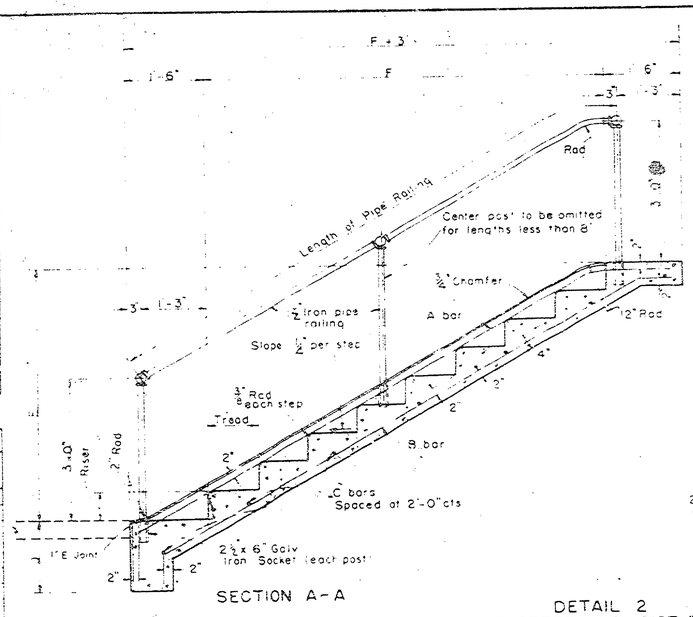
TABLE OF DIMENSIONS AND QUANTITIES

STEPS FOR APPROX. 1 ON 1¾ SLOPE

No. of Risers	Riser = 8" Tread = 14" C	E	F	G	1½" Pipe Railing Total Length	H = 4' No. of Bars A	B	C	Length of Bars A	B	C	Total Steel Pounds	Total Conc. Cu. Yds.	H = 5' No. of Bars A	B	C	Length of Bars A	B	C	Total Steel Pounds	Total Conc. Cu. Yds.	H = 6' No. of Bars A	B	C	Length of Bars A	B	C	Total Steel Pounds	Total Conc. Cu. Yds.
2	3"	1'-2"	3"	6"	—	2	5	3	4'-10"	4'-2"	4'-8"	30	0.6	2	6	3	4'-10"	4'-2"	5'-8"	35	0.7	2	7	3	4'-10"	4'-2"	6'-8"	39	0.8
3	3"	1'-9"	2'-0"	6"	—	2	5	3	6'-0"	5'-4"	4'-8"	35	0.7	2	6	3	6'-0"	5'-4"	5'-8"	41	0.9	2	7	3	6'-0"	5'-4"	6'-8"	46	1.0
4	3"	2'-4"	3'-0"	6"	10'-4"	2	5	4	7'-2"	6'-6"	4'-8"	44	0.9	2	6	4	7'-2"	6'-6"	5'-8"	51	1.0	2	7	4	7'-2"	6'-6"	6'-8"	58	1.2
5	3"	2'-11"	4'-0"	8"	11'-6"	2	5	5	8'-4"	7'-7"	4'-8"	52	1.0	2	6	5	8'-4"	7'-7"	5'-8"	60	1.2	2	7	5	8'-4"	7'-7"	6'-8"	69	1.4
6	3"	3'-5"	5'-0"	8"	14'-10"	2	5	5	9'-6"	8'-9"	4'-8"	58	1.2	2	6	5	9'-6"	8'-9"	5'-8"	67	1.4	2	7	5	9'-6"	8'-9"	6'-8"	76	1.6
7	3"	4'-0"	6'-0"	8"	17'-2"	2	5	6	10'-7"	9'-10"	4'-8"	66	1.3	2	6	6	10'-7"	9'-10"	5'-8"	76	1.5	2	7	6	10'-7"	9'-10"	6'-8"	87	1.8
8	3"	4'-8"	7'-0"	10"	19'-6"	2	5	6	11'-9"	10'-11"	4'-8"	71	1.5	2	6	6	11'-9"	10'-11"	5'-8"	82	1.7	2	7	6	11'-9"	10'-11"	6'-8"	93	2.0
9	3"	5'-3"	8'-0"	10"	21'-10"	2	5	7	13'-2"	12'-4"	4'-8"	81	1.6	2	6	7	13'-2"	12'-4"	5'-8"	94	1.9	2	7	7	13'-2"	12'-4"	6'-8"	107	2.2
10	3"	5'-10"	8'-0"	10"	24'-2"	2	5	7	14'-4"	13'-6"	4'-8"	86	1.8	2	6	7	14'-4"	13'-6"	5'-8"	100	2.1	2	7	7	14'-4"	13'-6"	6'-8"	113	2.4
11	3"	6'-6"	9'-0"	12"	26'-6"	2	5	8	15'-6"	14'-7"	4'-8"	94	2.0	2	6	8	15'-6"	14'-7"	5'-8"	109	2.3	2	7	8	15'-6"	14'-7"	6'-8"	125	2.7
12	3"	7'-0"	10'-0"	12"	29'-8"	2	5	8	16'-8"	15'-9"	4'-8"	100	2.1	2	6	8	16'-8"	15'-9"	5'-8"	116	2.5	2	7	8	16'-8"	15'-9"	6'-8"	132	2.8
13	3"	7'-7"	10'-0"	12"	31'-0"	2	5	9	18'-1"	17'-2"	4'-8"	110	2.3	2	6	9	18'-1"	17'-2"	5'-8"	127	2.7	2	7	9	18'-1"	17'-2"	6'-8"	145	3.1
14	3"	8'-2"	11'-0"	12"	33'-4"	2	5	10	19'-3"	18'-3"	4'-8"	118	2.4	2	6	10	19'-3"	18'-3"	5'-8"	137	2.9	2	7	10	19'-3"	18'-3"	6'-8"	156	3.3
15	3"	8'-9"	11'-0"	12"	35'-8"	2	5	10	20'-4"	19'-4"	4'-8"	123	2.5	2	6	10	20'-4"	19'-4"	5'-8"	143	3.1	2	7	10	20'-4"	19'-4"	6'-8"	162	3.6
16	3"	9'-4"	12'-0"	15"	38'-0"	2	5	11	21'-6"	20'-6"	4'-8"	131	2.8	2	6	11	21'-6"	20'-6"	5'-8"	153	3.3	2	7	11	21'-6"	20'-6"	6'-8"	174	3.8
17	3"	9'-11"	12'-0"	15"	40'-4"	2	5	12	22'-8"	21'-8"	4'-8"	140	2.9	2	6	12	22'-8"	21'-8"	5'-8"	163	3.4	2	7	12	22'-8"	21'-8"	6'-8"	185	4.0
18	3"	10'-6"	12'-0"	15"	42'-8"	2	5	12	23'-10"	22'-10"	4'-8"	146	3.1	2	6	12	23'-10"	22'-10"	5'-8"	159	3.6	2	7	12	23'-10"	22'-10"	6'-8"	192	4.1

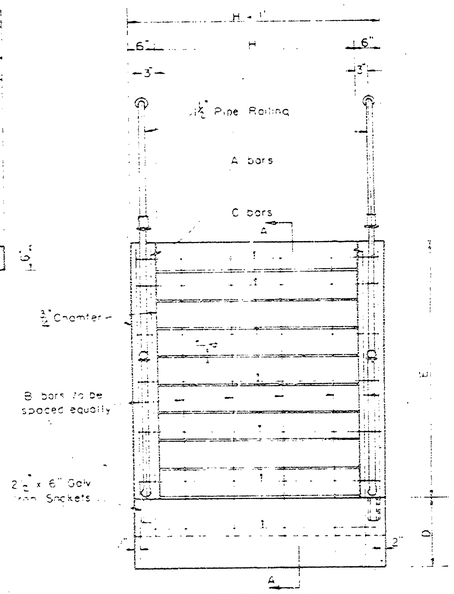
STEPS FOR 1 ON 2 SLOPE

No. of Risers	Riser = 8" Tread = 12" E	F	G	1½" Pipe Railing Total Length	H = 4' No. of Bars A	B	C	Length of Bars A	B	C	Total Steel Pounds	Total Conc. Cu. Yds.	H = 5' No. of Bars A	B	C	Length of Bars A	B	C	Total Steel Pounds	Total Conc. Cu. Yds.	H = 6' No. of Bars A	B	C	Length of Bars A	B	C	Total Steel Pounds	Total Conc. Cu. Yds.
2	1'-0"	1'-0"	6"	—	2	5	3	4'-6"	3'-11"	4'-8"	28	0.5	2	6	3	4'-6"	3'-11"	5'-8"	33	0.6	2	7	3	4'-6"	3'-11"	6'-8"	38	0.7
3	1'-0"	1'-6"	2'-0"	6"	—	2	5	3	5'-7"	5'-0"	4'-8"	34	0.7	2	6	3	5'-7"	5'-0"	5'-8"	39	0.8	2	7	3	5'-7"	5'-0"	6'-8"	44	0.9
4	1'-0"	2'-0"	3'-0"	6"	10'-0"	2	5	4	6'-9"	6'-2"	4'-8"	42	0.8	2	6	4	6'-9"	6'-2"	5'-8"	49	0.9	2	7	4	6'-9"	6'-2"	6'-8"	56	1.1
5	1'-3"	2'-6"	4'-0"	8"	12'-4"	2	5	5	8'-1"	7'-5"	4'-8"	51	1.0	2	6	5	8'-1"	7'-5"	5'-8"	59	1.1	2	7	5	8'-1"	7'-5"	6'-8"	68	1.3
6	1'-3"	3'-0"	5'-0"	8"	14'-6"	2	5	5	9'-3"	8'-6"	4'-8"	58	1.1	2	6	5	9'-3"	8'-6"	5'-8"	65	1.3	2	7	5	9'-3"	8'-6"	6'-8"	74	1.5
7	1'-3"	3'-6"	6'-0"	8"	16'-8"	2	5	6	10'-4"	9'-8"	4'-8"	65	1.2	2	6	6	10'-4"	9'-8"	5'-8"	75	1.4	2	7	6	10'-4"	9'-8"	6'-8"	86	1.7
8	1'-3"	4'-0"	7'-0"	10"	19'-0"	2	5	6	11'-5"	10'-8"	4'-8"	70	1.4	2	6	6	11'-5"	10'-8"	5'-8"	81	1.6	2	7	6	11'-5"	10'-8"	6'-8"	92	1.9
9	1'-6"	4'-6"	8'-0"	10"	21'-2"	2	5	7	12'-10"	12'-0"	4'-8"	79	1.5	2	6	7	12'-10"	12'-0"	5'-8"	92	1.8	2	7	7	12'-10"	12'-0"	6'-8"	104	2.1
10	1'-6"	5'-0"	9'-0"	10"	23'-4"	2	5	8	13'-11"	13'-2"	4'-8"	88	1.7	2	6	8	13'-11"	13'-2"	5'-8"	102	2.0	2	7	8	13'-11"	13'-2"	6'-8"	116	2.3
11	1'-6"	5'-6"	10'-0"	12"	25'-8"	2	5	8	15'-1"	14'-2"	4'-8"	92	1.8	2	6	8	15'-1"	14'-2"	5'-8"	107	2.2	2	7	8	15'-1"	14'-2"	6'-8"	122	2.5
12	1'-6"	6'-0"	11'-0"	12"	27'-10"	2	5	9	16'-2"	15'-3"	4'-8"	101	2.0	2	6	9	16'-2"	15'-3"	5'-8"	117	2.3	2	7	9	16'-2"	15'-3"	6'-8"	133	2.7
13	1'-9"	6'-6"	12'-0"	12"	30'-2"	2	5	9	17'-6"	16'-8"	4'-8"	107	2.1	2	6	9	17'-6"	16'-8"	5'-8"	124	2.5	2	7	9	17'-6"	16'-8"	6'-8"	141	2.9
14	1'-9"	7'-0"	13'-0"	12"	32'-4"	2	5	10	18'-8"	17'-9"	4'-8"	115	2.3	2	6	10	18'-8"	17'-9"	5'-8"	134	2.7	2	7	10	18'-8"	17'-9"	6'-8"	152	3.1
15	1'-9"	7'-6"	14'-0"	15"	34'-6"	2	5	10	19'-9"	18'-9"	4'-8"	120	2.5	2	6	10	19'-9"	18'-9"	5'-8"	139	2.9	2	7	10	19'-9"	18'-9"	6'-8"	159	3.3
16	1'-9"	8'-0"	15'-0"	15"	36'-10"	2	5	11	20'-11"	19'-10"	4'-8"	128	2.6	2	6	11	20'-11"	19'-10"	5'-8"	149	3.0	2	7	11	20'-11"	19'-10"	6'-8"	170	3.5
17	1'-9"	8'-6"	16'-0"	15"	39'-0"	2	5	12	22'-0"	21'-0"	4'-8"	137	2.7	2	6	12	22'-0"	21'-0"	5'-8"	159	3.2	2	7	12	22'-0"	21'-0"	6'-8"	181	3.7
18	1'-9"	9'-0"	17'-0"	15"	41'-4"	2	5	12	23'-2"	22'-1"	4'-8"	142	2.8	2	6	12	23'-2"	22'-1"	5'-8"	165	3.4	2	7	12	23'-2"	22'-1"	6'-8"	188	3.9



SECTION A-A

DETAIL 2
CONCRETE STEPS WITH PIPE RAILING
Scale ½" = 1'-0"



ELEVATION

GENERAL NOTES

~~The material and workmanship shall be in accordance with the current Michigan State Highway Department Standard Specifications.~~

Concrete shall be Grade "A" concrete. All edges shall be chamfered ¾" where chamfer is shown.

1½" Wrought Iron Pipe shall be used for railing and posts. Fittings shall be of the malleable iron adjustable type. Welded joints (ground smooth) may be substituted for the malleable iron adjustable type. Posts shall be set in 2½" galvanized iron sockets and calked or poured with lead. After setting the railing shall be painted with one coat of ~~No. 1a~~ red lead paint and two coats of paint mixture ~~No. 2a~~.

Pipe railing shall be measured in running feet of railing and will be paid for at the contract unit price per linear foot which price shall be payment in full for furnishing the materials, painting, and constructing the pipe railing complete including posts and fittings.

Expansion joints shall be placed at end of steps where steps abut proposed or existing sidewalk.

All steel reinforcement shall be ~~#5 Del Bars~~. Splices in reinforcing bars shall have a minimum length of 40 diameters.

Plans for steps having other combinations of treads and risers will be furnished on request.

SURVEYED BY		DRAWN BY		NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF NATURAL RESOURCES	CONCRETE STEP PLAN (SHEET TITLE)	MC LAIN STATE PARK (AREA OR PARK)	PROJECT NO. 24-1524		
DESIGNED BY		CHECKED BY		1.				3.						CONCRETE RAMP & STEPS (PROJECT)	SHEET 2 OF 2	PLAN NO. E-112	
	DATE		DATE	2.				4.									