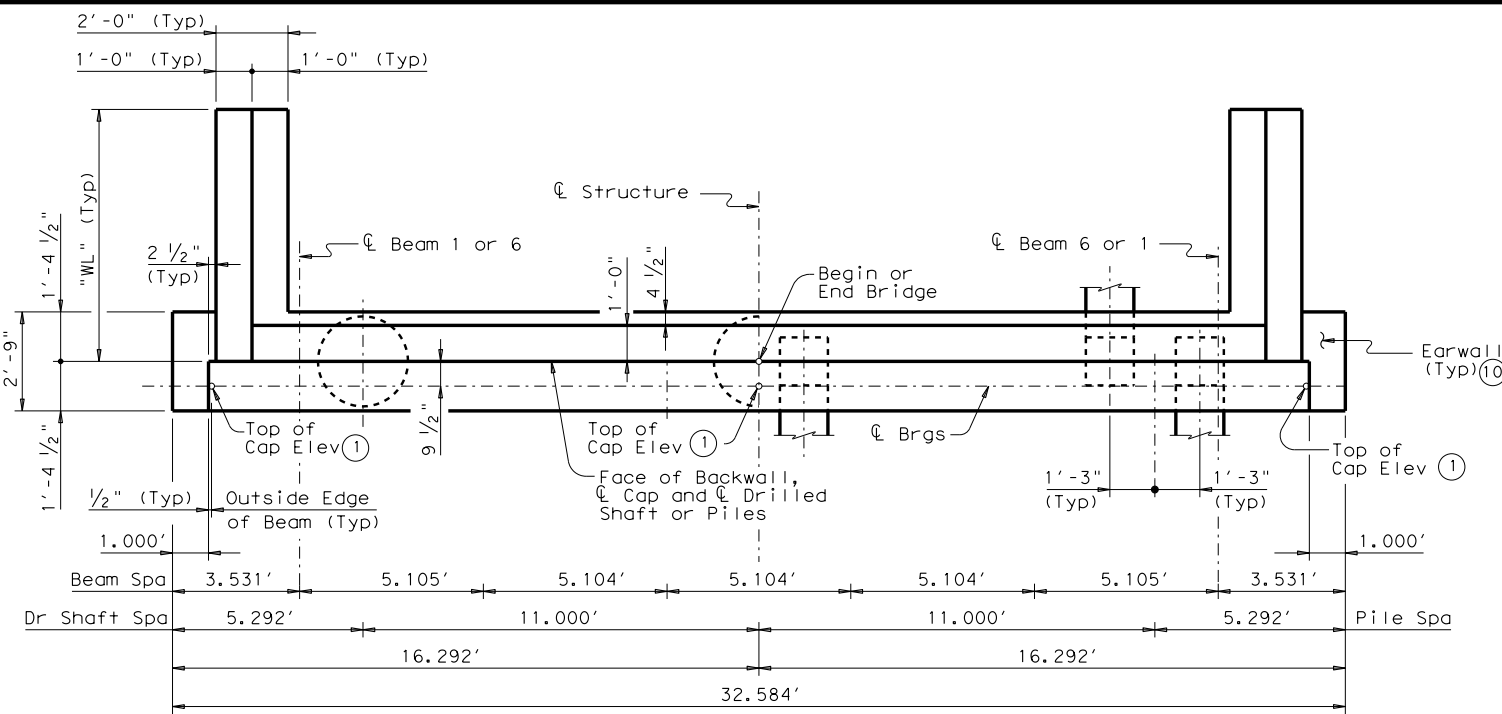
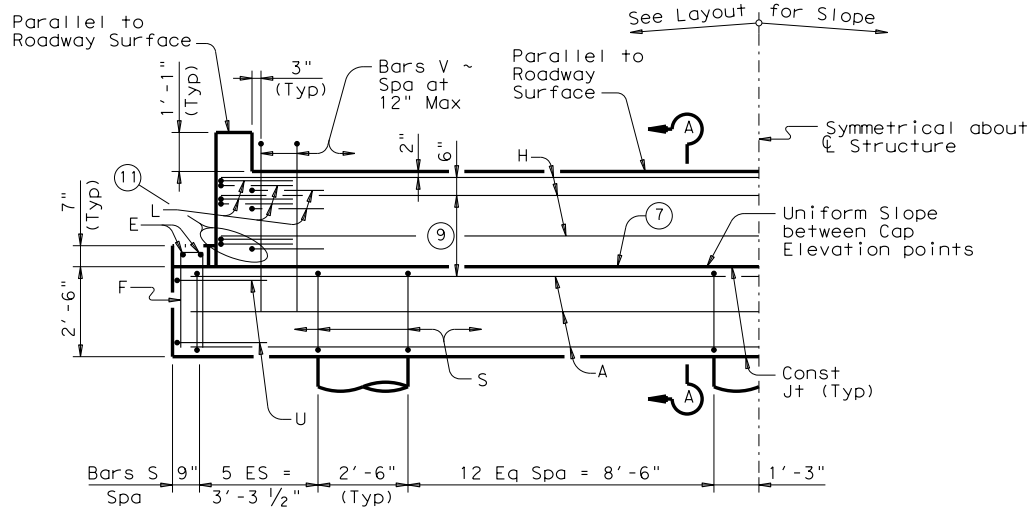


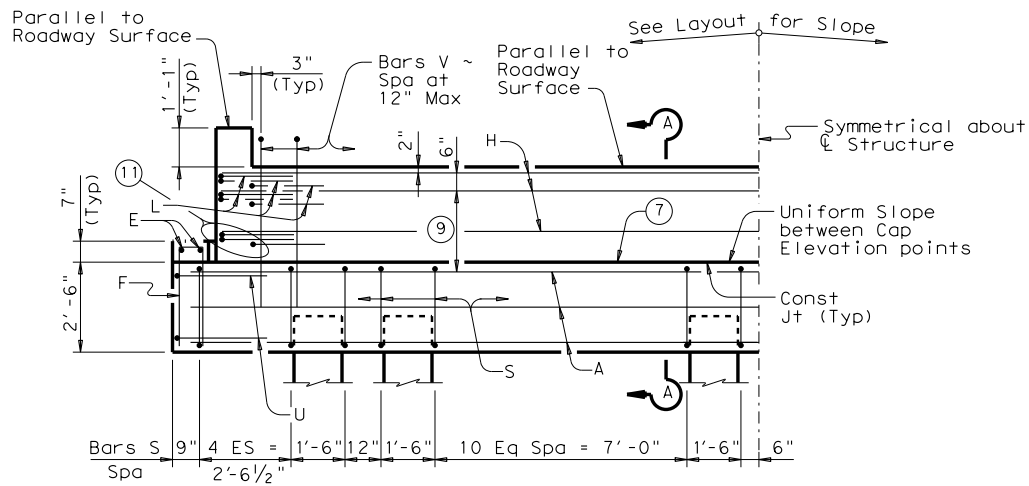
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SHOWING DRILLED SHAFTS **PLAN** SHOWING BATTERED PILES

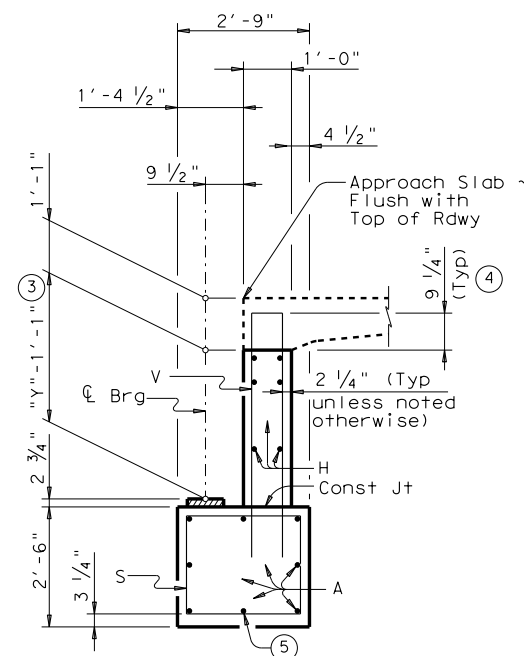


HALF ELEVATION ~ DRILLED SHAFT ABUTMENT

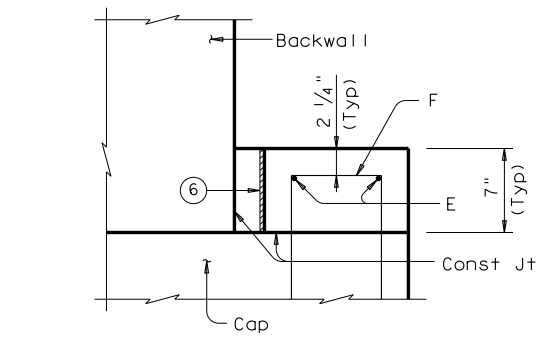


HALF ELEVATION ~ PILE ABUTMENT

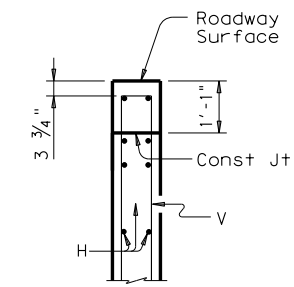
(Showing 16" Piles ~ for Piles larger than 16", adjust Bars S spacing as required to avoid Piling)



SECTION A-A
(Showing Approach Slab) (2)



EARWALL ELEVATION DETAIL (10)
(Slope top of earwall away from beams)



BACKWALL DETAIL
(Without Approach Slab) (2)

TABLE OF WINGWALL LENGTHS "WL"	
Beam Type	"WL"
B20	8.000'
B28	10.000'
B34	11.000'

TABLE OF FOUNDATION LOADS (8)		
Span Length Ft	Drilled Shaft Load Tons/DS	Battered Pile Load Tons/Pile
30	53	41
35	58	44
40	63	46
45	68	49
50	72	51
55	77	54
60	81	56
65	86	58
70	90	60
75	94	63
80	99	65
85	103	67
90	107	69
95	112	71
100	116	74

- (1) Top of Cap Elevations are based on section depths shown on Span Details.
- (2) See Bridge Layout for Joint type and to determine if Approach Slab is present.
- (3) See Span details for "Y" value.
- (4) Increase as required to maintain 3 3/4" from Finished Grade.
- (5) With pile foundations, replace Bar A, located at bottom centerline of cap with 2 ~ #11 x 7'-0" bars placed between pile groups. Deduct 93 Lbs from reinforcing steel total.
- (6) 1/2" Preformed Bituminous Fiber material between beam and earwall. Bond to beam with an approved adhesive. Inside face of earwall to be cast with vertical side of beam.
- (7) Surface finish for the top of Cap will be a textured wood float finish. The surface must be level in the direction of the centerline of Beams.
- (8) Foundation loads are based on B34 beams.
- (9) Use 2 Eq Spa for B28 and B34 beams. Use 1 space for B20 beams.
- (10) Do not cast earwalls until beams are erected in their final position.
- (11) This set of Bars L only required for B28 and B34 beams.

GENERAL NOTES:
 Designed according to AASHTO LRFD Specifications.
 Concrete strength f'c = 3,600 psi.
 All reinforcing must be Grade 60.
 Designed for normal embankment header slope of 3:1 or 2:1.
 See Bridge Layout for beam type and foundation type, size and length.
 See standard FD for all foundation details and notes.
 See applicable rail details for rail anchorage cast in wingwalls.
 See standard CRR for riprap attachment details, if applicable.
 These abutment details may be used only with the following standards:
 SBBS-B20-28 or SBBO-B20-28
 SBBS-B28-28 or SBBO-B28-28
 SBBS-B34-28 or SBBO-B34-28

ABUTMENTS
PRESTR CONC BOX BEAMS
28' RDWY

ABB-28

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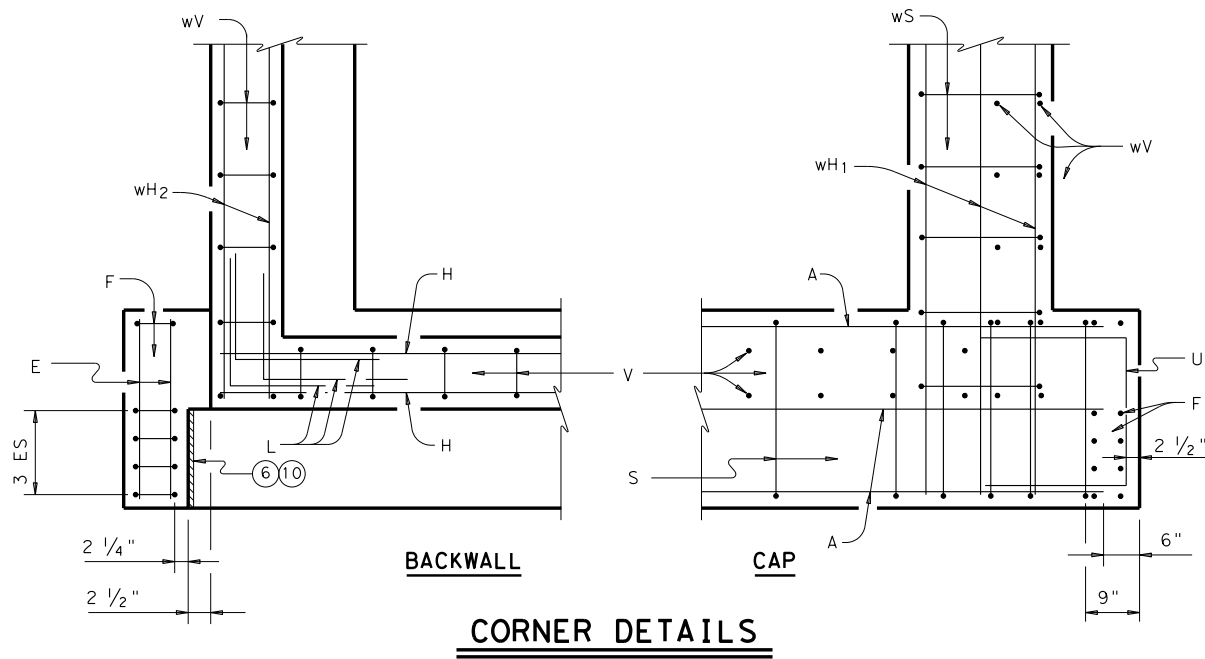


TABLE OF ESTIMATED QUANTITIES (TYPE B20 BEAMS) (12)

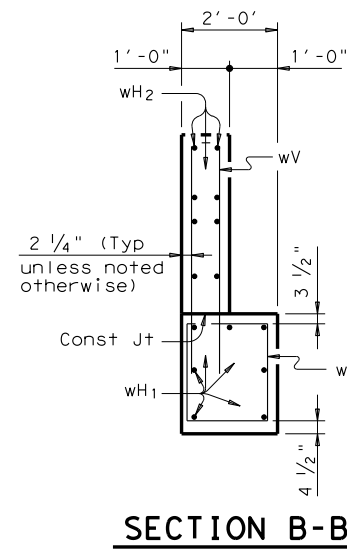
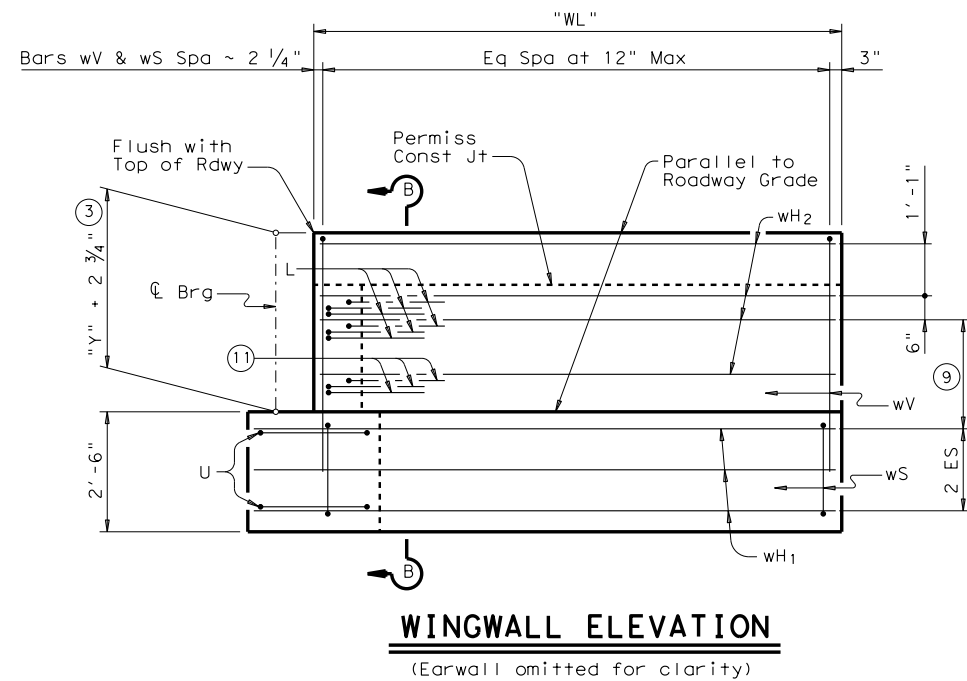
BAR	NO.	SIZE	LENGTH	WEIGHT
A (5)	8	#11	31'-7"	1,342
E	4	#5	2'-5"	10
F	10	#5	6'-1"	63
H	4	#6	29'-10"	179
L	12	#6	4'-0"	72
S	38	#4	9'-8"	245
U	4	#6	7'-6"	227
V	29	#5	7'-6"	227
wH1	14	#6	9'-0"	189
wH2	12	#6	7'-8"	138
wS	18	#4	7'-9"	93
wV	18	#5	7'-9"	145
Reinforcing Steel				Lb 2,747
Class "C" Concrete (w/Slab)				CY 13.8
Class "C" Concrete (w/ACP)				CY 13.5

TABLE OF ESTIMATED QUANTITIES (TYPE B28 BEAMS) (12)

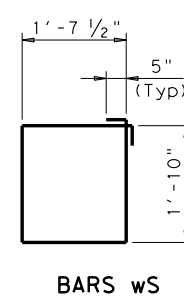
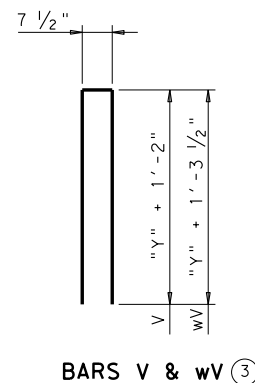
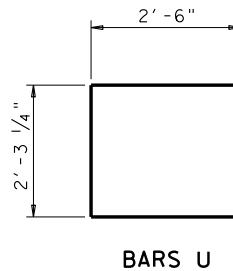
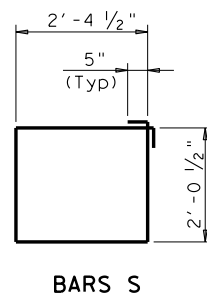
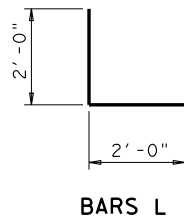
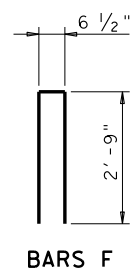
BAR	NO.	SIZE	LENGTH	WEIGHT
A (5)	8	#11	31'-7"	1,342
E	4	#5	2'-5"	10
F	10	#5	6'-1"	63
H	6	#6	29'-10"	269
L	18	#6	4'-0"	108
S	38	#4	9'-8"	245
U	4	#6	7'-3"	44
V	29	#5	8'-10"	267
wH1	14	#6	11'-0"	231
wH2	16	#6	9'-8"	232
wS	22	#4	7'-9"	114
wV	22	#5	9'-1"	208
Reinforcing Steel				Lb 3,133
Class "C" Concrete (w/Slab)				CY 16.1
Class "C" Concrete (w/ACP)				CY 15.7

TABLE OF ESTIMATED QUANTITIES (TYPE B34 BEAMS) (12)

BAR	NO.	SIZE	LENGTH	WEIGHT
A (5)	8	#11	31'-7"	1,342
E	4	#5	2'-5"	10
F	10	#5	6'-1"	63
H	6	#6	29'-10"	269
L	18	#6	4'-0"	108
S	38	#4	9'-8"	245
U	4	#6	7'-3"	44
V	29	#5	9'-9"	295
wH1	14	#6	12'-0"	252
wH2	16	#6	10'-8"	256
wS	24	#4	7'-9"	124
wV	24	#5	10'-0"	250
Reinforcing Steel				Lb 3,258
Class "C" Concrete (w/Slab)				CY 17.6
Class "C" Concrete (w/ACP)				CY 17.2



- (3) See Span details for "Y" value.
- (5) With pile foundations, replace Bar A, located at bottom centerline of cap, with 2 ~ #11 x 7'-0" bars placed between pile groups. Deduct 93 Lbs from reinforcing steel total.
- (6) 1/2" Preformed Bituminous Fiber material between beam and earwall. Bond to beam with an approved adhesive. Inside face of earwall to be cast with vertical side of beam.
- (9) Use 2 Eq Spa for B28 and B34 beams and 1 space for B20 beams.
- (10) Do not cast earwalls until beams are erected in their final position.
- (11) This set of Bars L only required for B28 and B34 beams.
- (12) Quantities shown are for one Abutment only (with Approach Slab). With no Approach Slab, add 1.1 CY Class "C" concrete and 90 Lb reinforcing steel for 2 additional Bars H.



Texas Department of Transportation
ABUTMENTS
 PRESTR CONC BOX BEAMS
 28' RDWY

ABB-28

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