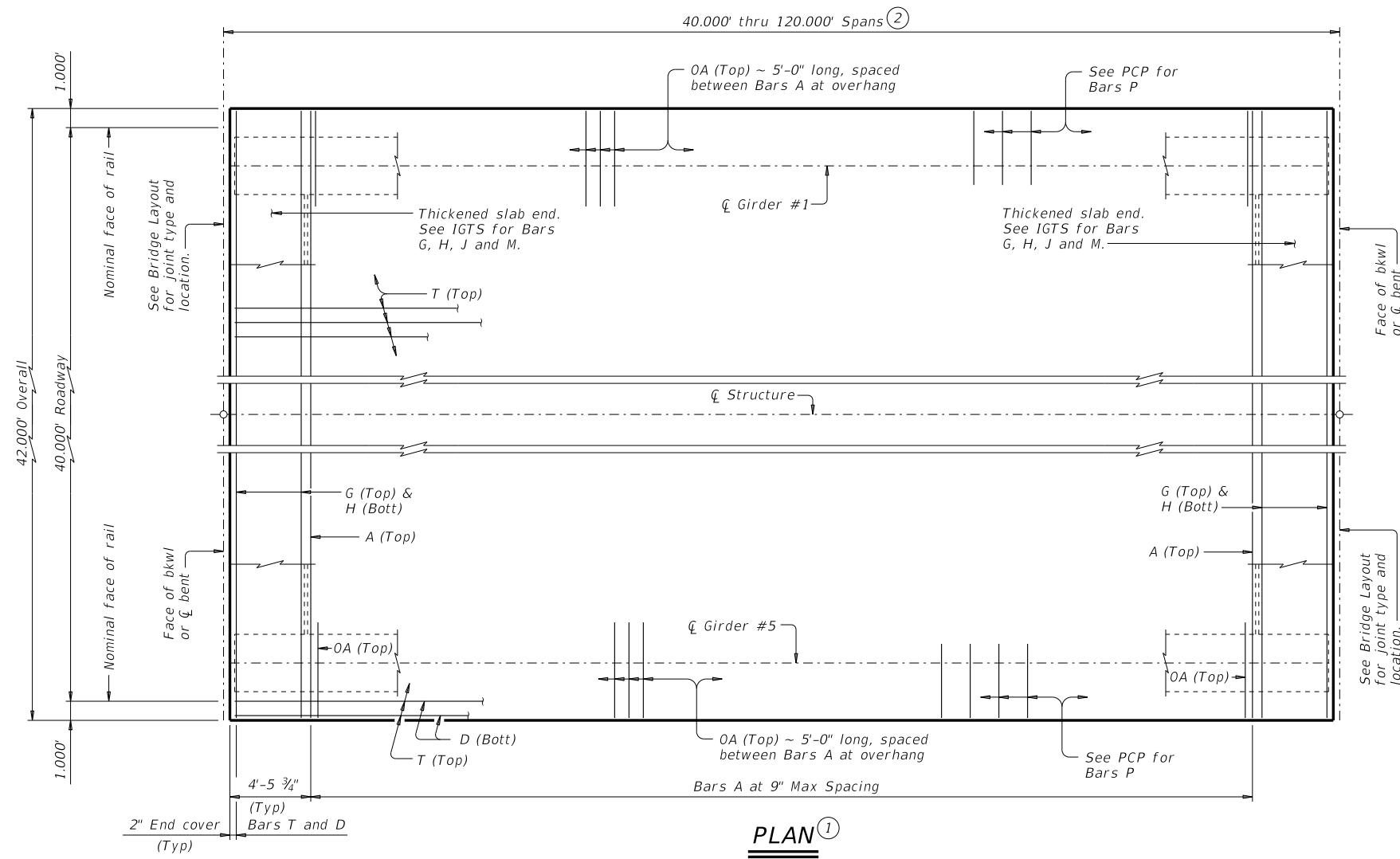
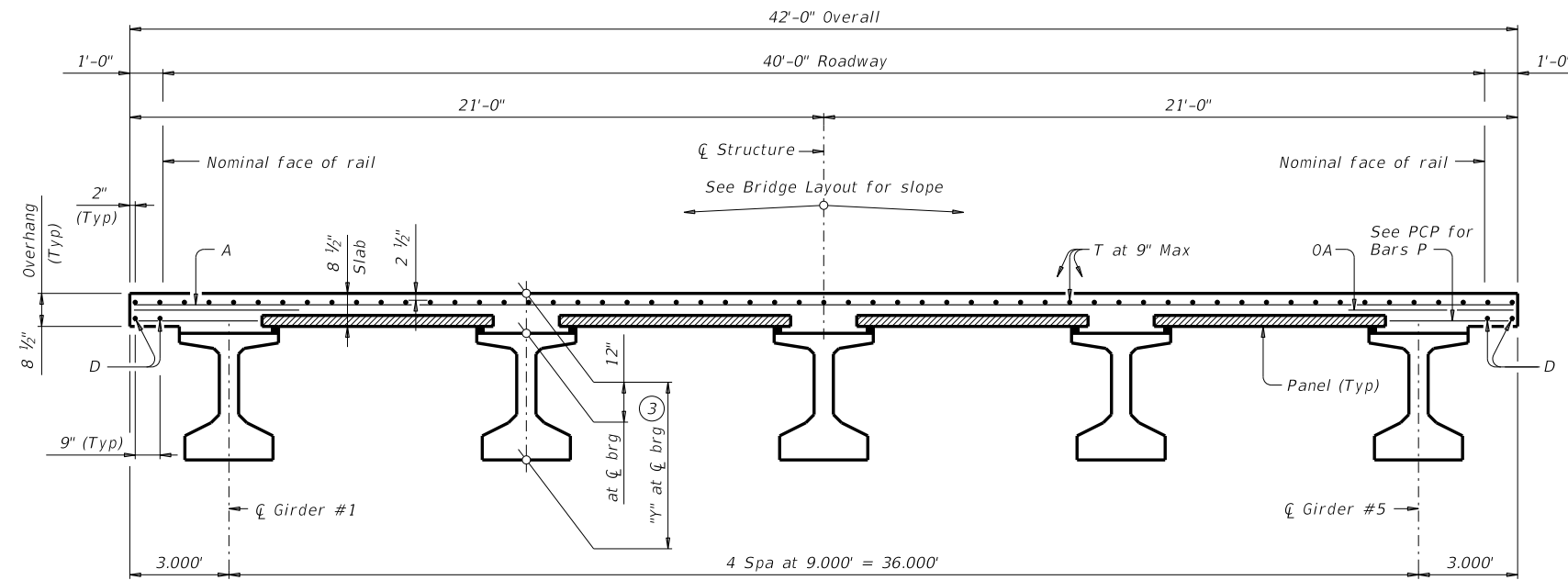


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**PLAN**<sup>①</sup>



**TYPICAL TRANSVERSE SECTION**  
(Showing girder type Tx46)

TABLE OF SECTION DEPTHS	
GIRDER TYPE	"Y" AT $\bar{C}$ BRG <sup>③</sup>
	Ft/In
Tx28	3'-4"
Tx34	3'-10"
Tx40	4'-4"
Tx46	4'-10"
Tx54	5'-6"

**BAR TABLE**

BAR	SIZE
A	#4
D	#4
G	#4
H	#4
J	#4
M	#4
OA	#5
P	#4
T	#4

- ① If multi-span units (with slab continuous over interior bents) are indicated on the Bridge Layout, see standard IGCS for adjustment to slab reinforcement and quantities.
- ② Span lengths for prestressed concrete I-Girder type:  
 Type Tx28 for spans lengths 40,000' thru 65,000'.  
 Type Tx34 for spans lengths 40,000' thru 80,000'.  
 Type Tx40 for spans lengths 40,000' thru 90,000'.  
 Type Tx46 for spans lengths 40,000' thru 105,000'.  
 Type Tx54 for spans lengths 40,000' thru 120,000'.
- ③ "Y" value shown is based on theoretical girder camber, dead load deflection from an 8 1/2" concrete slab, a constant roadway grade, and using precast panels (PCP). The Contractor will adjust this value as necessary for any roadway vertical curve and/or if the precast overhang panel (PCP(0)) option is used.

HL93 LOADING

SHEET 1 OF 2



**PRESTRESSED CONCRETE I-GIRDER SPANS (TYPE Tx28 THRU Tx54) 40' ROADWAY**

**SIG-40**

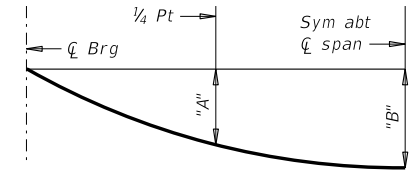
FILE: sig45sts-19.dgn	DN: JMH	CK: ASB	DW: JTR	CK: TAR
©TxDOT August 2017	CONT	SECT	JOB	HIGHWAY
REVISIONS				
10-19: Increased "X" and "Y" Values	DIST	COUNTY	SHEET NO.	

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**TABLE OF DEAD LOAD DEFLECTIONS**

TYPE Tx28 GIRDERS			TYPE Tx34 GIRDERS			TYPE Tx40 GIRDERS			TYPE Tx46 GIRDERS			TYPE Tx54 GIRDERS		
SPAN LENGTH	"A"	"B"	SPAN LENGTH	"A"	"B"	SPAN LENGTH	"A"	"B"	SPAN LENGTH	"A"	"B"	SPAN LENGTH	"A"	"B"
Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft
40	0.010	0.014	40	0.006	0.008	40	0.004	0.006	40	0.003	0.004	40	0.001	0.002
45	0.016	0.023	45	0.010	0.014	45	0.006	0.009	45	0.004	0.006	45	0.003	0.004
50	0.026	0.036	50	0.016	0.022	50	0.010	0.014	50	0.007	0.010	50	0.004	0.006
55	0.038	0.054	55	0.023	0.032	55	0.015	0.021	55	0.010	0.014	55	0.006	0.009
60	0.055	0.077	60	0.033	0.046	60	0.021	0.030	60	0.014	0.020	60	0.010	0.014
65	0.076	0.107	65	0.046	0.064	65	0.030	0.042	65	0.021	0.029	65	0.014	0.019
			70	0.062	0.087	70	0.041	0.057	70	0.028	0.039	70	0.019	0.026
			75	0.082	0.115	75	0.053	0.075	75	0.036	0.051	75	0.024	0.034
			80	0.107	0.150	80	0.070	0.098	80	0.048	0.067	80	0.031	0.044
						85	0.090	0.126	85	0.061	0.086	85	0.041	0.057
						90	0.113	0.159	90	0.078	0.109	90	0.051	0.072
									95	0.096	0.135	95	0.063	0.089
									100	0.119	0.167	100	0.078	0.110
									105	0.145	0.204	105	0.096	0.135
									110			110	0.116	0.163
									115			115	0.139	0.195
									120			120	0.165	0.232



**DEAD LOAD DEFLECTION DIAGRAM**

Calculated deflections shown are due to the concrete slab on interior girders only ( $E_c = 5000$  ksi). Adjust values as required for exterior girders and if optional slab forming is used. These values may require field verification.

**TABLE OF ESTIMATED QUANTITIES**

SPAN LENGTH	REINF CONCRETE SLAB	Prestressed Concrete Girders			TOTAL REINF STEEL ⑤
		ABUT TO INT BT ④	INT BT TO INT BT ④	ABUT TO ABUT ④	
Ft	SF	LF	LF	LF	Lb
40	1,680	197.50	197.50	197.50	3,864
45	1,890	222.50	222.50	222.50	4,347
50	2,100	247.50	247.50	247.50	4,830
55	2,310	272.50	272.50	272.50	5,313
60	2,520	297.50	297.50	297.50	5,796
65	2,730	322.50	322.50	322.50	6,279
70	2,940	347.50	347.50	347.50	6,762
75	3,150	372.50	372.50	372.50	7,245
80	3,360	397.50	397.50	397.50	7,728
85	3,570	422.50	422.50	422.50	8,211
90	3,780	447.50	447.50	447.50	8,694
95	3,990	472.50	472.50	472.50	9,177
100	4,200	497.50	497.50	497.50	9,660
105	4,410	522.50	522.50	522.50	10,143
110	4,620	547.50	547.50	547.50	10,626
115	4,830	572.50	572.50	572.50	11,109
120	5,040	597.50	597.50	597.50	11,592

- ④ Fabricator will adjust lengths for girder slopes as required.
- ⑤ Reinforcing steel weight is calculated using an approximate factor of 2.3 lbs/SF.

**GENERAL NOTES:**  
 Designed according to AASHTO LRFD Bridge Design Specifications.  
 Multi-span units, with slab continuous over interior bents, may be formed with the details shown on this sheet and standard IGCS.  
 See IGTS standard for Thickened Slab End details and quantity adjustments.  
 See PCP and PCP-FAB for panel details not shown.  
 See PCP(0) and PCP(0)-FAB for precast overhang panel details if this option is used.  
 See IGMS standard for miscellaneous details.  
 See applicable rail details for rail anchorage in slab.  
 See PMDF standard for details and quantity adjustments if this option is used.  
 This standard does not support the use of transition bents.

Cover dimensions are clear dimensions, unless noted otherwise.

**MATERIAL NOTES:**  
 Provide Class S concrete ( $f'_c = 4,000$  psi).  
 Provide Class S (HPC) concrete if shown elsewhere in the plans.  
 Provide Grade 60 reinforcing steel.  
 Provide bar laps, where required, as follows:  
 Uncoated ~ #4 = 1'-7"  
 Epoxy coated ~ #4 = 2'-5"  
 Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars A, D, OA, P or T unless noted otherwise.

 Texas Department of Transportation	 Bridge Division Standard
<b>PRESTRESSED CONCRETE I-GIRDER SPANS</b> <b>(TYPE Tx28 THRU Tx54)</b> <b>40' ROADWAY</b>	
<b>SIG-40</b>	
FILE: sig45sts-19.dgn	DN: JMH CK: ASB DW: JTR CK: TAR
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REVISIONS	
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