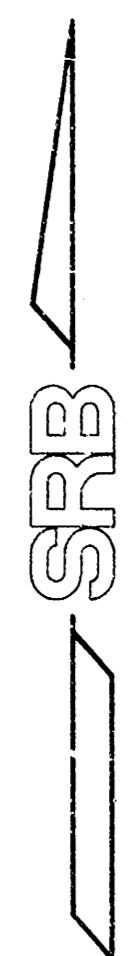
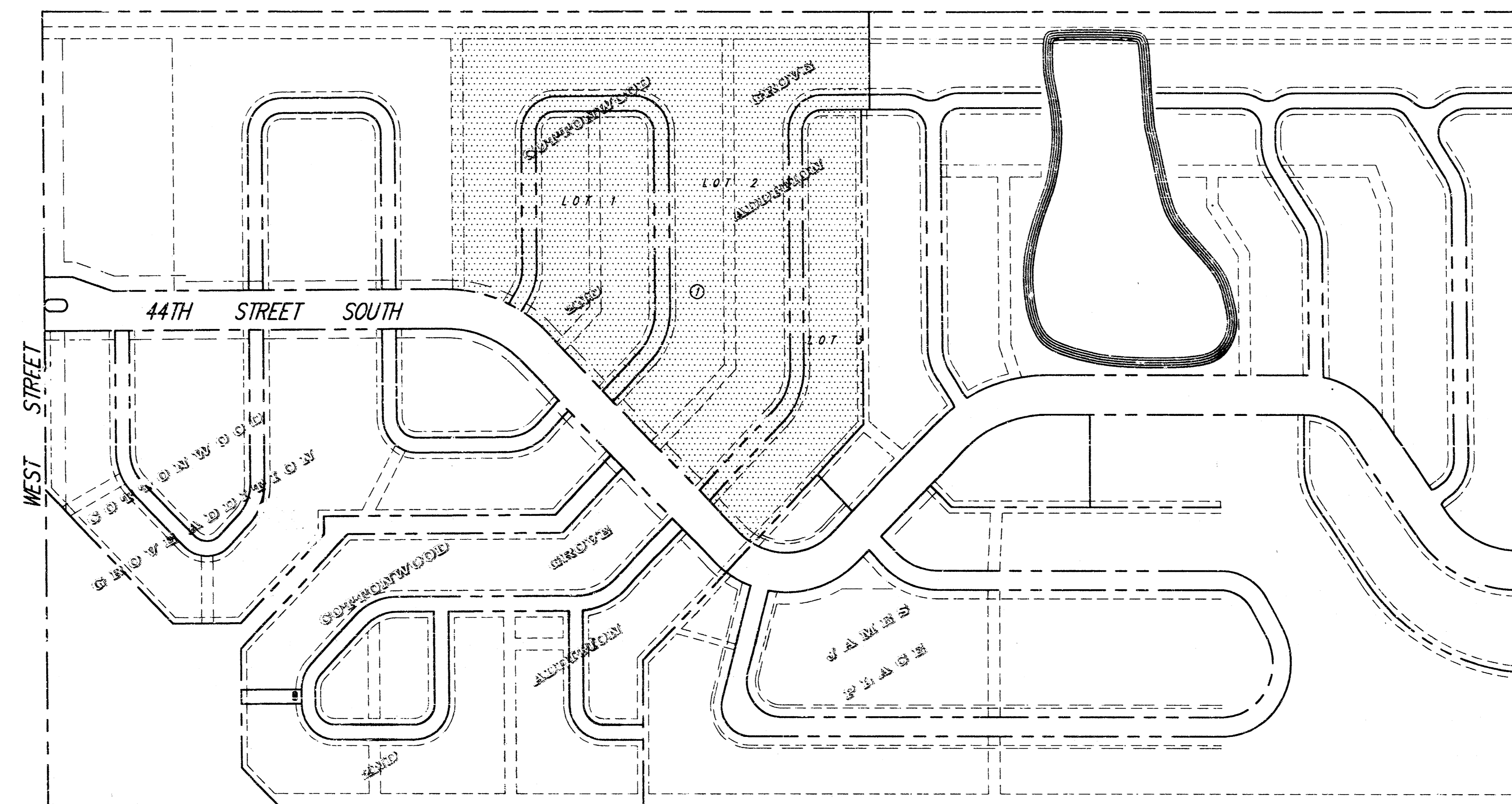


Lewis Blackwell

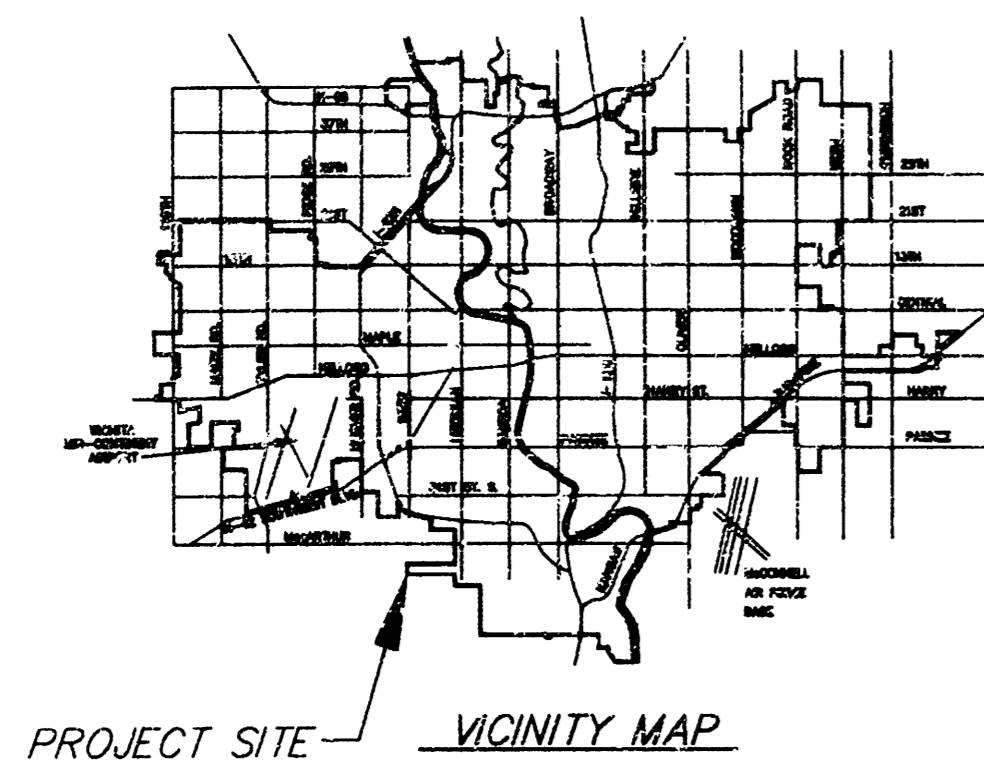
SITE DEVELOPMENT PLANS

COTTONWOOD GROVE 2ND ADDITION - PHASE 2

INCLUDING PRIVATE STORM SEWER #717 PPS (607861)



Scale 1" = 150'



INDEX OF SHEETS

1. TITLE SHEET
2. ~~STORM SEWER PLAN~~
3. ~~STORM SEWER PLAN~~
4. ~~STORM SEWER PLAN~~
5. STORM SEWER PLAN
6. SITE DETAILS
7. CONCRETE GUTTER INLET DETAIL
8. SHALLOW TYPE "P" MANHOLE DETAIL

BENCH MARKS

- * □ * CUT ON TOP OF S. CURB 44TH ST. S.
- ⊙ E. END OF CURVE ON N. SIDE OF LOT 3, BLOCK 2 COTTONWOOD GROVE ADDITION; ELEV. 95.40
- * □ * CUT ON TOP OF HUBGUARD
- ⊙ CENTER OF E. GUARDRAIL OF RCBC ON WEST ST. S. OF 44TH ST.; ELEV. 94.19

BOOKED
6-2-00
MCS
D-461

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

Sanitary Sewers _____

Storm Sewers VRH 5/27/97

Driveway Approaches _____

Water Mains _____

Paving _____

NOTE TO CONTRACTORS

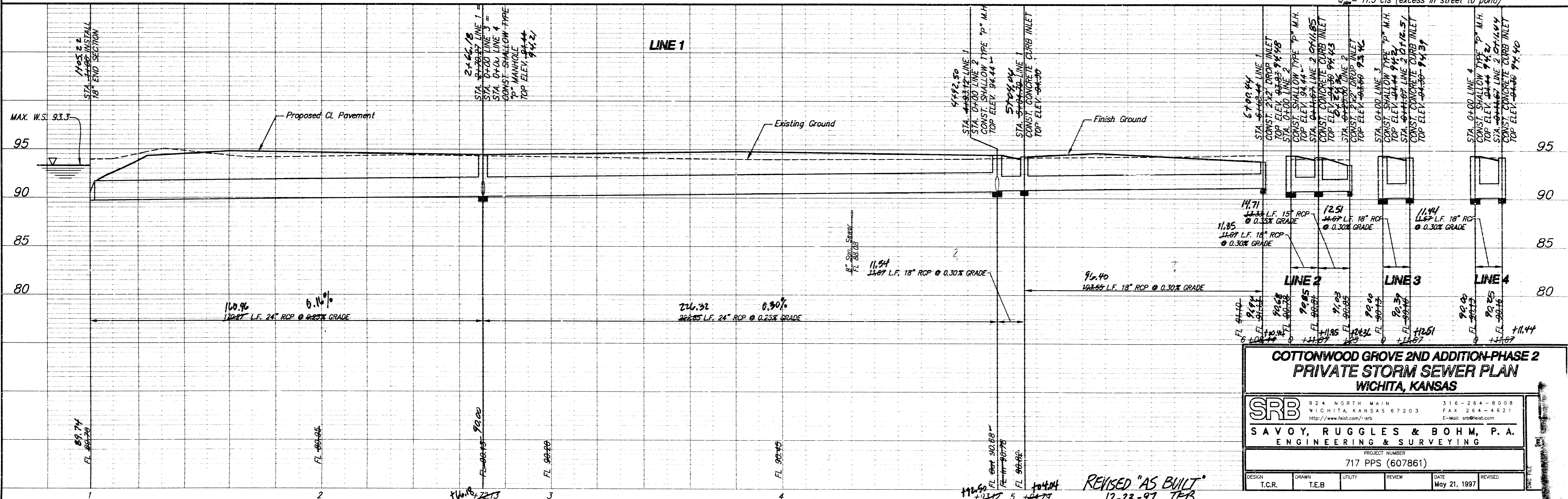
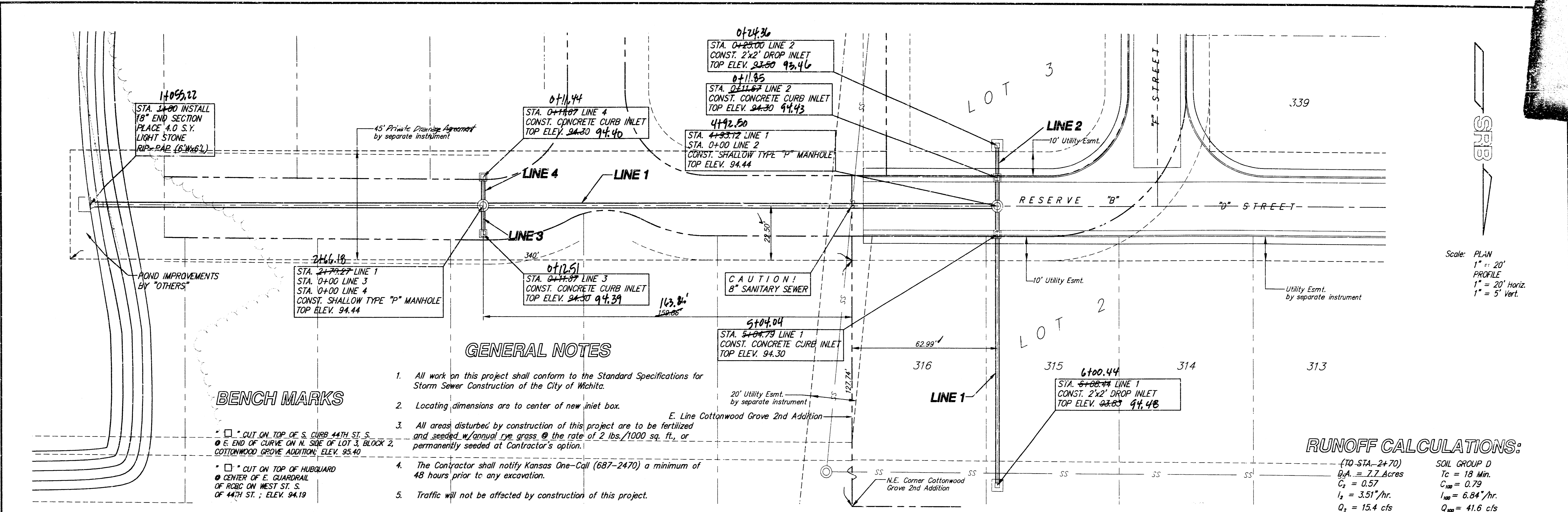
Inspection and testing for this project are to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No 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.



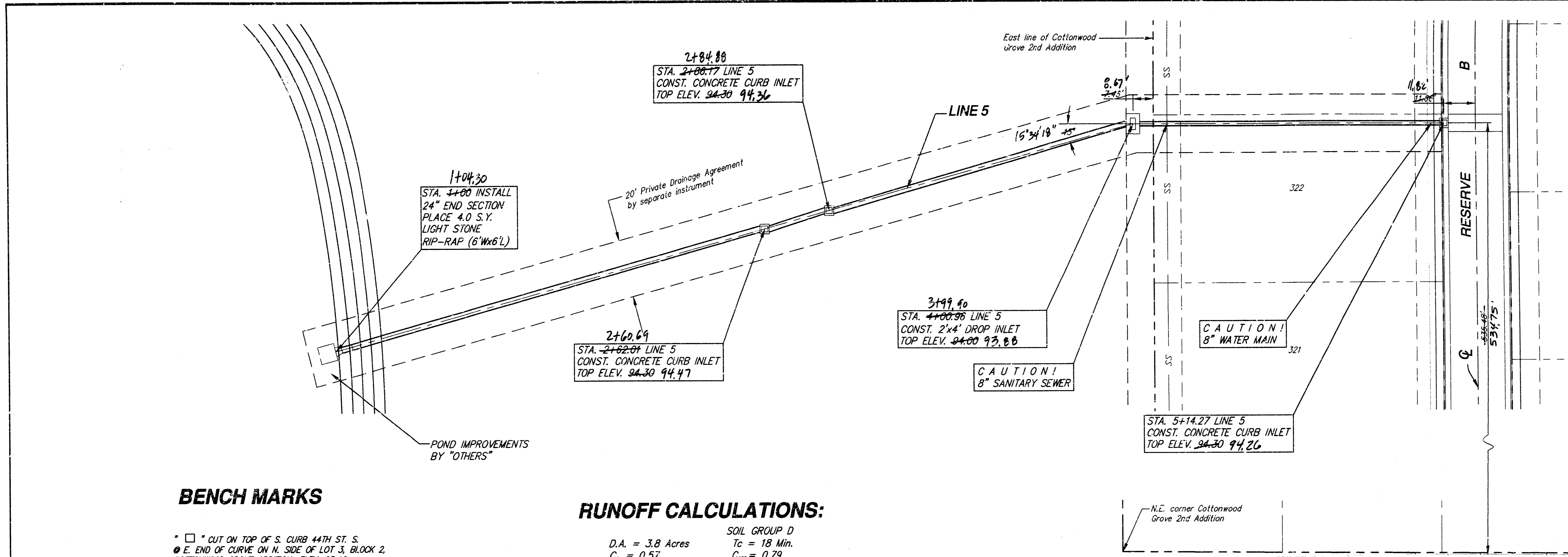
REVISED "AS BUILT" 12-23-97 TEB

SRB 924 NORTH MAIN 316-264-800
WICHITA, KANSAS 67203 FAX 264-462

SAVOY, RUGGLES & BOHM, P.
ENGINEERING & SURVEYING



F:\Active Projects\Tim Brooks\9602\Cottonwood Grove 2nd - Phase 2\Draw 1 - May 21, 97.dwg 30 1997 TEB



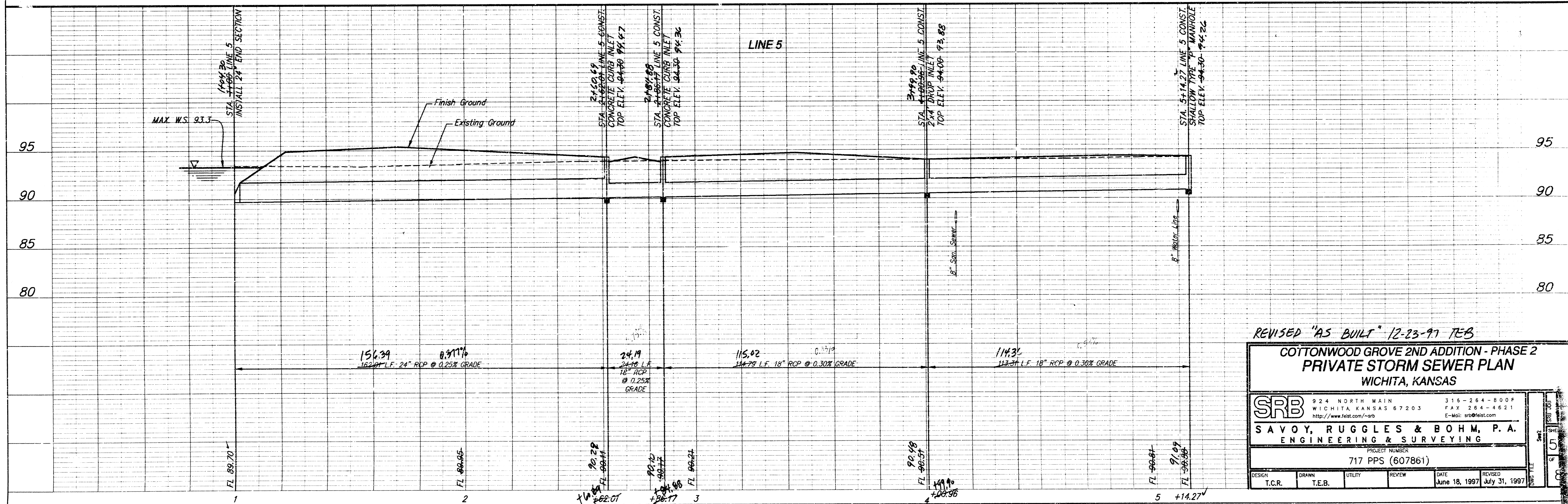
Scale: PLAN
 1" = 20'
 PROFILE
 1" = 20' Horiz.
 1" = 5' Vert.

BENCH MARKS

- * □ CUT ON TOP OF S. CURB 44TH ST. S.
- E. END OF CURVE ON N. SIDE OF LOT 3, BLOCK 2, COTTONWOOD GROVE ADDITION; ELEV. 95.40
- * □ CUT ON TOP OF HUBGUARD
- CENTER OF E. GUARDRAIL OF R.O.B. ON WEST ST. S. OF 44TH ST.; ELEV. 94.19

RUNOFF CALCULATIONS:

SOIL GROUP D
 D.A. = 3.8 Acres $T_c = 18$ Min.
 $C_2 = 0.57$ $C_{100} = 0.79$
 $I_s = 3.51$ /hr. $I_{100} = 6.84$ /hr.
 $Q_s = 7.6$ cfs $Q_{100} = 20.5$ cfs
 $Q_{avg} = 11.3$ cfs



REVISED "AS BUILT" 12-23-97 TEB

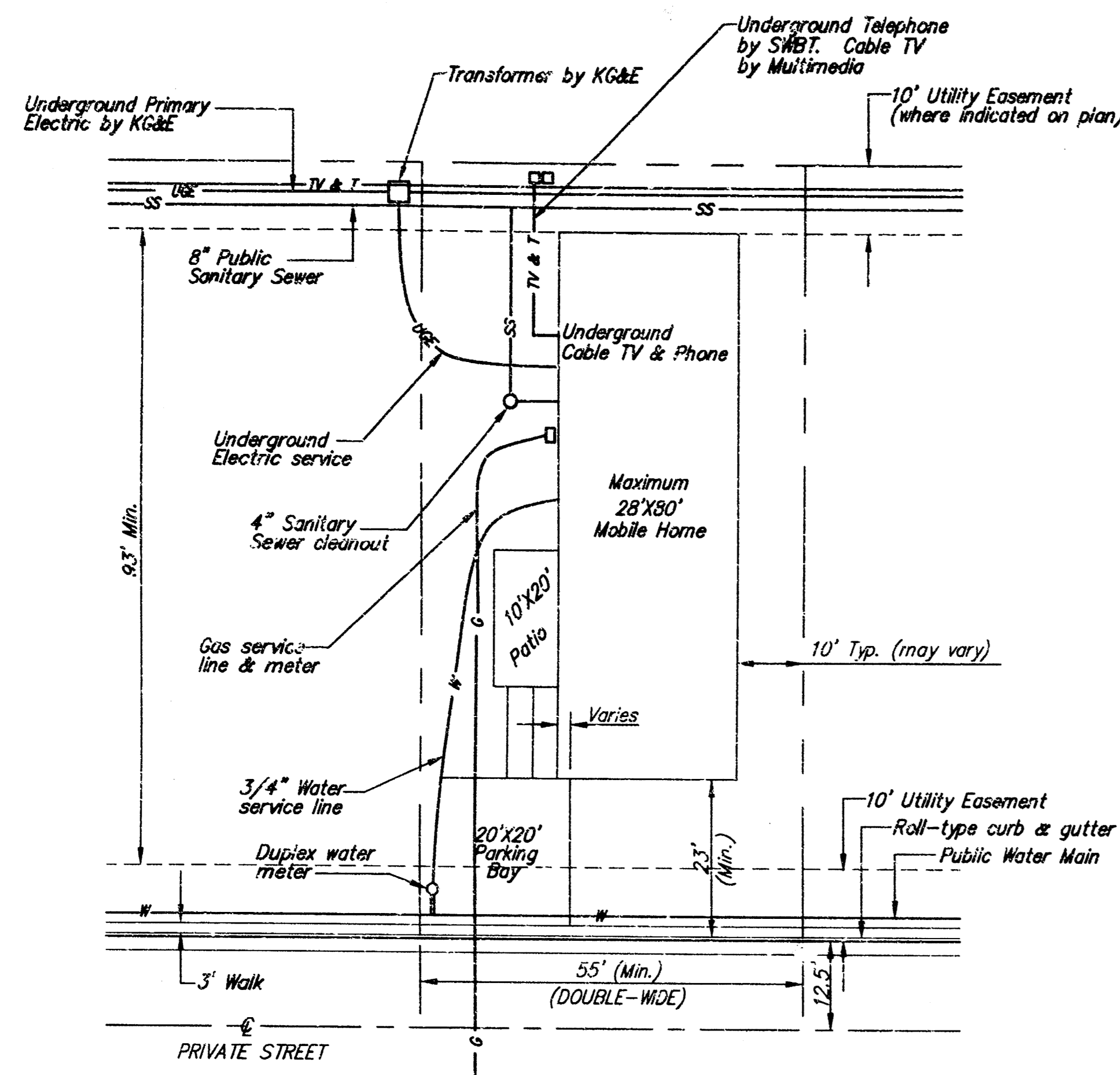
**COTTONWOOD GROVE 2ND ADDITION - PHASE 2
 PRIVATE STORM SEWER PLAN
 WICHITA, KANSAS**

SRB 924 NORTH MAIN 315-264-800P
 WICHITA, KANSAS 67203 FAX 264-4621
<http://www.feb.com/~srb> E-Mail: srb@feb.com

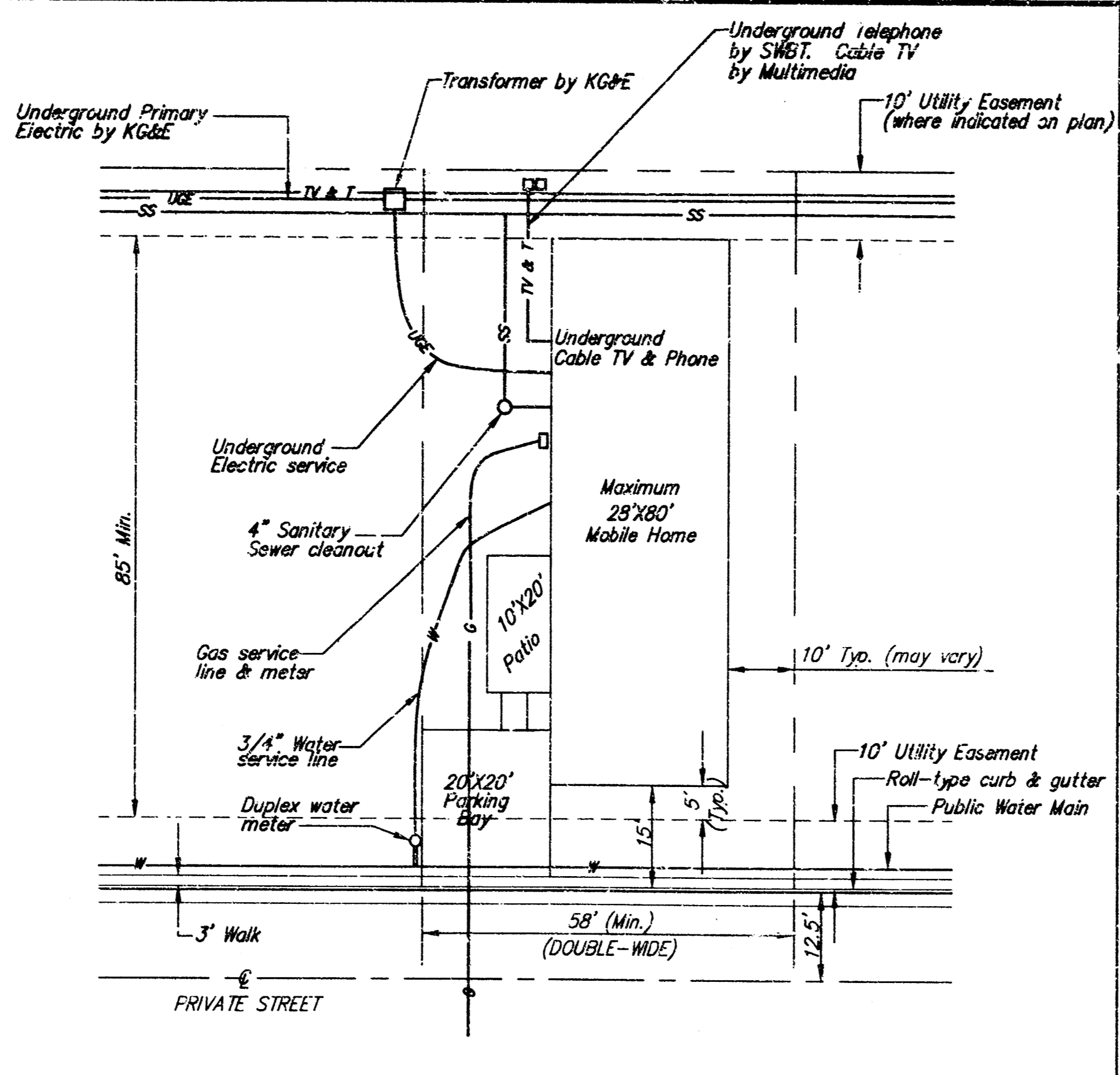
**SAVOY, RUGGLES & BOHM, P.A.
 ENGINEERING & SURVEYING**

PROJECT NUMBER
 717 PPS (607861)

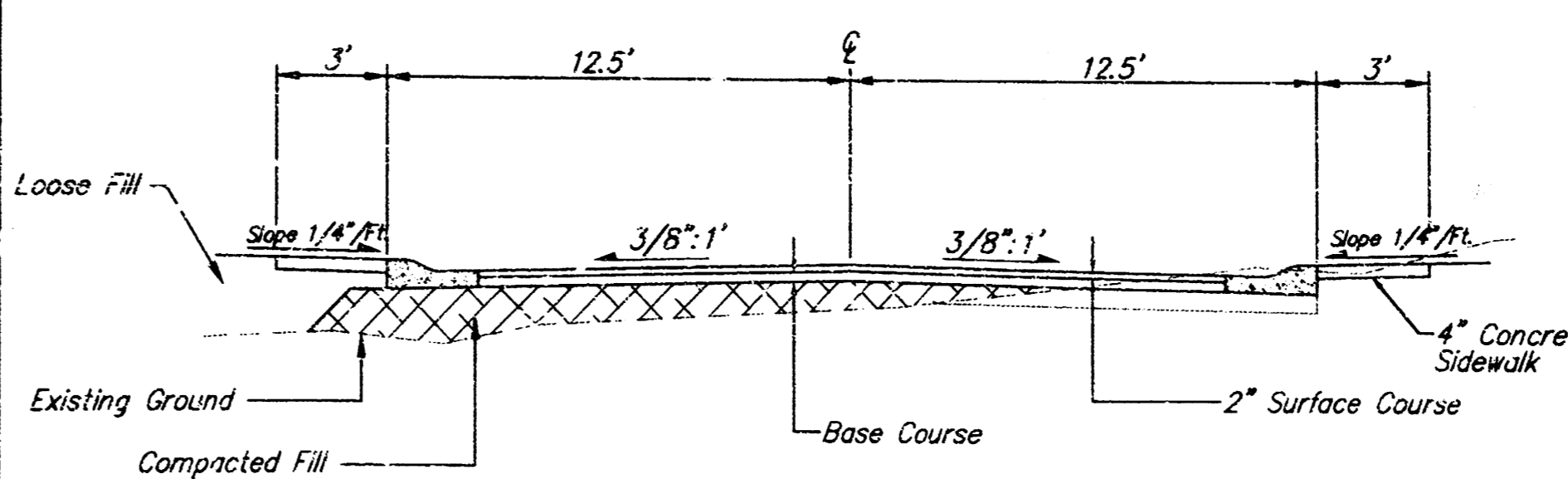
| | | | | | |
|--------|--------|---------|--------|---------------|---------------|
| DESIGN | DRAWN | UTILITY | REVIEW | DATE | REVISED |
| T.C.R. | T.E.B. | | | June 18, 1997 | July 31, 1997 |



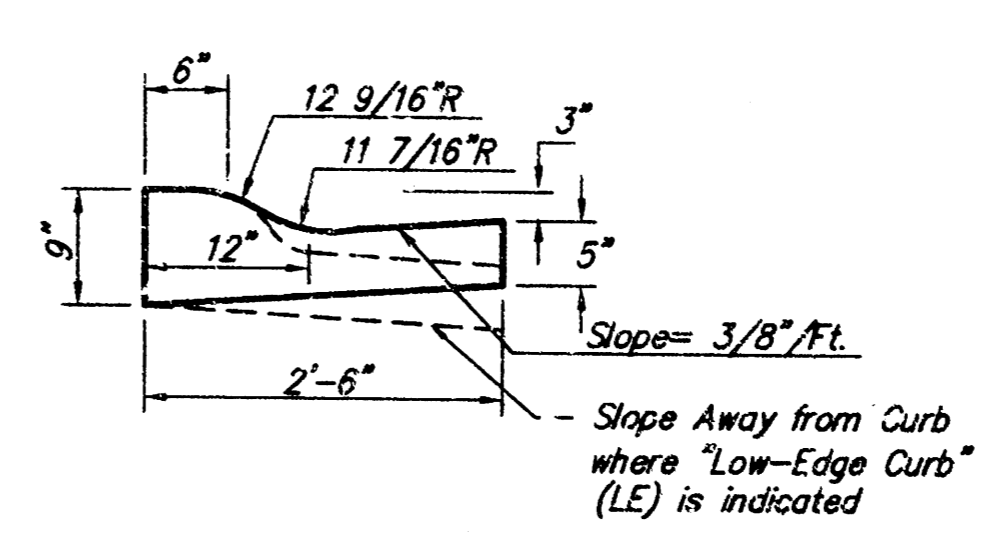
ALTERNATE MOBILE HOME LAYOUT



TYPICAL MOBILE HOME LAYOUT



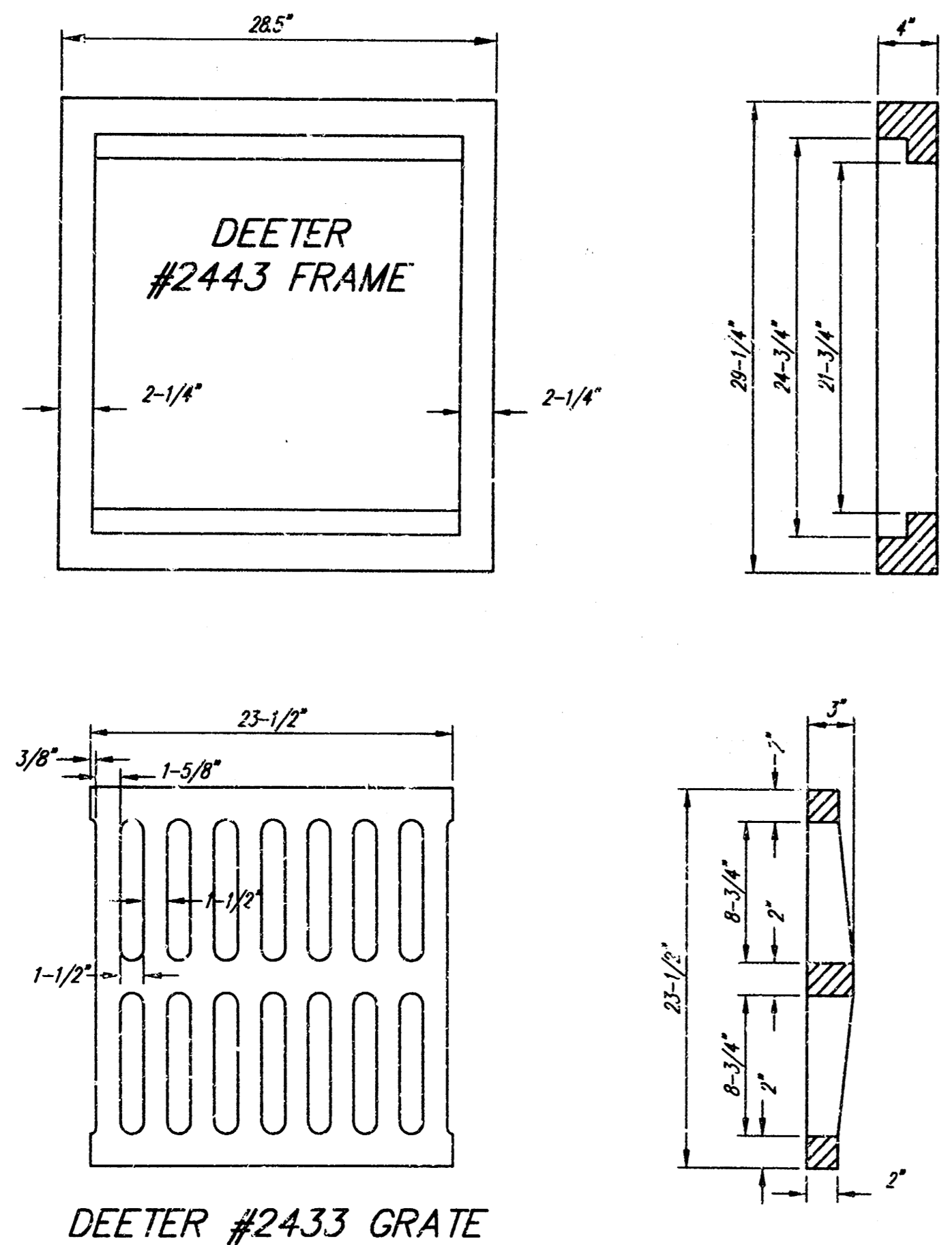
TYPICAL PAVEMENT SECTION



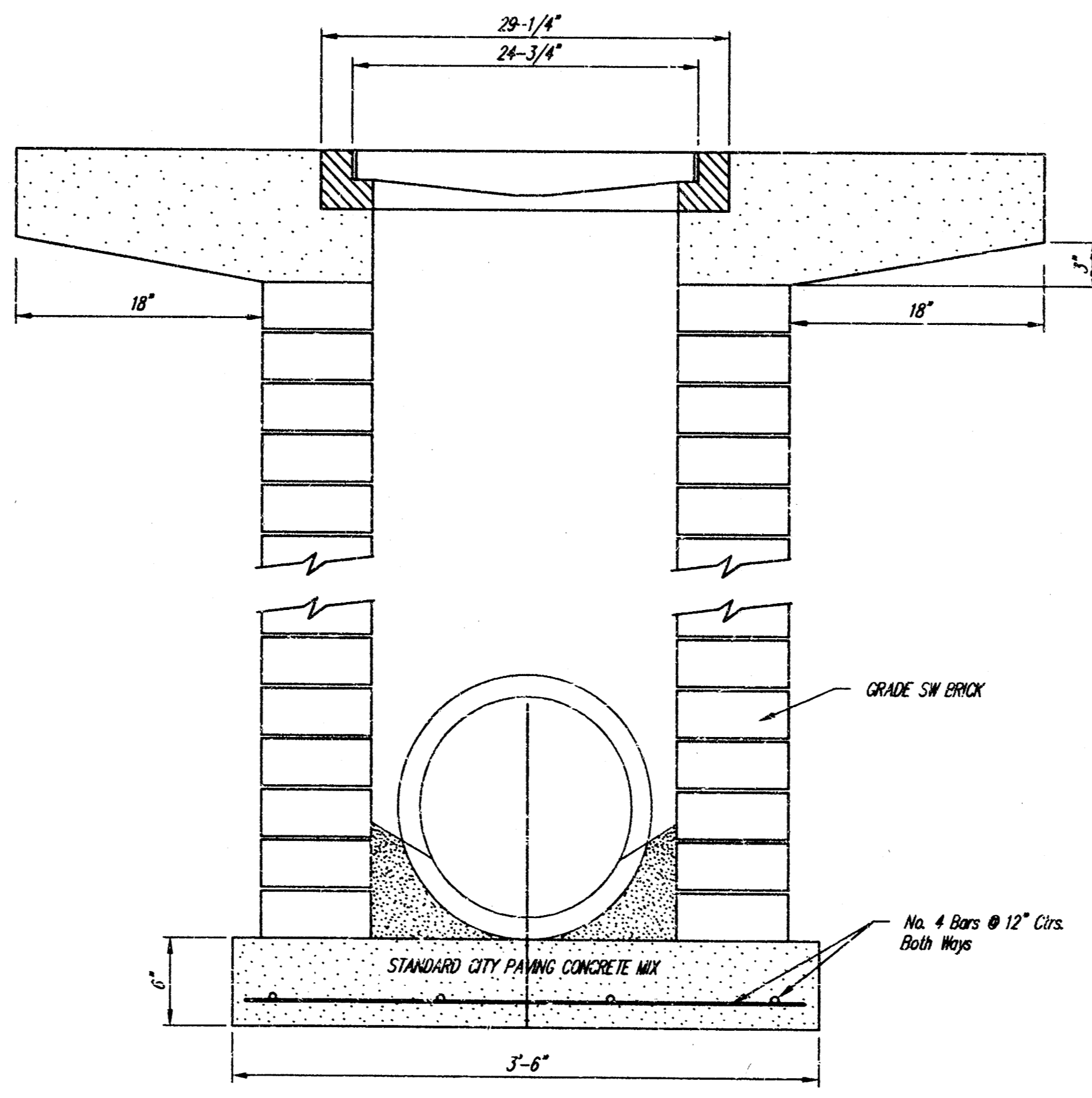
COMBINED ROLL TYPE CURB & GUTTER (3 5/8")

GENERAL NOTES:

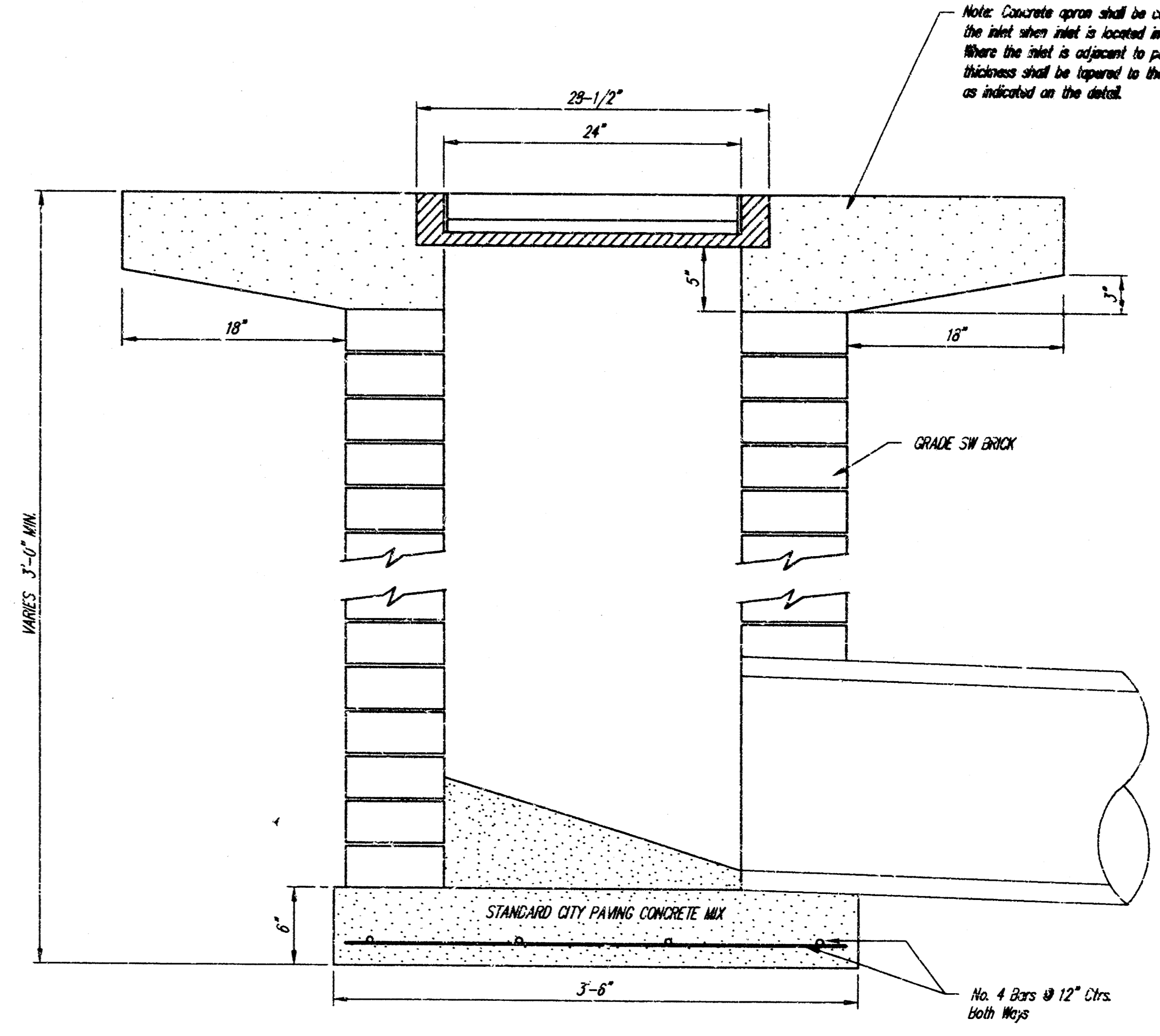
1. The contractor shall be required to construct 8" brick masonry walls between the concrete inlet base and top on this inlet when W=6'-4" or less and H=7'-0" or less. When W is greater than 6'-4" and H is less than 7'-0" the outside inlet walls below the brick stack shall be reinforced concrete construction and the center wall shall be of masonry construction as shown for the masonry wall option.
2. Inlet invert shall be shaped with a 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.
3. 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.
4. 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.
5. The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.



24" x 24" Frame and Grate Detail



2'x2' DROP INLET DETAIL



Note: Concrete apron shall be constructed around the inlet when inlet is located in an unimproved area. Where the inlet is adjacent to pavement, the pavement thickness shall be tapered to the inlet in 18 inches as indicated on the detail.

**COTTONWOOD GROVE 2ND ADDITION - PHASE 2
UTILITY & PAVEMENT DETAILS
WICHITA, KANSAS**

SRB 924 NORTH MAIN 316-264-8008
WICHITA, KANSAS 67203 FAX 264-4621
http://www.raist.com/~srb E-mail: srb@raist.com

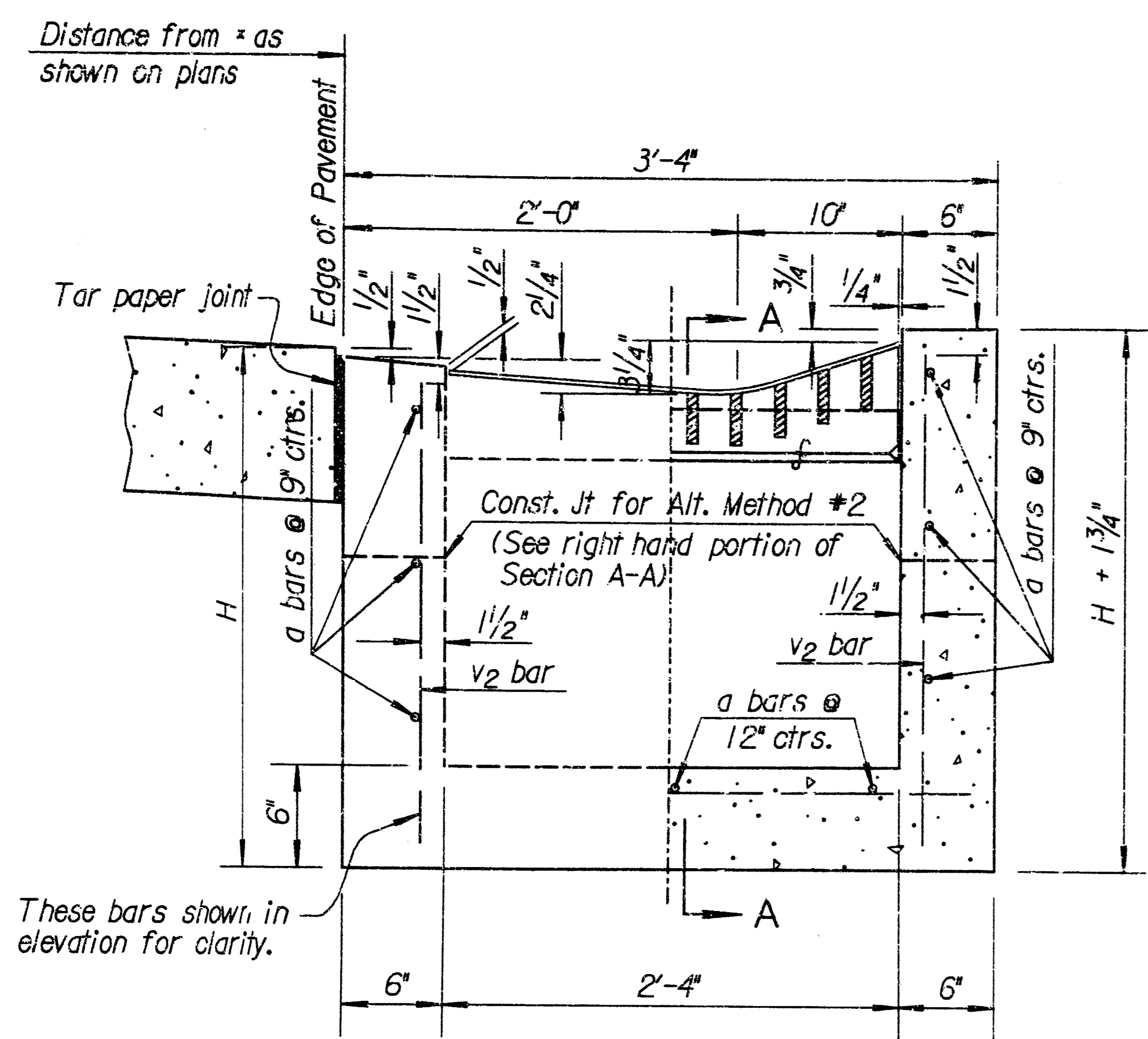
SAVOY, RUGGLES & BOHM, P.A.
ENGINEERING & SURVEYING

PROJECT NUMBER

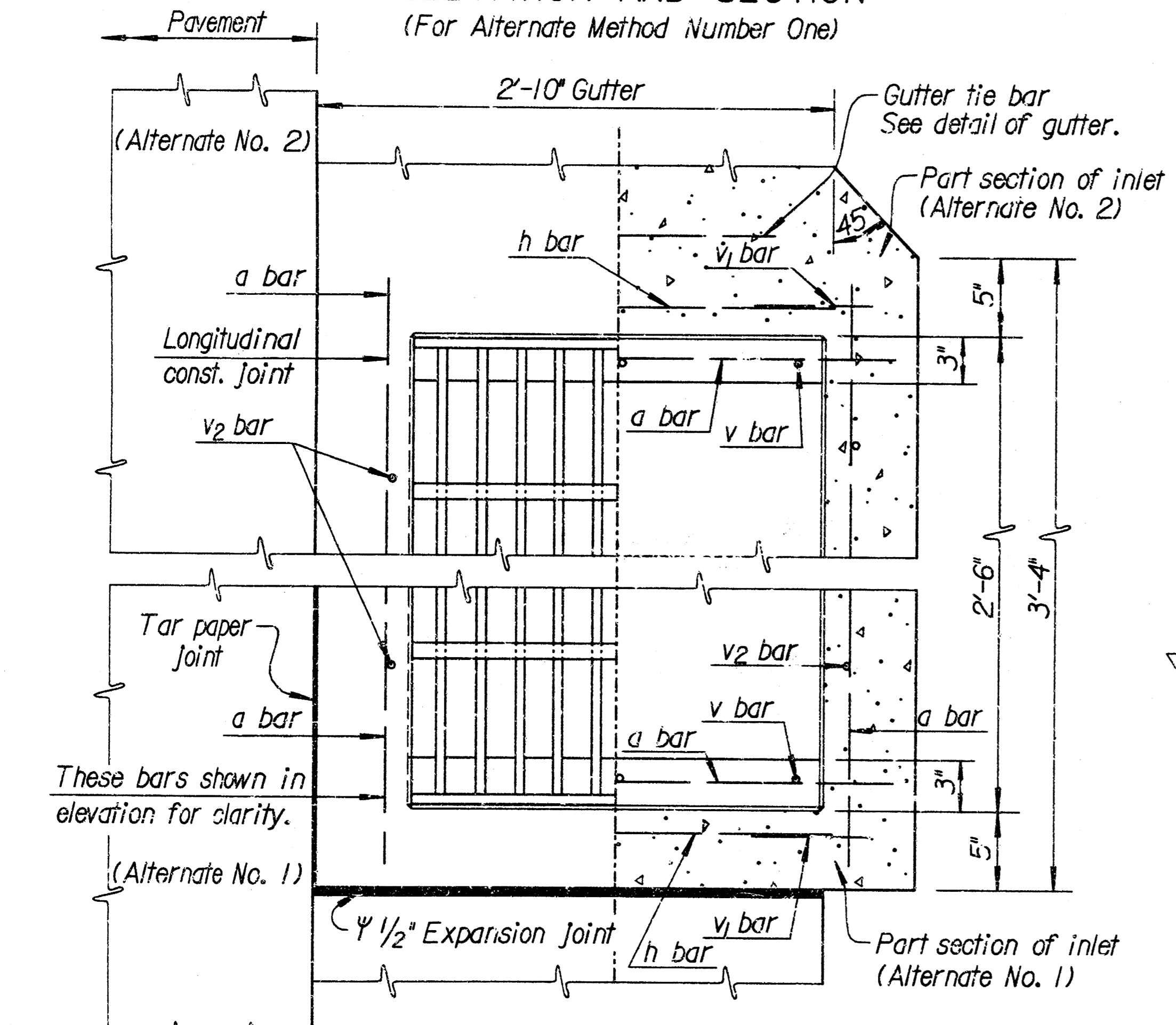
| | | | | | | | |
|--------|--------|-------|--------|---------|--------|--------------|---------|
| DESIGN | T.C.R. | DRAWN | T.E.B. | UTILITY | REVIEW | DATE | REVISED |
| | | | | | | May 21, 1997 | |

SWS PROJ. #717 PPS (607861)

| | | | | | |
|-----------------|--------|-------------|------|-----------|--------------|
| FHWA REGION NO. | STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
| 7 | KANSAS | | 19 | 7 | 8 |

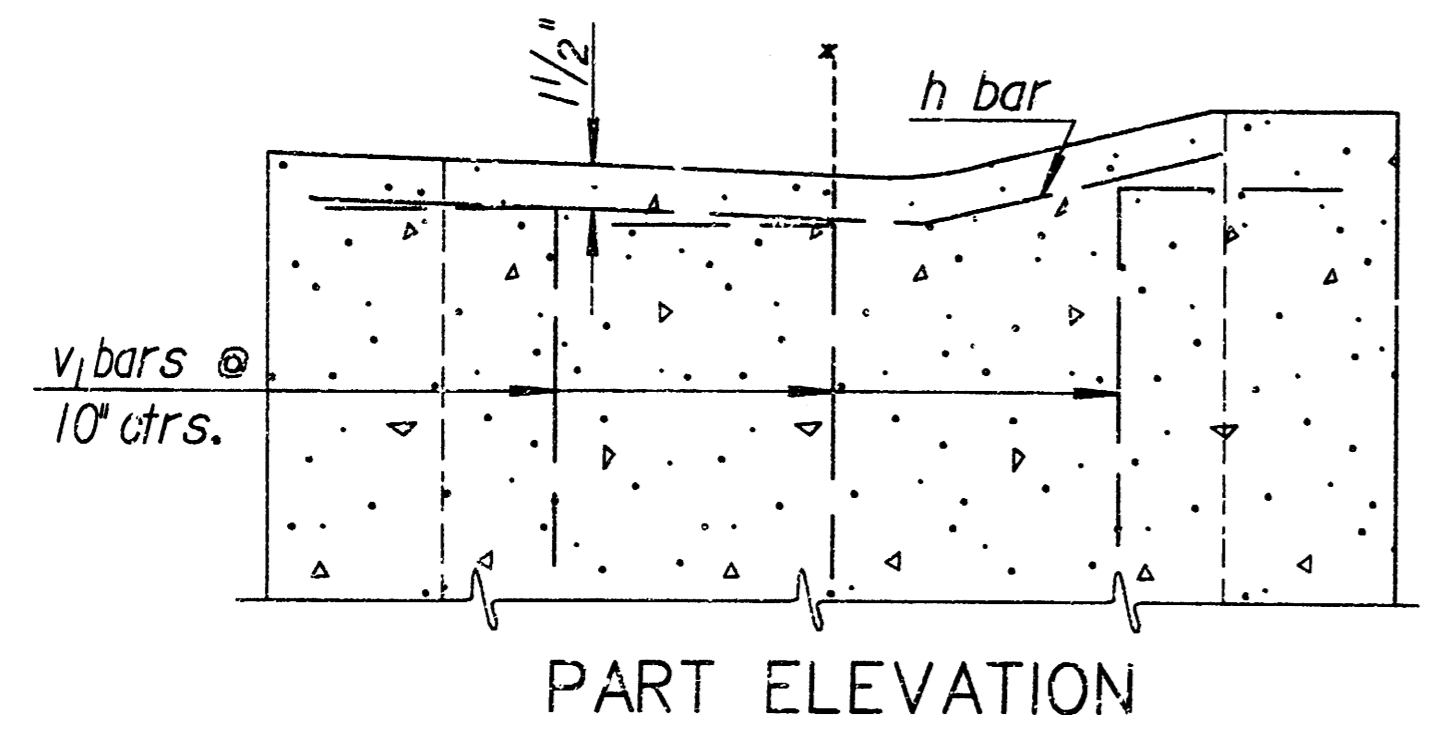


ELEVATION AND SECTION
(For Alternate Method Number One)

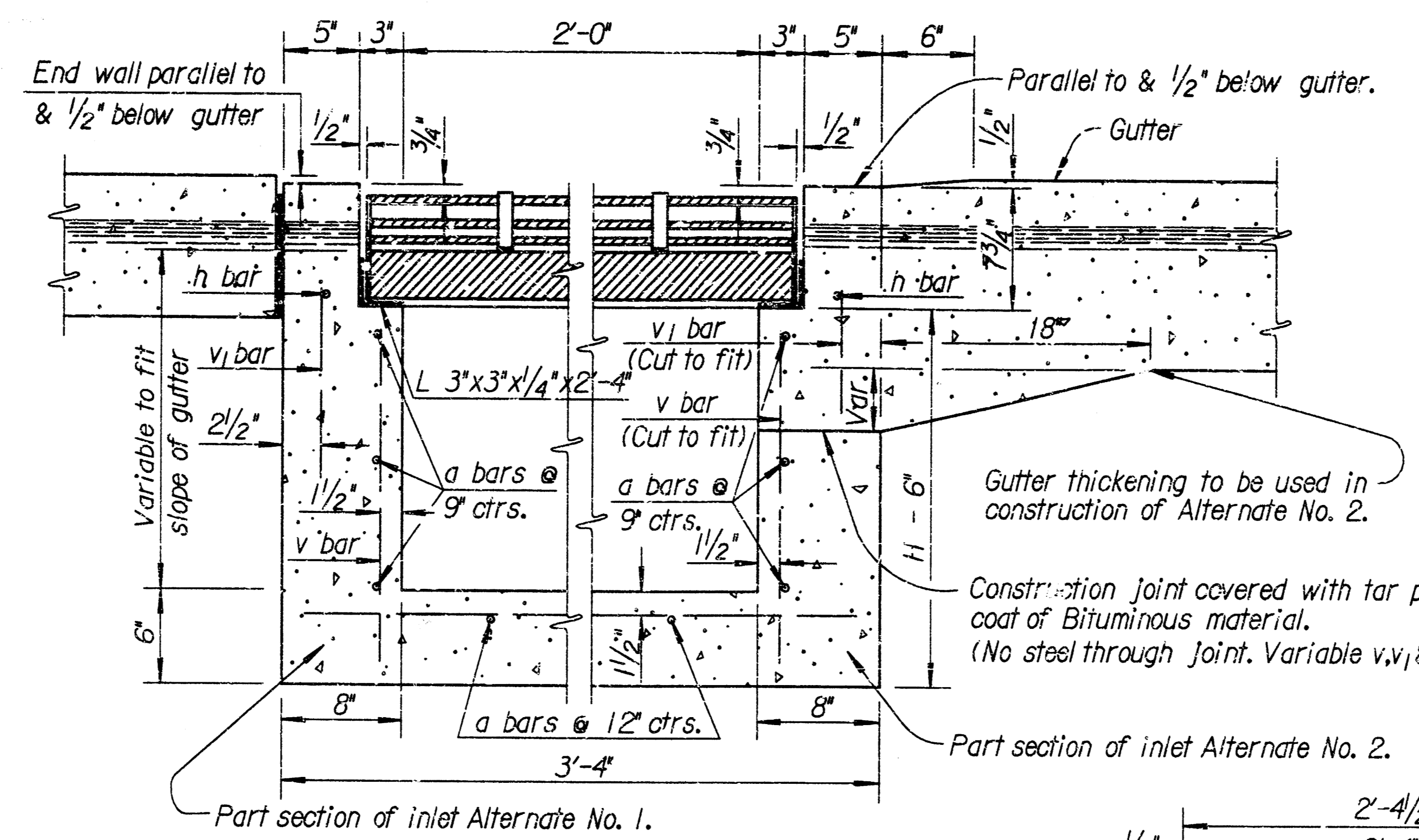


PLAN AND SECTION

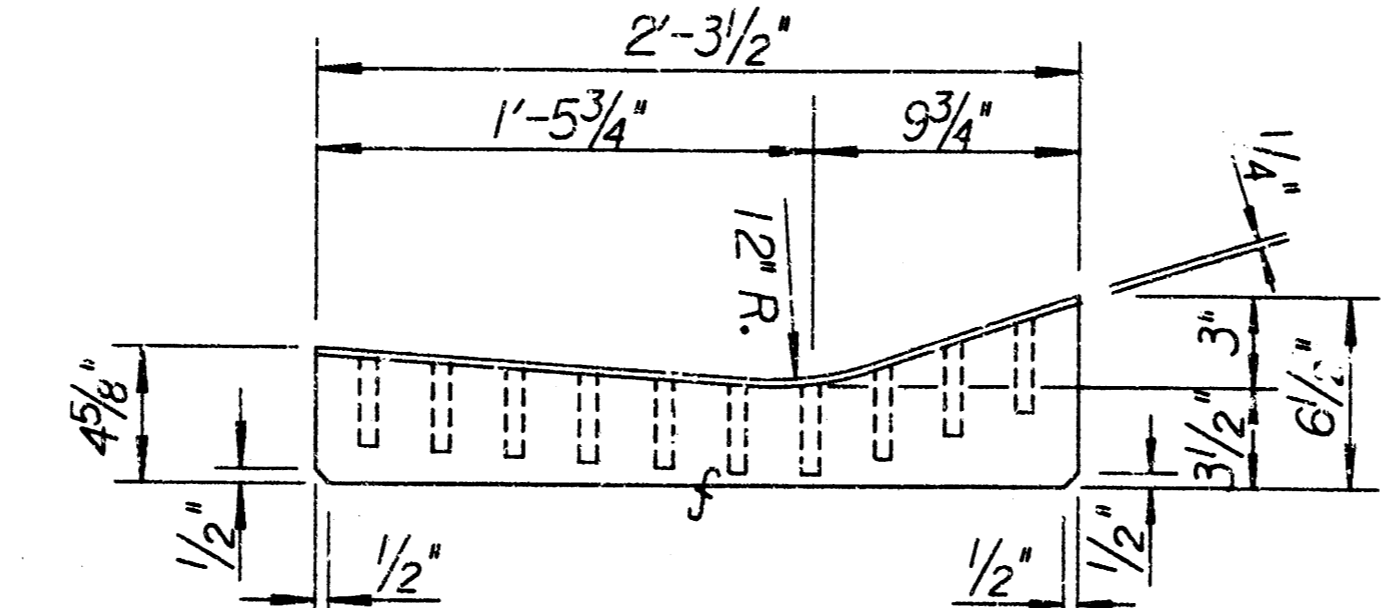
Ψ Hot or cold poured joint sealing compound, or premolded expansion joint filler (non-extruding-Type B). See note and sketch above for alternate methods of construction.



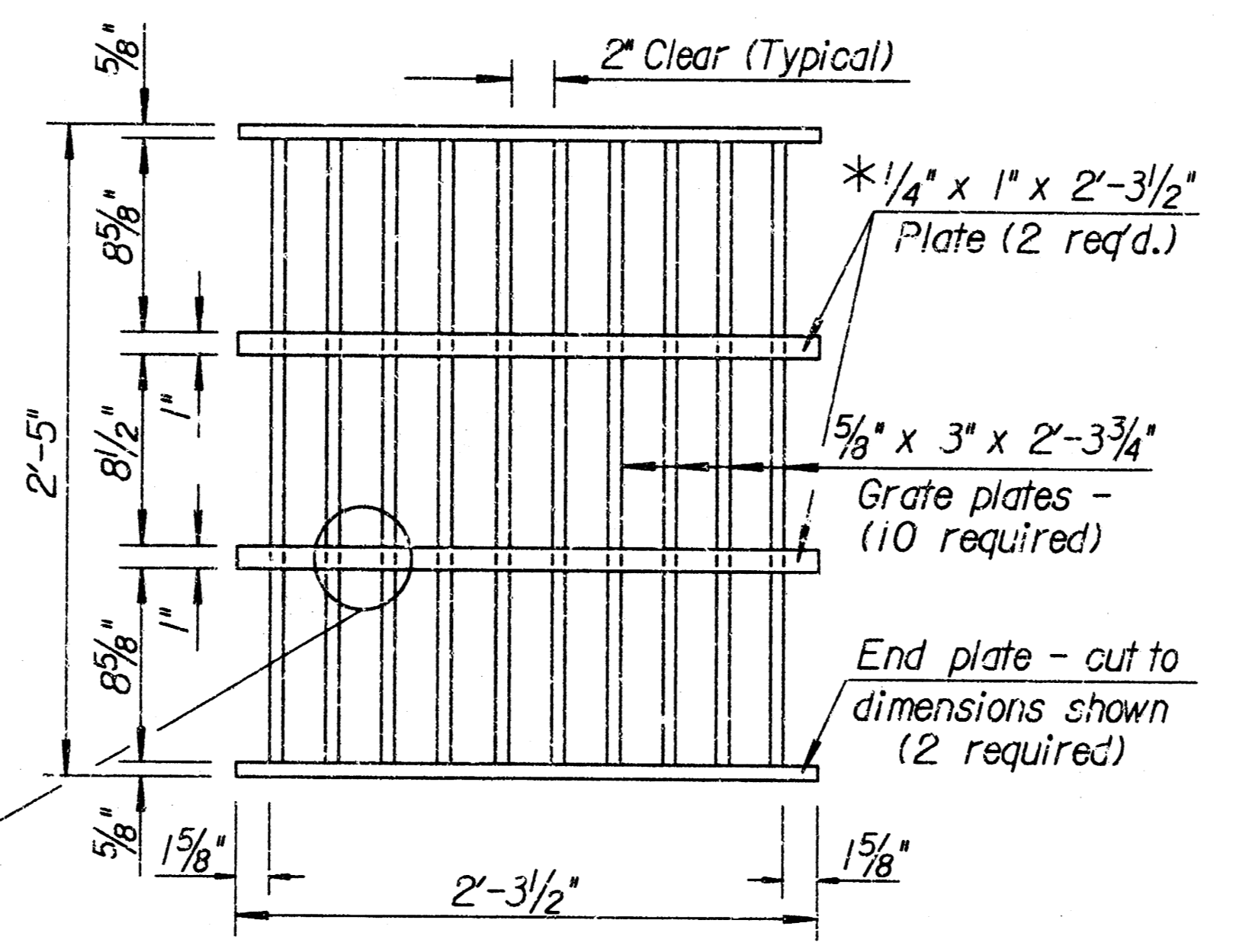
PART ELEVATION



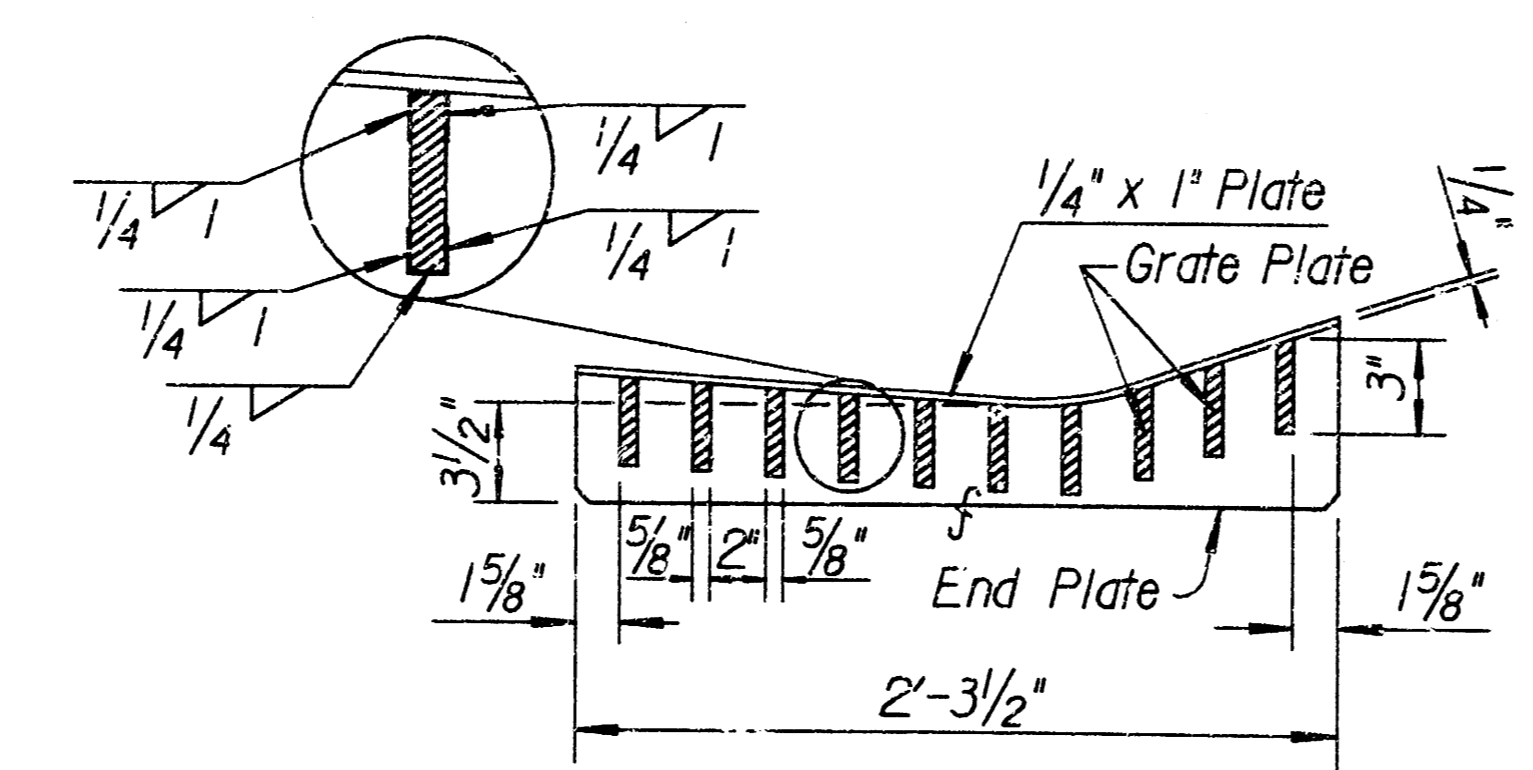
Part section of inlet Alternate No. 2.



END ELEVATION OF GRATE



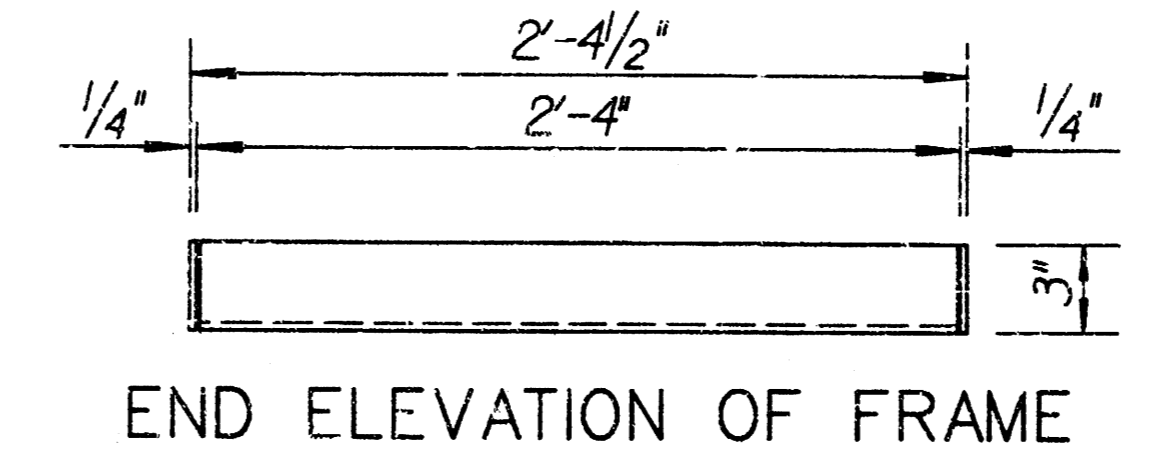
PLAN OF GRATE



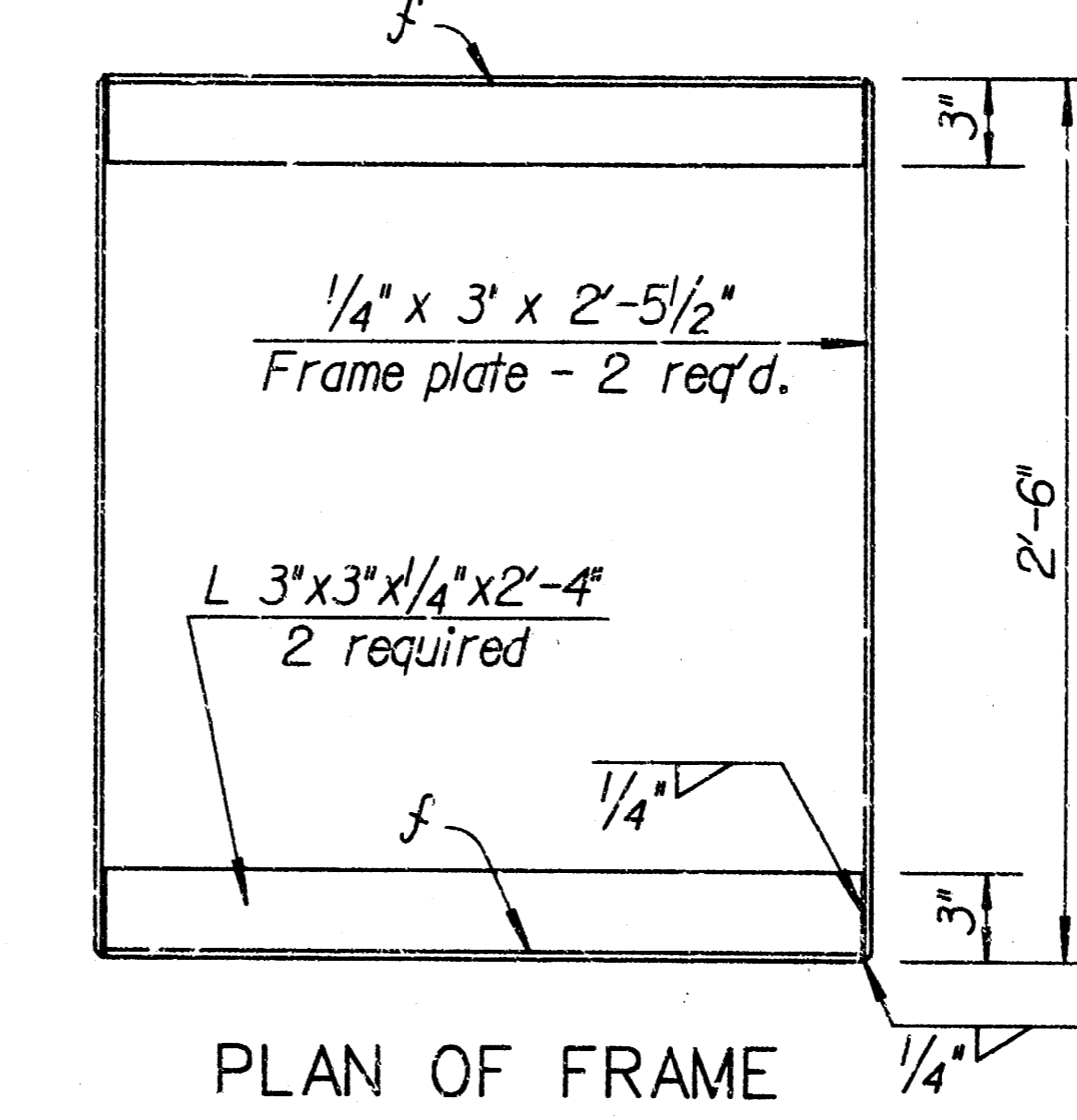
SECTION OF GRATE
DETAILS OF GRATE AND FRAME ASSEMBLY
** WELDED STRUCTURAL STEEL
(Weight= 230 lbs. each)

Note: Alternate Method No. 2 Construction.
Inlet may be constructed level with the subgrade and struck off smooth. The top of the inlet shall be constructed monolithic with the gutter. Tar paper or one coat of bituminous material shall be placed in the construction joint.
The bottom of gutter shall be transitioned to the top of the inlet construction joint. (See right-hand portion of Section A-A).

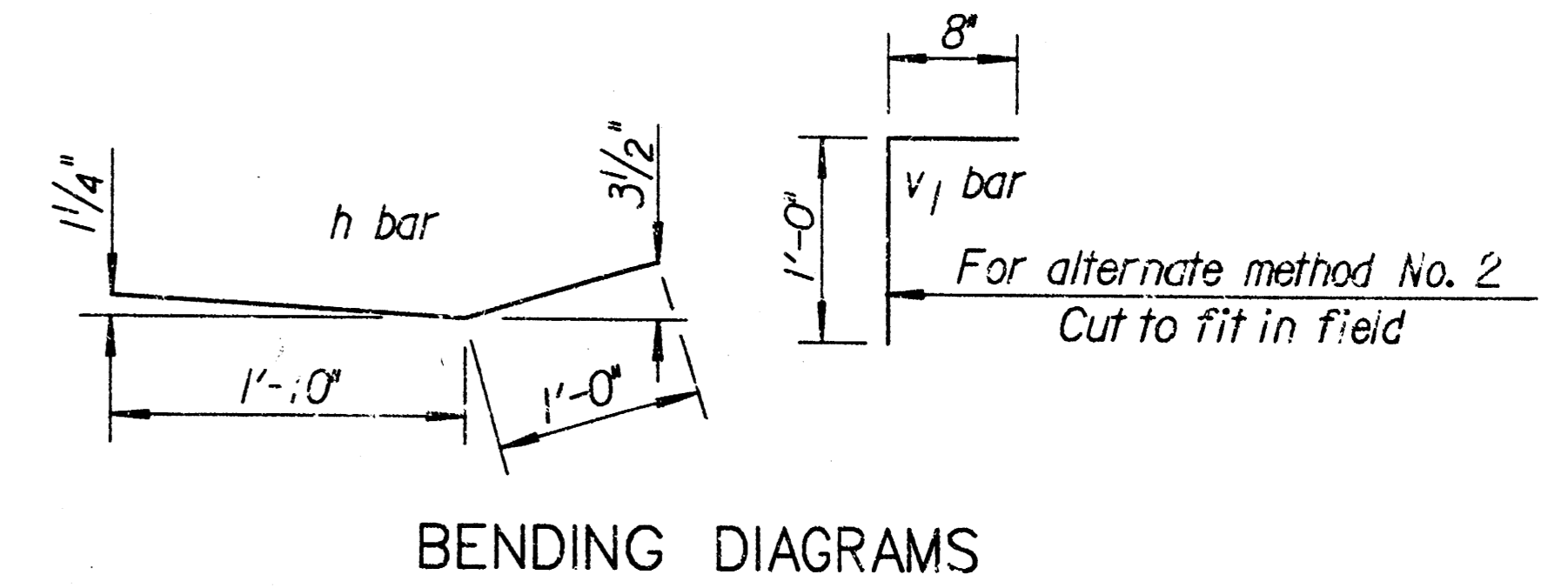
GENERAL NOTE
Use Class A Concrete throughout. All exposed edges shall be finished with an edging tool.
At the contractor's option, Class A Concrete (AE) or mix used in concrete pavement may be used throughout.
In general, pipes will enter and leave the manhole at various positions. Where possible bend bars around pipes.
No deductions in concrete quantities shall be made for pipe openings.
All bars are #4 @ 6" spacing and shall have a minimum clearance of 1 1/2" unless otherwise noted on the plans.
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.
Concrete and steel quantities listed are for alternate method number one.
If alternate number two is used, payment of quantities shall be for alternate number one.
For details of longitudinal construction joint, see Standard Drawing RD708.
For details of gutter, see Standard Drawing RD635.
No deductions will be made in pay length of curb, gutter, or curb & gutter through the inlet area.



END ELEVATION OF FRAME



PLAN OF FRAME



BENDING DIAGRAMS

f To prevent grate from rocking on bearing angles, machine finish surfaces indicated thus *f*.

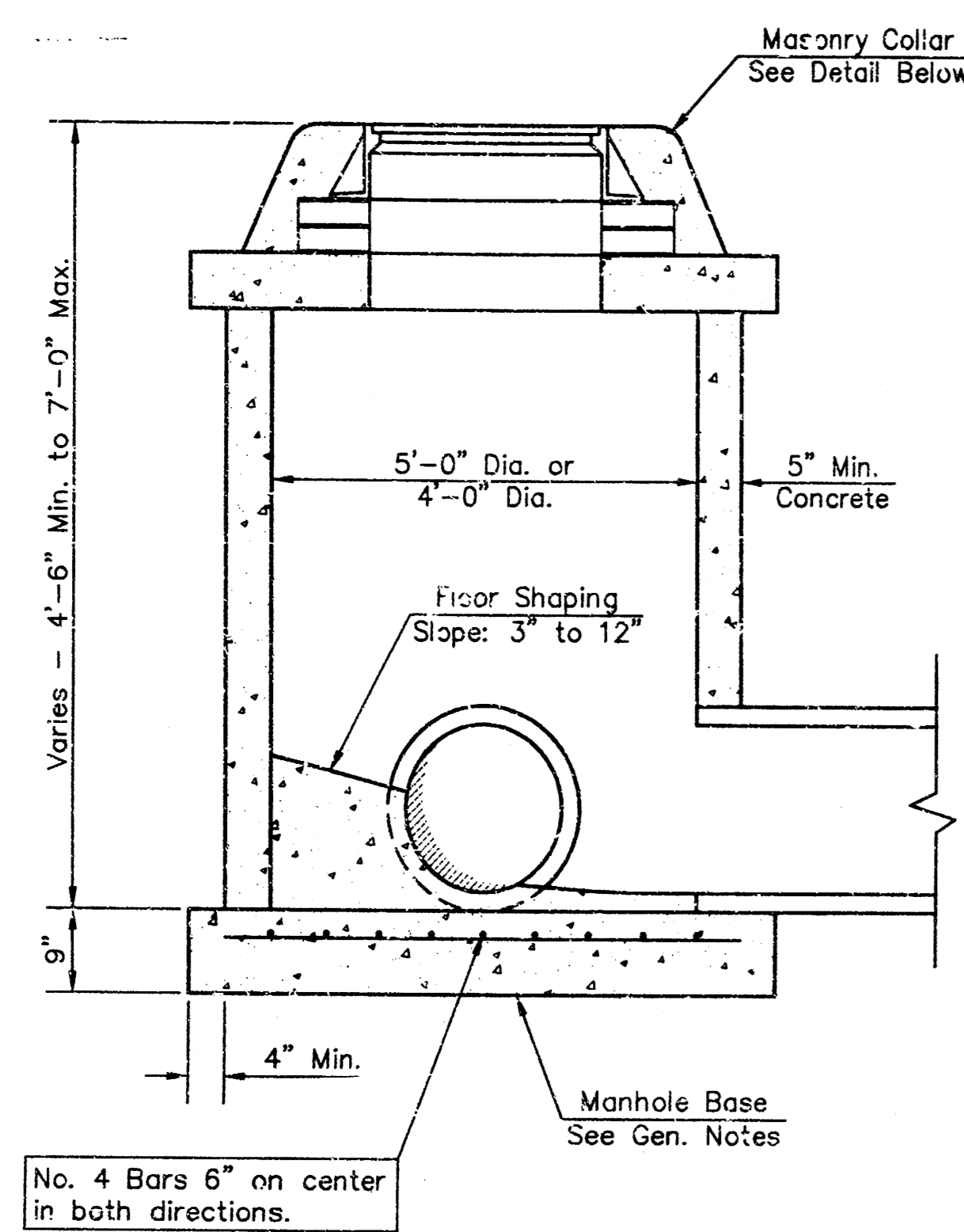
| BILL OF MATERIALS - GUTTER INLET | | | | | | | | | | | |
|----------------------------------|-----|------|-------------|------------------|-----|-----------|-------------|------------------|-----|------|-------------|
| H = 2'-6" | | | H = 3'-0" | | | H = 3'-3" | | | | | |
| Bar | No. | Size | Length | Bar | No. | Size | Length | Bar | No. | Size | Length |
| a | 17 | #4 | 3'-1" | a | 19 | #4 | 3'-1" | a | 21 | #4 | 3'-1" |
| h | 2 | #4 | 2'-10" | h | 2 | #4 | 2'-10" | h | 2 | #4 | 2'-10" |
| v | 6 | #4 | 1'-9" | v | 6 | #4 | 2'-3" | v | 6 | #4 | 2'-6" |
| v ₁ | 6 | #4 | 1'-8" | v ₁ | 6 | #4 | 1'-8" | v ₁ | 6 | #4 | 1'-8" |
| v ₂ | 4 | #4 | 2'-3" | v ₂ | 4 | #4 | 2'-9" | v ₂ | 4 | #4 | 3'-0" |
| Class "A" Conc. | | | 0.67 Cu.Yd. | Class "A" Conc. | | | 0.79 Cu.Yd. | Class "A" Conc. | | | 0.85 Cu.Yd. |
| Reinf. steel | | | 59 Lbs. | Reinf. steel | | | 66 Lbs. | Reinf. steel | | | 72 Lbs. |
| Struct. steel | | | * 230 Lbs. | Struct. steel | | | * 230 Lbs. | Struct. steel | | | * 230 Lbs. |
| Class III Excav. | | | 3 Cu.Yd. | Class III Excav. | | | 3 Cu.Yd. | Class III Excav. | | | 3 Cu.Yd. |

* On all interstate and rural area projects the two 1/4" x 1" x 2'-3 1/2" plates are to be omitted. The weight of the grate and frame without these plates is 226 lbs. of structural steel.

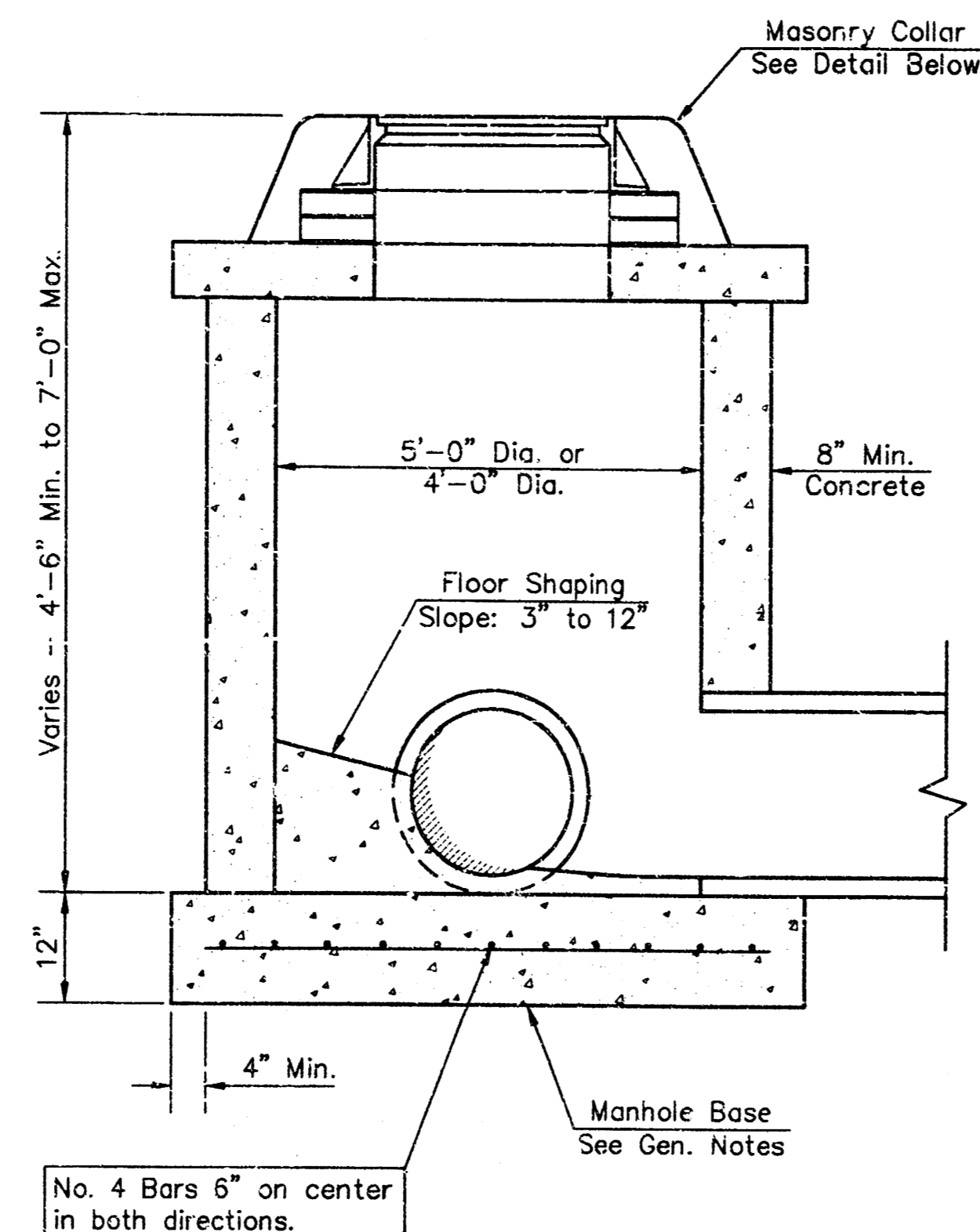
** Steel for grate and frame shall comply with ASTM A-36, A-242 or A-441.

| | | | | |
|-------------------------------------|------------|-----------------------|------------|------------|
| 8 | 8-30-94 | Entered on CADD | R.J.S. | J.S.S. |
| 7 | 4-10-90 | Revised point note | R.J.S. | J.S.S. |
| NO. | DATE | REVISIONS | BY | |
| KANSAS DEPARTMENT OF TRANSPORTATION | | | | |
| CONCRETE GUTTER INLET | | | | |
| RD634 | | | | |
| FHWA APPROVAL | 11-3-94 | APP'D James O. Brewer | DESIGNED | QUANTITIES |
| DESIGN CK. | DETAIL CK. | TRACED BY | DESIGN CK. | TRACE CK. |

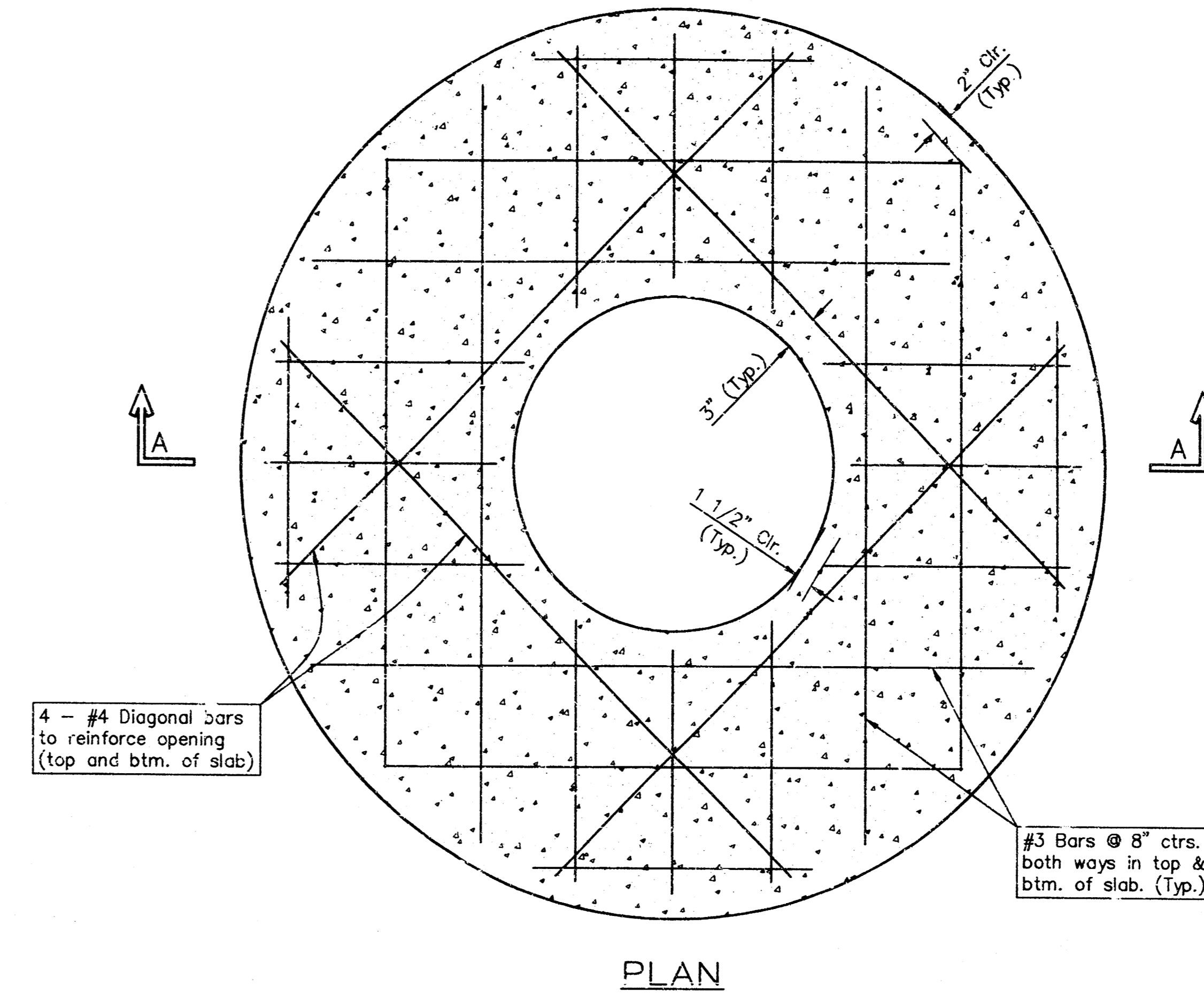
Drawn By: \$USER\$ Plotted: \$SYTIME\$ File: \$DGN\$ \$SPEC\$



SHALLOW TYPE "P" MANHOLE



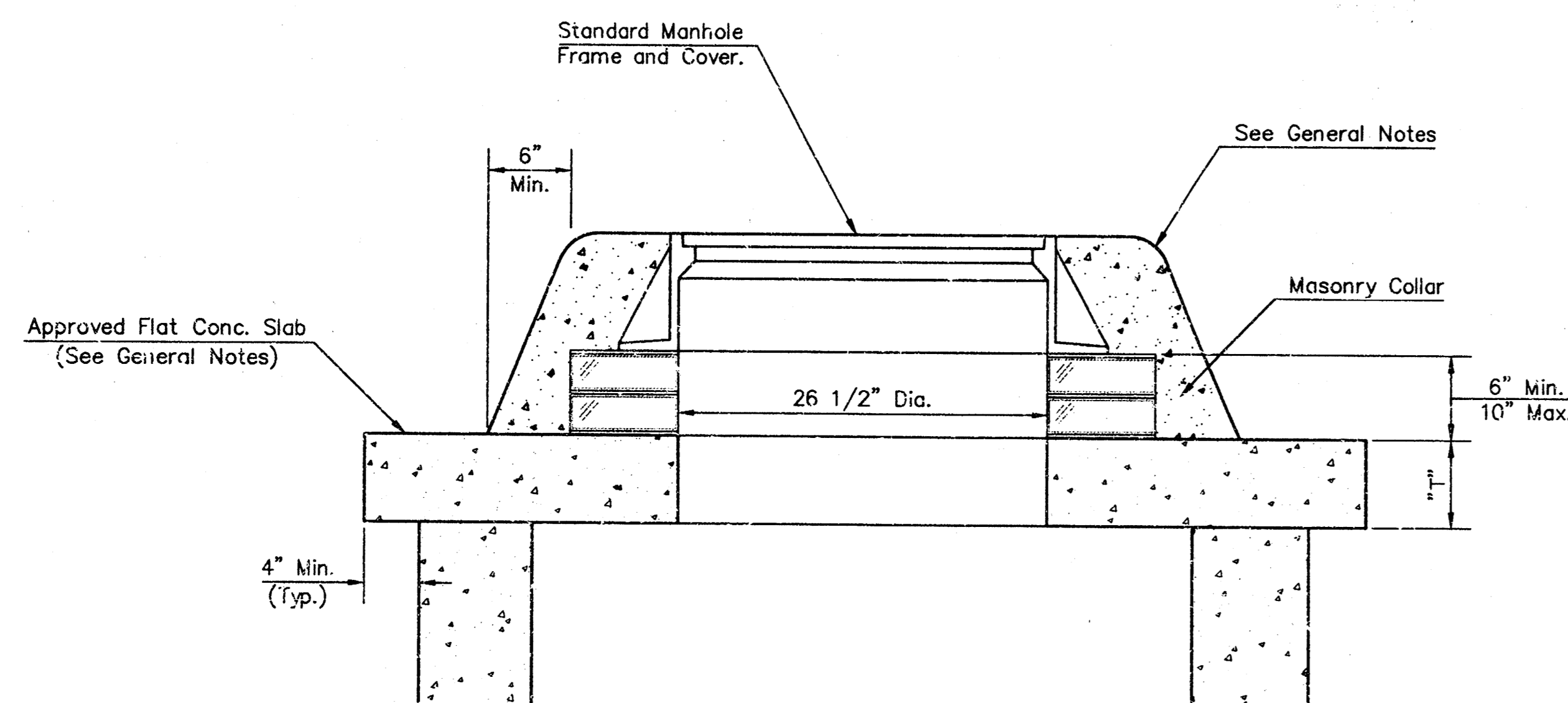
SHALLOW TYPE "C" MANHOLE



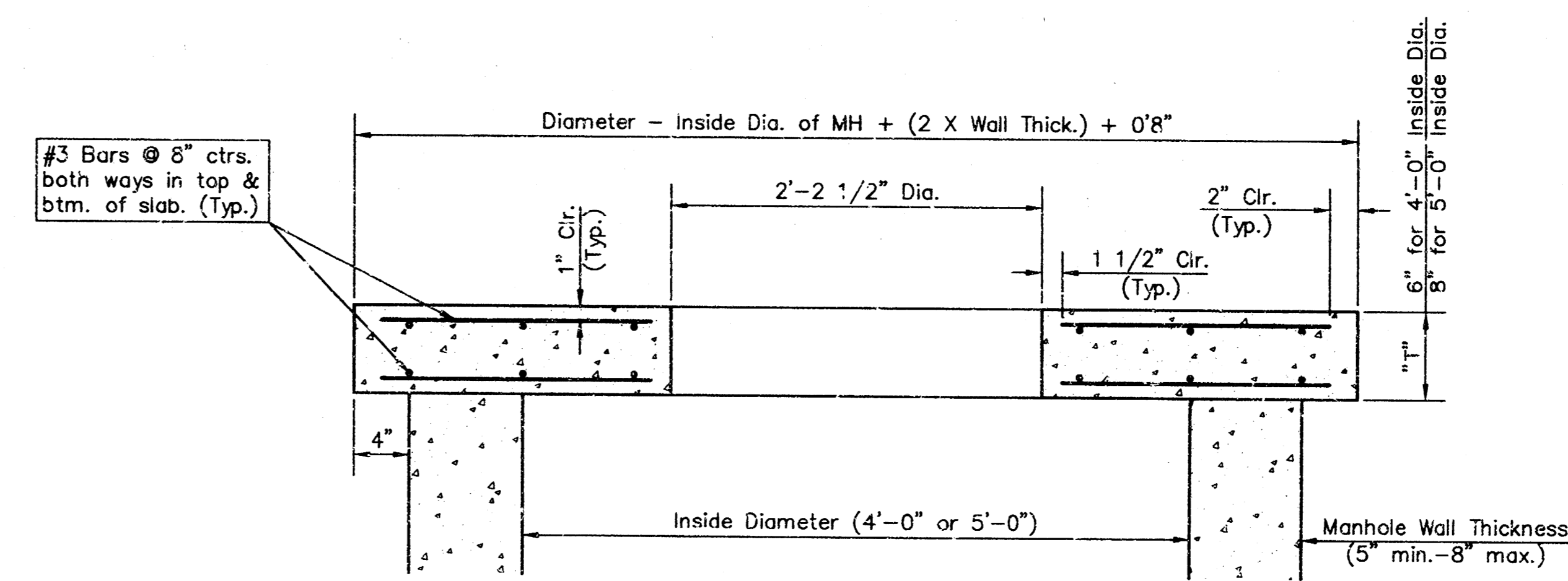
PLAN

GENERAL NOTES

- 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 cement 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 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 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 "P" and "C" shall be paid for at the unit price bid per each for the type and diameter 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.



MASONRY COLLAR DETAIL



SECTION A-A
FLAT CONCRETE SLAB DETAILS

F:\ACTIVE Projects\Tom Brooks\SEB\Gottonwood Grove 2nd - Phase 2\1\DW\SHALLOW TYPE P AND C MANHOLE.dwg Wed May 21 08:58:20 1997 TEB

| | | |
|--|--|------------------------|
| <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> | SHALLOW MANHOLES TYPE 'P' AND 'C' | |
| | M. E. LINDEBAK P.E. - CITY ENGINEER | |
| | PROJECT NUMBER 717 PPS | INDEX CODE (607861) |
| | DATE: 04/23/97 SHEET 8 OF | |