83371

LATERAL 3, MAIN 10
OF THE
FOUR MILE CREEK SEWER
IN
THE CITY OF WICHITA

OCA NO. 744001

CITY OF WICHITA PROJECT NO. 468-83371

NEIL D. CABLE, P.E.-CITY ENGINEER

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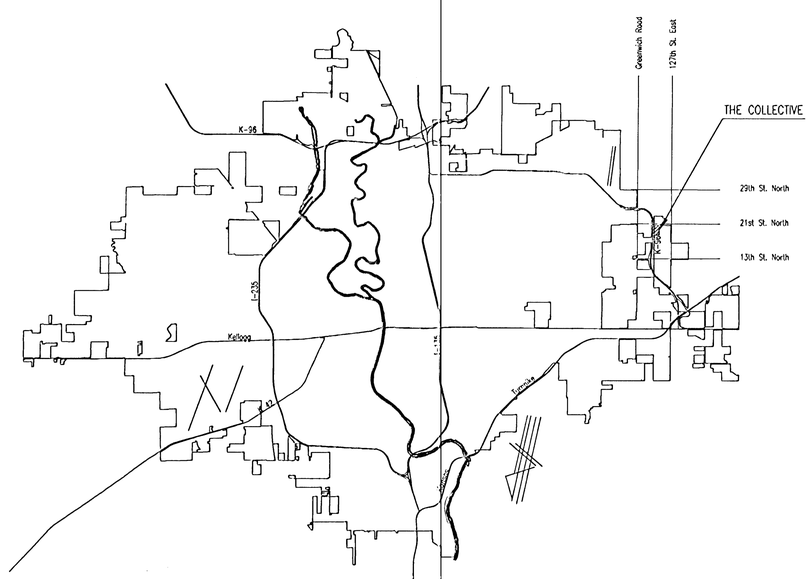

LOCATION MAP

CONSTRUCTION SCHEDULE/SEQUENCE

THE CONTRACTOR FOR EACH OF THE FOLLOWING COLLECTIVE PROJECTS SHALL COORDINATE THEIR EFFORTS WITH EACH OTHER SUCH THAT ANY NECESSARY SIMULTANEOUS CONSTRUCTION CAN PROCEED CONCURRENTLY WITHOUT CAUSING UNDUE DELAYS SO THAT ALL CONSTRUCTION CAN BE COMPLETED ON OR BEFORE THE DATES INDICATED.

SANITARY SEWER

THE CONTRACTOR SHALL COMPLETE THE COLLECTIVE SANITARY SEWER CONSTRUCTION (PROJECT NO. 468-83371) BY OCTOBER 21, 2003.

WATERLINES

CONSTRUCTION OF WATERLINE NO. 1 FROM WATERLINE STATION 1+15.00 TO WATERLINE STATION 12+15.40 AND THE CONSTRUCTION OF WATERLINE NO. 2 AND WATERLINE NO. 3 SHALL NOT BE STARTED UNTIL RESERVE A GRADING IS COMPLETE. THE CONTRACTOR SHALL COMPLETE THE COLLECTIVE WATERLINE CONSTRUCTION (PROJECT NO. 448-89646) BY OCTOBER 21, 2003.

STORM WATER DRAIN

THE CONTRACTOR SHALL COMPLETE TEE COLLECTIVE DRAINAGE CONSTRUCTION (PROJECT NO. 468-83372) BY NOVEMBER 5, 2003.

STREETS

WAWONA STREET IMPROVEMENTS (PROJECT NO. 472-83455)
COORDINATE EFFORTS SO SIMULTANEOUS CONSTRUCTION CAN TAKE PLACE.

AS BUILT
3/9/04
RDL
.PDF

KORY J. WILSON LICENSED 18337 07/15/03 KANSAS PROFESSIONAL ENGINEER

JULY 2003

PLANS PREPARED BY

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

ENGINEERS

WICHITA, KANSAS

DSNR: MDK OPER: CSL SCALE: 1=1.00
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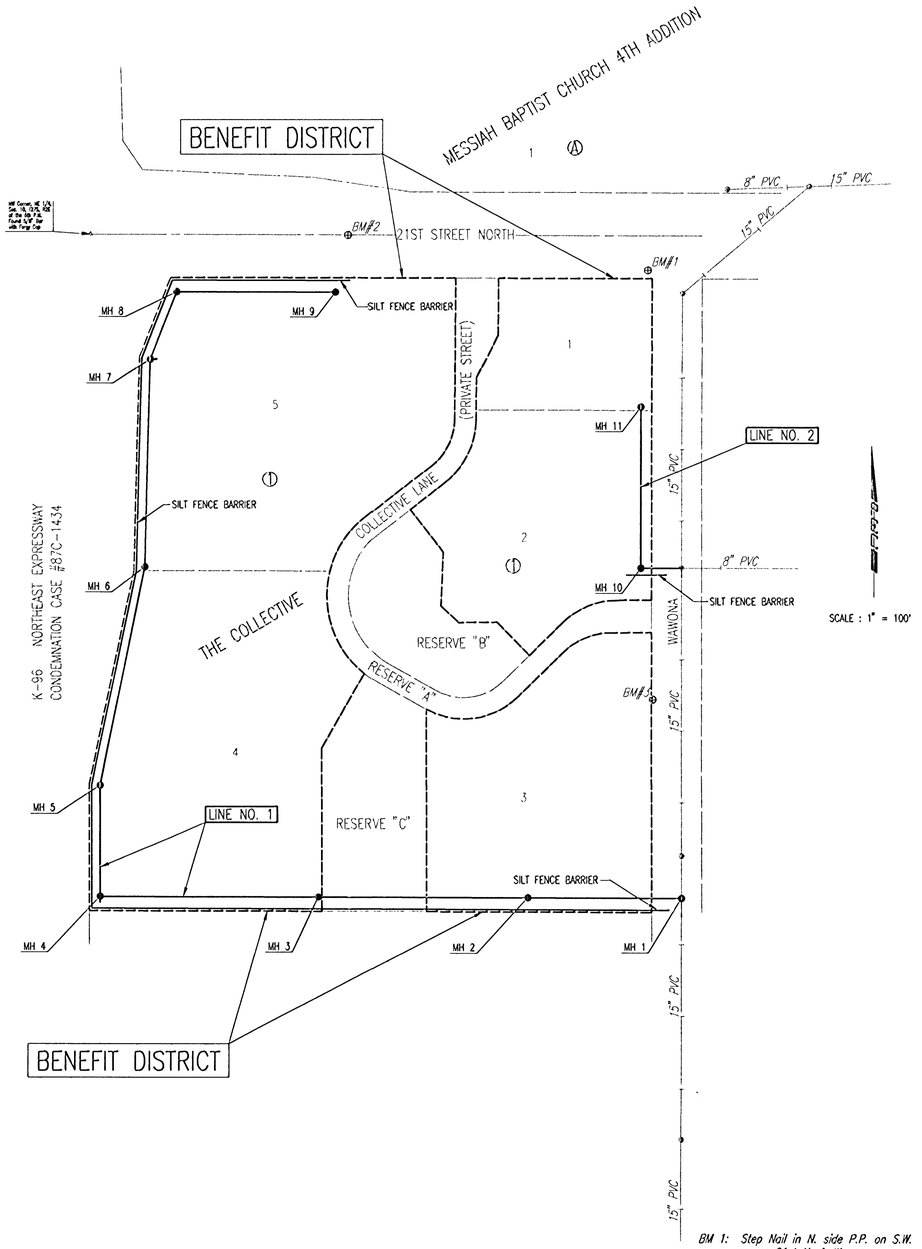

PLAT COORDINATE LIST
FOR HORIZONTAL CONTROL
SEE SHEET NO. 3

BM 1: Step Nail in N. side P.P. on S.W. corner 21st N. & Wawona. Elev.=197.32

BM 2: Chiseled "a" E. end Ctr. Median 21st N. E. of K96. Elev.=189.43

BM 3: R.R. Spike in N. face P.P. 120'± S. of Ctr. Res. A on W. side of Wawona. Elev.=190.17

DSNR: KJW OPER: CSL SCALE: 1=100.00
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GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS.
2. ALL ELEVATIONS SHOWN ARE BASED ON CITY OF WICHITA DATUM.
3. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
4. AT LEAST 72 HOURS PRIOR TO BEGINNING EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT (316) 687-2470 TO REQUEST THE LOCAL UTILITY COMPANIES MARK ANY EXISTING LINES WITHIN THE PROJECT AREA.
5. UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR OR UNLESS THE PLANS SPECIFICALLY IDENTIFY A UTILITY TO BE ADJUSTED BY ITS OWNER DURING CONSTRUCTION. EXISTING UTILITIES AND THEIR LOCATIONS, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR THE DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL 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. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE RESTORATION".
7. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
8. MANHOLES SHALL BE TYPE "P" MANHOLES. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS.
9. ALL LAWN/TURF AREAS DISTURBED BY CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE RESTORED WITH THE SAME GRASS/SOD AS EXISTING. RESTORATION OF DISTURBED AREAS SHALL INCLUDE, BUT NOT BE LIMITED TO, TOP SOIL PREPARATION, SEEDING, MULCH, AND/OR RESEEDING. ALL SEEDING/SODDING WORK SHALL BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD SPECIFICATIONS AND THE CITY OF WICHITA ADMINISTRATIVE REGULATION NO. AR78 WHICH GOVERNS CLEANUP AND RESTORATION OR REPLACEMENT FOLLOWING CONSTRUCTION. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE RESTORATION".
10. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED, TREE TRIMMINGS, AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE, AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WILL REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS. OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS MAY REQUIRE ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL LOCATION.
11. THE CONTRACTOR SHALL AVOID REMOVAL OR TRIMMING OF ANY TREES OR SHRUBS WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES THE REMOVAL OR TRIMMING IS UNAVOIDABLE, HE SHALL COORDINATE SUCH WORK WITH THE ENGINEER. COSTS FOR TREE/SHRUB REMOVAL AND TRIMMING REGARDLESS OF SIZE SHALL BE CONSIDERED SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE CLEARING".
12. THE CONTRACTOR SHALL PREVENT ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER DURING CONSTRUCTION.
13. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.
14. ALL APPROVED EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE STOCKPILED WITHIN THE COLLECTIVE AT NO ADDITIONAL COST TO THE OWNER. STOCKPILE LOCATIONS SHALL BE AS DIRECTED BY MR. J.V. JOHNSTON, AT (316) 682-1000 AND IN ACCORDANCE WITH GENERAL NOTE NO. 10 ABOVE.
15. CONTRACTOR IS REQUIRED TO MAINTAIN CONTINUOUS FLOW OF SEWAGE IN EXISTING MAINS AT ALL TIMES.
16. THE CONTRACTOR SHALL SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH TEMPORARY RYE GRASS. RYE GRASS SEED SHALL BE PLANTED AT A MINIMUM RATE OF SIX (6) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET. THIS TEMPORARY SEEDING MAY BE OMITTED ONLY IF OTHER SEEDING IS REQUIRED IN ACCORDANCE WITH GENERAL NOTE NO. 9 ABOVE. TEMPORARY SEEDING OR PERMANENT SEEDING/SODDING SHALL BE APPLIED WITHIN 14 DAYS AFTER THE AREA HAS BEEN DISTURBED.
17. THE CONTRACTOR SHALL NOT BURY MANHOLES THAT HAVE RIM ELEVATIONS WHICH ARE LOWER THAN EXISTING GROUND AT THE MANHOLE. THE GROUND AROUND SUCH MANHOLES AND ALONG THE SEWER ALIGNMENT SHALL BE BACKFILLED TO THE APPROXIMATE ELEVATION OF THE PROPOSED GROUND ELEVATION SHOWN ON THE PLAN/PROFILE SHEETS. THE CONTRACTOR SHALL PROVIDE DRAINAGE AWAY FROM THESE MANHOLES AND SEWER LINES BY CONSTRUCTION OF TEMPORARY DITCHES OR SLOPING THE GROUND AS REQUIRED. ALL COSTS FOR THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE INSTALLED BID PRICE FOR MANHOLES OR PIPE.
18. THE CONTRACTOR SHALL PROVIDE MOUNDED EARTH AT MANHOLES AND CLEANOUTS THAT HAVE TOP ELEVATIONS GREATER THAN 1 FOOT ABOVE FINISHED GRADE, AS SHOWN ON THE PLANS. COSTS FOR MOUNDING SHALL BE CONSIDERED SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE CLEARING" AND "SITE RESTORATION."
19. INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA AND LOCAL BUSINESS OR RESIDENTIAL TRAFFIC GENERATED WITHIN THE PROJECT AREA ARE TO BE CARRIED THROUGH CONSTRUCTION AS FURTHER PROMULGATED BY PROJECT SPECIAL PROVISIONS.
20. EROSION CONTROL (BMP'S)
THE CONTRACTOR SHALL INSTALL AND/OR MAINTAIN EROSION CONTROL METHODS AS SPECIFIED ON SHEETS 10-13. THE FOLLOWING QUANTITIES ARE ESTIMATED, AND SHOULD BE CONSIDERED THE MINIMUM EFFORT REQUIRED. THE GENERAL LOCATION OF THE REQUIRED EROSION CONTROL IS ILLUSTRATED ON THE PROJECT KEY MAP. THE SANITARY SEWER CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE EROSION CONTROL SHOWN THROUGH THE COMPLETION OF ALL PROJECTS LISTED IN THE CONSTRUCTION SCHEDULE/SEQUENCE ON THE TITLE SHEET. INSTALLATION OF THESE BMP'S DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF ABATING SOIL EROSION.

SILT FENCE BARRIER	1,953 L.F.

LEGEND

- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER w/MANHOLE
- PROPOSED SANITARY SEWER w/MANHOLE
- EXISTING SANITARY SEWER w/CLEANOUT
- PROPOSED SANITARY SEWER w/CLEANOUT

KORY J. WASON LICENSED 16337 07/15/03 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

LATERAL 3, MAIN 10 OF THE
FOUR MILE CREEK SEWER

KEY MAP AND GENERAL NOTES

NEIL D. CABLE, P.E.- CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-83371

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316-262-2691 • FAX 316-262-3003

Designed by	KJW	Job No.	35-03088-1	Sht. 2 of 13
Drawn by	DEP	Date	MARCH 2003	

COORDINATE LIST		
POINT	NORTH	EAST
1	19,943.5236	17,461.4443
2	19,941.9203	18,133.5811
3	19,056.9178	18,134.6538
4	19,058.7908	17,349.4034
5	19,233.9008	17,349.4035
6	19,532.0921	17,411.2517
7	19,832.6417	17,418.1346
8	20,003.7910	17,349.4060
9	19,942.5763	17,858.5819
10	19,942.4332	17,918.5817
11	19,862.4334	17,918.3909
12	19,802.5051	17,888.2479
13	19,744.5053	17,888.1095
14	19,653.9898	17,843.6946
15	19,744.5769	17,858.1096
16	19,677.6741	17,825.2812
17	19,744.7796	17,773.1099
18	19,583.8478	17,753.4743
19	19,402.8611	17,766.8172
20	19,607.5322	17,735.0609
21	19,376.7325	17,752.0761
22	19,497.7948	17,820.3763
23	19,365.5855	17,832.8883
24	19,377.9525	17,925.9534
25	19,339.4569	17,818.1473
26	19,356.5805	17,947.0066
27	19,433.5197	17,871.2151
28	19,460.5142	18,009.7654
29	19,491.8625	18,086.1266
30	19,382.8626	18,086.2587
31	19,418.9559	18,010.3266
32	19,446.8530	18,078.2810
33	19,349.8530	18,078.3986
34	19,491.9207	18,134.1265
35	19,446.9207	18,134.1811
36	19,757.5053	17,888.1405
37	19,756.9205	18,133.8053
38	19,617.1629	17,796.3259
39	19,557.9522	17,842.3595
40	19,483.0043	17,839.5632
41	19,460.8131	17,863.9876
42	19,461.2050	17,917.8441
43	19,414.8990	17,963.4594
44	19,338.8094	17,819.3117
45	19,057.6692	17,819.6525
46	19,389.1125	17,733.7210
47	19,283.9272	17,674.3782
48	19,058.0150	17,674.6520
49	19,531.4379	17,685.5092

1 = COORDINATE POINT NO.

NW Corner, NE 1/4, Sec. 10, 12S, R2E of the 6th P.M. Found 5/8" Bar with Forgy Cap

21ST STREET NORTH

Complete Access Control 397.14' S89°51'48"E

Access Control Except One Opening 60'

Complete Access Control 215'

112.18'

S00°08'12"W 60'

S89°51'48"E 672.14'

397.14' 60' 215.00'

Set Chiseled "+" on Telephone Pedestal Pad

Found 3/4" Iron Pipe

N21°20'07"E 119.04'

S00°08'12"W 60.00'

S26°42'05"W 67.08'

15' Drainage and Utility Easement

S00°08'12"W 198.00'

RESERVE "A" (PRIVATE STREET) 50'

S89°51'49"E 245.67'

N01°18'43"E 300.63'

77.14' R = 85.00' Δ = 52°00'09" R = 115.00' 104.37'

15' Drainage and Utility Easement

S00°08'12"W 114.28'

COLLECTIVE LANE 60.00'

S37°51'45"E 75.00'

S52°08'12"W 92.50'

54.28'

S00°08'12"W 214.41' R = 109.00' Δ = 112°42'22" R = 130.00'

S89°51'48"E 274.26'

RESERVE "B"

S44°34'34"E 33.00'

N89°34'59"E 53.86'

S44°34'10"E 65.00'

15' Drainage and Utility Easement

R = 109.00' Δ = 44°30'00" R = 97.00' 75.34'

N89°55'50"E 55.90'

COLLECTIVE LANE 65'

S60°34'10"E 75.86'

RESERVE "A" (PRIVATE STREET)

S60°34'10"E 100.74' R = 78.00' Δ = 74°00'00" R = 108.00' 139.15'

N45°25'50"E 88.88'

15' Drainage and Utility Easement

S28°25'50"W 120.77'

N11°43'04"E 304.54'

20' Utility Easement

S00°04'10"E 225.91'

RESERVE "C"

S00°04'10"E 281.14'

N00°00'00"E 175.11'

325.25' 5' Wall Easement 145.00' 20' Utility Easement 315.00'

N89°51'48"W 785.25'

Found 3/4" Iron Pipe

WAWONA

20' Utility Easement

6.90'

70'

185.00'

265.00'

885.00'

390.00'

45'

K-96 NORTHEAST EXPRESSWAY
CONDEMNATION CASE #87C-1434

Complete Access Control

SCALE : 1" = 50'

• = 3/4" IRON PIPE W/PEC CAP UNLESS OTHERWISE NOTED

THE COLLECTIVE

AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS

No.	Revision	By	Date

LATERAL 3, MAIN 10 OF THE
FOUR MILE CREEK SEWER

PLAT

NEIL D. CABLE, P.E.- CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-83371

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316-262-2691 • FAX 316-262-3003

Designed by	KJW	Job No.	35-03088-1
Drawn by		Date	MARCH 2003

Sht. 3 of 13

DSNR: PEC OPER: CSL SCALE: 1=50.00
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Sta. 0+00.0*
Construct MH 1 over exist. 15" PVC pipe. Remove top half of 15" PVC Pipe thru MH. Outside Drop MH
Shape invert to provide smooth flow. Construct a minimum of 3' reinforced concrete encasement on all 15" pipes from MH wall. (Subsidiary to MH Const.)

CAUTION !!!
2 1/2" Waterline
Leave in service
(Butler County RWD #5)

CAUTION !!!
Buried Telephone
(SBC)

CAUTION !!!
Water Meter and Water Service Line
Butler County RWD #5
Contractor shall cut & cap the existing water service line. Remove the meter, meter box and meter setter and salvage to Mr. Ralph Lanzrath (636-5175).
Coordinate all work for this item with Butler County Rural Water District #5, Ms. Pat Shaffer @ (316) 778-1631.
All costs incurred for this work shall be considered subsidiary to the Lump Sum price bid for "Site Clearing".

Sta. 2+15.0
Const. MH 2
Standard MH

Sta. 5+06.6
Const. MH 3
Standard MH

Sta. 8+11.9
Const. MH 4
Standard MH

Install 1-8" Stub and Plug

Remove and Replace 18 L.F. Gravel Road

Install 215.0 L.F. 8" Pipe

Install 291.6 L.F. 8" Pipe

Install 305.3 L.F. 8" Pipe

LINE NO. 1
See sheet no. 5

Top=184.60
℄ In=161.10 (N)
Out=160.82 (S)

Top=181.60
℄ In=158.10 (N)

Prop. 24" RCP

Prop. 18" RCP

Prop. 15" RCP

Gravel Road

15" PVC

10' Utility Esmt.

20' Utility Easement

10' Drainage Easement
(by separate instrument)

10' Gage Orange @ 10' O.C.

℄ 15" KG&E Easement
From 112 Page 1271

Limits of Prop. Pvmt. Removal

141.625'

90°00'00"

180°00'00"

90°08'12"

89°51'48"

BLOCK 1 LOT 4 LANZRATH ADDITION

LOT 1 TRINITY ACADEMY

RESERVE "C"
Proposed Pond
(by others)
STATIC=179.0
HW=181.3

Pond

Lagoon
To
CO

Water Edge of

To House

CO

5' Wall Easement

Toe

K-96 NORTHEAST EXPRESSWAY
CONDEMNATION CASE #87C-1434

*MH 1 shall be constructed to the proposed elevation shown in the profile. This manhole shall be extended from the proposed elevation to the existing elevation using temporary brick adjustment rings.

DENOTES SEWER SERVICE.
SEE SHEET NO. 9 FOR SEWER SERVICE SCHEDULE AND DETAILS

X - Denotes Trees to be removed.

SCALE:
PLAN: LAT. & LONG. 0 40 80
PROFILE: HORIZ. SAME AS ABOVE
VERT.

KORY J. WILSON
LICENSED
16337
07/15/03
KANSAS
PROFESSIONAL ENGINEER

PLAN | CHECKED | CHECKED | BY | DATE

SANITARY SEWER LINE NO. 1

PROFILE | CHECKED | CHECKED | BY | DATE

Top Elevation (Temporary Construction) = 184.5
Top Elevation (Permanent Construction) = 184.0
MH 1 Top Elev. = 184.0
Exist. 2 1/2" Waterline
Buried Telephone
Existing Ground
MH 2 Top Elev. = 184.2
Proposed Ground (by others)
Top mound= 182.5
10'
Proposed Ground
MH 3 Top Elev. = 182.9
Top mound= 182.2
MH 4 Top Elev. = 182.6
Prop. 18" RCP 10' Right (by others)
Prop. 15" RCP 10' Right (by others)
℄ In = 169.38
from 6" Service Connection (N)
Prop. Storm Sew. MH 10' Right (by others)
℄ In = 171.77
from 1-8" Stub (S)
Sta. 0+00 to Sta. 0+21
Place 23 L.F. of Excavatable Flowable Fill from top of pipe bedding to Elev.= 181.0
℄ Out= 160.82 (15")
℄ In= 168.32
℄ = 168.72
℄ = 169.12
℄ In = 169.18
℄ = 169.52
℄ = 169.92
℄ In = 170.35
℄ = 170.72
℄ = 171.12
℄ Out = 171.57
℄ In= 171.77
215.0 L.F. 8" Pipe @ 0.40%
291.6 L.F. 8" Pipe @ 0.40%
305.3 L.F. 8" Pipe @ 0.40%
200 190 185 180 175 170 165 160 155
0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00

LATERAL 3, MAIN 10 OF THE FOUR MILE CREEK SEWER

NEIL O. CABLE, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-83371

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316-262-2691 • FAX 316-262-3003

Designed By	KJW	Job No.	35-03088-1
Drawn By	TLS	Date	MARCH 2003

Sheet 4 of 13

DSNR: KJW OPER: CSL SCALE: 1=40.00
Q:\2003\03088\001\sspp01 07-15-2003 03:22:58 pm

SCALE:
PLAN: LAT. & LONG. 0 40 80
PROFILE: HORIZ. SAME AS ABOVE
VERT. 0 5

Sta. 8+11.9
MH 4

Sta. 9+65.5
Const. MH 5
Standard MH

Sta. 12+76.4
Const. MH 6
Standard MH

Sta. 15+69.1
Const. MH 7
Standard MH

Sta. 16+69.9
Const. MH 8
Standard MH

K-96 NORTHEAST EXPRESSWAY
CONDEMNATION CASE #87C-1434

89°51'45"
11°29'44"
10° 11'01"
3° 48'59"
20° 01'24"
69°58'35"
85°49'05"

20' Util. Esmt.
20' Utility Easement
5' Wall Easement
Proposed 20' Waterline Easement (by separate instrument)
Proposed 8" Fire Service Line (by others)
Proposed 20' x 25' Waterline Easement (by separate instrument)
Proposed 15' San. Sew. Esmt. (by separate instrument)
Proposed Building (by others)
Proposed Cox Communications Overhead Fiber Optic
Sprint Fiber Optic
Asphalt
24" RCP
18" RCP
SDC 11'x4.5'
Top=184.15
℄ In=177.50
℄ Out=177.40

BLOCK 1 LOT 4 LANZRATH ADDITION

Install 153.6 L.F. 8" Pipe
Install 310.9 L.F. 8" Pipe
Install 292.7 L.F. 8" Pipe
Install 100.8 L.F. 8" Pipe
Install 1-6" Stub and Plug

LINE NO. 1
See sheet no. 4

DENOTES SEWER SERVICE.
SEE SHEET NO. 9 FOR SEWER SERVICE SCHEDULE AND DETAILS

℄ 21ST STREET NORTH =

KORY J. WILSON
LICENSED
16337
9/15/03
KANSAS
PROFESSIONAL ENGINEER

SANITARY SEWER LINE NO. 1

PLAN | BY | DATE | CHECKED | CHECKED

PROFILE | BY | DATE | CHECKED | CHECKED

MH 4 Top Elev. = 182.6
MH 5 Top Elev. = 182.6
MH 6 Top Elev. = 185.7
MH 7 Top Elev. = 185.7
MH 8 Top Elev. = 185.2

Top mound= 182.2
Top mound= 182.2
Top mound= 185.3
Top mound= 185.3
Top mound= 184.8

Proposed Ground
Proposed Ground (by others)
Existing Ground

℄ In = 171.77 from 8" Stub (S)
℄ In = 173.83 from 6" Service Connection (NE)
℄ In = 175.0 from 1-6" Stub (E)

℄ Out= 171.57
℄ In= 171.77
℄ = 172.12
℄ = 172.38
℄ = 172.52
℄ = 172.92
℄ = 173.32
℄ = 173.63
℄ =173.72
℄ = 174.12
℄ = 174.52
℄ = 174.80
℄ = 174.92
℄ Out= 175.20
℄ In = 175.40

153.6 L.F. 8" Pipe @ 0.40%
310.9 L.F. 8" Pipe @ 0.40%
292.7 L.F. 8" Pipe @ 0.40%
100.8 L.F. 8" Pipe @ 0.40%

200 190 185 180 175 170 165 160 155

9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00

LATERAL 3, MAIN 10 OF THE FOUR MILE CREEK SEWER

SANITARY SEWER LINE NO. 1

MDL D. CABLE, P.E. - CITY ENGINEER
CITY OF WICHITA - PROJECT NO. 466-83371

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316-262-2691 • FAX 316-262-3003

Designed By KJW
Drawn By TLS
Job No. 35-03088-1
Date MARCH 2003

Sheet 5 of 13

DSNR: KJW OPER: CSL SCALE: 1=40.00
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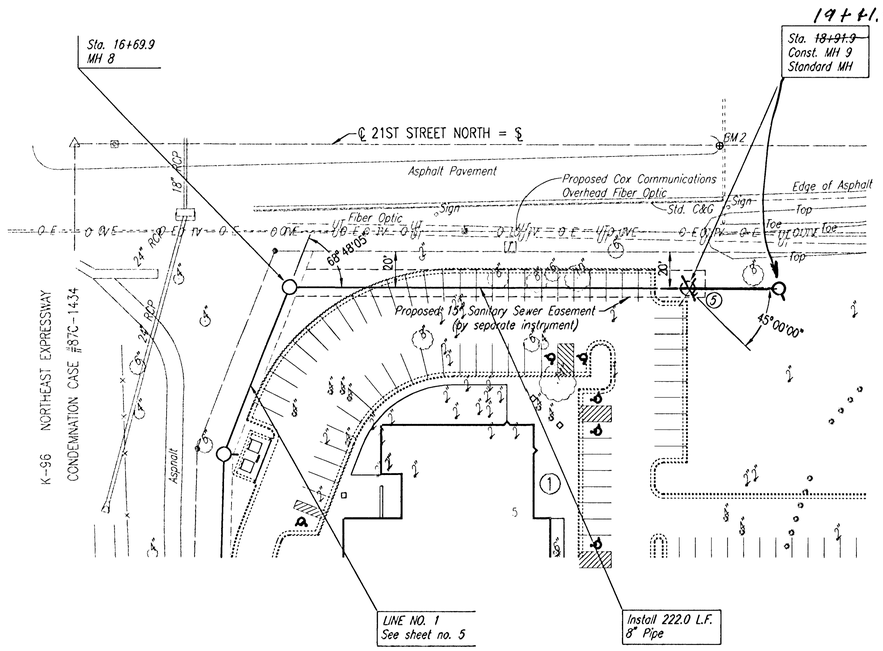


SANITARY SEWER LINE NO. 1

Sta. 0+00.0
Core existing concrete MH wall and Install outside drop connection. Seal new 8" Pipe to MH with an approved waterstop gasket and non-shrink grout. Construct a minimum of 3' Reinforced Concrete Encasement from MH wall. Reshape MH floor to provide smooth flow. This work shall be considered subsidiary to the price bid for pipe in place.

Sta. 0+57.0
Const. MH 10
Standard MH

CAUTION !!!
Water Meter and Water Service Line
Butler County RWD #5
Contractor shall cut & cap the existing water service line. Remove the meter, meter box, and meter setter and salvage to Mr. Ralph Lonzrath (636-5175). Coordinate all work for this item with Butler County Rural Water District #5, Ms. Pat Shafter @ (316) 778-1631. All costs incurred for this work shall be considered subsidiary to the Lump Sum price bid for "Site Clearing".

Sta. 2+82.80
Const. MH 11
Standard MH

CAUTION!!!
Buried Telephone Cables (SBC)
Contractor shall support in place and protect from damage.

15' Drainage and Utility Easement

CAUTION !!!
2-1/2" Waterline
Leave in service
(Butler County RWD #5)

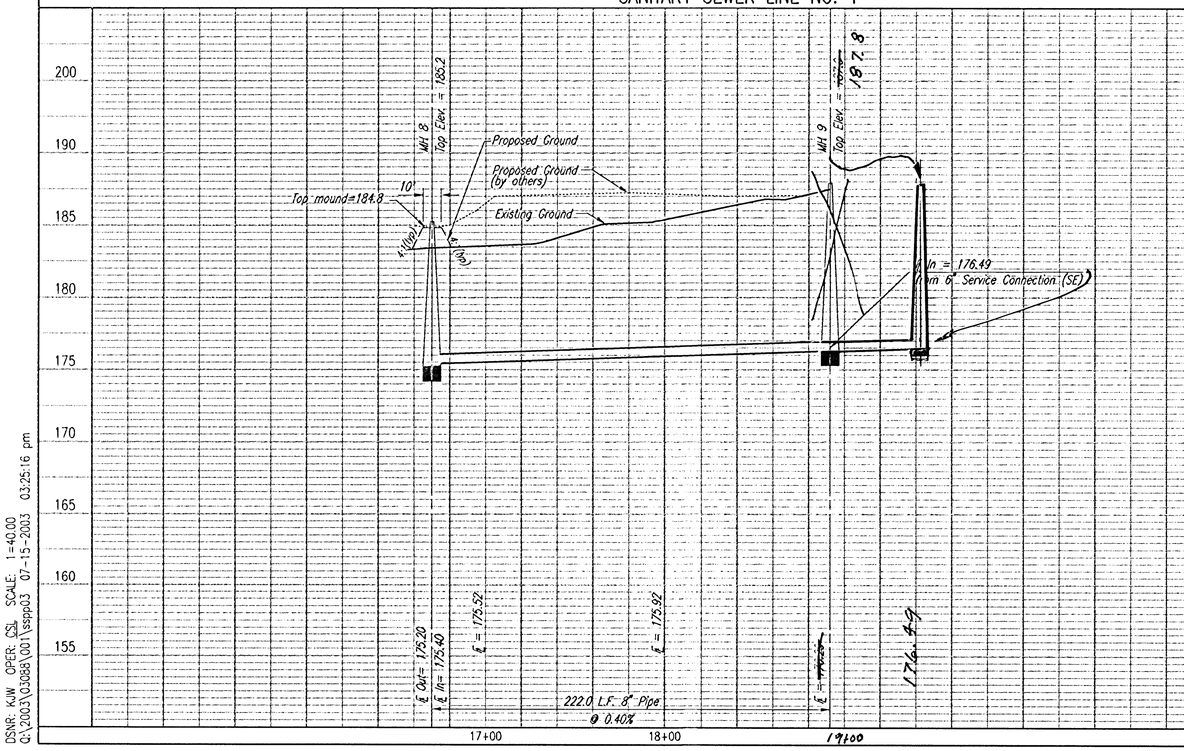
90°0'0"
44°47'39"
Utility Easement
15'
5'
SBC Tel. Cables
Gravel Road
Asphalt
15" PVC
8" Waterline (C.O.W.)
5' Access Easement (Film 1617, P.R.STONE)
Remove and Replace
21 L. F. Asphalt
Pavement in kind.
Install 57.0 L.F.
8" Pipe
Install 225.8 L.F.
8" Pipe
TRINITY ACADEMY
LOT 1

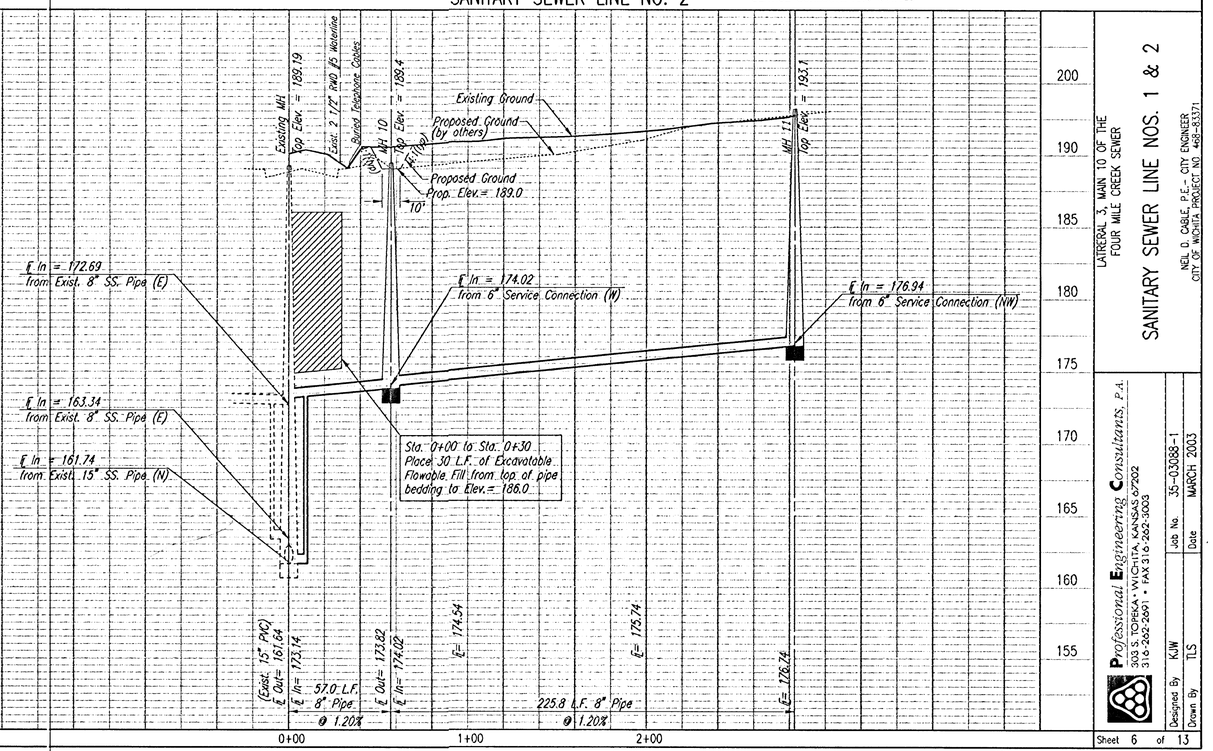
SCALE:
0 40 80
PLAN: LAT. & LONG.
PROFILE: HORIZ. SAME AS ABOVE
VERT.

DENOTES SEWER SERVICE.
SEE SHEET NO. 9 FOR SEWER SERVICE SCHEDULE AND DETAILS

KORY J. WILSON
LICENSED
16337
07/15/03
KANSAS
PROFESSIONAL ENGINEER

SANITARY SEWER LINE NO. 2





LATERAL J, MAIN 10 OF THE
FOUR MILE CREEK SEWER
NEIL D. CABLE, P.E. - CITY ENGINEER
CITY OF WICHITA, PROJECT NO. 466-83371

SANITARY SEWER LINE NOS. 1 & 2

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316-262-2691 • FAX 316-262-3003

Job No. 35-03088-1
Date MARCH 2003
Designed By KJW
Drawn By TLS
Sheet 6 of 13

PLAN: CHECKED CHECKED BY DATE
PROFILE: CHECKED CHECKED BY DATE

DSNR: KJW OPER: CSL SCALE: 1=40.00
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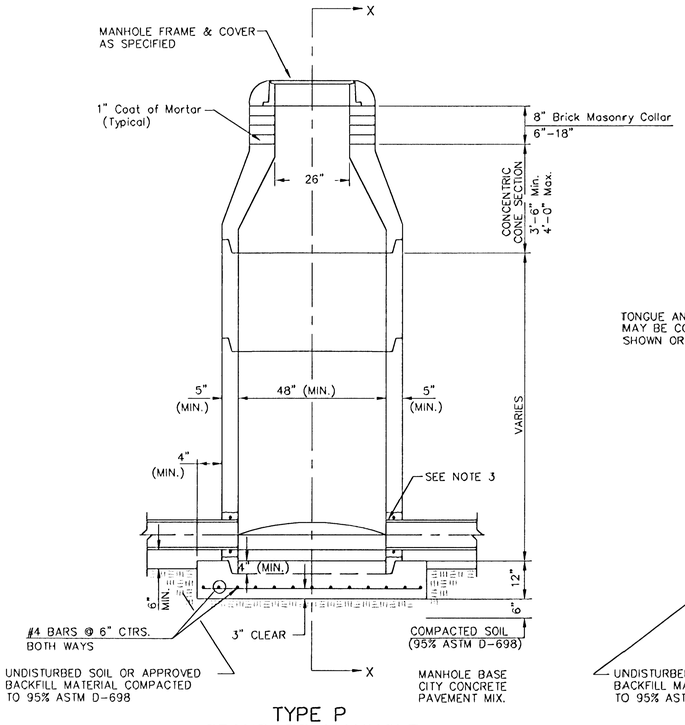
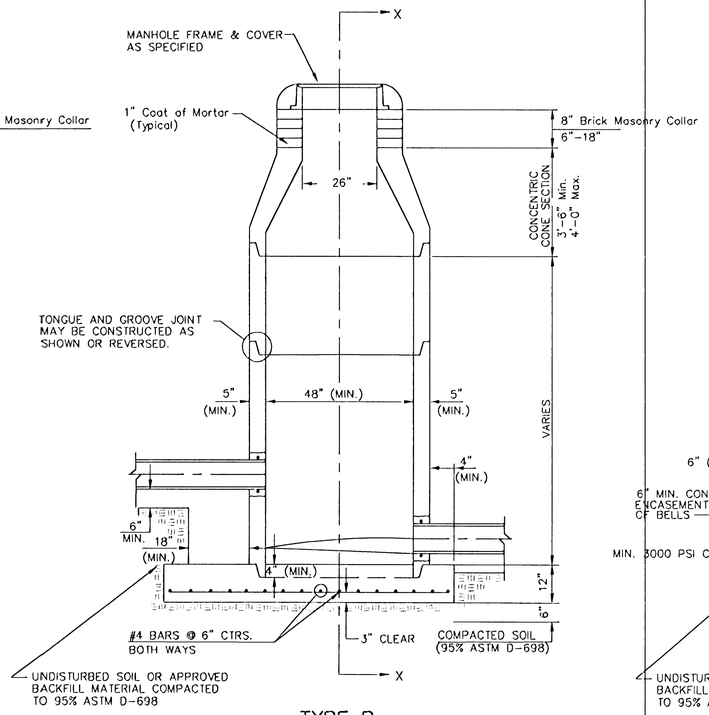
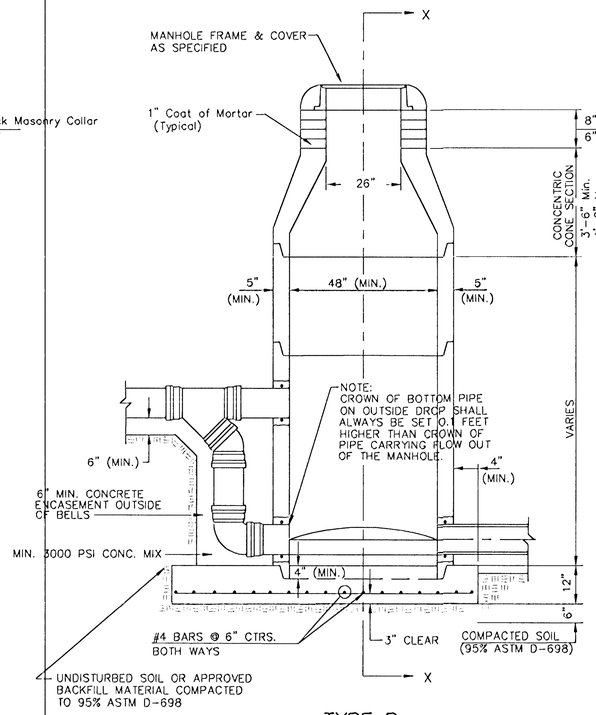
SEWER APPURTENANCES DETAILS



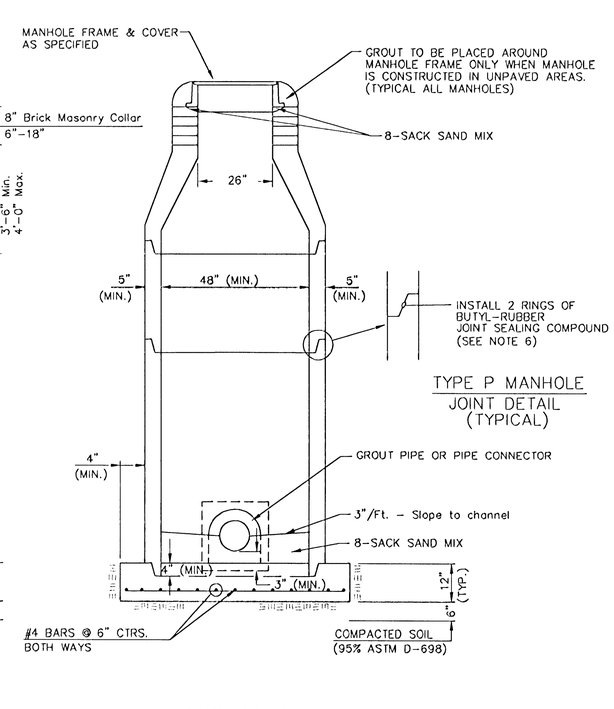
TYPE P STANDARD MANHOLE



TYPE P INSIDE DROP MANHOLE



TYPE P OUTSIDE DROP MANHOLE



SECTION X (TYPICAL)

GENERAL NOTES

PRECAST MANHOLE NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNEMEC SERIES 66 HI-BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. 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.
9. LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
12. OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
13. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
14. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
15. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
17. STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE-CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.

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THE CITY OF WICHITA
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4114 FAX

STANDARD TYPE 'P' MANHOLES

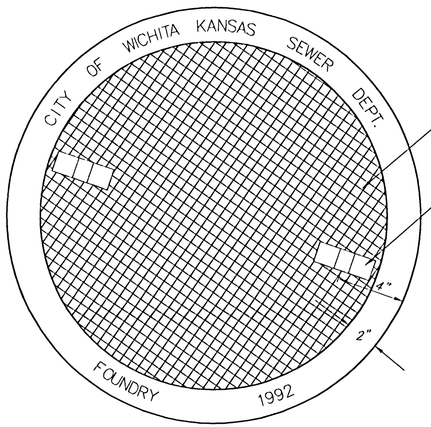
NEIL D. CABLE, P.E. - CITY ENGINEER

PROJECT NUMBER	OCA NO.
468-83371	744001
DATE: MAR 96	SHEET 7 OF 13

MANHOLE FRAME AND COVER DETAIL

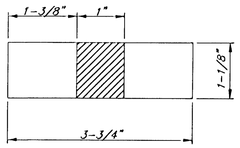
ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

MANHOLE COVER
Weight = 180 Lbs.

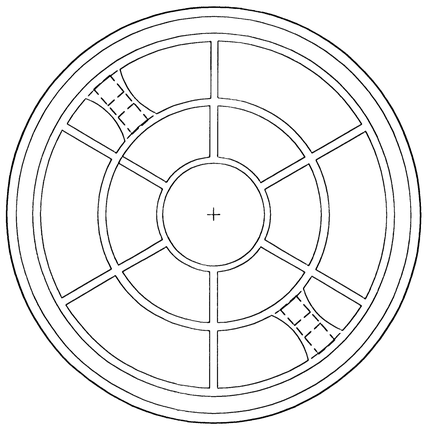


TOP VIEW

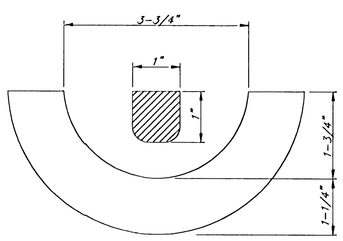
PICKHOLE DETAIL



TOP VIEW

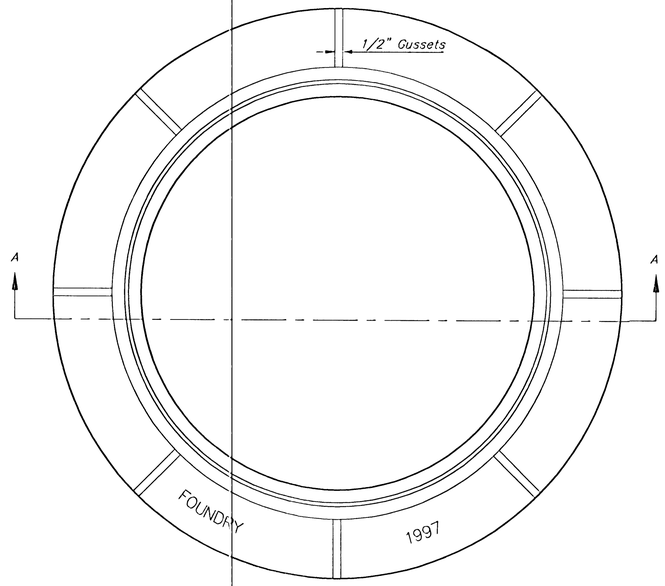


BOTTOM VIEW

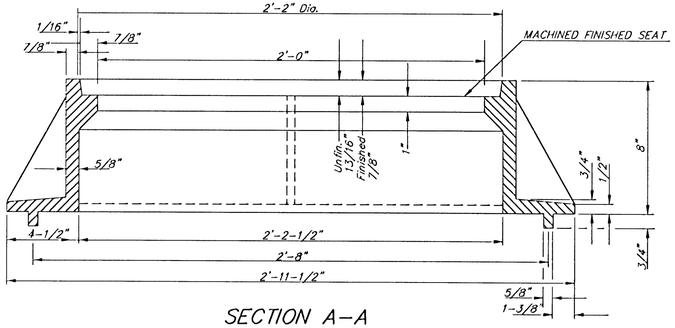


SECTION VIEW

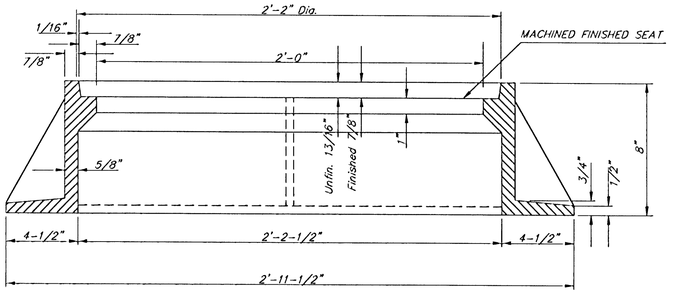
MANHOLE FRAME
Weight = 240 Lbs.



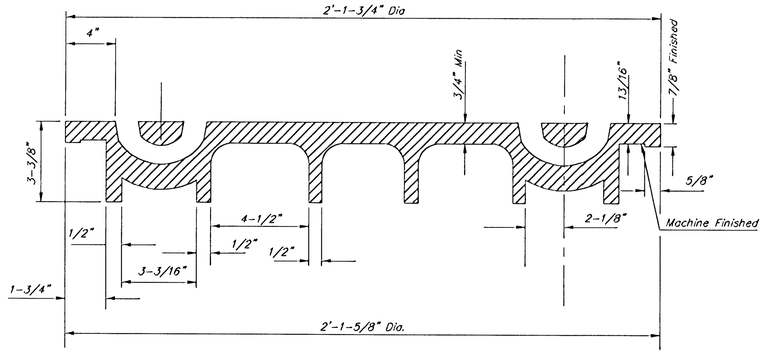
TOP VIEW



SECTION A–A
MUD RING



SECTION A–A



SECTION VIEW

GENERAL NOTES

1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.

2. MANHOLE CASTINGS SHALL WEIGH A MINIMUM OF 180 POUNDS ON THE SOLID COVER AND 240 POUNDS ON THE MANHOLE RING. THIS IS A TOTAL OF 420 POUNDS ON A RING AND COVER SET. CASTINGS WEIGHING LESS THAN THE MINIMUM SPECIFICATIONS WILL NOT BE ACCEPTED.

3. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.

4. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SEATING SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.

5. THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1 INCH IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD DEPARTMENT MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

THE CITY OF WICHITA
CITY ENGINEER'S OFFICE
CITY HALL – SEVENTH FLOOR
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(316) 268-4601
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MANHOLE FRAME AND COVER

NEIL D. CABLE, P.E. – CITY ENGINEER

PROJECT NUMBER	OCA NO.
468-83371	744001
DATE: MAR 96	SHEET 8 OF 13

DSNR: CITY OPER: CSL SCALE: 1=1.00
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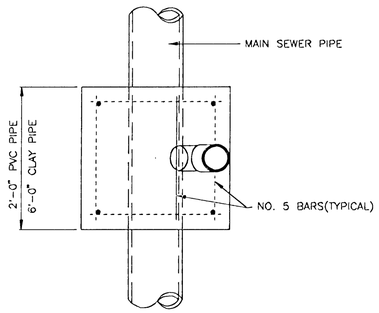
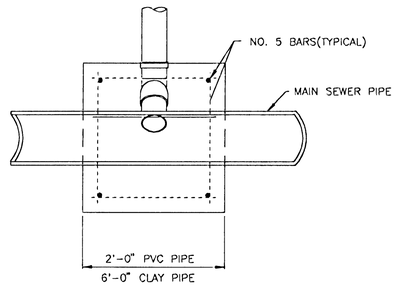
VERTICAL RISER DETAILS

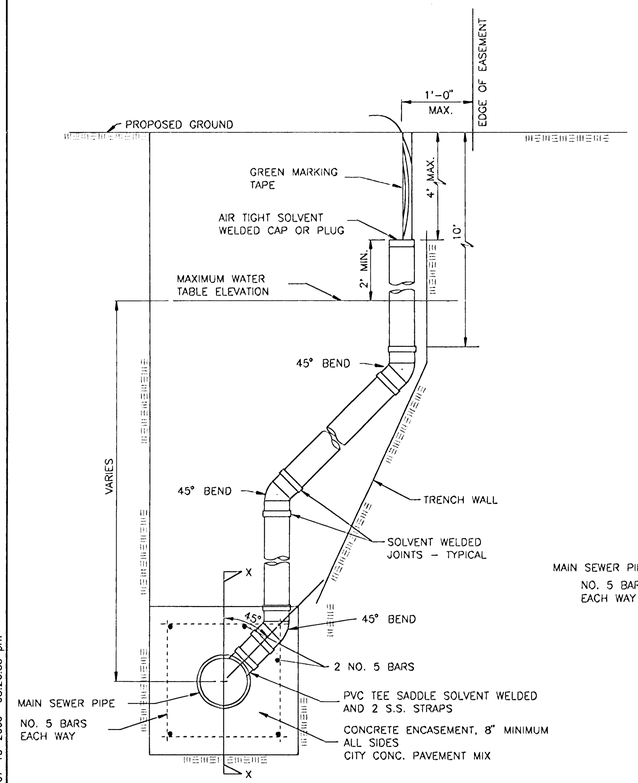
ADOPTED AS STANDARD DESIGN
BY
CITY OF WICHITA, KANSAS
OCTOBER 1992



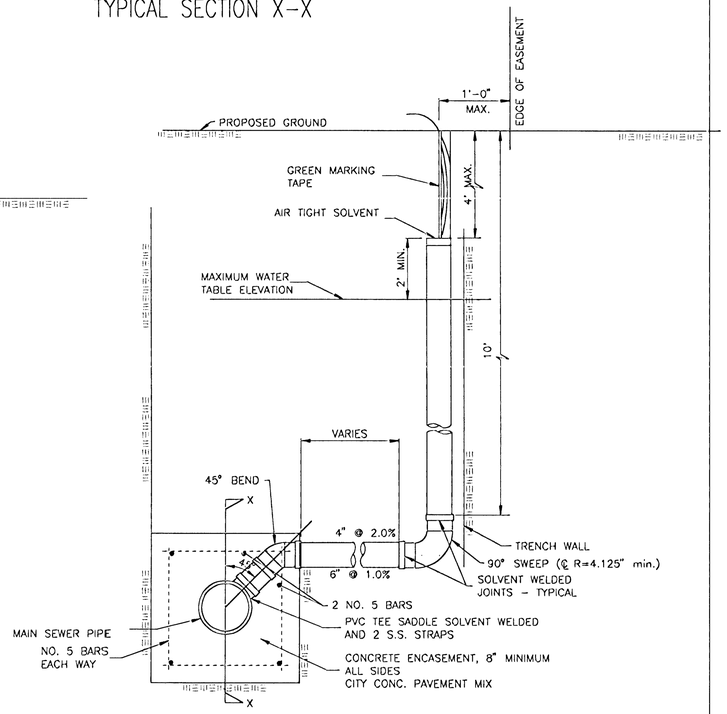
TYPICAL PLAN VIEW



TYPICAL SECTION X-X



METHOD "A"

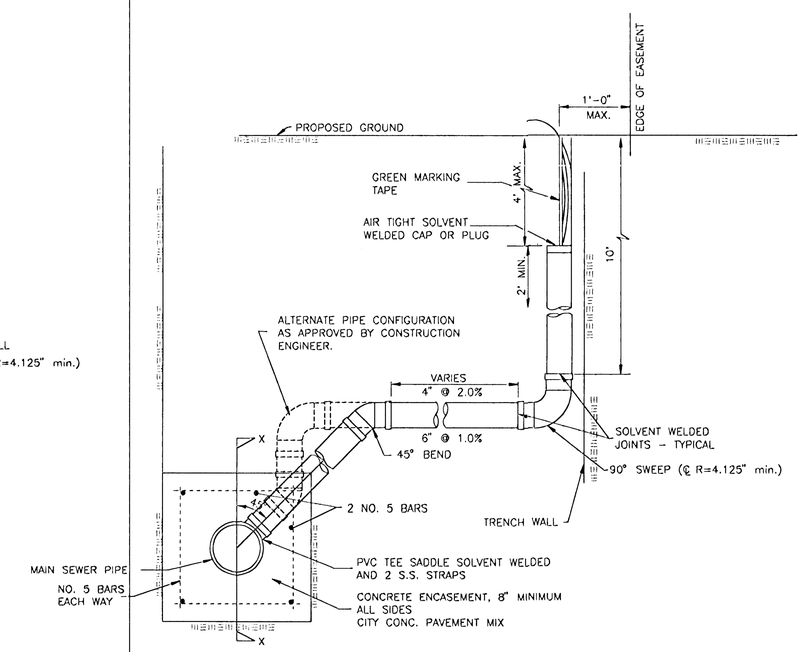


METHOD "B"

NOTE: RISER PIPE REQUIREMENTS AT MANHOLE STUBS SHALL BE SIMILAR TO THOSE SHOWN ABOVE.

SEWER SERVICE TABLE										
NO.	SIZE	LOCATION				FOR INFORMATION ONLY		RECORD INFORMATION (TO BE COMPLETED BY PROJECT INSPECTOR)		NO.
		LOT NO.	BLOCK NO.	LINE NO.	STATION/ DIRECTION	APPROXIMATE LENGTH 6" PIPE VERTICAL	APPROXIMATE LENGTH 6" PIPE HORIZONTAL	DISTANCE FROM NEAREST MANHOLE UPSTREAM	DISTANCE FROM NEAREST MANHOLE DOWNSTREAM	
1	6" Service Connection	3	1	1	1+15/Rt.	12'	14'			1
2	6" Service Connection	3	1	1	2+15.0 (N)	11'	14'			2
3	6" Service Connection	4	1	1	5+87/Rt.	7'	14'			3
4	6" Service Connection	5	1	1	12+76.4 (NE)	11'	6'			4
5	6" Service Connection	5	1	1	~~18+91.9~~ (SE)	7'	6' 19+71.9			5
6	6" Service Connection	2	1	2	0+57.0 (W)	11'	4'			6
7	6" Service Connection	2	1	2	1+20/Lt.	12'	4'			7
8	6" Service Connection	1	1	2	2+05/Lt.	12'	4'			8
9	6" Service Connection	1	1	2	2+82.8 (NW)	12'	6'			9

NOTES:
1. Vertical Riser Pipe shall be extended to 2' minimum above ground water elevation and 4' maximum below proposed ground elevation.
2. Method "B" shall be utilized for all services crossing proposed storm sewers. (Service No's 1, 2, 6, 7, 8, AND 9).



METHOD "C"

GENERAL NOTES

1. RISERS. Risers shall be installed to serve all lots or tracts where the sanitary sewer main is below the water table. Risers shall also be installed to serve all lots and tracts where the sanitary sewer main depth is greater than 12 feet below the proposed ground elevation. Installation of risers because of field conditions shall be as approved by the Construction Engineer. The location of the risers to serve developed property shall be approved by the property owner and the Construction Engineer.
2. PIPE STUBS. Pipe stubs shall be installed in manholes where locations of manholes will provide satisfactory service connection as determined by the Construction Engineer. The vertical distance between the flowline of the manhole pipe stub and the flowline of the sanitary sewer main out of the manhole shall not exceed 2 feet. Risers shall be utilized at manhole pipe stubs as indicated in Note 1. Manhole pipe stubs shall be set such that the top of the stub is not lower than the top of the sanitary sewer main.
3. SIZING. Pipe stubs and risers shall be sized according to the plans and riser table where risers are indicated by the plans. Where risers or pipe stubs are required because of field conditions, the risers and stubs shall be six-inch diameter for commercial or industrial properties and 4" or 6" diameter for residential properties, based on lot size and sanitary sewer main depth. Sizing of risers and stubs shall be approved by the Construction Engineer prior to installation.
4. RISER OR STUB MATERIAL. Risers and stubs shall be constructed of Schedule 40 PVC Pipe, meeting the requirements of the latest revision of A.S.T.M. . All pipe joints shall be solvent welded.
5. REINFORCED CONCRETE ENCASEMENT. Riser connections to clay pipe sanitary sewers shall be reinforced concrete encased both ways from the riser centerline. The reinforced concrete encasement shall extend three feet from the riser centerline or stop at the first sanitary sewer pipe joint within three feet of the riser centerline. Riser connections to PVC Sanitary Sewer mains shall be reinforced concrete encased one foot each way from the riser centerline. The concrete encasement shall be reinforced using reinforcing steel as shown in the appropriate drawing. The concrete shall conform to the City Standard Specifications for concrete pavement.
6. BEDDING. Bedding around the sanitary sewer riser shall be compacted Pipe Bedding Type 1 or 2. The bedding shall be placed and compacted from the depth of the sanitary sewer main to the top of the sanitary sewer riser pipe. Compacted Pipe Bedding Type 1 or 2 shall be required for all risers whether constructed in vertical wall or sloped wall trenches. Bedding material and construction practices shall be approved by the Construction Engineer prior to installation.
7. SUPPORT OF RISERS. Sanitary sewer riser pipe shall be supported during trench backfill. The riser pipe shall be held in a vertical position at all times until trench backfill and compaction has been completed. Contractor's methods for supporting and backfilling the riser pipe shall be approved by the Construction Engineer.
8. PLUGGING. The ends of the riser pipes and manhole stubs shall be plugged using an airtight solvent welded cap or plug. Cap or plug fittings shall be approved by the Construction Engineer prior to installation. Caps or plugs which do not provide an airtight seal will not be accepted.
9. TOP OF THE RISER PIPE. The top elevation of the sanitary sewer riser pipe shall be built per plan elevations, unless otherwise directed by the Construction Engineer. Where riser elevations are not shown on the plans, the top of the risers shall be set at an elevation four feet below the proposed ground surface. If ground water is encountered, the top of the riser pipe shall be set at an elevation two feet (min.) above the maximum water table elevation, regardless of the riser elevation shown on the plans.
10. MARKING. Locations of the ends of the sanitary sewer riser pipe shall be marked by fastening green colored plastic tape to the end of the riser. The tape shall be supported by a length of wooden 2 x 4, extending from the top of the riser pipe to the proposed ground surface. The green tape shall be visible and extend one foot above the proposed ground surface. The green tape shall be 4 mil Polyethylene film with a minimum width of three inches, specifically manufactured for the purpose of identification of underground sewers.
11. LOCATION MEASURES. The project inspector shall record and document the location of all risers constructed as measured from the nearest manhole, indicating the direction from the manhole, the direction and distance from the main, riser size, and elevation of the top of the riser.
12. RISER LOCATION. The riser shall be located per plan if shown. If not shown on the plan, the riser shall be located at the center of the lot, within one foot of the property side of the easement for the lot being served. All riser locations shall be approved by the Construction Engineer prior to installation.
13. PAYMENT. "Sanitary sewer risers" shall be paid for at the contract unit price per each, which price shall be full compensation for all pipe, fittings, marking tape, length of wooden 2 x 4, reinforced concrete encasement, support during backfill, backfill, labor, site restoration, and any other items necessary to complete the work.

"Manhole stubs" shall be paid for at the contract unit price per each, which shall be full compensation for all labor, material, and incidentals necessary to complete the work including all pipe, fittings, reinforced concrete encasement, and all other items as required and listed for "Sanitary Sewer Risers".

REVISED NOTE 4 - APRIL 98

THE CITY OF WICHITA
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4174 FAX

VERTICAL RISER DETAIL

NEIL D. CABLE, P.E. - CITY ENGINEER

PROJECT NUMBER	OCA NO.
468-83371	744001
DATE: MAR 96	SHEET 9 OF 13

DSNR: KJW OPER: CSL SCALE: 1=1.00
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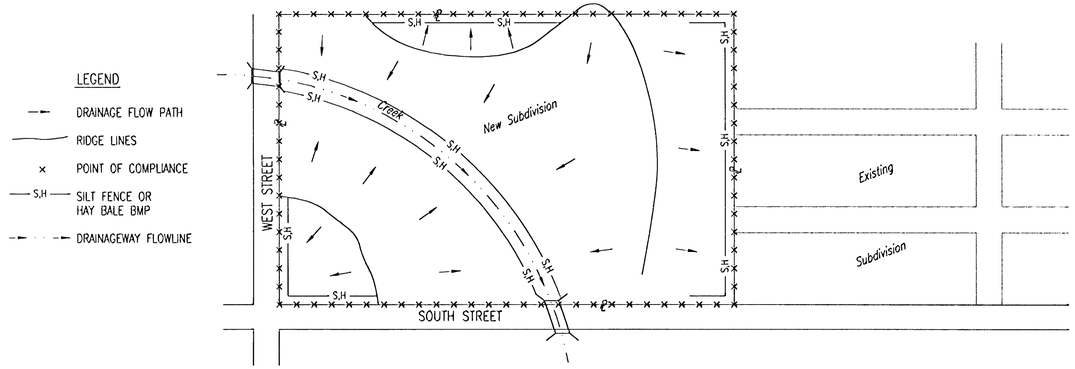
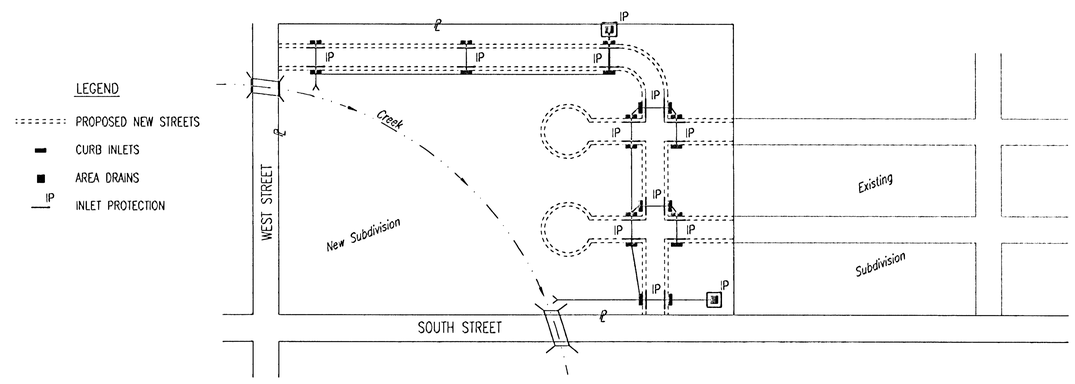
PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



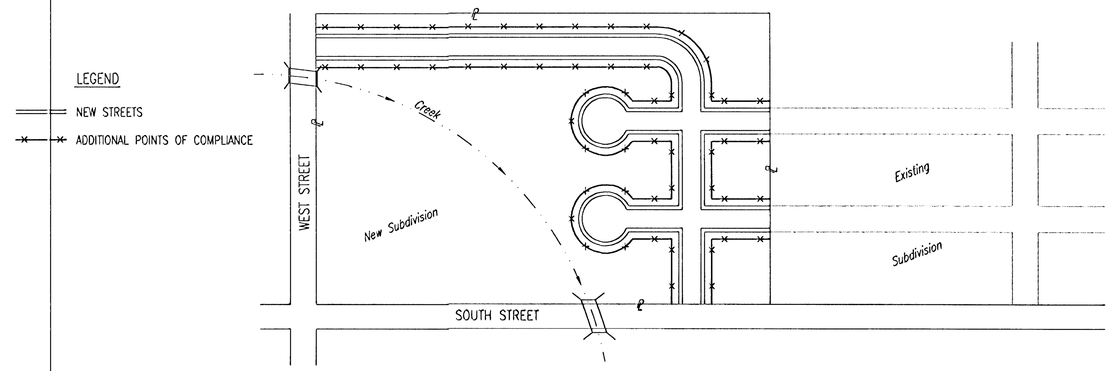
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAYBALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE BMP'S WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR GUTTERLINES ON THE ADJACENT BOUNDARY STREETS, APPROPRIATE BMP'S WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED AT THE END OF EACH WORK DAY.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL BMP'S AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDARY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE BMP'S AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. THE SUBDIVISION DEVELOPER (OWNER) SHALL INSTALL AND MAINTAIN THE ON-SITE BMP'S.

PHASE 2 – INSTALLATION OF STORM SEWER

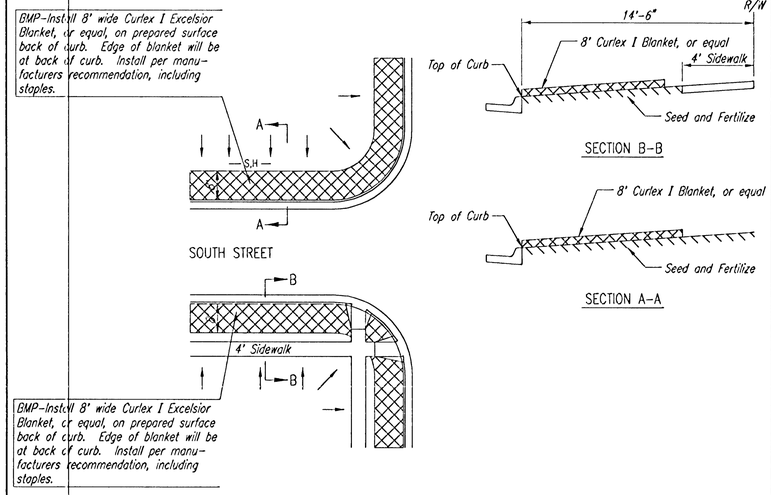


1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL BMP'S REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAYBALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
4. CURB OPENING INLETS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION BMP'S MUST BE INSTALLED. SEE PHASE 3 – STREET CONSTRUCTION.
5. THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE BMP'S. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION.
6. THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE BMP'S ONCE INSTALLED.
7. ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

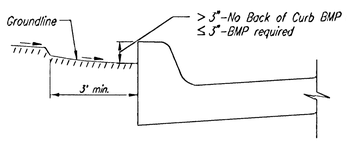
PHASE 3 – STREET CONSTRUCTION



1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL BMP'S INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
2. CURB OPENING INLET PROTECTION:
   A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.
   B. NON-SUMP LOCATIONS – PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
3. BMP'S WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), BMP'S WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
4. SEE DETAIL THIS SHEET ON BACK OF CURB PROTECTION.
5. THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLEMENTED WITH HAYBALE OR SILT FENCE BMP'S AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
6. THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB BMP'S.
7. THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB BMP'S IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.



BACK OF CURB PROTECTION DETAIL



CURB BACKFILL DETAIL

GENERAL NOTES:

1. THE INTENT OF ALL SOIL EROSION BEST MANAGEMENT PRACTICES (B.M.P.'S) IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, OR ANY OTHER DRAINAGE FEATURE.
2. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF BMP'S WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
3. BMP'S SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON THE BMP DETAIL SHEETS.
4. PERSONS DESTROYING BMP'S SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT BMP'S.
5. THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 5 ACRES OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL BMP'S ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLAN.
6. FOR SUBDIVISIONS SMALLER THAN 5 ACRES, SOIL EROSION BMP'S ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
7. FAILURE TO USE AND MAINTAIN BMP'S IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
8. THE APPLICATION OF BMP'S SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT BMP OTHER THAN THAT SHOWN. BMP'S, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
9. A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.

CITY OF WICHITA

SOIL EROSION BMPS SUBDIVISION DEVELOPMENT PROCESS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83371	744001

DATE: MAY 2001

DSNR: CITY OPER: CSI SCALE: 1=1.00
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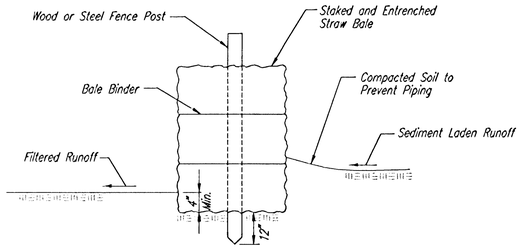


STRAW BALE BARRIERS

Material Specification:

Bale slope barriers may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.

Placement:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment.
When practicable, bale slope barriers should be placed along contours to avoid a concentration of flow.
Bale slope barriers can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

Proper installation method:

Excavate a trench the length of the planned slope barrier that is 4" deep and a bale's width wide. Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use.
Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the upslope side of the check and compact it. The compacted soil should be no more than 3" to 4" deep.

List of common placement/installation mistakes to avoid:

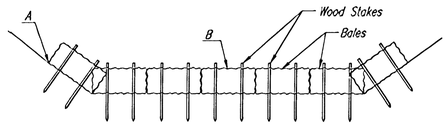
When practical, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the barrier fails.
Do not place bale slope barriers in areas with shallow soils underlain by rock. If the barrier is not anchored sufficiently, it will wash out.
Bale slope barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

Inspection and Maintenance:

Bale slope barriers should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Are there any points along the slope barrier where water is concentrating?
Does water flow under the slope barrier?
Does water flow through spaces between abutting bales?
Are any bales dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the slope barrier?

NOTE: Point A must be higher than Point B so that water flows over the bales and not around them.



STRAW BALE DITCH CHECKS

Material Specification:

Bale ditch checks may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Optional: The downstream scour apron should be constructed of a double-netted straw erosion-control blanket at least 6' wide.
Optional: The metal landscape staples used to anchor the erosion-control blanket should be at least 8" long.

Placement:

Bale ditch checks should be placed perpendicular to the flowline of the ditch.
The ditch check should extend far enough so that the ground level at the ends of the check is higher than the top of the lowest center bale. This prevents water from flowing around the check.
Checks should not be placed in ditches where high flows are expected. Rock checks should be used instead.
Bales should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used.
The following table provides check spacing for a given ditch grade:

Ditch Check Spacing

Ditch grade (%)	Check Spacing (feet)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is 4" deep and a bale's width wide. Extend the trench in a straight line along the entire length of the proposed ditch check. Place the soil on the upstream side of the trench--it will be used later.
Optional: On the downstream side of the trench, roll out a length of erosion-control blanket (scour apron) equal to the length of the trench. Place the upstream edge of the erosion-control blanket along the bottom upstream edge of the trench. The erosion control blanket should be anchored in the trench with one row of 8" landscape staples placed on 18" centers. The remainder of the erosion-control blanket (the portion that is not lying in the trench) will serve as the downstream scour apron. This section of the blanket should be anchored to the ground with 8" landscape staples placed around the perimeter of the blanket on 18" centers. The remainder of the blanket should be anchored using two evenly spaced rows of 8" landscape staples on 18" centers placed perpendicular to the flowline of the ditch.
Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the upstream side of the check and compact it. The compacted soil should be no more than 3" to 4" deep and extend upstream no more than 24".

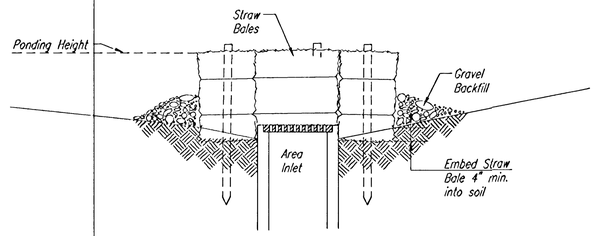
List of common placement/installation mistakes to avoid:

Do not place a bale ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow.
Do not place bale ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow.
Follow prescribed ditch-check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks.
Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the check is higher than the top of the lowest center bale.
Do not place bale ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.
Bale ditch checks must be dug into the ground. Bales at ground level do not work because they allow water to flow under the check.

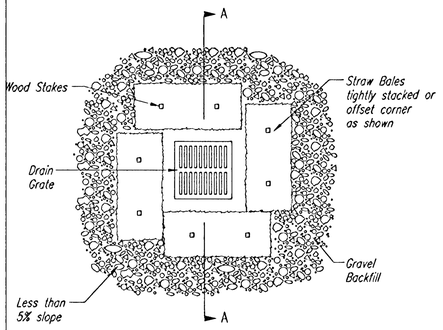
Inspection and Maintenance:

Bale ditch checks should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow around the ditch check?
Does water flow under the ditch check?
Does water flow through spaces between abutting bales?
Are any bales and/or scour aprons (optional) dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the ditch check?



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Bale area inlet barriers should be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.

Placement:

Bale area inlet barriers should be placed directly around the perimeter of a drop inlet.
When a bale area inlet barrier is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Proper Installation Method:

Excavate a trench around the perimeter of the area inlet that is at least 4" deep by a bale's width wide.
Place the bales in the trench, making sure that they are butted tightly. Some bales may need to be shortened to fit into the trench around the area inlet. Two stakes should be driven through each bale, approximately 6" to 8" in from the bale ends.
Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the receiving side of the barrier and compact it. The compacted soil should be no more than 3" to 4" deep.
Note: When a bale area inlet barrier is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

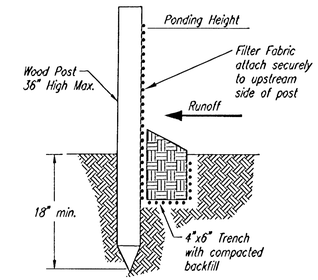
List of common placement installation mistakes to avoid:

Bales should be placed directly against the perimeter of the area inlet. This allows overtopping water to flow directly into the inlet instead of onto nearby soil causing scour.
Bale area inlet barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

Inspection and Maintenance:

Bale area inlet barriers should be inspected every 7 days and within 24 hours of a rainfall 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow under the area inlet barrier?
Does water flow through spaces between abutting bales?
Are any bales dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the area inlet barrier?



SILT FENCE BARRIERS

SILT FENCE BARRIERS

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Silt fence fabric should be attached to the wooden posts with staples, wire, zip ties, or nails.

Placement:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment.
When practicable, silt fence slope barriers should be placed along contours to avoid a concentration of flow.
Silt fence slope barriers can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

Proper installation method:

Excavate a trench the length of the planned slope barrier that is 6" deep by 4" wide.
Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use.
Roll out a continuous length of silt fence fabric on the downslope side of the trench.
Place the edge of the fabric in the trench starting at the top upslope edge. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt-fence fabric should remain exposed.
Lay the exposed silt fence upslope of the trench to clear an area for driving in the posts.
Just downslope of the trench, drive posts into the ground to a depth of at least 18".
Place posts no more than 4' apart.
Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

List of common placement/installation mistakes to avoid:

When practicable, do not place silt fence slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. When the flow concentrates, it overtops the barrier and the silt fence slope barrier quickly deteriorates.
Do not place silt-fence posts on the upslope side of the silt fence fabric. In this configuration, the force of the water is not restricted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail.
Do not place silt fence slope barriers in areas with shallow soils underlain by rock. If the barrier is not sufficiently anchored, it will wash out.
Silt fence slope barriers must be dug into the ground--silt fence at ground level does not work because water will flow underneath.

Inspection and Maintenance:

Silt fence slope barriers should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Are there any points along the slope barrier where water is concentrating?
Does water flow under the slope barrier?
Do the silt fences sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the slope barrier?

CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83371	744001
DATE: MAY 2001	SHEET 11 OF 13

DSNR: OPER: CSL SCALE: 1=1.00
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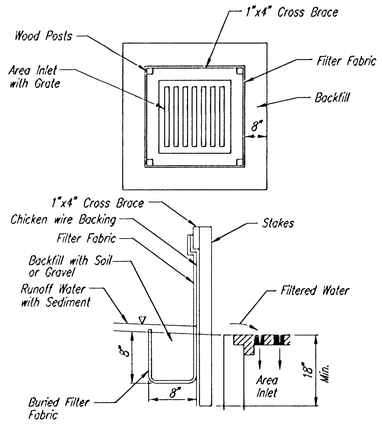


SILT FENCE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The wire or polymeric mesh backing used to help support the silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
The material used to frame the tops of the posts should be 1" by 4" boards.
Silt fence fabric and support backing should be attached to the wooden posts and frame with staples, wire, zip ties, or nails.

Placement:

Place a silt fence drop inlet barrier in a location where it is unlikely to be overtopped.
Water should flow through silt fence, not over it. Silt fence barriers for area inlets often fail when repeatedly overtopped.
When used as a barrier for area inlets, silt fence fabric and posts must be supported at the top by a wooden frame.
When a silt fence barrier for area inlets is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Proper installation method:

Excavate a trench around the perimeter of the area inlet that is at least 8" deep by 8" wide.
Drive posts to a depth of at least 18" around the perimeter of the area inlet.
The distance between posts should be 4' or less. If the distance between two adjacent corner posts is more than 4', add another post(s) between them.
Connect the tops of all the posts with a wooden frame made of 1" by 4" boards. Use nails or screws for fastening.
Attach the wire or polymeric-mesh backing to the outside of the post/frame structure with staples, wire, zip ties, or nails.
Roll out a continuous length of silt fence fabric long enough to wrap around the perimeter of the area inlet. Add more length for overlapping the fabric joint. Place the edge of the fabric in the trench, starting at the outside edge of the trench. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed.
Attach the silt fence to the outside of the post/frame structure with staples, wire, zip ties, or nails. The joint should be overlopped to the next post.

Note: When a silt fence barrier for area inlet is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

List of common placement/installation mistakes to avoid:

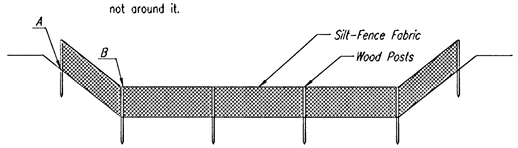
Water should flow through a silt fence barrier for area inlet-not over it. Place a silt fence barrier for area inlet in a location where it is unlikely to be overtopped. Silt fence barrier for area inlets often fail when repeatedly overtopped.
Do not place posts on the outside of the silt fence barrier for area inlet. In this configuration, the force of the water is not resisted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail.
Do not install silt fence barrier for area inlets without framing the top of the posts.
The corner posts around area inlets are stressed in two directions whereas a normal silt fence is only stressed in one direction. This added stress requires more support.

Inspection and Maintenance:

Silt fence barrier for area inlets should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow under the silt fence?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the area inlet barrier?

NOTE: Point A must be higher than Point B so that water flows over the silt fence fabric and not around it.



ELEVATION

SILT FENCE DITCH CHECKS
(STREAM PROTECTION)

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Silt fence fabric should be attached to the wooden posts with staples, wire, zip ties, or nails.

Placement:

Place silt fence in ditches where it is unlikely that it will be overtopped.
Water should flow through a silt fence ditch check, not over it. Silt fence ditch checks often fail when overtopped.
Silt fence ditch checks should be placed perpendicular to the flowline of the ditch.
The silt fence should extend far enough so that the ground level at the ends of the fence is higher than the top of the low point of the fence. This prevents water from flowing around the check.
Checks should not be placed in ditches where high flows are expected. Rock checks should be used instead.
Silt fence should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used.

The following table provides check spacing for a given ditch grade:

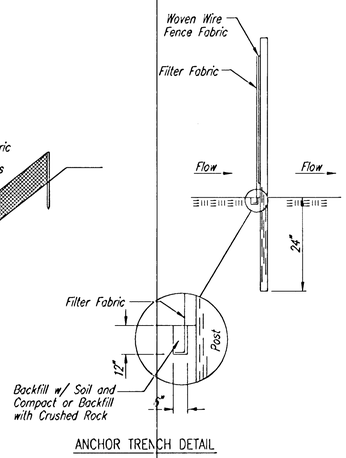
Ditch Check Ditch grade (%)	Spacing Check Spacing (feet)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

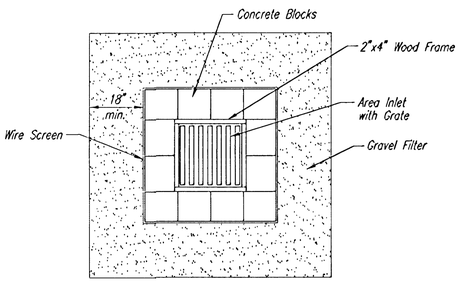
Excavate a trench perpendicular to the ditch flowline that is at least 12" deep by 6" wide.
Extend the trench in a straight line along the entire length of the proposed ditch check.
Place the soil on the upstream side of the trench for later use.
Roll out a continuous length of silt fence fabric on the downstream side of the trench.
Place the edge of the fabric in the trench starting at the top upstream edge of the trench. Line two sides of the trench with the fabric as shown on detail. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed.
Lay the exposed silt fence on the upstream side of the trench to clear an area for driving in the posts. Just downstream of the trench, drive posts into the ground to a depth of at least 24". Place posts no more than 4' apart.
Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

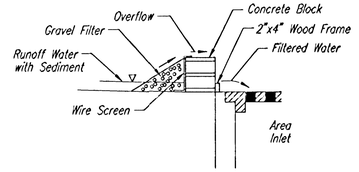
List of common placement/installation mistakes to avoid:

Water should flow through a silt fence ditch check-not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them.
Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration, the force of the water is not restricted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail.
Do not place a silt fence ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow.
Do not place silt fence ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow.
Follow prescribed ditch check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks.
Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the fence is higher than the low point on the top of the fence.
Do not place silt fence ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.



ANCHOR TRENCH DETAIL





CONCRETE BLOCK FILTER FOR AREA DRAIN
(INLET PROTECTION)

Gravel barriers provide little filtering of large inflow waters. However, when installed correctly and maintained, they can effectively treat low runoff flows.

Placement of gravel filters around area drains must be completed in a manner that will not cause local flooding.

Gravel filters can be used if the immediate and adjacent area to the area drain consists of soil or pavement.

Only gravel filters are to be installed on top of the pavement.

Instructions for Installing:

STEP 1: Place concrete blocks around the grate. The blocks can be stacked one or two high and should be supported by a 2"x4" board.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary.

An alternative method is use of gravel bags that are supported to prevent collapsing.

Use of rock having diameters smaller than 1" may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All gravel filters installed around area drains should be inspected and repaired after each runoff event. Sediment should be removed when material is within 3" of the top of any block. Periodically, the gravel should be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets after every runoff event.

Inspection and Maintenance:

Silt fence ditch checks should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow around the ditch check?
Does water flow under the ditch check?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the ditch check?

CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83371	744001
DATE: MAY 2001	SHEET 12 OF 13

DSNR: OPER: CSL SCALE: 1=1.00
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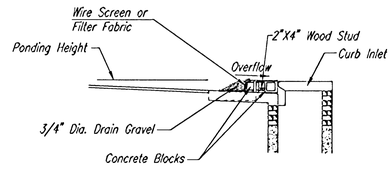
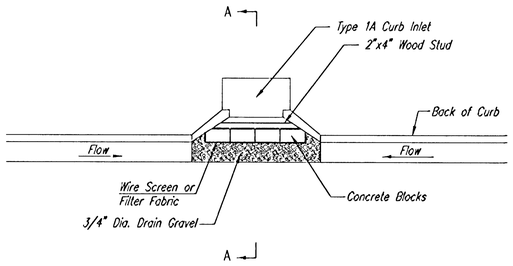


SECTION A-A



CURB INLET GRAVEL FILTERS
(INLET PROTECTION-RESIDENTIAL STREETS ONLY)

NOTE: Other types of curb inlet protection may be approved by the city so long as equal protection is provided.

A gravel inlet filter shall be installed at sump locations on residential streets. This type of protection is not to be used on arterial or collector streets at any time that it would pose an undue traffic hazard.

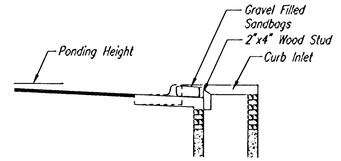
Instructions for Installing:

STEP 1: Place concrete blocks around the inlet as shown on drawing. Insert 2x4 board as shown.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary. An alternative installation is the use of gravel bags supported by a 2"x4" board to prevent collapsing.

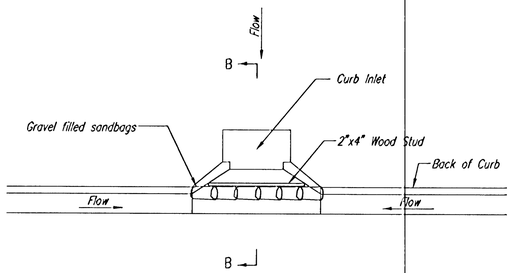
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All curb inlet gravel filters shall be inspected and repaired after each runoff event. Sediment deposits are to be removed once material is within 8 cm (3 inches) of the top of any block. Periodically, the gravel shall be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets.

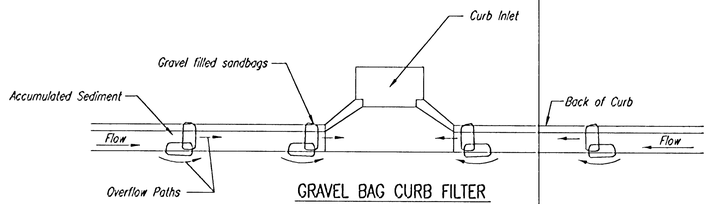


SECTION B-B



CURB INLET SANDBAG FILTERS
(INLET PROTECTION)

NOTE: Other types of curb inlet protection may be approved by the City so long as equal protection is provided.



GRAVEL BAG CURB FILTER
(INLET PROTECTION)

NOTE: Place two or more sets of bags in a manner that results in maximum support. The flow line bag must be lower than top of curb.

CURB SEDIMENT TRAPS

When inlets are located on streets having a grade (i.e., sump conditions do not exist), installing gravel (or sand) bags in the gutter flow line to create small sediment traps can be considered. Gravel bags are recommended over sand bags to allow for drainage.

If the spacing between bags becomes too large, little sediment may be trapped. Spacing of bags should be completed using the table or graph that illustrates placement distances based upon street slope. When installed in the gutter, bag tops must be lower than the sidewalk.

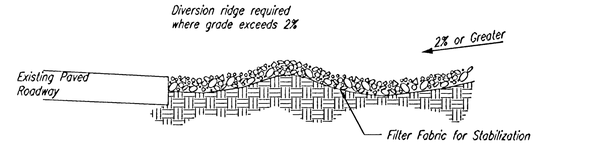
Spacing:

Gravel bags are to be placed according to street grades using the following table or graph that appears below.

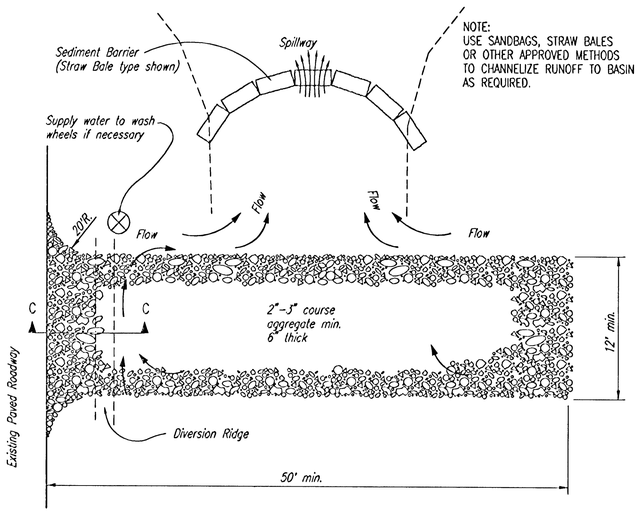
GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

Maintenance:

Collected sediment shall be removed after every runoff event. Bags that are destroyed by vehicular traffic or through natural deterioration are to be immediately replaced.



SECTION C-C



STABILIZED CONSTRUCTION ENTRANCE

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

CITY OF WICHITA

SOIL EROSION BMP DETAILS

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