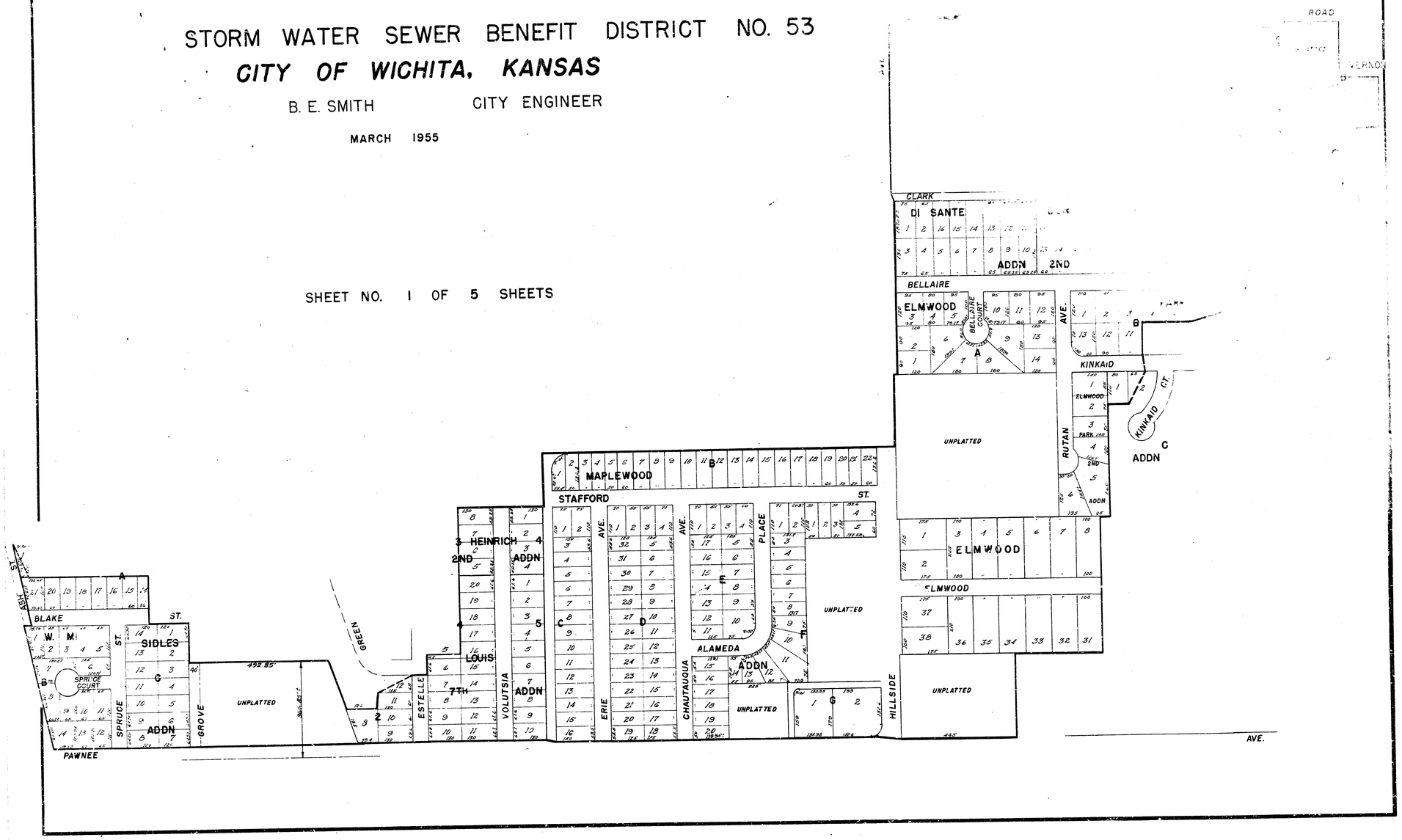
STORM WATER SEWER BENEFIT DISTRICT NO. 53

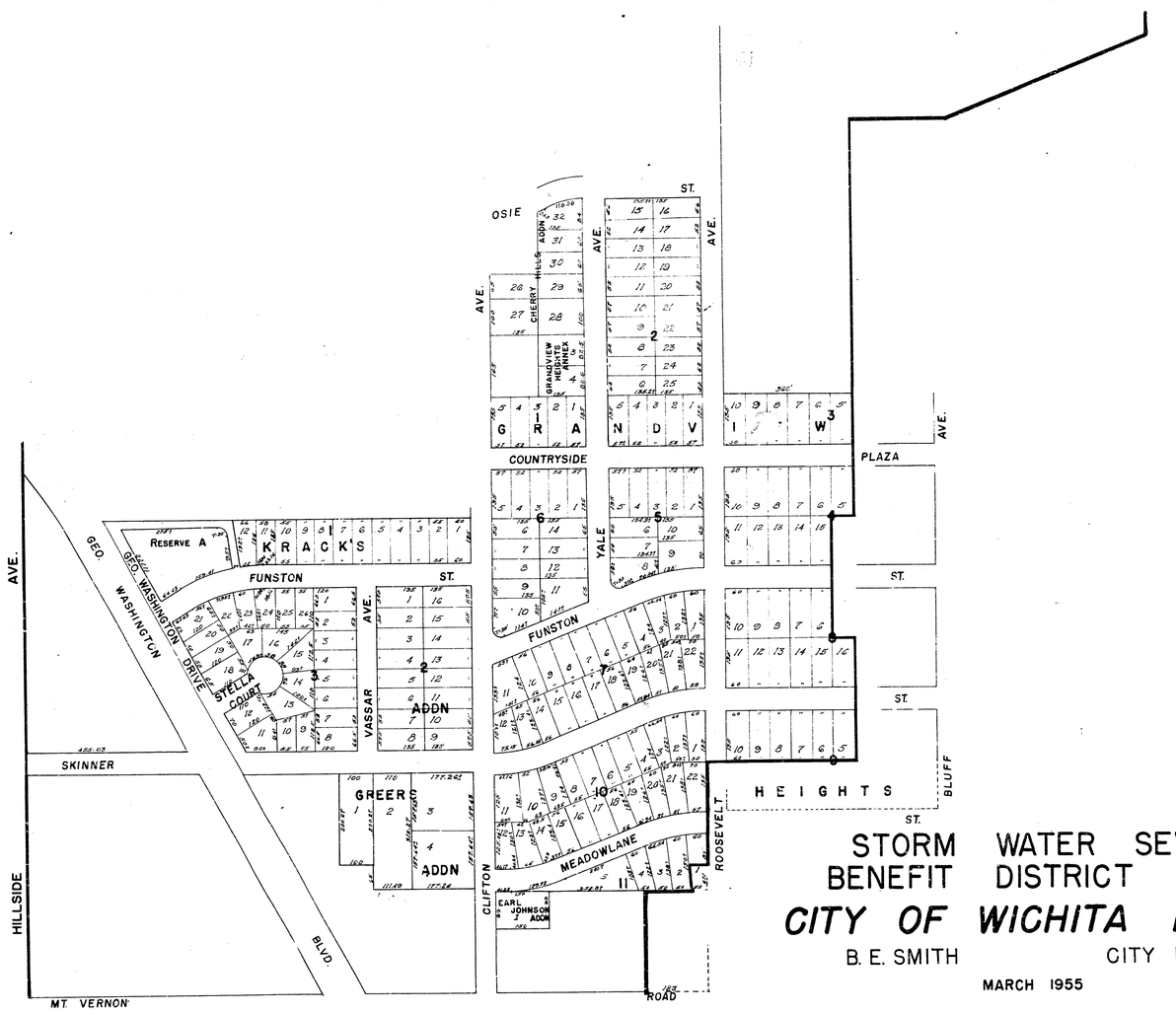
CITY OF WICHITA, KANSAS

B. E. SMITH CITY ENGINEER

MARCH 1955

SHEET NO. 1 OF 5 SHEETS





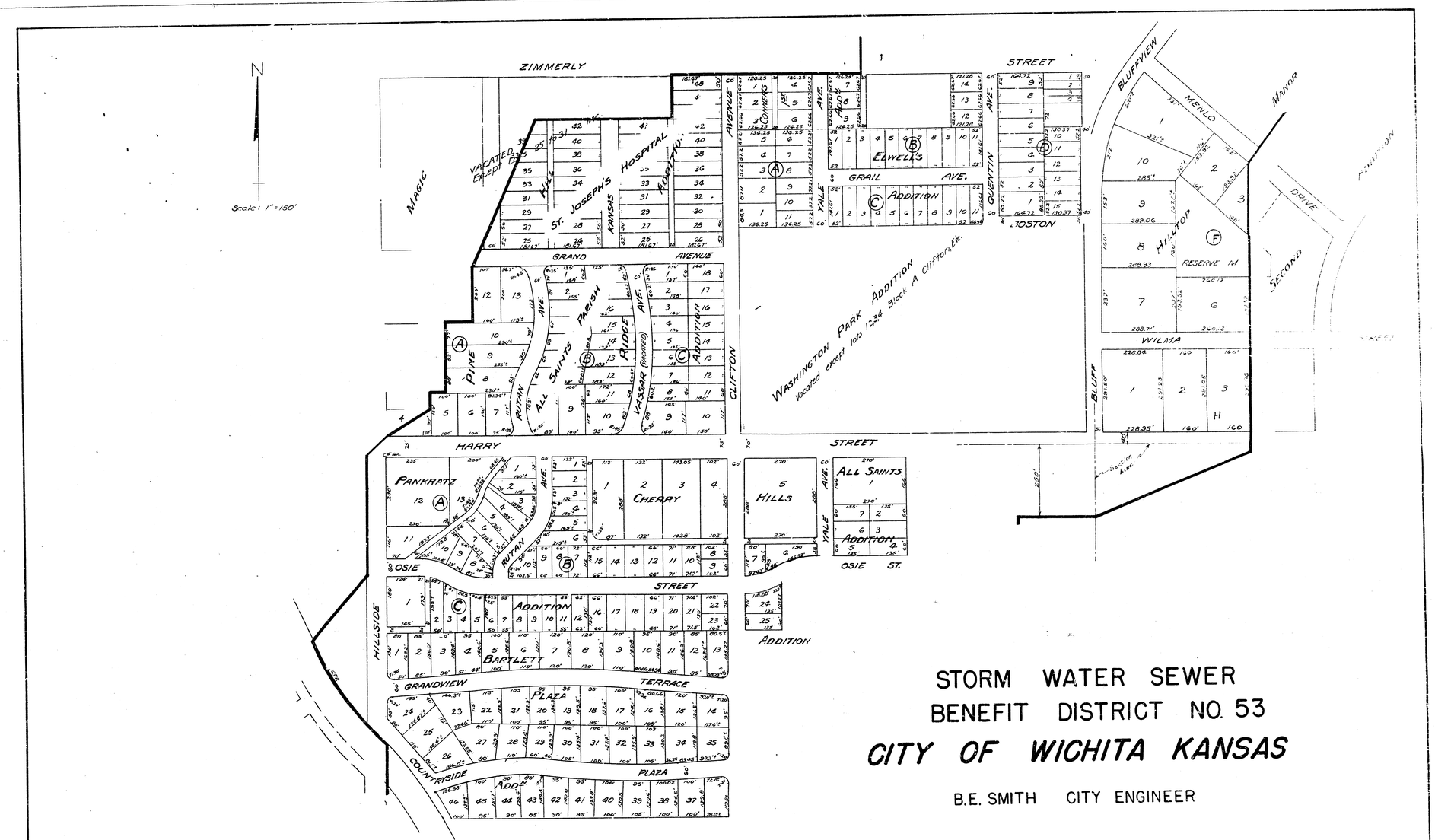
STORM WATER SEWER BENEFIT DISTRICT NO. 53

CITY OF WICHITA KANSAS

B. E. SMITH CITY ENGINEER

MARCH 1955

SHEET 2 OF 5 SHEETS



STORM WATER SEWER
BENEFIT DISTRICT NO. 53
CITY OF WICHITA KANSAS

B.E. SMITH CITY ENGINEER

SHEET NO. 3 OF 5 SHEETS

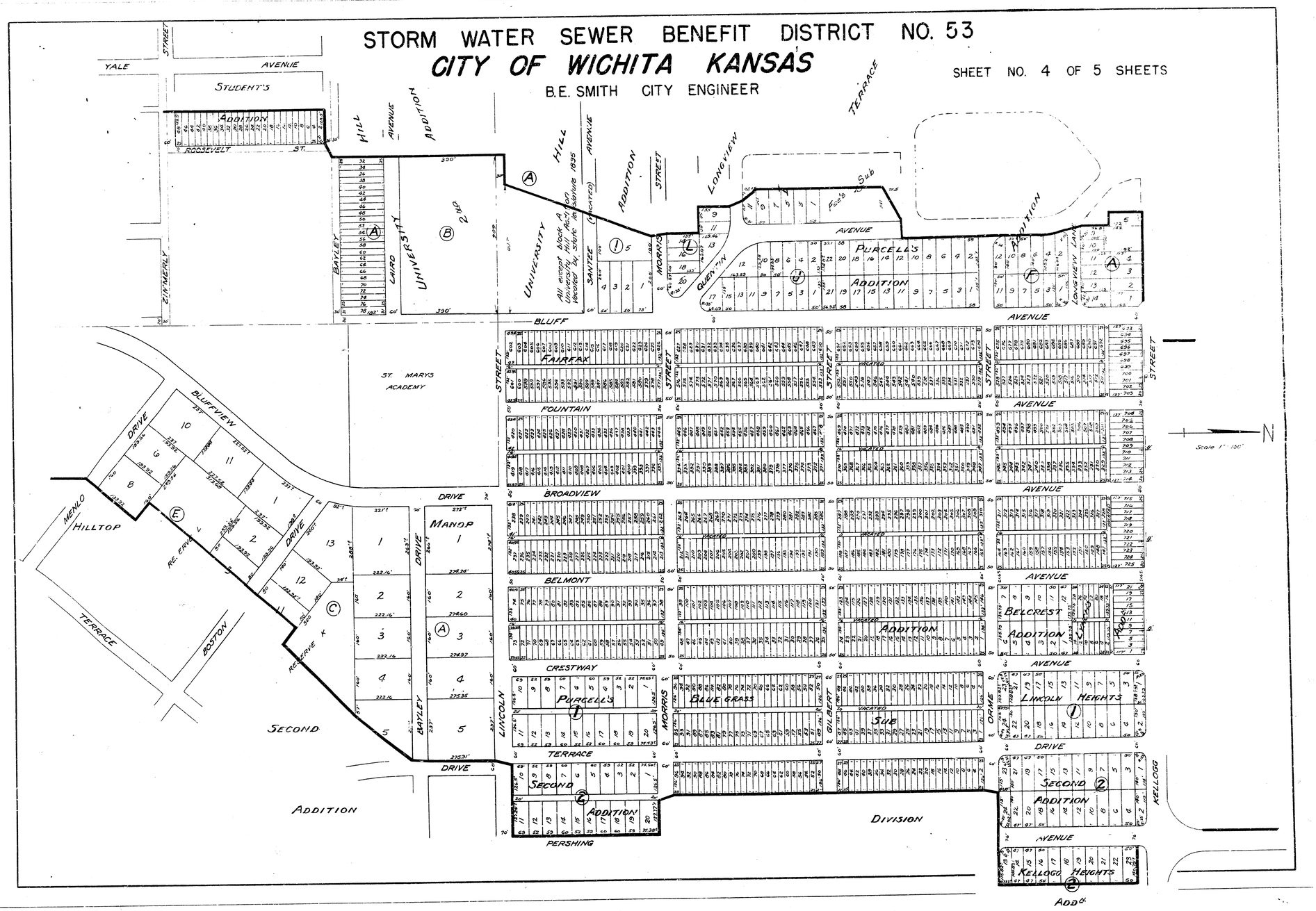
JLA

STORM WATER SEWER BENEFIT DISTRICT NO. 53

CITY OF WICHITA KANSAS

B.E. SMITH CITY ENGINEER

SHEET NO. 4 OF 5 SHEETS

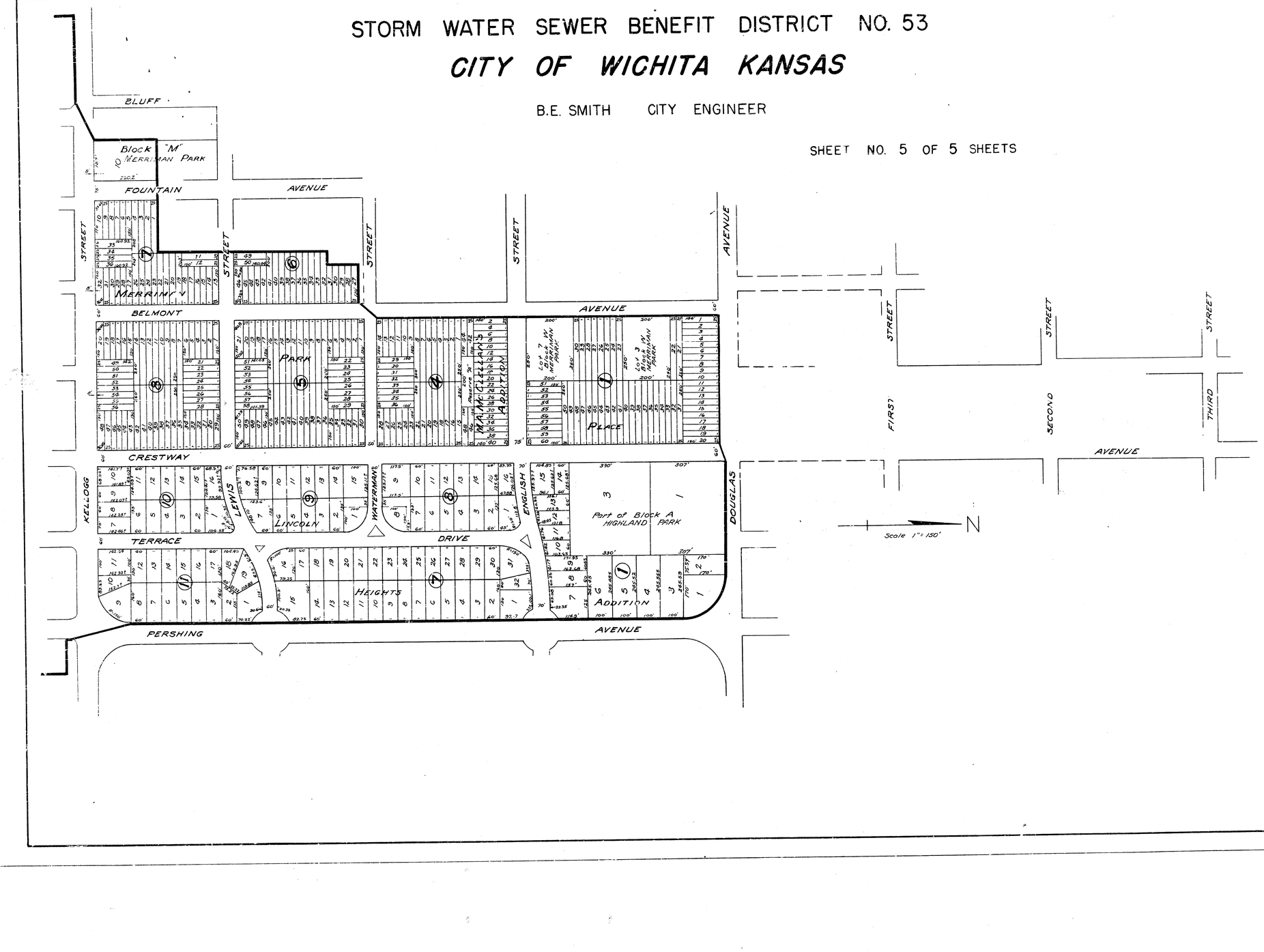


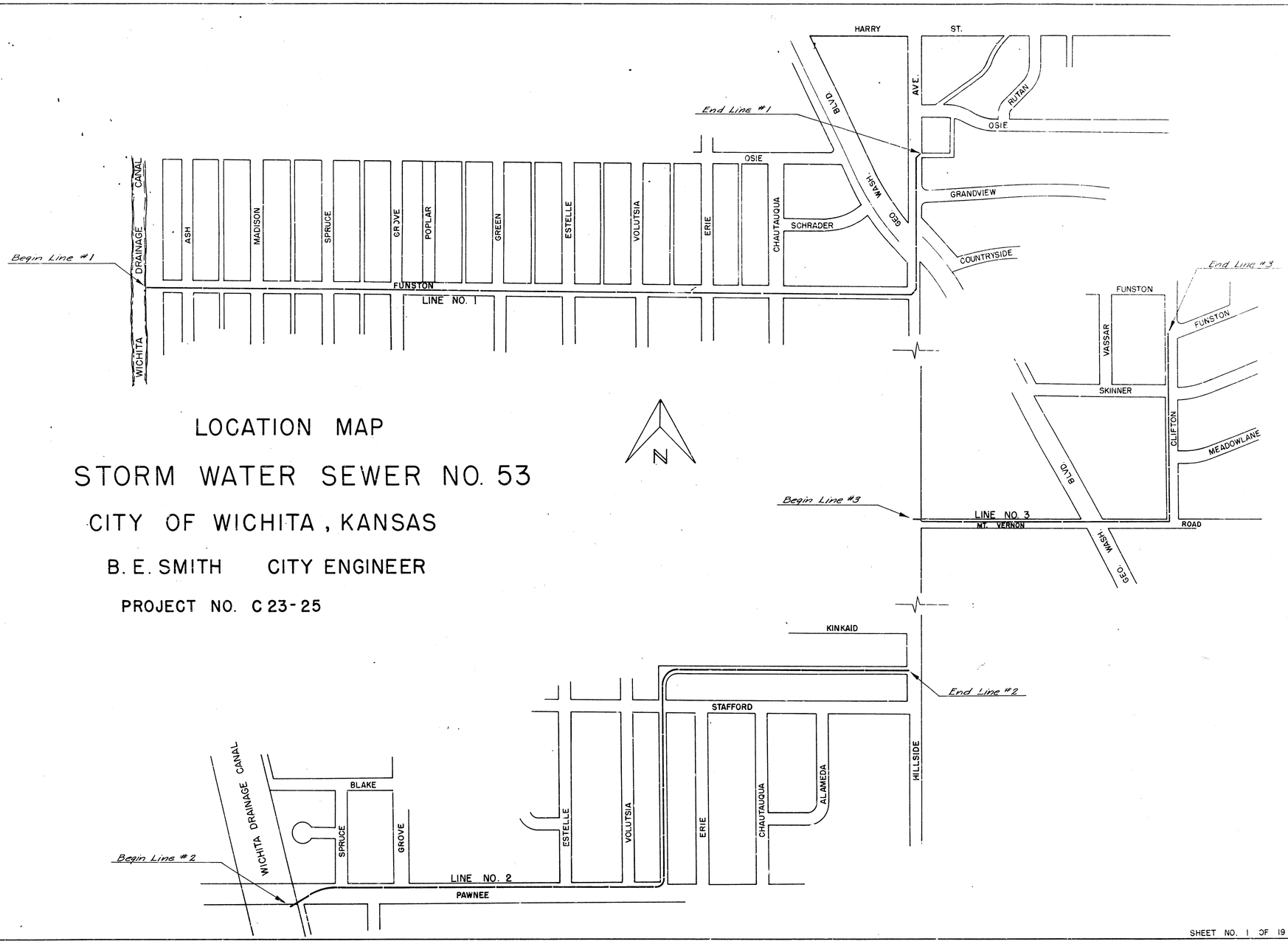
STORM WATER SEWER BENEFIT DISTRICT NO. 53

CITY OF WICHITA KANSAS

B.E. SMITH CITY ENGINEER

SHEET NO. 5 OF 5 SHEETS





LOCATION MAP

STORM WATER SEWER NO. 53

CITY OF WICHITA, KANSAS

B. E. SMITH CITY ENGINEER

PROJECT NO. C 23-25

N

Scale 1"=40'

Existing Manhole on 8" Sanitary Sewer Rim El. 99.72 Fl. El. 94.02

Existing Manhole on 8" Sanitary Sewer Rim El. 99.61 Fl. El. 94.17

Sta. 0+20 Construct Reinf. Conc. Outfall Structure. See Sheet No. 12 for details.

Sta. 11+25 Construct Reinf. Conc. Manhole over 8" sanitary sewer. See Sh. No. 12 for details

WICHITA DRAINAGE CANAL

FUNSTON STREET

ASH AVENUE

MADISON AVENUE

SPRUCE AVENUE

GROVE STREET

60' 99' 140' 20' 30' 22.5' 10' 22'

T.C. El. 93.00 T.C. El. 93.00 T.C. El. 100.11 T.C. El. 100.10 T.C. El. 99.42 T.C. El. 99.44 T.C. El. 99.44

T.C. El. 99.21 T.C. El. 99.80 T.C. El. 99.80 T.C. El. 99.48

T.C. El. 99.04 T.C. El. 99.40 T.C. El. 99.70 T.C. El. 99.37 T.C. El. 99.35 T.C. El. 99.40

T.C. El. 99.82 T.C. El. 99.53 T.C. El. 99.50 T.C. El. 99.50 T.C. El. 98.11 T.C. El. 99.12 T.C. El. 99.40

Conc. Pavement

Water Edge 0100

Std. Sewer #28

NOTE: Excess excavated material on Line 1 & 3 is to be used as fill on Line No 2. All excess excavated material not needed for backfill at existing drainage ditch will be hauled to the northeast corner of Grove & Pawnee.

NOTE: Bid price of fill sand shall include cost of flushing ditch where sand fill is used. Where excavated material is used as backfill, Lin. ft. of flushing will be paid.

B.M. "X" on center N.W. wing Harry Street bridge and canal. El. 102.68

B.M. Top conc. monument E.L. canal R/W and S.L. Funston El. 100.32

Drawn by J.L.A.
Checked by
Note Book No. Conn. 72, 53, 105, F-3, 6-8, 61

LINE No. 1

100

90

Water El.?

F.L. El. 84.0

F.L. El. 72" R.C.P. 84.06

72" R.C.P.

0.30%

F.L. El. OUT 87.38

F.L. El. IN 87.98

11+25

0+00 84.30 1 84.60 2 84.90 3 85.20 4 85.50 5 85.80 6 86.10 7 86.40 8 86.70 9 87.00 10 87.30 11 87.70 12 88.00 13

STORM WATER SEWER DIST. NO. 53
CITY OF WICHITA KANSAS
B.E. SMITH CITY ENGINEER
Proj. No. C 23-25

Existing Manhole on 42" Sanitary Sewer. Rim El. 103.41 F.L. El. 93.56

60' STREET Pavement 60' POPLAR (Vacated) 60' STREET Pavement 60' AVENUE Pavement

108' 140' 16' 140' 140' 16' 140' 140' 16' 140'

T.C. El. 98.60 T.C. El. 98.60 T.C. El. 100.26 T.C. El. 100.94 T.C. El. 101.31

FUNSTON STREET

T.C. El. 99.30 T.C. El. 96.40 T.C. El. 98.40 T.C. El. 99.99 T.C. El. 100.42 T.C. El. 102.55

30' 22' 467' 283.10' 317.3'

GROVE 30' 40' GREEN Pavement 22' 60' ESTELLE 60' 101.7 AVENUE

N

Scale 1"=40'

Sta. 13+20± Construct Reinf. Conc. Inverted Siphon See Sheet #13 for details.

El. Top Exist. 36" R.C.P. 96.43 Remove 36" R.C.P. through new manhole.

Sta. 18+25± Const. Reinf. Conc. Manhole over existing 36" RC.P. (S.W.S.) Remove two existing inlets. Const. two inlets and connect them to new manhole. Seal openings in abandoned 15" R.C.P. leads. See Sht. #12 for details.

B.M. G in Globe Top curb E.S. Green N.L. Funston El. 98.86

LINE No. 1

Drawn by J.L.A.
Checked by
Note Book No. 61-Y

13+20±

18+25

100

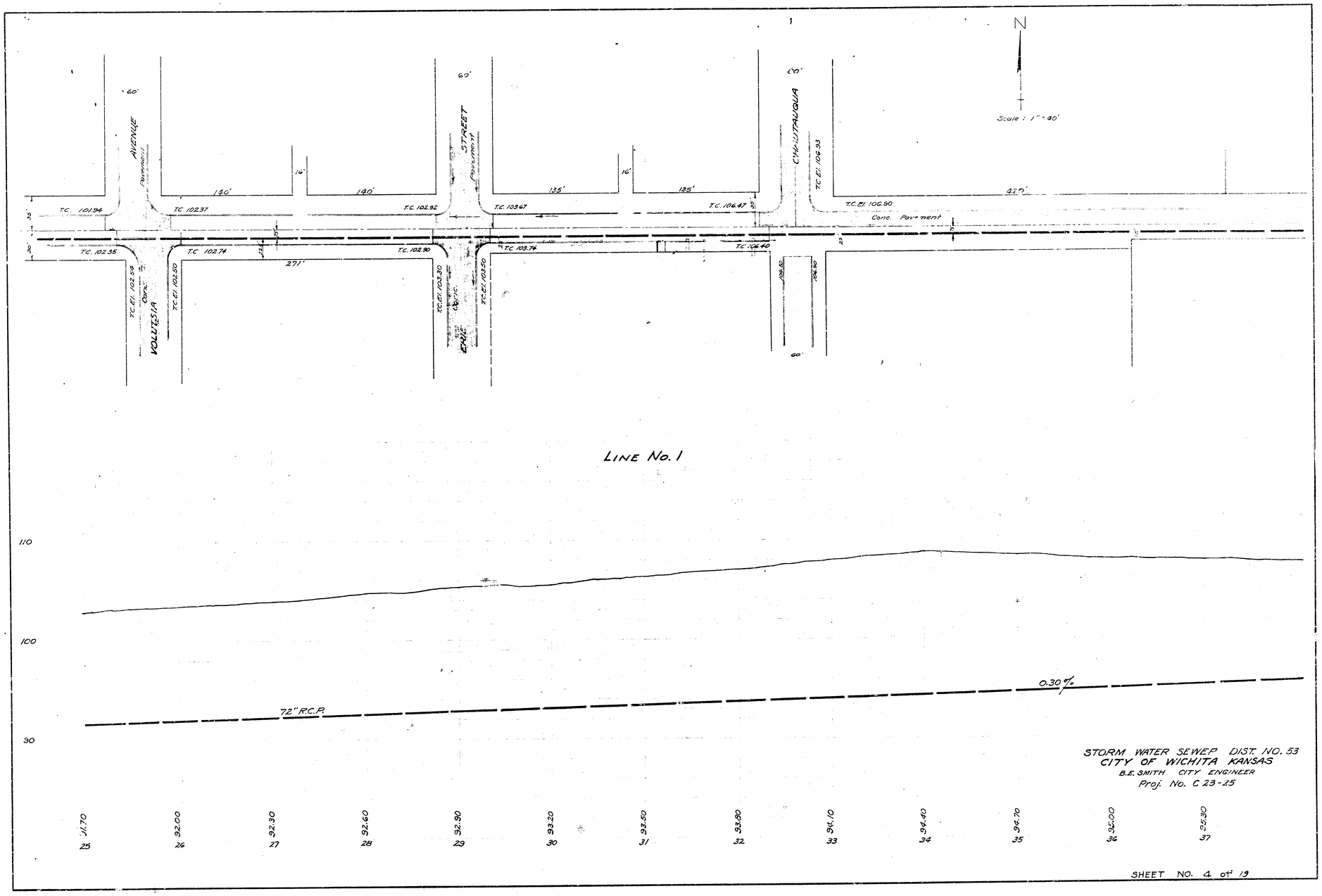
90

72" R.C.P. 0.30% 72" R.C.P. 0.30%

F.L. El. OUT 88.58 IN 89.68

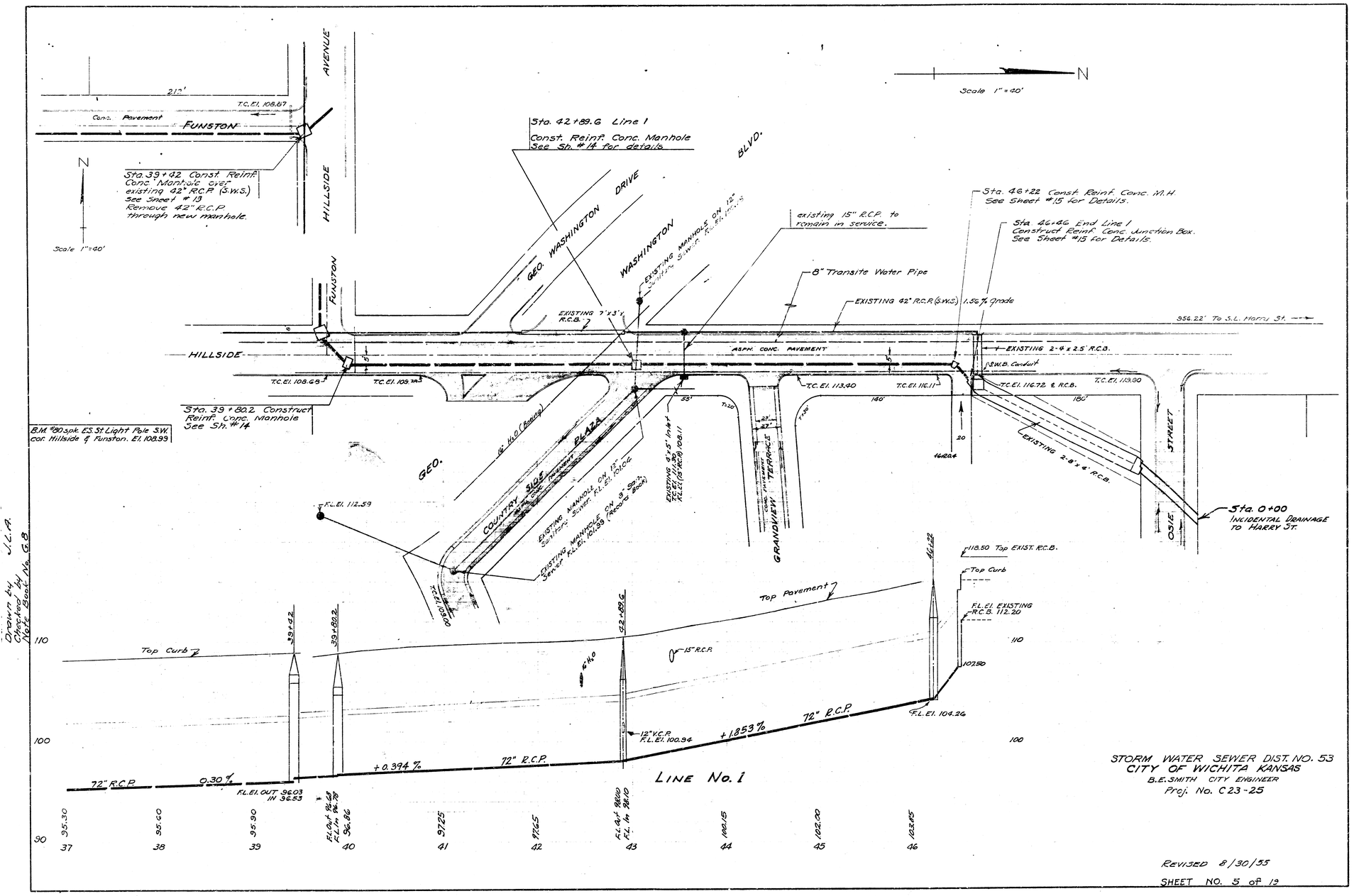
88.00 13 | 88.30 14 | 88.60 15 | 88.90 16 | 89.20 17 | 89.50 18 | 89.80 19 | 90.20 20 | 90.50 21 | 90.80 22 | 91.10 23 | 91.40 24 | 91.70 25

STORM WATER SEWER DIST. NO. 53
CITY OF WICHITA KANSAS
B.E. SMITH CITY ENGINEER
Proj. No. C.23-25



LINE No. 1

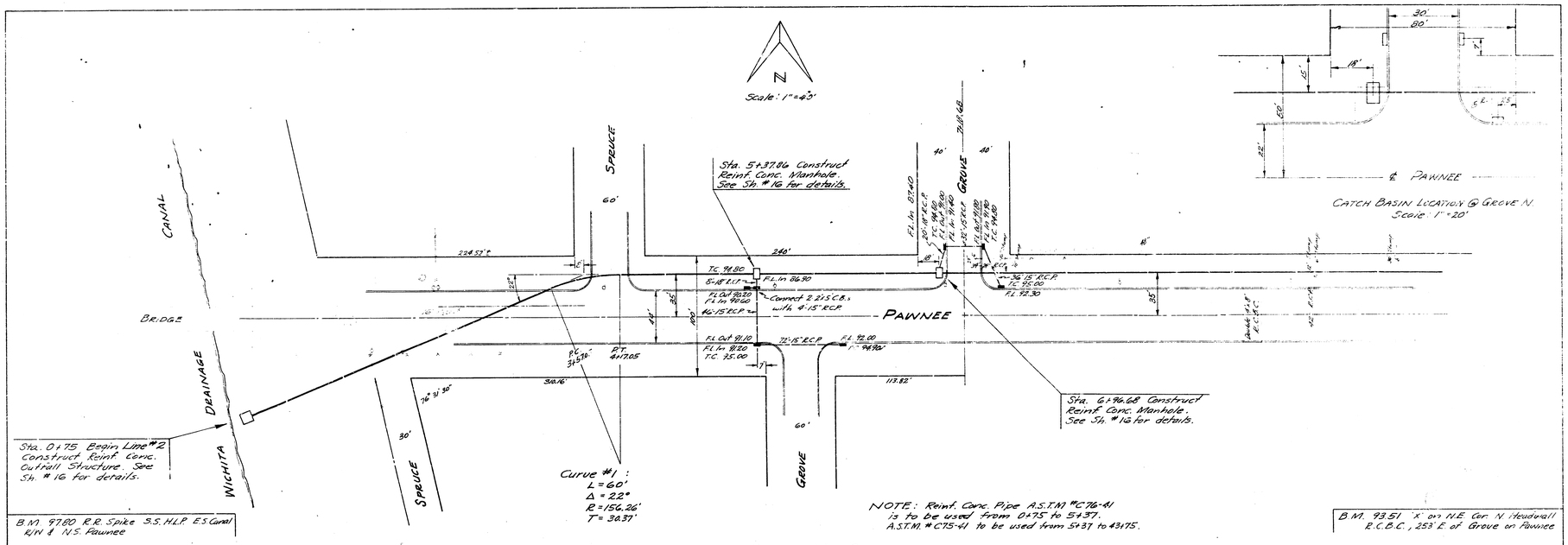
STORM WATER SEWER DIST. NO. 53
CITY OF WICHITA KANSAS
B.E. SMITH CITY ENGINEER
Proj. No. C 23-25



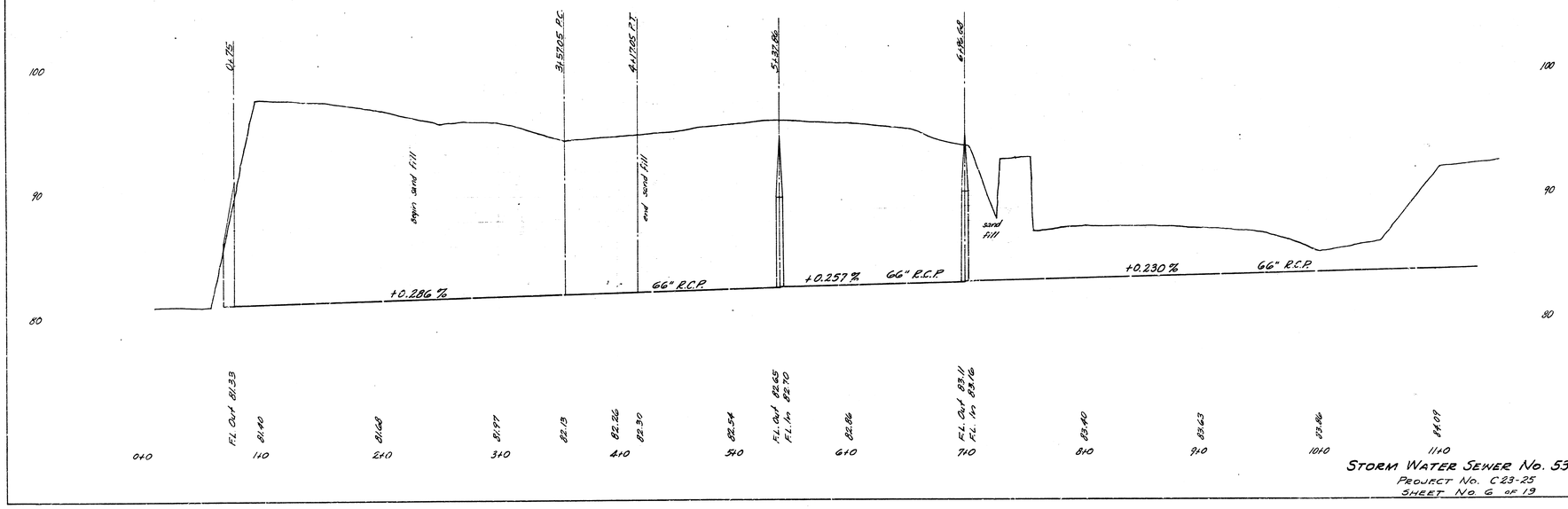
STORM WATER SEWER DIST. NO. 53
CITY OF WICHITA KANSAS
B.E. SMITH CITY ENGINEER
Proj. No. C23-25

REVISED 8/30/55

SHEET NO. 5 of 19



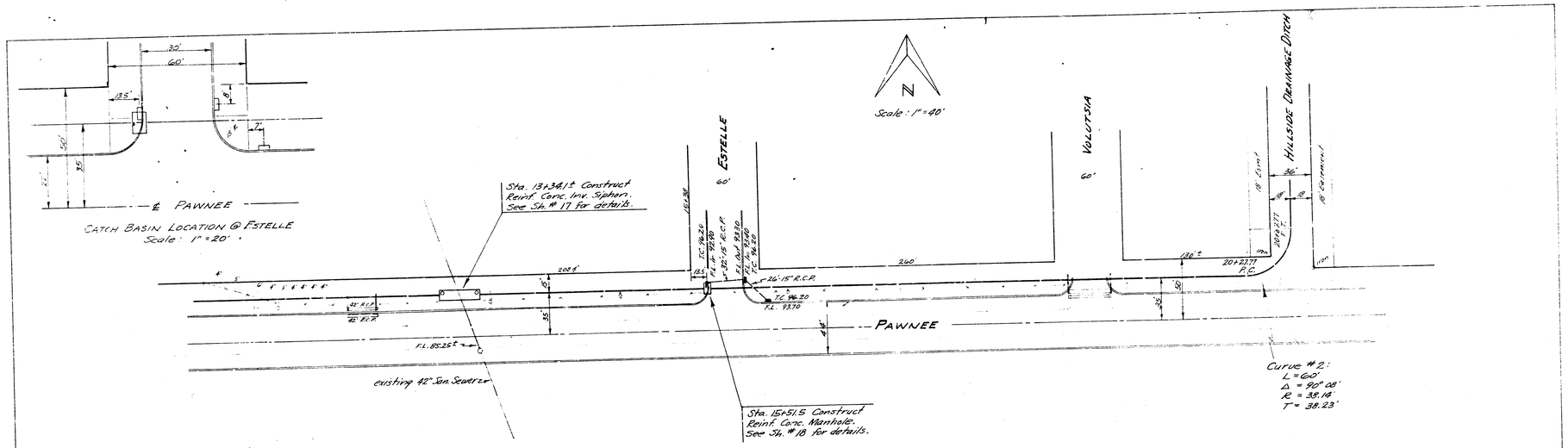
LINE No. 2



STORM WATER SEWER No. 53

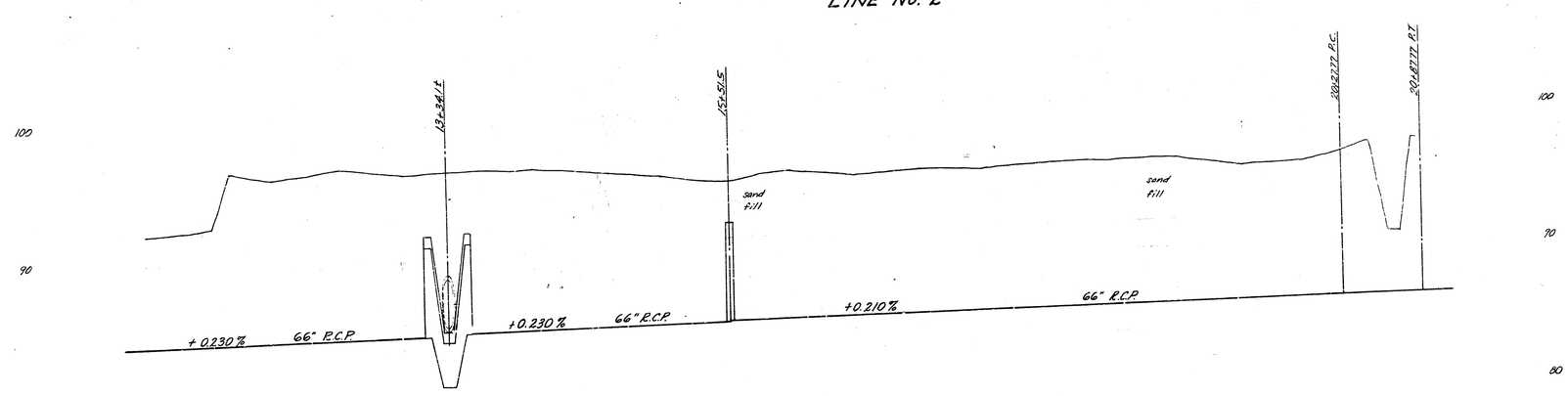
PROJECT No. C 23-25

SHEET No. 6 OF 19

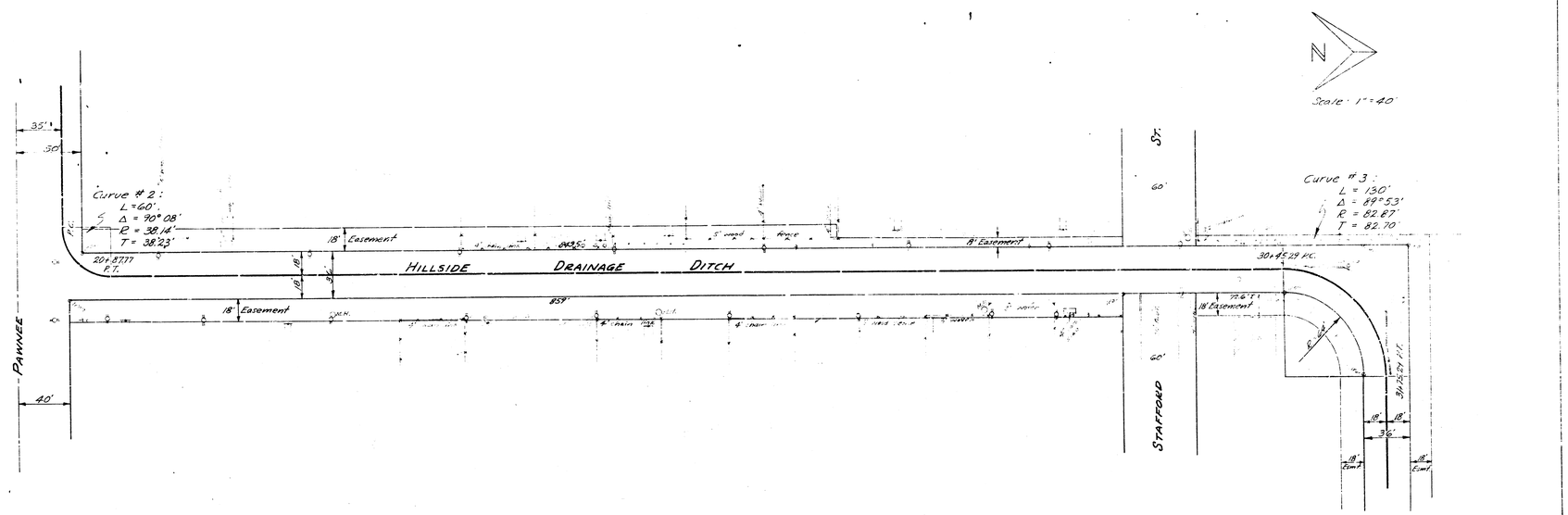


B.M. 93.51 ± on N.E. Cor. N. Headwall R.C.B.C. 253' E. of Grove on Pawnee.

LINE NO. 2

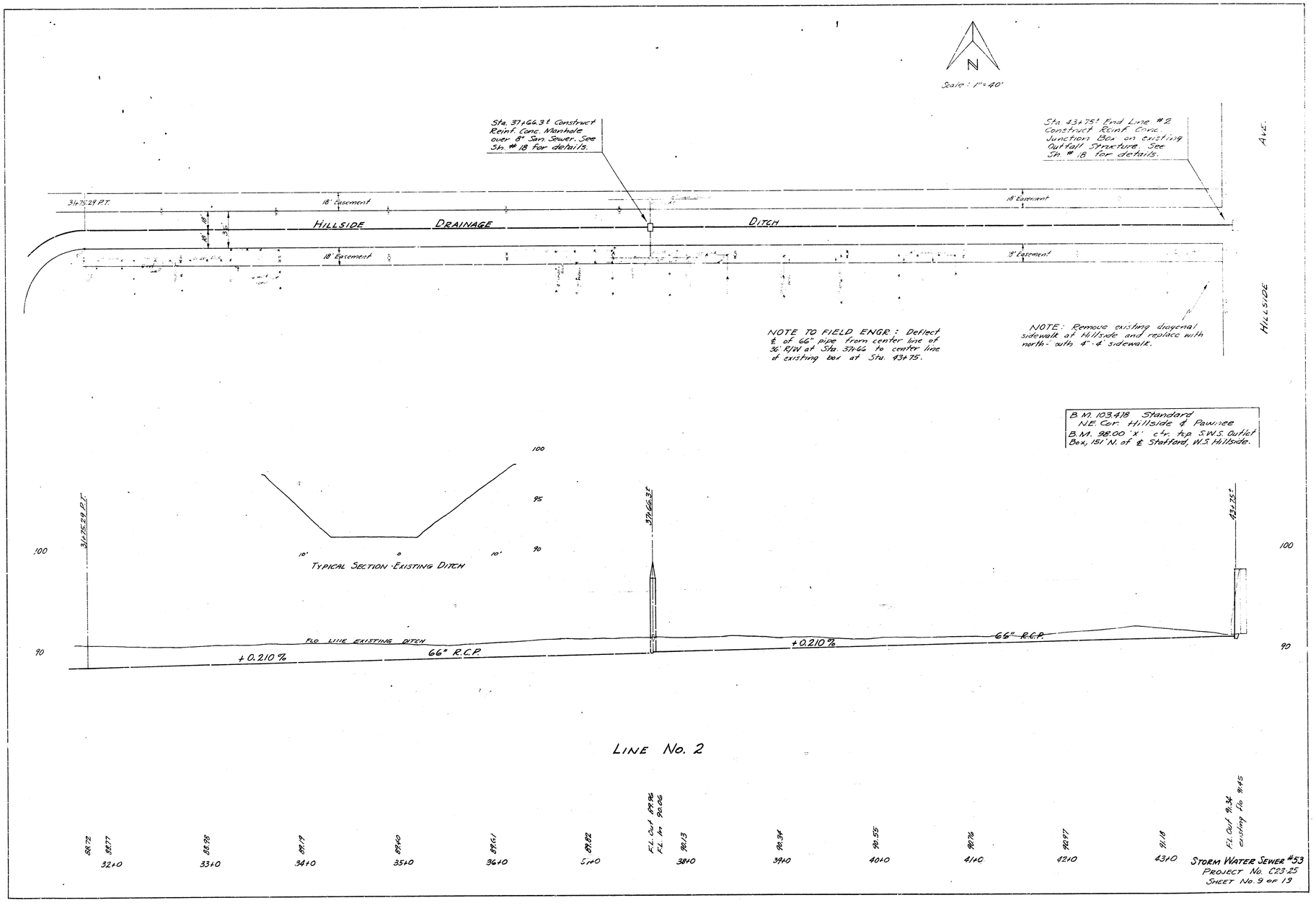


STORM WATER SEWER No. 53
PROJECT No. C23-25
SHEET No. 7 OF 19

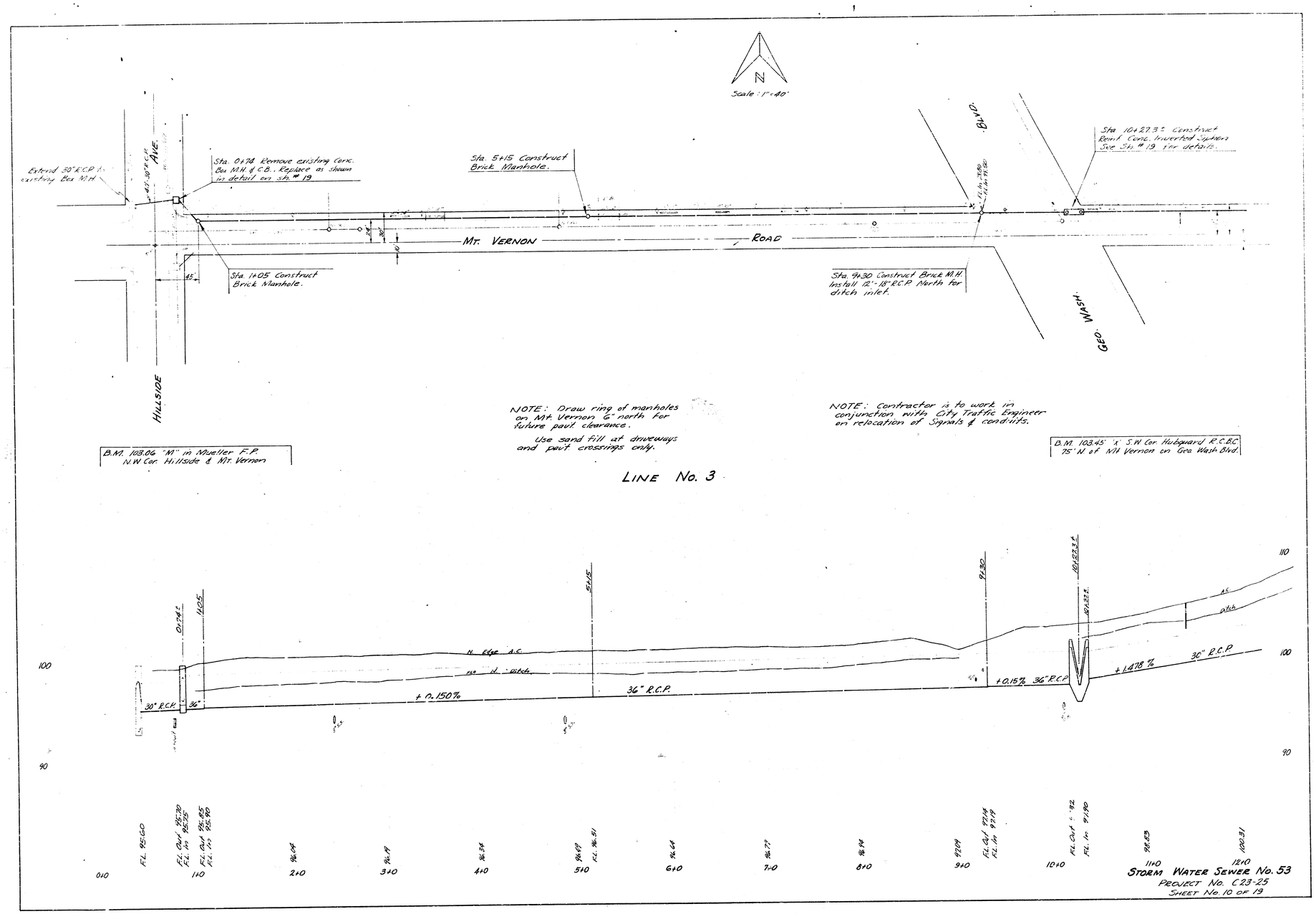


LINE No. 2

STORM WATER SEWER #53
PROJECT No. C23-25
SHEET No. 8 OF 19



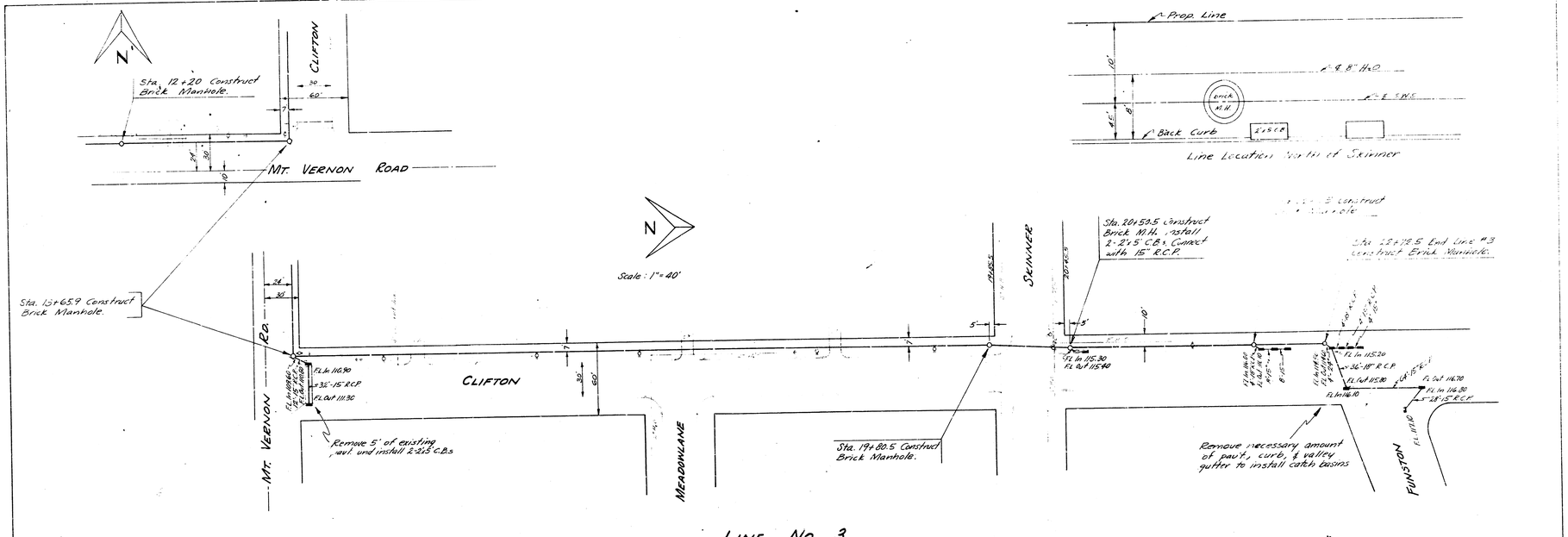
STORM WATER SEWER #53
PROJECT No. C23-25
SHEET No. 9 OF 19

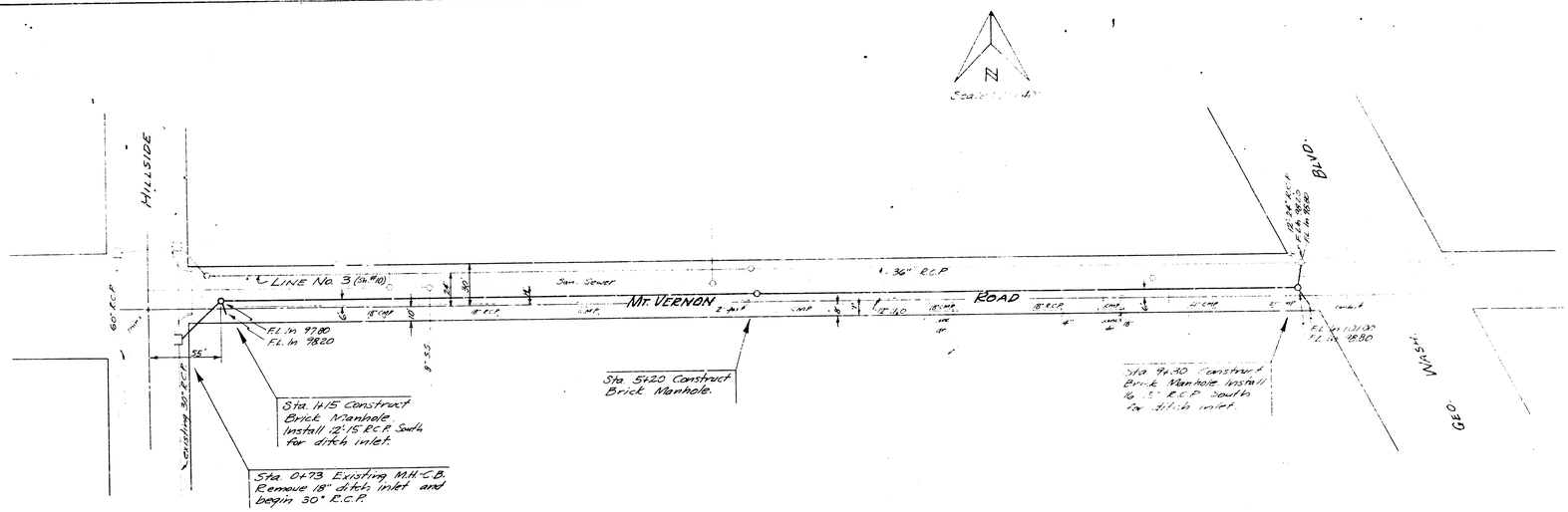


STORM WATER SEWER No. 53

PROJECT No. C23-25

SHEET No. 10 OF 19


N
Sta. 12+20 Construct Brick Manhole.
CLIFTON
MT. VERNON ROAD
Prop. Line
Back Curb
Line Location North of Skinner
Sta. 13+65.9 Construct Brick Manhole.
Scale: 1"=40'
Sta. 20+50.5 Construct Brick M.H. Install 2-2'x5' C.B.'s Connect with 15" R.C.P.
Sta. 22+72.5 End Line #3 Construct Brick Manhole.
SKINNER
MT. VERNON RD
CLIFTON
MEADOWLANE
FUNSTON
Remove 5' of existing, rem. and install 2-2x5' C.B.s
Sta. 19+80.5 Construct Brick Manhole.
Remove necessary amount of pavt., curb, & valley gutter to install catch basins
LINE NO. 3
30" R.C.P.
+0.900%
+3.818%
+0.700%
14.78%
STORM WATER SEWER No. 53
PROJECT C.23-25
SHEET No. 11 OF 19

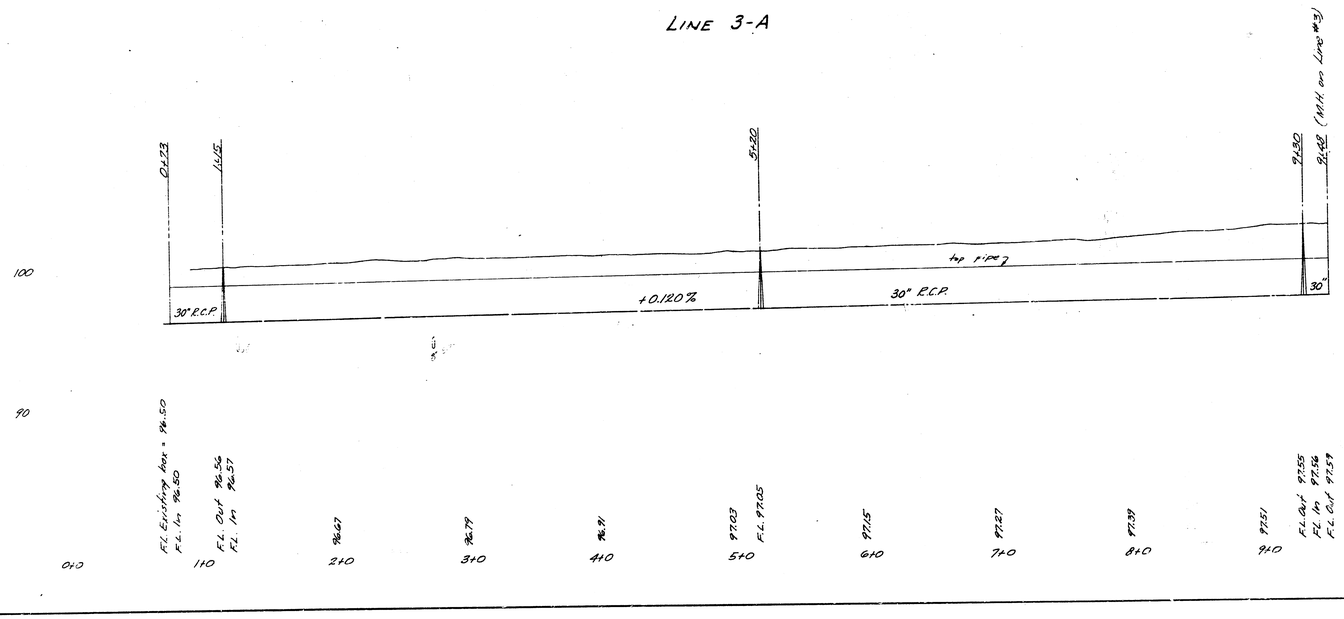


NOTE: Contractor is to remove & replace traffic detector @ Sta. 8+33 under supervision of City Traffic Engr. Materials are to be supplied by city.

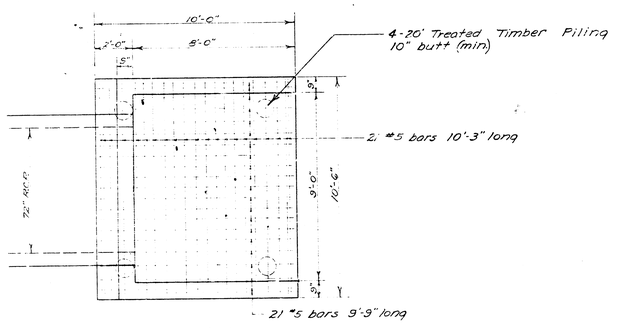
B.M. 103.06 'M' in Mueller F.P. N.W. Cor. Hillside & Mt. Vernon

B.M. 103.45 X S.W. Cor. Hayward R.C.S.C. 15' N of Mt. Vernon on Geo. Wash. Blvd

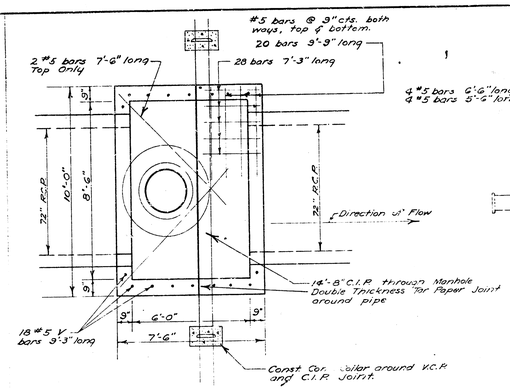
LINE 3-A

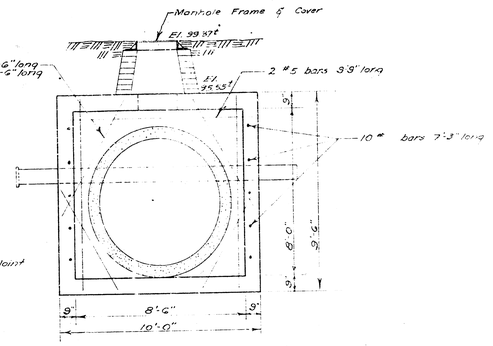


STORM WATER SEWER No. 53
PROJECT No. C23-25
SHEET No. 10 of 19



PLAN



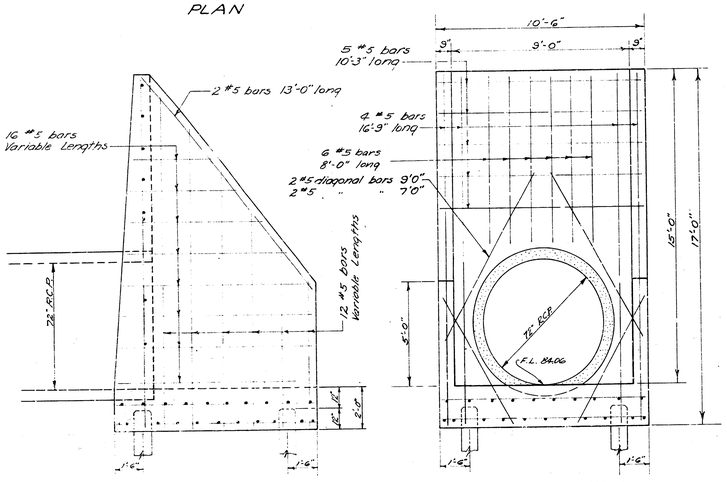


ELEVATION

PLAN

NOTE:
Cost of removal of 8" V.C.P. is to be included in bid price of Cast Iron Pipe.

REINF. CONC. MANHOLE Sta. 11+25
LINE No. 1
Scale : 3/8" = 1'-0"



SIDE ELEVATION

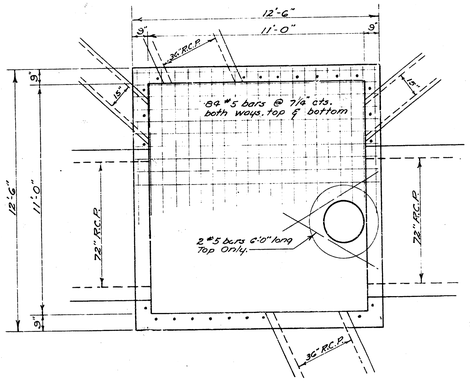
END ELEVATION

REINF. CONC. OUTFALL STRUCTURE
LINE No. 1
Scale: 3/8" = 1'-0"

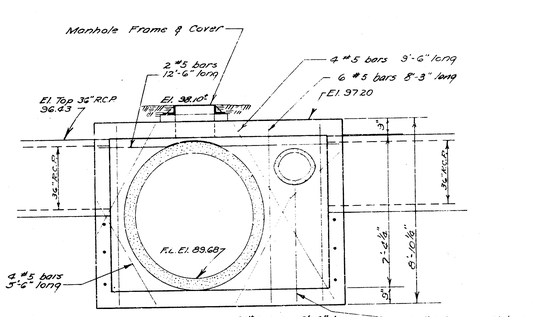
Concrete for structures shall contain not less than 1.65 bbls. of cement per cu. yd. of concrete. In no event shall the total water content exceed 6.25 gals. per sack of cement. The mixture of fine and coarse aggregate shall be such as will produce a maximum density of a most workable mixture.

IN GENERAL — Pipes will enter and leave the manholes at various angles and elevations. Where possible bend reinforcing bars around pipes (18" diam. or less). Where pipes are large use diagonal bars as shown.

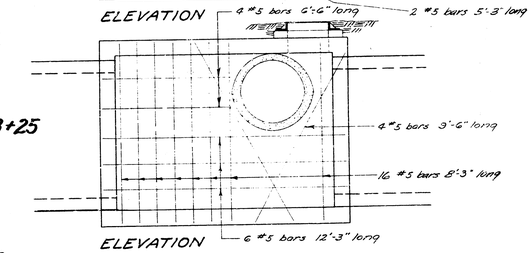
The floor of the manhole is to be shaped for flow and drainage. No deduction in concrete quantities shall be made for pipe openings. No addition in concrete quantities shall be made for shaping manhole floor. An internal vibrator shall be used for placing concrete.



PLAN



ELEVATION



ELEVATION

REINF. CONC. MANHOLE Sta. 18+25
LINE No. 1
Scale : 3/8" = 1'-0"

NOTE: Cost of removing 36" R.C.P. through new manhole is to be included in bid price of manhole.

STORM WATER SEWER DIST. NO. 53
CITY OF WICHITA KANSAS
B.E. SMITH CITY ENGINEER
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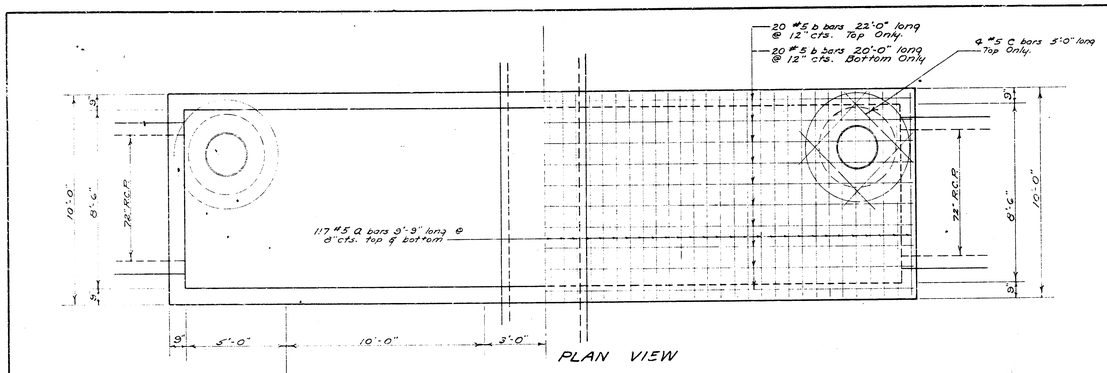
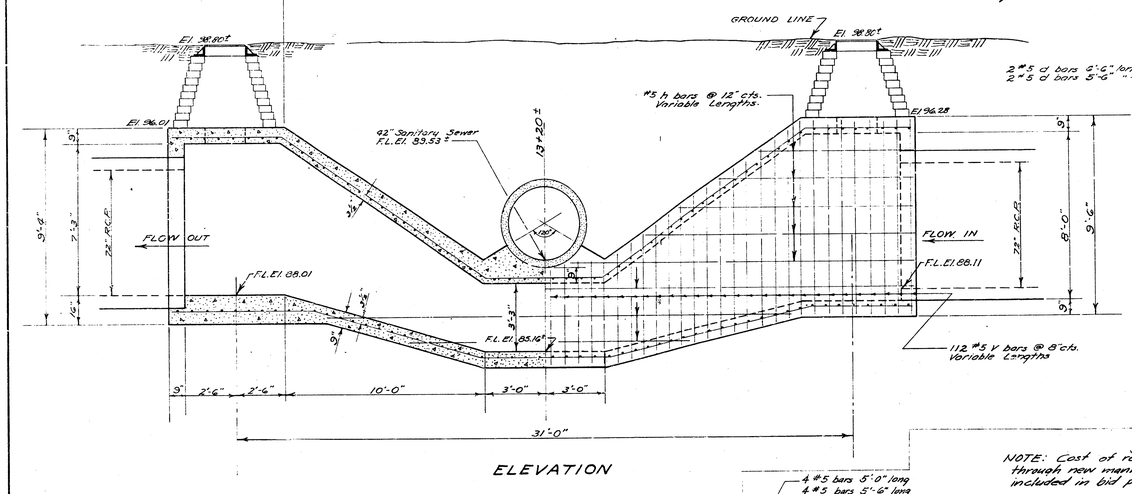
SHEET No. 12 of 19

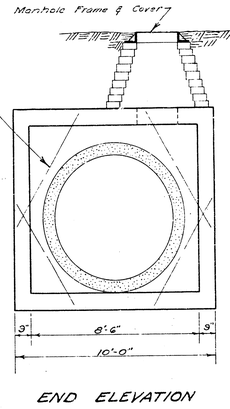
J.L.A.

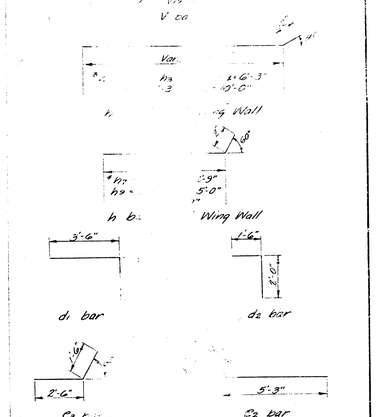


REINFORCING STEEL			
Bar	No.	Size	Length
a	117	#5	9'-9"
b	20	5	22'-0"
b	20	5	20'-0"
h	4	5	7'-6"
h	4	5	9'-6"
h	4	5	11'-6"
h	4	5	13'-6"
h	4	5	17'-6"
h	4	5	20'-0"
h	2	5	24'-0"
h	2	5	12'-0"
V	36	5	5'-2"
V	20	5	4'-6"
V	56	5	(av) 7'-0"
c	4	5	5'-0"
d	4	5	6'-2"
d	4	5	5'-6"

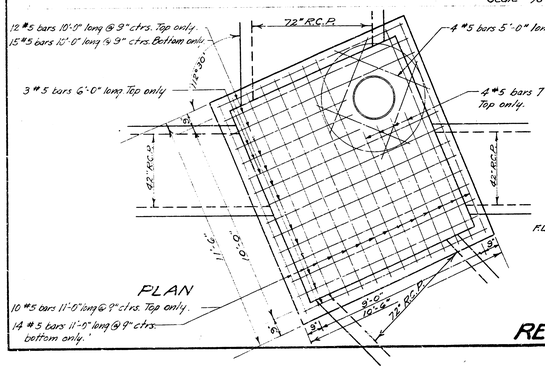
BILL OF MATERIAL		
Item	No.	Units
Excavation	260	cu. yds.
Concrete	38	cu. yds.
Reinf. Steel	3420	lbs.
Brick Manholes	2	each

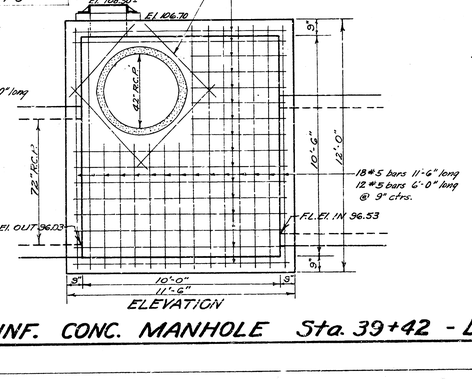




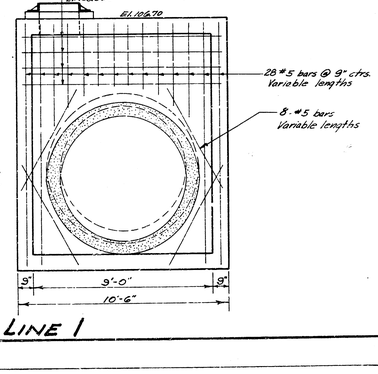


Bend ng Diagram for Conc. Inlet, Sta. Line 2





NOTE: Cost of removing 48" R.C.P. through new manhole is to be included in bid price of manhole.



Steel Schedule for Inlet @ Sta. 14+33.6, Line 2							
bar	size	no.	shape	bar	no.	length	shape
h_1	#5	4		V_{10}	2	9'-0"	
h_2	"	1		V_{11}	"	9'-6"	
h_3	"	1		V_{12}	"	10'-0"	
h_4	"	1		V_{13}	"	10'-6"	
h_5	"	1	3"	V_{14}	"	6'-0"	
h_6	"	2	5"	V_{15}	"	7'-0"	
h_7	"	1	6"	V_{16}	"	7'-3"	
h_8	"	1	1'-9"	V_{17}	"	7'-6"	
h_9	"	1	4'-0"	V_{18}	"	8'-6"	
h_{10}	"	1	6'-0"	V_{19}	"	7'-3"	
h_{11}	"	1	7'-0"	d_1	"	21	5'-6"
V_1	"	1	11'-0"	d_2	"	9	2'-6"
V_2	"	1	4'-6"	C_1	"	2	
V_3	"	1	3'-3"	C_2	"	3	
V_4	"	1	6'-0"	C_3	"	3	
V_5	"	1	6'-6"	C_1	"	2	
V_6	"	1	7'-0"	C_2	"	2	
V_7	"	1	7'-6"	X_1	"	2	5'-3"
V_8	"	1	8'-0"	S_1	"	1	7'-0"
V_9	"	1	8'-6"	S_2	"	1	10'-6"
				X_2	"	4	4'-0"

REINF. CONC. INVERTED SIPHON

Scale 3/8" = 1'-0"

REINF. CONC. MANHOLE Sta. 39+42 - LINE 1

STORM WATER SEWER DIST. NO. 53
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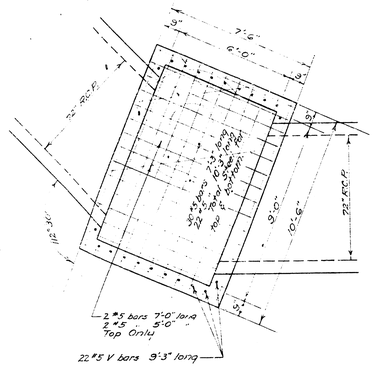
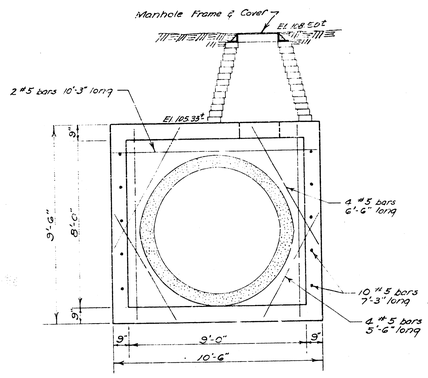
Proj. No. C 23-25

SHEET NO. 13 of 19 J.L.A.



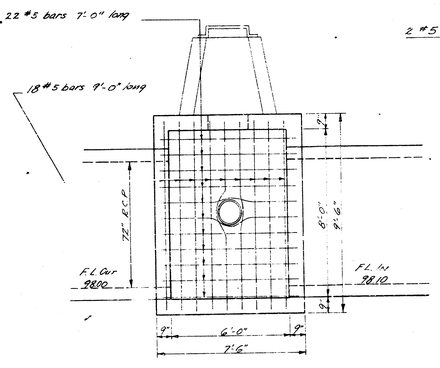
PLAN



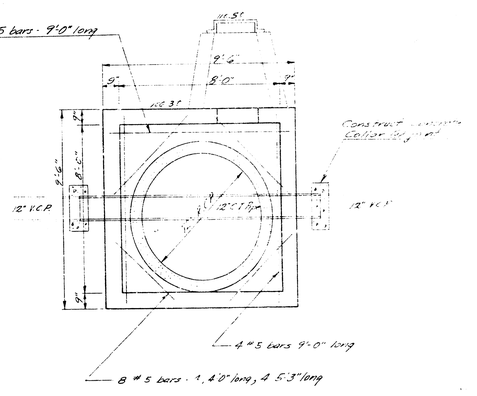
ELEVATION

REINF. CONC. MANHOLE Sta. 39+80.2 - LINE 1

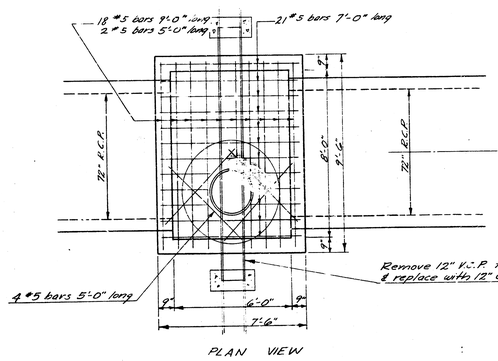
Scale 3/8" = 1'-0"



ELEVATION



ELEVATION

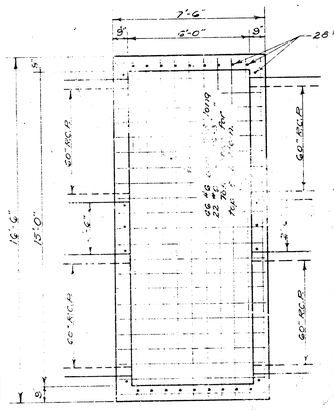


PLAN VIEW

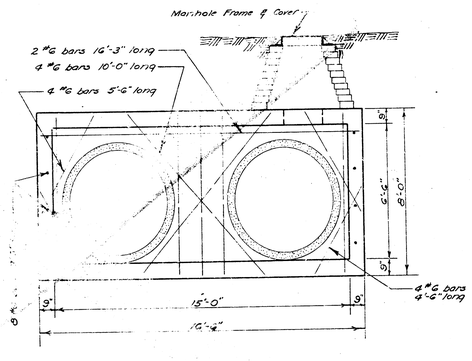
REINF. CONC. MANHOLE STA. 42+89.6 - LINE 1

Scale : 3/8" = 1'

Revised 8/30/55



PLAN



ELEVATION

REINF. CONC. MANHOLE Sta. 0+00 & 1+79.6

Scale 3/8" = 1'-0"

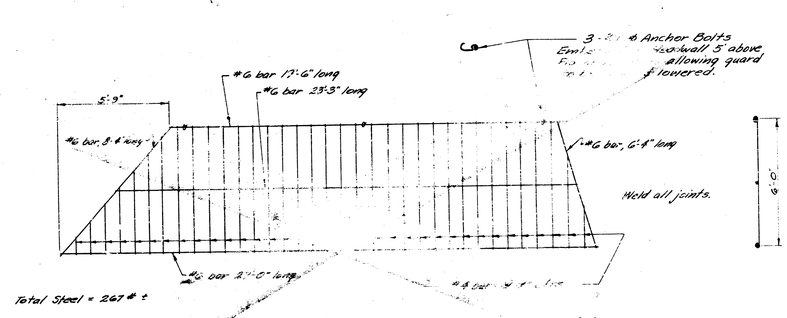
Concrete for structures shall contain not less than 1.65 bbls. of cement per cu. yd. of concrete. In no event shall the total water content exceed 6.25 gals. per sack of cement. The mixture of fine and coarse aggregate shall be such as will produce a maximum density of a most workable mixture.

IN GENERAL - Pipes will enter and leave the manholes at various angles and elevations. Where possible bend reinforcing bars around pipes (18" dia. or less). Where pipes are large use diagonal bars as shown.

The floor of the manhole is to be shaped for flow and drainage.

No deduction in concrete quantities shall be made for pipe openings.

No addition in concrete quantities shall be made for shaping manhole floor. An internal vibrator shall be used for placing concrete.



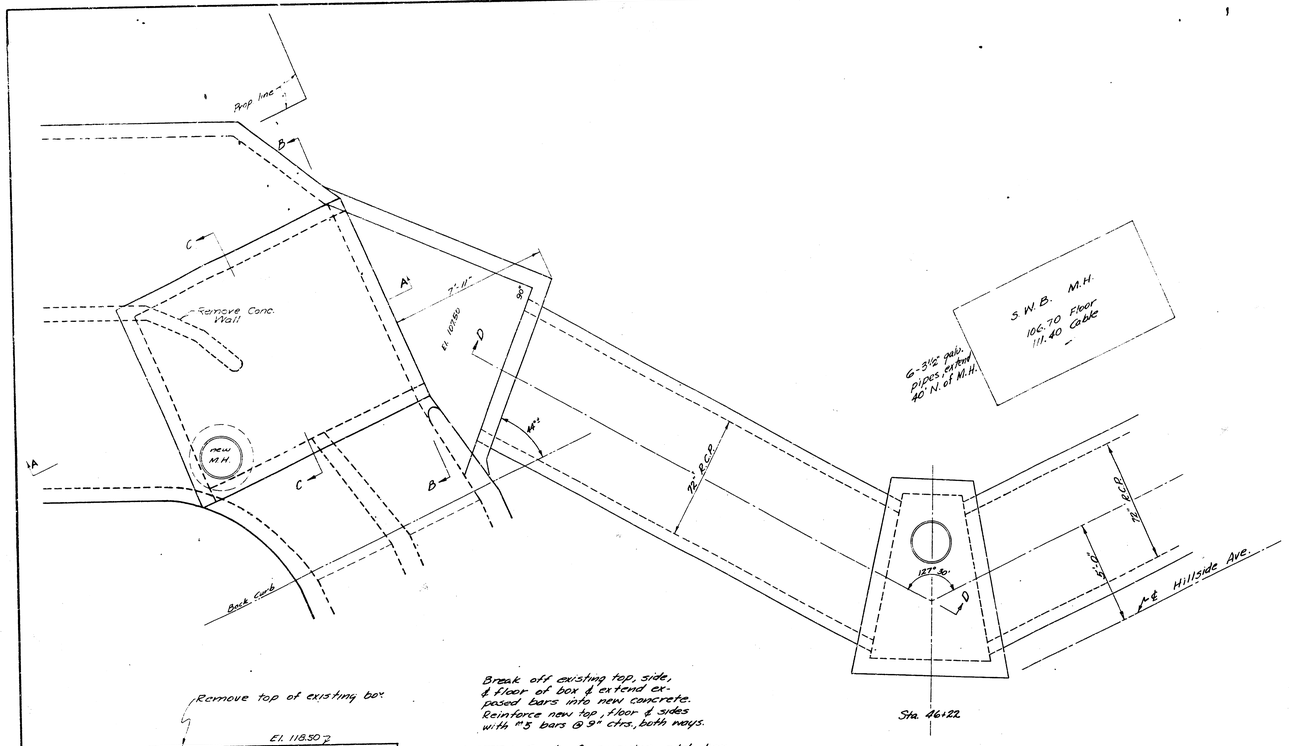
Total Steel = 267 # ±

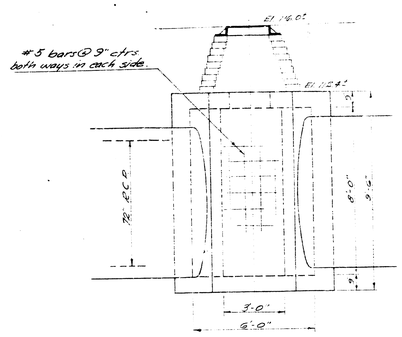
DETAIL OF ENTRANCE GUARD FOR INLET - STA. 14+83.6

STORM WATER SEWER DIST. NO. 53
CITY OF WICHITA KANSAS
B.E. SMITH CITY ENGINEER
Proj. No. C 23-25

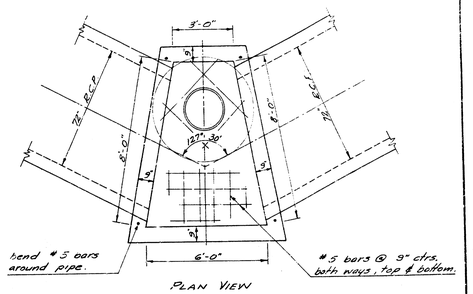
SHEET NO. 14 of 19

J.L.A.





SIDE ELEVATION



PLAN VIEW

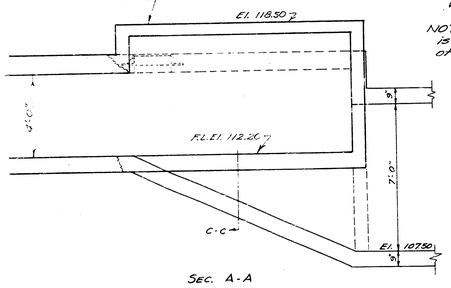
REINF. CONC. MANHOLE - STA. 46+22 - LINE 1

Scale: 3/8" = 1'-0"

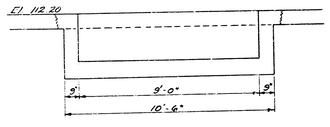
Remove top of existing box.

Break off existing top, side, & floor of box & extend exposed bars into new concrete. Reinforce new top, floor & sides with #5 bars @ 9" ctrs., both ways.

NOTE: Cost of removing old box is to be included in bid price of new junction box.



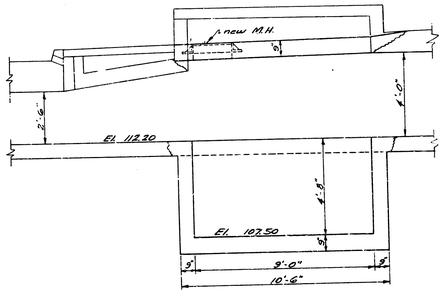
SEC. A-A



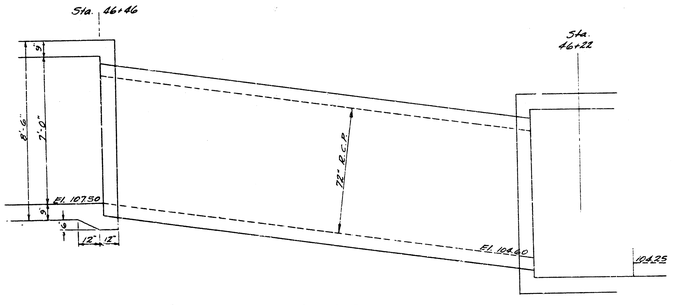
SEC. C-C

REINF. CONC. JUNCTION BOX - STA. 46+46 - LINE No. 1

Scale: 3/8" = 1'-0"



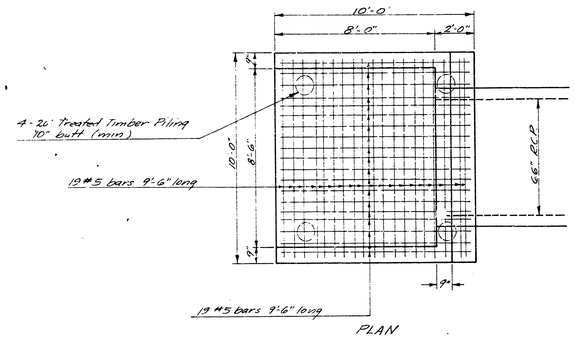
SEC. B-B



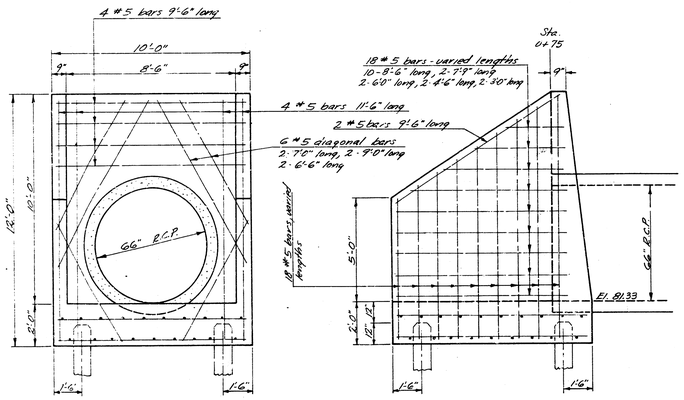
SEC. D-D

STORM WATER SEWER No. 53
CITY OF WICHITA, KANSAS
B. E. SMITH - CITY ENGINEER
PROJ. No. C 23-25
SHEET No. 15 OF 19

DL



PLAN

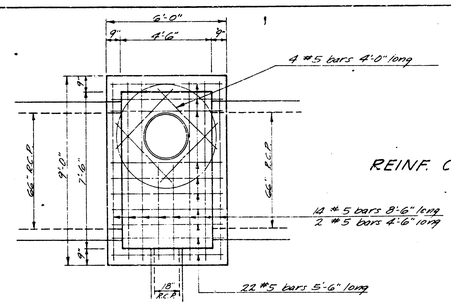


REINF. CONC. OUTFALL STRUCTURE - STA. 0+75 LINE No. 2

Scale : 3/8" = 1'-0"

Concrete for structures shall contain not less than 1.65 bbls. of cement per cu. yd of concrete. In no event shall the total water content exceed 6.25 gals. per sack of cement. The mixture of fine and coarse aggregate shall be such as will produce a maximum density of a most workable mixture.

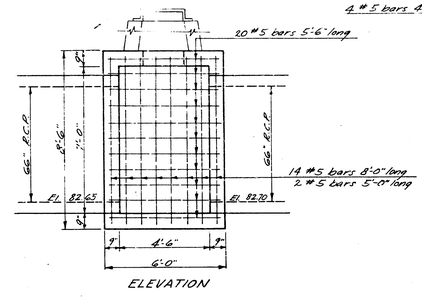
The floor of the manhole is to be shaped for flow and drainage. No deduction in concrete quantities shall be made for pipe openings. No addition in concrete quantities shall be made for shaping manhole floor. An internal vibrator shall be used for placing concrete.



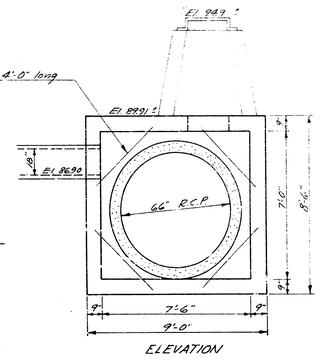
PLAN VIEW

REINF. CONC. MANHOLE - STA. 5+37.86 LINE No. 2

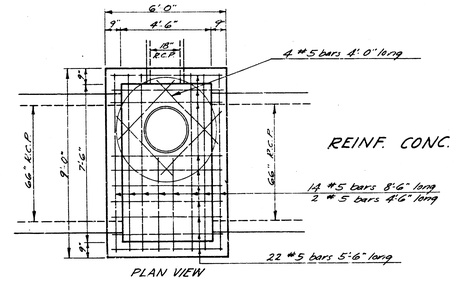
Scale : 3/8" = 1'-0"



ELEVATION



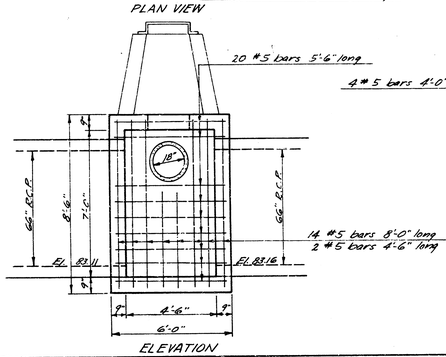
ELEVATION



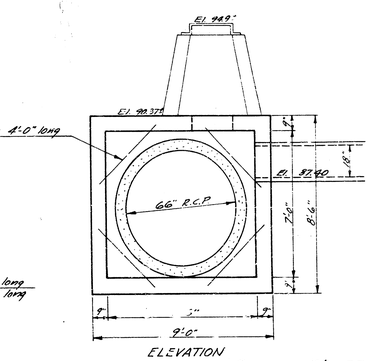
PLAN VIEW

REINF. CONC. MANHOLE - STA. 6+96.8 LINE No. 2

Scale : 3/8" = 1'-0"



ELEVATION



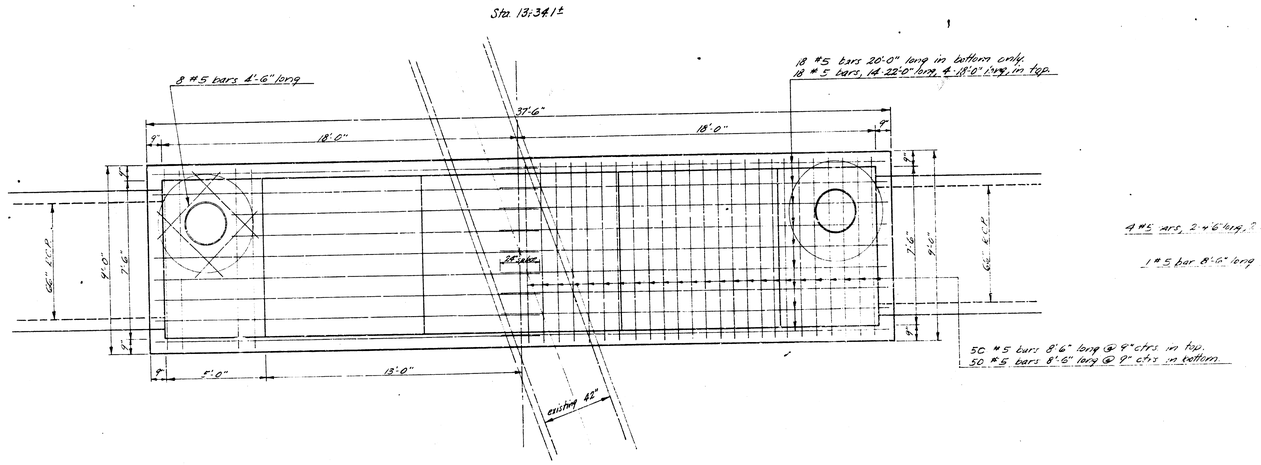
ELEVATION

STORM WATER SEWER No. 53

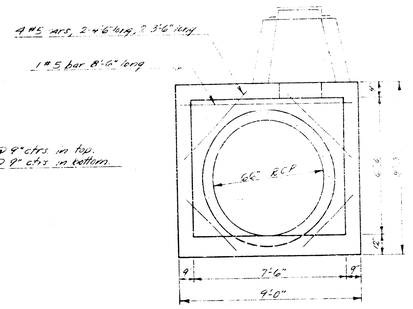
PROJECT No. C23-25

SHEET No. 16 OF 19

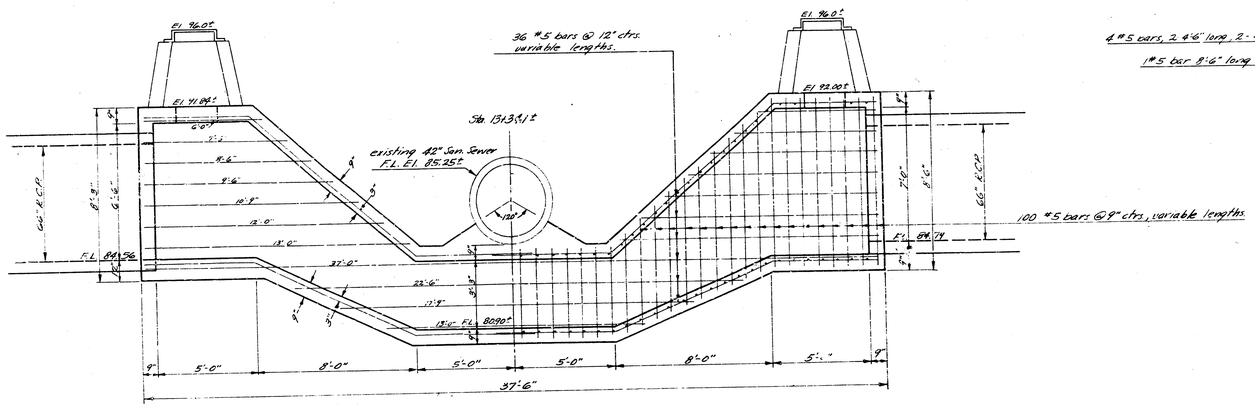
Bill of Material		
Item	No.	Un. Ft.
Concrete	35.1	Cu. Yds.
Reinf. Steel	2861	lbs.



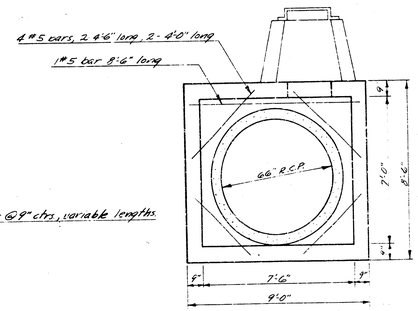
PLAN VIEW



ELEVATION - WEST END



ELEVATION



ELEVATION - EAST END

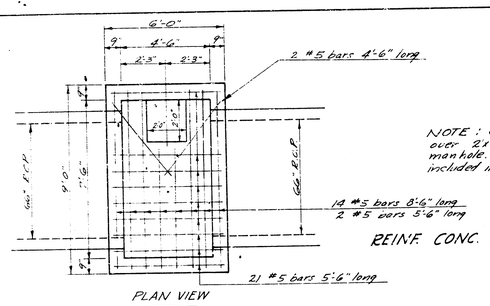
REINF. CONC. INVERTED SIPHON - STA. 13+34.1± LINE NO. 2

Scale : 3/8" = 1'-0"

STORM WATER SEWER NO. 53

PROJECT NO. C23-25

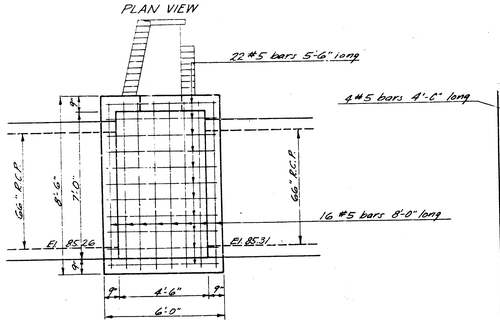
SHEET NO. 17 OF 19



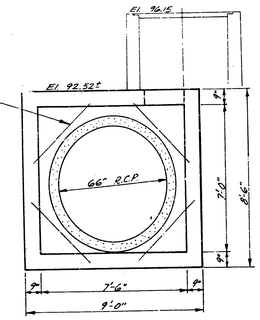
PLAN VIEW

NOTE : Construct 2'x5' C.B. over 2'x2' hole in top of manhole. Cost of C.B. is to be included in bid price of M.H.

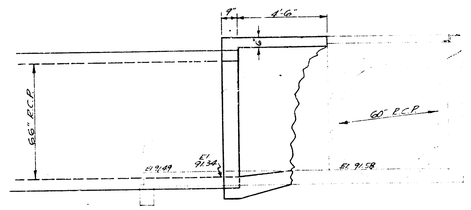
REINF. CONC. MANHOLE - STA. 15+51.5 LINE No. 2
Scale : 3/8" = 1'-0"



ELEVATION



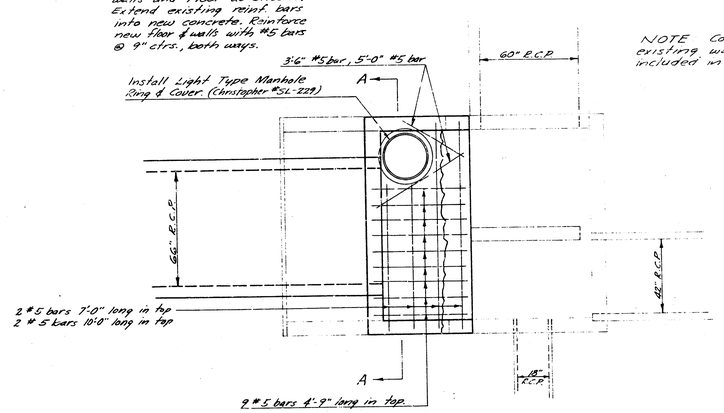
ELEVATION



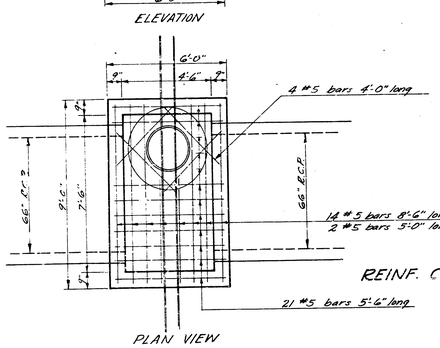
ELEVATION

NOTE : Break off existing walls and floor as shown. Extend existing reinf. bars into new concrete. Reinforce new floor & walls with #5 bars @ 9" ctrs., both ways.

NOTE Cost of removing existing walls & floor is to be included in bid price of box.



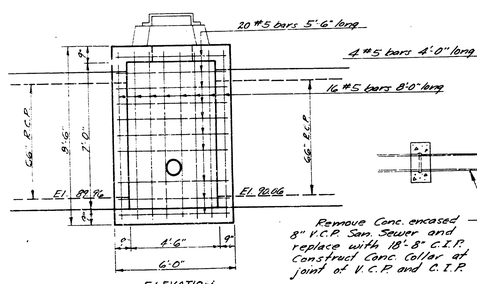
PLAN VIEW



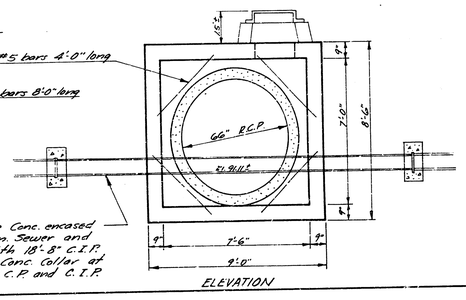
PLAN VIEW

NOTE :
Bid price of lin. ft. of Cast Iron pipe is to include cost of removing existing San. Sewer and installing C.I. pipe in place.

REINF. CONC. MANHOLE - STA. 37+66.3± LINE No. 2
Scale : 3/8" = 1'-0"

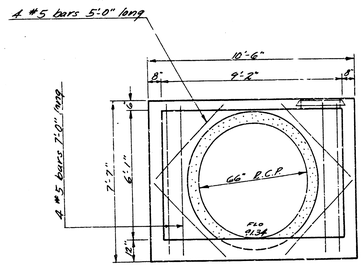


ELEVATION

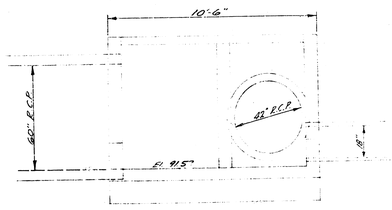


ELEVATION

Remove Conc. encased 8" V.C.P. San. Sewer and replace with 18"x8" C.I.P. Construct Conc. Collar at joint of V.C.P. and C.I.P.



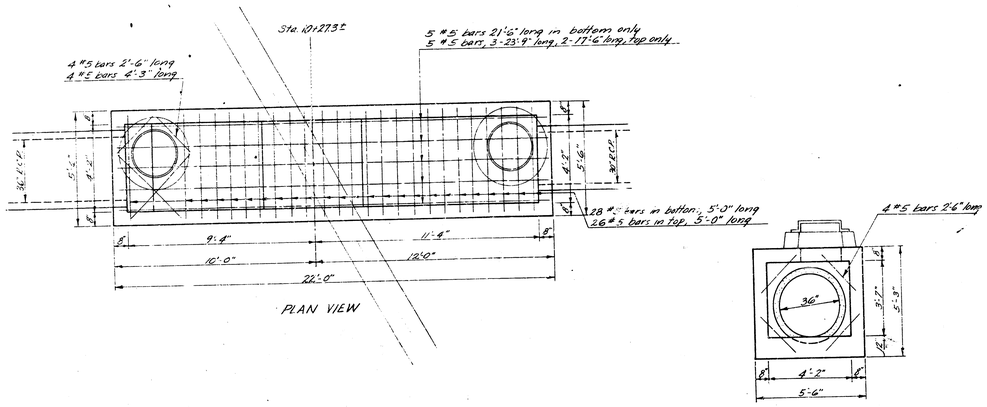
SEC. A-A



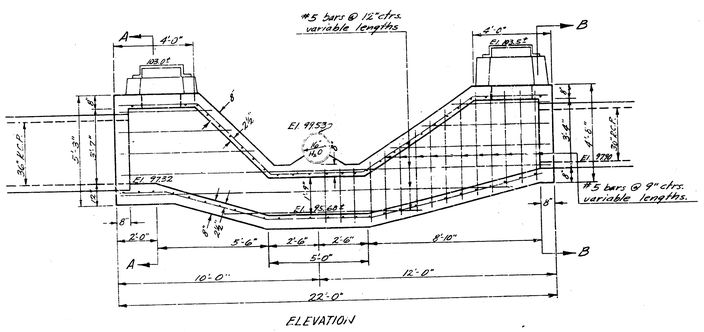
ELEVATION - EXISTING BOX

REINF. CONC. JUNCTION BOX - STA. 43+75 LINE No. 2
Scale : 3/8" = 1'-0"

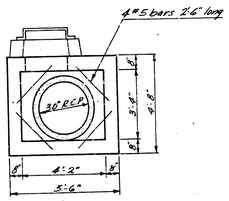
STORM WATER SEWER No. 53
PROJECT No. C23-25
SHEET No. 18 OF 19



PLAN VIEW

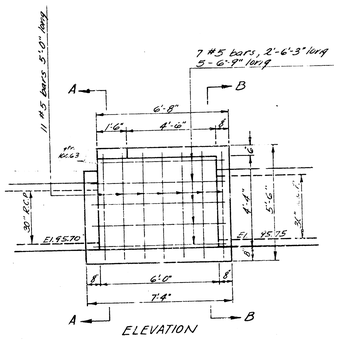


ELEVATION

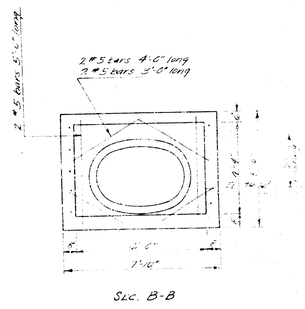


REINF. CONC. INVERTED SIPHON - STA. 10+27.3 LINE No. 3

Scale : 3/8" = 1'-0"

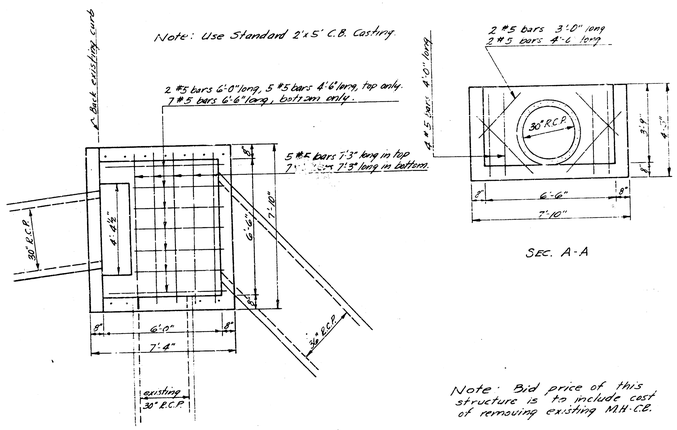


ELEVATION



SEC. B-B

Note: Use Standard 2'x5' C.B. Castings



PLAN VIEW

SEC. A-A

Note: Bid price of this structure is to include cost of removing existing M.H.-C.B.

REINF. CONC. BOX M.H.-C.B. - STA. 0+74 LINE No. 3

Scale : 3/8" = 1'-0"

STORM WATER SEWER No. 53

PROJECT No. C.23-25

SHEET No. 19 OF 19