

| SHEET NO. | TOTAL SHEETS |
|-----------|--------------|
| 1         | 12           |

CITY OF WICHITA, KANSAS  
 MICHAEL E. LINDEBAK, P.E., CITY ENGINEER  
**FLOODWATER DETENTION RESERVOIR NO. 16**  
 OAK KNOLL INDUSTRIAL PARK ADDITION  
 CITY OF WICHITA PROJECT NO. 468-76-245-81144-000-000-001

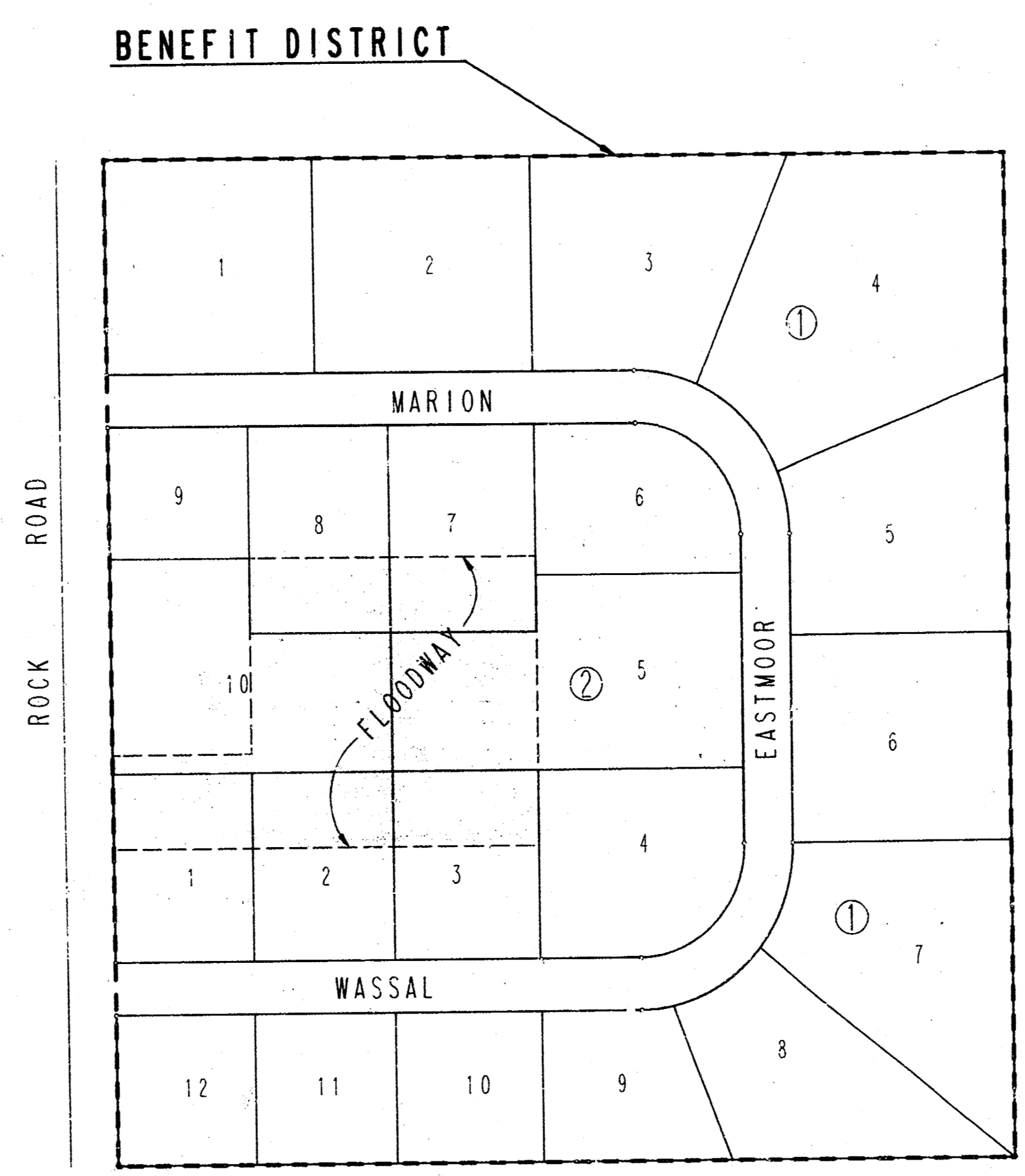
- INDEX OF SHEETS
1. TITLE SHEET
  2. PLAN
  3. DETENTION RESERVOIR GRADING PLAN AND TYPICAL SECTION
  4. OUTLET PIPES - PLAN/PROFILE
  5. R.C. BOX MODIFICATIONS
  6. HEADWALL DETAILS
  7. REINFORCED CONCRETE MANHOLE DETAILS
  8. FRAME & COVER DETAILS
  9. OVERALL GRADING PLAN
  - 10-12. CROSS-SECTIONS

PROJECT SURVEY CONTROL

VERTICAL DATUM: CITY OF WICHITA DATUM  
 DATUM BENCH MARK: CHIS. "D" ON BACK OF CURB RETURN ON EACH SIDE ROCK ROAD AND SOUTH SIDE WASSAL. EL. = 189.00  
 BENCH MARK #7: STEEL "T" POST ROCK ROAD STA 22+45, 64' RIGHT, APPROX. 100' SOUTH CENTERLINE MARION FL. = 195.34  
 BENCH MARK #9: STEEL "T" POST ROCK ROAD STA 26+62, 85' RIGHT BY 7' CHAIN LINK FENCE CORNER. EL. = 199.42

EARTHWORK SUMMARY

|                                 |             |
|---------------------------------|-------------|
| EXCAVATION - CROSS-SECTIONS     | 38,380 C.Y. |
| 104                             | 3,838 C.Y.  |
| TOTAL                           | 42,218 C.Y. |
| COMPACTED FILL - CROSS SECTIONS | 1,737 C.Y.  |
| 104                             | 174 C.Y.    |
| TOTAL                           | 1,911 C.Y.  |



GENERAL NOTES

UTILITY SERVICE LINES, POLES, VALVE BOXES, METERS, AND ETC. ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO OR DURING CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE PLAN LOCATIONS SHOWN ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY ALSO BE ENCOUNTERED. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

CONTRACTOR SHALL SATISFY HIMSELF OF SUB-SURFACE CONDITIONS PRIOR TO CONSTRUCTION.

RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND RUBBLE WHICH MAY BE ENCOUNTERED DURING EXCAVATION OPERATIONS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR OFF-SITE.

PROPERTIES WITHIN THE PROJECT BENEFIT DISTRICT SHALL HAVE FIRST RIGHT FOR THE EXCESS EXCAVATED MATERIAL (SEE SHEET NO. 9).

TREES AND SHRUBS IN PUBLIC RIGHT-OF-WAY OR EASEMENTS WHICH ARE IN DIRECT CONFLICT WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR WITH THE ENGINEER'S APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN CONFLICT WITH THE CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE.

THE CONTRACTOR SHALL SEED, FERTILIZE, AND MULCH ALL AREAS WITHIN THE PLATTED FLOODWAY ABOVE THE STATIC POOL ELEVATION. THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER ACRE FOR "SEEDING, FERTILIZING AND MULCHING". SAID PRICE SHALL BE CONSIDERED FULL COMPENSATION FOR ALL MATERIALS, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH C.O.W. STANDARD SPECIFICATIONS. THE APPROXIMATE QUANTITY FOR THIS WORK IS 1.7 ACRES.

ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. GROUTING OF STONE RIPRAP SHALL NOT BE PERFORMED. NEITHER THE BROKEN CONCRETE, FABRIC ENVELOPES, NOR PRE-MIXED DRY PACKAGED CONCRETE BAG ALTERNATES WILL BE ALLOWED.

THE CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH THE SANITARY SEWER CONTRACTOR REGARDING THE SANITARY SEWER CROSSING AT CHANNEL STA. 0+46.

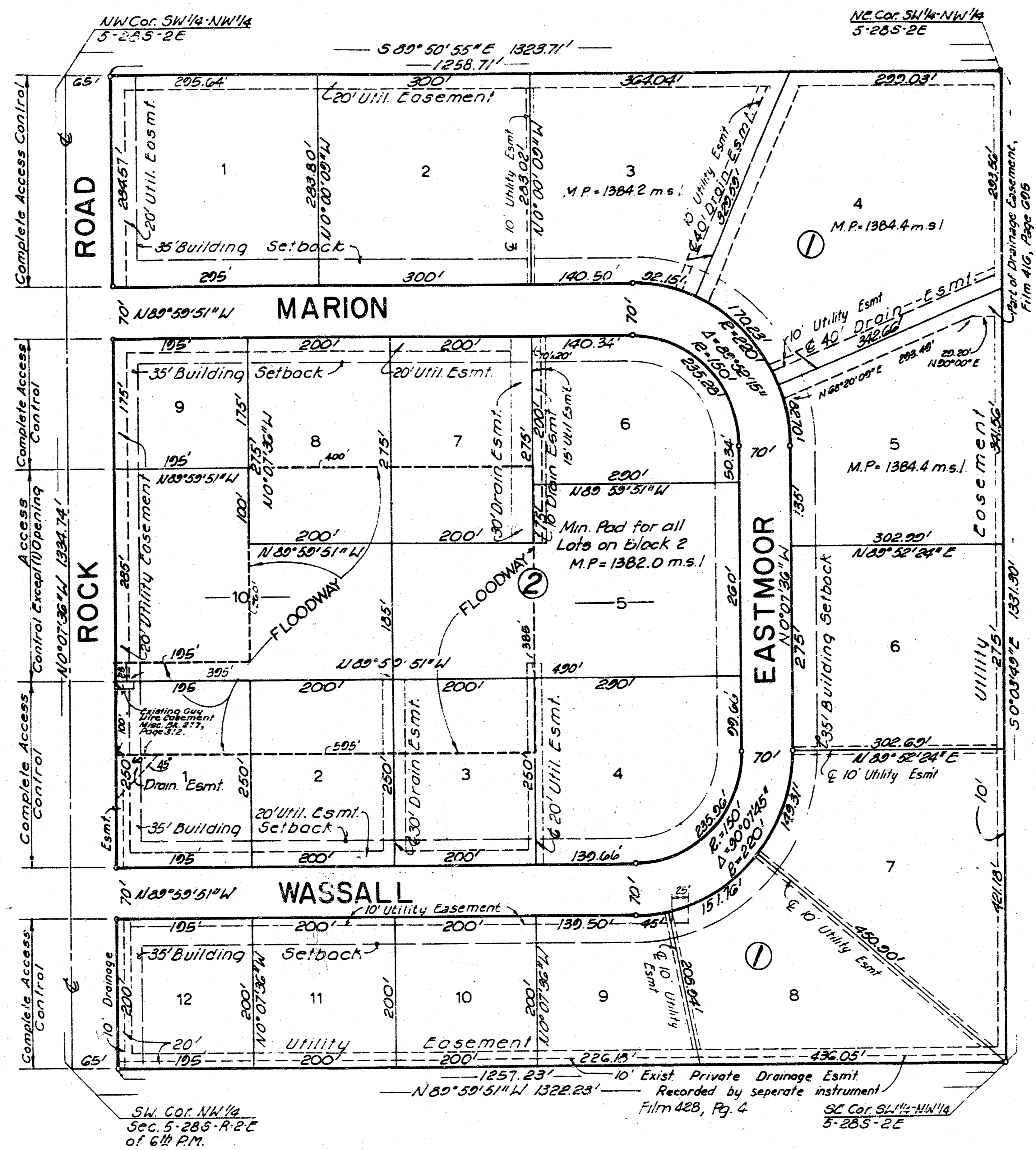
THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR OR A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH STATE LAWS.



*AS BUILT PLANS  
 12-18-86  
 GREENE  
 S/C - Summer '88*

MAY, 1986  
 PLANS PREPARED BY  
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.  
 ENGINEERS  
 WICHITA, KANSAS

FILMED FROM THE BEST AVAILABLE COPY.....



**PLAT**

Proj. No. 468 76 245 81144 000 000 001

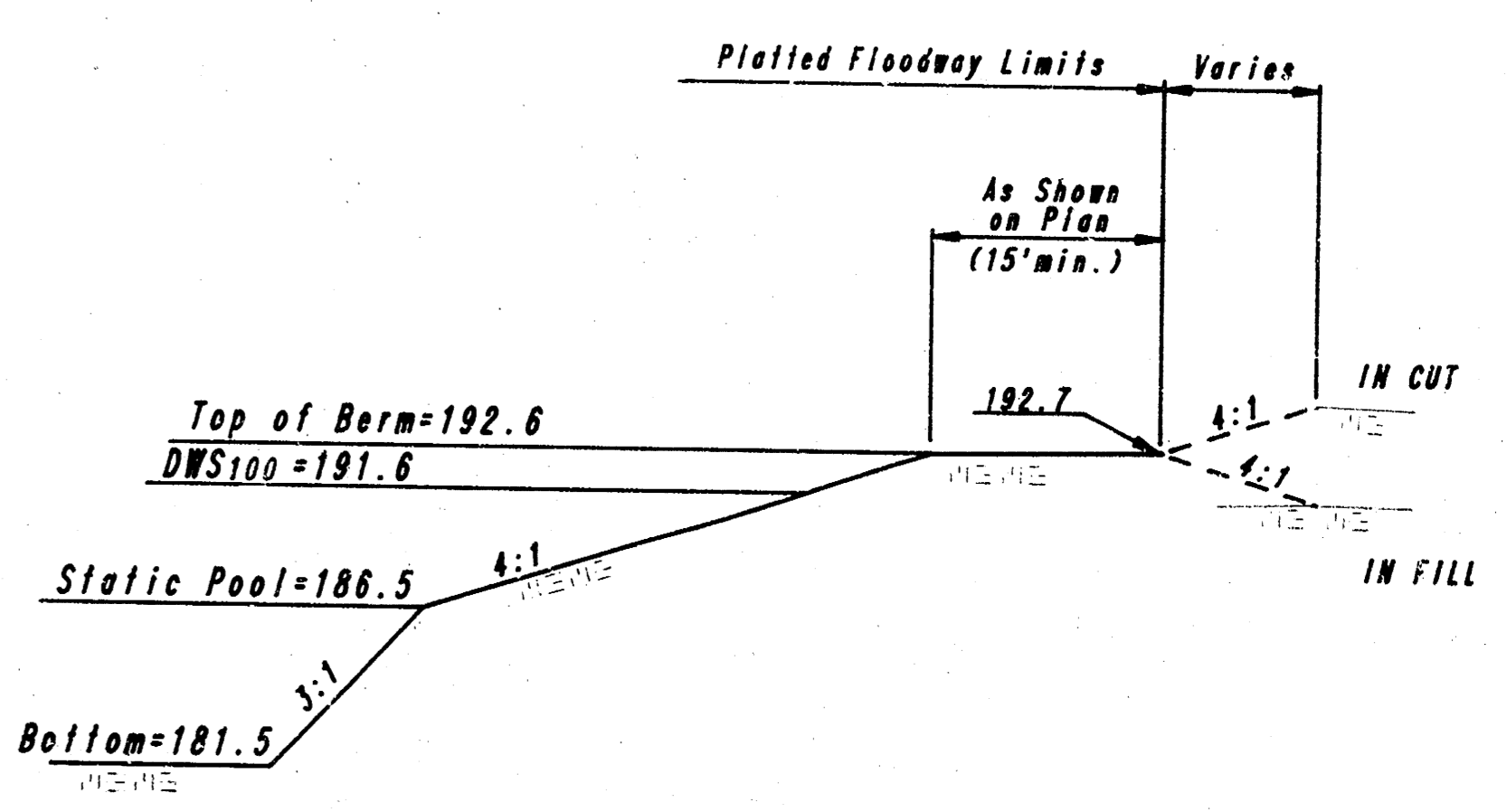
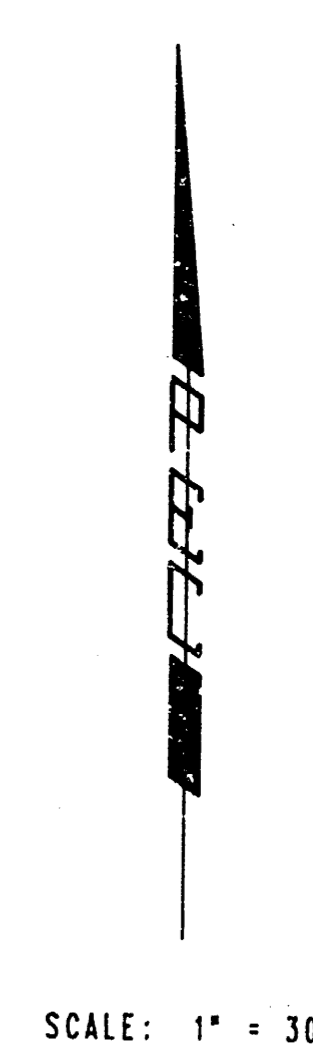
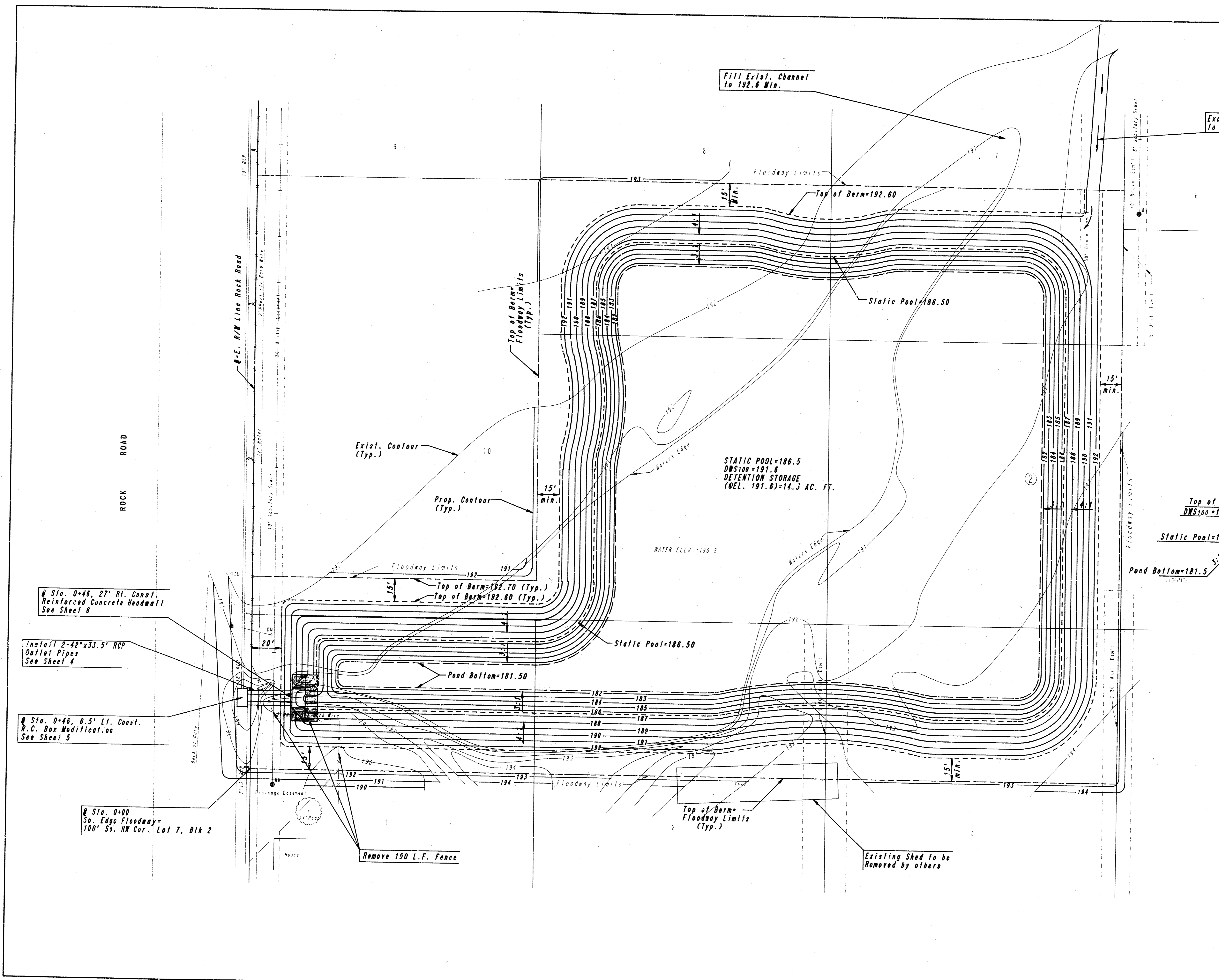
**PROFESSIONAL ENGINEERING CONSULTANTS, P.A.**

ENGINEERS  
WICHITA, KANSAS

Designed by \_\_\_\_\_ Checked by \_\_\_\_\_  
 Drawn by \_\_\_\_\_ Date May, 1986 Job No. 86117-1

FILMED FROM THE BEST AVAILABLE COPY.....

|                              |           |              |
|------------------------------|-----------|--------------|
| PROJECT NO.                  | SHEET NO. | TOTAL SHEETS |
| 468-76-245-81144-000-000-001 | 3         | 12           |



TYPICAL SECTION

- Sta. 0+46, 27' Rl. Const. Reinforced Concrete Headwall See Sheet 6
- Install 2-42"x33.5" RCP Outlet Pipes See Sheet 4
- Sta. 0+46, 6.5' Lt. Const. R.C. Box Modification See Sheet 5
- Sta. 0+00 So. Edge Floodway=100' Ss. NW Cor. Lot 7, Blk 2

DETENTION RESERVOIR GRADING PLAN & TYPICAL SECTION

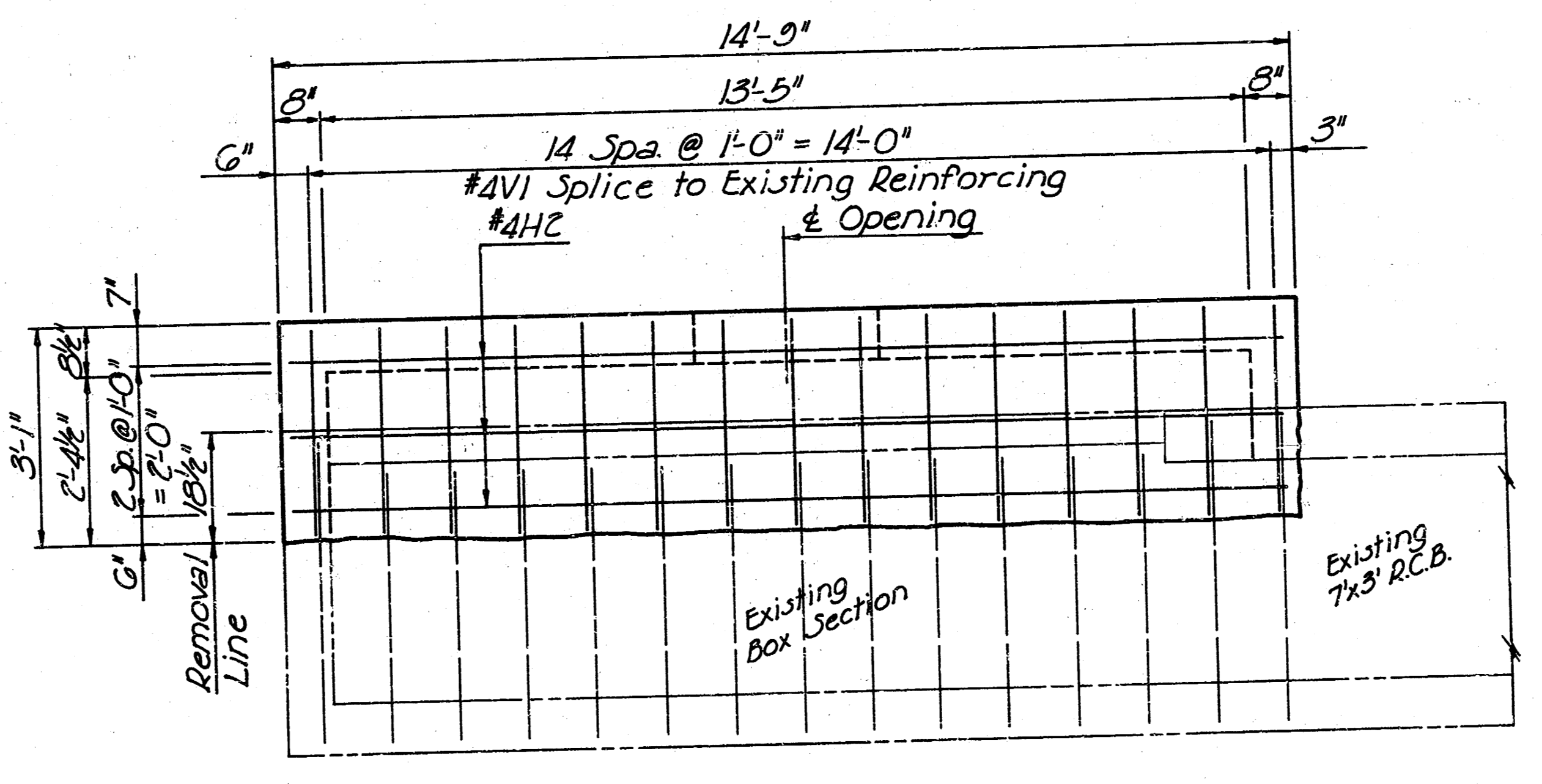
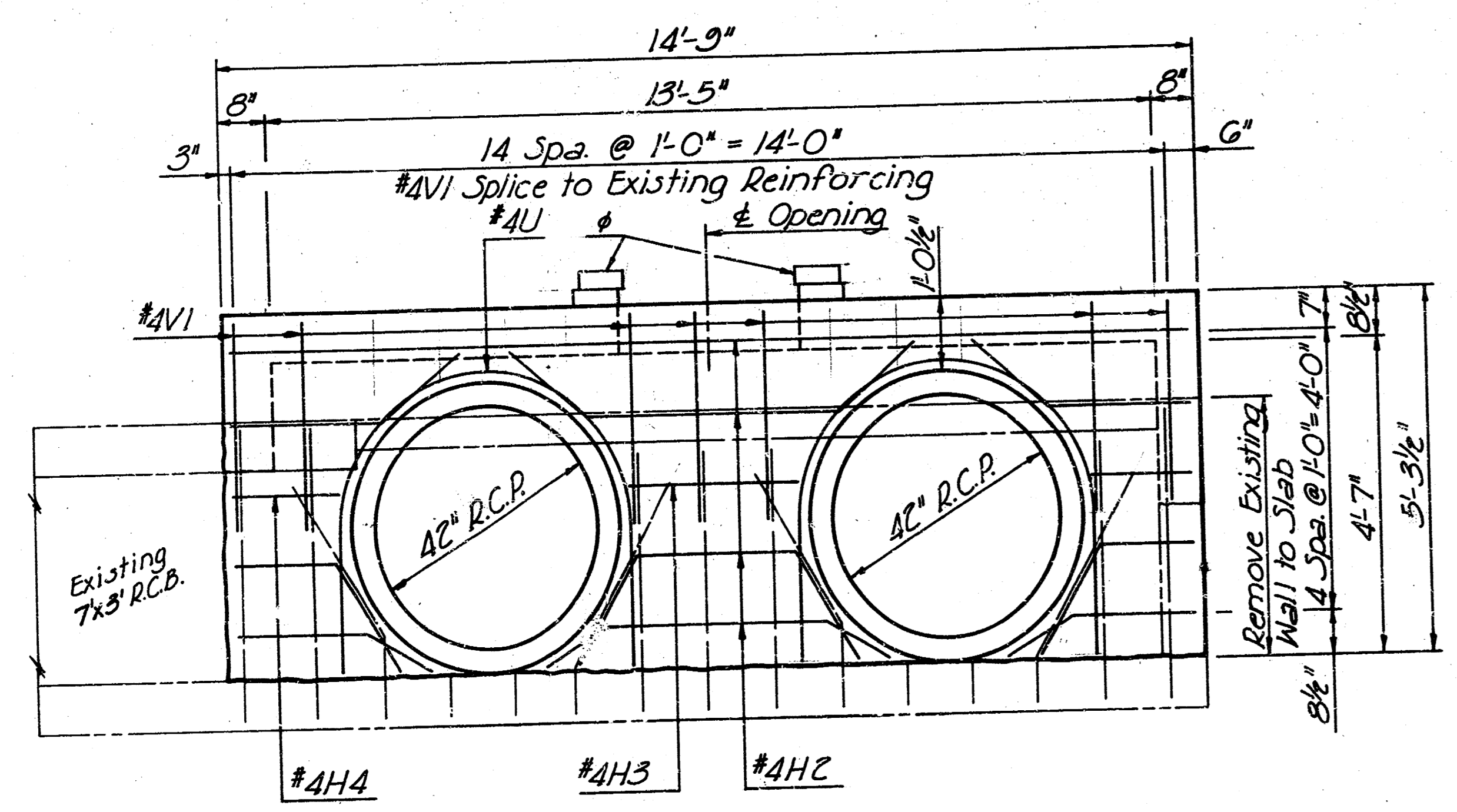
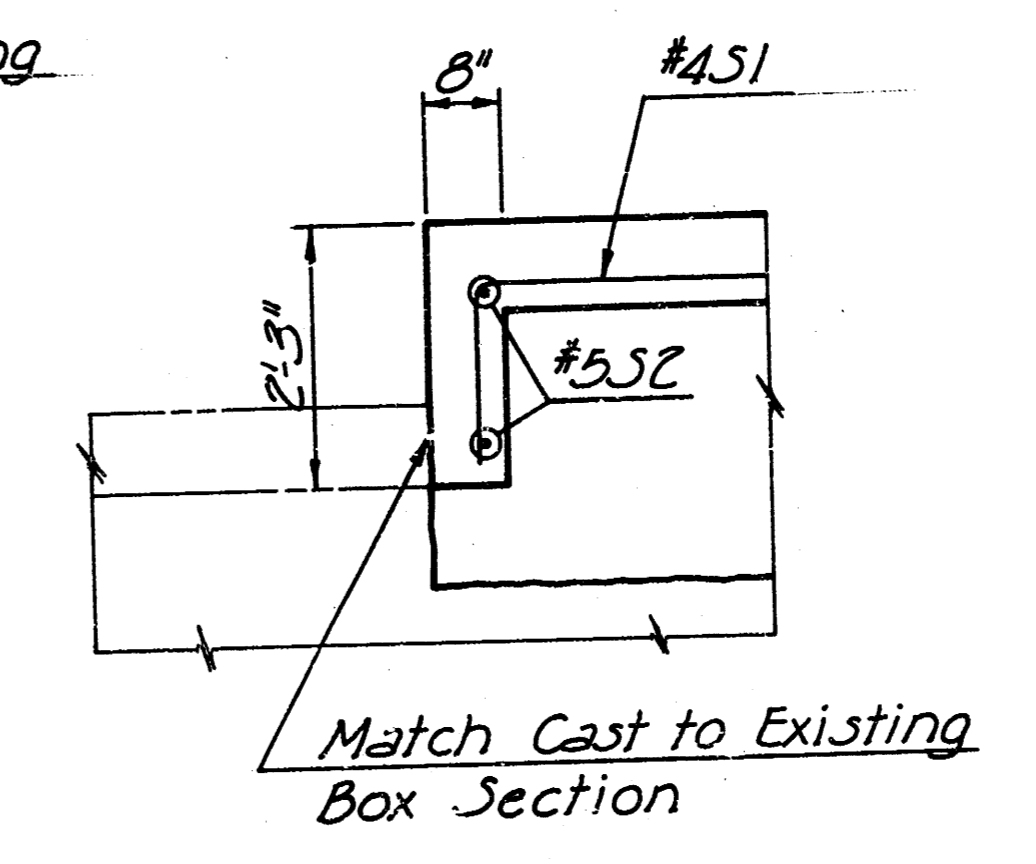
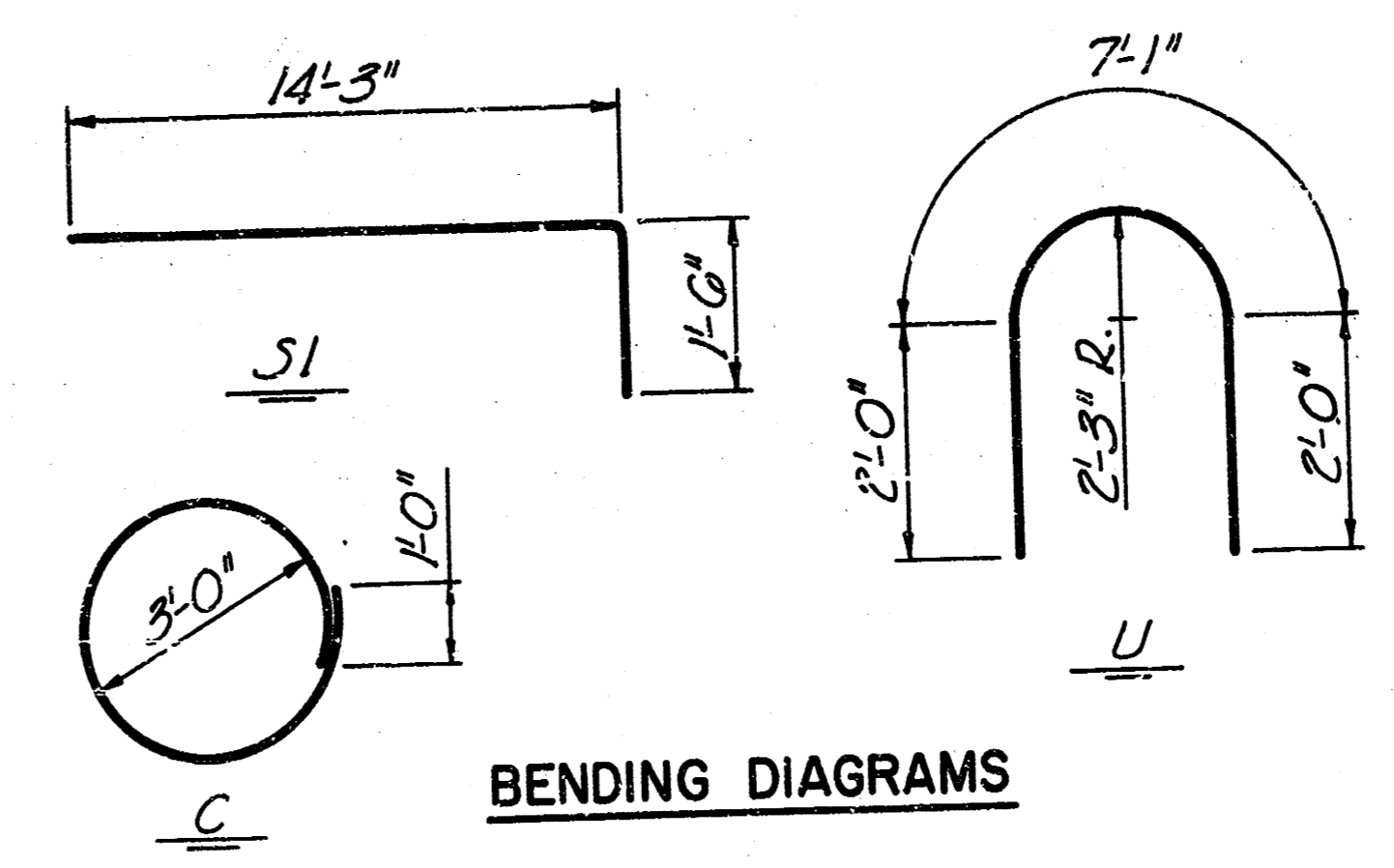
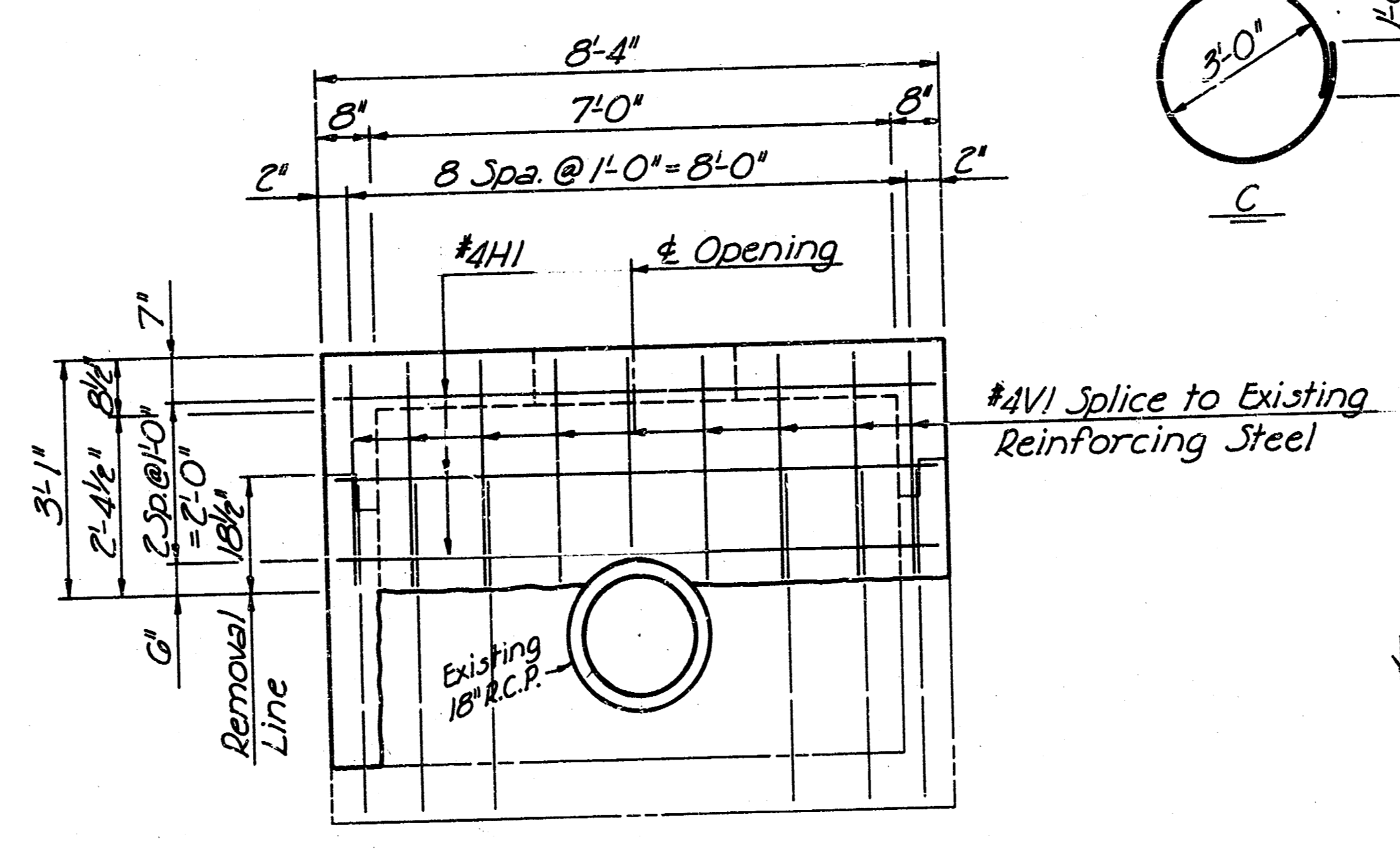
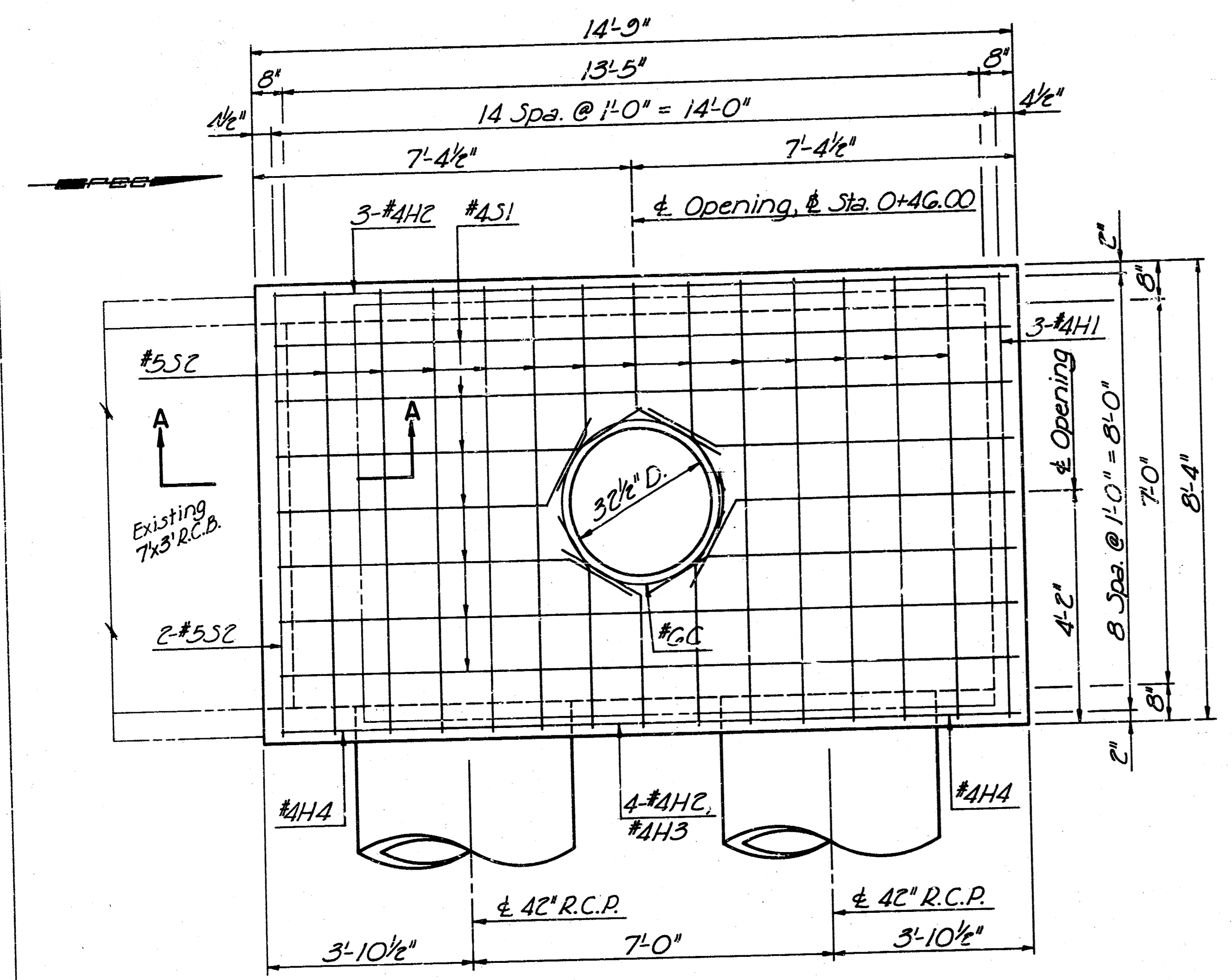
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.  
ENGINEERS  
WICHITA, KANSAS

|             |     |            |                 |
|-------------|-----|------------|-----------------|
| Designed by | CSB | Checked by |                 |
| Drawn by    | DEP | Date       | Job No. 86117-1 |

3/12

FILMED FROM THE BEST AVAILABLE COPY





| REINFORCING STEEL |     |             |           |     |             |
|-------------------|-----|-------------|-----------|-----|-------------|
| STRAIGHT BARS     |     |             | BENT BARS |     |             |
| Mark              | No. | Size Length | Mark      | No. | Size Length |
| H1                | 3   | #4 8'-1"    | S1        | 7   | #5 15'-0"   |
| H2                | 7   | #4 14'-0"   | U         | 2   | #6 11'-1"   |
| H3                | 1   | #4 2'-0"    | C         | 1   | #6 10'-0"   |
| H4                | 2   | #4 7'-0"    |           |     |             |
| S2                | 14  | #4 8'-1"    |           |     |             |
| V1                | 20  | #4 2'-11"   |           |     |             |

| # SUMMARY OF QUANTITIES |          |         |
|-------------------------|----------|---------|
| Item                    | Quantity | Unit    |
| Class AAA Concrete (AE) | 5.5      | Cu Yds. |
| Reinforcing Steel       | 385      | Lbs.    |
| Cast Iron               | 420      | Lbs.    |

# For Information Only

GENERAL NOTES

- CLASS AAA CONCRETE (AE) SHALL BE USED THROUGHOUT. BEVEL ALL EXPOSED EDGES WITH A 3/4" TRIANGULAR MOLDING OR WITH AN APPROVED EDGING TOOL.
- REINFORCING STEEL SHALL BE A MINIMUM GRADE 40, ASTM A615. ALL DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO THE CENTERLINE OF BARS UNLESS OTHERWISE NOTED. REINFORCING STEEL SHALL BE BENT AND/OR CUT TO CLEAR THE PIPE OPENINGS. ALL CLEARANCES ARE 1-1/2" UNLESS OTHERWISE NOTED.
- DEDUCTIONS IN CONCRETE QUANTITIES HAVE BEEN MADE FOR PIPE OPENINGS.
- THE INLET INVERT SHALL BE SHAPED WITH UNREINFORCED CLASS A CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLETS AND THE OUTLET BOX.
- ALL DIMENSIONS HAVE BEEN TAKEN FROM OLD PLANS AND MUST BE CHECKED IN THE FIELD FOR COMPLIANCE TO PLANS PRIOR TO CONSTRUCTION.
- SEE CITY OF WICHITA STANDARD MANHOLE FRAME AND COVER DETAIL SHEET.
- THE EXISTING PIPE GRATE SHALL BE SALVAGED BY THE CONTRACTOR AND PLACED ON THE RIGHT OF WAY TO BE REMOVED BY SEDGWICK COUNTY FORCES.
- EXISTING CONCRETE SHALL BE REMOVED TO THE LINES SHOWN. ALL CONCRETE SURFACES OF THE EXISTING STRUCTURE TO WHICH NEW CONCRETE IS TO BE PLACED SHALL BE PAINTED WITH EITHER A CEMENT-GROUT MIX OR AN EPOXY BONDING AGENT. ALL EXISTING REINFORCING STEEL EXPOSED BY THE REMOVAL OF THE EXISTING CONCRETE IS TO BE THOROUGHLY CLEANED AND THEN INCORPORATED INTO THE NEW STRUCTURE.
- ALL MATERIALS REMOVED EXCEPT FOR THOSE TO BE SALVAGED SHALL BE DISPOSED OF AT SITES SELECTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
- THE "R.C. BOX MODIFICATION" SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH IN PLACE INCLUDING CONCRETE, REINFORCING STEEL, CAST IRON, EXCAVATION AND ALL OTHER MISCELLANEOUS MATERIALS, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, INCLUDING THE COMPLETE MANHOLE BRICK STACK. QUANTITIES SHOWN ARE FOR INFORMATION ONLY.

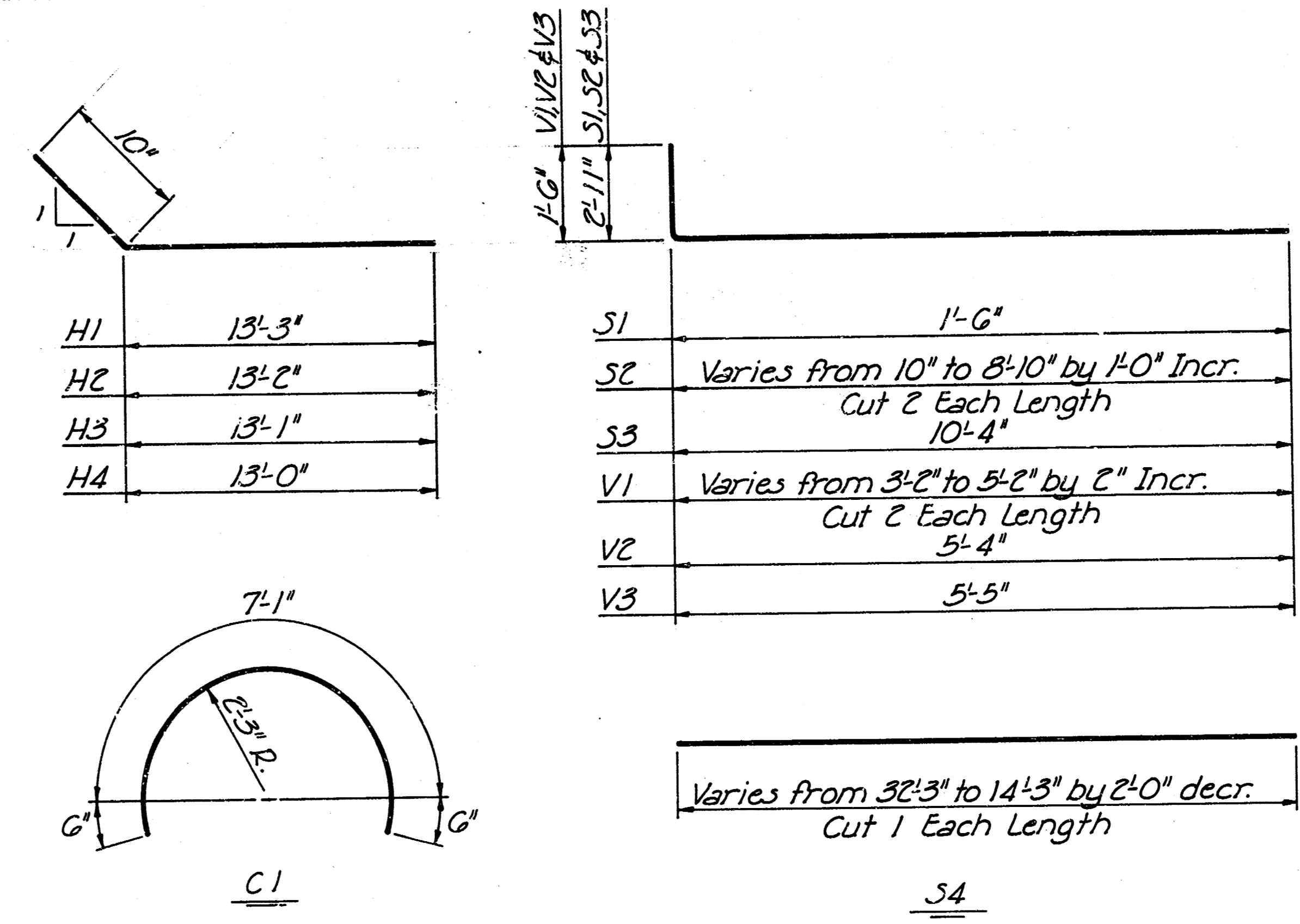
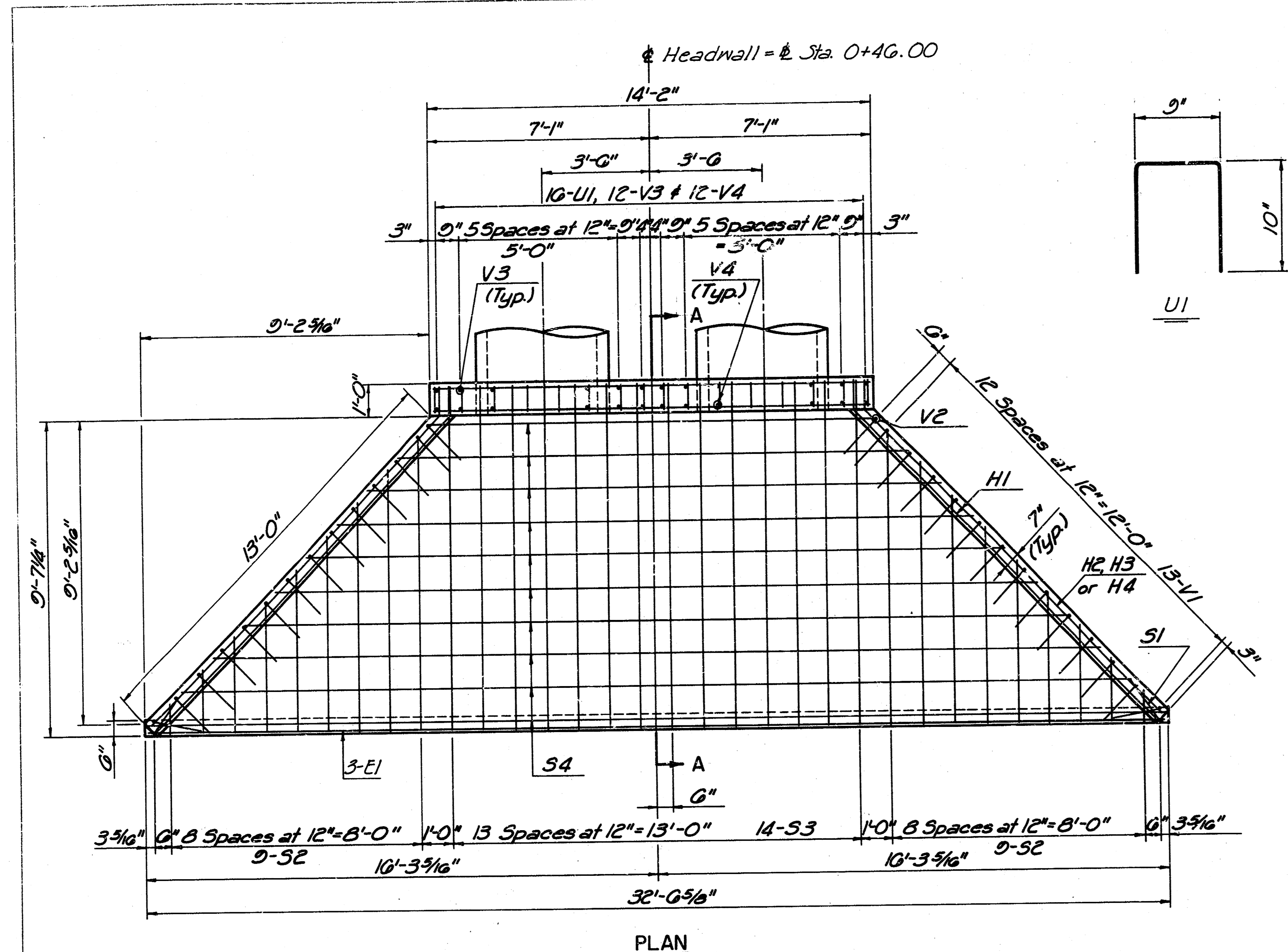
**R.C. BOX MODIFICATION**

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.  
ENGINEERS  
WICHITA, KANSAS

Designed by P.D.F. Checked by R.A.S.  
Drawn by M.L.L. Date May 1986 Job No. 86117-1

# Construct Brick Stack as detailed on Sheet No. 7.

FILMED FROM THE BEST AVAILABLE COPY



BENDING DIAGRAMS  
All dimensions are out to out of bars

| REINFORCING STEEL |     |             |           |     |             |
|-------------------|-----|-------------|-----------|-----|-------------|
| STRAIGHT BARS     |     |             | BENT BARS |     |             |
| Mark              | No. | Size Length | Mark      | No. | Size Length |
| E1                | 3   | #4 32'-3"   | C1        | 8   | #6 3'-1"    |
| S4                | 10  | #4 *        | H1        | 4   | #4 14'-1"   |
| H5                | 14  | #4 13'-11"  | H2        | 2   | #4 14'-0"   |
| V4                | 12  | #4 5'-10"   | H3        | 2   | #4 13'-11"  |
|                   |     |             | H4        | 4   | #4 13'-10"  |
|                   |     |             | S1        | 2   | #4 4'-5"    |
|                   |     |             | S2        | 18  | #4 *        |
|                   |     |             | S3        | 14  | #4 13'-3"   |
|                   |     |             | U1        | 10  | #4 2'-5"    |
|                   |     |             | V1        | 20  | #5 *        |
|                   |     |             | V2        | 2   | #5 6'-10"   |
|                   |     |             | V3        | 12  | #4 6'-11"   |

\*See Bending Diagrams

| # SUMMARY OF QUANTITIES |          |         |
|-------------------------|----------|---------|
| Item                    | Quantity | Unit    |
| Class AAA Concrete (AE) | 13.2     | Cu.Yds. |
| Reinforcing Steel       | 1080     | Lbs.    |

# For Information Only

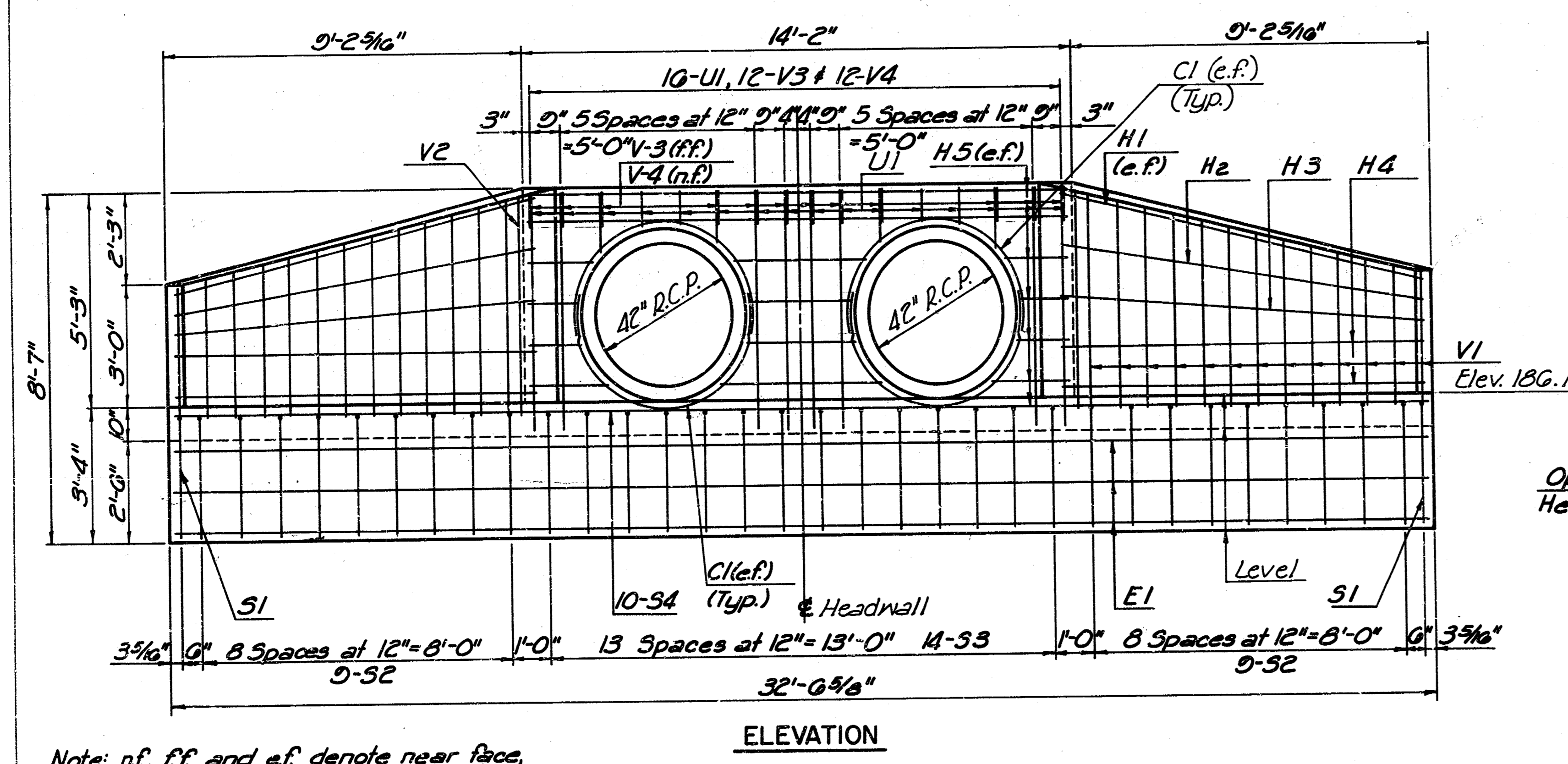
CONCRETE HEADWALL NOTES

CONCRETE: BEVEL ALL EXPOSED EDGES WITH A 3/4 INCH TRIANGULAR HOLDING OR FINISH WITH AN APPROVED EDGING TOOL. CLASS AAA CONCRETE (AE) SHALL BE USED THROUGHOUT. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 P.S.I. THE CONCRETE COVER FOR ALL REINFORCING STEEL SHALL BE A MINIMUM OF 1-1/2" UNLESS OTHERWISE NOTED.

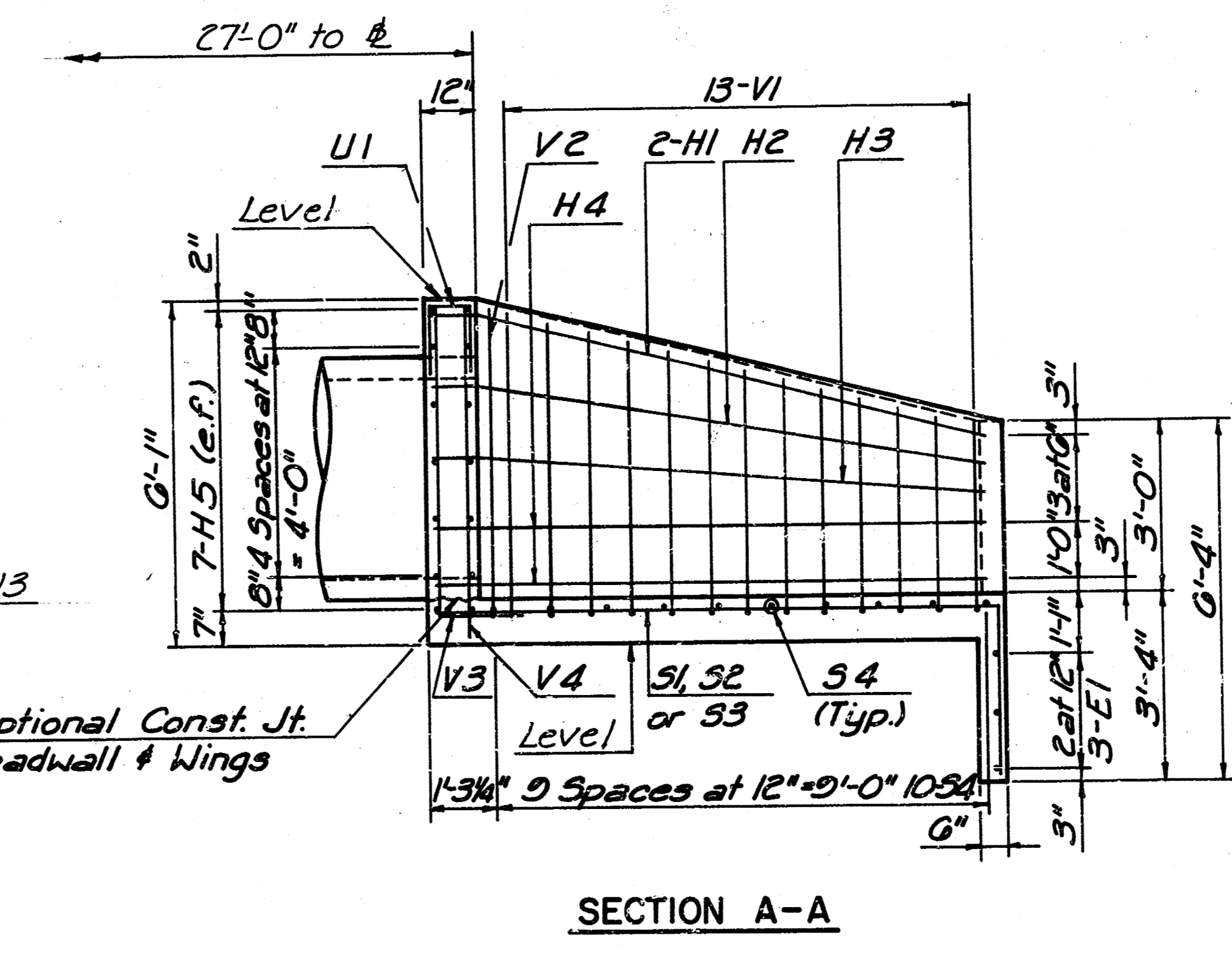
REINFORCING STEEL: ALL DIMENSIONS RELATIVE TO REINFORCING STEEL ARE TO CENTERLINE OF BAR UNLESS OTHERWISE NOTED. REINFORCING STEEL SHALL BE BENT AND/OR CUT TO CLEAR THE PIPE OPENINGS. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615 GRADE 40 AS A MINIMUM REQUIREMENT.

DEDUCTIONS IN CONCRETE QUANTITIES HAVE BEEN MADE FOR PIPE OPENINGS.

THE CONCRETE HEADWALL SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH IN PLACE INCLUDING CONCRETE, REINFORCING STEEL, EXCAVATION AND ALL OTHER MISCELLANEOUS MATERIALS, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. QUANTITIES SHOWN ARE FOR INFORMATION ONLY.



Note: n.f., f.f. and e.f. denote near face, far face and each face respectively. Cut and/or bend H5, V3 and V4 bars to clear pipe openings.

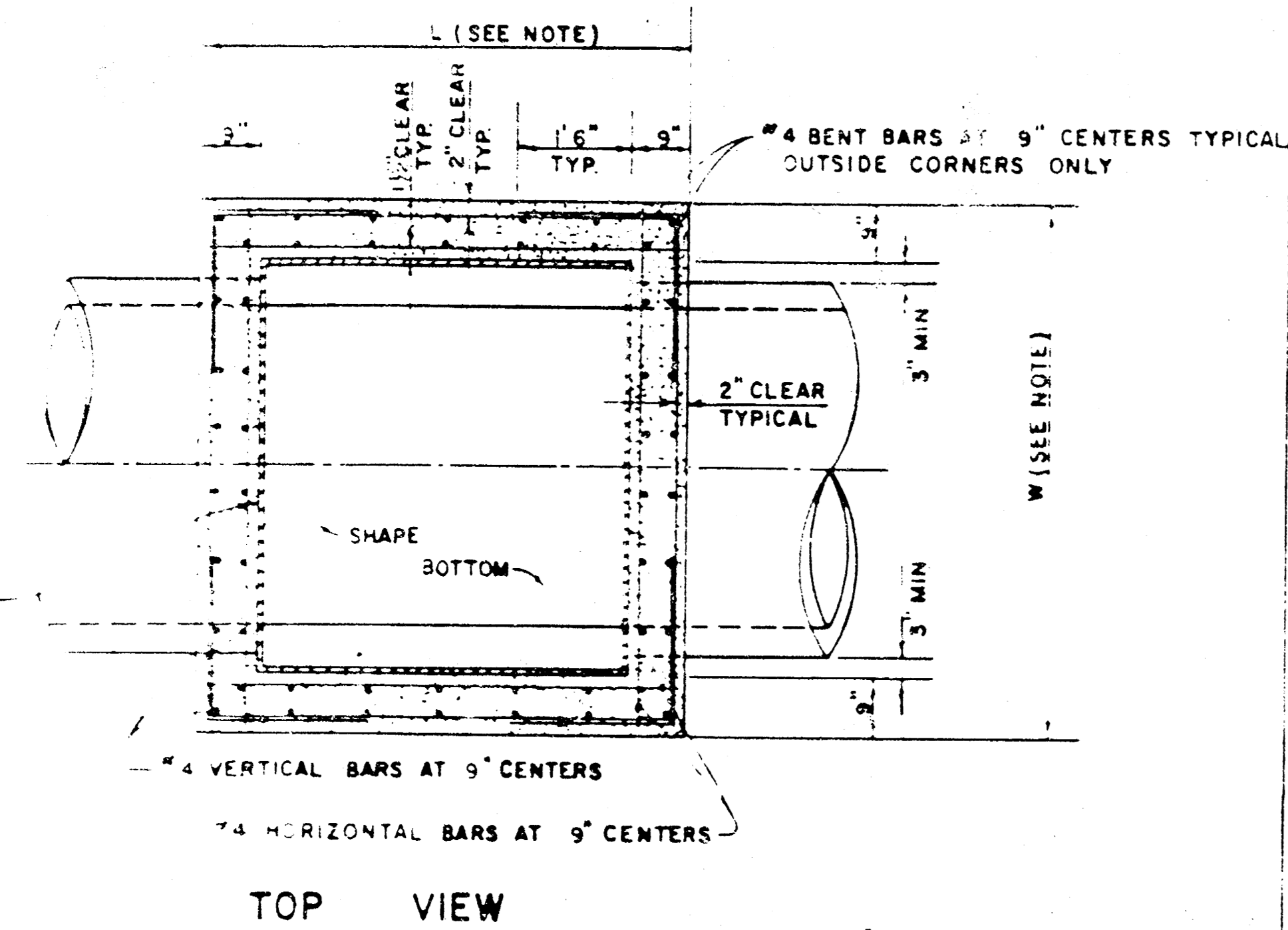


**HEADWALL DETAILS**

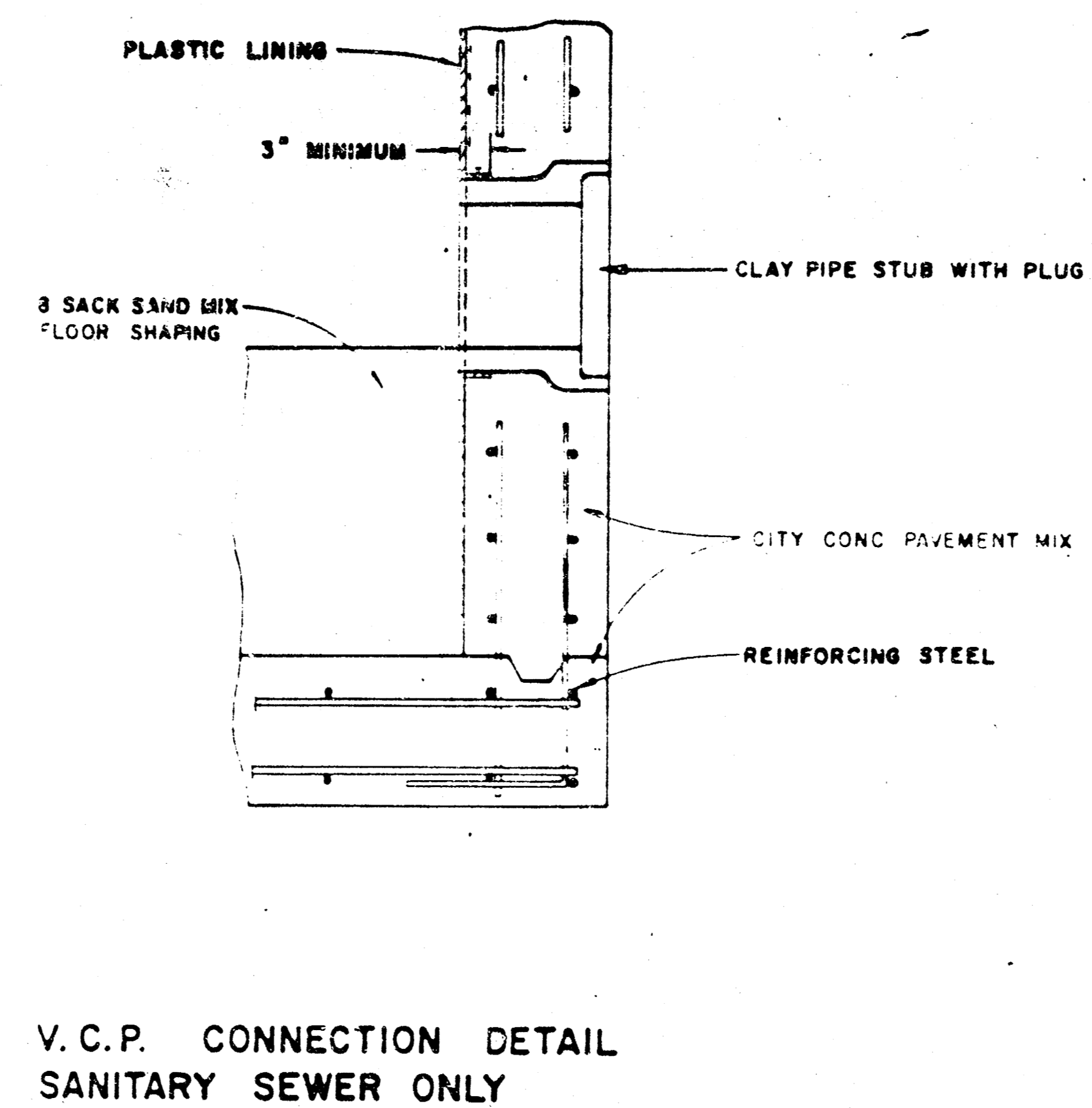
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.  
ENGINEERS  
WICHITA, KANSAS

Designed by R.D.F. Checked by R.A.S.  
Drawn by GDR Date May 1980 Job No. 88117-1

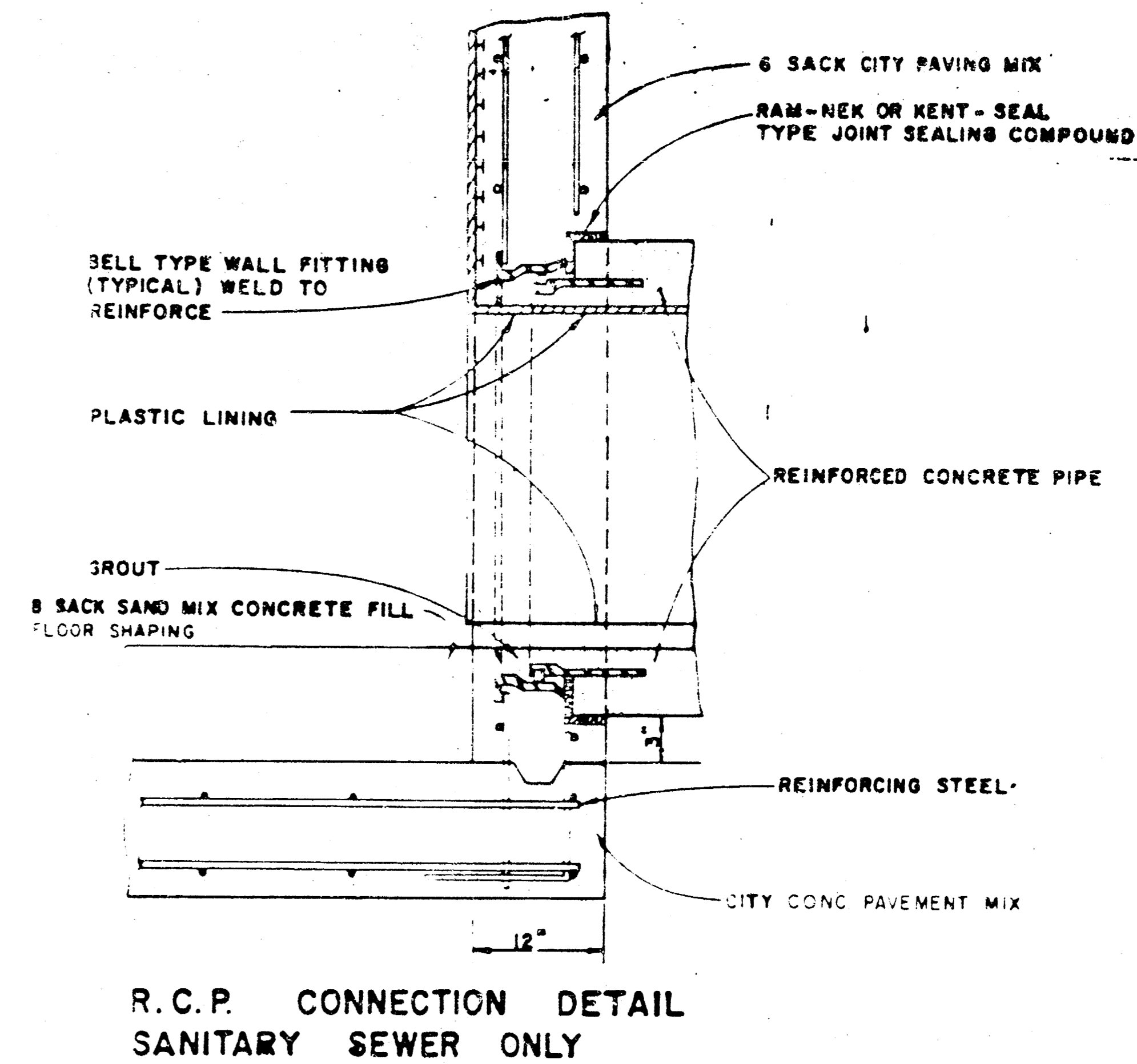
FILMED FROM THE BEST AVAILABLE COPY.....



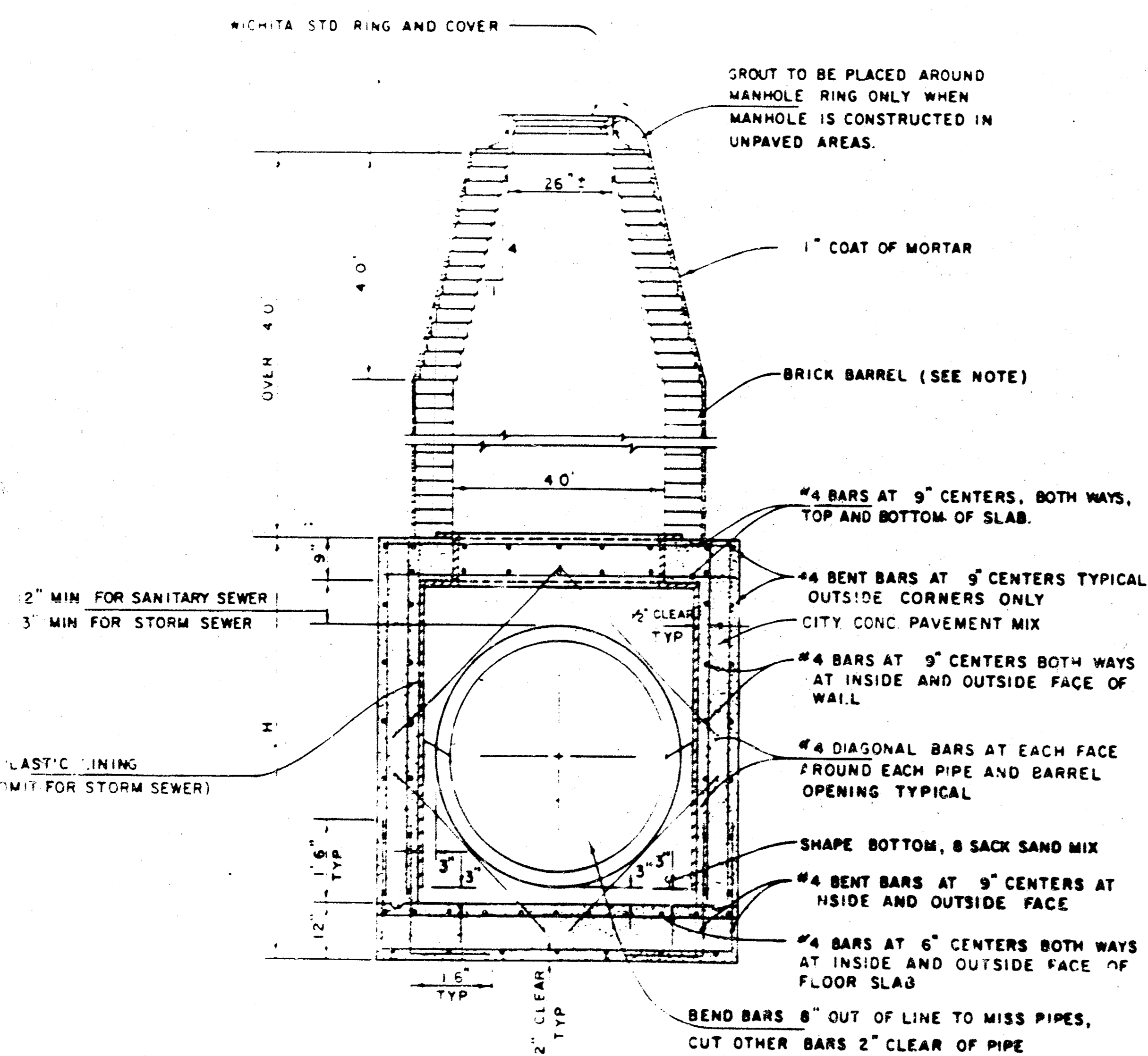
REINFORCED CONCRETE MANHOLE  
DEPTH OF STACK: OVER 4.0'  
SCALE 1" = 2'



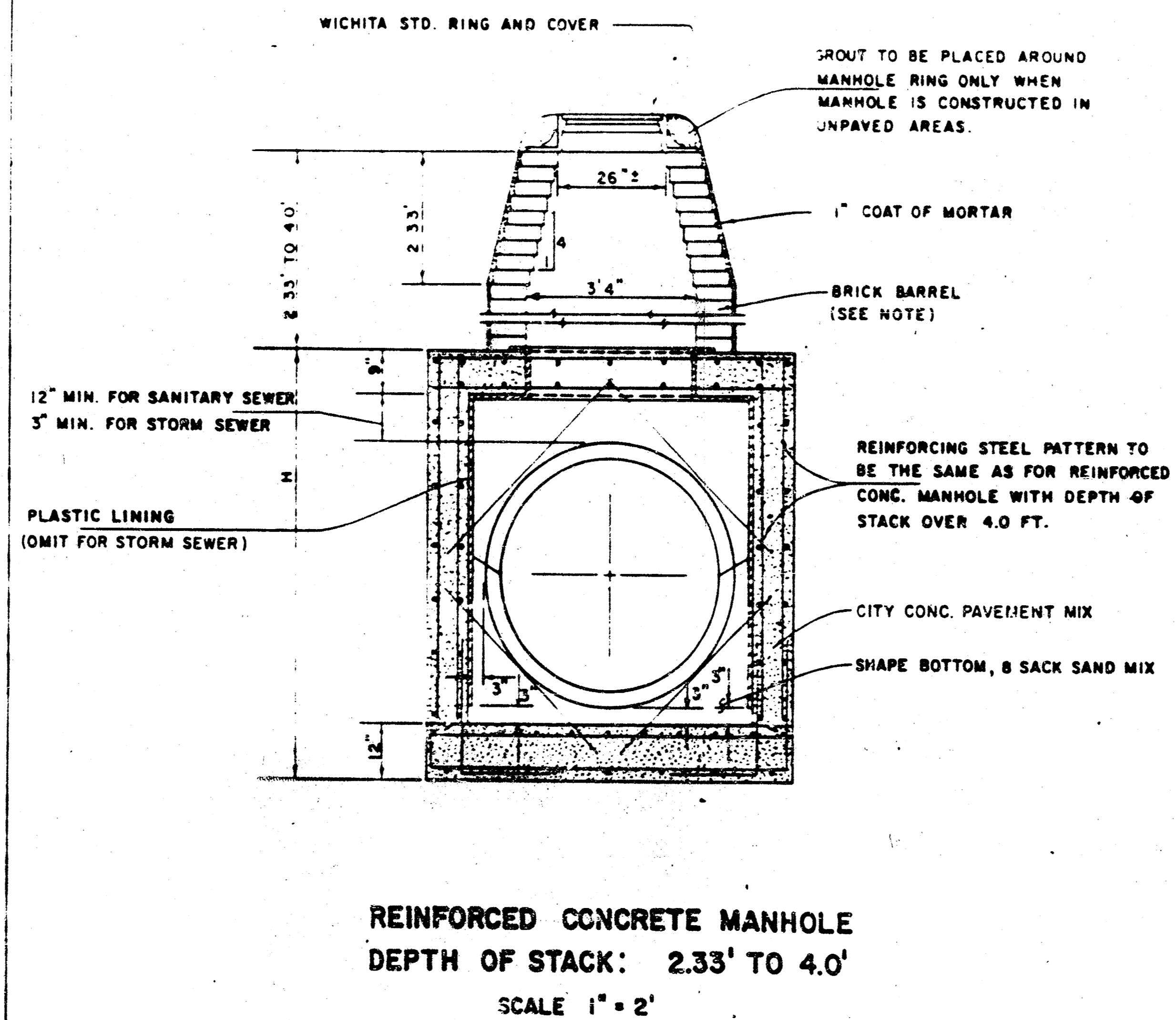
V.C.P. CONNECTION DETAIL  
SANITARY SEWER ONLY



R.C.P. CONNECTION DETAIL  
SANITARY SEWER ONLY

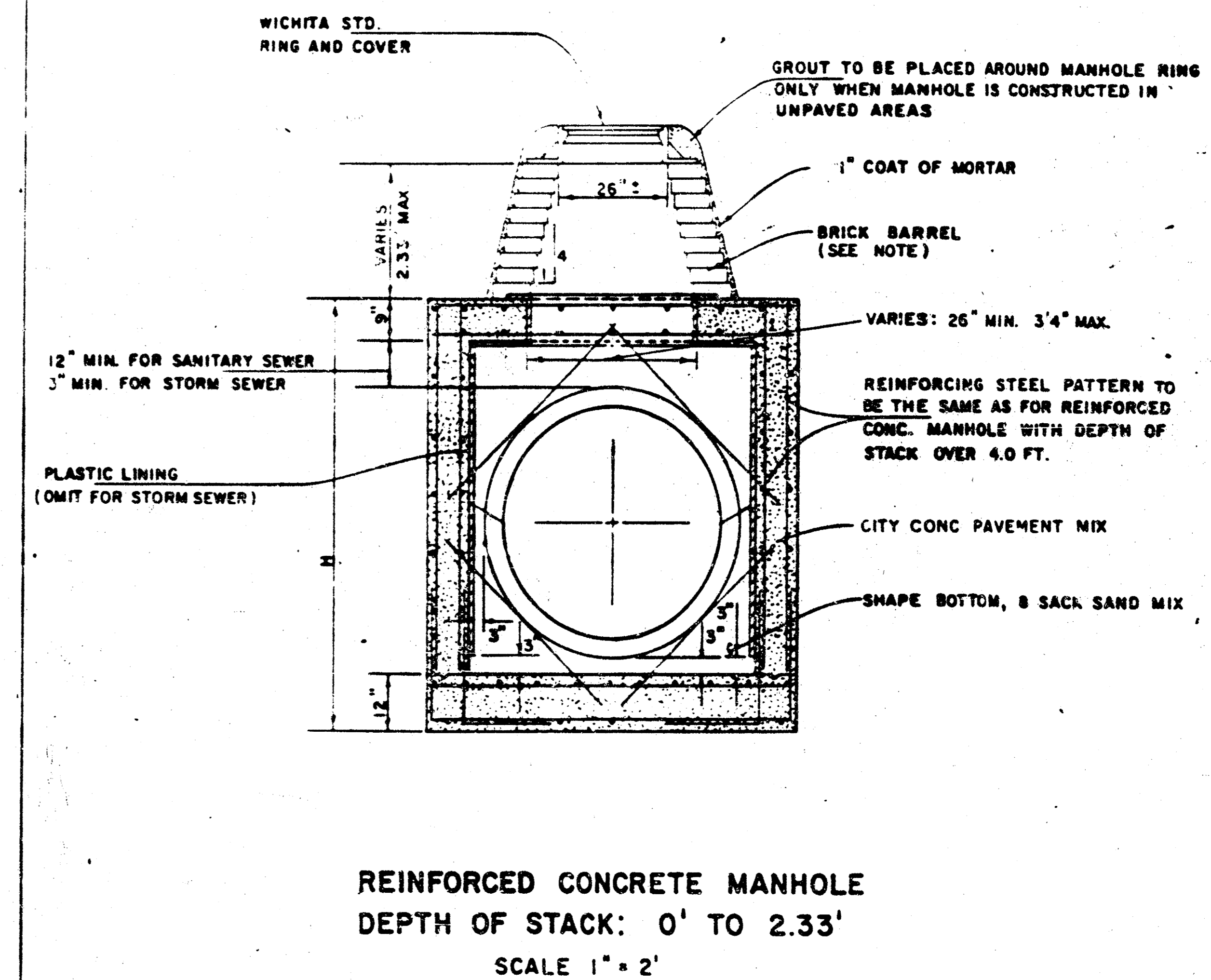


REINFORCED CONCRETE MANHOLE  
DEPTH OF STACK: OVER 4.0'  
SCALE 1" = 2'



REINFORCED CONCRETE MANHOLE  
DEPTH OF STACK: 2.33' TO 4.0'  
SCALE 1" = 2'

NOTE:  
BRICK BARRELS LESS THAN 16' DEEP SHALL HAVE 8" WALLS EXCEPT WHEN LOCATED WITHIN PUBLIC STREET OR ALLEY PAVEMENT THEN THE WALL SHALL BE 12". BRICK BARRELS MORE THAN 16' DEEP SHALL HAVE 12" WALLS. THE "L" AND "W" DIMENSIONS SHALL BE A MINIMUM OF 5'6" FOR BRICK BARRELS WITH 8" WALLS AND 6'2" FOR BRICK BARRELS WITH 12" WALLS WHEN THE BRICK BARRELS ARE OVER 4 FT. IN HEIGHT.



REINFORCED CONCRETE MANHOLE  
DEPTH OF STACK: 0' TO 2.33'  
SCALE 1" = 2'

Proj. No. 468 76 245 81144 000 000 001

STANDARD DETAILS  
REINFORCED CONCRETE MANHOLES

CITY OF WICHITA

FEBRUARY 1984

Sheet No. 7 of 10

10 1 1 15

FILMED FROM THE BEST AVAILABLE COPY

# MANHOLE FRAME AND COVER DETAIL

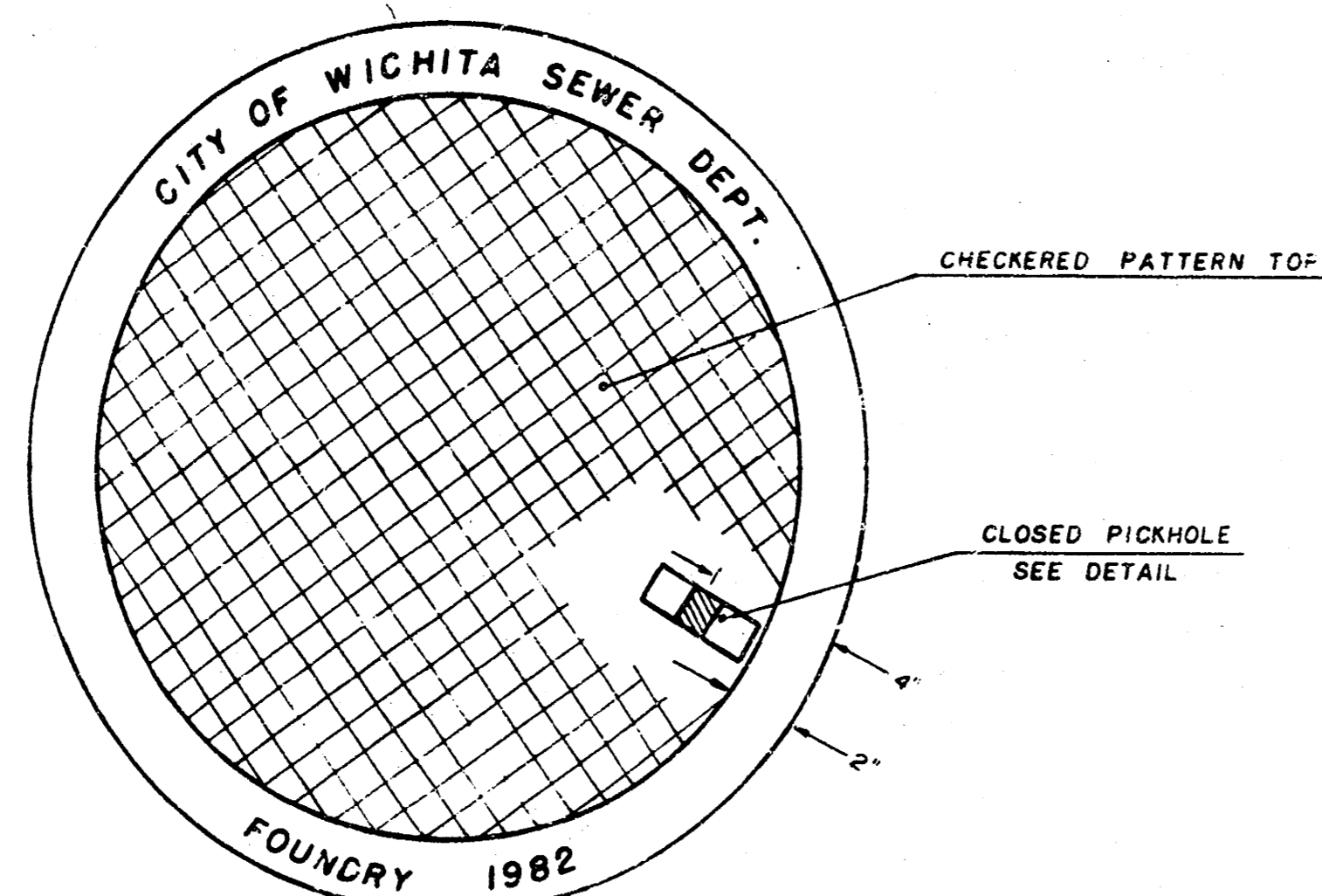
ADOPTED AS STANDARD DESIGN

BY

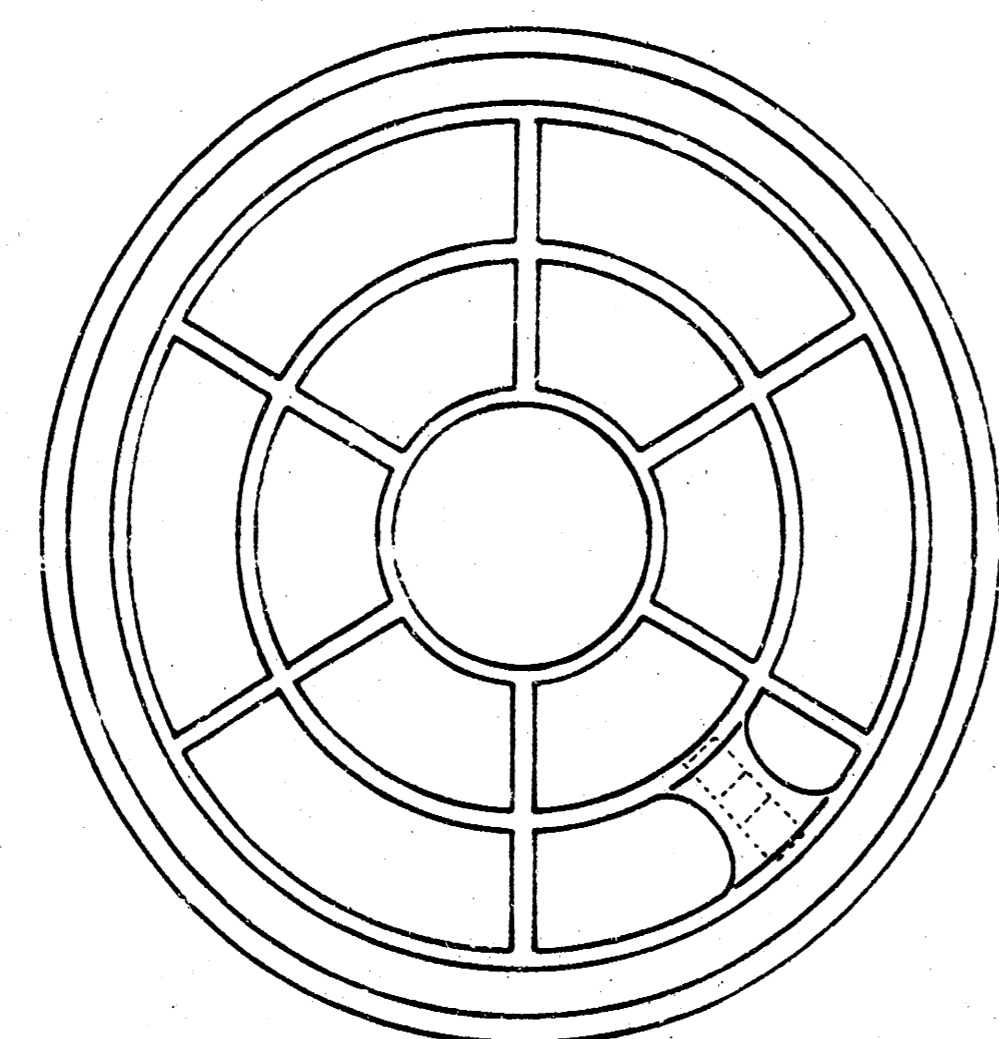
City of Wichita, Kansas

## MANHOLE COVER

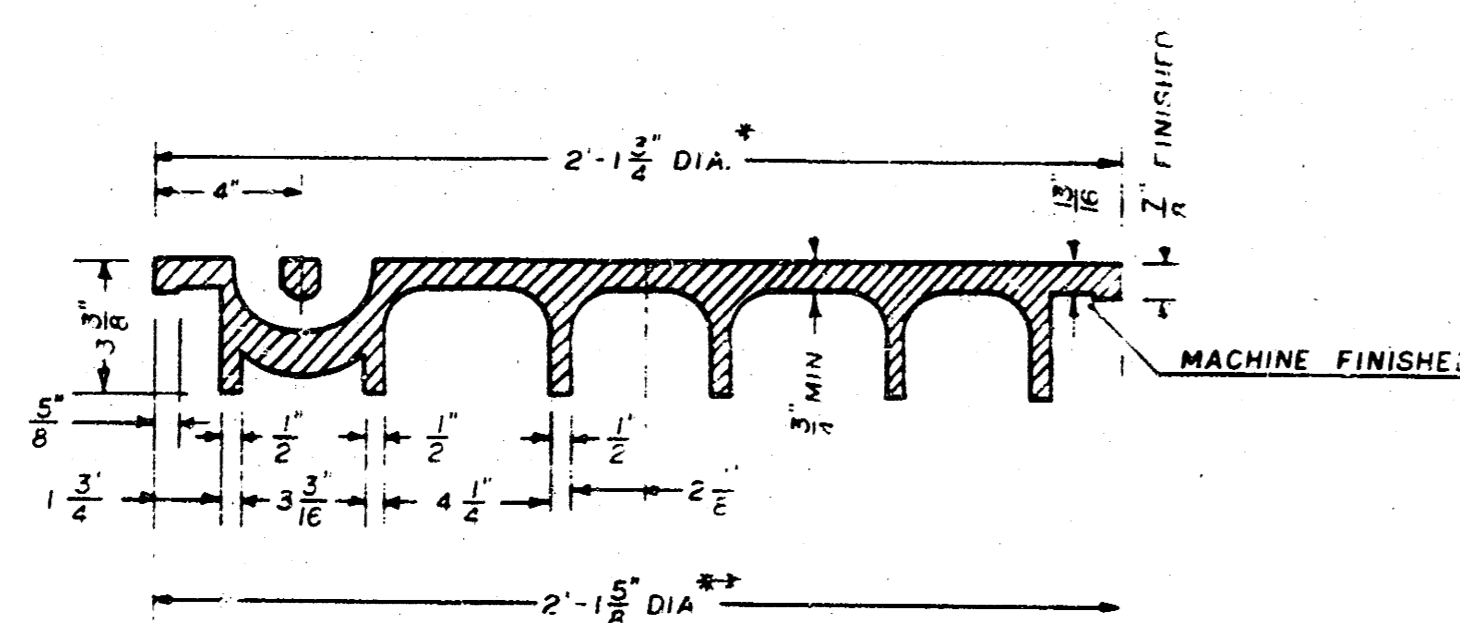
Weight: 180 Lbs.



TOP VIEW



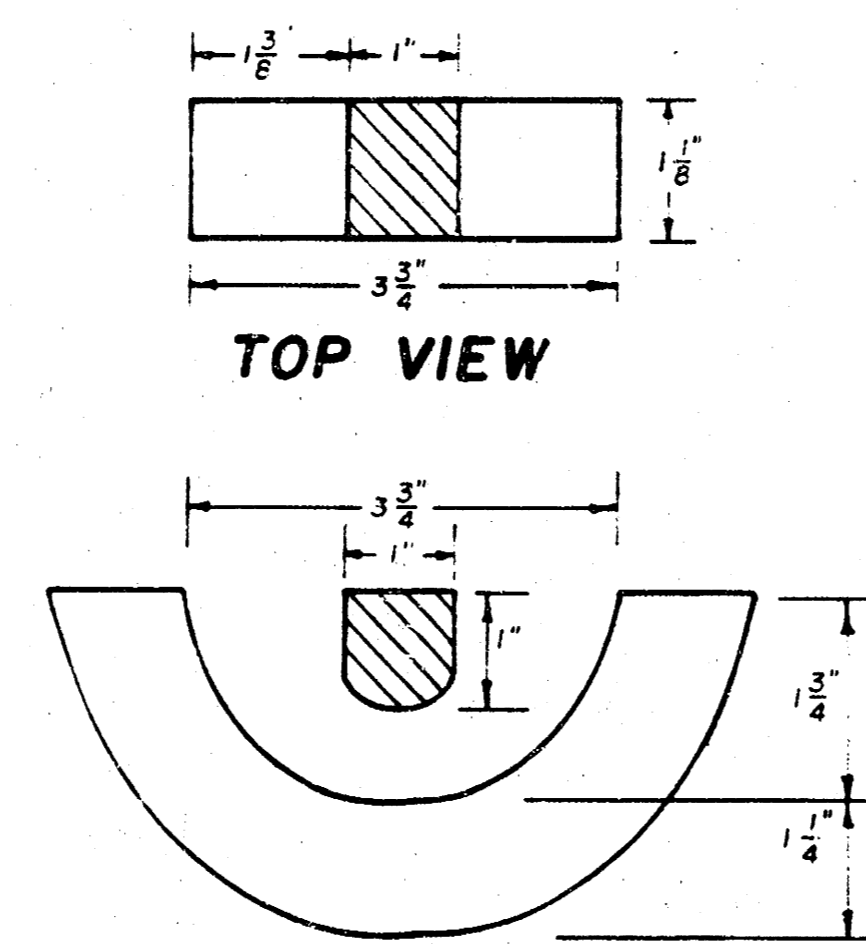
BOTTOM VIEW



SECTION VIEW

\* OUTSIDE DIA. TOP OF COVER  
\*\* OUTSIDE DIA. BOTTOM OF COVER

## PICKHOLE DETAIL

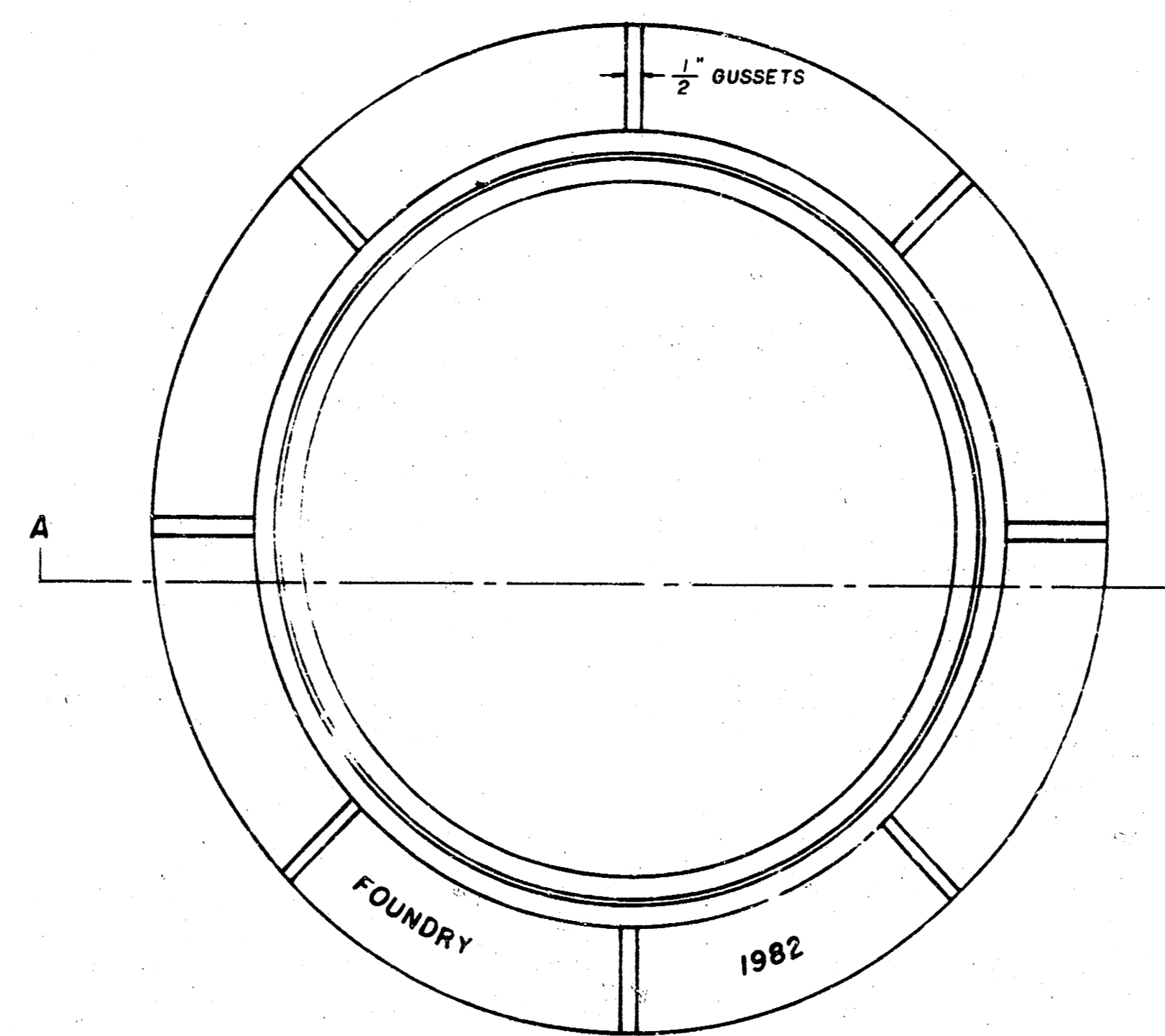


TOP VIEW

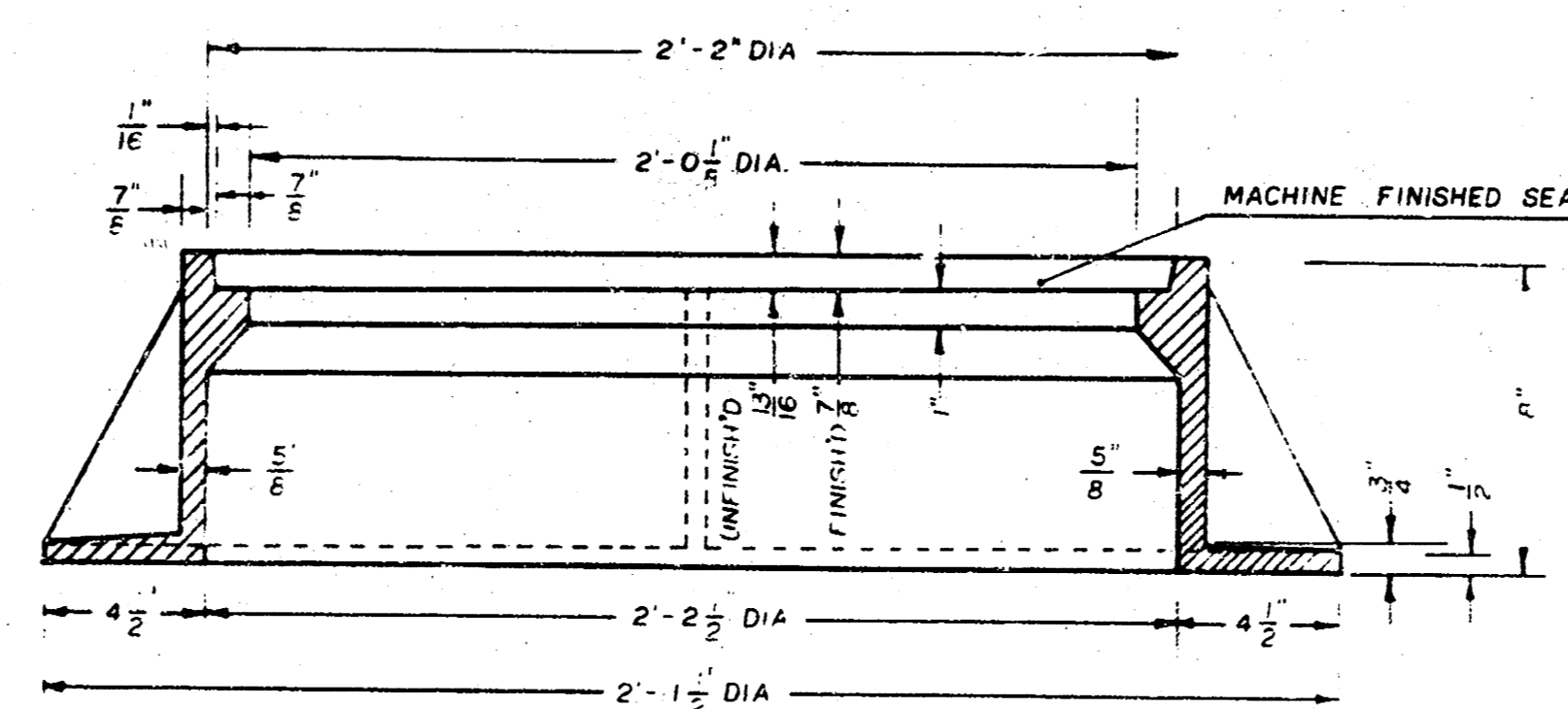
SECTION VIEW

## MANHOLE FRAME

Weight: 240 Lbs.



TOP VIEW



SECTION A-A

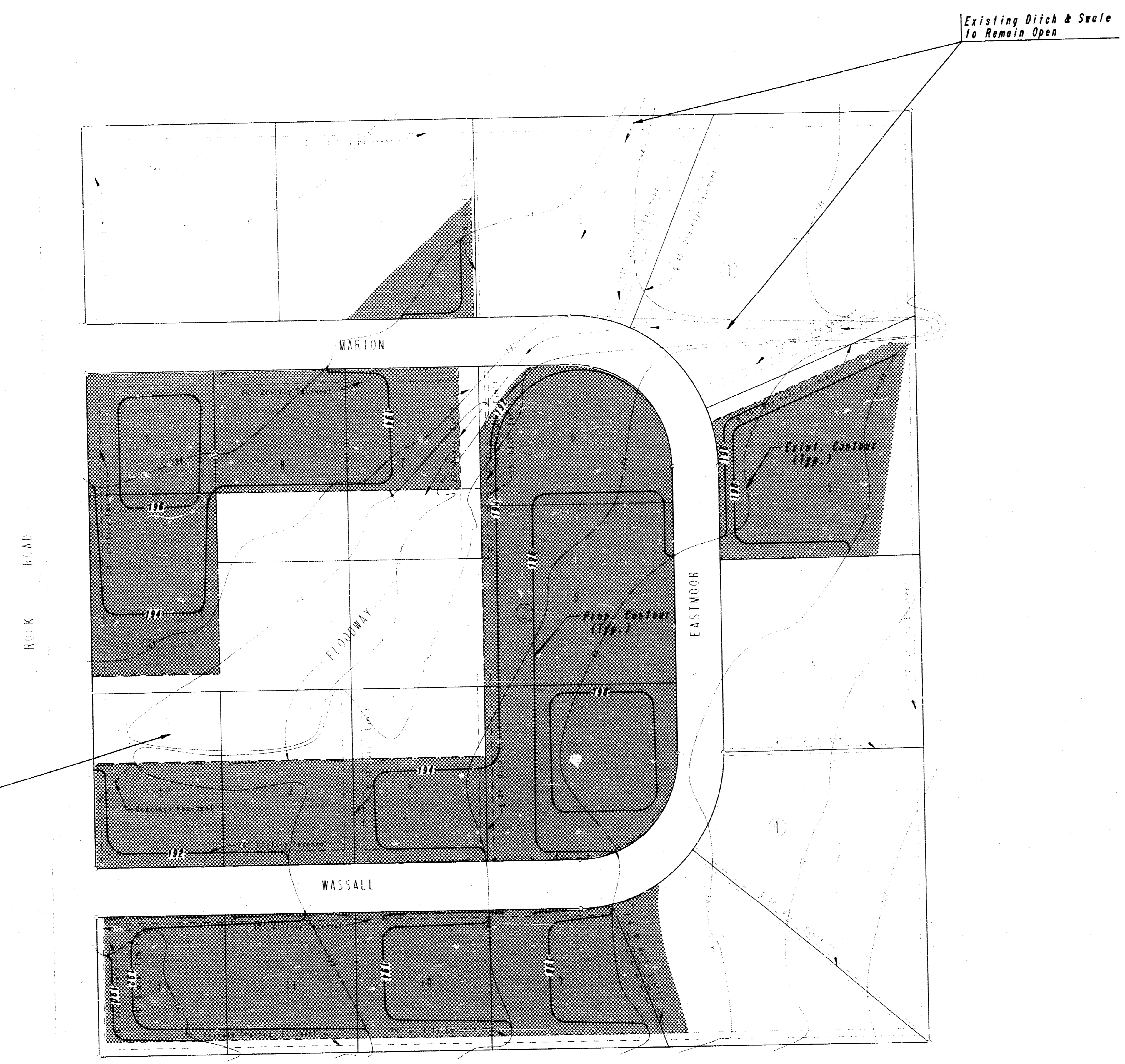
### GENERAL NOTES

1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.
2. MANHOLE CASTINGS SHALL BE COATED WITH AN ASPHALT PAINT RESULTING IN A SMOOTH, TOUGH AND TENACIOUS COATING WHICH IS NOT BRITTLE OR TACKY.
3. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.
4. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.
5. THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1" IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD "DEPARTMENT" MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

|   |                |                    |
|---|----------------|--------------------|
| PROJECT NO.<br>468-76-245-81144-000-000-001 | SHEET NO.<br>9 | TOTAL SHEETS<br>12 |
|---|----------------|--------------------|

SCALE: 1" = 100'

See Sheet No. 3 for Grading within Platted Floodway



- NOTES
- OWNER SHALL HAVE FIRST RIGHT TO EXCESS MATERIAL EXCAVATED FROM THE DETENTION POND.
  - EXCESS EXCAVATED MATERIAL SHALL BE WASTED WITHIN THE SHADED AREAS SHOWN HEREON TO THE PROPOSED CONTOURS SHOWN. ANY ADDITIONAL EXCESS MATERIAL, OVER AND ABOVE THAT NEEDED FOR THE FILL AREAS SHOWN, SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR.
  - ALL STAKING, INSPECTION, TESTING, AND APPROVAL OF THE DISPOSAL OF EXCESS MATERIAL ON PRIVATE PROPERTY, AS SHOWN HEREON, SHALL BE THE SOLE RESPONSIBILITY OF THE LANDOWNER. CONTACT MR. RANDALL VOTH, AMERICAN LAND DEVELOPMENT COMPANY, INC., PH. NO. 264-3210.
  - NO FILL SHALL BE PLACED ON STREET RIGHTS-OF-WAY.
  - BLADE FILL AREAS SMOOTH AND GRADE TO DRAIN.
  - CONTOUR INTERVAL = 2'

EARTHWORK SUMMARY

|  |             |
|--|-------------|
| EXCAVATION - CROSS-SECTIONS                      | 38,380 C.Y. |
| 10X  | 3,838 C.Y.  |
| TOTAL  | 42,218 C.Y. |
| COMPACTED FILL - CROSS SECTIONS                  | 1,737 C.Y.  |
| 10X  | 174 C.Y.    |
| TOTAL  | 1,911 C.Y.  |
| WITH 20% SHRINKAGE FACTOR, EXCESS MATERIAL =     | 39,325 C.Y. |
| ESTIMATED FILL REQUIRED ON-SITE (SHADED AREAS) = | 32,510 C.Y. |
| ESTIMATED DISPOSAL OFF-SITE                      | 7,415 C.Y.  |

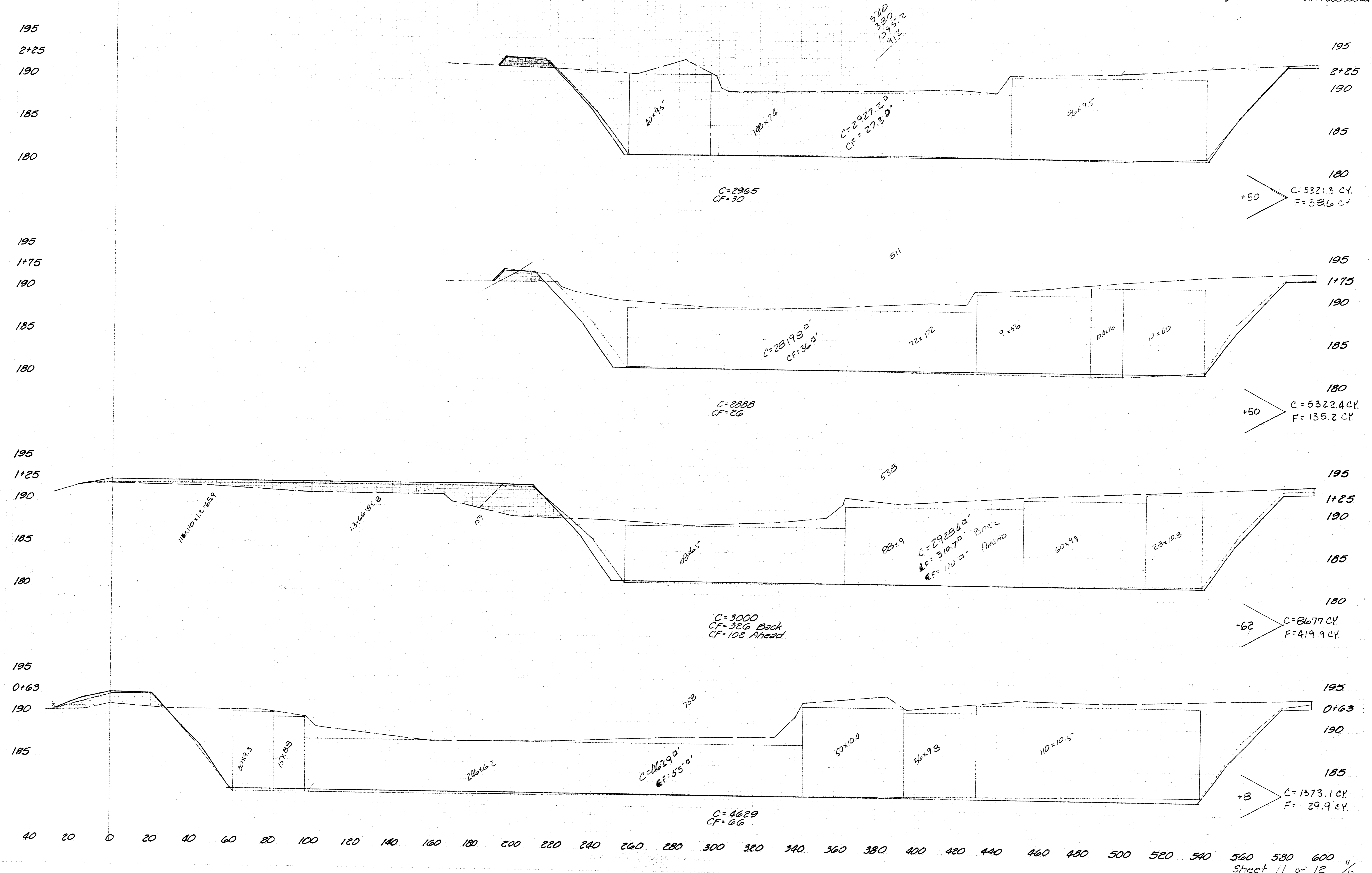
OVERALL GRADING PLAN  
(FOR INFORMATION ONLY)

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.  
ENGINEERS  
WICHITA, KANSAS

|             |     |            |           |
|-------------|-----|------------|-----------|
| Designed by | CSB | Checked by |           |
| Drawn by    | DEP | Date       | MAY, 1966 |
|             |     | Job No.    | 88117-1   |

FILMED FROM THE BEST AVAILABLE COPY....

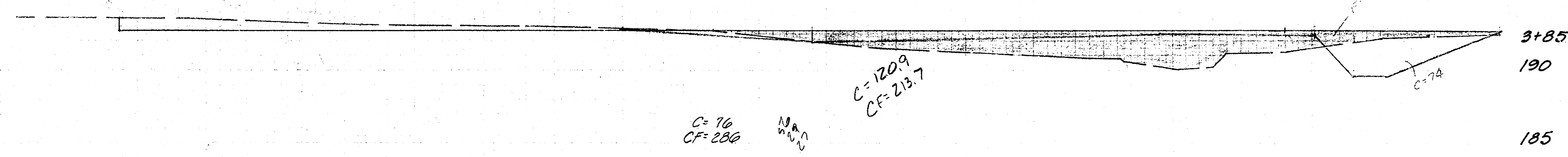




FILMED FROM THE BEST AVAILABLE COPY...

195  
3+85  
190  
185  
180

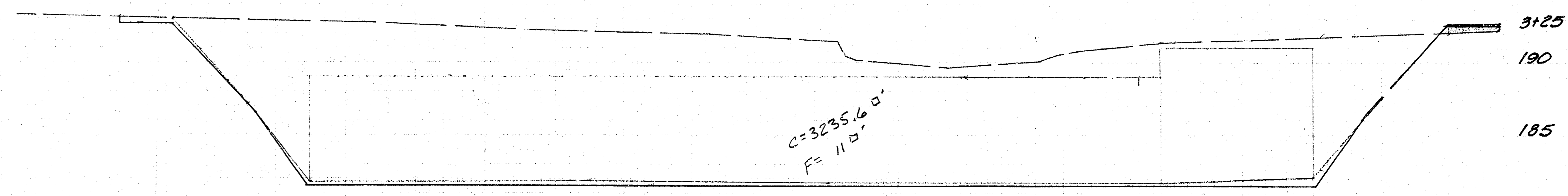
195  
3+85  
190  
185



+60  
C=3729.4CY  
F=209.7CY

195  
3+25  
190  
185  
180

195  
3+25  
190  
185



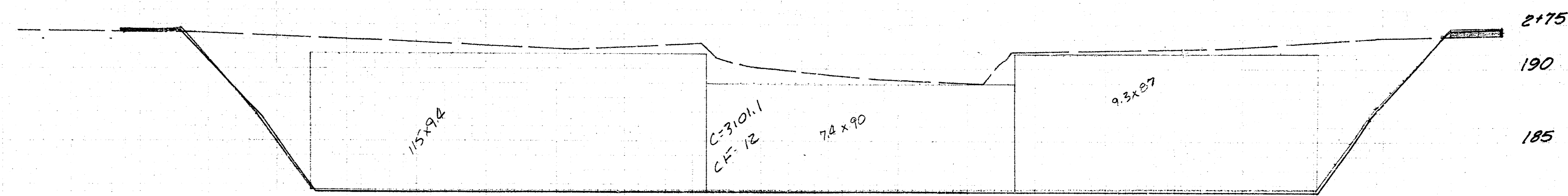
C=3338  
CF=11

+50  
C=5867.3CY  
F=21.3CY

$\frac{9.8}{1.17}$   
 $\frac{1795.8}{1038.0}$   
 $\frac{3235.6}{5235.6}$

195  
2+75  
190  
185  
180

195  
2+75  
190  
185



C=3144  
CF=12

+50  
C=5531.8CY  
F=36.4CY

$\frac{1081}{505}$   
 $\frac{666}{809.1}$   
 $\frac{3101.1}{3101.1}$

40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600

IN AT THE FULL SCALE SECTION

10 4 5 12 of 12

FILMED FROM THE BEST AVAILABLE COPY