COLUMN "A"

LINE	NO. of MANHOLE STEPS	R	DIMENSIONS H	DIMENSIONS K	DIMENSIONS T	REINFORCING STEEL A LENGTH	A NO	B LENGTH	B NO	C NO.=16 LENGTH	D NO.=4 LENGTH	QUANTITIES CONC. CU. YD.	QUANTITIES REINF. STEEL LBS.
1	--	4	3'-10	2'-6	6"	4'-8	14	3'-2	15	3'-5	1'-0	1.365	179
2	2	4	4'-4	3'-0			14		15	3'-11		1.504	187
3	2	5	4'-10	3'-6			16		17	4'-5		1.642	212
4	3	5	5'-4	4'-0			16		17	4'-11		1.781	220
5	3	6	5'-10	4'-6			18		19	5'-5		1.920	245
6	4	6	6'-4	5'-0			18		19	5'-11		2.059	253
7	4	7	6'-10	5'-6			20		21	6'-5		2.198	278
8	5	7	7'-4	6'-0			20		21	6'-11		2.337	286
9	5	8	7'-10	6'-6			22		23	7'-5		2.476	311
10	6	8	8'-4	7'-0			22		23	7'-11		2.615	319
11	6	9	8'-10	7'-6			24		25	8'-5		2.754	344
12	7	9	9'-4	8'-0			24		25	8'-11		2.892	352
13	7	10	9'-10	8'-6			26		27	9'-5		3.031	377
14	8	10	10'-4	9'-0			26		27	9'-11		3.170	385
15	8	11	10'-10	9'-6			28		29	10'-5		3.309	410
16	9	11	11'-4	10'-0			28		29	10'-11		3.448	418
17	9	12	11'-10	10'-6			30		31	11'-5		3.587	443
18	10	12	12'-4	11'-0	6"	4'-8	30	3'-2	31	11'-11	1'-0	3.726	451
19	10	13	12'-11	11'-6	7"	4'-10	32	3'-4	33	12'-6	1'-1	4.610	489
20	11	13	13'-5	12'-0			32		33	13'-0		4.775	498
21	11	14	13'-11	12'-6			34		35	13'-6		4.941	523
22	12	14	14'-5	13'-0			34		35	14'-0		5.107	531
23	12	15	14-11	13'-6			36		37	14'-6		5.272	552
24	13	15	15'-5	14'-0			36		37	15'-0		5.438	565
25	13	16	15'-11	14'-6			38		39	15'-6		5.604	590
26	14	16	16'-5	15'-0			38		39	16'-0		5.769	599
27	14	17	16-11	15'-6			40		41	16'-6		5.935	624
28	15	17	17'-5	16'-0			40		41	17'-0		6.100	632
29	15	18	17'-11	16'-6			42		43	17'-6		6.266	658
30	16	18	18'-5	17'-0			42		43	18'-0		6.432	666
31	16	19	18'-11	17'-6			44		45	18'-6		6.597	692
32	17	19	19'-5	18'-0			44		45	19'-0		6.763	700
33	17	20	19'-11	18'-6			46		47	19'-6		6.929	725
34	18	20	20'-5	19'-0			46		47	20'-0		7.094	734
35	18	21	20'-11	19'-6			48		49	20'-6		7.260	759
36	19	21	21'-5	20'-0			48		49	21'-0		7.426	767
37	19	22	21'-11	20'-6			50		51	21'-6		7.591	793
38	20	22	22'-5	21'-0	7"	4'-10	50	3'-4	51	22'-0	1'-1	7.757	801
39	20	23	23'-0	21'-6	8"	5'-0	52	3'-6	53	22'-7	1'-2	9.259	846
40	21	23	23'-6	22'-0			52		53	23'-1		9.452	855
41	21	24	24'-0	22'-6			54		55	23'-7		9.646	881
42	22	24	24'-6	23'-0			54		55	24'-1		9.839	889
43	22	25	25'-0	23'-6			56		57	24'-7		10.032	915
44	23	25	25'-6	24'-0			56		57	25'-1		10.226	924
45	23	26	26'-0	24'-6			58		59	25'-7		10.419	950
46	24	26	26'-6	25'-0			58		59	26'-1		10.613	958
47	24	27	27'-0	25'-6			60		61	26'-7		10.806	984
48	25	27	27'-6	26'-0			60		61	27'-1		11.000	992
49	25	28	28'-0	26'-6			62		63	27'-7		11.193	1018
50	26	28	28'-6	27'-0			62		63	28'-1		11.386	1027
51	26	29	29'-0	27'-6			64		65	28'-7		11.580	1053
52	27	29	29'-6	28'-0			64		65	29'-1		11.773	1055
53	27	30	30'-0	28'-6			66		67	29'-7		11.967	1087
54	28	30	30'-6	29'-0	8"	5'-0	66	3'-6	67	30'-1	1'-2	12.160	1096

N=1 S=6 W=4'-0 M=0'-4

COLUMN "B"

LINE	DIMENSIONS H	DIMENSIONS K	DIMENSIONS T	REINFORCING STEEL A LENGTH	A NO	B LENGTH	B NO	C NO.=18 LENGTH	D NO.=4 LENGTH	E NO.=2 LENGTH	QUANTITIES CONC. CU. YD.	QUANTITIES REINF. STEEL LBS.
1	----		---	----	--	---	--	----	---	---	----	----
2	----		---	----	--	---	--	----	---	---	----	----
3	----		---	----	--	---	--	----	---	---	----	----
4	----		---	----	--	---	--	----	---	---	----	----
5	----		---	----	--	---	--	----	---	---	----	----
6	6'-4	5'-0	6"	5'-8	18	3'-2	23	5'-11	1'-0	1'-6	2.417	301
7	6'-10	5'-6			20		25	6'-5			2.575	321
8	7'-4	6'-0			20		25	6'-11			2.732	338
9	7'-10	6'-6			22		27	7'-5			2.889	366
10	8'-4	7'-0			22		27	7'-11			3.047	375
11	8'-10	7'-6			24		29	8'-5			3.204	403
12	9'-4	8'-0			24		29	8'-11			3.362	412
13	9'-10	8'-6			26		31	9'-5			3.519	440
14	10'-4	9'-0			26		31	9'-11			3.675	450
15	10'-10	9'-6			28		33	10'-5			3.834	477
16	11'-4	10'-0			28		33	10'-11			3.991	486
17	11'-10	10'-6			30		35	11'-5			4.149	515
18	12'-4	11'-0	6"	5'-8	30	3'-2	35	11'-11	1'-0	1'-6	4.305	524
19	12'-11	11'-6	7"	5'-10	32	3'-4	37	12'-6	1'-1	1'-7	5.299	566
20	13'-5	12'-0			32		37	13'-0			5.486	575
21	13'-11	12'-6			34		39	13'-6			5.673	604
22	14'-5	13'-0			34		39	14'-0			5.861	613
23	14'-11	13'-6			36		41	14'-6			6.048	642
24	15'-5	14'-0			36		41	15'-0			6.235	651
25	15'-11	14'-6			38		43	15'-6			6.422	680
26	16'-5	15'-0			38		43	16'-0			6.609	689
27	16'-11	15'-6			40		45	16'-6			6.797	637
28	17'-5	16'-0			40		45	17'-0			6.984	727
29	17'-11	16'-6			42		47	17'-6			7.171	755
30	18'-5	17'-0			42		47	18'-0			7.358	765
31	18'-11	17'-6			44		49	18'-6			7.545	793
32	19'-5	18'-0			44		49	19'-0			7.733	803
33	19'-11	18'-6			46		51	19'-6			7.920	831
34	20'-5	19'-0			46		51	20'-0			8.107	841
35	20'-11	19'-6			48		53	20'-6			8.294	869
36	21'-5	20'-0			48		53	21'-0			8.481	878
37	21'-11	20'-6			50		55	21'-6			8.669	907
38	22'-5	21'-0	7"	5'-10	50	3'-4	55	22'-0	1'-1	1'-7	8.856	916
39	23'-0	21'-6	8"	6'-0	52	3'-6	57	22'-7	1'-2	1'-8	10.533	966
40	23'-6	22'-0			52		57	23'-1			10.752	975
41	24'-0	22'-6			54		59	23'-7			10.970	1004
42	24'-6	23'-0			54		59	24'-1			11.188	1014
43	25'-0	23'-6			56		61	24'-7			11.406	1043
44	25'-6	24'-0			56		61	25'-1			11.629	1052
45	26'-0	24'-6			58		63	25'-7			11.842	1082
46	26'-6	25'-0			58		63	26'-1			12.060	1091
47	27'-0	25'-6			60		65	26'-7			12.278	1120
48	27'-6	26'-0			60		65	27'-1			12.496	1130
49	28'-0	26'-6			62		67	27'-7			12.714	1159
50	28'-6	27'-0			62		67	28'-1			12.933	1168
51	29'-0	27'-6			64		69	28'-7			13.151	1197
52	29'-6	28'-0			64		69	29'-1			13.369	1207
53	30'-0	28'-6			66		71	29'-7			13.587	1236
54	30'-6	29'-0	8"	6'-0	66	3'-6	71	30'-1	1'-2	1'-8	13.805	1245

N=4 S=7 W=5'-0 M=1'-4

COLUMN "C"

LINE	DIMENSIONS H	DIMENSIONS K	DIMENSIONS T	REINFORCING STEEL A LENGTH	A NO	B LENGTH	B NO	C NO.=18 LENGTH	D NO.=4 LENGTH	E NO.=2 LENGTH	QUANTITIES CONC. CU. YD.	QUANTITIES REINF. STEEL LBS.
1	----	----	---	----	--	----	--	----	----	----	----	----
2	----	----	---	----	--	----	--	----	----	----	----	----
3	----	----	---	----	--	----	--	----	----	----	----	----
4	----	----	---	----	--	----	--	----	----	----	----	----
5	----	----	---	----	--	----	--	----	----	----	----	----
6	----	----	---	----	--	----	--	----	----	----	----	----
7	6'-10	5'-6	6"	6'-2	20	3'-2	26	6'-5	1'-0	2'-0	2.763	343
8	7'-4	6'-0			20		26	6'-11			2.930	353
9	7'-10	6'-6			22		28	7'-5			3.096	382
10	8'-4	7'-0			22		28	7'-11			3.263	391
11	8'-10	7'-6			24		30	8'-5			3.430	420
12	9'-4	8'-0			24		30	8'-11			3.596	429
13	9'-10	8'-6			26		32	9'-5			3.763	458
14	10'-4	9'-0			26		32	9'-11			3.930	467
15	10'-10	9'-6			28		34	10'-5			4.096	496
16	11'-4	10'-0			28		34	10'-11			4.263	506
17	11'-10	10'-6			30		36	11'-5			4.430	535
18	12'-4	11'-0	6"	6'-2	30	3'-2	36	11'-11	1'-0	2'-0	4.596	544
19	12'-11	11'-6	7"	6'-4	32	3'-4	38	12'-6	1'-1	2'-1	5.644	587
20	13'-5	12'-0			32		38	13'-0			5.842	596
21	13'-11	12'-6			34		40	13'-6			6.040	626
22	14'-5	13'-0			34		40	14'-0			6.238	635
23	14'-11	13'-6			36		42	14'-6			6.436	665
24	15'-5	14'-0			36		42	15'-0			6.634	674
25	15'-11	14'-6			38		44	15'-6			6.832	704
26	16'-5	15'-0			38		44	16'-0			7.030	713
27	16'-11	15'-6			40		46	16'-6			7.228	743
28	17'-5	16'-0			40		46	17'-0			7.426	752
29	17'-11	16'-6			42		48	17'-6			7.624	782
30	18'-5	17'-0			42		48	18'-0			7.822	791
31	18'-11	17'-6			44		50	18'-6			8.020	821
32	19'-5	18'-0			44		50	19'-0			8.215	830
33	19'-11	18'-6			46		52	19'-6			8.416	860
34	20'-5	19'-0			46		52	20'-0			8.615	869
35	20'-11	19'-6			48		54	20'-6			8.812	899
36	21'-5	20'-0			48		54	21'-0			9.011	908
37	21'-11	20'-6			50		56	21'-6			9.209	937
38	22'-5	21'-0	7"	6'-4	50	3'-4	56	22'-0	1'-1	2'-1	9.407	946
39	23'-0	21'-6	8"	6'-6"	52	3'-6	58	22'-7	1'-2	2'-2	11.171	998
40	23'-6	22'-0			52		58	23'-1			11.401	1007
41	24'-0	22'-6			54		60	23'-7			11.632	1037
42	24'-6	23'-0			54		60	24'-1			11.862	1047
43	25'-0	23'-6			56		62	24'-7			12.093	1077
44	25'-6	24'-0			56		62	25'-1			12.323	1086
45	26'-0	24'-6			58		64	25'-7			12.554	1117
46	26'-6	25'-0			58		64	26'-1			12.784	1126
47	27'-0	25'-6			60		66	26'-7			13.015	1156
48	27'-6	26'-0			60		66	27'-1			13.245	1166
49	28'-0	26'-6			62		68	27'-7			13.476	1196
50	28'-6	27'-0			62		68	28'-1			13.706	1205
51	29'-0	27'-6			64		70	28'-7			13.937	1235
52	29'-6	28'-0			64		70	29'-1			14.167	1245
53	30'-0	28'-6			66		72	29'-7			14.398	1275
54	30'-6	29'-0	8"	6'-6	66	3'-6	72	30'-1	1'-2	2'-2	14.628	1285

N=5 S=7 W=5'-5 M=1'-10

COLUMN "D"

LINE	DIMENSIONS H	DIMENSIONS K	DIMENSIONS T	REINFORCING STEEL A LENGTH	A NO	B LENGTH	B NO	C NO.=20 LENGTH	D NO.=4 LENGTH	E NO.=2 LENGTH	QUANTITIES CONC. CU. YD.	QUANTITIES REINF. STEEL LBS.
1	----	----	---	----	--	----	--	----	----	----	----	----
2	----	----	---	----	--	----	--	----	----	----	----	----
3	----	----	---	----	--	----	--	----	----	----	----	----
4	----	----	---	----	--	----	--	----	----	----	----	----
5	----	----	---	----	--	----	--	----	----	----	----	----
6	----	----	---	----	--	----	--	----	----	----	----	----
7	----	----	---	----	--	----	--	----	----	----	----	----
8	7'-4	6'-0	6"	6'-8	20	3'-2	28	6'-11	1'-0	2'-6	3.127	385
9	7'-10	6'-6			22		30	7'-5			3.303	417
10	8'-4	7'-0			22		30	7'-11			3.479	427
11	8'-10	7'-6			24		32	8'-5			3.655	458
12	9'-4	8'-0			24		32	8'-11			3.831	468
13	9'-10	8'-6			26		34	9'-5			4.007	499
14	10'-4	9'-0			26		34	9'-11			4.182	510
15	10'-10	9'-6			28		36	10'-5			4.358	541
16	11'-4	10'-0			28		36	10'-11			4.534	551
17	11'-10	10'-6			30		38	11'-5			4.710	582
18	12'-4	11'-0	6"	6'-8	30	3'-2	38	11'-11	1'-0	2'-6	4.886	592
19	12'-11	11'-6	7"	6'-10	32	3'-4	40	12'-6	1'-1	2'-7	5.988	638
20	13'-5	12'-0			32		40	13'-0			6.197	648
21	13'-11	12'-6			34		42	13'-6			6.406	680
22	14'-5	13'-0			34		42	14'-0			6.615	690
23	14'-11	13'-6			36		44	14'-6			6.824	722
24	15'-5	14'-0			36		44	15'-0			7.032	733
25	15'-11	14'-6			38		46	15'-6			7.241	764
26	16'-5	15'-0			38		46	16-0			7.450	775
27	16'-11	15'-6			40		48	16'-6			7.659	806
28	17'-5	16'-0			40		48	17'-0			7.868	817
29	17'-11	16'-6			42		50	17'-6			8.076	848
30	18'-5	17'-0			42		50	18'-0			8.285	859
31	18'-11	17'-6			44		52	18'-6			8.494	890
32	19'-5	18'-0			44		52	19'-0			8.703	901
33	19'-11	18'-6			46		54	19'-6			8.912	932
34	20'-5	19'-0			46		54	20'-0			9.120	948
35	20'-11	19'-6			48		56	20'-6			9.329	975
36	21'-5	20'-0			48		56	21'-0			9.538	985
37	21'-11	20'-6			50		58	21'-6			9.747	1017
38	22'-5	21'-0	7"	6'-10	50	3'-4	58	22'-0	1'-1	2'-7	9.965	1027
39	23'-0	21'-6	8"	7'-0	52	3'-6	60	22'-7	1'-2	2'-8	11.808	1080
40	23'-6	22'-0			52		60	23'-1			12.051	1091
41	24'-0	22'-6			54		62	23'-7			12.294	1123
42	24'-6	23'-0			54		62	24'-1			12.536	1134
43	25'-0	23'-6			56		64	24'-7			12.779	1166
44	25'-6	24'-0			56		64	25'-1			13.022	1176
45	26'-0	24'-6			58		66	25'-7			13.265	1208
46	26'-6	25'-0			58		66	26'-1			13.508	1219
47	27'-0	25'-6			60		68	26'-7			13.750	1251
48	27'-6	26'-0			60		68	27'-1			13.993	1262
49	28'-0	26'-6			62		70	27'-7			14.236	1294
50	28'-6	27'-0			62		70	28'-1			14.479	1304
51	29'-0	27'-6			64		72	28'-7			14.722	1337
52	29'-6	28'-0			64		72	29'-1			14.964	1347
53	30'-0	28'-6			66		74	29'-7			15.207	1380
54	30'-6	29'-0	8"	7'-0	66	3'-6	74	30'-1	1'-2	2'-8	15.450	1390

N=6 S=8 W=6'-0 M=2'-4

TABLE 1 : CONCRETE DISPLACED BY PIPES:

PIPE SIZES R.C.P.	PIPE SIZES C.M.P.	6" CU. YD.	7" CU. YD.	8" CU. YD.
42"	48"	0.233	0.271	0.310
48"	60"	0.340	0.396	0.453
54"	66"	0.427	0.498	0.569
60"	72"	0.524	0.611	0.698
	54"	0.295	0.344	0.393

TABLE 2 : MAXIMUM PIPE SIZE TO BE USED:

	R.C.P.	C.M.P.
COLUMN A	42"	48"
COLUMN B	48"	60"
COLUMN C	54"	66"
COLUMN D	60"	72"

TABLE 3 : CONCRETE NEEDED FOR FORMED INVERT:

PIPES SIZES	R.C.P. CU. YD.	C.M.P. CU. YD.
42"	0.273	----
48"	0.428	0.143
54"	----	----
60"	0.617	0.223
66"	----	0.270
72"	----	0.322

STRUCTURAL STEEL :

RECTANGULAR GRATE & FRAME = 340 LBS
BICYCLE - SAFE GRATE & FRAME = 365 LBS.
SOLID COVER & FRAME = 474 LBS.

REVISIONS

NO.	DATE	APPR.	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — JULY 03,2002 DATE
CHAIRMAN STANDARDS COMMITTEE APPROVED — JULY 03,2002 DATE
DEPUTY DIRECTOR

STANDARD CATCH BASIN AND CLEANOUT BOX
SCHEDULE OF INSTALLATION
42" TO 60" RCP
48" TO 72" CMP
STANDARD DRAWING TITLE

STD DWG
CB 10C