

**STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
CONSTRUCTION PLAN FOR PAVING
TRUNK HIGHWAY NO. 12:104
BETWEEN VANDALIA ST. AND W. CITY LIMITS - ST. PAUL**

From A POINT 133' SOUTH AND 843' WEST OF N.E. COR. SEC. 32 T 29 N R 23 W To A POINT 1888' NORTH OF SW. COR. SEC. 29 T 29 N R 23 W

MINNESOTA PROJECT U307 (13) STATE PROJECT NO. 6208-05

GROSS LENGTH	5314.15	Feet	1.007	Miles
BRIDGES LENGTH	—	Feet	—	Miles
EXCEPTIONS-LENGTH	—	Feet	—	Miles
NET LENGTH	5314.15	Feet	1.007	Miles

INDEX

SHEET NO. 1	TITLE SHEET
" " 2	ESTIMATE SHEET
" " 3-9 INCL.	PAVING PLAN SHEETS
" " 10-12 INCL.	IMPROVEMENTS IN PLACE PLAN SHEETS
" " 13-15 INCL.	LIGHTING PLAN SHEETS
" " 16	SAFETY ISLAND DETAIL SHEET
" " 17	LIGHT STANDARD DETAIL SHEET
" " 2A&2B INCL.	CITY ST. PAUL DETAIL PLATE
" " 2C	" " " TRAFFIC SIGNAL LAYOUT

CONVENTIONAL SIGNS

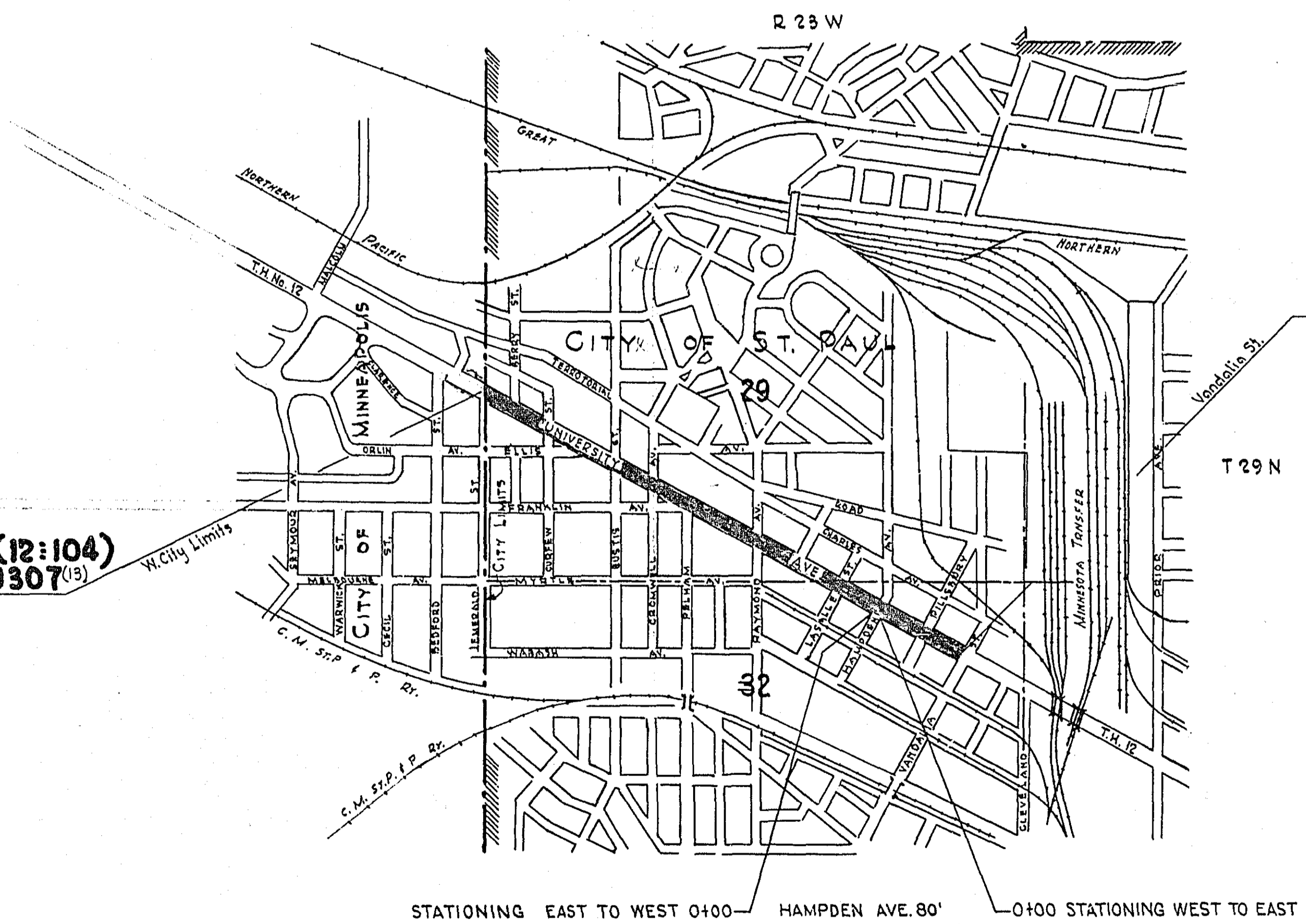
STATE LINE	TIMBER
COUNTY LINE	BRUSH
TOWNSHIP OR RANGE LINE	ORCHARD
SECTION LINE	ROCK LEDGE
QUARTER LINE	SAND
SIXTEENTH LINE	EDGE OF CUT
RIGHT-OF-WAY LINE	TOE OF EMBANKMENT
PROPERTY LINE (Except Land Lines)	CATCH BASIN
VACATED PLATTED PROPERTY	MANHOLE
CORPORATE OR CITY LIMITS	FIRE HYDRANT
TRUNK HIGHWAY CENTER LINE	ARC LAMP
RETAINING WALL	OTHER LAMPS (Slate Kind)
STEAM RAILROAD	RAILROAD CROSSING SIGN
ELECTRIC RAILROAD	RAILROAD CROSSING BELL
RAILROAD RIGHT-OF-WAY LINE	ELECTRIC WARNING SIGN
CREEK	CROSSING GATE
RAPIDS OR WATERFALL	CATTLE GUARD
DRY RUN	OVERHEAD (Highway Over)
DRAINAGE DITCH	UNDERPASS (Highway Under)
HIGH TENSION LINE	ABUTMENT, WALL & PIER
POWER POLE LINE	BRIDGE
TELEPHONE OR TELEGRAPH LINE	BUILDING (One Story Frame)
CULVERT	F-FRAME C-CONCRETE
DROP INLET	S-STONE T-TILE
GUARD RAIL	B-BRICK ST-STUCCO
WIRE FENCE	IRON PIPE
RAILROAD SNOW FENCE	STONE MONUMENT
BOARD OR HIGHWAY SNOW FENCE	WOOD STAKE OR HUB
STONE WALL OR FENCE	MEANDER CORNER
HEDGE	
WATER PIPE	
SEWER PIPE	
DRAIN TILE	
GRAVEL PIT	
SAND PIT	
CLAY PIT	
ROCK QUARRY	
SPRINGS	
MARSH	
TRUNK HIGHWAY R/W	
RAILROAD R/W	
PRESENT ROAD R/W	

SCALES { PLAN, 1 inch = 40 Feet
PROFILE, Horz. 1 inch = 40 Feet, Vert. 1 inch = 5 Feet

LAYOUT
Scale 1 inch = 1200 Feet

SPECIFICATIONS

The Specifications for Highway Construction, dated July 1, 1947, and submitted for approval by the Division Engineer of the Public Roads Administration, Oct. 15, 1947, shall govern.



**END S.P. 6208-05 (12:104)
END MINN. PROJ. U307 (13)**
STA. 43 + 73.20

**BEGIN S.P. 6208-05 (12:104)
BEGIN MINN. PROJ. U307 (13)**
STA. 8 + 60.95

PIT DATA

PIT NO.	Located in	Dead Haul
PIT NO.	Located in	Dead Haul
PIT NO.	Located in	Dead Haul
PIT NO.	Located in	Dead Haul

Right of Way Approval *S. Lee Green* 5-11-48
ENGINEER OF LANDS & RIGHT OF WAY

Planned By *Jens A. Holmlor* 3-25-48
PRINCIPAL ASSISTANT CIVIL ENGINEER, CITY OF ST. PAUL

Recommended for Approval *Joy M. Shepard* 3-25-48
CHIEF ENGINEER, CITY OF ST. PAUL

Recommended for Approval _____ 19 _____
DISTRICT ENGINEER

Recommended for Approval *F. J. Flannery* 5/11 1948
ENGINEER OF PLANS & SURVEY

Approved 5-11-1948 *O. C. Kipp*
CHIEF ENGINEER

RECOMMENDED FOR APPROVAL _____ 19 _____

DISTRICT ENGINEER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

APPROVED _____ 19 _____

DIVISION ENGINEER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

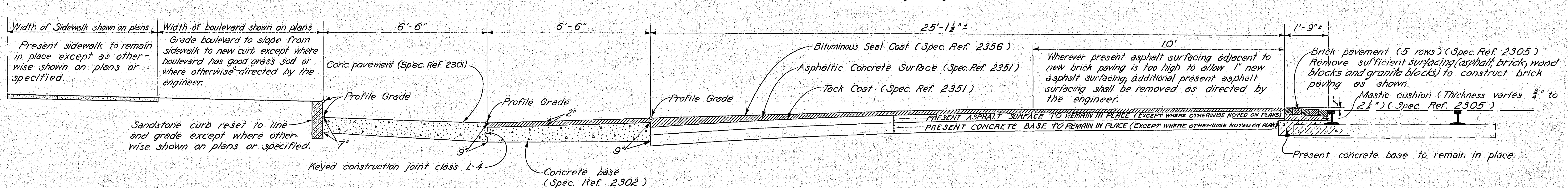
Jens A. Holmlor
DATE 3-25-48 REG. NO. 866

DESIGN SQUAD _____

TYPICAL GRADING & PAVING SECTION UNIVERSITY AVE.

SCALE: $\frac{1}{2}'' = 1'-0''$

Note: The transverse slopes and crowns of the finished asphalt surface will be furnished by the Engineer. Templates to conform to such slopes and crowns shall be constructed by the Contractor and used as directed by the Engineer.



VANDALIA ST. TO WEST CITY LIMITS

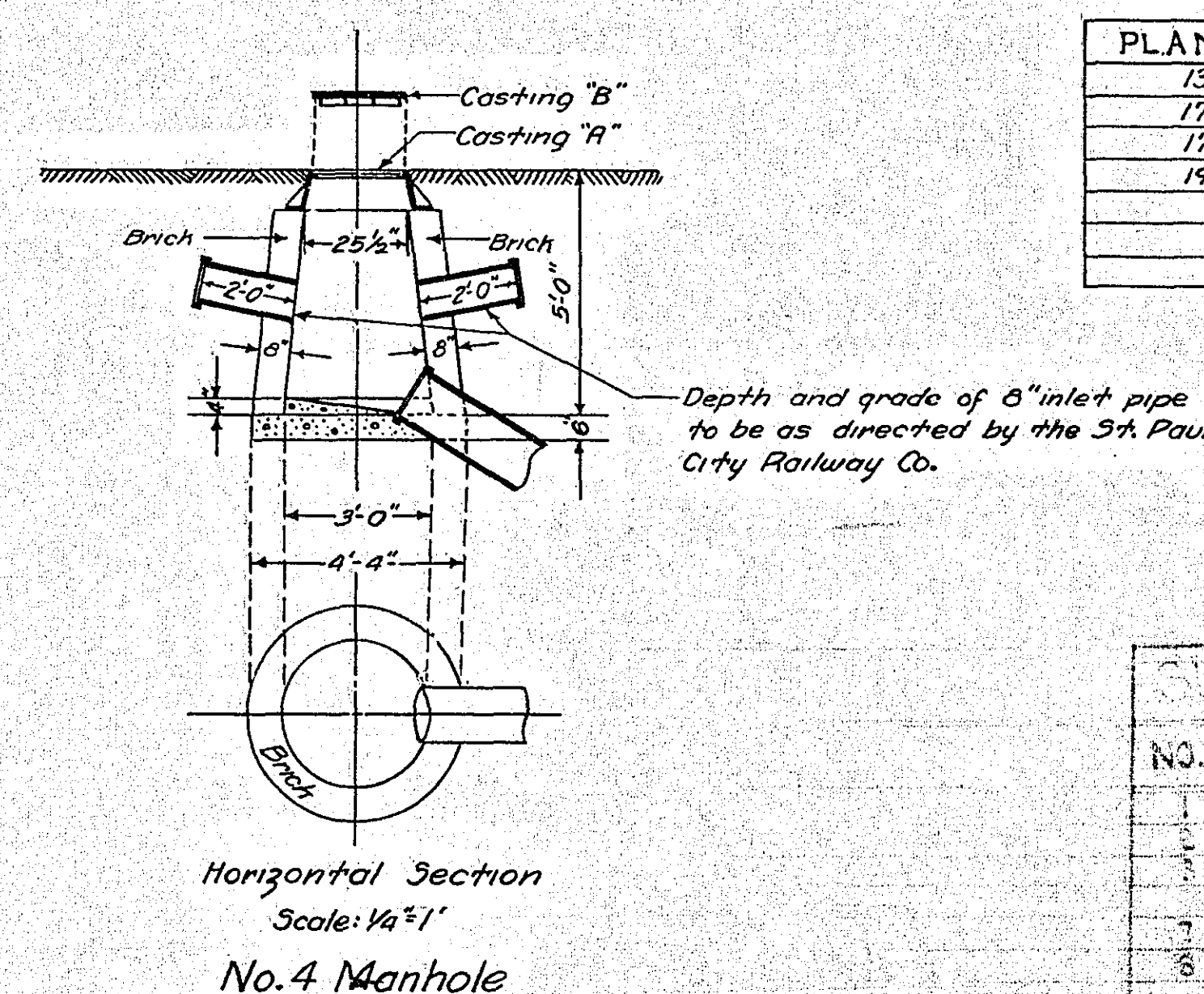
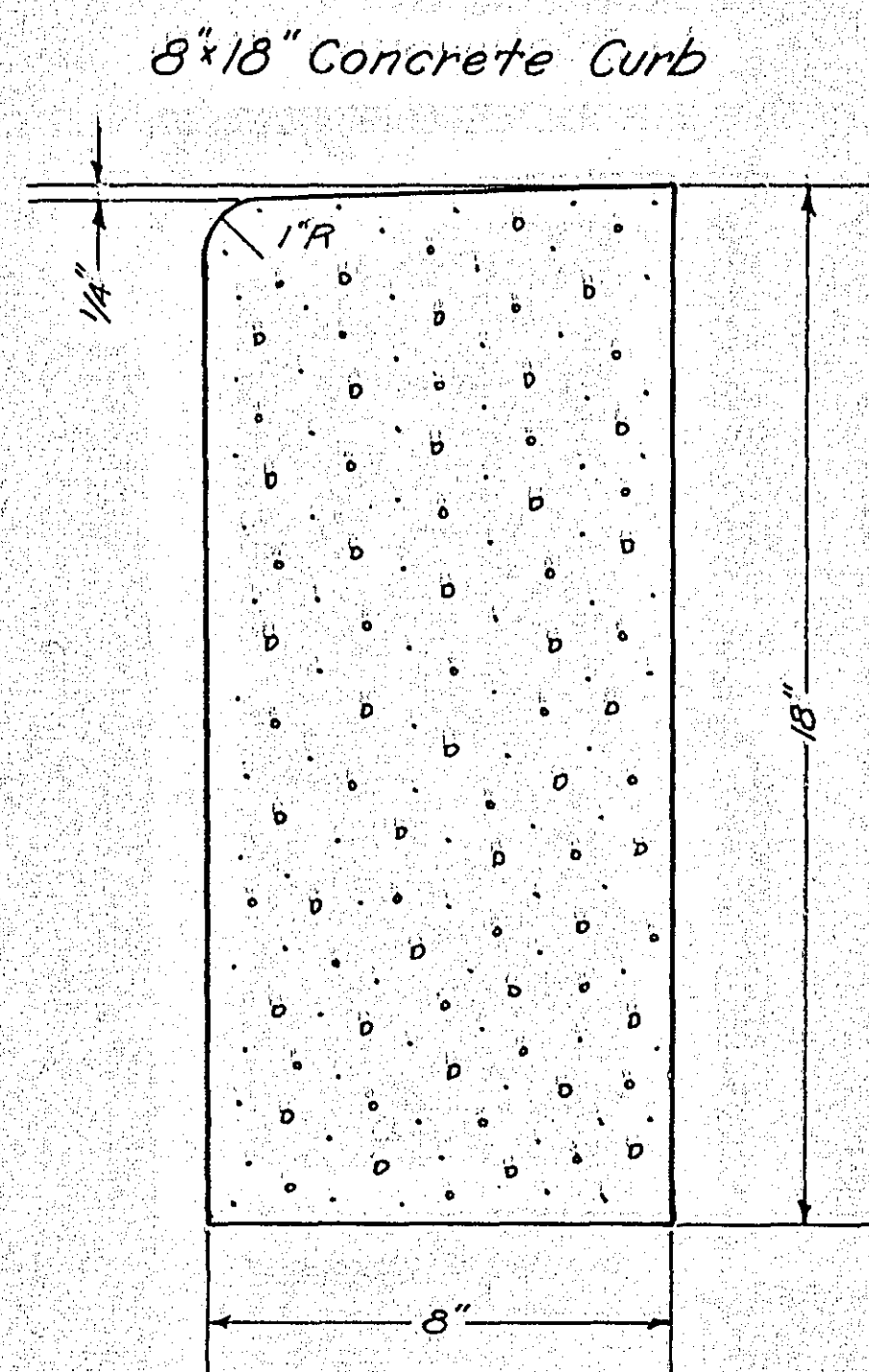
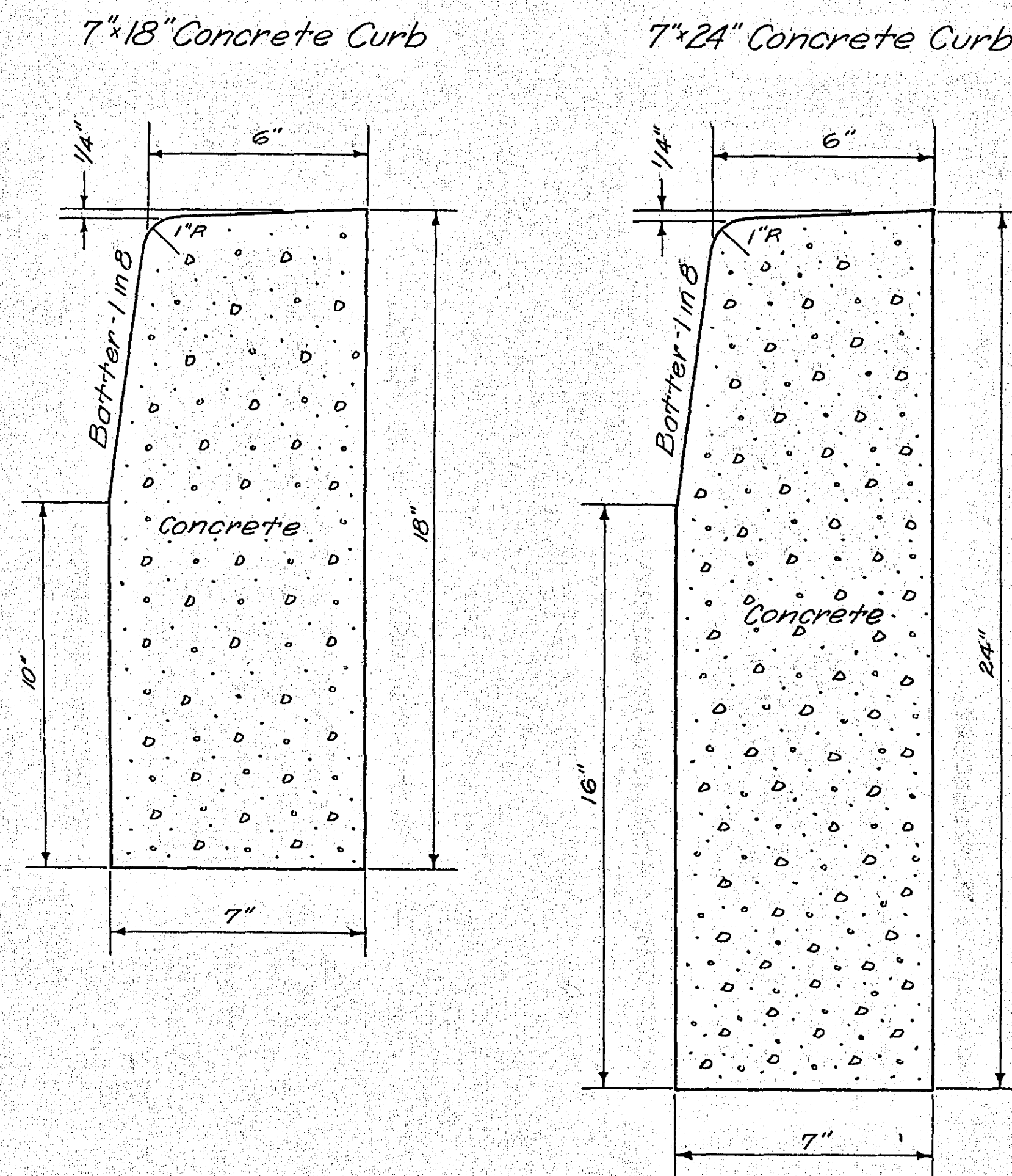
Standard detail plates issued Oct. 1, 1947, and submitted for approval by the Division Engineer of the Public Roads Administration Oct. 15, 1947, shall govern. The following standard detail plates shall govern on this project.

PLATE NO.	STANDARD DETAIL PLATES
2500	Paver Water System
2501	Shop Cleaning Device For Paving Mixers
2550	Longitudinal Floor
2575	Field Laboratory Building
2576	Cement Checkers Shelter
2580	Master Straight Edge
2581	Testing And Finishing Straight Edges
4180	Manhole Step Casting
8000-8001	Standard Barricades
8200	Federal Project Field Marker
1141	Pavement Keyway
1120	Contraction Joint C ₁ or C ₂
2521	Insert For Contraction Joint

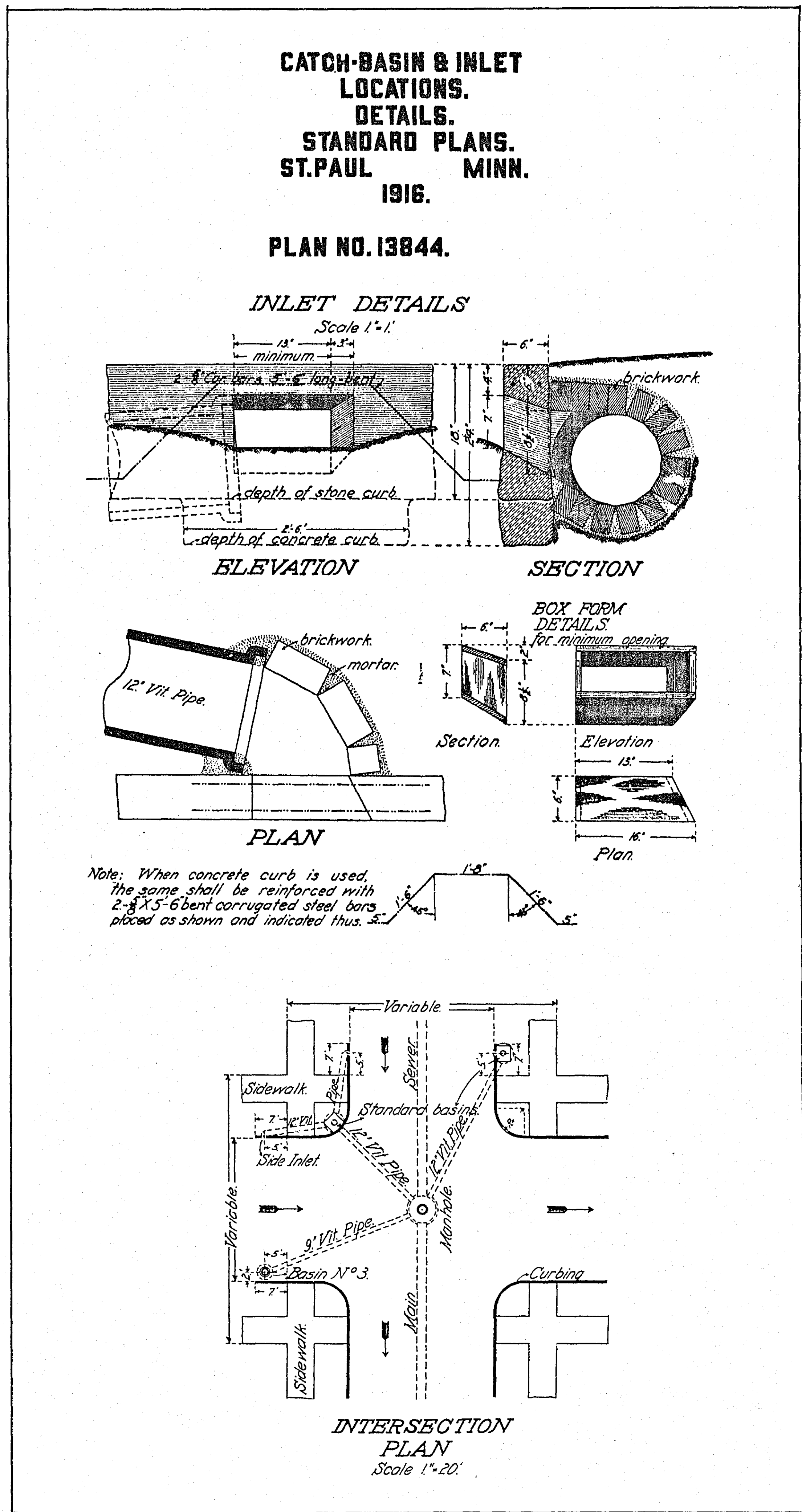
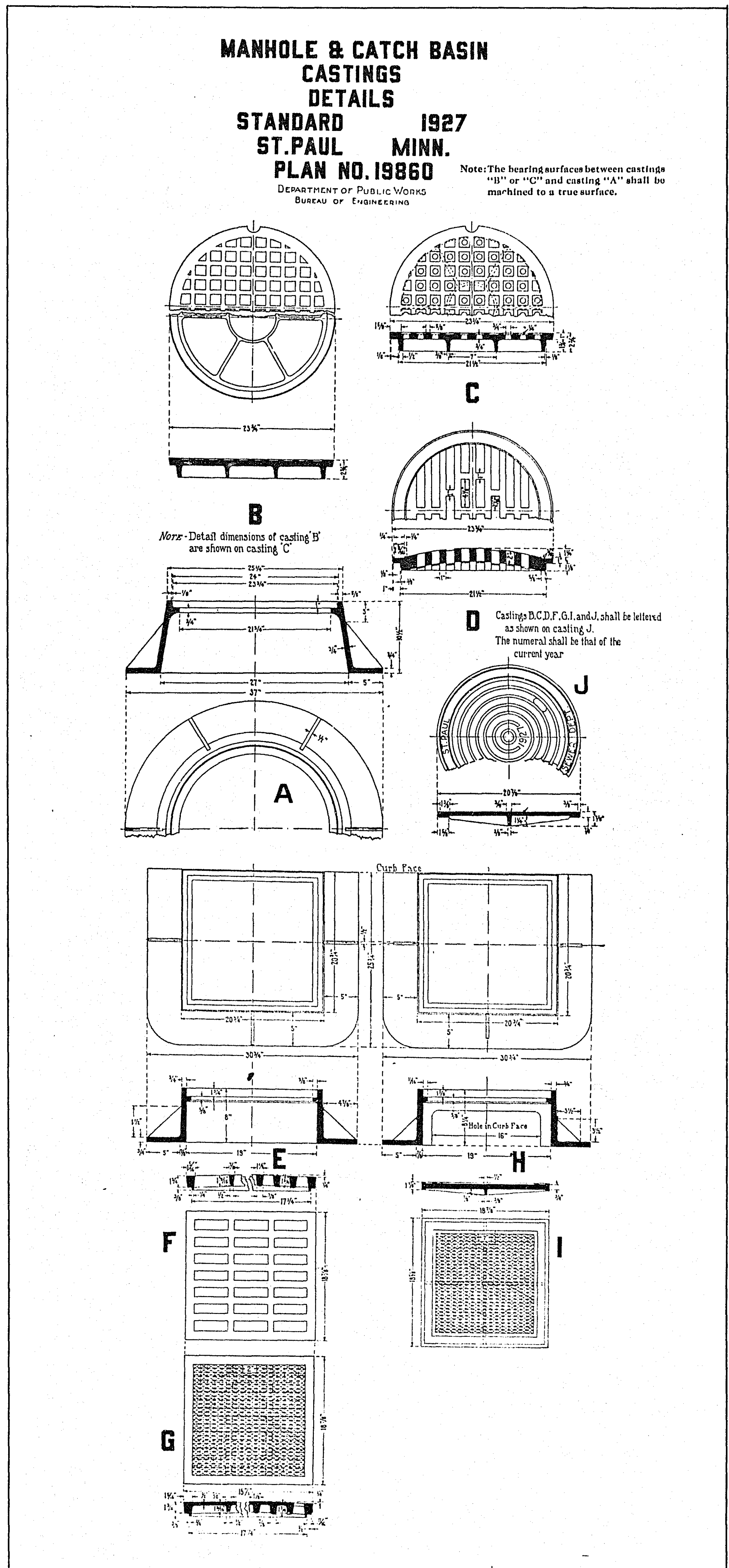
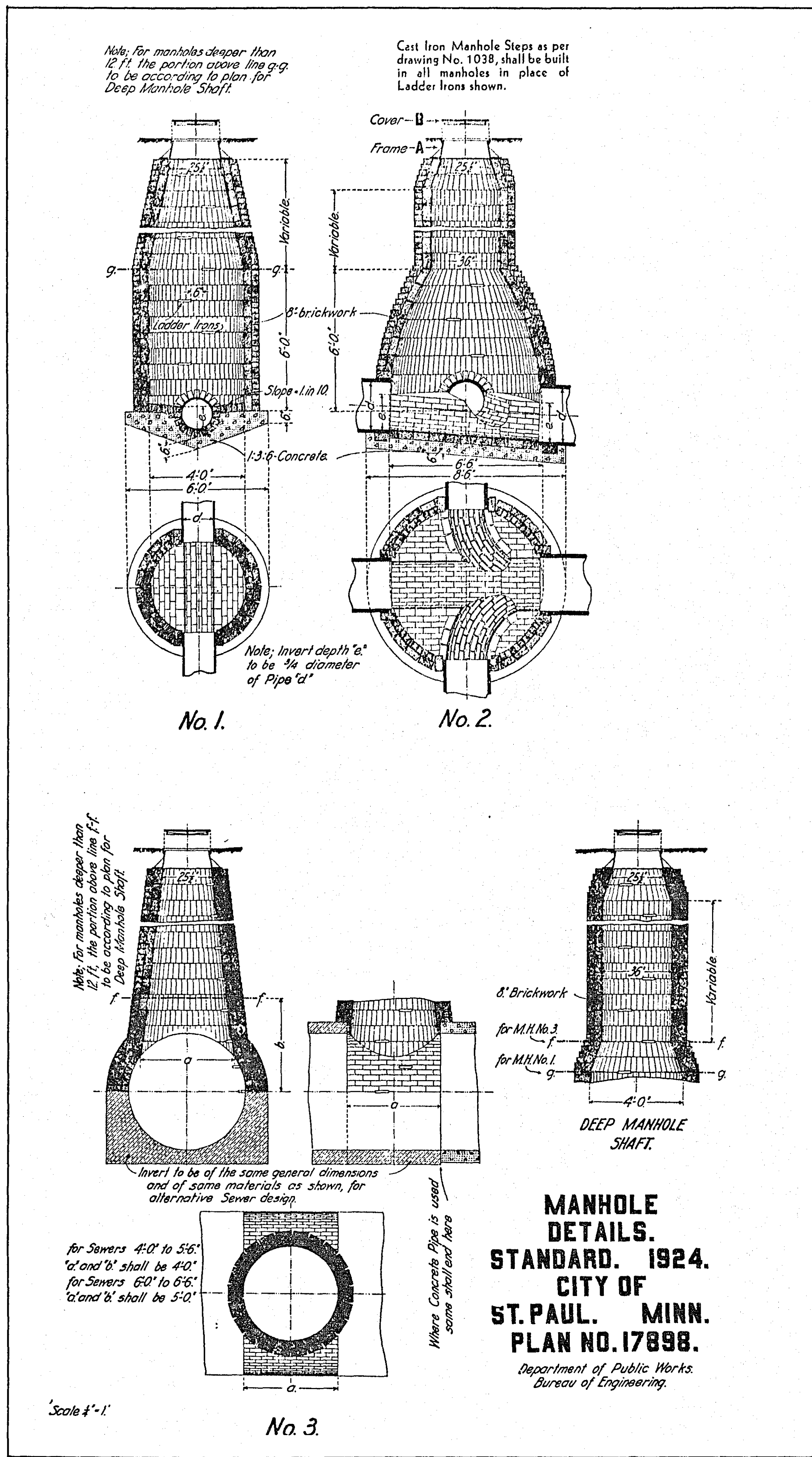
Drainage structures shall be constructed in accordance with the City of St. Paul Standard Detail Plates, Sheets No. 2A & 2B

PLAN NO.	STANDARD DETAIL PLATES
13847	Side Inlet
17630	Catch Basin Details
17898	Manhole Details
19860	Manhole And Catch Basin Castings
1	Catch Basin Cover And Dripstone
538	Special Catch Basin

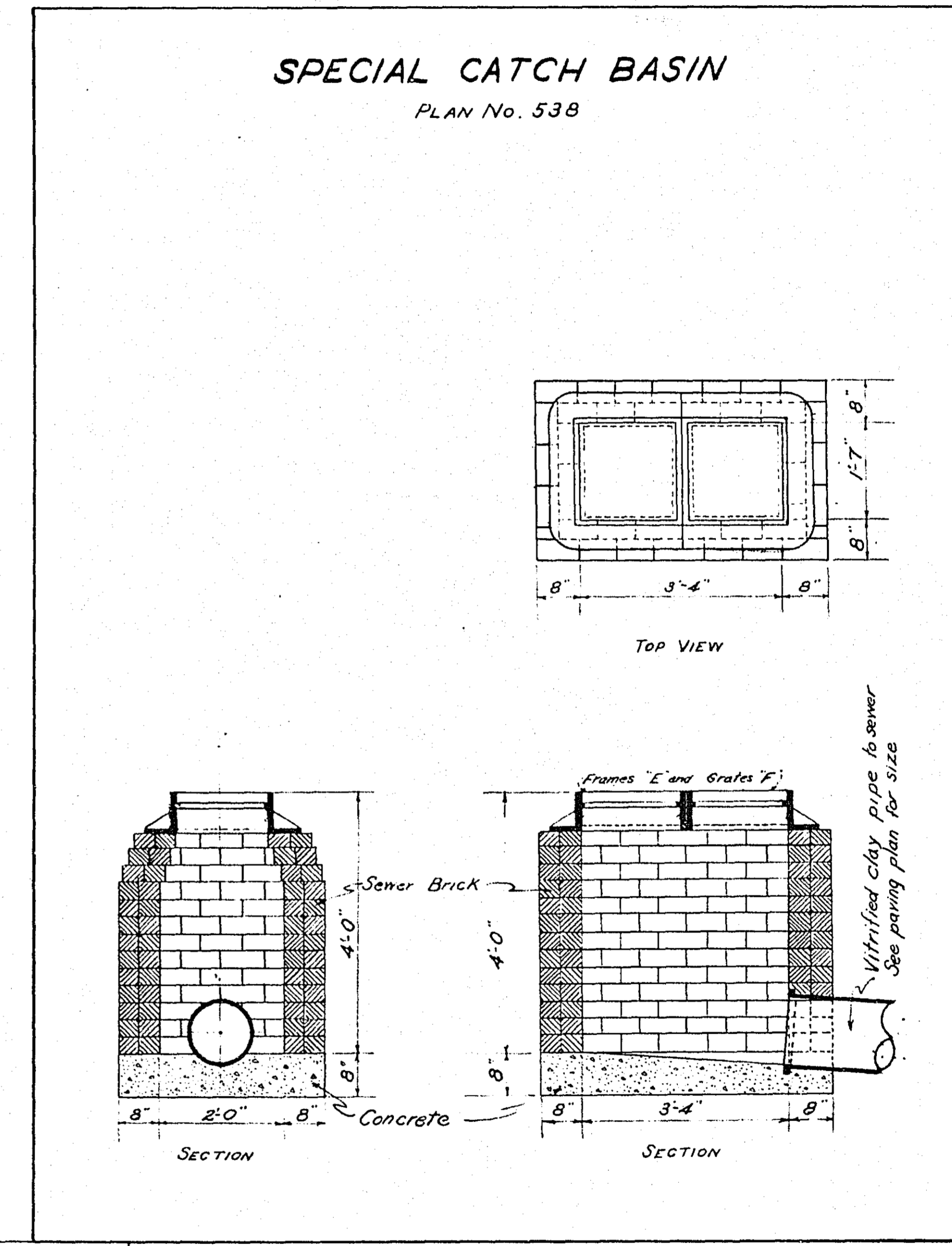
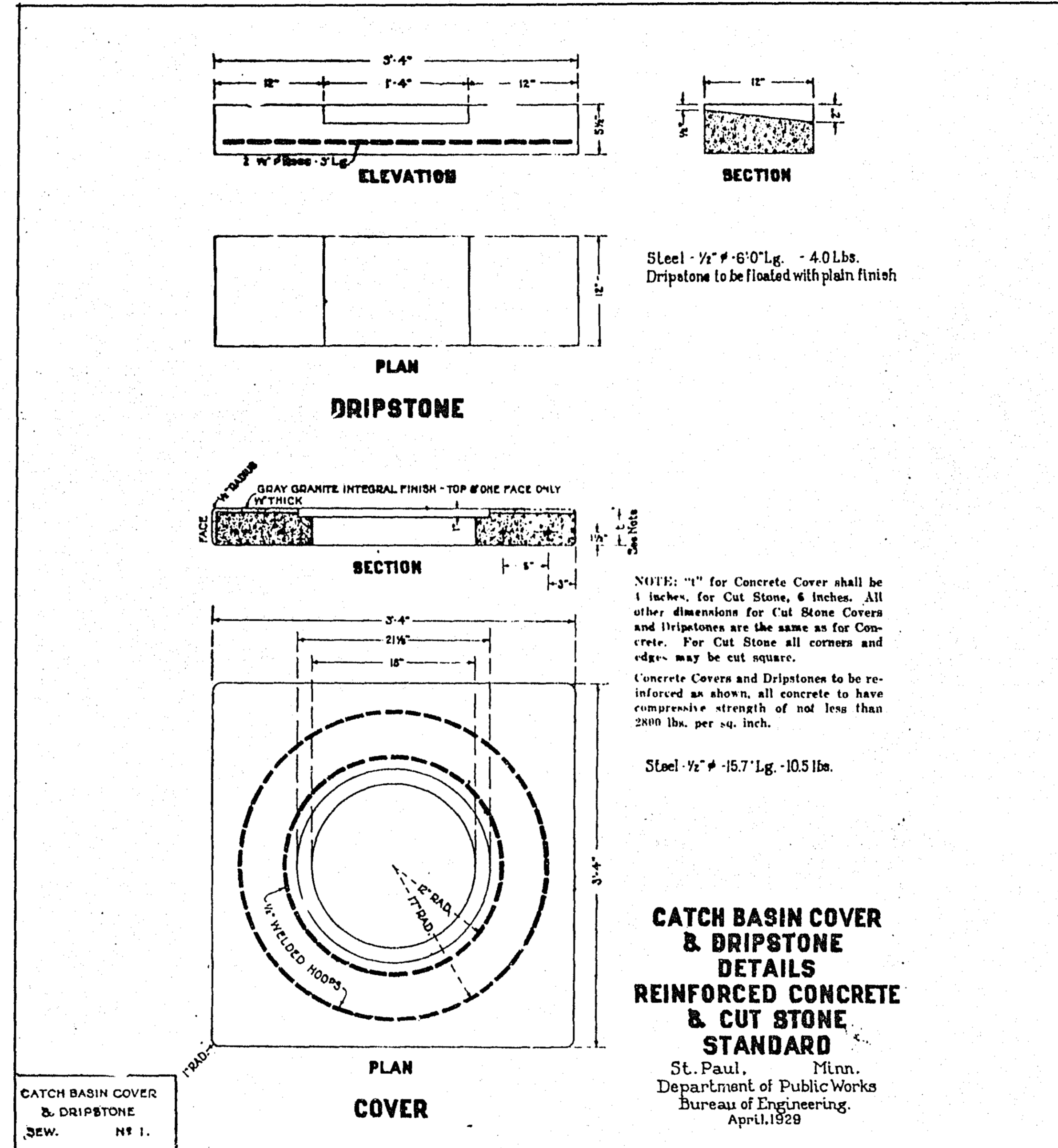
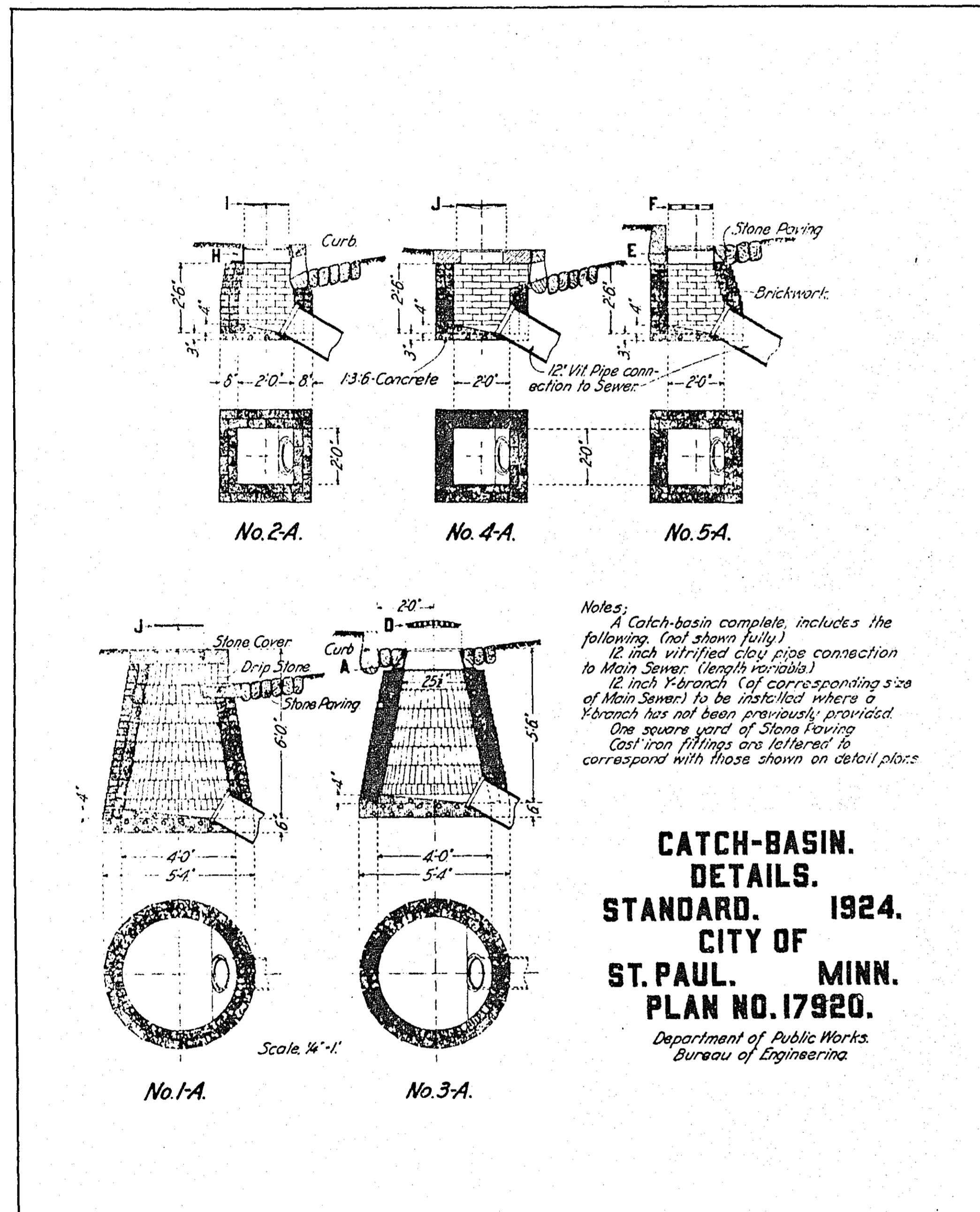
STATEMENT OF ESTIMATED QUANTITIES					
	NO.	ITEM	UNIT	ESTIMATED QUANTITIES	
GRADING	2105.503	Class "C" Excavation	(F) 7,479.0	Cu. Yd.	7000
	2104.502	Remove Pavement (Base And Surfacing)	(F) 2,319.5	Sq. Yd.	2371
	104.551	Remove Asphalt Pavement Surfacing	(F) 1,119.7	Sq. Yd.	4332
	104.552	Remove Block Pavement Surfacing	(F) 1,691.5	Sq. Yd.	1612
	104.553	Remove Sidewalk (Tie)	(F) 552.0	Sq. Yd.	550
	2104.506	Remove Sidewalk (Concrete)	(F) 1,579.8	Sq. Yd.	1657
	2104.504	Remove Curb	(F) 10,624.22	Lin. Ft.	10627
	2533.501	Stone Curb	(F) 6,032.0	Lin. Ft.	7411
	2521.501	Concrete Walk (4" Thick)	(F) 13,886.17	Sq. Ft.	11361
	2101.502	Clearing	(F)	Tree	(F) 33
	2101.507	Grubbing	(F)	Tree	(F) 33
	2503.501	Trench Excavation (0'-6")	(F) 133.5	Lin. Ft.	588
	2503.502	Trench Excavation (0'-10")	(F) 181.5	Lin. Ft.	404
	2503.512 (R)	Furnish And Install 12" Clay Pipe Sewer	(F) 911.4	Lin. Ft.	992
	104.554	Remove Side Inlets	(F) 16.3	Inlet	14
	2103.511	Remove Catch Basins	(F) 19.5	Catch Basin	18
	2506.511	Reconstruct Manholes	(F) 55.0	Lin. Ft.	54
	2506.512	Reconstruct Catch Basins	(F) 19.5	Lin. Ft.	9
	506.553	Construct Side Inlet (Standard)	(F)	Side Inlet	(F) 6
	506.552	Construct Catch Basin Type (A)	(F) 14.0	Catch Basin	13
	506.552	Construct Catch Basin Type (A)	(F)	Catch Basin	(F) 6
	506.552	Construct Catch Basin Type (A)	(F)	Catch Basin	(F) 17
	506.552	Construct Catch Basin (Special C.B. No. 538)	(F)	Catch Basin	(F) 8
	506.551	Construct Manholes (Type No. 4)	(F)	Manhole	(F) 7
	506.551	Construct Manholes (Type No. 1) (13' Deep)	(F) 15.0	Manhole	9
2506.516	Furnish And Install Castings Assembly "A" "B"	(F) 4.0	Assembly	(F) 2	
2568.501	Federal Project Field Marker	(F)	Marker	(F) 2	
2302.531	Reinforcing Bars	(F) 1,915.48	Pound	2159	
2531.502	Concrete Curb 7"x18" Type 3 or 4 Concrete	(F) 1,611.3	Lin. Ft.	1165	
2531.502	Concrete Curb 6"x18" Type 3 or 4 Concrete	(F) 2,411.5	Lin. Ft.	1200	
2531.502	Concrete Curb 7"x24" Type 3 or 4 Concrete	(F) 252.5	Lin. Ft.	261	
2301.515	Concrete Pavement 7-9" Thick Type 3 or 4 Concrete (High Early Strength)	(F) 50.0	Sq. Yd.	102.85	
2301.515	Concrete Pavement 7-9" Thick Type 3 or 4 Concrete (Standard Strength)	(F) 50.0	Sq. Yd.	106.43	
2302.515	Concrete Base (7-9" Thick) Type 1, 3 or 4 Concrete (Standard Strength)	(F) 50.0	Sq. Yd.	155.06	
2302.515	Concrete Base (7" Thick) Type 1, 3 or 4 Concrete (Standard Strength)	(F) 50.0	Sq. Yd.	103.15	
2305.501	Brick Pavement	(F) 2,718.0	Sq. Yd.	2925	
2303.506	Concrete Resurfacing (Leveling Course)	(F) 426.66	Sq. Yd.	365	
2303.515	Mixed Concrete Type 1, 3 or 4 (Standard Strength)	(F) 20.0	Cu. Yd.	10	
2351.502	Bituminous Material For Tack Coat	(F) 2,800.0	Gallon	3580	
2351.501	Bituminous Material For Prime Coat MC-1, 2, or 3	(F) 2,800.0	Gallon	296	
2351.511	Asphaltic Concrete (Leveling Course)	(F) 1,635.0	Ton	1397	
2351.511	Asphaltic Concrete (Wearing Course)	(F) 4,150.0	Ton	4804	
2351.512	Asphaltic Concrete Surface (Leveling Course)	(F) 6,540.0	Sq. Yd.	12017	
2351.512	Asphaltic Concrete Surface (Wearing Course)	(F) 24,730.0	Sq. Yd.	40,272	
2356.506	Seal Coat Aggregate	(F) 578.77	Ton	403	
2356.512	Bituminous Seal Coat	(F) 10,151.44	Sq. Yd.	40,272	
2356.505	Bituminous Material For Seal Coat RC-3 or 4	(F) 5,125.0	Gallon	8457	
2351.504	Bituminous Material For Asphaltic Concrete AC-1, 70-85 Per Cent	(F) 1,125.0	Ton	368	
MISCL.	2432.502	Lighting System (See Special Provisions)	(F)	System	(F) 1
	499.551	Constructing Safety Islands	(F)	Island	(F) 18
	499.561	Reconstructing Safety Islands	(F)	Island	(F) 4
	432.551	Street Lights Inplace	(F)	Light	(F) 107
	104.555	Remove Ornamental Light Bases	(F)	Base	(F) 88
	569.551	Moving City Limits Markers	(F)	Marker	(F) 2



SUPPLEMENTAL AGREEMENTS			
NO.	ITEM	UNIT	QUANTITY
1	INSTALLING TEMPORARY CROSSINGS	CONCRETE	4
2	CONCRETE CURBS	CONCRETE	1200
3	BRICK PAVEMENT	CONCRETE	2925
4	BRICK PAVEMENT	CONCRETE	2925
5	BRICK PAVEMENT	CONCRETE	2925
6	BRICK PAVEMENT	CONCRETE	2925
7	BRICK PAVEMENT	CONCRETE	2925
8	BRICK PAVEMENT	CONCRETE	2925



CITY OF ST. PAUL STANDARD DETAIL PLATES

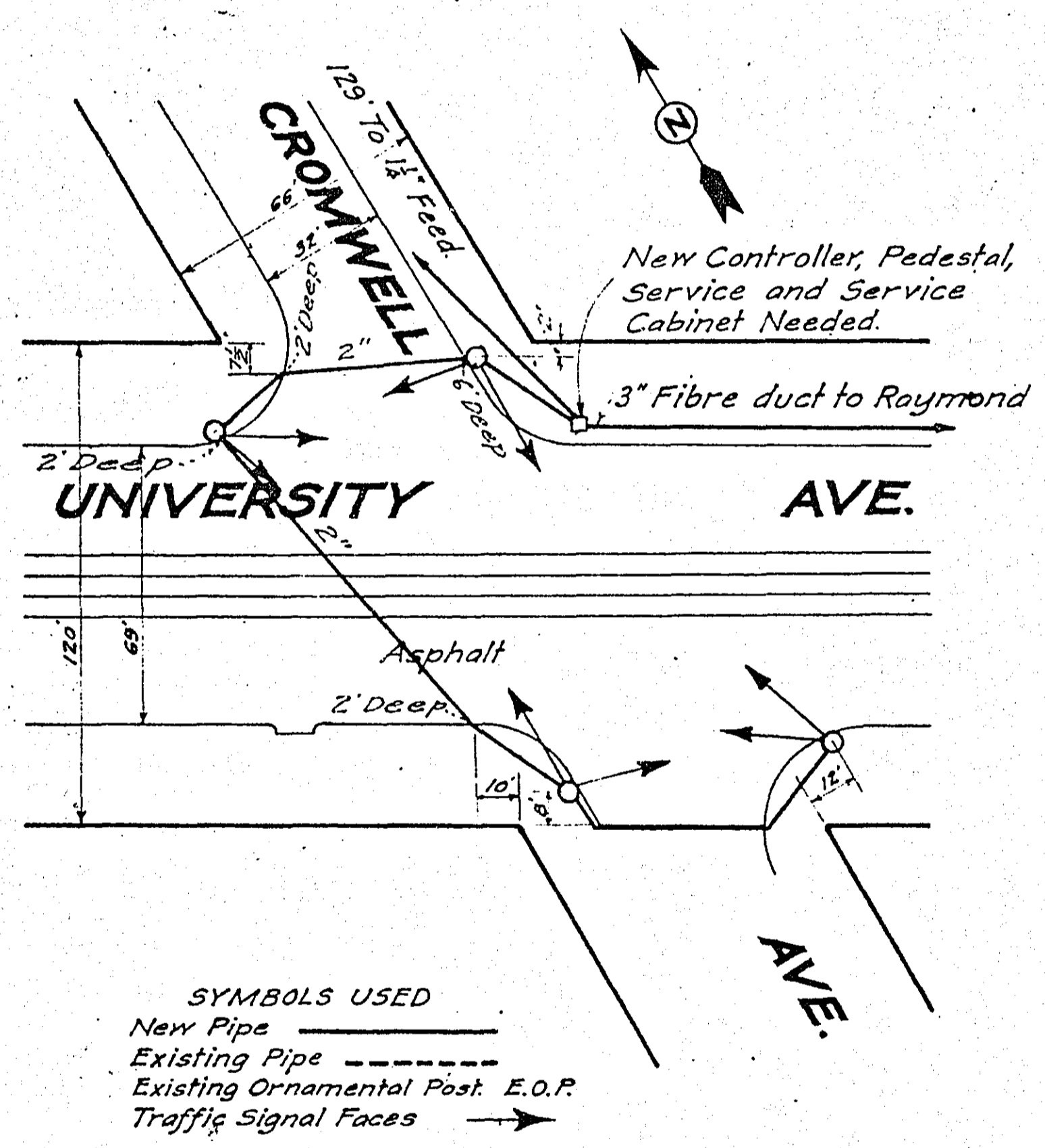


CITY OF ST. PAUL
 STANDARD DETAIL PLATES

1
OF 38

TRAFFIC SIGNALS

Dept. of Public Works
Scale 1" = 40'

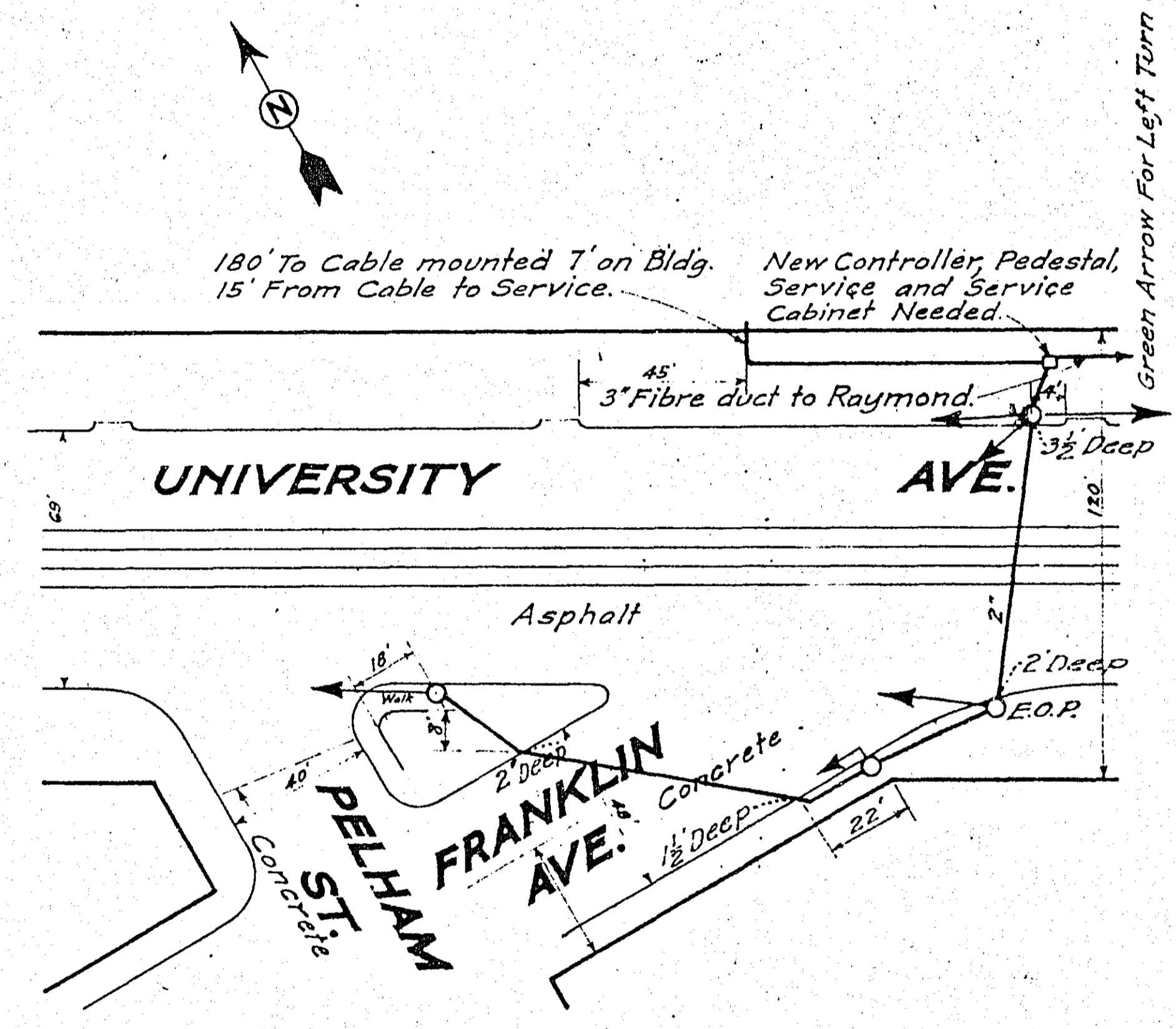


TRAFFIC SIGNALS
UNIVERSITY & CROMWELL
MISC. DR. 5. N° 274

2

TRAFFIC SIGNALS

Dept. of Public Works
Scale 1" = 40'

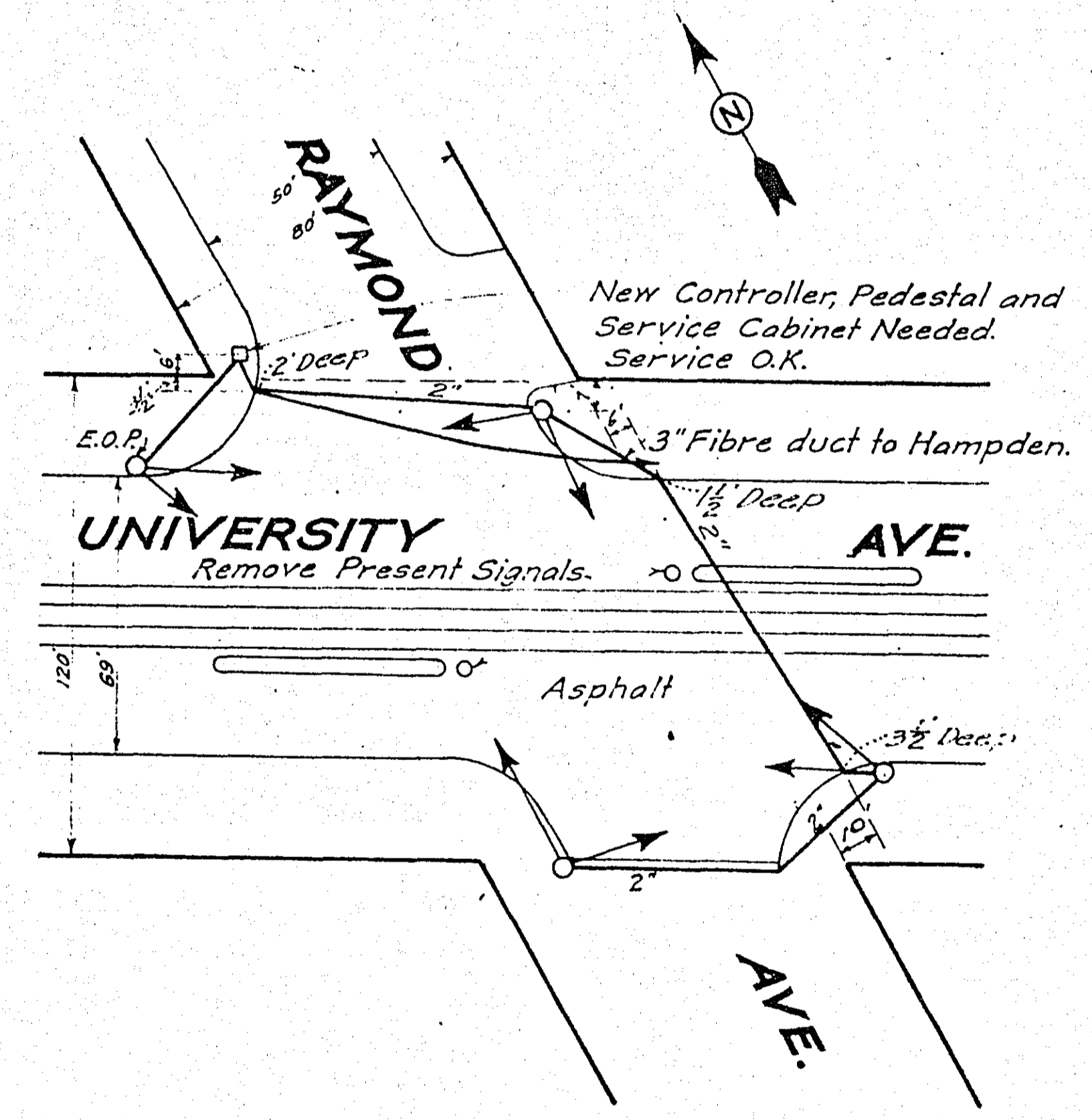


TRAFFIC SIGNALS
UNIV-FRANKLIN-PELHAM
MISC. DR. 5 N° 275

3

TRAFFIC SIGNALS

Dept. of Public Works
Scale 1" = 40'

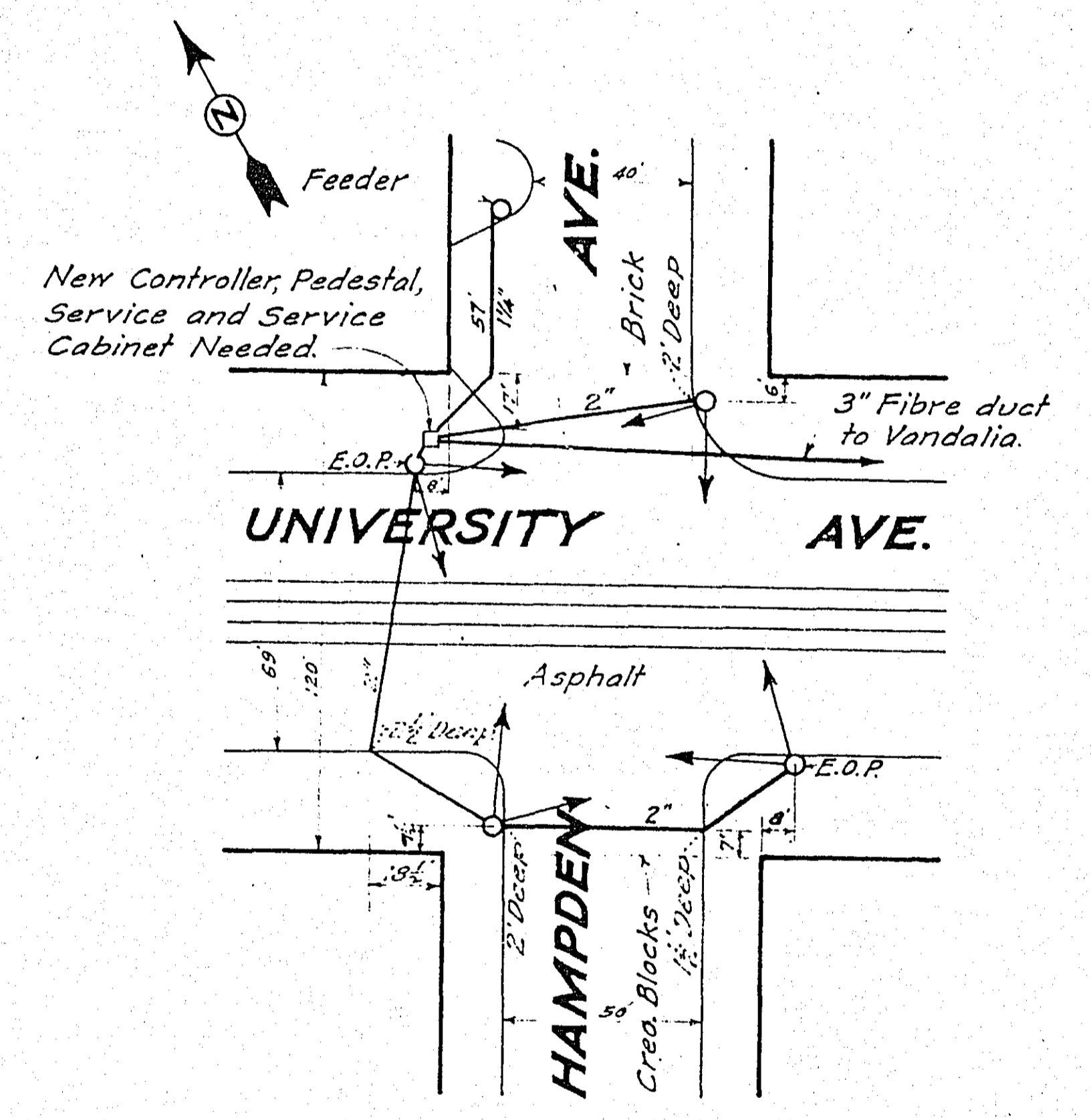


TRAFFIC SIGNALS
UNIVERSITY & RAYMOND
MISC. DR. 5. N° 276

4

TRAFFIC SIGNALS

Dept. of Public Works
Scale 1" = 40'

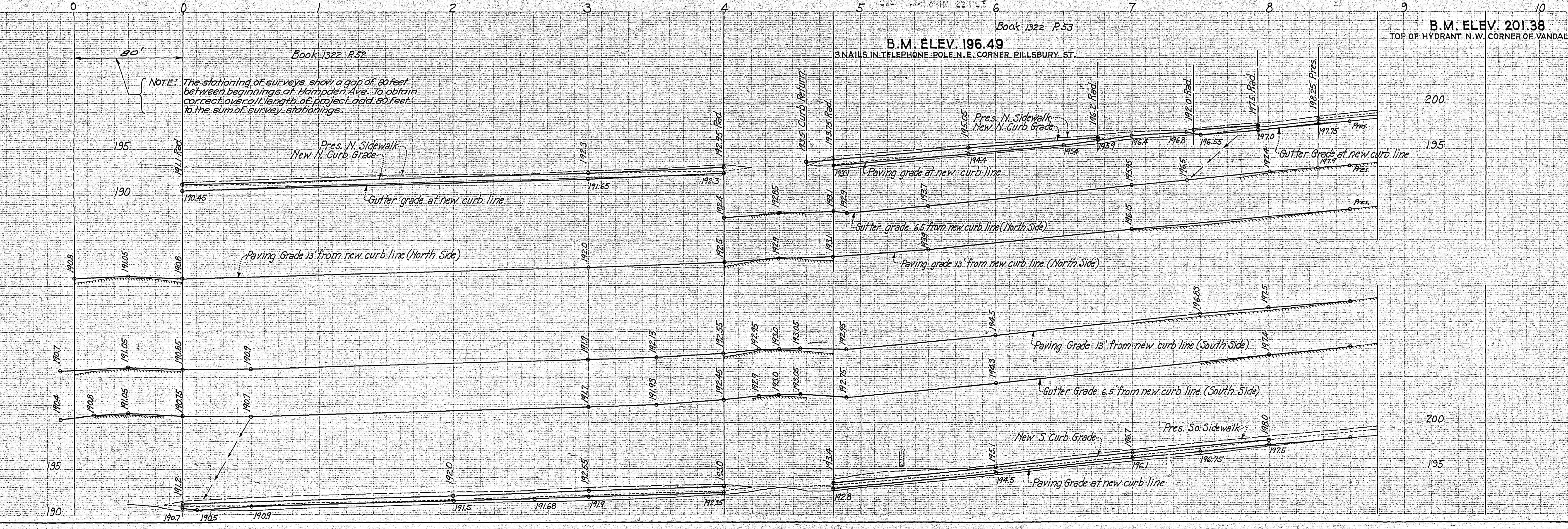
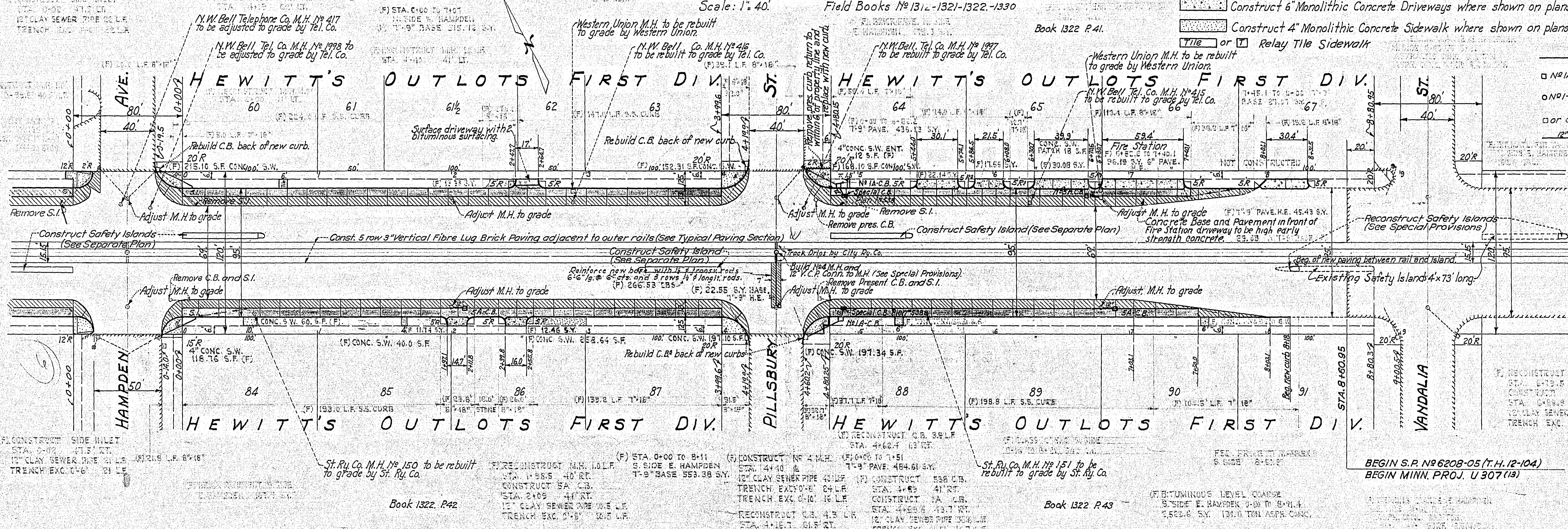


TRAFFIC SIGNALS
UNIVERSITY & HAMPDEN
MISC. DR. 5. N° 277

NOTE
 Surface entire present asphalt pavement from Vandalia St. to West City Limits with asphalt. See Typical Grading & Paving Section and Special Provisions. The stationing of surveys show a gap of 80 feet between beginnings at Hampden Ave. To obtain correct overall length of project add 80 feet to the sum of survey stationings.
 Book 1322 P.40

GRADING & PAVING PLANS
WIDENING ROADWAY ON UNIVERSITY AVE.
FROM VANDALIA ST. TO THE WEST CITY LIMITS
 Scale: 1" = 40'
 Field Books No 1312-1321-1322-1330

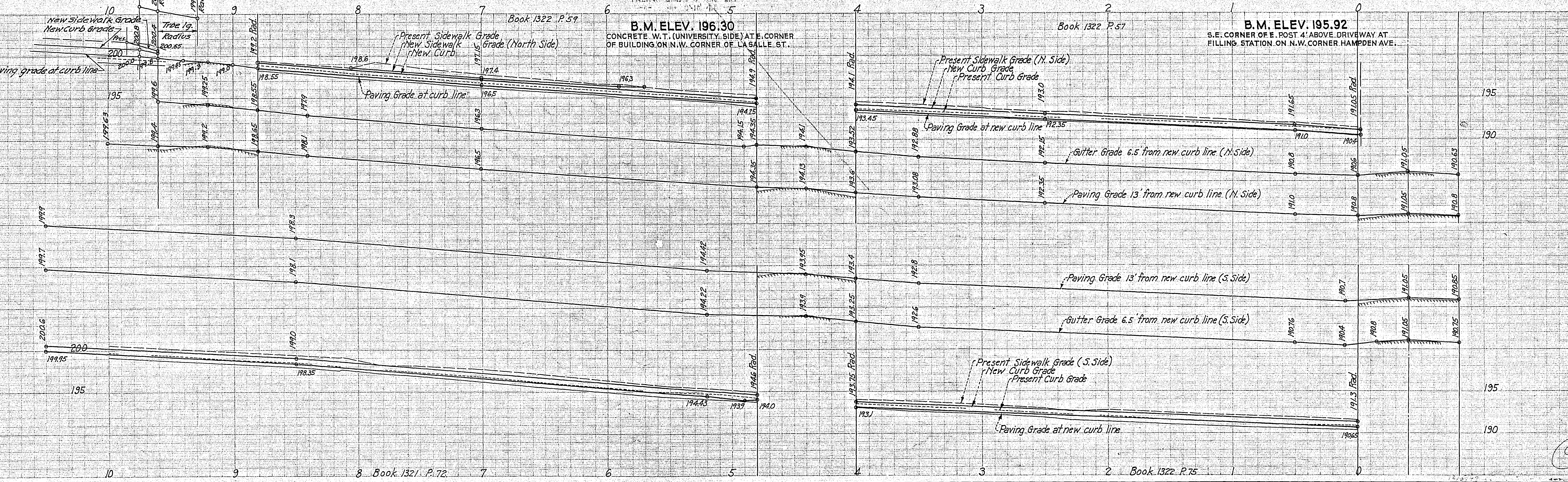
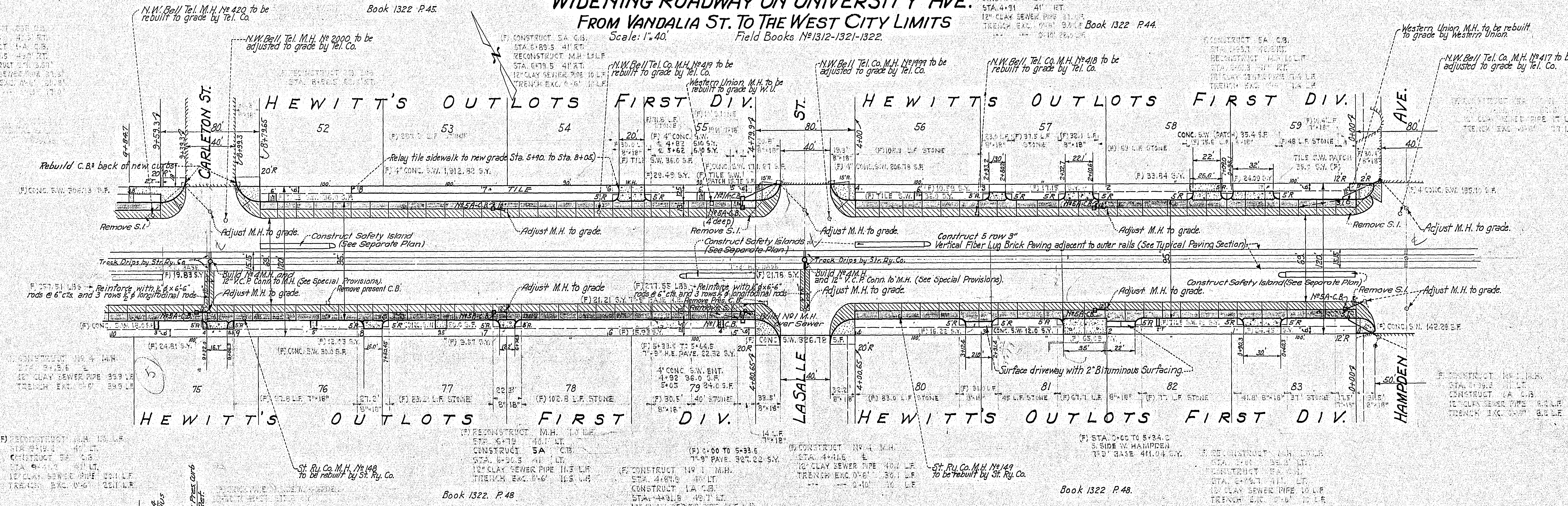
- EXPLANATION OF CONVENTIONAL SIGNS (APPLIES TO SHEETS No 3-4-5-6-7-8-9)**
- Construct 2" Asphalt Paving and new Concrete Base where shown on plans by hatched areas. Dummy Contrach Joints @ 15' Int.
 - Construct Concrete pavement where shown on plans thus
 - Construct 6" Monolithic Concrete Driveways where shown on plans thus.
 - Construct 4" Monolithic Concrete Sidewalk where shown on plans thus.
 - Title or Relay Tile Sidewalk
 - Reset Sandstone Curb or build new Concrete Curb.
 - Construct Catch Basin. (Notation indicates type)
 - Construct Manhole. (Notation indicates type)
 - Existing Catch Basin or Manhole.
 - Construct new Vitrified Clay Pipe Sewer. (Notation indicates inside diameter of pipe)



NOTE: The stationing of surveys show a gap of 80 feet between beginnings of Hampden Ave. To obtain correct overall length of project add 80 feet to the sum of survey stationings.

GRADING & PAVING PLANS WIDENING ROADWAY ON UNIVERSITY AVE. FROM VANDALIA ST. TO THE WEST CITY LIMITS

Scale: 1"=40'
Field Books N°1312-1321-1322.

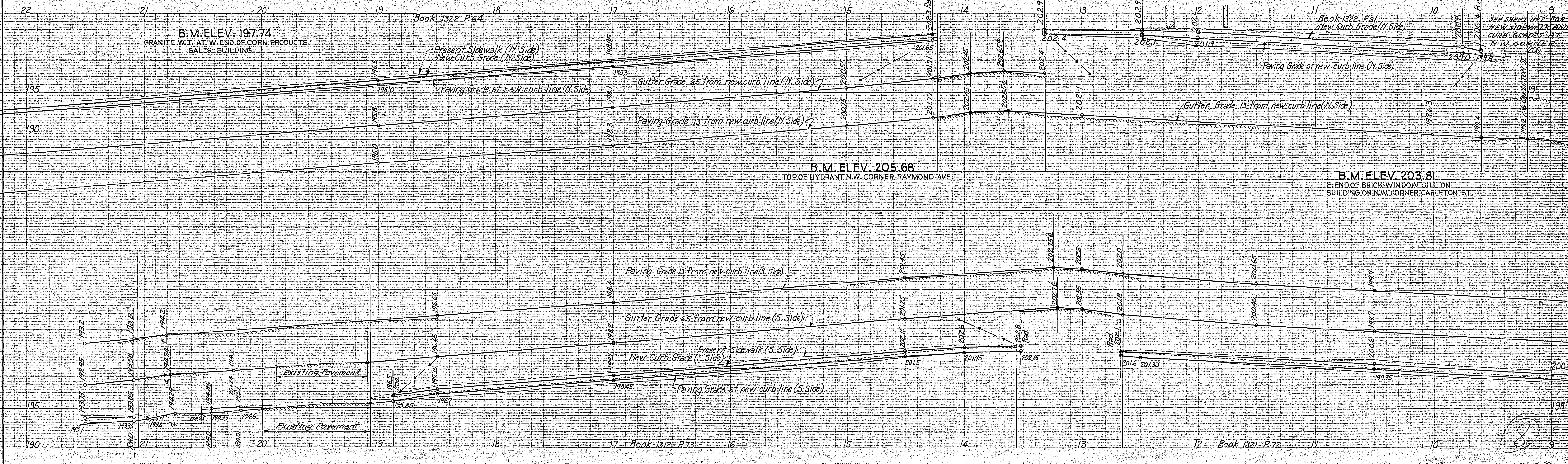
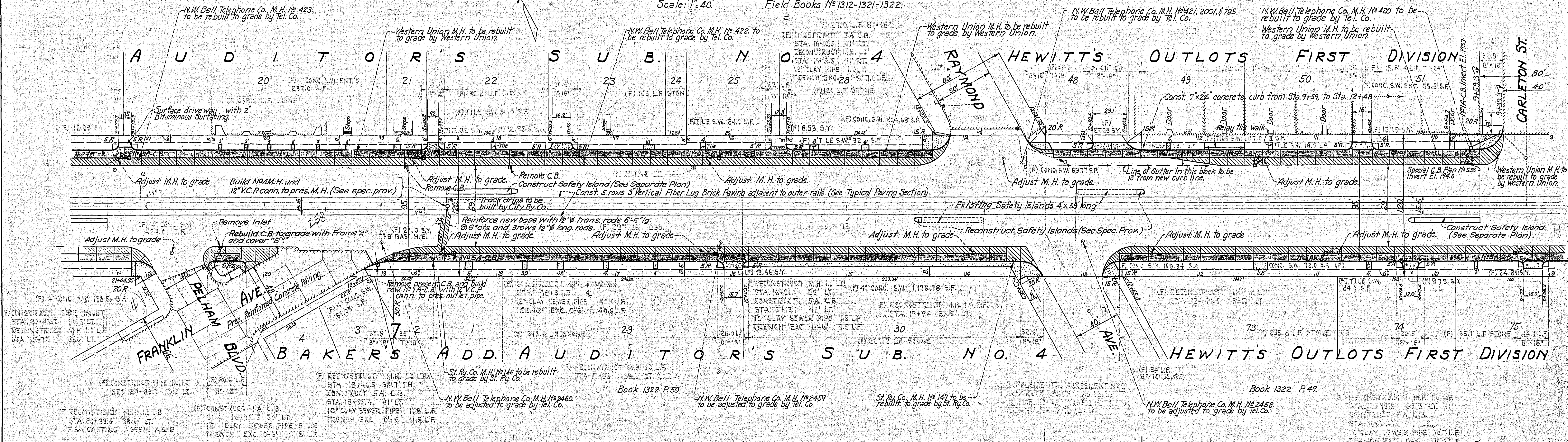


GRADING & PAVING PLANS WIDENING ROADWAY ON UNIVERSITY AVE. FROM VANDALIA ST. TO THE WEST CITY LIMITS

Scale: 1"=40' Field Books No 1312-1321-1322.

Book 1322 P.46

Book 1322 P.45



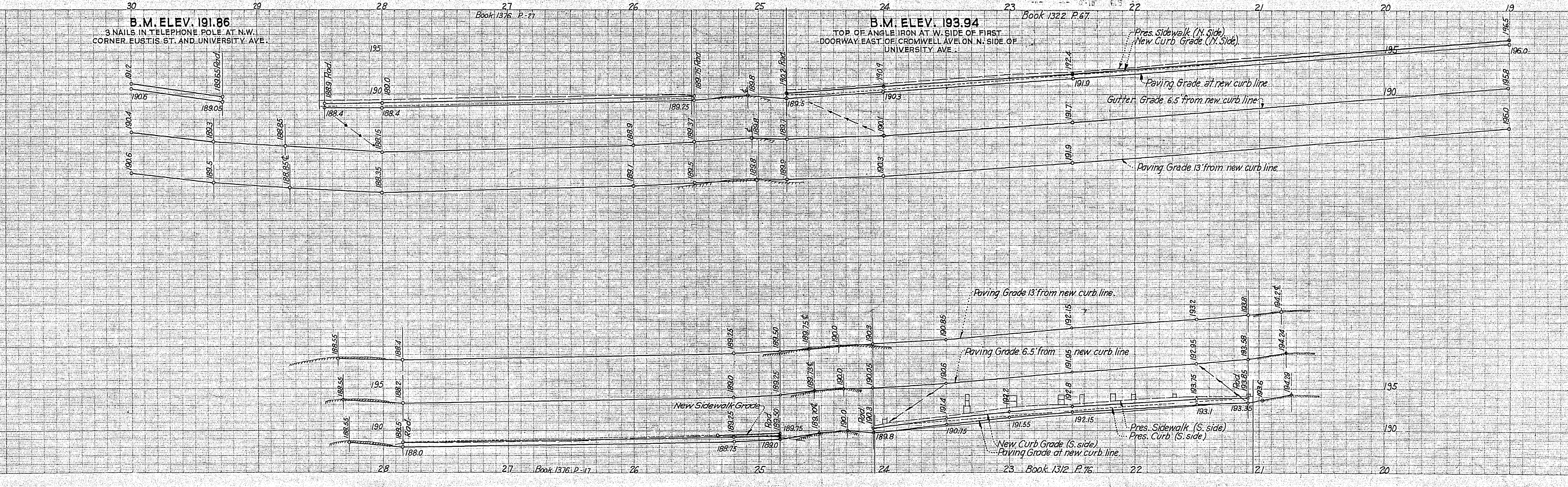
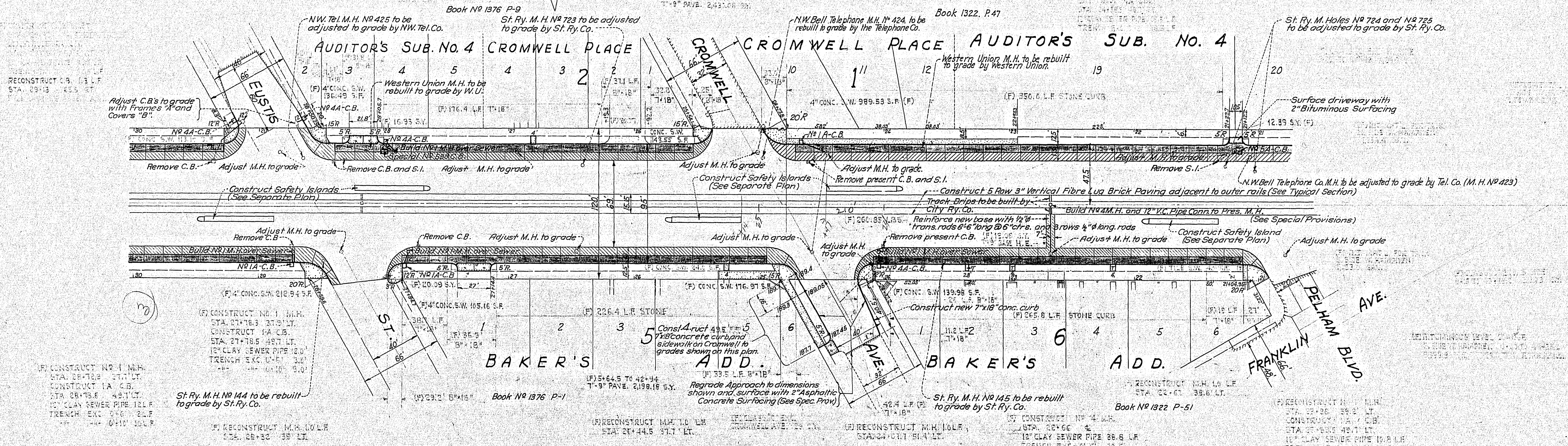
GRADING & PAVING PLANS

WIDENING ROADWAY ON UNIVERSITY AVE.

FROM VANDALIA ST. TO THE WEST CITY LIMITS

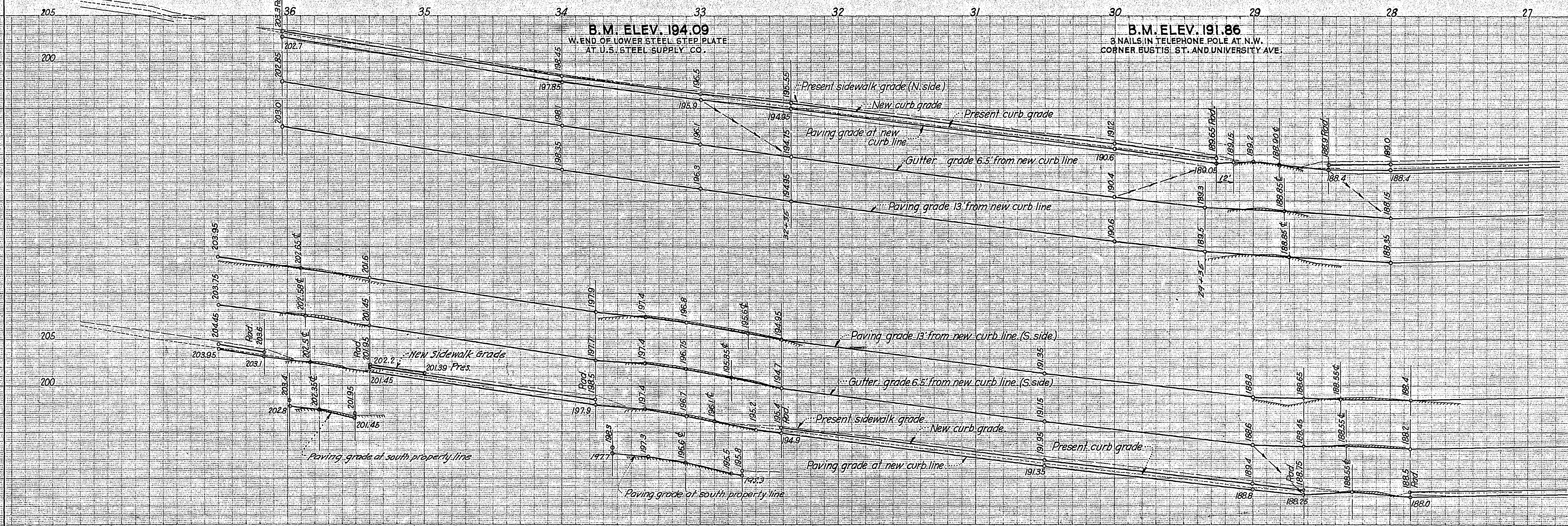
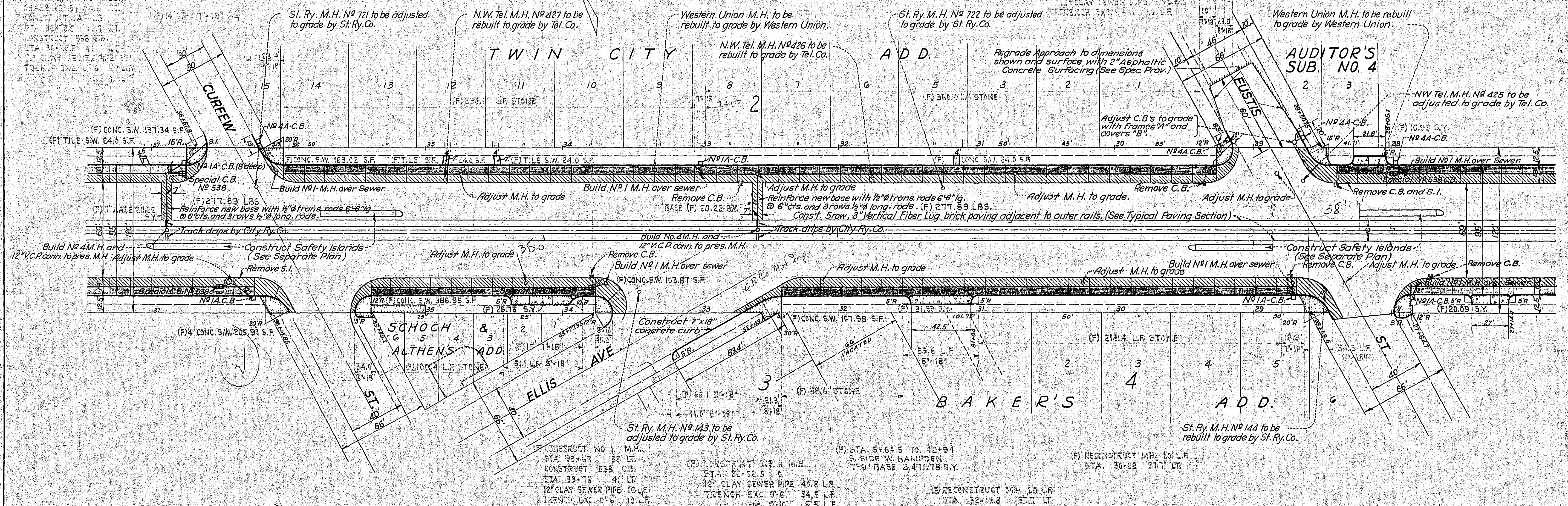
Scale: 1"=40'

Field Books No 1312-1321-1322-1376



GRADING AND PAVING PLANS FOR WIDENING ROADWAY ON UNIVERSITY AVE. FROM VANDALIA ST. TO THE WEST CITY LIMITS

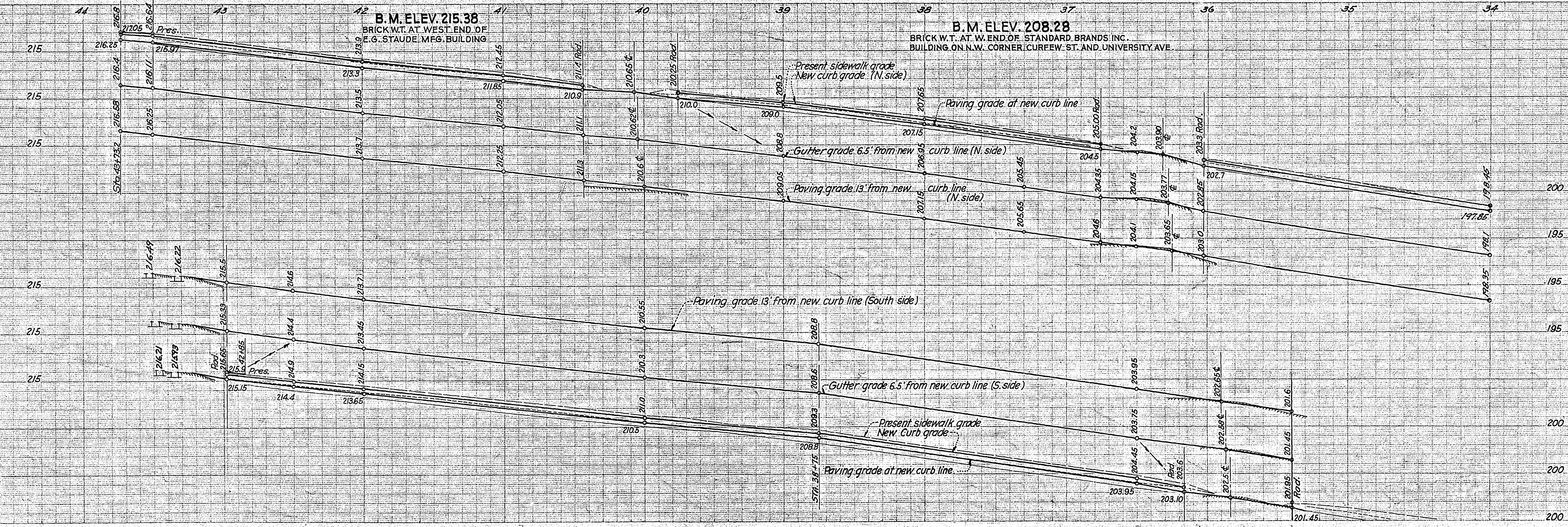
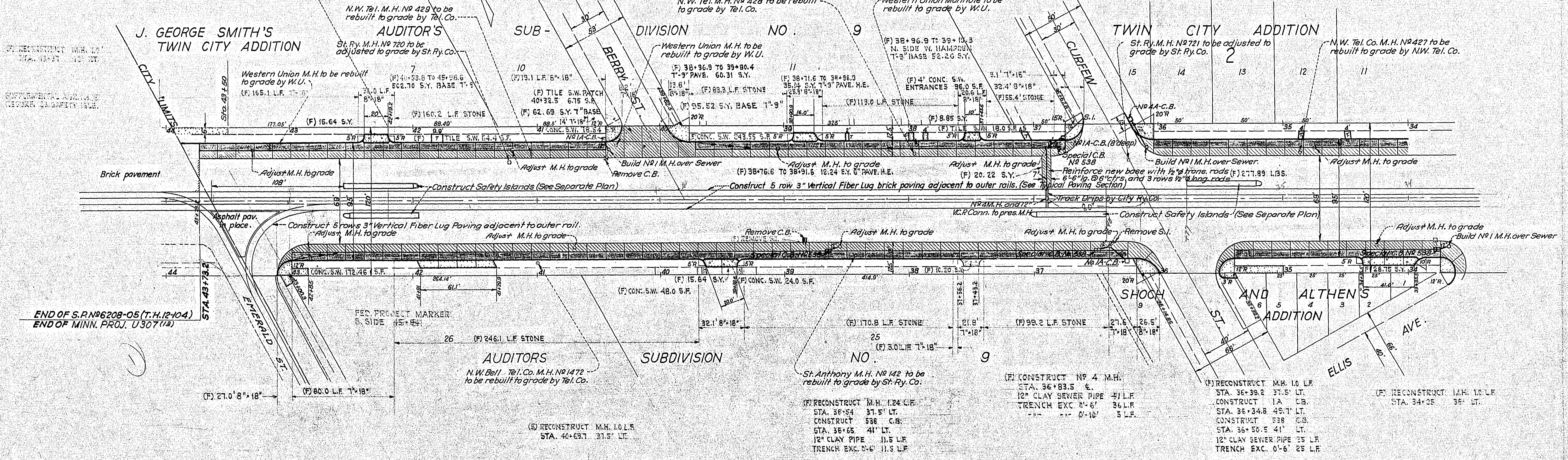
Scale 1"=40' Field Book No 1976



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5 N	MINN.	U307 (11)			8	17

GRADING AND PAVING PLANS FOR ROADWAY WIDENING ON UNIVERSITY AVE.

VANDALIA ST. TO THE WEST CITY LIMITS
Scale 1" = 40'
N. Book No 1876

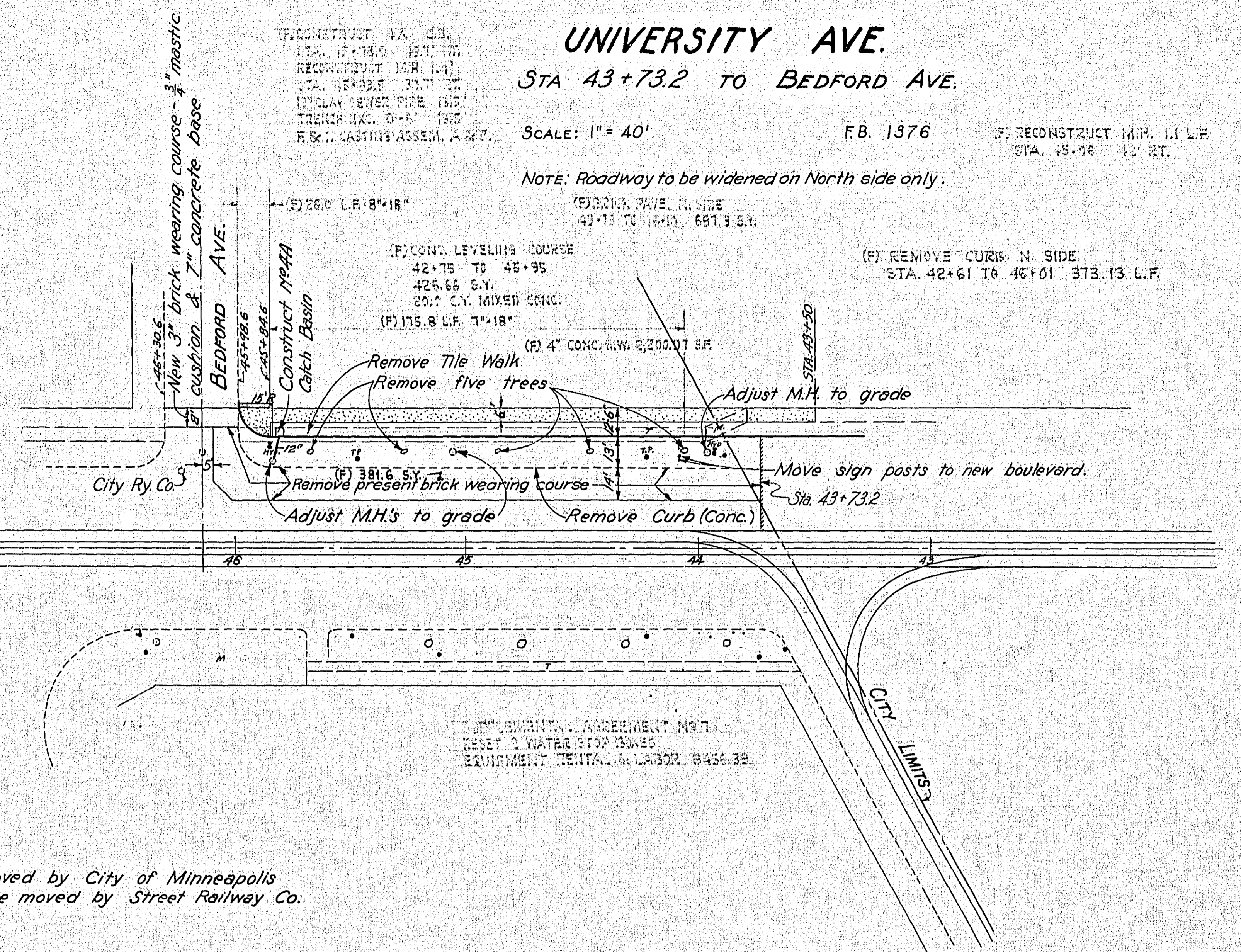
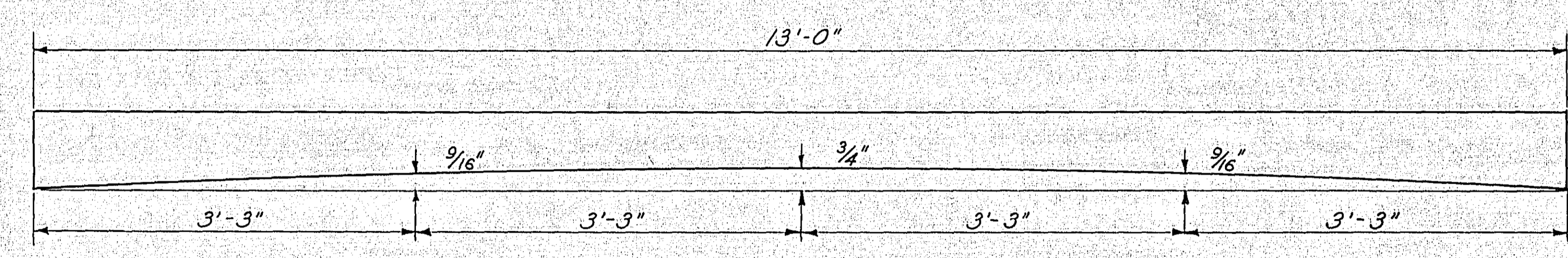
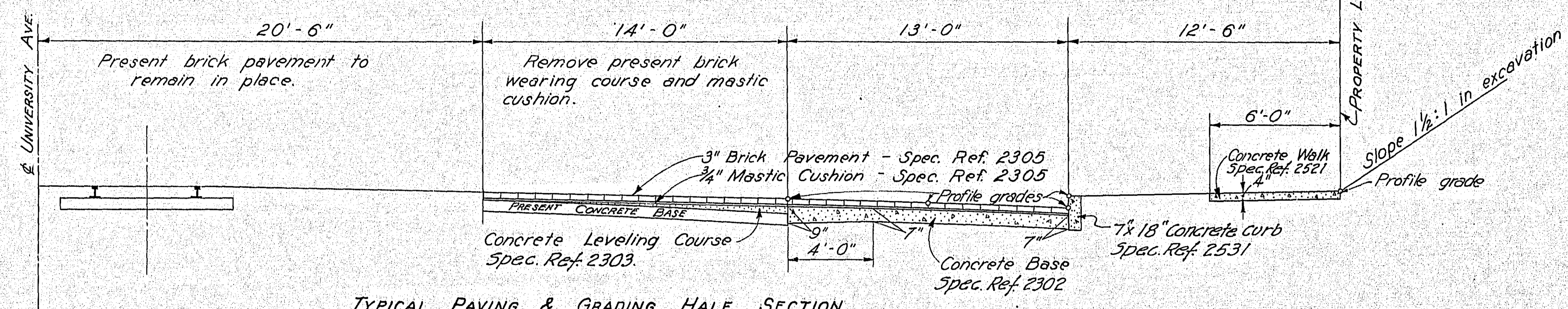


UNIVERSITY AVE.

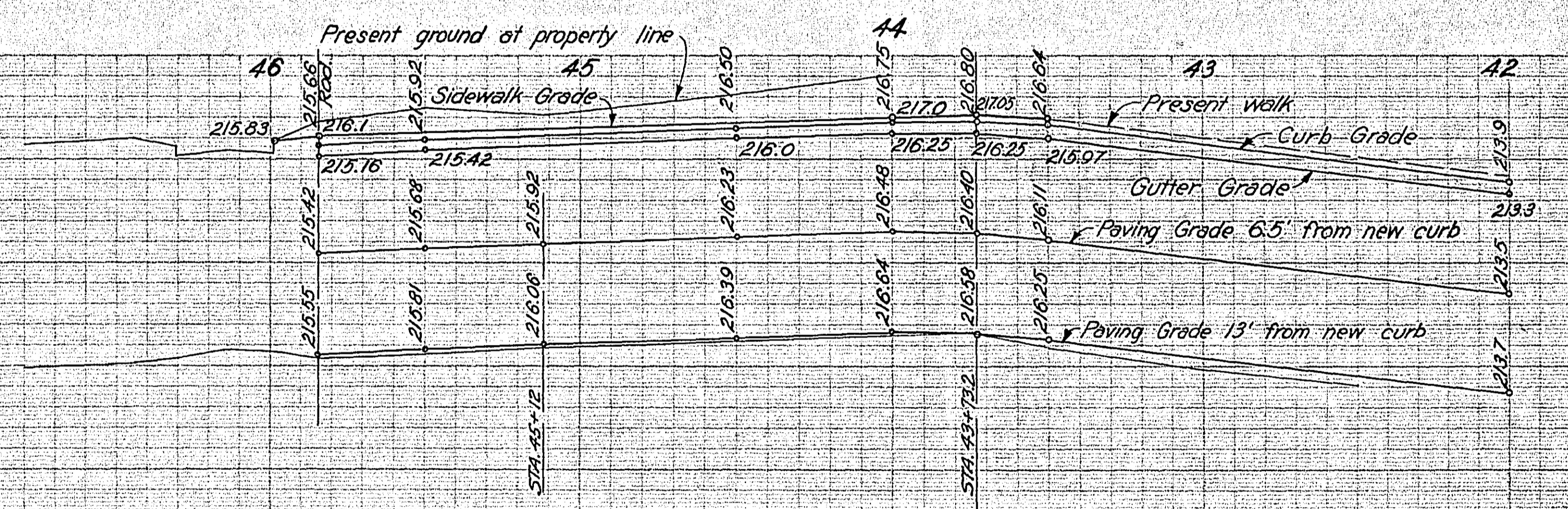
STA 43+73.2 TO BEDFORD AVE.

Scale: 1" = 40'
 FB. 1376
 RECONSTRUCT M.H. 11 L.F. STA. 43+06 TO 43+17

NOTE: Roadway to be widened on North side only.



NOTE:
 Hydrants to be moved by City of Minneapolis
 Trolley Poles to be moved by Street Railway Co.

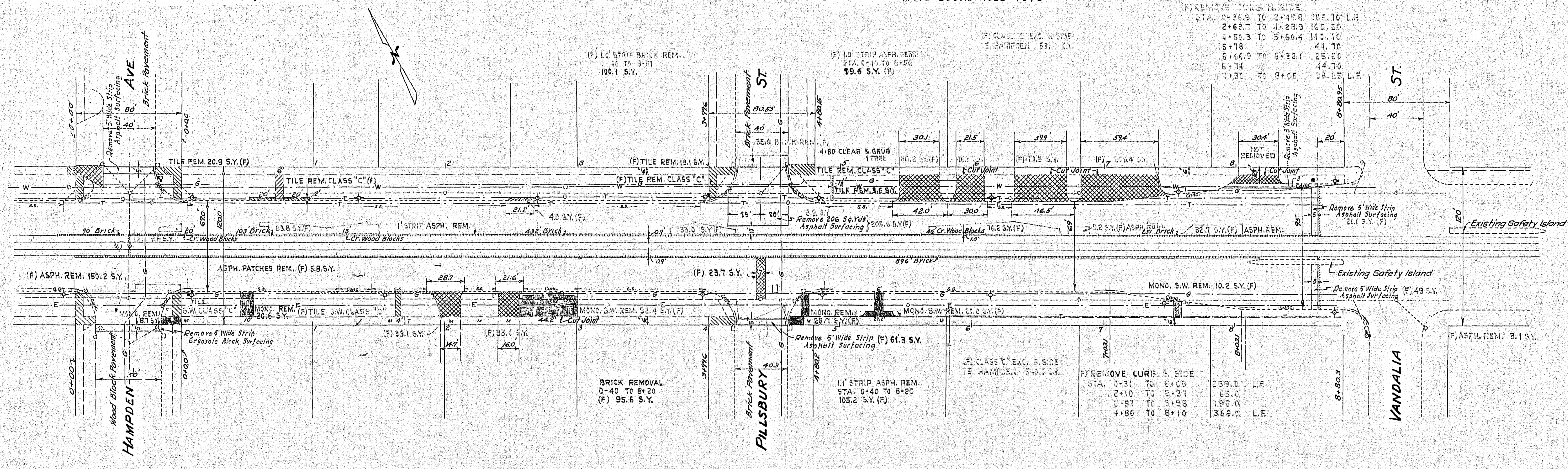


NOTE: Profile Grades shown above are for N. side of University Ave.

UNIVERSITY AVE. FROM VANDALIA ST. TO THE WEST CITY LIMITS PLAN SHOWING STREET IMPROVEMENTS IN PLACE

Scale 1"=40' Note Books 1322-1376

NOTE: The stationing of surveys shows a gap of 80 feet between beginnings of Hampden Ave. to obtain correct overall length of project add 80 feet to the sum of survey stationings.



(F) REMOVE CURB N. SIDE

STA. 0+26.9 TO 0+48.9	885.0	L.F.
2+63.7 TO 4+28.9	165.2	L.F.
4+59.3 TO 5+06.4	115.1	L.F.
5+78	44.7	L.F.
6+66.9 TO 6+32.1	25.8	L.F.
6+74	44.7	L.F.
7+30 TO 8+05	38.2	L.F.

(F) REMOVE CURB N. SIDE

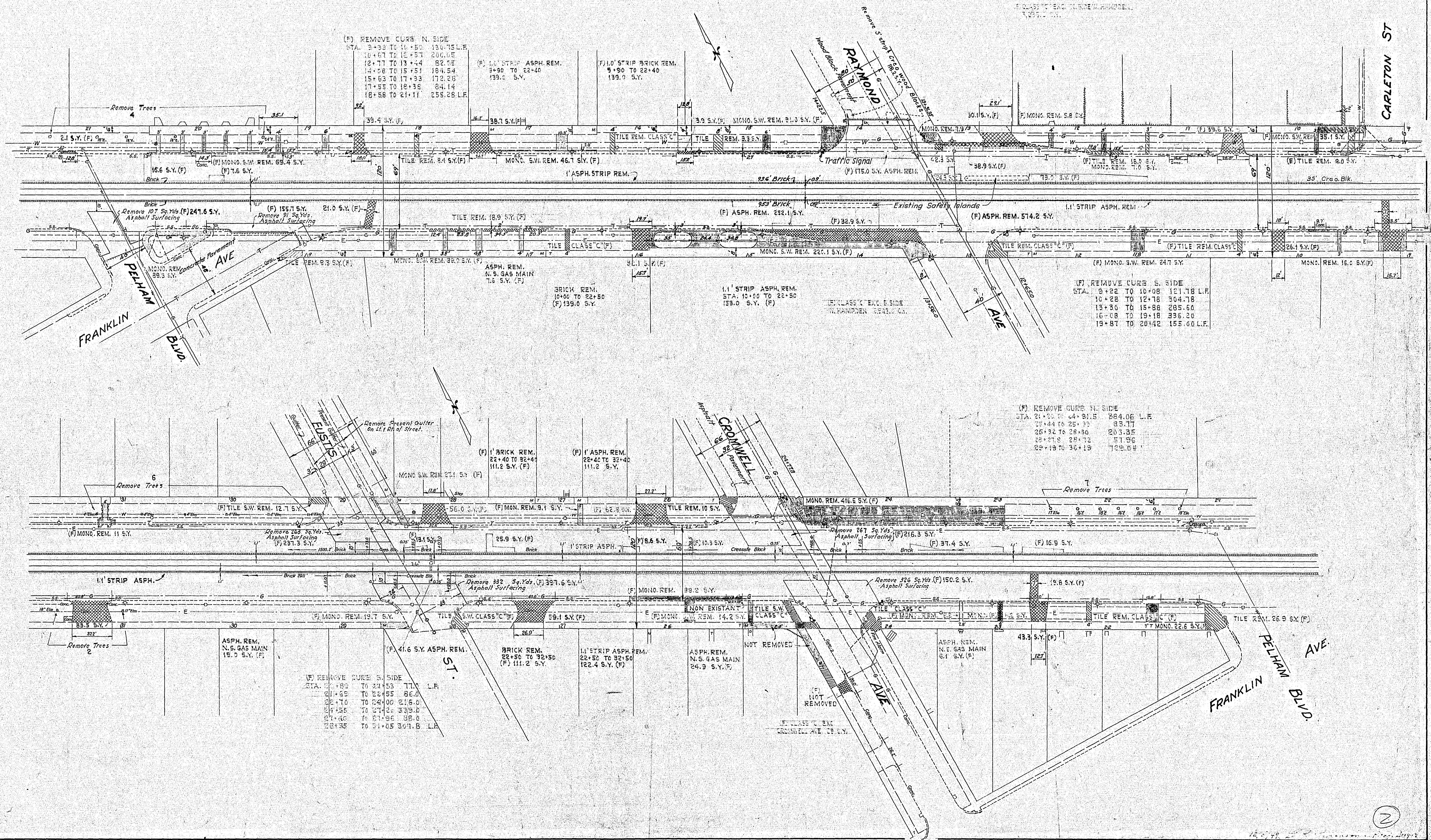
STA. 0+34.7 TO 0+84.4	119.7	L.F.
1+03	44.7	L.F.
1+31 TO 2+10	111.6	L.F.
2+32 TO 2+81	71.2	L.F.
2+93 TO 4+20	155.7	L.F.
4+60 TO 5+74	124.8	L.F.
5+85 TO 9+00	333.0	L.F.

(F) REMOVE CURB S. SIDE

STA. 0+35 TO 0+74	109.0	L.F.
1+00 TO 1+75	102.0	L.F.
2+02 TO 2+04	11.0	L.F.
2+38 TO 2+90	55.0	L.F.
3+14 TO 4+03	125.0	L.F.
4+78 TO 5+35	54.0	L.F.
5+78 TO 6+67	111.5	L.F.
6+90 TO 7+75	115.0	L.F.
8+00 TO 8+05	121.0	L.F.

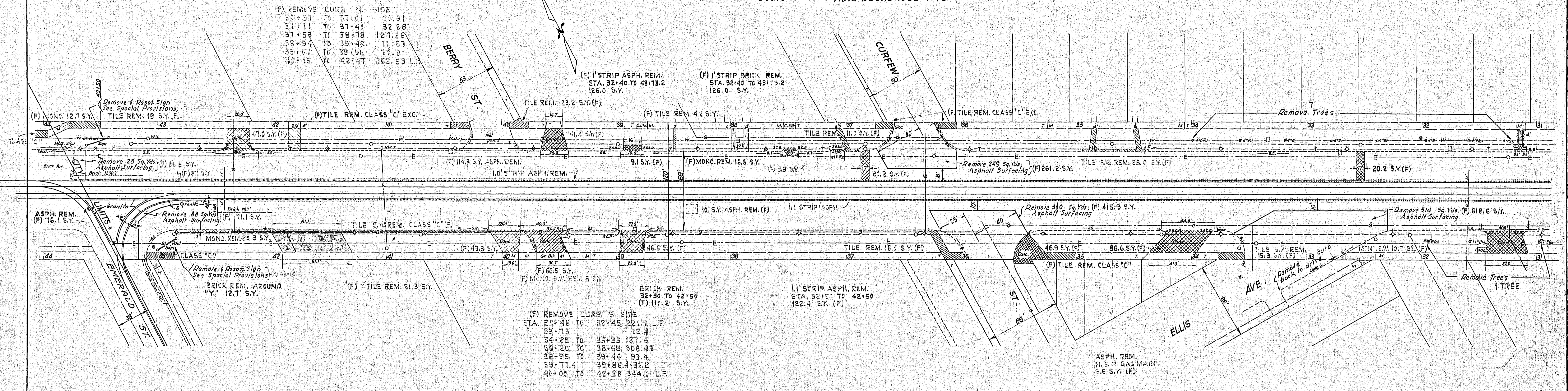
- ### CONVENTIONAL SIGNS
- Applies to Sheets No 10-11-12
- Remove Present Paving
 - Remove Present Tile Sidewalk
 - Remove Present Monolithic Concrete Sidewalk
 - Manhole or Catch Basin In Place
 - Curb In Place (Letters indicates type (S indicates sandstone))
 - Sewer In Place
 - Sidewalk In Place
 - Ornamental Light Standard In Place
 - Ornamental Light Std. With Traffic Control Lights
 - Traffic Control Standard In Place
 - Fire Hydrant In Place
 - Traffic Signal Control Box In Place
 - Telephone Co. Duct Line In Place
 - Street Railway Co. Duct Line In Place
 - Western Union Co. Duct Line In Place
 - Gas Man In Place
- Ornamental Light Cable in place and Signal Control Cables in place are not shown on these plans.
- o & e. Tree In Place. Notation Indicates Diam. and Kind of Tree

UNIVERSITY AVE.
VANDALIA ST. TO THE WEST CITY LIMITS
PLAN SHOWING STREET IMPROVEMENTS IN PLACE
 Scale 1"=40' Note Books 1322-1376



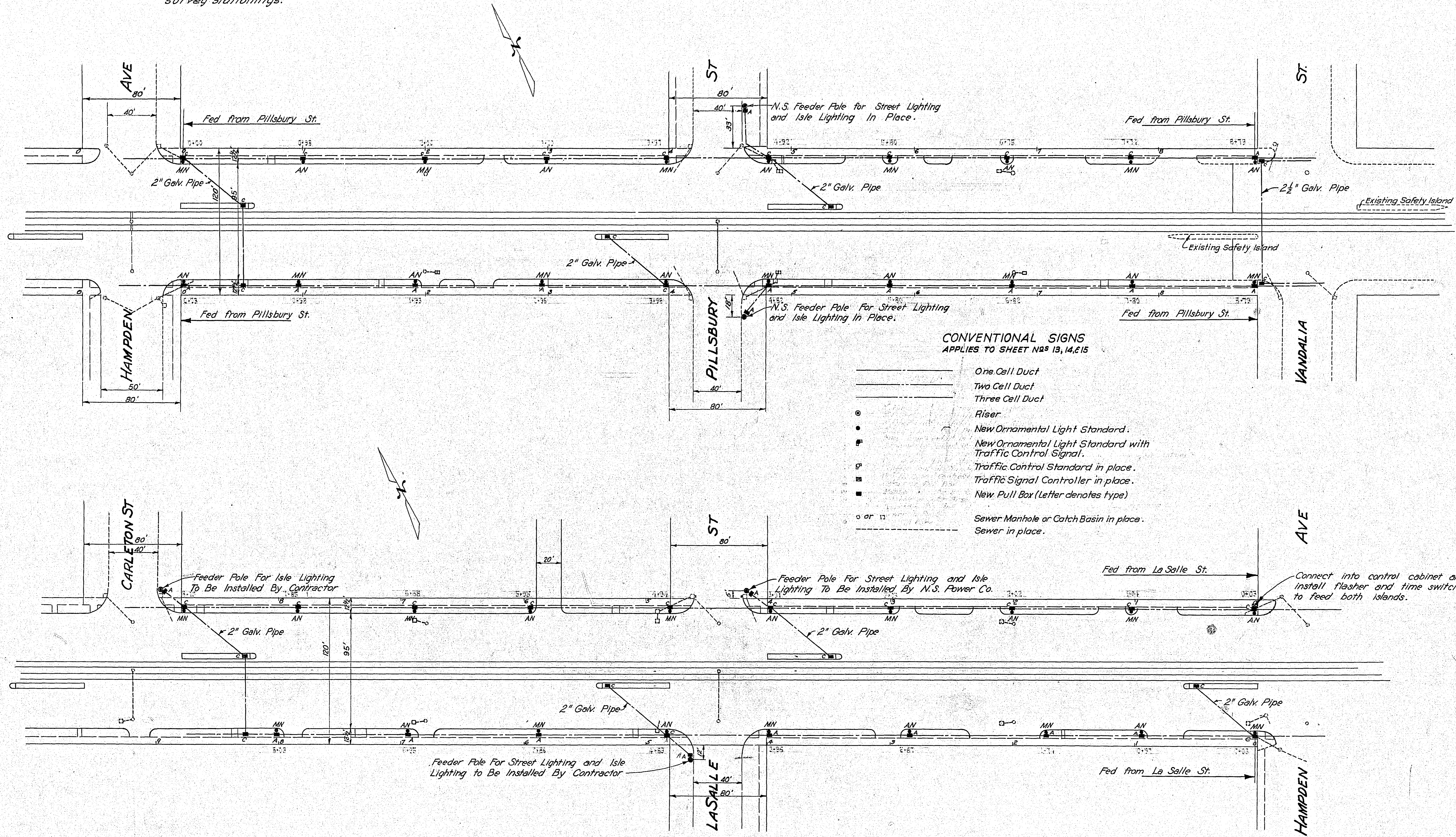
UNIVERSITY AVENUE FROM VANDALIA ST. TO THE WEST CITY LIMITS PLAN SHOWING STREET IMPROVEMENTS IN PLACE

Scale - 1" = 40' Note Books 1322-1376



UNIVERSITY AVE FROM VANDALIA ST. TO THE WEST CITY LIMITS LIGHTING PLAN Scale 1"=40'

NOTE: The stationing of surveys show a gap of 80 feet between beginnings of Hampden Ave. To obtain correct overall length of project add 80 feet to the sum of survey stationings.

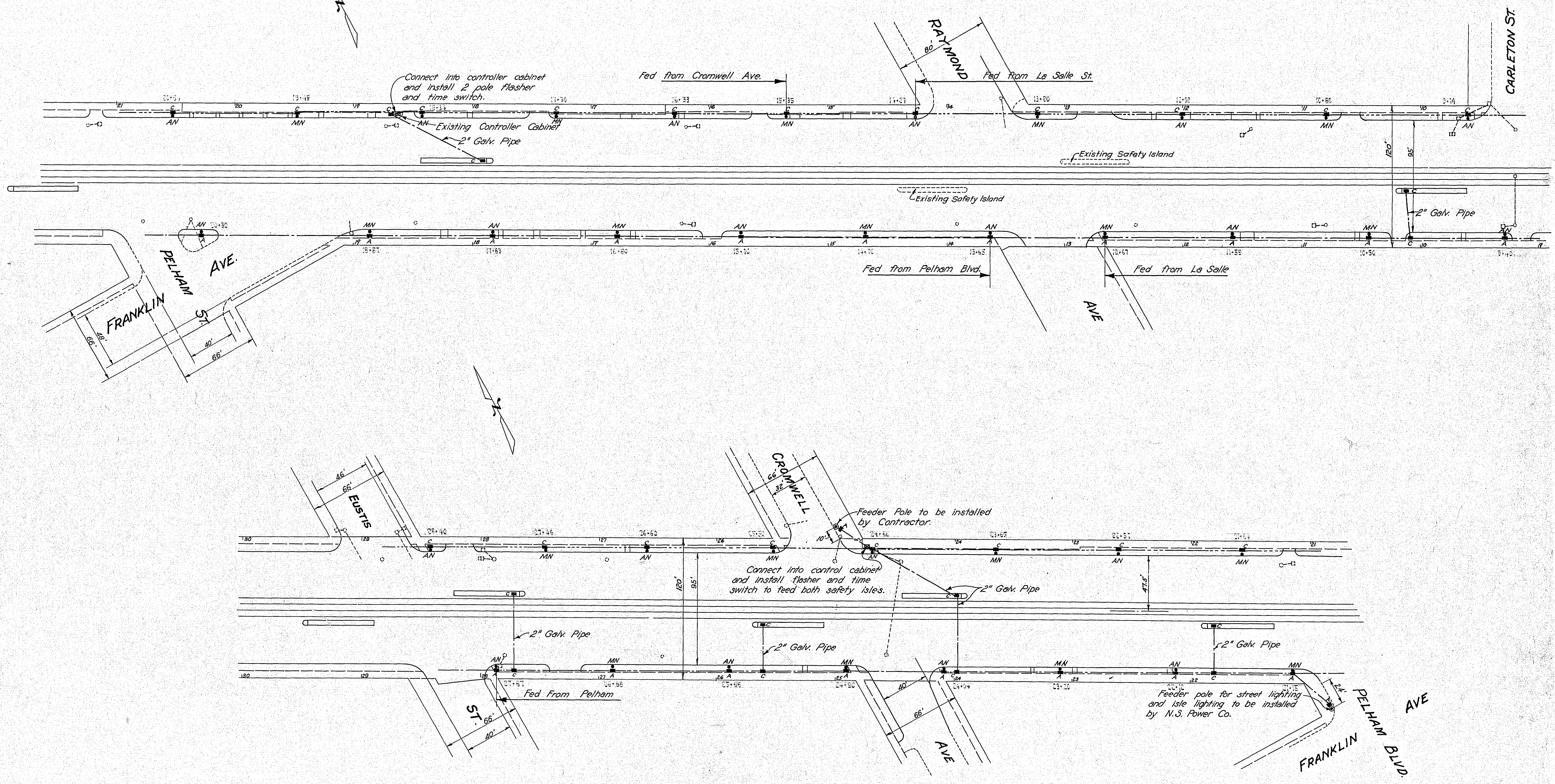


CONVENTIONAL SIGNS
APPLIES TO SHEET NOS 13, 14, & 15

- One Cell Duct
- Two Cell Duct
- Three Cell Duct
- ⊙ Riser
- New Ornamental Light Standard.
- ⊕ New Ornamental Light Standard with Traffic Control Signal.
- ⊞ Traffic Control Standard in place.
- ⊠ Traffic Signal Controller in place.
- New Pull Box (Letter denotes type)
- or □ Sewer Manhole or Catch Basin in place.
- - - Sewer in place.

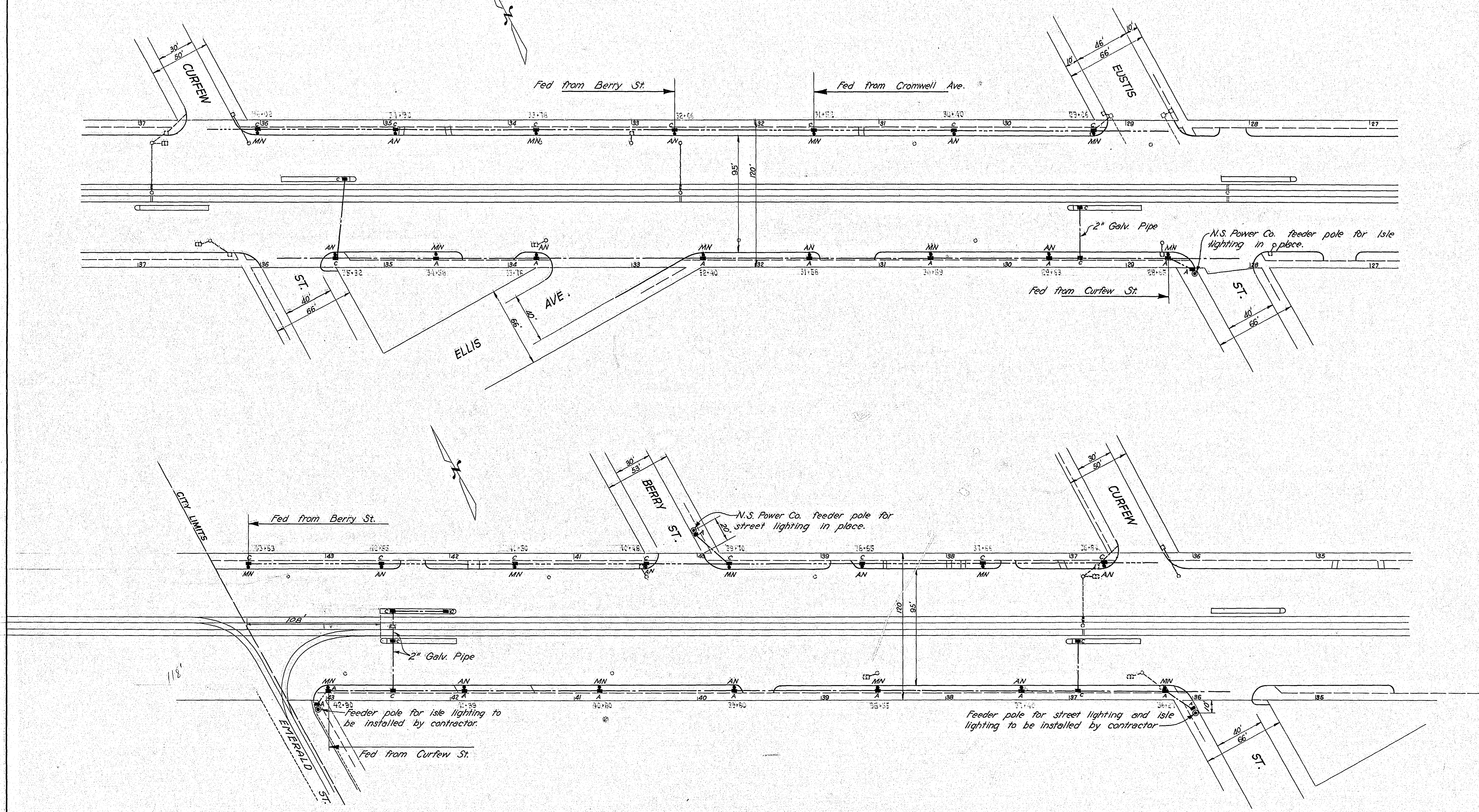
UNIVERSITY AVE
FROM VANDALIA ST. TO THE WEST CITY LIMITS
LIGHTING PLAN
Scale 1"=40'

25.5
15.1
7.1



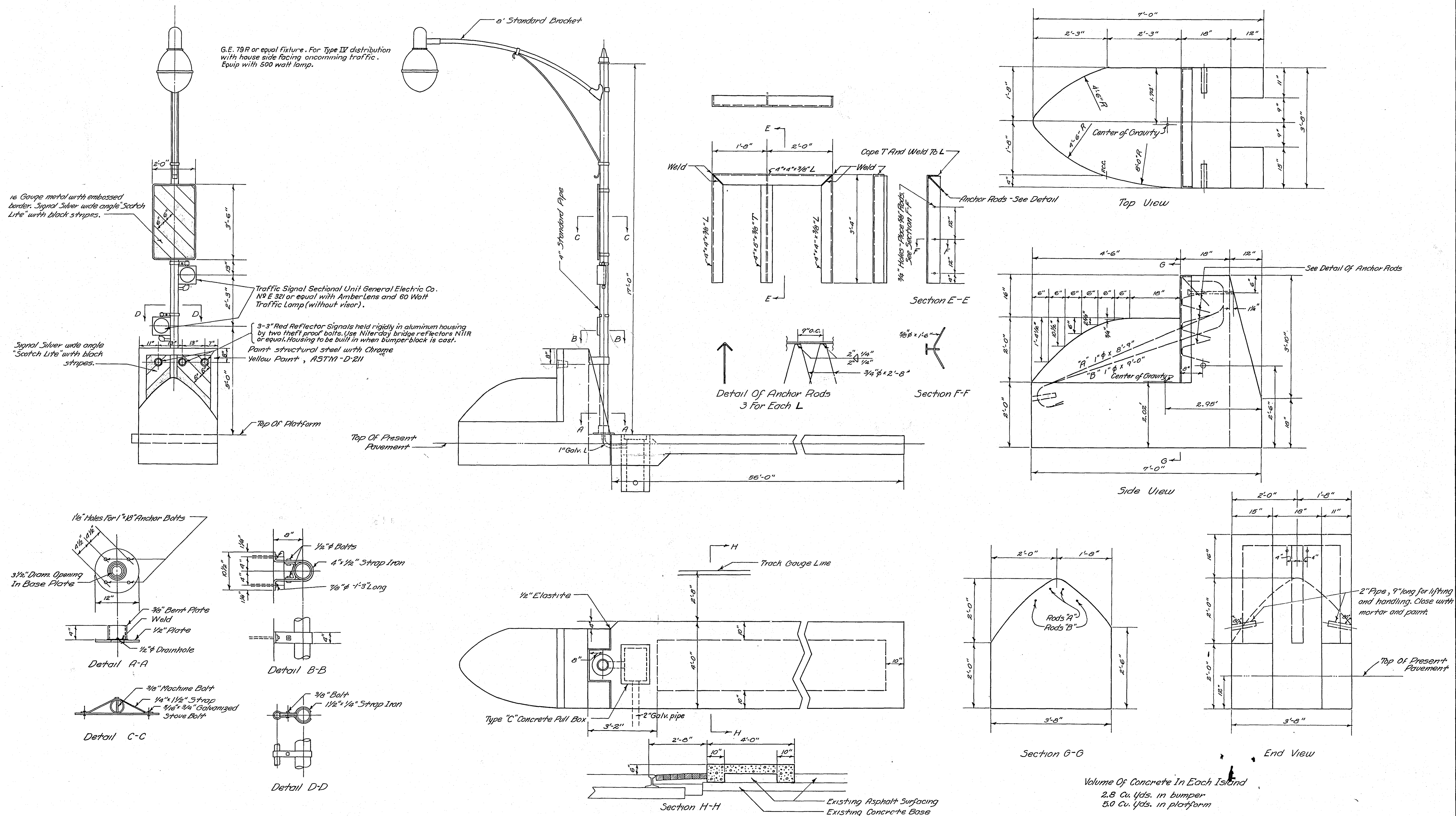
UNIVERSITY AVENUE FROM VANDALIA ST. TO THE WEST CITY LIMITS LIGHTING PLAN

Scale: 1" = 40'



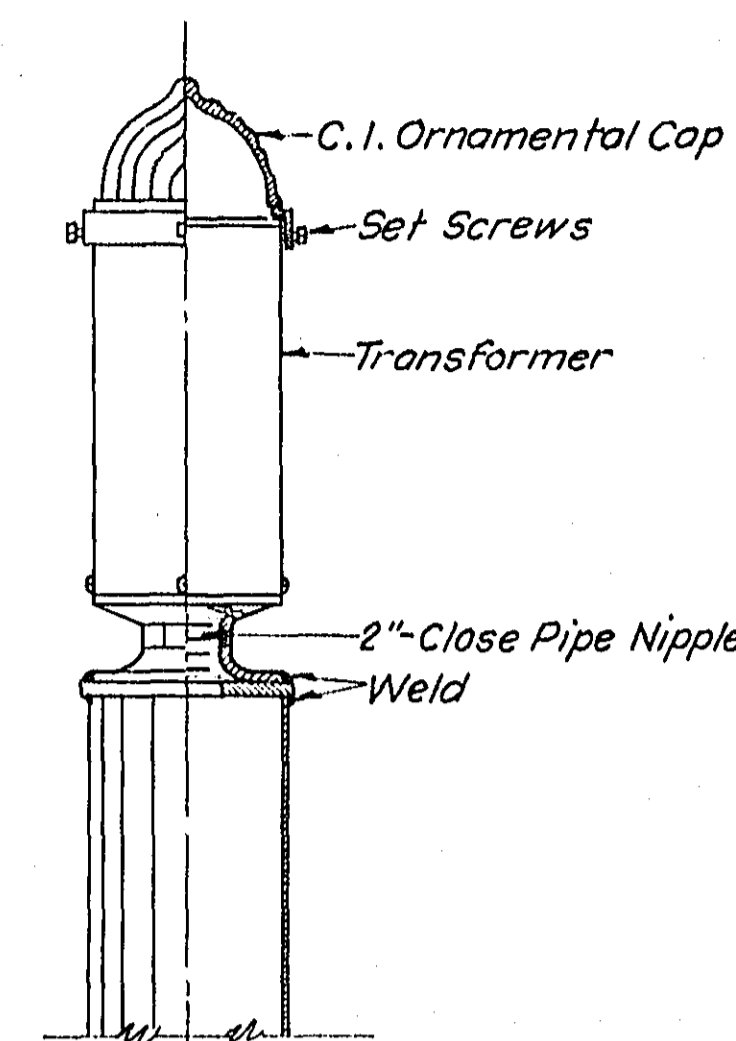
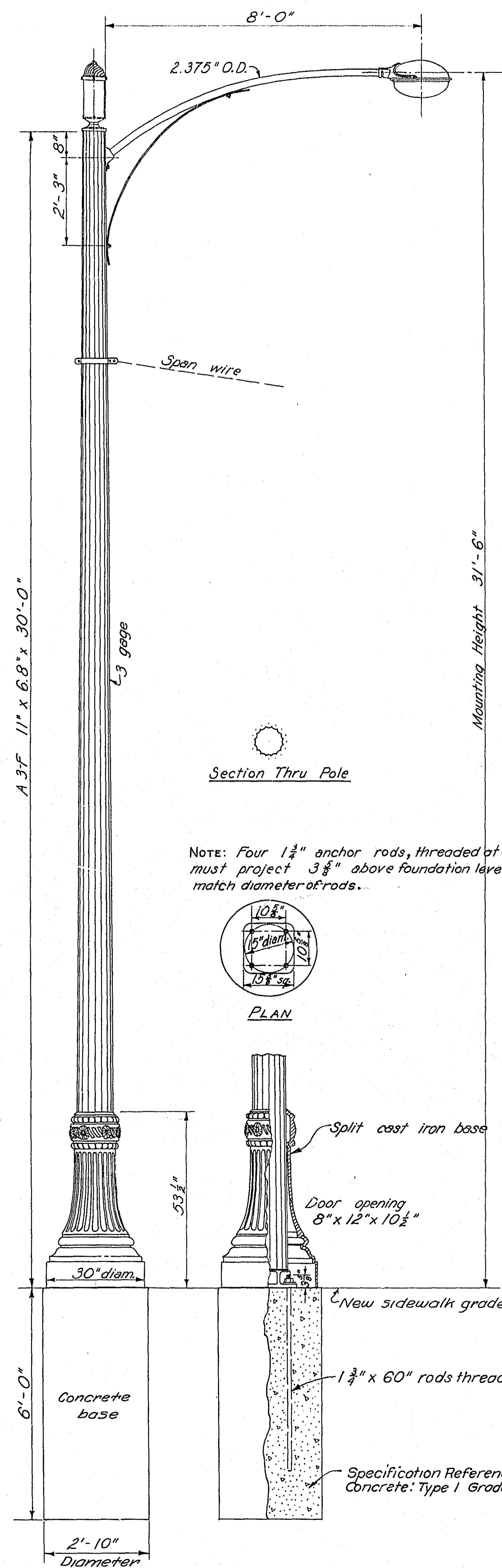
**UNIVERSITY AVE. WIDENING
VANDALIA ST. TO WEST CITY LIMITS
DETAILS OF SAFETY ISLANDS AND FIXTURES**

Note: Concrete bumper may be precast in an upside-down position. Both the asphalt surfacing and present concrete base shall be cut and removed and a smooth uniform subgrade shall be prepared at an elevation one foot below present paving surface. Except for the face to receive "Scotch Lite" the bumper shall be painted traffic yellow.



Volume of Concrete in Each Island
 2.8 Cu. Yds. in bumper
 5.0 Cu. Yds. in platform

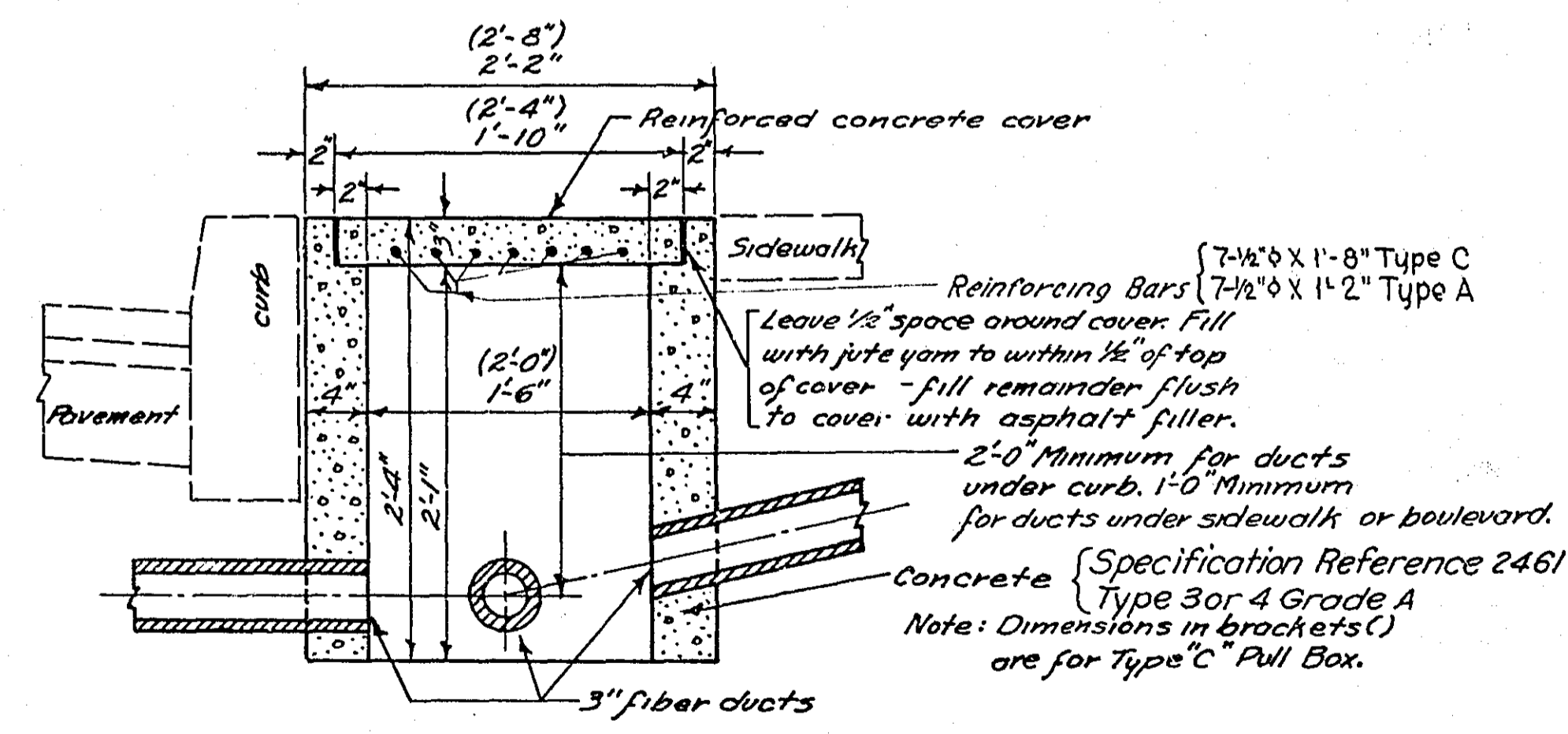
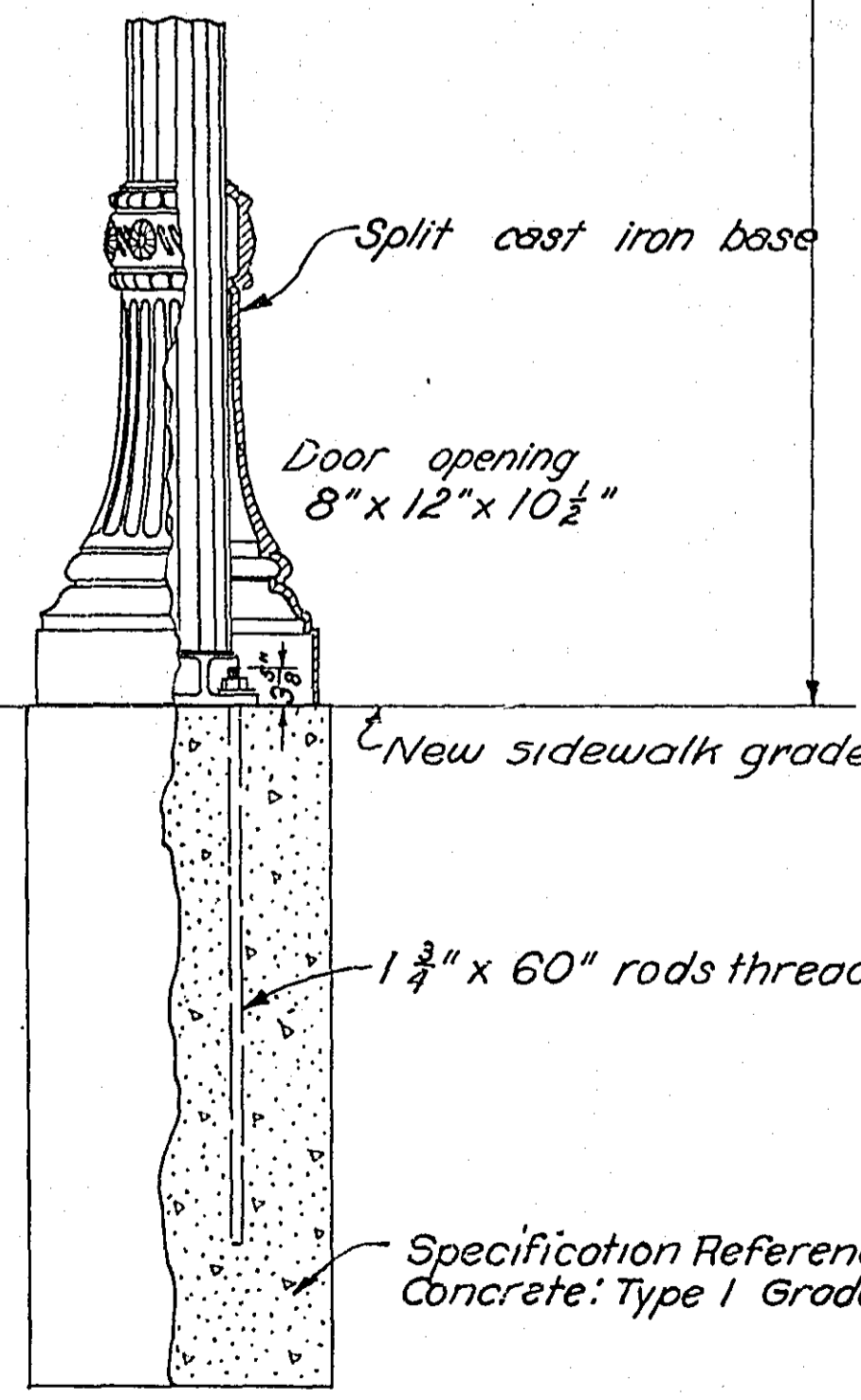
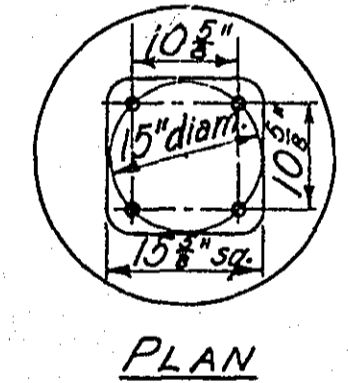
UNIVERSITY AVENUE
 FROM VANDALIA ST. TO THE WEST CITY LIMITS
 ORNAMENTAL LIGHT STANDARD AND TYPE "A" PULL BOX
 DETAILS



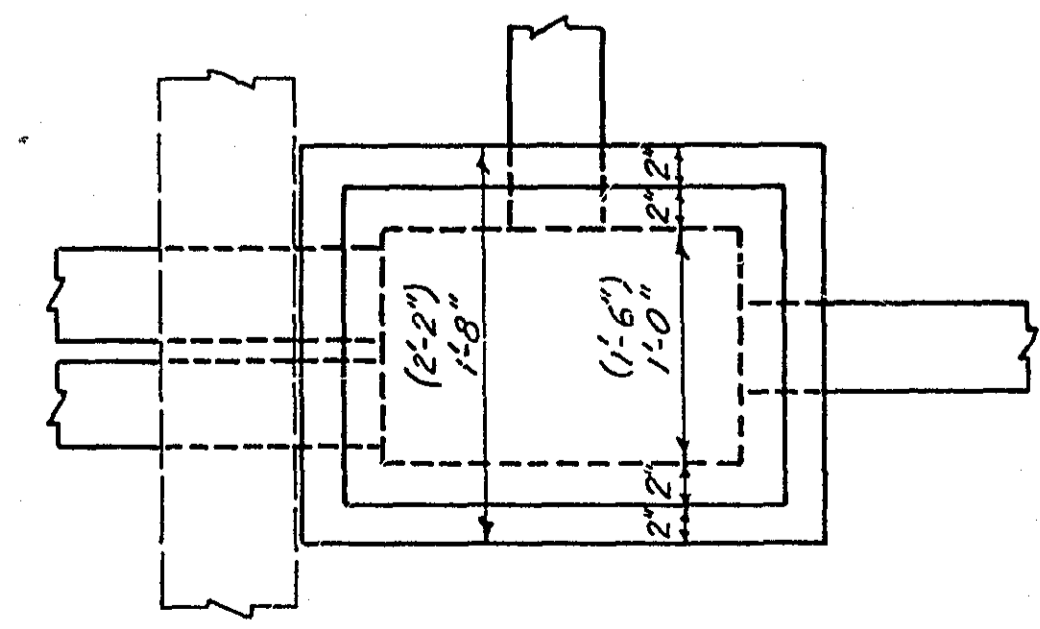
DETAIL OF POLE TOP AND ADAPTER
 FOR WESTINGHOUSE MERCURY VAPOR TRANSFORMER



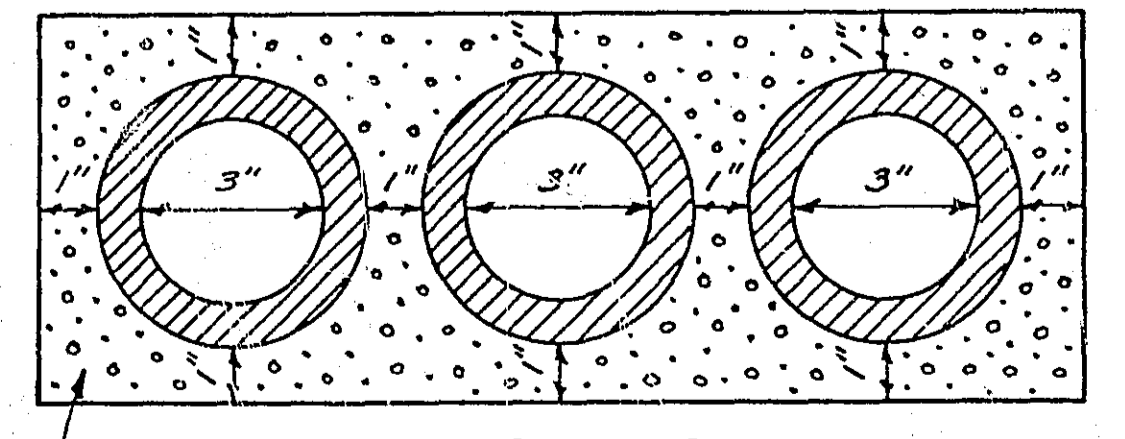
Note: Four 1 3/8" anchor rods, threaded at one end, must project 3 3/8" above foundation level. Hexagonal nuts to match diameter of rods.



DETAILS OF 3 CELL DUCT LINE
 Showing minimum requirements for thickness of concrete encasement. For one or two cell duct lines similar thicknesses of concrete are required.



TYPE "A" PULL BOX
 Scale: 1/2" = 1'



One Quarter Size
 Specification Reference 2461
 Concrete Type 1 Grade B