4MC-002

FOUR MILE CREEK

CONSTRUCTION PLANS FOR A

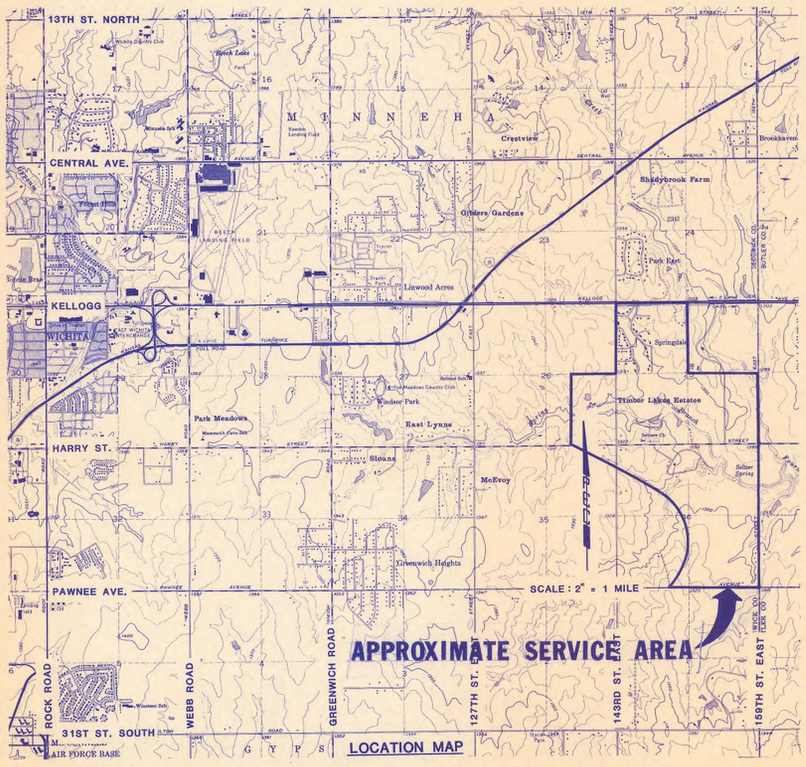
SANITARY SEWER INTERCEPTOR

IN THE

FOUR MILE CREEK JOINT SEWER DISTRICT

Project No. 34-81051-2-024

JANUARY, 1983



INDEX OF SHEETS

APPROVED BY:
SEDGWICK COUNTY
BUREAU OF PUBLIC SERVICES

DIRECTOR _____ DATE _____

APPROVED BY:
BOARD OF COUNTY COMMISSIONERS

CHAIR _____ DATE _____

FILED IN THE OFFICE OF:
THE SEDGWICK COUNTY CLERK

COUNTY CLERK _____ DATE _____

RECORD DRAWING
MDK PROJ. ENG. 4/27/94 DATE
GRG RES. ENG. 4/15/94 DATE

MICHAEL D. SCHOMAKER LICENSED 8778 KANSAS PROFESSIONAL ENGINEER

DARREL LYNN MOORE LICENSED 9055 KANSAS PROFESSIONAL ENGINEER

UPDATED PER CURRENT STANDARDS 5/92

EPA Project No. C200691-02

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
WICHITA, KANSAS

4MC-002

SCHEDULE OF SHEETS

STATION TO STATION	SHEET NO.
0+00.00 to 9+00.00	4
9+00.00 to 15+58.00	5
15+58.00 to 20+83.91 back 17+92.05 ahead	6
20+83.91 back to 26+54.75 17+92.05 ahead	7
26+54.75 to 37+23.59	8
37+23.59 to 47+68.10	9

AERIAL PHOTO PROVIDED BY M.J. HARDEN ASSOCIATES, INC. FLOWN MARCH, 1981

SEE SHEET NO. 10 FOR GENERAL NOTES

RECORD DRAWING
MDK PROJ. ENG. 4/27/94 DATE
GRG RES. ENG. 5/15/94 DAT

CONSTRUCTION SEQUENCING

THE CONTRACTOR SHALL SUBMIT HIS PROPOSED CONSTRUCTION SCHEDULE TO THE ENGINEER FOR APPROVAL AT LEAST 10 DAYS PRIOR TO THE NOTICE TO PROCEED. THE CONTRACTORS PROPOSED SCHEDULE SHALL INCLUDE, BUT SHALL NOT NECESSARILY BE LIMITED TO THE FOLLOWING ITEMS:

1. DRAIN THE LAKE BY OPENING VALVES ON THE TWO DRAIN PIPES AT THE DAM. SEE DRAINING LAKE AND DAM MODIFICATIONS NOTE, SHT. 10.
2. CONSTRUCT SANITARY SEWER AND MANHOLES BETWEEN MH TA-8 AND MH TA-14. ALSO, COMPLETE IMPROVEMENTS TO THE DRAIN PIPES AND VALVES AT THE DAM. THE SANITARY SEWER BETWEEN MH'S TA-8 AND TA-14 SHALL BE TELEVISED AND ACCEPTED BY THE OWNER PRIOR TO ALLOWING THE LAKE TO REFILL. THE CONTRACTOR SHALL SUBSTANTIALLY COMPLETE THIS LINE, INCLUDING ALL BACKFILL, SEEDING, MULCHING, AND TESTING PRIOR TO BEGINNING WORK ON ANY OTHER PORTION OF THE PROJECT. UPON COMPLETION OF THE ABOVE LISTED CONSTRUCTION, THE CONTRACTOR SHALL CLOSE THE VALVES AT THE DAM AND ALLOW THE LAKE TO REFILL. PROPOSED MH TA-10 SHALL BE CONSTRUCTED AROUND THE EXISTING 18" PIPE BETWEEN EXISTING MH TLS-9 AND MH TLS-10 AND IT SHALL REMAIN IN SERVICE.
3. CONSTRUCT SANITARY SEWER BETWEEN EXISTING MH TA-4 AND PROPOSED MH TA-8.
4. REMOVE EXISTING SPIROLITE MH TA-4 AND REPLACE WITH A 5 FT. DIAMETER TYPE C MH. INSTALL TEMPORARY 36" PLUG IN THE 36" PIPE ENTERING MH TA-4.
5. CONSTRUCT SANITARY SEWER BETWEEN PROPOSED MH TA-14 AND EXISTING MH TA-22. MH'S TA-15 AND TA-18 SHALL BE CONSTRUCTED AROUND THE EXISTING LINES. THE EXISTING LINE BETWEEN EXISTING MH TLS-27 AND PROPOSED MH TA-15 SHALL REMAIN IN SERVICE UNTIL THE REMAINDER OF THE PROJECT IS ACCEPTED BY THE OWNER. THE EXISTING 21" PIPE THAT PROPOSED MH TA-18 WILL BE BUILT AROUND SHALL REMAIN IN SERVICE.
6. BREAK INTO THE EXISTING LINE IN PROPOSED MH TA-10. THE EXISTING PIPE SHALL BE CUT AT THE MANHOLE WALL ENTERING AND EXITING THE MANHOLE AND REMOVED. THE REMAINING PIPE BETWEEN EXISTING MH TLS-9 AND PROPOSED MA TA-10 SHALL BE ABANDONED IN PLACE BY PLUGGING BOTH ENDS WITH A 12" THICK CONCRETE PLUG, AS SHOWN IN THE PLANS.
7. BREAK INTO THE EXISTING LINE IN PROPOSED MH TA-15. THE EXISTING PIPE SHALL BE CUT AT THE MANHOLE WALL ENTERING AND EXITING THE MH. THE PIPE BETWEEN EXISTING MH TLS-27 AND PROPOSED MH TA-15 SHALL BE ABANDONED IN PLACE BY PLUGGING BOTH ENDS WITH A 12" THICK CONCRETE PLUG, AS SHOWN IN THE PLANS.
8. BREAK INTO THE EXISTING LINE IN PROPOSED MH TA-18. THE EXISTING PIPE FROM THE NORTH SHALL BE CUT AT THE MH WALL. THE PIPE BETWEEN EXISTING MH SHI-2 AND PROPOSED MH TA-18 SHALL BE REMOVED AND RESET, AS SHOWN IN THE PLANS. THE CONTRACTOR SHALL PROVIDE TEMPORARY PUMPING OF WASTEWATER FLOWS TO PERFORM THIS WORK. UPON COMPLETION OF THIS WORK, THE CONTRACTOR SHALL PLUG THE EXISTING SANITARY SEWER BETWEEN EXISTING MH SHI-1 AND MH SHI-2 WITH A 12" THICK CONCRETE PLUG AT EACH MANHOLE.
9. PLUG AND ABANDON THE EXISTING 12" SANITARY SEWER BETWEEN EXISTING MH SHI-7 AND EXISTING MH TA-22 WITH A 12" THICK CONCRETE PLUG AT EACH MANHOLE.
10. FOR REHABILITATION OF EXISTING MH'S TA-22, TLS-9, TLS-27, SHI-1, SHI-2, AND SHI-7, TLS-25 SEE GENERAL NOTES.
11. THE FOLLOWING MH'S WERE RAISED: TA-4, MH EAST OF TA-8

SCALE: 1" = 200'

LEGEND

Existing Sanitary Sewer

Proposed Interceptor

MICHAEL D. SCHOWALTER LICENSED 6778 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date
1	Updated per current standards	RJ	5/92

SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E.
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

KEY MAP

SANITARY SEWER INTERCEPTOR
FOUR MILE CREEK JOINT SEWER DISTRICT

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by MDS	Job No. 81051-2	Sht. 2	of 14
Drawn by TLS	Date Jan. 1983		

FOUR MILE CREEK

SECTION CORNER TIES

SECTION 25

CENTER	568,990.0631 N	387,931.4494 E
	(CALCULATED)	
SOUTH 1/4 CORNER	566,334.7546 N	387,974.1210 E
	1/2" IRON PIPE IN THIMBLE	
	123.64' SE, NAIL AND SHINER IN NORTHEAST FACE UTILITY POLE	
	59.91' N, NAIL AND SHINER IN WEST FACE FENCE POST	
	88.13' NW, NAIL AND SHINER IN WEST FACE FENCE POST	
SOUTHWEST CORNER	566,288.8954 N	385,318.8960 E
	3/4" IRON PIPE IN THIMBLE	
	56.70' NE, NAIL AND SHINER IN SOUTHEAST FACE UTILITY POLE	
	58.57' NW, NAIL AND SHINER IN EAST FACE UTILITY POLE	
	41.29' SE, NORTHWEST CORNER OF STONE WALL	
WEST 1/4 CORNER	568,944.8998 N	385,284.1660 E
	3/4" IRON PIPE IN THIMBLE	
	53.95' NE, NAIL AND SHINER IN NORTHWEST FACE UTILITY POLE	
	53.94' SE, NAIL AND SHINER IN SOUTHWEST FACE 18" ELM	
	38.15' W, NAIL AND SHINER IN NORTH FACE UTILITY POLE	

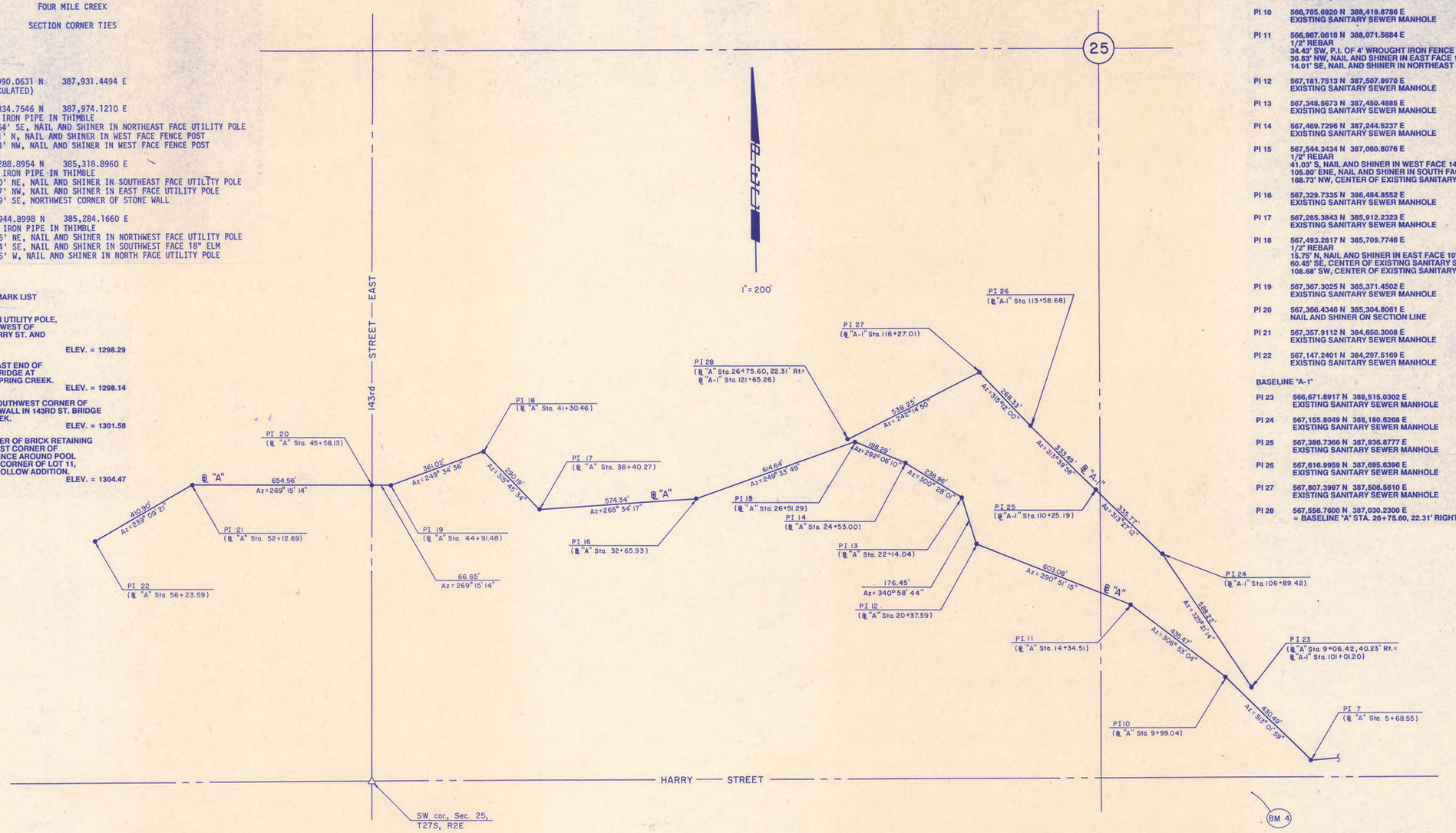
BENCH MARK LIST

BM 4 RAILROAD SPIKE IN UTILITY POLE, 60' SOUTH AND 25' WEST OF INTERSECTION HARRY ST. AND ARBOR LAKES DR.
ELEV. = 1298.29

BM 101 CHISELED "□" IN EAST END OF NORTH CURB OF BRIDGE AT HARRY ST. OVER SPRING CREEK.
ELEV. = 1298.14

BM 108 CHISELED "□" IN SOUTHWEST CORNER OF SOUTHWEST WINGWALL IN 143RD ST. BRIDGE OVER SPRING CREEK.
ELEV. = 1301.58

BM 109 NORTHEAST CORNER OF BRICK RETAINING WALL AT NORTHEAST CORNER OF WROUGHT IRON FENCE AROUND POOL NEAR NORTHEAST CORNER OF LOT 11, BLOCK 7, SPRINGHOLLOW ADDITION.
ELEV. = 1304.47



P.I. TIES

BASELINE "A"

PI 7 566,411.9159 N 388,734.5491 E
1/2" REBAR
58.45' SE, CHISELED "X" IN NORTHWEST END OF NORTHWEST WINGWALL TO CONCRETE BRIDGE AT HARRY ST. AND SPRING CREEK
165.05' WSW, CENTER OF EXISTING SANITARY SEWER MANHOLE
40.49' ENE, NAIL AND SHINER IN NORTH FACE 6" OSAGE ORANGE

PI 10 566,705.6920 N 388,419.8786 E
EXISTING SANITARY SEWER MANHOLE

PI 11 566,967.0618 N 388,071.5684 E
1/2" REBAR
34.43' SW, P.I. OF 4' WROUGHT IRON FENCE
30.83' NW, NAIL AND SHINER IN EAST FACE 18" HACKBERRY
14.01' SE, NAIL AND SHINER IN NORTHEAST FACE 24" HACKBERRY

PI 12 567,181.7513 N 387,507.9970 E
EXISTING SANITARY SEWER MANHOLE

PI 13 567,348.5673 N 387,450.4685 E
EXISTING SANITARY SEWER MANHOLE

PI 14 567,469.7296 N 387,244.5237 E
EXISTING SANITARY SEWER MANHOLE

PI 15 567,544.3434 N 387,060.8076 E
1/2" REBAR
41.03' S, NAIL AND SHINER IN WEST FACE 14" WALNUT
105.80' ENE, NAIL AND SHINER IN SOUTH FACE 15" ELM
168.73' NW, CENTER OF EXISTING SANITARY SEWER MANHOLE

PI 16 567,329.7335 N 386,484.8552 E
EXISTING SANITARY SEWER MANHOLE

PI 17 567,285.3843 N 385,912.2323 E
EXISTING SANITARY SEWER MANHOLE

PI 18 567,493.2817 N 385,709.7746 E
1/2" REBAR
15.75' N, NAIL AND SHINER IN EAST FACE 10" COTTONWOOD
60.45' SE, CENTER OF EXISTING SANITARY SEWER MANHOLE
108.68' SW, CENTER OF EXISTING SANITARY SEWER MANHOLE

PI 19 567,367.3025 N 385,371.4502 E
EXISTING SANITARY SEWER MANHOLE

PI 20 567,366.4346 N 385,304.8061 E
NAIL AND SHINER ON SECTION LINE

PI 21 567,357.9112 N 384,650.3008 E
EXISTING SANITARY SEWER MANHOLE

PI 22 567,147.2401 N 384,297.5169 E
EXISTING SANITARY SEWER MANHOLE

BASELINE "A-1"

PI 23 566,671.8917 N 388,515.0302 E
EXISTING SANITARY SEWER MANHOLE

PI 24 567,155.8049 N 388,180.6268 E
EXISTING SANITARY SEWER MANHOLE

PI 25 567,386.7366 N 387,936.8777 E
EXISTING SANITARY SEWER MANHOLE

PI 26 567,616.9959 N 387,695.6396 E
EXISTING SANITARY SEWER MANHOLE

PI 27 567,807.3997 N 387,506.5610 E
EXISTING SANITARY SEWER MANHOLE

PI 28 567,556.7600 N 387,030.2300 E
= BASELINE "A" STA. 26+75.60, 22.31' RIGHT

MICHAEL D. SCHOMAKER LICENSED 9778 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date
1	Updated per current standards	RJ	5/02

SEDGWICK COUNTY-BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E.
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

BASELINE KEY MAP

SANITARY SEWER INTERCEPTOR
FOUR MILE CREEK JOINT SEWER DISTRICT

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by DLM, MDS | Job No. 81051-2 | Sht. 3 of 14
Drawn by GM | Date Jan. 1983

Sta. 0+00.00
Remove Existing Spirolite MH TA-4.
Construct Type C, 5' Dia. MH w/self-sealing MH frame.
The contractor shall maintain wastewater flows by pumping or piping during removal and replacement of this MH.
Cost for this work shall be considered subsidiary to the Lump Sum Price Bid for "MH TA-4 Removal and Replacement"

SCALE
PLAN 1"=40'
PROFILE:
HORIZ. 1"=40'
VERT. 1"=5'

Sta. 0+40 to Sta. 1+00
Const. 60 L.F. Creek Crossing
See detail, sht. no. 10

℄ "A-1", Sta. 101+01.20
on baseline

41.60
Install 550.00 L.F. 36" Pipe

Sta. 4+40 to Sta. 4+80
Const. 40 L.F. Reinforced Concrete Encasement

Note:
Clay Trench Plug shall Consist of material having a Plasticity Index in excess of 15 and Liquid Limit in excess of 35. Clay Plug shall extend from 1' below finish grade to the bottom of trench. (Cost of Clay Plugs shall be subsidiary to Trench Backfill.)

106+42.67
℄ "A-1", Sta. ~~106+50.84~~
~~20.00~~' Left
18.31'

41.60
Sta. ~~5+50.00~~
Const. MH TA-5
Type A, 5' Dia.
w/self-sealing MH frame

2.24
Install 350.00 L.F. 36" Pipe

8+93.84
Sta. ~~9+00.00~~
Const. MH TA-6
Type A, 5' Dia.
w/self-sealing MH frame

109+98.10
℄ "A-1", Sta. ~~110+04.00~~
~~62.00~~' Left
60.32'

ALL PIPE INSTALLED IS VCP PIPE UNLESS OTHERWISE NOTED.

SANITARY SEWER PIPE SLOPES AND DEFLECTION ANGLES AT MANHOLES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.

See Sheet No. 10 for table of deflection angles at MH's.

RECORD DRAWING
MDK PROJ. ENG. 4/27/94
GRG RES. ENG. 4/15/94

MICHAEL D. SCHUMAKER LICENSED 6776 KANSAS PROFESSIONAL ENGINEER

Existing MH TA-4 Top Elev.=1287.06 (To be replaced with new MH) Top Elev. ~~1287.22~~ shall be 1287.22

Water Surface=1276.3 4/20/92 @ Creek=1278.3

Existing Ground

Clay Trench Plug See note this sheet

Type 'A' Backfill

Clay Trench Plug See note this sheet

1275.43
E IN=~~1275.30~~
from exist. 18" San. Sew.

E IN=1271.80
from existing 30" Spirolite Stub MH (to be removed)

10'

10'

Creek Crossing

Reinforced Concrete Encasement

MH TA-5 Top Elev.=~~1288.73~~ 1288.73

MH TA-6 Top Elev.=~~1290.00~~ 1290.00

1271.28 E OUT=~~1271.28~~ 1271.28
E IN=~~1271.03~~ 1271.03

1273.12 E=~~1273.20~~ 1273.12

1274.09 E=~~1274.23~~ 1274.09

41.60
550.00 L.F. 36" Pipe @ 0.27%

2.24
350.00 L.F. 36" Pipe @ 0.27%

1300 1295 1290 1285 1280 1275 1270 1265 1260

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00

PLATE 1 PLAN-PROFILE O. P. R. & R. E. STANDARD
EUGENE DIETZGEN CO.

SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E.
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

SANITARY SEWER INTERCEPTOR
FOUR MILE CREEK JOINT SEWER DISTRICT
INTERCEPTOR A

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Job No. 34-92113-1
Date May, 1992
Designed by MDS, MDK
Drawn by STM

Sht. 4 of 14

PLAN
SURVEYED
PLOTTED
NOTE BOOK
NO.
ALIGNMENT CHECKED
GRADES CHECKED
R. M.'s NOTED
STRUCTURE NOTATIONS CHECKED
RT. OF WAY CHECKED
BY
DATE

PROFILE
SURVEYED
PLOTTED
NOTE BOOK
NO.
GRADES CHECKED
R. M.'s NOTED
STRUCTURE NOTATIONS CHECKED
BY
DATE

PLAN

NOTE BOOK	SURVEYED.	BY	DATE
NO.	PLOTTED.		
	ALIGNMENT CHECKED.		
	RT. OF WAY CHECKED.		

PROFILE

NOTE BOOK	SURVEYED.	BY	DATE
NO.	PLOTTED.		
	GRADES CHECKED.		
	B. M.'S NOTED.		
	STRUCTURE NOTAT'NS CH'KD.		

SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E.
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

~~MAIN NO.~~ INTERCEPTOR A

SANITARY SEWER INTERCEPTOR
FOUR MILE CREEK JOINT SEWER DISTRICT

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Job No. 34-92113-1
Date May, 1992
Designed by MDS, MDK
Drawn by STM
Sht. 5 of 14

PLATE 1 PLAN-PROFILE D. P. R. & R. E. STANDARD
EUGENE DIETZGEN CO.

RECORD DRAWING
MDK PROJ. ENG. 4/27/94 DATE
GRG RES. ENG. 4/15/94 DATE

Sta. 15+58.00 22
MH TA-8

Sta. 16+80 to Sta. 18+60
Construct 180 L.F. Reinforced Concrete Encasement

Sta. ~~19+00.00~~ 18+99.51
Const. MH TA-9
Type A, 5' Dia.
w/self-sealing MH frame

Existing 18" San. Sew. to be abandoned in place. See Const. Sequencing Sheet No. 2

EQUATION .51
Sta. 20+83.~~01~~ bk =
Sta. 17+92.05 ahead
Const. MH TA-10
over existing 18" pipe
Type A, 5' Dia.
w/self-sealing MH frame
(See Construction Sequencing Sht. No. 2)

RESERVE A-Floodway & Resident Open Space

SCALE
PLAN 1"=40'
PROFILE:
HORIZ. 1"=40'
VERT. 1"=5'

Note:
Clay Trench Plug shall Consist of material having a Plasticity Index in excess of 15 and Liquid Limit in excess of 35. Clay Plug shall extend from 1' below finish grade to the bottom of trench. (Cost of Clay Plugs shall be subsidiary to Trench Backfill.)

℄ "A-1", Sta. 116+65.00, 20.00' Right

Install 342.00 L.F. 36" Pipe (See Construction Sequencing Sht. No. 2)

DO NOT DAMAGE

℄ "A-1", Sta. 120+01.15, 83.00' Right

CAUTION!! 6" Steel Pipeline (Farmland Industries)

Install 183.~~01~~ L.F. 36" Pipe

℄ "A-1", Sta. 121+65.~~00~~ on ℄

Existing 18" San. Sew. to remain in service

ALL PIPE INSTALLED IS VCP PIPE UNLESS OTHERWISE NOTED.

SANITARY SEWER PIPE SLOPES AND DEFLECTION ANGLES AT MANHOLES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.

See Sheet No. 10 for table of deflection angles at MH's

PLAN: SURVEYED, PLOTTED, NOTE BOOK, NO., ALIGNMENT CHECKED, R/W STAKED, STRUCTURE NOTATNS CHKD, BY, DATE

PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, R/W STAKED, STRUCTURE NOTATNS CHKD, NOTE BOOK, NO., BY, DATE

SEE SHEET NO. 8 FOR PLAN VIEW

PLATE 1 PLAN-PROFILE O. P. R. & R. E. STANDARD

EUGENE DIETZGEN CO.

SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

SANITARY SEWER INTERCEPTOR
FOUR MILE CREEK JOINT SEWER DISTRICT
INTERCEPTOR A
MAIN NO. 1

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Job No. 34-92113-1
Date MAY, 1992
Designed by MDS, MDK
Drawn by STM

Sht. 6 of 14


SANITARY SEWER PIPE SLOPES AND DEFLECTION ANGLES AT MANHOLES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.
ALL PIPE INSTALLED IS VCP PIPE UNLESS OTHERWISE NOTED.
SCALE
PLAN 1"=40'
PROFILE
HORIZ 1"=40'
VERT 1"=5'
RESERVE "A"
Main No. 1
Baseline "A"
TIMBER LAKES ESTATES
WILLOWBEND CIRCLE
Install 271.11 L.F. 36" Pipe
Install 323.91 L.F. 36" Pipe
Install 267.69 L.F. 36" Pipe
See sheet no. 10 for table deflection angle of MH's
RECORD DRAWING
PROJ. ENG. DATE
RES. ENG. DATE
1305
1300
1295
1290
1285
1280
1275
1270
1265
MH TA-10 Top Elev. 1293.32
MH TA-11 Top Elev. 1295.28
MH TA-12 Top Elev. 1297.12
MH TA-13 Top Elev. 1293.55
Existing Ground
FL IN = 1279.07 (18") from exist. 18" San Sewer
FL IN = 1280.57 from 12" PVC Pipe (MLJ)
Connected to MH TLS-25
271.11 L.F. 36" Pipe @ 0.38%
323.91 L.F. 36" Pipe @ 0.38%
267.69 L.F. 36" Pipe @ 0.38%
18+00
19+00
20+00
21+00
22+00
23+00
24+00
25+00
26+00
27+00
1 Updated per current standards
No. Revision By Date
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS
Designed by DLM, MDS
Drawn by RFJ, GM
Job No. 34-81051-2-024
Date January, 1983
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E.
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER
INTERCEPTOR A
SANITARY SEWER INTERCEPTOR
FOUR MILE CREEK JOINT SEWER DISTRICT
Sht. 7 of 14

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by DLM, MDS | Job No. 34-81051-2-024
Drawn by RFJ, GM | Date January, 1983

No.	Revision	By	Date
1	Updated per current standards	RJ	5/92

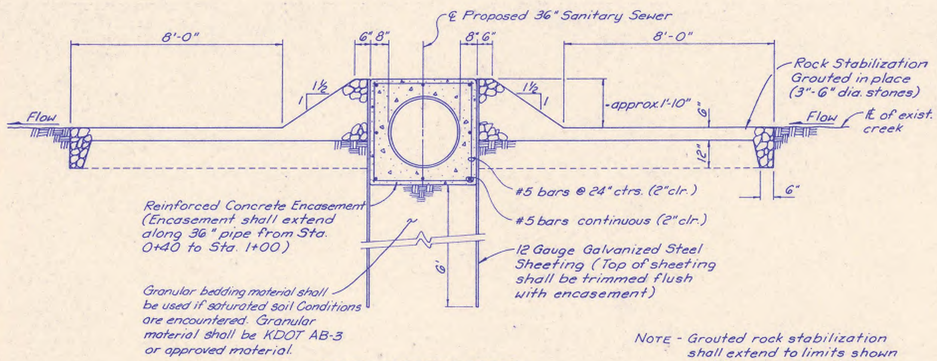
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E.
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

INTERCEPTOR A

SANITARY SEWER INTERCEPTOR
FOUR MILE CREEK JOINT SEWER DISTRICT

Sht. 8 of 14


Sta. 47+68.10
Existing Reinf. Conc. MH
Connect new pipe to existing MH TA-22
see detail sht. no. 10
Sta. 40+57.26
Const. MH TA-19
Type A 5' Dia.
w/self-sealing MH Frame
Sta. 43+20.75
Const. MH TA-20
Type A 5' Dia.
w/self-sealing MH Frame
Sta. 47+47.41
Const. MH TA-21
Type A 5' Dia.
w/self-sealing MH Frame
Provide Conc. Cradle to support Storm Drain pipe.
CAUTION !! Buried Utilities
CAUTION !! 30" Storm Drain
CAUTION !! 24" Storm Drain
Remove and reset fence as required.
Install 30" Pipe
Install 262.98 L.F. 30" Pipe
Install 427.23 L.F. 30" Pipe
Install 20.69 L.F. 30" Pipe
Remove Vegetable Garden as required. Stockpile materials for owner. Do not Reset.
Remove and reset as required.
ALL PIPE INSTALLED IS VCP PIPE UNLESS OTHERWISE NOTED.
SANITARY SEWER PIPE SLOPES AND DEFLECTION ANGLES AS INDICATED HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.
Updated per current standards
BOSTON
SPRING HOLLOW
EAST
143RD STREET
MH TA-18
Top Elev. 1299.32
MH TA-19
Top Elev. 1302.21
MH TA-20
Top Elev. 1302.04
MH TA-21
Top Elev. 1302.17
24" Storm Drain
24" Storm Drain
Existing Ground
Proposed Conc. Cradle
Approx. Location
from exist. 21" San. Sew.
from new 21" pipe(s)
RECORD DRAWING
PROJ. ENG.
RES. ENG.
DATE
LICENSED PROFESSIONAL ENGINEER KANSAS
4.46
L.F. 30" Pipe @ 0.30%
57.43
L.F. 30" Pipe @ 0.30%
31.47
L.F. 30" Pipe @ 0.30%
L.F. 30" Pipe @ 0.32%
1310
1305
1300
1295
1290
1285
1280
1275
1270
38+00
39+00
40+00
41+00
42+00
43+00
44+00
45+00
46+00
47+00
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS
Designed by DLM, MDS
Drawn by RFJ, GM
Job No. 34-81051-2-024
Date January, 1983
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E.
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER
INTERCEPTOR A
SANITARY SEWER INTERCEPTOR
FOUR MILE CREEK JOINT SEWER DISTRICT
Sht. 9 of 14



CREEK CROSSING DETAIL
STA. 0+40 to STA. 1+00

NOTE - Grouted rock stabilization shall extend to limits shown and from creek bank to creek bank. Toe wall as shown shall extend around perimeter of stabilized area.

DRAINING LAKE AND DAM MODIFICATIONS

THE CONTRACTOR SHALL DRAIN THE LAKE PRIOR TO CONSTRUCTION BY OPENING THE VALVES ON THE TWO DRAIN PIPES AT THE DAM, AT THE LOCATION SHOWN ON THE KEY MAP. THE OPERATING CONDITION OF THE DRAIN VALVES IS UNKNOWN; THEREFORE, IF THE VALVES ARE INOPERABLE, THE CONTRACTOR MAY NEED TO CREATE A SIPHON OVER THE DAM, OR MAY USE ANY OTHER APPROVED MEANS TO DRAIN THE LAKE. THE CONTRACTOR WILL NOT BE ALLOWED TO DRAIN THE LAKE BY PUMPING UNLESS A PERMIT IS OBTAINED FROM THE DIVISION OF WATER RESOURCES. THE CONTRACTOR SHALL ALSO CONTACT MR. JIM WEBER AT THE SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES AT LEAST 14 DAYS PRIOR TO DRAINING THE LAKE TO COORDINATE ANY FISH HARVESTING OPERATION, WHICH WILL BE PERFORMED BY OTHERS.

WHERE THE SANITARY SEWER CROSSES THE LAKE, THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY CULVERTS AND TEMPORARY EARTHEN DAMS NEEDED TO CONSTRUCT THE SANITARY SEWER. UPON COMPLETION OF THE SANITARY SEWER, INCLUDING TESTING, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY MATERIALS AND EARTH USED FOR THE CROSSING. COSTS FOR THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID FOR PIPE IN PLACE.

THE CONTRACTOR SHALL INCLUDE IN THE ADD-ALTERNATE BID PRICE FOR "DAM MODIFICATIONS" THE PURCHASE AND INSTALLATION OF 2-10" OS&Y RESILIENT SEAT GATE VALVES TO REPLACE THE EXISTING VALVES AT THE DAM. ALSO INCLUDED SHALL BE CONCRETE REMOVAL AND REPLACEMENT TO INSTALL THE VALVES AND REMOVAL OF THE EXISTING VALVES. THE VALVES SHALL BE MUELLER OR APPROVED EQUAL.

DEFLECTION ANGLES AT MANHOLES

MH NO.	DEFLECTION ANGLES
MH TA-5	15°28'10" LEFT
MH TA-6	12°28'02" RIGHT
MH TA-7	11°39'59" LEFT
MH TA-8	55°44'21" LEFT
MH TA-9	37°26'36" LEFT
MH TA-10	26°14'03" RIGHT (TO PROPOSED) 50°27'03" RIGHT (FROM PROPOSED TO EXISTING)
MH TA-11	7°54'38" RIGHT
MH TA-12	16°00'28" RIGHT
MH TA-13	0°00'00" ----
MH TA-14	50°11'17" RIGHT
MH TA-15	0°00'00" ---- (TO PROPOSED) 50°11'18" LEFT (FROM PROPOSED TO EXISTING)
MH TA-16	43°37'08" LEFT
MH TA-17	13°48'26" LEFT
MH TA-18	10°55'03" RIGHT (TO PROPOSED) 91°56'50" RIGHT (FROM PROPOSED TO EXISTING)
MH TA-19	0°00'00" ----
MH TA-20	29°43'54" LEFT
MH TA-21	90°00'00" LEFT

GRASS PLANTING

THE CONTRACTOR SHALL PLANT GRASS ON ALL AREAS DISTURBED BY CONSTRUCTION WHICH ARE NEITHER PART OF PAVED OR UNPAVED ROADS OR DRIVES NOR AREAS OCCUPIED BY SIDEWALKS, STRUCTURES, GARDENS, OR CULTIVATED CROPS. SURFACES SHALL BE PREPARED, FERTILIZED, AND PLANTED IN ACCORDANCE WITH THE SPECIFICATIONS AND AT THE APPLICATION RATES GIVEN BELOW. THE COST FOR SEEDING, SPRIGGING, AND SODDING SHALL BE SUBSIDIARY TO THE PRICE BID FOR "SITE CLEARING AND RESTORATION".

ROAD RIGHTS-OF-WAY AND OTHER PUBLICLY OWNED AREAS SHALL BE SEEDED AS DIRECTED BELOW UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL TEMPORARY SEED AND MULCH AREAS THAT ARE SUSCEPTIBLE TO EROSION AND AREAS THAT WILL NOT BE PERMANENTLY SEEDED WITHIN A 2 MONTH PERIOD, AS DIRECTED BY THE ENGINEER. ALL AREAS TO BE SEEDED SHALL BE PROVIDED WITH TOP SOIL SUFFICIENT TO PROVIDE SUBSTANTIAL GROWTH.

APPLICATION RATES:

1. SEED: K-31 FESCUE @ 8 LBS PER 1,000 SQUARE FEET
2. MULCH (IF REQUIRED): 90 LBS PER 1,000 S.F.
3. FERTILIZER: NITROGEN @ 1 LB PER 1,000 S.F.
   PHOSPHOROUS @ 2 LBS PER 1,000 S.F.
   POTASSIUM @ 1 LB PER 1,000 S.F.

GRASS ON PRIVATELY-OWNED AREAS (INCLUDING TEMPORARY AND PERMANENT EASEMENTS) SHALL BE REPLACED IN KIND IN ACCORDANCE WITH THE INFORMATION GIVEN BELOW OR AS DIRECTED BY THE ENGINEER.

TYPE OF GRASS	PLANTING TIME	SEEDING APPLICATION	FERTILIZER*
BLUEGRASS (WINDSOR KENTUCKY, ETC.)	FALL	3 LBS/1,000 S.F.	8 LBS/1,000 S.F.*
TALL FESCUE (K-31)	SPRING AND FALL	8 LBS/A,000 S.F.	8 LBS/1,000 S.F*
BERMUDA	SPRING	SPRIGS OR SOD (SEE SPECIFICATIONS)	8 LBS/1,000 S.F.*
ZOYSIA	SPRING	SPRIGS OR SOD (SEE SPECIFICATIONS)	8 LBS/1,000 S.F.*

*FERTILIZER APPLICATION RATES ARE BASED ON ACTUAL LBS OF PHOSPHOROUS APPLIED PER 1,000 S.F. FERTILIZER SHALL BE 12-24-12 OR OTHER HIGH PHOSPHOROUS TYPE AS APPROVED BY THE ENGINEER. (EXAMPLE: TO APPLY 2 LBS OF PHOSPHOROUS USING A 12-24-12 FERTILIZER, 8 LBS OF FERTILIZER WOULD BE REQUIRED.)

MANHOLE REHABILITATION

REHABILITATION OF THE EXISTING MANHOLES LISTED BELOW SHALL CONSIST OF REPLACING EXISTING FRAME AND COVER WITH A NEW SELF-SEALING MH FRAME AND COVER AND COATING THE MANHOLE INTERIOR WITH "STRONG SEAL MS 2-A" PER THE SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS. ALL IMPERFECTIONS SHALL BE FILLED WITH A QUICK-SET HYDRAULIC CEMENT PRIOR TO COATING.

EXISTING MANHOLES TO BE REHABILITATED ARE AS FOLLOWS (SEE KEY MAP, SHEET NO. 2):

MH TLS-9, MH TLS-27, MH SHI-1, MH SHI-2, MH SHI-7, AND MH TA-22*.

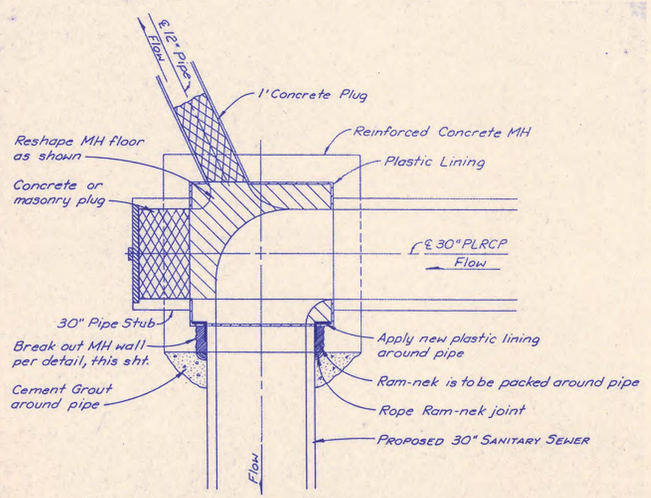
MANHOLE REHABILITATION SHALL BE PAID FOR BASED ON THE LUMP SUM PRICE BID PER EACH.

*MANHOLE TA-22 IS A PLASTIC LINED MANHOLE WHICH MAY REQUIRE SEALING OR PATCHING OF THE PLASTIC-LINER. ANY REPAIRS TO THE PLASTIC LINING SHALL BE MADE IN ACCORDANCE WITH THE LINER MANUFACTURERS RECOMMENDATIONS AT NO ADDITIONAL COST TO THE PROJECT. "STRONG SEAL" COATING IS NOT REQUIRED FOR THIS MANHOLE.

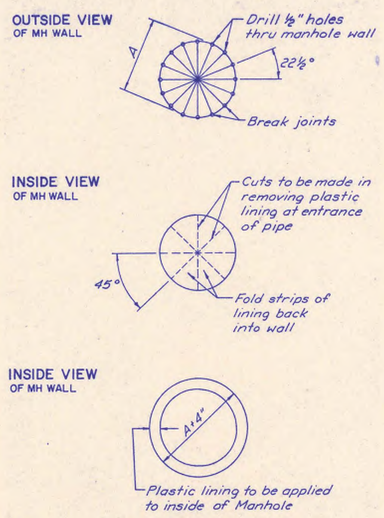
GENERAL NOTES

1. ALL ELEVATIONS SHOWN ARE USGS DATUM.
2. AT LEAST 72 HOURS PRIOR TO BEGINNING ANY EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT 687-2470 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ANY EXISTING LINES WITHIN THE PROJECT AREA: MULTIMEDIA CABLE TV, WICHITA WATER, SOUTHWESTERN BELL TELEPHONE, K G & E GAS, AND K G & E ELECTRIC.
3. THE BURIED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE LOCATIONS ONLY. IT SHOULD BE NOTED THAT OTHER BURIED LINES AND CABLES MAY EXIST WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING TRENCHING OPERATIONS TO AVOID DAMAGING THESE LINES. ANY LINES DAMAGED SHALL BE REPLACED OR REPAIRED IMMEDIATELY AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
4. AT LEAST 24 HOURS BEFORE CONNECTING NEW SEWER PIPE TO THE EXISTING SEWAGE SYSTEM, THE CONTRACTOR SHALL CONTACT THE SEDGWICK COUNTY EASTERN SEWER DISTRICT (733-0202). THE CONTRACTOR SHALL KEEP ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER DURING CONSTRUCTION. TO PREVENT WATER OR DEBRIS FROM ENTERING THE EXISTING SEWER, A MECHANICAL PLUG SHALL BE INSTALLED AND MAINTAINED TO ISOLATE THE EXISTING SEWER FROM THE NEW CONSTRUCTION UNTIL THE NEW CONSTRUCTION IS CLEANED, TELEVISED, AND HAS BEEN ACCEPTED. THE WATER USED FOR CLEANING SHALL NOT BE ADDED TO THE FLOW OF THE EXISTING SEWER. THE CLEANING OR OTHERWISE ACCUMULATED WATER SHALL BE PUMPED OR OTHERWISE REMOVED PRIOR TO TELEVISING.
5. ALL MANHOLES CONSTRUCTED ON THIS PROJECT SHALL HAVE SELF-SEALING FRAMES AND SHALL BE COATED INTERNALLY WITH STRONG SEAL MS2-A PER PROJECT SPECIFICATIONS.
6. ALL PIPE JOINTS SHALL BE LAID AND PUSHED 'FULL HOME', WITH THE BEVELED END OF THE SPIGOT MAKING FULL CONTACT WITH THE CHAMFERED AREA AT THE THROAT OF THE BELL OR SOCKET, WITH NO SEPARATION BETWEEN THEM. IF SEPARATION IS DETERMINED, THE PIPE SHALL BE EXCAVATED AND RELAID ACCORDING TO SPECIFICATIONS AT THE CONTRACTORS EXPENSE.
7. EXCESS EXCAVATED MATERIAL AND OTHER DEBRIS SHALL BE WASTED ON SITES TO BE PROVIDED BY THE CONTRACTOR AS APPROVED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
8. THE CONTRACTOR SHALL CONTAIN HIS OPERATIONS TO PERMIT TRAFFIC THROUGH AND ACROSS CONSTRUCTION AT EXISTING ROADWAYS AT ALL TIMES. THE CONTRACTOR SHALL ERECT WARNING SIGNS, FLASHING LIGHTS, AND BARRICADES IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES TO ENSURE SAFETY AS DIRECTED IN THE GENERAL CONDITIONS. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS. PRIOR TO START OF CONSTRUCTION THE CONTRACTOR SHALL FLAG AND REFERENCE ALL PROPERTY CORNERS THAT MAY BE DISTURBED BY CONSTRUCTION OPERATIONS, AND VERIFY THESE IN THE FIELD IN THE PRESENCE OF THE ENGINEER AND THE CONTRACTOR'S SURVEYOR. AFTER CONSTRUCTION AND BEFORE THE FINAL INSPECTION, A LETTER SIGNED AND SEALED BY THE LICENSED LAND SURVEYOR CERTIFYING REPLACEMENT OF ALL DISTURBED PROPERTY CORNERS SHALL BE SUBMITTED TO THE ENGINEER.
10. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, AND BANKS TO THEIR ORIGINAL SLOPES AND GRADES. WHERE EXISTING ENTRANCE PIPE, DRAINAGE PIPE, SIGNS, FENCES, ETC., CONFLICT WITH THE PROPOSED WORK HEREIN, THEY SHALL BE REMOVED AND REPLACED OR RESET. THE REPLACEMENT OF ALL THE AFOREMENTIONED ITEMS, INCLUDING SEEDING, FERTILIZER, AND MULCHING SHALL BE CONSIDERED SUBSIDIARY TO "SITE CLEARING AND RESTORATION".
11. EASEMENTS AND RIGHTS-OF-WAY PROVIDED BY THE OWNER FOR THE PROJECT ARE SHOWN IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACQUISITION OF ANY ADDITIONAL TEMPORARY EASEMENTS OR RIGHTS-OF-WAY THAT HE DESIRES TO USE IN COMPLETING THE WORK.
12. POSITIVE DRAINAGE SHALL BE PROVIDED FOR ALL AREAS ON OR NEAR SPOIL AREAS. NATURAL DRAINAGE WAS SHALL BE MAINTAINED.
13. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
14. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF 10 DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION IN THE VICINITY OF THE AFFECTED PROPERTY.
15. ALL TRENCH BACKFILL SHALL BE EITHER TYPE I OR TYPE III UNLESS NOTED OTHERWISE.
16. TOP ELEVATIONS FOR MANHOLES ARE APPROXIMATE ONLY. TOP ELEVATIONS FOR MANHOLES SHALL BE SET AS FOLLOWS:
    A. OUTSIDE OF TRAVELED WAYS, 0.4 FEET ABOVE FINISH GRADE.
    B. PAVED TRAVELED WAYS, FLUSH WITH FINISH GRADE.
    C. UNPAVED TRAVELED WAYS, AS DIRECTED BY THE ENGINEER.
17. THE CONTRACTOR SHALL ALSO CONTACT THE FOLLOWING AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION TO ADVISE THEM OF THE INTENDED WORK AND OF HIS PROPOSED SCHEDULE:

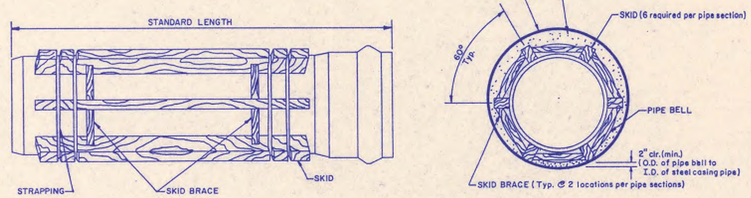
    SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
    1250 S. SENECA
    WICHITA, KS 67213
    MR. JIM WEBER
    (316) 383-7901
18. WHERE THE IMPROVEMENTS CROSS EXISTING PUBLIC OR PRIVATE UTILITIES WHICH ARE NOT TO BE ADJUSTED BY OTHERS, THE CONTRACTOR SHALL PROVIDE THE MATERIAL AND MEANS TO PROTECT AND SUPPORT SAID UTILITIES DURING CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER.
19. THE CONTRACTOR SHALL AVOID REMOVAL OR TRIMMING OF ANY TREES WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES THE REMOVAL OR TRIMMING IS UNAVOIDABLE HE SHALL OBTAIN THE CONCURRENCE OF THE ENGINEER BEFORE PROCEEDING WITH SUCH WORK.
20. PROPERTIES WITHIN THE PROJECT LIMITS HAVE UNDERGROUND SPRINKLER SYSTEMS IN PUBLIC RIGHT-OF-WAY WHICH CONFLICT WITH NEW CONSTRUCTION. CONTRACTOR WILL BE REQUIRED TO REMOVE SUCH IMPROVEMENTS SHOULD THEY NOT BE REMOVED BY THEIR OWNER AT THE TIME OF CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL REMOVE AND REPLACE OR RESET ANY SPRINKLER HEADS, PIPES, AND/OR VALVES WHICH CONFLICT WITH CONSTRUCTION. ANY SPRINKLER HEADS, PIPES, AND/OR VALVES DAMAGED BY CONSTRUCTION OPERATIONS SHALL BE REPLACED IN KIND AT NO ADDITIONAL COST TO THE OWNER. PORTIONS OF UNDERGROUND SPRINKLER SYSTEMS NOT IN CONFLICT WITH NEW CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE AND SHALL REMAIN IN PLACE. ALL WORK IN CONNECTION WITH UNDERGROUND SPRINKLER SYSTEMS SHALL BE CONSIDERED AS SUBSIDIARY TO "SITE CLEARING AND RESTORATION".
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS FLOW OF SEWAGE THROUGH CONSTRUCTION. CONTRACTOR'S PROPOSED METHOD FOR MAINTAINING SEWAGE FLOW SHALL BE APPROVED BY THE ENGINEER. COST OF MAINTAINING FLOW OF SEWAGE THROUGH CONSTRUCTION WILL NOT BE PAID DIRECTLY AND THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO "SITE CLEARING AND RESTORATION".
22. IF THE CONTRACTOR ELECTS TO USE PLASTIC LINED REINFORCED CONCRETE PIPE, REINFORCED CONCRETE MANHOLES MUST BE USED. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT, FOR THE ENGINEERS APPROVAL, 1/2" SCALE PLAN VIEW DRAWINGS FOR EACH MANHOLE IN CONFORMANCE WITH THE STANDARD DETAILS.
23. IF PVC PIPE GREATER THAN 27" DIAMETER OR POLYETHYLENE PIPE WILL BE BID ON THIS PROJECT THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO BIDDING. SEE SPECIFICATION SECTION 02605 - SANITARY SEWER CONSTRUCTION.
24. THE OWNER WILL PROVIDE CONSTRUCTION STAKING FOR THIS PROJECT, AMONG OTHER SURVEYING SERVICES (SEE SPECIFICATIONS).



CONNECTION TO EXISTING MH
STA. 47+68.10



MH WALL BREAKOUT DETAIL
For Reinforced Concrete MH



STEEL ENCASEMENT DETAIL
If P.E. Pipe is to be used for this project the contractor shall follow the manufacturers recommendation for encasement.

RECORD DRAWING
MDK PROJ. ENG. 4/27/99 DATE
GRG RES. ENG. 4/15/99 DATE

MICHAEL D. SCHOMAKER LICENSED 6778 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E.
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

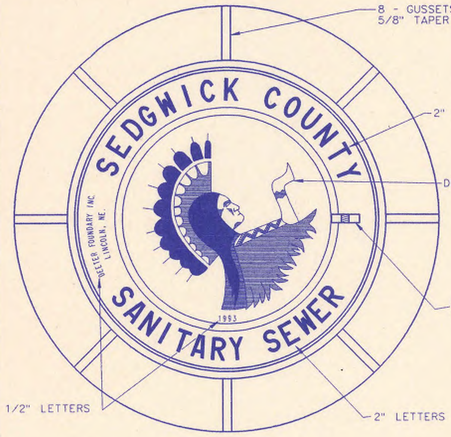
MISCELLANEOUS DETAILS

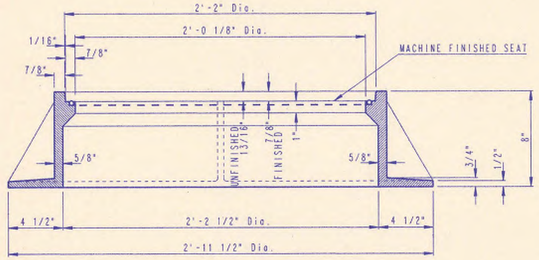
SANITARY SEWER INTERCEPTOR
FOUR MILE CREEK JOINT SEWER DISTRICT

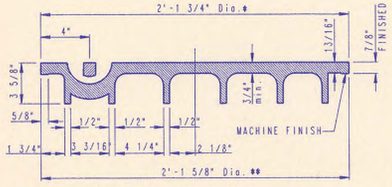
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by MDS, MDK	Job No. 34-92113-1	Sht. 10 of 14
Drawn by STM	Date May, 1992	

547686







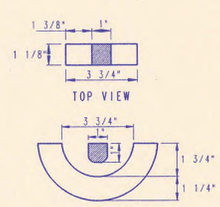
*OUTSIDE DIA. TOP OF COVER
**OUTSIDE DIA. BOTTOM OF COVER

MANHOLE FRAME AND COVER

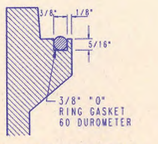
(TOTAL WEIGHT = 430 LBS.)

MANHOLE FRAME AND COVER NOTES

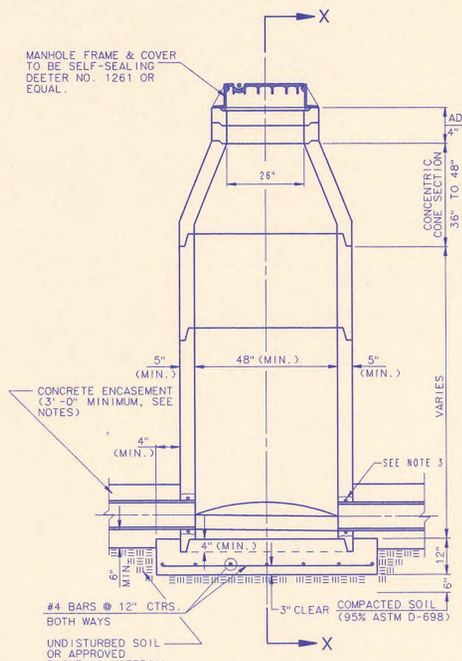
1. CAST IRON MANHOLE FRAME AND COVER SHALL CONFORM TO ASTM A-48, CLASS 35B, OR BETTER.
2. CASTINGS ARE TO BE MANUFACTURED TRUE TO PATTERN AND WITH SATISFACTORY FIT OF COMPONENT PARTS. CASTINGS SHALL BE FREE OF DEFECTS. DIMENSIONS AS DETAILED ON PLAN SHALL NOT DEVIATE BY ± 1/16" PER FOOT.
3. NO OTHER LETTERING OR MARKINGS OTHER THAN THOSE DETAILED ON PLAN WILL BE PERMITTED ON CASTINGS.
4. CASTINGS MUST BE DOMESTICALLY MANUFACTURED IN THE UNITED STATES OF AMERICA.
5. THE FRAMES AND COVERS SHALL BE FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES SO FITTING PARTS WILL NOT RATTLE OR ROCK UNDER TRAFFIC.
6. MANHOLE CASTINGS SHALL BE SELF-SEALING DEETER FOUNDRY INC. NO. 1261 OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED IN THE SPECIAL CONDITIONS (MINIMUM WT.=430 LBS.) ALL MANHOLE CASTINGS SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICES BID FOR THE VARIOUS MANHOLE TYPES.
7. GRIND ALL BURRS SMOOTH, CLEAN THOROUGHLY, THEN APPLY SHOP COAT OF ASPHALT BASE PAINT.
8. THE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO MANUFACTURE. THE ENGINEER SHALL RETAIN THE RIGHT TO REJECT CASTINGS NOT CONFORMING TO THE SPECIFICATIONS OR THE APPROVED SHOP DRAWINGS.
9. THE MANHOLE FRAME SHALL BE FURNISHED WITH AN APPROVED "O" RING GASKET GROOVED INTO THE BEARING SURFACE OF THE MANHOLE FRAME (PER DETAIL). THE "O" RING GASKET SHALL NOT BE INSTALLED IN THE MANHOLE FRAME UNTIL AFTER FINAL INSPECTION AND ACCEPTANCE OF THE PROJECT BY THE ENGINEER.



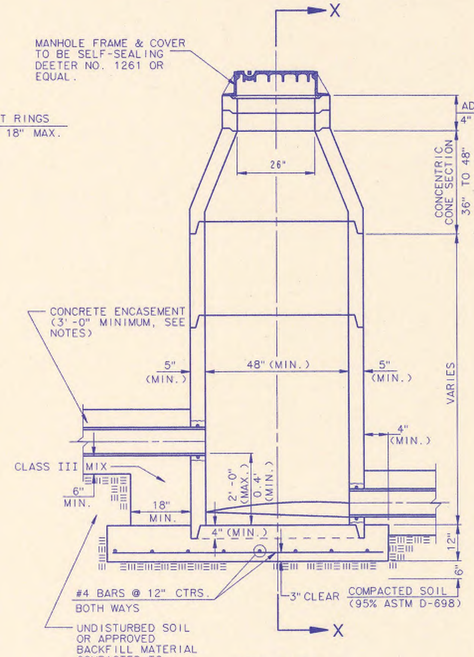
PICK HOLE DETAIL



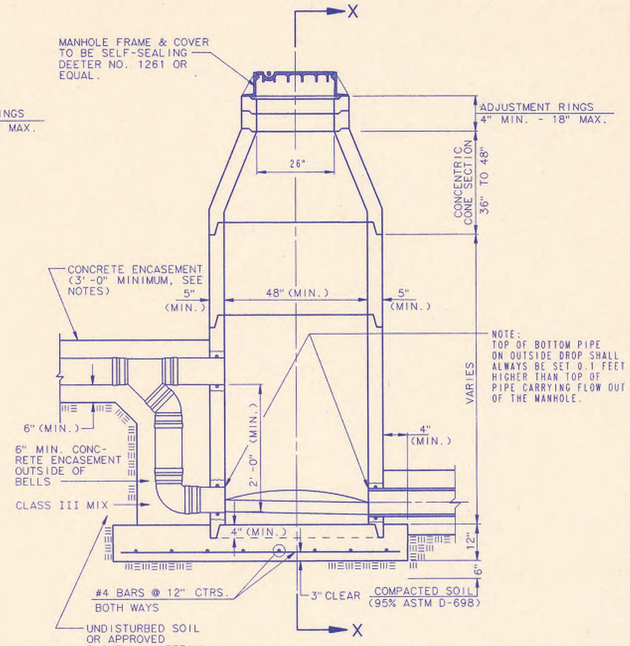
FRAME GROOVING DETAIL
(TYPICAL ALL MANHOLES)



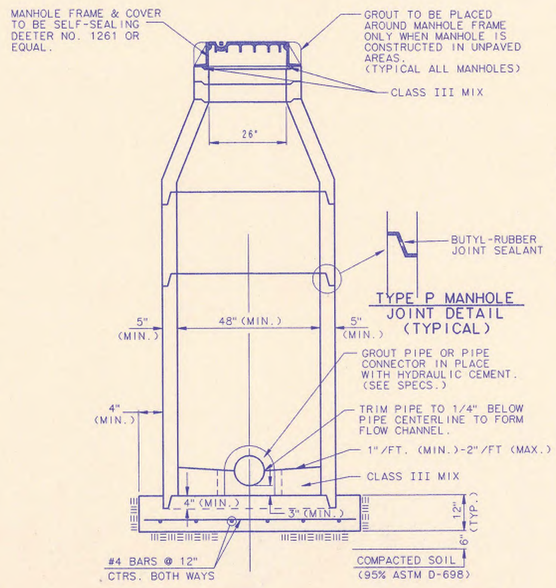
PRECAST
STANDARD MANHOLE
TYPE "A"



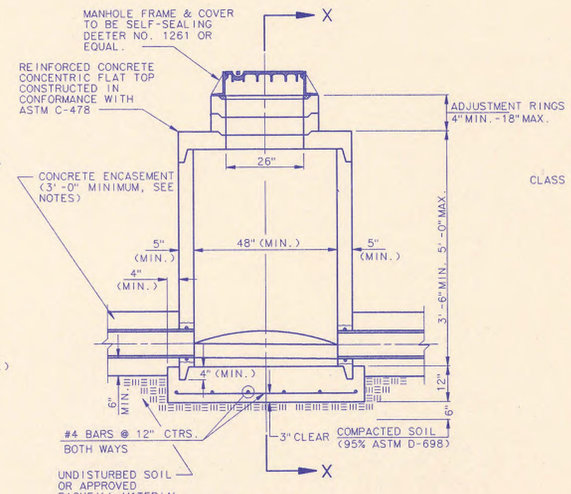
PRECAST
INSIDE DROP MANHOLE
TYPE "B"



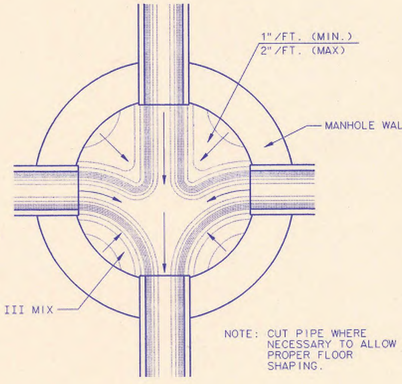
PRECAST
OUTSIDE DROP MANHOLE
TYPE "C"



SECTION X
(TYPICAL)



PRECAST
SHALLOW MANHOLE
TYPE "D"



TYPICAL MANHOLE
FLOOR SHAPING

PRECAST MANHOLE NOTES

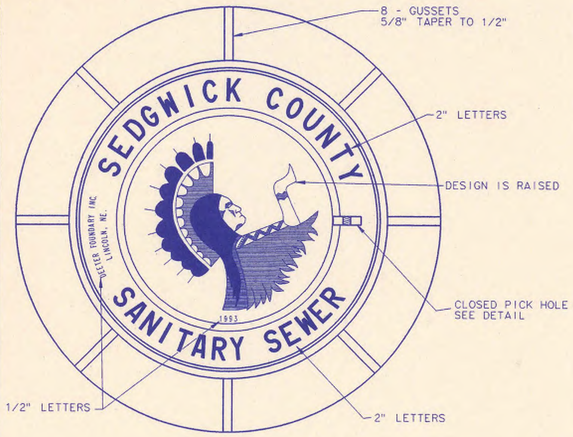
1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
2. STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
3. APPROVED FLEXIBLE WATERSTOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS OF ASTM C-923 SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN PLASTIC PIPE IS USED. SEWER PIPE EXTENDING FROM MANHOLES SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL.
4. THE MANHOLE FRAME SHALL BE SEATED ON AN APPROVED BUTYL-RUBBER SEALANT TO PROVIDE A WATER-TIGHT SEAL BETWEEN THE MANHOLE ADJUSTMENT RING AND THE MANHOLE FRAME.
5. GASKETED PIPE CAPS SHALL BE PROVIDED BY THE PIPE SUPPLIER. GLUED OR CEMENTED CAPS WILL NOT BE ACCEPTED.
6. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
7. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
8. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF ASTM C478 AS MODIFIED BY THE SPECIFICATIONS.
9. CONCRETE FOR MANHOLE BASES SHALL BE CLASS I AS DESCRIBED IN THE SPECIFICATIONS.
10. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO MANHOLE BASE.
11. MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5' INSIDE DIAMETER (MIN.)
12. INSIDE DIAMETER OF FIVE-FOOT DIAMETER PRECAST MANHOLES SHALL REMAIN CONSTANT TO THE LOCATION OF THE REDUCING FLAT TOP WHICH CONNECTS THE FOUR-FOOT DIAMETER CONE SECTION TO THE FIVE-FOOT DIAMETER MANHOLE BARREL.

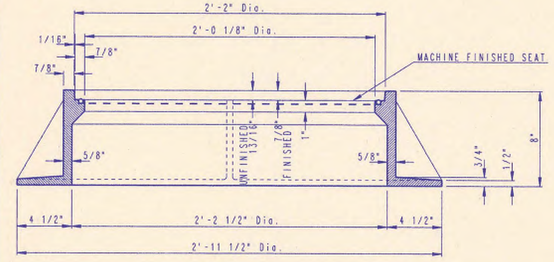
No.	Revision	By	Date
3	All Manholes self-sealing/MH Cover	RJ	1/25/93
2	Modified pipe connection note	RJ	8/01/92
1	Manhole Frame and Cover Note 1	RJ	7/16/91

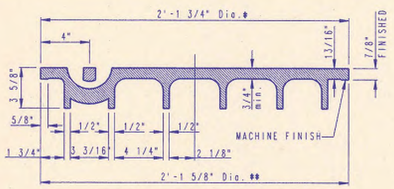
PRECAST MANHOLE DETAILS

ADOPTED AS STANDARD DESIGN SEPTEMBER, 1989
BY
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

E4.55







*OUTSIDE DIA. TOP OF COVER
**OUTSIDE DIA. BOTTOM OF COVER

MANHOLE FRAME AND COVER

(TOTAL WEIGHT = 430 LBS.)

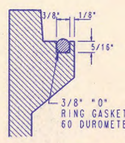
MANHOLE FRAME AND COVER NOTES

1. CAST IRON MANHOLE FRAME AND COVER SHALL CONFORM TO ASTM A-48, CLASS 35B, OR BETTER.
2. CASTINGS ARE TO BE MANUFACTURED TRUE TO PATTERN AND WITH SATISFACTORY FIT OF COMPONENT PARTS. CASTINGS SHALL BE FREE OF DEFECTS. DIMENSIONS AS DETAILED ON PLAN SHALL NOT DEVIATE BY ± 1/16" PER FOOT.
3. NO OTHER LETTERING OR MARKINGS OTHER THAN THOSE DETAILED ON PLAN WILL BE PERMITTED ON CASTINGS.
4. CASTINGS MUST BE DOMESTICALLY MANUFACTURED IN THE UNITED STATES OF AMERICA.
5. THE FRAMES AND COVERS SHALL BE FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES SO FITTING PARTS WILL NOT RATTLE OR ROCK UNDER TRAFFIC.
6. MANHOLE CASTINGS SHALL BE SELF-SEALING DEETER FOUNDRY INC. NO. 1261 OR APPROVED EQUAL UNLESS OTHERWISE SPECIFIED IN THE SPECIAL CONDITIONS. (MINIMUM WT.=430 LBS.) ALL MANHOLE CASTINGS SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICES BID FOR THE VARIOUS MANHOLE TYPES.
7. GRIND ALL BURRS SMOOTH, CLEAN THOROUGHLY, THEN APPLY SHOP COAT OF ASPHALT BASE PAINT.
8. THE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO MANUFACTURE. THE ENGINEER SHALL RETAIN THE RIGHT TO REJECT CASTINGS NOT CONFORMING TO THE SPECIFICATIONS OR THE APPROVED SHOP DRAWINGS.
9. THE MANHOLE FRAME SHALL BE FURNISHED WITH AN APPROVED "O" RING GASKET GROOVED INTO THE BEARING SURFACE OF THE MANHOLE FRAME (PER DETAIL). THE "O" RING GASKET SHALL NOT BE INSTALLED IN THE MANHOLE FRAME UNTIL AFTER FINAL INSPECTION AND ACCEPTANCE OF THE PROJECT BY THE ENGINEER.

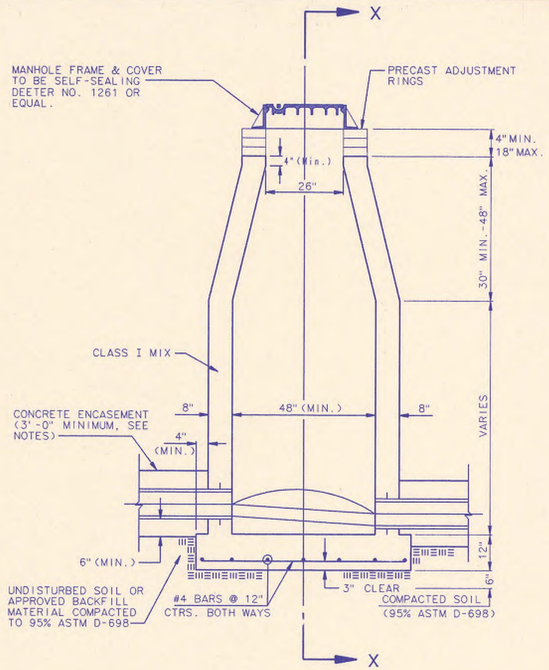
TOP VIEW

SECTION VIEW

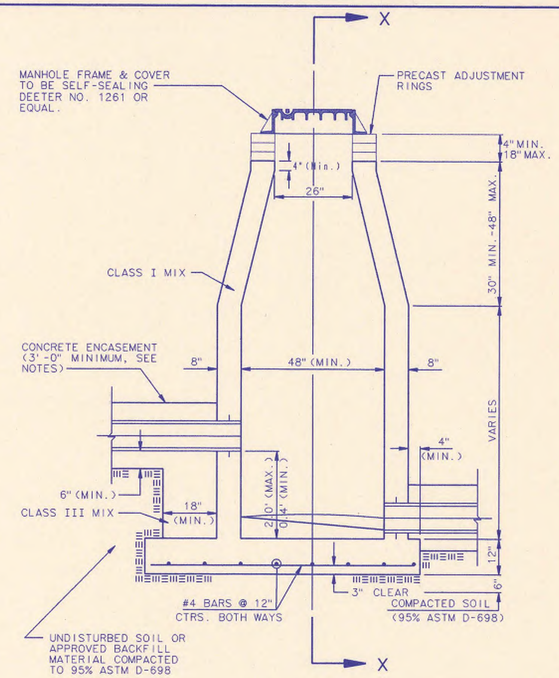
PICK HOLE DETAIL



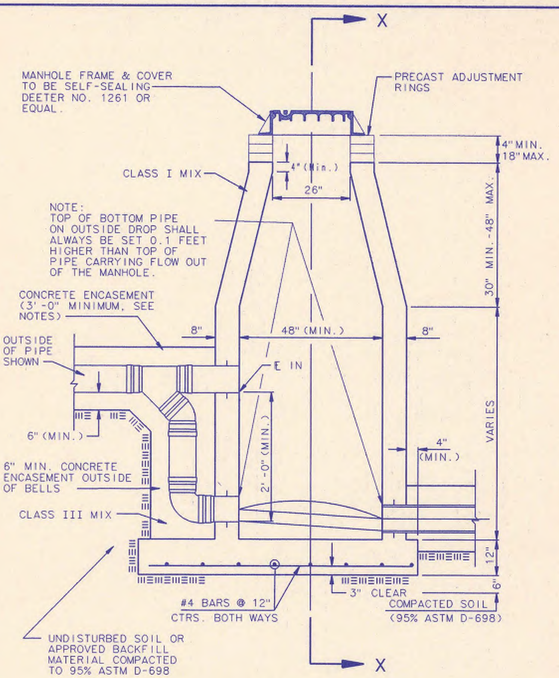
FRAME GROOVING DETAIL
(TYPICAL ALL MANHOLES)



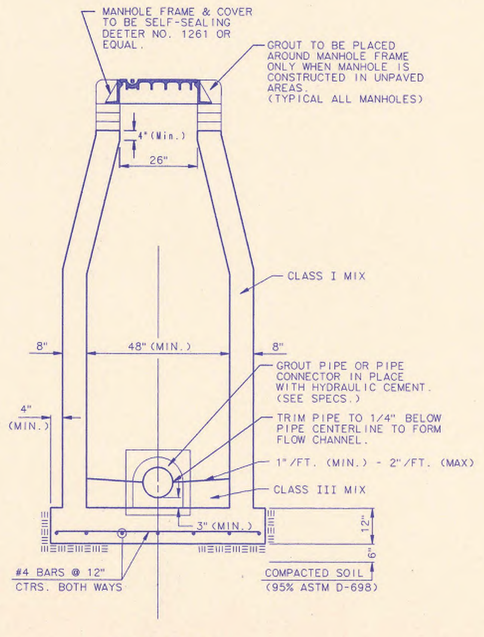
CAST IN PLACE
STANDARD MANHOLE
TYPE "A"



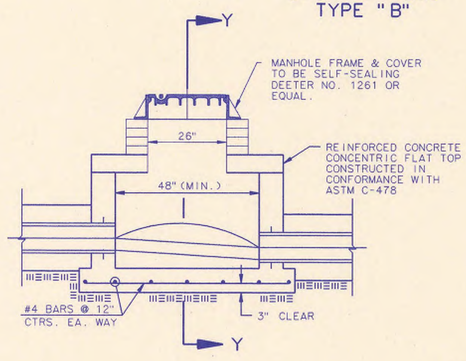
CAST IN PLACE
DROP MANHOLE
TYPE "B"



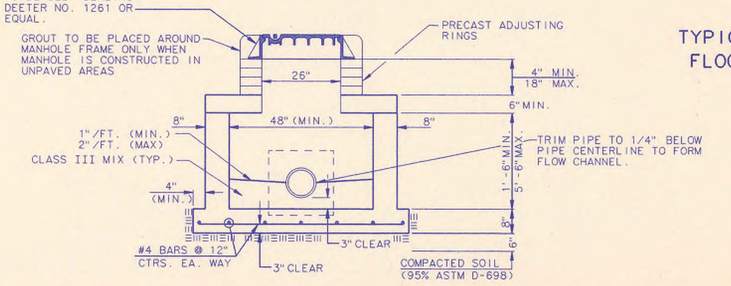
CAST IN PLACE
OUTSIDE DROP MANHOLE
TYPE "C"



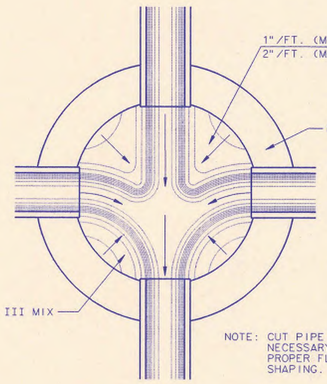
SECTION X
(TYPICAL)



SHALLOW MANHOLE
TYPE "D"



SECTION Y



TYPICAL MANHOLE
FLOOR SHAPING

CAST-IN-PLACE MANHOLE NOTES

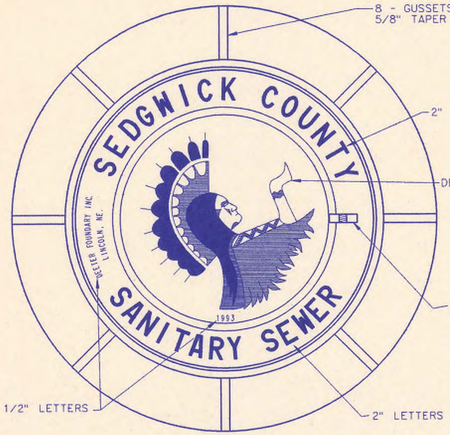
1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
2. STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
3. WHEN OPENINGS ARE CUT IN MANHOLE WALLS FOR PIPE, THE PIPE OR PIPE CONNECTOR SHALL BE GROUTED IN PLACE WITH HYDRAULIC CEMENT. EXTERIOR OF COMPLETED CONNECTION SHALL BE SEALED WITH APPROVED COATINGS.
4. CAST-IN-PLACE CIRCULAR CONCRETE MANHOLES ARE TO BE CONSTRUCTED ONLY IN LOCATIONS WHERE IT IS OBVIOUS THAT ANY ADJUSTMENT OF THE MANHOLE TOP ELEVATIONS WHICH MAY BE NECESSARY WILL NOT REQUIRE MODIFICATION OF THE CONCRETE BARREL.
5. APPROVED FLEXIBLE WATERSTOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS OF ASTM C-923 SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN ABS COMPOSITE PIPE OR PVC PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER EXTENDING FROM MANHOLES SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL.
6. THE MANHOLE FRAME SHALL BE SEATED ON AN APPROVED BUTYL-RUBBER SEALANT TO PROVIDE A WATER-TIGHT SEAL BETWEEN THE MANHOLE ADJUSTMENT RING OR BRICK MASONRY COLLAR AND THE MANHOLE FRAME.
7. GASKETED PIPE CAPS SHALL BE PROVIDED - BY THE PIPE SUPPLIER. GLUED OR CEMENTED CAPS WILL NOT BE ACCEPTED.
8. CONCRETE FOR MANHOLE BASES SHALL BE CLASS I AS DESCRIBED IN THE SPECIFICATIONS.
9. MANHOLES WITH PIPE SIZES LARGER THAN 15" SHALL HAVE 5' INSIDE DIAMETER.

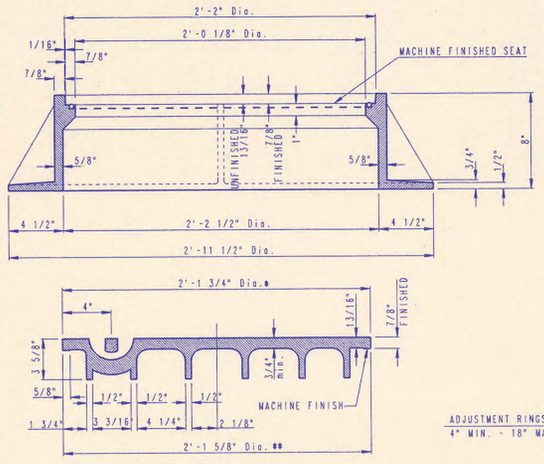
No.	Revision	By	Date
3	All Manholes Self-sealing/ MH Cover	RJ	1/25/93
2	Modified Pipe connection note and MH Note 3	RJ	6/01/92
1	Manhole Frame and Cover Note 1	RJ	7/16/91

CAST-IN-PLACE MANHOLE DETAILS

ADOPTED AS STANDARD DESIGN SEPTEMBER, 1989
BY
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

4-97





*OUTSIDE DIA. TOP OF COVER
**OUTSIDE DIA. BOTTOM OF COVER

MANHOLE FRAME AND COVER

(TOTAL WEIGHT = 430 LBS.)

MANHOLE FRAME AND COVER NOTES

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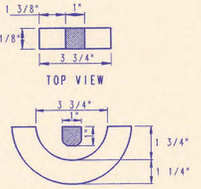
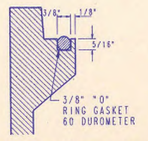
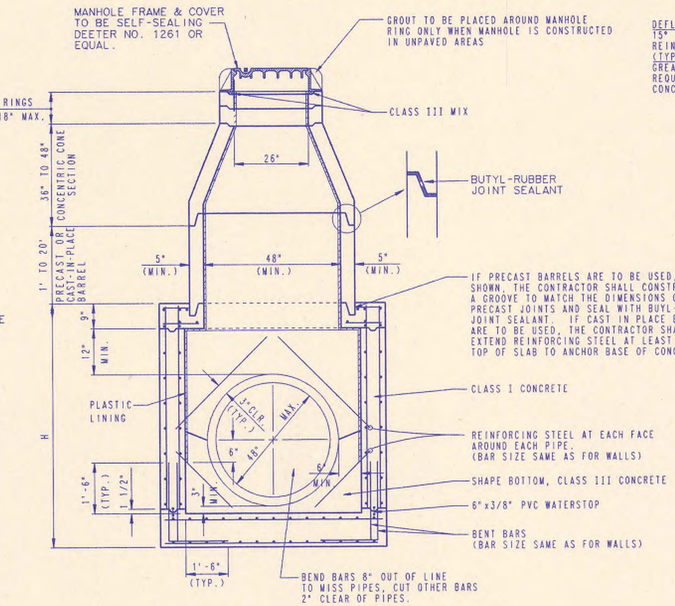


PICK HOLE DETAIL



FRAME GROOVING DETAIL (TYPICAL ALL MANHOLES)

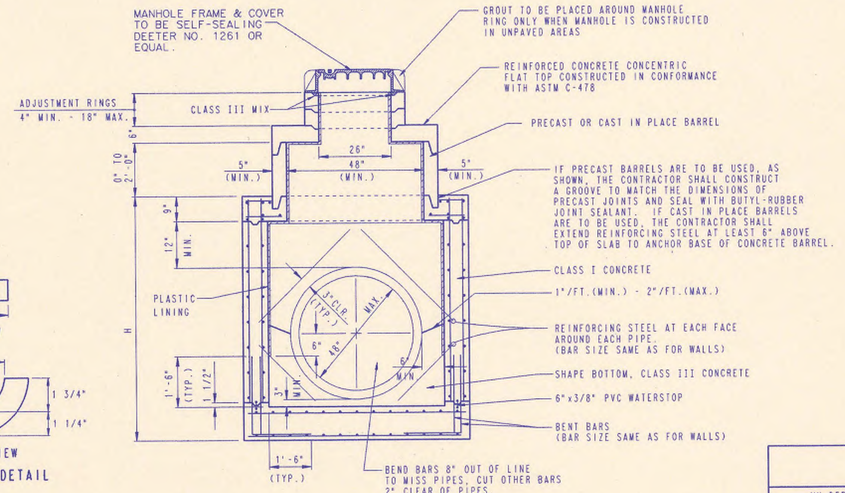


(SEE TYPE R MANHOLE SCHEDULE FOR H)

REINFORCED CONCRETE MANHOLE

(TOP MH TO ℄ OUT=9.0' MIN.)

SEE "MANHOLE DIMENSIONS AND REINFORCING STEEL SCHEDULE" FOR WALL, FLOOR, AND TOP SLAB STEEL REINFORCEMENT.



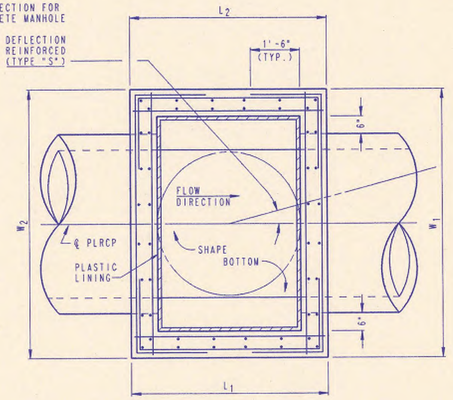
(SEE TYPE R MANHOLE SCHEDULE FOR H)

REINFORCED CONCRETE MANHOLE

(TOP MH TO ℄ OUT=5.5' TO 10.8')

SEE "MANHOLE DIMENSIONS AND REINFORCING STEEL SCHEDULE" FOR WALL, FLOOR, AND TOP SLAB STEEL REINFORCEMENT.

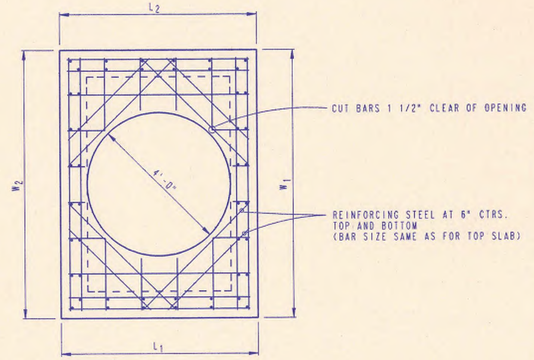
DEFLECTION ANGLE
15° MAXIMUM DEFLECTION FOR REINFORCED CONCRETE MANHOLE (TYPE "R")
GREATER THAN 15° DEFLECTION REQUIRES SPECIAL REINFORCED CONCRETE MANHOLE (TYPE "S")



(SEE TYPE R MANHOLE SCHEDULE FOR W_1, W_2, L_1 AND L_2)

REINFORCED CONCRETE MANHOLE

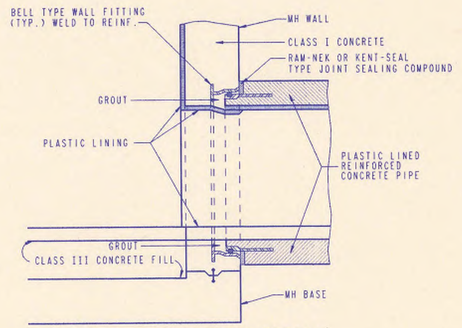
TYPICAL PLAN VIEW



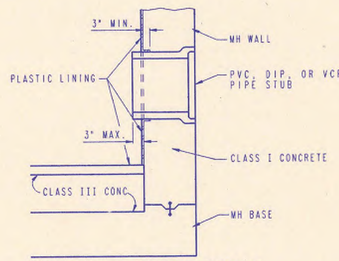
FOR DIMENSIONS, SEE TYPE "R" MANHOLE SCHEDULE, THIS SHEET.

REINFORCED CONCRETE MANHOLE

TYPICAL TOP SLAB REINFORCEMENT



R.C.P. CONNECTION DETAIL



PIPE CONNECTION DETAIL

TYPE "R" MANHOLE SCHEDULE

MH NO.	PIPE SIZE	DIMENSIONS * H	W_1	W_2	L_1	L_2	DEFLECTION ANGLE (Δ)

* SIDE W_1 = DOWNSTREAM SIDE OF MANHOLE
SIDE W_2 = DIRECTLY OPPOSITE "W_1"
SIDE L_1 = ADJACENT TO, AND CLOCKWISE FROM "W_1"
SIDE L_2 = DIRECTLY OPPOSITE "L_1"
H = HEIGHT OF REINFORCED CONCRETE BOX

REINFORCED CONCRETE MANHOLE NOTES

1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
2. STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
3. WHEN OPENINGS ARE CUT IN MANHOLE WALLS FOR PIPE, THE PIPE OR PIPE CONNECTOR SHALL BE GROUTED IN PLACE WITH HYDRAULIC CEMENT. EXTERIOR OF COMPLETED CONNECTION SHALL BE SEALED WITH APPROVED COATINGS.
4. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
5. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
6. APPROVED FLEXIBLE WATERSTOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS OF ASTM C-923 SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN PLASTIC PIPE IS USED. SEWER PIPE EXTENDING FROM MANHOLES SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL.
7. GASKETED PIPE CAPS SHALL BE PROVIDED BY THE PIPE SUPPLIER. GLUED OR CEMENTED CAPS WILL NOT BE ACCEPTED.
8. CONCRETE FOR MANHOLE WALLS AND BASES SHALL BE CLASS I AS DESCRIBED IN THE SPECIFICATIONS.
9. TYPE "R" MANHOLES SHALL BE REINFORCED CONCRETE MANHOLES WITH FOUR WALLS AS DETAILED ON THIS SHEET WITH WALL DIMENSIONS AS LISTED ON THE "TYPE R MANHOLE SHEDULE" THIS SHEET. TYPE "S" MANHOLES SHALL BE REINFORCED CONCRETE MANHOLES WITH FIVE OR MORE WALLS. REINFORCING FOR TYPE "S" MANHOLES SHALL BE AS DETAILED ON THIS SHEET.
10. WHERE TYPE "R" MANHOLES ARE REQUIRED, THE CONTRACTOR SHALL COMPLETE A TYPE "R" MANHOLE SCHEDULE AS SHOWN ABOVE FOR THE ENGINEERS APPROVAL PRIOR TO BEGINNING CONSTRUCTION. IF TYPE "S" MANHOLES ARE REQUIRED, THE CONTRACTOR SHALL SUBMIT SCALE PLAN VIEW MH DRAWINGS FOR THE ENGINEERS APPROVAL PRIOR TO BEGINNING CONSTRUCTION.

MANHOLE DIMENSIONS AND REINFORCING STEEL SCHEDULE FOR REINFORCED CONCRETE MANHOLES

MH DEPTH (TOP FRAME TO ℄ OUT)	DESCRIPTION	THICKNESS	STEEL PLACEMENT	STEEL CLEARANCE
5.5' TO 11.0'	TOP SLAB:	9"	#4 @ 12" MAX. CTRS. (BOTH WAYS), TOP & BOTTOM	1 1/2" EA. FC.
	WALLS:	9"	#4 @ 12" MAX. CTRS. (BOTH WAYS), EACH FACE	1 1/2" EA. FC.
	FLOOR:	12"	#4 @ 8" MAX. CTRS. (BOTH WAYS), TOP & BOTTOM	2" EA. FC.
11.0' TO 16.0'	TOP SLAB:	9"	#5 @ 12" MAX. CTRS. (BOTH WAYS), TOP & BOTTOM	1 1/2" EA. FC.
	WALLS:	9"	#5 @ 12" MAX. CTRS. (BOTH WAYS), EACH FACE	1 1/2" EA. FC.
	FLOOR:	12"	#5 @ 8" MAX. CTRS. (BOTH WAYS), TOP & BOTTOM	2" EA. FC.
16.0' TO 22.0'	TOP SLAB:	9"	#5 @ 12" MAX. CTRS. (BOTH WAYS), TOP & BOTTOM	1 1/2" EA. FC.
	WALLS:	12"	#5 @ 12" MAX. CTRS. (BOTH WAYS), EACH FACE	1 1/2" EA. FC.
	FLOOR:	12"	#5 @ 8" MAX. CTRS. (BOTH WAYS), TOP & BOTTOM	2" EA. FC.
22.0' TO 30.0'	TOP SLAB:	12"	#5 @ 12" MAX. CTRS. (BOTH WAYS), TOP & BOTTOM	1 1/2" EA. FC.
	WALLS:	12"	#5 @ 12" MAX. CTRS. (BOTH WAYS), EACH FACE	1 1/2" EA. FC.
	FLOOR:	12"	#6 @ 8" MAX. CTRS. (BOTH WAYS), TOP & BOTTOM	2" EA. FC.

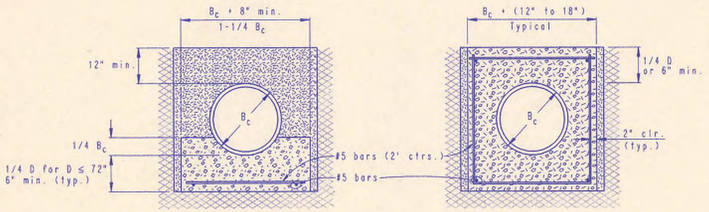
No.	Revision	By	Date
1	All Manholes Self-sealing/ MH Cover	RJ	1/25/93

REINFORCED CONCRETE MANHOLE DETAILS

ADOPTED AS STANDARD DESIGN SEPTEMBER, 1989
BY
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

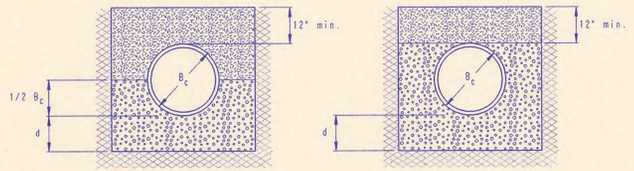
DATE | BY | CHECKED | CHECKED | PLAN

EA-255



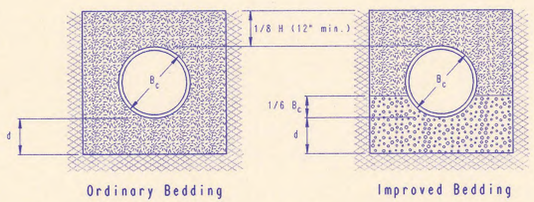
Concrete Cradle — Concrete Encasement

CLASS A



Normal Bedding — Improved Bedding

CLASS B



Ordinary Bedding — Improved Bedding

CLASS C

PIPE ZONE BACKFILLING

B_c = Outside Pipe Diameter

H = Backfill from Top of Pipe to Existing Ground

D = Inside Pipe Diameter

d = Depth of Bedding Material Below Pipe

= Granular Bedding Material or Sand-Gravel Bedding

= Compacted Embedment

= Concrete (Class III)

Depth of Bedding Material Below Pipe		
D	d(min) Soil	d(min) Rock
27" & smaller	4"	6"
30" to 60"	5"	9"
66" & larger	6"	12"

Granular Bedding Material shall be an approved material consisting of durable crushed rock conforming with the requirements of the latest revision of ASTM C-33 Size No. 67 (3/4" to No. 4); to be placed in not more than 6" layers and compacted by slicing with a shovel or vibrating. Soundness, abrasion, and absorption limits shall be as required for coarse aggregates in Section 03010-Concrete Work in the specifications.

Sand-Gravel Bedding Material - sand-gravel mix meeting Type UD-1 of the 1990 Kansas Standard Specifications for State Road and Bridge Construction.

Compacted Embedment shall be an approved sand material free from debris, organic material, and stones with 100% passing the 3/4" sieve to be placed in uniform layers not more than 6" thick and compacted to 90 percent maximum density as determined by ASTM D1557. Granular Bedding Material may be substituted for all or part of Compacted Embedment Materials.

Class A "Concrete Cradle" and/or Class A "Concrete Encasement" is not required unless specified on the plans. However, where unexpected trench conditions exist or improper trenching is performed Class A Bedding may be required as determined by the Engineer.

Class B Bedding shall be used for all flexible pipe.

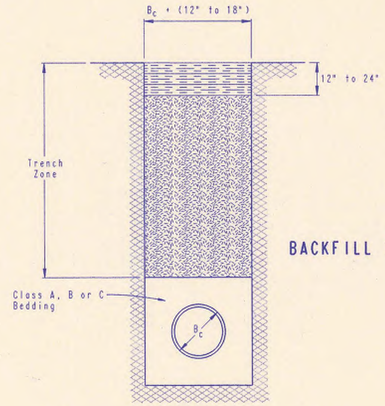
a. Class B Normal Bedding shall be used for PVC Pipe unless wet conditions are encountered.

b. Class B Improved Bedding shall be used for other flexible pipe, and for PVC pipe in wet conditions.

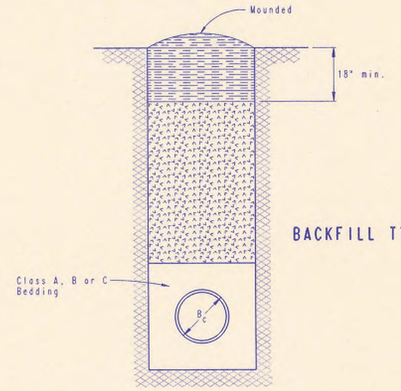
Class C Bedding shall be used for all rigid pipe.

a. Class C Ordinary Bedding shall be used for all rigid pipe unless wet conditions are encountered.

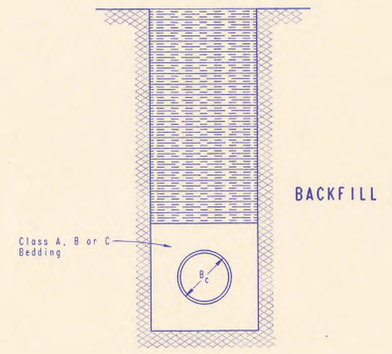
b. Class C Improved Bedding shall be used for wet conditions existing in the trench, as directed by the Engineer, at no additional cost to the Owner. The dimensions shall be equal to that required for "rock" excavation (see specifications).



BACKFILL TYPE I



BACKFILL TYPE II



BACKFILL TYPE III

TRENCH ZONE BACKFILLING

B_c = Outside Pipe Diameter

= Compacted Granular Backfill

= Uncompacted Earth Backfill

= Compacted Earth Backfill

Compacted Granular Backfill material shall be an approved sand material free from debris, organic material and stones with 100% passing the 3/4" sieve and not more than 15% passing a No. 200 sieve; to be jetted and mechanically vibrated into place and compacted to 90% density as determined by ASTM D1557.

Uncompacted Earth Backfill material may be natural soil free from large clods or stones, brush, roots more than 2 inches in diameter, debris, and junk. Flooding with water shall be provided as directed by the Engineer.

Compacted Earth Backfill shall consist of material existing prior to trenching or selected material as directed by the Engineer, and shall be compacted to 90% density as determined by ASTM D1557.

Backfill: Backfill material and compaction requirements shall conform to either Type I, Type II or Type III as specified in the plans. One years maintenance will be required on all backfill.

Backfilling Through Rock: Backfilling through rock shall be performed as specified in the paragraph Backfill above, except that the Pipe Zone is increased to provide eighteen (18) inches of cover over the pipe. When approved by the Engineer the remainder of the backfill may be excavated rock provided the excavated rock has been broken up so that earth and rock will thoroughly mix and not result in voids around the larger pieces of rock. Any excess rock remaining after the trench has been backfilled shall be removed or wasted as directed by the Engineer.

Backfilling Under Pavement: Backfilling under existing or proposed pavement shall be performed as Backfill Type I to a level of two (2) feet from the bottom of the pavement. The remainder of the trench shall be backfilled with selected material, sufficiently damp to be properly compacted in layers not exceeding six (6) inches in depth, compaction shall be performed with mechanical tampers and continued until a relative density of 95 percent of modified density, in conformance with ASTM D1557 is attained.

Backfilling Under Gravel Streets: Where the trench crosses or is in existing gravel surfaced streets, the backfill shall be compacted as provided in the paragraph "Backfilling Under Pavement".

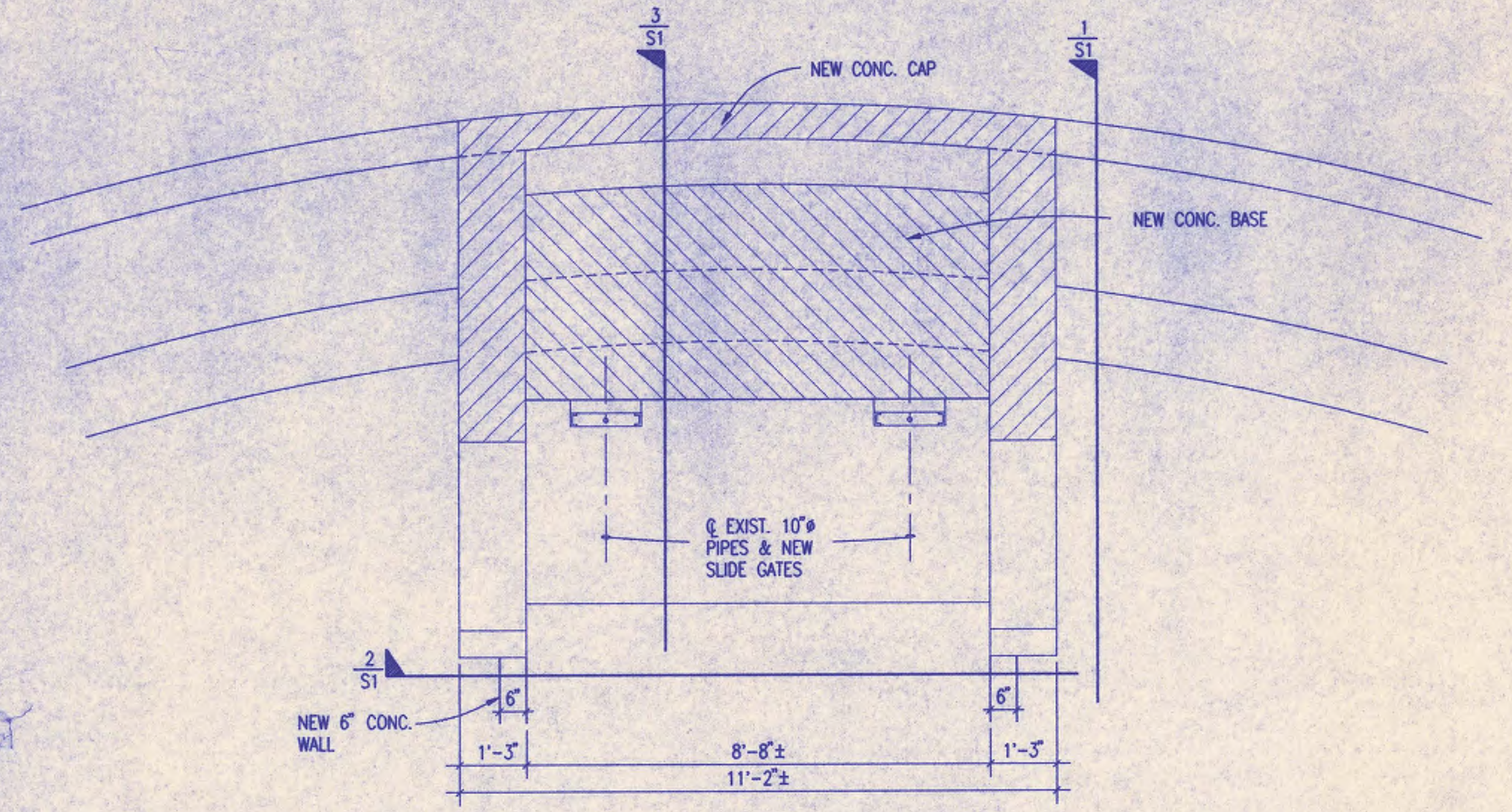
No	Revision	By	Date

BACKFILL DETAILS

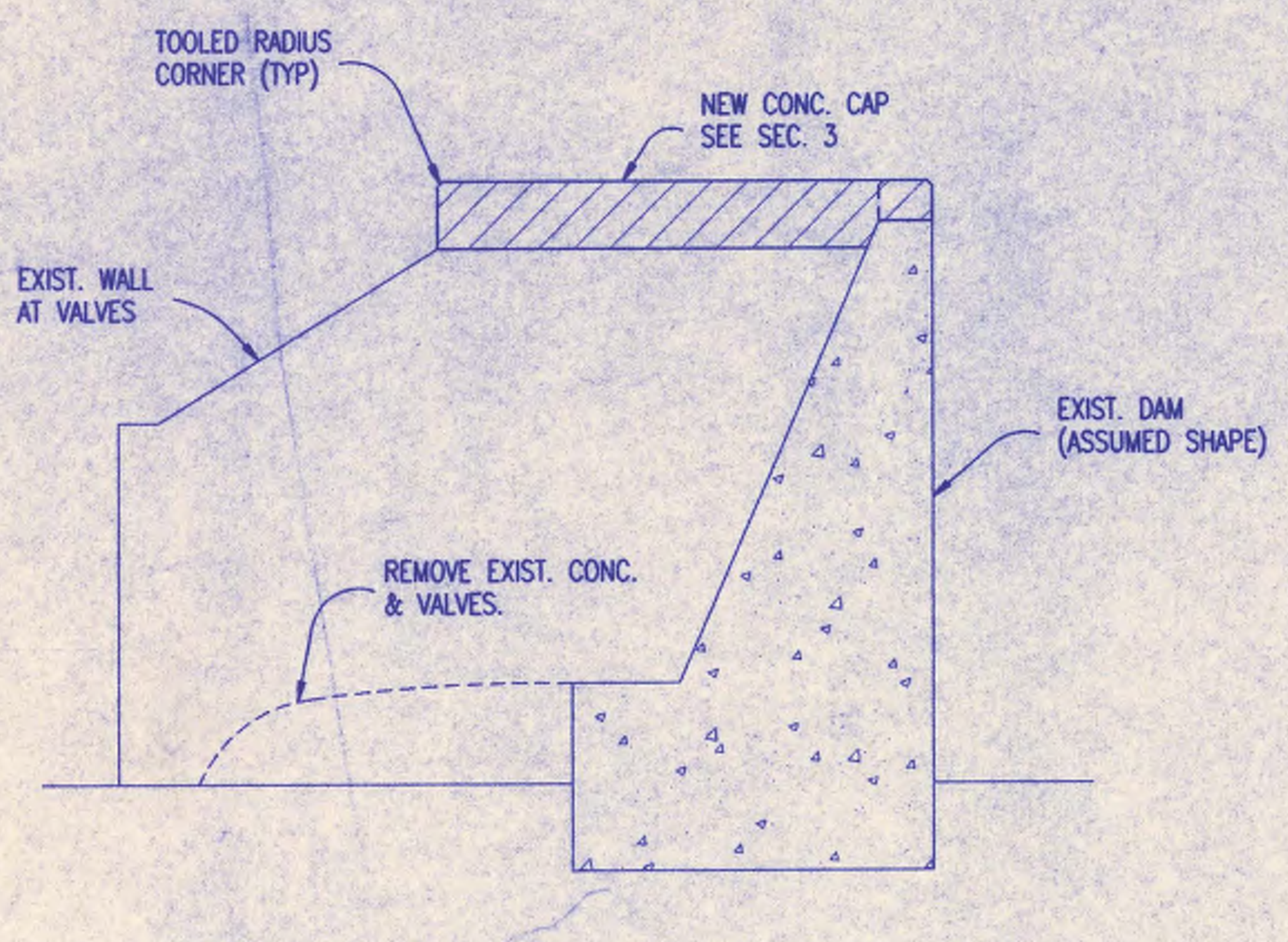
ADOPTED AS STANDARD DESIGN SEPTEMBER, 1989
BY
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

PLAN CHECKED CHECKED BY DATE

14-137



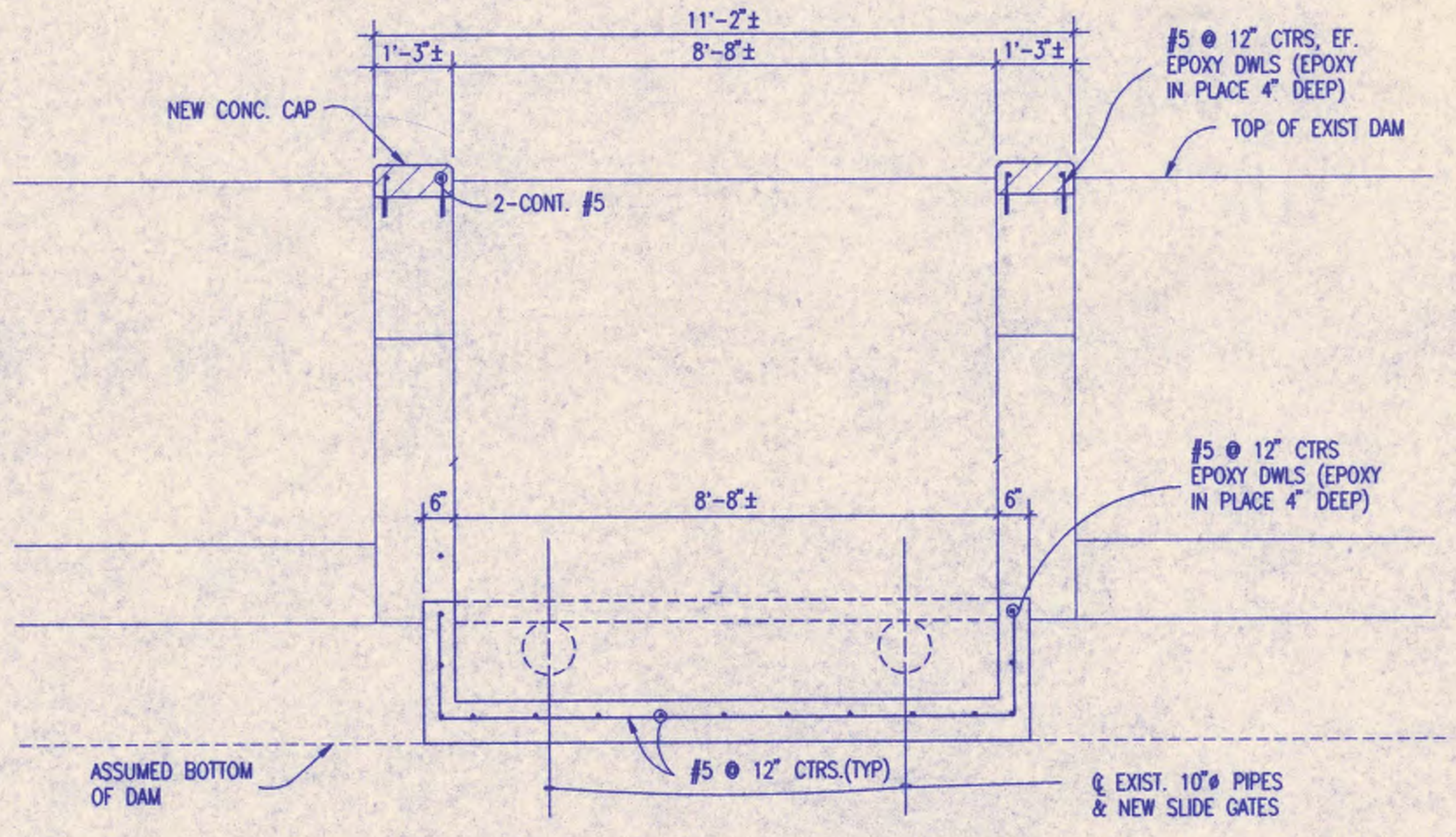
PLAN
1/2"=1'-0"



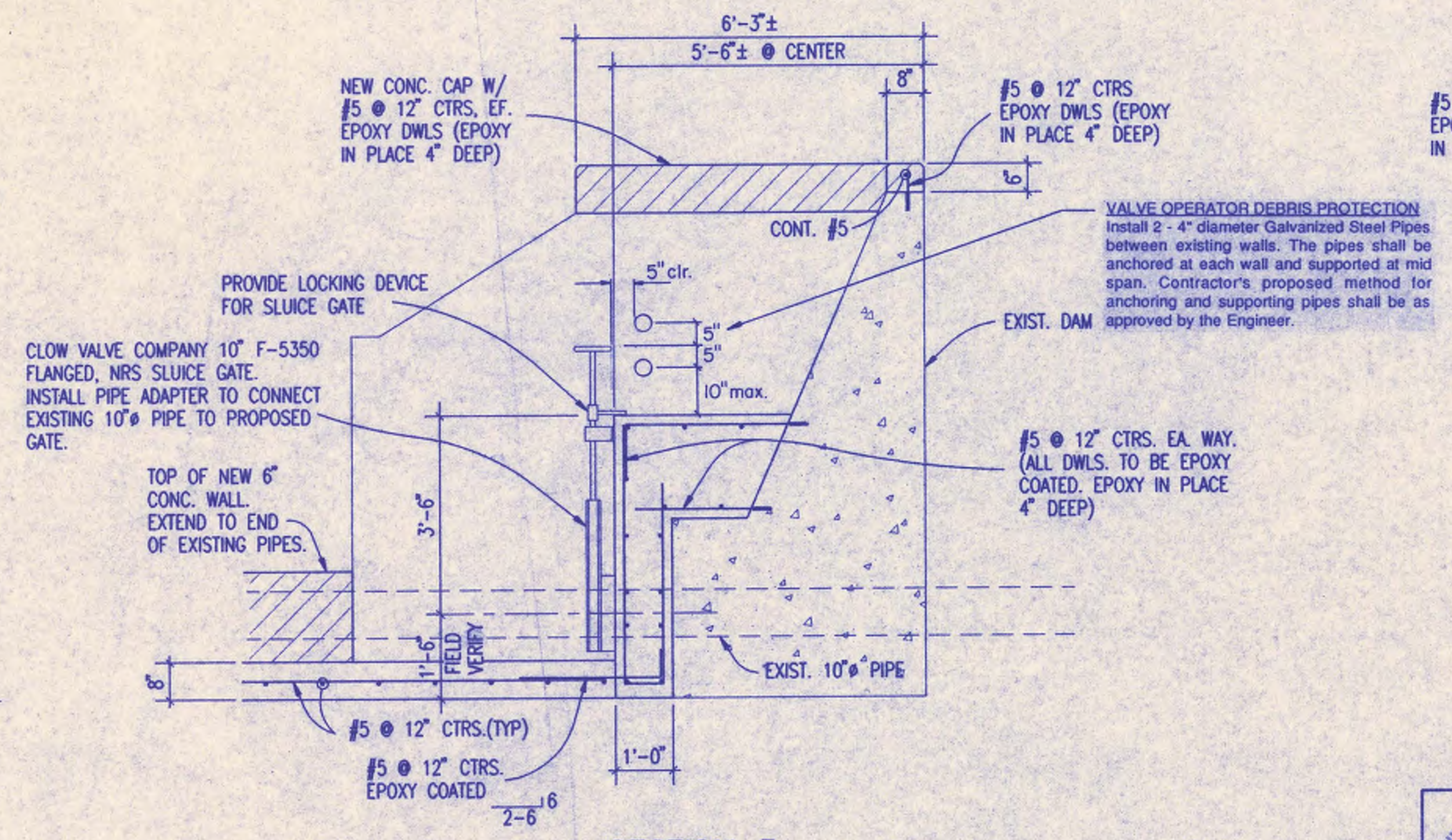
SECTION 1
1/2"=1'-0"

GENERAL NOTES:

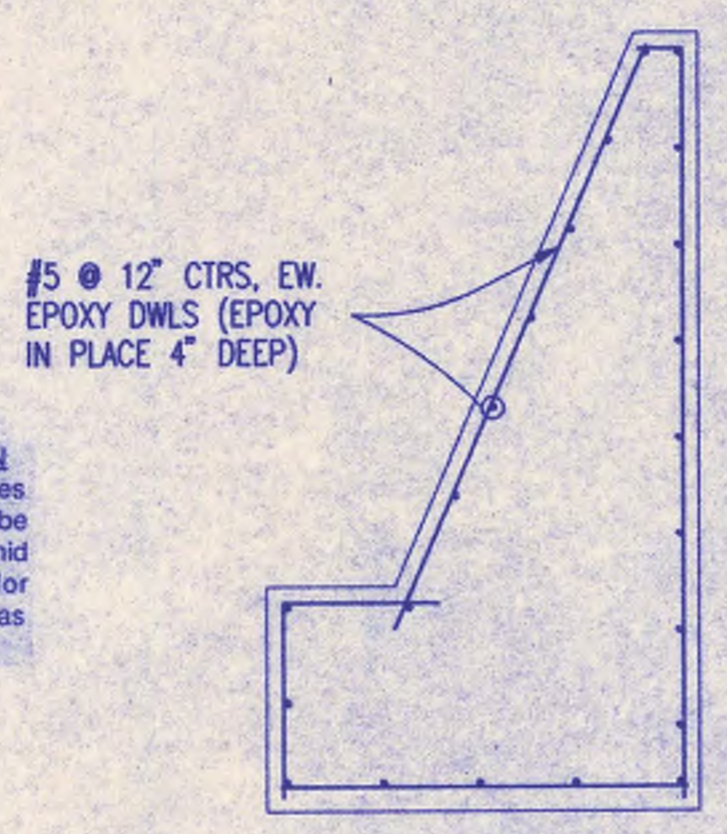
1. Design Stresses: Concrete: 3000 PSI min. at 28 days; Reinforcing Steel: A615. Grade 60 steel – 60,000 PSI min. yield.
2. Concrete protection for reinforcing shall be 1-1/2" clear for walls; 2" clear for formed exposed surfaces; and 3" for footings (typical unless otherwise noted).
3. Lap wall reinforcement 30 bar diameters (2'-0" min.) and
4. Reinforcing bars shall be detailed in accordance with the latest A.C.I. detailing manual.



SECTION 2
1/2"=1'-0"



SECTION 3
1/2"=1'-0"



SECTION @ DAM REPAIR
1/2"=1'-0"

GILBERT L. ADAMS LICENSED 8300 KANSAS PROFESSIONAL ENGINEER
8.30.93

No.	Revision	By	Date

SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E.
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

EXISTING DAM REPAIR

SANITARY SEWER INTERCEPTOR
FOUR MILE CREEK JOINT SEWER DISTRICT

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 S. TOPEKA
(316) 262-2691 WICHITA, KANSAS 67202 FAX (316) 262-3003

Designed by GLA	Job No. 10-93257	Sht. S1 of 1	
Drawn by PBS	Date AUGUST 1993		