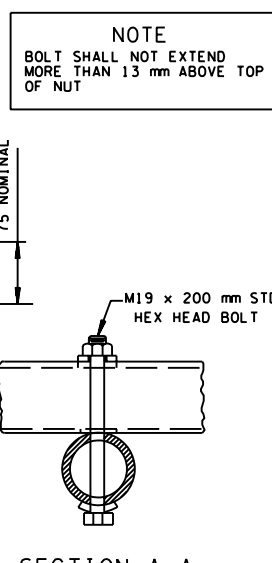
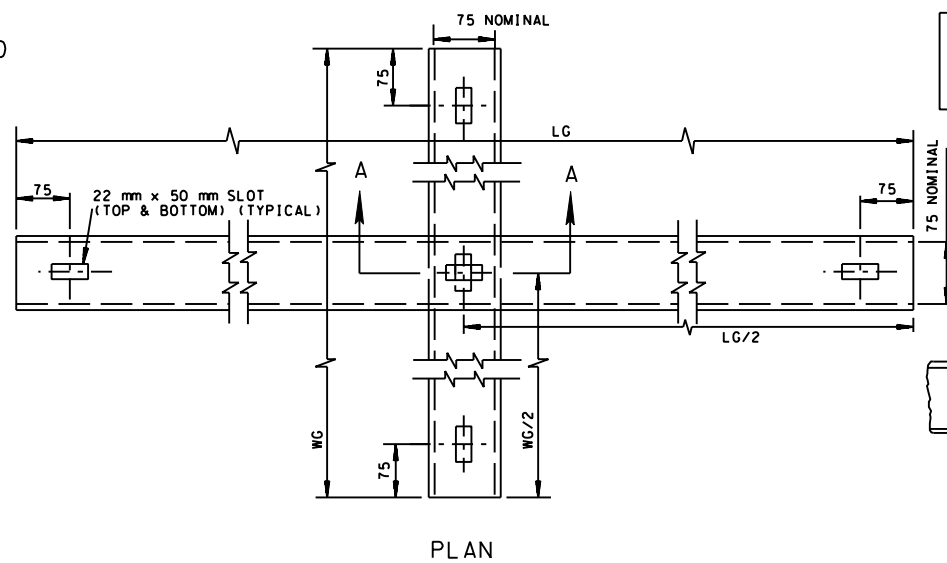
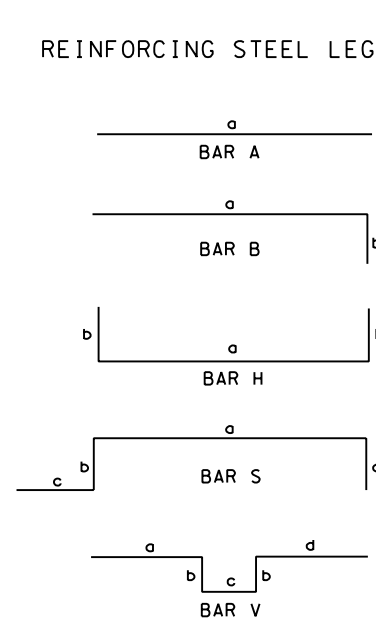


- REV. 11-1-95: CHANGED TO METRIC.
□ REV. 5-27-99: CHANGED PAINT SPECIFICATION TO TT-E-489J.
□ REV. 7-17-07: ADDED GENERAL NOTE ⑥

BILL OF STEEL																																						
CODE NO.	LOCATION	BAR SIZE	450 mm PIPE						600 mm PIPE						750 mm PIPE						900 mm PIPE						1050 mm PIPE						1200 mm PIPE					
			BENDING DIMENSIONS				NO. REQ'D	LENGTH	BENDING DIMENSIONS				NO. REQ'D	LENGTH	BENDING DIMENSIONS				NO. REQ'D	LENGTH	BENDING DIMENSIONS				NO. REQ'D	LENGTH	BENDING DIMENSIONS				NO. REQ'D	LENGTH						
			a	b	c	d			a	b	c	d			a	b	c	d			a	b	c	d			a	b	c	d			a	b	c	d		
A1300	TOEWALL	13	775				3	775	975				3	975	1150				3	1150	1325				3	1325	1500				3	1500	1675				3	1675
A1301	WINGWALLS	13	2325				2	2325	3050				2	3050	3850				2	3850																		
A1302	WINGWALLS	13							1825				2	1825	1900				2	1900	3350				2	3350	3950				2	3950	4675				2	4675
A1303	WINGWALLS	13													1425				2	1425	2125				2	2125	2750				2	2750	2925				2	2925
A1304	WINGWALLS	13																									1525				2	1525	2225				2	2225
A1305	WINGWALLS	13	1125					2	1125																													
A1500	WINGWALLS	15	2400					4	2400	3125				4	3125																							
A2000	HEADWALL	20																			650				4	650	675				4	675	750				4	750
A2001	HEADWALL	20	425					2	425	550				2	550	650				2	650	750			2	750	875				2	875	950				2	950
A2002	HEADWALL	20	400					2	400	525				2	525	650				2	650	725			2	725	850				2	850	925				2	925
A2003	HEADWALL	20	775					2	775	975				2	975																							
B1300	BOTTOM SLAB & WINGWALL	13	455	355			2	810	760				2	1065	760	380			2	1140	1065	455			2	1520	1065	560			2	1625	1370	330			2	1700
B1301	BOTTOM SLAB & WINGWALL	13	150	355			2	505	455	305			2	760	455	380			2	835	760	455			2	1215	610	560			2	1170	1065	330			2	1395
B1302	BOTTOM SLAB & WINGWALL	13							150	305			2	455	150	380			2	530	455	455			2	910	455	560			2	1015	760	330			2	1090
B1303	BOTTOM SLAB & WINGWALL	13								305											150	455			2	605	150	560			2	710	455	330			2	785
B1304	BOTTOM SLAB & WINGWALL	13																																			2	480
B1305	HEADWALL & WINGWALL	13																			4570	205			2	4775	5180	255			2	5435	5895	280			2	6175
B1306	HEADWALL & WINGWALL	13							610	230			2	840	815	255			2	1070	915	305			2	1220	305	510			2	815	1015	405			2	1420
H1300	BOTTOM SLAB & HEADWALL	13	785	865			1	2515	965	1015			1	2995	1145	1245			1	3635	1320	1420			1	4160	1500	1575			1	4650	1675	1755			1	5185
H1301	BOTTOM SLAB & HEADWALL	13	785	840			1	2465	965	990			1	2945	1145	1220			1	3585	1320	1395			1	4110	1500	1550			1	4600	1675	1700			1	5075
H1302	BOTTOM SLAB & WINGWALL	13	785	685			1	2155	965	840			1	2645	1145	990			1	3125	1320	1220			1	3760	1500	1370			1	4240	1675	1525			1	4725
H1303	BOTTOM SLAB & WINGWALL	13	785	610			1	2005	965	760			1	2485	1145	915			1	2975	1320	1145			1	3610	1500	1295			1	4090	1675	1450			1	4575
H1304	BOTTOM SLAB & WINGWALL	13	785	535			1	1855	965	685			1	2335	1145	840			1	2825	1320	1065			1	3450	1500	1220			1	3940	1675	1370			1	4415
H1305	BOTTOM SLAB & WINGWALL	13	785	455			1	1695	965	610			1	2185	1145	760			1	2665	1320	990			1	3300	1500	1145			1	3790	1675	1295			1	4265
H1306	BOTTOM SLAB & WINGWALL	13	785	380			1	1545	965	535			1	2035	1145	685			1	2515	1320	915			1	3150	1500	1065			1	3630	1675	1220			1	4115
H1307	BOTTOM SLAB & WINGWALL	13	785	305			1	1395	965	455			1	1875	1145	430			1	2005	1320	840			1	3000	1500	990			1	3480	1675	1145			1	3965
H1308	BOTTOM SLAB & WINGWALL	13	785	230			1	1245	965	380			1	1725	1145	535			1	2215	1320	760			1	2840	1500	915			1	3330	1675	1065			1	3805
H1309	BOTTOM SLAB & WINGWALL	13	785	150			1	1085	965	305			1	1575	1145	455			1	2055	1320	635			1	2590	1500	840			1	3180	1675	990			1	3655
H1310	BOTTOM SLAB & WINGWALL	13							965	230			1	1425	1145	380			1	1905	1320	610			1	2540	1500	610			1	2720	1675	915			1	3505
H1311	BOTTOM SLAB & WINGWALL	13							965	150			1	1265	1145	305			1	1755	1320	535			1	2390	1500	685			1	2870	1675	840			1	3355
H1312	BOTTOM SLAB & WINGWALL	13													1145	230			1	1605	1320	455			1	2230	1500	610			1	2720	1675	760			1	3195
H1313	BOTTOM SLAB & WINGWALL	13													1145	150			1	1445	1320	380			1	2080	1500	535			1	2570	1675	685			1	3045
H1314	BOTTOM SLAB & WINGWALL	13																			1320	305			1	1930	1500	455			1	2410	1675	610			1	2895
H1315	BOTTOM SLAB & WINGWALL	13																			1320	230			1	1780	1500	380			1	2260	1675	535			1	2745
H1316	BOTTOM SLAB & WINGWALL	13																			1320	150			1	1620	1500	305			1	2110	1675	455			1	2585
H1317	BOTTOM SLAB & WINGWALL	13																								1500	230			1	1960	1675	380			1	2435	
H1318	BOTTOM SLAB & WINGWALL	13																								1500	150			1	1800	1675	305			1	2285	
H1319	BOTTOM SLAB & WINGWALL	13																																			1	2135
H1320	BOTTOM SLAB & WINGWALL	13																																			1	1975
S1300	BOTTOM SLAB & TOEWALL	13	2335	100	205	405	4	3045	3050	100	205	405	6	3760	3860	100	205	405	6	4570	4570	100	205	405	6	5280	5180	100	205	405	6	5890	5895	100	205	405	8	6605
V1500	WINGWALL	15													1980	205	205	1805	4	4400	2335	205	230	2160	4	5135	2665	205	230	2465	4	5770	3025	205	205	2870	4	6510
V2000	HEADWALL	20													455	100	230	455	2	1340	560	100	205	560	2	1525	635	100	230	635	2	1700	735	100	205	735	2	1875

REINFORCING STEEL LEGEND



NOTE
BOLT SHALL NOT EXTEND MORE THAN 13 mm ABOVE TOP OF NUT

GENERAL NOTES

- CONCRETE ENDWALL SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS.
- THE MATERIAL AND PAINTING FOR STRUCTURAL STEEL GRATE SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
A STEEL PIPE ASTM A53, TYPE E OR S, GRADE A OR B, SCHEDULE 40.
B THE GRATE SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489J, AFTER FABRICATION.
- THE MATERIAL AND GALVANIZING FOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
A BOLTS, NUTS AND WASHERS ASTM A307
B GALVANIZING ASTM A153
- THE COST OF FURNISHING BOLTS, NUTS AND WASHERS, INCLUDING ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION, SHALL BE INCLUDED IN THE PRICE BID FOR PIPE ENDWALL.
- PAYMENT WILL BE MADE UNDER:
ITEM NO. 611M07.01, CLASS "A" CONCRETE (PIPE ENDWALLS)----m³
ITEM NO. 611M07.02, STEEL BAR REINFORCEMENT