

GENERAL NOTES

CATCH BASINS

CONCRETE used in catch basins shall be in accordance with General Specifications of the City of San Bernardino.

REINFORCING STEEL may be placed in any position around the walls or floor when consistent with the improvement plan.

CURVATURE of the lip and shoulders of gutter opening shall be formed by curved forms and shall not be made by plastering.

FLOOR of basins shall be finished steel, fluted metal and shall slope from all directions to the curb, for type D catch basin a base of floor parallel with curb shall be 1/2" unless otherwise specified.

MANHOLE shall be placed along back wall near outlet.

OUTLET pipe shall be trimmed to the final slope and length to the concrete is required.

PROTECTION BAR: horizontal plate round galvanized steel, 3 feet long, 1/2" thick, 1/2" wide, 1/2" high, used when curb is 4.5 inches or more.

REINFORCING STEEL shall be #3 hot round deformed bars.

STEPS: 3 inch diameter galvanized steel (3/4 inch apart) required when V is greater than 4 feet 6 inches from the curb shall be 6 inches below the surface and 3 feet 6 inches from the curb. Only one step (12 inches from the curb) if V is 4 feet 6 inches or less. No steps required if V is 4 feet 6 inches or less. Steps shall be angled so that they are 5 inches in height at the curb.

WEAPONS: 1/2 inch plain round galvanized steel supports shall be placed 7 feet apart. Straps shall be welded to supports when curb face is 15 inches or more.

BACKFILL of all exposed concrete shall conform in slope, grade, color, finish, and staining to existing prepared curb and work adjacent to the basin.

MANHOLES

CONCRETE of specified (in catch basins) shall be located over center line of manhole shaft.

DEPTH of manhole shall be 48" or less in which case above floor of basin shall be 3 inches above floor of basin. If depth is greater than 48" it shall be 3 inches above floor of basin.

REINFORCING STEEL shall be #3 hot round deformed bars.

DETAILS: 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 10.10, 10.11, 10.12, 10.13, 10.14, 10.15, 10.16, 10.17, 10.18, 10.19, 10.20, 10.21, 10.22, 10.23, 10.24, 10.25, 10.26, 10.27, 10.28, 10.29, 10.30, 10.31, 10.32, 10.33, 10.34, 10.35, 10.36, 10.37, 10.38, 10.39, 10.40, 10.41, 10.42, 10.43, 10.44, 10.45, 10.46, 10.47, 10.48, 10.49, 10.50, 10.51, 10.52, 10.53, 10.54, 10.55, 10.56, 10.57, 10.58, 10.59, 10.60, 10.61, 10.62, 10.63, 10.64, 10.65, 10.66, 10.67, 10.68, 10.69, 10.70, 10.71, 10.72, 10.73, 10.74, 10.75, 10.76, 10.77, 10.78, 10.79, 10.80, 10.81, 10.82, 10.83, 10.84, 10.85, 10.86, 10.87, 10.88, 10.89, 10.90, 10.91, 10.92, 10.93, 10.94, 10.95, 10.96, 10.97, 10.98, 10.99, 10.100.

STEPS shall be 1/4" thick galvanized steel one on each side not less than 6 inches from the walls of manhole unless otherwise shown in the drawings. They shall be 10" on centers. Dimensions shall be not more than 2'-6" above height.

RINGS, HOUSING, AND WELLS for access shafts shall be seated in mortar and neatly pointed on inside of shaft.

STATIONS of manholes shown on improvement plan shall be of center of shaft. Elevations shown at stations refer to prolonged vertical grade lines.

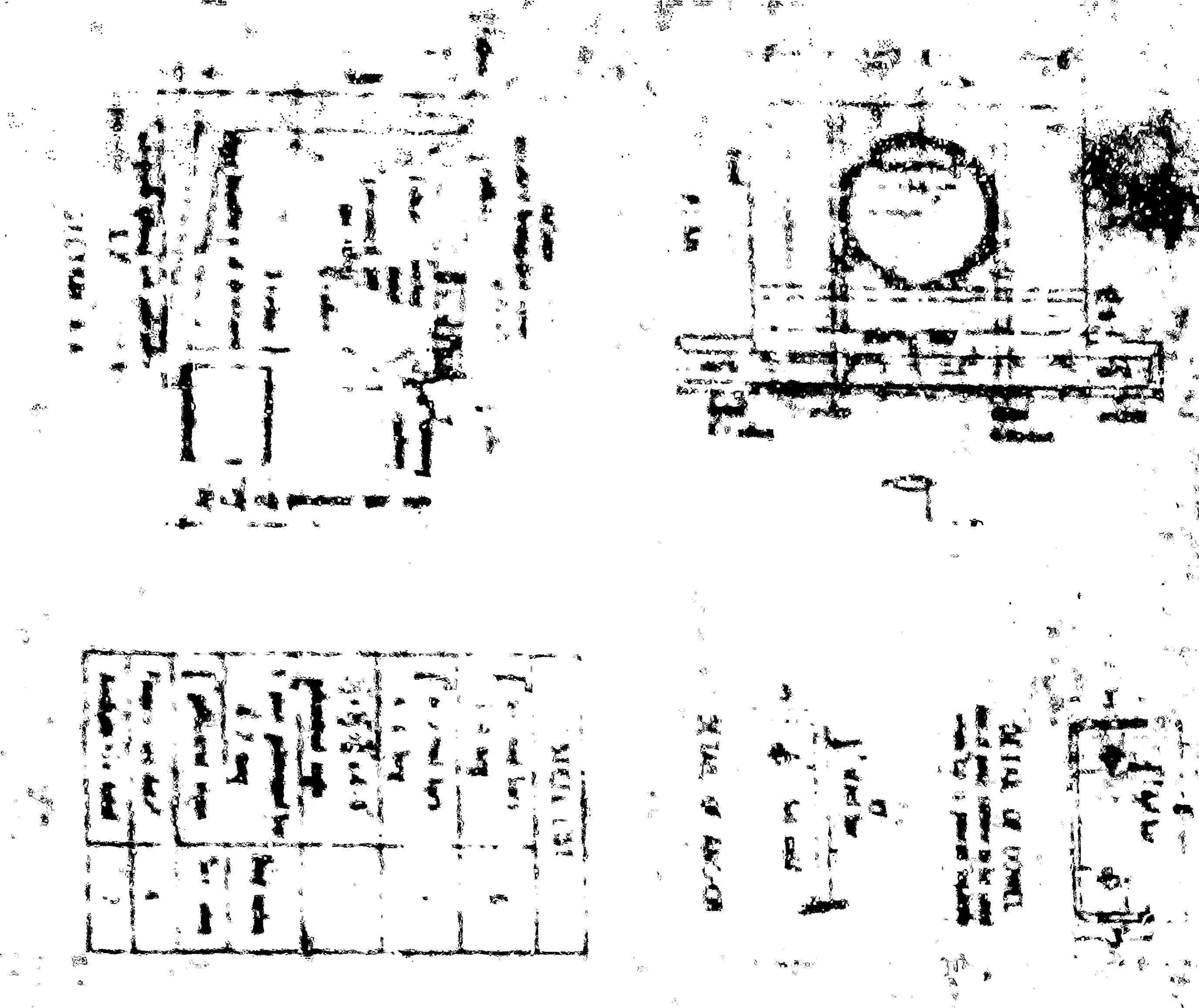
FLOOR of manhole shall be steel-framed to top of shaft.

BODY of manhole shall be finished in one continuous operation, except that the contractor shall have the option of placing all the remaining line a concrete section with a top individual keyway.

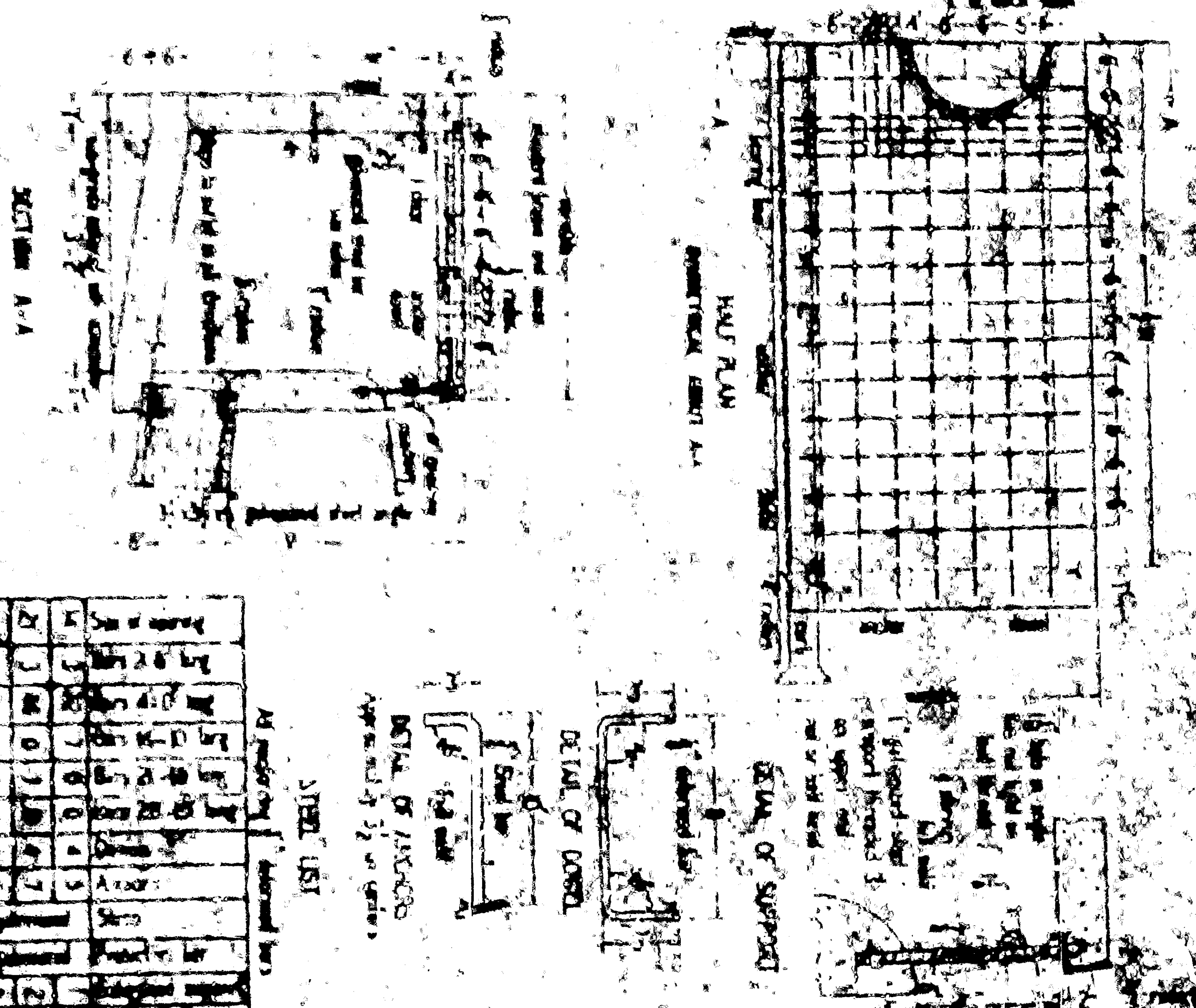
Depth	10' 0"	12' 0"	14' 0"	16' 0"	18' 0"	20' 0"	22' 0"	24' 0"	26' 0"	28' 0"	30' 0"
Area	10.0	14.4	19.6	25.6	32.4	39.8	47.8	56.4	65.6	75.4	85.8
Perimeter	31.4	42.4	53.4	64.4	75.4	86.4	97.4	108.4	119.4	130.4	141.4
Volume	100.0	172.8	274.4	409.6	579.6	796.4	1060.0	1371.4	1730.4	2137.8	2593.6

Depth of manhole shall be 48" or less in which case above floor of basin shall be 3 inches above floor of basin. If depth is greater than 48" it shall be 3 inches above floor of basin.

CATCH BASIN A

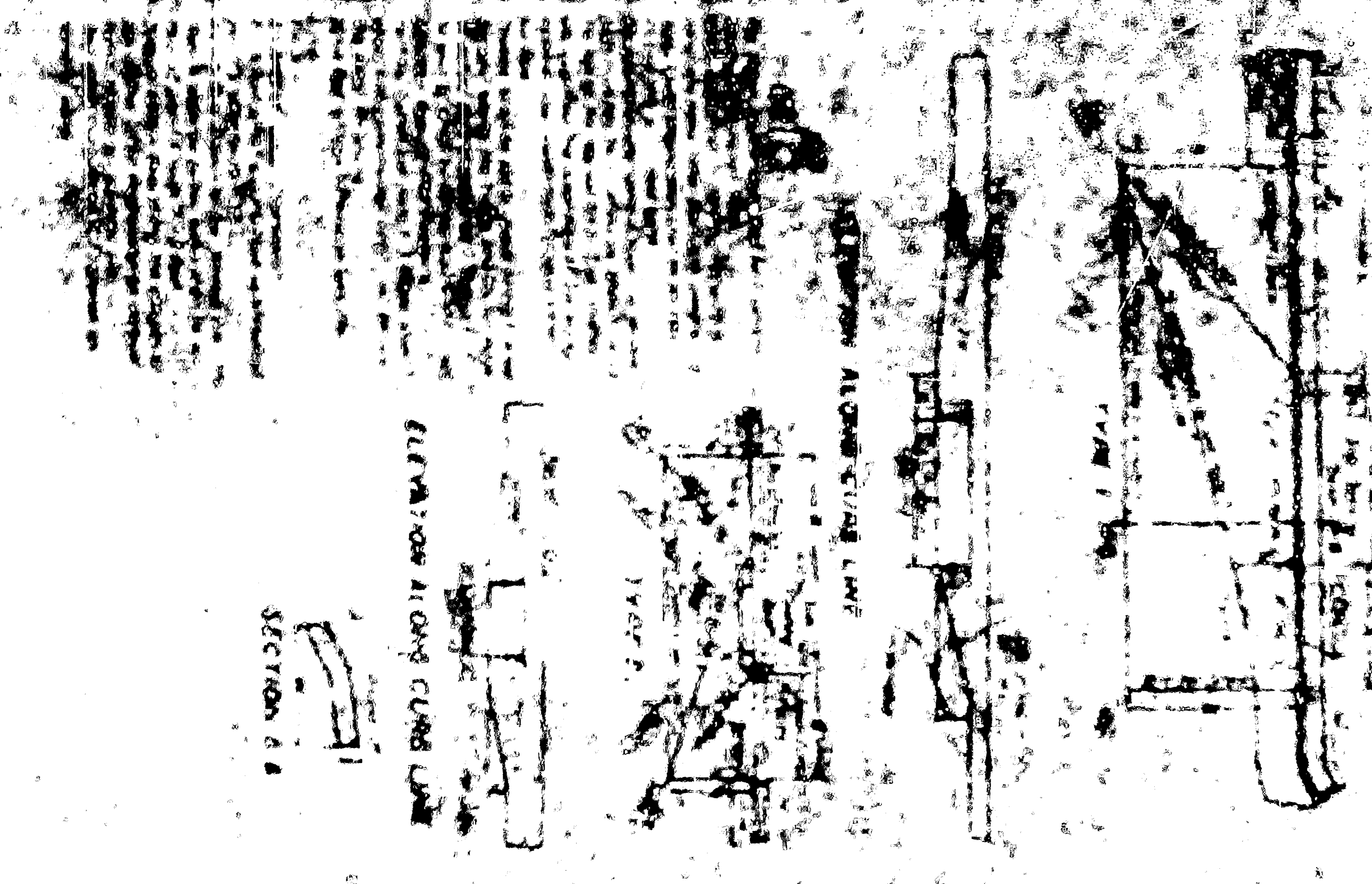


CATCH BASIN B

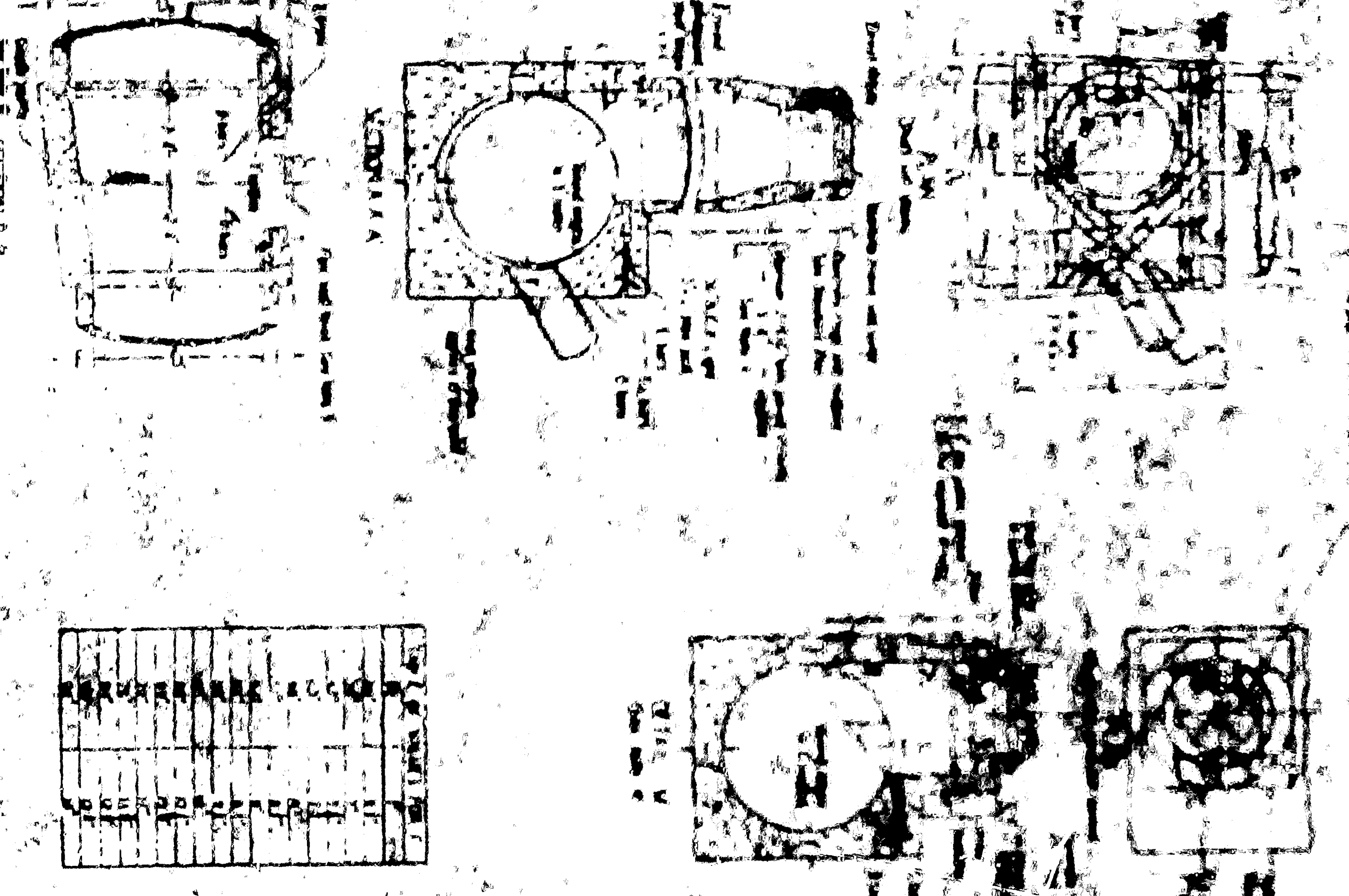


DIMENSIONS
 7'-0" inches if 1'-0" from curb to 7'-0"
 7'-0" inches if 1'-0" from curb to 7'-0"
 7'-0" inches if 1'-0" from curb to 7'-0"

STANDARD LOCAL DEPRESSION MANHOLE OPENING BASINS



MANHOLE



Depth of manhole shall be 48" or less in which case above floor of basin shall be 3 inches above floor of basin. If depth is greater than 48" it shall be 3 inches above floor of basin.

GENERAL NOTES

CATCH BASINS

CONCRETE used in catch basins shall be in accordance with General Specifications of the City of San Bernardino.

REINFORCING STEEL may be placed in any position around the walls of the basin when consistent with the improvement plan.

CURBATURE of the lip and sidewalks of gutter opening shall be formed by curved forms and shall not be made by plastering.

FLOOR of basin shall be given a steel troweled finish and shall slope from all directions to the curb, for type D catch basin a base of floor parallel with curb shall be 1/2" unless otherwise specified.

MANHOLE shall be placed along back wall near outlet.

OUTLET pipe shall be trimmed to the final slope and length before concrete is poured.

PROTECTION BAR: horizontal plain round galvanized steel pipe shall be embedded 5 inches up each end.

REINFORCING STEEL shall be 3/8" round deformed bars.

STEPS: 3" plain round galvanized steel steps (3/4" x 3/4" x 3/4") required when V is greater than 4 feet 6 inches from the curb. One step shall be 12 inches from the curb. If V is 4 feet 6 inches or less, no steps required. If V is 4 feet 6 inches or less, steps shall be spaced not less than 3 inches in width of the basin.

STEPS: 1.1 inch plain round galvanized steel supports shall be placed 7 feet apart. Supports shall be set in concrete with a curb face as 1/2 inch diameter.

REINFORCEMENT of all exposed concrete shall conform in shape, grade, color, finish, and scoring to existing or proposed curb and walk adjacent to the basin.

MANHOLES

CONCRETE of specified (see catch basins) shall be located over center line of manhole shaft.

DEPTH of manhole shall be 4 feet 6 inches or less in which case above floor of basin shall be 3 inches above floor of basin. If manhole depth is greater than 4 feet 6 inches, the shaft shall be 3 inches above floor of basin.

REINFORCING STEEL shall be 3/8" round deformed bars.

DETAILS of manhole shall be in accordance with the specifications of the City of San Bernardino.

REINFORCING STEEL shall be 3/8" round deformed bars.

STEPS shall be 3" plain round galvanized steel steps (3/4" x 3/4" x 3/4") required when V is greater than 4 feet 6 inches from the curb. One step shall be 12 inches from the curb. If V is 4 feet 6 inches or less, no steps required. If V is 4 feet 6 inches or less, steps shall be spaced not less than 3 inches in width of the basin.

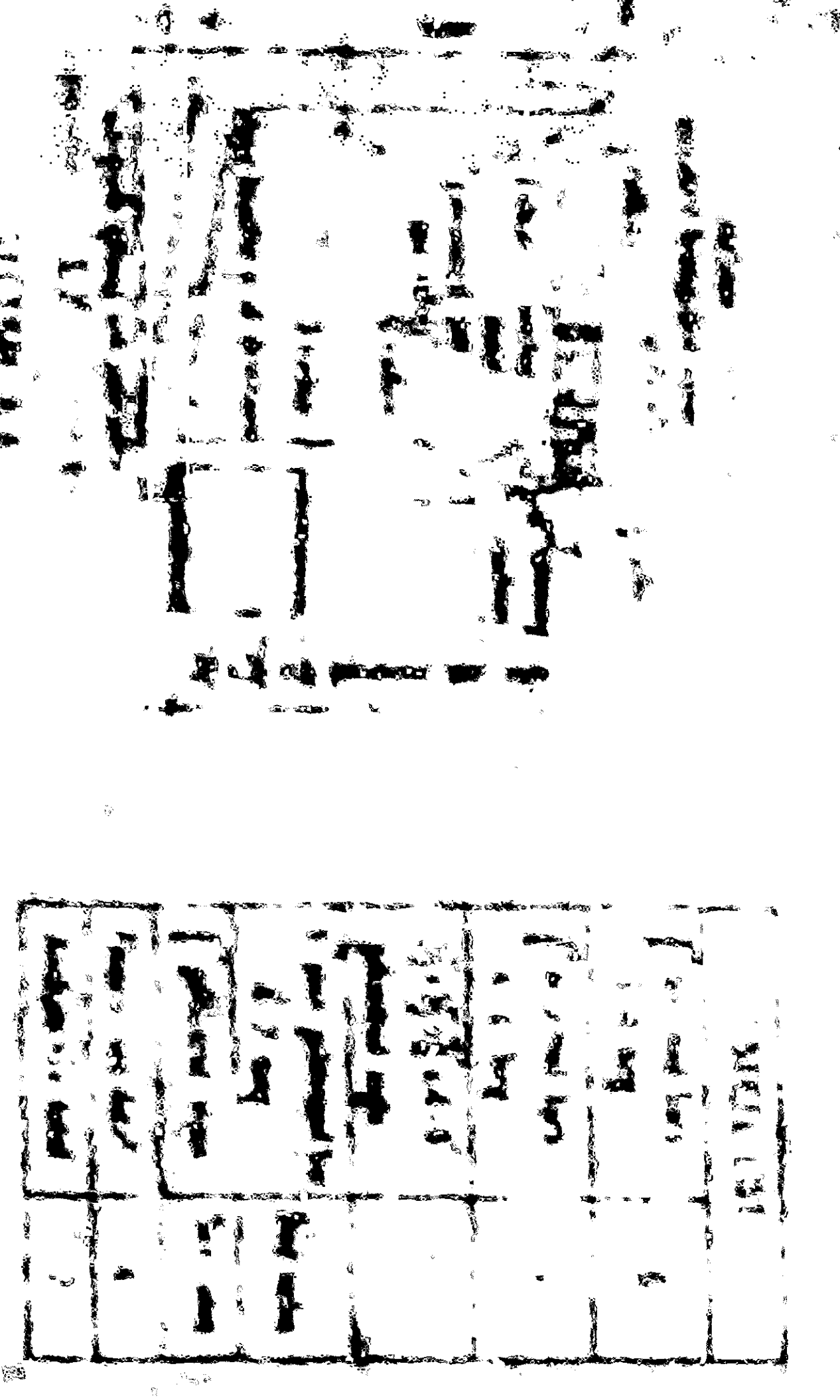
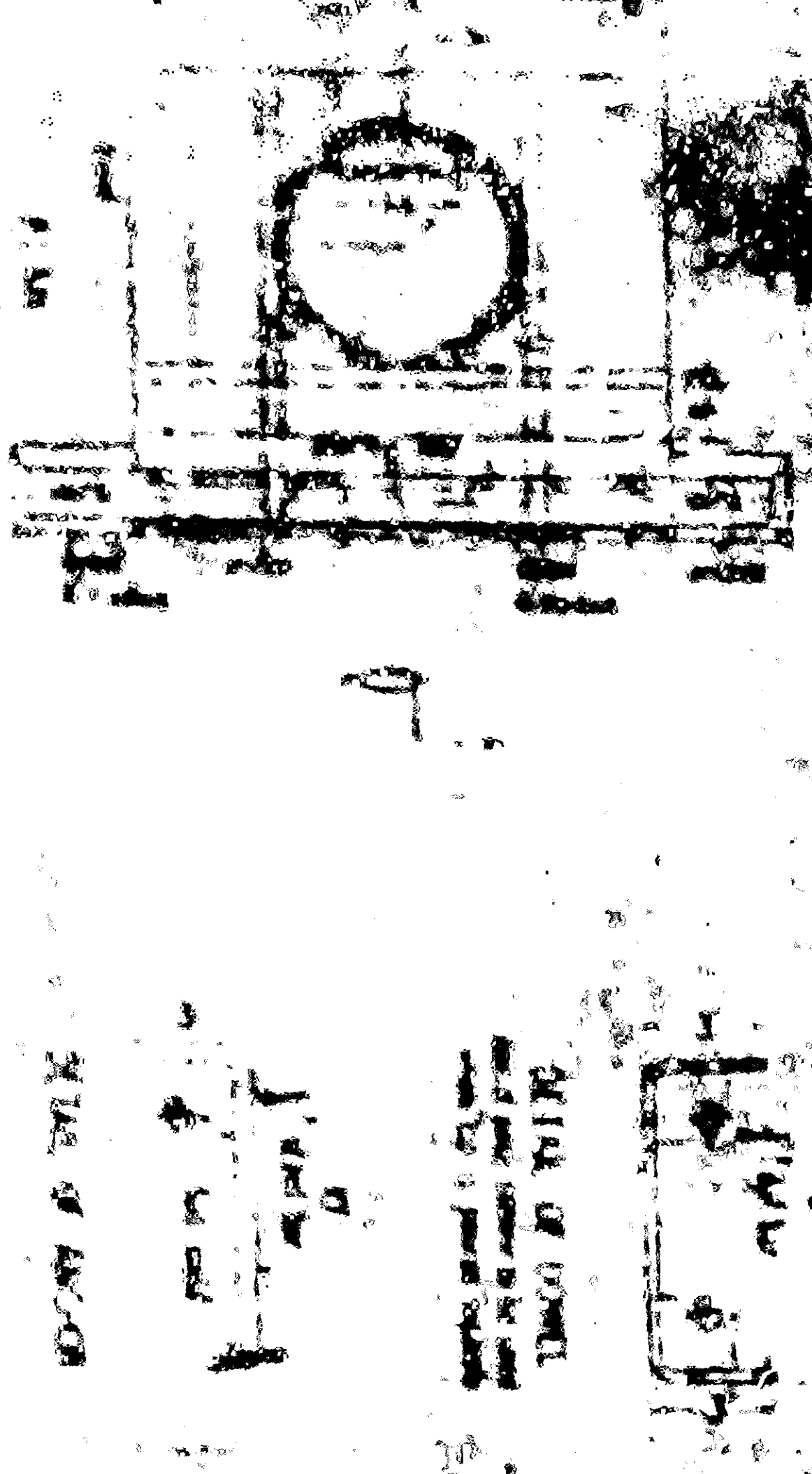
STEPS: 1.1 inch plain round galvanized steel supports shall be placed 7 feet apart. Supports shall be set in concrete with a curb face as 1/2 inch diameter.

REINFORCEMENT of all exposed concrete shall conform in shape, grade, color, finish, and scoring to existing or proposed curb and walk adjacent to the basin.

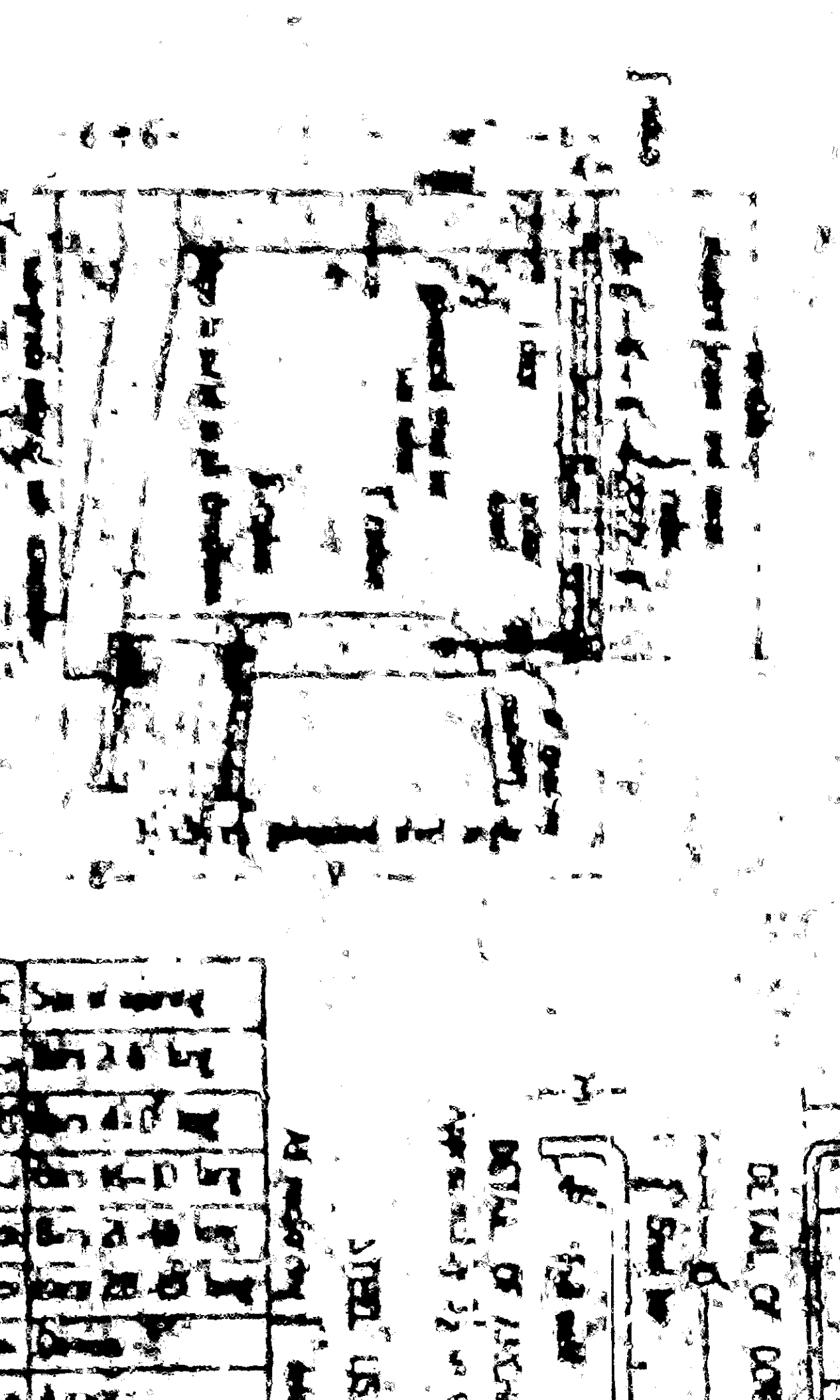
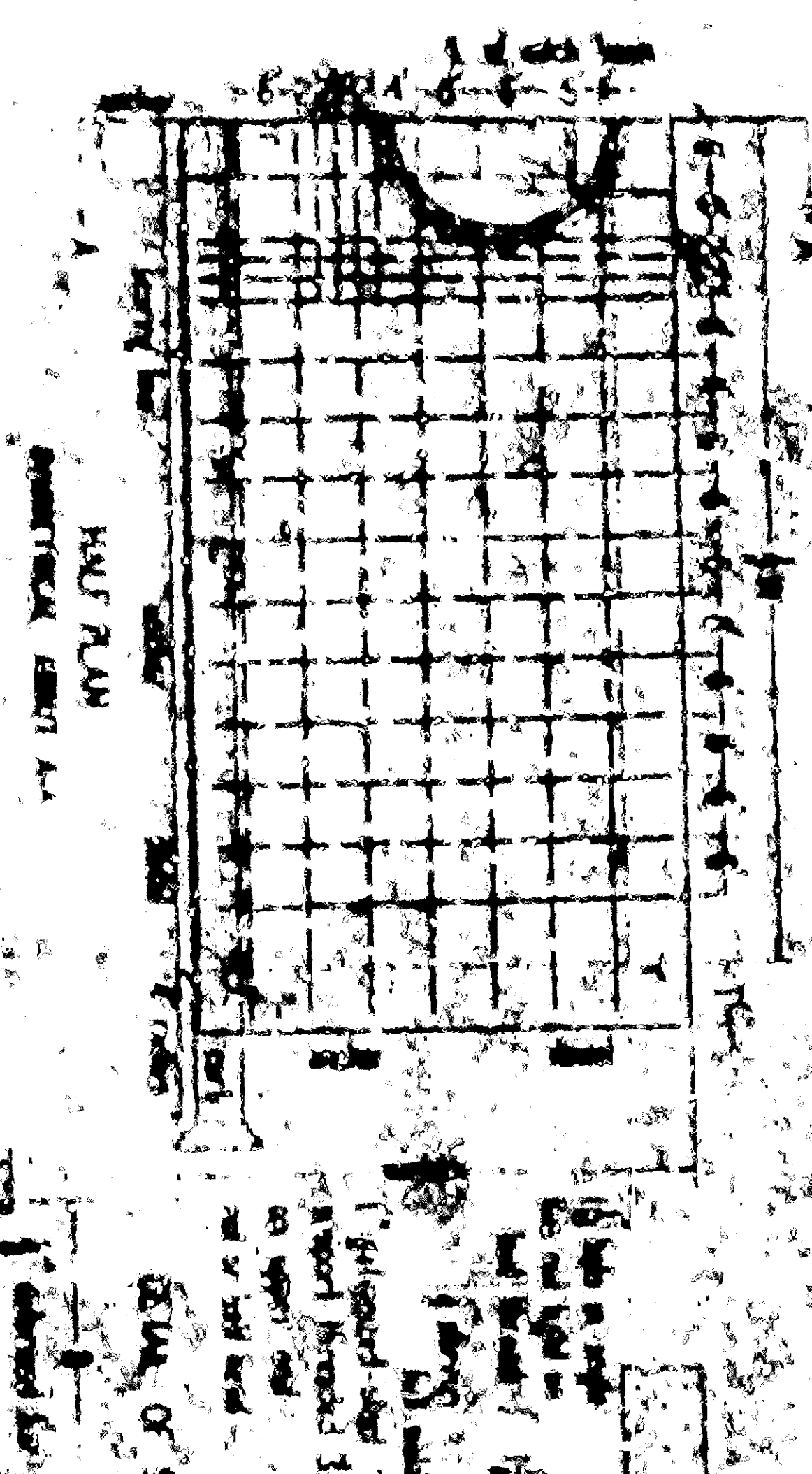
STEEL TABLE FOR MANHOLES

Depth of Manhole (ft)	Length of Shaft (ft)	Area of Shaft (sq ft)	Volume of Shaft (cu ft)	Weight of Shaft (lb)
4.5	4.5	1.77	8.07	110
5.0	5.0	2.00	10.00	135
5.5	5.5	2.25	12.38	165
6.0	6.0	2.52	15.12	200
6.5	6.5	2.81	18.23	240
7.0	7.0	3.12	21.70	285
7.5	7.5	3.45	25.54	335
8.0	8.0	3.80	29.76	390
8.5	8.5	4.17	34.37	450
9.0	9.0	4.56	39.36	515
9.5	9.5	4.97	44.74	585
10.0	10.0	5.40	50.50	660

Depth of manhole shall be steel-troweled to top height. The body of manhole shall be finished to one continuous section, except that the contractor shall have the option of placing all the reinforcing in a single section with a lap of 12 inches.

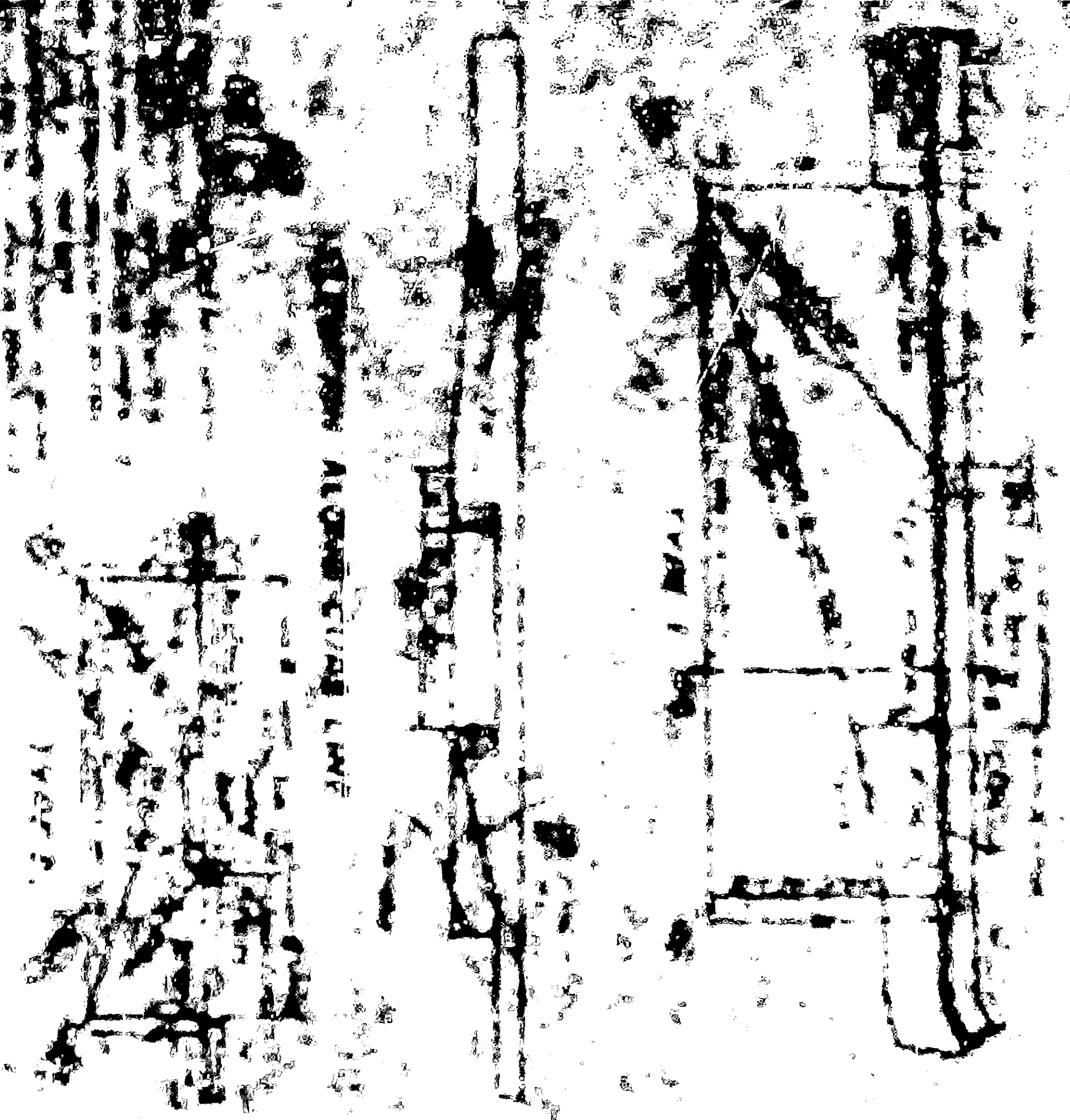


CATCH BASIN A

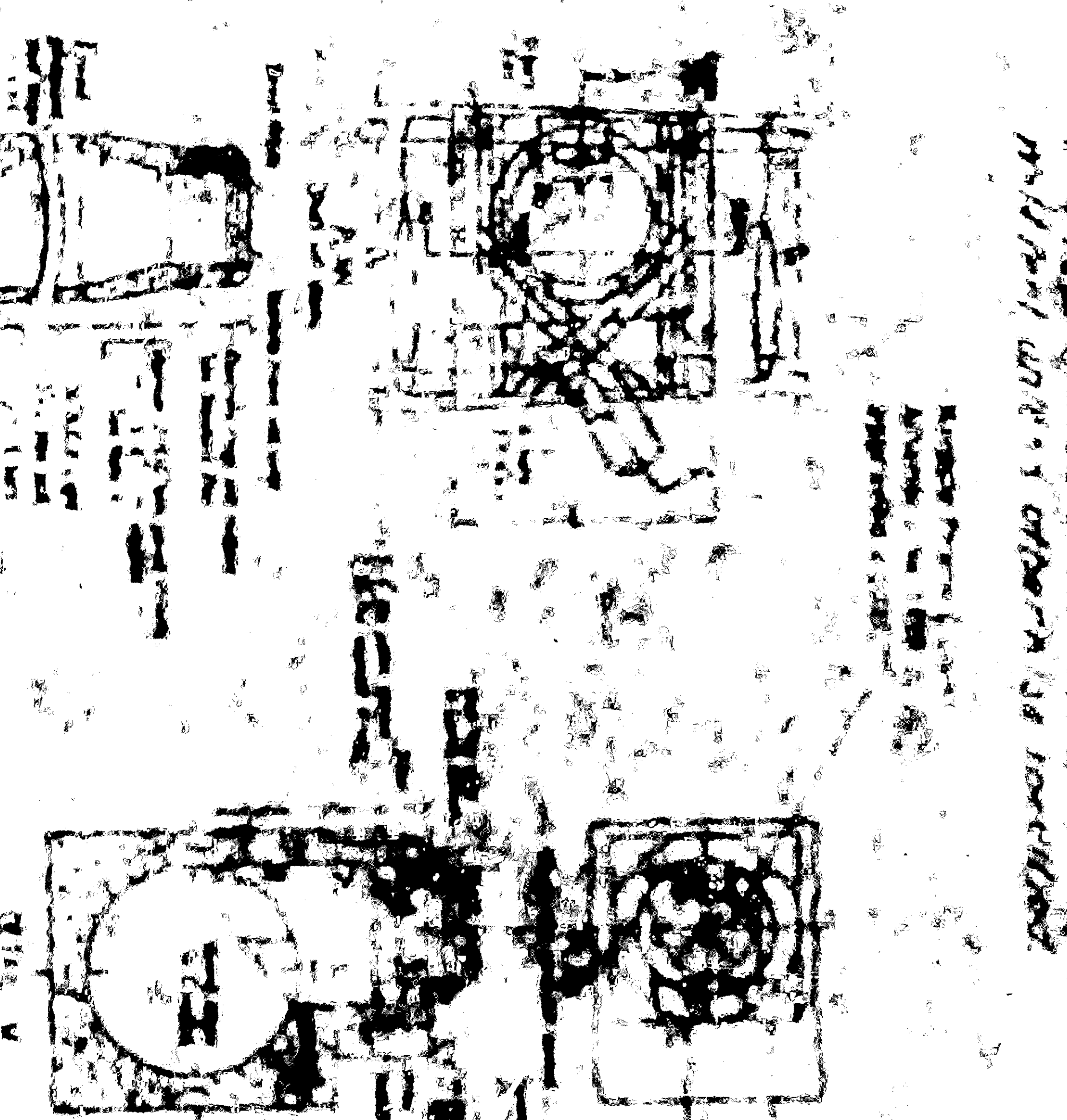


CATCH BASIN B

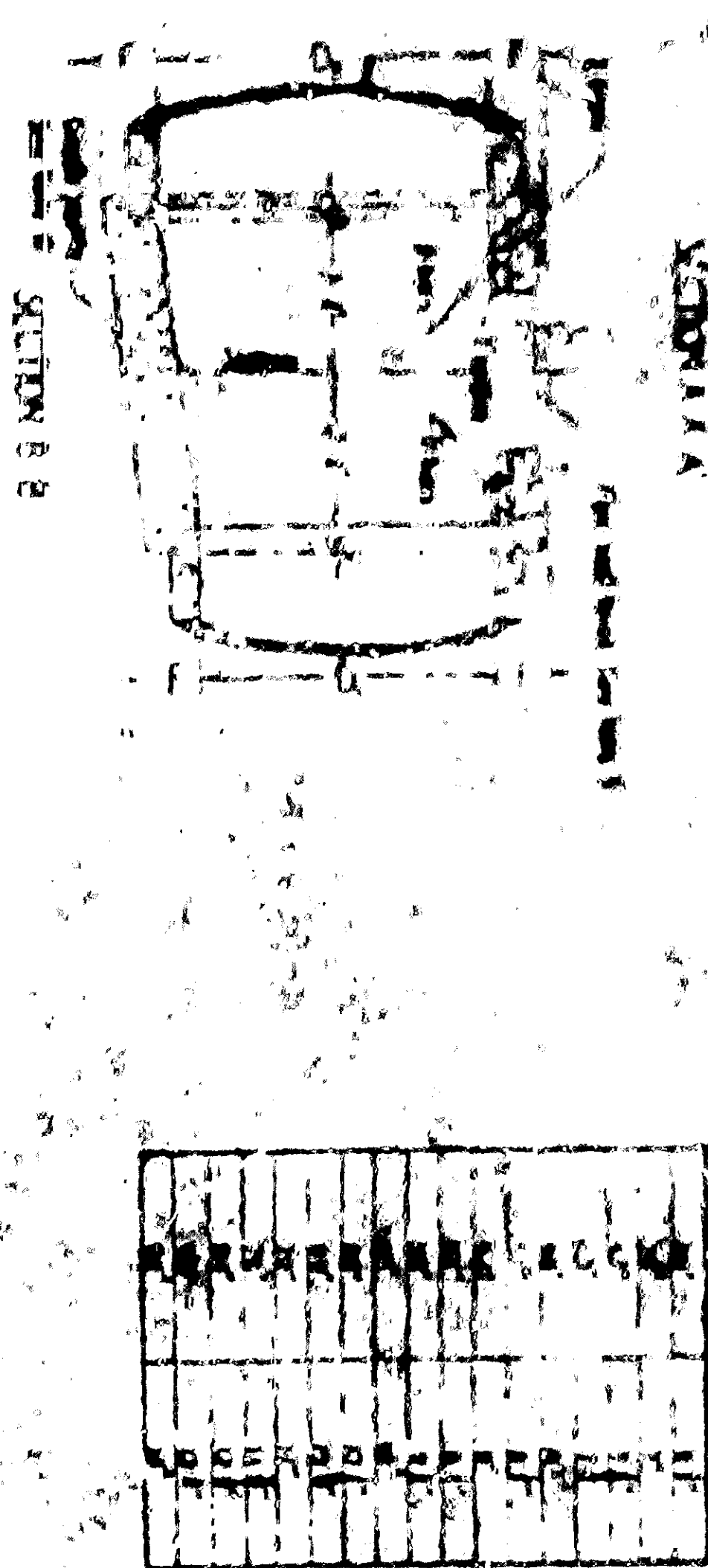
DIMENSIONS
 7-0 inches if 1-1/2 feet or less.
 7-6 inches if 1-1/2 feet or more.
 7-0 inches if 1-1/2 feet or more.
 7-6 inches if 1-1/2 feet or more.



CATCH BASIN C



CATCH BASIN D



HANHOLE

STANDARD LOCAL DEPRESSION MANHOLE OPENING BASINS

CHIT

GENERAL NOTES

CATCH BASINS

CONCRETE used in catch basins shall be in accordance with General Specifications of the City of San Bernardino.

FOUNDATION basins may be placed in any position around the walls or curb they govt. in the proper direction and the position is to be shown on the plans.

CURBATURE of the lip and sidewalks of gutter opening shall be formed by curved forms and shall not be made by plastering.

FLOOR of basins shall be formed of steel, poured final and shall slope from all directions to the curb, for type D catch basin a base of floor parallel with curb shall be 1/2" unless otherwise specified.

HANHOLE shall be formed along curb wall and length of curb concrete is 12 inches.

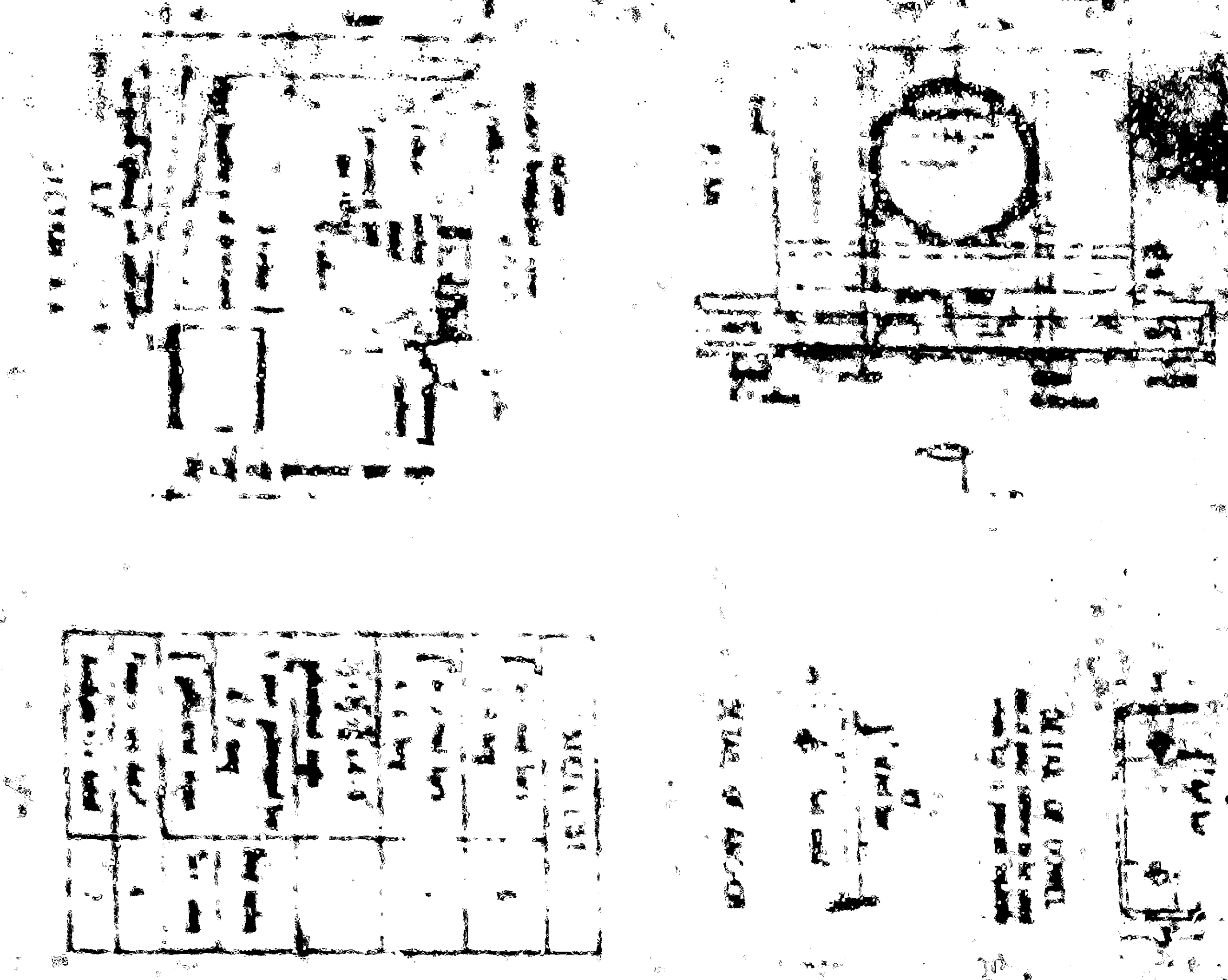
PROTECTION BAR, horizontal, plain round galvanized steel, 3/8" dia. shall be embedded 5 inches up curb and 1/2" into concrete.

REINFORCING STEEL shall be 3/8" plain round deformed bars.

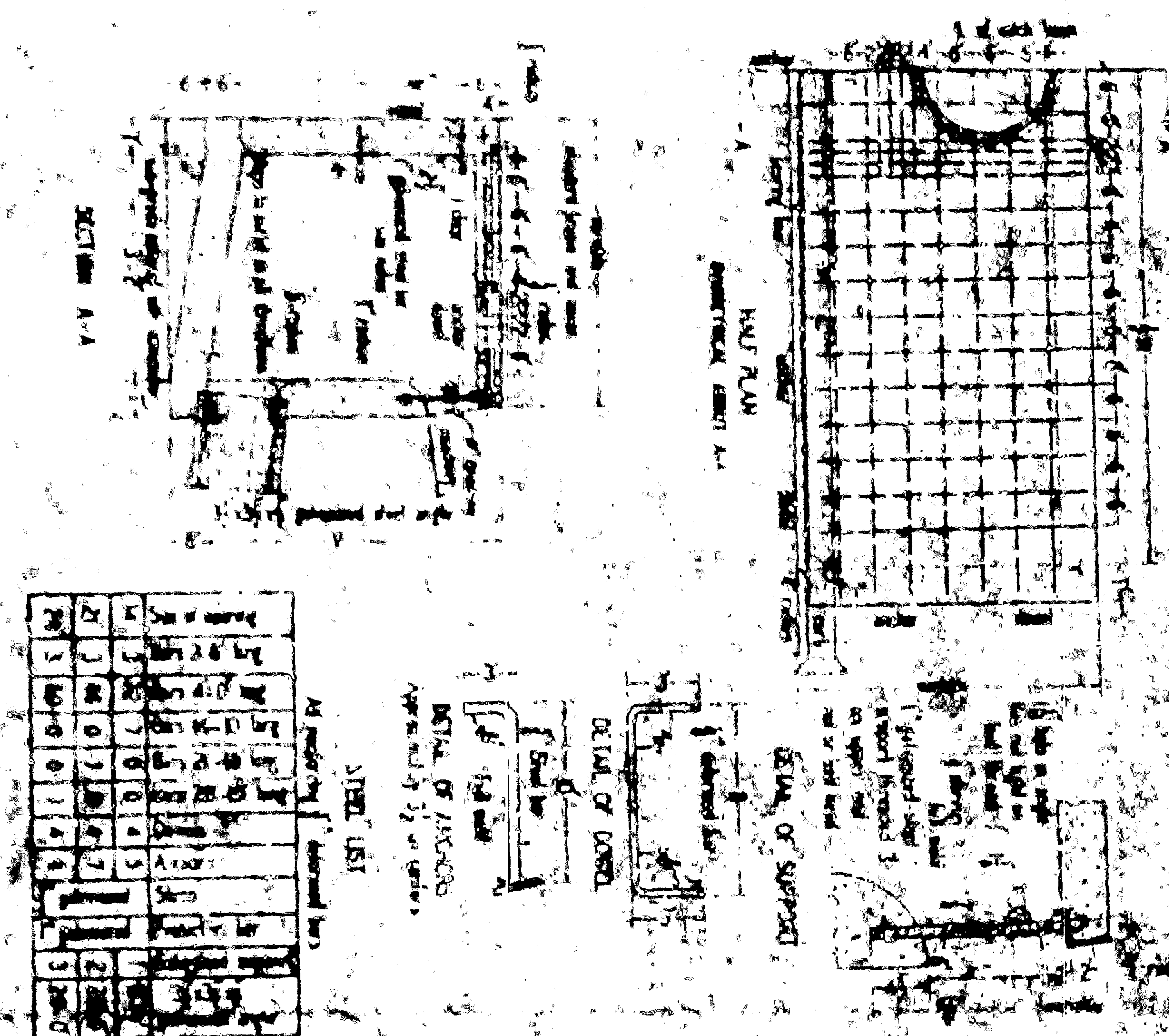
STEPS: 3" plain round galvanized steel (3/8" dia. bars) required when V is greater than 4 feet 6 inches from the curb and 6 inches below the surface and 3 feet 6 inches from the curb. Only one step (2 inches) from the curb if V is 4 feet 6 inches or less. No steps required if V is 4 feet 6 inches or less. Steps shall be angled so that the top surface is parallel to the curb. Steps shall be placed 7 feet apart. Steps shall be set to support a 1000 lb. curb face as is shown on page 11.

GRAVEL shall be placed over concrete and shall conform in shape, grade, color, finish, and spacing to existing or proposed curb and walk adjacent to the basin.

CATCH BASIN A



CATCH BASIN B



DIMENSIONS

T-3 inches if V is 4 feet or less.
 T-4 inches if V is 4 feet 6 inches or less.
 T-5 inches if V is 5 feet or less.
 T-6 inches if V is 5 feet 6 inches or less.
 T-7 inches if V is 6 feet or less.
 T-8 inches if V is 6 feet 6 inches or less.
 T-9 inches if V is 7 feet or less.
 T-10 inches if V is 7 feet 6 inches or less.
 T-11 inches if V is 8 feet or less.
 T-12 inches if V is 8 feet 6 inches or less.
 T-13 inches if V is 9 feet or less.
 T-14 inches if V is 9 feet 6 inches or less.
 T-15 inches if V is 10 feet or less.
 T-16 inches if V is 10 feet 6 inches or less.
 T-17 inches if V is 11 feet or less.
 T-18 inches if V is 11 feet 6 inches or less.
 T-19 inches if V is 12 feet or less.
 T-20 inches if V is 12 feet 6 inches or less.

HANHOLES

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PROTECTION BAR, horizontal, plain round galvanized steel, 3/8" dia. shall be embedded 5 inches up curb and 1/2" into concrete.

REINFORCING STEEL shall be 3/8" plain round deformed bars.

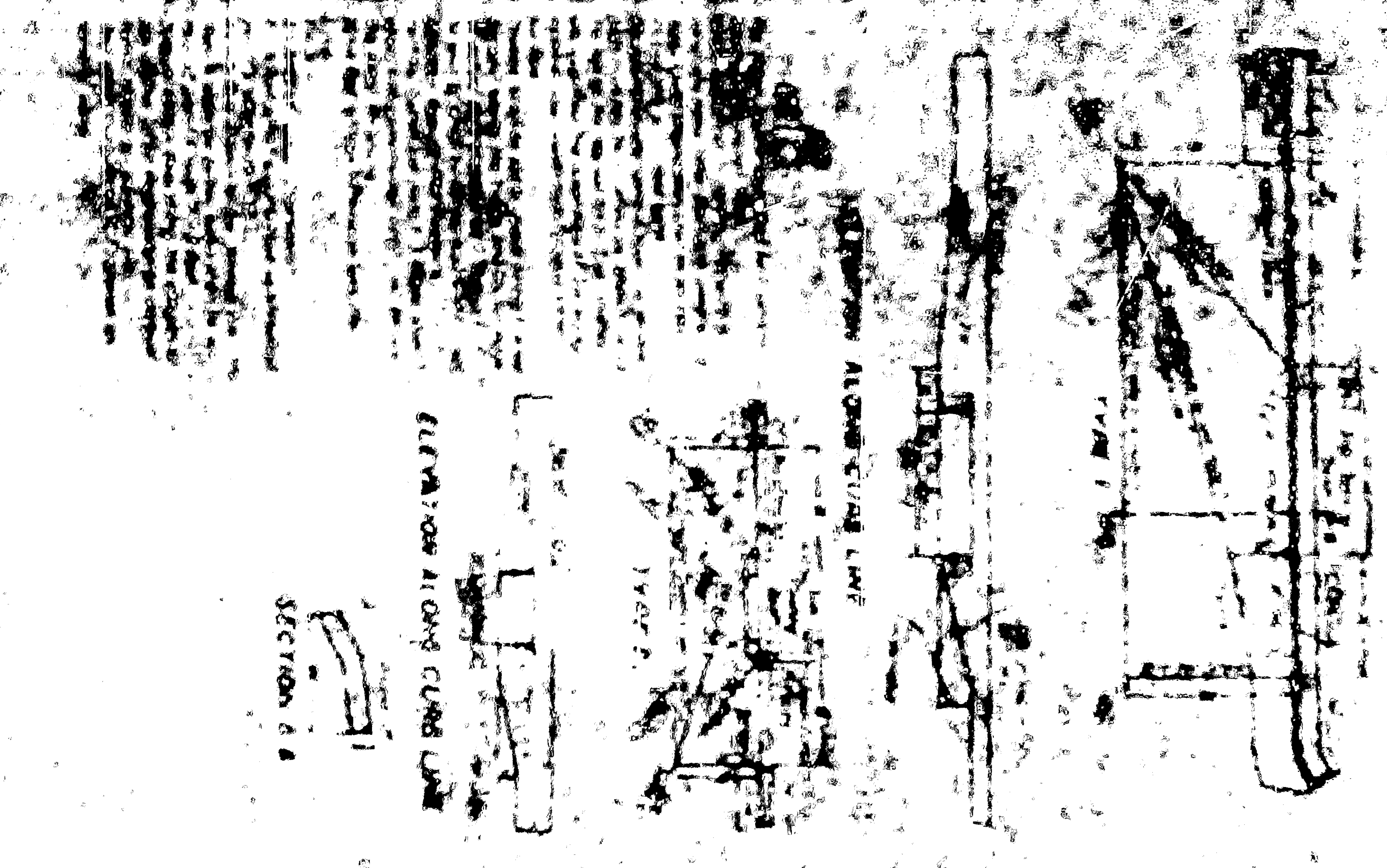
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GRAVEL shall be placed over concrete and shall conform in shape, grade, color, finish, and spacing to existing or proposed curb and walk adjacent to the basin.

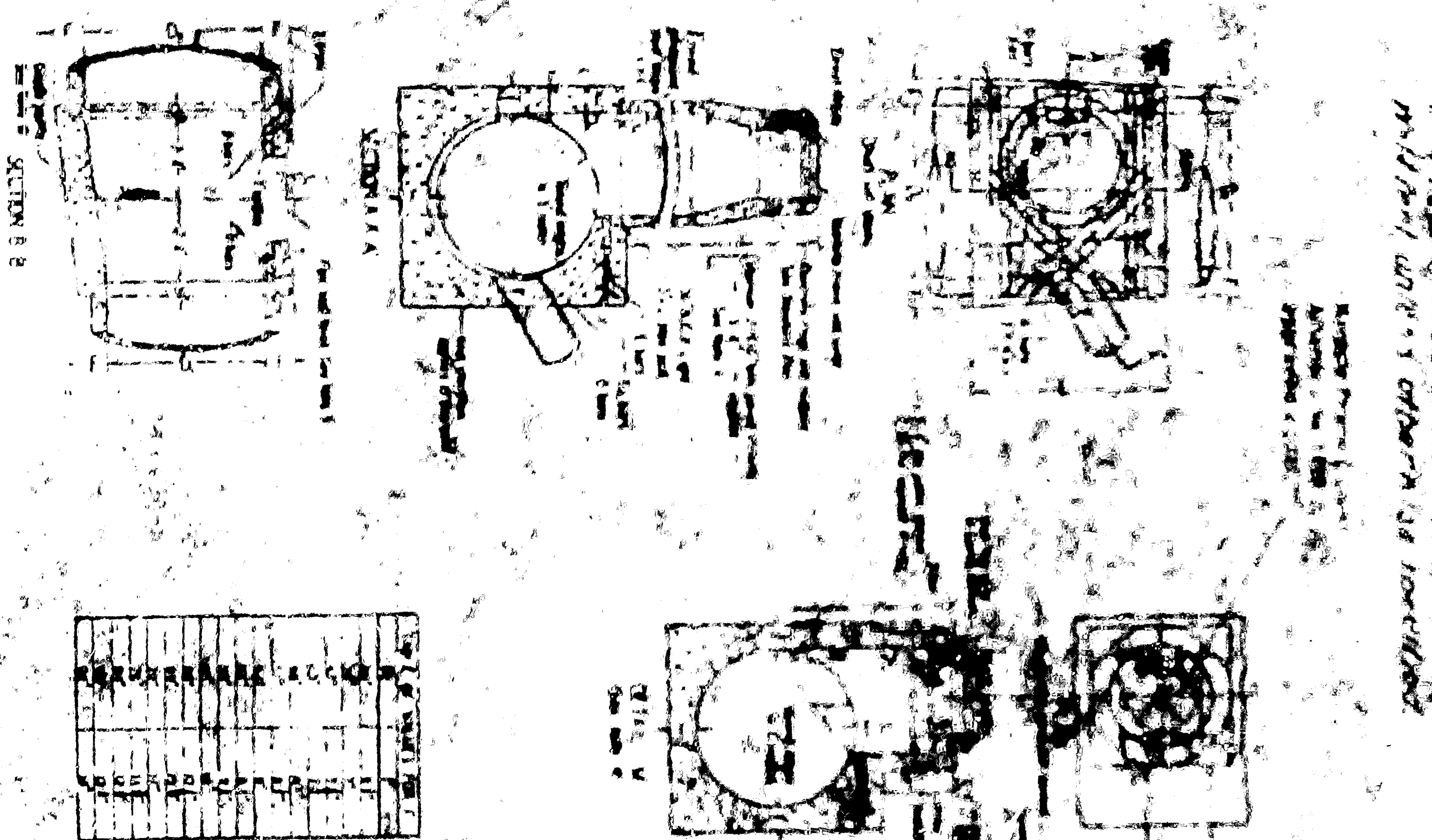
STEEL TABLE FOR HANHOLES

D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

STANDARD LOCAL DEPRESSION



HANHOLE



END