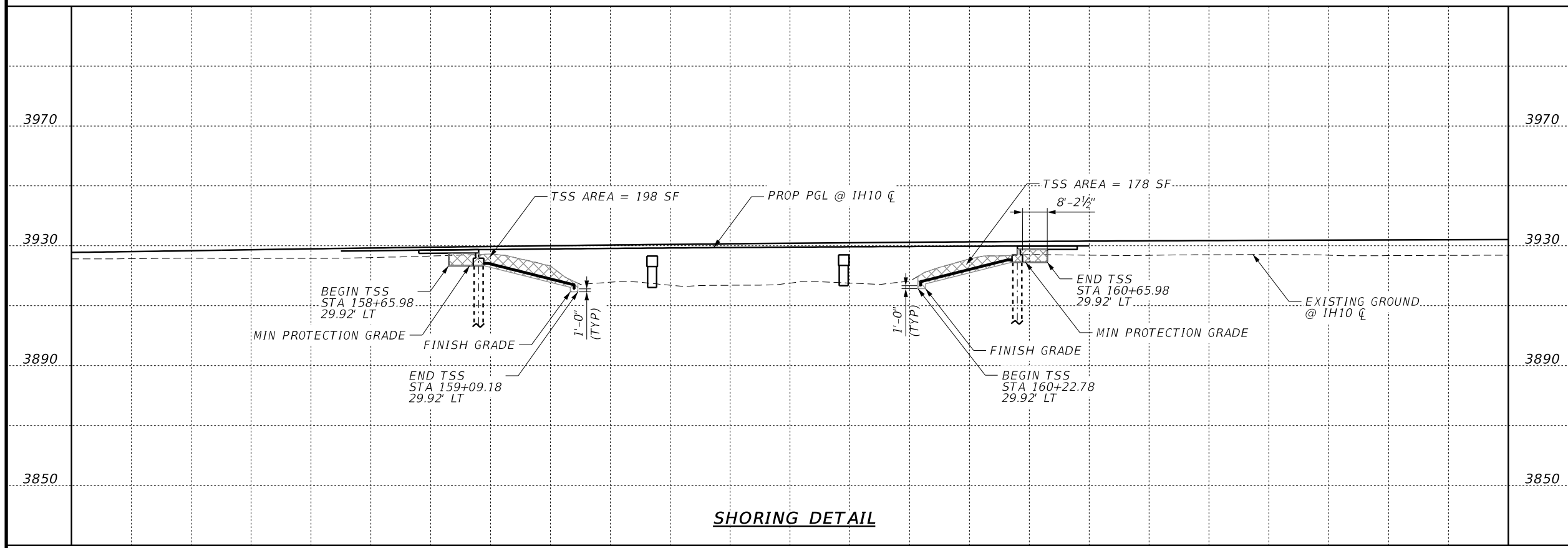
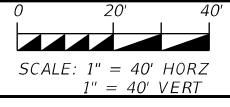
TEMPORARY SPL SHORING



PLAN VIEW

1 PAID FOR UNDER ITEM 403 TEMPORARY SPL SHORING.

HL93 LOADING



SHORING DETAIL



2/28/2024



IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
 ARROYO 45 RELIEF #1B BRIDGE
 IH10 WB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				683

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				PHASE II					PHASE I				
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	
1	ABUT	1	(FWD)	L	3925.518	3925.676	3925.834	3925.992	3926.150	3926.308	3926.465	3926.623	3926.780
				R	3925.638	3925.796	3925.954	3926.112	3926.270	3926.428	3926.585	3926.743	3926.900
2	BENT	2	(BK)	L	3926.162	3926.320	3926.478	3926.636	3926.794	3926.952	3927.110	3927.267	3927.425
				R	3926.282	3926.440	3926.598	3926.756	3926.914	3927.072	3927.230	3927.387	3927.545
	2	(FWD)	L	3926.183	3926.341	3926.499	3926.657	3926.815	3926.973	3927.131	3927.288	3927.446	
			R	3926.303	3926.461	3926.619	3926.777	3926.935	3927.093	3927.251	3927.408	3927.566	
3	BENT	3	(BK)	L	3926.763	3926.921	3927.079	3927.237	3927.395	3927.553	3927.710	3927.868	3928.025
				R	3926.883	3927.041	3927.199	3927.357	3927.515	3927.673	3927.830	3927.988	3928.145
	3	(FWD)	L	3926.779	3926.937	3927.095	3927.253	3927.411	3927.569	3927.727	3927.884	3928.042	
			R	3926.899	3927.057	3927.215	3927.373	3927.531	3927.689	3927.847	3928.004	3928.162	
4	ABUT	4	(BK)	L	3927.181	3927.339	3927.497	3927.655	3927.813	3927.971	3928.129	3928.286	3928.444
				R	3927.301	3927.459	3927.617	3927.775	3927.933	3928.091	3928.249	3928.406	3928.564



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
BEARING SEAT ELEVATIONS
ARROYO 45 RELIEF #1B BRIDGE
 IH10 WB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	684

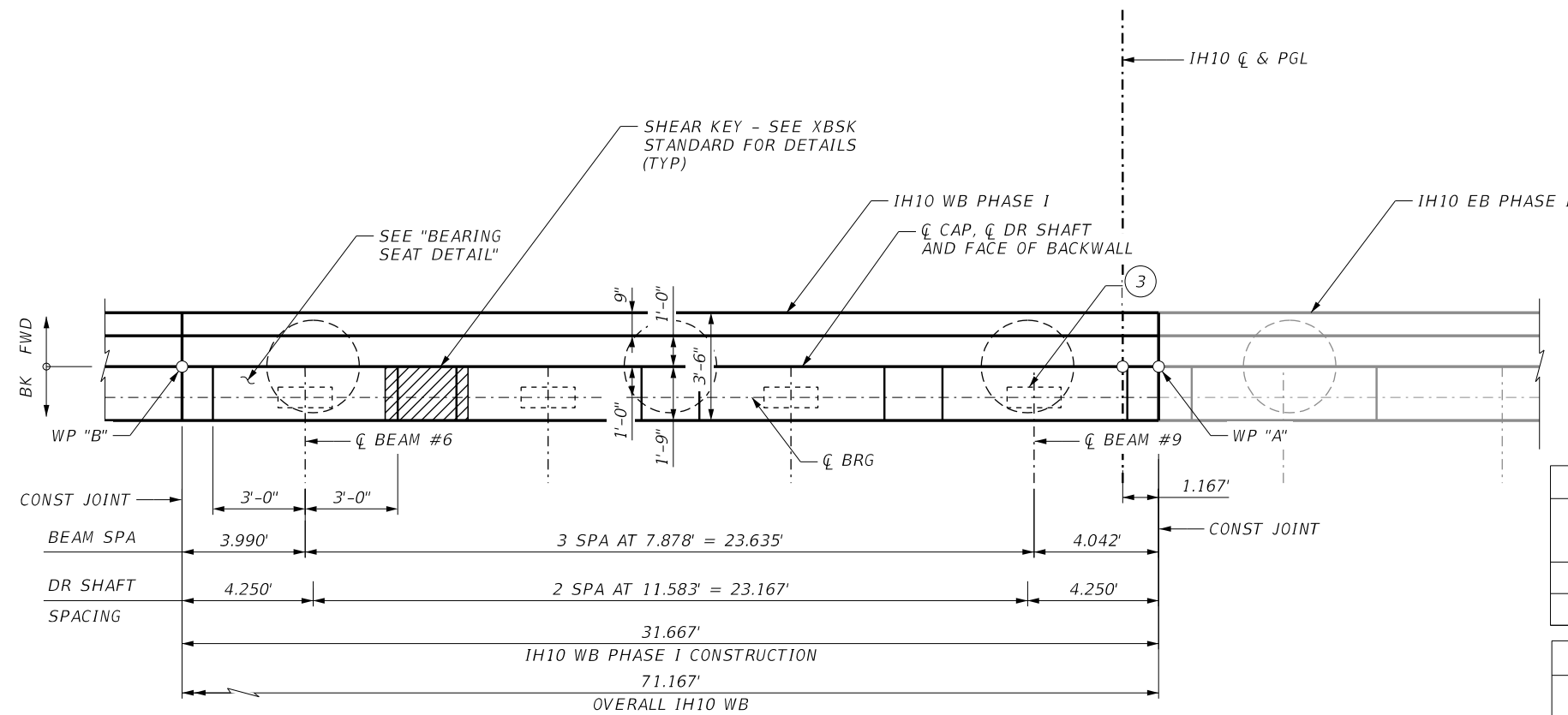
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GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH F'C = 3,600 PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

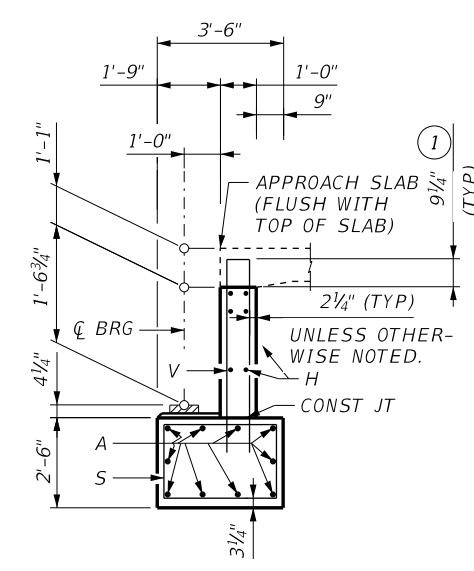
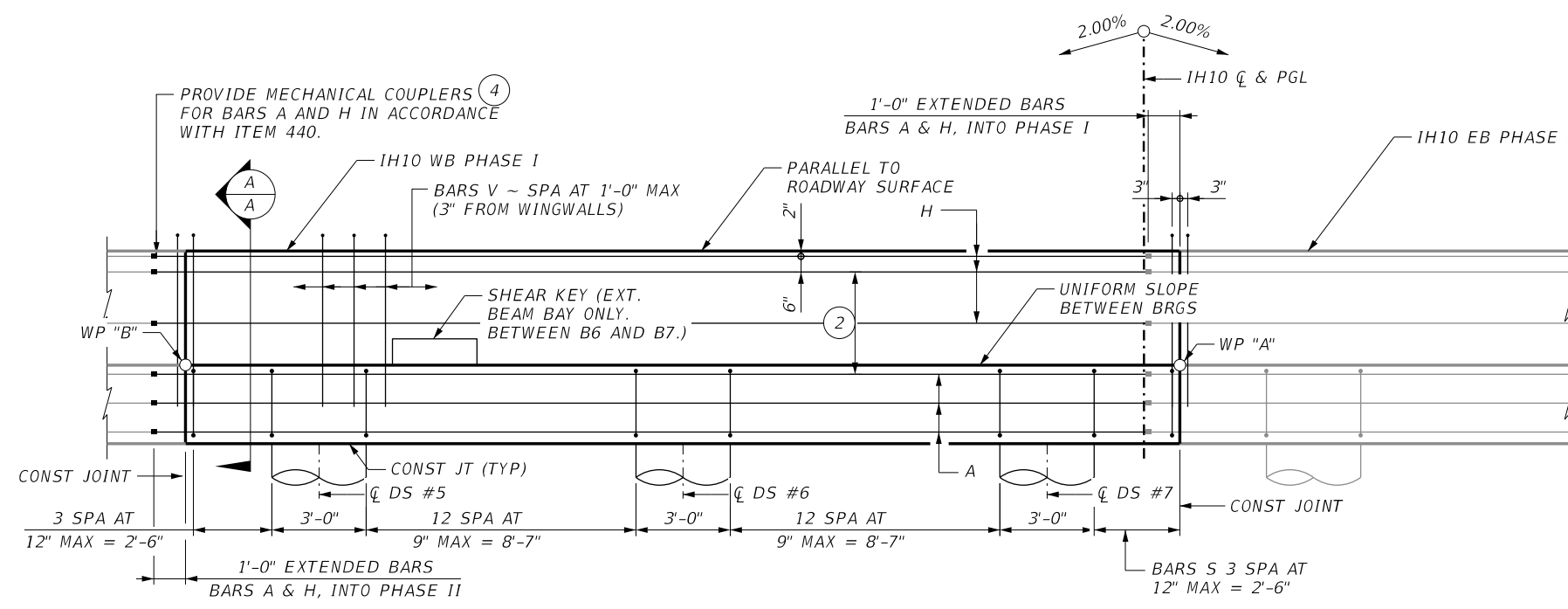
KEYED NOTES

- INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."

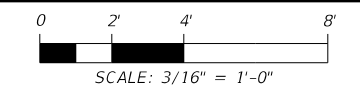


WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
A	3926.74'	3928.42'
B	3926.15'	3927.84'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
5	3923.74'	3925.42'
6	3923.97'	3925.65'
7	3924.20'	3925.88'



HL93 LOADING



2/28/2024



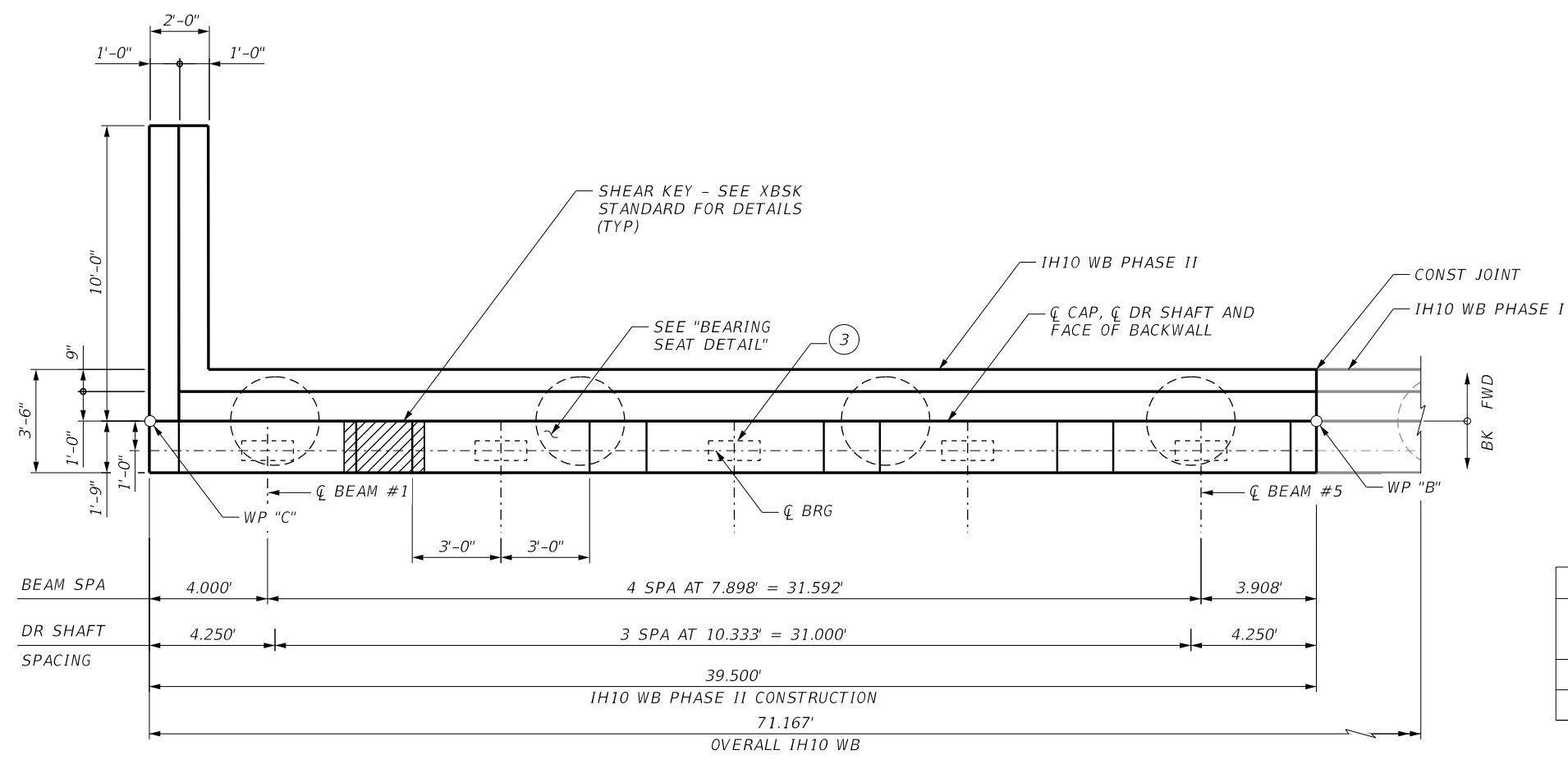
**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)**

SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	685

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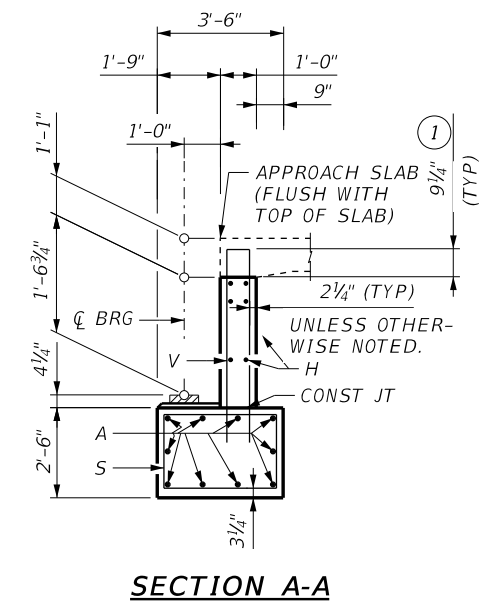
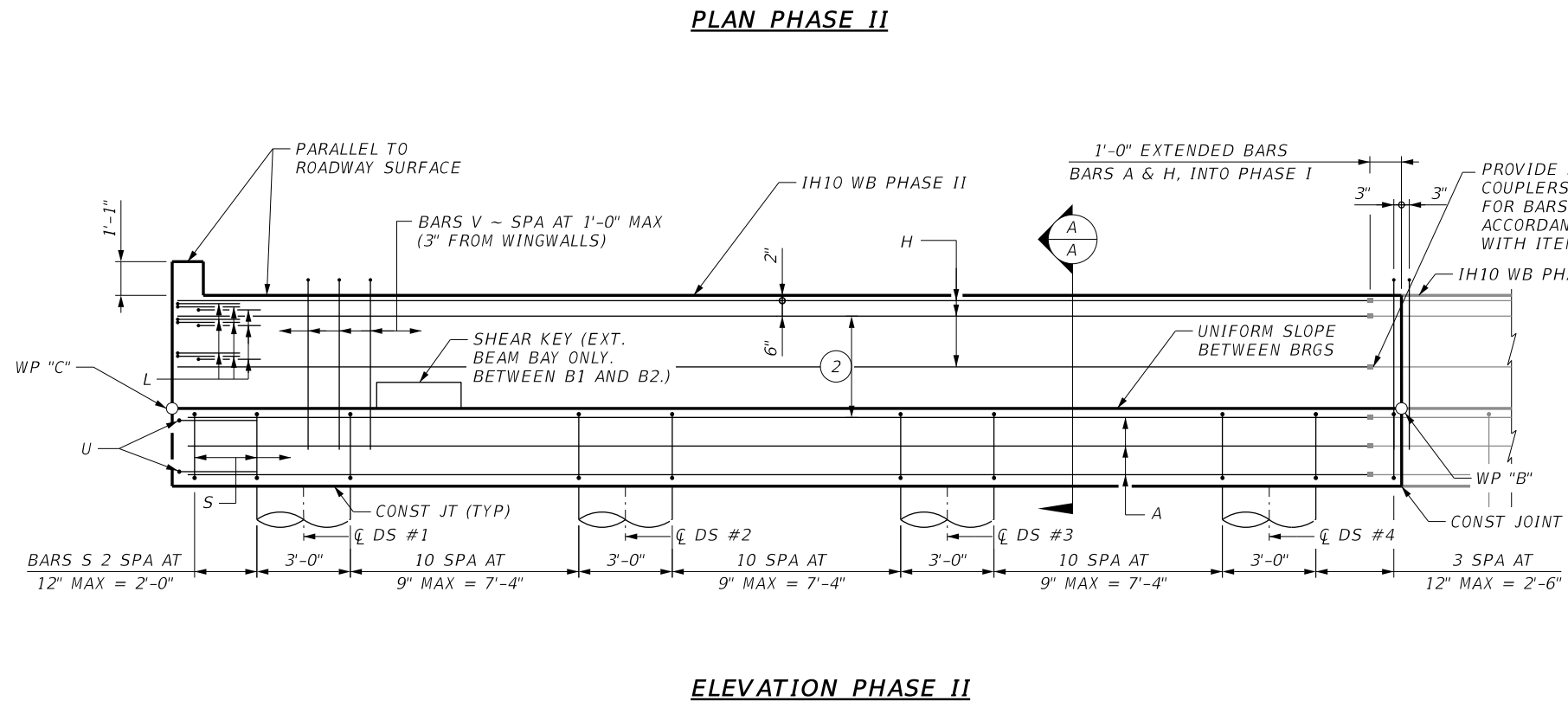
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- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH F'C = 3,600 PSI.
 - ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
 - SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.
- KEYED NOTES**
- INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.
 - SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
B	3926.15'	3927.84'
C	3925.36'	3927.05'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
1	3922.95'	3924.63'
2	3923.15'	3924.84'
3	3923.36'	3925.04'
4	3923.57'	3925.25'



HL93 LOADING

0 2' 4' 8'
SCALE: 3/16" = 1'-0"

STATE OF TEXAS
ELIZABETH MONTES
147931
PROFESSIONAL ENGINEER
2/28/2024

NO. DATE REVISION APPROV.

consor
F-12040
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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
**ABUTMENT NO. 1 & 4
PHASE II**
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)

SHEET 1 OF 1

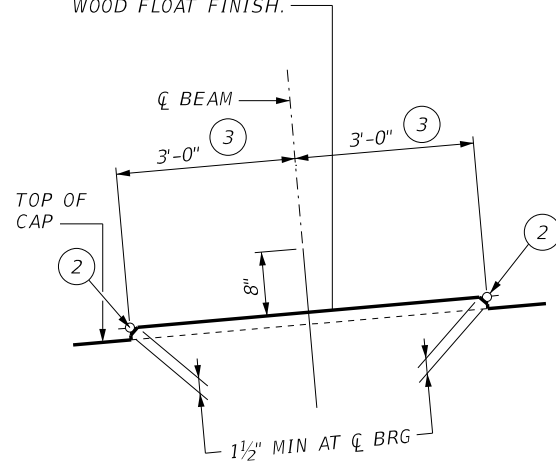
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6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
			JOB NO.
			104
			SHEET NO.
			686

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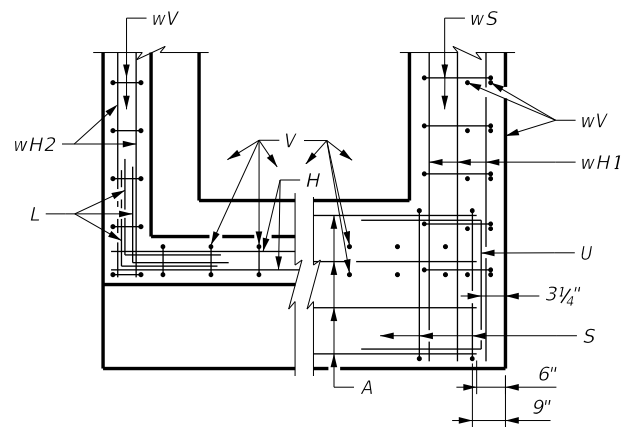
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LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



**BACKWALL
CORNER DETAILS**

TABLE OF ESTIMATED QUANTITIES PHASE I (ONE ABUT)

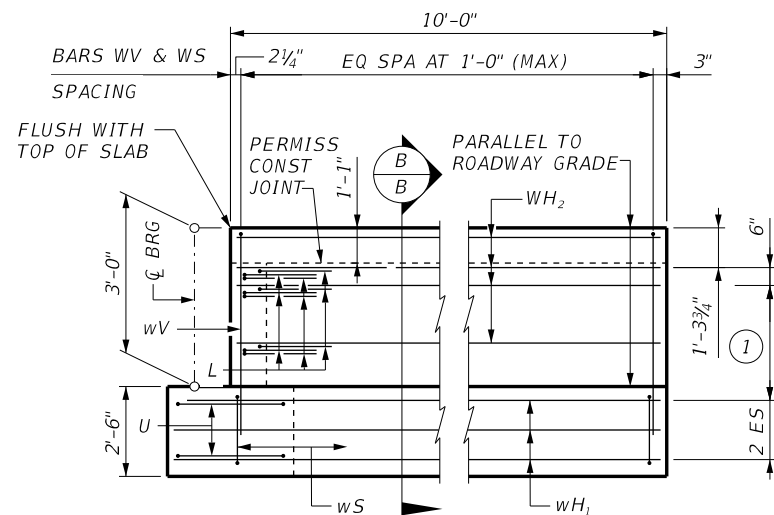
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31'-8"	1,682
H	6	#6	31'-8"	285
S	34	#5	11'-4"	402
V	33	#5	8'-6"	293
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,662
CONC (ABUT)			CY	12.7

TABLE OF ESTIMATED QUANTITIES PHASE II (ONE ABUT)

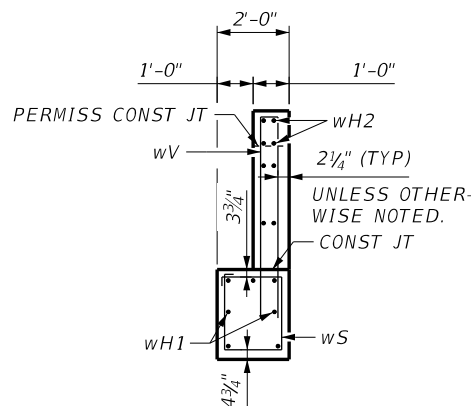
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	38'-0"	2,019
H	6	#6	38'-4"	345
L	9	#6	4'-0"	54
S	40	#5	11'-4"	473
U	2	#6	8'-0"	24
V	40	#5	8'-6"	355
wH1	7	#6	11'-5"	120
wH2	8	#6	9'-8"	116
wS	11	#4	7'-8"	56
wV	11	#5	8'-9"	100
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,663
CONC (ABUT)			CY	18.8

KEYED NOTES

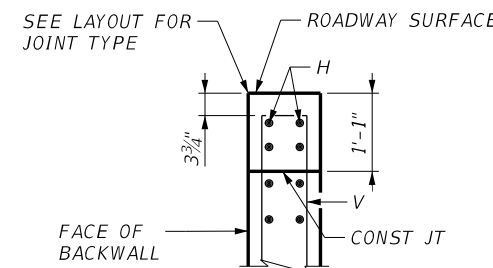
- ① SPACING BASED ON BEAM TYPE: XB20 - 2 EQUAL SPACES
- ② RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ③ MEASURED ALONG ϕ OF BEARING.



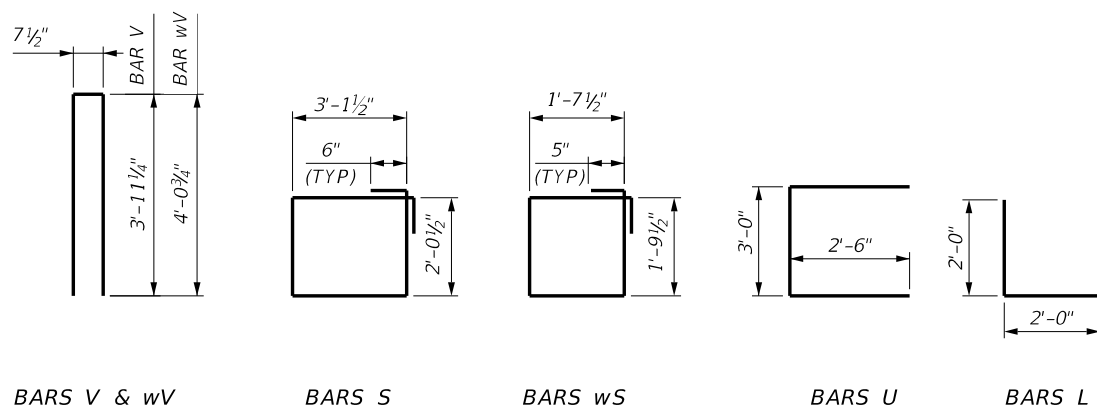
WINGWALL ELEVATION



SECTION B-B



**BACKWALL DETAIL
(WITH APPROACH SLAB)**



HL93 LOADING

NOT TO SCALE

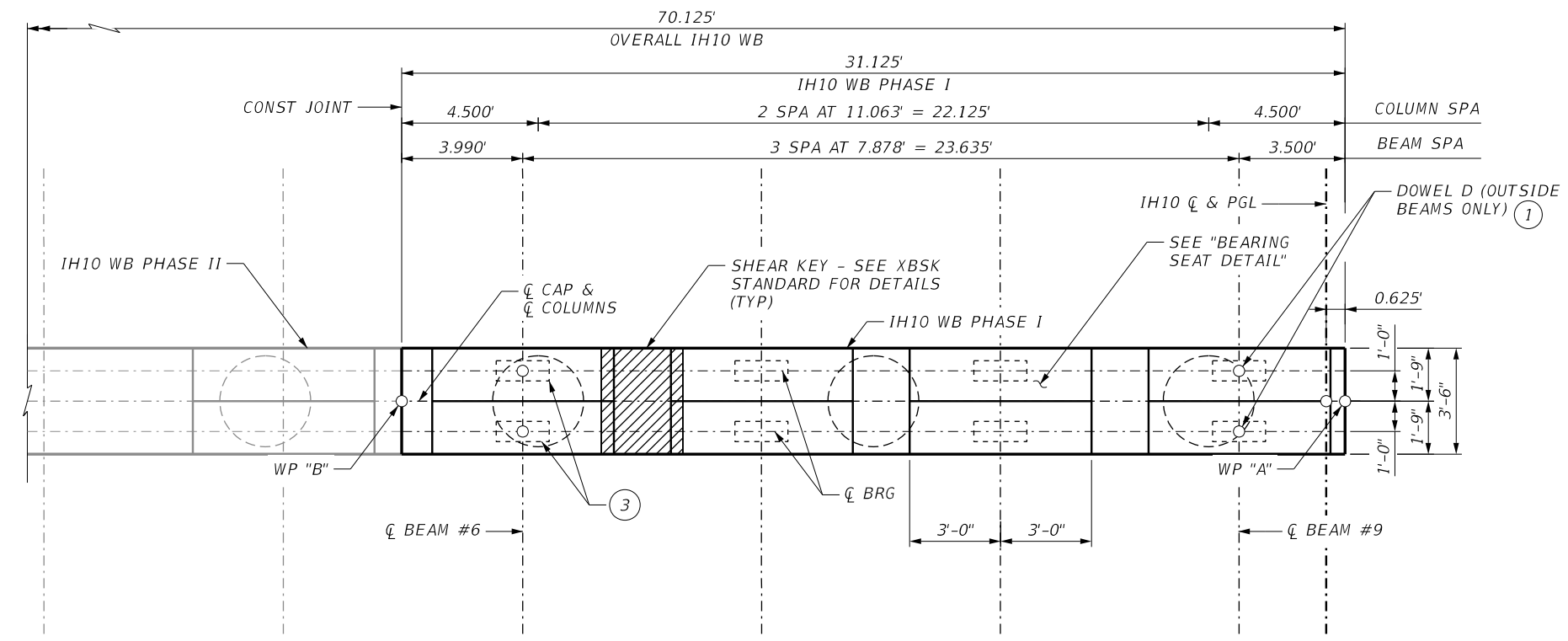
NO.	DATE	REVISION	APPROV.

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IH 10 WIDENING (NMSL/SPUR 37)
**ABUTMENT NO. 1 & 4
 PHASE I & II**
 ARROYO 45 RELIEF #1B BRIDGE
 IH10 WB
 (STA 158+76 TO STA 160+56)

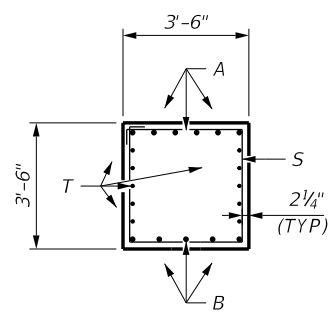
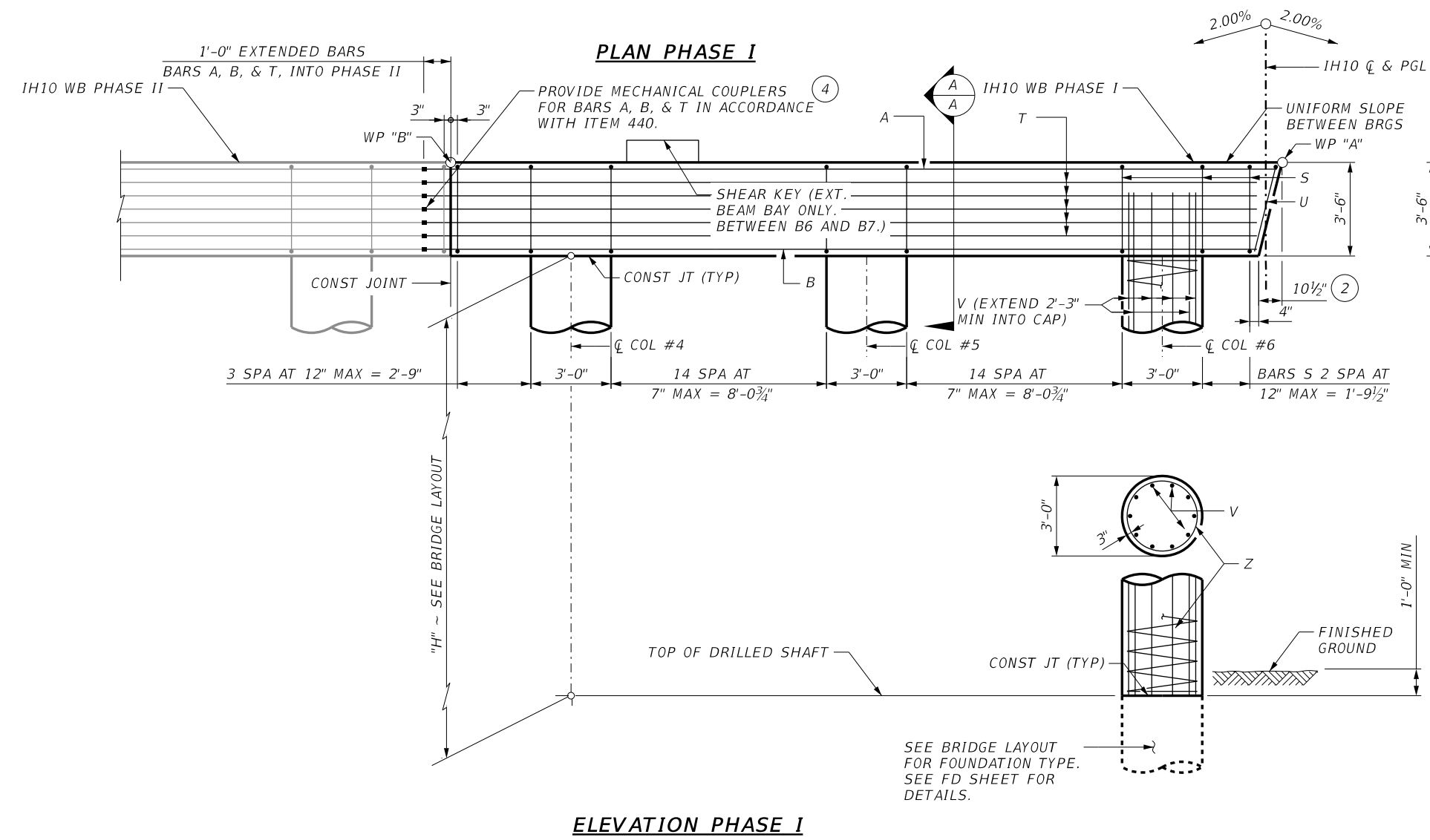
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	687



- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - GALVANIZE DWEL BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



HL93 LOADING

SCALE: 3/16" = 1'-0"

2/28/2024

WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
A	3927.42'	3928.02'
B	3926.82'	3927.42'

TOP OF COL ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
4	3923.41'	3924.01'
5	3923.63'	3924.23'
6	3923.85'	3924.45'

consor F-12040 ©2024

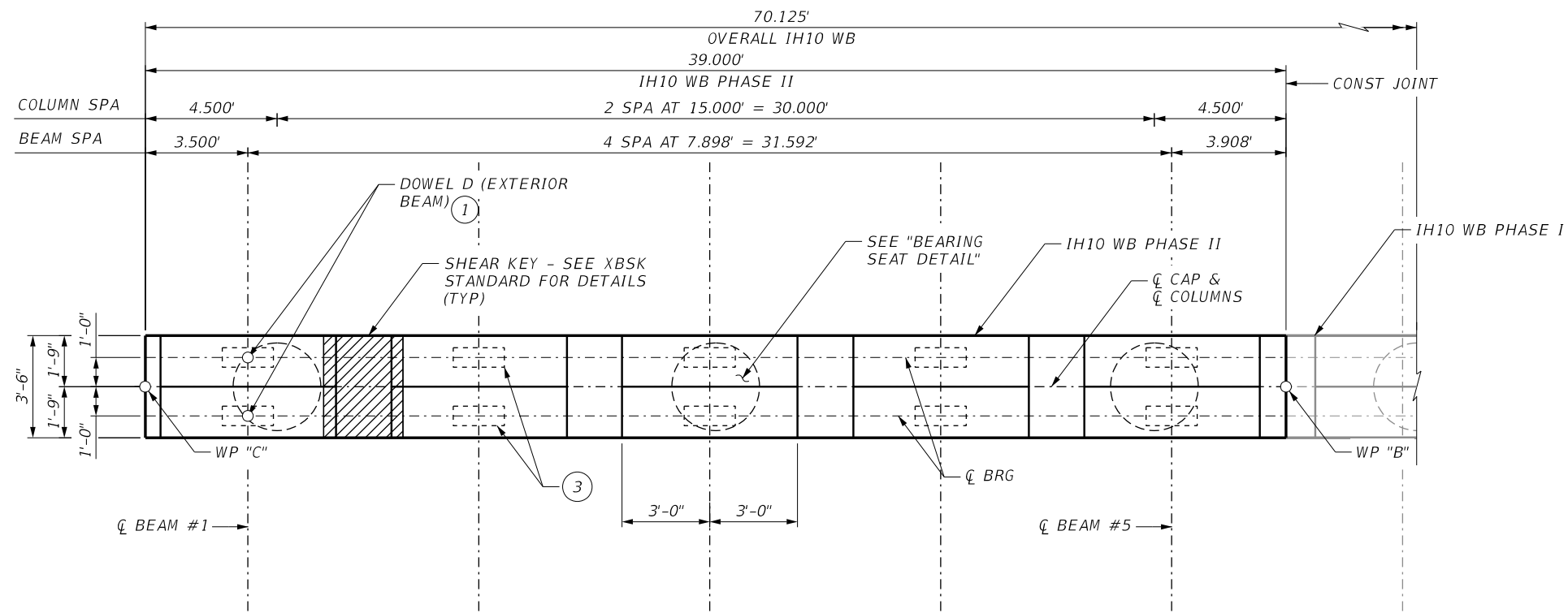
Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I
ARROYO 45 RELIEF #1B BRIDGE
 IH10 WB
 (STA 158+76 TO STA 160+56)

SHEET 1 OF 1

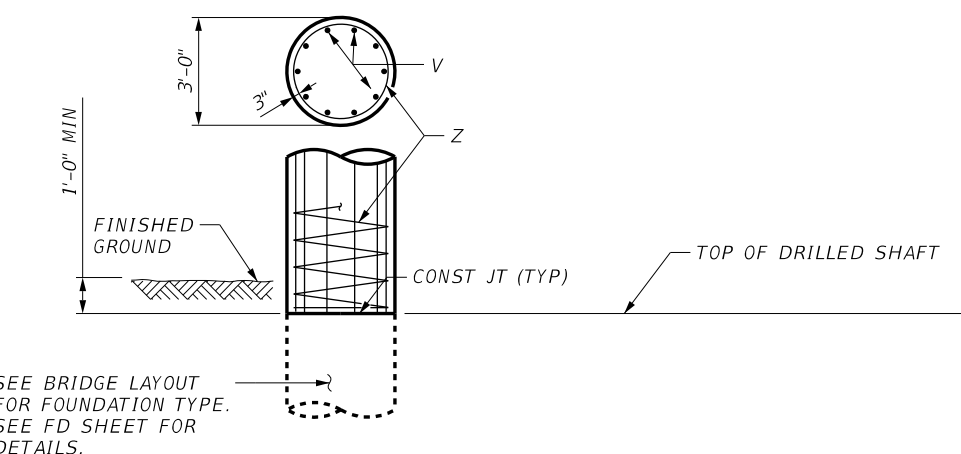
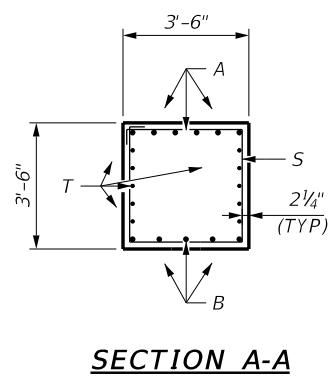
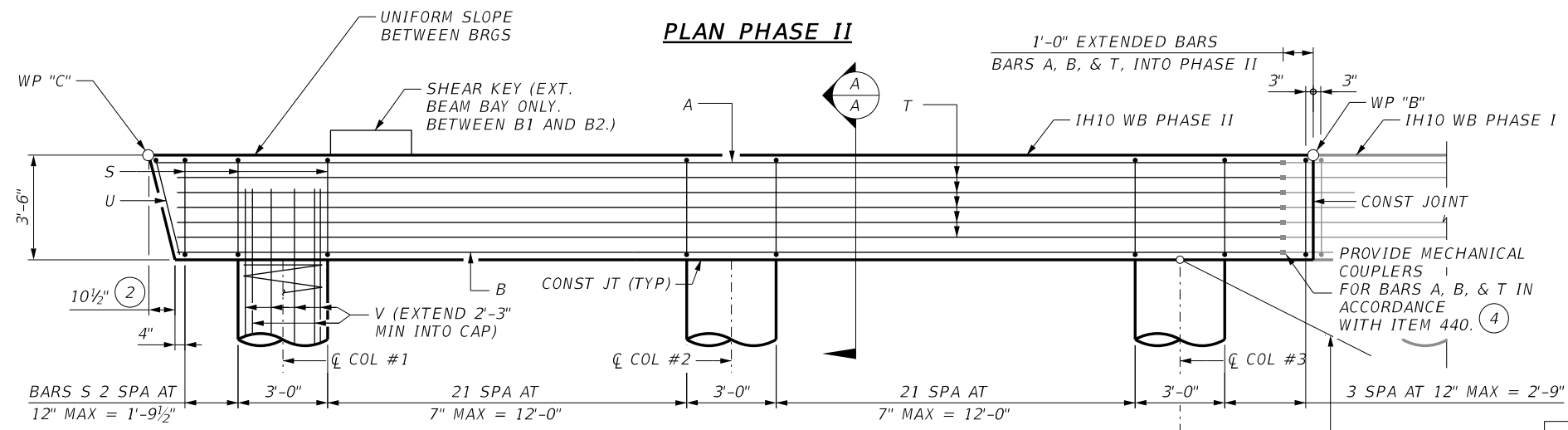
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	688

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- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - GALVANIZE DWELV BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



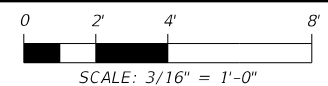
WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
B	3926.82'	3927.42'
C	3926.04'	3926.64'

TOP OF COL ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
1	3922.63'	3923.23'
2	3922.93'	3923.53'
3	3923.23'	3923.83'

HL93 LOADING



2/28/2024



IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3 PHASE II
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	689

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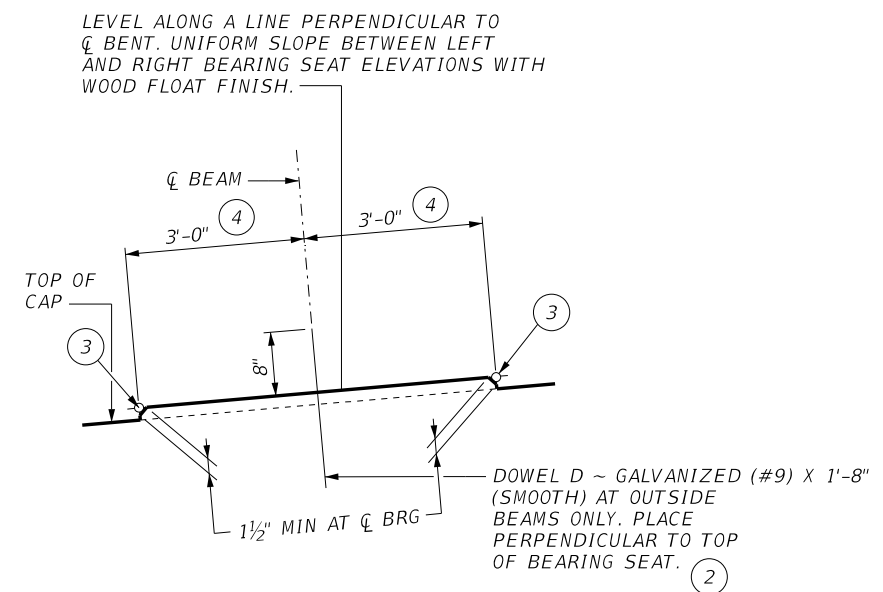
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TABLE OF ESTIMATED QUANTITIES PHASE I
(ONE BNT) ①

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	31'-11"	1,016
B	5	#11	31'-3"	830
D	4	1 1/4"	1'-8"	28
S	37	#5	13'-6"	521
T	10	#5	31'-3"	326
U	1	#5	9'-8"	10
V	30	#9	10'-3"	1,046
Z	3	#3	274'-11"	310
ITEM		UNIT	QUANTITY	
Reinforcing Steel		LB	4,087	
Conc (Cap)		CY	14.5	

TABLE OF ESTIMATED QUANTITIES PHASE II
(ONE BNT) ①

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	37'-9"	1,203
B	5	#11	37'-0"	983
D	2	1 1/4"	1'-8"	14
S	51	#5	13'-6"	718
T	10	#5	37'-0"	386
U	1	#5	9'-8"	10
V	30	#9	10'-3"	1,046
Z	3	#3	274'-11"	310
ITEM		UNIT	QUANTITY	
Reinforcing Steel		LB	4,670	
Conc (Cap)		CY	18.2	



BEARING SEAT DETAIL

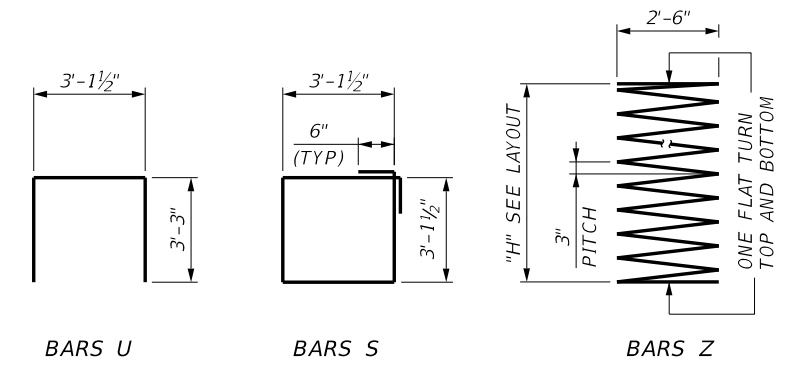
(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

KEYED NOTES

- ① QUANTITIES SHOWN ARE BASED ON AN "H" VALUE OF 8'. FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
BARS V LENGTH, 1'-0"
BARS Z LENGTH, 15'-9"
REINFORCING STEEL, 160 LB
CLASS "C" CONC (COL), 0.79 CY
- ② OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- ③ RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED ELSEWHERE.
- ④ MEASURED A LONG CL OF BEARING.

HL93 LOADING

NOT TO SCALE



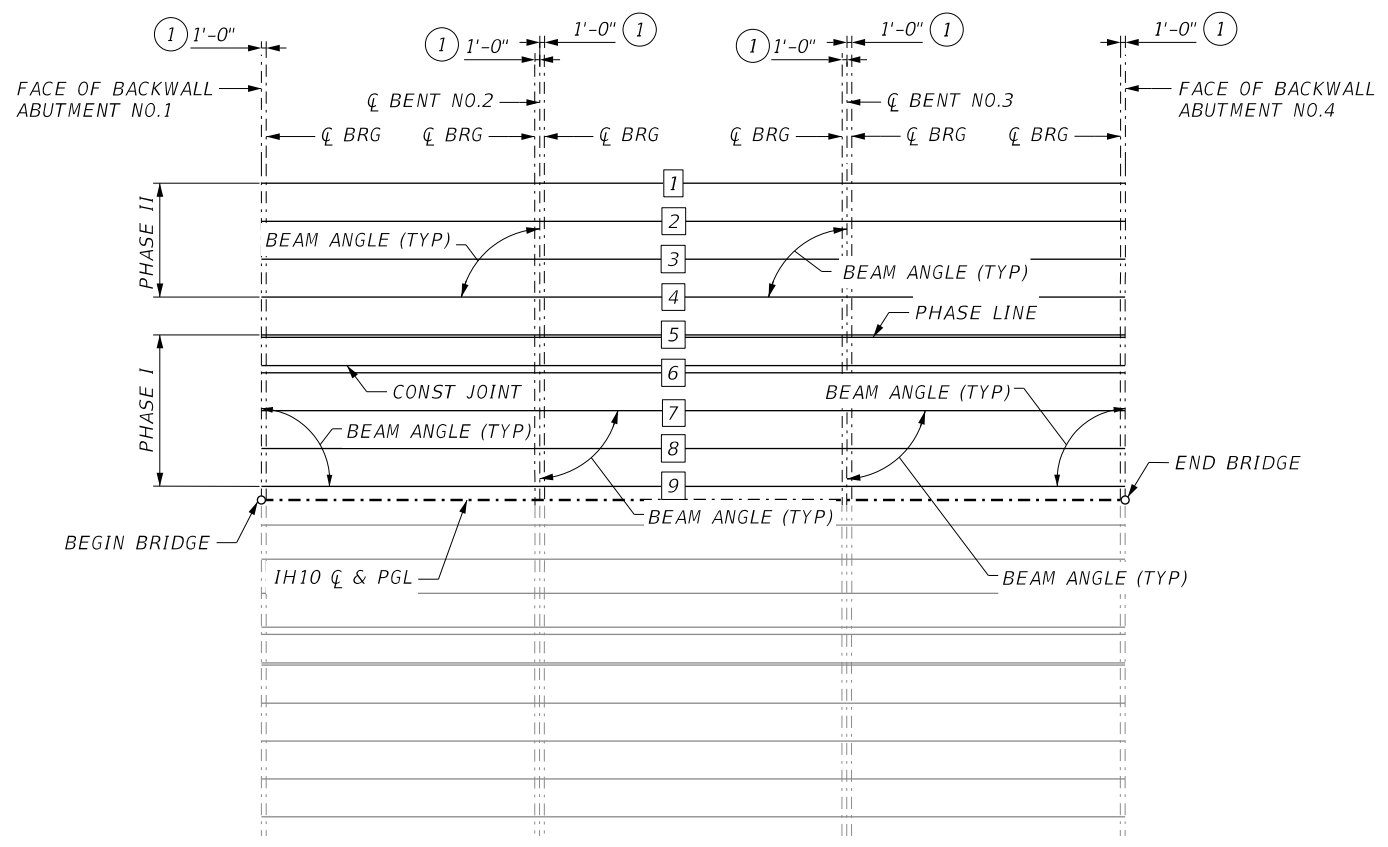
NO. DATE REVISION APPROV.

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IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I & II
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	690



SPAN 1
(5XB20 BEAMS)

SPAN 2
(5XB20 BEAMS)

SPAN 3
(5XB20 BEAMS)

BEAM LAYOUT

KEYED NOTES

- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.

HL93 LOADING



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	691

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BEAM REPORT

PHASE I

BEAM REPORT, SPAN 1

	HORIZONTAL DISTANCE	C-C BRG.	TRUE DISTANCE	BOT. BM. FLG.	BEAM SLOPE
BEAM 6	58.000	56.000	57.500	(2)	0.0115
BEAM 7	58.000	56.000	57.500		0.0115
BEAM 8	58.000	56.000	57.500		0.0115
BEAM 9	58.000	56.000	57.500		0.0115

BEAM REPORT, SPAN 2

	HORIZONTAL DISTANCE	C-C BRG.	TRUE DISTANCE	BOT. BM. FLG.	BEAM SLOPE
BEAM 6	64.000	62.000	63.500	(2)	0.0093
BEAM 7	64.000	62.000	63.500		0.0093
BEAM 8	64.000	62.000	63.500		0.0093
BEAM 9	64.000	62.000	63.500		0.0093

BEAM REPORT, SPAN 3

	HORIZONTAL DISTANCE	C-C BRG.	TRUE DISTANCE	BOT. BM. FLG.	BEAM SLOPE
BEAM 6	58.000	56.000	57.500	(2)	0.0072
BEAM 7	58.000	56.000	57.500		0.0072
BEAM 8	58.000	56.000	57.500		0.0072
BEAM 9	58.000	56.000	57.500		0.0072

PHASE II

BEAM REPORT, SPAN 1

	HORIZONTAL DISTANCE	C-C BRG.	TRUE DISTANCE	BOT. BM. FLG.	BEAM SLOPE
BEAM 1	58.000	56.000	57.500	(2)	0.0115
BEAM 2	58.000	56.000	57.500		0.0115
BEAM 3	58.000	56.000	57.500		0.0115
BEAM 4	58.000	56.000	57.500		0.0115
BEAM 5	58.000	56.000	57.500		0.0115

BEAM REPORT, SPAN 2

	HORIZONTAL DISTANCE	C-C BRG.	TRUE DISTANCE	BOT. BM. FLG.	BEAM SLOPE
BEAM 1	64.000	62.000	63.500	(2)	0.0093
BEAM 2	64.000	62.000	63.500		0.0093
BEAM 3	64.000	62.000	63.500		0.0093
BEAM 4	64.000	62.000	63.500		0.0093
BEAM 5	64.000	62.000	63.500		0.0093

BEAM REPORT, SPAN 3

	HORIZONTAL DISTANCE	C-C BRG.	TRUE DISTANCE	BOT. BM. FLG.	BEAM SLOPE
BEAM 1	58.000	56.000	57.500	(2)	0.0072
BEAM 2	58.000	56.000	57.500		0.0072
BEAM 3	58.000	56.000	57.500		0.0072
BEAM 4	58.000	56.000	57.500		0.0072
BEAM 5	58.000	56.000	57.500		0.0072

BENT REPORT

PHASE I

ABUTMENT NO. 1 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 1	BEAM 6	7.898	90	0 0
	BEAM 7	7.879	90	0 0
	BEAM 8	7.879	90	0 0
	BEAM 9	7.879	90	0 0
TOTAL		31.535		

BENT NO. 2 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 1	BEAM 6	7.898	90	0 0
	BEAM 7	7.879	90	0 0
	BEAM 8	7.879	90	0 0
	BEAM 9	7.879	90	0 0
TOTAL		31.535		

BENT NO. 2 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 2	BEAM 6	7.898	90	0 0
	BEAM 7	7.879	90	0 0
	BEAM 8	7.879	90	0 0
	BEAM 9	7.879	90	0 0
TOTAL		31.535		

BENT NO. 3 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 2	BEAM 6	7.898	90	0 0
	BEAM 7	7.879	90	0 0
	BEAM 8	7.879	90	0 0
	BEAM 9	7.879	90	0 0
TOTAL		31.535		

BENT NO. 3 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 3	BEAM 6	7.898	90	0 0
	BEAM 7	7.879	90	0 0
	BEAM 8	7.879	90	0 0
	BEAM 9	7.879	90	0 0
TOTAL		31.535		

ABUTMENT NO. 4 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 3	BEAM 6	7.898	90	0 0
	BEAM 7	7.879	90	0 0
	BEAM 8	7.879	90	0 0
	BEAM 9	7.879	90	0 0
TOTAL		31.535		

BENT REPORT

PHASE II

ABUTMENT NO. 1 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 1	BEAM 1	0.000	90	0 0
	BEAM 2	7.898	90	0 0
	BEAM 3	7.898	90	0 0
	BEAM 4	7.898	90	0 0
	BEAM 5	7.898	90	0 0
TOTAL		31.592		

BENT NO. 2 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 1	BEAM 1	0.000	90	0 0
	BEAM 2	7.898	90	0 0
	BEAM 3	7.898	90	0 0
	BEAM 4	7.898	90	0 0
	BEAM 5	7.898	90	0 0
TOTAL		31.592		

BENT NO. 2 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 2	BEAM 1	0.000	90	0 0
	BEAM 2	7.898	90	0 0
	BEAM 3	7.898	90	0 0
	BEAM 4	7.898	90	0 0
	BEAM 5	7.898	90	0 0
TOTAL		31.592		

BENT NO. 3 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 2	BEAM 1	0.000	90	0 0
	BEAM 2	7.898	90	0 0
	BEAM 3	7.898	90	0 0
	BEAM 4	7.898	90	0 0
	BEAM 5	7.898	90	0 0
TOTAL		31.592		

BENT NO. 3 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 3	BEAM 1	0.000	90	0 0
	BEAM 2	7.898	90	0 0
	BEAM 3	7.898	90	0 0
	BEAM 4	7.898	90	0 0
	BEAM 5	7.898	90	0 0
TOTAL		31.592		

ABUTMENT NO. 4 (N 86 46 1.98 W)

DISTANCE BETWEEN STATION LINE AND BEAM 1		66.000	BEAM ANGLE	
BEAM SPAC. (C.L. BENT)		D	M	S
SPAN 3	BEAM 1	0.000	90	0 0
	BEAM 2	7.898	90	0 0
	BEAM 3	7.898	90	0 0
	BEAM 4	7.898	90	0 0
	BEAM 5	7.898	90	0 0
TOTAL		31.592		

KEYED NOTES

- (2) BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- (3) BEAM SPACING SHOWN IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X BEAMS.

HL93 LOADING

NOT TO SCALE



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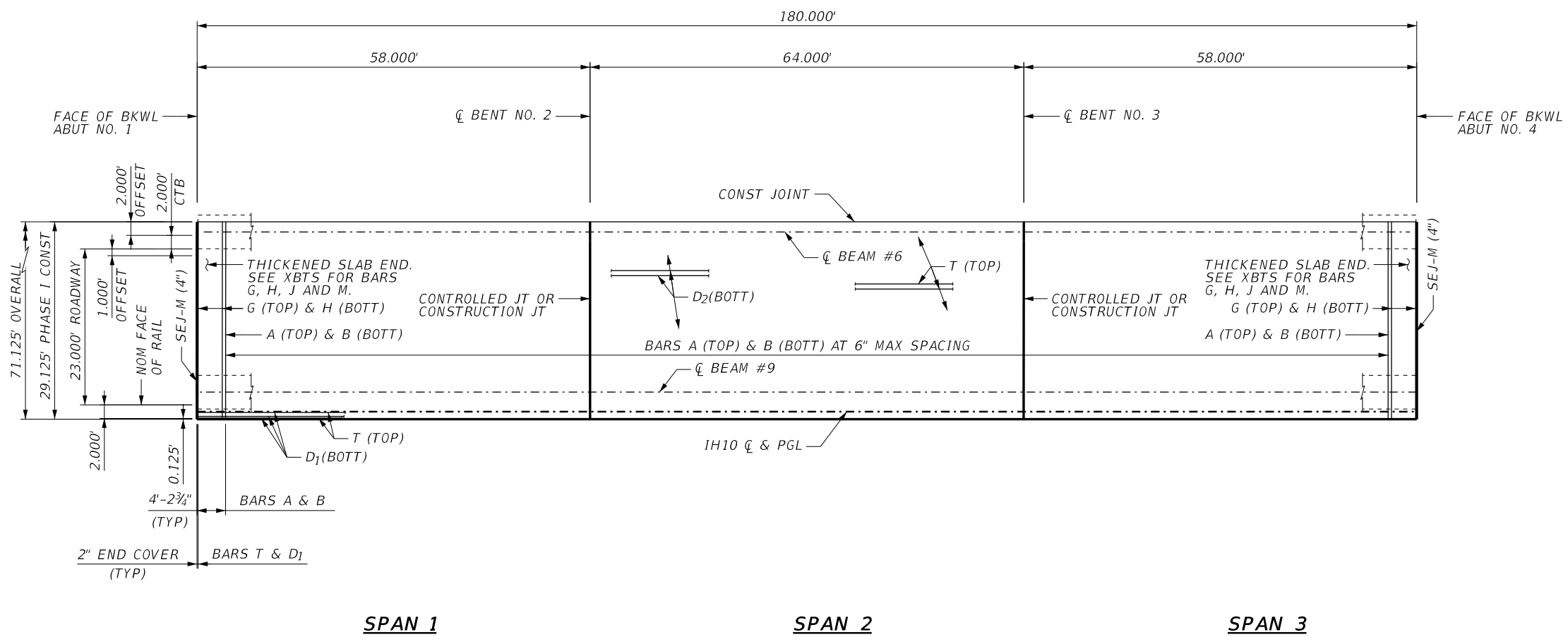


IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
ARROYO 45 RELIEF #1B BRIDGE
 IH10 WB
 (STA 158+76 TO STA 160+56)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	692

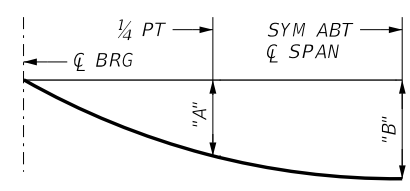


- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

PLAN PHASE I

TABLE OF DEFLECTIONS PHASE I

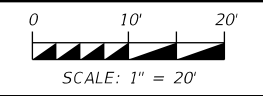
SPAN	BEAM	"A"	"B"
NO.	NO.	FT	FT
1,3	6-8	0.056	0.079
	9	0.056	0.080
2	6-8	0.084	0.119
	9	0.085	0.120



DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY ($E_c = 5,000$ KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

HL93 LOADING



2/28/2024



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)**

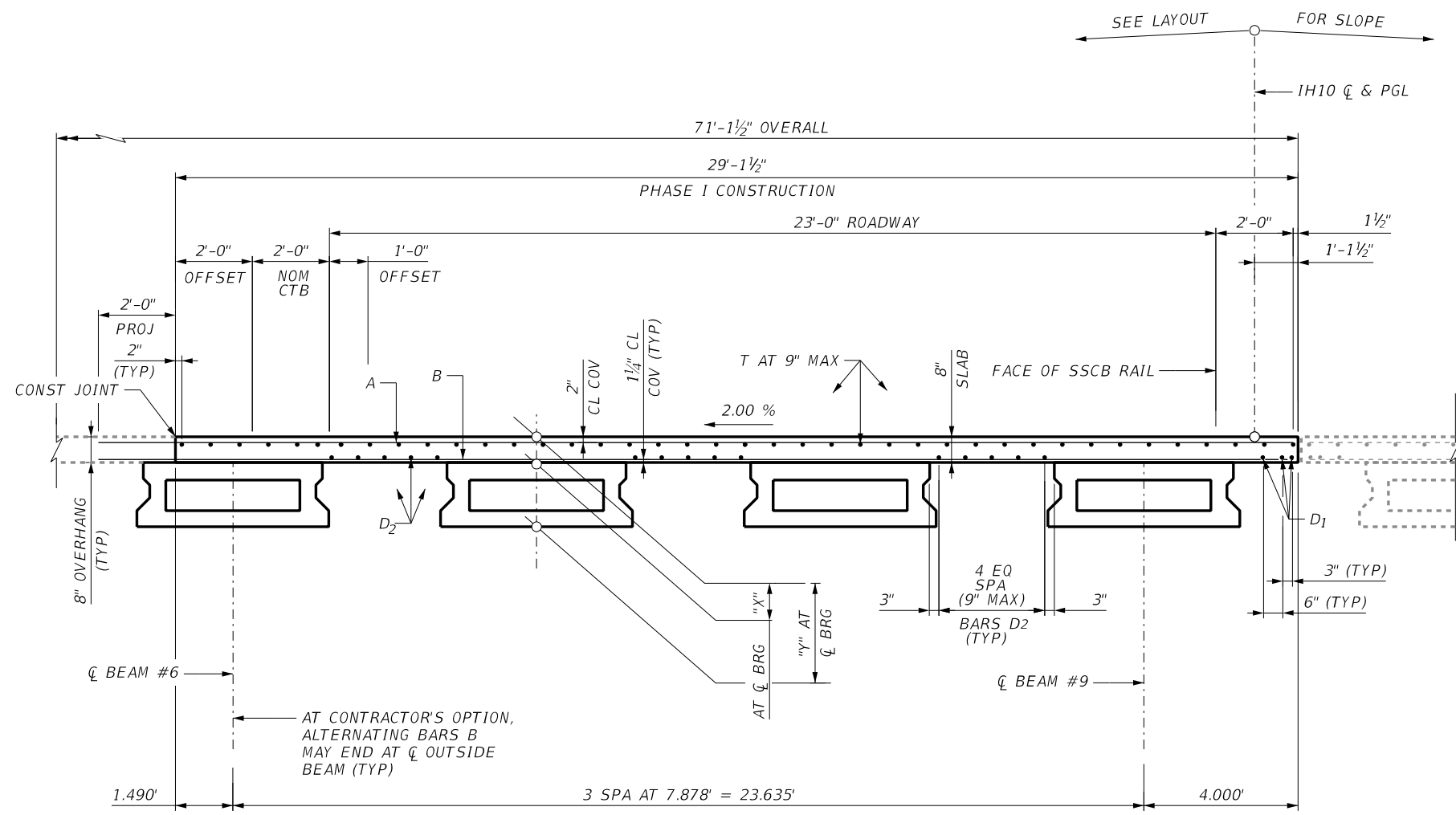
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO. SHEET NO.
ELP	EL PASO	2121	01	104 693

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BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4



TYPICAL TRANSVERSE SECTION PHASE I
(5XB20) SPANS 1 THRU 3

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

KEYED NOTES
① SPACE BARS U WITH BEAM BARS R IN ALL AREAS WHERE MEASURED HAUNCH EXCEEDS 3 1/2".

HL93 LOADING

NOT TO SCALE



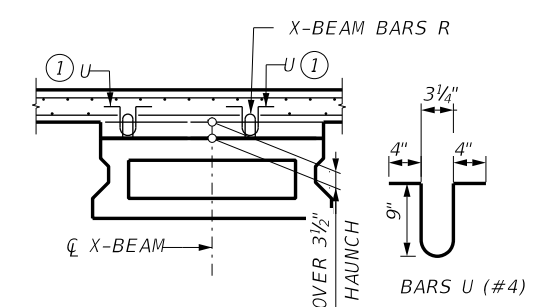
2/28/2024

TABLE OF ESTIMATED QUANTITIES PHASE I

SPAN NO.	REINF CONCRETE SLAB		PRESTR CONCRETE X-BEAMS (5XB20)		CLASS "S" CONCRETE		TOTAL REINF STEEL	
	SF	LF	CY	LB				
1	1,689	232.00	48.46	10,981				
2	1,864	256.00	48.08	12,116				
3	1,689	232.00	48.46	10,981				
TOTAL	5,243	720.00	145.01	34,078				

TABLE OF SECTION DEPTHS FOR PHASE I

SPAN NO.	BEAM NO.	"X" IN	"Y" IN
1	6-9	11 1/2	31 1/2
2	6-9	11 1/2	31 1/2
3	6-9	11 1/2	31 1/2



HAUNCH REINFORCING DETAIL

NO. DATE REVISION APPROV.

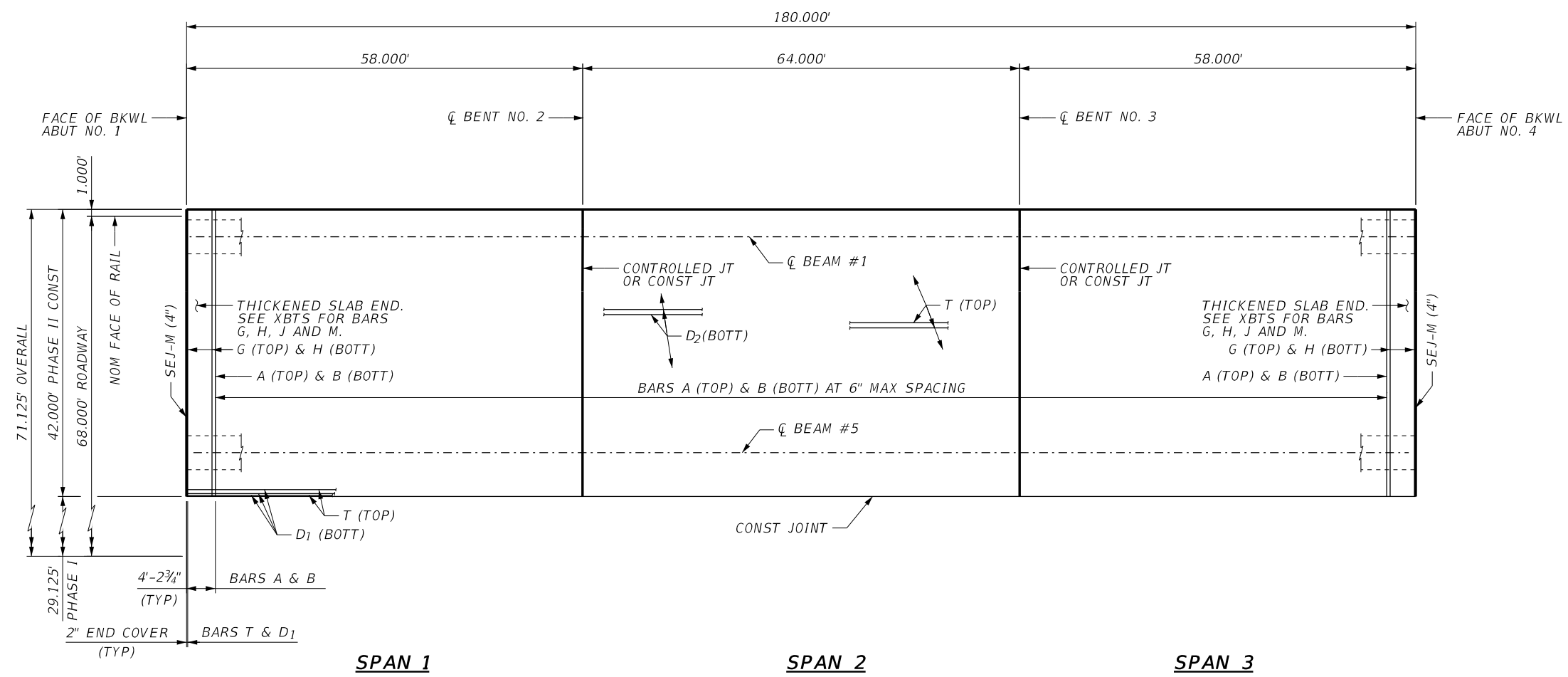


IH 10 WIDENING (NMSL/SPUR 37) PRESTRESSED CONCRETE X-BEAM (5XB20) UNITS PHASE I
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	694

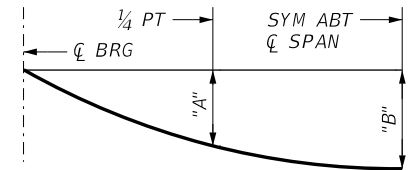
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 2/28/2024



- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH F'C = 4,000 PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

TABLE OF DEFLECTIONS PHASE II

SPAN	BEAM	"A"	"B"
NO.	NO.	FT	FT
1,3	1-5	0.056	0.080
2	1	0.085	0.120
	2-5	0.084	0.119



DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY (EC = 5,000 KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

HL93 LOADING



NO.	DATE	REVISION	APPROV.



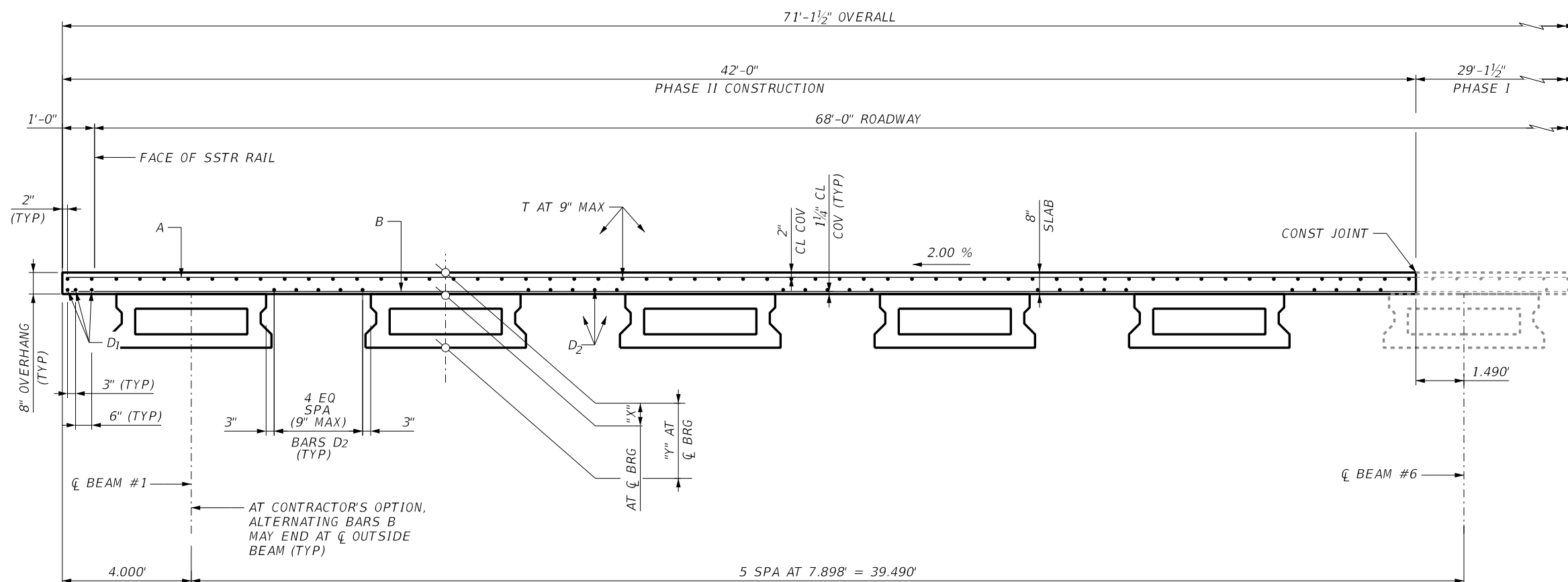
**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	695

BAR TABLE PHASE II

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4

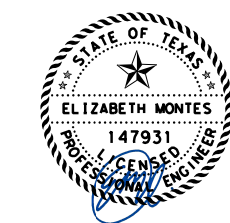


TYPICAL TRANSVERSE SECTION PHASE II
(5XB20) SPANS 1 THRU 3

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

HL93 LOADING

NOT TO SCALE



2/28/2024

SPAN NO.	REINF CONCRETE SLAB		PRESTR CONCRETE X-BEAMS (5XB20)		CLASS "S" CONCRETE		TOTAL REINF STEEL	
	SF	LF	CY	LB				
1	2,436	290.00	68.86	15,834				
2	2,688	320.00	68.12	17,472				
3	2,436	290.00	68.86	15,834				
TOTAL	7,560	900.00	205.85	49,140				

SPAN NO.	BEAM NO.	"X" IN	"Y" IN
1	1-5	11 1/2	31 1/2
2	1-5	11 1/2	31 1/2
3	1-5	11 1/2	31 1/2

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE X-BEAM (5XB20) UNITS PHASE II
ARROYO 45 RELIEF #1B BRIDGE
IH10 WB
(STA 158+76 TO STA 160+56)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	696

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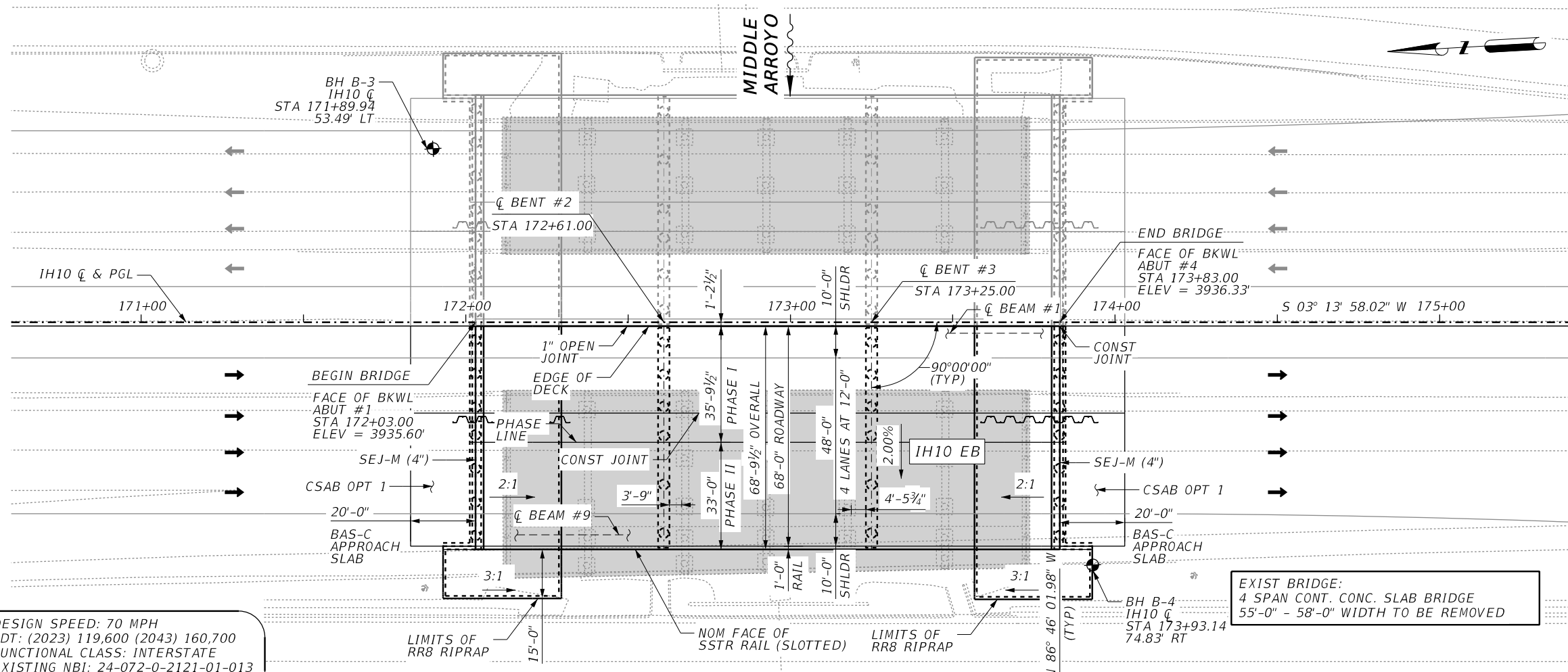
GENERAL NOTES

1. DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
2. DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
3. BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
4. THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
5. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
6. SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
7. FOR TYPICAL SECTIONS SEE "PHASED BRIDGE TYPICAL SECTIONS" SHEET.
8. SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

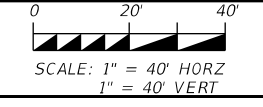
LEGEND

- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING

DESIGN SPEED: 70 MPH
 ADT: (2023) 119,600 (2043) 160,700
 FUNCTIONAL CLASS: INTERSTATE
 EXISTING NBI: 24-072-0-2121-01-013
 NEW NBI: 24-072-0-2121-01-366



HL93 LOADING



3/21/2024

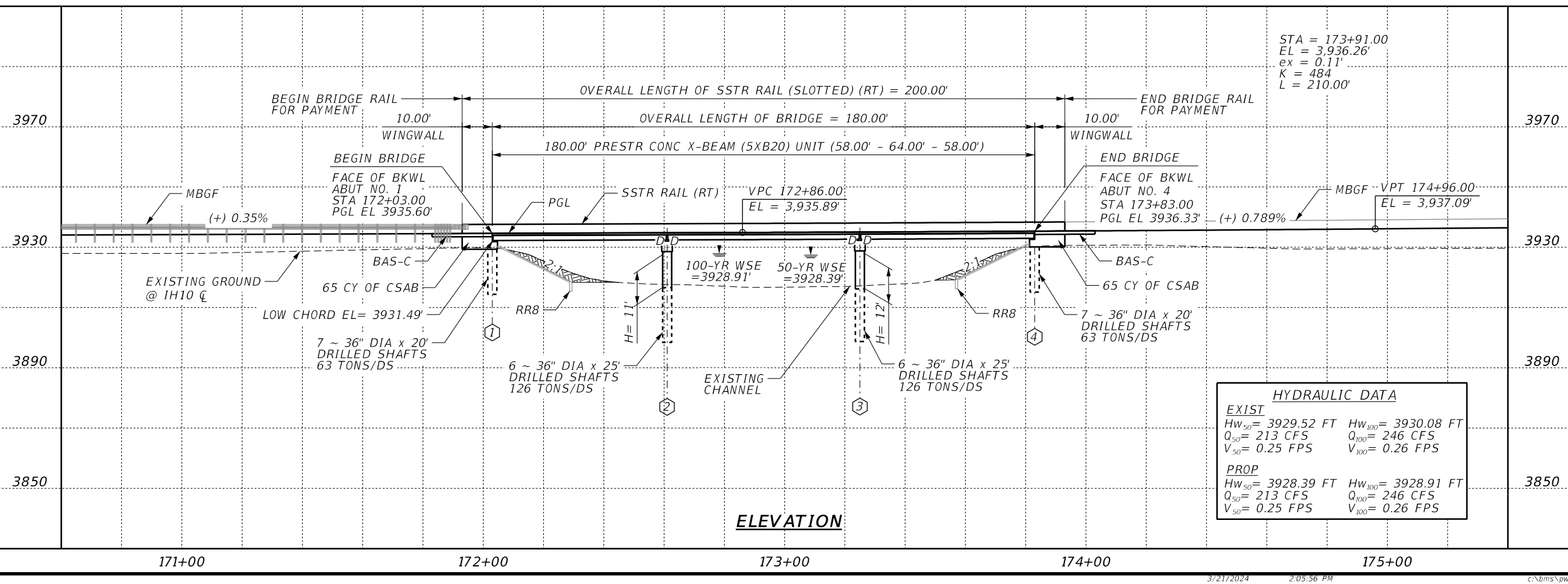


IH 10 WIDENING (NMSL/SPUR 37)

BRIDGE LAYOUT
 MIDDLE ARROYO #2A BRIDGE
 IH10 EB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.		
104	697		






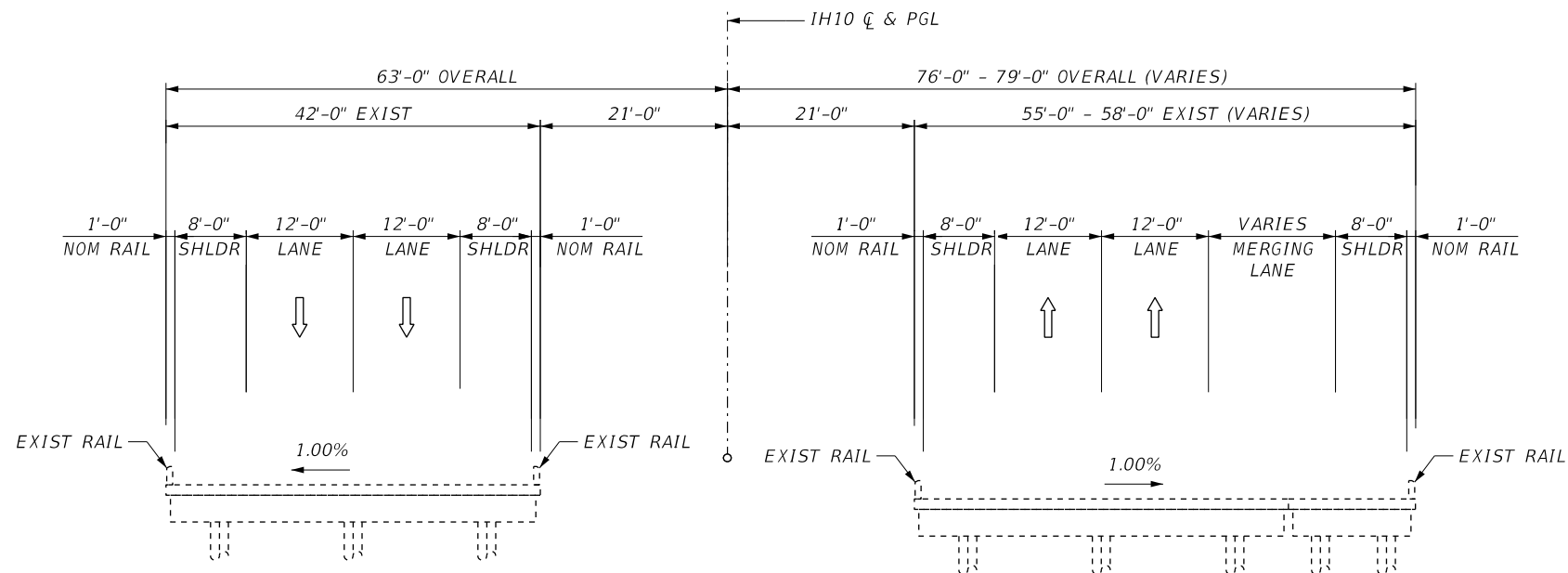
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GENERAL NOTES

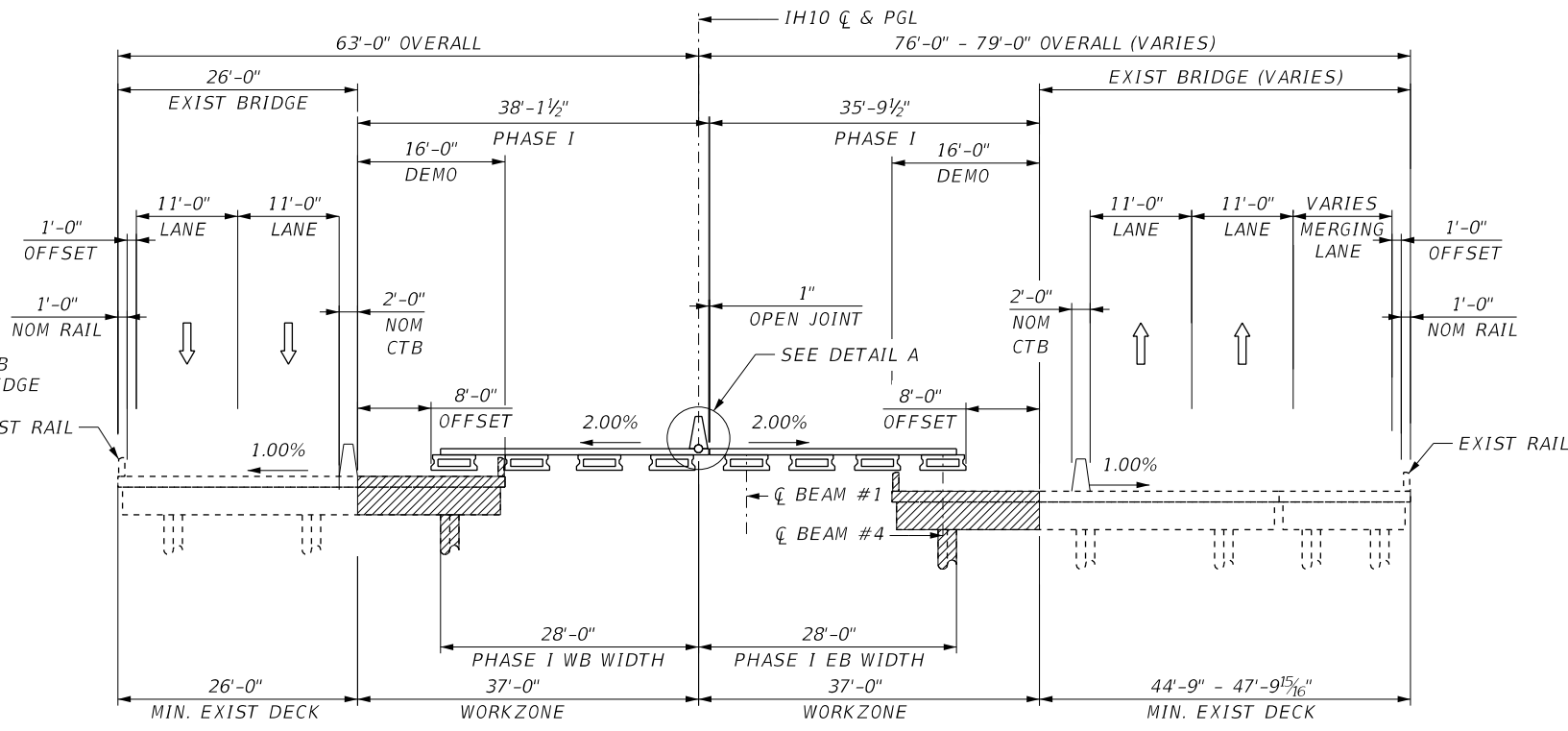
- CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

LEGEND

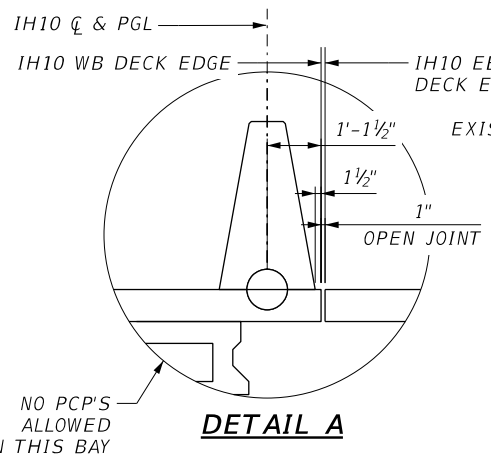
-  EXISTING TRAFFIC FLOW ARROW
-  PROPOSED TRAFFIC FLOW ARROW
-  DEMOLITION OF EXIST BRIDGE



EXISTING SECTION



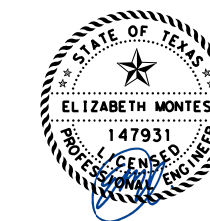
PHASE I SECTION



DETAIL A

HL93 LOADING

NOT TO SCALE



2/28/2024



F-12040



©2024

IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
MIDDLE ARROYO #2A BRIDGE
 IH10 EB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 2

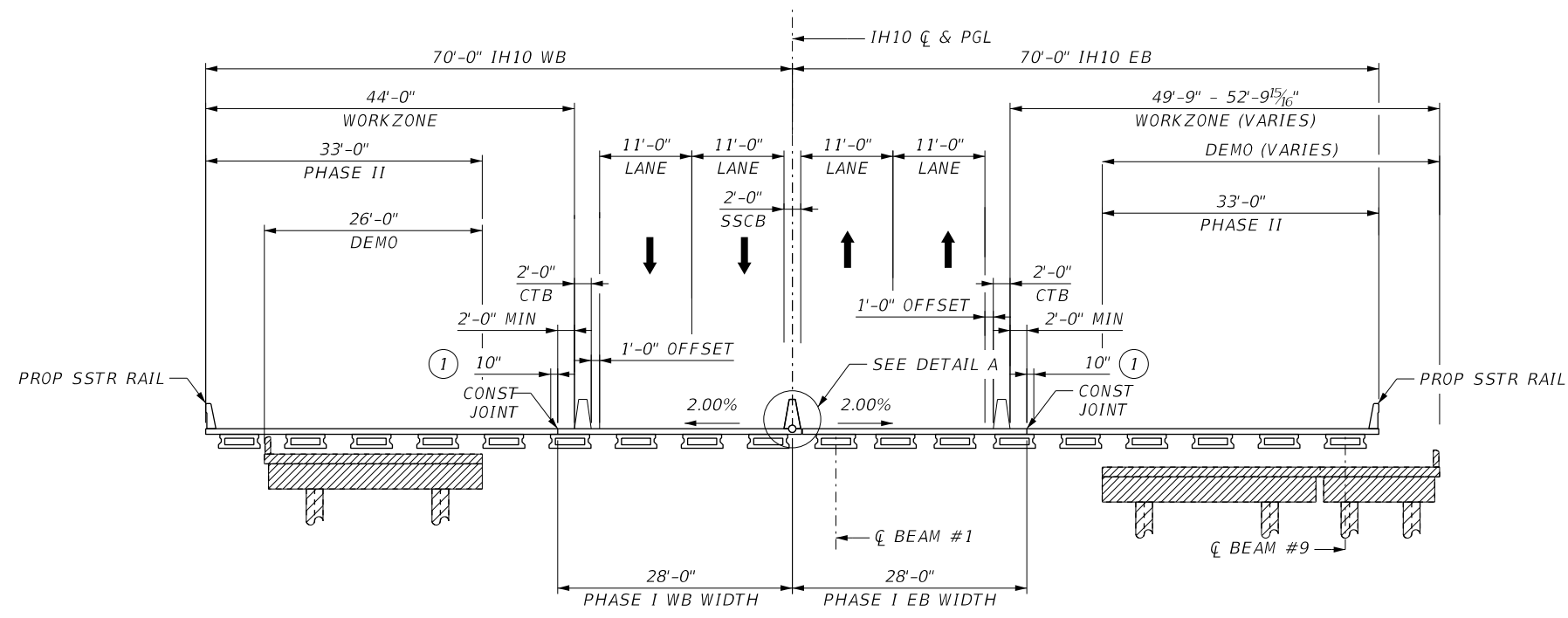
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6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				698

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



PHASE II SECTION

① EDGE OF DECK TO EDGE OF TOP OF BEAM.

HL93 LOADING

NOT TO SCALE



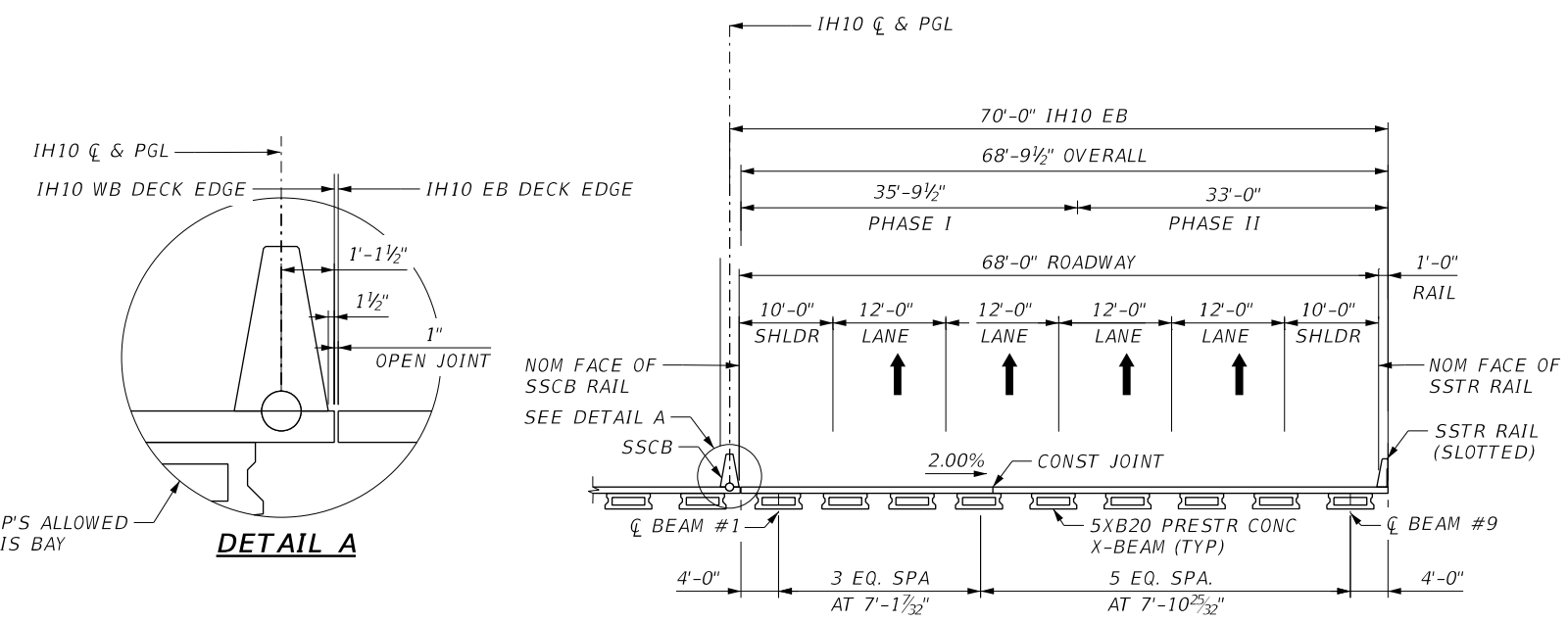
2/28/2024



IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
 MIDDLE ARROYO #2A BRIDGE
 IH10 EB
 (STA 172+03 TO STA 173+83)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	699

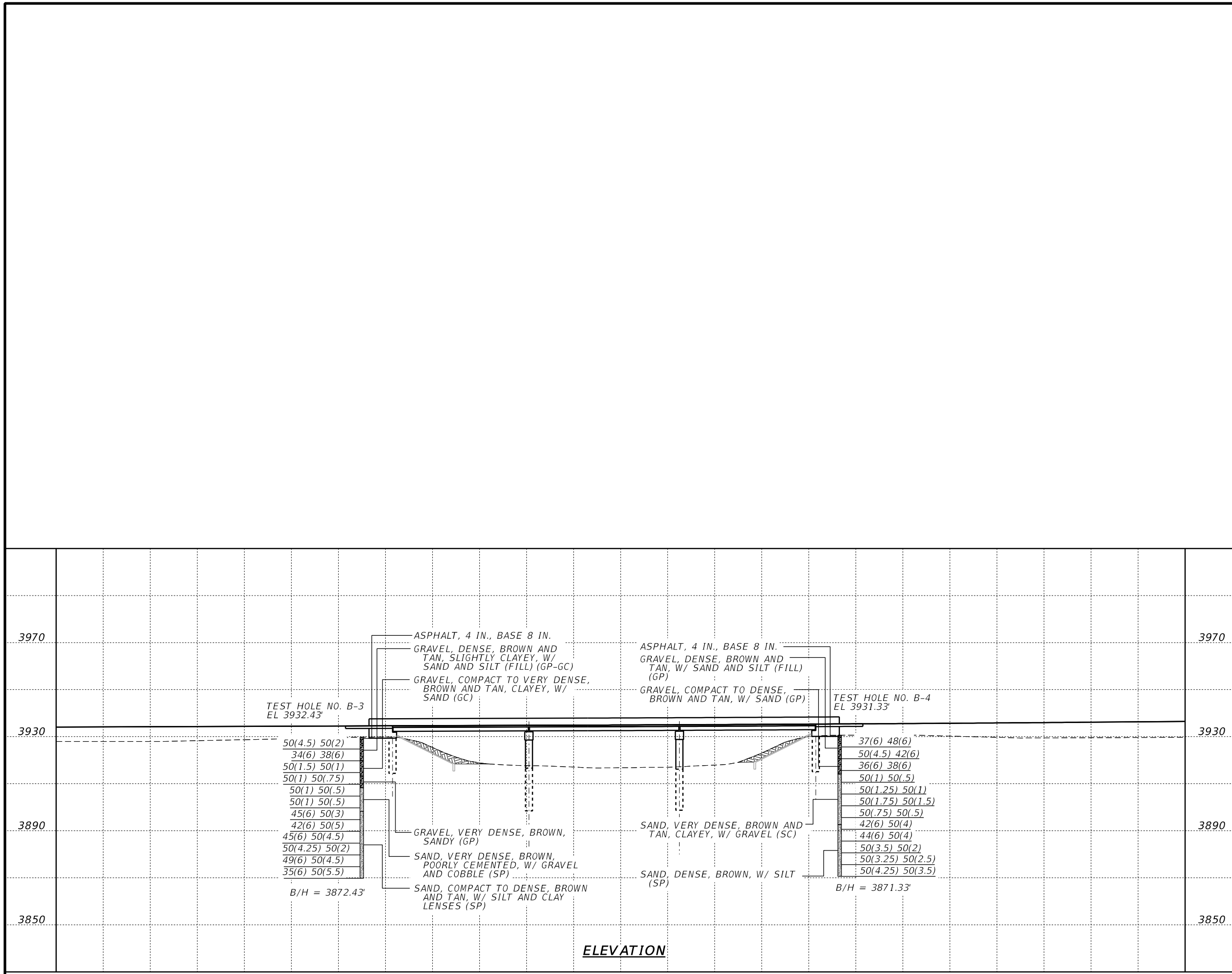


IH10 EB FINAL SECTION

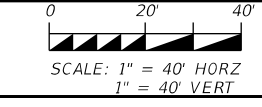
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HL93 LOADING



NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
BORING LOGS
 MIDDLE ARROYO #2A & #2B BRIDGE
 IH10 EB & IH10 WB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	700

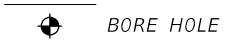
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GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.



LEGEND



HL93 LOADING



2/28/2024

NO.	DATE	REVISION	APPROV.

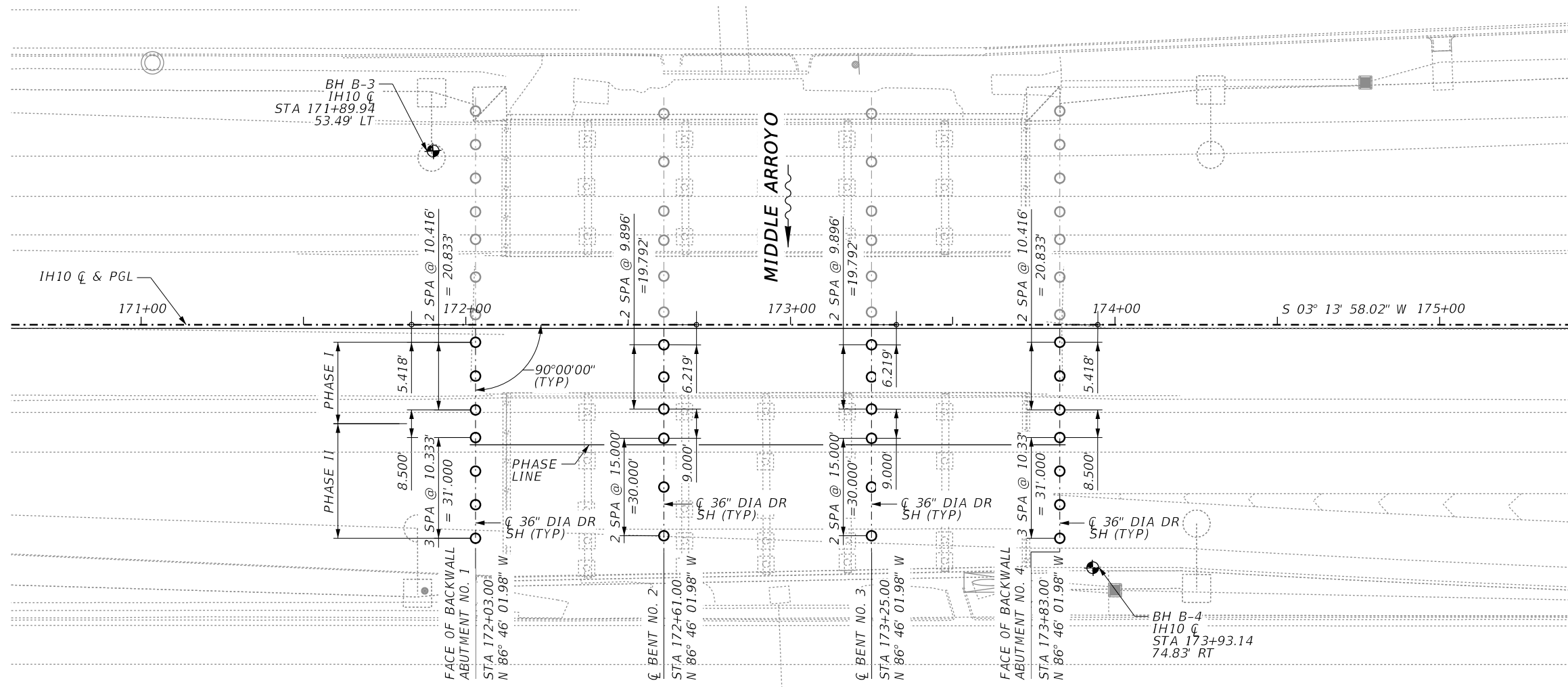


IH 10 WIDENING (NMSL/SPUR 37)

FOUNDATION LAYOUT
MIDDLE ARROYO #2A BRIDGE
IH10 EB
(STA 172+03 TO STA 173+83)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	701

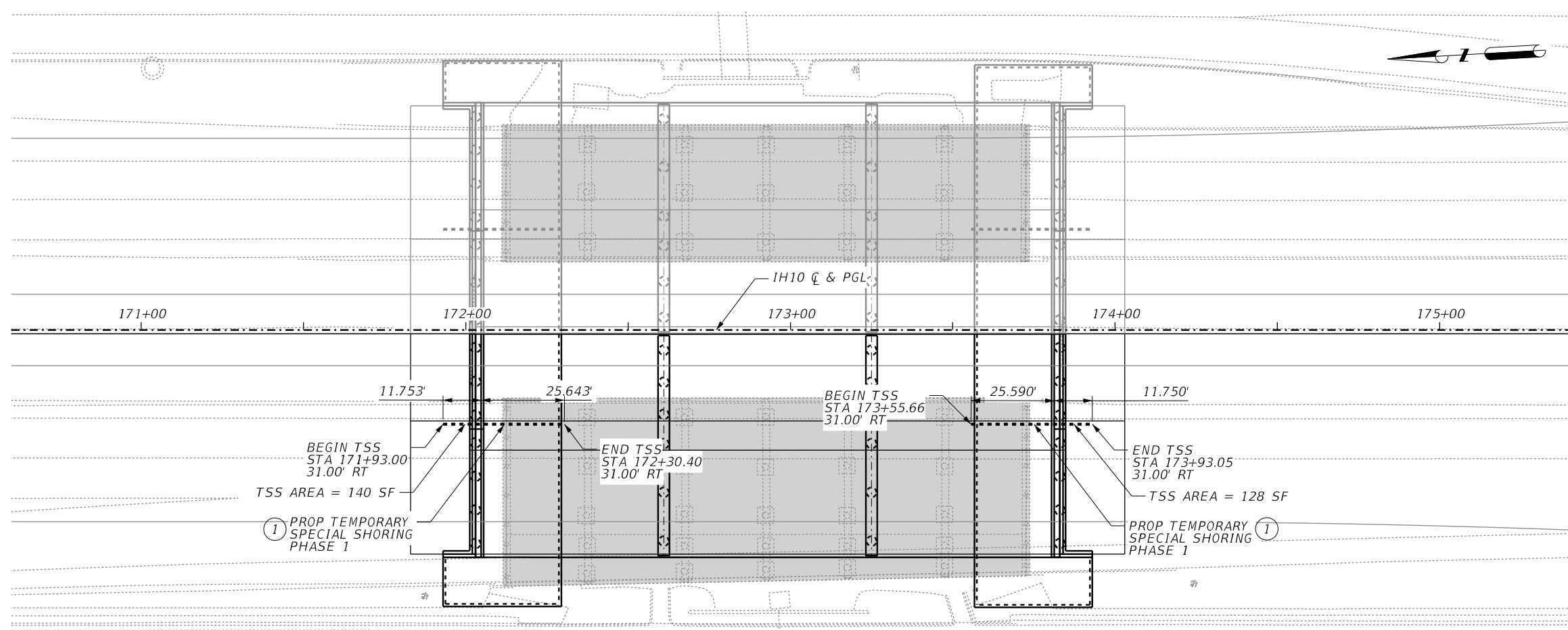
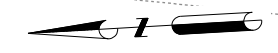


ABUT/BENT	TONS/SHAFT
1&4	63
2&3	126

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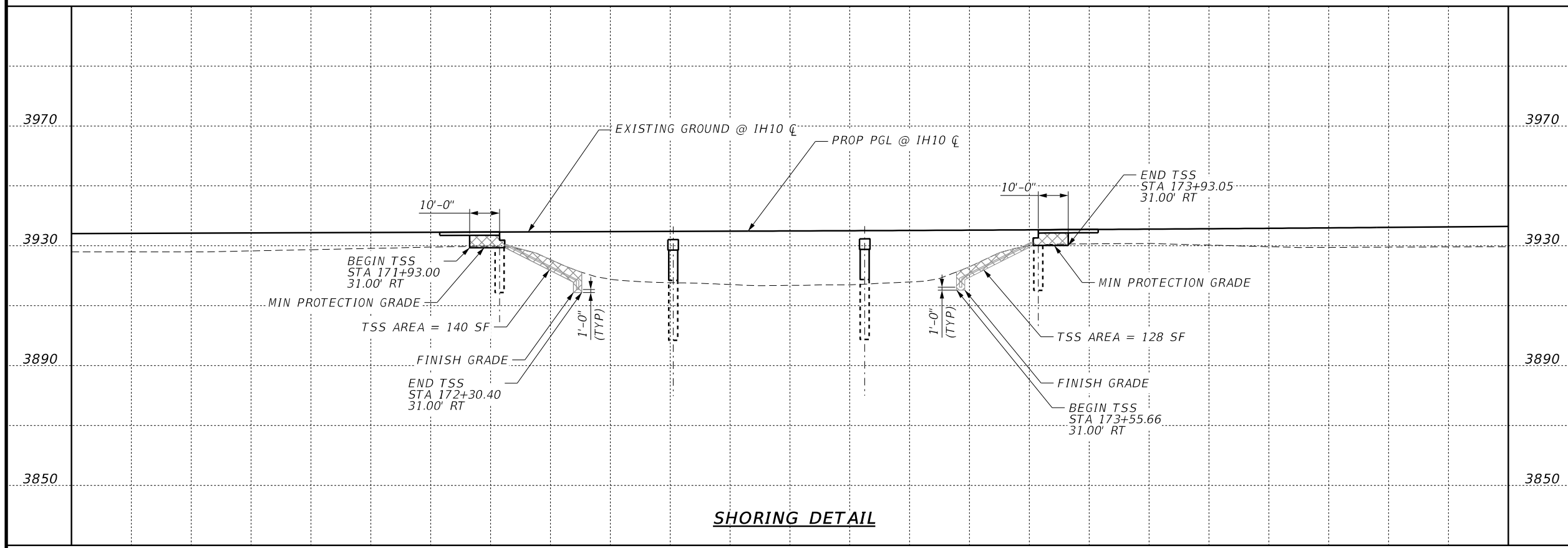
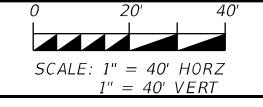
LEGEND

TEMPORARY SPL SHORING



PLAN VIEW

HL93 LOADING



SHORING DETAIL



IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
MIDDLE ARROYO #2A BRIDGE
IH10 EB
(STA 172+03 TO STA 173+83)

SHEET 1 OF 1		FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	EL PASO	2121	104
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	702

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				PHASE I				PHASE II					
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	
1	ABUT	1	(FWD)	L	3932.721	3932.579	3932.437	3932.295	3932.137	3931.979	3931.821	3931.663	3931.505
				R	3932.601	3932.459	3932.317	3932.175	3932.017	3931.859	3931.701	3931.543	3931.385
2	BENT	2	(BK)	L	3932.920	3932.778	3932.636	3932.494	3932.336	3932.178	3932.020	3931.862	3931.705
				R	3932.800	3932.658	3932.516	3932.374	3932.216	3932.058	3931.900	3931.742	3931.585
	2	(FWD)	L	3932.885	3932.743	3932.601	3932.459	3932.301	3932.143	3931.986	3931.828	3931.670	
			R	3932.765	3932.623	3932.481	3932.339	3932.181	3932.023	3931.866	3931.708	3931.550	
3	BENT	3	(BK)	L	3933.120	3932.978	3932.836	3932.694	3932.536	3932.378	3932.220	3932.062	3931.904
				R	3933.000	3932.858	3932.716	3932.574	3932.416	3932.258	3932.100	3931.942	3931.784
	3	(FWD)	L	3933.170	3933.029	3932.886	3932.744	3932.586	3932.428	3932.270	3932.112	3931.955	
			R	3933.050	3932.909	3932.766	3932.624	3932.466	3932.308	3932.150	3931.992	3931.835	
4	ABUT	4	(BK)	L	3933.447	3933.305	3933.163	3933.021	3932.863	3932.705	3932.547	3932.389	3932.231
				R	3933.327	3933.185	3933.043	3932.901	3932.743	3932.585	3932.427	3932.269	3932.111



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
BEARING SEAT ELEVATIONS
 MIDDLE ARROYO #2A BRIDGE
 IH10 EB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	703

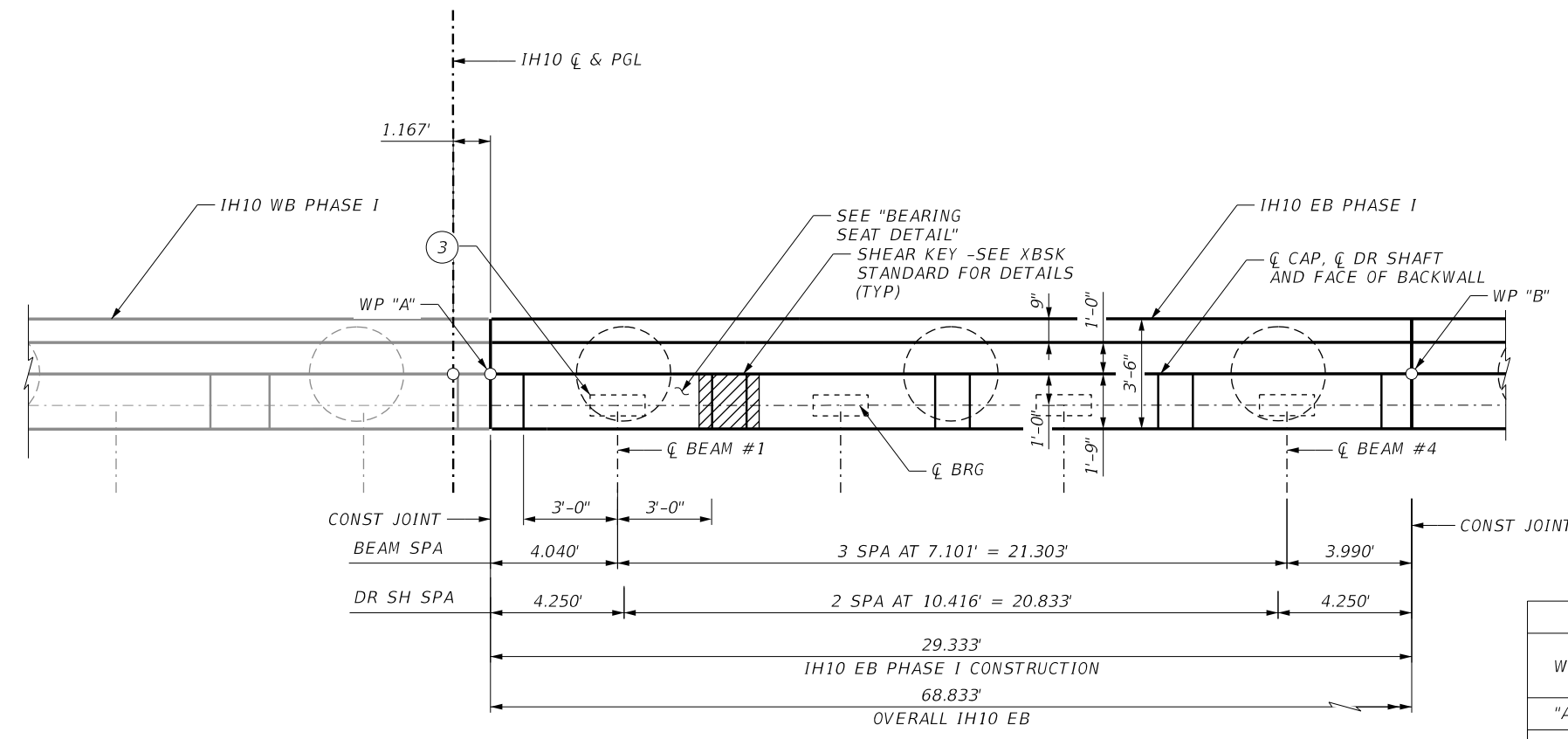
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 2/28/2024

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPlicing TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

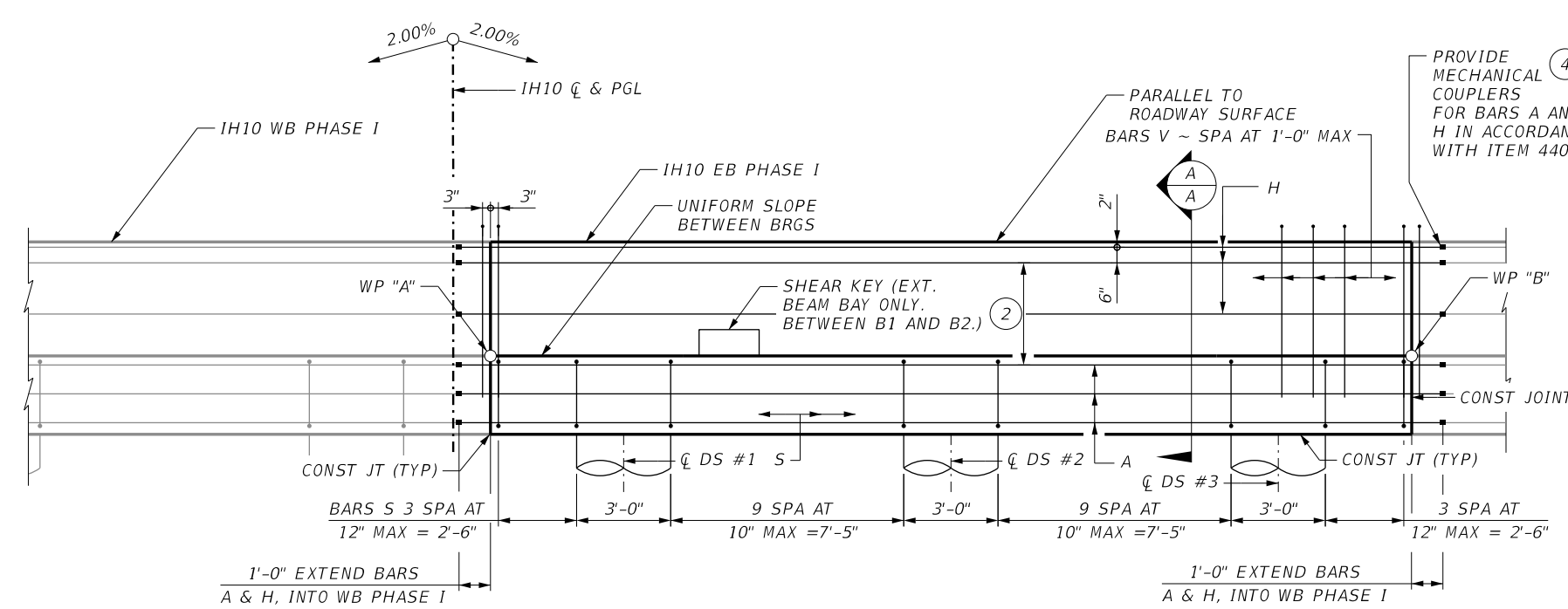
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE:
XB20 ~ 2 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



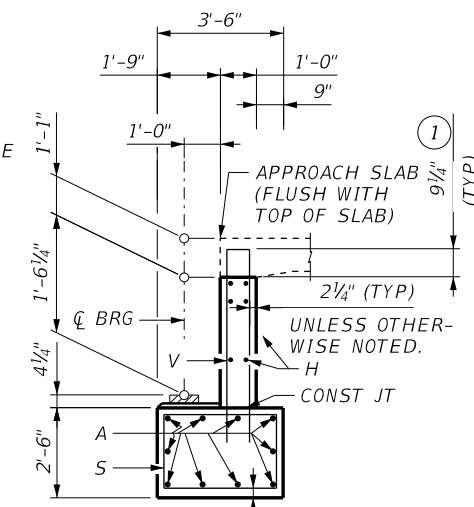
WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
"A"	3932.62'	3933.35'
"B"	3932.03'	3932.77'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
1	3930.03'	3930.77'
2	3929.82'	3930.56'
3	3929.61'	3930.35'

PLAN PHASE I

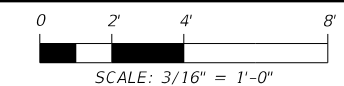


ELEVATION PHASE I



SECTION A-A

HL93 LOADING



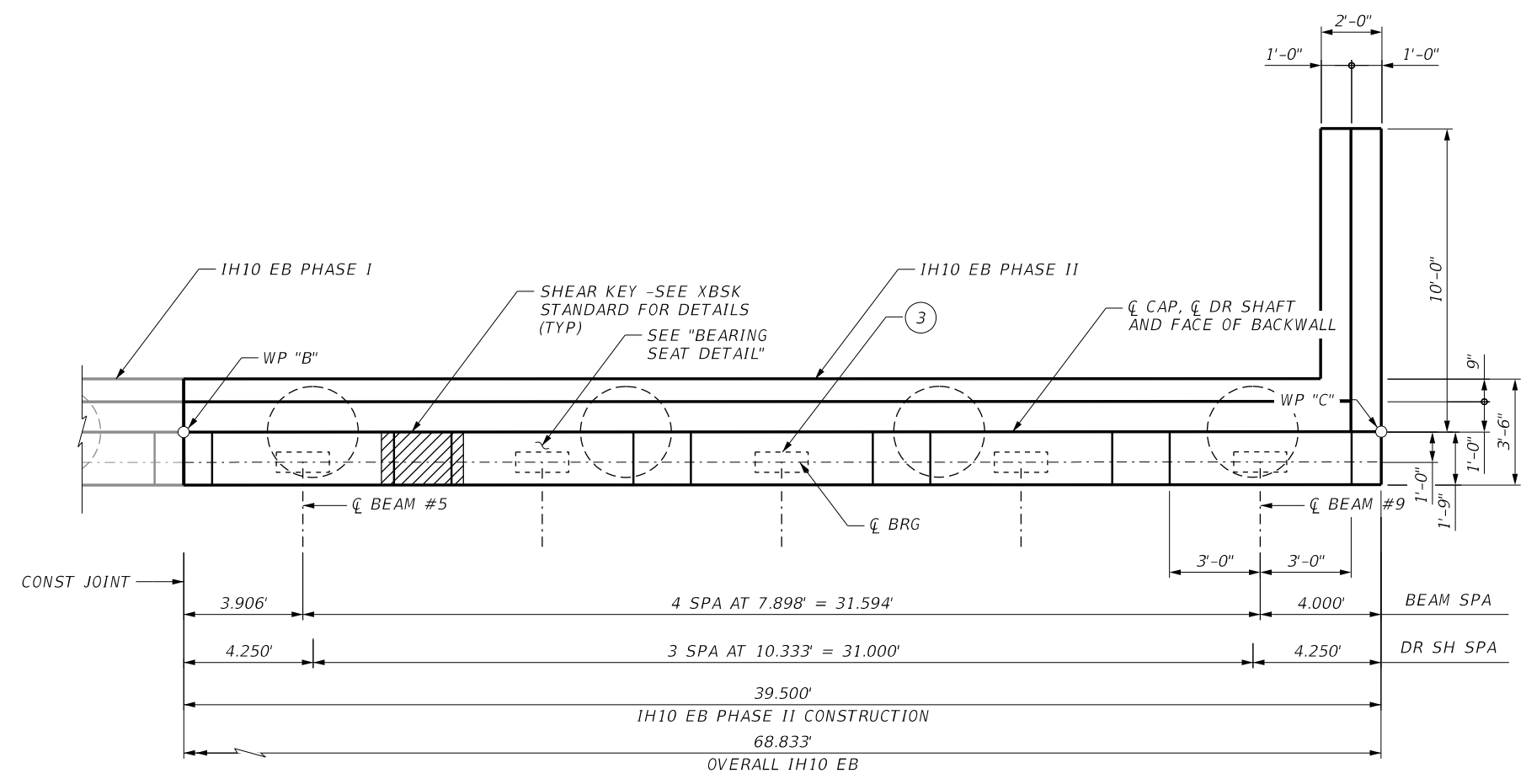
2/28/2024



**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I
MIDDLE ARROYO #2A BRIDGE
IH10 EB
(STA 172+03 TO STA 173+83)**

SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	704

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PLAN PHASE II

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH F'c = 3,600 PSI.
 - ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
 - SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

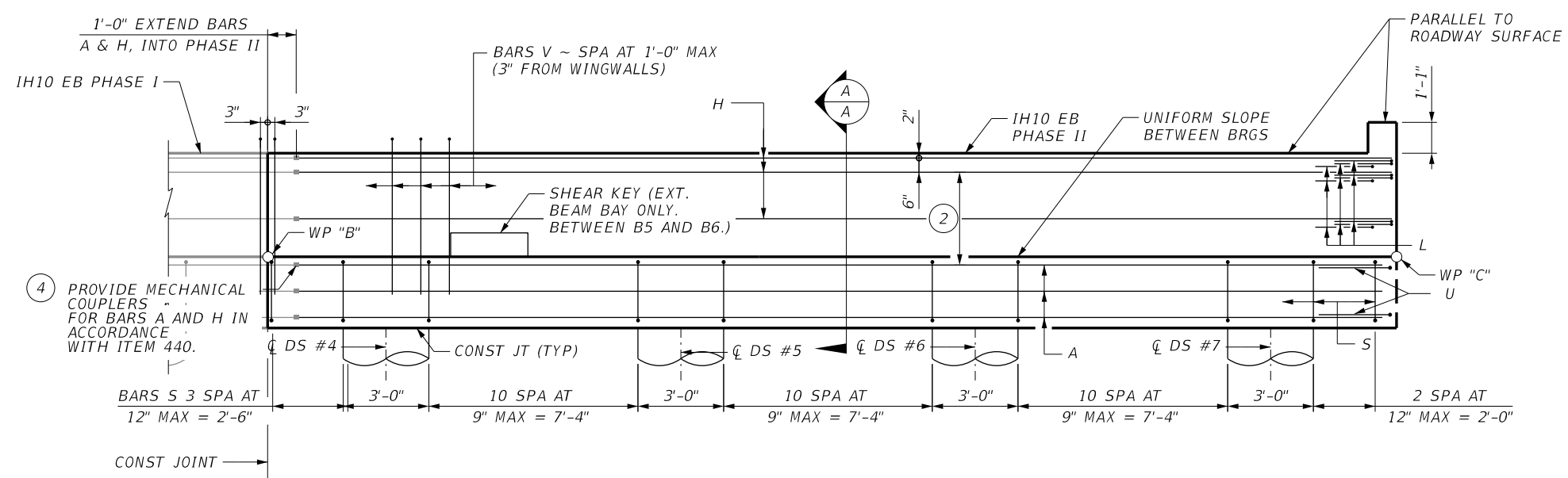
- KEYED NOTES**
- INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.
 - SPACING BASED ON BEAM TYPE:
XB20 ~ 2 EQUAL SPACES
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."

WORKING POINT ELEVATIONS

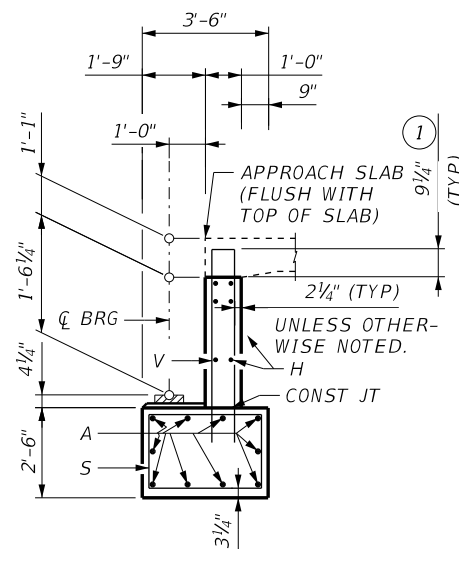
WP	ELEV	
	ABUT 1	ABUT 4
"B"	3932.03'	3932.77'
"C"	3931.24'	3931.98'

TOP OF DS ELEVATIONS

DS	ELEV	
	ABUT 1	ABUT 4
4	3929.44'	3930.18'
5	3929.24'	3929.97'
6	3929.03'	3929.77'
7	3928.82'	3929.56'

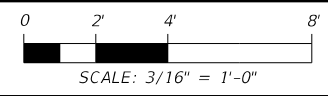


ELEVATION PHASE II



SECTION A-A

HL93 LOADING



2/28/2024



IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE II
 MIDDLE ARROYO #2A BRIDGE
 IH10 EB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 1

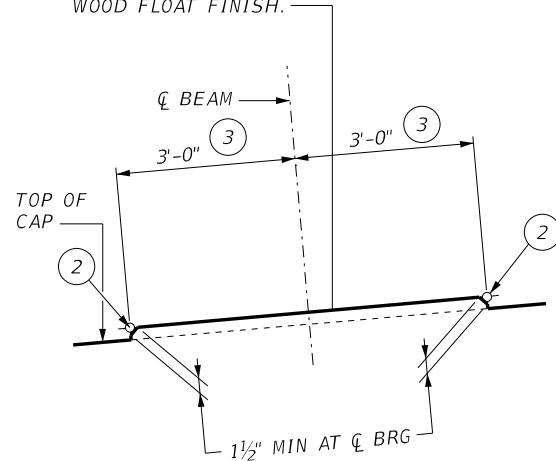
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	705

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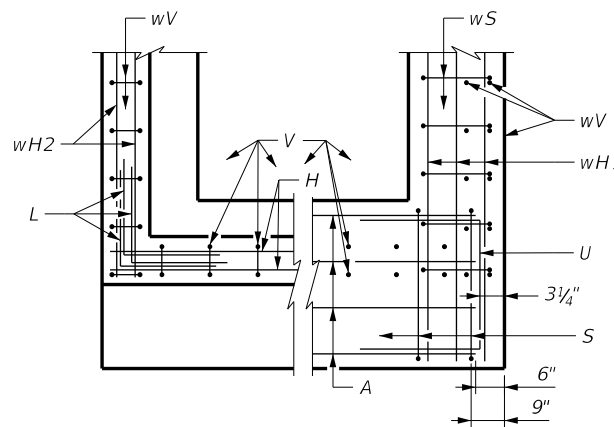
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LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



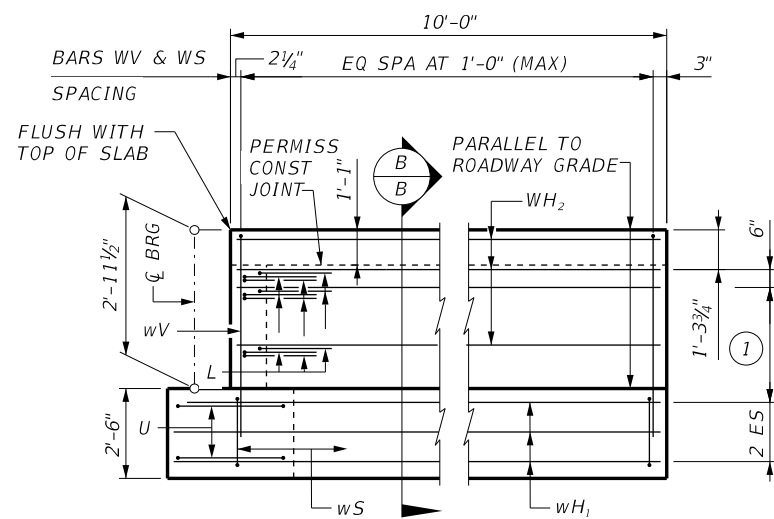
**BACKWALL
CAP
CORNER DETAILS**

**TABLE OF ESTIMATED QUANTITIES
PHASE I (ONE ABUT)**

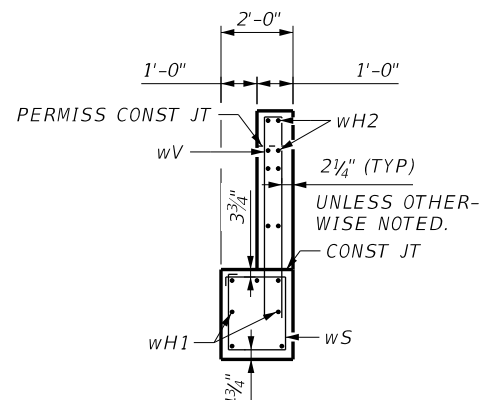
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31'-4"	1,665
H	6	#6	31'-4"	282
S	28	#5	11'-4"	331
V	31	#5	8'-5"	272
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,550
CONC (ABUT)			CY	11.7

**TABLE OF ESTIMATED QUANTITIES
PHASE II (ONE ABUT)**

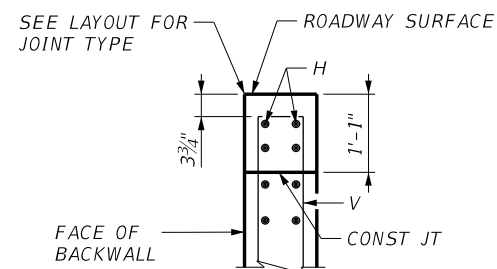
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	38'-0"	2,019
H	6	#6	38'-4"	345
L	9	#6	4'-0"	54
S	40	#5	11'-4"	473
U	2	#6	8'-0"	24
V	40	#5	8'-5"	351
wH1	7	#6	11'-5"	120
wH2	8	#6	9'-8"	116
wS	11	#4	7'-8"	56
wV	11	#5	8'-8"	99
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,658
CONC (ABUT)			CY	18.7



WINGWALL ELEVATION



SECTION B-B

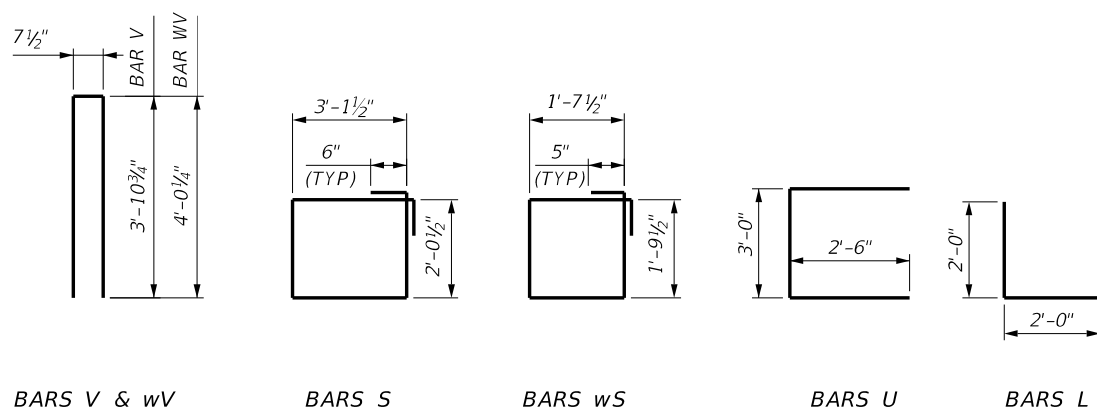


BACKWALL DETAIL

(WITH APPROACH SLAB)

KEYED NOTES

- SPACING BASED ON BEAM TYPE: XB20 ~ 2 EQUAL SPACES
- RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- MEASURED ALONG ϕ OF BEARING.



HL93 LOADING

NOT TO SCALE

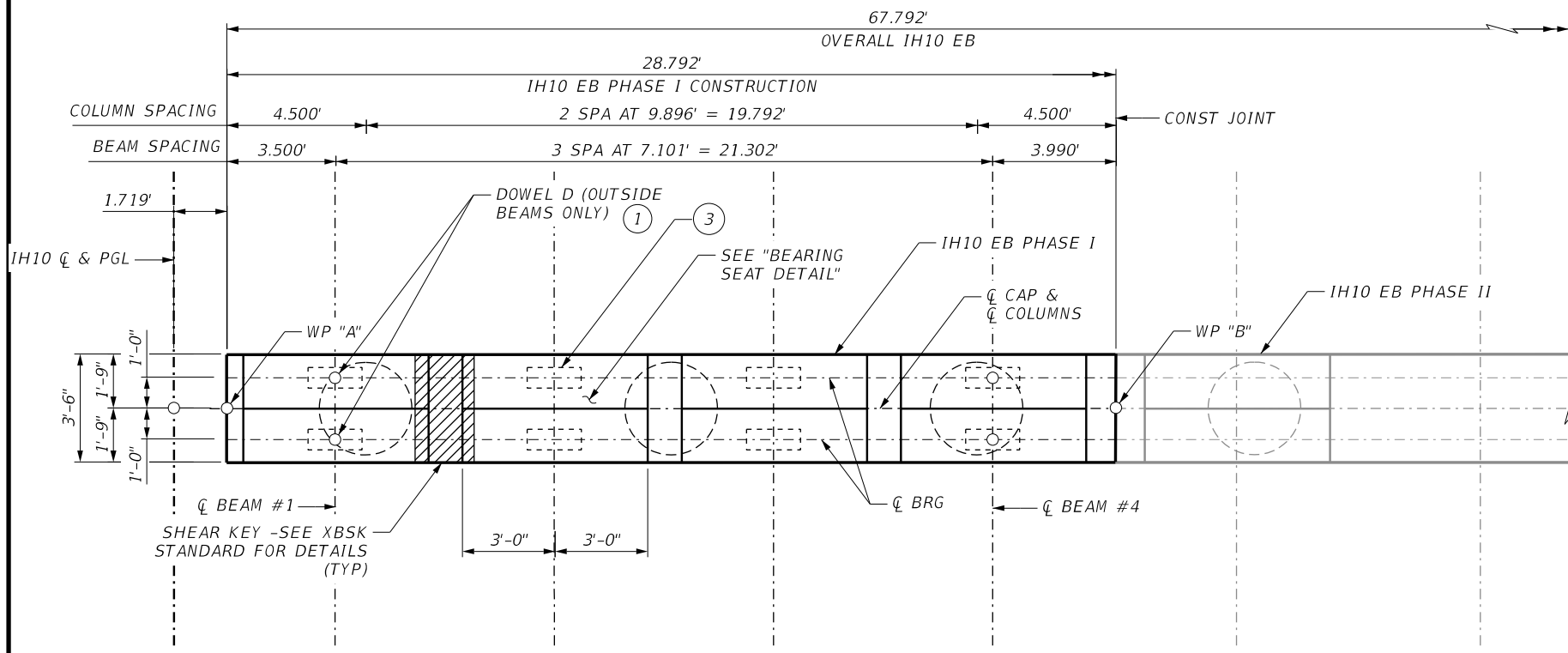
NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I & II
 MIDDLE ARROYO #2A BRIDGE
 IH10 EB
 (STA 172+03 TO STA 173+83)

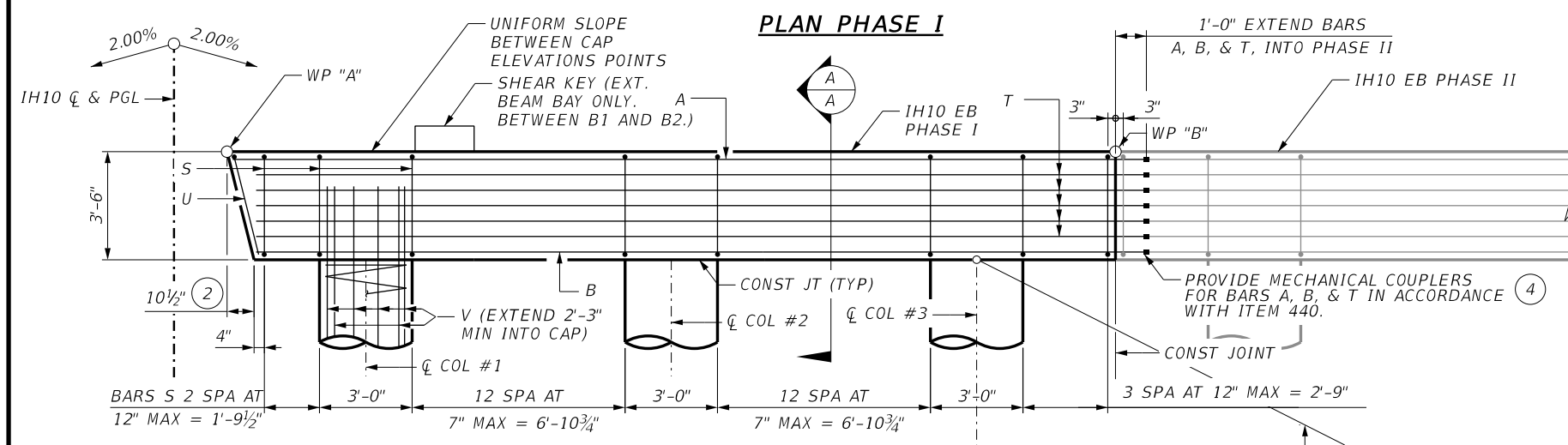
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	706



- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - GALVANIZE DOWEL BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MAY BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES. LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."

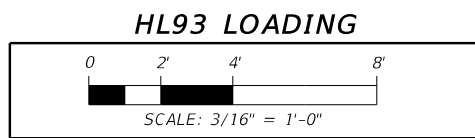


WORKING POINT ELEVATIONS

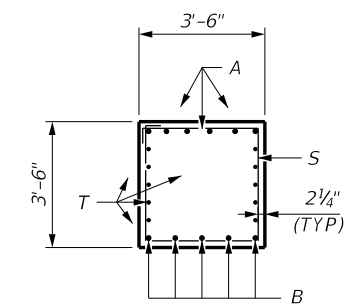
WP	ELEV	
	BENT 2	BENT 3
A	3932.77'	3933.01'
B	3932.19'	3932.44'

TOP OF COL ELEVATIONS

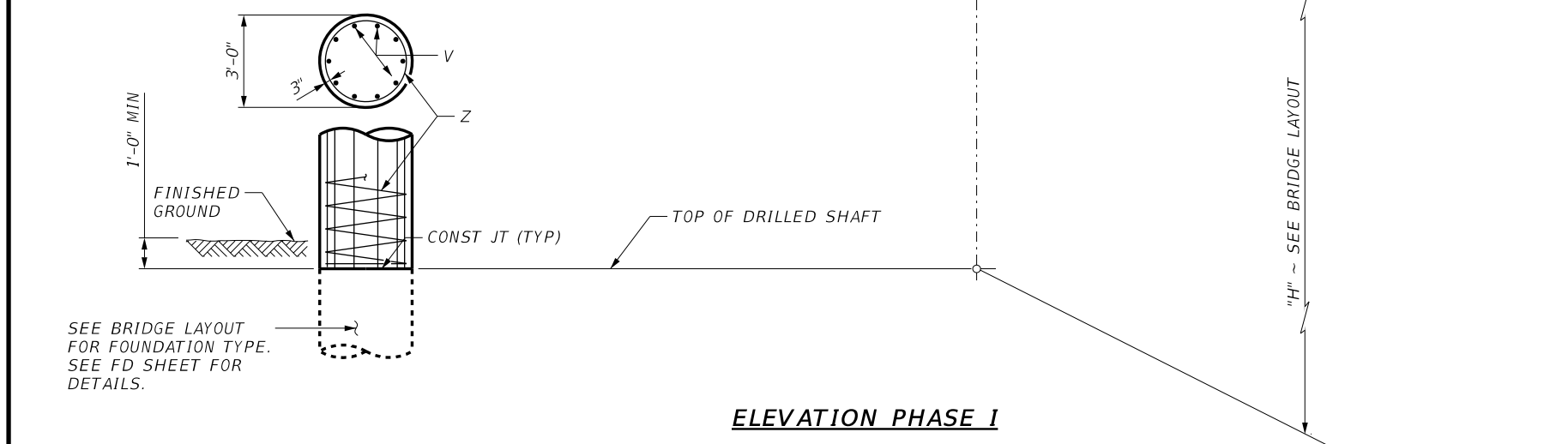
COL	ELEV	
	BENT 2	BENT 3
1	3929.18'	3929.42'
2	3928.98'	3929.22'
3	3928.78'	3929.03'



2/28/2024



SECTION A-A



ELEVATION PHASE I

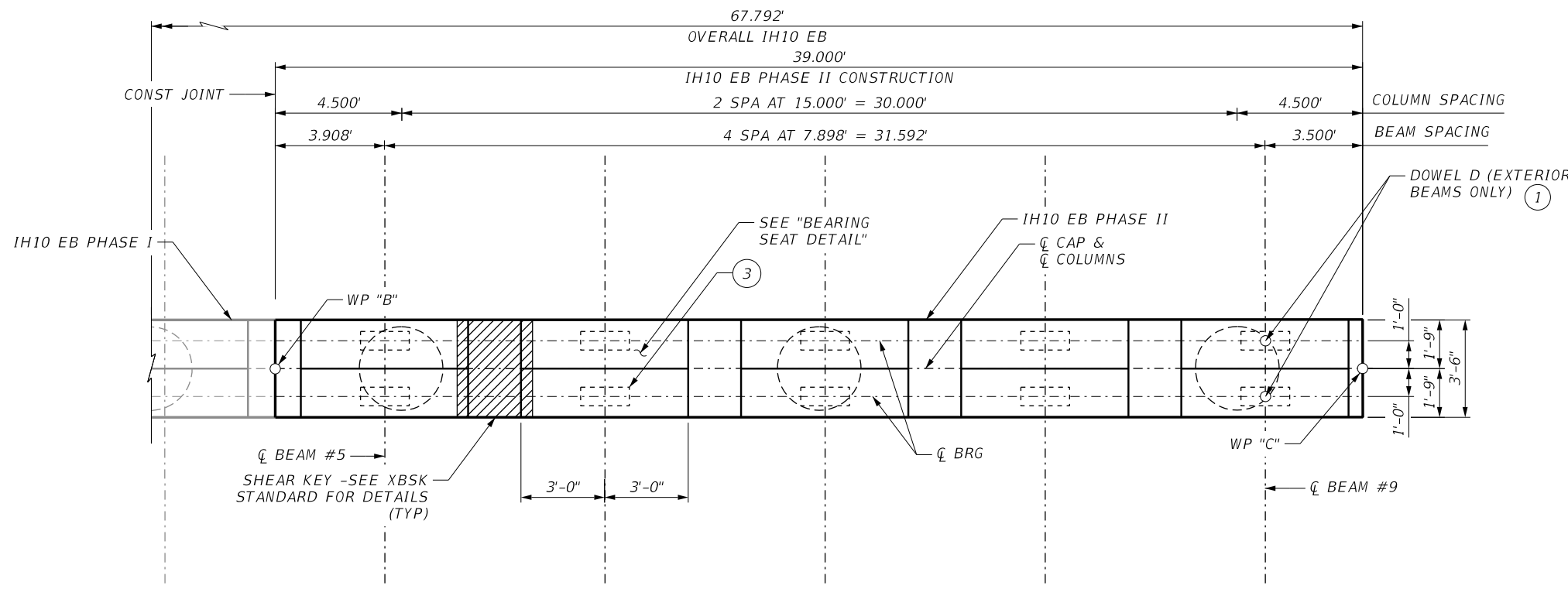
SEE BRIDGE LAYOUT FOR FOUNDATION TYPE. SEE FD SHEET FOR DETAILS.



IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I
 MIDDLE ARROYO #2A BRIDGE
 IH10 EB
 (STA 172+03 TO STA 173+83)

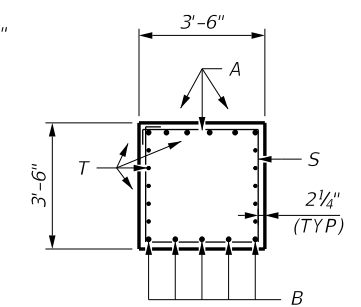
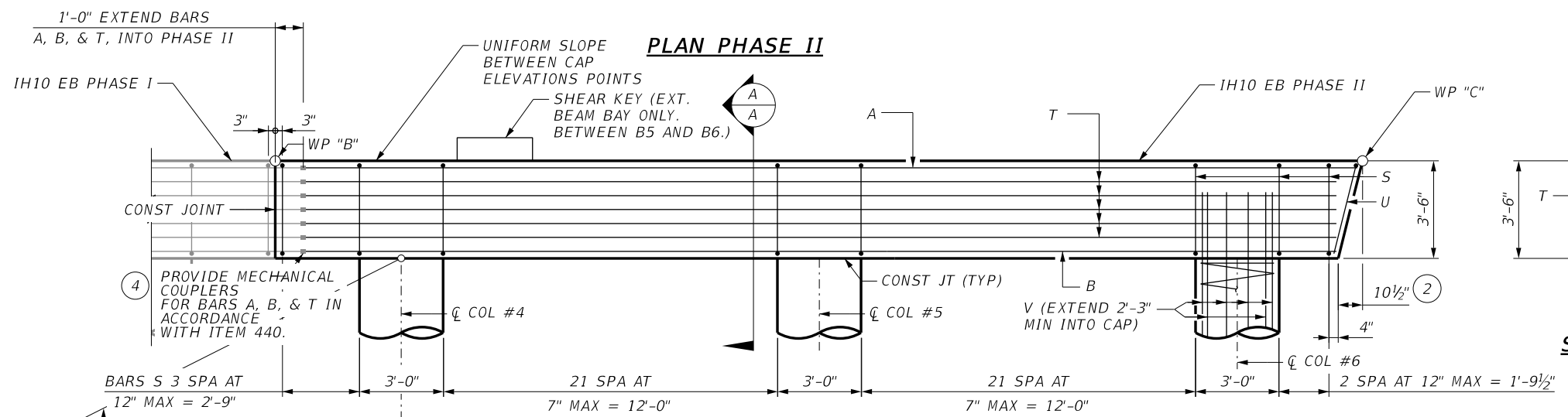
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	707

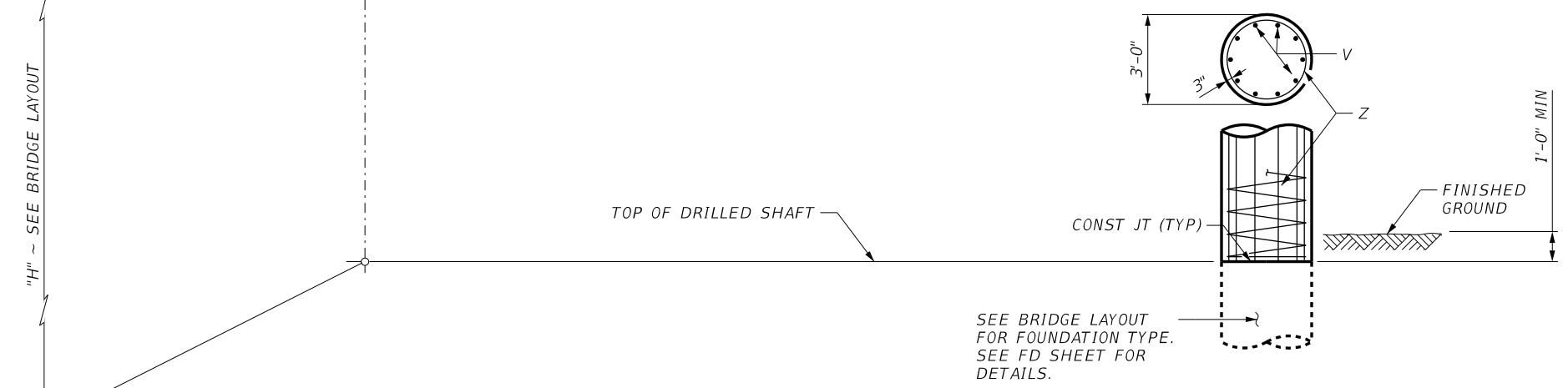


- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - GALVANIZE DOWEL BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MAY BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



SECTION A-A



ELEVATION PHASE II

WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
"B"	3932.19'	3932.44'
"C"	3931.41'	3931.66'

TOP OF COL ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
4	3928.60'	3928.85'
5	3928.30'	3928.55'
6	3928.00'	3928.25'

HL93 LOADING

0 2' 4' 8'

SCALE: 3/16" = 1'-0"

STATE OF TEXAS
ELIZABETH MONTES
147931
PROFESSIONAL ENGINEER
LICENSED

2/28/2024

NO. DATE REVISION APPROV.

consor
F-12040
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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
**BENT NO. 2 & 3
PHASE II**
MIDDLE ARROYO #2A BRIDGE
IH10 EB
(STA 172+03 TO STA 173+83)

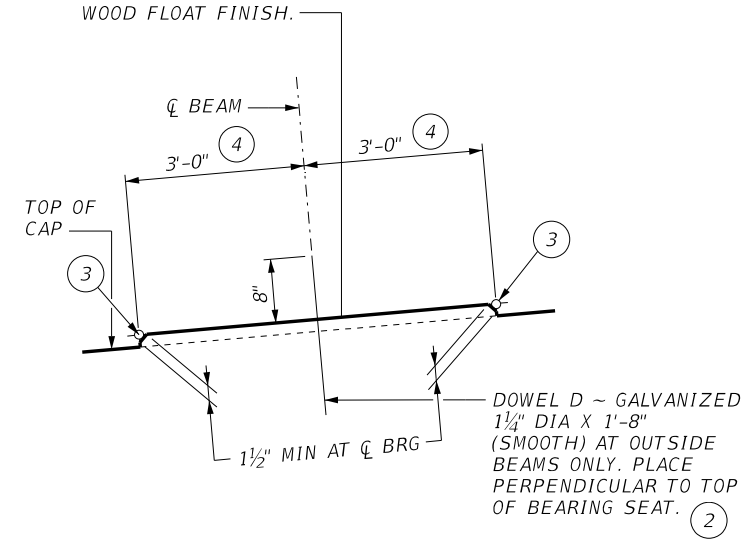
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10

STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	708

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LEVEL ALONG A LINE PERPENDICULAR TO
 CL BENT. UNIFORM SLOPE BETWEEN LEFT
 AND RIGHT BEARING SEAT ELEVATIONS WITH
 WOOD FLOAT FINISH.



BEARING SEAT DETAIL
 (BEARING SURFACE MUST BE CLEAN
 AND FREE OF ALL LOOSE MATERIAL
 BEFORE PLACING BEARING PAD.)

**TABLE OF ESTIMATED QUANTITIES PHASE I
 (ONE BNT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	29'-7"	942
B	5	#11	28'-10"	765
D	4	1 1/4"	1'-8"	28
S	33	#5	13'-6"	465
T	10	#5	28'-10"	300
U	1	#5	9'-8"	10
V	30	#9	14'-3"	1,454
Z	3	#3	400'-7"	452
ITEM			UNIT	QUANTITY
Reinforcing Steel			LB	4,415
Conc (Cap)			CY	13.5

**TABLE OF ESTIMATED QUANTITIES PHASE II
 (ONE BNT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	37'-9"	1,203
B	5	#11	37'-0"	983
D	2	1 1/4"	1'-8"	14
S	51	#5	13'-6"	718
T	10	#5	37'-0"	386
U	1	#5	9'-8"	10
V	30	#9	14'-3"	1,454
Z	3	#3	400'-7"	452
ITEM			UNIT	QUANTITY
Reinforcing Steel			LB	5,220
Conc (Cap)			CY	18.2

KEYED NOTES

- ① QUANTITIES SHOWN ARE BASED ON AN "H" VALUE OF 12'. FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
 BARS V LENGTH, 1'-0"
 BARS Z LENGTH, 23'-7"
 REINFORCING STEEL, 160 LB
 CLASS "C" CONC (COL), 0.79 CY
- ② OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- ③ RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED ELSEWHERE.
- ④ MEASURED A LONG CL OF BEARING.

HL93 LOADING

NOT TO SCALE

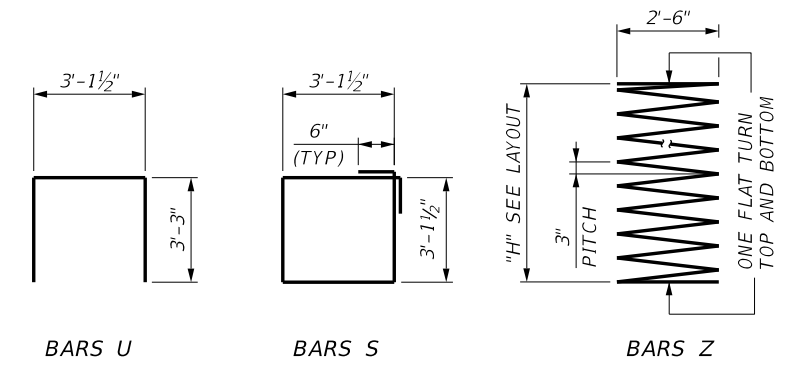
NO.	DATE	REVISION	APPROV.

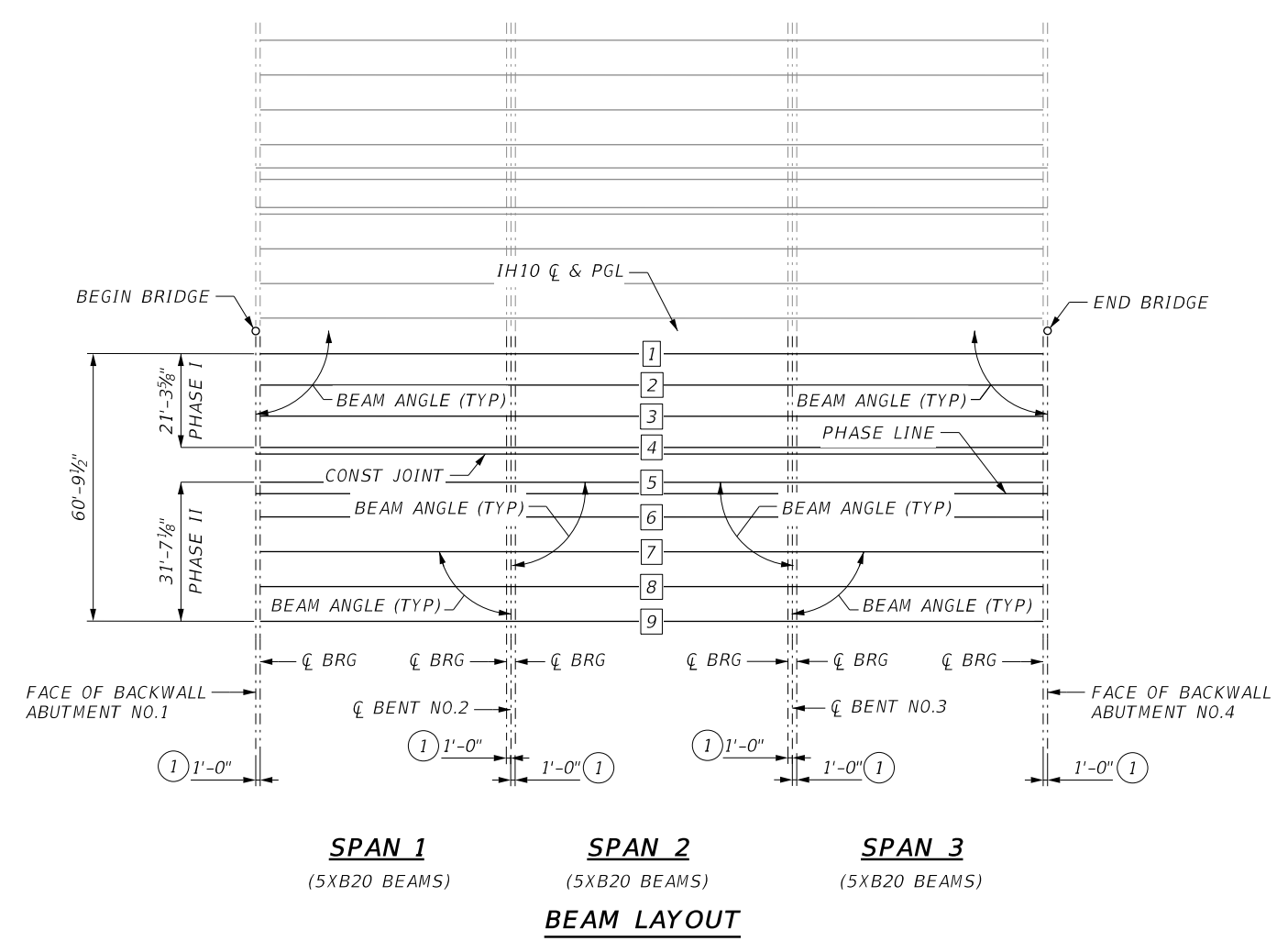
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 Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I & II
 MIDDLE ARROYO #2A BRIDGE
 IH10 EB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	709





SPAN 1
 (5XB20 BEAMS)
SPAN 2
 (5XB20 BEAMS)
SPAN 3
 (5XB20 BEAMS)
BEAM LAYOUT

KEYED NOTES

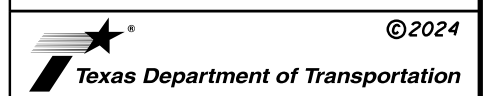
- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.

HL93 LOADING



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
MIDDLE ARROYO #2A BRIDGE
 IH10 EB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	710

BEAM REPORT

PHASE I

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 1-4.

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 1-4.

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 1-4.

PHASE II

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 5-9.

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 5-9.

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 5-9.

BENT REPORT

PHASE I

Table with columns: ABUTMENT NO. 1, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1-4, TOTAL.

Table with columns: BENT NO. 2, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1-4, TOTAL.

Table with columns: BENT NO. 2, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1-4, TOTAL.

Table with columns: BENT NO. 3, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1-4, TOTAL.

Table with columns: BENT NO. 3, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1-4, TOTAL.

Table with columns: ABUTMENT NO. 4, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1-4, TOTAL.

BENT REPORT

PHASE II

Table with columns: ABUTMENT NO. 1, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 5-9, TOTAL.

Table with columns: BENT NO. 2, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 5-9, TOTAL.

Table with columns: BENT NO. 2, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 5-9, TOTAL.

Table with columns: BENT NO. 3, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 5-9, TOTAL.

Table with columns: BENT NO. 3, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 5-9, TOTAL.

Table with columns: ABUTMENT NO. 4, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 5-9, TOTAL.

KEYED NOTES

1 BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.

HL93 LOADING

NOT TO SCALE



2/28/2024



F-12040



IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
MIDDLE ARROYO #2A BRIDGE
IH10 EB
(STA 172+03 TO STA 173+83)

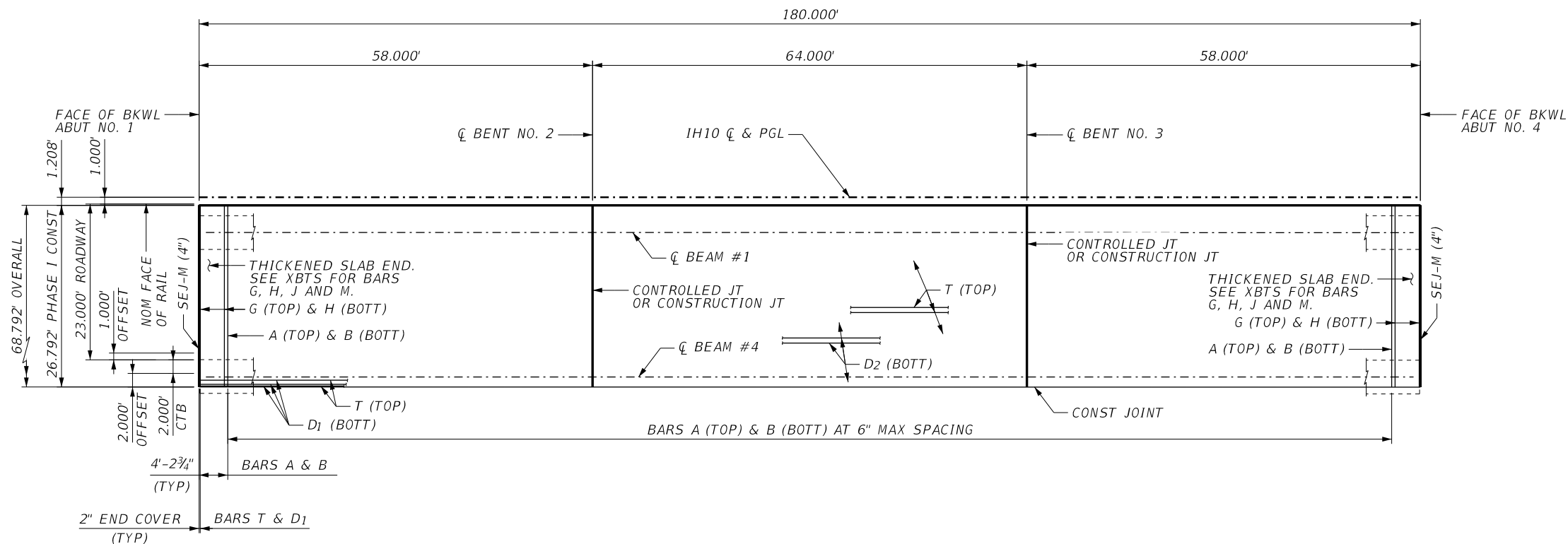
SHEET 2 OF 2

Table with columns: FED. RD. DIV. NO., STATE, FEDERAL AID PROJECT, HIGHWAY NO., STATE DISTRICT, COUNTY, CONTROL NO., SECTION NO., JOB NO., SHEET NO.

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
- SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
- SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
- ALL REINFORCING MUST BE GRADE 60.
- CONCRETE STRENGTH F'C = 4,000 PSI.
- BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:

EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
- SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.



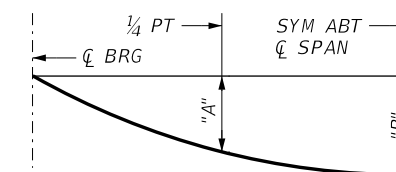
SPAN 1

SPAN 2

SPAN 3

PLAN PHASE I

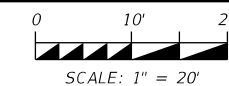
SPAN	BEAM	"A"	"B"
NO.	NO.	FT	FT
1	1	0.053	0.076
	2&3	0.050	0.072
	4	0.053	0.076
2	1	0.080	0.114
	2&3	0.076	0.107
	4	0.080	0.113
3	1	0.053	0.076
	2&3	0.050	0.072
	4	0.053	0.076



DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY (EC = 5,000 KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

HL93 LOADING



2/28/2024

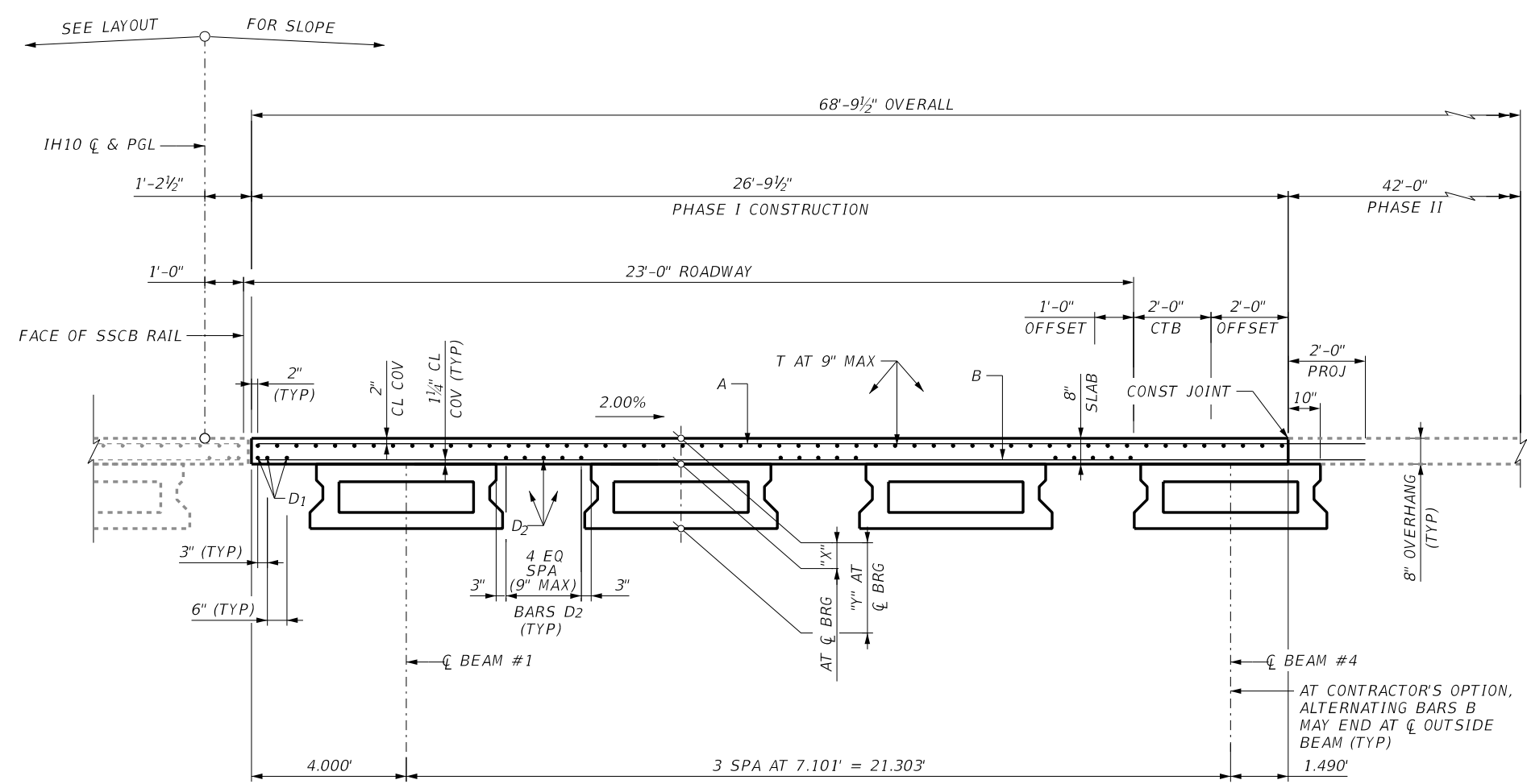
NO.	DATE	REVISION	APPROV.



**IH 10 WIDENING (NMSL/SPUR 37)
 PRESTRESSED CONCRETE
 X-BEAM (5XB20) UNITS
 PHASE I
 MIDDLE ARROYO #2A BRIDGE
 IH10 EB
 (STA 172+03 TO STA 173+83)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	712



TYPICAL TRANSVERSE SECTION PHASE I
(5XB20) SPANS 1 THRU 3

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

TABLE OF ESTIMATED QUANTITIES PHASE I

SPAN NO.	REINF CONCRETE SLAB	PRESTR CONCRETE X-BEAMS (5XB20)	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	1,554	232.00	45.42	10,101
2	1,715	256.00	50.08	11,146
3	1,554	232.00	45.42	10,101
TOTAL	4,823	720.00	140.91	31,348

TABLE OF SECTION DEPTHS FOR PHASE I

SPAN NO.	BEAM NO.	"X" IN	"Y" IN
1	1-4	11 1/4	31 1/4
2	1-4	11 3/4	31 3/4
3	1-4	11 1/4	31 1/4

HL93 LOADING

NOT TO SCALE



2/28/2024

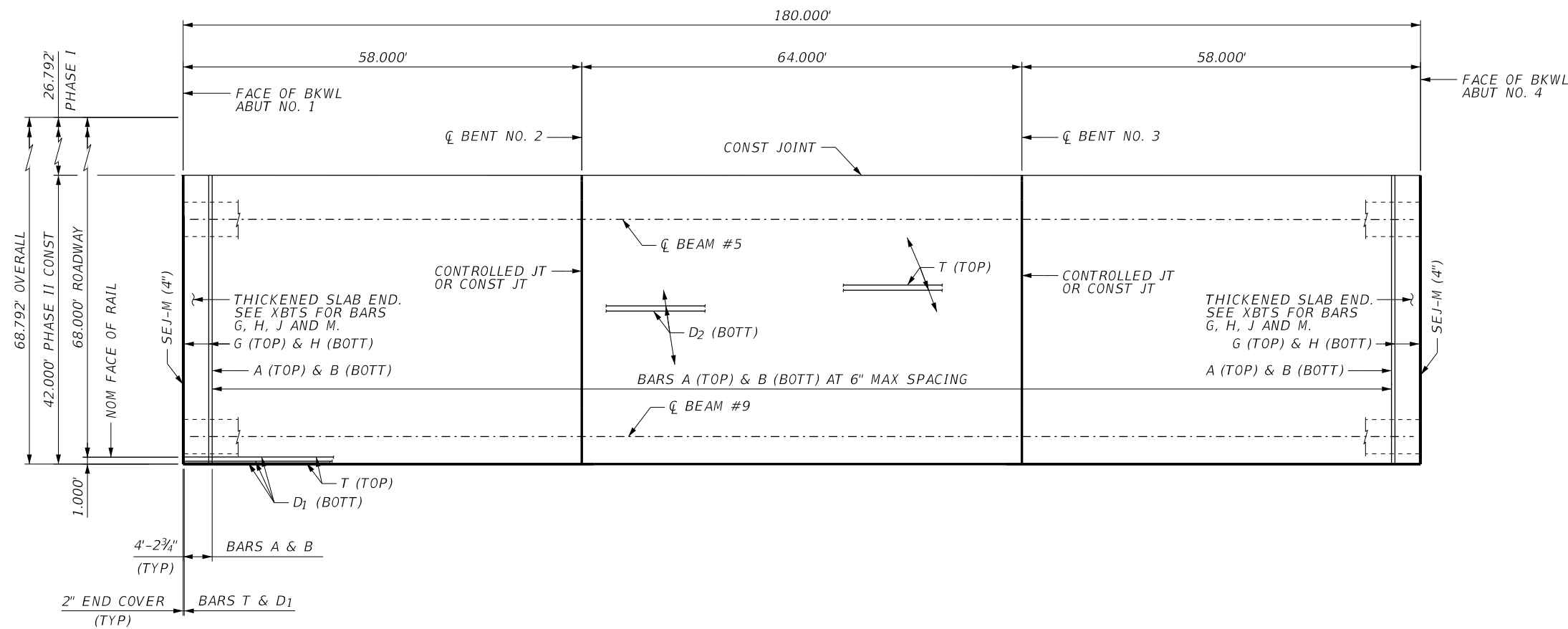


**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE I
MIDDLE ARROYO #2A BRIDGE
IH10 EB
(STA 172+03 TO STA 173+83)**

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	713

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 2/28/2024



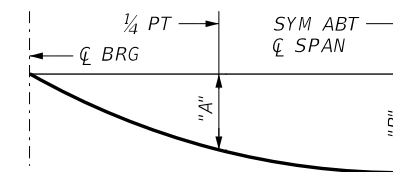
SPAN 1

SPAN 2

SPAN 3

PLAN PHASE II

TABLE OF DEFLECTIONS PHASE II			
SPAN	BEAM	"A"	"B"
NO.	NO.	FT	FT
1	5 - 9	0.056	0.080
2	5 - 8	0.084	0.120
	9	0.085	0.120
3	5 - 9	0.056	0.080



DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY (EC = 5,000 KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

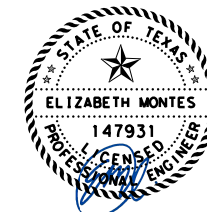
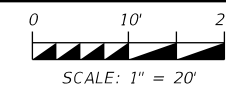
GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
- SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
- SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
- ALL REINFORCING MUST BE GRADE 60.
- CONCRETE STRENGTH F'C = 4,000 PSI.
- BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:

EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"

- SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

HL93 LOADING



2/28/2024



F-12040



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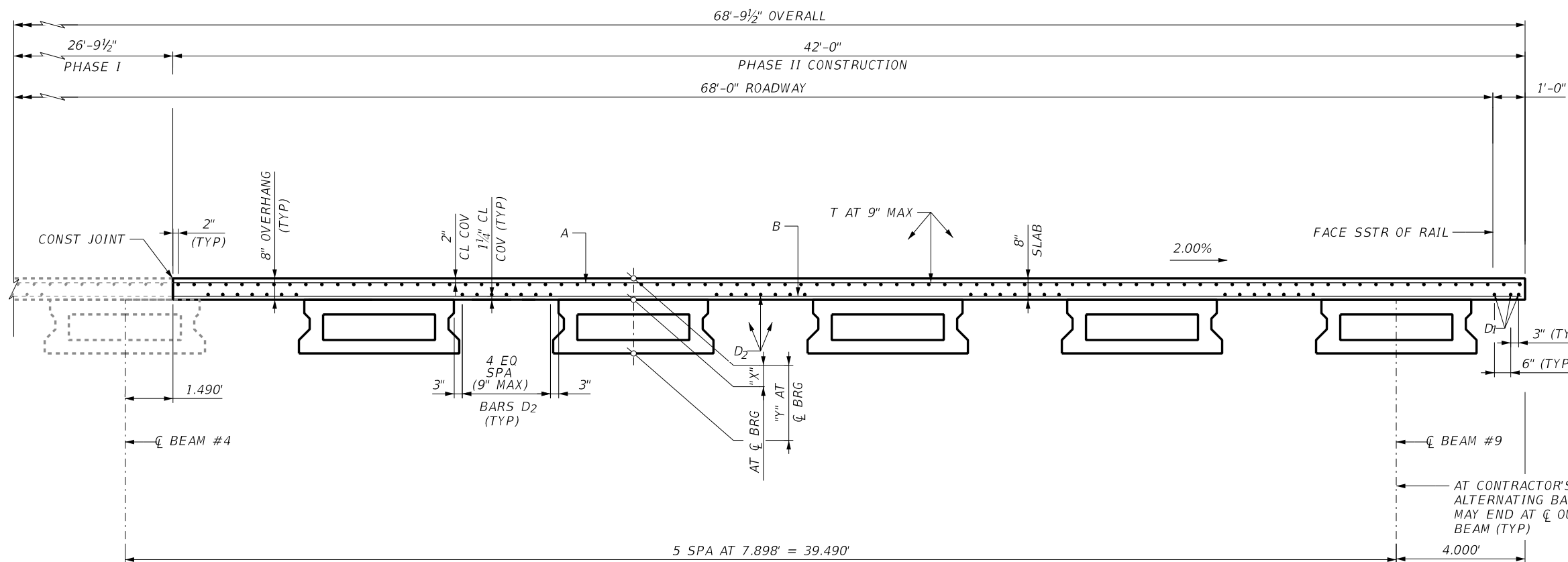
IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE X-BEAM (5XB20) UNITS
PHASE II
MIDDLE ARROYO #2A BRIDGE
IH10 EB
(STA 172+03 TO STA 173+83)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	714

BAR TABLE PHASE II

BAR	SIZE
A	#5
B	#5
D	#5
G	#5
H	#5
J	#5
M	#5
T	#4



GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

TYPICAL TRANSVERSE SECTION PHASE II
(5XB20) SPANS 1 THRU 3

HL93 LOADING

NOT TO SCALE



2/28/2024

TABLE OF ESTIMATED QUANTITIES PHASE II

SPAN NO.	REINF CONCRETE SLAB	PRESTR CONCRETE X-BEAMS (5XB20)	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	2,436	290.00	69.38	15,834
2	2,688	320.00	76.04	17,472
3	2,436	290.00	69.38	15,834
TOTAL	7,560	900.00	214.81	49,140

TABLE OF SECTION DEPTHS FOR PHASE II

SPAN NO.	BEAM NO.	"X" IN	"Y" IN
58	5-9	11 1/4	31 1/4
64	5-9	11 3/4	31 3/4
58	5-9	11 1/4	31 1/4



F-12040



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IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
MIDDLE ARROYO #2A BRIDGE
IH10 EB
(STA 172+03 TO STA 173+83)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	715

GENERAL NOTES

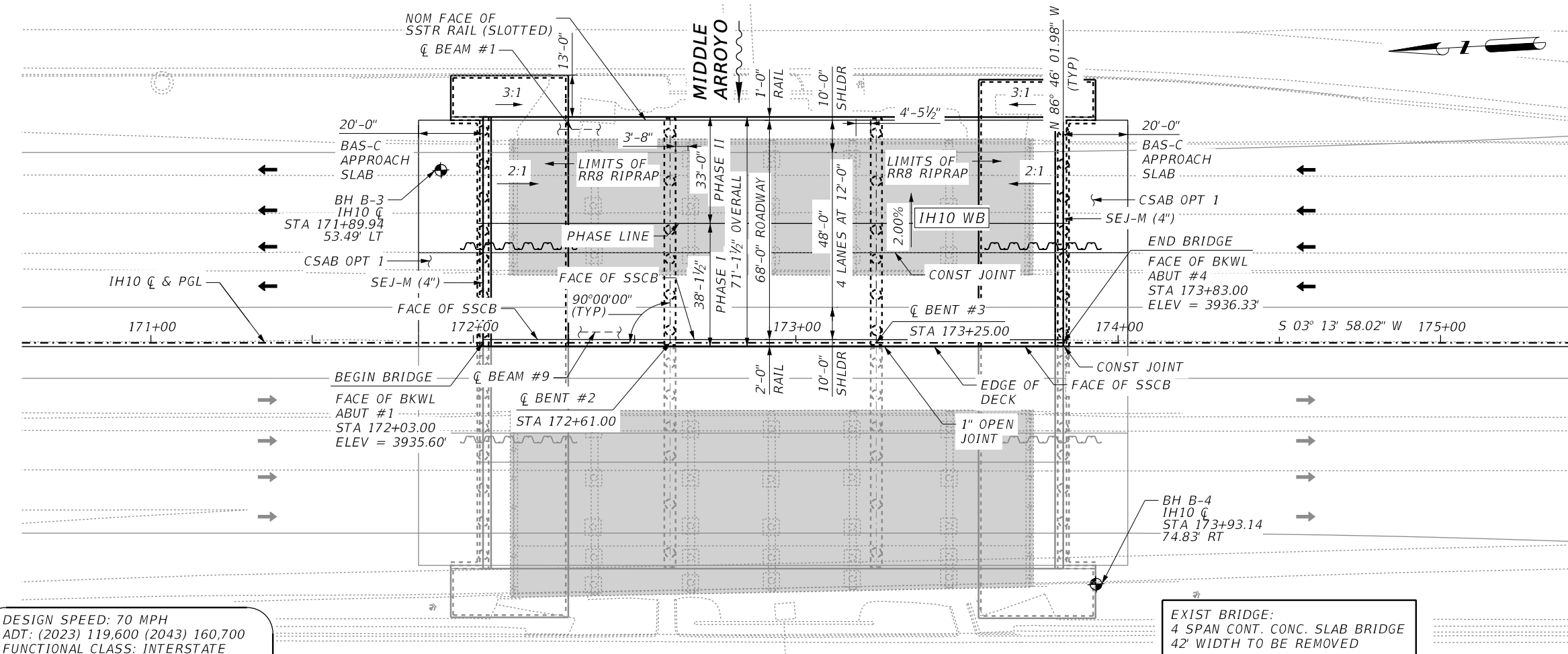
- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ◆ DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "PHASED BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING

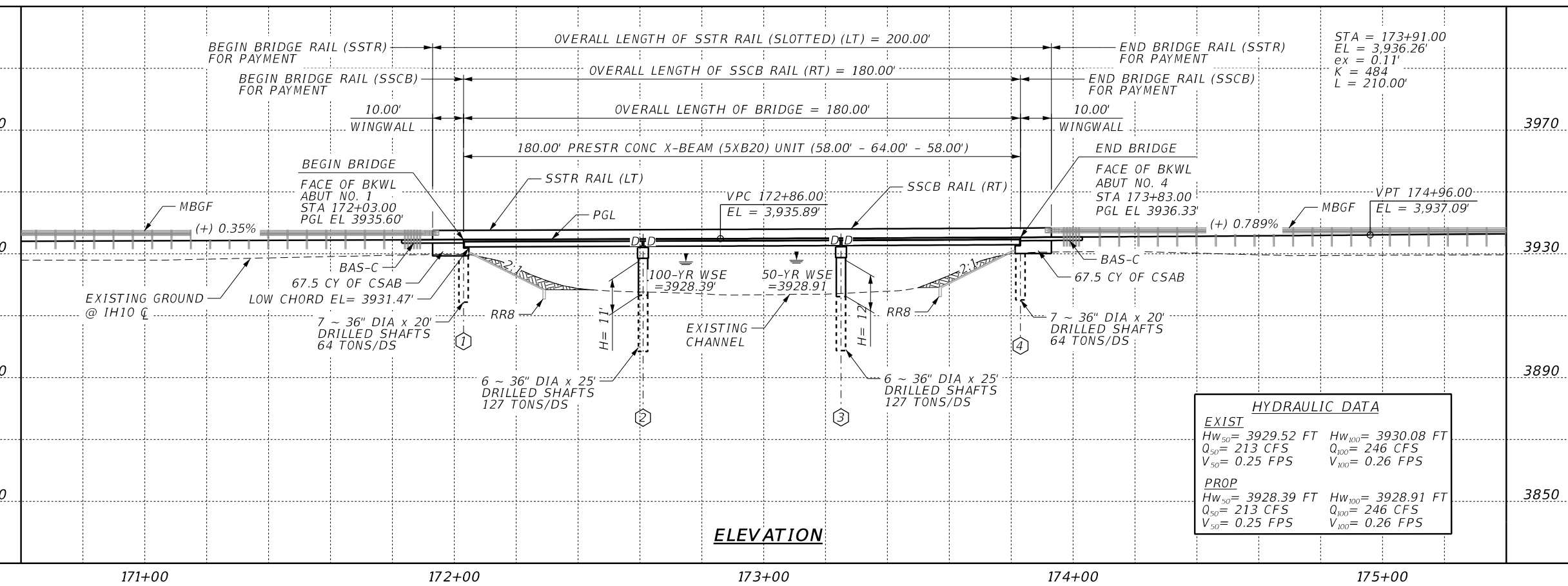
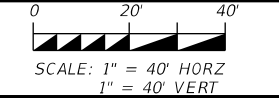
DESIGN SPEED: 70 MPH
 ADT: (2023) 119,600 (2043) 160,700
 FUNCTIONAL CLASS: INTERSTATE
 EXISTING NBI: 24-072-0-2121-01-012
 NEW NBI: 24-072-0-2121-01-367

EXIST BRIDGE:
 4 SPAN CONT. CONC. SLAB BRIDGE
 42' WIDTH TO BE REMOVED



PLAN VIEW

HL93 LOADING



ELEVATION

HYDRAULIC DATA

EXIST		PROP	
Hw ₅₀ = 3929.52 FT	Hw ₁₀₀ = 3930.08 FT	Hw ₅₀ = 3928.39 FT	Hw ₁₀₀ = 3928.91 FT
Q ₅₀ = 213 CFS	Q ₁₀₀ = 246 CFS	Q ₅₀ = 213 CFS	Q ₁₀₀ = 246 CFS
V ₅₀ = 0.25 FPS	V ₁₀₀ = 0.26 FPS	V ₅₀ = 0.25 FPS	V ₁₀₀ = 0.26 FPS

3/21/2024

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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)

BRIDGE LAYOUT
 MIDDLE ARROYO #2B BRIDGE
 IH10 WB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 1




FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.		
104	716		

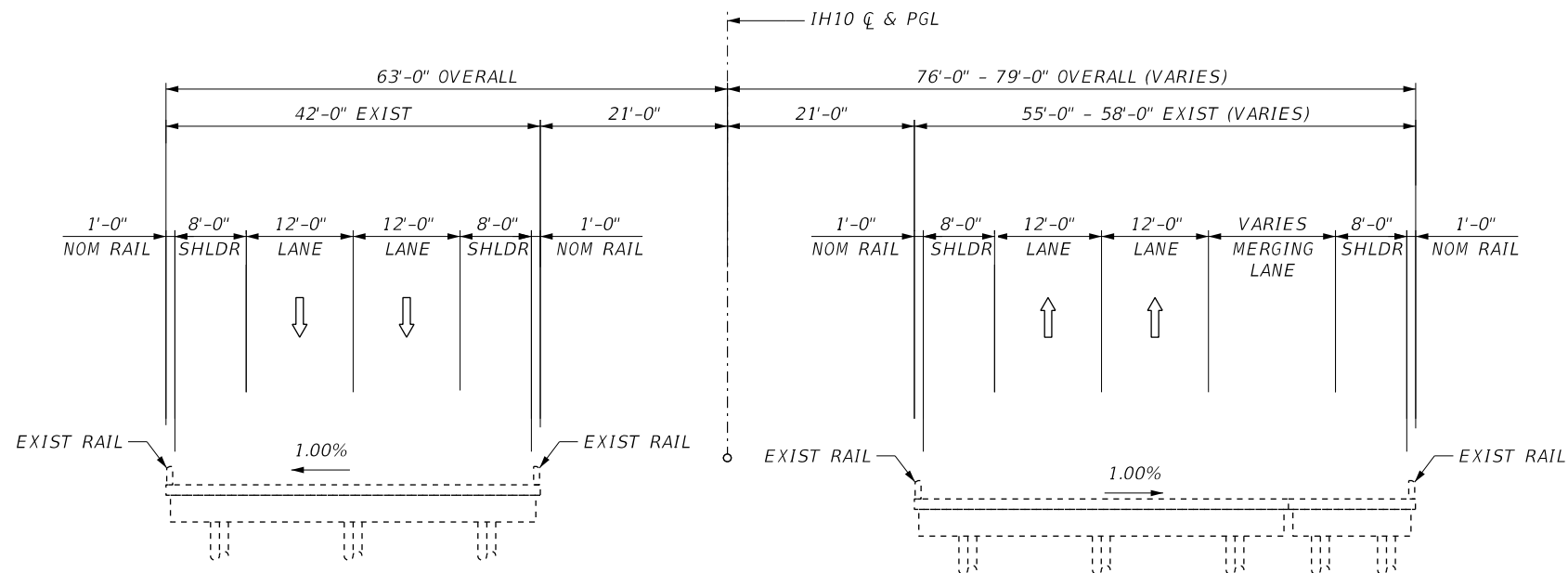
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GENERAL NOTES

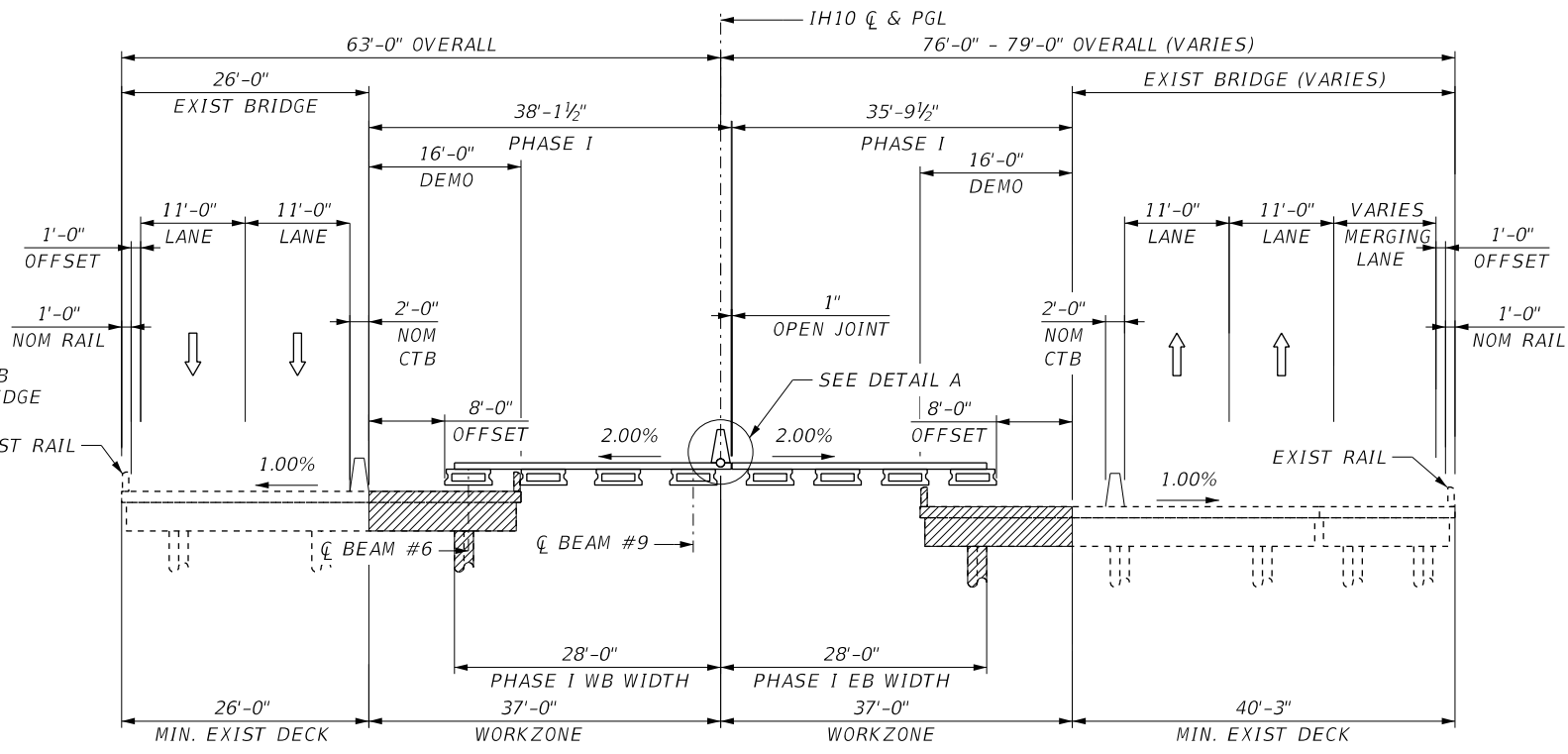
- CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

LEGEND

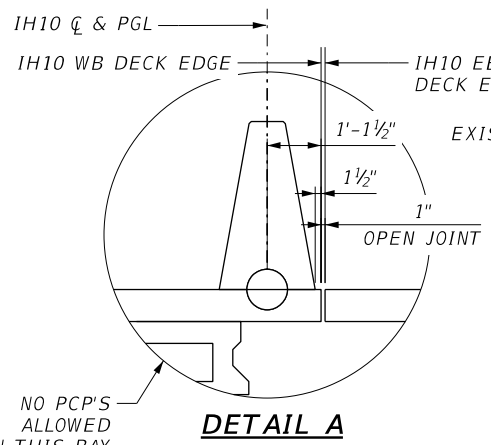
-  EXISTING TRAFFIC FLOW ARROW
-  PROPOSED TRAFFIC FLOW ARROW
-  DEMOLITION OF EXIST BRIDGE



EXISTING SECTION



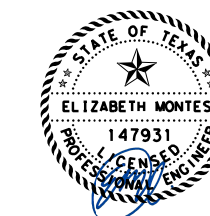
PHASE I SECTION



DETAIL A

HL93 LOADING

NOT TO SCALE



2/28/2024



F-12040



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IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
MIDDLE ARROYO #2B BRIDGE
 IH10 WB
 (STA 172+03 TO STA 173+83)




SHEET 1 OF 2

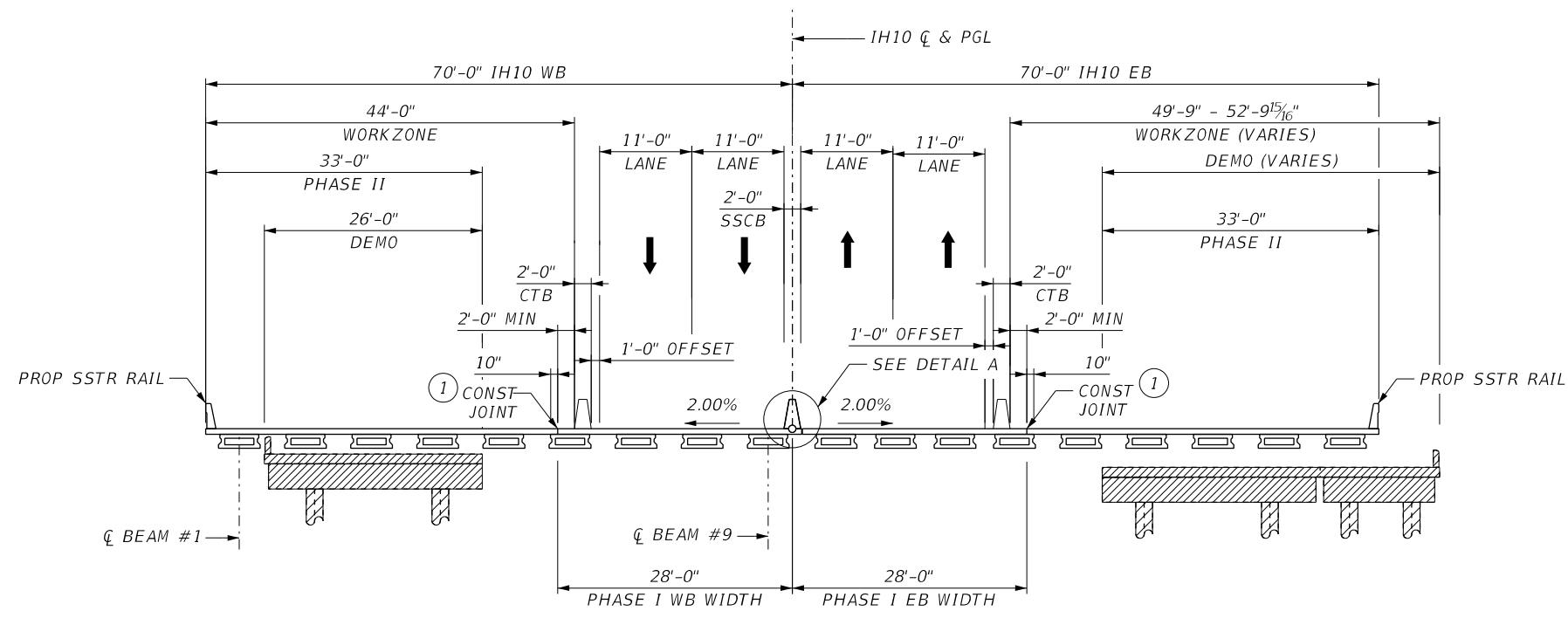
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6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	717

GENERAL NOTES

- CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

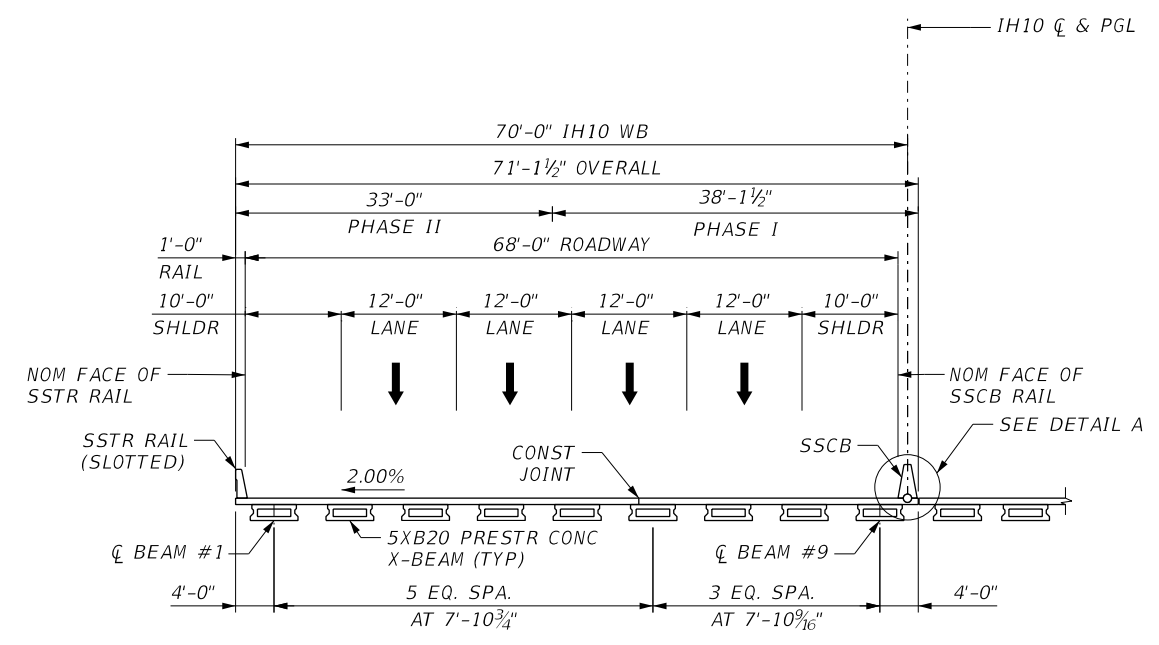
LEGEND

-  EXISTING TRAFFIC FLOW ARROW
-  PROPOSED TRAFFIC FLOW ARROW
-  DEMOLITION OF EXIST BRIDGE

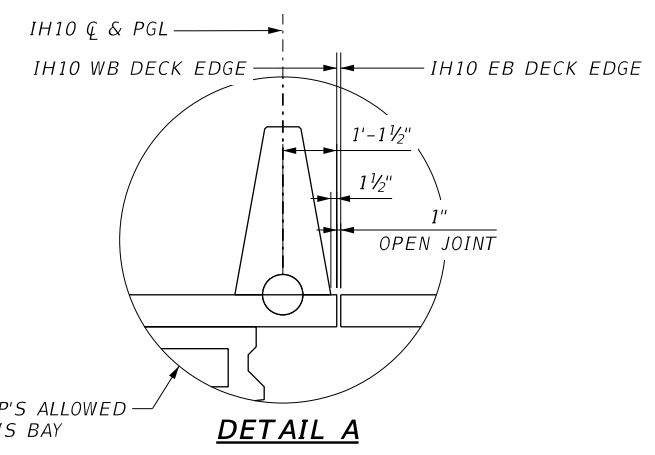


PHASE II SECTION

① EDGE OF DECK TO EDGE OF TOP OF BEAM.



IH10 WB FINAL SECTION



DETAIL A

HL93 LOADING

NOT TO SCALE



2/28/2024



**IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)**

SHEET 2 OF 2

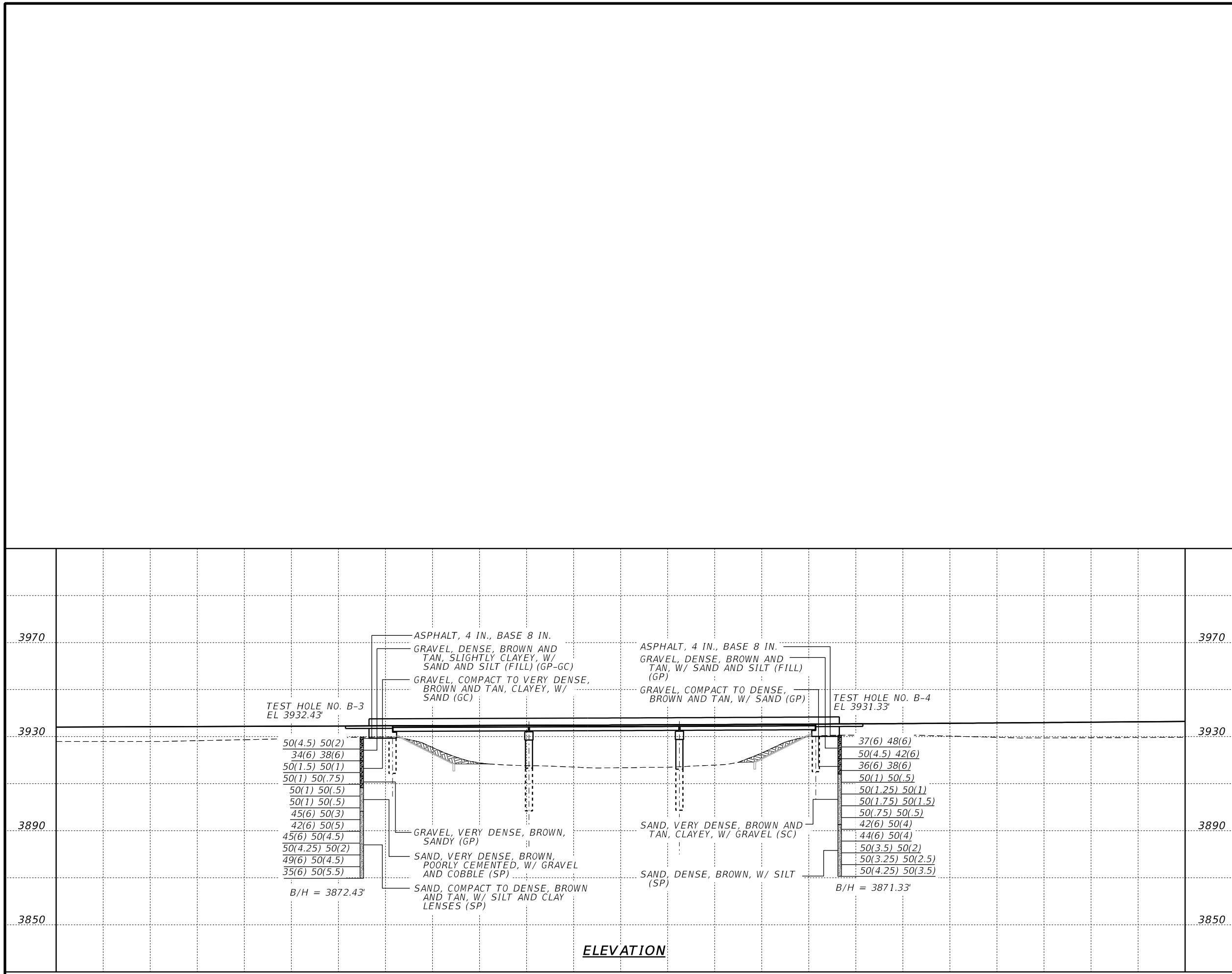
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6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	718

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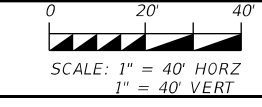
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HL93 LOADING



NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
BORING LOGS
 MIDDLE ARROYO #2A & #2B BRIDGE
 IH10 EB & IH10 WB
 (STA 172+03 TO STA 173+83)

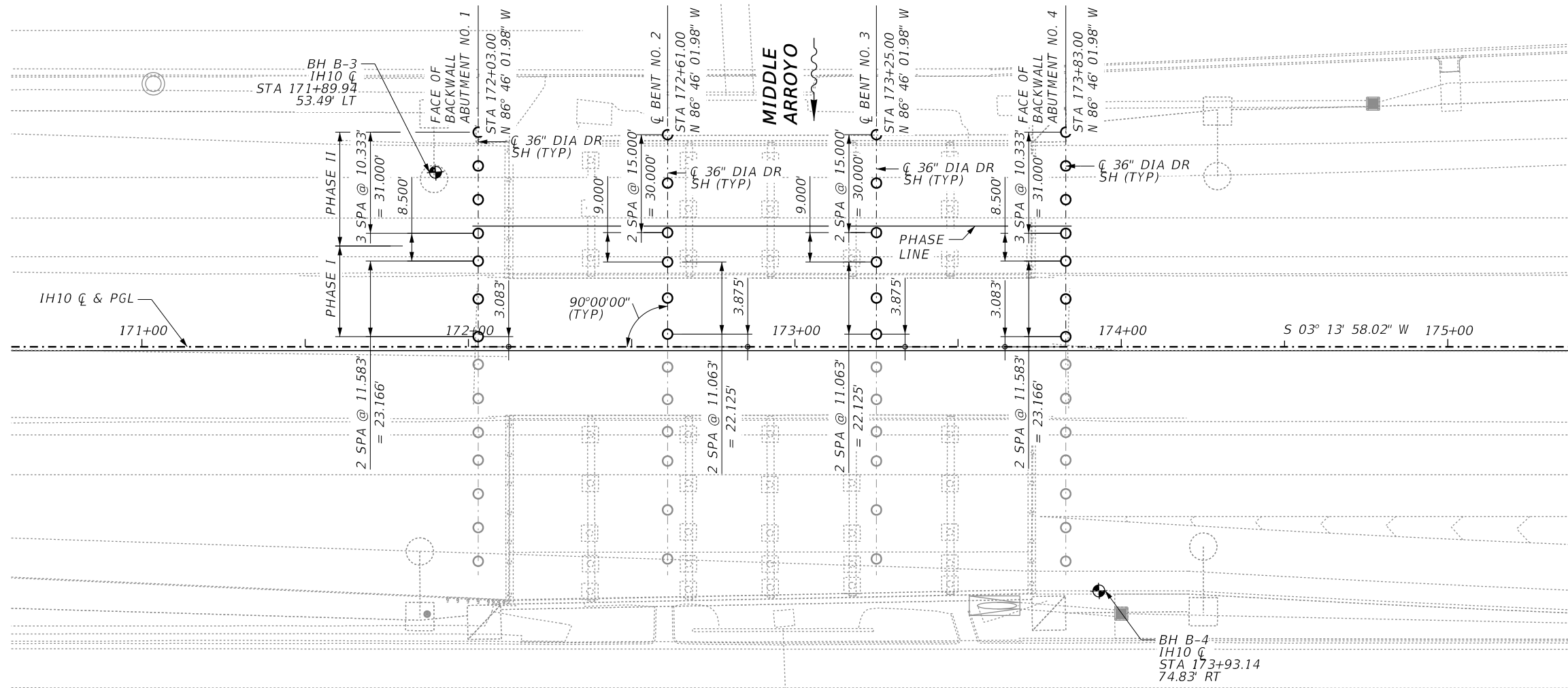
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	719

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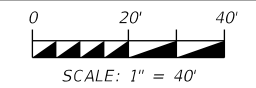
GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.



LEGEND
 BORE HOLE

HL93 LOADING



2/28/2024

FOUNDATION LOADS	
ABUT/BENT	TONS/SHAFT
1&4	64
2&3	127



IH 10 WIDENING (NMSL/SPUR 37)

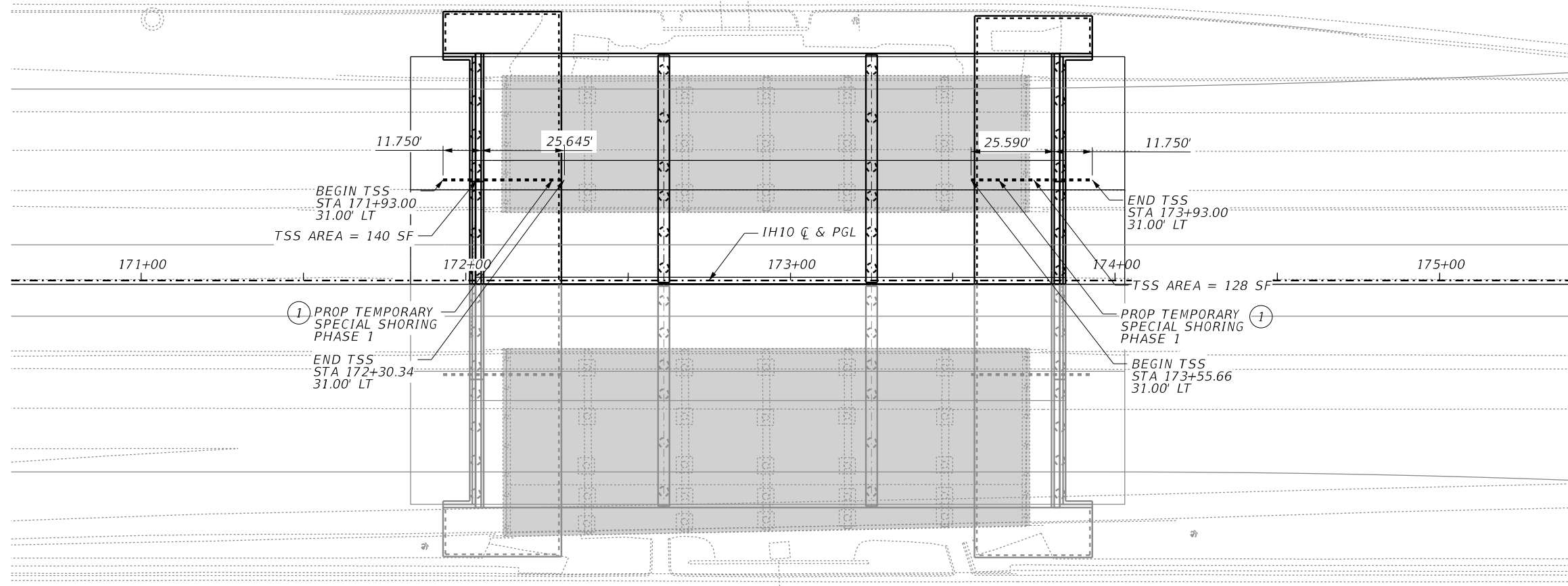
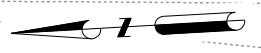
FOUNDATION LAYOUT
 MIDDLE ARROYO #2B BRIDGE
 IH10 WB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	720

LEGEND

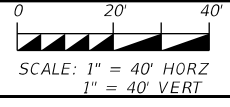
TEMPORARY SPL SHORING



PLAN VIEW

1 PAID FOR UNDER ITEM 403 TEMPORARY SPL SHORING.

HL93 LOADING



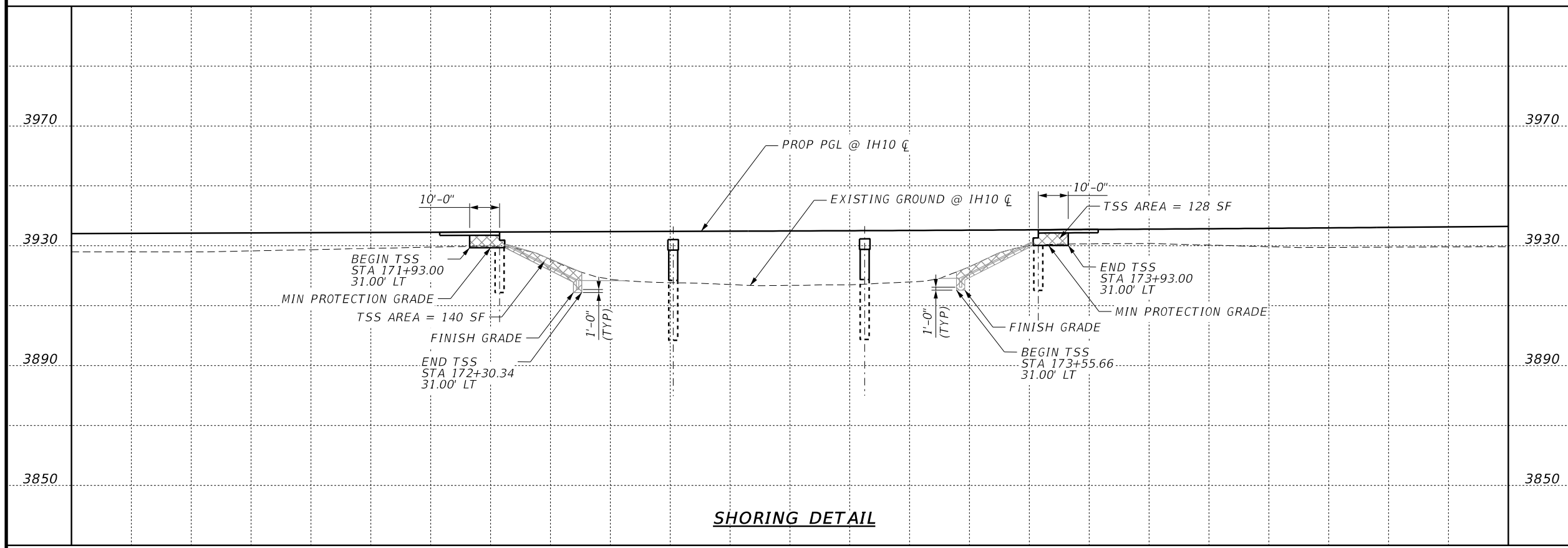
2/28/2024



IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	721



SHORING DETAIL

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				PHASE II					PHASE I				
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	
1	ABUT	1	(FWD)	L	3931.364	3931.522	3931.680	3931.838	3931.996	3932.154	3932.312	3932.469	3932.627
				R	3931.484	3931.642	3931.800	3931.958	3932.116	3932.274	3932.432	3932.589	3932.747
2	BENT	2	(BK)	L	3931.564	3931.721	3931.879	3932.037	3932.195	3932.353	3932.511	3932.668	3932.826
				R	3931.684	3931.841	3931.999	3932.157	3932.315	3932.473	3932.631	3932.788	3932.946
	2	(FWD)	L	3931.529	3931.687	3931.845	3932.002	3932.160	3932.318	3932.476	3932.634	3932.791	
			R	3931.649	3931.807	3931.965	3932.122	3932.280	3932.438	3932.596	3932.754	3932.911	
3	BENT	3	(BK)	L	3931.763	3931.921	3932.079	3932.237	3932.395	3932.553	3932.710	3932.868	3933.025
				R	3931.883	3932.041	3932.199	3932.357	3932.515	3932.673	3932.830	3932.988	3933.145
	3	(FWD)	L	3931.814	3931.971	3932.129	3932.287	3932.445	3932.603	3932.761	3932.919	3933.076	
			R	3931.934	3932.091	3932.249	3932.407	3932.565	3932.723	3932.881	3933.039	3933.196	
4	ABUT	4	(BK)	L	3932.090	3932.248	3932.406	3932.564	3932.722	3932.880	3933.038	3933.195	3933.353
				R	3932.210	3932.368	3932.526	3932.684	3932.842	3933.000	3933.158	3933.315	3933.473



2/28/2024

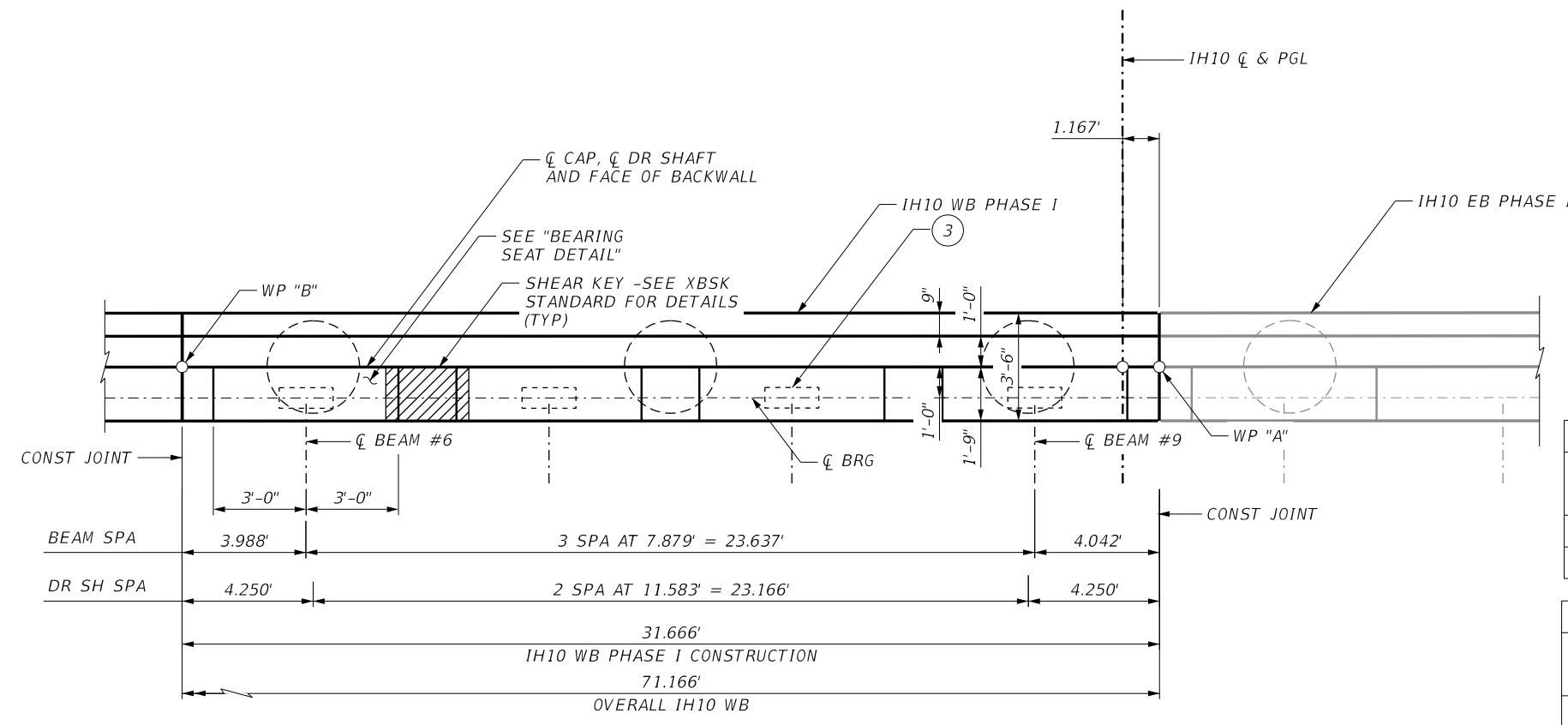
NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
BEARING SEAT ELEVATIONS
 MIDDLE ARROYO #2B BRIDGE
 IH10 WB
 (STA 172+03 R1 TO STA 173+83 R1)
 SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	722

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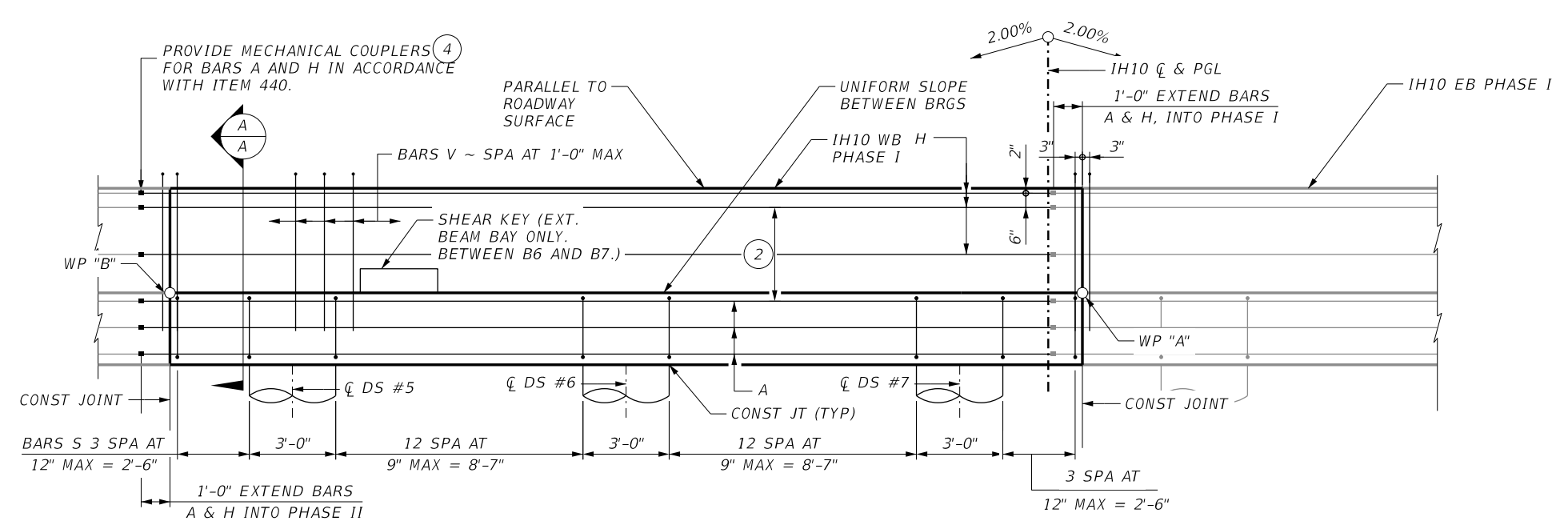
PLAN PHASE I

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
A	3932.59'	3933.33'
B	3932.01'	3932.74'

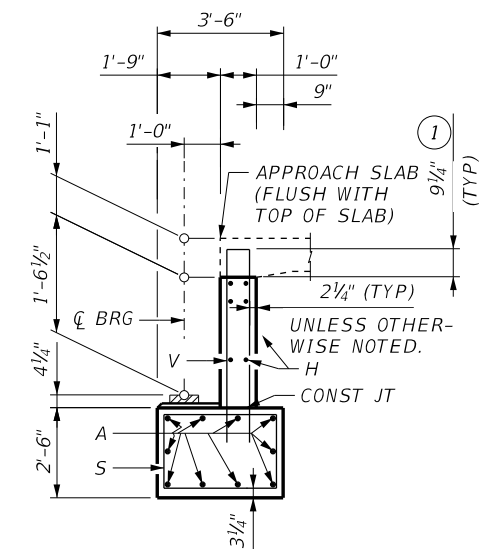
TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
5	3929.59'	3930.33'
6	3929.82'	3930.56'
7	3930.06'	3930.79'

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH F'C = 3,600 PSI.
 - ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
 - SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- INCREASE AS REQUIRED TO MAINTAIN 3/4" FROM FINISHED GRADE.
 - SPACING BASED ON BEAM TYPE:
XB20 ~ 2 EQUAL SPACES
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."

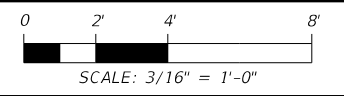


ELEVATION PHASE I



SECTION A-A

HL93 LOADING



2/28/2024

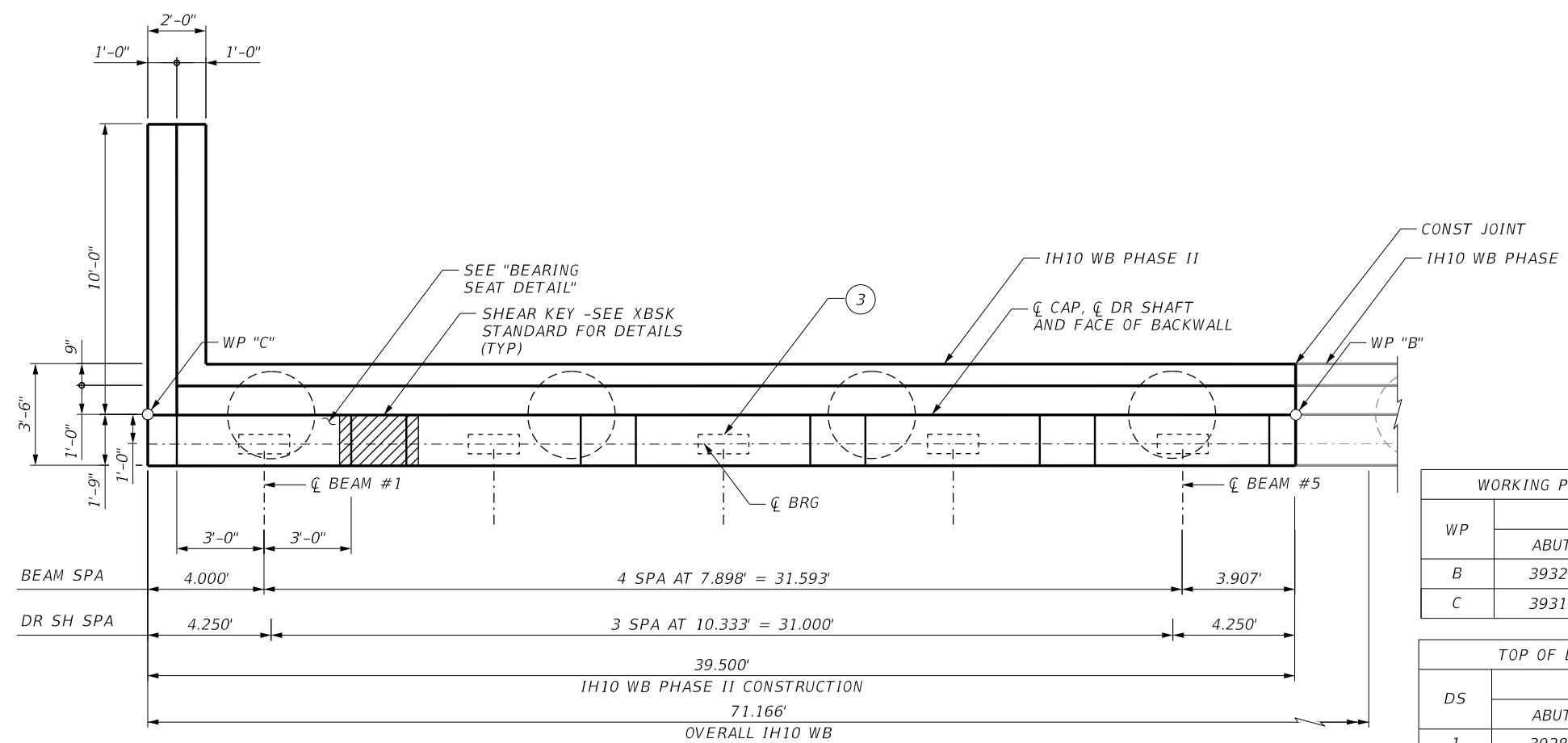


IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE I
 MIDDLE ARROYO #2B BRIDGE
 IH10 WB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	723

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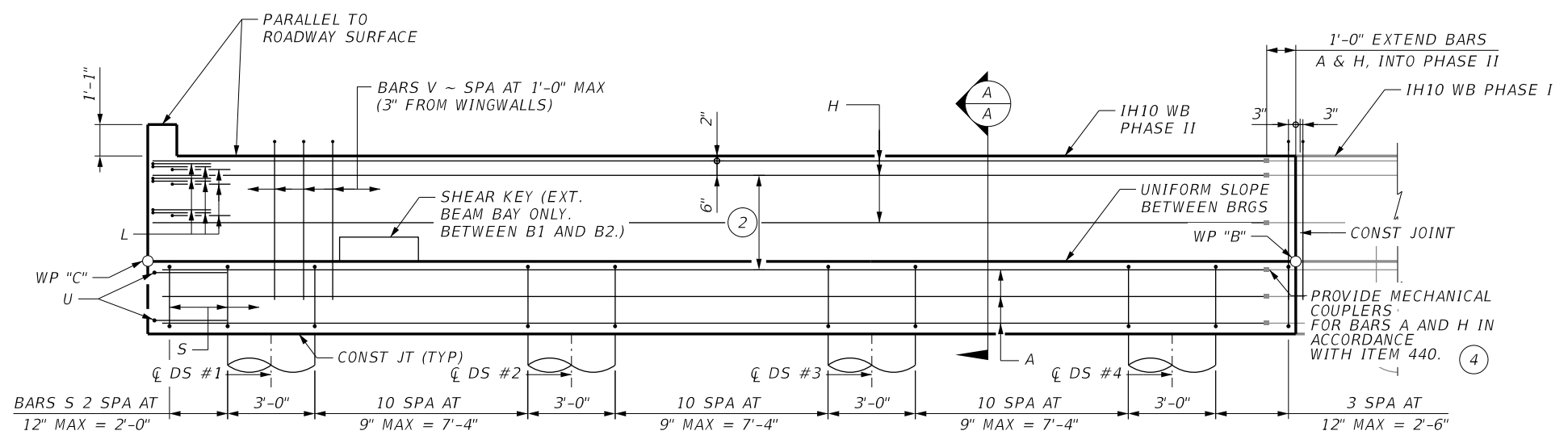
WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 4
B	3932.01'	3932.74'
C	3931.22'	3931.95'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 4
1	3928.80'	3929.54'
2	3929.01'	3929.75'
3	3929.22'	3929.95'
4	3929.42'	3930.16'

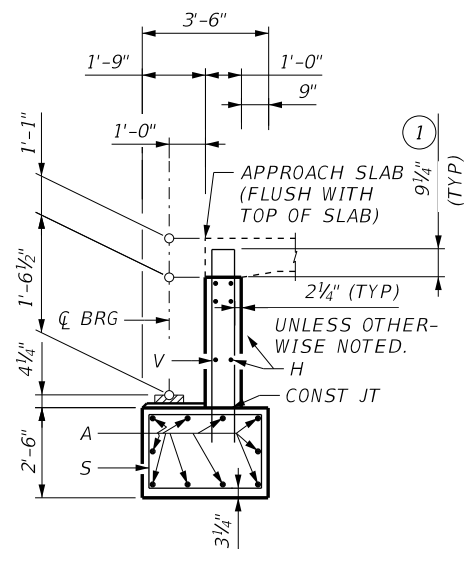
- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
 - SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
 - SPACING BASED ON BEAM TYPE:
XB20 ~ 2 EQUAL SPACES
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."

PLAN PHASE II

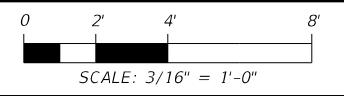


ELEVATION PHASE II



SECTION A-A

HL93 LOADING



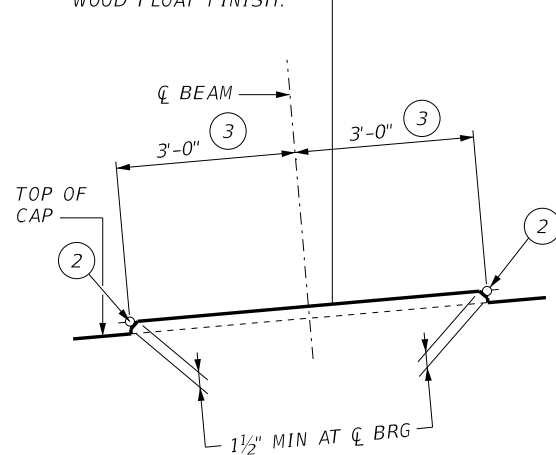
**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 4
PHASE II
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)**

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	724

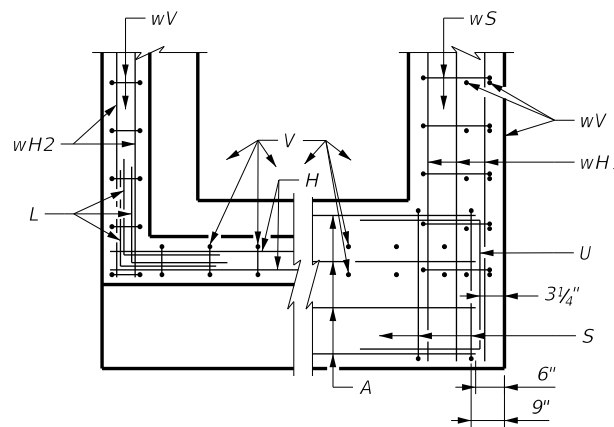
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LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



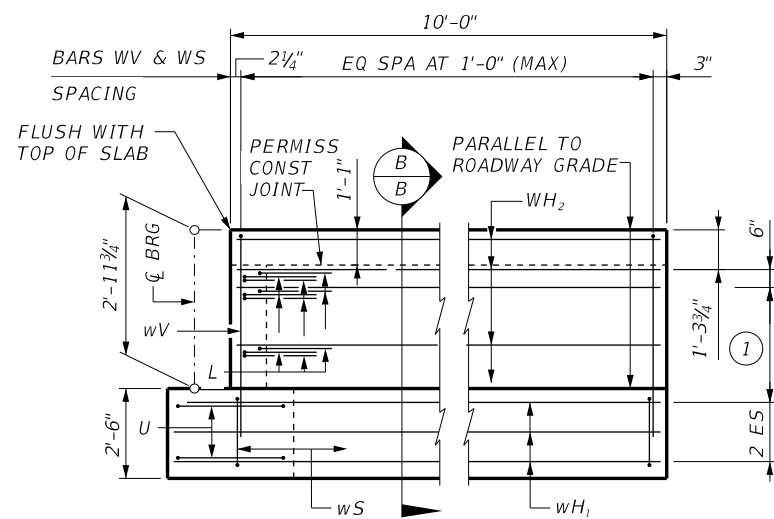
**BACKWALL
CAP
CORNER DETAILS**

**TABLE OF ESTIMATED QUANTITIES
PHASE I (ONE ABUT)**

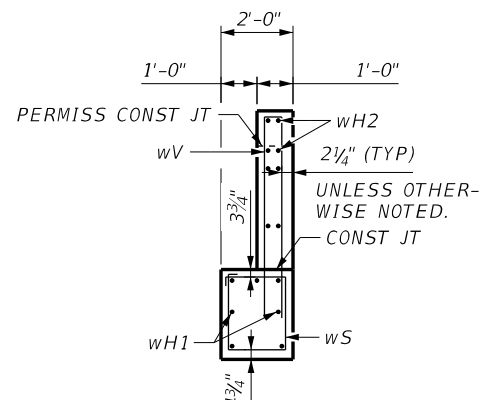
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31'-8"	1,682
H	6	#6	31'-8"	285
S	34	#5	11'-4"	402
V	33	#5	8'-6"	293
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,662
CONC (ABUT)			CY	12.7

**TABLE OF ESTIMATED QUANTITIES
PHASE II (ONE ABUT)**

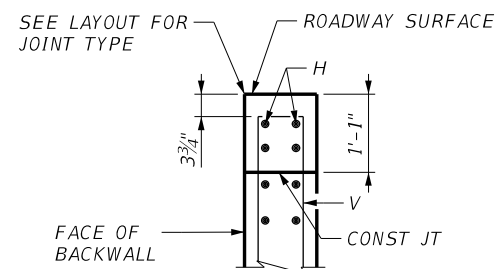
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	38'-0"	2,019
H	6	#6	38'-2"	344
L	9	#6	4'-0"	54
S	40	#5	11'-4"	473
U	2	#6	8'-0"	24
V	40	#5	8'-6"	355
wH1	7	#6	11'-5"	120
wH2	8	#6	9'-8"	116
wS	11	#4	7'-8"	56
wV	11	#5	8'-9"	100
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,661
CONC (ABUT)			CY	18.8



WINGWALL ELEVATION

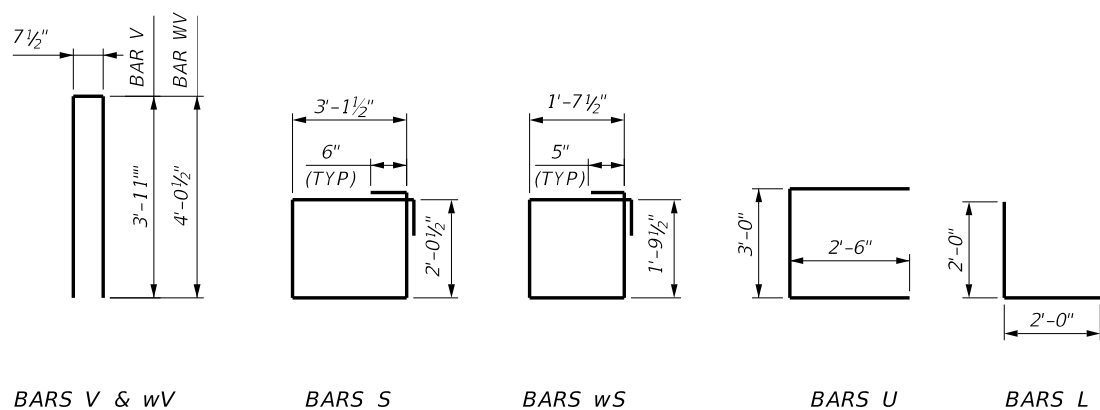


SECTION B-B



BACKWALL DETAIL

(WITH APPROACH SLAB)



BARS V & wV

BARS S

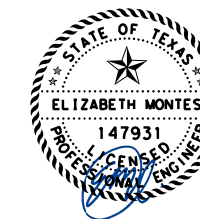
BARS wS

BARS U

BARS L

HL93 LOADING

NOT TO SCALE



2/28/2024



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IH 10 WIDENING (NMSL/SPUR 37)

**ABUTMENT NO. 1 & 4
PHASE I & II**

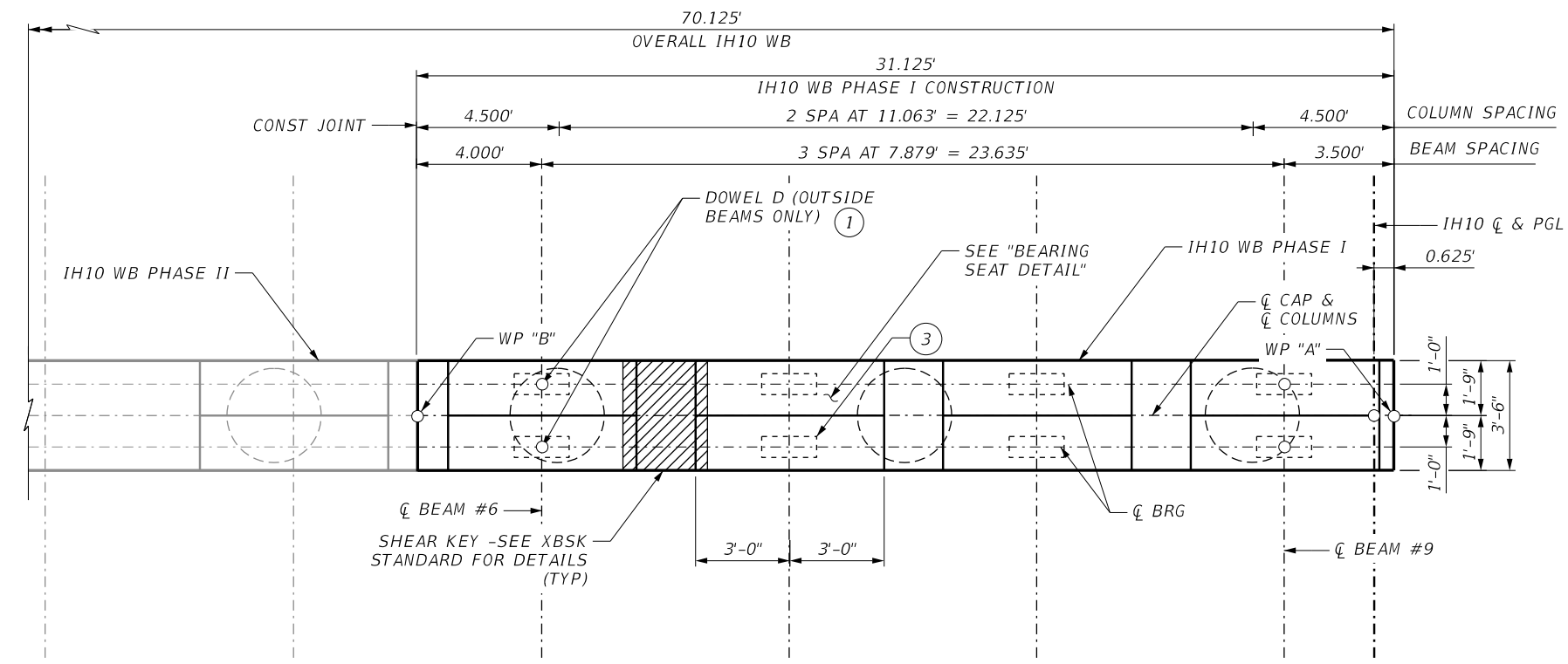
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	725

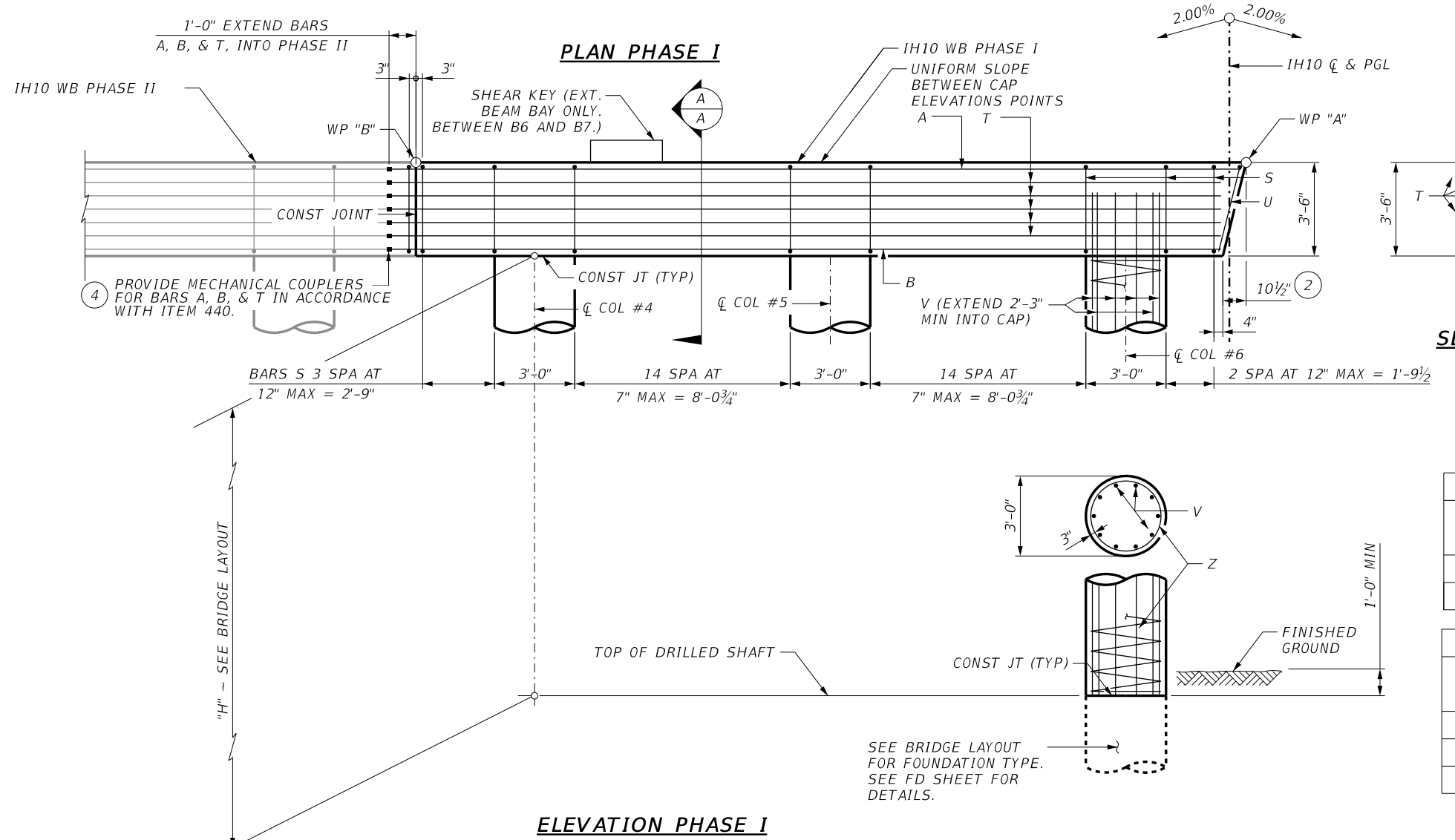
KEYED NOTES

- SPACING BASED ON BEAM TYPE:
XB20 ~ 2 EQUAL SPACES
- RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- MEASURED ALONG ϕ OF BEARING.



- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH F'C = 3,600 PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - GALVANIZE DWEL BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MAY BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FOWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
A	3932.77'	3933.01'
B	3932.17'	3932.41'

TOP OF COL ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
4	3928.76'	3929.00'
5	3928.98'	3929.23'
6	3929.20'	3929.45'

HL93 LOADING

SCALE: 3/16" = 1'-0"

2/28/2024

consor F-12040 ©2024

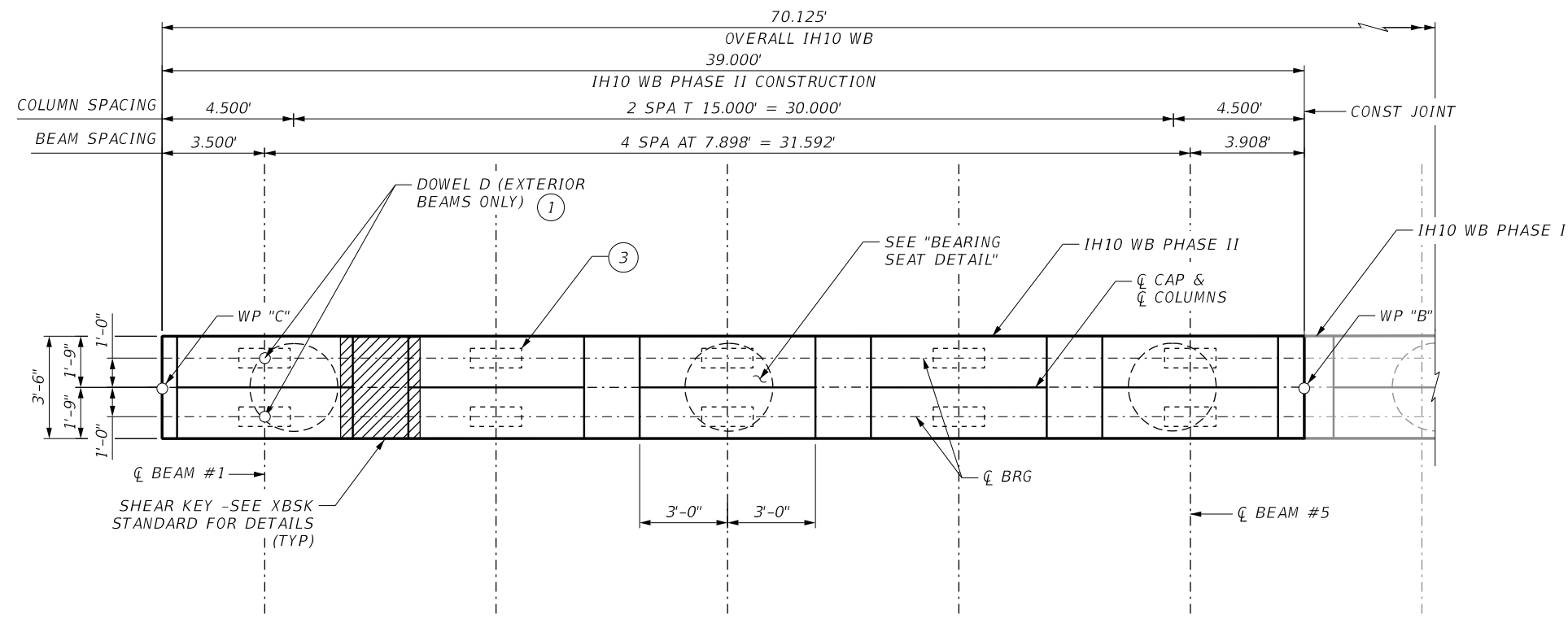
Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I
MIDDLE ARROYO #2B BRIDGE
 IH10 WB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 1

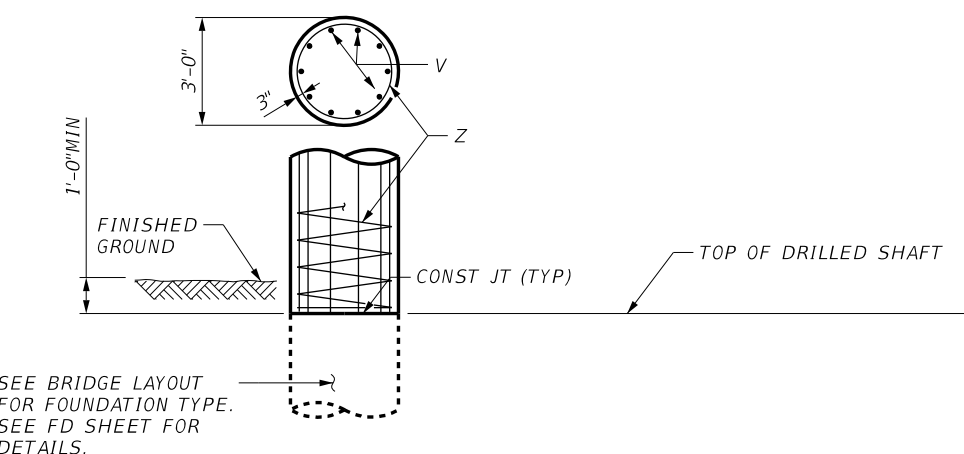
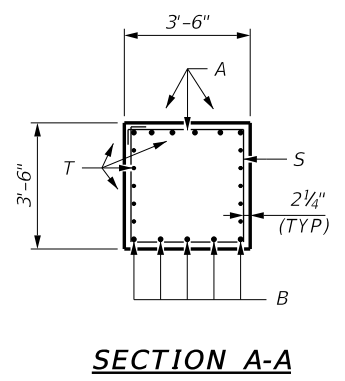
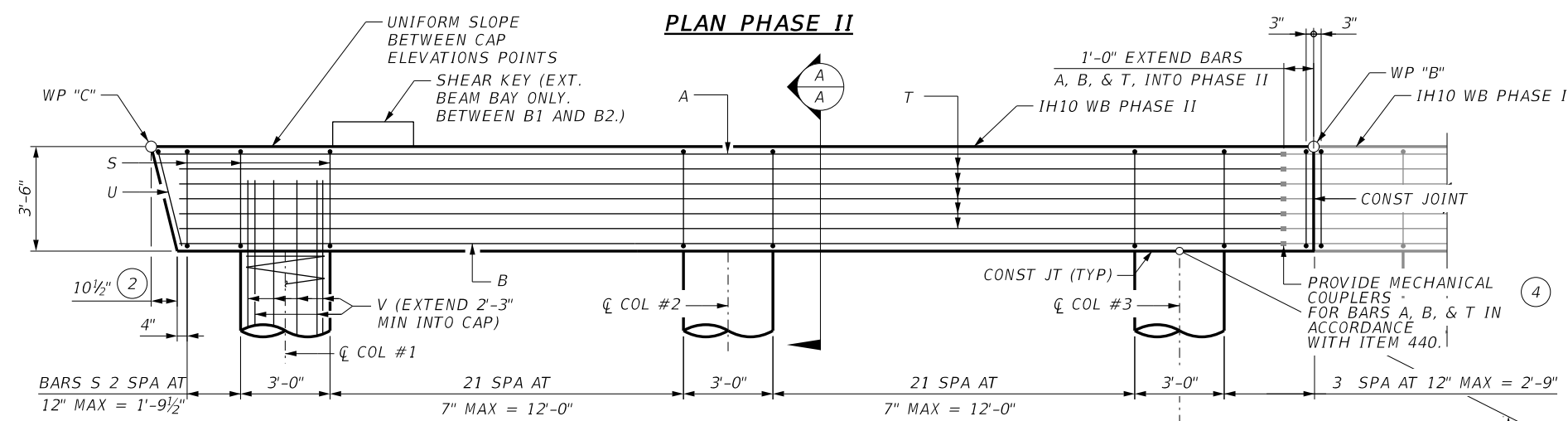
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	726

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- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $f'_c = 3,600$ PSI.
 - ALL CAP REINFORCING MUST BE GRADE 60.
 - GALVANIZE DWELV BARS D.
 - COLUMN AND DRILLED SHAFT REINFORCING MAY BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



WORKING POINT ELEVATIONS

WP	ELEV	
	BENT 2	BENT 3
B	3932.17'	3932.41'
C	3931.39'	3931.63'

TOP OF COL ELEVATIONS

COL	ELEV	
	BENT 2	BENT 3
1	3927.98'	3928.22'
2	3928.28'	3928.52'
3	3928.58'	3928.82'

HL93 LOADING

0 2' 4' 8'

SCALE: 3/16" = 1'-0"

STATE OF TEXAS
ELIZABETH MONTES
147931
PROFESSIONAL ENGINEER

2/28/2024

NO. DATE REVISION APPROV.

consor
F-12040

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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
**BENT NO. 2 & 3
PHASE II**
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)

SHEET 1 OF 1

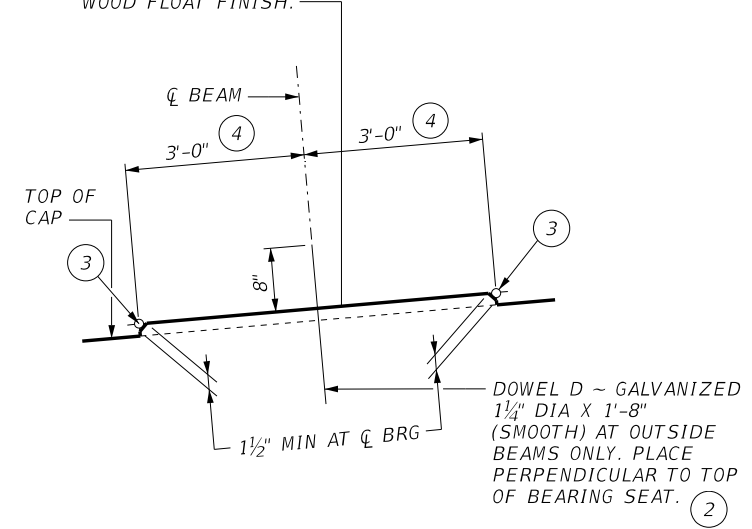
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	727

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LEVEL ALONG A LINE PERPENDICULAR TO
 CL BENT. UNIFORM SLOPE BETWEEN LEFT
 AND RIGHT BEARING SEAT ELEVATIONS WITH
 WOOD FLOAT FINISH.



BEARING SEAT DETAIL
 (BEARING SURFACE MUST BE CLEAN
 AND FREE OF ALL LOOSE MATERIAL
 BEFORE PLACING BEARING PAD.)

**TABLE OF ESTIMATED QUANTITIES PHASE I
 (ONE BNT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	31'-11"	1,016
B	5	#11	31'-2"	827
D	4	1 1/4"	1'-8"	28
S	37	#5	13'-6"	521
T	10	#5	31'-2"	325
U	1	#5	9'-8"	10
V	30	#9	14'-3"	1,454
Z	3	#3	400'-7"	452
ITEM			UNIT	QUANTITY
Reinforcing Steel			LB	4,632
Conc (Cap)			CY	14.5

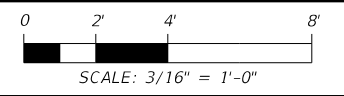
**TABLE OF ESTIMATED QUANTITIES PHASE II
 (ONE BNT) ①**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	37'-9"	1,203
B	5	#11	37'-0"	983
D	2	1 1/4"	1'-8"	14
S	51	#5	13'-6"	718
T	10	#5	37'-0"	386
U	1	#5	9'-8"	10
V	30	#9	14'-3"	1,454
Z	3	#3	400'-7"	452
ITEM			UNIT	QUANTITY
Reinforcing Steel			LB	5,220
Conc (Cap)			CY	18.2

KEYED NOTES

- ① QUANTITIES SHOWN ARE BASED ON AN "H" VALUE OF 12'. FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
 BARS V LENGTH, 1'-0"
 BARS Z LENGTH, 23'-7"
 REINFORCING STEEL, 165 LB
 CLASS "C" CONC (COL), 0.79 CY
- ② OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- ③ RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED ELSEWHERE.
- ④ MEASURED A LONG CL OF BEARING.

HL93 LOADING



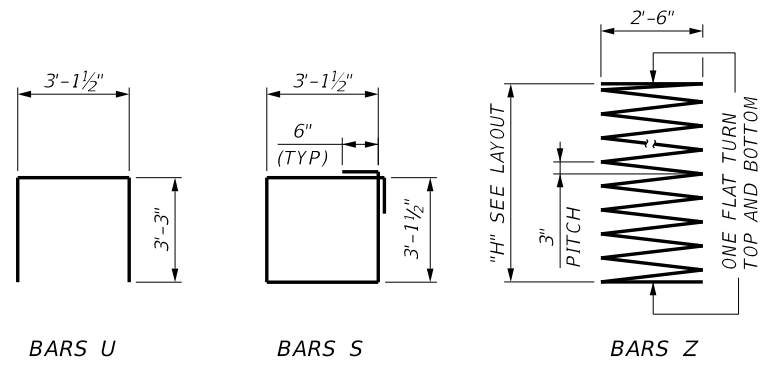
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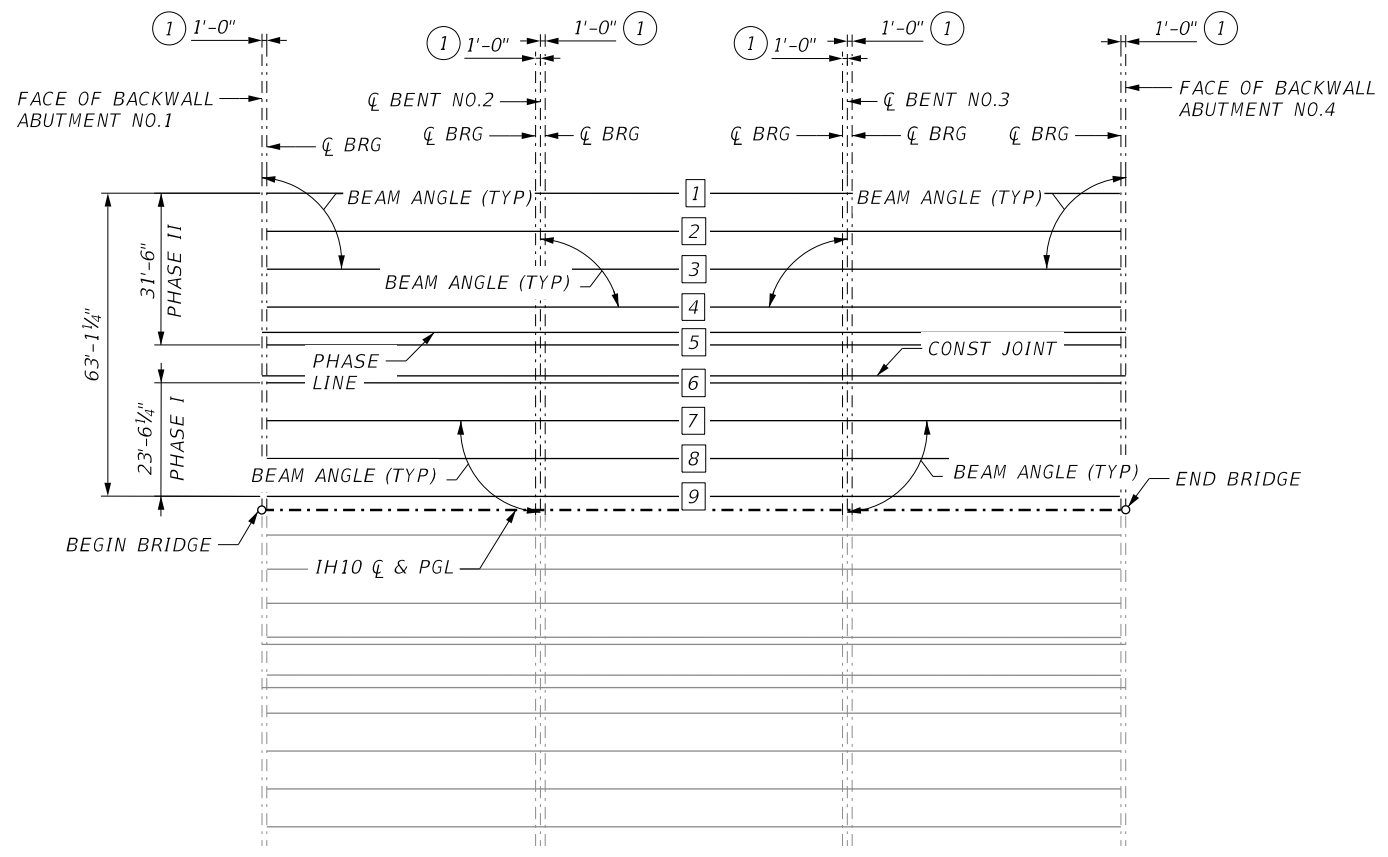


IH 10 WIDENING (NMSL/SPUR 37)
BENT NO. 2 & 3
PHASE I & II
 MIDDLE ARROYO #2B BRIDGE
 IH10 WB
 (STA 172+03 TO STA 173+83)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	728





SPAN 1
(5XB20 BEAMS) **SPAN 2**
(5XB20 BEAMS) **SPAN 3**
(5XB20 BEAMS)

BEAM LAYOUT

KEYED NOTES

- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.

HL93 LOADING



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	729

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BEAM REPORT

PHASE I

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 6, 7, 8, 9.

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 6, 7, 8, 9.

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 6, 7, 8, 9.

PHASE II

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 1, 2, 3, 4, 5.

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 1, 2, 3, 4, 5.

Table with columns: BEAM, HORIZONTAL DISTANCE, C-C BENT, C-C BRG., TRUE DISTANCE BOT. BM. FLG., BEAM SLOPE. Rows for BEAM 1, 2, 3, 4, 5.

BENT REPORT

PHASE I

Table with columns: ABUTMENT NO. 1, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 6, 7, 8, 9, TOTAL.

Table with columns: BENT NO. 2, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 6, 7, 8, 9, TOTAL.

Table with columns: BENT NO. 2, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 6, 7, 8, 9, TOTAL.

Table with columns: BENT NO. 3, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 6, 7, 8, 9, TOTAL.

Table with columns: BENT NO. 3, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 6, 7, 8, 9, TOTAL.

Table with columns: ABUTMENT NO. 4, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 6, 7, 8, 9, TOTAL.

BENT REPORT

PHASE II

Table with columns: ABUTMENT NO. 1, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1, 2, 3, 4, 5, TOTAL.

Table with columns: BENT NO. 2, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1, 2, 3, 4, 5, TOTAL.

Table with columns: BENT NO. 2, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1, 2, 3, 4, 5, TOTAL.

Table with columns: BENT NO. 3, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1, 2, 3, 4, 5, TOTAL.

Table with columns: BENT NO. 3, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1, 2, 3, 4, 5, TOTAL.

Table with columns: ABUTMENT NO. 4, DISTANCE BETWEEN STATION LINE AND BEAM 1, BEAM SPAC., BEAM ANGLE, BEAM 1, 2, 3, 4, 5, TOTAL.

KEYED NOTES

1 BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.

HL93 LOADING

NOT TO SCALE



2/28/2024



F-12040

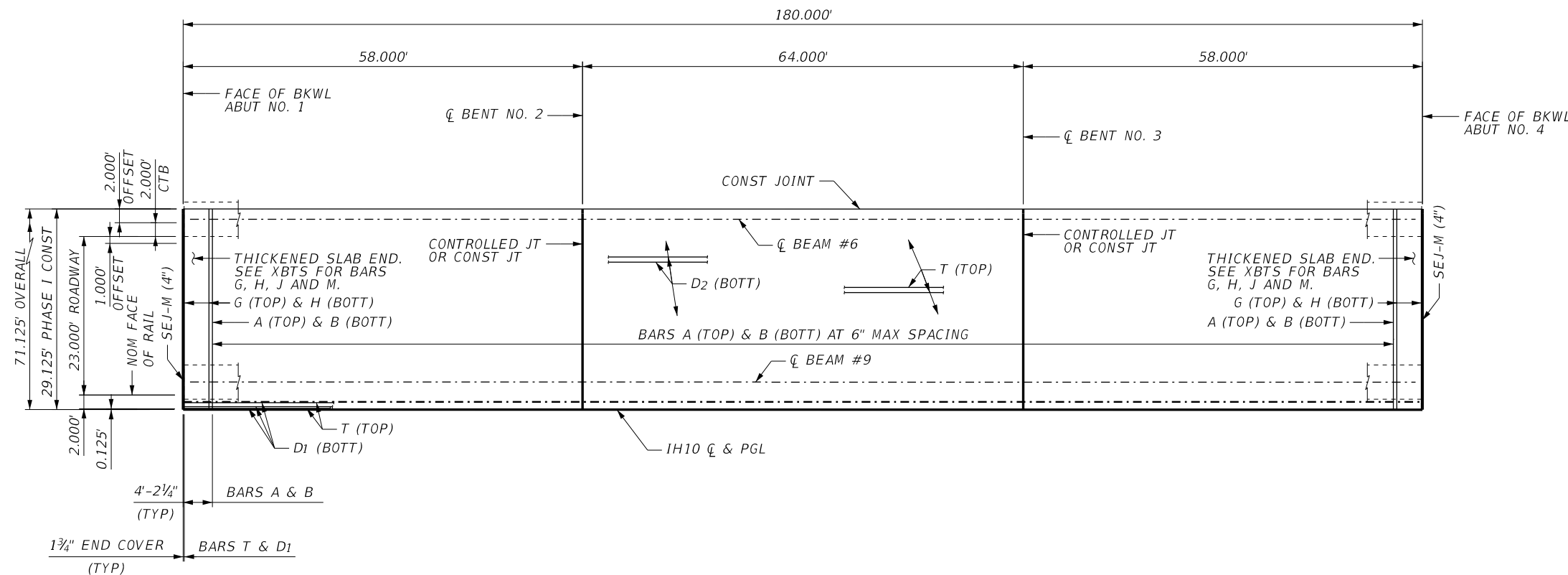


IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)

SHEET 2 OF 2

Table with columns: FED. RD. DIV. NO., STATE, FEDERAL AID PROJECT, HIGHWAY NO., STATE DISTRICT, COUNTY, CONTROL NO., SECTION NO., JOB NO., SHEET NO.



SPAN 1

SPAN 2

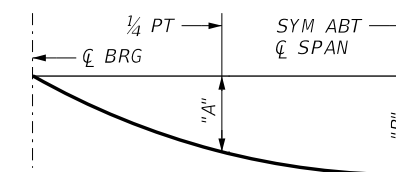
SPAN 3

PLAN PHASE I

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH F'C = 4,000 PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"

TABLE OF DEFLECTIONS PHASE I			
SPAN	BEAM	"A"	"B"
FT	NO.	FT	FT
1	6 - 8	0.056	0.079
	9	0.056	0.080
2	6 - 8	0.084	0.119
	9	0.085	0.120
3	6 - 8	0.056	0.079
	9	0.056	0.080



DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY (EC = 5,000 KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

HL93 LOADING



2/28/2024



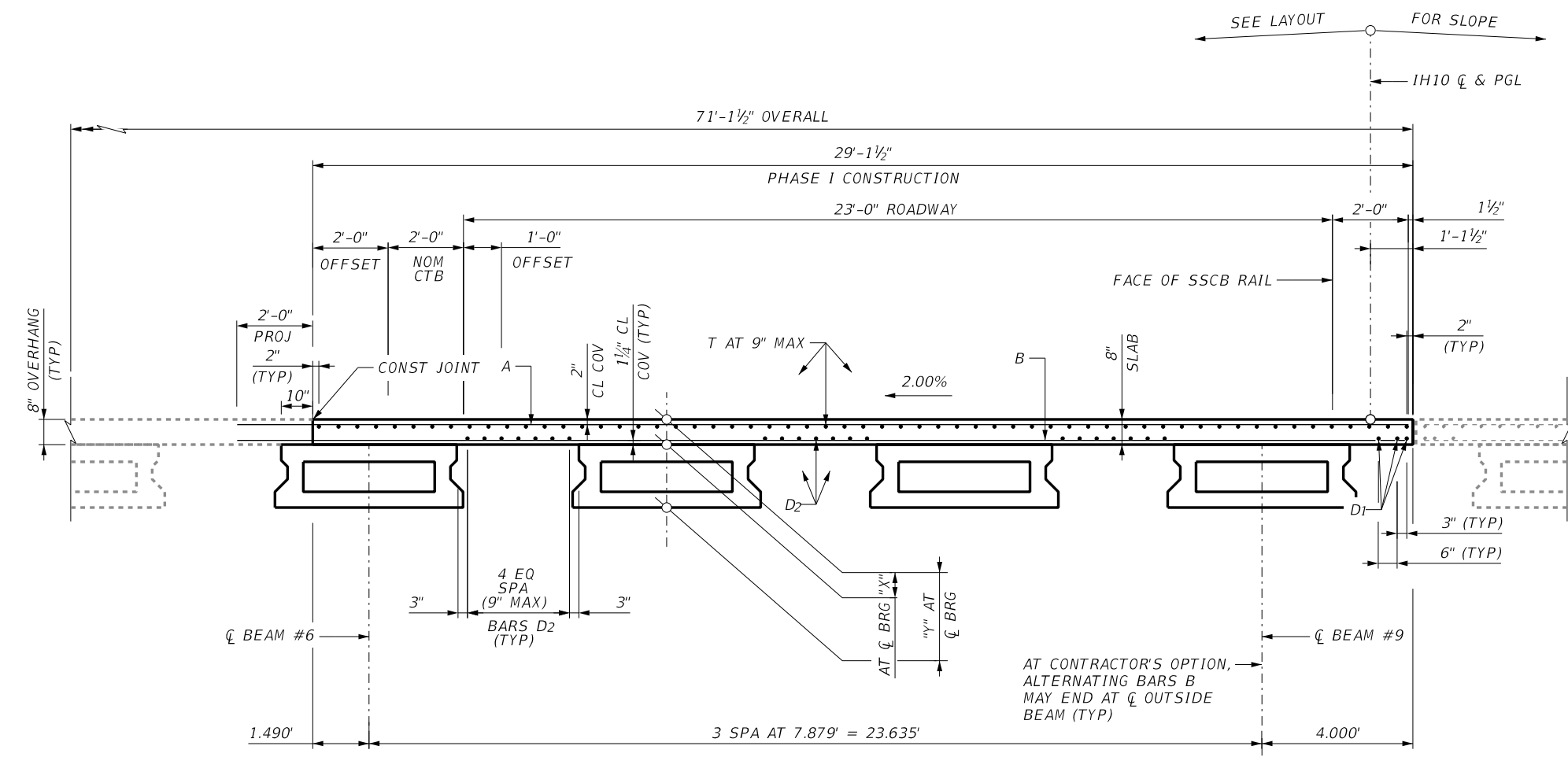
IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE X-BEAM (5XB20) UNITS PHASE I
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	731

BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4



TYPICAL TRANSVERSE SECTION PHASE I
(5XB20) SPANS 1 THRU 3

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

KEYED NOTES
① SPACE BARS U WITH BEAM BARS R IN ALL AREAS WHERE MEASURED HAUNCH EXCEEDS 3 1/2\".

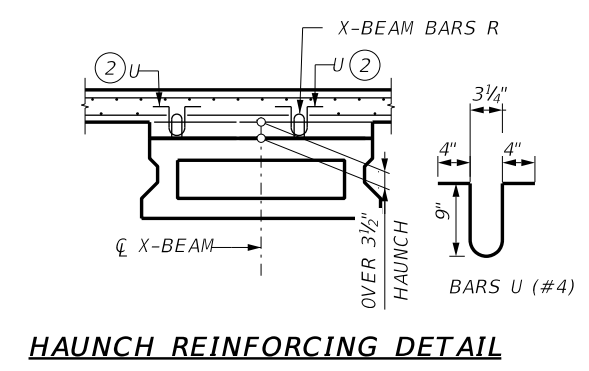
HL93 LOADING

NOT TO SCALE

2/28/2024

TABLE OF ESTIMATED QUANTITIES				
SPAN	REINF CONCRETE SLAB	PRESTR CONCRETE X-BEAMS (5XB20)	CLASS "S" CONCRETE	TOTAL REINF STEEL
NO.	SF	LF	CY	LB
1	1,689	232.00	49.29	10,981
2	1,864	256.00	48.31	12,116
3	1,689	232.00	49.29	10,981
TOTAL	5,243	720.00	146.88	34,078

TABLE OF SECTION DEPTHS FOR PHASE I			
SPAN	BEAM	"X"	"Y"
NO.	NO.	IN	IN
1	6 - 9	11 1/2	31 1/2
2	6 - 9	12	32
3	6 - 9	11 1/2	31 1/2



HAUNCH REINFORCING DETAIL

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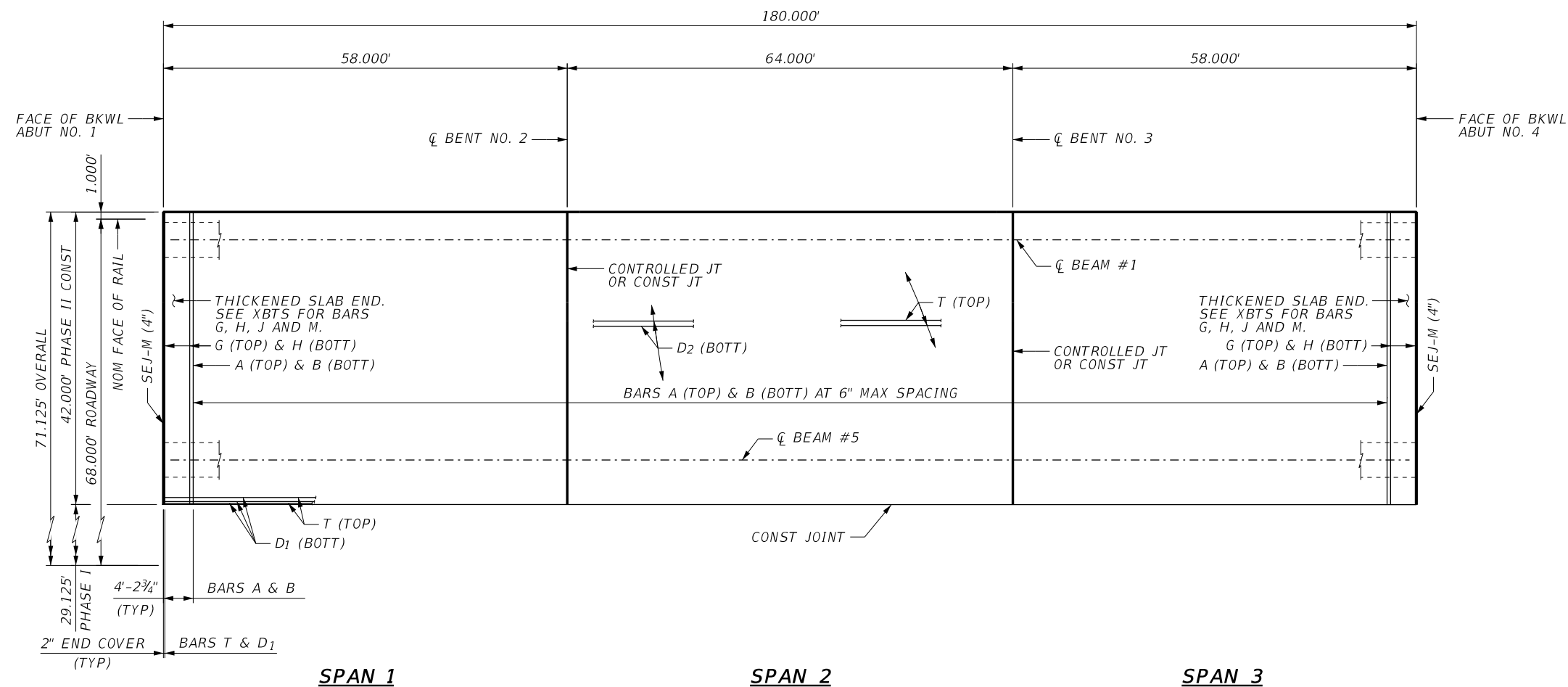
Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37) PRESTRESSED CONCRETE X-BEAM (5XB20) UNITS PHASE I
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	732

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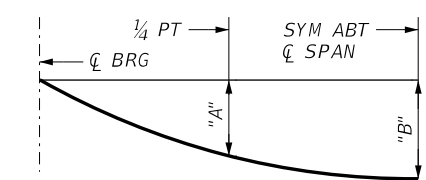


- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH $f'_c = 4,000$ PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

PLAN PHASE II

TABLE OF DEFLECTIONS PHASE II

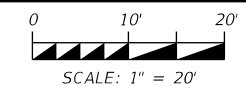
SPAN	BEAM	"A"	"B"
NO.	NO.	NO.	FT
1	1 - 5	0.056	0.080
2	1	0.085	0.120
	2 - 5	0.084	0.119
3	1 - 5	0.056	0.080



DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY ($E_c = 5,000$ KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

HL93 LOADING



2/28/2024



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)**

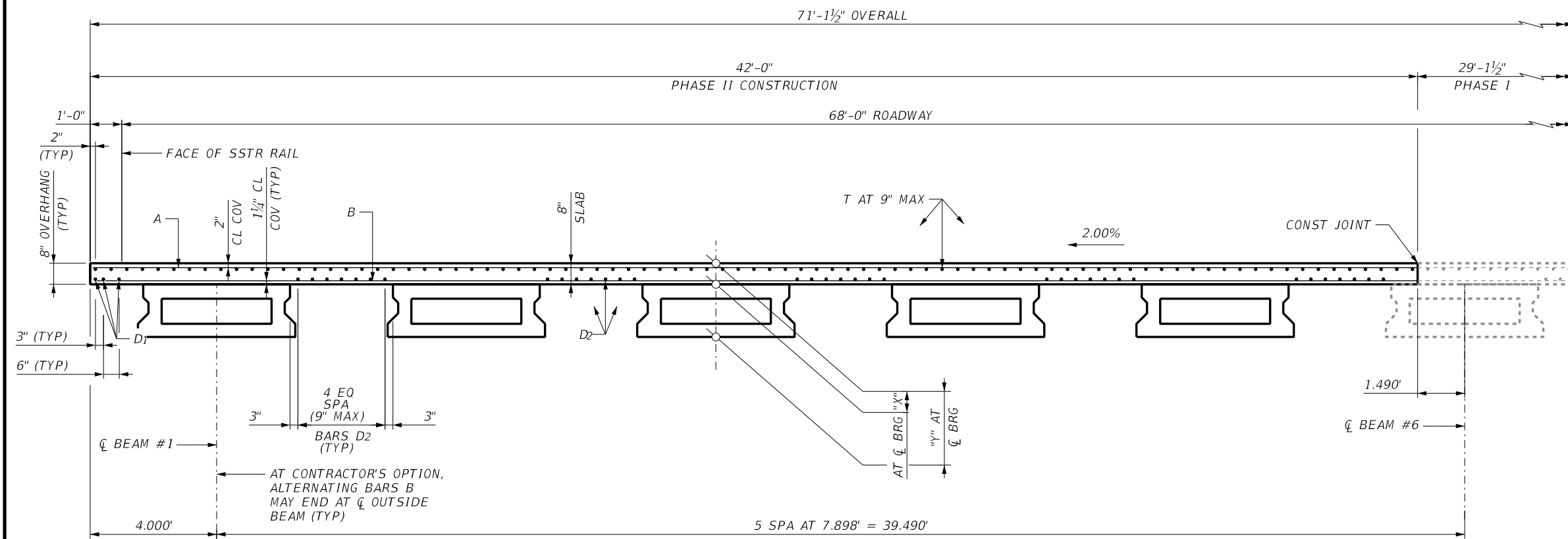
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	733

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BAR TABLE PHASE II

BAR	SIZE
A	#5
B	#5
D	#5
G	#5
H	#5
J	#5
M	#5
T	#4



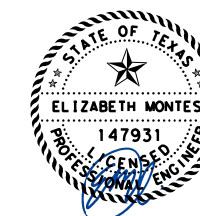
TYPICAL TRANSVERSE SECTION PHASE II

(5XB20) SPANS 1 THRU 3

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

HL93 LOADING

NOT TO SCALE



2/28/2024

TABLE OF ESTIMATED QUANTITIES PHASE II

SPAN NO.	REINF CONCRETE SLAB	PRESTR CONCRETE X-BEAMS (5XB20)	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	2,436	290.00	69.89	15,834
2	2,688	320.00	68.39	17,472
3	2,436	290.00	69.89	15,834
TOTAL	7,560	900.00	208.19	49,140

TABLE OF SECTION DEPTHS FOR PHASE II

SPAN LENGTH NO.	BEAM NO.	"X" IN	"Y" IN
58	1 - 5	11 1/2	31 1/2
64	1 - 5	12	32
58	1 - 5	11 1/2	31 1/2



F-12040



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IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB20) UNITS
PHASE II
MIDDLE ARROYO #2B BRIDGE
IH10 WB
(STA 172+03 TO STA 173+83)

SHEET 2 OF 2

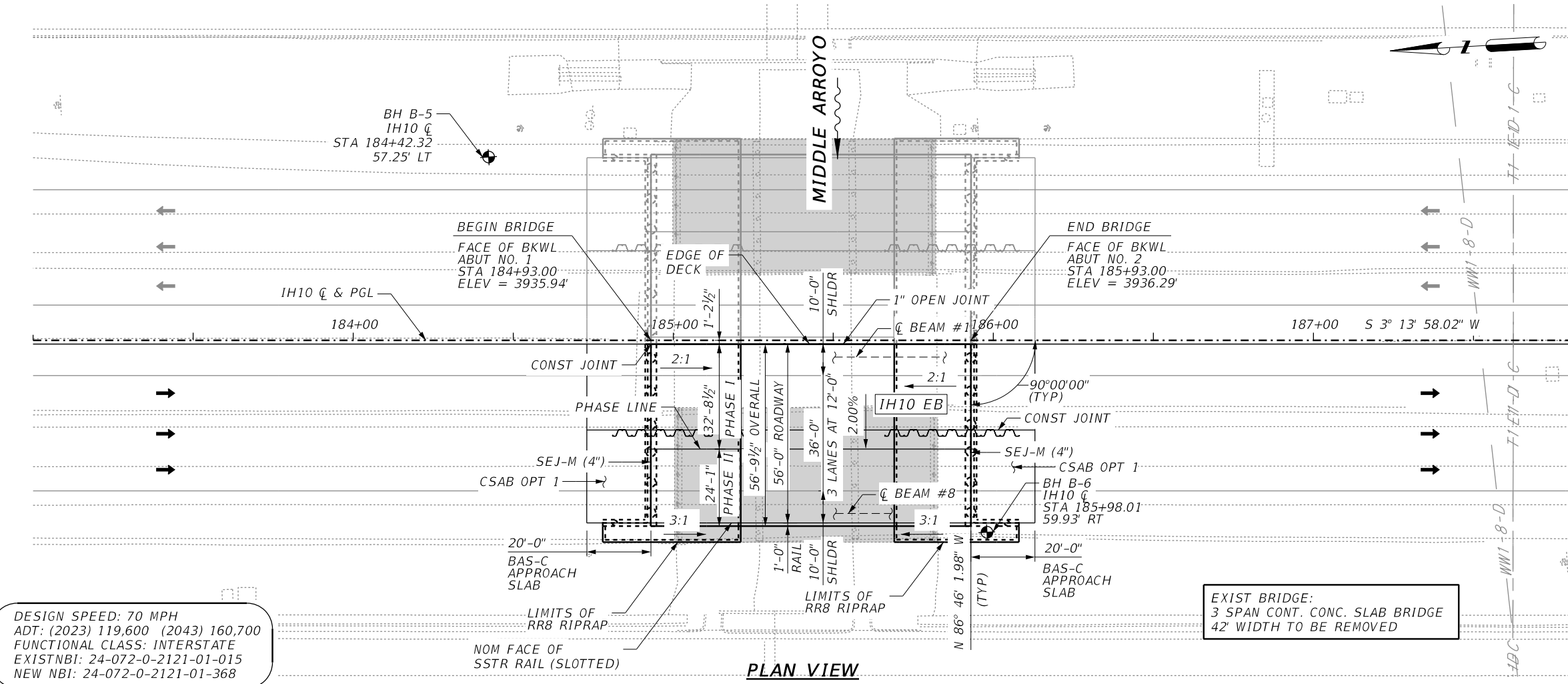
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6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	734

GENERAL NOTES

- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ◆ DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "PHASED BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

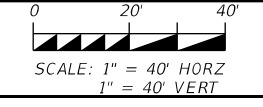
- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING



DESIGN SPEED: 70 MPH
 ADT: (2023) 119,600 (2043) 160,700
 FUNCTIONAL CLASS: INTERSTATE
 EXISTNBI: 24-072-0-2121-01-015
 NEW NBI: 24-072-0-2121-01-368

EXIST BRIDGE:
 3 SPAN CONT. CONC. SLAB BRIDGE
 42' WIDTH TO BE REMOVED

HL93 LOADING



3/21/2024

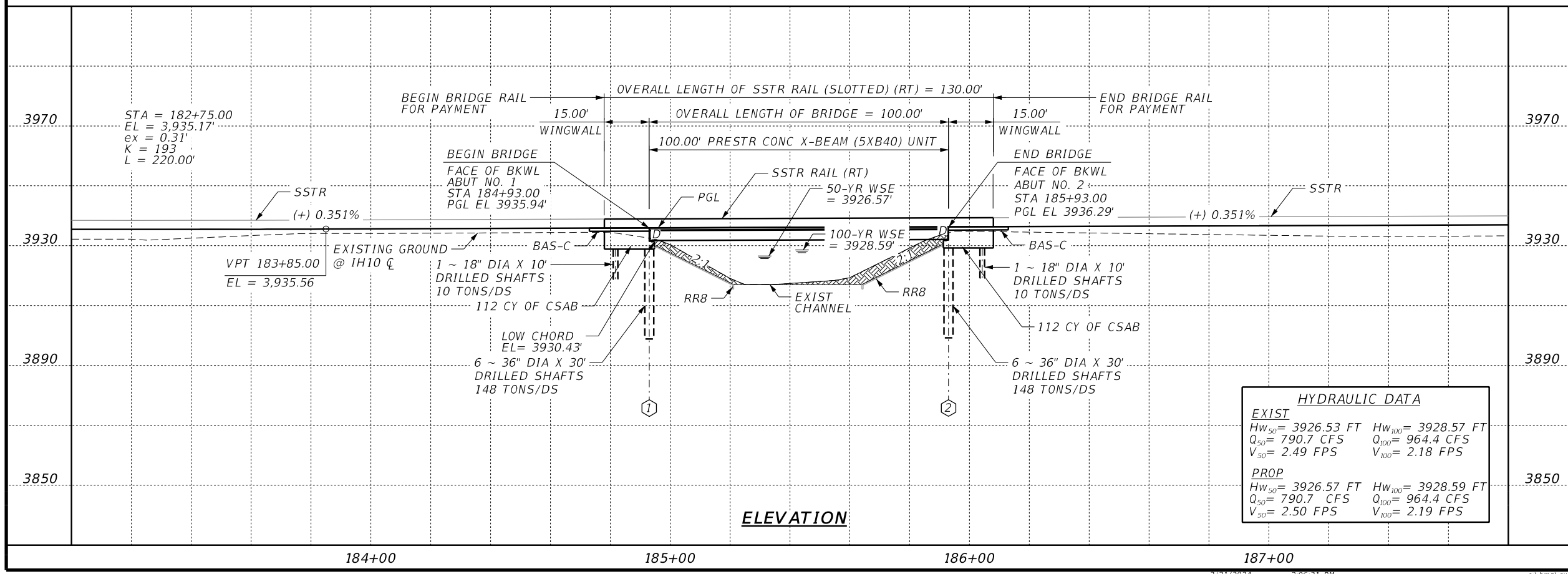


IH 10 WIDENING (NMSL/SPUR 37)

BRIDGE LAYOUT
 MIDDLE ARROYO #3A BRIDGE
 IH10 EB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 1

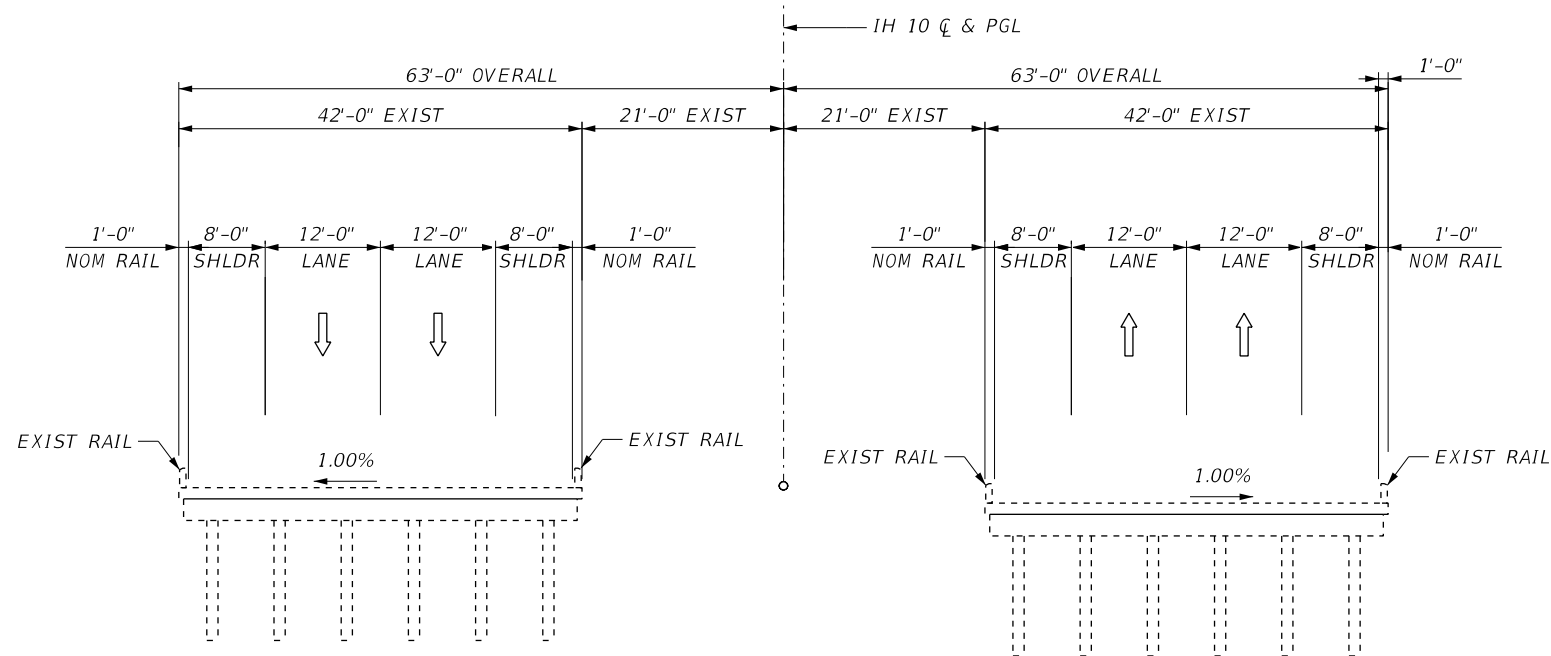
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6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	735



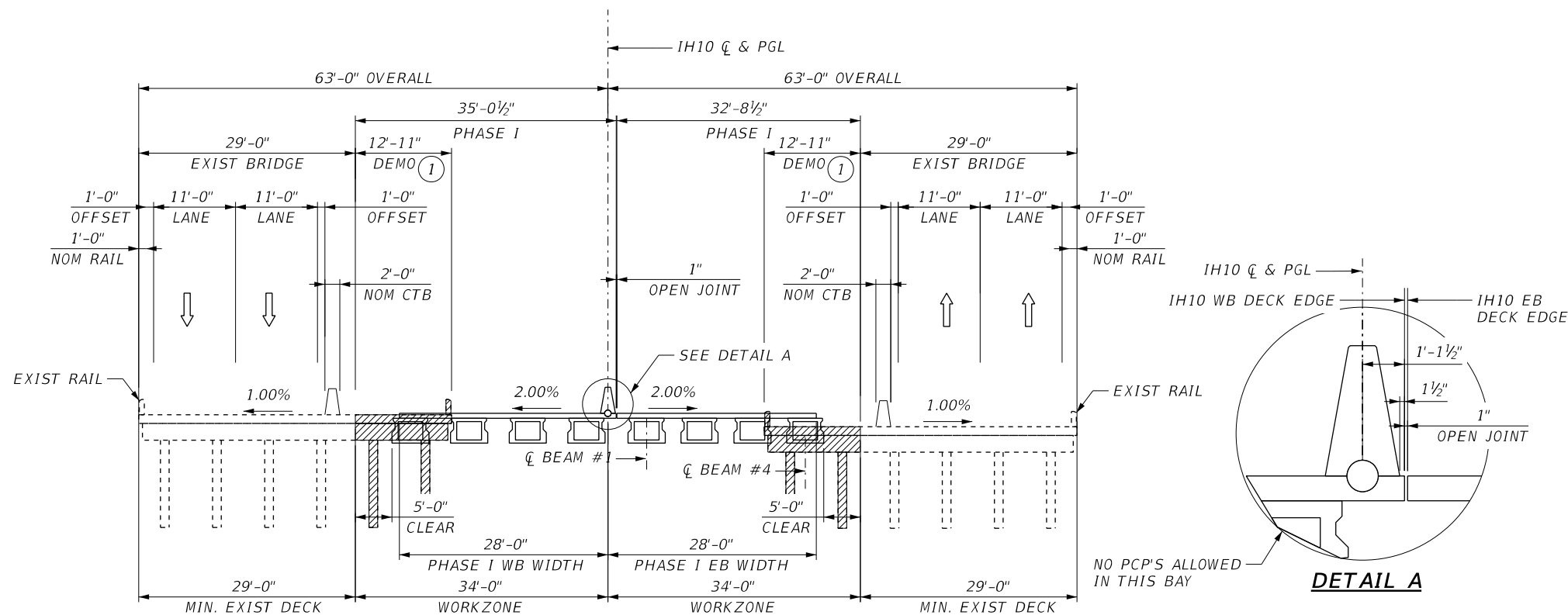
HYDRAULIC DATA

EXIST		PROP	
Hw ₅₀ = 3926.53 FT	Hw ₁₀₀ = 3928.57 FT	Hw ₅₀ = 3926.57 FT	Hw ₁₀₀ = 3928.59 FT
Q ₅₀ = 790.7 CFS	Q ₁₀₀ = 964.4 CFS	Q ₅₀ = 790.7 CFS	Q ₁₀₀ = 964.4 CFS
V ₅₀ = 2.49 FPS	V ₁₀₀ = 2.18 FPS	V ₅₀ = 2.50 FPS	V ₁₀₀ = 2.19 FPS

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EXIST SECTION



PHASE I SECTION

- ① SAWCUT EXISTING CAP AS NECESSARY TO AVOID CONFLICT WITH BEAM. DO NOT CUT BEYOND LIMITS OF DEMOLITION. DO NOT REMOVE EXISTING COLUMNS NOT MARKED FOR DEMOLITION IN THIS PHASE.

GENERAL NOTES

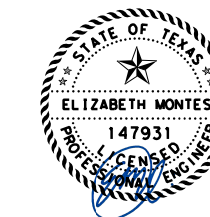
- 1. CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE

HL93 LOADING

NOT TO SCALE



2/28/2024



F-12040



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IH 10 WIDENING (NMSL/SPUR 37)

BRIDGE
TYPICAL SECTIONS
 MIDDLE ARROYO #3A BRIDGE
 IH10 EB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 2

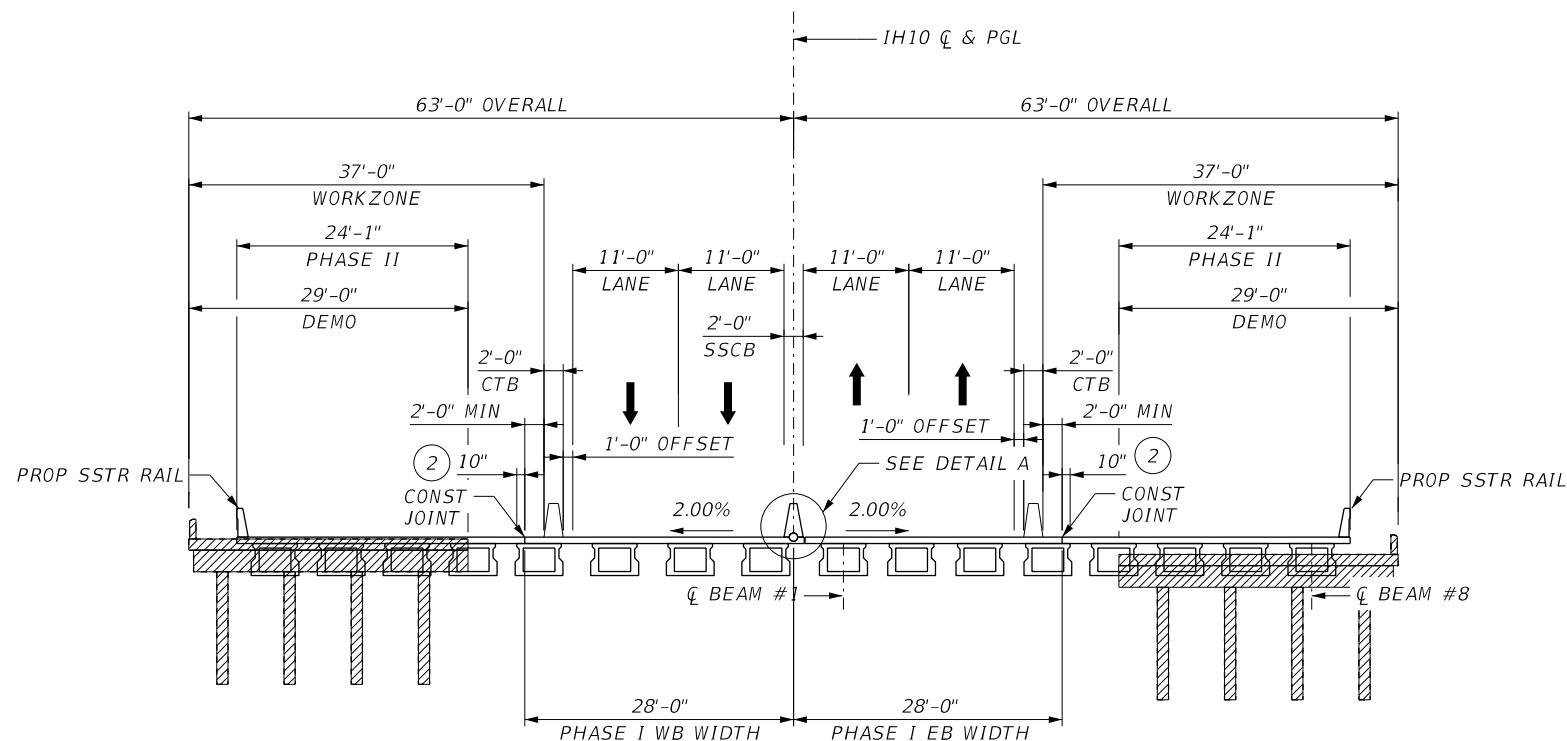
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				736

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

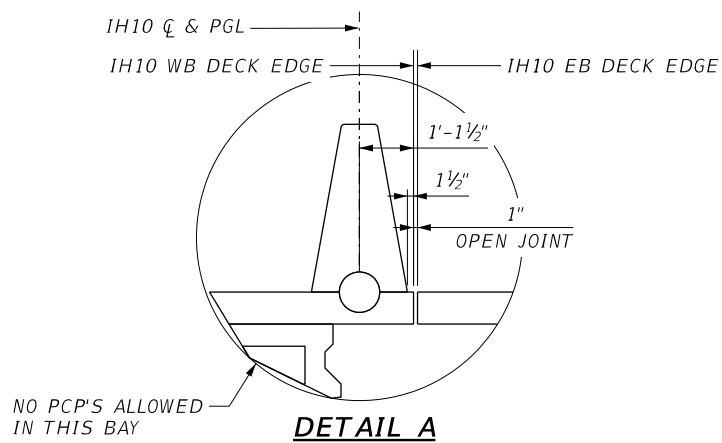
LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE

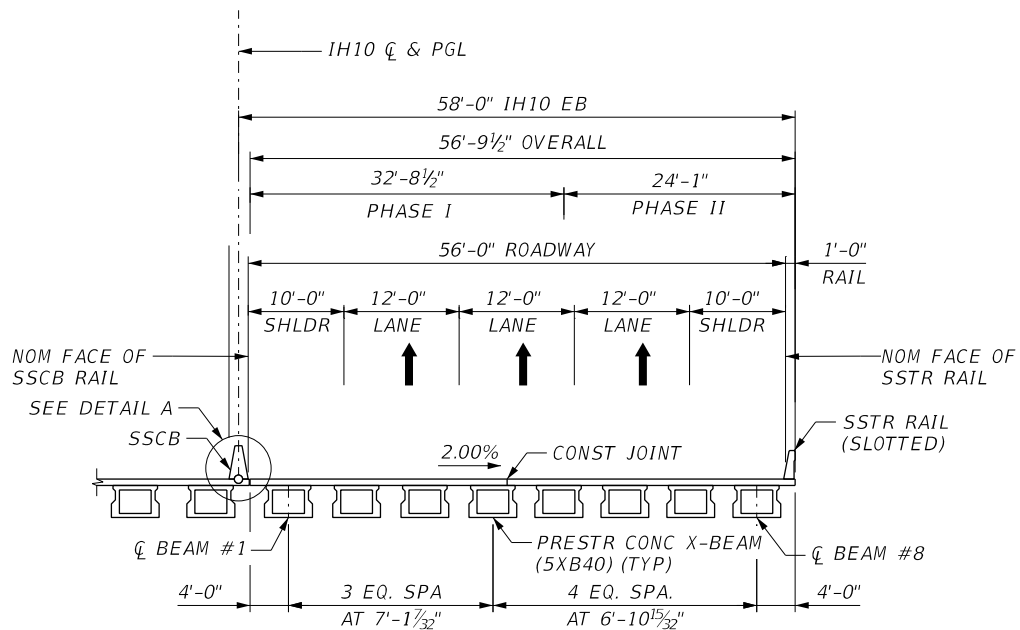


PHASE II SECTION

② EDGE OF DECK TO EDGE OF TOP OF BEAM.



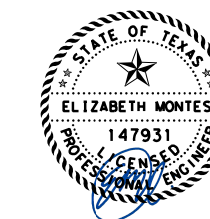
DETAIL A



IH10 EB FINAL SECTION

HL93 LOADING

NOT TO SCALE



2/28/2024



F-12040

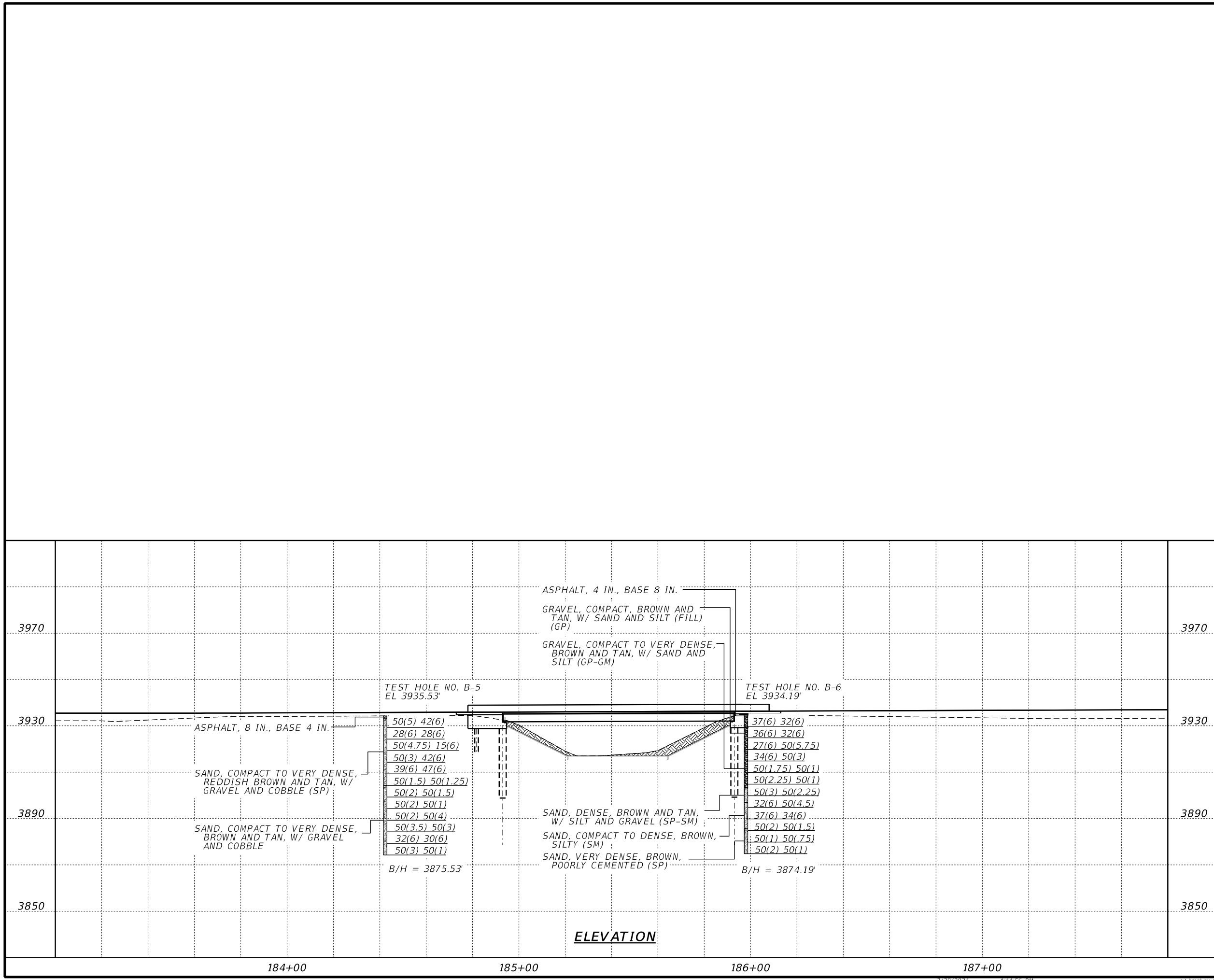


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IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
MIDDLE ARROYO #3A BRIDGE
 IH10 EB
 (STA 184+93 TO STA 185+93)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	737



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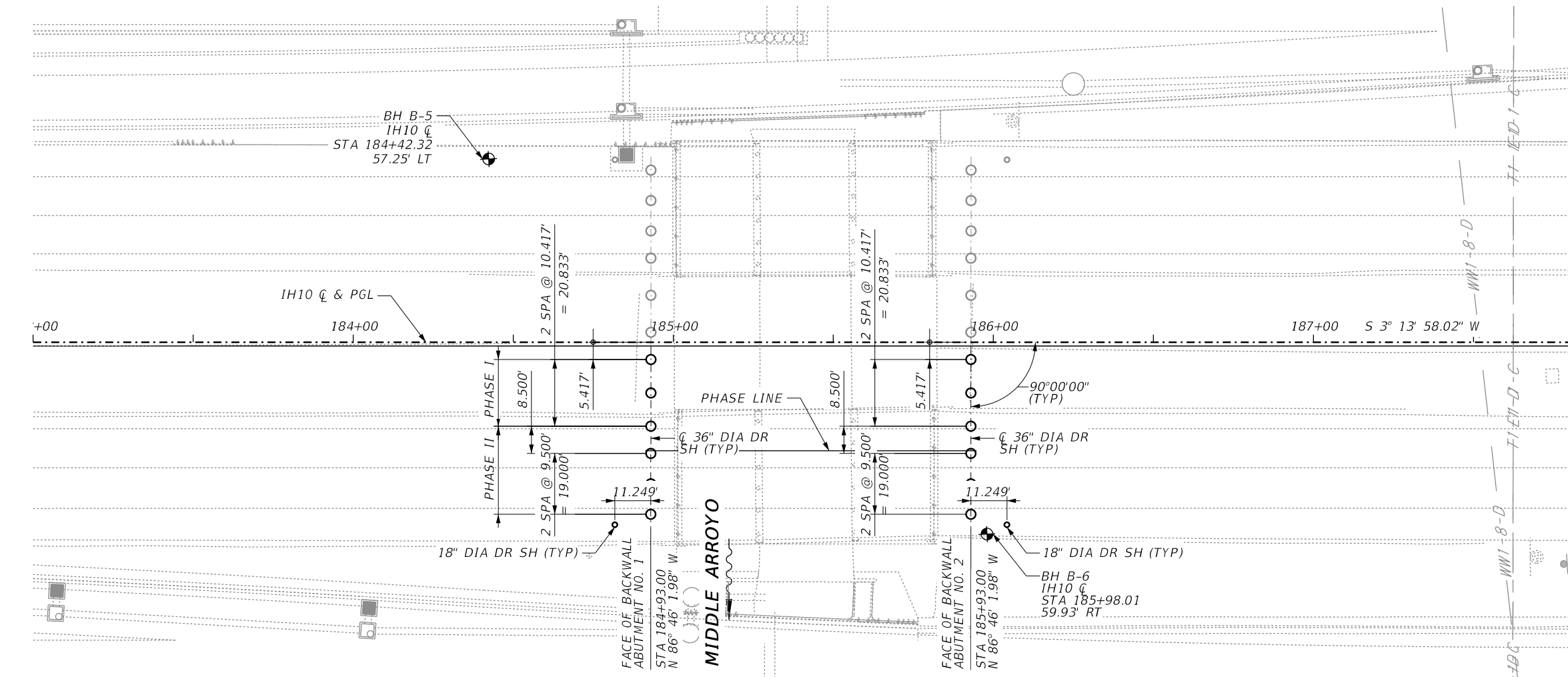
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GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.



LEGEND



HL93 LOADING



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

FOUNDATION LAYOUT
MIDDLE ARROYO #3A BRIDGE
IH10 EB
(STA 184+93 TO STA 185+93)

SHEET 1 OF 1

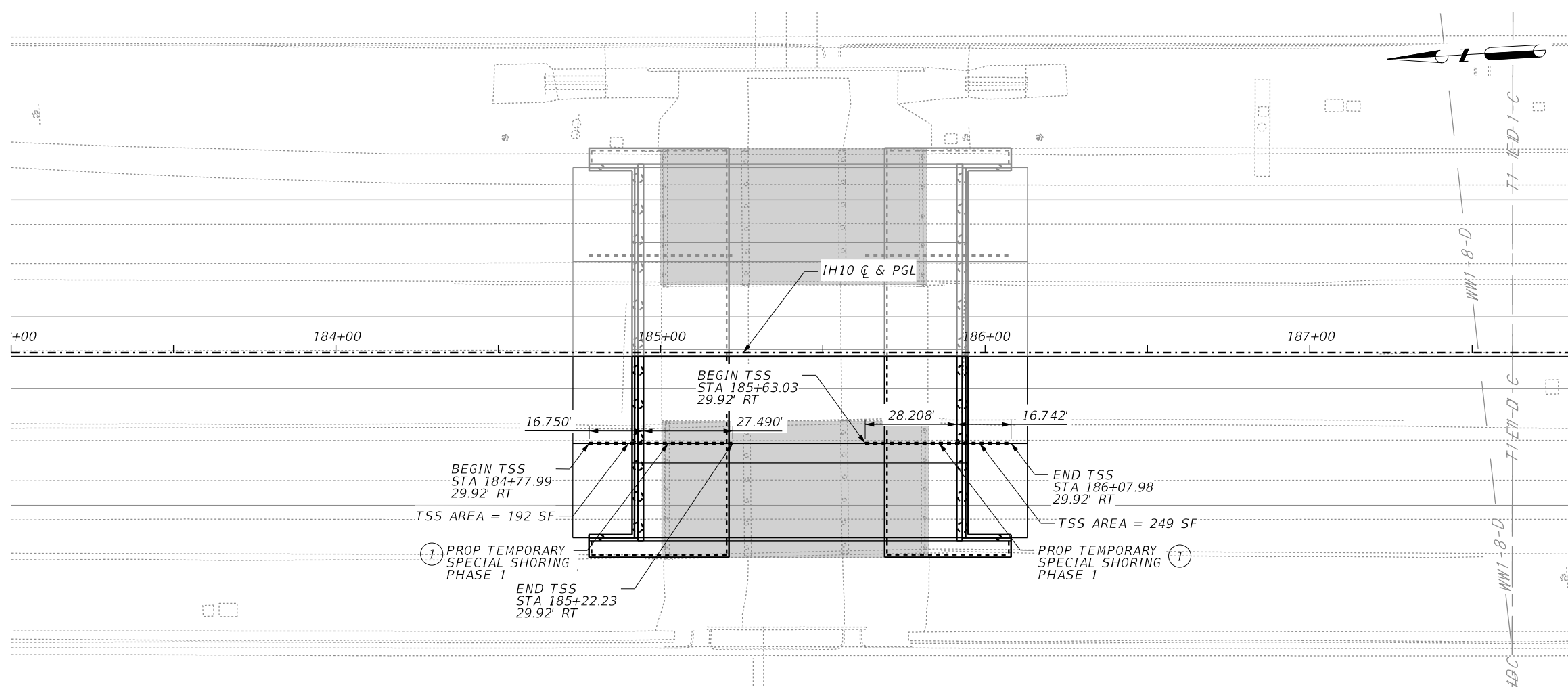
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6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	739

FOUNDATION LOADS	
ABUT	TONS/SHAFT
1&2	148
WINGWALL	10

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LEGEND

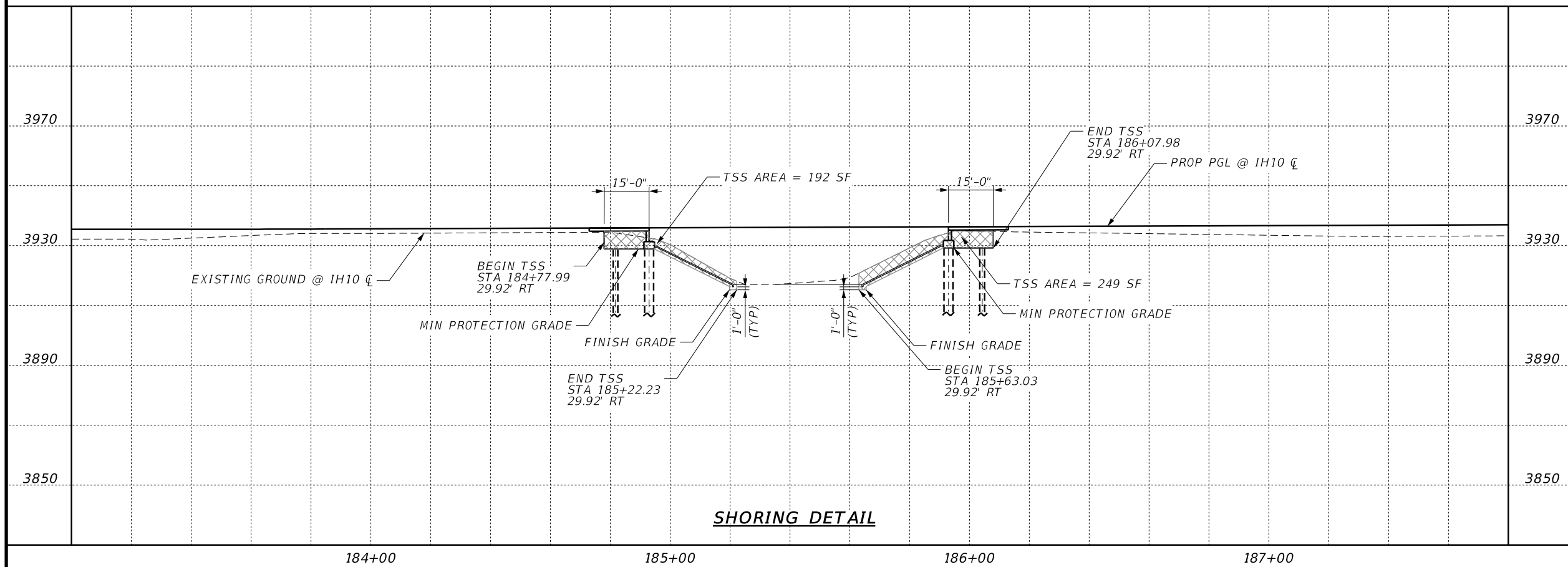
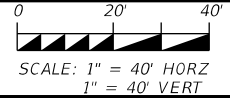
TEMPORARY SPL SHORING



PLAN VIEW

1 PAID FOR UNDER ITEM 403 TEMPORARY SPL SHORING.

HL93 LOADING



SHORING DETAIL



2/28/2024



IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
 MIDDLE ARROYO #3A BRIDGE
 IH10 EB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	740

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				PHASE I				PHASE II				
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	
1	ABUT	1	(FWD)	L	3931.337	3931.195	3931.053	3930.911	3930.774	3930.636	3930.499	3930.361
				R	3931.217	3931.075	3930.933	3930.791	3930.654	3930.516	3930.379	3930.241
2	ABUT	2	(BK)	L	3931.786	3931.644	3931.502	3931.360	3931.222	3931.085	3930.947	3930.810
				R	3931.666	3931.524	3931.382	3931.240	3931.102	3930.965	3930.827	3930.690



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
BEARING SEAT ELEVATIONS
 MIDDLE ARROYO #3A BRIDGE
 IH10 EB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	741

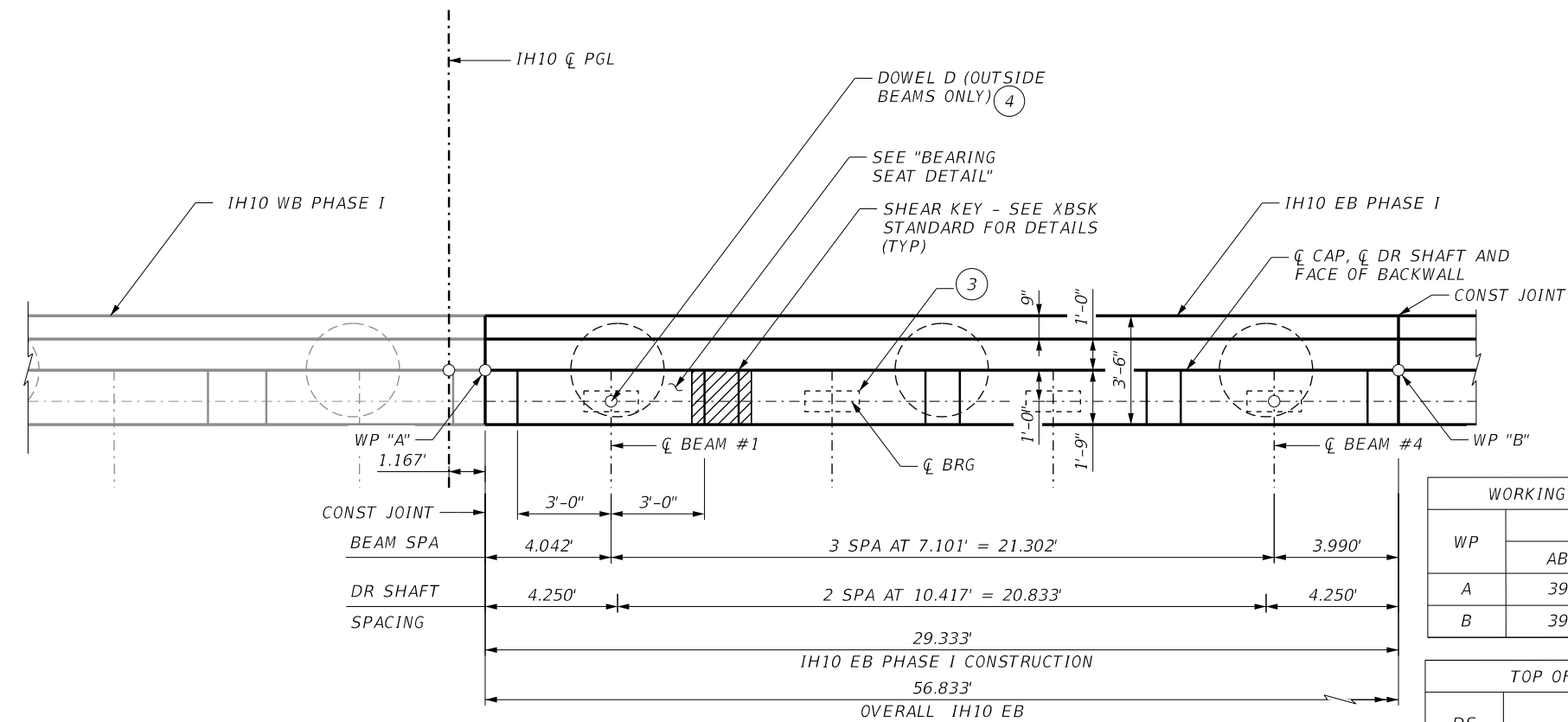
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GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

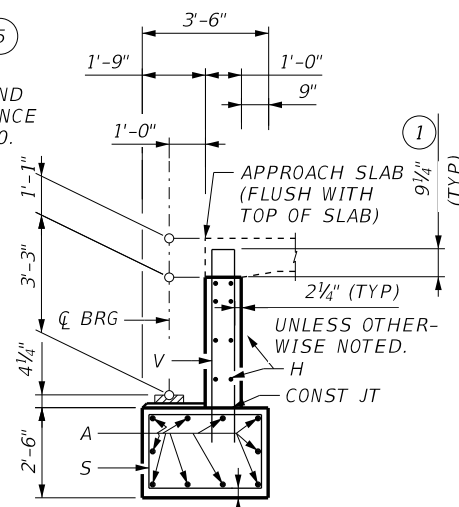
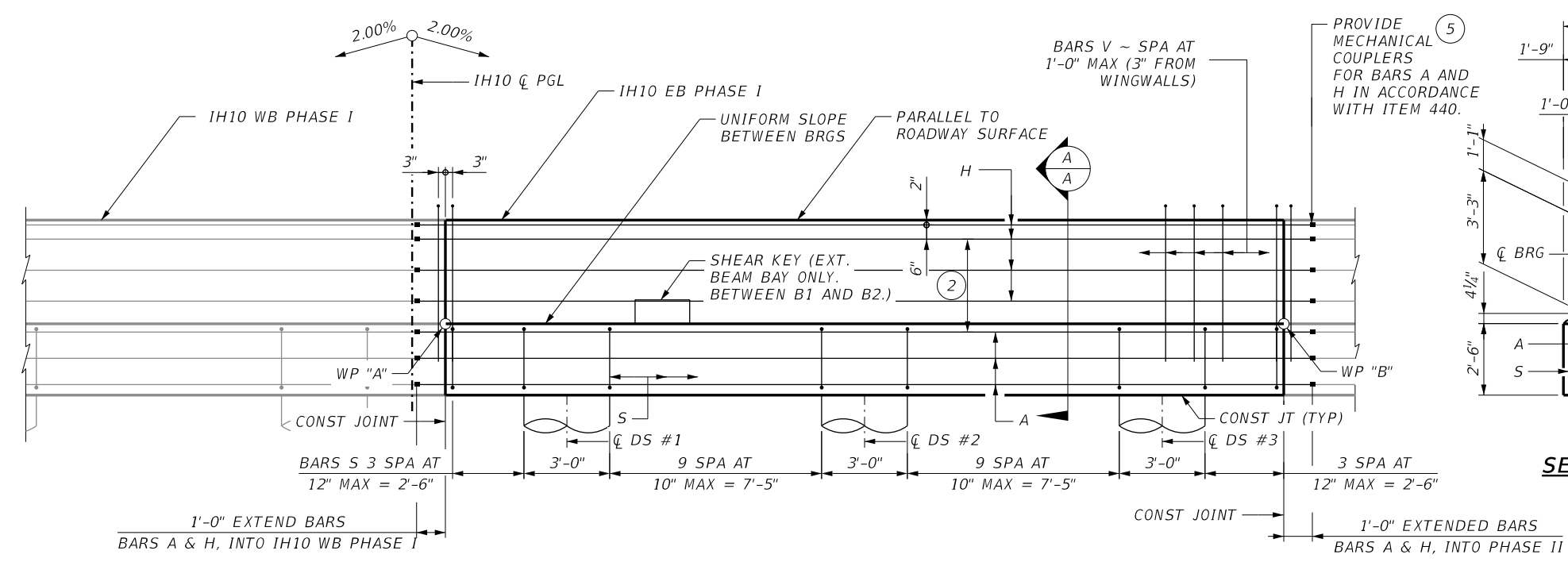
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE:
XB40 ~ 3 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 2
A	3931.23'	3931.58'
B	3930.64'	3930.99'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 2
1	3928.64'	3928.99'
2	3928.43'	3928.78'
3	3928.23'	3928.58'

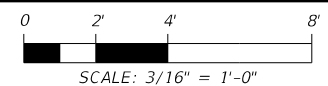
PLAN PHASE I



SECTION A-A

ELEVATION PHASE I

HL93 LOADING



2/28/2024

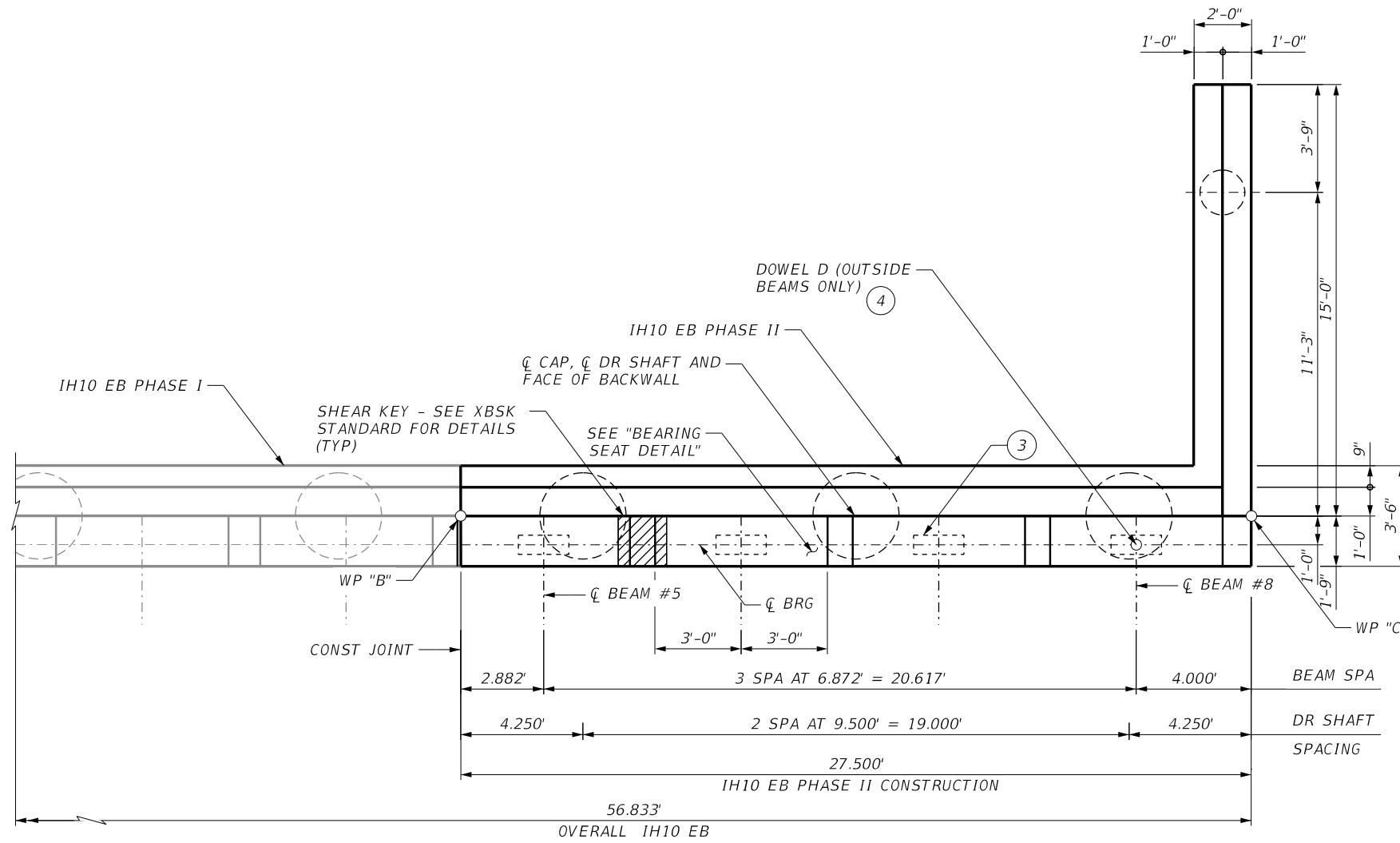


**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE I
MIDDLE ARROYO #3A BRIDGE
IH10 EB
(STA 184+93 TO STA 185+93)**

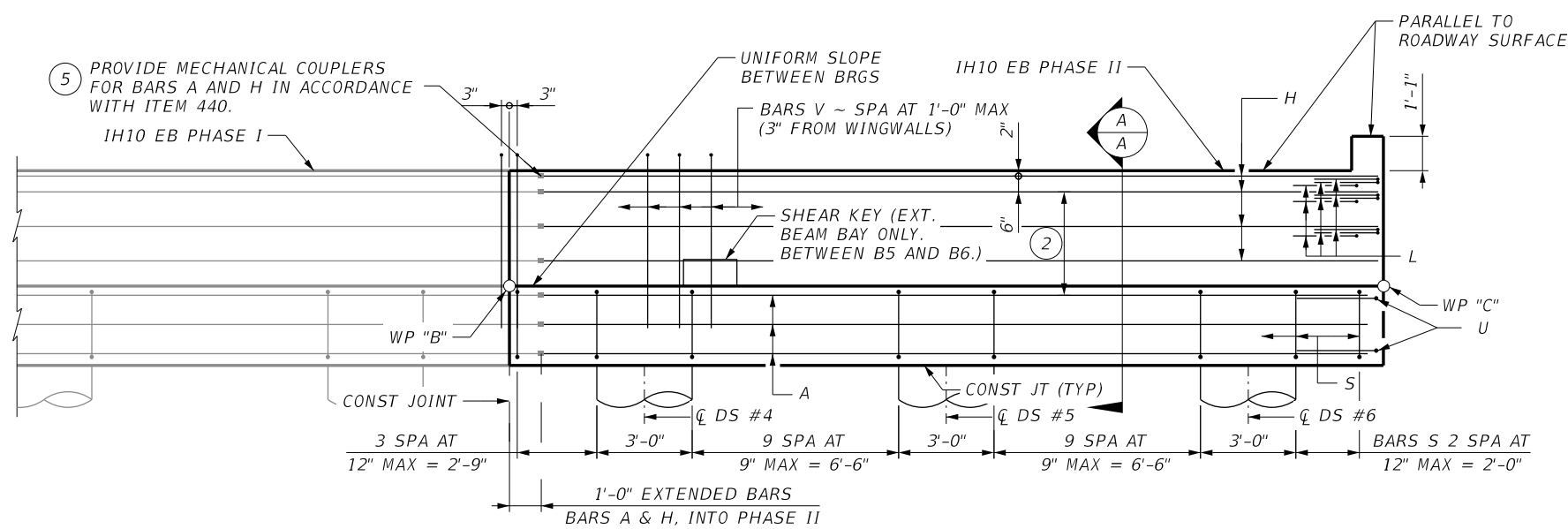
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	742

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PLAN PHASE II

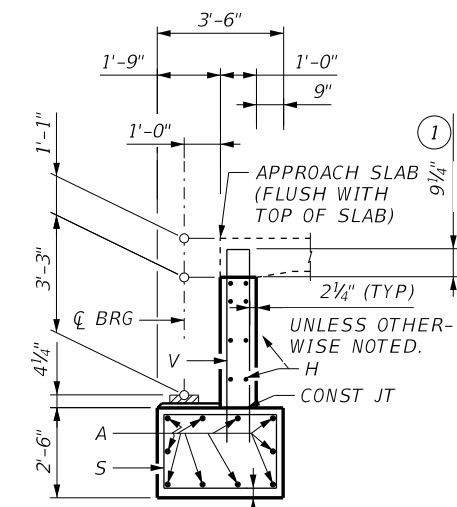
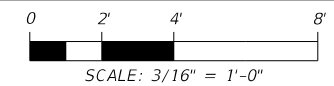


ELEVATION PHASE II

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 2
B	3930.64'	3930.99'
C	3930.09'	3930.44'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 2
4	3928.05'	3928.41'
5	3927.86'	3928.22'
6	3927.67'	3928.03'

HL93 LOADING



SECTION A-A

GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH F'C = 3,600 PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

- INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB40 ~ 3 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."

5 PROVIDE MECHANICAL COUPLERS FOR BARS A AND H IN ACCORDANCE WITH ITEM 440.



2/28/2024



F-12040

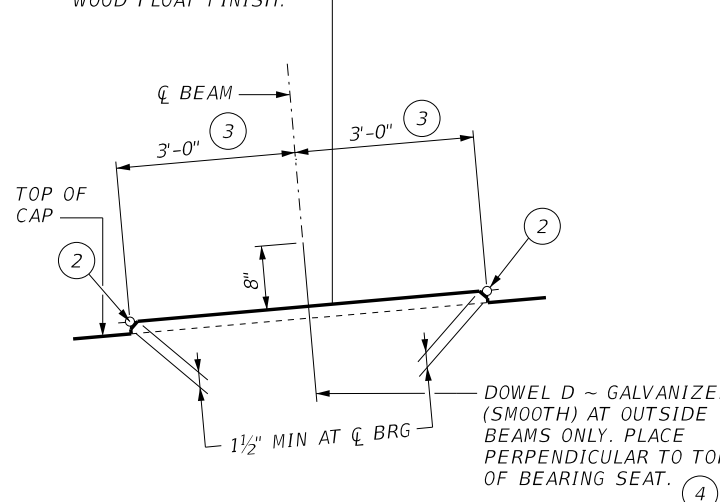


IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE II
 MIDDLE ARROYO #3A BRIDGE
 IH10 EB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 1

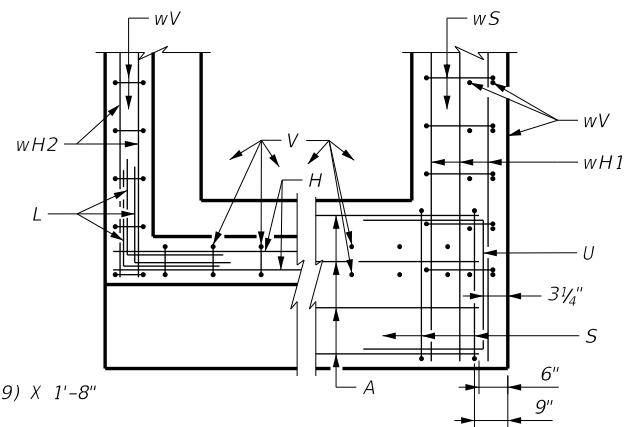
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	743

LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



**BACKWALL
CAP
CORNER DETAILS**

TABLE OF ESTIMATED QUANTITIES PHASE I (ONE ABUT)

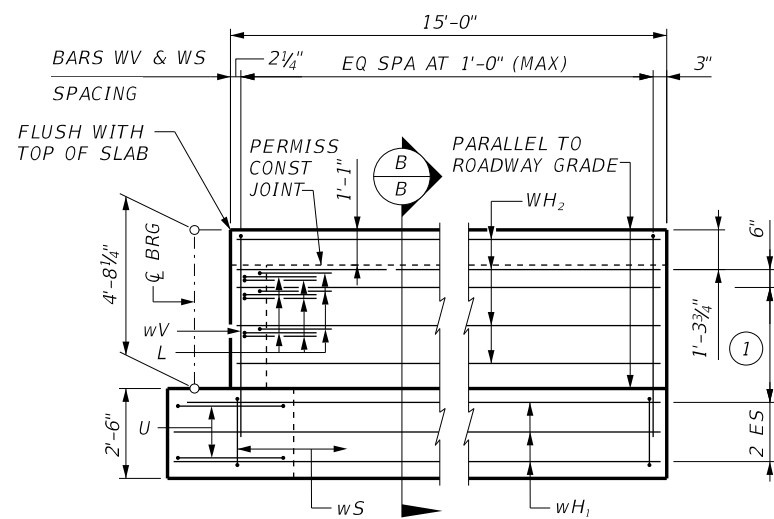
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31'-4"	1,665
D	2	#9	1'-8"	18
H	8	#6	31'-4"	376
S	28	#5	11'-4"	331
V	30	#5	11'-11"	370
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,759
CONC (ABUT)			CY	13.6

TABLE OF ESTIMATED QUANTITIES PHASE II (ONE ABUT)

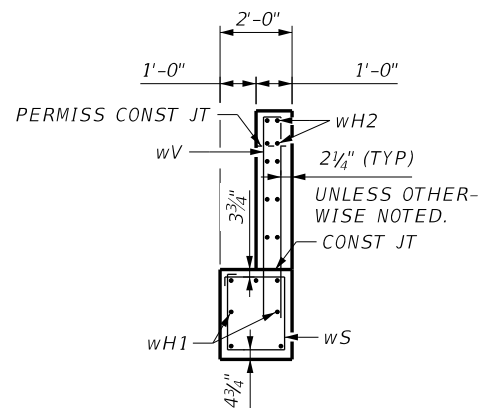
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	26'-0"	1,381
D	1	#9	1'-8"	9
H	8	#6	26'-4"	316
L	9	#6	4'-0"	54
S	27	#5	11'-4"	319
U	2	#6	8'-0"	24
V	28	#5	11'-11"	347
wH1	7	#6	16'-1"	169
wH2	10	#6	14'-8"	220
wS	16	#4	7'-8"	82
wV	16	#5	12'-2"	202
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,124
CONC (ABUT)			CY	18.2

KEYED NOTES

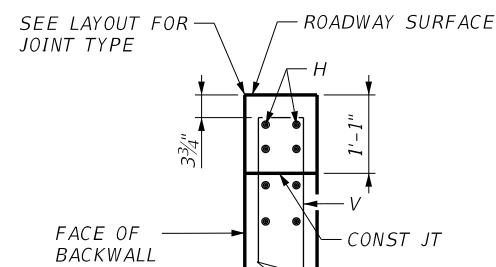
- ① SPACING BASED ON BEAM TYPE: XB40 ~ 3 EQUAL SPACES
- ② RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ③ MEASURED ALONG ϕ OF BEARING.
- ④ OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.



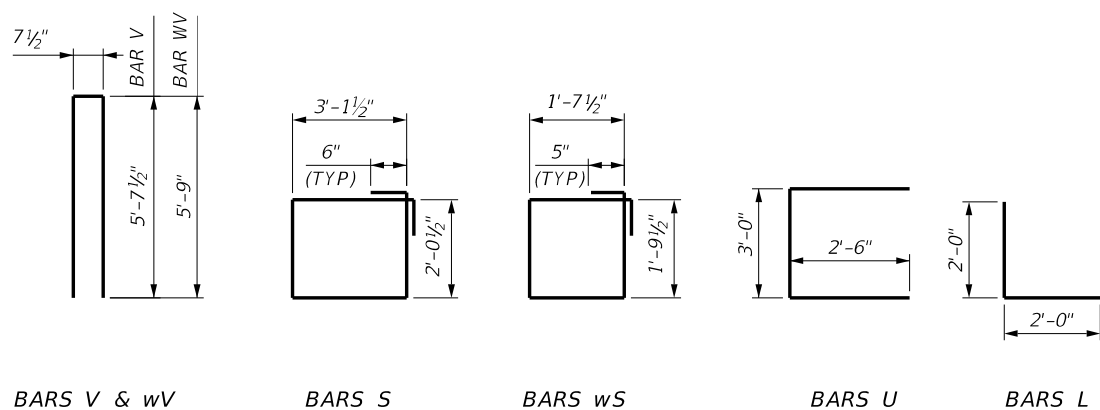
WINGWALL ELEVATION



SECTION B-B



**BACKWALL DETAIL
(WITH APPROACH SLAB)**



HL93 LOADING

NOT TO SCALE

2/28/2024

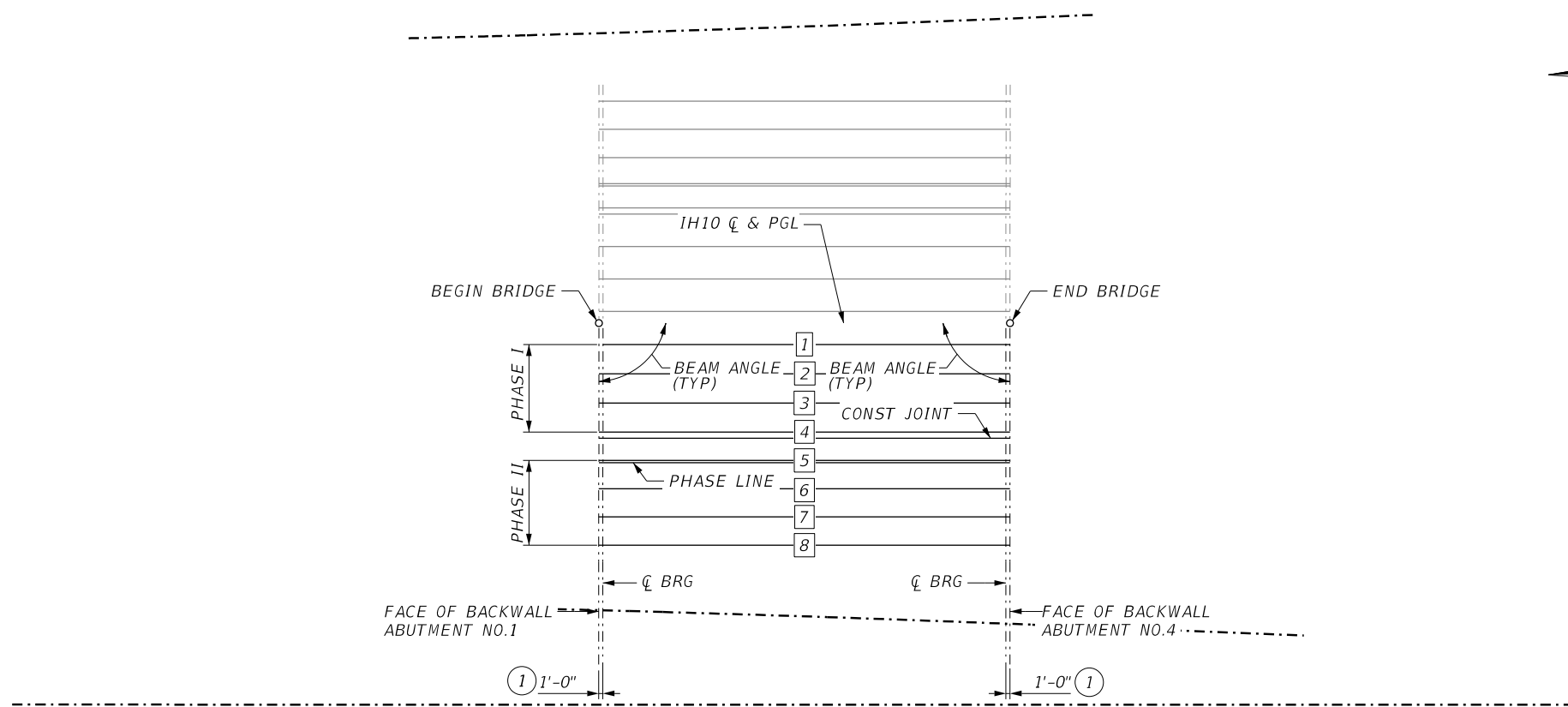
NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE I & II
 MIDDLE ARROYO #3A BRIDGE
 IH10 EB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	744



SPAN 1
(5XB40 BEAMS)
BEAM LAYOUT

KEYED NOTES

- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
- ③ BEAM SPACING SHOWN IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X BEAMS.

BEAM REPORT

PHASE I			
BEAM REPORT, SPAN 1			
	HORIZONTAL DISTANCE	TRUE DISTANCE	BEAM SLOPE
	C-C BENT	BOT. BM. FLG.	
BEAM 1	100.000	99.500	0.0035
BEAM 2	100.000	99.500	0.0035
BEAM 3	100.000	99.500	0.0035
BEAM 4	100.000	99.500	0.0035

PHASE II			
BEAM REPORT, SPAN 1			
	HORIZONTAL DISTANCE	TRUE DISTANCE	BEAM SLOPE
	C-C BENT	BOT. BM. FLG.	
BEAM 5	100.000	99.500	0.0035
BEAM 6	100.000	99.500	0.0035
BEAM 7	100.000	99.500	0.0035
BEAM 8	100.000	99.500	0.0035

BENT REPORT

PHASE I				
ABUTMENT NO. 1 (N 86 46 1.98 W)				
DISTANCE BETWEEN STATION LINE AND BEAM 1 5.208 R				
	BEAM	BEAM SPAC. (C.L. BENT)	D	BEAM ANGLE
SPAN 1	BEAM 1	0.000	90	0 0
	BEAM 2	7.101	90	0 0
	BEAM 3	7.101	90	0 0
	BEAM 4	7.101	90	0 0
	TOTAL	21.303		

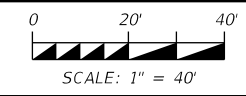
PHASE II				
ABUTMENT NO. 2 (N 86 46 1.98 W)				
DISTANCE BETWEEN STATION LINE AND BEAM 1 5.208 R				
	BEAM	BEAM SPAC. (C.L. BENT)	D	BEAM ANGLE
SPAN 1	BEAM 1	0.000	90	0 0
	BEAM 2	7.101	90	0 0
	BEAM 3	7.101	90	0 0
	BEAM 4	7.101	90	0 0
	TOTAL	21.303		

BENT REPORT

PHASE I				
ABUTMENT NO. 1 (N 86 46 1.98 W)				
DISTANCE BETWEEN STATION LINE AND BEAM 1 5.208 R				
	BEAM	BEAM SPAC. (C.L. BENT)	D	BEAM ANGLE
SPAN 1	BEAM 5	6.872	90	0 0
	BEAM 6	6.872	90	0 0
	BEAM 7	6.872	90	0 0
	BEAM 8	6.872	90	0 0
	TOTAL	27.488		

PHASE II				
ABUTMENT NO. 2 (N 86 46 1.98 W)				
DISTANCE BETWEEN STATION LINE AND BEAM 1 5.208 R				
	BEAM	BEAM SPAC. (C.L. BENT)	D	BEAM ANGLE
SPAN 1	BEAM 5	6.872	90	0 0
	BEAM 6	6.872	90	0 0
	BEAM 7	6.872	90	0 0
	BEAM 8	6.872	90	0 0
	TOTAL	27.488		

HL93 LOADING

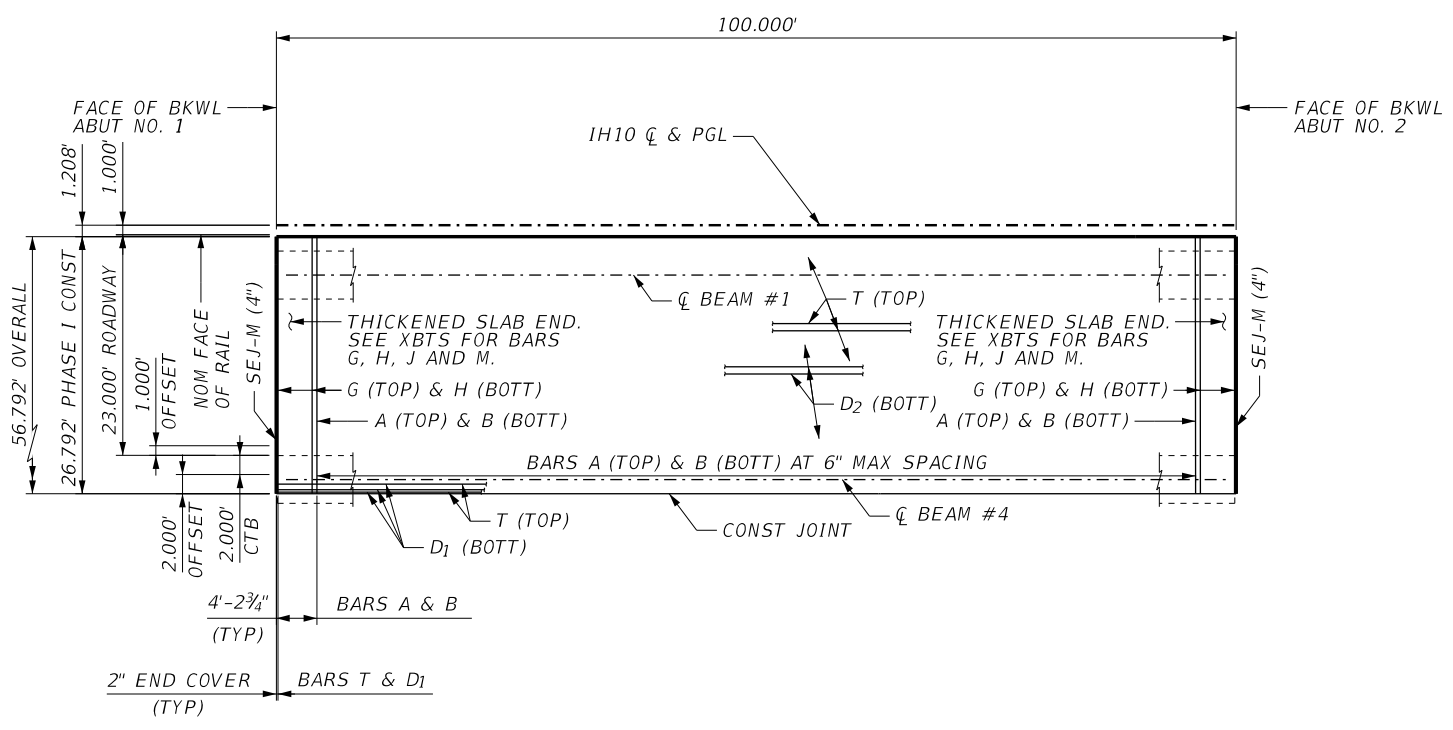


IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
MIDDLE ARROYO #3A BRIDGE
IH10 EB
(STA 184+93 TO STA 185+93)

FED. RD. DIV. NO.		STATE		FEDERAL AID PROJECT		HIGHWAY NO.	
6		TEXAS		SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.		
ELP	EL PASO	2121	01	104	745		

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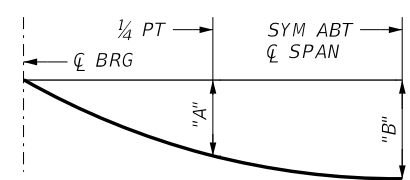


SPAN 1
PLAN PHASE I

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH F'C = 4,000 PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:

EPOXY COATED ~ #4 = 2'-1"
 ~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

TABLE OF DEFLECTIONS PHASE I			
SPAN	BEAM	"A"	"B"
NO.	NO.	FT	FT
1	1	0.079	0.112
	2-3	0.074	0.105
	4	0.073	0.104



DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY (EC = 5,000 KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

HL93 LOADING



2/28/2024



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB40) UNITS
PHASE I
MIDDLE ARROYO #3A BRIDGE
IH10 EB
(STA 184+93 TO STA 185+93)**

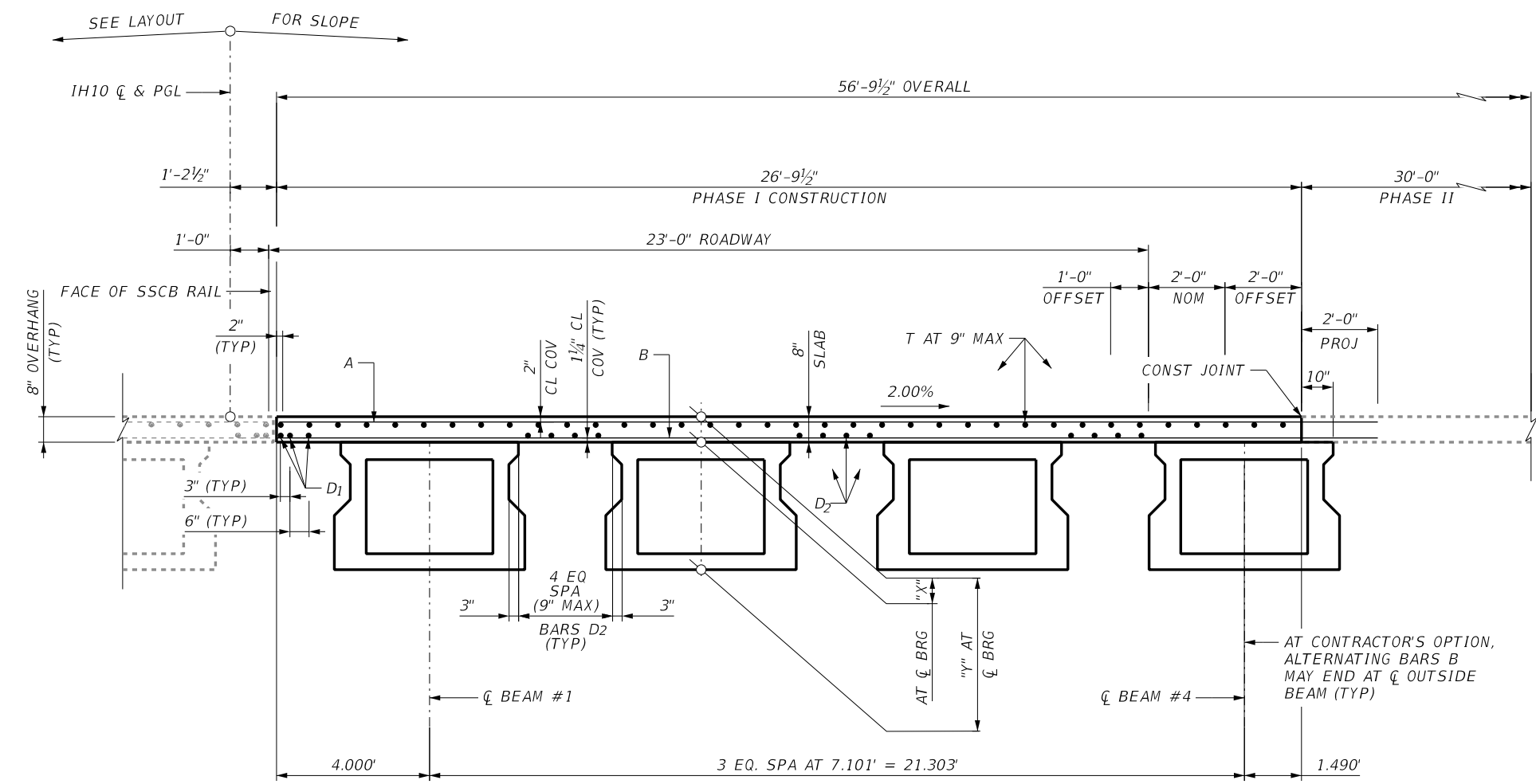
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	746

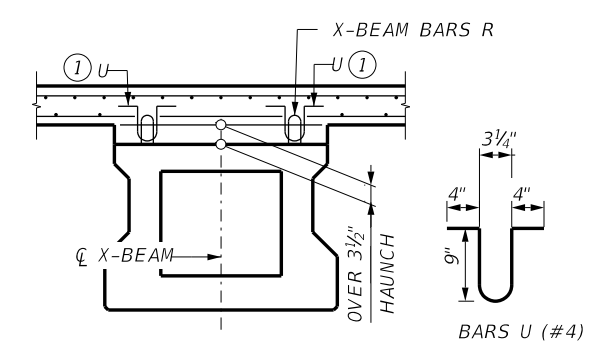
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BAR TABLE PHASE I

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4



TYPICAL TRANSVERSE SECTION PHASE I
(5XB40) SPAN 1



HAUNCH REINFORCING DETAIL

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

KEYED NOTES
① SPACE BARS U WITH BEAM BARS R IN ALL AREAS WHERE MEASURED HAUNCH EXCEEDS 3 1/2".

HL93 LOADING

NOT TO SCALE



2/28/2024

TABLE OF ESTIMATED QUANTITIES PHASE I

SPAN NO.	REINF CONCRETE SLAB	PRESTR CONCRETE X-BEAMS (5XB40)	CLASS "S" CONCRETE	TOTAL REINF STEEL
	SF	LF	CY	LB
1	2,680	400.00	79.88	17,420
TOTAL	2,680	400.00	79.88	17,420

TABLE OF SECTION DEPTHS FOR PHASE I

SPAN NO.	BEAM NO.	"X" IN	"Y" IN
1	1-4	12	52

NO.	DATE	REVISION	APPROV.

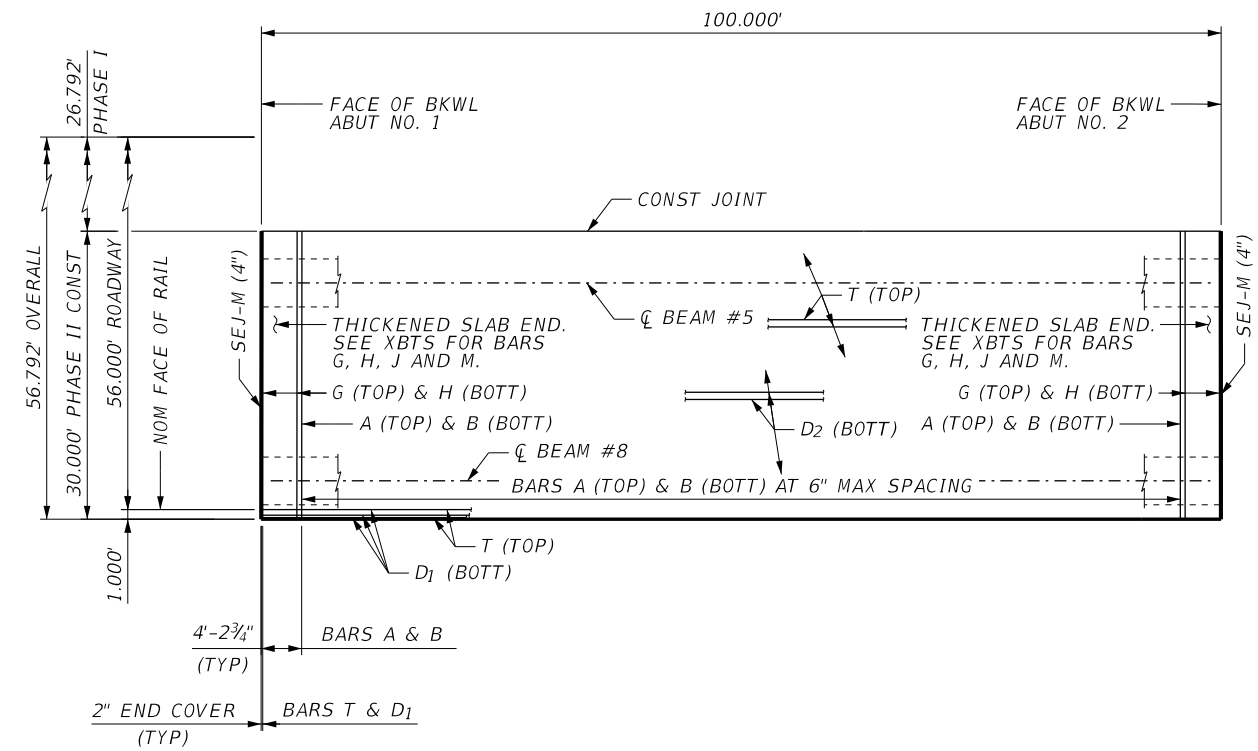


IH 10 WIDENING (NMSL/SPUR 37) PRESTRESSED CONCRETE X-BEAM (5XB40) UNITS PHASE I
MIDDLE ARROYO #3A BRIDGE
IH10 EB
(STA 184+93 TO STA 185+93)

SHEET 2 OF 2

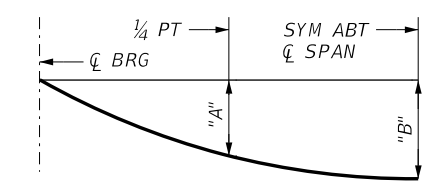
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	747

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SPAN 1
PLAN PHASE II

TABLE OF DEFLECTIONS PHASE II			
SPAN	BEAM	"A"	"B"
NO.	NO.	FT	FT
1	5-7	0.072	0.102
	8	0.078	0.110



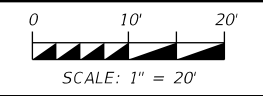
DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY (EC = 5,000 KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH F'C = 4,000 PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:

EPOXY COATED ~ #4 = 2'-1"
 ~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

HL93 LOADING



NO.	DATE	REVISION	APPROV.



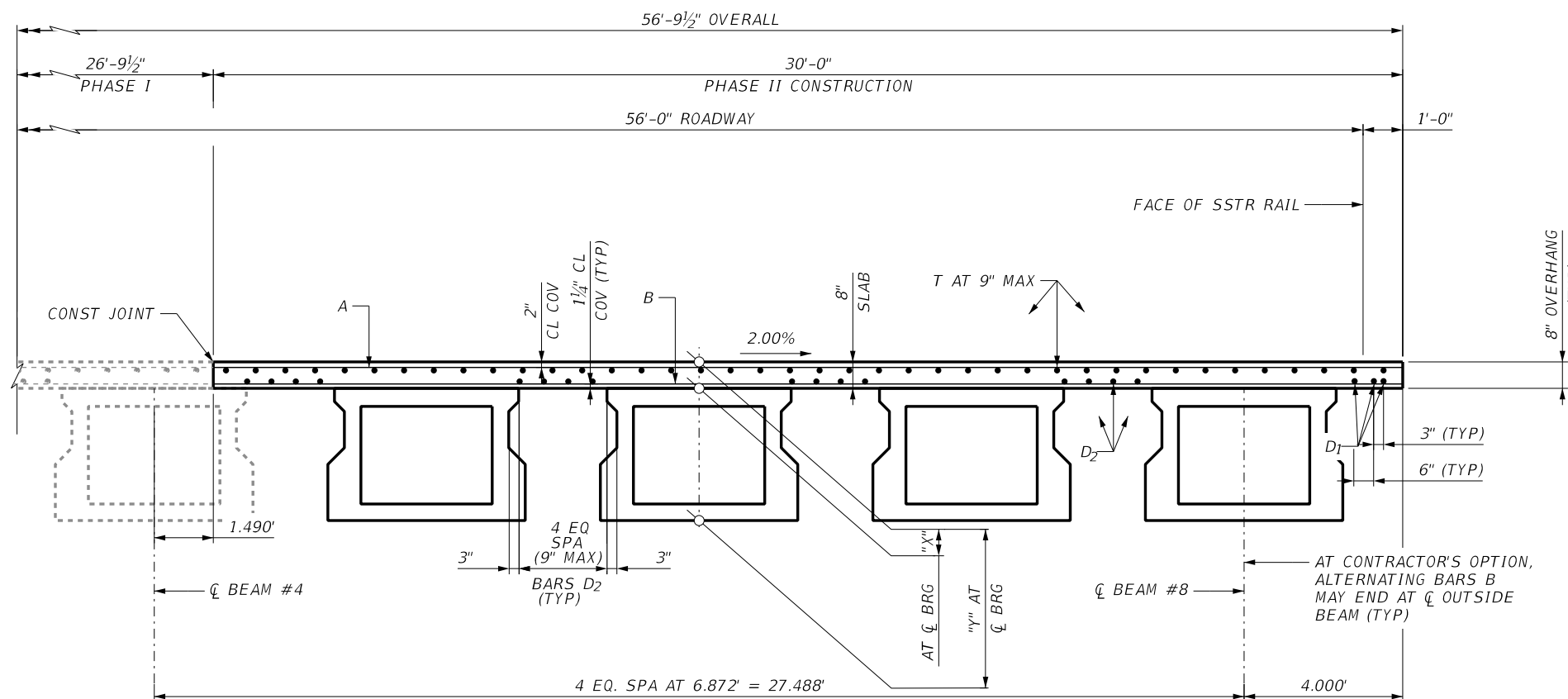
**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB40) UNITS
PHASE II
MIDDLE ARROYO #3A BRIDGE
IH10 EB
(STA 184+93 TO STA 185+93)**

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO. SHEET NO.
ELP	EL PASO	2121	01	104 748

BAR TABLE PHASE II

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4



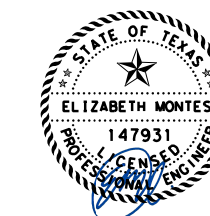
GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

TYPICAL TRANSVERSE SECTION PHASE II

(5XB40) SPAN 1

HL93 LOADING

NOT TO SCALE



2/28/2024

SPAN	REINF CONCRETE SLAB		PRESTR CONCRETE X-BEAMS (5XB40)	CLASS "S" CONCRETE	TOTAL REINF STEEL
	NO.	SF			
1	3,000	400.00	83.66	19,500	
TOTAL	3,000	400.00	83.66	19,500	

SPAN	BEAM	"X"	"Y"
NO.	NO.	IN	IN
1	5-8	12	52



IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB40) UNITS
PHASE II
MIDDLE ARROYO #3A BRIDGE
IH10 EB
(STA 184+93 TO STA 185+93)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
JOB NO.	SHEET NO.	104	749

GENERAL NOTES

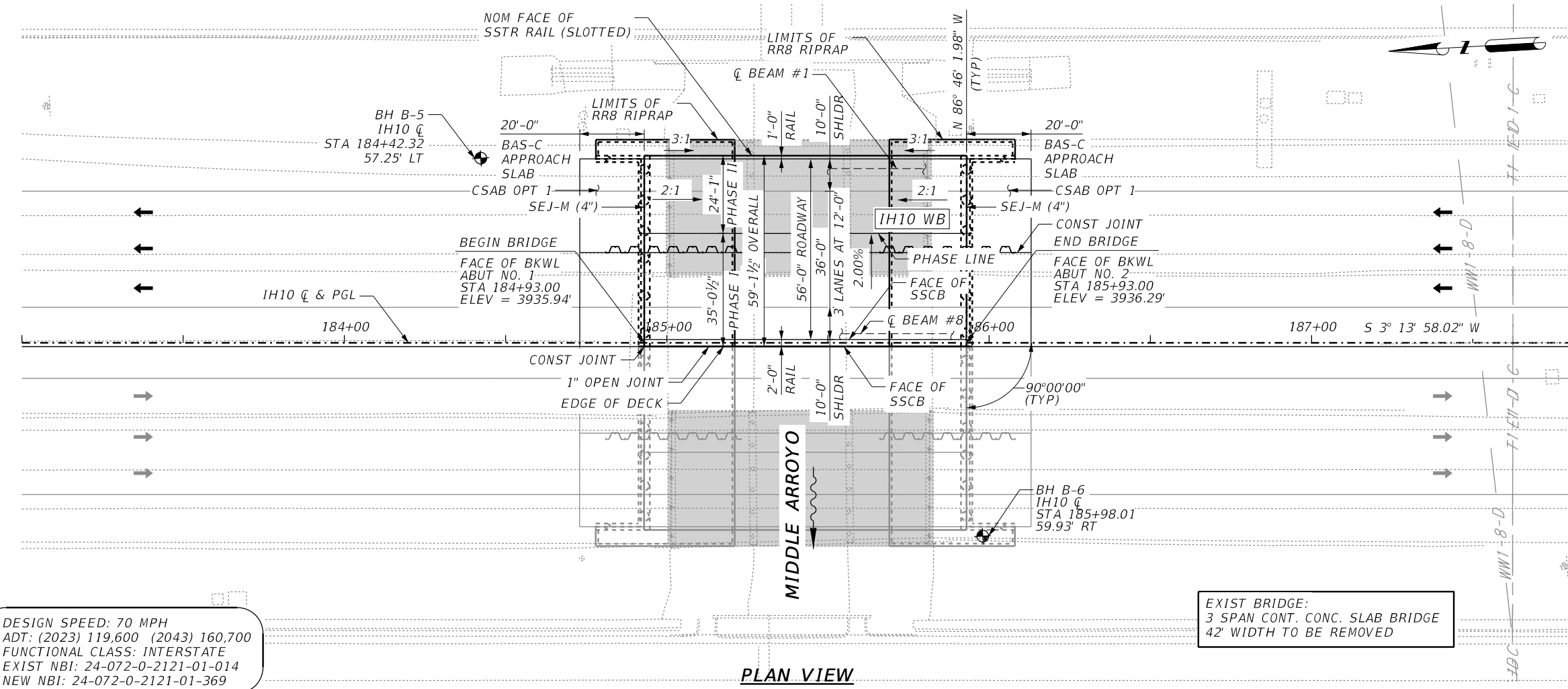
- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) (HL-93 LOADING).
- ◆ DENOTES APPROXIMATE SOIL BORING LOCATION. SEE BORING LOG SHEET FOR GEOTECHNICAL INFORMATION.
- BEAM END CONDITIONS:
D: DENOTES DOWEL AT EXTERIOR GIRDERS.
BLANK: DENOTES NO DOWEL.
- THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING QUANTITIES FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION OR FABRICATION.
- SHAFT LENGTHS NOTED ARE AVERAGE LENGTH PER BENT.
- FOR TYPICAL SECTIONS SEE "PHASED BRIDGE TYPICAL SECTIONS" SHEET.
- SEE SHEET 765 FOR AESTHETIC BRIDGE DETAILS.

LEGEND

- STRUCTURE TO BE REMOVED
- CHANNEL EXCAVATION
- TEMP SPL SHORING

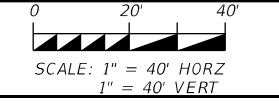
DESIGN SPEED: 70 MPH
 ADT: (2023) 119,600 (2043) 160,700
 FUNCTIONAL CLASS: INTERSTATE
 EXIST NBI: 24-072-0-2121-01-014
 NEW NBI: 24-072-0-2121-01-369

EXIST BRIDGE:
 3 SPAN CONT. CONC. SLAB BRIDGE
 42' WIDTH TO BE REMOVED



PLAN VIEW

HL93 LOADING

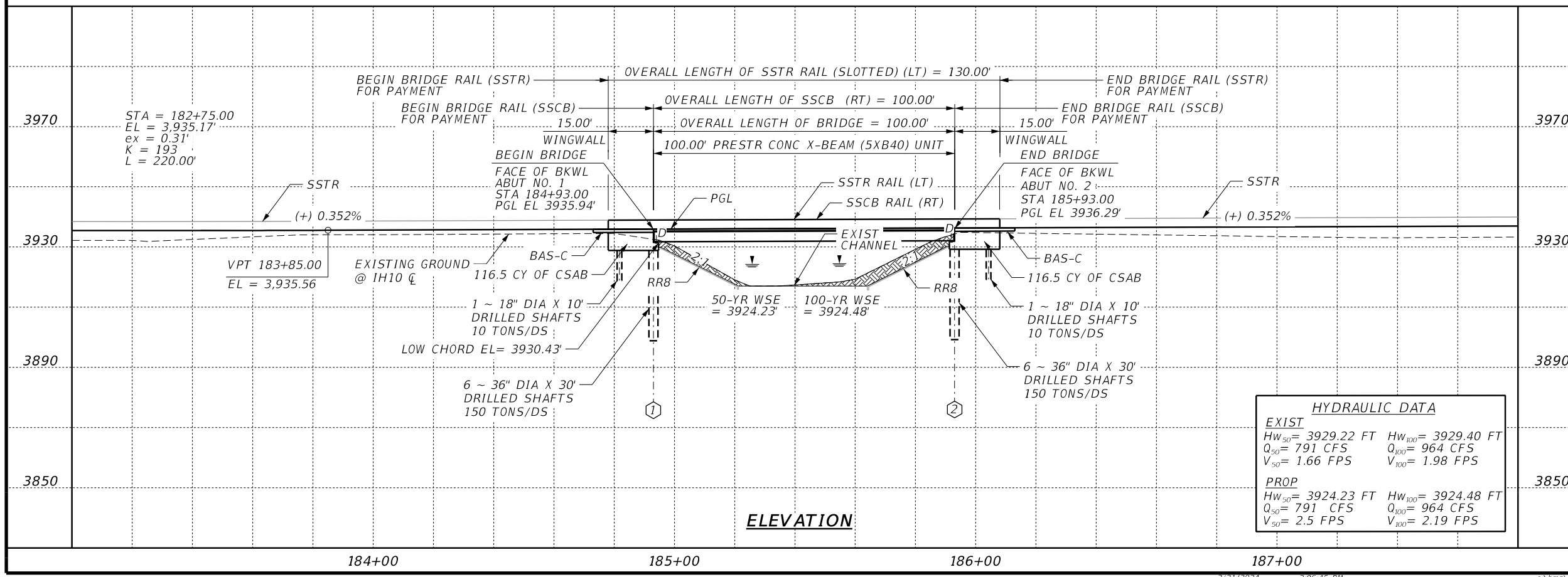


IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE LAYOUT
 MIDDLE ARROYO #3B BRIDGE
 IH10 WB
 (STA 184+93 TO STA 185+93)

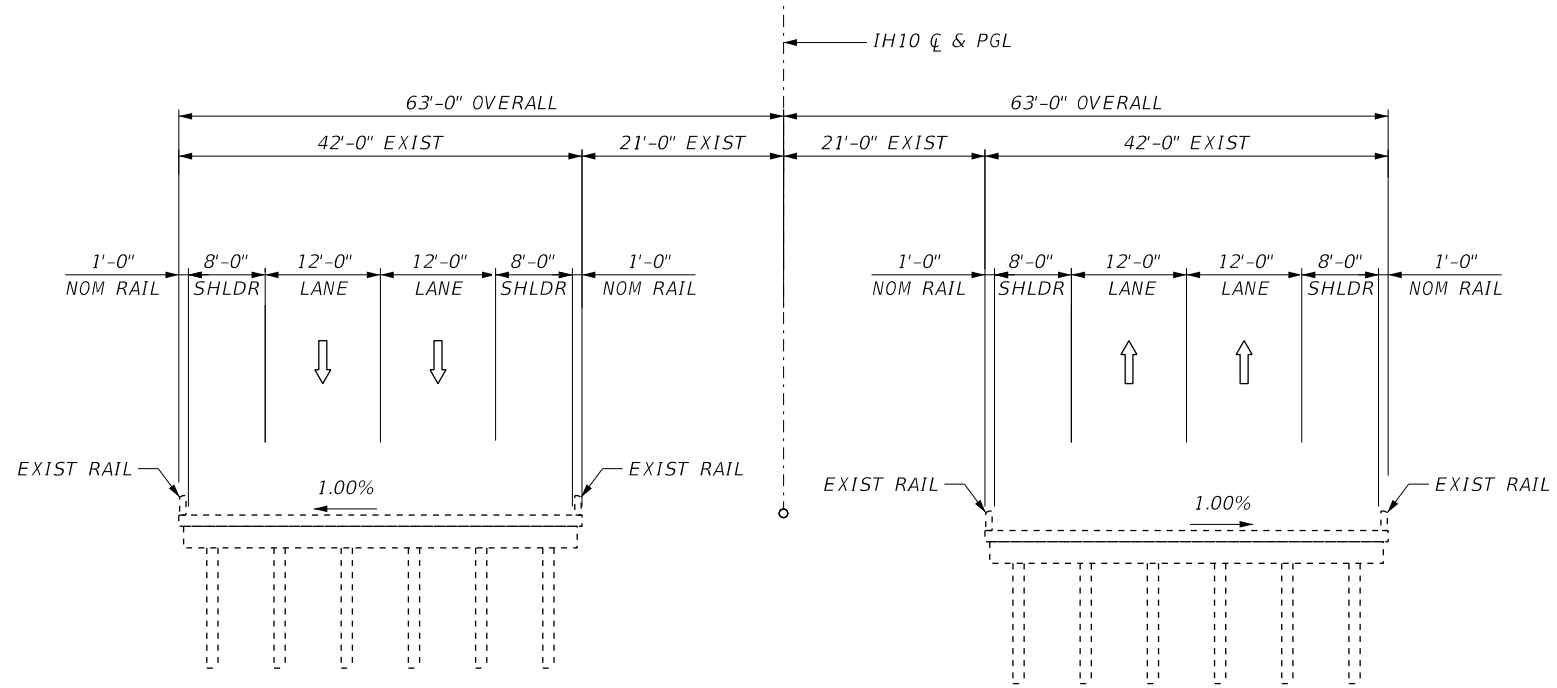
SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	750

HYDRAULIC DATA			
EXIST			
Hw ₅₀ = 3929.22 FT	Hw ₁₀₀ = 3929.40 FT		
Q ₅₀ = 791 CFS	Q ₁₀₀ = 964 CFS		
V ₅₀ = 1.66 FPS	V ₁₀₀ = 1.98 FPS		
PROP			
Hw ₅₀ = 3924.23 FT	Hw ₁₀₀ = 3924.48 FT		
Q ₅₀ = 791 CFS	Q ₁₀₀ = 964 CFS		
V ₅₀ = 2.5 FPS	V ₁₀₀ = 2.19 FPS		

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ELEVATION



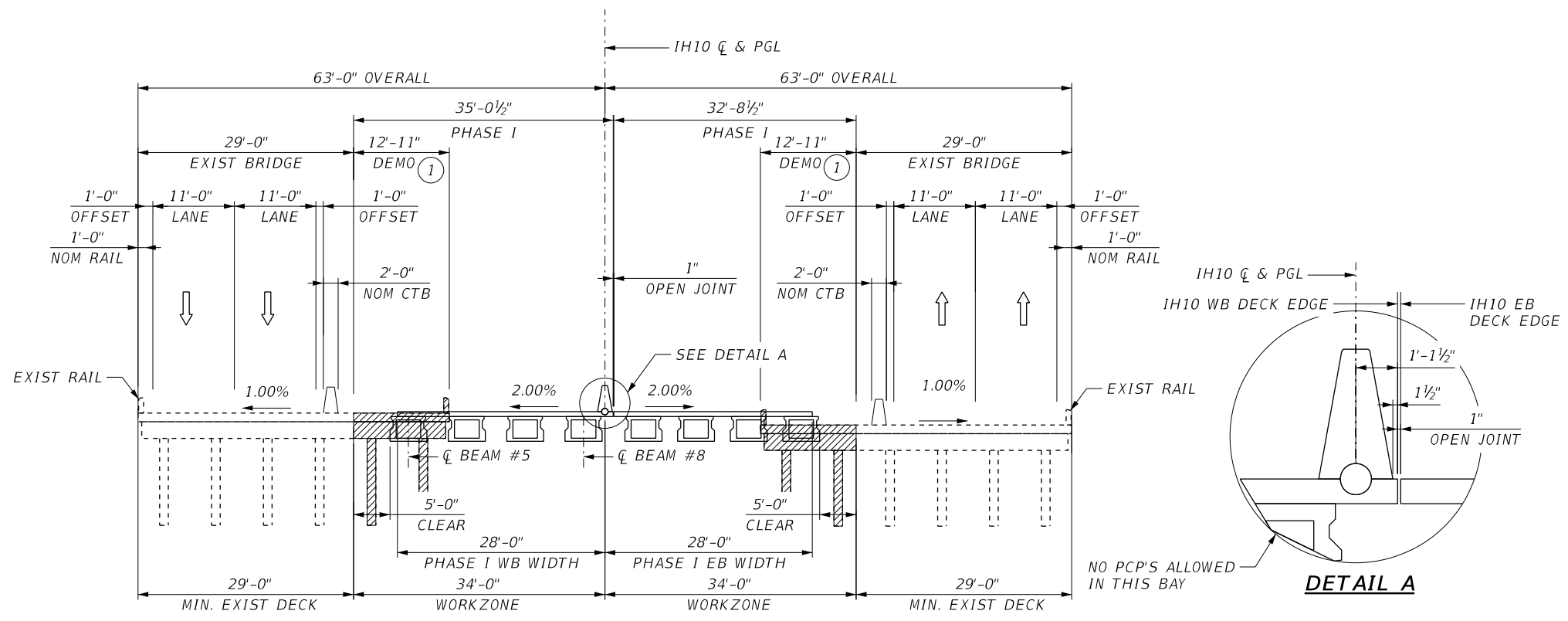
EXIST SECTION

GENERAL NOTES

- CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE



PHASE I SECTION

- SAWCUT EXISTING CAP AS NECESSARY TO AVOID CONFLICT WITH BEAM. DO NOT CUT BEYOND LIMITS OF DEMOLITION. DO NOT REMOVE EXISTING COLUMNS NOT MARKED FOR DEMOLITION IN THIS PHASE.

HL93 LOADING

NOT TO SCALE

2/28/2024

NO.	DATE	REVISION	APPROV.

F-12040

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IH 10 WIDENING (NMSL/SPUR 37)
BRIDGE
TYPICAL SECTIONS
MIDDLE ARROYO #3B BRIDGE
 IH10 WB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	751

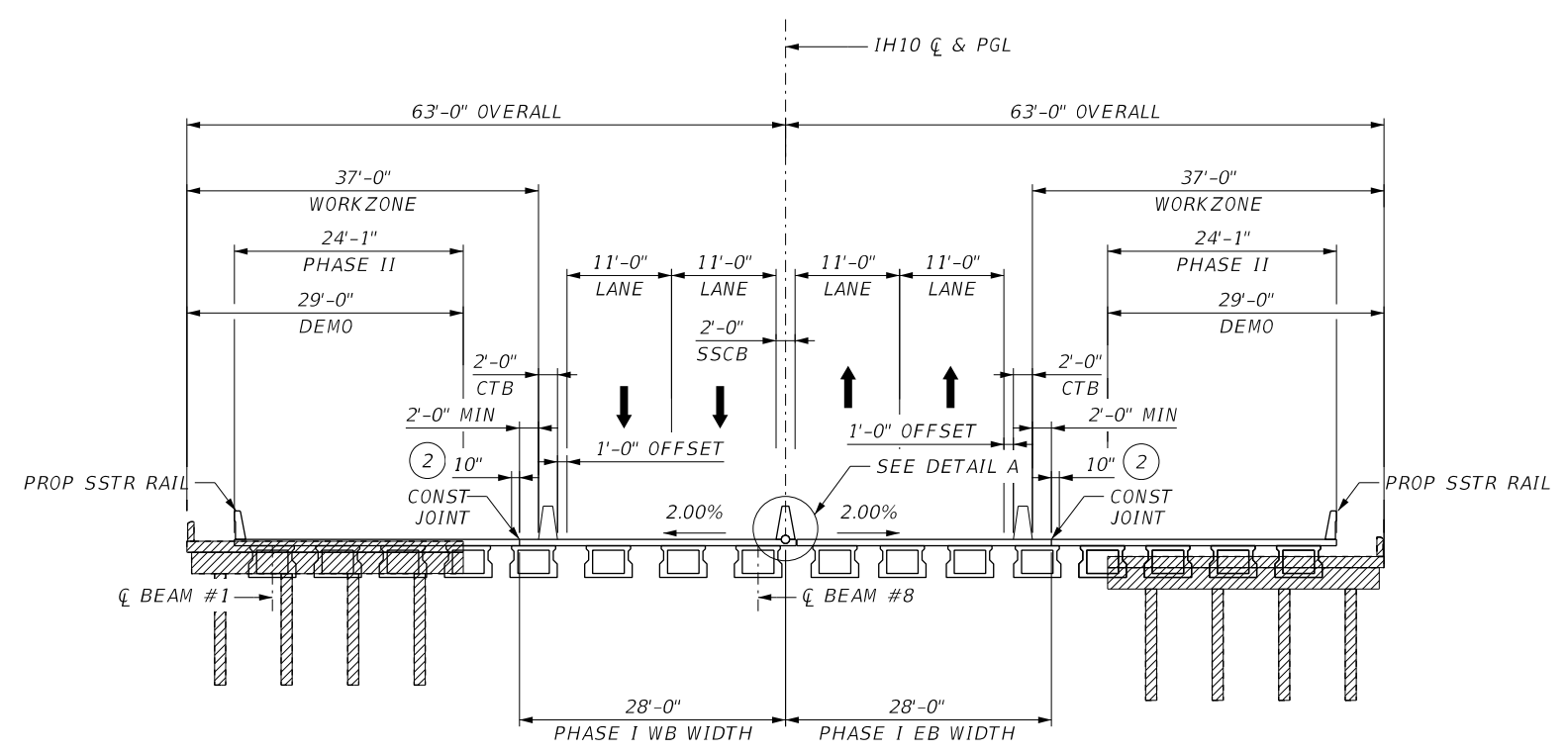
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 2/28/2024

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY EXISTING BRIDGE CONDITIONS PRIOR TO ANY DEMOLITION.

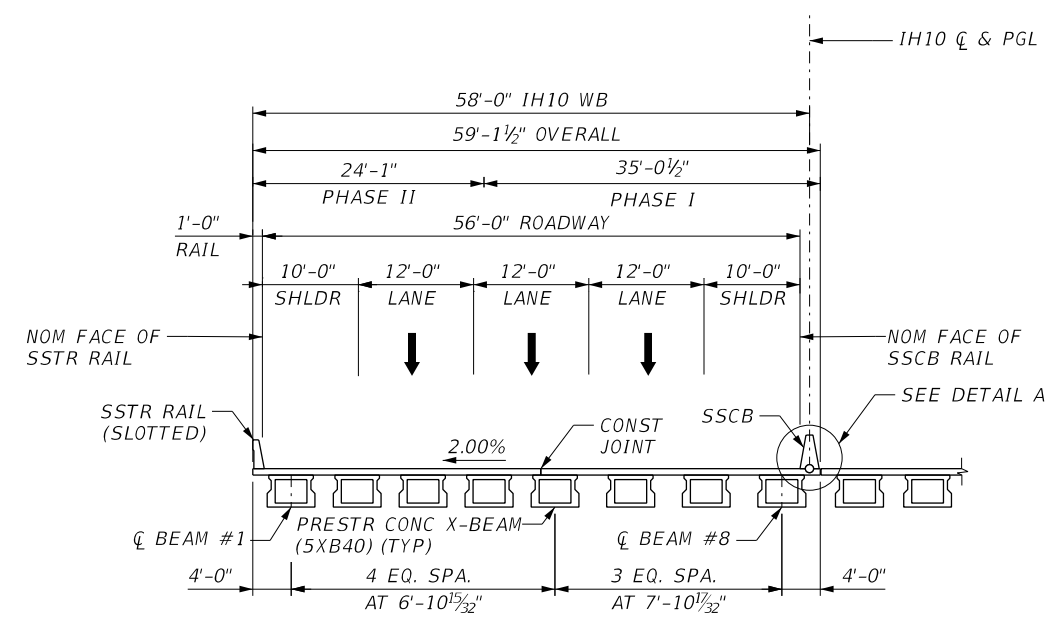
LEGEND

- ↑ EXISTING TRAFFIC FLOW ARROW
- ↑ PROPOSED TRAFFIC FLOW ARROW
- ▨ DEMOLITION OF EXIST BRIDGE

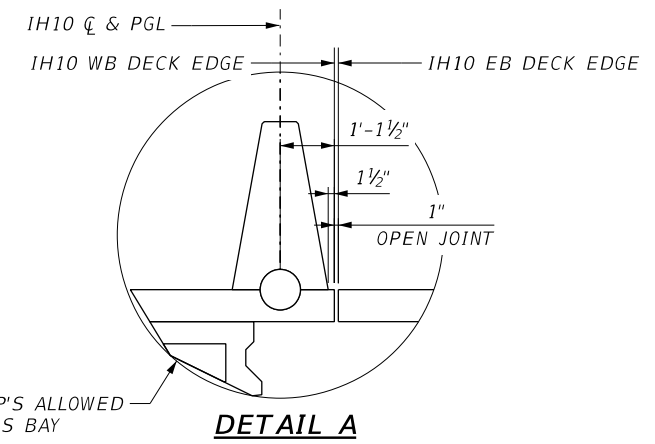


PHASE II SECTION

(2) EDGE OF DECK TO EDGE OF TOP OF BEAM.



IH10 WB FINAL SECTION



DETAIL A

HL93 LOADING

NOT TO SCALE



2/28/2024

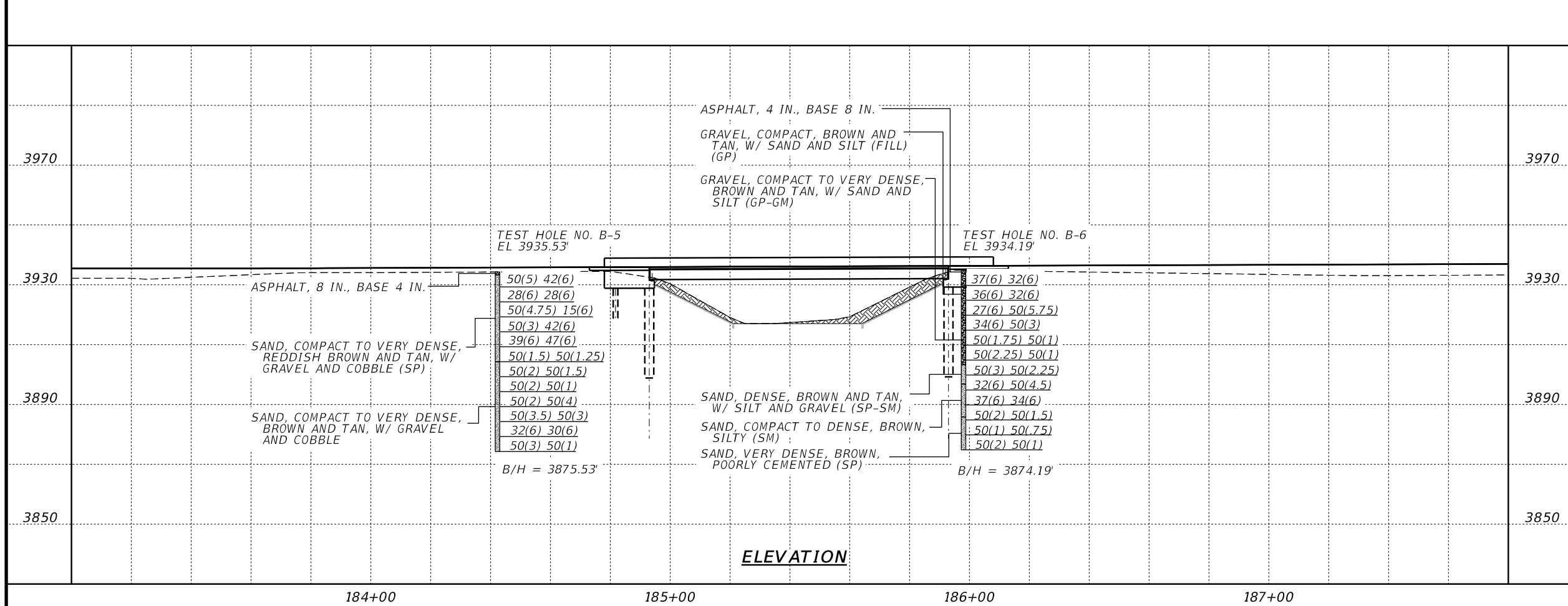


IH 10 WIDENING (NMSL/SPUR 37) BRIDGE
TYPICAL SECTIONS
MIDDLE ARROYO #3B BRIDGE
 IH10 WB
 (STA 184+93 TO STA 185+93)

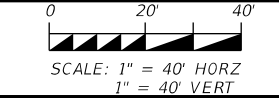
SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET		IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
ELP	EL PASO	2121	01	104
				SHEET NO.
				752

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HL93 LOADING



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
BORING LOGS
MIDDLE ARROYO #3A & #3B BRIDGE
IH10 EB & IH10 WB
(STA 184+93 TO STA 185+93)

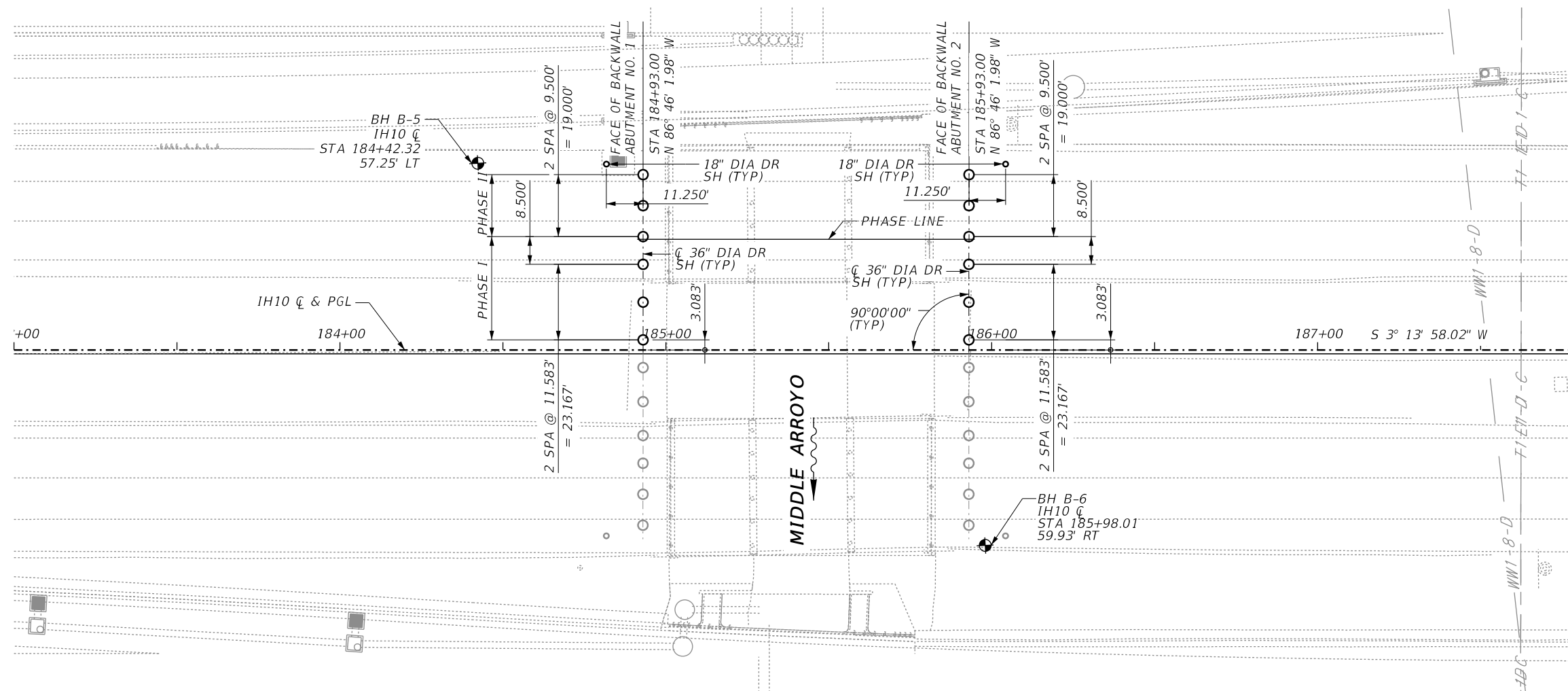
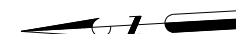
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	753

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GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE CONSTRUCTION AND ORDERING MATERIAL.
2. SEE COMMON FOUNDATION DETAILS FD STANDARD SHEET FOR ALL STRUCTURAL DETAILS AND NOTES NOT SHOWN.



LEGEND
 BORE HOLE

HL93 LOADING



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)

FOUNDATION LAYOUT
 MIDDLE ARROYO #3B BRIDGE
 IH10 WB
 (STA 184+93 TO STA 185+93)

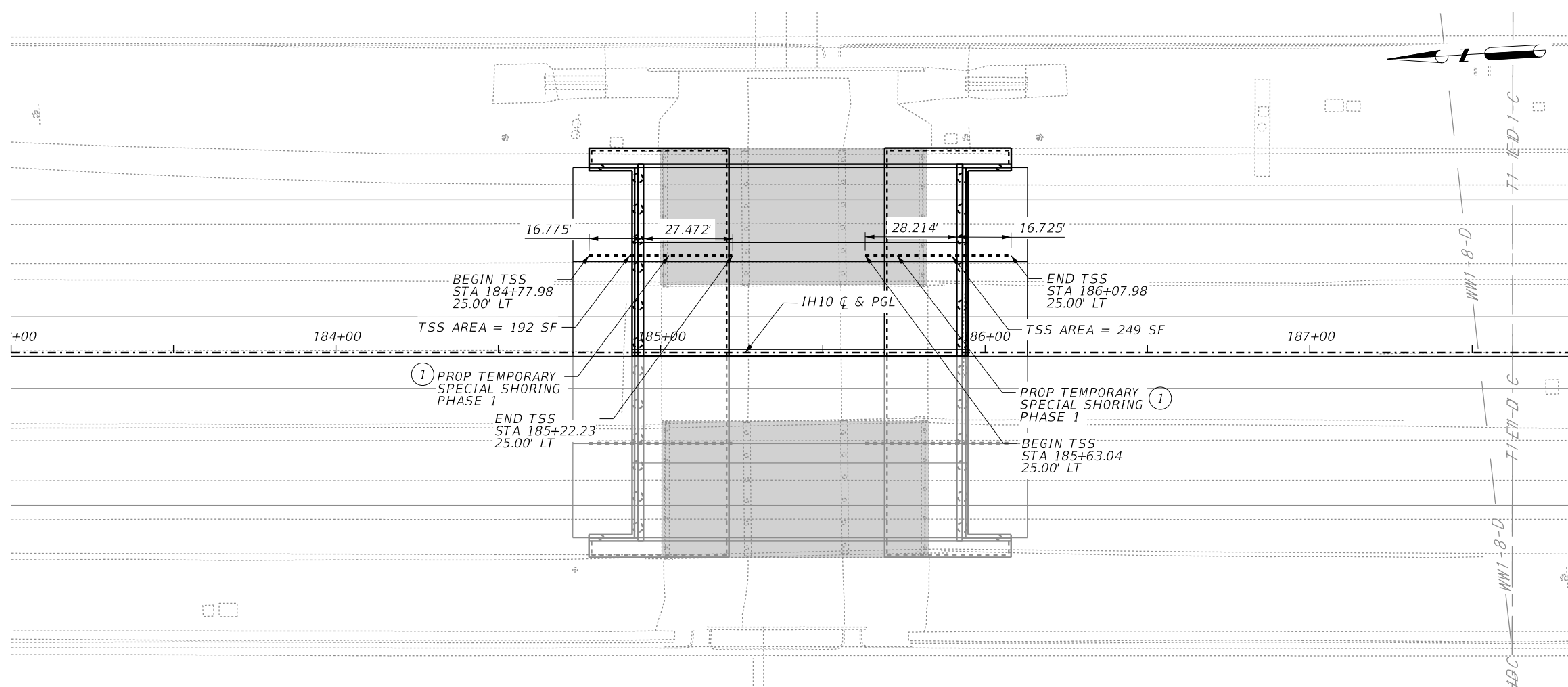
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	754

FOUNDATION LOADS	
ABUT/BENT	TONS/SHAFT
1&2	150
WINGWALL	10

LEGEND

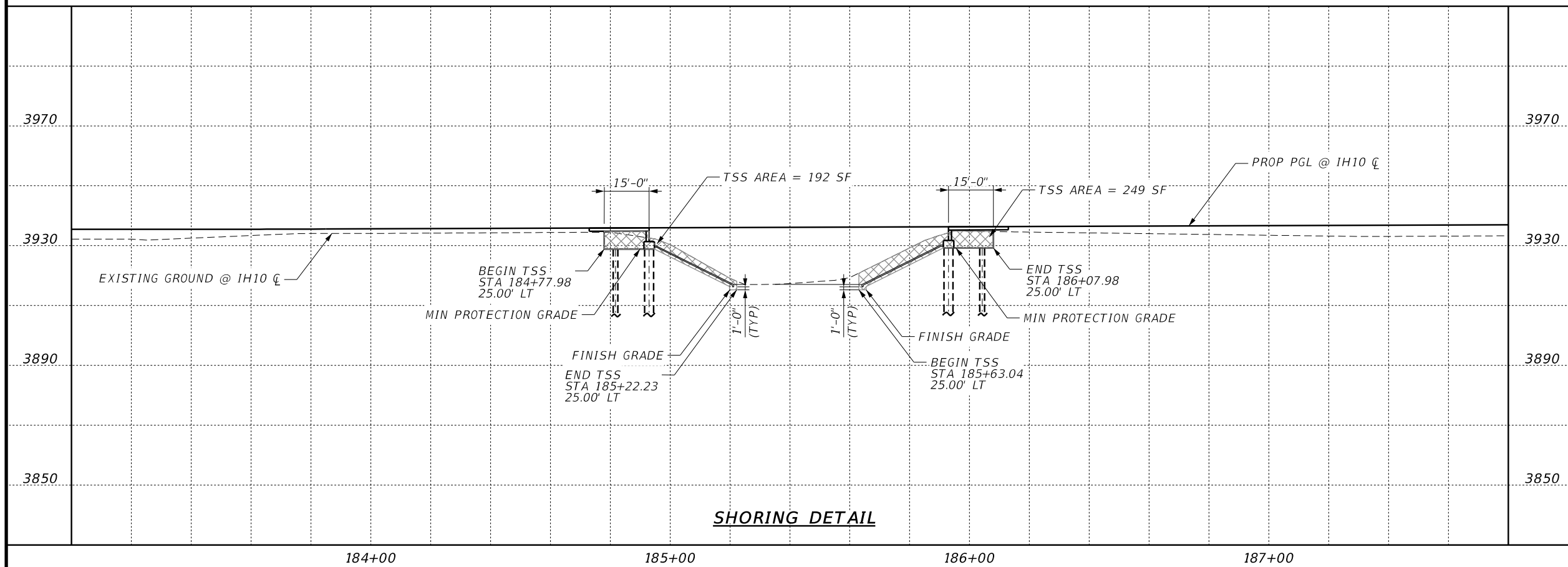
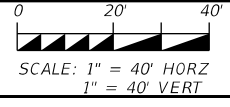
TEMPORARY SPL SHORING



PLAN VIEW

1 PAID FOR UNDER ITEM 403 TEMPORARY SPL SHORING.

HL93 LOADING



SHORING DETAIL



2/28/2024



IH 10 WIDENING (NMSL/SPUR 37)
TEMPORARY SPECIAL SHORING LAYOUT
 MIDDLE ARROYO #3B BRIDGE
 IH10 WB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	755

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				PHASE II				PHASE I				
				BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	
1	ABUT	1	(FWD)	L	3930.241	3930.379	3930.516	3930.654	3930.791	3930.949	3931.106	3931.264
				R	3930.361	3930.499	3930.636	3930.774	3930.911	3931.069	3931.226	3931.384
2	ABUT	2	(BK)	L	3930.690	3930.827	3930.965	3931.102	3931.240	3931.397	3931.555	3931.712
				R	3930.810	3930.947	3931.085	3931.222	3931.360	3931.517	3931.675	3931.832



2/28/2024

NO.	DATE	REVISION	APPROV.



IH 10 WIDENING (NMSL/SPUR 37)
BEARING SEAT ELEVATIONS
 MIDDLE ARROYO #3B BRIDGE
 IH10 WB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT			HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET			IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	756

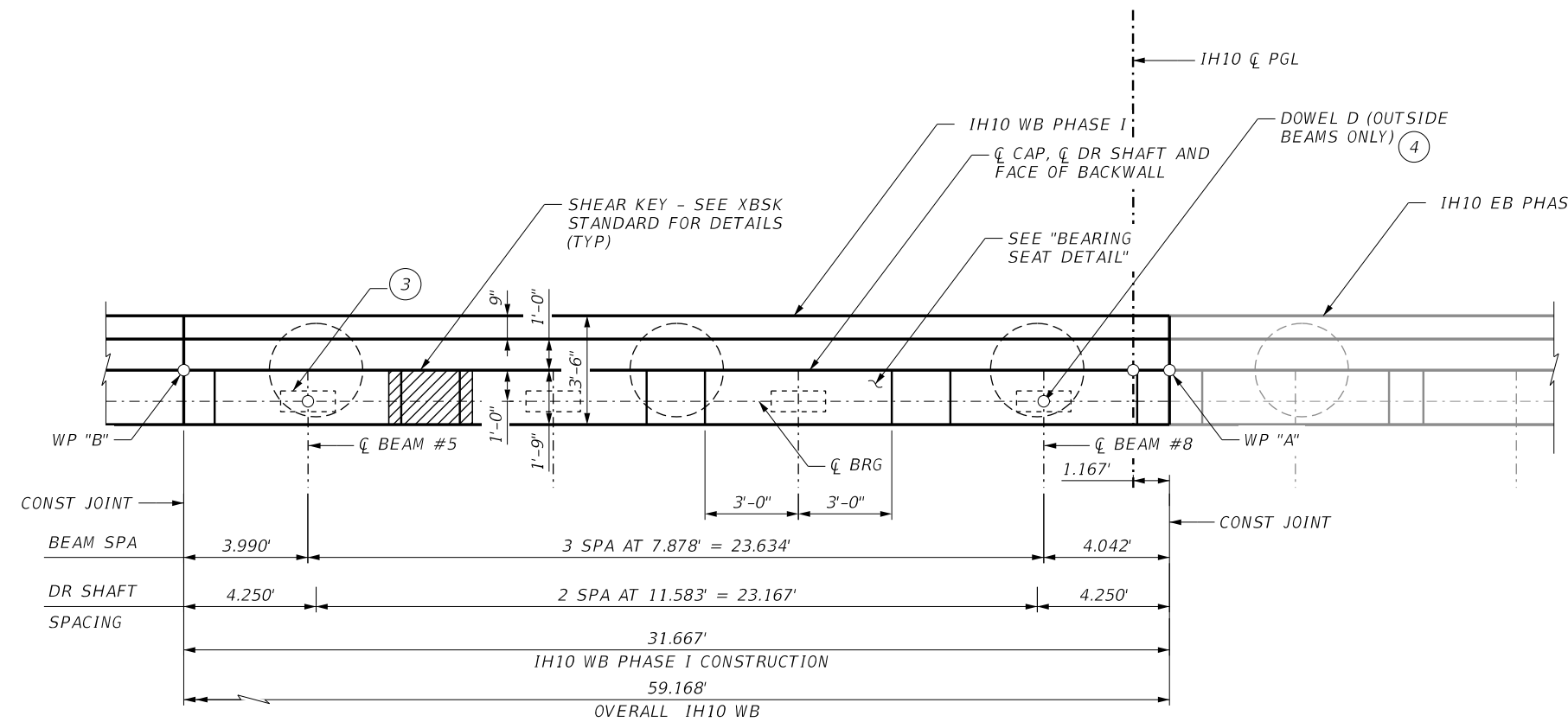
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GENERAL NOTES

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- CONCRETE STRENGTH $f'_c = 3,600$ PSI.
- ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
- SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPLICING TO THREADED MECHANICAL COUPLERS.

KEYED NOTES

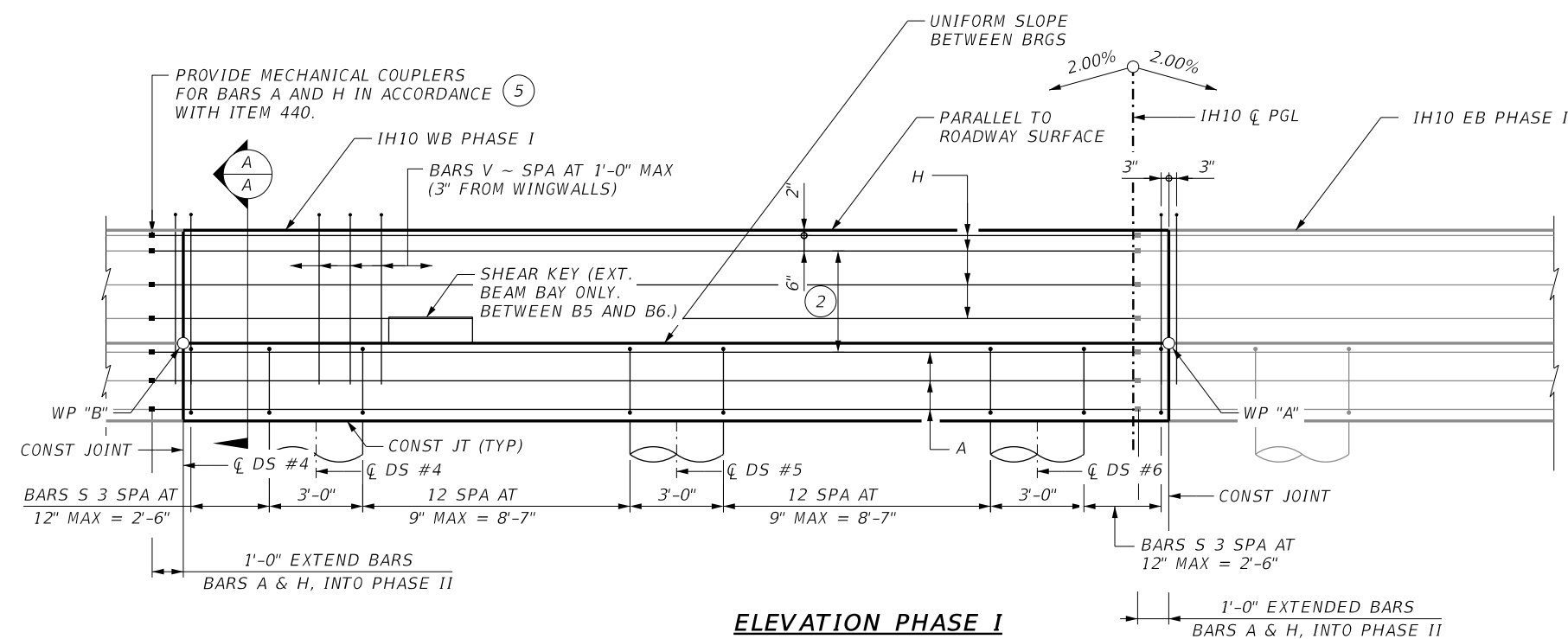
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
- SPACING BASED ON BEAM TYPE: XB40 ~ 3 EQUAL SPACES
- PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
- OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
- MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



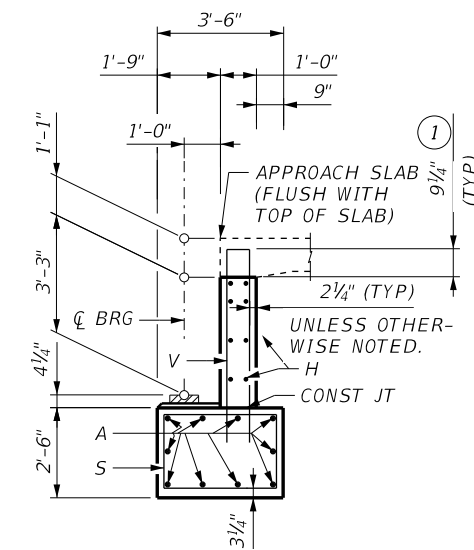
WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 2
A	3931.23'	3931.58'
B	3930.64'	3930.99'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 2
4	3928.23'	3928.58'
5	3928.46'	3928.81'
6	3928.69'	3929.04'

PLAN PHASE I

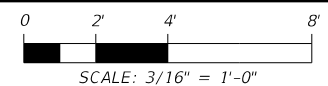


ELEVATION PHASE I



SECTION A-A

HL93 LOADING



2/28/2024



**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE I
MIDDLE ARROYO #3B BRIDGE
IH10 WB
(STA 184+93 TO STA 185+93)**

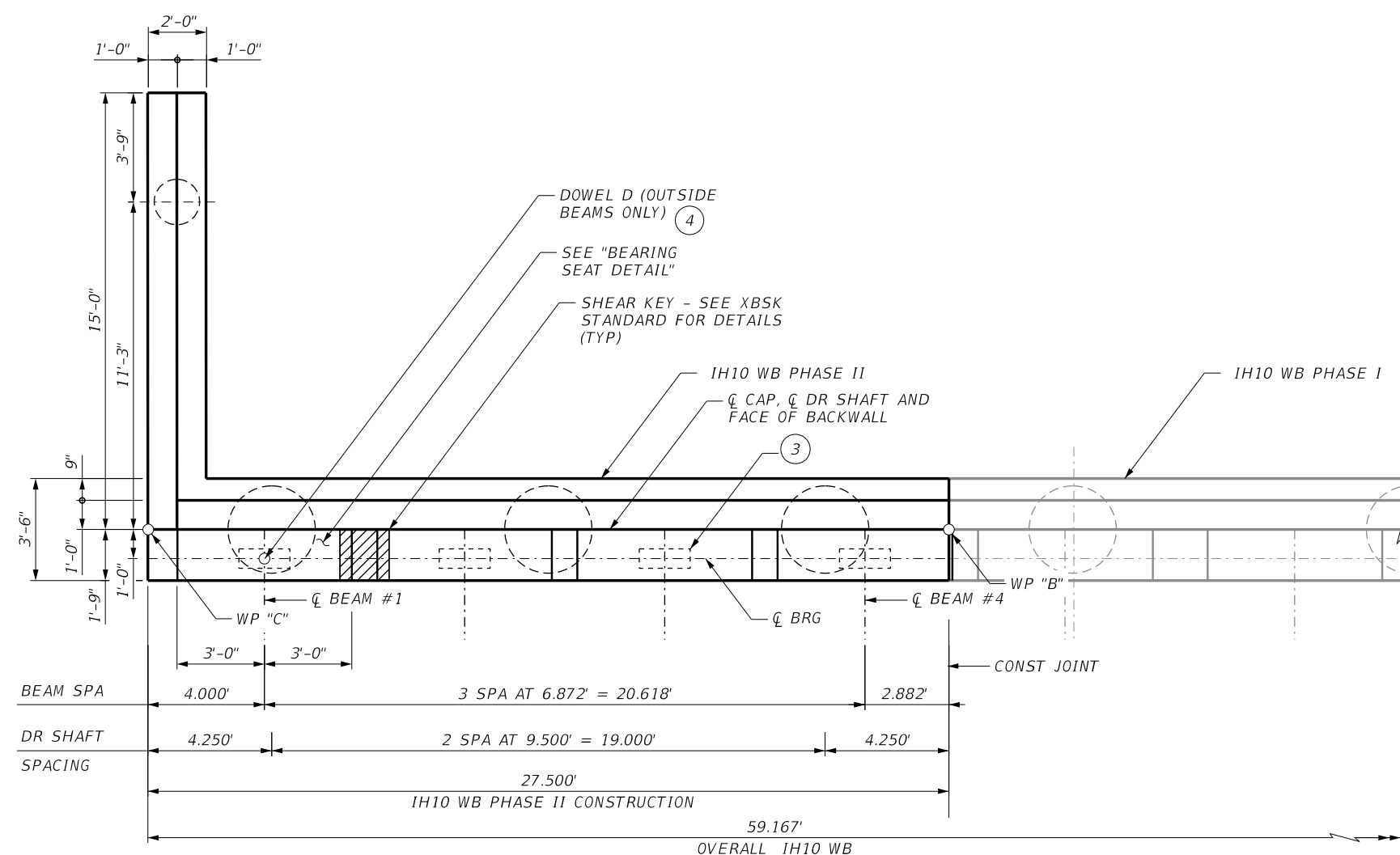
SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	757

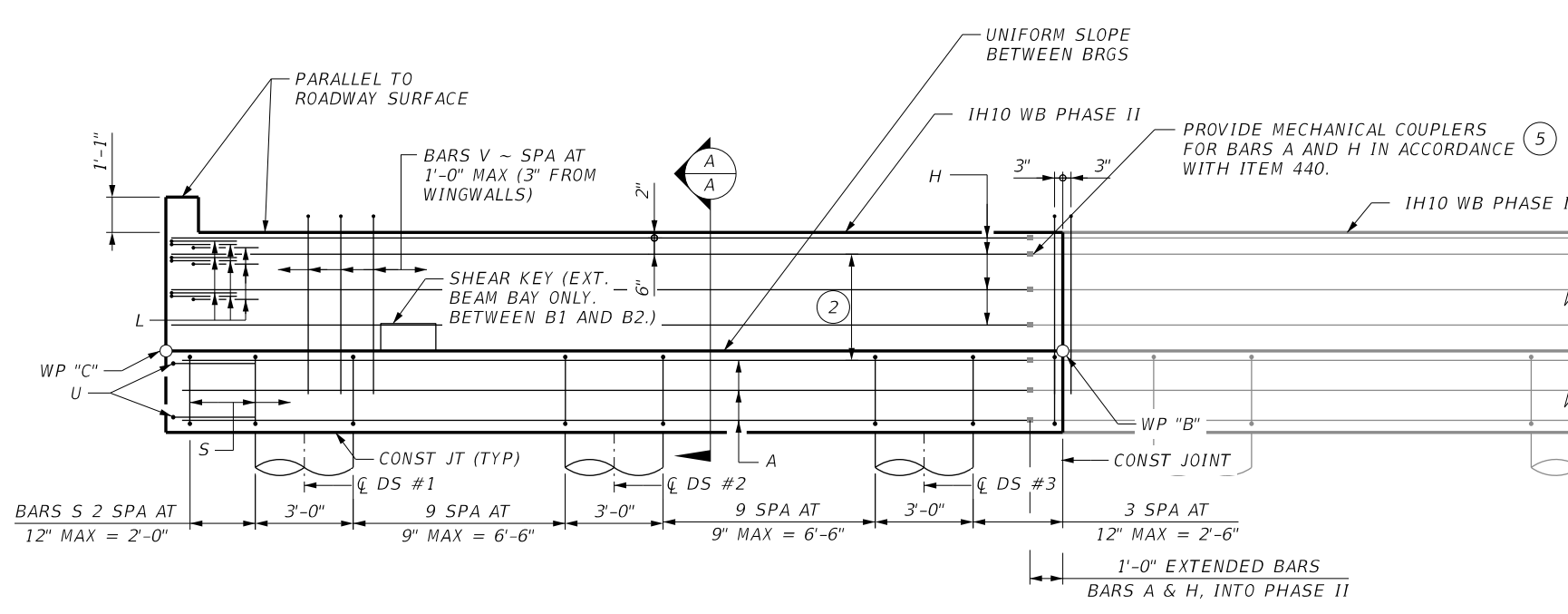
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PLAN PHASE II



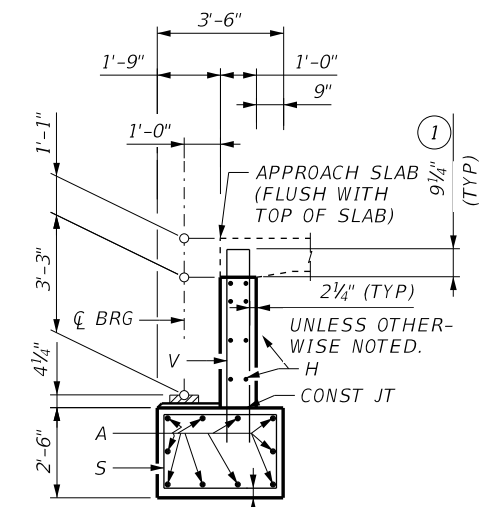
ELEVATION PHASE II

WORKING POINT ELEVATIONS		
WP	ELEV	
	ABUT 1	ABUT 2
B	3930.64'	3930.99'
C	3930.09'	3930.44'

TOP OF DS ELEVATIONS		
DS	ELEV	
	ABUT 1	ABUT 2
1	3927.68'	3928.03'
2	3927.87'	3928.22'
3	3928.06'	3928.41'

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - CONCRETE STRENGTH $F'_C = 3,600$ PSI.
 - ALL CAP AND WALL REINFORCING MUST BE GRADE 60.
 - SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE AND LENGTH.
 - SEE FOUNDATION DETAIL STANDARD SHEET, FD, FOR ALL FOUNDATION DETAILS AND NOTES.
 - SEE CONCRETE RIPRAP STANDARD SHEET, CRR, FOR RIPRAP ATTACHMENT DETAILS.
 - SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
 - LENGTHS SHOWN FOR BARS A AND H DO NOT INCLUDE LENGTH OF THREADED PROJECTION FOR SPlicing TO THREADED MECHANICAL COUPLERS.

- KEYED NOTES**
- INCREASE AS REQUIRED TO MAINTAIN $3\frac{3}{4}$ " FROM FINISHED GRADE.
 - SPACING BASED ON BEAM TYPE: XB40 ~ 3 EQUAL SPACES
 - PLACE ONE BEARING AT FORWARD STATION BEAM END. PLACE TWO BEARINGS AT BACK STATION BEAM END. SEE XBEB STANDARD FOR DETAILS.
 - OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.
 - MECHANICAL COUPLERS TO MEET TXDOT SPECIFICATION DMS-4510, "MECHANICAL COUPLERS FOR REINFORCING STEEL."



SECTION A-A

HL93 LOADING

0 2' 4' 8'
SCALE: 3/16" = 1'-0"

ELIZABETH MONTES
147931
PROFESSIONAL ENGINEER

2/28/2024

NO.	DATE	REVISION	APPROV.

consor
F-12040

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Texas Department of Transportation

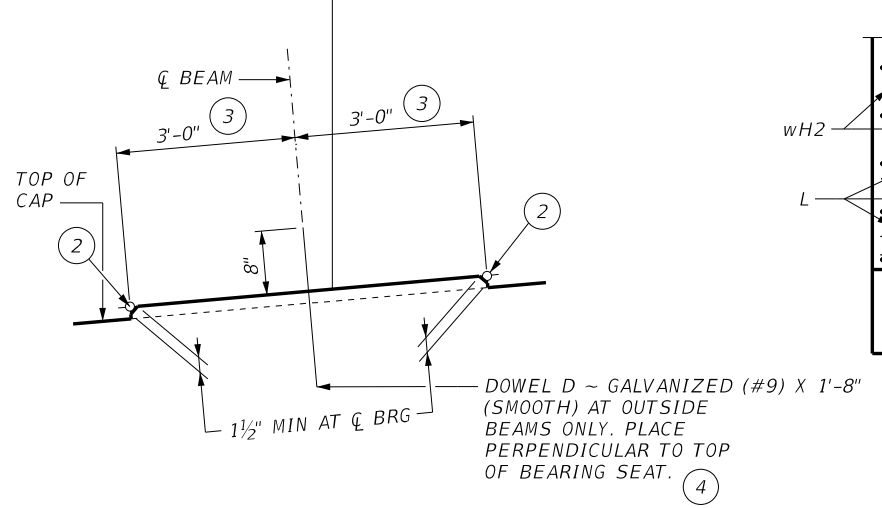
**IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE II
MIDDLE ARROYO #3B BRIDGE
IH10 WB
(STA 184+93 TO STA 185+93)**

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	758

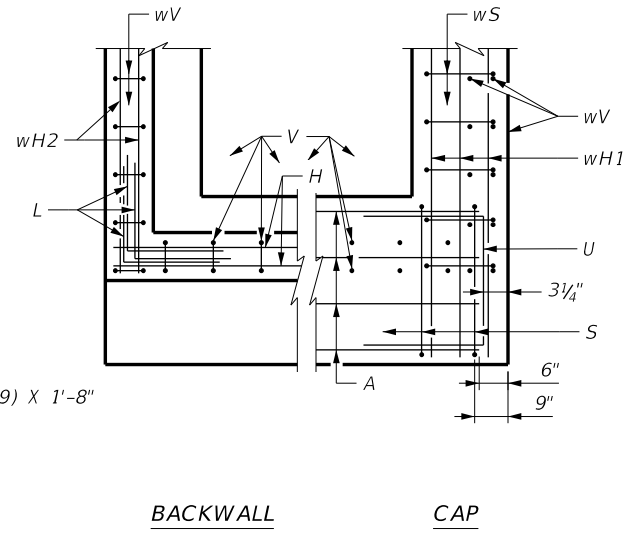
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LEVEL ALONG A LINE PERPENDICULAR TO BACKWALL. UNIFORM SLOPE BETWEEN LEFT AND RIGHT BEARING SEAT ELEVATIONS WITH WOOD FLOAT FINISH.



BEARING SEAT DETAIL

(BEARING SURFACE MUST BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



CORNER DETAILS

TABLE OF ESTIMATED QUANTITIES PHASE I (ONE ABUT)

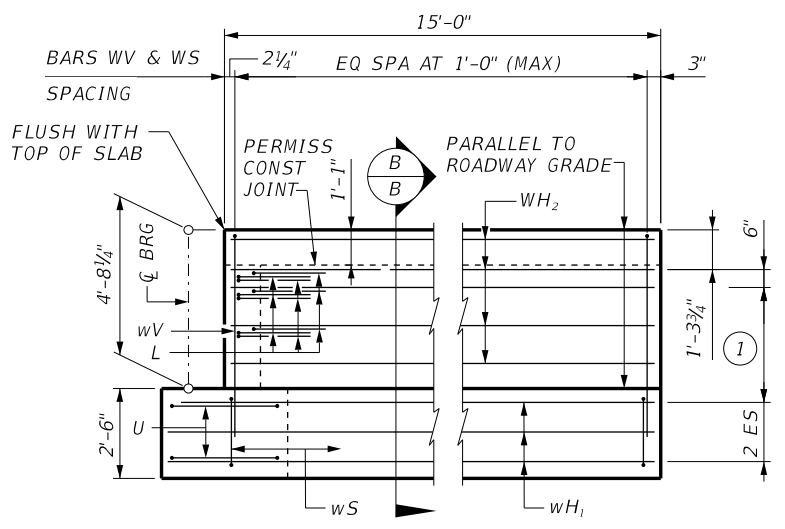
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	31'-8"	1,682
D	2	#9	1'-8"	18
H	8	#6	31'-8"	381
S	34	#5	11'-4"	402
V	33	#5	11'-11"	409
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	2,891
CONC (ABUT)			CY	14.7

TABLE OF ESTIMATED QUANTITIES PHASE II (ONE ABUT)

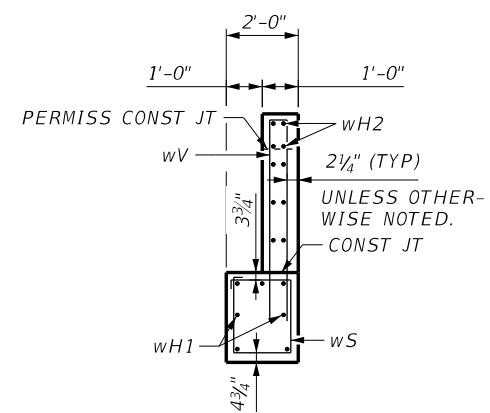
BAR	No.	SIZE	LENGTH	WEIGHT
A	10	#11	26'-0"	1,381
D	1	#9	1'-8"	9
H	8	#6	26'-4"	316
L	9	#6	4'-0"	54
S	27	#5	11'-4"	319
U	2	#6	8'-0"	24
V	28	#5	11'-11"	347
wH1	7	#6	16'-1"	169
wH2	10	#6	14'-8"	220
wS	16	#4	7'-8"	82
wV	16	#5	12'-2"	202
ITEM			UNIT	QUANTITY
REINFORCING STEEL			LB	3,124
CONC (ABUT)			CY	18.3

KEYED NOTES

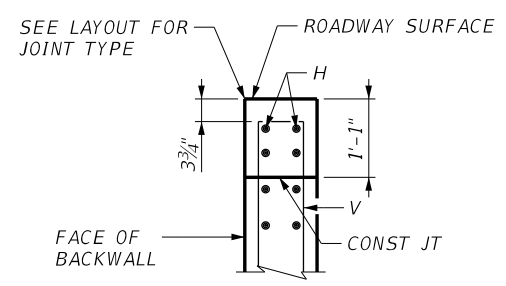
- ① SPACING BASED ON BEAM TYPE: XB40 ~ 3 EQUAL SPACES
- ② RIGHT AND LEFT ELEVATIONS AND LOCATIONS ARE PROVIDED AT THE TABLE OF BEARING SEAT ELEVATIONS.
- ③ MEASURED ALONG ϕ OF BEARING.
- ④ OMIT DOWELS D AT END OF UNIT. ADJUST REINFORCING STEEL TOTAL ACCORDINGLY.



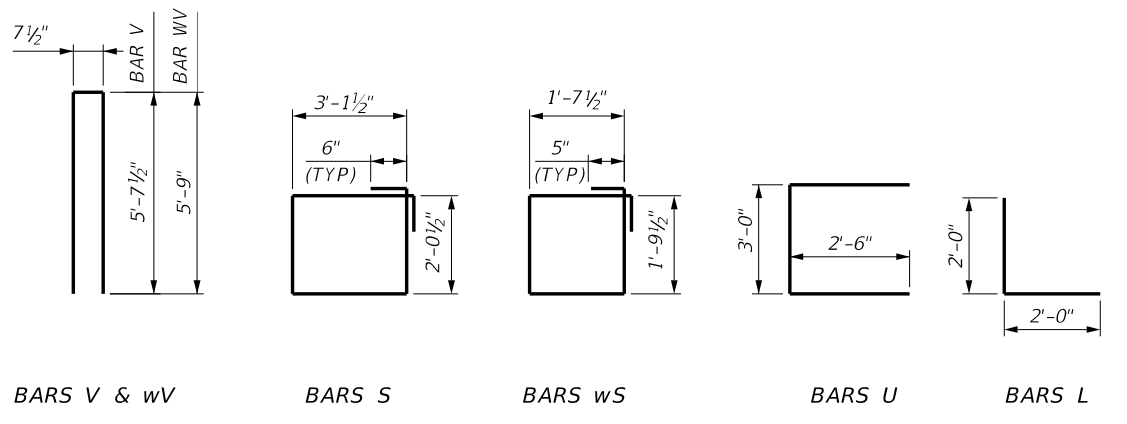
WINGWALL ELEVATION



SECTION B-B



BACKWALL DETAIL (WITH APPROACH SLAB)



HL93 LOADING

NOT TO SCALE

2/28/2024

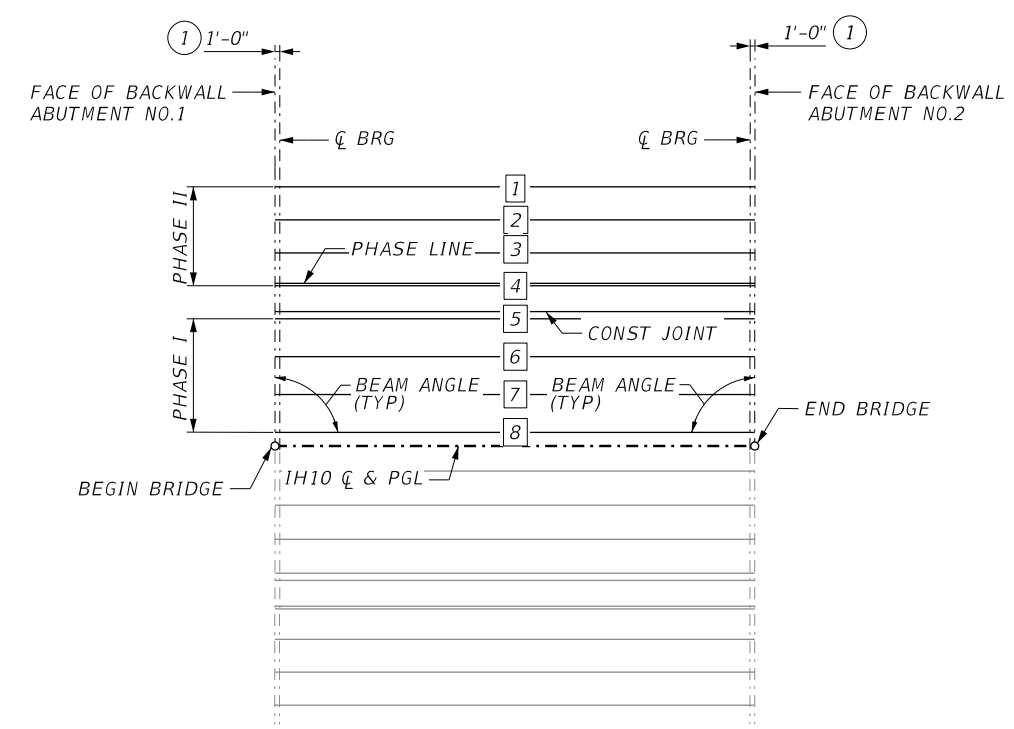
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Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37)
ABUTMENT NO. 1 & 2
PHASE I & II
 MIDDLE ARROYO #3B BRIDGE
 IH10 WB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	759



SPAN 1
(5XB40 BEAMS)
BEAM LAYOUT

- KEYED NOTES**
- ① SEE ELASTOMERIC BEARING DETAILS (XBEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
 - ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
 - ③ BEAM SPACING SHOWN IS MEASURED AT BOTTOM OF BEAM. SPACING AT TOP OF BEAM MAY VARY DUE TO CROSS-SLOPE OF X BEAMS.

BEAM REPORT

PHASE I					
BEAM REPORT, SPAN 1					
	HORIZONTAL DISTANCE	C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG. ②	BEAM SLOPE
BEAM 5	100.000	98.000	98.000	99.500	0.0035
BEAM 6	100.000	98.000	98.000	99.500	0.0035
BEAM 7	100.000	98.000	98.000	99.500	0.0035
BEAM 8	100.000	98.000	98.000	99.500	0.0035

PHASE II					
BEAM REPORT, SPAN 1					
	HORIZONTAL DISTANCE	C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG. ②	BEAM SLOPE
BEAM 1	100.000	98.000	98.000	99.500	0.0035
BEAM 2	100.000	98.000	98.000	99.500	0.0035
BEAM 3	100.000	98.000	98.000	99.500	0.0035
BEAM 4	100.000	98.000	98.000	99.500	0.0035

BENT REPORT

PHASE I					
ABUTMENT NO. 1 (N 86 46 1.98 W)					
DISTANCE BETWEEN STATION LINE AND BEAM 1 54.000 L					
	BEAM	BEAM SPAC. (C.L. BENT) ③	D	M	S
SPAN 1	BEAM 5	6.872	90	0	0
	BEAM 6	7.879	90	0	0
	BEAM 7	7.878	90	0	0
	BEAM 8	7.879	90	0	0
	TOTAL	30.508			

PHASE II					
ABUTMENT NO. 2 (N 86 46 1.98 W)					
DISTANCE BETWEEN STATION LINE AND BEAM 1 54.000 L					
	BEAM	BEAM SPAC. (C.L. BENT) ③	D	M	S
SPAN 1	BEAM 5	6.872	90	0	0
	BEAM 6	7.879	90	0	0
	BEAM 7	7.878	90	0	0
	BEAM 8	7.879	90	0	0
	TOTAL	30.508			

BENT REPORT

PHASE II					
ABUTMENT NO. 1 (N 86 46 1.98 W)					
DISTANCE BETWEEN STATION LINE AND BEAM 1 54.000 L					
	BEAM	BEAM SPAC. (C.L. BENT) ③	D	M	S
SPAN 1	BEAM 1	0.000	90	0	0
	BEAM 2	6.872	90	0	0
	BEAM 3	6.872	90	0	0
	BEAM 4	6.872	90	0	0
	TOTAL	20.616			

PHASE II					
ABUTMENT NO. 2 (N 86 46 1.98 W)					
DISTANCE BETWEEN STATION LINE AND BEAM 1 54.000 L					
	BEAM	BEAM SPAC. (C.L. BENT) ③	D	M	S
SPAN 1	BEAM 1	0.000	90	0	0
	BEAM 2	6.872	90	0	0
	BEAM 3	6.872	90	0	0
	BEAM 4	6.872	90	0	0
	TOTAL	20.616			

HL93 LOADING



2/28/2024



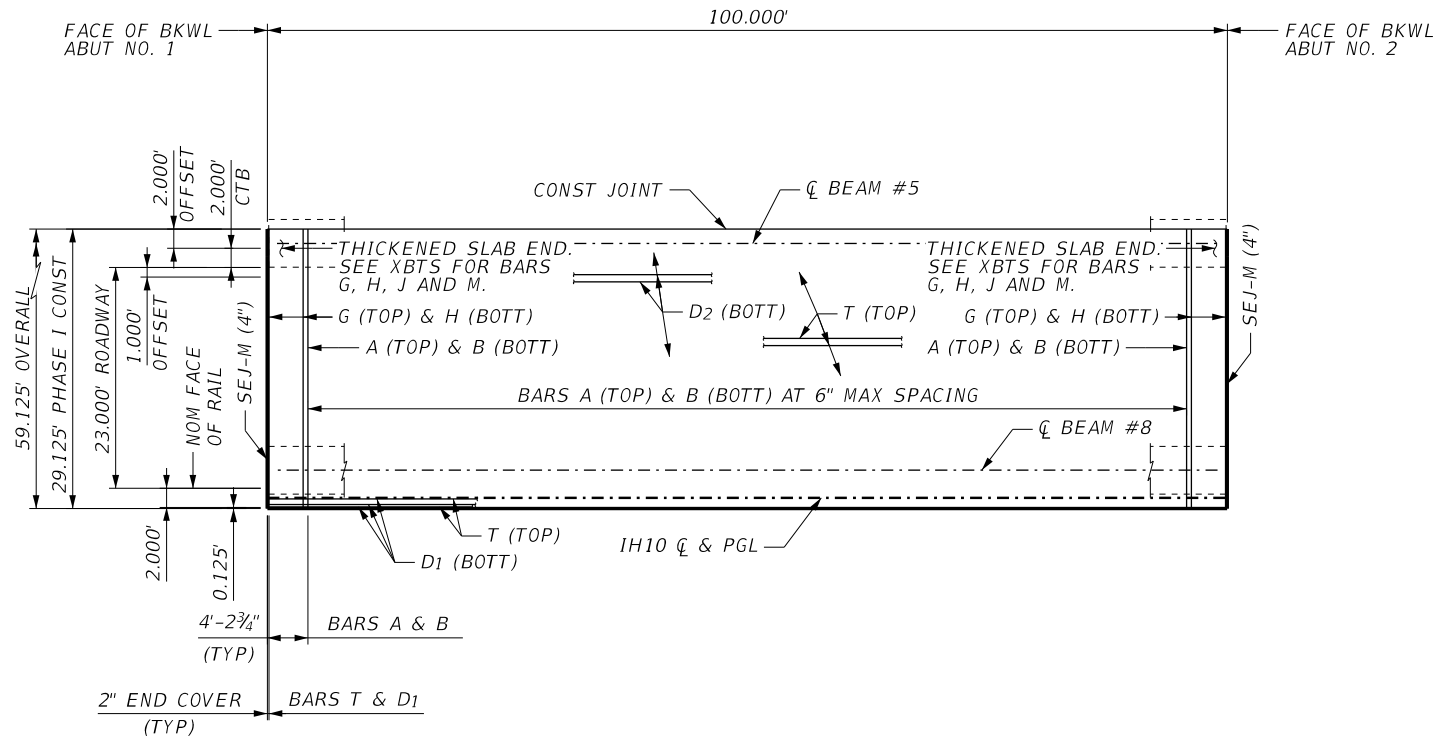
IH 10 WIDENING (NMSL/SPUR 37)

BEAM LAYOUT
MIDDLE ARROYO #3B BRIDGE
IH10 WB
(STA 184+93 TO STA 185+93)

SHEET 1 OF 1

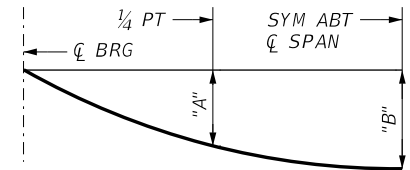
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
ELP	EL PASO	2121	01
		JOB NO.	SHEET NO.
		104	760

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SPAN 1
PLAN PHASE I

TABLE OF DEFLECTIONS PHASE I			
SPAN	BEAM	"A"	"B"
NO.	NO.	FT	FT
1	5	0.077	0.109
	6-7	0.082	0.117
	8	0.083	0.118



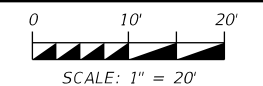
DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY (EC = 5,000 KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH F'C = 4,000 PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:

EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

HL93 LOADING



NO.	DATE	REVISION	APPROV.



**IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE
X-BEAM (5XB40) UNITS
PHASE I
MIDDLE ARROYO #3B BRIDGE
IH10 WB
(STA 184+93 TO STA 185+93)**

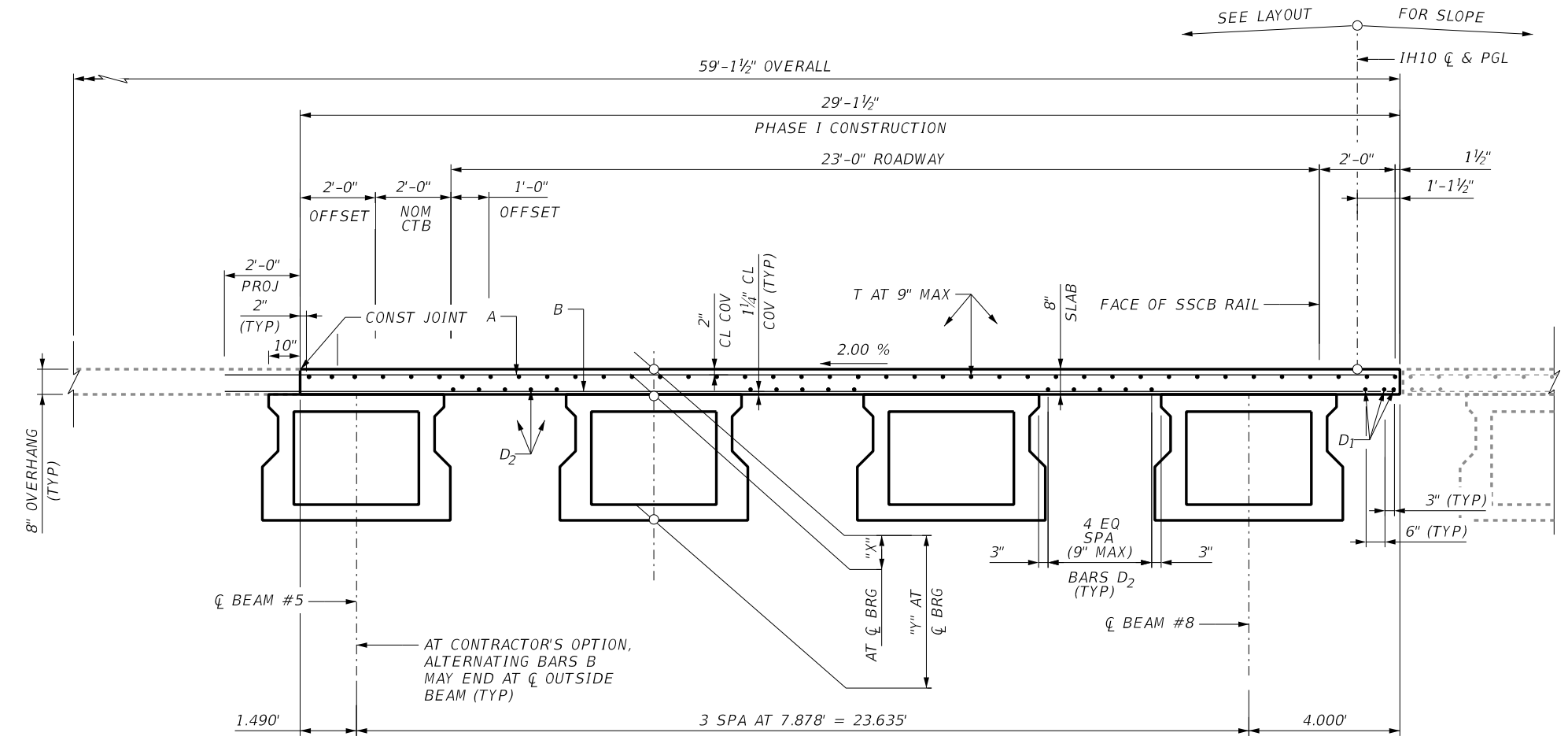
SHEET 1 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	761

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BAR TABLE PHASE I

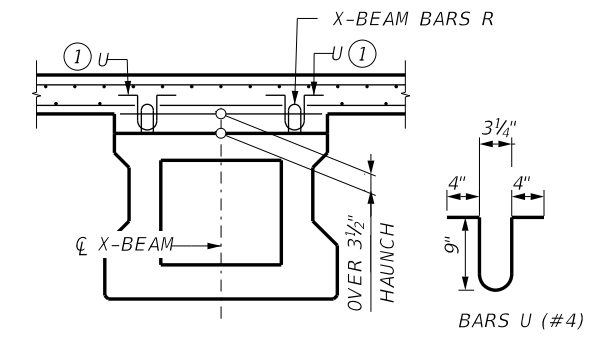
BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
J	#5
M	#5
K	#5
M	#5
T	#4



TYPICAL TRANSVERSE SECTION PHASE I
(5XB40) SPAN 1

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

KEYED NOTES
① SPACE BARS U WITH BEAM BARS R IN ALL AREAS WHERE MEASURED HAUNCH EXCEEDS 3 1/2".



HAUNCH REINFORCING DETAIL

TABLE OF ESTIMATED QUANTITIES PHASE I

SPAN	REINF	PRESTR	CLASS "S"	TOTAL
	CONCRETE	CONCRETE		
NO.	SF	LF	CY	LB
1	2,913	400.00	85.75	18,935
TOTAL	2,913	400.00	85.75	18,935

TABLE OF SECTION DEPTHS FOR PHASE I

SPAN	BEAM	"X"	"Y"
NO.	NO.	IN	IN
1	5-8	12	52

HL93 LOADING

NOT TO SCALE

2/28/2024

NO.	DATE	REVISION	APPROV.

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F-12040
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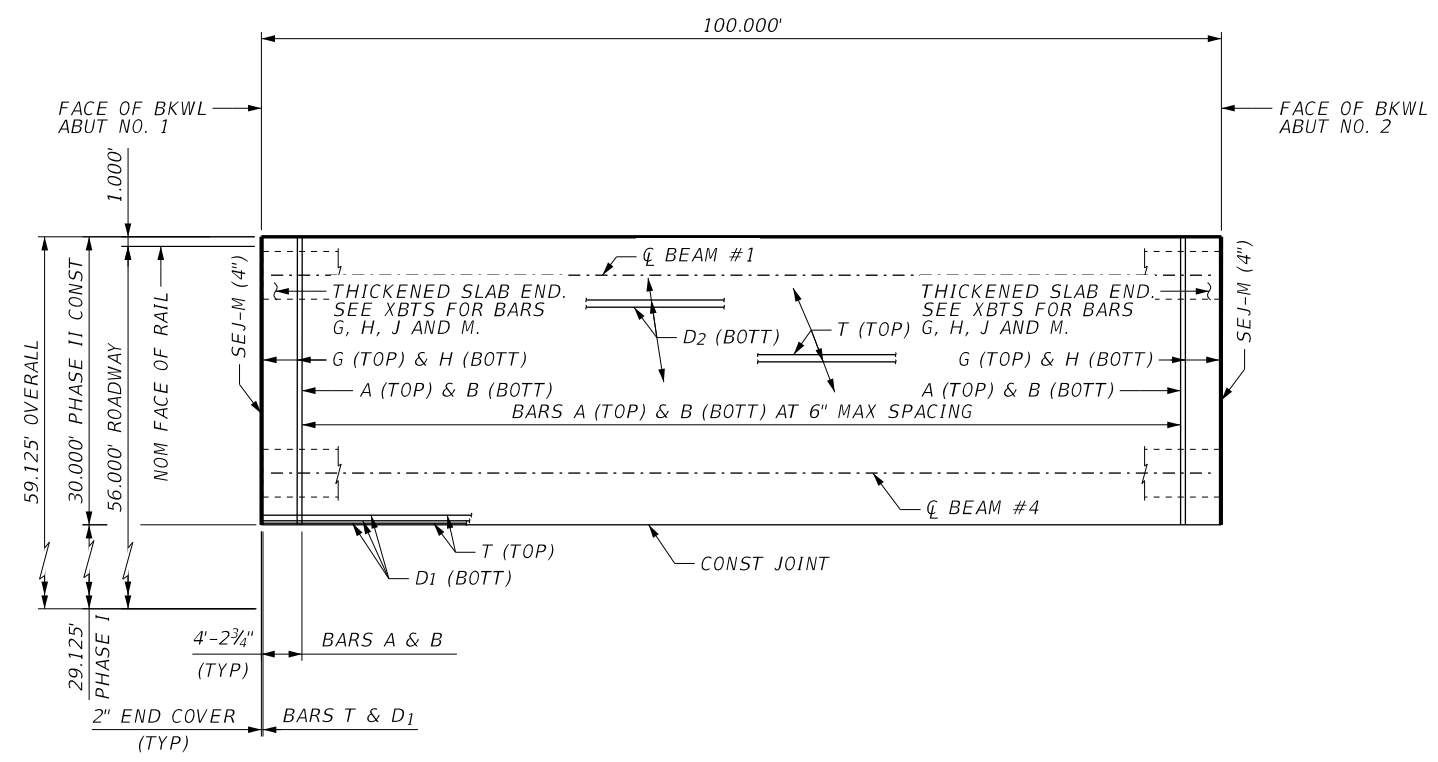
Texas Department of Transportation

IH 10 WIDENING (NMSL/SPUR 37) PRESTRESSED CONCRETE X-BEAM (5XB40) UNITS PHASE I
MIDDLE ARROYO #3B BRIDGE
IH10 WB
(STA 184+93 TO STA 185+93)

SHEET 2 OF 2

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	762

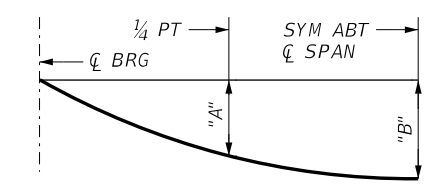
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2/28/2024



SPAN 1

PLAN PHASE II

TABLE OF DEFLECTIONS PHASE II			
SPAN	BEAM	"A"	"B"
NO.	NO.	FT	FT
1	1	0.078	0.110
	2-4	0.072	0.102

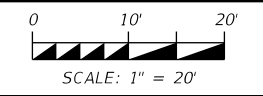


DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ON INTERIOR BEAMS ONLY (EC = 5,000 KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR BEAMS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

- GENERAL NOTES**
- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
 - SEE XBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
 - SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
 - SEE XBMS STANDARD FOR MISCELLANEOUS DETAILS.
 - ALL REINFORCING MUST BE GRADE 60.
 - CONCRETE STRENGTH F'C = 4,000 PSI.
 - BAR LAPS, WHERE REQUIRED, WILL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
 - SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.

HL93 LOADING



2/28/2024

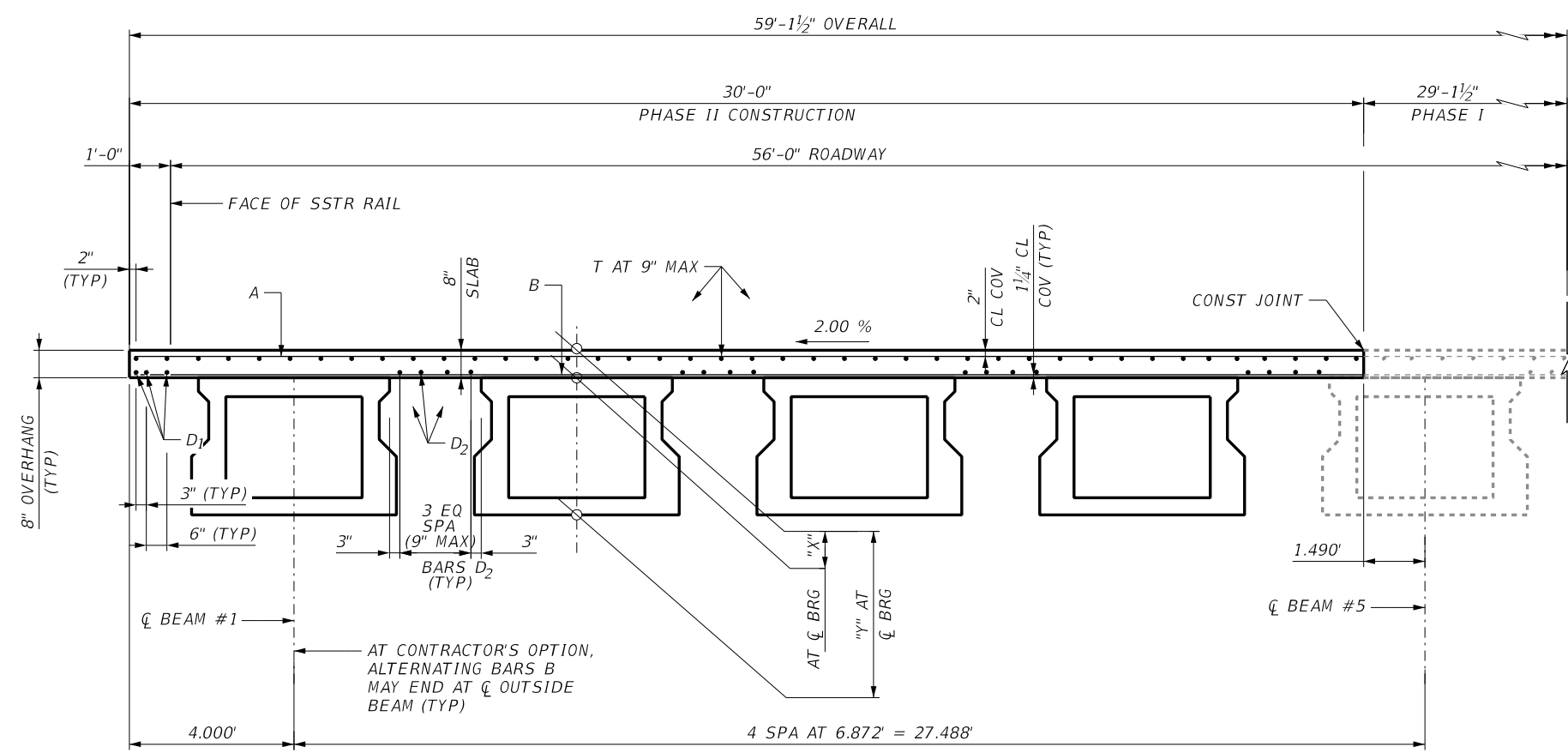


IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE X-BEAM (5XB40) UNITS
 PHASE II
 MIDDLE ARROYO #3B BRIDGE
 IH10 WB
 (STA 184+93 TO STA 185+93)

SHEET 1 OF 2		FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	763

BAR TABLE PHASE II

BAR	SIZE
A	#5
B	#5
D1	#5
D2	#5
G	#5
H	#5
J	#5
M	#5
T	#4



TYPICAL TRANSVERSE SECTION PHASE II
(5XB40) SPAN 1

GENERAL NOTES
1. SEE SHEET 1 FOR NOTES.

HL93 LOADING

NOT TO SCALE

TABLE OF ESTIMATED QUANTITIES PHASE II

SPAN	REINF CONCRETE SLAB	PRESTR CONCRETE X-BEAMS (5XB40)	CLASS "S" CONCRETE	TOTAL REINF STEEL
	NO.	SF	LF	CY
1	3,000	400.00	87.94	19,500
TOTAL	3,000	400.00	87.94	19,500

TABLE OF SECTION DEPTHS FOR PHASE II

SPAN	BEAM	"X"	"Y"
NO.	NO.	IN	IN
1	1-4	12	52

NO.	DATE	REVISION	APPROV.

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IH 10 WIDENING (NMSL/SPUR 37)
PRESTRESSED CONCRETE X-BEAM (5XB40) UNITS
PHASE II
MIDDLE ARROYO #3B BRIDGE
IH10 WB
(STA 184+93 TO STA 185+93)

SHEET 2 OF 2

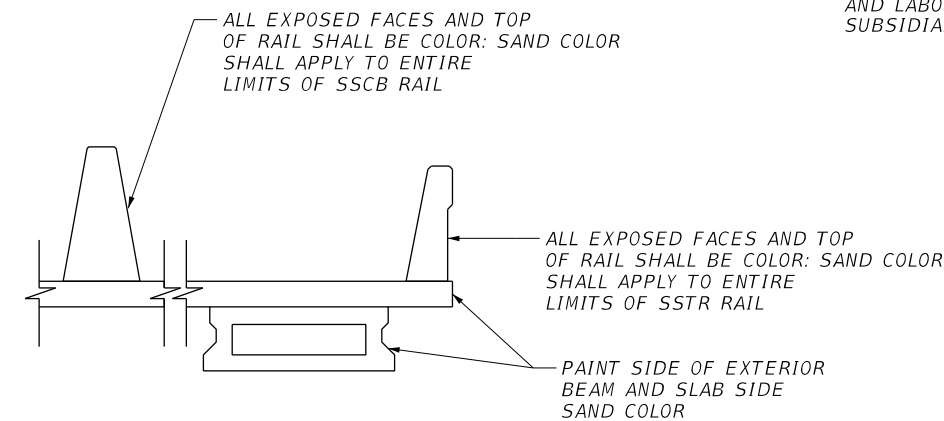
FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT	HIGHWAY NO.		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	764

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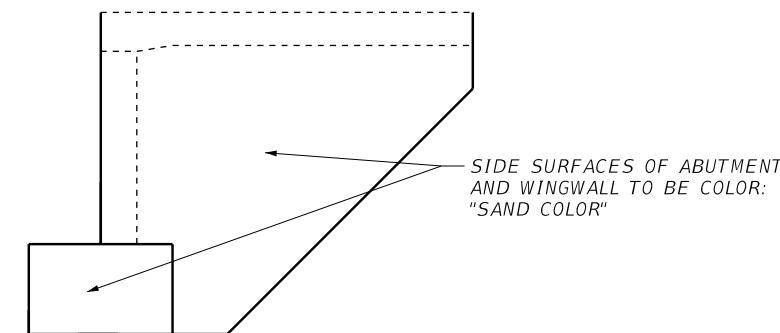
TABLES OF ESTIMATED QUANTITIES				
BRIDGE	ITEM	DESCRIPTION	QTY	UNIT
ARROYO 45 RELIEF 1A	427 6002	CONCRETE PAINT FINISH	1910	SF
ARROYO 45 RELIEF 1B			3317	SF
MIDDLE ARROYO 2A	427 6002	CONCRETE PAINT FINISH	1909	SF
MIDDLE ARROYO 2B			3315	SF
MIDDLE ARROYO 3A	427 6002	CONCRETE PAINT FINISH	1488	SF
MIDDLE ARROYO 3B			2269	SF
ARROYO 48 RELIEF AA	427 6002	CONCRETE PAINT FINISH	3739	SF
ARROYO 48 RELIEF AB			5370	SF
ARROYO 47 RELIEF BA	427 6002	CONCRETE PAINT FINISH	2968	SF
ARROYO 47 RELIEF BB			3793	SF
UNNAMED RELIEF CA	427 6002	CONCRETE PAINT FINISH	3843	SF
UNNAMED RELIEF CB			5257	SF
ARROYO 46 RELIEF DA	427 6002	CONCRETE PAINT FINISH	3843	SF
ARROYO 46 RELIEF DB			5275	SF
TOTAL			48296	SF

GENERAL NOTES

1. ALL SURFACE FINISHES SHALL BE IN ACCORDANCE WITH ITEM 427 "SURFACE FINISHES FOR CONCRETE".
2. THE CONCRETE SURFACE FINISH COATING SHALL BE OPAQUE SEALER. THE SURFACE FINISH SHALL BE APPLIED TO ALL SURFACE AREA LOCATIONS AND ALL OTHER EXPOSED SURFACES AS SHOWN IN THE PLANS.
3. THE SAND SHALL CONFORM TO THE FEDERAL STANDARD COLOR I.D. NO. 13578.
4. USE COLOR SCHEME CONFORMING TO FEDERAL STANDARD 5958 COLORS FAN DECK 7690-01-162-2210 (JULY 1994). MATERIALS AND LABOR FOR PAINTING/ STAINING IS SUBSIDIARY TO ITEM 427.



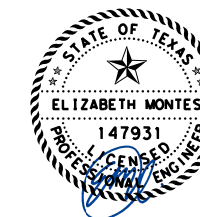
SLAB, RAIL, AND SSTR/SSCB COLOR SCHEME



ABUTMENT AND WINGWALL COLOR SCHEME

HL93 LOADING

NOT TO SCALE



2/28/2024



IH 10 WIDENING (NMSL/SPUR 37)

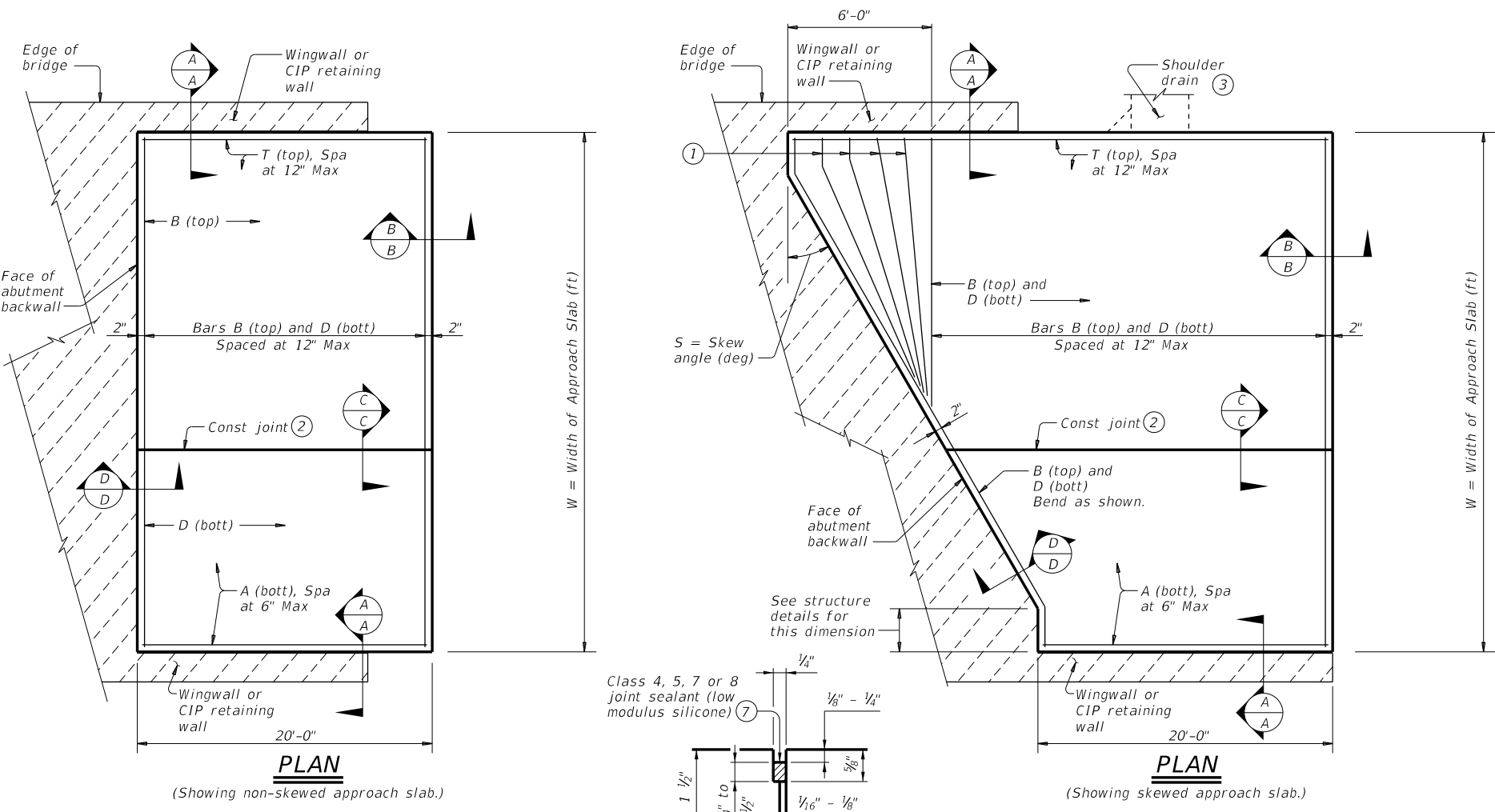
AESTHETIC BRIDGE DETAILS

SHEET 1 OF 1

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT		HIGHWAY NO.	
6	TEXAS	SEE TITLE SHEET		IH 10	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
ELP	EL PASO	2121	01	104	765

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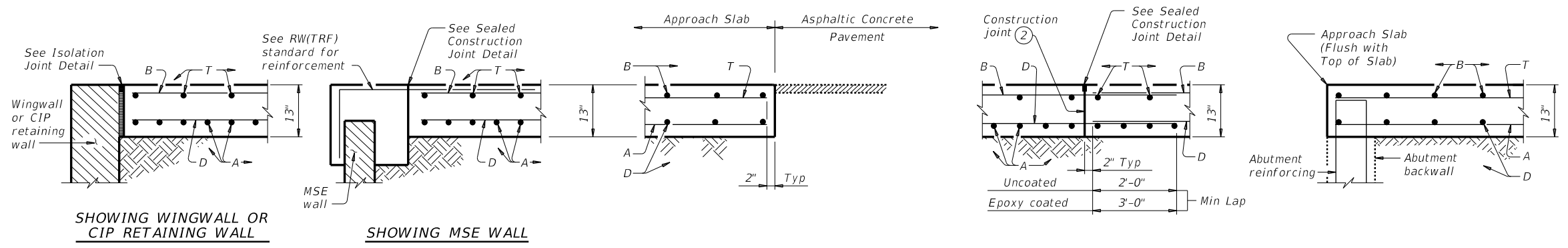


BAR TABLE	
BAR	SIZE
A	#8
B	#5
D	#5
T	#5

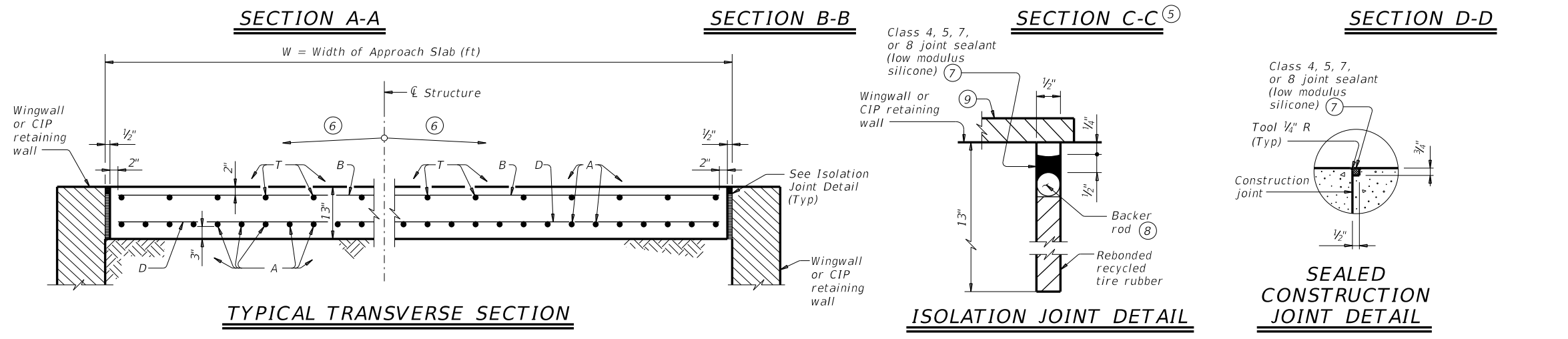
APPROXIMATE QUANTITIES ⁽⁴⁾	
Reinf steel weight = 8.5 Lbs/SF of Approach Slab	
Volume of Appr Slab Conc (CY) = 0.802W + 0.02W ² Tan S	
W = Width of Approach Slab (ft)	
S = Skew Angle (deg)	

- ① Flare Bars B and D in this region (1'-6" Max Spa, 3" Min Spa). Minimum flared bar length = 2'-6". Bend bars as necessary.
- ② Provide longitudinal construction joints that align with longitudinal construction joints in the bridge slab with bridges built in stages. Other longitudinal construction joints must receive approval of the Engineer.
- ③ See details elsewhere in plans for shoulder drain location and details.
- ④ For Contractor's information only. Quantities shown are for one approach slab.
- ⑤ Multiple piece tie bars are acceptable at longitudinal construction joints provided minimum laps shown are achieved.
- ⑥ See details elsewhere in plans for required cross-slope.
- ⑦ Place in accordance with Item 438.
- ⑧ Provide backer rod that is 25% larger than joint opening and compatible with the sealant.
- ⑨ If bridge rail is present at the wingwall or CIP retaining wall, place 1/2" rebonded recycled tire rubber between concrete railing and top of approach slab as shown when concrete railing projects over the approach slab.

LONGITUDINAL SAW CUT JOINT DETAIL



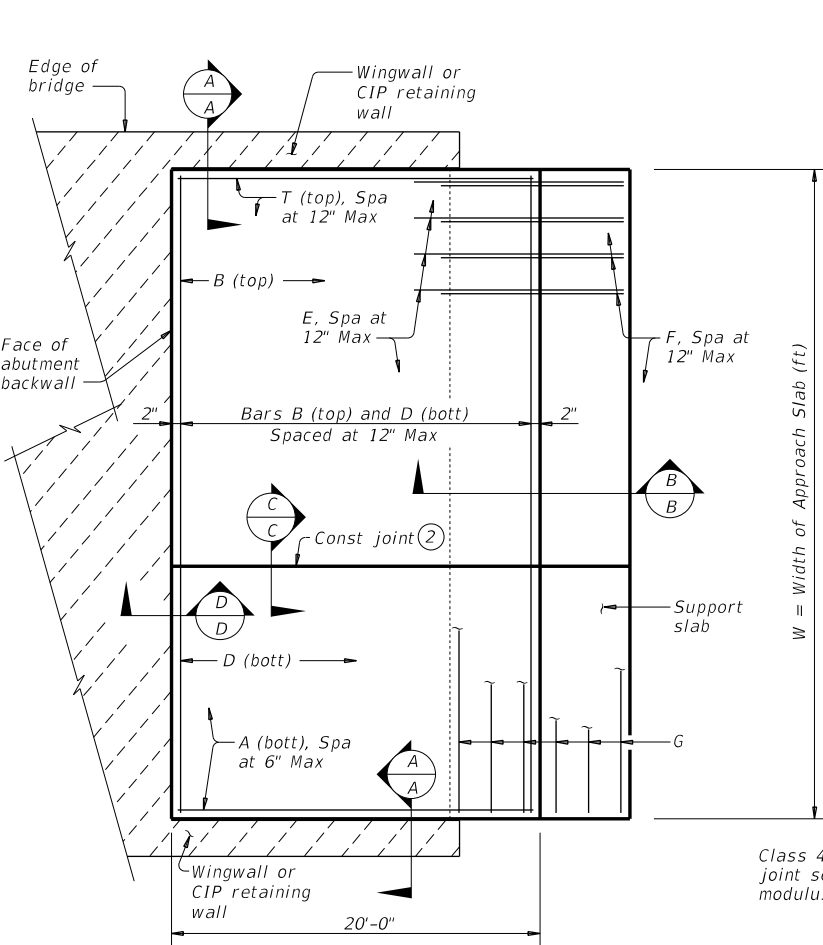
GENERAL NOTES:
 Construct approach slab in accordance with Item 422.
 Provide Class "S" concrete with a minimum compressive strength of 4,000 psi.
 Provide Grade 60 reinforcing steel.
 Provide longitudinal joints as shown on the Longitudinal Saw Cut Joint Detail at lane lines and shoulders when width between longitudinal construction joints or edges of approach slab exceeds 16 feet. Saw cut joints within 24 hours of concrete placement to a depth of 1 1/2" and seal in accordance with Item 438. Alternately, provide a controlled joint consisting of 1 1/2" vinyl or plastic joint former (Stress Cap, Zip Strip, Stress Lock, or equal as approved by the Engineer.)
 Provide rebonded recycled tire rubber joint filler that meets the requirements of DMS-6310. "Joint Sealants and Fillers."
 Construct the subgrade or subbase away from the bridge for a minimum distance of 100 feet prior to the approach slab, unless otherwise indicated on the plans.
 Compact and finish the subgrade or foundation for the approach slab to the typical cross-section and to the lines and grades shown on the plans.
 Cure for 4 days using water or membrane curing per Item 422.
 All details shown herein are subsidiary to bridge approach slab.
 Cover dimensions are clear dimensions, unless noted otherwise.



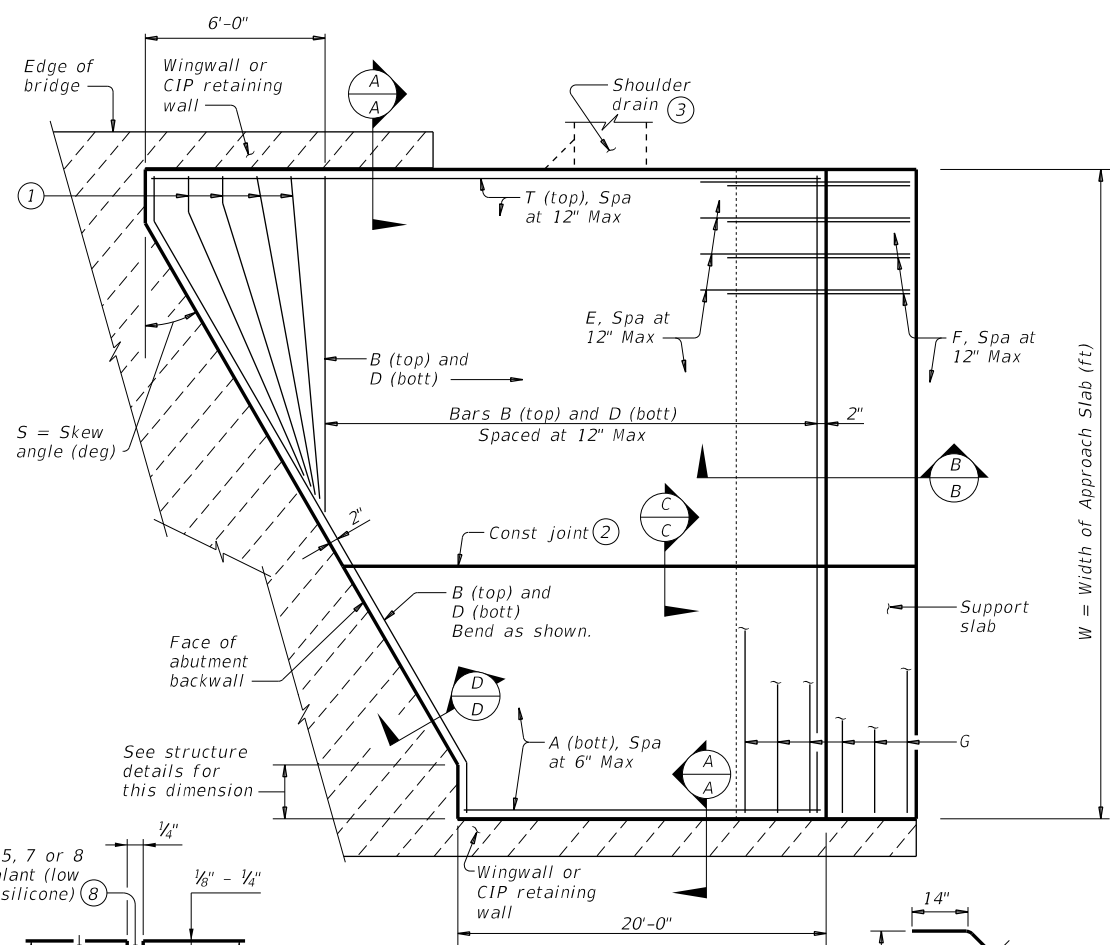
		Bridge Division Standard	
BRIDGE APPROACH SLAB ASPHALTIC CONCRETE PAVEMENT			
BAS-A			
FILE: basaste1-20.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT
©TxDOT April 2019	CONT	SECT	JOB
REVISIONS	2121	01	104
02-20: Removed stress relieving pad.	DIST	COUNTY	SHEET NO.
ELP	EL PASO		766

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PLAN
(Showing non-skewed approach slab.)



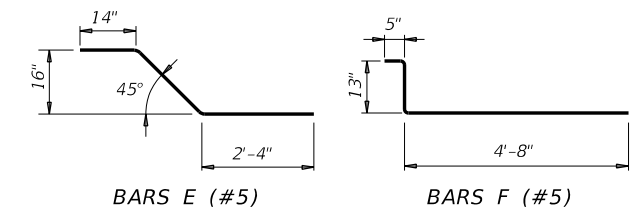
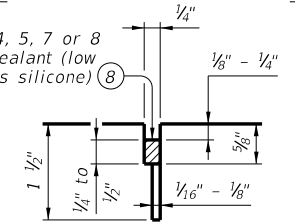
PLAN
(Showing skewed approach slab.)

BAR TABLE	
BAR	SIZE
A	#8
B	#5
D	#5
E	#5
F	#5
G	#5
T	#5

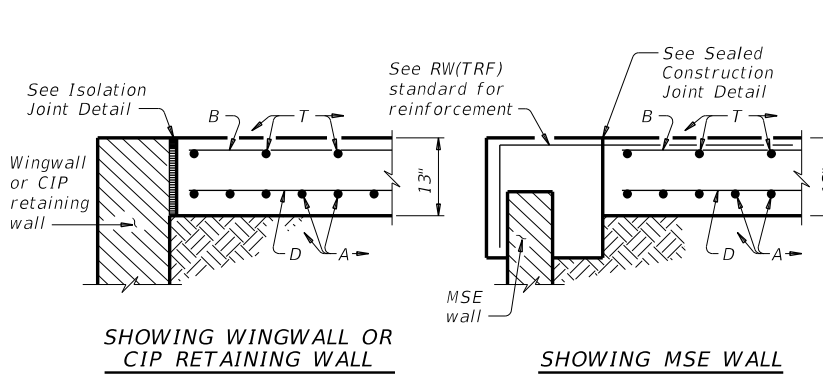
APPROXIMATE QUANTITIES ④	
Reinf steel weight =	8.5 Lbs/SF of Approach Slab 18.4 Lbs/LF of Support Slab
Vol of Appr Slab Conc (CY) =	$1.057W - 0.008W \times T + 0.02W^2 \tan S$ (Includes Support Slab)
W =	Width of Approach Slab (ft)
T =	Conc Pavement Thickness (in)
S =	Skew Angle (deg)

- Flare Bars B and D in this region (1'-6" Max Spa, 3" Min Spa). Minimum flared bar length = 2'-6". Bend bars as necessary.
- Provide longitudinal construction joints that align with longitudinal construction joints in the bridge slab with bridges built in stages. Other longitudinal construction joints must receive approval of the Engineer.
- See details elsewhere in plans for shoulder drain location and details.
- For Contractor's information only. Quantities shown are for one approach slab only.
- On portion of support slab that supports the concrete pavement, adjust top surface elevation, if required, to accommodate concrete pavement thickness. Smooth trowel finish. Oil top of support slab with 60 grade oil and apply heavy coat of powdered graphite. Press down one layer of 30# roofing felt.
- Multiple piece tie bars are acceptable at longitudinal construction joints provided minimum laps shown are achieved.
- See details elsewhere in plans for required cross-slope.
- Place in accordance with Item 438.
- Provide backer rod that is 25% larger than joint opening and compatible with the sealant.
- If bridge rail is present at the wingwall or CIP retaining wall, place 1/2" rebonded recycled tire rubber between concrete railing and top of approach slab as shown when concrete railing projects over the approach slab.

LONGITUDINAL SAW CUT JOINT DETAIL

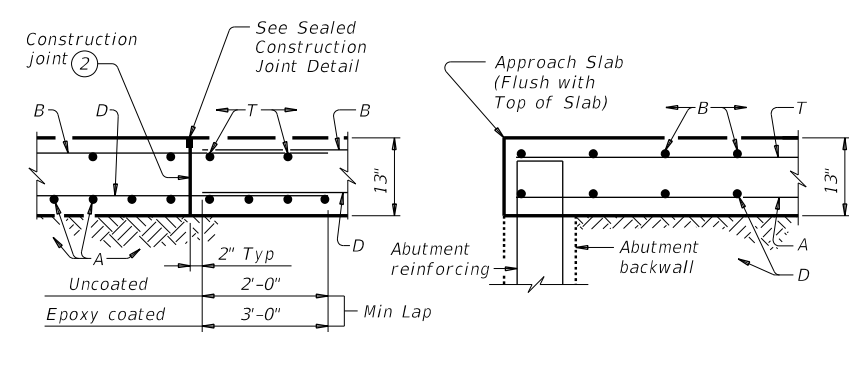


GENERAL NOTES:
 Construct approach slab in accordance with Item 422.
 Provide Class "S" concrete with a minimum compressive strength of 4,000 psi.
 Provide Grade 60 reinforcing steel.
 Provide longitudinal joints as shown on the Longitudinal Saw Cut Joint Detail at lane lines and shoulders when width between longitudinal construction joints or edges of approach slab exceeds 16 feet. Saw cut joints within 24 hours of concrete placement to a depth of 1 1/2" and seal in accordance with Item 438. Alternately, provide a controlled joint consisting of 1 1/2" vinyl or plastic joint former (Stress Cap, Zip Strip, Stress Lock, or equal as approved by the Engineer.)
 Provide rebonded recycled tire rubber joint filler that meets the requirements of DMS-6310. "Joint Sealants and Fillers."
 Construct the subgrade or subbase away from the bridge for a minimum distance of 100 feet prior to the approach slab, unless otherwise indicated on the plans.
 Compact and finish the subgrade or foundation for the approach slab to the typical cross-section and to the lines and grades shown on the plans.
 Cure for 4 days using water or membrane curing per Item 422.
 All details shown herein are subsidiary to bridge approach slab.
 Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.



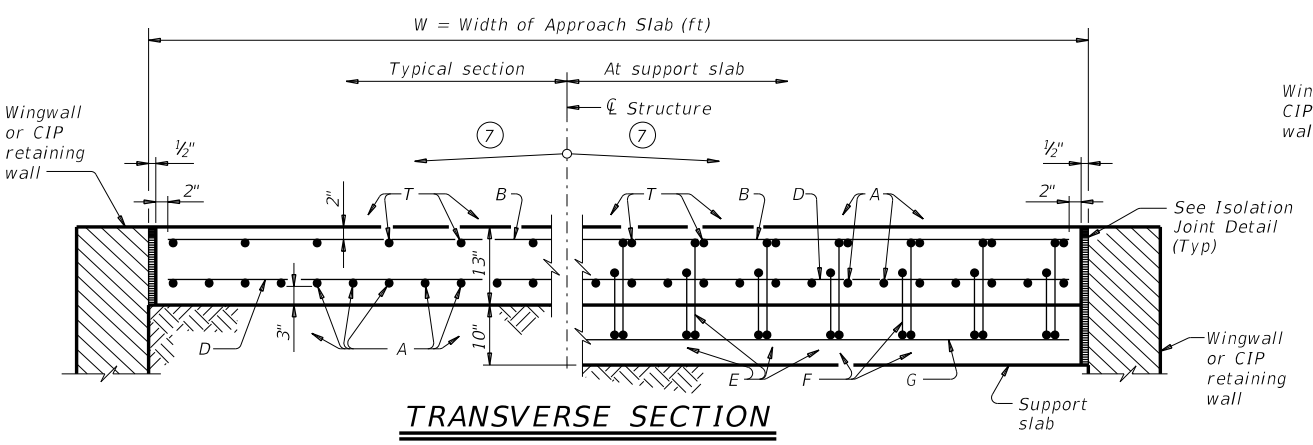
SECTION A-A

SECTION B-B

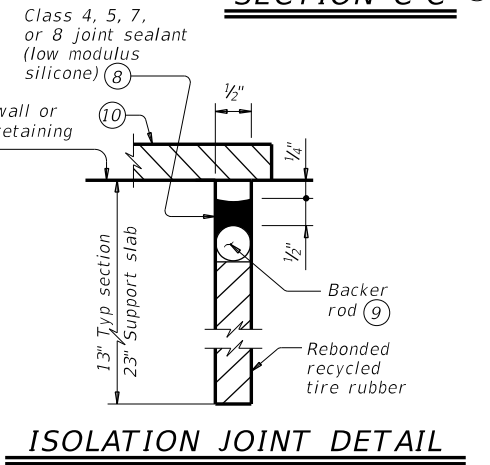


SECTION C-C

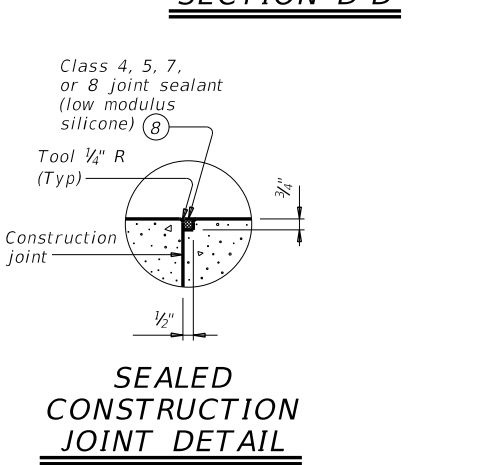
SECTION D-D



TRANSVERSE SECTION



ISOLATION JOINT DETAIL



SEALED CONSTRUCTION JOINT DETAIL

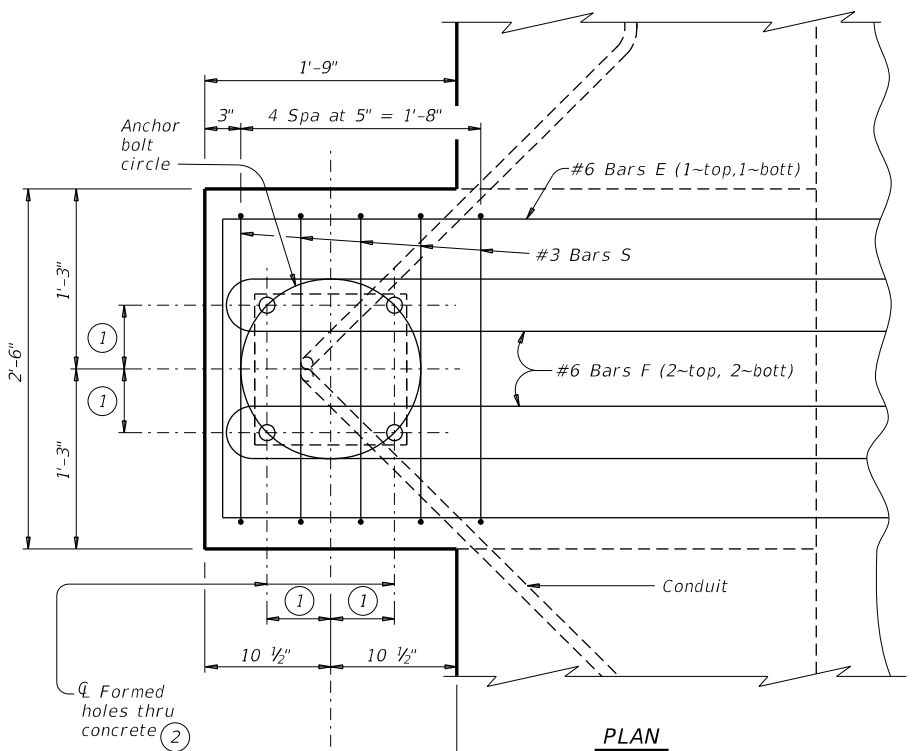
		Bridge Division Standard	
BRIDGE APPROACH SLAB CONCRETE PAVEMENT			
BAS-C			
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©TxDOT April 2019	CONT	SECT	JOB
REVISIONS	2121	01	104
02-20: Removed stress relieving pad.	DIST	COUNTY	SHEET NO.
ELP	EL PASO		767

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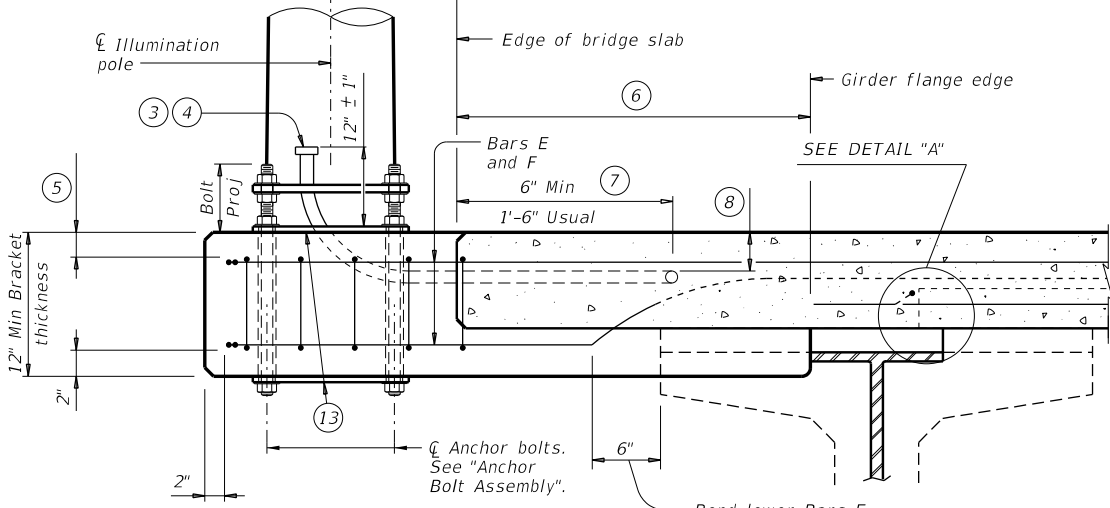
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TABLE OF ANCHOR BOLT AND ANCHOR BOLT PLATE INFORMATION						
ANCHOR BOLT CIRCLE DIAMETER	ANCHOR BOLT OFFSET	ANCHOR BOLT DIAMETER	ANCHOR BOLT HOLE SIZE		TOP AND BOTTOM ANCHOR BOLT PLATE SIZE	CENTER HOLE DIAMETER IN TOP ANCHOR BOLT PLATE
			CONCRETE	STEEL		
13	4 5/8	1	1 1/4	1 1/4	PL 1/2 X 13 X 1'-1"	9 1/2
15	5 5/16	1 1/4	1 1/2	1 1/2	PL 1/2 X 15 1/2 X 1'-3 1/2"	10 1/2

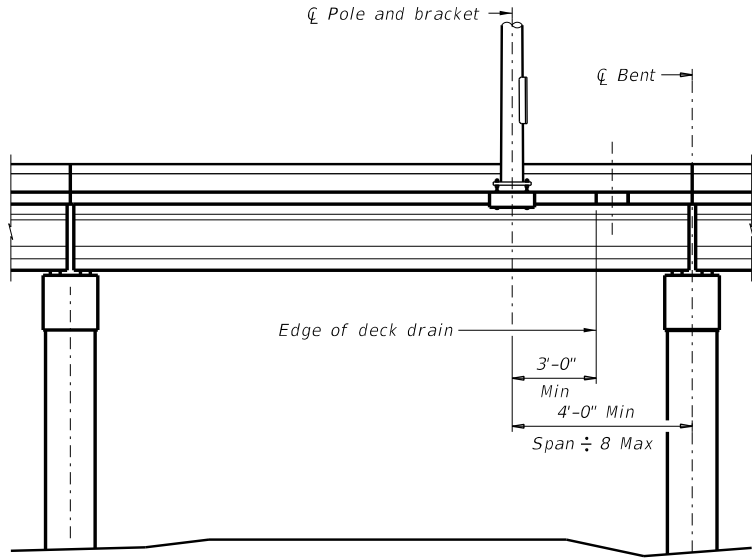
ESTIMATED QUANTITIES~ONE BRACKET			
ITEM	UNIT	QUANT	
CONCRETE	(9)(10) CY	0.2	
REINFORCING STEEL	(10) LB	146	
STRUCTURAL STEEL	(10)(11) LB	112	
CONDUIT	(12) LF	4	



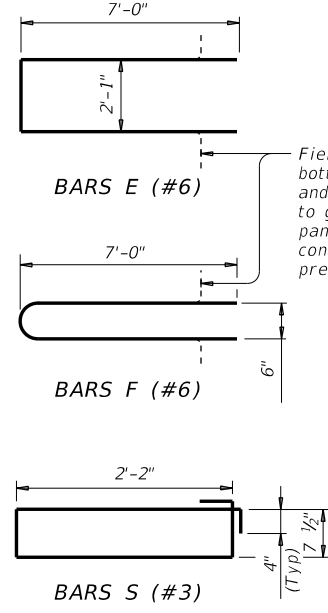
PLAN



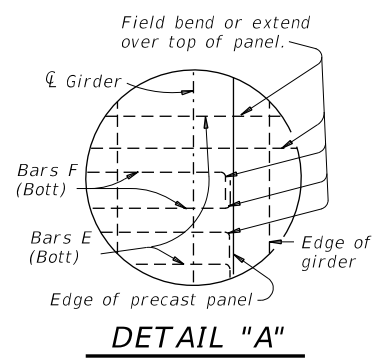
ELEVATION
(Structures with overhanging slabs)



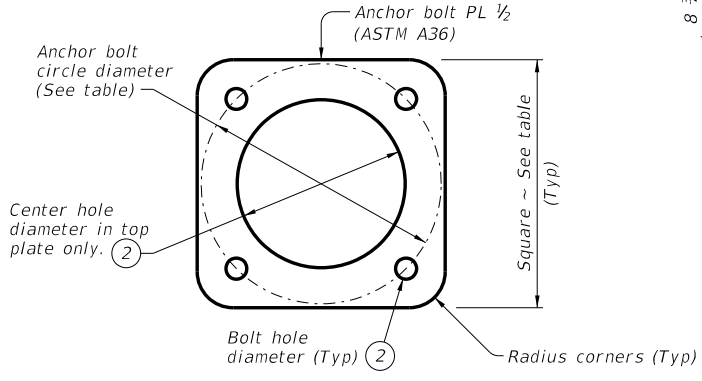
TYPICAL BRIDGE ELEVATION



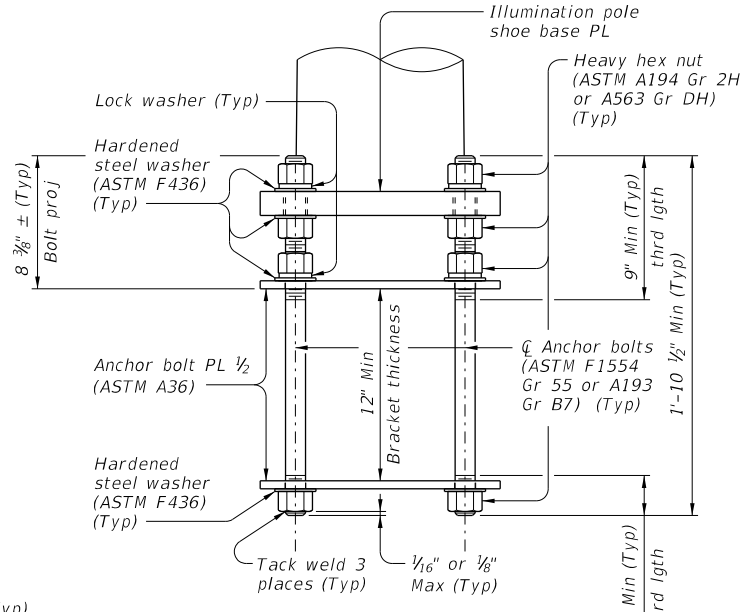
ILLUMINATION POLE BRACKET LOCATION AND REINFORCING



DETAIL "A"



ANCHOR BOLT PLATE



ANCHOR BOLT ASSEMBLY
(See table for anchor bolt diameter)

- 1 See table for anchor bolt offset dimension.
- 2 See table for hole diameter size.
- 3 If lighting is to be placed on future contract, extend conduit only 6" and provide water tight cap.
- 4 Ream burrs and install bell ends or bushings on all conduit ends.
- 5 Provide same clear cover required for bridge slab. Place Bars E and F beneath top slab reinforcing only if necessary to provide this cover.
- 6 If slab edge to girder flange edge exceeds 3'-11", lengthen Bars E and F proportionally to ensure Bars E and F extend 1'-6" Min beyond girder flange edge.
- 7 Clear rail anchors, drains, etc 1 1/2" Min.
- 8 1 1/2" Min cover and always beneath top layer slab reinforcing.
- 9 Variation due to slab thickness is insignificant.
- 10 For Contractor's information only.
- 11 Anchor bolts, nuts, washers, and 2 plates. Verify anchor bolt lengths prior to ordering.
- 12 Additional to main run (size and type as shown elsewhere on the plans).
- 13 See "Anchor Bolt Assembly", "Anchor Bolt Plate", and table for anchor bolt, and anchor bolt plate information.

MATERIAL NOTES:
 Galvanize anchor bolts, nuts, washers, and anchor bolt plates. Repair galvanizing damage from tack welding per Item 445, "Galvanizing".
 Provide Grade 60 reinforcing steel.
 Epoxy coat or galvanize all reinforcing steel if slab bars are epoxy coated or galvanized.
 Concrete for Illumination Pole Brackets must be of the same type and placed monolithically with the bridge slab. The bracket quantity is considered subsidiary to the Item "Reinforced Concrete Slab".

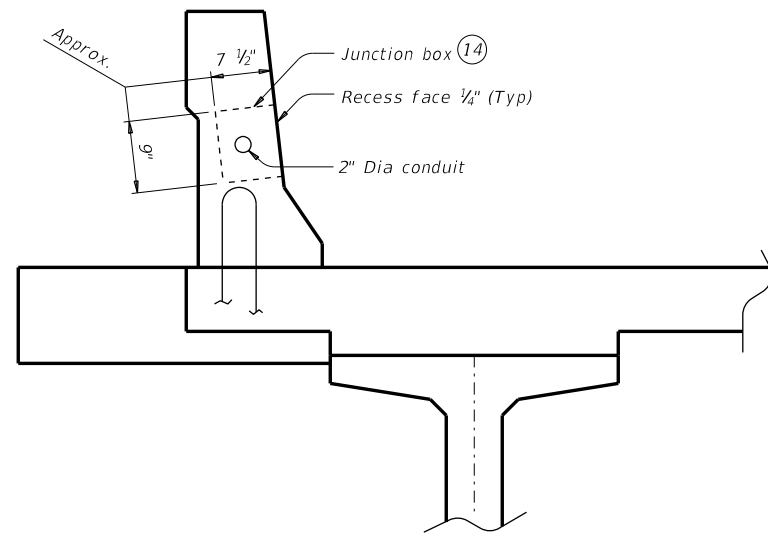
GENERAL NOTES:
 Designed for up to 50 ft light pole with one 12 ft arm, 60 lb luminaire with 1.6 sq ft EPA at maximum design wind speed of 110 mph (3 second gusts). A special design is required if luminaire mounting height exceeds 100 ft above average surrounding terrain.
 The anchor bolts, nuts, washers, and anchor bolt plates are subsidiary to the Item "Roadway Illumination Assemblies".
 The type and size of conduit, the anchor bolt circle diameter, and the number and location of brackets is shown elsewhere on the plans. Brackets found to conflict with other components of the bridge may be relocated as necessary.
 See Roadway Illumination Poles standard for details and notes not shown.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.

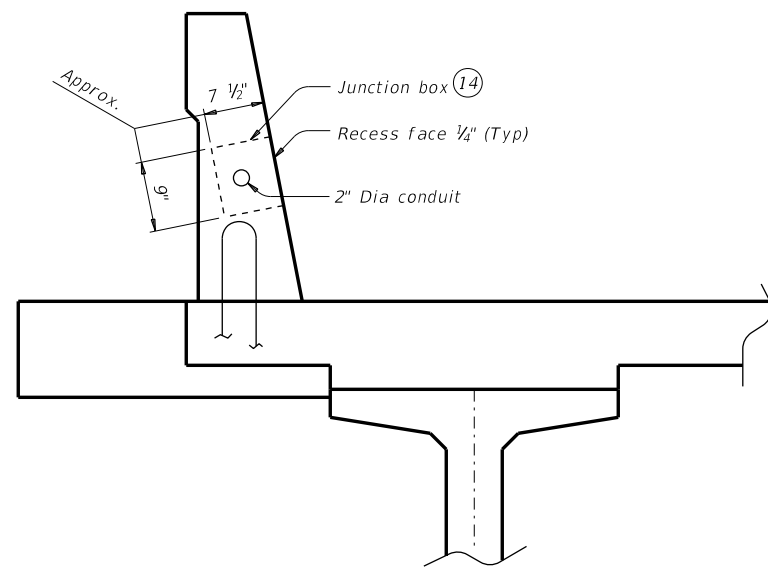
		Bridge Division Standard	
<h2>BRIDGE LIGHTING DETAILS</h2>			
<h3>BL</h3>			
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REVISIONS	2121	01	104
	DIST	COUNTY	SHEET NO.
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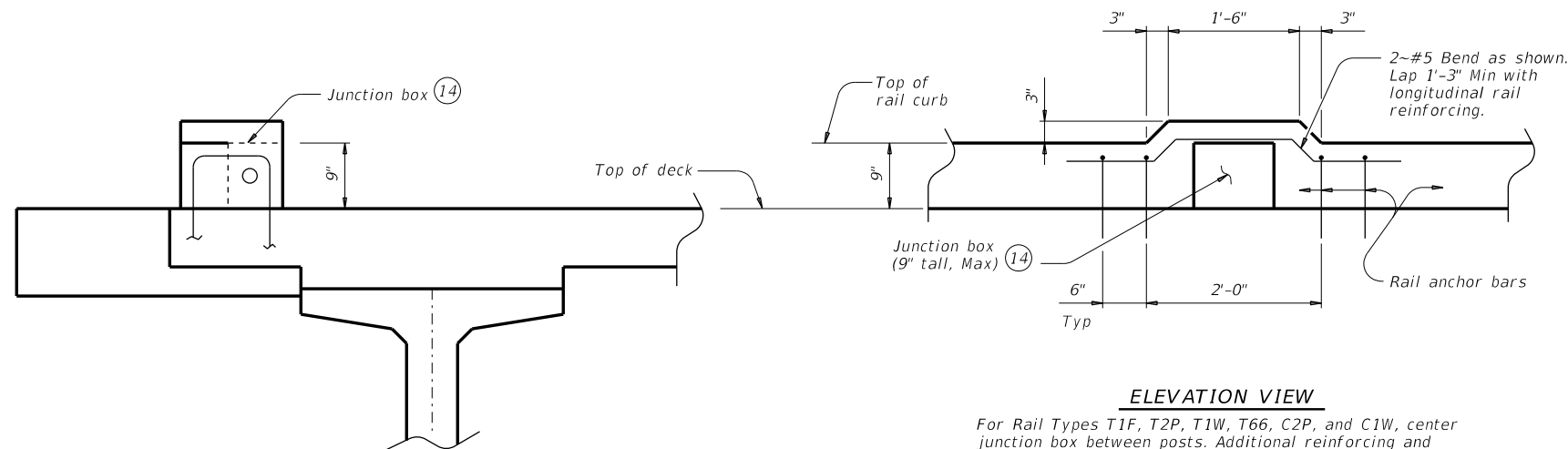
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SHOWING T551, T552, AND T80HT



SHOWING SSTR AND T80SS



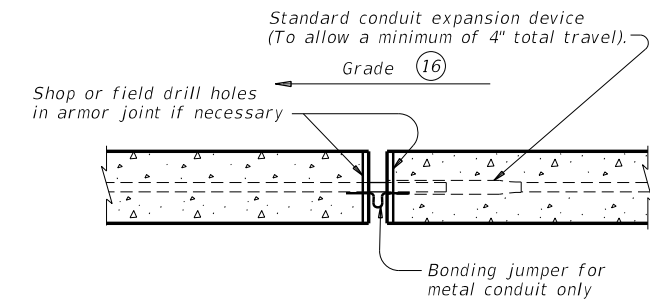
SHOWING T1F, T2P, T1W, T66, C2P, AND C1W CURB

See Elevation View for curb modifications

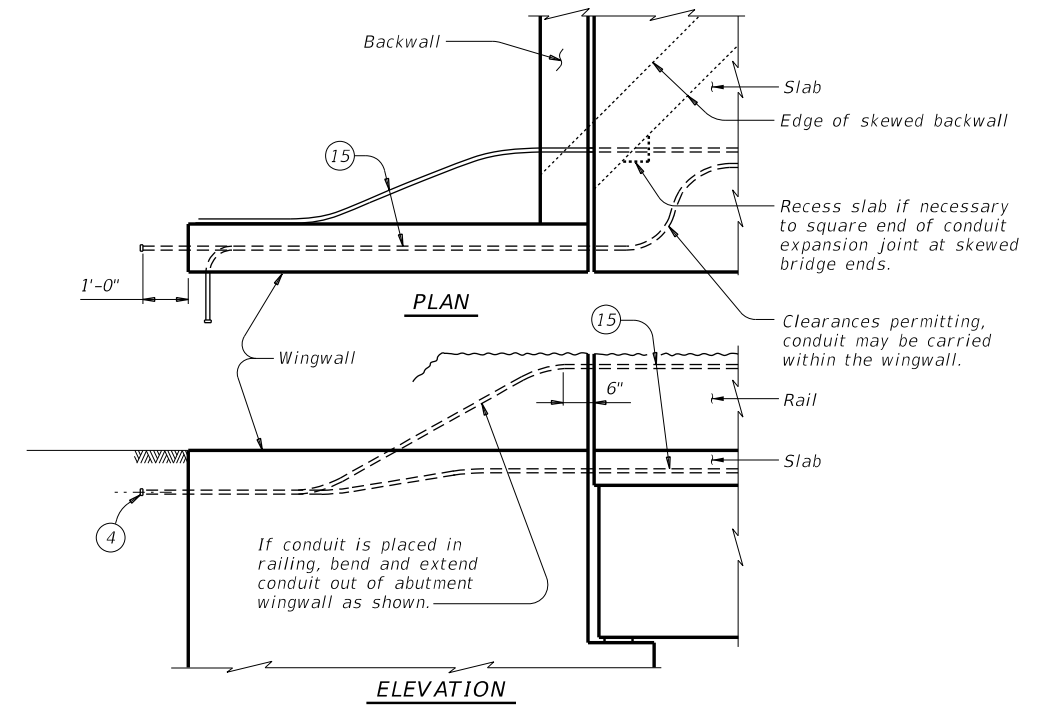
JUNCTION BOX LOCATION

Use these details as a guide in locating junction boxes in rail types not shown.

- ④ Ream burrs and install bell ends or bushings on all conduit ends.
- ⑭ Provide polymer concrete junction boxes meeting the requirements of DMS 11030.
- ⑮ Position of conduit shown elsewhere on the plans or as directed by the Engineer.
- ⑯ Place conduit expansion device on high side of expansion joint.



CONDUIT EXPANSION JOINT



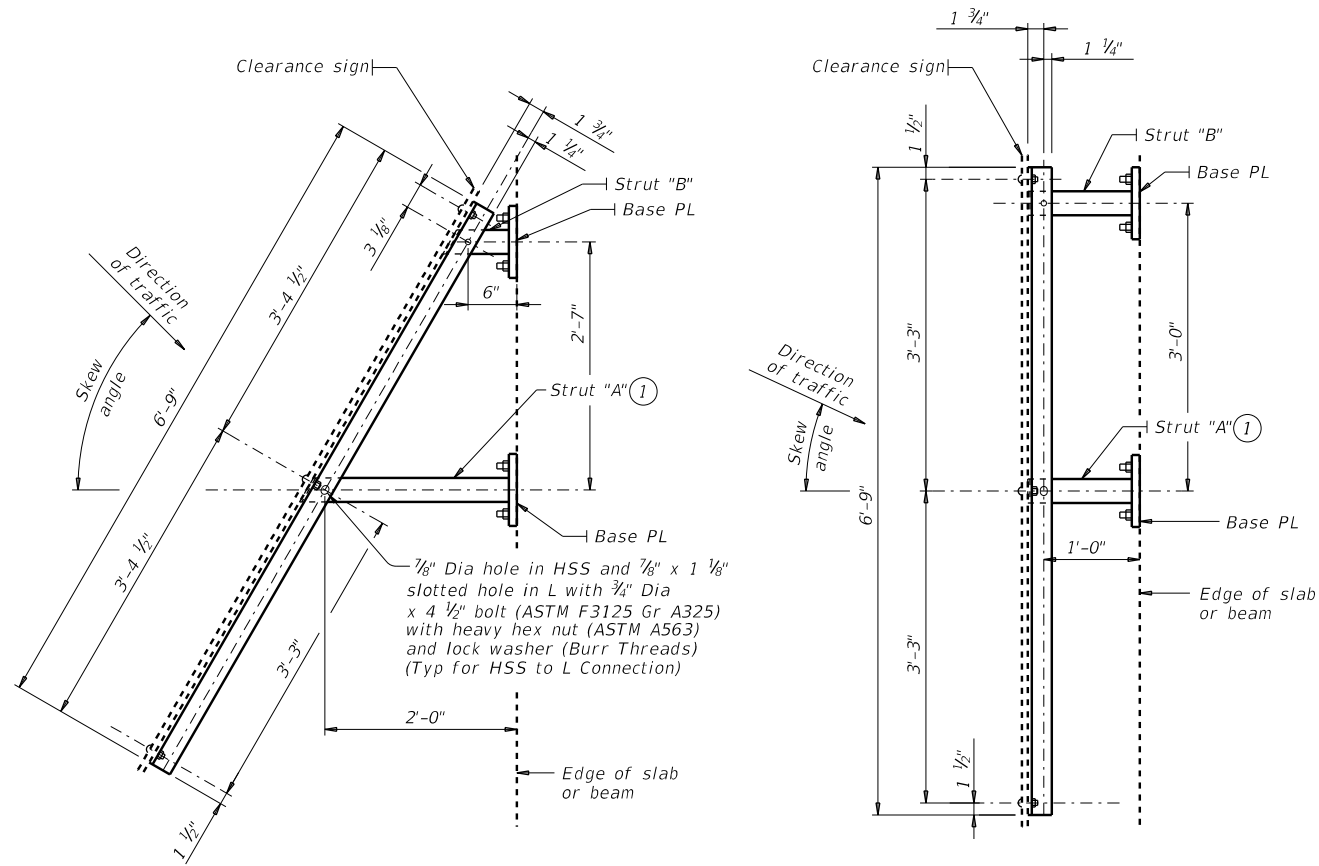
TREATMENT AT END OF BRIDGE

SHEET 2 OF 2

		Bridge Division Standard	
BRIDGE LIGHTING DETAILS			
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	ELP	EL PASO	769

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PLAN OF TYPE S MOUNT
(Used for skews over 30°)

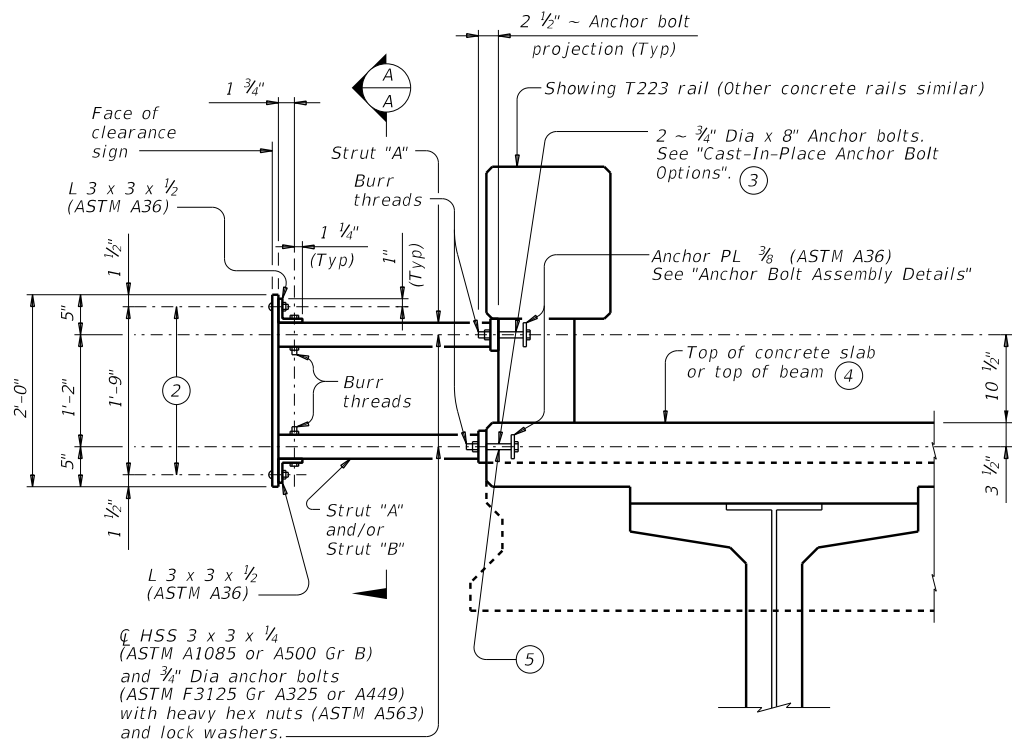
PLAN OF TYPE N MOUNT
(Used for 0° to 30° skews)

- ① Locate centerline of Strut A no closer than 12" from a vertical concrete edge.
- ② 6/8" Dia x 2" Hexagon socket button head cap screws (ASTM A574) with hex nuts. Attach hex nuts to L 3 x 3 x 1/2 by tack welding in two places. Threads must have Class 3A fit tolerance in accordance ASME B1.1. Six screws required.
- ③ At the Contractor's option fully threaded adhesive anchors may be used instead of cast-in-place anchor bolts. Expansion anchors are not allowed. Provide adhesive anchors that are 3/4" Dia ASTM A193 Gr B7 or F1554 Gr 105 fully threaded rods with one hardened steel washer (ASTM F436) and one regular lock washer placed under heavy hex nut (ASTM A563). Embed fully threaded rods using a Type III, Class C, D, E, or F anchor adhesive. Adhesive anchor embedment depth is 8". Anchor adhesive chosen must be able to achieve a factored bond strength in tension of 2.2 kips per anchor (edge distance and spacing must be accounted for). Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing".
- ④ For decked slab beams topped with a 2 course surface treatment and ACP overlay.
- ⑤ Anchor bolts to be cast into decked slab beams topped with a 2 course surface treatment or ACP overlay. Anchor bolts with heavy hex nuts, regular lock washers, hardened washers and anchor plate that is embedded in the beam will be provided by the beam Fabricator.

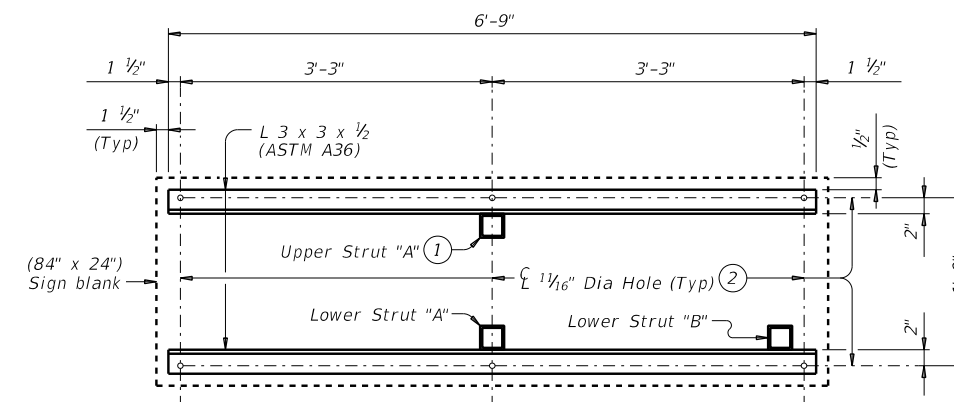
CONSTRUCTION NOTES:
Install the vertical face of clearance sign plumb unless otherwise approved by the Engineer.
Test adhesive anchors in accordance with Item 450.3.3, "Tests". Test 1 anchor per bridge mounted clearance sign installed. Perform corrective measures to provide adequate capacity if any of the tests do not meet the required test load. Repair damage from testing as directed.

MATERIAL NOTES:
Galvanize all steel components after fabrication unless otherwise noted.

GENERAL NOTES:
This standard provides details to mount a vertical clearance sign (84" x 24") to bridges. Rail Types T631, T631LS, PR11, PR22 and PR3 are not accommodated. The Engineer will furnish the clearance to be shown on the sign.
See Bridge Layout for sign location and mounting type (Type N or S).
Cost of furnishing, installing, relocating or removing a clearance sign, including structural steel for sign mount, is included in unit price bid for Item 644, "Small Roadside Sign Assemblies".
One Sign Blank (84" x 24") is 14 SF.
Average steel weight for one complete Type N Mount is 219 Lb.
Average steel weight for one complete Type S Mount is 233 Lb.



SECTION

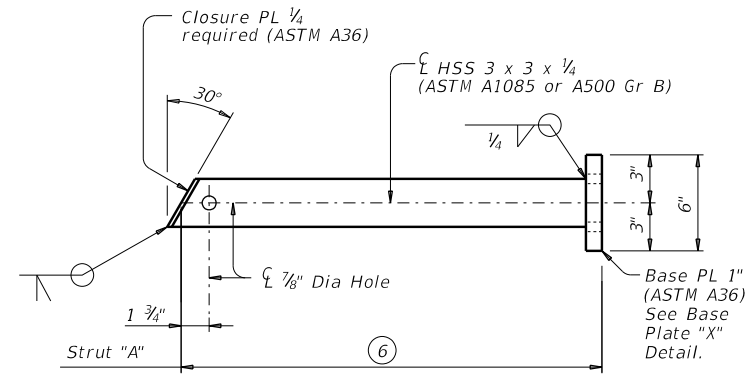


SECTION A-A

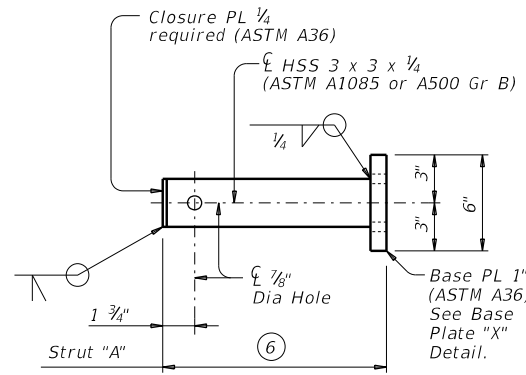
SHEET 1 OF 3

		Bridge Division Standard	
BRIDGE MOUNTED CLEARANCE SIGN ASSEMBLY			
BMCS			
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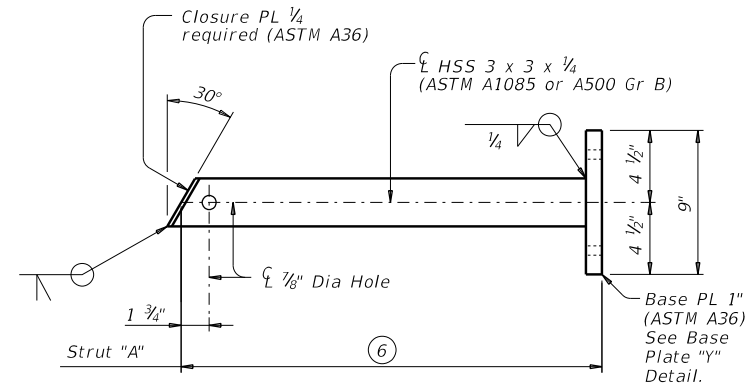
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FOR T411 AND C411 RAIL TYPES



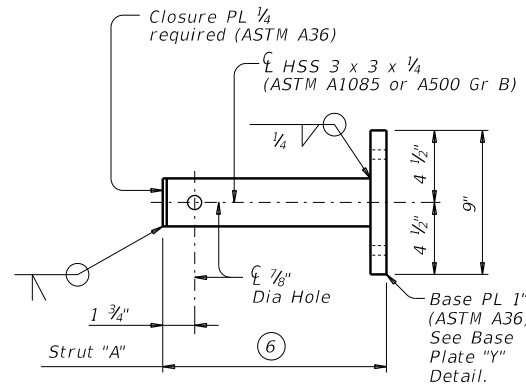
FOR T411 AND C411 RAIL TYPES



FOR T221, C221, T222, T223, C223, T401, T402, C402, T551, T552, T80HT, T80SS AND SSTR RAIL TYPES

UPPER STRUT DETAIL FOR (TYPE S MOUNT)

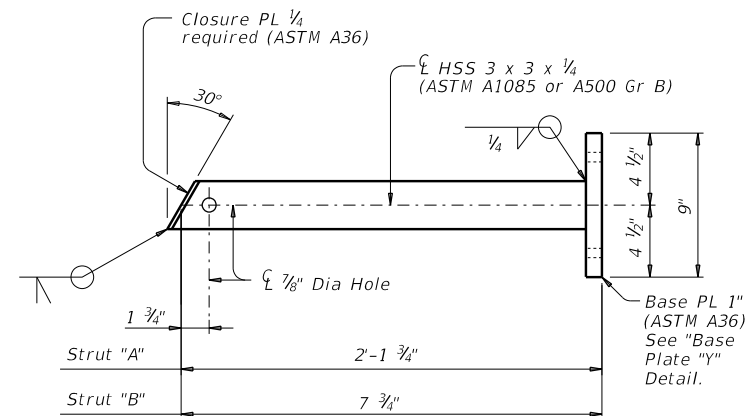
(Used for skews over 30°)



FOR T221, C221, T222, T223, C223, T401, T402, C402, T551, T552, T80HT, T80SS AND SSTR RAIL TYPES

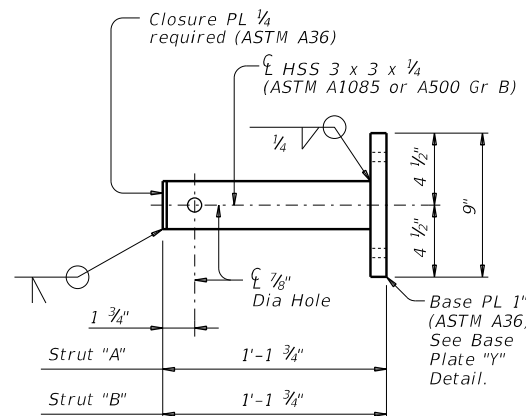
UPPER STRUT DETAIL FOR (TYPE N MOUNT)

(Used for 0° to 30° skews)



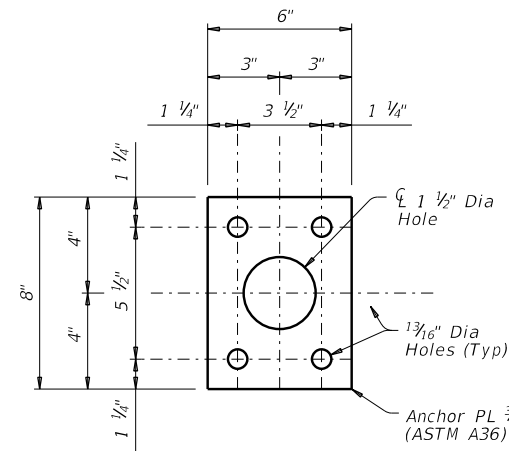
LOWER STRUT DETAILS FOR (TYPE S MOUNT)

(Used for skews over 30°)

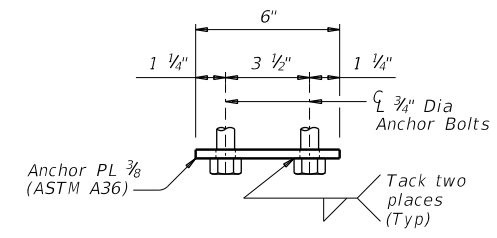


LOWER STRUT DETAILS FOR (TYPE N MOUNT)

(Used for 0° to 30° skews)



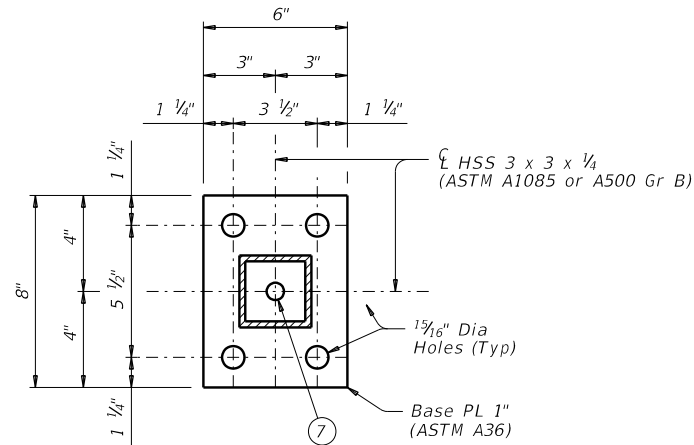
PLAN OF ANCHOR PLATE



ELEVATION

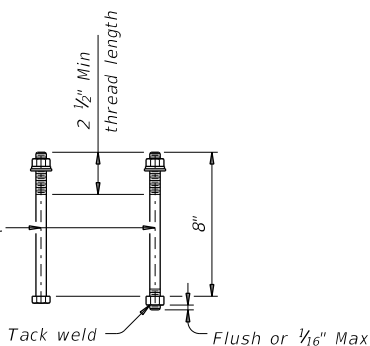
ANCHOR BOLT ASSEMBLY DETAILS ③

(Used on Base Plate "X" with T411 and C411 rail types.)



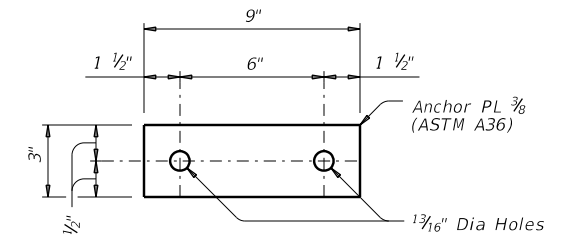
BASE PLATE "X" DETAIL

③ $\frac{3}{4}$ " Dia heavy hex head anchor bolt (ASTM F3125 Gr A325 or A449) or threaded rod (ASTM A193 Gr B7 or F1554 Gr 105) with one hardened washer and one regular lock washer placed under heavy hex nut (ASTM A563). Furnish one additional heavy hex nut for each threaded rod.

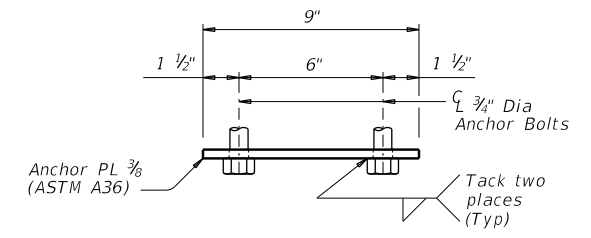


CAST-IN-PLACE ANCHOR BOLT OPTIONS ③

- ③ At the Contractor's option fully threaded adhesive anchors may be used instead of cast-in-place anchor bolts. Expansion anchors are not allowed. Provide adhesive anchors that are $\frac{3}{4}$ " Dia ASTM A193 Gr B7 or F1554 Gr 105 fully threaded rods with one hardened steel washer (ASTM F436) and one regular lock washer placed under heavy hex nut (ASTM A563). Embed fully threaded rods using a Type III, Class C, D, E, or F anchor adhesive. Adhesive anchor embedment depth is 8". Anchor adhesive chosen must be able to achieve a factored bond strength in tension of 2.2 kips per anchor (edge distance and spacing must be accounted for). Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing".
- ⑥ Adjust length to accommodate edge of slab to back of rail for specific project conditions and to help plumb the vertical face of clearance sign.
- ⑦ Hole required to drain zinc from base plate during galvanizing.



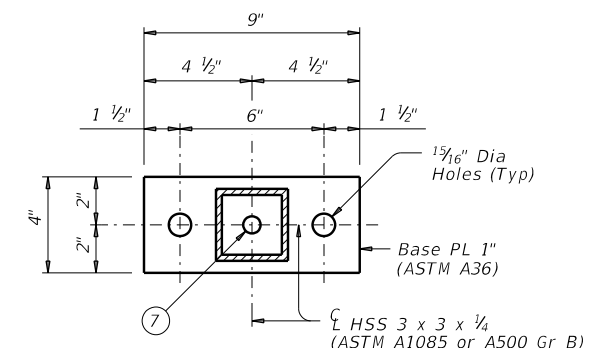
PLAN OF ANCHOR PLATE



ELEVATION

ANCHOR BOLT ASSEMBLY DETAILS ③

(Used on Base Plate "Y" and with T1F, T2P, C2P, T1W, C1W, T66 and C66 rail types.)



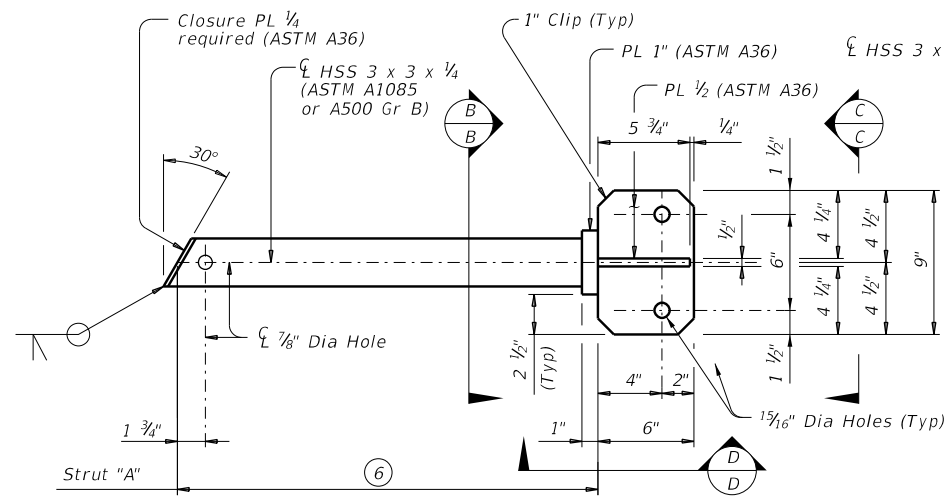
BASE PLATE "Y" DETAIL

SHEET 2 OF 3

				Bridge Division Standard	
BRIDGE MOUNTED CLEARANCE SIGN ASSEMBLY					
BMCS					
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		DIST	COUNTY	SHEET NO.	
		ELP	EL PASO	771	

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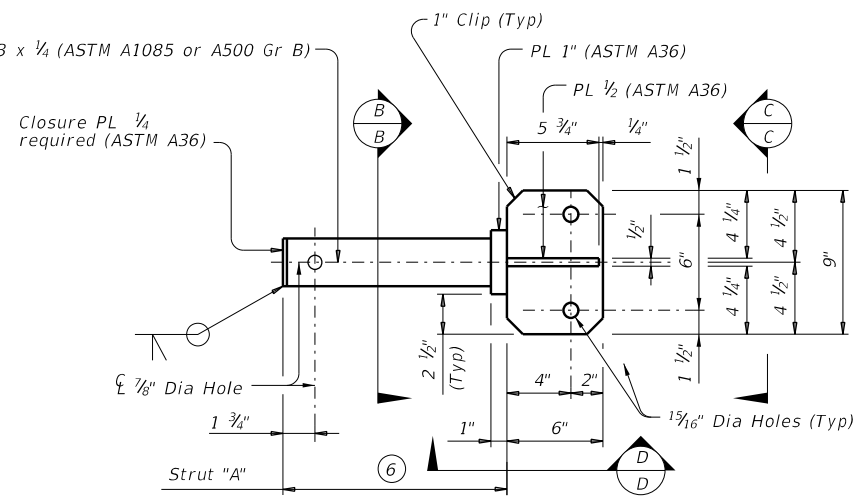


FOR T1F, T2P, C2P, T1W, C1W, T66 AND C66 RAIL TYPES

UPPER STRUT DETAIL FOR (TYPE S MOUNT)

(Used for skews over 30°)

- ② 1/8" Dia x 2" Hexagon socket button head cap screws (ASTM A574) with hex nuts. Attach hex nuts to L 3 x 3 x 1/2 by tack welding in two places. Threads must have Class 3A fit tolerance in accordance ASME B1.1. Six screws required.
- ③ At the Contractor's option fully threaded adhesive anchors may be use instead of cast-in-place anchor bolts. Expansion anchors are not allowed. Provide adhesive anchors that are 3/4" Dia ASTM A193 Gr B7 or F1554 Gr 105 fully threaded rods with one hardened steel washer (ASTM F436) and one regular lock washer placed under heavy hex nut (ASTM A563). Embed fully threaded rods using a Type III, Class C, D, E, or F anchor adhesive. Adhesive anchor embedment depth is 8". Anchor adhesive chosen must be able to achieve a factored bond strength in tension of 2.2 kips per anchor (edge distance and spacing must be accounted for). Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing".

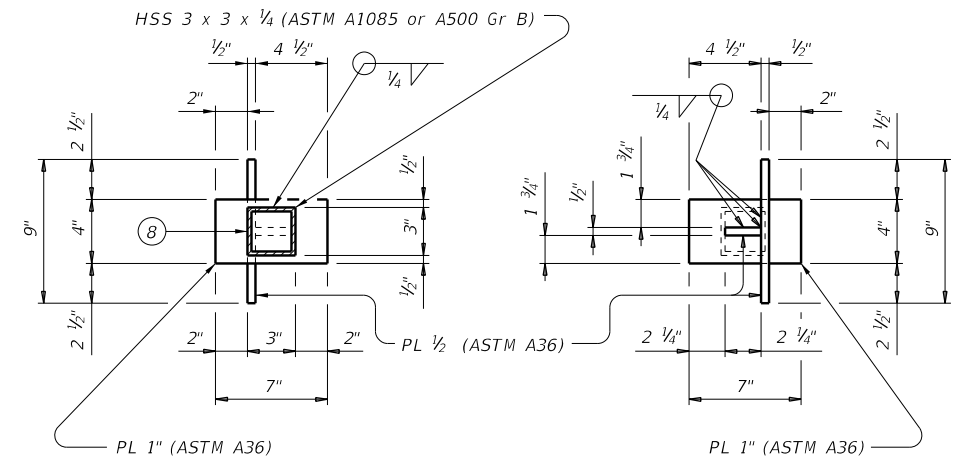


FOR T1F, T2P, C2P, T1W, C1W, T66 AND C66 RAIL TYPES

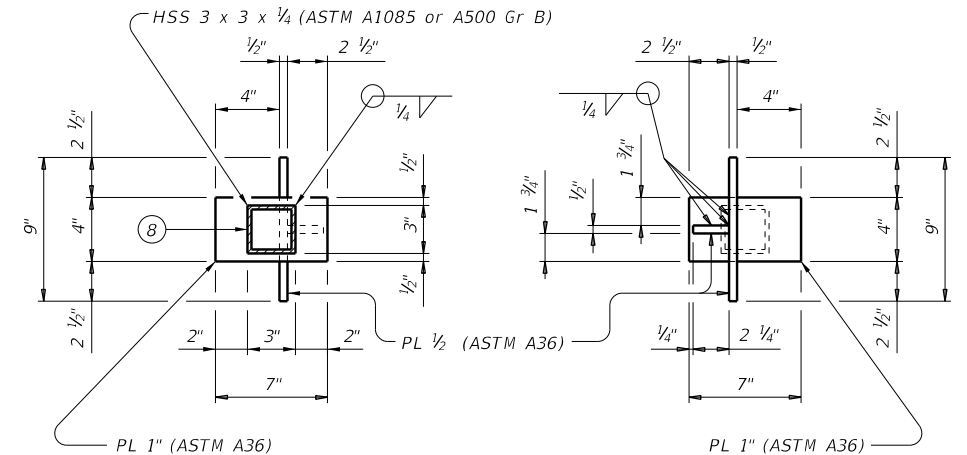
UPPER STRUT DETAIL FOR (TYPE N MOUNT)

(Used for 0° to 30° skews)

- ④ For decked slab beams topped with a 2 course surface treatment and ACP overlay.
- ⑥ Adjust length to accommodate edge of slab to back of rail for specific project conditions and to help plumb the vertical face of clearance sign.
- ⑧ Hole required in bottom of HSS to drain zinc during galvanizing.
- ⑨ 11" curb is for structures with 2" ACP overlay.



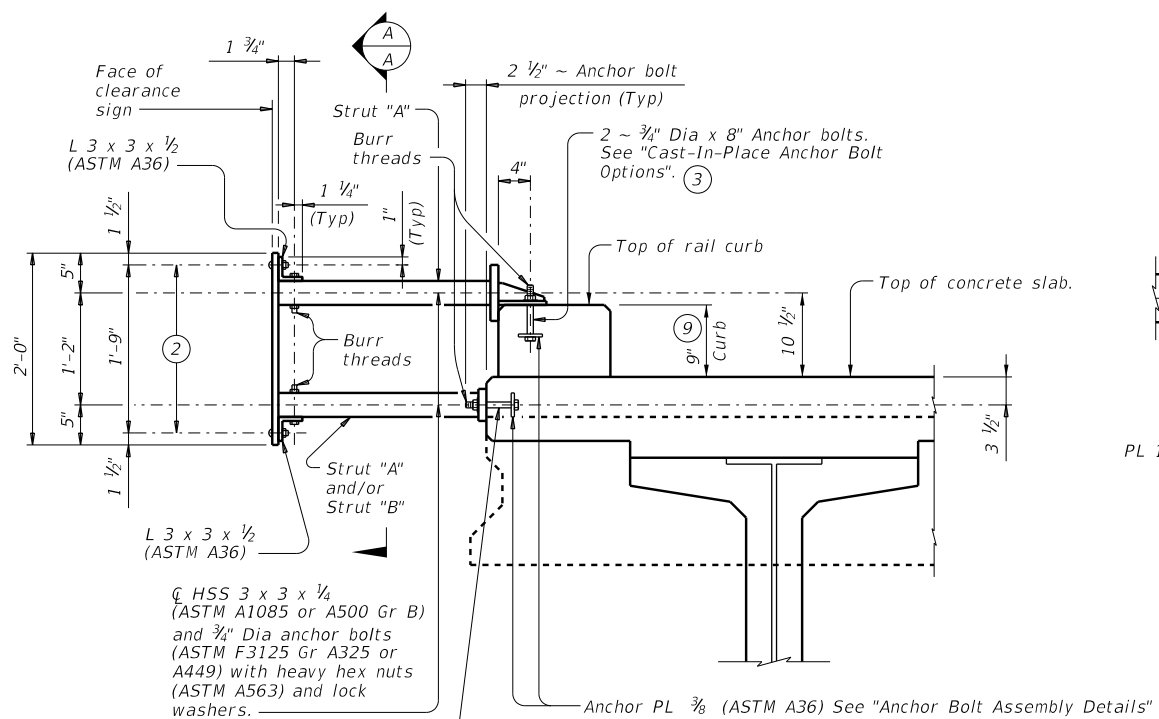
FOR 9" HIGH CURBS



FOR 11" HIGH CURBS

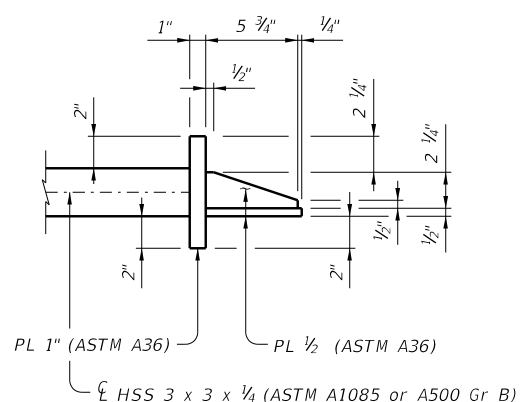
SECTION B-B

VIEW C-C



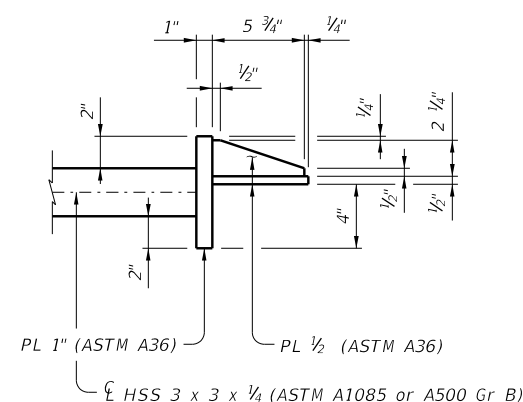
SECTION THRU T1F, T2P, C2P, T1W, C1W, T66 AND C66 RAIL CURB

Showing sign mount on a 9" high curb, 11" high curb similar.



FOR 9" HIGH CURBS

VIEW D-D



FOR 11" HIGH CURBS

SHEET 3 OF 3

Texas Department of Transportation
 Bridge Division Standard

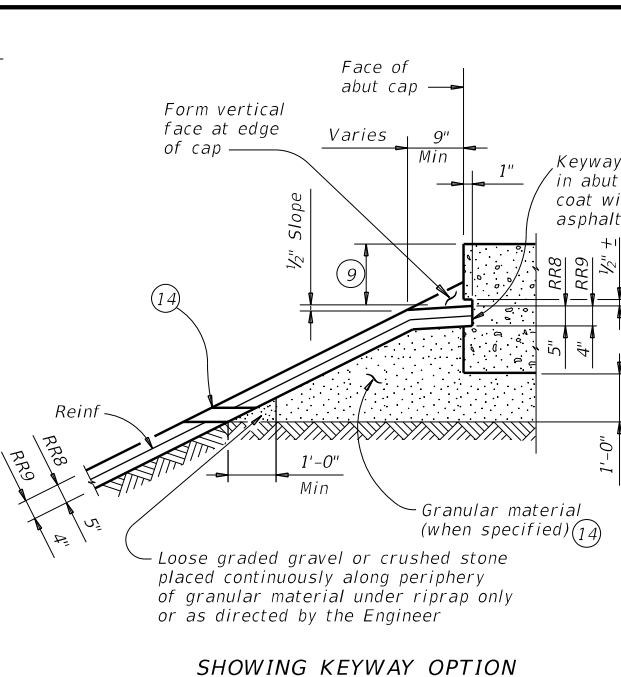
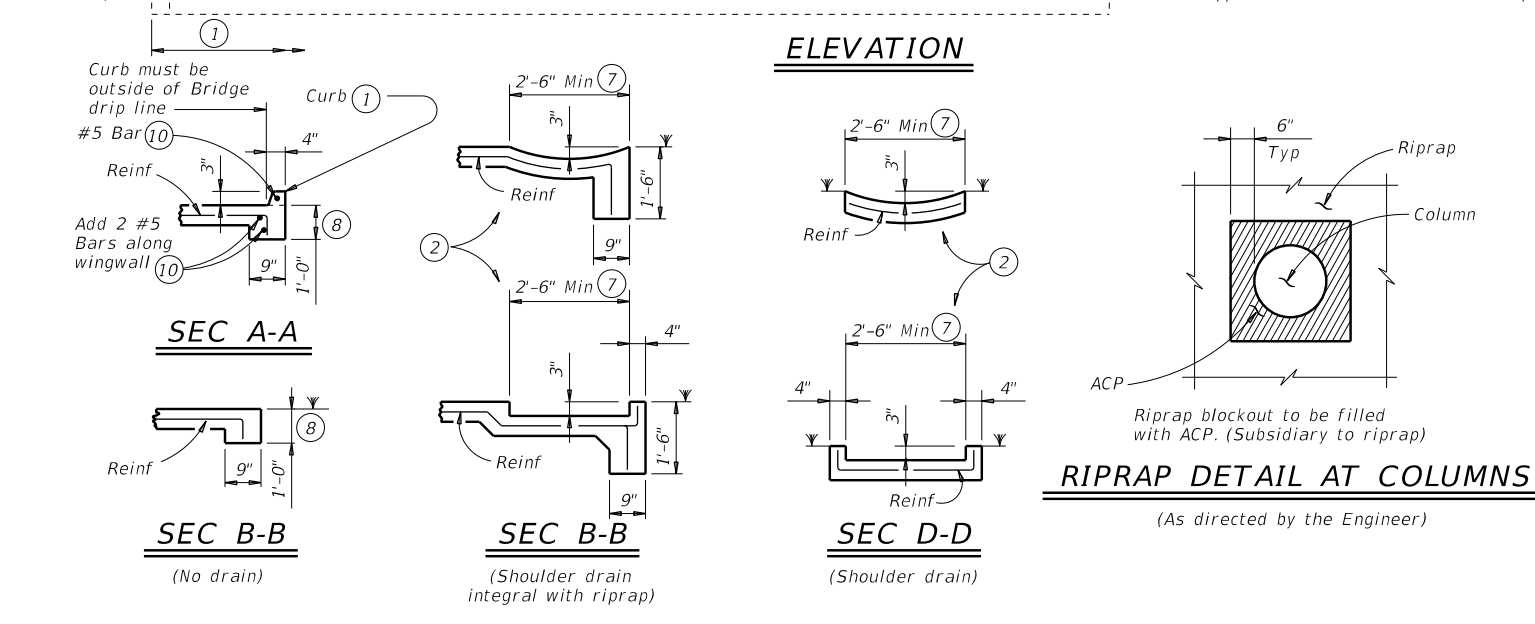
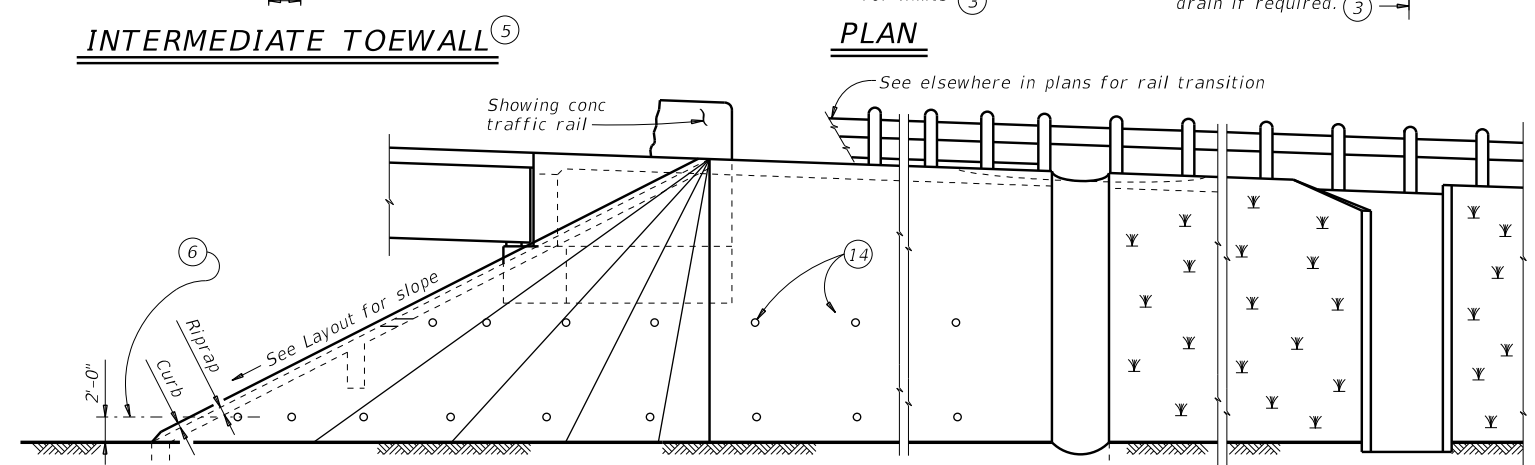
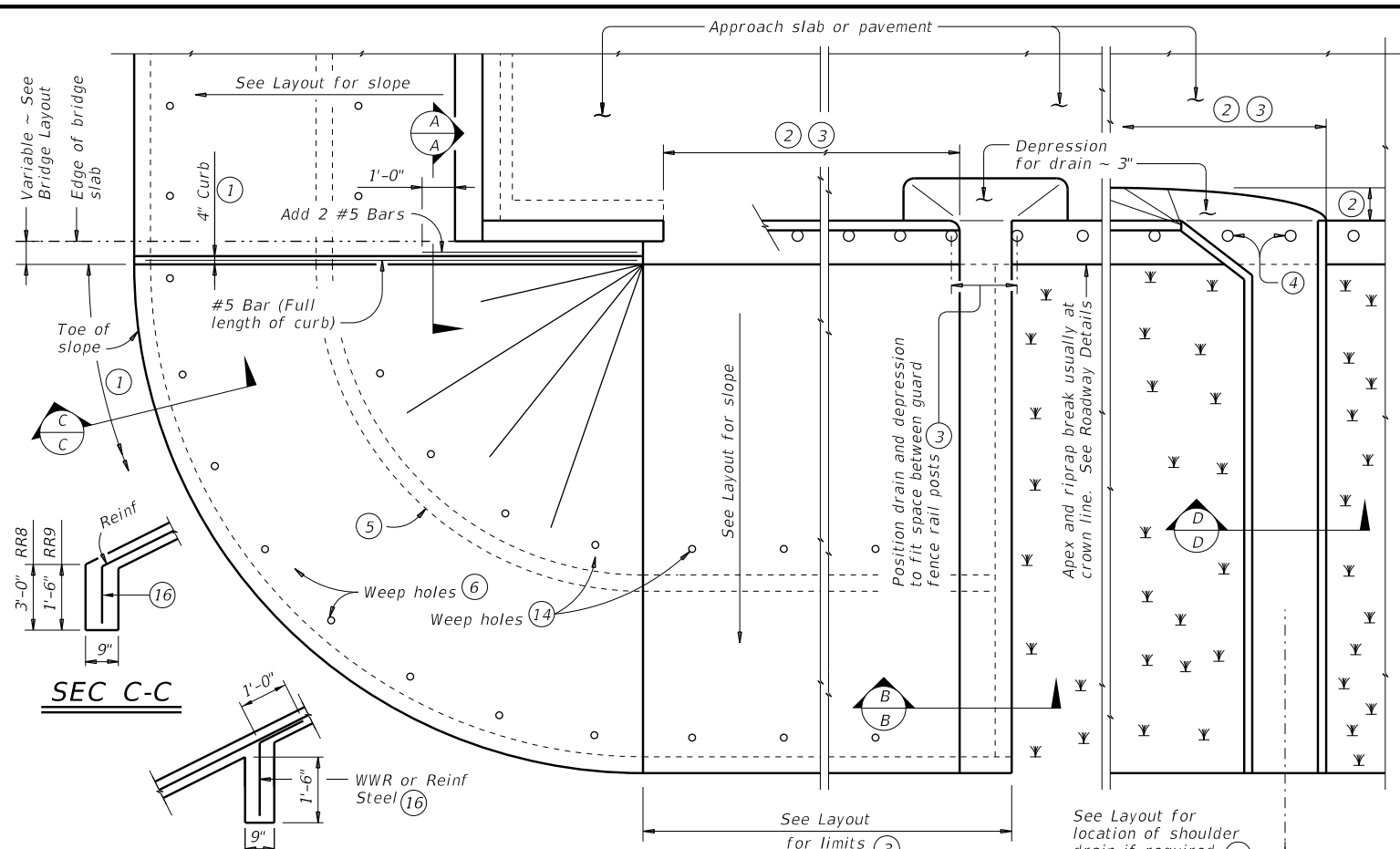
BRIDGE MOUNTED CLEARANCE SIGN ASSEMBLY

BMCS

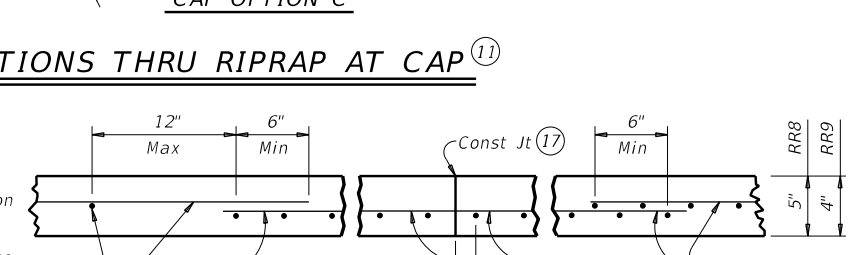
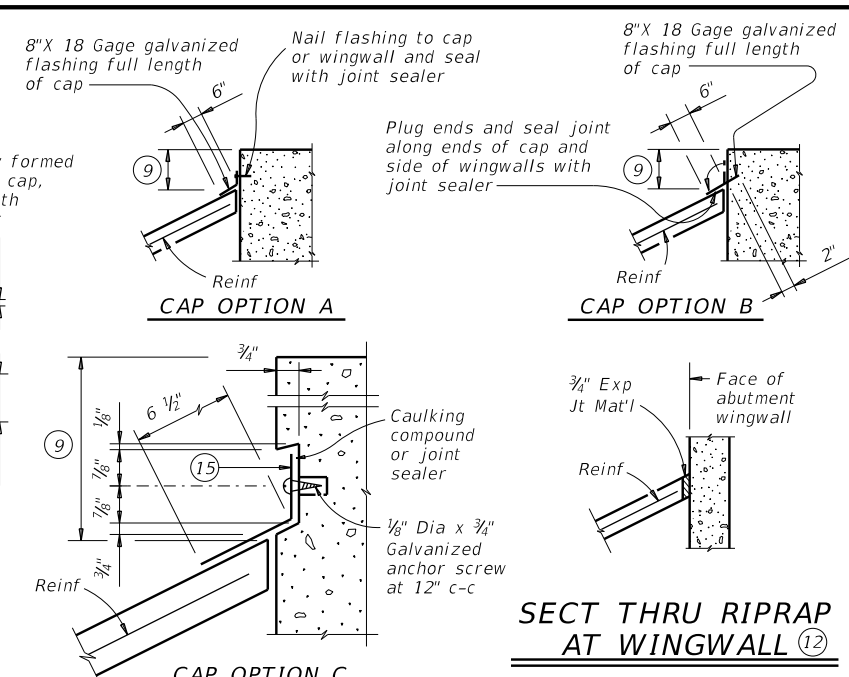
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©TxDOT	April 2019	CONT	SECT	JOB
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- SHOWING KEYWAY OPTION**
- When riprap is shown extended around header on layout, extend slab and toewall as shown and eliminate 4" curb.
 - Limits and configuration of drains and depressions are as shown elsewhere in plans or as directed by the Engineer.
 - Location of shoulder drain must consider limitations imposed by rail transition. Do not locate shoulder drains at expansion joints between approach slab and concrete pavement.
 - See details elsewhere in plans for installation of guard fence posts through concrete riprap.
 - Provide intermediate toewall only when designated elsewhere in the plans or included in the specifications.
 - Provide lower level of 2" Dia weep holes at 10' c-c backed by 1 CF packet of gravel and galvanized hardware cloth at all locations unless directed by the Engineer to eliminate.
 - Use wider or other drain configurations if shown elsewhere in plans or if directed by the Engineer.
 - Wall extension may be reduced or modified if approved by the Engineer. Increase wall extension to 1'-6" whenever the optional intermediate toewall is called for in the plans.
 - Top of cap to top of riprap dimension varies as directed by the Engineer. Should be 9" Min for beam/slab type bridges and 1'-6" for slab span, box beam, or slab beam bridges.
 - #5 bars shown are required even when synthetic fiber reinforcing option is selected.
 - Provide sealing option for joint between the face of cap and riprap as designated by the Engineer or as shown elsewhere on plans.
 - Flashing (shown in Cap Option A) may be used at wingwall in addition to Exp Jt Mat'l if shown on plans or directed by the Engineer.
 - Provide #3 reinforcing bars at 18" Spa c-c. Provide Welded Wire Reinforcement (WWR) as 6x6-D2.9xD2.9 or D3xD3. Combinations of WWR and reinforcing bars may be used if both are permitted. Use lap splices of a minimum 6 inches, measured from the transverse wire of WWR, and the ends of reinforcing bars.
 - If granular material is specified, provide upper level of 2" Dia weep holes at 10' c-c backed by galvanized hardware cloth.
 - 8" x 18 Gage Galv Sheet Metal
 - Provide WWR or #3 bars, with 1'-0" extension into slope.
 - WWR or reinforcing steel is continuous through riprap construction joints. Provide WWR or reinforcing steel that extends 1'-1" minimum into adjacent riprap on each side of construction joint even if synthetic reinforcing fiber is utilized.



- SECTIONS THRU RIPRAP AT CAP**
- REINFORCEMENT DETAILS**
- See General Notes for optional synthetic fiber reinforcement.

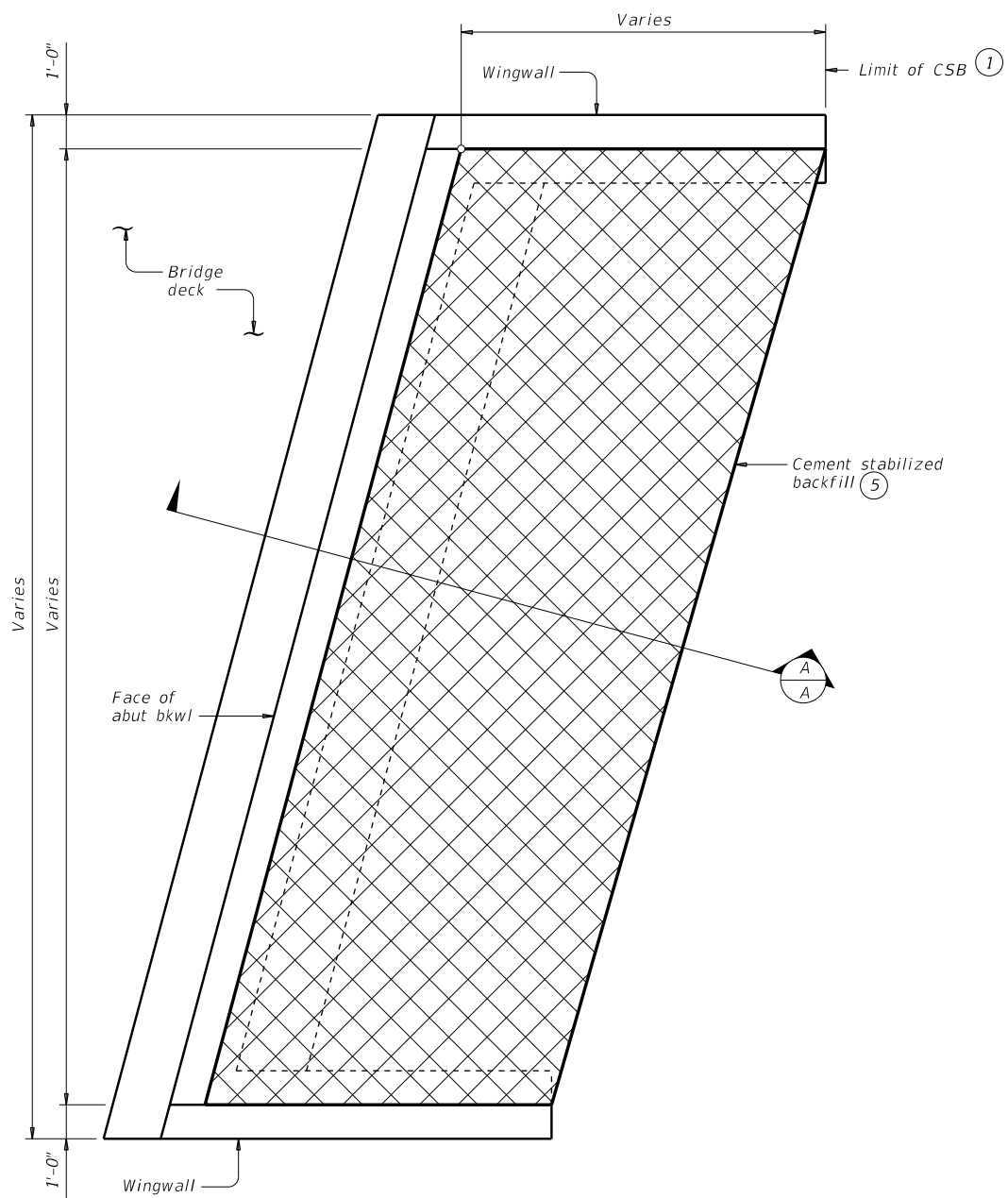
GENERAL NOTES:
 Provide Class "B" concrete (f'c = 2,000 psi) unless noted elsewhere in plans.
 Provide Grade 60 reinforcing steel.
 Provide deformed welded wire reinforcement (WWR) meeting ASTM A1064, unless otherwise shown.
 Provide reinforcing bars, deformed WWR, or any suitable combination of both types for riprap reinforcing, unless specified elsewhere in the plans.
 Optionally synthetic fibers may be used if approved by the Engineer. Provide synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) in lieu of steel reinforcing in riprap concrete.
 Install construction joints or grooved joints extending the full slant slope height at intervals of approximately 20 feet unless otherwise directed by the Engineer.
 Hardware cloth, loose grade stone behind weep holes, flashing, or other sealing material are subsidiary to the bid item "Riprap".
 See Layout for limits of riprap.
 RR8 is to be used on stream crossings.
 RR9 is to be used on other embankments.

		Bridge Division Standard	
CONCRETE RIPRAP AND SHOULDER DRAINS EMBANKMENTS AT BRIDGE ENDS (TYPES RR8 & RR9)			
CRR			
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	DIST	COUNTY	SHEET NO.
	ELP	EL PASO	773

FOR CONTRACTOR'S INFORMATION ONLY:
 5" of RR8 = 0.015 CY/SF
 4" of RR9 = 0.012 CY/SF
 #3 Reinf at 18" c-c = 0.501 Lbs/SF
 6x6-D3xD3 = 0.408 Lbs/SF

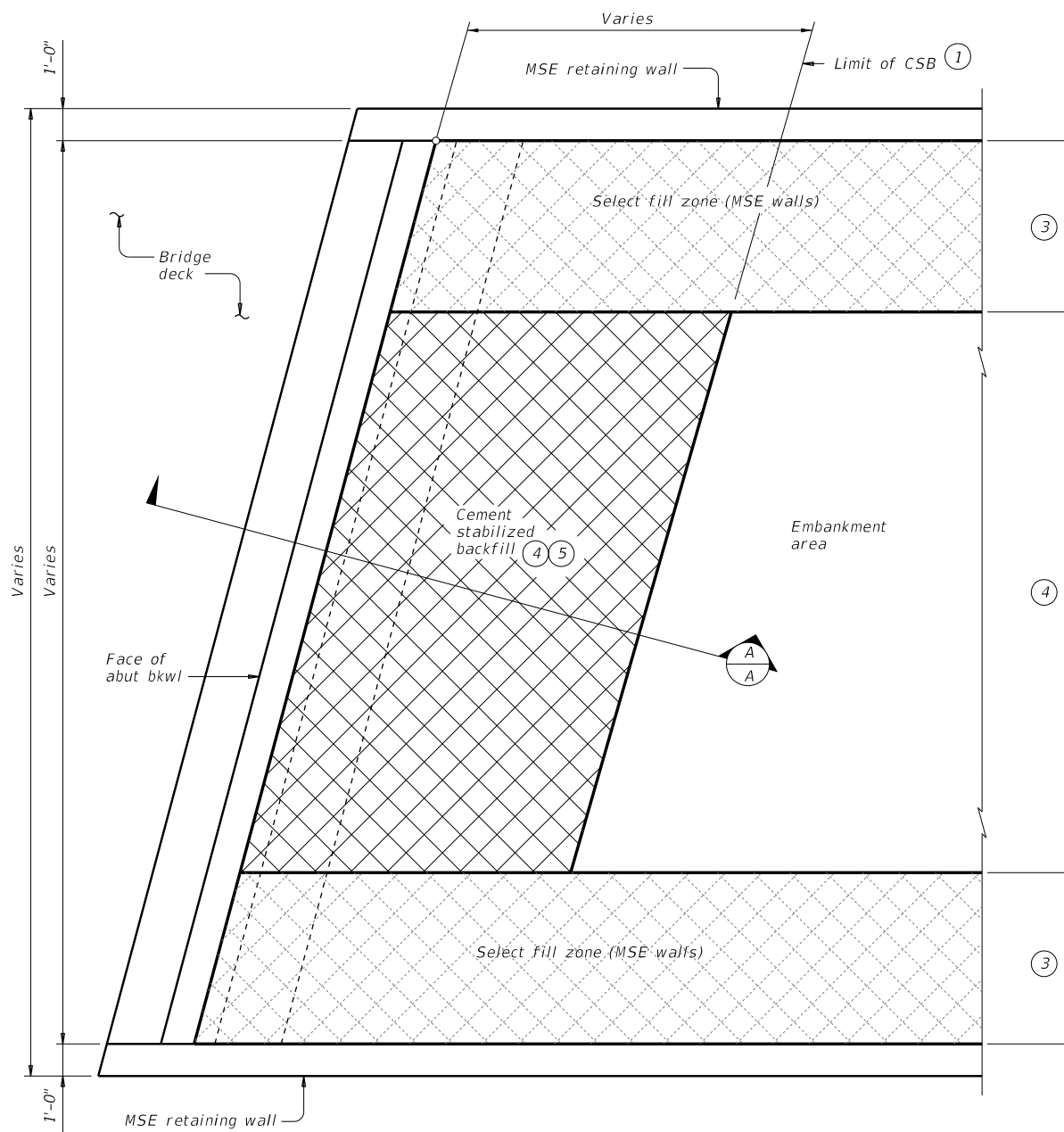
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OPTION 1 ~ PLAN WITH WINGWALLS

Cast-in-place retaining walls similar.

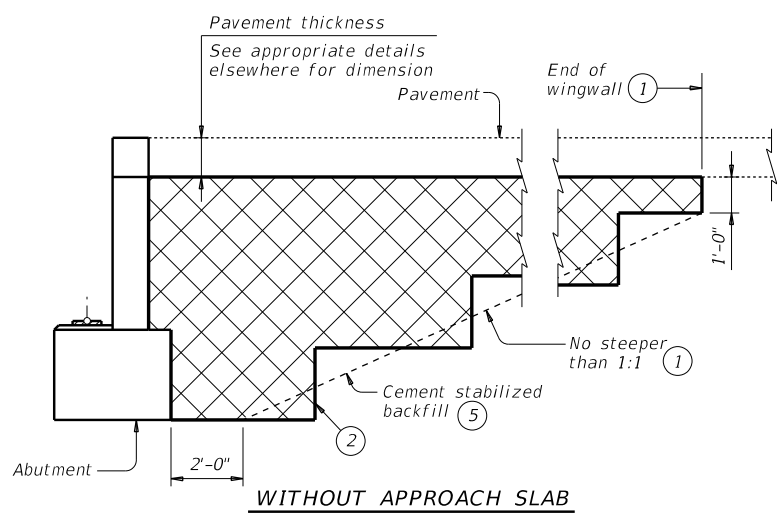


OPTION 1 ~ PLAN WITH MSE RETAINING WALLS

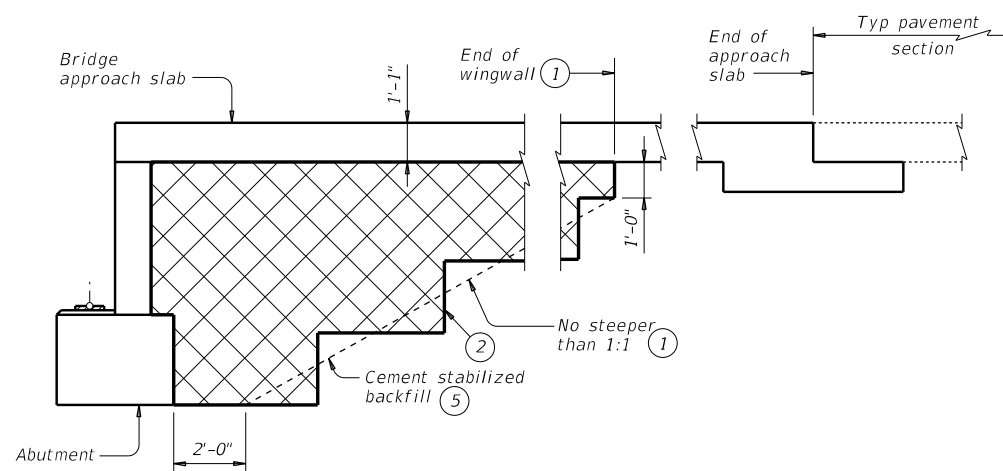
- ① Usual limit of Cement Stabilized Backfill is at end of wingwall. Extend CSB limits as required to maintain a slope no steeper than 1:1 at bottom of backfill.
- ② Bench backfill as shown with 12" (approximate) bench depths.
- ③ Where MSE retaining walls are present, adjust CSB limits to accommodate the select fill zone. See retaining wall details for additional information.
- ④ When distance between select fill zones is less than 5'-0", MSE select fill may be substituted for cement stabilized backfill with approval from the Engineer.
- ⑤ If shown in the plans flowable backfill can be used as a substitute for cement stabilized backfill with the following constraints:
 - a) If flowable backfill is to be placed over MSE backfill then a filter fabric will be placed over the MSE backfill prior to placement of the flowable fill; and
 - b) Place flowable fill in lifts not exceeding 2 feet in height, place each successive lift when the previous lift has stiffened/hardened (i.e. has lost its flowability).

GENERAL NOTES:

See the Bridge Layout for selected Option. Option 2 is intended for new construction requiring high plasticity embankment fill with a plasticity index (PI) greater than 30 or pavement built in poor native soil. Poor soils are defined as high plasticity clays or expansive clays. Option 1 is intended for construction only requiring PI controlled embankment fill or excavation in competent soils/rocks in order to construct the abutment. Provide Cement Stabilized Backfill (CSB) meeting the requirements of Item 400, "Excavation and Backfill for Structures", to the limits shown at bridge abutments. If required elsewhere in the plans, provide Flowable Backfill meeting the requirements of Item 401, "Flowable Backfill", to the limits shown at bridge abutments. Details are drawn showing left forward skew. See Bridge Layout for actual skew direction. These details do not apply when Concrete Block retaining walls are used in lieu of wingwalls.



WITHOUT APPROACH SLAB



WITH APPROACH SLAB
 (Showing BAS-C, BAS-A similar.)

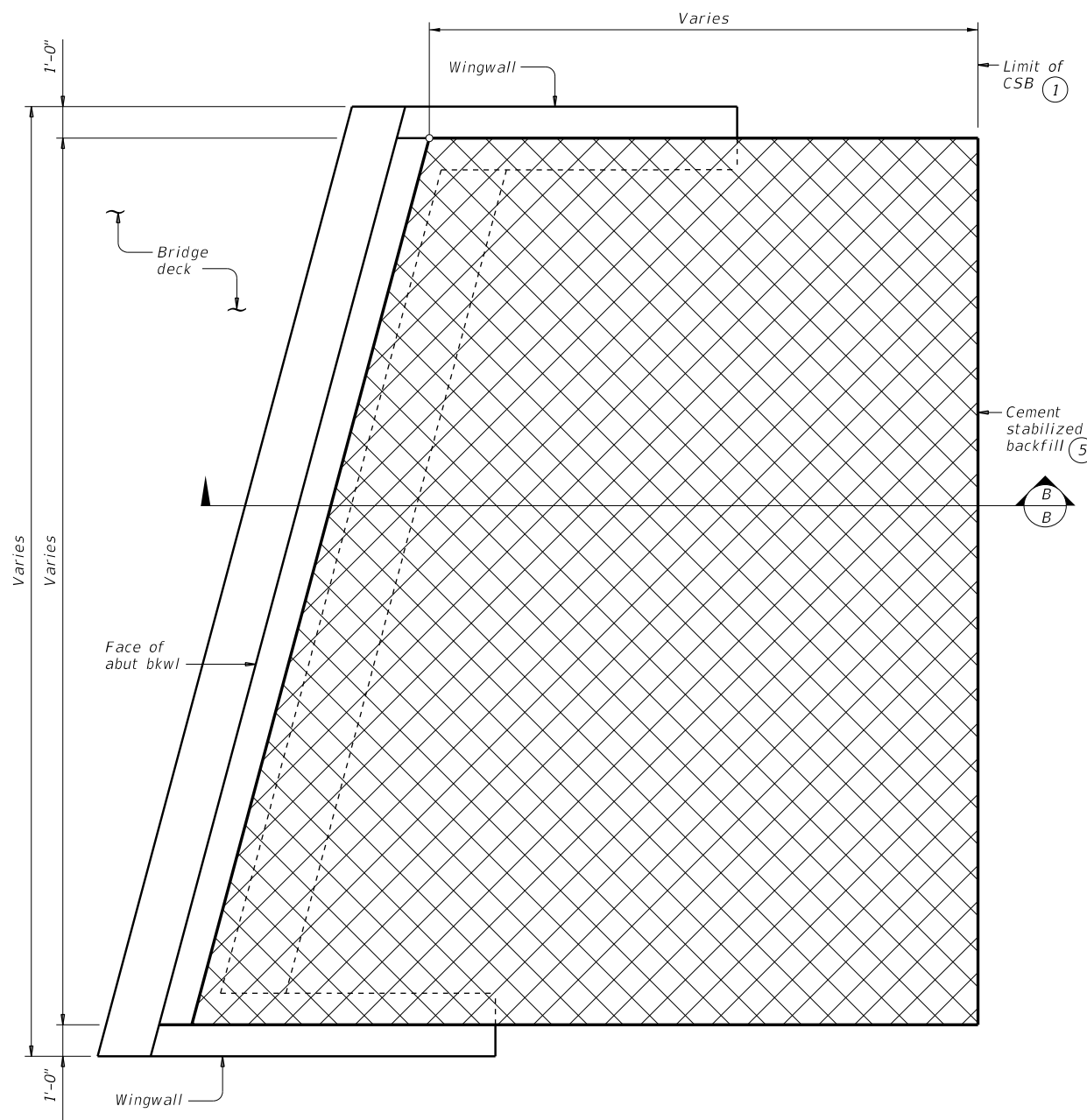
SECTION A-A

SHEET 1 OF 2

		Bridge Division Standard	
CEMENT STABILIZED ABUTMENT BACKFILL BRIDGE ABUTMENT			
CSAB			
FILE: csabste1-20.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT
©TxDOT April 2019	CONT	SECT	JOB
	2121	01	104
02-20: Added Option 2.	DIST	COUNTY	SHEET NO.
	ELP	EL PASO	774

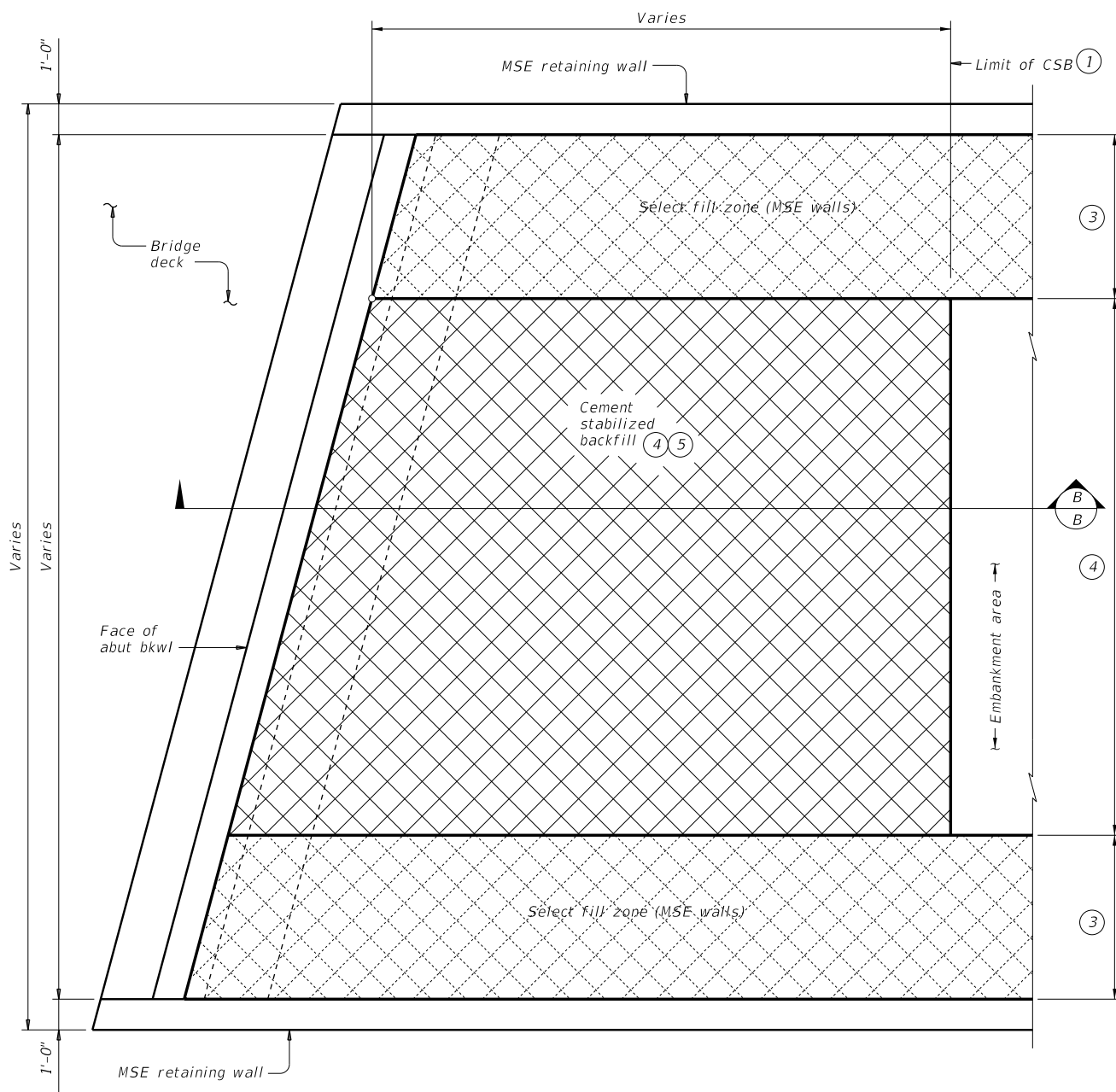
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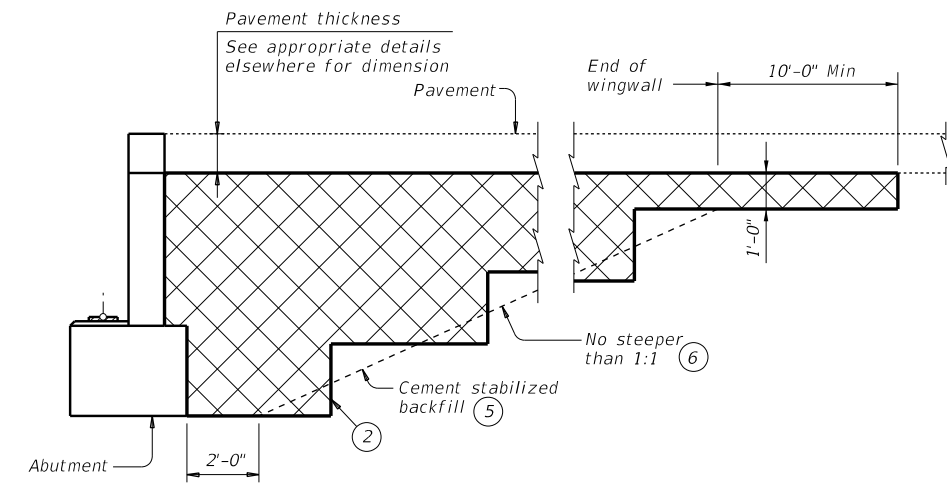
OPTION 2 ~ PLAN WITH WINGWALLS

Cast-in-place retaining walls similar.

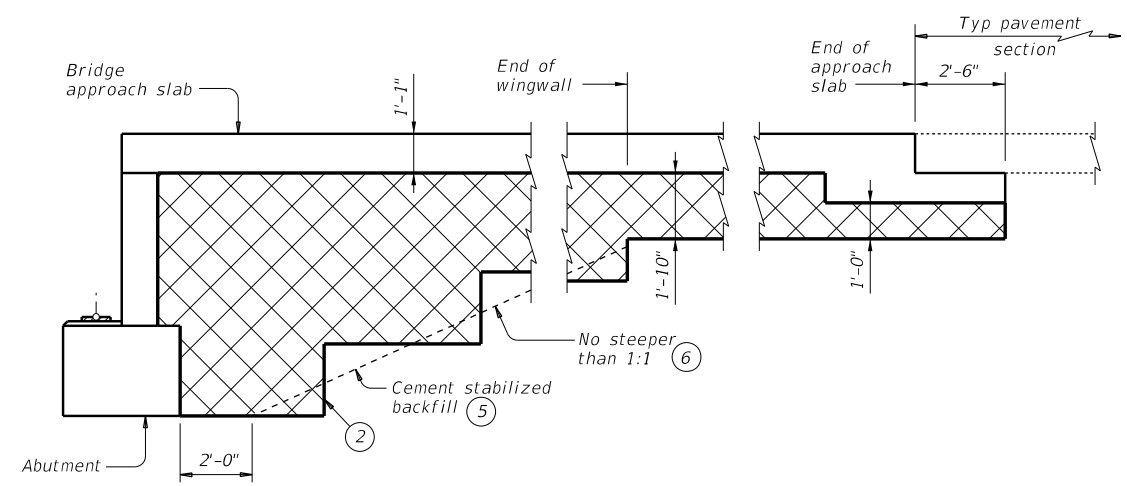


OPTION 2 ~ PLAN WITH MSE RETAINING WALLS

- ① Usual limit of Cement Stabilized Backfill is at end of wingwall. Extend CSB limits as required to maintain a slope no steeper than 1:1 at bottom of backfill.
- ② Bench backfill as shown with 12" (approximate) bench depths.
- ③ Where MSE retaining walls are present, adjust CSB limits to accommodate the select fill zone. See retaining wall details for additional information.
- ④ When distance between select fill zones is less than 5'-0", MSE select fill may be substituted for cement stabilized backfill with approval from the Engineer.
- ⑤ If shown in the plans flowable backfill can be used as a substitute for cement stabilized backfill with the following constraints:
 - a). If flowable backfill is to be placed over MSE backfill then a filter fabric will be placed over the MSE backfill prior to placement of the flowable fill; and
 - b). Place flowable fill in lifts not exceeding 2 feet in height, place each successive lift when the previous lift has stiffened/hardened (i.e. has lost its flowability).



WITHOUT APPROACH SLAB



SECTION B-B

WITH APPROACH SLAB
(Showing BAS-C, BAS-A similar.)

SHEET 2 OF 2



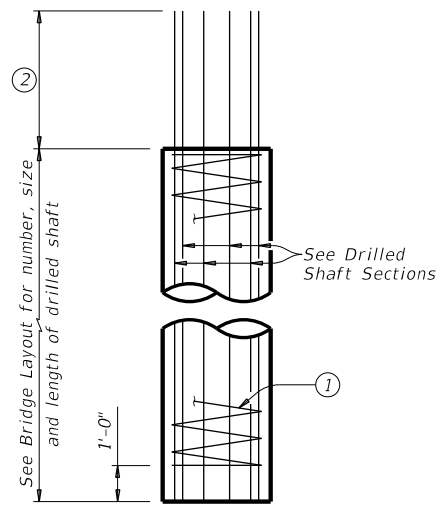
**CEMENT STABILIZED
ABUTMENT BACKFILL
BRIDGE ABUTMENT**

CSAB

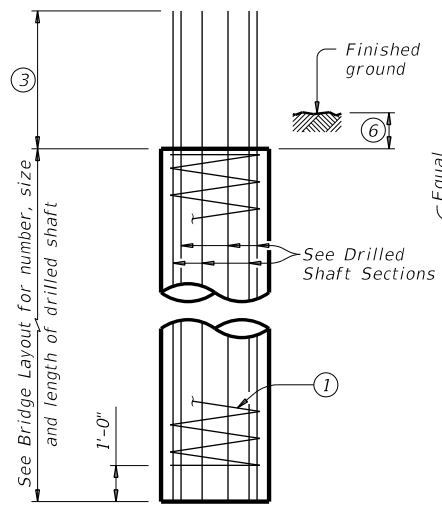
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©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	2121	01	104	IH 10
02-20: Added Option 2.	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	775	

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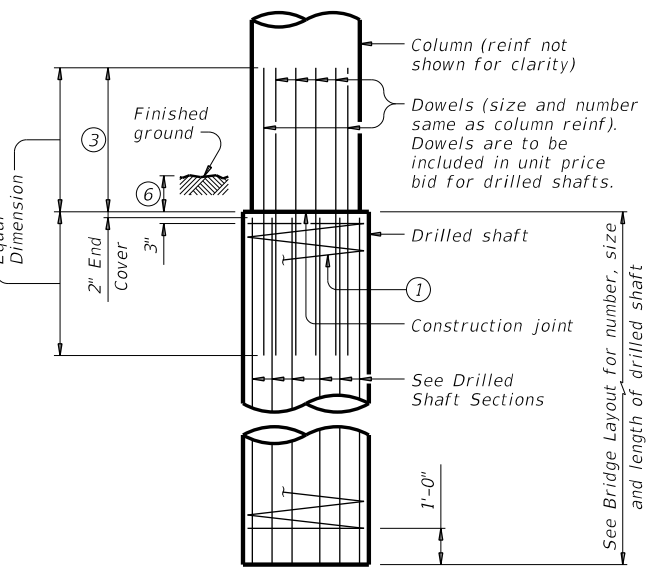
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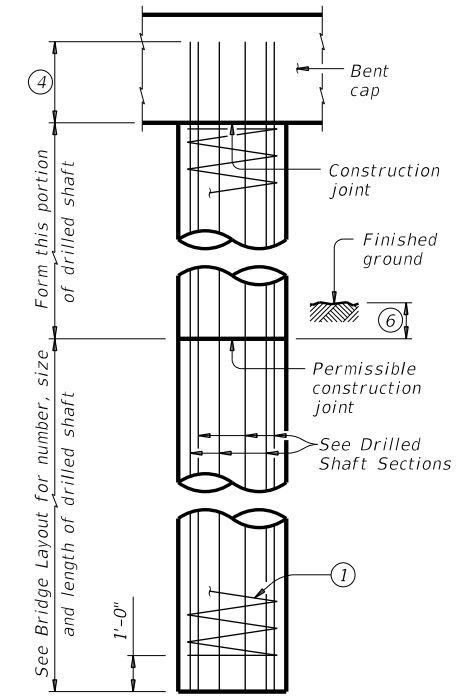
ABUTMENTS, WINGWALLS AND MULTI-DRILLED SHAFT FOOTINGS



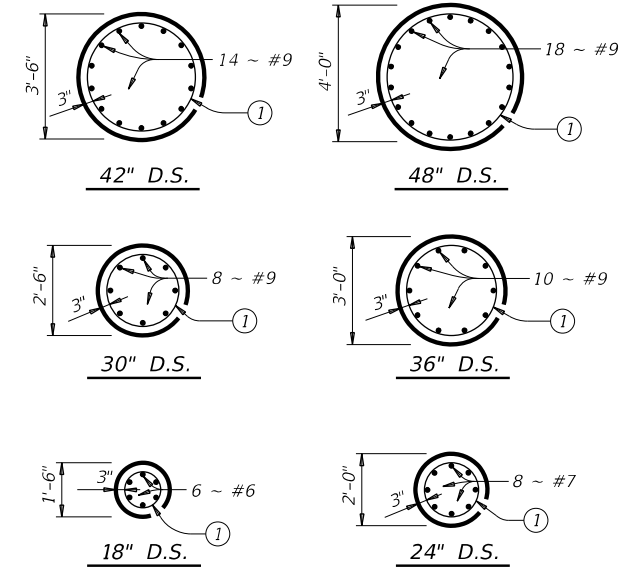
INTERIOR BENTS DRILLED SHAFT DIA EQUAL TO COLUMN DIA



INTERIOR BENTS DRILLED SHAFT DIA GREATER THAN COLUMN DIA



OPTIONAL INTERIOR BENT DRILLED SHAFT DETAIL

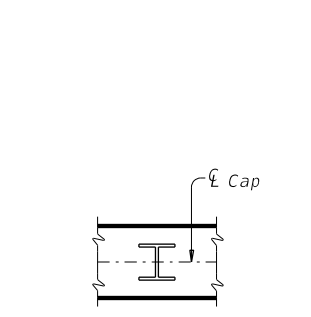


DRILLED SHAFT SECTIONS

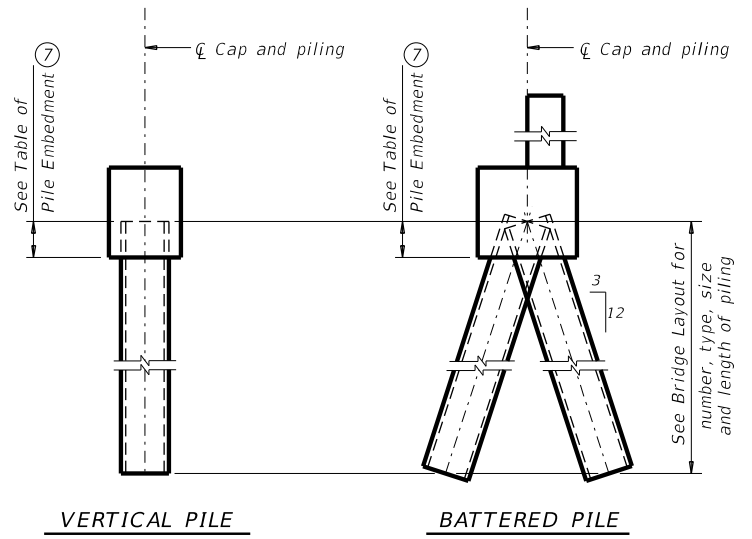
DRILLED SHAFT DETAILS

TABLE OF PILE EMBEDMENT	
Pile Type	Embedment Depth (Ft)
16" Sq Concrete 18" Sq Concrete HP14 Steel HP16 Steel	1'-0"
20" Sq Concrete 24" Sq Concrete HP18 Steel	1'-6"

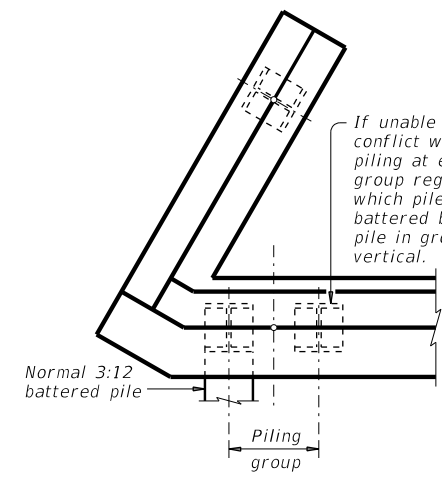
See Prestressed Concrete Piling (CP) standard for additional details on concrete pile embedment.



ORIENTATION OF STEEL H-PILING

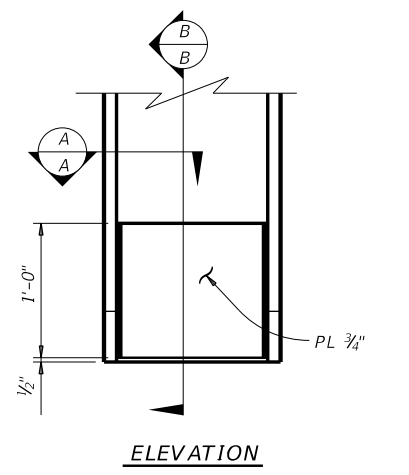


PILING DETAILS (Concrete or steel H)

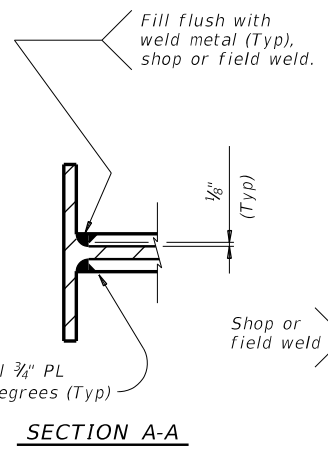


DETAIL "A" (Showing plan view of a 30° skewed abutment)

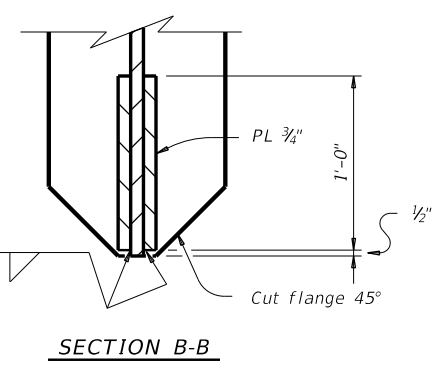
- ① #3 spiral at 6" pitch (one and a half flat turns top and bottom).
- ② Min extension into supported element:
#6 Bars = 1'-11"
#7 Bars = 2'-0"
#9 Bars = 2'-3"
- ③ Min lap with column reinf:
#7 Bars = 2'-11"
#9 Bars = 3'-9"
#11 Bars = 4'-8"
- ④ Min extension into supported element:
#6 Bars = 1'-11"
#7 Bars = 2'-3"
#9 Bars = 2'-9"
- ⑤ Drilled shafts may extend to the bottom of bent caps for "H" heights of 6 ft and less (as shown on the Bridge Layout), if approved. This option can only be used when the drilled shaft diameter equals the column diameter. Obtain approval of the forming method above the ground line prior to construction. No adjustments in payment will be made if this option is used.
- ⑥ 1'-0" Min, unless shown otherwise on plans.
- ⑦ Or as shown on plans.



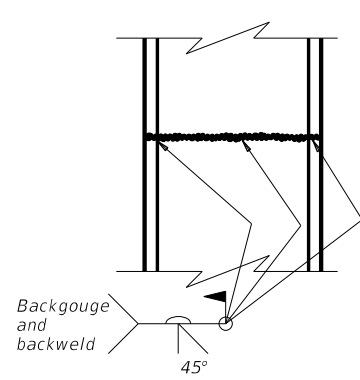
ELEVATION



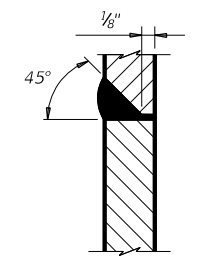
SECTION A-A



SECTION B-B



STEEL H-PILE SPLICE DETAIL Use when required.



SECTION THRU FLANGE OR WEB

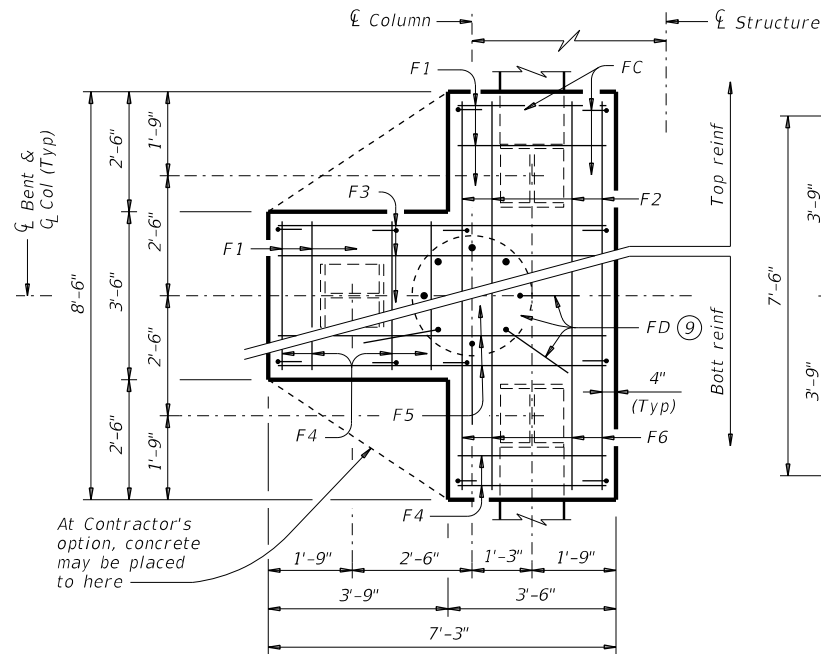
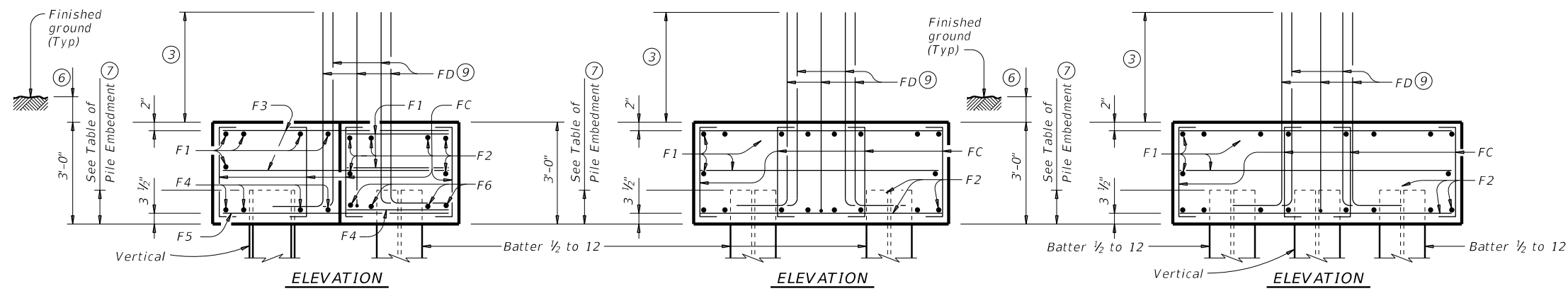
COMMON FOUNDATION DETAILS

FD

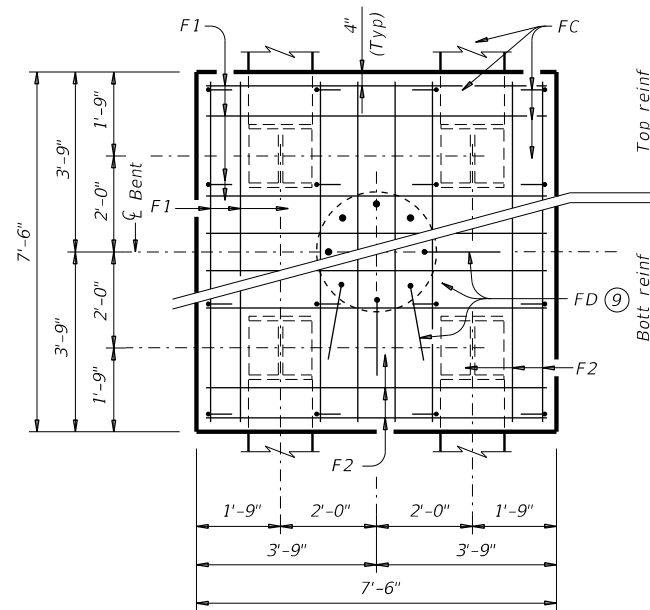
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©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	2121	01	104	IH 10
01-20: Added #11 bars to the FD bars.	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	776	

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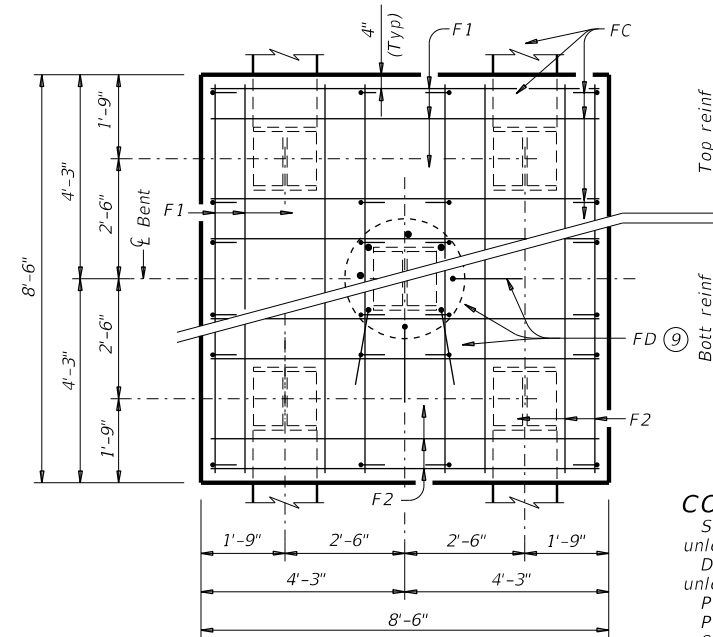
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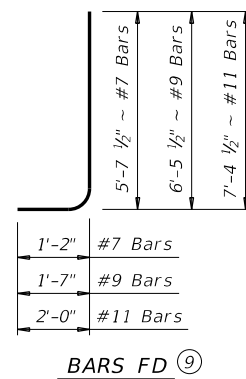
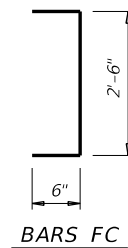
THREE PILE FOOTING^⑧
 For 36" Dia and smaller columns.



FOUR PILE FOOTING^⑧
 For 42" Dia and smaller columns.



FIVE PILE FOOTING^⑧
 For 42" Dia and smaller columns.



- ③ Min lap with column reinforcing:
 #7 Bars = 2'-11"
 #9 Bars = 3'-9"
 #11 Bars = 4'-8"
- ⑥ 1'-0" Min, unless shown otherwise on plans.
- ⑦ Or as shown on plans.
- ⑧ See Bridge Layout for type, size and length of piling.
- ⑨ Number and size of FD bars must match column reinforcing. Tie FD bars to the top of the bottom reinforcing mat.
- ⑩ Adjust FD quantity, size and weight as needed to match column reinforcing.

TABLE OF FOOTING QUANTITIES FOR 30" COLUMNS

ONE 3 PILE FOOTING					
Bar	No.	Size	Length	Weight	
F1	11	#4	3'- 2"	23	
F2	6	#4	8'- 2"	33	
F3	6	#4	6'- 11"	28	
F4	8	#9	3'- 2"	86	
F5	4	#9	6'- 11"	94	
F6	4	#9	8'- 2"	111	
FC	12	#4	3'- 6"	28	
FD ^⑩	8	#9	8'- 1"	220	
Reinforcing Steel				Lb	623
Class "C" Concrete				CY	4.8
ONE 4 PILE FOOTING					
Bar	No.	Size	Length	Weight	
F1	20	#4	7'- 2"	96	
F2	16	#8	7'- 2"	306	
FC	16	#4	3'- 6"	37	
FD ^⑩	8	#9	8'- 1"	220	
Reinforcing Steel				Lb	659
Class "C" Concrete				CY	6.3
ONE 5 PILE FOOTING					
Bar	No.	Size	Length	Weight	
F1	20	#4	8'- 2"	109	
F2	16	#9	8'- 2"	444	
FC	24	#4	3'- 6"	56	
FD ^⑩	8	#9	8'- 1"	220	
Reinforcing Steel				Lb	829
Class "C" Concrete				CY	8.0

CONSTRUCTION NOTES:

See Bridge Layout for foundation type required. Use these foundation details unless shown otherwise.
 Drive piling under abutment wingwalls to a minimum resistance of 10 Tons/Pile unless shown otherwise.
 Provide Class C Concrete ($f'_c = 3,600$ psi), unless shown otherwise.
 Provide Grade 60 reinforcing steel.
 Galvanize reinforcing if shown elsewhere in the plans.
 Provide bar laps for drilled shaft reinforcing, where required, as follows:
 Uncoated or galvanized (#6) ~ 2'-6"
 Uncoated or galvanized (#7) ~ 2'-11"
 Uncoated or galvanized (#9) ~ 3'-9"

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.

DESIGNER NOTES:

Do not use the drilled shaft details shown on this standard for retaining wall, noise wall, barrier, or sign foundations without structural evaluation.
 Do not use the footings shown on this standard in direct contact with salt water or exposed to salt water spray.
 Maximum allowable pile loads for the footings shown are:

- 72 Tons/Pile with 24" Dia Columns
- 80 Tons/Pile with 30" Dia Columns
- 100 Tons/Pile with 36" Dia Columns
- 120 Tons/Pile with 42" Dia Columns

SHEET 2 OF 2

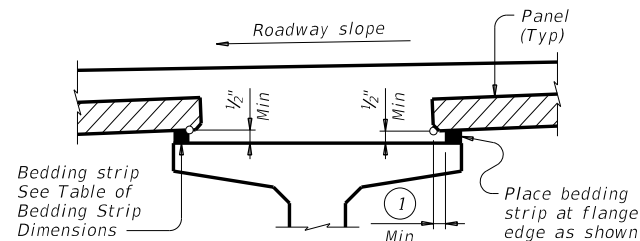


COMMON FOUNDATION DETAILS

FD

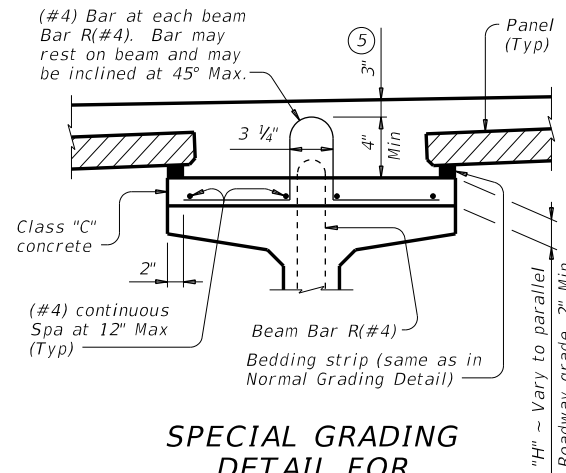
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©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	2121	01	104	IH 10
01-20: Added #11 bars to the FD bars.	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	777	

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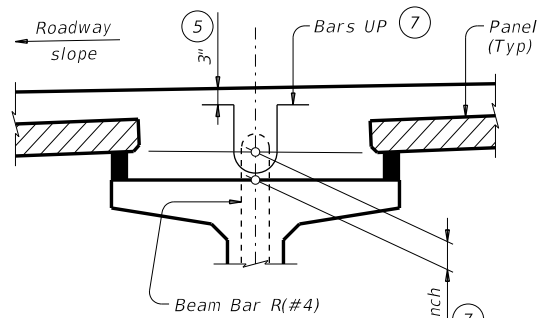
NORMAL GRADING DETAIL ③

Showing prestressed concrete I-girders.
(Other beam types similar)



SPECIAL GRADING DETAIL FOR CONCRETE BEAMS

Showing prestressed concrete I-girders.
(Other beam types similar)

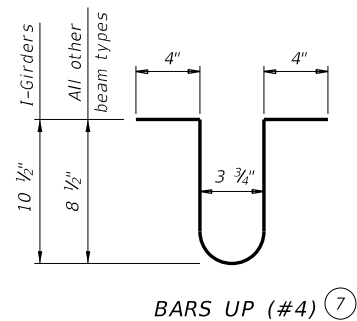


HAUNCH REINFORCING DETAIL

Showing prestressed concrete I-girders.
(Other beam types similar)

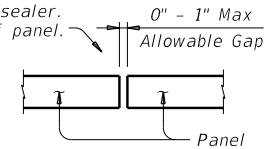
WIDTH	HEIGHT ④	
	Min	Max
1" (Min)	1/2"	2"
1 1/4"	1/2"	2 1/2"
1 1/2"	1/2"	3"
1 3/4"	1/2"	3 1/2"
2"	1/2"	4"
2 1/4"	1/2"	4 1/2" ②
2 1/2"	1/2"	5" ②
2 3/4"	1/2"	5 1/2" ②
3" (Max)	1/2"	6" ②

- ① 2" Min for I-girders, 1 1/2" Min for all other beam types.
- ② Allowed for I-girders, not allowed on other beam types.
- ③ To reduce the quantity of cast-in-place concrete, bedding strip thickness may be increased in 1/4" increments. Bedding strips must be comprised of one layer. Bond bedding strips to the beams with an adhesive compatible with bedding strips. Bedding strips over 2.5" high may need to be bonded to panels. The same thickness strip must be used under any one panel edge and the maximum change in thickness between adjacent panels is 1/4". Alternatively, bedding strips may be cut to grade. Panels may be supported by an alternate method, using a commercial product, if approved by the Engineer of Bridge Design, Bridge Division. If bedding strips exceed 6" high for I-Girders, 4" high for all other beam types, use Special Grading Detail for Concrete Beams or submit an alternate method to the Bridge Division for approval.
- ④ Height must not exceed twice the width.
- ⑤ Provide clear cover as indicated unless otherwise shown on Span Details.
- ⑥ See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.
- ⑦ Space Bars UP(#4) with Beam Bars R(#4) in all areas where measured haunch exceeds 3 1/2" with I-girders, and 3" for all other beam types. Epoxy coating for Bars UP is not required.
- ⑧ Do not locate construction joints on top of a panel.
- ⑨ Butt adjacent bedding strips together with adhesive. Cut v-notches, approx 1/4" deep, in the top of the bedding strips at 8' o.c..



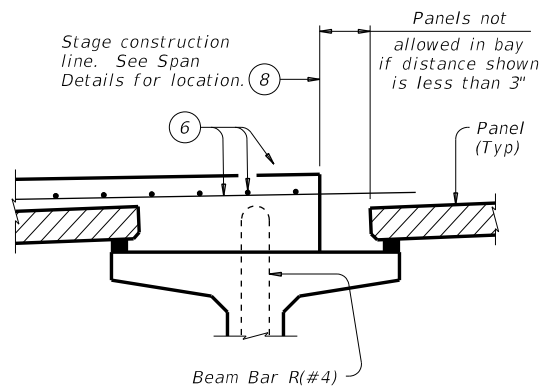
BARS UP (#4) ⑦

Seal joint between panels when gap exceeds 1/4" with polyurethane sealant or expanding foam sealer. Make seal flush with top of panel.

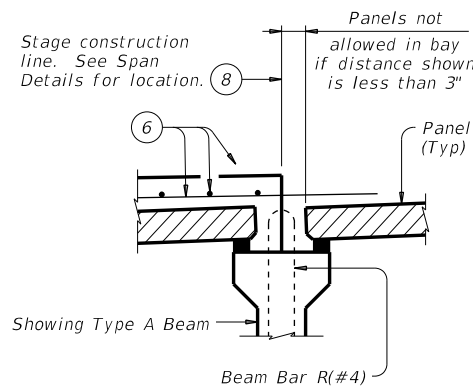


PANEL JOINTS

(Panel reinforcing not shown for clarity. The gap cannot be considered as a panel fabrication tolerance. Adjust panel placement to minimize joint openings.)



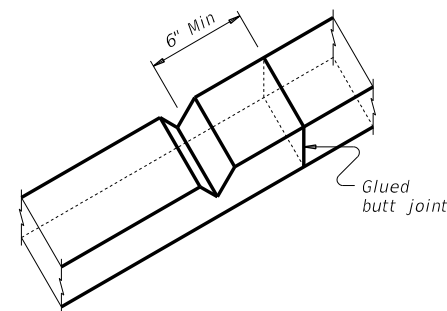
PRESTR CONC I-GIRDERS



PRESTR CONC I-BEAMS

STAGE CONSTRUCTION LIMITATIONS

(Other beam types similar)



BEDDING STRIP DETAIL ⑨

CONSTRUCTION NOTES:

Erected panels must bear uniformly on bedding strips of extruded polystyrene placed along top flange edges. Placing panels to minimize joint openings is recommended. If additional blocking is needed, special grading details for supporting the panels and extra reinforcing between beam and slab will be considered subsidiary to deck construction. Bars U, shown on PCP-FAB, may be bent over or cut off if necessary. Care must be taken to ensure proper cleaning of construction debris and consolidation of concrete material under the edges of the panels. Bedding strips must be placed at beam flange edges so that adequate space is provided for the mortar to flow a minimum of 1 1/2" under the panels as the slab concrete is placed. To allow the proper amount of mortar to flow between beam and panel, the minimum vertical opening must be at least 1/2". Roadway cross-slope reduces the opening available for entry of the mortar. Bedding strips varying in thickness across the beam are therefore required. For clear span between U-beams less than or equal to 18", see Permissible Slab Forming Detail on Miscellaneous Slab Detail sheets, UBMS.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel in the cast-in-place slab. See Table of Reinforcing Steel for size and spacing of reinforcement. If the top and bottom layer of reinforcing steel is shown on the Span Details to be epoxy coated, then the D, E, P, & Z bars must be epoxy coated. Provide bar Laps, where required, as follows:
 Uncoated ~ #4 = 1'-7"
 Epoxy Coated ~ #4 = 2'-5"

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications. Panel placement may follow either Option 1 or Option 2 except Option 1 must be used if the skew exceeds 45 degrees. Use of Prestressed Concrete Panels is not permitted for horizontally curved steel plate or tub girders. See Span Details for other possible restrictions on their use. These details are to be used in conjunction with the Span Details, PCP-FAB and other applicable standard drawings. When panel support (bedding strips) deviates from what is shown herein, provide details signed and sealed by a professional Engineer. Any additional reinforcing or concrete required on this standard is considered subsidiary to the bid item "Reinforced Concrete Slab".

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

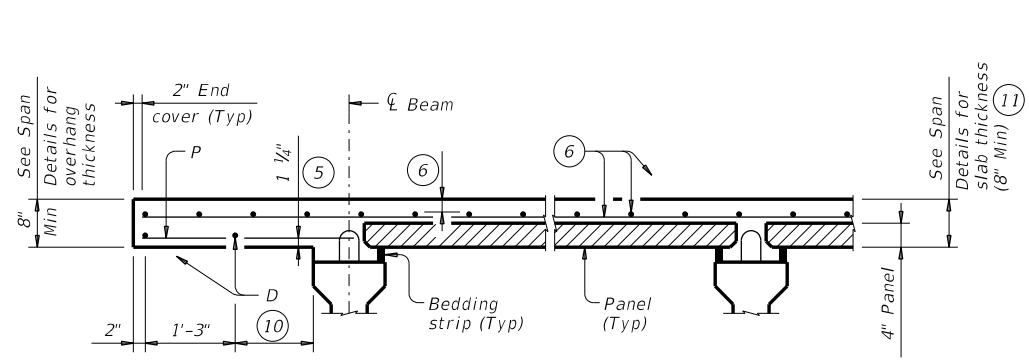
HL93 LOADING

SHEET 1 OF 4

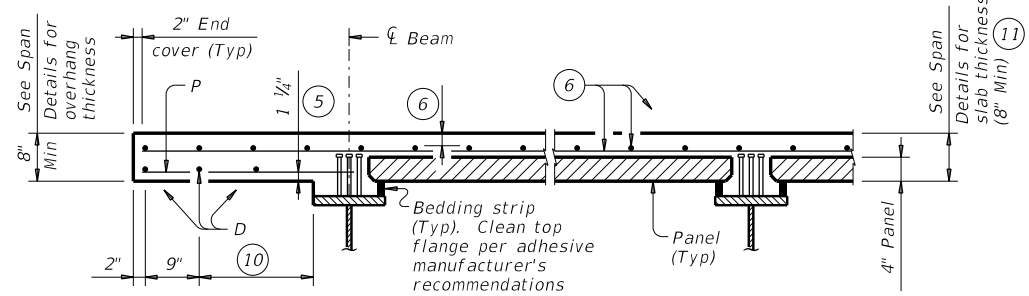
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PRESTRESSED CONCRETE PANELS DECK DETAILS			
PCP			
FILE: pcpstde1-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR
©TxDOT April 2019	CONT	SECT	JOB
REVISIONS	2121	01	104
	DIST	COUNTY	SHEET NO.
	ELP	EL PASO	778

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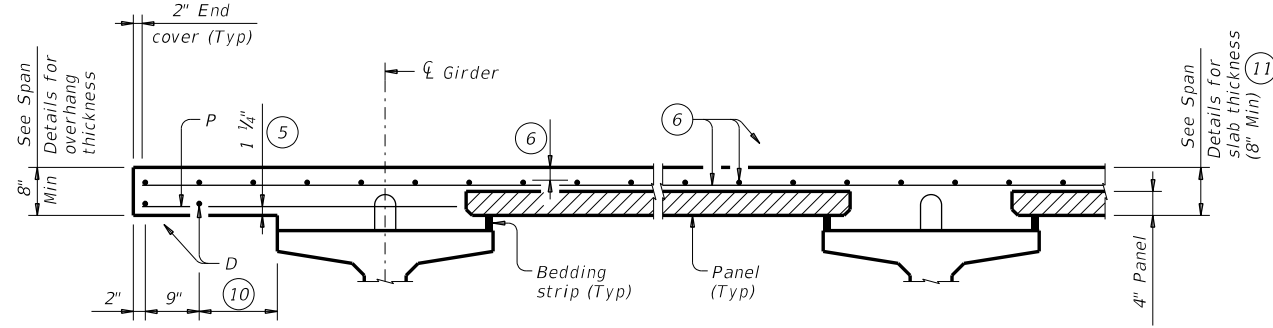
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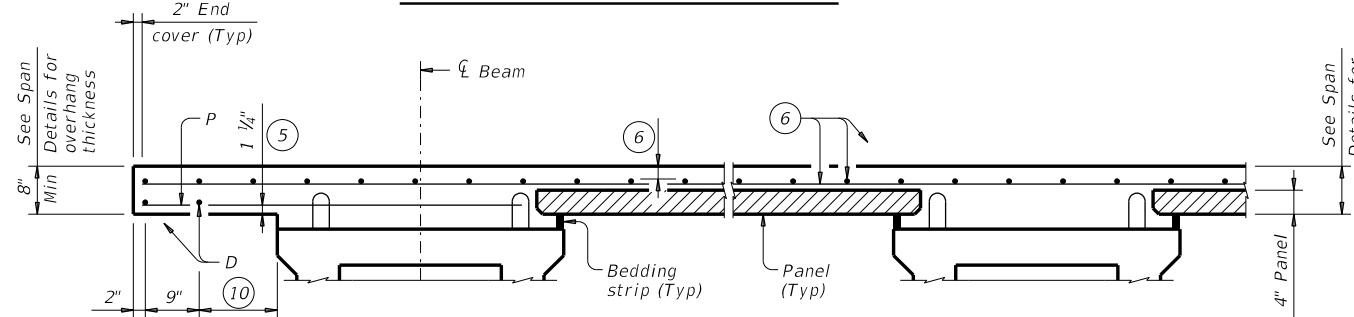
PRESTRESSED CONCRETE I-BEAMS



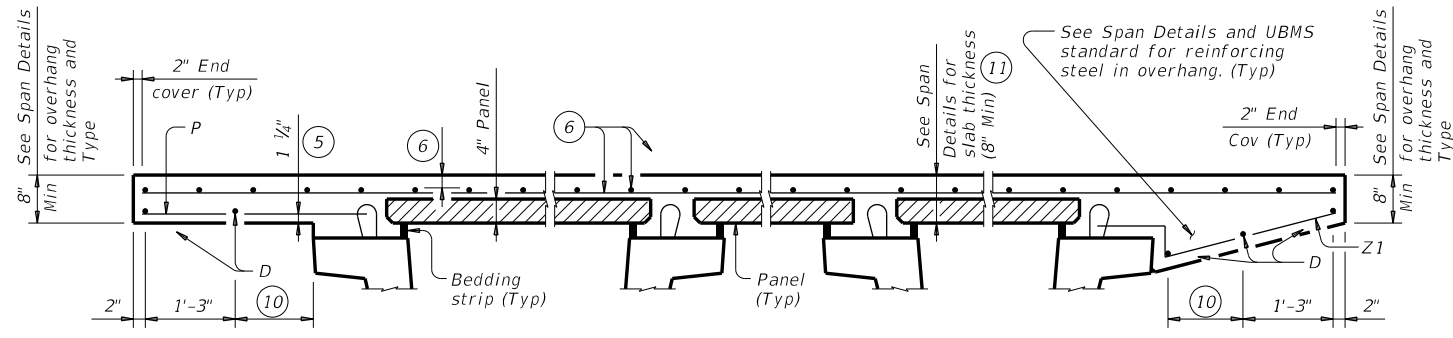
STEEL BEAMS



PRESTRESSED CONCRETE I-GIRDERS



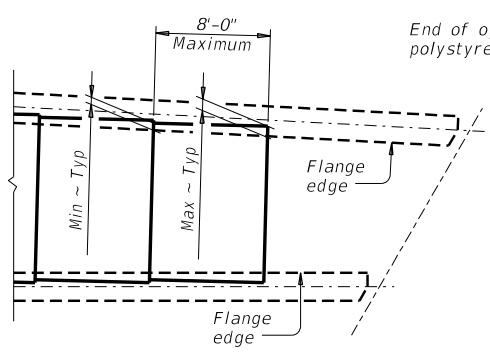
PRESTRESSED CONCRETE X-BEAMS



NORMAL OVERHANG WITH PRESTR CONC U-BEAMS

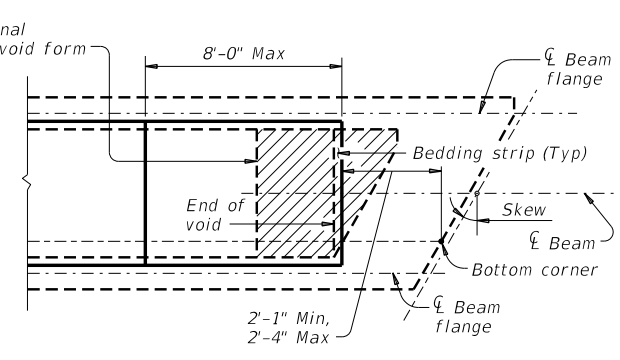
TYPICAL PART TRANSVERSE SECTIONS

SLOPED OVERHANG WITH PRESTR CONC U-BEAMS

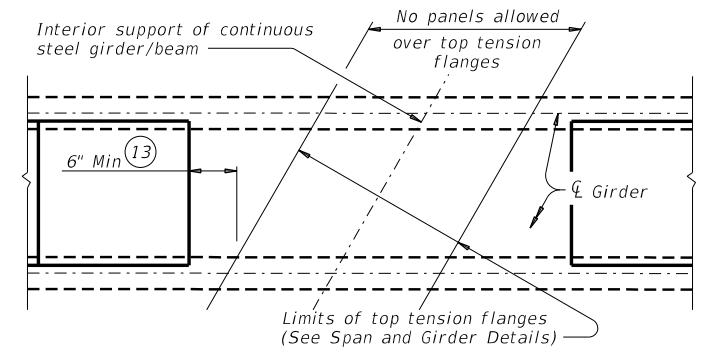


AT FLARED BEAMS OR GIRDERS

See PCP-FAB standard for Min and Max dimensions based on beam/girder type.



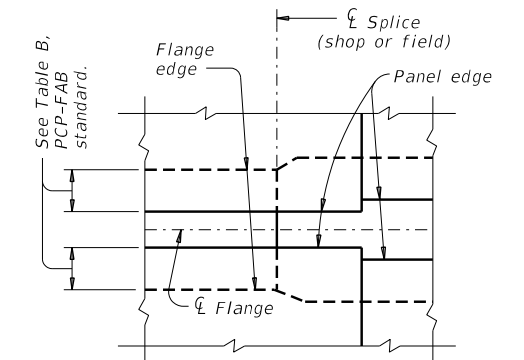
OVER CONC U-BEAMS



AT INT SUPPORTS OF CONTINUOUS STEEL GIRDERS

PART PLANS OF PANEL PLACEMENT

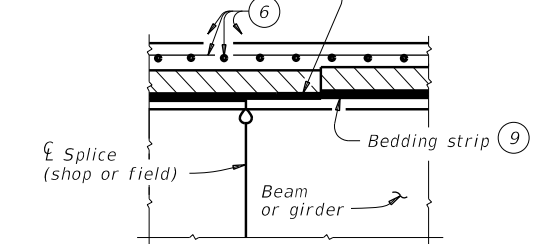
- 5 Provide clear cover as indicated unless otherwise shown on Span Details.
- 6 See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.
- 9 Butt adjacent bedding strips together with adhesive. Cut v-notches, approx 1/4" deep, in the top of the bedding strips at 8' o.c..
- 10 Equally space additional bar if more than 1'-3" Max.
- 11 The actual thickness constructed may exceed the slab thickness shown on the Span Details but the extra thickness may be no more than 2" (1" for prestressed concrete U-beams and steel beams). Bearing seat elevations or finished grade may be adjusted.
- 12 Field adjust Bars Z1(#4) to match actual slope of slab overhangs. Width of slab overhang will vary along span with curved slab edges. Adjust Bar Z1(#4) dimensions to maintain proper cover. Bars Z2(#4) are located at Inverted-Tee stems only.
- 13 Location of concrete placement sequence boundaries and bolted field splices should be considered by the contractor in determining panel limits.



PLAN AT SPLICE

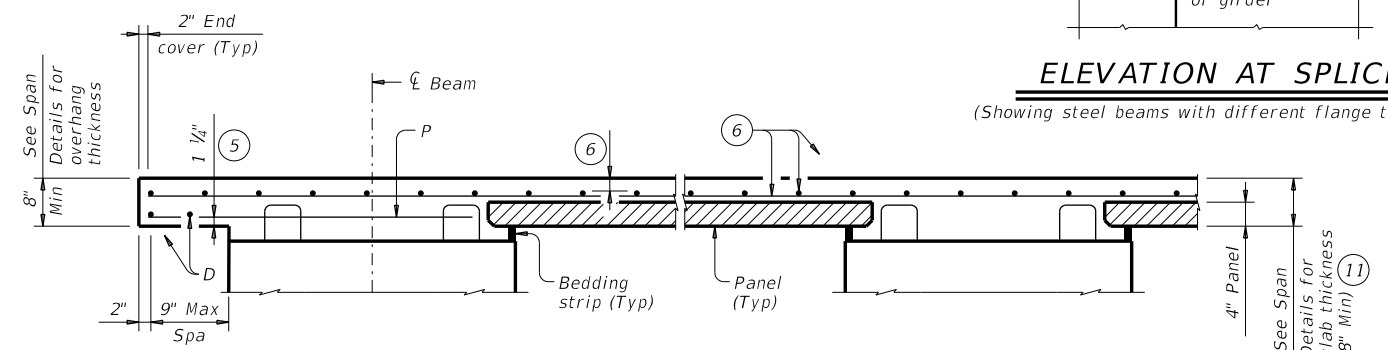
(Showing steel beams with flange width transition)

Cut bedding strip to adjust for difference in flange thickness.



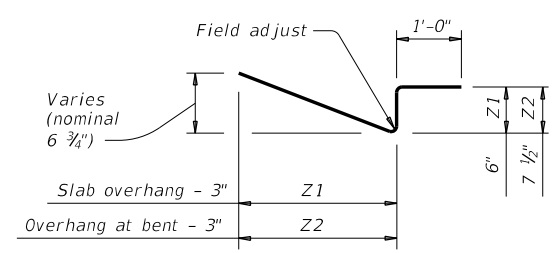
ELEVATION AT SPLICE

(Showing steel beams with different flange thickness)



PRESTRESSED CONCRETE SPREAD SLAB BEAMS

Bars P over exterior beams are still required when no overhang is used. In this case, only one Bar D, 2" from slab edge, is required.

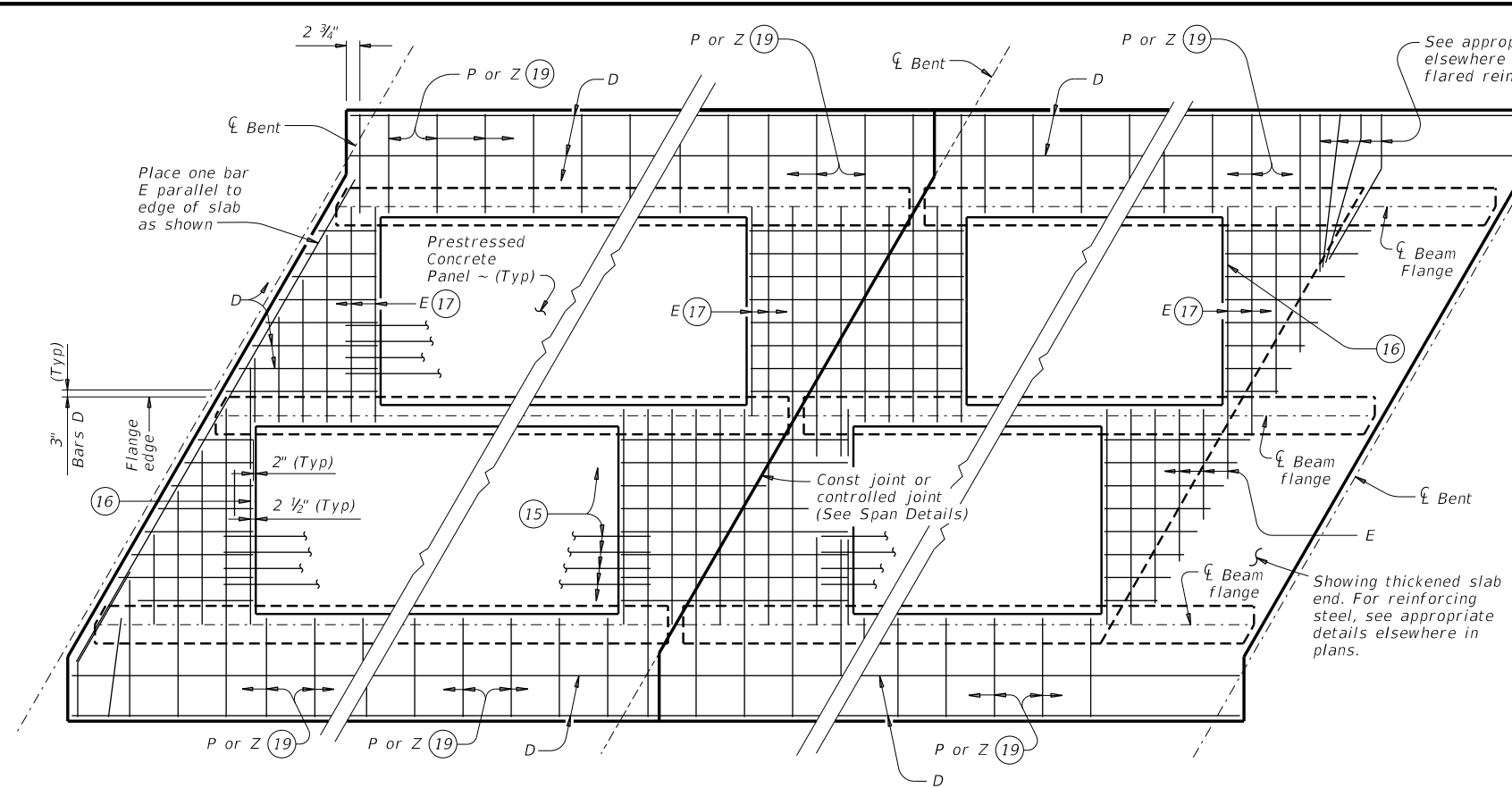


BARS Z (#4) (12)

		Bridge Division Standard	
PRESTRESSED CONCRETE PANELS DECK DETAILS			
PCP			
FILE: pcpstde1-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR
©TxDOT April 2019	CONT SECT	JOB	HIGHWAY
REVISIONS	2121 01	104	IH 10
	DIST	COUNTY	SHEET NO.
	ELP	EL PASO	779

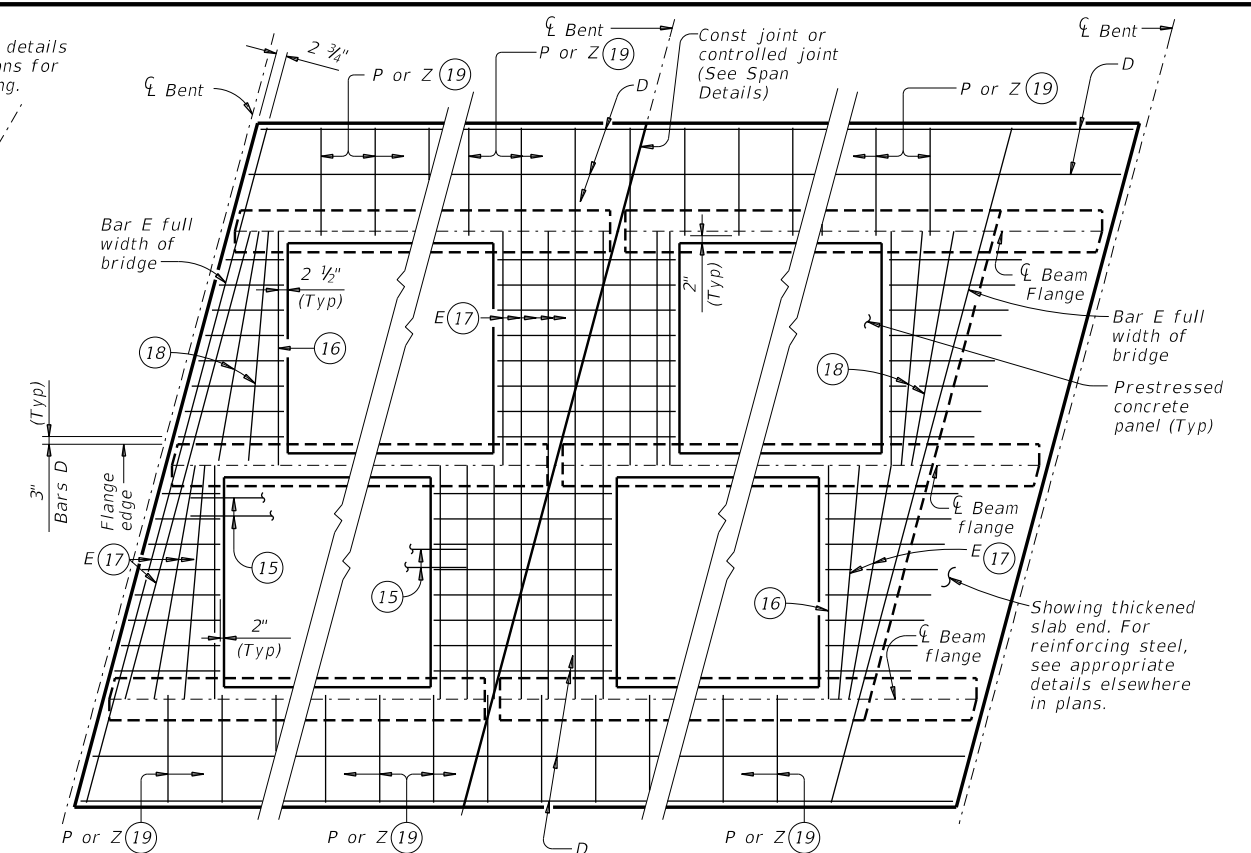
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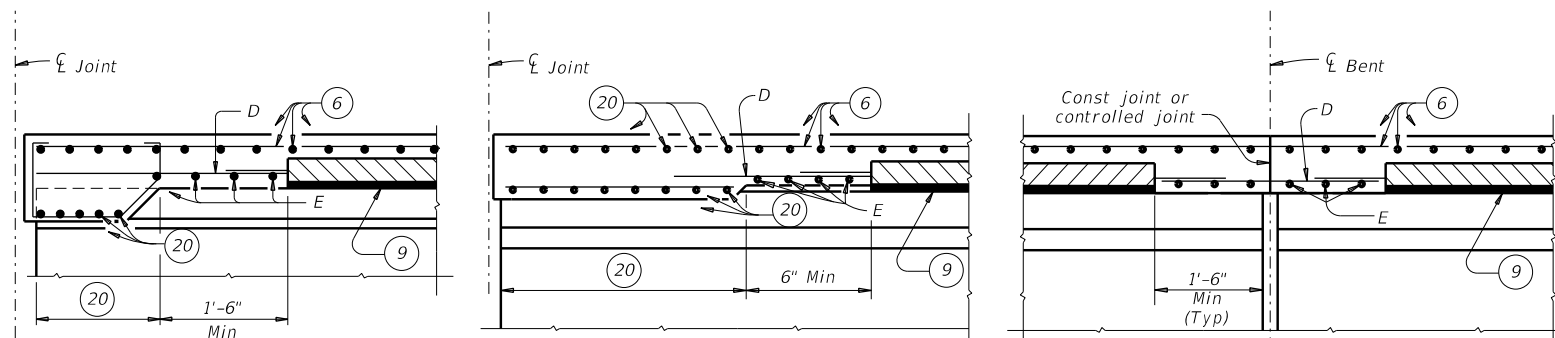
AT ALL SPAN ENDS UNLESS NOTED OTHERWISE
 AT INTERIOR BENTS
 AT THICKENED END SLABS

OPTION 1 ~ PLAN OF SLABS WITH NORMAL REINFORCEMENT

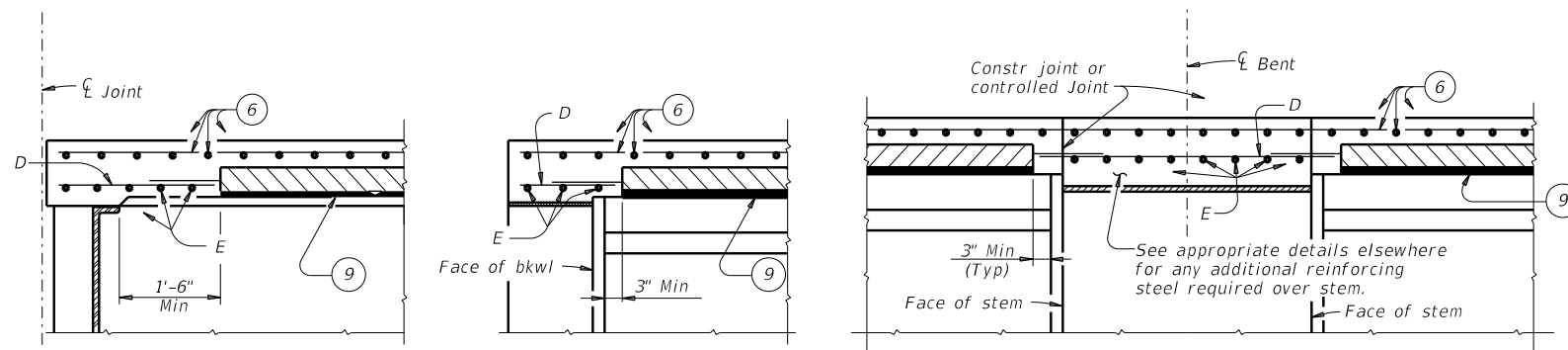


AT ALL SPAN ENDS UNLESS NOTED OTHERWISE
 AT INTERIOR BENTS
 AT THICKENED END SLABS

OPTION 1 ~ PLAN OF SLABS WITH SKEWED REINFORCEMENT



AT THICKENED SLAB ENDS FOR PRESTR CONC U-BMS
 AT THICKENED SLAB ENDS FOR PRESTR CONC I-BMS AND STEEL BMS
 AT SLAB CONTINUOUS OVER CONVENTIONAL INTERIOR BENTS FOR ALL SIMPLE SPAN BMS



AT CONVENTIONAL END DIAPHRAGMS FOR STEEL BMS
 AT SLAB OVER ABUTMENT BACKWALL FOR ALL BMS
 AT SLAB CONTINUOUS OVER INVERTED-T BENTS FOR ALL BMS

OPTION 1 ~ ELEVATIONS AT BEAM ENDS

- 6 See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.
- 9 Butt adjacent bedding strips together with adhesive. Cut v-notches, approx 1/4" deep, in the top of the bedding strips at 8' o.c.
- 14 Max Spacing as listed unless otherwise shown.
- 15 At connection with cast-in-place slab, extend longitudinal panel reinforcement. See PCP-FAB for details.
- 16 Maintain one Bar E(#4) parallel to panel ends (Typ).
- 17 Bars E(#4) not continuous over beam flanges must overlap beam flange 6" Min.
- 18 Add flared Bars E(#4) (Min Spa = 6", Max Spa = 12") as required at panel ends.
- 19 Where possible, Bars E(#4) may be extended into overhangs to replace Bars P(#4). Bars Z(#4) are required for sloped overhangs with U-Beams.
- 20 See appropriate thickened slab end details for reinforcing and limits of thickened slab end.

TABLE OF REINFORCING STEEL (14)		
BAR	SIZE	Max Spa (in.)
D	#4	9
E	#4	9
P	#4	18
UP	#4	~
Z	#4	18

HL93 LOADING SHEET 3 OF 4

Texas Department of Transportation
 Bridge Division Standard

PRESTRESSED CONCRETE PANELS DECK DETAILS

PCP

FILE: pcpstd1-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: JMH
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REVISIONS	2121	01	104	IH 10
	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	780	

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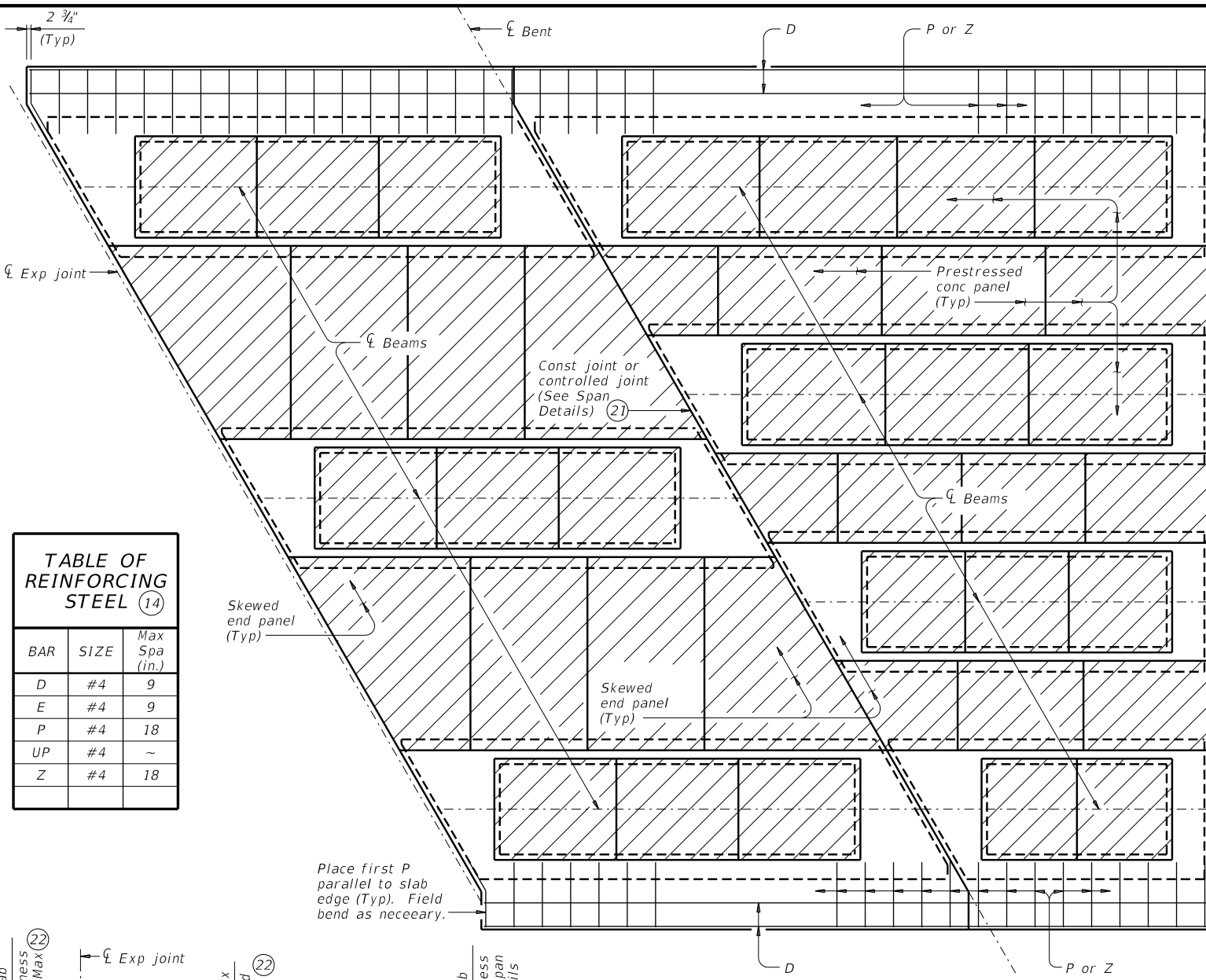
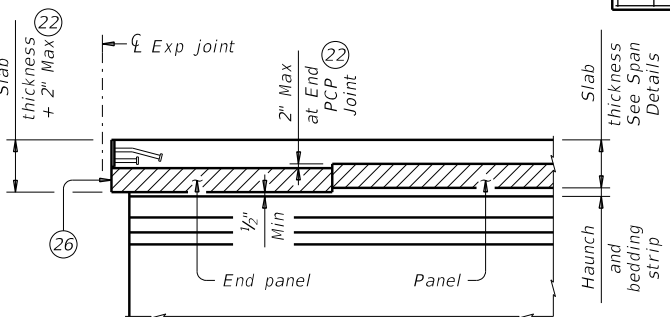
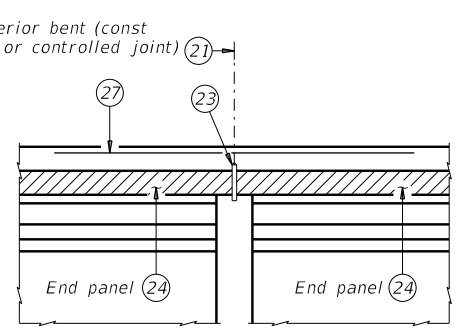


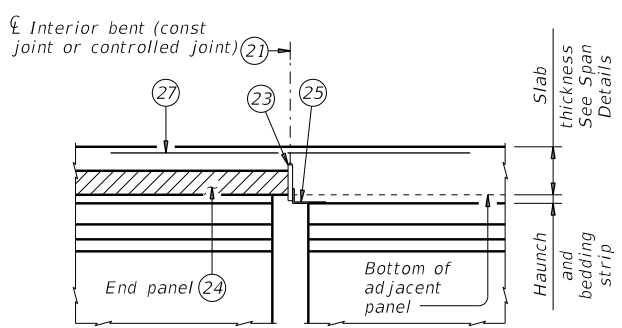
TABLE OF REINFORCING STEEL (14)		
BAR	SIZE	Max Spa (in.)
D	#4	9
E	#4	9
P	#4	18
UP	#4	~
Z	#4	18



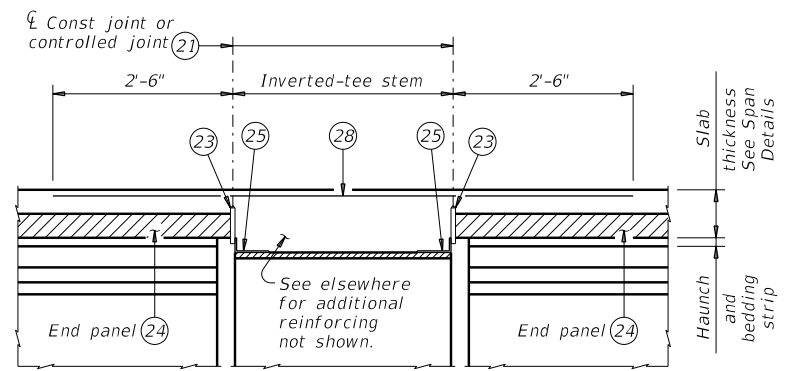
JOINTS (BETWEEN BEAMS/GIRDERS OR AT INV-T STEM)
 For SEJ-A, SEJ-S(0), AJ, and Type A expansion joints only.



CONVENTIONAL INTERIOR BENT
 Panel against panel between beams/girders.



CONVENTIONAL INTERIOR BENT
 Panel against beam/girder end in adjacent span.



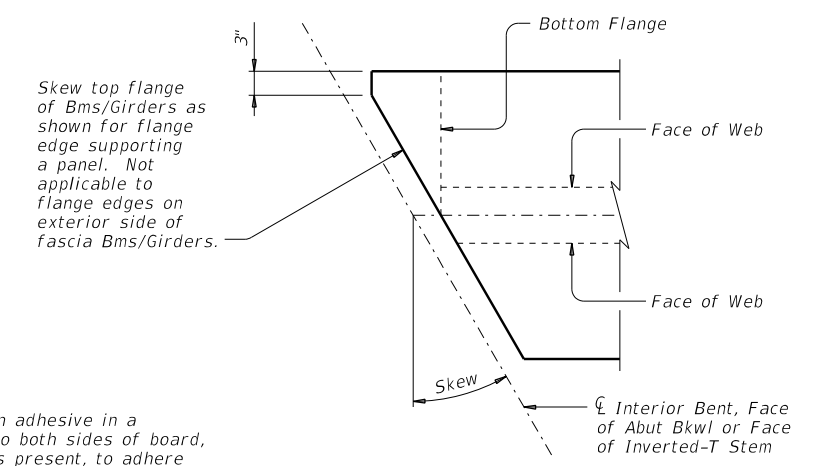
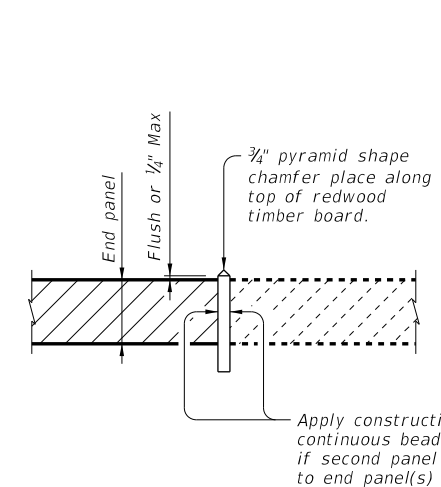
INVERTED-T BENT
 Panels against inverted-tee stem

OPTION 2 ~ ELEVATIONS AT BEAM ENDS (6)

ELEVATION EXAMPLE OF END PANEL AND TIMBER BOARD (23)

See "Option 2 ~ Elevation At Beam Ends".

- (6) See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.
- (14) Max Spacing as listed unless otherwise shown.
- (21) 1 1/2" Vinyl or plastic joint former at controlled joints (Stress Cap, Zip Strip, Stress Lock, or equal as approved by the Engineer.)
- (22) End panel may be set up to 2" lower to accommodate expansion joint hardware, provided bedding strip is not less than 1/2" thick.
- (23) 3/4" thick redwood timber board, leave in place. Redwood timber board placed flush with top of panel or within 1/4" Max above panel. Place 3/4" pyramid shape chamfer along top of timber board. See "Elevation Example of End Panel and Timber Board". Place straight, within 1/4" of centerline of bent or face of inverted-tee, across bridge width and end board at exterior flange edge of fascia beams/girders. Do not extend into overhang.
- (24) Place panel within 1/2" of 3/4" thick board.
- (25) Permanent galvanized steel sheet form. Removable formwork is acceptable.
- (26) Place end panel within 1/2" of expansion joint opening. End panel cannot encroach on required expansion joint opening.
- (27) Place additional (#4) bar 5'-0" in length between every slab bars T. Center (#4) bar on joint.
- (28) Place additional (#4) bar continuous 2'-6" beyond each side of Inverted-T Stem between every slab bars T.



OPTION 2 ~ SHOWING MODIFICATION TO BEAM/GIRDER TOP FLANGE FOR SKEWS OVER 5°

Showing I-Bm/I-Girder, U-Bms and Steel Bms similar.

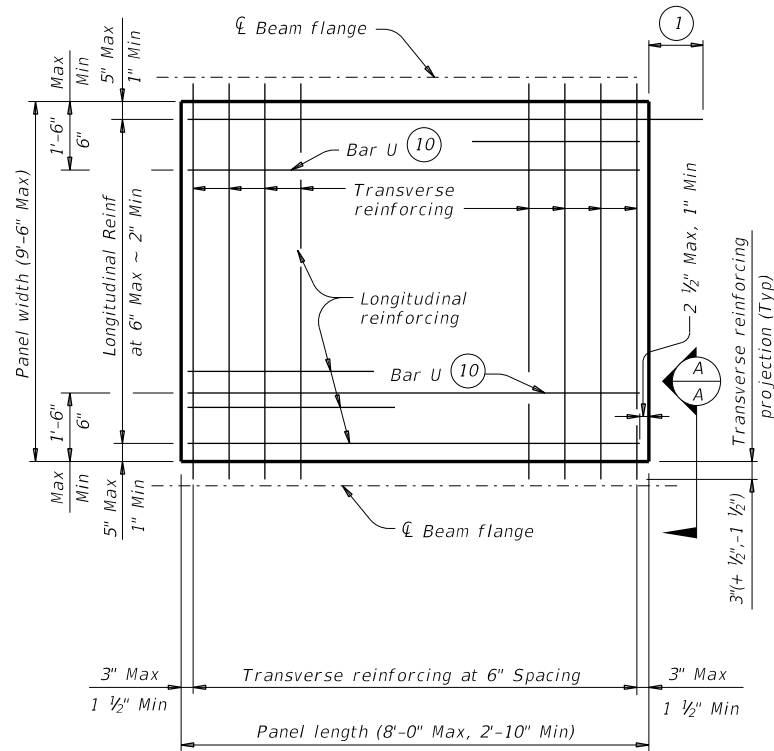
SPECIAL OPTION 2 CONSTRUCTION NOTES:

- When Option 2 is chosen bottom mat of thickened end slab reinforcing is not required. Use the same top mat as shown on the Thickened Slab End Details sheet.
- Placing panels adjacent to expansion joints and bent centerlines prior to completing interior panel placement is recommended. Saw cutting panels to fit is acceptable when approved by the Engineer. Minimum distance from a saw cut edge to a panel strand is 1 1/2".
- Do not extend the longitudinal panel reinforcement into the cast-in-place slab.
- Top flanges of beams and girders on skewed bridges must be modified as shown on this drawing. The Contractor is responsible for coordinating this modification with the beam fabricator prior to submitting shop drawings for approval.
- Fabricator may optionally skew the whole end. When electing to skew whole end, girder end details and bearing type at conventional interior bent must be changed to use condition at abutment. Fabricator must coordinate change in bearing type, bearing centerline location, and dowel location with Engineer and Contractor. Show appropriate changes on girder and bearing shop drawings.
- Bending of anchor studs of expansion joints shown on standards AJ, SEJ-A and SEJ-S(0) is permissible if necessary to clear top of end panels. The Contractor is responsible for coordinating modifications with the joint fabricator. Submit shop drawings for approval when modifications to expansion joint hardware are made.
- Bedding strips under skewed end panels must conform to the requirements of Item 422 except their minimum compressive strength must be 60 psi.
- Provide Bars AA, G, K and OA from standard IGTS in the slab.

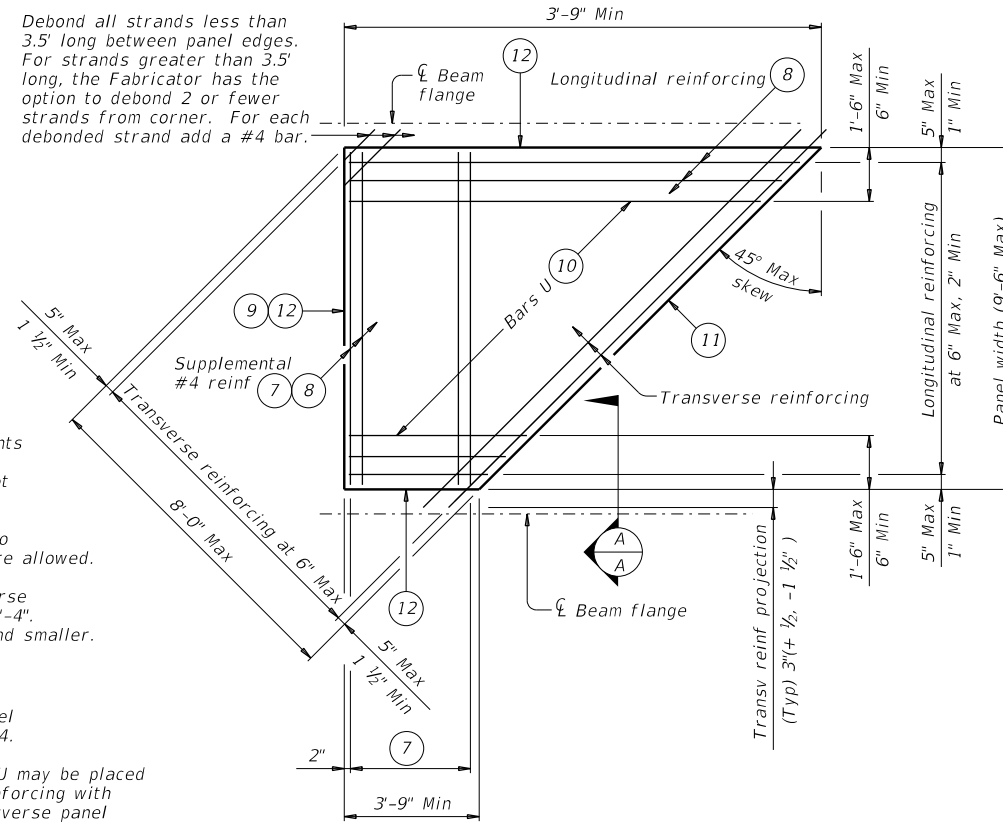
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PRESTRESSED CONCRETE PANELS DECK DETAILS			
PCP			
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©TxDOT April 2019	CONT SECT	JOB	HIGHWAY
REVISIONS	2121 01	104	IH 10
DIST	COUNTY	SHEET NO.	
ELP	EL PASO	781	

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TYPICAL NON-SKEWED PANEL PLAN



TYPICAL SKEWED END PANEL PLAN

(Only to be used with details shown elsewhere in the plans.)

- 1 At connection with cast-in-place slab, extend longitudinal panel reinforcement 1'-0" (+2", -0") past panel end. Alternatively, provide (#3) x 2'-0" dowels at 6" Max Spacing and extend dowels 1'-0" past panel end.
- 2 Four loops required per panel.
- 3 Four loops required per panel. 3/8" or 1/2" strands may be used.
- 4 Normal dimensions must be used on spans with parallel beams. Maximum and Minimum dimensions apply only to spans with flared beams.
- 5 See Normal Grading Detail on PCP standard for lap requirements and bedding strip dimensions. Some laps shown in tables cannot utilize all bedding strip widths.
- 6 One Splice allowed per panel. No more than two sheets of WWR are allowed.
- 7 Provide (#4) bars under transverse reinforcing, 10 Spaces at 4" = 3'-4". Omit for 5 degree (1:12) skew and smaller.
- 8 End Cover 2 1/2" Max, 1" Min.
- 9 Recess strands on indicated panel edge in accordance with Item 424.
- 10 At the fabricator's option, Bars U may be placed parallel to transverse panel reinforcing with horizontal legs in plane of transverse panel reinforcing.
- 11 Use length of indicated panel edge as panel width for purpose of determining type of transverse reinforcing.
- 12 Timber form work permissible this edge.

TABLE A (4) (5)			
Beam Type	Normal (In.)	Min (In.)	Max (In.)
A	3	2 1/2	3 1/2
B	3	2 1/2	3 1/2
C	4	3	4 1/2
IV	6	4	7 1/2
VI	6 1/2	4 1/2	8 1/2
U40 - 54	5 1/2	5 1/2	7
Tx28-70	6	5	7 1/2
XB20 - 40	4	3	4 1/2
XSB12 - 15	4	3	4 1/2

TABLE B (4) (5)			
Top Flange Width	Normal (In.)	Min (In.)	Max (In.)
11" to 12"	2 3/4	2 1/2	2 3/4
Over 12" to 15"	3 1/4	3	3 1/4
Over 15" to 18"	4	3	4 3/4
Over 18"	5	3 1/2	6 1/4

GENERAL NOTES:

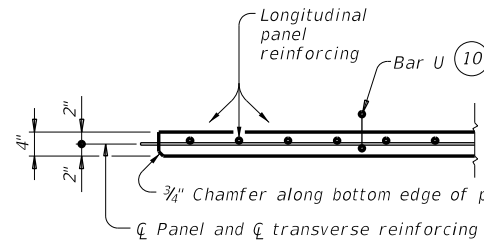
Provide Class H concrete for panels. Release strength $f'c=3,500$ psi. Minimum 28 day strength $f'c=5,000$ psi.
 Provide 3/4" chamfer along bottom edge of panel on beam side. Do not use epoxy-coated reinforcing steel bar or strand in panels. Remove laitance from top panel surface. Finish top of panel to a roughness between a No. 6 and No. 9 concrete surface profile, inclusive, as specified by the International Concrete Repair Institute (ICRI).
 Shop drawings for the fabrication of panels will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.
 A panel layout which identifies location of each panel must be developed by the Fabricator. Permanently mark each panel in accordance with the panel layout. A copy of the layout is to be provided to the Engineer.

TRANSVERSE PANEL REINFORCEMENT:

For panel widths over 5', use 3/8" or 1/2" Dia (270k) prestressing strands with a tension of 14.4 kips per strand.
 For panel widths over 3'-6" up to and including 5', use 3/8" or 1/2" Dia (270k) prestressing strands with a tension of 14.4 kip per strand. Optionally, (#4) Grade 60 reinforcing bars may be used in lieu of prestressed strands.
 For panel widths up to 3'-6", use (#4) Grade 60 reinforcing bars (prestressed strands alone are not allowed).
 Place transverse panel reinforcement at panel centroid and space at 6" Max.

LONGITUDINAL PANEL REINFORCEMENT:

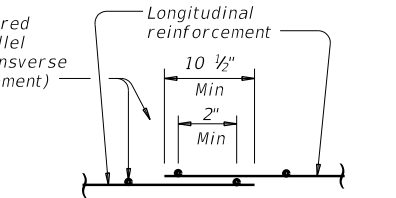
Any of the following options may be used for longitudinal panel reinforcement:
 1. (#3) Grade 60 reinforcing steel at 6" Max Spacing. No splices allowed.
 2. 3/8" Dia prestressing strands at 4 1/2" Max Spacing (unstressed). No splices allowed.
 3. 1/2" Dia prestressing strands at 6" Max Spacing (unstressed). No splices allowed.
 4. Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) providing 0.22 sq in per foot of panel width. Wires larger than D11 not permitted. Provide transverse wires to ensure proper handling of reinforcing. One splice per panel is allowed. See WWR Splice Detail.
 No combination of longitudinal reinforcement options in a panel is allowed. Place longitudinal panel reinforcement above or below transverse panel reinforcement. Must be placed above transverse panel reinforcement for skewed end panels with supplemental (#4) reinforcement.



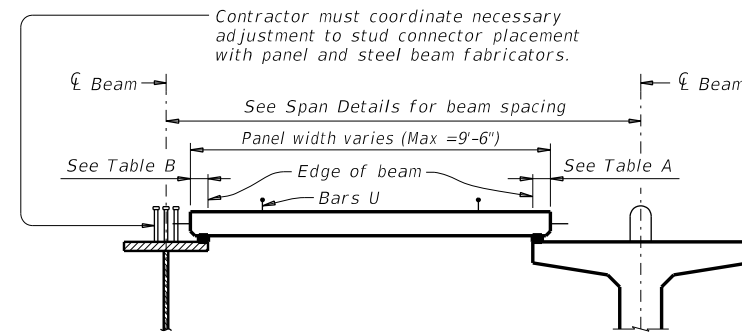
SECTION A-A

(Not showing supplemental #4 bars for skewed end panels.)

No splice required for wires parallel to strands (transverse panel reinforcement)

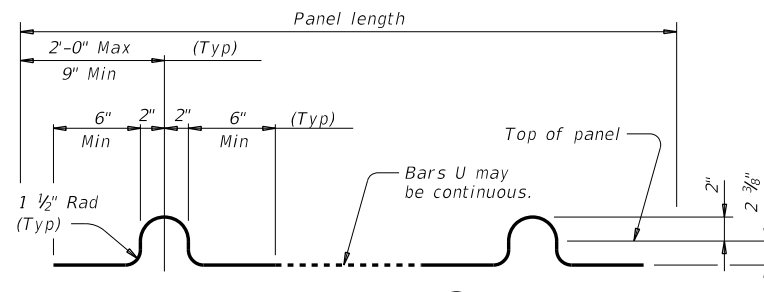


WELDED WIRE REINFORCEMENT (WWR) SPLICE DETAIL

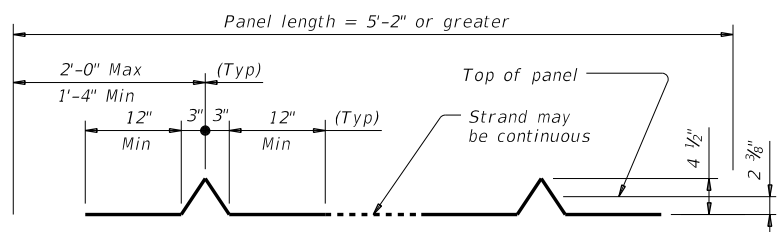


STEEL BEAMS

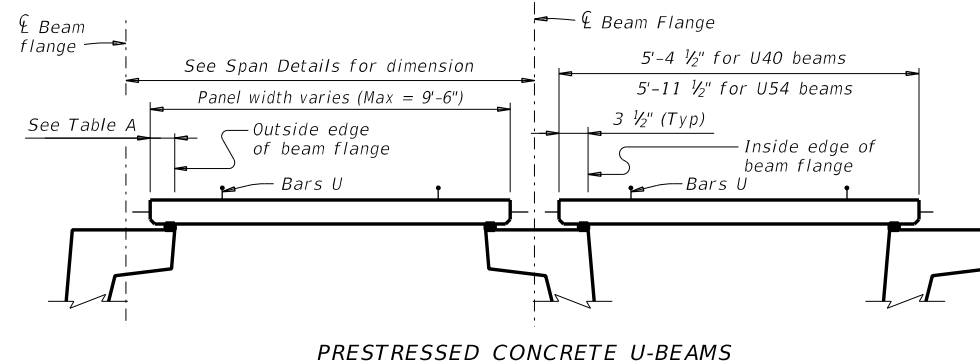
PRESTRESSED CONCRETE BEAMS OR GIRDERS
 Typ unless noted otherwise



BARS U (#3)



OPTIONAL STRAND FOR BARS U



PRESTRESSED CONCRETE U-BEAMS

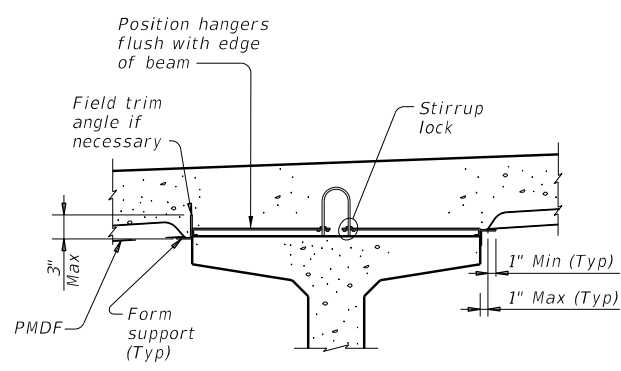
TYPICAL SECTIONS FOR DETERMINING PANEL WIDTH

HL93 LOADING

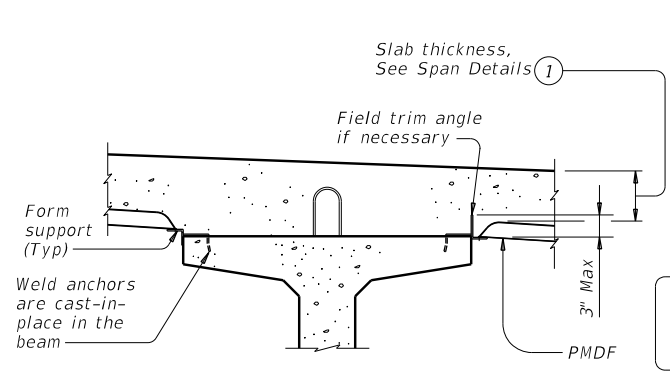
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	ELP	EL PASO	782

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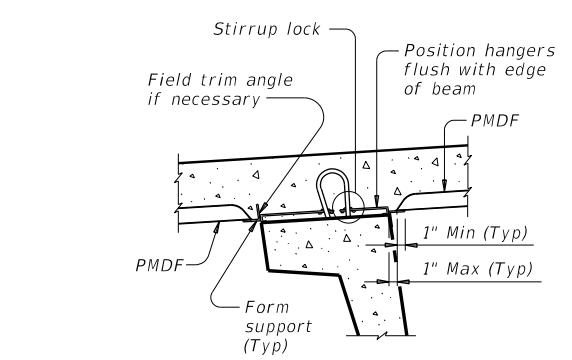
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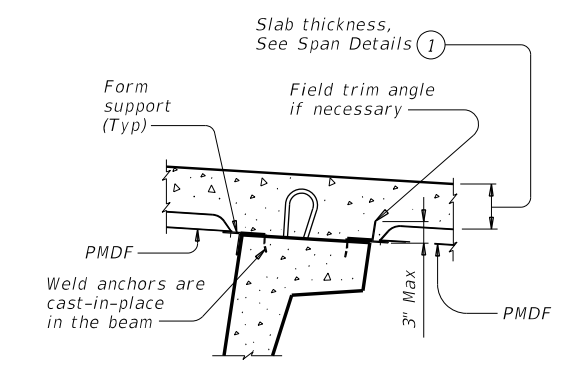
PRESTR CONC I-BEAMS AND I-GIRDERS WITH STIRRUP LOCKS



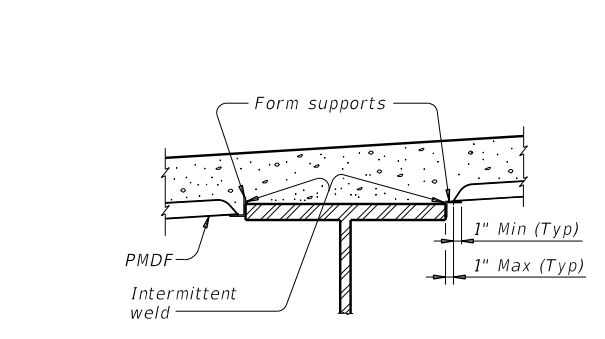
PRESTR CONC I-BEAMS AND I-GIRDERS WITH WELD ANCHORS



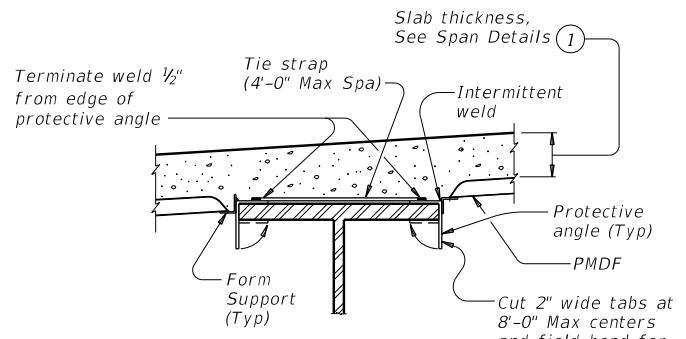
U-BEAMS WITH STIRRUP LOCKS



U-BEAMS WITH WELD ANCHORS

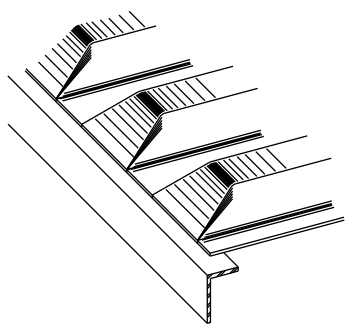


STEEL BEAMS AT COMPRESSION FLANGES

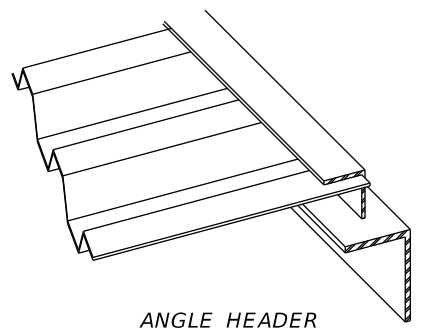


STEEL BEAMS AT TENSION FLANGES

TYPICAL TRANSVERSE SECTIONS



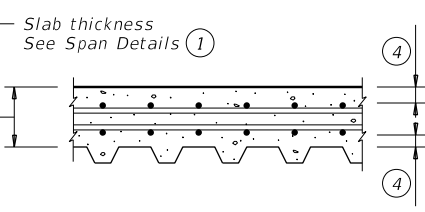
PRECLOSED



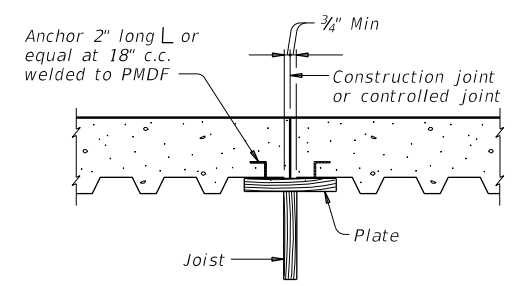
ANGLE HEADER

NOTE: This type is to be used for skewed ends only.

TYPES OF END CLOSURES



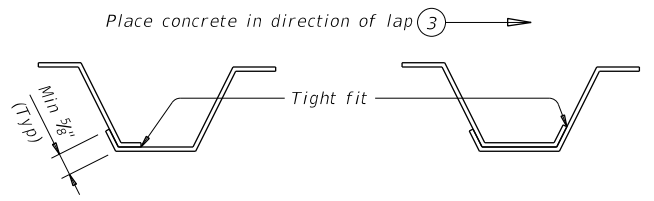
TYP LONGITUDINAL SLAB SECTION



Note: In spans where PMD forms are used, timber forms must be used at construction joints. Adequate provision must be made to support edge of metal form and to provide anchorage of metal form to slab concrete where joined to wood forms.

SECTION THRU CONSTRUCTION JOINT

FOR PRESTR CONC U-BEAM AND STEEL GIRDER BRIDGES:
 Unless shown elsewhere in the plans, size, spacing, and orientation of bottom mat of slab reinforcement must match the top mat of reinforcing shown on the span details except all bottom mat bars are to be #5. Bottom mat reinforcement and additional concrete is subsidiary to Item 422 "Concrete Superstructures."
FOR PRESTR CONC TX-GIRDER BRIDGES:
 See Miscellaneous Slab Details, Prestr Concrete I-Girders (IGMS) standard sheet for bottom mat reinforcing.



SIDE LAP DETAILS

- Slab thickness minus 5/8" if corrugations match reinforcing bars.
- Welding of form supports to tension flanges will not be permitted. Other methods of providing wind hold down resistance for PMDF in tension flange zones will be considered. At least one layer of sheet metal must be provided between the flange and the weld joint.
- The direction of concrete placement will be such that the upper layer of the form overlap is loaded first.
- See Span details for cover requirements.

GENERAL NOTES:

Steel for Permanent Metal Deck Forms (PMDF) and support angles shall conform to ASTM A653, structural steel (SS), with coating designation G165. Steel must have a minimum yield strength of 33 ksi. Minimum thickness of PMDF is 20 gage and that of support angles and protective angles is 12 gage.
 Submit two copies of forming plans for PMDF to the Engineer. These plans must show all essential details of proposed form sheets, closures, fasteners, supports, connectors, special conditions and size and location of welds. These plans must clearly show areas of tension flanges for steel beams and provisions for protecting the tension flanges from welding notch effects by inclusion of separating sheet metal or other positive method. These plans must be designed, signed, and sealed by a licensed professional engineer. Department approval of these plans is not required, but the Department reserves the right to require modifications to the plans. The Contractor is responsible for the adequacy of these plans. The details and notes shown on this standard are to be used as a guide in preparation of the forming plans.
 All material, labor, tools and incidentals necessary to form a bridge deck with Permanent Metal Deck Forms is considered subsidiary to Item 422, "Concrete Superstructures".

DESIGN NOTES:
 As a minimum, PMDF and support angles must be designed for the dead load of the form, reinforcement and concrete plus 50 psf for construction loads. Flexural stresses due to these design loads must not exceed 75 percent of the yield strength of the steel. Allowable stress for weld metal must be 12,400 psi.
 Maximum deflection under the weight of forms, reinforcement and concrete or 120 psf, whichever is greater, shall not exceed the following:

- 1/180 of the form design span, but not more than 0.50", for design spans of 10' or less.
 - 1/240 of the form design span, but not more than 0.75", for design spans greater than 10'.
- The form design span must not be less than the clear distance between beam flanges, measured parallel to the form flutes, minus 2".

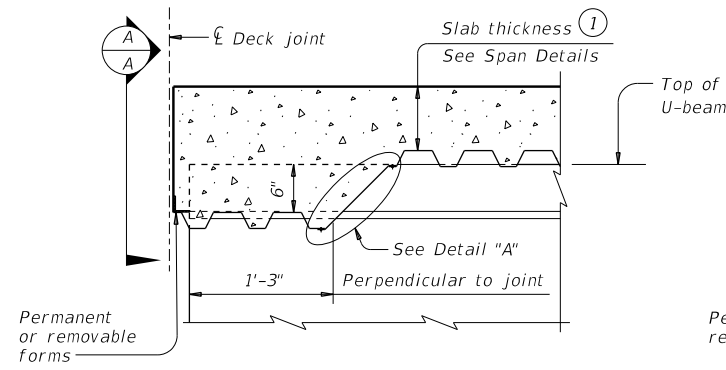
CONSTRUCTION NOTES:

Form sheets must not be permitted to rest directly on the top of beam flanges. Form sheets must be securely fastened to form supports and must have a minimum bearing length of one inch at each end. Form supports must be placed in direct contact with beam flanges.
 All attachments must be made by permissible welds, screws, bolts, clips or other means shown on the the forming plans. All sheet metal assembly screws must be installed with torque-limiting devices to prevent stripping. Only welds or bolts must be used to support vertical loads.
 Welding and welds must be in accordance with the provisions of Item 448, "Structural Field Welding", pertaining to fillet welds. All welds must be made by a qualified welder in accordance with Item 448.
 All permanently exposed form metal, where the galvanized coating has been damaged, must be thoroughly cleaned and repaired in accordance with Item 445, "Galvanizing". Minor heat discoloration in areas of welds need not be touched up.
 Flutes must line up uniformly across the entire width of the structure where main reinforcing steel is located in the flute.
 Construction joints will not be permitted unless shown on the plans. The location of and forming details for any construction joint used must be shown on the forming plans. Forms below a construction joint must be removed after curing of the slab.
 A sequence for uniform vibration of concrete must be approved by the Engineer prior to concrete placement. Attention must be given to prevent damage to the forms, yet provide proper vibration to prevent voids or honeycomb in the flutes and at headers and/or construction joints.

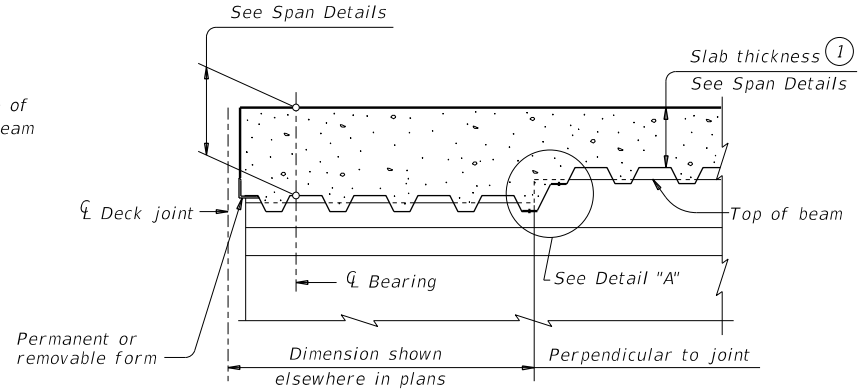
		Bridge Division Standard	
PERMANENT METAL DECK FORMS			
PMDF			
FILE: pmdfste1-20.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT
©TxDOT April 2019	CONT	SECT	JOB
REVISIONS	2121	01	104
02-20: Modified box note by adding steel beams/girders and subsidiary.	DIST	COUNTY	SHEET NO.
ELP	EL PASO		783

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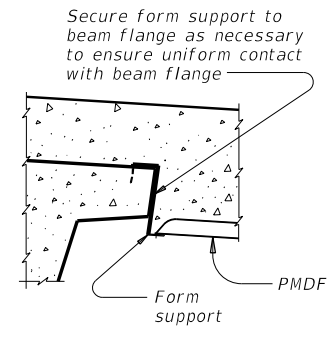
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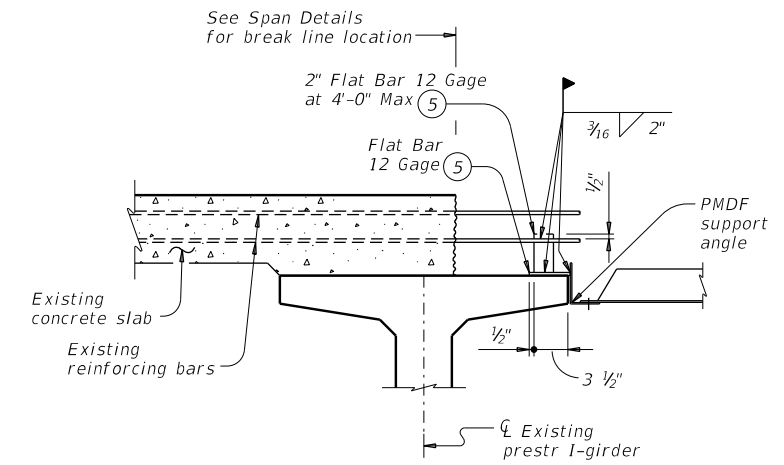
AT THICKENED SLAB END FOR U-BEAMS



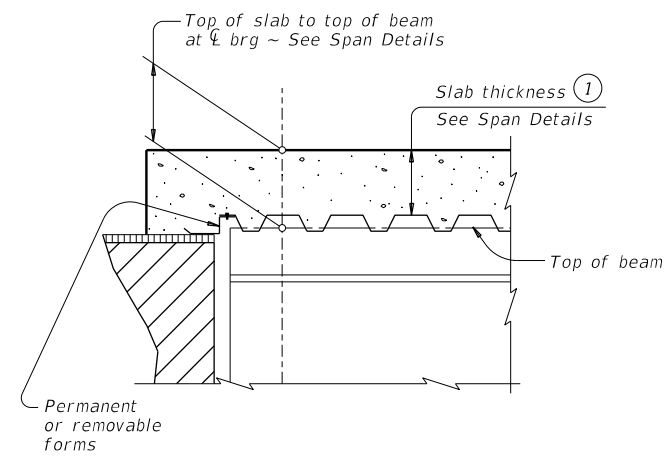
AT THICKENED SLAB END FOR PRESTRESSED I-BEAMS, I-GIRDERS AND STEEL BEAMS
 Showing I-beam block-out. No block-out for I-girders or steel beams.



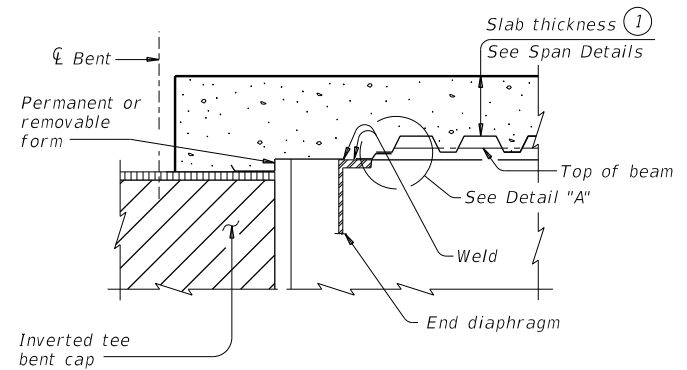
SECTION A-A



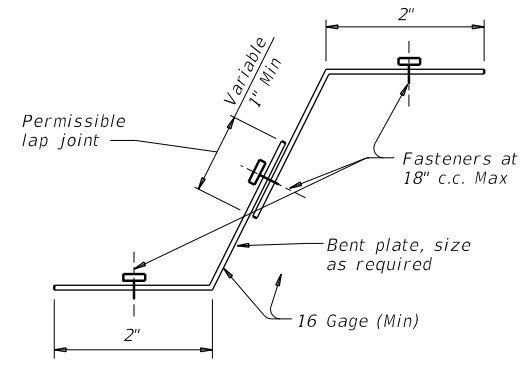
SHOWING PRESTRESSED CONCRETE I-BEAMS, I-GIRDERS AND U-BEAMS



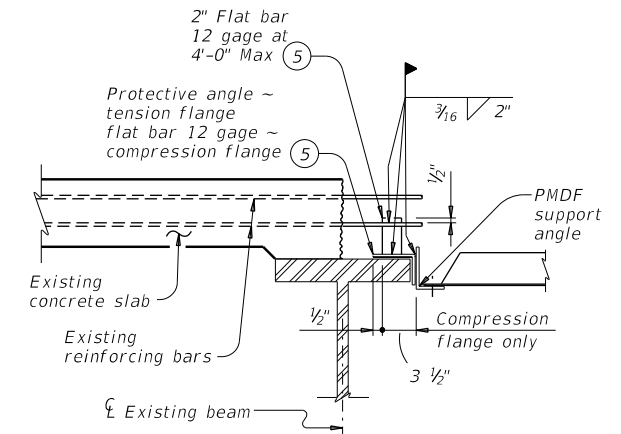
AT SLAB OVER ABUT BKWL OR INV TEE STEM FOR CONC BEAMS WITHOUT THICKENED SLAB END



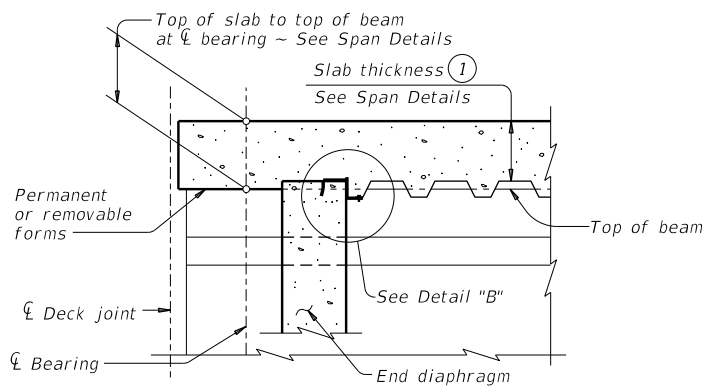
AT SLAB OVER INV TEE STEM FOR STEEL BEAMS WITHOUT THICKENED SLAB END



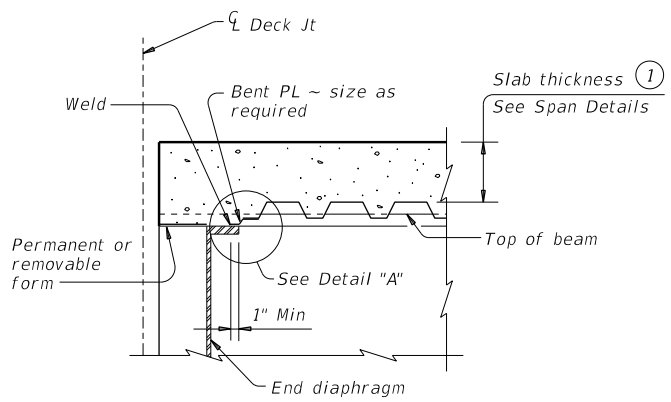
DETAIL "A"



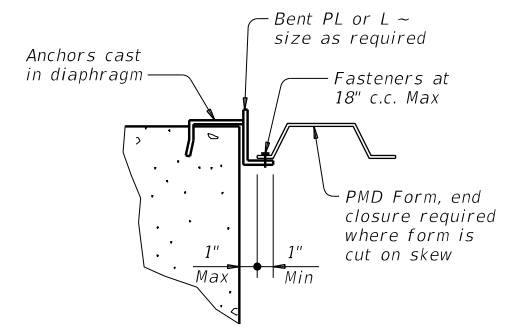
SHOWING STEEL BEAMS



AT CONC END DIAPHRAGM FOR PRESTRESSED I-BEAMS AND STEEL BEAMS



AT END DIAPHRAGM FOR STEEL BEAMS WITHOUT THICKENED SLAB END



DETAIL "B"

- (1) Slab thickness minus 3/8" if corrugations match reinforcing bars
- (5) Minimum yield stress of 12 gage bars shall be 40 ksi

DETAILS AT ENDS OF BEAMS

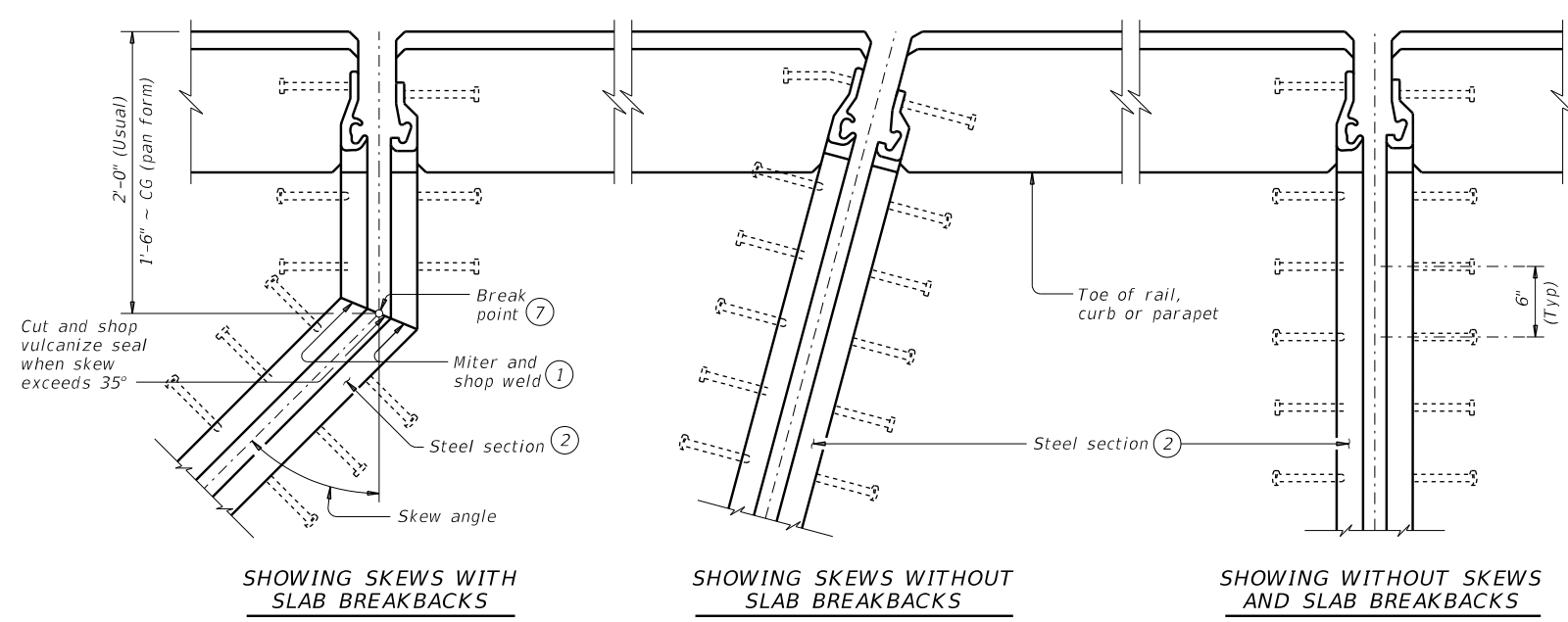
WIDENING DETAILS

SHEET 2 OF 2

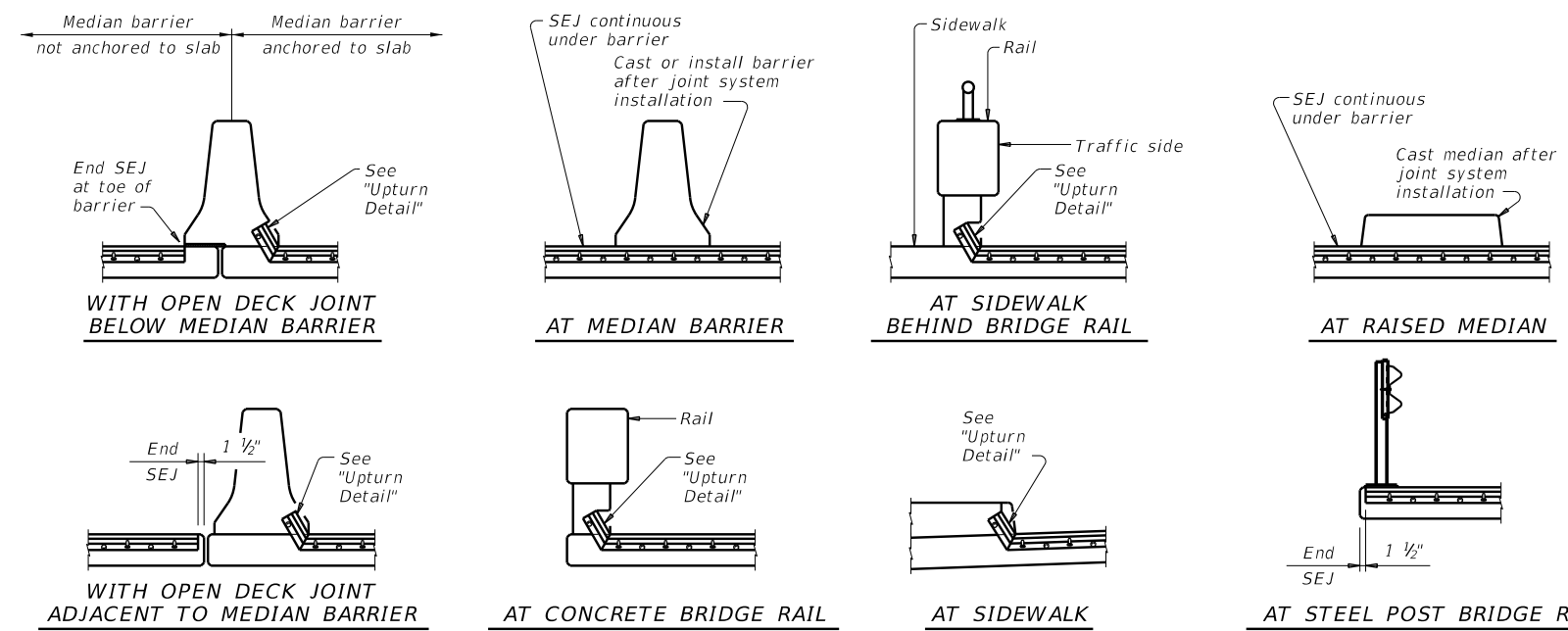
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PERMANENT METAL DECK FORMS			
PMDF			
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©TxDOT April 2019	CONT	SECT	JOB
REVISIONS	2121	01	104
02-20: Modified box note by adding steel beams/girders and subsidiary.	DIST	COUNTY	SHEET NO.
	ELP	EL PASO	784

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PLANS OF END CONDITIONS



TYPICAL SECTIONS

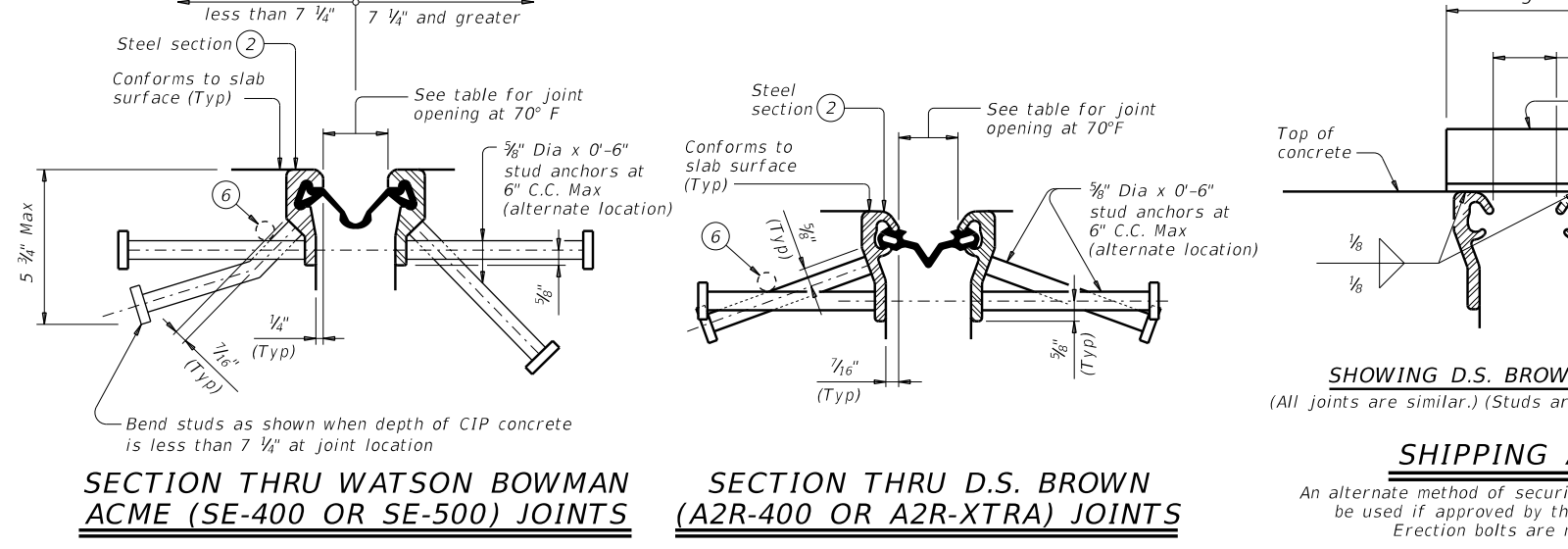
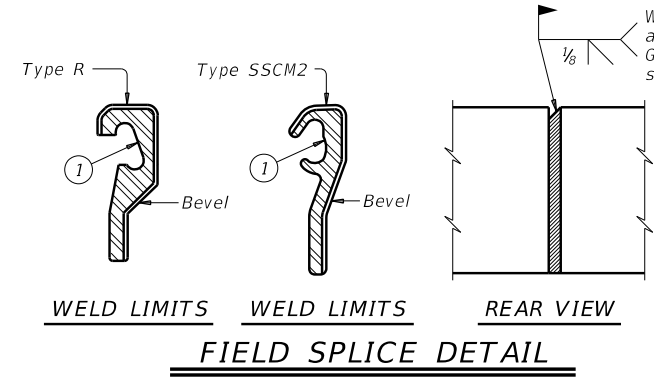


TABLE OF SEALED EXPANSION JOINT INFORMATION					
MANUFACTURER	STEEL SECTION ②	STRIP SEAL			
		4" JOINT		5" JOINT	
Seal Type	Joint Opening ③	Seal Type	Joint Opening ③		
D.S. Brown	Type SSCM2	A2R-400	1 3/4"	A2R-XTRA	2"
Watson Bowman Acme	Type R	SE-400	1 3/4"	SE-500	2"

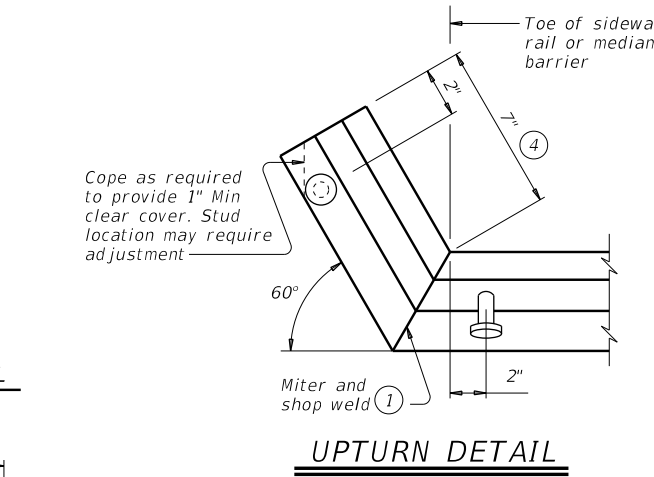
SKEW (deg)	JOINT SIZE	
	4"	5"
0	4.0"	5.0"
15	4.0"	5.0"
30	3.5"	4.3"
45	2.8"	3.5"

DESIGN NOTES:
 Joints installed on a skew have reduced ability to accommodate longitudinal movement. Use table values to determine the correct joint size for skewed installations. For other skews over 25 degrees, calculate reduced movement range by multiplying joint size by cosine (skew).

- Remove all burrs which will be in contact with seal prior to making splice.
- Shape of steel section shown is typical. Variations in sections must be approved by the Engineer.
- These openings are also the recommended minimum installation openings.
- Reduce for sidewalk or parapet heights less than 6".
- Other conditions affecting the joint profile should be noted elsewhere.
- Move transverse bars that are in conflict with SEJ studs, in either the bridge slab or approach slab, to rest at the junction of the studs.
- See Span details for location of break point.
- Align shipping angle perpendicular to joint.

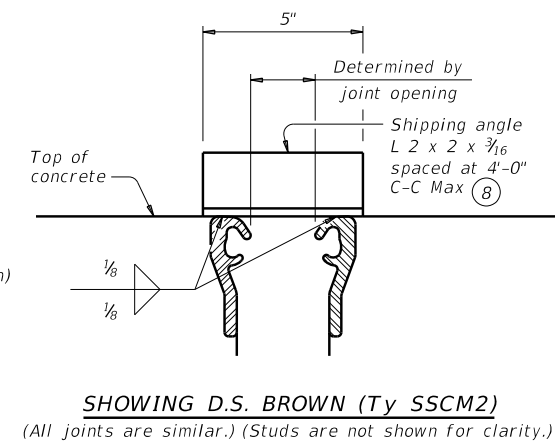


FABRICATION NOTES:
 Temporarily shop assemble corresponding sections of sealed expansion joints (SEJ), check for fit, and match mark for shipment. Secure corresponding sections together for shipment with shipping angle. Do not use erection bolts.
 The seal must be continuous and included in the price bid for sealed expansion joint.
 Ship steel sections in convenient lengths of 10'-0" Min and 24'-0" Max unless necessary for staged construction or widenings. One shop splice is permitted in each shipping length provided no piece is less than 2'-0" long and sufficient studs are added to limit the stud to shop splice distance to 2" Min and 4" Max.
 Weld studs in accordance with AWS D1.1.
 Butt weld all shop and field splices and grind smooth areas in contact with seal. Make all necessary field splice joint preparations in the shop.
 Paint the entire steel section with System II or IV primer in accordance with Item 446, "Feild Cleaning and Painting Steel", unless required to galvanize when shown in the plans. Provide galvanizing in accordance with Item 445, "Galvanizing". Provide paints in accordance with Item 446.2. Prepare steel and apply paint in accordance with Item 446.7.3 and 446.7.4.
 Shop drawings for the fabrication of sealed expansion joints will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.



CONSTRUCTION NOTES:
 Secure the sealed expansion joint in position and place to the proper grade and alignment by welding braces to adjacent reinforcing steel, to prestressed beam stirrups, or to anchors cast in concrete diaphragms. Include cost of temporary bracing in the price bid for sealed expansion joint.
 Remove shipping angle immediately after each joint half is secured in place. Grind smooth, and touch up with organic zinc-rich paint.
 Clean and prepare seal cavity for seal installation as per the Manufacturer's installation procedures.

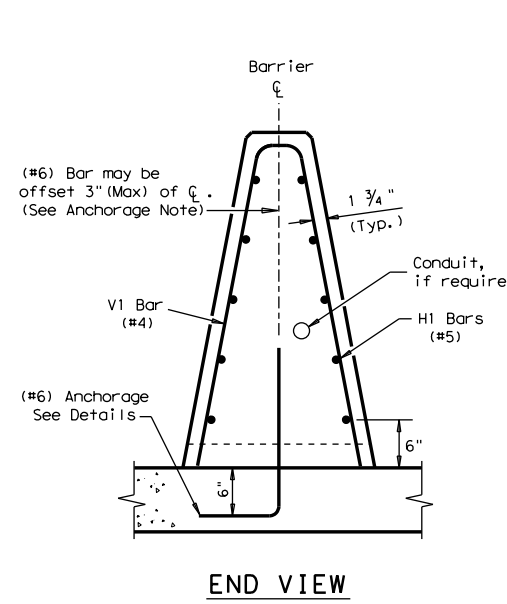
GENERAL NOTES:
 Provide sealed expansion joints in the size and at locations shown on the plans.
 Minimum slab and overhang thickness required for the use of SEJ-M is 6 1/2".



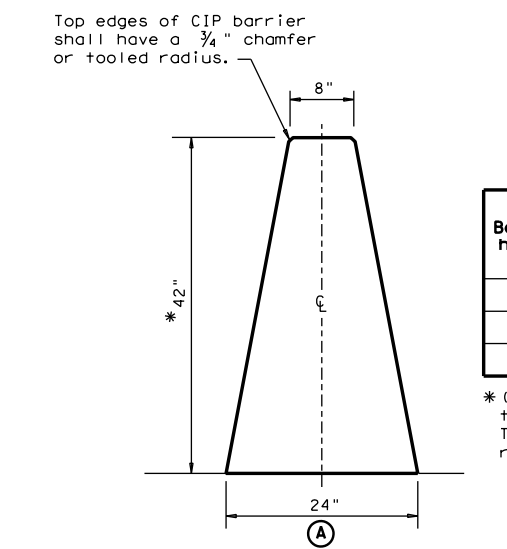
SHIPPING ANGLE
 An alternate method of securing joint sections may be used if approved by the Bridge Division. Erection bolts are not allowed.

		Bridge Division Standard	
SEALED EXPANSION JOINT TYPE M WITHOUT OVERLAY			
SEJ-M			
FILE: sejmste1-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR
©TxDOT April 2019	CONT SECT	JOB	HIGHWAY
REVISIONS	2121 01	104	IH 10
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	ELP	EL PASO	785

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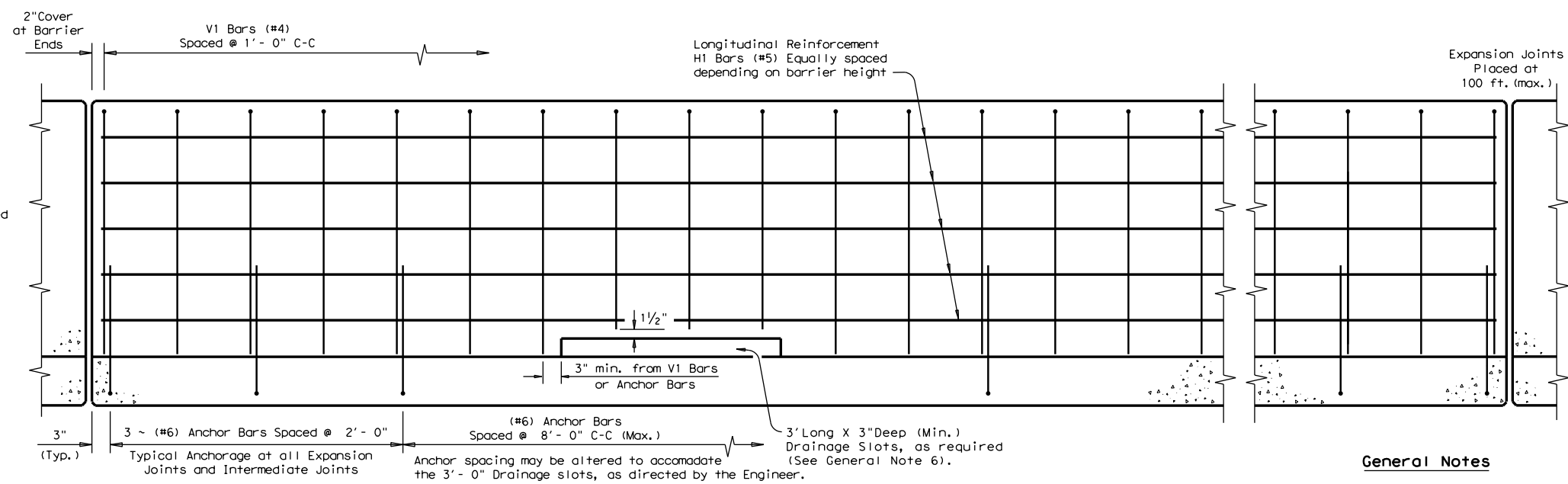
END VIEW
CAST-IN-PLACE (CIP) BARRIER
 Barrier is Symmetrical About the Center Line



SINGLE SLOPE CONCRETE BARRIER (SSCB) (42")

* Barrier height (IN.)	Dimensions (IN.)		
	(A)	(B)	(C)
42	24	40 1/4	20 1/2
48	26 1/4	46 1/4	22 3/4
54	28 1/2	52 1/4	25 1/6

* (SSCB) (42") Barrier height may be increased to 48" or 54". This would increase the barrier and reinforcement dimensions accordingly.



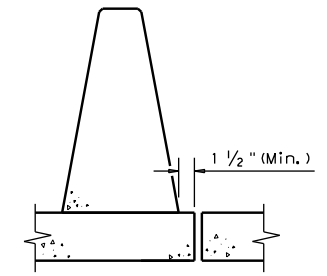
ELEVATION VIEW
Cast-in-Place (SSCB) on Bridge Decks or Continuously Reinforced Concrete Pavement (CRCP)
 (Showing Reinforcement and Anchor Placement)

BARRIER PLACEMENT OVER (CRCP) JOINTS

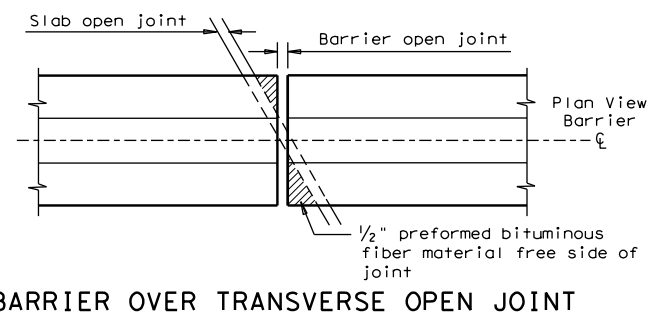
Barrier may be cast over a "Longitudinal" CRCP joint.

CRCP Joints (with or without tiebars): Two layers of 30 lb roofing felt or 1/2" preformed bituminous fiber material.

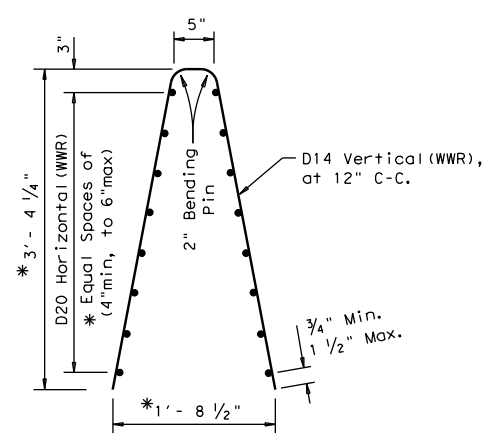
Barrier Anchorage Note: Anchorage must be located at least 3" from a longitudinal joint.



MINIMUM EDGE DISTANCE FROM LONGITUDINAL JOINT
 Barrier placement over a longitudinal bridge joint is not recommended.

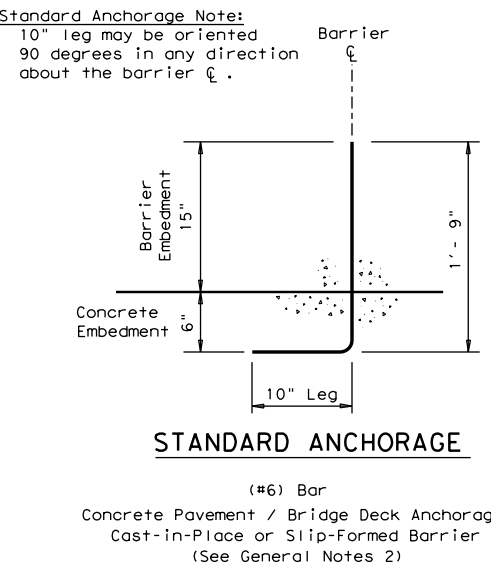


BARRIER OVER TRANSVERSE OPEN JOINT

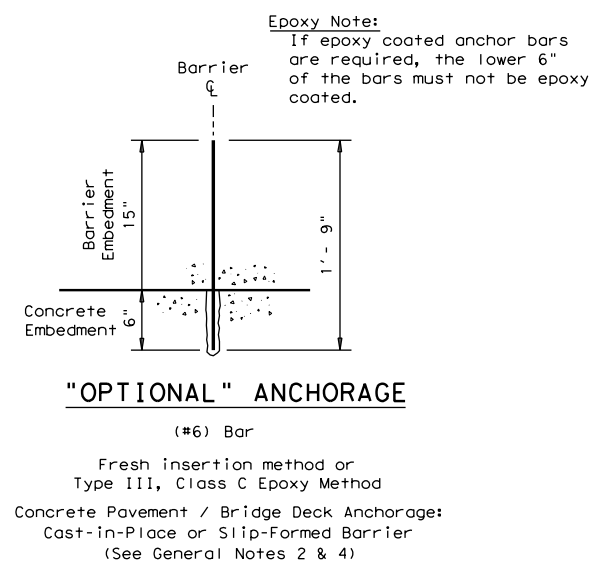


Welded Wire Reinforcement (WWR) Option for Bars V1 and H1

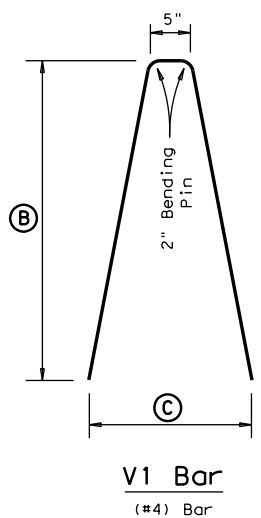
- (WWR) General Notes**
- Deformed Welded Wire Reinforcement (WWR) shall conform to ASTM A497.
 - Welded wire cage may be cut and bent to accommodate the drainage slots, as directed by the Engineer.
 - Welded wire splice locations shall have a "minimum" splice lap length of 12".
 - Combinations of reinforcing steel and WWR will be permitted, as directed by the Engineer. The dimension from the end of the barrier section to the first wire shall not exceed 3".



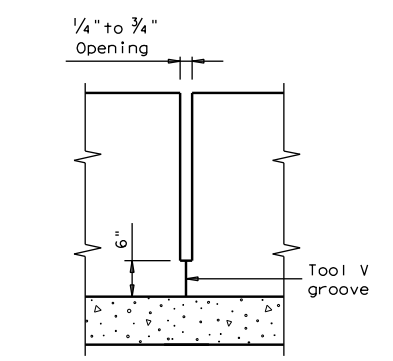
STANDARD ANCHORAGE



"OPTIONAL" ANCHORAGE



V1 Bar



INTERMEDIATE JOINT DETAIL

Place at all Bent Bars, without expansion joints and spaced at 33 ft. (max.), 10 ft. (min).

EXPANSION JOINT PLACEMENT
 Place at all transverse joints or 100 ft. (max.), 10 ft. (min).

General Notes

- Concrete shall be Class C. Unless otherwise specified in the plans.
- Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615. If the bridge slab requires epoxy "coated" reinforcement, the barrier and/or anchorage may require the same, if shown elsewhere in the plans.
- These details cover barrier per Item 514, "Permanent Concrete Traffic Barrier".
- Anchorage: The "Optional" Anchor system shall be embedded 6" into fresh concrete or using a Type III, Class C Epoxy anchorage system. Follow the manufacturer's directions for installing the expoxied anchor bars. All anchorage shown is the minimum required, and considered subsidiary to the bid item.
- Top edges of CIP barrier shall have a 3/4 inch chamfer or tooling radius.
- Drainage slot locations (12'-0", C-C Min. Spacing) are shown elsewhere, or as directed by the Engineer. Drainage slot heights on the SSCB may be increased to a maximum of 5 inches, without geometric changes to the barrier face.
- Cast-in-place barrier may be slip formed. Bracing may be tied or tack welded to the reinforcement cage to provide cage stability. Do not weld to anchor bars. The reinforcement cage may rest on the top of the finished grade.
- For locations where lighting is required, see the SSCB(4) sheet for the proper reinforcement and anchorage.

Cast-In-Place (CIP) or Slip-Formed (SSCB)

Cast-in-Place barrier may be connected to precast SSCB. Joint connection "Types" may be used in Cast-in-Place barrier, to match the precast barrier connection. (See required connection "Type" elsewhere in the plans)

The weight of Cast-in-Place (SSCB)42" is approx. 717 lbs per ft.

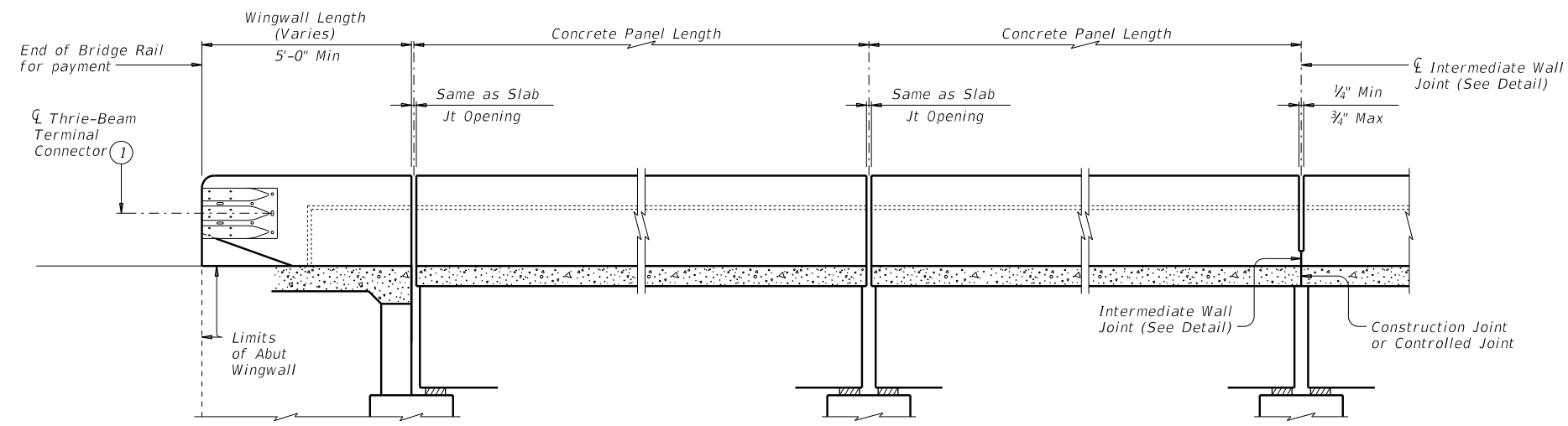
Design Division Standard

SINGLE SLOPE CONCRETE BARRIER
CAST-IN-PLACE (TYPE 1)
(BRIDGE DECK OR CRCP)
SSCB(1)-16

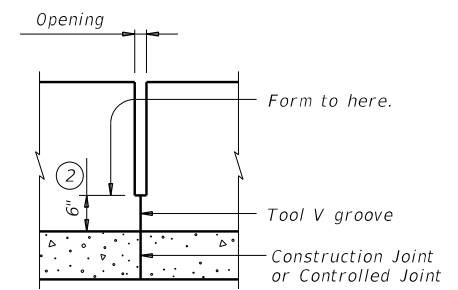
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© TxDOT January 2016	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
ELP	EL PASO	786		

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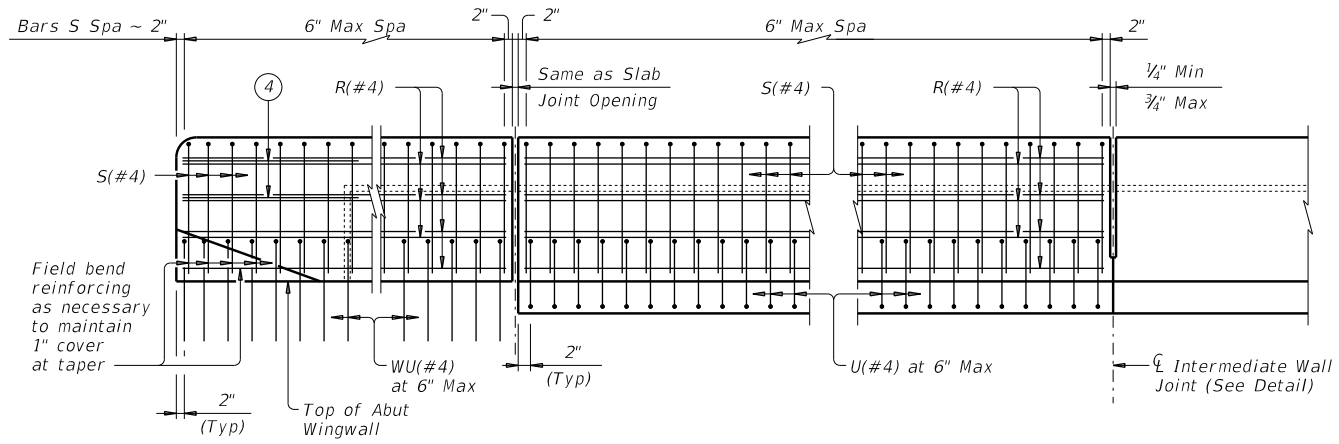
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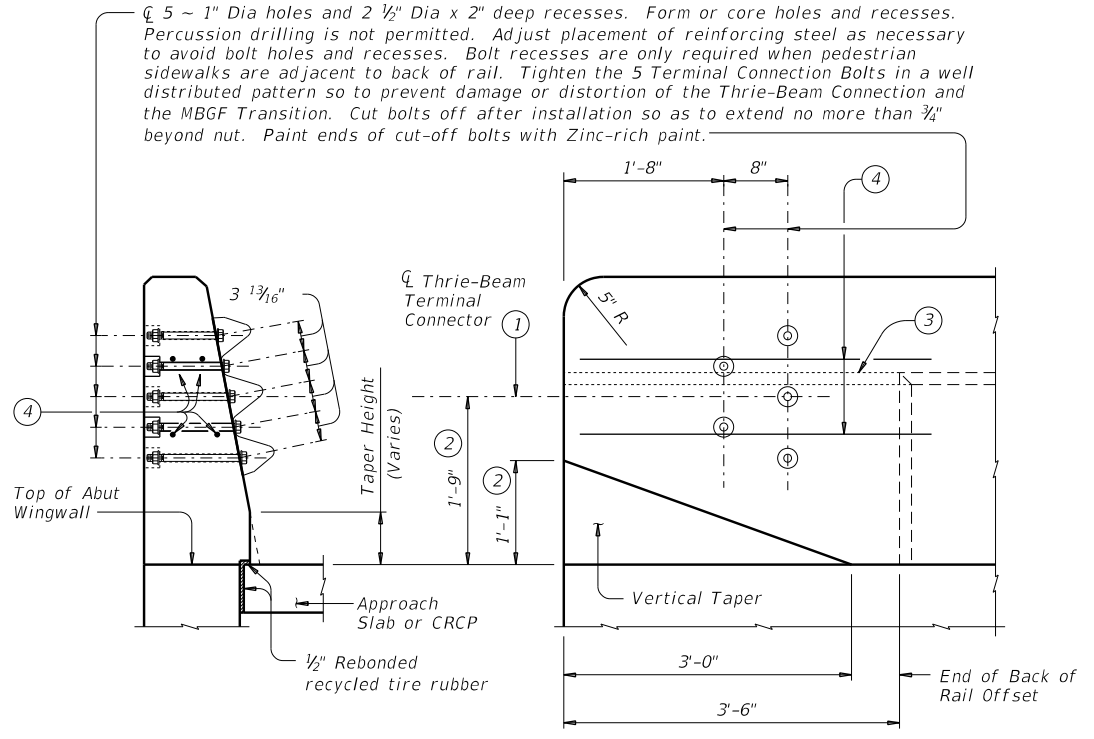
ROADWAY ELEVATION OF RAIL



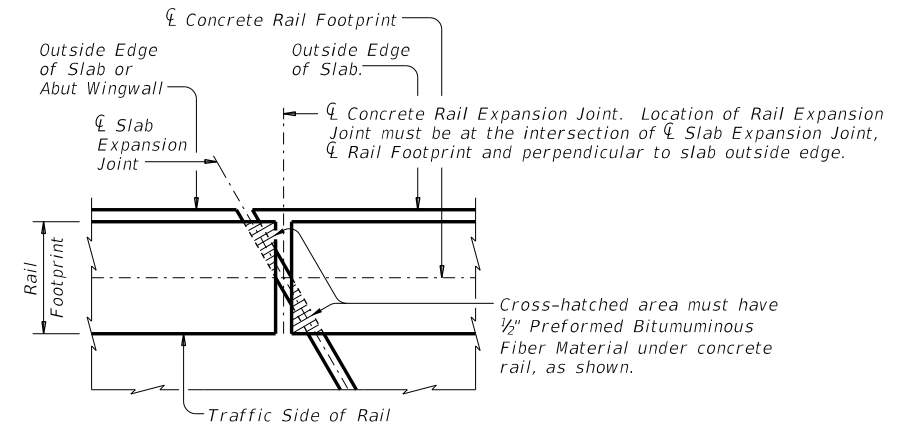
INTERMEDIATE WALL JOINT DETAIL
 Provide at all interior bents without slab expansion joints.



ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT



SECTION
ELEVATION
TERMINAL CONNECTION DETAILS



PLAN OF RAIL AT EXPANSION JOINTS
 Example showing Slab Expansion Joints without breakbacks.

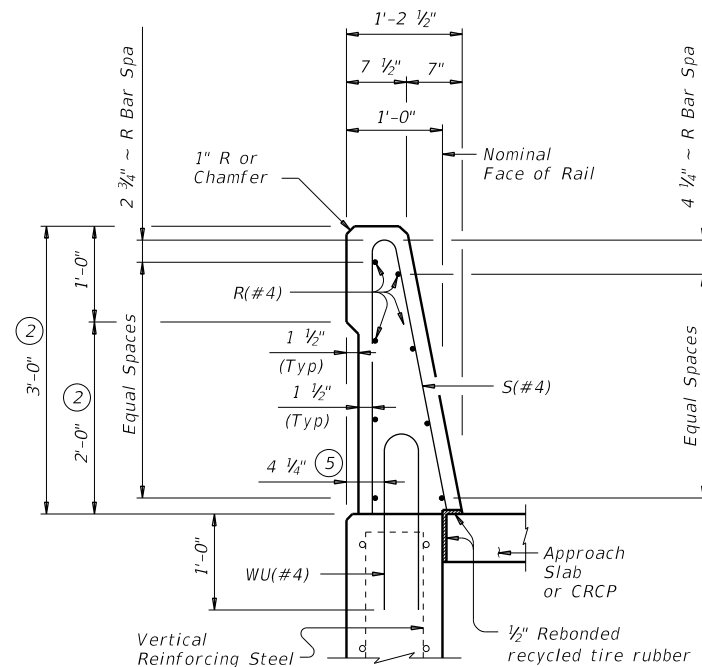
- 1 Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence". Attach Metal Beam Guard Fence Transitions to the bridge rail and extend along the embankment unless otherwise shown in the plans.
- 2 Increase 2" for structures with Overlay.
- 3 Back of rail offset may, with Engineer's approval, be continued to the end of the railing.
- 4 Place 4 additional Bars R(#4) 3'-8" in length inside Bars S(#4) and centered 2'-0" from end of rail when Terminal Connections are required.

SHEET 1 OF 2

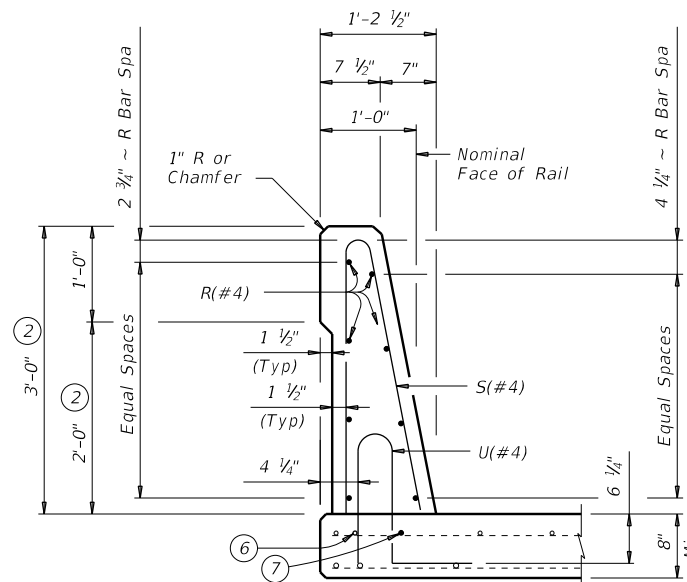
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TRAFFIC RAIL SINGLE SLOPE			
TYPE SSTR			
FILE: rstd014-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR
©TxDOT September 2019	CONT	SECT	JOB
REVISIONS	2121	01	104
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	ELP	EL PASO	787

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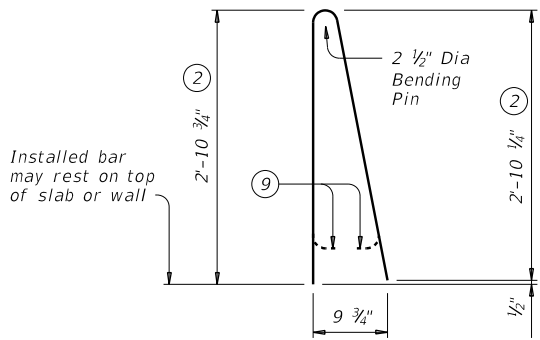


ON ABUTMENT WINGWALLS OR CIP RETAINING WALLS

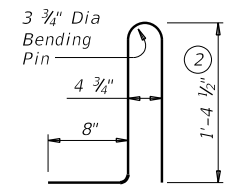


ON BRIDGE SLAB

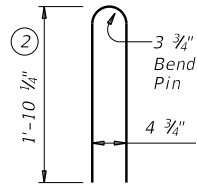
SECTIONS THRU RAIL



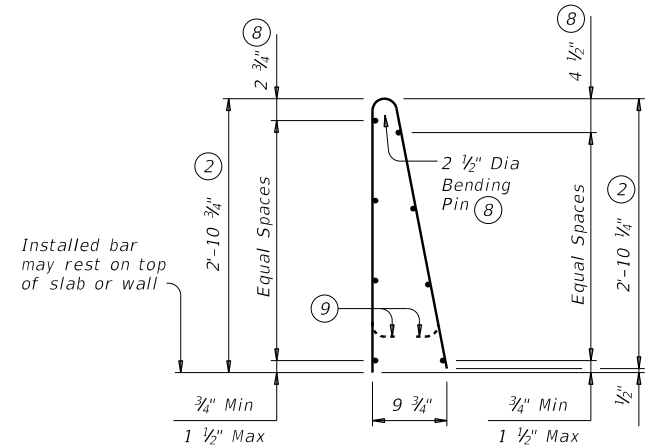
BARS S (#4)



BARS U (#4)



BARS WU (#4)



OPTIONAL WELDED WIRE REINFORCEMENT (WWR)

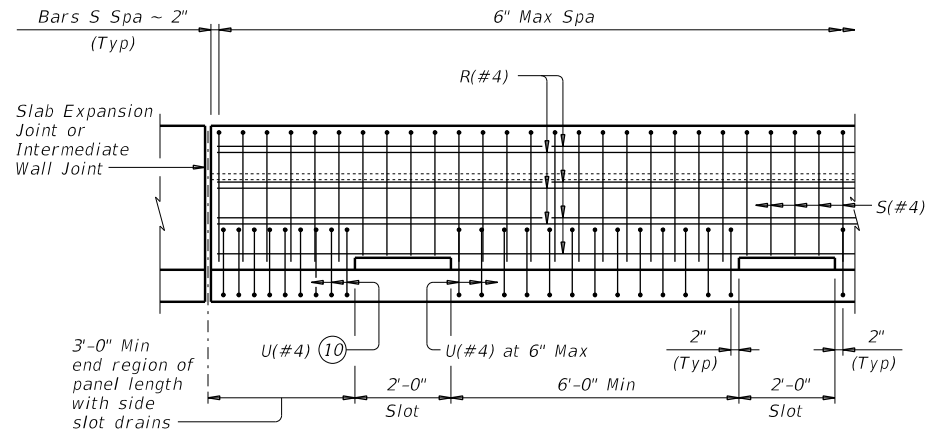
- ② Increase 2" for structures with Overlay.
- ⑤ 5 1/4" when vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls or retaining walls on traffic side of wall.
- ⑥ As an aid in supporting reinforcement, additional longitudinal bars may be used in the slab with the approval of the Engineer. Such bars must be furnished at the Contractor's expense.
- ⑦ Top longitudinal slab bar may be adjusted laterally 3" plus or minus to tie reinforcing.
- ⑧ No longitudinal wires may be within upper bend.
- ⑨ Bend or cut as required to clear drain slots.
- ⑩ Space U(#4) bars at 4" Max when end region of panel length is less than 6'-0" to side slot drain. Space U(#4) bars at 6" Max when end region of panel length is 6'-0" and greater to side slot drain.

CONSTRUCTION NOTES:
 This railing may be constructed by the slipform process when approved by the Engineer, with equipment approved by the Engineer. Provide sensor control for both line and grade. Tack welding to provide bracing for slipform operations is acceptable. Welding may be performed at a minimum spacing of 3 ft between the cage and the anchorage. It is permissible to weld to bars U, WU and S at any location on the cage. If increased bracing is needed, provide additional anchorage devices and weld in the upper two thirds of the cage. Paint welded areas on epoxy coated and/or galvanized reinforcing with an organic zinc rich paint in accordance with Item 445 "Galvanizing".
 If rail is slipformed, apply a heavy epoxy bead 1" behind toe of traffic side of rail to concrete deck just prior to slip forming. Provide a 3/8" width x 1/4" tall heavy epoxy bead with Type III, Class C or a Type V epoxy.
 The back of railing must be vertical unless otherwise shown in the plans or approved by the Engineer.

MATERIAL NOTES:
 Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere.
 Provide Grade 60 reinforcing steel.
 Epoxy coat or galvanize all reinforcing steel if slab bars are epoxy coated or galvanized.
 Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars U and WU unless noted otherwise. Deformed WWR (ASTM A1064) may be substituted for Bars R and S, as shown. Combinations of reinforcing steel and WWR or configurations of WWR other than shown are permitted if conditions in the table are satisfied. Provide the same laps as required for reinforcing bars.
 Provide bar laps, where required, as follows:
 Uncoated or galvanized ~ #4 = 1'-7"
 Epoxy coated ~ #4 = 2'-5"

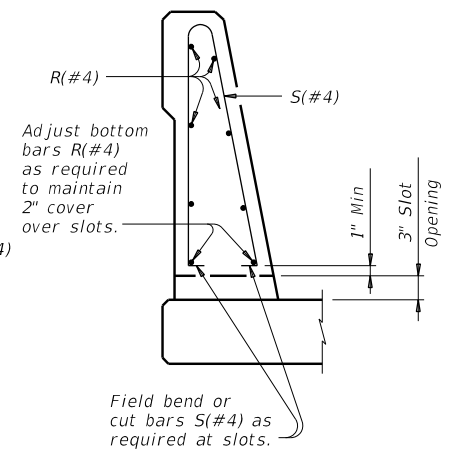
GENERAL NOTES:
 This rail has been successfully evaluated by full-scale crash test to meet MASH TL-4 criteria. This rail can be used for speeds of 50 mph and greater when a TL-3 rated guard fence transition is used. When a TL-2 rated guard fence transition is used, this rail can only be used for speeds of 45 mph and less.
 Do not use this railing on bridges with expansion joints providing more than 5" movement.
 Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.
 Shop drawings will not be required for this rail.
 Average weight of railing with no overlay is 376 plf.

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.



OPTIONAL SIDE SLOT DRAIN DETAIL

Note: Side Slot Drains may be used where shown elsewhere on the plans or as directed by the Engineer. Drains should not be placed over railroad tracks, lower roadways, or sidewalks. When this rail is used as a separator between a roadway surface and a sidewalk surface, side drain slots will not be permitted.



SECTION THRU OPTIONAL SIDE SLOT DRAIN

DESCRIPTION	LONGITUDINAL WIRES	VERTICAL WIRES
Minimum (Cumulative Total) Wire Area	1.067 Sq In.	0.267 Sq In. per Ft
Minimum	No. of Wires	Spacing
Maximum	8	4"
Maximum Wire Size Differential	10	8"
	The smaller wire must have an area of 40% or more of the larger wire.	

Texas Department of Transportation
 Bridge Division Standard

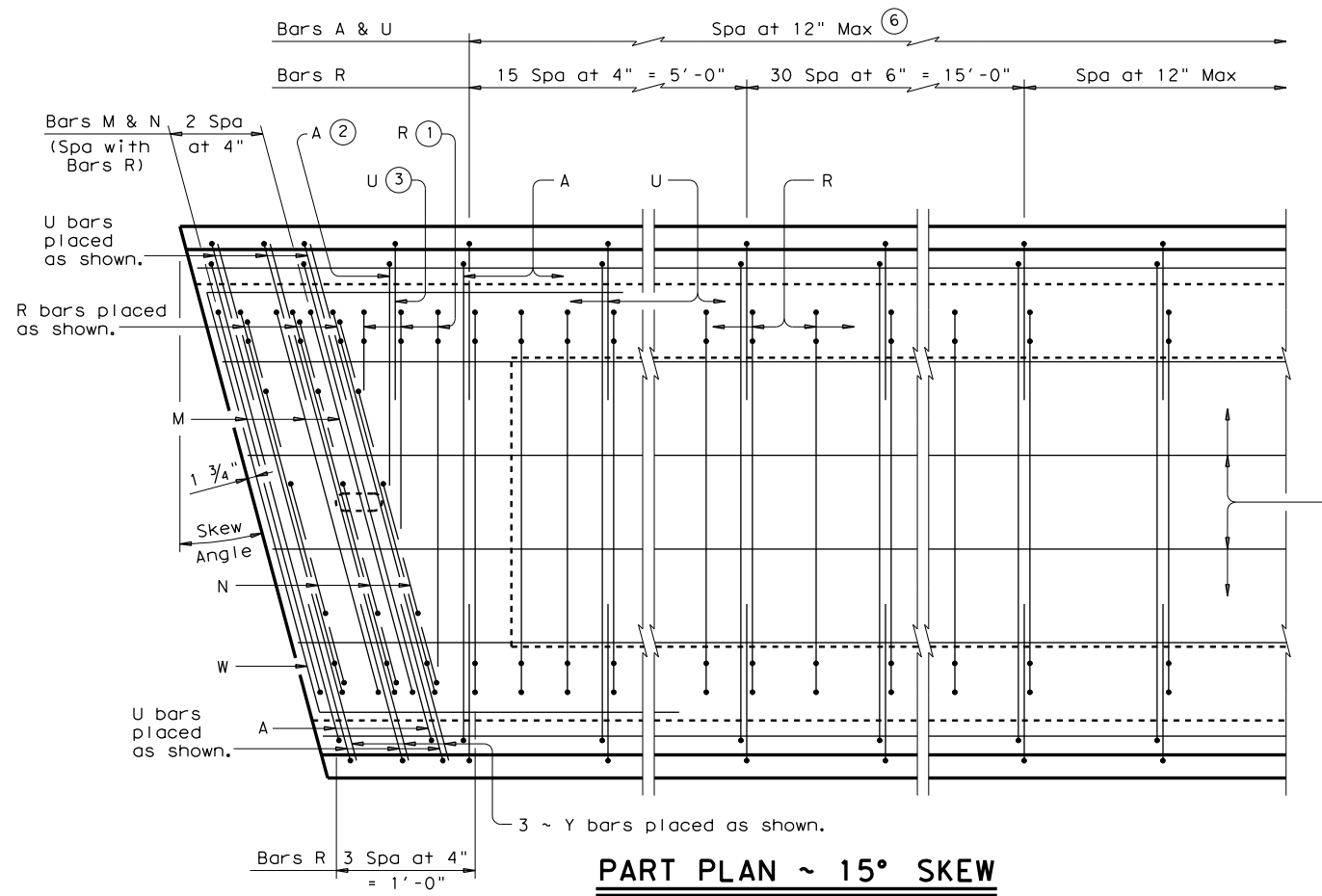
TRAFFIC RAIL SINGLE SLOPE

TYPE SSTR

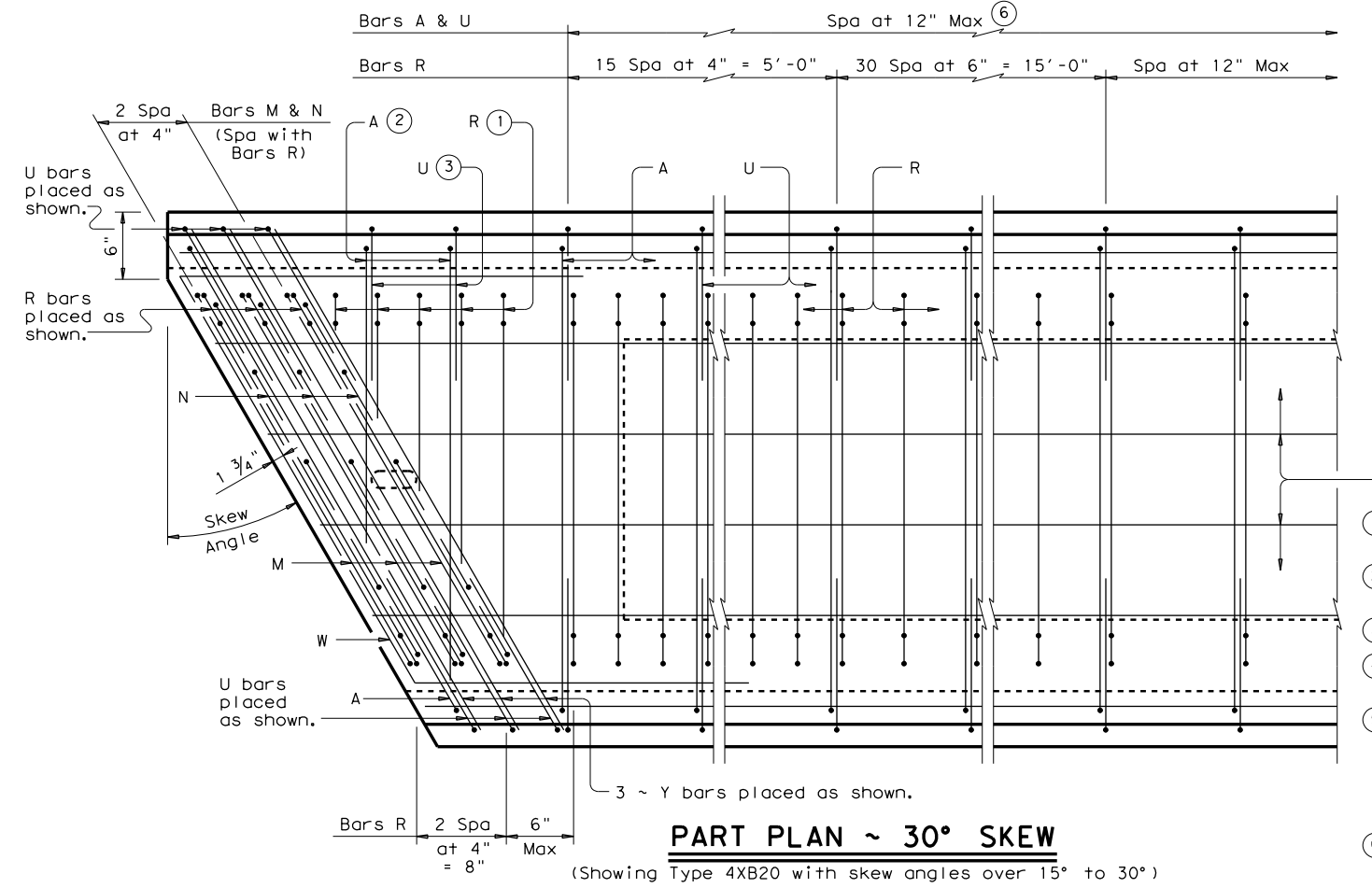
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©TxDOT September 2019	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	788	

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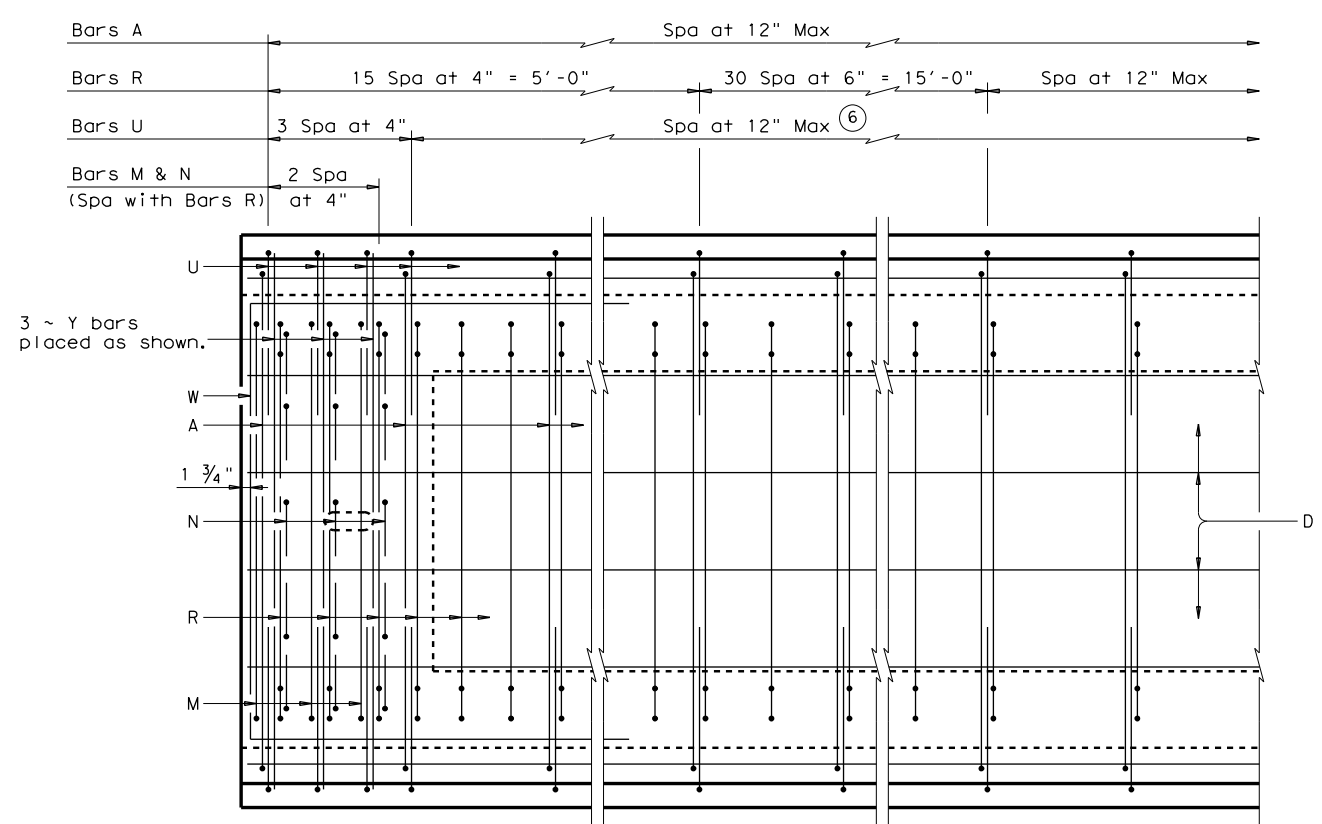
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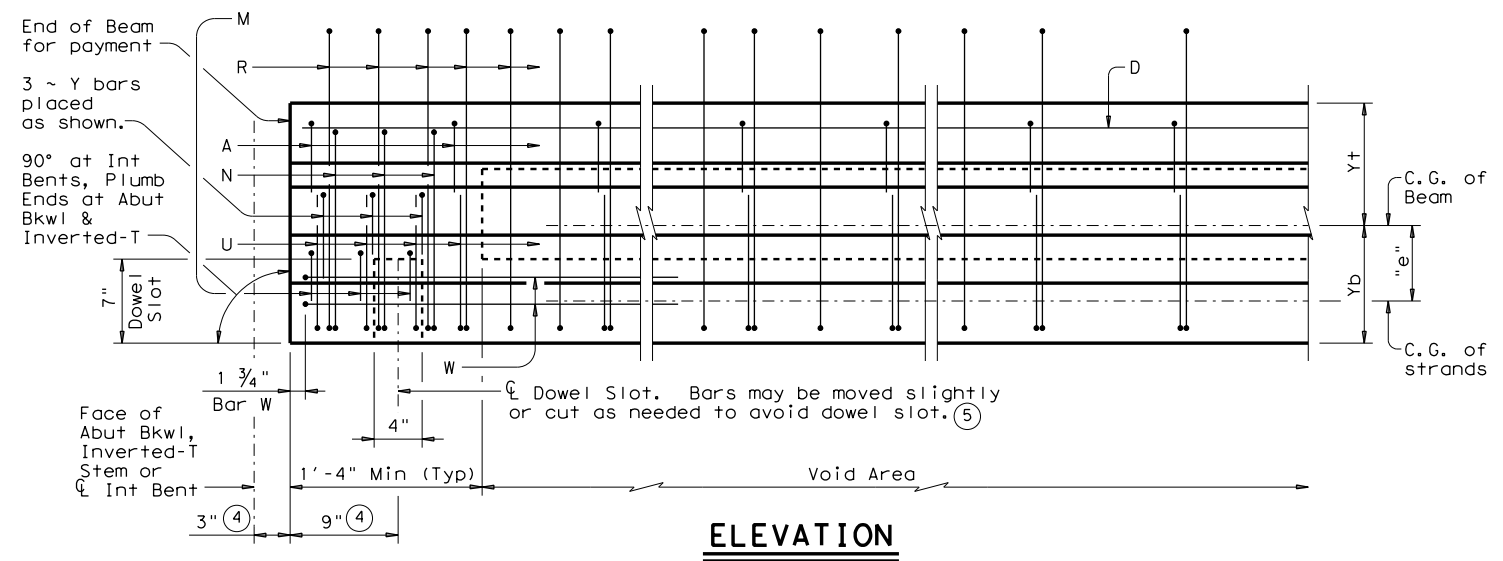
PART PLAN ~ 15° SKEW
 (Showing Type 4XB20 with skew angles over 0° to 15°)



PART PLAN ~ 30° SKEW
 (Showing Type 4XB20 with skew angles over 15° to 30°)



PART PLAN
 (Showing Type 4XB20)



ELEVATION

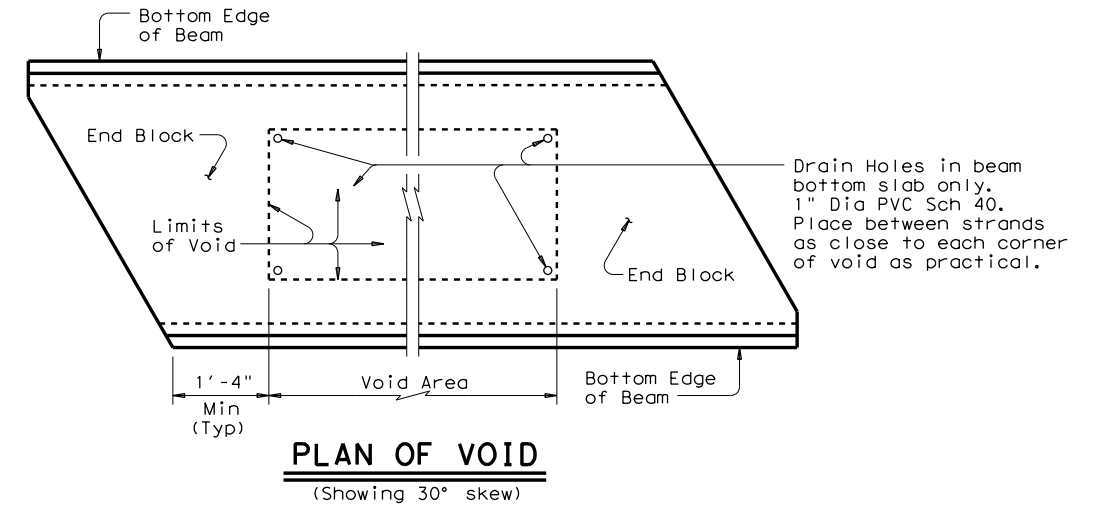
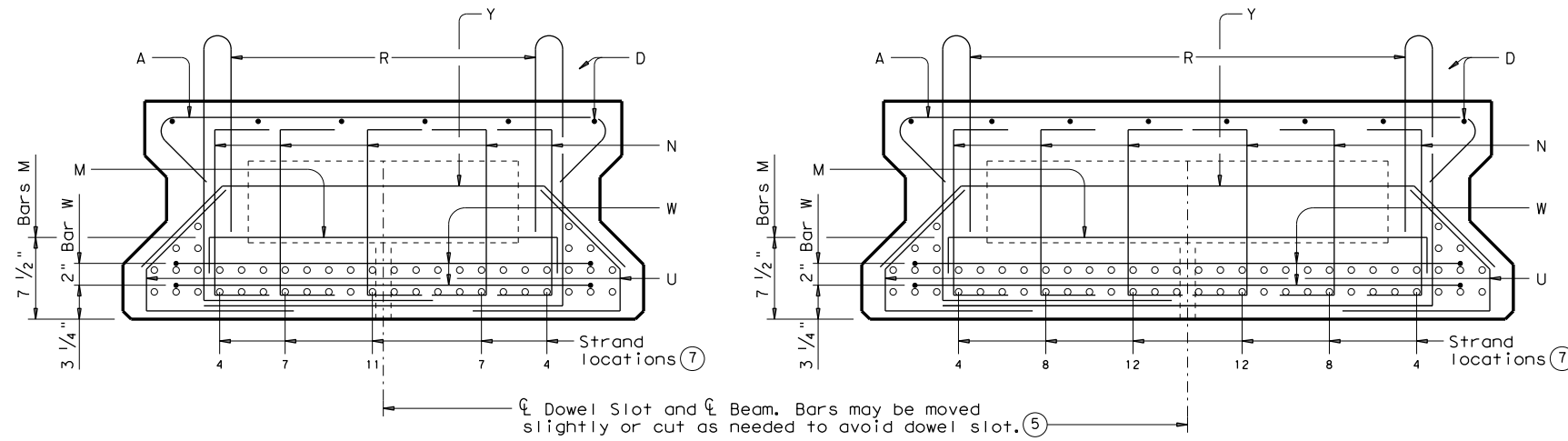
- ① Bars R spaced at 4" Max. Cut Bars R as necessary to provide 2" clear between adjacent bars as shown.
- ② Bars A spaced with Bars U. Cut Bars A as necessary to provide 2" clear between adjacent bars as shown.
- ③ Bars U spaced at 8" Max as shown.
- ④ Measured perpendicular to $\bar{\bar{C}}$ Interior Bents, Abutment Bkwl or Inverted-T Stem.
- ⑤ $\bar{\bar{C}}$ 4" x 1 1/2" Vertical Slotted Hole at doweled beam end [labeled (D) on Bridge Layout]. Required for outside beam only or as shown on substructure details. Anchorage holes may be tapered (4 3/4" x 1 5/8") at base. If holes are formed with sheet metal, forms may be left in place.
- ⑥ End Bars U the greater of 5' from beam ends or 3' beyond the last debonded strands.

HL93 LOADING SHEET 1 OF 2

		Bridge Division Standard	
PRESTRESSED CONCRETE X-BEAM DETAILS (TYPE XB20)			
XB20			
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©TxDOT June 2011	CONT SECT	JOB	HIGHWAY
REVISIONS	2121 01	104	IH 10
	DIST	COUNTY	SHEET NO.
	ELP	EL PASO	789

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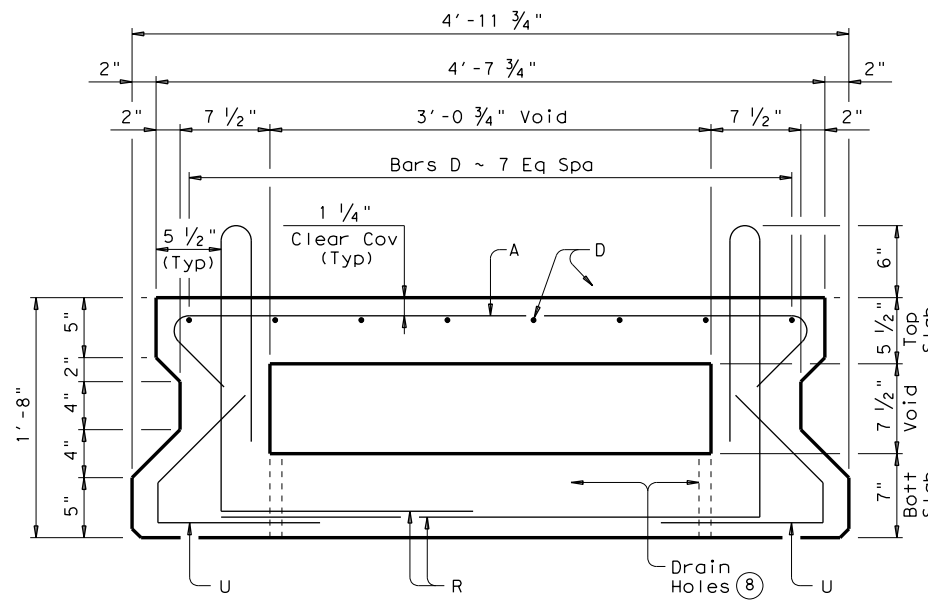
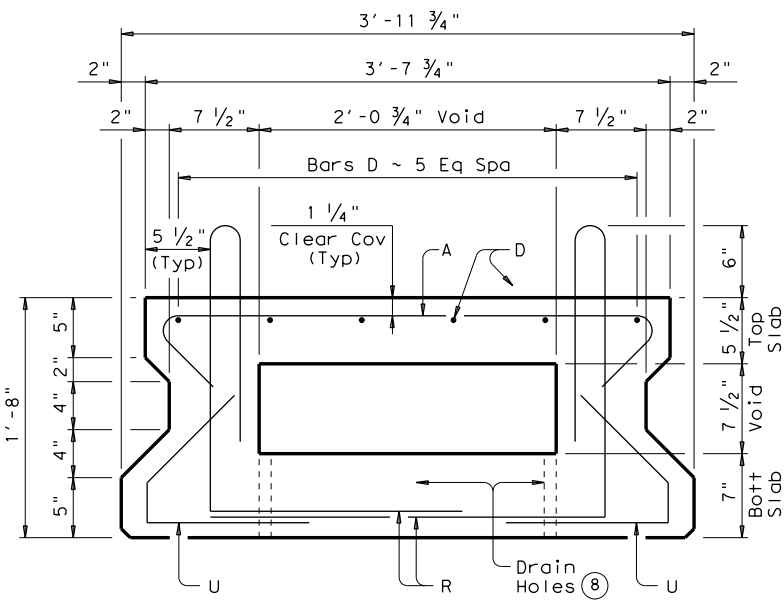
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END BLOCK SECTION ~ TYPE 4XB20

END BLOCK SECTION ~ TYPE 5XB20

- (5) 4" x 1 1/2" Vertical Slotted Hole at doweled beam end [labeled (D) on Bridge Layout]. Required for outside beam only or as shown on substructure details. Anchorage holes may be tapered (4 3/4" x 1 3/8") at base. If holes are formed with sheet metal, forms may be left in place.
- (7) See standard XBND or appropriate Prestressed Concrete X-Beam Standard Designs sheet for locations of pretensioning strands.
- (8) Drain Holes 1" Dia PVC Sch 40 Pipe as shown between strands in all beam void corners. See "Plan of Void".
- (9) Based on 150 pcf weight density of concrete. Weight of end blocks is not included.
- (10) Dimension will vary slightly with skew. Adjust as necessary.
- (11) At the Fabricator's option, alternate designs utilizing deformed welded wire reinforcement (WWR) conforming to ASTM A1064 of equivalent cross sectional area to replace all or some of Bars A, D, R and U will be permitted. Smooth Welded Wire Reinforcement is not permitted.

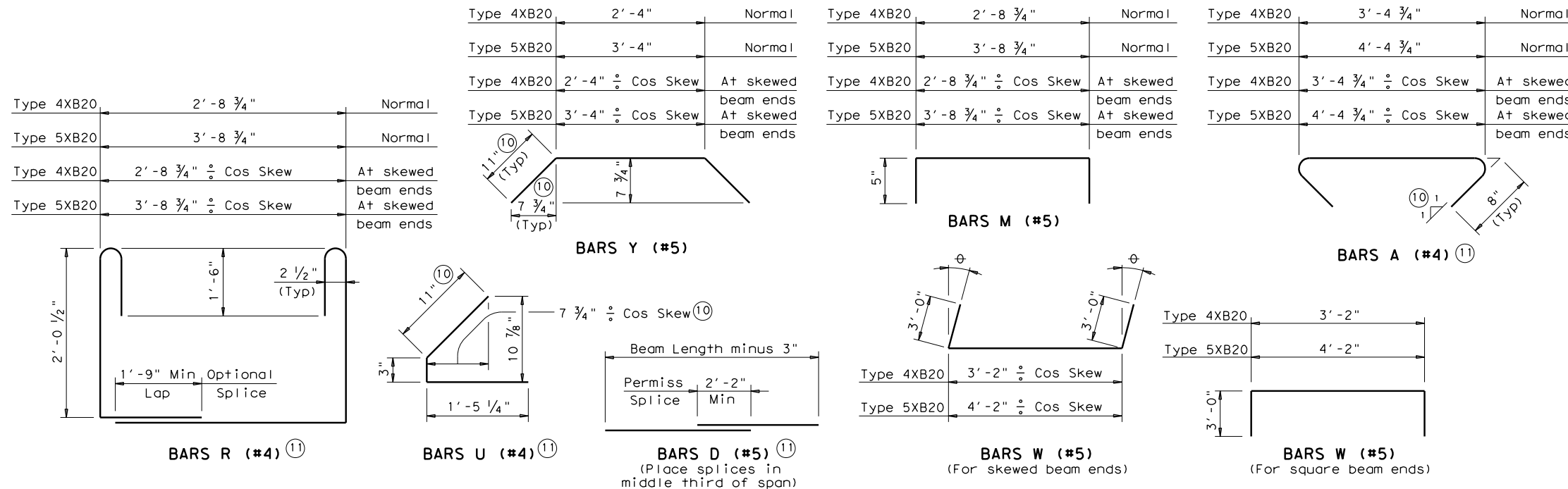


BEAM PROPERTIES			
		Type 4XB20	Type 5XB20
Area	in ²	689	839
Y top	in	10.47	10.47
Y bott	in	9.53	9.53
I	in ⁴	29,124	36,621
Weight	lb/ft	718	874

GENERAL NOTES:
 Designed according to AASHTO LRFD Specifications. Use Class H concrete. Use Class H (HPC) if required elsewhere in plans. All reinforcing steel must be Grade 60.
 Two-stage monolithic casting is required. The concrete in the first stage cast (bottom beam flange) must remain plastic until the second stage cast (webs and top beam flange) is placed. Vibrate as required to ensure consolidation between the two casts.
 1 1/4" clear cover to reinforcement is required unless noted otherwise.
 These details are applicable for skews up to 30 degrees only.
 Chamfer bottom beam corners 3/4" or round to a 3/4" radius.
 Punch through all drain holes, removing any blockage, before beams are shipped.

TYPICAL SECTION ~ TYPE 4XB20

TYPICAL SECTION ~ TYPE 5XB20



Texas Department of Transportation
 PRESTRESSED CONCRETE X-BEAM DETAILS (TYPE XB20)

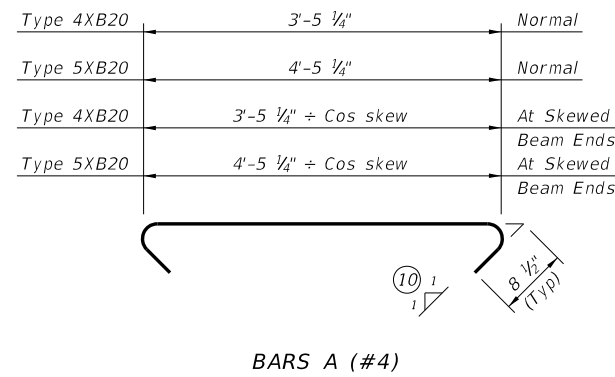
XB20

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©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
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	ELP	EL PASO	790	

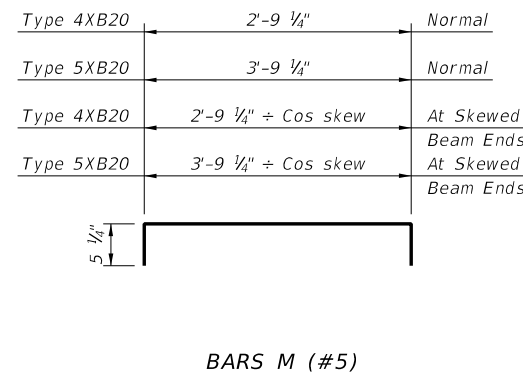
Bridge Division Standard

DISCLAIMER:
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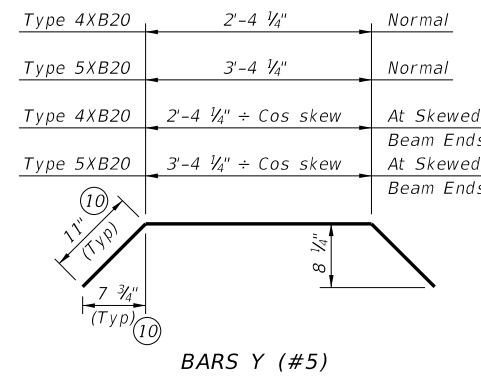
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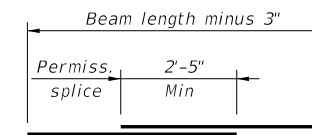
BARS A (#4)



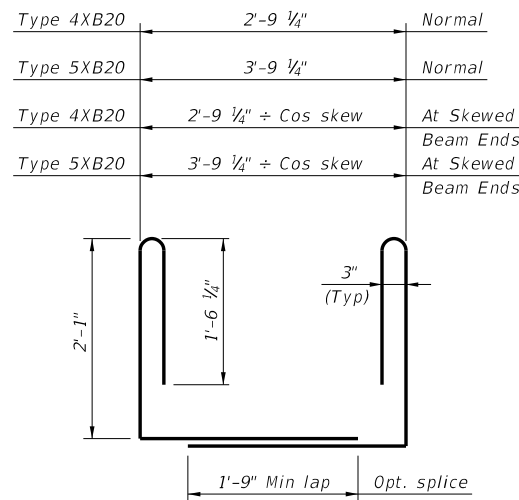
BARS M (#5)



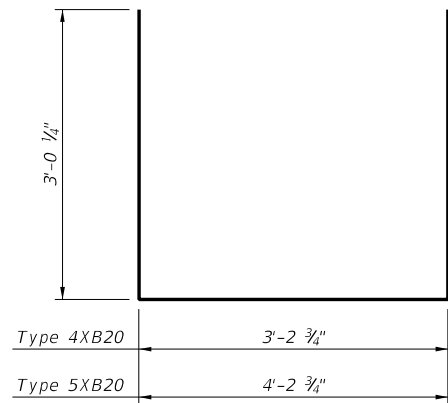
BARS Y (#5)



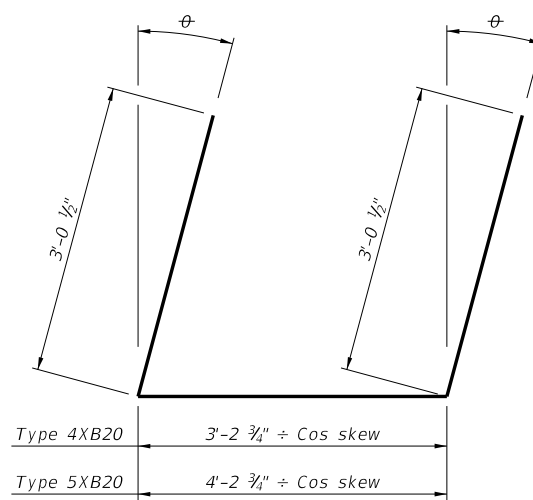
BARS D (#5)
(Place splices in middle third of span.)



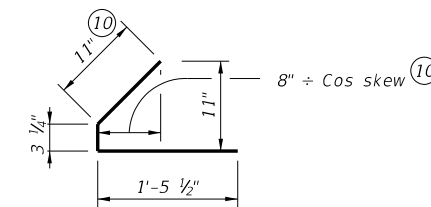
BARS R (#4)



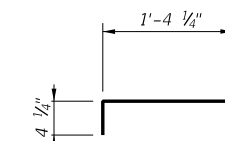
BARS W (#5)
(For square beam ends)



BARS W (#5)
(For skewed beam ends)



BARS U (#4)



BARS N (#4)

(10) Dimension will vary slightly with skew. Adjust as necessary.

MATERIAL NOTES:

Provide Class H concrete.
Provide Grade 60 reinforcing steel.
An equal area of deformed welded wire reinforcement (WWR) (ASTM A1064) may be substituted for all or some of Bars A, D, R, and U.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
Two-stage monolithic casting is required when conventional concrete is used. The concrete in the first stage cast (bottom beam flange) must remain plastic until the second stage cast (webs and top beam flange) is placed. Vibrate as required to ensure consolidation between the two casts.

When approved by the Engineer, self-consolidating concrete may be placed in a one-stage monolithic casting.

1 1/4" clear cover to reinforcement is required unless noted otherwise.

These details are applicable for skews up to 30 degrees only.
Chamfer bottom beam corners 3/4" or round to a 3/4" radius.

Punch through all drain holes, removing any blockage, before beams are shipped.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING

SHEET 3 OF 3



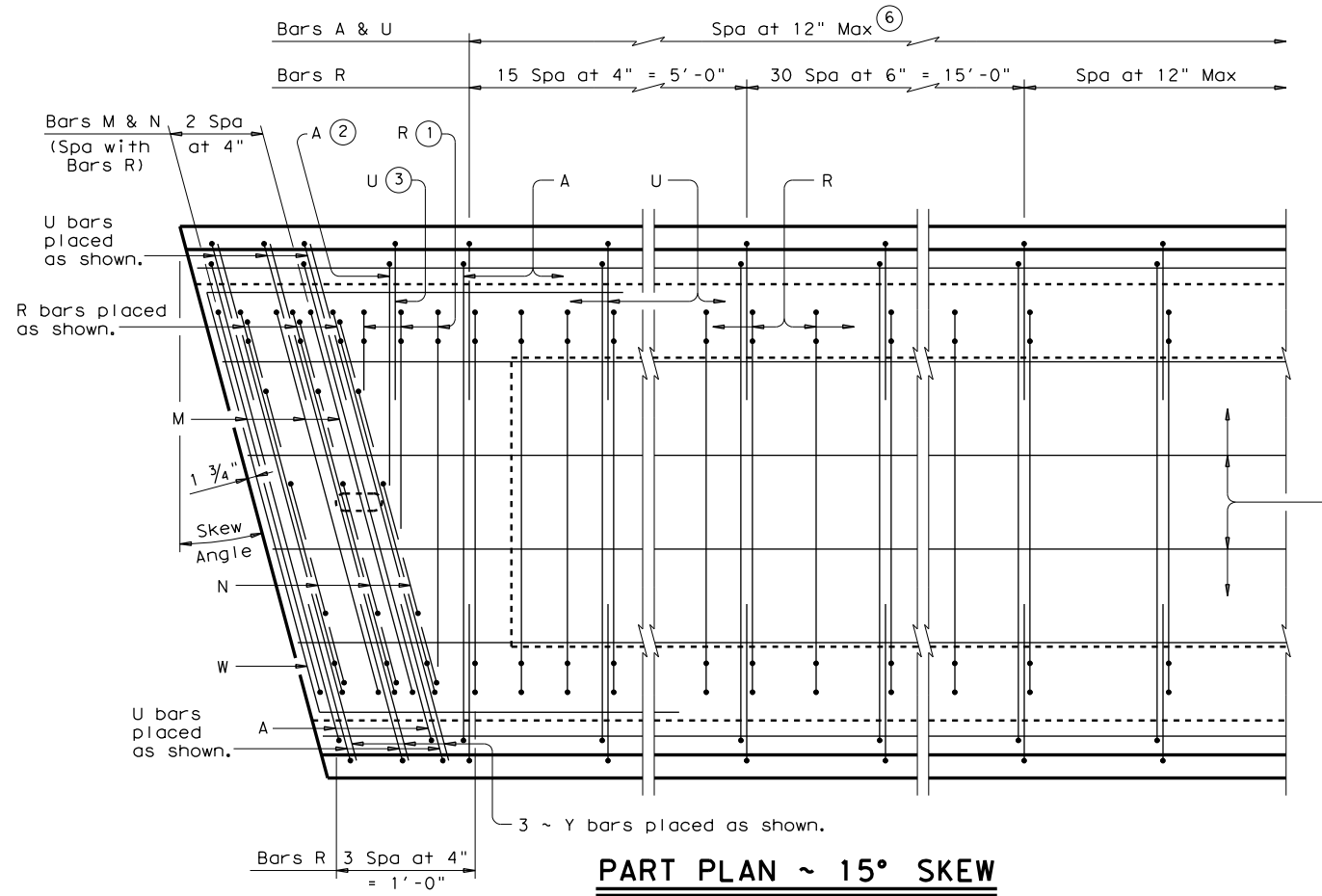
**PRESTRESSED CONCRETE
X-BEAM DETAILS
(TYPE XB20)**

XB20

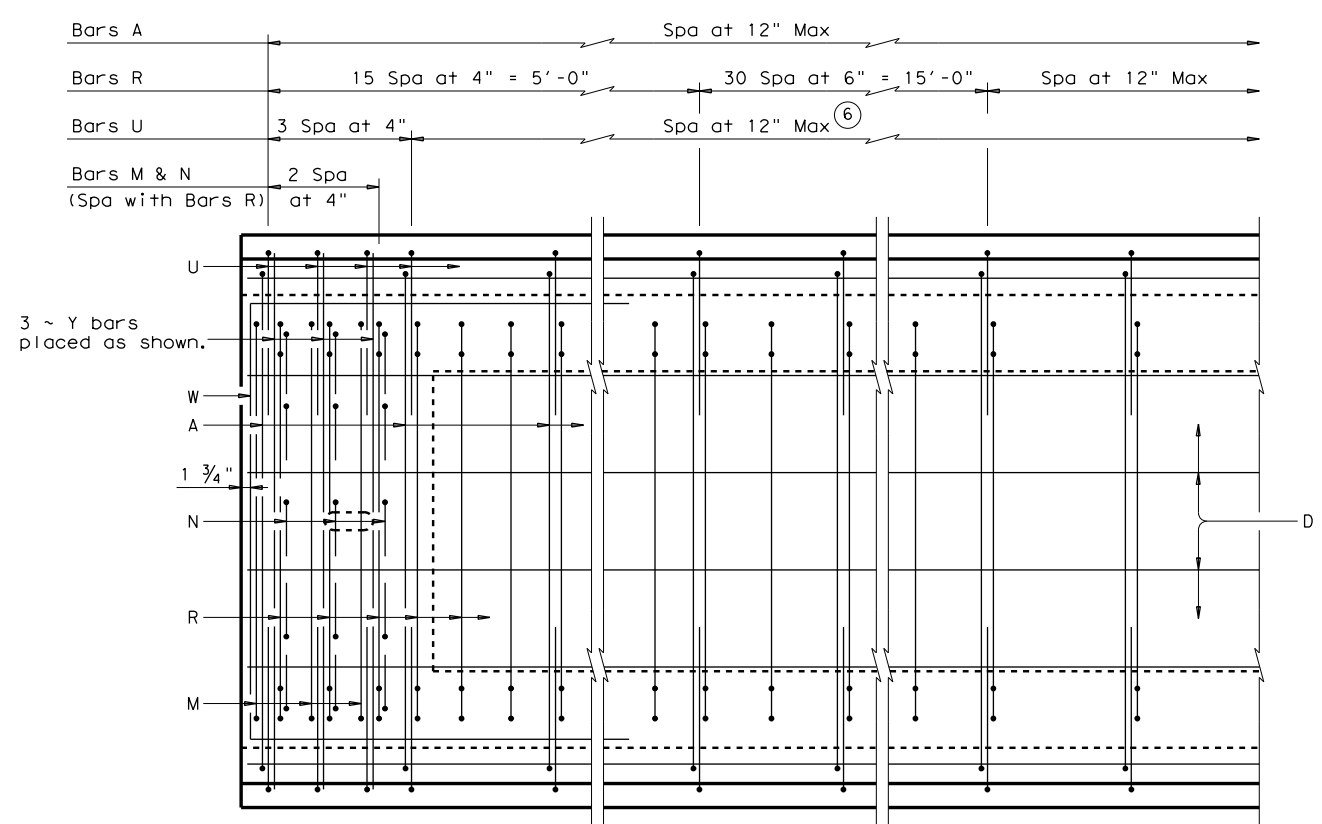
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©TxDOT August 2022 REVISIONS	CONT	SECT	JOB	HIGHWAY
	2121	01	104	1H 10
	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	791	

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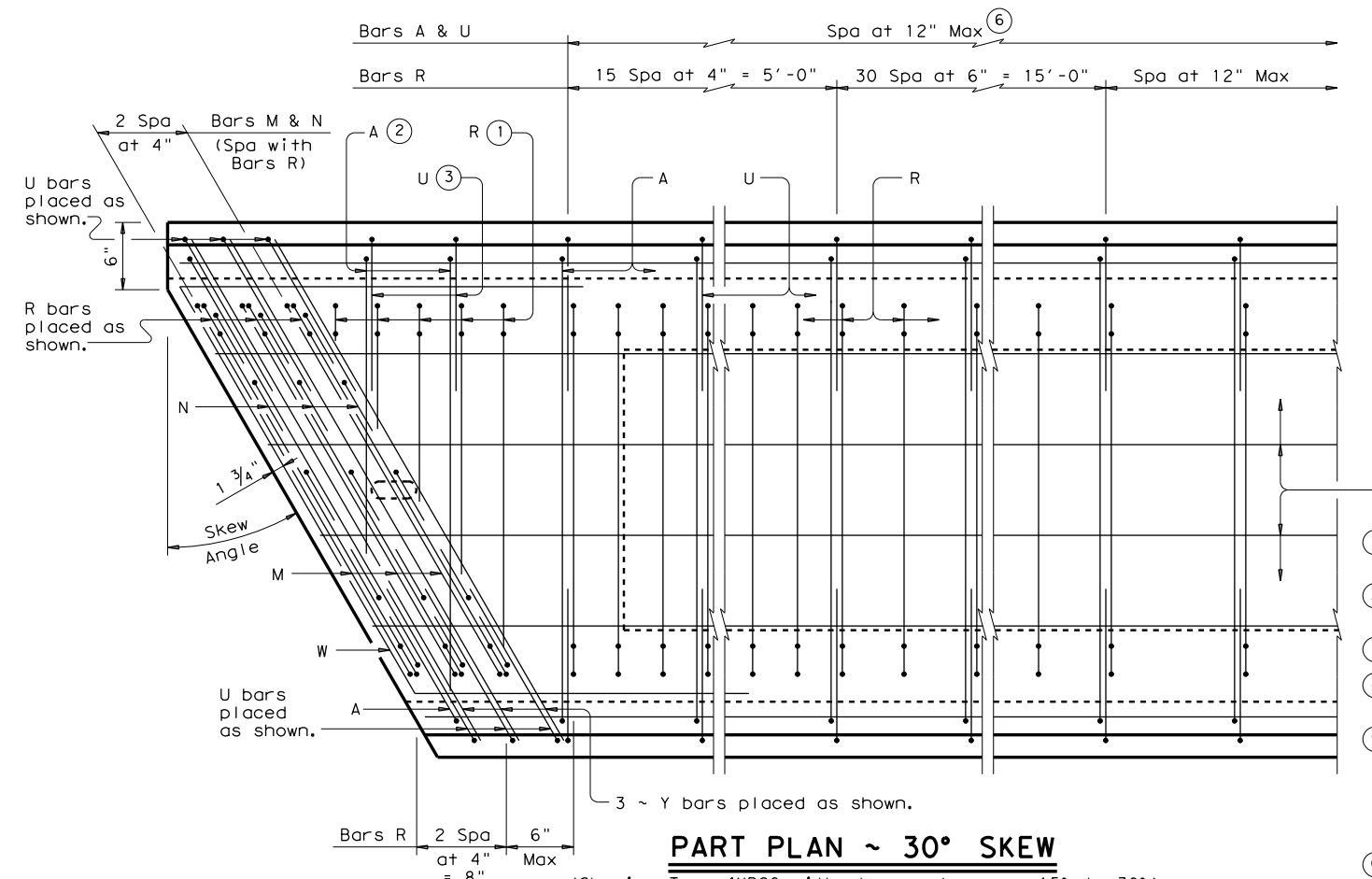
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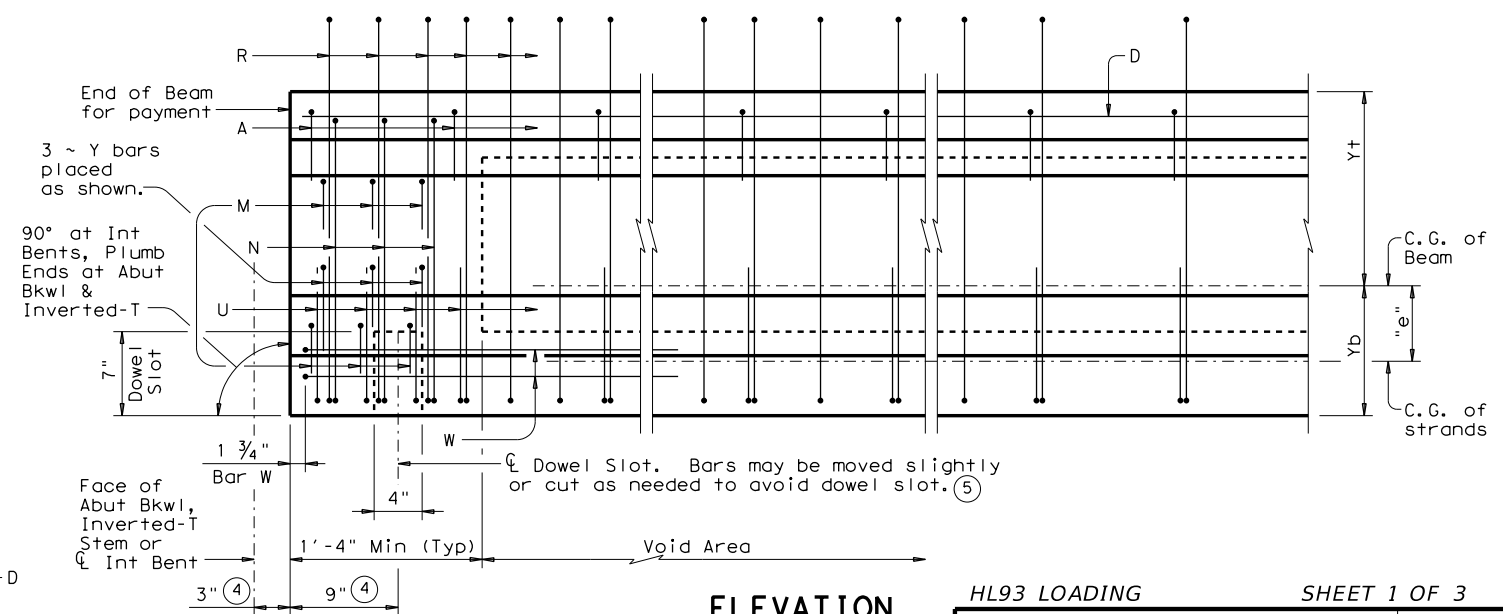
PART PLAN ~ 15° SKEW
 (Showing Type 4XB28 with skew angles over 0° to 15°)



PART PLAN
 (Showing Type 4XB28)



PART PLAN ~ 30° SKEW
 (Showing Type 4XB28 with skew angles over 15° to 30°)



ELEVATION

- ① Bars R spaced at 4" Max. Cut Bars R as necessary to provide 2" clear between adjacent bars as shown.
- ② Bars A spaced with Bars U. Cut Bars A as necessary to provide 2" clear between adjacent bars as shown.
- ③ Bars U spaced at 8" Max as shown.
- ④ Measured perpendicular to ϕ Interior Bents, Abutment Bkwl or Inverted-T Stem.
- ⑤ ϕ 4" x 1 1/2" Vertical Slotted Hole at doweled beam end [labeled (D) on Bridge Layout]. Required for outside beam only or as shown on substructure details. Anchorage holes may be tapered (4 3/4" x 1 5/8") at base. If holes are formed with sheet metal, forms may be left in place.
- ⑥ End Bars U the greater of 5' from beam ends or 3' beyond the last debonded strands.

HL93 LOADING SHEET 1 OF 3



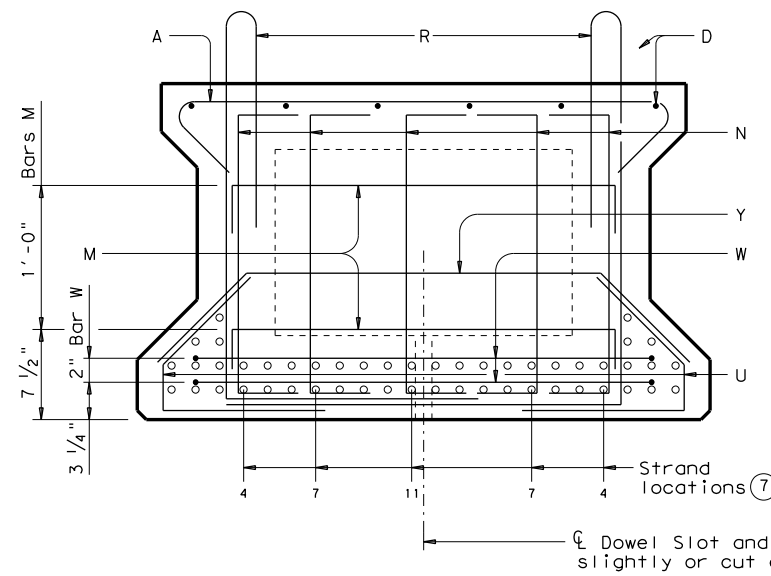
PRESTRESSED CONCRETE X-BEAM DETAILS (TYPE XB28)

XB28

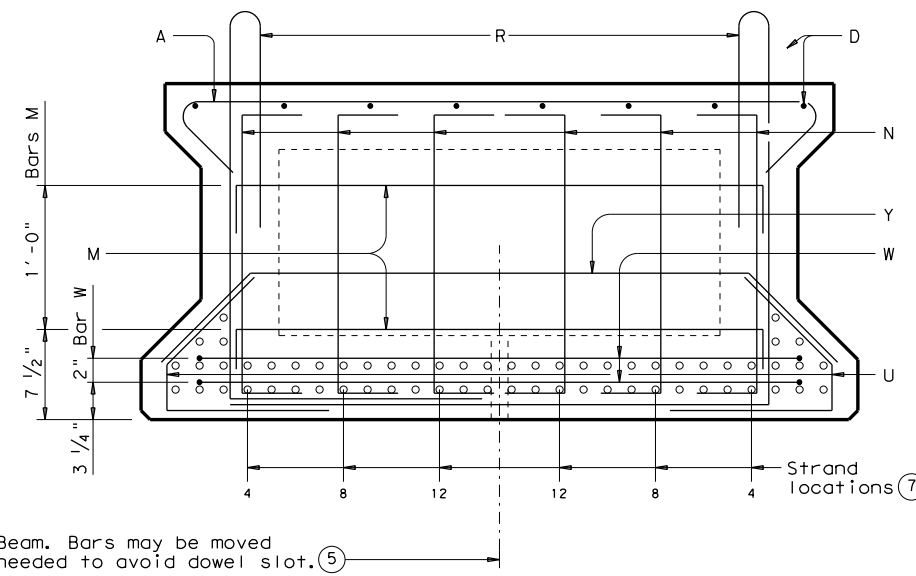
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©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	792	

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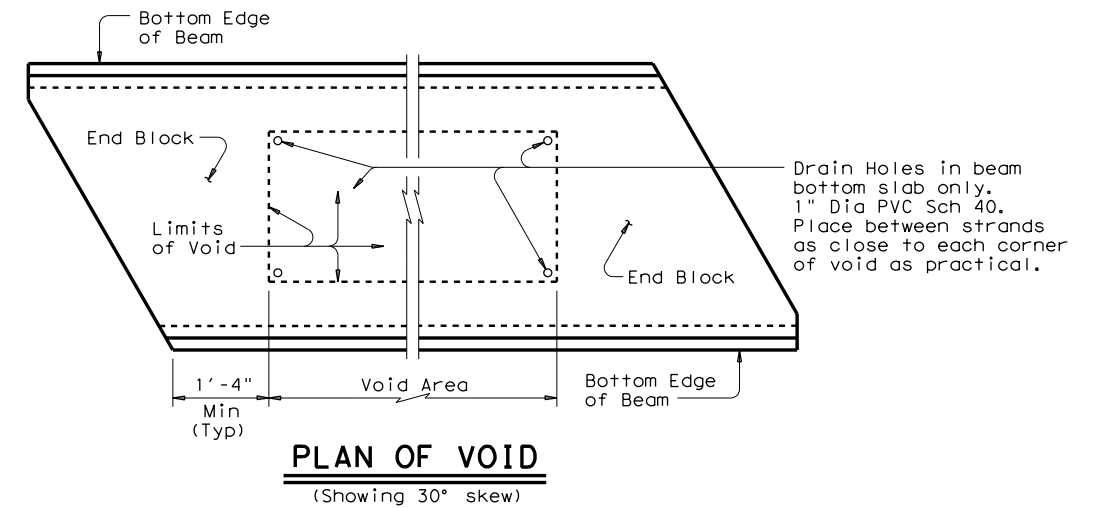
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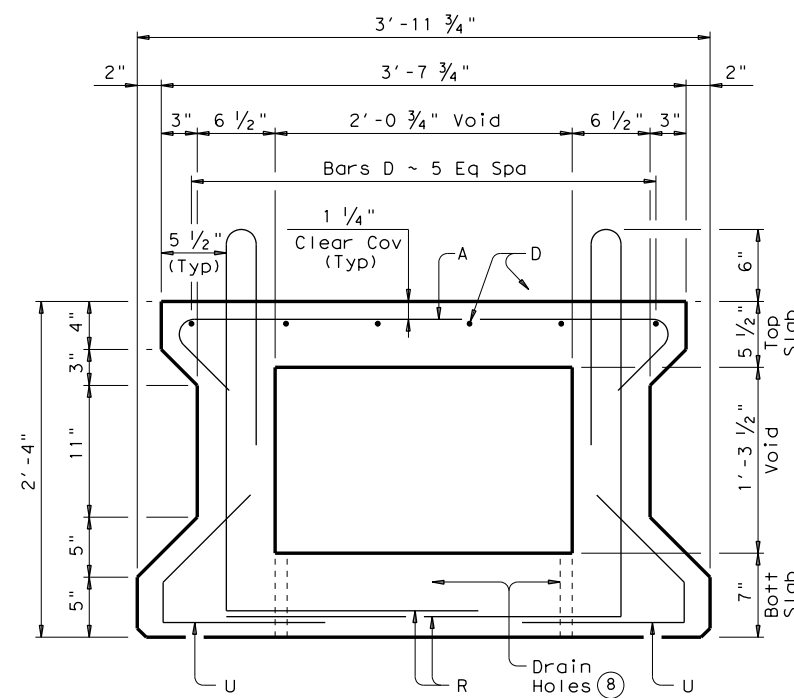
END BLOCK SECTION ~ TYPE 4XB28



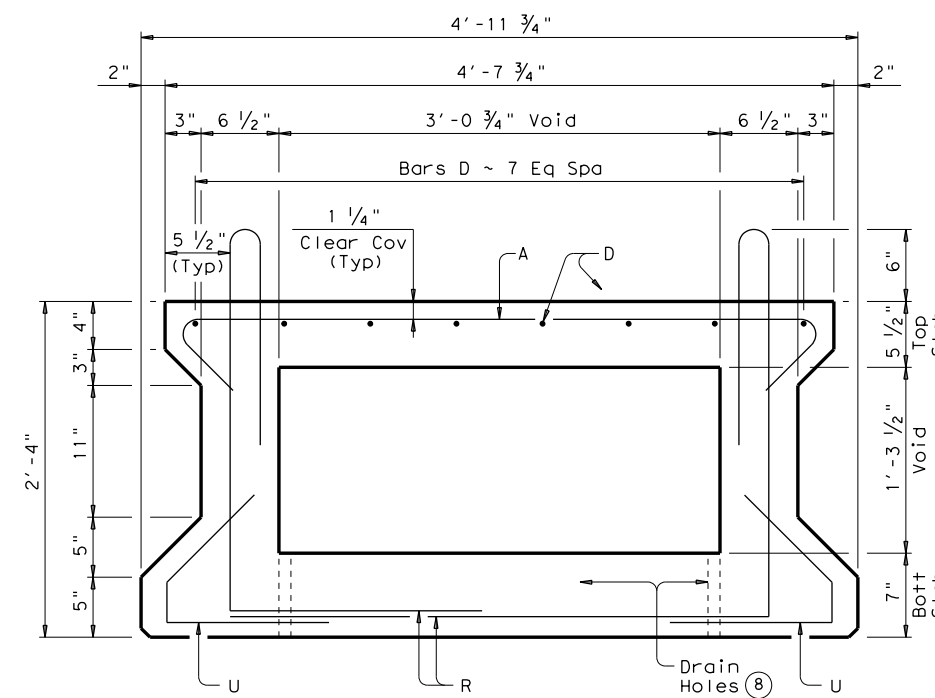
END BLOCK SECTION ~ TYPE 5XB28



- ⑤ 4" x 1 1/2" Vertical Slotted Hole at doweled beam end [labeled (D) on Bridge Layout]. Required for outside beam only or as shown on substructure details. Anchorage hole may be tapered (4 3/4" x 1 5/8") at base. If holes are formed with sheet metal, forms may be left in place.
- ⑦ See standard XBND or appropriate Prestressed Concrete X-Beam Standard Designs sheet for locations of pretensioning strands.
- ⑧ Drain Holes 1" Dia PVC Sch 40 Pipe as shown between strands in all beam void corners. See "Plan of Void".
- ⑨ Based on 150 pcf weight density of concrete. Weight of end blocks is not included.



TYPICAL SECTION ~ TYPE 4XB28



TYPICAL SECTION ~ TYPE 5XB28

BEAM PROPERTIES			
	Type 4XB28	Type 5XB28	
Area	in ²	781	931
Y top	in	14.86	14.87
Y bott	in	13.14	13.13
I	in ⁴	72,798	90,793
Weight ⑨	lb/ft	813	970

HL93 LOADING SHEET 2 OF 3



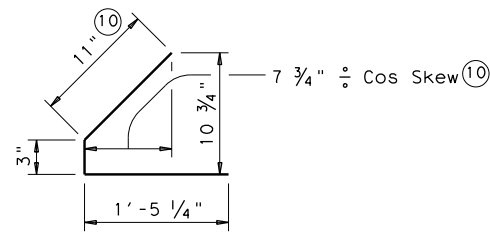
PRESTRESSED CONCRETE X-BEAM DETAILS (TYPE XB28)

XB28

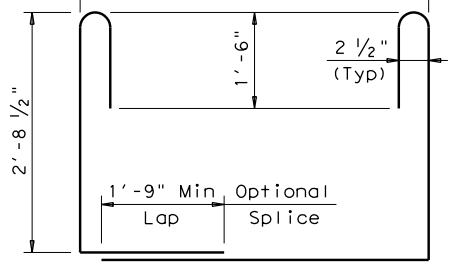
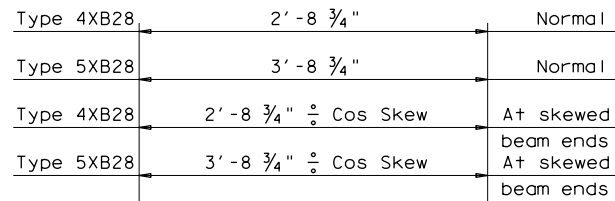
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©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS	2121	01	104	IH 10
	DIST	COUNTY	SHEET NO.	
ELP	EL PASO		793	

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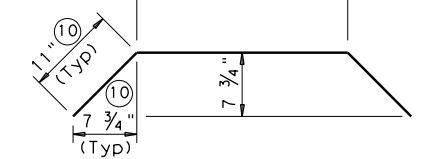
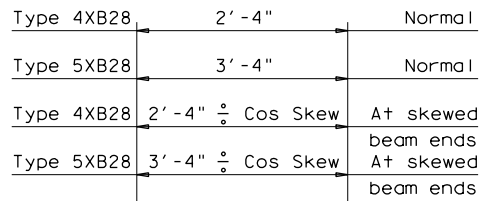
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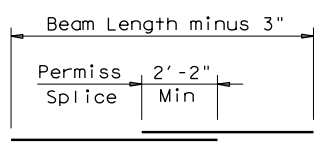
BARS U (#4) (11)



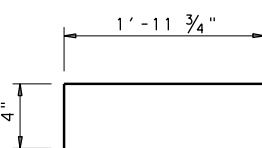
BARS R (#4) (11)



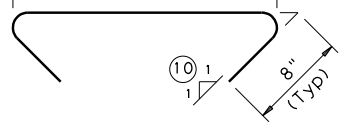
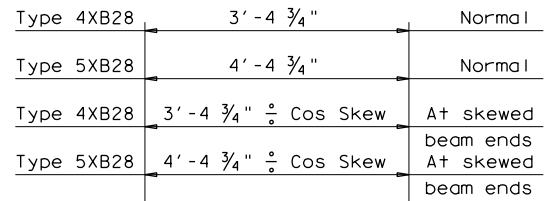
BARS Y (#5)



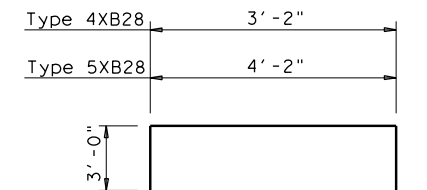
BARS D (#5) (11)
(Place splices in middle third of span)



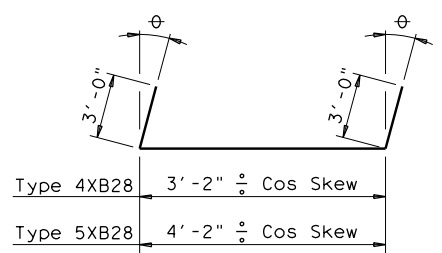
BARS N (#4)



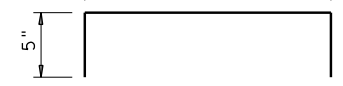
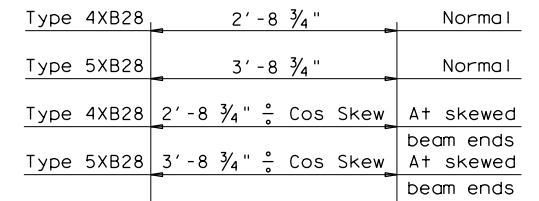
BARS A (#4) (11)



BARS W (#5)
(For square beam ends)



BARS W (#5)
(For skewed beam ends)



BARS M (#5)

- (10) Dimension will vary slightly with skew. Adjust as necessary.
- (11) At the Fabricator's option, alternate designs utilizing deformed welded wire reinforcement (WWR) conforming to ASTM A1064 of equivalent cross sectional area to replace all or some of Bars A, D, R and U will be permitted. Smooth Welded Wire Reinforcement is not permitted.

GENERAL NOTES:
Designed according to AASHTO LRFD Specifications. Use Class H concrete. Use Class H (HPC) if required elsewhere in plans. All reinforcing steel must be Grade 60.
Two-stage monolithic casting is required. The concrete in the first stage cast (bottom beam flange) must remain plastic until the second stage cast (webs and top beam flange) is placed. Vibrate as required to ensure consolidation between the two casts.
1 1/4" clear cover to reinforcement is required unless noted otherwise.
These details are applicable for skews up to 30 degrees only.
Chamfer bottom beam corners 3/4" or round to a 3/4" radius.
Punch through all drain holes, removing any blockage, before beams are shipped.



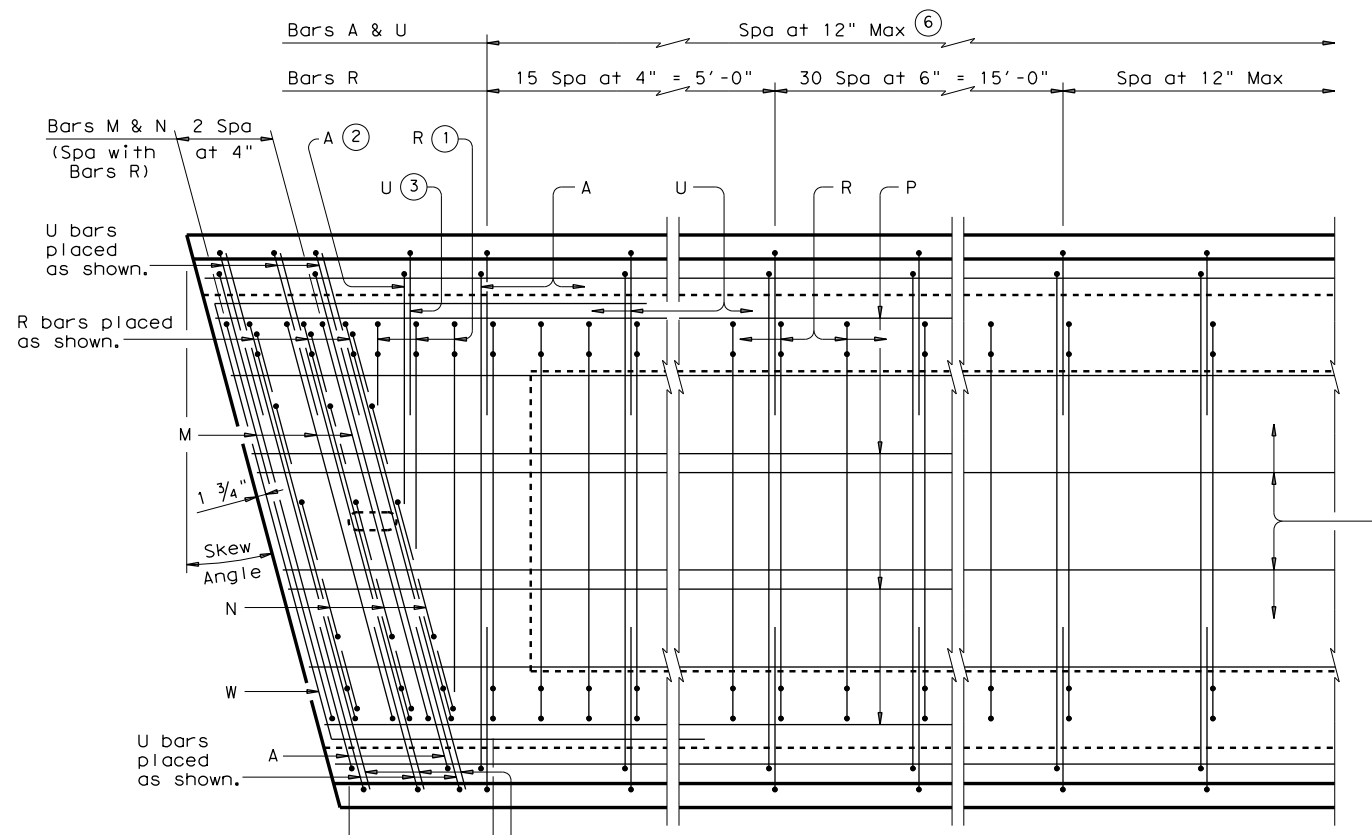
PRESTRESSED CONCRETE X-BEAM DETAILS (TYPE XB28)

XB28

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©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS	2121	01	104	IH 10
	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	794	

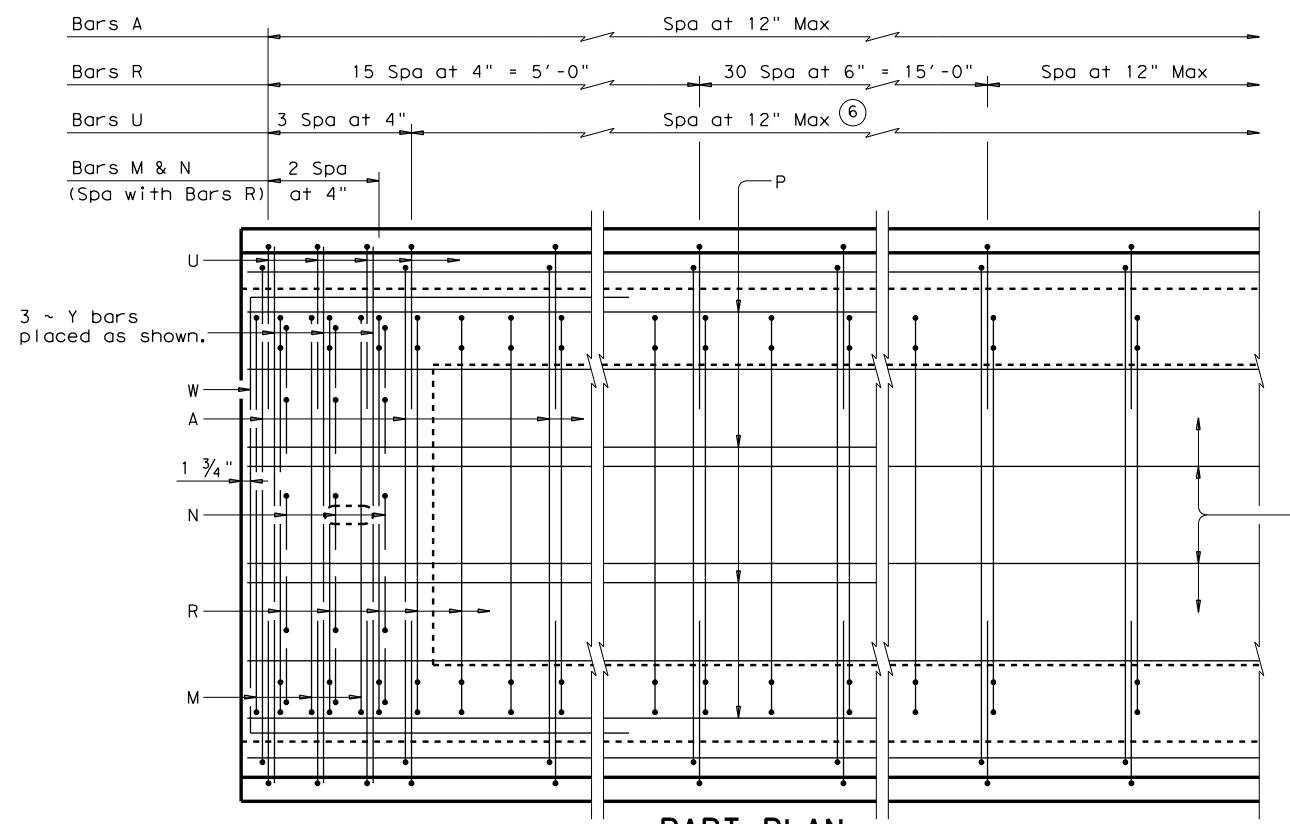
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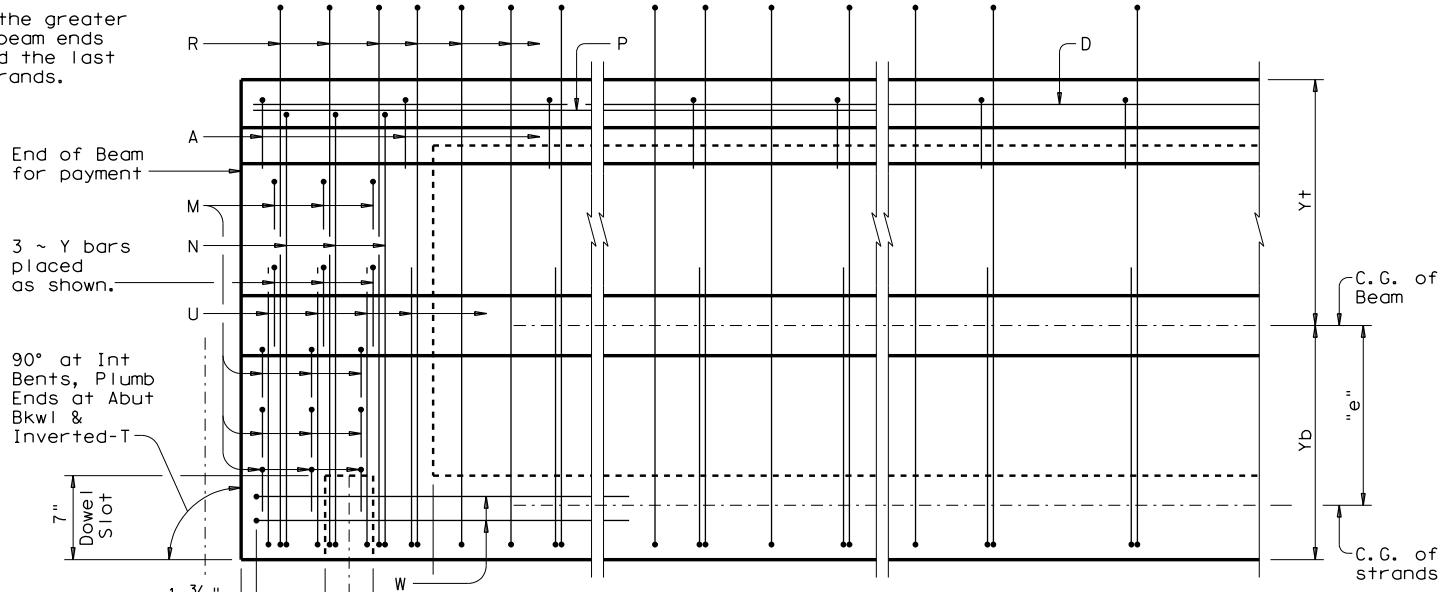


PART PLAN ~ 15° SKEW
 (Showing Type 4XB40 with skew angles over 0° to 15°)

⑥ End Bars U the greater of 5' from beam ends or 3' beyond the last debonded strands.



PART PLAN
 (Showing Type 4XB40)



ELEVATION

- ① Bars R spaced at 4" Max. Cut Bars R as necessary to provide 2" clear between adjacent bars as shown.
- ② Bars A spaced with Bars U. Cut Bars A as necessary to provide 2" clear between adjacent bars as shown.
- ③ Bars U spaced at 8" Max as shown.
- ④ Measured perpendicular to ℓ Interior Bents, Abutment Bkwl or Inverted-T Stem.
- ⑤ ℓ 4" x 1 1/2" Vertical Slotted Hole at doweled beam end [labeled (D) on Bridge Layout]. Required for outside beam only or as shown on substructure details. Anchorage holes may be tapered (4 3/4" x 1 5/8") at base. If holes are formed with sheet metal, forms may be left in place.

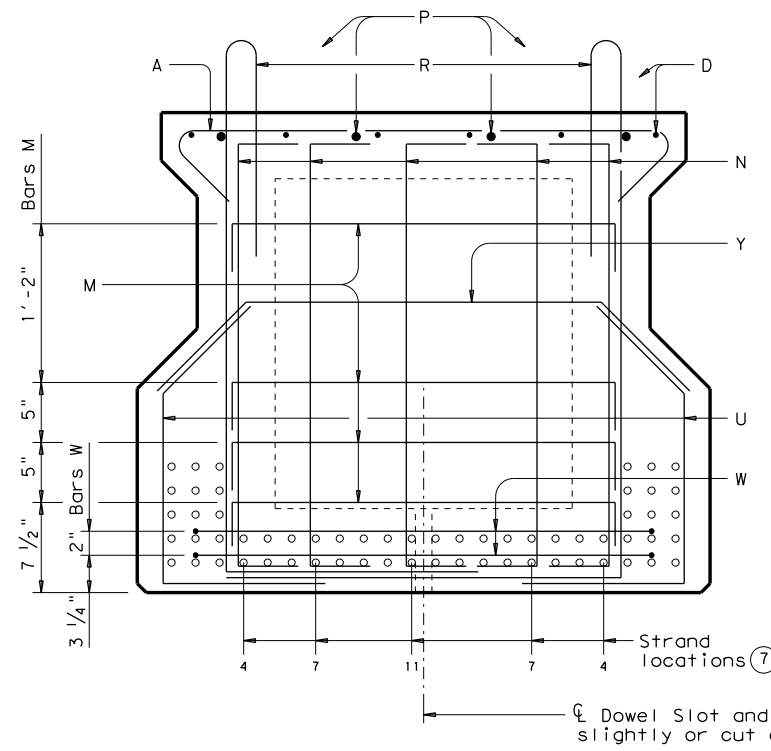
PART PLAN ~ 30° SKEW
 (Showing Type 4XB40 with skew angles over 15° to 30°)

HL93 LOADING SHEET 1 OF 3

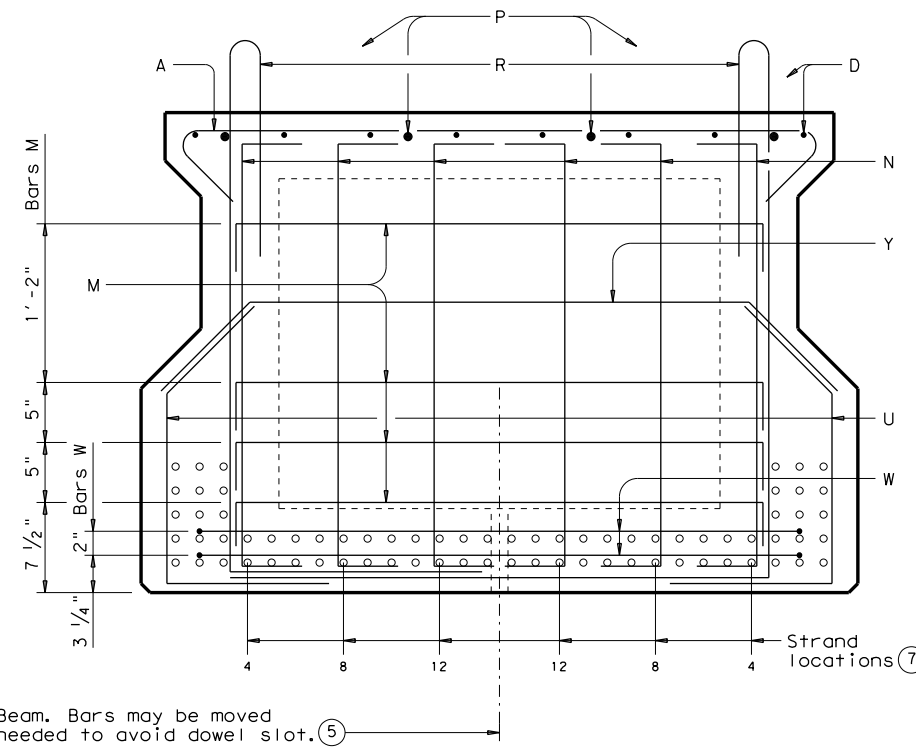
		Bridge Division Standard	
PRESTRESSED CONCRETE X-BEAM DETAILS (TYPE XB40)			
XB40			
FILE: xbstds04.dgn	DN: JMH	CK: AM	DW: JTR
©TxDOT June 2011	CONT SECT	JOB	HIGHWAY
REVISIONS	2121 01	104	IH 10
	DIST	COUNTY	SHEET NO.
	ELP	EL PASO	795

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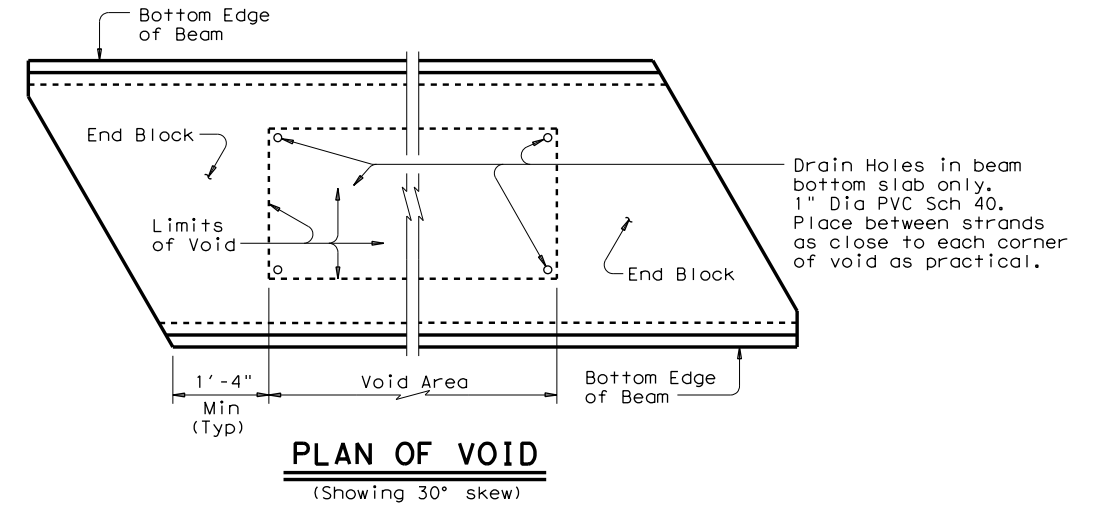
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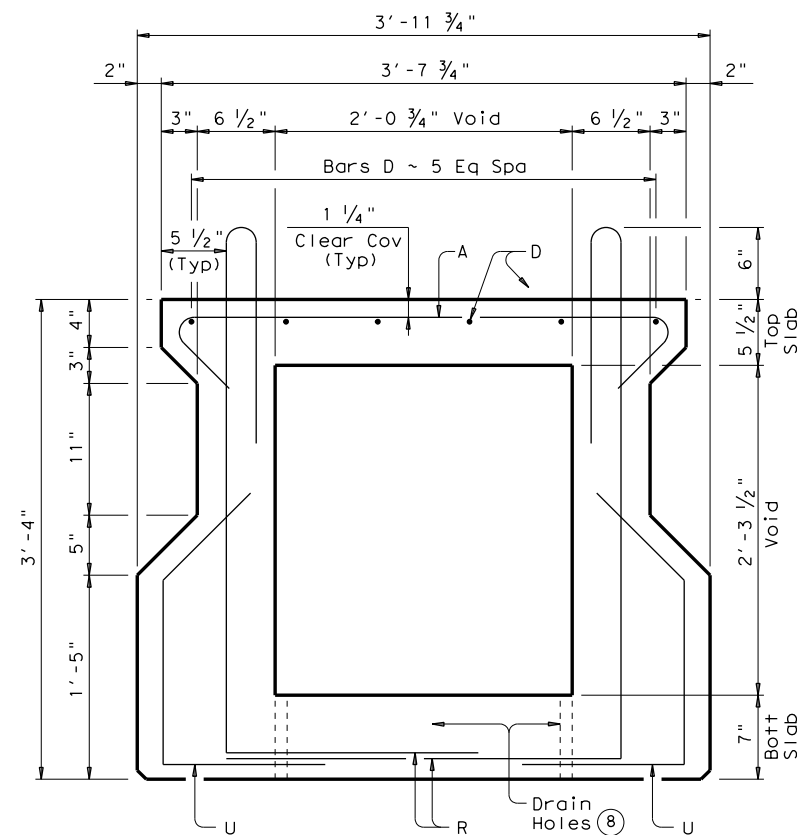
END BLOCK SECTION ~ TYPE 4XB40



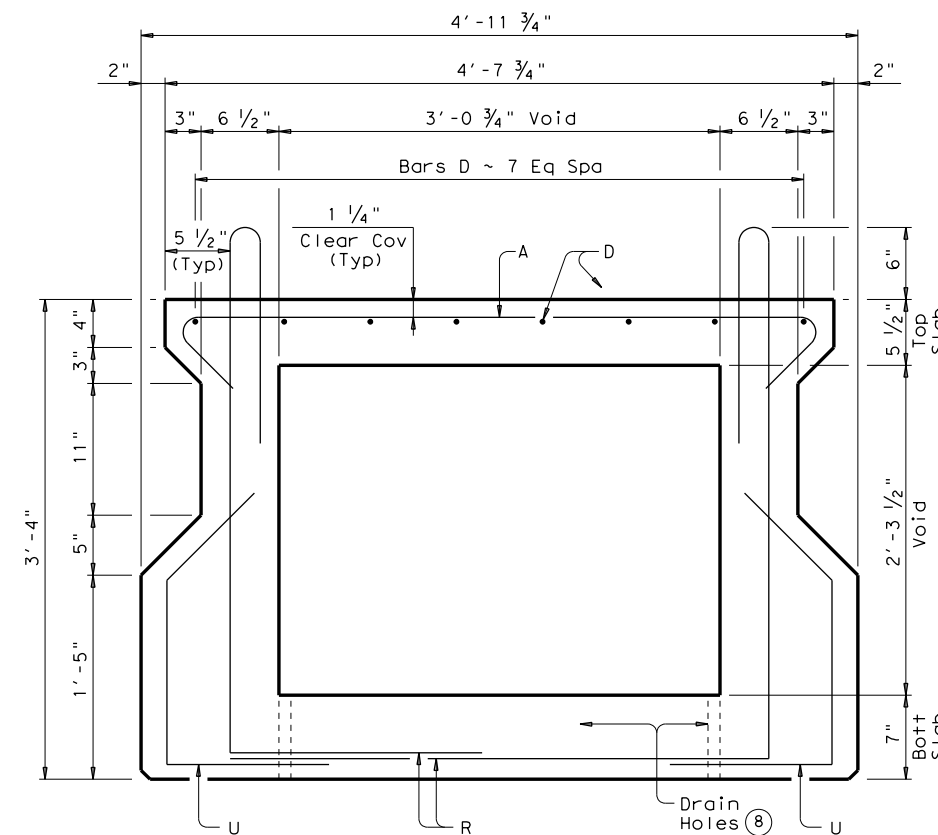
END BLOCK SECTION ~ TYPE 5XB40



- ⑤ 4" x 1 1/2" Vertical Slotted Hole at doweled beam end [labeled (D) on Bridge Layout]. Required for outside beam only or as shown on substructure details. Anchorage hole may be tapered (4 3/4" x 1 5/8") at base. If holes are formed with sheet metal, forms may be left in place.
- ⑦ See standard XBND or appropriate Prestressed Concrete X-Beam Standard Designs sheet for locations of pretensioning strands.
- ⑧ Drain Holes 1" Dia PVC Sch 40 Pipe as shown between strands in all beam void corners. See "Plan of Void".
- ⑨ Based on 150 pcf weight density of concrete. Weight of end blocks is not included.



TYPICAL SECTION ~ TYPE 4XB40



TYPICAL SECTION ~ TYPE 5XB40

BEAM PROPERTIES			
	Type 4XB40	Type 5XB40	
Area	in ²	1,057	1,207
Y top	in	21.82	21.80
Y bott	in	18.18	18.20
I	in ⁴	190,840	233,453
Weight ⑨	lb/ft	1,101	1,257

HL93 LOADING SHEET 2 OF 3

Texas Department of Transportation Bridge Division Standard

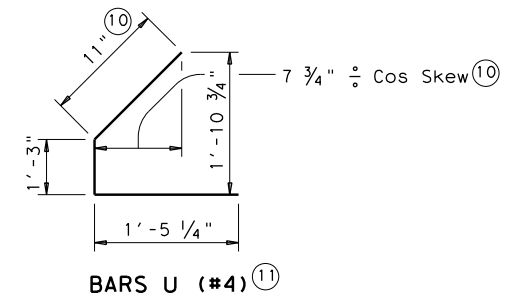
PRESTRESSED CONCRETE X-BEAM DETAILS (TYPE XB40)

XB40

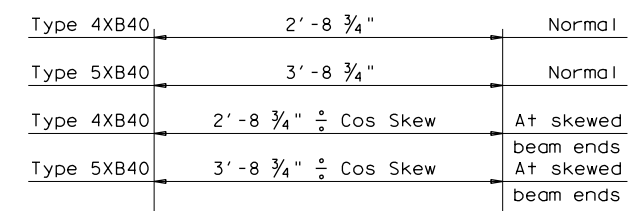
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©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS	2121	01	104	IH 10
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	ELP	EL PASO	796	

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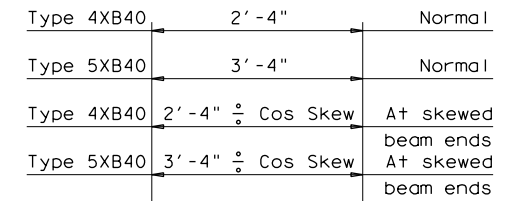
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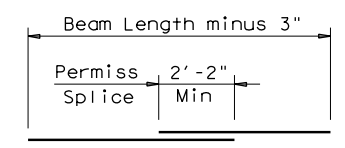
BARS U (#4) (11)



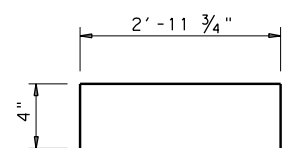
BARS R (#4) (11)



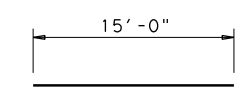
BARS Y (#5)



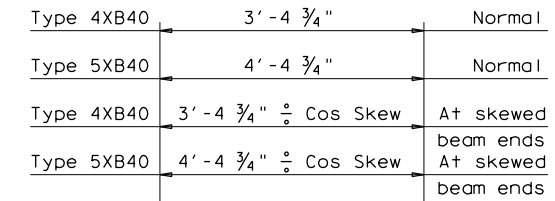
BARS D (#5) (11)
(Place splices in middle third of span)



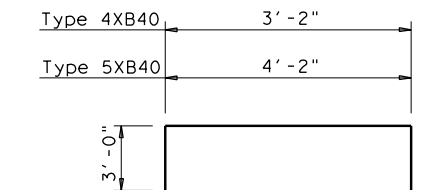
BARS N (#4)



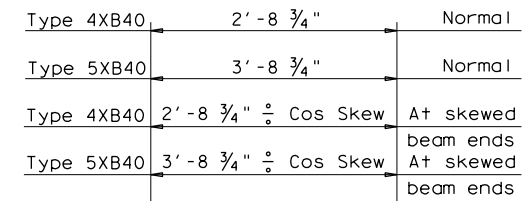
BARS P (#6)
(Place at beam ends)



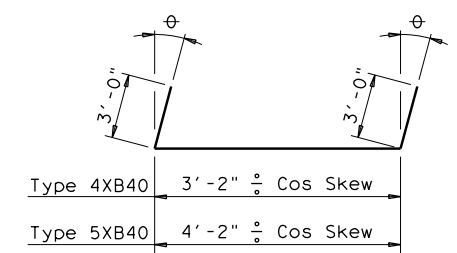
BARS A (#4) (11)



BARS W (#5)
(For square beam ends)



BARS M (#5)



BARS W (#5)
(For skewed beam ends)

- (10) Dimension will vary slightly with skew. Adjust as necessary.
- (11) At the Fabricator's option, alternate designs utilizing deformed welded wire reinforcement (WWR) conforming to ASTM A1064 of equivalent cross sectional area to replace all or some of Bars A, D, R and U will be permitted. Smooth Welded Wire Reinforcement is not permitted.

GENERAL NOTES:
Designed according to AASHTO LRFD Specifications. Use Class H concrete. Use Class H (HPC) if required elsewhere in plans. All reinforcing steel must be Grade 60.
Two-stage monolithic casting is required. The concrete in the first stage cast (bottom beam flange) must remain plastic until the second stage cast (webs and top beam flange) is placed. Vibrate as required to ensure consolidation between the two casts.
1 1/4" clear cover to reinforcement is required unless noted otherwise.
These details are applicable for skews up to 30 degrees only.
Chamfer bottom beam corners 3/4" or round to a 3/4" radius.
Punch through all drain holes, removing any blockage, before beams are shipped.

HL93 LOADING SHEET 3 OF 3

Texas Department of Transportation
Bridge Division Standard

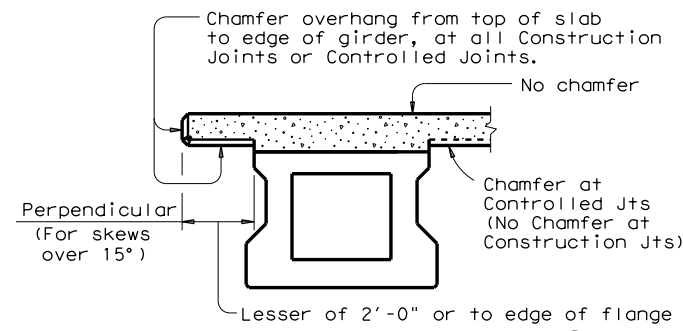
PRESTRESSED CONCRETE X-BEAM DETAILS (TYPE XB40)

XB40

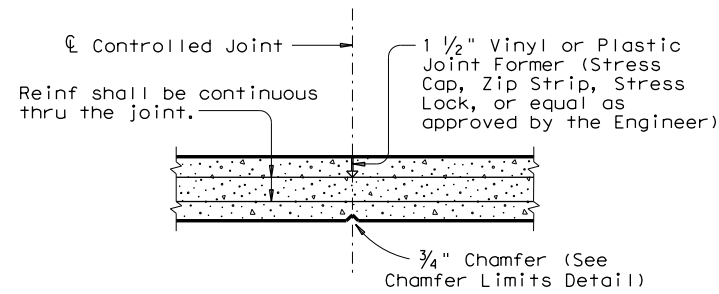
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©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS	2121	01	104	IH 10
	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	797	

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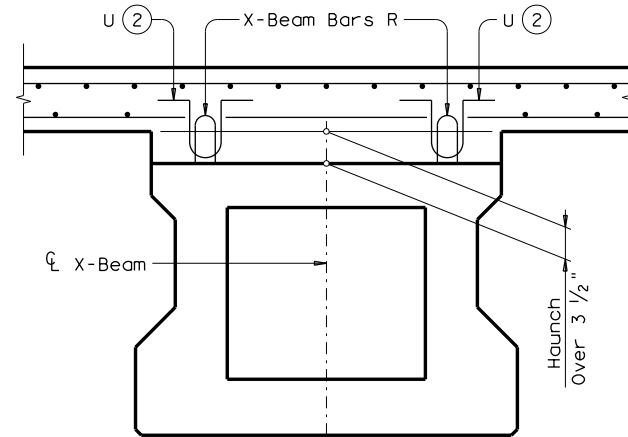


CHAMFER LIMITS DETAIL ①

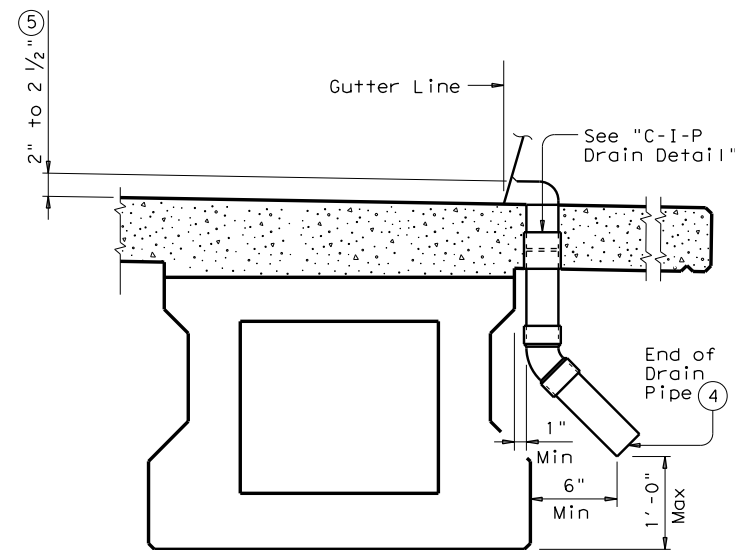
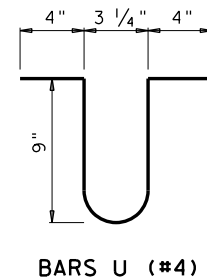


CONTROLLED JOINT DETAIL

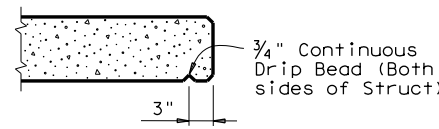
(Saw-cutting will not be allowed)



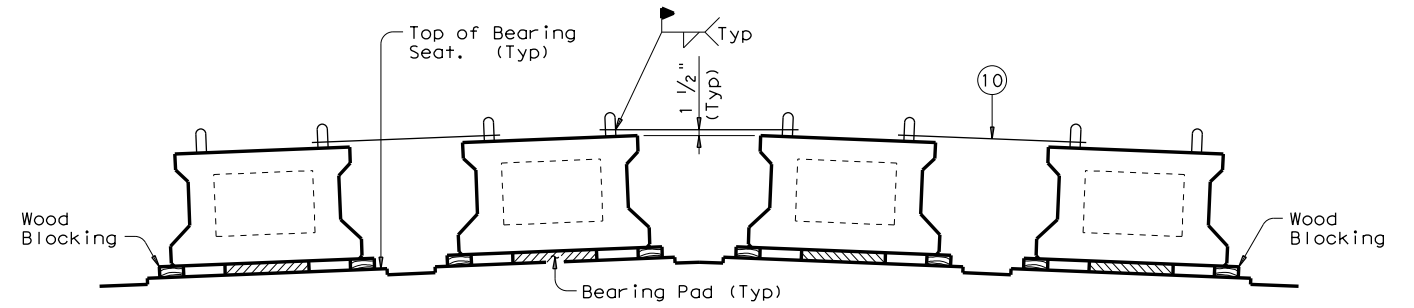
HAUNCH REINFORCING DETAIL



DRAIN DETAIL ⑥



DRIP BEAD DETAIL



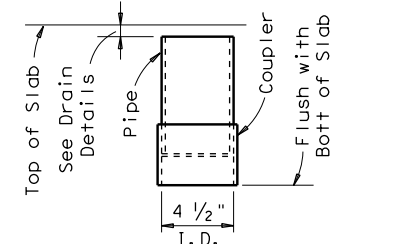
MINIMUM BEAM BLOCKING & BRACING DETAIL

Provide blocking at both sides of all beam ends supported by one bearing pad. Leave blocking in place for at least 4 days after slab is cast and afterwards remove at the Contractor's convenience.

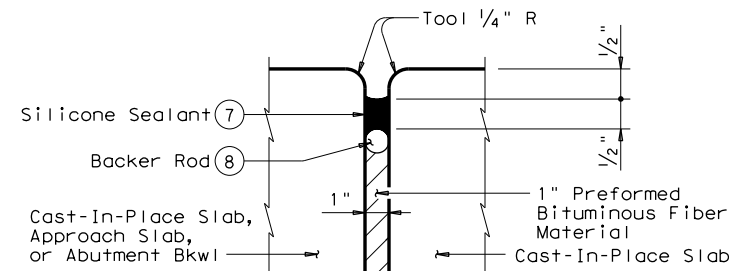
- ① See Span details for type of joint and joint locations.
- ② Space Bars U with Beam Bars R in all areas where measured haunch exceeds 3 1/2".
- ③ Roughen outside of PVC with coarse rasp or equal to ensure bond with cast-in-place concrete.
- ④ No water shall be discharged onto beams.
- ⑤ Drain Entrance formed in Rail or Sidewalk.
- ⑥ All drain pipe and fittings to be 4" diameter (Sch 40) PVC. See Item 481 "Pipe for Drains" for pipe, connections and solvent welding. Bend reinforcing steel to clear PVC 1". Drain length and location shall be as directed by the Engineer. No drains shall be permitted over roadways or railways, or within 10'-0" of Bent Caps. Degrease outside of exposed PVC, apply acrylic water base primer, then coat with same surface finishing material as used for outside beam face. Variations of the above designs, as required for the type of rail used and its location on the structure, shall be installed with the approval and direction of the Engineer.
- ⑦ Class 7 silicone sealant that conforms to DMS-6310. Install when ambient temperature is between 55°F and 85°F and rising. Engineer to determine allowable hours for sealant application.
- ⑧ 1 1/4" backer rod must be compatible with joint sealant. Use of multiple pieces to create a backer rod cross section is not permitted. Top of backer rod must be convex as shown.
- ⑨ The maximum distance between Type A expansion joints is 100'. See Bridge Layout for location of joints. Type A joints will not be paid for directly, but shall be considered subsidiary to Item 422, "Concrete Superstructures".
- ⑩ Weld a (#5) bar at each beam end as shown immediately after erection and prior to PCP placement. These bars are in addition to slab reinforcement.

GENERAL NOTES:

Designed in accordance with AASHTO LRFD Specifications.
 All items (reinforcing steel, drains, joint formers, etc.) shown on this sheet shall be considered subsidiary to other bid items.
 Systems equal to or better than those shown may be used provided details of such systems are submitted to and approved by the Engineer prior to erection.
 Use of these systems and/or details does not relieve the Contractor of the responsibility for the adequacy of the bracing and the safety of the structure.



C-I-P DRAIN DETAIL ③

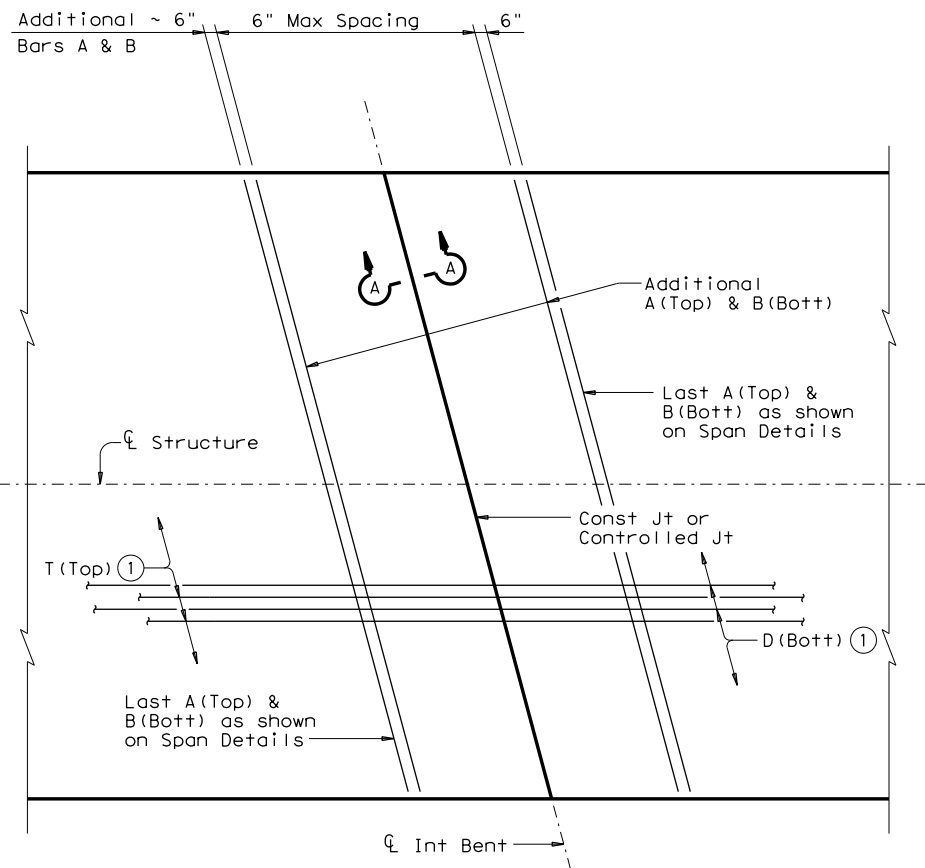


TYPE A JOINT DETAIL ⑨

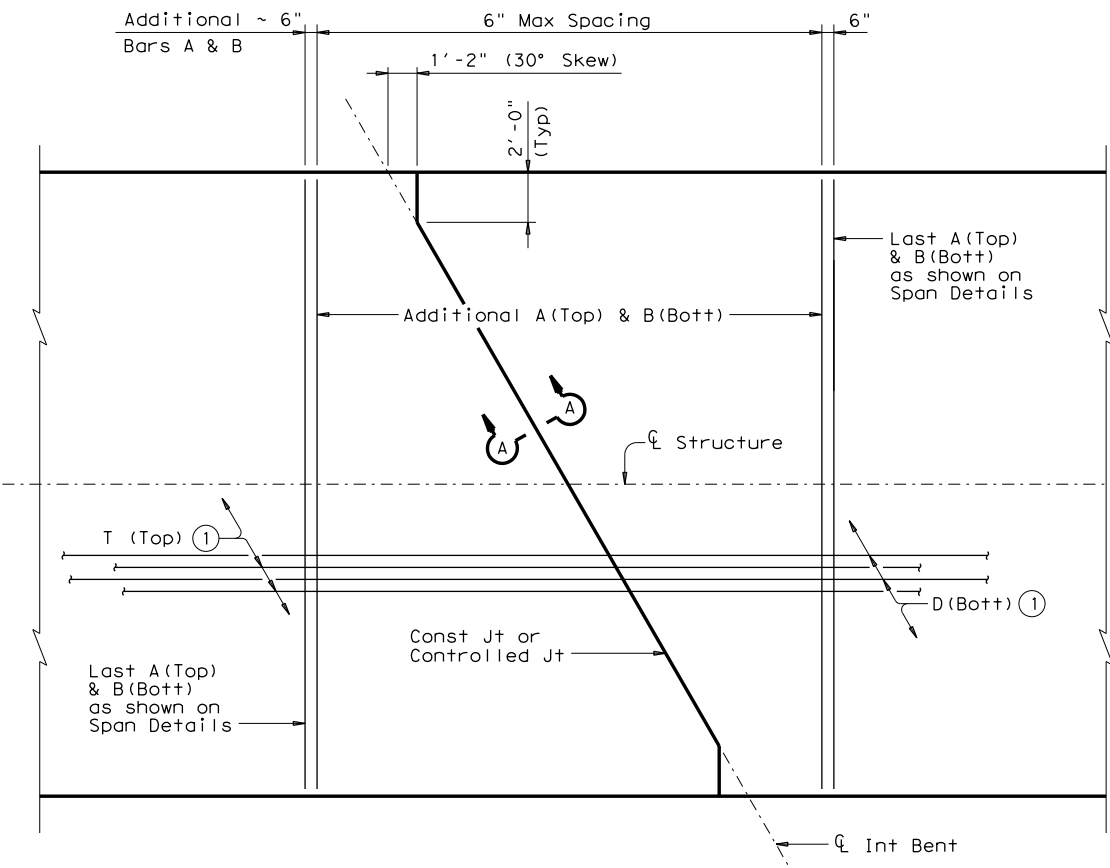
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MINIMUM ERECTION AND BRACING REQUIREMENTS WITH MISCELLANEOUS SLAB DETAILS PRESTR CONCRETE X-BEAMS XBBR-MS					
FILE: xbstds05.dgn	DN: JMH	CK: AM	DW: JTR	CK: JMH	
©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY	
REVISIONS	2121	01	104	IH 10	
	DIST	COUNTY	SHEET NO.		
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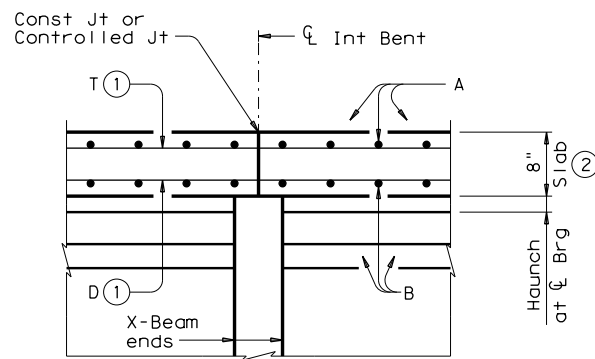
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PLAN FOR SKEW ANGLES 0° TO 15°
(Showing 15° skew)



PLAN FOR SKEW ANGLES OVER 15° TO 30°
(Showing 30° skew)



SECTION A-A

- ① Top and bottom mats must be continuous through joint.
- ② Maintain a constant 8" thick slab over the bent.

TABLE OF ALLOWABLE UNIT LENGTH	
Max Rdwy Grade, Percent	Unit Length Factor
0.00	4.6
1.00	4.4
2.00	4.2
3.00	4.0
4.00	3.7
5.00	3.5

BAR TABLE	
BAR	SIZE
A	#5
B	#5
D	#5
T	#4

Unit length must not exceed the length of the shortest end span times the Unit Length Factor shown in table or 400', whichever is less.

The details shown on this sheet are applicable for two and three span units comprised of the same x-beam type. Units may be comprised of different span lengths. See "Table of Allowable Unit Length".

GENERAL NOTES:

- Designed according to AASHTO LRFD Specifications.
- This standard is drawn showing right forward skew. See Bridge Layout for actual skew direction.
- Where multi-span units are indicated on the Bridge Layout, the Thickened Slab End details and reinforcement shown on Standard XBTS (Bars AA, G, H, J, K, and M) and on the Span Details will be omitted where slabs are continuous over interior bents. At these locations, the slab details and reinforcement will be as shown on this sheet or on Standard PCP (if using this option).
- Thickened Slab End reinforcement and details still apply at expansion joint locations (ends of units).
- See Span Details for remainder of slab reinforcement and details.
- All reinforcing must be Grade 60.
- Concrete strength $f'c = 4,000$ psi.
- Bar laps, where required, will be as follows:
 - Uncoated ~ #4 = 1'-5"
 - ~ #5 = 1'-9"
 - Epoxy Coated ~ #4 = 2'-1"
 - ~ #5 = 2'-7"

The details shown on this sheet are applicable for use only with the Prestressed Concrete X-Beam Standard Designs shown on standards XBSD-32, XBSD-38, XBSD-40 and XBSD-44.

HL93 LOADING

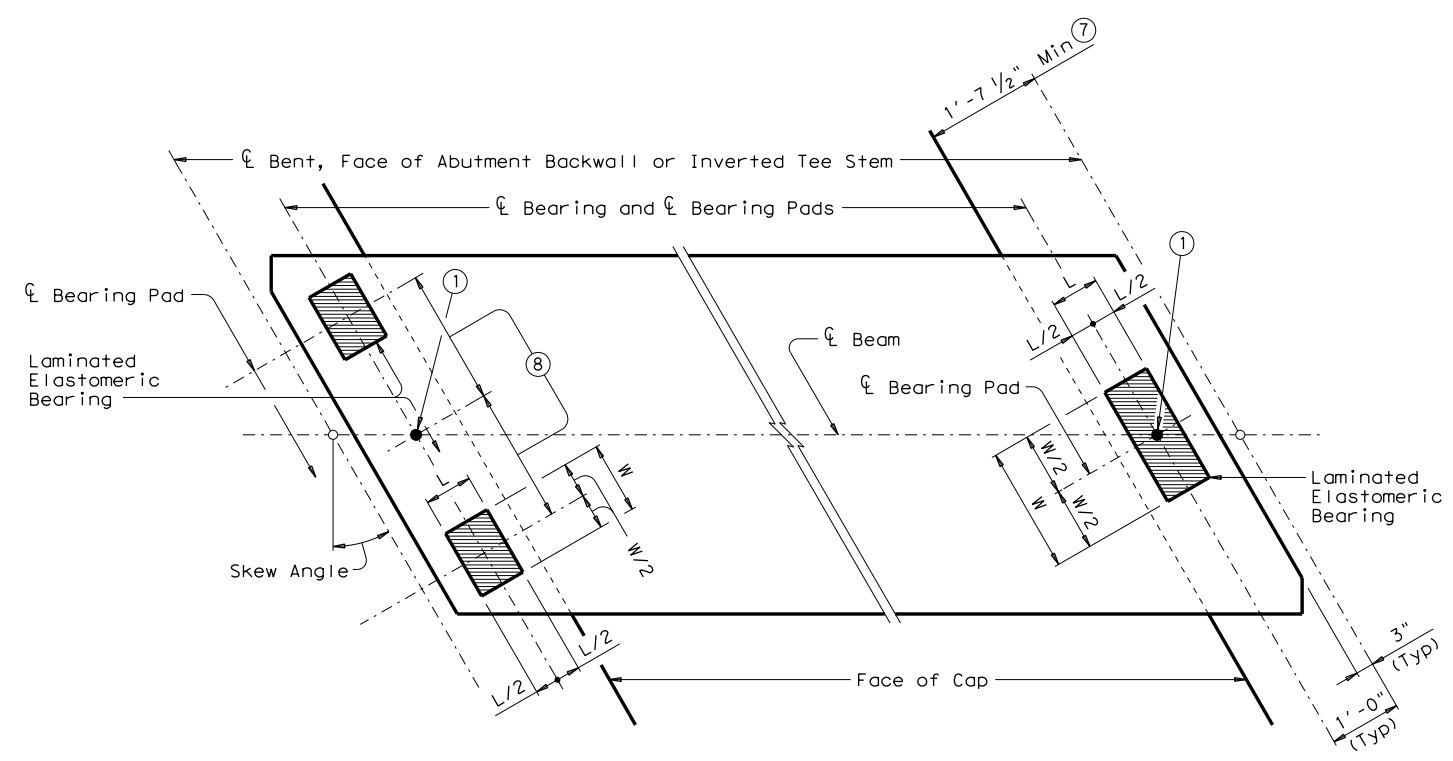
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CONTINUOUS SLAB DETAILS PRESTR CONC X-BEAM SPANS			
XBCS			
FILE: xbstde06.dgn	DN: JMH	CK: AM	DW: JTR
©TxDOT June 2011	CONT	SECT	JOB
REVISIONS	2121	01	104
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	ELP	EL PASO	799

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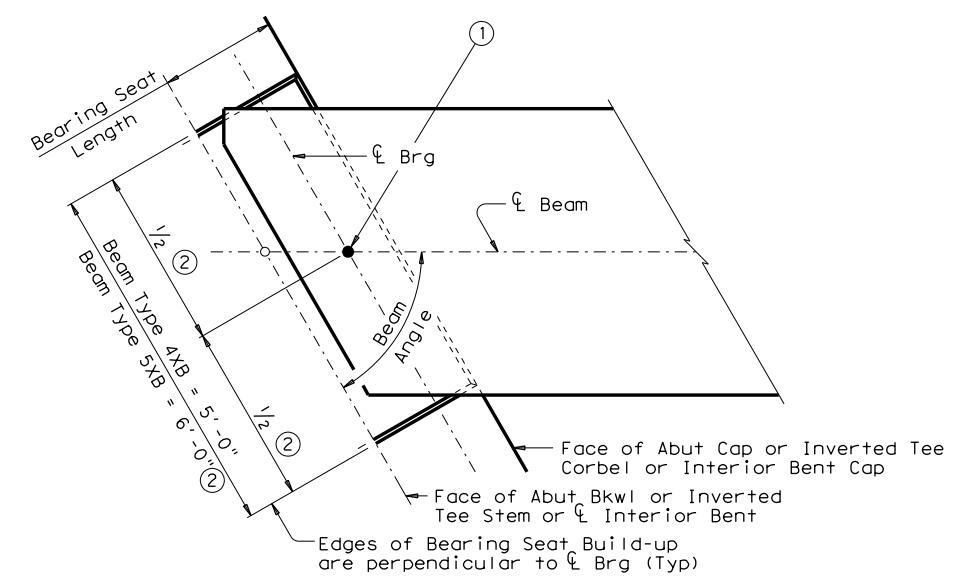
ELASTOMERIC BEARING DIMENSIONS TABLE

BEARING TYPE ④	BEAM TYPE	ONE BEARING		TWO BEARINGS	
		L	W	L	W
XB20-"N"	4XB20	8"	21"	8"	10"
	5XB20	8"	21"	8"	10"
XB28-"N"	4XB28	8"	21"	8"	10"
	5XB28	8"	21"	8"	10"
XB34-"N"	4XB34	8"	21"	8"	12"
	5XB34	8"	21"	8"	12"
XB40-"N"	4XB40	8"	21"	8"	12"
	5XB40	8"	21"	8"	12"



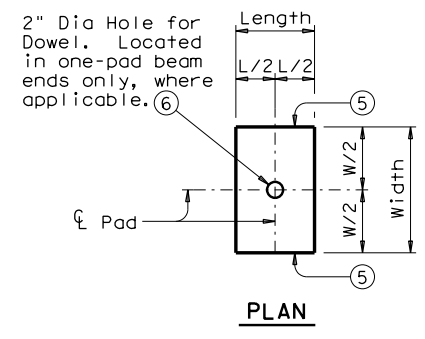
ELASTOMERIC BEARING PLACEMENT DIAGRAMS

Place one bearing at forward station beam end.
 Place two bearings at back station beam end.

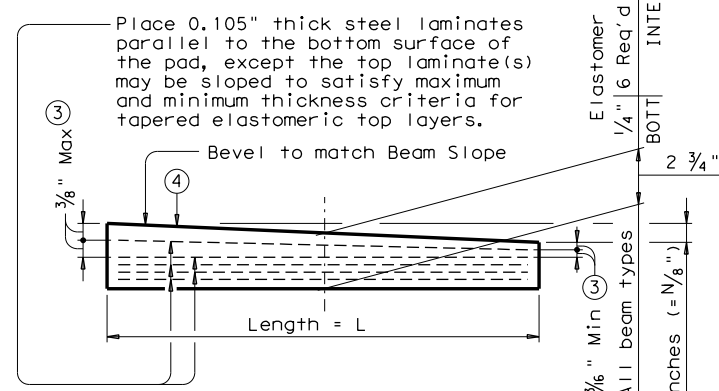


BEARING SEAT DIMENSIONS

Used when shown on Abutment and/or Bent details.



PLAN



ELEVATION (50 DUROMETER)

ELASTOMERIC BEARING SECTION

The use of Polyisoprene (natural rubber), for the manufacture of bearing pads, is not permitted.

- ① Dowel at doweled beam end [labeled (D) on Bridge Layout]. Required for outside girder only or as shown on substructure details.
- ② Measured along \bar{C} of Bearing.
- ③ Maximum and minimum layer thicknesses shown are for elastomer only, on tapered layers.
- ④ Indicate BEARING TYPE on all pads. For tapered pads, locate BEARING TYPE on the high side. Include the value of "N" (amount of taper in $\frac{1}{8}$ " increments) in this mark.
 Examples: N=0, (for 0" taper)
 N=1, (for $\frac{1}{8}$ " taper)
 N=2, (for $\frac{1}{4}$ " taper)
 (etc.)
 Fabricated pad top surface slope must not vary from plan beam slope by more than $(\frac{0.0625"}{Length})$ IN/IN.
- ⑤ Locate Permanent Mark here.
- ⑥ Provide 2" Dia Hole only at locations required. See substructure details for location.
- ⑦ Minimum dimension required for the bearings shown on this standard.
- ⑧ 4XB beams = 1'-2" along \bar{C} Bearing (Typ).
 5XB beams = 1'-8" along \bar{C} Bearing (Typ).

GENERAL NOTES:

Set beams on elastomeric bearings of the dimensions shown. Center bearings as near nominal \bar{C} bearing as possible within limits shown. Constant thickness bearings may be used for moderate beam slopes up to 0.008 ft/ft. For skewed supports, Bearings beveled for beam slope may not provide uniform contact. However, predicted contact is considered within allowable tolerances. Shop drawings for approval are required. A bearing layout which identifies location and orientation of all bearings must be developed by the bearing fabricator. Permanently mark each bearing in accordance with the bearing layout. Provide copy of the bearing layout to the Engineer. Cost of furnishing and installing elastomeric bearings is to be included in unit price bid for "Prestressed Concrete X-Beams". Details are drawn showing right forward skew. See Bridge Layout for actual direction. These details are applicable for skews up to 30 degrees only.

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ELASTOMERIC BEARING DETAILS PRESTR CONC X-BEAMS

XBEB

FILE: xbstde07.dgn	DN: JMH	CK: AM	DW: JTR	CK: JMH
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REVISIONS	2121	01	104	IH 10
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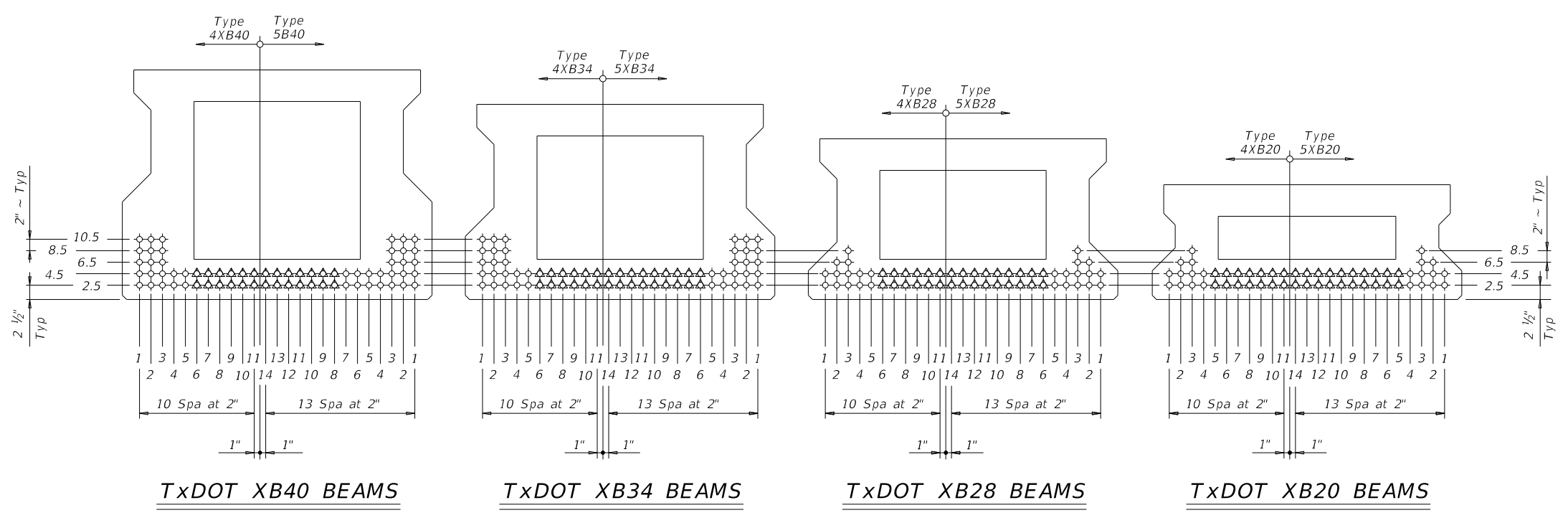
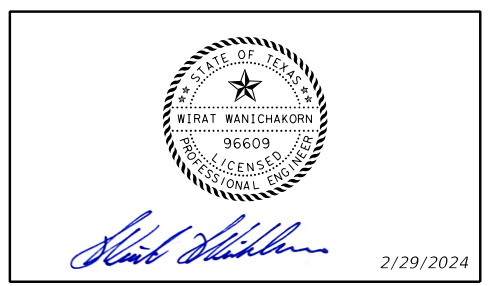
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STRUCTURE	DESIGNED BEAMS (STRAIGHT STRANDS)																	OPTIONAL DESIGN							
	SPAN NO.	BEAM NO.	BEAM TYPE	PRESTRESSING STRANDS							DEBONDED STRAND PATTERN PER ROW							CONCRETE		DESIGN LOAD COMP STRESS (TOP \bar{c}) (SERVICE I)	DESIGN LOAD TENSILE STRESS (BOTTOM \bar{c}) (SERVICE III)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I)	LIVE LOAD DISTRIBUTION FACTOR		
				NON-STD STRAND PATTERN	TOTAL NO.	SIZE (in)	STRGTH (ksi)	"e" \bar{c} (in)	"e" END (in)	TOT NO. DEB	DIST FROM BOTTOM (in)	NO. OF STRANDS		NUMBER OF STRANDS DEBONDED TO (ft from end)					RELEASE STRGTH f'_{ci} (ksi)				MINIMUM 28 DAY COMP STRGTH f'_c (ksi)	②	
												TOTAL	DE-BONDED	3	6	9	12	15						Moment	Shear
#AA BRIDGE	ALL	ALL	5XB20		30	0.6	270	6.90	6.87	6	2.5	28	6	2	2	2	0	0	4.400	5.000	2.882	-3.353	2253	0.554	0.689
#AB BRIDGE	ALL	ALL	5XB20		32	0.6	270	6.78	6.72	6	2.5	28	6	2	2	2	0	0	4.700	5.000	3.046	-3.613	2469	0.616	0.800
#BA BRIDGE	ALL	ALL	5XB40		40	0.6	270	15.10	14.90	10	2.5	28	10	2	6	0	2	0	4.000	5.000	3.350	-3.245	5973	0.531	0.704
#BB BRIDGE	ALL	ALL	5XB40		44	0.6	270	14.98	14.70	12	2.5	28	12	2	6	2	0	2	4.200	5.000	3.449	-3.403	6294	0.547	0.750
#CA BRIDGE	ALL	ALL	5XB20		30	0.6	270	6.90	6.87	6	2.5	28	6	2	2	2	0	0	4.400	5.000	2.912	-3.428	2329	0.579	0.739
#CB BRIDGE	ALL	ALL	5XB20		30	0.6	270	6.90	6.87	6	2.5	28	6	2	2	2	0	0	4.400	5.000	2.922	-3.479	2362	0.572	0.737
#DA BRIDGE	1&3 2	ALL ALL	5XB28 5XB28		18 38	0.6 0.6	270 270	10.63 10.11	10.63 9.96	6 6	2.5 2.5	28 28	0 8	0 2	0 2	0 2	0 0	0 2	4.000 4.600	5.000 5.000	1.850 3.254	-2.121 -3.587	2437 3895	0.605 0.561	0.764 0.742
#DB BRIDGE	1&3 2	ALL ALL	5XB28 5XB28		18 38	0.6 0.6	270 270	10.63 10.11	10.63 9.96	6 6	2.5 2.5	28 28	0 8	0 2	0 2	0 2	0 0	0 2	4.000 4.600	5.000 5.000	1.850 3.253	-2.121 -3.591	2437 3888	0.605 0.554	0.764 0.740

DESIGN NOTES:
 Designed in accordance with AASHTO LRFD Bridge Design Specifications.
 Prestress losses for the designed beams have been calculated for a relative humidity of 60 percent. Optional designs must likewise conform.

FABRICATION NOTES:
 Provide Class H concrete.
 Provide Grade 60 reinforcing steel bars.
 Use low relaxation strands, each pretensioned to 75 percent of fpu.
 When shown on this sheet, the Fabricator has the option of furnishing either the designed beam or an approved optional beam design. All optional design submittals and shop drawings must be signed, sealed and dated by a Professional Engineer registered in the State of Texas.
 Locate strands for the designed beam as low as possible on the 2" grid system unless a non-standard stand pattern is indicated. Fill row "2.5", then row "4.5", then row "6.5", etc. Place strands within a row as follows:
 1) Locate a strand in each "1" position.
 2) Place strand symmetrically about vertical centerline of box.
 3) Space strands as equally as possible across the entire width.
 Stand debonding must comply with Item 424.4.2.2.4.
 Do not debond strands in position "1". Distribute debonded strands equally about the vertical centerline. Decrease debonded lengths working inward, with debonding staggered in each row.
 Full-length debonded strands are only permitted in positions marked Δ .

- ① Based on the following allowable stresses (ksi):
 Compression = 0.65 f'_{ci}
 Tension = 0.24 $\sqrt{f'_{ci}}$
 Optional designs must likewise conform.
- ② Portion of full HL93.



HL93 LOADING

Texas Department of Transportation
 Bridge Division Standard

PRESTRESSED CONCRETE X-BEAM DESIGNS (NON-STANDARD SPANS)

XBND

FILE: xbstds08.dgn	DN: TxDOT	CK: TxDOT	DW: SFS	CK: SDB
©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS	2121	01	104	IH 10
01-16: Notes	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	801	

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STRUCTURE	DESIGNED BEAMS (STRAIGHT STRANDS)																	OPTIONAL DESIGN							
	SPAN LENGTH (ft)	BEAM NO.	BEAM TYPE	PRESTRESSING STRANDS							DEBONDED STRAND PATTERN PER ROW							CONCRETE		DESIGN LOAD COMP STRESS (TOP $\bar{\epsilon}$) (SERVICE I)	DESIGN LOAD TENSILE STRESS (BOT $\bar{\epsilon}$) (SERVICE III)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I)	LIVE LOAD DISTRIBUTION FACTOR		
				NOV-STD STRAND PATTERN	TOTAL NO.	SIZE (in)	STRGTH (ksi)	"e" $\bar{\epsilon}$ (in)	"e" END (in)	TOT NO. DEB	DIST FROM BOTTOM (in)	NO. OF STRANDS		NUMBER OF STRANDS DEBONDED TO (ft from end)					RELEASE STRENGTH $\bar{\epsilon}$ (ksi)				MINIMUM 28 DAY COMP STRGTH $\bar{\epsilon}$ (ksi)	②	
												TOTAL	DE-BONDED	3	6	9	12	15						Moment	Shear
#1A BRIDGE	1, 2, 3	1-9	5XB20		38	0.6	270	6.51	6.41	6	2.5	28	6	2	2	2	0	0	5.600	5.700	3.174	-3.740	2533	0.584	0.741
#2A BRIDGE	1, 3	1-9	5XB20		32	0.6	270	6.78	6.72	6	2.5	28	6	2	2	2	0	0	4.700	5.000	2.671	-3.492	2574	0.796	0.796
	2	1-9	5XB20		38	0.6	270	6.51	6.41	6	2.5	28	6	2	2	2	0	0	5.500	5.700	3.211	-4.038	3036	0.796	0.796
#1B BRIDGE	1, 3	1-9	5XB20		38	0.6	270	6.51	6.41	6	2.5	28	6	2	2	2	0	0	5.800	5.800	3.482	-3.968	2723	0.603	0.752
#2B BRIDGE	2	1-9	5XB20		42	0.6	270	6.37	6.21	8	2.5	28	8	0	0	0	8	0	5.999	7.999	3.482	-3.968	2643	0.569	0.744
											2.5	28	14	0	8	2	2	2	5.500	5.700	3.412	-3.482	7033	0.796	0.796
#3A BRIDGE	1	1-8	5XB40		52	0.6	270	14.78	14.48	16	4.5	24	2	2	0	0	0	0	5.200	5.500	3.249	-3.148	6332	0.501	0.672
#3B BRIDGE	1	1-8	5XB40		52	0.6	270	14.78	14.48	16	4.5	24	2	2	0	0	0	0	5.200	5.500	3.249	-3.148	6332	0.501	0.672

DESIGN NOTES:

Designed in accordance with AASHTO LRFD Bridge Design Specifications. Prestress losses for the designed beams have been calculated for a relative humidity of 60 percent. Optional designs must likewise conform.

FABRICATION NOTES:

Provide Class H concrete.
 Provide Grade 60 reinforcing steel bars.
 Use low relaxation strands, each pretensioned to 75 percent of fpu.
 When shown on this sheet, the fabricator has the option of furnishing either the designed beam or an approved optional beam design. All optional design submittals and shop drawings must be signed, sealed and dated by a Professional Engineer registered in the State of Texas.
 Locate strands for the designed beam as low as possible on the 2" grid system unless a non-standard stand pattern is indicated. Fill row "2.5", then row "4.5", then row "6.5", etc. Place strands within a row as follows:
 1) Locate a strand in each "1" position.
 2) Place strand symmetrically about vertical centerline of box.
 3) Space strands as equally as possible across the entire width.
 Stand debonding must comply with Item 424.4.2.2.4.
 Do not debond strands in position "1". Distribute debonded strands equally about the vertical centerline. Decrease debonded lengths working inward, with debonding staggered in each row.
 Full-length debonded strands are only permitted in positions marked Δ .

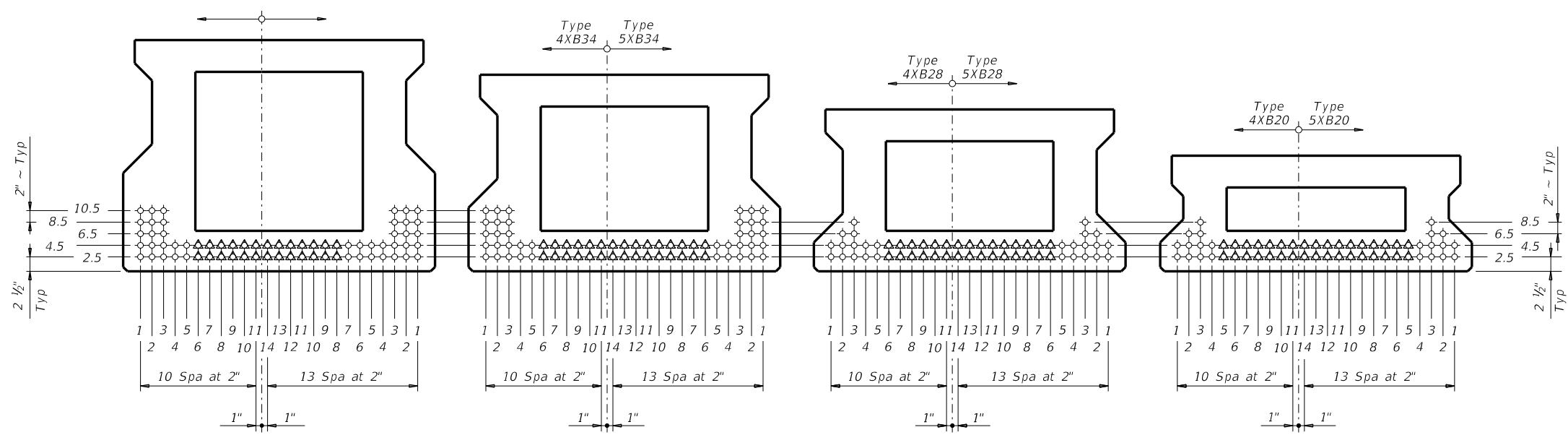
① Based on the following allowable stresses (ksi):

Compression = $0.65 f'_{ci}$

Tension = $0.24 \sqrt{f'_{ci}}$

Optional designs must likewise conform.

② Portion of full HL93.



TxDOT XB40 BEAMS

TxDOT XB34 BEAMS

TxDOT XB28 BEAMS

TxDOT XB20 BEAMS



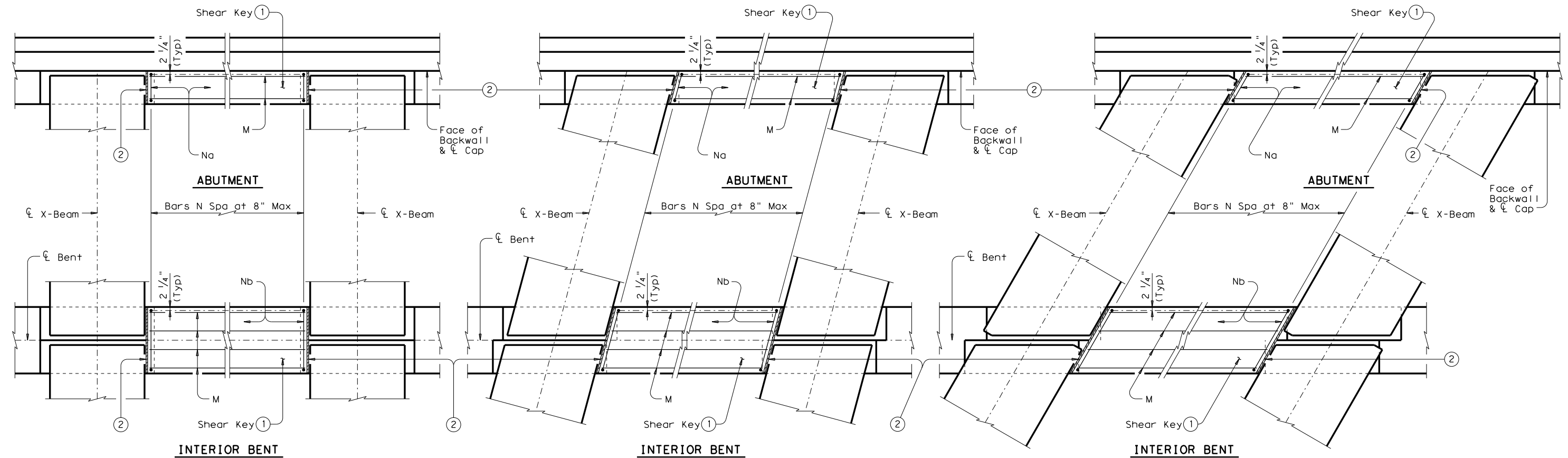
2/28/2024

HL93 LOADING

		Bridge Division Standard	
PRESTRESSED CONCRETE X-BEAM DESIGNS (NON-STANDARD SPANS)			
XBND			
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©TxDOT June 2011	CONT	SECT	JOB
REVISIONS	2121	01	104
01-16: Notes	DIST	COUNTY	SHEET NO.
	ELP	EL PASO	802

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PARTIAL PLANS WITH NO SKEW

Showing shear keys on 3'-6" wide caps.

PARTIAL PLANS WITH 15° SKEW

Showing shear keys on 3'-6" wide caps.

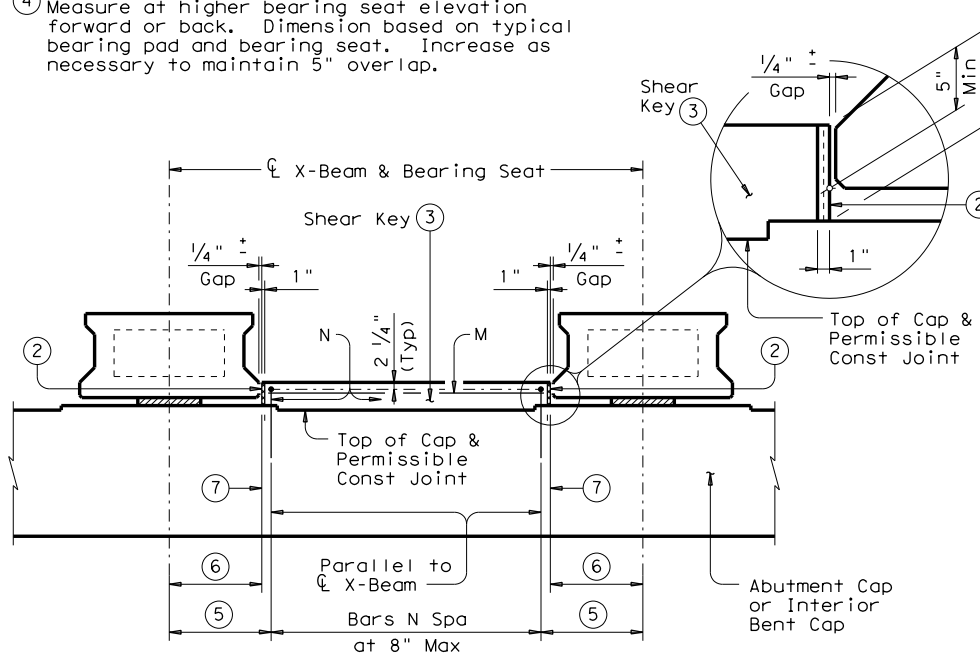
PARTIAL PLANS WITH 30° SKEW

Showing shear keys on 3'-6" wide caps.

- ① Place shear keys on the upstream side of structure between outside beam and next adjacent beam, unless shown otherwise on plans.
- ② UHMW Polyethylene Wear Pad. (Typ)
- ③ Leave a 1/4" gap plus or minus between beam and face of wear pad. Cast wear pad with shear key, smooth side facing beam. Care must be taken to keep concrete from flowing under beam. Slope top of shear keys in accordance with Item 420.4.9, "Treatment and Finishing of Horizontal Surfaces."
- ④ Measure at higher bearing seat elevation forward or back. Dimension based on typical bearing pad and bearing seat. Increase as necessary to maintain 5" overlap.

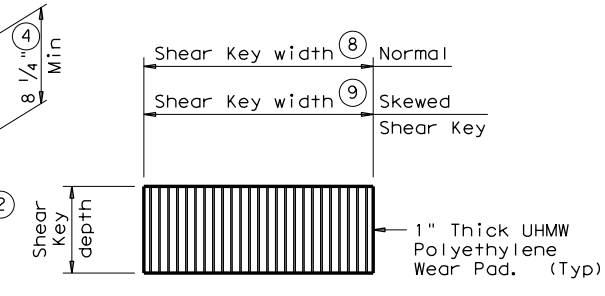
- ⑤ With No Skew = 2'-10", measured along ℓ Cap. With Skew = $2'-10" \div \cos \text{Skew}$, measured along ℓ Cap.
- ⑥ With No Skew = $2'-6 \frac{1}{4}"$, measured along ℓ Cap. With Skew = $2'-6 \frac{1}{4}" \div \cos \text{Skew}$, measured along ℓ Cap.
- ⑦ Face of UHMW Polyethylene Wear Pad. Smooth side of polyethylene wear pad facing beam.

- ⑧ Abutments = $\frac{1}{2}$ Cap width. Interior Bents = Cap width.
- ⑨ Abutments = $\frac{1}{2}$ Cap width $\div \cos \text{Skew}$. Interior Bents = Cap width $\div \cos \text{Skew}$.

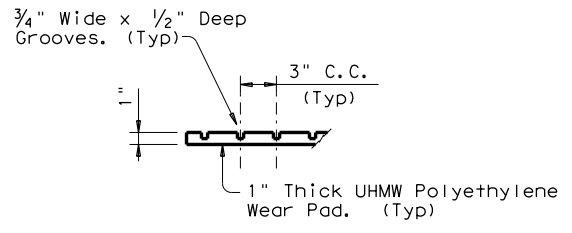


PARTIAL ELEVATION OF ABUTMENT OR INTERIOR BENT CAP

Showing shear key with beam Type 5XB28. Other XB beam types similar.

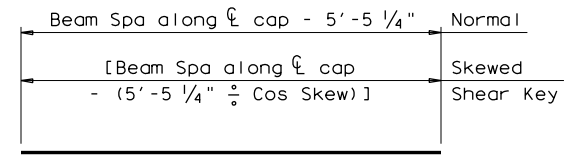


ELEVATION

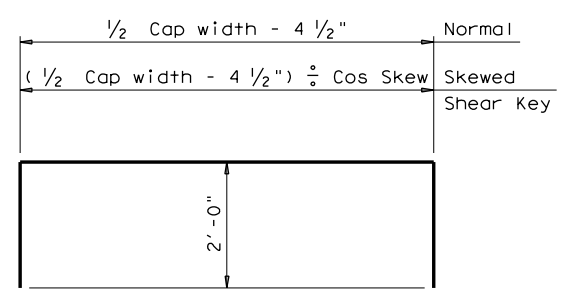


PART SECTION

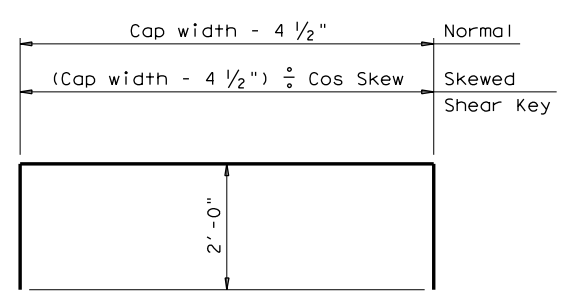
ULTRA HIGH MOLECULAR WEIGHT (UHMW) POLYETHYLENE WEAR PAD DETAILS



BARS M (#5)



BARS Na (#5) (For Abutments)



BARS Nb (#5) (For Interior Bents)

CONSTRUCTION NOTES:

Use Class "C" concrete. Use Class "C" (HPC) if shown elsewhere on the plans. Provide concrete with strength $f'c = 3,600$ psi. Provide Grade 60 reinforcing steel. Provide epoxy coated reinforcing steel for shear key if Abutment or Interior Bent reinforcing steel is epoxy coated. Provide Ultra High Molecular Weight Polyethylene wear pads in accordance with ASTM D6712.

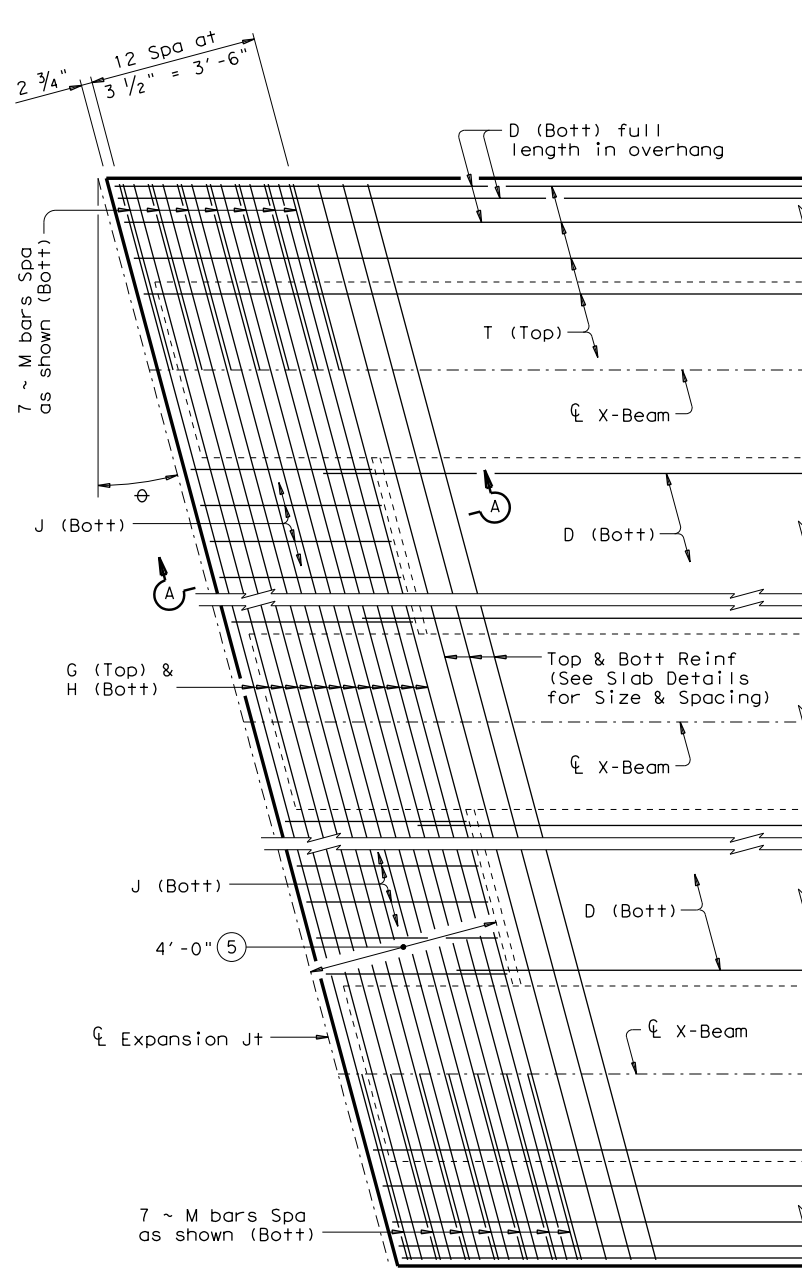
GENERAL NOTES:

Designed according to AASHTO LRFD Specifications. Details showing skew are drawn showing right forward skew. See Bridge Layout for actual skew direction. These details are limited to bridges skewed 30 degrees and less. This standard is only applicable for 5XB X-Beams. Modify details for bearing conditions, beam type, and beam spacing not shown on this standard. Details do not account for pedestal bearing seat. Include shear key concrete in Abutment or Bent concrete for payment. UHMW polyethylene wear pads are subsidiary to Class "C" concrete.

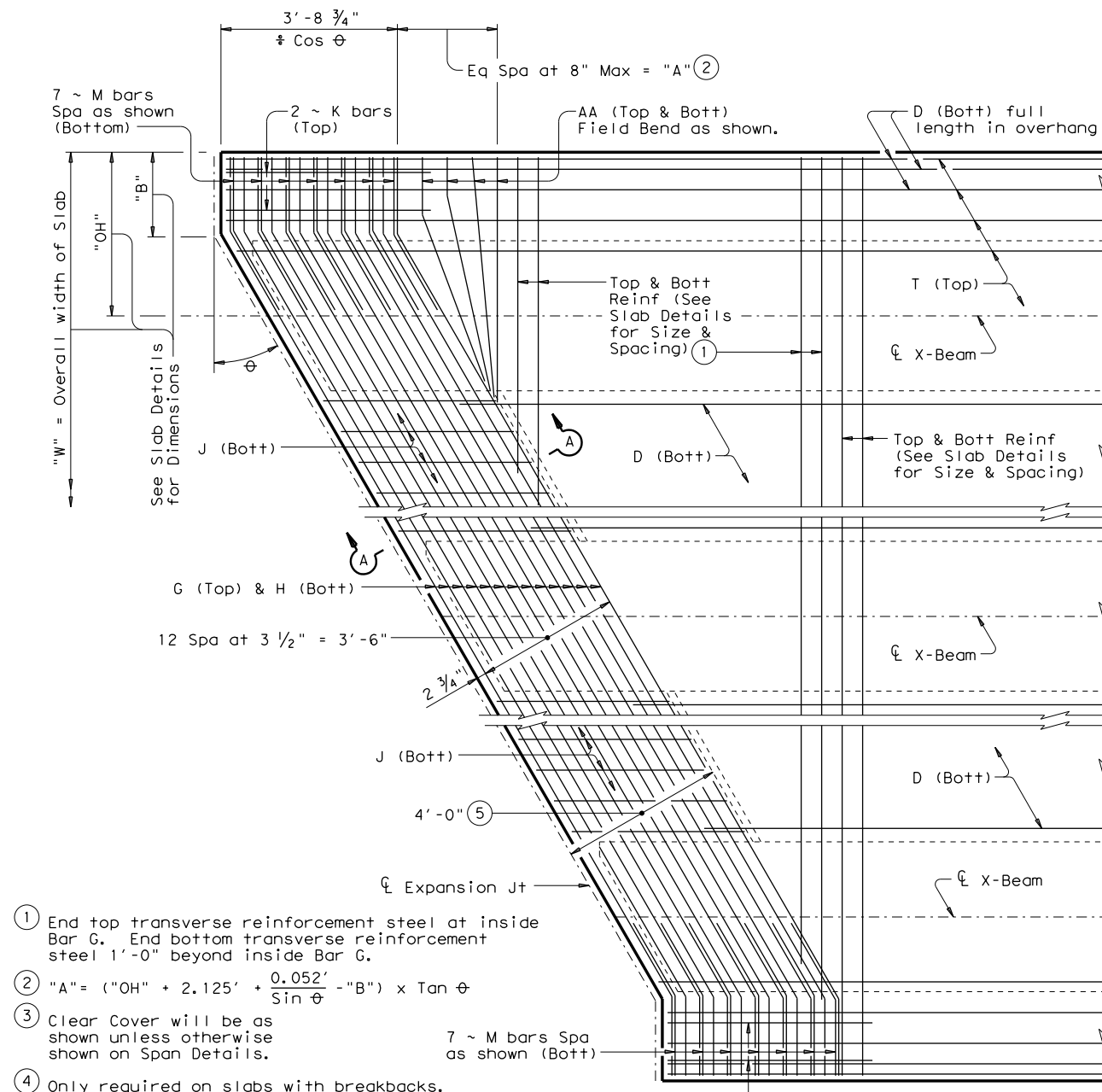
		Bridge Division Standard	
SHEAR KEY DETAILS PRESTR CONCRETE X-BEAMS			
XBSK			
FILE: xbstds92.dgn	DN: TxDOT	CK: TxDOT	DW: JTR
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REVISIONS	2121	01	104
	DIST	COUNTY	SHEET NO.
	ELP	EL PASO	803

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DATE: 2/28/2024
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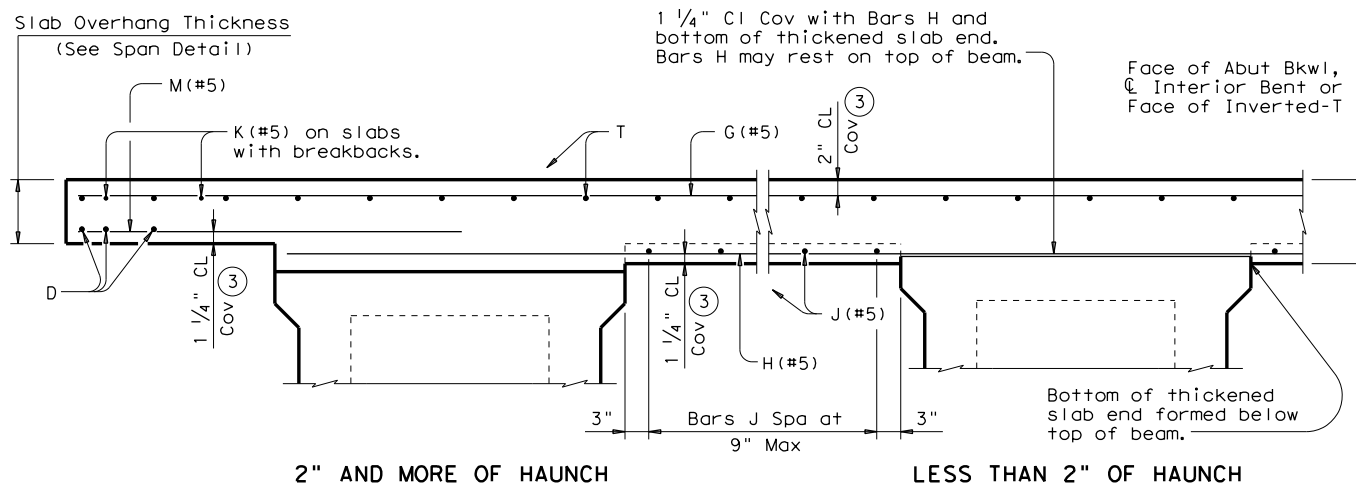


PARTIAL PLAN FOR SLABS WITHOUT BREAKBACK

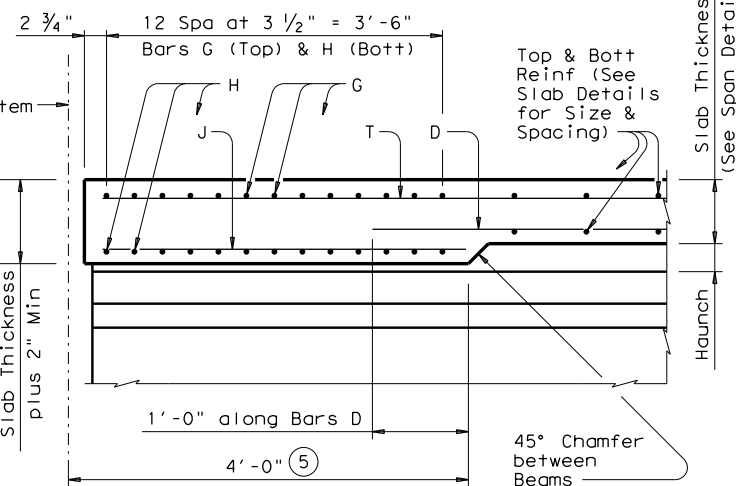


PARTIAL PLAN FOR SLABS WITH BREAKBACK

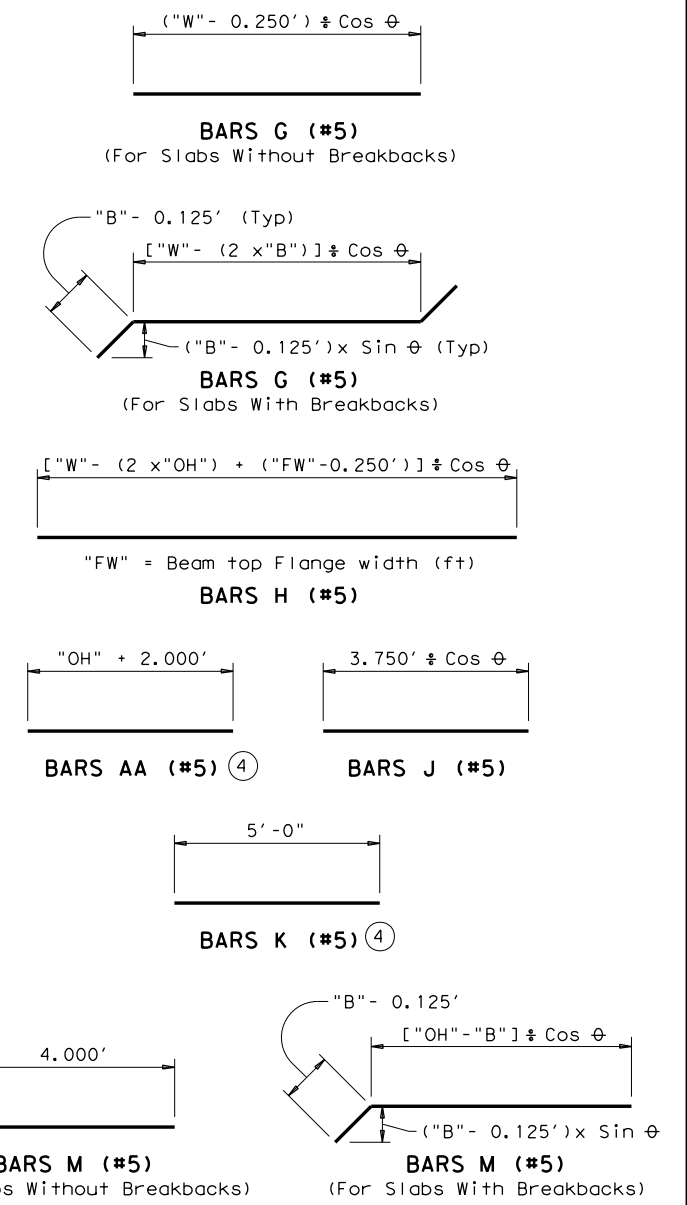
- ① End top transverse reinforcement steel at inside Bar G. End bottom transverse reinforcement steel 1'-0" beyond inside Bar G.
- ② $A = ("OH" + 2.125' + \frac{0.052'}{\sin \theta} - "B") \times \tan \theta$
- ③ Clear Cover will be as shown unless otherwise shown on Span Details.
- ④ Only required on slabs with breakbacks.
- ⑤ Thickened Slab End dimensioned perpendicular to Face of Bkwl, Centerline Interior Bent or Face of Inverted-T Stem.



TYPICAL TRANSVERSE SECTION
 (Showing Prestressed Conc X-Beams at ϕ Brg)



SECTION A-A
 (Showing with 2" and more of Haunch)



GENERAL NOTES:
 Designed according to AASHTO LRFD Specifications.
 These details are restricted to Prestressed Concrete X-Beam Spans.
 These details are to be used in conjunction with the Span Details and Standard PCP (if prestressed concrete panels are used).
 All reinforcing bars must be Grade 60 steel.
 If slab reinforcing steel is shown on the Slab Details to be epoxy coated, then Bars AA, G, K, H, J and M should be epoxy coated. Bar laps, where required, will be as follows:
 Uncoated ~ #4 = 1'-5"
 ~ #5 = 1'-9"
 Epoxy Coated ~ #4 = 2'-1"
 ~ #5 = 2'-7"

HL93 LOADING

Texas Department of Transportation Bridge Division Standard

THICKENED SLAB END DETAILS
PRESTRESSED CONCRETE
X-BEAM SPANS

XBTS

FILE: xbstae09.dgn	DN: JMH	CK: AM	DW: JTR	CK: JMH
©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS	2121	01	104	IH 10
	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	804	