DISCLAIMER:
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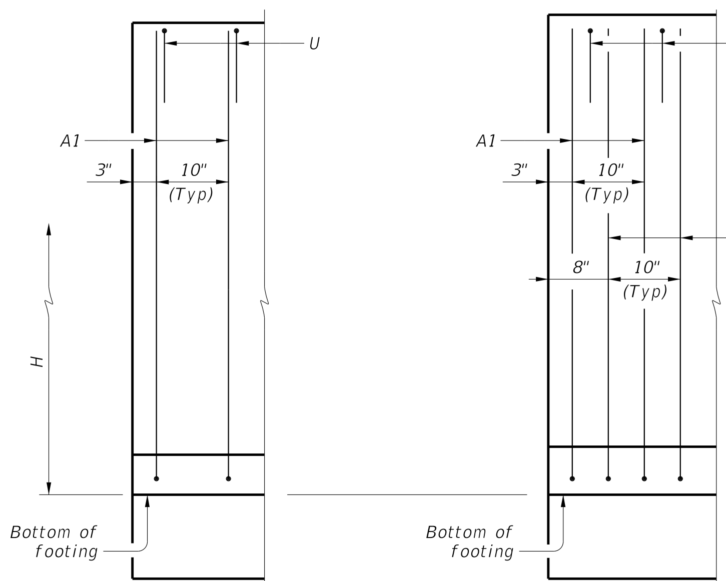
PROPERTIES

Wall Height "H" (Ft)	Fw	Tw	Sw	Hw	Ft	Kw	Kd	MAX SOIL PRESS T/SF
	WALL DIMENSIONS							
2	1' - 4"	0' - 4"	1' - 0"	0' - 0"	0' - 9"	0' - 9"	0' - 9"	0.164
4	2' - 5"	0' - 8"	1' - 0"	0' - 9"	1' - 0"	0' - 9"	0' - 9"	0.287
6	3' - 6"	1' - 2"	1' - 0"	1' - 4"	1' - 0"	0' - 9"	0' - 9"	0.373
8	5' - 1"	1' - 9"	1' - 0"	2' - 4"	1' - 0"	0' - 9"	0' - 9"	0.425
10	6' - 7"	2' - 3"	1' - 0"	3' - 4"	1' - 2"	1' - 0"	1' - 0"	0.513
12	8' - 4"	2' - 10"	1' - 1"	4' - 5"	1' - 4"	1' - 3"	1' - 3"	0.589
14	9' - 11"	3' - 5"	1' - 2"	5' - 4"	1' - 7"	1' - 6"	1' - 6"	0.674
16	11' - 5"	4' - 0"	1' - 3"	6' - 2"	1' - 9"	1' - 9"	1' - 9"	0.756
18	12' - 8"	4' - 7"	1' - 4"	6' - 9"	1' - 9"	2' - 0"	2' - 0"	0.830
20	14' - 4"	5' - 2"	1' - 6"	7' - 8"	2' - 0"	2' - 0"	2' - 0"	0.910

REINFORCING STEEL FOR ONE 32' PANEL (DESIGN A)

Wall Height "H" (Ft)	Bars A1 No.	Size	Spa.	Length	Weight	Bars A2 No.	Size	Spa.	Length	Weight	Bars B No.	Size	Spa.	Length	Weight	Bars C No.	Size	Spa.	Length	Weight
2	39	#4	10"	2' - 6"	66						39	#4	10"	2' - 2"	57					
4	39	#4	10"	4' - 10"	126						39	#4	10"	3' - 11"	103	39	#4	10"	1' - 11"	50
6	39	#4	10"	7' - 4"	192						39	#4	10"	5' - 11"	155	39	#4	10"	3' - 0"	79
8	39	#4	10"	9' - 11"	259						39	#4	10"	7' - 11"	207	39	#4	10"	4' - 7"	120
10	39	#4	10"	12' - 5"	324						39	#4	10"	9' - 9"	255	39	#4	10"	6' - 1"	159
12	39	#5	10"	15' - 1"	614						39	#4	10"	11' - 7"	302	39	#5	10"	7' - 10"	319
14	39	#6	10"	17' - 9"	1040						39	#4	10"	13' - 4"	348	39	#6	10"	9' - 5"	553
16	39	#6	10"	20' - 5"	1196	39	#4	10"	20' - 5"	532	39	#4	10"	15' - 2"	396	39	#6	10"	10' - 11"	640
18	39	#6	10"	23' - 1"	1353	39	#5	10"	23' - 1"	939	39	#4	10"	17' - 2"	448	39	#7	10"	12' - 2"	971
20	39	#6	10"	25' - 10"	1514	39	#6	10"	25' - 10"	1514	39	#4	10"	18' - 11"	493	39	#7	10"	13' - 10"	1103

Wall Height "H" (Ft)	Bars E No.	Size	Spa.	Length	Weight	Bars K No.	Size	Spa.	Length	Weight	D (#5) at 12" Max. No.	Weight	Dowel F at 12" Max. No.	Weight	H (#5) at 12" Max No.	Weight	T (#5) at 12" Max. No.	Weight	U ~ 27 #5 at 15" Max. Length	Weight	QUANTITY FOR ONE 32' PANEL Conc (CY)	REINF (LB)
2						39	#4	10"	3' - 1"	81	6	198	5	41	2	66	2	66	2' - 6"	71	3.4	646
4	39	#4	10"	1' - 11"	50	39	#4	10"	3' - 1"	81	8	263	7	57	3	99	3	99	3' - 6"	99	7.1	1027
6	39	#4	10"	3' - 0"	79	39	#4	10"	3' - 1"	81	12	395	10	81	4	132	4	132	3' - 6"	99	10.8	1425
8	39	#4	10"	4' - 7"	120	39	#4	10"	3' - 1"	81	16	526	14	113	6	198	6	198	3' - 6"	99	15.0	1921
10	39	#4	10"	6' - 1"	159	39	#4	10"	3' - 10"	100	20	658	18	145	8	263	8	263	3' - 6"	99	20.8	2425
12	39	#4	10"	7' - 10"	205	39	#4	10"	4' - 7"	120	24	789	21	169	9	296	9	296	3' - 7"	101	28.8	3211
14	39	#4	10"	9' - 5"	246	39	#4	10"	5' - 4"	139	28	920	25	201	11	362	11	362	3' - 8"	104	38.5	4275
16	39	#4	10"	10' - 11"	285	39	#4	10"	6' - 1"	159	32	1052	28	225	12	395	12	395	3' - 9"	106	48.5	5381
18	39	#4	10"	12' - 2"	318	39	#4	10"	6' - 10"	179	36	1183	32	257	14	460	14	460	3' - 10"	108	56.7	6676
20	39	#4	10"	13' - 10"	361	39	#4	10"	6' - 10"	179	38	1249	34	273	15	493	15	493	4' - 0"	113	70.8	7785

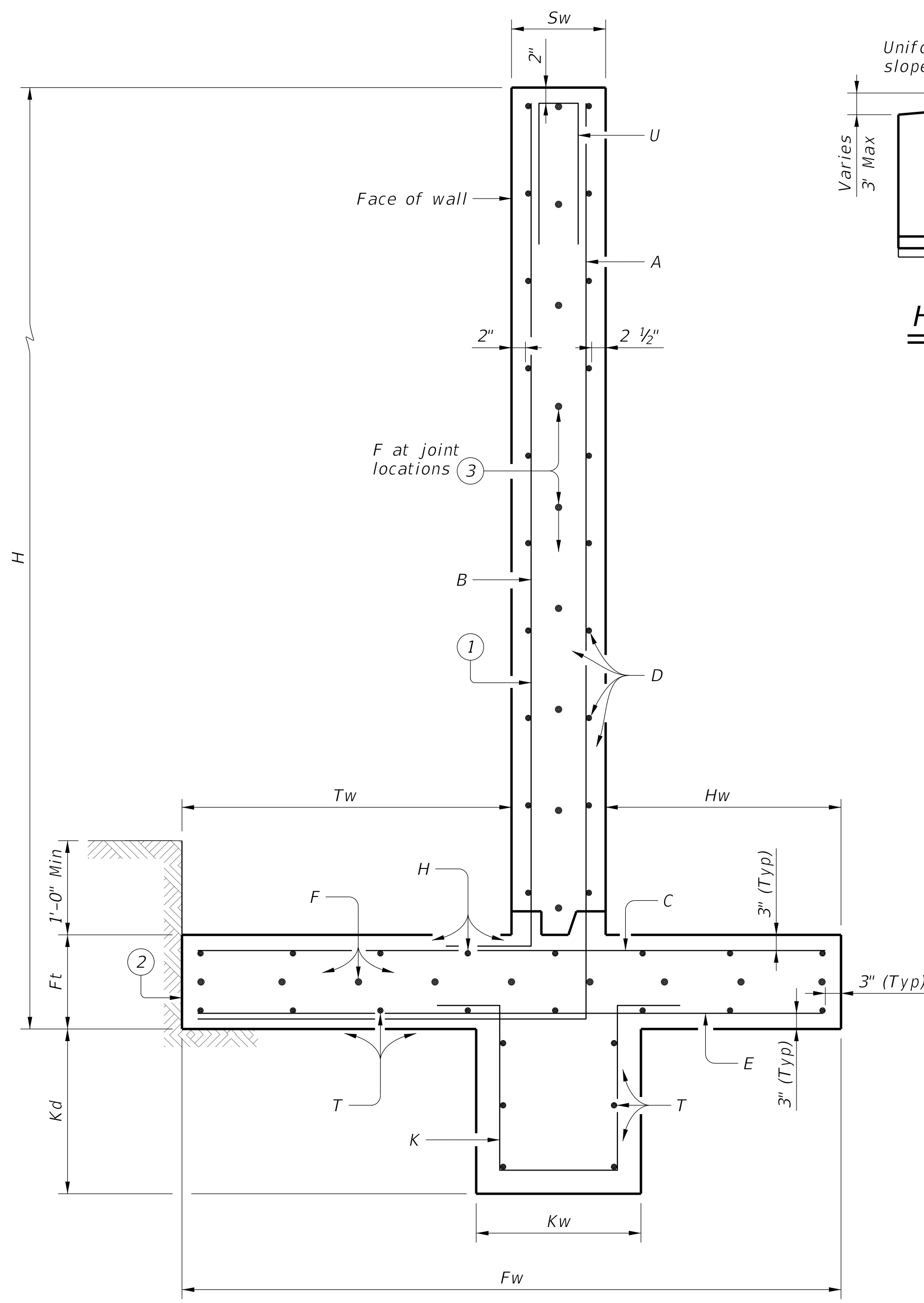


H < 16'

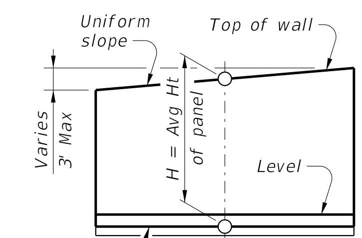
H ≥ 16'

PARTIAL WALL ELEVATIONS

(Showing vertical reinforcing pattern in back face.)



SECTION



H DEFINITION

(1) Place vertical bars inside of horizontal bars (Typical both faces.)

(2) Place footing toe against undisturbed soil.

(3) See Retaining Wall Miscellaneous Details (RW(SF)) standard for size.

MATERIAL NOTES:

Provide Class C concrete (f'c=3,600 psi.)
Provide Grade 60 reinforcing steel.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

Walls are designed assuming unit weight of soil = 120 pcf and a friction angle = 30 degrees for foundation and retained soil.

See Retaining Wall Miscellaneous Details (RW(SF)) standard for details and notes not shown.

These details provide designs for wall heights of 2 to 20 feet. For heights not shown, round up "H" to determine wall dimensions and reinforcing. (For example, a 9-foot high wall would use the 10-foot high dimensions and reinforcing.)

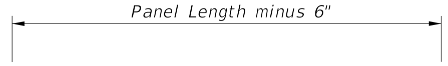
Quantities are based on "H" being average height of panel.

Retaining walls are designed to be coded as follows on Retaining Wall Layout Sheets:

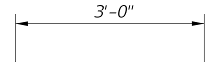
A - 15 - 32

- 32: Panel length ~ 32 ft. is standard; 28 ft. requires special quantities.
- 15: Average height (H) of panel.
- A: Design A = No surcharge or slope above wall.
  Design B = No surcharge; slopes to 3:1.
  Design C = Traffic surcharge; no slope above wall.

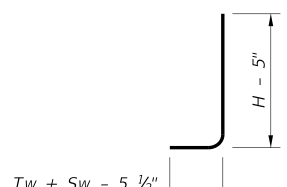
Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.



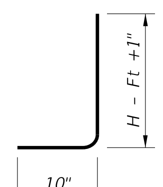
BARS D, H, and T



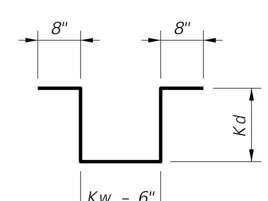
BARS F (3)



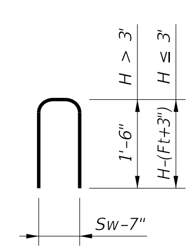
BARS A1 & A2



BARS B



BARS K



BARS U

Texas Department of Transportation

Bridge Division Standard

SPREAD FOOTING RETAINING WALL

RW(SFA)

FILE: RW-SFA-22.dgn	DN: TAR	CK: RLE	DW: JER	CK: TAR
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REVISIONS				
	DIST	COUNTY		SHEET NO.

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