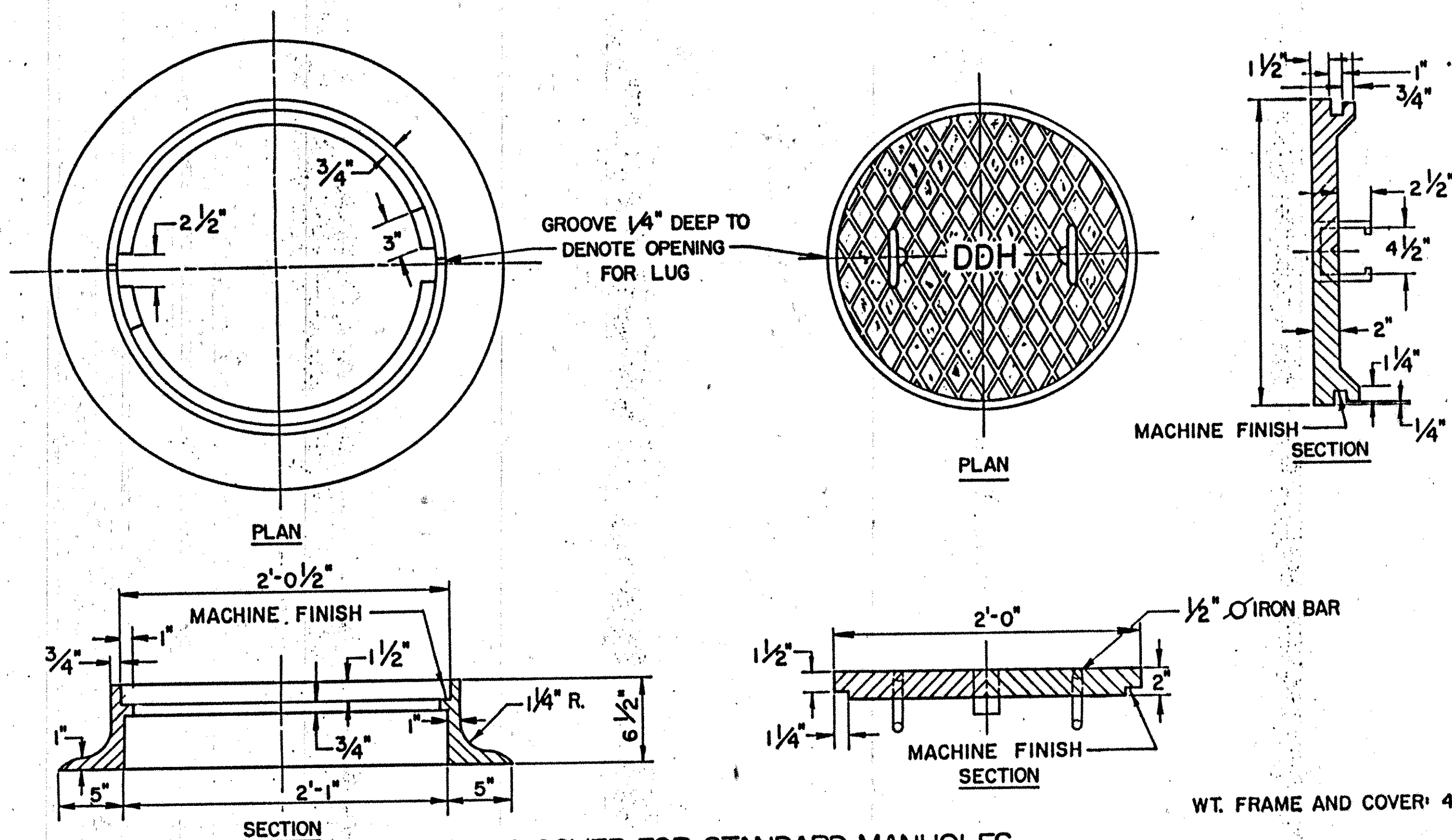


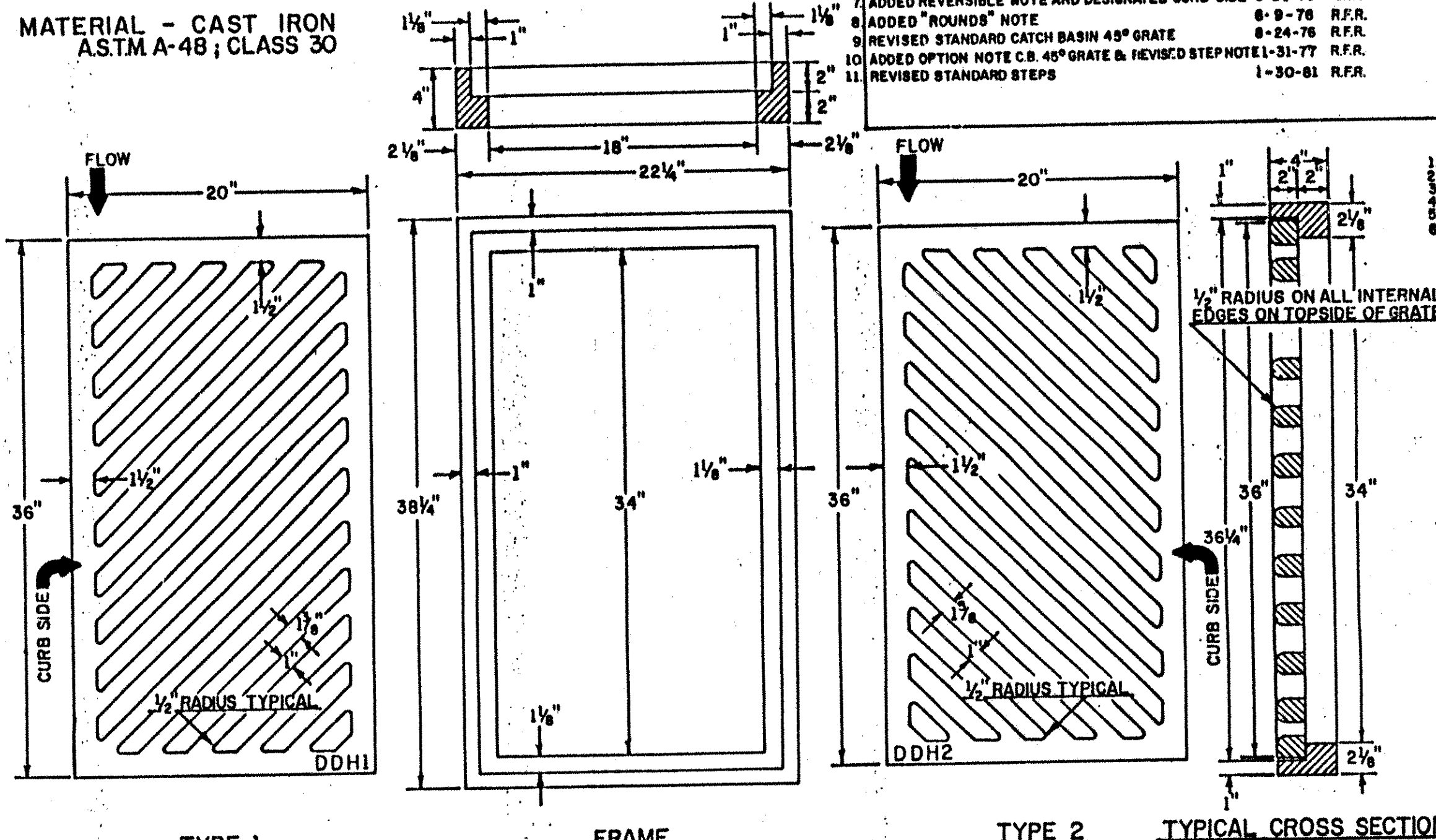
NOTE:
THE CONTACTING SURFACES ON ALL MANHOLE FRAMES AND COVERS USED IN ROADWAY OR SHOULDER AREAS ARE TO BE MACHINE FINISHED.



FRAME AND COVER FOR STANDARD MANHOLES

WT. FRAME AND COVER: 470 LBS. (MIN.)
490 LBS. (MAX.)

MATERIAL - CAST IRON
ASTM A-48; CLASS 30



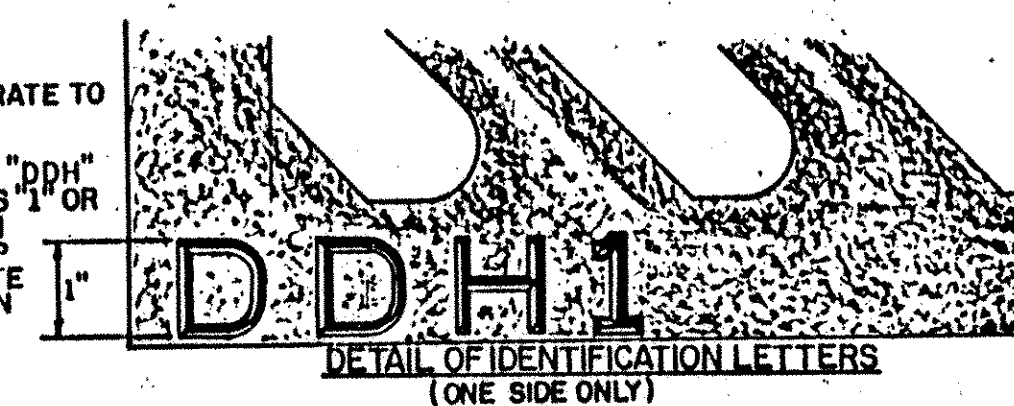
TYPE 1

FRAME

TYPE 2

TYPICAL CROSS SECTION

NOTE: BOTTOM OF GRATE TO BE FLAT AND TRUE
* THE LETTERS "DDH" AND THE NUMERALS "1" OR "2" TO BE ONE INCH AND RAISED ON TOP SIDE OF EACH GRATE LOCATED AS SHOWN



STANDARD CATCH BASIN FRAME & 45° GRATE

* THE ABOVE MENTIONED LETTERS MAY BE EITHER RAISED OR DEPRESSED AT THE OPTION OF THE FOUNDRY

REVISIONS (Cont.)

- 7. ADDED REVERSIBLE NOTE AND DESIGNATED CURB SIDE 8-11-76 R.F.R.
- 8. ADDED "ROUNDS" NOTE 8-9-78 R.F.R.
- 9. REVISED STANDARD CATCH BASIN 45° GRATE 8-24-76 R.F.R.
- 10. ADDED OPTION NOTE C.B. 45° GRATE & REVISED STEP NOTE 1-31-77 R.F.R.
- 11. REVISED STANDARD STEPS 1-30-81 R.F.R.

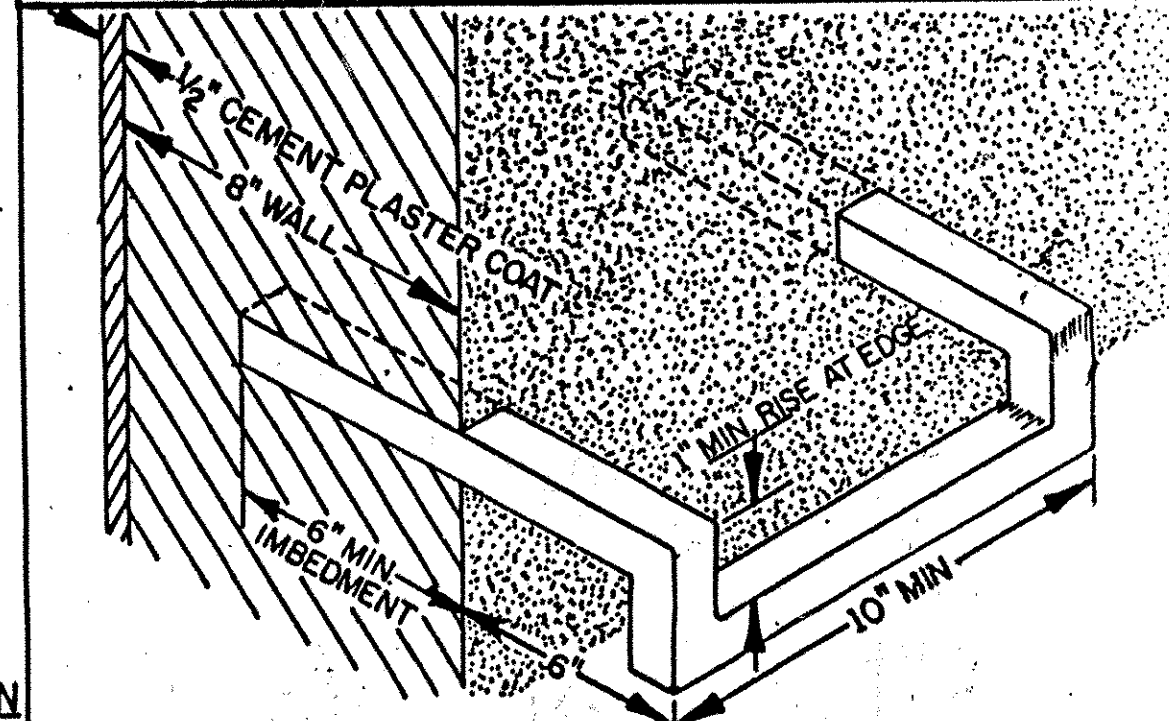
COUNTY	CONTRACT	P. & A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET D-1-11
CASTINGS, STEPS, MONUMENT BOX DETAILS

PREL. TRACING: L.W.H. DESIGN: E.L.W. CHKD.: J.T.B.

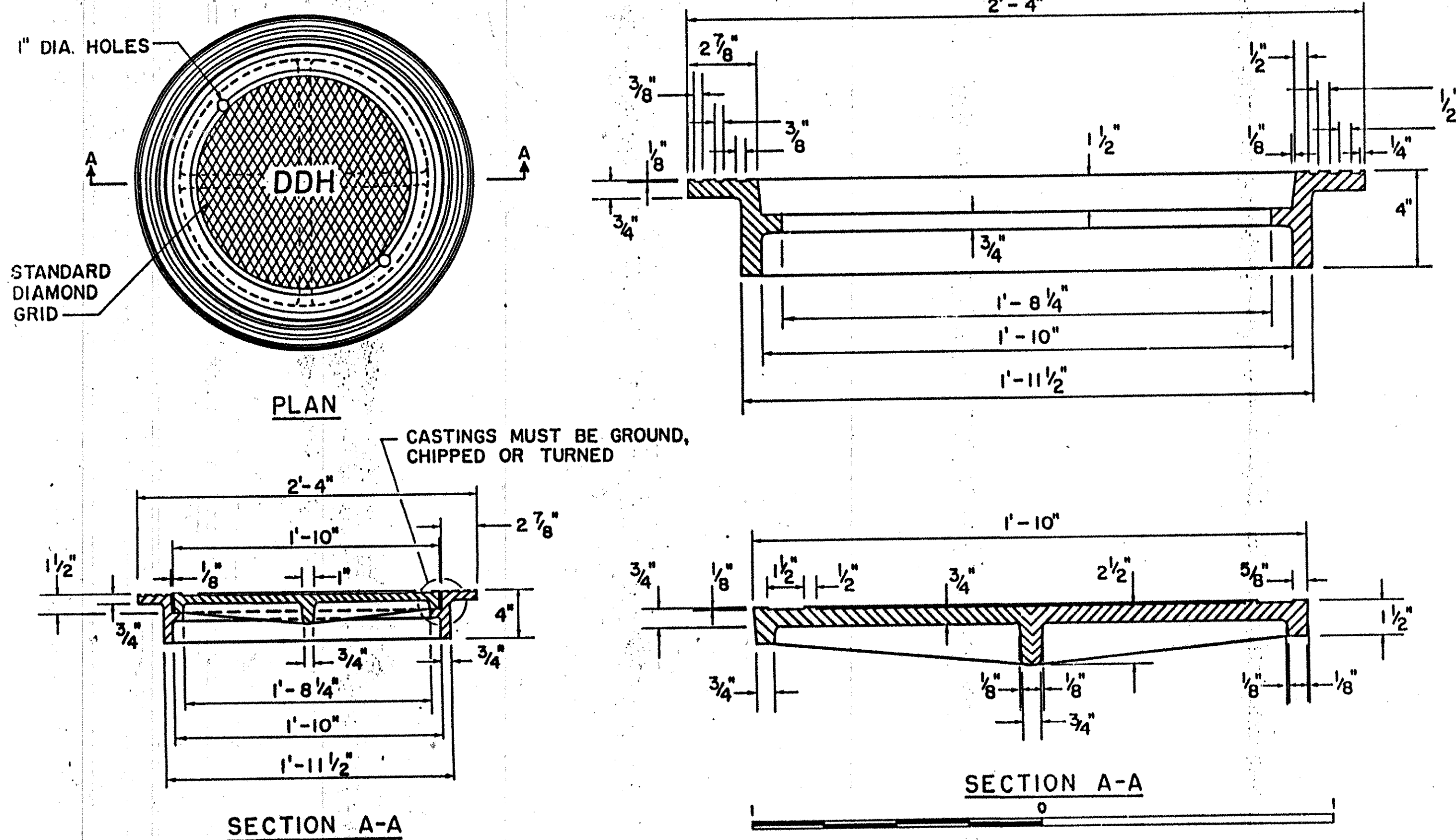
REVISIONS	DATE	BY
REVISED IMPRINT ON CASTINGS AND SEATING SURFACE REQUIREMENTS	12-22-70	J.T.B.
REVISED STANDARD CATCH BASIN GRATE	7-8-71	J.T.B.
REVISED OUTSIDE DIMENSION STANDARD C.B. FRAME	5-16-74	R.F.C.
NOTE PROVIDING ALTERNATE STEP	10-25-74	R.F.C.
REVISED STANDARD STEPS	12-2-76	R.F.R.
ADDED DETAIL IDENTIFICATION LETTERS	5-11-76	R.F.R.

APPROVED: *[Signature]* 6-22-70
DIRECTOR OF OPERATIONS DATE
[Signature] 6/22/70
DEPUTY DIRECTOR-CHIEF ENGINEER DATE



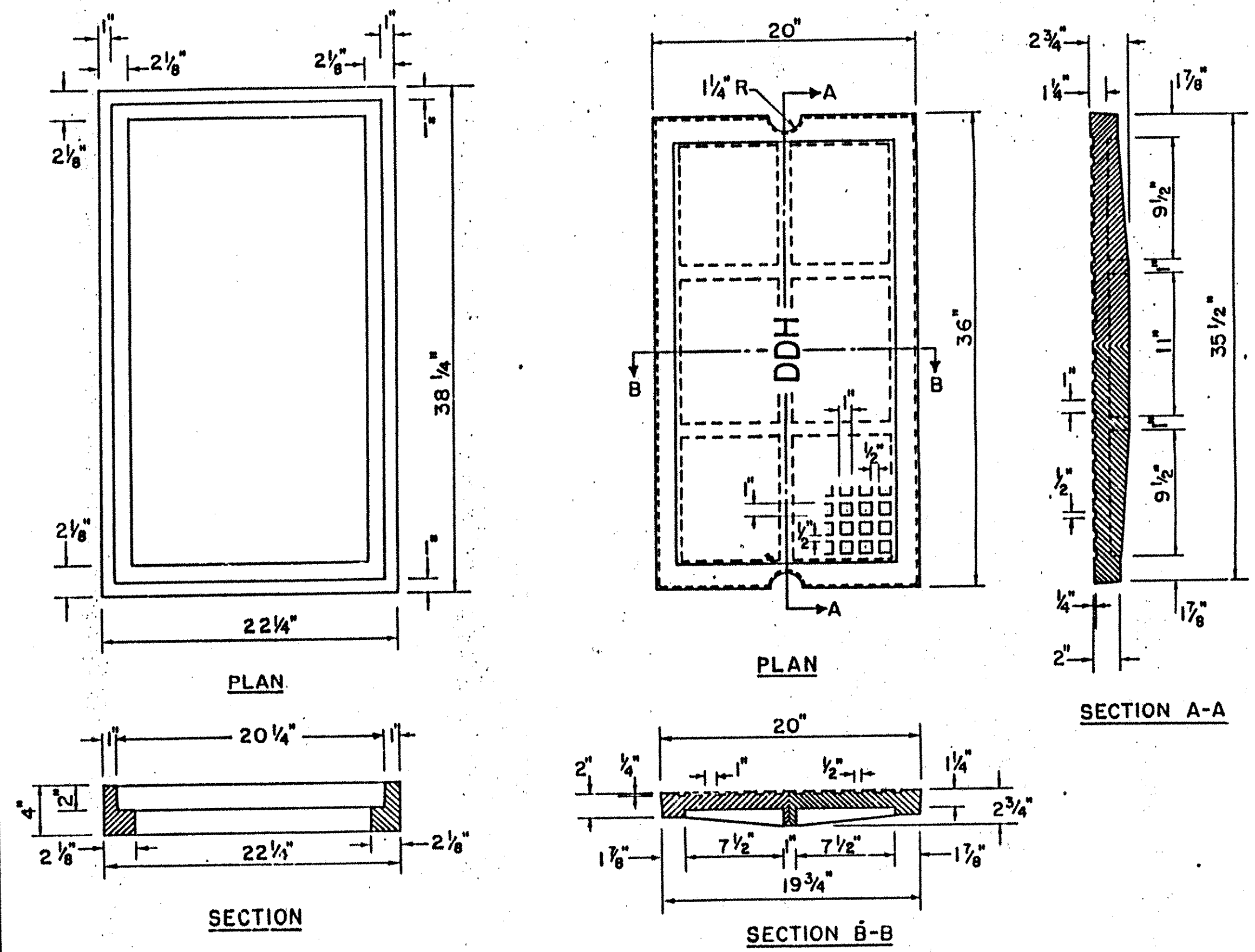
Steps are required to be installed in each catch basin, manhole or type B junction box exceeding 48 inches in depth measured from the top of grate or cover elevation to the center line of the lowest pipe.
The top step shall be located no more than 30 inches below the top of grate or cover. The steps shall be aligned so as to form a continuous ladder and be spaced equally and vertically at 12 inch intervals unless otherwise directed. The bottom step shall be no more than 23 inches nor less than 13 inches above the finished bottom of the unit except when structurally impractical.
The steps shall be of grey iron castings conforming to AASHTO M105, class 30 B or carbon steel castings conforming to AASHTO M103 and be galvanized in accordance with AASHTO M111 or extruded aluminum conforming to ASTM B221, alloy 6061-T6 coated with zinc chromate primer as per Fed. Spec. TT-P-645. Aluminum steps shall in no way be permitted to contact reinforcement or dissimilar metals.
The minimum cross sectional dimension of the step shall be 0.75 inches.
The dimensions and specifications herein shown or described are specific or minimum standards and must be adhered to. The pictorial representation is for the purpose of displaying dimensions and does not constitute a standard in itself, however, all deviations must be submitted to the department, design section, for approval.

STANDARD STEPS



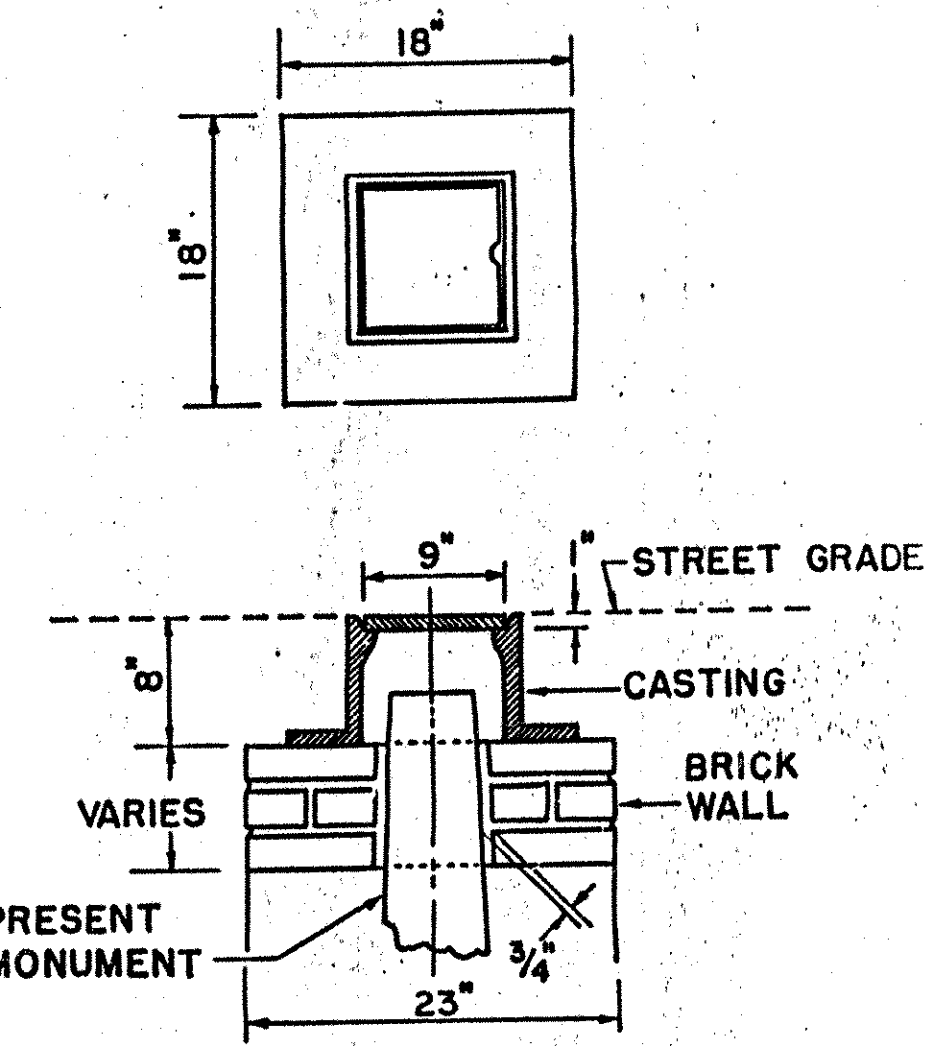
SIDEWALK FRAME AND COVER

WEIGHT 195 LBS



B JUNCTION BOX FRAME & COVER

WEIGHT 465 LBS MIN.- 485 LBS MAX.



MONUMENT BOX DETAIL

NOTE:
BRICK MASONRY AND CASTING SHALL BE INCLUDED IN THE PRICE BID FOR "MONUMENT BOX".