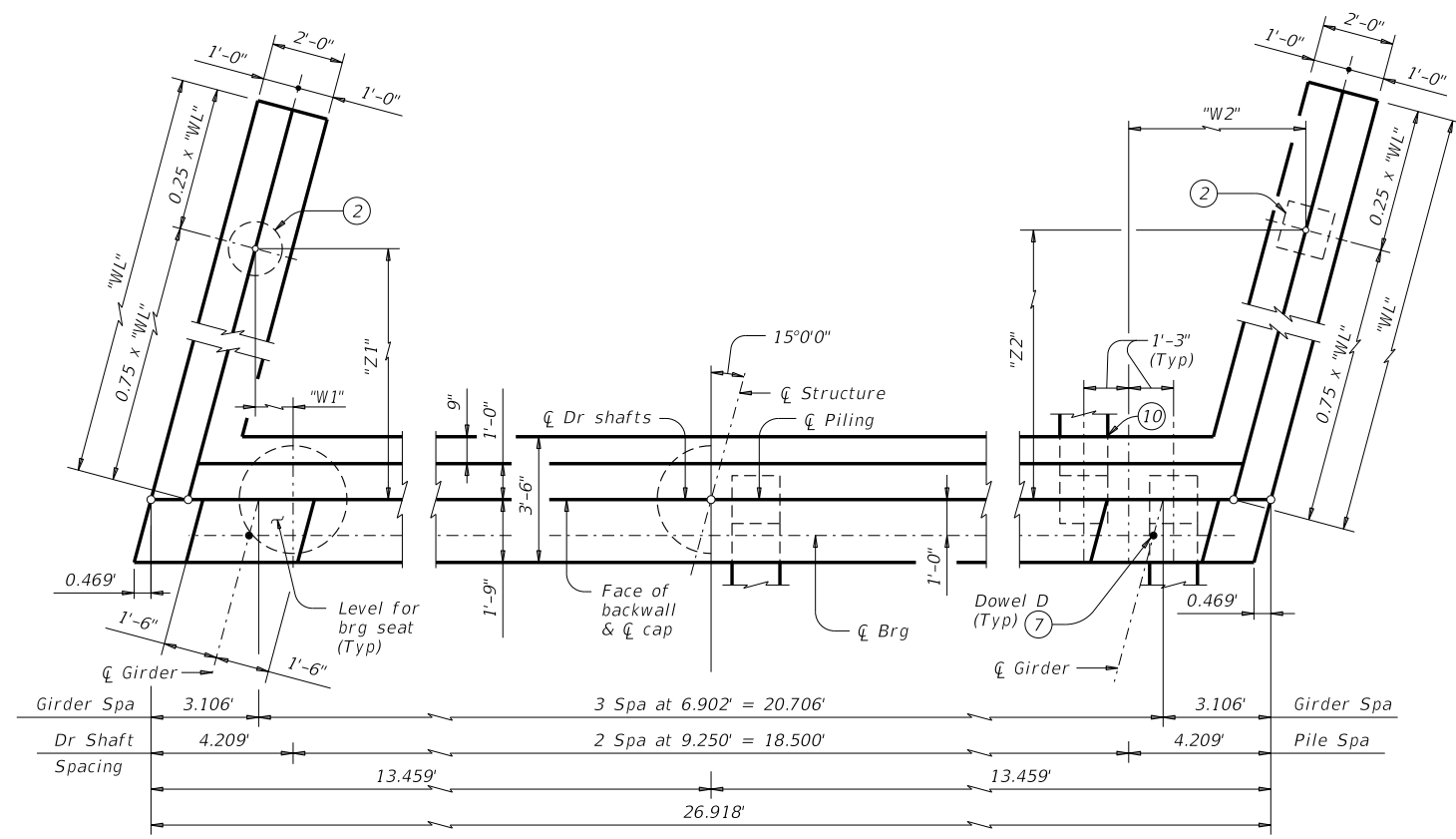


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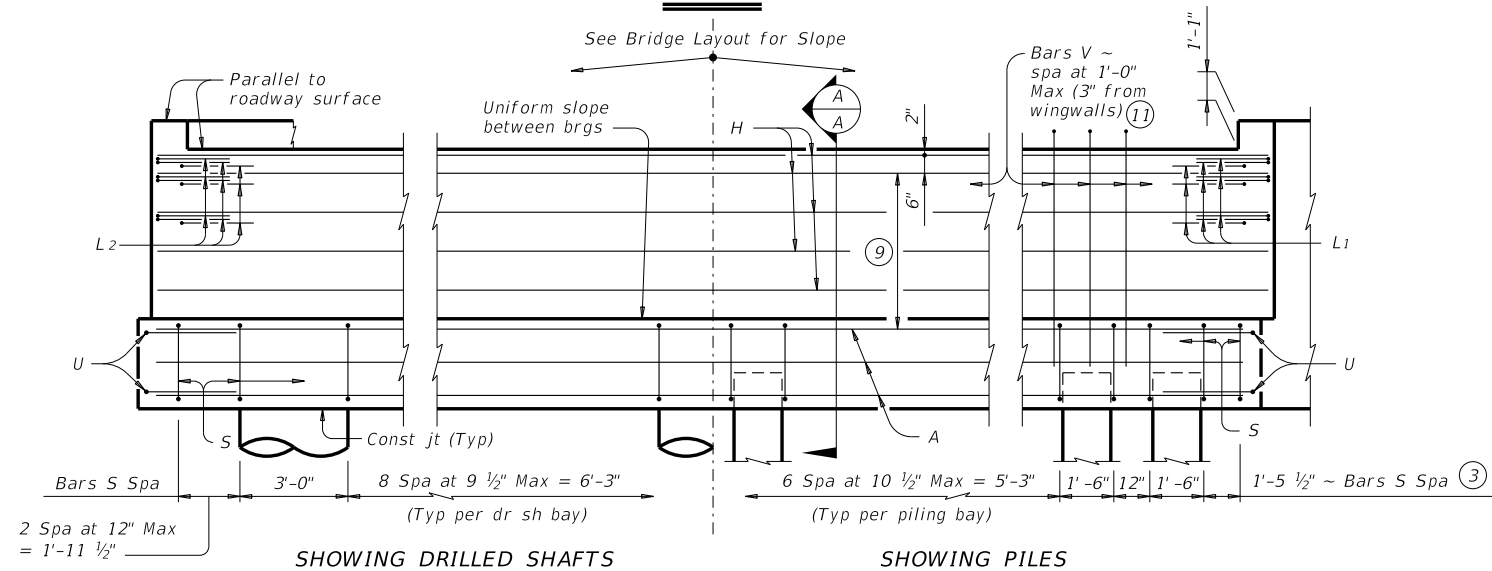
DATE: FILE:



SHOWING DRILLED SHAFTS

SHOWING PILES

PLAN 1

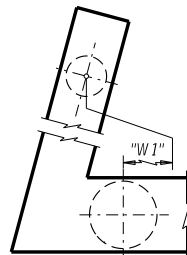


SHOWING DRILLED SHAFTS

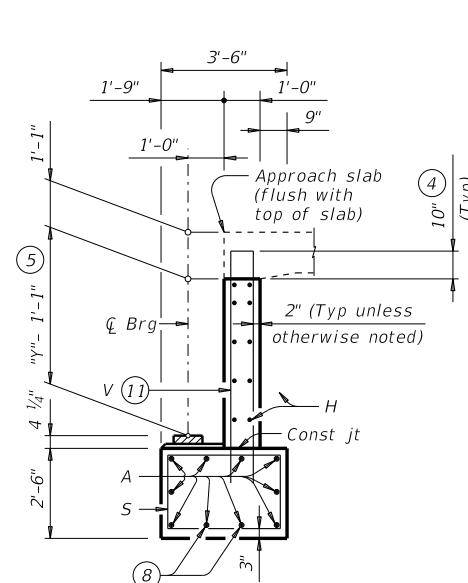
SHOWING PILES

ELEVATION

Header Slope	Girder Type	Wingwall Type	Wingwall Lgth "WL"	"W1" (12)	"Z1"	"W2"	"Z2"				
2:1	Tx28	Cantilevered	8.000'	Not Applicable							
	Tx34	Cantilevered	9.000'								
	Tx40	Cantilevered	10.000'								
	Tx46	Cantilevered	11.000'								
	Tx54	Founded	13.000'	0.650'	9.418'	5.697'	9.418'				
3:1	Tx28	Cantilevered	12.000'	Not Applicable							
	Tx34	Founded	14.000'					0.456'	10.142'	5.891'	10.142'
	Tx40	Founded	15.000'					0.262'	10.867'	6.085'	10.867'
	Tx46	Founded	17.000'					-0.127'	12.316'	6.473'	12.316'
	Tx54	Founded	19.000'					-0.515'	13.764'	6.861'	13.764'

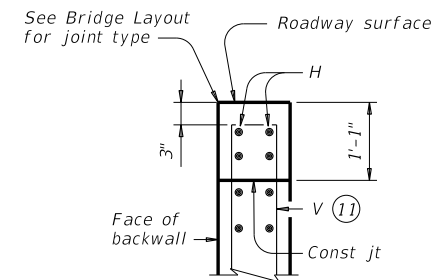


DETAIL A



SECTION A-A

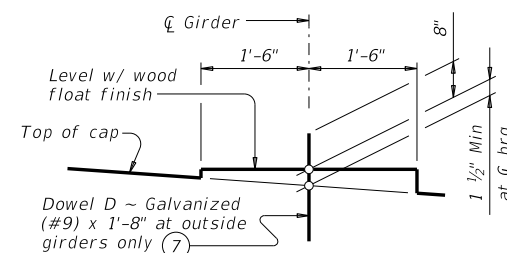
(With approach slab) (6)



BACKWALL DETAIL

(Without approach slab) (6)

- See Table A for variable dimensions based on header slope and girder type.
- See Table A to determine if wingwall foundations are required.
- For piling larger than 16" adjust Bars S spacing as required to avoid piling.
- Increase as required to maintain 3" from finished grade.
- See Span details for "Y" value.
- See Bridge Layout to determine if approach slab is present.
- Omit Dowels D at end of multi-span unit. Adjust reinforcing steel total accordingly.
- With pile foundations, move Bars A shown to clear piles.
- 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
- See Detail A on FD standard.
- Field bend as needed to clear piles.
- Negative values for the "W1" dimension indicates a wingwall foundation on the other side of the cap foundation from what is shown in plan view. See Detail A.



BEARING SEAT DETAIL

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

TABLE OF FOUNDATION LOADS

Span Length	All Girder Types	
	Tons/Shaft	Tons/Pile
40	65	55
45	69	57
50	73	59
55	77	61
60	81	64
65	85	66
70	89	68
75	93	70
80	97	71
85	100	73
90	104	75
95	108	77
100	112	79
105	115	81
110	119	83
115	123	85
120	127	87
125	130	89

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-24-15 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



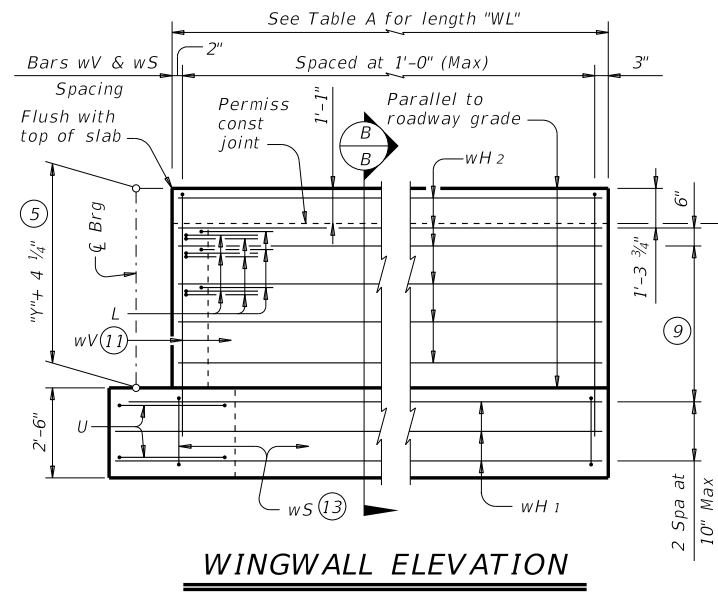
**ABUTMENTS**  
TYPE TX28 THRU TX54  
PRESTR CONC I-GIRDERS  
24' ROADWAY 15° SKEW

AIG-24-15

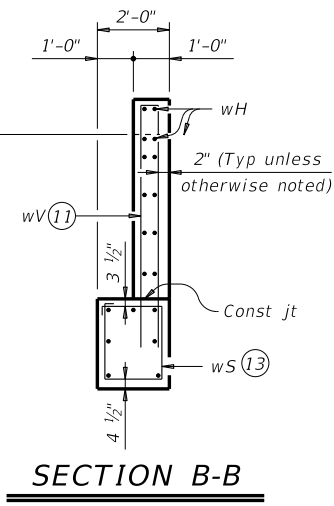
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REVISIONS				
DIST	COUNTY			SHEET NO.

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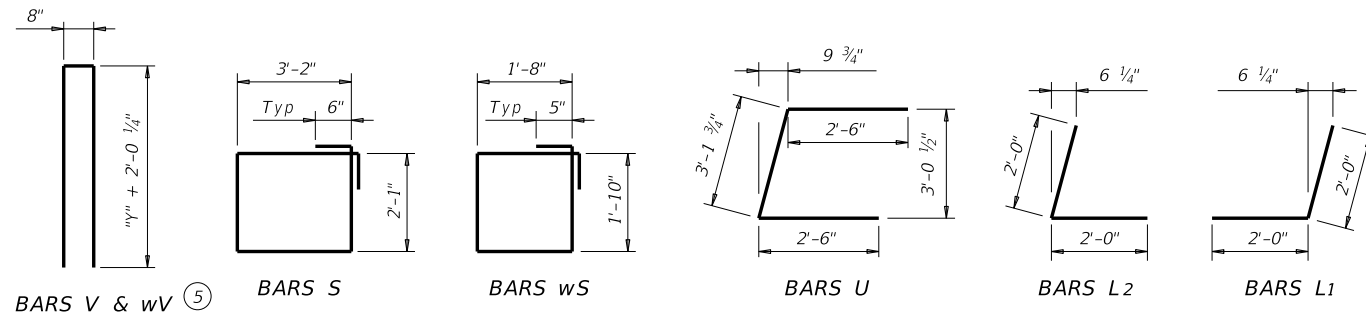
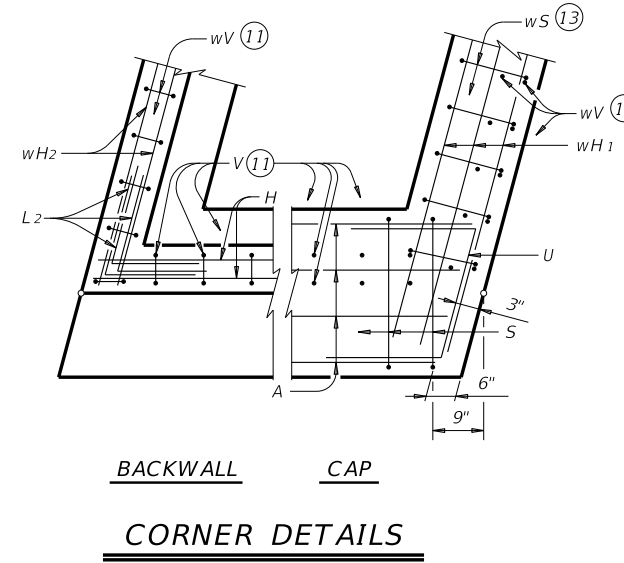
DATE:  
FILE:



**WINGWALL ELEVATION**



**SECTION B-B**



- (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.
- (13) Adjust as required to avoid piling.

HL93 LOADING

SHEET 2 OF 3

		<b>Bridge Division Standard</b>	
<b>ABUTMENTS</b> TYPE TX28 THRU TX54 PRESTR CONC I-GIRDERS 24' ROADWAY 15° SKEW <b>AIG-24-15</b>			
FILE: IG-AIG2415-17.dgn	DN: TAR	CK: KCM	DW: JTR
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REVISIONS	DIST		SHEET NO.

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### TABLES OF ESTIMATED QUANTITIES WITH 2:1 HEADER SLOPE <sup>(14)</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	10	#11	25'-11"	1,377	A	10	#11	25'-11"	1,377	A	10	#11	25'-11"	1,377	A	10	#11	25'-11"	1,377	A	10	#11	25'-11"	1,377					
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	26'-7"	319	H	8	#6	26'-7"	319	H	10	#6	26'-7"	399	H	10	#6	26'-7"	399	H	12	#6	26'-7"	479					
L1	9	#6	4'-0"	54	L1	9	#6	4'-0"	54	L1	9	#6	4'-0"	54	L1	9	#6	4'-0"	54	L1	9	#6	4'-0"	54					
L2	9	#6	4'-0"	54	L2	9	#6	4'-0"	54	L2	9	#6	4'-0"	54	L2	9	#6	4'-0"	54	L2	9	#6	4'-0"	54					
S	24	#5	11'-6"	288	S	24	#5	11'-6"	288	S	24	#5	11'-6"	288	S	24	#5	11'-6"	288	S	24	#5	11'-6"	288					
U	4	#6	8'-2"	49	U	4	#6	8'-2"	49	U	4	#6	8'-2"	49	U	4	#6	8'-2"	49	U	4	#6	8'-2"	49					
V	26	#5	11'-4"	307	V	26	#5	12'-4"	334	V	26	#5	13'-4"	362	V	26	#5	14'-4"	389	V	26	#5	15'-8"	425					
wH1	14	#6	9'-5"	198	wH1	14	#6	10'-5"	219	wH1	14	#6	11'-5"	240	wH1	14	#6	12'-5"	261	wH1	14	#6	14'-5"	303					
wH2	20	#6	7'-8"	230	wH2	20	#6	8'-8"	260	wH2	24	#6	9'-8"	348	wH2	24	#6	10'-8"	385	wH2	28	#6	12'-8"	533					
wS	18	#4	7'-10"	94	wS	20	#4	7'-10"	105	wS	22	#4	7'-10"	115	wS	24	#4	7'-10"	126	wS	28	#4	7'-10"	147					
wV	18	#5	11'-4"	213	wV	20	#5	12'-4"	257	wV	22	#5	13'-4"	306	wV	24	#5	14'-4"	359	wV	28	#5	15'-8"	458					
Reinforcing Steel				Lb	3,194	Reinforcing Steel				Lb	3,327	Reinforcing Steel				Lb	3,603	Reinforcing Steel				Lb	3,752	Reinforcing Steel				Lb	4,178
Class "C" Concrete				CY	15.6	Class "C" Concrete				CY	17.0	Class "C" Concrete				CY	18.5	Class "C" Concrete				CY	20.1	Class "C" Concrete				CY	22.9

### TABLES OF ESTIMATED QUANTITIES WITH 3:1 HEADER SLOPE <sup>(14)</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	10	#11	25'-11"	1,377	A	10	#11	25'-11"	1,377	A	10	#11	25'-11"	1,377	A	10	#11	25'-11"	1,377	A	10	#11	25'-11"	1,377					
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	26'-7"	319	H	8	#6	26'-7"	319	H	10	#6	26'-7"	399	H	10	#6	26'-7"	399	H	12	#6	26'-7"	479					
L1	9	#6	4'-0"	54	L1	9	#6	4'-0"	54	L1	9	#6	4'-0"	54	L1	9	#6	4'-0"	54	L1	9	#6	4'-0"	54					
L2	9	#6	4'-0"	54	L2	9	#6	4'-0"	54	L2	9	#6	4'-0"	54	L2	9	#6	4'-0"	54	L2	9	#6	4'-0"	54					
S	24	#5	11'-6"	288	S	24	#5	11'-6"	288	S	24	#5	11'-6"	288	S	24	#5	11'-6"	288	S	24	#5	11'-6"	288					
U	4	#6	8'-2"	49	U	4	#6	8'-2"	49	U	4	#6	8'-2"	49	U	4	#6	8'-2"	49	U	4	#6	8'-2"	49					
V	26	#5	11'-4"	307	V	26	#5	12'-4"	334	V	26	#5	13'-4"	362	V	26	#5	14'-4"	389	V	26	#5	15'-8"	425					
wH1	14	#6	13'-5"	282	wH1	14	#6	15'-5"	324	wH1	14	#6	16'-5"	345	wH1	14	#6	18'-5"	387	wH1	14	#6	20'-5"	429					
wH2	20	#6	11'-8"	350	wH2	20	#6	13'-8"	411	wH2	24	#6	14'-8"	529	wH2	24	#6	16'-8"	601	wH2	28	#6	18'-8"	785					
wS	26	#4	7'-10"	136	wS	30	#4	7'-10"	157	wS	32	#4	7'-10"	167	wS	36	#4	7'-10"	188	wS	40	#4	7'-10"	209					
wV	26	#5	11'-4"	307	wV	30	#5	12'-4"	386	wV	32	#5	13'-4"	445	wV	36	#5	14'-4"	538	wV	40	#5	15'-8"	654					
Reinforcing Steel				Lb	3,534	Reinforcing Steel				Lb	3,764	Reinforcing Steel				Lb	4,080	Reinforcing Steel				Lb	4,335	Reinforcing Steel				Lb	4,814
Class "C" Concrete				CY	18.1	Class "C" Concrete				CY	20.4	Class "C" Concrete				CY	22.1	Class "C" Concrete				CY	24.6	Class "C" Concrete				CY	27.7

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

<sup>(14)</sup> Quantities shown are for one abutment only (with approach slab). With no approach slab, add 1.0 CY Class "C" concrete and 160 lbs reinforcing steel for 4 additional Bars H.

**Bridge Division Standard**

## ABUTMENTS

### TYPE TX28 THRU TX54

### PRESTR CONC I-GIRDERS

### 24' ROADWAY      15° SKEW

## AIG-24-15

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