WALL PROPERTIES / REINFORCING STEEL FOR A 30'-0" WALL PANEL / QUANTITIES PER LIN. FT. OF WALL

WALL PROPERTIES

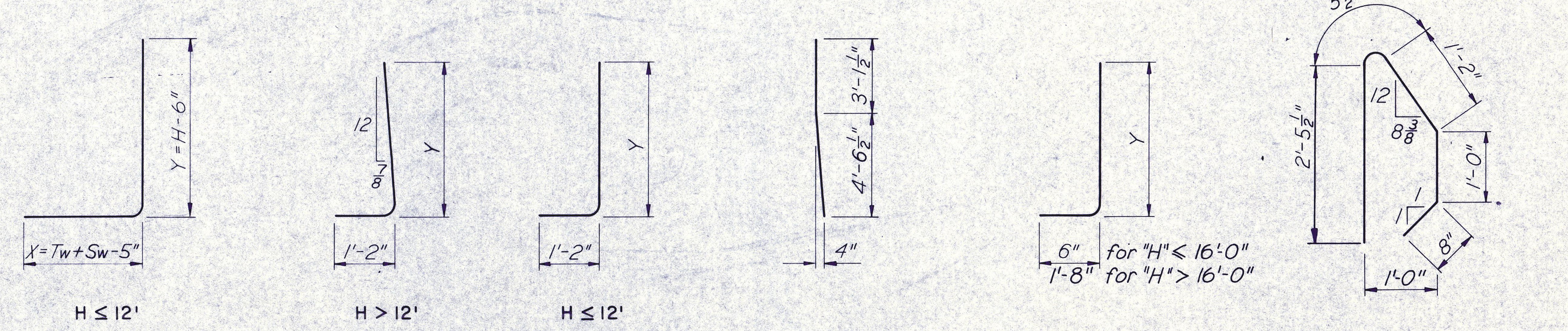
H	DIMENSIONS Fw	Tw	Sw	Hw	Ft	Kw	MAX. SOIL PRESS (T/□')	MIN. As REQ'D. (□"/Ft.) STEM	TOE	HEEL
4'	3'-3"	1'-0"	1'-0"	1'-3"	1'-0"	0	0.56	0.31	0.35	0.31
6'	4'-3"	1'-4"	1'-0"	1'-11"	1'-0"	0	0.74	0.40	0.35	0.31
8'	5'-3"	1'-8"	1'-0"	2'-7"	1'-0"	0	0.91	0.55	0.35	0.31
10'	6'-3"	2'-0"	1'-0"	3'-3"	1'-0"	0	1.07	0.78	0.35	0.31
12'	7'-3"	2'-4"	1'-0"	3'-11"	1'-0"	0	1.25	1.12	0.35	0.48
14'	8'-0"	2'-6"	1'-8 1/4"	3'-9 3/4"	1'-3"	0	1.54	0.78	0.40	0.46
16'	9'-8"	3'-4"	1'-9 15/16"	4'-7 1/16"	1'-4"	0	1.48	0.97	0.51	0.60
18'	11'-4"	4'-1"	1'-11 9/16"	5'-3 7/16"	1'-6"	0	1.46	1.19	0.68	0.68
20'	13'-0"	5'-0"	2'-1 3/16"	5'-10 13/16"	1'-8"	0	1.46	1.44	0.87	0.77
22'	14'-9"	5'-10"	2'-2 3/4"	6'-8 1/4"	1'-10"	1'-3"	1.48	1.72	1.05	0.90
24'	16'-6"	6'-8"	2'-4 5/16"	7'-5 11/16"	2'-1"	1'-6"	1.51	2.03	1.19	0.99
26'	18'-6"	7'-8"	2'-5 13/16"	8'-4 3/16"	2'-4"	1'-6"	1.51	2.37	1.35	1.08
28'	20'-3"	8'-6"	2'-7 3/8"	9'-1 5/8"	2'-7"	1'-9"	1.52	2.72	1.49	1.16
30'	22'-0"	9'-6"	2'-8 7/8"	9'-9 1/8"	2'-10"	1'-9"	1.58	3.10	1.71	1.28

REINFORCING STEEL FOR A 30'-0" WALL PANEL

H	A1 @ 12" SIZE	NO.	X	Y	LGTH.	A2 @ 6", H > 12'; A2 @ 12", H ≤ 12' SIZE	NO.	Y	LGTH.	A3 @ 12" SIZE	NO.	LGTH.	A4 @ 12" SIZE	NO.	LGTH.
4'	#6	30	1'-7"	3'-6"	5'-1"	—	—	—	—	—	—	—	—	—	—
6'	↓	↓	1'-11"	5'-6"	7'-5"	—	—	—	—	—	—	—	—	—	—
8'	↓	↓	2'-3"	7'-6"	9'-9"	#6	29	3'-3"	4'-5"	—	—	—	—	—	—
10'	↓	↓	2'-7"	9'-6"	12'-1"	#6	29	5'-3"	6'-5"	—	—	—	—	—	—
12'	↓	30	2'-11"	11'-6"	14'-5"	#8	29	7'-3"	8'-5"	—	—	—	—	—	—
14'	#6	29	—	—	6'-2"	#6	59	3'-2"	4'-4"	#6	30	12'-7"	—	—	—
16'	#7	↓	—	—	8'-1"	#7	↓	3'-11"	5'-1"	#6	↓	14'-6"	—	—	—
18'	#7	↓	—	—	8'-0"	#7	↓	4'-1"	5'-3"	#7	↓	10'-10"	#6	30	7'-8"
20'	#8	↓	—	—	7'-9"	#8	↓	5'-2"	6'-4"	#8	↓	12'-8"	↓	↓	↓
22'	#9	↓	—	—	9'-7"	#9	↓	6'-2"	7'-4"	#8	↓	14'-6"	↓	↓	↓
24'	#10	↓	—	—	9'-7"	#10	↓	7'-8"	8'-10"	#9	↓	16'-3"	↓	↓	↓
26'	#10	↓	—	—	10'-1"	#10	↓	7'-11"	9'-1"	#10	↓	18'-0"	↓	↓	↓
28'	#11	↓	—	—	11'-10"	#11	↓	9'-5"	10'-7"	#10	↓	19'-9"	↓	↓	↓
30'	#11	29	—	—	12'-4"	#11	59	9'-8"	10'-10"	#11	30	21'-6"	#6	30	7'-8"

H	B1 @ 12" SIZE	NO.	LGTH.	B2 @ 12" SIZE	NO.	Y	LGTH.	C1 @ 12", TOP; C1 @ 6", BOT. SIZE	NO.	LGTH.	C2 @ 12" SIZE	NO.	LGTH.
4'	—	—	—	#5	30	3'-6"	4'-0"	#5	30	2'-9"	—	—	—
6'	—	—	—	↓	↓	5'-6"	6'-0"	↓	↓	3'-9"	—	—	—
8'	#5	30	6'-9"	↓	↓	2'-3"	2'-9"	↓	↓	4'-9"	—	—	—
10'	↓	↓	8'-9"	↓	↓	2'-3"	2'-9"	↓	↓	5'-9"	—	—	—
12'	↓	↓	10'-9"	↓	↓	2'-3"	2'-9"	↓	30	6'-9"	#5	29	6'-0"
14'	↓	↓	12'-6"	↓	↓	2'-6"	3'-0"	↓	89	5'-3"	#5	↓	4'-4"
16'	↓	↓	14'-5"	↓	↓	2'-7"	4'-3"	#5	↓	6'-2"	#5	↓	5'-0"
18'	↓	↓	16'-3"	↓	↓	2'-9"	4'-5"	#6	↓	7'-0"	#6	↓	5'-8"
20'	↓	↓	18'-1"	↓	↓	2'-11"	4'-7"	#6	↓	7'-9"	#6	↓	6'-3"
22'	↓	↓	19'-11"	↓	↓	3'-1"	4'-9"	#7	↓	8'-8"	#5	↓	7'-0"
24'	↓	↓	21'-8"	↓	↓	3'-4"	5'-0"	#7	↓	9'-7"	#6	↓	7'-9"
26'	↓	↓	23'-5"	↓	↓	3'-7"	5'-3"	#7	↓	10'-7"	#7	↓	8'-6"
28'	↓	↓	25'-2"	↓	↓	3'-10"	5'-6"	#8	↓	11'-11"	#7	↓	9'-8"
30'	#5	30	26'-11"	#5	30	4'-1"	5'-9"	#8	89	12'-6"	#7	29	10'-1"

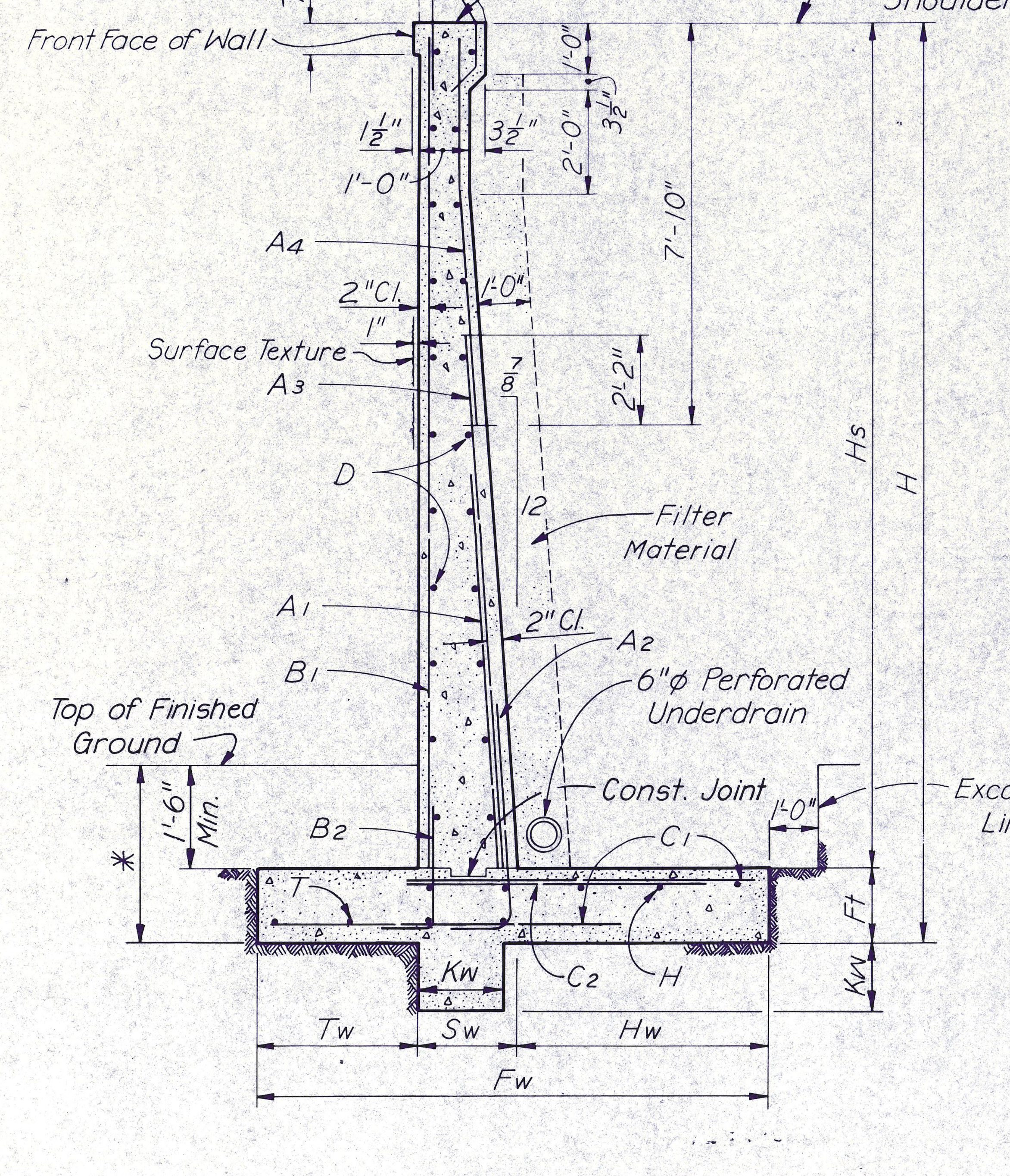
H	D @ 18" SIZE	NO.	LGTH.	H @ 18" SIZE	NO.	LGTH.	T @ 18" SIZE	NO.	LGTH.	U @ 8" SIZE	NO.	LGTH.	QUANTITIES PER LIN. FT. OF WALL CONC. (C.Y.)	REINF. (LB.)
4'	#5	4	29'-6"	#5	3	31'-9"	#5	2	31'-9"	#5	45	5'-9"	0.247	33.3
6'	↓	8	↓	↓	3	↓	↓	2	↓	↓	↓	↓	0.358	44.0
8'	↓	10	↓	↓	3	↓	↓	2	↓	↓	↓	↓	0.469	60.7
10'	↓	12	↓	↓	4	↓	↓	3	↓	↓	↓	↓	0.580	74.4
12'	↓	16	↓	↓	4	↓	↓	3	↓	↓	↓	↓	0.691	103.6
14'	↓	18	↓	↓	4	↓	↓	3	↓	↓	↓	↓	0.979	112.6
16'	↓	20	↓	↓	4	↓	↓	4	↓	↓	↓	↓	1.209	140.1
18'	↓	22	↓	↓	5	↓	↓	4	↓	↓	↓	↓	1.491	173.0
20'	↓	26	↓	↓	5	↓	↓	5	↓	↓	↓	↓	1.804	212.6
22'	↓	28	↓	↓	6	↓	↓	6	↓	↓	↓	↓	2.204	267.1
24'	↓	30	↓	↓	7	↓	↓	6	↓	↓	↓	↓	2.651	332.6
26'	↓	32	↓	↓	7	↓	↓	7	↓	↓	↓	↓	3.130	375.9
28'	↓	34	↓	↓	8	↓	↓	8	↓	↓	↓	↓	3.665	474.8
30'	#5	36	29'-6"	#5	9	31'-9"	#5	8	31'-9"	#5	45	5'-9"	4.210	519.9



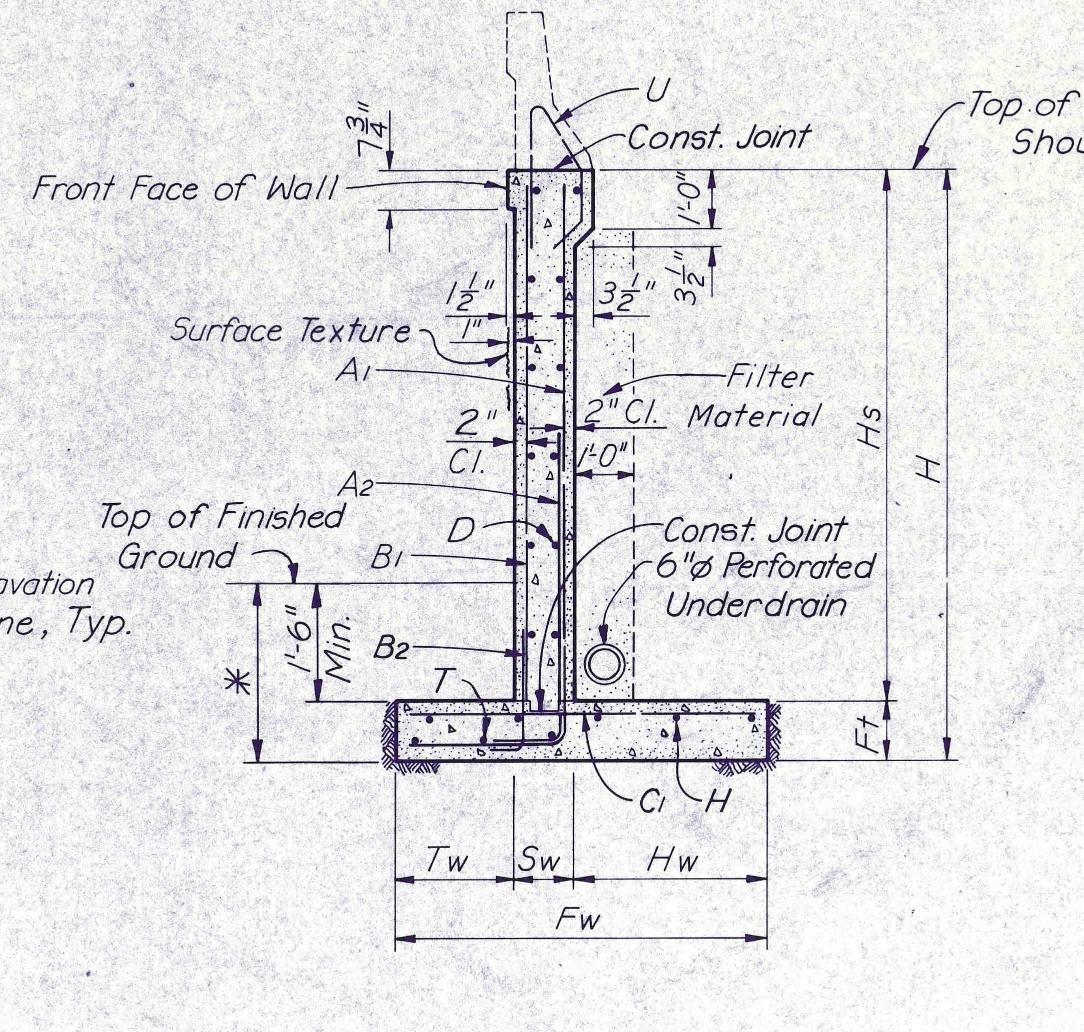
H ≤ 12' BARS A1 | H > 12' H ≤ 12' BARS A2 | BARS A4 | BARS B2 | BARS U[□]

□ See Standard Drawing 30A for the Bar U configuration to be used with the Traffic Rail, Type T5 (mod.)

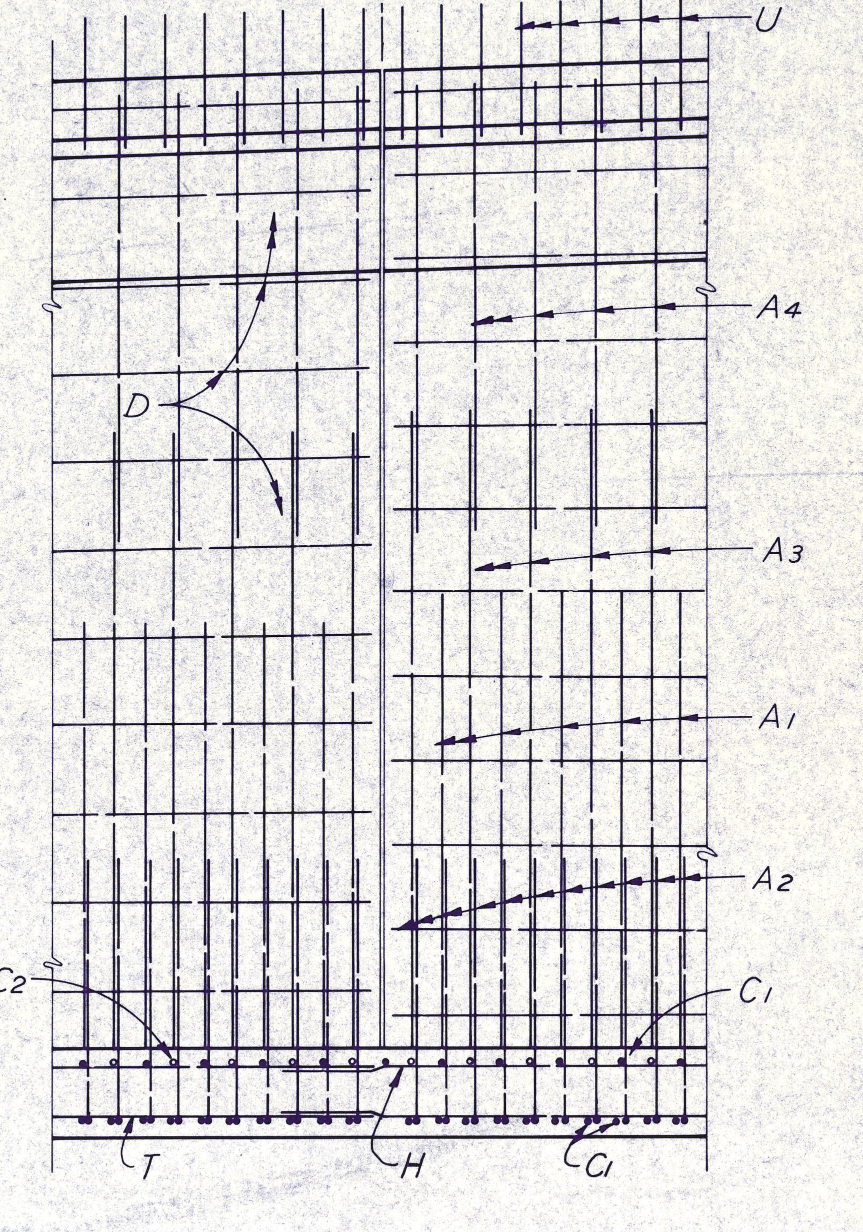
✱ The bottom of the footing shall be placed at H/4 or 1'-0" below the top of weathered rock, whichever is deeper.



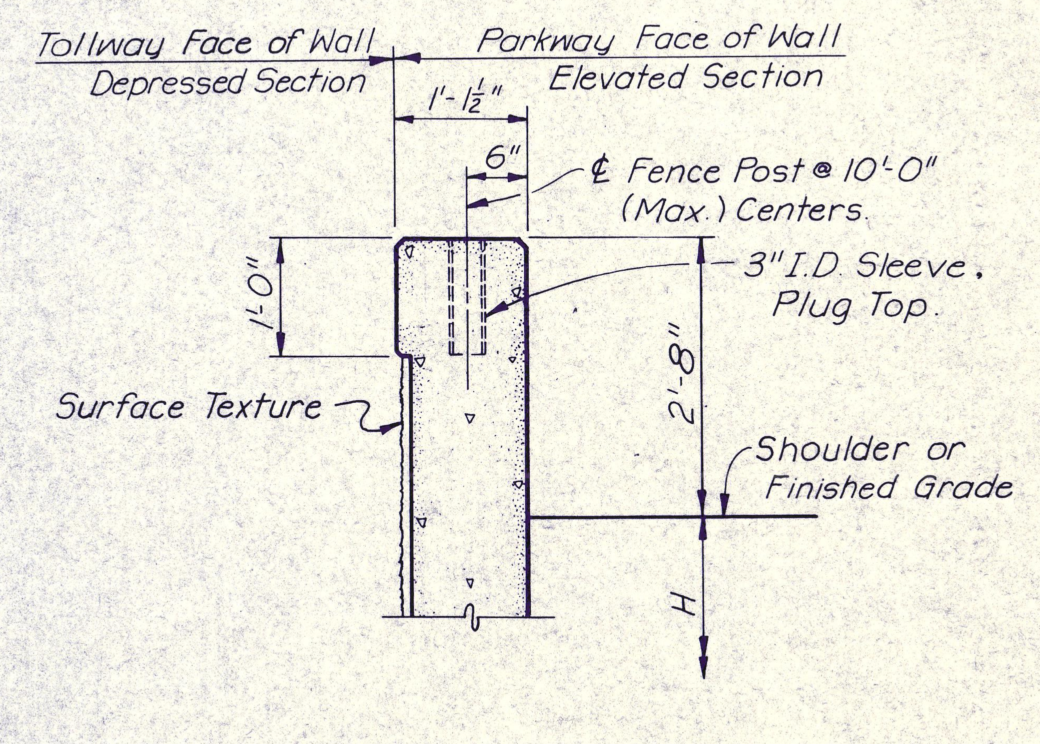
SECTION
H > 12'



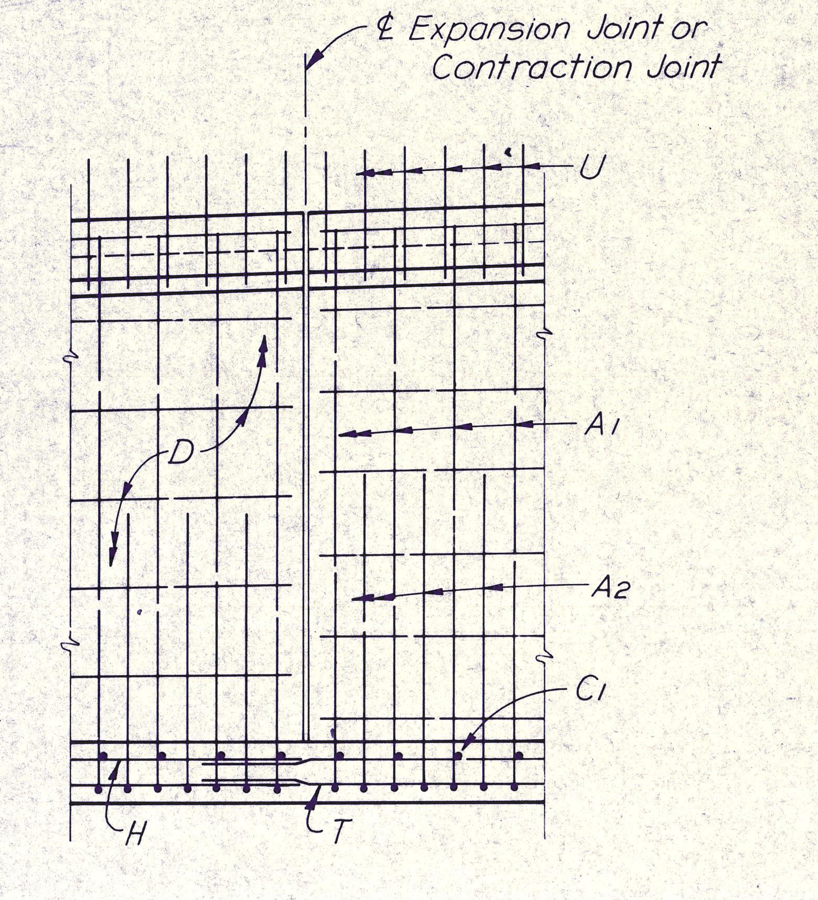
SECTION
H ≤ 12'



REAR ELEVATION
H > 12'



SPECIAL WALL CAP DETAIL
STA. 702+50.0 & STA. 710+00.0



REAR ELEVATION
H ≤ 12'

GENERAL NOTES:

Designed according to AASHTO 1977 Standard Specifications and Interim Specifications thru 1982.

Walls are designed using a 40 p.s.f. eq. fluid pressure and a 2'-0" live load surcharge.

All concrete to be Class C, f'c = 3,600 p.s.i.; fc = 1,440 p.s.i.

All reinforcing steel to be ASTM A-615, Grade 60. Bar dimensions are given out to out of bar. Radii are given to the inside of the bar.

Footings shall be poured to neat lines against undisturbed material.

Expansion joints shall be placed at 90 ft. centers. Contraction joints shall be placed at all other panel points.

Quantities include wall and footing only.

For additional details, see Standard Drawing No. 41.

If this wall construction type is selected, the Contractor shall develop all necessary reinforcing steel schedules and shop drawings necessary to complete the work and submit these drawings and schedules for approval prior to beginning fabrication and construction.

The top surfaces of walls must be sloped to correspond with the adjacent roadway shoulder cross slope.

NO.	REVISION	BY	DATE

TEXAS TURNPIKE AUTHORITY

DALLAS NORTH TOLLWAY

ELEVATED ROADWAY SECTION
CAST-IN-PLACE CONCRETE
RETAINING WALL DETAILS

HNTB
HOWARD NEEDLES TAMMEN & BERGENDOFF

SECTION VII

DRAWN J.T.K. DATE 3-28-83 DESIGNED J.B.L. DATE 3-10-83
CHECKED Y.A.L. DATE 5-2-83 SCALE None

STANDARD DRAWING NO. 40

1 OF 2

CONTRACT NO. DNT-115