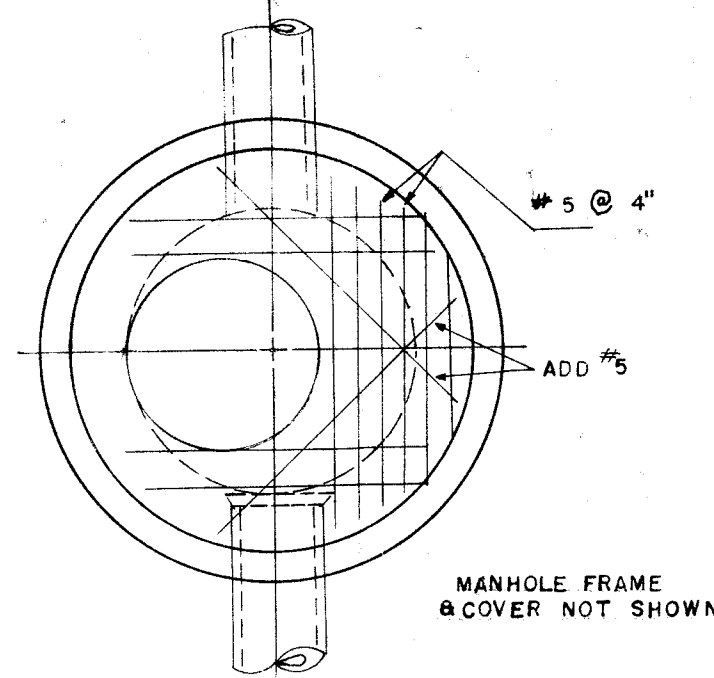
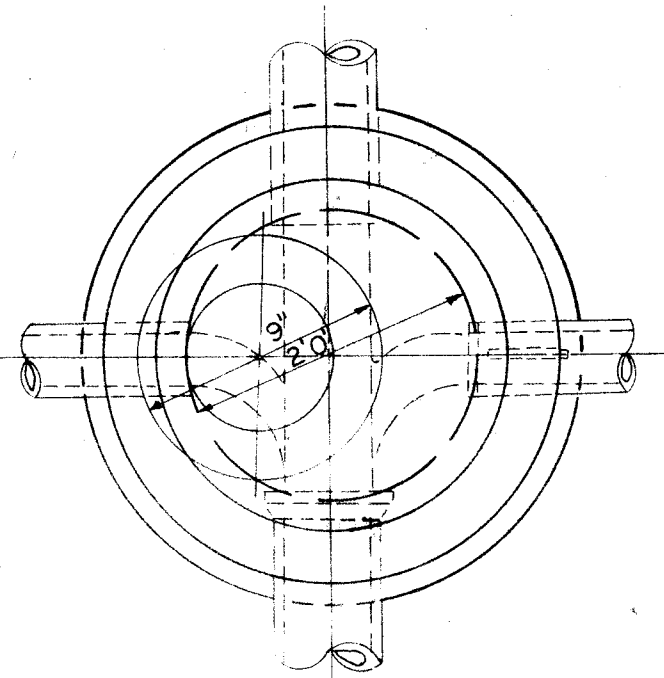
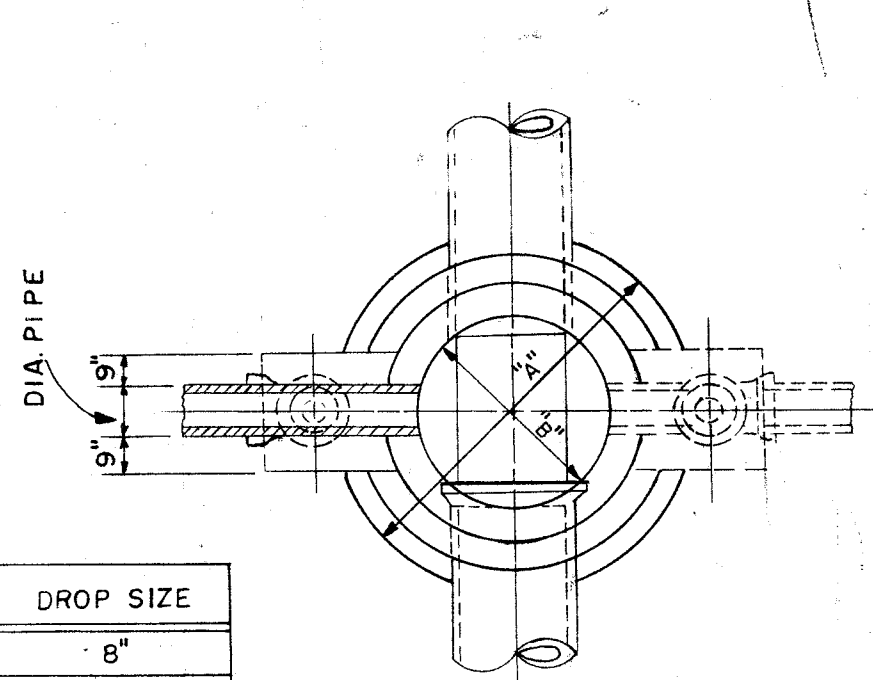


MANHOLE FRAME & COVER
NEENAH STARK COUNTY SPECIAL

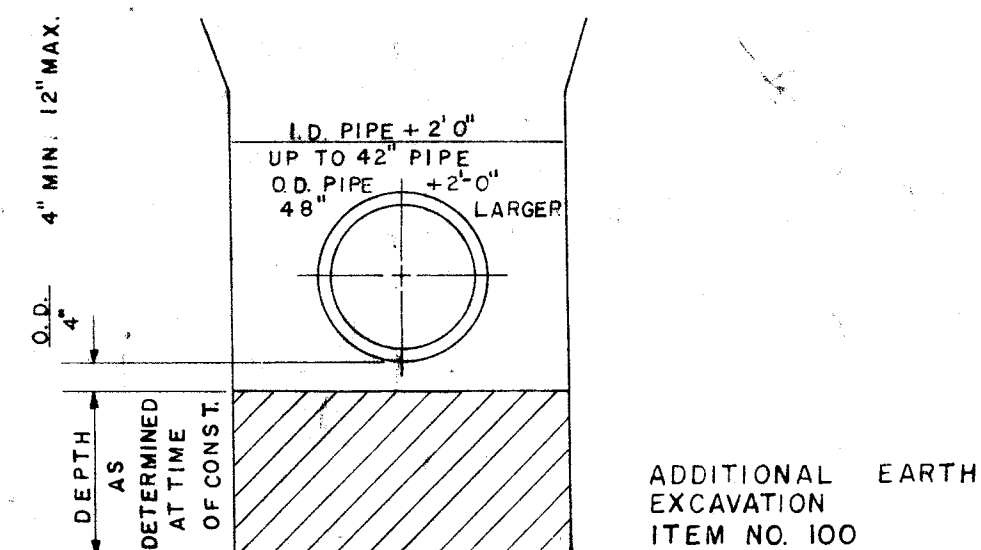
EAST AKRON CASTING CO., TALLMAUGE, OHIO
FRAME NO. 155 — WEIGHT 345 LBS.
COVER NO. 156 — WEIGHT 154 LBS.
OR EQUAL



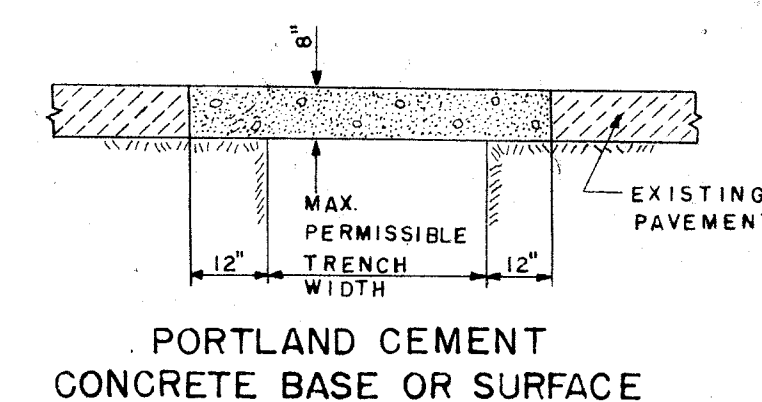
SEWER SIZE	DROP SIZE
8"	8"
10"	10"
12"-15"-18"	12"
21"-24"	15"
27"-30"-36"	18"



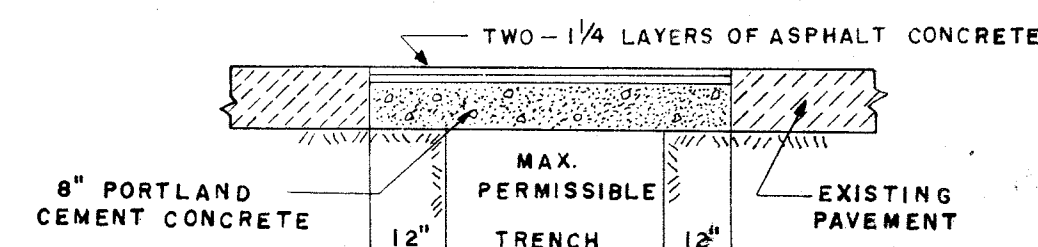
PLAN



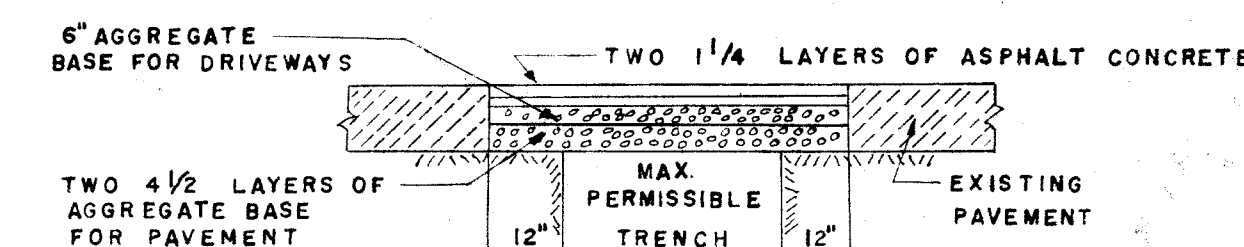
ADDITIONAL EARTH EXCAVATION
PAYMENT LIMITS



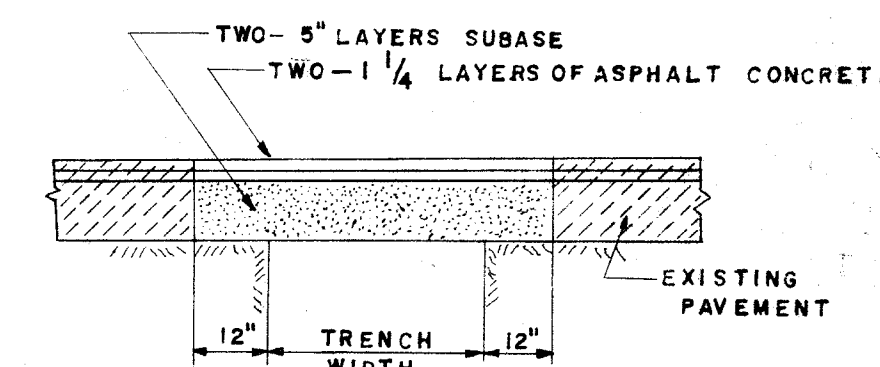
PORTLAND CEMENT
CONCRETE BASE OR SURFACE



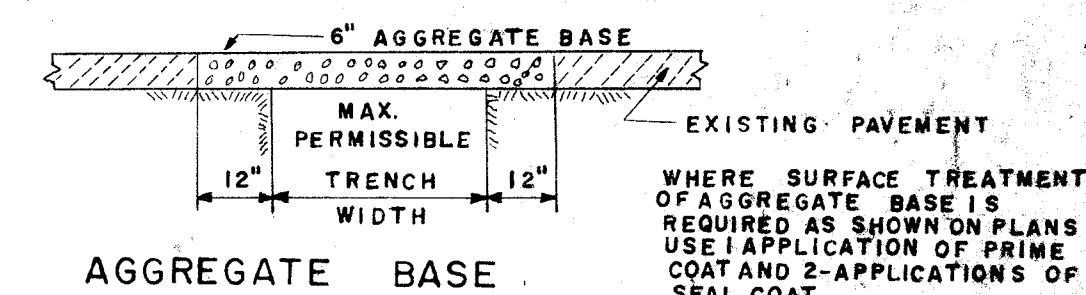
ASPHALT CONCRETE SURFACE COURSE PORTLAND
CEMENT CONCRETE BASE COURSE



ASPHALT CONCRETE SURFACE COURSE
AGGREGATE BASE COURSE



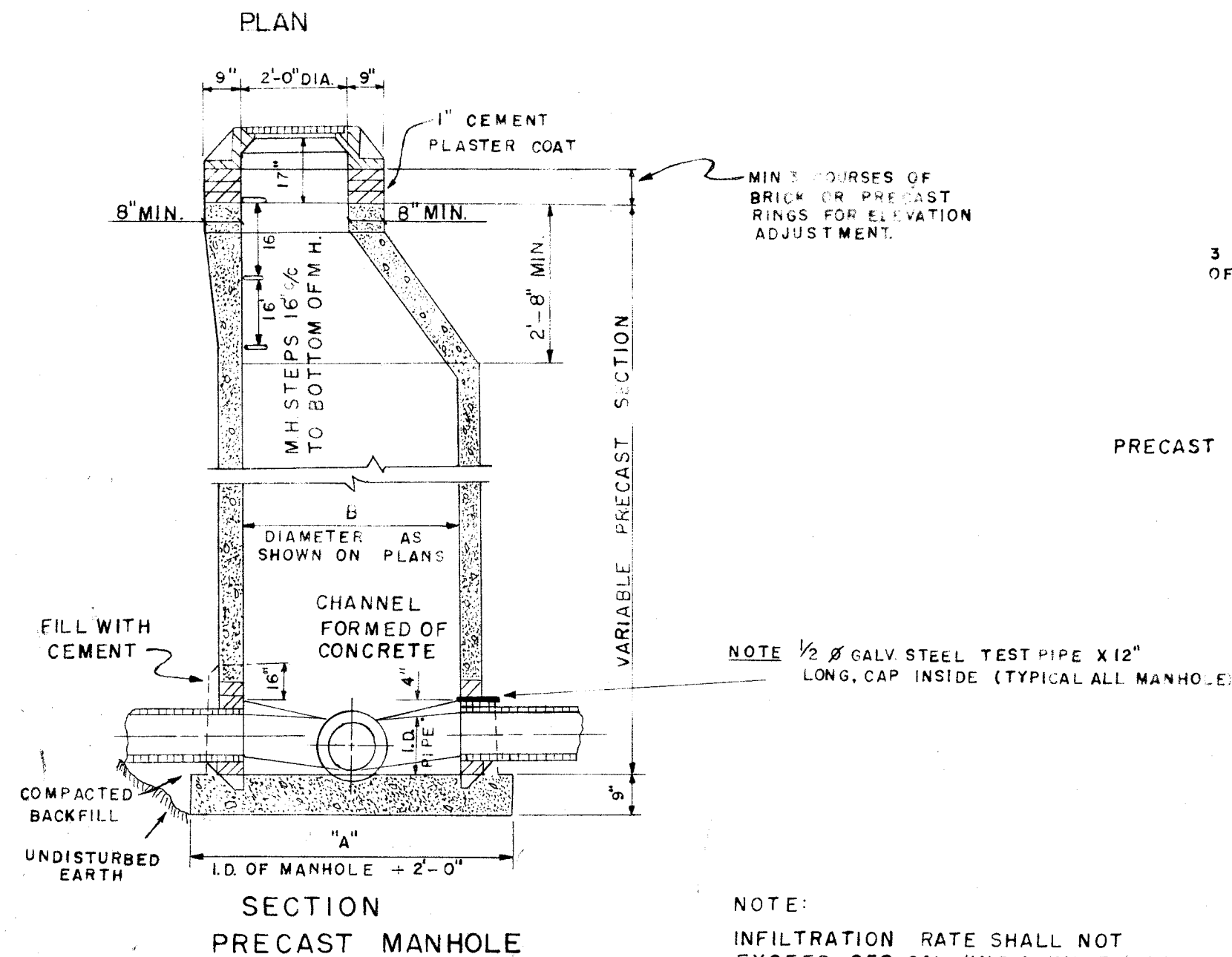
ASPHALT CONCRETE SURFACE COURSE
SUB BASE



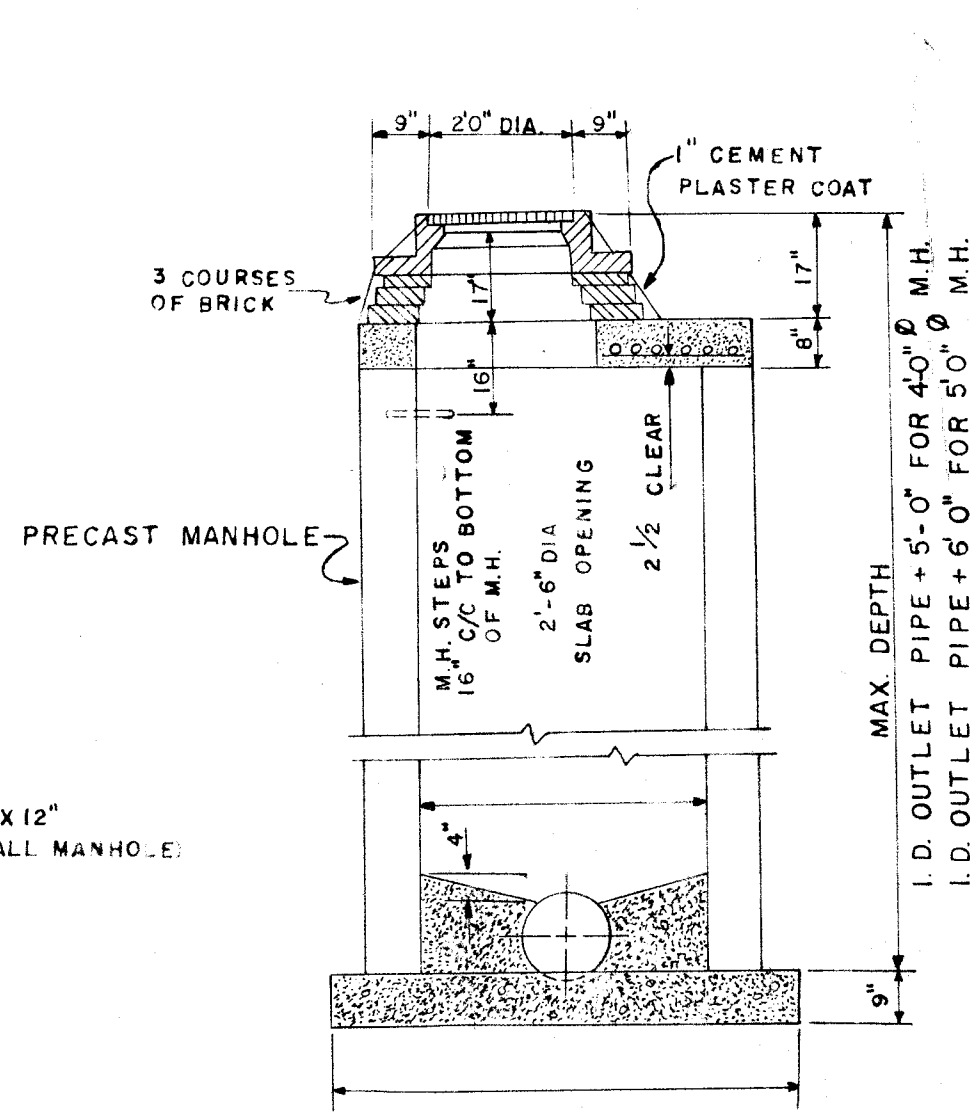
AGGREGATE BASE

TYPICAL PAVEMENT
REPLACEMENT SECTIONS

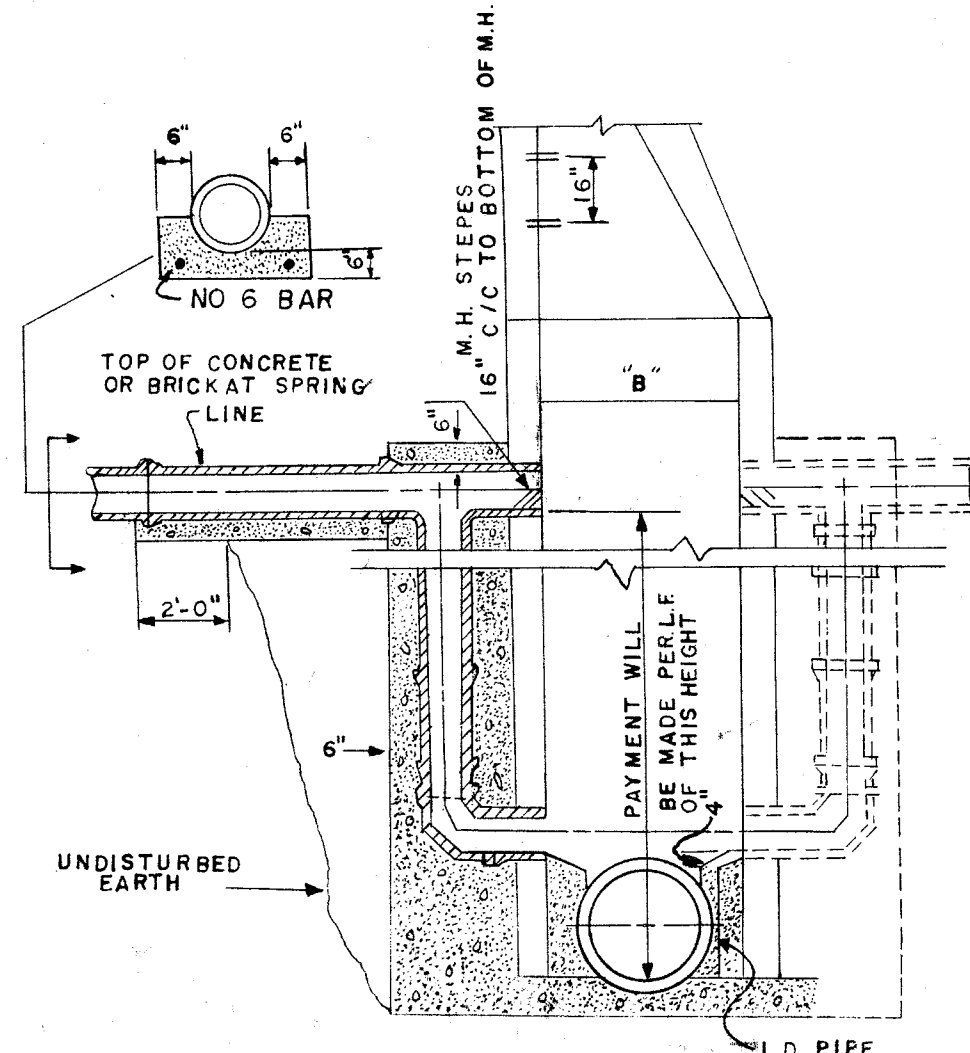
NOTE: THIS CONNECTION TO BE USED WHEN DEPTH OF SEWER IS TO
GREAT TO USE STANDARD HOUSE CONNECTION. LOCATION AS SHOWN ON
PLANS OR DETERMINED AT TIME OF CONSTRUCTION.



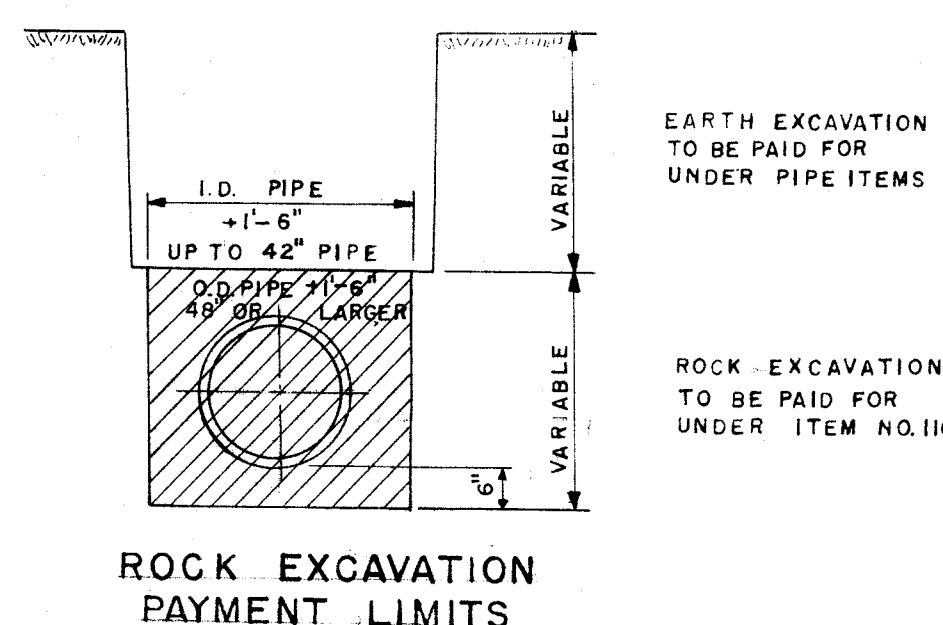
SECTION
PRECAST MANHOLE



SECTION
SHALLOW MANHOLE

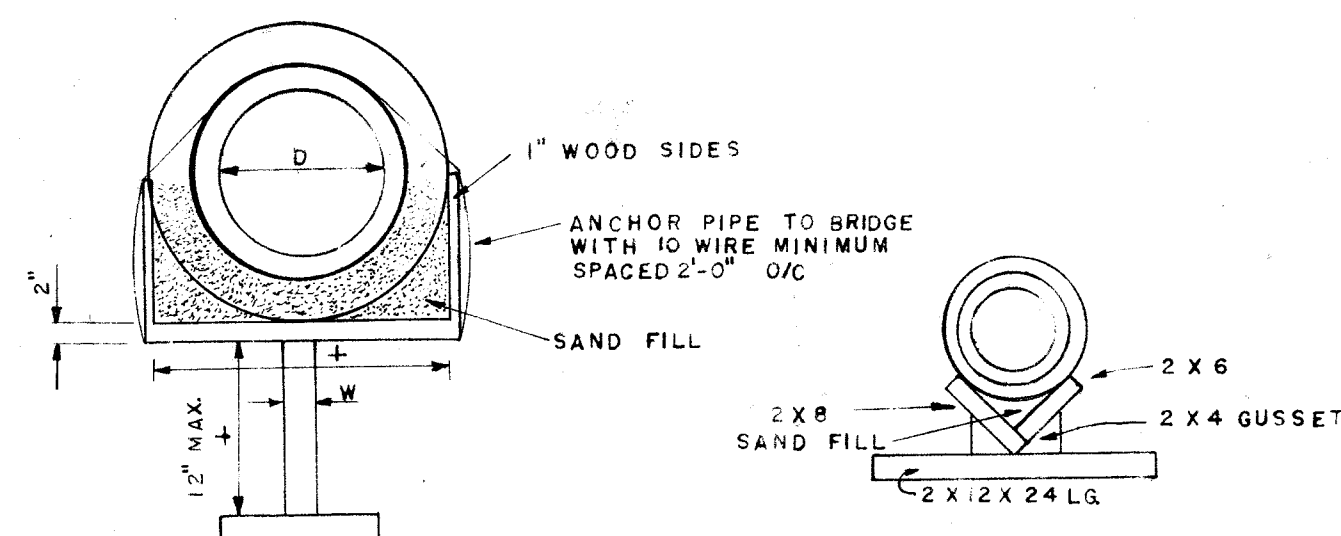


SECTION
DROP MANHOLE



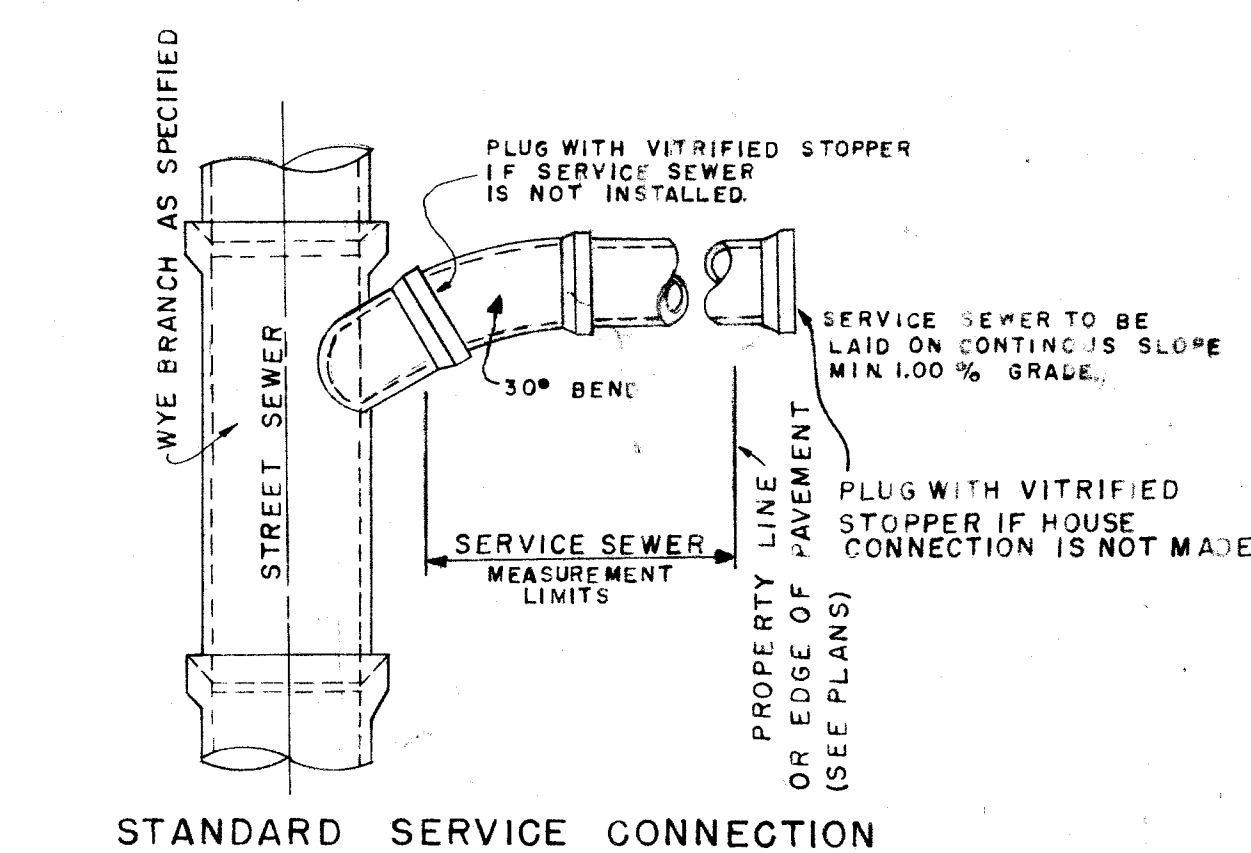
ROCK EXCAVATION
PAYMENT LIMITS

D	4'-6"	8"	10"	12"	15"	18"
+	8"	12"	16"	18"	20"	24"
W	2"	2"	3"	3"	3"	3"

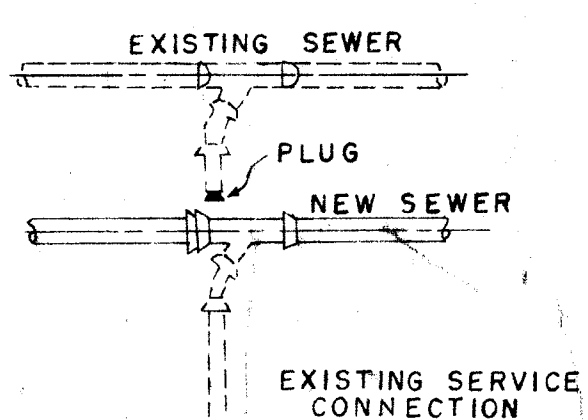


SECTION E-E

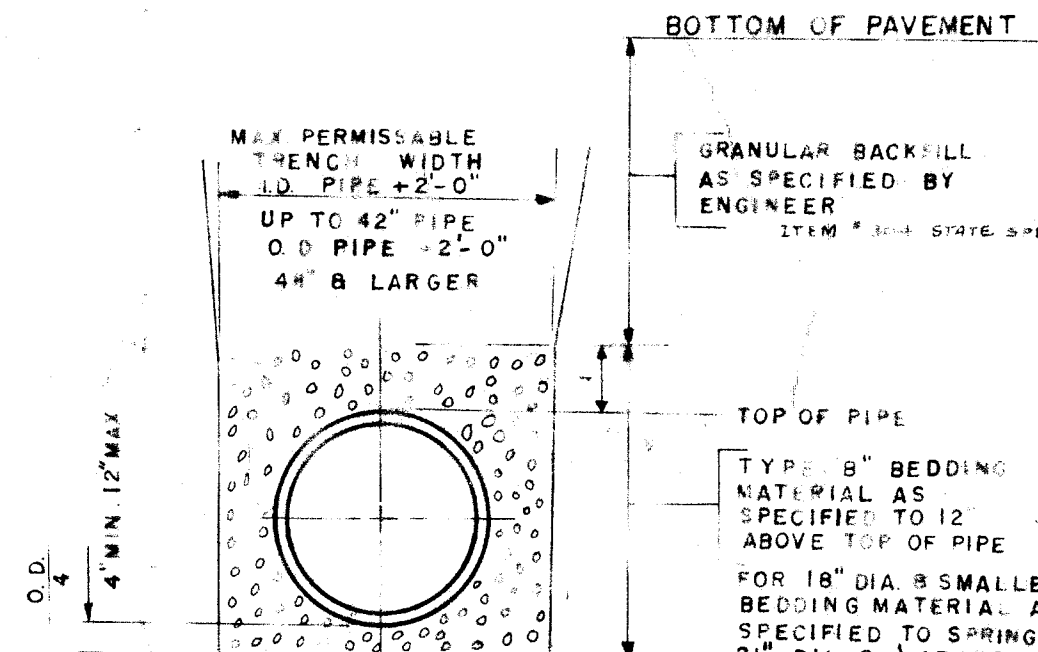
SECTION F-F



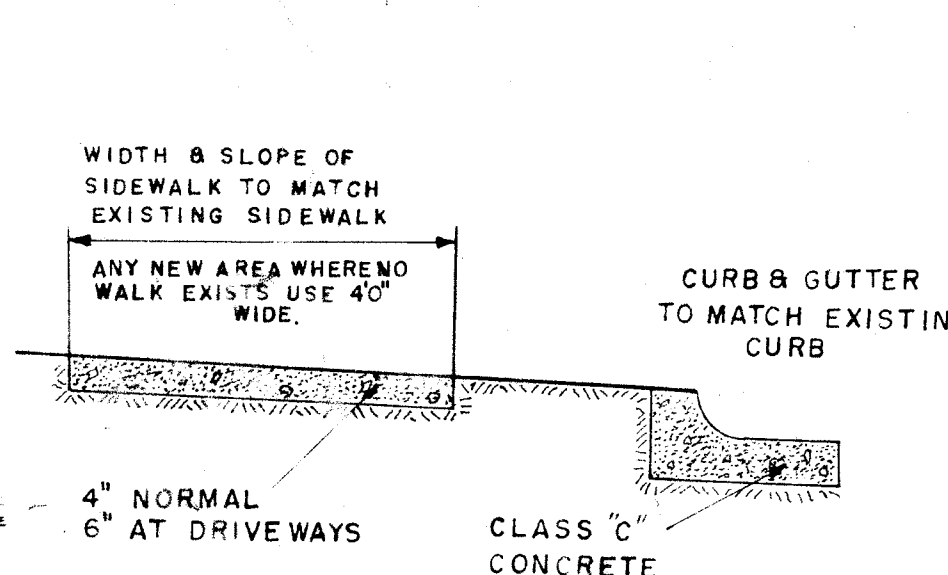
STANDARD SERVICE CONNECTION



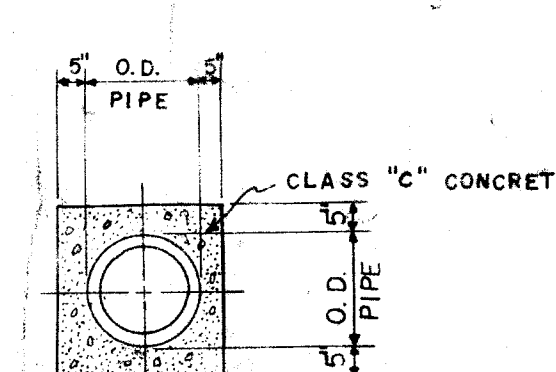
RECONNECTION OF EXISTING
SERVICE SEWERS



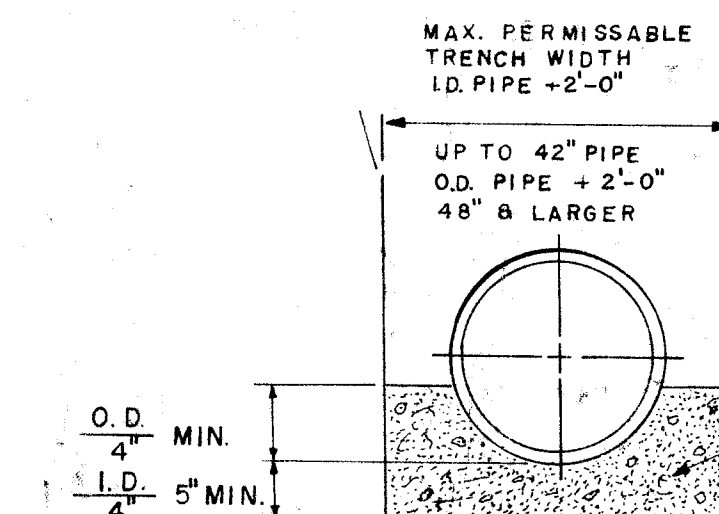
TYPE B BEDDING



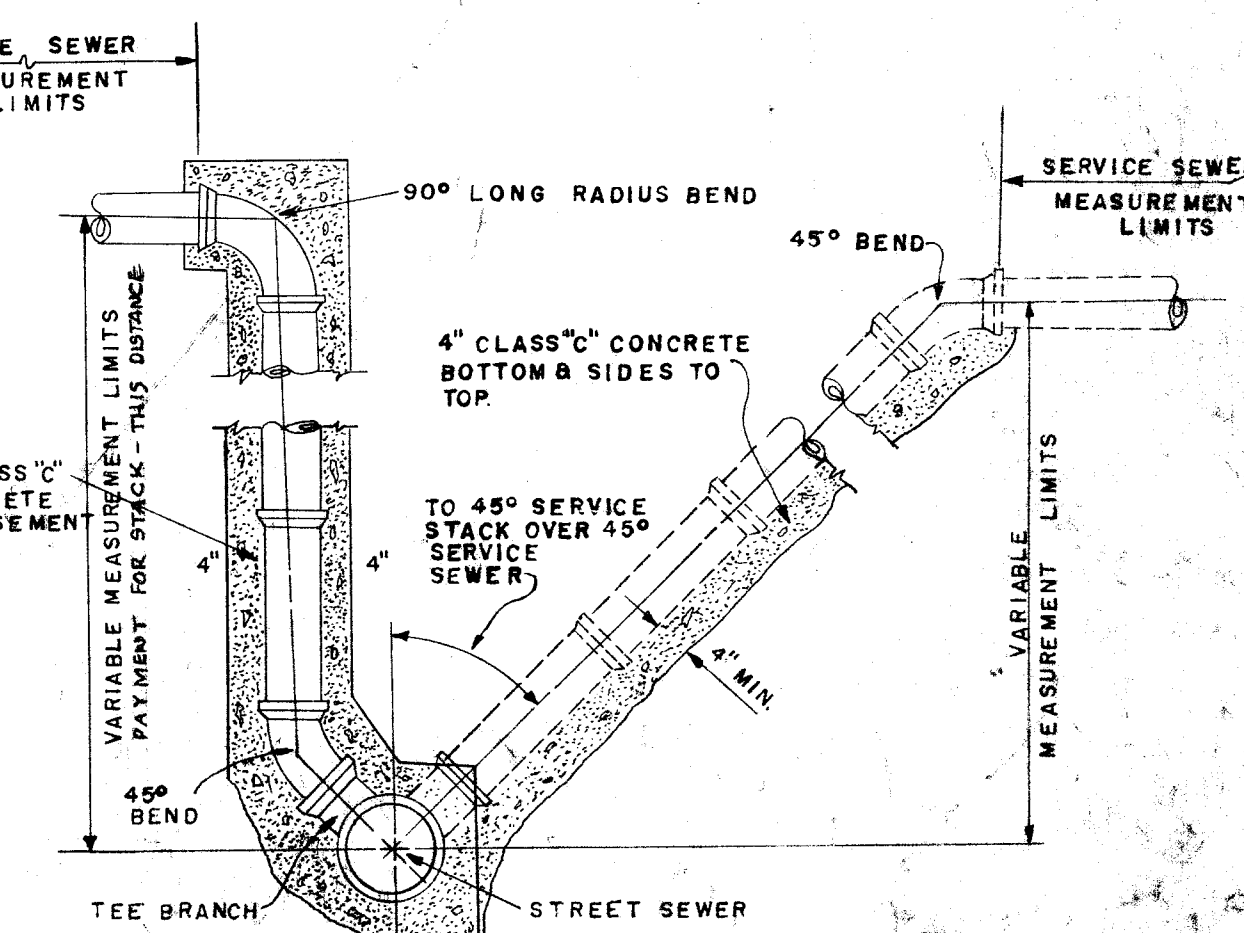
SIDEWALK CURB & GUTTER
DETAIL



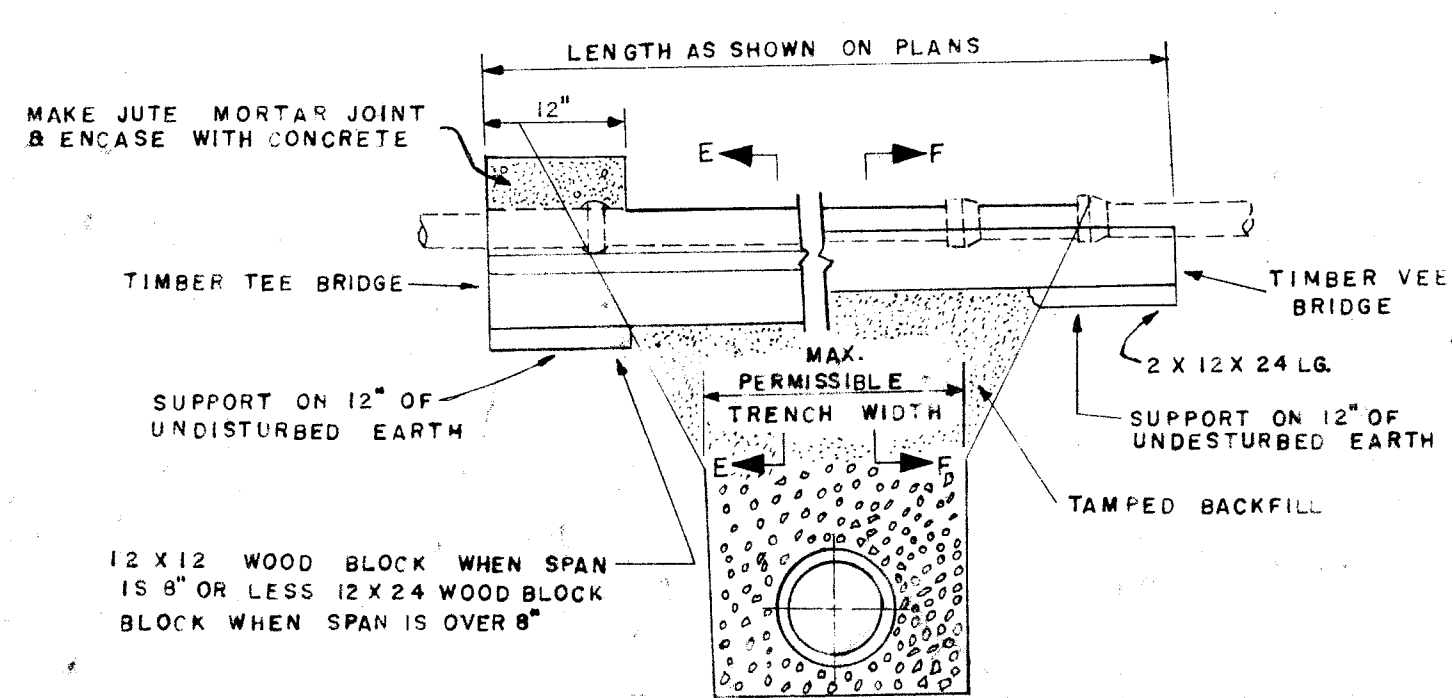
TYPICAL PIPE
ENCASEMENT



TYPE-A BEDDING



TYPICAL SERVICE STACK



RESTORE EXIST SEWER PIPE LINES



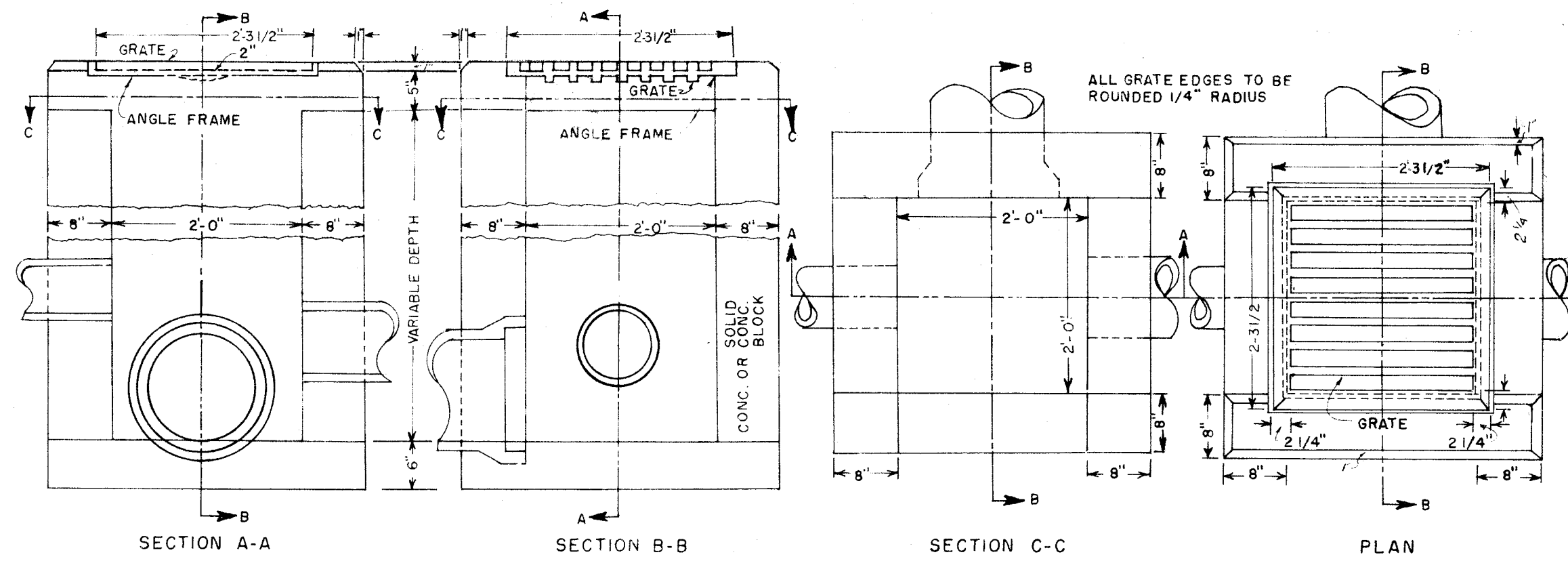
COOPER AND ASSOCIATES
CONSULTING ENGINEERS AND SURVEYORS

PHONE (216) 452-5731

JAMES E. COOPER
J. EDWARD JENEMANN JR.
ROBERT A. MILLER
WILLIAM J. MEOLA

SURVEYED	PLATTED	FIELD BOOK	DATE	FILE	SCALE

STANDARD NO. 2-2-A CATCH BASIN



GRATING & FRAME SHALL MEET THE REQUIREMENTS OF ITEM 1-B. THE DESIGN SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THE ONE SHOWN HEREON.

WEIGHT OF GRATE, MINIMUM, 120 LBS.

WEIGHT OF FRAME, MINIMUM, 40 LBS.

CONCRETE CAST IN PLACE TO BE CLASS "C".

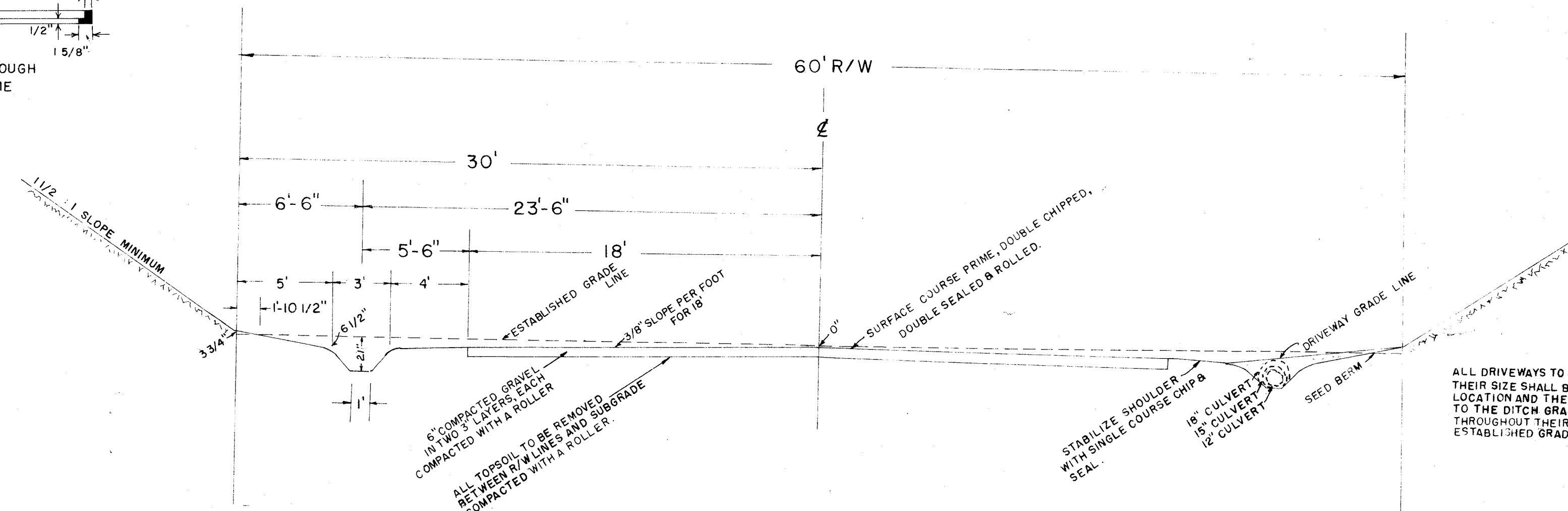
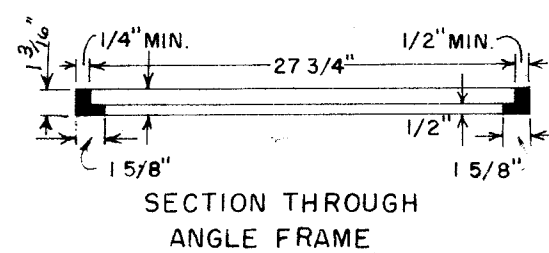
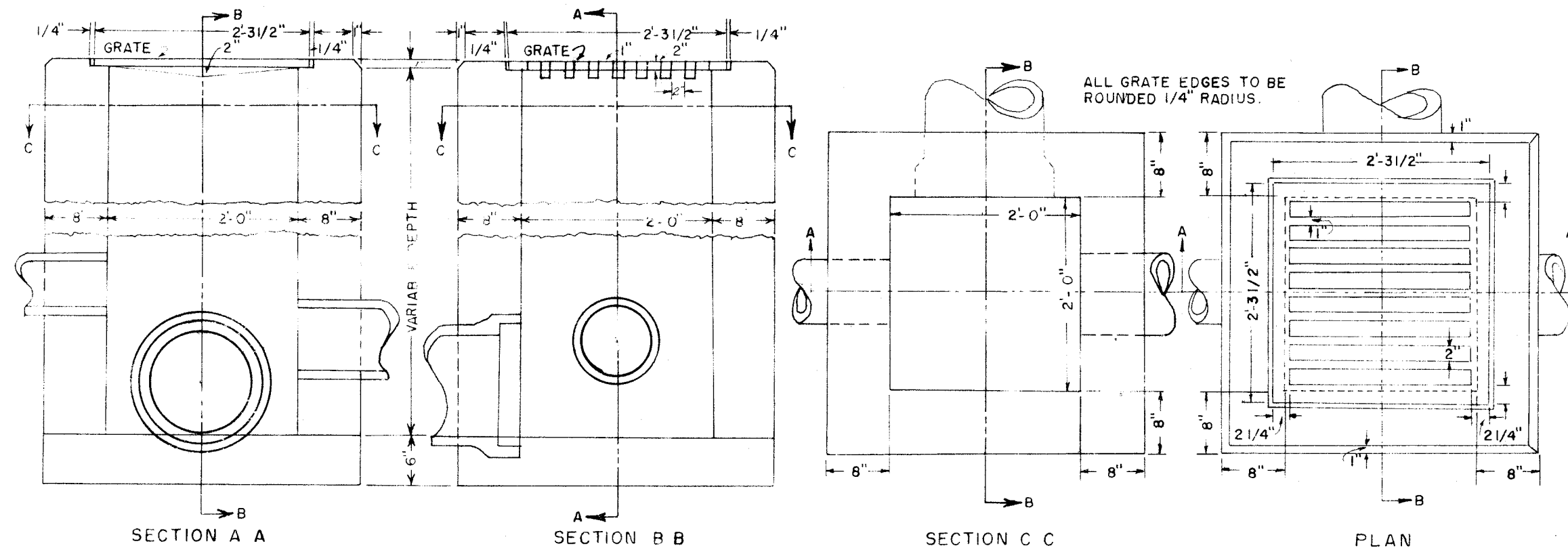
BRICK OR CONCRETE BLOCK SIDEWALLS, WHEN USED IN PLACE OF CONCRETE, SHALL BE 8" MINIMUM IN THICKNESS. WHEN BRICK OR CONCRETE BLOCKS ARE USED, THE WALLS OF THE CATCH BASIN, ABOVE THE FLOW LINE OF THE SIDE OPENING SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE.

2-2-A SIDE INLETS TO BE PLACED 4 TO 6 INCHES BELOW NORMAL ELEVATION OF MEDIAN OR DITCH FLOW LINE RETURNING TO NORMAL 10 FEET EACH SIDE OF BASIN.

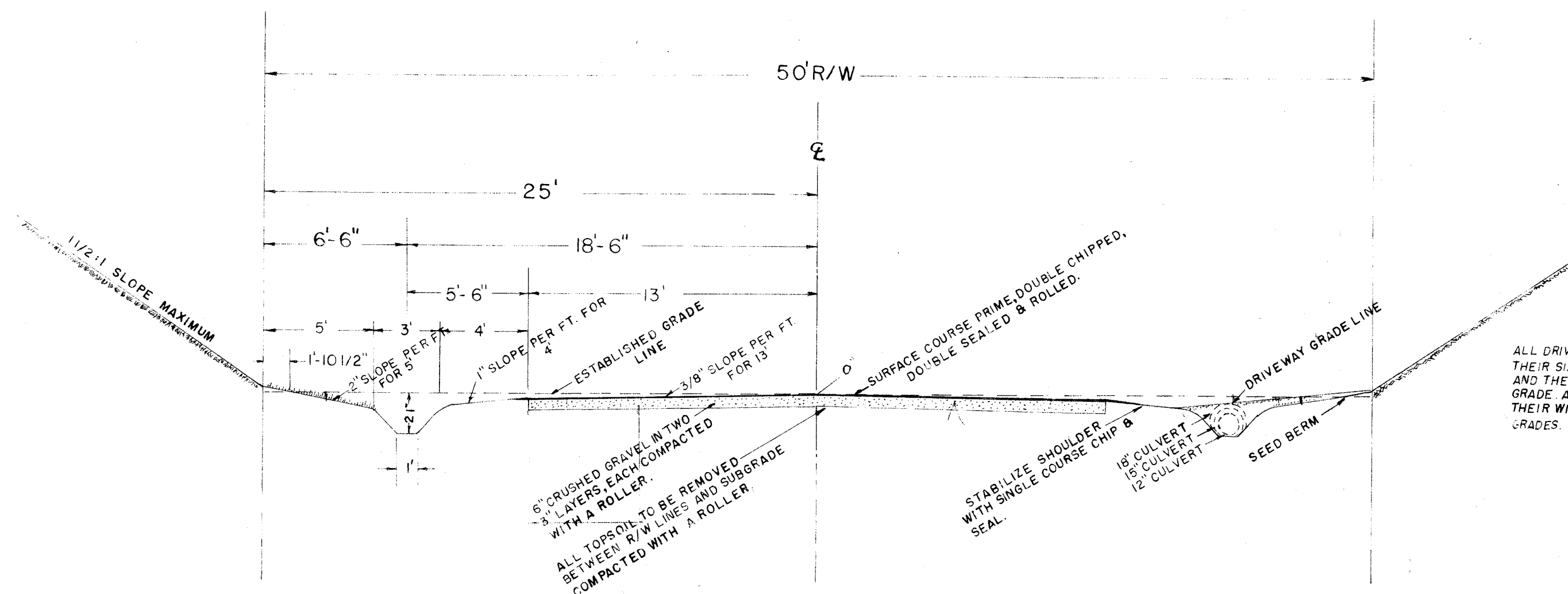
2-2-B GRATE ELEVATION TO BE PLACED 4 TO 6 INCHES BELOW NORMAL DITCH RETURNING TO NORMAL 10 FEET EACH SIDE OF BASIN.

SIDE INLETS SHALL BE PROVIDED ON BOTH SIDES OF THE NO. 2-2-A CATCH BASIN IN "B" & "D" OR "D" & "E" CONTINUOUS DRAIN GRADE PAST THE CATCH BASIN.

STANDARD NO. 2-2-B CATCH BASIN



ALL DRIVEWAYS TO CONFORM TO STREET GRADES. THEIR SIZE SHALL BE SUITABLE TO THEIR LOCATION AND THEIR GRADE SHALL CONFORM TO THE DITCH GRADE. ALL STREETS TO BE GRADED THROUGHOUT THEIR WIDTH AND LENGTH TO THE ESTABLISHED GRADES.



NOTE
ALL DRIVEWAYS TO CONFORM TO STREET GRADES. THEIR SIZE SHALL BE SUITABLE TO THEIR LOCATION AND THEIR GRADE SHALL CONFORM TO THE DITCH GRADE. ALL STREETS TO BE GRADED THROUGHOUT THEIR WIDTH AND LENGTH TO THE ESTABLISHED GRADES.



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CONSULTING ENGINEERS AND SURVEYORS

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AVENUE N. W.
CANTON, OHIO
44708

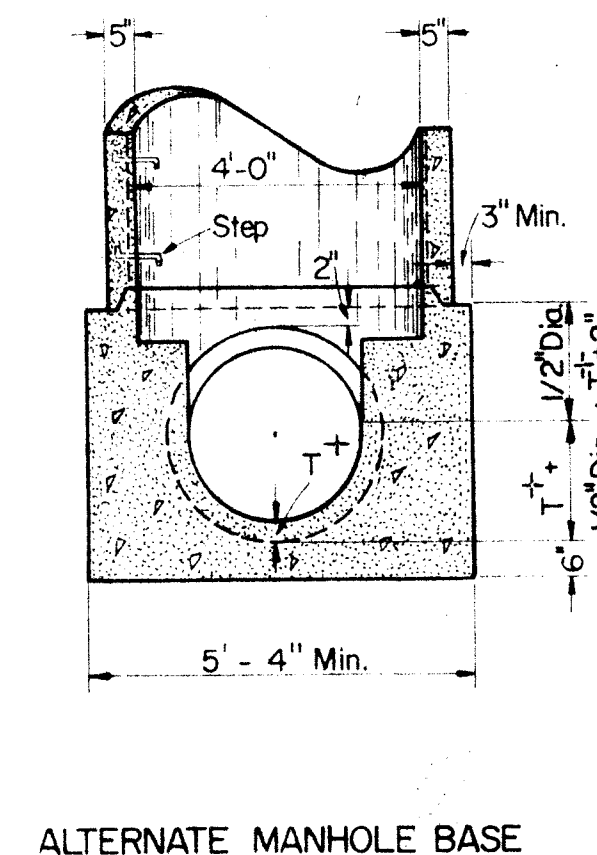
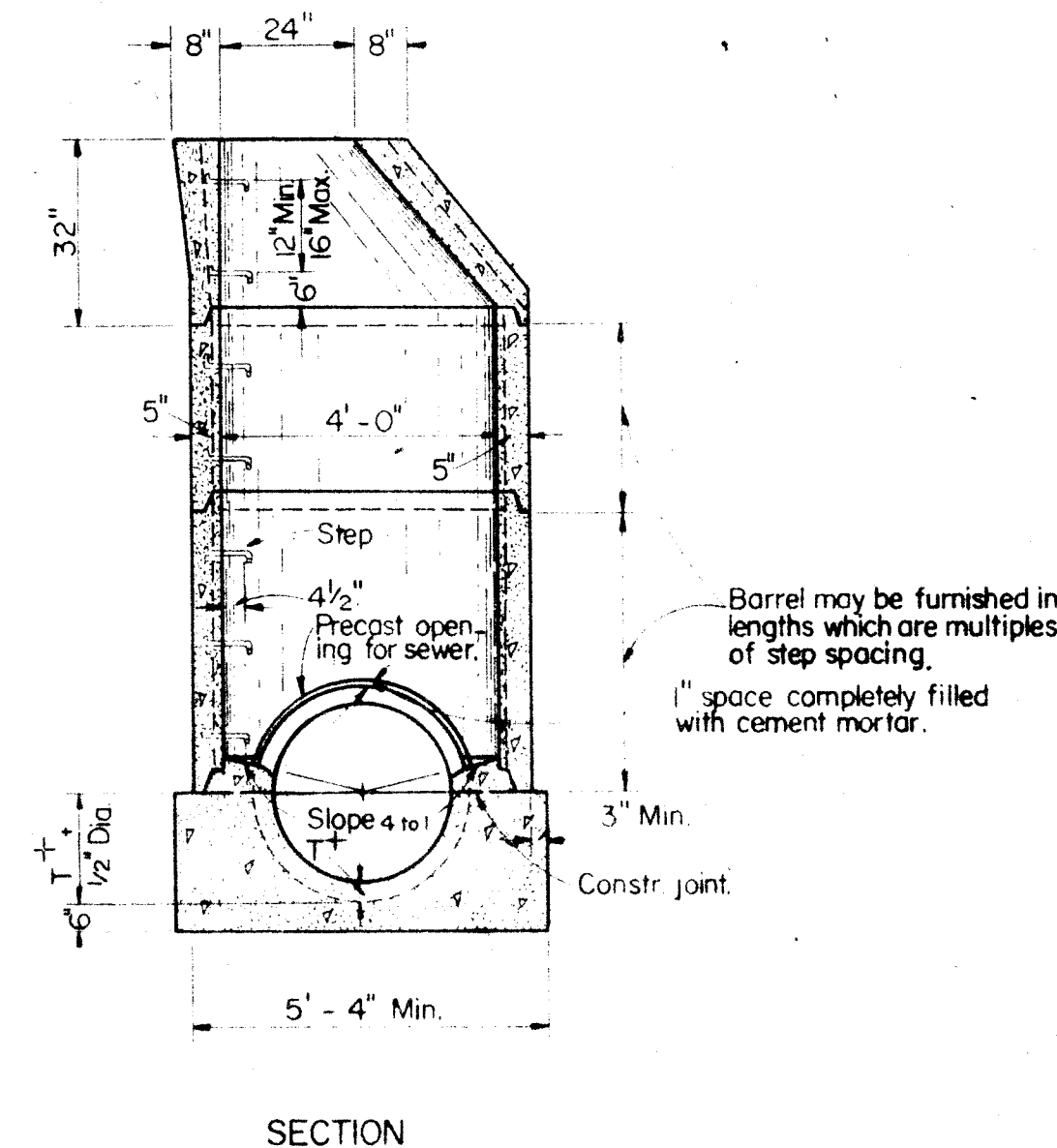
PHONE (216) 452-5731
(216) 492-3303

JAMES L. COOPER
J. EDWARD JUENEMANN JR.
ROBERT A. MILLER
WILLIAM J. MEOLA

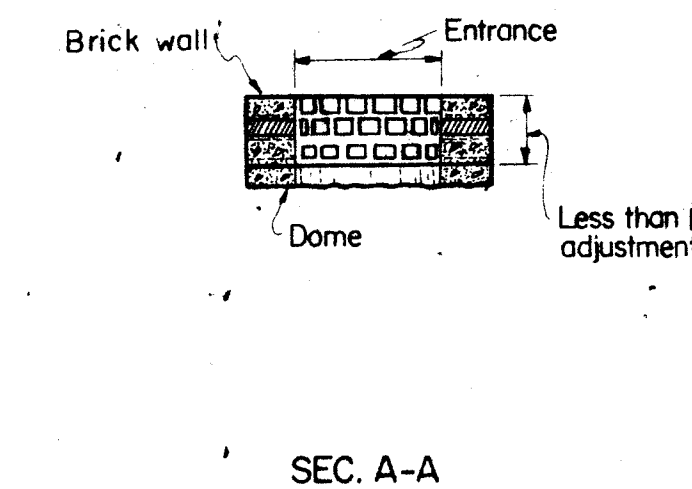
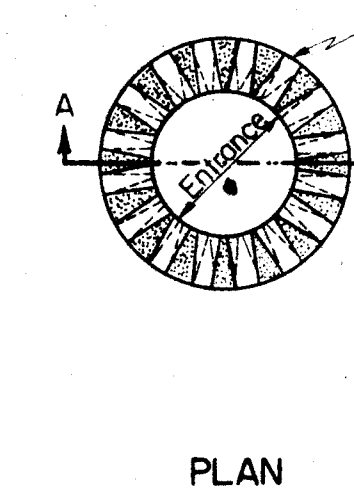
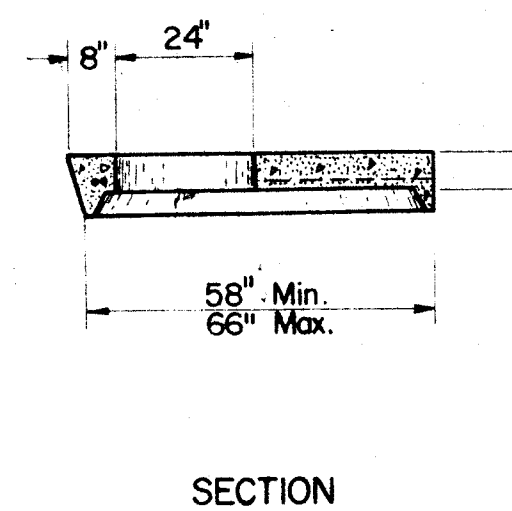
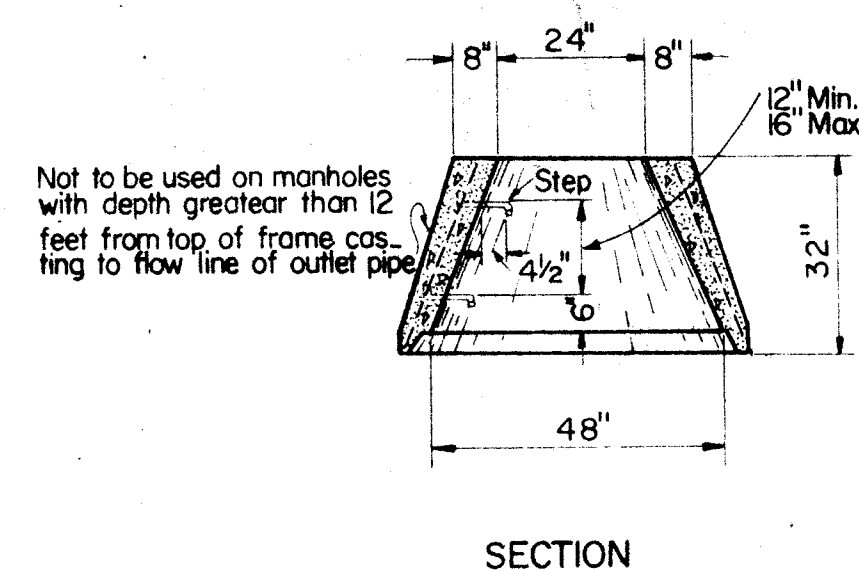
TYPICAL STREET SECTION AND CATCH BASIN DETAIL

SURVEYED	PLATTED	FIELD BOOK	DATE	FILE	SCALE

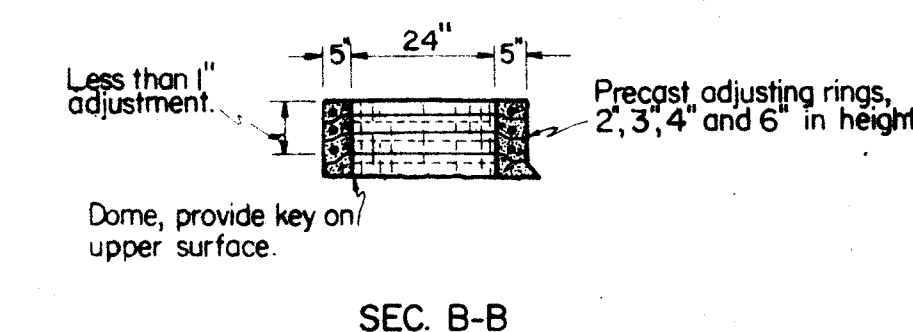
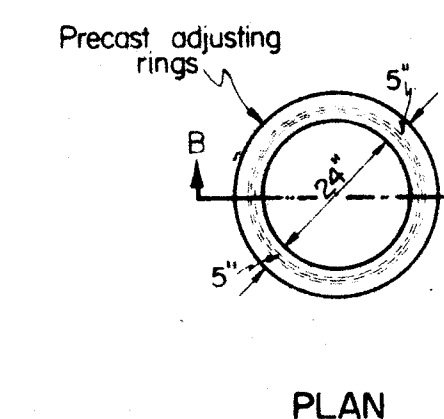
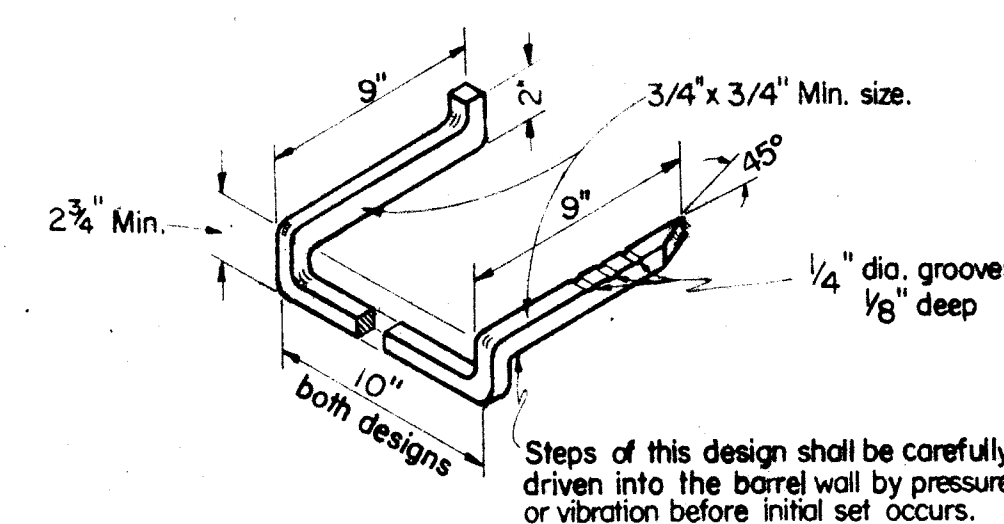
STANDARD MANHOLE



PRECAST MANHOLE ON SEWERS
42" AND UNDER



DOMES ALTERNATES



ALTERNATE METHODS OF ADJUSTING TO GRADE

NOTES

GENERAL: Precast reinforced concrete manholes detailed on this drawing may be used in lieu of the design shown on Standard Drawings MH-1 and MH-2.

Openings for the inlet and outlet sewer pipe shall be cast in the precast ring unless the manhole base is built to an elevation two inches above the top of the outlet pipe.

Openings for pipes 18" diameter or less entering the manhole above the spring line of the outlet sewer may be cut in the field provided the portion of the pipe (15" or 18" diam.) inside the manhole is cut to fit the circumference of the manhole. Pipes over 18" diameter entering the manhole above the spring line of the outlet sewer shall be connected to the manhole by a Tee connection precast with the barrel of the manhole.

All joints at pipe openings in the manhole shall be thoroughly caulked with cement mortar or other suitable material to prevent infiltration of earth into the manhole.

Drop pipes when required shall be constructed as shown on Standard Drawing MH-2.

MATERIALS: Concrete for the manhole base and connection box shall be Class "C".

Precast reinforced concrete riser rings and domes shall comply with the requirements of 706.02 except for Minimum Designs and Marking. Minimum wall thickness shall be 5 inches and circular reinforcement shall be 0.12 sq. in. per foot minimum. Concrete shall have a minimum strength of 4,000 pounds per square inch. 1/4" holes for handling may be cast in domes and rings. The following shall be clearly stenciled or impressed on each riser ring:

- M.H.
- The date of manufacture.
- The name or trade-mark of the manufacturer and location of the plant.

STEPS shall meet the requirements of 604.

Castings shall be as specified on Standard Drawing MH-1 and MH-2.

CONNECTION BOXES for sewers 48 inches and over in diameter shall be reinforced as shown and as specified below:

- A bars shall be spaced at 12" centers in both directions.
B bars shall be spaced at 3" centers in both directions.
A, B and L bar sizes:

- 5/8" ϕ for 48" to 60" sewers.
- 3/4" ϕ for 66" to 70" sewers.
- 7/8" ϕ for 84" to 96" sewers.

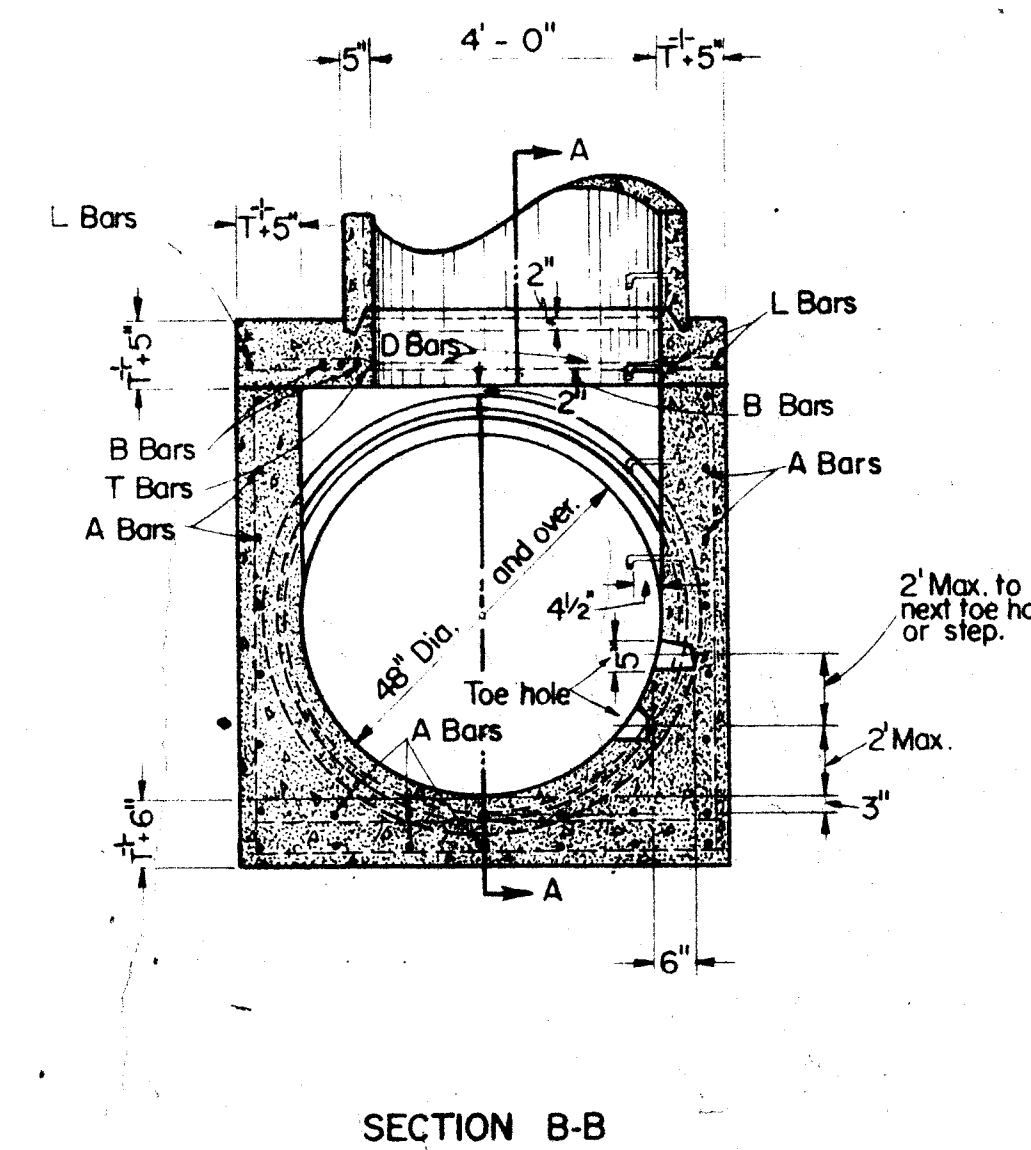
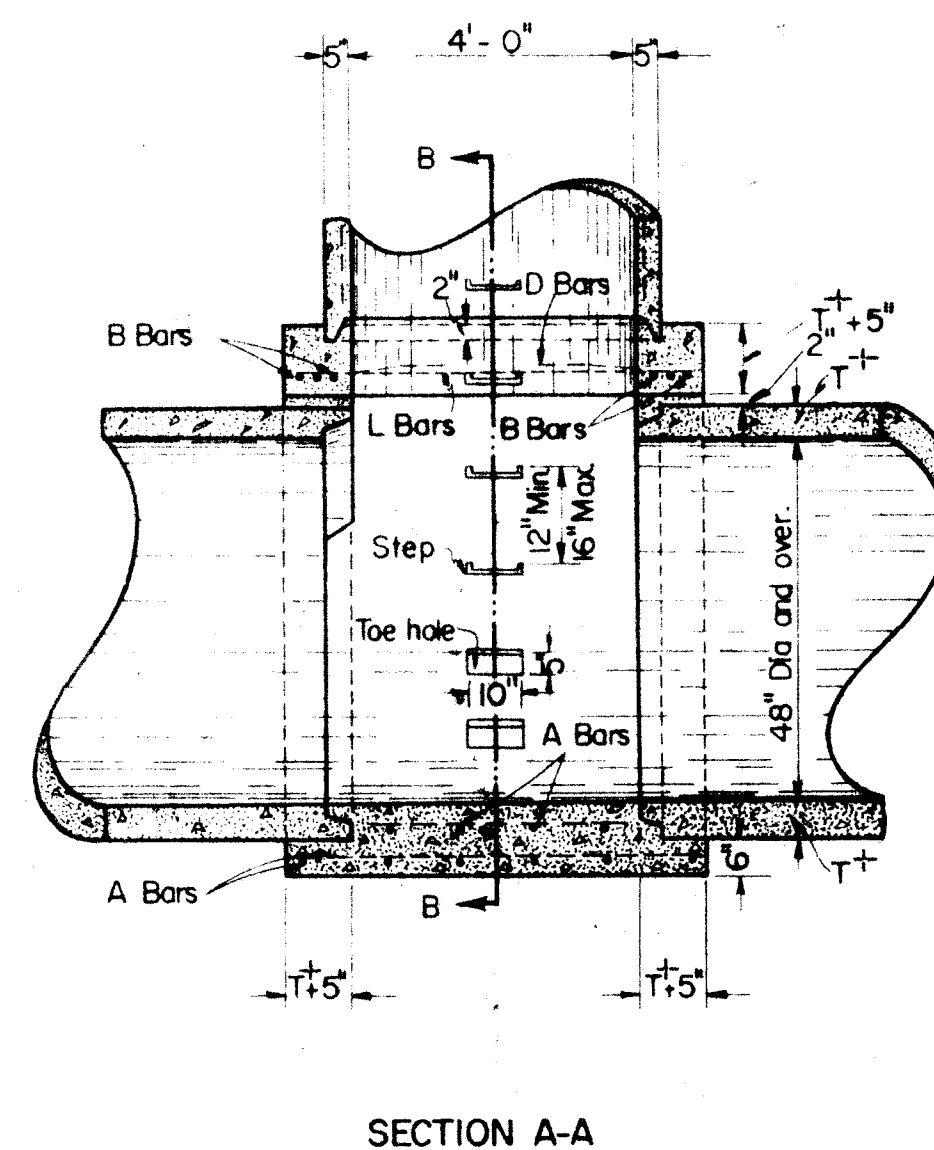
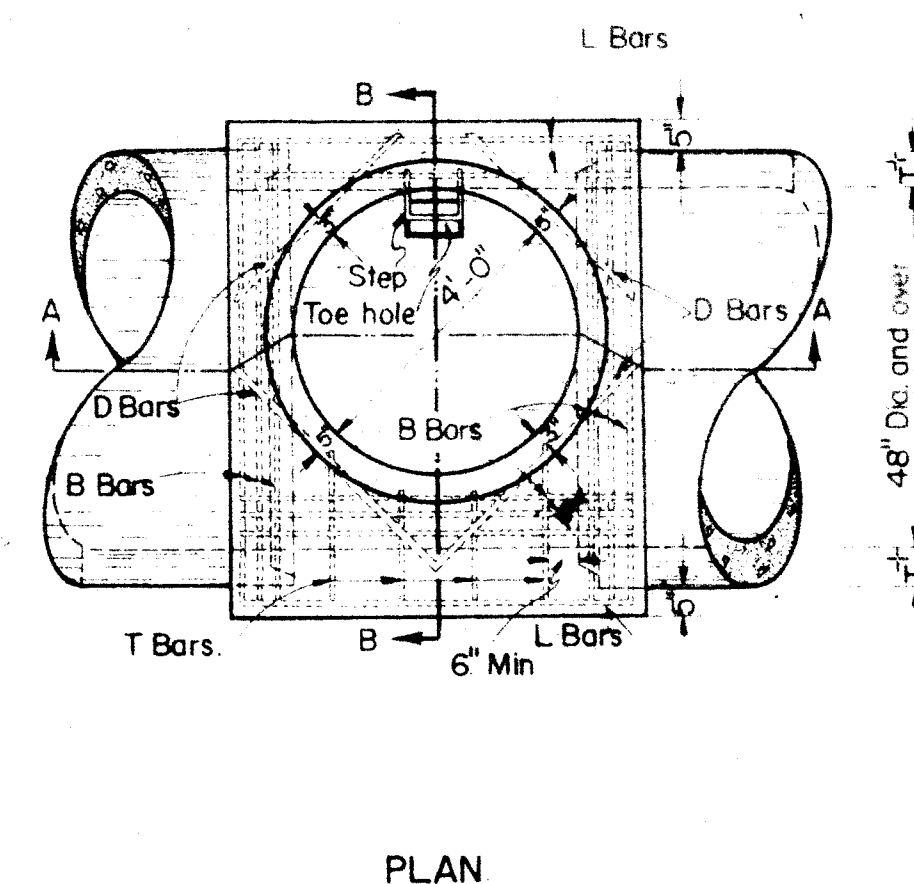
T bars shall be 5/8" ϕ spaced at 12" centers.

D bars shall be 5/8" ϕ .

Reinforcing steel shall have 2 inch clearance except where otherwise specified.

ADJUSTING RINGS, precast, shall be reinforced with one No. 3 gage wire or equivalent.

BRICK. All brick shall conform to Grade SW as specified in the "Standard Specifications for Building Brick" C62 of the American Society for Testing Materials. Concrete brick may be used on approval of the engineer, providing they meet all of the Physical Requirements for Grade SW in Table I of the above-mentioned A.S.T.M. Specifications.



CONNECTION BOX FOR PRECAST MANHOLES ON SEWERS 48" AND OVER

L.W.J. COOPER AND ASSOCIATES
CONSULTING ENGINEERS AND SURVEYORS

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CANTON, OHIO 44708

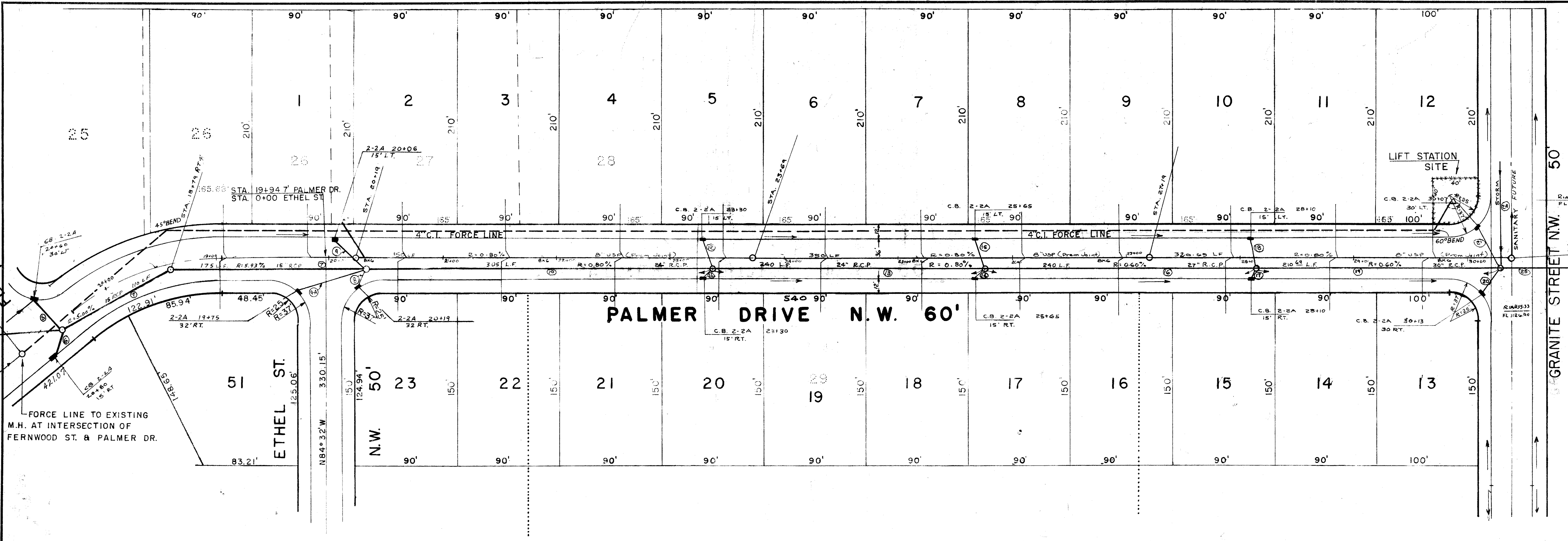
PHONE (216) 492-5731
(216) 492-3202

JAMES L. COOPER
J. EDWARD JUENEMANN JR.
ROBERT A. MILLER
WILLIAM J. MEOLA

STORM SEWER DETAILS

SURVEYED	PLATTED	FIELD BOOK	DATE	FILE	SCALE
			JULY, 1974		

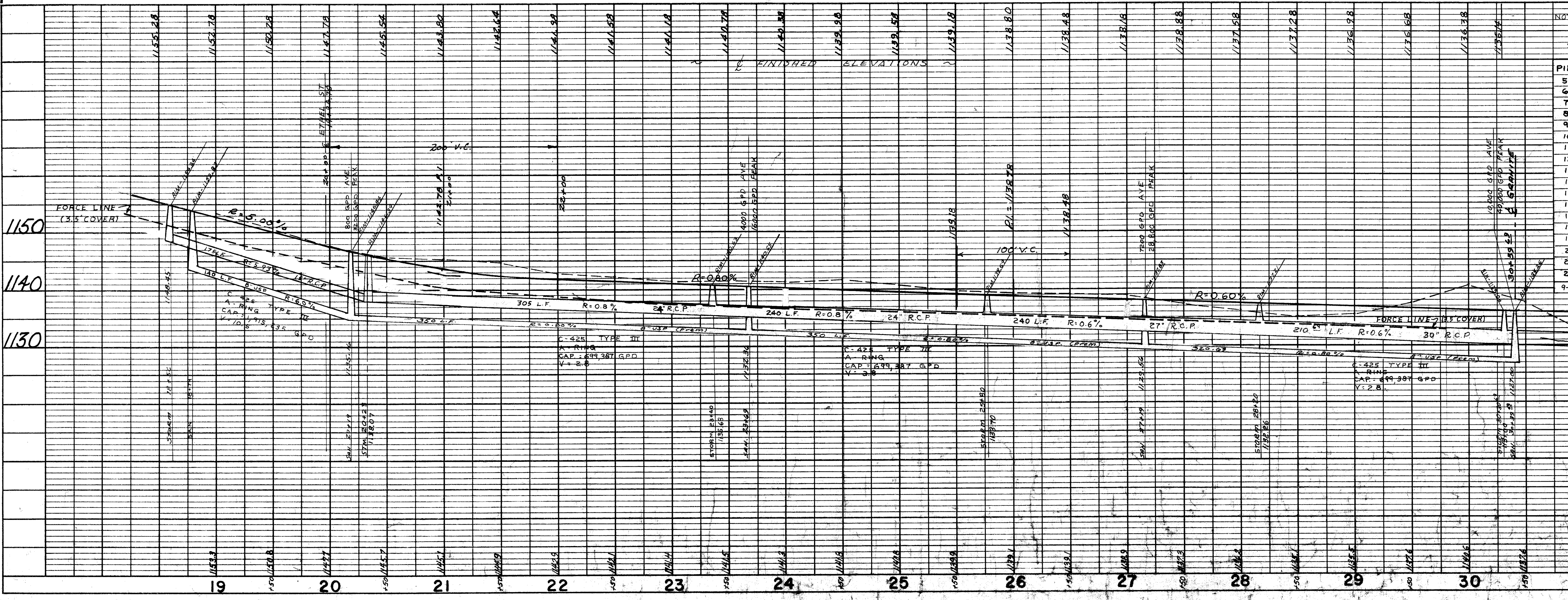
DATE 1-5-78 BY J. COOPER
SURVEYED
PLOTTER
NOTE BOOK NO. 151
CHECKED
BY
NO. 151



SANITARY SEWER APPROVED THIS _____ DAY OF _____ 1976
MASSILLON CITY ENGINEER
SARANTY SEWER APPROVED THIS _____ DAY OF _____ 1976
STARK COUNTY ENGINEER

BM - 1170.82 2 SPKS. S. ROOT 40' W. CHERRY
E.P.L. 32' N. OF CL. FERNWOOD ST.

DATE 1-5-78 BY J. COOPER
SURVEYED
PLOTTER
NOTE BOOK NO. 151
CHECKED
BY
NO. 151

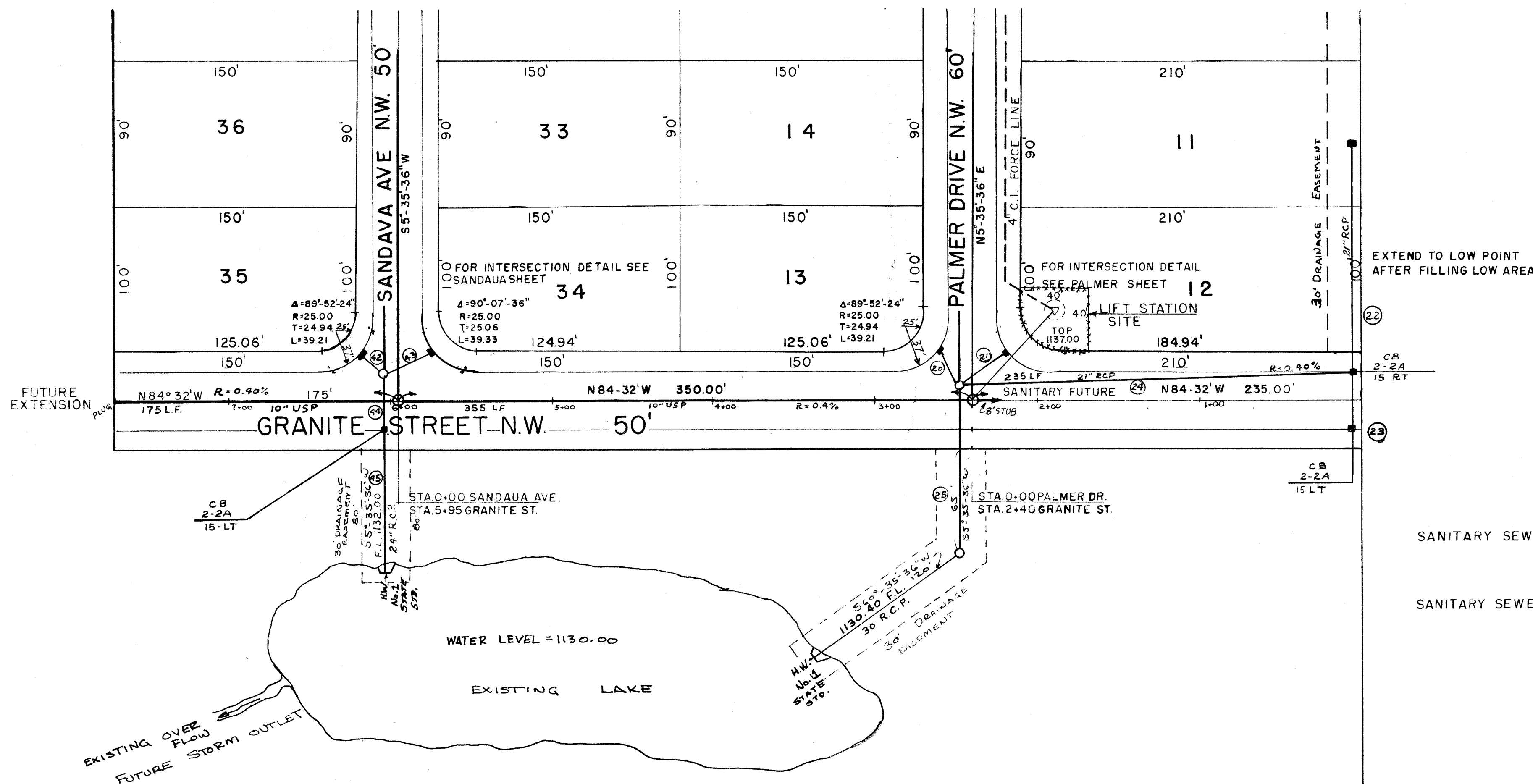


STORM					
SEWER					
DATA					
PIPE	SIZE	TYPE	L.F.	INLET ELEV.	OUTLET ELEV.
5	15	R.C.P.	35	1154.45	1153.95
6	12	R.C.P.	20	1154.25	1153.95
7	15	R.C.P.	350	1153.95	1138.01
8	12	R.C.P.	17	1140.17	1140.00
9	12	R.C.P.	38	1140.38	1140.00
10	24	R.C.P.	305	1137.74	1135.63
11	12	R.C.P.	12	1136.00	1135.63
12	12	R.C.P.	28	1136.00	1135.63
13	24	R.C.P.	240	1135.63	1133.70
14	12	R.C.P.	12	1134.00	1133.70
15	12	R.C.P.	28	1134.00	1133.70
16	27	R.C.P.	240	1133.70	1132.26
17	12	R.C.P.	12	1132.60	1132.26
18	12	R.C.P.	28	1132.60	1132.26
19	27	R.C.P.	210	1132.26	1131.00
20	12	R.C.P.	28	1131.50	1131.00
21	12	R.C.P.	40	1131.50	1131.00
25	30	R.C.P.	150	1131.00	1130.40
9-A	12	R.C.P.	63	1140.63	1140.00

PALMER DRIVE N.W. 60'
S. OF THE NE. NW. QTR. SEC. 15 T. 11 N. R. 9 E.
STARK COUNTY, OHIO
SCALE HOR. 1"=50'
VERT. 1"=10'
JULY 1978
LWJ COOPER & ASSOCIATES
REGISTERED ENGINEERS
J. COOPER - J. ED. MENEMANN - R. MILLER - J. WEAVER
J. COOPER

PLAN	SURVEYED	DATE
	PLANNED	BY
NOTE BOOK	CHECKED	
	RT. OF WAY CHECKED	
NO.		

PROFILE	SURVEYED	DATE
	PLANNED	BY
NOTE BOOK	CHECKED	
	B.M.'S NOTED	
NO.	STRUCTURE NOTATIONS CHKD.	



SANITARY SEWER APPROVED THIS ____ DAY OF ____ 197__

MASSILLON CITY ENGINEER

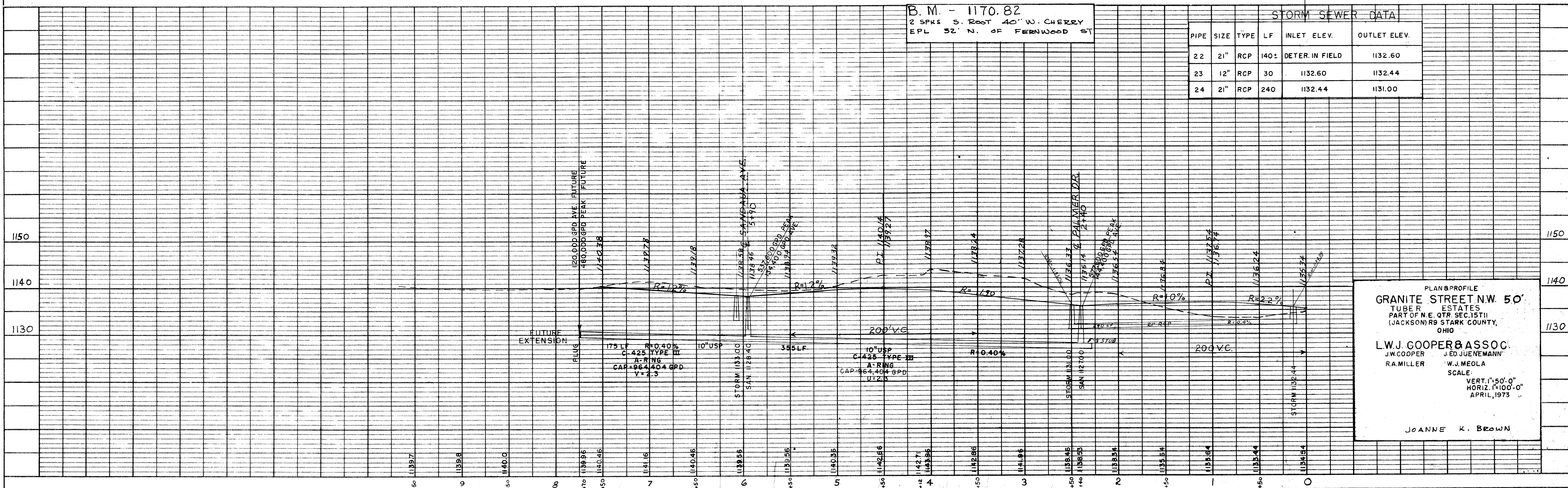
SANITARY SEWER APPROVED THIS ____ DAY OF ____ 197__

STARK COUNTY SANITARY ENGINEER

B.M. - 1170.82
2 SPKS S. ROOT 40' W. CHERRY
EPL 32' N. OF FERNWOOD ST

STORM SEWER DATA

PIPE	SIZE	TYPE	LF	INLET ELEV.	OUTLET ELEV.
22	21"	RCP	140±	DETER. IN FIELD	1132.60
23	12"	RCP	30	1132.60	1132.44
24	21"	RCP	240	1132.44	1131.00

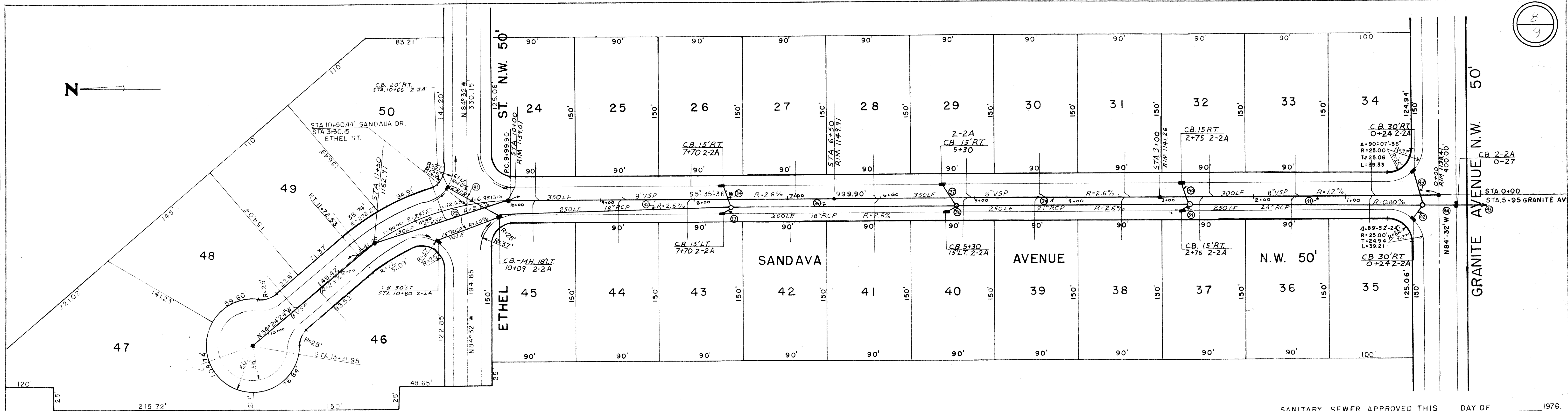


PLAN & PROFILE
GRANITE STREET N.W. 50'
TUBER ESTATES
PART OF N.E. QTR. SEC. 15TH
(JACKSON) 19 STARK COUNTY,
OHIO
L.W.J. COOPER & ASSOC.
J.W. COOPER J.E.D. JUEMANN
R. MILLER W.J. MEOLA
SCALE:
VERT. 1"=50'-0"
HORIZ. 1"=100'-0"
APRIL, 1973

JOANNE K. BROWN

PLAN	SURVEYED	DATE
NO.	BY	
	NOTED	
	CHECKED	
	RT. OF WAY CHECKED	

PROFILE	SURVEYED	DATE
NO.	BY	
	NOTED	
	CHECKED	
	STRUCTURE NOTED AS CHD.	



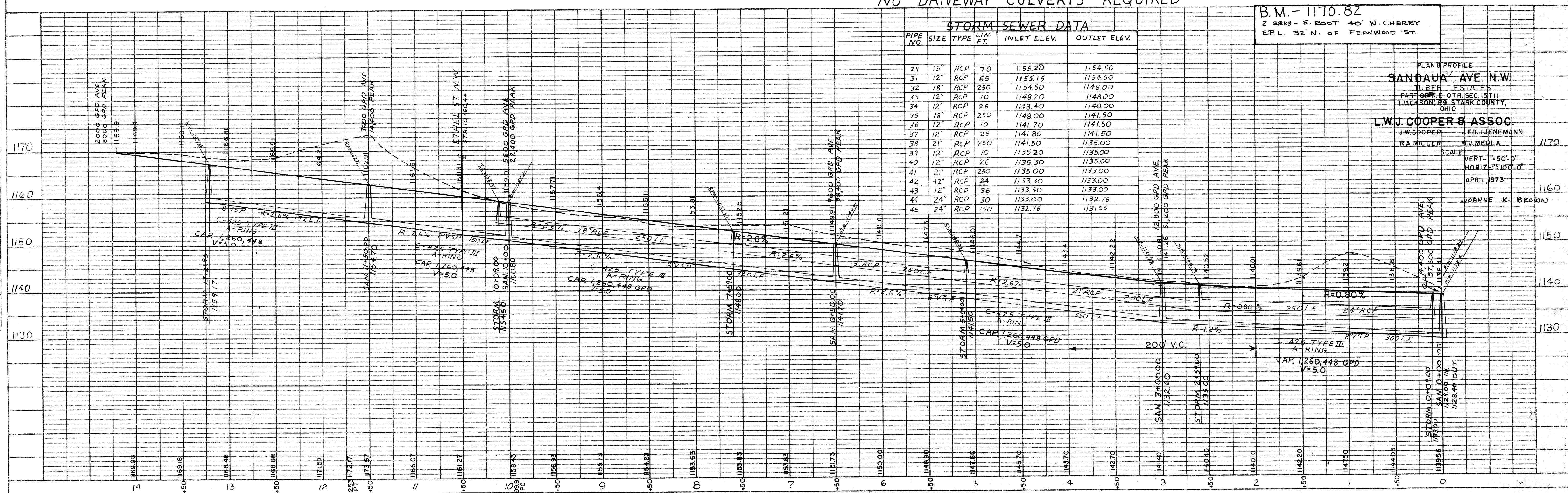
SANITARY SEWER APPROVED THIS _____ DAY OF _____ 1976.

MASSILLON CITY ENGINEER

SANITARY SEWER APPROVED THIS _____ DAY OF _____ 1976.

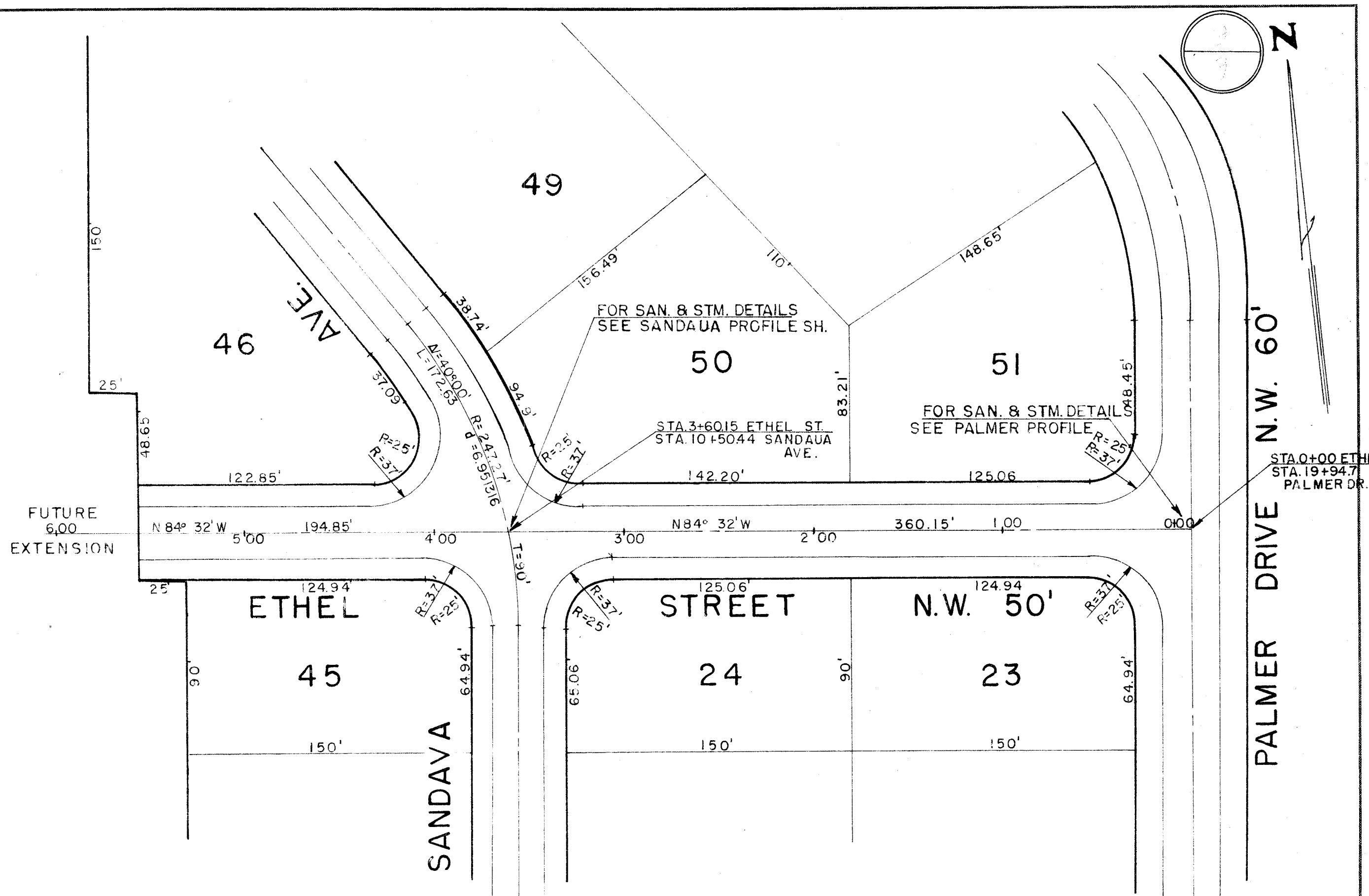
STARK COUNTY SANITARY ENGINEER

NO DRIVEWAY CULVERTS REQUIRED



PLAN	SURVEYED ALIGNED CHECKED RT. OF WAY CHECKED	BY	DATE

PROFILE	SURVEYED CHANGES CHECKED B.M.'S NOTED STRUCTURE NOTATIONS CHECKED	BY	DATE



SANITARY SEWER APPROVED THIS ____ DAY OF ____ 1976.

SANITARY SEWER APPROVED THIS ____ DAY OF ____ 1976.

