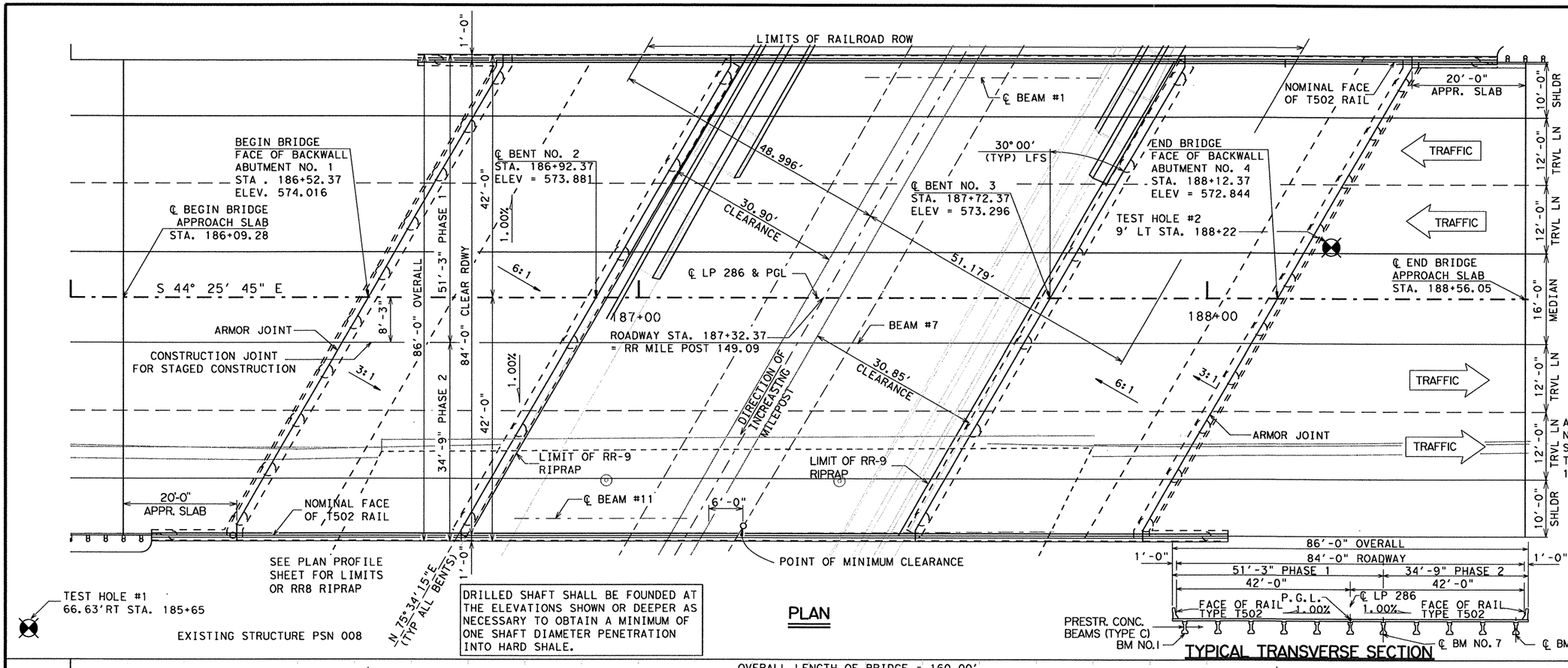
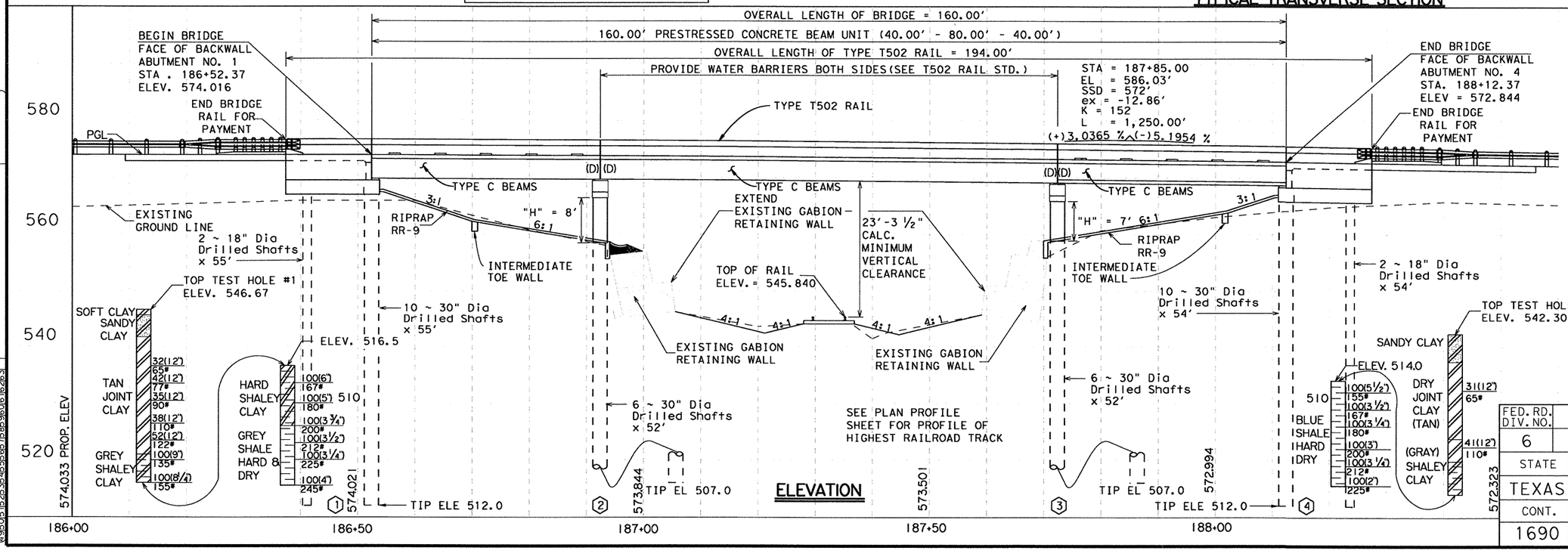


ANNUAL AVERAGE DAILY TRAFFIC = 0
NUMBER OF TRAINS = 0
SPEED OF TRAINS = 0
TRACK NOT IN SERVICE
10/2005



NBI NUMBER
BM # 101
RR SPIKE IN POWER POLE
65' LT OF STA 175+66.80
ELEV. = 552.49

BRIDGE LAYOUT UPRR RAILWAY OVERPASS

STA 186+00 TO STA 188+60
DOT No. 795 979M
NBI: 01 139 0 1690 01 026
DESIGN SPEED = 50
ADT (2003) = 6,700 VPD
FUNCTIONAL CLS=
MINOR ARTERIAL

Texas Department of Transportation

HORIZONTAL 1" = 20'
VERTICAL 1" = 20'

FED. RD. DIV. NO.	FED. PROJECT NO.		SHEET NO.
6	BR 2006(750)		98
STATE	DIST.	COUNTY	
TEXAS	01	LAMAR	
CONT.	SECT.	JOB	HIGHWAY NO.
1690	01	103	LP 286

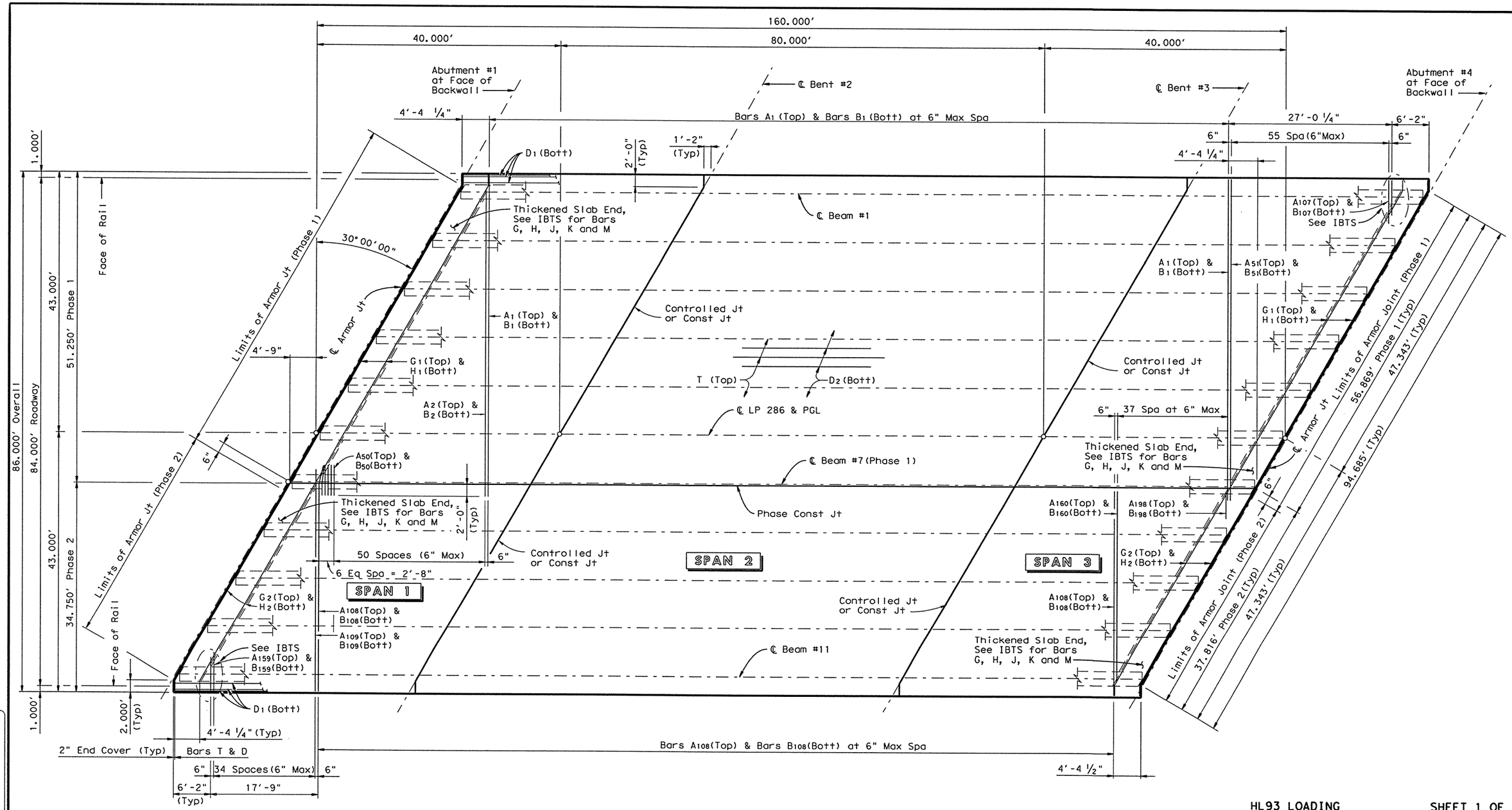
DN: LJN
CK: JFF
DW: WMB
CK: LJN
DATE: AUG 2005
COMMENTS:
6698 | y01.dgn

ACTIVE FILE LEVELS (DISPLAYED)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

STATE OF TEXAS
Richard G. Harper
81053
LICENSED PROFESSIONAL ENGINEER
7/12/06

STATE OF TEXAS
DACIO MARIN III
65549
REGISTERED PROFESSIONAL ENGINEER
25 July 2006

STATE OF TEXAS
MARK P. McCLELLAND
60710
REGISTERED PROFESSIONAL ENGINEER
7/24/06



PLAN

GENERAL NOTES:

Designed according to 2004 LRFD Standard and current Interim Specifications.

See IBTS 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 IBMS Standard for miscellaneous details.

All reinforcing shall be Grade 60.
Concrete strength f'c = 4,000 psi.

Bar laps, where required, shall be as follows:
Uncoated ~ #4 = 1'-5"
~ #5 = 1'-9"

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HL93 LOADING

SHEET 1 OF 2

Texas Department of Transportation
Bridge Division

160.00' PRESTRESSED CONCRETE BEAM UNIT

UPRR RAILWAY OVERPASS PHASE 1 & 2

FILE: 6698pb01.dgn	DN: LJN	CK: JFF	DW: WMB	CK: LJN
© TxDOT AUG 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	PAR	BR 2006(750)		105
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	LAMAR	1690	01	103	LP286

LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

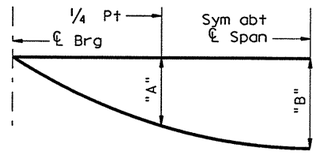
PATH:

TABLE OF SECTION DEPTHS

	Span No.	"X" at ℄ Brg	"Y" at ℄ Brg	③ "Z" at ℄ Span
Phase 1	1	9"	4'-1"	8 ¾"
	2	10 ½"	4'-2 ½"	8 ¾"
	3	9"	4'-1"	8 ¾"
Phase 2	1	9"	4'-1"	8 ¾"
	2	10 ½"	4'-2 ½"	8 ¾"
	3	9"	4'-1"	8 ¾"

③ Theoretical dimension

	Span No.	Beam No.	"A" Ft	"B" Ft
Phase 1	1	All	0.006	0.008
	2	All	0.099	0.139
	3	All	0.006	0.008
Phase 2	1	All	0.006	0.008
	2	All	0.099	0.139
	3	All	0.006	0.008



(E_C= 5 X 10^6 psi)

Deflections shown are due to concrete slab only. Calculated deflections shown are theoretical and actual dimensions may be less. Deflections shall be adjusted based on field observations.

DEAD LOAD DEFLECTION DIAGRAM

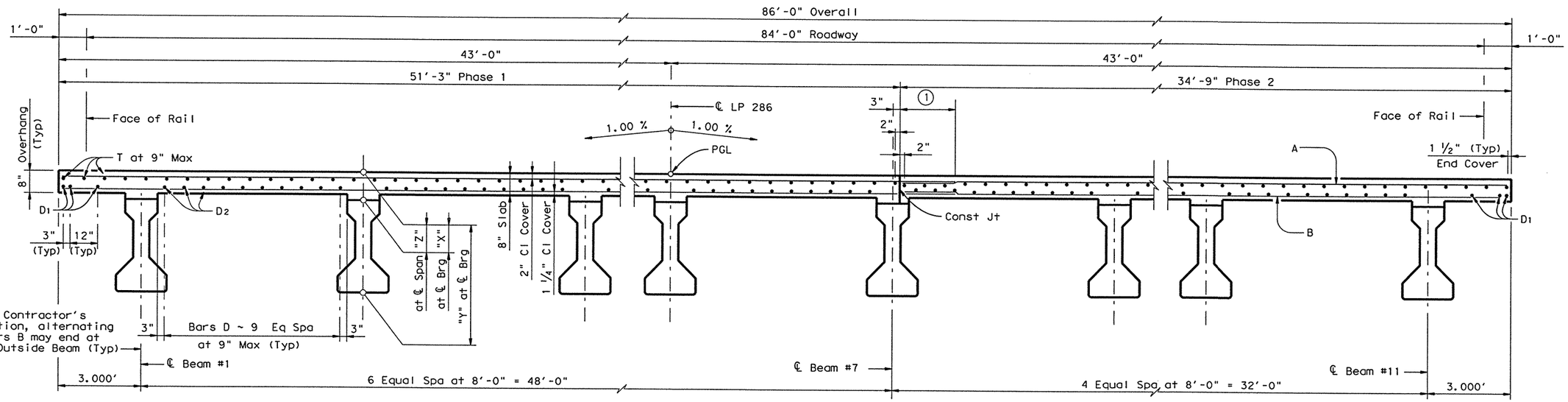
BAR TABLE

Bar	Size
A	#5
AA	#5
B	#5
D	#5
G	#5
H	#5
J	#5
K	#5
M	#5
T	#4

TABLE OF ESTIMATED QUANTITIES

	Span No.	Reinf Concrete Slab SF	Prestr Concrete Beams (Ty C) LF	Class "S" Concrete CY	① Reinf Steel Lb
Phase 1	1	2050	277.48	52.8	13,325
	2	4100	557.69	103.9	26,650
	3	2050	277.48	52.8	13,325
	Total	8200	1,112.65	209.5	53,300
Phase 2	1	1390	158.56	35.7	9,035
	2	2780	318.68	70.2	18,070
	3	1390	158.56	35.7	9,035
	Total	5560	635.80	141.6	36,140

① Reinforcing steel weight is calcualted using an approximate factor of 6.5 Lbs/SF.



① Extend Bars A, AA, B, G & H 2'-0" Min into Phase 2 Construction

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Texas Department of Transportation
Bridge Division

160.00' PRESTRESSED CONCRETE BEAM UNIT

UPRR RAILWAY OVERPASS PHASE 1 & 2

FILE: 6698pb01.dgn	DN: LJN	CK: JFF	DW: WMB	CK: LJN
©TxDOT AUG 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	PAR	BR 2006(750)		106
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	LAMAR	1690	01	103	LP286

LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

PATH:

BENT REPORT

BENT NO. 1 (N 75 34 15.00 E)
DISTANCE BETWEEN STATION LINE AND BEAM 1 46.188 L

		BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 1	BEAM 1	.000	60	0	0
	BEAM 2	9.238	60	0	0
	BEAM 3	9.238	60	0	0
	BEAM 4	9.238	60	0	0
	BEAM 5	9.238	60	0	0
	BEAM 6	9.238	60	0	0
	BEAM 7	9.238	60	0	0
	BEAM 8	9.238	60	0	0
	BEAM 9	9.238	60	0	0
	BEAM 10	9.238	60	0	0
	BEAM 11	9.238	60	0	0
	TOTAL	92.376			

BENT NO. 2 (N 75 34 15.00 E)
DISTANCE BETWEEN STATION LINE AND BEAM 1 46.188 L

		BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 1	BEAM 1	.000	60	0	0
	BEAM 2	9.238	60	0	0
	BEAM 3	9.238	60	0	0
	BEAM 4	9.238	60	0	0
	BEAM 5	9.238	60	0	0
	BEAM 6	9.238	60	0	0
	BEAM 7	9.238	60	0	0
	BEAM 8	9.238	60	0	0
	BEAM 9	9.238	60	0	0
	BEAM 10	9.238	60	0	0
	BEAM 11	9.238	60	0	0
	TOTAL	92.376			

BENT NO. 2 (N 75 34 15.00 E)
DISTANCE BETWEEN STATION LINE AND BEAM 1 46.188 L

		BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 2	BEAM 1	.000	60	0	0
	BEAM 2	9.238	60	0	0
	BEAM 3	9.238	60	0	0
	BEAM 4	9.238	60	0	0
	BEAM 5	9.238	60	0	0
	BEAM 6	9.238	60	0	0
	BEAM 7	9.238	60	0	0
	BEAM 8	9.238	60	0	0
	BEAM 9	9.238	60	0	0
	BEAM 10	9.238	60	0	0
	BEAM 11	9.238	60	0	0
	TOTAL	92.376			

BENT NO. 3 (N 75 34 15.00 E)
DISTANCE BETWEEN STATION LINE AND BEAM 1 46.188 L

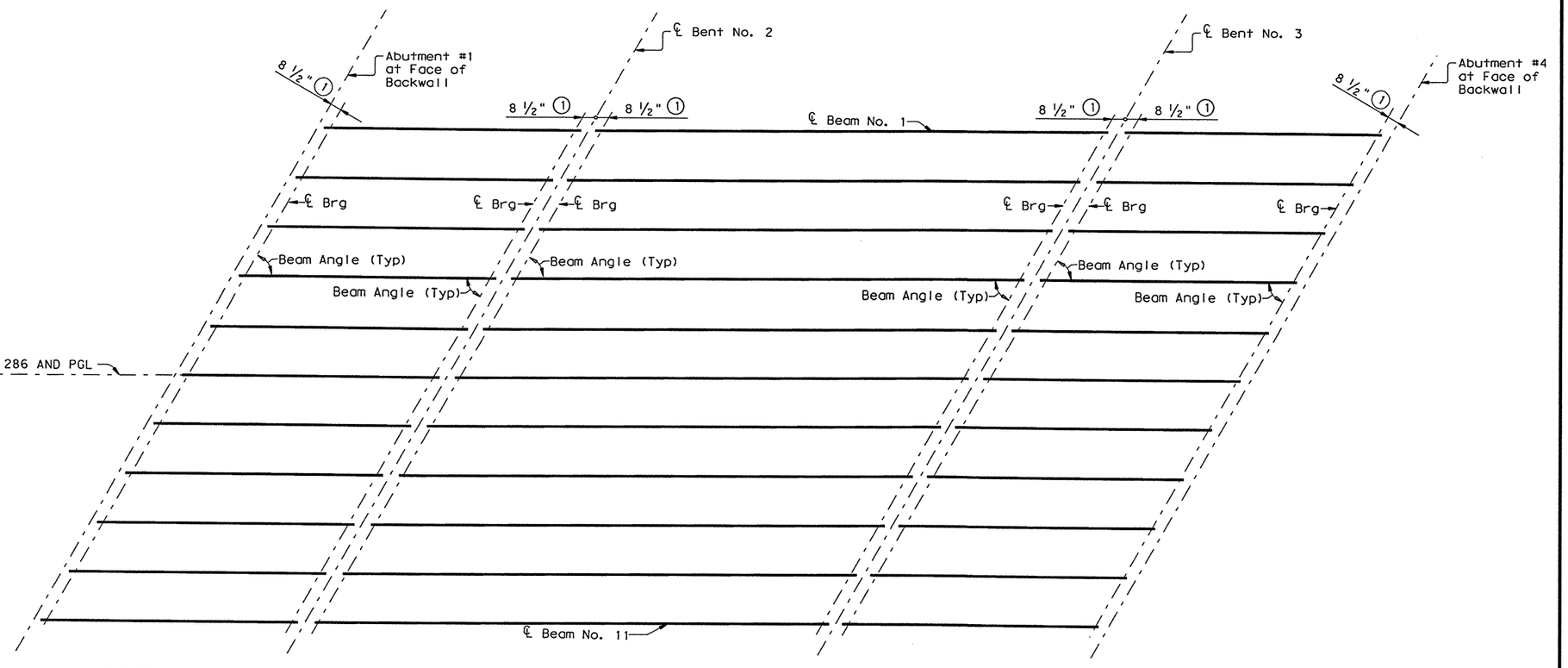
		BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 2	BEAM 1	.000	60	0	0
	BEAM 2	9.238	60	0	0
	BEAM 3	9.238	60	0	0
	BEAM 4	9.238	60	0	0
	BEAM 5	9.238	60	0	0
	BEAM 6	9.238	60	0	0
	BEAM 7	9.238	60	0	0
	BEAM 8	9.238	60	0	0
	BEAM 9	9.238	60	0	0
	BEAM 10	9.238	60	0	0
	BEAM 11	9.238	60	0	0
	TOTAL	92.376			

BENT NO. 3 (N 75 34 15.00 E)
DISTANCE BETWEEN STATION LINE AND BEAM 1 46.188 L

		BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 3	BEAM 1	.000	60	0	0
	BEAM 2	9.238	60	0	0
	BEAM 3	9.238	60	0	0
	BEAM 4	9.238	60	0	0
	BEAM 5	9.238	60	0	0
	BEAM 6	9.238	60	0	0
	BEAM 7	9.238	60	0	0
	BEAM 8	9.238	60	0	0
	BEAM 9	9.238	60	0	0
	BEAM 10	9.238	60	0	0
	BEAM 11	9.238	60	0	0
	TOTAL	92.376			

BENT NO. 4 (N 75 34 15.00 E)
DISTANCE BETWEEN STATION LINE AND BEAM 1 46.188 L

		BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 3	BEAM 1	.000	60	0	0
	BEAM 2	9.238	60	0	0
	BEAM 3	9.238	60	0	0
	BEAM 4	9.238	60	0	0
	BEAM 5	9.238	60	0	0
	BEAM 6	9.238	60	0	0
	BEAM 7	9.238	60	0	0
	BEAM 8	9.238	60	0	0
	BEAM 9	9.238	60	0	0
	BEAM 10	9.238	60	0	0
	BEAM 11	9.238	60	0	0
	TOTAL	92.376			



SPAN 1
(TYPE C BEAMS)

SPAN 2
(TYPE C BEAMS)

SPAN 3
(TYPE C BEAMS)

BEAM REPORT

BEAM REPORT, SPAN 1

	HORIZONTAL DISTANCE C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG. ②	BEAM SLOPE
BEAM 1	40.000	38.474	39.64	-.0049
BEAM 2	40.000	38.474	39.64	-.0046
BEAM 3	40.000	38.474	39.64	-.0043
BEAM 4	40.000	38.474	39.64	-.0040
BEAM 5	40.000	38.474	39.64	-.0037
BEAM 6	40.000	38.474	39.64	-.0034
BEAM 7	40.000	38.474	39.64	-.0031
BEAM 8	40.000	38.474	39.64	-.0028
BEAM 9	40.000	38.474	39.64	-.0025
BEAM 10	40.000	38.474	39.64	-.0022
BEAM 11	40.000	38.474	39.64	-.0019

BEAM REPORT, SPAN 2

	HORIZONTAL DISTANCE C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG. ②	BEAM SLOPE
BEAM 1	80.000	78.583	79.67	-.0089
BEAM 2	80.000	78.583	79.67	-.0085
BEAM 3	80.000	78.583	79.67	-.0082
BEAM 4	80.000	78.583	79.67	-.0079
BEAM 5	80.000	78.583	79.67	-.0076
BEAM 6	80.000	78.583	79.67	-.0073
BEAM 7	80.000	78.583	79.67	-.0070
BEAM 8	80.000	78.583	79.67	-.0067
BEAM 9	80.000	78.583	79.67	-.0064
BEAM 10	80.000	78.583	79.67	-.0061
BEAM 11	80.000	78.583	79.67	-.0058

BEAM REPORT, SPAN 3

	HORIZONTAL DISTANCE C-C BENT	C-C BRG.	TRUE DISTANCE BOT. BM. FLG. ②	BEAM SLOPE
BEAM 1	40.000	38.474	39.64	-.0128
BEAM 2	40.000	38.474	39.64	-.0125
BEAM 3	40.000	38.474	39.64	-.0122
BEAM 4	40.000	38.474	39.64	-.0119
BEAM 5	40.000	38.474	39.64	-.0116
BEAM 6	40.000	38.474	39.64	-.0113
BEAM 7	40.000	38.474	39.64	-.0110
BEAM 8	40.000	38.474	39.64	-.0107
BEAM 9	40.000	38.474	39.64	-.0104
BEAM 10	40.000	38.474	39.64	-.0101
BEAM 11	40.000	38.474	39.64	-.0098

① See IBB standard for orientation of dimension

② Beam lengths shown are bottom beam flange lengths with adjustments made for beam slope.

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REGISTERED PROFESSIONAL ENGINEER

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25 July 2006

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Bridge Division

BEAM LAYOUT

UPRR RAILWAY OVERPASS PHASE 1 & 2

FILE: 6698pb01.dgn	DN: LJN	CK: JFF	DW: WMB	CK: LJN
© TxDOT AUG 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	PAR	BR 2006(750)		164
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	LAMAR	1690	01	103	LP286

LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

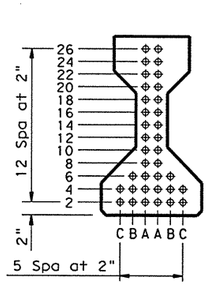
PATH:

DESIGNED BEAMS (DEPRESSED STRANDS)

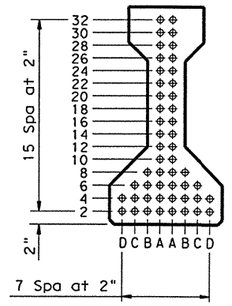
STRUCTURE	SPAN NO.	BEAM NO.	BEAM TYPE	NON-STD STRAND PATTERN	PRESTRESSING STRANDS TOTAL NO.	TOTAL SIZE (in)	TOTAL STRGTH fpu (ksi)	TOTAL "e" ℄ (in)	TOTAL "e" END (in)	DEPRESSED NO.	DEPRESSED TO (in)	CONCRETE RELEASE STRGTH f'ci (ksi)	CONCRETE MINIMUM 28 DAY COMP STRGTH f'c (ksi)
UPRR Railway Overpass	1,3	All	C		10	1/2	270K	15.09	13.09	2	12.0	4.000	5.000
	2	All	C		38	1/2	270K	12.25	7.62	8	30.0	6.363	6.363

OPTIONAL DESIGN

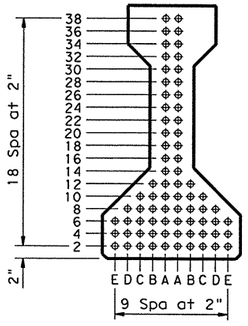
STRUCTURE	DESIGN LOAD COMP STRESS (TOP ℄) (SERVICE I) fct(ksi)	DESIGN LOAD TENSILE STRESS (BOTT ℄) (SERVICE III) fcb(ksi)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I) (ft-kips)	LIVE LOAD DISTRIB FACTOR ①
UPRR Railway Overpass	0.966	-1.242	1435	0.752
	3.777	-4.215	3872	0.638



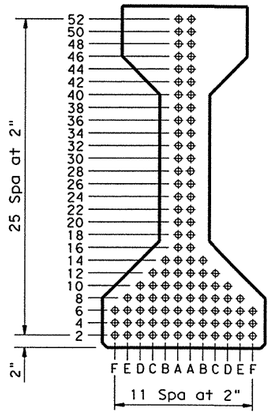
TYPE A BM



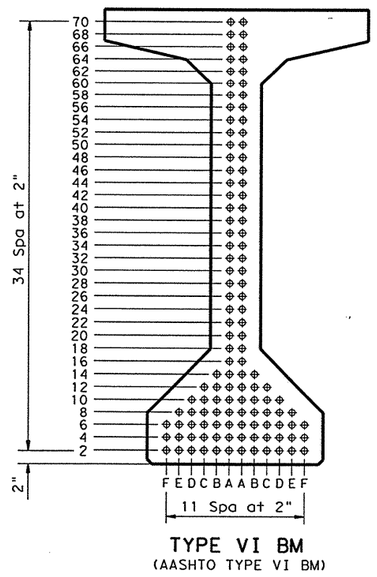
TYPE B BM



TYPE C BM



TYPE IV BM
(AASHTO TYPE IV BM)



TYPE VI BM
(AASHTO TYPE VI BM)

NON-STANDARD STRAND PATTERNS

PATTERN	STRAND ARRANGEMENT AT ℄ OF BEAM

GENERAL NOTES:

Designed in accordance with AASHTO LRFD Specifications.

All concrete shall be Class H. All reinforcing bars shall be Grade 60.

When shown on this sheet, the Fabricator has the option of furnishing either the designed depressed strand beam or an approved optional design. All optional design submittals shall be signed, sealed and dated by a registered Professional Engineer.

Optional designs for beams 120 feet or longer shall have a calculated residual camber equal to or greater than that of the designed beam.

Prestress losses for the designed beams have been calculated for a relative humidity of 65 percent. Optional designs shall likewise conform.

Certain beams with depressed strands are subject to cracking in the end of the beam. When such cracks occur, all subsequent beams of the same type and strand pattern shall have strands debonded in the following manner:

1. Alternate rows of depressed strands shall be debonded for two feet from each end of the beam.
2. One half of the straight strands, as nearly as possible, shall be debonded for four feet from each end of the beam.
3. The debonding pattern shall be symmetrical about the vertical axis of the beam for both depressed and straight strands.
4. Strands shall be debonded so that the centers of gravity of the depressed strands and the straight strands will remain within one inch of their original location.
5. Strands shall be encased in plastic tubing along entire debonded length, and ends of tubing shall be sealed with waterproof tape. Split plastic tubing may be used provided the seam of the tubing is sufficiently sealed with waterproof tape to prohibit grout infiltration. Wrapping of strands with tape to provide debonding will not be permitted.
6. Revised shop drawings will not be required.

For depressed strand designed beams, strands shall be located as low as possible on the 2" grid system unless a Non-Standard Strand Pattern is indicated. Fill row "2", then row "4", then row "6", etc., beginning each row in the "A" position and working outward until the required number of strands is reached. All strands in the "A" position shall be depressed, maintaining the 2" spacing so that, at the beam ends, the upper two strands are in the position shown in the table.

Strands for the designed beam shall be low relaxation strands pretensioned to 75 percent of fpu each.

① Portion of full HL93

HL93 LOADING

LEVELS DISPLAYED 1 ACC: 6698mi01.dgn

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PROFESSIONAL ENGINEER
25 July 2006

Texas Department of Transportation
Bridge Division

PRESTRESSED CONCRETE I-BEAM DESIGNS (NON-STANDARD SPANS)

IBND

FILE: ibndstel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	PAR	BR 2006(750)		124
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	LAMAR	1690	01	103	LP286