STORM SEWER
TO SERVE COWTOWN LIVING HISTORY MUSEUM
PRIVATE PROJECT NUMBER 1447 PPS (607853)

GENERAL NOTES

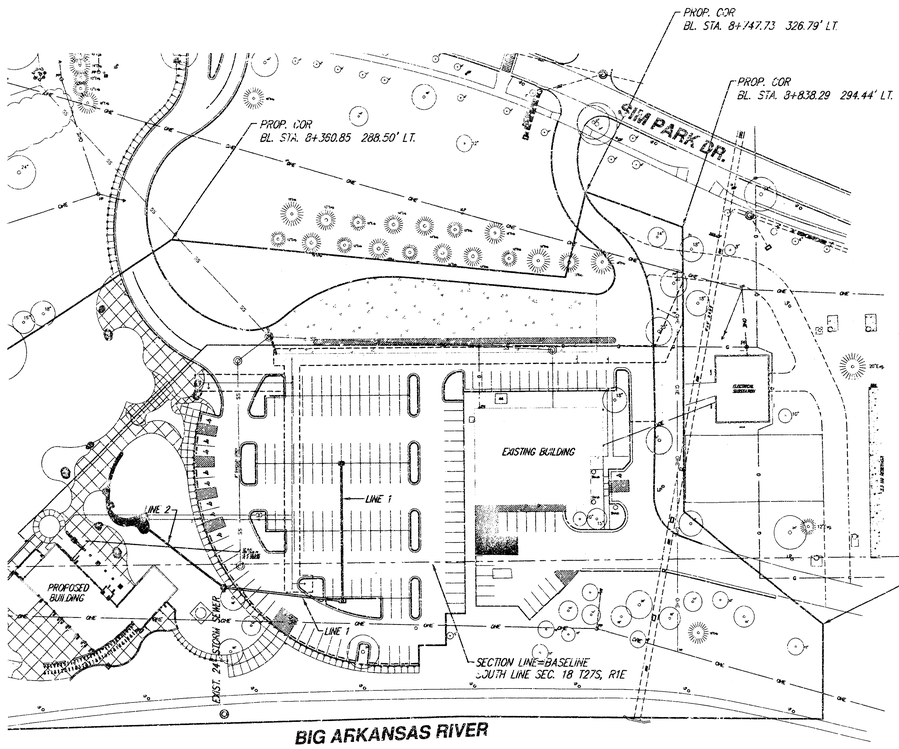
1. Contractor will be required to provide a minimum advance notice of fourty-eight (48) hours to utility companies prior to starting any excavation as follows:

   Kansas One-Call 687-2470

   The Contractor must notify the following in case of an emergency:

Cox Communications	262-0661
Kansas Gas Service	333-8600
Westar	383-8600
Aquila Energy	1-800-303-0357
Southwestern Bell Telephone Company	1-800-286-8313
City of Wichita Water Department	262-6000
City of Wichita Sewer Maintenance	262-6000

2. This project is located within the limits of a larger project which will include building construction. The General Contractor for the project will submit a Storm Water Pollution Prevention Plan for the entire project prior to beginning any work on this street project.
3. This project is to be constructed in accordance with City of Wichita Standard Specifications for the Construction of City Projects, and Policy on Construction of Public Works Improvements by Private Contract.
4. No work shall begin on this project before required bonds are submitted to the City of Wichita, and the project inspector has been notified.
5. Precast concrete construction may be used in lieu of cast-in-place of the inlet, upon approval of submittal drawings.



BENCHMARKS

C.O.W. BENCHMARK AT THE S.W. CORNER OF THE BRIDGE OVER THE LITTLE ARKANSAS RIVER ON CENTRAL JUST EAST OF STACKMAN DRIVE
ELEV.=1304.99 (NVGD)

CHISELED "□" AT THE N.W. CORNER OF 3.3 MG RESERVOIR 1,38'± SOUTH OF SIM PARK DRIVE AND 720'± WEST OF STACKMAN DRIVE
ELEV.=1302.90 (NVGD)

SHEET INDEX

1. INDEX SHE.
2. STORM SEWER PLAN & PROFILE
3. TYPE I CURB INLET DETAILS
4. 4' x 2' INLET & DRAIN DETAILS
5. SPECIAL SHALLOW MANHOLE DETAILS

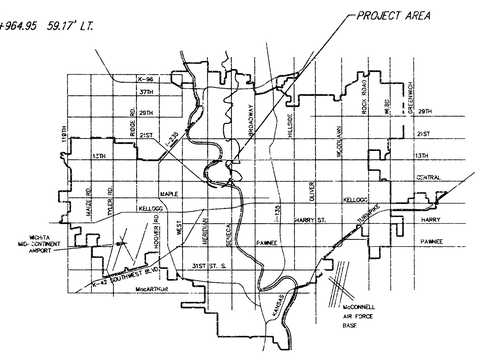
APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

Sanitary Sewers _____
Storm Sewers JRH 6/8/04
Driveway Approaches _____
Water Mains _____
Paving _____

NOTE TO CONTRACTORS

Inspection and testing for this project are to be provided by a Licensed Consulting Engineering Firm under contract with 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 without such inspection, nor shall any work be commenced without written authorization by the City Engineer.

Shawn C. Riggs
6-8-04



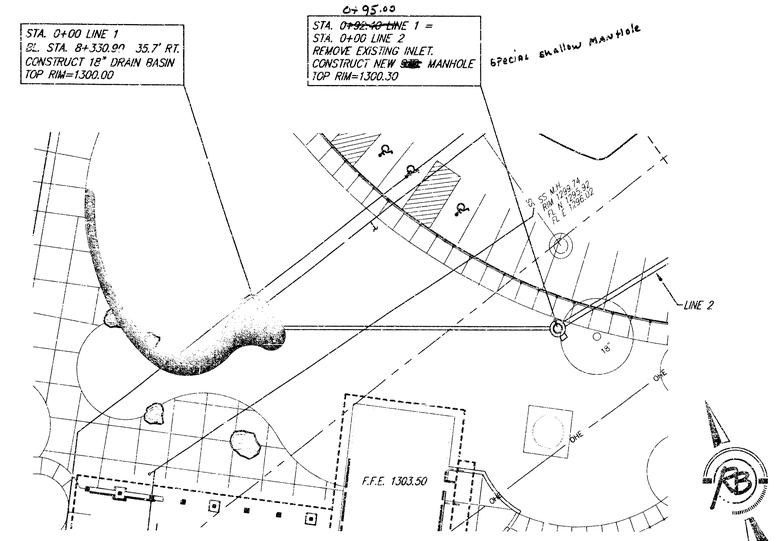
AS-BUILT
4/11/05
Date
KE Miller
Signed Kerry Lee

SCALE: 1"=60'

CITY OF WICHITA, KANSAS
JAMES L. ARMOUR, P.E., ACTING CITY ENGINEER

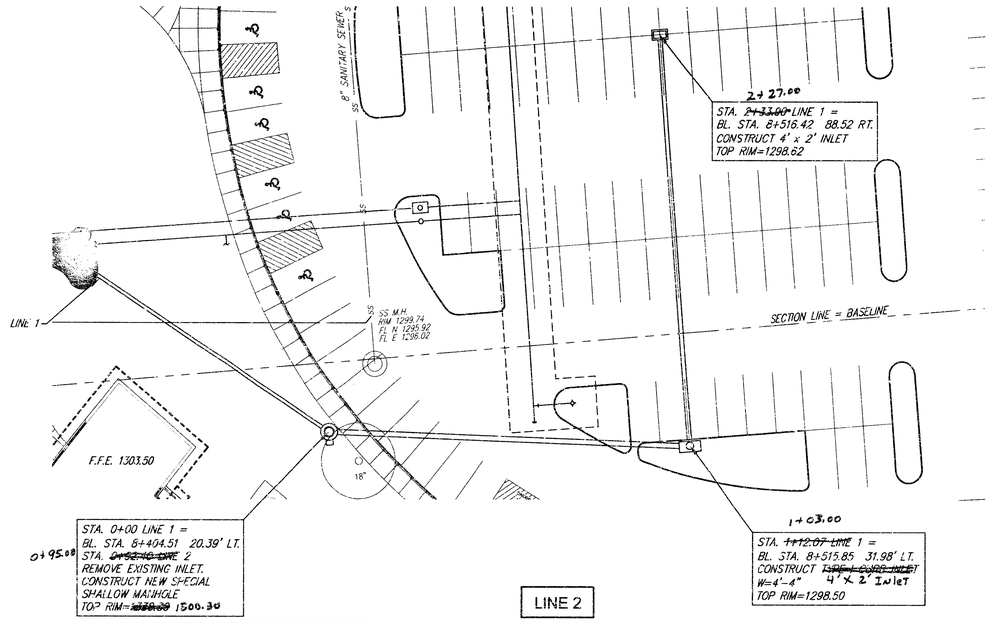
Riggles & Bohm, P.A.
Engineering, Surveying, Land Planning
924 North Main (316) 264-8008
Wichita, Kansas 67203 (316) 264-4621 fax
www.rbkansas.com E-mail: info@rbkansas.com

2496E



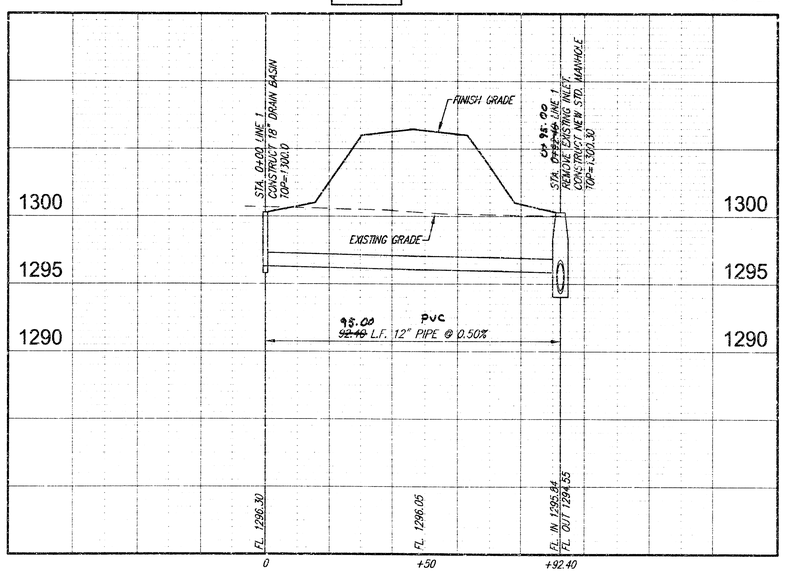
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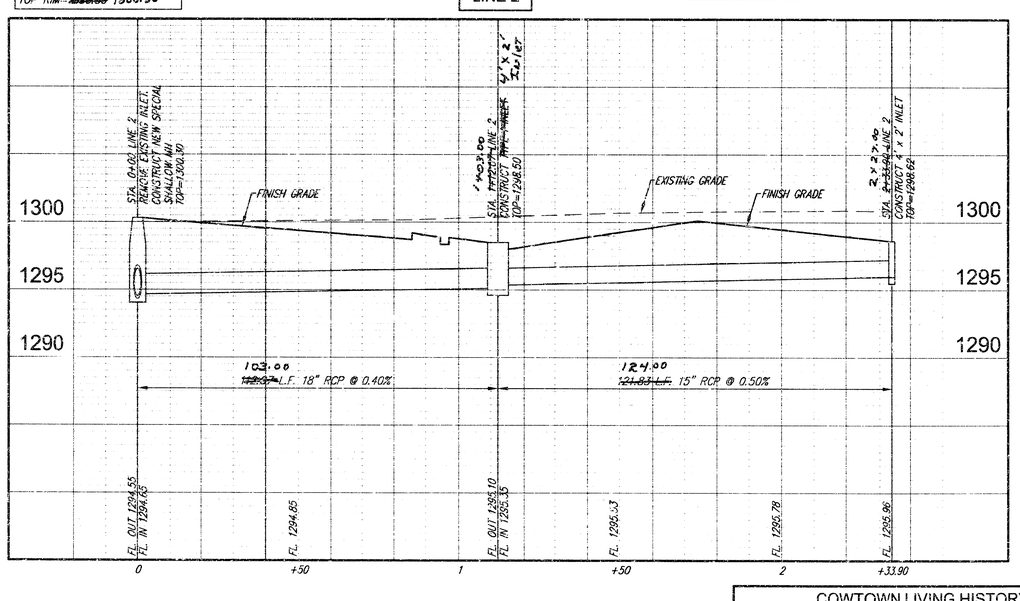
SCALE: 1"=20'
1"=5' VERT.



LINE 2

SCALE: 1"=20'
1"=5' VERT.

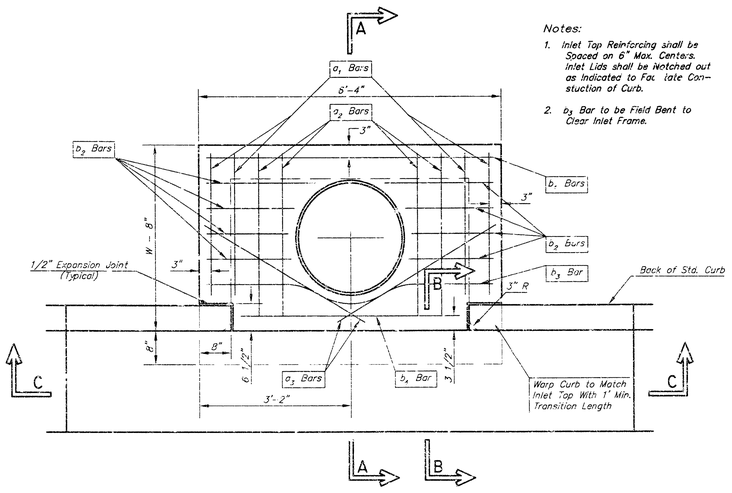




COWTOWN LIVING HISTORY MUSEUM
STORM SEWER PLAN & PROFILE
WICHITA, KANSAS

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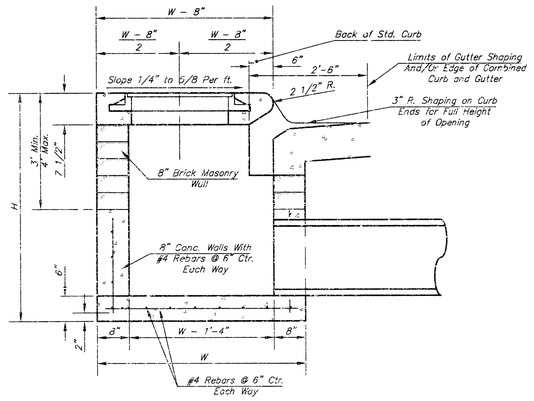
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REVIEW	
UTILITY	
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DRAWING FILE	02430-LG1 {SWS}
PROJECT NUMBER	
RB JOB	2496E
SHEET	2 OF 5



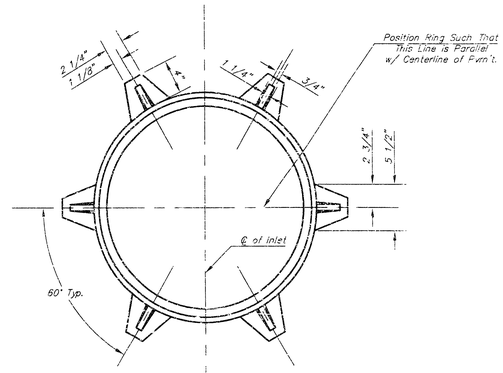
PLAN

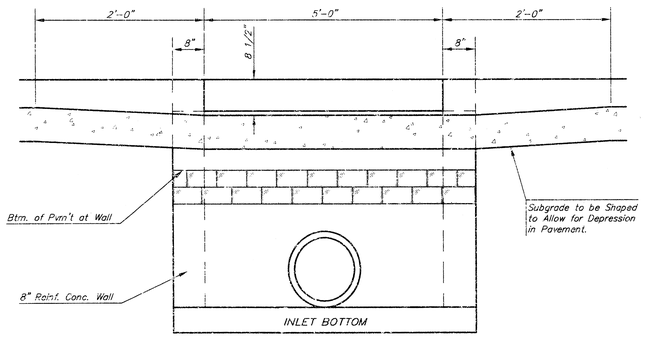
Notes:

1. Inlet Top Reinforcing shall be Spaced on 6" Max. Centers. Inlet Lids shall be Notched out as Indicated to Facilitate Construction of Curb.
2. b_3 Bar to be Field Bent to Clear Inlet Frame.

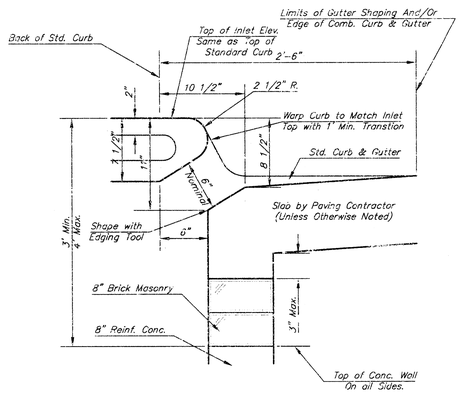


SECTION A-A

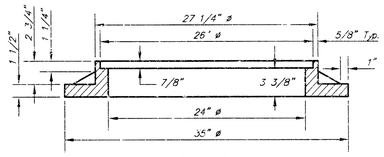




SECTION C-C



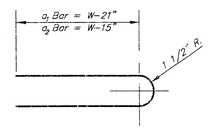
SECTION B-B



WT. = 180 lbs.

MANHOLE RING AND COVER

*See City of Wichita Standard Manhole Ring and Cover Detail Sheet for Cover Details to Be Used With Inlet Frame.



BENDING DIAGRAM

STEEL SCHEDULE

BAR		a_1	a_2	a_3	b_1 W=4'-4"	b_1 W=5'-4"	b_1 W=6'-4"	b_1 W=7'-4"	b_1 W=8'-4"	b_2	b_3	b_4	Wt. Lbs.
NUMBER		4	4	2	1	3	5	7	9	6	1	1	
SIZE		#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#6	
LENGTH	W=4'-4"	5'-7"	6'-7"	4'-0"	6'-1"	–	–	–	–	1'-9"	6'-2"	4'-8"	60±
	W=5'-4"	7'-7"	8'-7"	5'-0"	–	6'-1"	–	–	–	1'-9"	6'-2"	4'-8"	81±
	W=6'-4"	9'-7"	10'-7"	6'-0"	–	–	6'-1"	–	–	1'-9"	6'-2"	4'-8"	101±
	W=7'-4"	11'-7"	12'-7"	7'-0"	–	–	–	6'-1"	–	1'-9"	6'-2"	4'-8"	121±
	W=8'-4"	13'-7"	14'-7"	8'-0"	–	–	–	–	6'-1"	1'-9"	6'-2"	4'-8"	141±

Note: a_3 Bars to be Placed Approx. 2" Below Top of Inlet Cover.

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

GENERAL NOTES

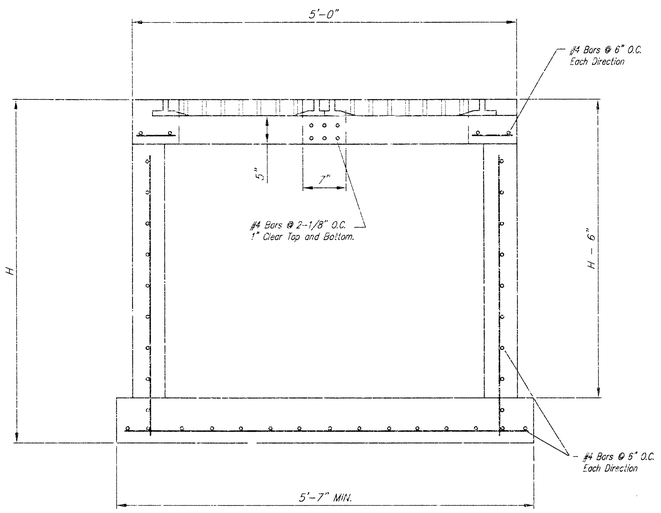
1. Concrete tops to be installed on thin mortar cushion to insure full support along brick walls. Concrete tops may be cast in place or precast. Concrete used for inlet construction shall be concrete pavement mix.
2. Contractor shall have the option of constructing 8" brick masonry walls between the concrete inlet base and top on this inlet when W=6'-4" and H=7'-0" or less.
3. 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.
4. The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.

THE CITY OF WICHITA

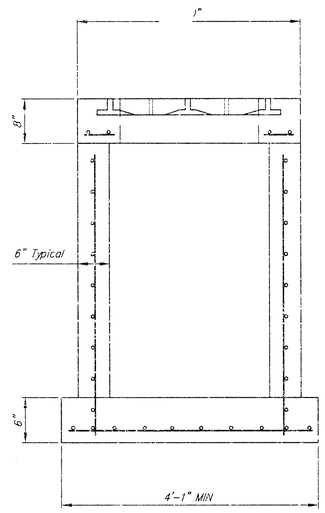
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4114 FAX

STANDARD TYPE 1 CURB INLET OPENING = 6"x5'-0"

PROJECT NUMBER: *
OCA #: *
DATE: MAR 96
SHEET 3 OF 5



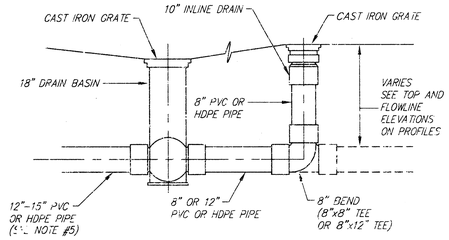
SECTION X-X



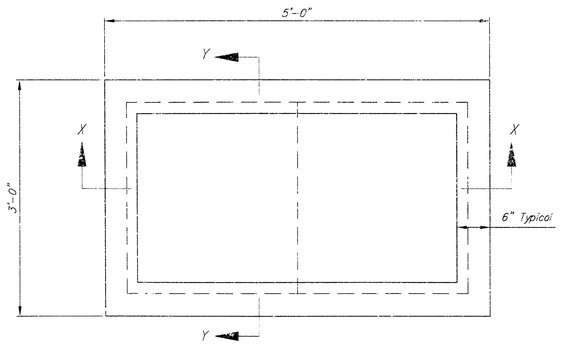
SECTION Y-Y

STORM DRAIN NOTES:

1. STORM DRAIN PIPE (EXCEPT WHERE RCP IS INDICATED) TO BE EITHER REINFORCED CONCRETE PIPE AS SPECIFIED BELOW; CLOSED PROFILE PVC PIPE MEETING ASTM D-1784 (FOR SIZES 21"-48"), SDR 35 PVC PIPE MEETING ASTM F-679 OR D-3034 (FOR SIZES 8"-18"), OR HIGH DENSITY POLYETHYLENE CORRUGATED PIPE MEETING THE REQUIREMENTS OF AASHTO DESIGNATION M 294 (N12 AS MFGD. BY ADVANCED DRAINAGE SYSTEMS, INC., OR APPROVED EQUAL).
2. REINFORCED CONCRETE PIPE SHALL BE CLASS III, MEETING REQUIREMENTS OF ASTM C-76 FOR WALL B.
3. HDPE OR PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321.
4. DRAIN BASINS TO BE PREFABRICATED HIGH-DENSITY POLYETHYLENE BASINS WITH FLAT SLOTTED CAST IRON GRATES (AS MFGD. BY ADS, INC.) OR APPROVED EQUAL).
5. CONNECTION OF DISSIMILAR PIPE MATERIALS SHALL BE MADE WITH ADAPTERS MADE FOR THAT PURPOSE.



STORM WATER DRAIN CONNECTIONS
TYPICAL DETAIL



PLAN

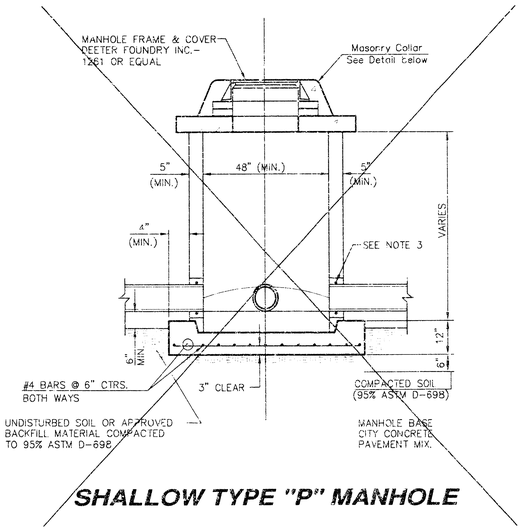
NOTE:

1. FRAME AND GRATE TO BE 2 EA. GCI CASTINGS, INC. GR 3027, 2 EA. DEETER FOUNDRY 2512, OR EQUIVALENT
2. CONCRETE USED IN INLET CONSTRUCTION TO BE CLASS A OR CLASS A (AE).
3. FLOOR OF INLET TO BE SHAPED TO DRAIN, USING UNREINFORCED CLASS A CONCRETE.
4. INLET MAY BE PRE-CAST WITH ENGINEER'S APPROVAL.

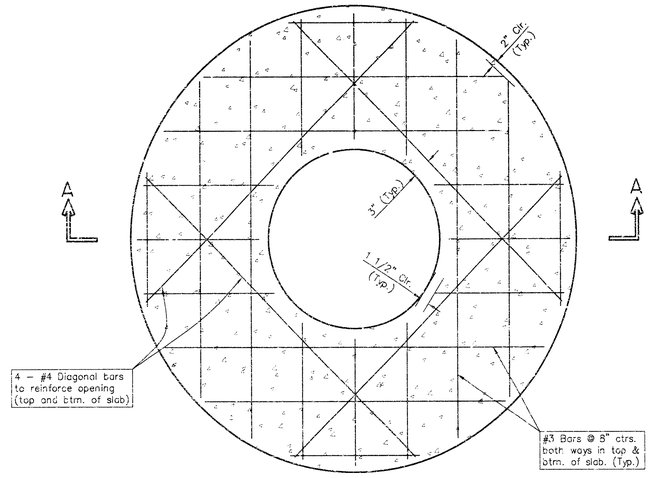
COWTOWN LIVING HISTORY MUSEUM
4' x 2' INLET & DRAIN DETAILS
WICHITA, KANSAS

Ruggles & Bohm, P.A.
Engineering Surveying Land Planning
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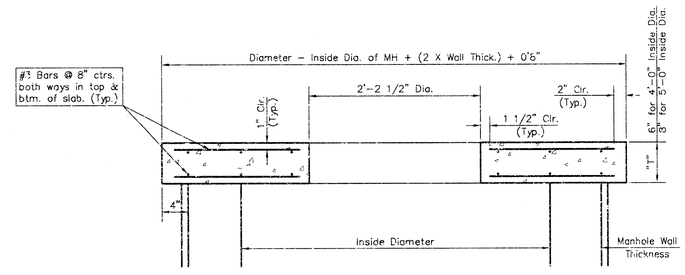
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REVIEW:
UTILITY:
DATE: Apr. 20, 2004
R&B JOB: 2498E
SHEET: 4 OF 5
DRAWING FILE: 02430-1 G1 (4x2)
PROJECT NUMBER:



SHALLOW TYPE "P" MANHOLE

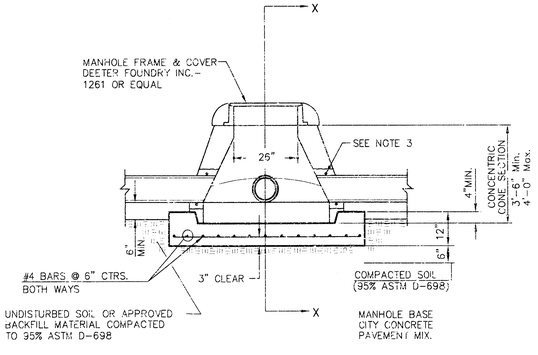


PLAN

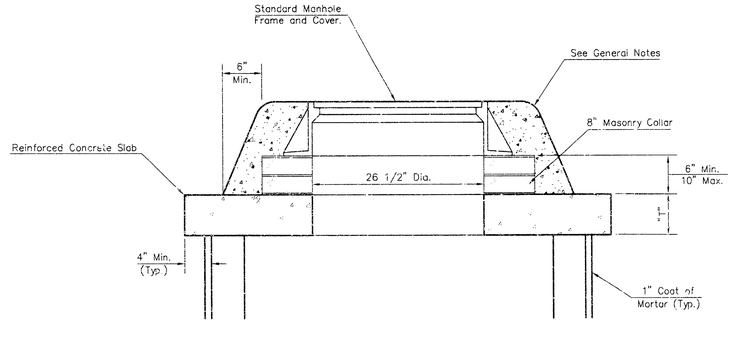


SECTION A-A

CONCRETE SLAB DETAILS



SPECIAL SHALLOW TYPE "P" MANHOLE



MASONRY COLLAR DETAIL

GENERAL 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.S.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 THEMEC 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. 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.
13. 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.
14. 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.
15. ALL BRICK USED IN MANHOLE CONSTRUCTION SHALL MEET GRADE SW OF ASTM C652 OR C62-87.

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DESIGN	TCR
DRAWN	EJB
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DRAWING FILE	02430-LOI (Shallow MH)
PROJECT NUMBER	
DATE	May 12, 2004
RB JOB	2486E
SHEET	5
OF	5

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