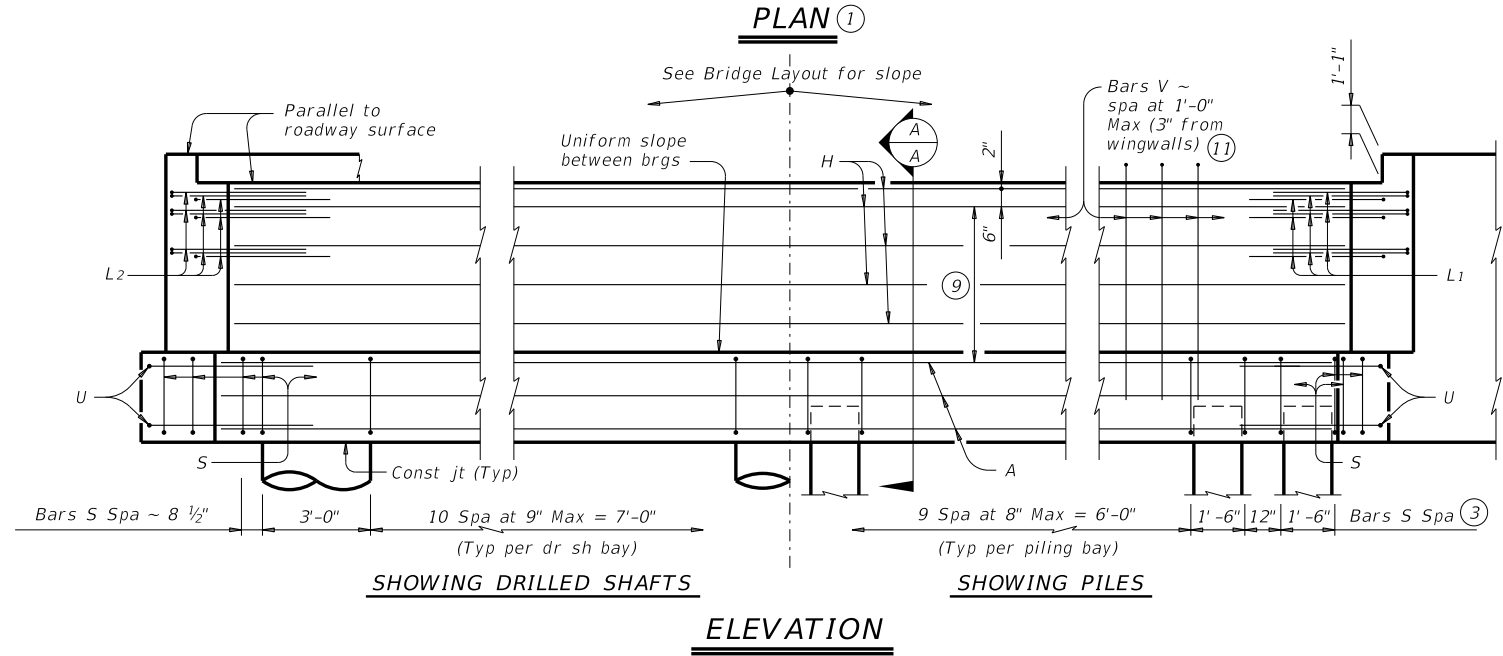
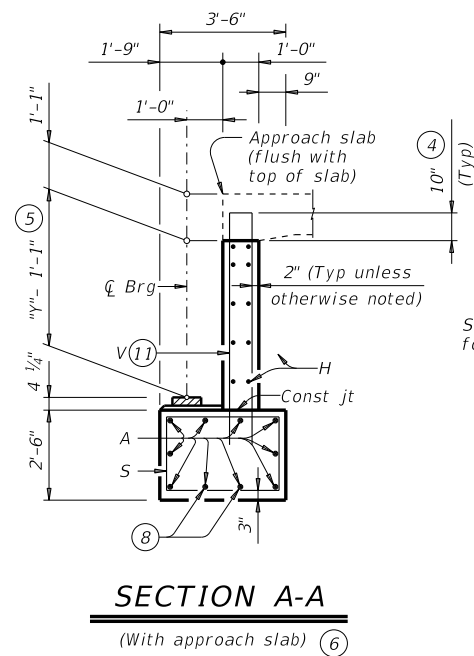
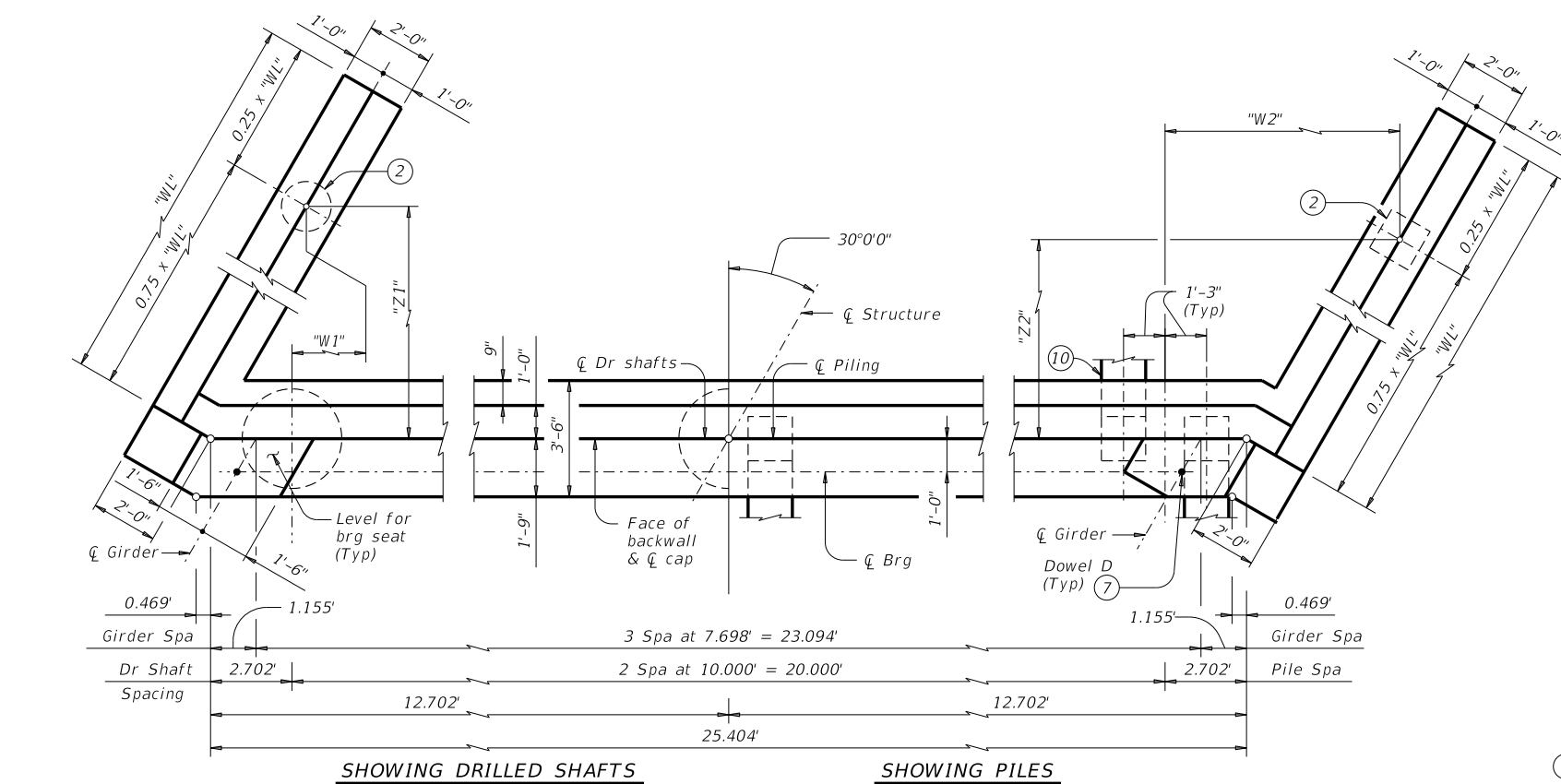


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DATE: FILE:

TABLE OF FOUNDATION LOADS

Span Length Ft	All Girder Types	
	Tons/Shaft	Tons/Pile
40	65	57
45	70	59
50	74	62
55	78	64
60	82	66
65	86	68
70	90	70
75	94	72
80	97	74
85	101	76
90	105	78
95	109	80
100	113	82
105	116	83
110	120	85
115	124	87
120	127	89
125	131	91



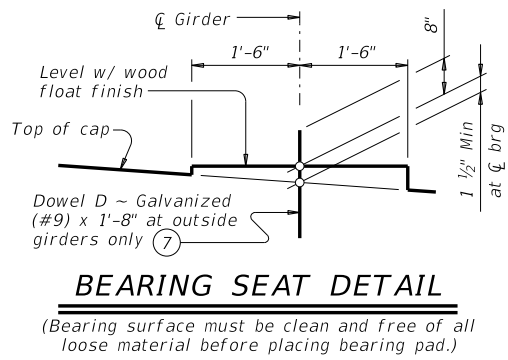
- ① See Table A for variable dimensions based on header slope and girder type.
- ② See Table A to determine if wingwall foundations are required.
- ③ For piling larger than 16" adjust Bars S spacing as required to avoid piling.
- ④ Increase as required to maintain 3" from finished grade.
- ⑤ See Span details for "y" value.
- ⑥ See Bridge Layout to determine if approach slab is present.
- ⑦ Omit Dowels D at end of multi-span unit. Adjust reinforcing steel total accordingly.
- ⑧ With pile foundations, move Bars A shown to clear piles.
- ⑨ Spacing based on girder type:
Tx28 ~ 3 spaces at 1'-0" Max
Tx34 ~ 3 spaces at 1'-0" Max
Tx40 ~ 4 spaces at 1'-0" Max
Tx46 ~ 4 spaces at 1'-0" Max
Tx54 ~ 5 spaces at 1'-0" Max
- ⑩ See Detail A on FD standard.
- ⑪ Field bend as needed to clear piles.

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications.
 See Bridge Layout for header slope and foundation type, size and length.
 See Common Foundation Details (FD) standard sheet for all foundation details and notes.
 See Concrete Riprap (CRR) standard sheet or Stone Riprap (SRR) standard sheet for riprap attachment details, if applicable.
 See applicable rail details for rail anchorage in wingwalls.
 Details are drawn showing right forward skew. See Bridge Layout for actual skew direction.
 These abutment details may be used with standard SIG-24-30 only.

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.

MATERIAL NOTES:
 Provide Class C concrete (f'c = 3,600 psi).
 Provide Class C (HPC) concrete if shown elsewhere in the plans.
 Provide Grade 60 reinforcing steel.
 Galvanize dowel bars D.

Header Slope	Girder Type	Wingwall Type	Wingwall Lgth "WL"	"W1"	"Z1"	"W2"	"Z2"
2:1	Tx28	Cantilevered	10.000'	Not Applicable			
	Tx34	Cantilevered	11.000'				
	Tx40	Cantilevered	12.000'				
	Tx46	Founded	14.000'				
	Tx54	Founded	15.000'				
3:1	Tx28	Founded	14.000'	1.682'	9.593'	8.818'	8.593'
	Tx34	Founded	16.000'	2.432'	10.892'	9.568'	9.892'
	Tx40	Founded	18.000'	3.182'	12.191'	10.318'	11.191'
	Tx46	Founded	20.000'	3.932'	13.490'	11.068'	12.490'
	Tx54	Founded	22.000'	4.682'	14.789'	11.818'	13.789'



HL93 LOADING SHEET 1 OF 3

Texas Department of Transportation
 Bridge Division Standard

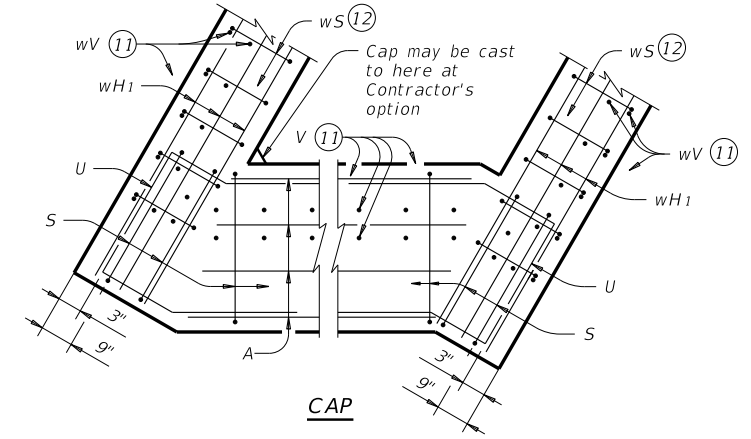
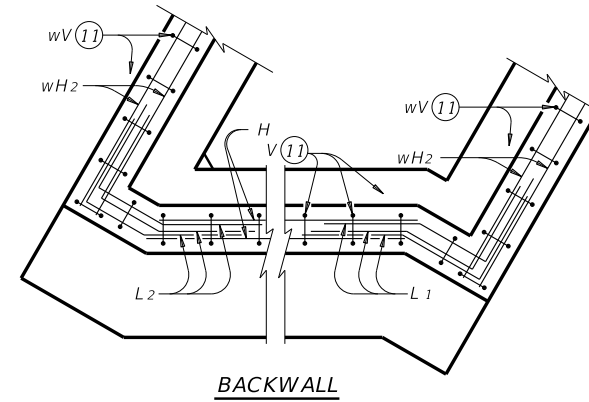
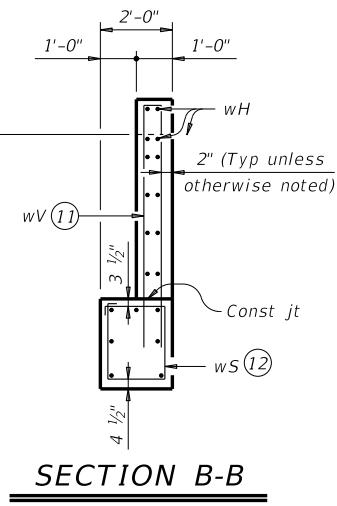
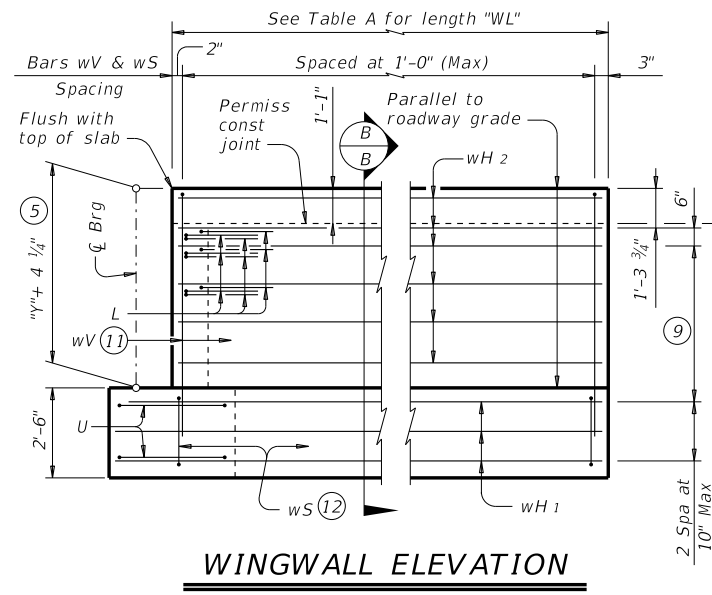
ABUTMENTS
 TYPE TX28 THRU TX54
 PRESTR CONC I-GIRDERS
 24' ROADWAY 30° SKEW

AIG-24-30

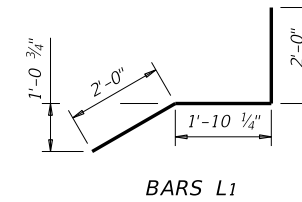
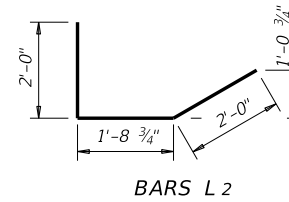
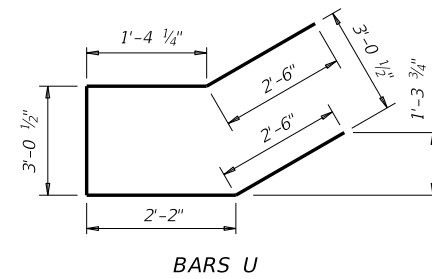
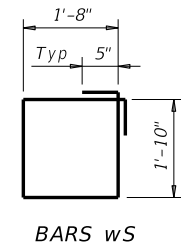
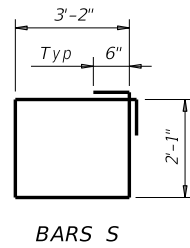
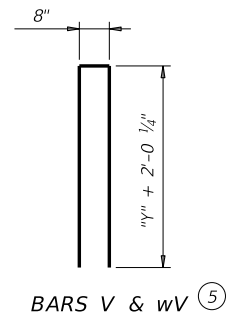
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CORNER DETAILS



(5) See Span details for "y" value.

(9) Spacing based on girder type:
Tx28 ~ 3 spaces at 1'-0" Max
Tx34 ~ 3 spaces at 1'-0" Max
Tx40 ~ 4 spaces at 1'-0" Max
Tx46 ~ 4 spaces at 1'-0" Max
Tx54 ~ 5 spaces at 1'-0" Max

(11) Field bend as needed to clear piles.

(12) Adjust as required to avoid piling.

HL93 LOADING

SHEET 2 OF 3

		Bridge Division Standard	
ABUTMENTS TYPE TX28 THRU TX54 PRESTR CONC I-GIRDERS 24' ROADWAY 30° SKEW AIG-24-30			
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TABLES OF ESTIMATED QUANTITIES WITH 2:1 HEADER SLOPE ¹³

TYPE Tx28 Girders					TYPE Tx34 Girders					TYPE Tx40 Girders					TYPE Tx46 Girders					TYPE Tx54 Girders									
Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight					
A	10	#11	25'-5"	1,350	A	10	#11	25'-5"	1,350	A	10	#11	25'-5"	1,350	A	10	#11	25'-5"	1,350	A	10	#11	25'-5"	1,350					
D ⁷	2	#9	1'-8"	11	D ⁷	2	#9	1'-8"	11	D ⁷	2	#9	1'-8"	11	D ⁷	2	#9	1'-8"	11	D ⁷	2	#9	1'-8"	11					
H	8	#6	25'-5"	305	H	8	#6	25'-5"	305	H	10	#6	25'-5"	382	H	10	#6	25'-5"	382	H	12	#6	25'-5"	458					
L1	9	#6	5'-11"	80	L1	9	#6	5'-11"	80	L1	9	#6	5'-11"	80	L1	9	#6	5'-11"	80	L1	9	#6	5'-11"	80					
L2	9	#6	5'-9"	78	L2	9	#6	5'-9"	78	L2	9	#6	5'-9"	78	L2	9	#6	5'-9"	78	L2	9	#6	5'-9"	78					
S	30	#5	11'-6"	360	S	30	#5	11'-6"	360	S	30	#5	11'-6"	360	S	30	#5	11'-6"	360	S	30	#5	11'-6"	360					
U	4	#6	11'-7"	70	U	4	#6	11'-7"	70	U	4	#6	11'-7"	70	U	4	#6	11'-7"	70	U	4	#6	11'-7"	70					
V	28	#5	11'-4"	331	V	28	#5	12'-4"	360	V	28	#5	13'-4"	389	V	28	#5	14'-4"	419	V	28	#5	15'-8"	458					
wH1	14	#6	11'-5"	240	wH1	14	#6	12'-5"	261	wH1	14	#6	13'-5"	282	wH1	14	#6	15'-5"	324	wH1	14	#6	16'-5"	345					
wH2	20	#6	9'-8"	290	wH2	20	#6	10'-8"	320	wH2	24	#6	11'-8"	421	wH2	24	#6	13'-8"	493	wH2	28	#6	14'-8"	617					
wS	22	#4	7'-10"	115	wS	24	#4	7'-10"	126	wS	26	#4	7'-10"	136	wS	30	#4	7'-10"	157	wS	32	#4	7'-10"	167					
wV	22	#5	11'-4"	260	wV	24	#5	12'-4"	309	wV	26	#5	13'-4"	362	wV	30	#5	14'-4"	448	wV	32	#5	15'-8"	523					
Reinforcing Steel				Lb	3,490	Reinforcing Steel				Lb	3,630	Reinforcing Steel				Lb	3,921	Reinforcing Steel				Lb	4,172	Reinforcing Steel				Lb	4,517
Class "C" Concrete				CY	17.9	Class "C" Concrete				CY	19.5	Class "C" Concrete				CY	21.1	Class "C" Concrete				CY	23.6	Class "C" Concrete				CY	25.7

TABLES OF ESTIMATED QUANTITIES WITH 3:1 HEADER SLOPE ¹³

TYPE Tx28 Girders					TYPE Tx34 Girders					TYPE Tx40 Girders					TYPE Tx46 Girders					TYPE Tx54 Girders									
Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight					
A	10	#11	25'-5"	1,350	A	10	#11	25'-5"	1,350	A	10	#11	25'-5"	1,350	A	10	#11	25'-5"	1,350	A	10	#11	25'-5"	1,350					
D ⁷	2	#9	1'-8"	11	D ⁷	2	#9	1'-8"	11	D ⁷	2	#9	1'-8"	11	D ⁷	2	#9	1'-8"	11	D ⁷	2	#9	1'-8"	11					
H	8	#6	25'-5"	305	H	8	#6	25'-5"	305	H	10	#6	25'-5"	382	H	10	#6	25'-5"	382	H	12	#6	25'-5"	458					
L1	9	#6	5'-11"	80	L1	9	#6	5'-11"	80	L1	9	#6	5'-11"	80	L1	9	#6	5'-11"	80	L1	9	#6	5'-11"	80					
L2	9	#6	5'-9"	78	L2	9	#6	5'-9"	78	L2	9	#6	5'-9"	78	L2	9	#6	5'-9"	78	L2	9	#6	5'-9"	78					
S	30	#5	11'-6"	360	S	30	#5	11'-6"	360	S	30	#5	11'-6"	360	S	30	#5	11'-6"	360	S	30	#5	11'-6"	360					
U	4	#6	11'-7"	70	U	4	#6	11'-7"	70	U	4	#6	11'-7"	70	U	4	#6	11'-7"	70	U	4	#6	11'-7"	70					
V	28	#5	11'-4"	331	V	28	#5	12'-4"	360	V	28	#5	13'-4"	389	V	28	#5	14'-4"	419	V	28	#5	15'-8"	458					
wH1	14	#6	15'-5"	324	wH1	14	#6	17'-5"	366	wH1	14	#6	19'-5"	408	wH1	14	#6	21'-5"	450	wH1	14	#6	23'-5"	492					
wH2	20	#6	13'-8"	411	wH2	20	#6	15'-8"	471	wH2	24	#6	17'-8"	637	wH2	24	#6	19'-8"	709	wH2	28	#6	21'-8"	911					
wS	30	#4	7'-10"	157	wS	34	#4	7'-10"	178	wS	38	#4	7'-10"	199	wS	42	#4	7'-10"	220	wS	46	#4	7'-10"	241					
wV	30	#5	11'-4"	355	wV	34	#5	12'-4"	437	wV	38	#5	13'-4"	528	wV	42	#5	14'-4"	628	wV	46	#5	15'-8"	752					
Reinforcing Steel				Lb	3,832	Reinforcing Steel				Lb	4,066	Reinforcing Steel				Lb	4,492	Reinforcing Steel				Lb	4,757	Reinforcing Steel				Lb	5,261
Class "C" Concrete				CY	20.5	Class "C" Concrete				CY	22.9	Class "C" Concrete				CY	25.4	Class "C" Concrete				CY	28.1	Class "C" Concrete				CY	31.3

⁷ Omit Dowels D at end of multi-span unit. Adjust reinforcing steel total accordingly.

¹³ Quantities shown are for one abutment only (with approach slab). With no approach slab, add 1.1 CY Class "C" concrete and 153 lbs reinforcing steel for 4 additional Bars H.

Texas Department of Transportation		Bridge Division Standard		
<h2 style="margin: 0;">ABUTMENTS</h2> <h3 style="margin: 0;">TYPE TX28 THRU TX54</h3> <h3 style="margin: 0;">PRESTR CONC I-GIRDERS</h3> <h3 style="margin: 0;">24' ROADWAY 30° SKEW</h3> <h2 style="margin: 0;">AIG-24-30</h2>				
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