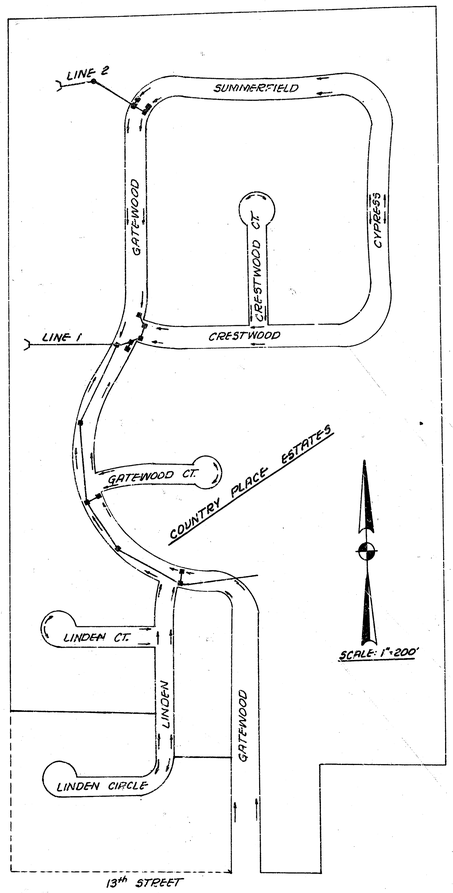
STORM WATER SEWER NO. 153

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE WORK WITH PAVING AND SANITARY SEWER CONTRACTORS; AND CONTACT RELEVANT UTILITY COMPANIES AND OTHER AGENCIES INVOLVED WITH THE FINE ARTS OF THIS PROJECT SITE DEVELOPMENTS.
2. FIELD ENGINEER SHALL TAKE TIES ON ALL IRONS AND THIMBLES IN THE PROJECT AREA PRIOR TO CONSTRUCTION. FIELD ENGINEER SHALL REPLACE ALL SUCH IRONS AND THIMBLES DISTURBED DURING CONSTRUCTION.
3. THE CURB INLETS AS NOTED ON THE PLANS MAY VARY FROM PROPOSED PAVING PLANS. THE FIELD ENGINEER SHALL LOCATE CURB INLETS WITH REFERENCE TO PROPOSED PAVING PLANS OF THE PERTINENT STREETS.
4. ALL CORRUGATED METAL PIPE SHALL BE FULLY COATED (FC) BOTH INSIDE AND OUTSIDE WITH BITUMINOUS OR POLYMERIC AS SPECIFIED IN AASHO DESIGNATION M246-78, TYPE B. ALL SUCH PIPES FOR SIZES 21" AND LESS DIAMETER SHALL HAVE HELICALLY CORRUGATIONS. ALL SUCH PIPES FOR SIZES 24" AND LARGER DIAMETER SHALL HAVE FULLY PAVED (FP) SMOOTH FLOW INTERIORS.
5. ALL CONCRETE SHALL BE "6-SACK CONCRETE" UNLESS OTHERWISE NOTED.
6. EARTHWORK DOWNSTREAM FROM HEADWALLS AND FOR RIP-RAP SHALL BE PAID FOR IN ITEMS BID FOR HEADWALLS, PIPES AND/OR RIP-RAP.
7. TREES TO BE REMOVED ARE MARKED THUS ⁂ EXCEPT THAT ANY TREE MARKED FOR REMOVAL WHICH IN THE OPINION OF THE ENGINEER CAN BE SAVED, SHALL BE SPARED.
8. HEADWALLS AT PIPE OUTFALL SHALL BE CONSTRUCTED TO ALIGN WITH THE SLOPE OF BANKS IN ORDER THAT WALL PROTRUSION IS MINIMUM. WHERE SUCH PROTRUSION CANNOT BE AVOIDED, FILL AROUND THE WALLS AT APPROXIMATELY 5:1 SIDE SLOPE SO HEADWALL APPEARS ENTIRELY RECESSED.
9. CONTRACTOR SHALL HAVE THE OPTION TO INSTALL PRE-CAST TYPE I-A CURB INLET IN LIEU OF THE BRICK TYPE CONSTRUCTION, SEE STANDARD DETAIL PRE-CAST TYPE I-A INLET DATED AUGUST, 1979.



DEAN SELLERS, ACTING CITY ENGINEER
CITY OF WICHITA, KANSAS

PROJECT NO. 468-76-245-80716-000-000-001

DATE: _____

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BM 186.09 R.R. Spk. NW face Osage Orange hedge in hedge row N-S near SE cor. Crestwood & Gatewood.

12" brick wall, all sides

42" Pipe

Bevel Pipe 25°

Bevel Pipe 32°

35'

27" Pipe

SPECIAL CURB INLET @ Sta. 4+31
No Scale

Contractor may pre-cast top

W.L. Country Place Estates Sta. 1+00

80' FLOODWAY

Sta. 1+50 Short Pipe

SCALE: 1" = 20'

Lot 21, Blk 1

Remove fence

Constr. 42" SWS Line

Lot Line
℄ 20' Storm Sewer & Drainage Easement

Constr. 42" Headwall

Lot 20, Blk 1

Install Type 3 Rip-Rap

30' Utility Easement

Constr. Type 1A Curb Inlet, w=4'6", Top 181.70
Street Sta. 19+60.40

Install 27' of 15" Pipe USFL 179.26, DSFL 178.99

Constr. Type 1A Curb Inlet, w=4'6", Top 181.90
Street Sta. 0+40.26

Install 39' of 18" Pipe, USFL 178.19, DSFL 177.80

Install 26' of 21" Pipe, USFL 177.30, DSFL 177.04

Constr. Type 1A Curb Inlet, w=4'2", Top 181.30
Street Sta. 18+94.98

Install 47' of 24" Pipe, USFL 176.79, DSFL 176.32

Constr. Spec. Type 1A Curb Inlet, w=5'8", Top 181.34
Street Sta. 18+62.31, See Detail this sheet.
SWS Sta. 4+31

Remove 12" Pipe

Iron: Gatewood Sta. 19+52.19'
Crestwood Sta. 0+31.68

8" Water

℄ CRESTWOOD

35' @ 4%

℄ Gate

8" San Sewer

Constr. Type 1A Curb Inlet
w=4'2", Top 181.90
Street Sta. 0+38.28

Iron: Gatewood Sta. 18+92.95'
Crestwood Sta. 0+29.94

Install 4' of 15" Pipe
USFL 178.89, DSFL 178.79

Constr. Type 1A Curb Inlet, w=4'2"
Top 181.33, Street Sta. 18+76.98

℄ GATEWOOD

6 yr. @ 4%

35' @ 4%

8" Water Line

Sta. 4+91 Constr. Spec. Inlet w=5'8"
Top 181.34

LINE 1

Ground Line

Constr. 42" Headwall

R. 145.8 ℄ of Middle Fork Gypsum Creek

Sta. 1+50 Short Pipe

Grade to drain

Floodway Line

Ground Line

Install Type 3 Rip-Rap

170.37

178.67

21" 174.17

24" 176.32

221' SWS @ + 0.83%
Alt. #1 42" RCP
Alt. #2 42" CMP (FP & FC)

170.78

171.40

172.42

185 180 175 170

0 1 2 3 4

SWS # 153 Line 1 Sheet 2 of 9

2/20

DLK 353 Line 2 WSK

PLATE 1. KEUFFEL & ESSER CO.

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SCALE: 1"=20'

27" SWS, See Sheet 2

Sta. 4+31
Constr. Inlet, See Sheet 2

8" San. Sewer

8" Water

Const: 27" SWS

12" Gas

35' R/W

66' R/W

8" San. Sewer

Sta. 6+94
Constr. Type 1A Curb Inlet, w=5'0", Top 182.15
Street Sta. 14+00

GATEWOOD Ct.

12" Gas

Instl Street Sta. 13+90.68
Constr. Type 1A Curb Inlet, w=4'2", Top 182.80
Street Sta. 13+80.61

Install 37' of 15 Pipe, USFL 179.96, DSFL 179.99

10" Water

℄ GATEWOOD

Constr. 24" SWS

12" Gas

Sta. 9+25
Constr. Type 1A Curb Inlet, w=5'0", Top 183.21
Street Sta. 13+80.61

8" San. Sewer

Sta. 10+40

Const. 24" SWS
See Sheet 4

Sta. 10+86, Constr. Type 1A Curb Inlet, w=2'0", Top 183.04
Street Sta. 13+25

For Profile, See Sheet 4

48" SWS See Sheet 2

LINE 1

Constr. Inlet Sta. 4+31 w=5.0
Top 181.34

Ground Line

Proposed Right Curb

42" out 172.67
174.17

8" San. Sewer
N 162.22±

Sta. 6+94 Constr. Inlet
Top 182.15 w=5'0"

174.40
174.83

2" Gas Line

Sta. 9+25 Constr. Inlet
Top 183.21 w=5'0"

178.35
174.35

Sta. 10+40
Match Line

178.95

265' SWS @ + 0.86%
Alt. #1 27" RCP
Alt. #2 27" CMP (FP & FC)

229' SWS @ +0.86%
Alt #1 27" RCP
Alt #2 27" CMP (FP & FC)

135' SWS @ +1.00%
Alt #1 24" RCP
Alt #2 24" CMP (FP & FC)

174.75 (5) 175.59 (6) 174.40 (7) 177.30 (8) 178.14 (9) 178.35 (10)

Street Survey
W&K

SWS #153 Line 1 Sheet 3 of 9

PLATE 1 PLAN PROFILE
REVISED 8-19-63

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SCALE: 1"=20'

Sta. 10+86
Constr. Inlet, See Sheet 3

℄ 8" San. Sewer

Rt/w

Lt

℄ 8" Water

Constr. 24" SWS2

12

35' RID

℄ 2" Gas

Constr. Type 1A Curb Inlet, w=4'2", Top 187.37
Street Sta. 10+08.31

Install 37' of 15" Pipe, USFL 183.93, DSFL 183.56

℄ 8" Water

℄ GATEWOOD

5" Constr. 21" SWS

14

15

℄ 2" Gas

℄ LINDEN

Sta. 13+13
Constr. Type 1A Curb Inlet, w=5'0", Top 187.10
Street Sta. 10+08.31

Iron: Street Sta. 10+16.72

P.I. of Street R/w

12'

Sta. 15+59, End of Project
Install 2" wooden plank pipe plug
at no additional cost.

8" San. Sewer

LINE 1

Sta. 10+60 Match Line

Sta. 10+88 Constr. Inlet w=5'0"
Top 185.06

8" San. Sewer
℄ 176.91

Sta. 13+13 Constr. Inlet w=5'0"
Top 187.10

Sta. 15+59
End of Project

Proposed Top of Rt. Curb

Ground Line

Proposed Top of Rt. Curb

Proposed Pav't Surface

Proposed Parking Surface

185

180

175

179.95

180.23
180.25

182.50
182.79

184.56

8" Water Line

8" Water Line

Install 2" wooden plank pipe plug
at no additional cost.

8" San. Sewer, ℄ 176.3±

28'@+1.00%
Alt #1 24" RCP
Alt #2 24" CMP (FP & FC)

225' SWS @+1.00%
Alt #1 24" RCP
Alt #2 24" CMP (FP & FC)

246' SWS @+0.72%
Alt #1 21" RCP
Alt #2 21" CMP (FC)

195

190

185

180

11 — 180.37

12 — 181.37

13 — 182.37

14 — 183.42

15 — 184.14

Old 3rd Line 5; Street Survey
W.S.K.

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BM 186.16 R.R. Spk N-face P.P E-side Gatewood. 30'± S. of P.C. on W.L. Lot 1, Blk 2.

Lot 26, Blk 1

Constr. Type 1A Curb Inlet, w=4'2" Top 184.79
Street Sta. 25+81.88

Install 4' of 15" Pipe, USFL 181.00, DSFL 180.90

Constr. Type A 5'ϕ Manhole

14.0' Lot Line

℄ Constr. 21" SWS

20' Storm Sewer & Drainage Easmt.

Remove fence

Constr. 21" SWS

Sta 3+03.14 Constr. Type 1A Curb Inlet, W=4'2" Top 184.73, Street Sta. 25+75

Constr. Headwall

Install Type 3 Rip-Rap

Base Line 2

State Hwy. 99 Frontage Road

County Road

FLOODWAY

Lot 25, Blk 1

Lot 24, Blk 1

℄ GATEWOOD

R 173.51'

12" Gas

8" San. Sewer

8" Water

Constr. Type 1A Curb Inlet, w=4'2" Top 184.82
Street Sta. 25+84.55

Install 4' of 15" Pipe, USFL 181.50, DSFL 181.40

Constr. Type 1A Curb Inlet, w=4'2", Top 184.74
Street Sta. 25+75

Install 39' of 15" Pipe, USFL 181.30, DSFL 180.90

Lot 1, Blk 2

Lot 8, Blk 2

SCALE: 1"=20'

DLK 340 Line 3
WSK

LINE 2

185 | 180 | 175 | 170

℄ Ninety Eight Gypsum Creek

Sta. 0+46 Start Pipe

Grade to drain

Grade to drain

Sta. 1+55.64 Constr. Manhole Type A 5'ϕ

Sta. 3+03.14 Constr. Type 1A Curb Inlet, w=4'2" Top 184.73

Ground Line

Constr. Headwall

Install Type 3 Rip-Rap

172.95

176.89
176.61

180.15

109.86' SWS @ +2.4%
Alt #1 21" RCP
Alt #2 21" CMP (FC)

147.28' SWS @ +2.4%
Alt #1 21" RCP
Alt #2 21" CMP (FC)

175.25

177.67

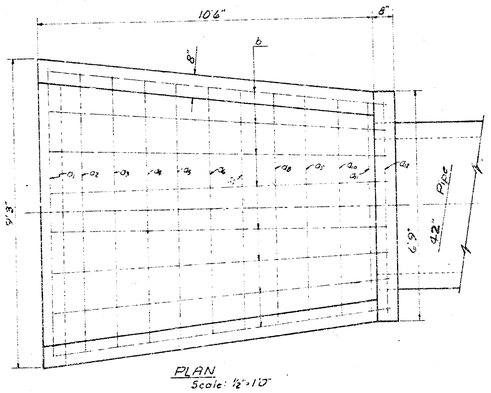
180.07

0 1 2 3

SWS # 153 Country Place Estates, Line 2 Sheet 5 of 9

5/8

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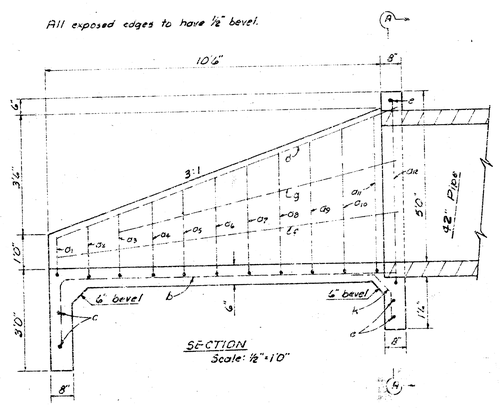


PLAN
Scale: ½"=1'0"

TABLE OF QUANTITIES				
BAR	NUMBER	LENGTH	SHAPE	WEIGHT
a_1	1	10'10"		7.24
a_2	1	11'3"		7.52
a_3	1	11'8"		7.79
a_4	1	12'1"		8.07
a_5	1	12'6"		8.35
a_6	1	13'0"		8.68
a_7	1	13'5"		8.96
a_8	1	13'10"		9.24
a_9	1	14'3"		9.52
a_{10}	1	14'8"		9.80
a_{11}	1	15'2"		10.13
a_{12}	1	16'10"		11.24
b	8	12'7"		67.25
c	3	8'6"		11.36
d	2	11'6"		15.36
e	3	12'5"		12.91
f	2	10'9"		14.36
g	3	9'0"		12.02
h_1	4	1'2"		3.12
h_2	4	8"		1.78
j	4	3'3"		8.68
k	7	2'6"		11.69
Rebars (lbs)				245.07
Concrete (C.Y.)				4.75

All rebars to be #4

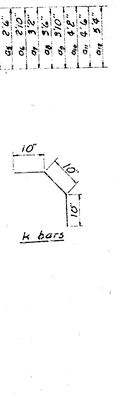
All exposed edges to have ½" bevel.



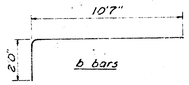
SECTION
Scale: ½"=1'0"

a bars

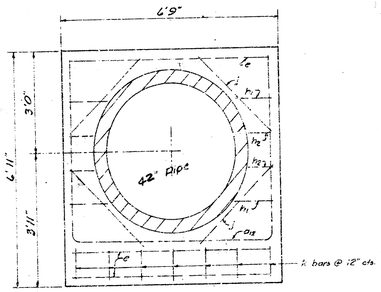
a_1	8'6"
a_2	8'3"
a_3	8'0"
a_4	7'9"
a_5	7'6"
a_6	7'4"
a_7	7'1"
a_8	6'10"
a_9	6'7"
a_{10}	6'4"
a_{11}	6'2"
a_{12}	4'2"



k bars

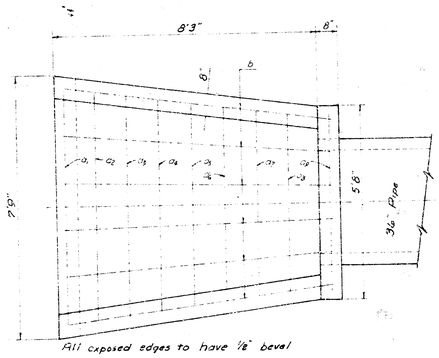


b bars



SECTION A-A
Scale: ½"=1'0"

HEADWALL FOR 42" PIPE

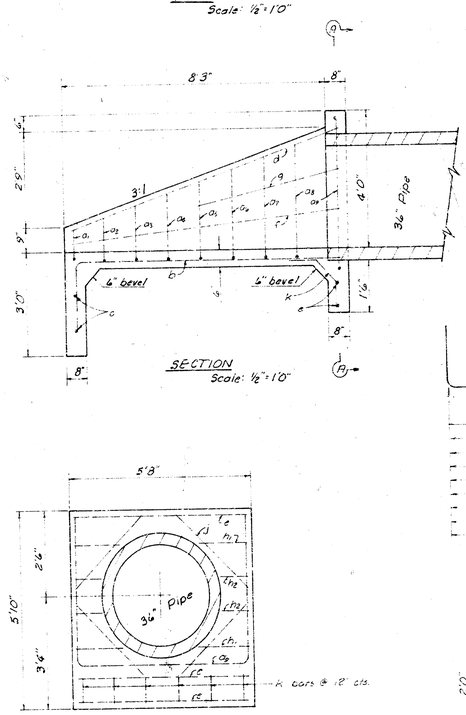


All exposed edges to have ½" bevel

PLAN
Scale: ½"=1'0"

TABLE OF QUANTITIES				
BAR	NUMBER	LENGTH	SHAPE	WEIGHT
a_1	1	8'7"		5.73
a_2	1	9'0"		6.01
a_3	1	9'7"		6.90
a_4	1	10'0"		6.28
a_5	1	10'5"		6.96
a_6	1	10'10"		7.24
a_7	1	11'3"		7.52
a_8	1	11'10"		7.90
a_9	1	12'0"		8.35
b	6	10'4"		41.42
c	2	7'0"		9.35
d	2	9'0"		12.02
e	3	9'4"		12.49
f	2	8'5"		11.24
g	2	4'2"		4.12
h_1	4	1'6"		6.01
h_2	4	1'0"		2.23
j	4	3'0"		8.02
k	6	2'6"		10.02
Total Rebars, lbs				172.91
Conc. C.Y.				3.20

All Rebars to be #3

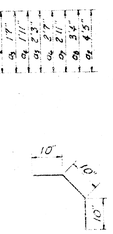


SECTION
Scale: ½"=1'0"

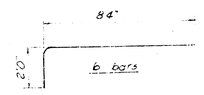
SECTION A-A
Scale: ½"=1'0"

a bars

a_1	6'11"
a_2	6'8"
a_3	6'5"
a_4	6'2"
a_5	5'11"
a_6	5'8"
a_7	5'5"
a_8	5'2"
a_9	5'2"



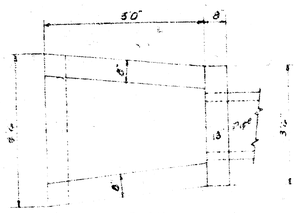
k bars



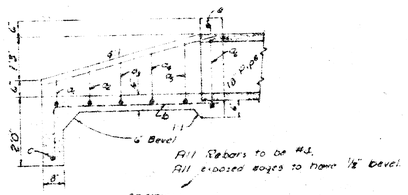
b bars

HEADWALL FOR 36" PIPE

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PLAN
Scale ½"=1'0"



SECTION
Scale ½"=1'0"

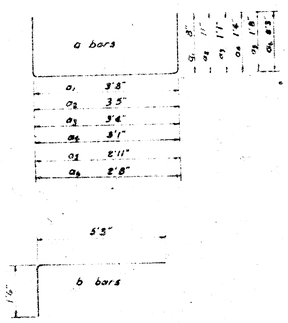
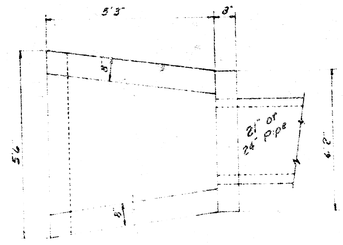


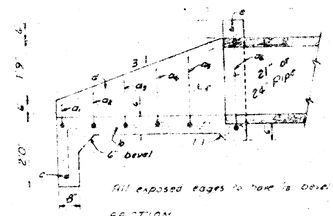
TABLE OF QUANTITIES

BAR	NUMBER	LENGTH	SHAPE	WEIGHT
a_1	1	5'0"		3.34
a_2	1	5'3"		3.51
a_3	1	5'6"		3.67
a_4	1	5'9"		3.96
a_5	1	6'3"		4.16
a_6	1	7'2"		4.79
b	5	4'9"		22.56
c	1	4'0"		2.67
d	2	5'3"		7.01
e	1	3'8"		2.12
Total Rebars, lbs.				53.57
Conc. C.Y.				1.08

HEADWALL FOR 18" PIPE



PLAN
Scale ½"=1'0"



SECTION
Scale ½"=1'0"

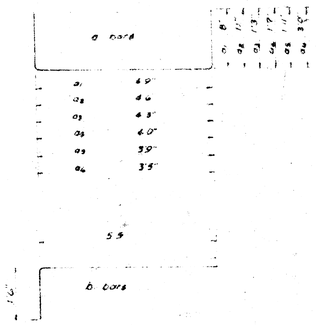
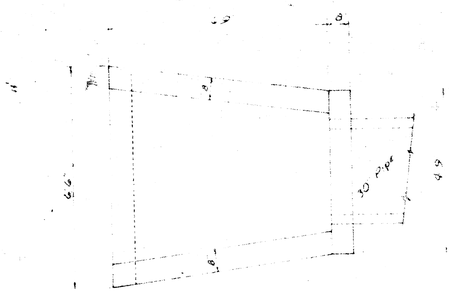


TABLE OF QUANTITIES

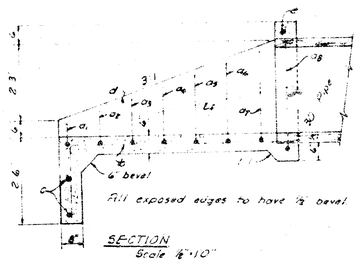
BAR	NUMBER	LENGTH	SHAPE	WEIGHT
a_1	1	4'1"		4.06
a_2	1	4'4"		4.23
a_3	1	4'9"		4.51
a_4	1	7'2"		4.79
a_5	1	7'7"		5.07
a_6	1	9'5"		4.20
b	6	6'11"		27.72
c	1	5'0"		3.37
d	2	5'10"		7.79
e	1	3'10"		2.56
f	2	2'9"		3.42
Total Rebar, lbs				96.03
Concrete, C.Y.				1.40

All Rebars to be #4

HEADWALL FOR 21" OR 24" PIPE



PLAN
Scale ½"=1'0"



SECTION
Scale ½"=1'0"

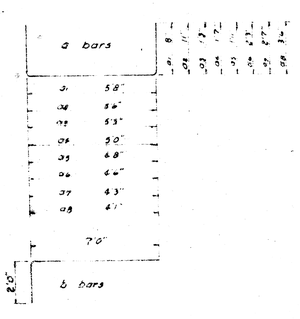


TABLE OF QUANTITIES

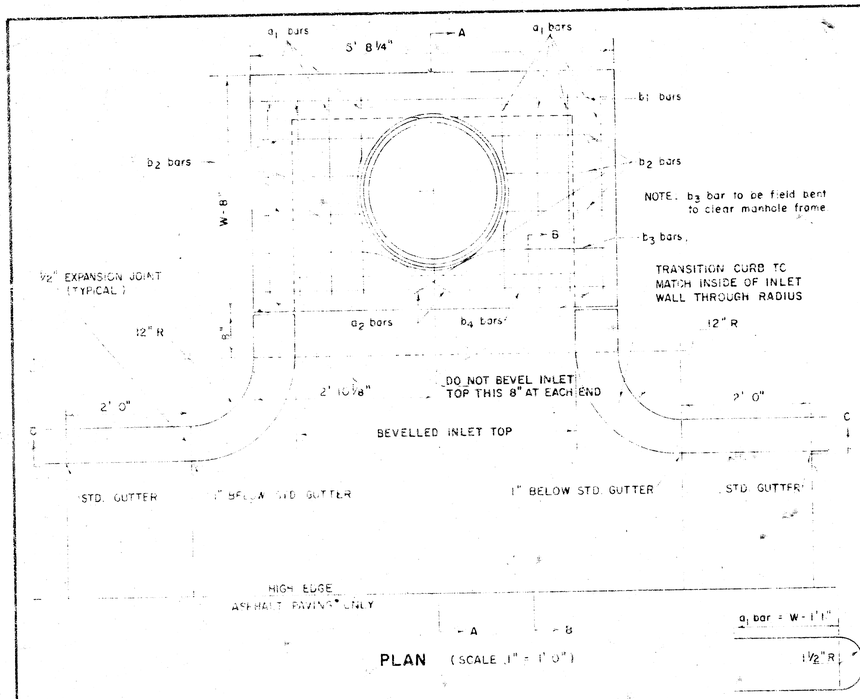
BARS	NUMBER	LENGTH	SHAPE	WEIGHT
a_1	1	7'0"		6.48
a_2	1	7'4"		3.90
a_3	1	7'9"		5.18
a_4	1	8'2"		5.44
a_5	1	8'6"		5.68
a_6	1	9'0"		6.01
a_7	1	9'3"		6.29
a_8	1	11'1"		7.40
b	7	9'0"		37.13
c	2	4'0"		8.02
d	2	7'4"		10.02
e	1	4'5"		2.95
f	2	4'3"		5.68
Total Rebars, lbs				109.40
Concrete, C.Y.				2.09

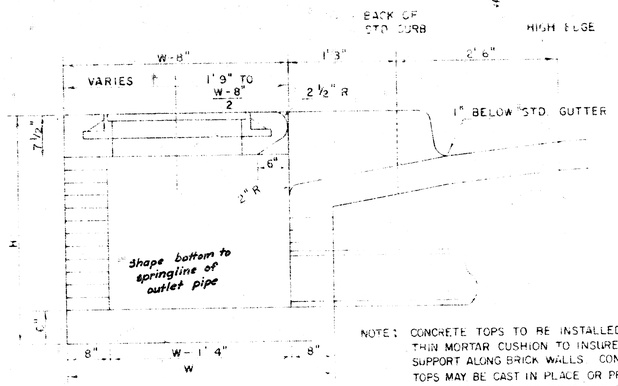
All Rebars to be #4

HEADWALL FOR 30" PIPE

HEADWALL FOR 21" Pipe
SWS # 153, Sheet 7 of 9

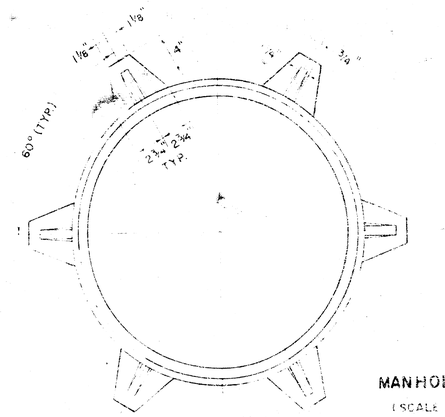
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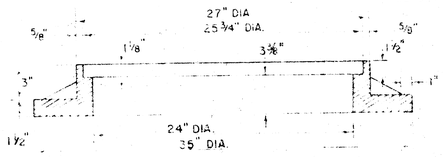


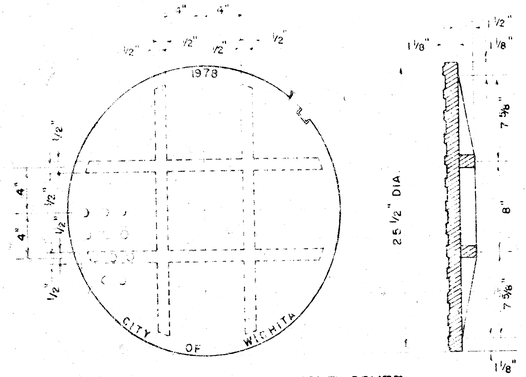
SECTION A-A
(SCALE 1" = 1'0")

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 6-SACK PAVING MIX.

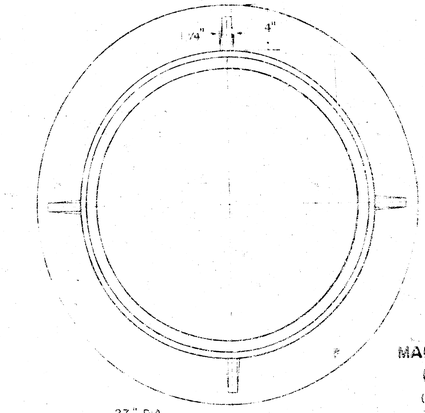


MANHOLE FRAME
(SCALE 1" = 6")
WEIGHT = 180 LBS.





MANHOLE COVER
(SCALE 1" = 6")
WEIGHT = 170 LBS.



MANHOLE FRAME (ALTERNATE)
(SCALE 1" = 6")
WEIGHT = 180 LBS.

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	1	5	7	9	6	1	1	
SIZE	#4	#5	#6	#4	#4	#4	#4	#4	#4	#6	
LENGTH W=4'2"	6'5"	5'4"	5'5"	–	–	–	–	1'5"	5'6"	5'5"	60#
LENGTH W=5'0"	8'1"	6'4"	–	5'5"	–	–	–	1'5"	5'6"	5'5"	77#
LENGTH W=6'0"	10'1"	7'4"	–	–	5'5"	–	–	1'5"	5'6"	5'5"	97#
LENGTH W=7'0"	11'1"	8'4"	–	–	–	5'5"	–	1'5"	5'6"	5'5"	111#
LENGTH W=8'0"	12'1"	9'4"	–	–	–	–	5'5"	1'5"	5'6"	5'5"	124#

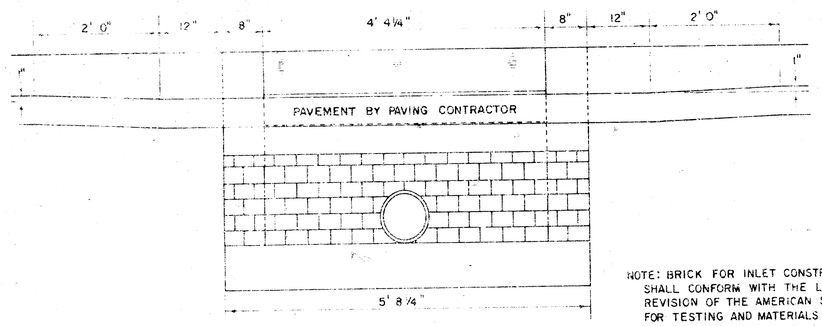
* NOTE: a_2 BARS TO BE PLACED APPROX. 2" BELOW TOP OF INLET COVER

BENDING DIAGRAM

STANDARD CURB INLET PRECAST TOPS

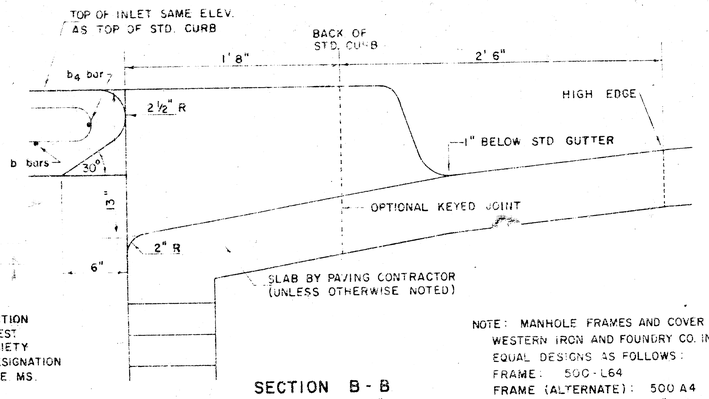
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4' 2"	36"x5'8 1/4"x7 1/2"	21" & SMALLER	0.46 *
5' 0"	44"x5'8 1/4"x7 1/2"	24" & 30"	0.57 *
6' 0"	54"x5'8 1/4"x7 1/2"	36" & 42"	0.71 *
7' 0"	64"x5'8 1/4"x7 1/2"	48" & 54"	0.84 *
8' 0"	74"x5'8 1/4"x7 1/2"	60" & 66"	0.97 *

* GROSS VOLUME



SECTION C-C
(SCALE 1" = 1'0")

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.



SECTION B-B
(SCALE 1" = 6")

NOTE: MANHOLE FRAMES AND COVER ARE WESTERN IRON AND FOUNDRY CO. INC. OR EQUAL DESIGNS AS FOLLOWS:
FRAME: 500-L64
FRAME (ALTERNATE): 500 A4
COVER: 222 S4 "NOBBY"

DETAIL STANDARD TYPE IA CURB INLET

CITY OF WICHITA, KANSAS

R. W. LINN — CITY ENGINEER

OCTOBER 1978

SWS #153

Sheet 9 of 9

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