



SPECIAL PROVISIONS

STATION MARKING ON HEADWALLS

The Engineer shall place station numbers on all concrete culvert headwalls. The stationing of the centerline of the culvert shall be marked on the top of each headwall with base of numbers toward center of road by using standard pavement marking forms.

GRADES FOR INTERSECTIONS

All intersections are to be considered as complete units and their grades determined before construction is started.

TRANSVERSE JOINTS IN CONCRETE PAVEMENT

Transverse joints in concrete pavement shall be placed according to details on Standard Plan E-4-A-135B and E-4-A-127B.

BITUMINOUS MATERIAL ON APPROACHES

Bituminous surfacing mixture where placed on approaches and no specific dimensions indicated, shall be placed to a line 30 feet from the edge of the slab, unless otherwise shown.

Where used as a base for bituminous surfacing mixture, the approach aggregate shall have a minimum thickness of 5" compacted. The bituminous material mixture shall be 2-1/2" thick, compacted, and the approach aggregate shall be depressed 2-1/2" to receive the bituminous material.

HAND FINISHING

Hand finishing according to Article 4.14.03-q-1 of the Standard Specifications will be permitted on variable width lanes and lanes formed by flexible forms for short radius curves, as directed by the Engineer.

"RESISTIVITY INVESTIGATION

A resistivity survey will generally be made in all cut sections in excess of 12 feet in depth and in larger borrow pits. A minimum number of borings will be made to satisfactorily establish a correlation with the resistivity factors.

These surveys are available for review by the contractor in the District Office of the district in which the project occurs, in the office of the Engineer of Soils in Lansing, and in the office of Testing and Research in Lansing."

MANHOLE COVERS IN SHOULDER AREAS

"All manhole covers occurring within shoulder areas shall be set at an elevation 3" to 4" below the normal shoulder elevation."

WOVEN WIRE FENCE

Where woven wire fence is called for, the Engineer shall check the right of way as actually acquired before placing fence.

RIGHT OF WAY FENCE

Permanent right of way fence shall be constructed as the first operation in cases where the right of way cuts across stock grazing areas. Temporary fencing, when ordered by the Engineer, will be paid for at the contract unit price for Temporary Fence.

SURPLUS SURCHARGE MATERIAL

In locations where surcharge is used, the surplus surcharge material, over and above that required to complete the fill after settlement, shall be used as directed by the Engineer for subbase, porous material, swamp backfill, other embankments, or at other surcharge locations. Quantities of items for which this material is substituted shall be correspondingly decreased.

"CLASS B SODDING

Where Class B Sodding is shown on the plans, the Department may elect to substitute Jute Matting. The determination of specific areas and locations will be as directed by the Engineer".

The foregoing applies to Class B Sodding only. There is no intention of substituting jute matting for Class A.

PEAT EXCAVATION AT CULVERTS

At the time of peat excavation, the specific treatment called for on plans at any given swamp shall be widened out at culverts to provide stable foundation for the entire length of culvert, including headwalls or end sections.

THE FOLLOWING ITEMS ARE ESTIMATED FOR THE ENTIRE PROJECT TO CORRECT POSSIBLE UNSTABLE SURGRADE CONDITIONS WHERE DESIGNATED BY THE ENGINEER.

|  |       |                |
|--|-------|----------------|
| FROST HEAVE EXCAVATION                     | _____ | CU.YDS.        |
| BORROW                                     | _____ | CU.YDS.        |
| OVERHAUL (ON ABOVE BORROW)                 | _____ | COMP.CU.YD. U. |
| 6" EDGE DRAINS                             | _____ | LIN.FT.        |
| 6" BANK DRAINS (6.1-14' Deep)              | _____ | LIN. FT.       |
| EXCAVATION (WASTE FROM SEWER TRENCHES)     | _____ | CU.Y.S.        |
| POROUS MATERIAL - GRADE B (COMP. IN PLACE) | _____ | CU.YDS.        |
| **POROUS MATERIAL - GRADE A                | _____ | CU.YDS.        |
| OVERHAUL (POROUS MATERIAL - GRADE A)       | _____ | COMP.CU.YD. U. |
| GRADE "A" CONCRETE                         | _____ | CU.YDS.        |
| REINFORCING STEEL                          | _____ | LBS.           |
| GUARD POSTS                                | _____ | EACH           |

\*\*CLASSED AS EARTH EXCAVATION FROM PIT NO. \_\_\_\_\_.

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE SHEETS.

|   |       |                |
|---|-------|----------------|
| EARTH EXCAVATION (TOPSOIL REMOVAL)  | _____ | CU.YDS.        |
| BORROW (TO REPLACE TOPSOIL)   | _____ | CU.YDS.        |
| OVERHAUL (ON ABOVE BORROW)  | _____ | COMP.CU.YD. U. |
| FINE GRADING AND CLEANUP - POB TO POE OR STA. _____ TO STA. _____ AND STA. _____ TO STA. _____ AND STA. _____ TO STA. _____ | _____ | STAS.          |
| TESTING EARTH GRADE WITH COMPACTOR  | _____ | HOURS          |
| COMPACTING CUT SECTIONS   | _____ | STAS.          |
| COMPACTING ORIGINAL GROUND  | _____ | STAS.          |
| CLASS B, C, OR D SHOULDERS (ESTIMATED TO BE OBTAINED FROM _____ AND FROM _____)   | _____ | CU.YDS.        |
| CLASS APPROACHES (MAIL BOX TURNOUTS)  | _____ | TONS           |
| TOPSOIL SURFACE (ON UNSODDED SLOPES AND DITCHES)  | _____ | CU.YDS.        |
| ELM TREE SPRAY - APPLIED  | _____ | GALS.          |
| BARRICADES  | _____ | EACH           |
| WOVEN WIRE FENCE (TEMPORARY FENCING)  | _____ | LIN.RODS       |
| MULCHING (SLOPES, AS DIRECTED BY THE ENGINEER)  | _____ | TONS           |
| RYE SEEDING   | _____ | ACRES          |
| *CLASS _____ SEEDING  | _____ | ACRES          |
| GUARD POSTS (MAIL BOXES) (NON-FED. PARTICIPATION)   | _____ | EACH           |
| COMPLETING UNDER TRAFFIC  | _____ | MILES          |

Maintaining Traffic 1 Per Intersection

PUBLIC UTILITIES

The existing utilities listed below and shown on these plans represent the best information available, as obtained on our surveys dated \_\_\_\_\_. This information does not relieve the contractor of the responsibility to satisfy himself as to their accuracy or of his responsibility in case utilities have been constructed or removed, since the above survey date, \_\_\_\_\_.

| Type of Utility           | Owner                              |
|---------------------------|------------------------------------|
| Water Mains               | Detroit Water Supply               |
| Telephone                 | Mich. Bell Telephone Company       |
| Gas Mains                 | Mich. Consolidated Gas Company     |
| Electric                  | Detroit Edison Company             |
| Sewers                    | Detroit Department of Public Works |
| Police & Fire Call System | Detroit Police & Fire Dept.        |

The owners of existing poles and other service structures that are within grading limits and that will interfere with construction operations will move them to locations designated by the engineer or will remove them entirely from the highway right of way.

Owners of public utilities will not be required by the Department to move additional poles and structures that are not within grading or structure limits in order to facilitate the operation of construction equipment, unless it is determined by the engineer that such pole line or structures constitute a hazard to the public or are extraordinarily dangerous to the Contractor's operations.

GENERAL PLAN NOTES

BEDDING AND FILLING

Bedding and filling around pipe culverts shall be done as specified on Standard Plan E-4-A-36C. An estimate of the sand gravel fill required is included on the plans.

PROPERTY OWNERS

Property owners' names, where shown, are for information only and their accuracy is not guaranteed.

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON THE PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

|   |   |
|---|---|
| Outlet Headwalls  | E-4-A-9E, Details 1 or 2  |
| Concrete Rings  | E-4-A-9E, Detail 3  |
| Edge Drains   | E-4-A-9E, Detail 5  |
| Sodding   | E-4-A-10C   |
| Ditch Turnout   | E-4-A-10C, Detail 11  |
| Pavement Reinforcement  | E-4-A-21F   |
| Track Crossings   | E-4-A-22D   |
|   | (except that the depth of the header shall be 18" instead of 15")     |
| Grading Cross-Sections  | E-4-A-26D   |
| Intercepting Ditch  | E-4-A-26D   |
| Cover A   | E-4-A-27A-3   |
| Cover C-4   | E-4-A-27C-4   |
| Cover D-4   | E-4-A-27D-4   |
| Cover E   | E-4-A-27E-3   |
| Cover F & Monument Box (Monument Boxes Furnished By The State)  | E-4-A-27F-3   |
| Cover G   | E-4-A-27G-4   |
| Cover H   | E-4-A-27H   |
| Cover J   | E-4-A-27J   |
| Cover K   | E-4-A-27K   |
| Cover L   | E-4-A-27L   |
| Cover M   | E-4-A-27M   |
| Manholes, Catch Basins & Inlets   | E-4-A-27F-3   |
| Treatment of Peat Marshes   | E-4-A-28E   |
| Concrete Curb, Roll Curb & Curb & Outer Curb & Outer Headers  | E-4-A-29F   |
| Curb & Outer Endings  | E-4-A-29F, Detail 9   |
| Driveway Returns & Driveway Openings  | E-4-A-29F, Detail 14  |
| Concrete End Header (At Pavement Ends)  | E-4-A-29F, Detail 20  |
| Concrete End Header (At RR Crossings)   | E-4-A-29F, Detail 20A   |
| Bridge Header   | E-4-A-29F, Detail 21  |
| Pavement Joints   | E-4-A-33O   |
|   | (Excepting that Plain Tie Bars will not be permitted)                 |
| Bedding & Filling Around Pipe Culverts  | E-4-A-36C   |
| Plan Mat  | E-4-A-36C, Detail 6   |
| Superelevation of Curves  | E-4-A-49E-7   |
|   | (except that the rate of Superelevation is to be called for on Plans) |
| Pavement Crows  | E-4-A-49E-7   |
| Two Cable Guard Rail & Guard Posts  | E-4-A-75C-2(Rev.10-10-61)   |
| Braced End Panels   | E-4-A-75C-2(Rev.10-10-61)   |
| Cable Expansion Take-Ups  | E-4-A-75C-2(Rev.10-10-61)   |
| Concrete ROW Markers  | E-4-A-76A   |
| Mail Box Turnouts   | E-4-A-110B, Detail 1  |
| 4" Concrete Sidewalk  | E-4-A-110B, Detail 2  |
| 7" Concrete Sidewalk  | E-4-A-110B, Detail 3  |
| Concrete Pavement 7" Uniform  | E-4-A-110B, Detail 4  |
| Plain Cobble Gutters  | E-4-A-110B  |
| Grouted Cobble Gutters  | E-4-A-110B  |
| Reverse Curves  | E-4-A-110B, Detail 11   |
| Concrete Curve Header   | E-4-A-125   |
| Typical Joint Layout  | E-4-A-127B  |
| Concrete Shoulder Gutter & Spillway   | E-4-A-128   |
| Tile Trap   | E-4-A-129   |
| Dowel Bar Installation For Load Transfer At Transverse Contraction & Expansion Joints   | According to Details Approved By The Department                       |
| Concrete Steps  | E-4-A-132A  |
| Bridge Approach Curb & Gutter   | E-4-A-134C  |
| Location of Transverse Expansion & Contraction Joints In Concrete Pavement  | E-4-A-135B  |
| Steel Beam Guard Rail   | E-4-A-137D  |
| Base Plate For Expansion & Transverse Contraction Joints  | E-4-A-138   |
| Double Steel Beam Guard Rail  | E-4-A-140A  |
| Wooden Bumper Rail & Rustic Guard Post  | E-4-A-143   |
| Concrete Nose Detail For Urban Freeways   | E-4-A-145   |
| Barricade & Project Sign  | E-6-A-55E   |
| Concrete Headwalls For Circular Culverts 10" To 36" Diameter (Headwalls Are To Be Omitted From All Circular Drive Culverts Up To 24" Diameter Inclusive & a Concrete Ring Shall Be Placed At Each End Of These Culverts.) | E-13-A-1D   |
| Headwalls For Reinforced Elliptical Concrete Culverts   | E-13-A-2C   |
| Precast Concrete End Sections For Pipe Culvert  | E-13-A-3A   |
| Headwalls For 42" & 48" Diameter Circular Culverts  | E-13-A-42-48B   |
| Headwalls For 54" & 60" Diameter Circular Culverts  | E-13-A-54-60B   |
| Headwalls For 72" & 84" Diameter Circular Culverts  | E-13-A-72-84B   |
| Concrete Slab Culverts  | E-14-A-Series   |
| Concrete Box Culverts   | E-14-B-Series   |

**AS CONSTRUCTED**  
ACCORDING TO MARKED PLANS  
PREPARED BY PROJECT ENGINEER

| B.P.R. DIV. NO. | STATE         | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|-----------------|---------------|-----------|-------------|-----------|--------------|
| 4               | MICH.         |           |             |           |              |
| ROUTE           | STATE PROJECT | COUNTY    | CITY        | SHEET NO. | TOTAL SHEETS |
| 45-24           | B2053C        | Wayne     | Detroit     | 2         |              |

Final ROW 2-7-57 LK  
 Rev. ROW, 6-2-58 L.K.  
 82053C-C34  
 Final Design  
 R. Johnson  
 12-63  
 12-58  
 12-53  
 Checked  
 S. Foster

B.M. # 56 Elev. 634.56  
 RE Spike in 12" Maple  
 84 Ft. E Sta. 975 + 55

P.I. Sta. 980 + 03.65  
 4' 0"-15'-45" Lt.  
 Axle Shaft on E  
 Witnesses: N 39°-00' E Cap & Nail in 15' Elm 41.90'  
 S 22°-00' E Cap & Nail in Power Pole 52.90'  
 S 41°-00' W Cap & Nail in Power Pole 67.33'

B.M. # 56 Elev. 633.23  
 RE Spike in 22" Elm  
 104 Ft. E Sta. 983 + 85

REDFORD PARK SUBDIVISION  
 C34

| B.P.R. DIV. NO. | STATE           | FED. PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------|----------------|-------------|-----------|--------------|
| 4               | MICH.           |                |             |           |              |
| ROUTE           | CONTROL SECTION | COUNTY         | CITY        | SHEET NO. | TOTAL SHEETS |
| 15-24           | B2053C          | Wayne          | Detroit     | 3         |              |

For Legend See Sheet No. 5

**C34**  
 Note: Stationing is not continuous along the project.

Construct CB-6A(10'-6.0 ft deep) with 45 lin. ft. of 12 in. Sewer (0'-6.0 ft deep)  
 (1)-12" Sewer Tap  
 Remove 6 sq. yds. Old Pavt.  
 Conc. Curb & Gutter Detail 10A-B lin. ft.  
 Conc. Pavt. Patching 10" Uniform 4 sq. yds.

**C34**  
 Construct: Sta. 980+40 Lt.  
 1 Special Manhole Detail A (25.16' over ft deep) along side the existing 6" Foot Sewer and 11/2 lin. ft. of 15" Sewer (14.1 - 2.5.0) ft deep  
 Remove 6 sq. yds. sidewalk  
 Place 50 sq. ft. 4" Conc. Sidewalk  
 (1) 12" Sewer Tap  
 (1) 12" Sewer Bulkhead  
 (1) 15" sewer tap  
 See Det. A on sheet # 11

**C34**  
 Construct CB-6E(6.1 to 14 ft Deep) with 10 lin. ft. of 12" Sewer (6.1 to 14 ft deep) for Connection to Special Manhole A.  
 Bulkhead Existing 18" Sewer Outlet to West (1) 15" Sewer Tap.

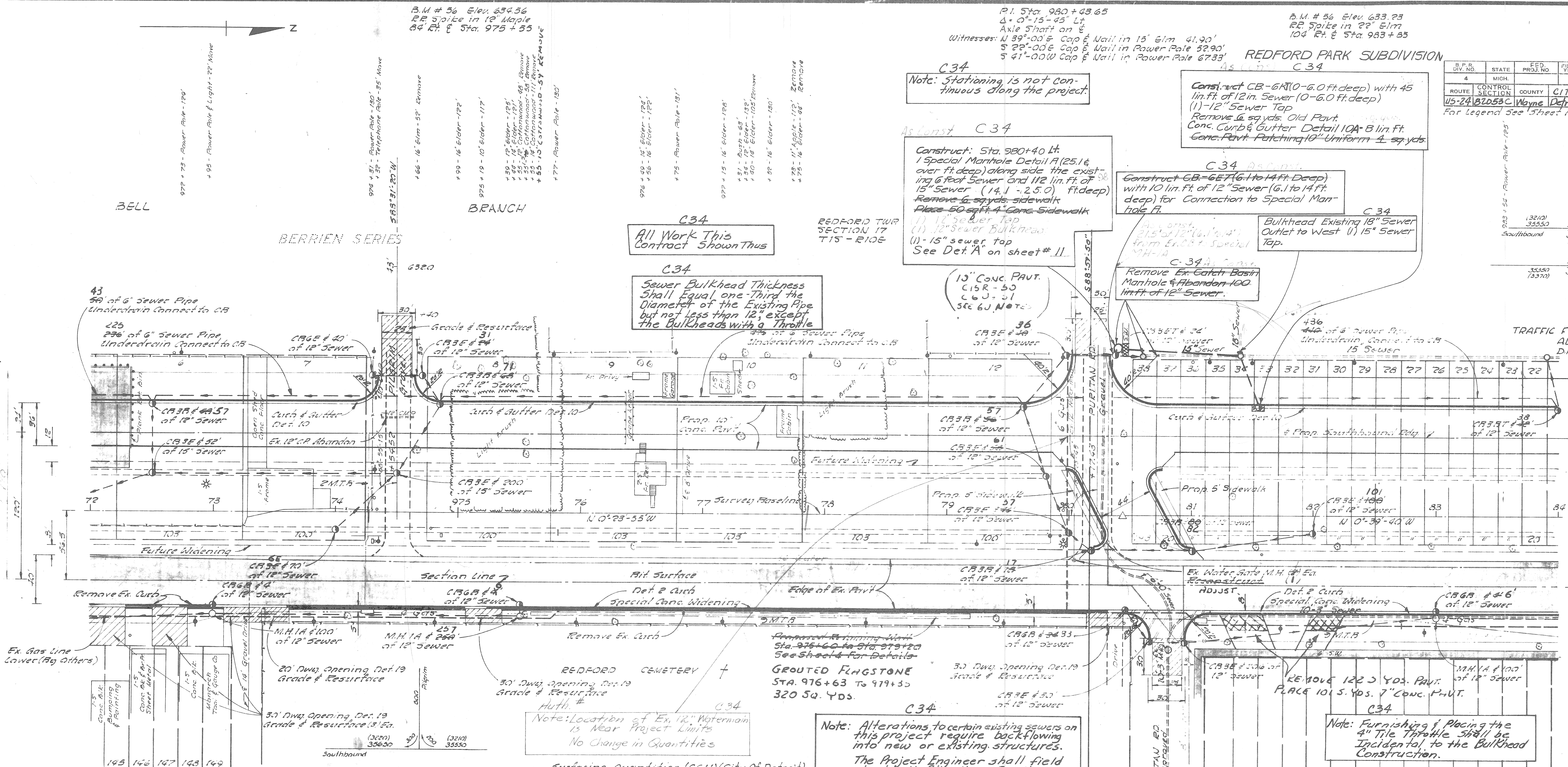
**C34**  
 Remove Ex. Catch Basin Manhole & Abandon 100 lin. ft. of 12" Sewer.

**C34**  
 All Work This Contract Shown Thus

**C34**  
 Sewer Bulkhead Thickness Shall Equal one-Third the Diameter of the Existing Pipe but not less than 12", except the Bulkheads with a Throttle

REDFORD TWP SECTION 17 T15-R10E

TRAFFIC FLOW DIAGRAM ADT 1976 DHV ( )



**ABERDEEN HEIGHTS SUBDIVISION**

Surfacing Quantities (CGU)

|                           |       |             |
|---------------------------|-------|-------------|
| 10" Conc. Base Course     | 272   | S.Y.        |
| Curb & Gutter Detail 10   | 854   | 853 L.F.    |
| Curb Detail 2             | 817   | L.F.        |
| Bit. Conc. Wearing Course | 645   | 56.3 Tons   |
| Bit. Prime Coat M.C-1     | 47.0  | 64.2 Gals.  |
| Bit. Bond Coat A.E-2      | 50.5  | 55.1 Gals.  |
| Bit. Material A.E-3       | 0     | 359.4 Gals. |
| Aggregate Base Course     | 637.0 | 615.3 Tons  |
| Cover Material 26-15      | 0     | 12.3 Tons   |
| Calcium Chloride Admixed  | 3.4   | 3.80 Tons   |
| Water (1000 gal. Units)   | 0     | 1.44 Units  |
| Selected Subbase          | 613.1 | 651.3 Tons  |
| 4" Conc. Sidewalk         | 325   | S.F.        |

Removal Quantities (CGU)

|                          |    |          |
|--------------------------|----|----------|
| Removing Old Pavement    | 0  | 3 S.Y.   |
| Removing Asphalt Surface | 91 | 96 S.Y.  |
| Removing Masonry & Conc. | 42 | 123 C.Y. |
| Removing Curb            |    | 715 L.F. |

TRAFFIC FLOW DIAGRAM ADT 1976 DHV ( )

Miscellaneous Quantities (CGU)

Sawing Bit Surface 819,864 L.F.

Tree Removals (CGU)

8" to 12" Diam. 7 G Each  
 15" to 24" Diam. 6 Each

Surfacing Quantities (CGU) (City of Detroit)

|                           |       |            |
|---------------------------|-------|------------|
| 7" Conc. PAVT.            | 135   | 104 S.Y.   |
| 10" Conc. Base Course     |       | 113 S.Y.   |
| 3" Conc. Base Course      |       | 113 S.Y.   |
| Curb & Gutter Detail 10   | 518   | 514 L.F.   |
| Curb Detail 2             | 377   | 371 L.F.   |
| Bit. Conc. Wearing Course | 553   | 44.8 Tons  |
| Bit. Prime Coat M.C-1     | 34.8  | 52.8 Gal.  |
| Bit. Bond Coat A.E-2      | 35.0  | 38.1 Gal.  |
| Bit. Material A.E-3       | 0     | 157.2 Gal. |
| Aggregate Base Course     | 269   | 125.1 Tons |
| Cover Material 26-15      | 0     | 5.6 Tons   |
| Calcium Chloride Admixed  | 1.5   | 1.94 Tons  |
| Water (1000 gal. Units)   | 0     | .78 Units  |
| Selected Subbase          | 411.6 | 390.8 Tons |
| 4" Conc. Sidewalk         | 334   | 325 S.F.   |

Removal Quantities (CGU) (City of Detroit)

Removing Asphalt Surface 6751 S.Y.  
 Removing 4" Pavement 122 S.Y.

Miscellaneous Quantities (CGU) (City of Detroit)

Sawing Bit Surface 491,458 L.F.  
 Elm Tree (Total CGU) 278 Gal.

Tree Removals (CGU) (City of Detroit)

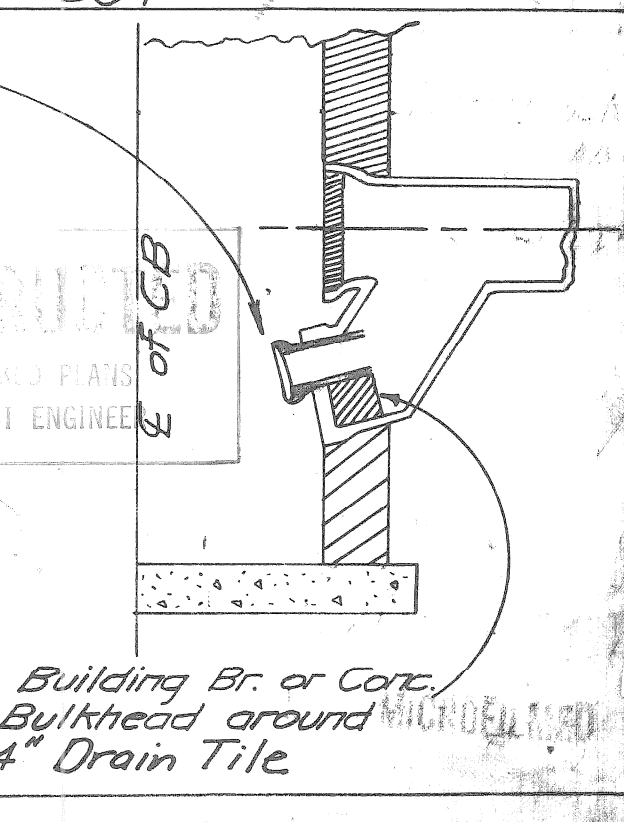
8" to 12" Diam. 1 G Each  
 15" to 24" Diam. 3 Each

**C34**  
 Note: Alterations to certain existing sewers on this project require backflowing into new or existing structures.  
 The Project Engineer shall field check all flow lines for the proposed drainage structure, so that the expected backflowing and efficiency loss be held to a minimum on this project.

P.O.B. Mich. Project MB2053C, C34  
 Sta. 980 + 17.43

**C34**  
 Detail of Bulkhead with 4" Dia. Throttle

**C34**  
 Note: Thickness of Bulkhead with Special Throttle to be 8".

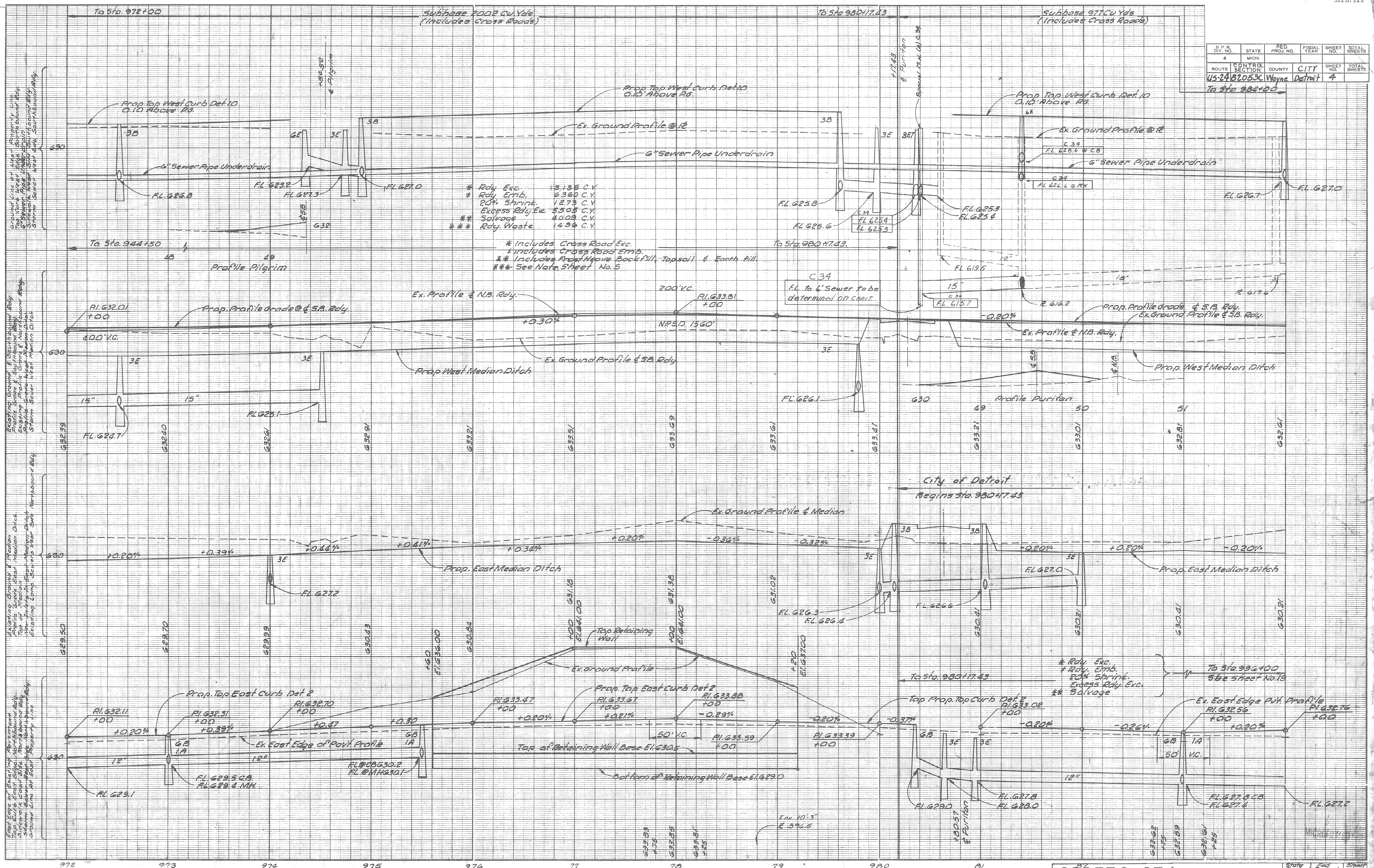


82053C-C34  
 R. Johnson  
 12-63  
 Johnson & Crockett  
 1-64  
 R.G. Foster

|                            |      |
|----------------------------|------|
| OPERATION                  | DATE |
| PRELIMINARY P.O.W. CHECKED |      |
| FINAL DESIGN CHECKED       |      |
| TRACED                     |      |
| FINAL P.O.W. CHECK         |      |
| QUANTITIES CHECKED         |      |
| SQUAD                      |      |

|                    |      |
|--------------------|------|
| OPERATION          | DATE |
| SURVEYED           |      |
| PLAN CHECKED       |      |
| PROFILE PLOTTED    |      |
| PROFILE CHECKED    |      |
| PRELIMINARY GRADE  |      |
| FEDERAL INSPECTION |      |

|                 |                 |                |             |           |              |
|-----------------|-----------------|----------------|-------------|-----------|--------------|
| F.P.R. DIV. NO. | STATE           | FED. PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4               | MICH.           |                |             | 4         |              |
| ROUTE           | CONTROL SECTION | COUNTY         | CITY        | SHEET NO. | TOTAL SHEETS |
| US-24           | 82053C          | Wayne          | Detroit     | 4         |              |

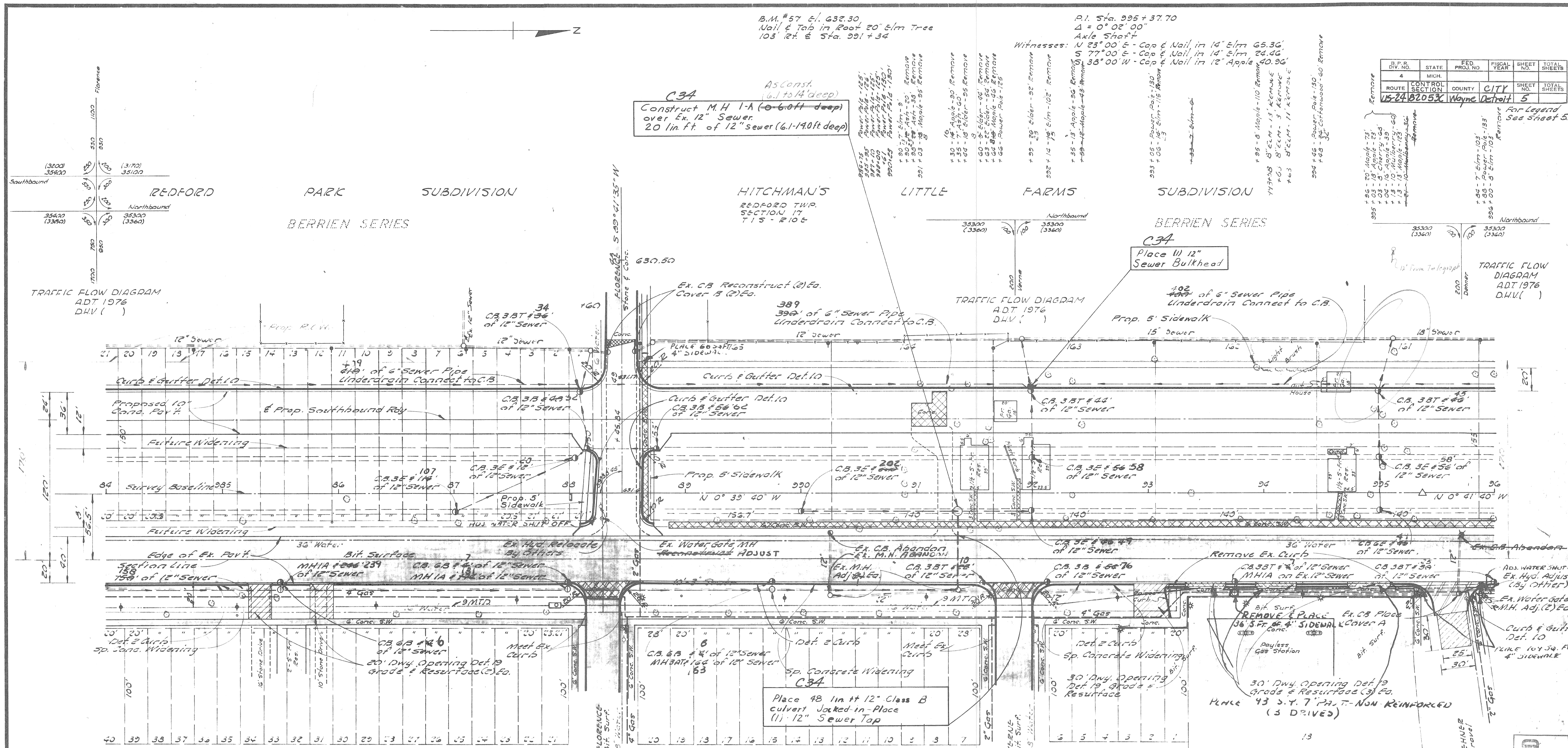


\* Rdy. Exc. 13,133 C.Y.  
 \* Rdy. Emb. 6360 C.Y.  
 \* 20% Shrink. 1273 C.Y.  
 \* Excess Rdy. Exc. 5505 C.Y.  
 \* Salvage 4000 C.Y.  
 \* Rdy. Waste 1496 C.Y.

\* Includes Cross Road Exc.  
 \* Includes Cross Road Emb.  
 \* Includes Prop. Heavy Backfill, Topsoil & Earth Fill.  
 \*\*\* See Note, Sheet No. 5

\* Rdy. Exc.  
 \* Rdy. Emb.  
 \* 20% Shrink.  
 \* Excess Rdy. Exc.  
 \* Salvage

Final P.O.W. 2-7-57 LK  
 Final Design 820530C34  
 E. Johnson 12-63  
 Checked J. Cook 12-63  
 Squad Foster 1963



| Surfacing Quantities      |                   | Removal Quantities        |                 | Miscellaneous Quantities |                   | Tree Removals    |           |
|---------------------------|-------------------|---------------------------|-----------------|--------------------------|-------------------|------------------|-----------|
| 10" Conc. Base Course     | 337 949 Sq.Yds.   | Removing Old Pavement     | 296 Sq.Yds. 328 | Sawing Bit. Surface      | 1284 1266 Lin.Ft. | 8" to 12" Diam.  | 10 @ Each |
| 9" Conc. Base Course      | 350 248 Sq.Yds.   | Removing Asphalt Surface  | 140 Sq.Yds.     |                          |                   | 13" to 24" Diam. | 32 Each   |
| 7" Conc. Pavement         | 13 51 Sq.Yds.     | Removing Mosaicry & Conc. | 94 Cu.Yds. 18   |                          |                   | 25" to 36" Diam. | 5 @ Each  |
| Curb & Gutter Det. 10     | 1433 1397 Lin.Ft. | Removing Sidewalk         | 627 Sq.Yds.     |                          |                   | 37" & Over Diam. | 1 @ Each  |
| Curb Det. 2               | 122 Lin.Ft.       | Removing Curb             | 177 Lin.Ft. 273 |                          |                   |                  |           |
| Bit. Conc. Wearing Course | 114.5 Tons        |                           |                 |                          |                   |                  |           |
| Bit. Prime Coat No. 1     | 44.6 242.3 Gals.  |                           |                 |                          |                   |                  |           |
| Bit. Bond Coat AF2        | 98.6 1074 Gals.   |                           |                 |                          |                   |                  |           |
| Bit. Material AF3         | 0 524.3 Gals.     |                           |                 |                          |                   |                  |           |
| Aggregate Base Course     | 809.5 741.7 Tons  |                           |                 |                          |                   |                  |           |
| Cement Material           | 24.8 18.4 Tons    |                           |                 |                          |                   |                  |           |
| Calcium Chloride Admixed  | 4.1 5.42 Tons     |                           |                 |                          |                   |                  |           |
| Water (1000 Gal. Units)   | 0 2.12 Units      |                           |                 |                          |                   |                  |           |
| Selected Subbase          | 108.6 1023.7 Tons |                           |                 |                          |                   |                  |           |
| 4" Conc. Sidewalk         | 4588 4400 Sq.Ft.  |                           |                 |                          |                   |                  |           |

**AS CONSTRUCTED**  
 ACCORDING TO MARKED PLANS  
 PREPARED BY PROJECT ENGINEER

OPERATION BY DATE  
 PRELIMINARY R.O.W. CHECKED: 1/09/93  
 FINAL DESIGN CHECKED: 1/07/93  
 TRADES CHECKED: 1/06/93  
 FINAL R.O.W. CHECK: 1/06/93  
 QUANTITIES CHECKED: 1/06/93  
 SQUARE: 1/06/93

OPERATION BY DATE  
 PRELIMINARY R.O.W. CHECKED: 1/09/93  
 FINAL DESIGN CHECKED: 1/07/93  
 TRADES CHECKED: 1/06/93  
 FINAL R.O.W. CHECK: 1/06/93  
 QUANTITIES CHECKED: 1/06/93  
 SQUARE: 1/06/93

OPERATION BY DATE  
 PRELIMINARY R.O.W. CHECKED: 1/09/93  
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 FINAL R.O.W. CHECK: 1/06/93  
 QUANTITIES CHECKED: 1/06/93  
 SQUARE: 1/06/93

OPERATION BY DATE  
 PRELIMINARY R.O.W. CHECKED: 1/09/93  
 FINAL DESIGN CHECKED: 1/07/93  
 TRADES CHECKED: 1/06/93  
 FINAL R.O.W. CHECK: 1/06/93  
 QUANTITIES CHECKED: 1/06/93  
 SQUARE: 1/06/93

OPERATION BY DATE  
 PRELIMINARY R.O.W. CHECKED: 1/09/93  
 FINAL DESIGN CHECKED: 1/07/93  
 TRADES CHECKED: 1/06/93  
 FINAL R.O.W. CHECK: 1/06/93  
 QUANTITIES CHECKED: 1/06/93  
 SQUARE: 1/06/93



|                 |                 |                |             |           |              |
|-----------------|-----------------|----------------|-------------|-----------|--------------|
| B.P.R. DIV. NO. | STATE           | FED. PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4               | MICH.           |                |             | 6         |              |
| ROUTE           | CONTROL SECTION | COUNTY         | CITY        | SHEET NO. | TOTAL SHEETS |
| 44-21           | 82053C          | Wayne          | Detroit     | 6         |              |

\* Rdy. Exc. 7,221 C.Y.  
 \* Rdy. Emb. 3,705  
 20% Silt 760  
 Excess Rdy. Exc. 2,600  
 \*\* Salvage 3,542  
 \*\*\* Rdy. Bottom 870

\* Includes Cross Road Exc.  
 \* Includes Cross Road Emb.  
 \*\* Includes Frost Heave Backfill, Topsoil & Earth Fill  
 \*\*\* See Note Sheet No 5

AS CONSTRUCTED  
 ACCORDING TO MARKED PLANS  
 PREPARED BY PROJECT ENGINEER

P.O.T. Sta. 998 + 72.02'  
 Boat Spike on E  
 Witnesses: N 10°-00' E Cap & Nail in 12" Locust 38.10'  
 S 87°-00' E Christed "K" in Sidewalk 30.22'  
 S 32°-00' E Cap & Nail in 40" Locust 4.52'

B.M. # 58 Elev. 634.40  
 4' on East Edge of Bell Tele Co. MH Flange  
 84 Rt. E Sta. 1000 + 80

P.I. Sta. 1006 + 59.26  
 4' 0" - 08-00' Lt.  
 Boat Spike in Long Joint M. Nichols Rd. on E  
 Witnesses: N 24°-00' W Nail & Washer in Power Pole 40.32'  
 N 9°-00' E Cap & Nail in Power Pole 41.56'  
 S 27°-00' E Cap & Nail in Power Pole 31.07'

B.M. # 59 Elev. 635.30  
 4' on West Side Bell Tele Co. MH Flange  
 98 Rt. E Sta. 1006 + 82

| D.P. No. | STATE           | FED. PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|----------|-----------------|----------------|-------------|-----------|--------------|
| 4        | MICH.           |                |             |           |              |
| ROUTE    | CONTROL SECTION | COUNTY         | CITY        | SHEET NO. | TOTAL SHEETS |
| 45-24    | 82053C          | Wayne          | Detroit     | 7         |              |

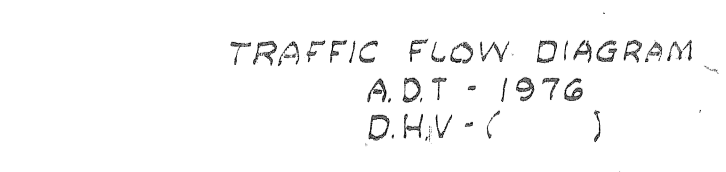
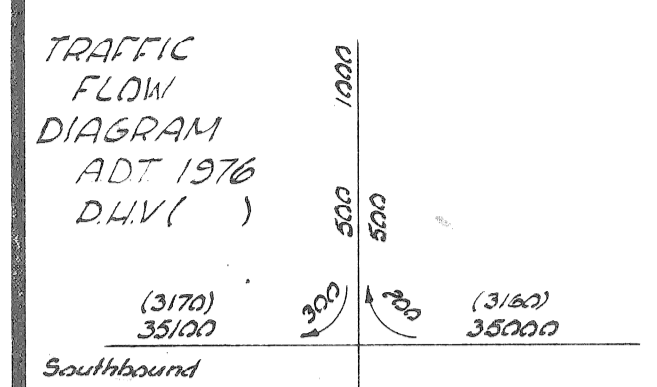
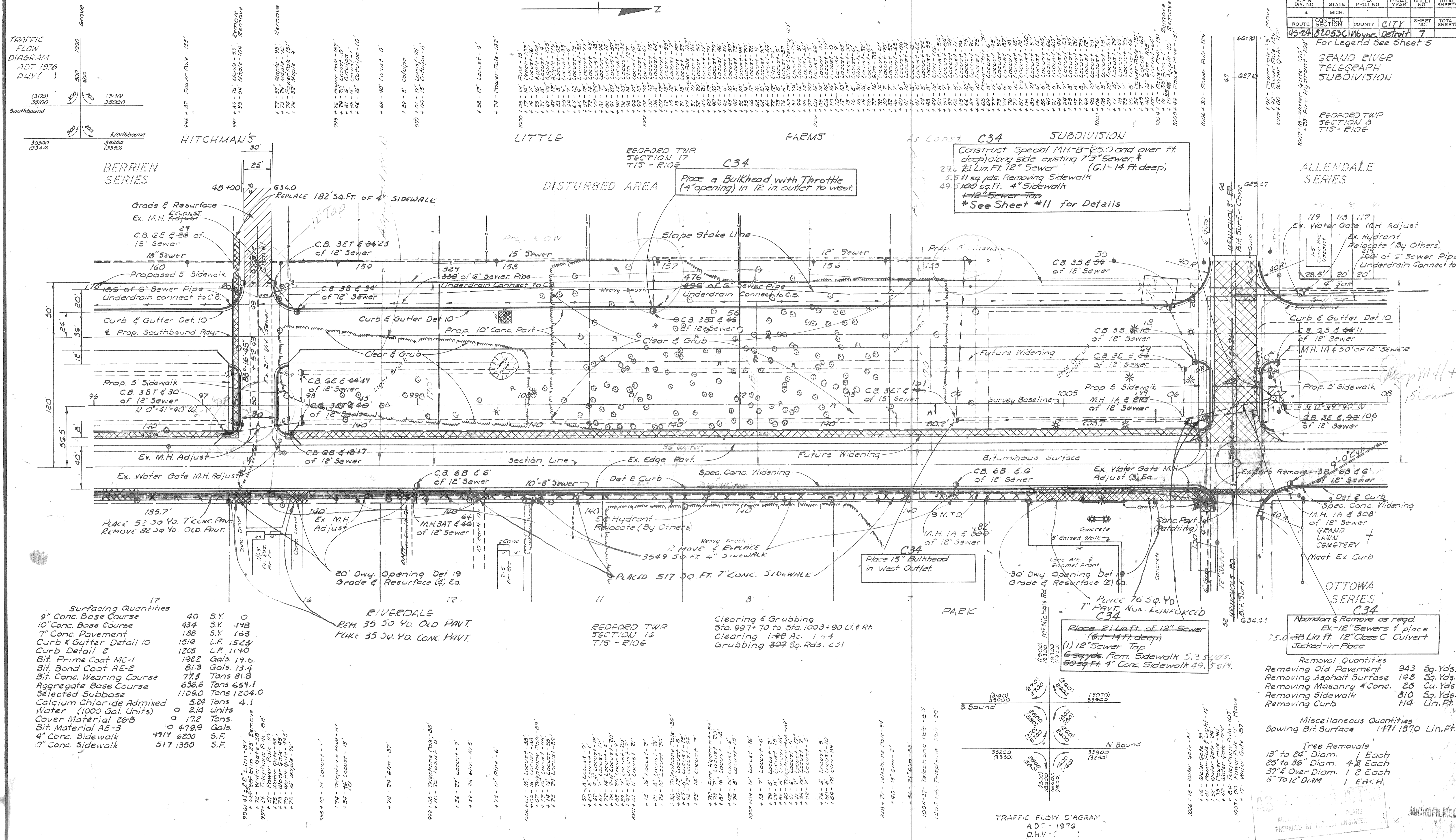
For Legend See Sheet 5

GRAND RIVER TELEGRAPH SUBDIVISION

REDFORD TWP SECTION 5 T15 - R10E

ALLENDALE SERIES

OTTOWA SERIES



17

| Surfacing Quantities      |        |             |
|---------------------------|--------|-------------|
| 9" Conc. Base Course      | 40     | S.Y. 0      |
| 10" Conc. Base Course     | 434    | S.Y. 448    |
| 7" Conc. Pavement         | 188    | S.Y. 103    |
| Curb & Gutter Detail 10   | 1519   | L.F. 1523   |
| Curb Detail 2             | 1205   | L.F. 1140   |
| Bit. Prime Coat MC-1      | 1022   | Gals. 14.6  |
| Bit. Bond Coat AE-2       | 81.3   | Gals. 13.4  |
| Bit. Conc. Wearing Course | 77.3   | Tons 81.8   |
| Aggregate Base Course     | 636.6  | Tons 659.1  |
| Selected Subbase          | 1109.0 | Tons 1204.0 |
| Calcium Chloride Admixed  | 5.24   | Tons 4.1    |
| Water (1000 Gal. Units)   | 0      | 2.14 Units  |
| Cover Material 26B        | 0      | 17.2 Tons   |
| Bit. Material AE-3        | 0      | 479.9 Gals. |
| 4" Conc. Sidewalk         | 9917   | S.F. 6200   |
| 7" Conc. Sidewalk         | 517    | S.F. 1350   |

RIVERDALE  
 REM. 35 SQ. YD. OLD PAVT.  
 HURK 35 SQ. YD. CONC. PAVT.

REDFORD TWP SECTION 16 T15 - R10E

Clearing & Grubbing  
 Sta. 997 + 70 to Sta. 1003 + 90 Lt. & Rt.  
 Clearing 1.02 Ac. 1.44  
 Grubbing 307 Sq. Rds. 2.51

Removal Quantities

|                          |     |               |
|--------------------------|-----|---------------|
| Removing Old Pavement    | 943 | Sq. Yds. 1020 |
| Removing Asphalt Surface | 148 | Sq. Yds. 149  |
| Removing Masonry & Conc. | 25  | Cu. Yds. 3    |
| Removing Sidewalk        | 810 | Sq. Yds. 1223 |
| Removing Curb            | 114 | Lin. Ft. 346  |

Miscellaneous Quantities  
 Sawing Bit. Surface 1471.1370 Lin. Ft.

Tree Removals  
 13" to 24" Diam. Each  
 25" to 36" Diam. 4 Each  
 37" & Over Diam. 1 2 Each  
 5" to 12" DIAM. 1 EACH

ASBESTOS PLANS  
 PREPARED BY ENGINEER

Microfilmed

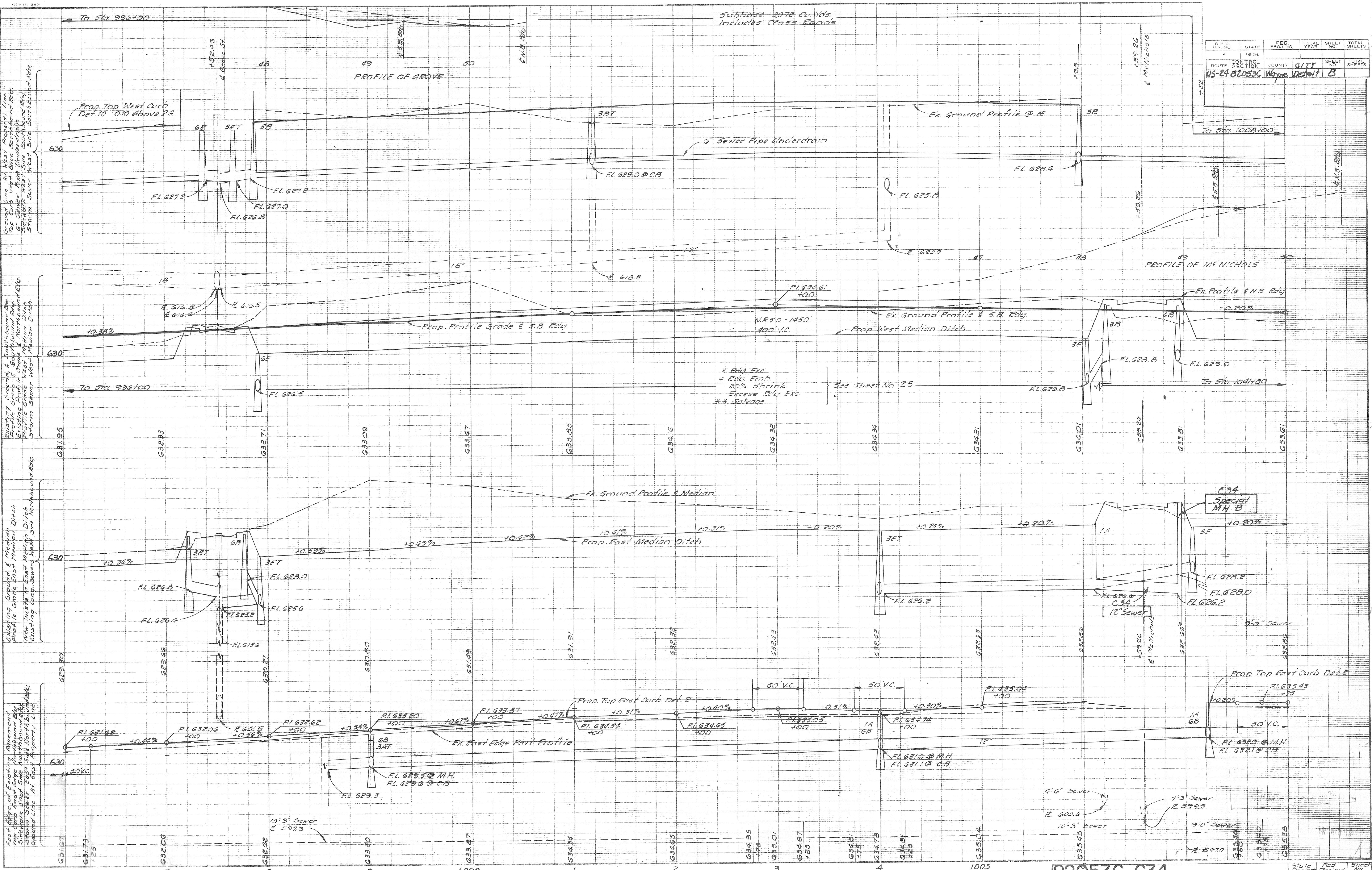
Final Plan 2-157 LK  
 Rev. Row 6-2-58 LK  
 82053C-C34  
 Final Design E. Johnson  
 Checked J. Clock  
 12-63  
 Squad Foster  
 1963

| OPERATION          |      |
|--------------------|------|
| SURVEYED           | BY   |
| PLAN PLOTTED       | DATE |
| PLAN CHECKED       |      |
| DESIGNED           |      |
| PROF. DRAWING      |      |
| PRELIMINARY GRADE  |      |
| GRADE INSPECTION   |      |
| FEDERAL INSPECTION |      |

| OPERATION                  |        |
|----------------------------|--------|
| PRELIMINARY R.O.W. CHECKED | 4/69   |
| FINAL DESIGN CHECKED       | 4/69   |
| TRADED                     | 4/69   |
| FINAL R.O.W. CHECK         | 8/69   |
| QUANTITIES CHECKED         | 8/69   |
| SQUAD                      | C.T.P. |

| OPERATION                  |        |
|----------------------------|--------|
| PRELIMINARY R.O.W. CHECKED | 4/69   |
| FINAL DESIGN CHECKED       | 4/69   |
| TRADED                     | 4/69   |
| FINAL R.O.W. CHECK         | 8/69   |
| QUANTITIES CHECKED         | 8/69   |
| SQUAD                      | C.T.P. |

82053C-C34  
 E. Johnson 12-63  
 J. Clock 12-63  
 Clock-Johnson 1-64  
 Johnson-Johnson 1-64  
 Foster 1-63



| STATE | FED. PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |              |
|-------|-----------------|-------------|-----------|--------------|--------------|
| 4     |                 |             |           |              |              |
| ROUTE | CONTROL SECTION | COUNTY      | CITY      | SHEET NO.    | TOTAL SHEETS |
| 45-24 | B2053C          | Wayne       | Detroit   | B            |              |



Final Plan 2-7-57 LK  
 Rev. Plan 7-11-57  
 Final Design R Johnson 12-63  
 Checked J Crock 12-63  
 Spiced K G Foster 1963

82053C-C34

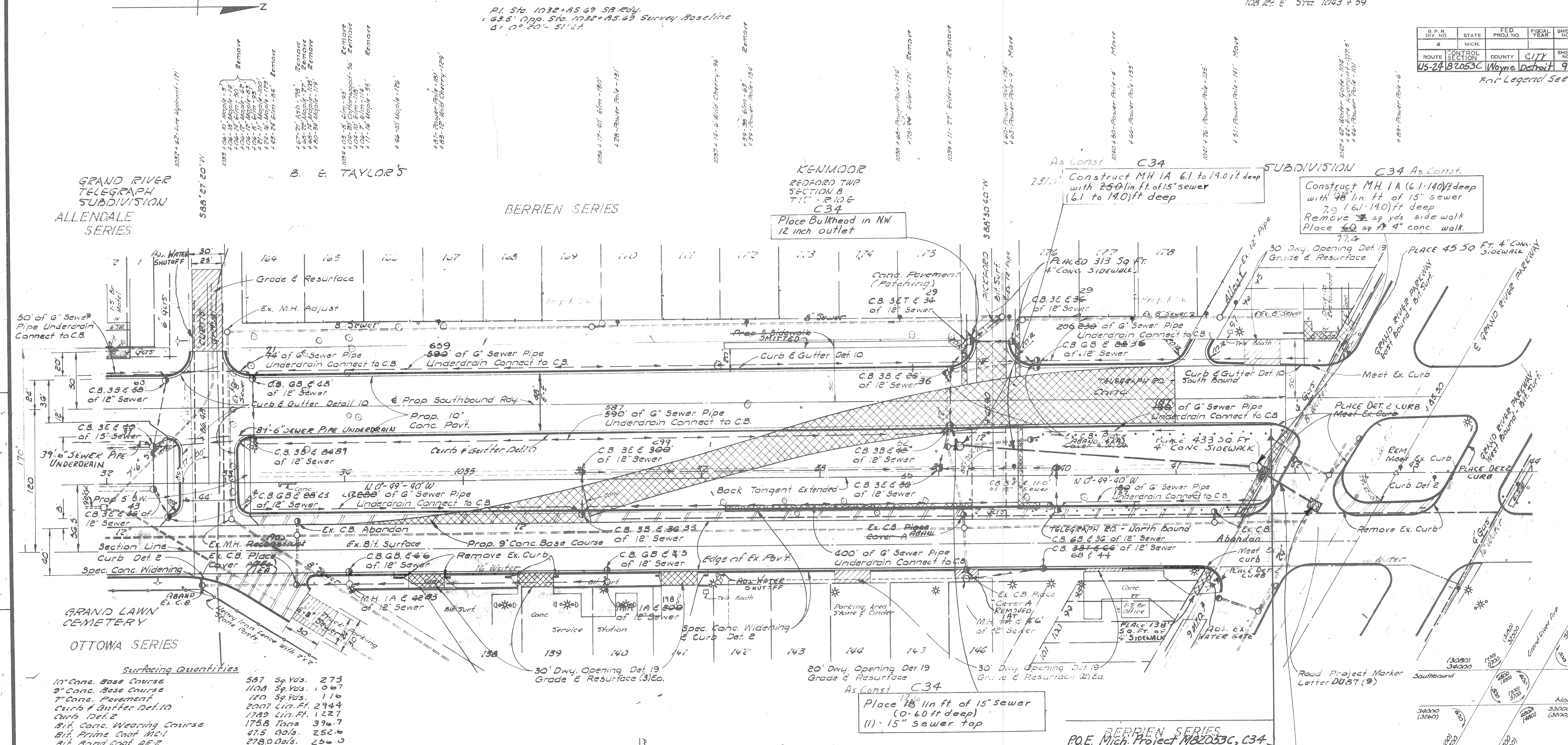
P.I. Sta. 1032+85.69 SB Edy.  
 = 63.5' Opp. Sta. 1032+85.69 Survey Baseline  
 Δ = 0° 20' - 51' 24"

P.O.E. Sta. 1042+85.50

B.M. # 63 Elev 630.13  
 on Gas Pump Island  
 108.12' E Sta. 1043+59

| S.P.R. DIV. NO.   | STATE | FED. PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|-------------------|-------|----------------|-------------|-----------|--------------|
| 4                 | MICH. |                |             | 9         |              |
| ROUTE CONTROL NO. |       | COUNTY         | CITY        | SHEET NO. | TOTAL SHEETS |
| US-24 B2053C      |       | Wayne          | Detroit     | 9         |              |

For Legend See Sheet 5



**Surfacing Quantities**

|  |               |        |
|--|---------------|--------|
| 10" Conc. Base Course                            | 587 Sq. Yds.  | 273    |
| 9" Conc. Base Course                             | 1108 Sq. Yds. | 1067   |
| 7" Conc. Pavement                                | 120 Sq. Yds.  | 116    |
| Curb & Gutter Det. 10                            | 2007 Lin. Ft. | 2944   |
| Curb Det. 2                                      | 1783 Lin. Ft. | 1227   |
| Bit Conc. Wearing Course                         | 175.8 Tons    | 396.7  |
| Bit. Prime Coat MC-1                             | 47.5 Gals.    | 252.6  |
| Bit. Bond Coat A&B                               | 278.0 Gals.   | 250.0  |
| Bit Conc. Binder Course                          | 107.6 Tons    | 63.0   |
| Bit Material A&B                                 | 13.7 Gals.    | 0      |
| Aggregate Base Course                            | 161.4 Tons    | 470    |
| Cover Material 26B                               | 0.7 Tons      |        |
| Calcium Chloride Admixed Water (1000 Gal. Units) | 3.96 Tons     | 3.8    |
| 4" Conc. Sidewalk                                | 1.84 Units    |        |
| Selected Subbase                                 | 650 Sq. Ft.   | 1545   |
|  | 1161.5 Tons   | 1224.2 |

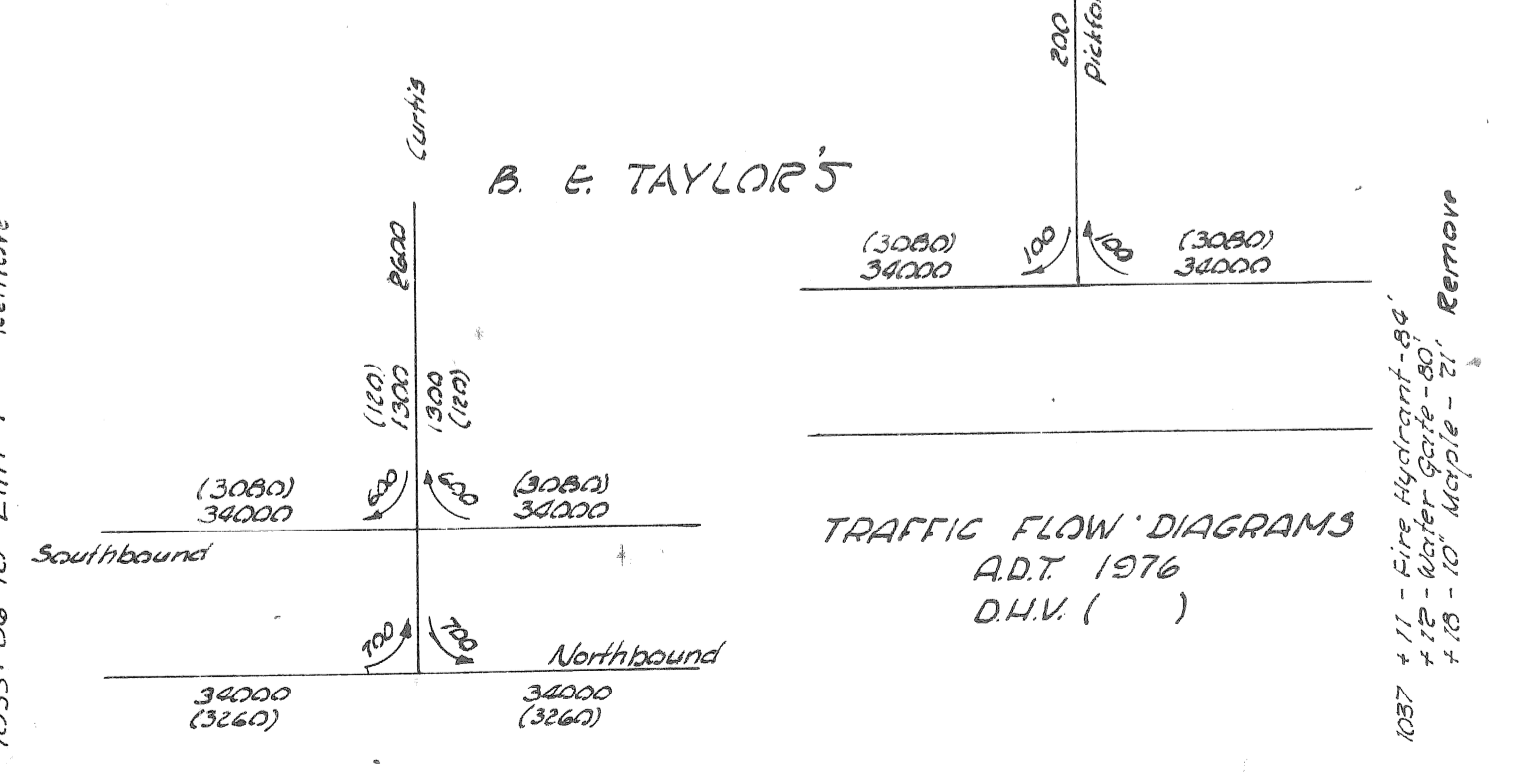
**Removal Quantities**

|                          |               |      |
|--------------------------|---------------|------|
| Removing Old Pavement    | 2385 Sq. Yds. | 2321 |
| Removing Asphalt Surface | 427 Sq. Yds.  | 330  |
| Removing Sidewalk        | 262 Sq. Yds.  | 270  |
| Removing Curb            | 250 Lin. Ft.  | 376  |

**Miscellaneous Quantities**  
 Sawing Bit. Surface 2010 Lin. Ft. 2162

**Tree Removals**

|                  |          |
|------------------|----------|
| 8" to 12" Diam.  | 9 Each   |
| 13" to 24" Diam. | 13 Each  |
| 25" to 36" Diam. | 7 + Each |
| 37" & Over Diam. | 0 + Each |



Place 18" lin ft. of 15" sewer  
 (1) - 15" sewer top

P.O.E. Mich. Project 82053C, C34  
 Sta. 1041+80.00

As Const C34  
 38.7 39 lin ft of 15 inch Class C Culvert Jacked in place  
 Construct M.H. 1A - (6.1 to 14.0) ft deep over existing 24" sewer  
 17 sq yds. Rem Old Pavt  
 7 sq yds. Conc. Pavt. Patching 8" Unit.  
 1 Ton Bit Conc. Wearing Course (Patching)  
 1 Gal. Bit Bond Coat

**AS CONSTRUCTED**  
 ACCORDING TO MARKED PLANS  
 PREPARED BY PROJECT ENGINEER

Sta. 1032+00 to 1041+00

82053C-C34

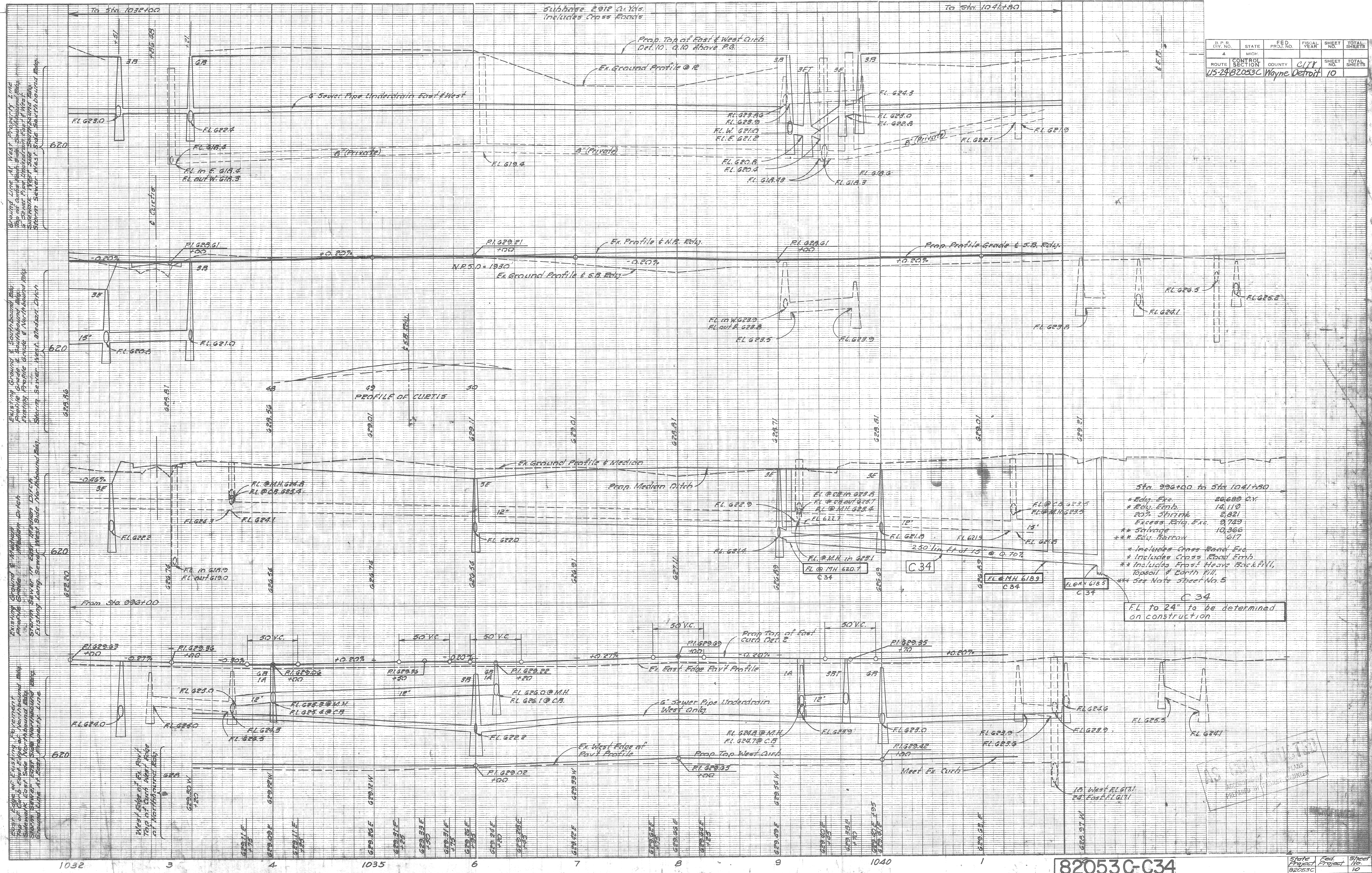
|               |        |
|---------------|--------|
| State Project | 82053C |
| Sheet         | 9      |

82053C-C34  
 J. Cloack  
 12-63  
 Johnson  
 1-64  
 Johnson  
 Cloack & Johnson  
 R.G. Porter

|                            |         |
|----------------------------|---------|
| OPERATION                  | DATE    |
| PRELIMINARY R.O.W. CHECKED | 7/22/63 |
| FINAL DESIGN CHECKED       | 7/27/63 |
| FINAL R.O.W. CHECK         | 7/28/63 |
| QUANTITIES CHECKED         | 8/1/63  |
| AS BUILT                   | 8/1/63  |

|                    |        |
|--------------------|--------|
| OPERATION          | DATE   |
| SURVEYED           | 5/1/63 |
| PLAN P.L.C.TED     | 5/1/63 |
| PLAN CHECKED       | 5/1/63 |
| PROFILE CHECKED    | 5/1/63 |
| PRELIMINARY GRADE  | 5/1/63 |
| GRADE INSPECTION   | 5/1/63 |
| FEDERAL INSPECTION | 5/1/63 |

|                 |        |                |             |              |              |
|-----------------|--------|----------------|-------------|--------------|--------------|
| B.P.R. DIV. NO. | STATE  | FED. PROJ. NO. | FISCAL YEAR | SHEET NO.    | TOTAL SHEETS |
| 4               | MICH.  |                |             | 10           |              |
| ROUTE           | COUNTY | CITY           | SHEET NO.   | TOTAL SHEETS |              |
| US-24           | Wayne  | Detroit        | 10          |              |              |



Sta. 996+00 to Sta. 1041+50

|                   |           |
|-------------------|-----------|
| * Edge Exc.       | 26,680 CY |
| * Edge Emb.       | 14,110    |
| 20% Shrink        | 2,821     |
| Excess Rel. Exc.  | 9,749     |
| ** Salvage        | 10,366    |
| *** Rel. Material | 617       |

\* Includes Cross Road Exc.  
 \* Includes Frost Heave Emb.  
 \*\* Includes Frost Heave Backfill, Topsoil & Earth Fill.  
 \*\*\* See Note Sheet No. 5

C 34  
 F.L. to 24" to be determined on construction

AS BUILT  
 APPROVED BY  
 PREPARED BY

| B.P.R. DIV. NO. | STATE         | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|-----------------|---------------|-----------|-------------|-----------|--------------|
| 4               | MICH.         |           |             |           |              |
| ROUTE           | STATE PROJECT | COUNTY    | CITY        | SHEET NO. | TOTAL SHEETS |
| 24              | 62053         | WAYNE     | DETROIT     | 11        |              |
| B.P.R. DIV. NO. | STATE         | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4               | MICH.         |           |             |           |              |
| ROUTE           | STATE PROJECT | COUNTY    | CITY        | SHEET NO. | TOTAL SHEETS |
|                 |               |           |             |           |              |

**Note:**

The materials and workmanship shall be in accordance with the current Michigan State Highway Department Standard Specifications.

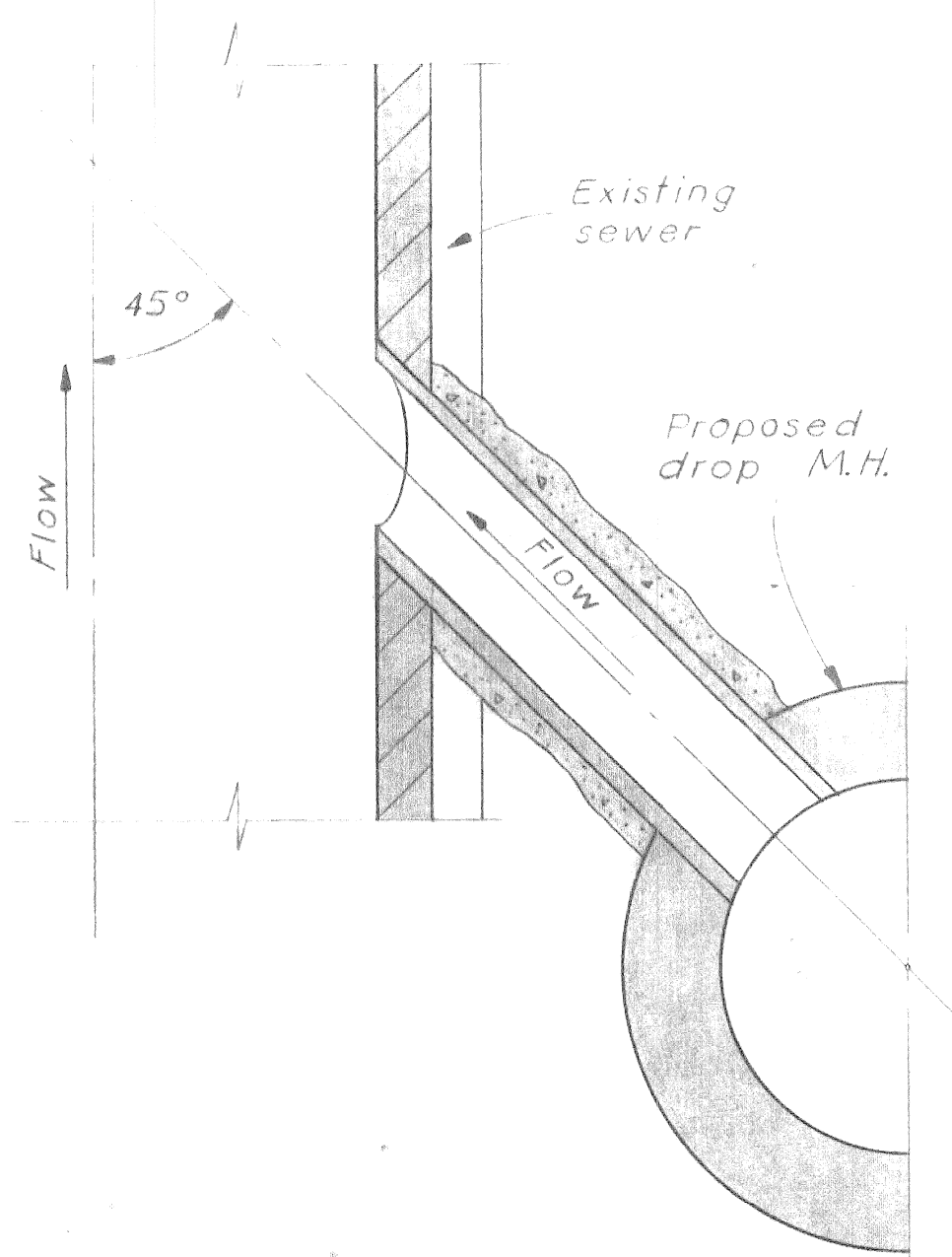
The contractor may construct each structure of brick or concrete block, as indicated.

All concrete masonry shall be grade A.

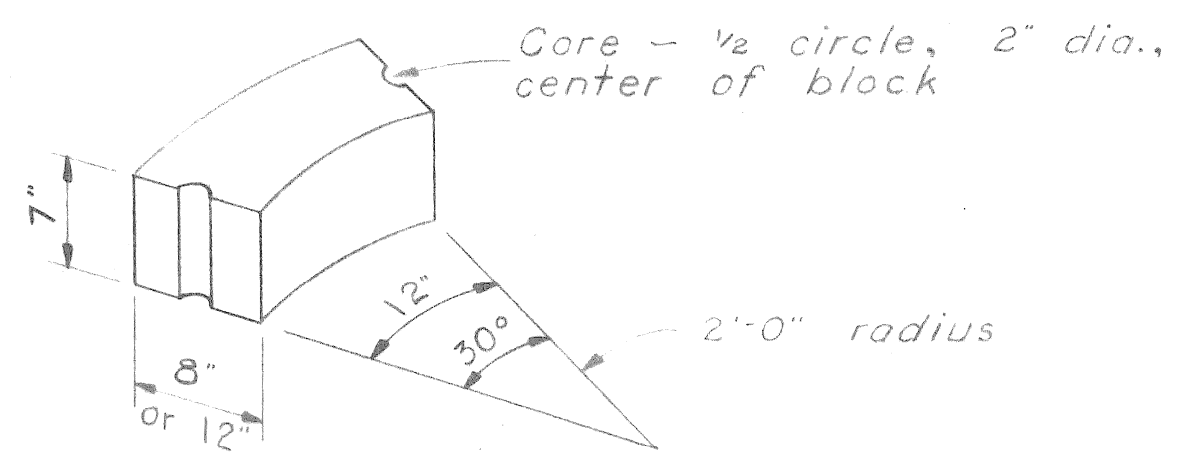
Payment shall be based on the complete structure, including cover, steps, 15" reinforced concrete pipe C-76 class V, and concrete collar.

Elevations of existing sewers are approximate only and exact elevations are to be determined by the Engineer.

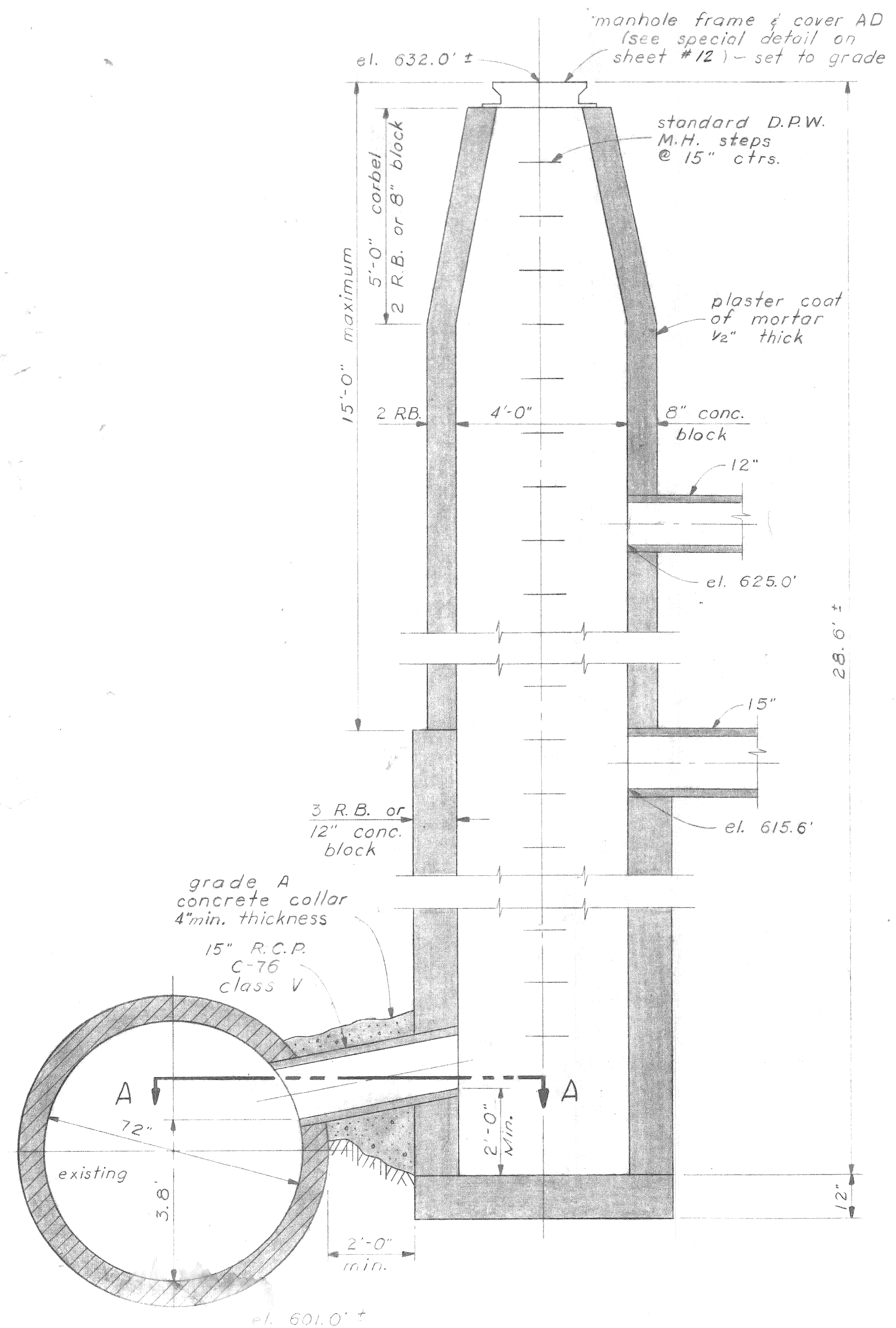
Where installation of these manholes materially interferes with any existing utilities, the manholes may be relocated as directed by the Engineer.



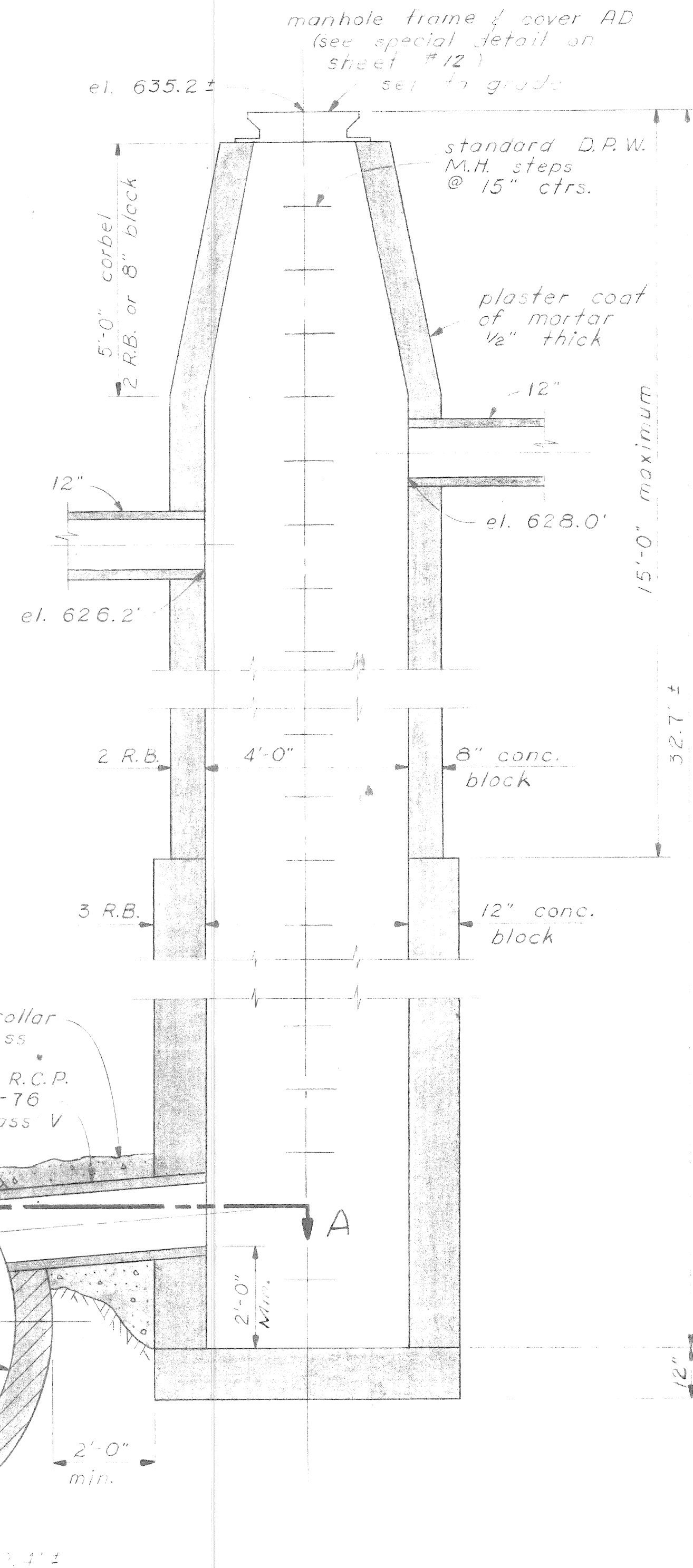
Section A-A



Block Detail  
scale: 1" = 1'-0"



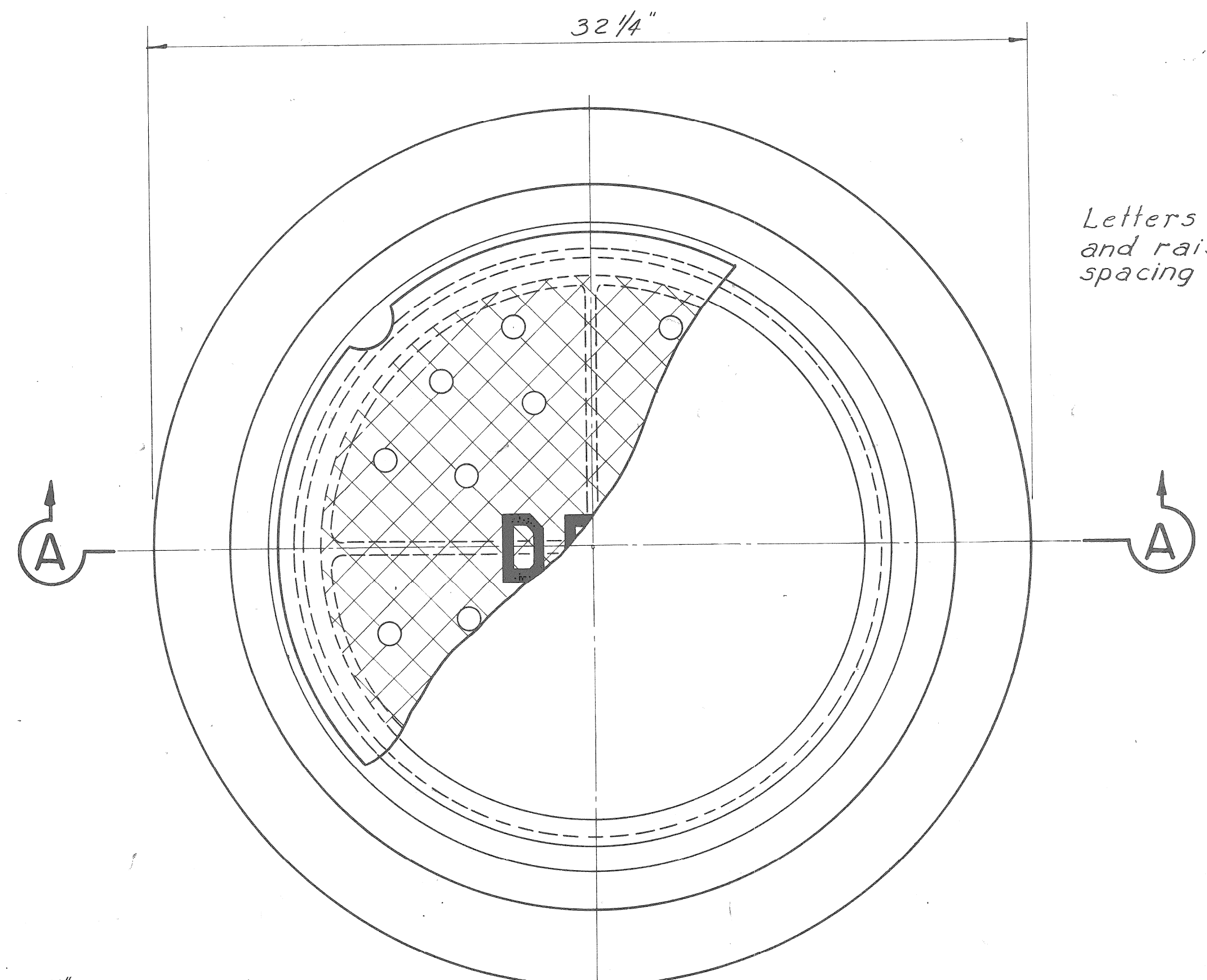
Detail A  
Station 980+40 - 135' Left



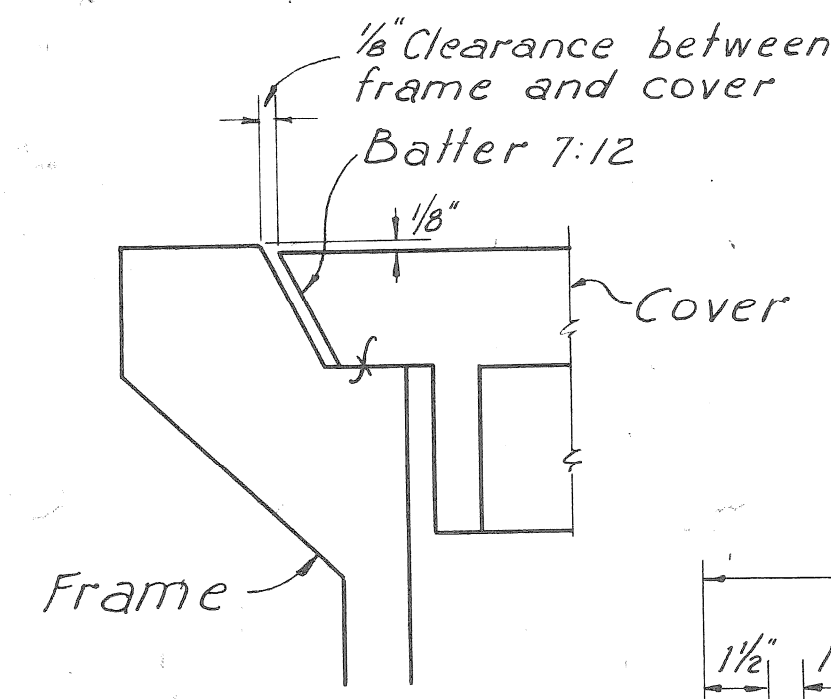
Detail B  
Station 1000+10 - 4' Left

AS CONSULTED  
PREPARED BY ENGINEER

| ROUTE | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|-------|-------|-----------|-------------|-----------|--------------|
| 4     | MICH. |           |             |           |              |
| ROUTE | STATE | COUNTY    | City        | SHEET NO. | TOTAL SHEETS |
| 4     | MICH. | Wayne     | Detroit     | 12        |              |
| ROUTE | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4     | MICH. |           |             |           |              |
| ROUTE | STATE | COUNTY    |             | SHEET NO. | TOTAL SHEETS |
|       |       |           |             |           |              |



PLAN VIEW OF FRAME

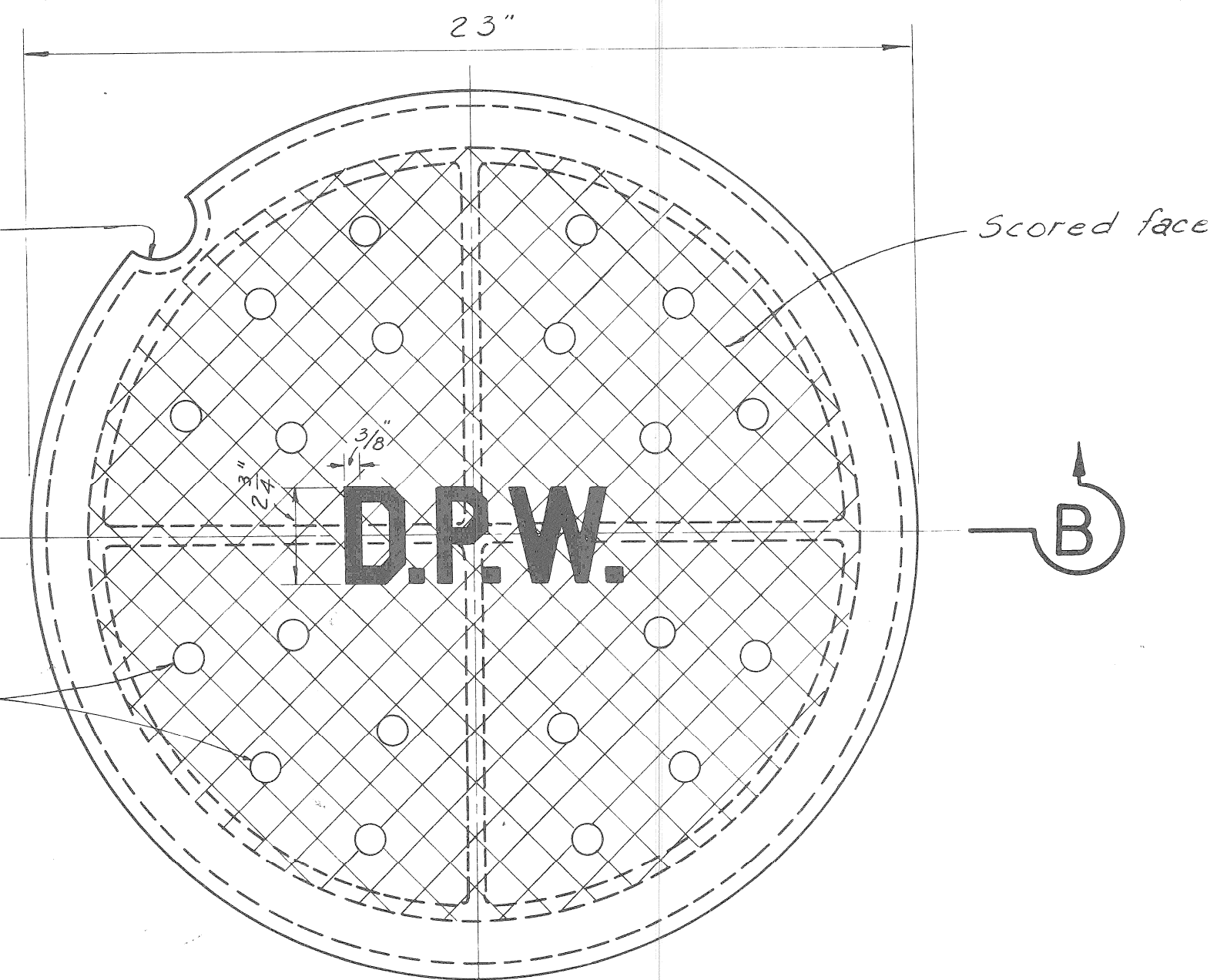


SECTION A-A

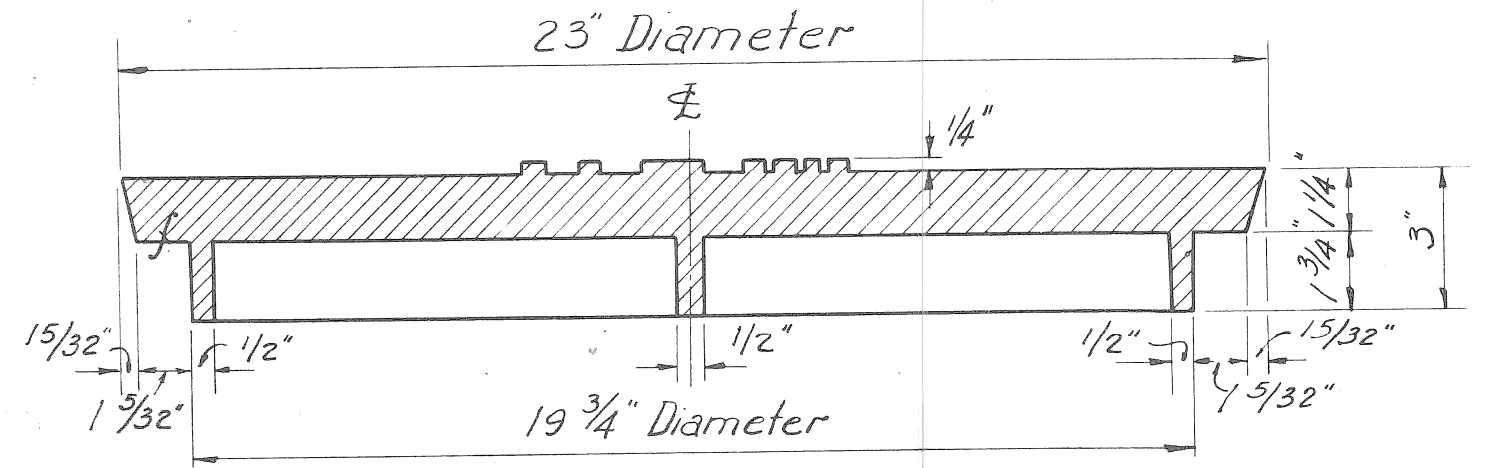
Letters to be 3/8" wide 2 3/4" high and raised 1/4". Location & spacing as shown.

20 - 1 1/4" Dia perforations  
24.54 Sq. in. = 5.91%

1" Radius pickhold in solid covers only.



PLAN VIEW OF COVER



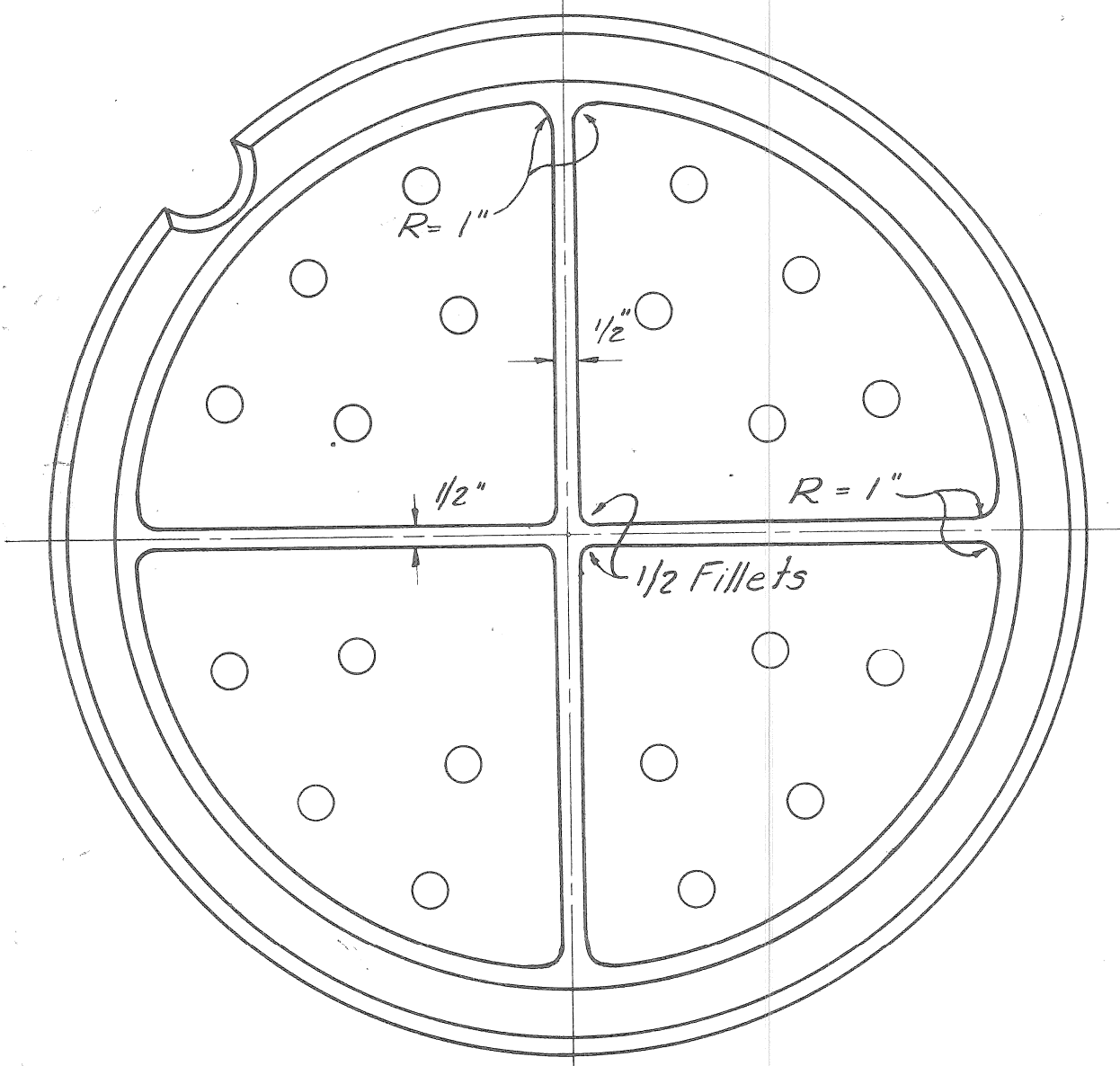
SECTION B-B

NOTES:-

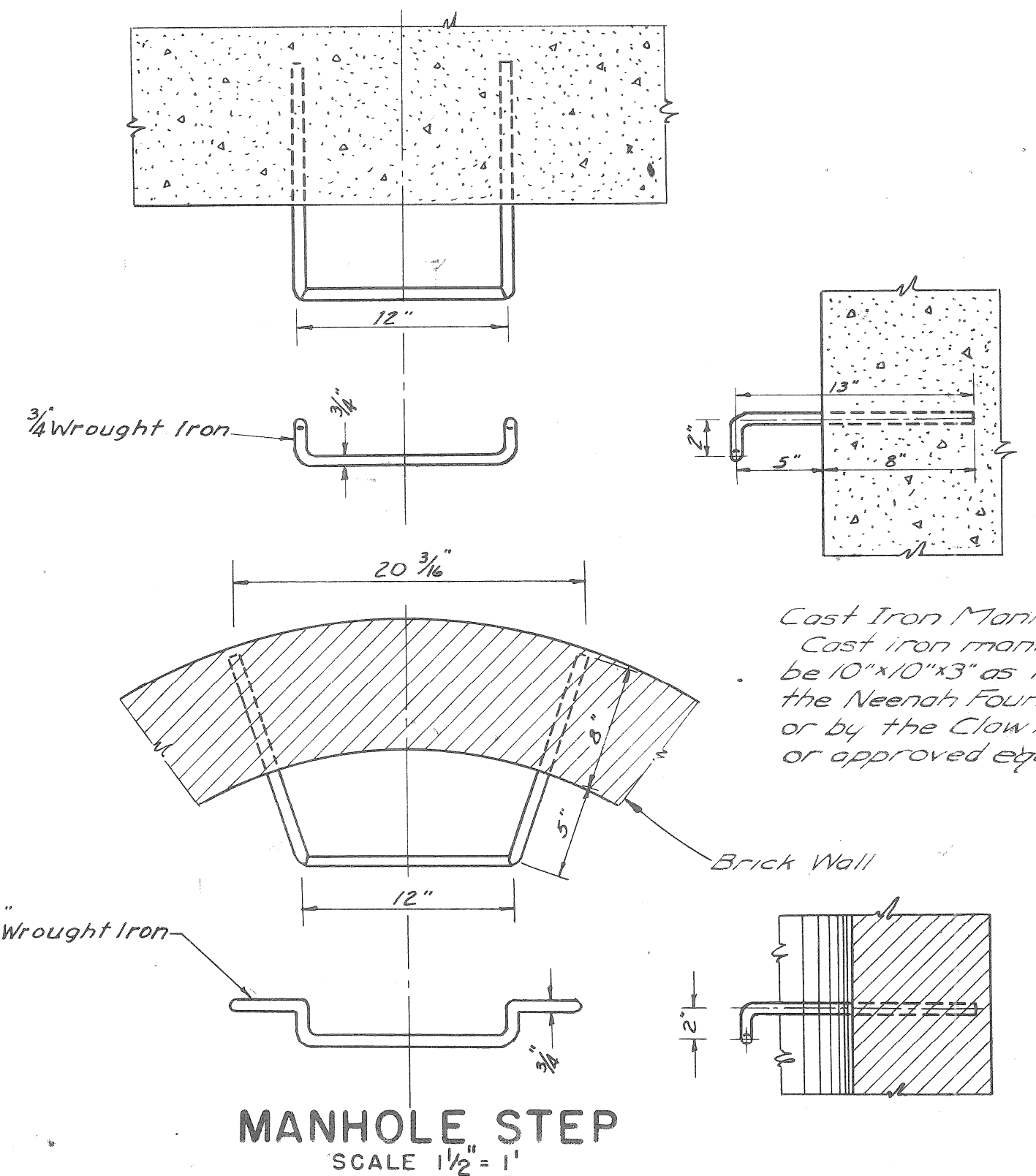
Frame and cover to be gray iron castings.  
Total weight = 409# (Perf cover)  
Manhole frame = 262#  
Cover (Perf) = 147#  
Cover (Blank) = 157#

The seating face of the cover and the seat for same on the frame shall be machine finished so that the cover shall have an even bearing on its seat at all points without rocking or tilting.

SCALE 3" = 1'



BOTTOM VIEW OF COVER



MANHOLE STEP  
SCALE 1 1/2" = 1'

Cast Iron Manhole Steps: Cast iron manhole steps shall be 10"x10"x3" as manufactured by the Neenah Foundry Co. R-19805, or by the Claw National F-3650, or approved equal.

| NO. | DESCRIPTION                          | DATE               |
|-----|--------------------------------------|--------------------|
| 1   | Added Specs for C.I. Manhole Steps   | S.S. J.L. JMO 1-36 |
| 2   | Deleted "Mild Steel" from M.H. Steps | S.S. J.L. JMO 1-36 |