

# STORM WATER SEWER TO SERVE L.R. JONES THIRD ADDITION 10510 WEST 21ST STREET NORTH 1386 PPS (607861) WICHITA, KANSAS NEIL D. CABLE, P.E., CITY ENGINEER

## GENERAL NOTES

1. Contractor will be required to provide notice to utility companies a minimum of twenty-four (24) hours prior to any excavation, as follows:

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

|                                                                                                                                 |                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Southwestern Bell Telephone Co.<br>154 N. Brookway<br>Wichita, Kansas 67202<br>Jim Toben<br>316-268-2245                        | Wichita Water & Sewer Dept.<br>8th Floor, City Hall<br>455 N. Main St.<br>Wichita, Kansas 67202<br>Bill Perkins/Paul Bryant<br>316-268-4555 |
| Westar Energy<br>P.O. Box 208<br>Wichita, Kansas 67201<br>Jimmy Washington<br>316-261-6315                                      | Cox Communications<br>701 E. Douglas<br>Wichita, Kansas 67202<br>Brian Ring<br>316-262-4270 Ext.169                                         |
| Wichita Water & Sewer Dept.<br>8th Floor, City Hall<br>455 N. Main St.<br>Wichita, Kansas 67202<br>Bill Perkins<br>316-268-4555 | Kansas One Call<br>800-344-7233<br>Emergency 911                                                                                            |
| Aquila Network<br>1611 S. Hoover<br>Wichita, Kansas 67209<br>Calvin Briggs<br>316-941-7233                                      |                                                                                                                                             |

2. Contractor shall not start work on the project until the project inspector is assigned to the project and is present on the site. Any work done without inspection will be required to be uncovered for inspection.

3. 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 locations, 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.

4. 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 law.

5. All areas disturbed by construction operations shall be seeded with rye grass at a rate of 300 lbs/acre immediately following construction in that area. Ground shall be prepared per City of Wichita specifications prior to seeding.

6. Contractor shall verify the location of all utilities prior to beginning construction.

7. Contractor shall implement Best Management Practices in accordance with city regulations.

8. Contractor to provide all staking, testing, and inspection necessary to complete the work.

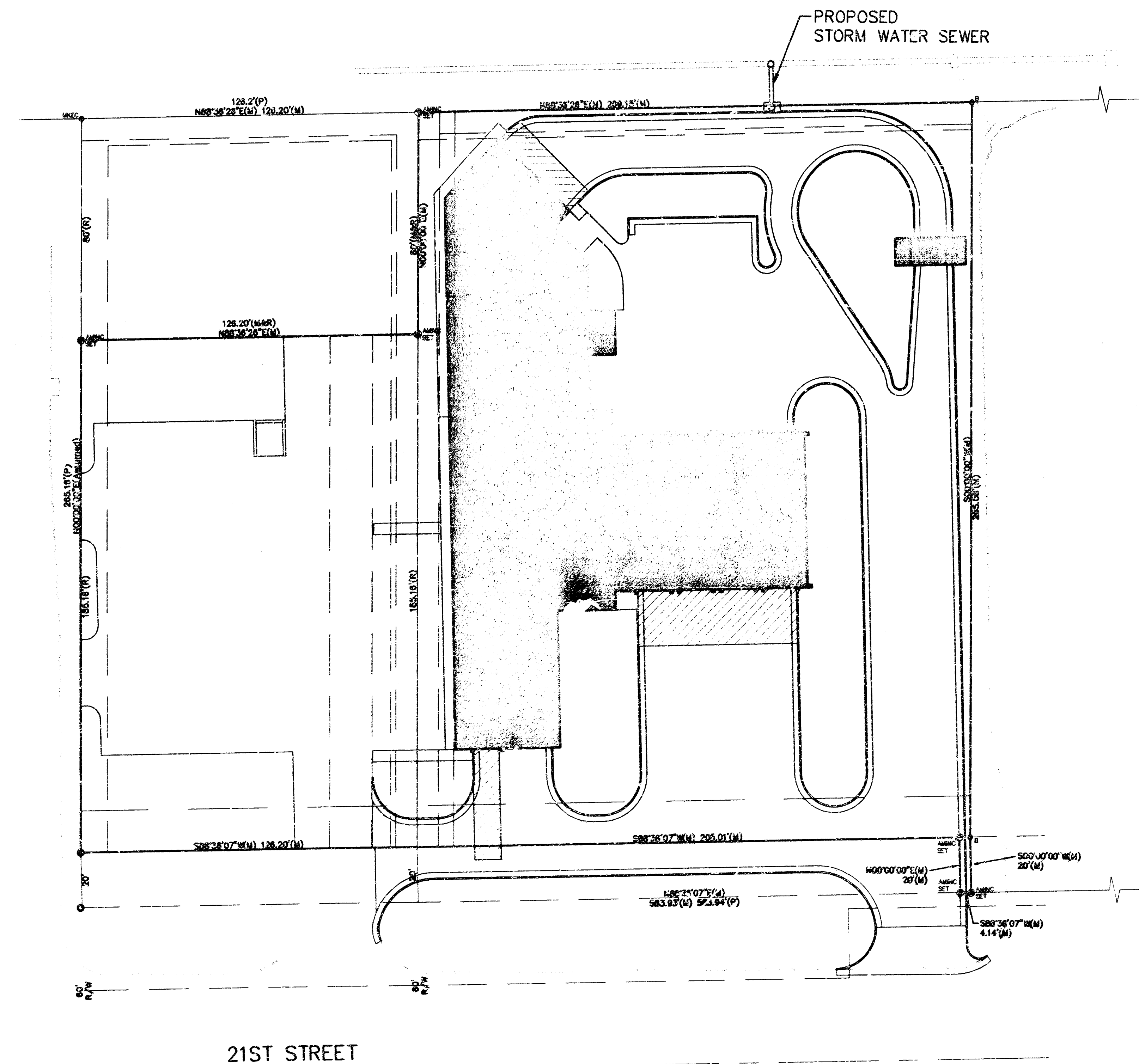
9. Pipe shall be: Contech Ultra Flo or approved equal.

APPROVED AS NOTED BY CITY ENGINEER OF WICHITA

STORM SEWERS VRH 4/29/03

## 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 is 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 work be commenced without written authorization by the City Engineer. All construction and materials shall comply with the City of Wichita Specifications and Standards (on file and available in the City Engineer's Office).



## SHEET INDEX

1. Title Sheet
2. Standard C.O.W. Type 'P' Manhole
3. Standard C.O.W. Type 1 Curb 'niet
4. Plan & Profile



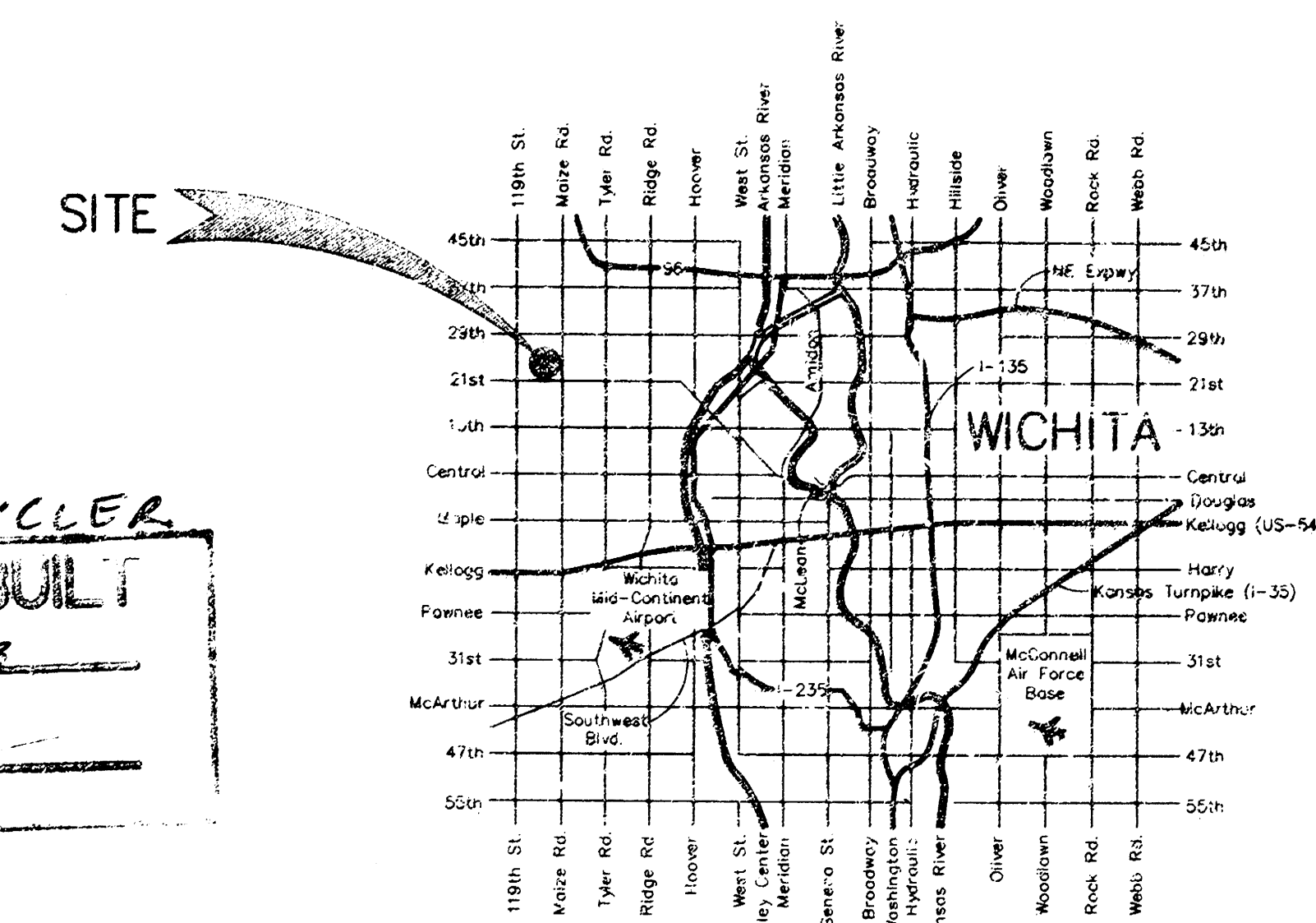
## BENCHMARK

"□" out north face power pole base  
northeast corner of site property.  
Elev. 166.57 C.O.W. city datum, 103.00 site datum  
63.57 datum conversion

SCALE  
30 0 30 60

IC MILLER  
AS-BUILT  
4/29/03  
Date  
Signed

Booked  
12/10/03  
E-7  
JDL



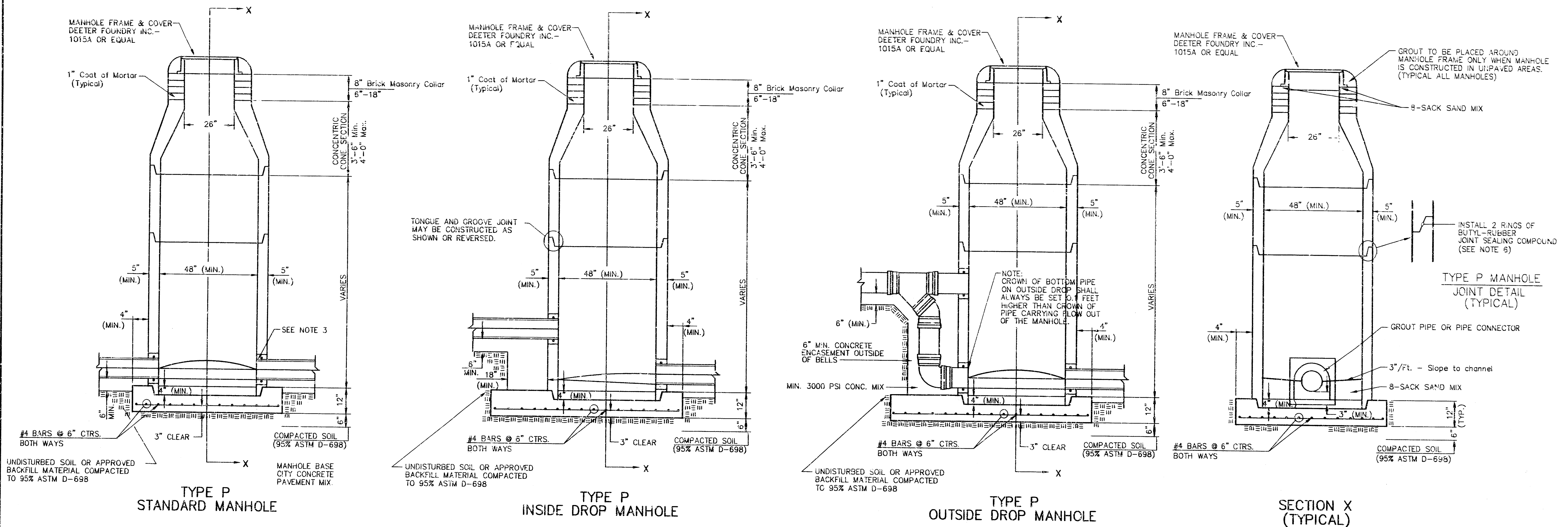
## VICINITY MAP



CONSULTING ENGINEERS  
ENGINEERING SERVICES  
142 N. Emporia Wichita, KS 67202  
316/265-2670 fax: 316/265-2639



# SEWER APPURTENANCES DETAILS



- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
- NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
- 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.
- ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS (T.M.E.C. SERIES 66 HI-BUILD EPOXYLINE, DRY THICKNESS OF 8 MILS (MIN.))
- EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
- JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
- 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 SHARP INVERT.
- LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
- 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 PAVING CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVING 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.

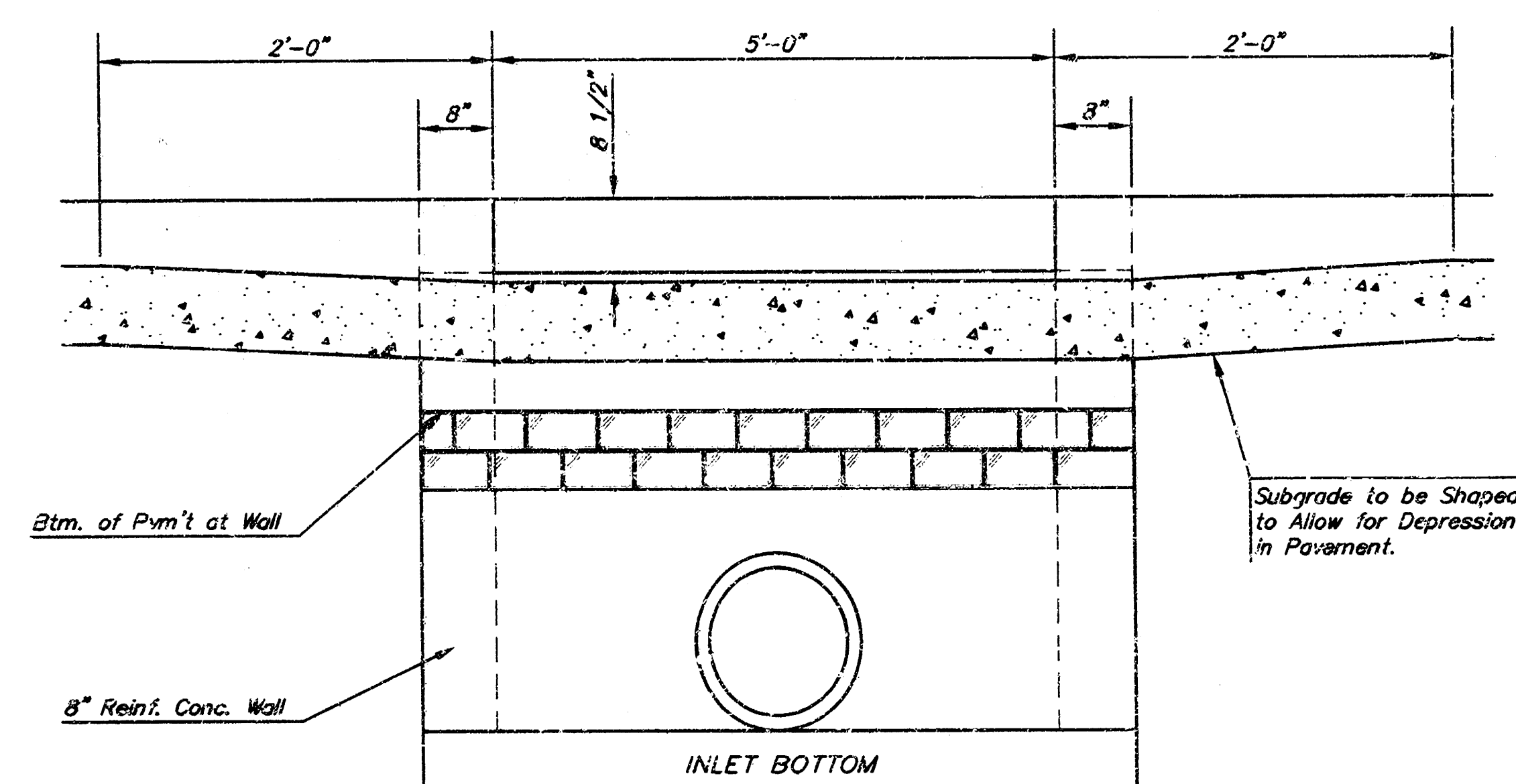
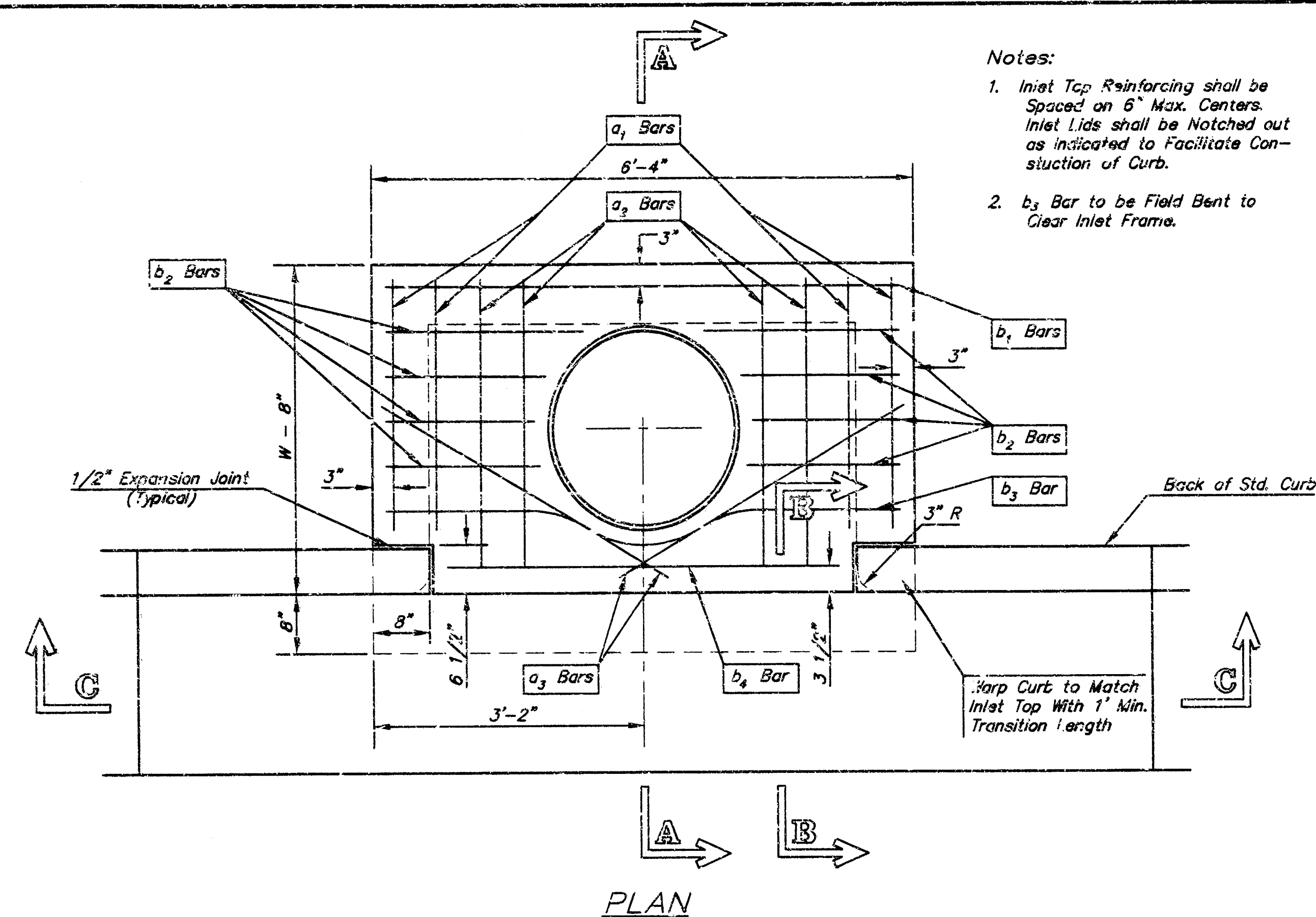
- REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
- 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.
- 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 TOP-UP 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 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.
- 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.
- 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.

|                                                                                                                                                                    |                                                 |                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------|
| <p>THE CITY OF WICHITA</p> <p>CITY ENGINEER'S OFFICE</p> <p>602 NORTH MAIN STREET</p> <p>WICHITA, KANSAS 67202</p> <p>(316) 268-4301</p> <p>(316) 268-4112 FAX</p> | <p>STANDARD</p> <p>TYPE 'P'</p> <p>MANHOLES</p> |                                 |
|                                                                                                                                                                    | <p>NEIL D. CABLE, P.E. - CITY ENGINEER</p>      |                                 |
|                                                                                                                                                                    | <p>PROJECT NUMBER</p> <p>XXX-XXXX</p>           | <p>INDEX CODE</p> <p>XXXXXX</p> |
|                                                                                                                                                                    | <p>DATE</p> <p>MAR 96</p> <p>SHEET X OF X</p>   |                                 |

|  |                                                |                               |                             |                            |                                                                                                           |                                          |                |
|--|------------------------------------------------|-------------------------------|-----------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------|----------------|
|  | <p>PROJECT NUMBER</p> <p>1335 PPS (607981)</p> | <p>AM NO.</p> <p>02122-04</p> | <p>DATE</p> <p>04-25-03</p> | <p>SCALE</p> <p>N.T.S.</p> | <p>GREEN LANTERN CAR WASH</p> <p>TYPE P MANHOLES</p> <p>10510 WEST 21ST STREET NORTH, WICHITA, KANSAS</p> | <p>SHEET</p> <p>2</p> <p>OF</p> <p>4</p> | <p>REVISED</p> |
|--|------------------------------------------------|-------------------------------|-----------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------|----------------|



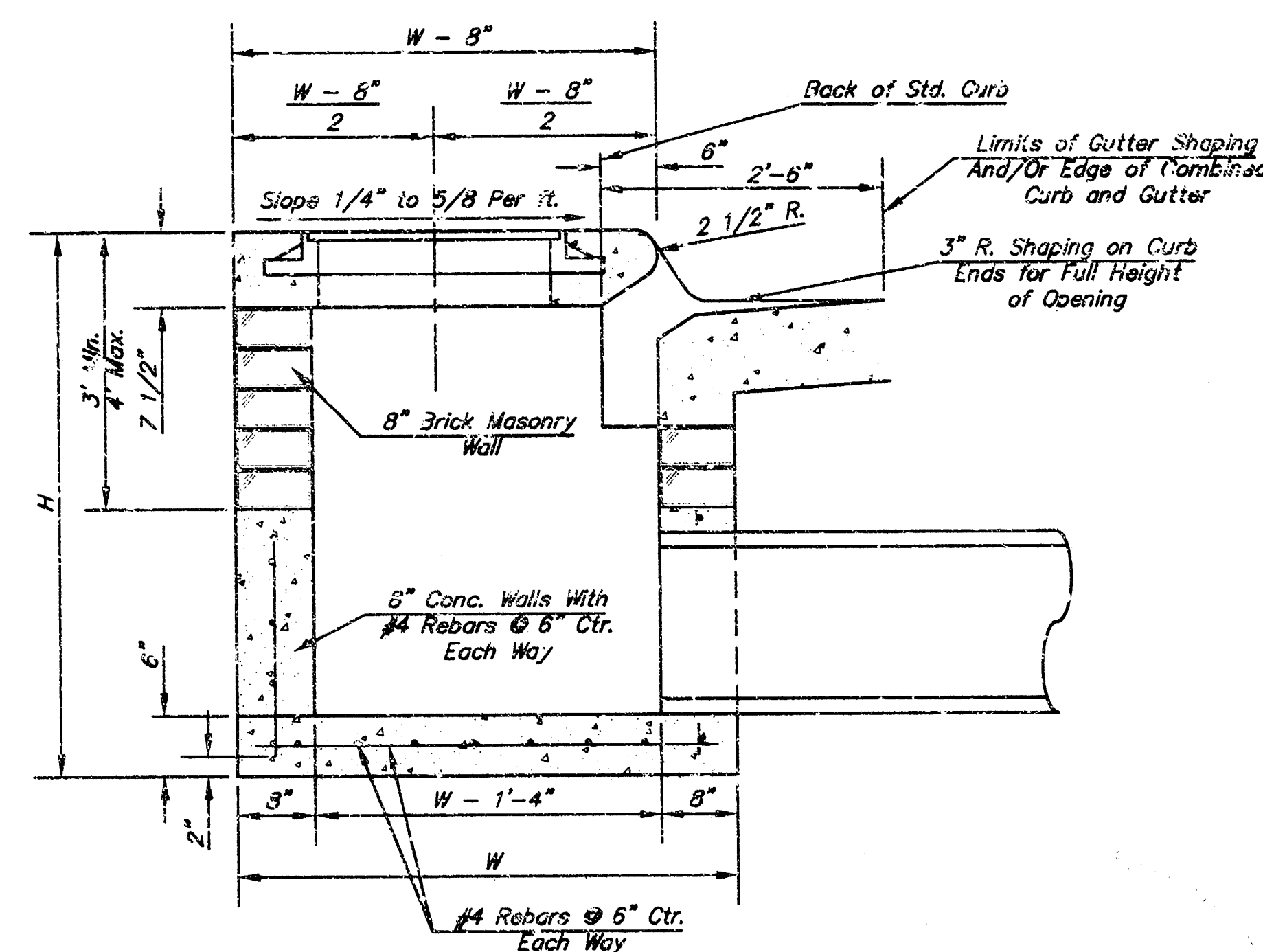


SECTION C-C

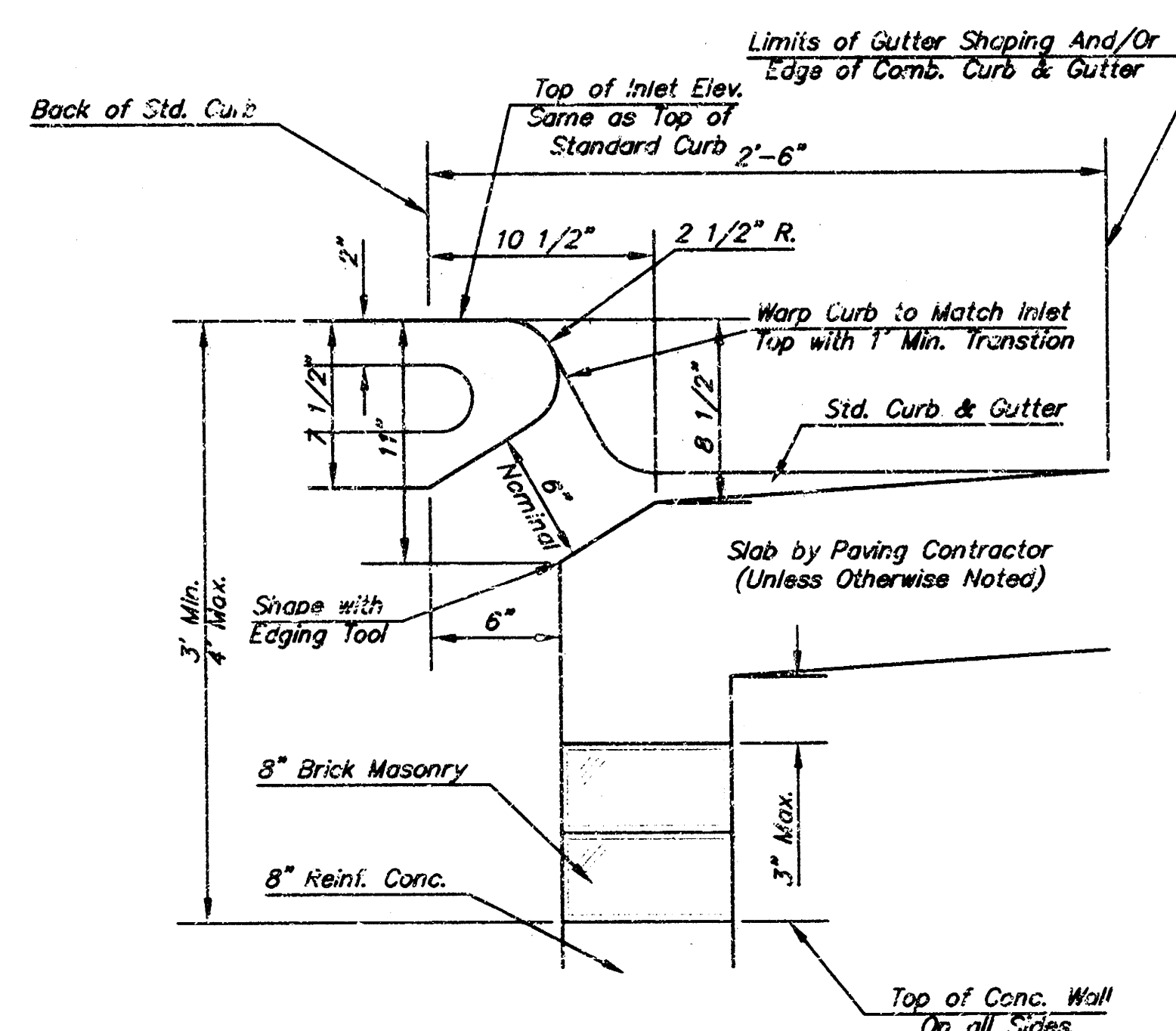
| STEEL SCHEDULE |                |                |                |                |       |       |       |                |                |                |          |
|----------------|----------------|----------------|----------------|----------------|-------|-------|-------|----------------|----------------|----------------|----------|
| BAR            | a <sub>1</sub> | a <sub>2</sub> | a <sub>3</sub> | b <sub>1</sub> |       |       |       | b <sub>2</sub> | b <sub>3</sub> | b <sub>4</sub> | Wt. /lb. |
| NUMBER         | 4              | 4              | 2              | 1              | 3     | 5     | 7     | 9              | 6              | 1              | 1        |
| SIZE           | #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"    |
|                | W=5'-4"        | 7'-7"          | 8'-7"          | 5'-0"          | -     | 6'-1" | -     | -              | 1'-9"          | 6'-2"          | 4'-8"    |
|                | W=6'-4"        | 9'-7"          | 10'-7"         | 6'-0"          | -     | -     | 6'-1" | -              | 1'-9"          | 6'-2"          | 4'-8"    |
|                | W=7'-4"        | 11'-7"         | 12'-7"         | 7'-0"          | -     | -     | -     | 6'-1"          | 1'-9"          | 6'-2"          | 4'-8"    |
|                | W=8'-4"        | 13'-7"         | 14'-7"         | 8'-0"          | -     | -     | -     | -              | 6'-1"          | 1'-9"          | 6'-2"    |
|                |                |                |                |                |       |       |       |                |                |                | 141±     |

Note: a<sub>3</sub> Bars to be Placed Approx. 2" Below Top of Inlet Cover.

| STANDARD CURB INLET PRECAST TOPS |                    |               |                |
|----------------------------------|--------------------|---------------|----------------|
| W                                | PRE-CAST TOP SIZE  | PIPE SIZE     | CUL. 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±          |



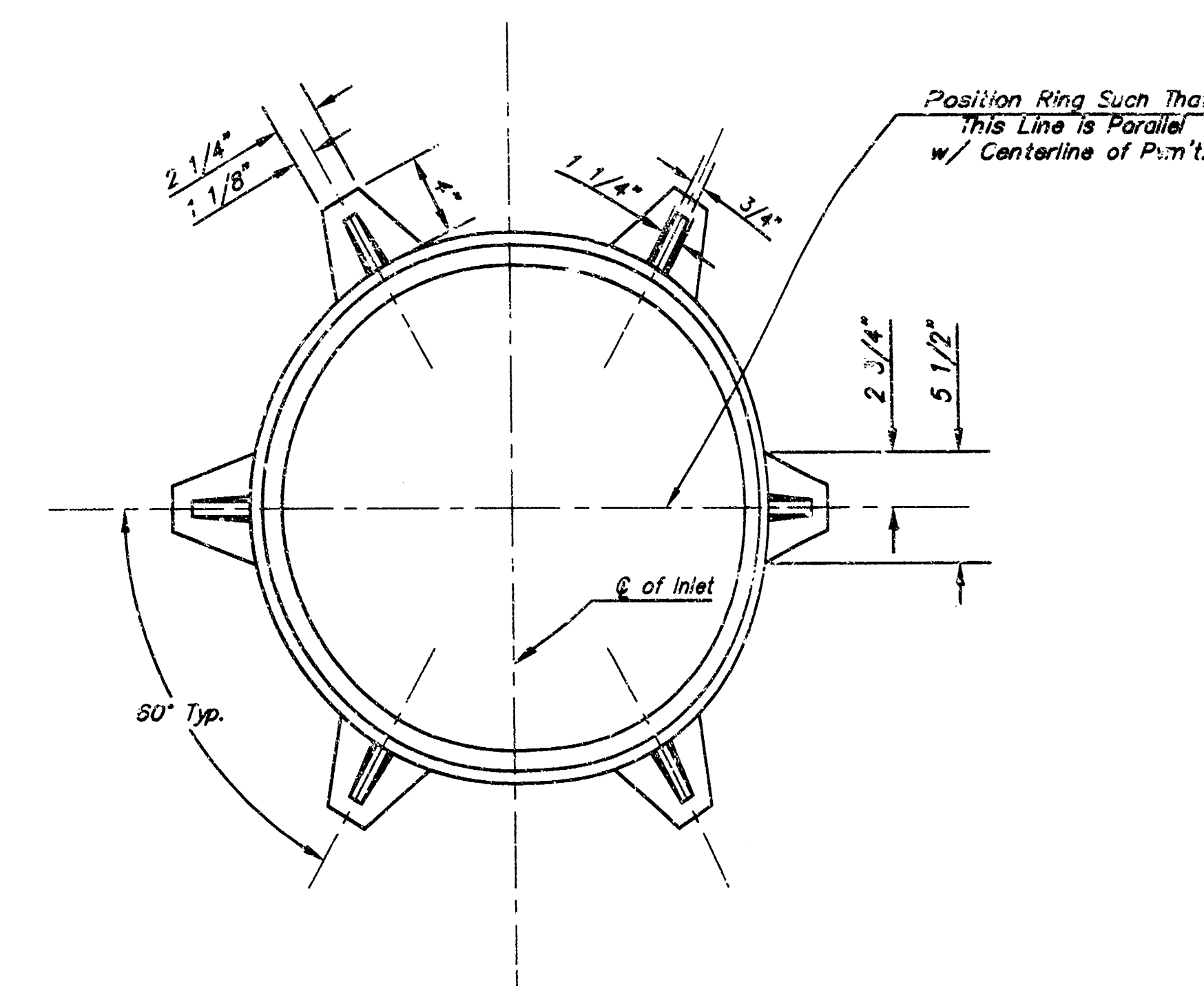
SECTION A-A



SECTION B-B

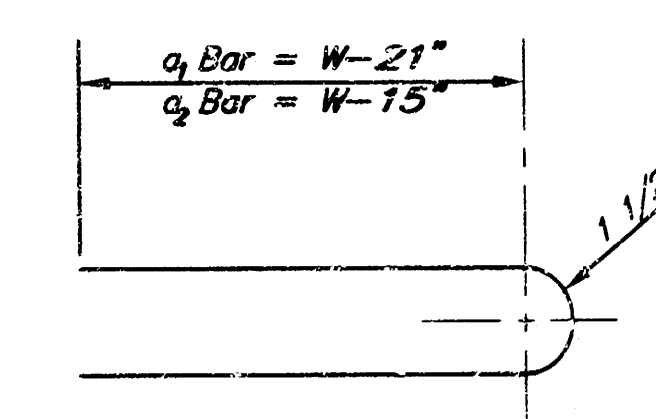
#### GENERAL NOTES

- 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.
- 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.
- 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.



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

|                                                                                                                                                                   |                                                                   |                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------|
| <p>THE CITY OF WICHITA</p> <p>CITY ENGINEER'S OFFICE<br/>CITY HALL - SEVENTH FLOOR<br/>655 NORTH MAIN STREET<br/>WICHITA, KANSAS 67202<br/>(316) 268-4114 FAX</p> | <p>STANDARD TYPE 1<br/>CURB INLET</p> <p>OPENING = 6" x 5'-0"</p> |                              |
|                                                                                                                                                                   | <p>NEIL D. CABLE, P.E. - CITY ENGINEER</p>                        |                              |
|                                                                                                                                                                   | <p>PROJECT NUMBER<br/>XXX-XXXX</p>                                | <p>INDEX CODE<br/>XXXXXX</p> |
|                                                                                                                                                                   | <p>DATE<br/>MAR 96</p>                                            | <p>SHEET X OF X</p>          |

|                                                                                                             |                                             |                             |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|
| <p>GREEN LANTERN CAR WASH</p> <p>TYPE 1 CURB INLET</p> <p>10510 WEST 21ST STREET NORTH, WICHITA, KANSAS</p> | <p>PROJECT NUMBER<br/>1336 PPS (807861)</p> | <p>AM. NO.<br/>02122-04</p> |
|                                                                                                             | <p>DESIGN<br/>C.O.W.</p>                    | <p>DATE<br/>04-25-03</p>    |

STYP1-S.DWG



