SHEET NO.	TOTAL SHEETS
1	9

CITY OF WICHITA, KANSAS
MICHAEL E. LINDEBAK, P.E., CITY ENGINEER

STORM WATER SEWER IMPROVEMENTS

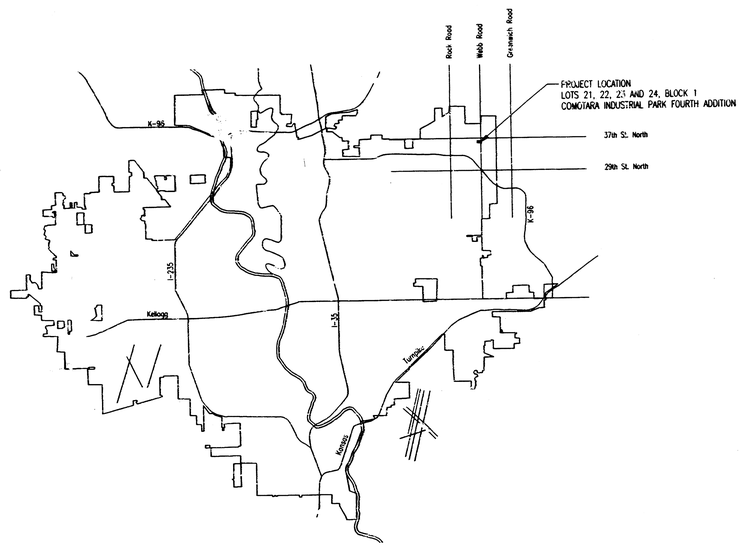
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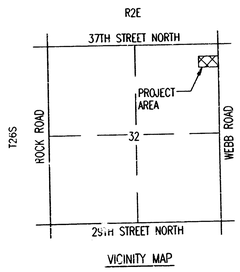
COMOTARA INDUSTRIAL PARK FOURTH ADDITION

PRIVATE PROJECT NO. 752PPS (607861)

INDEX OF SHEETS

1. TITLE SHEET
2. STORM WATER SEWER PLAN
3. STORM WATER SEWER PROFILE
4. STD. AREA INLET DETAIL
5. TYPE 1A CURB INLET DETAIL
6. MANHOLE FRAME AND COVER DETAILS
7. DITCH INLET DETAILS
8. SEDIMENT AND EROSION CONTROL STANDARD DETAILS AND INLET PROTECTION
9. EROSION CONTROL AND SEDIMENT BARRIER DETAILS





VICINITY MAP

BOOKED
7-21-98
MCG
D-3946



APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

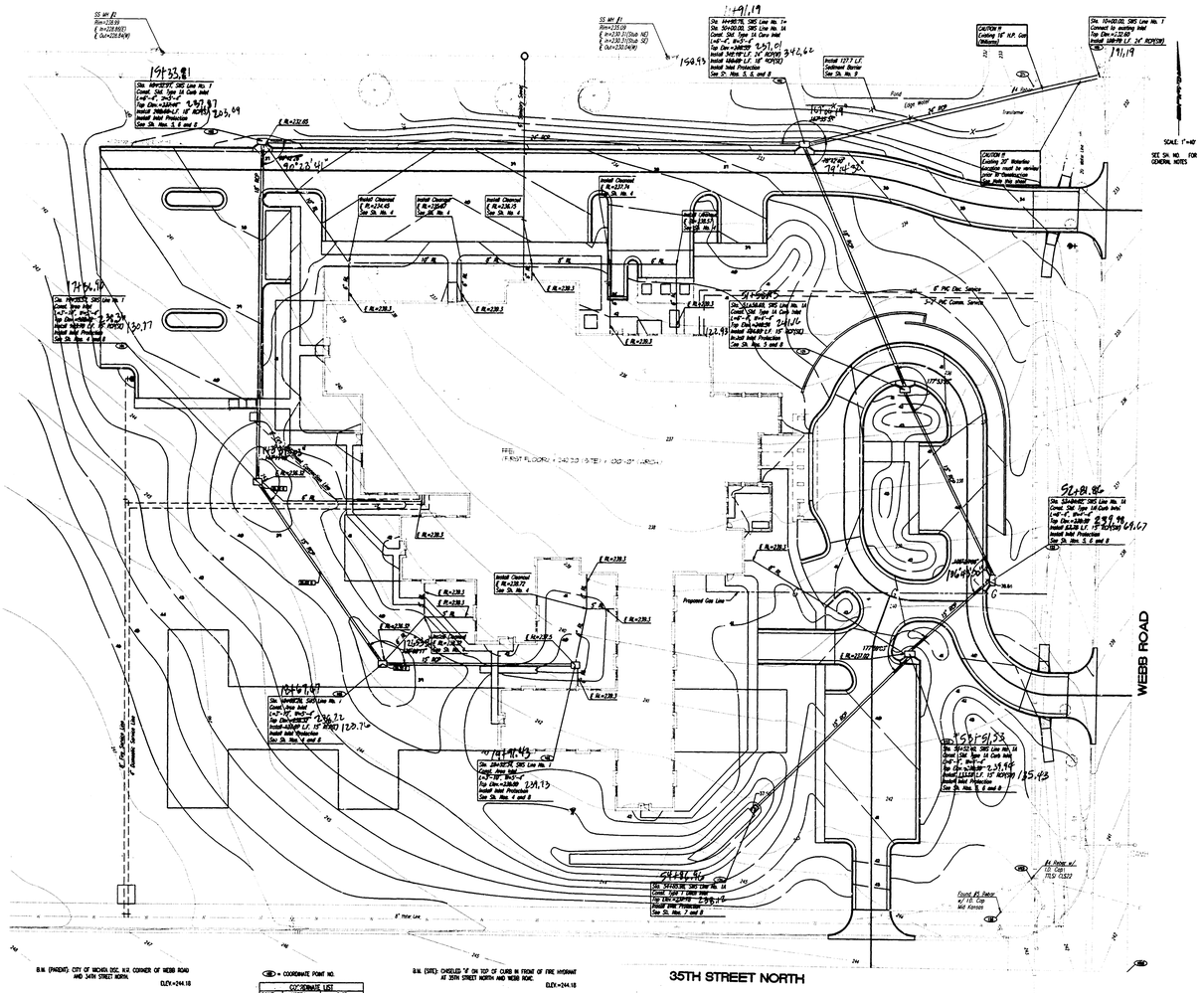
SANITARY SEWERS _____
STORM SEWERS VRH 10/22/97
DRIVEWAY APPROACHES _____
WATER MAINS _____
PAVING _____

OCTOBER, 1997

PLANS PREPARED BY
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

REVISED "AS BUILT" 1-7-98 TCL

PROJECT NO.	SHEET NO.	TOTAL SHEETS
472-76-245-8 . -000-000-001	2	9



= COORDINATE POINT NO.

COORDINATE LIST		
POINT	NORTH	EAST
100	1,567.9680	2,088.9159
102	1,524.0880	2,303.2811
103	1,518.8674	2,141.1648
104	1,314.9078	2,141.7915
105	1,269.5643	2,242.1581
106	1,211.2440	2,385.2120
121	1,376.6781	2,568.7495
122	1,237.1753	2,435.8763
123	1,222.8417	2,376.7839
124	1,128.0857	2,479.6397
126	1,076.1000	2,436.2.00
271	1,561.8200	2,647.7200
1099	1,680.5000	2,854.9600
1100	1,606.3140	2,715.6300

NOTE: PRIOR TO ORDERING MATERIALS THE CONTRACTOR SHALL EXPOSE THE 20" WATERLINE AT STA. 10+12.0, LINE NO. 1 AND VARIFY THE TOP ELEVATION. IF THE EXISTING ELEVATION IS ABOVE THAT SHOWN (227.64) THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

GENERAL NOTES
STORMWATER SEWER

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. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION. CONTRACTOR SHALL SATISFY HIMSELF OF SUBSURFACE CONDITIONS PRIOR TO BIDDING.

TREES AND SHRUBS IN PUBLIC RIGHT-OF-WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR WITH THE ENGINEER'S APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR AND APPROVED AS NOTED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WOULD 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 WOULD REQUIRE ADDITIONAL ARCHEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.

CONTRACTOR SHALL PROVIDE A MINIMUM FORTY-EIGHT (48) HOUR ADVANCE NOTICE (EXCLUDING WEEKENDS AND HOLIDAYS) PRIOR TO BEGINNING ANY EXCAVATION, TO KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT (316) 687-2470 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ALL EXISTING LINES WITHIN THE PROJECT AREA: K.G.E. GAS, PEOPLES NATURAL GAS, K.G.E. ELECTRIC, SOUTHWESTERN BELL TELEPHONE, MULTIMEDIA CABLEVISION, CITY OF WICHITA SEWER MAINTENANCE AND CITY OF WICHITA WATER DEPARTMENT.

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 STORM WATER SEWER MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH CITY OF WICHITA STANDARD SPECIFICATIONS.

ROOF LEADERS ARE NOT PART OF PRIVATE PROJECT NO. 752PPS (607861). CONTRACTOR SHALL CONTACT OFFICE OF CENTRAL INSPECTION FOR PERMITS AND INSPECTION OF THE ROOF LEADER TIE-INS.

NOTE TO CONTRACTOR

INSPECTION AND TESTING FOR THIS PROJECT IS TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM CONTRACTED BY THE OWNER/DEVELOPER. SAID INSPECTION TO BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD CONSTRUCTION ENGINEERING PRACTICES AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. NO WORK SHALL BE PERFORMED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY BY THE CONTRACTOR UNTIL SUCH INSPECTION IS ARRANGED FOR AND REQUIRED BONDS HAVE BEEN SUBMITTED TO AND APPROVED BY THE CITY NOR SHALL ANY WORK BE COMMENCED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY WITHOUT WRITTEN AUTHORIZATION BY THE CITY ENGINEER. IMPROVEMENTS PERFORMED UNDER THIS PROJECT SHALL NOT BE ACCEPTED BY THE CITY UNTIL ALL APPLICABLE DOCUMENTATION HAS BEEN SUBMITTED TO THE CITY ENGINEER. THIS MAY INCLUDE: AS-BUILT DRAWINGS, INSPECTION LOGS, TEST DOCUMENTATION, TV TAPES, AND A CERTIFICATE OF COMPLETION. THE ABOVE SHAL BE PERFORMED BY THE CONSULTING FIRM CONTRACTED TO INSPECT THIS PROJECT.

REVISED "AS BUILT" 1-7-98 TEB

C.O.W. PRIVATE PROJECT NO. 752PPS (607861)

STORM WATER SEWER PLAN

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

Designed by	PWM, BER	Checked by	
Drawn by	DEP	Date OCT. 1997	Job No. 97311-1

C.O.W. PRIVATE PROJECT NO. 752PPS (607861)

LINE NO. 1
STA. 10+00.00 TO STA. 19+92.34

LINE NO. 1A
STA. 50+00.00 TO STA. 54+85.98

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

Designed by	PMM, PFR	Job No.	97311-1
Drawn by	DEP	Date	OCT. 1997

Sheet 3 of 9

Revised: "As Constructed" 1-7-98 TDB

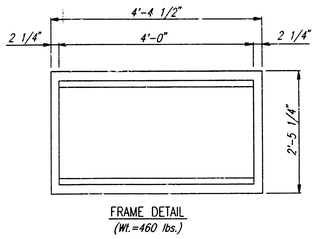
LINE NO. 1

Sta. 10+00.00, Line No. 1
Connect to Existing Inlet
Top Elev.=232.60
Existing 20" Waterline
Top of Pipe=227.65
Existing 16" High Pressure Gas
Top of Pipe=226.1
Prop. 6" Sanitary Sewer
Top of Pipe=230.92
Sta. 11+00.76, Line No. 1=
Const. Std. Type 1A Curb Inlet
Top Elev.=236.55 238.47
℄ In=229.73
℄ Out=229.23
Sta. 15+32.97, Line No. 1
Const. Std. Type 1A Curb Inlet
Top Elev.=237.44 238.07
℄ In=232.62
℄ Out=232.42
Sta. 17+35.57, Line No. 1
Const. Area Inlet
Top Elev.=236.32
12" Elec. 236.34
5" Fire Service Line
Top of Pipe=233.38
4" Domestic Service Line
Top of Pipe=233.38
6" Fire Department Connection Line
Top of Pipe=236.75
Sta. 18+69.28, Line No. 1
Const. Area Inlet
Top Elev.=236.32 238.28
℄ In=235.33 235.55
Sta. 19+92.34, Line No. 1
Const. Area Inlet
Top Elev.=239.50 237.72
℄ Out=236.39
Existing Ground
Proposed Ground
℄ In=231.09 Line No. 1A
℄ In=225.1 Exist. 30" RCP(E)
141.19 L.F. 24" RCP @ 0.61%
℄ Out=228.95 234.82
℄ In=228.85 228.55
141.19 L.F. 24" RCP @ 0.61%
℄ Out=229.73 234.22
℄ In=229.08 234.42
Jog 77 L.F. 15" RCP @ 10.88% 6.73%
℄ Out=235.55 237.39
℄ In=235.33 235.55
123.74 L.F. 15" RCP @ 10.86% 1.07%
℄ Out=236.39 234.82
℄ In=236.19 234.42
202.66 L.F. 18" RCP @ 9.48% 0.61%
℄ Out=232.62 235.42
℄ In=232.42 235.22

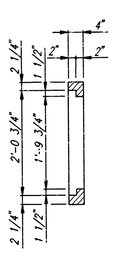
Sta. 50+00.00, Line No. 1A=
Sta. 1+00.76, Line No. 1
Const. Std. Type 1A Curb Inlet
Top Elev.=236.55 237.91
℄ In=229.73
℄ Out=229.23
Sta. 51+65.67, Line No. 1A
Const. Std. Type 1A Curb Inlet
Top Elev.=240.54 241.16
℄ In=232.21
℄ Out=232.01 232.58
Sta. 52+84.62, Line No. 1A
Const. Std. Type 1A Curb Inlet
Top Elev.=239.39 238.98
℄ In=233.38
℄ Out=233.08 233.54
Prop. Gas Line
Sta. 53+52.40, Line No. 1A
Const. Std. Type 1A Curb Inlet
Top Elev.=235.38 237.94
℄ In=234.08
℄ Out=233.98 234.28
Sta. 54+85.98, Line No. 1A
Const. Type 1 Ditch Inlet
Top Elev.=237.78 238.12
℄ Out=236.24 235.43
Prop. 3-2" PVC Comm. Service
Prop. 6" PVC Elec. Service
Existing Ground
Proposed Ground
℄ In=228.55 Line No. 1
52.75 L.F. 15" RCP @ 10.88% 6.76%
℄ Out=232.01 232.58
℄ In=231.81 232.38
132.93 L.F. 15" RCP @ 10.88% 6.76%
℄ Out=233.08 233.54
℄ In=232.88 233.34
135.49 L.F. 15" RCP @ 10.88% 6.41%
℄ Out=234.08 234.28
℄ In=233.98 234.18
159.93 L.F. 18" RCP @ 9.48% 6.98%
℄ Out=229.73 230.44
℄ In=229.23 230.14

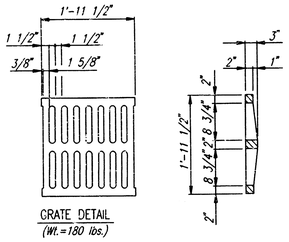
240 235 230 225
10+00 11 12 13 14 15+00 16 17 18 19
LINE NO. 1A

PROJECT NO.	SHEET NO.	TOTAL SHEETS
472-76-245-B -000-000-001	4	9



FRAME DETAIL
(Wt.=460 lbs.)





GRATE DETAIL
(Wt.=180 lbs.)

GENERAL NOTES

CONCRETE SHALL BE C.O.W. STANDARD PAVING MIX. ALL EXPOSED EDGES SHALL BE FINISHED WITH AN APPROVED EDGING TOOL.

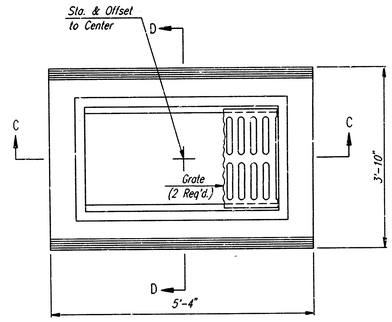
REINFORCING STEEL SHALL BE A MINIMUM GRADE 40, A.S.T.M. A615. ALL DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO THE CENTERLINE OF BARS UNLESS OTHERWISE NOTED.

INLET 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.

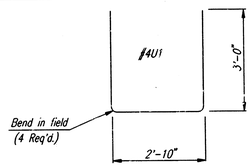
CONSTRUCTION REQUIREMENTS AND MATERIALS FOR MASONRY WALLS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

INLET FLOOR SHALL BE SHAPED WITH UNREINFORCED CONCRETE (8 SACK SAND MIX) TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.

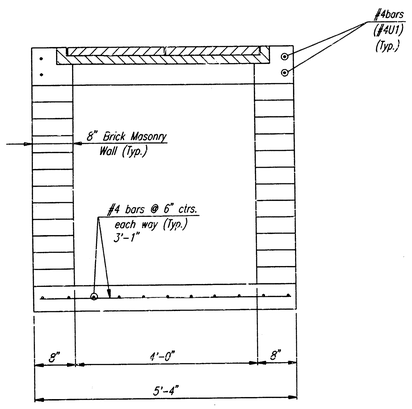
AREA INLETS SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE BID PER EACH. THIS SHALL BE CONSIDERED FULL COMPENSATION FOR ALL EXCAVATION, BACKFILLING, MATERIALS, LABOR, CONNECTION TO EXISTING STRUCTURES (IF REQUIRED), EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.



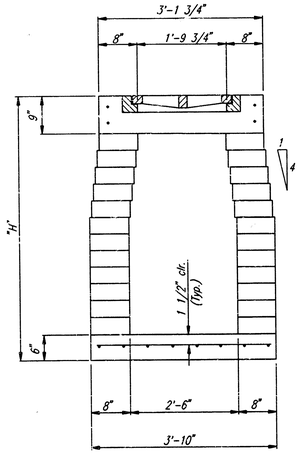
PLAN



BENDING DIAGRAM

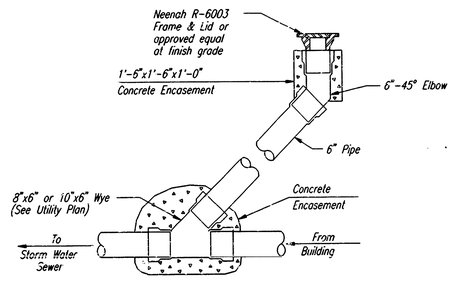


SECTION C-C



SECTION D-D

AREA INLET



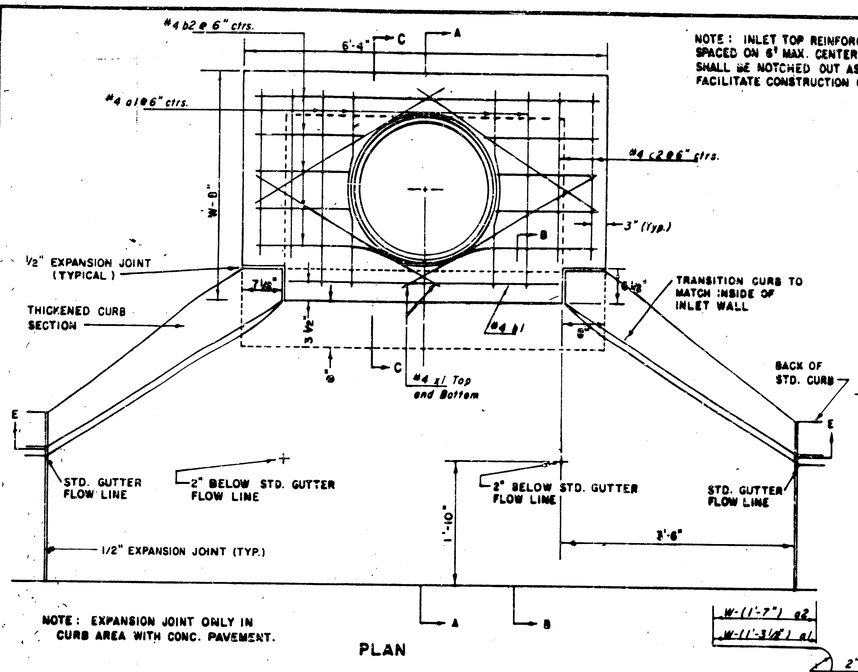
6" RAIN LEADER CLEANOUT DETAIL

C.O.W. PRIVATE PROJECT NO. XxX PPS (XXXXXX)

STD. AREA INLET DETAILS

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

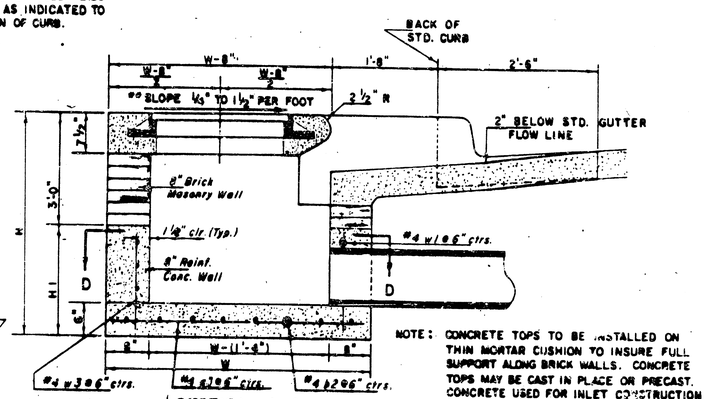
Designed by	PMM, BER	Checked by	
Drawn by	DFP	Date OCT. 1997	Job No 97311-1



PLAN

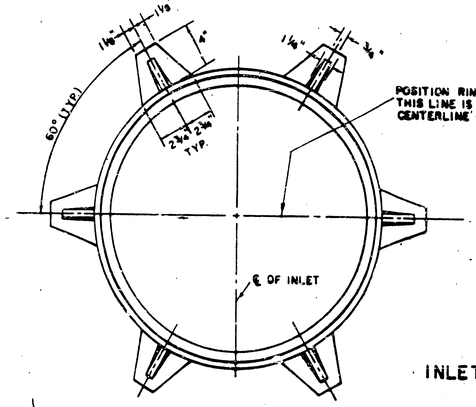
NOTE: EXPANSION JOINT ONLY IN CURB AREA WITH CONC. PAVEMENT.

NOTE: INLET TOP REINFORCING SHALL BE SPACED ON 6' MAX. CENTERS. INLET LIDS SHALL BE NOTCHED OUT AS INDICATED TO FACILITATE CONSTRUCTION OF CURB.



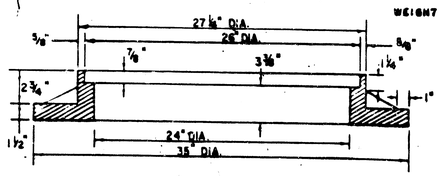
SECTION A-A

NOTE: CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK WALLS. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL BE CONCRETE PAVEMENT MIX WITH AIR ENTRAINMENT.



INLET FRAME

WEIGHT = 180 LBS.



SEE CITY OF WICHITA STANDARD MANHOLE FRAME AND COVER DETAIL SHEET FOR COVER DETAILS TO BE USED WITH INLET FRAME.

BENDING DIAGRAM

NOTE: CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP ON THIS INLET WHEN W = 6'4" AND H = 7'0" OR LESS.

ADDITIONAL CURB AND GUTTER CONSTRUCTION NECESSARY TO CONNECT SET-BACK INLET TO PAVEMENT WILL BE PAID FOR AT THE UNIT PRICE BID FOR EACH INLET HOOKUP.

INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.

THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.

**NOTE: Slope of Inlet Tops to match Sidewalk or Parking Slopes within Limits indicated.

PRECAST SLAB AND FLOOR REINFORCING

		W=4'-4"		W=5'-4"		W=6'-4"		W=7'-4"		W=8'-4"	
Mark	Size	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length
b1	#4	6	6'-7"	6	8'-7"	6	10'-7"	6	12'-7"	6	13'-7"
a2	#4	4	6'-0"	4	8'-0"	4	10'-0"	4	12'-0"	4	14'-0"
a3	#4	13	4'-1"	13	5'-1"	13	6'-1"	13	7'-1"	13	8'-1"
b1	#4	1	4'-9"	1	4'-9"	1	4'-9"	1	4'-9"	1	4'-9"
b2	#4	23	6'-1"	29	6'-1"	35	6'-1"	41	6'-1"	47	6'-1"
z1	#4	8	3'-10"	8	4'-2"	8	4'-6"	8	4'-10"	8	5'-2"

WALL REINFORCING

		W=4'-4"		W=5'-4"		W=6'-4"		W=7'-4"		W=8'-4"	
Mark	Size	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length
w1	#4	(2)	6'-1"	(2)	6'-1"	(2)	6'-1"	(2)	6'-1"	(2)	6'-1"
w2	#4	(1)	8'-1"	(1)	9'-1"	(1)	6'-1"	(1)	7'-1"	(1)	8'-1"
w3	#4	32	(2)	36	(2)	40	(2)	44	(2)	48	(2)

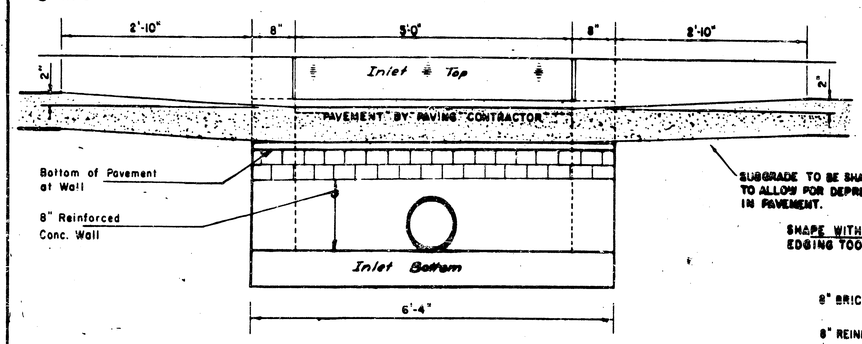
* Field bend or cut Reinforcing as required for clearance.

(1) 4(H1-12"); (H1-12") Round down to nearest 0.5'

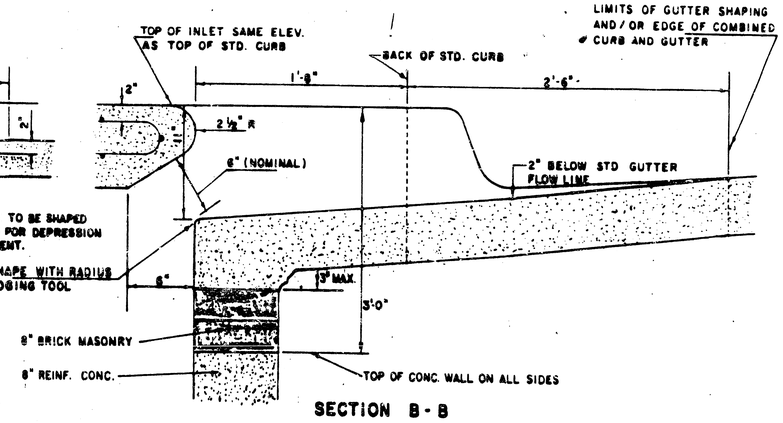
(2) H1-3"

STANDARD CURB INLET PRECAST TOPS

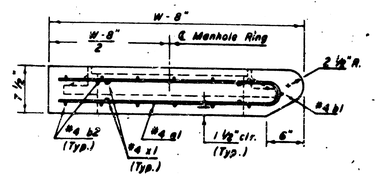
W	PRE-CAST TOP SIZE	PIPE SIZE	CU.YD. CONC.
4' 4"	3'6"x 6'4" x7 1/2"	21" & SMALLER	0.38 ±
5' 4"	4'6"x 6'4" x7 1/2"	24" & 30"	0.51 ±
6' 4"	5'6"x 6'4" x7 1/2"	36" & 42"	0.64 ±
7' 4"	6'6"x 6'4" x7 1/2"	48" & 54"	0.77 ±
8' 4"	7'6"x 6'4" x7 1/2"	60" & 66"	0.90 ±



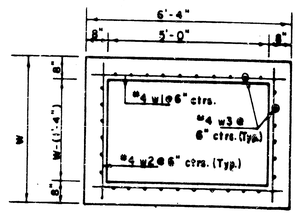
SECTION E-E



SECTION B-B



SECTION C-C



SECTION D-D

~~REVISED 11-30-1988~~

~~REVISED 12-31-1984~~

Revised 2-16-1989

DETAIL STANDARD TYPE IA CURB INLET

CITY OF WICHITA, KANSAS

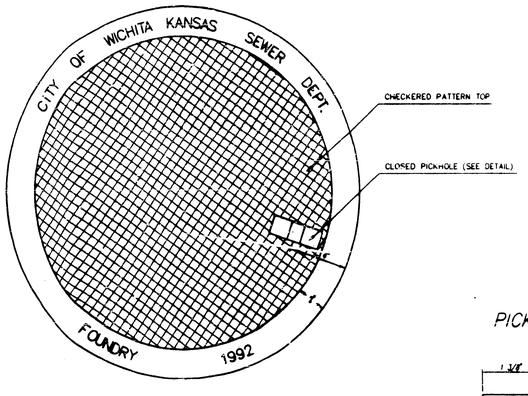
INLET OPENING = 6" x 5'0"

JUNE 1984

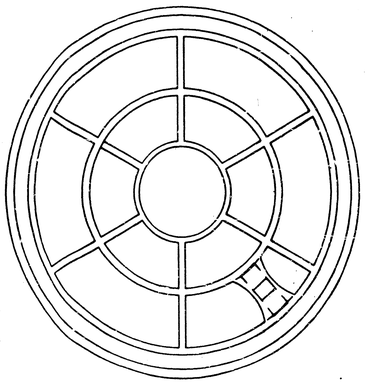
MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

MANHOLE COVER
Weight = 180 Lbs.

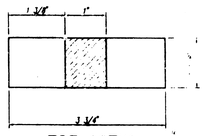


TOP VIEW

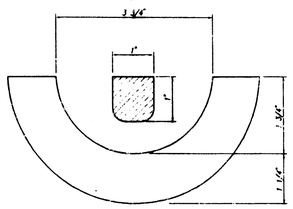


BOTTOM VIEW

PICKHOLE DETAIL

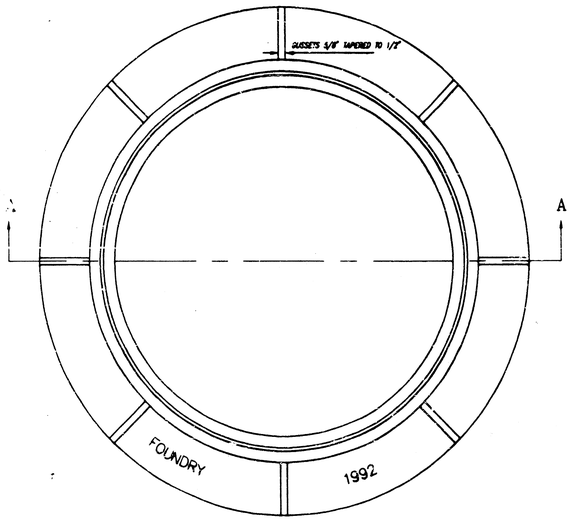


TOP VIEW

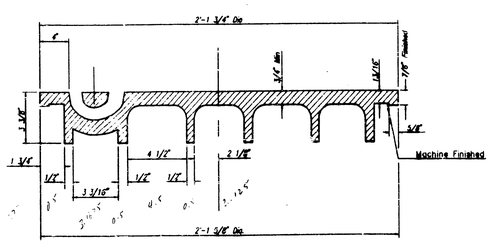


SECTION VIEW

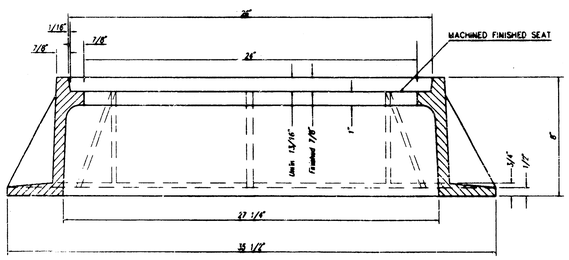
MANHOLE FRAME
Weight = 240 Lbs.



TOP VIEW



SECTION VIEW



SECTION A-A

GENERAL NOTES

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.

MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDARY 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.

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 AS THESE SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.

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.

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.

TO INSURE CONFORMANCE TO TENSILE STRENGTH REQUIREMENTS ALL CASTINGS SHALL BE JULIAN HEAT DATED WITH THE FOLLOWING REQUIREMENTS:

TWO TEST BAR SPECIMENS MUST BE POURED WHEN PRODUCING CITY OF WICHITA CASTINGS. ONE OF THE TEST BAR SPECIMENS SHALL BE SENT TO AN INDEPENDENT LABORATORY FOR TENSILE STRENGTH VERIFICATION TESTING. A TEST REPORT SHALL ACCOMPANY EACH SHIPMENT OF CASTINGS. THE HEAT DATE(S) ON THE CASTINGS SHALL RESPOND TO THE TENSILE STRENGTH REPORT(S). THE TEST REPORT WILL BE PAID FOR BY THE SUPPLIER. THE REMAINING TEST BAR SPECIMEN WILL BE SHIPPED TO SEWER MAINTENANCE AT 713 W. HARRY, WICHITA, KANSAS 67213.

MANHOLE FRAME AND COVER DETAIL
ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

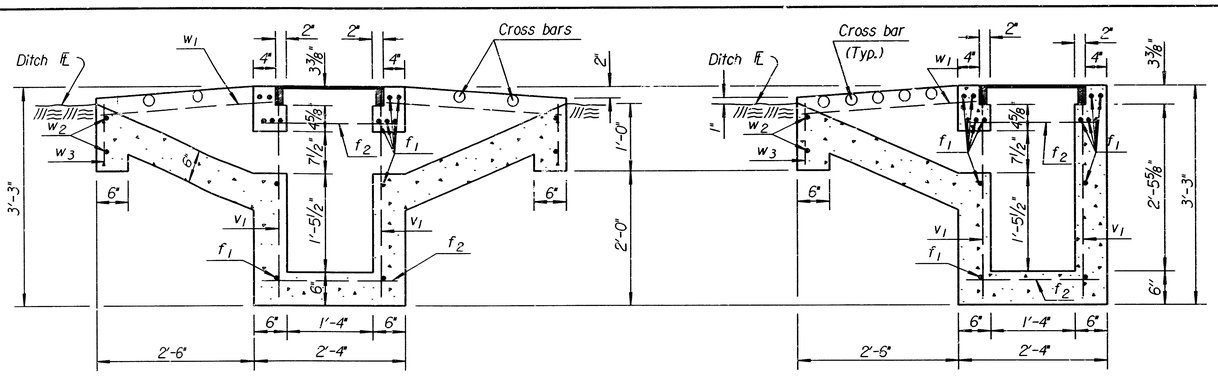
CITY OF WICHITA, KANSAS
M. E. LINDEBAK - CITY ENGINEER

REVISED 6/27/86

PROJ. NO. 468-76-245- -000-000-001

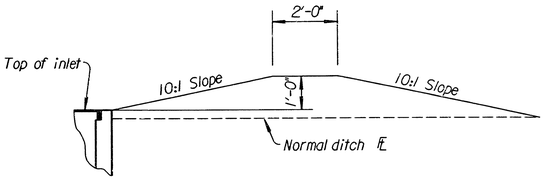
SHEET OF

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	752PPS (607861)	1997	7	9



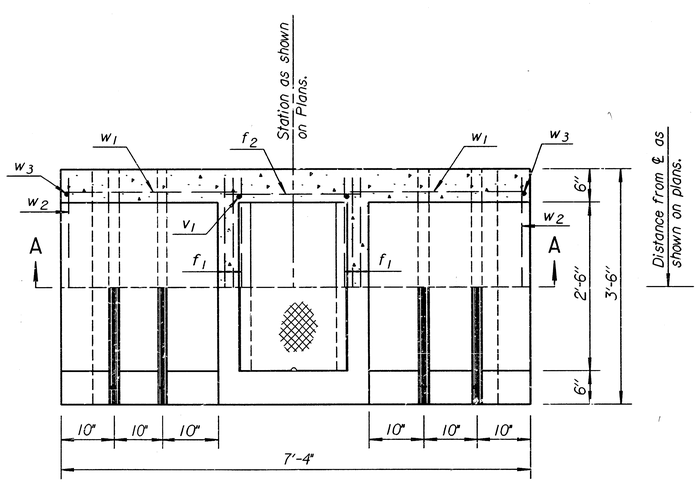
SECTION A-A
TYPE II

SECTION B-B
TYPE I

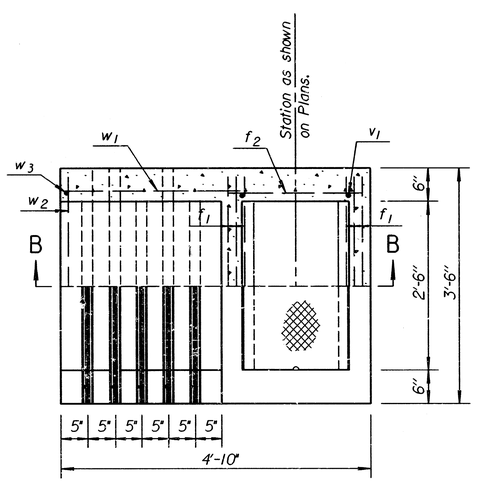


SKETCH OF DITCH PLUG

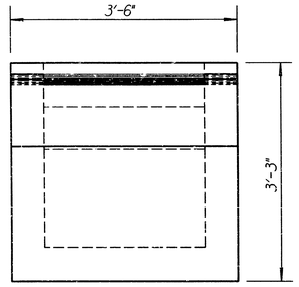
An earth dike, as shown above, shall be constructed across the ditch downstream from each Type I inlet where no other plug is used.



PLAN
TYPE II



PLAN
TYPE I



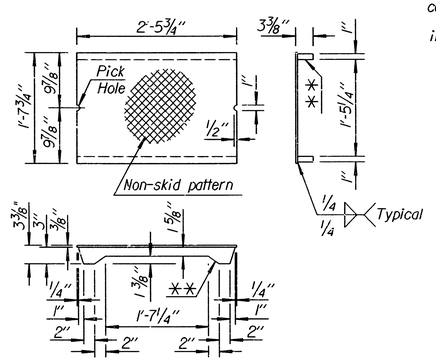
FRONT ELEVATION
TYPE I & TYPE II

BILL OF MATERIALS

TYPE II			TYPE I		
Bar	No.	Length	Bar	No.	Length
f_1	14	3'-3"	f_1	14	3'-3"
f_2	4	2'-1"	f_2	4	2'-1"
v_1	4	3'-0"	v_1	4	3'-0"
w_1	4	2'-9"	w_1	2	2'-9"
w_2	4	3'-3"	w_2	2	3'-3"
w_3	4	0'-10"	w_3	2	0'-10"
Class "A" Conc. 1.1 Cu.Yd.			Class "A" Conc. 0.9 Cu.Yd.		
Reinf. Steel 60 lbs.			Reinf. Steel 50 lbs.		
Struct. Steel 98 lbs.			Struct. Steel 98 lbs.		
Class III Excav. 4 Cu.Yd.			Class III Excav. 3 Cu.Yd.		

NOTE: ALL REINFORCING BARS ARE SIZE #4.

Concrete shall be C.O.W. Standard Paving Mix. All exposed edges shall be finished with an approved edging tool.



* STRUCTURAL STEEL COVER PLATE

Weight = 98 lbs. Each

* Non skid steel floor plate (commercial grade)

** At the contractors option, the supports on the cover plate may be made with the "feet" portions welded to the 1 5/8" steel bars. The weld shall be 1/8" full length, each side and ground smooth on the outside.

GENERAL NOTES

~~Class A Concrete, Class A Concrete (AE), or the mix used in Concrete Pavement, at the Contractor's option, shall be used throughout.~~

All exposed edges shall be finished with an edging tool.

Reinforcing bars shall be bent around pipe.

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

All structural steel shall comply with ASTM A-36, A-242, or A-441.

Cross bars shall be standard weight 2" galvanized pipe and shall be furnished in place as a subsidiary item. All cross bars shall be cut flush with outside of wing walls.

Cross bars shall be fastened securely to the concrete wings by bolts or other suitable means.

Minor variations in the shape of legs will be permitted. ~~but payment will be made on calculated weight.~~

Cast iron cover plate, constructed to the dimensions shown for structural steel cover plate, minimum weight 98 lbs. (approx.), will be allowed as an approved alternate.

All castings shall be gray iron and shall comply with the Standard Specifications.

The weight of castings includes no allowance for fillets and overruns.

All exposed structural steel shall be painted with a coat of inorganic zinc primer and then with a topcoat or a field coat of organic zinc, each coat to be 3 to 4 mils.

Minimum clearance on all reinforcing steel shall be one inch except where noted.

NO.	DATE	REVISIONS	BY	APP'D
23	12-27-93	Delete paint on cast iron	R.J.S.	J.O.B.
22	4-15-92	Entered on CADD	R.J.S.	J.O.B.
21	4-10-90	Revised paint note	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

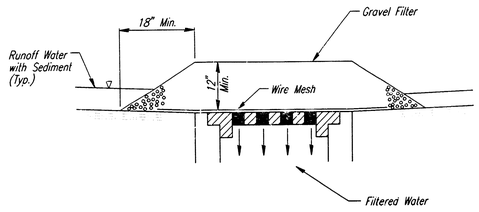
CONCRETE DITCH INLETS, TYPES I & II

~~RD63I~~

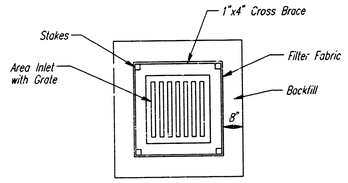
FHWA APPROVAL	2-15-93	APP'D James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Seitz

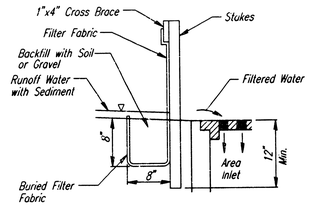
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PROJECT NO.	SHEET NO.	TOTAL SHEETS
472-76-245-8 -000-000-001	8	9

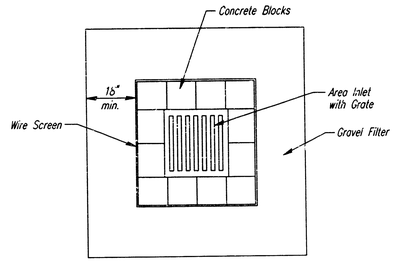


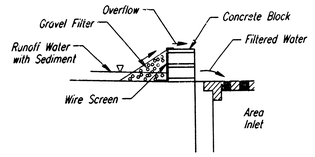
AREA INLET PROTECTION
GRAVEL AND WIRE MESH



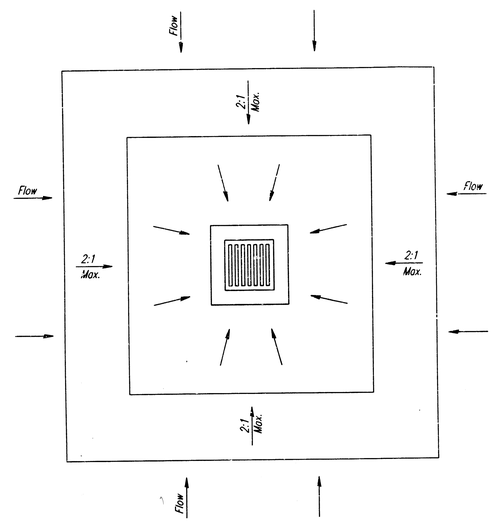


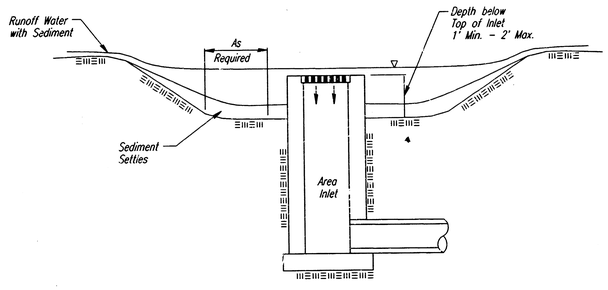
AREA INLET PROTECTION
FILTER FABRIC





AREA INLET PROTECTION
BLOCK AND GRAVEL FILTER

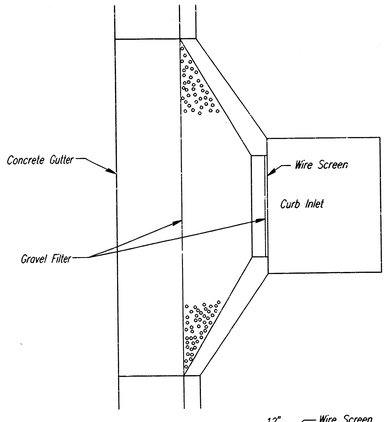




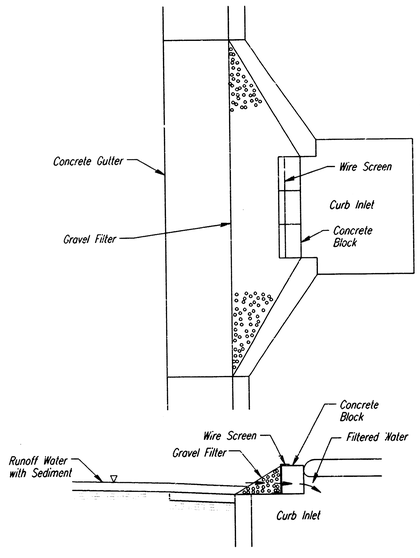
AREA INLET PROTECTION
EXCAVATED AREA INLET
SEDIMENT TRAP

ADAPTED FROM: VIRGINIA SOIL AND WATER CONSERVATION COMISSION, 1985 AND DRAINAGE CRITERIA MANUAL, DENVER URBAN DRAINAGE AND FLOOD CONTROL DISTRICT 9-1-92

NOTE: INLET SIPE MAY VARY FROM THAT SHOWN.



CURB INLET PROTECTION
GRAVEL AND WIRE MESH FILTER



CURB INLET PROTECTION
BLOCK AND GRAVEL FILTER

GENERAL NOTES
INLET PROTECTION

1. INLET PROTECTION METHOD MAY BE ANY OF THE APPLICABLE TYPES SHOWN, AT THE CONTRACTORS OPTION.
2. GRAVEL FILTER SHALL BE A DURABLE, WELL-GRADED SAND-GRAVEL OR CRUSHED STONE, MAXIMUM 1-1/2 IN. SIPE. AS AN ALTERNATE GRAVEL FILLED BAGS OF BURLAP OR OTHER FABRIC MAY BE USED. WHERE BAGS ARE USED, THE WIRE SCREEN, WHERE SHOWN, MAY BE OMITTED.
3. FILTER FABRIC, WHERE USED, SHALL BE RESISTANT TO ULTRAVIOLET LIGHT. MATERIALS MAY BE SUPPLIED BY THE FOLLOWING MANUFACTURERS:

MIRAFI, INC.	-	100X
HOECHST FIBERS INDUSTRIES	-	TREVIRA 1115
EXXON	-	TYPAR 3301 W

MATERIALS SUPPLIED BY THE ABOVE NAMED MANUFACTURERS SHALL BE ACCEPTED UPON VISUAL INSPECTION BY THE ENGINEER. OTHER COMPARABLE MATERIALS MAY BE USED IF APPROVED BY THE ENGINEER.

4. INLET PROTECTION SHALL BE ERECTED AS SOON AS THE STRUCTURE HAS BEEN BACKFILLED. MEASURES SHALL BE TAKEN TO PRECLUDE ENTRY OF SEDIMENT INTO THE STORM WATER SEWER SYSTEM DURING CONSTRUCTION OF THE STRUCTURE.
5. REMOVAL AND DISPOSAL OF ACCUMULATED SILT AND DEBRIS AND/OR REMOVAL AND RECONSTRUCTION OF INLET PROTECTION INSTALLATIONS SHALL BE PERFORMED THROUGHOUT THE PROJECT LIFE WHENEVER DEBRIS REACHES ONE-THIRD THE BARRIER HEIGHT, OR AS DEEMED NECESSARY BY THE ENGINEER. ULTIMATE REMOVAL AND DISPOSAL OF INLET PROTECTION AND DEBRIS WILL BE PERFORMED BY THE DEVELOPER.
6. MEASUREMENT AND PAYMENT: THE ITEM "INLET PROTECTION" SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE BID PER EACH FOR EACH INLET LOCATION PROTECTED REGARDLESS OF METHOD SELECTED BY THE CONTRACTOR. SAID PRICE SHALL BE CONSIDERED FULL COMPENSATION FOR EXCAVATION, COMPACTION, BACKFILL, SEDIMENT, AND DEBRIS REMOVAL AND DISPOSAL, AND ALL LABOR, MATERIALS, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. RECONSTRUCTION OF INLET PROTECTION INSTALLATION DUE TO DAMAGE BY WIND, FLOOD, FIRE, ETC. OR DUE TO ACTIONS BY THE CONTRACTOR OR OTHERS SHALL BE PERFORMED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST.

REVISED 1/95

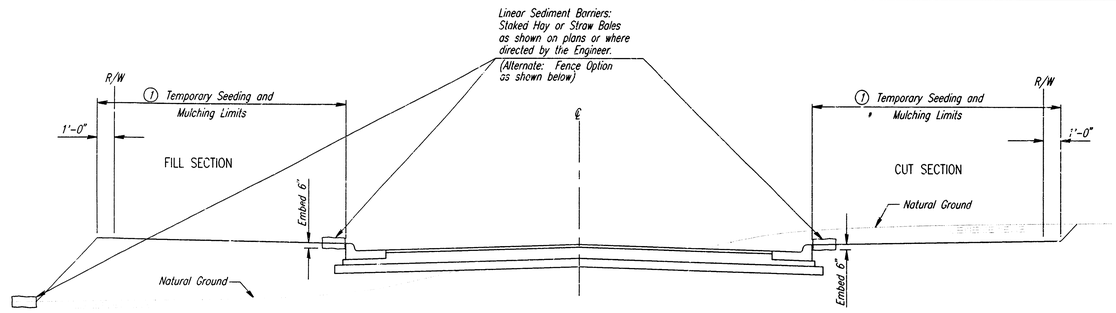
C.O.W. PRIVATE PROJECT NO. XXX PPS (XXXXXX)

SEDIMENT AND EROSION CONTROL STANDARD DETAILS AND INLET PROTECTION

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

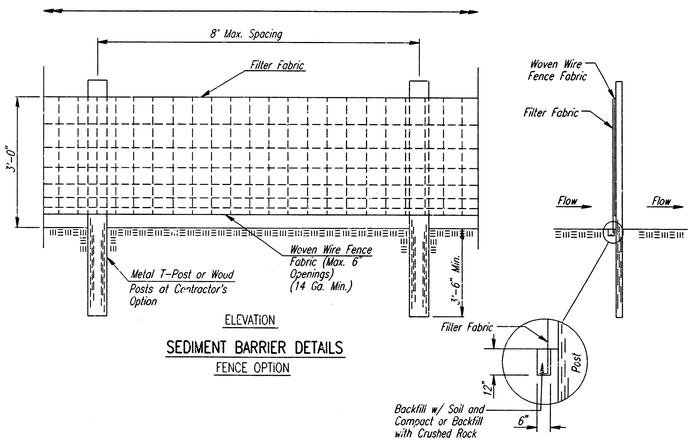
Designed by	PMM, BER	Checked by	
Drawn by	DEP	Date OCT. 1997	Job No. 97311-1

PROJECT NO.	SHEET NO.	TOTAL SHEETS
472-76-248 -000-000-001	9	9

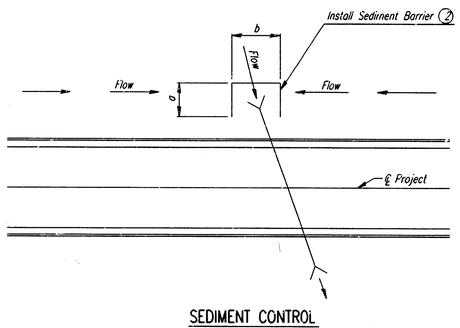


① Seed with Annual Rye at the rate of 4 lbs./1000 S.F.
Mulch with Hay at the rate of 90 lbs./1000 S.F.

SEDIMENT CONTROL
CURB AND GUTTER STREET SECTION

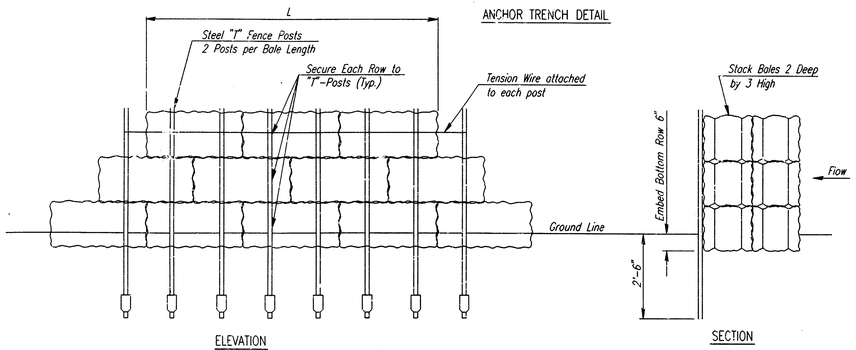


SEDIMENT BARRIER DETAILS
FENCE OPTION



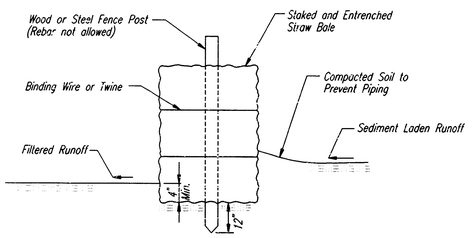
SEDIMENT CONTROL
TYPICAL CROSS ROAD PIPE LOCATION

② "a" Dimension = Ditch bottom width +10'
"b" Dimension = End Section or Headwall width +1C'

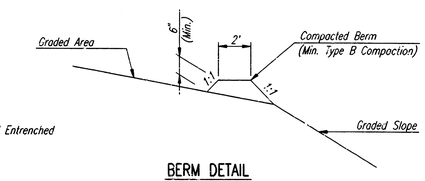


ANCHOR TRENCH DETAIL

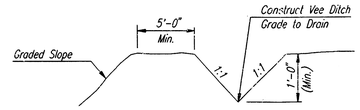
SEDIMENT BARRIER DETAILS
HAY/STRAW BALE OPTION



LINEAR SEDIMENT BARRIER



BERM DETAIL



INTERCEPT DITCH DETAIL

TEMPORARY EROSION CONTROL DETAILS FOR SLOPE PROTECTION

The Engineer may determine that the height of Berm or depth of Ditch should be increased over that shown if Drainage conditions are producing Slope Erosion

1. SEDIMENT BARRIERS SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. ADDITIONAL SEDIMENT BARRIERS WILL BE INSTALLED AT LOCATIONS AS DIRECTED BY THE ENGINEER WITH NO ADJUSTMENT IN UNIT PRICE.

2. SEDIMENT BARRIERS SHALL BE ERECTED PRIOR TO THE COMMENCEMENT OF EARTHWORK OPERATIONS IN A GIVEN BASIN. REMOVAL AND DISPOSAL OF ACCUMULATED SILT AND DEBRIS AND/OR REMOVAL AND RECONSTRUCTION OF SEDIMENT BARRIERS WILL BE PERFORMED THROUGHOUT THE PROJECT LIFE WHEN DEBRIS REACHES ONE-THIRD THE FENCE HEIGHT OR AS DEEMED NECESSARY BY THE ENGINEER. SEDIMENT BARRIERS AND ACCUMULATED DEBRIS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AFTER TURF COVER HAS BEEN ESTABLISHED, UNLESS OTHER ARRANGEMENTS HAVE GEEN AGREED TO.

3. FILTER FABRIC FOR FENCE OPTION SEDIMENT BARRIERS SHALL BE RESISTANT TO ULTRAVIOLET LIGHT. MATERIALS MAY BE SUPPLIED BY THE FOLLOWING MANUFACTURERS:

MIRAFI, INC.	–	100X
HOECHST FIBERS INDUSTRIES	–	TREVIRA 1115
EXXON	–	TYPAR 3301 W

MATERIALS SUPPLIED BY THE ABOVE NAMED MANUFACTURERS SHALL BE ACCEPTED UPON VISUAL INSPECTION BY THE ENGINEER. OTHER COMPARABLE MATERIALS MAY BE USED IF APPROVED BY THE ENGINEER.

FILTER FABRIC SHALL BE ATTACHED TO FENCE FABRIC BY MEANS OF TIE WIRES OR HOG RINGS PRIOR TO ATTACHMENT OF FENCE/FABRIC COMBINATION ONTO THE POSTS.

4. BALES USED FOR SEDIMENT BARRIERS MAY BE EITHER HAY OR STRAW, PROVIDED THEY ARE SOUND AND INTACT.

5. TEMPORARY EROSION CONTROL BERMS AND/OR INTERCEPT DITCHES SHALL BE CONSTRUCTED AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. ADDITIONAL BERMS AND/OR DITCHES MAY BE REQUIRED AT NO ADJUSTMENT IN UNIT PRICE(S).

WHERE TEMPORARY EROSION CONTROL BERMS AND/OR INTERCEPT DITCHES ARE USED, ALL AREAS WHERE FLOW IS CONCENTRATED SHALL BE PROTECTED BY SILTATION BARRIERS PRIOR TO DISCHARGING INTO ANY DITCH, STORM SEWER, OR WATERCOURSE.

6. MEASUREMENT AND PAYMENT: THE ITEM "SEDIMENT BARRIERS", "EROSION CONTROL INTERCEPT DITCH", "EROSION CONTROL BERM" AND "LINEAR SEDIMENT BARRIERS" SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAL FOOT COMPLETE IN PLACE OF THE VARIOUS BID ITEMS SHOWN. SAID PRICE SHALL BE CONSIDERED FULL COMPENSATION FOR EXCAVATION, COMPACTION, BACKFILL, SEDIMENT AND DEBRIS REMOVAL AND DISPOSAL, AND ALL MATERIALS, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. RECONSTRUCTION OF EROSION CONTROL MEASURES WHICH ARE DESTROYED BY WIND, FLOOD, FIRE, OR BY THE ACTIONS OF THE CONTRACTOR OR OTHERS SHALL BE PERFORMED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST. WHERE ADJUSTMENTS IN QUANTITIES ARE REQUIRED BY FIELD CONDITIONS, THERE SHALL BE NO ADJUSTMENT IN UNIT PRICE.

THE ITEM "TEMPORARY SEEDING AND MULCHING" SHALL BE MEASURED AND PAID FOR AT THE CONTRACT PRICE BID PER ACRE OR PER LUMP SUM, AS INDICATED IN THE PROPOSAL.

C.O.W. PRIVATE PROJECT NO. XXX PPS (XXXXXX)

EROSION CONTROL AND SEDIMENT BARRIER DETAILS

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

Designed by	PMM, BER	Checked by	
Drawn by	DEP	Date OCT. 1997	Job No. 97311-1

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