STORM WATER SEWER NO. 229

PROJECT NO.
468-76-245-81098-000-000-001

SHEET INDEX

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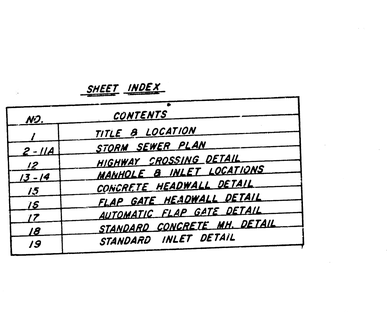
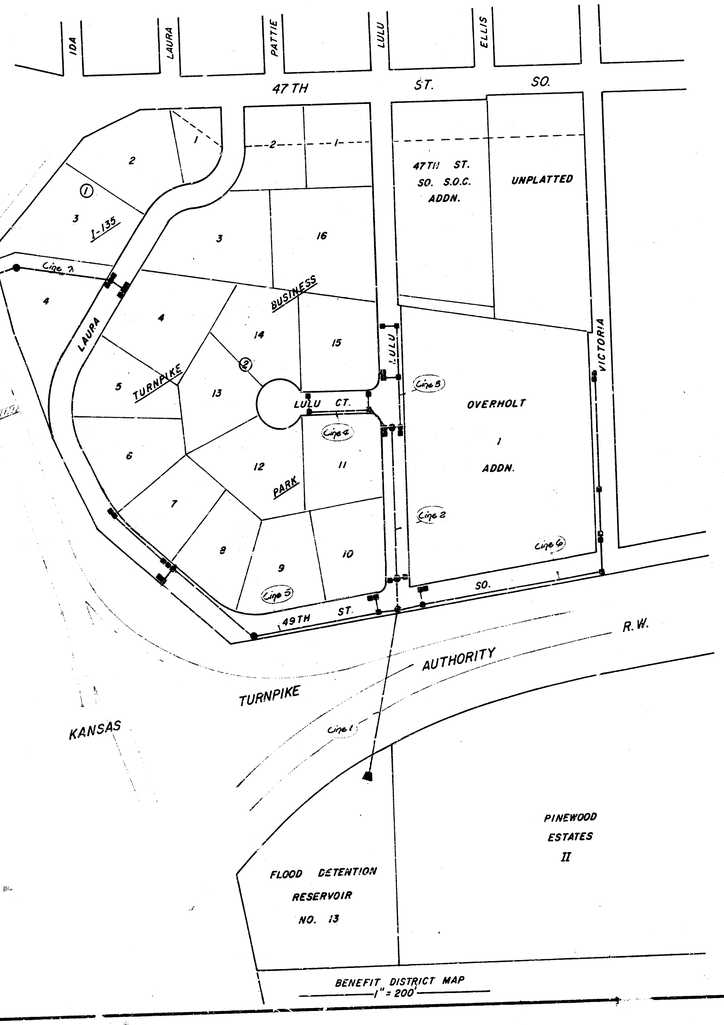
17	AUTOMATIC FLAP GATE DETAIL
18	STANDARD CONCRETE MH. DETAIL
19	STANDARD INLET DETAIL



LOCATION MAP



BENEFIT DISTRICT MAP
1" = 200'

GENERAL NOTES

Contractor shall co-ordinate construction with the pavement, flood detention reservoir, and the sanitary sewer construction.

The contractor shall be responsible for contacting all involved utility companies for underground verification.

Standard Type 1-A Inlets are to be constructed throughout the project. Widths and lengths do vary and are noted in the chart on sht.14.

All concrete shall be standard city paving mix unless otherwise noted.

The contractor shall be responsible for any irons moved or destroyed due to construction. A Registered Land Surveyor or a Professional Engineer shall be obtained to replace any irons.

The contractor shall be responsible for the construction permits and fees required by the Kansas Turnpike Authority. Permits may be obtained by calling the K.T.A. - 682-4537.

The wire fence along the K.T.A. shall be removed and replaced in good condition. Only the minimum amount of fence necessary shall be removed and replaced. The contractor shall provide temporary fence closing every night thru out the construction period.

The K.T.A. Right of Way at the crossing and at the area North of the coll booth shall be regraded to its original slope and elevation after construction is complete in these areas. These two areas shall be fertilized, seeded, and mulched. The Engineer shall determine the extent of this work.

The tunnel liner shall be bid as L.F. Tunnel Liner and shall include all costs for completion including excavation, liner plates, sand fill, end seals, grouting, skids, bands, fittings, backfill, and compacting backfill. The storm sewer pipe installed in the tunnel will be paid seperately.

Meenah (R2560 B-2) Beehive Inlet Grates are to be substituted for the standard inlet covers at nine locations on 49th St., east of Lulu, and Victoria. The inlet tops are to set on the brick walls flush with no lateral opening, see sheet 8. The inlets will be adjusted to the proper grades when the streets are paved in the future. Presently no plans exist to pave either of these steets. Those inlets shall be bid and paid as standard "Type 1-A Beehive Drop Inlets".

Asphalt driveway to be removed on Victoria shall be replaced with the same thickness of asphalt. Contractor shall make arrangements and schedule the construction on Victoria to provide access for the two trucking companies on the west side of Victoria at all times.

Regrading the areas around the beehive drop inlets at 49th St. and Lulu is to be performed by the pavement contractor. Regrading the ditch along Victoria is to be done by the storm sewer contractor and the cost of regrading shall be considered as incidental.

Storm sewer contractor shall not begin construction until Flood Dentencion Reservoir No. 13 is under contract for construction.

KENT WOLFE LICENSED 8470 KANSAS REGISTERED ENGINEER

CITY OF WICHITA, KS.

R. W. BRUGGEMAN ——— DIRECTOR OF ENGINEERING

ASHLEY D. FAGG LICENSED KANSAS REGISTERED ENGINEER

DATE 1/20/

BAUGHMAN COMPANY, P.A.
SURVEYING & ENGINEERING
316/262-7271 • 330 LAURA • WICHITA, KANSAS 6721

B.M. 82.58 - City Std. Disc., 2' South & 6' East of Northeast Corner of 16th & 47th St. So.
B.M. 81.76 - R.R. Sok. N. Fr. RR. Approx. 15' South of K.T.A. R.W. & 120' East of ℄ Culv.

KANSAS TURNPIKE RIGHT—OF—WAY

Scale:
Plan: 1" = 20'
Profile: 1" = 5' - Hor.
1" = 5' - Vert.

Install 55 SY. Type 3 Rip-Rap, as indicated

Construct Reinforced Conc. Headwall See Detail Sheet No. 15

Remove & Replace 100 L.F. Wire Fence.

E. Bound K.T.A. Lanes

W. Bound K.T.A. Lanes

W. Bound Off Ramp

Highway Crossing See Detail Sht. No. 12

(X) Note - Regrade K.T.A. - R.W. area to existing condition. Seed, fertilize, and mulch disturbed areas.

Remove & Replace 100 L.F. Wire Fence.

49TH ST.

95'

Line 5

Line 1

Line 2

Line 6

Property Line

PROPOSED FLOOD DETENTION RESERVOIR

Property Line

Note - See Plans for Flood Detention Reservoir #13 Proj. No. 468-74-245-81097-000-000-001 in conjunction w. this proj.

10.00' E. Property Line

PINEWOOD ESTATES II

Sta. 0+02 - Constr. Std. Reinf. Conc. Manhole (11" x 9') See Detail Sheet No. 13 Top = 80.85 = Sta. 0+05 Line 2.

Sta. 5+26 - Constr. Std. Reinf. Concrete Manhole (11" x 9') See Detail Sheet No. 13 Top = 80.85

Sta. 0+12.2 Equip. Skids Pipe Installation Line 1

Temp. Backfill

Existing Ground

Construct Reinf. Conc. Headwall Structure - See Sheet No. 15.

Proposed Manhole Ring 73B

Proposed Bottom 66B

Install 55 SY. Type 3 Rip-Rap.

Line 1

cut-off collar

Tunnel Liner

Sand Fill

Sinks Pipe

225 L.F. Tunnel Liner See Highway Crossing Detail Sheet No. 12

513 L.F. 53" x 89" H.E.R.C.P. @ +0.245 %

Temp. Backfill

cut-off collar

Line 1

Property Line

Sta. 5+26.0 - Constr. Std. Reinf. Conc. Manhole (11" x 9') See Detail Sheet No. 13 Top = 80.85

℄ 49th St. So.

Station	0+02	0+12.2	0+60	1+00	1+50	1+85	2+00	2+50	3+00	3+50	3+85	4+10	4+50	5+00	5+26
	71.50 Flo.	71.50 Flo. out	71.89 Flo.	72.71 Flo.	73.04 Flo.	73.42 Flo.	73.56 Flo.	73.98 Flo.	74.20 Flo.	74.33 Flo.	74.55 Flo.	74.67 Flo.	74.86 Flo.	75.03 Flo.	75.25 Flo. out 75.30 Flo. In 75.74 Flo. In

LINE 1

10

11

KANSAS TURNPIKE R.W.

Plan: 1" = 20'
Profile: 1" = 20' Hor
1" = 5' Vert

Pavement Sta. 0+99 Constr. Std. Type I-4 Inlet (W = 4'2") Top = 805

Sta. 1+08 Line 2 - Constr. Std. Reinf. Conc. MH (5' x 6'2") Top Elev. = 805 See Detail Sht. 13.

Sta. 5+47 Constr. Std. Reinf. Conc. MH. (5' x 6'6") Top Elev. = 805 See Detail Sht. 13.

843.15' R

1220' R

825.82' R

Line 1

Line 2

Line 2A

Line 2B

Line 3

Line 4

Line 5

Line 6

Line 7

Line 8

Line 9

Line 10

Line 11

Line 12

Line 13

Line 14

Line 15

Line 16

Line 17

Line 18

Line 19

Line 20

Line 21

Line 22

Line

11

15

16

LULU CT.

LULU

Line 2

Line 3

Line 3A

Line 3

Line 3

Constr. Std. Type 1-A Inlet (W= 4'2") Top Elev.= 81.92

Constr. Std. Type 1-A Inlet (W= 4'2"), Top Elev.= 81.95

Sta. 3+75± Constr. Std. Type 1-A Inlet (W= 4'2") Top Elev.= 81.97

M/H Sta 0+00 Line 3 = Sta. 5+47± Line 2

223.05' R.

82.88' R.

Constr. Std. Type 1-A Inlet (W= 4'2") Top Elev.= 80.42

Sta. 0+32 Constr. Type 1-A Inlet (5'0" x 6'3") Top Elev.= 80.42

Sta. 1+71± Constr. Std. Type 1-A Inlet (W= 5'0") Top = 81.92

Sta. 3+27± Constr. Std. Type 1-A Inlet (W= 4'2"), Top = 81.92

Plan: 1" = 20'
Profile: 1" = 20' - Hor.
1" = 5' - Vert.

47TH ST. SO. S.U.C. ADDITION

LOT 1
OVERHOLT ADDITION

85
80
75
85
80
75

Constr. Std. Type 1-A Inlet (W= 4'2") Top Elev.= 80.42

Sta. 0+32 Constr. Type 1-A Inlet (5'0" x 6'3") Top= 80.42

Sta. 1+71± Constr. Std. Type 1-A Inlet (W= 5'0") Top= 81.92

Constr. Type 1-A Inlet (W= 4'2"), Top= 81.92

Constr. Type 1-A Inlet (W= 4'2"), Top= 81.92

Sta. 3+27± Constr. Std. Type 1-A Inlet, (W= 4'2") Top= 81.92

Sta. 3+75± Constr. Std. Type 1-A Inlet (W= 4'2") Top = 81.92

6" Curb

6" Curb

6" Curb

3" Water Line

3" Water Line

Sample Inlet

Sample Inlet

Existing Ground

Proposed Top Curb

Line 3

Line 3

Line 3A

M/H Sta. 0+00 Line 3 = Sta. 5+47± Line 2 = ℄ Culv.

Sta. 0+32 Constr. Type 1-A Inlet (5'0" x 6'3") Top= 80.42

Sta. 1+71± Constr. Std. Type 1-A Inlet (W= 5'0") Top= 81.92

Sta. 3+27± Constr. Std. Type 1-A Inlet, (W= 4'2") Top= 81.92

Sta. 3+75± Constr. Std. Type 1-A Inlet (W= 4'2") Top = 81.92

32 LF 29"x45" H.E.R.C.P. @ -0.57 %

147± LF 30" R.C.P. @ -0.35 %

156± LF 21" R.C.P. @ -0.20 %

47± LF 15" R.C.P. @ -0.22 %

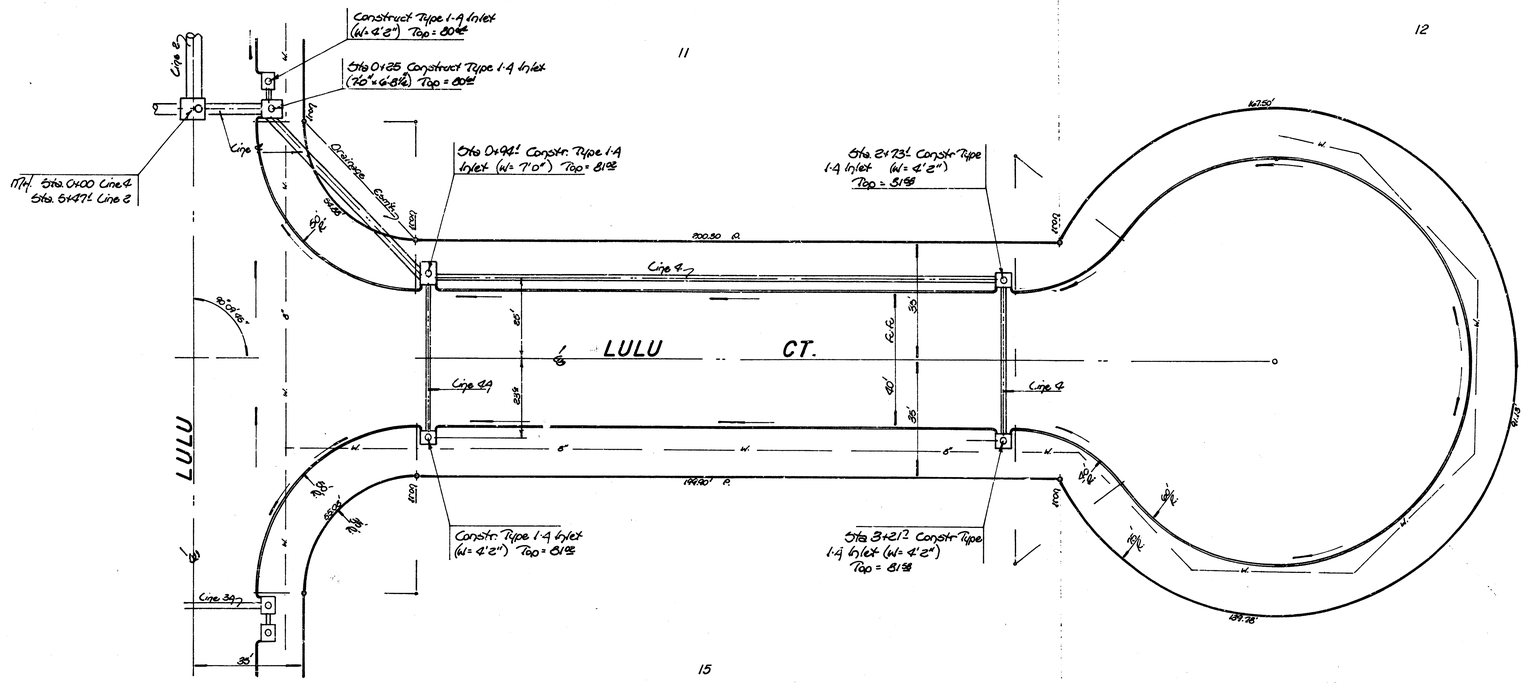
8± LF 15" R.C.P.

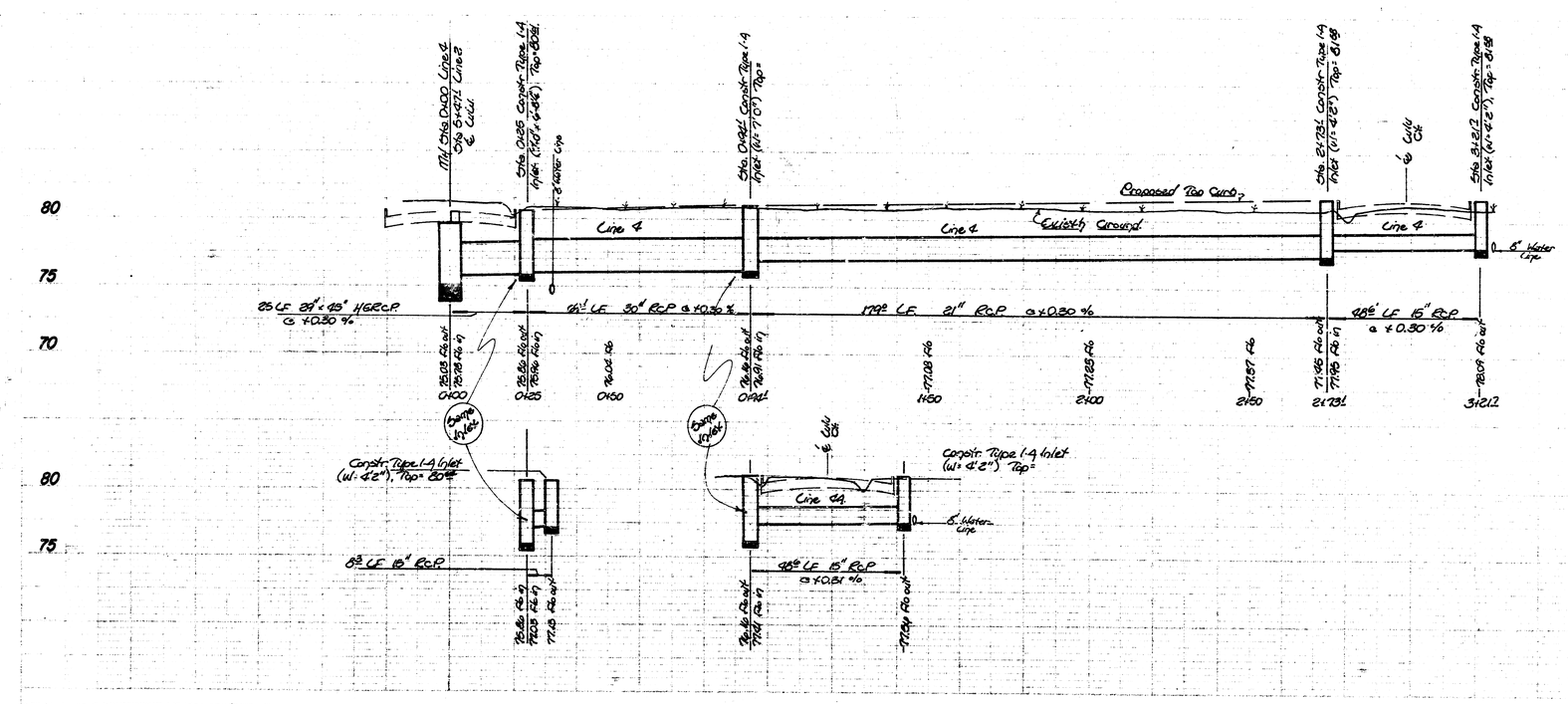
47± LF 21" R.C.P. @ -0.30 %

8± LF 15" R.C.P.

0+00	0+32	0+50	1+00	1+50	1+71±	2+00	2+50	3+00	3+27±	3+75±

LINE 3





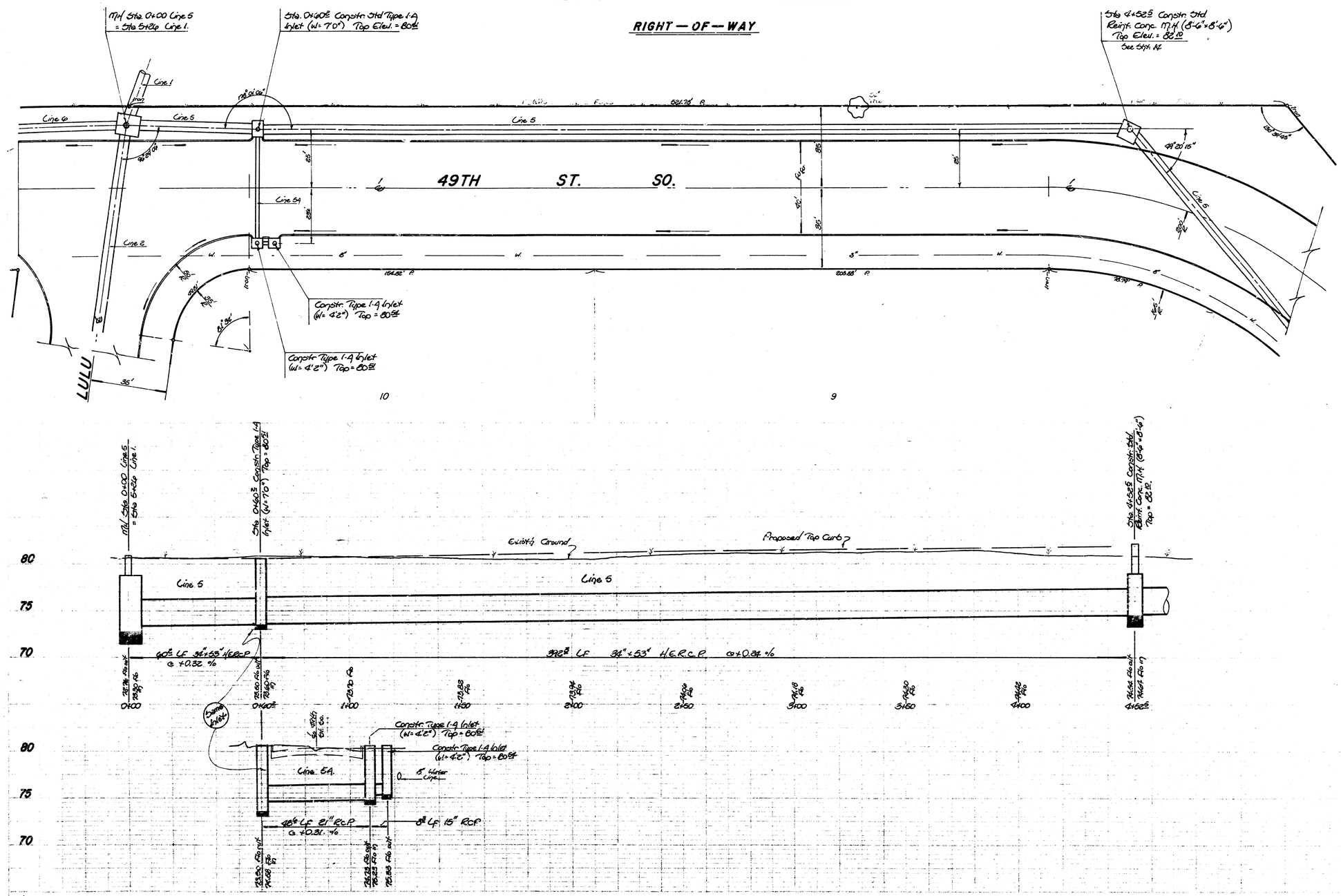
LINE 4

Plan 1" = 20'
Profile 1" = 20' - Hor.
1" = 5' - Vert.

B.M. 81.76 - R.R. Spk. in R.R. Located approx. 120' East of 15' South of intersection of ℄ Curb of K.T.A. R.W. East.

KANSAS TURNPIKE

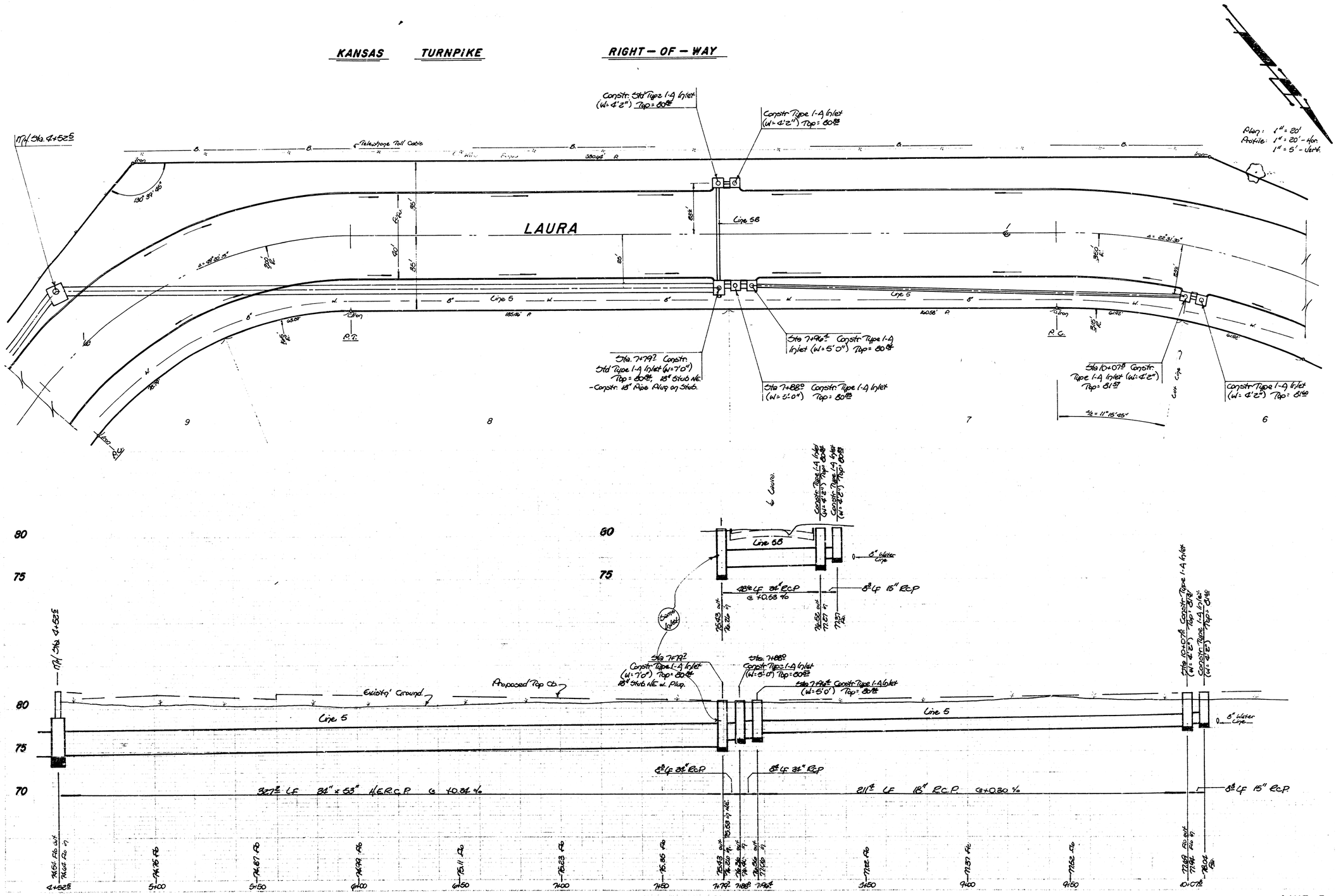
RIGHT — OF — WAY



Plan: 1" = 20'
Profile: 1" = 20' Hor.
1" = 5' Vert.

LINE 5

KANSAS TURNPIKE **RIGHT — OF — WAY**



LOT 1
OVERHOLT ADDITION

Scale
Plan - 1"=20'
Profile - 1"=20' Hor.
1"=5' Vert.

LINE 2

LULU

35'

40'

Constr (2)-Std. Type 1-A Inlets (W= 4'-2") w. Beehive Covers. Top Elev.=??@

Note - Install Beehive Inlet Covers (Neenah R-2560 C-2 or equal) at these 3 inlet locations in the place of standard covers. At the time 49th is paved, the beehive covers will be Removed and Replaced w. Std. Inlet covers, and the Inlets Raised to Proper Grade

Property Line

566.28' R

49TH ST. SO.

Curb Line

Point Ending

Line GA

80°00'50"

F.F. 35'

25'

80'

35'

LINE 5

LINE 6

Property Line?

79°28'10"

Sta. 0+78.1 - Constr. Std. Type 1-A Inlet w. Beehive Cover (W= 7'0") Top Elev.=??@

LINE 1

100°28'43"

KANSAS TURNPIKE

Area to be Regraded "By Others" at Time of Pavement Construction.

Neenah (R2560-C2) or equal Beehive Inlet Cover to be installed in place of Standard Cover.

Top Elev.

Contractor to construct planking or extra brick or both on face of inlet to eliminate any lateral opening. Cost of planking or brick to be incidental to inlet.

Inlet frame to be Western Iron & Foundry Co., Inc. or equal as follows:
Frame 524-CG
Frame (Lift) 500-AL

DETAIL TYPE I-A BEEHIVE DROP INLET

Proposed Future Ch.

Existing Ground

Line GA

Line 6

80

75

70

Sta. 0+78.1 - Constr. Std. Type 1-A Inlet w. Beehive Cover (W= 7'0") Top El. = ??@

Same as Inlet

E. 49th St. So.

Constr. Std. Type 1-A Inlet (W= 4'-2") w. Beehive Cover Top El. ??@

Constr. Std. Type 1-A Inlet (W= 4'-2") w. Beehive Cover Top El. ??@

78' LF 39"x 46" HERCP @ +0.577 %

56.39 LF 34"x 53" H.E.R.C.P. @+0.25%

83 LF 15" RCP

80.46 LF 21" RCP @ +0.85 %

Sta. 0+00 Line 6 = Sta. 5+26 Line 1

Sta. 0+00 Line GA = Sta. 5+76 Line 1

78.78 Fld. out
78.76 Fld. in

79.98 Fld.

79.10 Fld. out
78.80 Fld. in

79.14 Fld.

79.38 Fld.

79.60 Fld.

79.65 Fld.

79.75 Fld.

79.65 Fld.

79.00 Fld.

79.13 Fld.

79.26 Fld.

79.38 Fld.

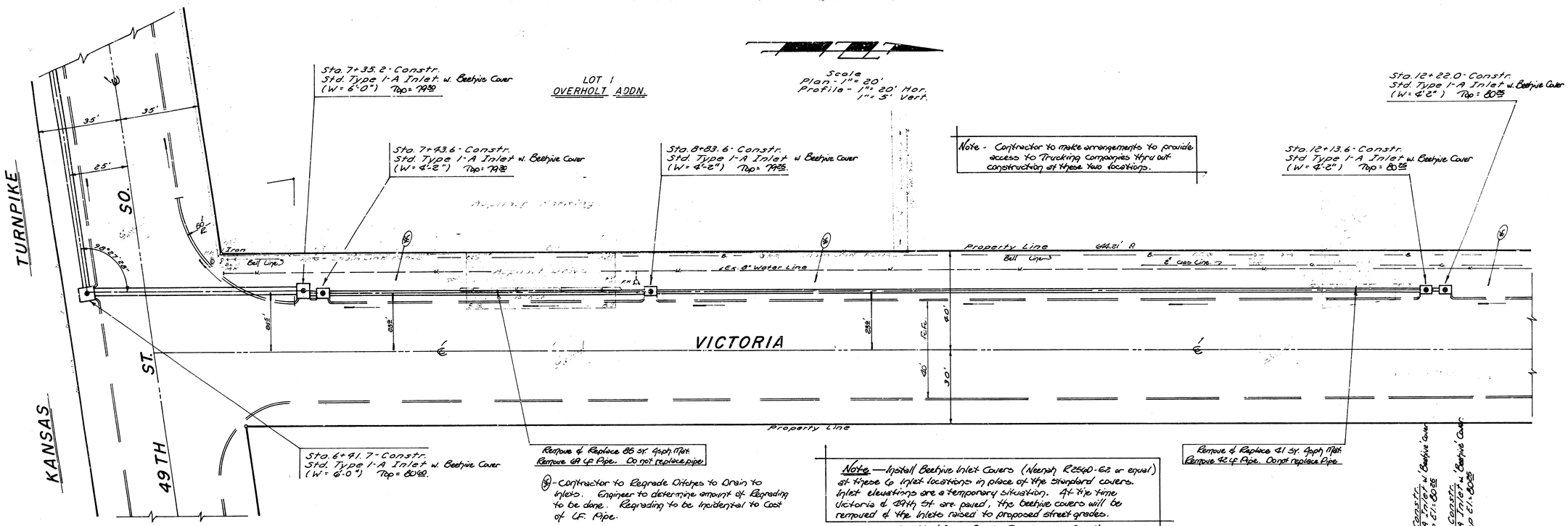
78.10 Fld. out
78.08 Fld. in

78.28 Fld. out

Station 0+00 0+50 0+78.1 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+50

8 1/20

LINE 6



B.M. 82.53 - City of Wichita Std. Disc. 2' South & 6' East. N.E. Corner 27th St. So. & 106.

(5) Note - Regrade R.T.A. - R.W. to existg condition. Seed, Fertilize, and mulch disturbed area.

Sta. 0+71.2 Install End Section & Begin Pipe Installation.

20" CMP Pipe Line

Property Line

City Service Easement

40' Pipeline Easement

307.76'

20" CMP Pipe Line

Sta. 1+54.5 Constr. Type I-A Inlet (4'-2" x 4'-8½") Top Elev. = 82.78

16' Utility Easement

R.C.P.

Line 7

326°38'40"

Sta. 1+60.8 Construct Std. Reinf. Conc. Mfd. w/ Beehive Inlet Cover. (7'-0" x 4'-6") Top Elev. = 81.90 See Detail Sht. #14.

Remove & Replace 30 L.F. of Wire Fence for Constr.

Construct 180 S.Y. 5" Concrete Ditch Lining See Sht. No. 11 for detail.

Property

Bell Tele. Cable

Note - Contact Bell Telephone Co. for raising or lowering of Tell Cable. This line must be kept in operation at all times.

KANSAS TURNPIKE RIGHT-OF-WAY

Line 7

Utility & Drainage Easement

Sta. 4+54.5 Constr. Type I-A Inlet (4'-2" x 4'-8½") Top Elev. = 82.78

Constr. (2) Std. Type I-A Inlets (W = 4'-2")

326°38'40"

225'

225'

Pavement Sta. 18+66.38

Sta. 5+01.5 Constr. (3) Std. Type I-A Inlets (W = 4'-2").

LAURA

Scale
Plan — 1" = 20'
Profile — 1" = 20' — Hor.
1" = 5' — Vert.

Note - Pipe End Section to be considered as Incidental to L.F. Pipe.

Sta. 0+71 - Install End Section & Begin Pipe Installation

Telephone Tell Cable Sta. 1+00 App. Line

Sta. 1+60.8 Construct Std. Reinf. Conc. Mfd. w/ Beehive Inlet Cover. (7'-0" x 4'-6") Top Elev. = 81.90 See Detail Sht. #14

Install Neenah Beehive Grate & Frame (R-2560-E2)

Existing Ground

Line 7

89° L.F. - 84" x 45" H.E.R.C.P. @ ± 0.200 %

89° L.F. - 84" x 45" H.E.R.C.P. @ ± 0.200 %

87° L.F. - 24" R.C.P. @ ± 0.420 %

Sta. 4+54.5 Constr. Type I-A Inlet (4'-2" x 4'-0") Top Elev. = 82.28

Sta. 5+01.5 Constr. Std. Type I-A Inlet (W = 4'-2") Top = 82.28

Caura

d' Sanitary Sewer

6" Water Line

Install (2) - 8° L.F. Each of 15" R.C.P.

Constr. Type I-A Inlet (W = 4'-2") Top = 82.78

Constr. Type I-A Inlet (W = 4'-2") Top = 82.27

Existing Ground

Constr. Type I-A Inlet (W = 4'-2") Top = 82.78

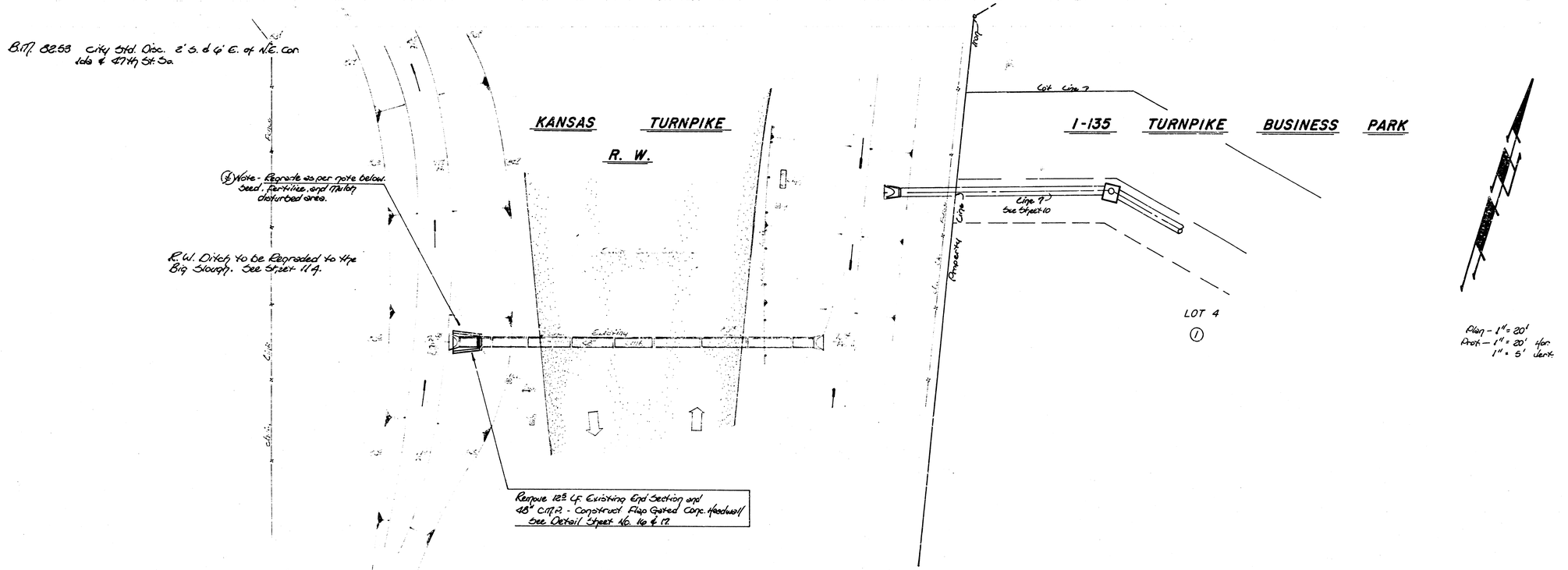
Constr. Type I-A Inlet (W = 4'-2") Top = 82.27

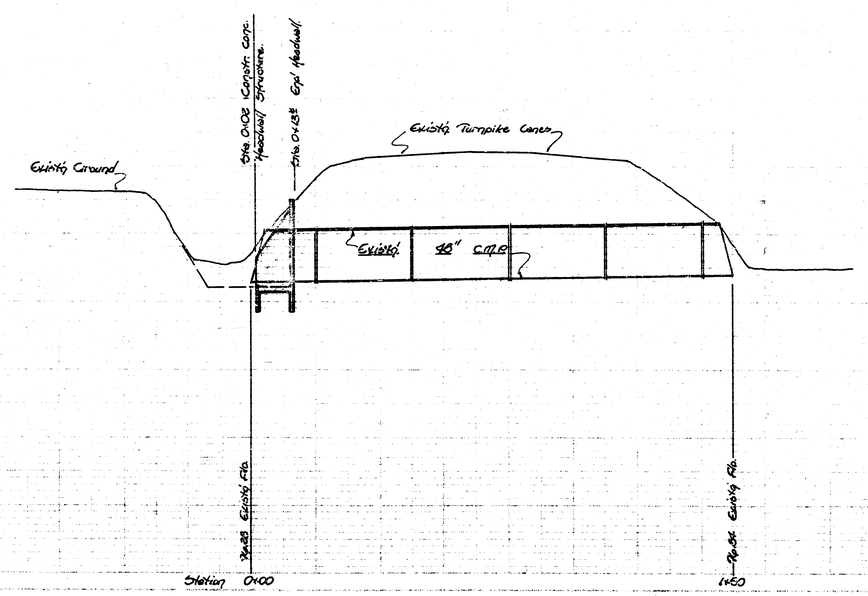
Install (2) - 8° L.F. Each of 15" R.C.P.

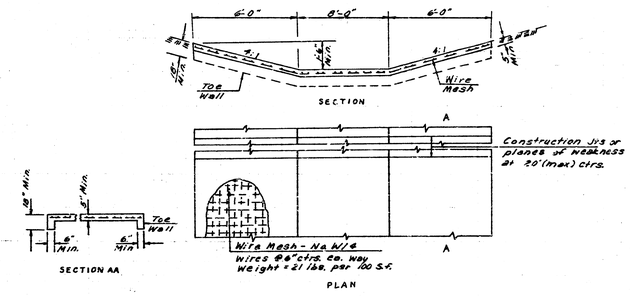
85 80 75

Station 0+71 1+00 1+60.8 2+00 2+50 3+00 3+50 4+00 4+54.5 5+01.5

LINE · 7







CONCRETE DITCH LINING DETAILS

FLAP GATED HEADWALL

11/20

B.M. 82.53 City Std Disc. 2' S. & 6' E. of N.E. Corner 106 & 47th St. So.

KANSAS TURNPIKE AUTHORITY

R. W.

Scale - 1" = 40' Plan
1" = 40' Profile-Hor.
1" = 5' " -Vert.

47TH ST. SO.

BIG SLOUGH

Do not move or damage Existing R.C.P.

Do not move or damage Existing R.C.P.

Remove & Reset Existing 48" C.M.P. See grades below. Regrade Entrance Approach Area. This work to be incidental to C.F. Ditching

Begin Ditching Work Sta. 0+00

Turnpike Fence

Wire Fence

Note - Regrade the existing drainage ditch - see Flo Elevations on profile. Regrading to be bid and paid as "C.F. Ditching".

Contractor to verify Gas Service Co. Pipeline & water line pipe elevations for clearance prior to any ditching work beginning.

UNPLATTED

28" Gas Service Co. Pipeline

End Ditching Work Sta 12+30

Headwall to be constr. See Str. No. 11. Sta 12+03 Below.

Bottom varies 10' - 12' thru-out

Typical Ditch Cross-Section maintain 4:1 Side Slopes where possible.

Existing 48" CMP to be Reset to new grades indicated.

Transition to match existg ground

Existing Ditch Flo Line

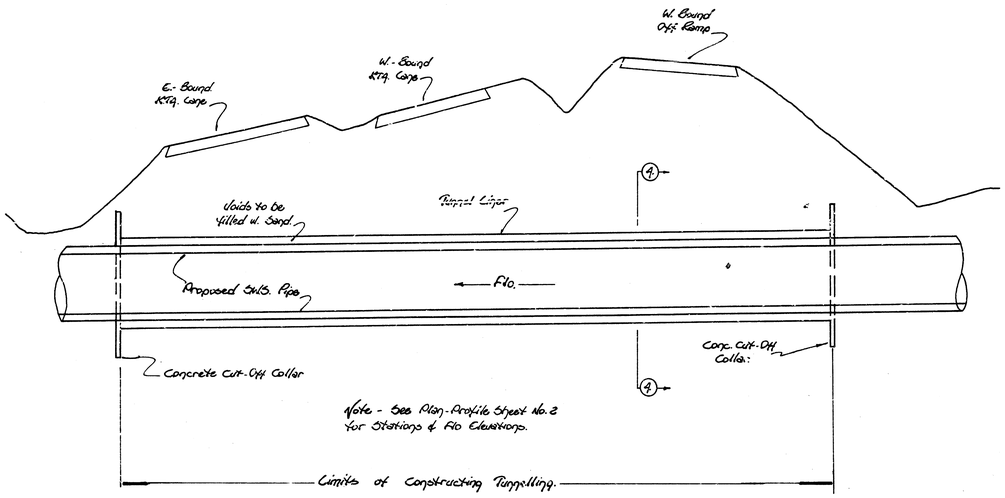
Regrade the Ditch Bottom at +0.141 % Proposed Flo Elevations indicated Below.

80
75
70

Sta. 0+00 — 2038' Flo
0+91 — 1978' Flo - 48" CMP
1+47 — 1975' Flo "
2+00 — 1975' Flo
3+00 — 1972' Flo
4+00 — 1968' Flo
5+00 — 1952' Flo
6+00 — 1956' Flo
7+00 — 1952' Flo
8+00 — 1958' Flo
9+00 — 1958' Flo
10+00 — 1952' Flo
11+00 — 1958' Flo
12+03 — 1958' Flo @ Headwall Str.
12+30 — 1958' Flo

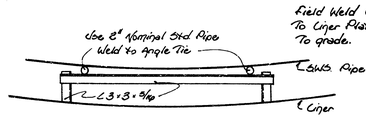
DITCH REGRADING PLAN

12
20



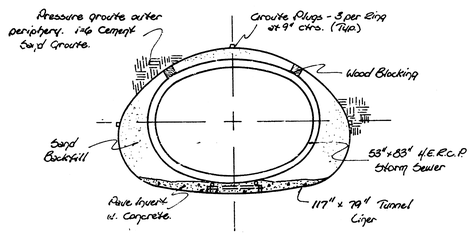
Note - See Plan-Profile Sheet No. 2 for Stations & F.G. Elevations.

— CROSSING PROFILE —

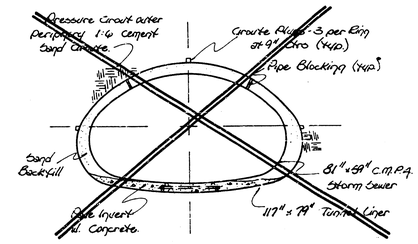


— RAIL ASSEMBLY —

Note - Tunnel Contractor may propose an alternate rail assembly to the sizes noted above. Proposal shall provide the same grade consistency for the Storm Sewer Pipe & be presented to the Engineer for Approval.



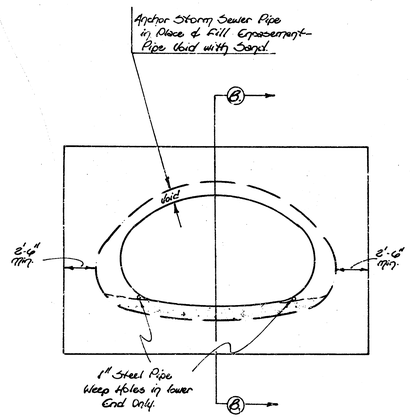
SECTION A.- A. (H.E.R.C.P.)



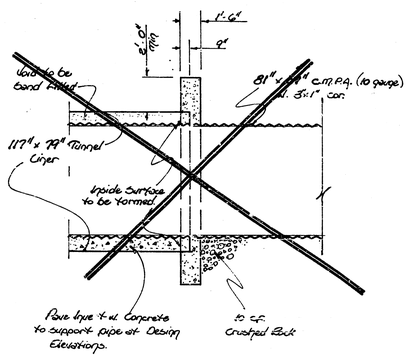
~~SECTION A.- A. (C.M.P.A. - FULLY PAVED)~~

Note - Tunnel Liner to be Arch Liner Plate Construction, Thickness = 10 gauge (0.1345 in.) with Section Properties = 0.059 $in^3/in.$

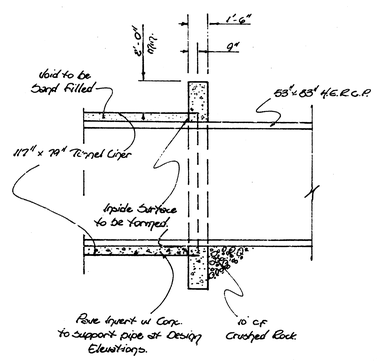
PIPE ENCASEMENT DETAILS



— END SECTION —

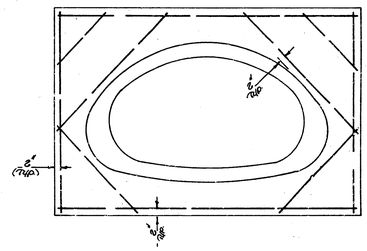


~~SECTION B-B (C.M.P.A. - FULLY PAVED)~~

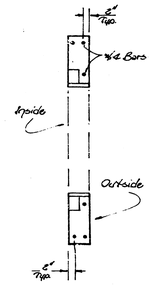


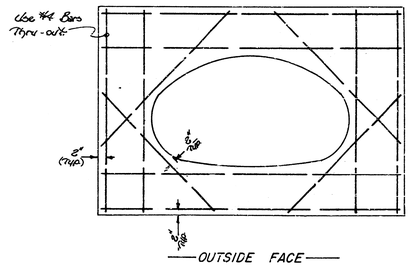
SECTION B-B (H.E.R.C.P.)

CONCRETE CUT-OFF COLLAR DETAILS



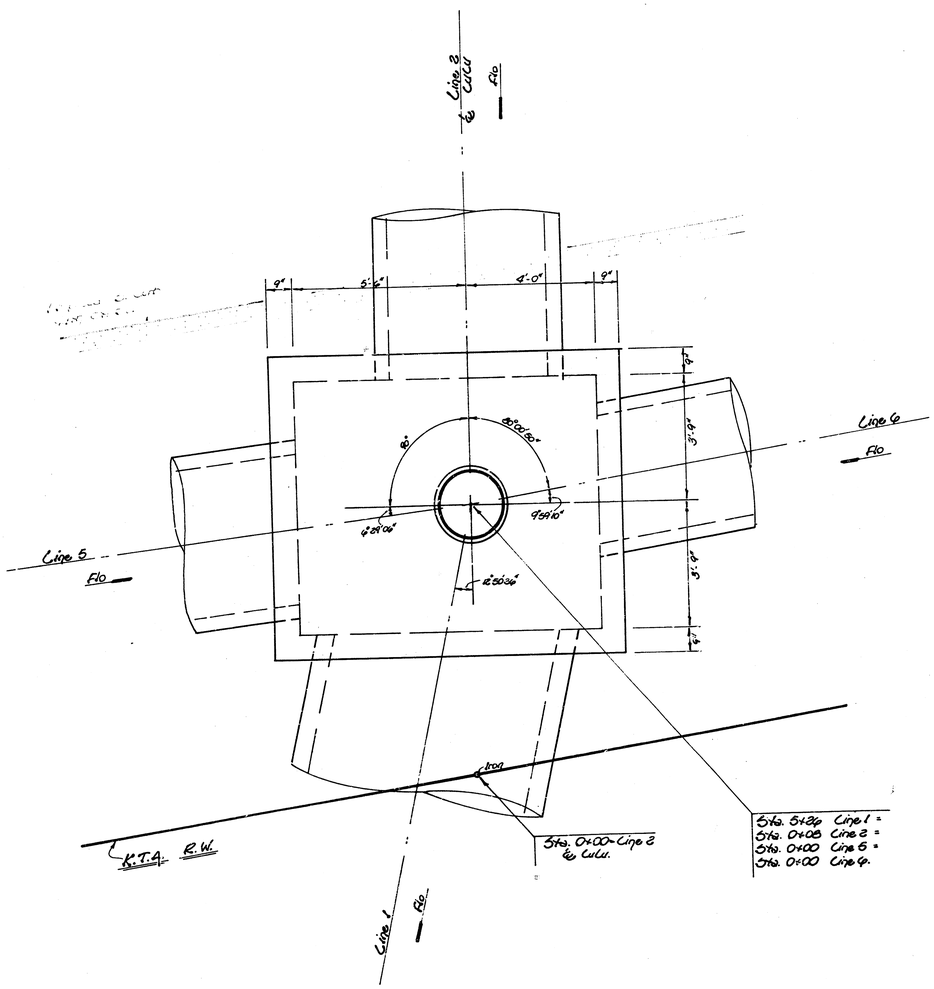
COLLAR REINFORCING





HIGHWAY CROSSING DETAILS

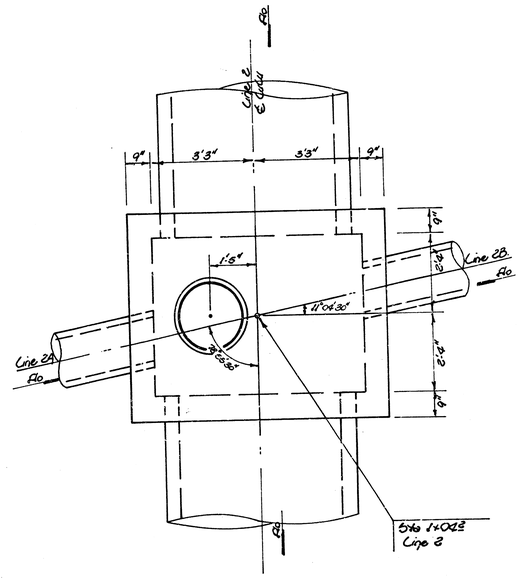
13/20



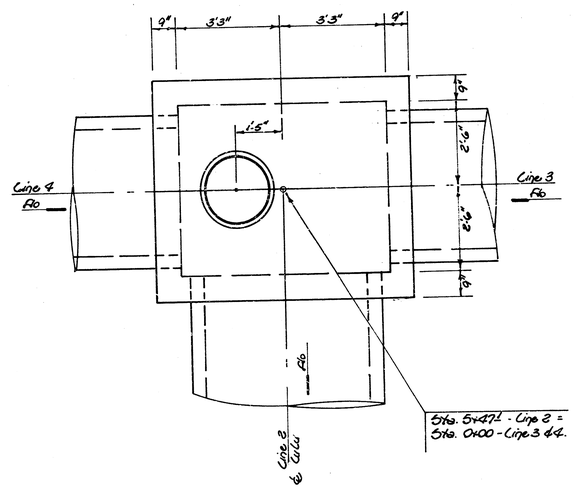
TOP VIEW
(1" = 2')

Note - See Plan - Profile Sheets for Pipe Size & Elevations.
See Std. Reinforced Concrete MH. Detail Sheet for
Reinforcing Design. (Depth of Stack = 0'-3.33").

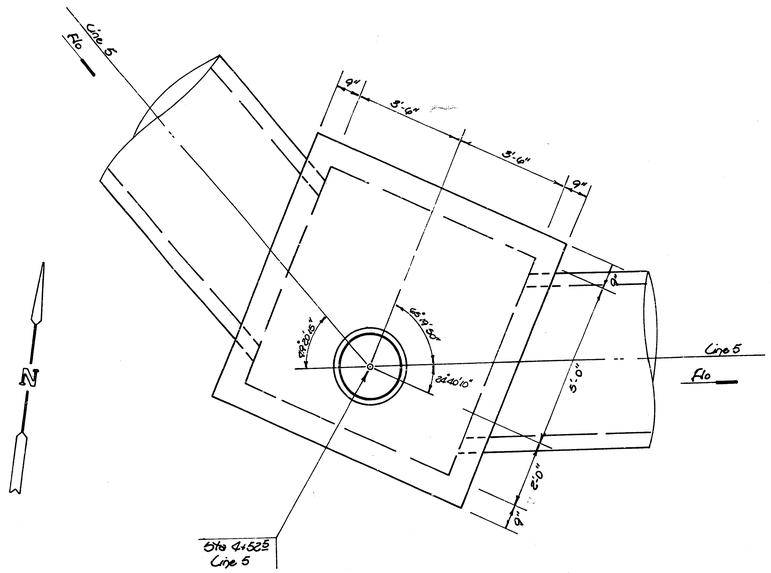
N

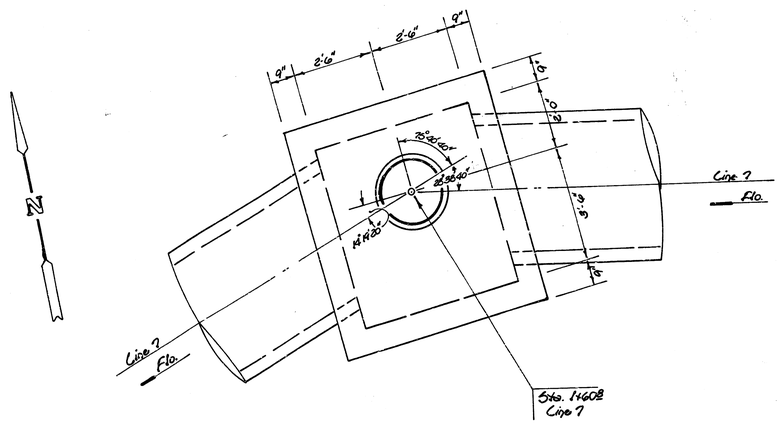


Note - The Manhole Brick Stock is to be constructed
off of ℄ as far West as possible (Indicated by dimension)
for these two Manhole locations on Culv.



MANHOLE ALIGNMENT & DIMENSION 14/20





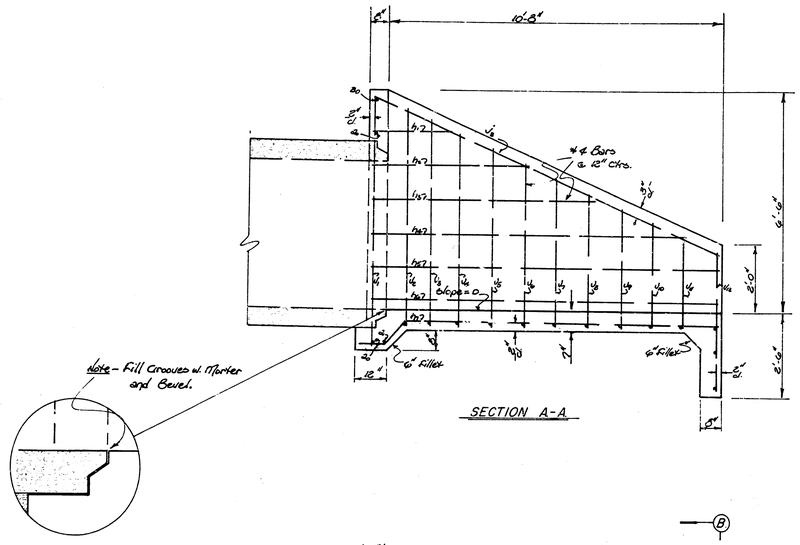
MANHOLE & INLET LOCATION & DIMENSION

Line No.	Manhole Sta.	Manhole Dimension	Inlet Sta.	Inlet Dimension (W x L)
1	5+26	11'-0" x 4'-0"		
2	1+04	8'-0" x 6'-2"		
2A			0+24	4'-2"
2B			0+24	4'-2"
2	5+47	8'-0" x 6'-6"		
3			0+24	5'-0" x 6'-8½"
"			"	4'-2"
3			1+77	5'-0"
3			3+27	4'-2"
3			3+75	4'-2"
3			0+47	4'-2"
3A			"	4'-2"
"			0+25	7'-0" x 6'-8½"
4			"	4'-2"
"			0+92	7'-0"
4			2+73	4'-2"
4			3+21	4'-2"
4			0+48	4'-2"
4A			0+60	7'-0"
5				
5	4+52	8'-6" x 8'-6"		
5			7+77	7'-0"
5			7+88	5'-0"
5			7+96	5'-0"
5			10+07	4'-2"
"			"	4'-2"
"			0+48	4'-2"
5A			"	4'-2"
"			0+48	4'-2"
5B			"	4'-2"
"			0+78	7'-0"
6			6+42	6'-0"
6			7+35	6'-0"
6			7+43	4'-2"
6			8+83	4'-2"
6			12+13	4'-2"
6			12+22	4'-2"
6			0+48	4'-2"
6A			"	4'-2"
"				
7	14+60	7'-0" x 6'-6"		
7			4+54	4'-2" x 6'-8½"
"			"	4'-2"
"			"	4'-2"
"			5+01	4'-2"
7			"	4'-2"
"			"	4'-2"
"			"	4'-2"

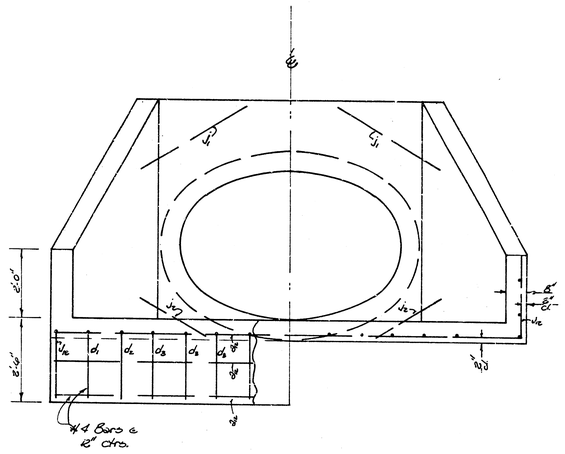
Note -

All Manholes to be Standard Reinforced Concrete Manholes. See Detail Sheet No. 18 for Reinforcing Design. Widths, Lengths, and Alignment for the MH's are indicated on Sheet No. 13 & 14.
Manhole concrete to be Standard Paving Mix.
Floors of the Manholes are to be shaped & smooth.
All Inlets are to be Standard Type 1-A Inlet Construction (See Detail Sheet No. 19)
Length = 5'-8½" unless otherwise indicated, and then the length shall be 6'-8½".
Widths vary in relation to the pipe sizes and are indicated in the table above.

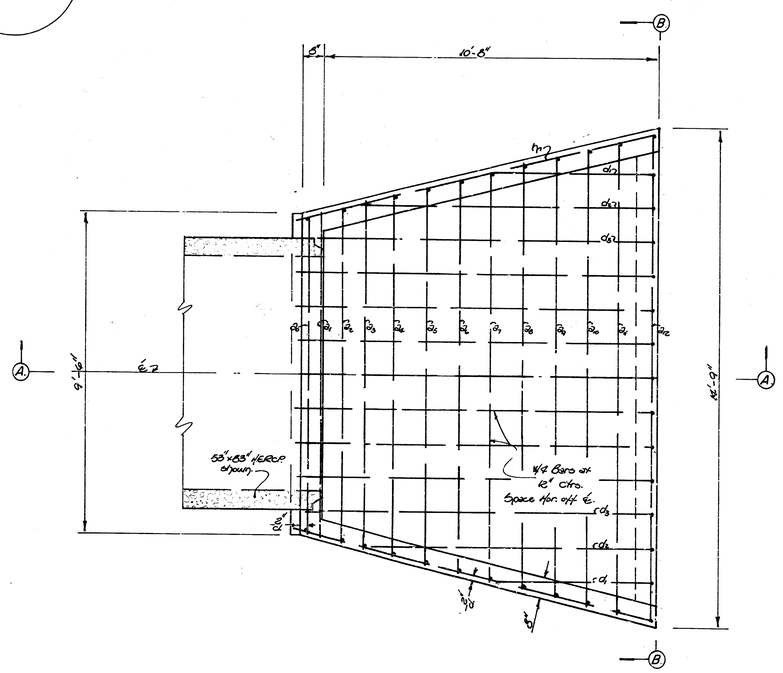
15/20



SECTION A-A



SECTION B-B



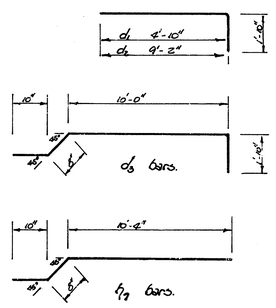
PLAN VIEW
1" = 2'

LISTING OF BARS, DIMENSIONS, & QUANTITIES.

Bar	Number	Length	Weight
a_0	3	9'-2"	18.36 lb.
a_1	1	9'-2"	6.23
a_2	1	9'-7"	6.40
a_3	1	10'-1"	6.75
a_4	1	10'-7"	7.07
a_5	1	11'-1"	7.40
a_6	1	11'-6"	7.68
a_7	1	11'-11"	7.96
a_8	1	12'-5"	8.29
a_9	1	12'-10"	8.57
a_{10}	1	13'-4"	8.90
a_{11}	1	13'-9"	9.19
a_{12}	3	14'-3"	28.56
K_1	2	9'-2"	12.25
d_1	2	6'-8"	8.91
d_2	2	11'-0"	14.70
d_3	9	13'-4"	80.16
J_1	2	3'-9"	5.01
J_2	2	2'-6"	3.34
J_3	2	12'-2"	16.25

Bar	Number	Length	Weight
h_1	2	2'-8"	3.56 lb.
h_2	2	5'-1"	6.79
h_3	2	7'-5"	9.90
h_4	2	9'-10"	13.13
h_5	2	11'-0"	14.70
h_6	2	11'-0"	14.70
h_7	2	12'-1"	16.14
U_1	2	7'-6"	10.02
U_2	2	6'-6"	8.68
U_3	2	6'-1"	8.12
U_4	2	5'-8"	7.57
U_5	2	5'-2"	6.90
U_6	2	4'-9"	6.35
U_7	2	4'-4"	5.78
U_8	2	3'-11"	5.23
U_9	2	3'-6"	4.68
U_{10}	2	3'-1"	4.12
U_{11}	2	2'-8"	3.56
U_{12}	2	4'-2"	5.57

Total Reinforcing Steel = 427.4 lb.
" Concrete = 7.8 cy.



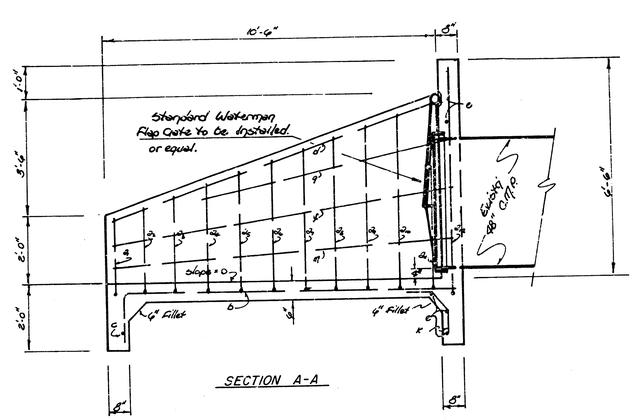
BENDING DIAGRAM

Note -

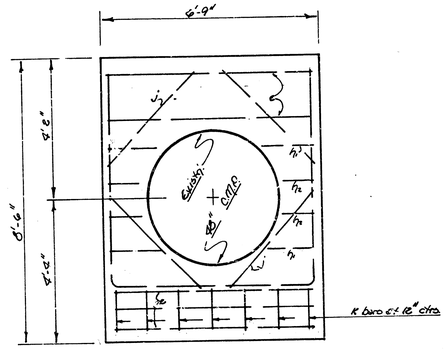
All Reinforcing Bars to be 1/2" ϕ.
All Bars are straight, except those shown in the bending diagrams.
All Edges to have 1/2" beveled edges. Contractor to fill any grooves with mortar and bevel finish.
All Reinforcement (horizontal) to be supported on metal supports or spacers. The Engineer to approve all supports and ties made.
Class A Concrete to be used thru out.

CONCRETE HEADWALL DETAIL

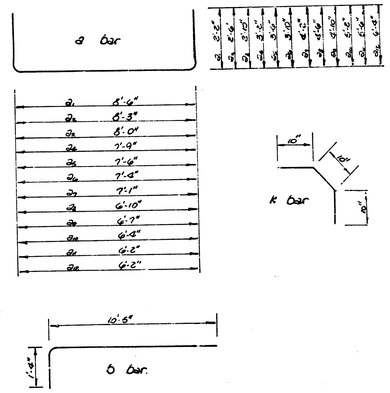
16/20



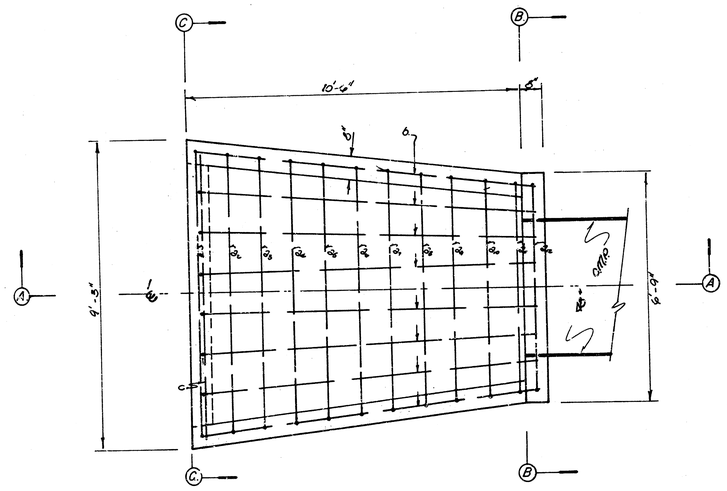
SECTION A-A



SECTION B-B



BENDING DIAGRAMS

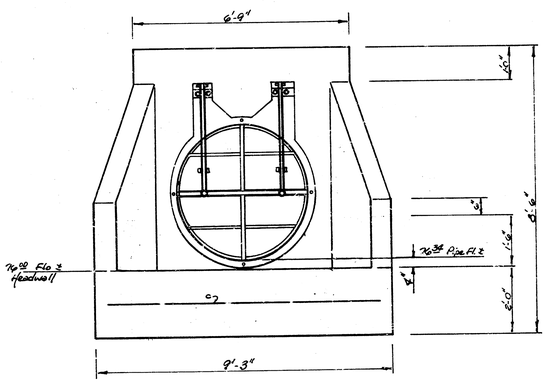


PLAN VIEW
1" = 2'

LISTING OF BARS, DIMENSIONS, & QUANTITIES.

Bar	Number	Length	Shape	Weight
a_1	1	12'-10"		8.50 lb.
a_2	1	13'-3"		8.85
a_3	1	13'-8"		9.13
a_4	1	14'-1"		9.41
a_5	1	14'-6"		9.69
a_6	1	15'-0"		10.02
a_7	1	15'-5"		10.30
a_8	1	15'-10"		10.67
a_9	1	16'-3"		10.86
a_{10}	1	16'-8"		11.14
a_{11}	1	17'-2"		11.47
a_{12}	1	18'-10"		12.67
b	8	11'-9"		62.79
c	1	8'-6"		5.67
d	2	11'-6"		15.36
e	5	6'-5"		21.46
f	2	10'-9"		14.36
g	2	8'-0"		10.69
h_1	2	10'-8"		14.26
h_1	4	1'-6"		4.01
h_2	4	1'-0"		2.67
j	4	4'-0"		10.69
k	7	2'-6"		11.69
Total Reinforcing Steel				384.2 lb.
" Concrete				5.4 c.y.

Bars to be #4 through.

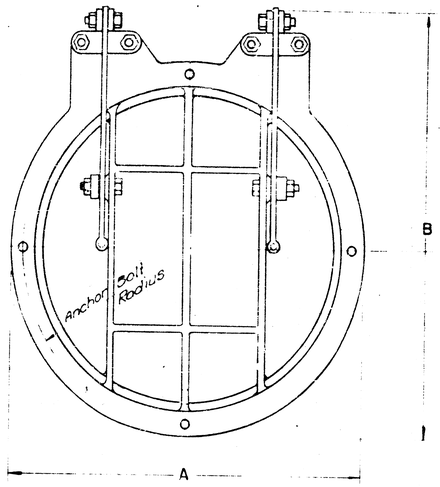


SECTION C-C

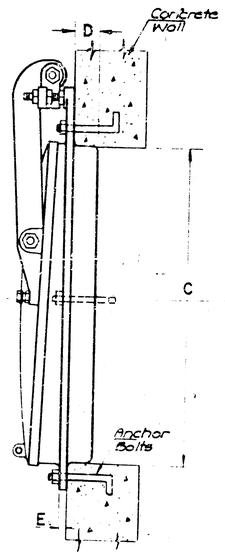
Note-
All Reinforcing Bars to be ½" ϕ.
All Edges to have ½" beveled edges.
Waterman supplied Flap Gate to be installed or equal.
Class A Concrete to be used.
Use a Typical 2" clearance for all bars.

FLAP GATE HEADWALL DETAIL.

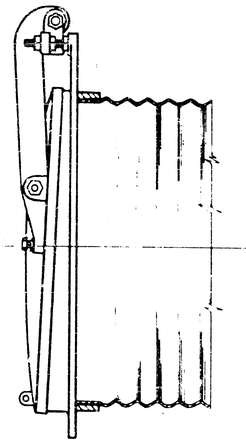
17/20



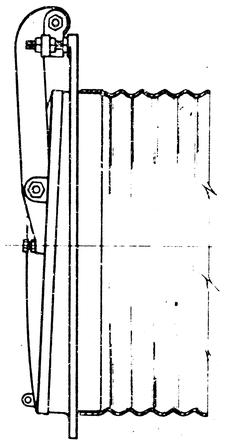
ELEVATION



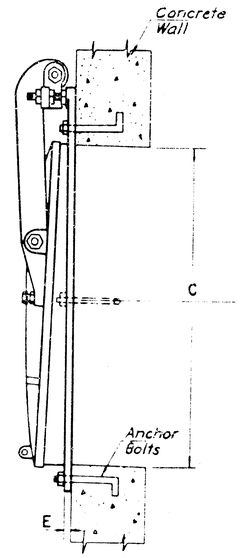
SIDE VIEW & SECTION
THRU CONCRETE WALL
SPIGOT BACK



SIDE VIEW & SECTION
THRU CORRUGATED METAL PIPE
SPIGOT BACK



SIDE VIEW & SECTION
THRU CORRUGATED METAL PIPE
SPIGOT BACK



SIDE VIEW & SECTION
THRU CONCRETE WALL
FLAT BACK

FLAT BACK & SPIGOT BACK CAST IRON FRAME AND GATE

INSTALLATION WITH CONCRETE WALL
& ATTACHED TO CORRUGATED METAL PIPE

Gate Size Diameter	A	B	C	D	E	Weight in Pound	Anchor Bolts Diam.	Anchor Bolts Projection	Anchor Bolts Radius
8"	13½"	14½"	9¼"	2"	1"	50	⅝"	1¾"	5⅜"
10"	16"	16½"	11"	2"	½"	60	⅝"	1¾"	7⅛"
12"	19"	18½"	13"	2"	½"	85	⅝"	1⅞"	8½"
15"	22½"	23¾"	15½"	2"	⅝"	140	¾"	2⅛"	10"
18"	24⅝"	28¼"	19"	2"	⅝"	165	¾"	2⅛"	11⅝"
21"	28"	30½"	22¾"	2"	¾"	225	¾"	2⅛"	13"
24"	32"	35¼"	26"	2½"	¾"	330	¾"	2⅛"	14½"
30"	37"	40"	31½"	2½"	¾"	425	¾"	2⅛"	17½"
36"	44"	49½"	37½"	3"	⅞"	605	⅞"	2⅝"	20½"
42"	50⅜"	58"	43⅝"	3¼"	1"	780	⅞"	2⅝"	24"
48"	54½"	63⅜"	49⅞"	3"	⅝"	750	⅝"	2"	19⅝"
54"	64⅛"	72"	55⅞"	4"	1"	1395	1"	2⅝"	30"
60"	69"	80½"	62"	4"	1⅛"	1710	1"	3"	33"
66"	80"	90	68⅛"	4"	1¼"	2685	1"	3⅛"	33"
72"	82"	95¼"	74½"	4"	1½"	2950	1"	3½"	39⅝"
84"	100"	112¼"	86½"	4"	2"	5500	1⅛"	4⅛"	42⅝"

NOTE: Automatic flap gates shall conform to the dimensions and approximate weights shown in the tables. The gate shall be installed in accordance with the manufacturers' recommendations.

When no water is against the face of the gate, the flap shall seat on the finished frame. Seating surfaces of both frame and flap shall be cast iron and machined to a close fit.

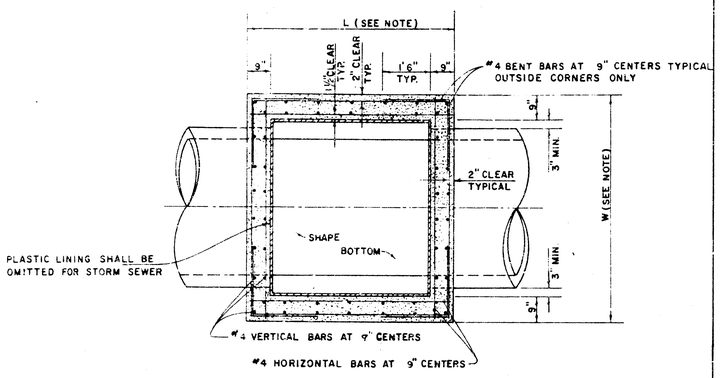
The gate flap, frame and links shall be cast iron. Anchor bolts, assembly bolts and nuts shall be galvanized steel.

The gate is designed to withstand a maximum operating head of Ten (10) feet on the check side, measured from the center line of the gate to the high water level.

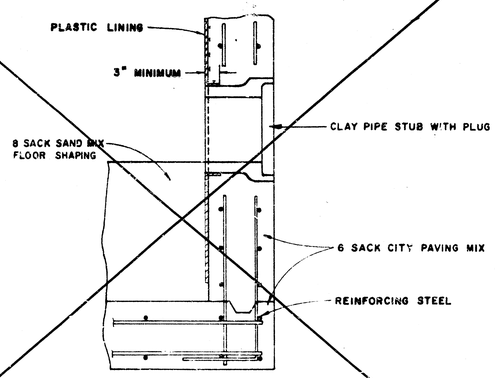
The illustrations, notes and table of dimensions shown are for Armco Model 20C, however, a Standard Waterman Model F-10 Flap Gate or equal may be used.

AUTOMATIC FLAP GATE

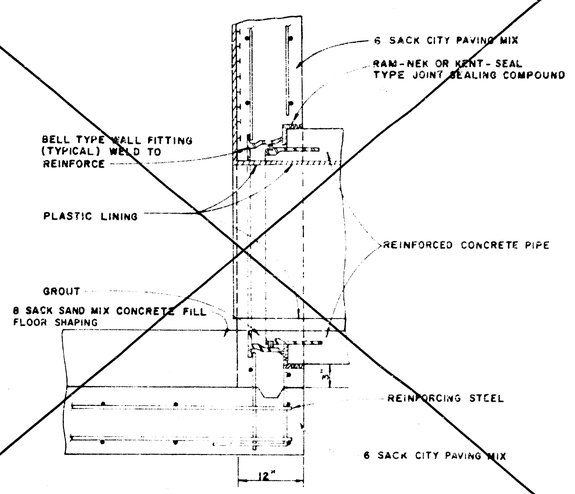
18/20



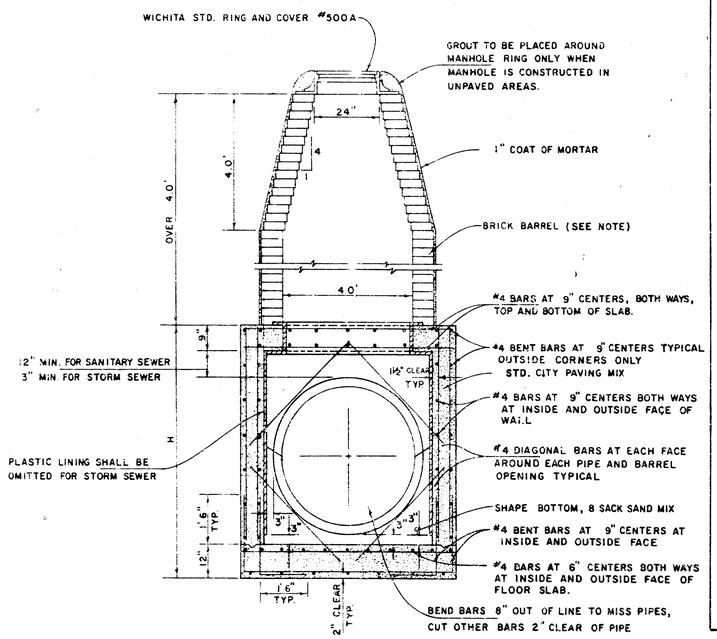
TOP VIEW



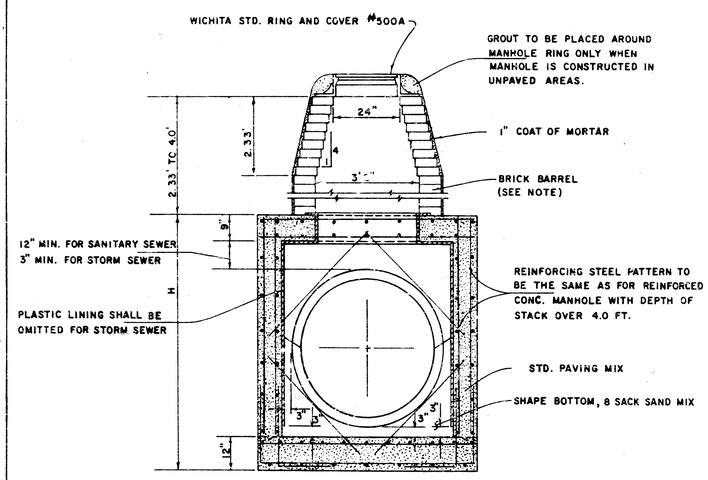
V. C. P. CONNECTION DETAIL
SANITARY SEWER ONLY



R. C. P. CONNECTION DETAIL
SANITARY SEWER ONLY

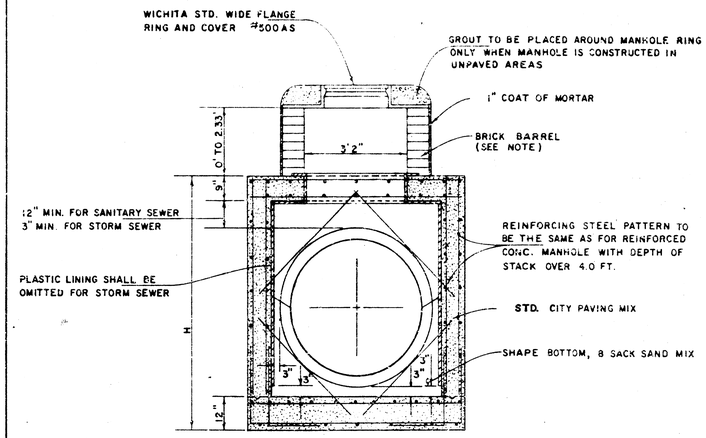


REINFORCED CONCRETE MANHOLE
DEPTH OF STACK: OVER 4.0'
SCALE 1" = 2'



REINFORCED CONCRETE MANHOLE
DEPTH OF STACK: 2.33' TO 4.0'
SCALE 1" = 2'

NOTE :
BRICK BARRELS LESS THEN 16' DEEP SHALL HAVE 8" WALLS EXCEPT WHEN LOCATED WITHIN PUBLIC STREET OR ALLEY PAVEMENT THEN THE WALL SHALL BE 12". BRICK BARRELS MORE THEN 16' DEEP SHALL HAVE 12" WALLS. THE "L" AND "W" DIMENSIONS SHALL BE A MINIMUM OF 5'6" FOR BRICK BARRELS WITH 8" WALLS AND 6'2" FOR BRICK BARRELS WITH 12" WALLS.



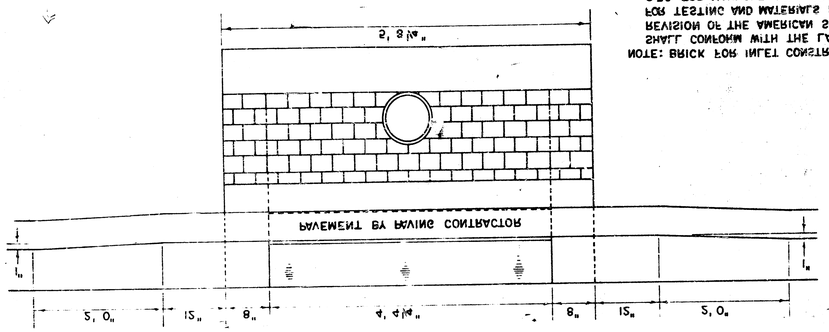
REINFORCED CONCRETE MANHOLE
DEPTH OF STACK: 0' TO 2.33'
SCALE 1" = 2'

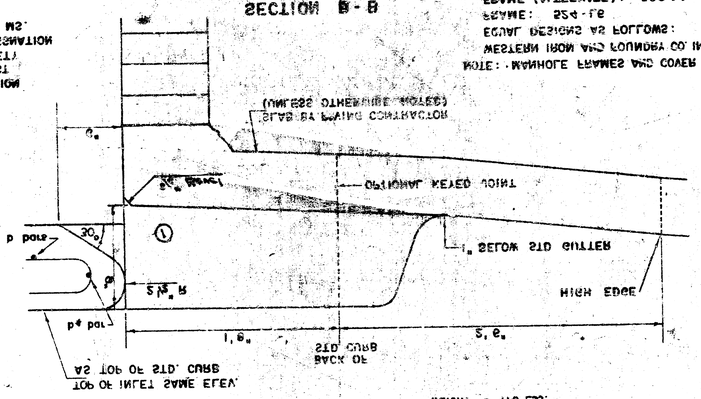
NOTE — H.F.R.C.P. ▬▬▬ STORM SEWER PIPE TO BE USED AT MOST MANHOLE LOCATIONS IN PLACE OF THE CIRCULAR PIPE INDICATED HERE. SEE DETAIL SHEETS 13 & 14 FOR MANHOLE GEOMETRICS.

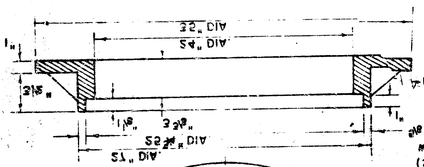
STANDARD DETAILS
REINFORCED CONCRETE MANHOLES
CITY OF WICHITA

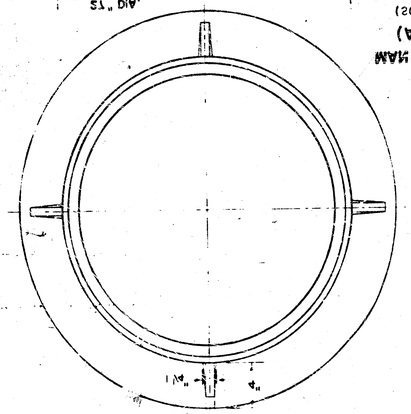
APRIL 1978 REVISED APRIL, 1980

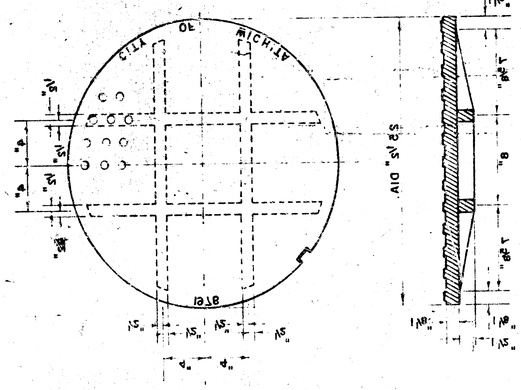
19 77 2D 49











NOTE: CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK WALLS. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE FOR INLET TOPS AND FLOORS SHALL BE [illegible] PAVING MIX.

STEEL SCHEDULE

BAR	a_1	a_2*	b_1 W=4'2"	b_1 W=5'0"	b_1 W=6'0"	b_1 W=7'0"	b_1 W=8'0"	b_2	b_3	b_4	WT. LBS.
NUMBER	8	2	1	3	5	7	9	6	1	1	
SIZE	#4	#4	#4	#4	#4	#4	#4	#4	#4	#6	
LENGTH W=4'2"	6'5"	3'4"	5'5"	–	–	–	–	1'5"	5'6"	5'5"	60*
W=5'0"	8'1"	4'4"	–	5'5"	–	–	–	1'5"	5'6"	5'5"	77*
W=6'0"	10'1"	5'4"	–	–	5'5"	–	–	1'5"	5'6"	5'5"	97*
W=7'0"	11'1"	6'4"	–	–	–	5'5"	–	1'5"	5'6"	5'5"	111*
W=8'0"	12'1"	7'4"	–	–	–	–	5'5"	1'5"	5'6"	5'5"	124*

* NOTE: a_2 BARS TO BE PLACED APPROX. 2" BELOW TOP OF INLET COVER

STANDARD CURB INLET PRECAST TOPS

W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4' 2"	3'6"x5'8 1/4"x7 1/2"	21" & SMALLER	0.46 *
5' 0"	4'4"x5'8 1/4"x7 1/2"	24" & 30"	0.57 *
6' 0"	5'4"x5'8 1/4"x7 1/2"	36" & 42"	0.71 *
7' 0"	6'4"x5'8 1/4"x7 1/2"	48" & 54"	0.84 *
8' 0"	7'4"x5'8 1/4"x7 1/2"	60" & 66"	0.97 *

* GROSS VOLUME

NOTE: MANHOLE FRAMES AND COVER ARE WESTERN IRON AND FOUNDRY CO. INC. OR EQUAL DESIGNS AS FOLLOWS:
FRAME: 524-L6
FRAME (ALTERNATE): 500 A4
COVER: 522 S4 "NOBBY"

NOTE: BRICK FOR INLET CONSTRUCTION SHALL CONFORM WITH THE LATEST REVISION OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS DESIGNATION C-32 FOR MANHOLE BRICK GRADE MS.

① Rev. 5-18-61

DETAIL STANDARD TYPE 1A CURB INLET

CITY OF WICHITA, KS
R.W. BRUGGEMAN — DIR. ENGINEERING

19 4t 3 14

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