

CONVENTIONAL SIGNS & ABBREVIATIONS

STATE LINE	-----	EXCAVATION	F
COUNTY LINE	-----	EMBANKMENT	-----	F
TOWNSHIP LINE	-----	OVERHAUL	-----	H
SECTION LINE	-----	SURFACING	-----	S
CITY, VILLAGE, OR BOROUGH	-----	GUARD RAIL	-----	GR
FENCE LINE	-----	INTERSECTION ANGLE	-----	A
RIGHT-OF-WAY LINE	-----	RADIUS	-----	R
TRAVELLED WAY	-----	ELEVATION	-----	E
RAILROADS	-----	VERTICAL CURVE	-----	VC
RETAINING WALL	-----	BENCH MARK	-----	B.M.
BASE OR SURVEY LINE	-----	SECTIONAL CONCRETE CULVERT	-----	P.C.
LEVEE	-----	CORRUGATED METAL CULVERT	-----	C.M.
GRAVEL PIT	-----	CULVERT HAUL	-----	P.H.
SAND PIT	-----	TON MILES	-----	T.M.
CLAY PIT	-----	PLACE	-----	P
ROCK QUARRY	-----	IN PLACE	-----	Imp.
CULVERTS	-----	REPLACE	-----	Rep.
PLAIN	-----	RIGHT	-----	R
WITH FACEWALLS	-----	LEFT	-----	L
WITH WINGWALLS	-----	HAND DITCHING	-----	H.D.
DROP INLET	-----	POINT OF CURVE	-----	P.C.
POWER POLE LINE	-----	POINT OF TANGENT	-----	P.T.
TELEPHONE OR TELEGRAPH LINE	-----	POINT OF INTERSECTION	-----	P.I.
MARSH	-----	SPECIAL EXCAVATION	-----	S.E.
HEDGE, BUSH, OR THIBER	-----	SPECIAL PLOWING	-----	S.P.
GROUND ELEVATION	-----	TELEPHONE POLE	-----	Te.P.
GRADE ELEVATION	-----			

OFFICE OF COUNTY SURVEYOR
RAMSEY COUNTY
Plan and Profile of Centerville Rd.

From The So. 1/4 Cor. of Sec. 4-30-22 To A point which is 96.04 Ft. West of the No. 1/2 Cor. of Sec. 4-30-22.

GROSS LENGTH 5803.71 FEET 1.10 MILES
LENGTH OF EXCEPTIONS FEET MILES
NET LENGTH 5803.71 FEET 1.10 MILES

PLAN, 1 Inch = 100 Feet
PROFILE, Horiz. 1 Inch = 100 Feet. Vert. 1 Inch = 10 Feet
WORKING PLANS (Horiz. 1 Inch = 100 Feet
Vert. 1 Inch = 10 Feet
Cross-Sections, 1 Inch = 5 Feet

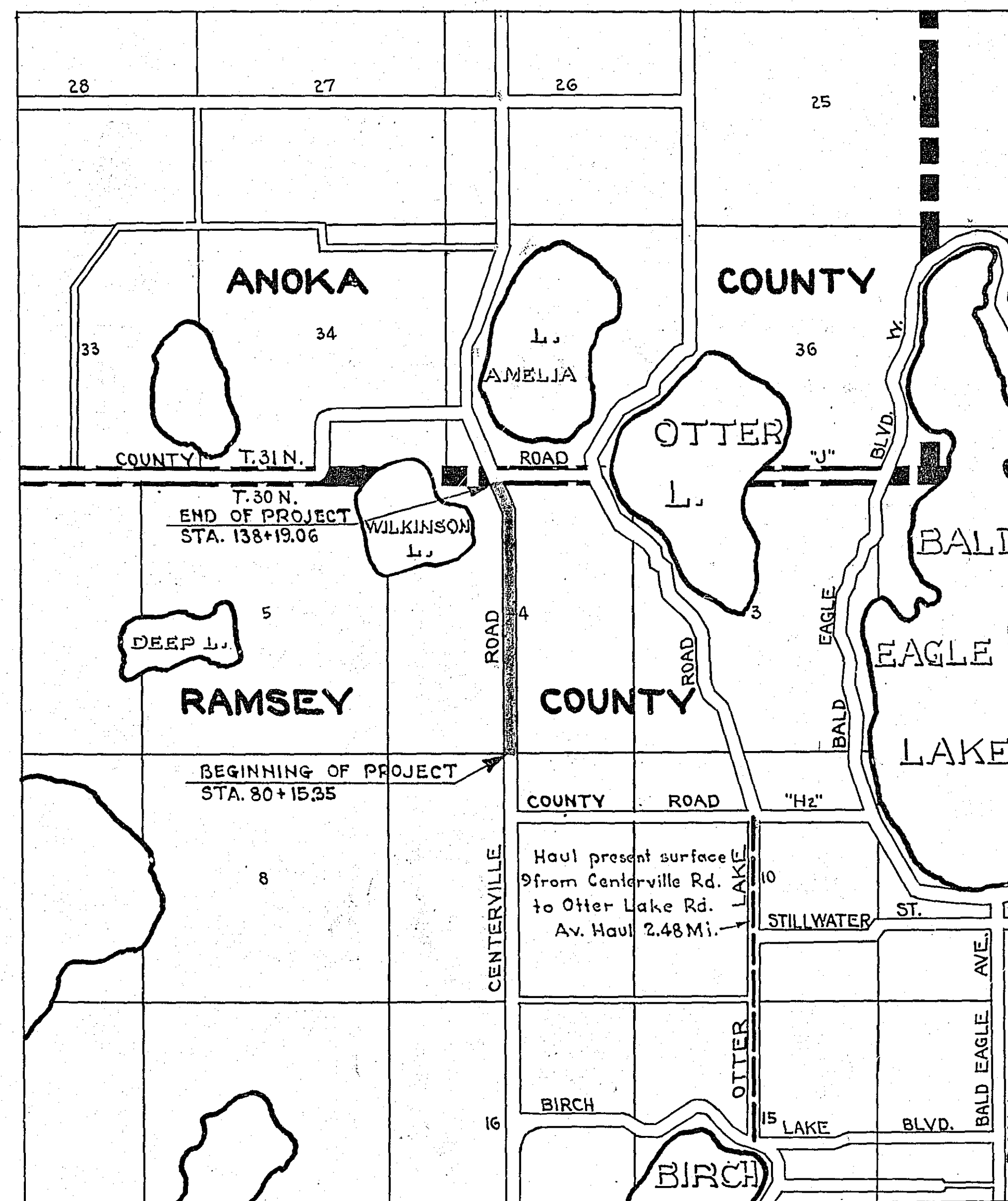
LAYOUT
SCALE, 1 Inch = 2640 Feet
MINNESOTA F.A.S. No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MINN.			1	11

INDEX OF SHEETS

- Sheet No. 1. Title Sheet and Layout Map
- " No. 2. Typical Cross-Sections and Statement
- " No. 3. Plan and Profile, Sta. 80+15.35 to Sta. 138+19.06
- " No. 4-6 Standard Paving Details
- " No. 5-8 "
- " No. 6 To 11 Cross Sections

Specifications approved by the Chief of the Bureau of Public Roads Oct. 3rd 1929 with Revisions dated Aug. 1, 1934 and approved Oct. 25, 1935 to govern.



Approved By *Harry S. Bronson*
County Surveyor of **RAMSEY** County

Approved by County Board _____ 19____ CHAIRMAN OF COUNTY BOARD.

Approved _____ 19____ CHIEF ENGINEER MINN. STATE HIGHWAY DEPT.

Recommended for Approval _____ DISTRICT ENGINEER S. OF P.R.

Recommended for Approval _____ CHIEF ENGINEER S. OF P.R.

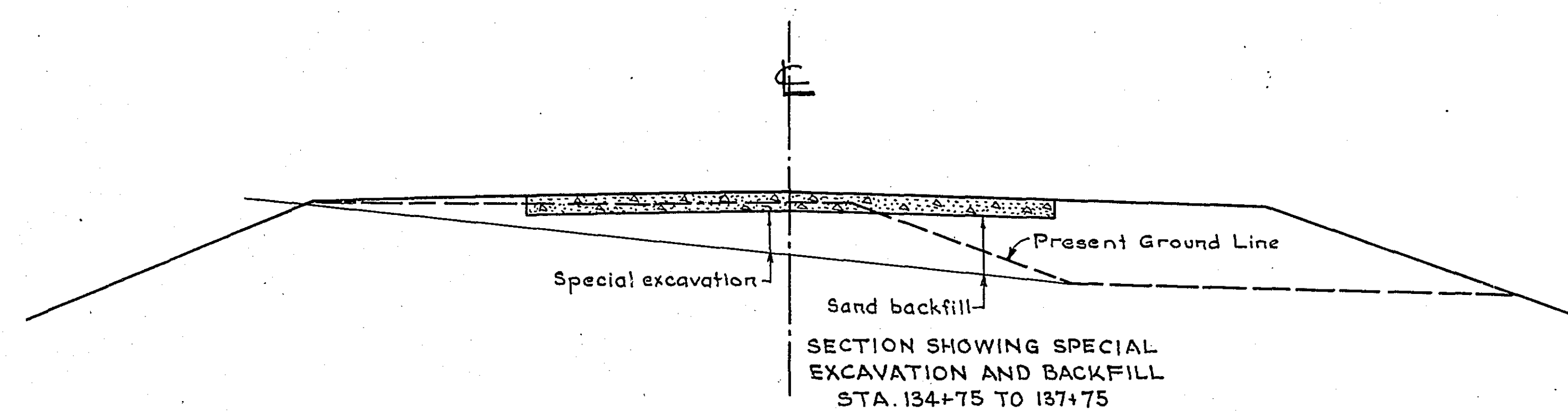
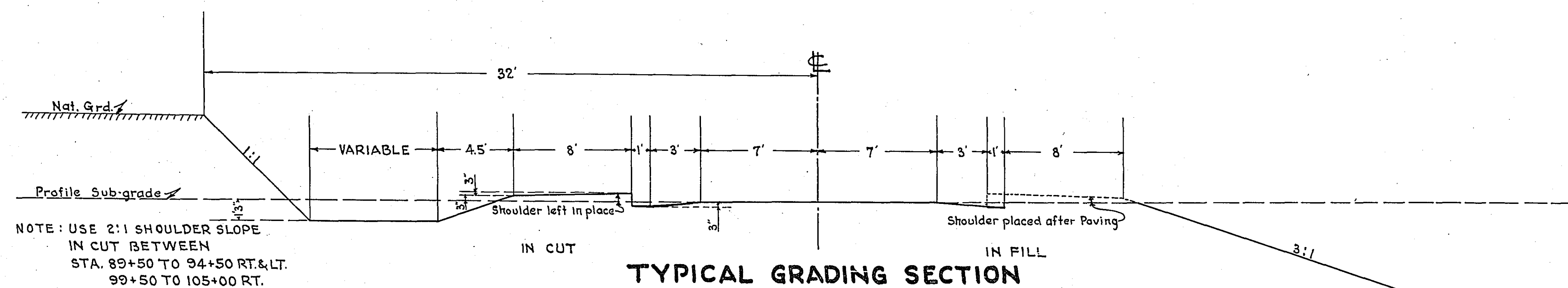
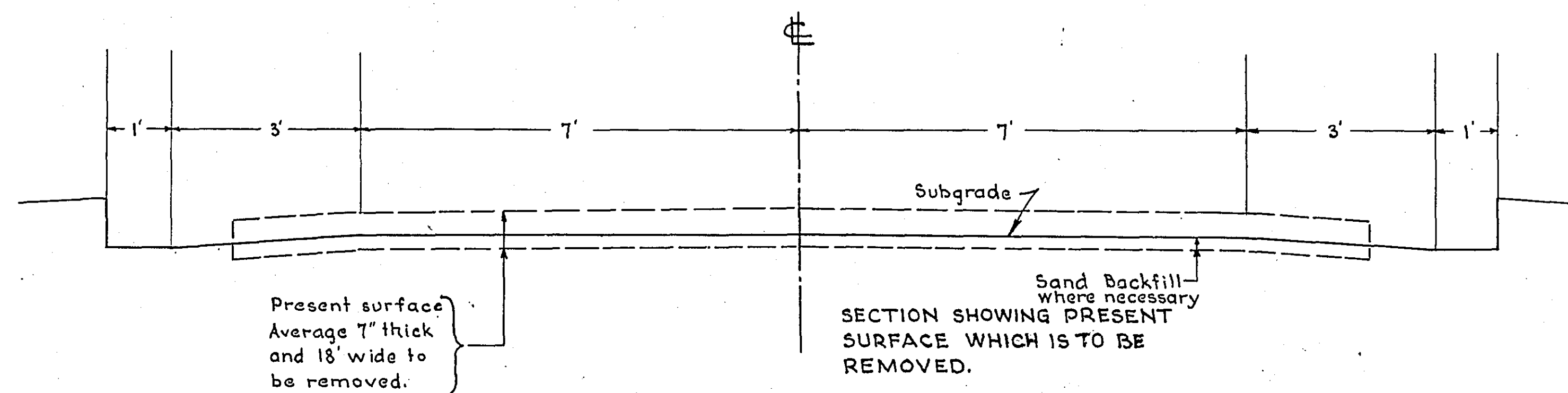
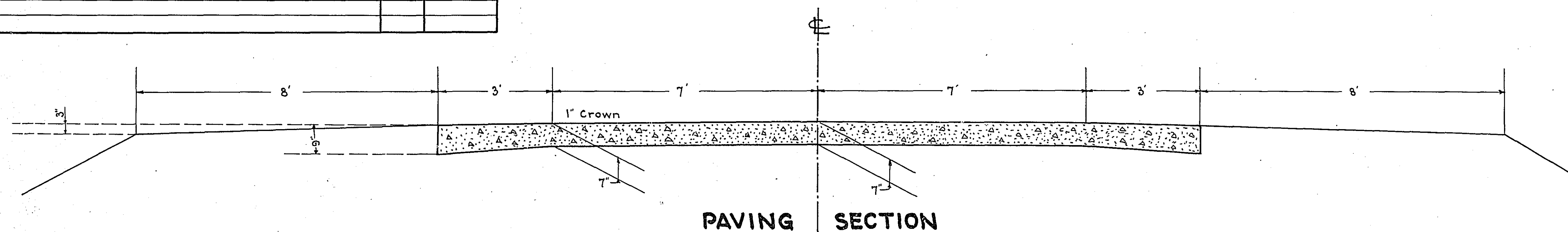
Approved _____ DIRECTOR S. OF P.R.

Approved by *W. W. Carney*
PRINCIPAL ASST. ENGR.

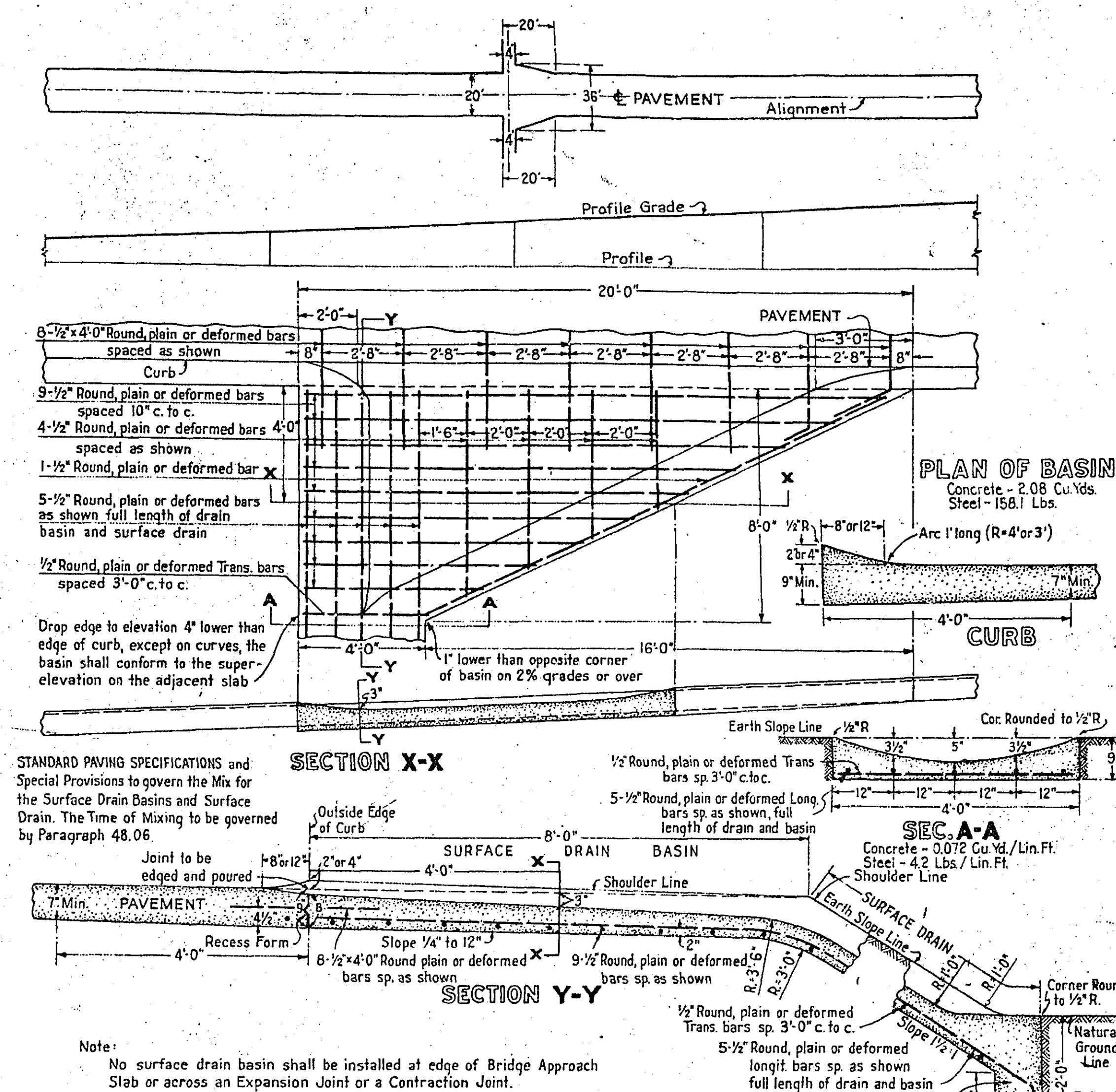
STATEMENT OF ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Clearing	Tree	11
Grubbing	Tree	11
Excavation Earth	Cu.Yd.	7251
Excavation (Special Present Surface)	Cu.Yd.	2409
Excavation (Special Old Road Core) Sta. 134+75 to 137+75	Cu.Yd.	318
Overhaul	Cu.Yd.	23818
Haul Present Surface Material To Otter Lake Rd 2.48 Mi.	C.Y.M.	5974
Remove Old Culvert	Lin.Ft.	255
Furnish and Install 15" C.M.	Lin.Ft.	100
Furnish and Install 24" S.C. Culv.	Lin.Ft.	234
Spreading Sand Backfill	Cu.Yd.	1193
Loose Rock	Cu.Yd.	100
Solid Rock	Cu.Yd.	50
Fine Grading	Cu.Yd.	550
Concrete Pavement	Sq.Yd.	12897
Placing and Shaping Shoulder Mat'l.	Cu.Yd.	1014
Surface Drain	Lin.Ft.	128
Surface Drain Basins	Each	14
Curb 2"	Lin.Ft.	3290
Curb 4"	Lin.Ft.	619

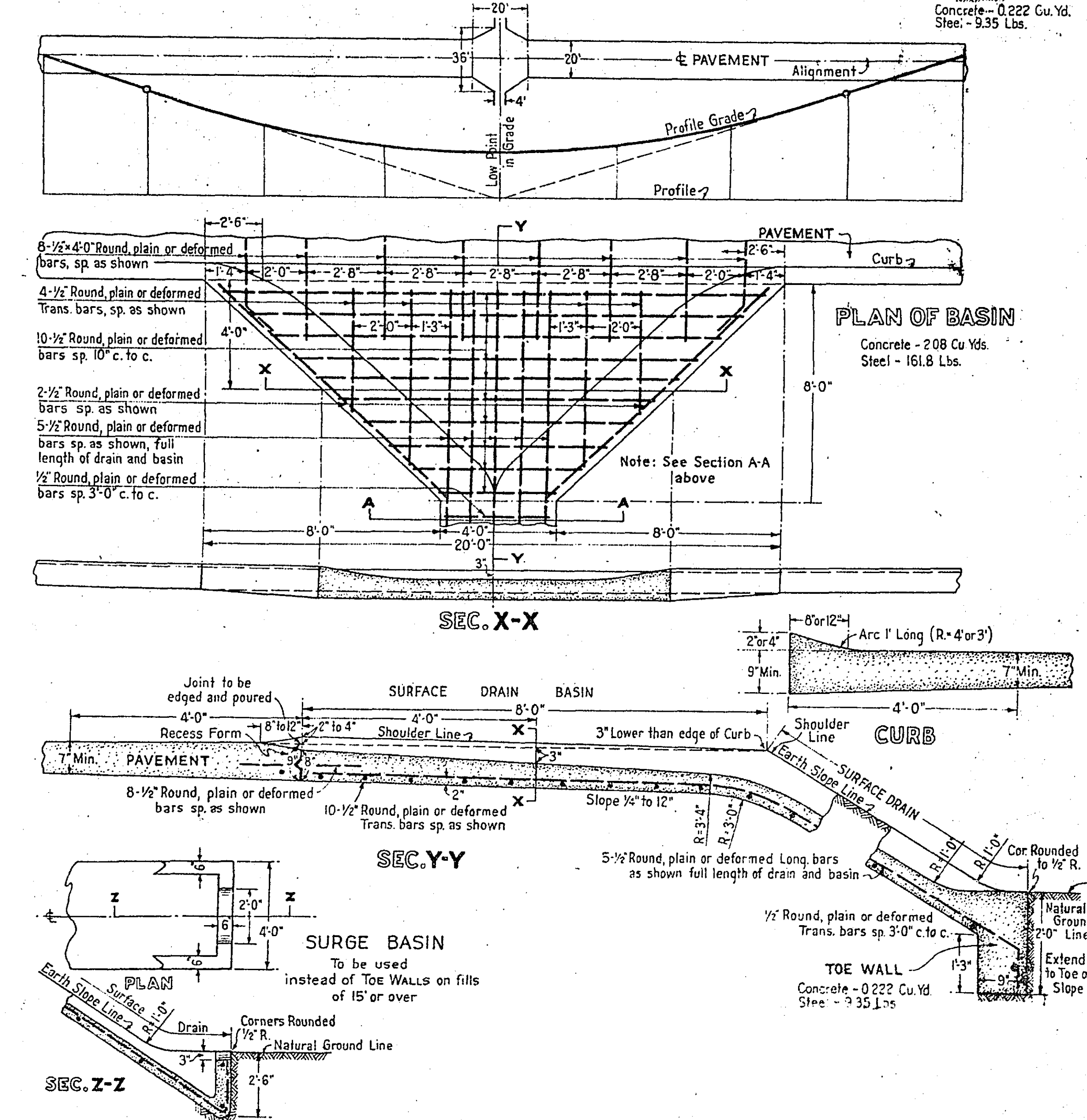
NOTE: Fine Grading Estimated at 500 Cu.Yds. per Mile.

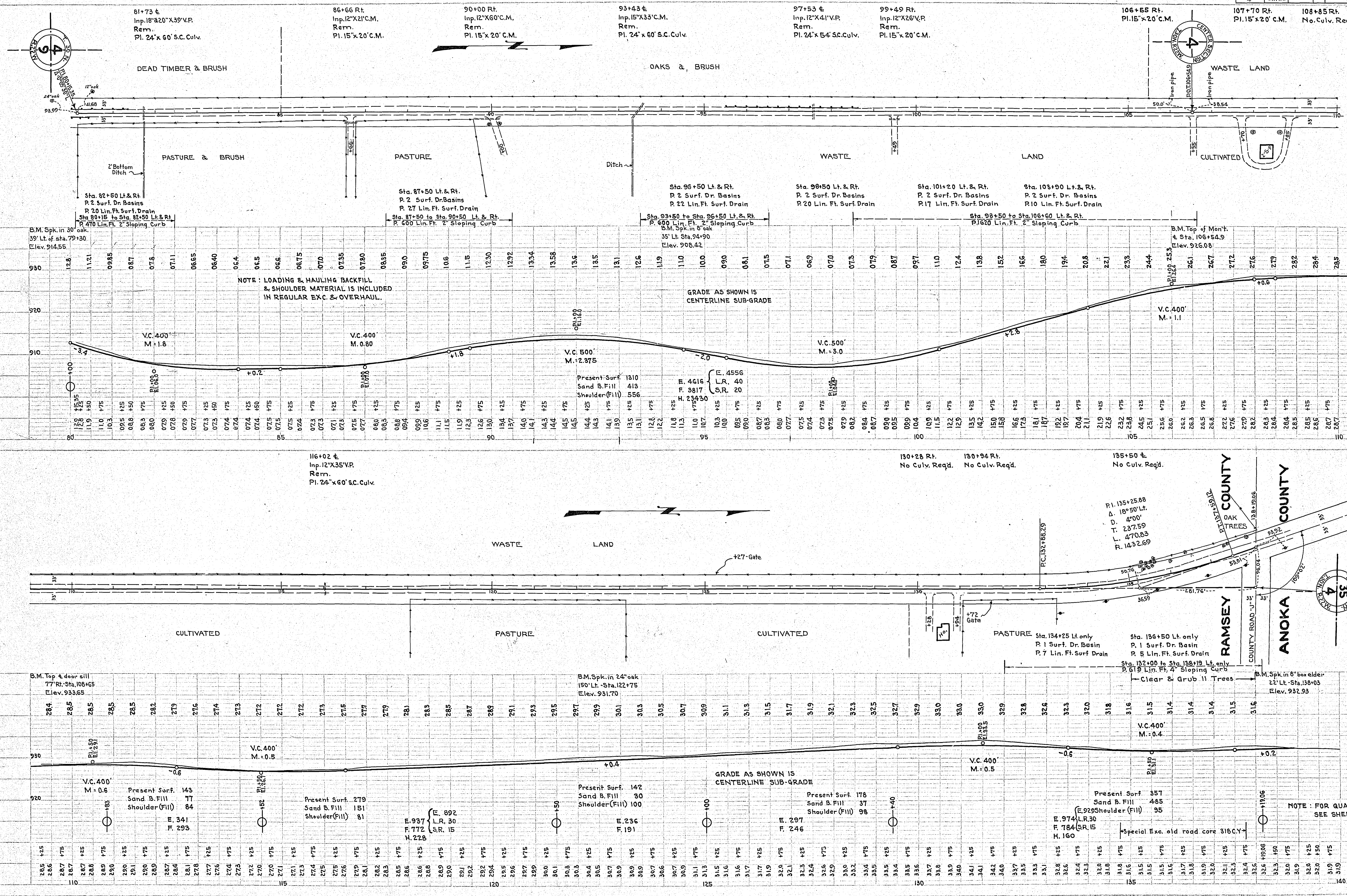


8 FT. SURFACE DRAIN ON GRADE



8 FT. SURFACE DRAIN FOR LOW POINT ON GRADE





PLAN

DATE: _____

BY: _____

CHECKED: _____

NOTE: ROAD ALIGNED WITH CENTERLINE OF HIGHWAY.

PROFILE

DATE: _____

BY: _____

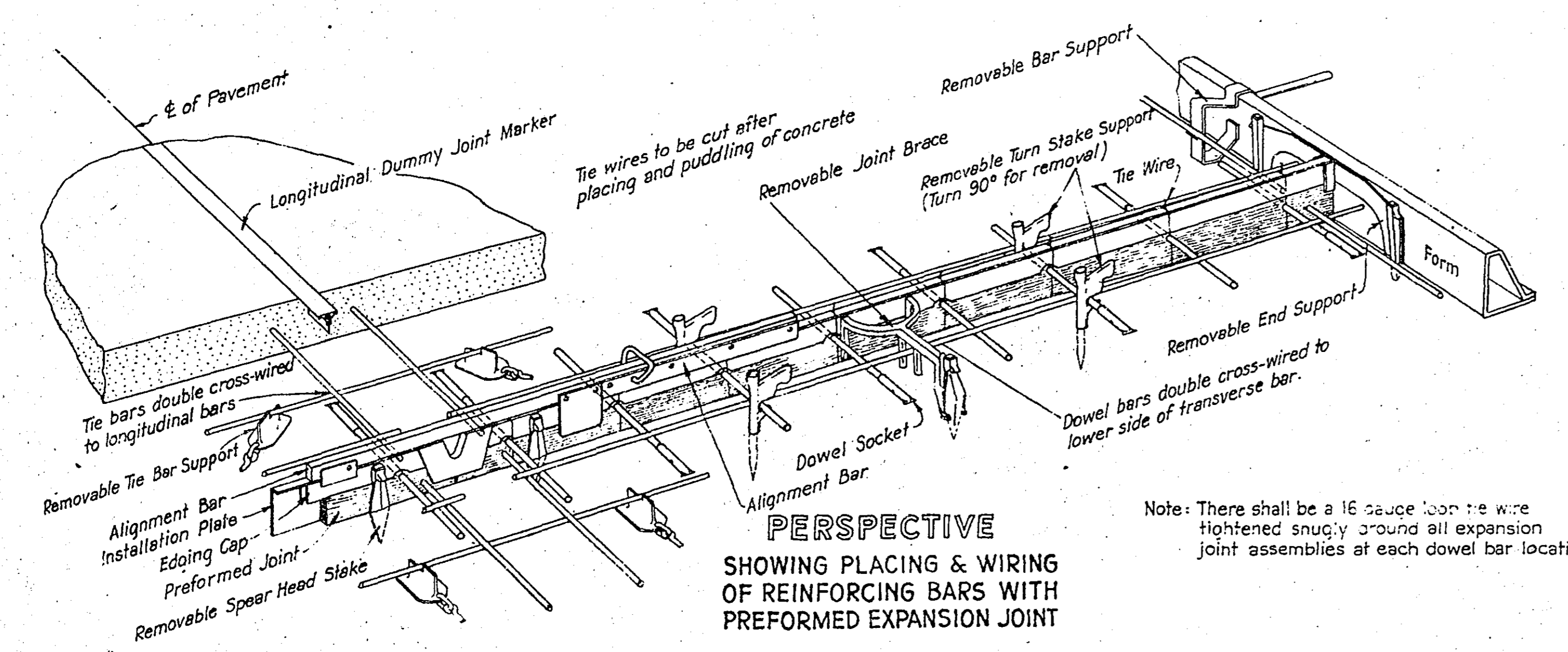
CHECKED: _____

NOTE: ROAD ALIGNED WITH CENTERLINE OF HIGHWAY.

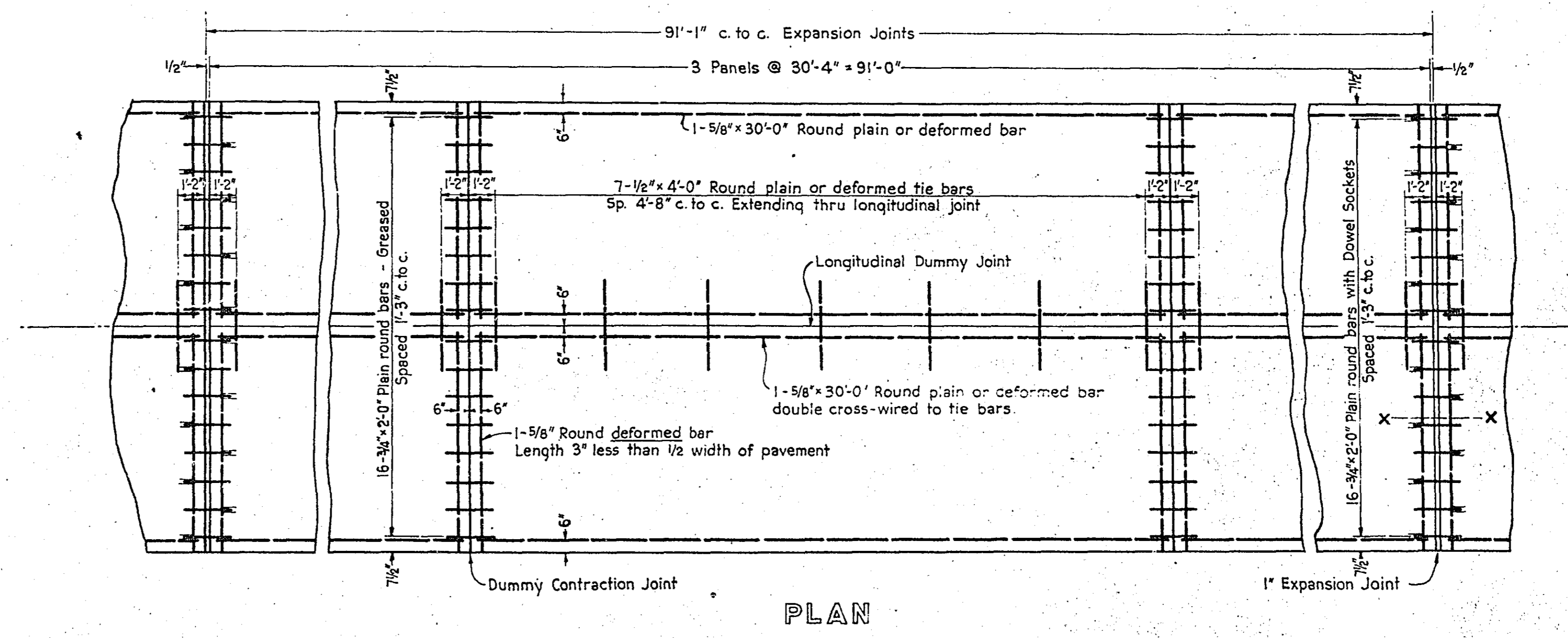
NOTE: FOR QUANTITIES SEE SHEET NO. 2

2415

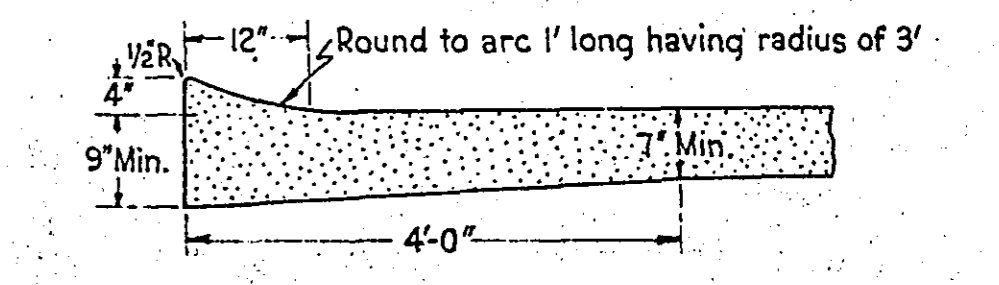
20 FOOT PAVEMENT ONE COURSE CONCRETE



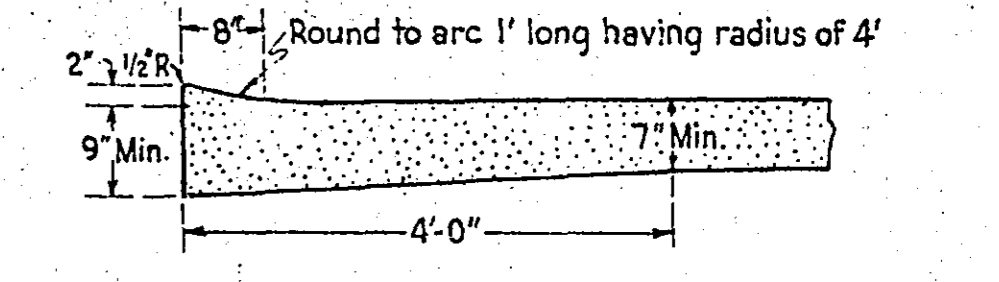
Note: There shall be a 16 gauge loop tie wire tightened snugly around all expansion joint assemblies at each dowel bar location.



Volume of 4" Curb
= 0.180 cu. ft. per lineal foot.

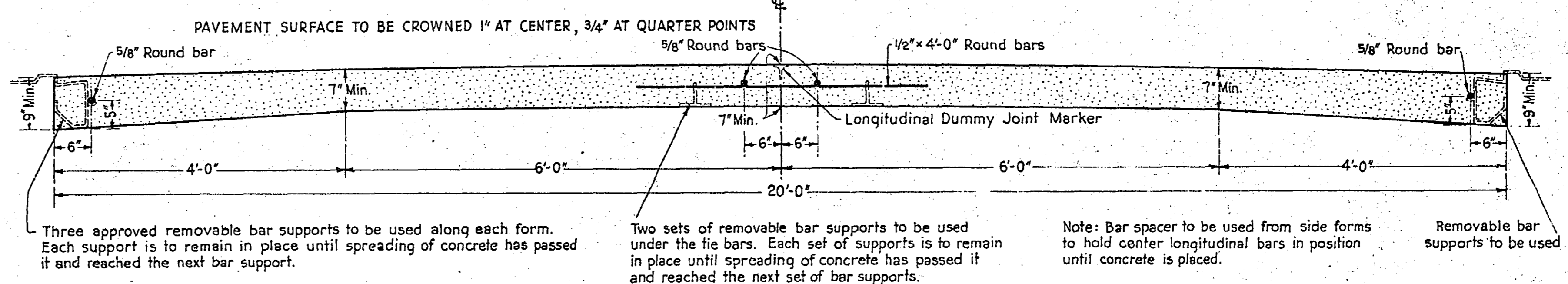
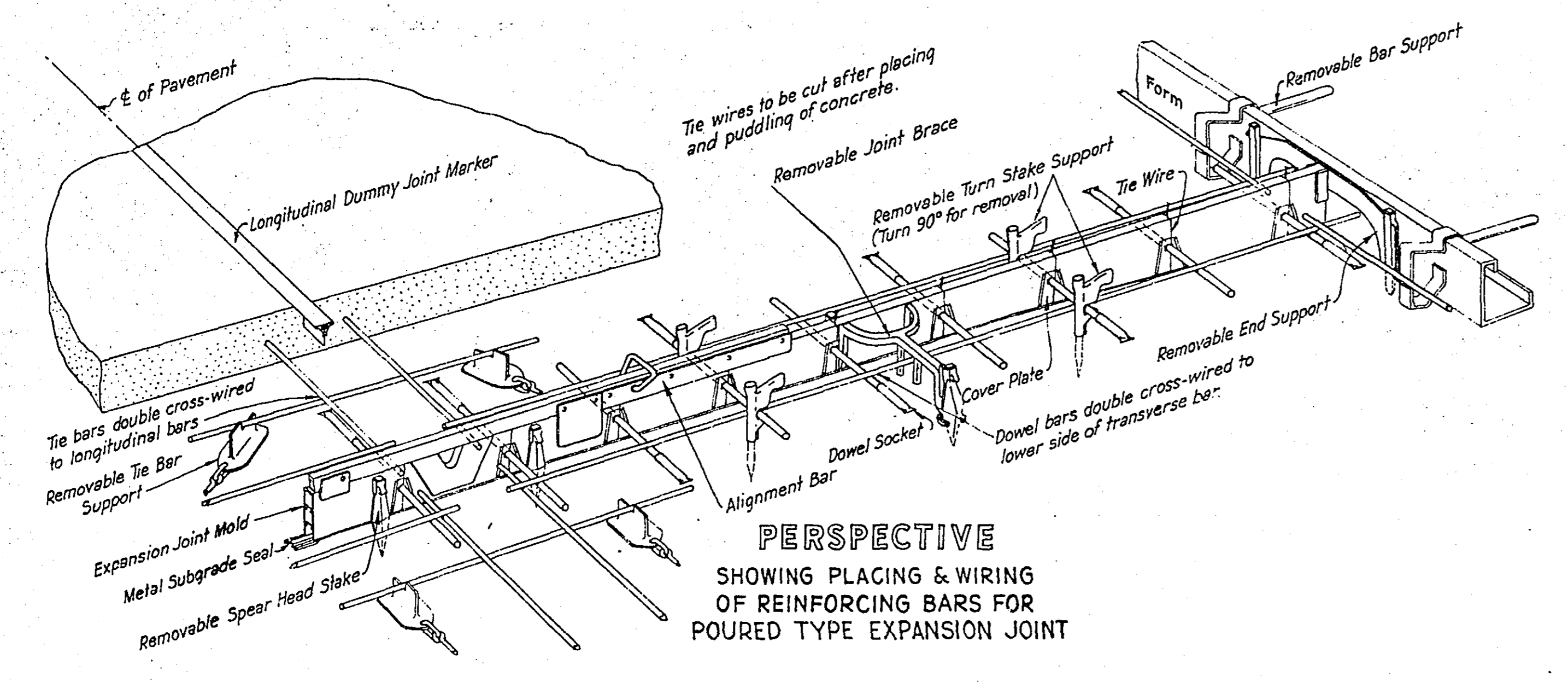


Volume of 2" Curb
= 0.066 cu. ft. per lineal foot.



Note: Preformed expansion joint material only shall be used for all expansion joints in curb. A space of 1/2" shall be left at each expansion joint. Curb forms to be of steel.

CURB SECTIONS



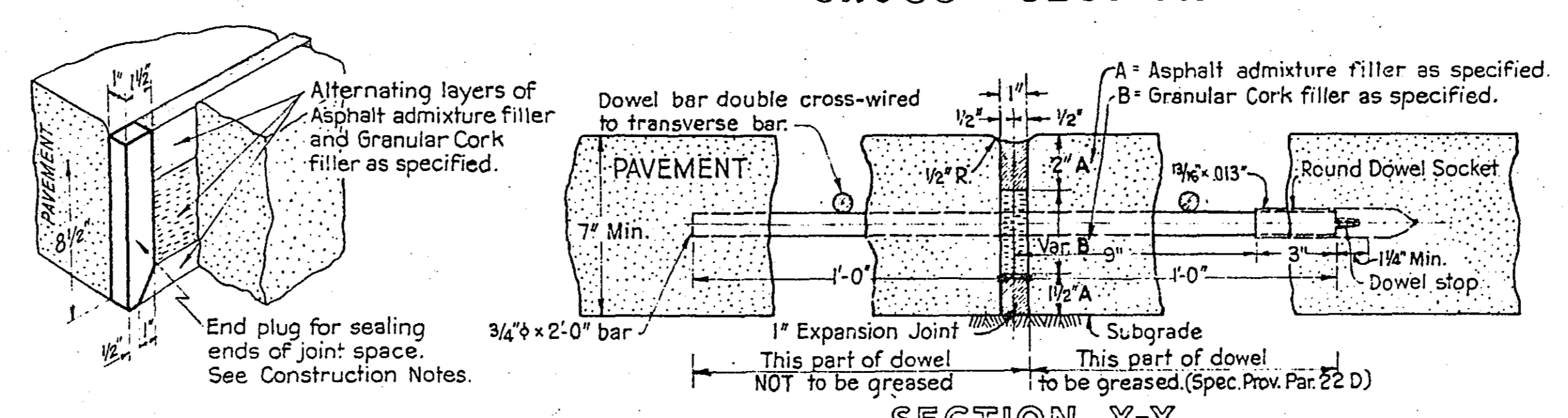
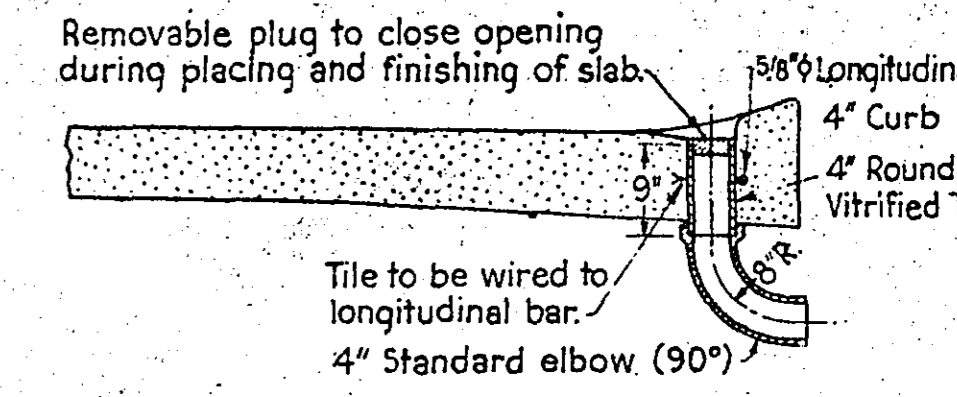
Three approved removable bar supports to be used along each form. Each support is to remain in place until spreading of concrete has passed it and reached the next bar support.

Two sets of removable bar supports to be used under the tie bars. Each set of supports is to remain in place until spreading of concrete has passed it and reached the next set of bar supports.

Note: Bar spacer to be used from side forms to hold center longitudinal bars in position until concrete is placed.

Removable bar supports to be used

Note: Elbow and tile outlet drain to be installed after the construction of the pavement.



CONSTRUCTION NOTES

Each Surface Drain Basin shall be dowelled to the pavement slab by eight 1/2" x 4'-0" round, plain or deformed bars spaced as shown on basin details.

Whenever surface drain basins are to be constructed, strips of grooved metal plates or recess forms shall be furnished and placed in the edge of pavement slab adjacent to forms. These plates shall be punched in the field to accommodate the surface drain tie bars. The tie bars shall be bent at right angles in the middle. One half of each bar is to be installed in the pavement slab and one half placed in the groove of the plate so that the bar can be straightened after the pavement form is removed. Removable clamps or form pins may be used to hold plates in position. The plate is to be left in the pavement.

The Sloping Curb shall be constructed from concrete which is mixed the same as the concrete in the pavement slab. The Contraction and Expansion joints shall be continuous through the sloping curb. At expansion joints, the space between the curb ends shall be 1 1/2".

The Curb and Edges of pavement shall be carefully finished at the time of initial set with an edge having a radius of 1/2". The edge shall be smooth and true to line. Edging of sides and joints to be done after final belting.

No Longitudinal Bars shall be continuous through contraction or expansion joints.

Contraction and Expansion Joint Steel Assemblies are to be made up in a notched rack and wired so that the steel will be fastened as specified in its proper position with the dowel bars parallel to each other.

All the intersections of bars and dowels shall be double cross-wired, i.e. wired in both directions across the intersection. Use 16 gauge loop tie wire.

The use of Joint End Supports, Brace-stake Supports and Turn-stake Supports, as shown, has been assigned to the State of Minnesota for the use by contractors in the construction of any type of expansion joints on contracts entered into with the Commissioner of Highways, State of Minnesota.

The devices or products shown on this sheet are built by and may be purchased from established manufacturers of paving supplies and accessories. Either Poured Type Expansion or Preformed Joints as specified may be used.

The position of the Expansion Joint shall be established at right angles to the center line by means of a large wooden square used against the side form and a chalk line extending to the opposite form. The sub-grade under the determined position of the joint is to be smoothed with a shovel to an even contour and all score marks and depressions filled.

When preformed or trough type poured joints are used, it will be necessary to remove enough material from the crown of the subgrade to permit a straight line section for a distance of six feet on either side of the center line. The bottom edges of the preformed or of the poured type joint are to be tamped with a tamping iron to close all openings along the edges, and fill any minor depressions under the joint.

Removable plate End Supports as shown, are to be positioned at the joint location and the joint assembly is then to be placed within this support.

Place deep flanges of alignment bar upon one half of the joint mold with the flanges of the other end of the bar held clear.

The concrete at all Expansion Joints shall be spaded and puddled against both halves of the joint before the strikeoff movement of the finishing machine, in accordance with the Special Provisions dated Aug. 1st, 1934.

After the concrete is placed and puddled the turn-stakes are to be removed; also the alignment bar.

After the First Screeding movement of the finishing machine, the side brace stakes are to be removed. Also, any supporting member for preformed joints. Any center spear head stakes on the side toward the screed are also to be removed.

After the Second Screeding movement of the finishing machine, and before the use of the longitudinal float, the end plate supports and center spear-head stakes are removed.

are to be lifted and the concrete at all expansion and contraction joints shall be finished with an edging tool. A notched straight-edge four feet long shall be used to check the straight line of the finished slab surface each side of the expansion joint before removing cap or mold.

The poured joint shall be protected with a 1" x 4" board (see details) after the mold or installation core is removed, and until the concrete is hard.

After the removal of side forms, any projections of concrete adhering to or bridging across the ends of the joint space must be removed.

The material used for the filler of all dummy joints, of poured type expansion joints or the sealing and capping of preformed, shall be that specified in the Special Provisions, dated Aug. 1st, 1934. The time and method of sealing shall be in accordance with Paragraph 33.04 (V) as modified by Special Provisions.

The installation cores, edging caps, joint molds and all dummy joint markers shall be thoroughly cleaned, straightened and oiled inside and outside immediately after they are used.

Cleaning and oiling racks must be provided with drip pans to prevent oil and debris dropping on fresh concrete.

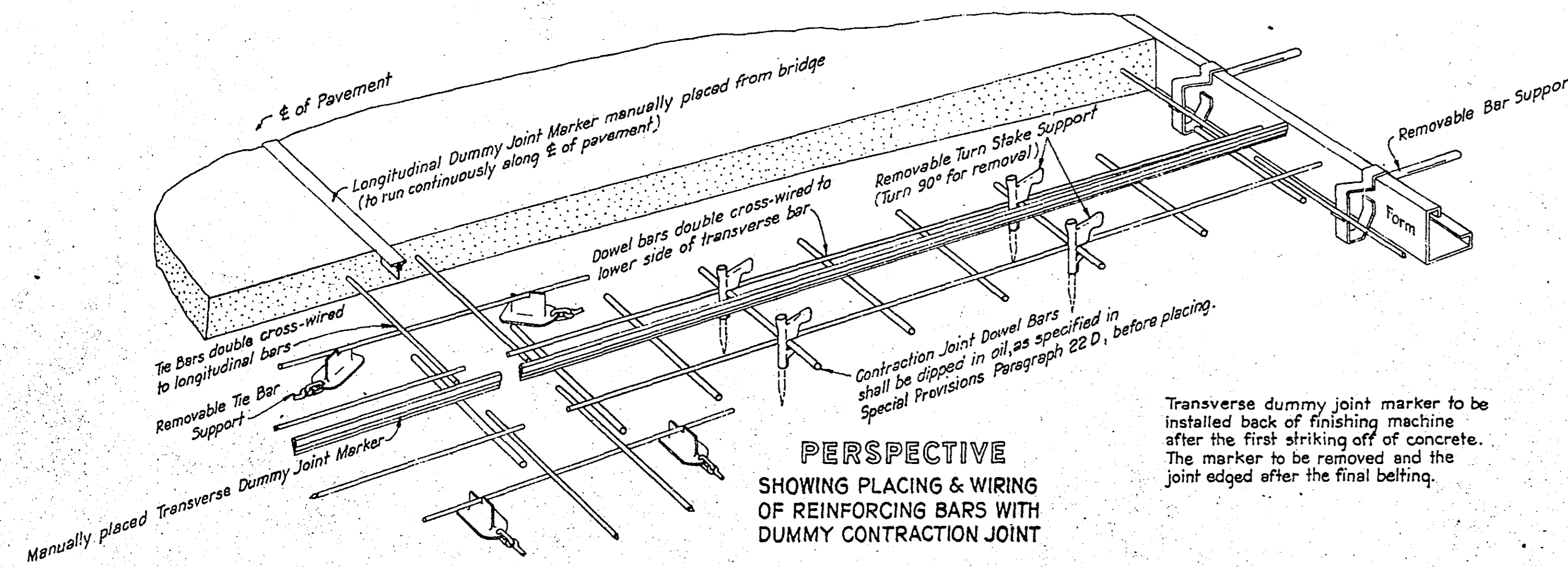
Other methods of installing joint assemblies will be approved, if in actual construction, they give the equivalent or better support than those illustrated.

Joint molds purchased in 1934 must be notched at the outer end to accommodate the removable end support shown on Sheet 3 B, of this date. End supports of 1934 type are not to be used.

After the joint space has been thoroughly cleaned and before pouring the filler materials, an end plug of bitumen impregnated cane fiber, preformed granulated cork, or sponge rubber with asphalt treated felt sides shall be driven into each end of the formed poured joint space.

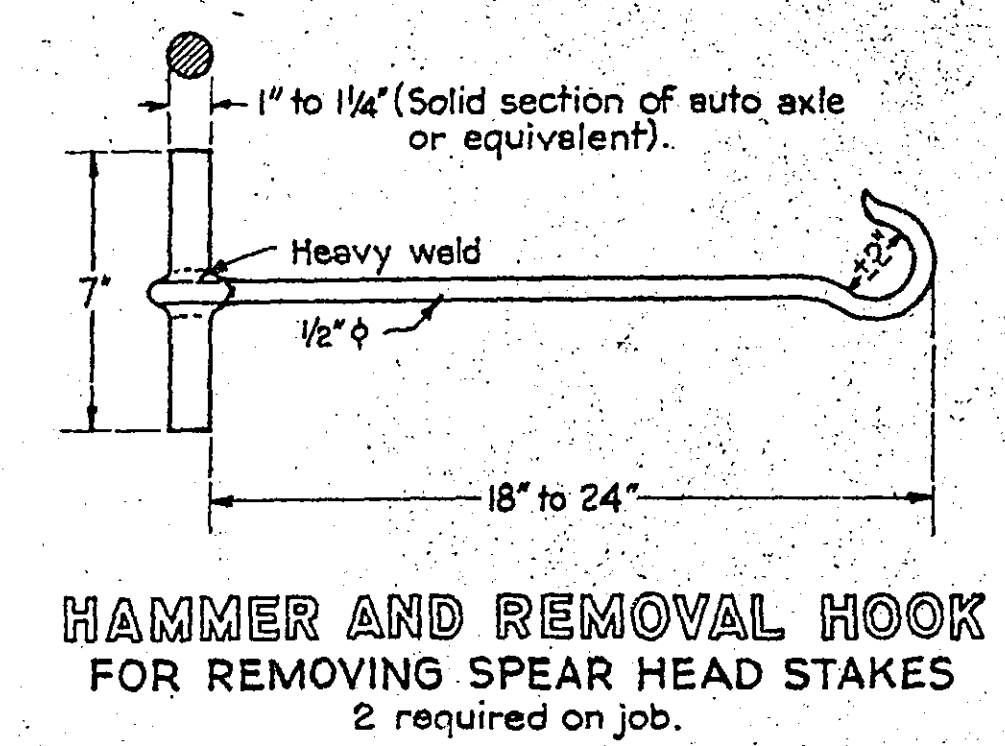
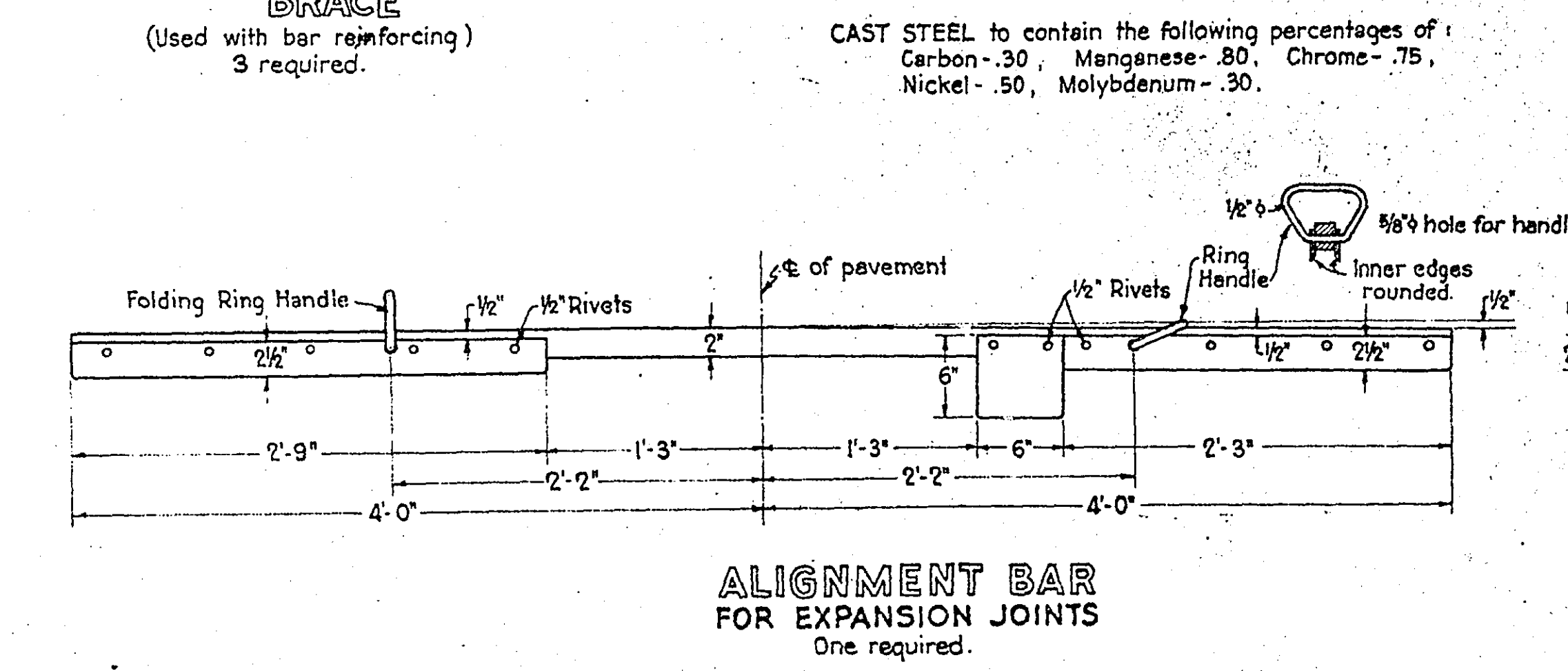
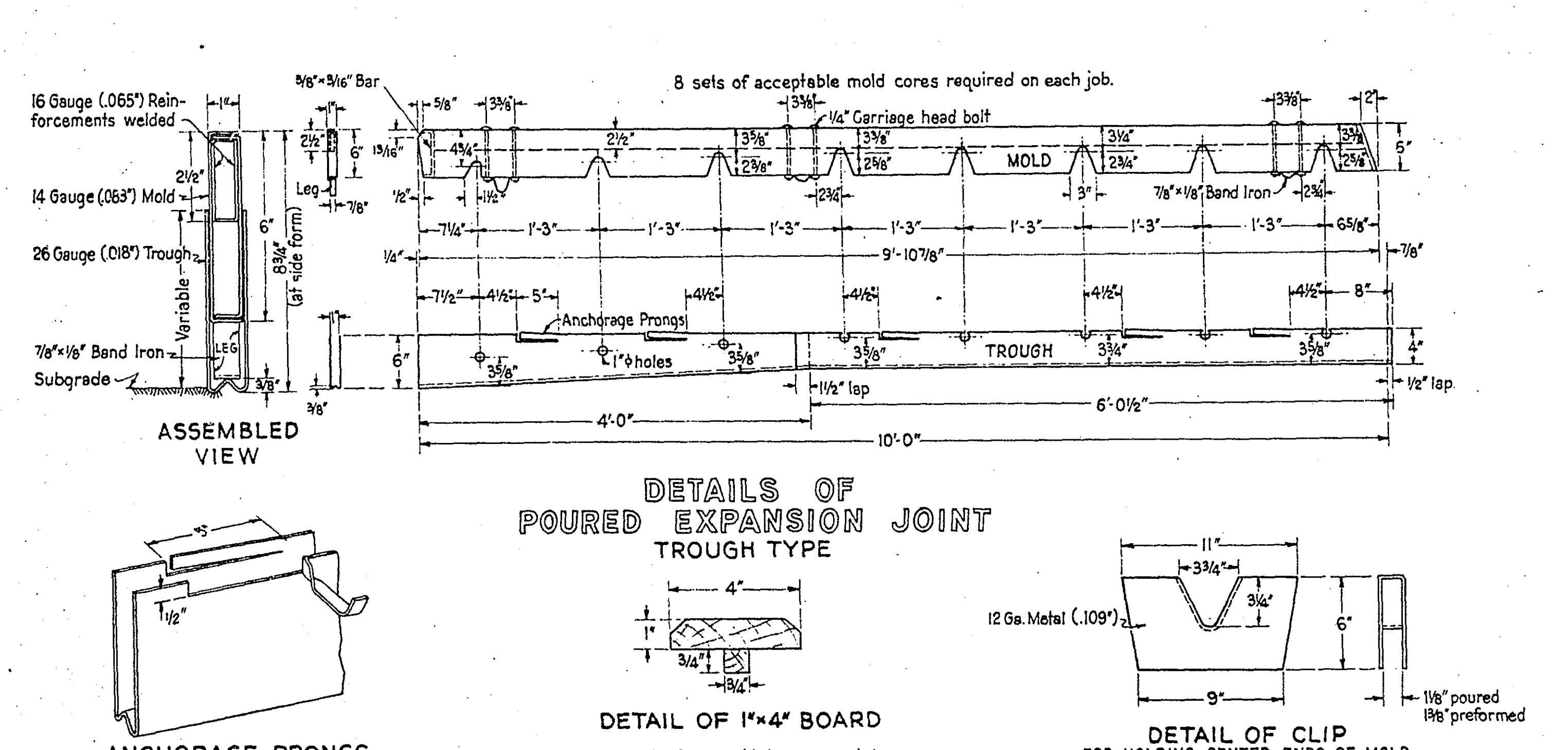
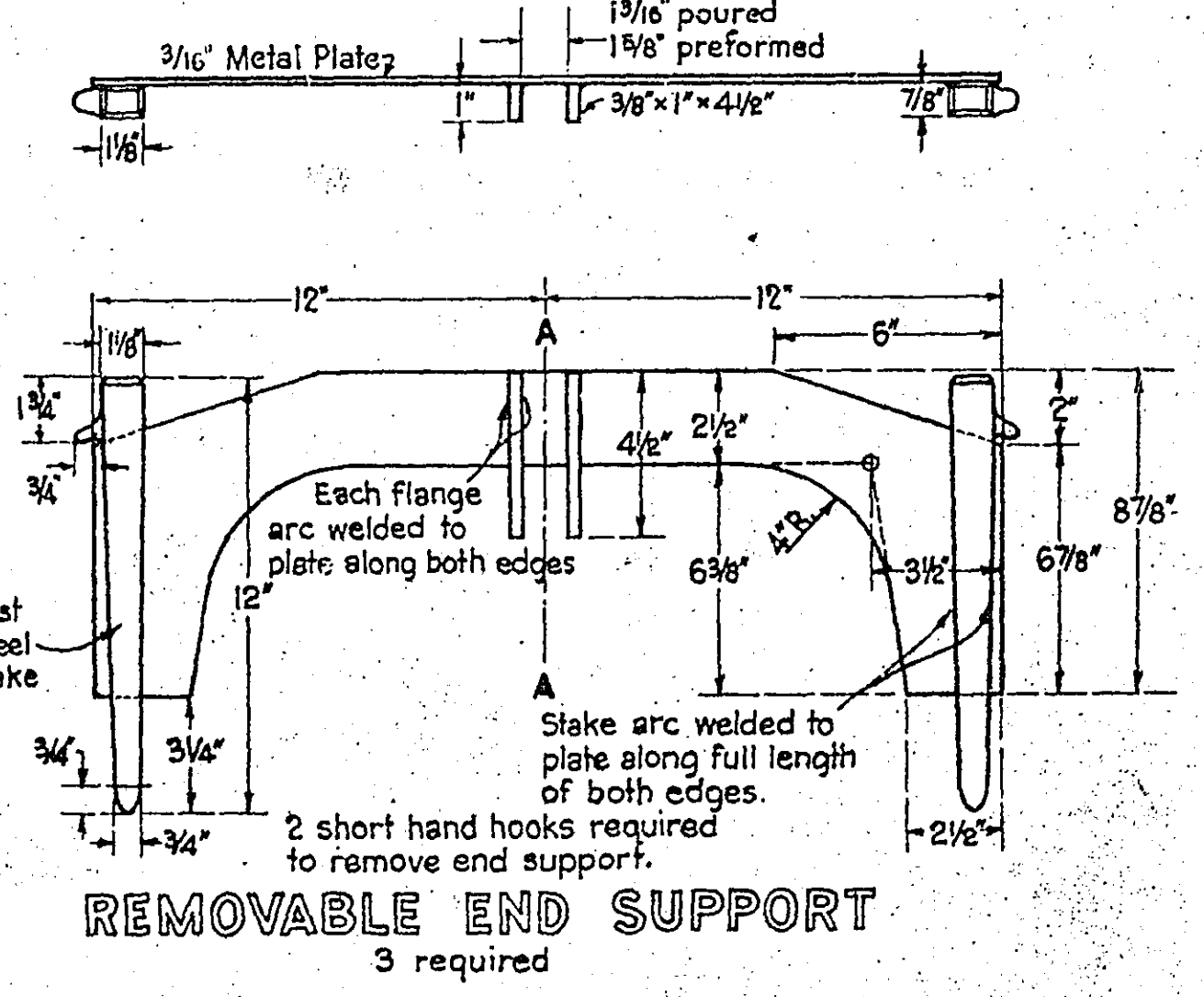
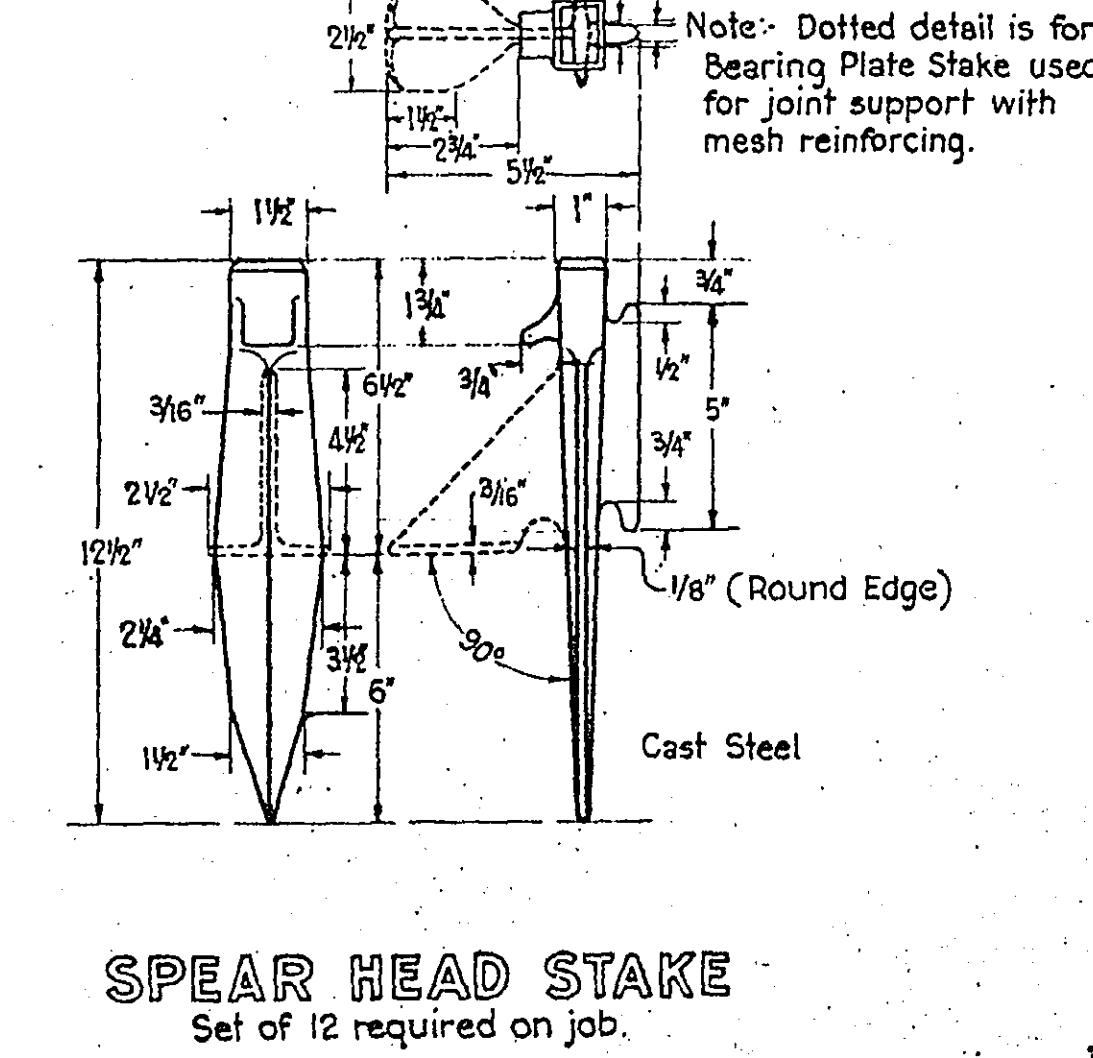
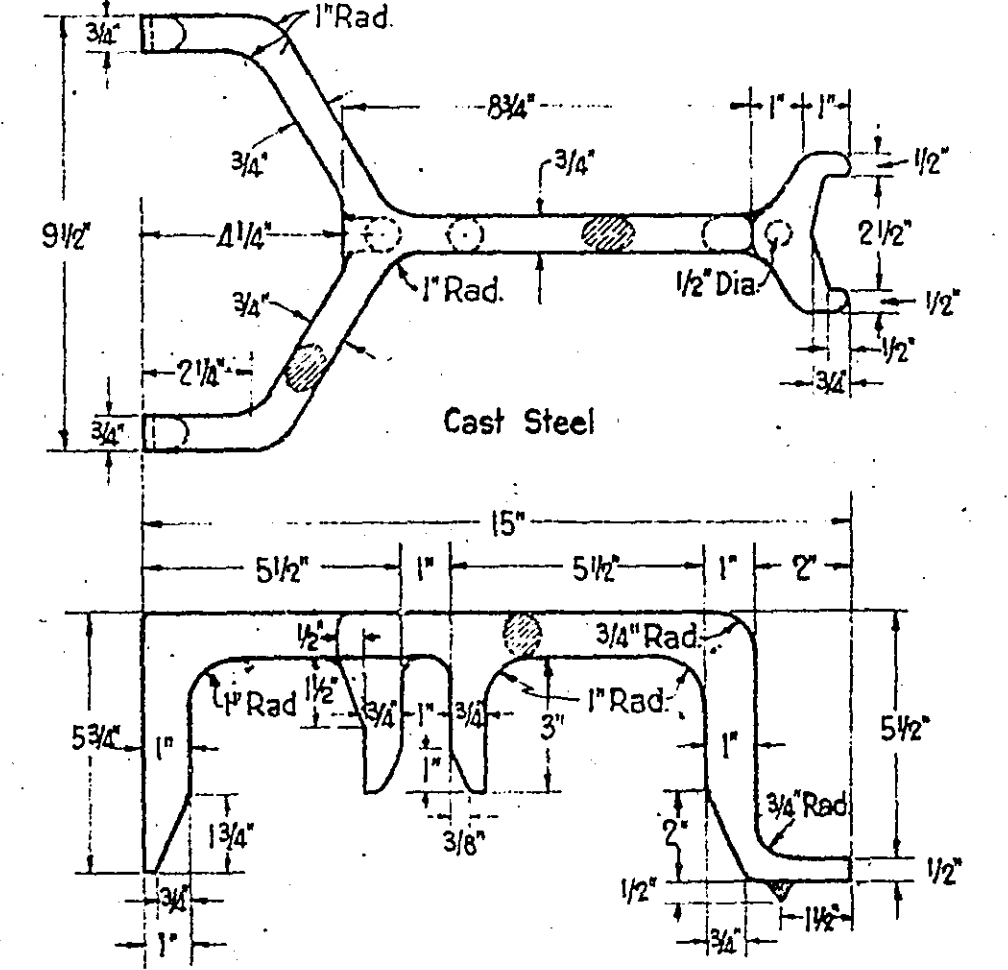
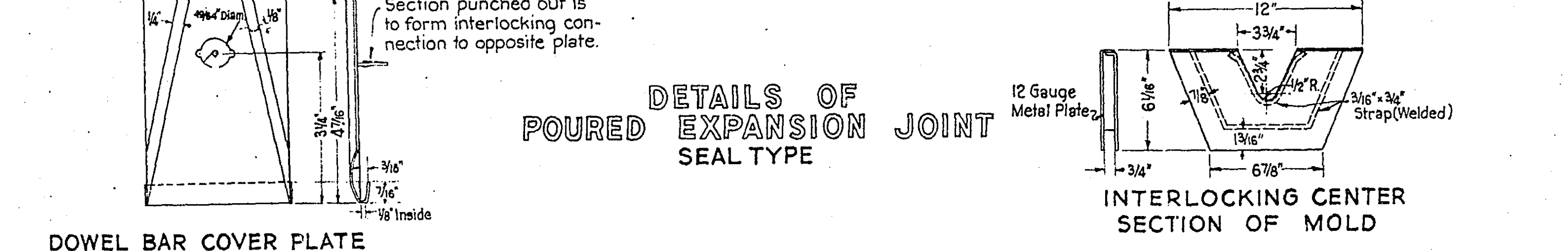
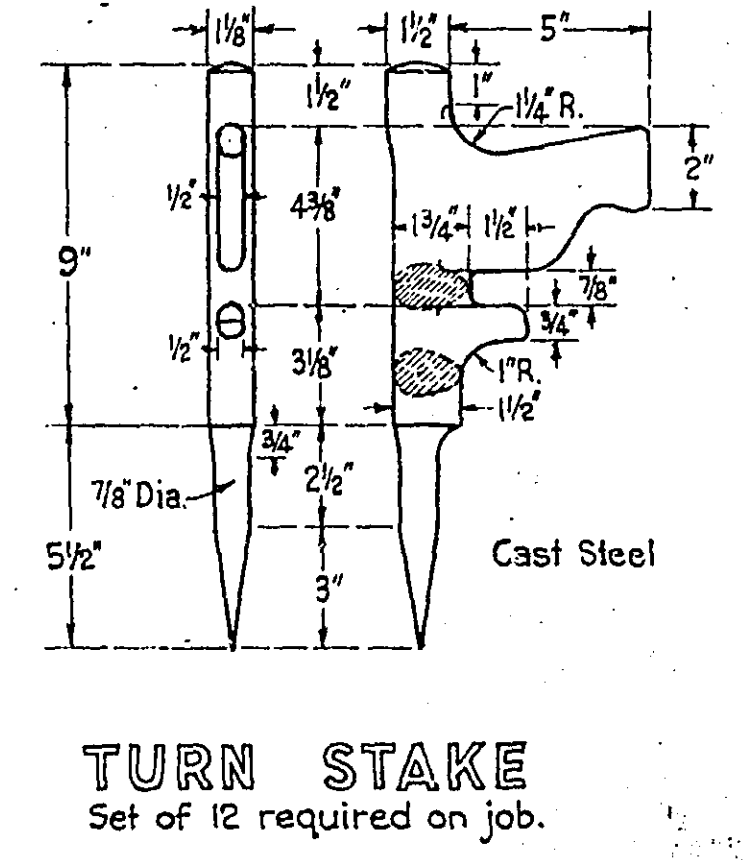
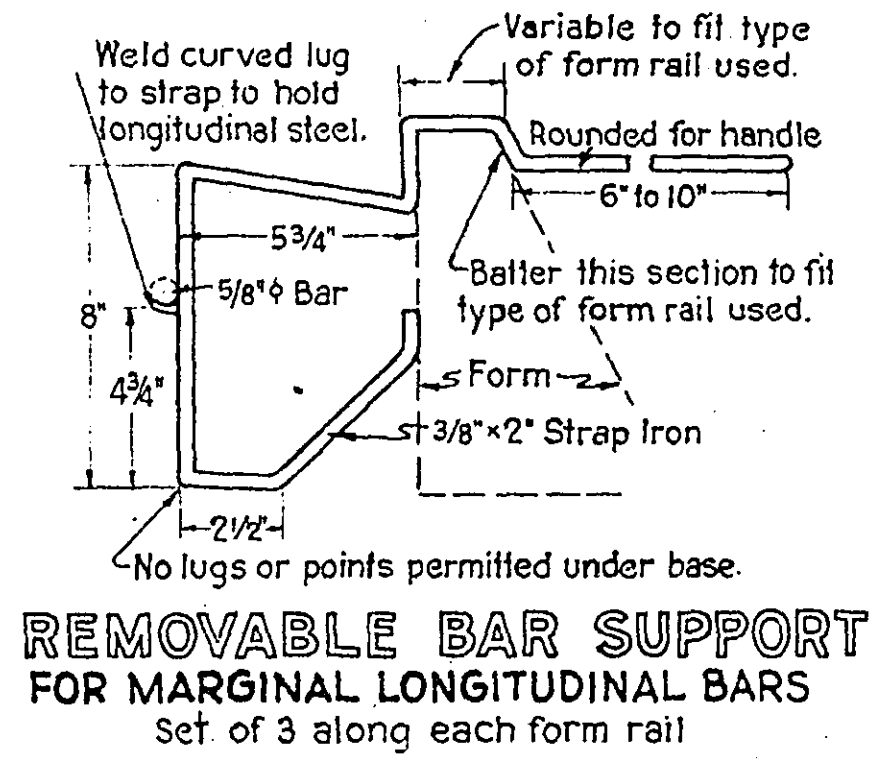
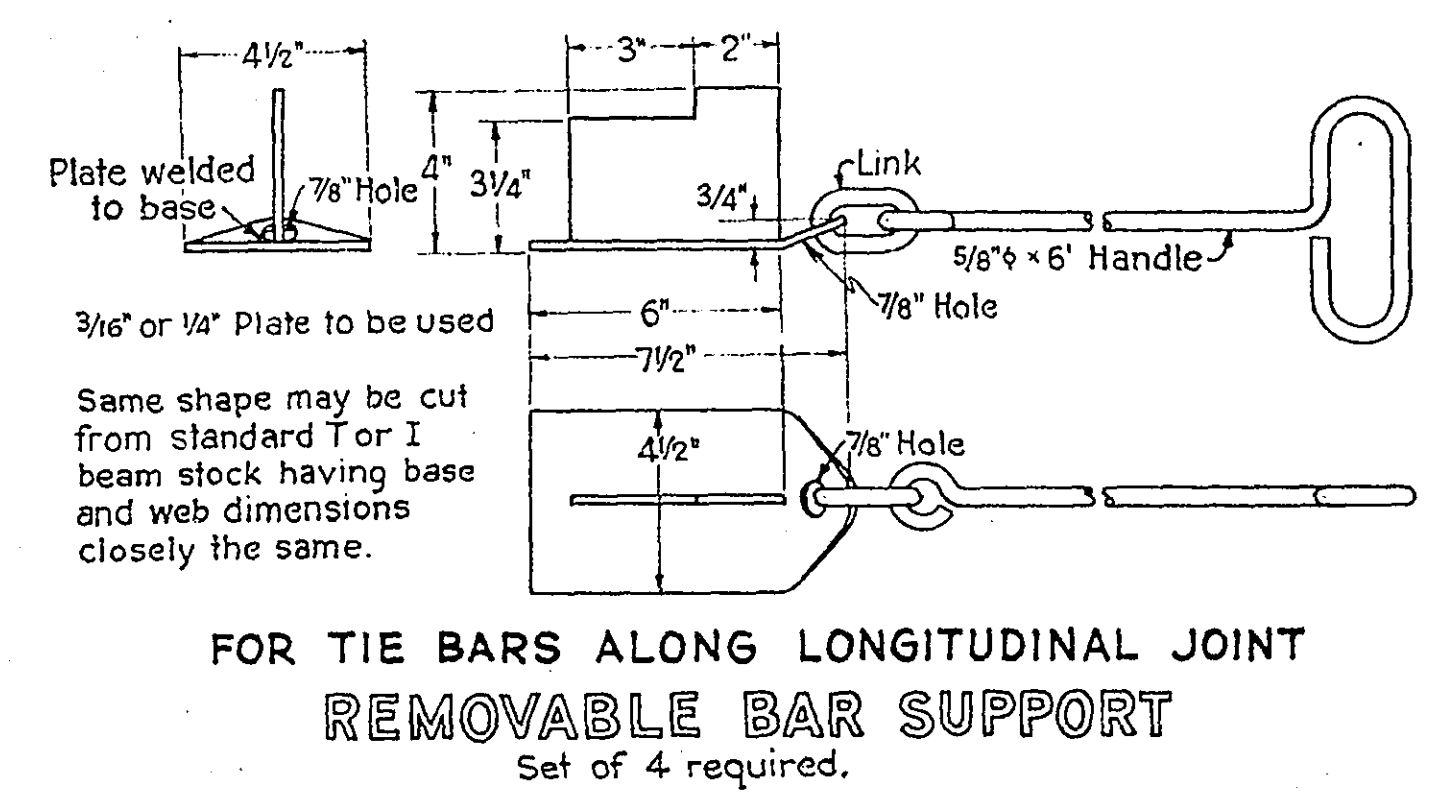
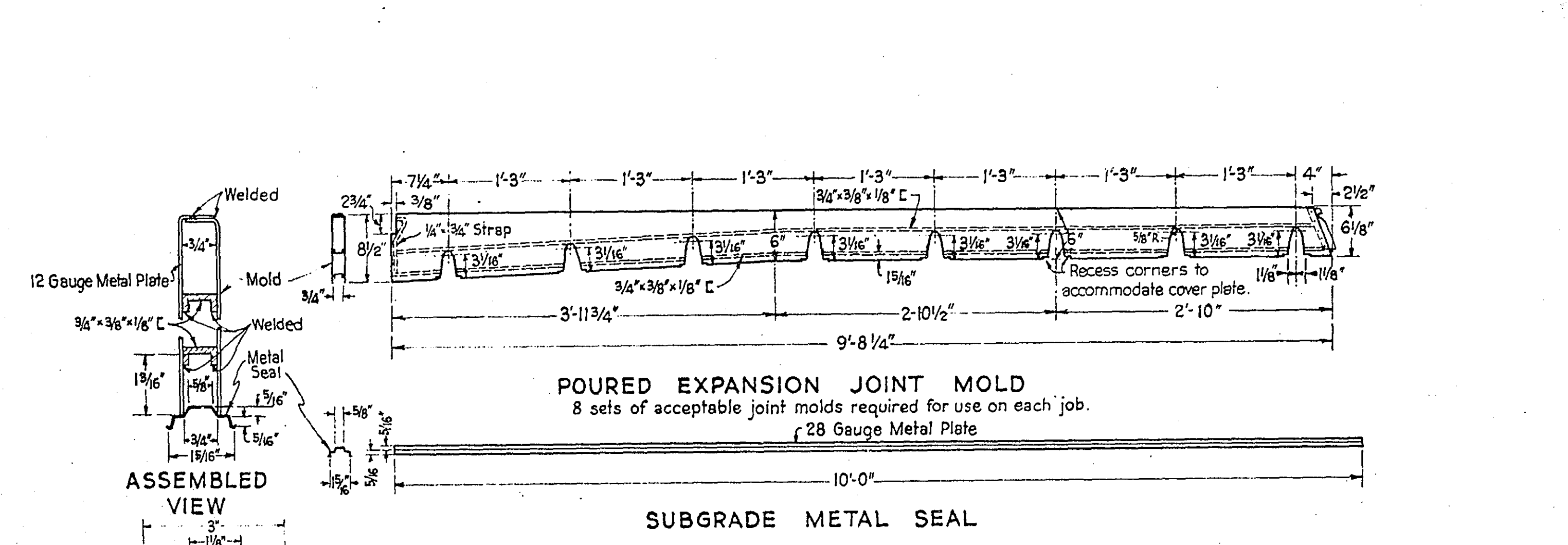
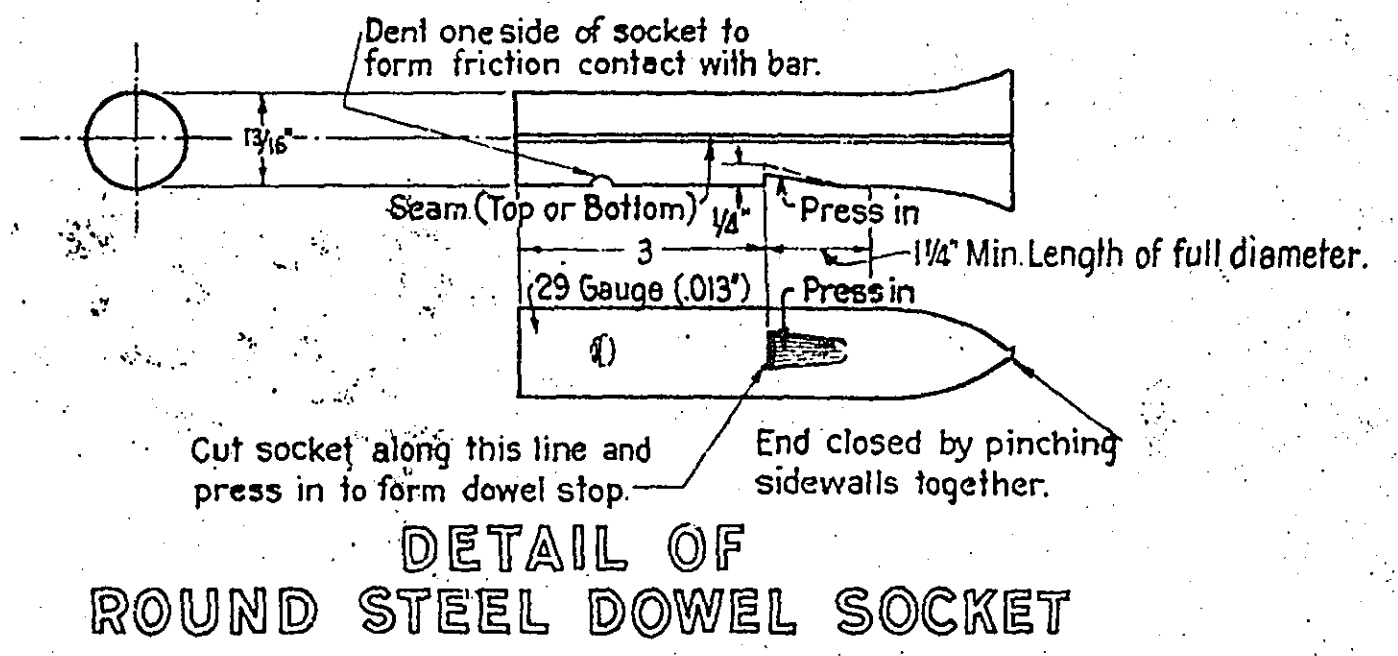
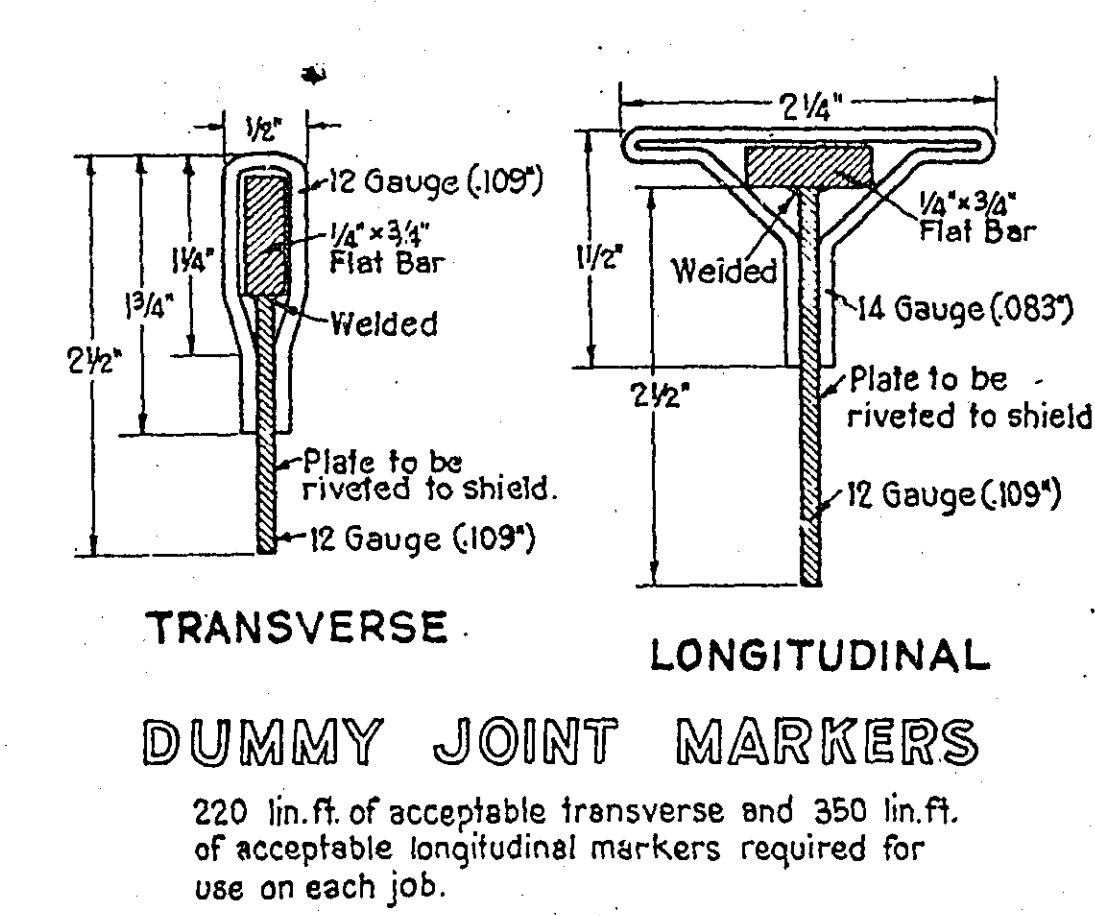
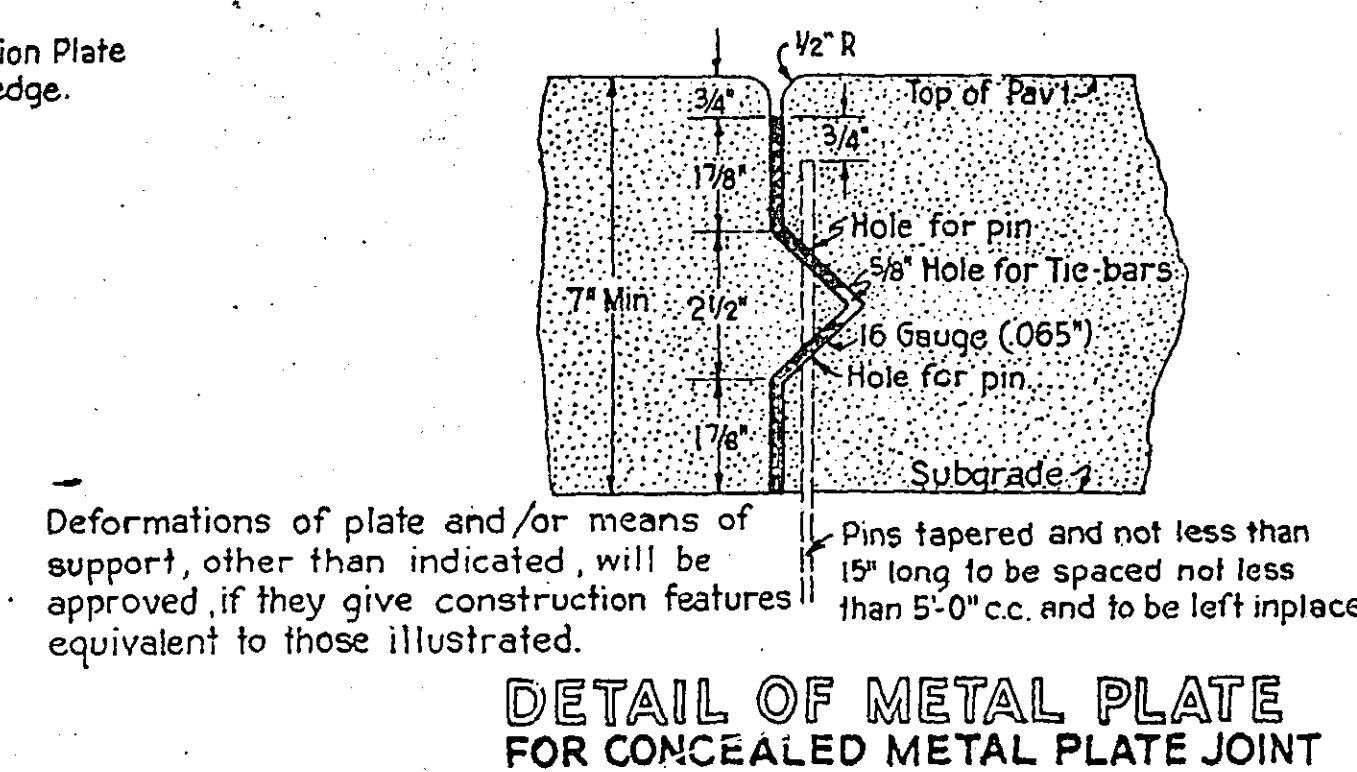
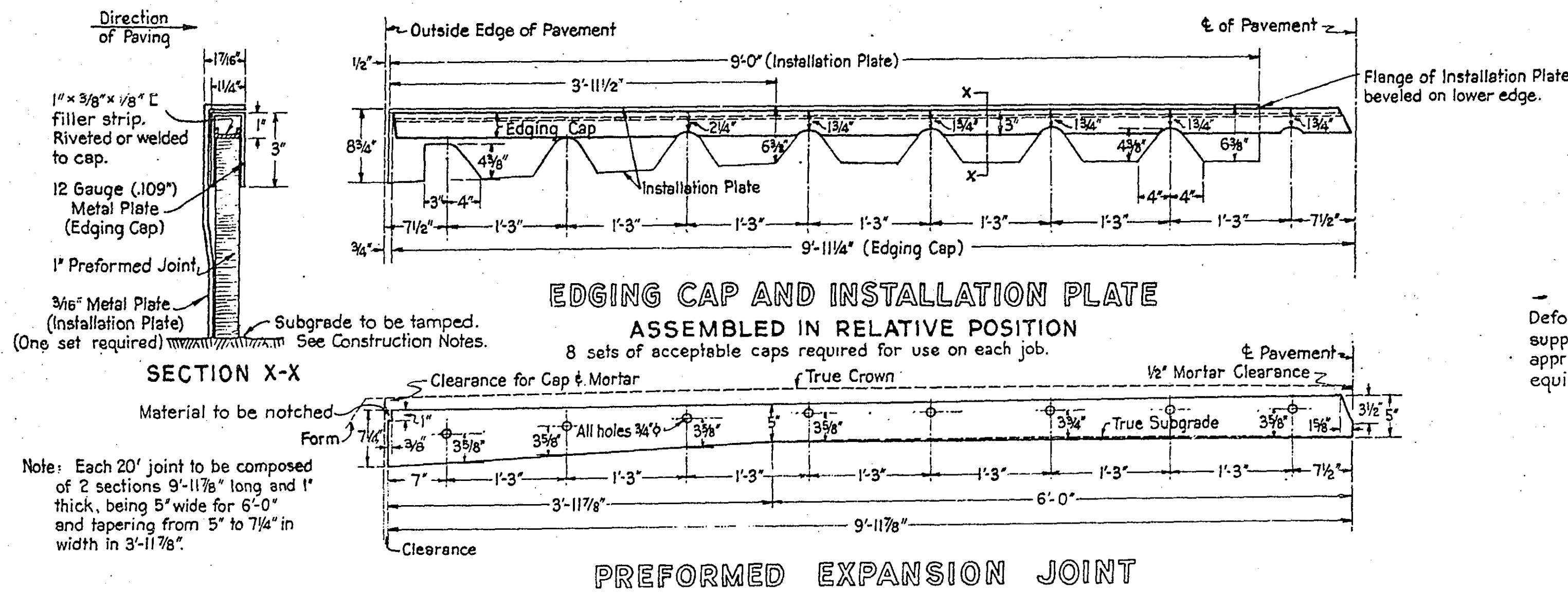
The location of these supports and stakes is to be well rodded by means of the removal hook or spade and enough concrete brought back to fill up the depressions where the concrete has been disturbed by the removal of these supports.

At the proper time, the joint molds or edging caps



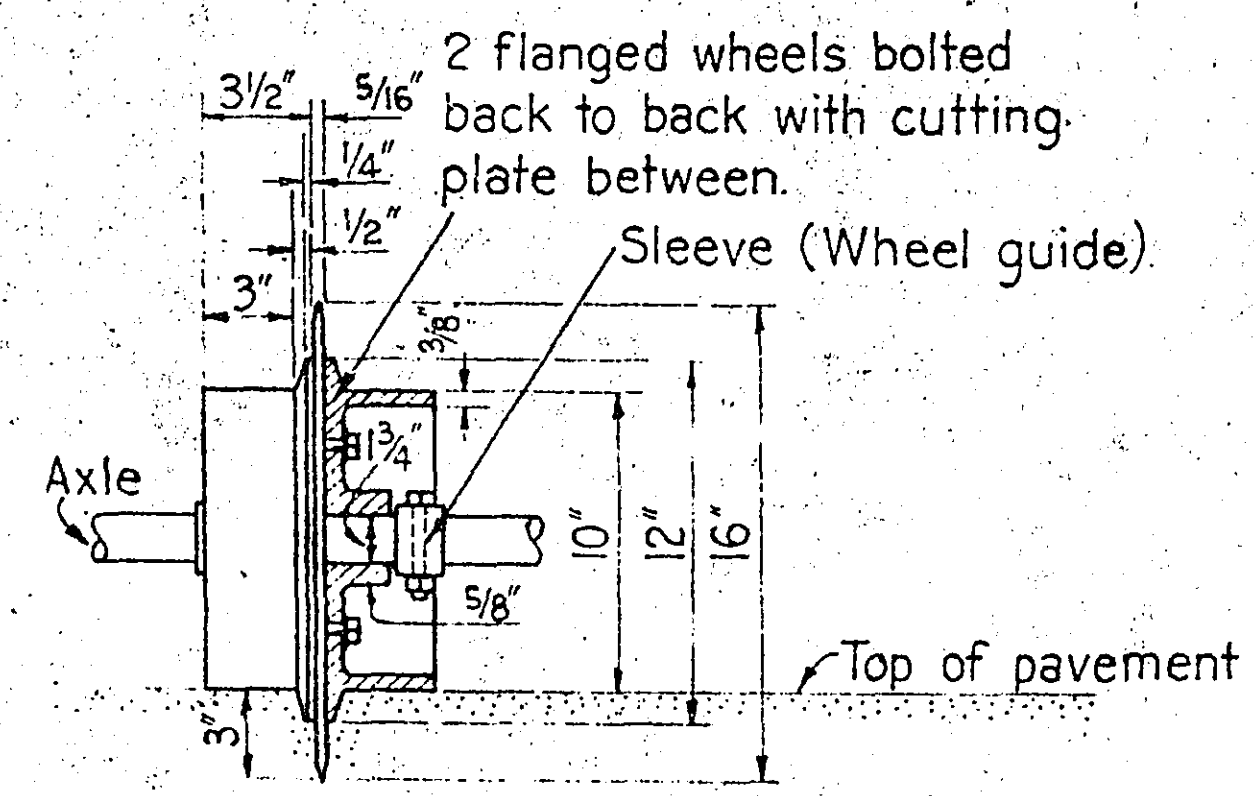
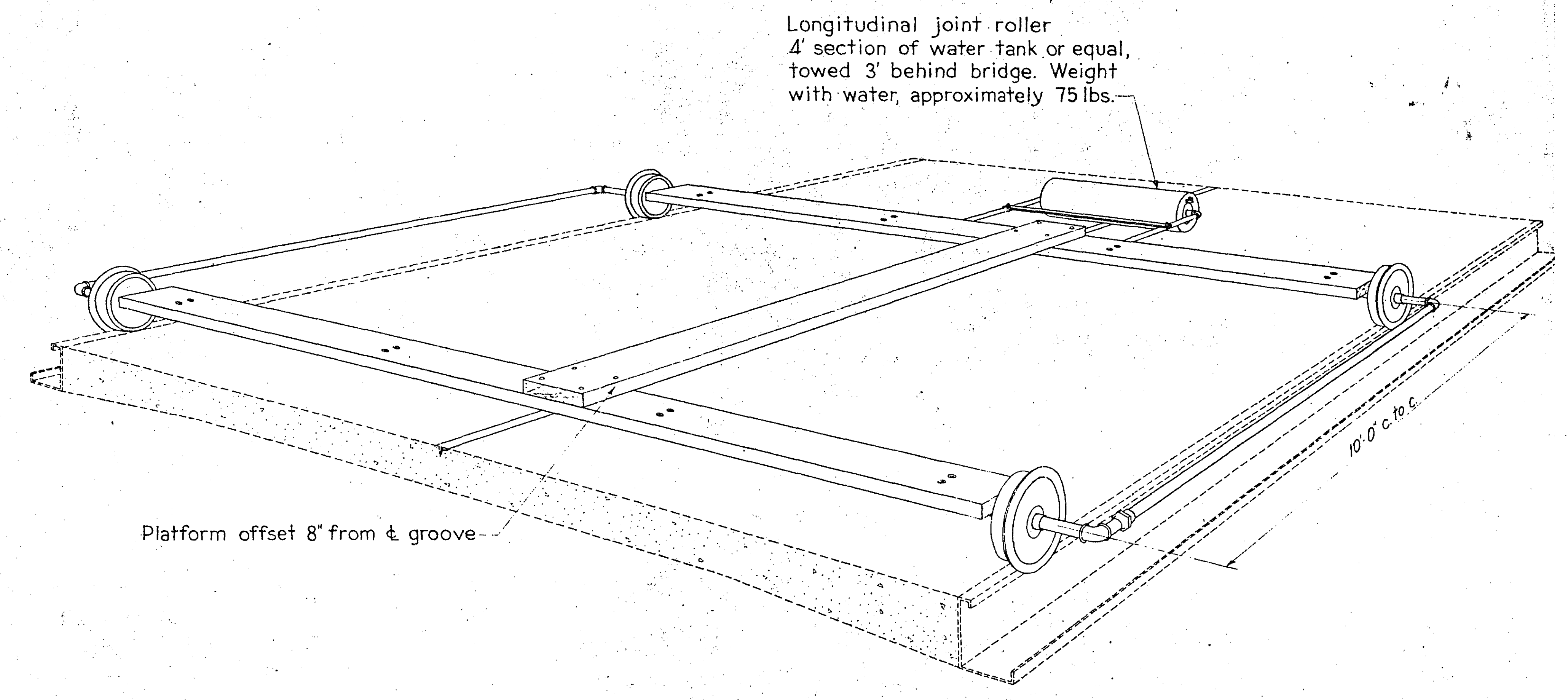
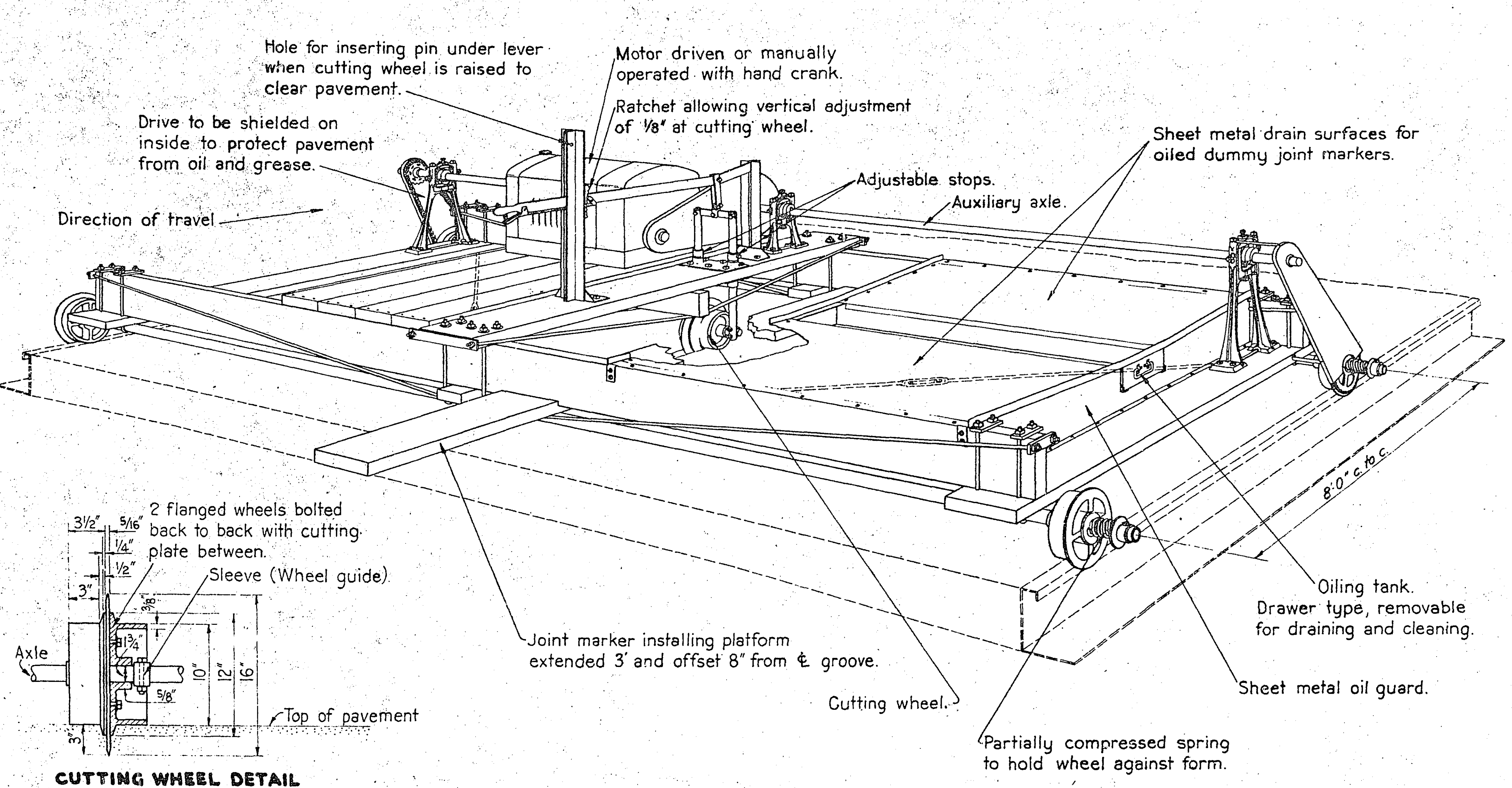
Note: For details of various devices or products shown see sheet 3 B.

RECOMMENDED FOR APPROVAL
APPROVED: *[Signature]* 1934
CONSTRUCTION ENGR.
CHIEF ENGR. 2415



NOTE: The devices or products shown on this sheet are built by and may be purchased from established manufacturers of paving supplies and accessories. The use of End Supports, Joint Brace Supports, and Turn Stake Supports, as shown, has been assigned to the State of Minnesota for the use by contractors in the construction of any type of expansion joints on contracts entered into with the Commissioner of Highways, State of Minnesota. Any and all commissions, royalties, licenses, or fees of any character, connected with the type of joint constructed or accessories used in its construction or installation must be absorbed by the manufacturer or vendor of such joint construction, equipment or accessories.

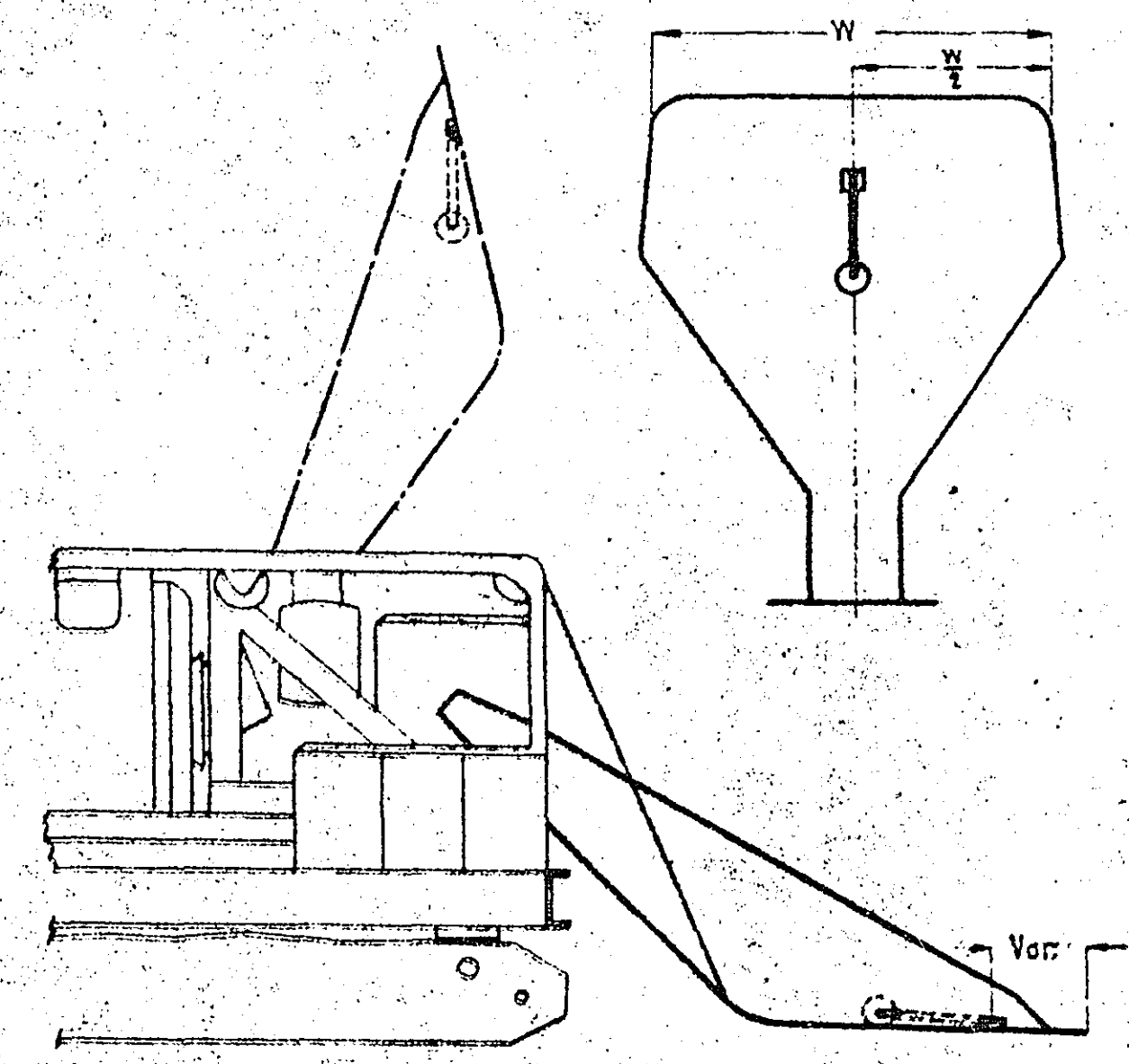
RECOMMENDED FOR APPROVAL
CONSTRUCTION ENGINEER
APPROVED August 27, 1934.
J. W. BEISER, CHIEF ENGR. 2415



CUTTING WHEEL DETAIL

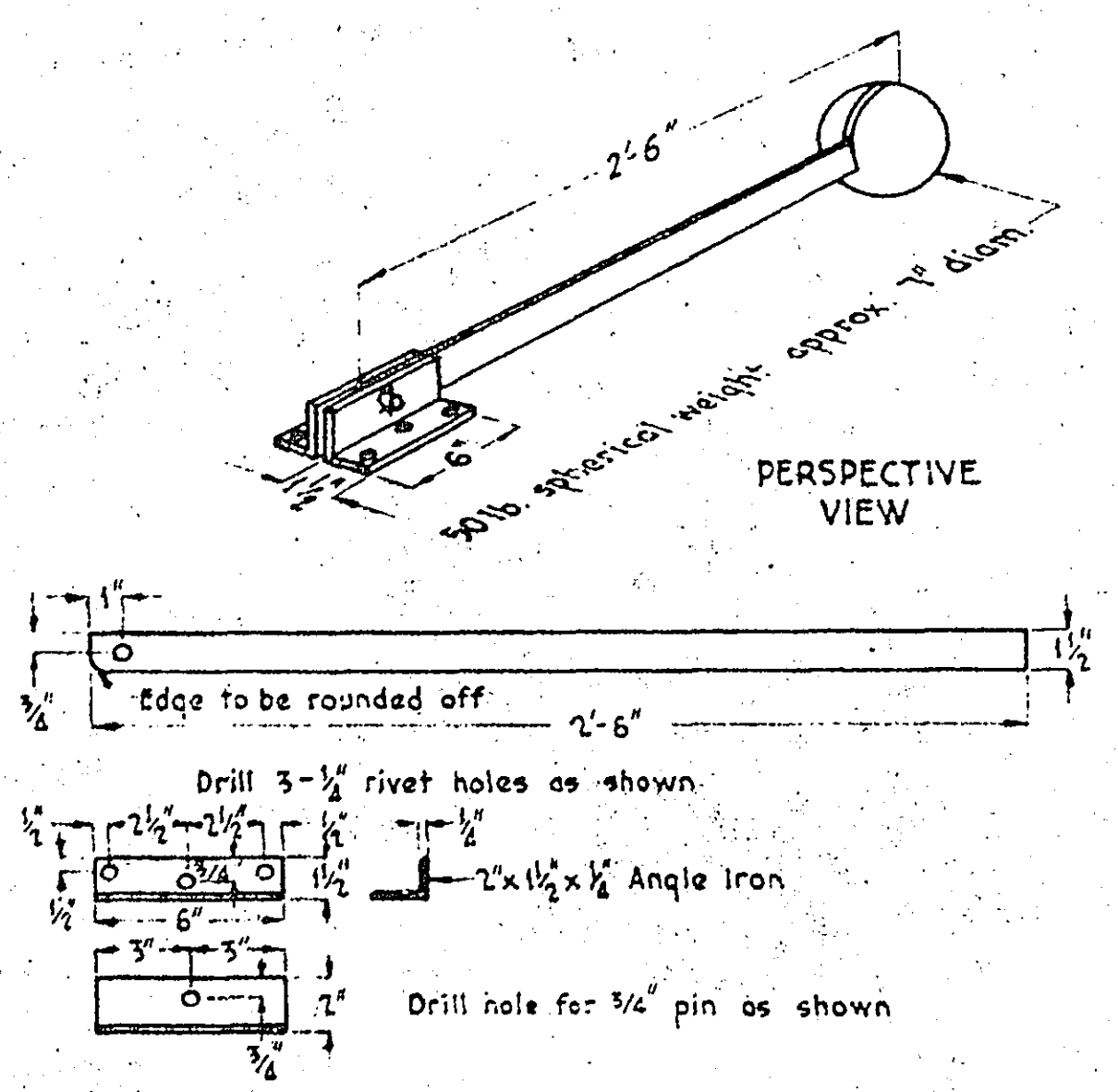
JOINT FINISHING BRIDGE AND ROLLER

LONGITUDINAL CENTER LINE JOINT CUTTER AND BRIDGE

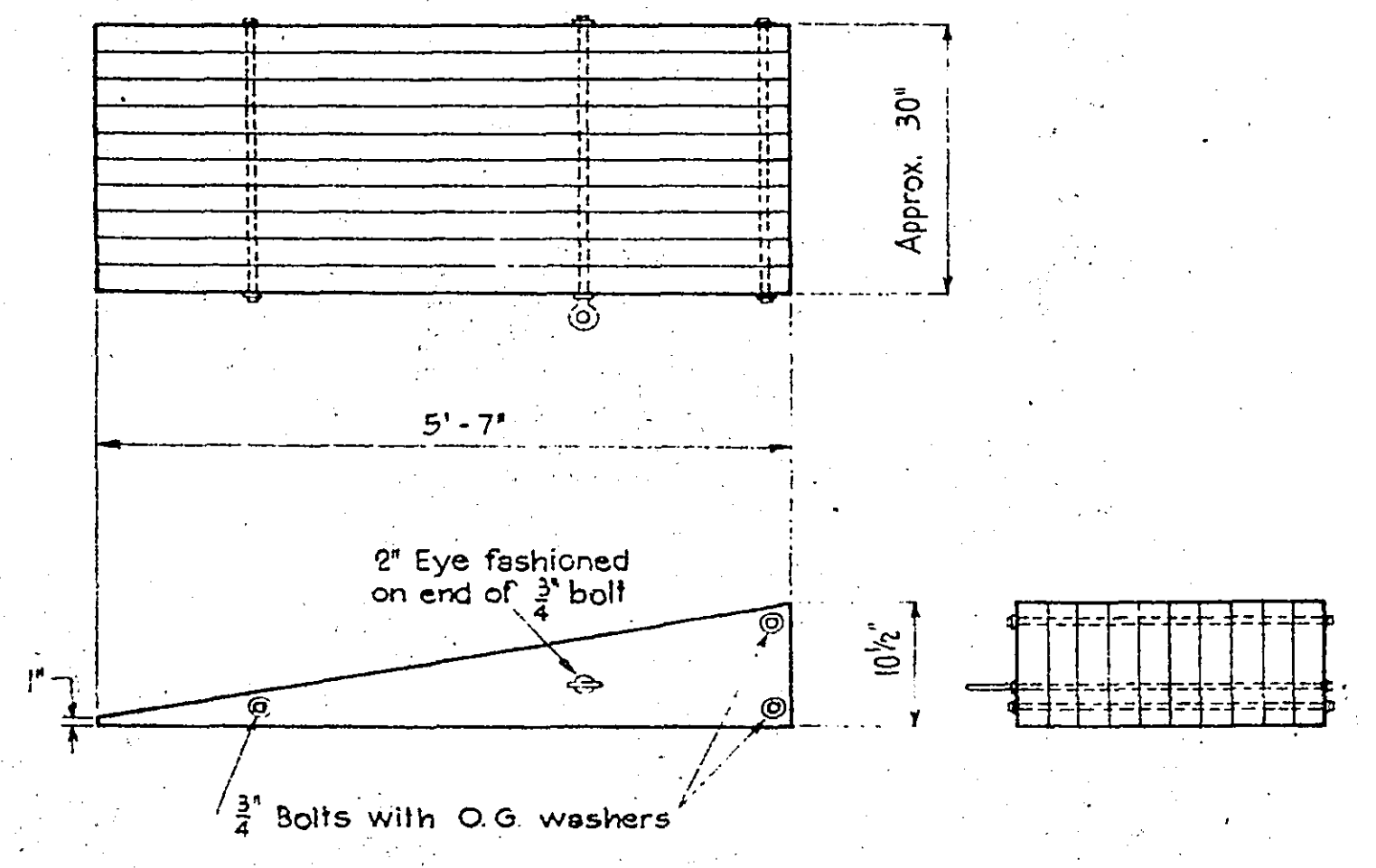


VIEWS SHOWING SKIP POLDER MOUNTED

SKIP POLDER



DETAILS



TRUCK RAMP