

CASE IV - ADJACENT TRAFFIC BARRIER

QUANTITIES

LIMIT STATE NOTES:

Dimensions							Steel List										Service Limit State			Strength Limit State											
H	W	B	C	F	E	X	S1			S2			S3			H	V	Y			F1			F2	Qtveu-SERV Lbs./Sq.Ft.	Qnveu-SERV Lbs./Sq.Ft.	B'SERV Ft.	Qtveu-STR Lbs./Sq.Ft.	Qnveu-STR Lbs./Sq.Ft.	B'STR Ft.	
							Bar Size	Spacing	Length	Bar Size	Spacing	Length	Bar Size	Spacing	Length			Number	Length	Bar Size	Spacing	Length	Number								Bar Size
4'	5'-0	1'-0	1'-6	1'-0	2'-6	1'-0	5	12"	5'-6						4	3'-9	5	12"	4'-0	4	5	12"	3'-9	4	1970	1610	2.92	2450	1970	3.09	
5'	5'-0	1'-0	1'-6	1'-0	2'-6	1'-0	5	12"	6'-6						6	4'-9	5	12"	4'-0	4	5	12"	3'-9	4	1900	1540	3.27	2350	1860	3.49	
6'	5'-6	1'-0	1'-6	1'-0	3'-0	1'-6	5	12"	7'-6						6	5'-9	5	12"	4'-0	4	5	12"	4'-3	4	1610	1250	4.40	2030	1540	4.63	
7'	5'-6	1'-3	1'-6	1'-0	3'-0	1'-6	5	12"	8'-9						8	6'-9	5	12"	4'-0	4	5	12"	4'-3	4	1590	1200	4.91	1980	1450	5.22	
8'	6'-0	1'-3	1'-9	1'-0	3'-3	1'-8	5	12"	9'-9						10	7'-9	5	12"	4'-6	4	5	12"	4'-6	4	1520	1130	5.72	1950	1420	5.94	
9'	6'-6	1'-3	2'-0	1'-1	3'-5	1'-8	5	12"	6'-6	5	12"	10'-9			10	8'-9	5	12"	5'-0	4	5	12"	4'-9	4	1490	1100	6.50	2100	1570	6.12	
10'	7'-0	1'-3	2'-0	1'-1	3'-11	1'-10	5	12"	7'-6	5	12"	11'-9			12	9'-9	5	12"	5'-3	5	6	12"	5'-6	5	1670	1280	6.55	2370	1840	6.15	
11'	7'-6	1'-3	2'-3	1'-2	4'-1	2'-0	5	12"	8'-6	5	12"	12'-9			14	10'-9	5	12"	5'-6	5	6	12"	5'-9	5	1770	1380	6.82	2520	1990	6.38	
12'	8'-0	1'-3	2'-3	1'-2	4'-7	2'-0	6	12"	9'-6	5	12"	13'-9			14	11'-9	5	12"	6'-0	5	7	12"	6'-9	5	1950	1560	6.94	2790	2260	6.48	
13'	8'-6	1'-3	2'-6	1'-3	4'-9	2'-2	6	12"	7'-0	6	12"	10'-6	5	12"	5'-6	16	12'-9	6	12"	6'-6	5	8	12"	7'-9	5	2050	1660	7.24	2930	2410	6.74
14'	9'-0	1'-3	2'-6	1'-4	5'-2	2'-4	6	12"	8'-3	6	12"	11'-6	5	12"	5'-6	18	13'-9	6	12"	6'-9	5	9	12"	8'-6	6	2230	1840	7.41	3200	2680	6.89
15'	9'-6	1'-4	2'-9	1'-5	5'-4	2'-6	7	12"	5'-6	7	12"	12'-9	5	12"	5'-6	18	14'-9	6	12"	7'-0	5	9	12"	9'-0	6	2350	1950	7.69	3390	2850	7.13
16'	10'-0	1'-5	2'-9	1'-6	5'-9	2'-8	7	12"	5'-6	7	12"	13'-9	5	12"	5'-6	20	15'-9	6	12"	7'-6	5	8	9"	9'-0	6	2560	2150	7.85	3700	3140	7.27
17'	10'-6	1'-6	3'-0	1'-7	5'-11	2'-10	8	12"	7'-9	7	12"	15'-0	5	12"	5'-6	22	16'-9	7	12"	7'-9	6	8	8"	9'-3	7	2680	2260	8.15	3880	3310	7.52
18'	11'-0	1'-7	3'-0	1'-8	6'-4	3'-0	8	12"	8'-0	8	12"	13'-0	6	12"	9'-3	22	17'-9	7	12"	8'-6	6	8	6"	9'-6	7	2880	2450	8.40	4180	3600	7.75
19'	11'-6	1'-8	3'-3	1'-9	6'-6	3'-2	8	12"	10'-3	8	12"	13'-9	6	12"	9'-3	24	18'-9	7	12"	8'-6	6	8	6"	9'-9	7	2990	2550	8.74	4350	3760	8.04
20'	12'-0	1'-9	3'-3	1'-10	6'-11	3'-4	9	12"	10'-6	8	12"	15'-0	6	12"	9'-3	26	19'-9	7	12"	9'-0	6	8	6"	10'-3	7	3200	2750	9.01	4650	4040	8.29
21'	12'-6	1'-10	3'-6	1'-11	7'-1	3'-6	9	12"	10'-0	9	12"	16'-6	6	12"	9'-3	26	20'-9	7	9"	9'-6	6	8	6"	10'-6	8	3310	2850	9.35	4820	4200	8.58
22'	13'-0	1'-11	3'-6	2'-0	7'-6	3'-8	9	12"	11'-0	9	12"	17'-6	6	12"	9'-3	28	21'-9	7	9"	9'-9	7	9	6"	11'-6	8	3520	3050	9.62	5120	4490	8.83
23'	13'-6	2'-0	3'-9	2'-2	7'-7	3'-10	10	12"	12'-6	9	12"	19'-0	6	12"	9'-3	30	22'-9	8	12"	10'-0	7	9	6"	11'-9	8	3590	3110	9.98	5250	4600	9.14
24'	14'-0	2'-2	3'-9	2'-4	7'-11	4'-0	10	12"	13'-6	9	12"	20'-0	6	12"	9'-3	30	23'-9	8	12"	10'-6	7	9	6"	12'-0	8	3830	3330	10.21	5600	4930	9.34
25'	14'-6	2'-4	4'-0	2'-6	8'-0	4'-2	10	12"	14'-6	9	12"	21'-0	6	12"	9'-3	32	24'-9	8	12"	10'-9	7	9	6"	12'-6	9	4020	3500	10.50	5880	5170	9.58
26'	15'-0	2'-6	4'-0	2'-8	8'-4	4'-4	10	12"	14'-6	10	12"	22'-6	6	12"	9'-3	34	25'-9	8	12"	11'-0	7	10	9"	13'-3	9	4270	3730	10.74	6240	5510	9.79
27'	15'-6	2'-9	4'-3	2'-10	8'-5	4'-6	10	12"	15'-0	10	12"	23'-6	6	12"	10'-3	34	26'-9	8	12"	11'-6	8	10	9"	13'-3	9	4450	3880	11.00	6520	5750	9.99
28'	16'-0	3'-0	4'-3	3'-0	8'-9	4'-8	10	12"	15'-6	10	12"	24'-6	6	12"	11'-3	36	27'-9	8	12"	12'-0	8	10	9"	13'-6	9	4730	4130	11.20	6940	6130	10.16
29'	16'-6	3'-3	4'-6	3'-3	8'-9	4'-10	11	12"	16'-3	9	12"	25'-0	6	12"	12'-3	38	28'-9	8	12"	12'-6	8	10	9"	14'-0	9	4920	4290	11.46	7240	6380	10.36
30'	17'-0	3'-6	4'-6	3'-6	9'-0	5'-0	11	12"	17'-0	10	12"	26'-0	6	12"	12'-9	38	29'-9	8	12"	13'-0	8	10	9"	14'-3	10	5210	4550	11.66	7670	6780	10.52

CASE IV			
H	Concrete C.Y./Ln.Ft.	Steel Lbs./Ln.Ft.	Steel (Horiz. Lap) Lbs./Splice
4'	.40	32	12
5'	.44	35	14
6'	.50	37	14
7'	.58	41	15
8'	.64	44	16
9'	.71	53	16
10'	.77	62	19
11'	.85	67	20
12'	.91	79	20
13'	.99	95	22
14'	1.07	109	24
15'	1.19	119	24
16'	1.31	126	25
17'	1.43	150	28
18'	1.57	179	28
19'	1.71	190	29
20'	1.85	207	30
21'	2.00	232	31
22'	2.16	264	33
23'	2.35	289	34
24'	2.60	301	34
25'	2.86	315	36
26'	3.13	334	38
27'	3.46	345	38
28'	3.81	358	40
29'	4.21	365	41
30'	4.63	401	42

Qtveu-SERV = Total equivalent uniform vertical bearing stress to be used only for the evaluation of settlement based on the Service I Limit State as per ADOT SF-1.

Qnveu-SERV = Net equivalent uniform vertical bearing stress to be used only for the evaluation of settlement based on the Service I Limit State as per ADOT SF-1.

B'SERV = Effective footing width to be used only for the evaluation of settlement based on the Service I Limit State as per ADOT SF-1.

Qtveu-STR = Total equivalent uniform vertical bearing stress to be used only for the evaluation of bearing resistance based on the Strength I Limit State as per ADOT SF-1.

Qnveu-STR = Net equivalent uniform vertical bearing stress to be used only for the evaluation of bearing resistance based on the Strength I Limit State as per ADOT SF-1.

B'STR = Effective footing width to be used only for the evaluation of bearing resistance based on the Strength I Limit State as per ADOT SF-1.

For other applicable limit states, perform project specific-analysis using the procedures in ADOT SF-1 (Spread Footing: Bearing Resistance and Settlement).

ADOT SF-1 memorandum is found on the Bridge Group website (Geotech Services LRF Design Memorandums).

QUANTITIES NOTE:

Quantities are shown for information purposes only. The pay item is measured per square foot of wall.

Quantities are for one L.F. of wall except for horizontal steel lap splices and footing steps.

Steel quantities for horizontal lap splices shall be added for wall segments greater than 30 feet, and add a splice for each additional wall segment greater than 30 feet. Horizontal 1'-0 lap splices occur at construction or contraction joints.

Steel and concrete quantities for footing steps shall be added to those shown in the table.

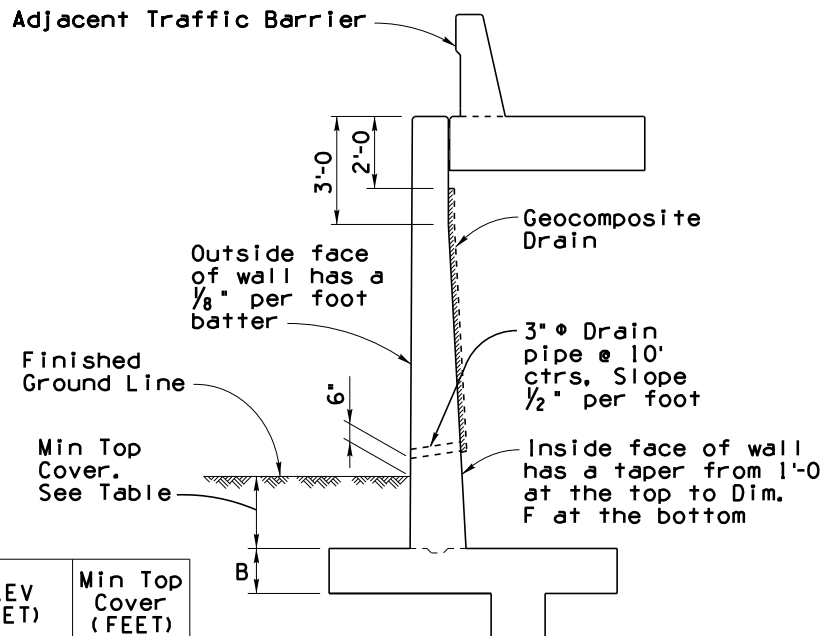
NOTES:

For General Notes, Typical Elevations, Sections and Details see SD 7.01 (1 to 4).

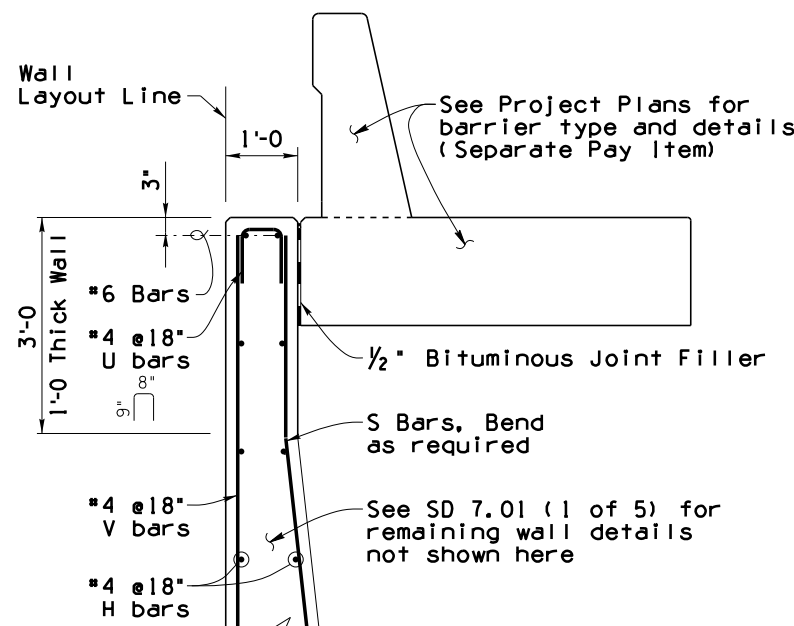
For Structural Excavation Limits and Structure Backfill Limits, see SD 7.01 (4 of 5).

Note to Designer: The information presented in this Standard Drawing has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.

Case IV - Adjacent Traffic Barrier



TYPICAL SECTION (Case IV)



TYPICAL WALL DETAILS (Case IV)

ELEV (FEET)	Min Top Cover (FEET)
5000' and Below	1'-6
Above 5000'	2'-6

STANDARDS ENGINEER
A. ALZUBI
RECOMMENDED FOR APPROVAL
GROUP MANAGER
D. EBERHART
APPROVED
STANDARDS COMMITTEE APPROVED FOR DISTRIBUTION 12/21 DATE

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP STANDARD DRAWING
**RETAINING WALL
REINFORCED CONCRETE CANTILEVER**
DRAWING NO.
**SD 7.01
(5 of 5)**