

# 24" SANITARY SEWER RELOCATION AT CENTRAL MAINTENANCE FACILITY

M.T.A. ADDITION  
PROJECT NO. 468-83367  
OCA # 633739

## GENERAL NOTES

1. Contractor will be required to provide a minimum advance notice of twenty-four (24) 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	383-8600
K.G.E. Electric	383-8600
Peoples Natural Gas Company	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
Jayhawk Pipeline LLC	755-0241

2. 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 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.

3. A saw cut of at least one-half the depth of existing surface courses or one-fourth the depth of existing total pavement thickness shall be provided at locations where proposed construction abuts an existing surface course or pavement for which partial removal of that surface or pavement is required, except when such saw cuts are within three (3) feet of an existing joint the limits of removal shall be extended to the existing joint. Such saw cuts will not be paid for directly and this cost shall be considered as subsidiary to the removal of the surface or pavement.

4. Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall 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.

5. 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 permitting regulations. Any material buried or stockpiled beyond approved of Engineers construction limits would require additional archeological investigations unless buried in a previously approved borrow location.

6. The Engineer shall take field ties to all quarter section corners. The Contractor shall set a City survey monument in the required location where such quarter section corners fall within the limits of pavement construction. Survey monuments will be furnished by the City. The Engineer will accurately locate and install the iron at the quarter section corner. This work will not be paid for directly, but shall be considered subsidiary to the other pay items of work in the contract.

7. The Contractor shall notify pipeline companies at least 24 hours in advance of any work being performed across and/or adjacent to pipelines.

8. The Contractor shall give all property owners and/or tenants of developed property directly abutting the construction of this project a minimum of ten (10) days advance notice prior to start of construction.

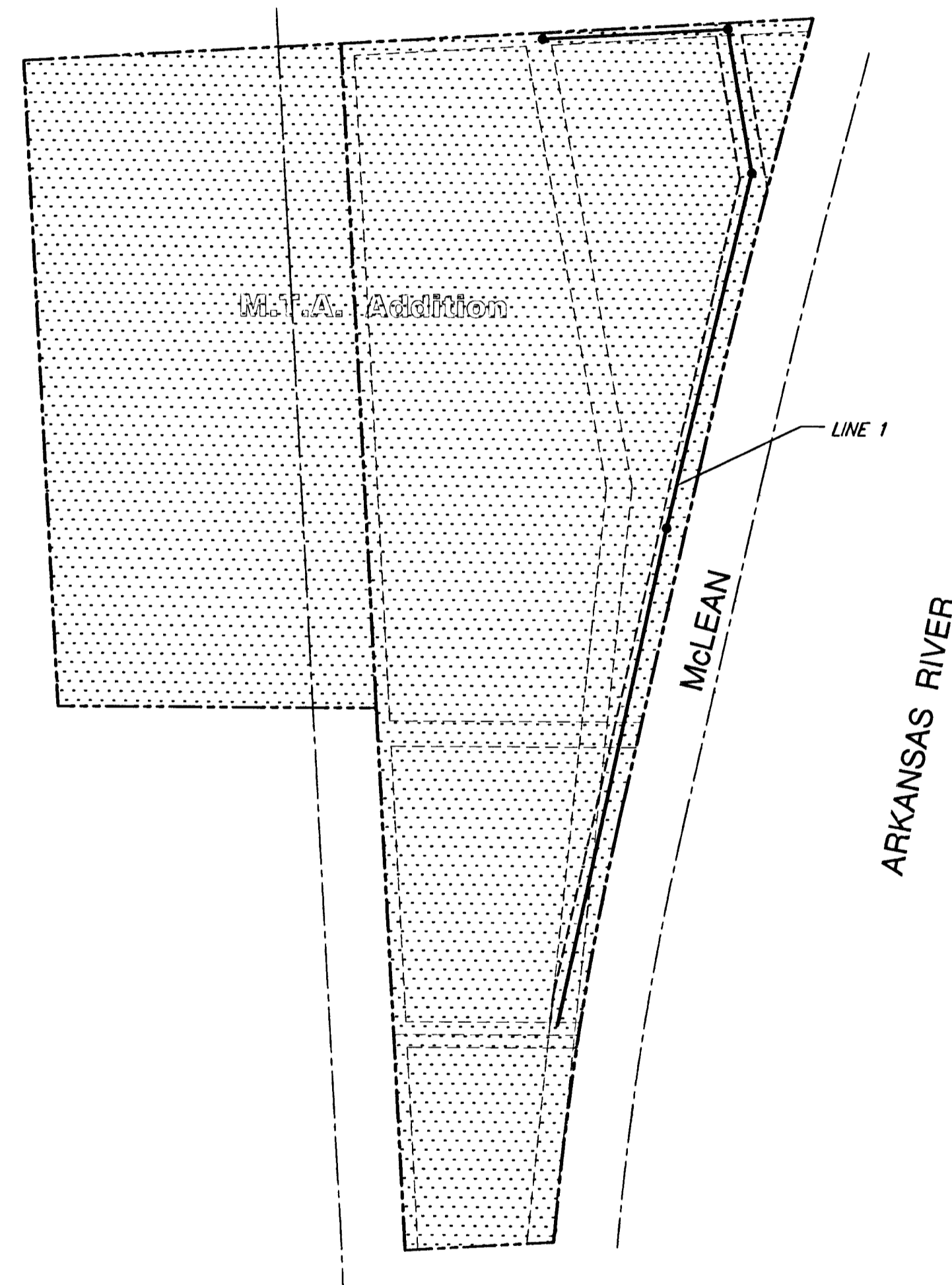
9. The Contractor shall restore all unpaved areas disturbed by construction. All such work shall be included in the lump sum bid item "Site Clearing and Restoration".

10. It shall be the responsibility of the Contractor to maintain sewage flow during construction. The Contractor's plan for maintaining sewage flow shall be submitted to the Engineer for approval prior to construction.

11. Contractor to seal-off existing service to 1825 S McLean. (permit required from D.C.I.). New service with drop to be connected to outside drop, by others, after completion of this project.

12. Reinforced concrete manholes and/or pipe shall be plastic lined as required by Sections 804.2 and 804.4 of the specifications.

13. Fence removal and replacement to be subsidiary to Site Clearing and Restoration.



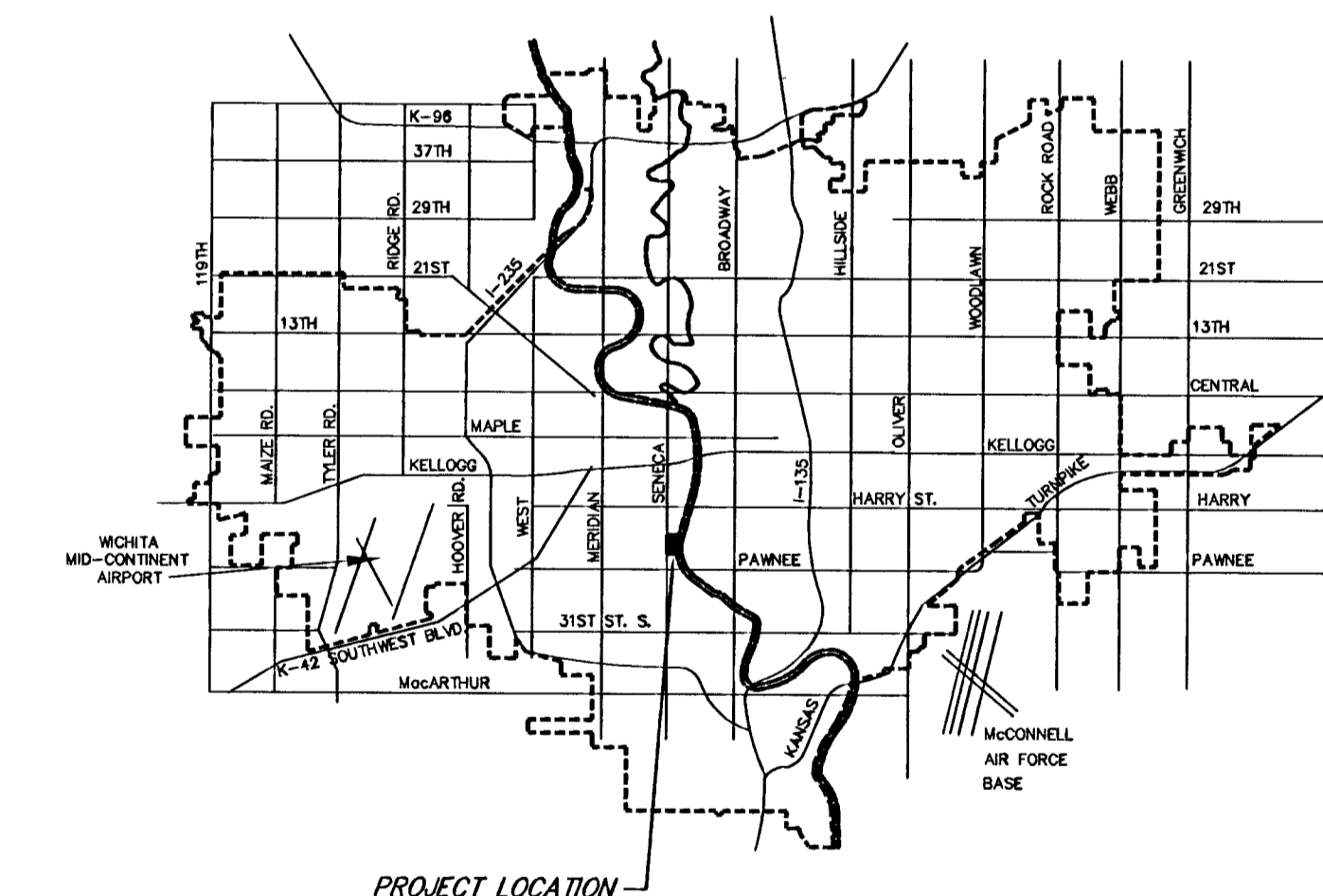
 IMPROVEMENT DISTRICT

## BENCH MARKS

C.O.W. @ S.W. corner of bridge on Harry over Arkansas River  
Elev. 1295.94  
\* \* T.C. @ S. return on N. Entrance to Central Maint. Facility  
Elev. 1289.97  
\* \* T.C. @ N.E. corner Lot 1 Block A, M.T.A. Addition  
Elev. 1290.02

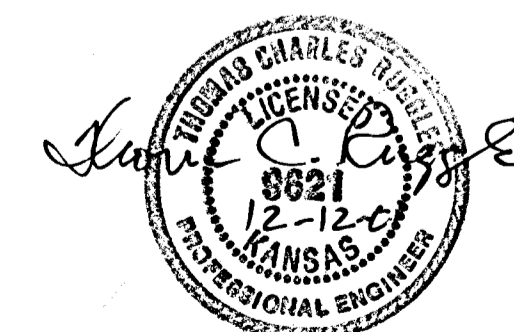
## INDEX OF SHEETS

1. TITLE SHEET
2. LINE 1 PLAN/PROFILE
3. RCMH DETAILS
4. TYPE 'D' MANHOLE DETAILS



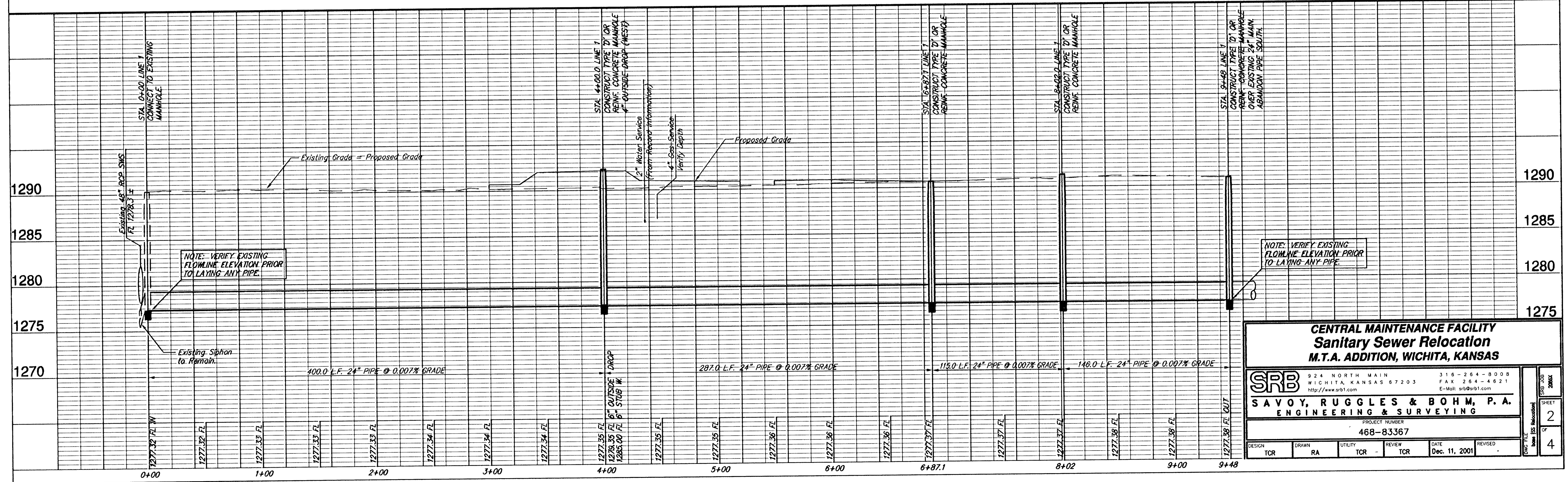
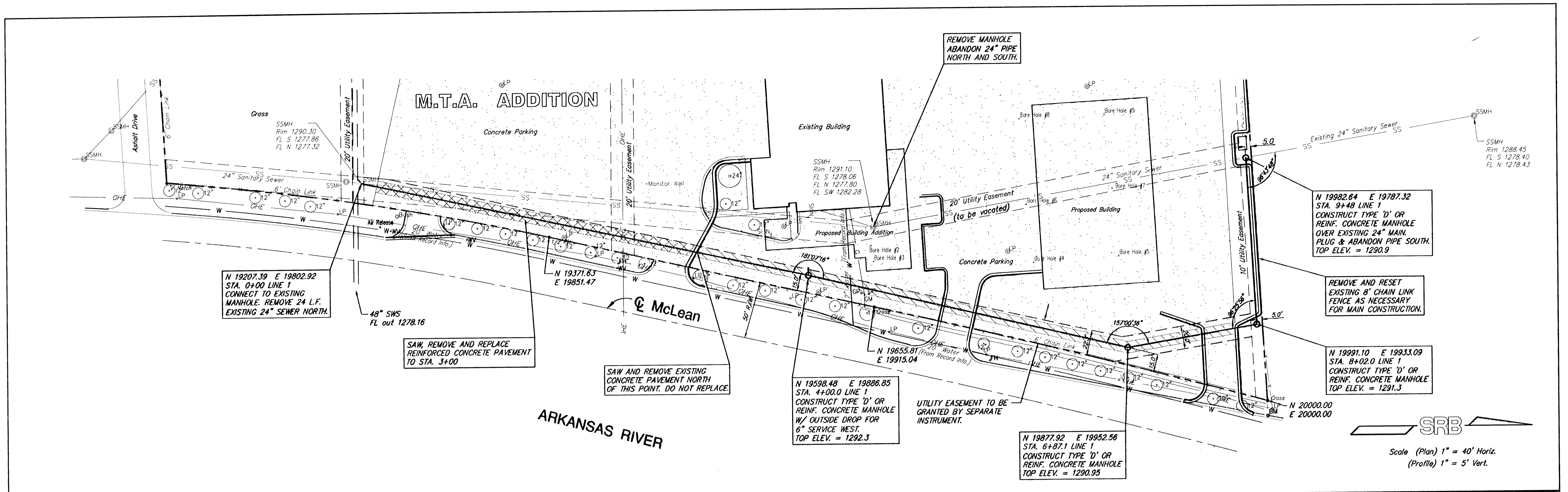
VICINITY MAP

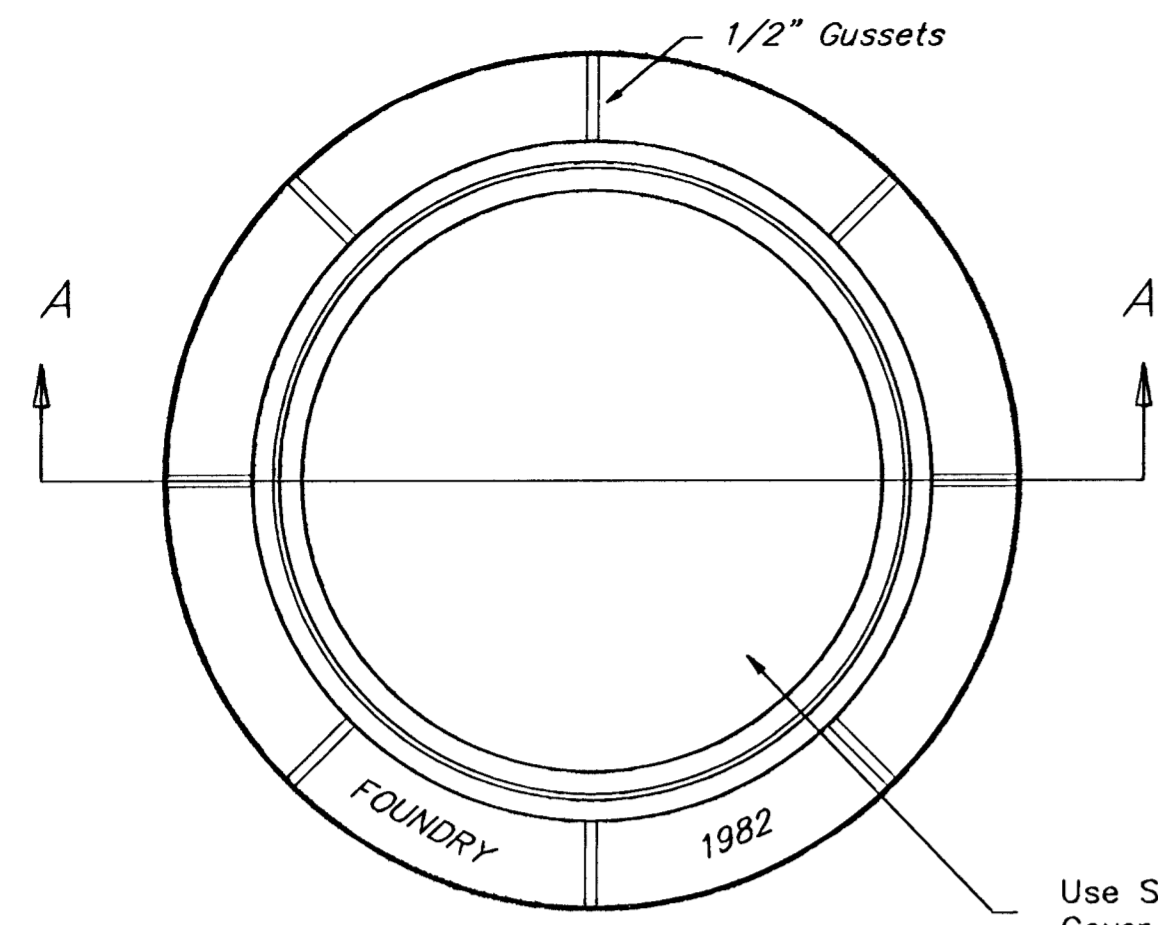
Booked  
P-229  
7-15-02  
RDL  
PER PLAN



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

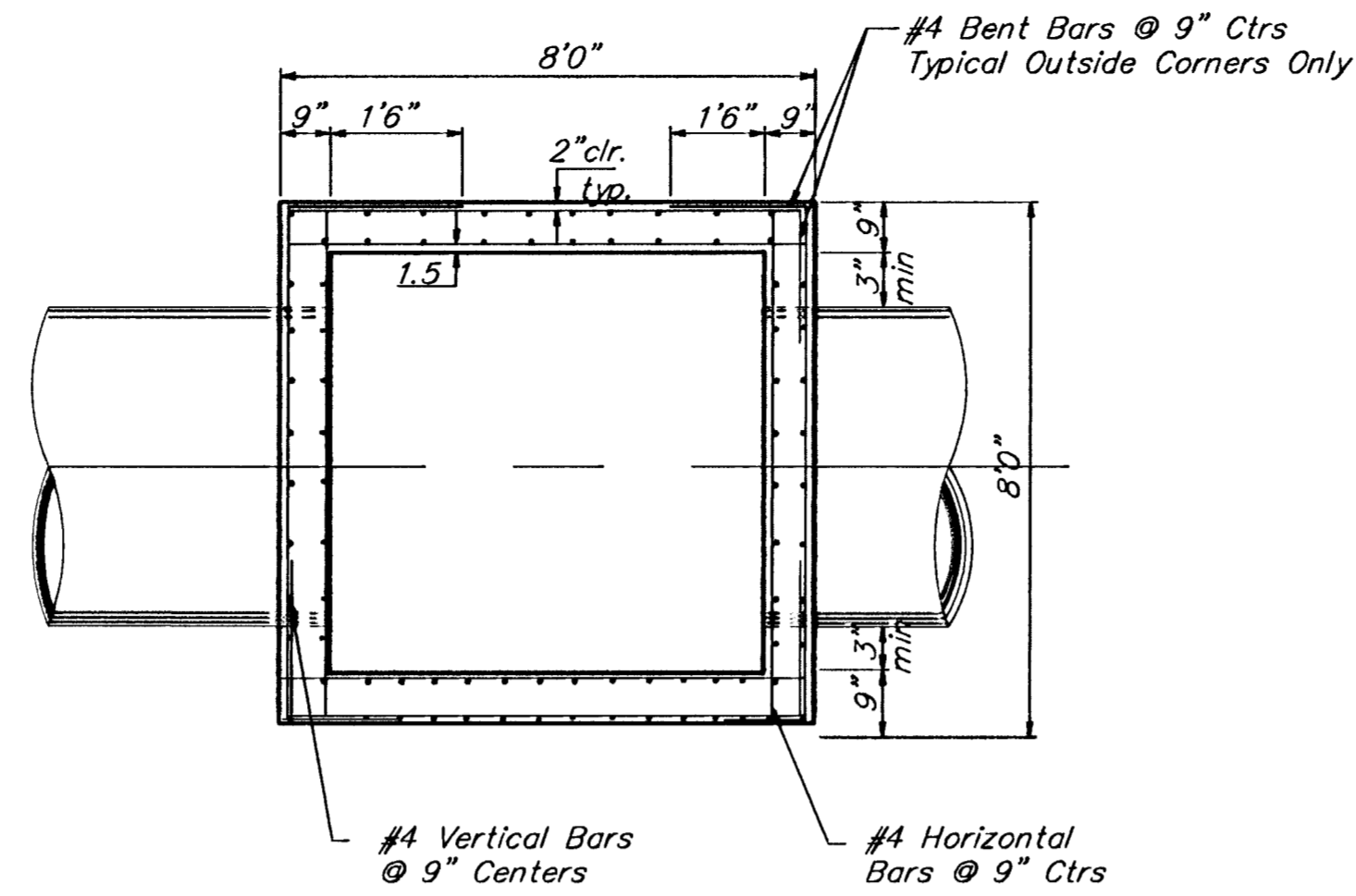
**SRB** 924 NORTH MAIN 316-264-8008  
WICHITA, KANSAS 67203 FAX 264-4621  
SAVOY, RUGGLES & BOHM, P. A.  
ENGINEERING & SURVEYING





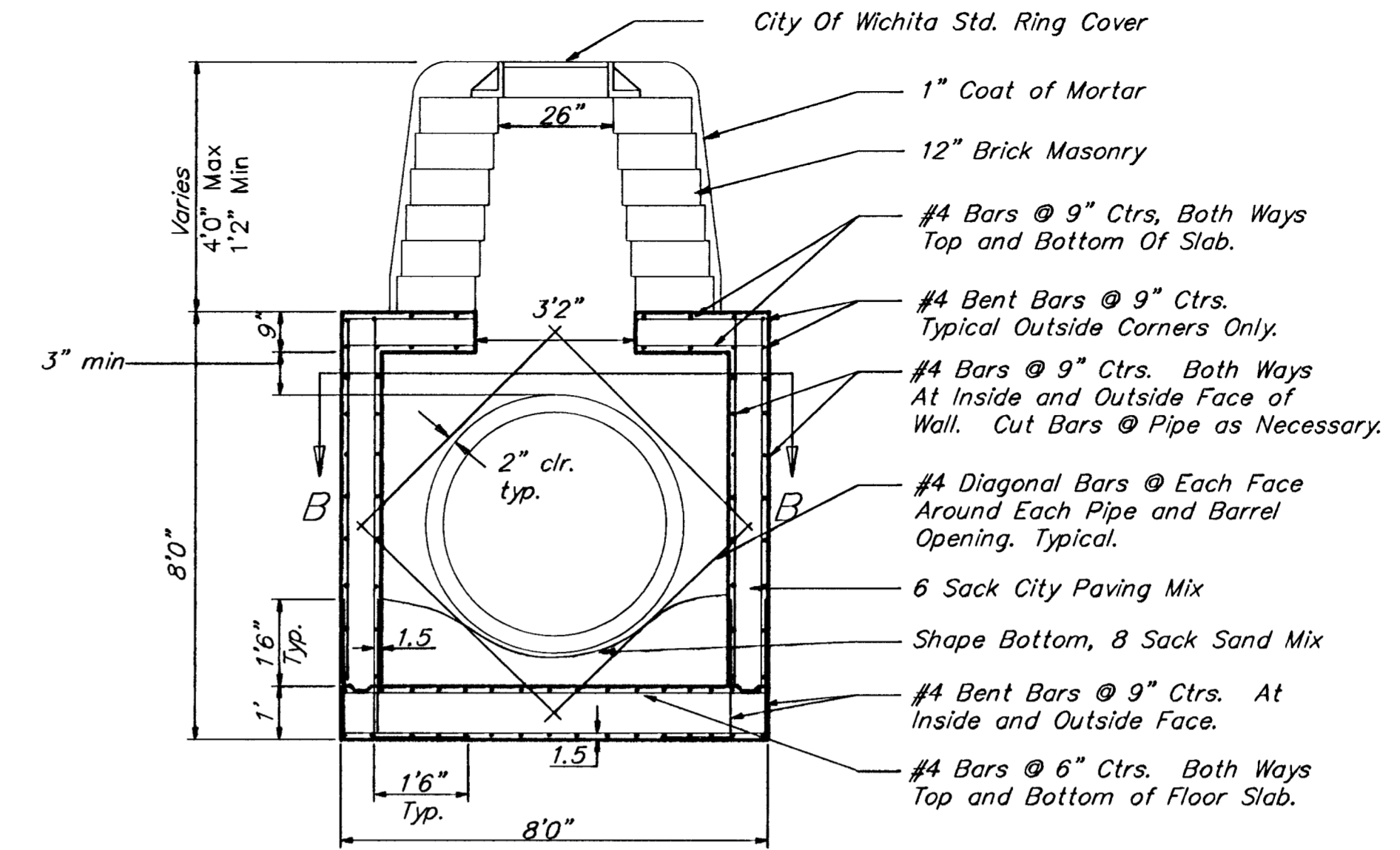
TOP VIEW

Use Standard City Of Wichita Cover (Weight: 180 lbs)

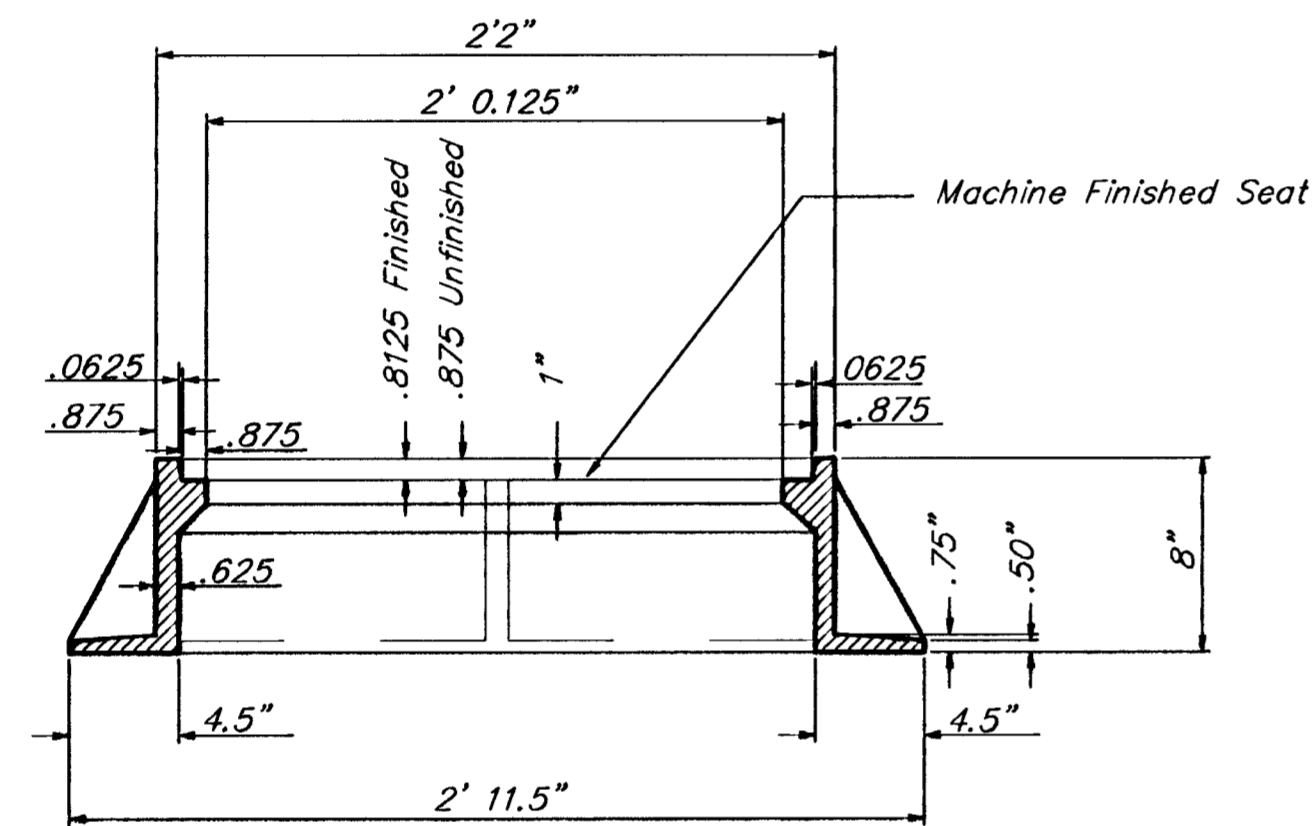


NOTE:  
Bend Bars Not More Than 8" to Clear Pipes, or Cut Bars 2" Clear of Pipe, as Necessary.

SECTION B-B



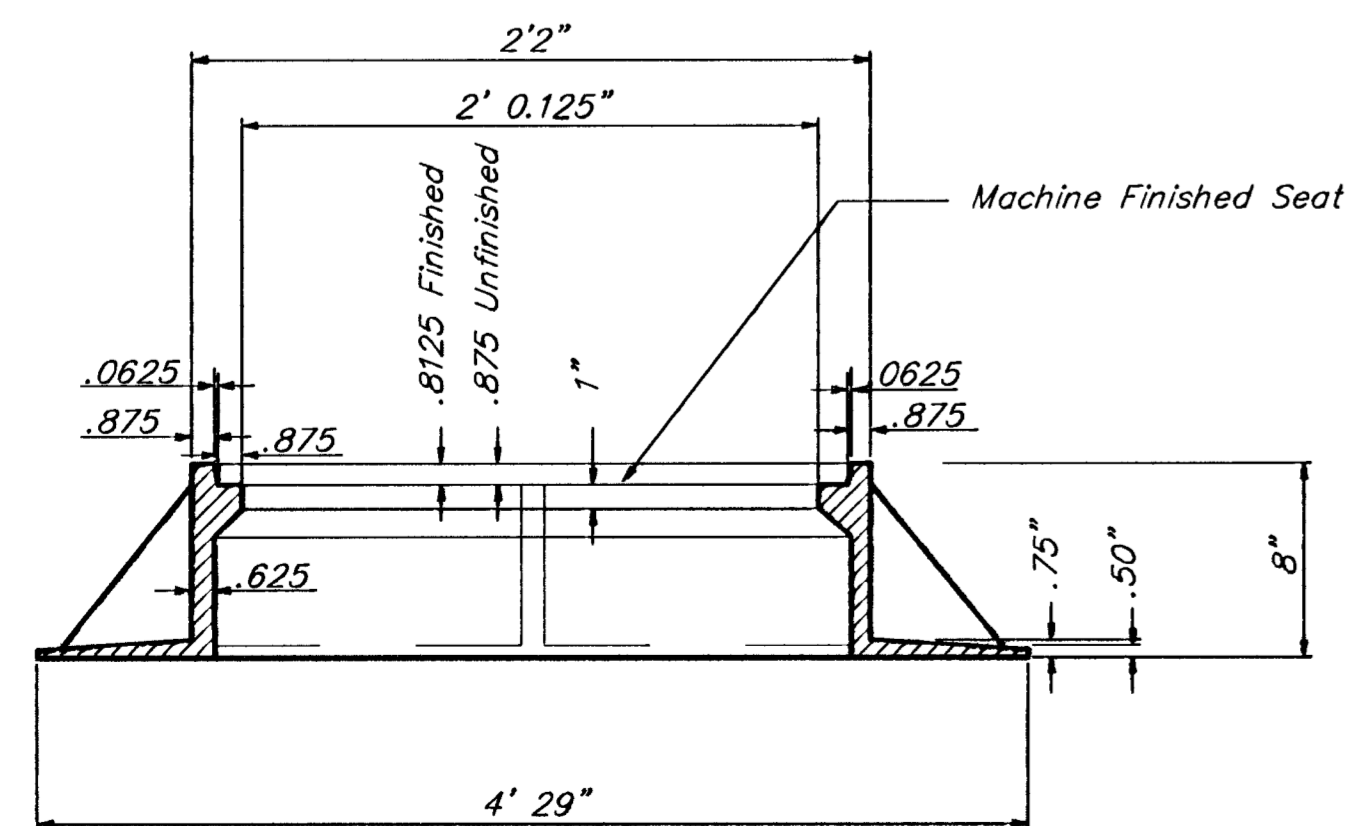
REINFORCED CONCRETE MANHOLE  
STACK 2.33' TO 4'0"



SECTION A-A

MANHOLE FRAME

Weight: 240 Lbs.

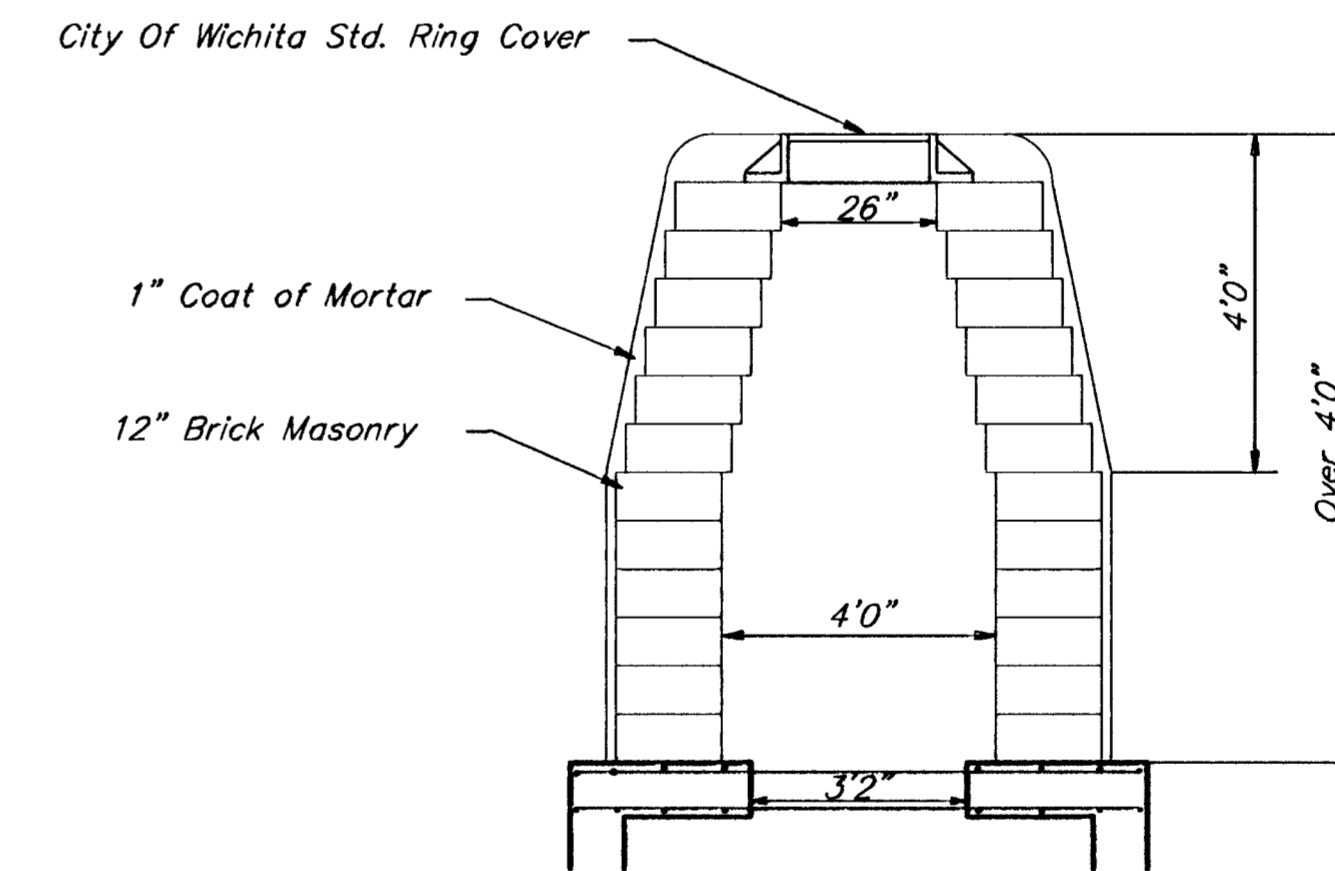


WIDE FLANGE RING

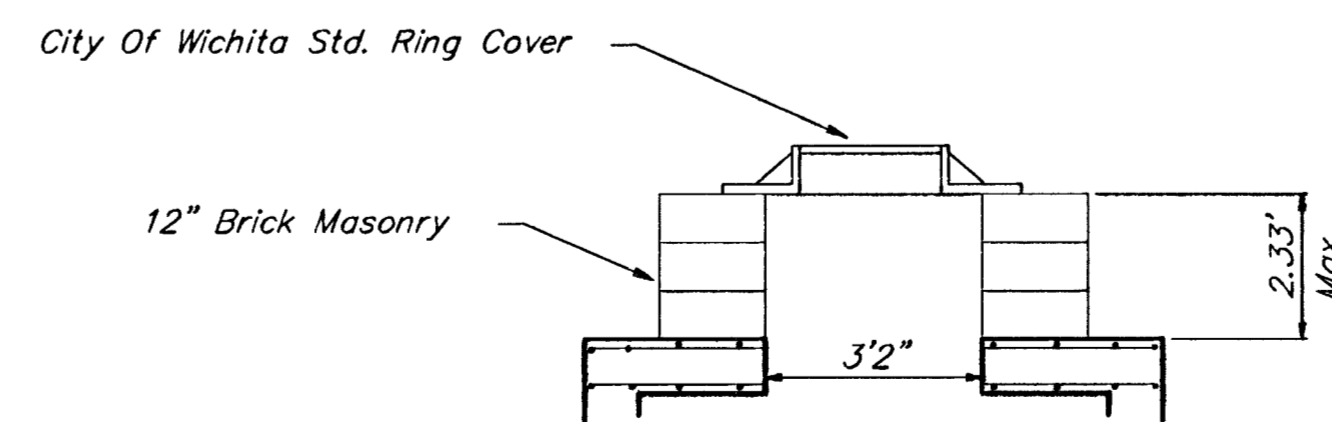
Weight: 705 Lbs.

GENERAL NOTES:

1. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE WALLS AND BASES SHALL CONFORM TO THE REQUIREMENTS 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. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
2. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING. USING 8-SACK SAND MIX CONCRETE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS.
3. 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.
4. THE ENDS OF ALL PIPES IN MANHOLES SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF MANHOLE WALL.
5. SEE SHEET 4 FOR OUTSIDE DROP DETAILS.



MANHOLE STACK OVER 4'0"

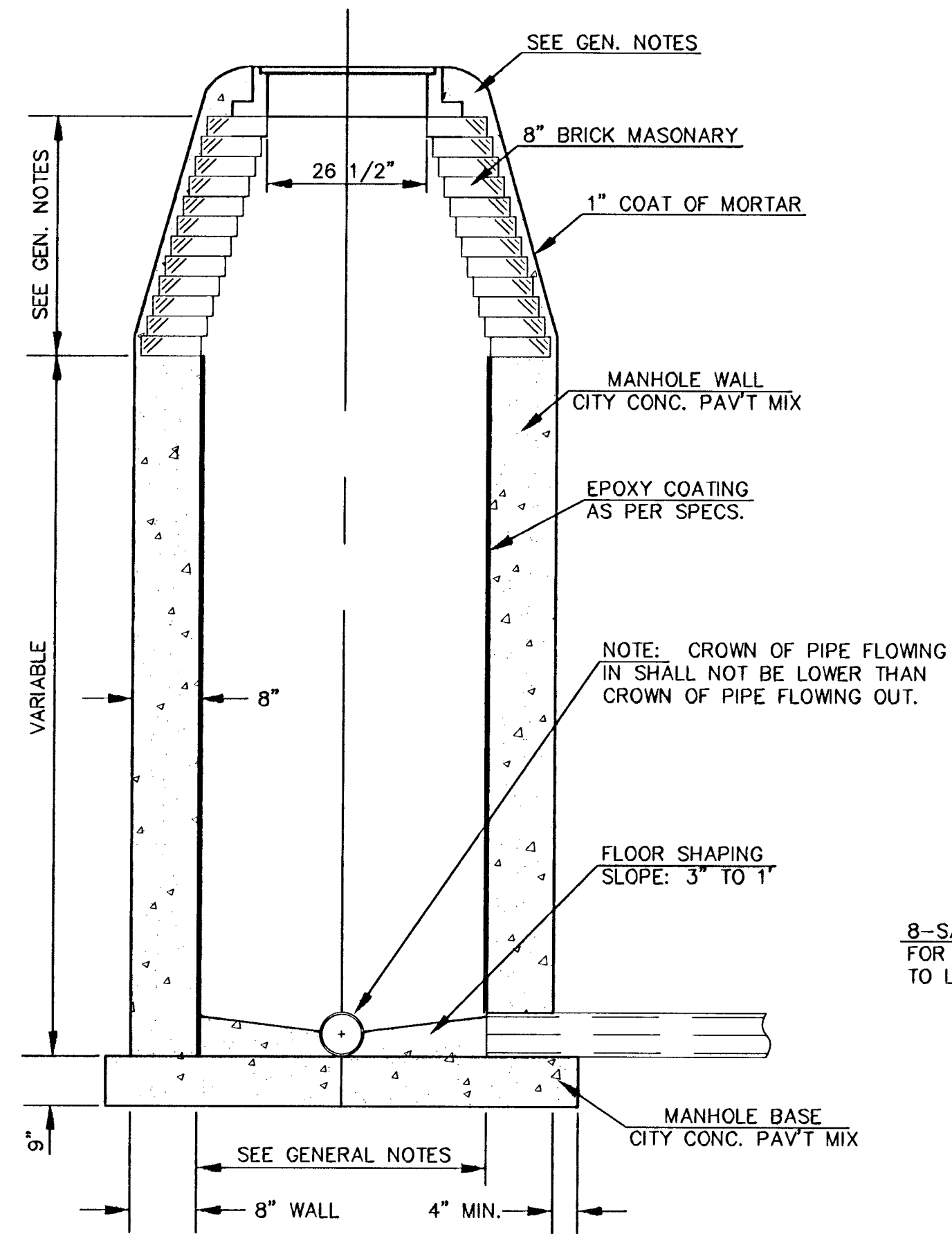


MANHOLE STACK LESS THAN 2.33'

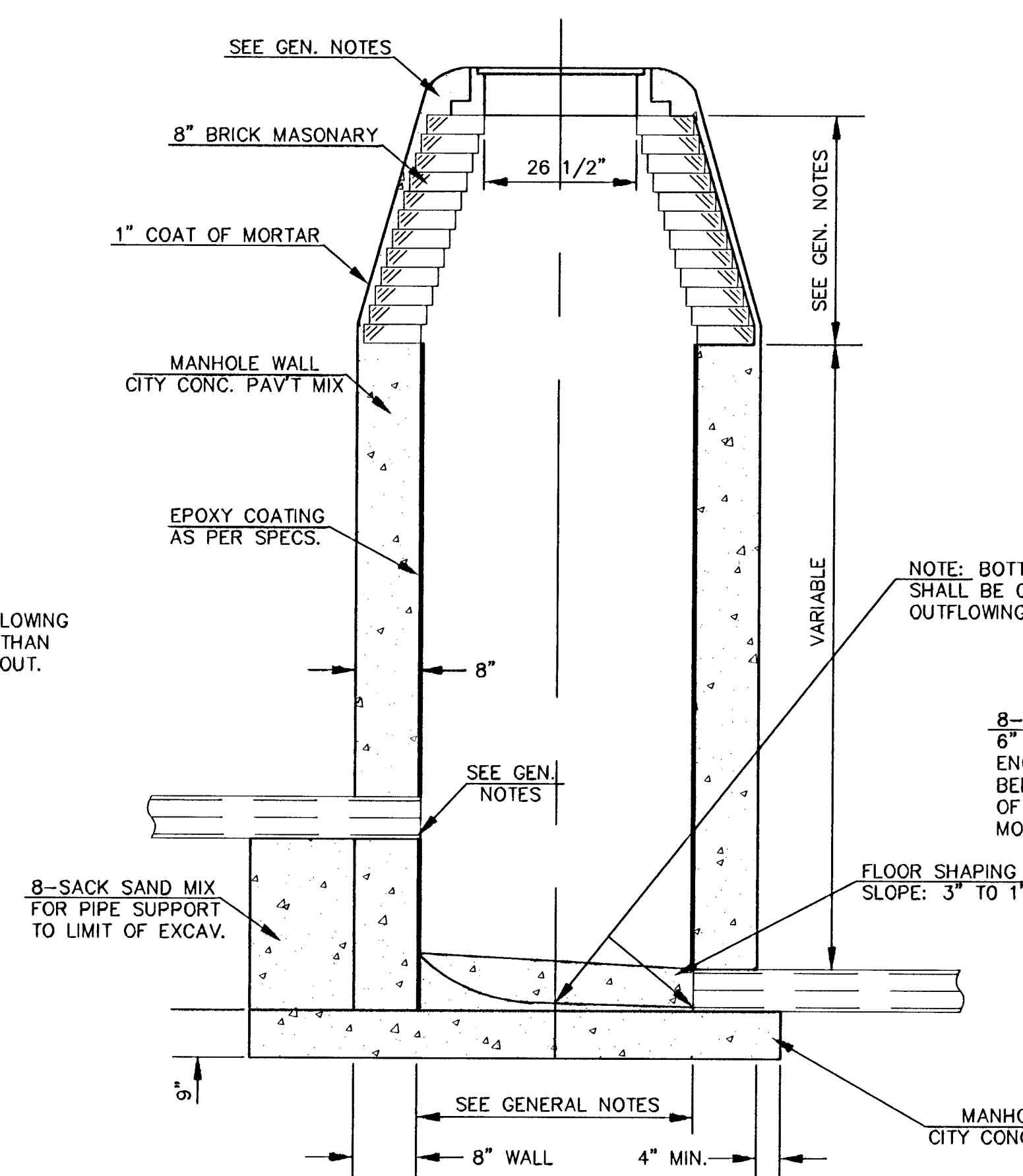
<b>REINFORCED CONCRETE MANHOLE</b>					
<b>SRB</b>		924 NORTH MAIN WICHITA, KANSAS 67203 www.srb1.com		316-264-8008 FAX 264-4821 E-mail: srb@srb1.com	
<b>SAVOY, RUGGLES &amp; BOHM, P. A.</b> ENGINEERING & SURVEYING					
PROJECT NUMBER <b>468-83367</b>					
DESIGN	DRAWN	UTILITY	REVIEW	DATE	REVISED
				Date	
					SHEET <b>3</b> OF <b>4</b>

# SEWER APPURTENANCES DETAILS

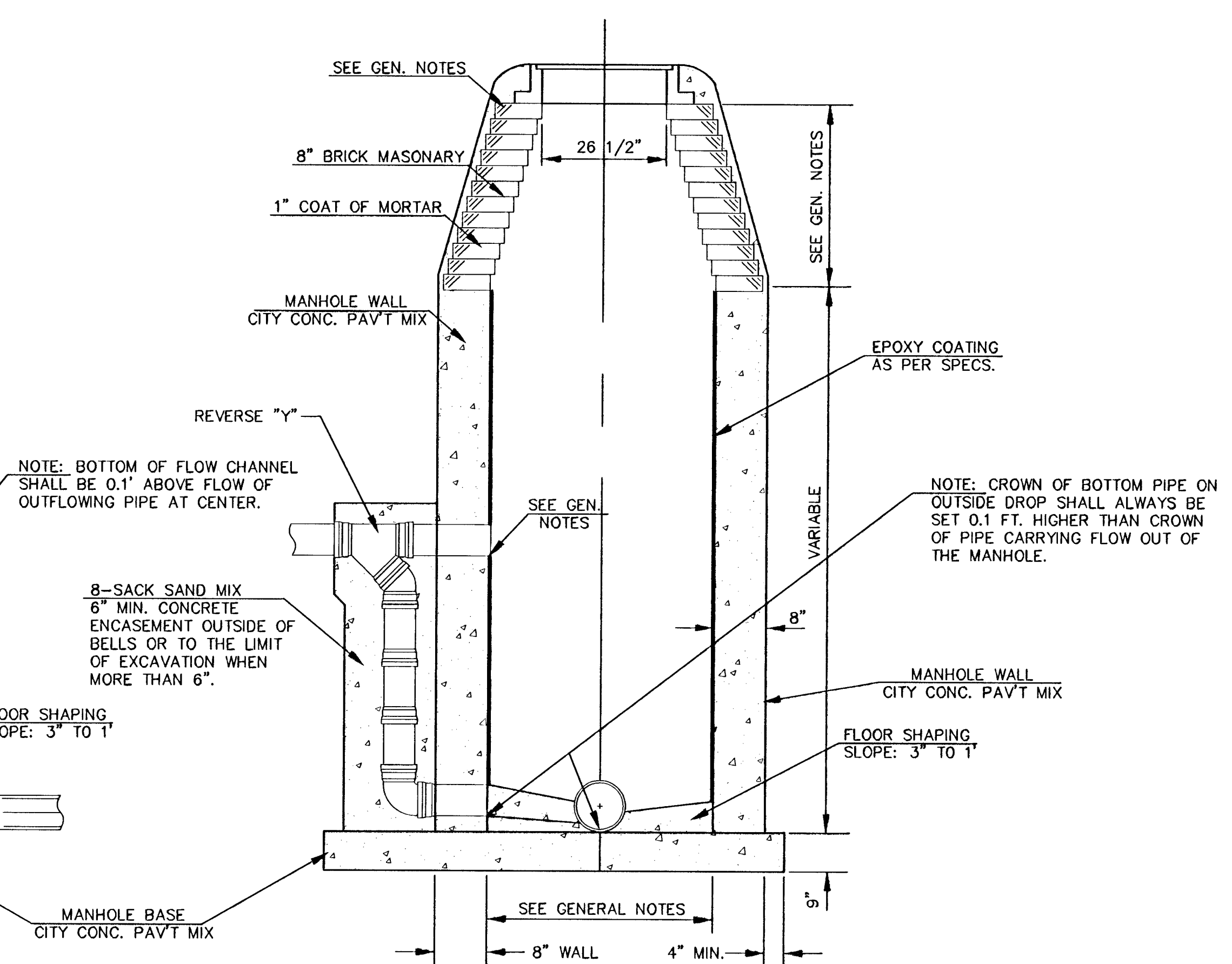
STANDARD MANHOLE TYPE "D"



INSIDE DROP MANHOLE TYPE "D"



OUTSIDE DROP MANHOLE TYPE "D"




GENERAL NOTES

- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE WALLS AND 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.  
  
ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WALL WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE PROTECTED BY AN APPROVED EPOXY COATING. TYPE "D" MANHOLES MAY BE USED ON PIPE SIZES 8" TO 36" WHEN THE MANHOLE DEPTH EXCEEDS THE REQUIRED CORBEL HEIGHT BY 1' PLUS THE OUTSIDE DIAMETER OF THE LARGEST PIPE IN THE MANHOLE.  
  
MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE A DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE THE PIPE SIZES ARE 24" OR LARGER SHALL HAVE A DIAMETER OF 5'. THE HEIGHT OF THE CORBELS ON 4' DIAMETER MANHOLES SHALL BE 4'. MANHOLES HAVING A DIAMETER OF 5' SHALL HAVE CORBELS 6' IN HEIGHT. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
- REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASE. REINFORCING STEEL SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. REINFORCING STEEL SHALL BE PLACED 6" ABOVE THE BOTTOM OF THE MANHOLE BASE. COST OF FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
- AN OPENING SHALL BE CUT IN THE MANHOLE WALL FOR THE UPPER INLET PIPE FOR INSIDE AND OUTSIDE DROP MANHOLES. THE UPPER INLET PIPE SHALL BE GROUTED INTO THIS OPENING WITH NON-SHRINK GROUT. THE EXTERIOR OF THIS COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. THE INTERIOR PLASTIC LINING SHALL BE SEALED AROUND THE INLET PIPE OPENING IN SUCH A MANNER THAT WILL EFFECTIVELY MAINTAIN THE INTEGRITY OF THE PROTECTIVE PLASTIC LINER.
- 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.
- 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.
- 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.
- THE VERTICAL FREE FALL DROP INSIDE MANHOLES SHALL NOT EXCEED 2'. THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
- STANDARD MANHOLES THPE "D" AND STANDARD INSIDE DROP MANHOLES TYPE "D" SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES TYPE "D" SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

NOTE: EPOXY COATING ON INTERIOR CONCRETE SURFACES MAY BE DELETED WHEN TYPE "D" MANHOLES ARE CONSTRUCTED ON SEWERS WITH DIAMETERS SMALLER THAN 10".

 <p>THE CITY OF WICHITA</p> <p>CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 268-4501 (316) 268-4114 FAX</p>	<b>TYPE 'D' MANHOLES</b>	
	M. E. LINDEBAK P.E. - CITY ENGINEER	
	PROJECT NUMBER 468-83367	OCA # 633739
	DATE MAR 96	SHEET 4 OF 4