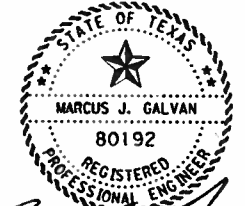
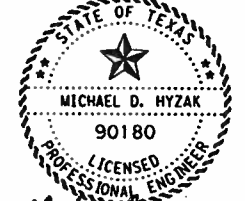


LEGEND

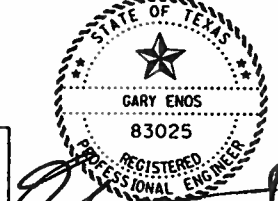
- 2029- EXISTING CONTOUR
- - - EXISTING EDGE OF ROAD
- - - RIGHT OF WAY LINE



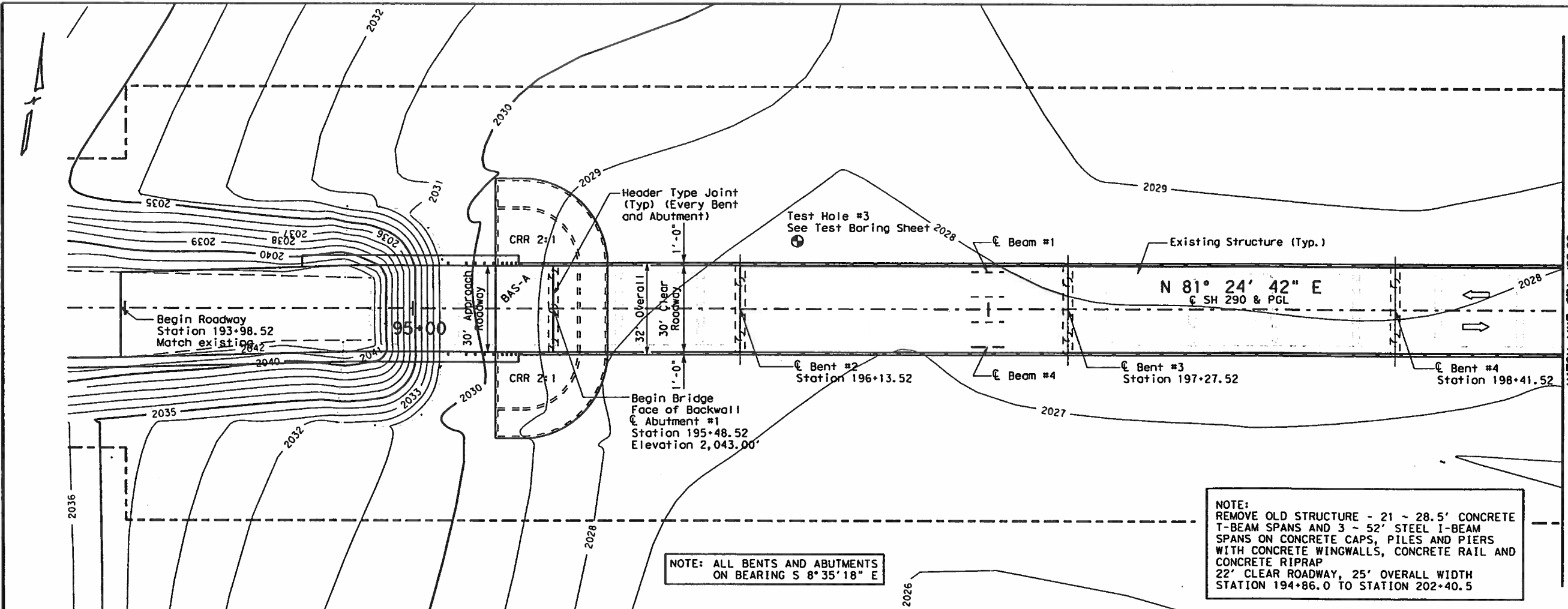
MJG
7/5/05



Michael D. Hyzak
7/5/05

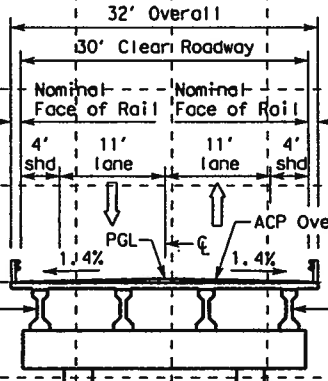
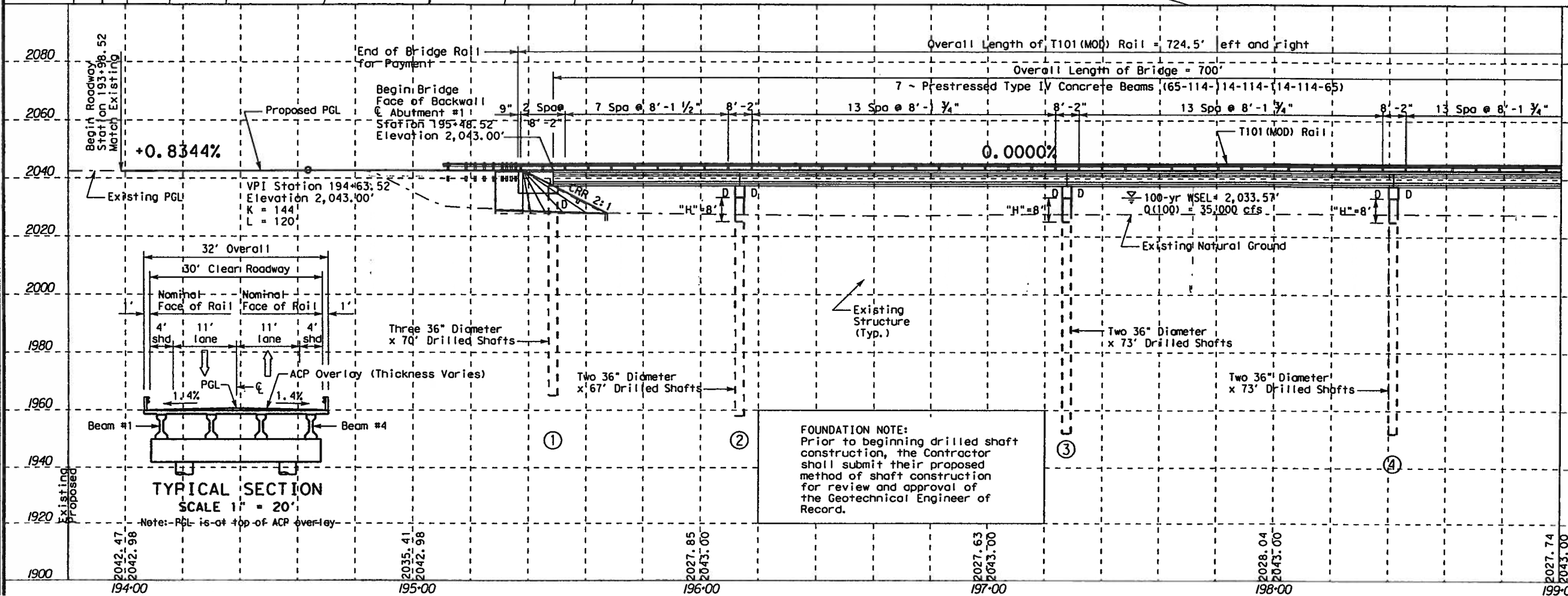


Gary Engos
JULY 1, 2005



NOTE: ALL BENTS AND ABUTMENTS ON BEARING S 8° 35' 18" E

NOTE: REMOVE OLD STRUCTURE - 21 ~ 28.5' CONCRETE T-BEAM SPANS AND 3 ~ 52' STEEL I-BEAM SPANS ON CONCRETE CAPS, PILES AND PIERS WITH CONCRETE WINGWALLS, CONCRETE RAIL AND CONCRETE RIPRAP
22' CLEAR ROADWAY, 25' OVERALL WIDTH STATION 194+86.0 TO STATION 202+40.5



FOUNDATION NOTE:
Prior to beginning drilled shaft construction, the Contractor shall submit their proposed method of shaft construction for review and approval of the Geotechnical Engineer of Record.

SCALE 1" = 40'
CONTOUR INTERVAL = 1'
DESIGN SPEED = 40 MPH
FUNC. CLASS = MAJOR COLLECTOR
ADT = 360 (2004)
TERRAIN = ROLLING
OLD NBI 07-053-0-0140-08-053
NEW NBI 07-053-0-0140-08-130
HL93 LOADING

BEAM END CONDITIONS:
D - DENOTES SLOTTED HOLE IN EXTERIOR BEAM END
BLANK - DENOTES NO HOLE

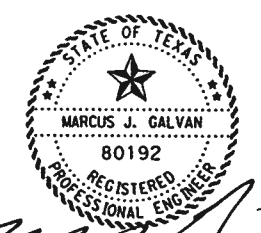
Texas Department of Transportation
SONORA AREA OFFICE

© 2005
**BRIDGE LAYOUT
LIVE OAK CREEK
SHEET 1 OF 2**

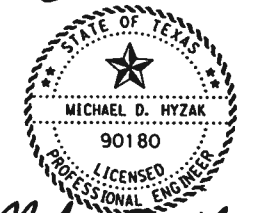
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6	IBR, 2005 (856)	43
STATE	DIST.	COUNTY
TEXAS	SJT	CROCKETT
CONT.	SECT.	JOB
		HIGHWAY NO.

ACTIVE FILE LEVELS DISPLAYED
DATE: 2/13/15 16:17:18 19/01/11 21/31/05 16
COMMENTS: 6635LY01.DGN
DN: CK: RNP MDH
DW: CK: RNP MDH

LEGEND	
— 2029 —	EXISTING CONTOUR
- - -	EXISTING EDGE OF ROAD
- - - - -	RIGHT OF WAY LINE



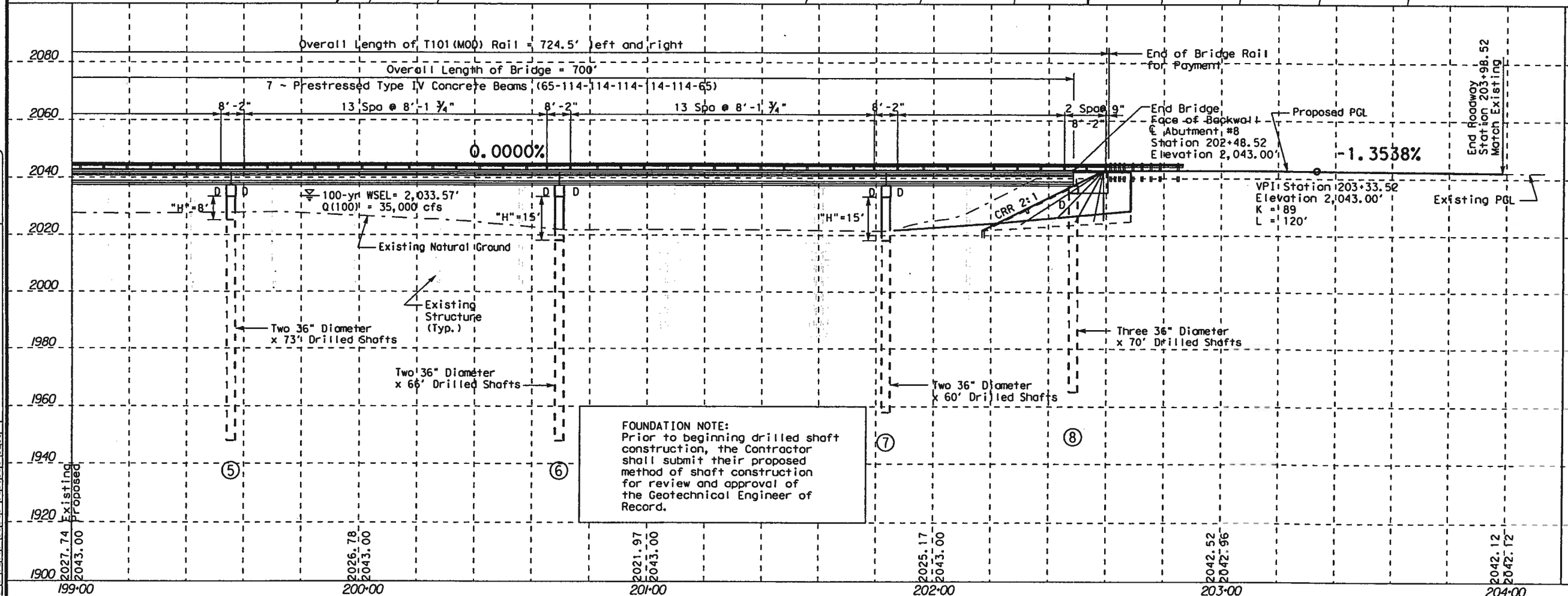
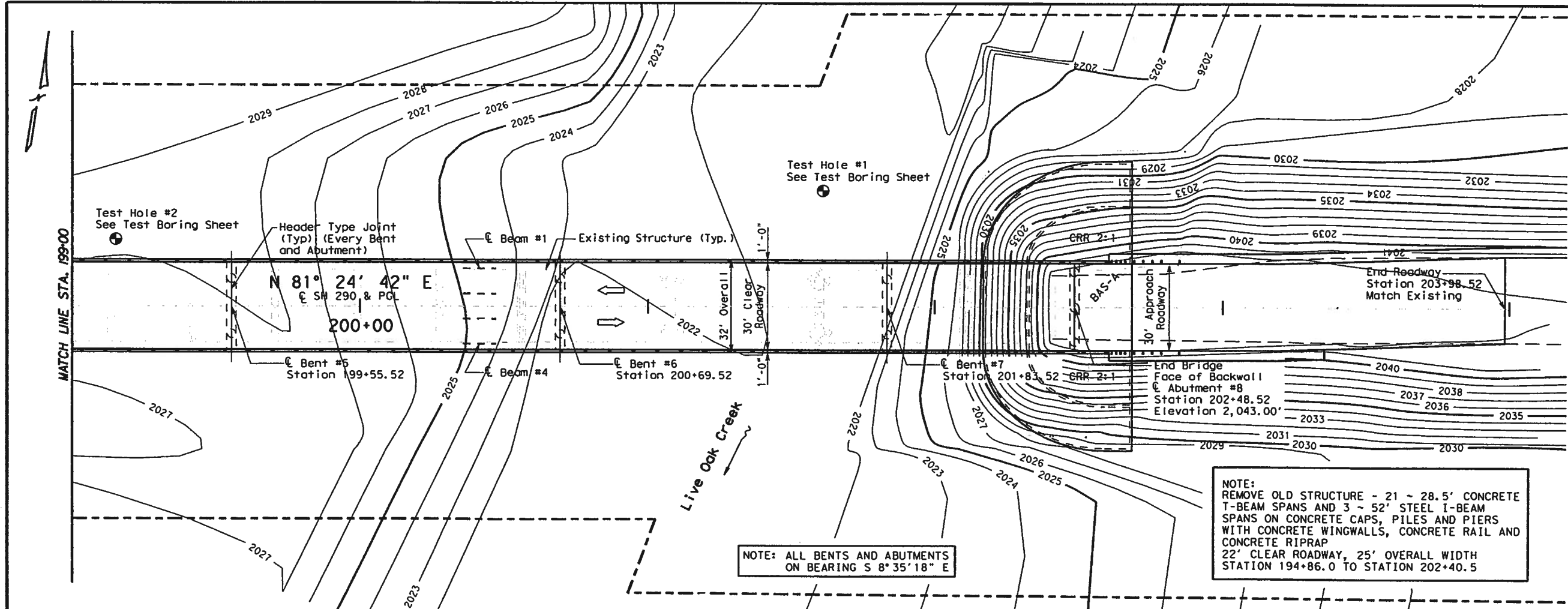
M. Galvan
7/5/05



Michael D. Hyzak
7/5/05



G. Enos
July 1, 2005



SCALE 1" = 40'
CONTOUR INTERVAL = 1'
DESIGN SPEED = 40 MPH
FUNC. CLASS = MAJOR COLLECTOR
ADT = 360 (2004)
TERRAIN = ROLLING
OLD NBI 07-053-0-0140-08-053
NEW NBI 07-053-0-0140-08-130
HL93 LOADING

BEAM END CONDITIONS:
D - DENOTES SLOTTED HOLE IN EXTERIOR BEAM END
BLANK - DENOTES NO HOLE

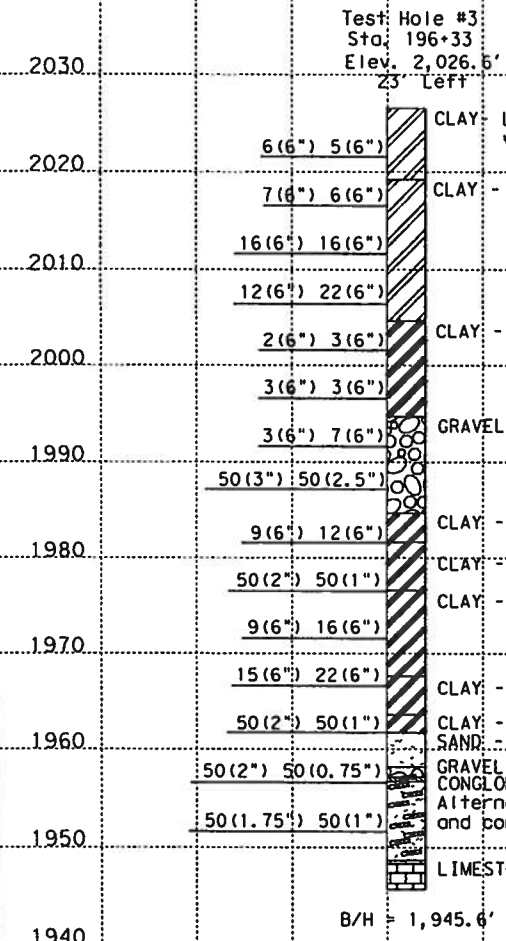
Texas Department of Transportation
SONORA AREA OFFICE
© 2005

BRIDGE LAYOUT
LIVE OAK CREEK
SHEET 2 OF 2

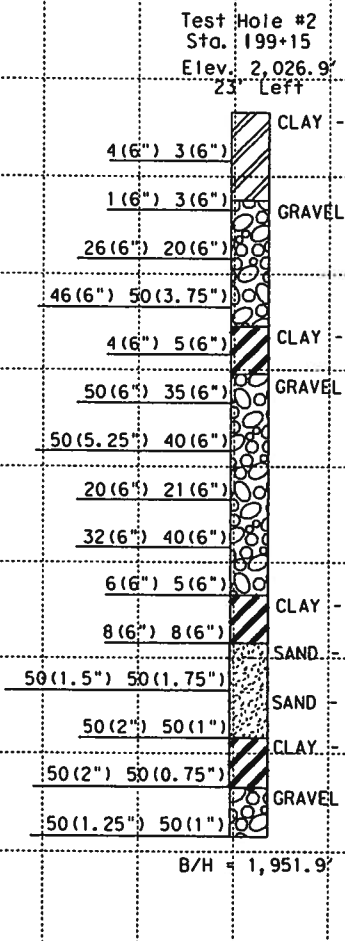
FED. RD. DIST. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
6	IBR 2005 (856)	44
STATE	DIST.	COUNTY
TEXAS	SJT	CROCKETT
CONT.	SECT.	JOB
		HIGHWAY NO.

ACTIVE FILE LEVELS DISPLAYED
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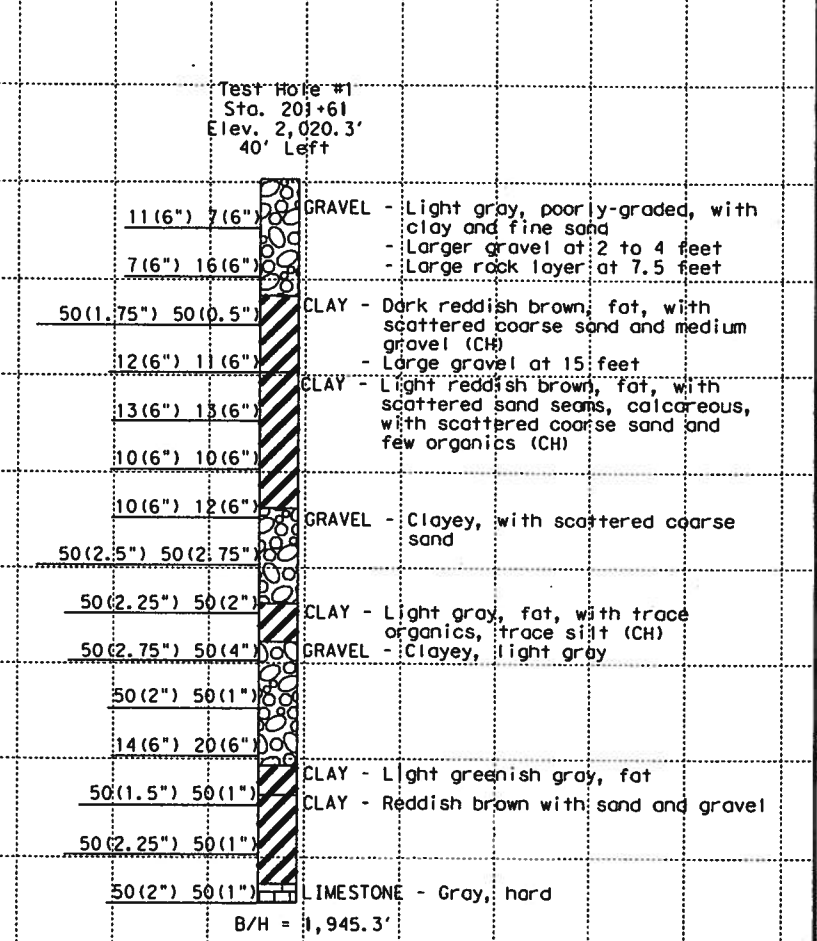
DATE: 05/15/05
 COMMENTS: 6635LY01.DGN
 DN: MDH
 CK: RNP
 DW: MDH
 CK: MDH



Notes:
 1) Boring was advanced dry and groundwater was encountered at the 11.0-foot depth.
 2) On completion of the drilling operation, the hole was noted open to the 1.0-foot depth and dry.



Notes:
 1) Boring was advanced dry and groundwater was encountered at the 8.5-foot depth.
 2) On completion of the drilling operation, the hole was noted open to the 1.0-foot depth and dry.



Notes:
 1) Boring was advanced dry and groundwater was encountered at the 2.0-foot depth.
 2) On completion of the drilling operation, the hole was noted open to the 1.5-foot depth and dry.

Texas Department of Transportation
 Sanora Area Office

TEST BORINGS

SCALE: 1"=20' VERTICAL

FILE: 66351b01.dgn	DN: MDH	CK: RNP	DW: MDH	CK: MDH
© TxDOT MAY 2005	DISTRICT	FEDERAL AID PROJECT	SHEET	
REVISIONS	SJT	IBR 2005 (856)	44A	
COUNTY	CONTROL	SECT	JOB	HIGHWAY

SUMMARY OF ESTIMATED QUANTITIES

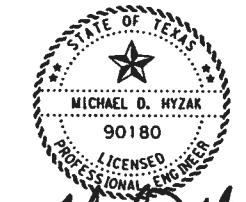
BRIDGE ELEMENT / BID ITEM DESCRIPTION	0416-2004	0420-2003	0420-2004	0420-2033	0422-2001	0425-2004	0432-2002	0450-2036	0454-2006	0496-2011	4078-2001			
	DRILLED SHAFTS	CLASS "C" CONCRETE	CLASS "C" CONCRETE	CLASS "S" CONCRETE	REINFORCED CONCRETE SLAB ①	PRESTRESSED CONCRETE BEAMS	RIPRAP CONCRETE	RAILING	HEADER TYPE EXPANSION JOINT	REMOVE STRUCTURE	STRUCTURAL GROUT			
	36" DIA	ABUTMENT	BENT	APPR SLAB		TY IV	5 IN	TY T101 (MOD)		BRIDGE 500-999 FT				
	LF	CY	CY	CY	SF	LF	CY	LF	LF	EA	CF			
2 ~ ABUTMENTS	420	49.0		48.2				49						
6 ~ INTERIOR BENTS	824		119.6											
2 ~ 65.00' PRESTR CONC BEAM SPANS					4160	517.36		260			148.8			
5 ~ 114.00' PRESTR CONC BEAM SPANS					18240	2273.40		1140			662.5			
TOTAL	1244	49.0	119.6	48.2	22400	2790.76	132	1449	240②	1	811.3③			

- ① Full Depth Precast Deck Panels.
- ② Quantity shown includes 30 LF per joint. Backer rod and silicone seal extends for an additional 1.5 LF per joint (not included in quantity).
- ③ Quantity shown is based on Panels with Projected Coupler Option. Quantity is 1045.4 CF if Slotted Coupler Option is selected. No additional payment will be made for Structural Grout if this option is selected.

BEARING SEAT ELEVATIONS

		BEAM 1	BEAM 2	BEAM 3	BEAM 4
ABUT 1 (FWD)		2037.146	2037.146	2037.146	2037.146
BENT 2 (BK) (FWD)		2037.146	2037.146	2037.146	2037.146
BENT 3 (BK) (FWD)		2036.979	2036.979	2036.979	2036.979
BENT 4 (BK) (FWD)		2036.979	2036.979	2036.979	2036.979
BENT 5 (BK) (FWD)		2036.979	2036.979	2036.979	2036.979
BENT 6 (BK) (FWD)		2036.979	2036.979	2036.979	2036.979
BENT 7 (BK) (FWD)		2036.979	2036.979	2036.979	2036.979
ABUT 8 (FWD)		2037.146	2037.146	2037.146	2037.146

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 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
 PATH: BRG-RPORTER-1
 6635eq01.dgn



Michael D. Hyzak
 6/29/05

Texas Department of Transportation
 Bridge Division

ESTIMATED QUANTITIES
 AND
 BEARING SEAT ELEVATIONS

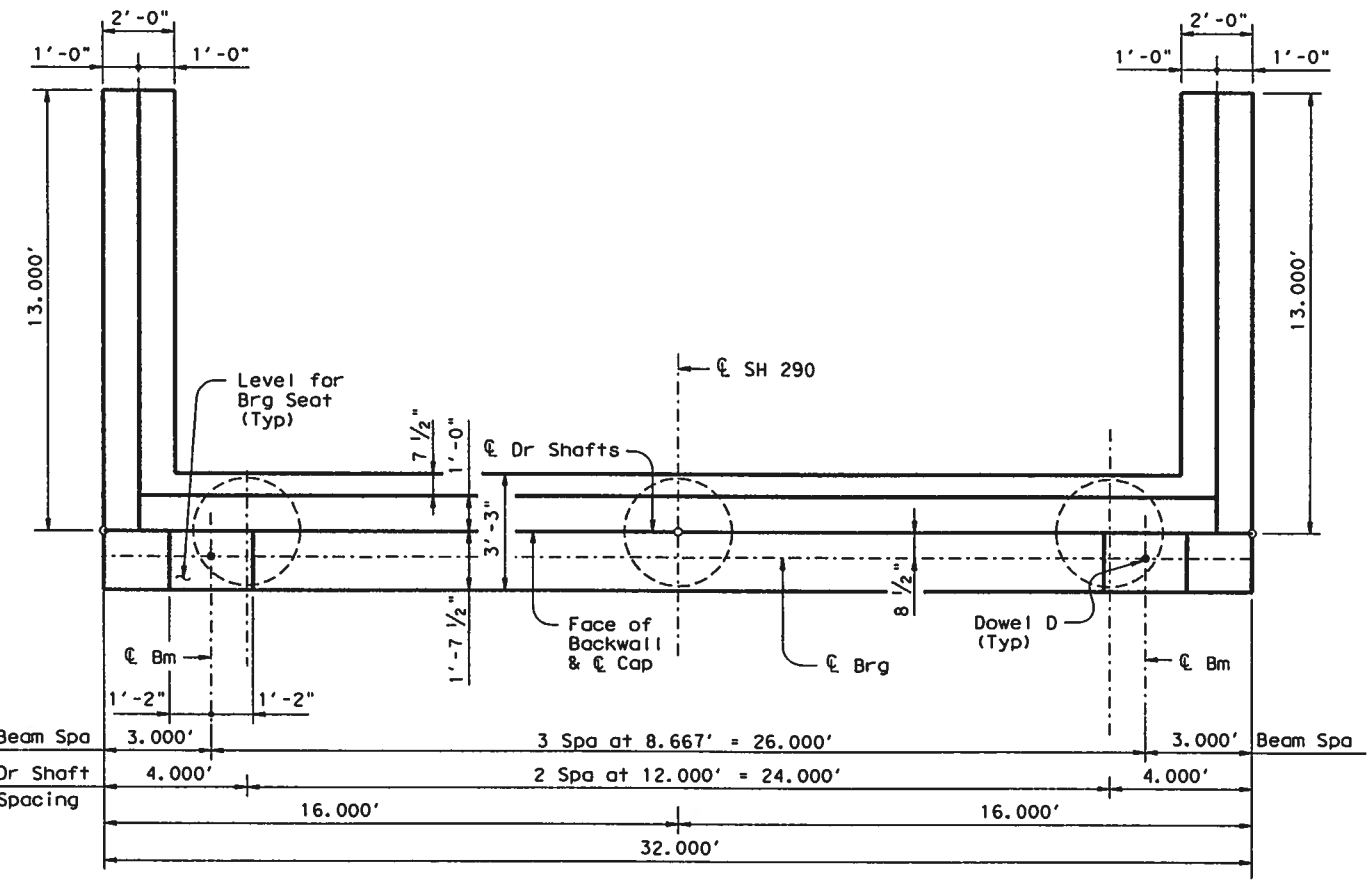
LIVE OAK CREEK BRIDGE

FILE: 6635eq01.dgn	DW: MDH	CK: RNP	MDH
© TxDOT MAY 2005	DISTRICT	FEDERAL AID PROJECT	SHEET
REVISIONS	SJT	BR 2005 (856)	44B
	COUNTY	CONTROL SECT	JOB HIGHWAY
	CROCKETT	0140 08 021	SH290

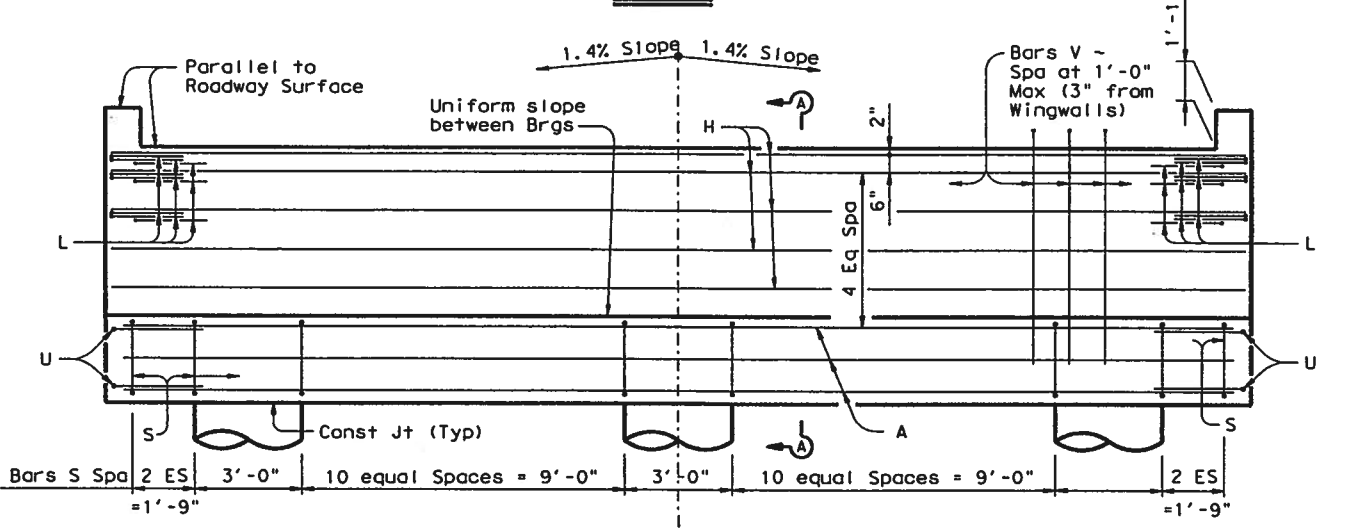
TABLE OF ESTIMATED QUANTITIES ②

Bar	No.	Size	Length	Weight
A	8	#11	31'-0"	1,318
D	2	1 1/4" D	1'-8"	14
H	10	#6	31'-8"	476
L	18	#6	4'-0"	108
S	28	#4	10'-8"	200
U	4	#6	7'-9"	47
V	31	#5	13'-10"	447
wH1	14	#6	14'-3"	300
wH2	24	#6	12'-8"	457
wS	28	#4	7'-9"	145
wV	28	#5	14'-2"	414
Reinforcing Steel				Lb 3,926
Class "C" Concrete				CY 24.5

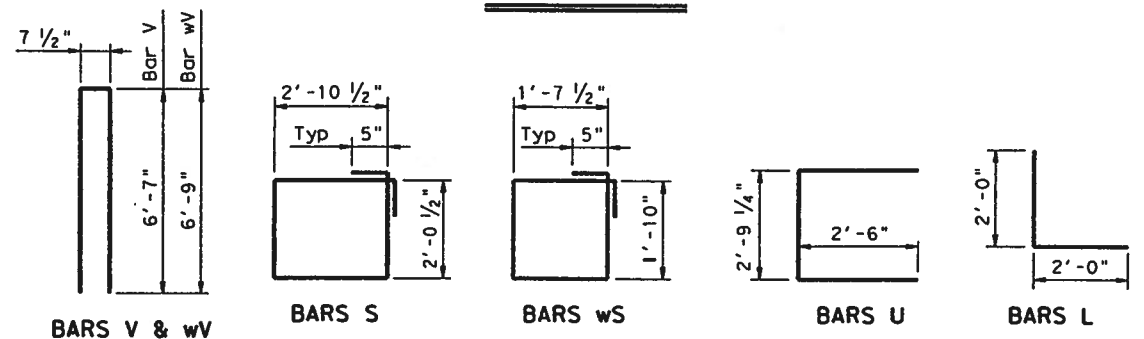
- ① Increase as required to maintain 3 3/4" from Finish Grade.
- ② Quantities shown are for one Abutment only.
- ③ Approach Slab (Flush with top of slab at overhang, and flush with top of slab + 2 1/2" at \bar{C} Structure).



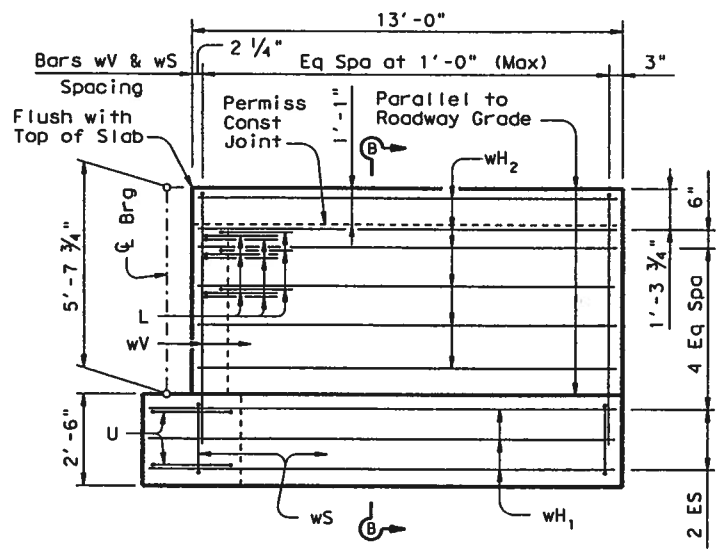
PLAN



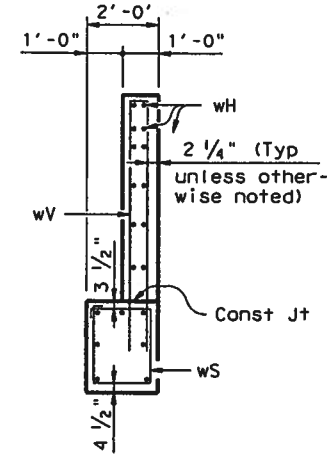
ELEVATION



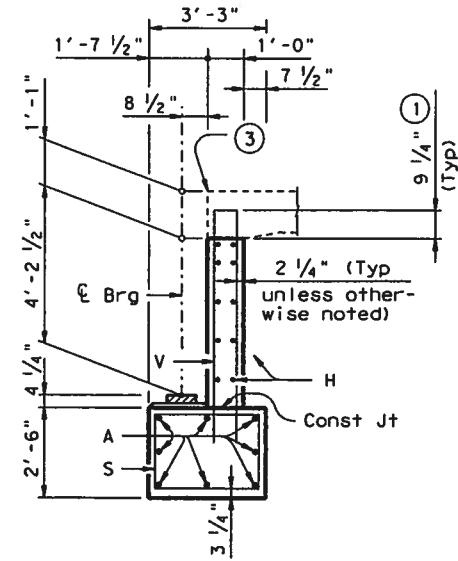
CORNER DETAILS



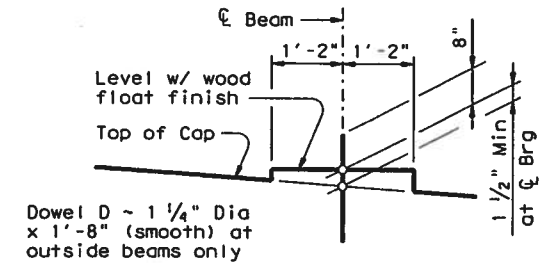
WINGWALL ELEVATION



SECTION B-B



SECTION A-A



BEARING SEAT DETAIL

(Bearing surface shall be clean and free of all loose material before placing bearing pad.)

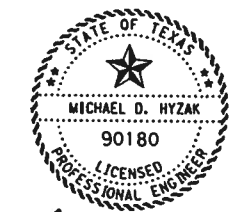
GENERAL NOTES:

- Designed according to AASHTO LRFD Specifications.
- Concrete strength $f'c = 3,600$ psi.
- All cap and wall reinforcing shall be Grade 60.
- See Bridge Layout for 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.
- Calculated Foundation Loads -
- Cap Drilled Shafts = 90 Tons / Dr Shaft

HL93 LOADING

Texas Department of Transportation
Bridge Division

**ABUTMENT NO. 1 AND NO. 8
LIVE OAK CREEK BRIDGE**



Michael D. Hyzak
6/29/05

LEVELS DISPLAYED
ACC: 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 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

FILE: 6635ab01.dgn	DN: MDH	CK: LW	CK: MDH
© TxDOT MAY 2005	DISTRICT	FEDERAL AID PROJECT	SHEET
REVISIONS	SJT	BR 2005 (856)	44C
COUNTY	CONTROL	SECT	JOB
PROJECT	DATE	NO.	DATE

① TABLE OF CONSTANT QUANTITIES					
Bar	No.	Size	Length	Weight	
A	9	#11	29'-8"	1,419	
B1	6	#11	29'-8"	946	
B2	3	#11	16'-2"	258	
D	4	1 1/4" D	1'-8"	28	
S	45	#5	14'-0"	657	
SS	18	#5	11'-5"	214	
T	12	#5	29'-8"	371	
Reinforcing Steel				Lb	3,893
Class "C" Conc (Cap)				CY	14.5

① Quantities shown are for one Interior Bent only.

TABLE OF COLUMN QUANTITIES ① ②							① ③ TOTAL ESTIMATED QUANTITIES	
Bent	"H"	Class "C" Conc (Col)	Bars V 20 ~ #9		Bars Z 2 ~ #3 Spiral		Class "C" Conc	Reinf Steel
No.	Height	CY	Length	Weight	Length	Weight	CY	Lb
2-5	8'	4.2	11'-6"	782	141'	106	18.7	4781
6-7	15'	7.9	18'-6"	1258	252'	190	22.4	5341

- ② Adjust Bars V length by 1 Ft and Bars Z length by 15.7398 Ft for each linear foot of variation in "H" value.
- ③ Adjust Reinf Steel Total by 80 Lb and Class "C" Conc Total by 0.5236 CY for each linear foot of variation in "H" value.

GENERAL NOTES:
 Designed according to AASHTO LRFD Specifications.
 Class "C" concrete strength $f'_c = 3,600$ psi.
 All Cap reinforcing shall be Grade 60.
 Column and Drilled Shaft reinforcing may be Grade 40.
 See OPTIONAL PRECAST CONCRETE BENT CAP DETAILS for optional construction technique.
 See Foundation Detail Standard Sheet, FD, for foundation details and notes.
 Calculated Foundation Loads ~
 Drilled Shafts = 330 Tons / Dr Shaft

HL93 LOADING

Texas Department of Transportation
 Bridge Division

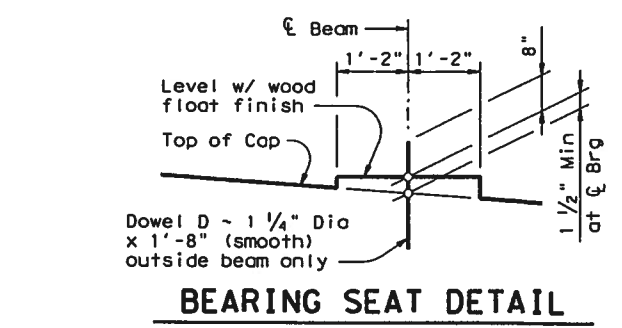
**INTERIOR BENT
 NO. 2 - NO. 7**

LIVE OAK CREEK BRIDGE

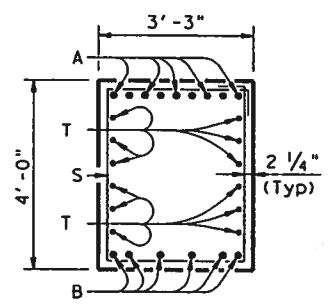
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© TXDOT	MAY 2005	DISTRICT	FEDERAL AID PROJECT
REVISIONS	SJT	BR 200518561	44D
COUNTY	CONTROL	SECT	JOB
CROCKETT	0140	08	021 SH 290

STATE OF TEXAS
 MICHAEL D. HYZAK
 90180
 LICENSED PROFESSIONAL ENGINEER

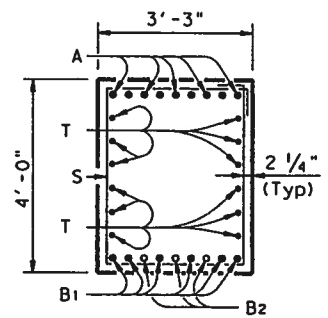
Michael D. Hyzak
 6/29/05



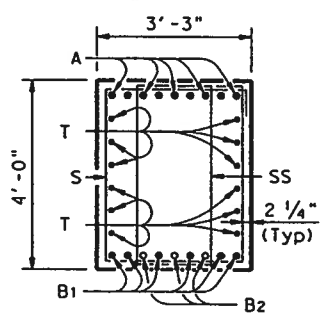
(Bearing surface shall be clean and free of all loose material before placing bearing pad.)



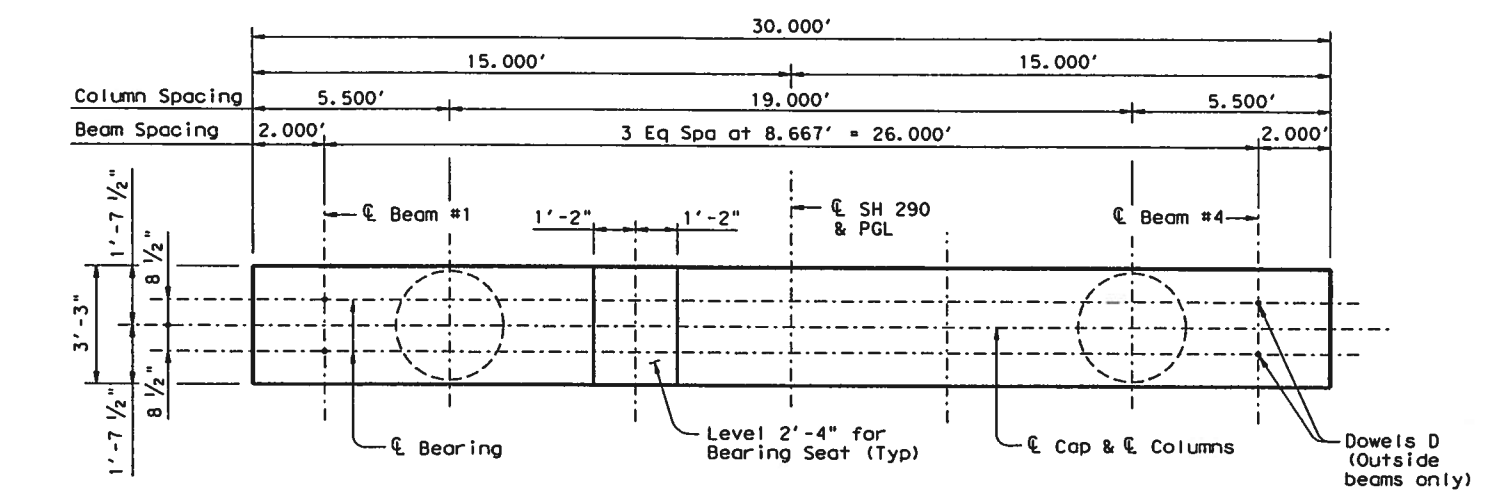
SECTION A-A



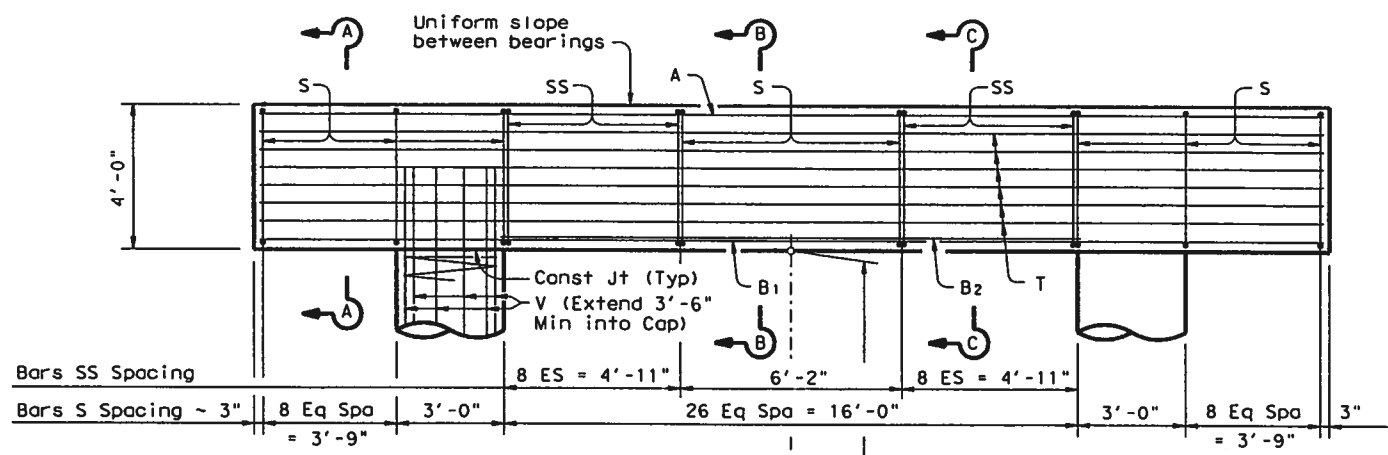
SECTION B-B



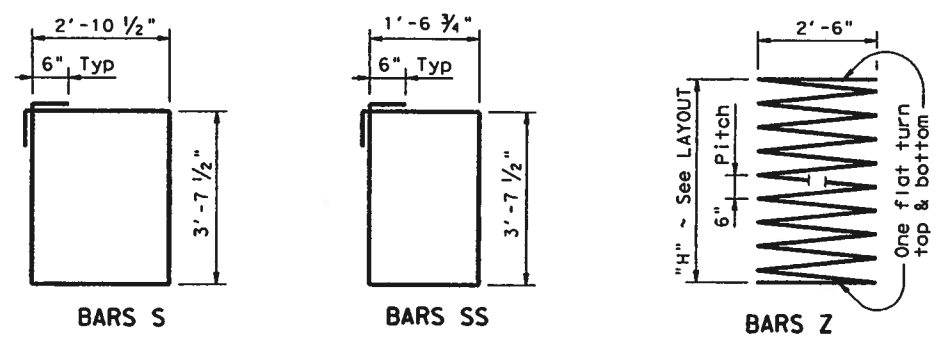
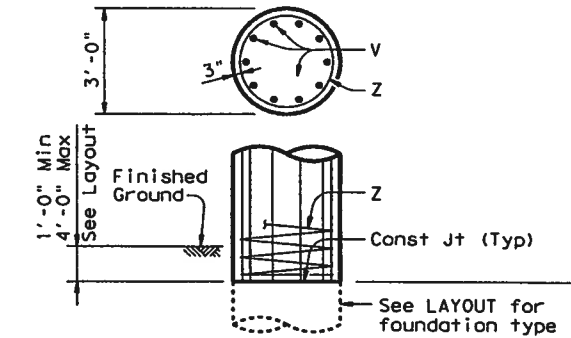
SECTION C-C



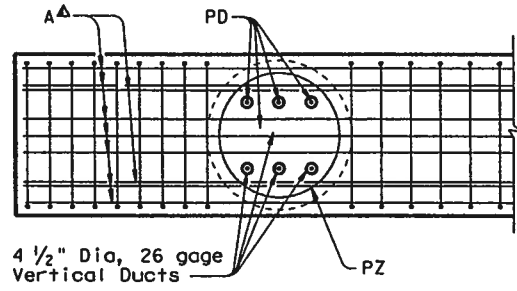
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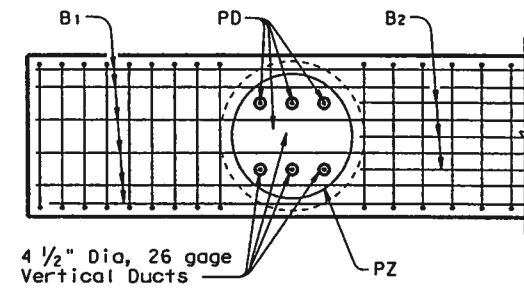
ELEVATION



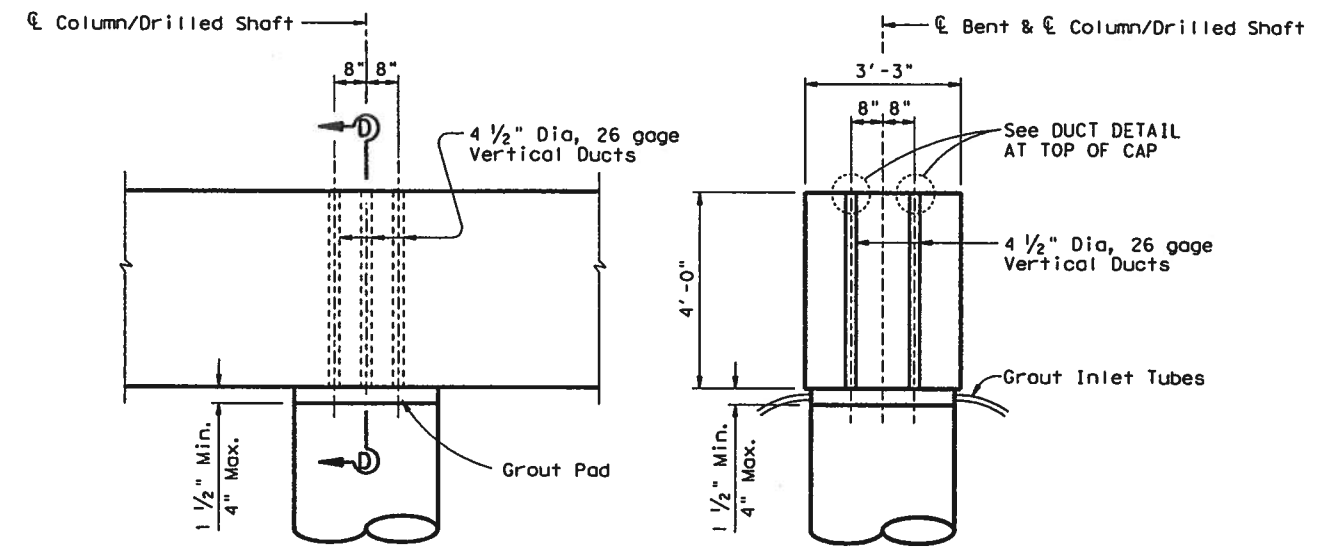
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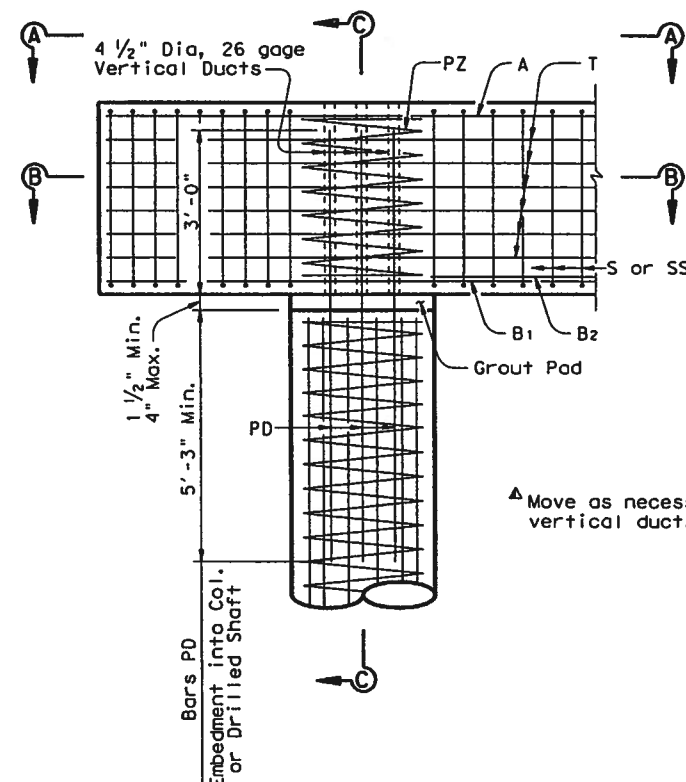
VIEW A-A



SECTION B-B



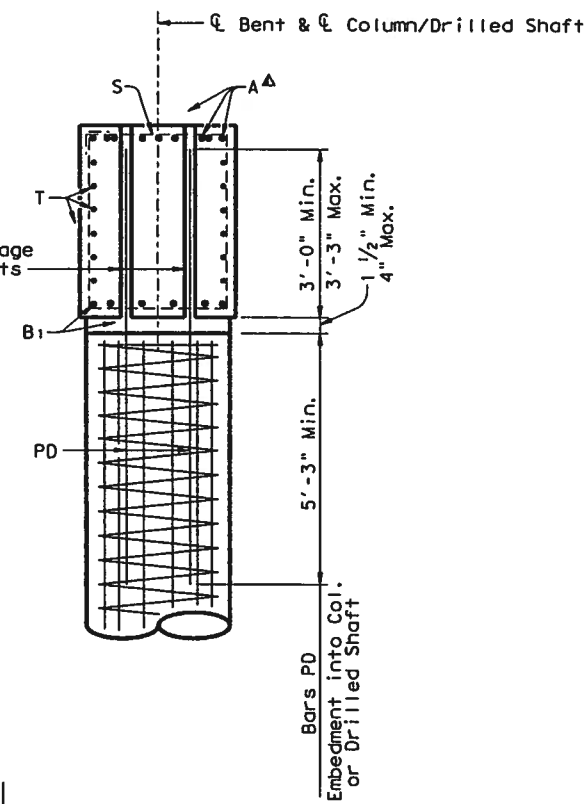
ELEVATION SECTION D-D
DETAILS SHOWING DUCT PLACEMENT



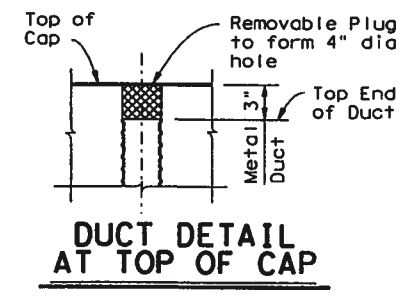
PART ELEVATION

DETAILS SHOWING DUCT REINFORCING

▲ Move as necessary to clear vertical ducts.

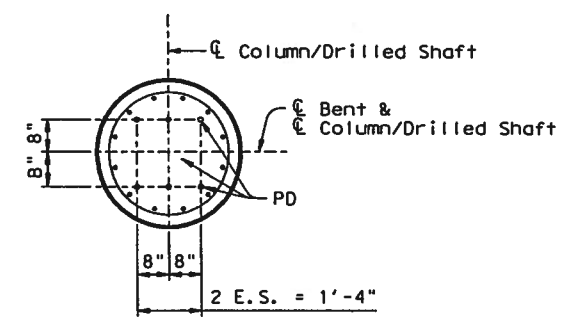


SECTION C-C

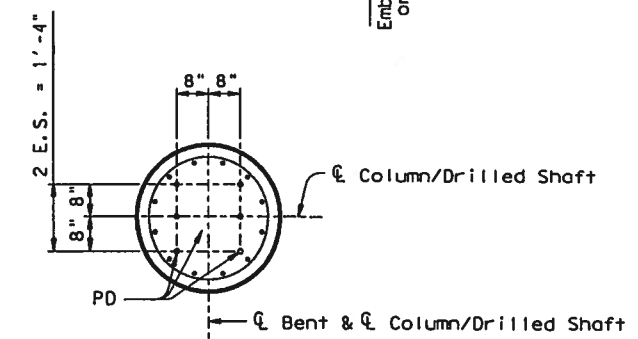


DUCT DETAIL AT TOP OF CAP

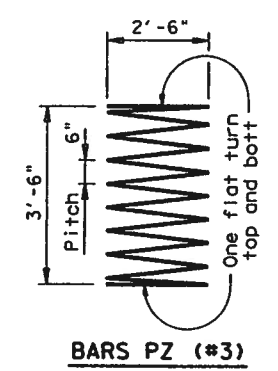
GENERAL NOTES
 Designed according to AASHTO LRFD Specifications, and TxDOT Research Project 1748.
 All reinforcing shall be Grade 60.
 Class "C" Concrete strength $f'_c = 3600$ psi.
 These details provide for optional precast bent cap construction.
 See Interior Bent sheets for additional details.



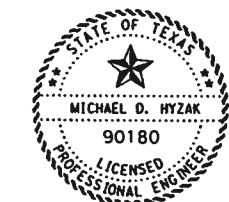
PART ELEVATION



SECTION C-C



BARS PZ (#3)



Michael D. Hyzak
6/29/05



OPTIONAL PRECAST CONCRETE BENT CAP DETAILS

LIVE OAK CREEK BRIDGE

FILE: 6635ib02.dgn	DW: MDH	CK: RNP	MDH
© TxDOT MAY 2005	DISTRICT	FEDERAL AID PROJECT	SHEET
REVISIONS	SJT	BR 2005 (856)	44E
COUNTY	CONTROL	SECT	JOB
CROCKETT	0140	OR	021 SH 290

LEVELS DISPLAYED
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 PATH: \BRG-RPORTER-1\ 6635ib02.dgn
 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

PRECAST BENT CAP CONSTRUCTION NOTES

Construction shall be in accordance with the requirements of Item 420. Vertical Ducts shall be semi-rigid spirally crimped, corrugated duct of galvanized, cold rolled steel conforming to ASTM A527 and ASTM A619. Corrugations shall have an amplitude of 0.094 in.

Precast Bent Caps shall be handled, moved, stored and placed in the structure in a manner to avoid chipping, cracking, fractures and excessive bending stresses or damage. Precast Caps shall not be stacked. They shall be supported on firm blocking until placed and shimmed into final position. Blocking shall be installed such that uneven settlement due to wet ground or inadequate material underneath the blocking will not occur.

The Contractor may alter mix design and/or move or place caps before completing the prescribed curing period in Item 420 provided all of the following conditions are met:

1. The concrete has reached a flexural strength of 355 psi or a compressive strength of 2500 psi.
2. The curing time is interrupted for no more than 2 hours.
3. The alternate plan meets the approval of the Engineer.

Place column/drilled shafts in accordance with Item 420. If the connection dowels (Bars PD) are inserted after the concrete has been placed, the concrete shall be re-vibrated. Dowel placement tolerance is + 1/2" (plan and elevation).

Caps may be placed on columns/drilled shafts after the column/drilled shaft concrete has achieved a flexural strength of 355 psi (or 2500 psi compressive strength). Use plastic shims or friction collars to support the caps at the proper elevation prior to grouting. Total area of plastic shims used on top of each column may not exceed 6% of the column area. Column/Drilled Shaft curing may be interrupted a maximum of two hours to allow placement of plastic shims or friction collars and placement of the cap.

Grout shall conform to the Special Specification "Structural Grout".

Grout forms and tubes (input type and location) shall be approved prior to grouting. Connection shall be grout tight such that fluid grout does not leak out before grout has achieved initial set.

Prior to construction, the Contractor shall demonstrate the adequacy of the grout and the grouting system to the satisfaction of the Engineer.

Three (3) 2" x 2" x 2" grout cube samples will be cast for each precast bent cap (one per precast cap-to-column connection) by the Contractor and given to TxDOT for testing to ensure that the grout meets the specified mechanical property criteria for compressive strength. Failure to meet strength criteria or evidence of frothing or foaming shall be cause for removal and recasting of the connection as deemed necessary by the Engineer. Grout selected shall meet the other criteria listed as well.

Prestressed beams may be placed on the caps after a grout compressive strength of 2500 psi has been achieved.

If the Contractor wishes to deviate from these requirements, a work plan and supporting calculations shall be submitted to the Engineer for review and approval. The plan and calculations shall be sealed by an Engineer registered in the State of Texas.

PRECAST BENT CAP QUANTITY ADJUSTMENTS

Shorten column Bars V (or vertical drilled shaft reinforcing if shafts cast to bottom of cap) by 3'-8" and reduce reinforcing steel total by 250 Lbs.

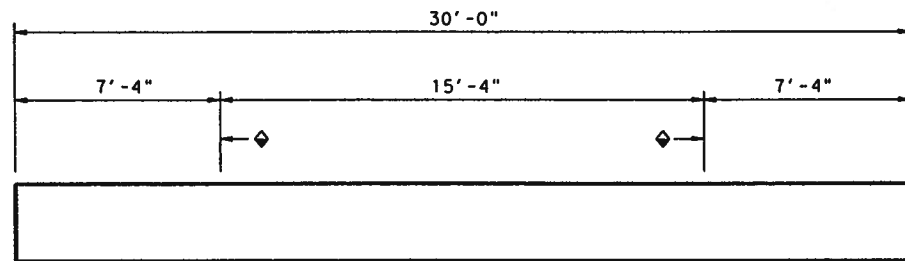
Add 18 Bars PD (#11 X 8'-7") ~ 821 Lbs. total

Add 3 Bars PZ (#3 X 56'-8") ~ 43 Lbs. total

Ducts, non shrink grout and grout tubes shall be subsidiary to Class "C" Concrete.

For Contractor's information, grout quantity is 12 CF per bent. (Based on a 2" grout pad thickness.)

No additional payment for grout will be made if Contractor elects to use precast bent option.



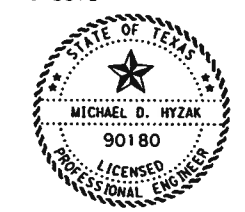
◆ Allowable Lift Point Location
Design lift point load is 30 tons, including impact factor of 2. The Contractor may submit other lifting points/schemes to the Engineer for review and approval. After bent caps are in place, lifting device pockets at expansion joint bents shall be patched with grout.

LIFTING DIAGRAM

PATH: \REPORTER-WS3
6635 ib02.dgn

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	64



Michael D. Hyzak
6/29/05



**OPTIONAL PRECAST
CONCRETE BENT
CAP DETAILS**

LIVE OAK CREEK BRIDGE

FILE: 6635ib02.dgn	DISTRICT: MDH	CITY: RNP	COUNTY: MDH
© TxDOT MAY 2005	DISTRICT: SJT	FEDERAL AID PROJECT: BR 2005 (856)	SHEET: 44F
REVISIONS			
COUNTY: CROCKETT	CONTROL: 0140	SECT: 08	JOB: 021
			HIGHWAY: SH 290

TABLE OF ESTIMATED QUANTITIES

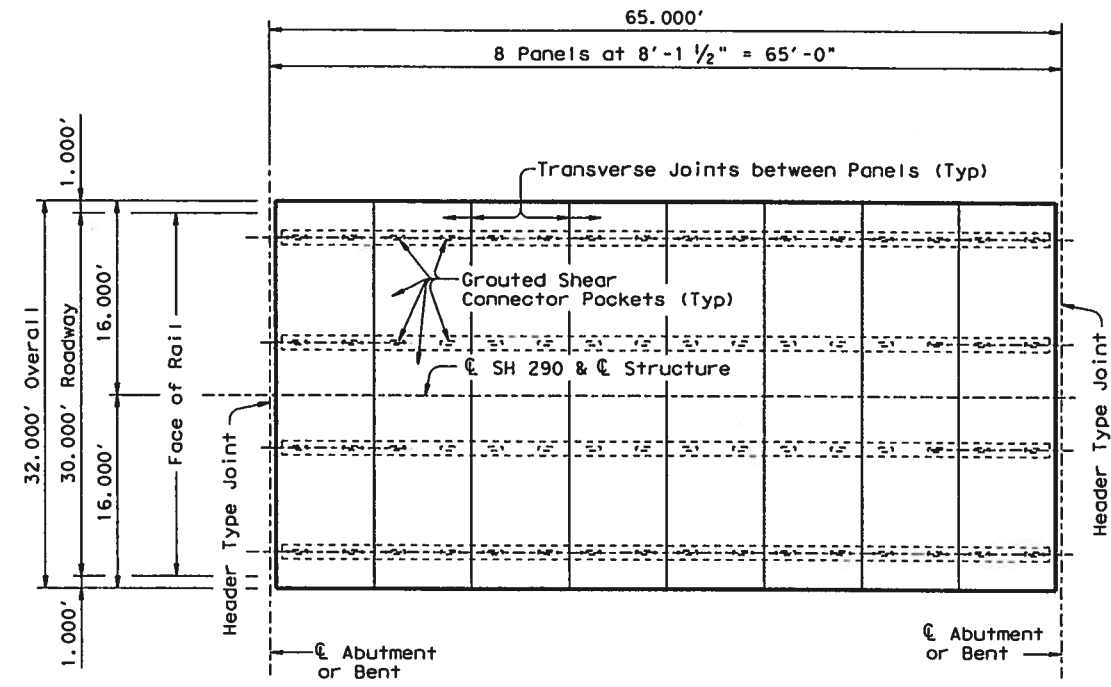
PROJECTED COUPLER OPTION

REINF CONCRETE SLAB ①	PRESTRESSED CONCRETE BEAMS (TY IV) ②	CLASS "H" CONCRETE ③	REINF STEEL ③ ④	STRUCT STEEL (MISC) ③	STRUCT GROUT
SF	LF	CY	LB	LB	CF
2080	258.68	49.6	4774	2984	74.4
TOTAL	258.68	49.6	4774	2984	74.4

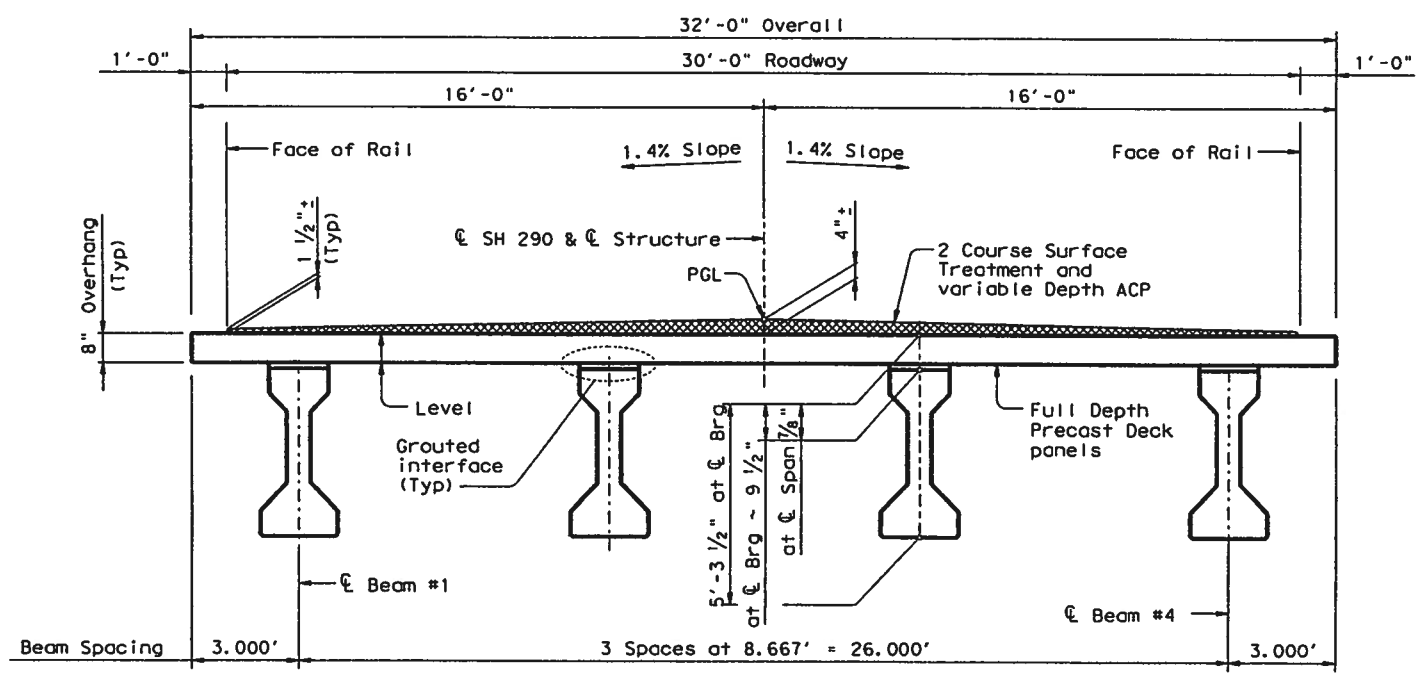
SLOTTED COUPLER OPTION

REINF CONCRETE SLAB ①	PRESTRESSED CONCRETE BEAMS (TY IV) ②	CLASS "H" CONCRETE ③	REINF STEEL ③ ④	STRUCT STEEL (MISC) ③	STRUCT GROUT
SF	LF	CY	LB	LB	CF
2080	258.68	48.8	5170	4284	95.2
TOTAL	258.68	48.8	5170	4284	95.2

- ① Full Depth Precast Deck Panels.
- ② Beam lengths shown are bottom flange lengths with adjustments made for beam slope. Span #1 ~ 64.67 L.F. each beam
- ③ For Contractors information only. (subsidiary to Reinforced Concrete Slab).
- ④ Quantity shown does not include prestressing strands.



PLAN



TYPICAL TRANSVERSE SECTION

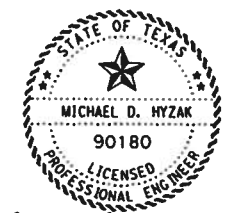
GENERAL NOTES:
 Designed according to AASHTO LRFD and current Interim Specifications. See FULL DEPTH DECK PANEL DETAILS and DECK CONSTRUCTION DETAILS sheets for additional information. Structural Grout shall conform to Special Specification 4078.

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 Bridge Division

65.00' PRESTRESSED CONCRETE BEAM SPAN

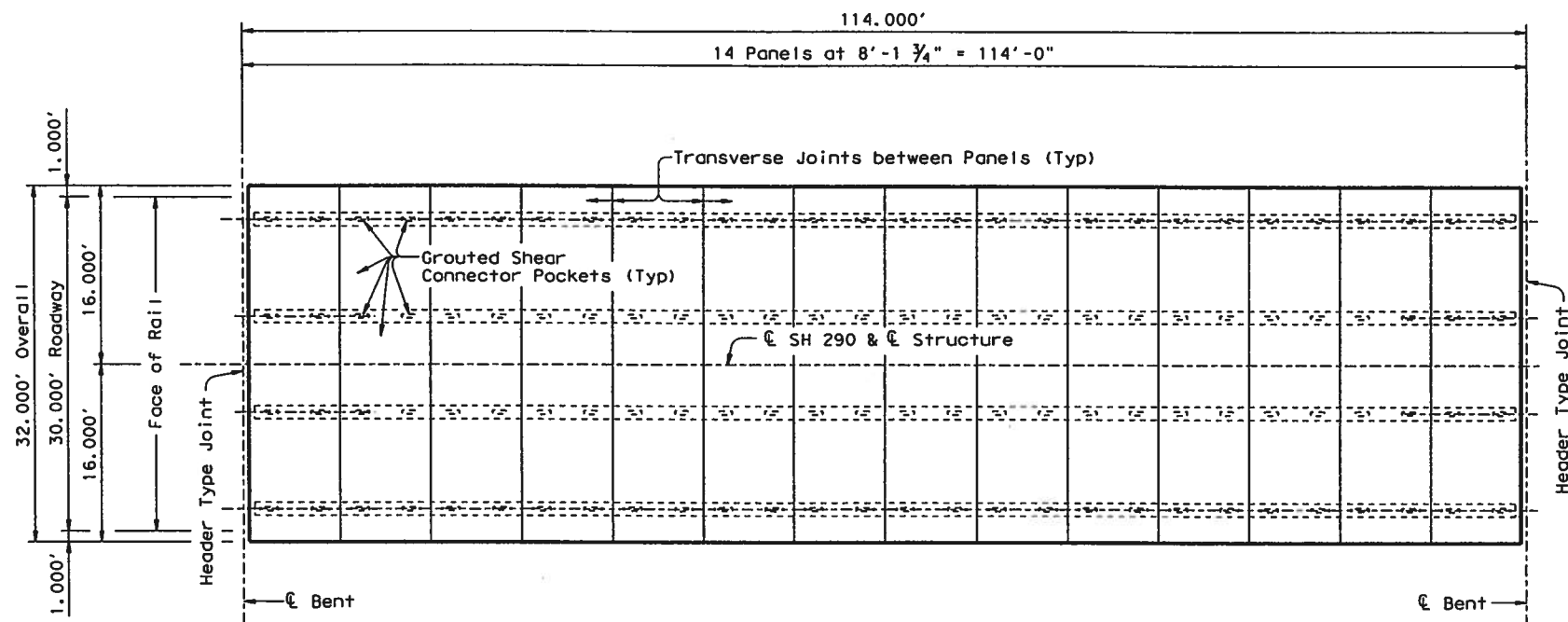
LIVE OAK CREEK BRIDGE



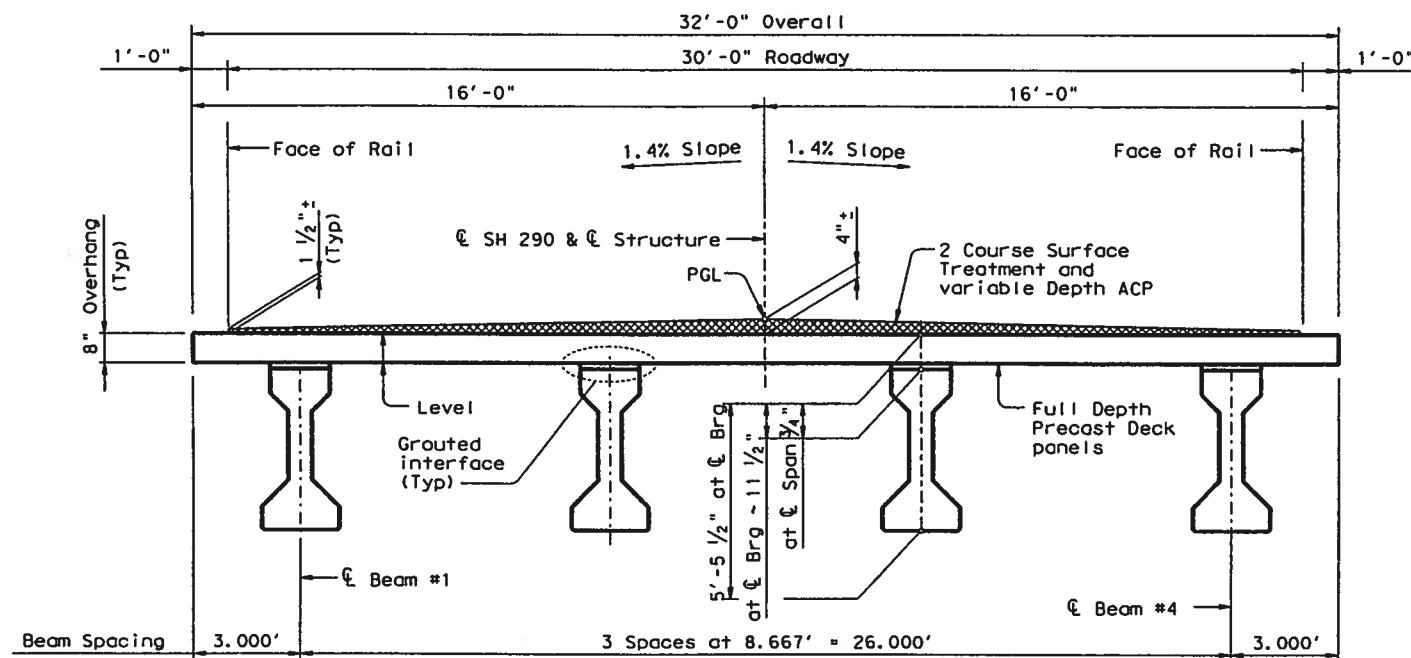
Michael D. Hyzak
 6/29/05

LEVELS DISPLAYED
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 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 64 65 66 67 68 69 70 71 72
 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92
 93 94 95 96 97 98 99 100

FILE: 6635pb01.dgn	DN: MDH	CK: RNP	CK: MDH
© TxDOT APRIL 2005	DISTRICT 07	FEDERAL AID PROJECT	SHEET 44G
REVISIONS	COUNTY	CONTROL SECT	JOB HIGHWAY



PLAN



TYPICAL TRANSVERSE SECTION

TABLE OF ESTIMATED QUANTITIES

PROJECTED COUPLER OPTION

REINF CONCRETE SLAB ①	PRESTRESSED CONCRETE BEAMS (TY IV) ②	CLASS "H" CONCRETE ③	REINF STEEL ③ ④	STRUCT STEEL (MISC) ③	STRUCT GROUT
SF	LF	CY	LB	LB	CF
3648	454.68	85.4	7942	5222	132.5
TOTAL	454.68	85.4	7942	5222	132.5

SLOTTED COUPLER OPTION

REINF CONCRETE SLAB ①	PRESTRESSED CONCRETE BEAMS (TY IV) ②	CLASS "H" CONCRETE ③	REINF STEEL ③ ④	STRUCT STEEL (MISC) ③	STRUCT GROUT
SF	LF	CY	LB	LB	CF
3648	454.68	86.8	8578	7956	171.0
TOTAL	454.68	86.8	8578	7956	171.0

- ① Full Depth Precast Deck Panels.
- ② Beam lengths shown are bottom flange lengths with adjustments made for beam slope. Span #1 ~ 113.67 L.F. each beam
- ③ For Contractors information only. (subsidiary to Reinforced Concrete Slab).
- ④ Quantity shown does not include prestressing strands.

GENERAL NOTES:

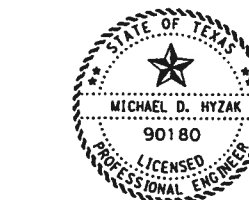
Designed according to AASHTO LRFD and current Interim Specifications. See FULL DEPTH DECK PANEL DETAILS and DECK CONSTRUCTION DETAILS sheets for additional information. Structural Grout shall conform to Special Specification 4078.

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114.00' PRESTRESSED CONCRETE BEAM SPAN

LIVE OAK CREEK BRIDGE



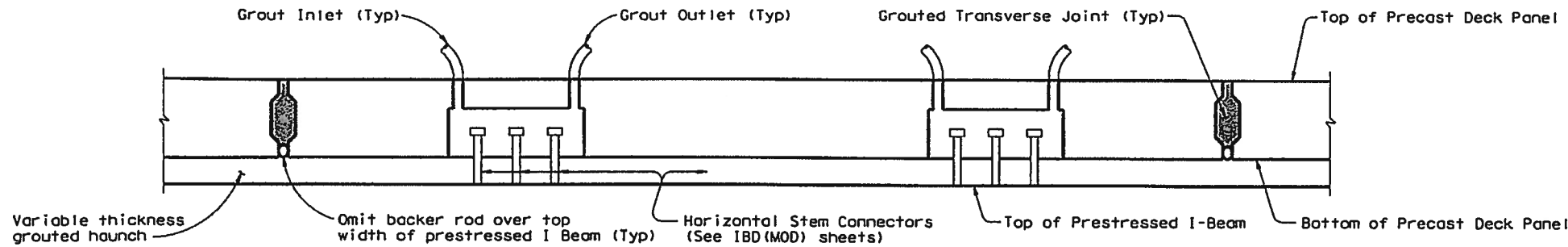
Michael D. Hyzak
6/29/05

LEVELS DISPLAYED
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FILE: 6635pb01.dgn	DW: MDH	CR:	DW: RNP	CR: MDH
© TXDOT APRIL 2005	DISTRICT	FEDERAL AID PROJECT	SHEET	
REVISIONS	07	BR 2005 (856)	44H	
COUNTY	CONTROL	SECT	JOB	HIGHWAY
CROCKETT	0140	08	021	SH290

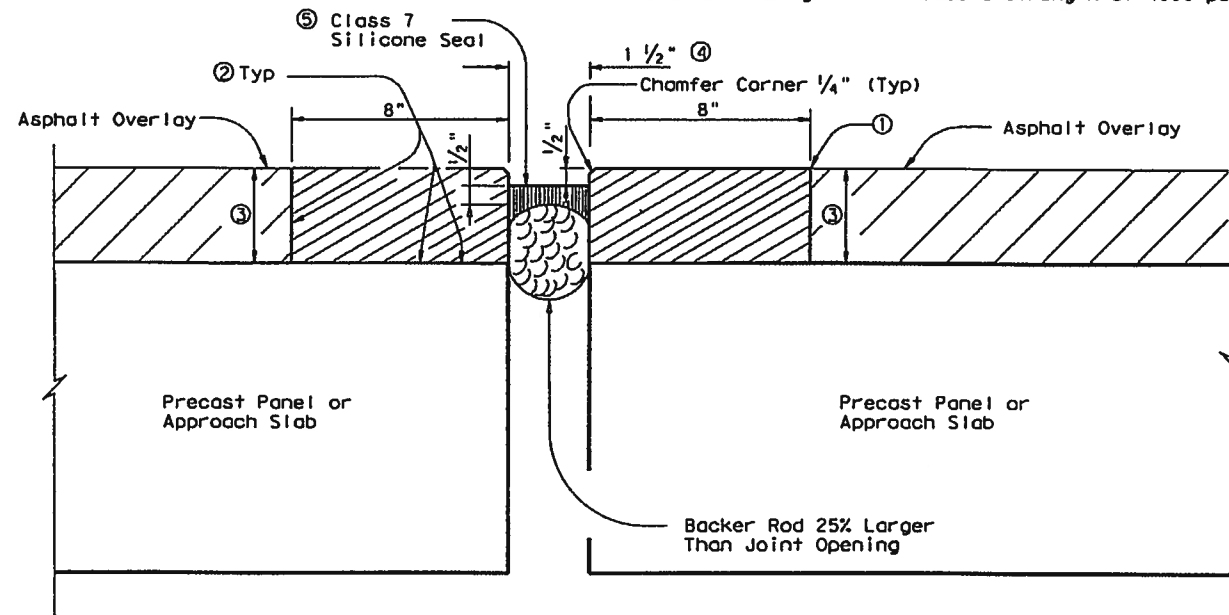
SUPERSTRUCTURE CONSTRUCTION SEQUENCE

1. Obtain approval of deck construction submittals from Engineer.
2. Erect beams and install temporary erection bracing.
3. Survey beams to establish elevation profile.
4. Estimate haunch height, erection bolt projection, dead load deflection to achieve profile grade. Make haunch forming and erection bolt adjustments as necessary.
5. Erect panels in a given span.
6. Survey panel elevations and make any necessary adjustments in elevation to achieve uniform bearing on erection bolts and correct profile grade.
7. Check haunch and transverse panel joint forming to be grout tight.
8. Install grout at horizontal shear connector locations until the haunch interface and shear connector pockets are completely filled.
9. Install grout at transverse panel joint locations.
10. Top-off grout to ensure all interfaces are completed grouted. Track volume placed and compare with theoretical volumes.
11. Cure grout according to manufacturer recommendations.
12. Proceed with subsequent activities (overlay, bridge rail, etc) on the constructed deck when grout reaches specified minimum strength.



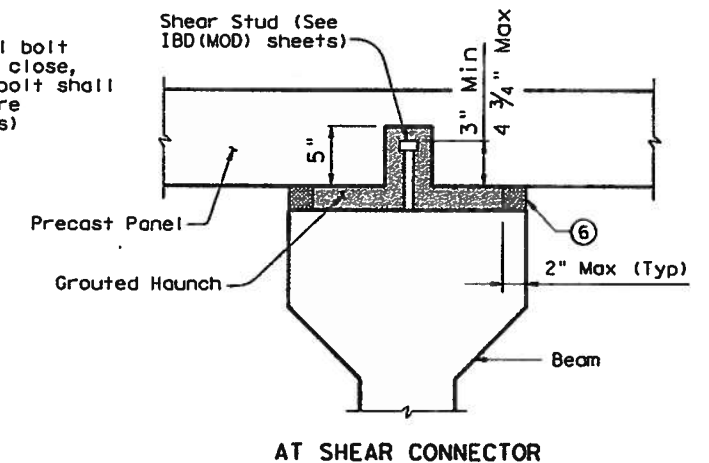
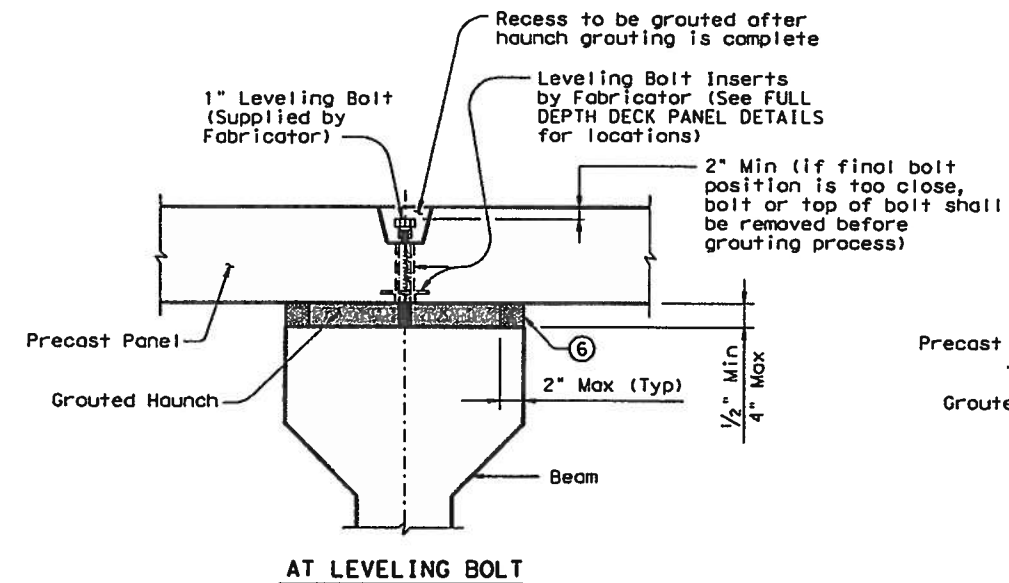
PANEL GROUTING DETAIL

Contractor shall submit a grouting plan for approval, including items such as grout, grout mixing and pumping equipment, haunch forms, grout tube types and locations, and the grout installation process. Subsequent deck construction operations/construction traffic may commence after grout achieves a strength of 4000 psi.



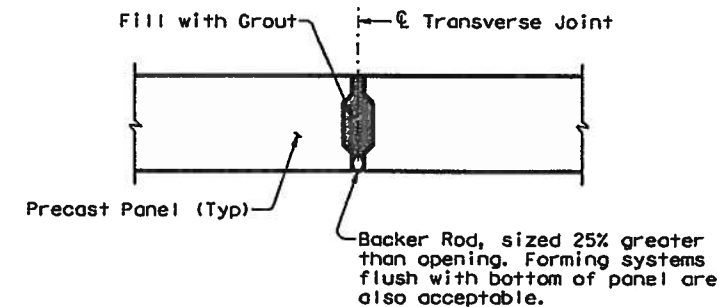
SECTION THRU HEADER EXPANSION JOINT

Measurement and Payment will be in accordance with Item 454, "Bridge Expansion Joints" and as shown on the plans.



BEAM-PANEL INTERFACE

⑥ Compressible stay-in-place form determined by contractor. External removable forms may also be used. Forms shall be grout tight.

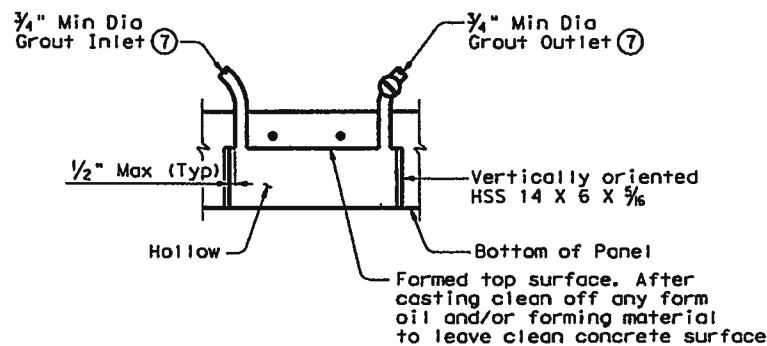


TRANSVERSE JOINT DETAIL

Forming at edge of panel to be determined by the Contractor.

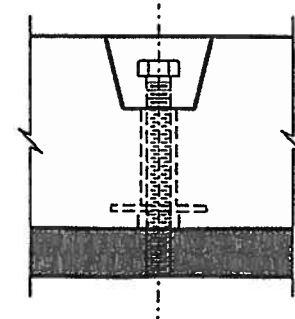
NOTES:

- ① Saw cut overlay to top of deck and remove material to expose joint.
- ② Surfaces where nosing/header material is to be placed shall be clean and dry in accordance with the manufacturer's specifications.
- ③ Match the thickness of the header with the thickness of the overlay. The thickness of the overlay varies from 4" to 1 1/2".
- ④ Match existing joint opening.
- ⑤ Extend sealant and backer rod to within 3 inches of deck edge. Prepare surfaces where sealant is to be placed in accordance with manufacturers specifications.



SHEAR CONNECTOR POCKET DETAIL

⑦ Diameter, length, and manufacturer to be coordinated with Contractor considering Contractor's grouting plan



LEVELING BOLT DETAIL

Contractor may propose other designs for approval.

FILE: 6635pb01.dgn PATH: d48pc3b\brg-rp\arter-1
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Bridge Division

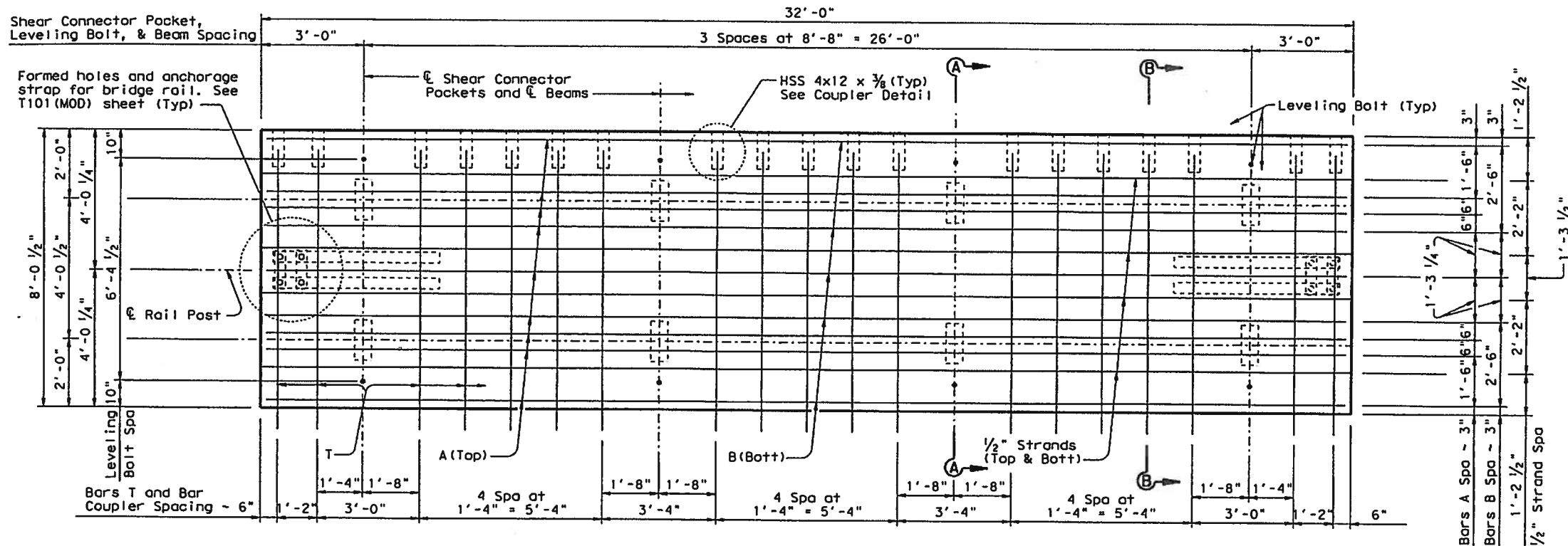
DECK CONSTRUCTION DETAILS

LIVE OAK CREEK BRIDGE

FILE: 6635pb01.dgn	DR: MDH	CK: RNP	CK: MDH
© TxDOT APRIL 2005	DISTRICT: 07	FEDERAL AID PROJECT: BR 2005 (856)	SHEET: 441
REVISIONS:	CONTROL:	SECT:	JOB:
MDH/RNP 2/23/07 - Added Shear Connector Detail, Leveling Bolt Detail, Substructure Const. Sec., Clarified Panel Grouting Detail.	CROCKETT	0140	08 021 SH290

Shear Connector Pocket, Leveling Bolt, & Beam Spacing

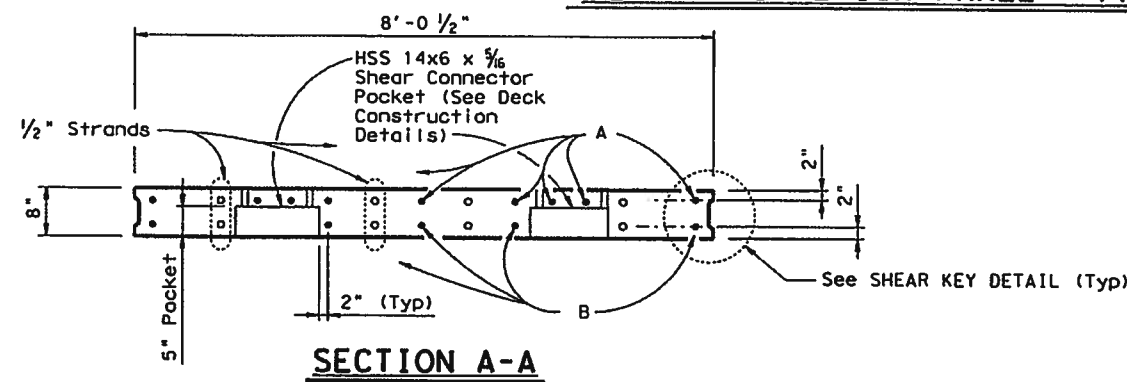
Formed holes and anchorage strap for bridge rail. See T101 (MOD) sheet (Typ)



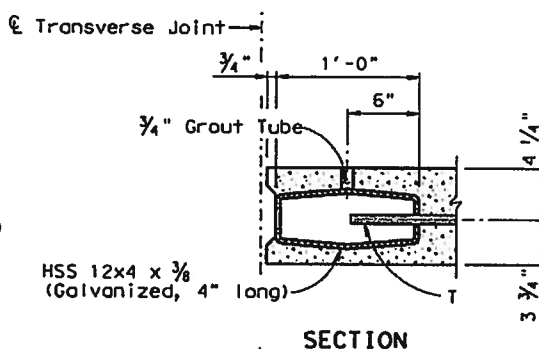
PLAN OF INTERIOR PANEL - PROJECTED COUPLER OPTION

TABLE OF ESTIMATED QUANTITIES ^①					
Bar	No.	Size	Length	Weight	
A	9	# 4	31' - 9"	191	
B	5	# 4	31' - 9"	106	
T	19	# 6	8' - 1"	231	
Reinforcing Steel				Lb	528
Class "H" Concrete				CY	6.2
1/2" Dia Strands				LF	② 256
Structural Steel (Misc)				Lb	373

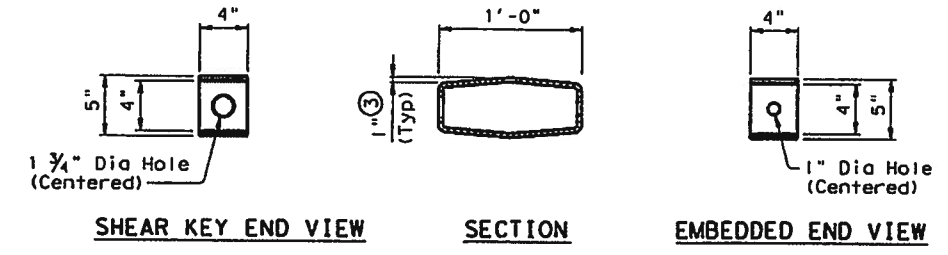
① Quantities are per panel and for Contractor's information only. All labor and materials subsidiary to Item 422 "Reinforced Concrete Slab".
 ② Quantity does not include additional projection needed beyond panel ends for stressing operations.



SECTION A-A



SECTION

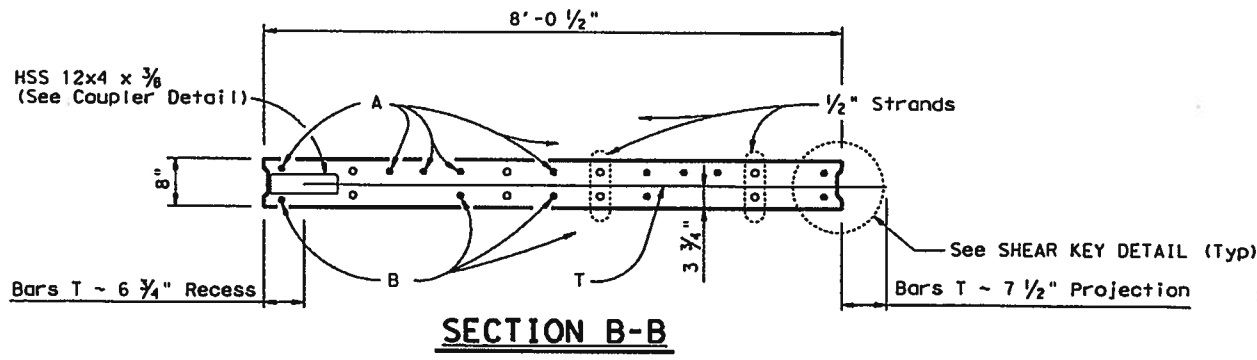


HSS 12x4x 3/8 DETAILS

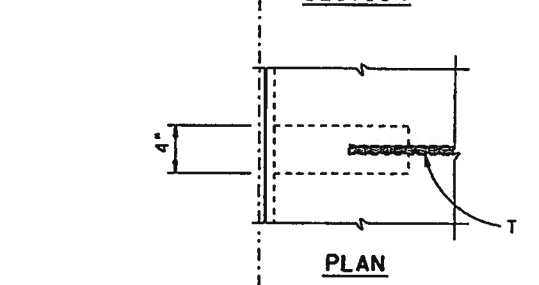
③ Compress to create bulge of dimension shown.

GENERAL NOTES:

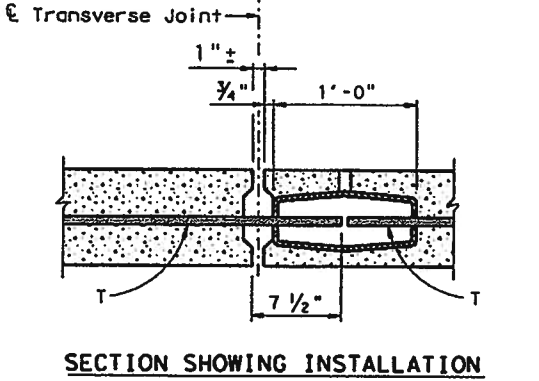
Designed according to AASHTO LRFD Specifications and NCHRP Project 12-65 recommendations. Panel payment under Item 422. Panel fabrication shall conform to Items 420, 424, and 426, unless otherwise noted. Fabricator shall submit shop drawings for approval by the Engineer. All concrete for panels to be Class "H". Release strength f'_{ci} = 4000 psi and minimum 28-day strength f'_c = 5000 psi. All reinforcing shall be Grade 60. Structural Tubes shall be A500 Gr B. 1/2" Dia Strands shall be 270 ksi low relaxation and pretensioned to an initial tension of 31 kips each. After stressing, strands shall be recessed and epoxied per Item 426. Top surface of bridge slab shall receive a carpet drag, burlap drag, or broom finish per Item 420. No tining will be required. All surfaces will be cured per the bridge slab requirements of Item 420, except curing may be interrupted by no more than a maximum of 2 hours to allow removal from forms after release.



SECTION B-B

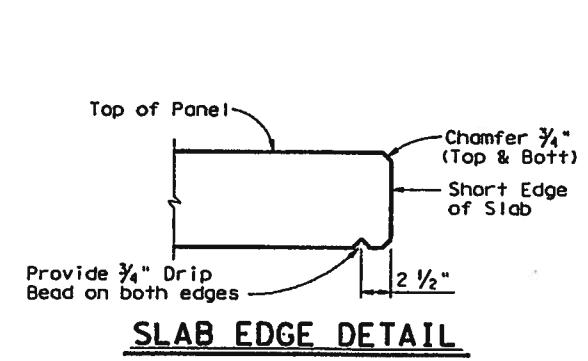


PLAN

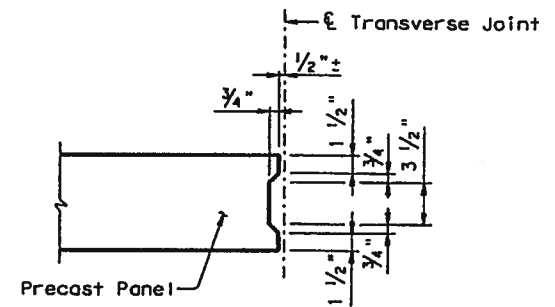


SECTION SHOWING INSTALLATION

COUPLER DETAILS



SLAB EDGE DETAIL



SHEAR KEY DETAIL

See DECK CONSTRUCTION DETAILS sheet for additional details.

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 Bridge Division

**FULL DEPTH DECK PANEL DETAILS
 PROJECTED COUPLER OPTION
 INTERIOR PANEL**

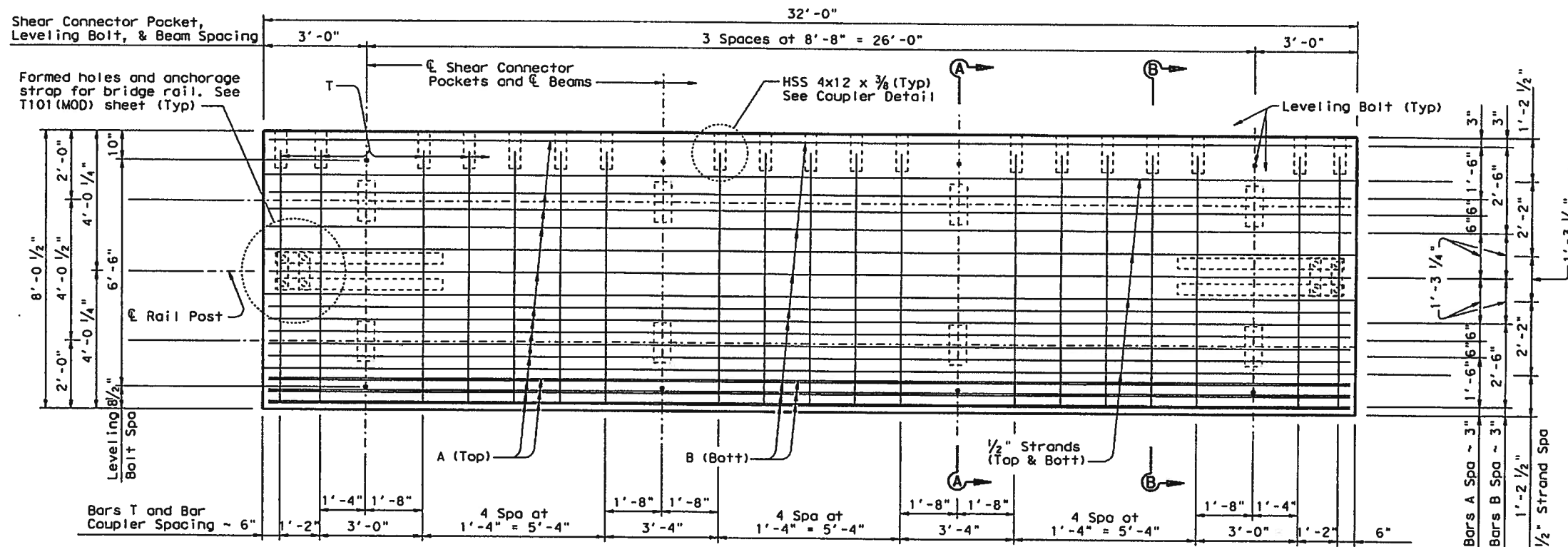
LIVE OAK CREEK BRIDGE

FILE: 6635p01.dgn	DN: MDH	CK: RNP	CK: MDH
© TXDOT APRIL 2005	DISTRICT	FEDERAL AID PROJECT	SHEET
REVISIONS	SJT	BR 2005 (856)	44J
12/04/06 - Clarified leveling bolt locations, shear pocket detail, grout tube, bulged coupler note. MDH/RNP	COUNTY	CONTROL SECT	JOB HIGHWAY
	CROCKETT	0140	08 021 SH290

LEVELS DISPLAYED
 1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9 4.0 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8 4.9 5.0 5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9 6.0 6.1 6.2 6.3 6.4 6.5 6.6 6.7 6.8 6.9 7.0 7.1 7.2 7.3 7.4 7.5 7.6 7.7 7.8 7.9 8.0 8.1 8.2 8.3 8.4 8.5 8.6 8.7 8.8 8.9 9.0 9.1 9.2 9.3 9.4 9.5 9.6 9.7 9.8 9.9 10.0

Shear Connector Pocket, Leveling Bolt, & Beam Spacing

Formed holes and anchorage strap for bridge rail. See T101(MOD) sheet (Typ)

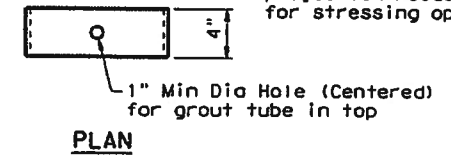


PLAN OF END PANEL - PROJECTED COUPLER OPTION

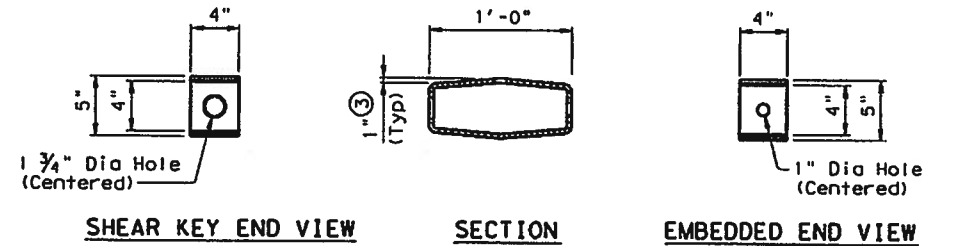
TABLE OF ESTIMATED QUANTITIES ①

Bar	No.	Size	Length	Weight
A	16	# 4	31'- 9"	339
B	11	# 4	31'- 9"	233
T	19	# 6	8'- 1"	231
Reinforcing Steel				Lb 803
Class "H" Concrete				CY 6.2
1/2" Dia Strands				LF ② 256
Structural Steel (Misc)				Lb 373

① Quantities are per panel and for Contractor's information only. All labor and materials subsidiary to Item 422 "Reinforced Concrete Slab".
 ② Quantity does not include additional projection needed beyond panel ends for stressing operations.



PLAN

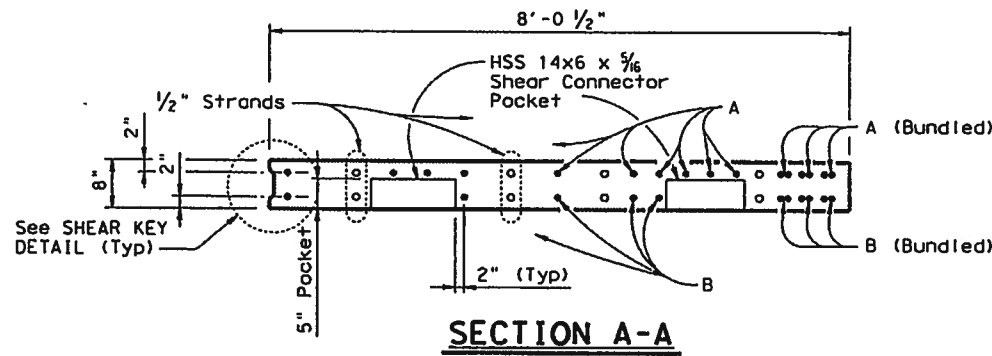


HSS 12x4x 3/8 DETAILS

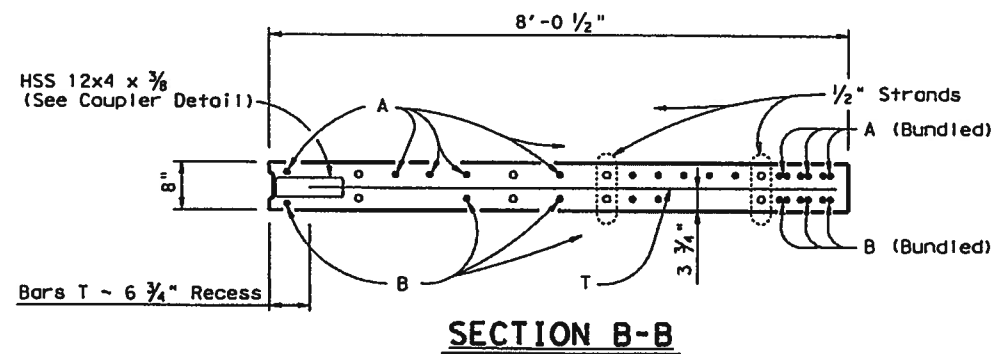
③ Compress to create bulge of dimension shown.

GENERAL NOTES:

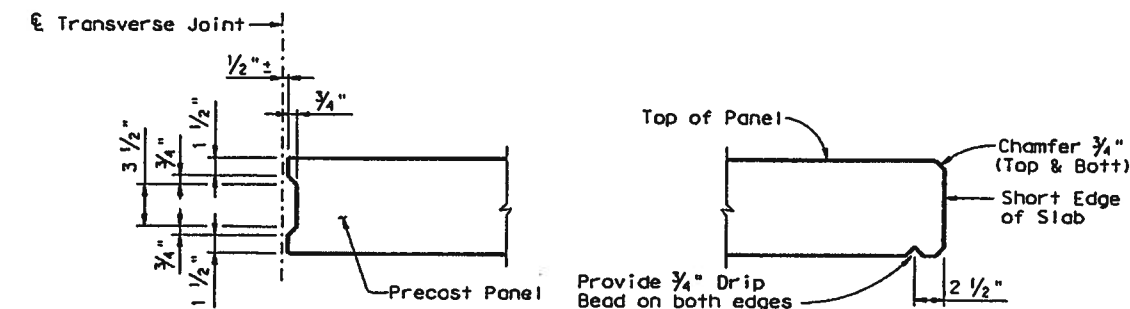
Designed according to AASHTO LRFD Specifications and NCHRP Project 12-65 recommendations. Panel payment under Item 422. Panel fabrication shall conform to Items 420, 424, and 426, unless otherwise noted.
 Fabricator shall submit shop drawings for approval by the Engineer.
 All concrete for panels to be Class "H". Release strength f'_{ci} = 4000 psi and minimum 28-day strength f'_c = 5000 psi.
 All reinforcing shall be Grade 60.
 Structural Tubes shall be A500 Gr B.
 1/2" Dia Strands shall be 270 ksi low relaxation and pretensioned to an initial tension of 31 kips each.
 After stressing, strands shall be recessed and epoxied per Item 426.
 Top surface of bridge slab shall receive a carpet drag, burlap drag, or broom finish per Item 420. No tining will be required.
 All surfaces will be cured per the bridge slab requirements of Item 420, except curing may be interrupted by no more than a maximum of 2 hours to allow removal from forms after release.



SECTION A-A

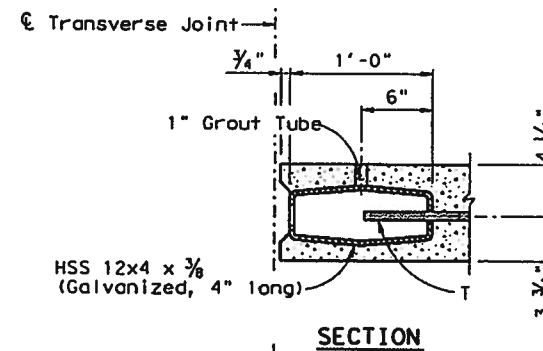


SECTION B-B



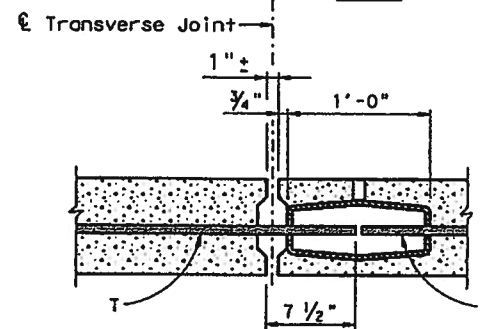
SHEAR KEY DETAIL

SLAB EDGE DETAIL



SECTION

PLAN



SECTION SHOWING INSTALLATION

COUPLER DETAILS

HL93 LOADING

Texas Department of Transportation
 Bridge Division

**FULL DEPTH DECK PANEL DETAILS
 PROJECTED COUPLER OPTION
 END PANEL**

LIVE OAK CREEK BRIDGE

FILE: 6635pb01.dgn	DR: MDH	CR: RNP	CR: MDH
© TXDOT APRIL 2005	DISTRICT: SJT	FEDERAL AID PROJECT: BR 2005 (856)	SHEET: 44K
REVISIONS		CONTROL: CROCKETT	SECT: 0140
2/20/07 - Clarified leveling bolt locations, shear pocket detail, grout tube, bulged coupler note, MDH/RSP		JOB: 08	HIGHWAY: 021 SH290

LEVELS DISPLAYED
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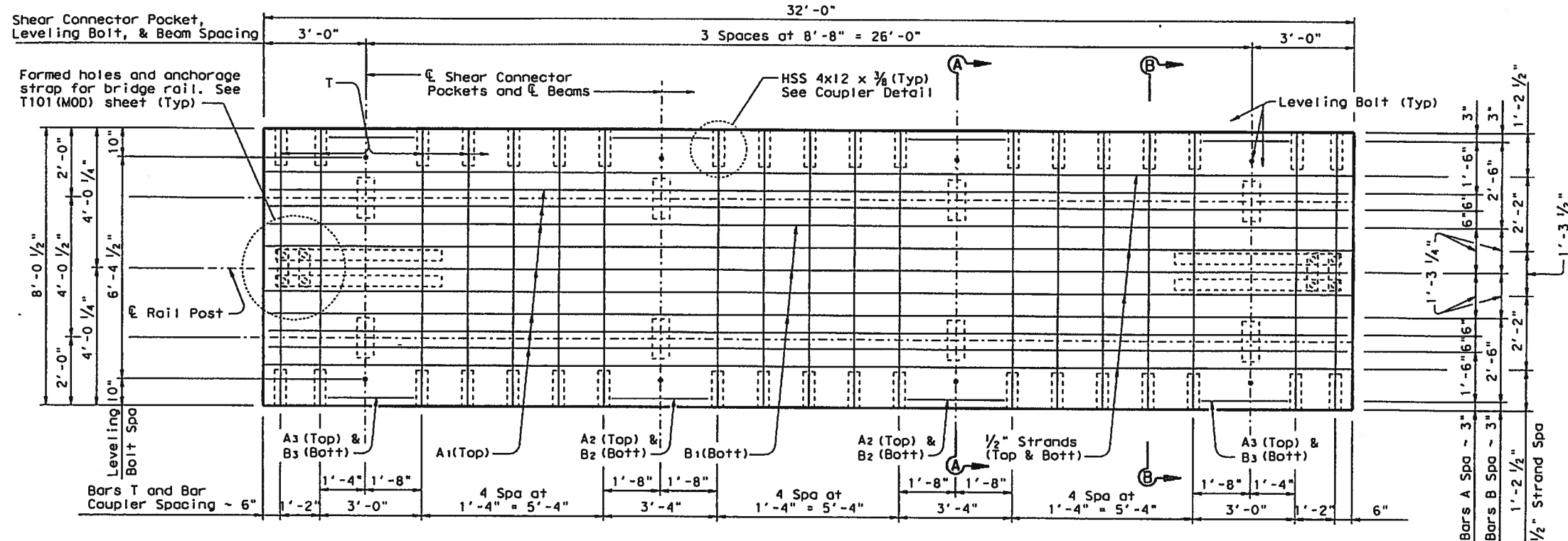
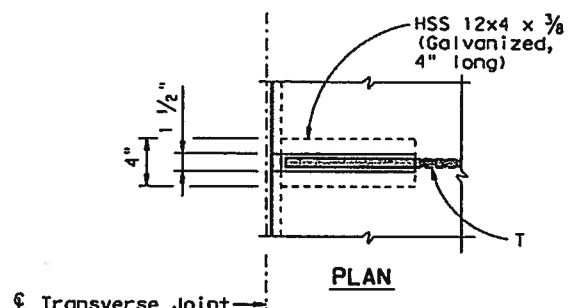
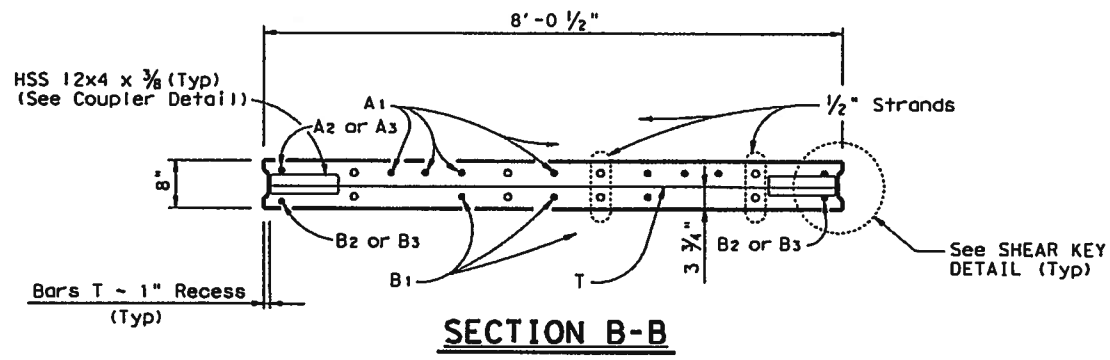
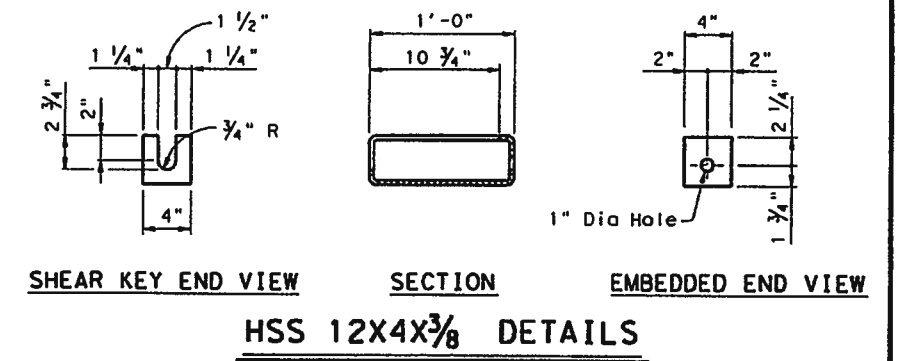
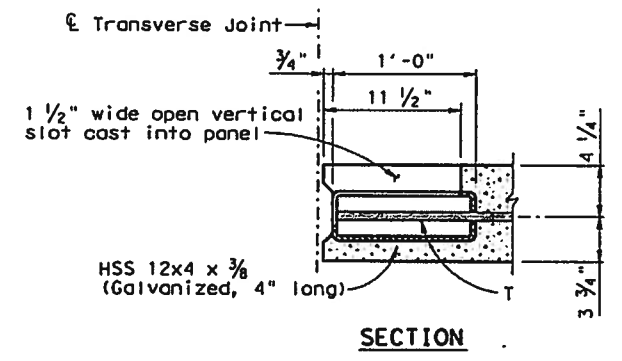
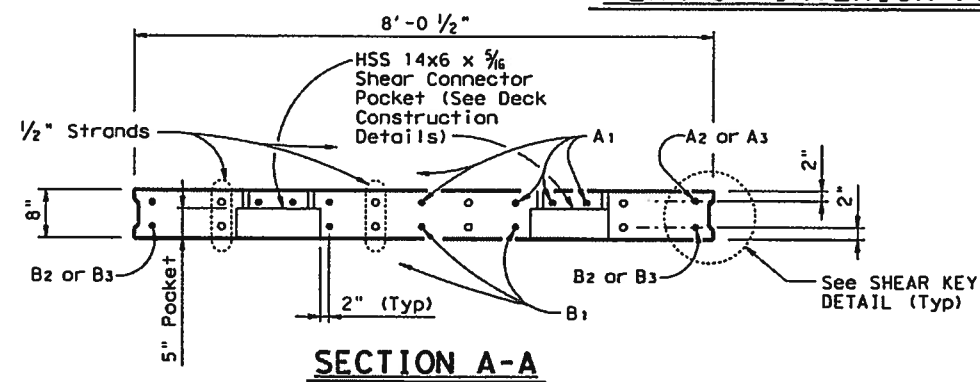


TABLE OF ESTIMATED QUANTITIES ⁽¹⁾				
Bar	No.	Size	Length	Weight
A1	7	# 4	31'- 9"	148
A2	4	# 4	2'- 9"	7
A3	4	# 4	2'- 5"	6
B1	5	# 4	31'- 9"	106
B2	4	# 4	2'- 9"	7
B3	4	# 4	2'- 5"	6
D	19	# 6	2'- 0"	57
T	19	# 6	8'- 1"	231
Reinforcing Steel			Lb	568
Class "H" Concrete			CY	6.1
1/2" Dia Strands			LF	(2) 256
Structural Steel (Misc)			Lb	612

(1) Quantities are per panel and for Contractor's information only. All labor and materials subsidiary to Item 422 "Reinforced Concrete Slab".

(2) Quantity does not include additional projection needed beyond panel ends for stressing operations.

PLAN OF INTERIOR PANEL - SLOTTED COUPLER OPTION



GENERAL NOTES:

Designed according to AASHTO LRFD Specifications and NCHRP Project 12-65 recommendations. Panel payment under Item 422. Panel fabrication shall conform to Items 420, 424, and 426, unless otherwise noted.

Fabricator shall submit shop drawings for approval by the Engineer.

All concrete for panels to be Class "H". Release strength $f'ci = 4000$ psi and minimum 28-day strength $f'c = 5000$ psi.

All reinforcing shall be Grade 60.

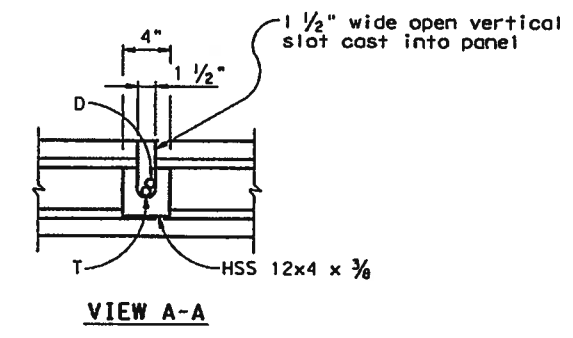
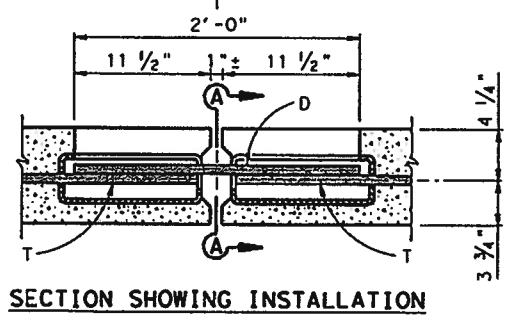
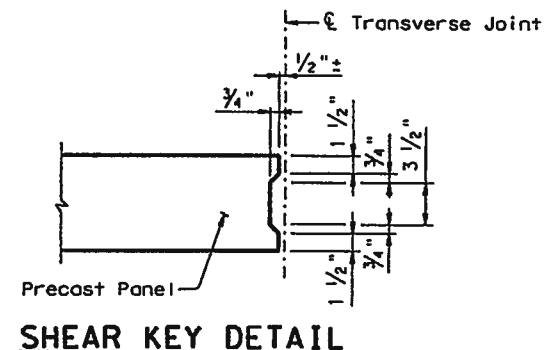
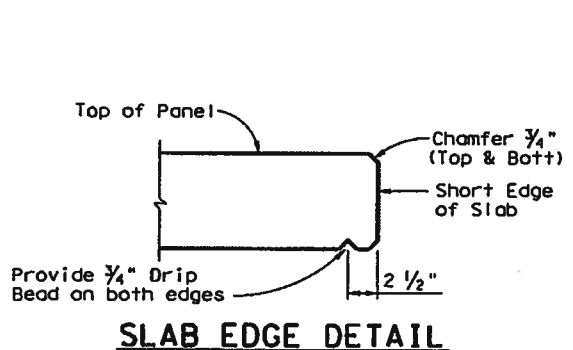
Structural Tubes shall be A500 Gr B.

1/2" Dia Strands shall be 270 ksi low relaxation and pretensioned to an initial tension of 31 kips each.

After stressing, strands shall be recessed and epoxied per Item 426.

Top surface of bridge slab shall receive a carpet drag, burlap drag, or broom finish per Item 420. No tining will be required.

All surfaces will be cured per the bridge slab requirements of Item 420, except curing may be interrupted by no more than a maximum of 2 hours to allow removal from forms after release.



SHEAR KEY DETAIL
See DECK CONSTRUCTION DETAILS sheet for additional details.

COUPLER DETAILS

HL93 LOADING

Texas Department of Transportation
Bridge Division

FULL DEPTH DECK PANEL DETAILS SLOTTED COUPLER OPTION INTERIOR PANEL

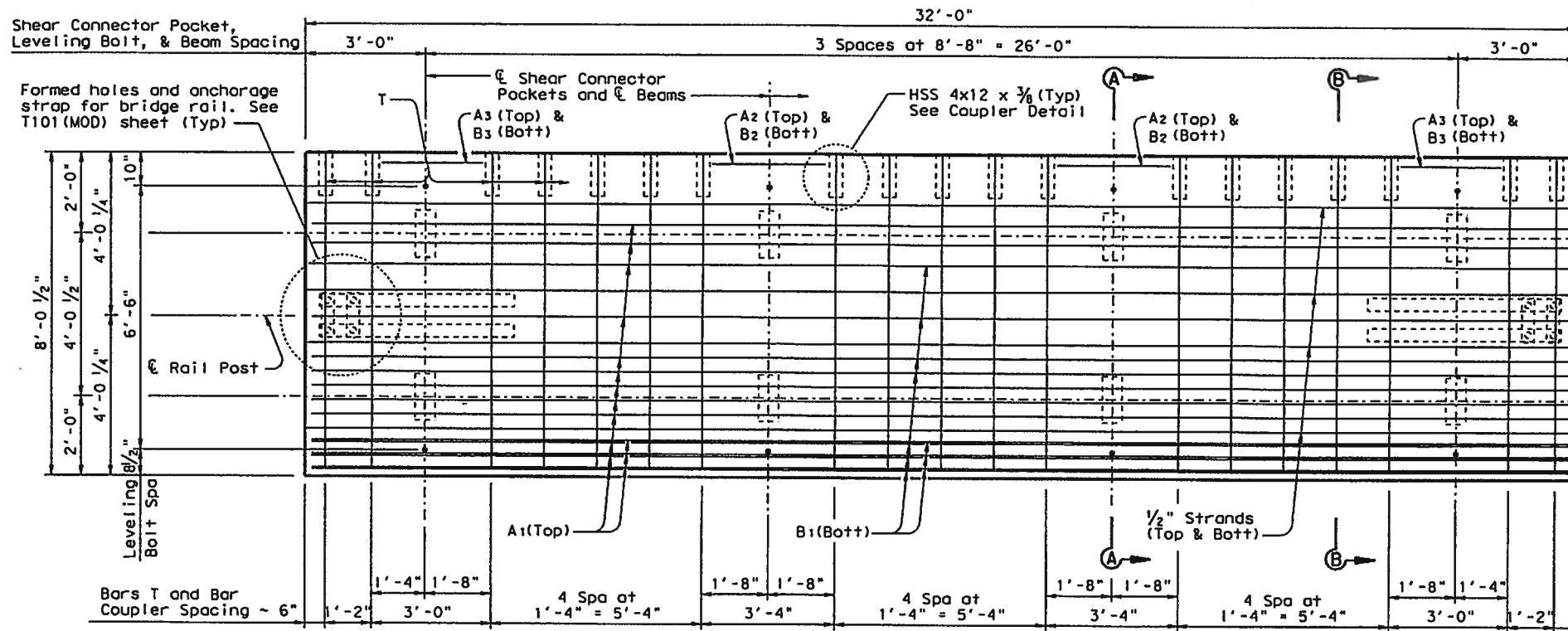
LIVE OAK CREEK BRIDGE

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REVISIONS	COUNTY: CROCKETT	CONTROL SECT: 0140 08 021	JOB: HIGHWAY
12/04/05 - Clarified leveling bolt locations, shear pocket detail, grant tube, bulged coupler note. MDH/RNP			5H290

LEVELS DISPLAYED

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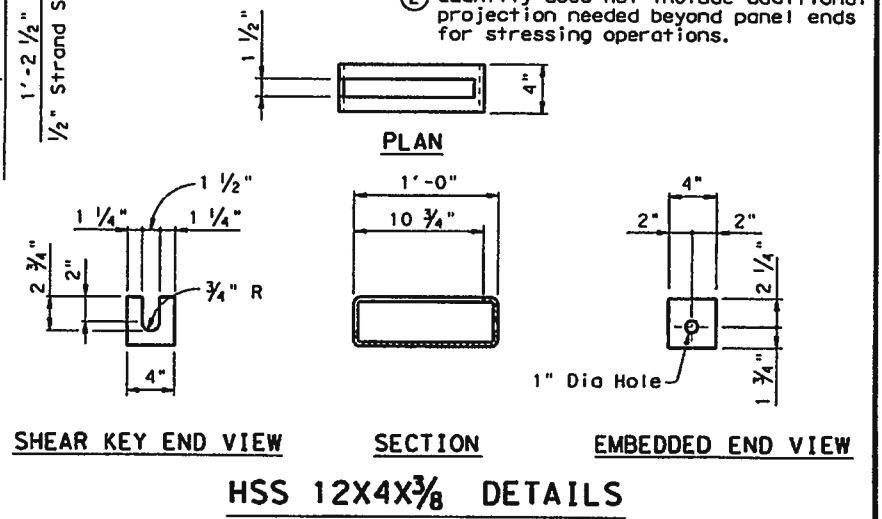
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PLAN OF END PANEL ~ SLOTTED COUPLER OPTION

TABLE OF ESTIMATED QUANTITIES ^①				
Bar	No.	Size	Length	Weight
A1	15	# 4	31'- 9"	318
A2	2	# 4	2'- 9"	4
A3	2	# 4	2'- 5"	3
B1	9	# 4	31'- 9"	191
B2	2	# 4	2'- 9"	4
B3	2	# 4	2'- 5"	3
D	19	# 6	2'- 0"	57
T	19	# 6	8'- 1"	231
Reinforcing Steel			Lb	881
Class "H" Concrete			CY	6.1
1/2" Dia Strands			LF	② 256
Structural Steel (Misc)			Lb	306

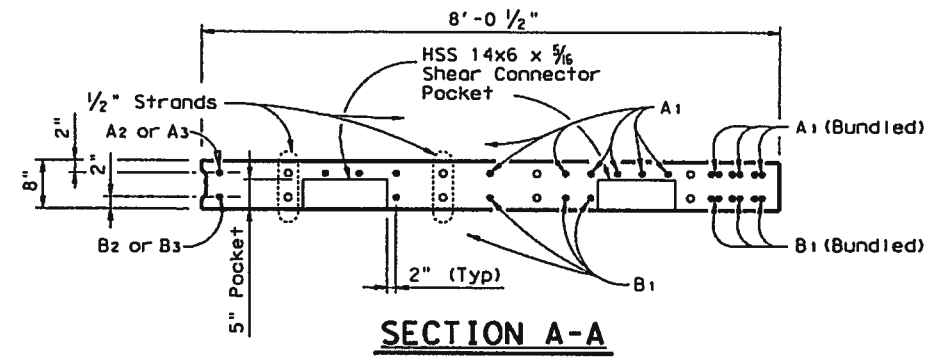
① Quantities are per panel and for Contractor's information only. All labor and materials subsidiary to Item 422 "Reinforced Concrete Slab".
 ② Quantity does not include additional projection needed beyond panel ends for stressing operations.



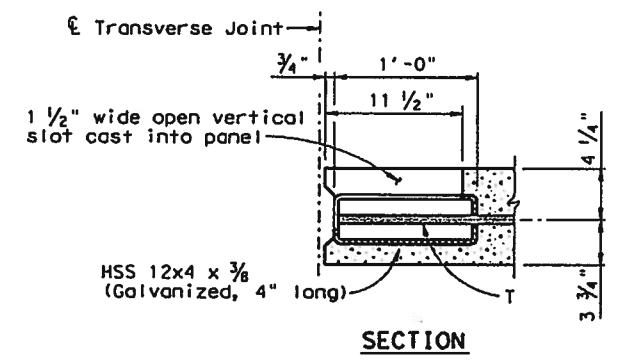
HSS 12x4x3/8 DETAILS

GENERAL NOTES:

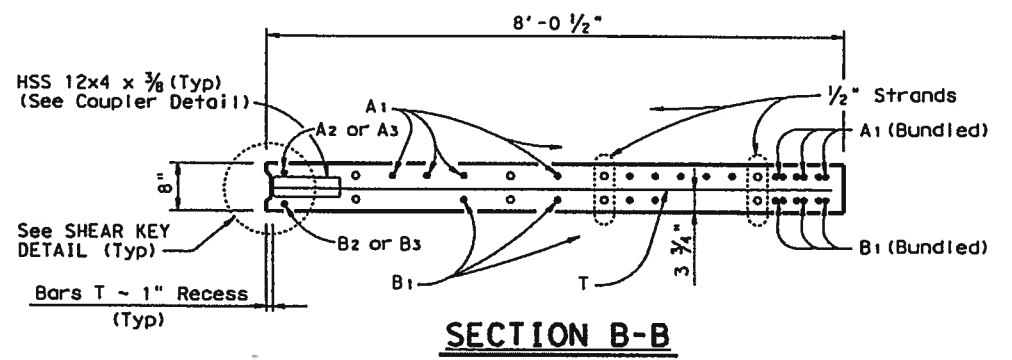
Designed according to AASHTO LRFD Specifications and NCHRP Project 12-65 recommendations. Panel payment under Item 422. Panel fabrication shall conform to Items 420, 424, and 426, unless otherwise noted. Fabricator shall submit shop drawings for approval by the Engineer. All concrete for panels to be Class "H". Release strength $f'ci = 4000$ psi and minimum 28-day strength $f'c = 5000$ psi. All reinforcing shall be Grade 60. Structural Tubes shall be A500 Gr B. 1/2" Dia Strands shall be 270 ksi low relaxation and pretensioned to an initial tension of 31 kips each. After stressing, strands shall be recessed and epoxied per Item 426. Top surface of bridge slab shall receive a carpet drag, burlap drag, or broom finish per Item 420. No tining will be required. All surfaces will be cured per the bridge slab requirements of Item 420, except curing may be interrupted by no more than a maximum of 2 hours to allow removal from forms after release.



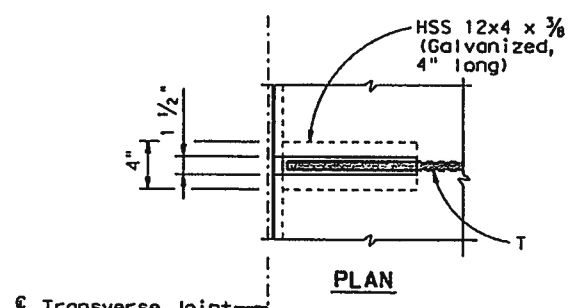
SECTION A-A



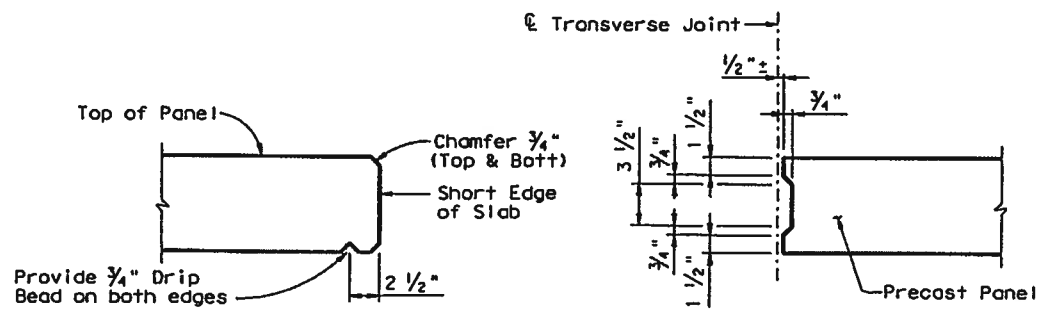
SECTION



SECTION B-B

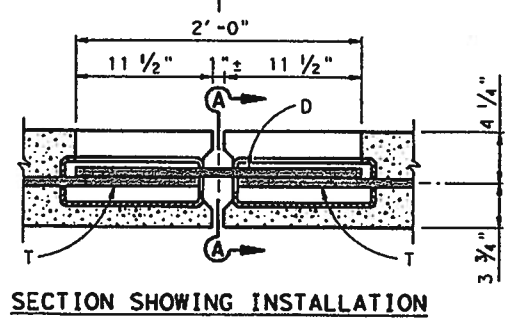


PLAN

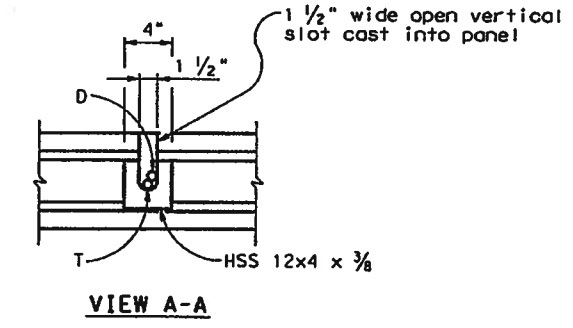


SLAB EDGE DETAIL

SHEAR KEY DETAIL



SECTION SHOWING INSTALLATION



VIEW A-A

COUPLER DETAILS

HL93 LOADING

Texas Department of Transportation
 Bridge Division

FULL DEPTH DECK PANEL DETAILS SLOTTED COUPLER OPTION END PANEL

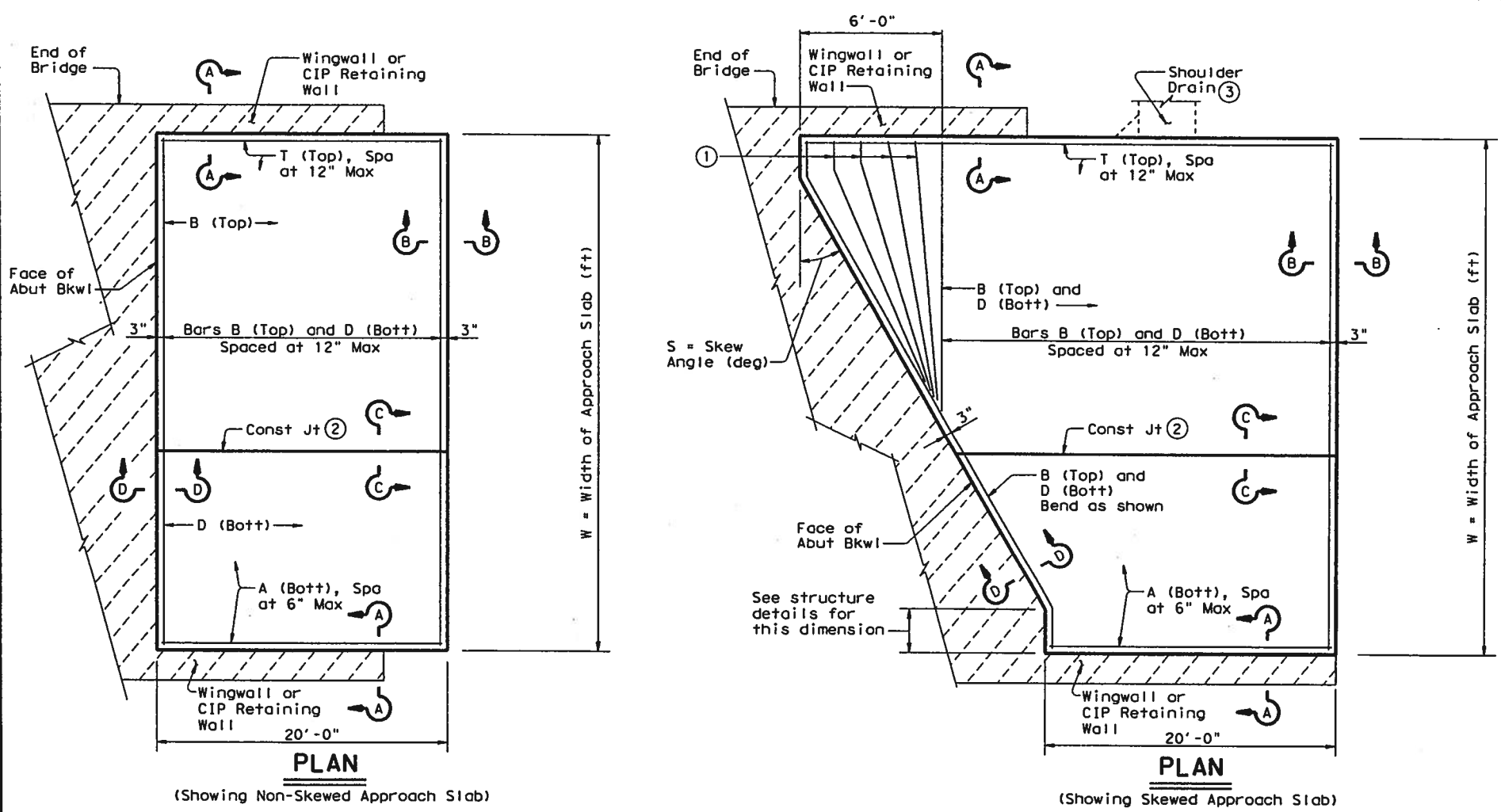
LIVE OAK CREEK BRIDGE

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© TxDOT APRIL 2005	DISTRICT	FEDERAL AID PROJECT	SHEET	
REVISIONS	SJT	BR 2005 (8561)	44M	
2/20/07 - Clarified leveling bolt locations, shear pocket detail, grout tube, bulge coupler note. MDH/RHP	COUNTY	CONTROL SECT	JOB	HIGHWAY
	CROCKETT	0140 08	021	SH290

LEVELS DISPLAYED
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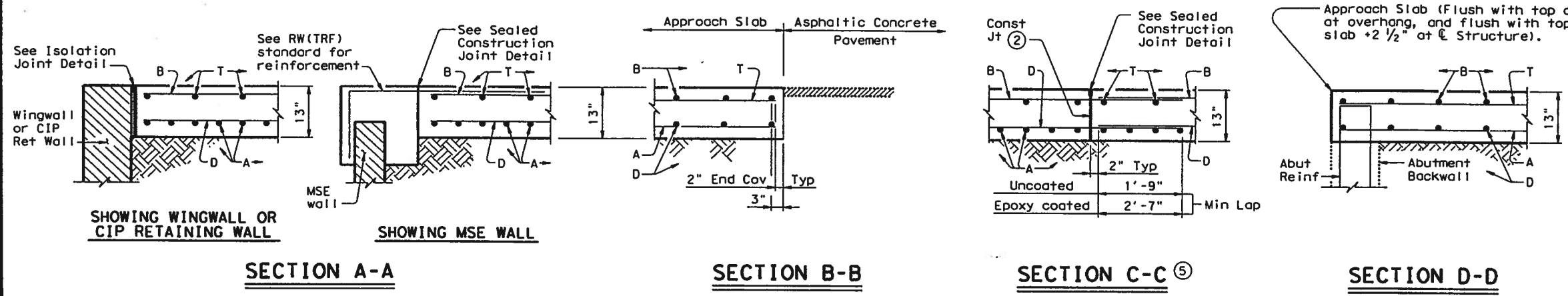
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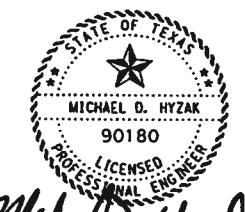
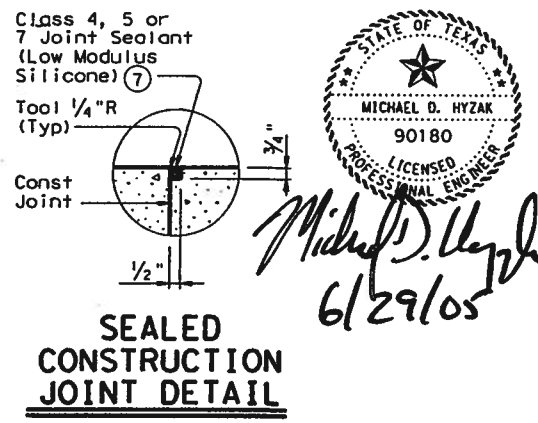
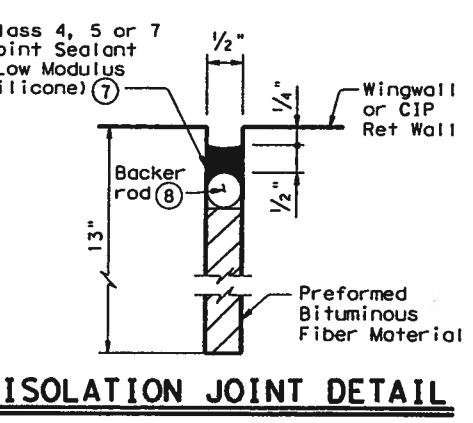
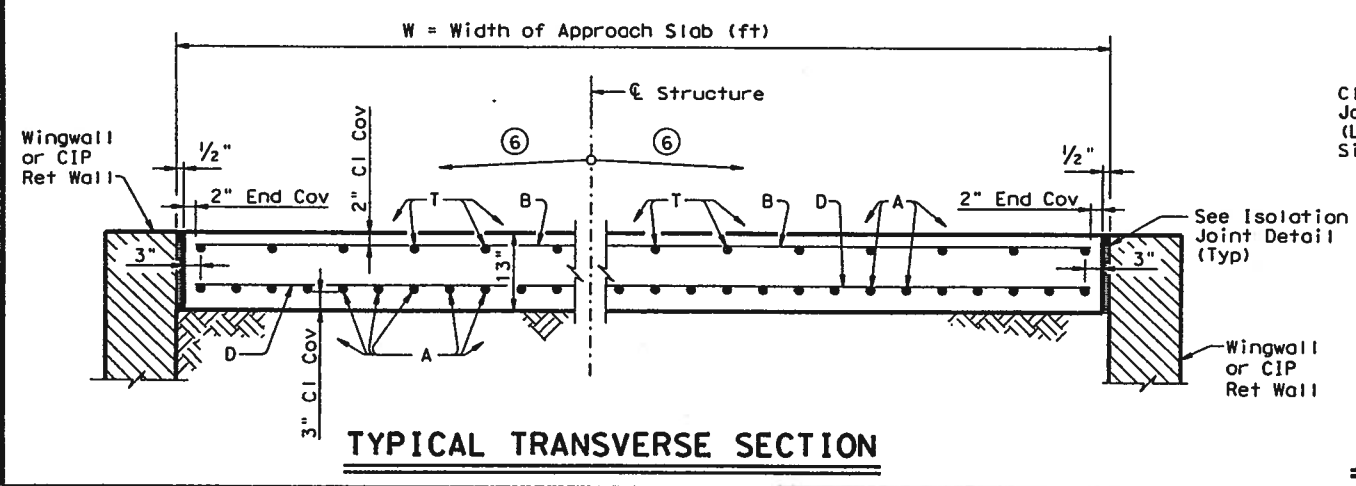
BAR TABLE	
BAR	SIZE
A	#8
B	#5
D	#5
T	#5

APPROXIMATE QUANTITIES ⁽⁴⁾	
Reinf steel weight =	8.5 Lbs/SF of Approach Slab
Area of Appr Slab =	20W + 0.5W ² tan S (SF)
W =	Width of Approach Slab (ft)
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.
- 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.
- Backer rod shall be 25% larger than joint opening and shall be compatible with the sealant.



GENERAL NOTES:
 Construct approach slab in accordance with Item 420.
 Concrete shall be Class "S" with a minimum compressive strength of 4,000 psi.
 All reinforcing steel shall be Grade 60.
 Construct the subgrade or subbase 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 420.
 Sealant, backer rod and preformed bituminous fiber material is subsidiary to approach slab concrete.



Michael D. Hyzak
 6/29/05

Texas Department of Transportation
 Bridge Division
BRIDGE APPROACH SLAB
ASPHALTIC CONCRETE PAVEMENT

BAS-A (MOD)

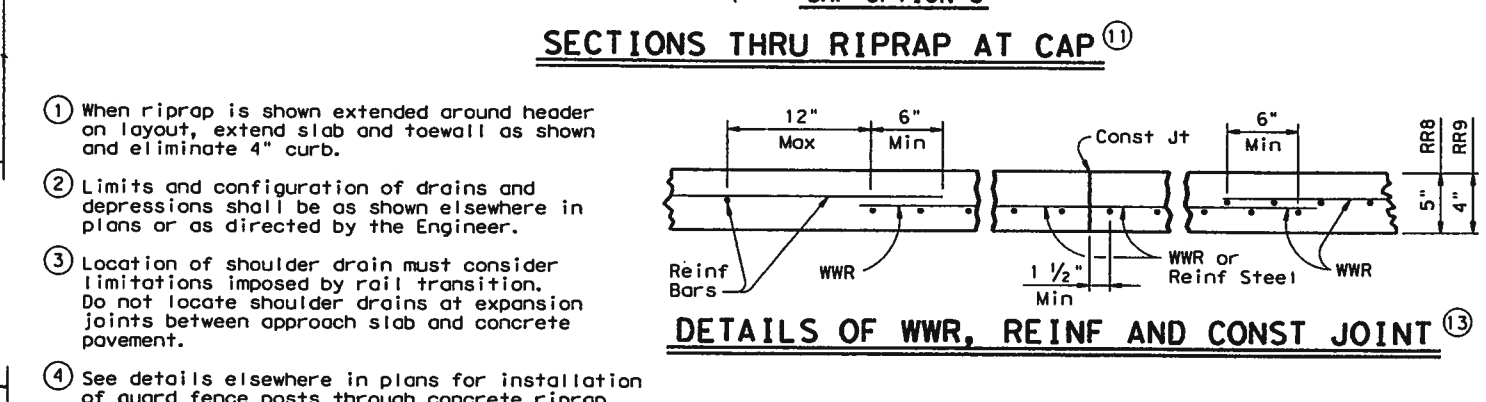
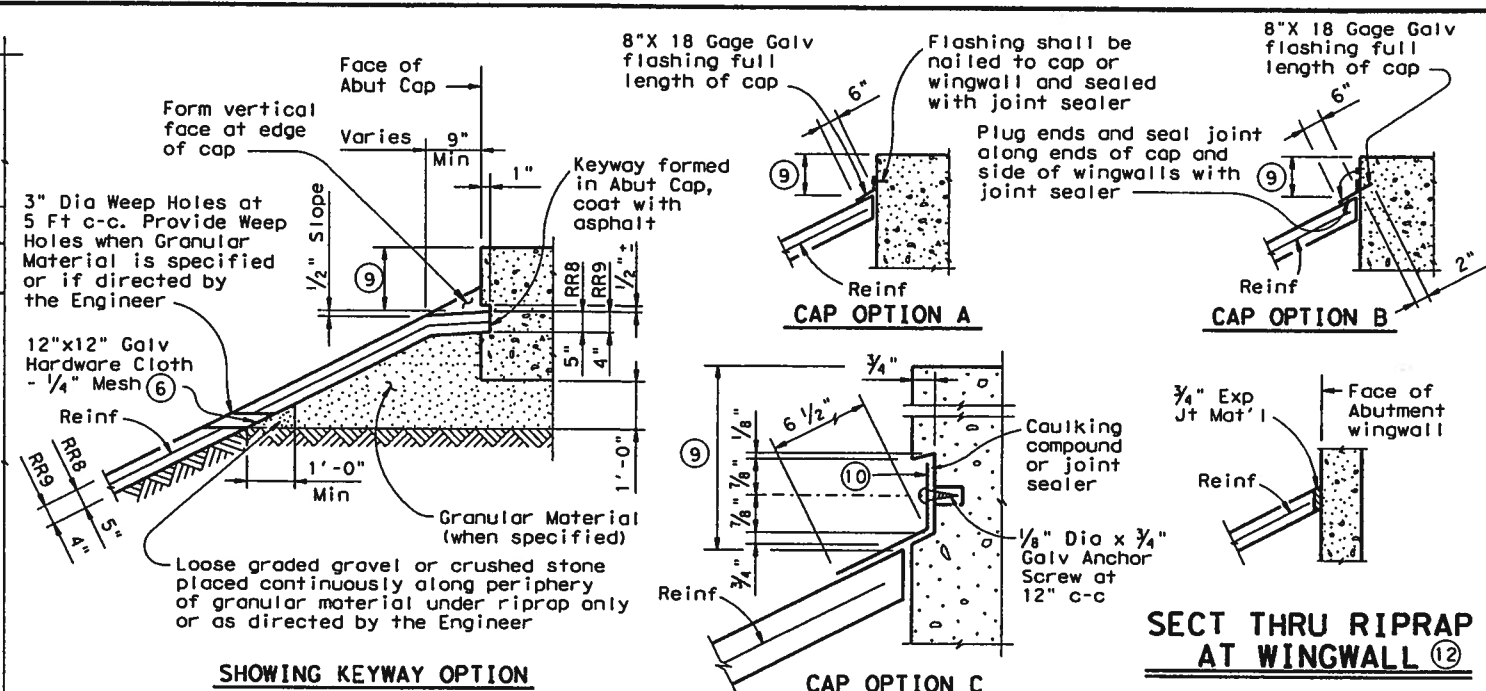
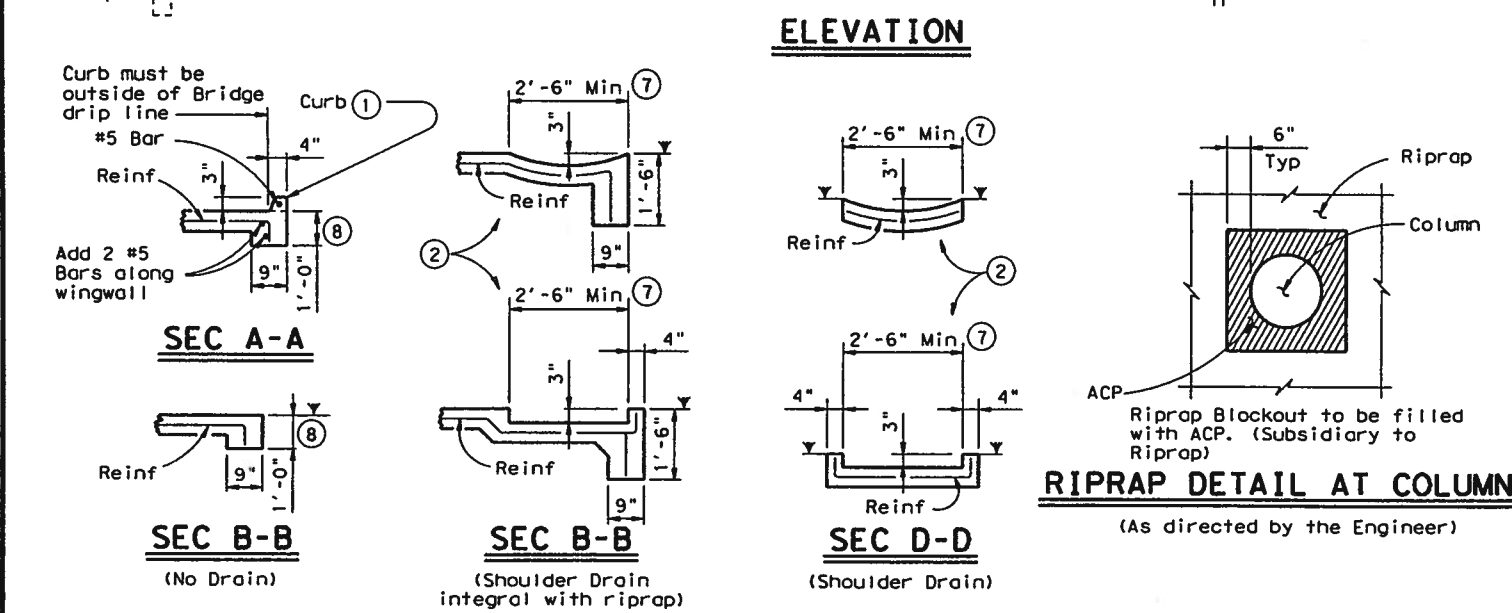
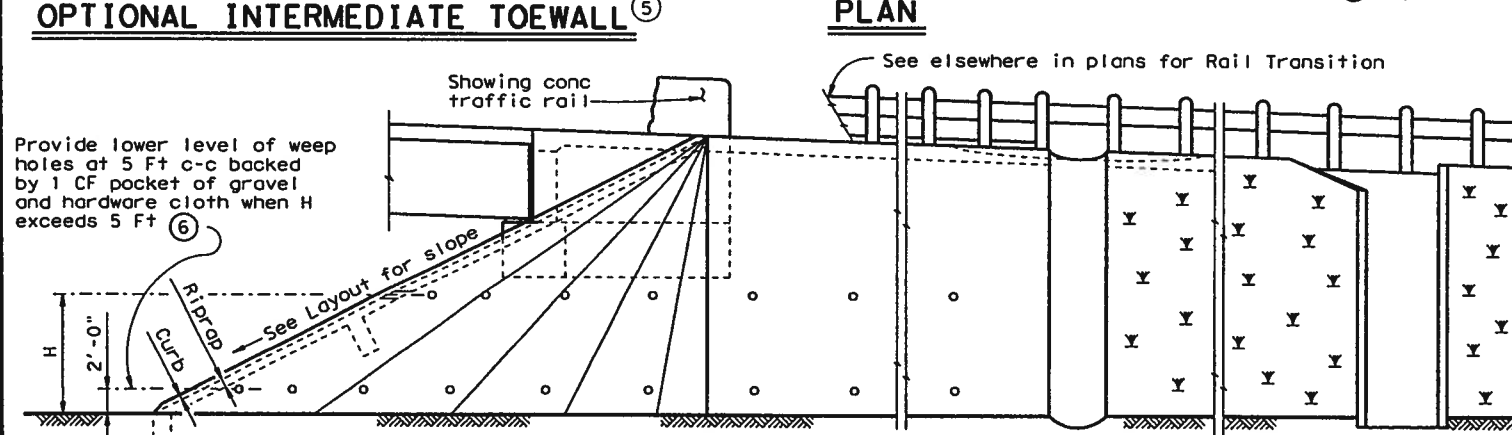
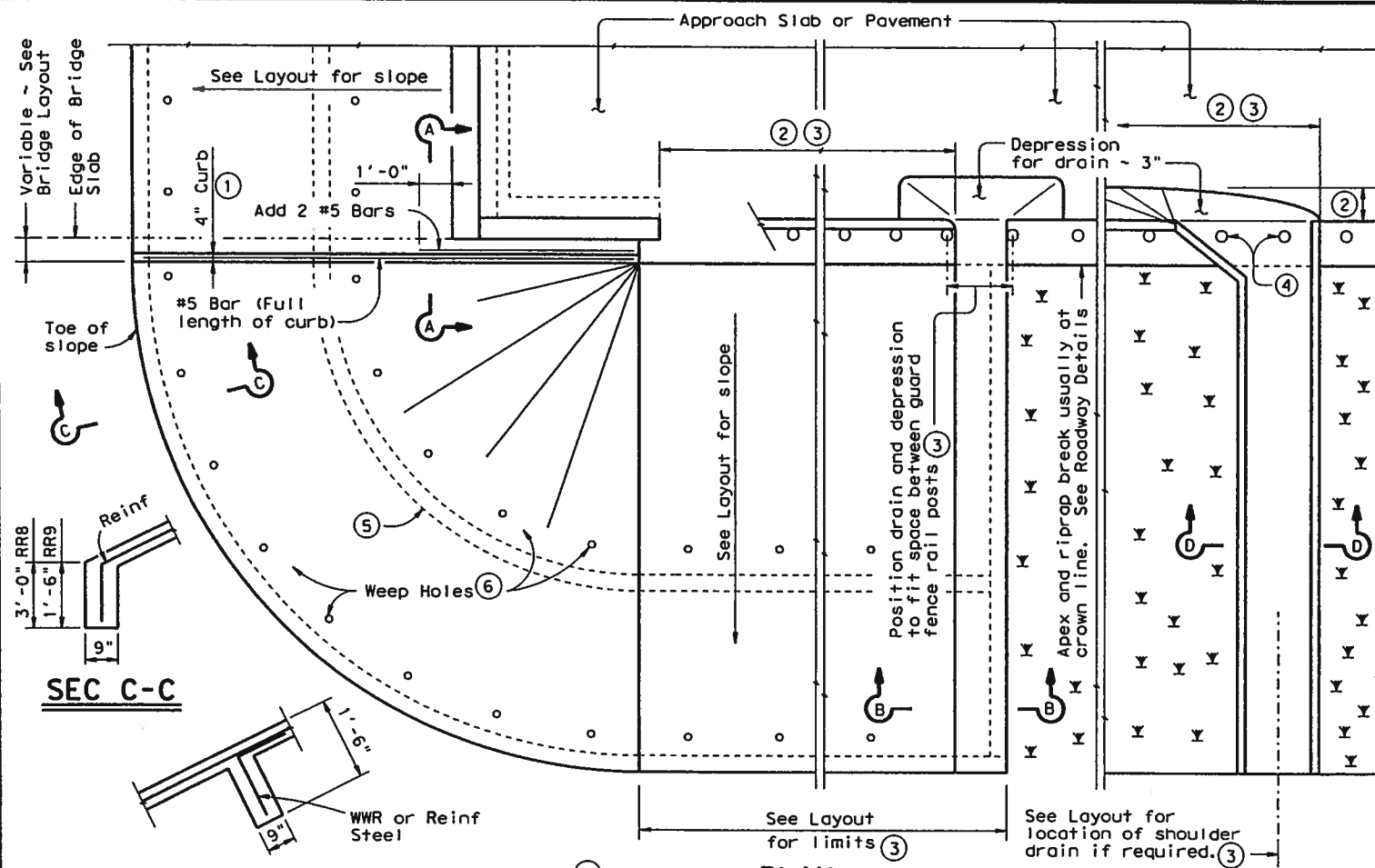
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REVISIONS	SJT	IBR 2005 (856)	45	
5/05 - MODIFIED TOP OF SLAB TO MATCH ROADWAY CROSS SLOPE AND ACCOMMODATE OVERLAY		COUNTY	CONTROL SECT	JOB HIGHWAY
		CROCKETT	0140	08 021 SH290

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6635m101.dgn

PATH:

LEVELS DISPLAYED



GENERAL NOTES:

- 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 shall be 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.
- The optional intermediate toewall shall be constructed when designated elsewhere in the plans or included in the specifications.
- If erodible soils occur in the embankment
- Wider or other drain configurations shall be used if shown elsewhere in plans or if directed by the Engineer.
- Wall extension may be reduced or modified if approved by the Engineer. Wall extension shall be increased 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.
- 8" x 18 Gage Galv Sheet Metal
- The sealing option of the joint between the face of cap and riprap shall be 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.
- Reinforcing bars shall be #3 at 18" Spa c-c. Welded Wire Reinforcement (WWR) shall be 6X6-W2.9XW2.9. Combinations of WWR and reinforcing bars may be used if both are permitted. Lap splices shall be a minimum of 6 inches, measured from the transverse wire of WWR, and the ends of reinforcing bars.

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-W2.9XW2.9 = 0.394 Lbs/SF

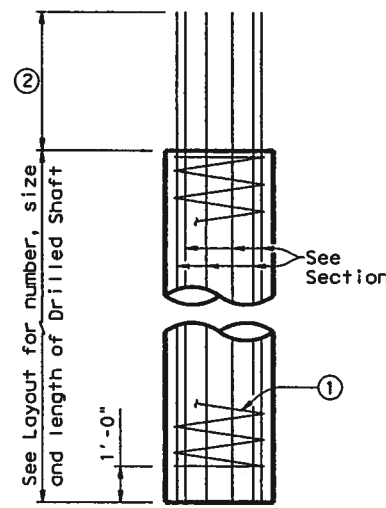
Texas Department of Transportation
 Bridge Division
CONCRETE RIPRAP AND SHOULDER DRAINS
 EMBANKMENTS AT BRIDGE ENDS
 (TYPES RR8 & RR9)
CRR

FILE: crstdel.dgn	DW: TxDOT	CR: TxDOT	DW: TxDOT	CR: TxDOT
© TxDOT June 2004	DISTRICT	FEDERAL AID PROJECT	SHEET	
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COUNTY	CONTROL	SECT	JOB	HIGHWAY
CONCRETE	PLAN	BR	051	10200

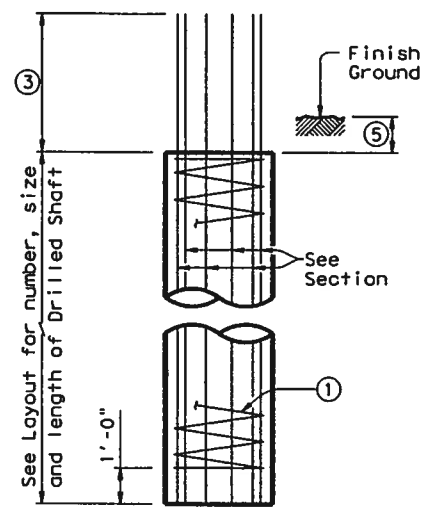
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

ACC: 6635m101.dgn

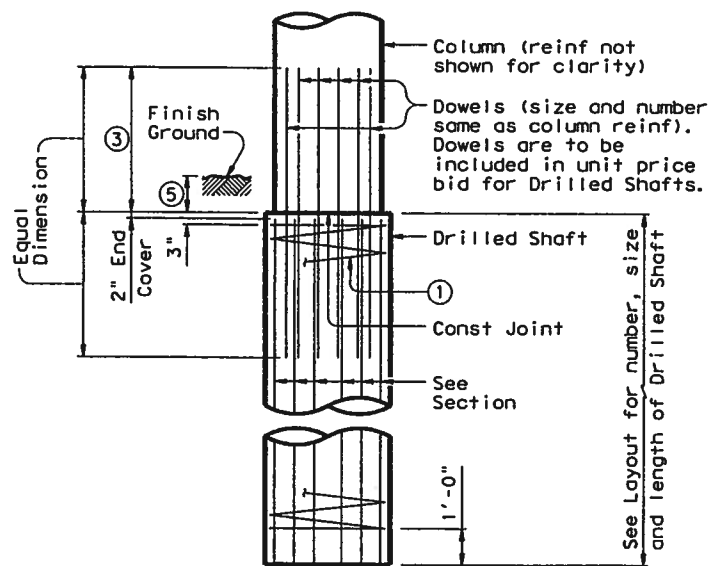
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ABUTMENTS AND WINGWALLS

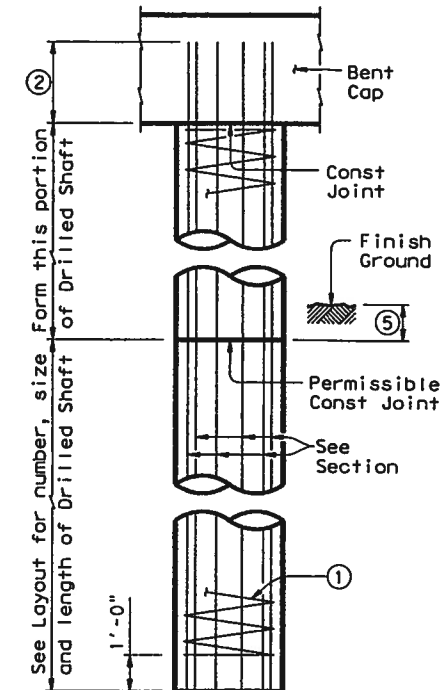


INTERIOR BENTS DRILLED SHAFT DIA EQUAL TO COLUMN DIA

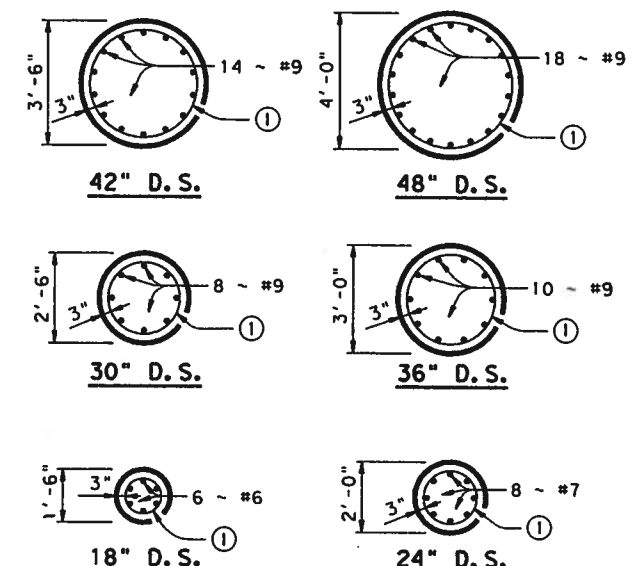


INTERIOR BENTS DRILLED SHAFT DIA GREATER THAN COLUMN DIA

DRILLED SHAFT DETAILS



OPTIONAL INTERIOR BENT DRILLED SHAFT DETAIL



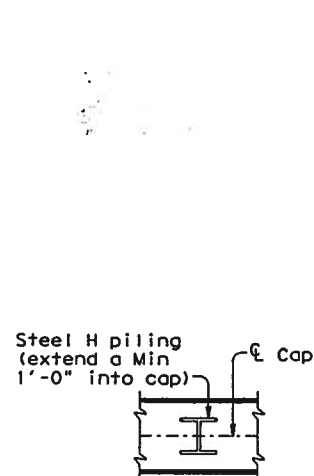
DRILLED SHAFT SECTIONS

- ① #3 Spiral at 6" pitch (One flat turn top & bottom)
- ② Min extension into supported element:
#7 Bars = 1'-5"
#9 Bars = 2'-3"
- ③ Min lap with Column reinf:
#7 Bars = 2'-4"
#9 Bars = 3'-10"

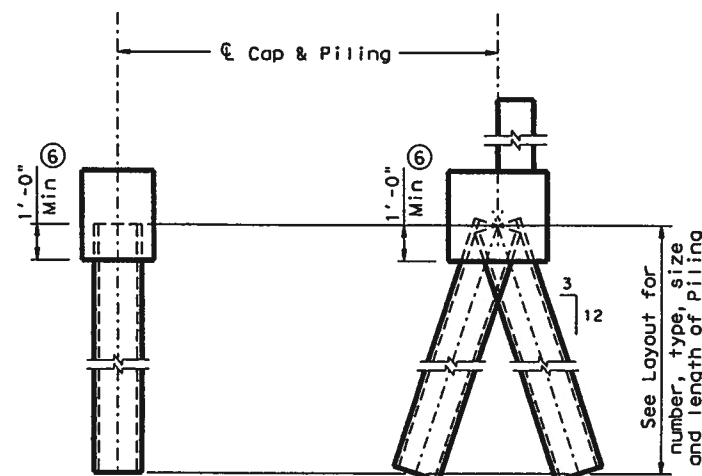
- ④ If approved by the Engineer, Drilled Shafts may extend to bottom of bent caps for "H" heights of 6 ft or less (as shown on Bridge Layout). This option can only be used when Drilled Shaft Dia equals Column Dia. The forming method shall be submitted for approval prior to construction. No adjustments in payment will be made if this option is used.
- ⑤ 6" Min at Grade Crossing, 1'-0" Min in Channel.
- ⑥ Or as shown on plans.

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.
See Bridge Layout of each Structure for Foundation Type to be used.
Drilled shaft details shown are not to be used for retaining wall, noise wall, barrier or sign foundation without structural evaluation.
Footings shown on this standard are not applicable for columns larger than 36" Diameter.
Details shown on this standard to be used unless shown otherwise in the plans.
Maximum Pile Load for the footings shown shall be as follows :
72 Tons/Pile with 24" Dia Column
80 Tons/Pile with 30" Dia Column
100 Tons/Pile with 36" Dia Column
The footings shown on this Standard are not to be used in direct contact with salt water or exposed to salt water spray.
Drilled Shaft reinforcing may be Grade 40.
Piling under abutment wings to be driven to a minimum resistance of 10 Tons.

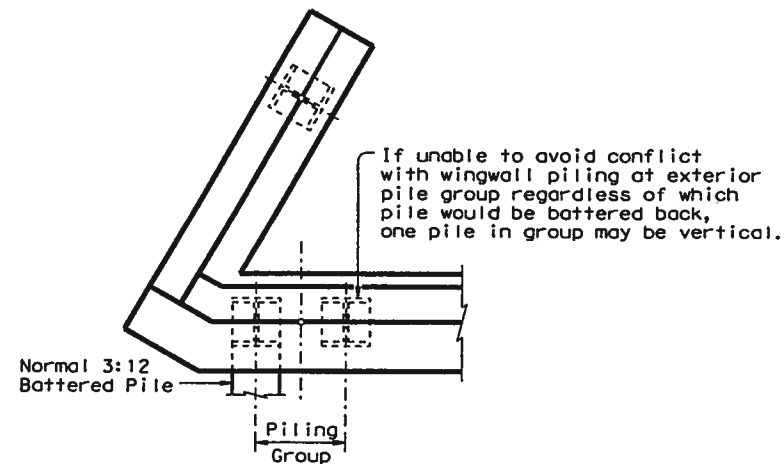


ORIENTATION OF STEEL H PILING



VERTICAL PILE BATTERED PILE

PILING DETAILS
(Concrete or Steel H)



DETAIL "A"
(Showing Plan View of a 30° Skewed Abutment)

SHEET 1 OF 2

Texas Department of Transportation
Bridge Division

COMMON FOUNDATION DETAILS

FD

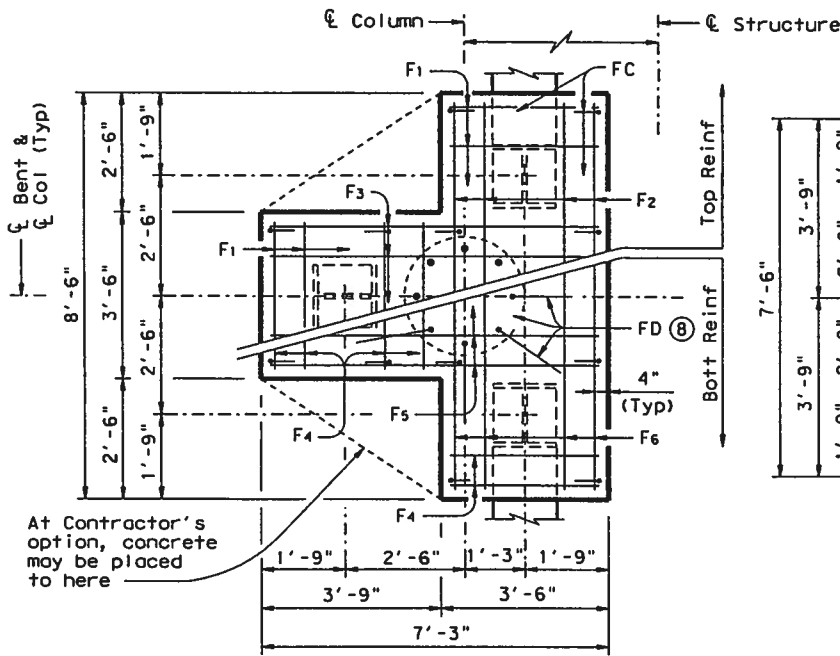
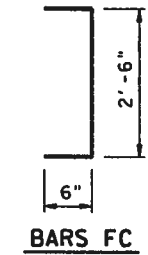
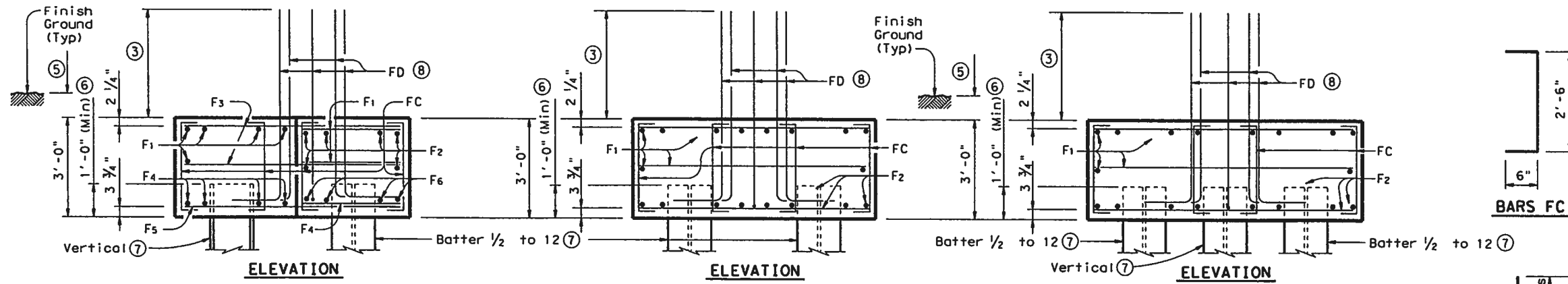
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CROCKETT	0140	08	021	SH290

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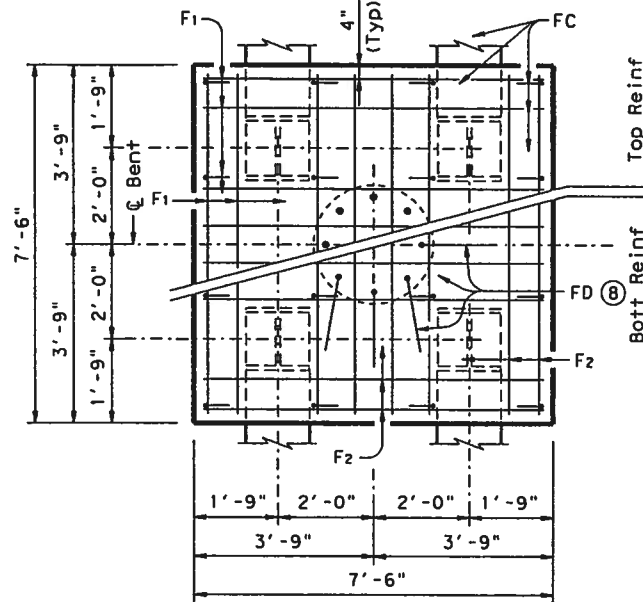
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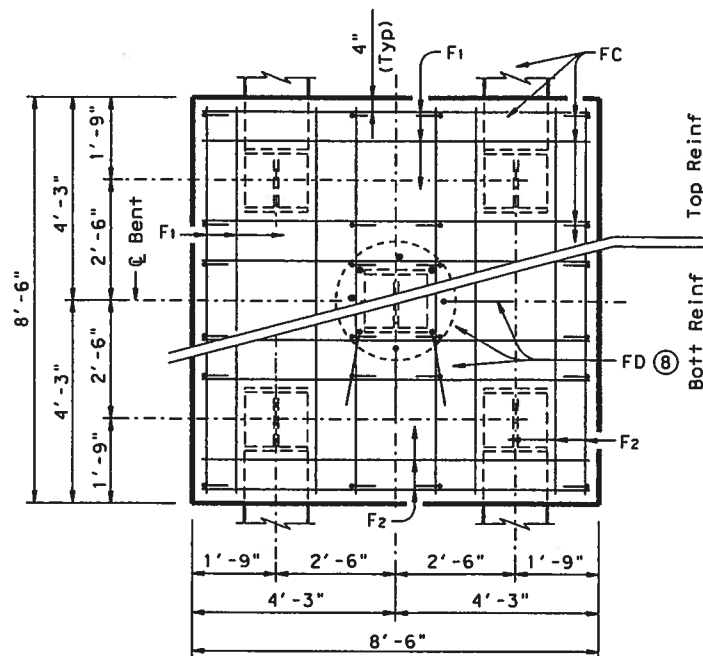
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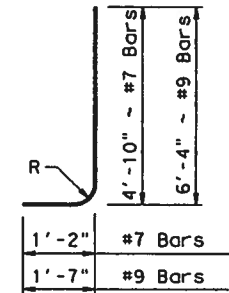
PLAN
THREE PILE FOOTING



PLAN
FOUR PILE FOOTING



PLAN
FIVE PILE FOOTING



BARS FD ⑧
R = 3 1/4" ~ #7 Bars
and 5 1/4" ~ #9 Bars

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 ⑨	8	#9	7' - 11"	215
Reinforcing Steel			Lb	618
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 ⑨	8	#9	7' - 11"	215
Reinforcing Steel			Lb	654
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 ⑨	8	#9	7' - 11"	215
Reinforcing Steel			Lb	824
Class "C" Concrete			CY	8.0

- ③ Min lap with Column reinf: #7 Bars = 2'-4" #9 Bars = 3'-10"
- ⑤ 6" Min at Grade Crossing, 1'-0" Min in Channel.
- ⑥ Or as shown on plans.
- ⑦ See Layout for Type, Size and length of Piling.
- ⑧ Number and size of FD bars must match Column reinforcing. FD bars shall be tied to the top of the bottom mat of reinforcing
- ⑨ For 24" Columns, use #7 FD bars (6'-0") in place of #9 bars and deduct 116 lbs. For 36" Columns, add 2 FD bars (54 lbs).

SHEET 2 OF 2



COMMON FOUNDATION DETAILS

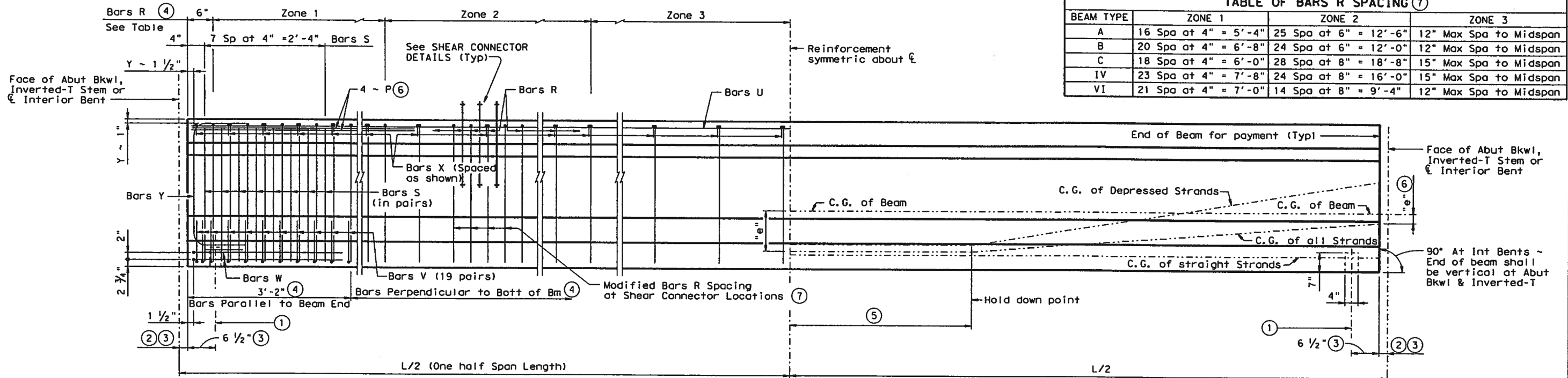
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COUNTY	CONTROL	SECT	JOB	HIGHWAY
CROCKETT	0140	08	021	SH290

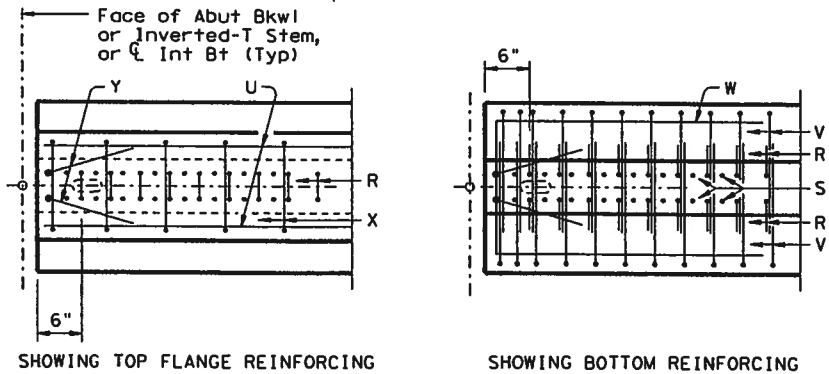
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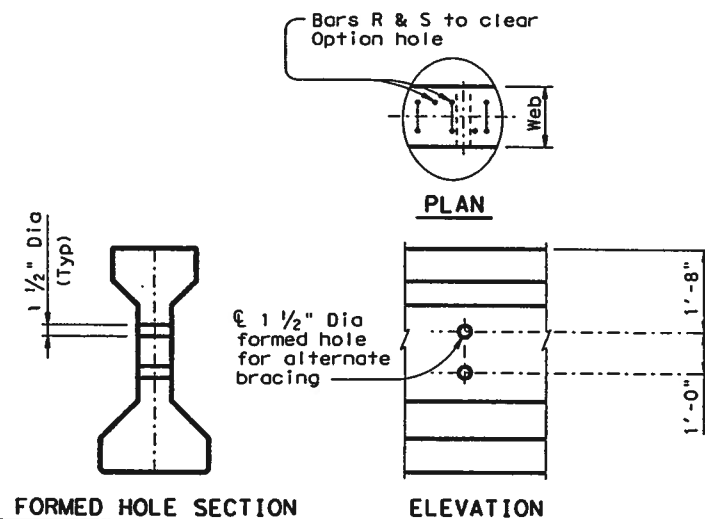


BEAM TYPE	ZONE 1	ZONE 2	ZONE 3
A	16 Spa at 4" = 5'-4"	25 Spa at 6" = 12'-6"	12" Max Spa to Midspan
B	20 Spa at 4" = 6'-8"	24 Spa at 6" = 12'-0"	12" Max Spa to Midspan
C	18 Spa at 4" = 6'-0"	28 Spa at 8" = 18'-8"	15" Max Spa to Midspan
IV	23 Spa at 4" = 7'-8"	24 Spa at 8" = 16'-0"	15" Max Spa to Midspan
VI	21 Spa at 4" = 7'-0"	14 Spa at 8" = 9'-4"	12" Max Spa to Midspan



BEAM END DETAILS

9 Reinforcing patterns shown are to be used as guides in determining the reinforcement for the actual beam type (Type C shown) and the skew angle used. In general, the distance between consecutive Bars R and/or S shall be 2". This spacing may be varied in order to avoid Dowel Holes or Concrete End Diaphragm Option holes. However, a minimum cross sectional area equivalent to that of Bars R & S in a square beam end shall be provided.

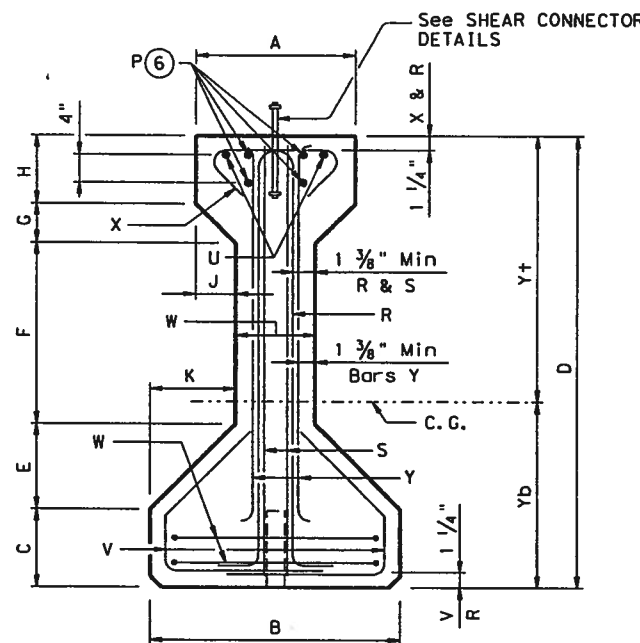


ALTERNATE ERECTION BRACING HOLE

(Diaphragm holes for lifting purposes will not be permitted.) Only required when Contractor indicates alternate erection bracing is used. Refer to MEBR(C) (MOD) for plan locations.

BEAM ELEVATION

NOTE: Top surface of beams shall be roughened to 1/4" amplitude.



TYPES A, B, C & IV BEAMS

BEAM TYPE	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	K in.	W in.	Yt in.	Yb in.	AREA in.²	I in.⁴	Weight plf
A	12	16	5	28	5	11	3	4	3	5	6	15.39	12.61	275.4	22,658	287
B	12	18	6	34	5 3/4	14	2 3/4	5 1/2	2 3/4	5 3/4	6 1/2	19.07	14.93	360.3	43,177	375
C	14	22	7	40	7 1/2	16	3 1/2	6	3 1/2	7 1/2	7	22.91	17.09	494.9	82,602	516
IV	20	26	8	54	9	23	6	8	6	9	8	29.25	24.75	788.4	260,403	821

- 1 4" x 1 1/2" Vertical Slotted Hole at Doweled Beam end (labeled (D) on Bridge Layout). Required for Outside Beams 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.
- 2 3" ~ Inverted-T- Stem, 2" ~ Abutment Bkwl and Interior Bents.
- 3 Measured along C of Beam at Interior Bents; perpendicular to Abutment Bkwl or Inverted-T Stem.
- 4 Spacing shown shall not be exceeded at either top or bottom of beam.
- 5 5'-0" Min or L/20 (- 0 ; + 2'-0") Max.
- 6 Bars P (#6 x 10'-0") are only required for Type IV Beams when "e" at beam ends exceeds 14.0". At the fabricator's option, bars larger than #6 may be used. When L is less than 50 ft, Bars P are to be the same length as Bars U.
- 7 See SHEAR CONNECTOR DETAILS for modified Bars R spacing at shear connector locations.
- 8 [(1'-2 1/2" : Cos Skew Angle) - 2"] at Interior Bents. [(1'-0 1/2" : Cos Skew Angle] at Abutment Bents and Inverted-T Bents. Measured along beam centerline. Skew Angle = 90° - Beam Angle.

GENERAL NOTES:

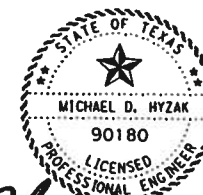
Designed in accordance with AASHTO LRFD Specifications. All concrete shall be Class H. Bottom corners of all beam flanges and outside corners of exterior beam ends shall be chamfered 3/4" or rounded to a 3/4" radius. All reinforcing bars for beams shall be Grade 60. An equal area of deformed Welded Wire Reinforcement (WWR) (ASTM A497) may be substituted for Bars R, V, S or X. It is permissible for bars or strands to come in contact with materials used in forming anchor holes.

HL93 LOADING Sheet 1 of 2

Texas Department of Transportation Bridge Division

PRESTRESSED CONCRETE I-BEAM DETAILS

IBD (MOD)

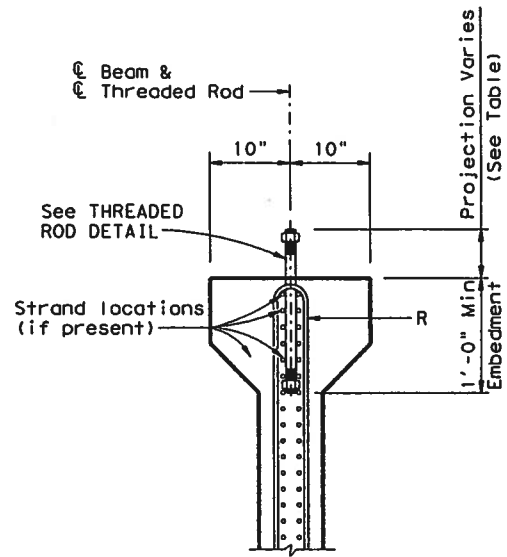


Michael D. Hyzak
6/29/05

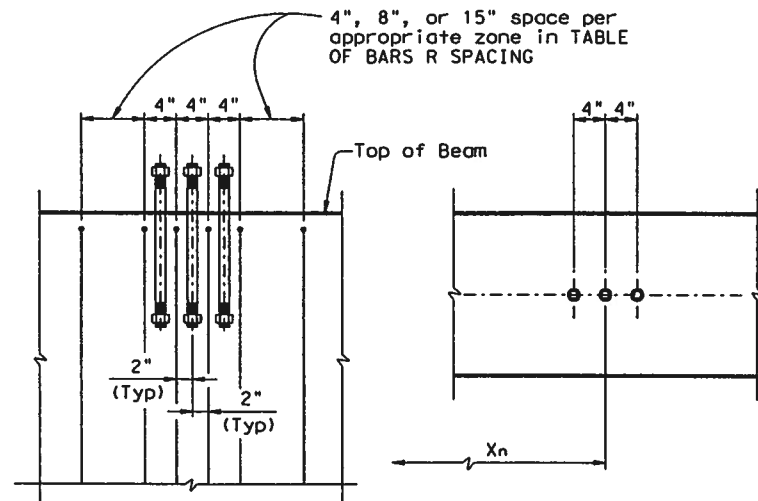
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		COUNTY	CONTROL SECT	JOB HIGHWAY
		CROCKETT	0140 08	021 5H290

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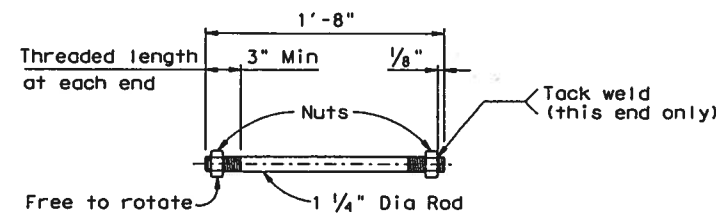
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PARTIAL BEAM SECTION



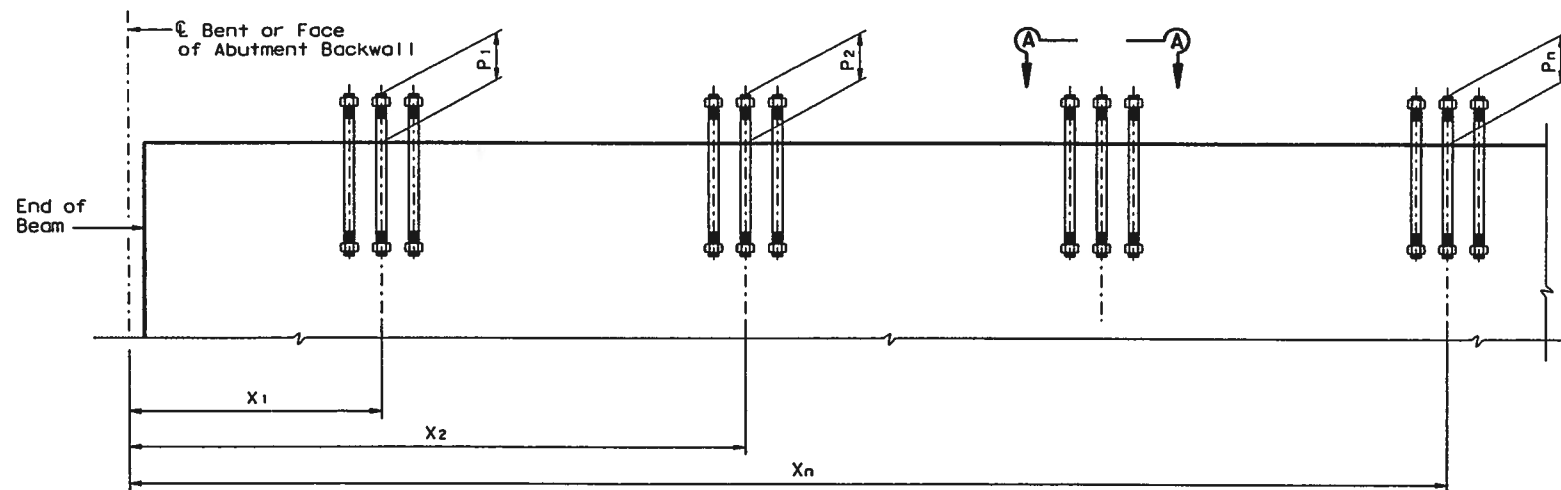
MODIFIED BARS R SPACING AT SHEAR CONNECTORS



EXPOSED END EMBEDDED END

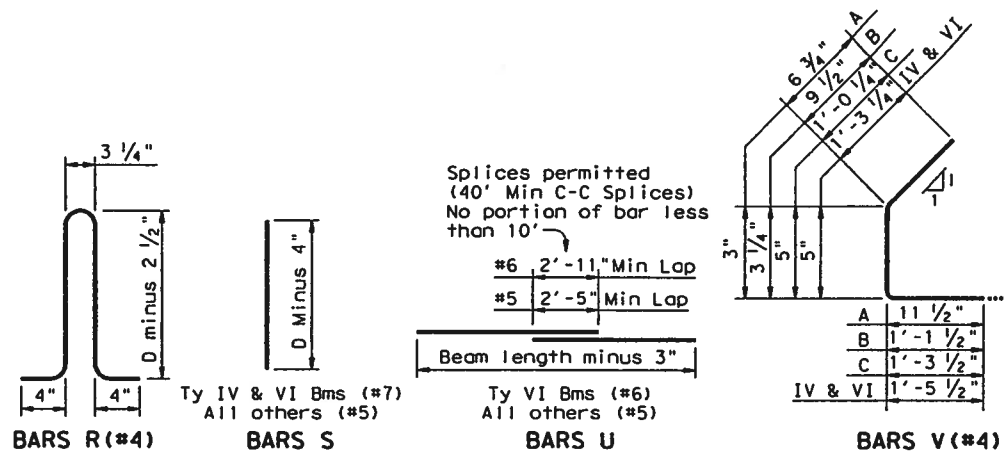
THREADED ROD DETAIL

Threaded rod and nuts shall conform to the material requirements of Item 449, medium-strength, mild steel category or better (Mild steel not allowed). Rods and nuts shall not be galvanized.

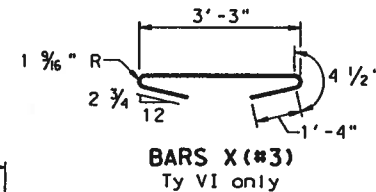


ELEVATION OF SHEAR CONNECTOR PLACEMENT

SHEAR CONNECTOR DETAILS

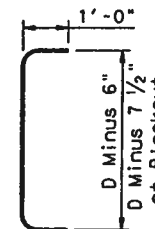


At the fabricator's option, bottom leg may be extended to tie to outside strand, in lieu of tying to inside strand.

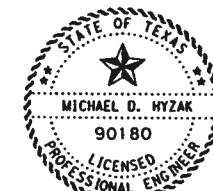


BARS X (#3)
Ty VI only

BARS X (#3)



BARS Y (#6)



Michael D. Hyzak
6/29/05

TABLE OF SHEAR CONNECTOR GEOMETRY

SPANS 1 AND 7 (65' SPANS)					
Shear Connector Group (n)	Xn (ft)	Pn (ft)	Est'd Beam Camber (in)	Est'd Slab Deflection (in)	Est'd Haunch (in)
1	2.063	6 1/8	0.10	0.03	1.43
2	6.104	6	0.27	0.08	1.30
3	10.182	6	0.41	0.13	1.19
4	14.223	5 7/8	0.53	0.17	1.10
5	18.301	5 3/4	0.63	0.20	1.03
6	22.342	5 3/4	0.70	0.22	0.97
7	26.420	5 5/8	0.75	0.24	0.94
8	30.461	5 5/8	0.78	0.24	0.92
9	34.539	5 5/8	0.78	0.24	0.92
10	38.581	5 5/8	0.75	0.24	0.94
11	42.658	5 3/4	0.70	0.22	0.97
12	46.700	5 3/4	0.63	0.20	1.03
13	50.777	5 7/8	0.53	0.17	1.10
14	54.819	6	0.41	0.13	1.19
15	58.896	6	0.27	0.08	1.30
16	62.938	6 1/8	0.10	0.03	1.43

SPANS 2 - 6 (114' SPANS)					
Shear Connector Group (n)	Xn (ft)	Pn (ft)	Est'd Beam Camber (in)	Est'd Slab Deflection (in)	Est'd Haunch (in)
1	2.063	8	0.34	0.17	3.30
2	6.104	7 5/8	0.96	0.49	2.93
3	10.204	7 3/8	1.54	0.78	2.59
4	14.245	7	2.07	1.05	2.27
5	19.345	6 3/4	2.55	1.30	1.99
6	22.386	6 1/2	2.98	1.52	1.73
7	26.486	6 1/4	3.37	1.72	1.50
8	30.527	6	3.71	1.89	1.30
9	34.627	5 7/8	4.00	2.04	1.13
10	38.668	5 3/4	4.24	2.16	0.99
11	42.769	5 5/8	4.43	2.26	0.87
12	46.809	5 1/2	4.58	2.33	0.79
13	50.909	5 1/2	4.67	2.38	0.73
14	54.950	5 1/2	4.72	2.40	0.70
15	59.050	5 1/2	4.72	2.40	0.70
16	63.091	5 1/2	4.67	2.38	0.73
17	67.191	5 1/2	4.58	2.33	0.79
18	71.232	5 5/8	4.43	2.26	0.87
19	75.332	5 3/4	4.24	2.16	0.99
20	79.373	5 7/8	4.00	2.04	1.13
21	83.473	6	3.71	1.89	1.30
22	87.514	6 1/4	3.37	1.72	1.50
23	91.614	6 1/2	2.98	1.52	1.73
24	95.655	6 3/4	2.55	1.30	1.99
25	99.755	7	2.07	1.05	2.27
26	103.796	7 3/8	1.54	0.78	2.59
27	107.896	7 5/8	0.96	0.49	2.93
28	111.937	8	0.34	0.17	3.30



PRESTRESSED CONCRETE I-BEAM DETAILS

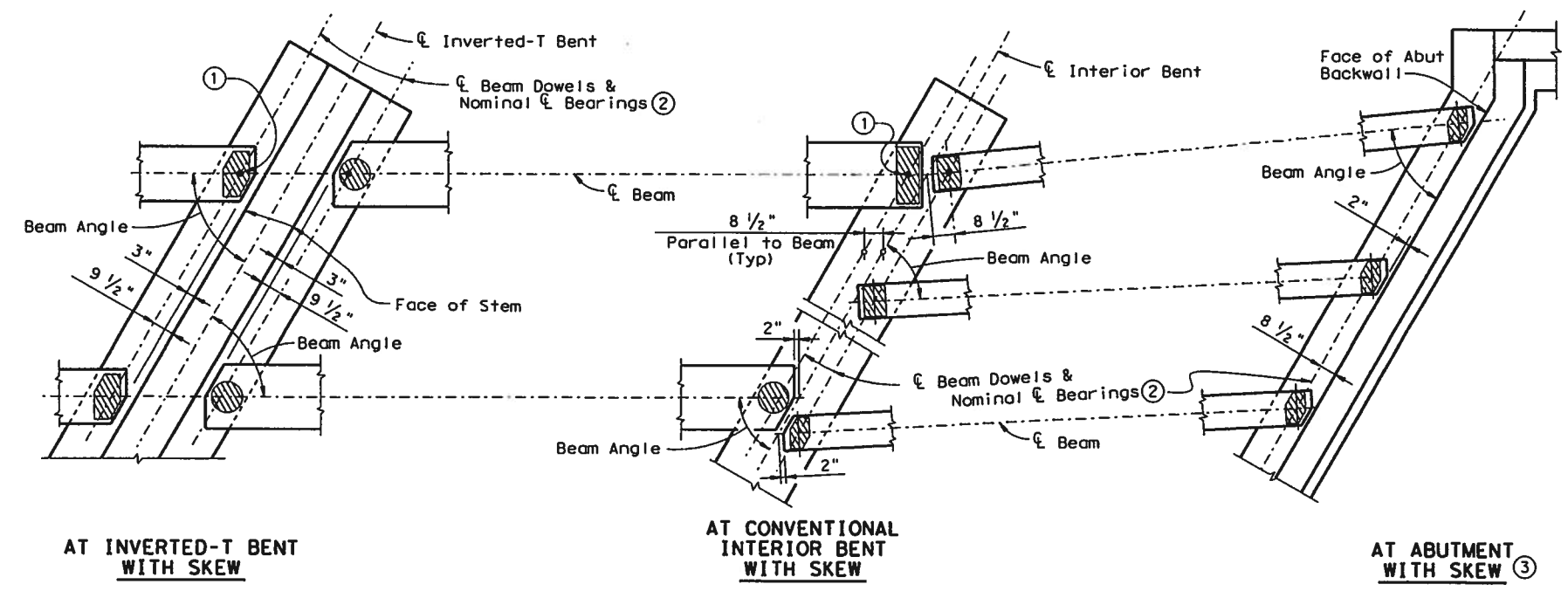
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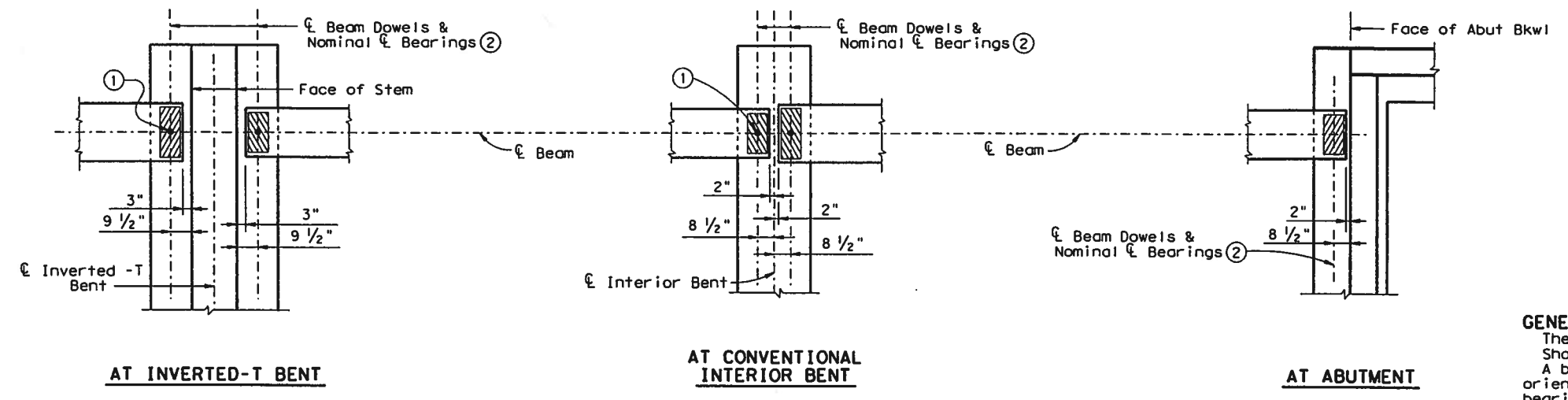
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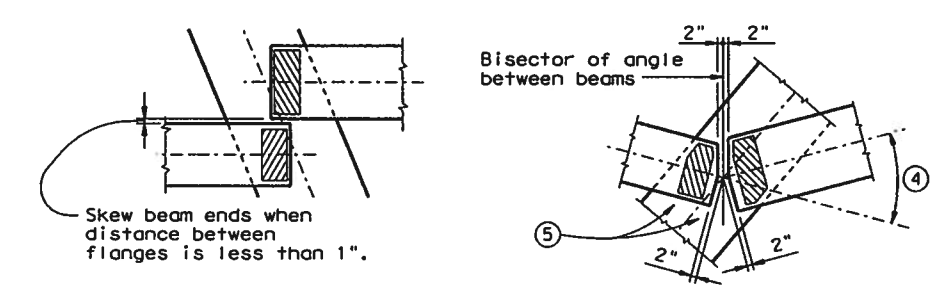


- ① Dowel at doweled beam end [labeled (D) on Bridge Layout]. Required for outside beams only or as shown on substructure details.
- ② For purposes of computing Bearing Seat Elevations, nominal centerline of bearing shall be defined as shown. The actual center of bearing pad may vary from this line.
- ③ For Transition Bents with backwall, beams and elastomeric bearings shall receive the same treatment as shown for Abutments.
- ④ When angle exceeds 0°, one or both beam ends shall be clipped to maintain the clearance between beam ends as shown in view.
- ⑤ See Elastomeric Bearing Data Table for Bearing size. Corner clips in Table not applicable for this situation. Table reflects beam conflicts of this type on radial bents only.



BEAM END DETAILS

GENERAL NOTES:
 These details accommodate skew angles up to 60°. Shop drawings for approval are required.
 A bearing layout which identifies location and orientation of all bearings shall be developed by the bearing fabricator. Permanently mark each bearing in accordance with the bearing layout. A copy of the bearing layout is to be provided to the Engineer.
 Cost of furnishing and installing elastomeric bearings shall be included in unit price bid for "Prestressed Concrete Beams".



BEAM CONFLICT DETAILS



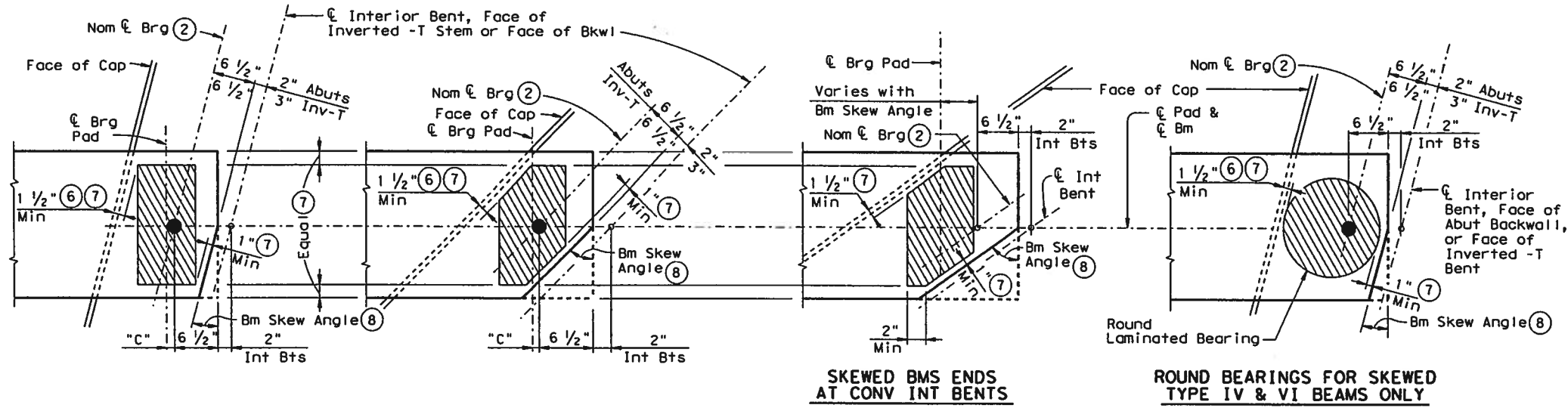
ELASTOMERIC BEARING AND BEAM END DETAILS
PRESTR CONCRETE I-BEAMS

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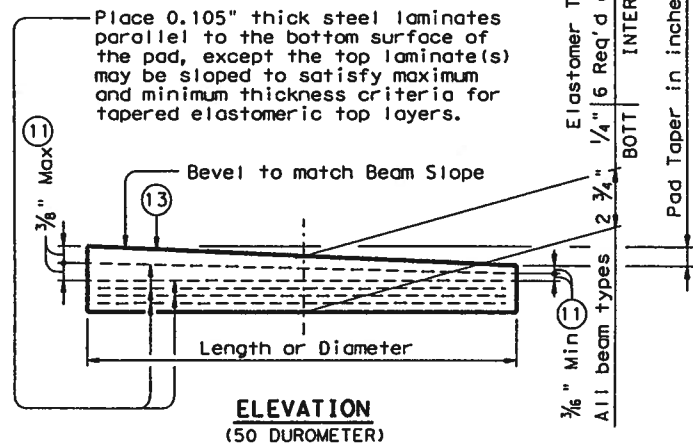
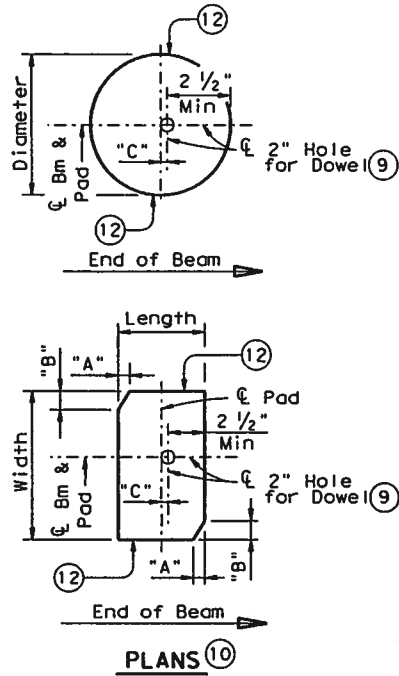
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ELASTOMERIC BEARING PLACEMENT DIAGRAMS



LAMINATED ELASTOMERIC BEARING DETAILS (14)

- (2) For purposes of computing Bearing Seat Elevations, nominal centerline of bearing shall be defined as shown. The actual center of bearing pad may vary from this line.
- (6) 3" for Inverted -T.
- (7) Factors controlling laminated bearing placement if no dowel is present. Place ϵ Pad as near Nominal ϵ Brg as possible between limits shown.
- (8) Complement of Beam Angle except at some conflicting beams.
- (9) Provide 2" Dia Hole (always on beam end side of centerline pad) only at locations required. See substructure details for location. The Dowel offset "C" dimension may be 0" when the bridge is square.
- (10) See Elastomeric Bearing Data Table for dimensions.
- (11) Maximum and minimum layer thicknesses shown are for elastomer only, on tapered layers.
- (12) Locate Permanent Mark here.
- (13) BEARING TYPE shall be indicated on all pads. For tapered pads, BEARING TYPE shall be located on the high side. The Fabricator shall include the value of "N" (amount of taper in 1/8" increments) in this mark.
Examples: N=0, (for 0" taper)
N=1, (for 1/8" taper)
N=2, (for 1/4" taper)
(etc.)
Fabricated pad top surface slope shall not vary from plan beam slope by more than $(\frac{0.0625}{\text{Length or Dia}})$ IN/IN.
- (14) The use of Polyisoprene (natural rubber), for the manufacture of bearing pads, is not permitted.
- (15) Substructure dimensions must satisfy the minimums provided to accommodate the elastomeric bearings shown on this standard.
- (16) Interpolate "C" values for angles not shown between 30° & 40°, 40° & 50°, 50° & 60°.

TABLE OF MINIMUM SUBSTRUCTURE DIMENSIONS (15)

Beam Type	Abutments	Int Bents	Inv-T Bents
	Face of BkwI to Face of Cap	Overall Cap Width	Corbel Width
A, B, & C	1'-4 1/2"	2'-9"	1'-8"
IV	1'-7 1/2"	3'-3"	1'-10"
VI	1'-10 1/2"	3'-9"	2'-0"

ELASTOMERIC BEARING DATA TABLE

Bent Type	Beam Type	Brg Type (13)	Beam End Skew Angle Range	Pad Size Lgth x Wdth	Pad Clip Dimensions		"C" (9)
					"A"	"B"	
AT ABUTMENTS, INVERTED - T & TRANSITION BENTS WITH BACKWALLS	A	A-1-"N"	0° thru 15°	7" x 12"	—	—	—
	A	A-2-"N"	15°+ thru 45°	7" x 12"	1 1/4"	1 1/4"	3/4"
	A	A-3-"N"	45°+ thru 60°	7" x 12"	1 1/2"	2"	1"
	B	B-1-"N"	0° thru 15°	7" x 14"	—	—	—
	B	B-2-"N"	15°+ thru 45°	7" x 14"	2 1/4"	2 1/4"	3/4"
	B	B-3-"N"	45°+ thru 60°	7" x 14"	3 3/4"	2 1/4"	1"
	C	C-1-"N"	0° thru 15°	7" x 16"	—	—	—
	C	C-2-"N"	15°+ thru 45°	7" x 16"	3 1/4"	3 1/4"	3/4"
	C	C-3-"N"	45°+ thru 60°	8" x 16"	6"	4"	1"
	IV	IV-1-"N"	0° thru 15°	7" x 22"	—	—	1"
	IV	IV-2-"N"	15°+ thru 29°	7" x 22"	2 1/2"	4 1/2"	1"
	IV	IV-3-"N"	30°(16)	15" Dia	—	—	2 3/8"
	IV	IV-4-"N"	40°(16)	15" Dia	—	—	2 3/8"
	IV	IV-5-"N"	50°(16)	15" Dia	—	—	3 1/8"
	IV	IV-6-"N"	60°(16)	15" Dia	—	—	4"
	VI	VI-1-"N"	0° thru 15°	9" x 24"	—	—	2"
VI	VI-2-"N"	15°+ thru 29°	9" x 24"	3 1/4"	5 1/2"	2"	
VI	VI-3-"N"	30°(16)	17" Dia	—	—	3 3/4"	
VI	VI-4-"N"	40°(16)	17" Dia	—	—	4"	
VI	VI-5-"N"	50°(16)	17" Dia	—	—	5 1/2"	
VI	VI-6-"N"	60°(16)	17" Dia	—	—	6"	
AT CONVENTIONAL INTERIOR BENTS	Sq Bm Ends	A	A-4-"N"	Not Applicable	7" x 12"	—	—
		B	B-4-"N"	Not Applicable	7" x 14"	—	—
	Skewed Bm Ends	C	C-4-"N"	Not Applicable	7" x 16"	—	—
		IV	IV-7-"N"	Not Applicable	7" x 22"	—	—
		VI	VI-7-"N"	Not Applicable	9" x 24"	—	—
		A	A-5-"N"	0° thru 15°	7" x 12"	—	—
		A	A-6-"N"	15°+ thru 60°	7" x 12"	1"	1"
		B	B-5-"N"	0° thru 15°	7" x 14"	—	—
		B	B-6-"N"	15°+ thru 45°	7" x 14"	1 3/4"	1 3/4"
		B	B-7-"N"	45°+ thru 60°	7" x 14"	2 3/4"	1 3/4"
C	C-5-"N"	0° thru 15°	7" x 16"	—	—	1/2"	
C	C-6-"N"	15°+ thru 45°	7" x 16"	2 3/4"	2 3/4"	—	
C	C-7-"N"	45°+ thru 60°	7" x 16"	4 1/2"	2 3/4"	—	
IV	IV-8-"N"	0° thru 15°	7" x 22"	—	—	1"	
IV	IV-9-"N"	15°+ thru 29°	7" x 22"	1 1/4"	2"	—	
IV	IV-10-"N"	29°+ thru 60°	15" Dia	—	—	—	
VI	VI-8-"N"	0° thru 15°	9" x 24"	1"	3 3/4"	1 1/2"	
VI	VI-9-"N"	15°+ thru 29°	9" x 24"	1"	2"	—	
VI	VI-10-"N"	29°+ thru 60°	17" Dia	—	—	—	

**ELASTOMERIC BEARING AND BEAM END DETAILS
PRESTR CONCRETE I-BEAMS**

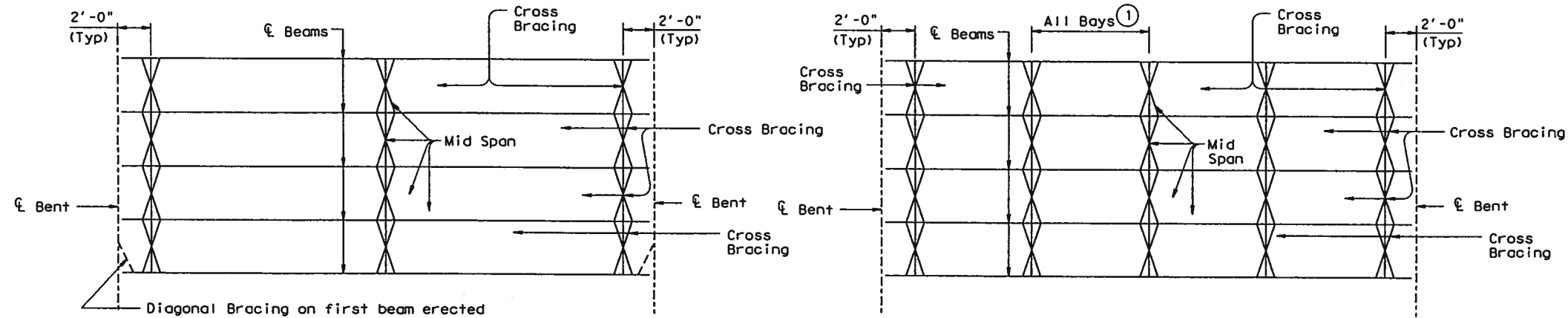
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LEVELS DISPLAYED



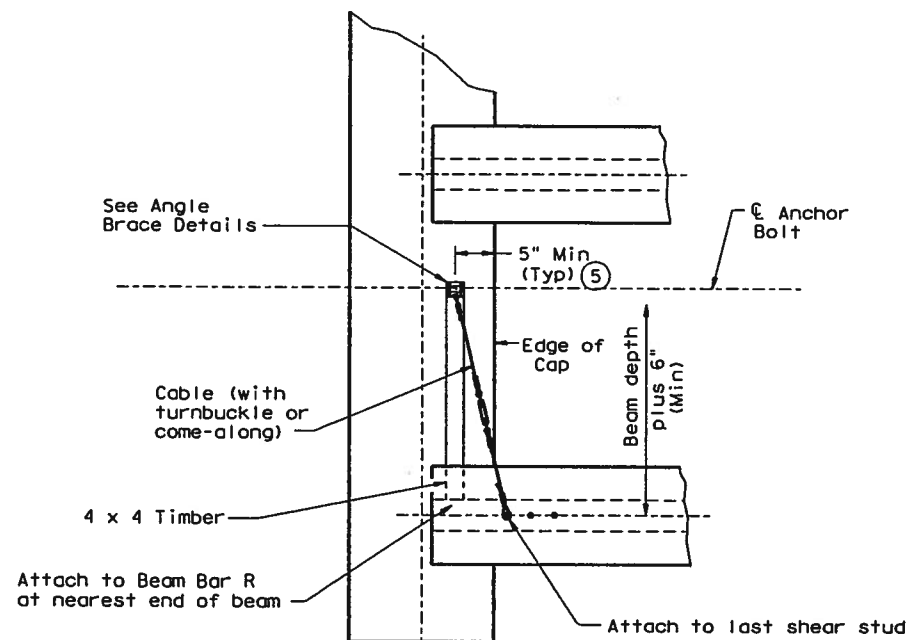
In lieu of providing the bracing shown, the Contractor may utilize the system of diaphragms shown on the ALTERNATE ERECTION BRACING sheet. These diaphragms may be reused from span to span or left in place. Contractor shall notify fabricator on which option will be used.

HAULING & ERECTION:
 The Contractor's attention is directed to the possible lateral instability of Type VI prestressed concrete beams, especially during hauling and erection. The use of the following methods of improving the stability of these beams is encouraged: Location of lifting devices at the maximum practical distance from the beam ends; use of external lateral stiffening devices during hauling and erection; lifting with vertical lines using two machines and care in handling to minimize inertial and impact forces. External adjustable stiffening devices (hog rods) will be required for any Ty VI beam in excess of 120'.

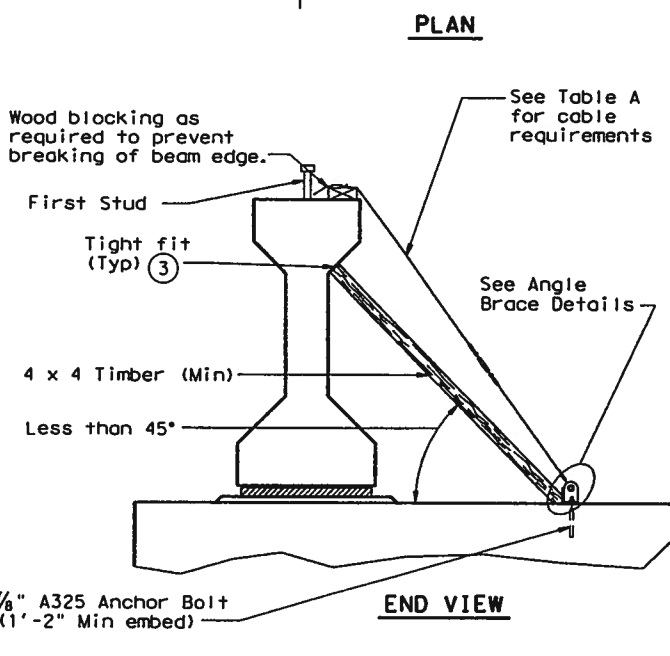
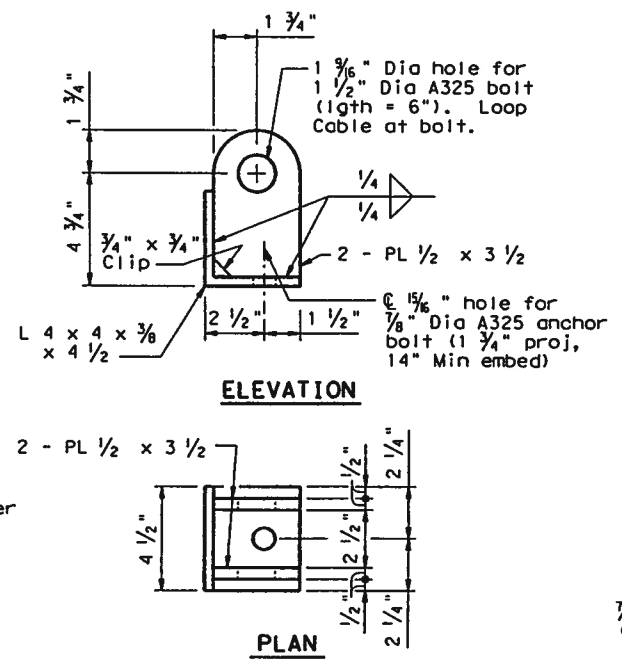
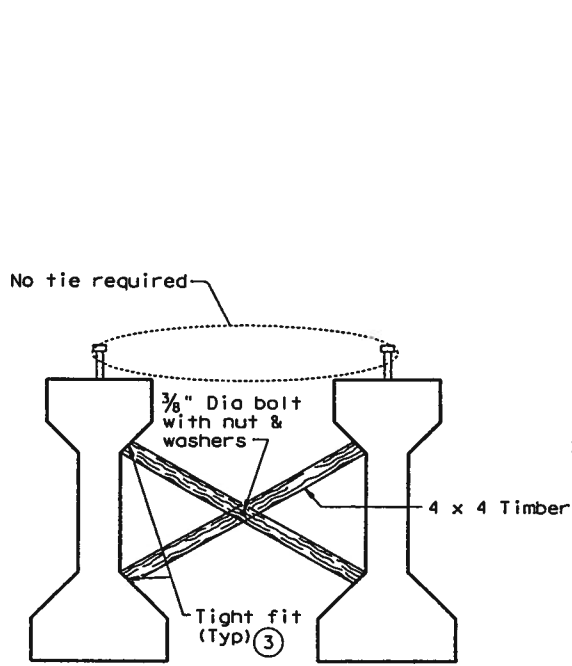
ERECTION BRACING:
 Erection bracing details are considered minimum for fulfilling the requirements of Specification Item 425 for bracing Types A, B, C, IV, and VI prestressed concrete beams regardless of location of structure. Required erection bracing shall be placed immediately after erection of each beam and remain in place until additional bracing as required for slab placement is in place. This standard is needed in all cases to meet requirements for Slab Placement Bracing.

SLAB PLACEMENT BRACING:
 The details for slab placement bracing are considered minimum for fulfilling the requirements of Specification Item 420. Required slab placement bracing shall remain in place until all precast deck panels are in place and the haunch/connection grout has achieved a compression strength of 3000 psi.

GENERAL NOTES:
 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. Removal of bracing for short periods of time to align beams is permissible. All turn-buckles, come-alongs, anchors and other connections shall be capable of developing the full strength of the cable shown hereon.



- ① 30'-0" Max.
- ② Pressure treated landscape timbers can not be used.
- ③ Use wedges as necessary to obtain tight fit. Nail wedges to timbers.
- ④ All hardware used with cable must be able to develop the minimum breaking strength specified. Use thimbles at all loops in cable. Install cable clamps with saddles bearing against the live end and U-bolts bearing against the dead end.
- ⑤ It is acceptable to tie anchor bolts to cap reinforcement.



Beam Type	Min Cable Breaking Strength ④
A	10.5 K
B	12.5 K
C	15.9 K
IV	21.8 K
VI	26.8 K

DIAGONAL BRACING DETAILS
 (To be used on both ends of the first beam erected in the span.)

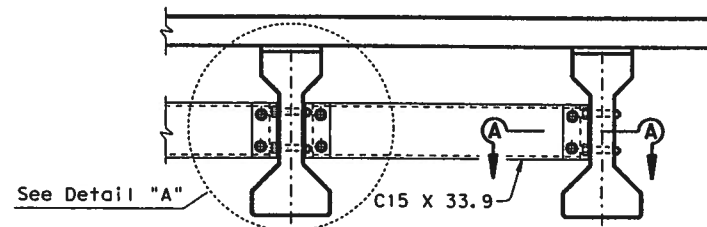
STATE OF TEXAS
 MICHAEL D. HYZAK
 90180
 LICENSED PROFESSIONAL ENGINEER
 Michael D. Hyzak
 6/29/05

Texas Department of Transportation
 Bridge Division

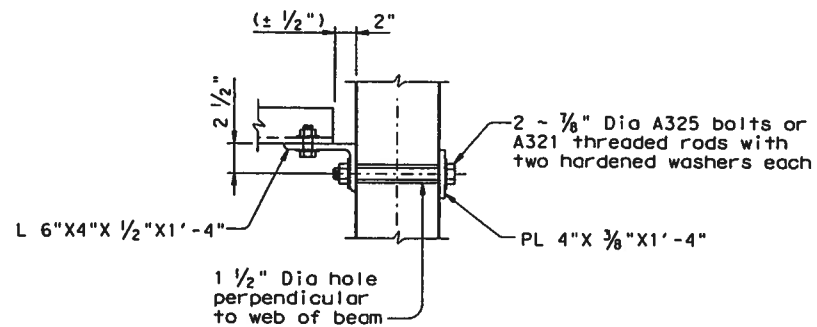
MINIMUM ERECTION AND BRACING REQUIREMENTS PRESTRESSED CONCRETE I-BMS (TYPE A, B, C, IV & VI)

MEBR (C) (MOD)

FILE: mebcst1.dgn	DN: TxDOT	CR: TxDOT	DN: TxDOT	CR: TxDOT
© TxDOT January 2005	DISTRICT	FEDERAL AID PROJECT	SHEET	
REVISIONS	SJT	[BR 2005(856)]	54	
5/05 - MODIFIED FOR FULL DEPTH PRECAST DECK MDH/RMP	COUNTY	CONTROL SECT	JOB	HIGHWAY
	CROCKETT	0140	08	021 SH290

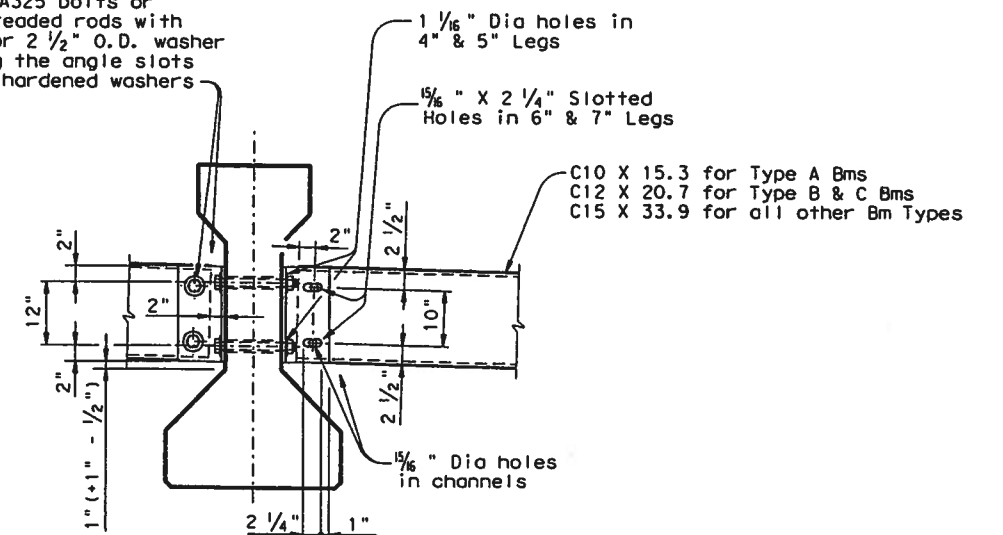


ELEVATION OF DIAPHRAGMS



SECTION A-A

3/4" Dia A325 bolts or A321 threaded rods with one 2" or 2 1/2" O.D. washer covering the angle slots and two hardened washers



DETAIL "A"

STEEL DIAPHRAGM NOTES:

All parts of steel diaphragms shall be galvanized after fabrication. After erection, all scratched or otherwise damaged galvanized parts shall be repaired in accordance with Item "Galvanizing".

NOTE: Provide diaphragms at all locations indicated on MEBC(C) (MOD) sheet.

GENERAL NOTES:

Contractor shall notify prestressed beam fabricator as to which bracing option he intends to use. Option selected shall be incorporated in shop drawings. Payment for any diaphragm option used shall be included in the price bid for Reinforced Concrete Slab.

ACC:	6635mi01.dgn
	(LV=1,2 for English)
LEVELS DISPLAYED	
1	
2	

Michael D. Myzak
 6/29/05

OPTIONAL ERECTION BRACING

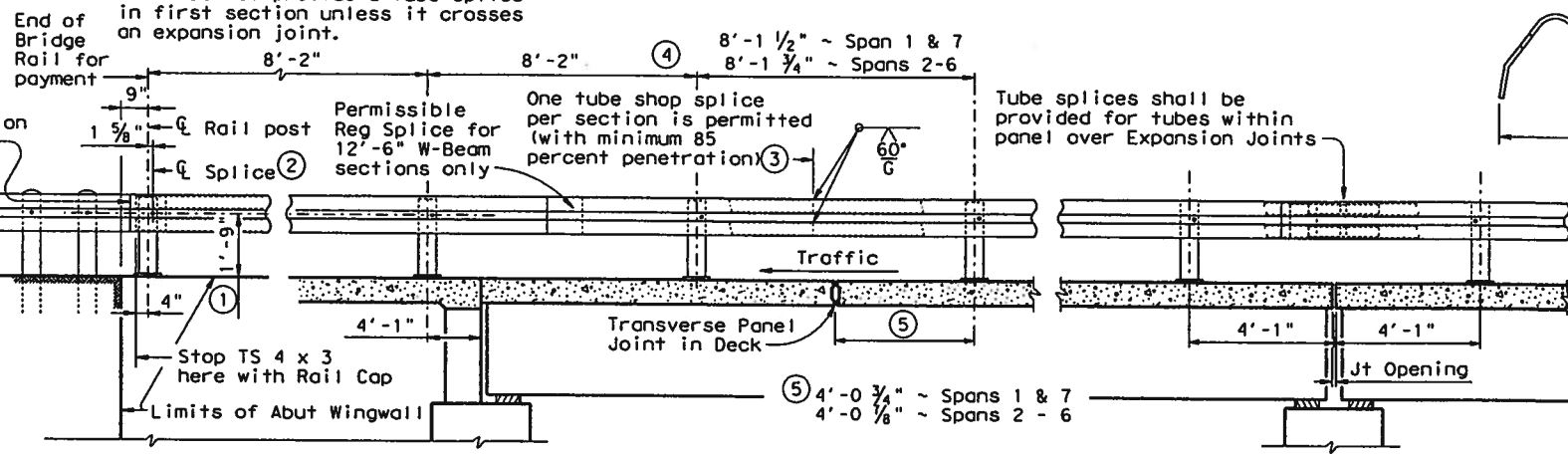
LIVE OAK CREEK BRIDGE

FILE: ibdoside.dgn	DR: THD	CK: THD	DR: DRG	CK: LDS	STD: B209
© TxDOT September 1998	DIST	FED REG	FEDERAL AID PROJECT	SHEET	
REVISIONS	SJT	6	(BR 20051856)	55	
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

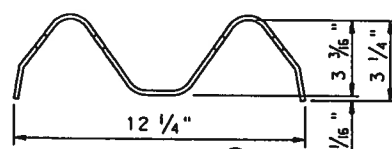
Note: Bridge rail must be attached to a metal beam guard fence transition section (nested W-beam) which then attaches to a metal beam guard fence and extends along the embankment unless shown otherwise on the plans. See plan sheet for details and length for payment. The splice joining the approach guard fence transition to the bridge rail shall be a regular splice.

Note: Do not provide a tube splice in first section unless it crosses an expansion joint.

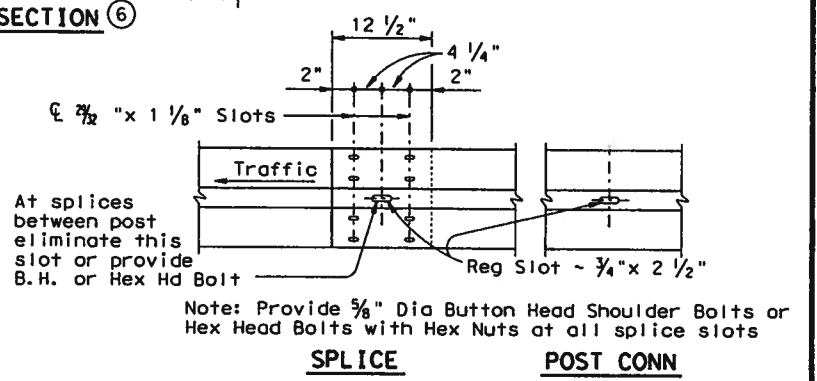
- 1 Increase 2" for structures with overlay.
- 2 Splice may be on either side of bridge rail post web.
- 3 The weld may be square groove or single vee groove. Grind smooth.
- 4 See BRIDGE LAYOUT for post spacing.



ROADWAY ELEVATION OF RAIL

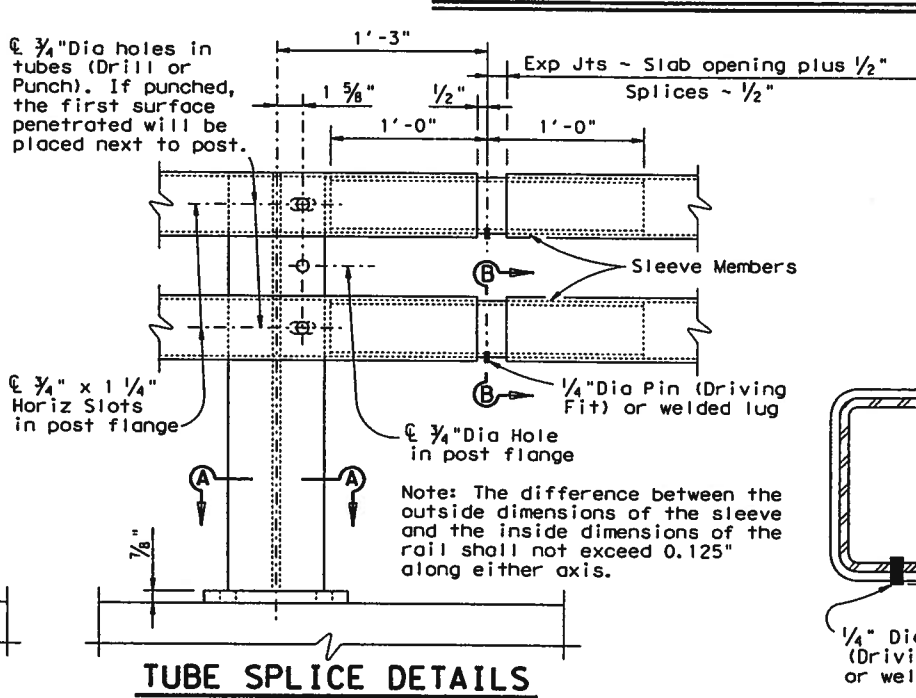
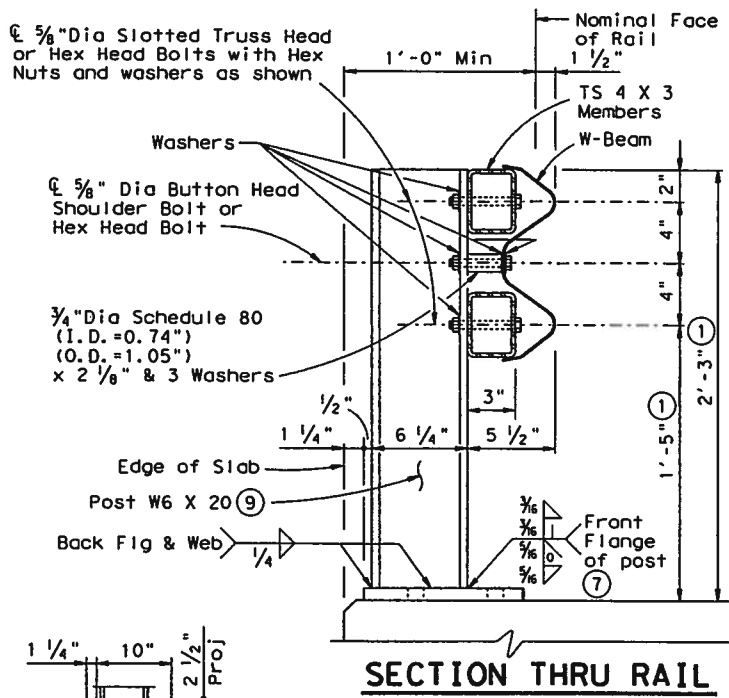


⑥ Member shall be 12 Gage Steel Nom thickness = 0.1046" exclusive of protective coating. Actual section may vary slightly with the manufacturer and conforms to AASHTO M-180.



At splices between post eliminate this slot or provide B.H. or Hex Hd Bolt

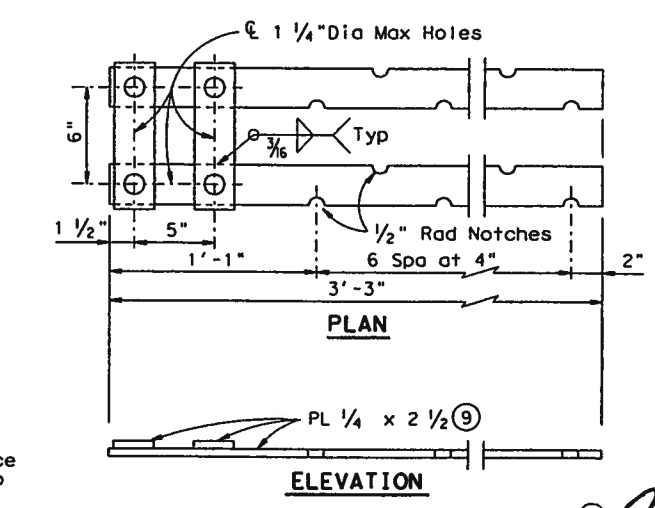
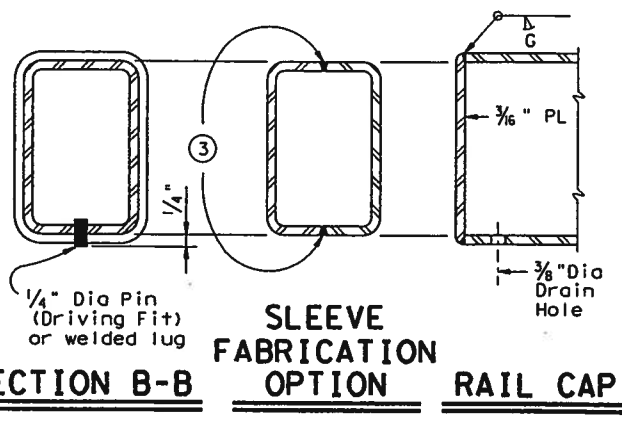
Note: Provide 5/8" Dia Button Head Shoulder Bolts or Hex Head Bolts with Hex Nuts at all splice slots



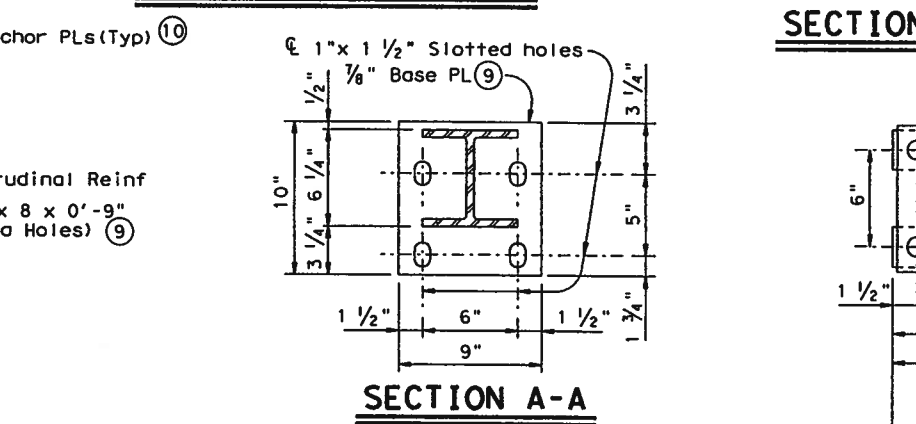
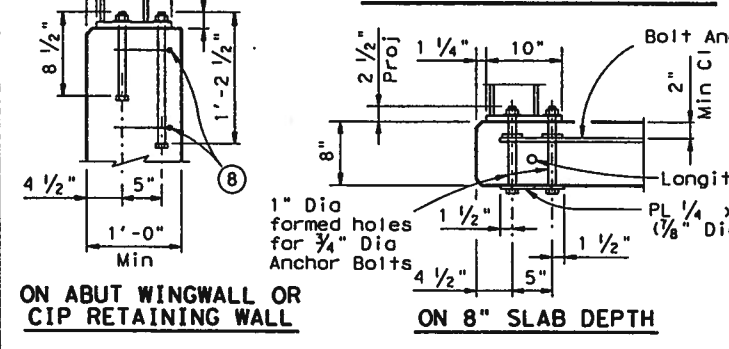
TUBE & SLEEVE MEMBERS

Rail Member Material	Sleeve Thickness Material - A36
A 500 Grade C	0.188"
A 500 Grade B	0.250"
A 500 Grade A or A 501	0.250"

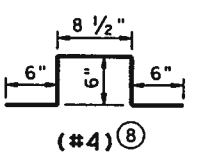
Note: Other sections of equal or greater strength are acceptable for sleeves.



*Michael D. Hyzak
6/29/05*



- ⑦ In lieu of front Flg weld shown, a 3/8" fillet weld all around including edges of flange may be used.
- ⑧ Adjust horizontal reinforcing as necessary and place two #4 bars around anchor bolts. These bars are to be considered subsidiary to Rail.
- ⑨ All steel posts and plates shall be ASTM A36.
- ⑩ Locally bend top Precast Panel Bar A to fit under anchorage plate.
- ⑪ Install one anchorage plate assembly in slab at each rail post. Do not galvanize or oil this assembly. Bolt Anchorage Plates may not be cut.



Note: Rail fabricator shall provide panel fabricator bolt anchorage plates for precasting into deck panels.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

LEVELS DISPLAYED

ACC									

**Texas Department of Transportation
Bridge Division**

TRAFFIC RAIL

TYPE T101 (MOD)

FILE: r1std03.dgn	DATE: TxDOT	CR: TxDOT	DR: JIR	CR: TxDOT
© TxDOT February 2003	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	SJT	BR 2005 (856)		56
4-05: W-Beam Splice & Notes.	COUNTY	CONTROL SECT	JOB	HIGHWAY
5-05: Modified for full depth concrete deck. (W/R/MP)	CONTRACT	PLAN NO	POS	CURBNO