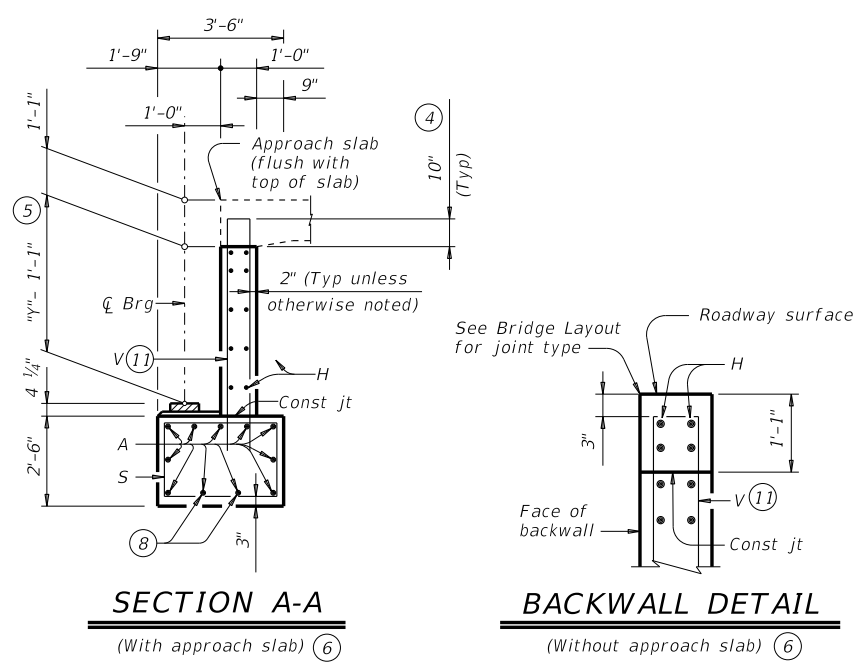
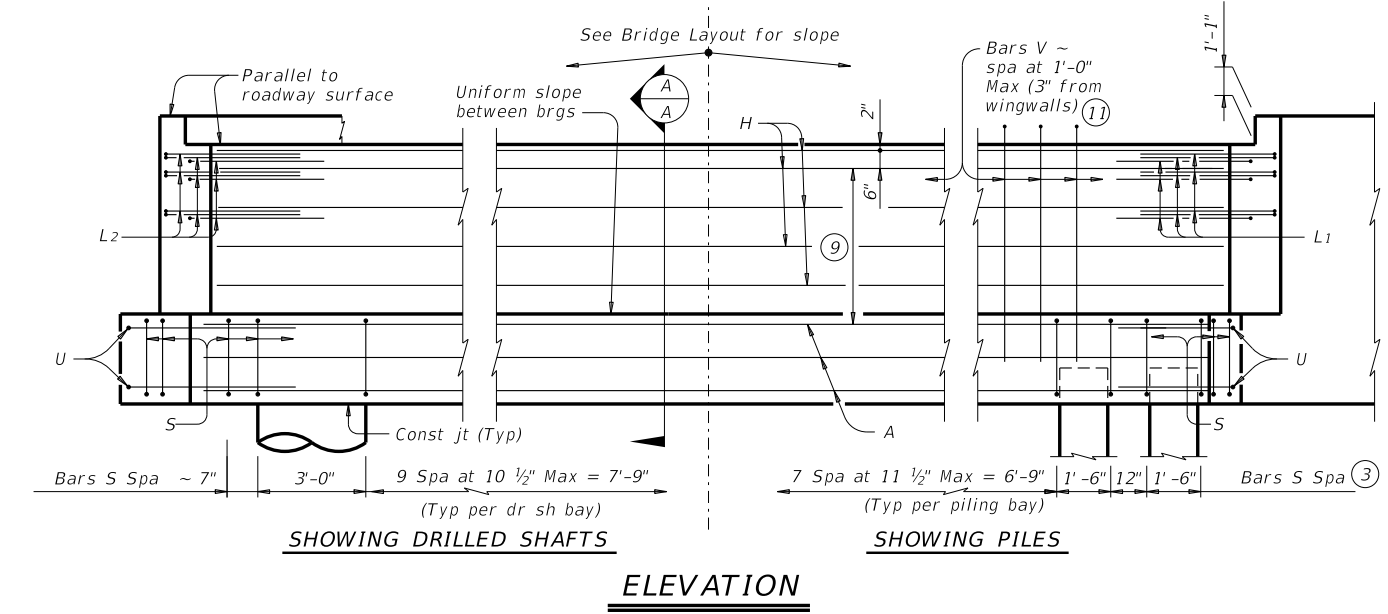
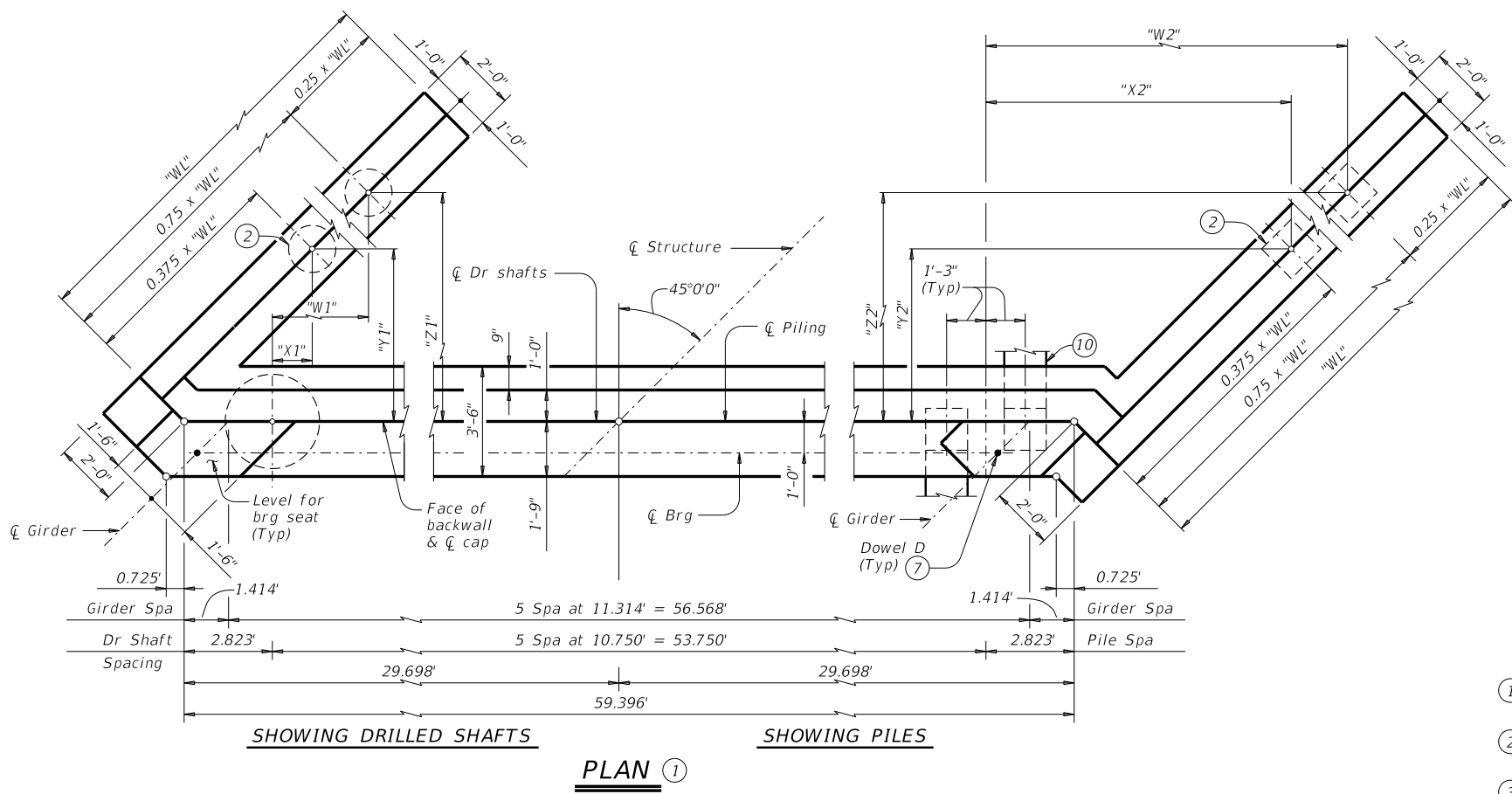


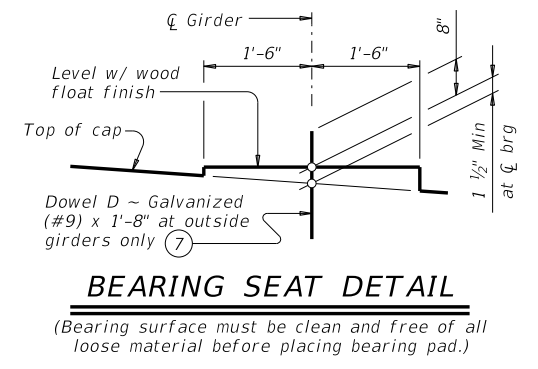
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- ① See Table A for variable dimensions based on header slope and girder type.
- ② See Table A to determine if this wingwall foundation is required.
- ③ For piling larger than 16" adjust Bars S spacing as required to avoid piling.
- ④ Increase as required 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.

Header Slope	Girder Type	Wingwall Type	Wingwall Lgth "WL"	"W1"	"X1"	"Y1"	"Z1"	"W2"	"X2"	"Y2"	"Z2"				
2:1	Tx28	Founded	13.000'	3.364'	Not Applicable		7.601'	10.425'	Not Applicable		6.187'				
	Tx34		14.000'	3.894'			8.132'	10.955'			6.718'				
	Tx40		16.000'	4.955'			9.192'	12.016'			7.778'				
	Tx46		17.000'	5.485'			9.723'	12.546'			8.309'				
	Tx54		19.000'	6.546'		10.783'	13.607'			9.369'					
3:1	Tx28	Founded	18.000'	6.015'	Not Applicable		10.253'	13.077'	Not Applicable		8.839'				
	Tx34		20.000'	7.076'			11.314'	14.137'			9.899'				
	Tx40		22.000'	8.137'			12.374'	15.198'			10.960'				
	Tx46		25.000'	9.728'			3.099'	7.336'			13.965'	16.789'	10.160'	5.922'	12.551'
	Tx54		27.000'	10.788'			3.629'	7.867'			15.026'	17.850'	10.690'	6.452'	13.612'



Span Length	All Girder Types	
	Tons/Shaft	Tons/Pile
40	49	51
45	52	52
50	55	54
55	58	55
60	61	57
65	64	58
70	67	60
75	70	61
80	73	63
85	76	64
90	79	66
95	82	67
100	84	69
105	87	70
110	90	72
115	93	73
120	96	75
125	99	76

**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-44-45 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.

HL93 LOADING SHEET 1 OF 3

**Texas Department of Transportation** Bridge Division Standard

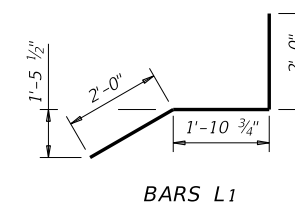
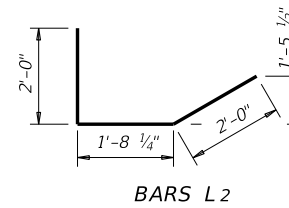
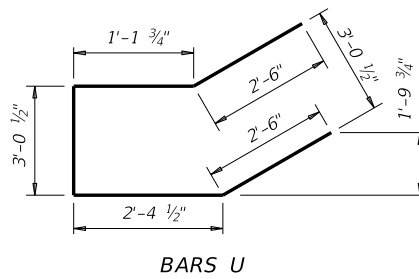
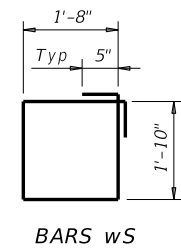
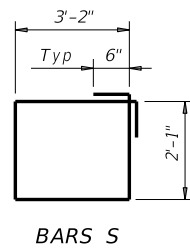
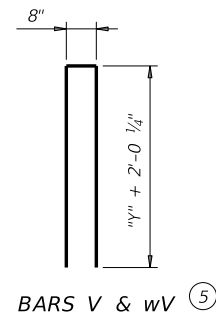
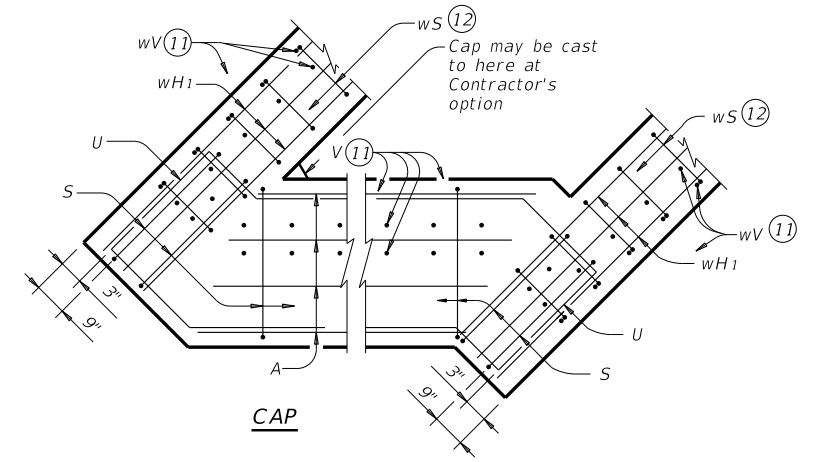
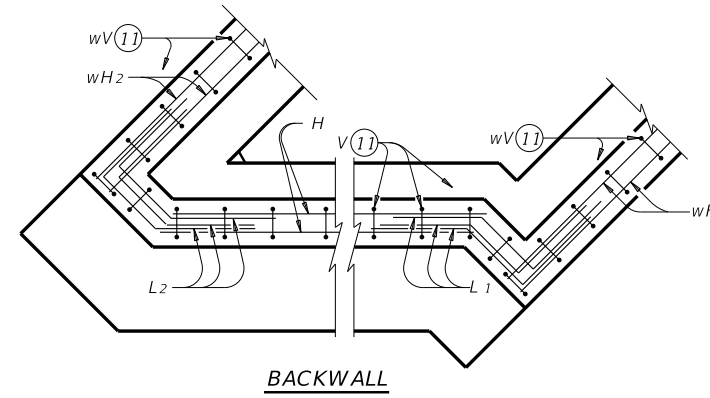
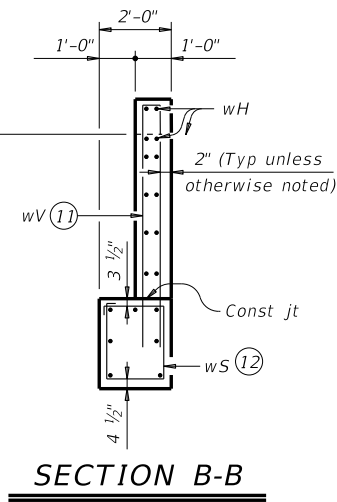
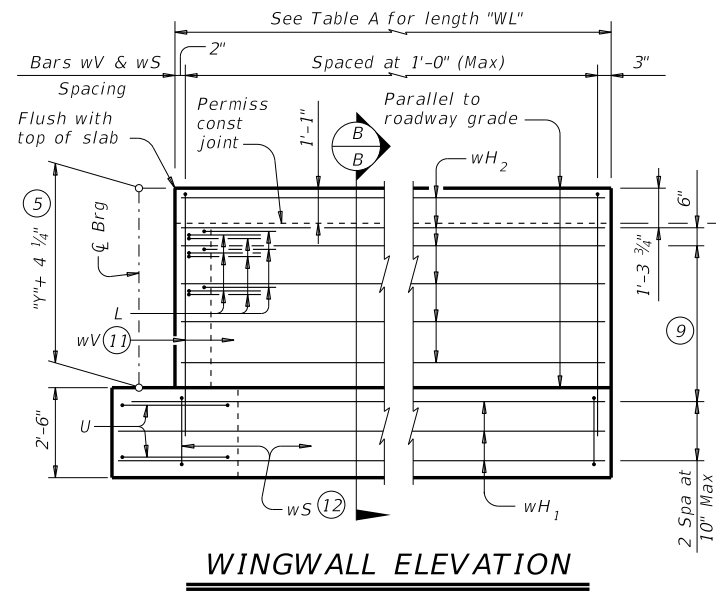
**ABUTMENTS**  
 TYPE TX28 THRU TX54  
 PRESTR CONC I-GIRDERS  
 44' ROADWAY 45° SKEW

**AIG-44-45**

FILE: IG-AIG4445-17.dgn	DN: TAR	CK: KCM	DW: JTR	CK: TAR
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REVISIONS				
	DIST	COUNTY		SHEET NO.

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Ⓟ See Span details for "y" value.

Ⓣ 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

Ⓛ Field bend as needed to clear piles.

Ⓜ Adjust as required to avoid piling.

HL93 LOADING SHEET 2 OF 3



**ABUTMENTS**  
TYPE TX28 THRU TX54  
PRESTR CONC I-GIRDERS  
44' ROADWAY 45° SKEW

**AIG-44-45**

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REVISIONS				
DIST	COUNTY			SHEET NO.

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**TABLES OF ESTIMATED QUANTITIES WITH 2:1 HEADER SLOPE <sup>(13)</sup>**

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	11	#11	59'-5"	3,472	A	11	#11	59'-5"	3,472	A	11	#11	59'-5"	3,472	A	11	#11	59'-5"	3,472	A	11	#11	59'-5"	3,472					
D <sup>(7)</sup>	2	#9	1'-8"	11	D <sup>(7)</sup>	2	#9	1'-8"	11	D <sup>(7)</sup>	2	#9	1'-8"	11	D <sup>(7)</sup>	2	#9	1'-8"	11	D <sup>(7)</sup>	2	#9	1'-8"	11					
H	8	#6	59'-5"	714	H	8	#6	59'-5"	714	H	10	#6	59'-5"	892	H	10	#6	59'-5"	892	H	12	#6	59'-5"	1,071					
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	58	#5	11'-6"	696	S	58	#5	11'-6"	696	S	58	#5	11'-6"	696	S	58	#5	11'-6"	696	S	58	#5	11'-6"	696					
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	62	#5	11'-4"	733	V	62	#5	12'-4"	798	V	62	#5	13'-4"	862	V	62	#5	14'-4"	927	V	62	#5	15'-8"	1,013					
wH1	14	#6	14'-5"	303	wH1	14	#6	15'-5"	324	wH1	14	#6	17'-5"	366	wH1	14	#6	18'-5"	387	wH1	14	#6	20'-5"	429					
wH2	20	#6	12'-8"	381	wH2	20	#6	13'-8"	411	wH2	24	#6	15'-8"	565	wH2	24	#6	16'-8"	601	wH2	28	#6	18'-8"	785					
wS	28	#4	7'-10"	147	wS	30	#4	7'-10"	157	wS	34	#4	7'-10"	178	wS	36	#4	7'-10"	188	wS	40	#4	7'-10"	209					
wV	28	#5	11'-4"	331	wV	30	#5	12'-4"	386	wV	34	#5	13'-4"	473	wV	36	#5	14'-4"	538	wV	40	#5	15'-8"	654					
Reinforcing Steel				Lb	7,016	Reinforcing Steel				Lb	7,197	Reinforcing Steel				Lb	7,743	Reinforcing Steel				Lb	7,940	Reinforcing Steel				Lb	8,568
Class "C" Concrete				CY	34.2	Class "C" Concrete				CY	36.5	Class "C" Concrete				CY	39.6	Class "C" Concrete				CY	42.1	Class "C" Concrete				CY	46.0

**TABLES OF ESTIMATED QUANTITIES WITH 3:1 HEADER SLOPE <sup>(13)</sup>**

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	11	#11	59'-5"	3,472	A	11	#11	59'-5"	3,472	A	11	#11	59'-5"	3,472	A	11	#11	59'-5"	3,472	A	11	#11	59'-5"	3,472					
D <sup>(7)</sup>	2	#9	1'-8"	11	D <sup>(7)</sup>	2	#9	1'-8"	11	D <sup>(7)</sup>	2	#9	1'-8"	11	D <sup>(7)</sup>	2	#9	1'-8"	11	D <sup>(7)</sup>	2	#9	1'-8"	11					
H	8	#6	59'-5"	714	H	8	#6	59'-5"	714	H	10	#6	59'-5"	892	H	10	#6	59'-5"	892	H	12	#6	59'-5"	1,071					
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	58	#5	11'-6"	696	S	58	#5	11'-6"	696	S	58	#5	11'-6"	696	S	58	#5	11'-6"	696	S	58	#5	11'-6"	696					
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	62	#5	11'-4"	733	V	62	#5	12'-4"	798	V	62	#5	13'-4"	862	V	62	#5	14'-4"	927	V	62	#5	15'-8"	1,013					
wH1	14	#6	19'-5"	408	wH1	14	#6	21'-5"	450	wH1	14	#6	23'-5"	492	wH1	14	#6	26'-5"	555	wH1	14	#6	28'-5"	598					
wH2	20	#6	17'-8"	531	wH2	20	#6	19'-8"	591	wH2	24	#6	21'-8"	781	wH2	24	#6	24'-8"	889	wH2	28	#6	26'-8"	1,121					
wS	38	#4	7'-10"	199	wS	42	#4	7'-10"	220	wS	46	#4	7'-10"	241	wS	52	#4	7'-10"	272	wS	56	#4	7'-10"	293					
wV	38	#5	11'-4"	449	wV	42	#5	12'-4"	540	wV	46	#5	13'-4"	640	wV	52	#5	14'-4"	777	wV	56	#5	15'-8"	915					
Reinforcing Steel				Lb	7,441	Reinforcing Steel				Lb	7,720	Reinforcing Steel				Lb	8,315	Reinforcing Steel				Lb	8,719	Reinforcing Steel				Lb	9,418
Class "C" Concrete				CY	37.4	Class "C" Concrete				CY	40.6	Class "C" Concrete				CY	43.9	Class "C" Concrete				CY	48.1	Class "C" Concrete				CY	52.4

<sup>(7)</sup> Omit Dowels D at end of multi-span unit. Adjust reinforcing steel total accordingly.

<sup>(13)</sup> Quantities shown are for one abutment only (with approach slab). With no approach slab, add 2.5 CY Class "C" concrete and 357 lbs reinforcing steel for 4 additional Bars H.

 Texas Department of Transportation		<b>Bridge Division Standard</b>		
<b>ABUTMENTS</b> TYPE TX28 THRU TX54 PRESTR CONC I-GIRDERS 44' ROADWAY      45° SKEW  <b>AIG-44-45</b>				
FILE: IG-AIG4445-17.dgn	DN: TAR	CK: KCM	DW: JTR	CK: TAR
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	DIST	COUNTY	SHEET NO.	