

# STORM WATER SEWER SYSTEM SERVING STONEBOROUGH ADDITION

## STORM WATER SEWER #445

### PROJECT NUMBER 468-76-245-82324-000-000-001

INDEX CODE: 750430

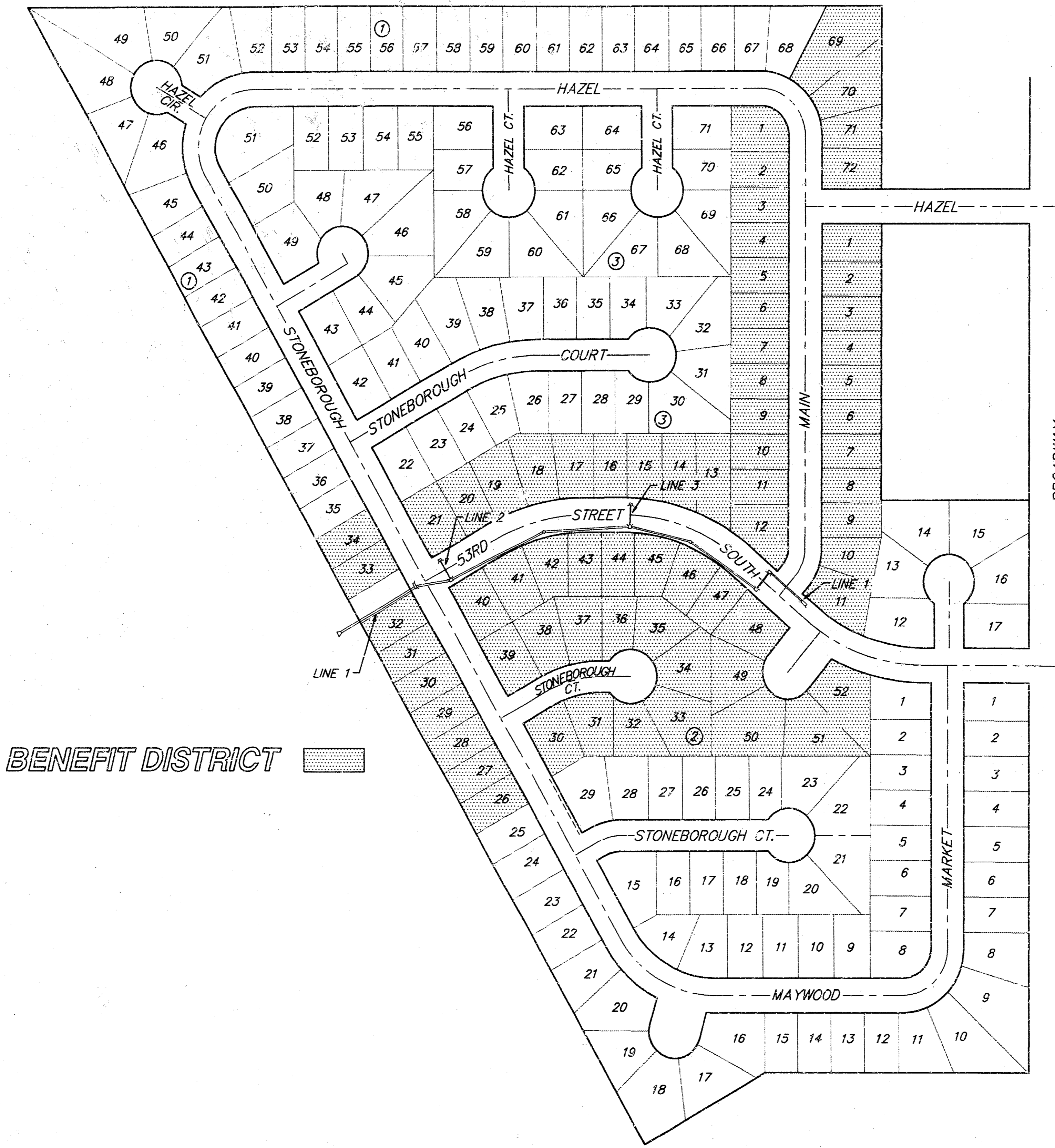
#### GENERAL NOTES

1. Traffic generated outside the project area and local business or residential traffic generated within the project area are to be carried through construction.
2. Underground utility service lines and overhead utility pole lines are to be adjusted by others if necessary prior to construction unless the plans specifically call for their adjustment by the Contractor or by their owner. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.
3. 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. 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 Agricultural 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 archaeological investigations unless buried in a previously approved borrow location.
4. Trees and shrubs in public right-of-way which are in direct conflict with proposed construction shall be removed by the Contractor with the Engineers approval. Trees and shrubs which are not in direct conflict with proposed construction shall be saved and protected from damage.
5. 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 notice prior to start of construction.
6. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish any property irons which are disturbed by his construction operations. Such irons shall be re-established by a licensed Land Surveyor in accordance with state laws.
7. The Contractor shall contact all affected utility companies concerning the relocation of utility lines as per the plans.
8. Contractor will be required to provide a minimum 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 before construction and in case of an emergency.

|                                     |                      |
|-------------------------------------|----------------------|
| K.P.&L. Gas Service Company         | 263-7511             |
| Kansas Gas & Electric               | 264-1141             |
| Arkia Gas Company                   | 942-8350 or 263-8161 |
| Southwestern Bell Telephone Company | 1-571-2611           |
| Cablevision                         | 262-4270 or 263-2061 |
| City of Wichita Water Department    | 268-4908             |
| City of Wichita Sewer Maintenance   | 268-4071             |

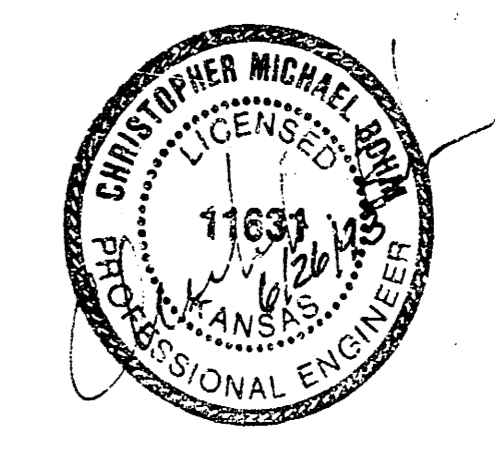


CITY OF WICHITA, KANSAS  
MICHAEL E. LINDEBAK - CITY ENGINEER

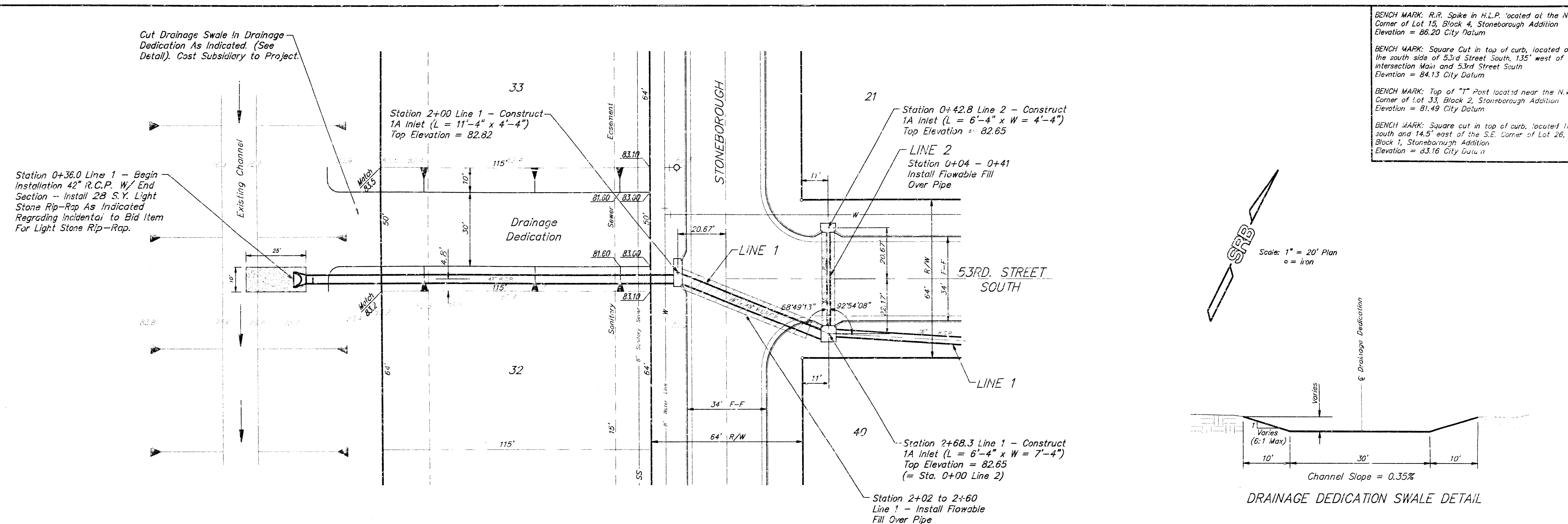
#### INDEX OF SHEETS

1. TITLE SHEET
2. LINE 1 AND LINE 2
3. LINE 1 AND LINE 3
4. LINE 1
5. TYPE IA INLET DETAIL (L = 10')
6. TYPE IA INLET DETAIL (L = 5')
7. SHALLOW TYPE B MANHOLE DETAIL
8. PLAT OF STONEBOROUGH ADDITION

Booked  
1-10-94  
MEL  
P-210



|                              |                       |              |
|------------------------------|-----------------------|--------------|
| <b>SRB</b>                   | 541 SOUTH HILLSIDE    | 316-652-7754 |
|                              | WICHITA, KANSAS 67211 | FAX 652-7532 |
| SAVOY, RUGGLES & BOHM, P. A. |                       |              |
| ENGINEERING & SURVEYING      |                       |              |

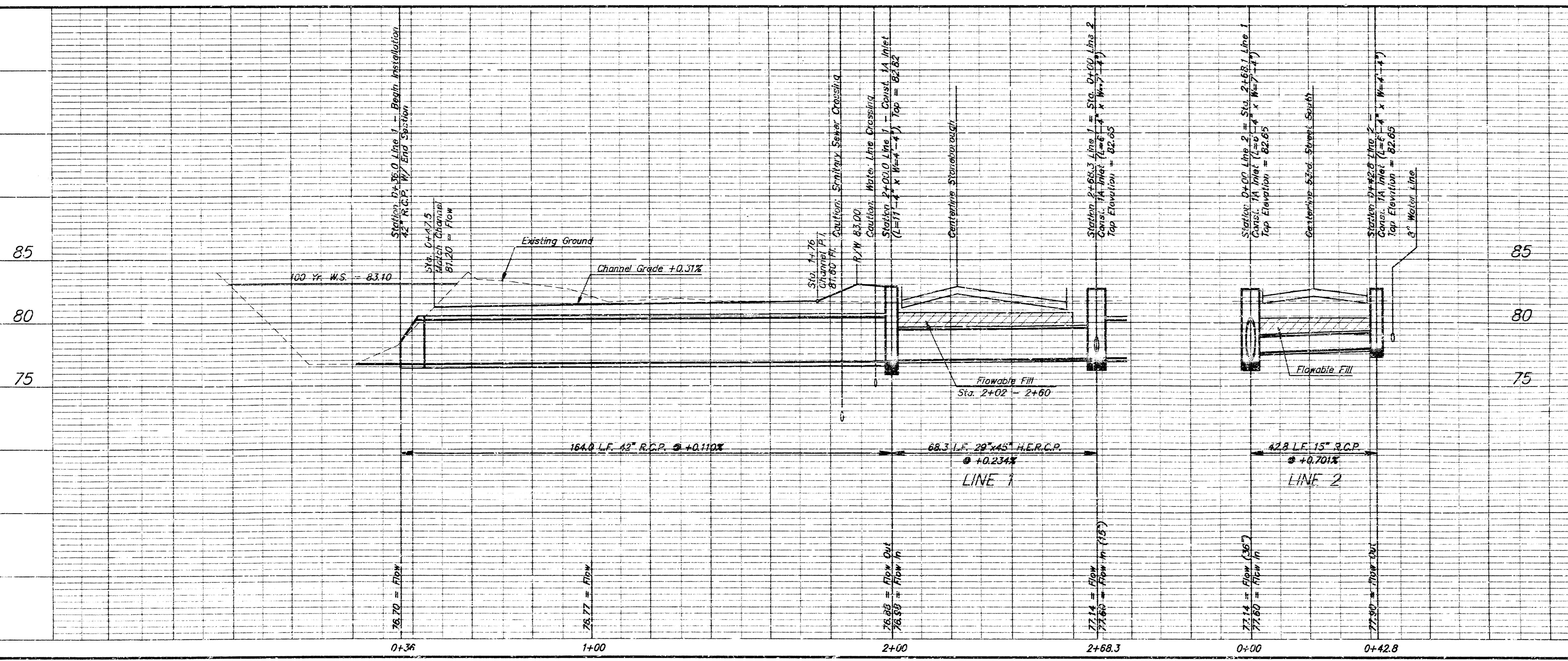


BENCH MARK: R.R. Spike in H.L.P. located at the N.E. Corner of Lot 15, Block 4, Stoneborough Addition  
Elevation = 86.20 City Datum

BENCH MARK: Square Cut in top of curb, located on the south side of 53rd Street South, 135' west of the intersection Main and 53rd Street South  
Elevation = 84.13 City Datum

BENCH MARK: Top of "T" Post located near the N.W. Corner of Lot 33, Block 2, Stoneborough Addition  
Elevation = 81.49 City Datum

BENCH MARK: Square cut in top of curb, located 10' south and 14.5' east of the S.E. Corner of Lot 26, Block 1, Stoneborough Addition  
Elevation = 83.16 City Datum



**STONEBOROUGH ADDITION**  
SWS #445

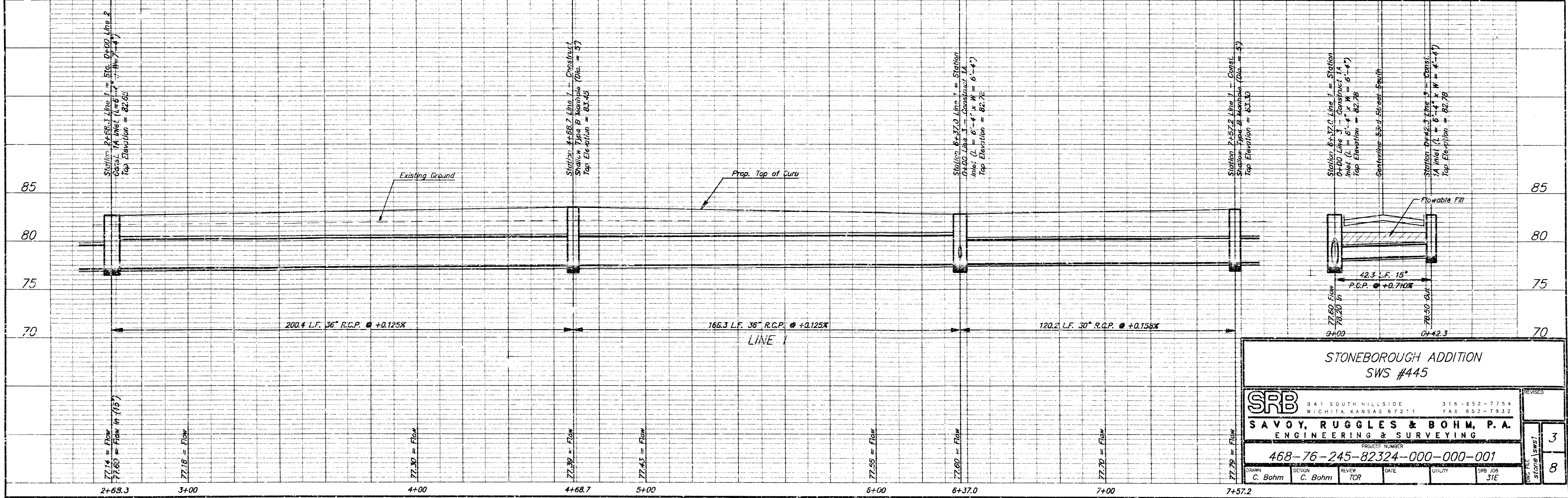
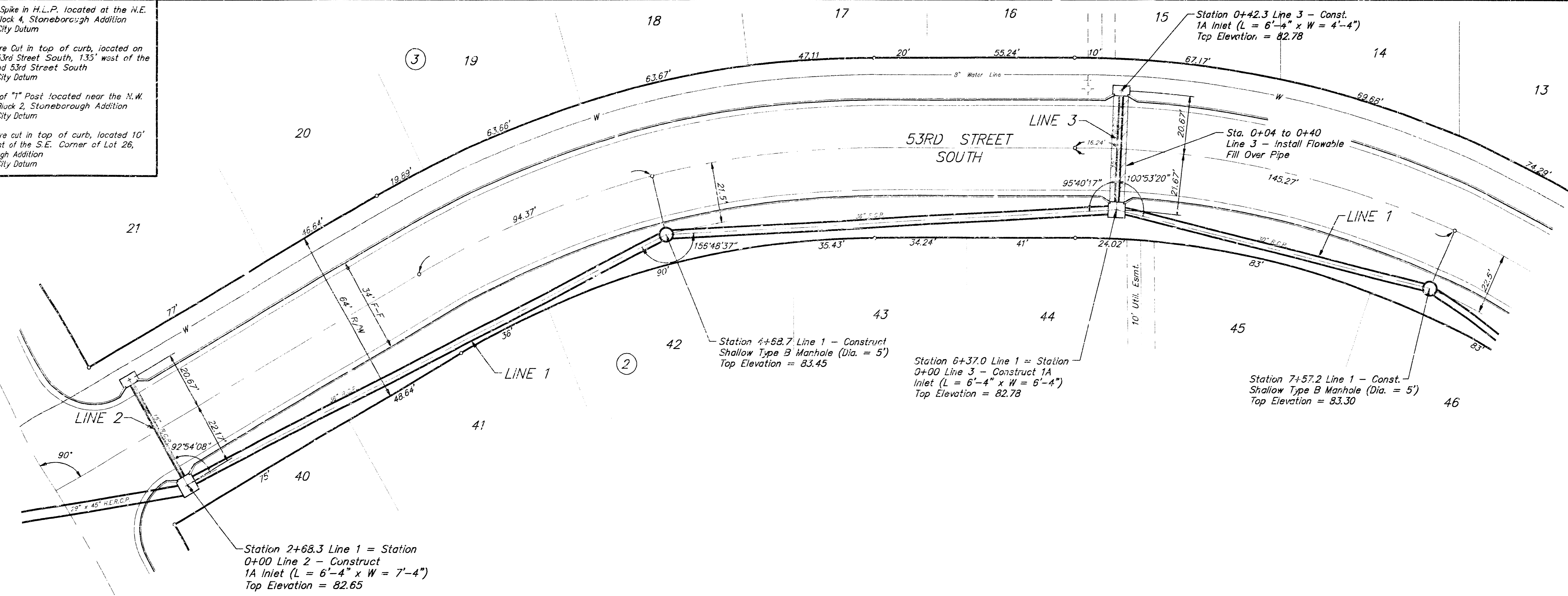
|   |                       |                |
|---|-----------------------|----------------|
| <b>SRB</b>  | 841 SOUTH HILLSIDE    | 316-657-7754   |
|   | WICHITA, KANSAS 67211 | FAX 652-7932   |
| <b>SAVOY, RUGGLES &amp; BOHM, P.A.</b><br>ENGINEERING & SURVEYING |                       |                |
| PROJECT NUMBER<br><b>468-76-245-82324-000-000-001</b>             |                       |                |
| DESIGN<br>C. Bohm   | DATE<br>TOR           | SCALE<br>3"=1' |

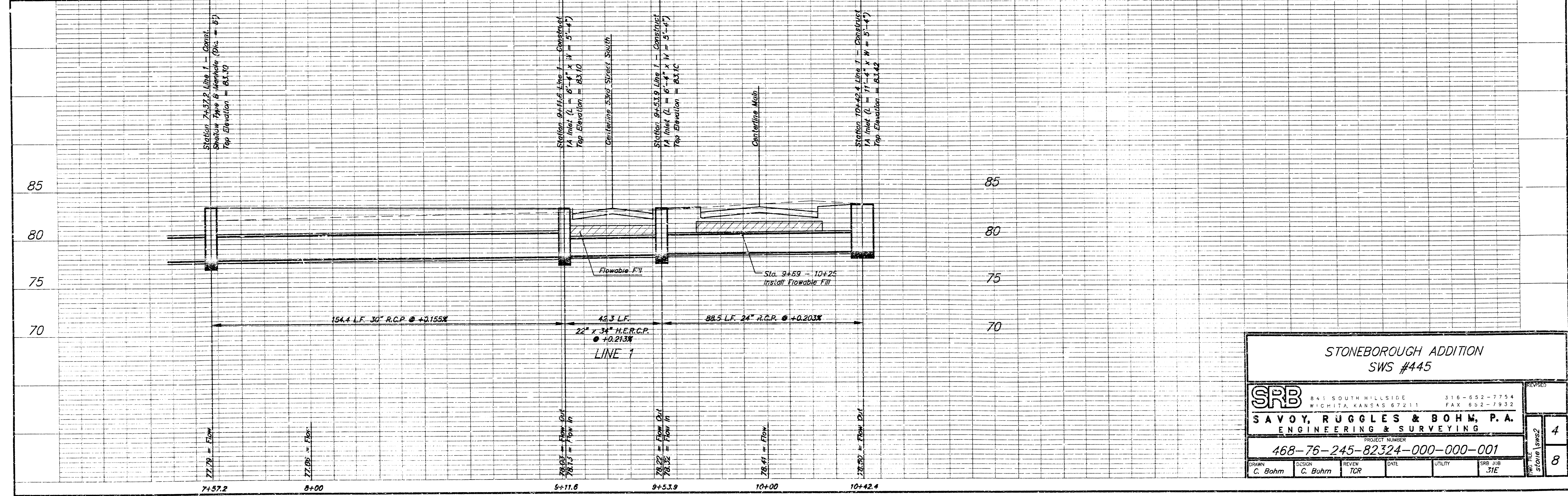
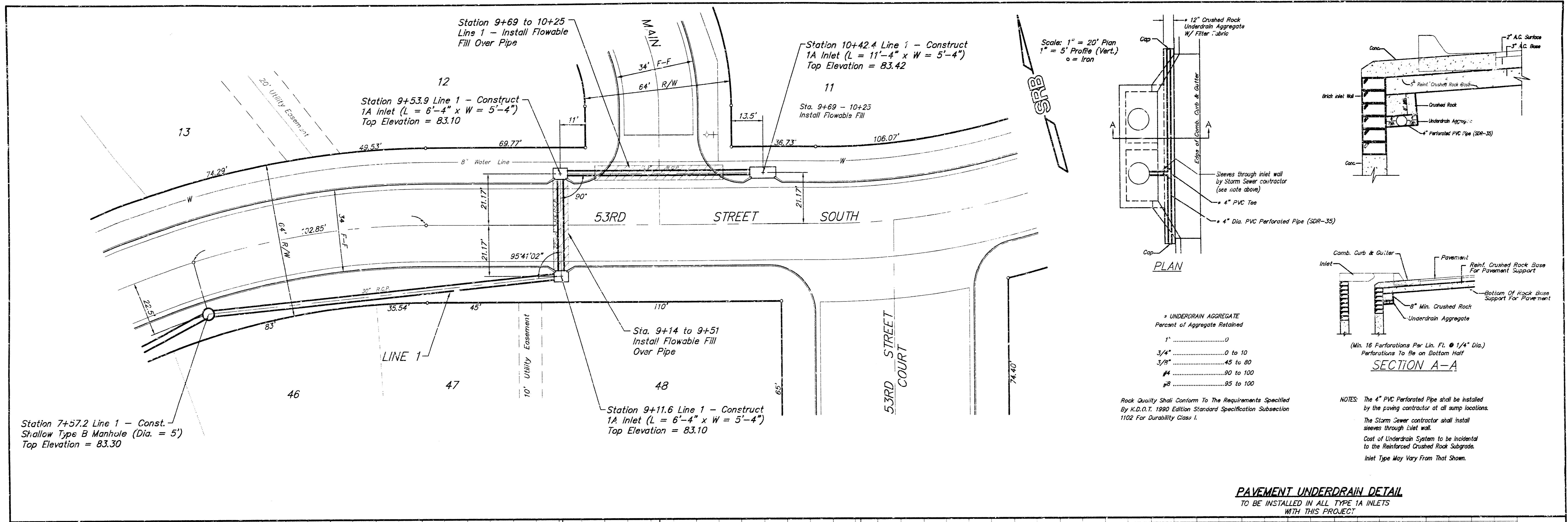
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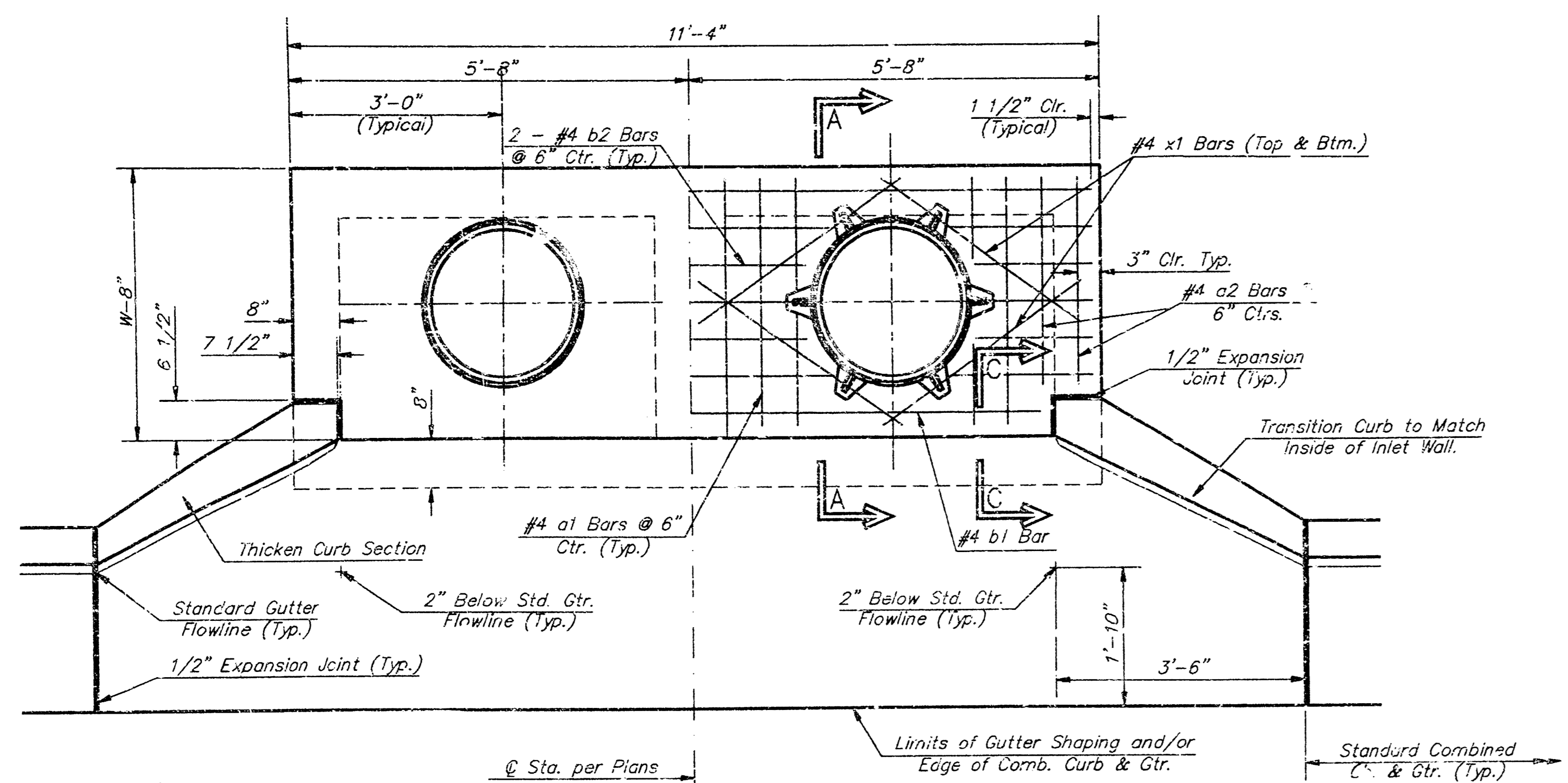
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Elevation = 83.16 City Datum



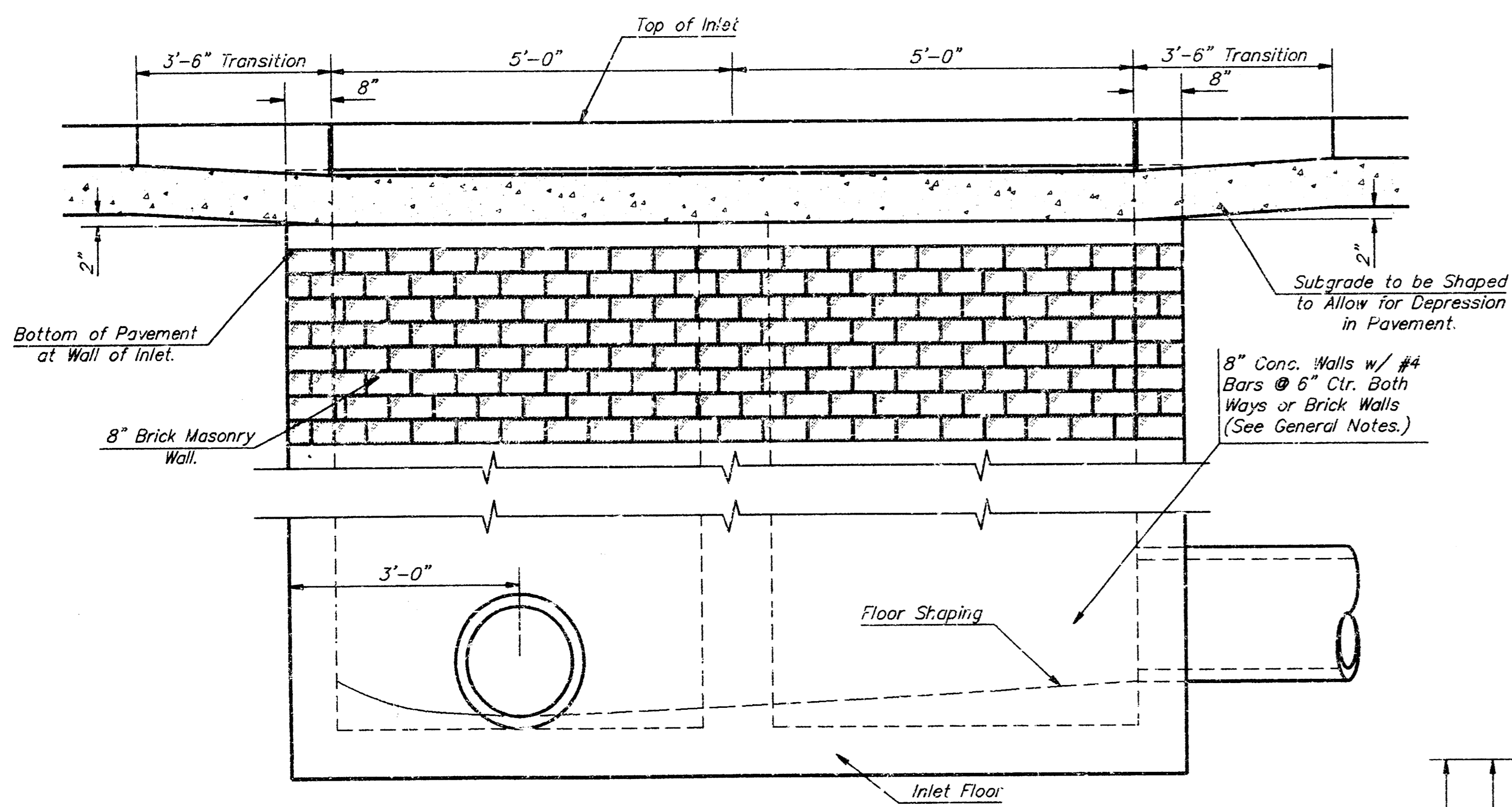




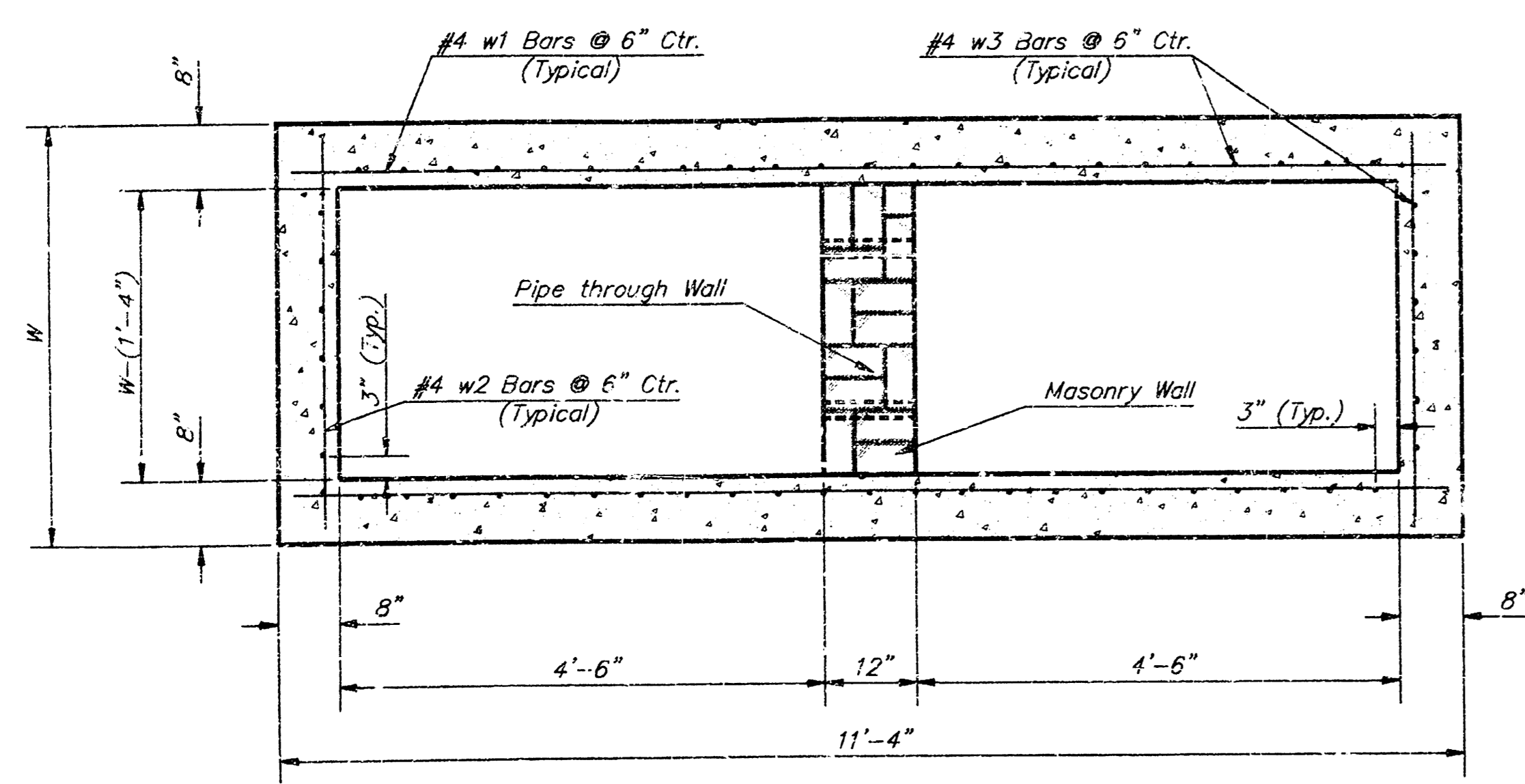
NOTE:  
Expansion Joint Only in Curb Area with Concrete Pavement.

**PLAN**

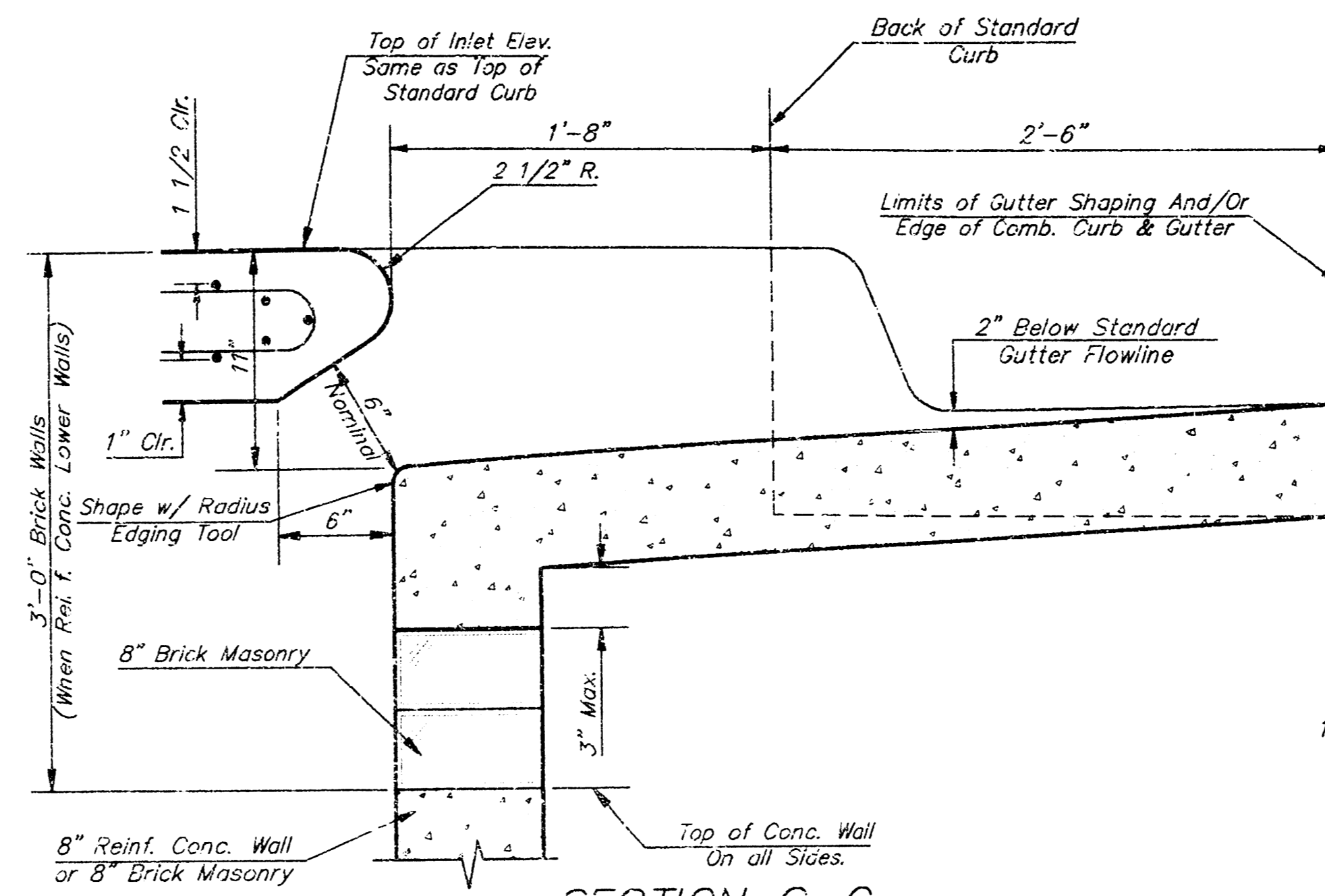
\*Left Side Shown Without Slab Reinforcing, Right Side Shown With Slab Reinforcing



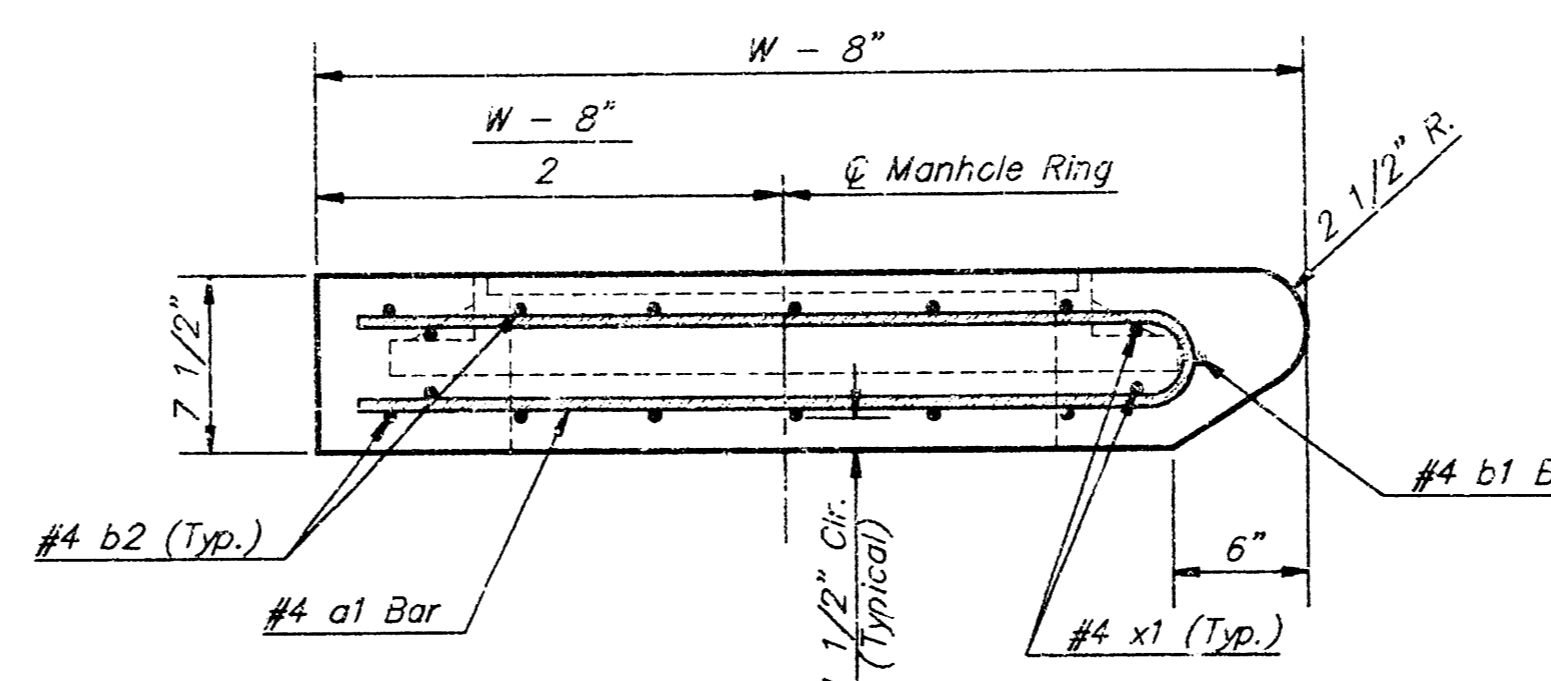
**ELEVATION**



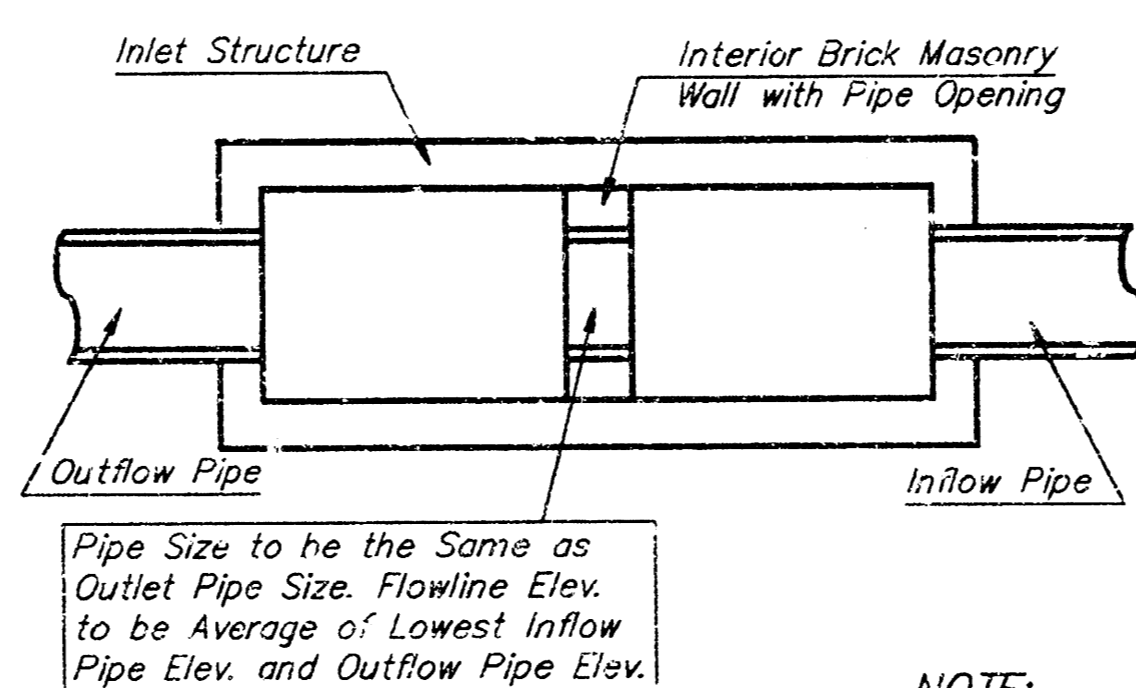
**SECTION B-B**



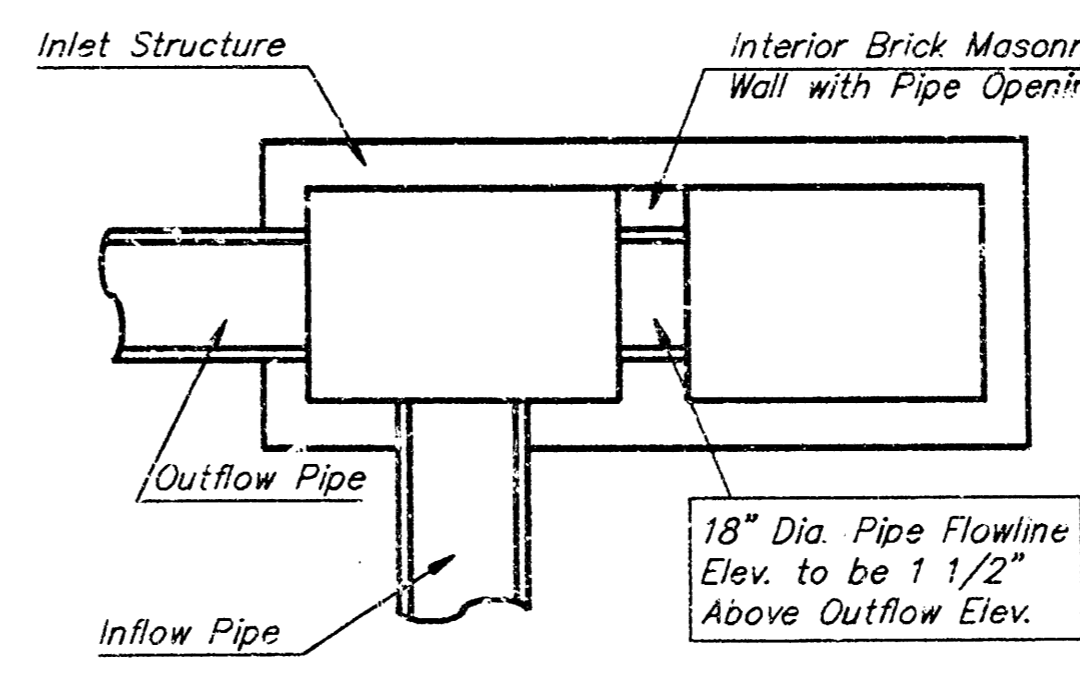
**SECTION C-C**



**SECTION A-A**

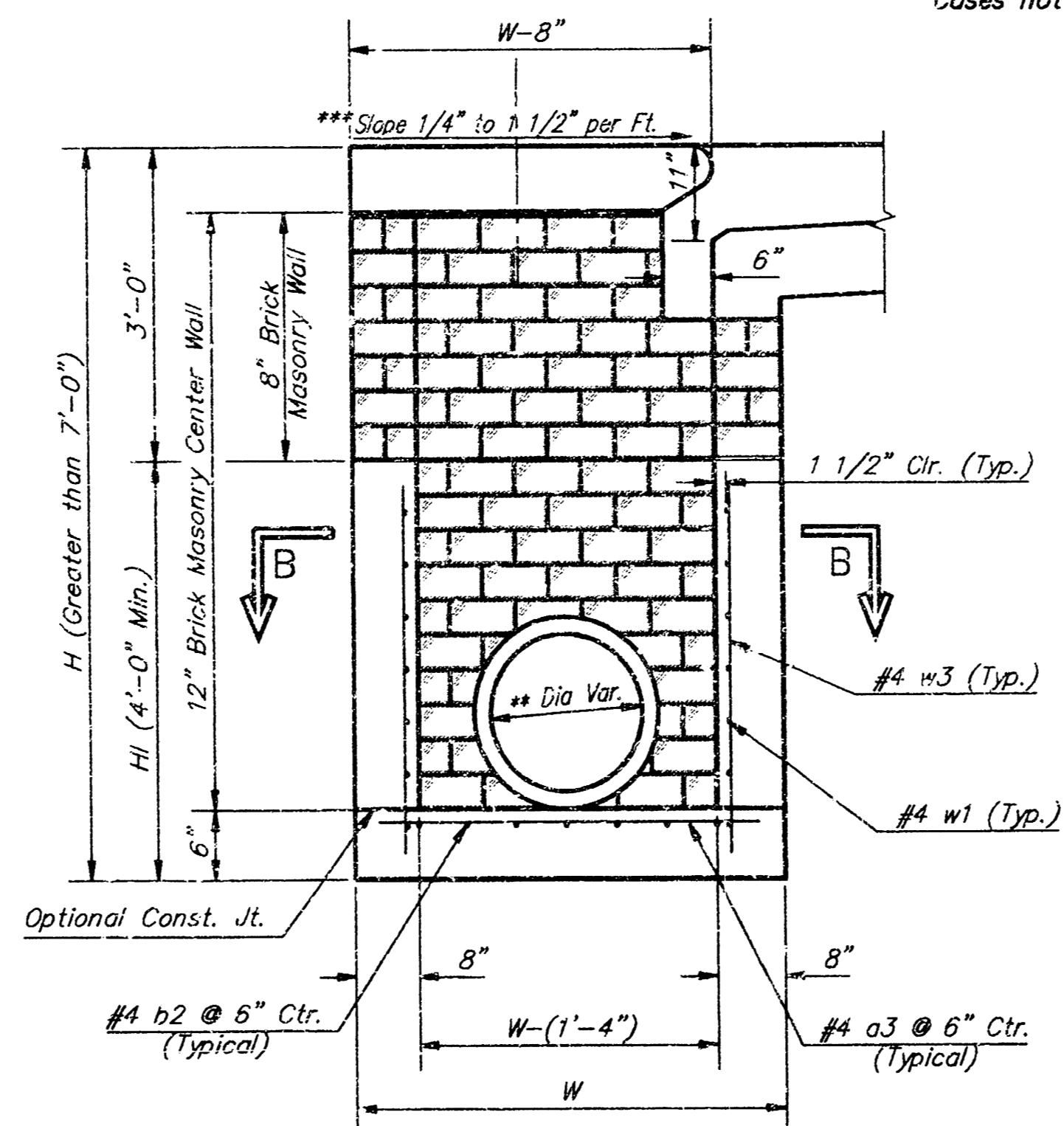


**CASE I**



**CASE II**

NOTE:  
Center Wall Pipe Size shall be as Specified in Inlet Construction Notes on the Plan/Profile Sheets for those Cases not Shown Here.



**TYPICAL INLET SECTION AT CENTER WALL (Reinforced Concrete Walls)**

NOTES:  
\*\* A center wall opening shall be provided by means of a section of reinforced concrete pipe. See Case I and Case II above.  
\*\*\* Slope of inlet tops to match sidewalk of parking slopes within limits indicated

| PRECAST SLAB AND FLOOR REINFORCING |      |           |        |           |        |           |        |           |        |           |        |
|------------------------------------|------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|
| MARK                               | SIZE | W = 4'-4" |        | W = 5'-4" |        | W = 6'-4" |        | W = 7'-4" |        | W = 8'-4" |        |
|                                    |      | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH |
| a1                                 | #4   | 13        | 6'-7"  | 13        | 8'-7"  | 13        | 10'-7" | 13        | 12'-7" | 13        | 14'-7" |
| a2                                 | #4   | 4         | 6'-0"  | 4         | 8'-0"  | 4         | 10'-0" | 4         | 12'-0" | 4         | 14'-0" |
| a3                                 | #4   | 23        | 4'-1"  | 23        | 5'-1"  | 23        | 6'-1"  | 23        | 7'-1"  | 23        | 8'-1"  |
| b1                                 | #4   | 1         | 9'-9"  | 1         | 9'-9"  | 1         | 9'-9"  | 1         | 9'-9"  | 1         | 9'-9"  |
| b2                                 | #4   | 23        | 11'-1" | 29        | 11'-1" | 35        | 11'-1" | 41        | 11'-1" | 47        | 11'-1" |
| x1                                 | #4   | 16        | 3'-10" | 16        | 4'-2"  | 16        | 4'-6"  | 16        | 4'-10" | 16        | 5'-2"  |

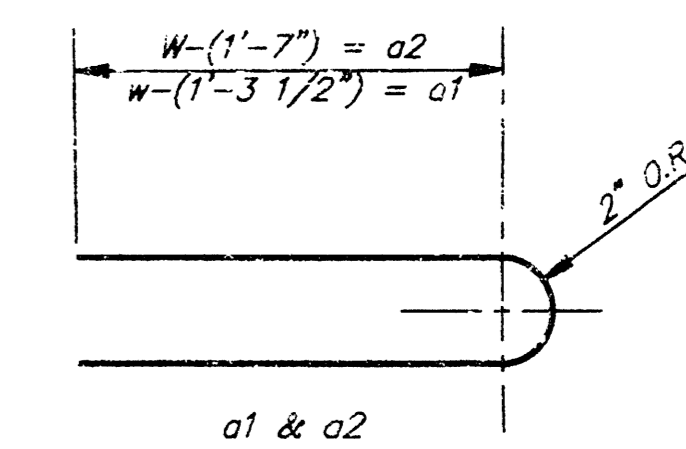
  

| WALL REINFORCING |      |           |        |           |        |           |        |           |        |           |        |
|------------------|------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|
| MARK             | SIZE | W = 4'-4" |        | W = 5'-4" |        | W = 6'-4" |        | W = 7'-4" |        | W = 8'-4" |        |
|                  |      | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH |
| w1               | #4   | 1         | 11'-1" | 1         | 11'-1" | 1         | 11'-1" | 1         | 11'-1" | 1         | 11'-1" |
| w2               | #4   | 1         | 4'-1"  | 1         | 5'-1"  | 1         | 6'-1"  | 1         | 7'-1"  | 1         | 8'-1"  |
| w3               | #4   | 52        | 2      | 56        | 2      | 60        | 2      | 64        | 2      | 68        | 2      |

\* Field Bend or Cut Reinforcing as Required for Clearance.  
① 4 (H1 - 12") (H1 = 21") Rounded down to nearest 0.5"  
② H1 = 3"

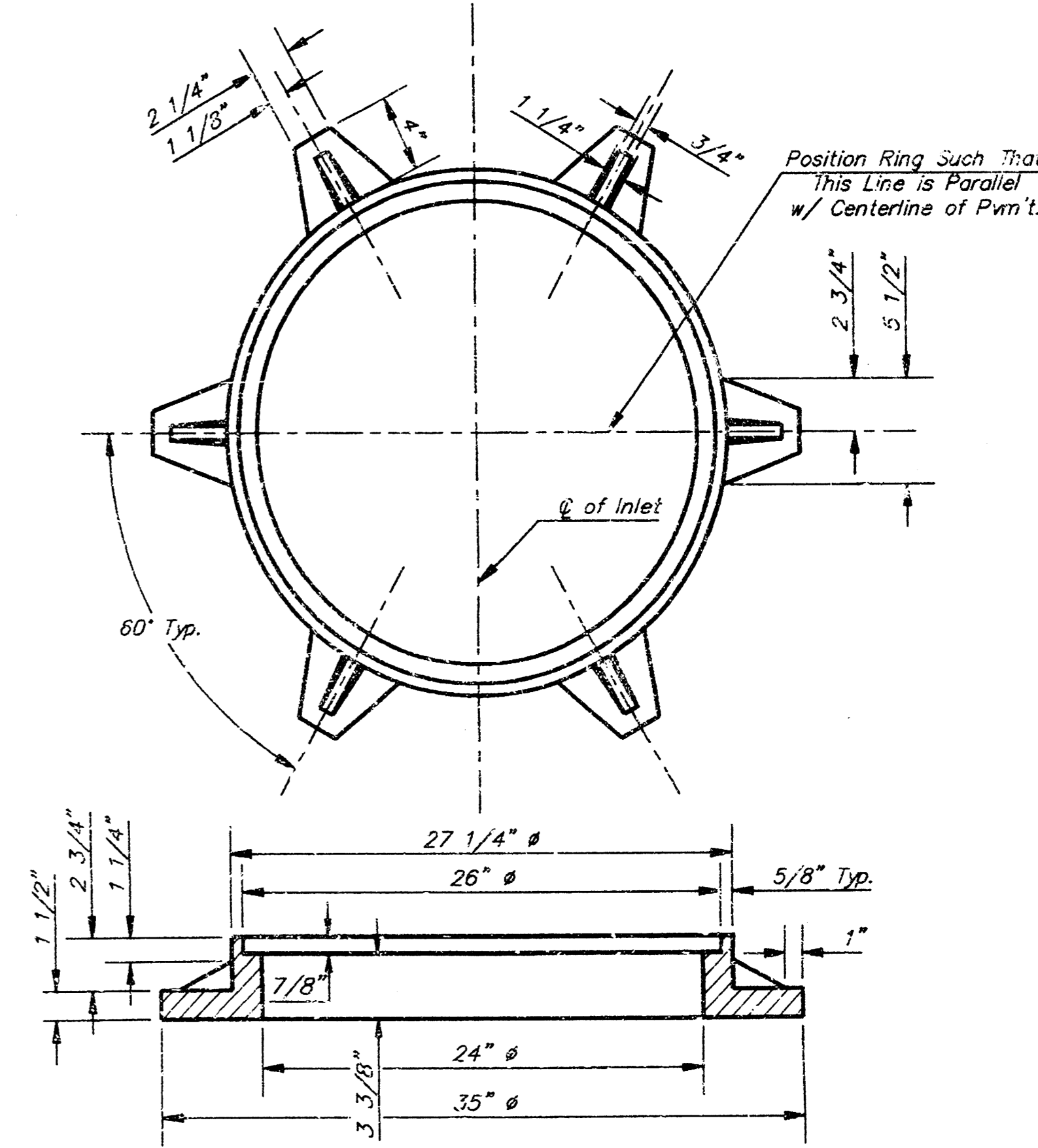
**GENERAL NOTES:**

- The contractor shall be required to construct 8" brick masonry walls between the concrete inlet base and top on this inlet when W=6'-4" or less and H=7'-0" or less. when W is greater than 6'-4" and H is less than 7'-0" the outside inlet walls below the brick stack shall be reinforced concrete construction and the center wall shall be of masonry construction as shown for the masonry wall option.
- 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.
- 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.
- Inlet top reinforcing shall be spaced on 6" max. centers. Inlet lids shall be notched out as indicated to facilitate construction of curb. Bars in inlet top to be field bent or cut to clear manhole ring.
- The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.



**BENDING DIAGRAM**

| STANDARD CURB INLET PRECAST TOPS |                     |               |               |
|----------------------------------|---------------------|---------------|---------------|
| W                                | PRE-CAST TOP SIZE   | PIPE SIZE     | CU. YD. CONC. |
| 4'-4"                            | 3'-8" 11'-4" 7 1/2" | 21" & SMALLER | 0.83E         |
| 5'-4"                            | 4'-8" 11'-4" 7 1/2" | 24" & 30"     | 1.02E         |
| 6'-4"                            | 5'-8" 11'-4" 7 1/2" | 36" & 42"     | 1.35E         |
| 7'-4"                            | 6'-8" 11'-4" 7 1/2" | 48" & 54"     | 1.81E         |
| 8'-4"                            | 7'-8" 11'-4" 7 1/2" | 60" & 66"     | 1.87E         |

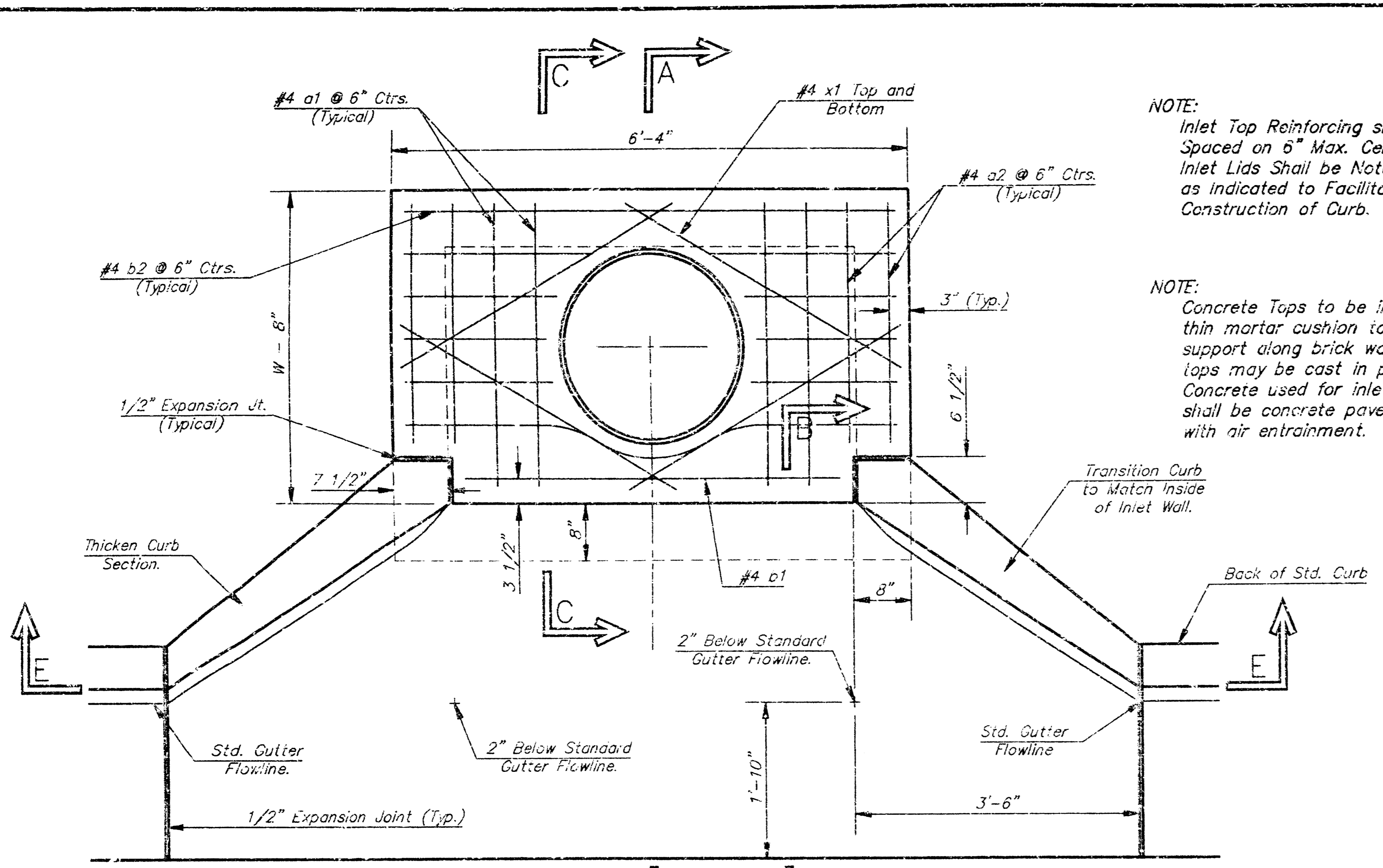


**MANHOLE RING AND COVER**  
Weight = 180 lbs.

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

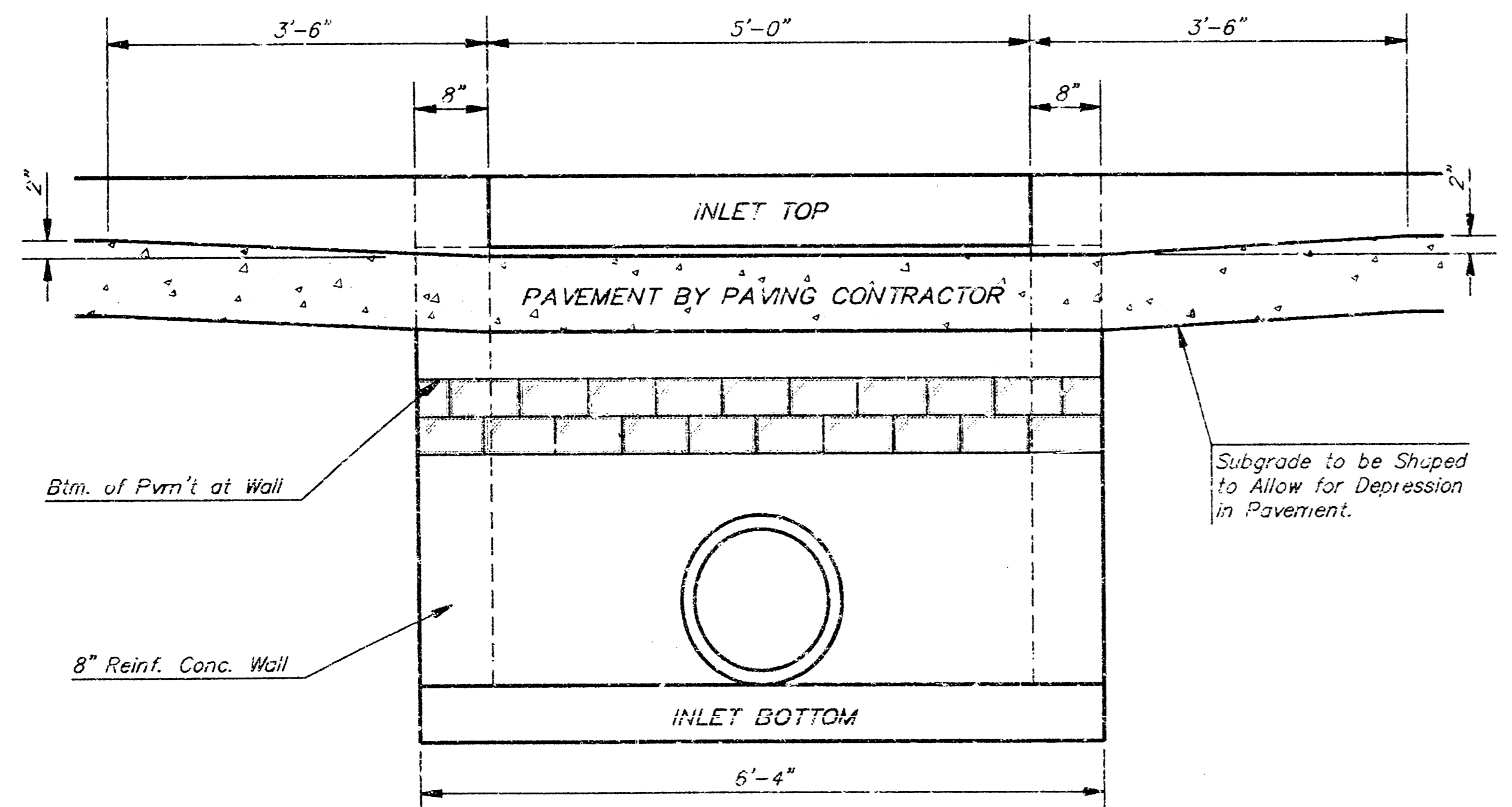
**TYPE 1A INLET (LENGTH = 10.0')**  
CITY OF WICHITA, KANSAS

Revised - Feb. 16, 1989

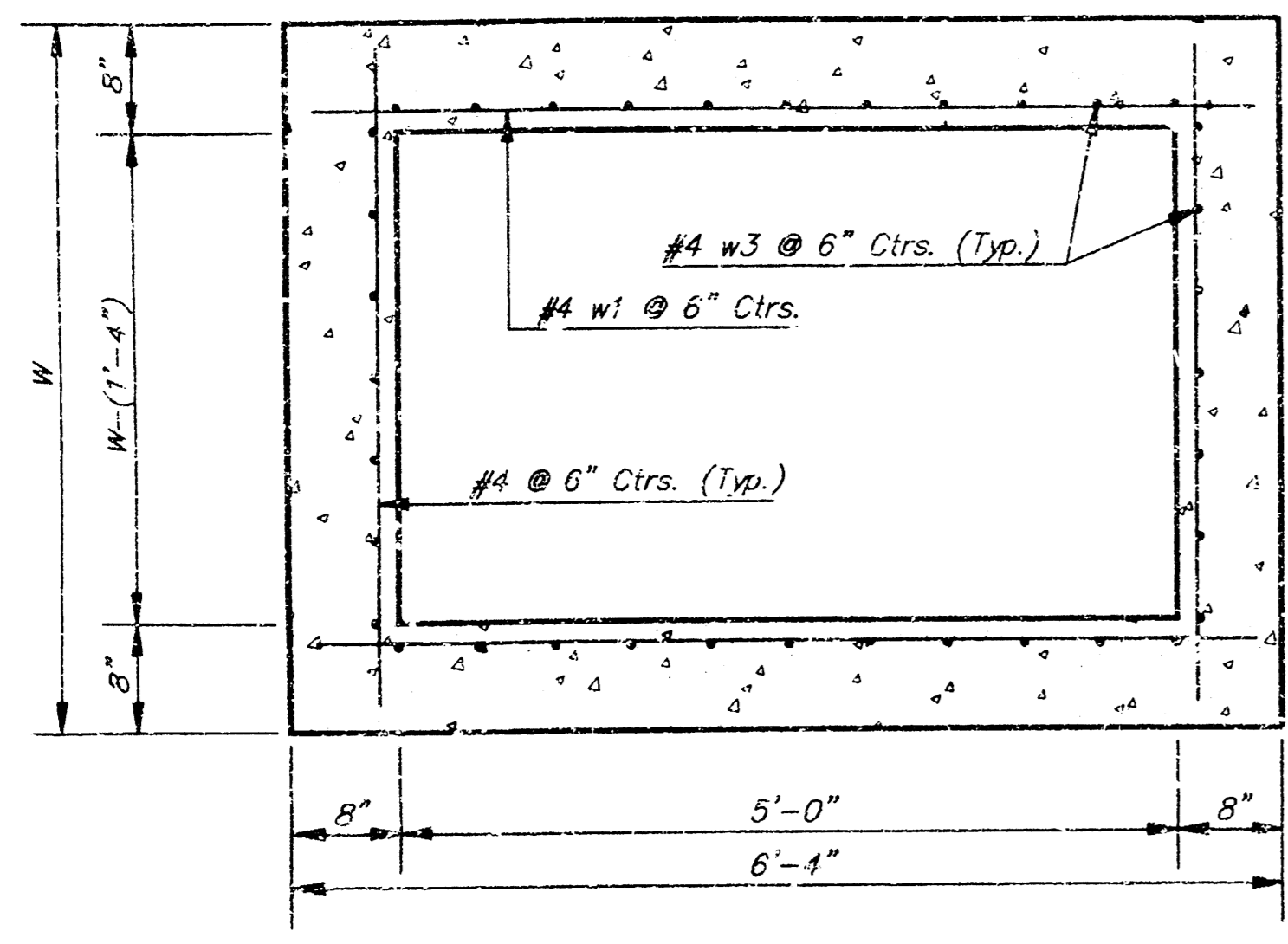


NOTE: Expansion Joint Only in Curb Area With Concrete Pavement.

PLAN



SECTION E-E



SECTION D-D

NOTE: Inlet Top Reinforcing shall be Spaced on 6" Max. Centers. Inlet Lids Shall be Notched Out as Indicated to Facilitate Construction of Curb.

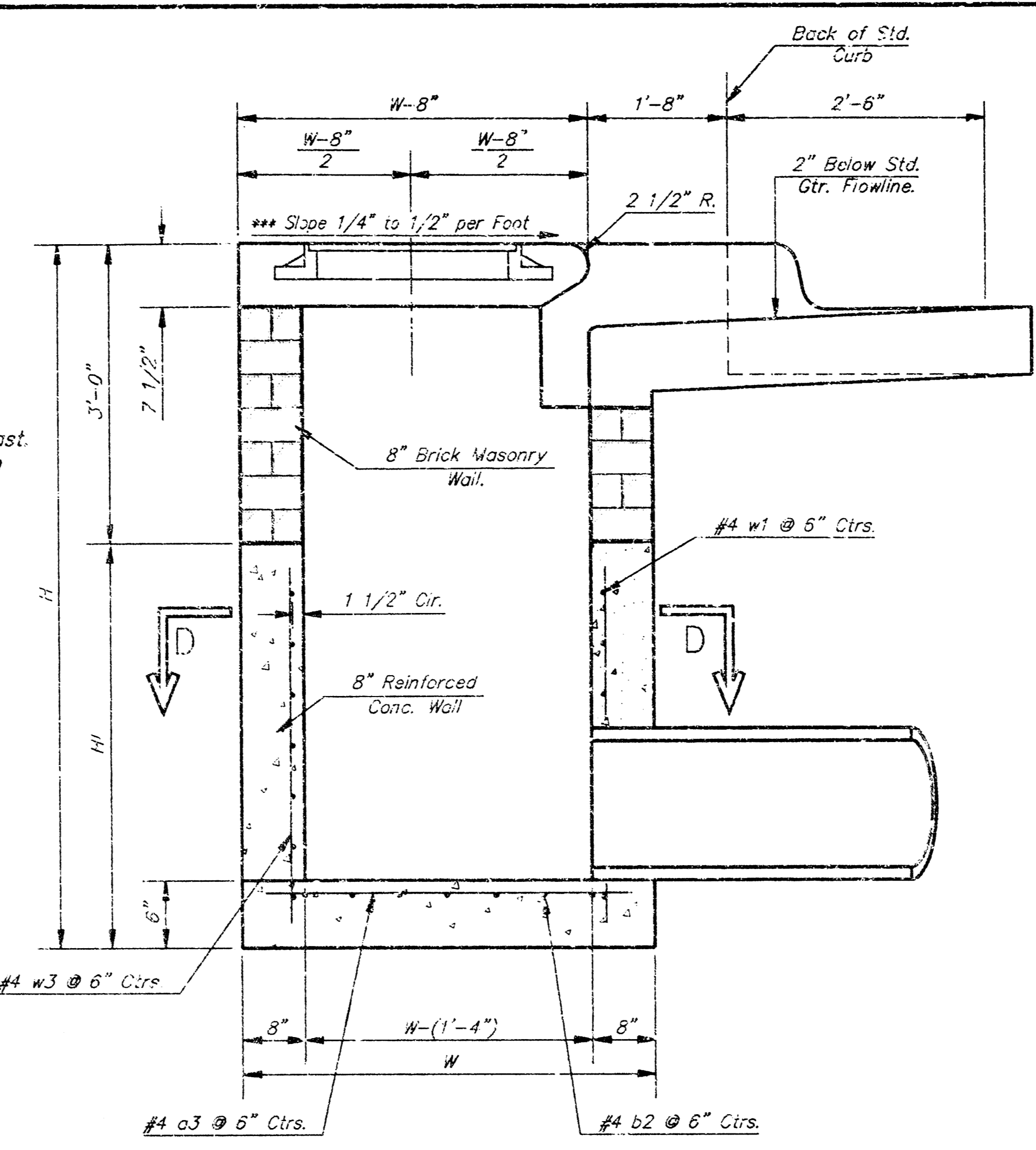
NOTE: Concrete Tops to be installed on thin mortar cushion to insure full support along brick walls. Concrete tops may be cast in place or precast. Concrete used for inlet construction shall be concrete pavement mix with air entrainment.

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.

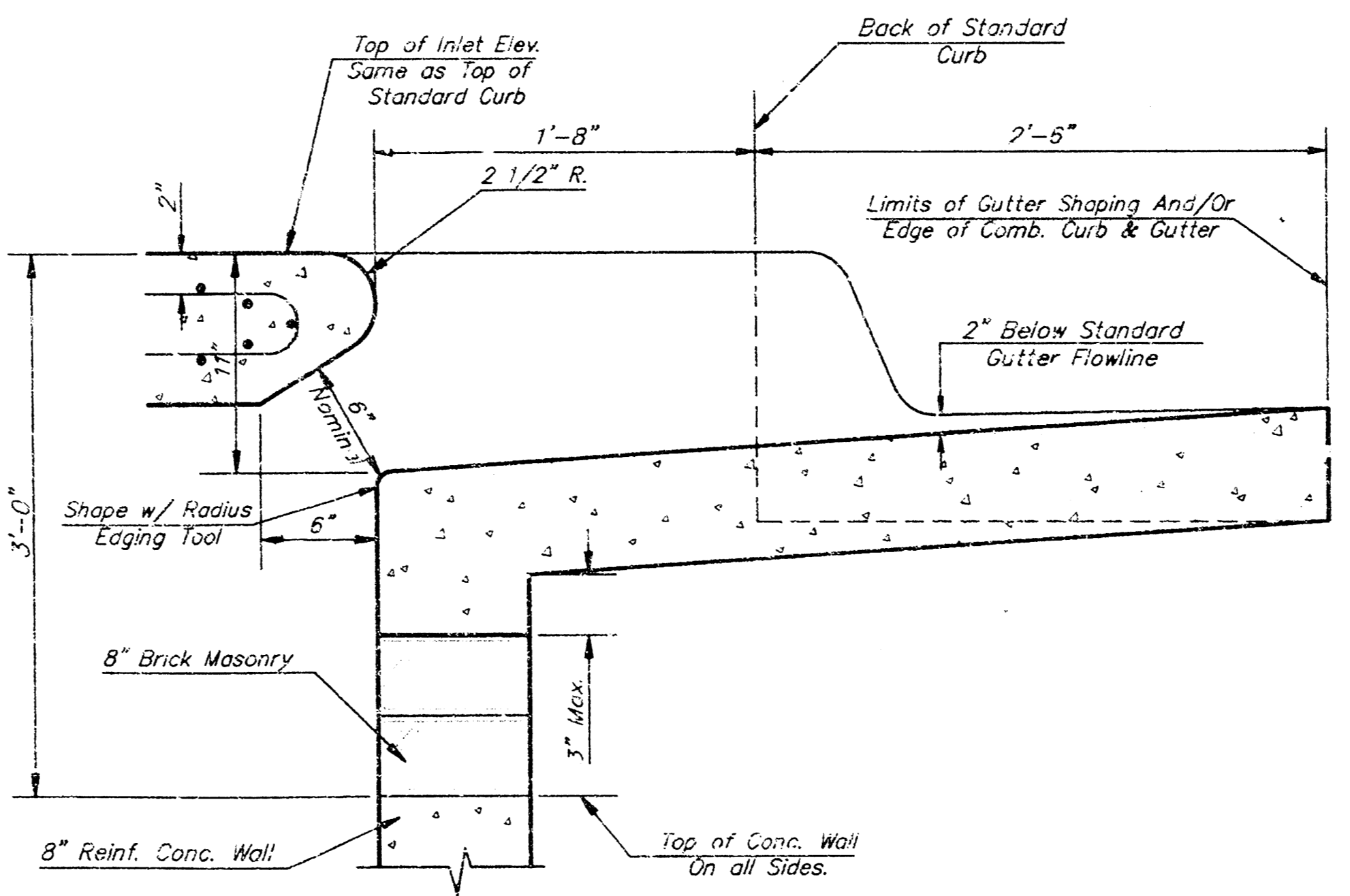
Inlet invert shall be shaped with B sack sand mix concrete to create flow channels and to increase hydraulic efficiency such that the inlet will be self-cleaning between all inlet and/or outlet pipes.

The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.

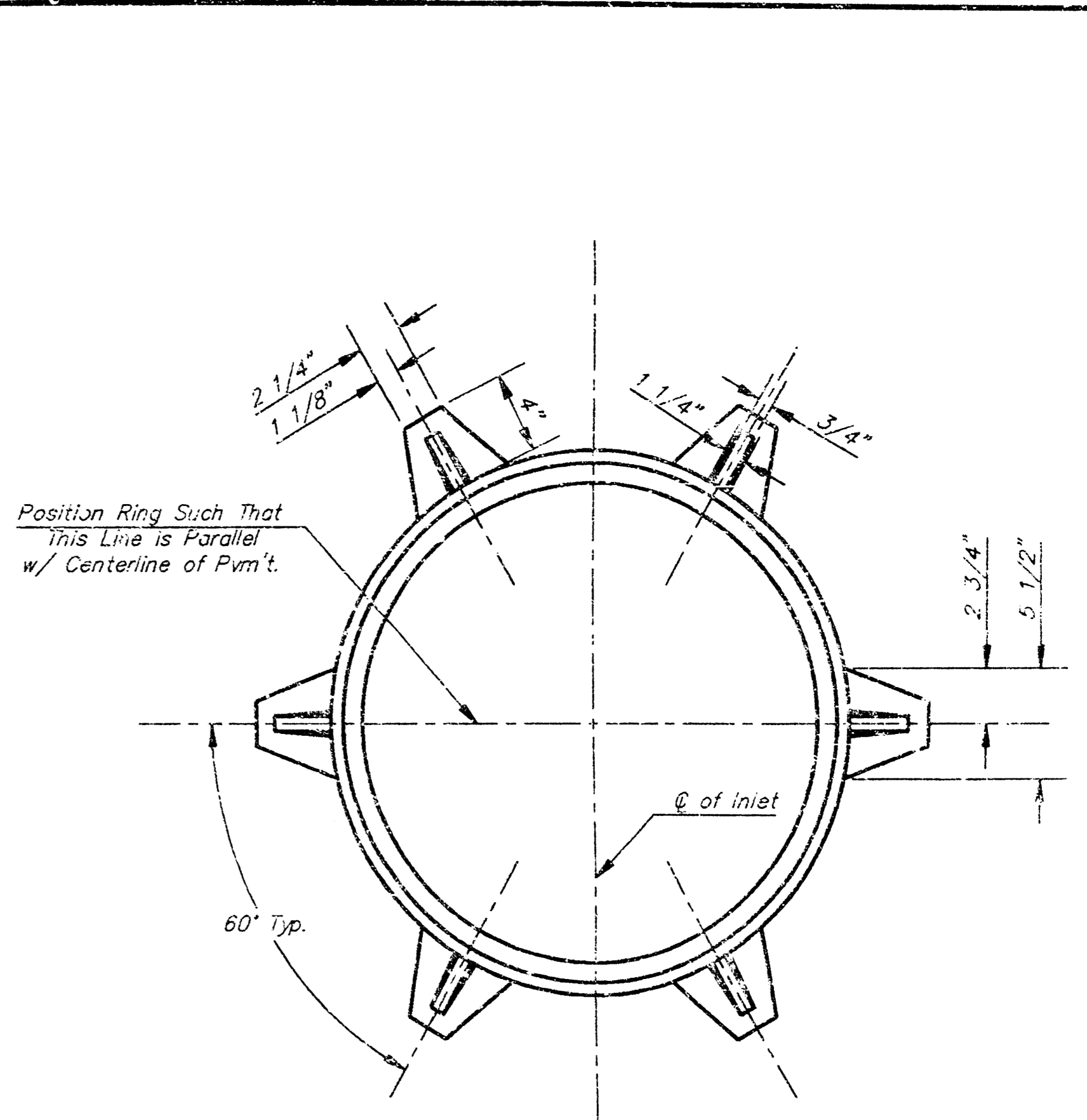


SECTION A-A

NOTE: Slope of Inlet tops to Match Sidewalk or Parking Slopes within Limits Indicated.



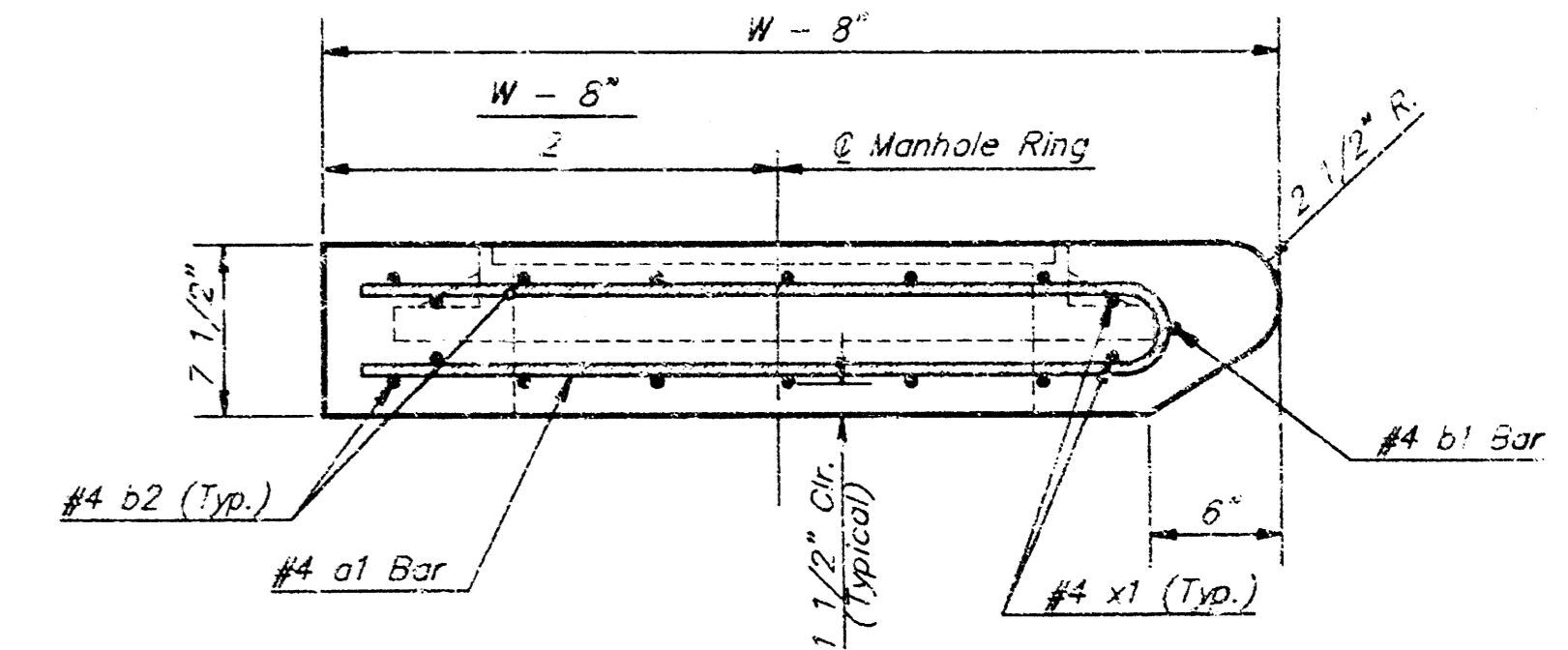
SECTION B-B



MANHOLE RING AND COVER

Weight = 180 Lbs.

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



SECTION A-A

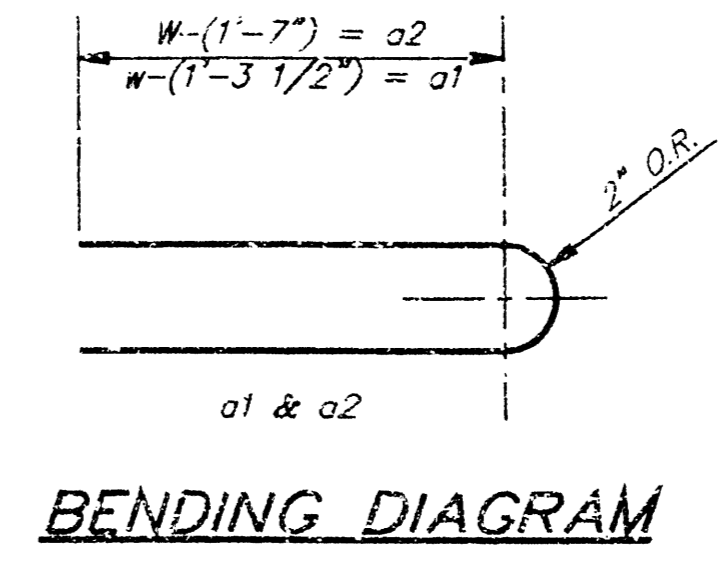
PRECAST SLAB AND FLOOR REINFORCING

| MARK | SIZE | W = 4'-4" |        | W = 5'-4" |        | W = 6'-4" |        | W = 7'-4" |        | W = 8'-4" |        |
|------|------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|
|      |      | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH |
| a1   | #4   | 6         | 8'-7"  | 6         | 8'-7"  | 6         | 10'-7" | 5         | 12'-7" | 6         | 14'-7" |
| a2   | #4   | 4         | 6'-0"  | 4         | 6'-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"  |
| x1   | #4   | 8         | 3'-10" | 8         | 4'-2"  | 8         | 4'-6"  | 8         | 4'-10" | 8         | 5'-2"  |

WALL REINFORCING

| MARK | SIZE | W = 4'-4" |        | W = 5'-4" |        | W = 6'-4" |        | W = 7'-4" |        | W = 8'-4" |        |
|------|------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|
|      |      | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH | NO.       | LENGTH |
| w1   | #4   | 1         | 6'-1"  | 1         | 6'-1"  | 1         | 6'-1"  | 1         | 6'-1"  | 1         | 6'-1"  |
| w2   | #4   | 1         | 4'-1"  | 1         | 5'-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 - 21') Rounded down to nearest 0.5'  
 ② H1 - 3'



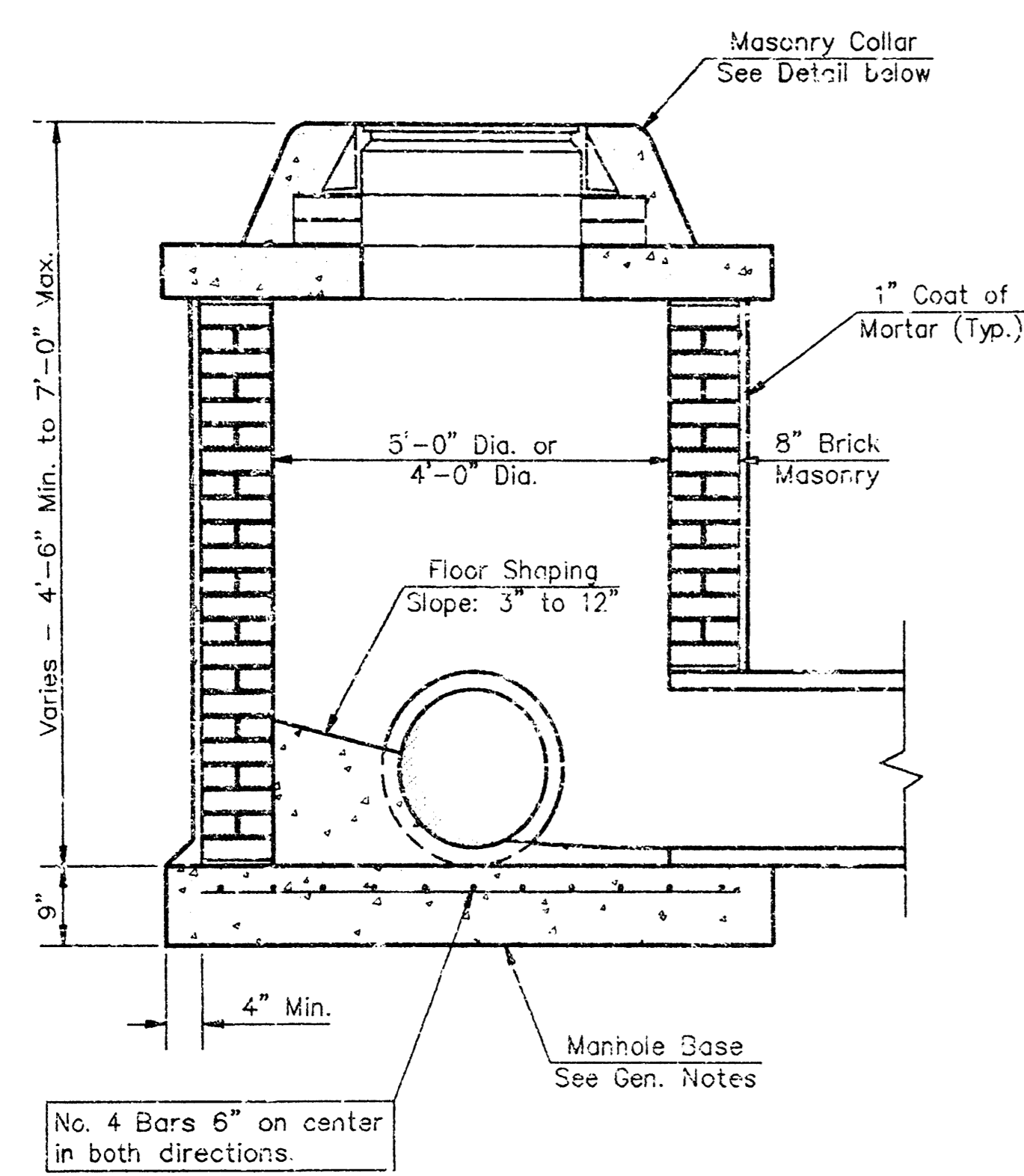
BENDING DIAGRAM

STANDARD CURB INLET PRECAST TOPS

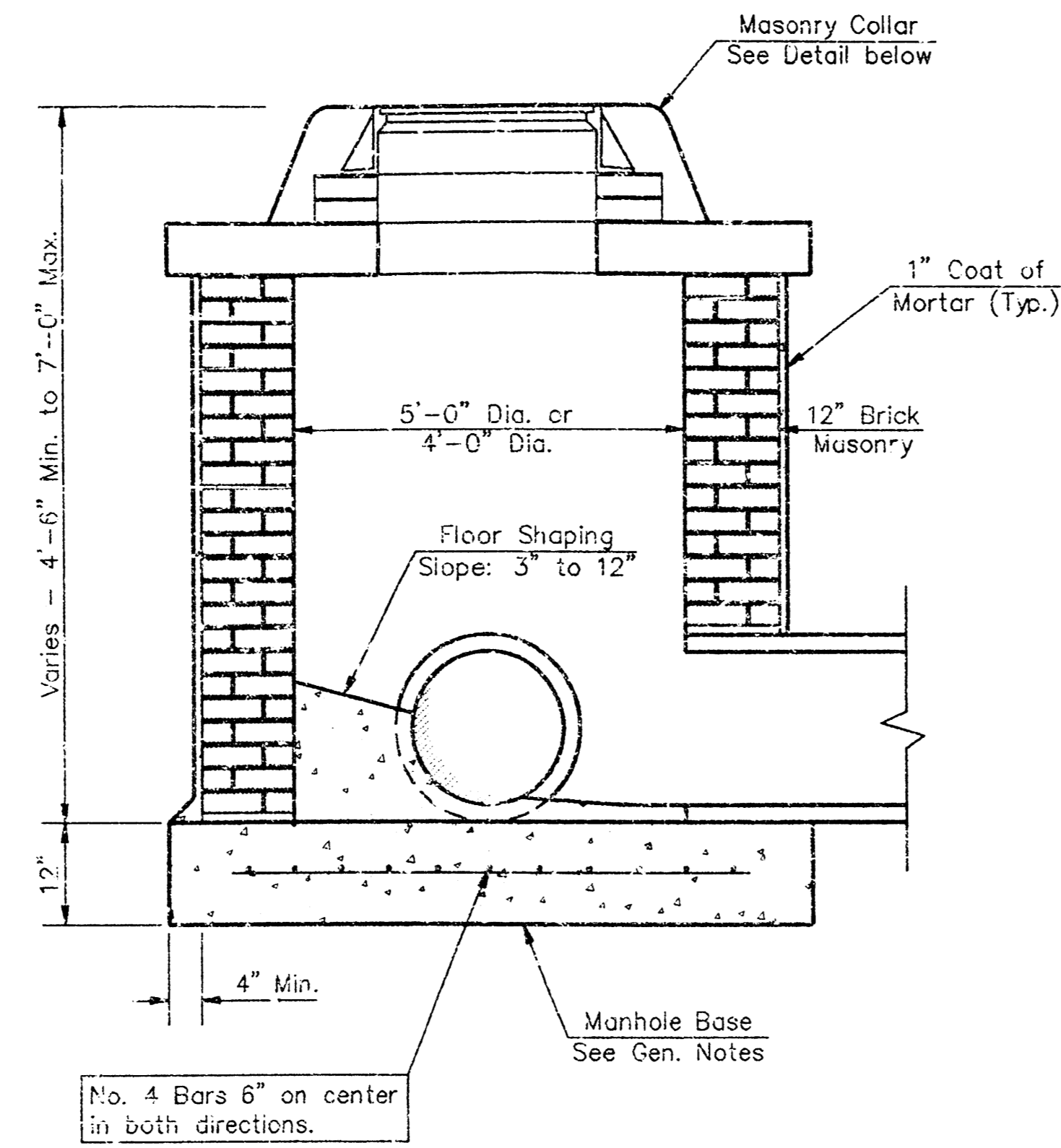
| W     | PRE-CAST TOP SIZE      | PIPE SIZE     | CU. YD. CONC. |
|-------|------------------------|---------------|---------------|
| 4'-4" | 3'-8" x 6'-4" x 7 1/2" | 21" & SMALLER | 0.32±         |
| 5'-4" | 4'-8" x 6'-4" x 7 1/2" | 24" & 30"     | 0.51±         |
| 6'-4" | 5'-8" x 6'-4" x 7 1/2" | 36" & 42"     | 0.64±         |
| 7'-4" | 6'-8" x 6'-4" x 7 1/2" | 48" & 54"     | 0.77±         |
| 8'-4" | 7'-8" x 6'-4" x 7 1/2" | 60" & 66"     | 0.90±         |

TYPE 1A INLET (LENGTH = 5.0')  
 CITY OF WICHITA, KANSAS

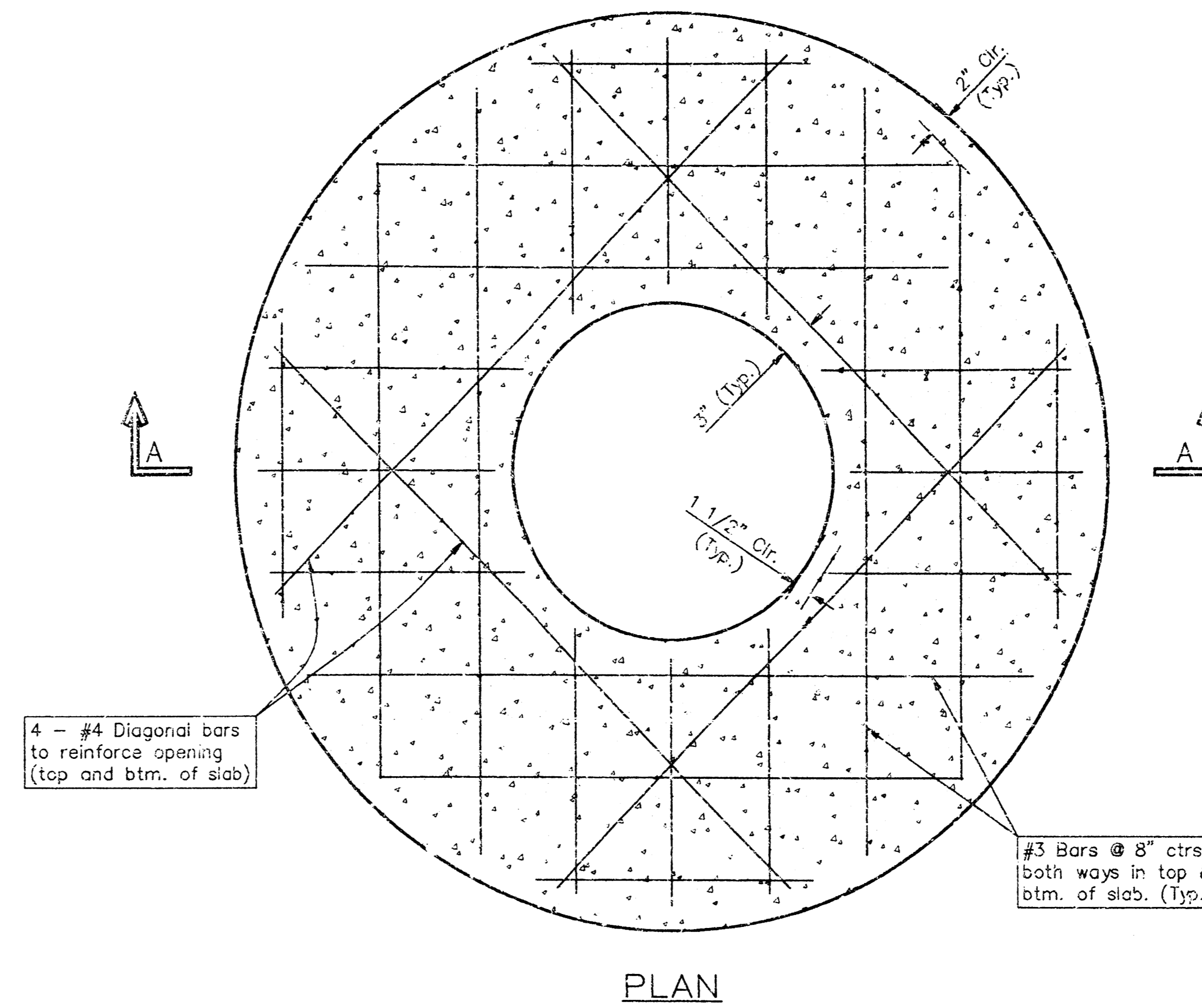
Revised - Feb. 15, 1989



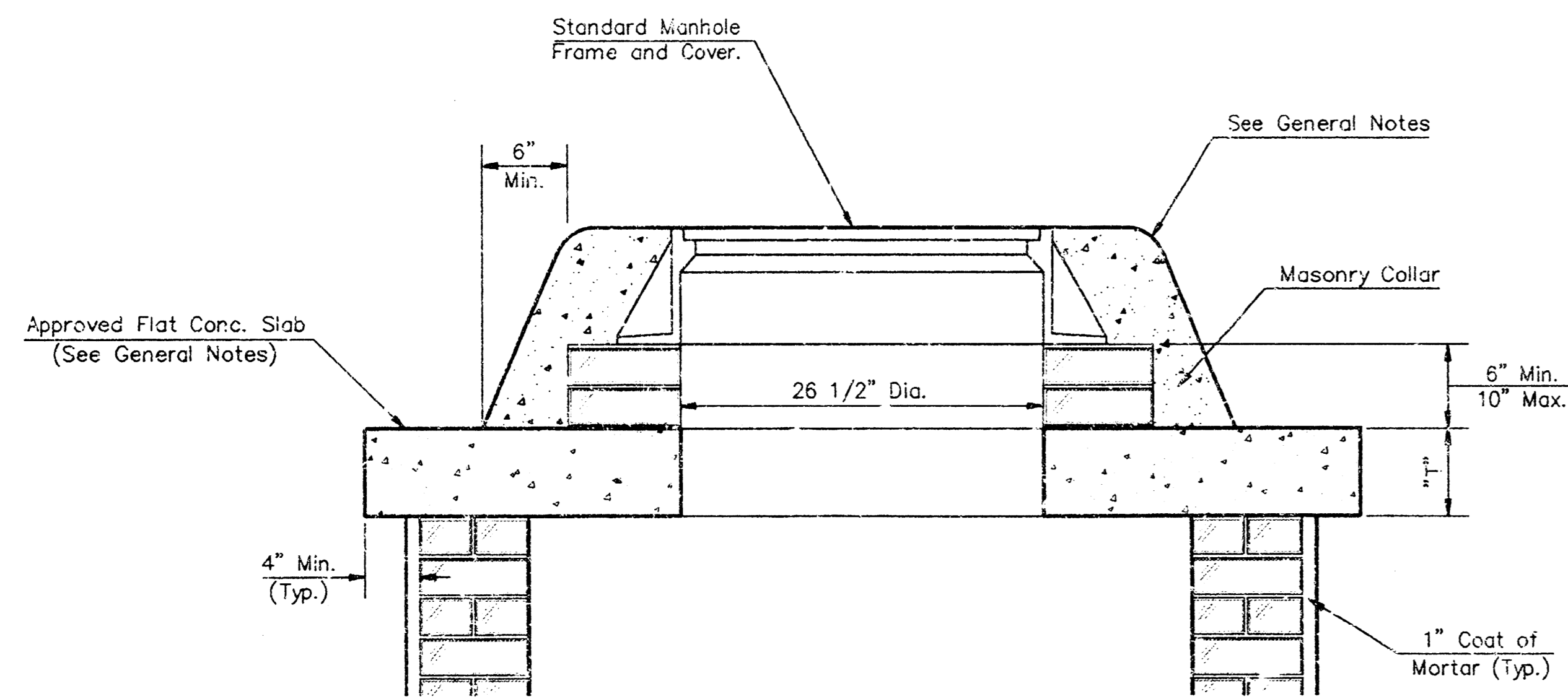
SHALLOW TYPE "A" MANHOLE



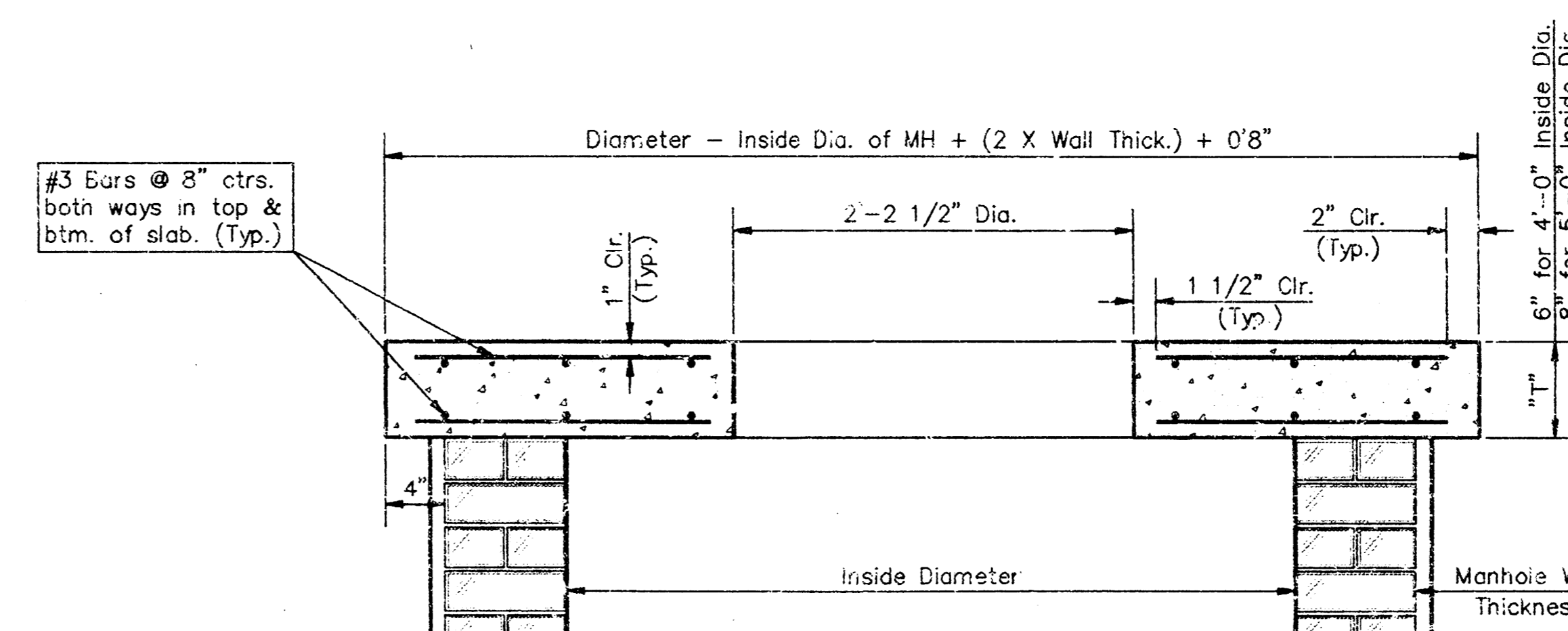
SHALLOW TYPE "B" MANHOLE



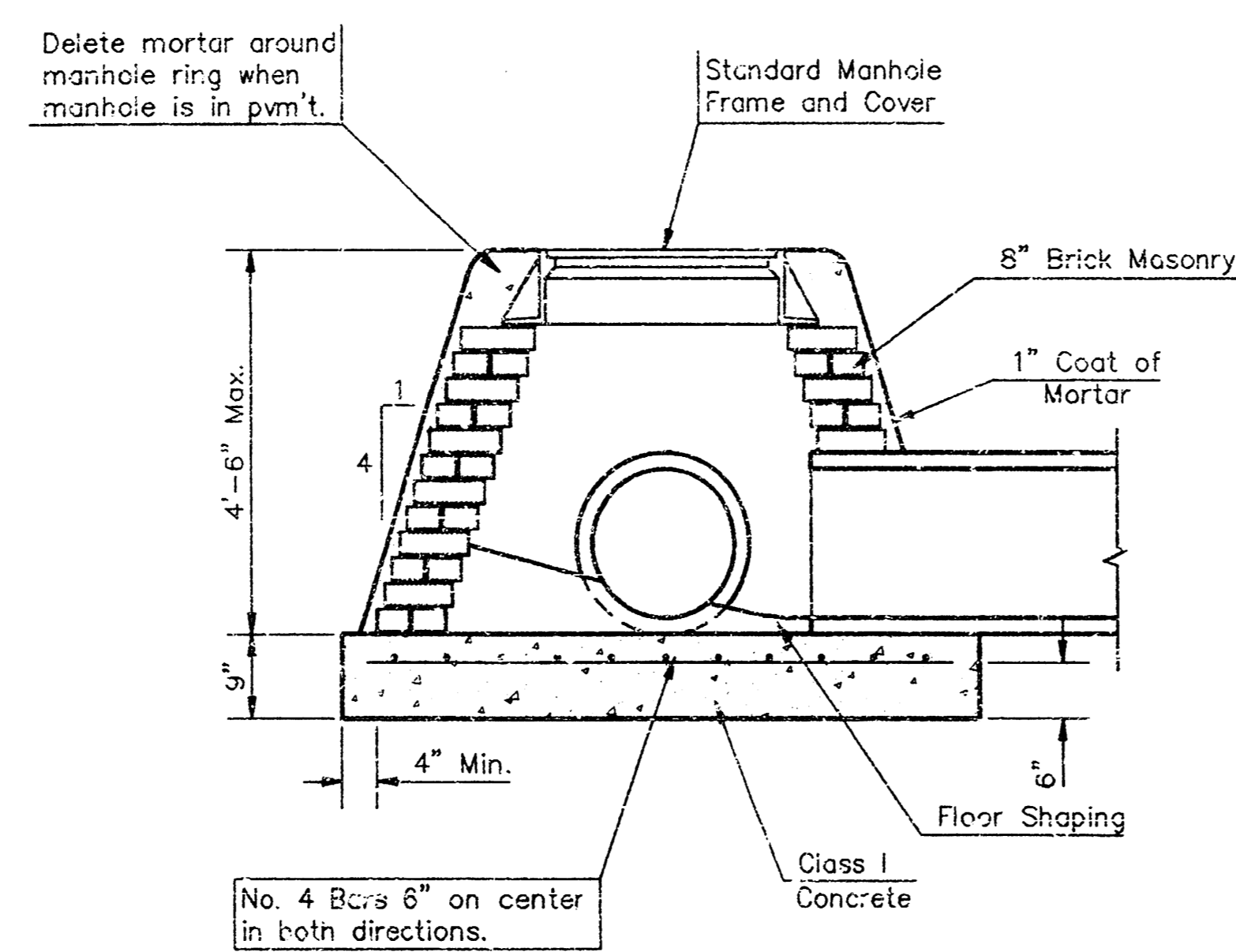
PLAN



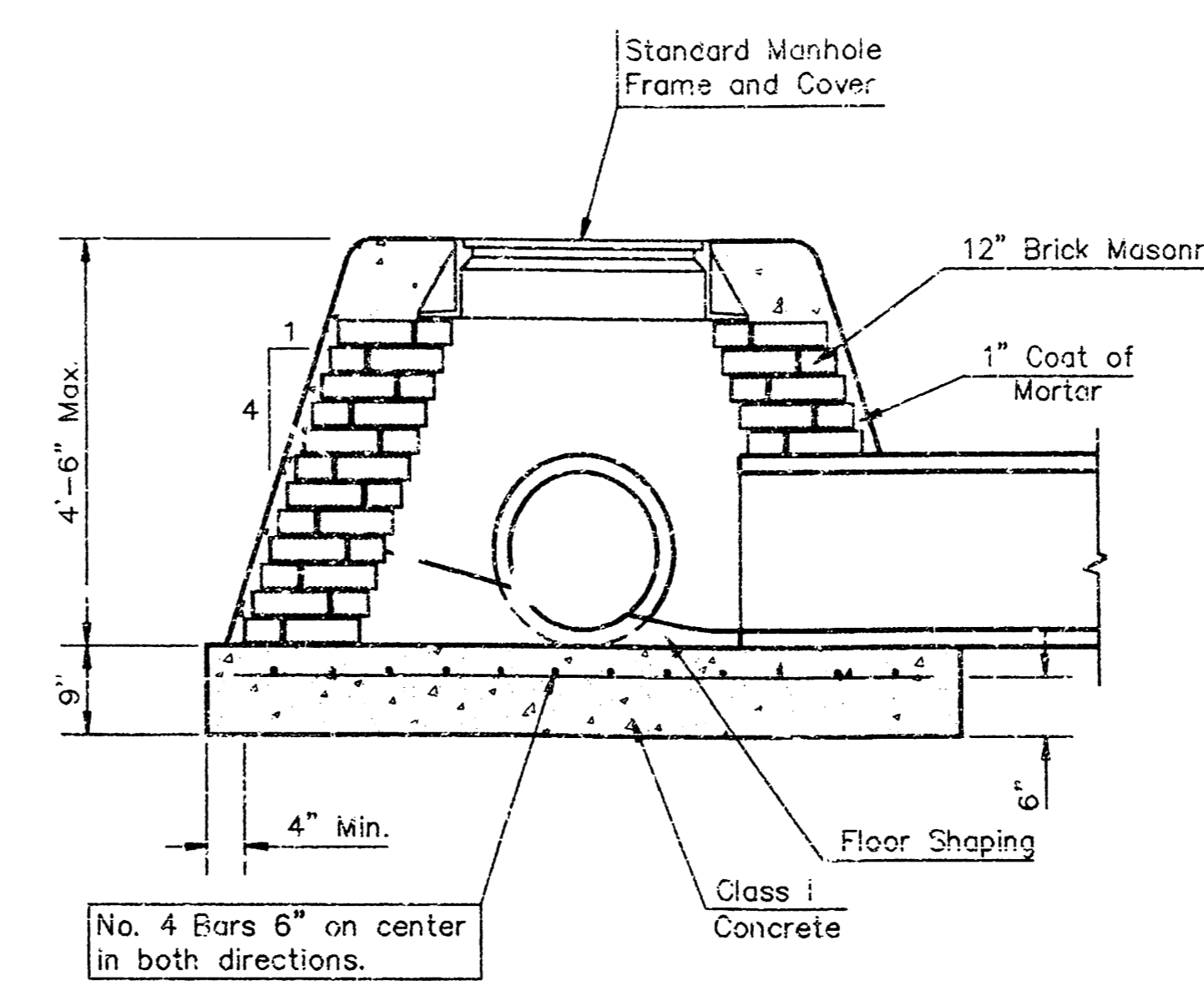
MASONRY COLLAR DETAIL



FLAT CONCRETE SLAB DETAILS



SPECIAL SHALLOW TYPE "A" MANHOLE



SPECIAL SHALLOW TYPE "B" MANHOLE

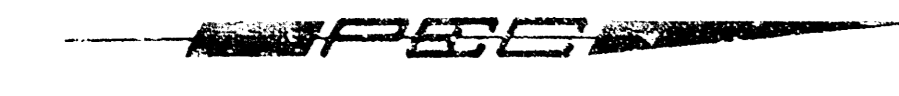
GENERAL NOTES

- Mortar used in masonry construction shall be Class I. Concrete used in manhole bases shall be Class I. Mortar shall be placed around the manhole ring as shown on the drawings when manholes are constructed in unpaved areas. Type "A" shallow manholes can be used on sewers when the manhole is not located within public street pavement. 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 manholes 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 6" 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.
- 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. 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 drawings.
- The crowns of inflowing pipes shall never be set lower than the crown of the outflowing pipe.
- Standard shallow manholes type "A" and "B" shall be paid for at the unit price bid per each for the type and diameter indicated. Standard special shallow manholes type "A" and "B" shall be paid for at the unit price bid per each for the type indicated. All standard shallow manhole diameters will be 4' unless indicated otherwise.
- All brick used in manhole construction shall meet Grade SW of ASTM C652 or C62-87.

| SHALLOW MANHOLE DETAIL |  |  |  |  |  | REVISED |
|------------------------|--|--|--|--|--|---------|
|                        |  |  |  |  |  | 7       |
|                        |  |  |  |  |  | 8       |
|                        |  |  |  |  |  |         |

# STONEBOROUGH

AN ADDITION TO WICHITA,  
SEDGWICK COUNTY, KANSAS

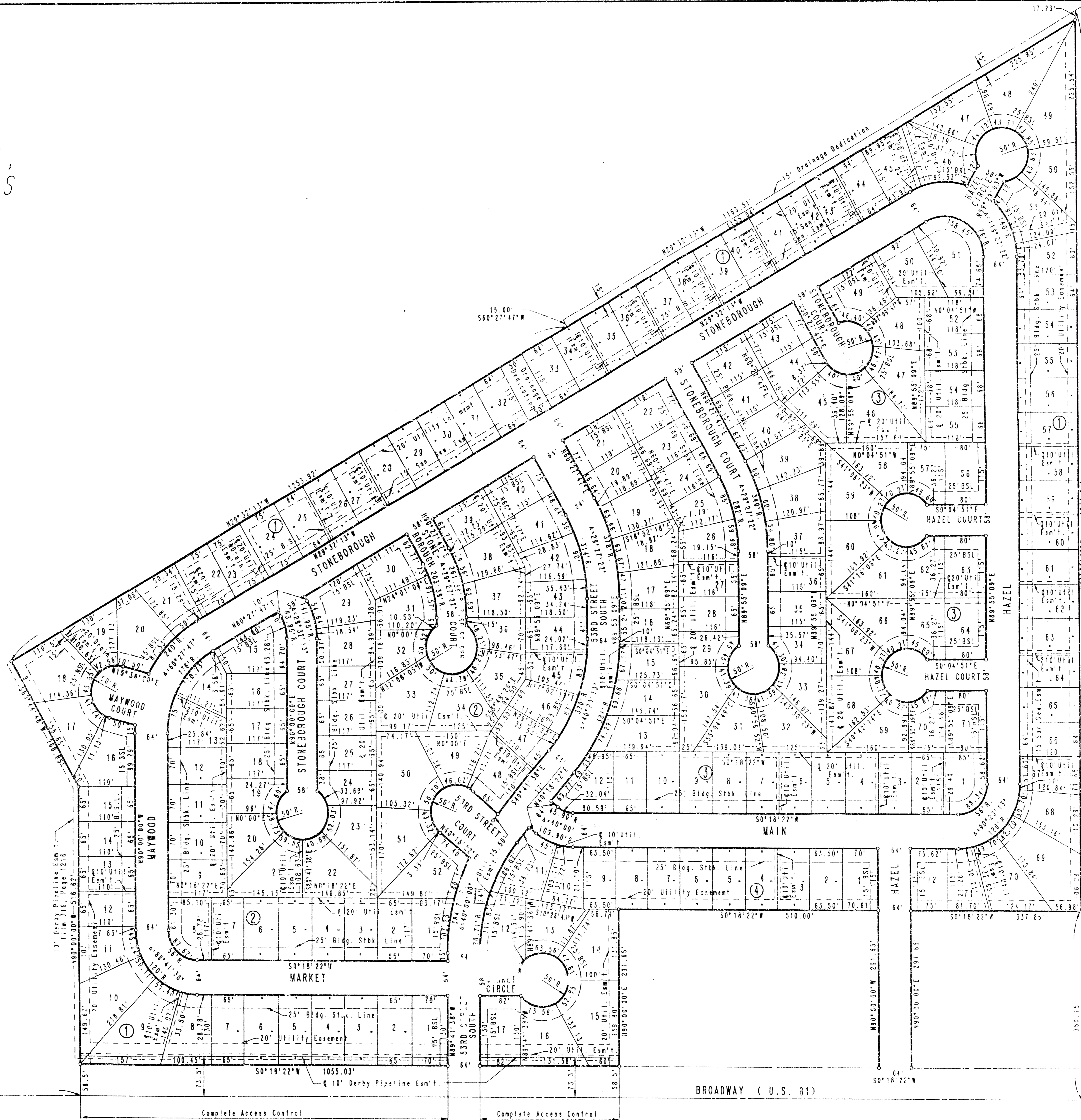


SCALE: 1"=100'  
 O = SET IRON  
 B.S.L. = BUILDING SETBACK LINE

B.M. - CITY OF WICHITA BENCH MARK DISC 41' EAST AND  
 57' SOUTH OF THE INTERSECTION OF THE  
 CENTERLINES OF BROADWAY AND 55TH STREET  
 SOUTH.  
 ELEV. +83.575 CITY DATUM  
 ELEV. +1270.975 U.S.L.

MINIMUM PAD ELEVATION AS FOLLOWS:  
 (LOWEST OPENING)  
 1.00' THROUGH 56' BLOCK 1  
 84.2 CITY DATUM OR 1271.6 U.S.L.

55TH STREET SOUTH



S.E. CORNER S.E. 1/4  
 SEC. 20, T28S, R1E  
 OF THE 6TH P.M.

679.66'

Complete Access Control

Complete Access Control

BROADWAY ( U.S. 81 )

POINT OF BEGINNING

N. CORNER S.E. 1/4  
 SEC. 20, T28S, R1E  
 OF THE 6TH P.M.

30