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**CITY OF DETROIT**  
 IN COOPERATION WITH  
**MICHIGAN DEPARTMENT OF TRANSPORTATION**  
 AND  
**FEDERAL HIGHWAY ADMINISTRATION**

PLAN AND PROFILE OF PROPOSED  
 REPLACEMENT OF THE  
**ANTIETAM AVENUE BRIDGE**  
 OVER THE  
**DEQUINDRE CUT GREENWAY**

STATE BRIDGE NO.: S02 of 82-22-97  
 JOB NO.: 83945A  
 CONTROL SECTION NO.: BRO 82022  
 FEDERAL PROJECT NO.: BRO 0782 (068)  
 FEDERAL ITEM NO.: RR 5680

**CITY OF DETROIT STANDARD PLANS**

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 AS INCLUDED IN THE PROPOSAL.

|  |        |
|--|--------|
| STANDARD CURB DETAILS                                      | C-4380 |
| DETAIL OF ALLEY RETURN AND DRIVE APPROACH                  | C-4384 |
| STANDARD SEWER AND DROP MANHOLES                           | C-4387 |
| MANHOLE FRAME AND COVER                                    | C-4391 |
| FLAT TYPE GRATE AND FRAME                                  | C-4392 |
| DOME GRATE AND FRAME                                       | C-4394 |
| STANDARD CATCH BASINS "A" AND "B" AND FLAT GRATE AND FRAME | C-5028 |

**MDOT STANDARD PLANS**

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.

|  |         |
|--|---------|
| DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALKS                      | R-29-D  |
| INTEGRAL CURB AND INTEGRAL CURB & GUTTER                                   | R-31-C  |
| TEMPORARY CONCRETE BARRIER   | R-52-E  |
| CHAIN LINK FENCE (USING TENSION WIRE)                                      | R-98-B  |
| MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS | B-103-D |

**MDOT SPECIAL DETAILS**

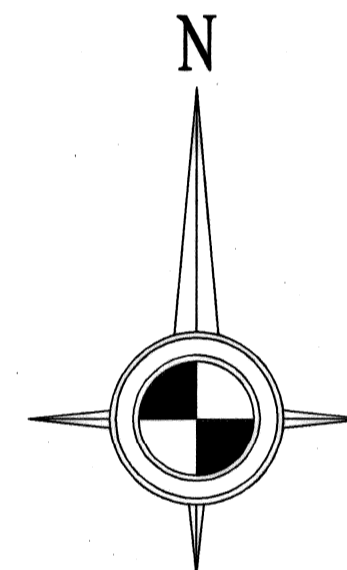
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|   |         |
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| SIDEWALK RAMP DETAILS                         | R-28-F  |
| SOIL EROSION & SEDIMENTATION CONTROL MEASURES | R-96-D  |
| PLACEMENT OF TEMPORARY CONCRETE BARRIER       | R-126-F |
| BRIDGE RAILING, AESTHETIC PARAPET TUBE        | B-25-E  |

\*SEE WZD-125-D FOR TEMPORARY TRAFFIC CONTROL DEVICE DETAILS.

**TITLE SHEET LEGEND**

|                                   |  |
|-----------------------------------|--|
| PROPOSED BRIDGE PROJECT           |  |
| EXISTING ROADS                    |  |
| CITY STREET                       |  |
| COUNTY                            |  |
| STATE ROUTES                      |  |
| FEDERAL DIVIDED ROUTES            |  |
| FEDERAL DIVIDED INTERSTATE ROUTES |  |
| SECTION LINE                      |  |
| CITY, VILLAGE OR TOWNSHIP LIMITS  |  |
| RAILROADS                         |  |



CITY OF DETROIT

PROJECT  
LOCATION  
S02 of 82-22-97

| TRAFFIC DATA: | YEAR  | YEAR   |
|---------------|-------|--------|
|               | 1997  | 2026   |
| ADT           | 1,433 | 2,545  |
| DHV           | 143   | 255    |
| COMM%         | 5.0%  | 5.0%   |
| DESIGN SPEED  |       | 25 MPH |
| POSTED SPEED  |       | 25 MPH |

**GENERAL NOTES**

THE DESIGN OF THIS STRUCTURE IS BASED ON CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES HS20-44 LOADING. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF SPAN LENGTH. THE LOAD FACTOR METHOD OF DESIGN WAS USED FOR THIS STRUCTURE.

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE ACCORDING TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 2003 EDITION.

ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE BEVELED WITH 1/2" TRIANGULAR MOLDINGS EXCEPT AS OTHERWISE NOTED.

THE PROPOSED IMPROVEMENTS COVERED BY THESE PLANS ARE IN ACCORDANCE WITH THE AASHTO: A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2004.

THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:

|                     |                 |
|---------------------|-----------------|
| CONCRETE: GRADE S2  | f'c - 3,000 psi |
| CONCRETE: GRADE D   | f'c - 4,000 psi |
| STEEL REINFORCEMENT | fy - 60,000 psi |

CONTRACT FOR: STRUCTURE REPLACEMENT, RELATED APPROACH WORK, AND TRAFFIC IMPROVEMENTS FOR ANTIETAM AVENUE OVER THE DEQUINDRE CUT GREENWAY

BRIDGE PLANS WERE PREPARED FOR THE CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT  
BY



*Ronald G. Wolfe*  
LICENSED PROFESSIONAL ENGINEER

5/15/07  
DATE

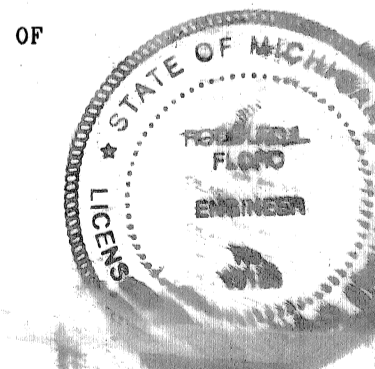


LOCAL AUTHORITY APPROVAL  
CITY OF DETROIT  
CITY ENGINEERING DIVISION  
DEPARTMENT OF PUBLIC WORKS

APPROVED BY \_\_\_\_\_ HEAD ENGINEER DATE \_\_\_\_\_

APPROVED BY *John Smith* CITY ENGINEER DATE 5/16/07

PREPARED UNDER THE SUPERVISION OF



*R. J. Flannery*  
LICENSED PROFESSIONAL ENGINEER

5-17-07  
DATE

CITY OF DETROIT  
ORGANIZATION

CITY ENGINEERING DIVISION  
900 CADILLAC TOWER  
DETROIT, MI 48226

ADDRESS



| CONTROL SECTION | JOB NUMBER | FEDERAL NUMBERS |         | SHEET NO. |
|-----------------|------------|-----------------|---------|-----------|
|                 |            | PROJECT         | ITEM    |           |
| BRO 82022       | 83945A     | BRO 0782 (068)  | RR 5680 | 1         |

BRO 82022-83945A  
 DATE: 9/7/06  
 CONTROL SECTION - JOB NUMBER  
 CORRECTED BY: TMB  
 DATE: 9/7/06  
 CHECKED BY: TMB  
 DATE: 1/10/06  
 DRAWN BY: BMW  
 FILE NAME: Antietam-title.dgn

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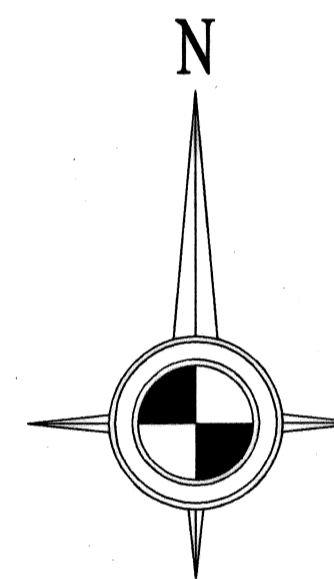
STATE BRIDGE NO.: S02 of 82-22-97

JOB NO.: 83945A

CONTROL SECTION NO.: BRO 82022

FEDERAL PROJECT NO.: BRO 0782 (068)

FEDERAL ITEM NO.: RR 5680



CITY OF DETROIT

PROJECT LOCATION  
S02 of 82-22-97

|               |       |        |
|---------------|-------|--------|
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|               | 1997  | 2026   |
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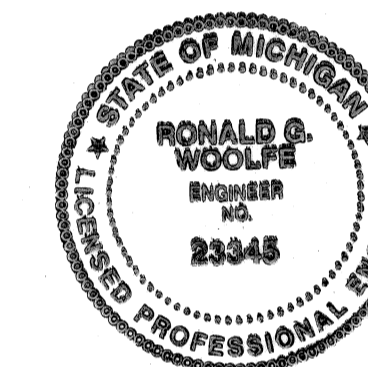
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BRIDGE PLANS WERE PREPARED FOR THE CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT



*Ronald G. Woolfe*  
LICENSED PROFESSIONAL ENGINEER

5/15/07  
DATE

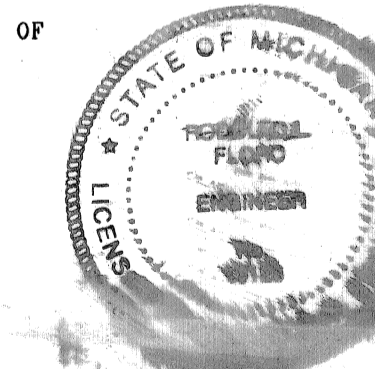


LOCAL AUTHORITY APPROVAL  
CITY OF DETROIT  
CITY ENGINEERING DIVISION  
DEPARTMENT OF PUBLIC WORKS

APPROVED BY \_\_\_\_\_ HEAD ENGINEER DATE \_\_\_\_\_

APPROVED BY *Joseph J. ...* CITY ENGINEER DATE 5/14/07

PREPARED UNDER THE SUPERVISION OF



*R. J. ...*  
LICENSED PROFESSIONAL ENGINEER

5-17-07  
DATE

CITY OF DETROIT  
ORGANIZATION

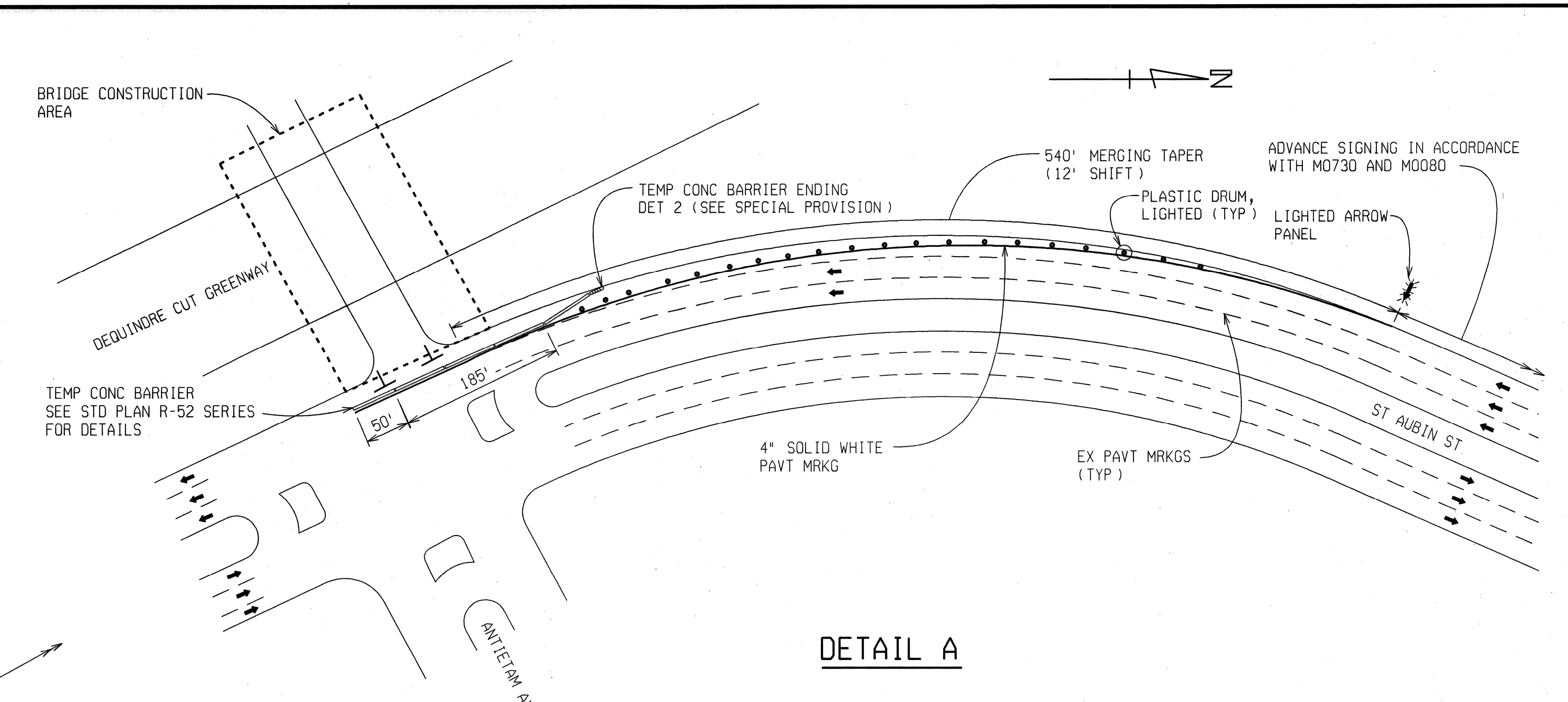
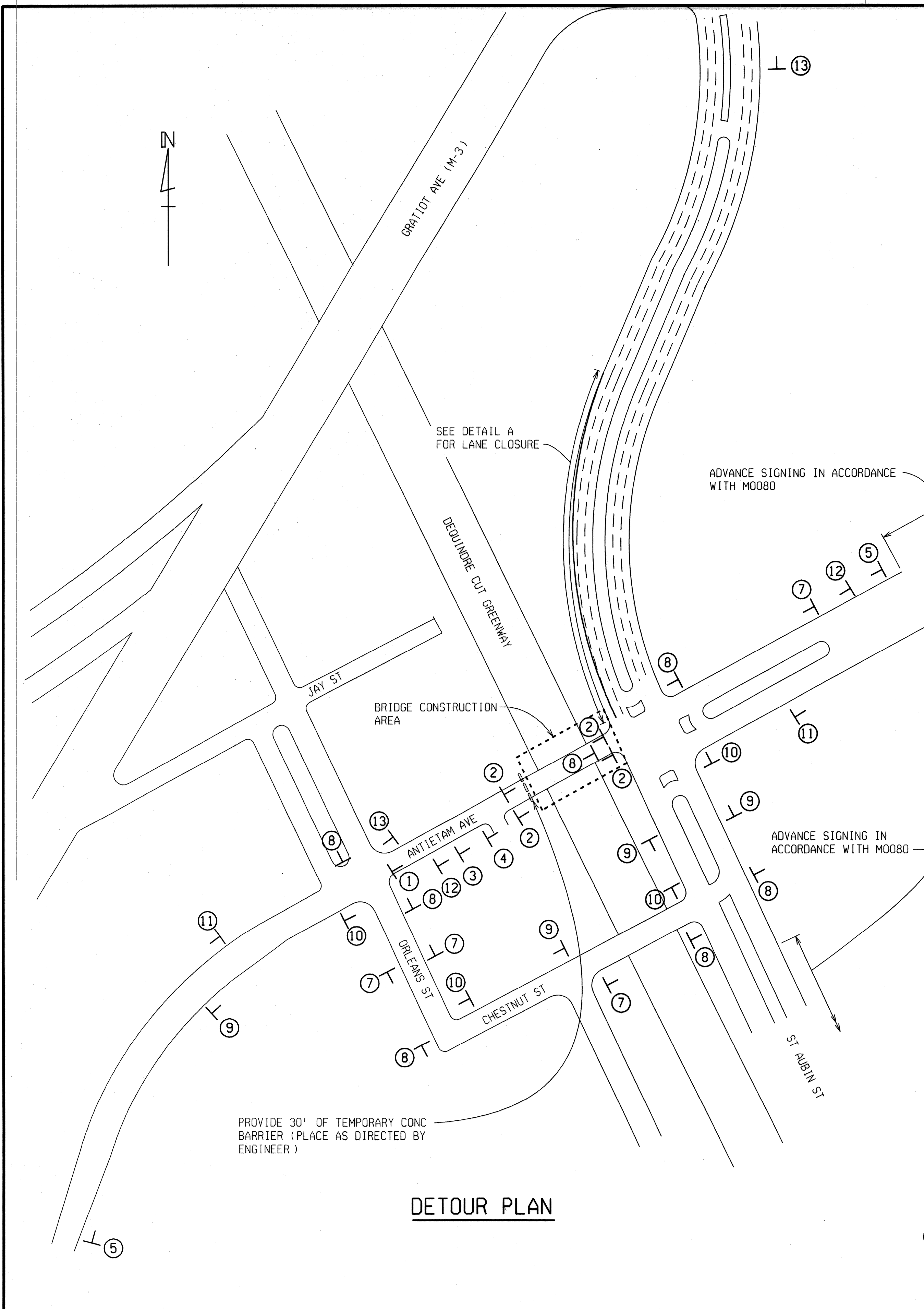
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900 CADILLAC TOWER  
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| CONTROL SECTION | JOB NUMBER | FEDERAL NUMBERS |         | SHEET NO. |
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 DRAWN BY: BMW  
 FILE NAME: Antietam+title.dgn



**MISCELLANEOUS QUANTITIES**

|     |     |  |
|-----|-----|--|
| 9   | Ea  | Barricade, Type III, High Intensity, Lighted, Furn |
| 9   | Ea  | Barricade, Type III, High Intensity, Lighted, Oper |
| 1   | LS  | Minor Traf Devices                                 |
| 660 | Sft | Sign, Type B, Temp, Prismatic, Furn                |
| 660 | Sft | Sign, Type B, Temp, Prismatic, Oper                |
| 25  | Ea  | Plastic Drum, High Intensity, Lighted, Furn        |
| 25  | Ea  | Plastic Drum, High Intensity, Lighted, Oper        |
| 680 | Ft  | Pavt Mrkg, Type R, 4 inch, White, Temp             |
| 300 | Ft  | Conc Barrier, Temp, Furn                           |
| 300 | Ft  | Conc Barrier, Temp, Oper                           |
| 1   | Ea  | Lighted Arrow, Type C, Furn                        |
| 1   | Ea  | Lighted Arrow, Type C, Oper                        |
| 1   | Ea  | Temp Conc Barrier Ending, Detail 2, Furn           |
| 1   | Ea  | Temp Conc Barrier Ending, Detail 2, Oper           |

ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY

R11-3 (60" X 30")  
 12.5 SFT TYPE IIB SIGN  
 MOUNT ON SEPARATE POSTS ABOVE AND BEHIND BARRICADE

ROAD CLOSED

R11-2 (48" X 30")  
 10 SFT TYPE IIB SIGN  
 MOUNT ON SEPARATE POSTS BEHIND BARRICADES

DETOUR

M4-10 (48" X 18")  
 6 SFT TYPE IIB SIGN  
 MOUNT ON BARRICADE

ROAD CLOSED AHEAD

W20-3 (48")  
 16 SFT TYPE IIIIB SIGN

UNINURE/KILL A WORKER

R5-18bLA (60" X 42")  
 17.5 SFT TYPE IIIIB SIGN

WORK ZONE BEGINS TRAFFIC FINES DOUBLED

R5-18cLA (60" X 42")  
 17.5 SFT TYPE IIIIB SIGN (450' SPA FROM R5-18bLA)

DETOUR ENDS

M4-8a (24" X 18")  
 3 SFT TYPE IIIIB SIGN

ROAD WORK AHEAD

W20-1 (48")  
 16 SFT TYPE IIIIB SIGN

END ROAD WORK

G20-2 (48" X 24")  
 8 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

D3-1 (36" X 8")  
 2 SFT TYPE IIB SIGN

DETOUR ANTIETAM AVE

M4-8 (24" X 12")  
 2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

M4-8 (24" X 12")  
 2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

D3-1 (36" X 8")  
 2 SFT TYPE IIB SIGN

DETOUR ANTIETAM AVE

M6-3a (21" X 15")  
 2.2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

M4-8 (24" X 12")  
 2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

D3-1 (36" X 8")  
 2 SFT TYPE IIB SIGN

DETOUR ANTIETAM AVE

M5-1a (L) (21" X 15")  
 2.2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

M4-8 (24" X 12")  
 2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

D3-1 (36" X 8")  
 2 SFT TYPE IIB SIGN

DETOUR ANTIETAM AVE

M6-1a (R) (21" X 15")  
 2.2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

M4-8 (24" X 12")  
 2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

D3-1 (36" X 8")  
 2 SFT TYPE IIB SIGN

DETOUR ANTIETAM AVE

M6-1a (R) (21" X 15")  
 2.2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

M4-8 (24" X 12")  
 2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

D3-1 (36" X 8")  
 2 SFT TYPE IIB SIGN

DETOUR ANTIETAM AVE

M6-1a (R) (21" X 15")  
 2.2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

M4-8 (24" X 12")  
 2 SFT TYPE IIIIB SIGN

DETOUR ANTIETAM AVE

D3-1 (36" X 8")  
 2 SFT TYPE IIB SIGN

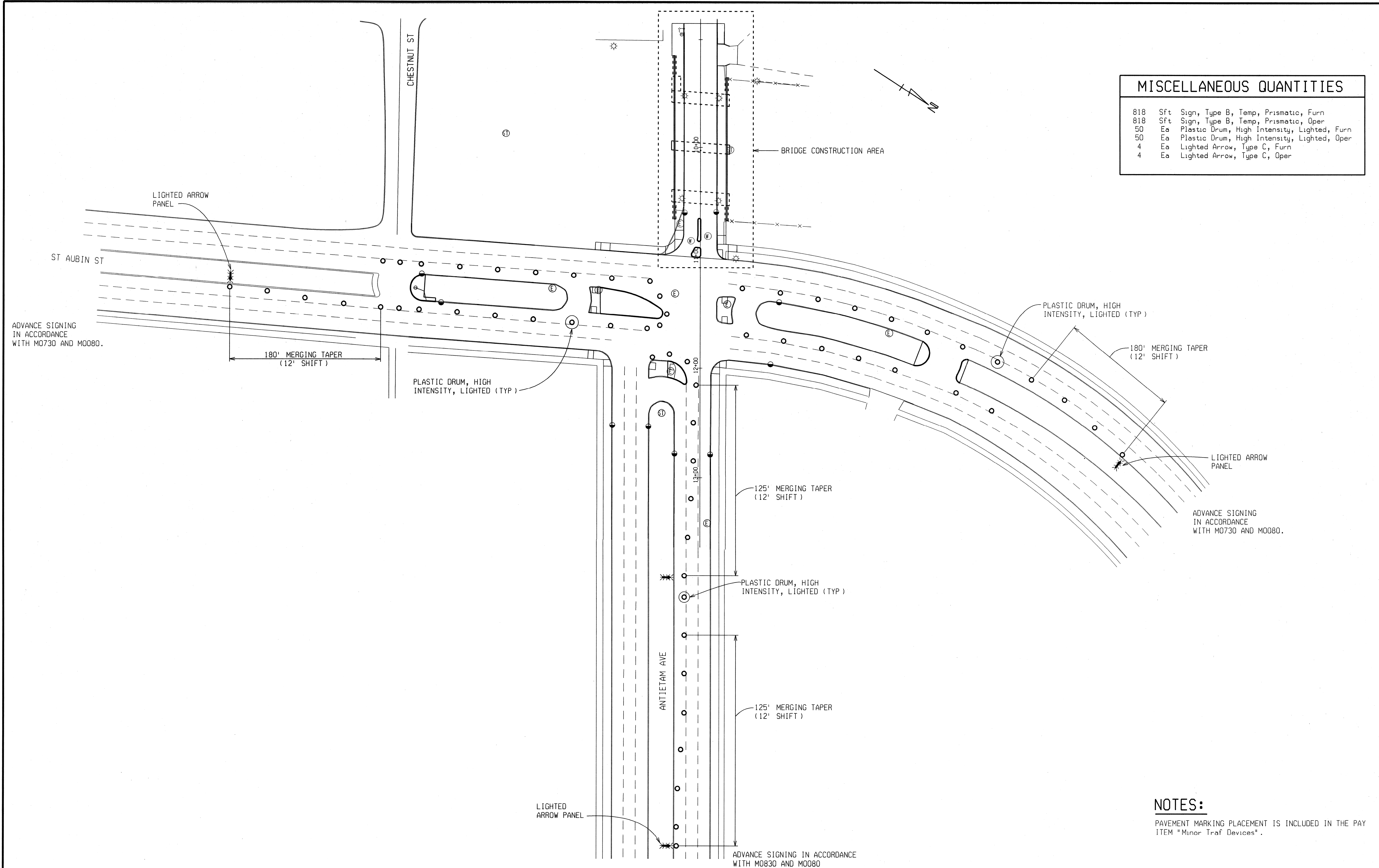
DETOUR ANTIETAM AVE

M6-1a (R) (21" X 15")  
 2.2 SFT TYPE IIIIB SIGN

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
|           |             |      |    |
|           |             |      |    |

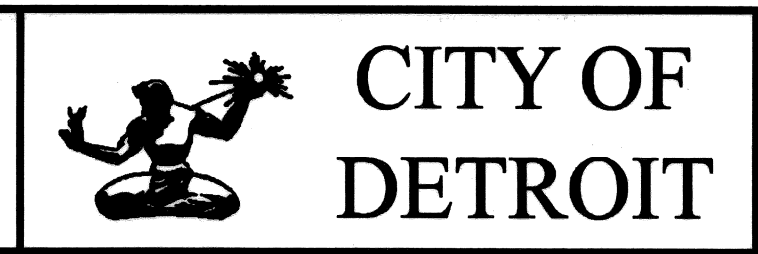
|              |  |   |                               |                          |
|--------------|--|---|-------------------------------|--------------------------|
|              |  | ANTIETAM AVENUE OVER DEQUINDRE CUT GREENWAY |                               | DATE: 4/13/07            |
|              |  | MDOT JOB NO. 83945A                         | STRUCTURE NO. S02 of 82-22-97 | DLZ JOB NO. 0641-6053-00 |
| DETOUR ROUTE |  |   |                               | SHEET NO. 2 OF 48        |

| MISCELLANEOUS QUANTITIES |     |   |
|--------------------------|-----|---|
| 818                      | Sft | Sign, Type B, Temp, Prismatic, Furn         |
| 818                      | Sft | Sign, Type B, Temp, Prismatic, Oper         |
| 50                       | Ea  | Plastic Drum, High Intensity, Lighted, Furn |
| 50                       | Ea  | Plastic Drum, High Intensity, Lighted, Oper |
| 4                        | Ea  | Lighted Arrow, Type C, Furn                 |
| 4                        | Ea  | Lighted Arrow, Type C, Oper                 |



**NOTES:**  
 PAVEMENT MARKING PLACEMENT IS INCLUDED IN THE PAY ITEM "Minor Traf Devices".

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
|           |             |      |    |
|           |             |      |    |



ANTIETAM AVENUE OVER  
 DEQUINDRE CUT GREENWAY  
 MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

CONSTRUCTION STAGING DETAILS

DATE: 4/13/07  
 DLZ JOB NO. 0641-6053-00  
 SHEET NO. 3 OF 48

| WITNESSES  |          |
|--|----------|
| WITNESSES TO CP2: 2 INCH MAGNAIL SET IN HMA NEAR C ANTINETAM AVENUE 100 FT WEST OF BRIDGE<br>NORTHING: 5048.11 EASTING: 10083.24<br>STA 8+58.28 ; OFF 5.06 FT LT                         |          |
| S 80° E TOP CENTER FIRE HYDRANT  | 40.1 FT  |
| S 30° E NW CORNER OF CATCH BASIN   | 16.45 FT |
| S 40° W CENTER LIGHT POLE  | 58.1 FT  |
| N 30° W NE CORNER OF CATCH BASIN   | 6.2 FT   |
| WITNESSES TO CP3: 2 INCH MAGNAIL FOUND IN CONCRETE ISLAND AT EAST SIDE OF ANTIETAM & ST. AUBIN INTERSECTION<br>NORTHING: 5193.9426 EASTING: 10395.8944<br>STA 12+01.62 ; OFF 29.25 FT RT |          |
| N 10° E CENTER LIGHT MANHOLE   | 2.3 FT   |
| N 70° E BACK OF CURB   | 6.2 FT   |
| S 20° E BACK OF CURB   | 17.7 FT  |
| S 70° W BACK OF CURB   | 7.65 FT  |

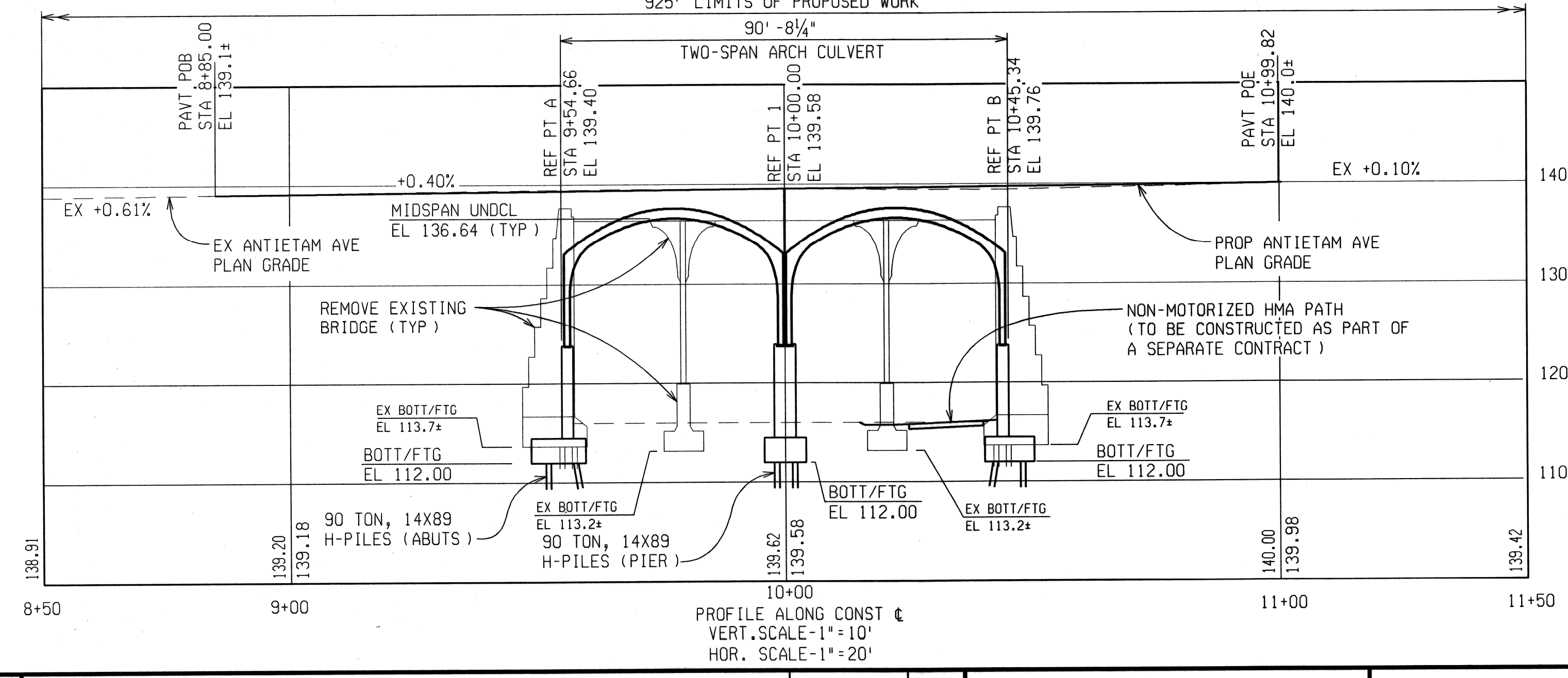
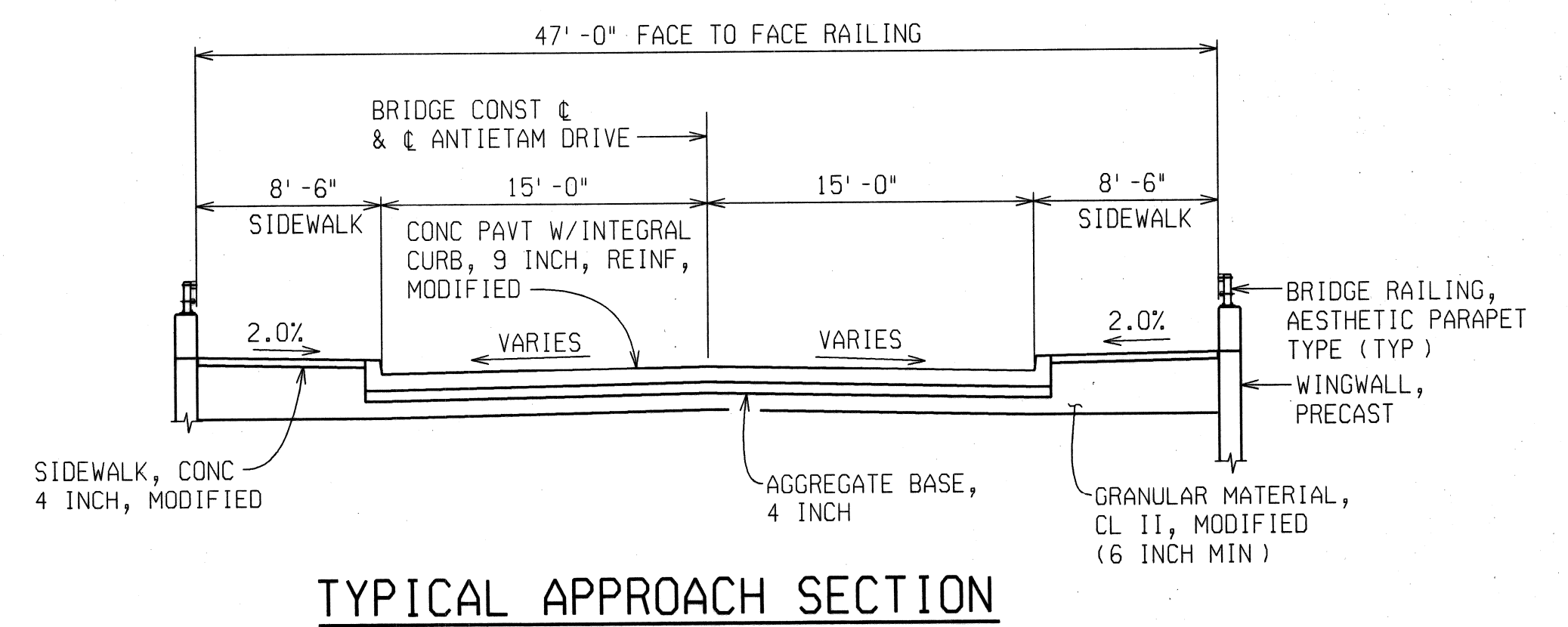
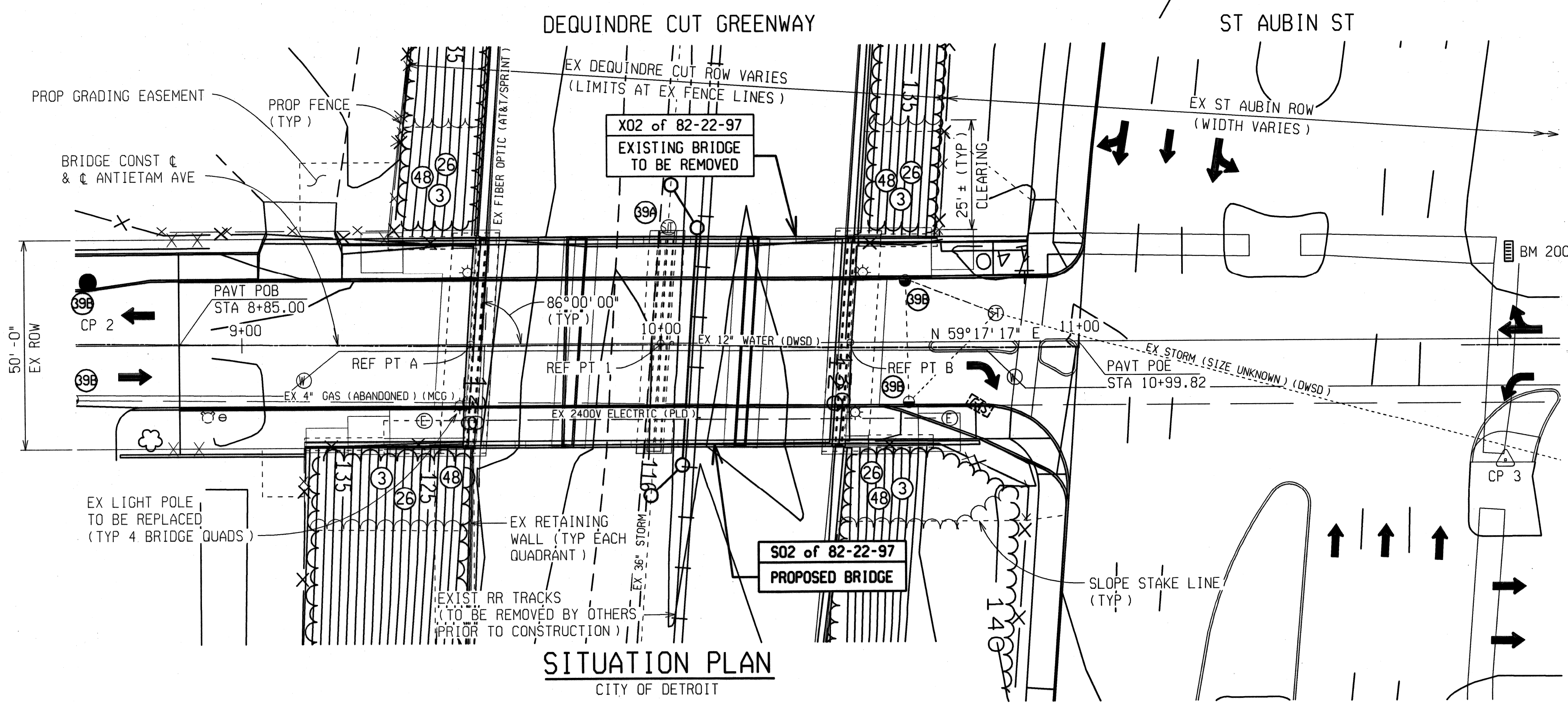
| BENCH MARKS  |   |
|--|---|
| BM 100   | EL - 138.85                             |
| ARROW AT TOP OF FIRE HYDRANT IN NORTH MEDIAN OF INTERSECTION OF ANTIETAM AVENUE AND ORLEANS STREET |   |
| NORTHING: 4975.19 EASTING: 9878.88   | STATION: 6+45.33 ; OFFSET: 46.76 FT LT  |
| BM 200   | EL - 138.29                             |
| DETROIT MONUMENT 39-357 FOUND IN NORTHEAST QUADRANT OF ANTIETAM AVENUE AND ST. AUBIN STREET        |   |
| NORTHING: 5237.38 EASTING: 10371.44  | STATION: 12+02.71 ; OFFSET: 20.61 FT LT |

**EXISTING STRUCTURE**

THE EXISTING STRUCTURE IS A 3 SPAN BRIDGE WITH A TOTAL SPAN LENGTH OF 85 FEET. THE EXISTING SUPERSTRUCTURE CONSISTS OF CONCRETE ENCASED ROLLED STEEL BEAMS. THE ABUTMENTS ARE ON PILES AND THE PIERS ARE ON SPREAD FOOTINGS. THE BRIDGE WAS BUILT IN 1930.

| EROSION AND SEDIMENTATION CONTROL MEASURES |  |         |
|--|--|---------|
|  |  | KEY NO. |
| *  | 100 Ft Erosion Control, Silt Fence                           | 26      |
|  | 4 Ea Erosion Control, Inlet Protection, Fabric Drop          | 39A     |
|  | 4 Ea Erosion Control, Inlet Protection, Geotextile and Stone | 39B     |
|  | 200 Syd Slope Restoration                                    | 3       |
|  | 200 Syd Mulch Blanket  | 4B      |

\* PLACE AS DIRECTED BY THE ENGINEER



| UTILITIES  |                    |
|--|--------------------|
| CITY OF DETROIT, PUBLIC LIGHTING DEPT (PLD)<br>9449 GRINNELL<br>DETROIT, MI 48213<br>ATTN: STAN TOPOLEWSKI<br>PHONE NO.: (313) 267-7228  | ELECTRIC, LIGHTING |
| CITY OF DETROIT<br>DETROIT WATER & SEWERAGE DEPT (DWS)<br>J MADISON BLDG<br>1420 WASHINGTON BLVD., SUITE 100<br>DETROIT, MI 48226<br>ATTN: MICHAEL KUBIAN<br>PHONE NO.: (313) 967-1508 | WATER, SEWER       |
| DTE ENERGY<br>MICHIGAN CONSOLIDATED GAS CO. (MCG)<br>MAIN REPLACEMENT TEAM, 2ND FLOOR<br>3200 HOBSON<br>DETROIT, MI 48201<br>ATTN: PAUL HARTMAN<br>PHONE NO.: (313) 577-7236           | GAS                |
| AT&T<br>2152 S. 114TH STREET<br>WEST ALLIS, WI 53227<br>ATTN: JOHN KOTZ<br>PHONE NO.: (414) 290-8927   | FIBER OPTIC        |
| SPRINT<br>5600 NORTH RIVER ROAD<br>ROSEMONT, IL 60018<br>ATTN: GERRY CRAIN<br>PHONE NO.: (847) 318-3010  | FIBER OPTIC        |

**NOTES:**

THE WORK COVERED BY THESE PLANS INCLUDES CLEARING, GRUBBING, EARTH EXCAVATION, MAINTAINING TRAFFIC, TRAFFIC IMPROVEMENTS, REMOVAL OF THE EXISTING BRIDGE, CONSTRUCTION OF THE PROPOSED BRIDGE AND APPROACHES TO THE LIMITS SHOWN.

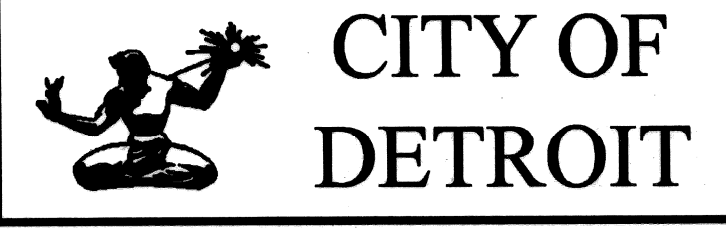
THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

ANTIETAM AVENUE TRAFFIC IS TO BE DETOURED OVER OTHER EXISTING ROADS.

PLAN ELEVATIONS REFER TO CITY OF DETROIT DATUM.

TOPOGRAPHY SHOWN HERE REPRESENTS CONDITIONS EXISTING AT THE TIME THE FIELD SURVEY WAS MADE. HOWEVER, THESE CONDITIONS MAY HAVE BEEN MATERIALLY ALTERED BY THE OPERATIONS OF OTHERS PRIOR TO THIS CONTRACT.

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |



ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY

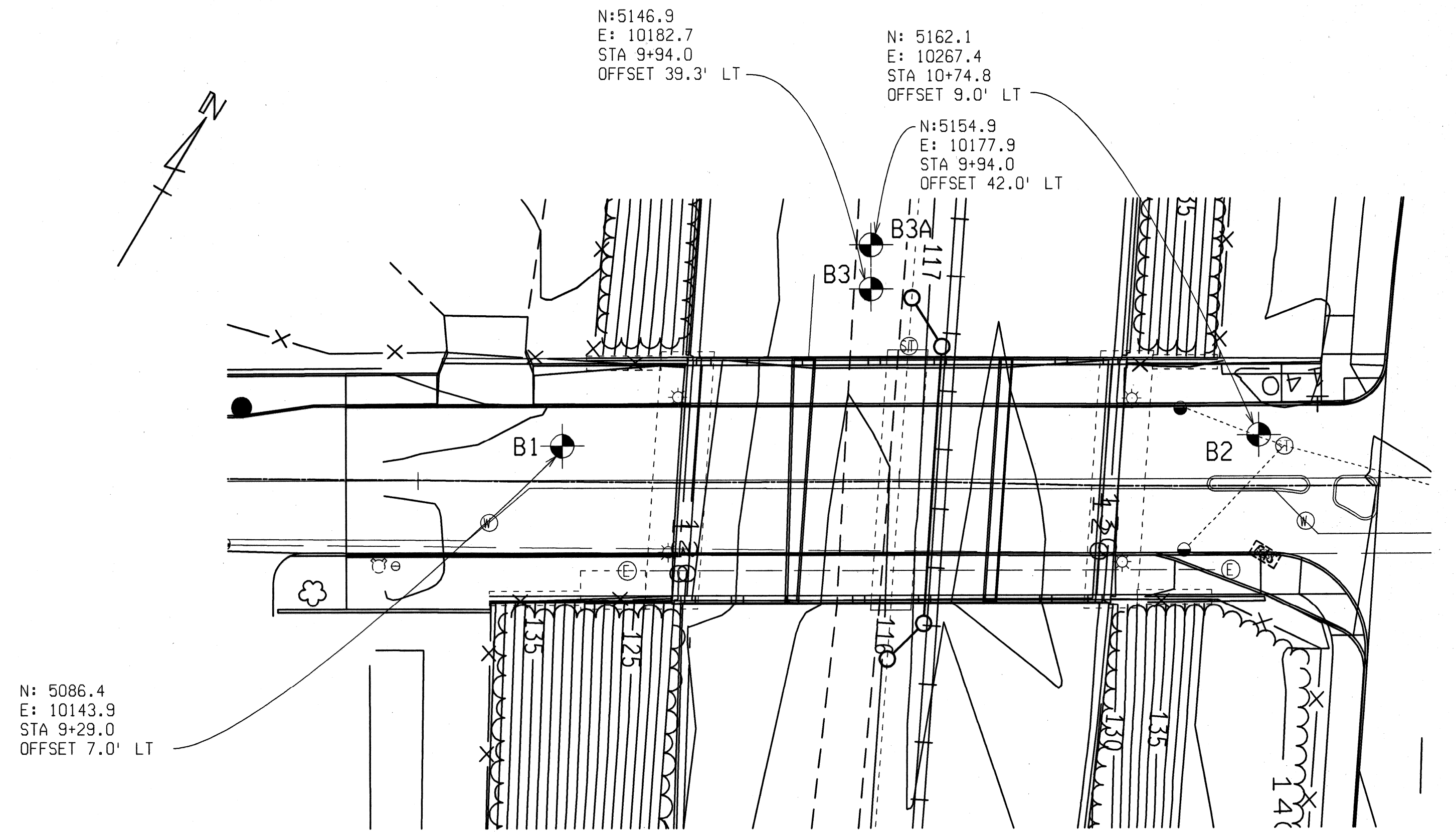
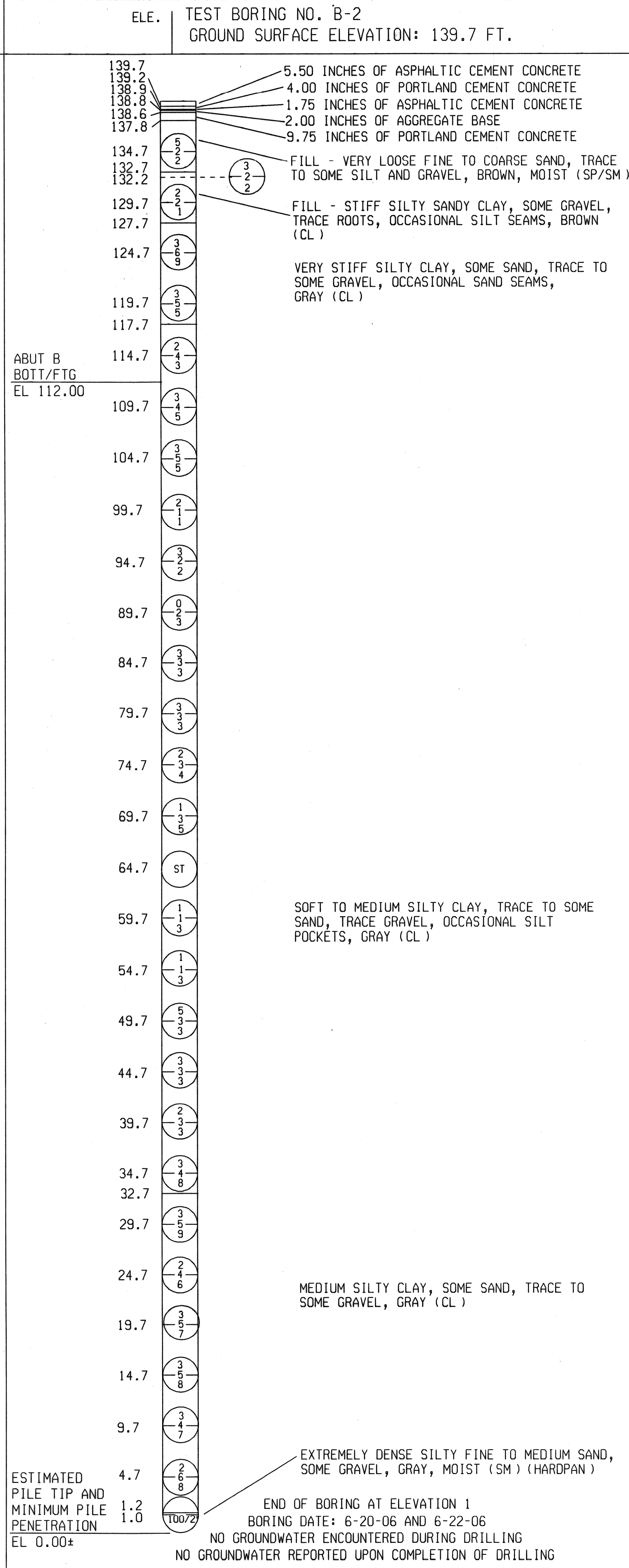
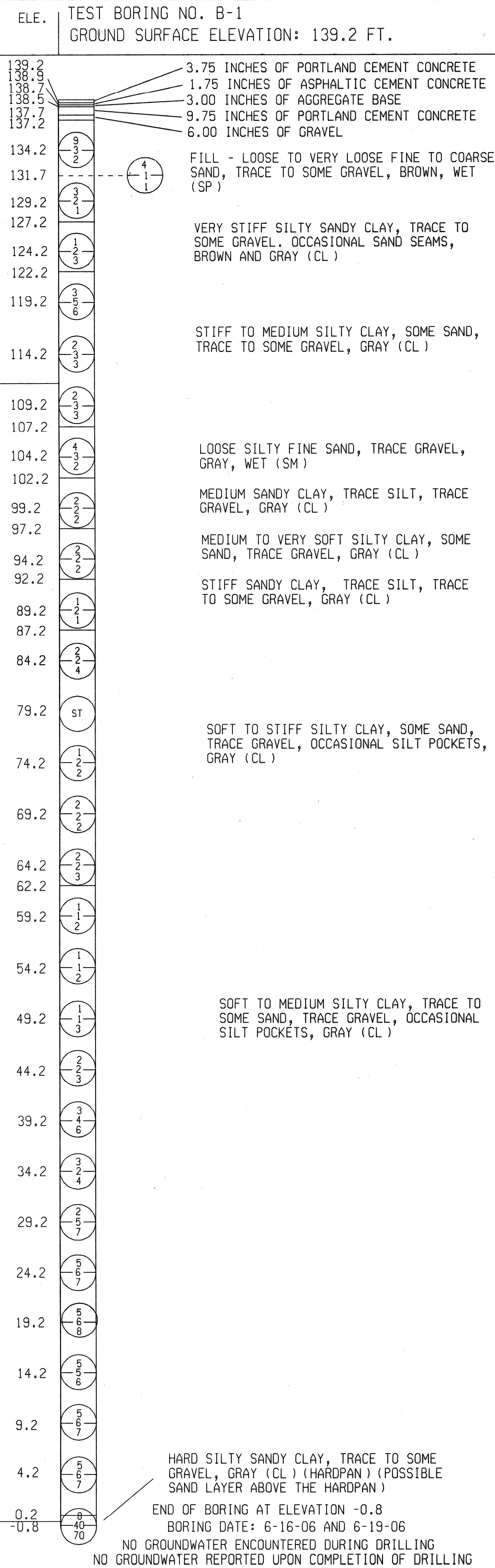
MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

GENERAL PLAN OF SITE

DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 4 OF 48

DATE: 9/7/06    CORRECTED BY: TNG    DATE: 9/6/06    CHECKED BY: BMW    DATE: 05/18/06    FILE NAME: antietam-s1.dgn

1.2 3.4 5.6 7.8 9.10 11.12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63



1ST 6 INCH  
2ND 6 INCH  
3RD 6 INCH

**NOTES:**

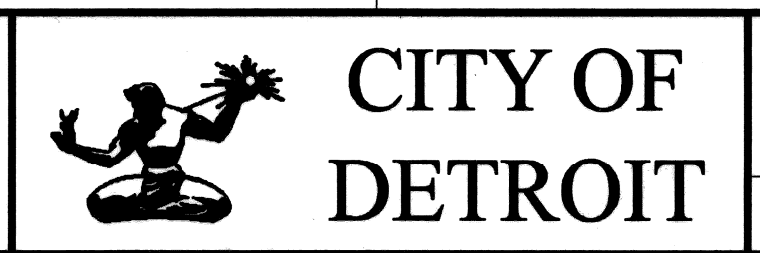
NUMBERS IN CIRCLES DENOTE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. (1 1/2" I.D.) SPLIT SPOON SAMPLER 3 SUCCESSIVE 6 INCH INCREMENTS USING A 140 LB HAMMER FALLING 2.5 FT.

CONSISTENCY WAS DETERMINED BY INSPECTION OF SAMPLES AND SUBSTANTIATED BY SOILS RESISTANCE TO DRILLING TOOLS.

WATER LEVELS MAY BE INFLUENCED BY RESIDUAL BORING WATER.

THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
|           |             |      |    |
|           |             |      |    |



ANTIETAM AVENUE OVER DEQUINDRE CUT GREENWAY

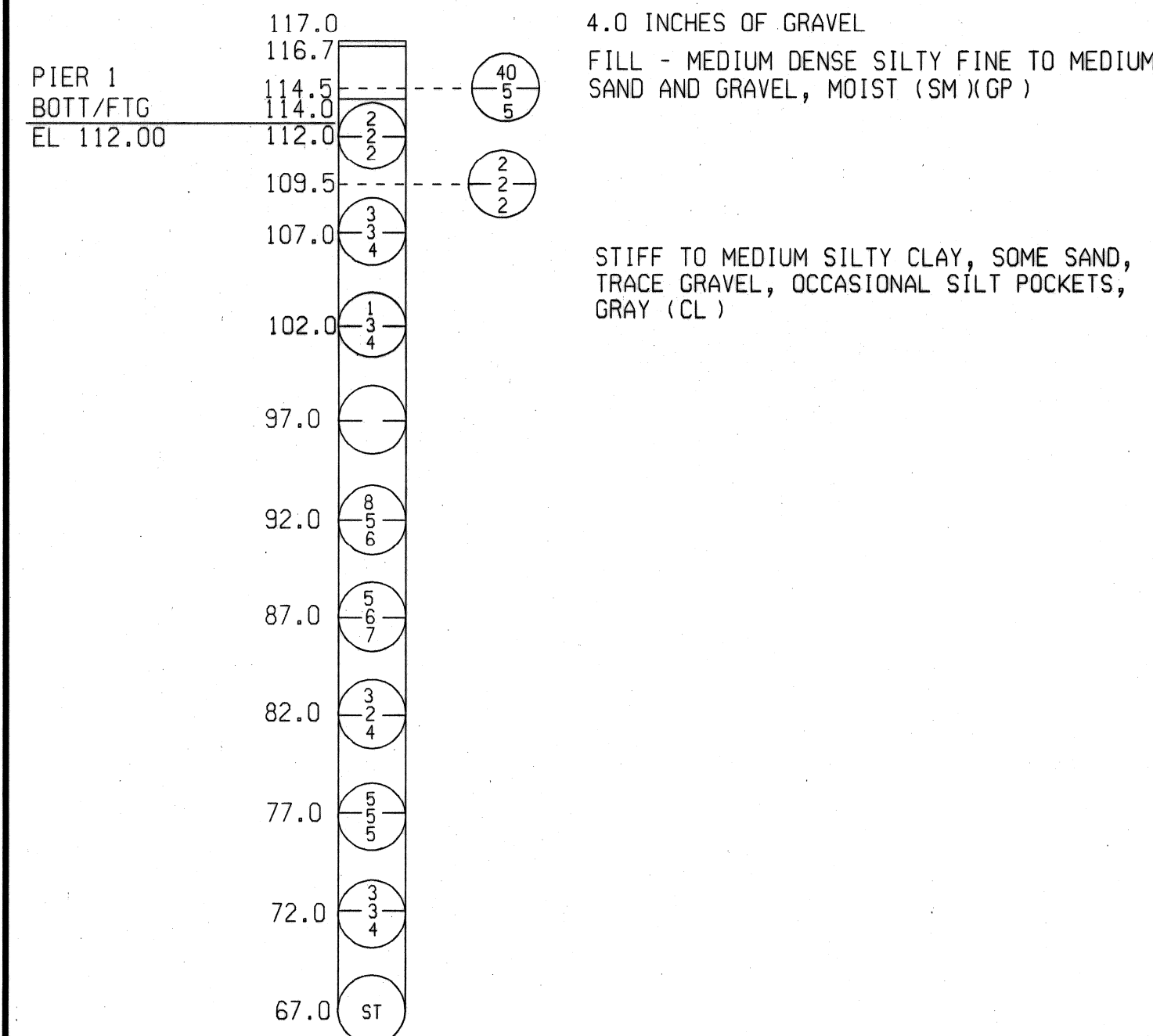
MDOT JOB NO. 83945A STRUCTURE NO. S02 of 82-22-97

SOIL BORING LOG

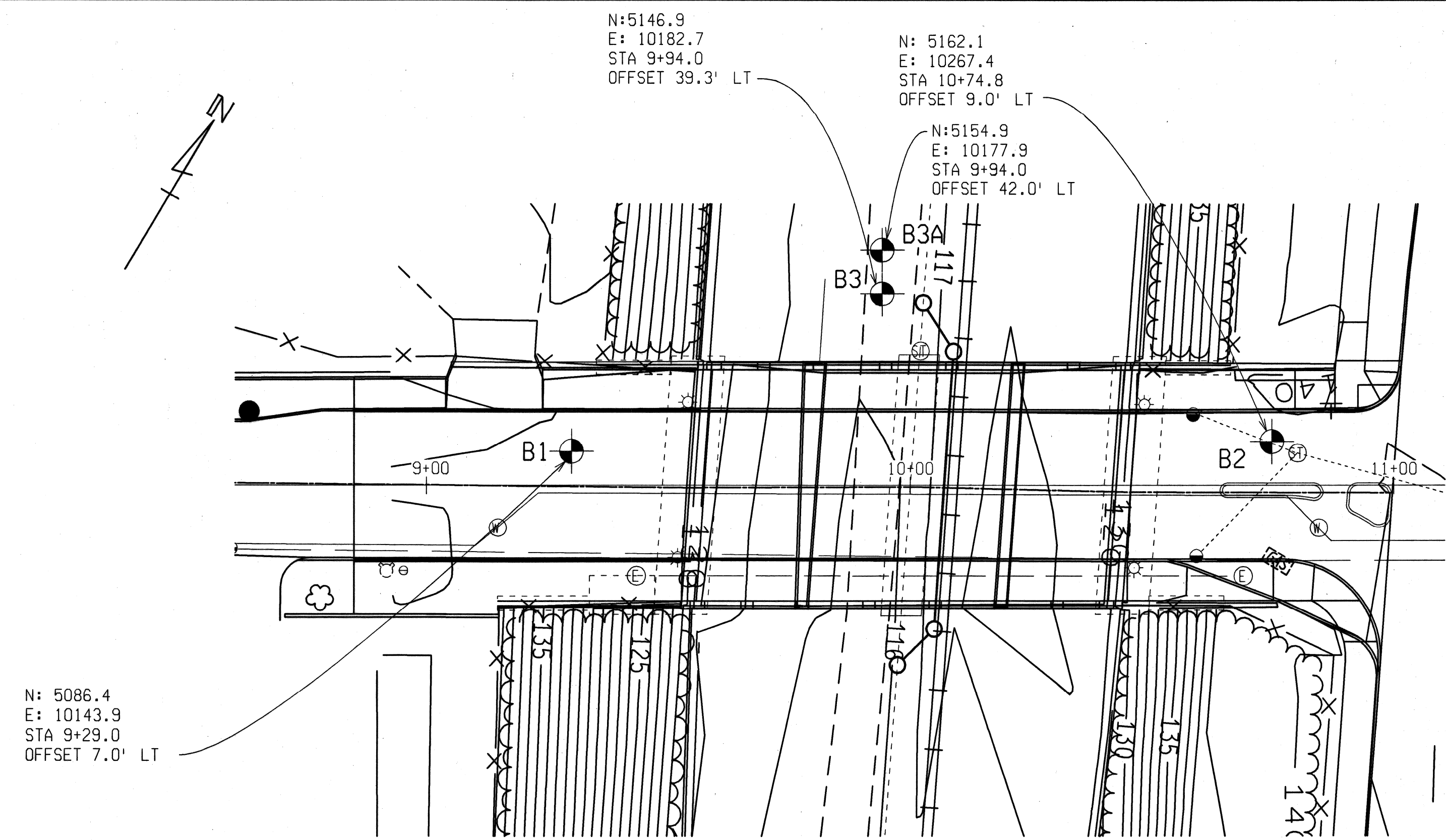
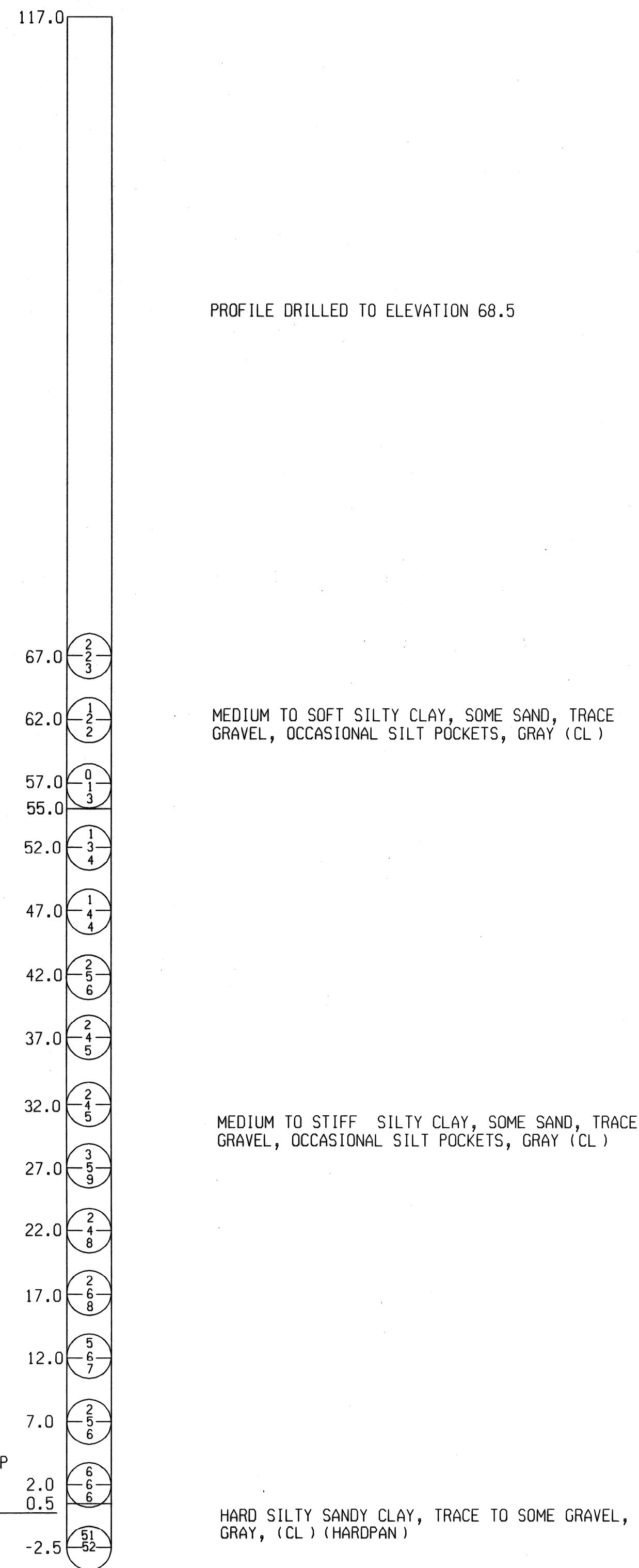
DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 5 OF 48

DATE: 9/7/06  
CORRECTED BY: TNB  
DATE: 9/7/06  
CHECKED BY: BMW  
DATE: 6/14/06  
DRAWN BY: bmr  
FILE NAME: anti-etam-sb1.dgn

ELE. TEST BORING NO. B-3  
GROUND SURFACE ELEVATION: 117.0 FT.



ELE. TEST BORING NO. B-3A  
GROUND SURFACE ELEVATION: 117.0 FT.



LOCATION DIAGRAM  
SCALE: 1" = 20'

○ 1ST 6 INCH  
○ 2ND 6 INCH  
○ 3RD 6 INCH

**NOTES:**

NUMBERS IN CIRCLES DENOTE NUMBER OF BLOWS  
REQUIRED TO DRIVE A 2" O.D. (1 1/2" I.D.) SPLIT SPOON SAMPLER  
3 SUCCESSIVE 6 inch INCREMENTS USING A 140 lb  
HAMMER FALLING 2.5 ft.

CONSISTENCY WAS DETERMINED BY INSPECTION OF SAMPLES AND SUBSTANTIATED  
BY SOILS RESISTANCE TO DRILLING TOOLS.

WATER LEVELS MAY BE INFLUENCED BY RESIDUAL BORING WATER.

THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF  
THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE  
THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
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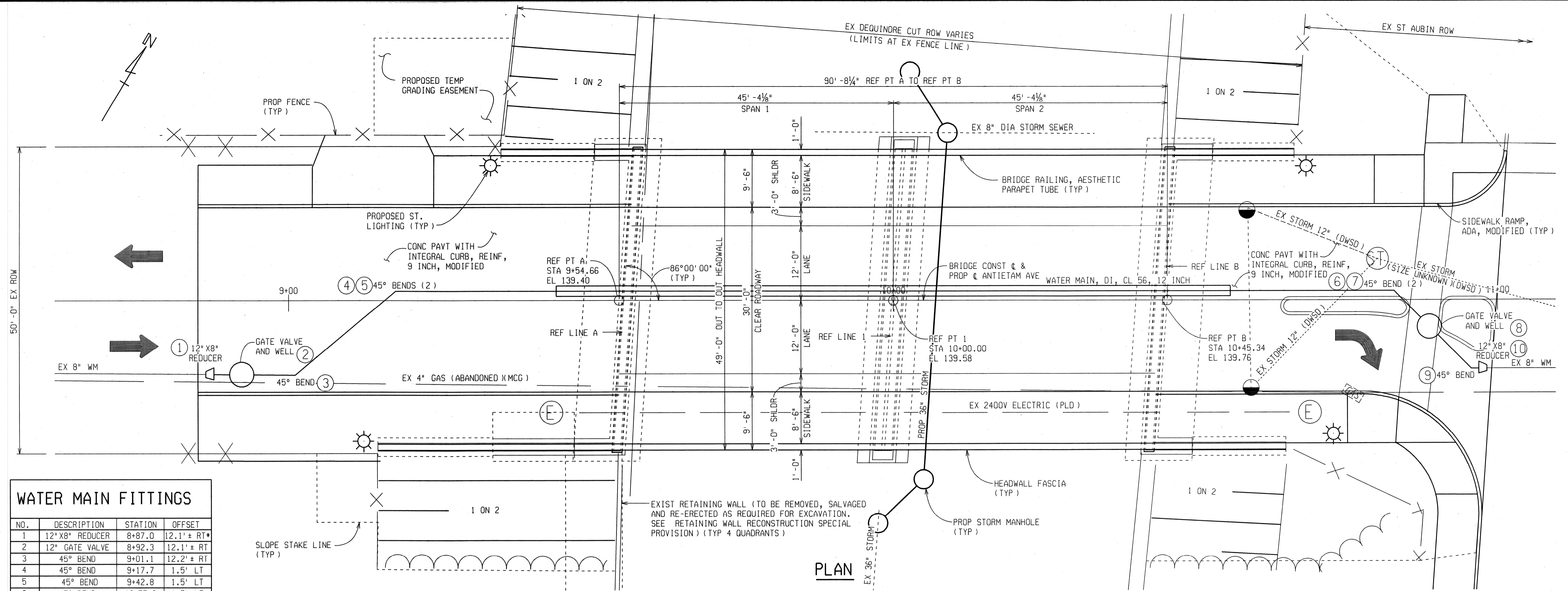
ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY

MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

SOIL BORING LOG

DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 6 OF 48

DATE: 6/14/06    DRAWN BY: bmw    FILE NAME: antietam-sb2.dgn

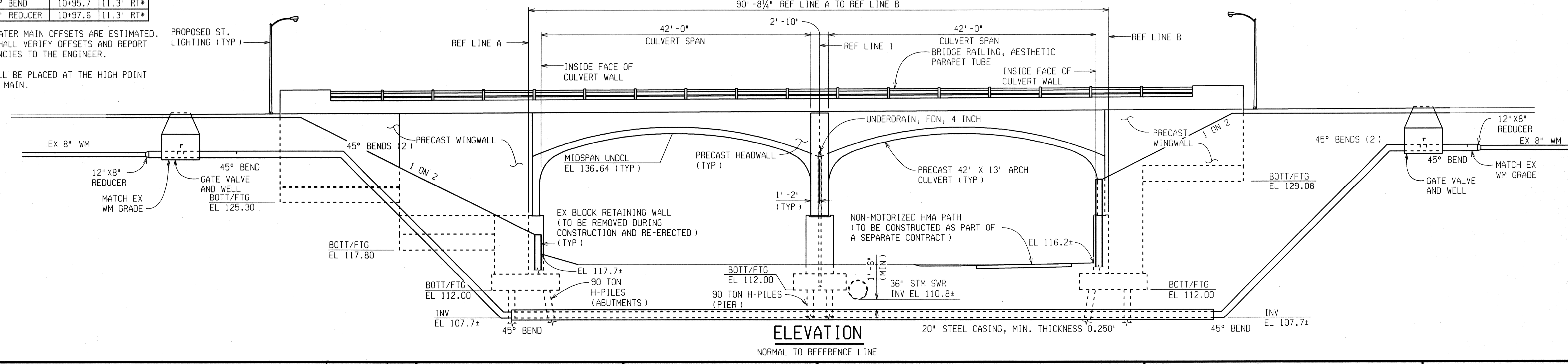


**WATER MAIN FITTINGS**

| NO. | DESCRIPTION      | STATION | OFFSET      |
|-----|------------------|---------|-------------|
| 1   | 12" X 8" REDUCER | 8+87.0  | 12.1' ± RT* |
| 2   | 12" GATE VALVE   | 8+92.3  | 12.1' ± RT  |
| 3   | 45° BEND         | 9+01.1  | 12.2' ± RT  |
| 4   | 45° BEND         | 9+17.7  | 1.5' LT     |
| 5   | 45° BEND         | 9+42.8  | 1.5' LT     |
| 6   | 45° BEND         | 10+57.2 | 1.5' LT     |
| 7   | 45° BEND         | 10+82.9 | 1.5' LT     |
| 8   | 12" GATE VALVE   | 10+88.7 | 4.4' RT     |
| 9   | 45° BEND         | 10+95.7 | 11.3' RT*   |
| 10  | 12" X 8" REDUCER | 10+97.6 | 11.3' RT*   |

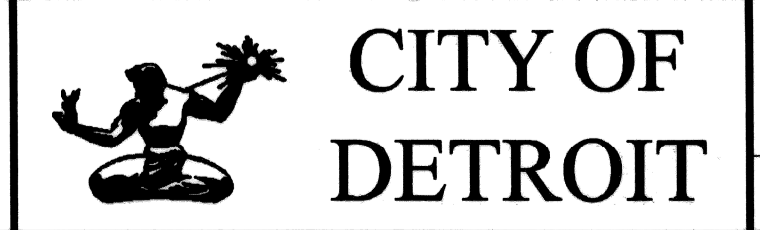
\* EXISTING WATER MAIN OFFSETS ARE ESTIMATED. CONTRACTOR SHALL VERIFY OFFSETS AND REPORT ANY DISCREPANCIES TO THE ENGINEER.

\*\* VALVES SHALL BE PLACED AT THE HIGH POINT OF THE WATER MAIN.



**REVISIONS**

| NO. | DESCRIPTION | DATE | BY |
|-----|-------------|------|----|
|     |             |      |    |
|     |             |      |    |
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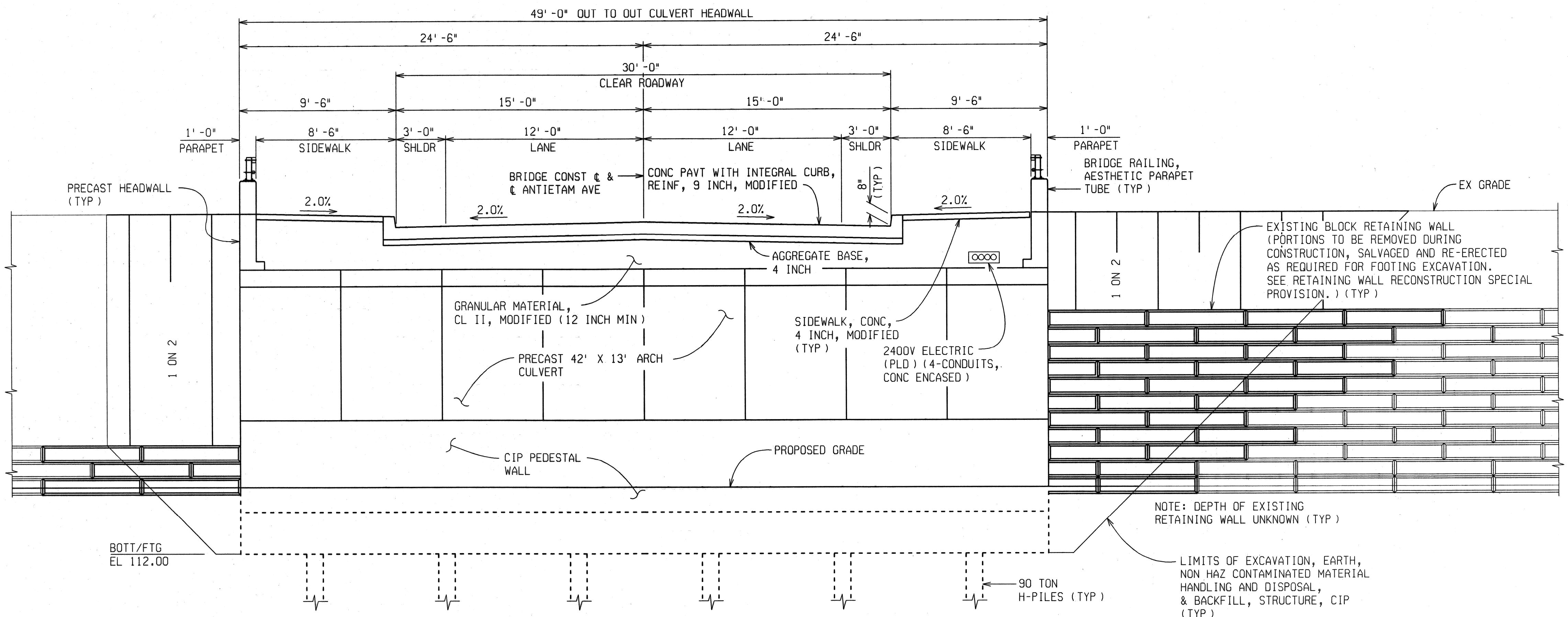
**ANTIETAM AVENUE OVER DEQUINDRE CUT GREENWAY**

MDOT JOB NO. 83945A STRUCTURE NO. S02 of 82-22-97

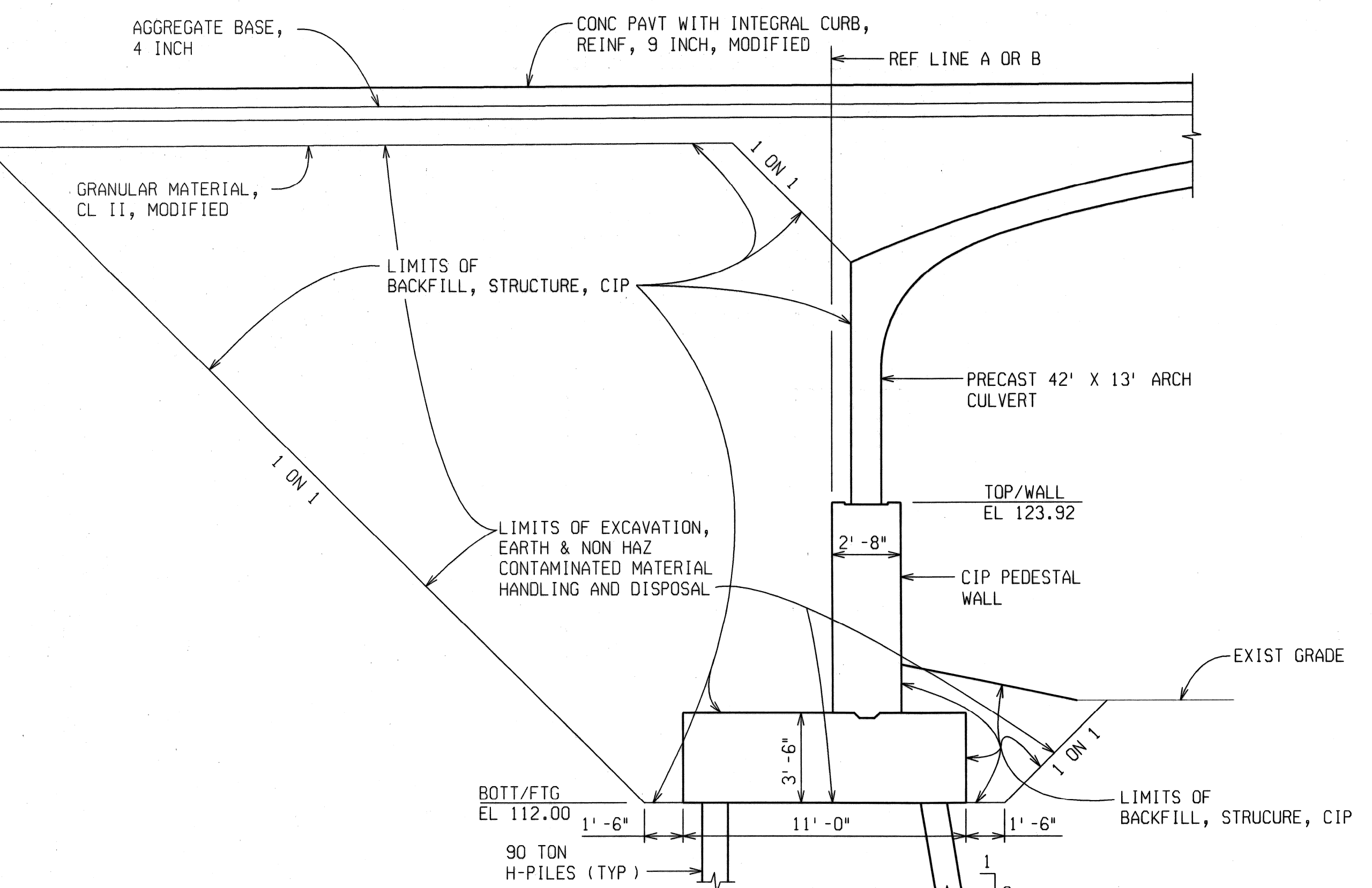
**GENERAL PLAN OF STRUCTURE**

DATE: 4/13/07  
 DLZ JOB NO. 0641-6053-00  
 SHEET NO. 7 OF 48

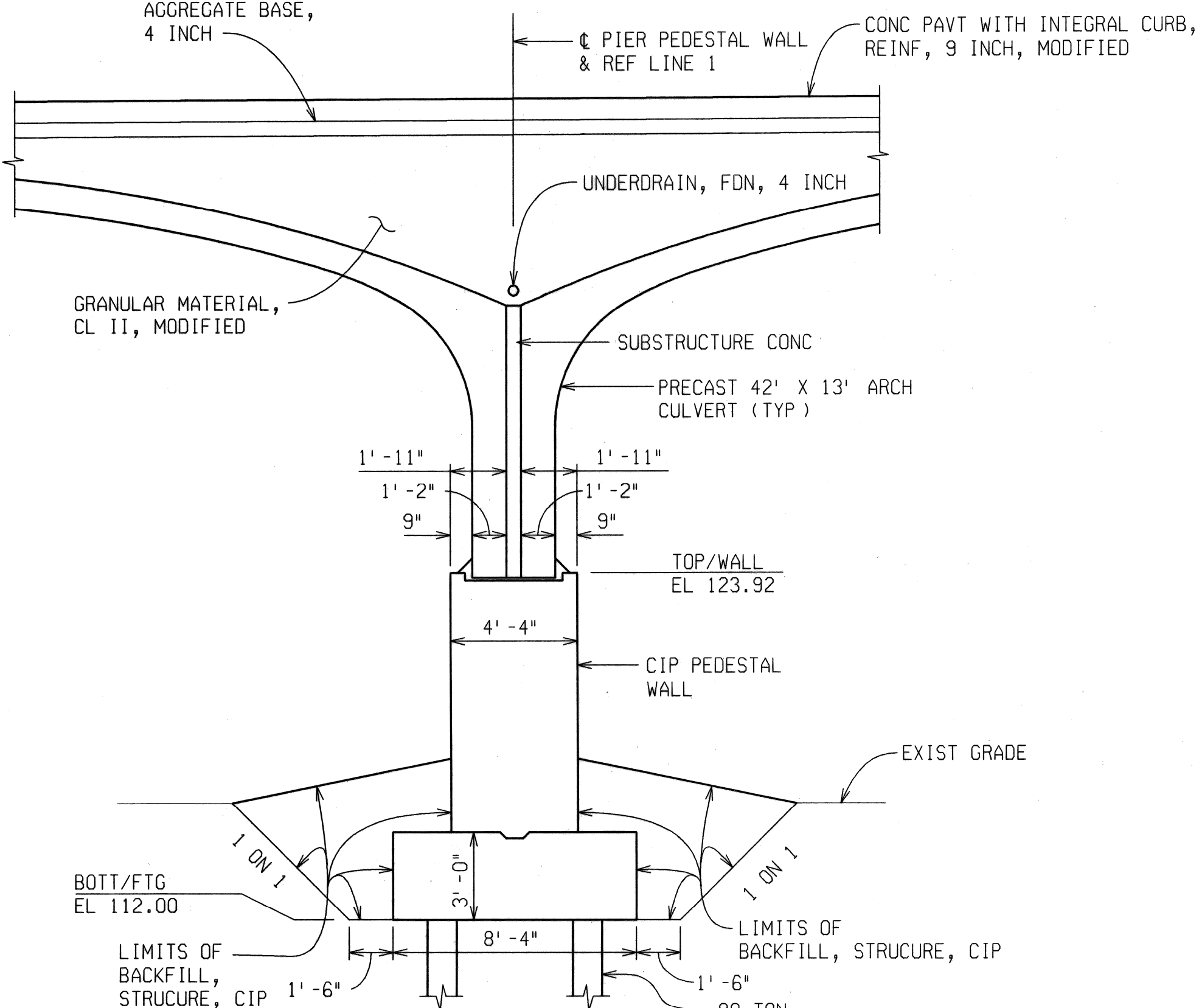




**TYPICAL DECK SECTION**  
LOOKING UPSTATION



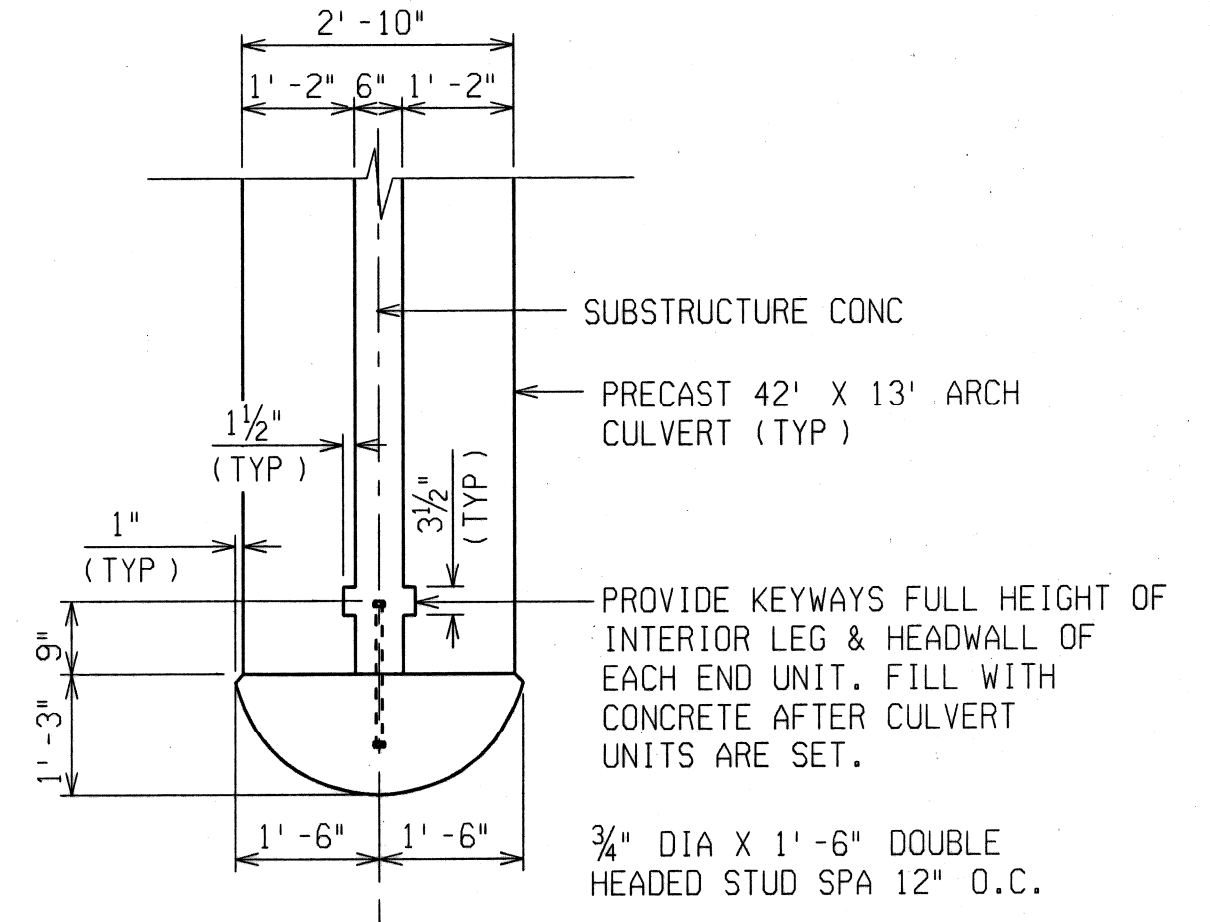
**TYPICAL ABUTMENT SECTION**



**TYPICAL PIER SECTION**

| MISCELLANEOUS QUANTITIES |     |   |
|--------------------------|-----|---|
| 1                        | LS  | Structures, Rem   |
| 4190                     | Cyd | Backfill, Structure, CIP  |
| 2000                     | Cyd | Non Haz Contaminated Material Handling and Disposal             |
| 200                      | Cyd | Excavation, Earth   |
| 242                      | Ft  | Water Main, DI, CI 56, 12 inch                                  |
| 400                      | Sft | Retaining Wall Reconstruction                                   |
| 100                      | Ft  | Culv, Precast Three-Sided or Arch, 42 foot by 13 foot, Modified |
| 1228                     | Sft | Wingwall, Precast   |

\* AS DIRECTED BY THE ENGINEER

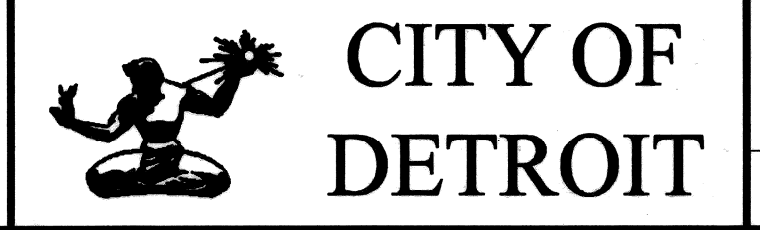


**NOSING DETAIL**

**NOTES:**

THE DESIGN OF THIS STRUCTURE IS BASED ON CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES HS20-44. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF SPAN LENGTH. THE LOAD FACTOR METHOD OF DESIGN WAS USED FOR THIS STRUCTURE.  
SEE PIER SHEET 14 OF 48 FOR UNDERDRAIN OUTLET DETAILS.

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
|           |             |      |    |



ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY  
MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

GENERAL PLAN OF STRUCTURE

DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 8 OF 48

DATE: 06/15/06    DRAWN BY: bmx    FILE NAME: anti-etam-s12.dgn

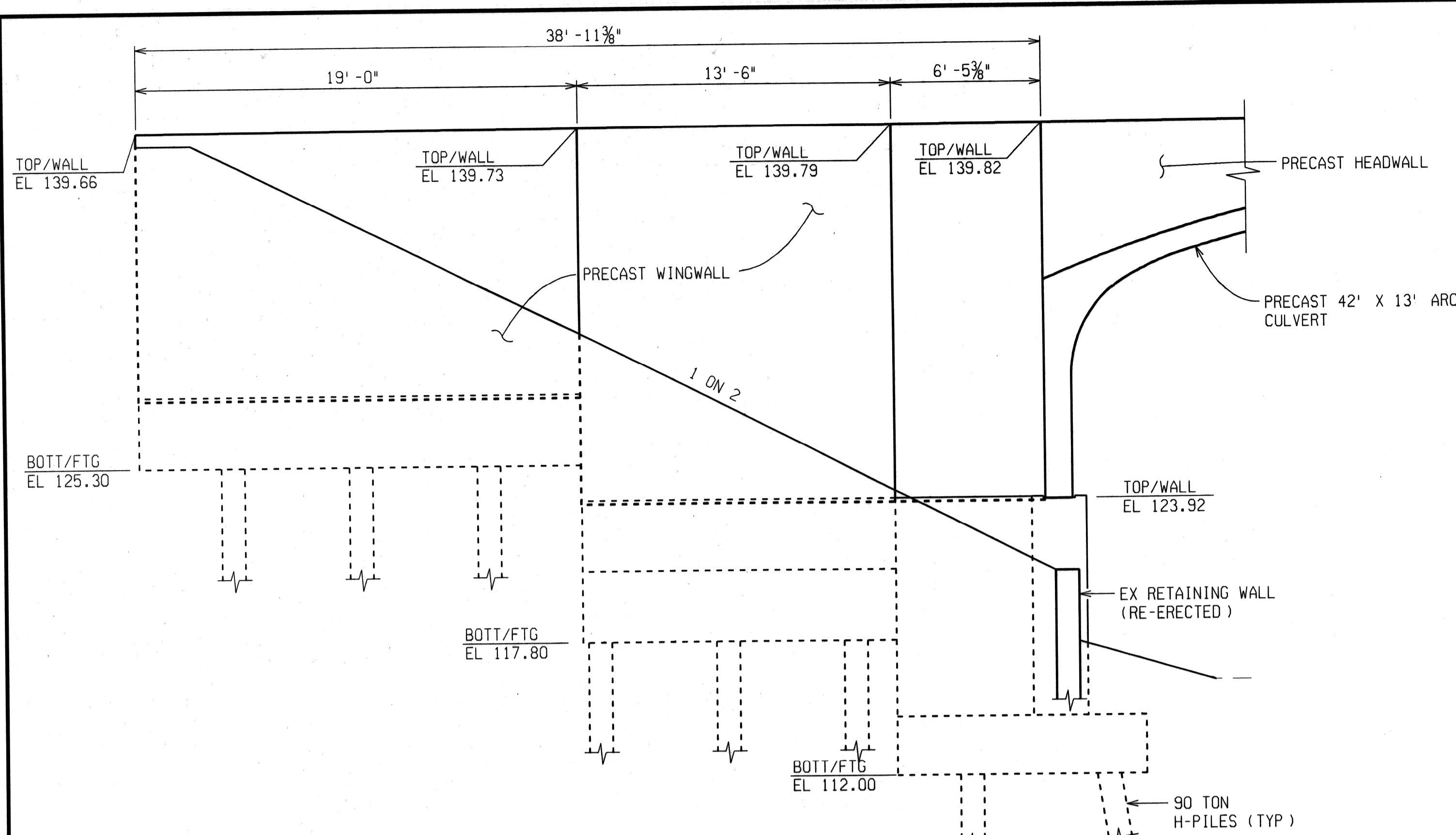
DATE: 9/12/06

DATE: 9/6/06 CORRECTED BY:DLW

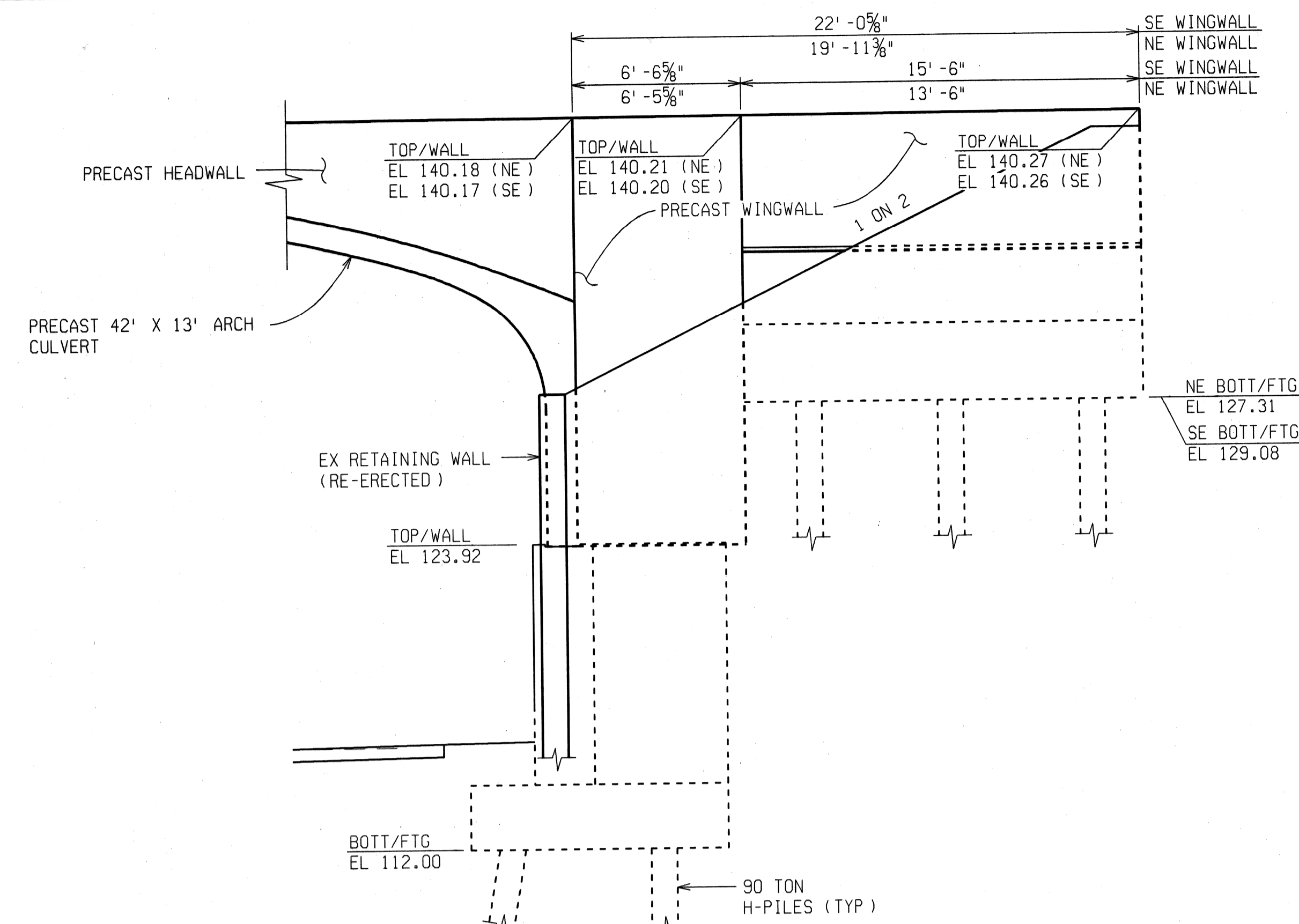
DATE: 06/15/06 CHECKED BY: BMW

DRAWN BY: bmw

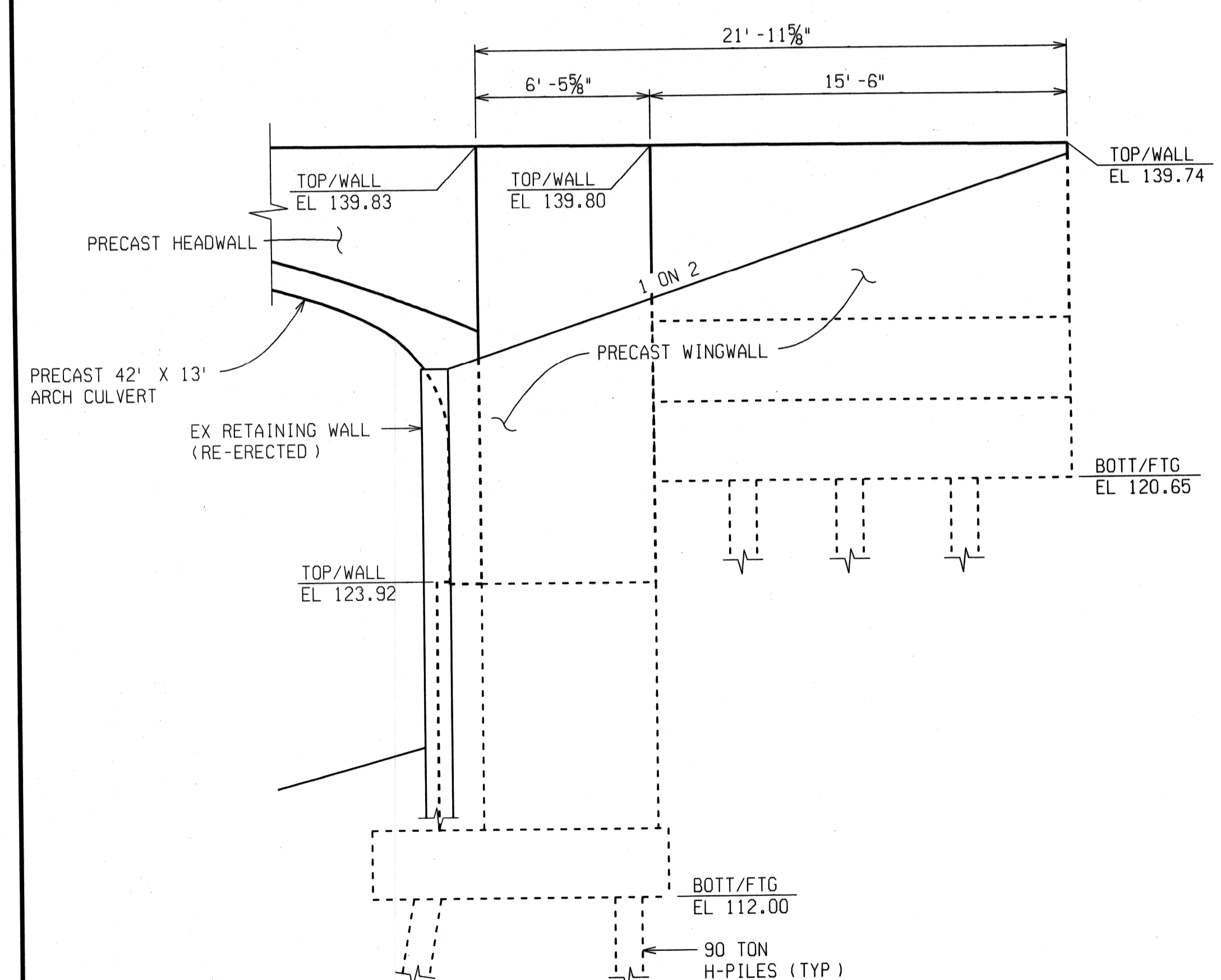
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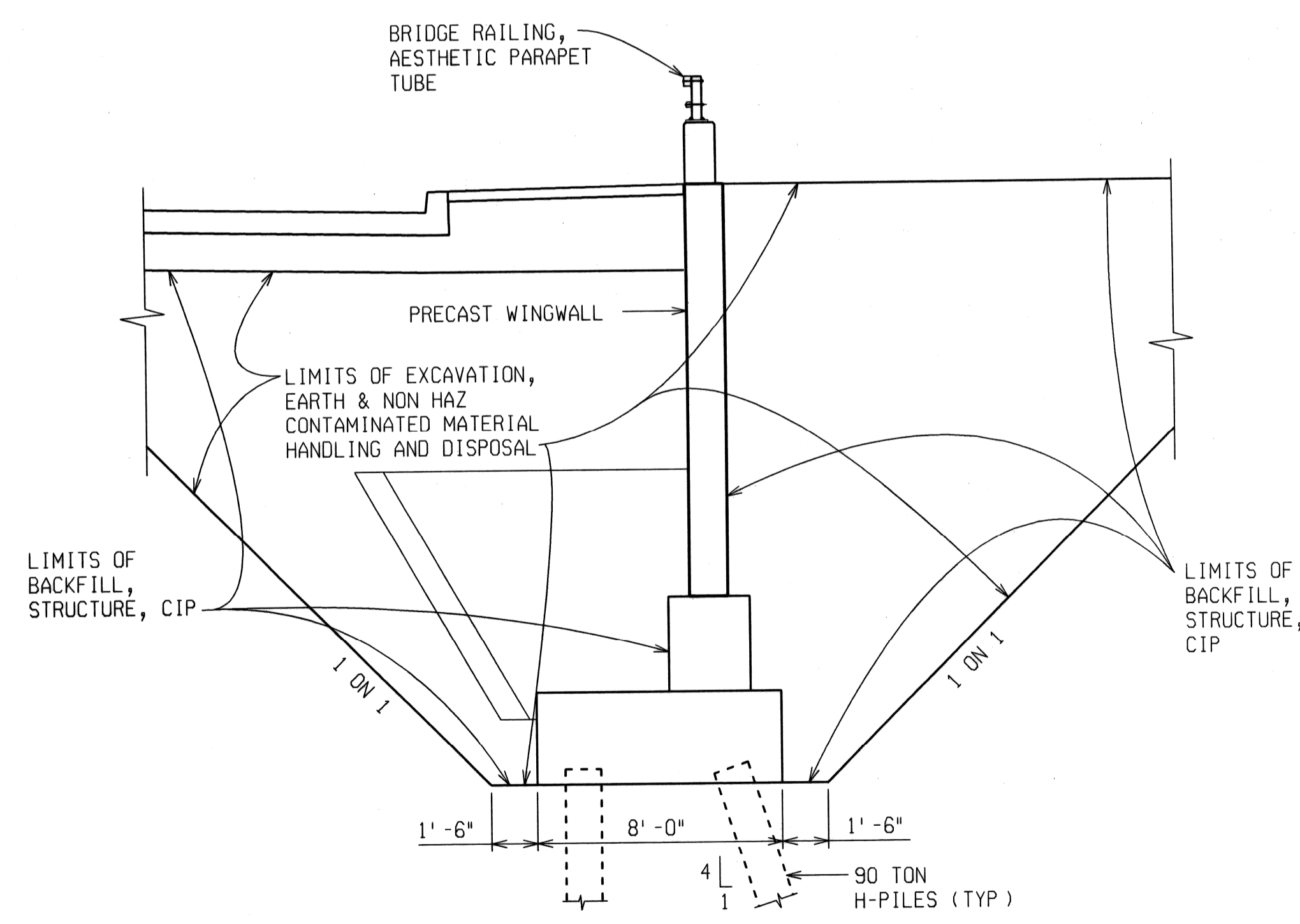
**SOUTHWEST WINGWALL ELEVATION**  
(OUTSIDE ELEVATION OF WINGWALL SHOWN)



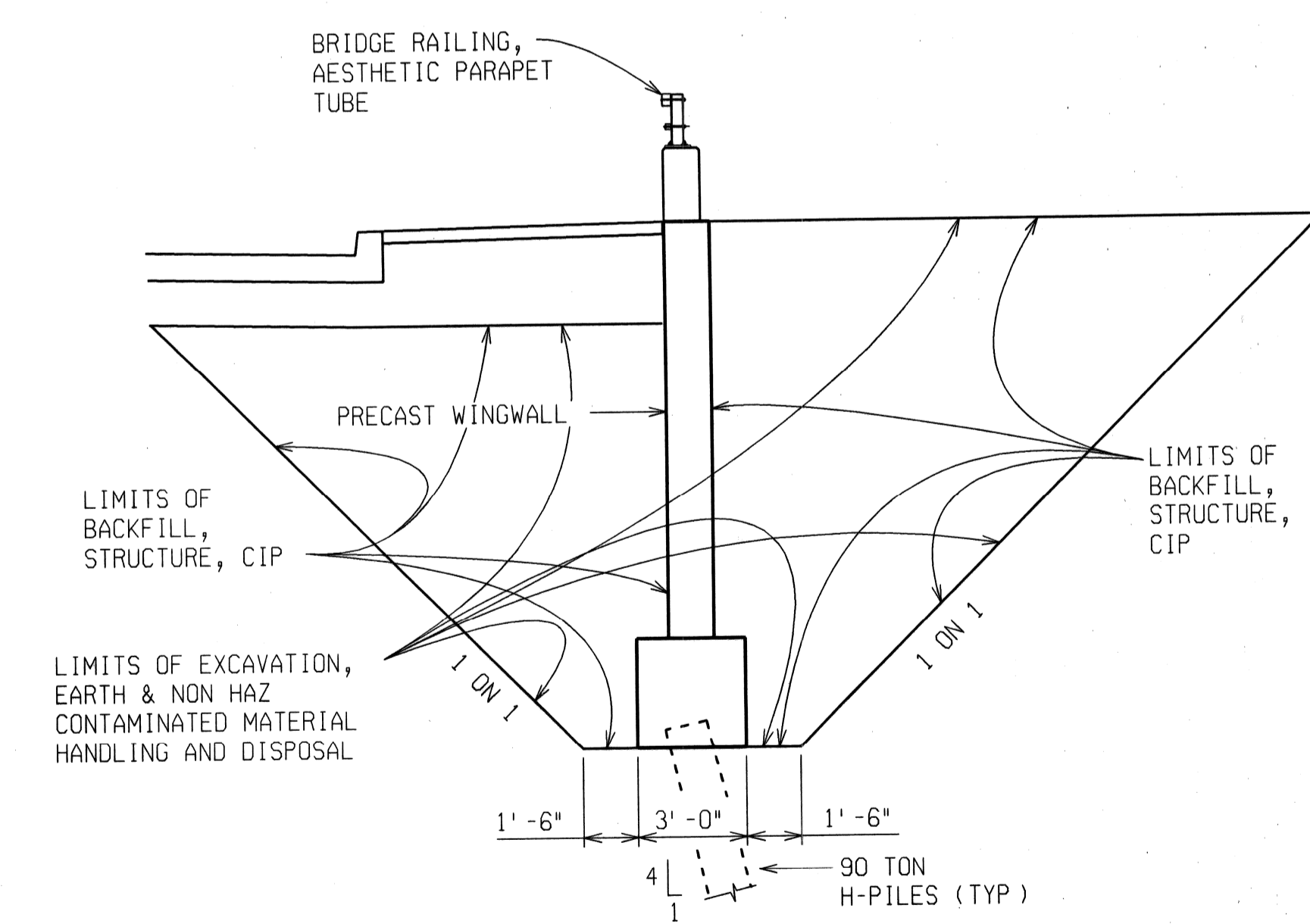
**EAST WINGWALLS ELEVATION**  
(OUTSIDE ELEVATION OF SE WINGWALL SHOWN)  
(INSIDE ELEVATION OF NE WINGWALL SHOWN)



**NORTHWEST WINGWALL ELEVATION**  
(OUTSIDE ELEVATION OF WINGWALL SHOWN)



**TYPICAL WINGWALL SECTION**  
(SW)



**TYPICAL END WINGWALL SECTION**  
(NE, NW, SE, SW)

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
|           |             |      |    |
|           |             |      |    |



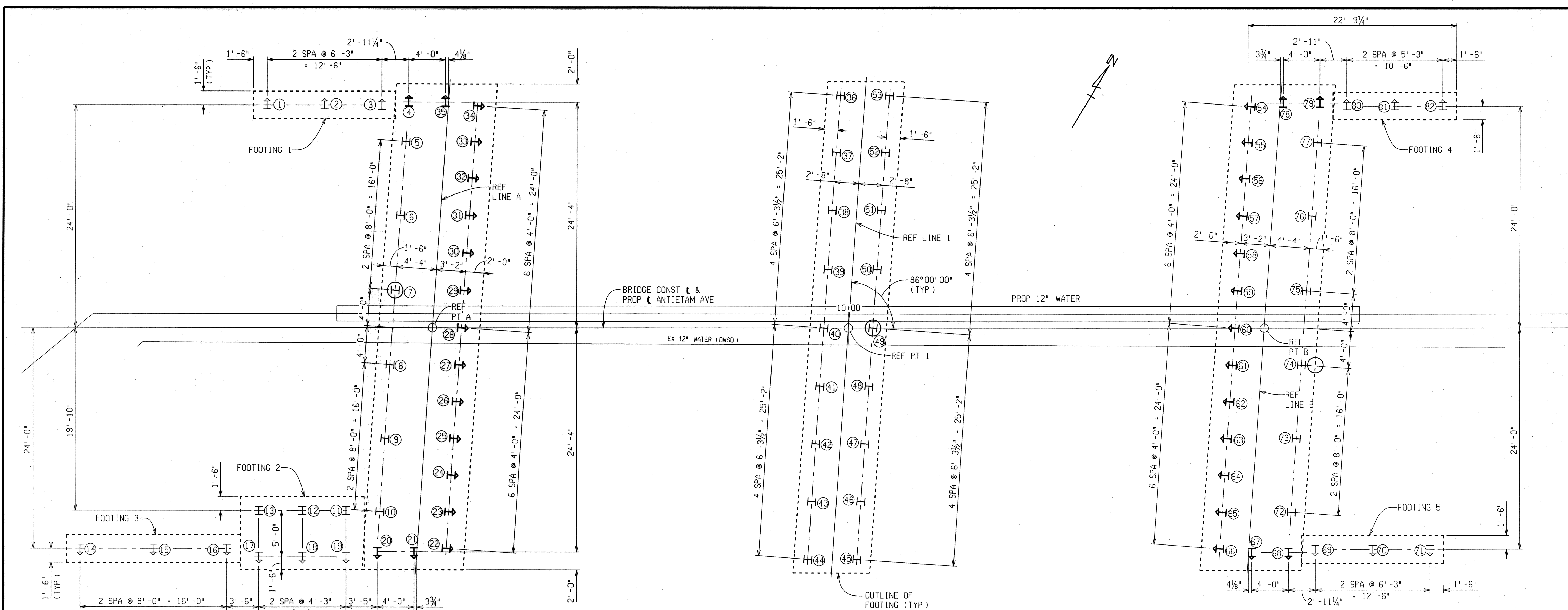
ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY

MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

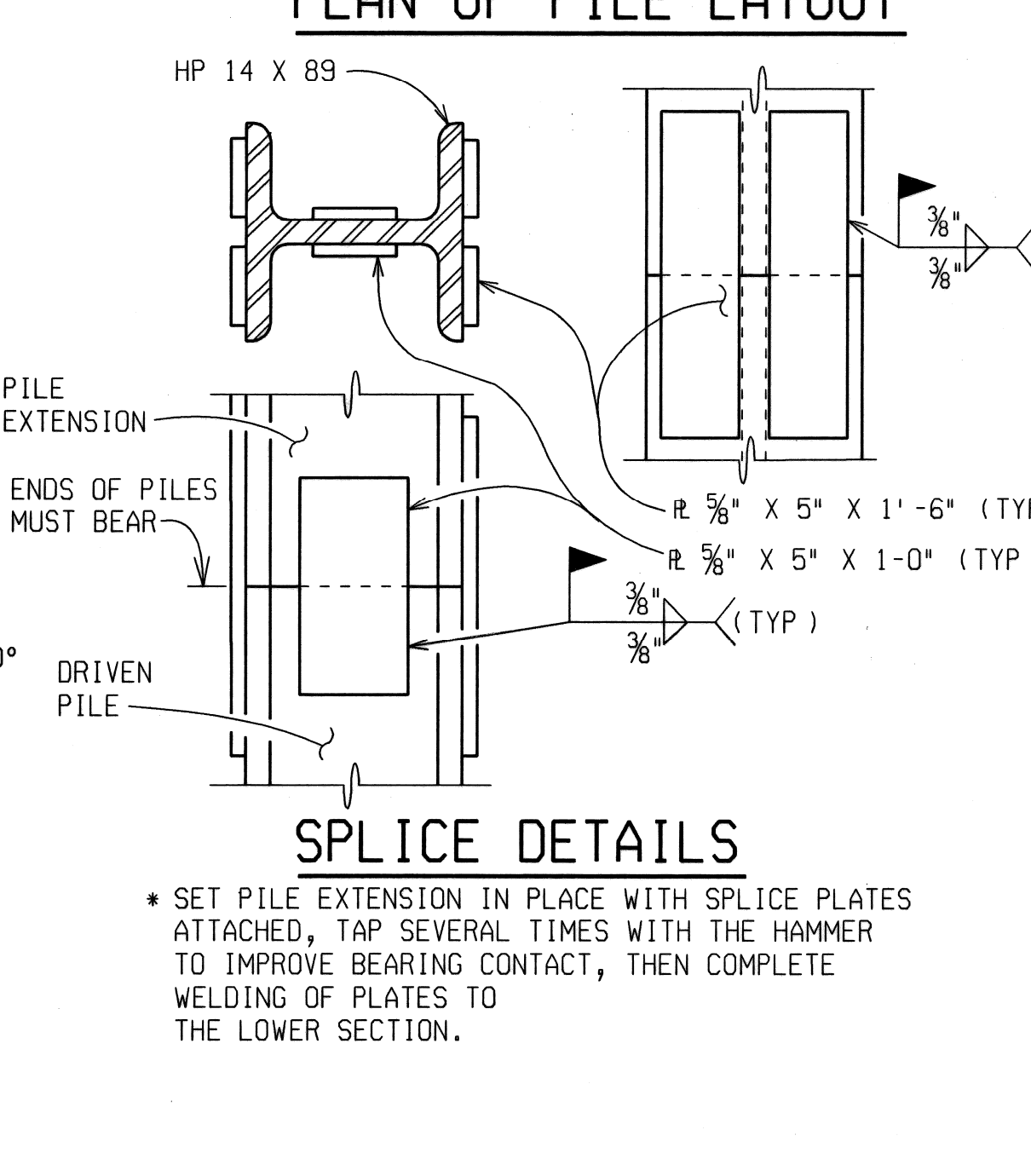
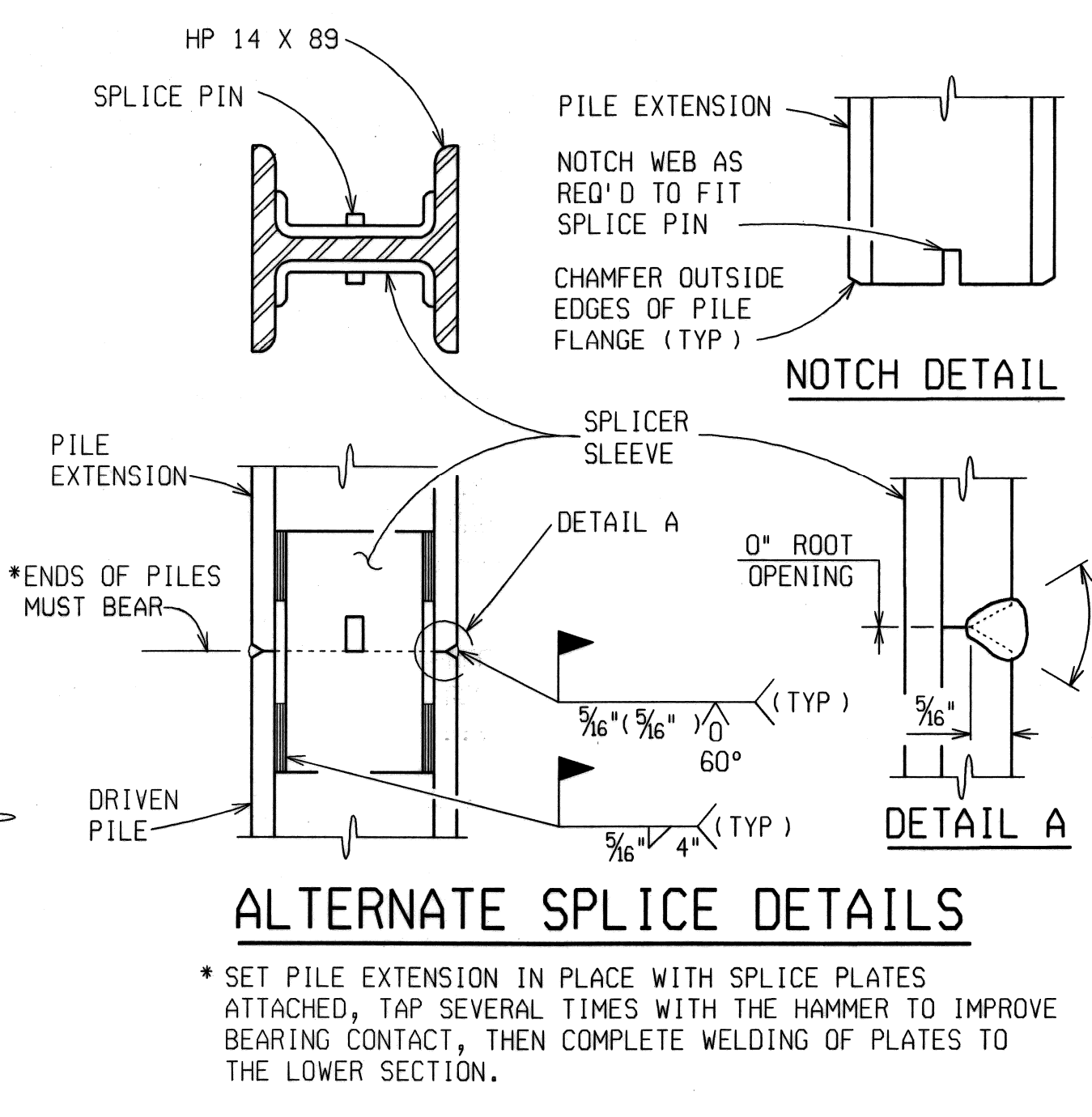
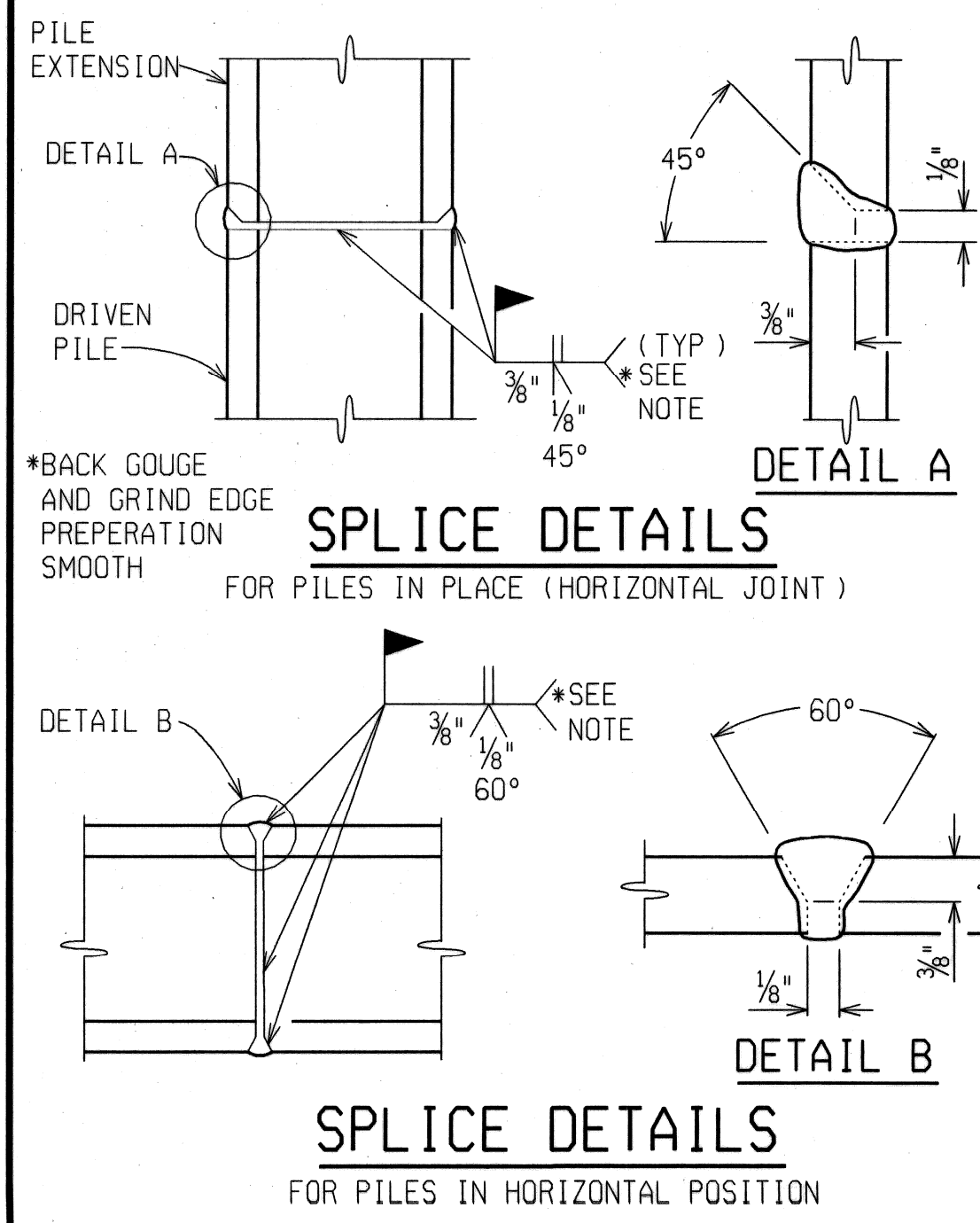
GENERAL PLAN OF STRUCTURE

DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 9 OF 48

DATE: 9/8/06  
CORRECTED BY: DLW  
DATE: 9/6/06  
CHECKED BY: BNW  
DATE: 8/30/06  
DRAWN BY: DLW  
FILE NAME: antietam-pl.dgn



**PLAN OF PILE LAYOUT**



**PILES - FURNISHED AND DRIVEN**

| LOCATION     | PILE TYPE         | NUMBER OF PILES | ESTIMATED LENGTH FURNISHED & DRIVEN EACH FEET TOTAL FEET |      | MIN PILE PENETRATION EL | CUT-OFF EL |
|--------------|-------------------|-----------------|--|------|-------------------------|------------|
| ABUT A       | TEST              | 1               | 125  | 125  | 0.00                    | 112.50     |
|              | VERTICAL BATTERED | 17              | 115  | 575  |                         |            |
| ABUT B       | TEST              | 1               | 125  | 125  | 0.00                    | 112.50     |
|              | VERTICAL BATTERED | 17              | 120  | 2040 |                         |            |
| PIER 1       | TEST              | 1               | 125  | 125  | 0.00                    | 112.50     |
|              | VERTICAL BATTERED | 17              | 115  | 1955 |                         |            |
| FOOTING 1    | VERTICAL          | 0               | 0  | 0    | 0.00                    | 121.15     |
|              | BATTERED          | 3               | 125  | 375  |                         |            |
| FOOTING 2    | VERTICAL          | 3               | 120  | 360  | 0.00                    | 118.30     |
|              | BATTERED          | 3               | 125  | 375  |                         |            |
| FOOTING 3    | VERTICAL          | 0               | 0  | 0    | 0.00                    | 125.80     |
|              | BATTERED          | 3               | 130  | 390  |                         |            |
| FOOTING 4    | VERTICAL          | 0               | 0  | 0    | 0.00                    | 127.81     |
|              | BATTERED          | 3               | 135  | 405  |                         |            |
| FOOTING 5    | VERTICAL          | 0               | 0  | 0    | 0.00                    | 129.58     |
|              | BATTERED          | 3               | 135  | 405  |                         |            |
| <b>TOTAL</b> |                   | <b>82</b>       |  |      |                         |            |

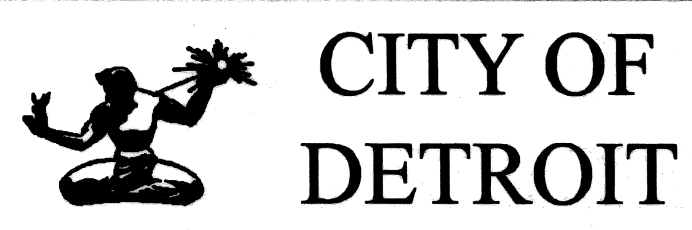
**MISCELLANEOUS QUANTITIES**

|      |    |                                       |
|------|----|---------------------------------------|
| 1    | LS | Pile Driving Equipment, Furn          |
| 9870 | Ft | Pile, Steel, Furn and Driven, 14 inch |
| 82   | Ea | Pile Point, Steel                     |
| 3    | Ea | Test Pile, Steel, 14 inch             |

**NOTES:**

- H --DENOTES VERTICAL PILES.
  - ⊥ --DENOTES 3V:1H BATTERED PILES.
  - ⊥ --DENOTES 4V:1H BATTERED PILES.
  - ⊕ --DENOTES VERTICAL TEST PILES.
- ABUTMENT AND PIER PILES SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 90 TONS.
- THE ESTIMATED PILE LENGTH IS BASED ON THE STATIC FORMULA.
- STEEL PILES SHALL BE HP 14 X 89.
- PILES ARE TO BE DRIVEN TO SUCH ACCURACY THAT THE ENDS OF THE PILES TO BE EMBEDDED IN THE CONCRETE ARE WITHIN 3\"/>

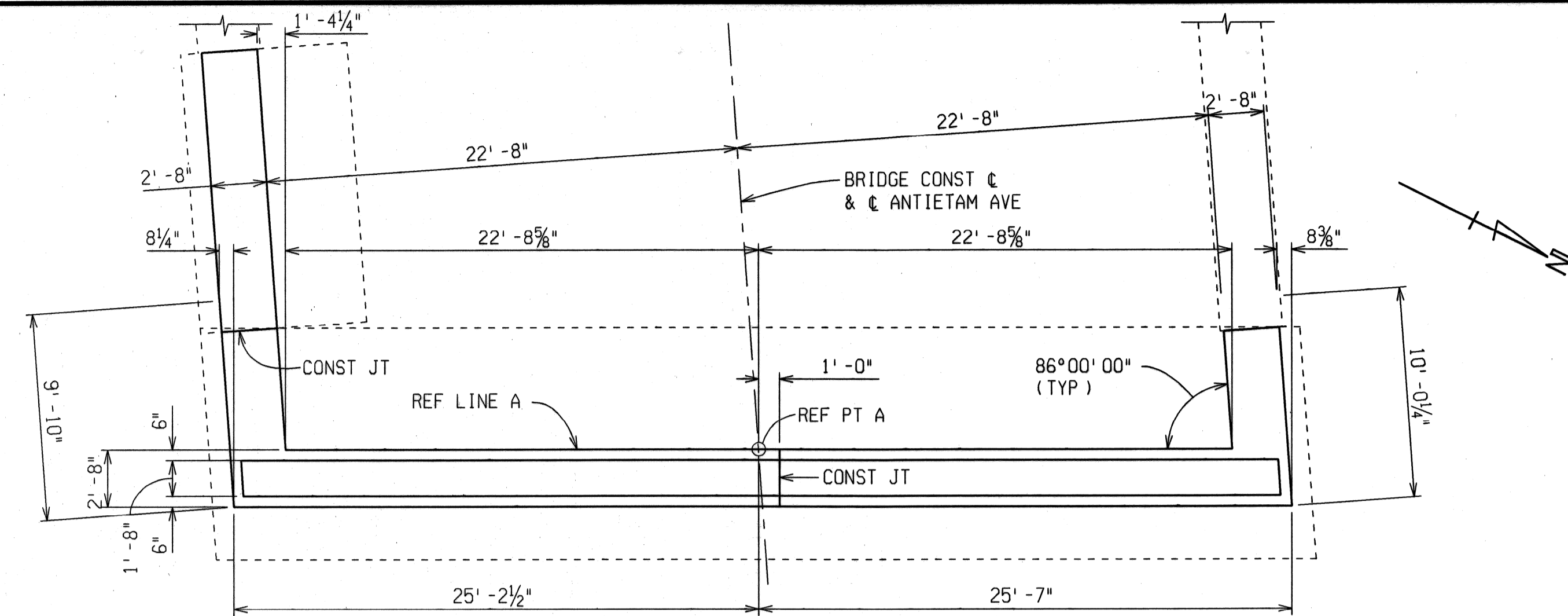
| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |



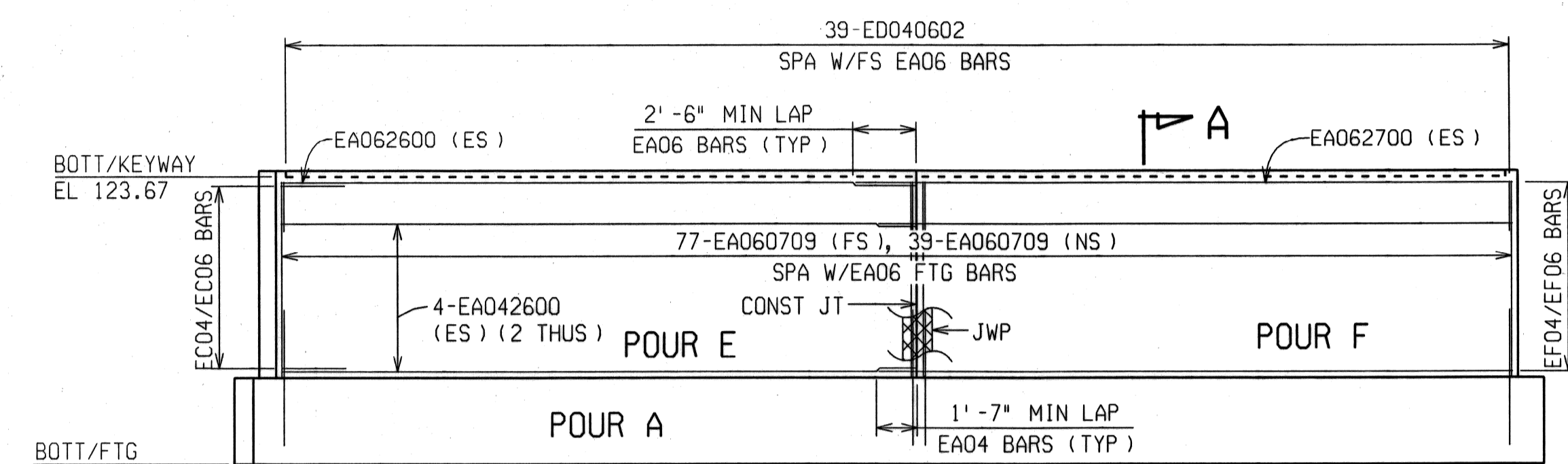
**ANTIETAM AVENUE OVER DEQUINDRE CUT GREENWAY**  
MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

**PILE DETAILS**

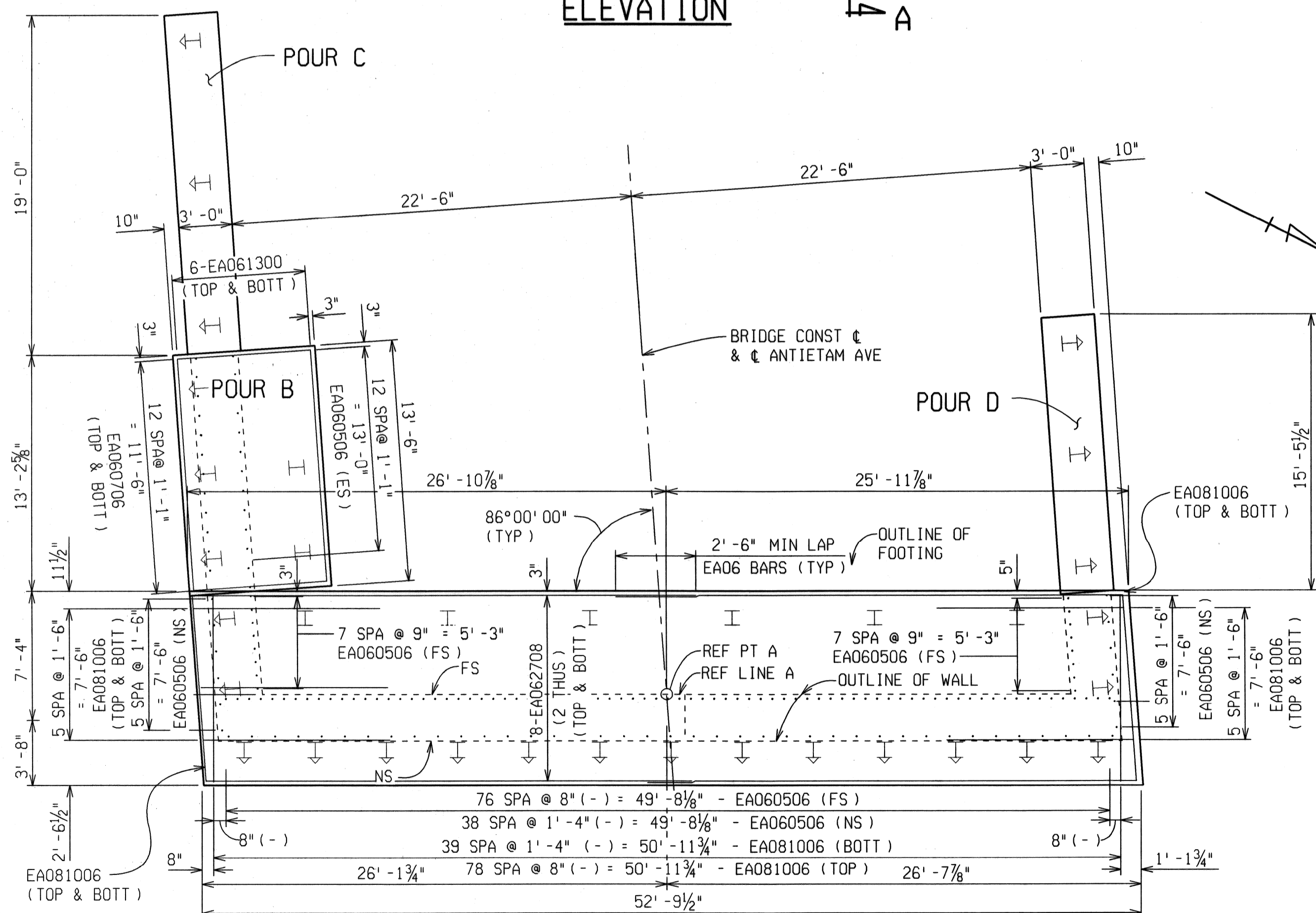
DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 10 OF 48



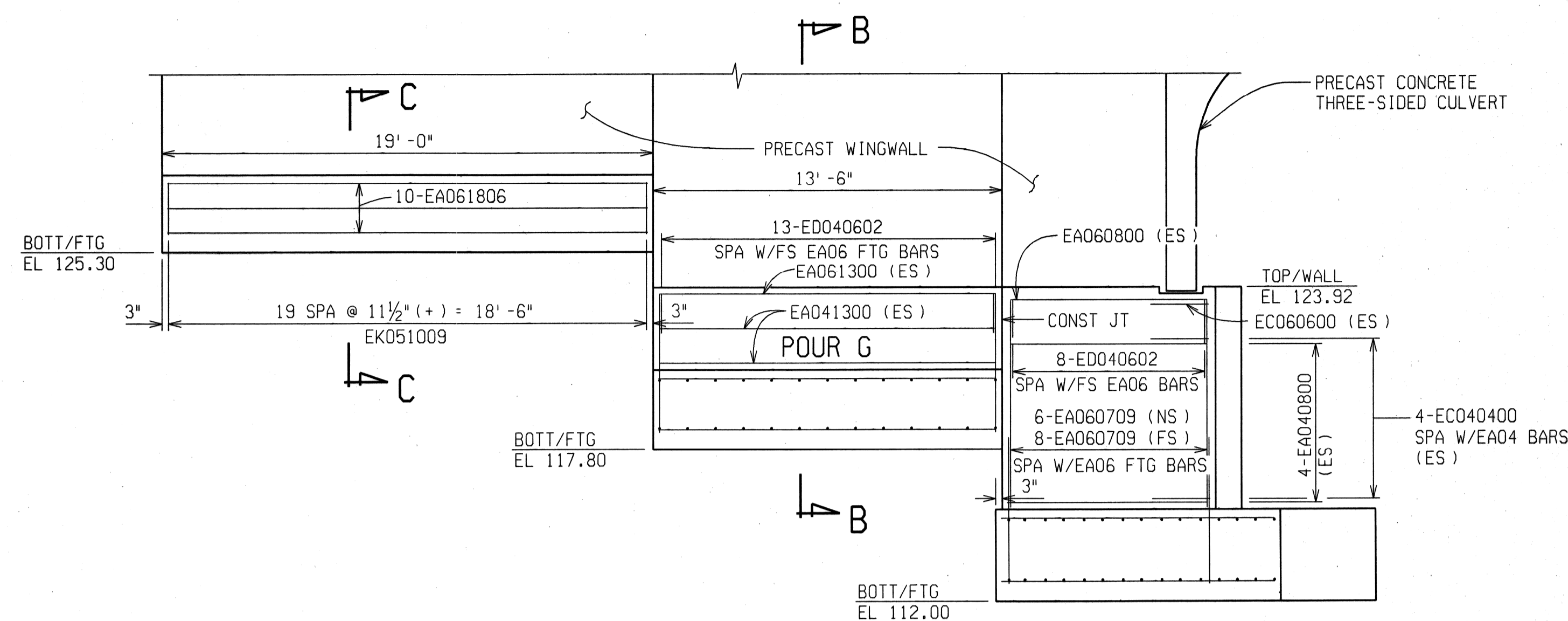
PLAN OF WALL



ELEVATION

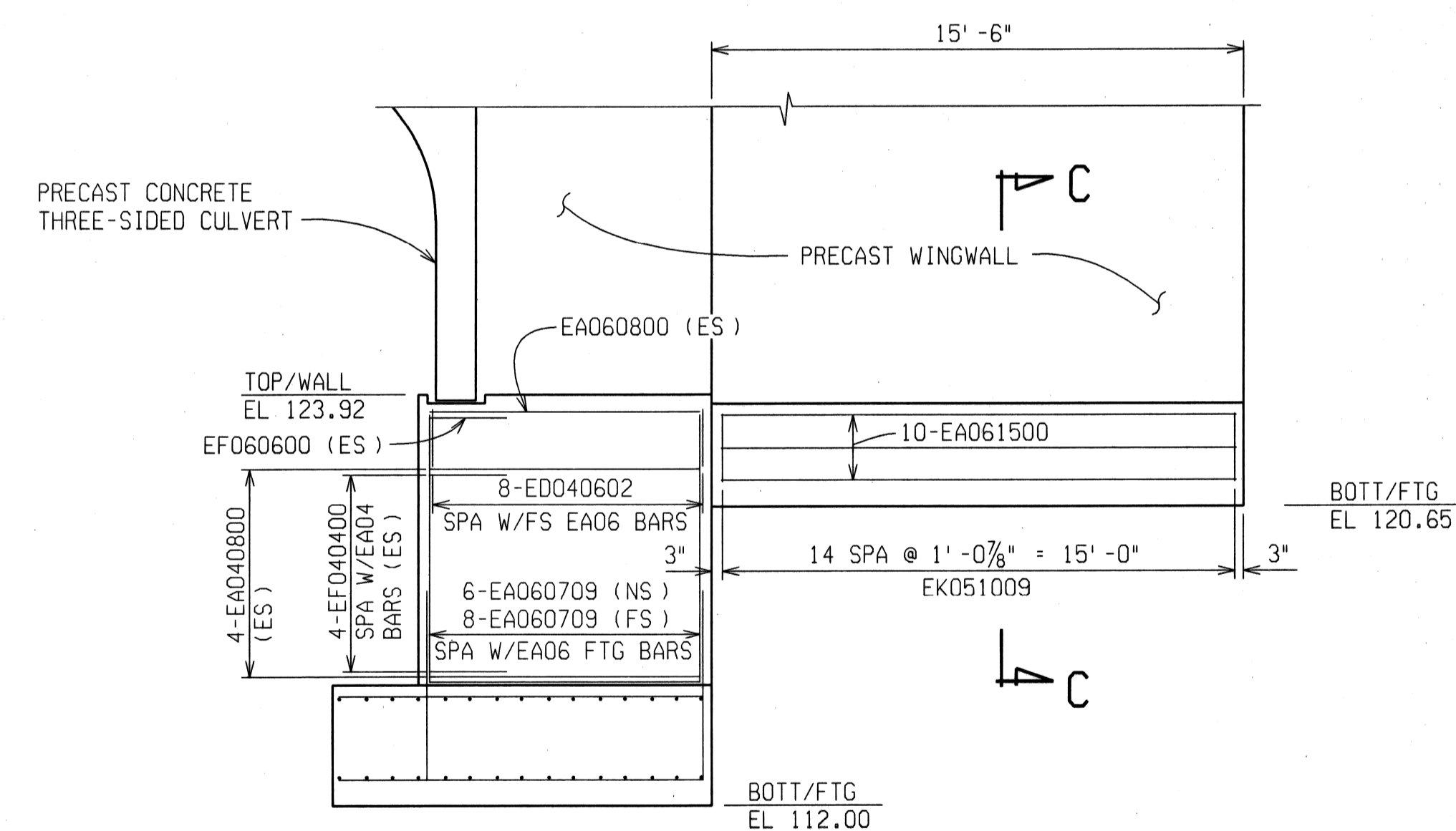


PLAN OF FOOTING



SOUTH WINGWALL ELEVATION

(PILES OMITTED FOR CLARITY)



NORTH WINGWALL ELEVATION

(PILES OMITTED FOR CLARITY)

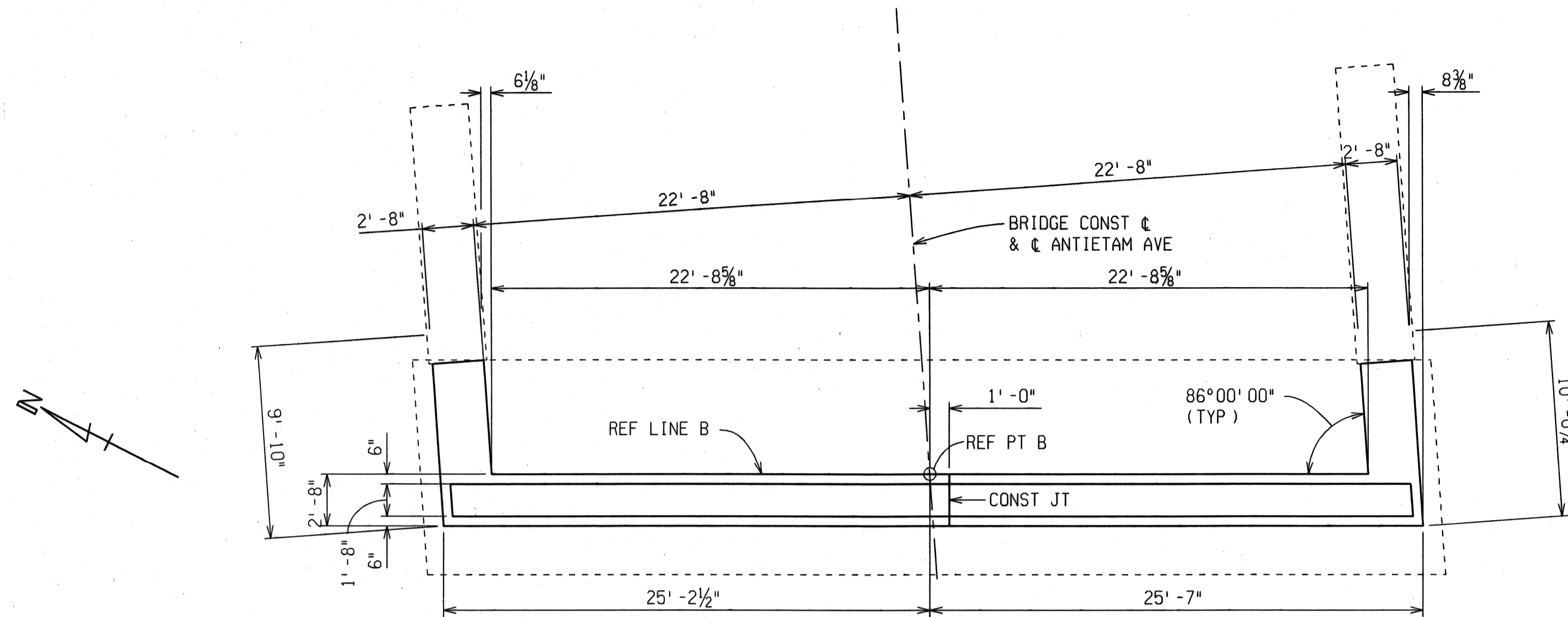
| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
|           |             |      |    |



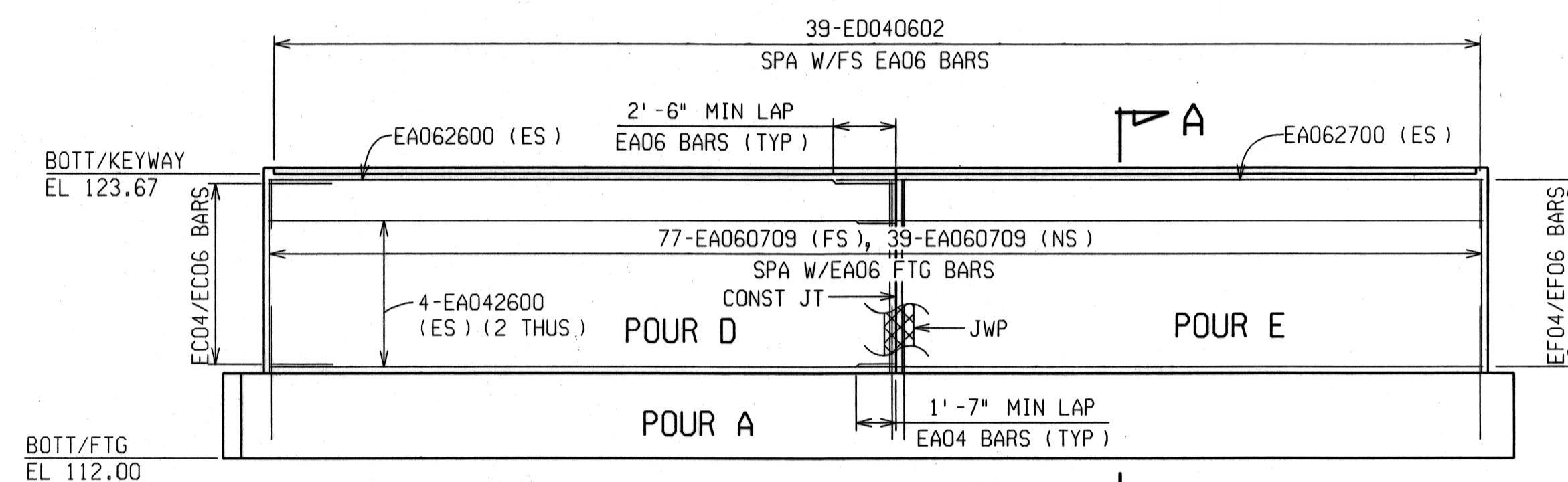
ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY  
MDOT JOB NO. 83945A STRUCTURE NO. S02 of 82-22-97

ABUTMENT A DETAILS  
DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 11 OF 48

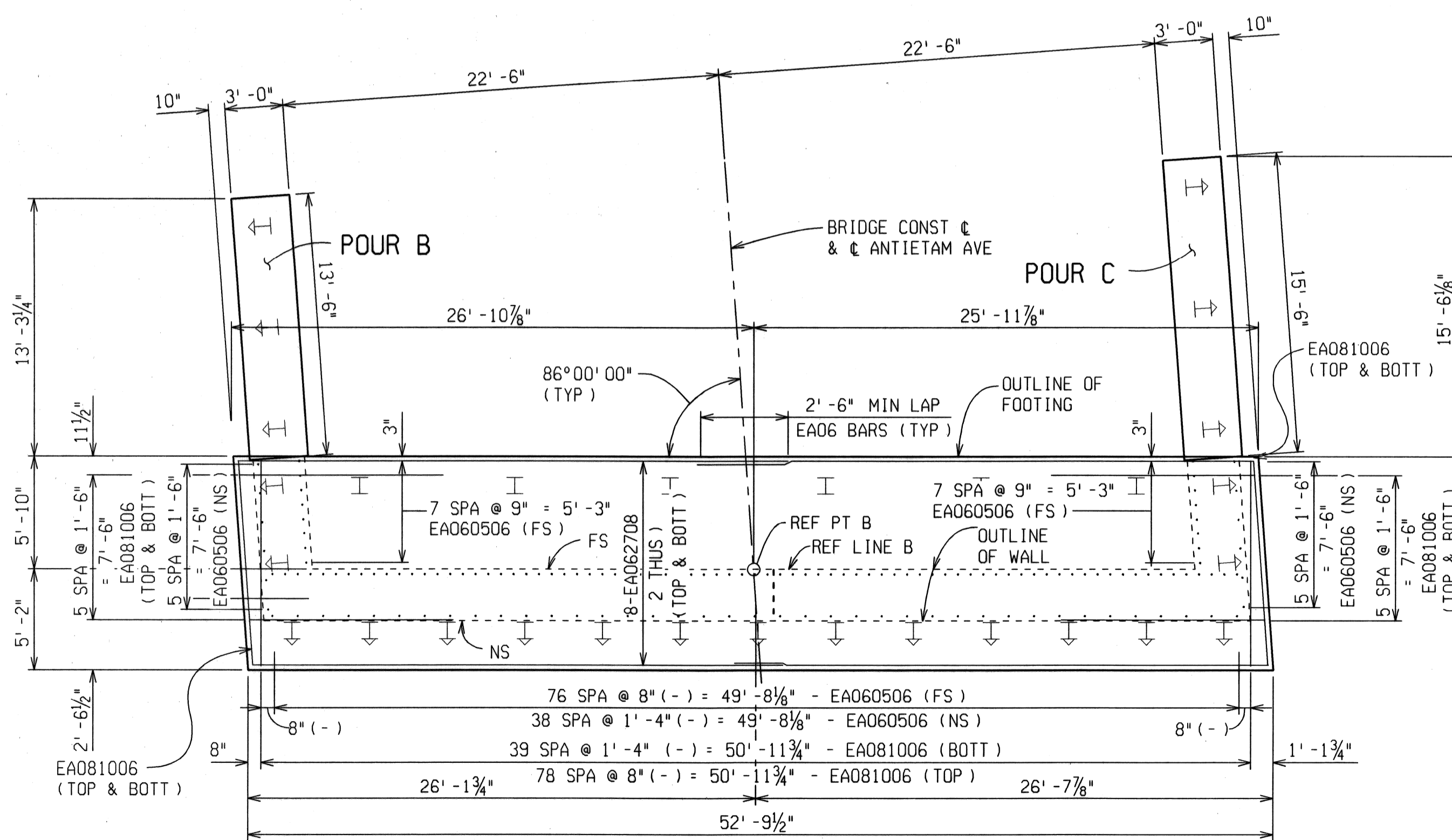
DATE: 9/12/06 CORRECTED BY: DLW DATE: 9/06/06 CHECKED BY: TNB DATE: 12/30/04 DRAWN BY: DLW FILE NAME: anti-etam-aba1.dgn



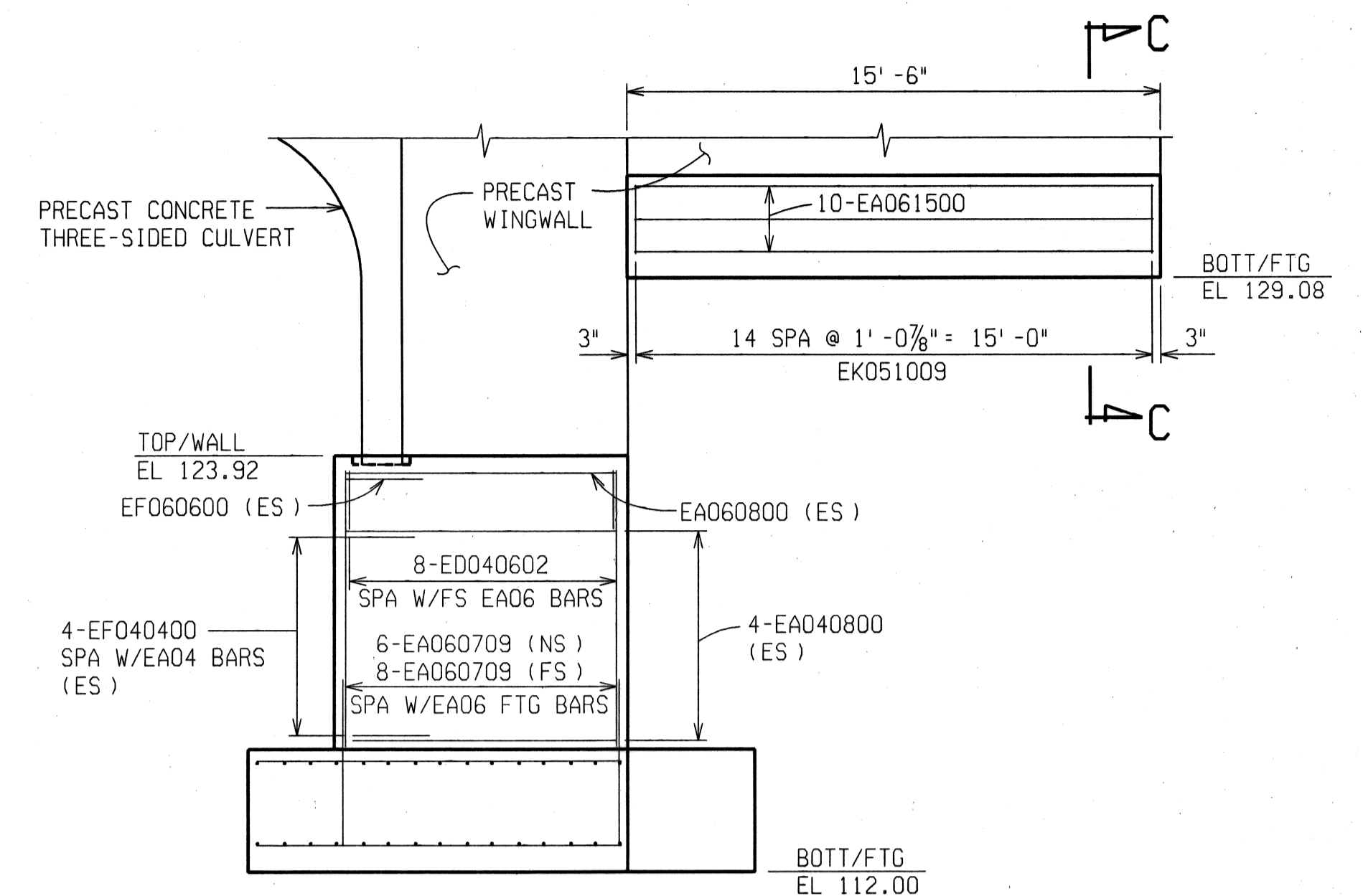
PLAN OF TOP



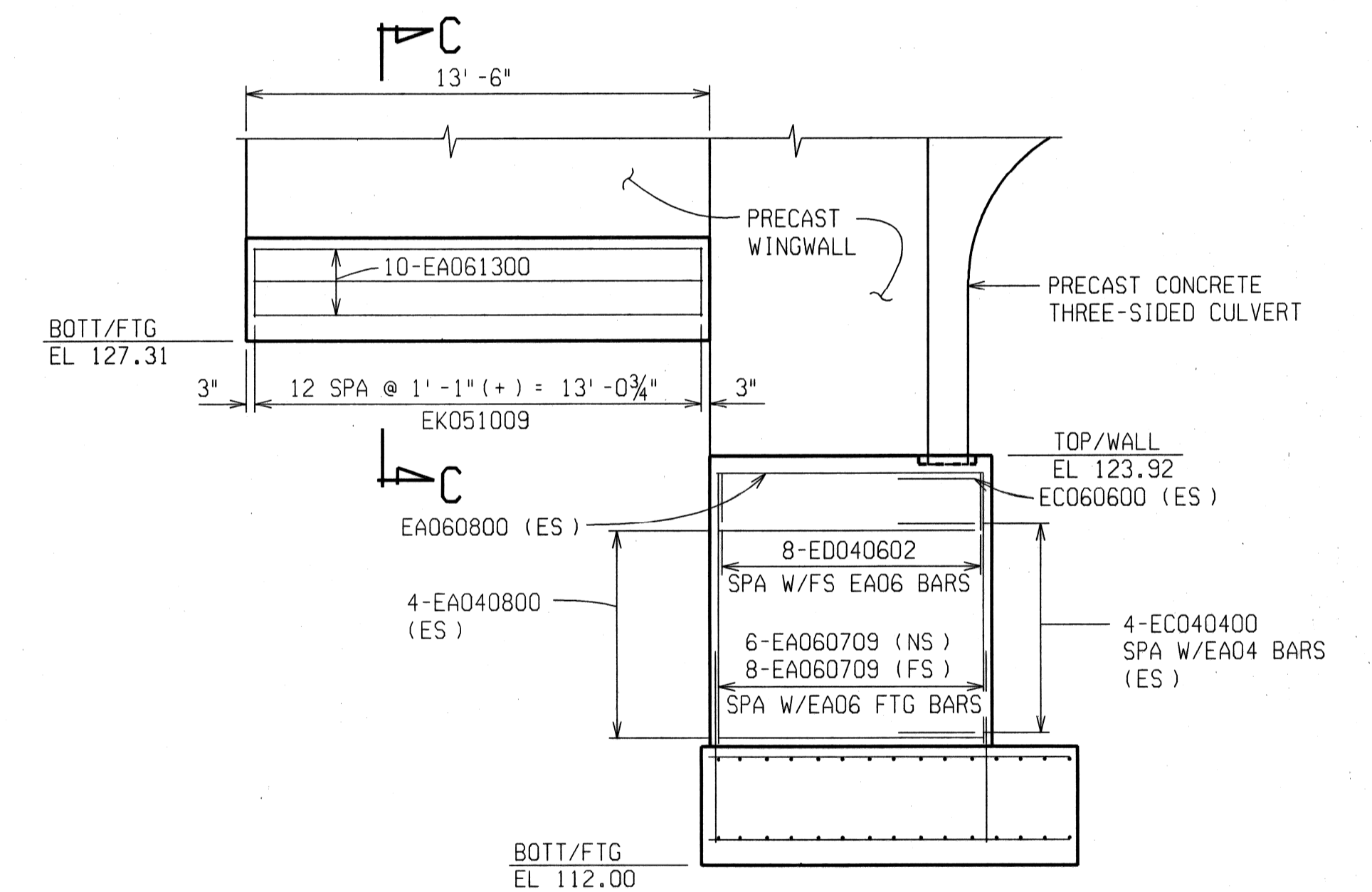
ABUTMENT ELEVATION



PLAN OF FOOTING



SOUTH WINGWALL ELEVATION  
(PILES OMITTED FOR CLARITY)



NORTH WINGWALL ELEVATION  
(PILES OMITTED FOR CLARITY)

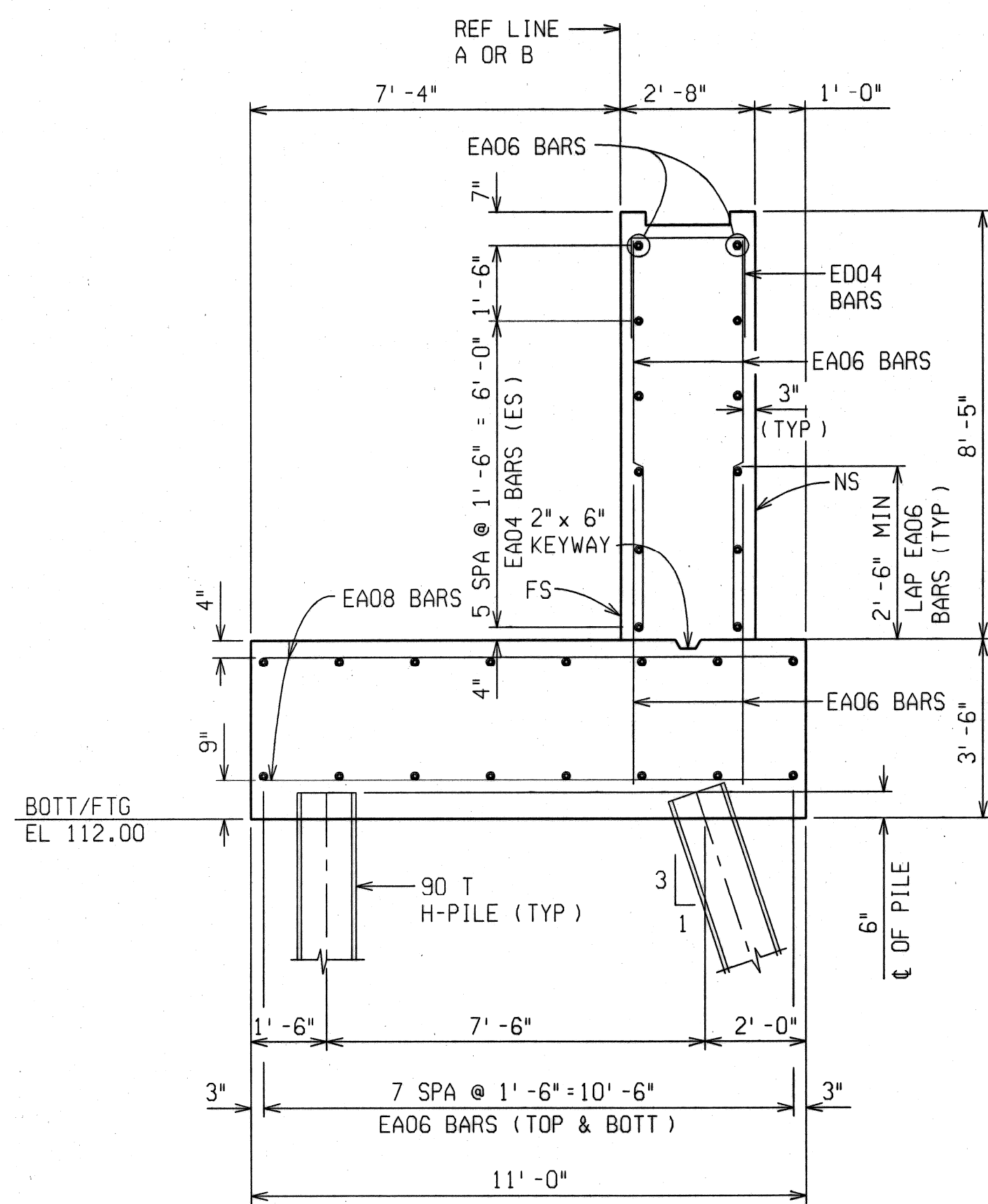
| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
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|           |             |      |    |



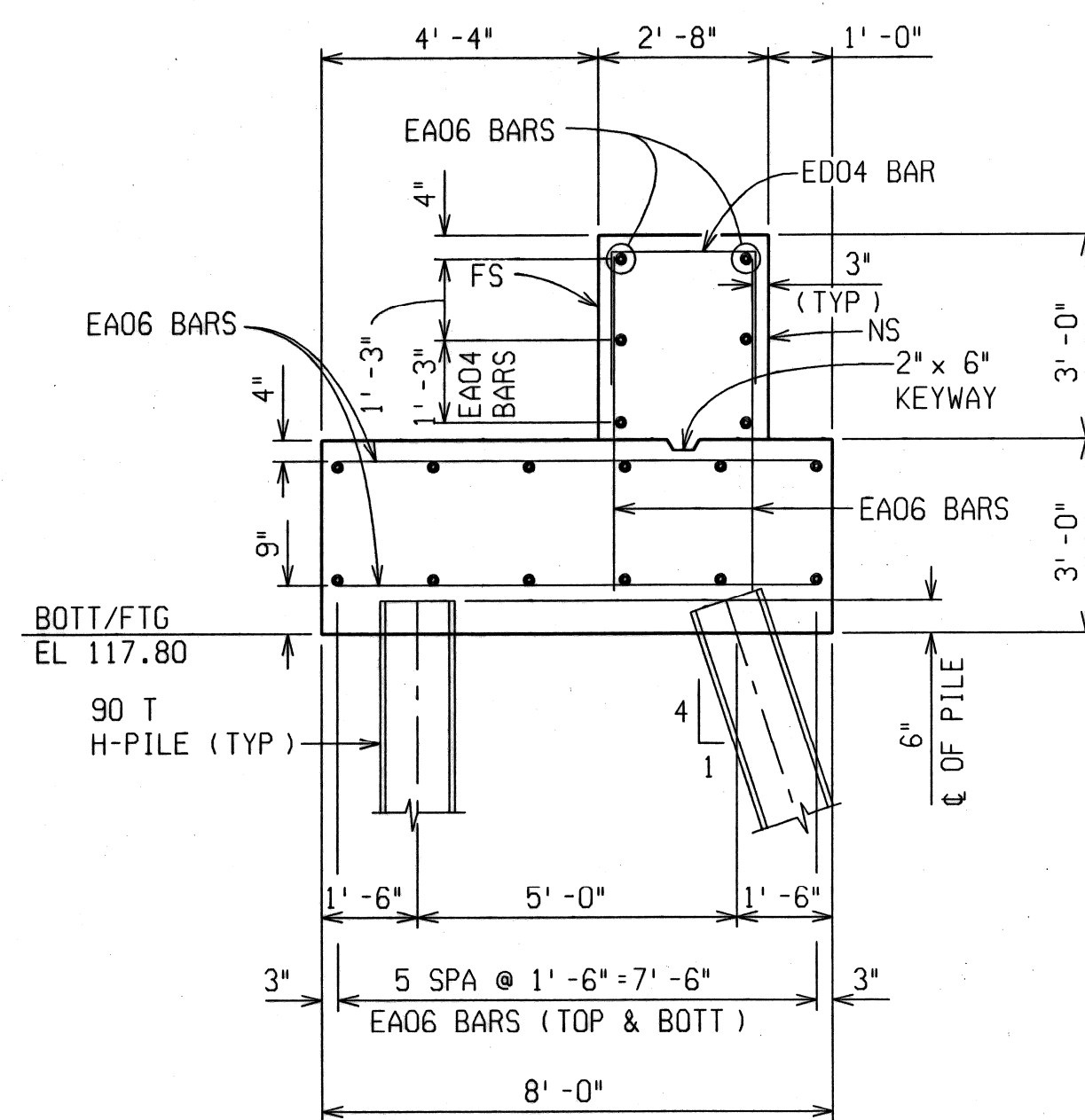
ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY  
MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

ABUTMENT B DETAILS

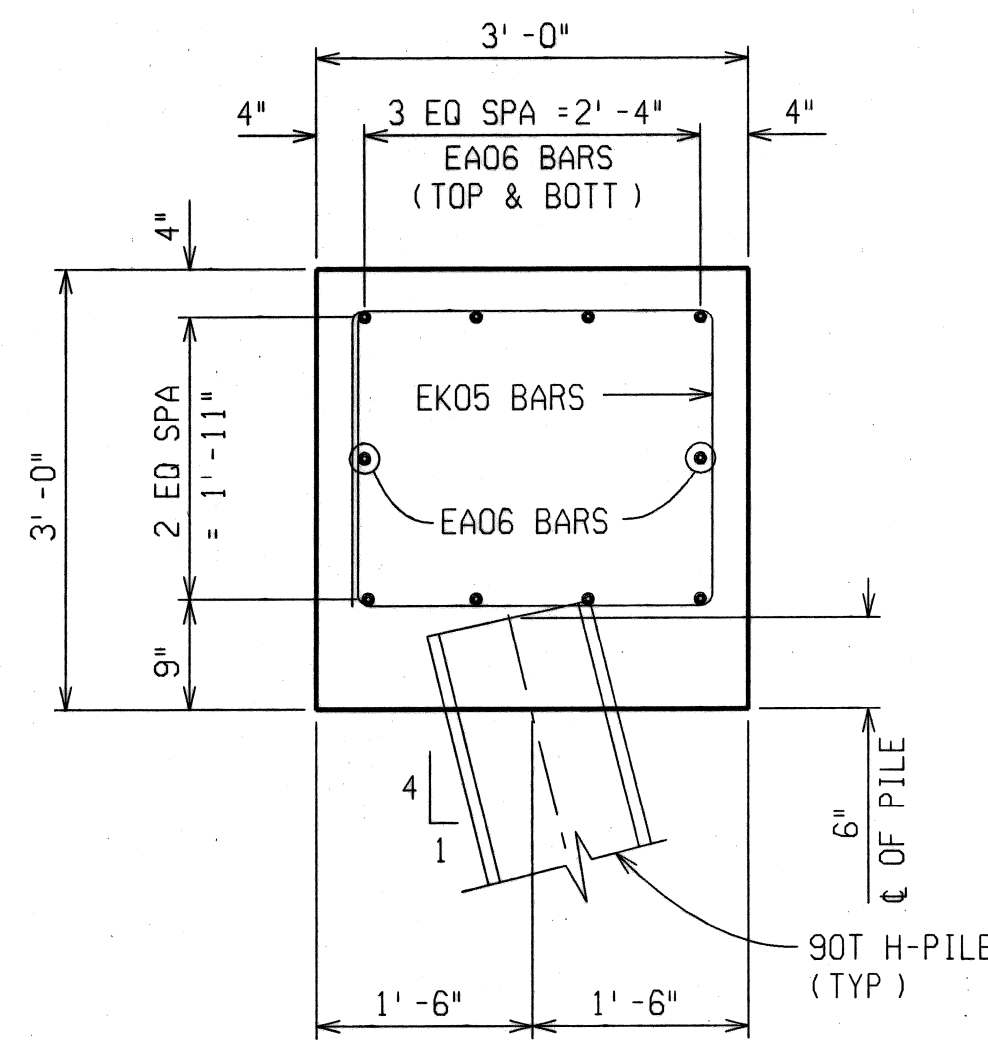
DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 12 OF 48



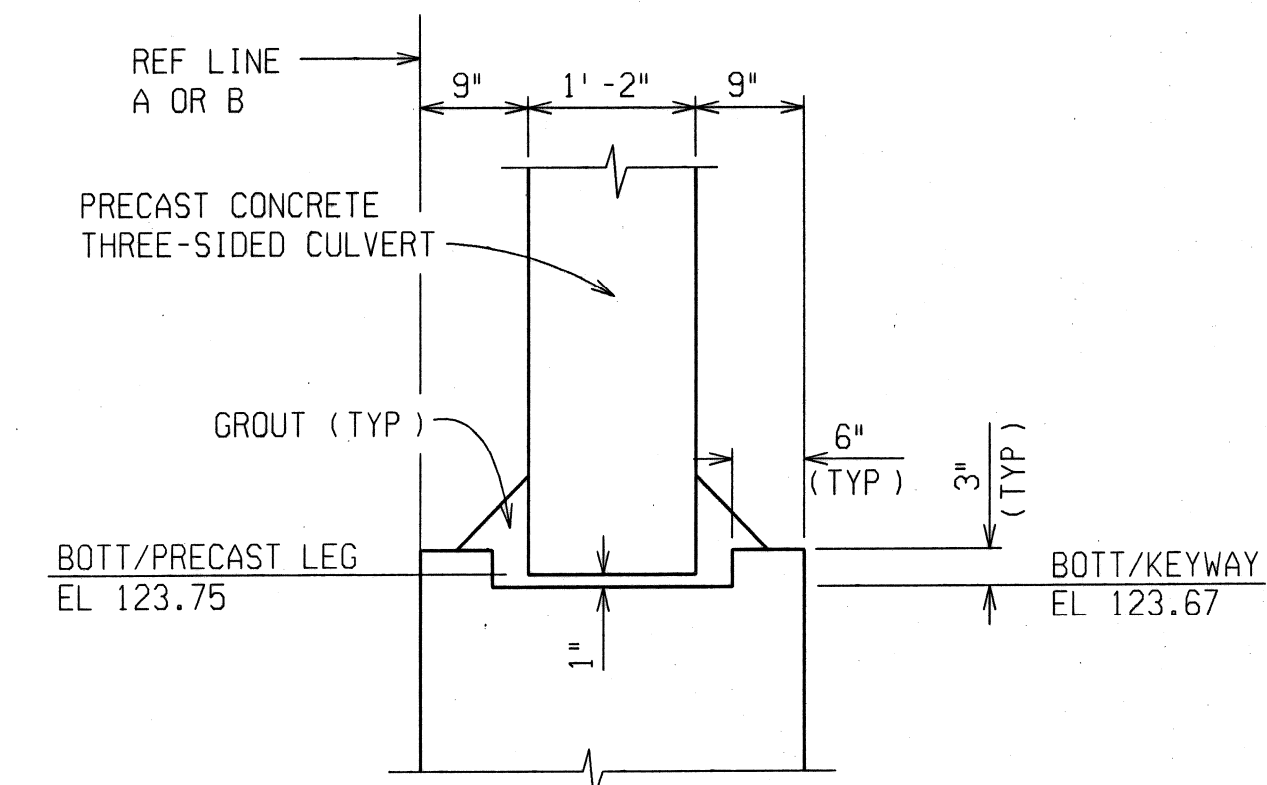
SECTION A-A



SECTION B-B



SECTION C-C



DETAIL OF KEYWAY

MISCELLANEOUS QUANTITIES

32 Sft Joint Waterproofing

SUBSTRUCTURE CONC QUANTITIES

| POUR        | ABUT A  | ABUT B |
|-------------|---------|--------|
| A           | 74.5    | 75.5   |
| B           | 12.0    | 4.5    |
| C           | 6.5     | 5.0    |
| D           | 5.0     | 26.5   |
| E           | 26.5    | 25.0   |
| F           | 25.0    |        |
| G           | 4.0     |        |
| TOTAL       | 153.5   | 136.5  |
| GRAND TOTAL | 290 CYD |        |

NOTES:

- JWP DENOTES JOINT WATERPROOFING.
- NS DENOTES NEAR SIDE.
- FS DENOTES FAR SIDE.
- ES DENOTES EACH SIDE.
- FOR BEVEL AND MOLDING DETAILS, SEE STANDARD PLAN B-103 SERIES.
- WORK THIS SHEET WITH SHEETS 11-12 OF 48.
- FOR PILE QUANTITIES, LAYOUT AND NOTES, SEE SHEET 10 OF 48.
- LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03J, OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE BID ITEM "Substructure Conc".

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
|           |             |      |    |
|           |             |      |    |

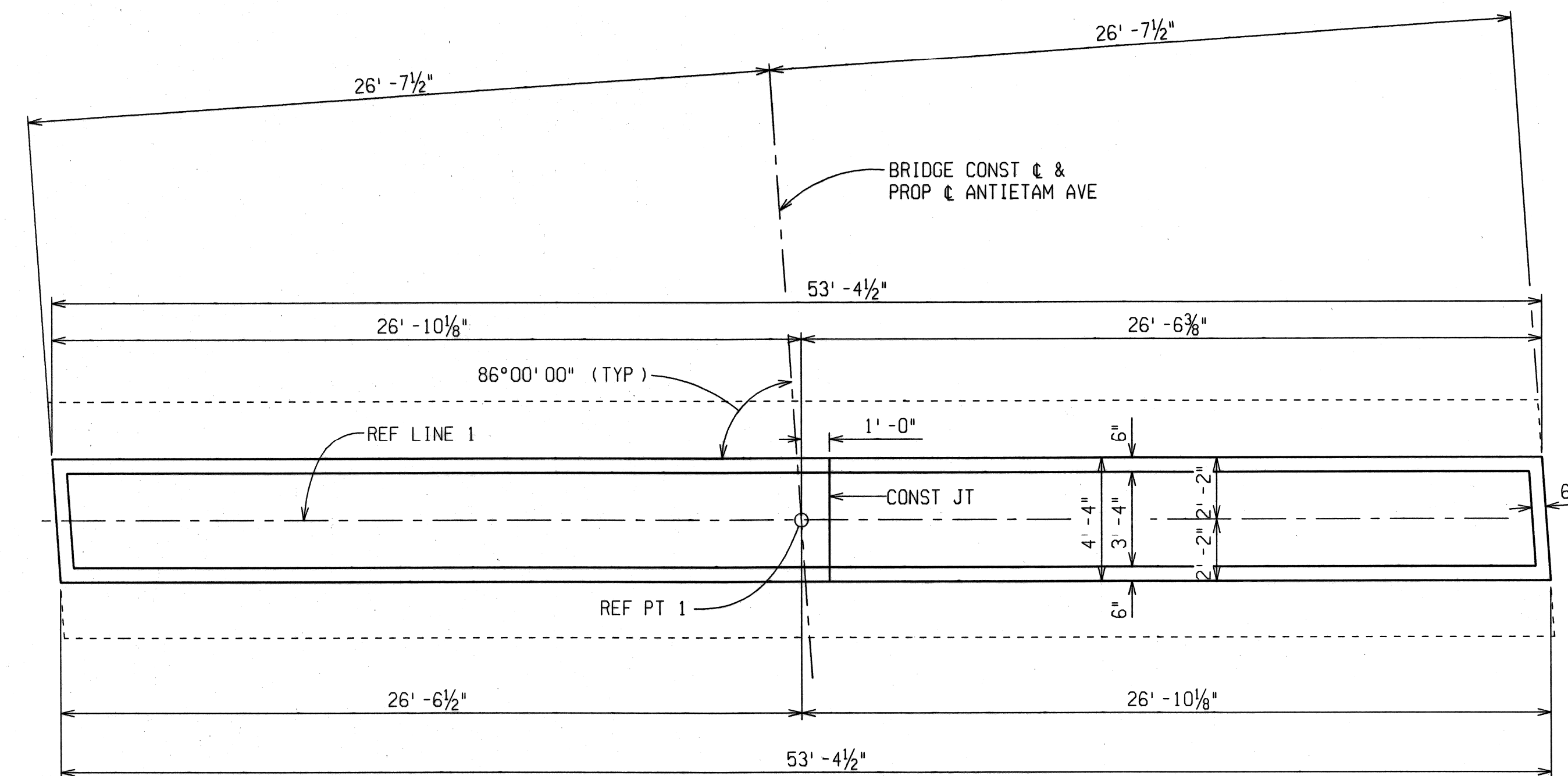


ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY  
MDOT JOB NO. 83945A STRUCTURE NO. S02 of 82-22-97

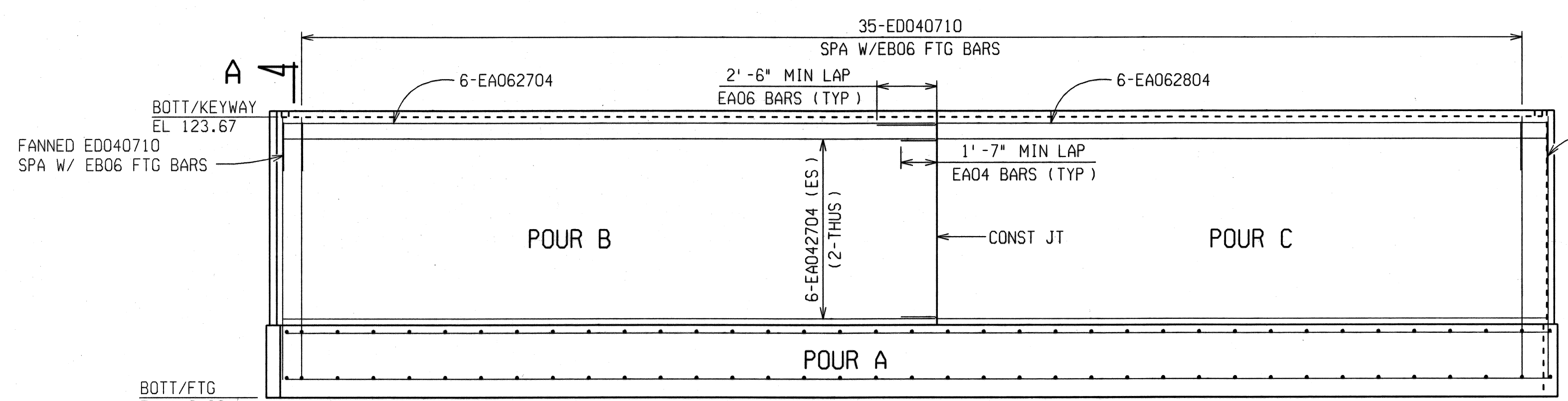
ABUTMENT DETAILS

DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 13 OF 48

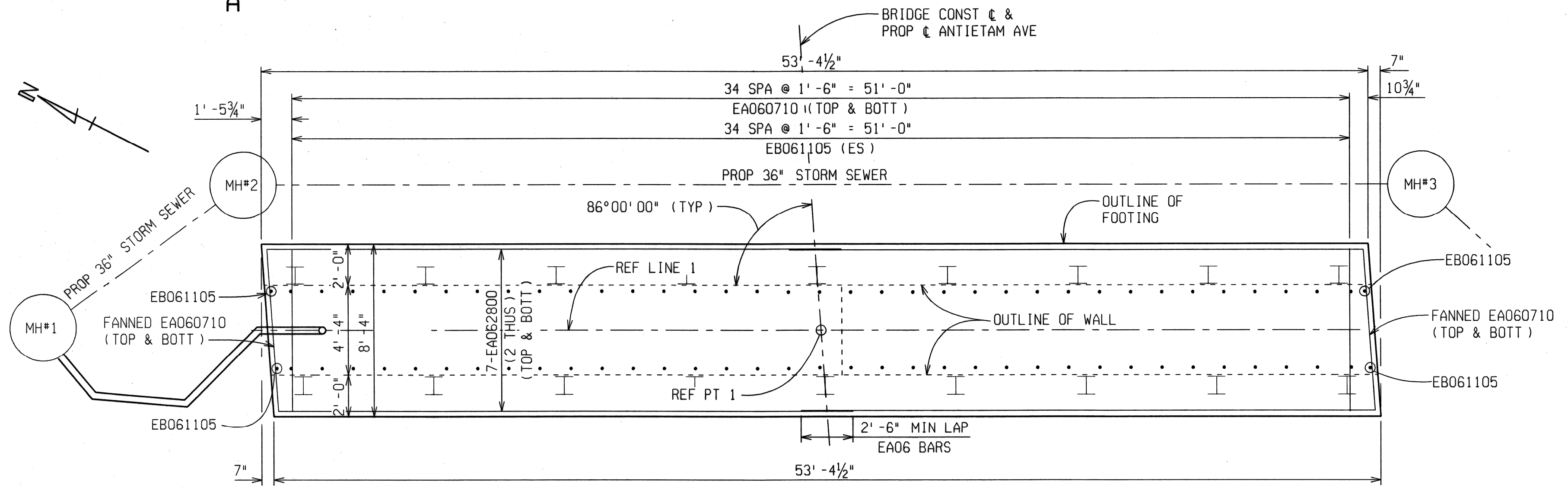
DATE: 9/12/06 CORRECTED BY: DLW DATE: 9/16/06 CHECKED BY: BMW DATE: 8/31/06 DRAWN BY: bmx FILE NAME: anti-etam-ab1.dgn



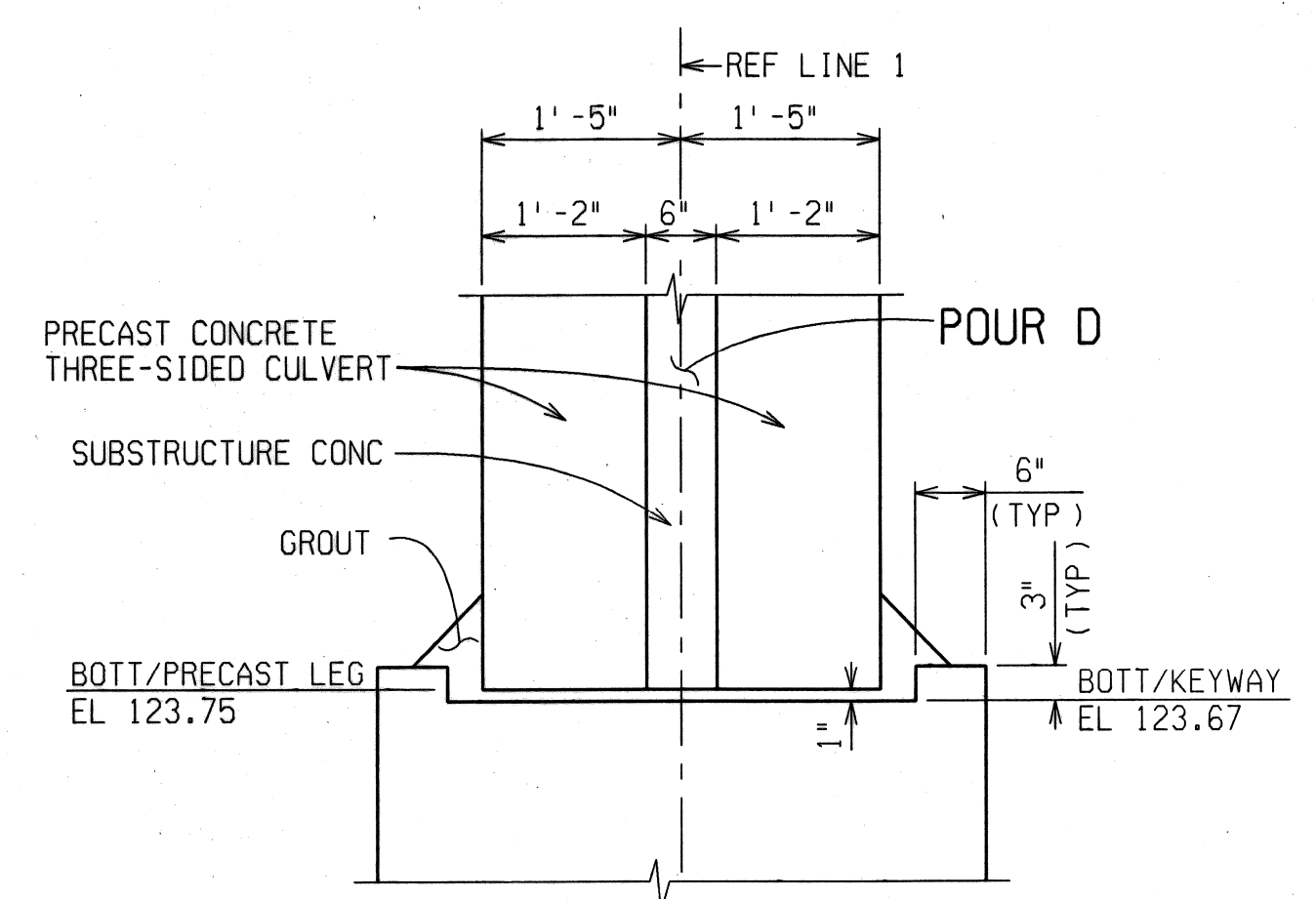
PLAN OF TOP



ELEVATION



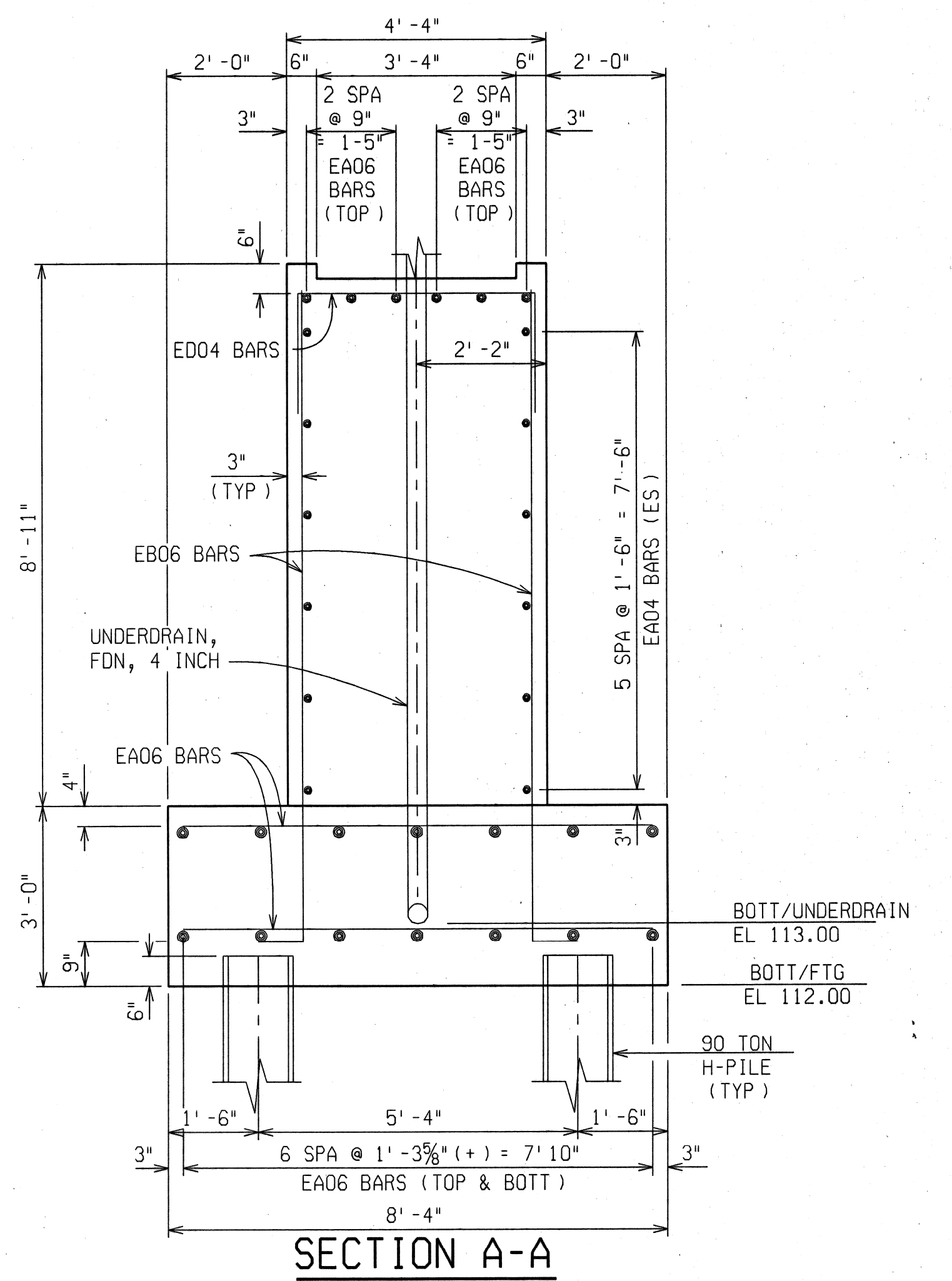
PLAN OF FOOTING



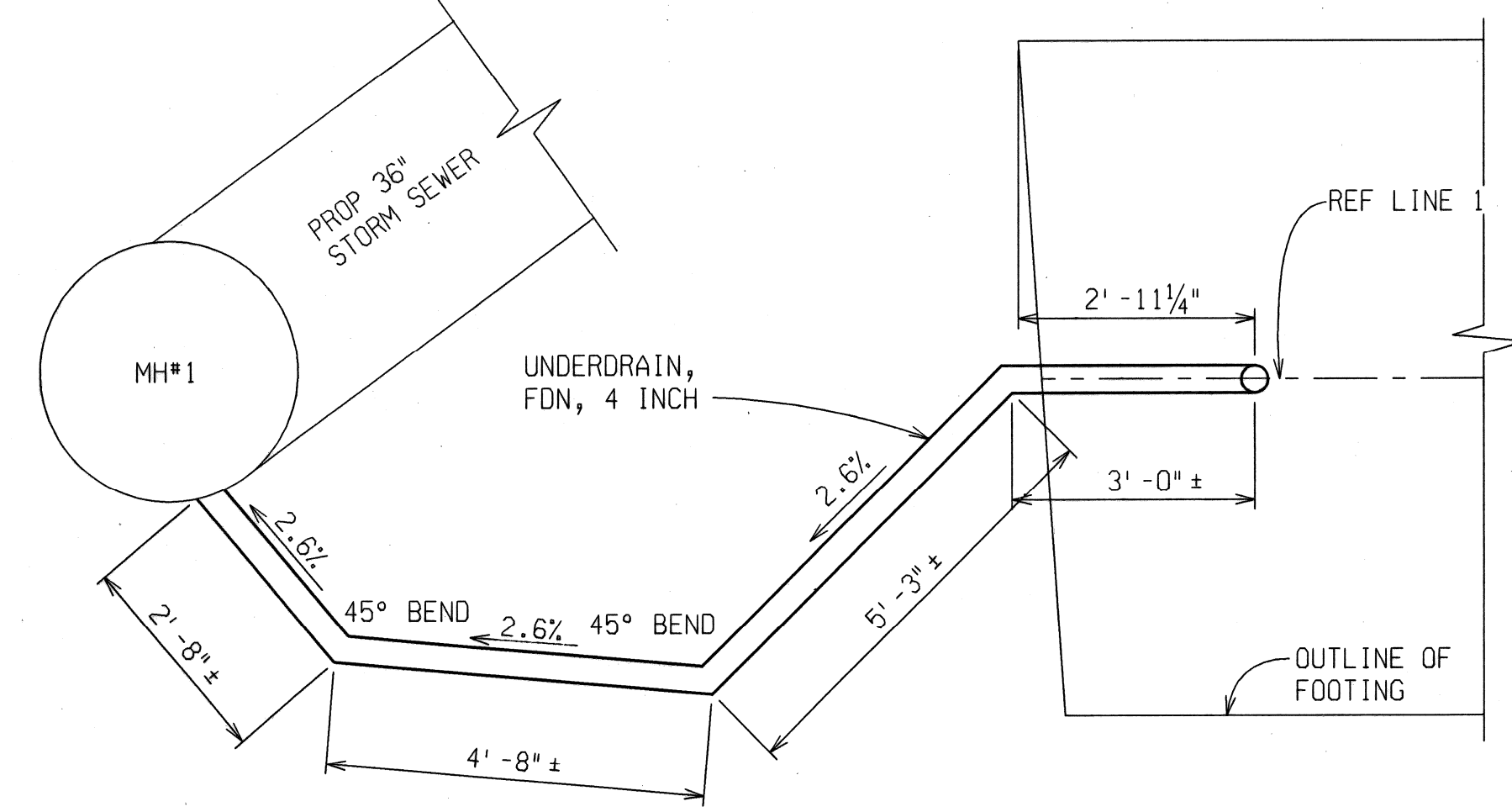
DETAIL OF KEYWAY

POUR D EXTENDS TO TOP OF CULVERT.

| SUBSTRUCTURE CONC QUANTITIES |      |
|------------------------------|------|
| POUR                         | CYD  |
| A                            | 49.0 |
| B                            | 39.0 |
| C                            | 36.0 |
| D                            | 9.0  |
| TOTAL                        | 133  |



SECTION A-A



UNDERDRAIN DETAIL

| MISCELLANEOUS QUANTITIES |                            |
|--------------------------|----------------------------|
| 86                       | Ft Underdrain, Fdn, 4 inch |
| 1                        | Ea Sewer Tap, 4 inch       |

NOTES:

- ES DENOTES EACH SIDE.
- FS DENOTES FAR SIDE.
- NS DENOTES NEAR SIDE.
- FOR BEVEL AND MOLDING DETAILS, SEE STANDARD PLAN B-103 SERIES.
- FOR PILE QUANTITIES, LAYOUT AND NOTES, SEE SHEET 10 OF 48.
- LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03J, OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE BID ITEM "Substructure Conc".

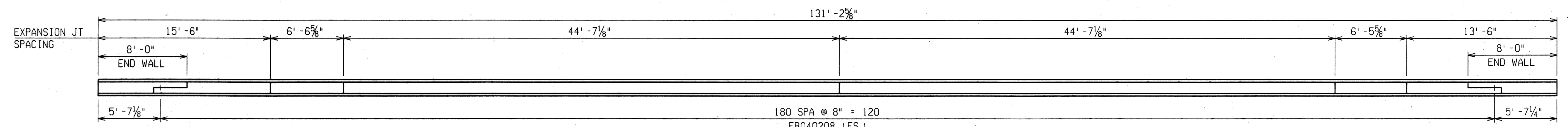
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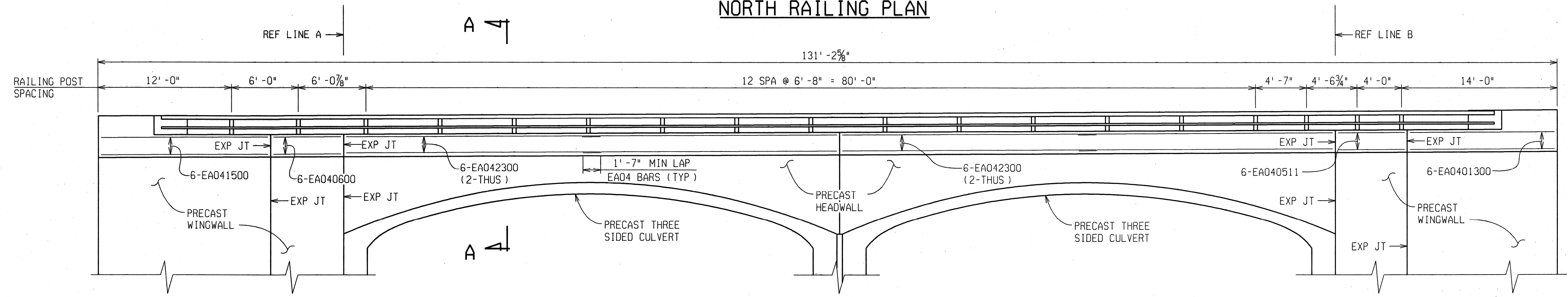
ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY  
MDOT JOB NO. 83945A STRUCTURE NO. S02 of 82-22-97

PIER DETAILS

|             |              |
|-------------|--------------|
| DATE:       | 4/13/07      |
| DLZ JOB NO. | 0641-6053-00 |
| SHEET NO.   | 14 OF 48     |

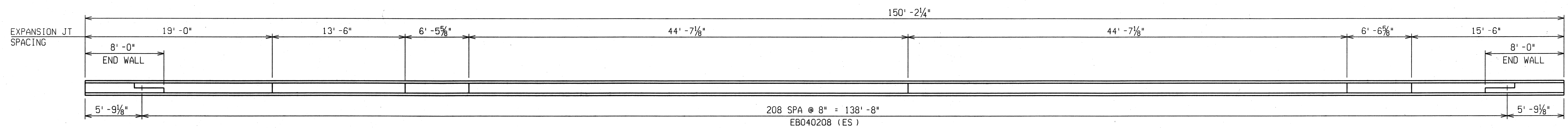


**NORTH RAILING PLAN**

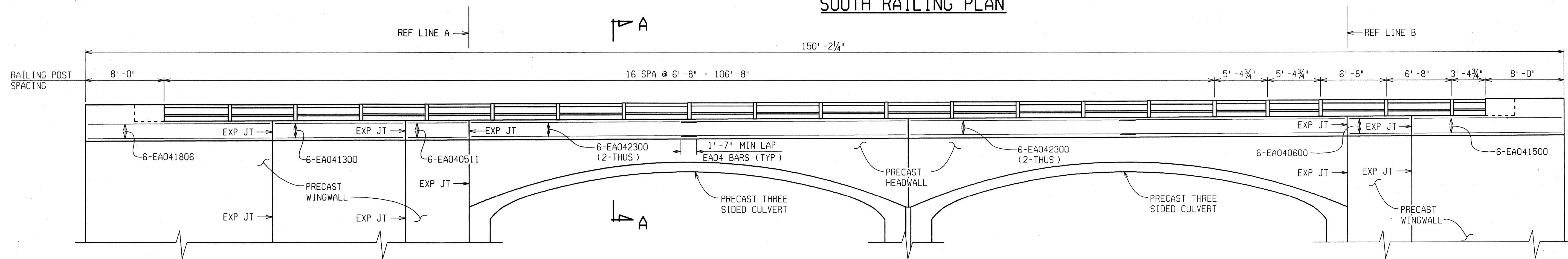


**NORTH RAILING ELEVATION**

INSIDE FACE SHOWN



**SOUTH RAILING PLAN**



**SOUTH RAILING ELEVATION**

OUTSIDE FACE SHOWN

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
|           |             |      |    |
|           |             |      |    |



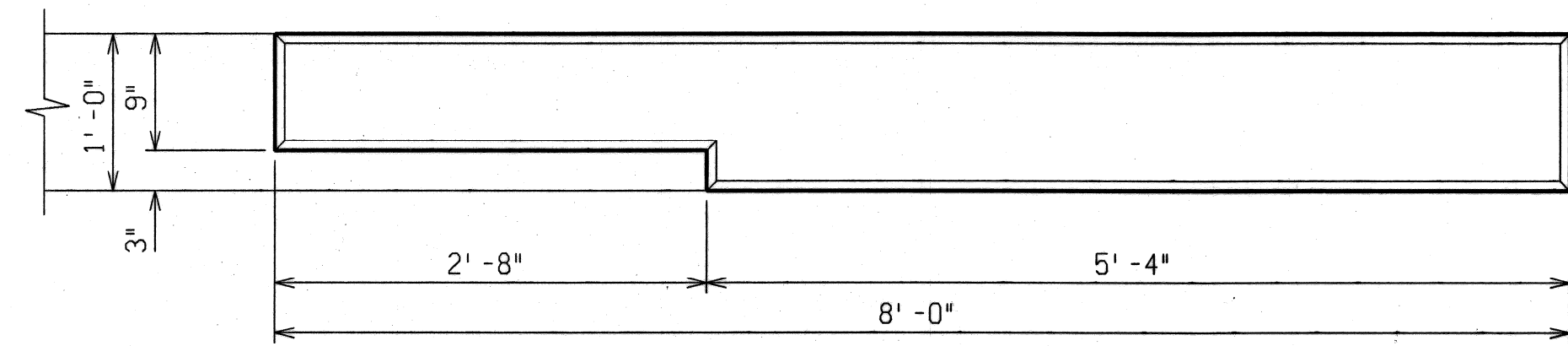
ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY  
MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

**SUPERSTRUCTURE DETAILS**

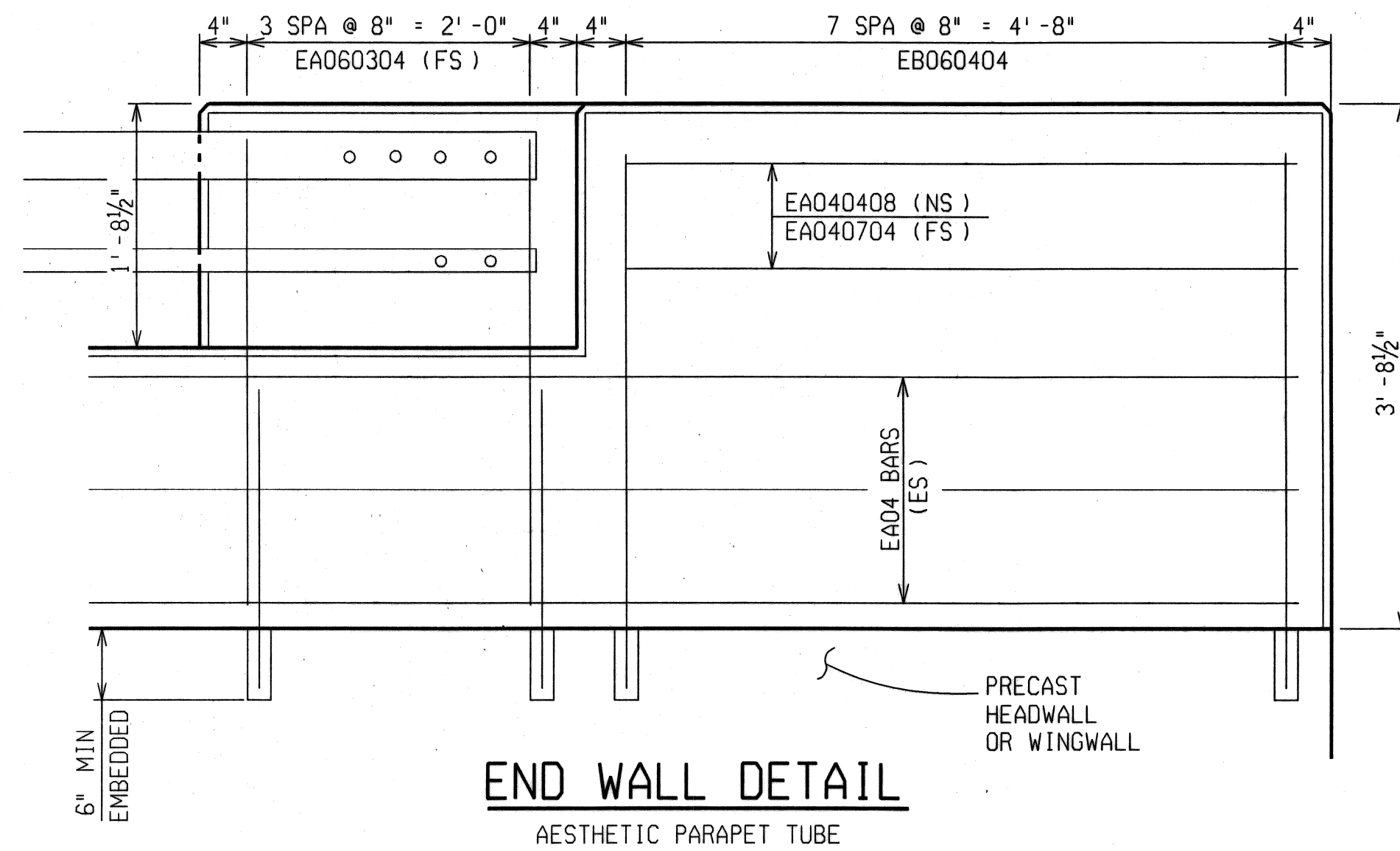
DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 15 OF 48

FILE NAME: antietam-dk1.dgn    DRAWN BY: bmw    CHECKED BY: BMW    DATE: 9/17/06    CORRECTED BY: DLW    DATE: 9/6/06    DATE: 9/12/06

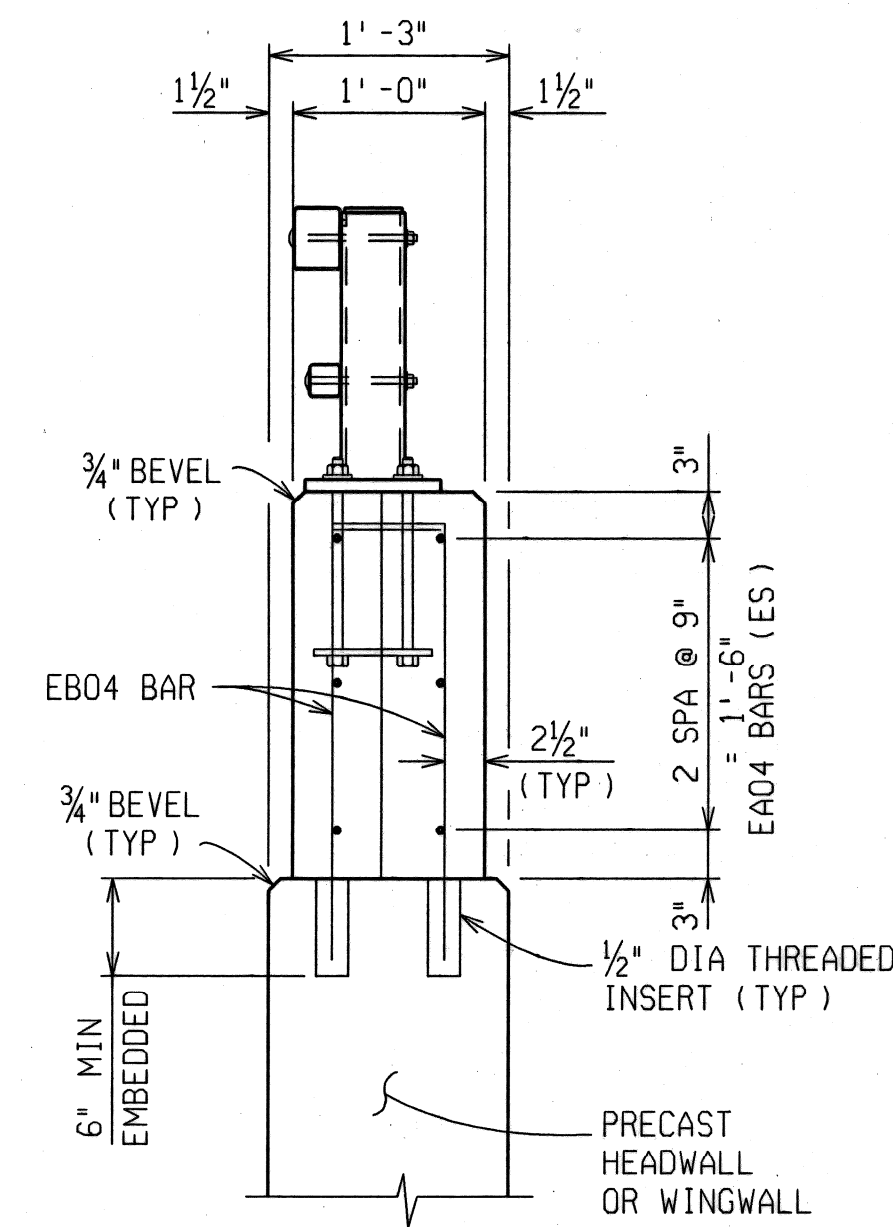




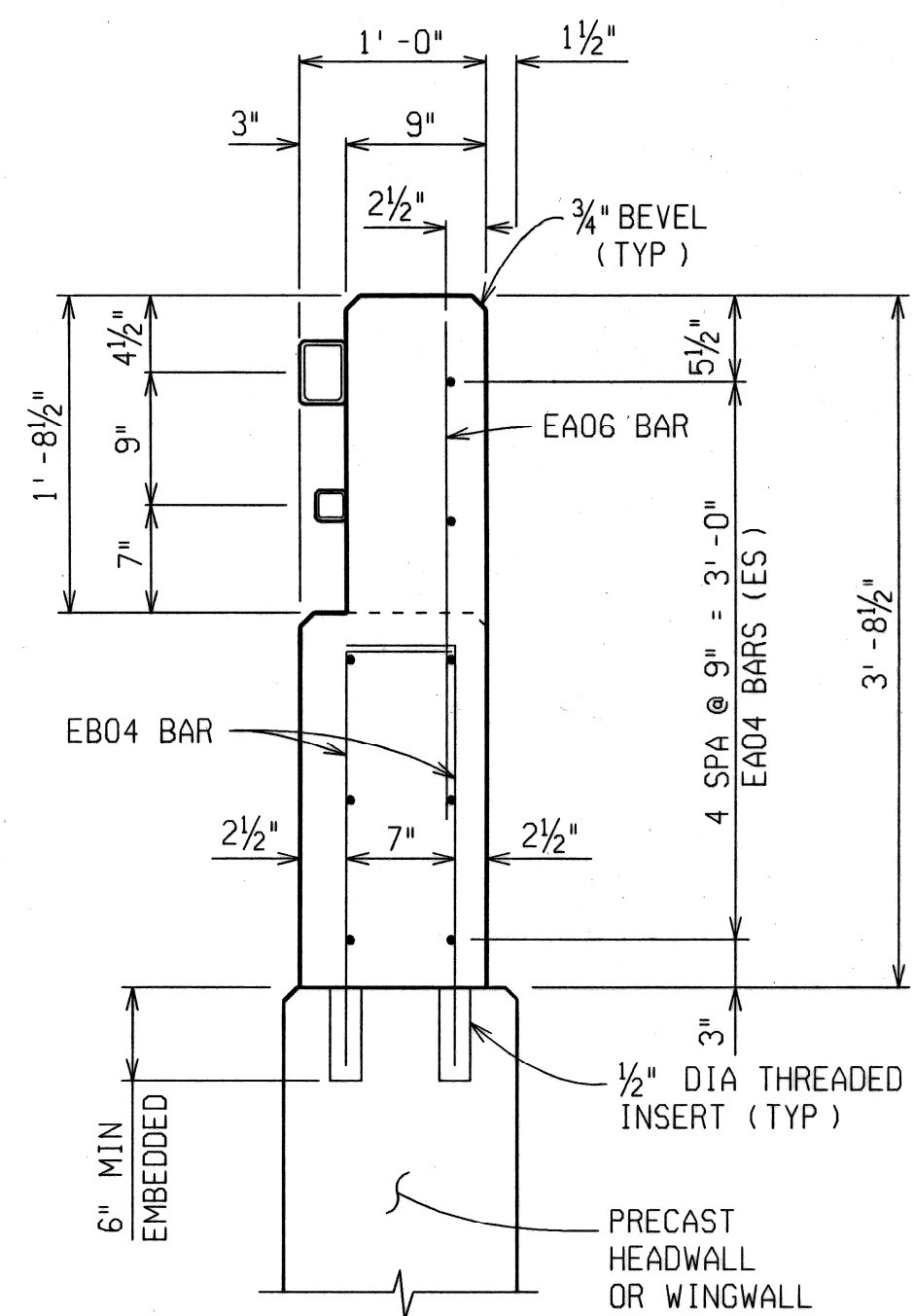
**PLAN - END WALL**  
AESTHETIC PARAPET TUBE



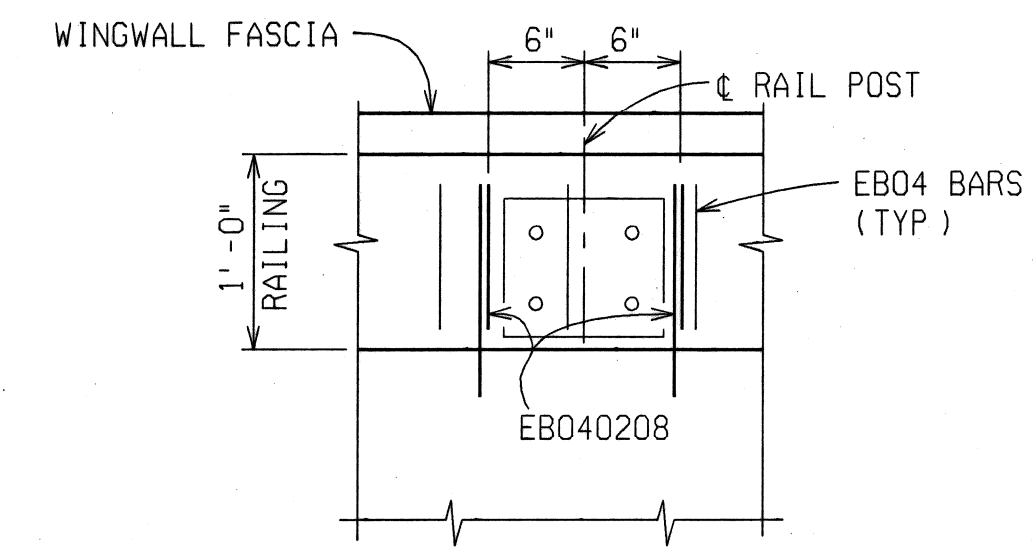
**END WALL DETAIL**  
AESTHETIC PARAPET TUBE



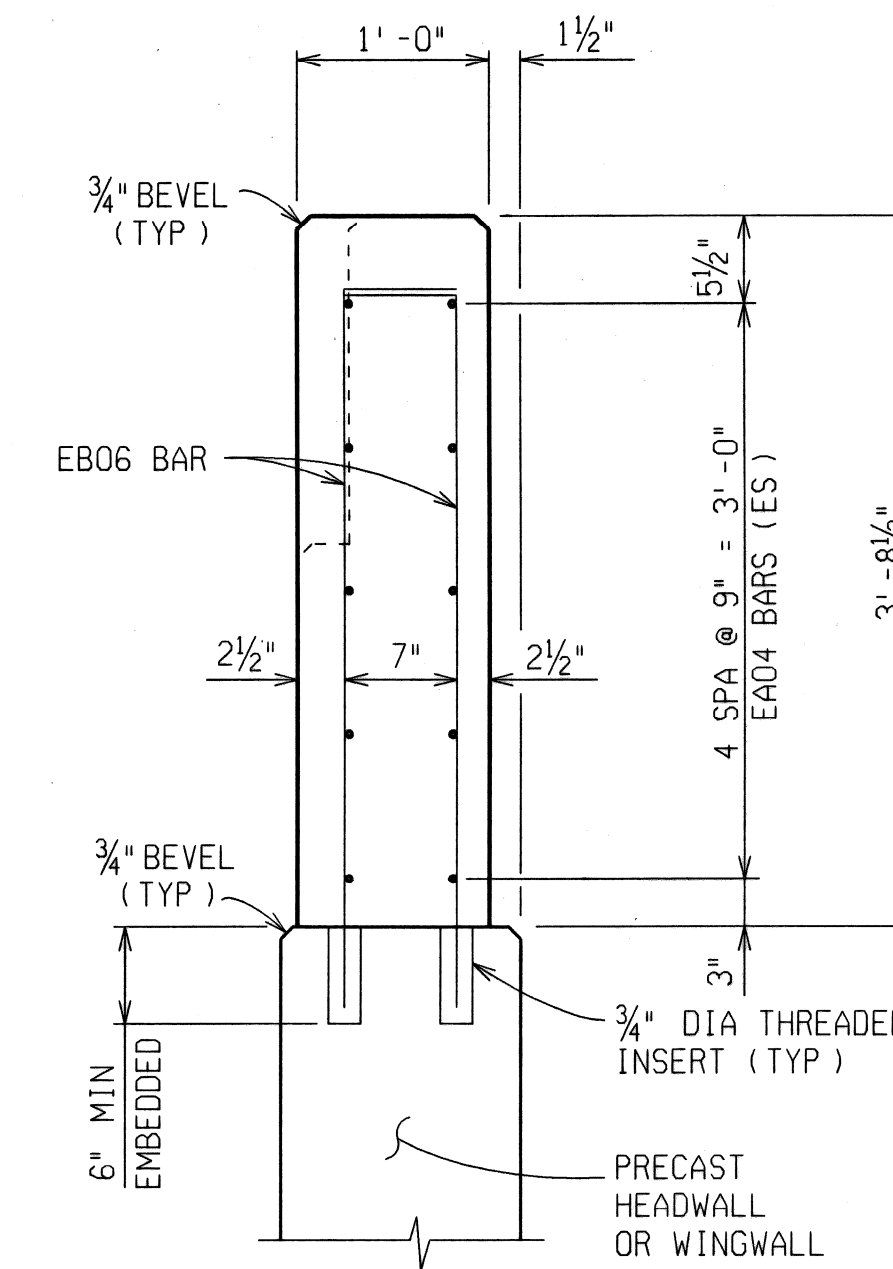
**SECTION A-A**  
(FULL CONCRETE AREA)



**SECTION AT END WALL**  
(TUBE CONNECTION AREA)



**RAIL POST DETAIL**  
(TYP 38 POSTS)



**SECTION AT END WALL**  
(FULL CONCRETE AREA)

**MISCELLANEOUS QUANTITIES**

282 Ft Bridge Railing, Aesthetic Parapet Tube  
5 Cyd Conc, Grade D

**NOTES:**

- NS DENOTES NEAR SIDE.
- FS DENOTES FAR SIDE.
- ES DENOTES EACH SIDE.
- FOR BEVEL AND MOLDING DETAILS, SEE STANDARD PLAN B-103 SERIES.
- WORK THIS SHEET WITH SHEET 15 OF 48.

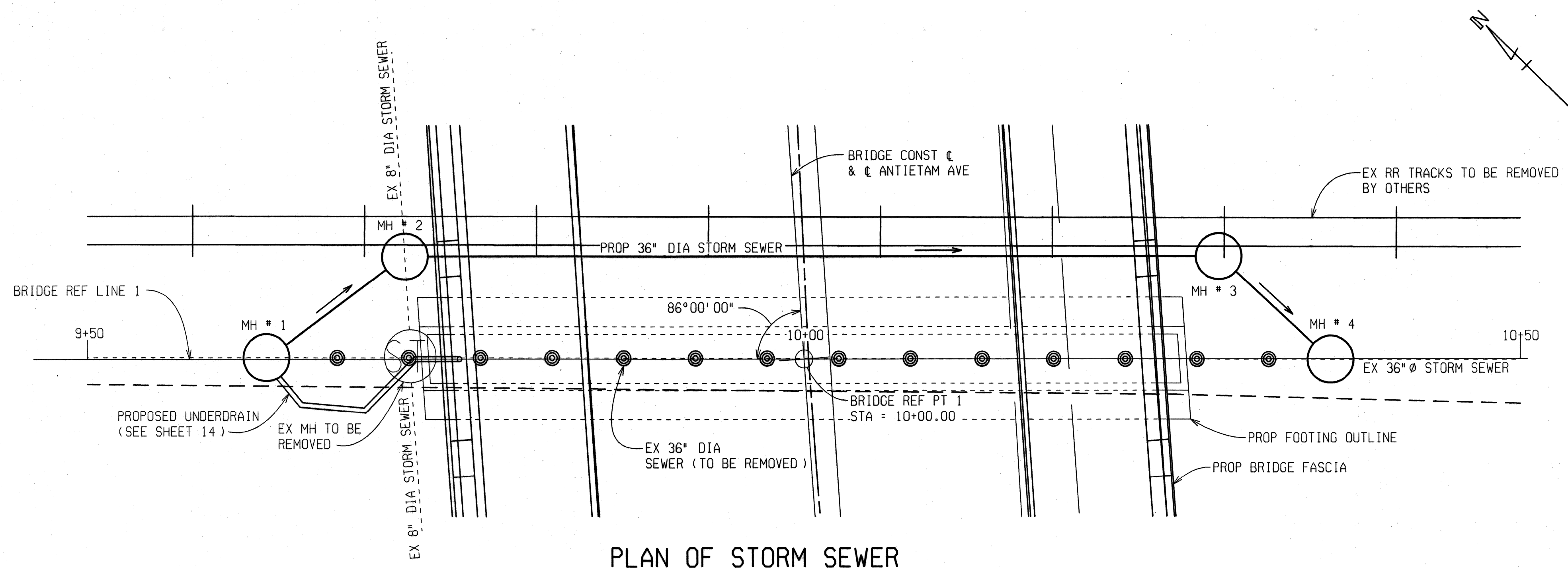
| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
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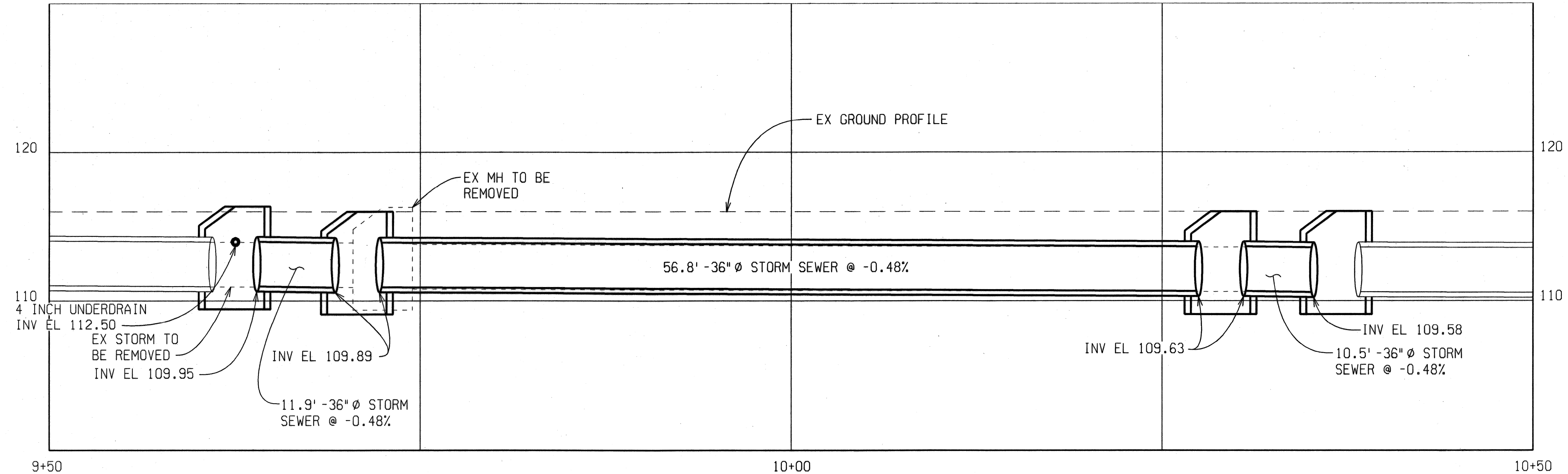
ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY  
MDOT JOB NO. 83945A STRUCTURE NO. S02 of 82-22-97

**SUPERSTRUCTURE DETAILS**

DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 16 OF 48



PLAN OF STORM SEWER

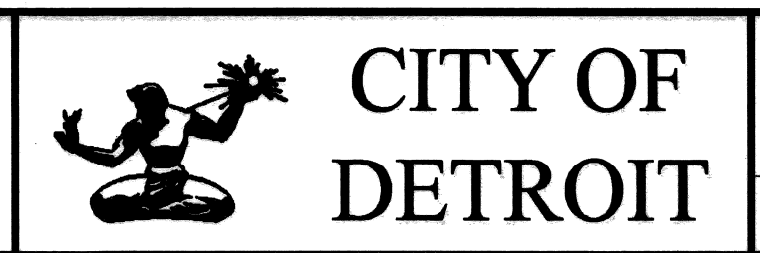


PROFILE

| MISCELLANEOUS QUANTITIES |    |  |
|--------------------------|----|--|
| 80                       | Ft | Sewer, CI C 76 IV, 36 inch, Tr Det B, Modified |
| 4                        | Ea | Manhole, 4 Foot, Standard, Modified            |
| 25                       | Ft | Sewer Cleanout, Modified                       |
| 80                       | Ft | Video Taping Sewer and Culv Pipe               |
| 1                        | Ea | Sewer Tap, 8 inch                              |

\* PERFORATED, DOMED COVER

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
|           |             |      |    |
|           |             |      |    |



ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY

MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

STORM SEWER DETAILS

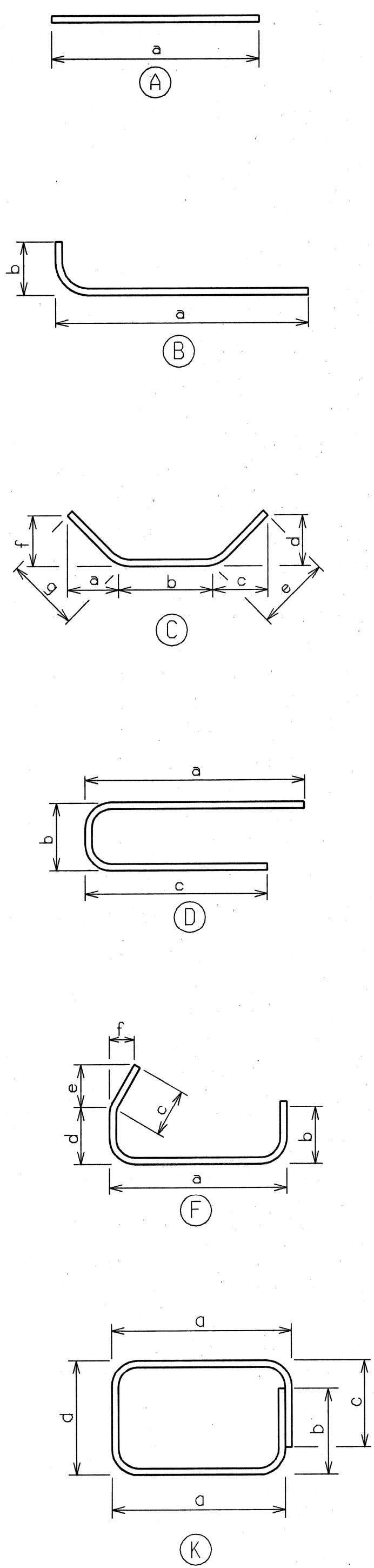
DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 17 OF 48

DATE: 2/6/07    CORRECTED BY: TNB    CHECKED BY: TNB    DATE: 9/6/06    DRAWN BY: bmv    FILE NAME: antietam-app3.dgn

| BAR      | DIMENSIONS |         |            |         |        |            |   |   | NO. REQ'D | TOTAL WT. |
|----------|------------|---------|------------|---------|--------|------------|---|---|-----------|-----------|
|          | a          | b       | c          | d       | e      | f          | g | h |           |           |
| EA040800 | 8' -0"     |         |            |         |        |            |   |   | 16        | 86        |
| EA042600 | 26' -0"    |         |            |         |        |            |   |   | 16        | 278       |
| EA060506 | 5' -6"     |         |            |         |        |            |   |   | 169       | 1397      |
| EA060706 | 7' -6"     |         |            |         |        |            |   |   | 26        | 293       |
| EA060709 | 7' -9"     |         |            |         |        |            |   |   | 144       | 1677      |
| EA060800 | 8' -0"     |         |            |         |        |            |   |   | 4         | 49        |
| EA061300 | 13' -0"    |         |            |         |        |            |   |   | 14        | 274       |
| EA041300 | 13' -0"    |         |            |         |        |            |   |   | 4         | 35        |
| EA061500 | 15' -0"    |         |            |         |        |            |   |   | 10        | 226       |
| EA061806 | 18' -6"    |         |            |         |        |            |   |   | 10        | 278       |
| EA062600 | 26' -0"    |         |            |         |        |            |   |   | 2         | 79        |
| EA062700 | 27' -0"    |         |            |         |        |            |   |   | 2         | 82        |
| EA062708 | 27' -8"    |         |            |         |        |            |   |   | 32        | 1330      |
| EA081006 | 10' -6"    |         |            |         |        |            |   |   | 147       | 4122      |
| EC040400 |            | 2' -0"  | 0' -1 1/2" | 2' -0"  | 2' -0" |            |   |   | 8         | 22        |
| EC060600 |            | 3' -0"  | 0' -2 1/2" | 3' -0"  | 3' -0" |            |   |   | 2         | 19        |
| ED040602 | 2' -0"     | 2' -2"  | 2' -0"     |         |        |            |   |   | 68        | 281       |
| EF040400 | 2' -0"     |         | 2' -0"     |         | 2' -0" | 0' -1 1/2" |   |   | 8         | 22        |
| EF060600 | 3' -0"     |         | 3' -0"     |         | 3' -0" | 0' -2 1/2" |   |   | 2         | 19        |
| EK051009 | 2' -6"     | 1' -11" | 1' -11"    | 1' -11" |        |            |   |   | 35        | 201       |
| EA040800 | 8' -0"     |         |            |         |        |            |   |   | 16        | 43        |
| EA042600 | 26' -0"    |         |            |         |        |            |   |   | 16        | 65        |
| EA060506 | 5' -6"     |         |            |         |        |            |   |   | 144       | 1190      |
| EA060709 | 7' -9"     |         |            |         |        |            |   |   | 144       | 1677      |
| EA060800 | 8' -0"     |         |            |         |        |            |   |   | 4         | 49        |
| EA061300 | 13' -0"    |         |            |         |        |            |   |   | 10        | 196       |
| EA061500 | 15' -0"    |         |            |         |        |            |   |   | 10        | 226       |
| EA062600 | 26' -0"    |         |            |         |        |            |   |   | 2         | 79        |
| EA062700 | 27' -0"    |         |            |         |        |            |   |   | 2         | 82        |
| EA062708 | 27' -8"    |         |            |         |        |            |   |   | 32        | 1330      |
| EA081006 | 10' -6"    |         |            |         |        |            |   |   | 147       | 4122      |
| EC040400 |            | 2' -0"  | 0' -1 1/2" | 2' -0"  | 2' -0" |            |   |   | 8         | 22        |
| EC060600 |            | 3' -0"  | 0' -2 1/2" | 3' -0"  | 3' -0" |            |   |   | 2         | 19        |
| ED040602 | 2' -0"     | 2' -2"  | 2' -0"     |         |        |            |   |   | 55        | 227       |
| EF040400 | 2' -0"     |         | 2' -0"     |         | 2' -0" | 0' -1 1/2" |   |   | 8         | 22        |
| EF060600 | 3' -0"     |         | 3' -0"     |         | 3' -0" | 0' -2 1/2" |   |   | 2         | 19        |
| EK051009 | 2' -6"     | 1' -11" | 1' -11"    | 1' -11" |        |            |   |   | 28        | 314       |
| EA042704 | 27' -4"    |         |            |         |        |            |   |   | 24        | 439       |
| EA060710 | 7' -10"    |         |            |         |        |            |   |   | 74        | 871       |
| EA062704 | 27' -4"    |         |            |         |        |            |   |   | 6         | 247       |
| EA062800 | 28' -0"    |         |            |         |        |            |   |   | 28        | 1178      |
| EA062804 | 28' -4"    |         |            |         |        |            |   |   | 6         | 256       |
| EB061105 | 10' -8"    | 0' -9"  |            |         |        |            |   |   | 74        | 1269      |
| ED040710 | 3' -10"    | 2' -0"  | 2' -0"     |         |        |            |   |   | 37        | 194       |

| BAR       | DIMENSIONS |        |   |   |   |   |   |   |   |  | NO. REQ'D | TOTAL WT. |
|-----------|------------|--------|---|---|---|---|---|---|---|--|-----------|-----------|
|           | a          | b      | c | d | e | f | g | h | J |  |           |           |
| EA040408  | 4' -8"     |        |   |   |   |   |   |   |   |  | 8         | 25        |
| EA040511  | 5' -11"    |        |   |   |   |   |   |   |   |  | 12        | 48        |
| EA040600  | 6' -0"     |        |   |   |   |   |   |   |   |  | 12        | 49        |
| EA040704  | 7' -4"     |        |   |   |   |   |   |   |   |  | 8         | 40        |
| EA041300  | 13' -0"    |        |   |   |   |   |   |   |   |  | 12        | 105       |
| EA041500  | 15' -0"    |        |   |   |   |   |   |   |   |  | 12        | 121       |
| EA041806  | 18' -6"    |        |   |   |   |   |   |   |   |  | 6         | 75        |
| EA042300  | 23' -0"    |        |   |   |   |   |   |   |   |  | 48        | 738       |
| EA060304  | 3' -4"     |        |   |   |   |   |   |   |   |  | 16        | 81        |
| *EB040208 | 2' -3"     | 0' -5" |   |   |   |   |   |   |   |  | 856       | 1525      |
| *EB060404 | 3' -11"    | 0' -5" |   |   |   |   |   |   |   |  | 32        | 209       |

\* DENOTES THREADED BARS



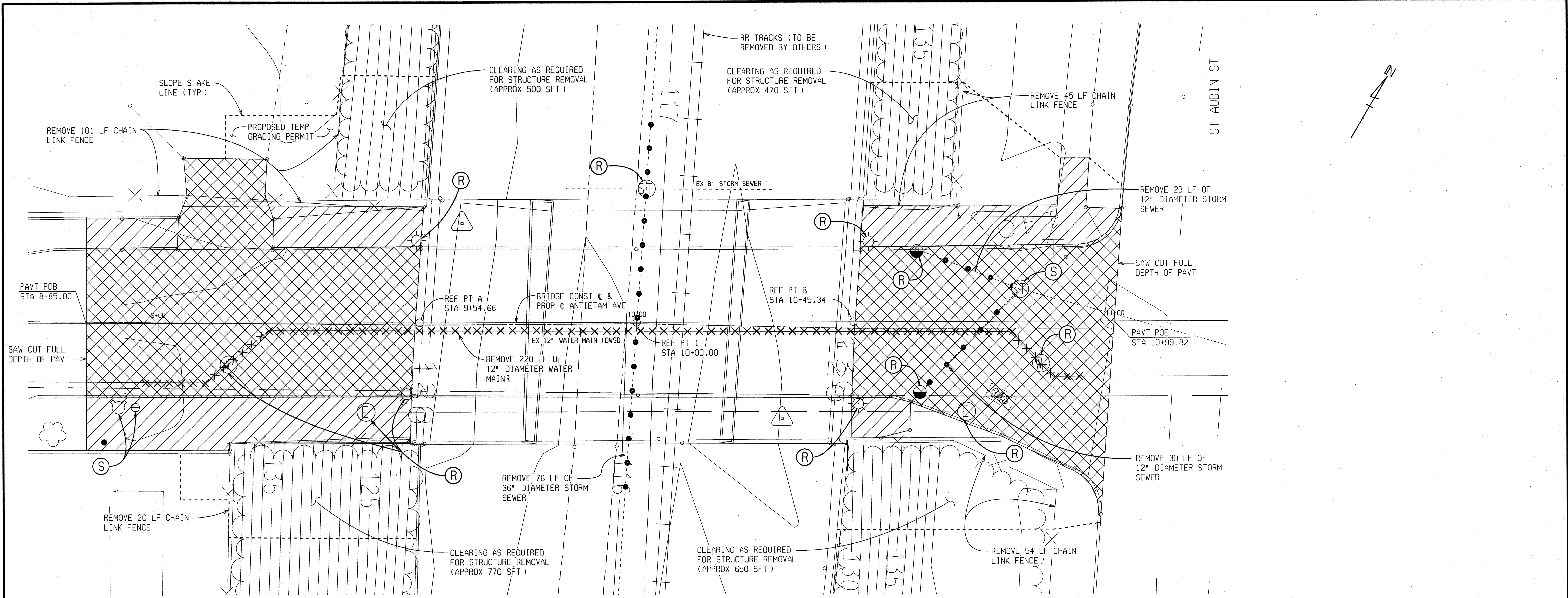
MISCELLANEOUS QUANTITIES

27,922 Lb Reinforcement, Steel, Epoxy Coated

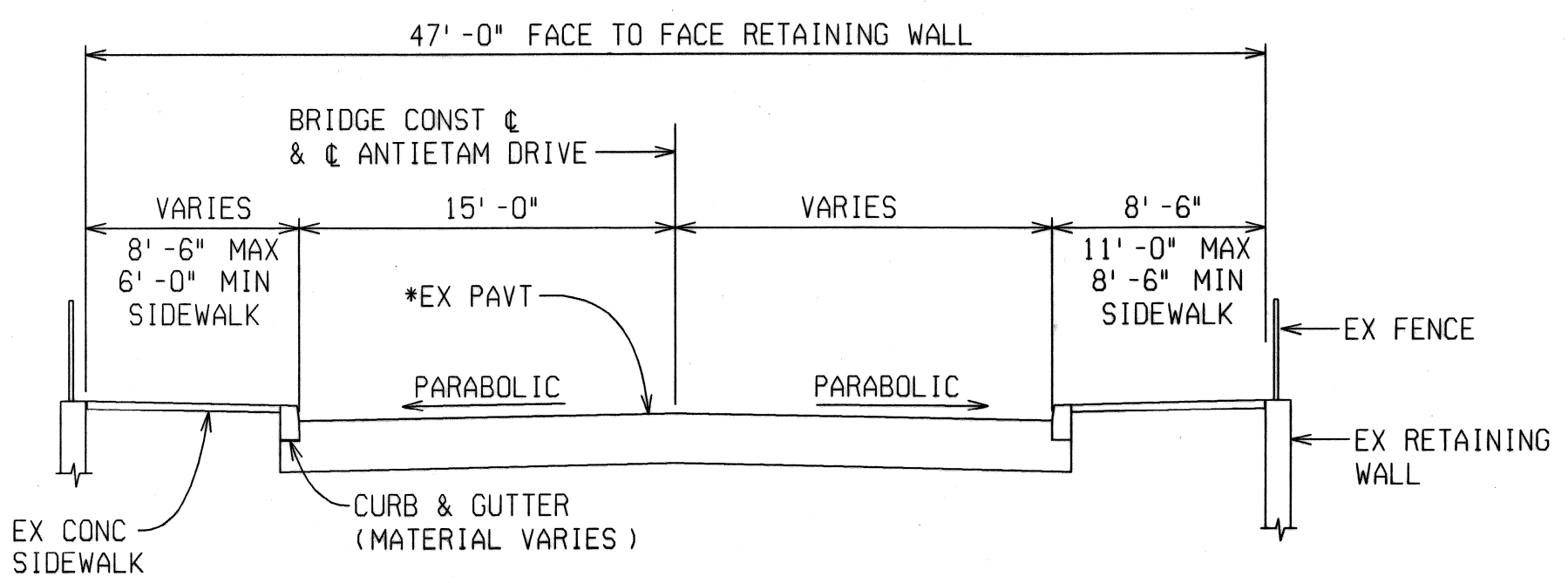
EPOXY COATED  
 BAR SIZE  
 BAR LENGTH (FT.)  
 BAR LENGTH (IN.)  
 EA064700  
 LBAR SHAPE  
 BAR LEGEND

NOTE:  
 REINFORCEMENT SHALL BE BUNDLED AND TAGGED AS TO THE LOCATION AS SHOWN ON THIS SHEET.

|           |             |      |    |  |  |   |                             |                          |
|-----------|-------------|------|----|--|--|---|-----------------------------|--------------------------|
| REVISIONS | DESCRIPTION | DATE | BY |  |  | ANTIETAM AVENUE OVER<br>DEQUINDRE CUT GREENWAY<br>MDOT JOB NO. 83945A STRUCTURE NO. S02 of 82-22-97 | STEEL REINFORCEMENT DETAILS | DATE: 4/13/07            |
|           |             |      |    |  |  |   |                             | DLZ JOB NO. 0641-6053-00 |
|           |             |      |    |  |  |   |                             | SHEET NO. 18 OF 48       |
|           |             |      |    |  |  |   |                             |                          |



PLAN OF APPROACH



EXISTING APPROACH SECTION

(LOOKING EAST)  
 \* EX PAVEMENT CONTAINS LAYERS OF CONCRETE, GRAVEL AND HMA  
 SEE LOG OF BORING SHEETS 5 AND 6 FOR FURTHER INFORMATION

**REMOVAL LEGEND**

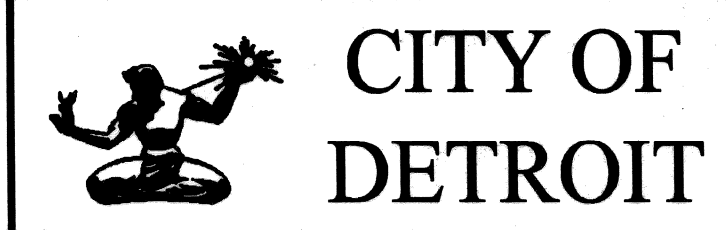
|                     |  |
|---------------------|--|
| REMOVING SIDEWALK   |  |
| REMOVING PAVEMENT   |  |
| REMOVING SEWER      |  |
| REMOVING WATER MAIN |  |
| SAVE                |  |
| REMOVE              |  |

| MISCELLANEOUS QUANTITIES |                            |                                   |
|--------------------------|----------------------------|-----------------------------------|
| PARTICIPATING QUANTITY   | NON-PARTICIPATING QUANTITY | ITEM                              |
| 0.1                      |                            | Acre Clearing                     |
| 3                        |                            | Ea Dr Structure, Rem              |
| 220                      |                            | Ft Fence, Rem                     |
| 190                      |                            | Syd Sidewalk, Rem                 |
| 53                       |                            | Ft Sewer, Rem, Less than 24 inch  |
| 75                       |                            | Ft Sewer, Rem, 24 inch to 48 inch |
| 506                      |                            | Syd Pavn, Rem, Modified           |
| 220                      |                            | Ft Water Main, Rem                |

**NOTES:**

- SEE SHEET 7 OF 48 FOR WATER MAIN DETAILS.
- SEE SHEET 17 OF 48 FOR STORM SEWER DETAILS.
- SEE SHEETS 26-48 OF 48 FOR ELECTRICAL DETAILS.
- SAWCUTTING IS INCLUDED IN THE PAY ITEM "Pavn, Rem, Modified" and "Sidewalk, Rem".
- CURB REMOVAL IS INCLUDED IN THE PAY ITEM "Pavn, Rem, Modified".

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
|           |             |      |    |
|           |             |      |    |

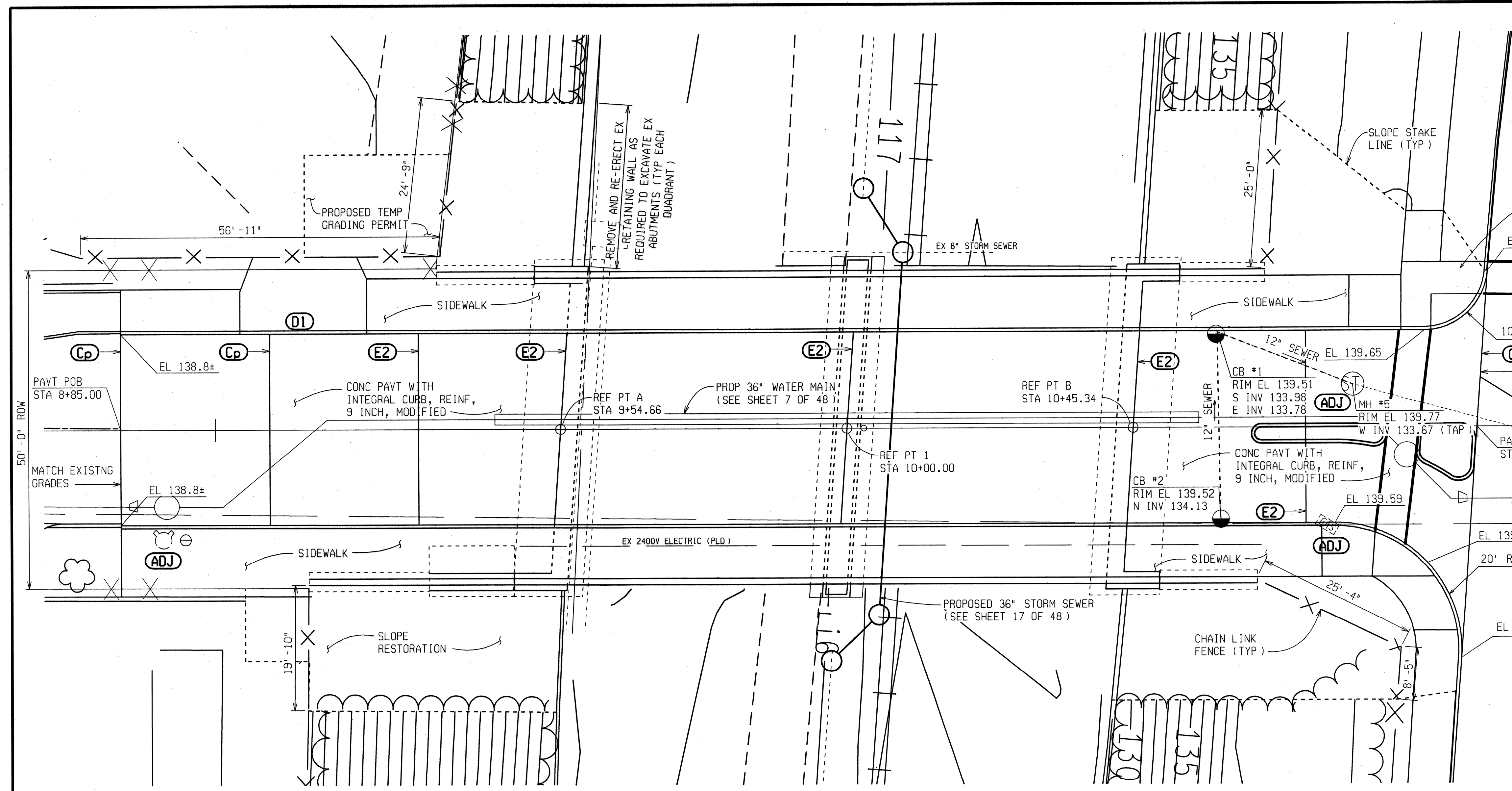


ANTIETAM AVENUE OVER  
 DEQUINDRE CUT GREENWAY  
 MDOT JOB NO. 83945A STRUCTURE NO. S02 of 82-22-97

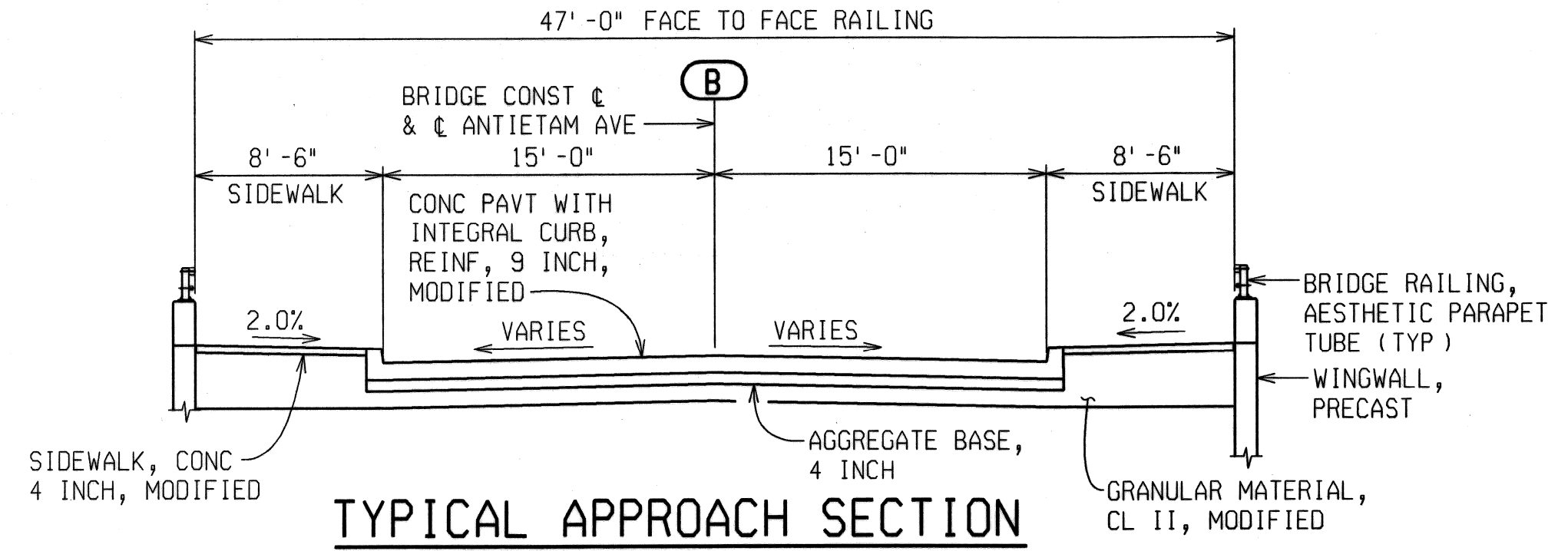
APPROACH REMOVAL DETAILS

DATE: 4/13/07  
 DLZ JOB NO. 0641-6053-00  
 SHEET NO. 19 OF 48

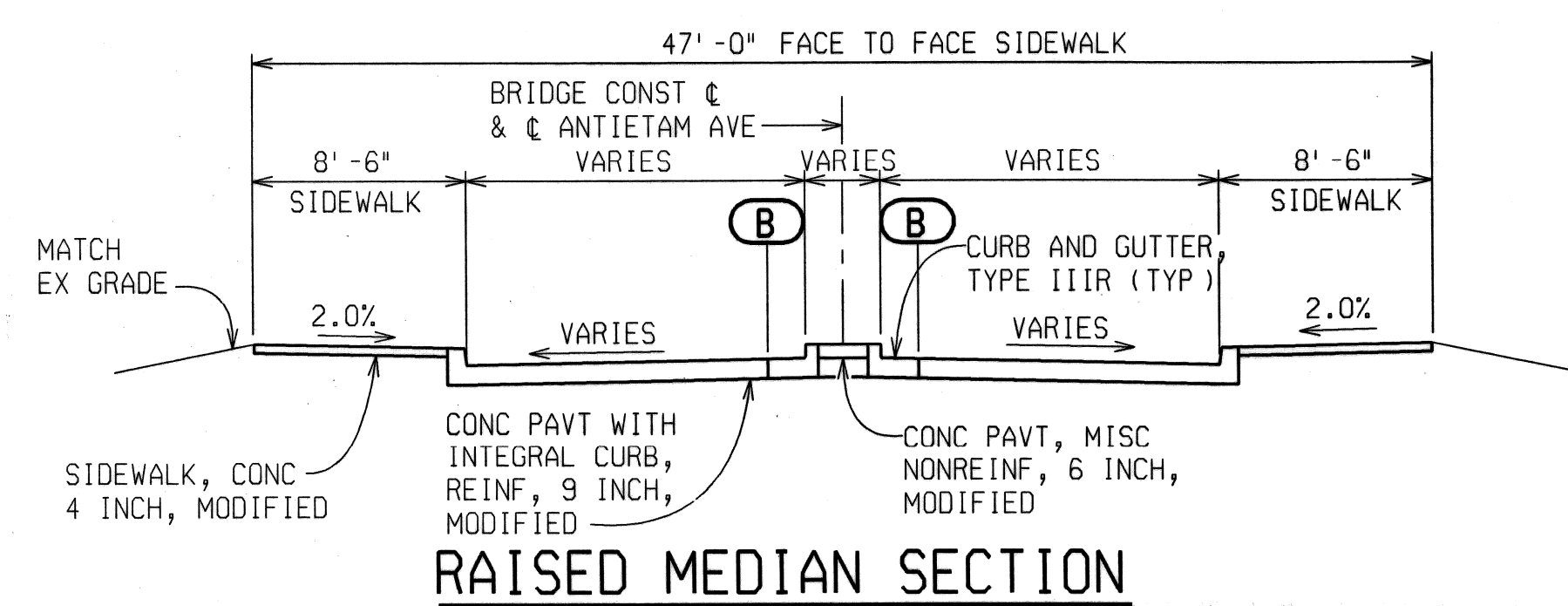
DATE: 9/12/06  
 DATE: 1/10/05  
 CORRECTED BY: DLW  
 CHECKED BY: BMW  
 DATE: 9/8/06  
 DRAWN BY: BMW  
 FILE NAME: antietam-app1.dgn



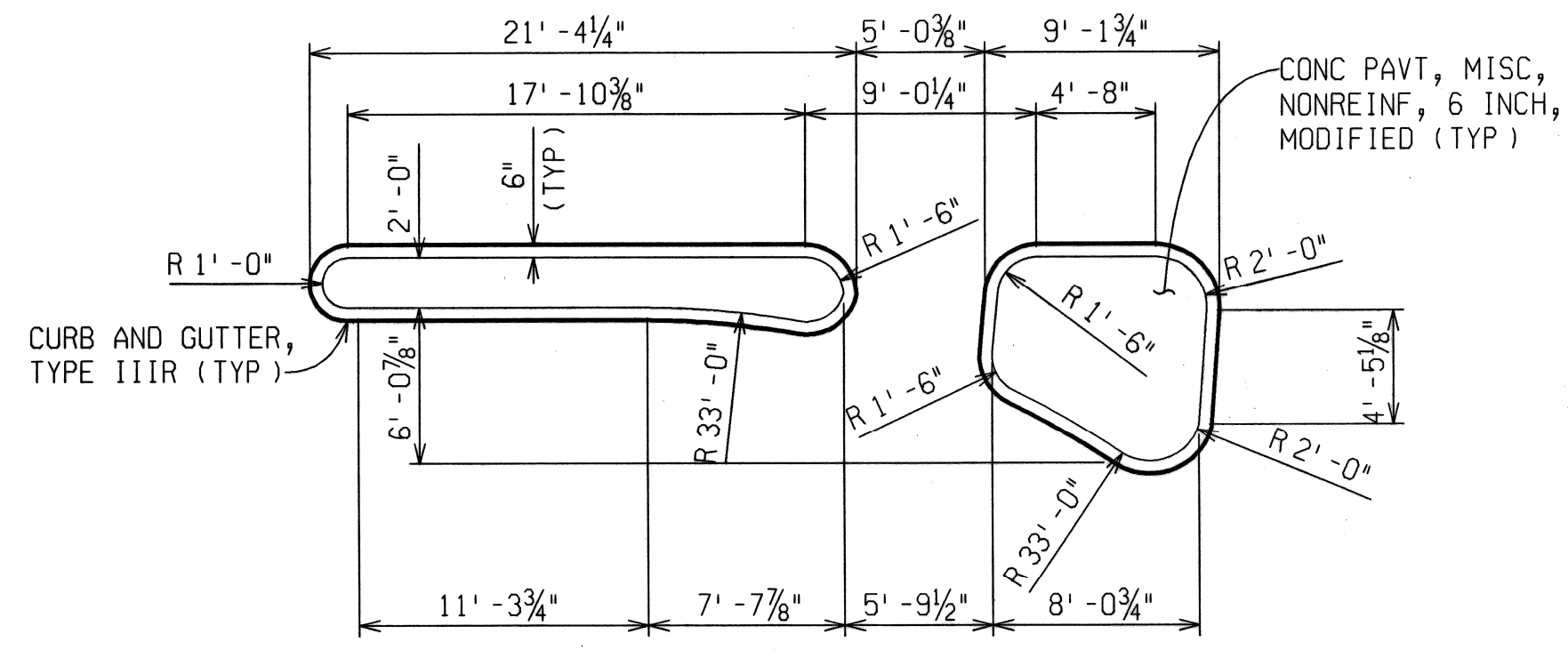
PLAN OF APPROACH



TYPICAL APPROACH SECTION



RAISED MEDIAN SECTION



RAISED MEDIAN DETAIL

| MISCELLANEOUS QUANTITIES |                            |      |   |
|--------------------------|----------------------------|------|---|
| PARTICIPATING QUANTITY   | NON-PARTICIPATING QUANTITY | ITEM |   |
| 2965                     |                            | Sft  | Sidewalk, Conc, 4 inch, Modified                      |
| 116                      |                            | Sft  | Sidewalk, Conc, 6 inch, Modified                      |
| 371                      |                            | Sft  | Sidewalk Ramp, ADA, Modified                          |
| 550                      |                            | Cyd  | Granular Material, Cl II, Modified                    |
| 779                      |                            | Syd  | Aggregate Base, 4 inch                                |
| 779                      |                            | Syd  | Conc Pavt with Integral Curb, Reinf, 9 Inch, Modified |
| 120                      |                            | Ft   | Joint, Expansion, E2                                  |
| 128                      |                            | Ft   | Joint, Contraction, Cp                                |
| 20                       |                            | Ft   | Joint, Plane-of-Weakness, D1                          |
| 161                      |                            | Ft   | Fence, Chain Link, 48 inch                            |
| 53                       |                            | Ft   | Sewer, Cl C 76 IV, 12 inch, Tr Det B, Modified        |
| 1                        |                            | Ea   | Catch Basin A, Modified                               |
| 1                        |                            | Ea   | Catch Basin B with Trap, Modified                     |
| 1                        |                            | Ea   | Dr Structure Cleaning, Modified                       |
| 1                        |                            | Ea   | Dr Structure Cover, Adj, Case 2, Modified             |
| 25                       |                            | Ft   | Sewer Cleanout, Modified                              |
| 11                       |                            | Syd  | Conc Pavt, Misc, Nonreinf, 6 inch, Modified           |
| 71                       |                            | Ft   | Curb and Gutter, Type IIIIR                           |
| 2                        |                            | Ea   | Water Shutoff, Adj, Modified                          |
| 1                        |                            | Ea   | Sewer Tap, 12 inch                                    |

| LEGEND                      |     |
|-----------------------------|-----|
| ADJUST DR STR RIM           | ADJ |
| JOINT, EXPANSION, E3        | E3  |
| JOINT, EXPANSION, E2        | E2  |
| JOINT, PLANE OF WEAKNESS    | D1  |
| LONGITUDINAL BULKHEAD JOINT | B   |
| JOINT, CONTRACTION, CP      | CP  |

**NOTES:**

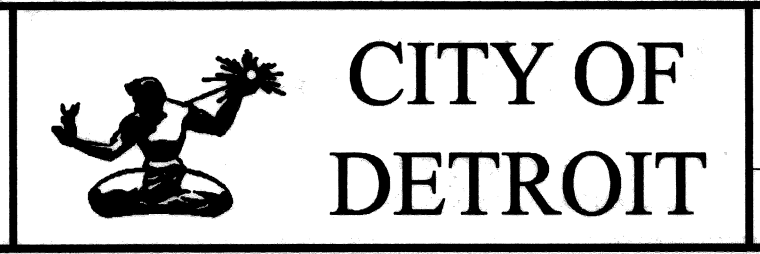
CB#1 SHALL BE "Catch Basin A, Modified".

CB#2 SHALL BE "Catch Basin B with Trap, Modified".

FOR BRIDGE RAILING DETAILS AND QUANTITIES, SEE SHEET 16 OF 48.

SEE SPECIAL PROVISION FOR SIDEWALK CONC, -- INCH, MODIFIED FOR LOCATIONS OF 4 INCH AND 6 INCH SIDEWALK.

| REVISIONS | DESCRIPTION | DATE | BY |
|-----------|-------------|------|----|
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ANTIETAM AVENUE OVER DEQUINDRE CUT GREENWAY

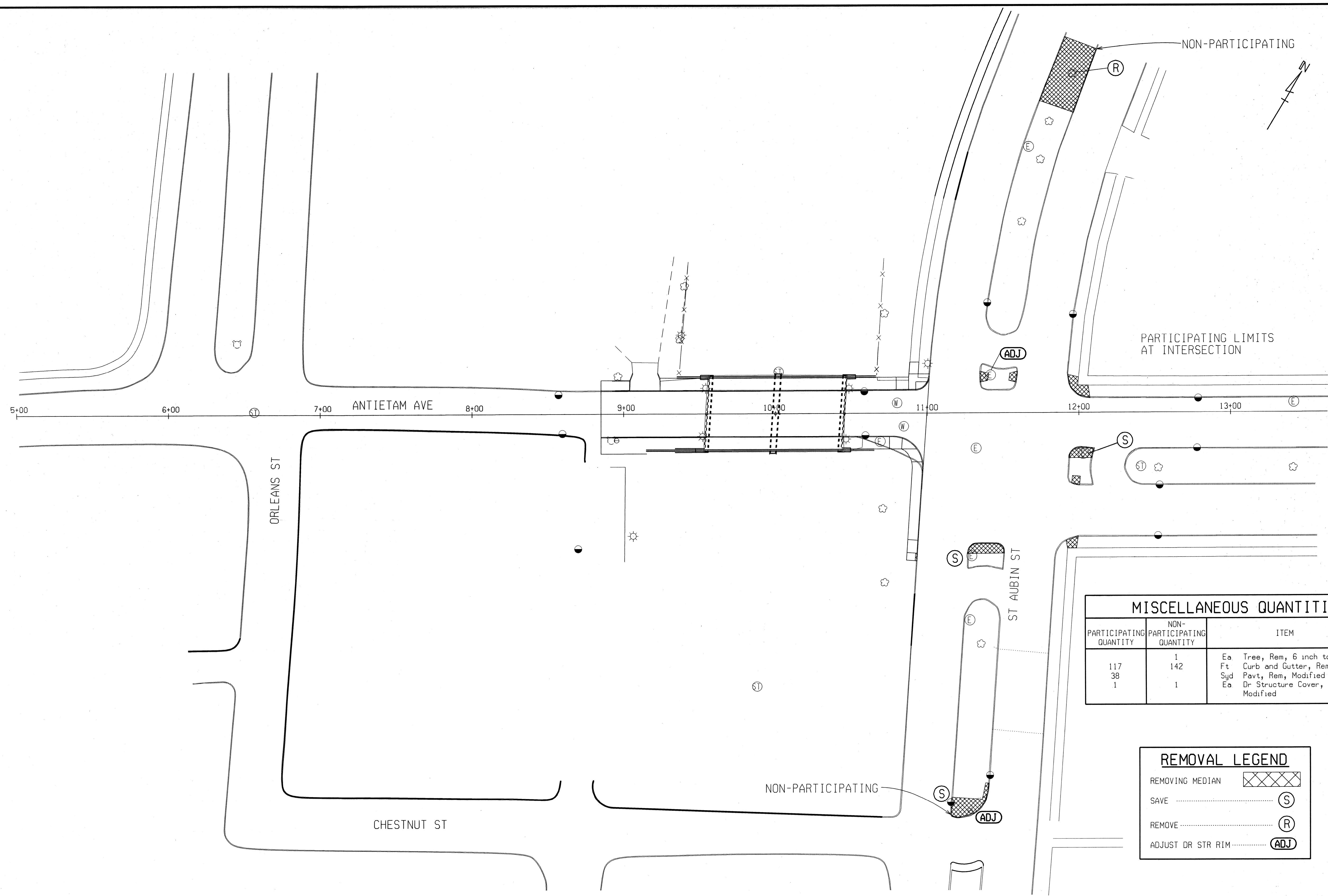
MDOT JOB NO. 83945A STRUCTURE NO. S02 of 82-22-97

APPROACH CONSTRUCTION DETAILS

DATE: 4/13/07

DLZ JOB NO. 0641-6053-00

SHEET NO. 20 OF 48



| MISCELLANEOUS QUANTITIES |                            |  |
|--------------------------|----------------------------|--|
| PARTICIPATING QUANTITY   | NON-PARTICIPATING QUANTITY | ITEM   |
| 117                      | 1                          | Ea Tree, Rem, 6 inch to 18 inch              |
| 38                       | 142                        | Ft Curb and Gutter, Rem                      |
| 1                        | 1                          | Syd Pavt, Rem, Modified                      |
|                          |                            | Ea Dr Structure Cover, Adj, Case 2, Modified |

| REMOVAL LEGEND    |  |
|-------------------|--|
| REMOVING MEDIAN   |  |
| SAVE              |  |
| REMOVE            |  |
| ADJUST DR STR RIM |  |

| REVISIONS | DESCRIPTION | DATE | BY |
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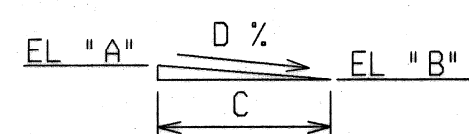


ANTIETAM AVENUE OVER  
 DEQUINDRE CUT GREENWAY  
 MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

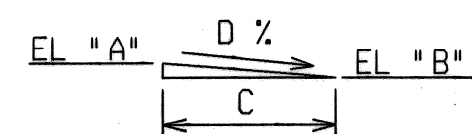
**TRAFFIC IMPROVEMENT  
 REMOVAL DETAILS**

DATE: 4/13/07  
 DLZ JOB NO. 0641-6053-00  
 SHEET NO. 21 OF 48

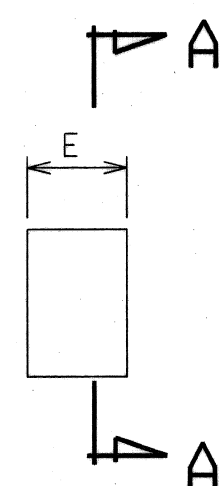
FILE NAME: antietam-app3.dgn    DRAWN BY: TNB    CHECKED BY: AJH    DATE: 1/25/07    CORRECTED BY: TNB    DATE: 1/31/07    DATE: 2/1/07



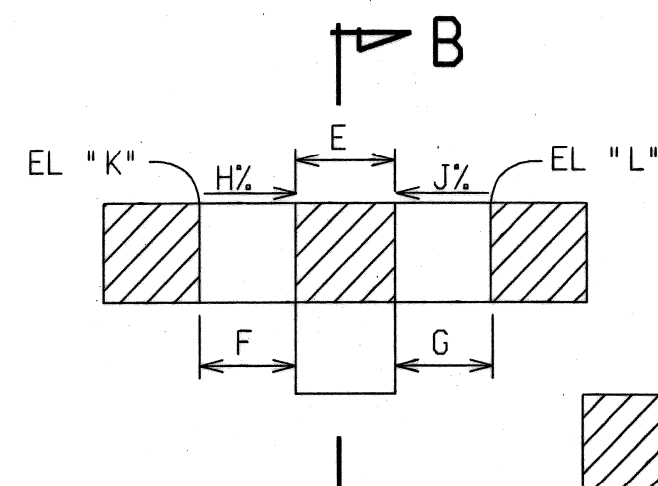
SECTION A-A



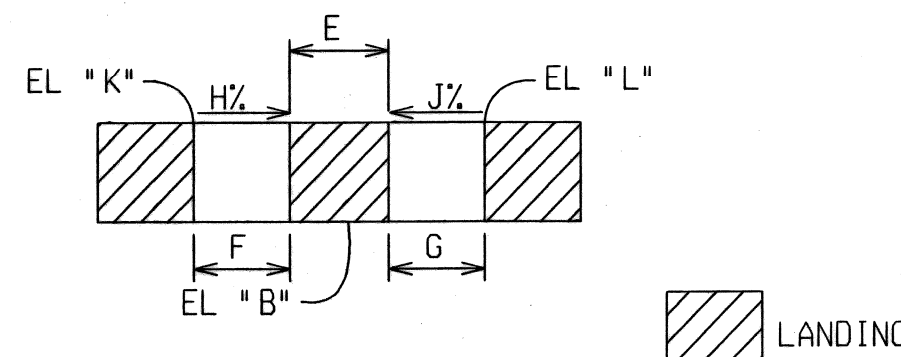
SECTION B-B



SIDEWALK RAMP TYPE R



SIDEWALK RAMP TYPE C



SIDEWALK RAMP TYPE P

| SIDEWALK RAMP, ADA, MODIFIED* |      |         |         |       |      |       |       |       |      |      |         |         |
|-------------------------------|------|---------|---------|-------|------|-------|-------|-------|------|------|---------|---------|
| RAMP                          | TYPE | A       | B       | C     | D    | E     | F     | G     | H    | J    | K       | L       |
| 1                             | P    |         | 139.65± |       |      | 5'-0" | 8'-3" | 8'-0" | 8.1% |      | 140.32± |         |
| 2                             | C    | 139.90± | 139.90± | 7'-6" | 0.0% | 5'-0" |       | 8'-0" |      | 8.1% |         | 140.55± |
| 3                             | R    | 139.35± | 139.70± | 5'-6" | 6.4% | 5'-0" |       |       |      |      |         |         |
| 4                             | R    | 139.25± | 139.70± | 5'-6" | 8.2% | 5'-0" |       |       |      |      |         |         |
| 5                             | R    | 138.35± | 139.70± | 5'-0" | 7.0% | 6'-0" |       |       |      |      |         |         |
| 6                             | R    | 138.20± | 139.70± | 6'-0" | 8.3% | 6'-0" |       |       |      |      |         |         |
| 7                             | R    | 138.35± | 138.90± | 7'-0" | 7.9% | 5'-0" |       |       |      |      |         |         |
| 8                             | R    | 138.63± | 139.00± | 5'-0" | 7.4% | 6'-0" |       |       |      |      |         |         |
| 9                             | R    | 138.45± | 138.85± | 5'-6" | 7.3% | 6'-0" |       |       |      |      |         |         |
| 10                            | R    | 138.55± | 138.95± | 7'-9" | 5.2% | 5'-0" |       |       |      |      |         |         |
| 11                            | R    | 138.75± | 139.20± | 5'-6" | 8.2% | 5'-0" |       |       |      |      |         |         |
| 12                            | R    | 139.45± | 139.70± | 5'-0" | 5.0% | 5'-0" |       |       |      |      |         |         |
| 13                            | P    |         | 139.70± |       |      | 5'-0" | 8'-6" |       | 8.2% |      | 140.40± |         |
| 14                            | P    |         | 139.70± |       |      | 6'-0" | 8'-6" |       | 8.2% | 8.2% | 140.40± | 140.40± |
| 15                            | M    |         |         |       |      |       |       |       |      |      |         |         |

\*SEE SPECIAL PROVISION FOR SIDEWALK RAMP, ADA, MODIFIED AND MOOT STANDARD PLAN R-28-F FOR DETAILS

| MISCELLANEOUS QUANTITIES |                            |   |
|--------------------------|----------------------------|---|
| PARTICIPATING QUANTITY   | NON-PARTICIPATING QUANTITY | ITEM  |
| 169                      | 114                        | Ft Curb and Gutter, Type IIIR                   |
| 244                      | 114                        | Syd Conc Pavt, Misc, Nonreinf, 6 inch, Modified |
| 470                      | 1                          | Cyd Topsoil Surface, Furn, LM                   |
| 345                      |                            | Sft Sidewalk Ramp, ADA, Modified                |
|                          |                            | Sft Sidewalk, Conc, 4 inch, Modified            |

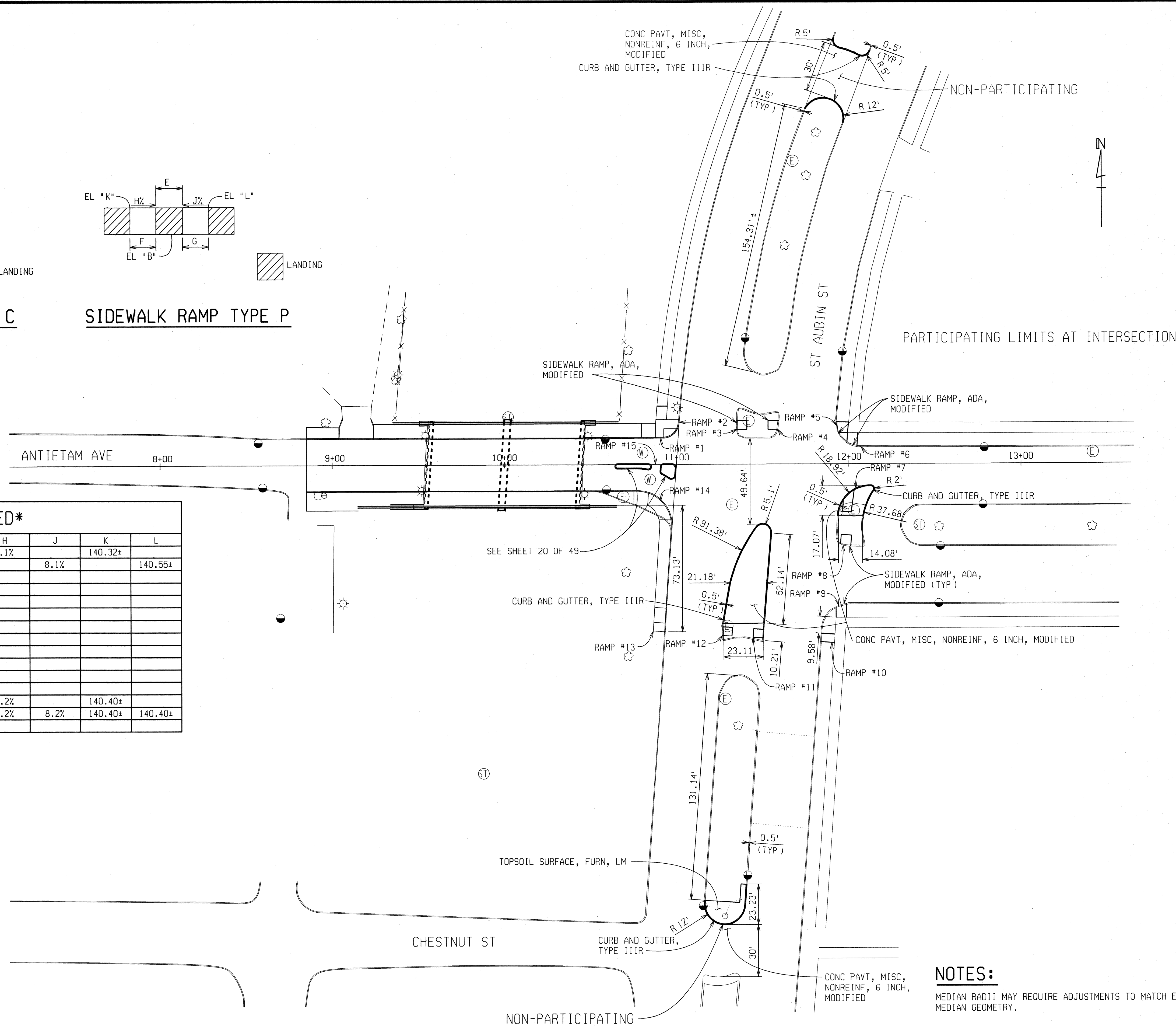
| REVISIONS | DESCRIPTION | DATE | BY |
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ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY  
MDOT JOB NO. 83945A STRUCTURE NO. S02 of 82-22-97

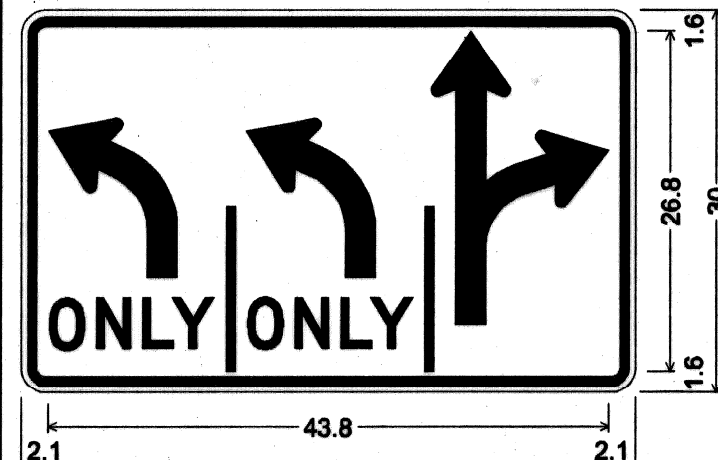
TRAFFIC IMPROVEMENT  
CONSTRUCTION DETAILS

DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 22 OF 48

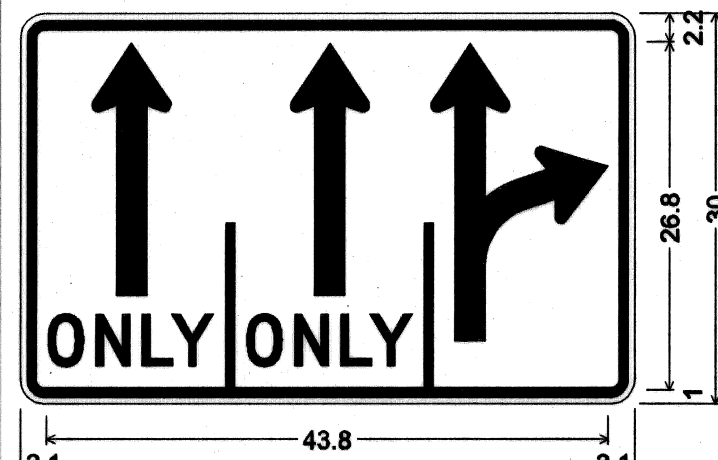


**NOTES:**  
MEDIAN RADII MAY REQUIRE ADJUSTMENTS TO MATCH EXISTING MEDIAN GEOMETRY.

DATE: 2/1/07  
CORRECTED BY: TNB  
DATE: 1/31/07  
CHECKED BY: AJH  
DATE: 1/25/07  
DRAWN BY: TNB  
FILE NAME: antietam-opp4.dgn



R3-BAL MODIFIED\_48x30;  
1.9" Radius, 0.8" Border, 0.5" Indent, White on White;  
ACD;  
SPECIAL DETAIL A



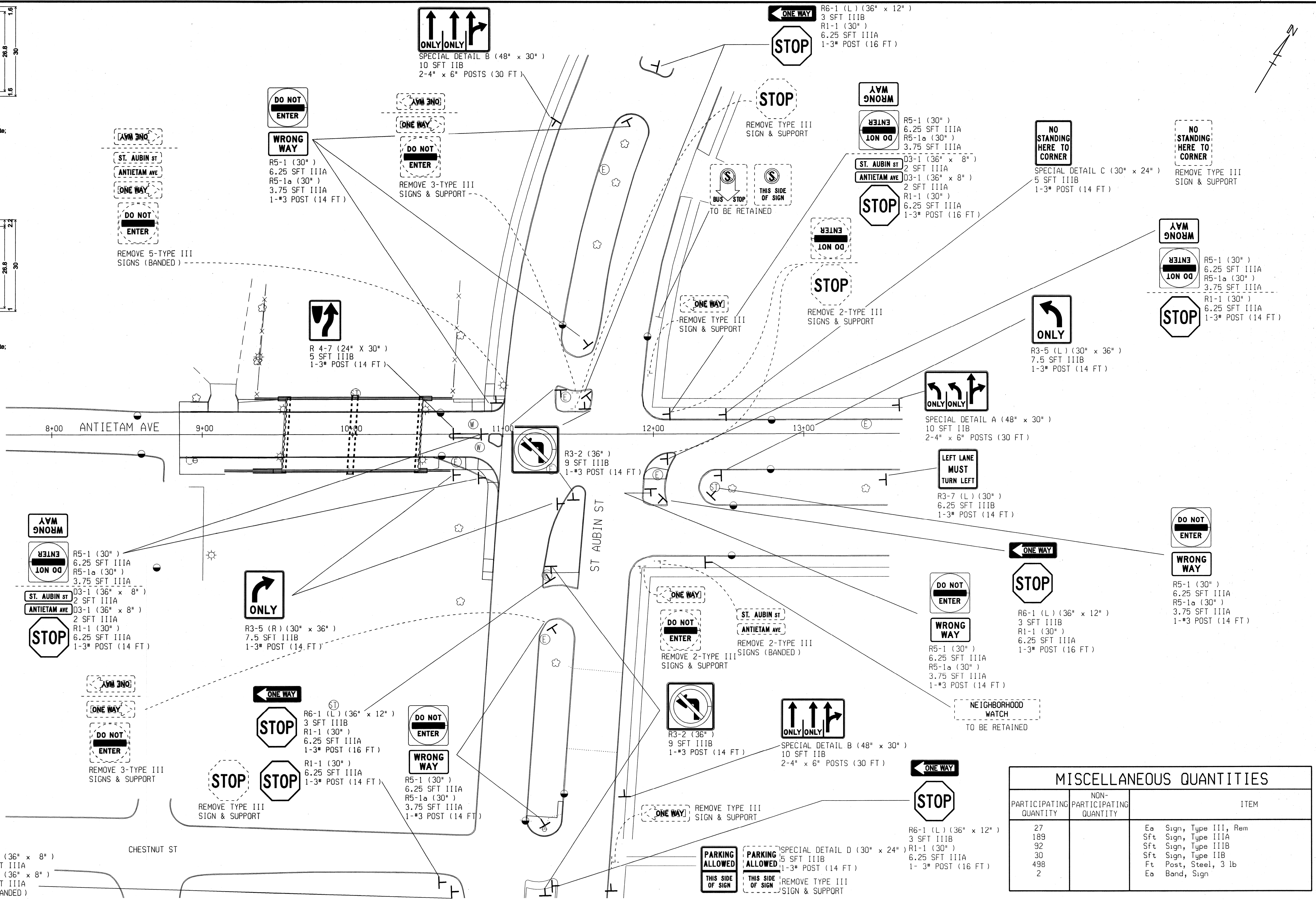
R3-BAL MODIFIED\_48x30;  
1.9" Radius, 0.8" Border, 0.5" Indent, White on White;  
ACD;  
SPECIAL DETAIL B



1.5" Radius, 0.6" Border, 0.4" Indent, Black on White;  
[NO] C; [STANDING] C;  
[HERE TO] C; [CORNER] C;  
SPECIAL DETAIL C

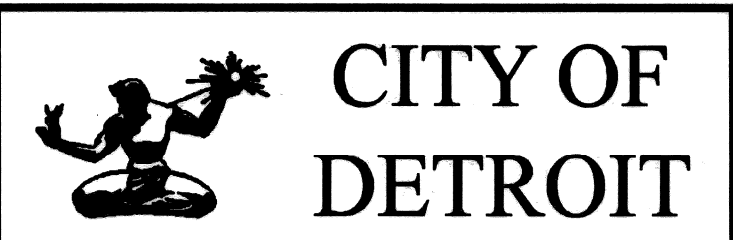


1.5" Radius, 0.6" Border, 0.4" Indent, Black on White;  
[PARKING] C; [ALLOWED] C;  
[THIS SIDE] C; [OF SIGN] C;  
SPECIAL DETAIL D



| MISCELLANEOUS QUANTITIES |                            |                        |
|--------------------------|----------------------------|------------------------|
| PARTICIPATING QUANTITY   | NON-PARTICIPATING QUANTITY | ITEM                   |
| 27                       |                            | Ea Sign, Type III, Rem |
| 189                      |                            | Sft Sign, Type IIIA    |
| 92                       |                            | Sft Sign, Type IIIB    |
| 30                       |                            | Sft Sign, Type IIIB    |
| 498                      |                            | Ft Post, Steel, 3 lb   |
| 2                        |                            | Ea Band, Sign          |

| REVISIONS | DESCRIPTION | DATE | BY |
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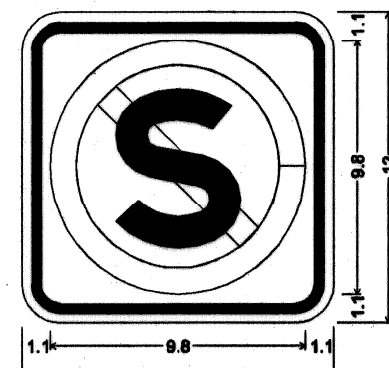
ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY  
MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

SIGNING DETAILS

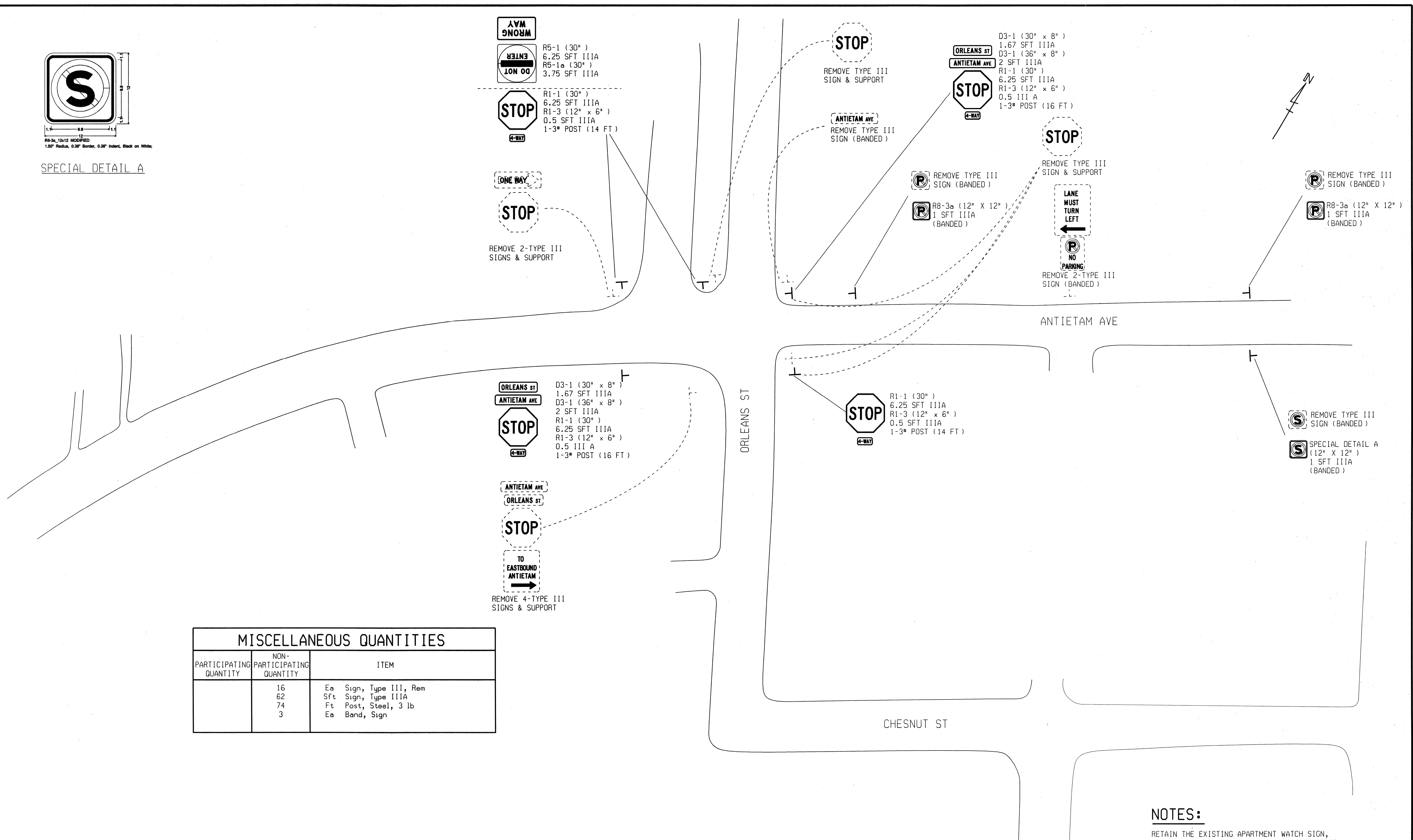
DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 23 OF 48

DATE: 2/1/07    CHECKED BY: AJH    DATE: 1/31/07    CORRECTED BY: TNG    DRAWN BY: JAP    FILE NAME: antietam-sign1.dgn





SPECIAL DETAIL A



WRONG WAY  
DO NOT ENTER  
R5-1 (30")  
6.25 SFT IIIA  
R5-1a (30")  
3.75 SFT IIIA

STOP  
R1-1 (30")  
6.25 SFT IIIA  
R1-3 (12" x 6")  
0.5 SFT IIIA  
1-3" POST (14 FT)

ONE WAY

STOP

REMOVE 2-TYPE III  
SIGNS & SUPPORT

STOP

REMOVE TYPE III  
SIGN & SUPPORT

ANTIETAM AVE

REMOVE TYPE III  
SIGN (BANDED)

ORLEANS ST  
ANTIETAM AVE

STOP

REMOVE TYPE III  
SIGN (BANDED)

REMOVE TYPE III  
SIGN (BANDED)

R8-3a (12" X 12")  
1 SFT IIIA  
(BANDED)

STOP

REMOVE TYPE III  
SIGN & SUPPORT

LANE  
MUST  
TURN  
LEFT

NO  
PARKING

REMOVE 2-TYPE III  
SIGN (BANDED)

REMOVE TYPE III  
SIGN (BANDED)

R8-3a (12" X 12")  
1 SFT IIIA  
(BANDED)

ORLEANS ST  
ANTIETAM AVE

STOP

D3-1 (30" x 8")  
1.67 SFT IIIA  
D3-1 (36" x 8")  
2 SFT IIIA  
R1-1 (30")  
6.25 SFT IIIA  
R1-3 (12" x 6")  
0.5 III A  
1-3" POST (16 FT)

ANTIETAM AVE  
ORLEANS ST

STOP

TO  
EASTBOUND  
ANTIETAM

REMOVE 4-TYPE III  
SIGNS & SUPPORT

STOP

R1-1 (30")  
6.25 SFT IIIA  
R1-3 (12" x 6")  
0.5 SFT IIIA  
1-3" POST (14 FT)

REMOVE TYPE III  
SIGN (BANDED)

SPECIAL DETAIL A  
(12" X 12")  
1 SFT IIIA  
(BANDED)

| MISCELLANEOUS QUANTITIES |                            |                        |
|--------------------------|----------------------------|------------------------|
| PARTICIPATING QUANTITY   | NON-PARTICIPATING QUANTITY | ITEM                   |
|                          | 16                         | Ea Sign, Type III, Rem |
|                          | 62                         | Sft Sign, Type IIIA    |
|                          | 74                         | Ft Post, Steel, 3 lb   |
|                          | 3                          | Ea Band, Sign          |

**NOTES:**

RETAIN THE EXISTING APARTMENT WATCH SIGN,  
SPEED LIMIT AND NO TRUCK SIGN ON ORLEANS ST.

| REVISIONS | DESCRIPTION | DATE | BY |
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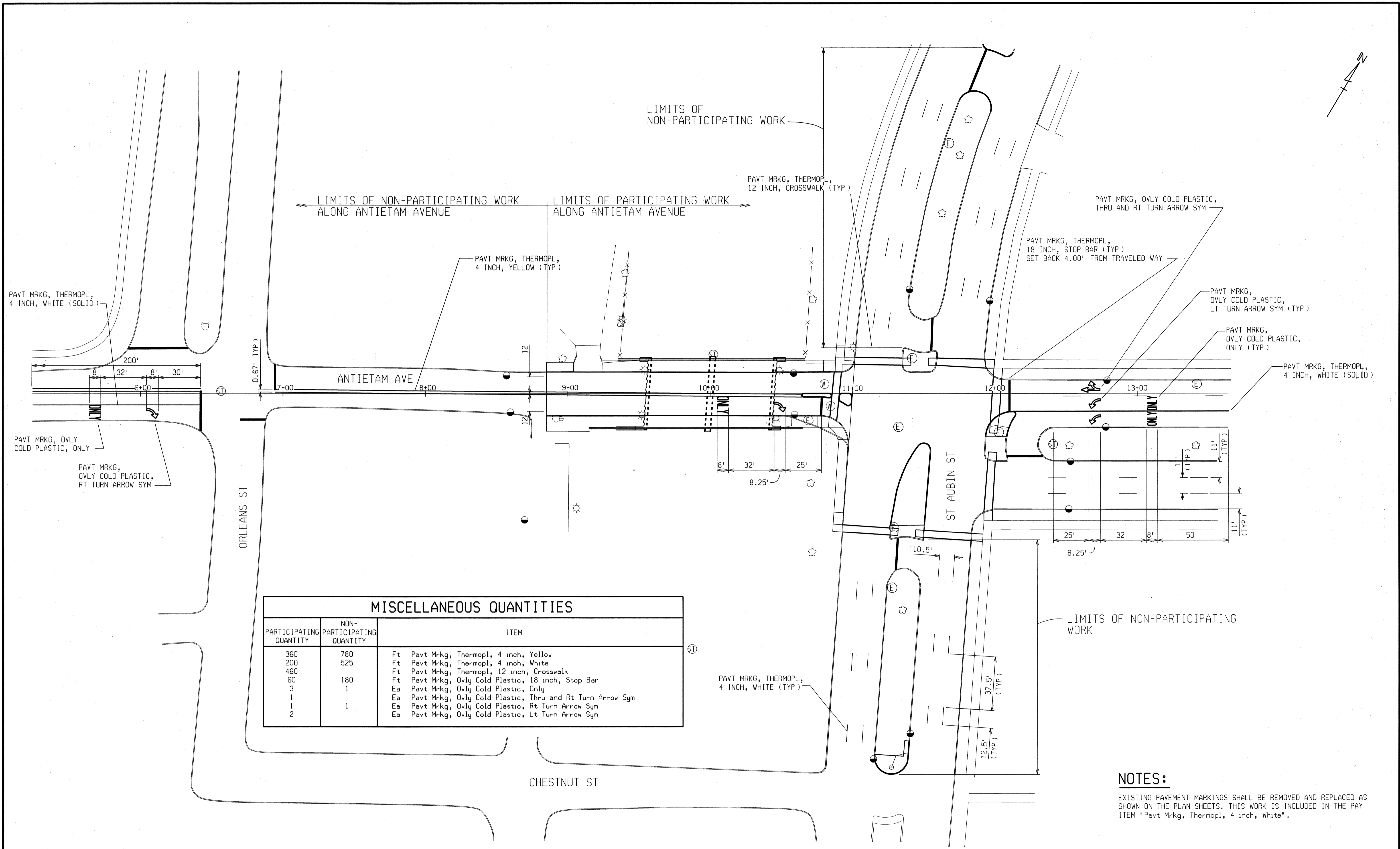


ANTIETAM AVENUE OVER  
DEQUINDRE CUT GREENWAY  
MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

SIGNING DETAILS

DATE: 4/13/07  
DLZ JOB NO. 0641-6053-00  
SHEET NO. 24 OF 48

DATE: 2/1/07    DATE: 1/31/07    CORRECTED BY: TNS    DATE: 1/29/07    CHECKED BY: AJH    DRAWN BY: JAP    FILE NAME: anti-etam-sign2.dgn



| MISCELLANEOUS QUANTITIES |                            |   |
|--------------------------|----------------------------|---|
| PARTICIPATING QUANTITY   | NON-PARTICIPATING QUANTITY | ITEM  |
| 360                      | 780                        | Ft Pavt Mrkg, Thermopl, 4 inch, Yellow                      |
| 200                      | 525                        | Ft Pavt Mrkg, Thermopl, 4 inch, White                       |
| 460                      |                            | Ft Pavt Mrkg, Thermopl, 12 inch, Crosswalk                  |
| 60                       | 180                        | Ft Pavt Mrkg, Ovly Cold Plastic, 18 inch, Stop Bar          |
| 3                        | 1                          | Ea Pavt Mrkg, Ovly Cold Plastic, Only                       |
| 1                        |                            | Ea Pavt Mrkg, Ovly Cold Plastic, Thru and Rt Turn Arrow Sym |
| 1                        |                            | Ea Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym          |
| 2                        | 1                          | Ea Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym          |

**NOTES:**  
 EXISTING PAVEMENT MARKINGS SHALL BE REMOVED AND REPLACED AS SHOWN ON THE PLAN SHEETS. THIS WORK IS INCLUDED IN THE PAY ITEM "Pavt Mrkg, Thermopl, 4 inch, White".

| REVISIONS | DESCRIPTION | DATE | BY |
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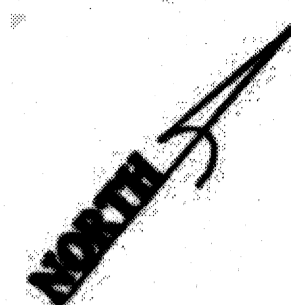
ANTIETAM AVENUE OVER  
 DEQUINDRE CUT GREENWAY  
 MDOT JOB NO. 83945A    STRUCTURE NO. S02 of 82-22-97

PAVEMENT MARKING DETAILS

DATE: 4/13/07  
 DLZ JOB NO. 0641-6053-00  
 SHEET NO. 25 OF 48

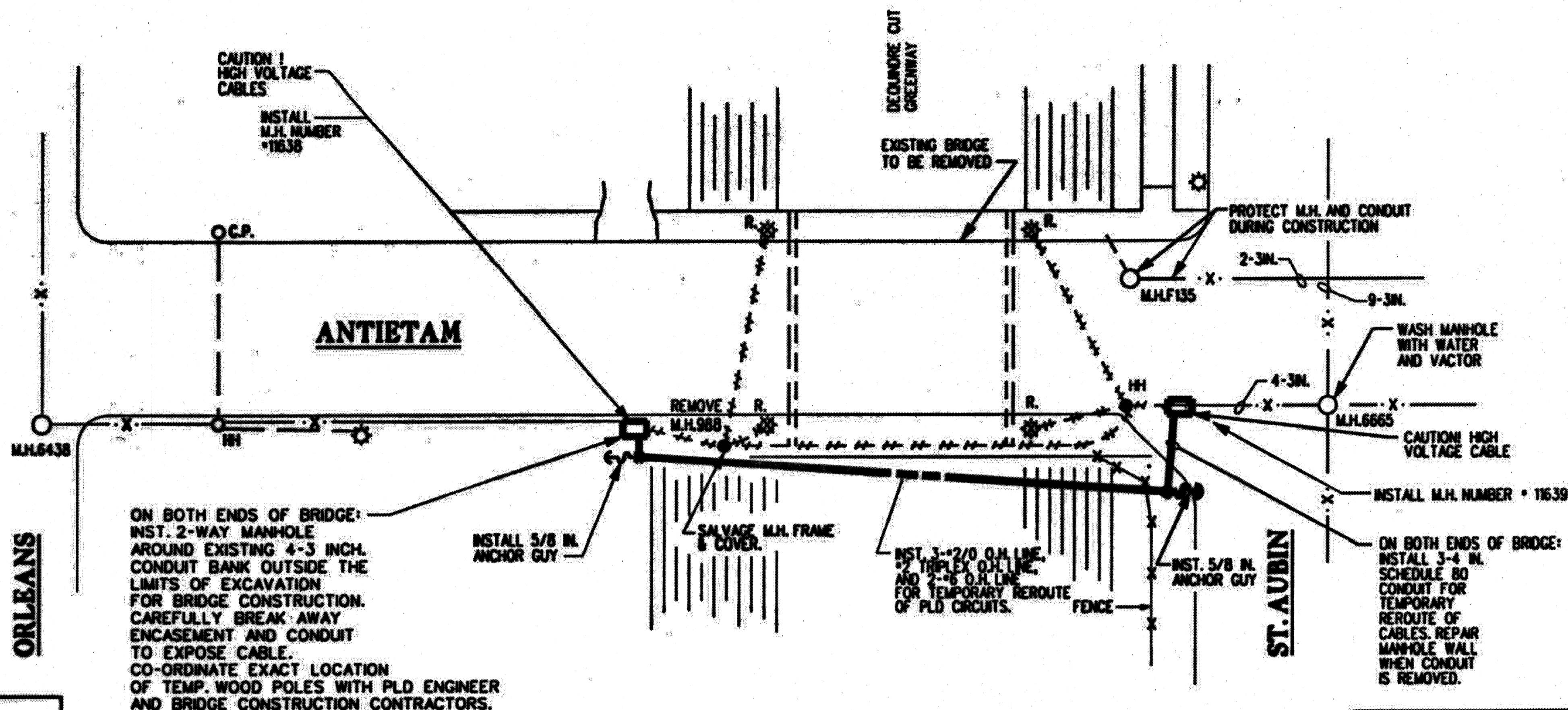
MAPLE 900A

4800 V.



T-39C

CRS 4



**P.L.D. FACILITIES  
REMOVAL & TEMPORARY REROUTE PLAN**

**PLAN LEGEND**

|  |   |
|--|---|
|  | INST. 2-WAY MANHOLE   |
|  | EXISTING P.L.D. CONDUIT BANK  |
|  | INST. HANDHOLE (30 IN. DIA.)  |
|  | REMOVE & SALVAGE O.P. IN USEABLE CONDITION- REMOVE FOUNDATION                           |
|  | REMOVE MANHOLE OR HANDHOLE  |
|  | REMOVE CABLE & DEMOLISH DUCT BANK   |
|  | SET TEMPORARY 45FT. CL2 WOOD POLE FIT UP AS PRIMARY C.P. & SEC. C.P.                    |
|  | INST. 1-3IN. EB20 TC6 CONDUIT   |
|  | INST. ST. LT. FOUNDATION, CODE 009 STANDARD, B.A., WITH 250 S.V. LUMINAIRE AS INDICATED |
|  | INST. TEMPORARY 5/8 IN. ANCHOR GUY  |
|  | INST. TEMPORARY O.H. LINES AS INDICATED   |

**NOTE:**

1. ALL MATERIALS MUST BE APPROVED BY P.L.D. ENGINEERING DIVISION.
2. EXISTING CABLES MAY HAVE ASBESTOS FIREPROOFING.
3. FOLLOW P.L.D. U.G. STANDARDS & SPECIFICATIONS FOR CONSTRUCTION & MATERIALS. SUPPLEMENTAL SHEETS PROVIDING DETAILS ARE ATTACHED.
4. PROPOSED P.L.D. U.G. FACILITIES MUST CLEAR OTHER U.G. UTILITIES OR STRUCTURES BY 1FT. VERTICAL AND 3.5 FT. HORIZONTAL.
5. SEAL THE ENDS OF ALL UNUSED CABLES AFTER PULLING THEM INTO MANHOLES.
6. VERTICAL CONDUIT TRANSITIONS MUST NOT EXCEED 4" IN 8' OF DUCT.
7. INSTALL 3/16" DIAMETER YELLOW POLYPROPYLENE ROPE IN ALL NEW CONDUIT.
8. THESE PLANS DO NOT SHOW UTILITIES NOT OWNED BY P.L.D.
9. PERMANENT AND TEMPORARY DUCT ENTRANCE INTO P.L.D. MANHOLES OR HANDHOLES ARE TO BE SAWCUT.
10. ALL SALVAGED MATERIAL IS TO BE DELIVERED TO P.L.D. BY CONTRACTOR IN USABLE CONDITION.
11. CONTRACTOR SHALL REMOVE CONSTRUCTION DEBRIS FROM P.L.D. STRUCTURES.
12. ALL CABLES ARE TO BE TAGGED WITH P.L.D. STANDARD TAGS PROVIDED BY THE CONTRACTOR. TRAIN AND RACK ALL CABLES. USE SUR-RACK STANCHIONS & CABLE ARMS. USE STAINLESS STEEL HARDWARE. (INCIDENTAL TO "INSTALL CABLE").
13. HANDHOLES ON ST. LTG. STANDARDS ARE TO FACE AWAY FROM ON-COMING TRAFFIC.
14. WHERE TEMPORARY DUCTS ARE REMOVED OR ABANDONED, NEATLY PATCH THE STRUCTURE WALL WITH BRICK OR MORTAR DEPENDENT UPON THE STRUCTURE COMPOSITION.
15. CALL P.L.D. SYSTEMS OPERATOR (313-267-4150) TO DE-ENERGIZE & ENERGIZE CIRCUITS.
16. CALL P.L.D. ENGINEER (313-267-7216) FOR INSPECTION OF CONSTRUCTION BEFORE POURING CONCRETE.
17. IF PROBLEMS OCCUR ON THE CIRCUITS AT THE TEMPORARY REROUTED LOCATIONS, THE CONTRACTOR WILL BE RESPONSIBLE FOR CORRECTION IN A TIMELY MANNER.
18. SERIES STREET LIGHTING CABLE SPLICES ARE LEAD WIPE TYPE.

**CALL MISS DIG**

\* QUANTITIES MAY VARY DUE TO FIELD CONDITIONS.

| INSTALL | PAYMENT ITEMS  |
|---------|--|
| 2 Ea    | 45 Ft. Cl2 Wood Pole (Fit Up as Prim. & Sec. C.P.)     |
| 2 Ea    | Code 009-00 St. Ltg. Standard & Foundation             |
| 2 Ea    | 6 Ft. Clamp-On Bracket Arm ( 36" Rise)                 |
| 2 Ea    | PLD Handhole (30in. Round) W/Frame & Cover             |
| 300 Ft* | Conduit, Encased, EB20 TC6 1-3"                        |
| 200 Ft* | Conduit, Encased, EB20 TC6 6-5"                        |
| 50 Ft*  | Conduit, DB 80, TC2 3-4"                               |
| 200 Ft* | Cable, St. Ltg., 7.5KV, 2-1/C *8 L.C.                  |
| 200 Ft* | Cable, St. Ltg., 2KV, 3-1/C *2 RHH & RHW (Color-Coded) |
| 50 Ft*  | Cable, St. Ltg., 2KV, 2-1/C *2 RHH & RHW (Color-Coded) |
| 100 Ft* | Cable, St. Ltg., 2KV, 1/C *2 RHH & RHW (Color-Coded)   |
| 100 Ft* | Cable, 15KV., 3-1/C *350KCM, U.R.D./P.J.               |
| 200 Ft* | Cable, 7KV., 1-3/C * 350KCM, P.I.L.C.P.J.              |
| 2 Ea    | Luminaire, 250 S.V. Cobra Head                         |
| 2 Ea    | Manhole, 2-Way   |
| 100 Ft* | Cable, 15KV, 2-1/C *2 U.R.D./P.J.                      |
| 200 Ft* | Triplex, *2 O.H. Line                                  |
| 200 Ft* | 3-*2/0 O.H. Line                                       |
| 200 Ft* | 2-*6 O.H. Line Wire                                    |
| 2 Ea    | H.H. (OR M.H.), Remove                                 |
| 4 Ea    | Remove & Salvage O.P., Luminaire, Coil                 |
| 300 Ft* | Remove Cable and Duct Bank                             |
| 2 Ea    | Wood Pole, Remove                                      |
| 6 Ea*   | Remove O.H. Lines Installed for Temp.                  |
| 30 Ea*  | Make Cable Splice                                      |
| 2 Ea*   | Vactor Out Manhole                                     |
| 50 Ft*  | Conduit Repair   |
| 4 Ea    | Remove Foundation                                      |
| 1 Ea*   | Trim Tree  |

F.W.O. 934614, 41, 42, 44, 45, 51, 52, 53, 54, 57B, 58

**RECONSTRUCTION OF ANTIETAM BRIDGE  
OVER DEQUINDRE CUT GREENWAY**

DRAWING NOT TO SCALE

DRAWN BY  
C.L.W.B.  
CHECKED BY  
B.W.  
APPROVED BY  
M.L.



**PUBLIC LIGHTING  
DEPARTMENT  
CITY OF DETROIT**

FILE NO  
27-1122  
SHEET NO  
26  
DATE

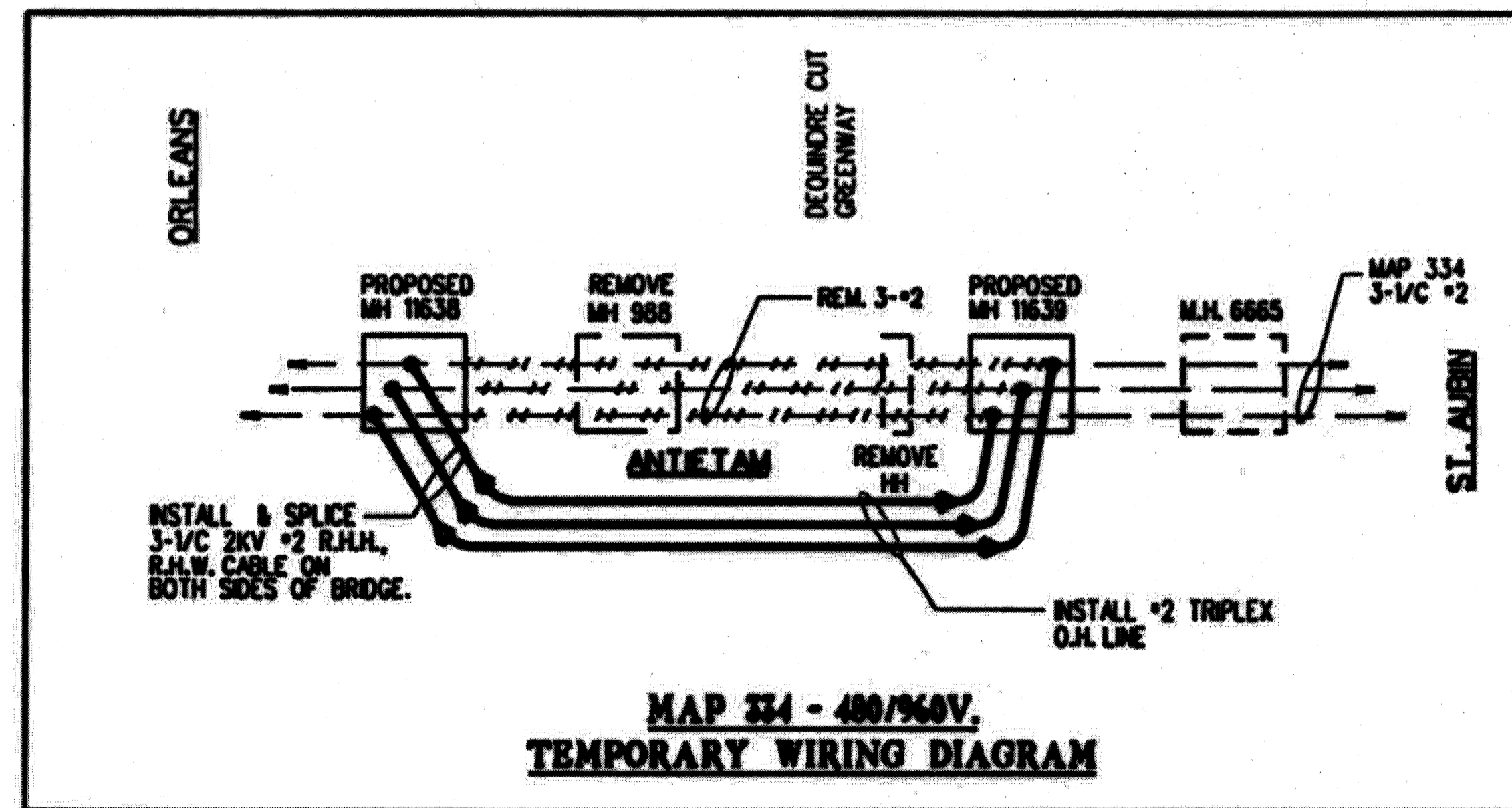
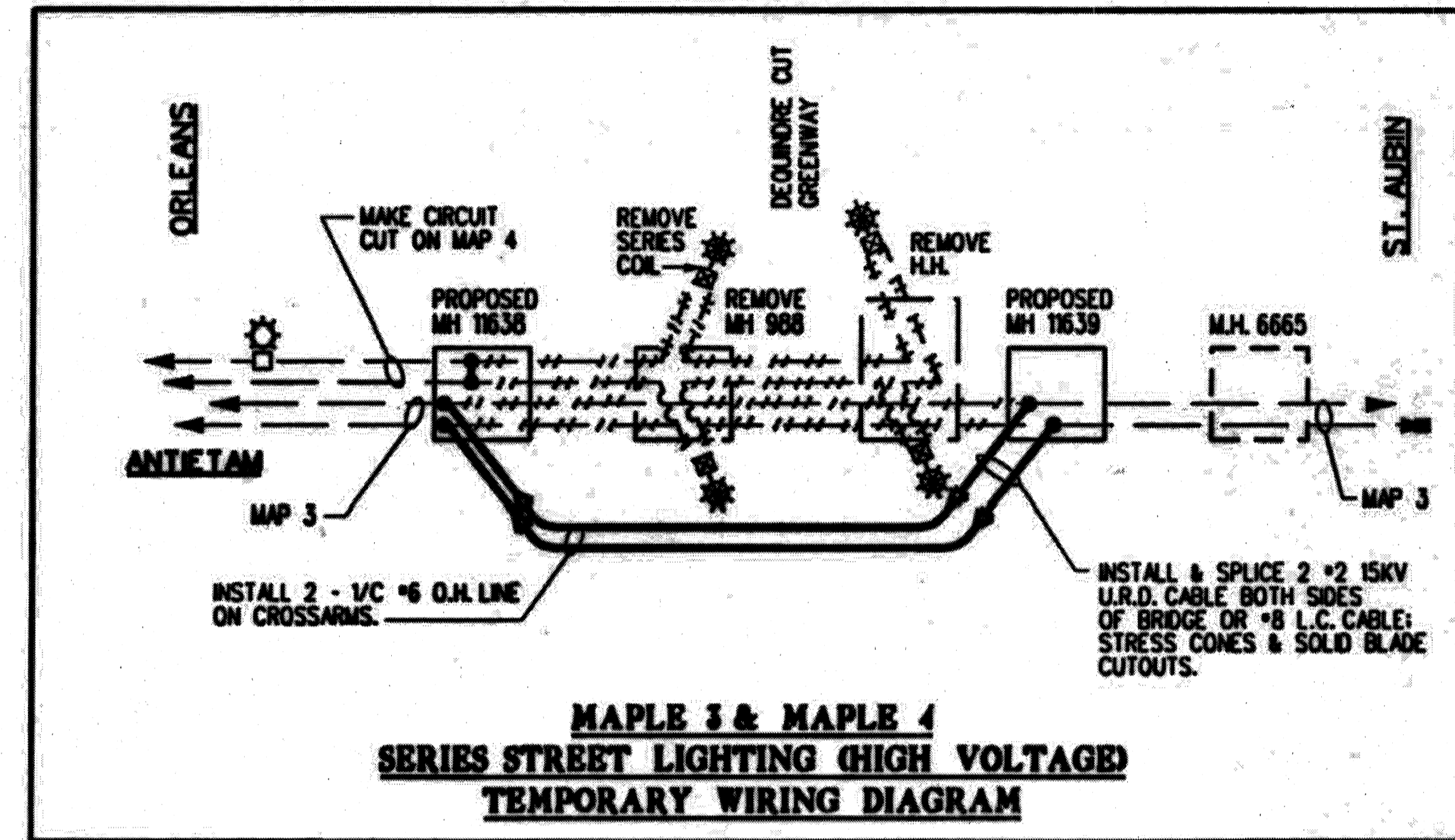
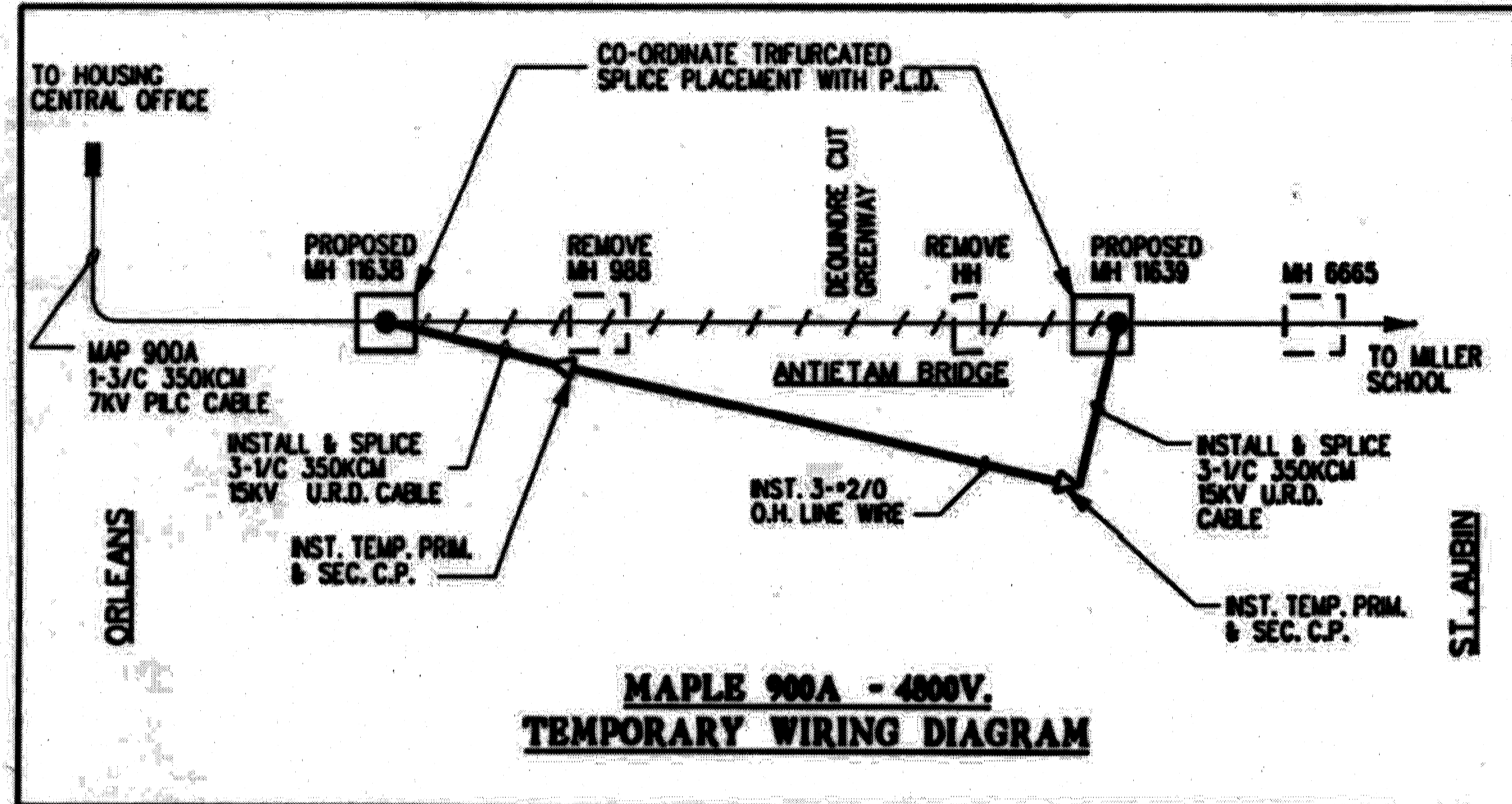
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| 12-20-06 | SHEET NOS., QUANTITIES AS INDICATED |            |
| 2-13-07  | SHEET NOS., PAYMENT ITEMS           |            |
|          |                                     |            |
|          |                                     |            |

MAPLE 900A

4800 V.

T-39C

CRS 4



CALL MISS DIG

F.W.O. 9346.14. 41. 42. 44. 45. 51. 52. 53. 54. 57B. 58

| DATE     | DESCRIPTION              | CHECKED BY |
|----------|--------------------------|------------|
| 10-30-06 | REVISED MISC. NOTES      |            |
| 2-13-07  | SHEET NOS. PAYMENT ITEMS |            |
|          |                          |            |
|          |                          |            |
|          |                          |            |

**RECONSTRUCTION OF ANTIETAM BRIDGE  
OVER DEQUINDRE CUT GREENWAY**  
DRAWING NOT TO SCALE

DRAWN BY  
G.LEWB  
CHECKED BY  
D.W.  
APPROVED BY  
M.L.



**PUBLIC LIGHTING  
DEPARTMENT  
CITY OF DETROIT**

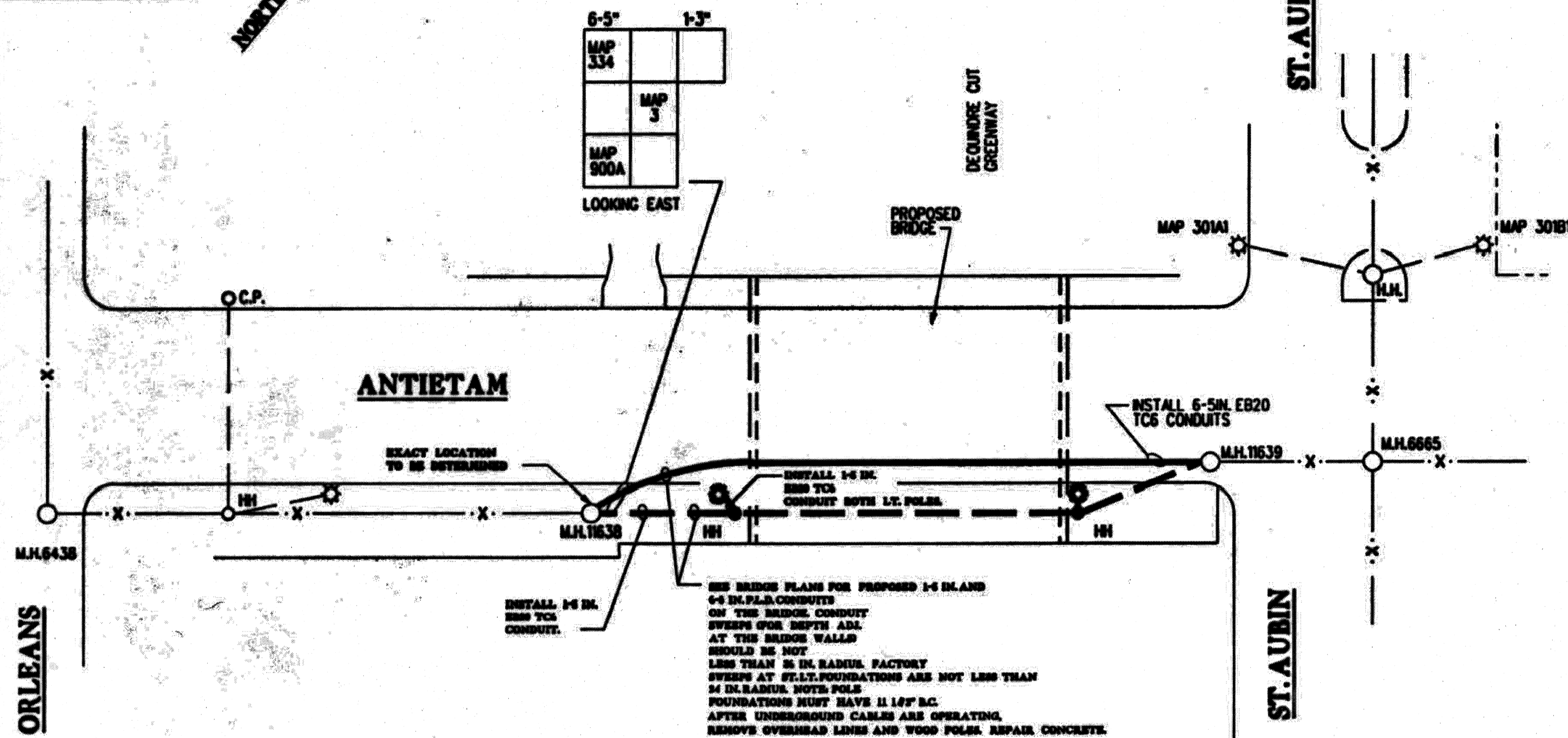
FILE NO  
27-1122  
SHEET NO  
27  
DATE

MAPLE 900A

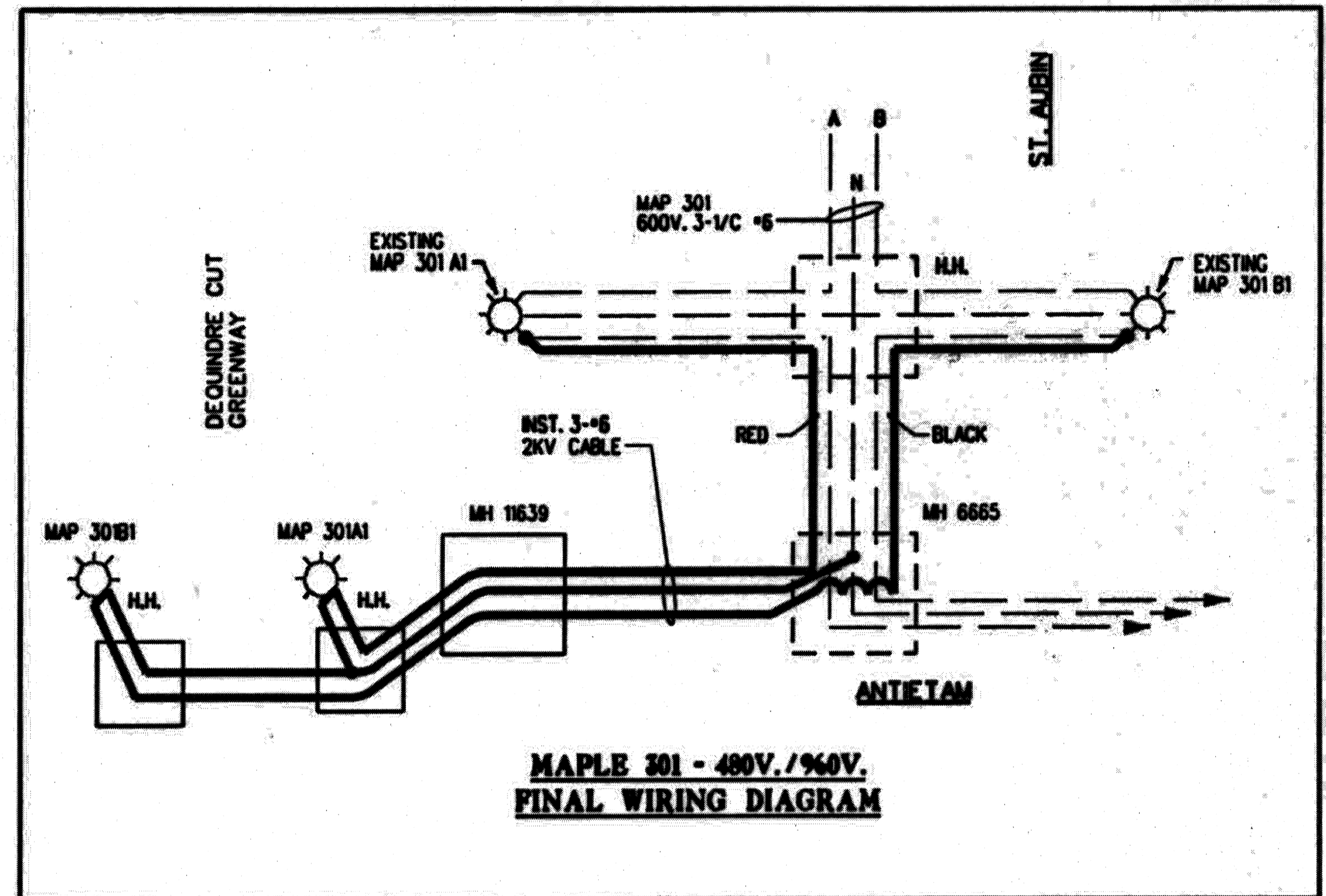
4800 V.

T-39C

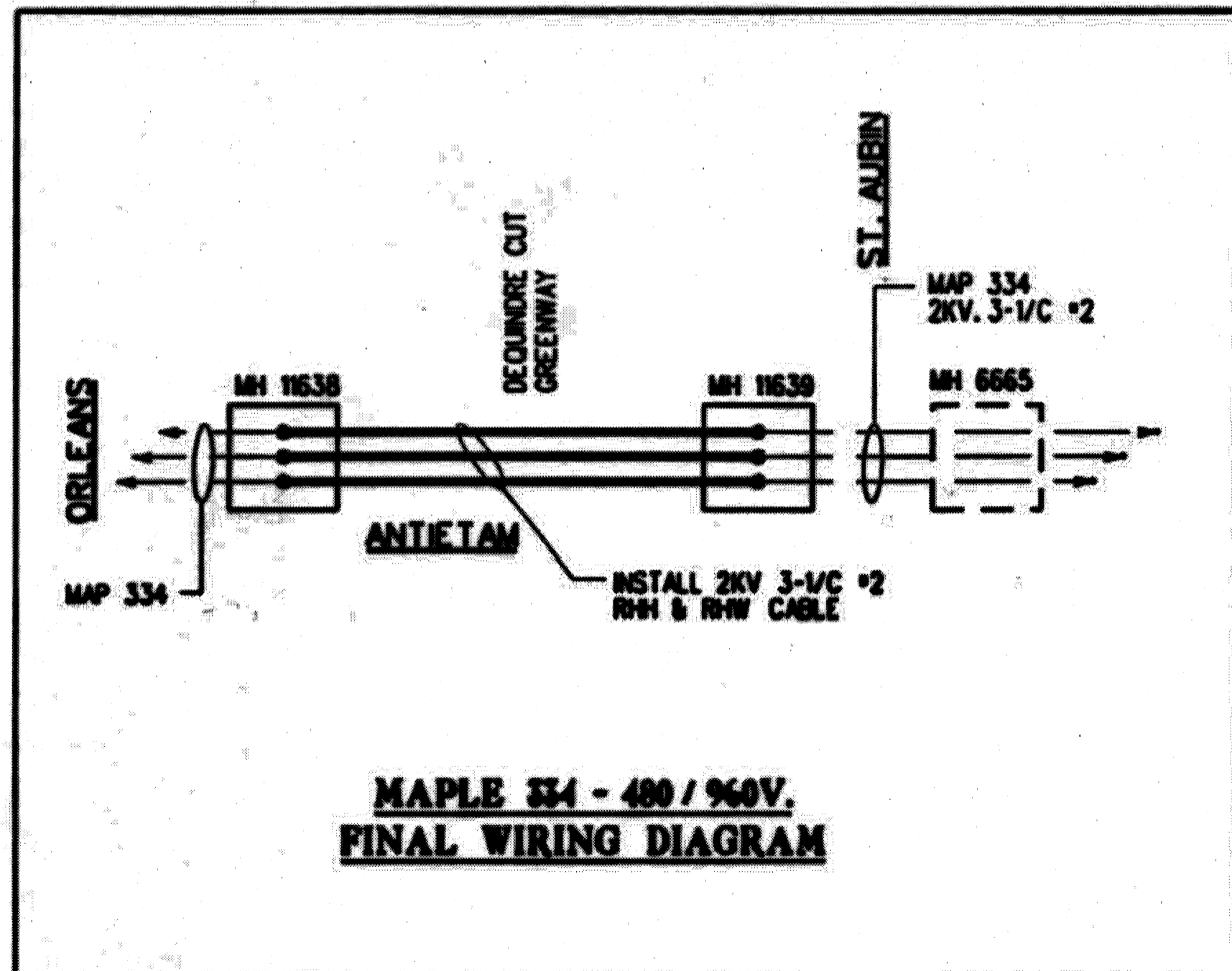
CRS 4



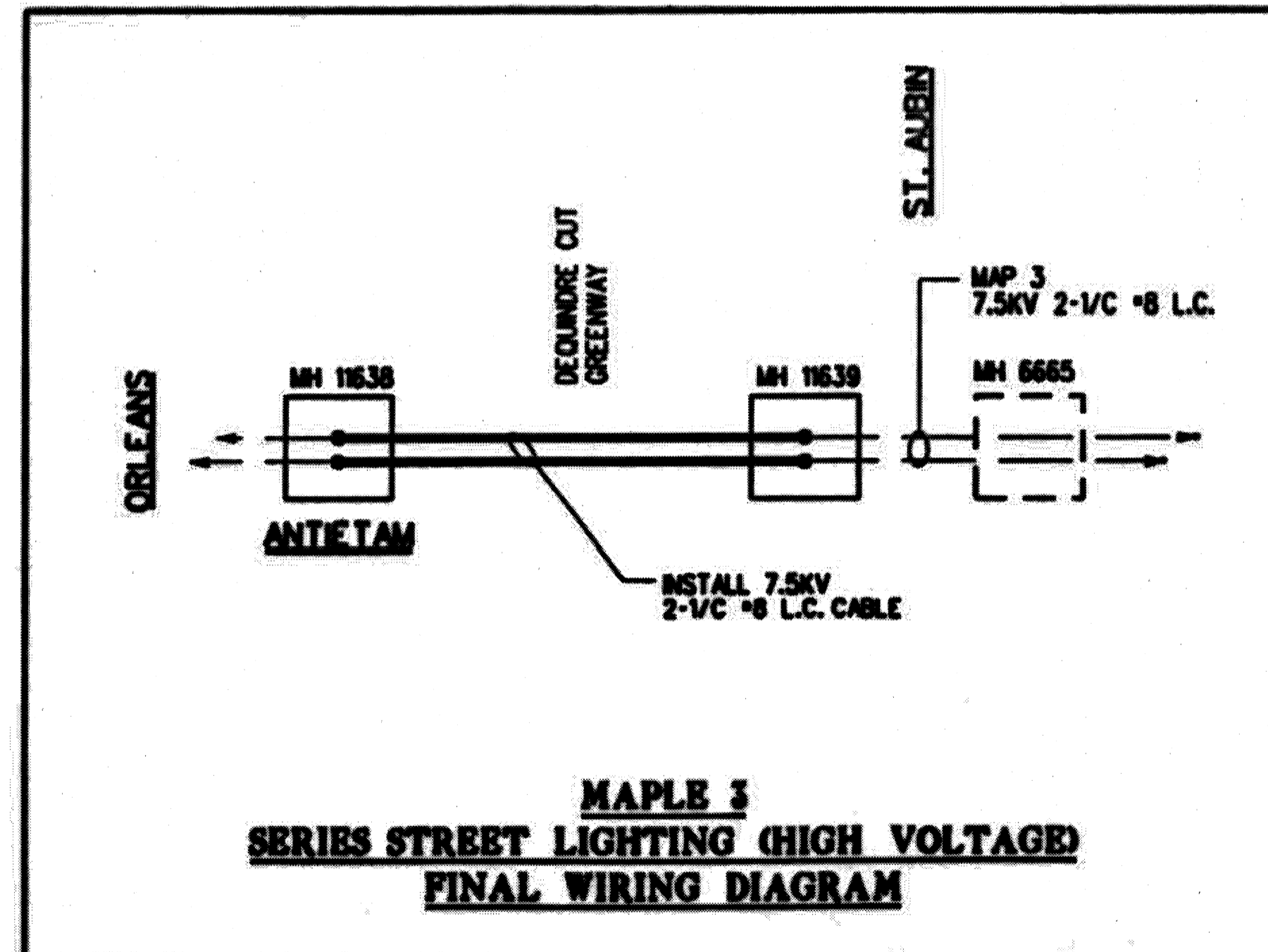
**P.L.D. FACILITIES  
PROPOSED FINAL PLAN**



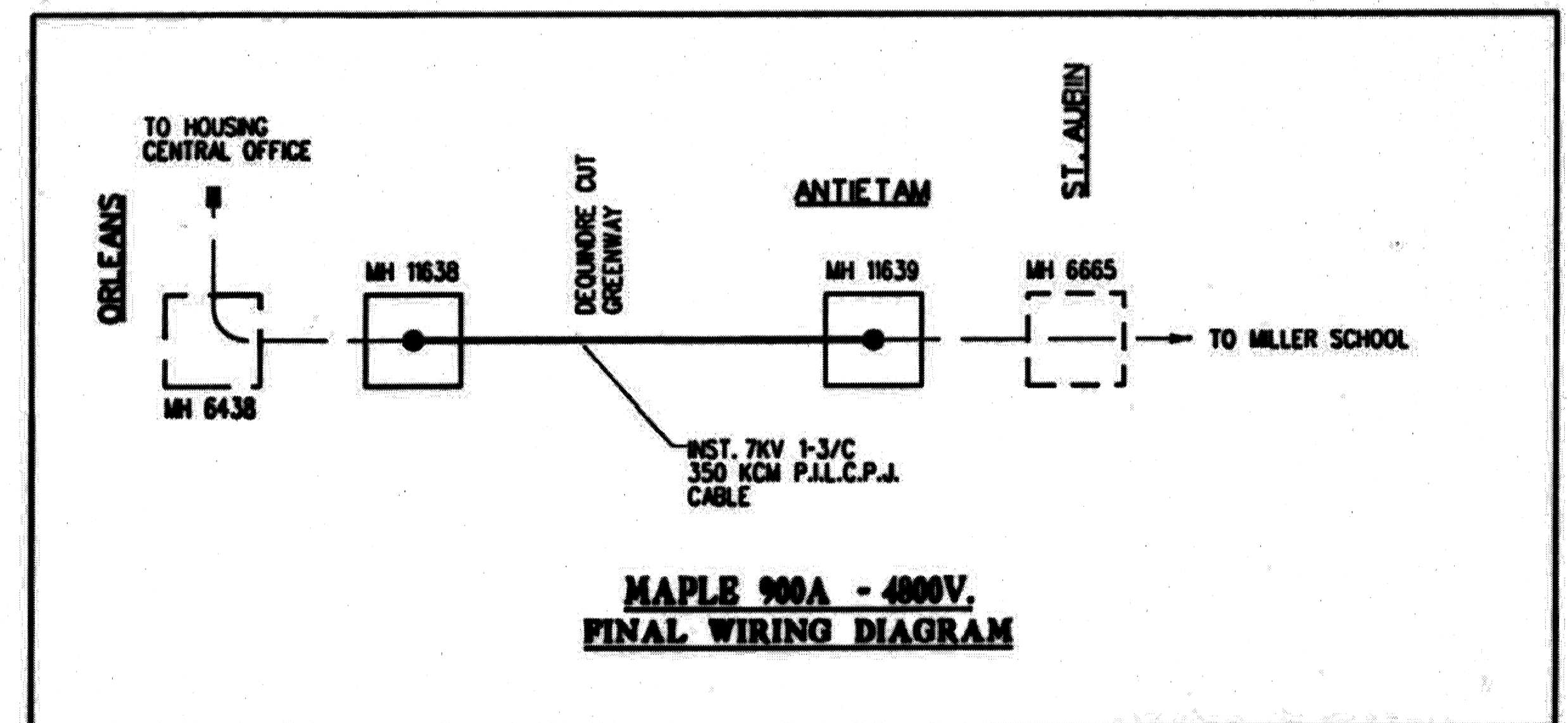
**MAPLE 301 - 480V./960V.  
FINAL WIRING DIAGRAM**



**MAPLE 334 - 480 / 960V.  
FINAL WIRING DIAGRAM**



**MAPLE 3  
SERIES STREET LIGHTING (HIGH VOLTAGE)  
FINAL WIRING DIAGRAM**



**MAPLE 900A - 4800V.  
FINAL WIRING DIAGRAM**

**CALL MISS DIG**

F.W.O. 9346.14, 41, 42, 44, 45, 51, 52, 53, 54, 57B, 58

**RECONSTRUCTION OF ANTIETAM BRIDGE  
OVER DEQUINDRE CUT GREENWAY**  
DRAWING NOT TO SCALE

DRAWN BY  
G.L.W.B.  
CHECKED BY  
D.W.  
APPROVED BY  
M.L.

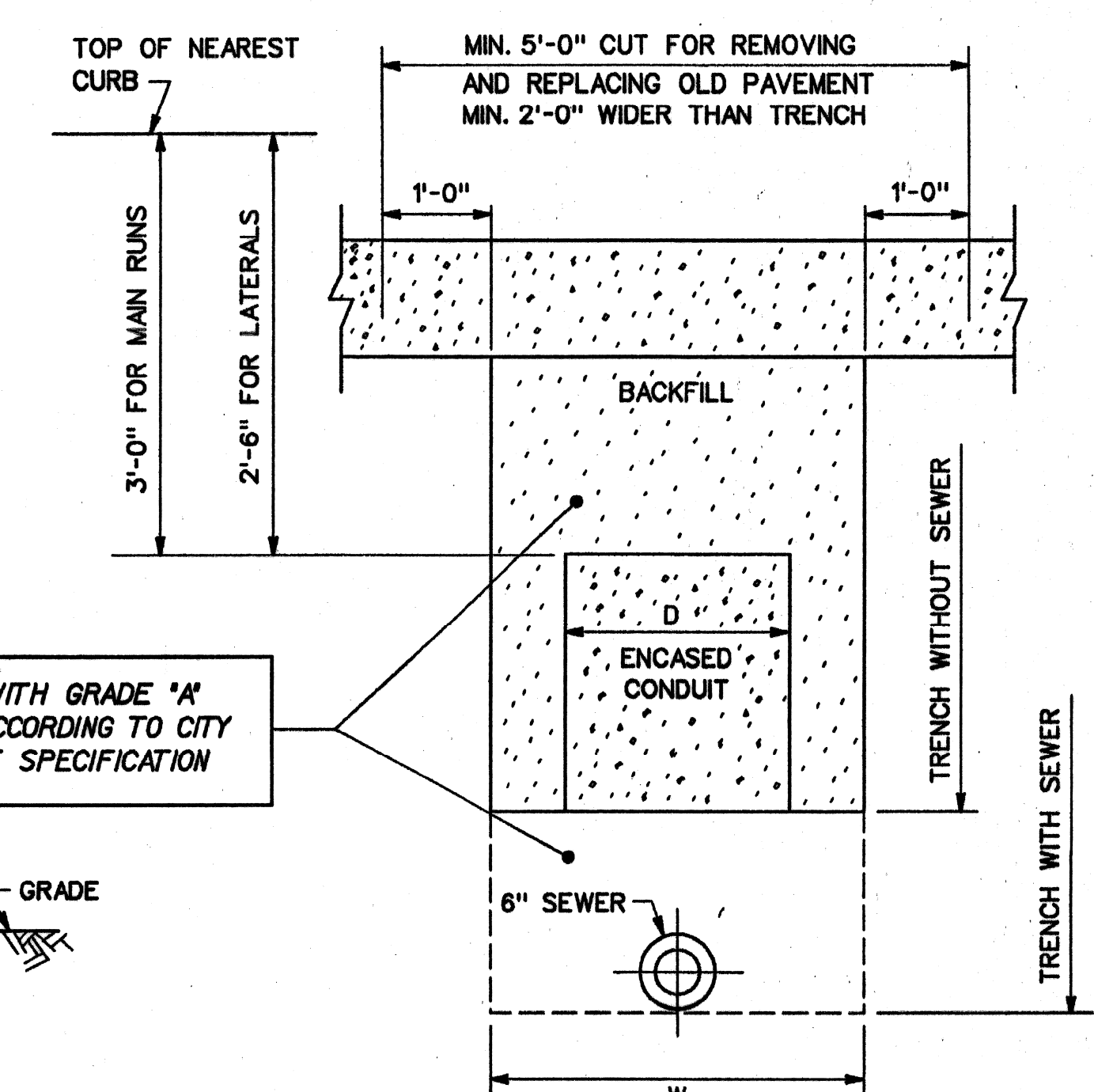
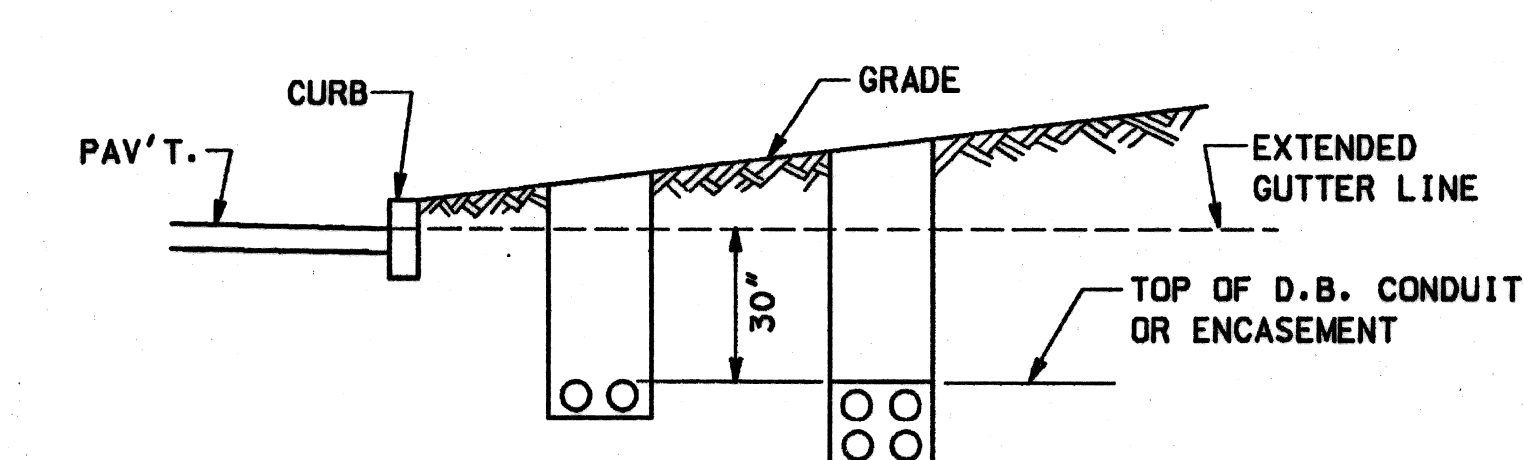
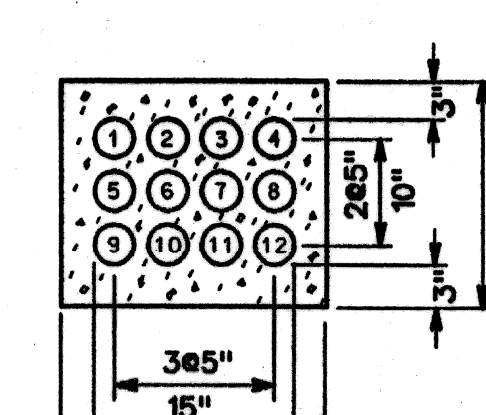
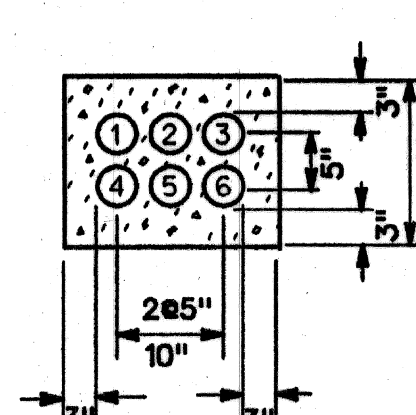
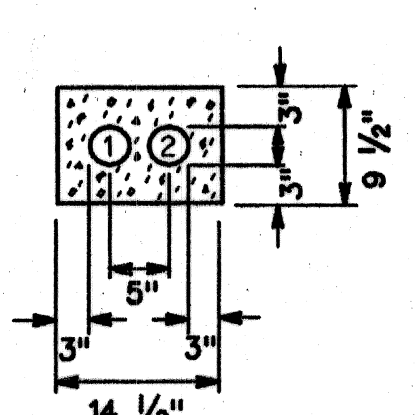
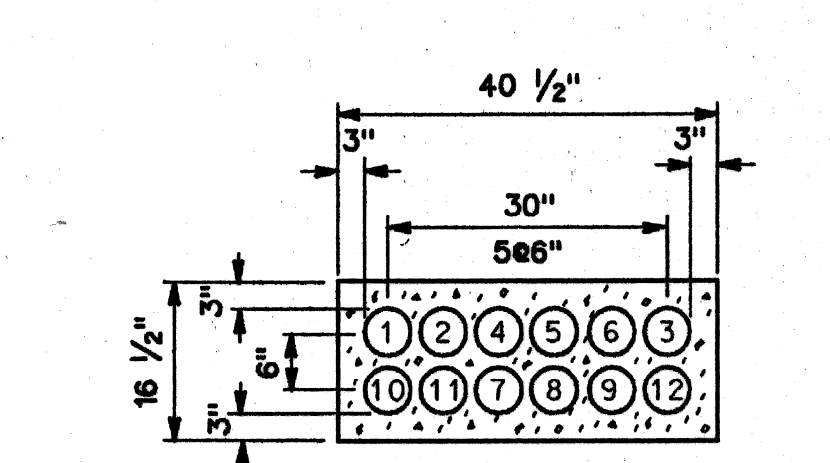
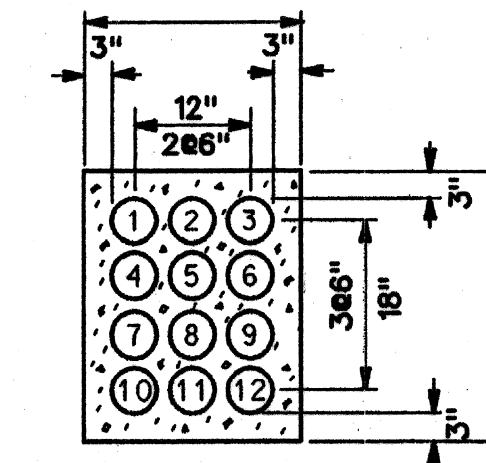
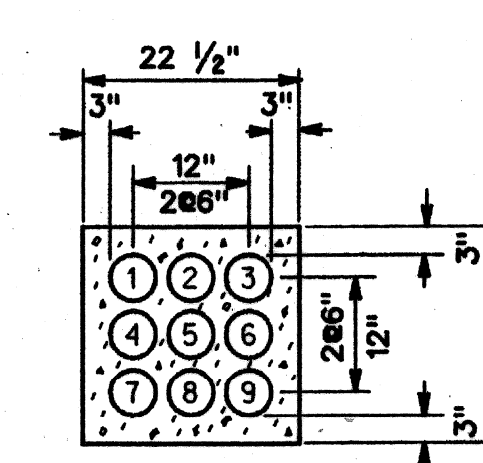
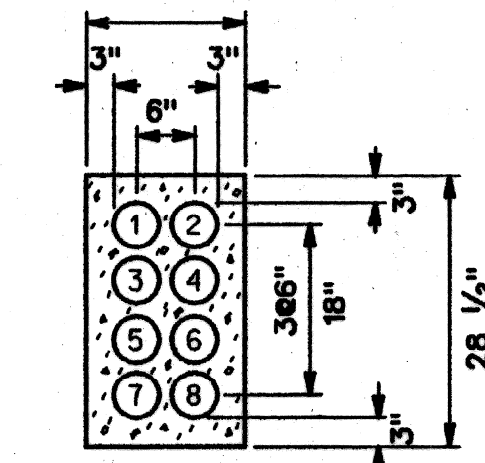
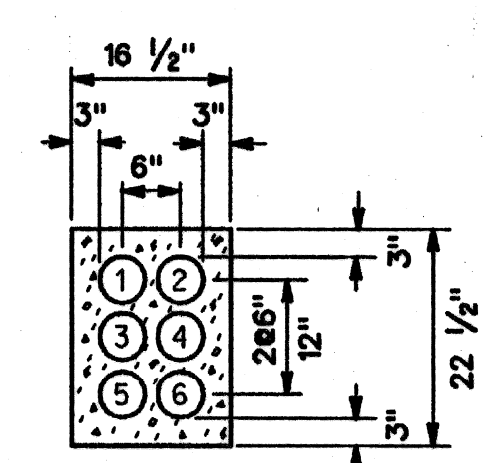
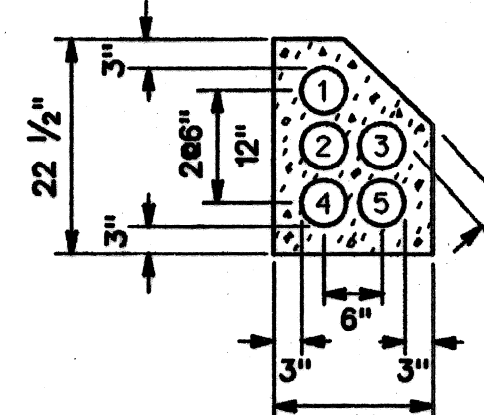
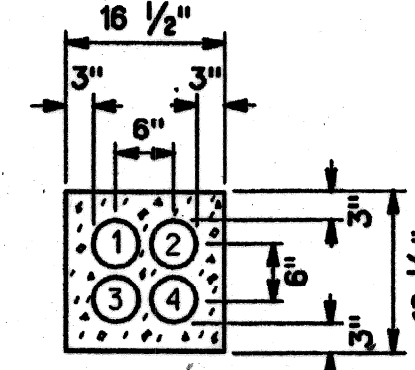
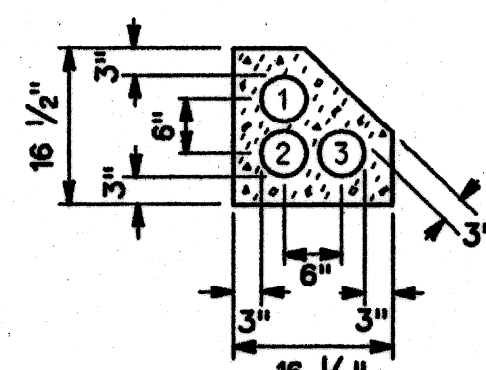
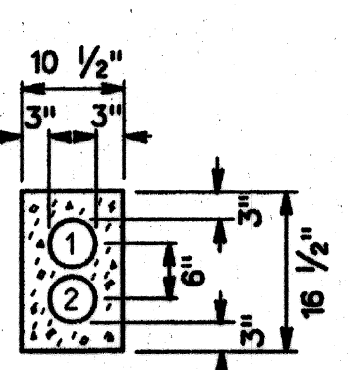
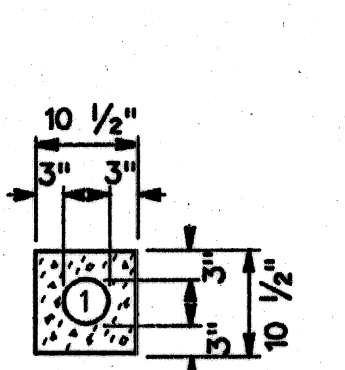
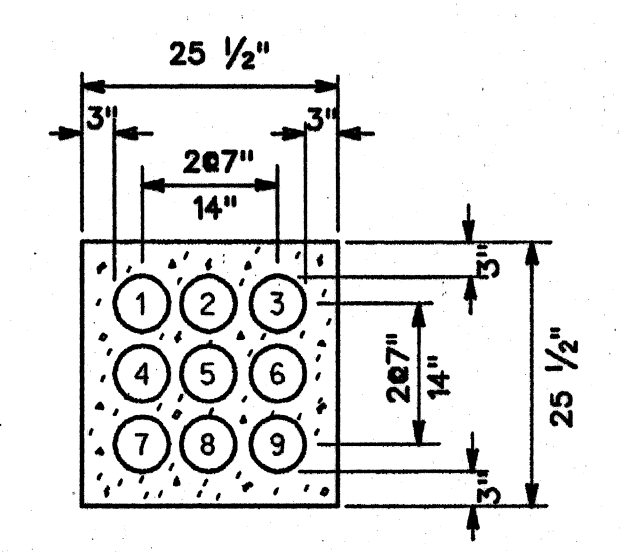
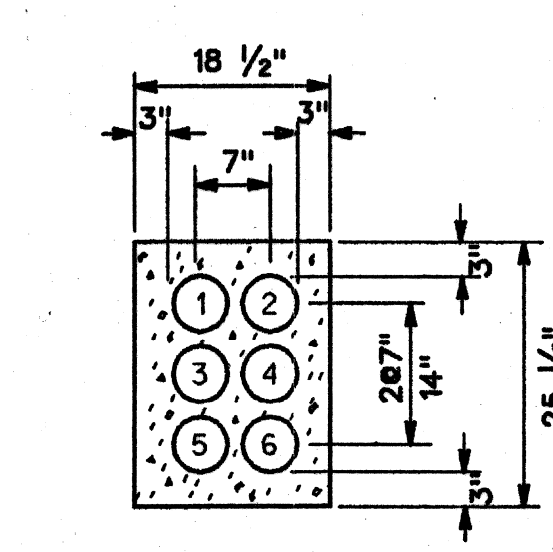
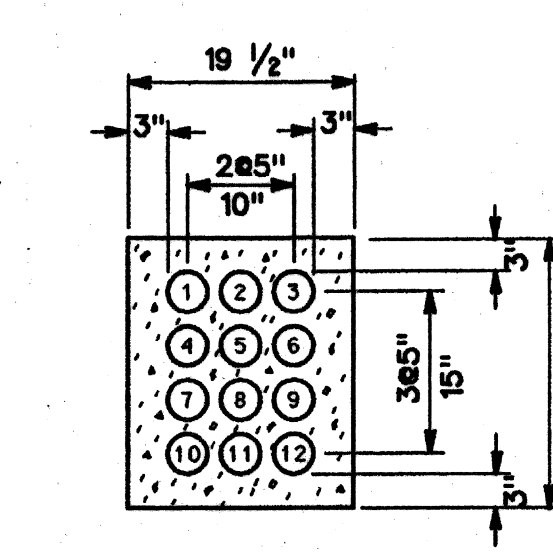
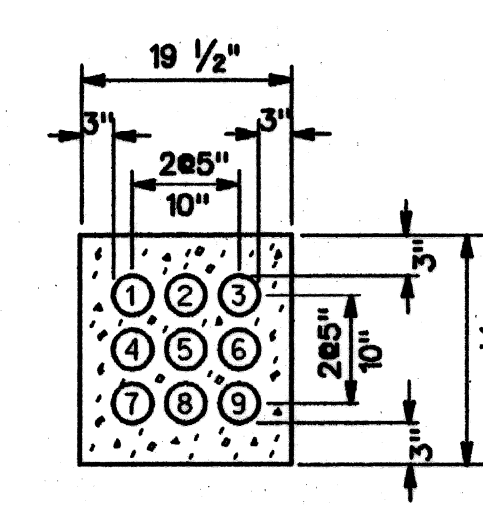
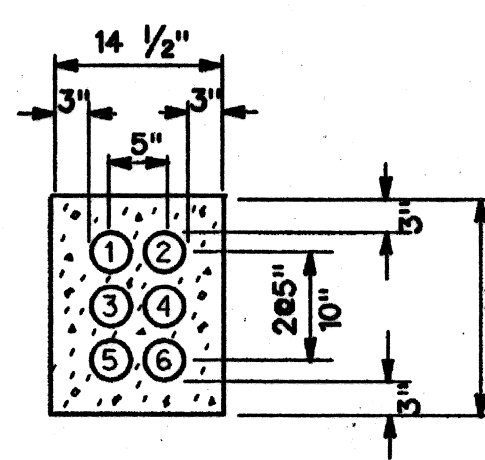
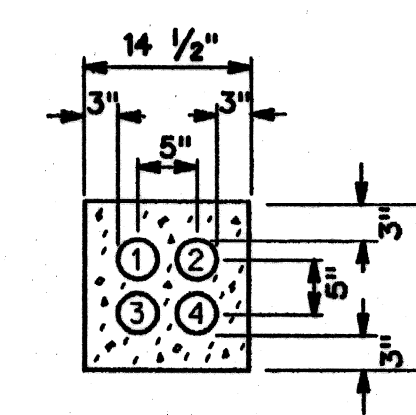
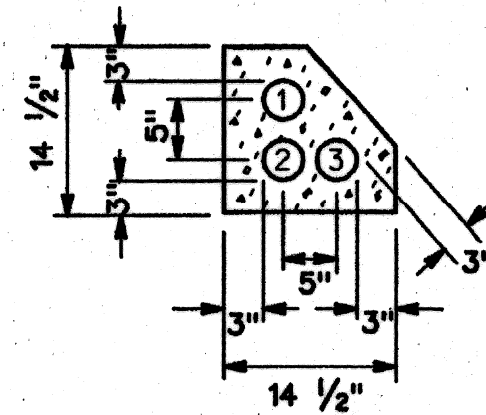
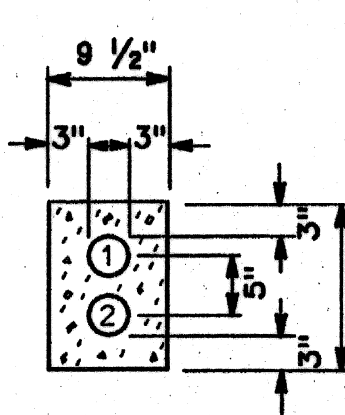
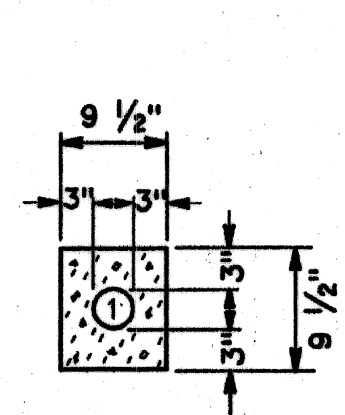
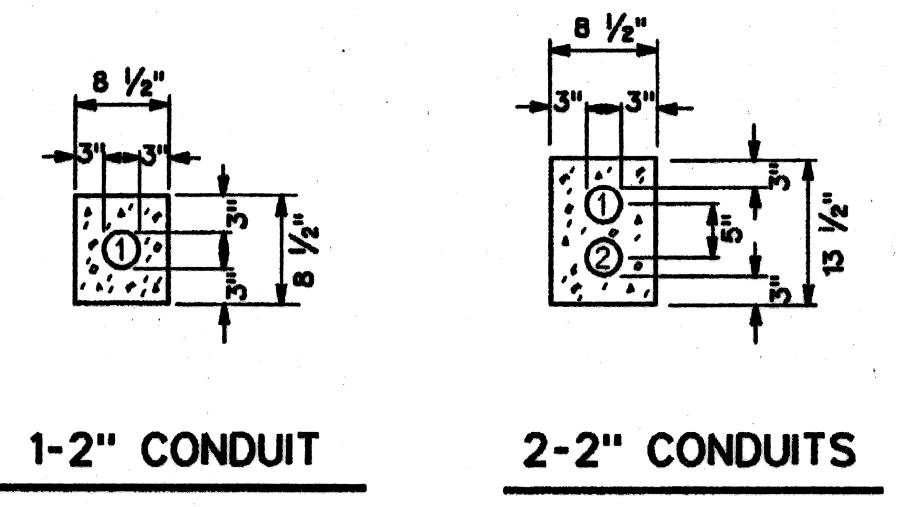


**PUBLIC LIGHTING  
DEPARTMENT  
CITY OF DETROIT**

FILE NO  
27-1122  
SHEET NO  
28  
DATE

| DATE    | DESCRIPTION               | CHECKED BY |
|---------|---------------------------|------------|
| 10-6-06 | REVISED MISC. NOTES       |            |
| 2-13-07 | SHEET NOS., PAYMENT ITEMS |            |
|         |                           |            |
|         |                           |            |
|         |                           |            |





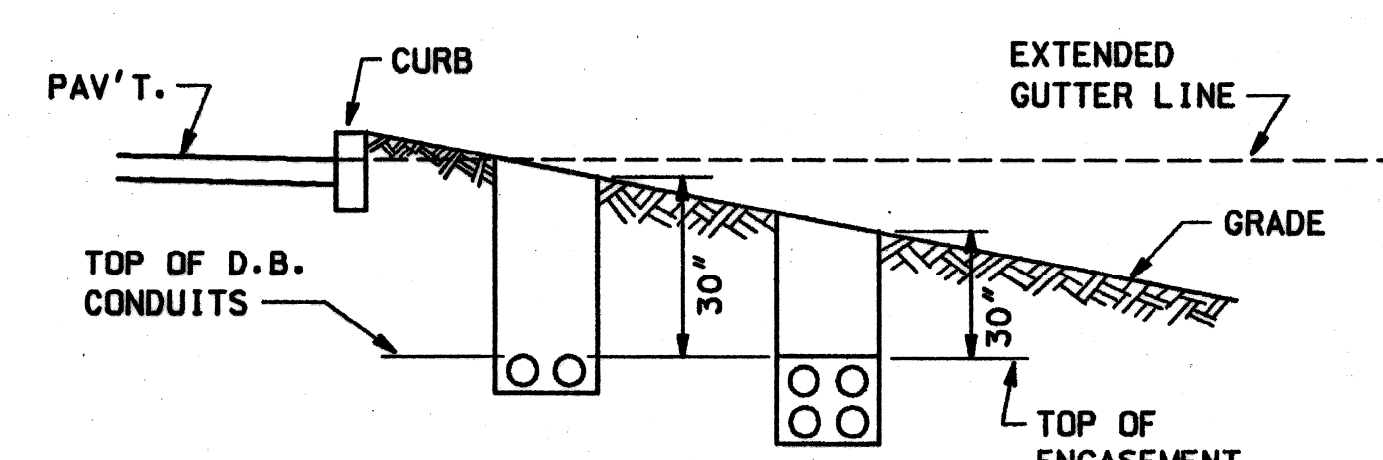
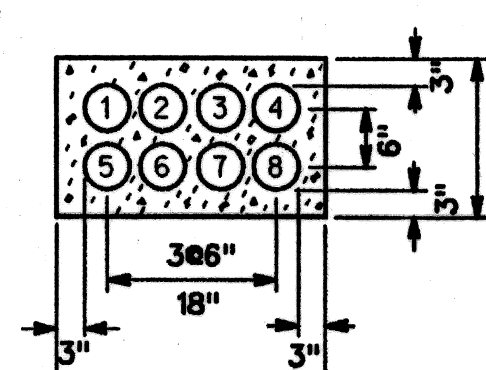
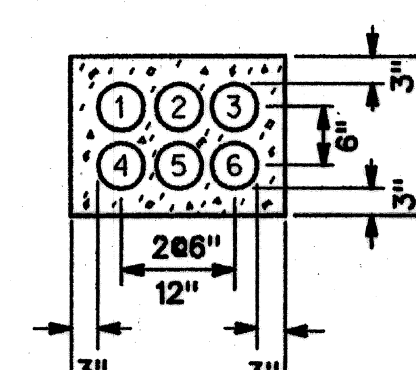
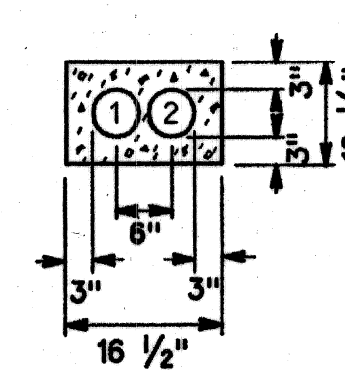
2-3" CONDUITS

6-3" CONDUITS

12-3" CONDUITS

ALTERNATE ARRANGEMENT OF 3" CONDUIT

(TO SUIT FIELD CONDITIONS)  
(TO BE APPROVED BY THE ENGINEER)



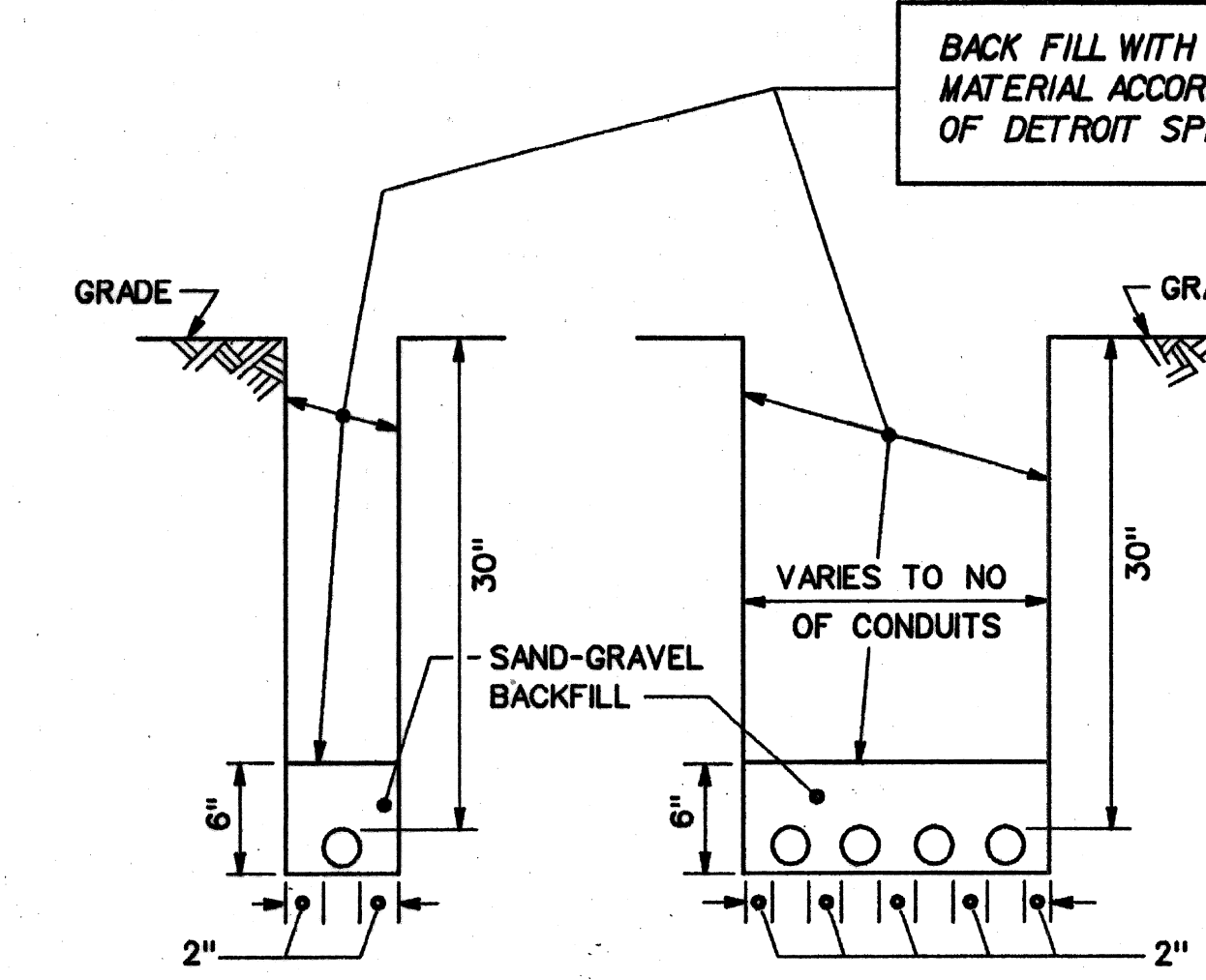
2-4" CONDUITS

6-4" CONDUITS

8-4" CONDUITS

ALTERNATE ARRANGEMENT OF 4" CONDUIT

(TO SUIT FIELD CONDITIONS)  
(TO BE APPROVED BY THE ENGINEER)



NOTE:  
THE PREFERRED TRENCH WIDTH "W" IS THE WIDTH OF "D" OF CONDUIT ENCASUREMENT.

DISK FILE: PLD 101

10-01-96 101

| REV. | Date | Description | Chkd. by |
|------|------|-------------|----------|
|      |      |             |          |
|      |      |             |          |
|      |      |             |          |
|      |      |             |          |

ENCASED CONDUIT

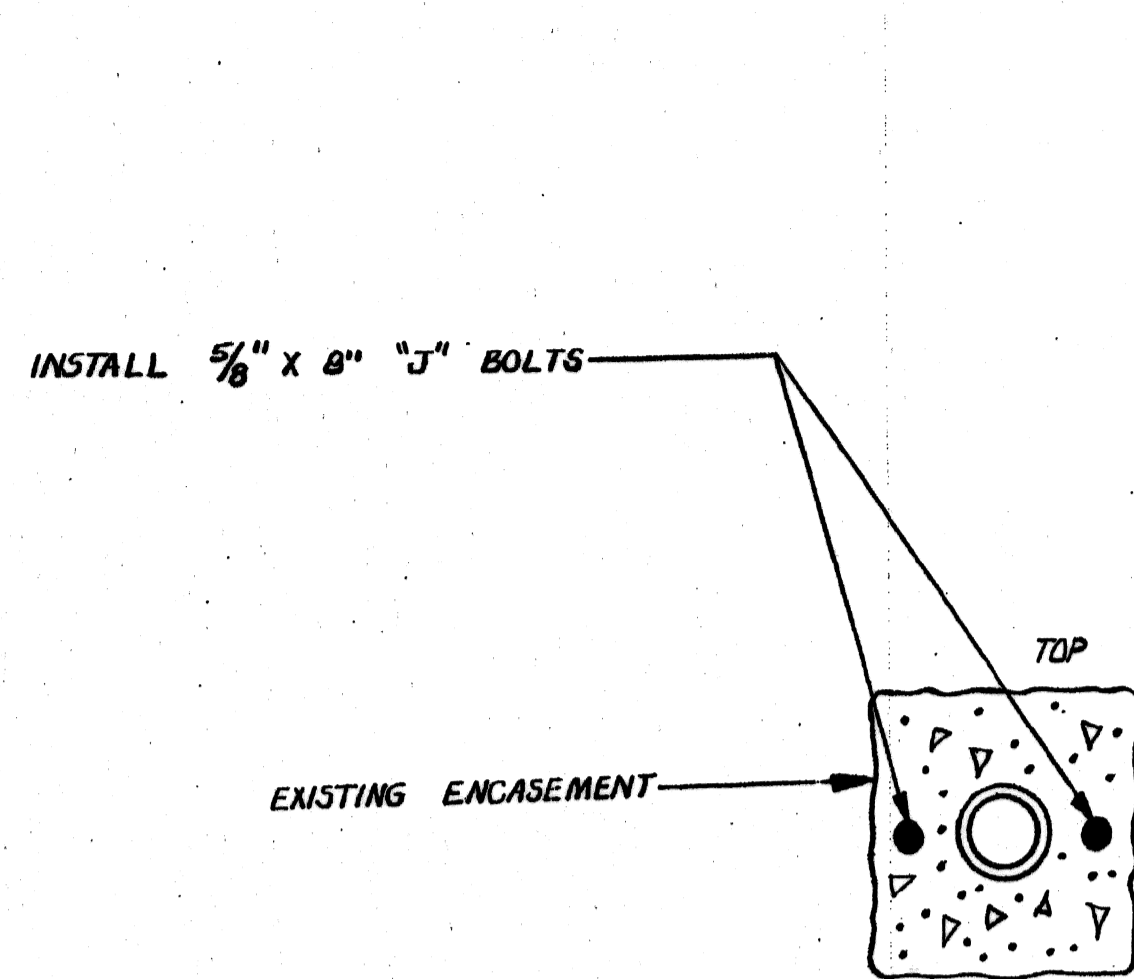
Drawn CEA  
Checked  
Approved  
Date

Consulting Engineering Associates, Inc.  
16580 WYOMING AVE. DETROIT MICHIGAN 48221  
TELEPHONE: (313) 341-9797 FAX: 341-0205

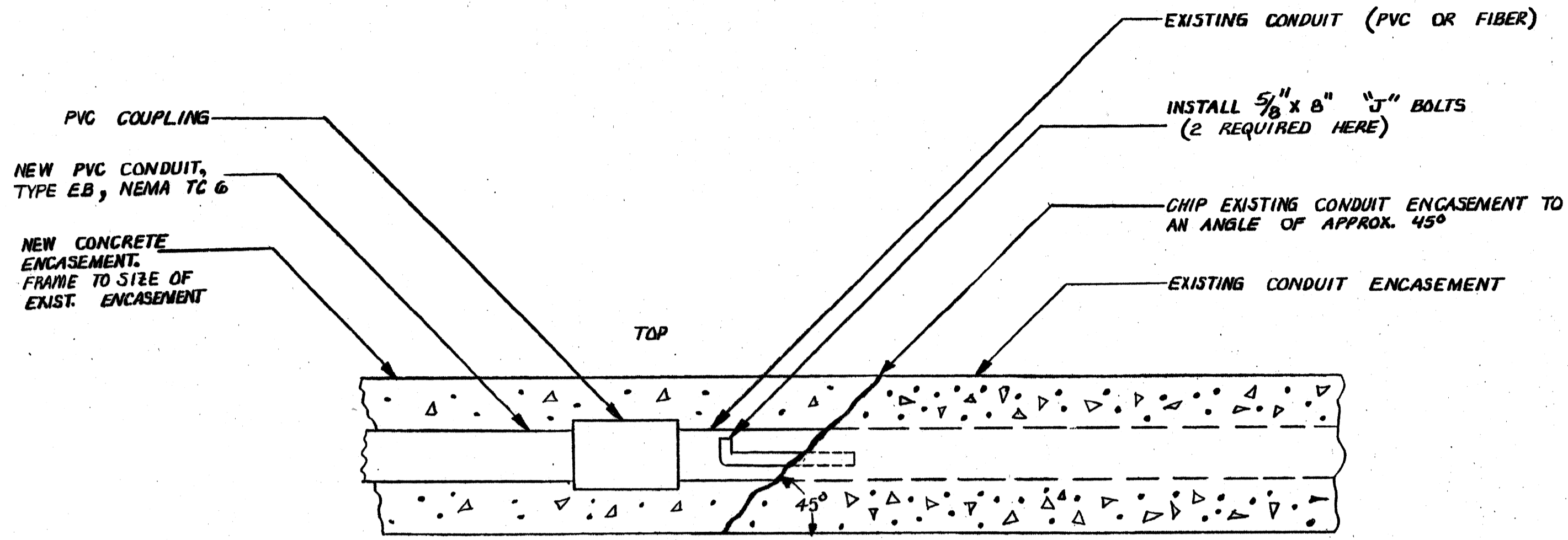
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File No.

PUBLIC LIGHTING DEPARTMENT  
CITY OF DETROIT

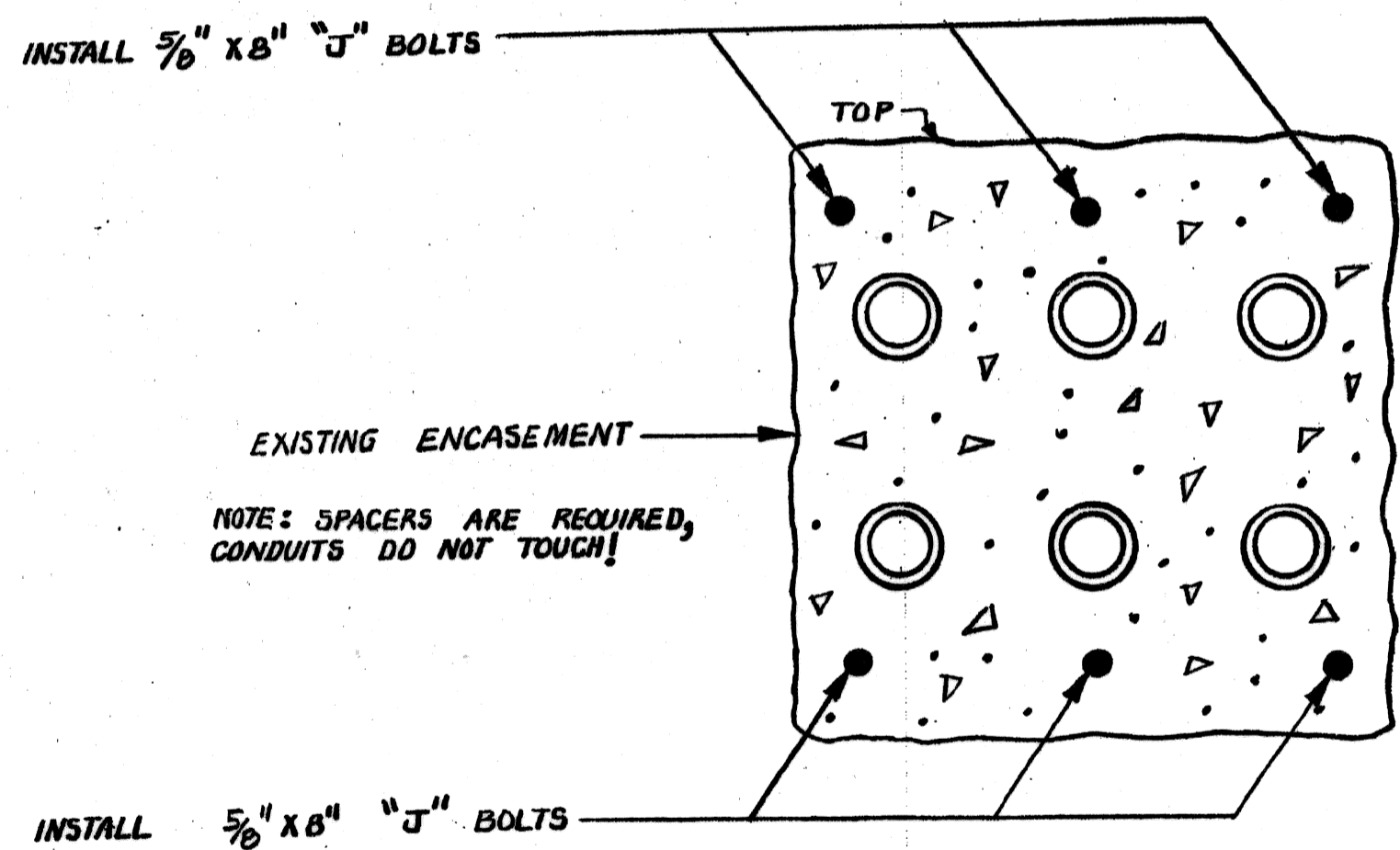
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Sheet No. 30 of 48  
Date



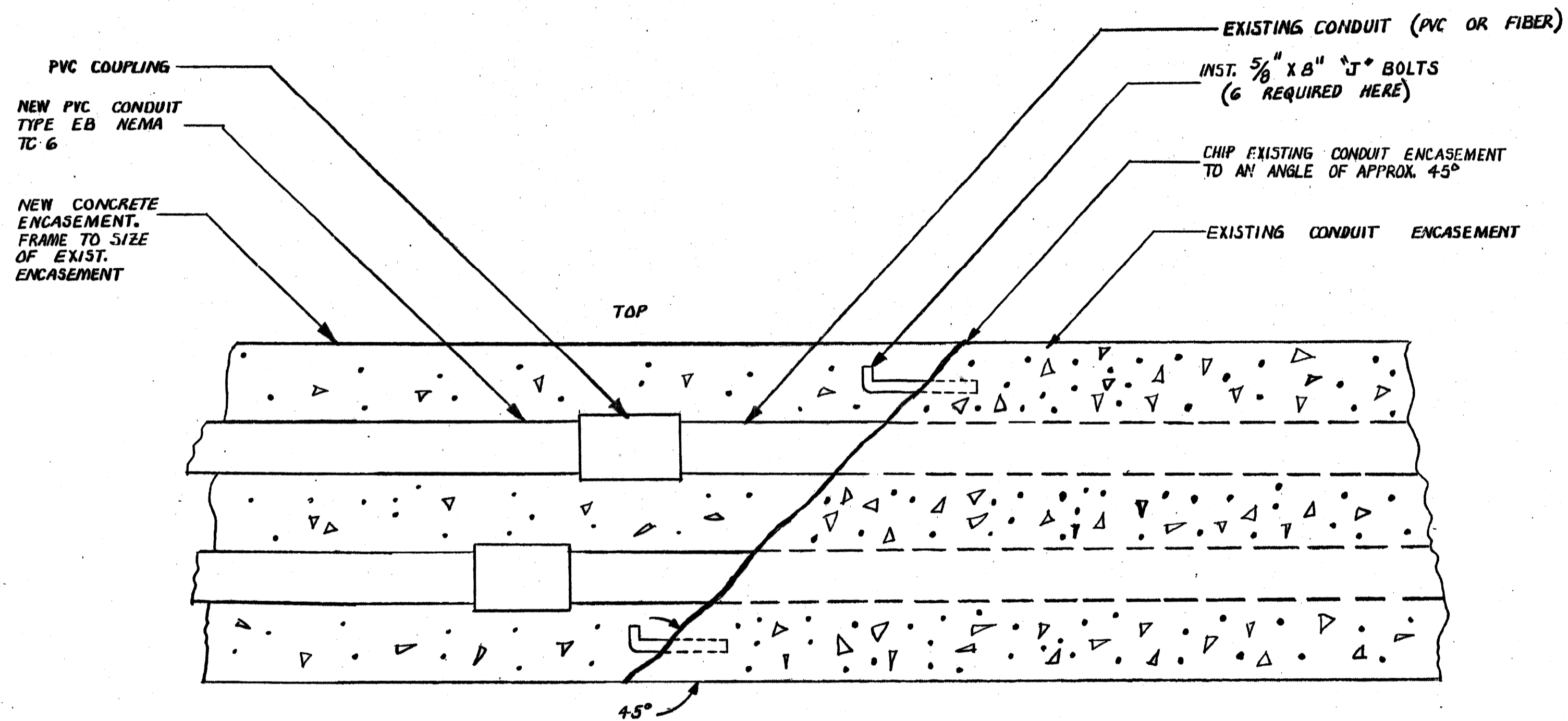
**DETAIL A**  
(N.T.S.)  
END VIEW OF CONDUIT ENCASUREMENT  
SHOWING APPROX. LOCATION OF "J" BOLTS



**DETAIL A**  
(N.T.S.)  
SIDE VIEW OF A SINGLE CONDUIT ENCASUREMENT



**DETAIL B**  
(N.T.S.)  
END VIEW OF CONDUIT ENCASUREMENT  
SHOWING APPROX. LOCATION OF "J" BOLTS  
(6 REQUIRED)



**DETAIL B**  
(N.T.S.)  
SIDE VIEW OF A MULTIPLE CONDUIT ENCASUREMENT

NOTE: TO TERMINATE A NEW CONDUIT BANK FOR FUTURE EXTENSION, REFERENCE P.L.D. DRAWING #44-0308

| DATE | DESCRIPTION | CHKD BY |
|------|-------------|---------|
|      |             |         |
|      |             |         |
|      |             |         |
|      |             |         |
|      |             |         |

**DETAIL FOR JOINING CONDUIT ENCASEMENTS**

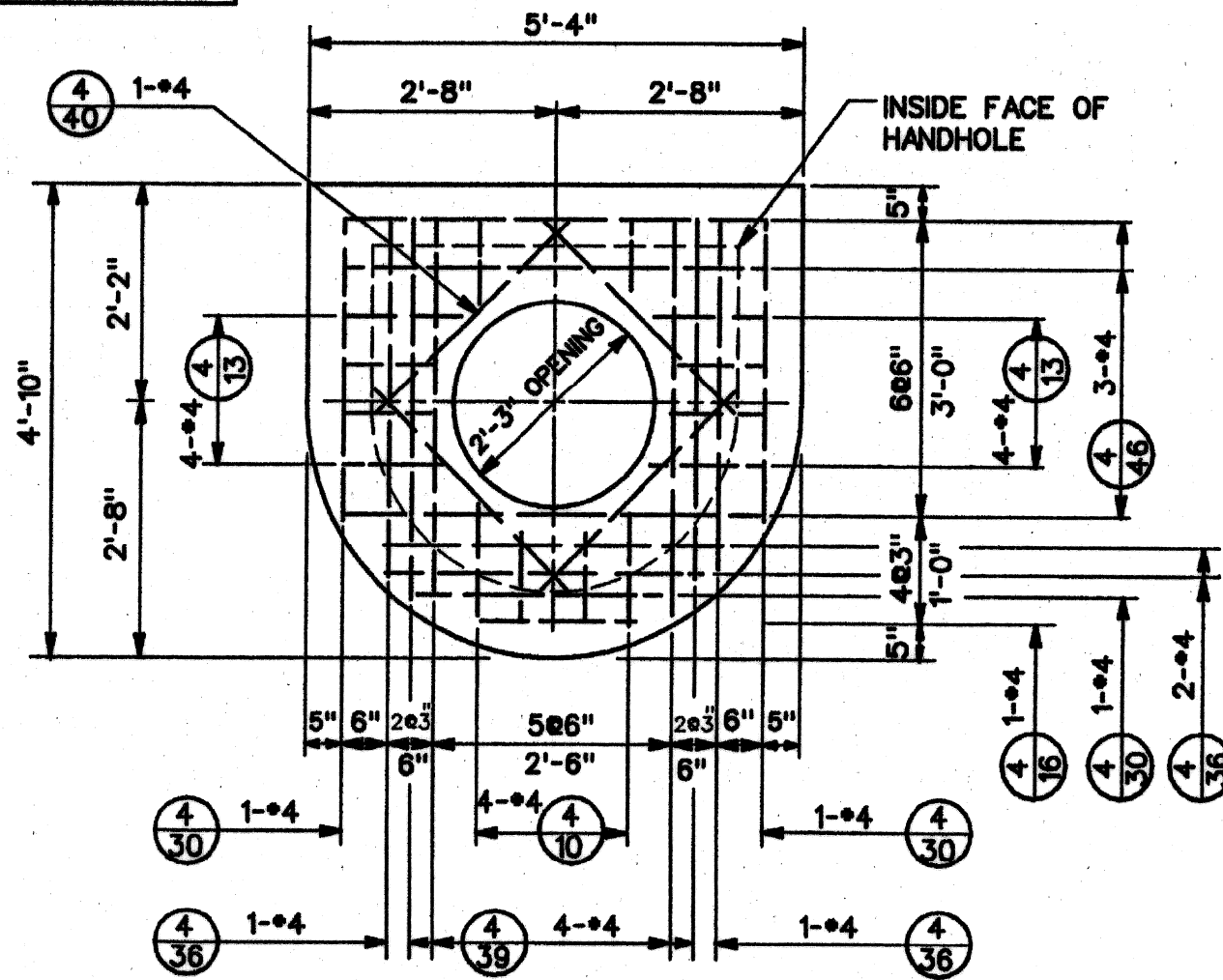
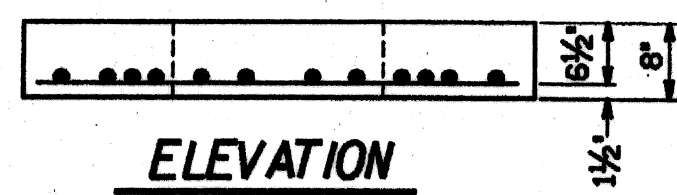
DRAWN BY  
**M. LASKOWSKI**  
CHECKED BY  
**M.L.**  
APPROVED BY  
**M.L.**

**PUBLIC LIGHTING  
COMMISSION  
CITY OF DETROIT**

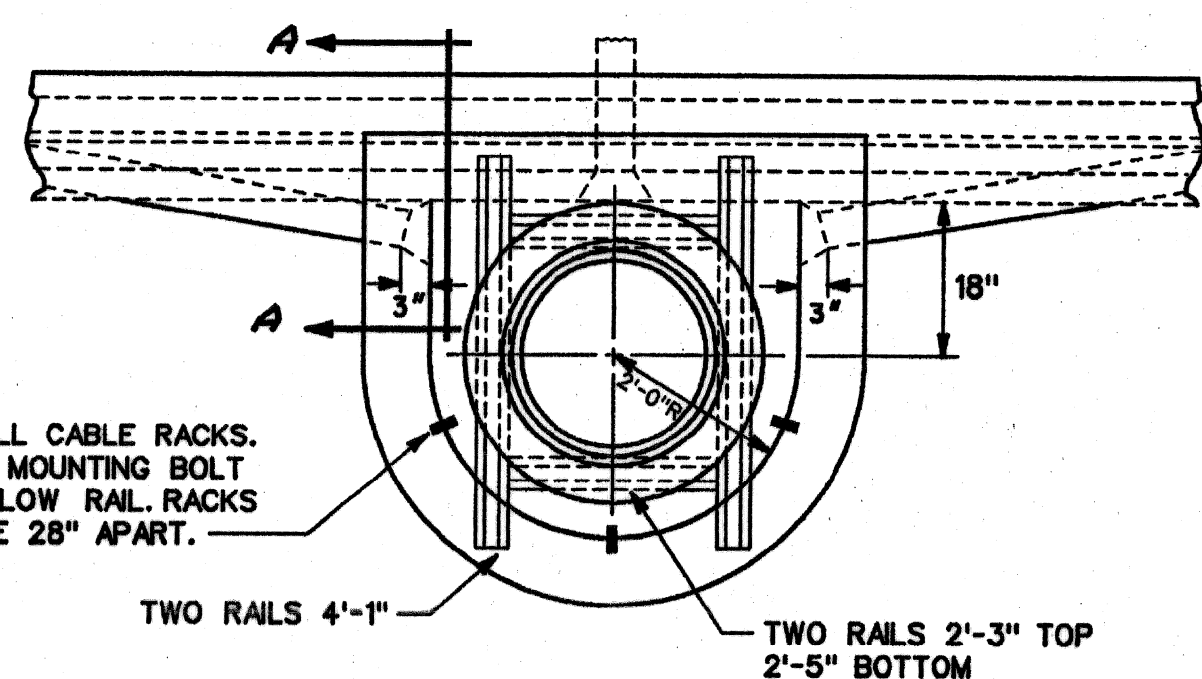
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**101 A**  
SHEET NO.  
**31 OF 48**  
DATE



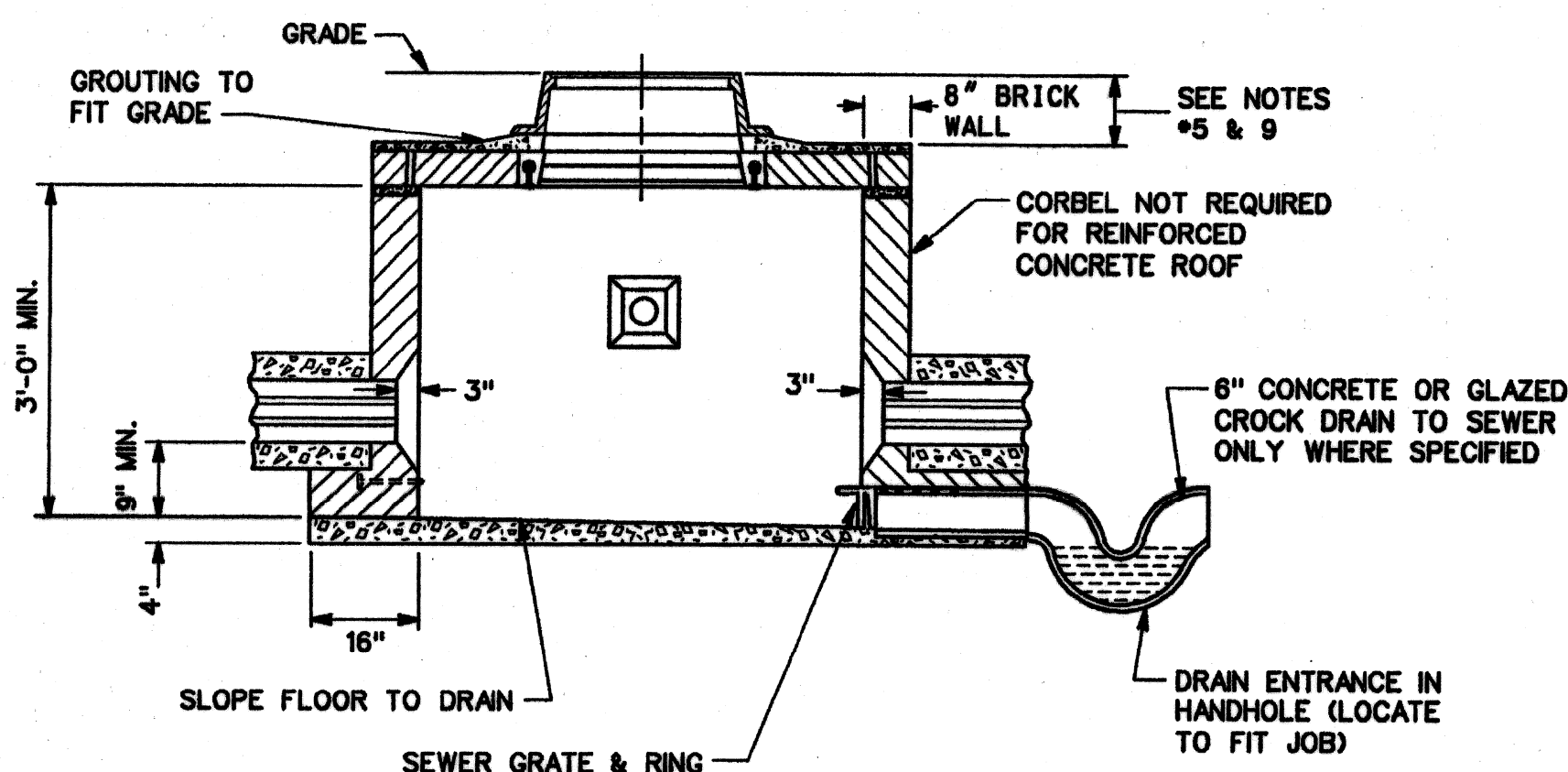
| TYPE "D" HANDHOLE |     |        |
|-------------------|-----|--------|
| TABLE FOR #4 BARS |     |        |
| MARK              | NO. | LENGTH |
| 4-46              | 3   | 4'-6"  |
| 4-40              | 4   | 4'-0"  |
| 4-39              | 4   | 3'-9"  |
| 4-36              | 4   | 3'-6"  |
| 4-30              | 3   | 3'-0"  |
| 4-16              | 1   | 18"    |
| 4-13              | 8   | 15"    |
| 4-10              | 4   | 12"    |



**ALTERNATE ROOF-TYPE "D" HANDHOLE**  
N.T.S.

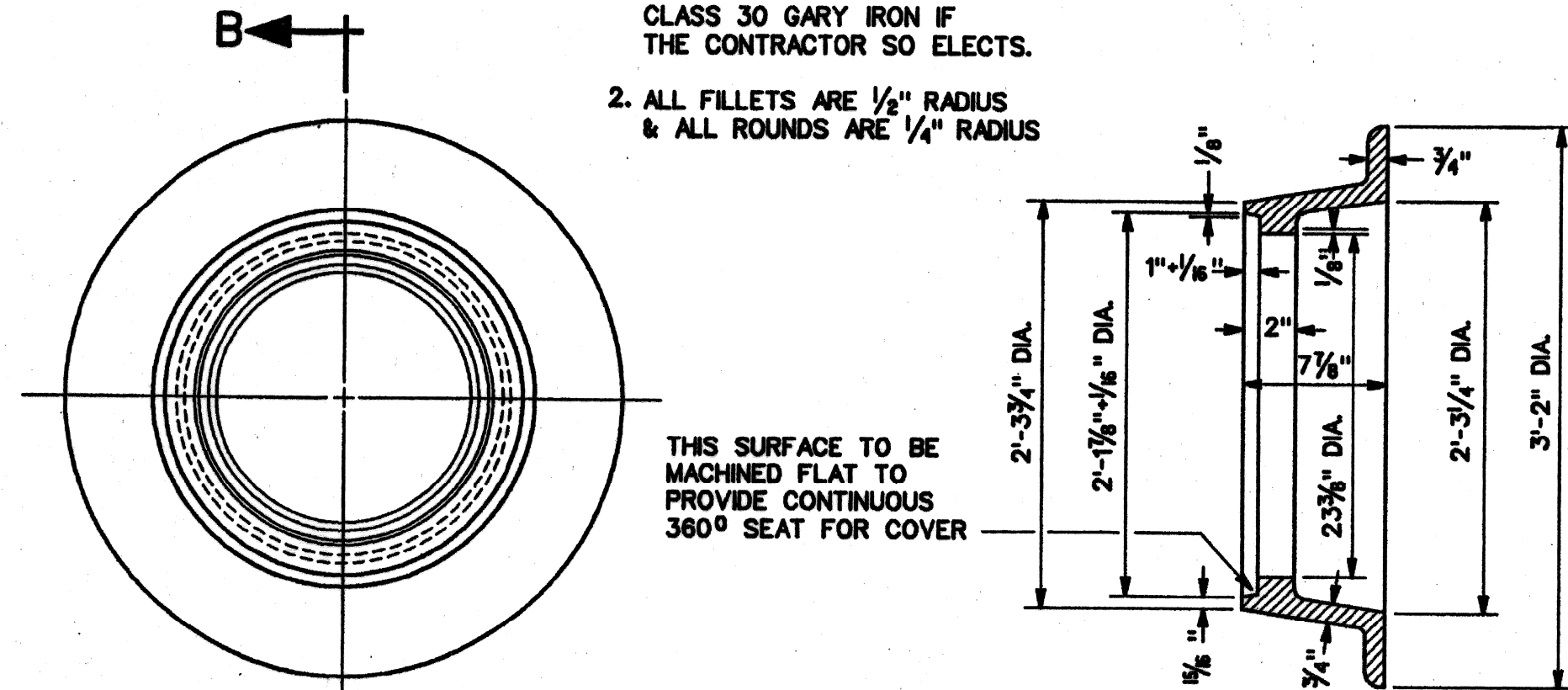


**PLAN**



**SECTION TYPE "D" HANDHOLE**  
N.T.S.

- NOTE:**
1. FRAMES MAY BE A.S.T.M. CLASS 30 GRAY IRON IF THE CONTRACTOR SO ELECTS.
  2. ALL FILLETS ARE 1/2" RADIUS & ALL ROUNDS ARE 1/4" RADIUS



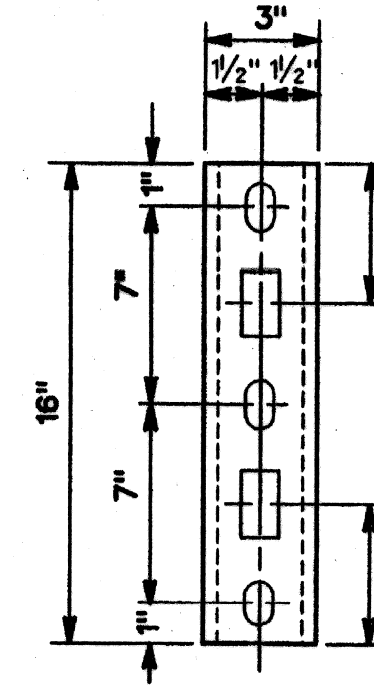
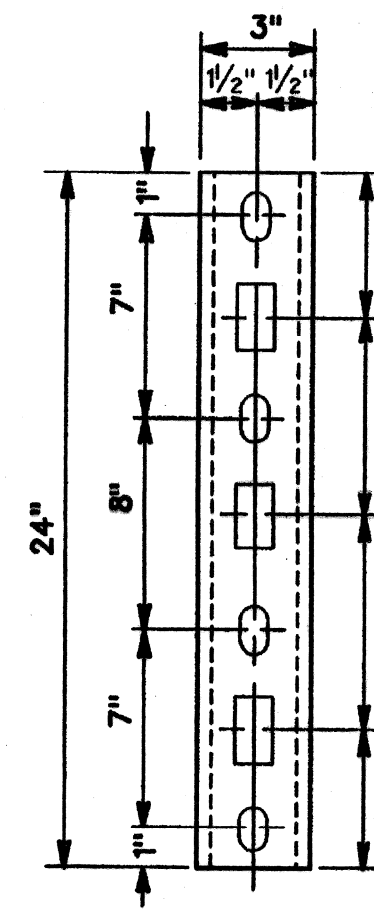
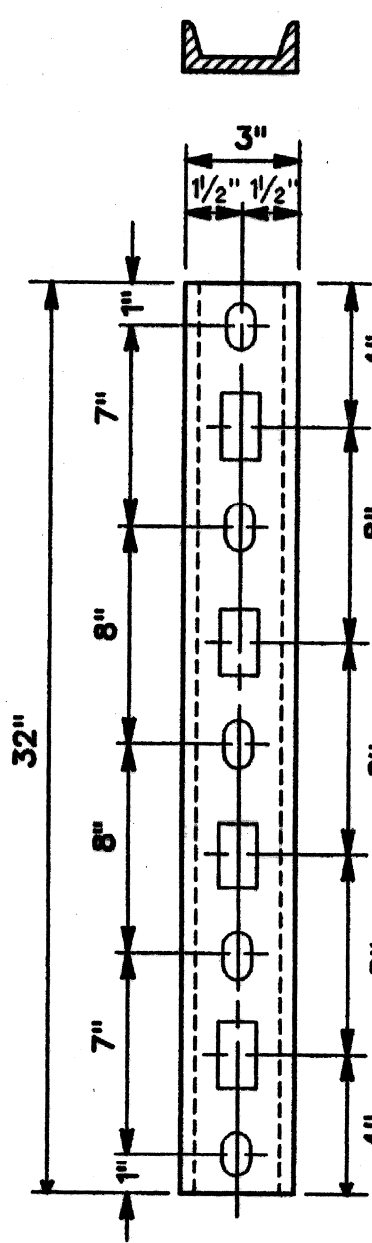
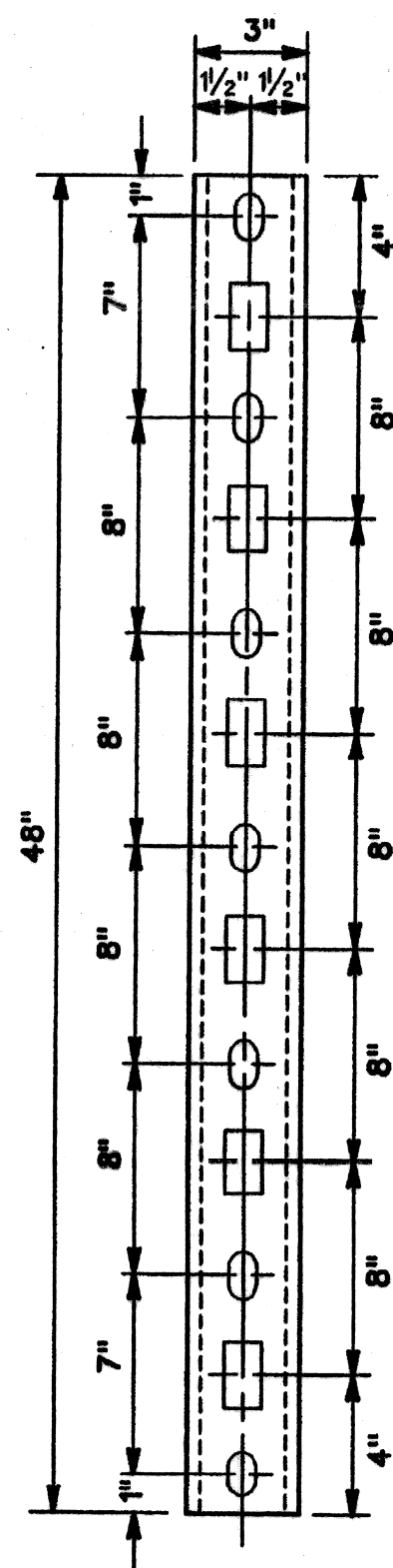
**P.L.C. PATTERN NO. 1A**  
**A.S.T.M. CLASS 20 OR 30 GRAY IRON**  
**APPROX. 251 LBS.**  
**HANDHOLE FRAME**

**NOTE:**

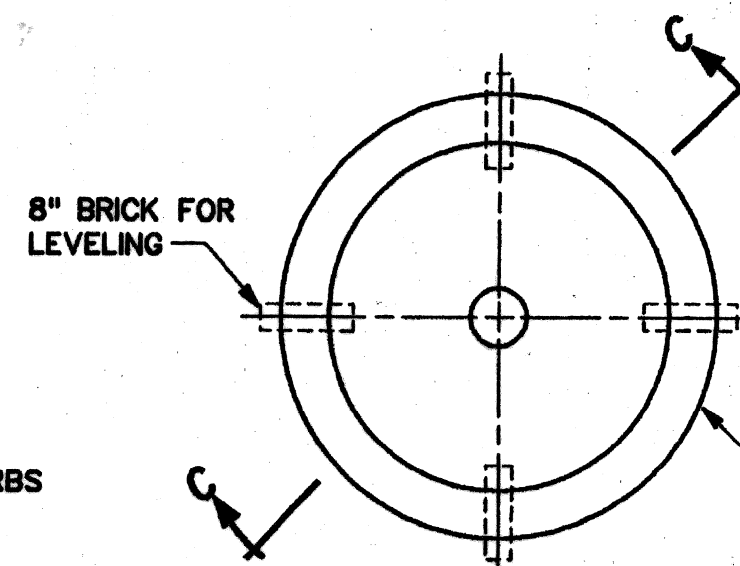
1. DUCT ENTRANCE TO BE BUILT AS REQUIRED.
2. ALL RAILS TO BE 60# YD. OR HEAVIER.
3. CABLE PULLING IRONS TO BE GALVANIZED
4. CABLE RACKS AND ARMS TO BE GALVANIZED.
5. IN PAVEMENT PROVIDE AT LEAST 3" BETWEEN ROOF AND BASE OF PAVEMENT. WHERE EXISTING GRADE IS HIGHER THAN PROP. FUTURE GRADE INSTALL BRICK RING OR GROUT (AS REQ'D.) UNDER FRAME TO ALLOW FOR FUTURE FRAME ADJUSTMENT.
6. BAR NUMBERS DENOTE THE SIZE OF BAR REQUIRED IN ACCORDANCE WITH CURRENT USAGE SPECIFIED BY THE CONCRETE REINFORCING STEEL INSTITUTE.
7. EXCAVATION LIMITS FOR PUBLIC LIGHTING DEPARTMENT HANDHOLES SHALL BE ON VERTICAL PLANES OF THE FOOTING OUTLINE.
8. INSTALL ANCHORS & CABLE-RACKS AS SHOWN.
9. WHERE HANDHOLES ARE LOCATED BACK OF CURBS ROOF MUST BE BUILT 18" BELOW CURB GRADE, TO PROVIDE FOR FUTURE WIDENING.

**NOTE:**

BELL ENDS ARE REQUIRED ON EACH CONDUIT BROKEN OUT IN HANDHOLE. TYPE AND SIZE SHALL BE IDENTICAL TO CONDUIT TYPE AND SIZE.

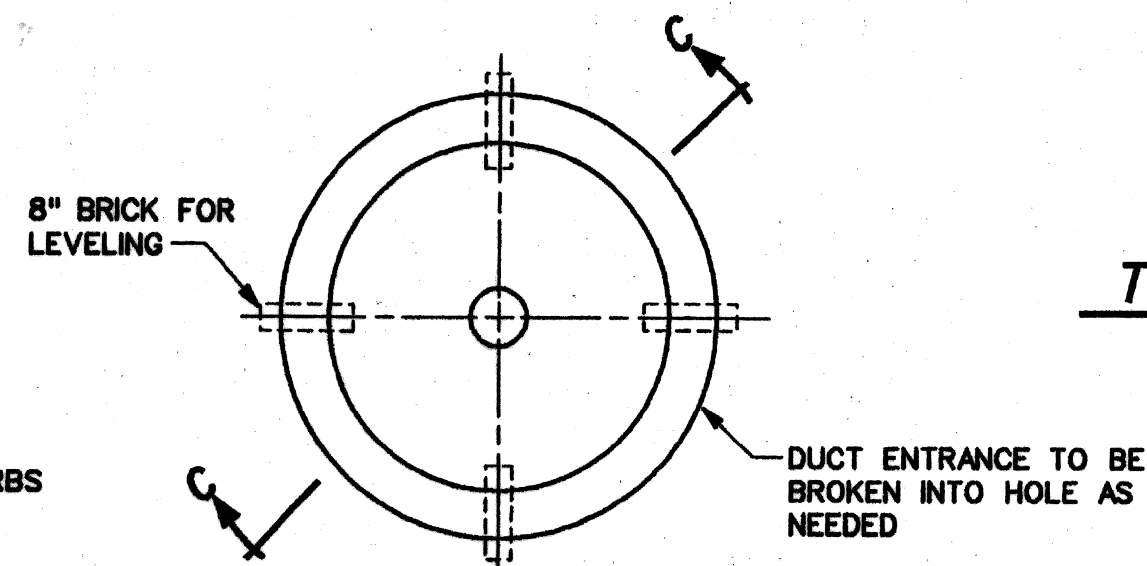


**CABLE RACKS**  
3" STD. 4.1" CHANNEL  
N.T.S.

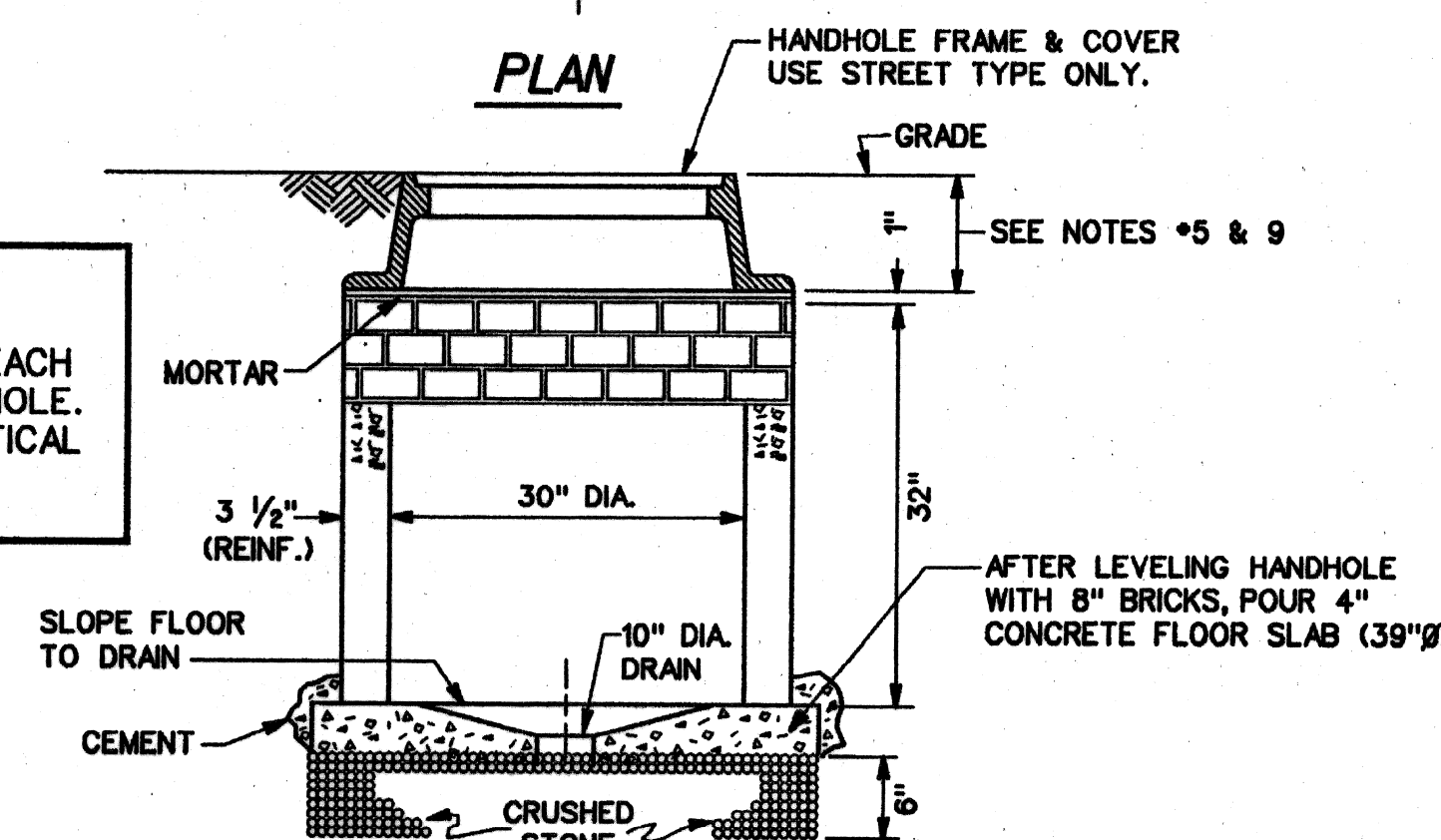


**SECTION "D-D"**

ALL LETTERING TO BE 1/4" HIGH AND FLUSH WITH SURFACE OF COVER.



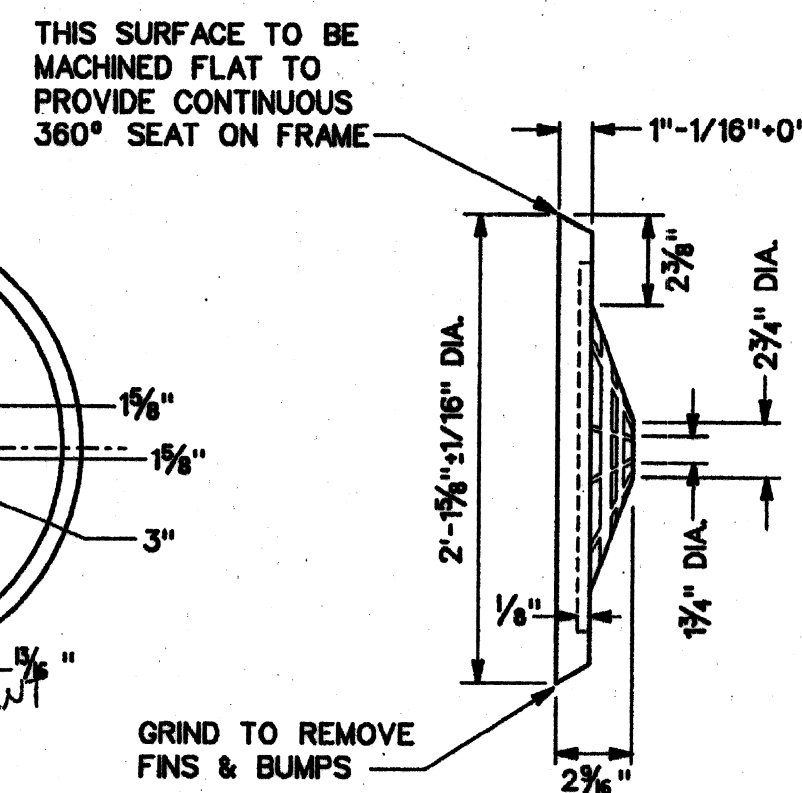
**PLAN**



**SECTION "C-C"**  
**REINFORCED CONCRETE PIPE (CLASS III)**  
**ROUND HANDHOLE**

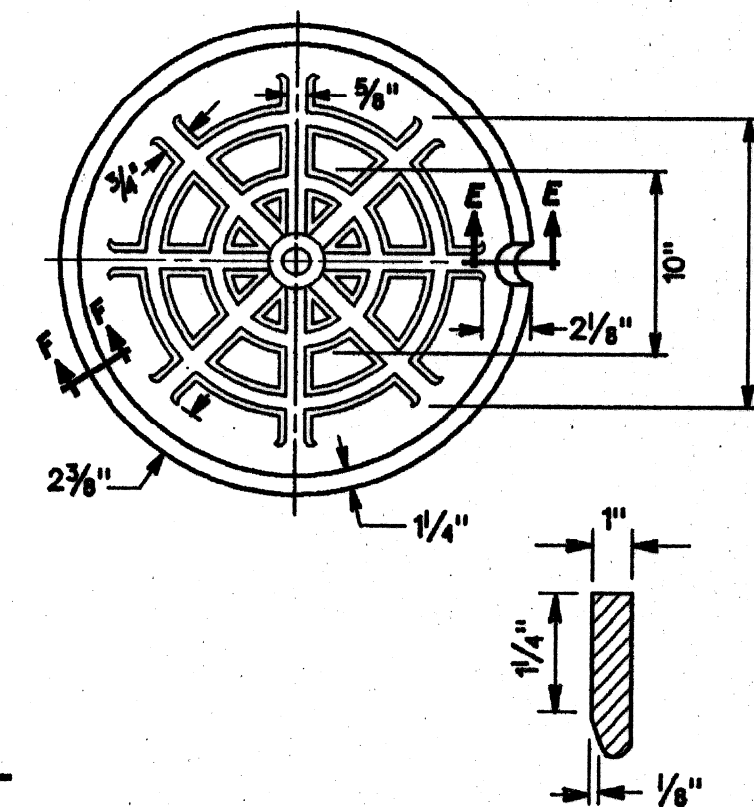
**NOTE:**

- CABLE RACKS SHALL BE GALV. AFTER FAB. IN ACCORDANCE WITH ASTM A-123.
- CABLE ARMS SHALL BE GALV. AFTER FAB. IN ACCORDANCE WITH ASTM A-153 53.
- ARMS MUST FIT ON INSIDE & OUTSIDE OF RACKS & MUST ALLOW INSULATOR TO FIT LOOSELY.
- USE 1/2" GALV. SUPPORTING BOLTS AND EXPANSION ANCHORS.

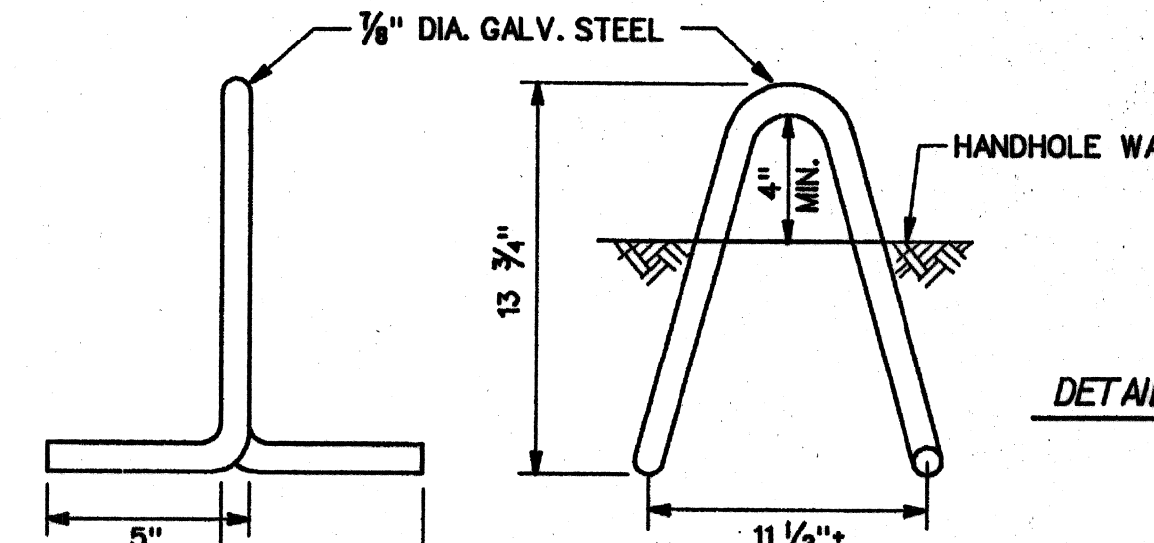


**SECTION "E-E"**

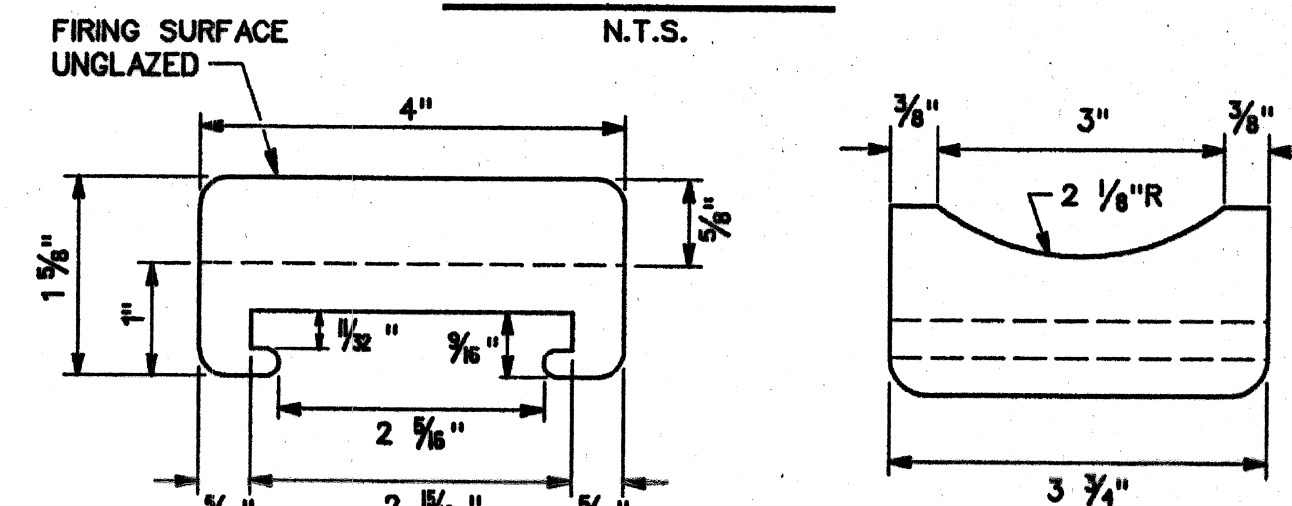
**P.L.C. PATTERN NO. 2A**  
**A.S.T.M. CLASS 30 GRAY IRON**  
**APPROX. WT. 145 LBS.**  
**STREET TYPE COVER**  
**TO BE USED IN STREETS & DRIVES**



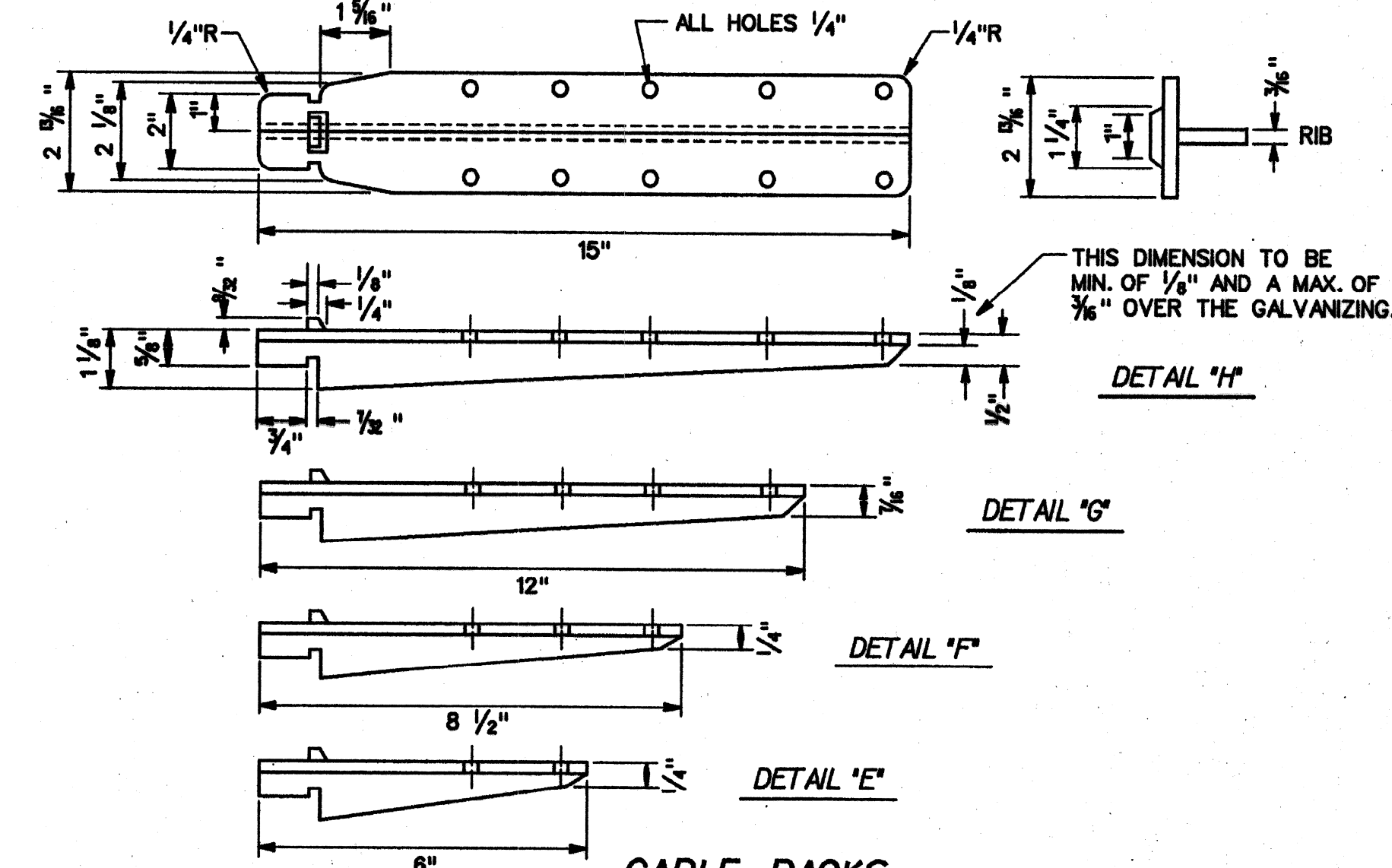
**SECTION "F-F"**



**PULLING IRON**  
N.T.S.



**CABLE ARM INSULATORS**  
WHITE GLAZED PORCELAIN DRY PROCESS  
N.T.S.



**CABLE RACKS**  
MALLEABLE CAST IRON  
N.T.S.

DISK FILE: DET103

| REVISIONS | Date | Description | Chkd. by |
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|           |      |             |          |
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HANDHOLE

Drawn CEA  
Checked  
Approved  
Date

**Consulting Engineering Associates, Inc.**  
16860 WYOMING AVE. DETROIT MICHIGAN 48221  
TELEPHONE: (313) 341-5797 FAX: 341-0205

Checked by  
Approved by

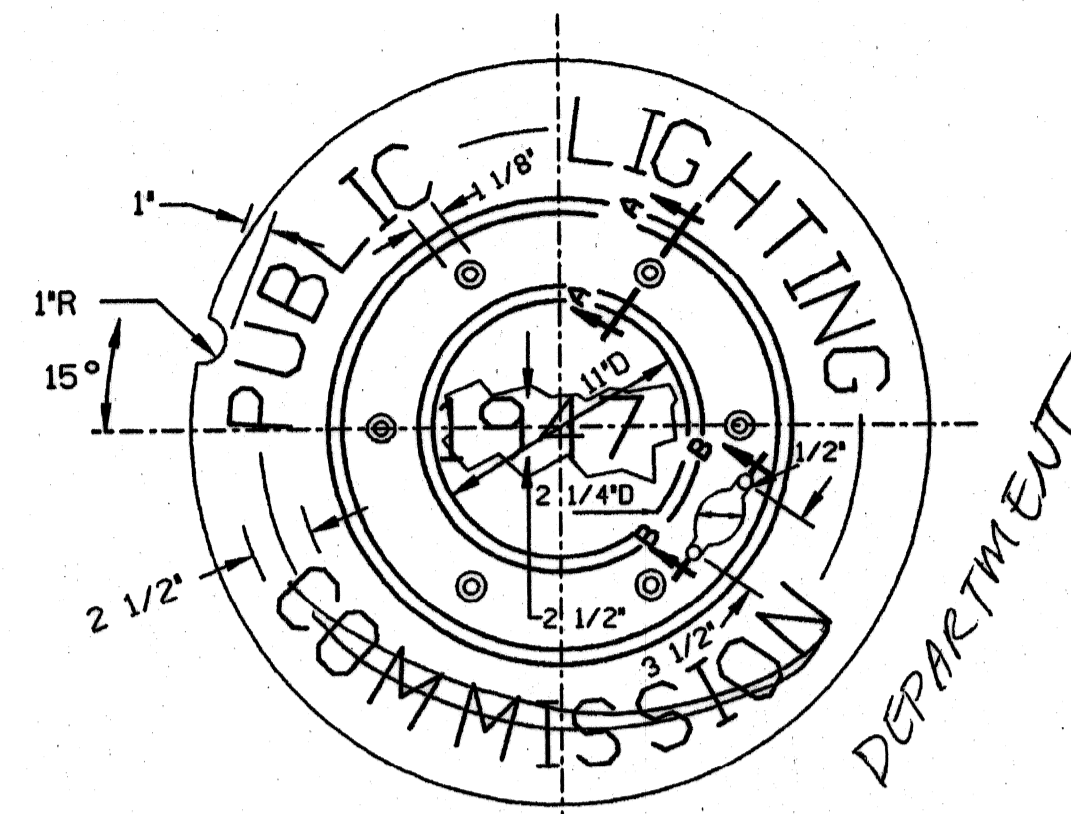
**PUBLIC LIGHTING DEPARTMENT**  
CITY OF DETROIT

10-01-96

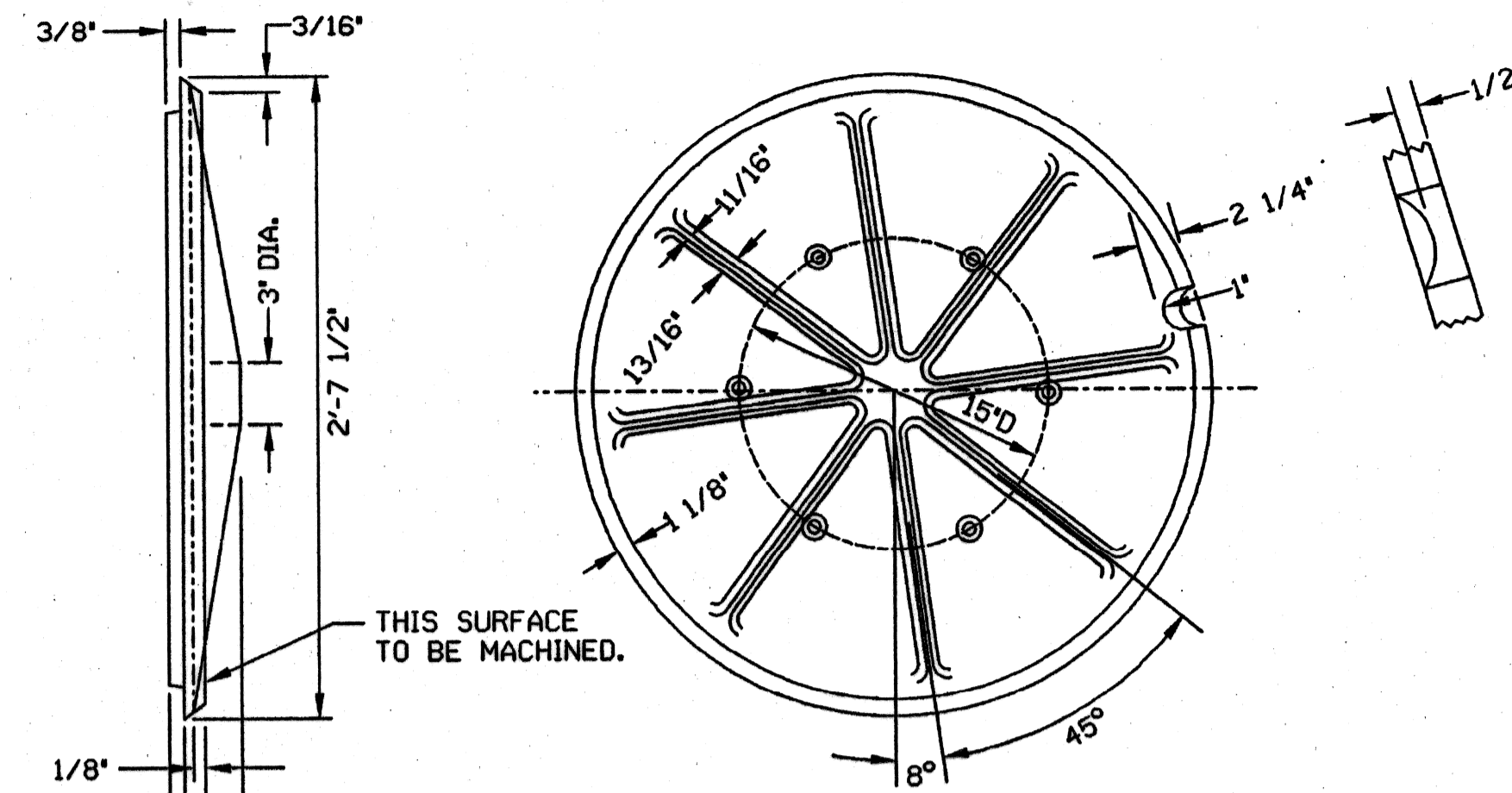
103

File No.  
Sheet No. 32 of 48  
Date

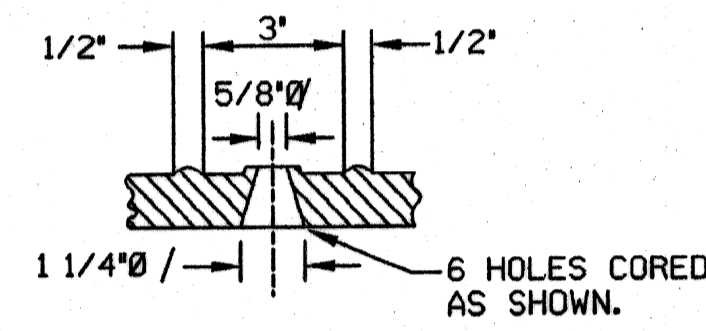




LETTERING & BEAD RAISED 3/8" ABOVE FACE.  
YEAR ON COVER TO BE YEAR OF CASTING.  
CONTRACTOR TO CHANGE PATTERN IF REQUIRED.

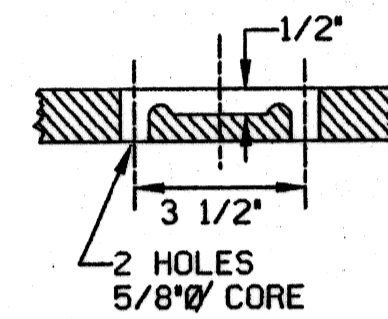


A.S.T.M. CLASS 30 GREY IRON  
P.L.C. PATT. NO. 418  
APPROX. WT.-245\*



SECTION A-A

N.T.S.

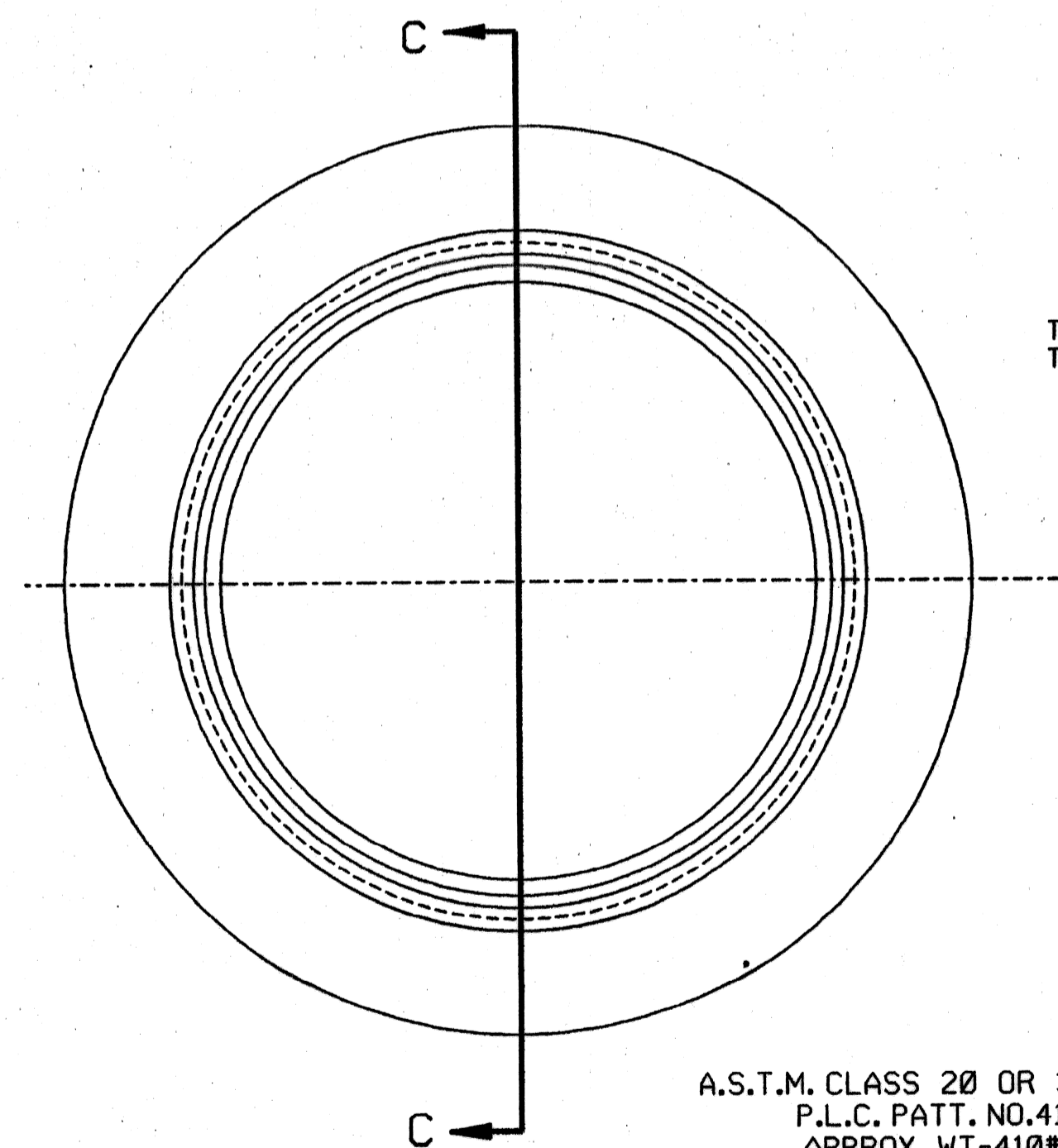


SECTION B-B

N.T.S.

MANHOLE COVER

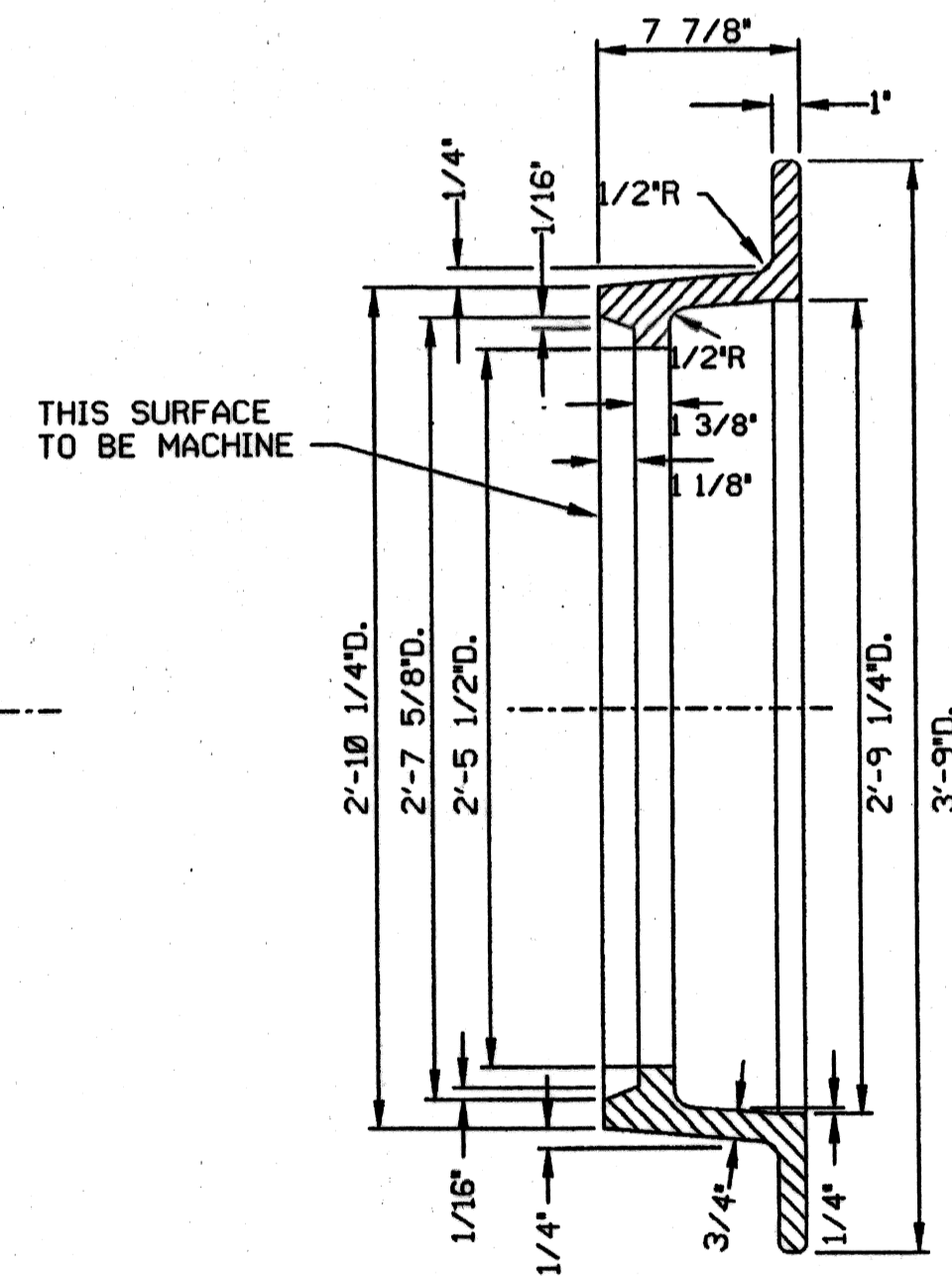
N.T.S.



A.S.T.M. CLASS 20 OR 30 GREY IRON  
P.L.C. PATT. NO. 417  
APPROX. WT-410\*

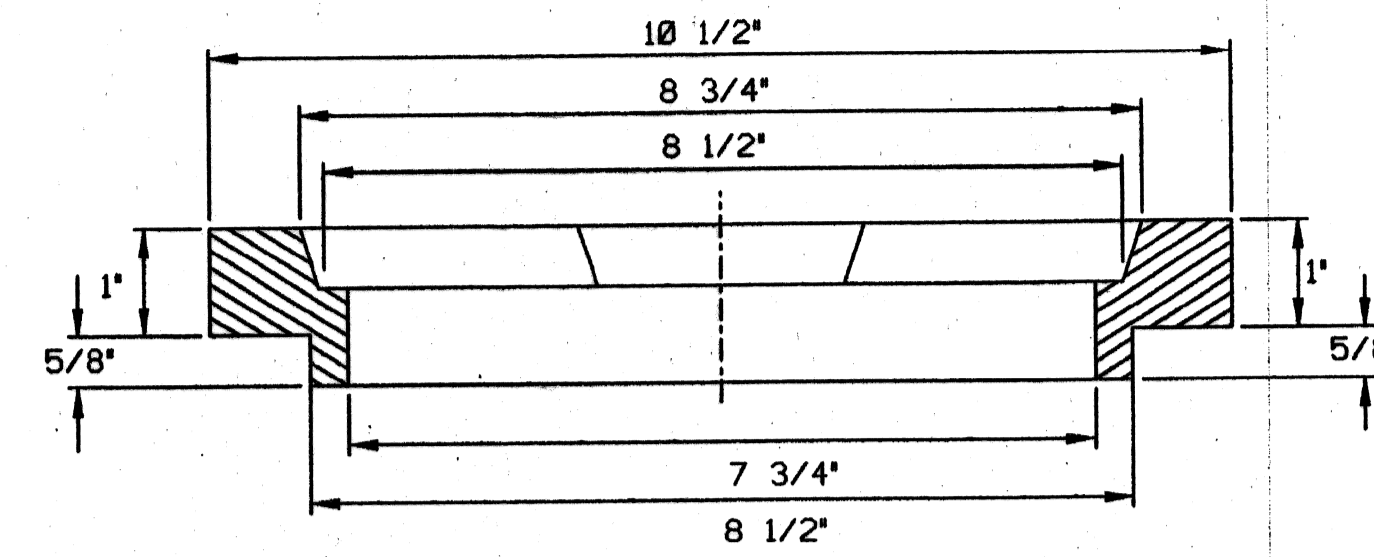
MANHOLE FRAME

N.T.S.



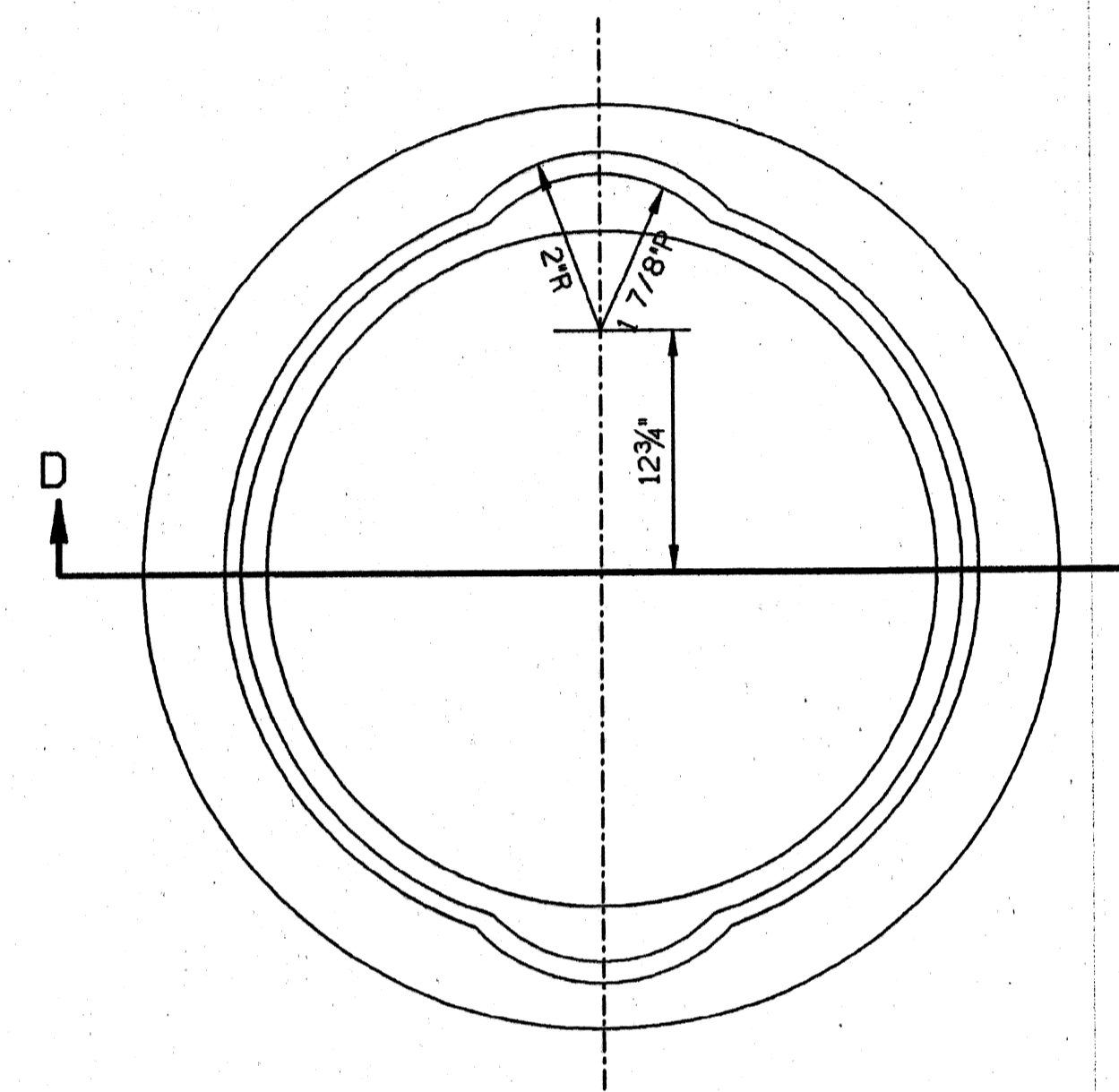
SECTION C-C

N.T.S.



SECTION D-D

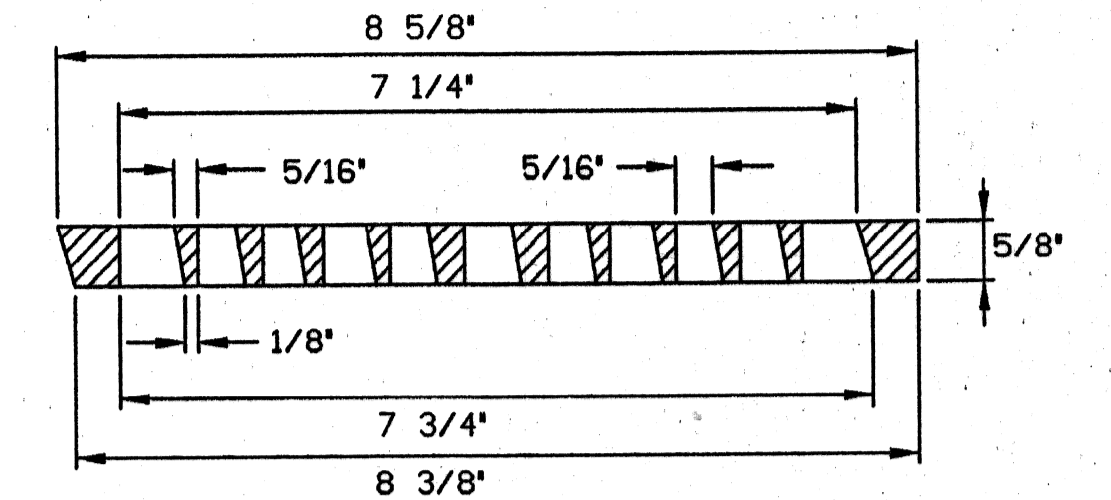
N.T.S.



A.S.T.M. CLASS 20 OR 30 GREY IRON  
P.L.C. PATT. NO. 318-A  
APPROX. WT-9\*

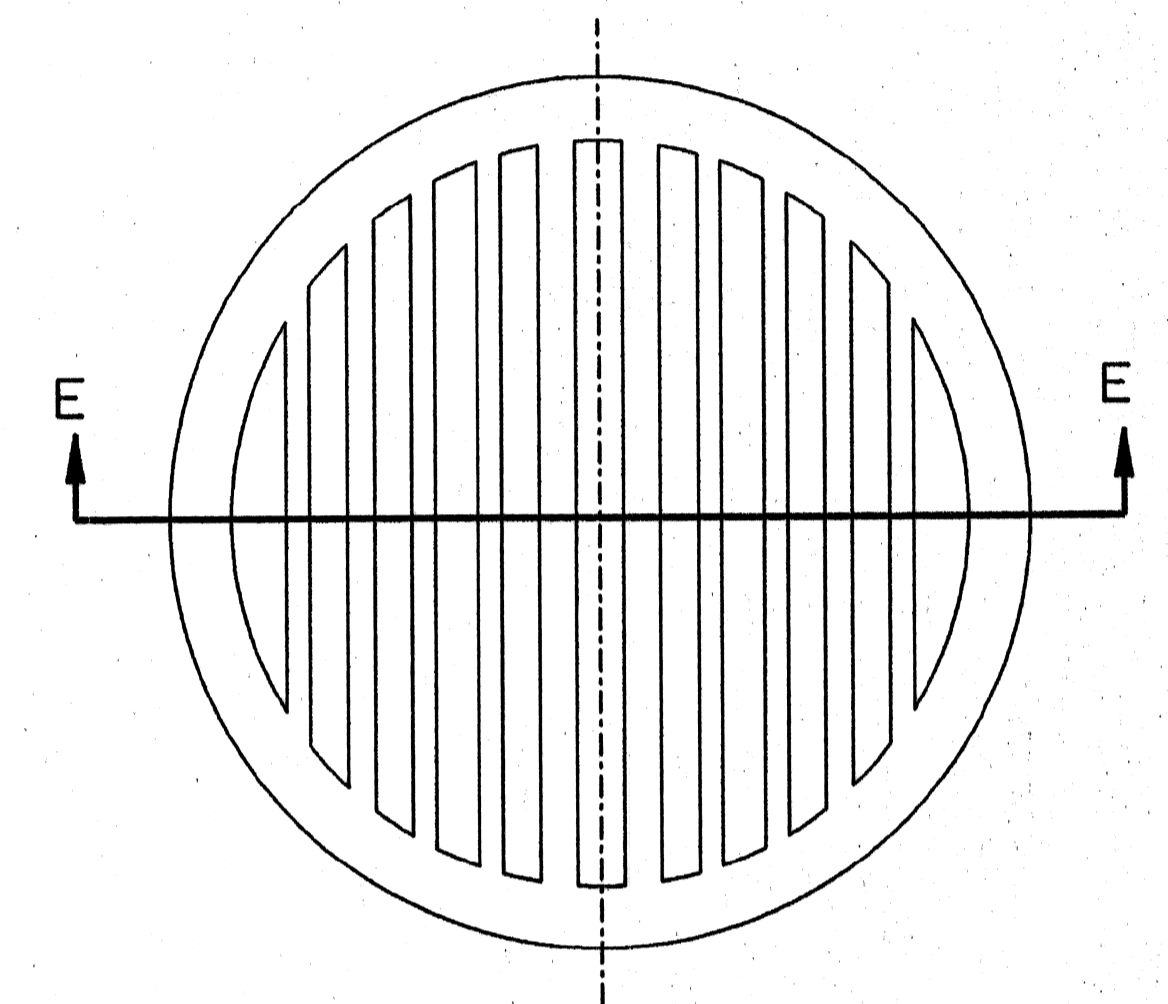
SEWER RING

N.T.S.



SECTION E-E

N.T.S.



A.S.T.M. CLASS 20 OR 30 GREY IRON  
P.L.C. PATT. NO. 318  
APPROX. WT-4.5\*

SEWER GRATE

N.T.S.

DISK FILE

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MANHOLE FRAMES &  
COVERS - SEWER GRATE & RING

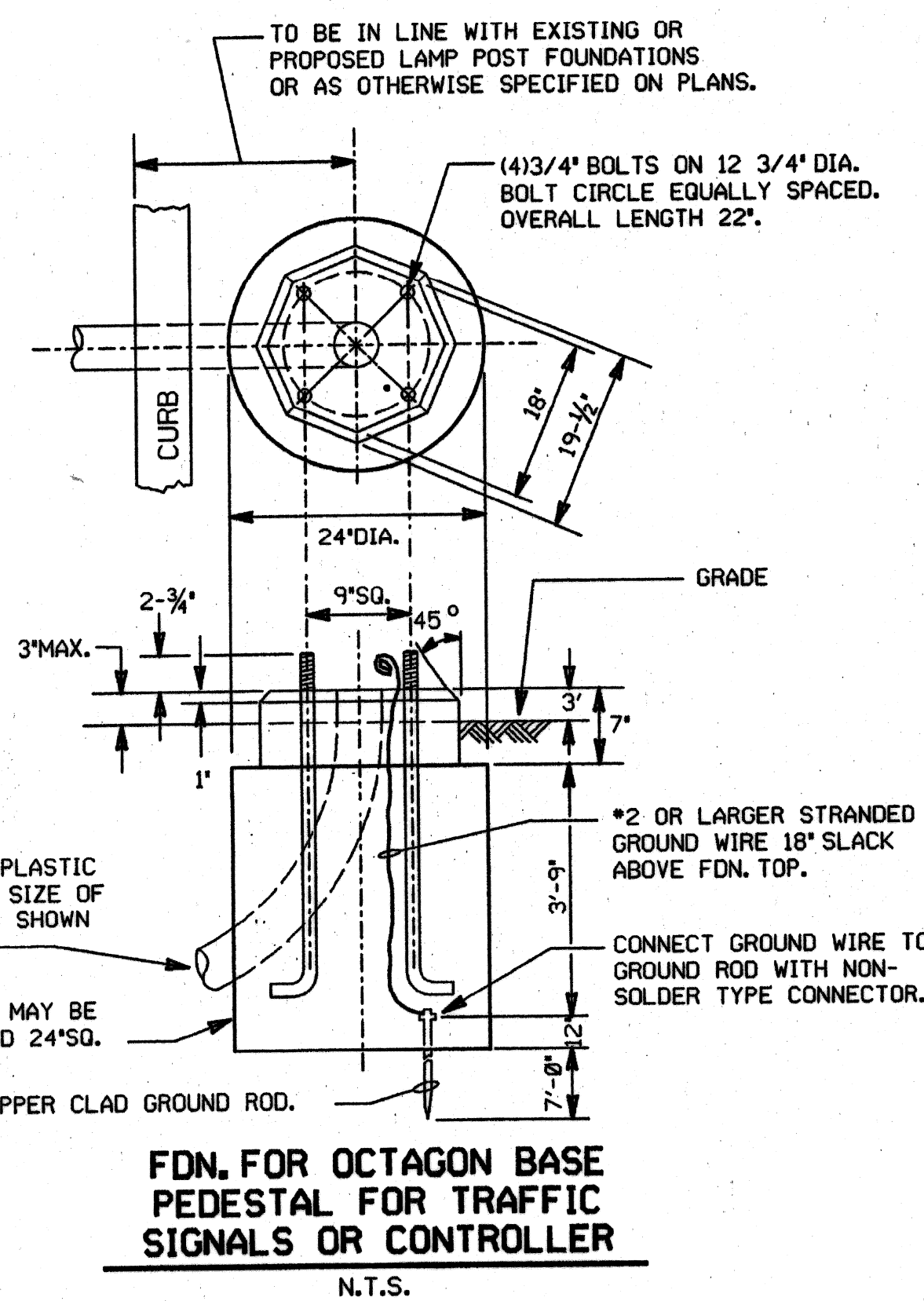
Drawn CEA  
Checked  
Approved  
Date

Consulting  
Engineering, Inc.  
16580 WYOMING AVE. DETROIT MICHIGAN 48221  
TELEPHONE: (313) 341-8787 FAX: 341-0206

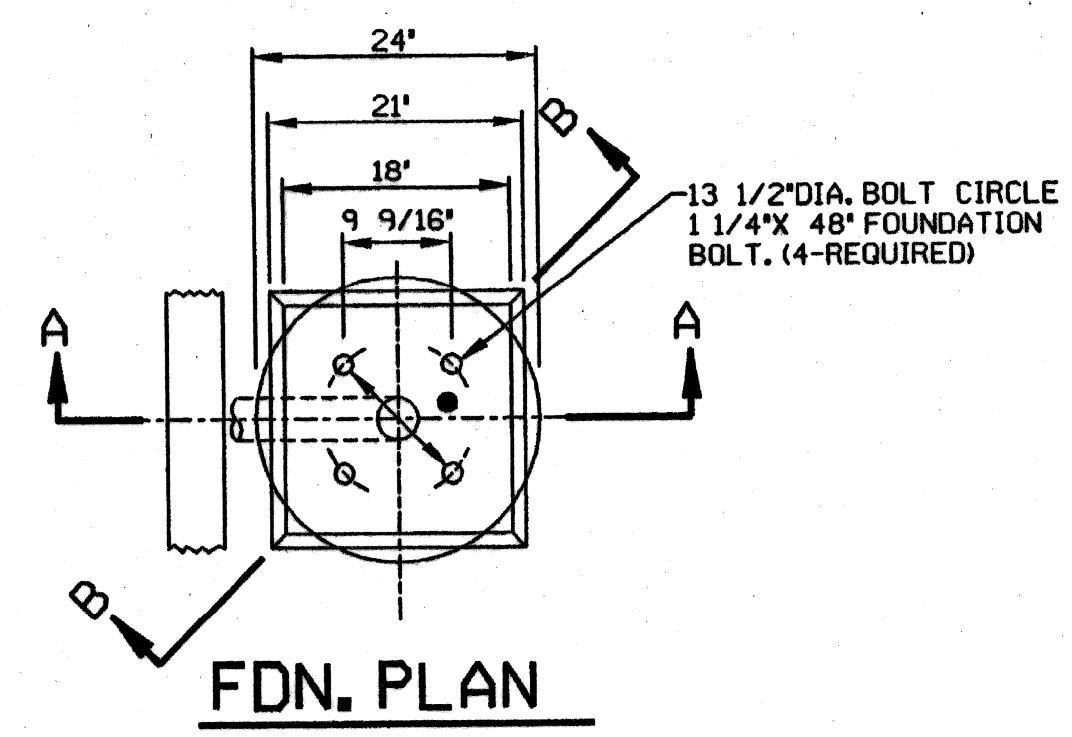
Checked by  
Approved by

PUBLIC LIGHTING  
DEPARTMENT  
CITY OF DETROIT

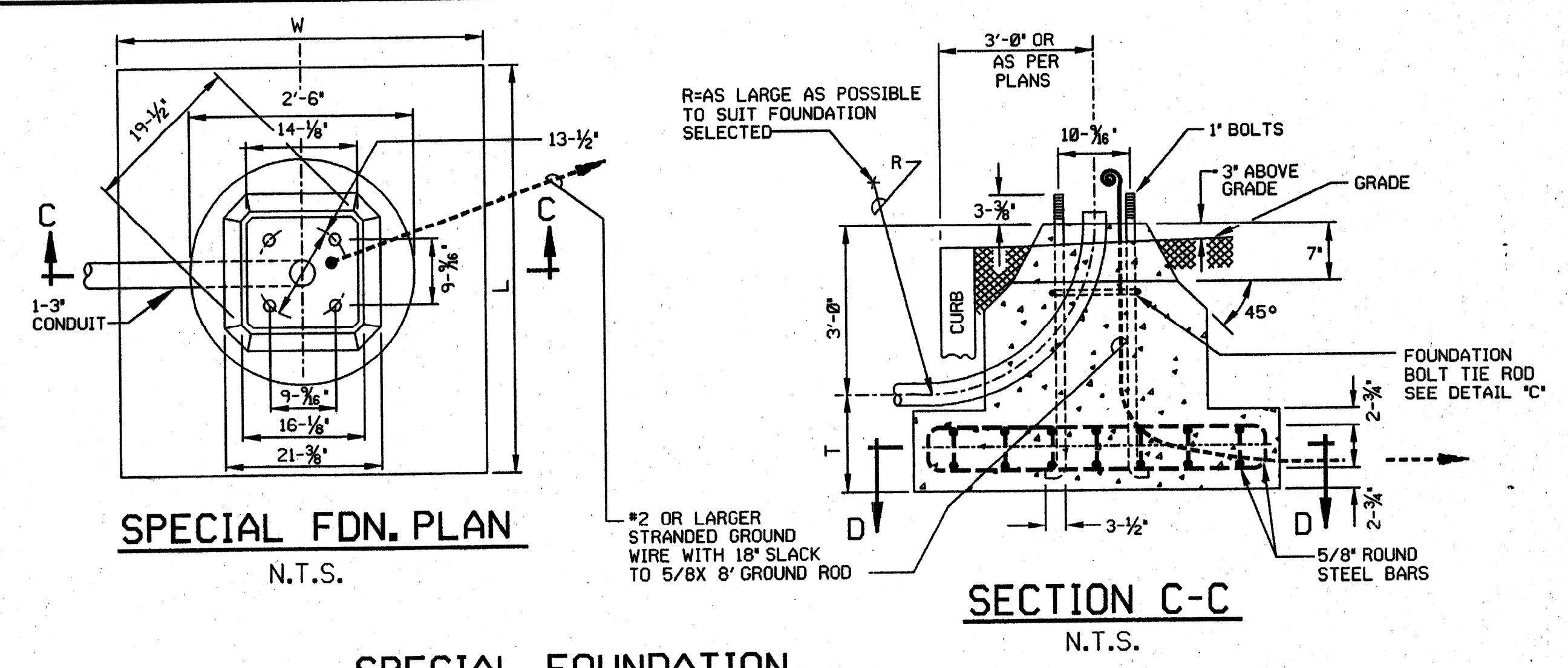
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Date



**FDN. FOR OCTAGON BASE PEDESTAL FOR TRAFFIC SIGNALS OR CONTROLLER**  
N.T.S.



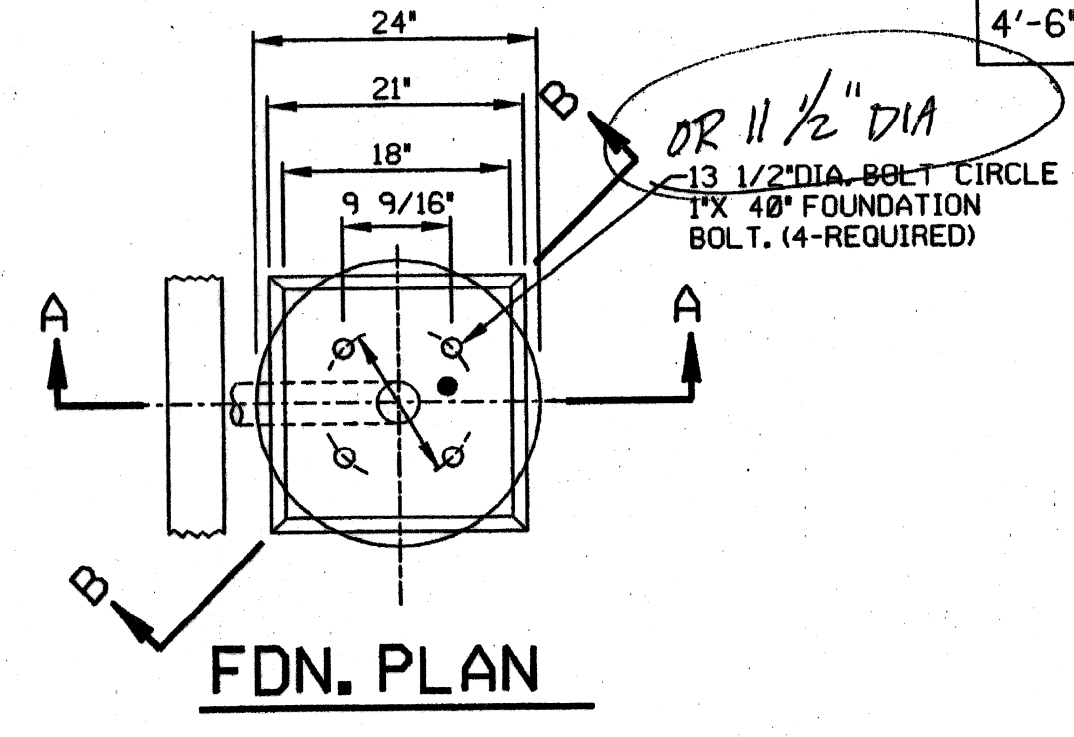
**FDN. PLAN**



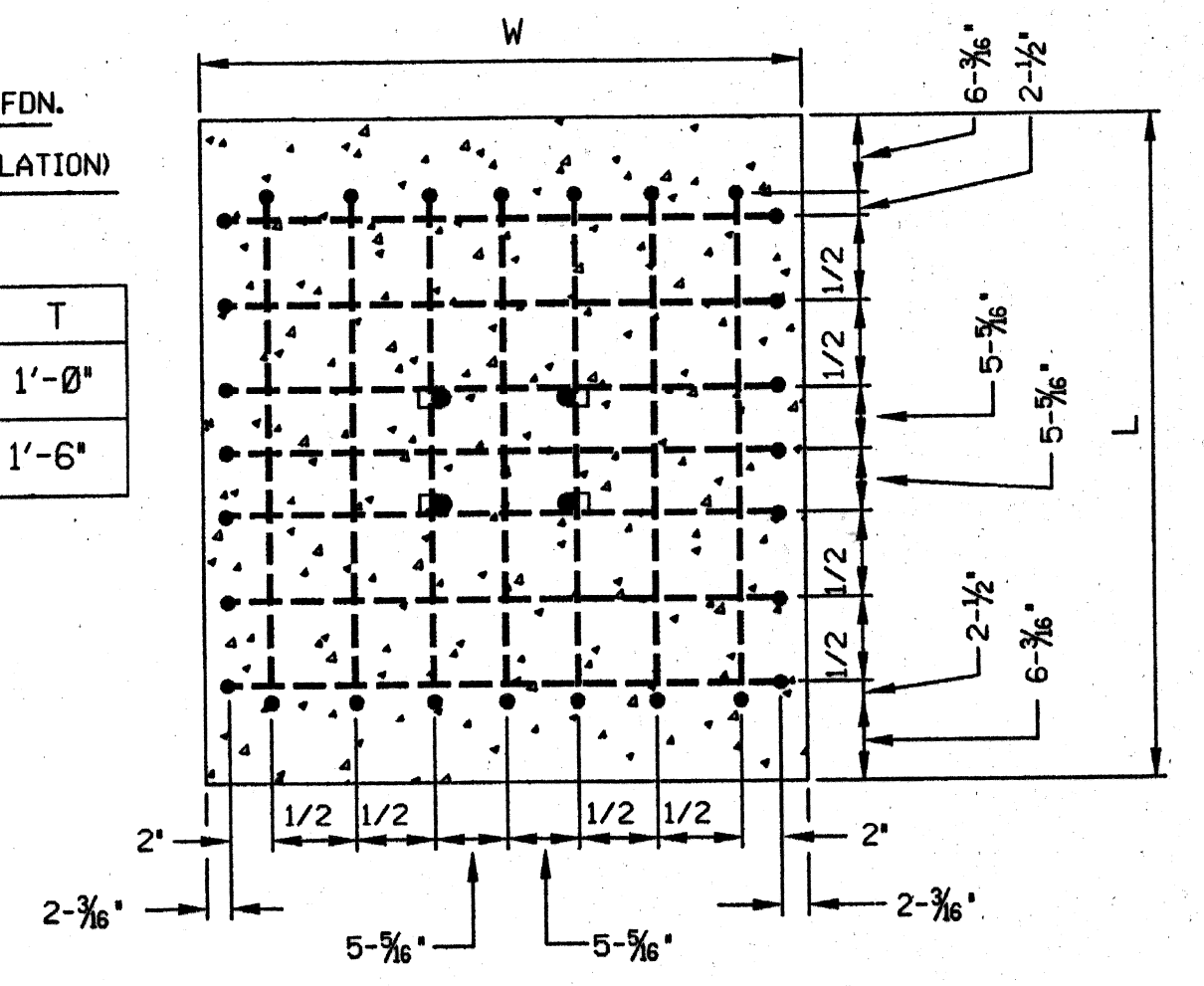
**SPECIAL FOUNDATION**

THERE SHALL BE NO EXTRA PAYMENT FOR SPECIAL FDN.  
(TO BE PAID FOR AS A NORMAL ST. LGT. STD. FDN. INSTALLATION)

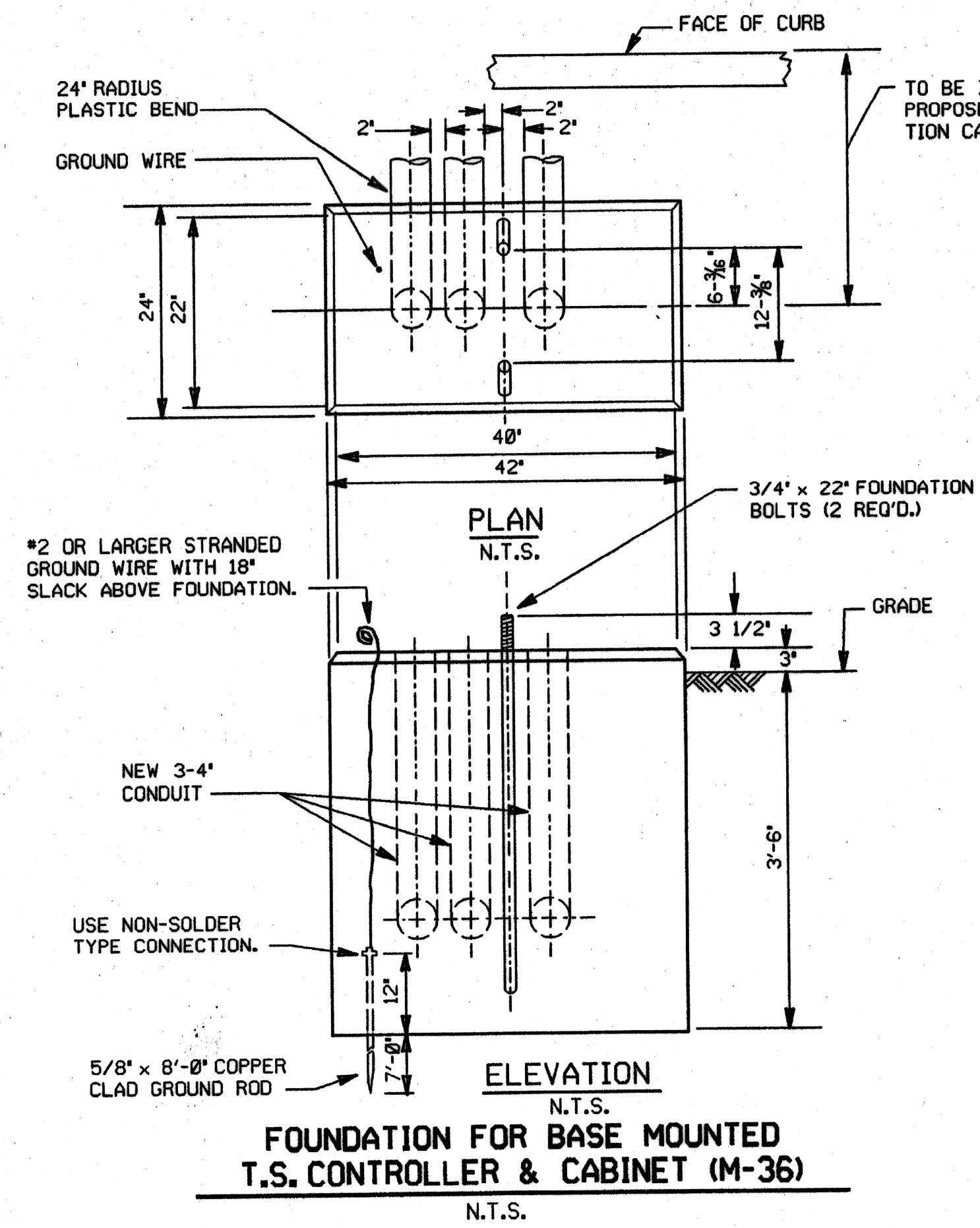
| L     | W     | T     |
|-------|-------|-------|
| 5'-0" | 4'-3" | 1'-0" |
| 4'-6" | 3'-6" | 1'-6" |



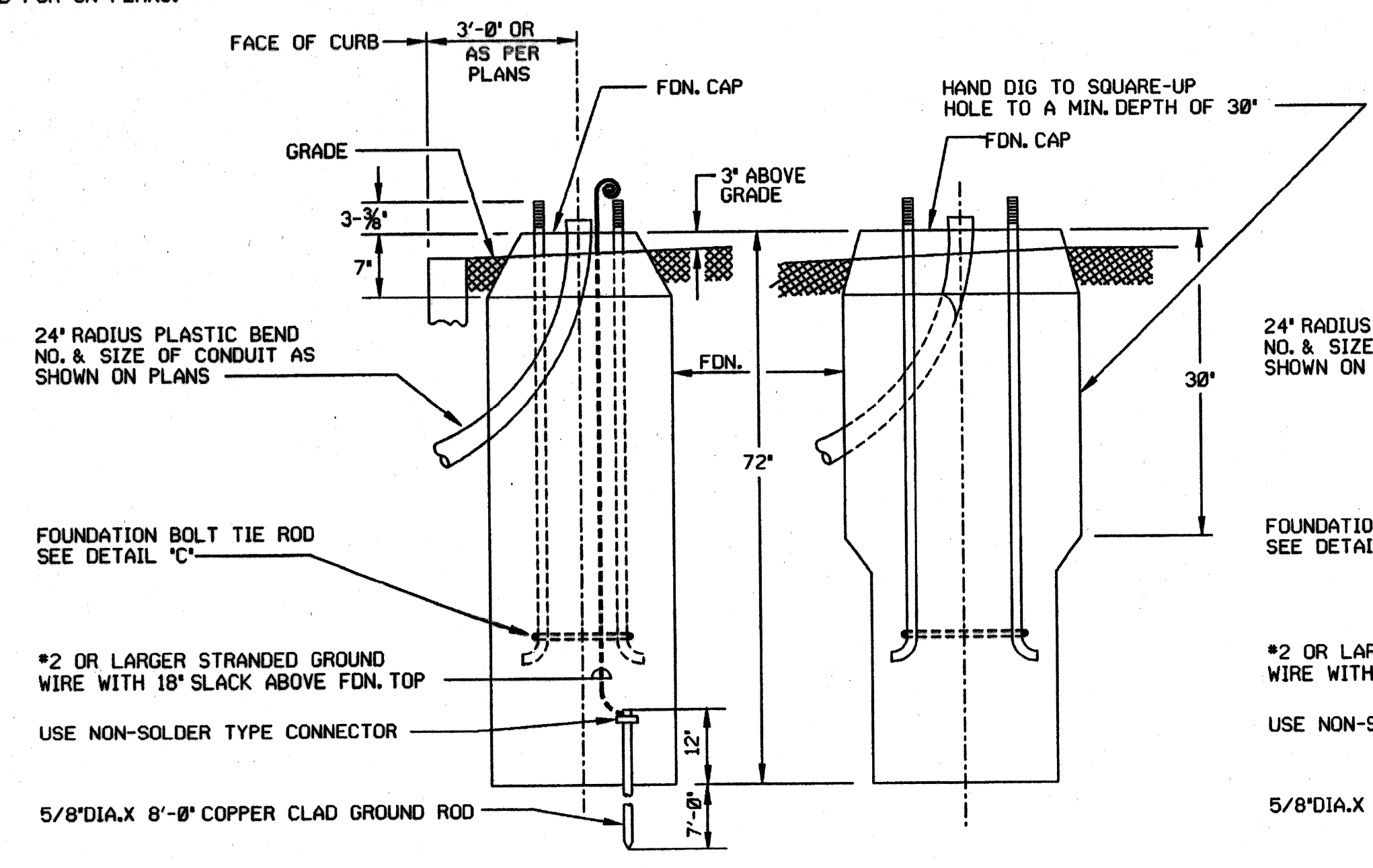
**FDN. PLAN**



**SECTION D-D**  
N.T.S.

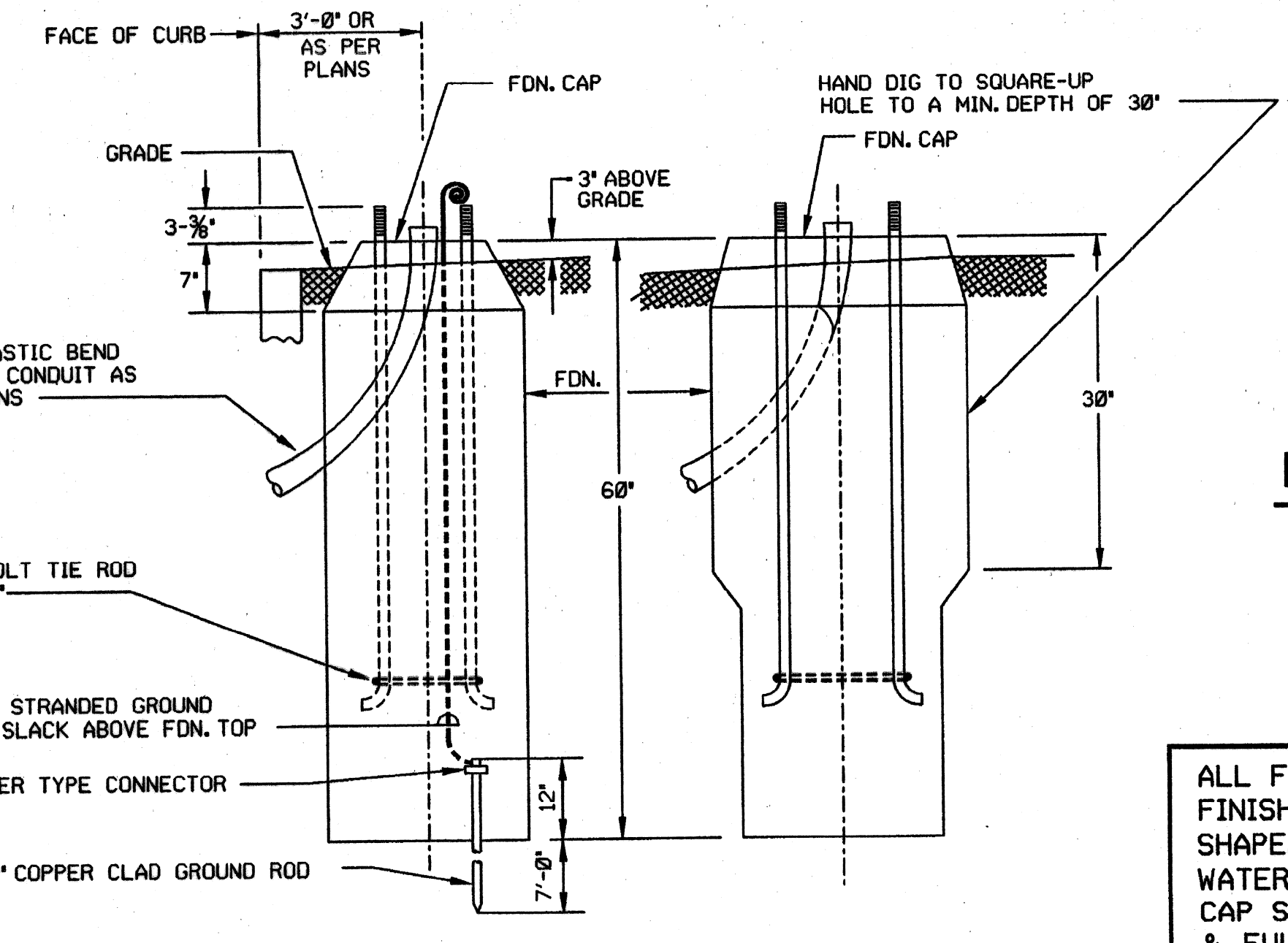


**FOUNDATION FOR BASE MOUNTED T.S. CONTROLLER & CABINET (M-36)**  
N.T.S.



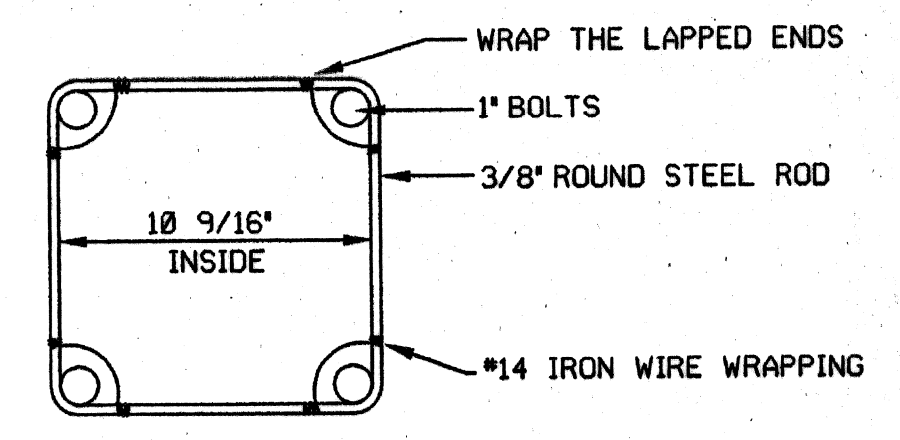
**SECTION A-A** N.T.S. **SECTION B-B** N.T.S.

**ANCHOR BASE STD. FOUNDATION**  
CODE 118-06,119-06,117-10-10



**SECTION A-A** N.T.S. **SECTION B-B** N.T.S.

**ANCHOR BASE STD. FOUNDATION**  
CODE 009-00,010-06,116-02



**DETAIL 'C'**  
**FDN. BOLT TIE ROD**  
N.T.S.

ALL FOUNDATION CAPS SHALL HAVE A SMOOTH FINISH WITH BEVELED EDGES & SHALL BE SHAPED TO ALLOW COMPLETE DRAINAGE OF WATER. ANCHOR BOLT PROJECTIONS ABOVE CAP SHALL BE CLEANED OF ALL CONCRETE & FULLY USABLE THEIR FULL LENGTH.

DISK FILE

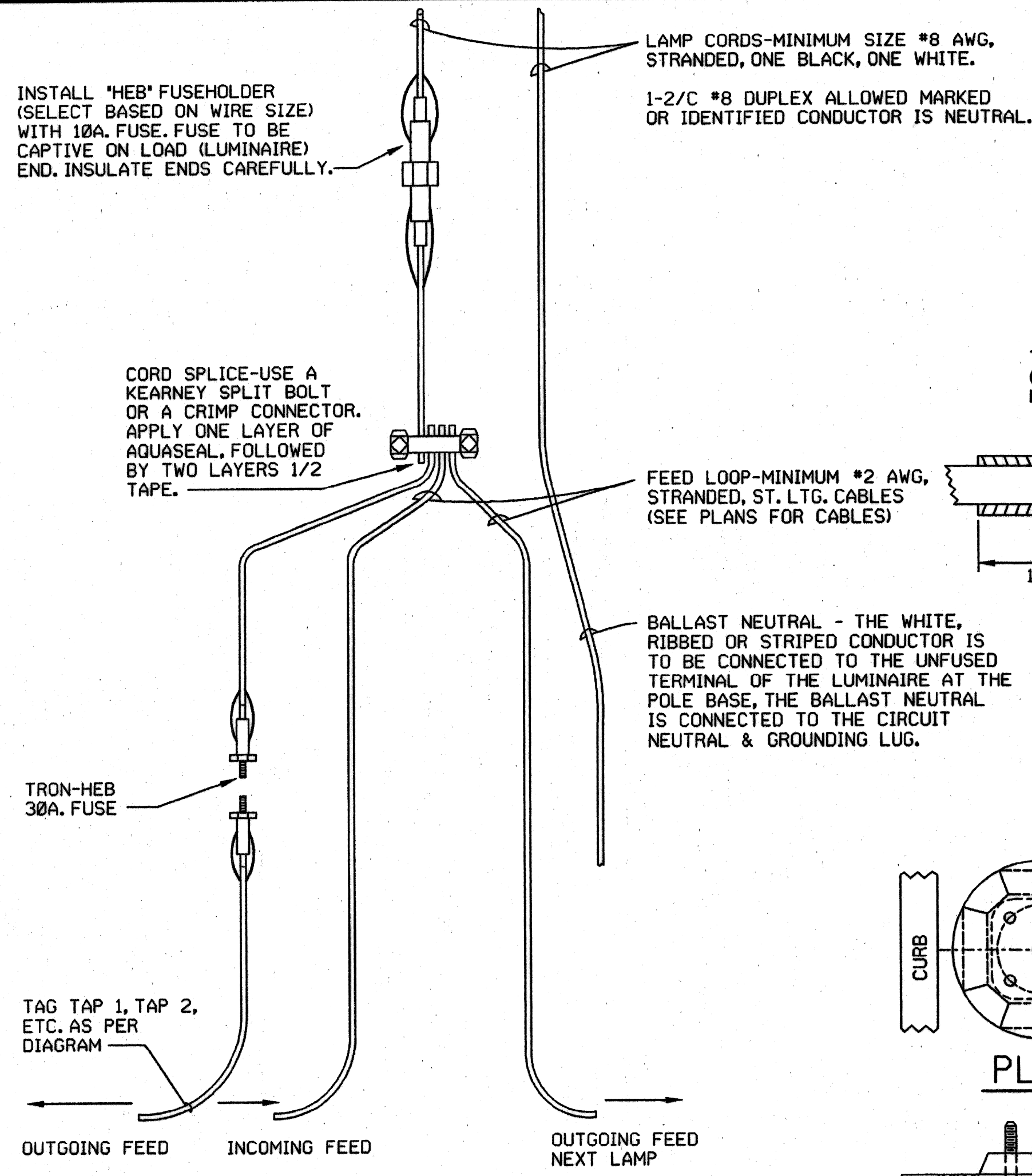
| REVISIONS | Date | Description | Chkd. by |
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FOUNDATIONS

|          |     |   |            |  |
|----------|-----|---|------------|--|
| Drawn    | CEA | <br>Consulting Engineering Associates, Inc.<br>16550 WYOMING AVE. DETROIT MICHIGAN 48221<br>TELEPHONE: (313) 341-8797 FAX: 341-0205 | Checked by |  |
| Checked  |     |   | Approved   |  |
| Approved |     |   | Date       |  |
| Date     |     |   | Drwg. No.  |  |
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| <b>PUBLIC LIGHTING DEPARTMENT</b><br>CITY OF DETROIT | File No.  |          |
|  | Sheet No. | 35 of 48 |
|  | Date      |          |
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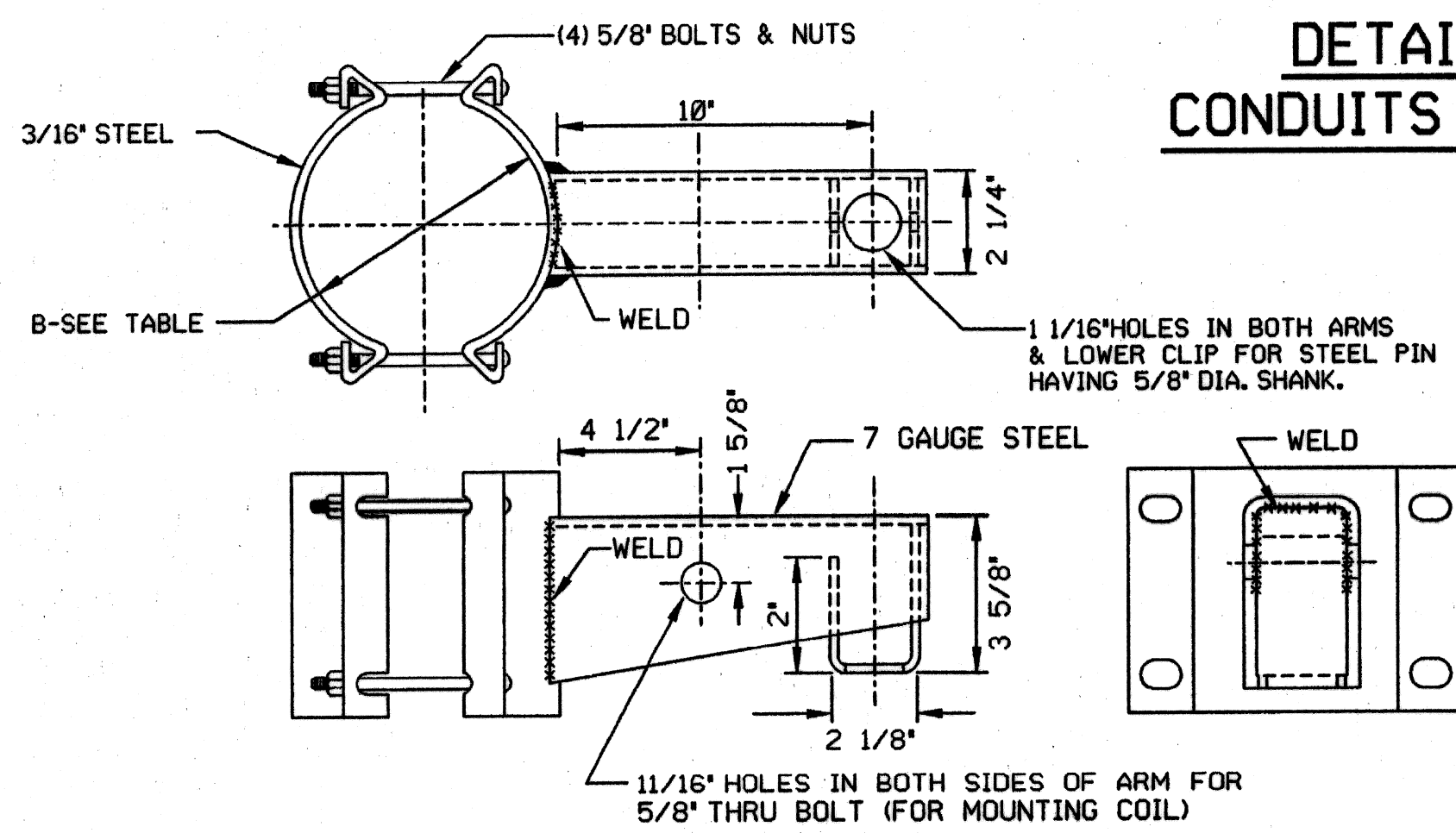


**MULTIPLE STREET LIGHTING CONNECTION IN POLE BASE**

N.T.S.

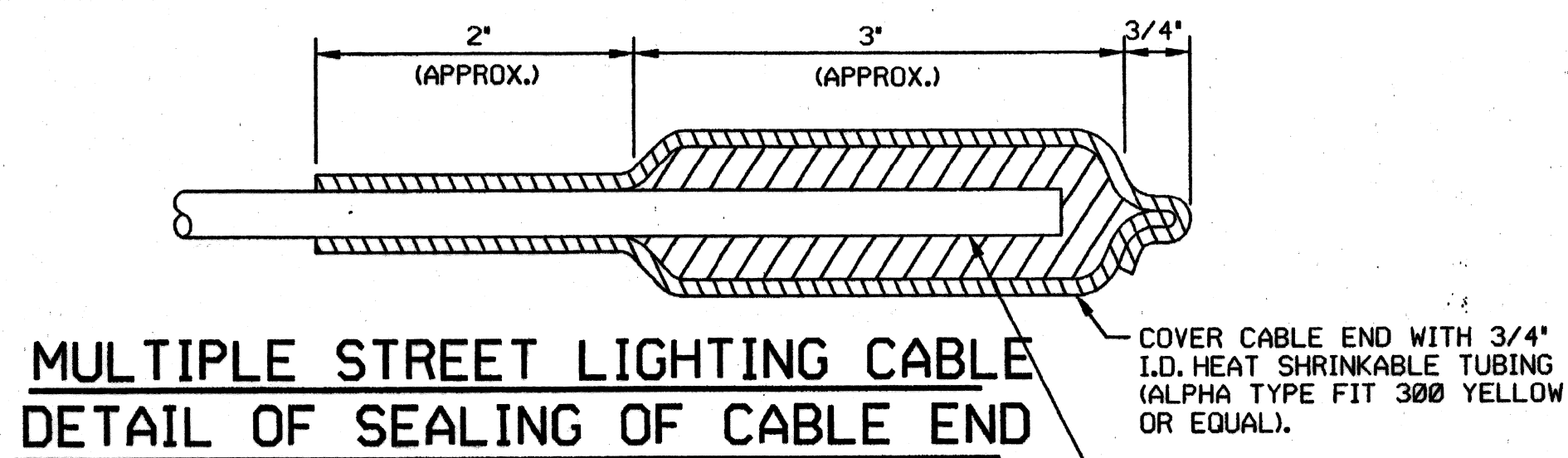
| TYPE | POLE DIAMETER |
|------|---------------|
| A    | 3.6"-4-5"     |
| B    | 6.1"-6.9"     |
| C    | 7.5"-8.5"     |

CLAMP SIZE TABLE



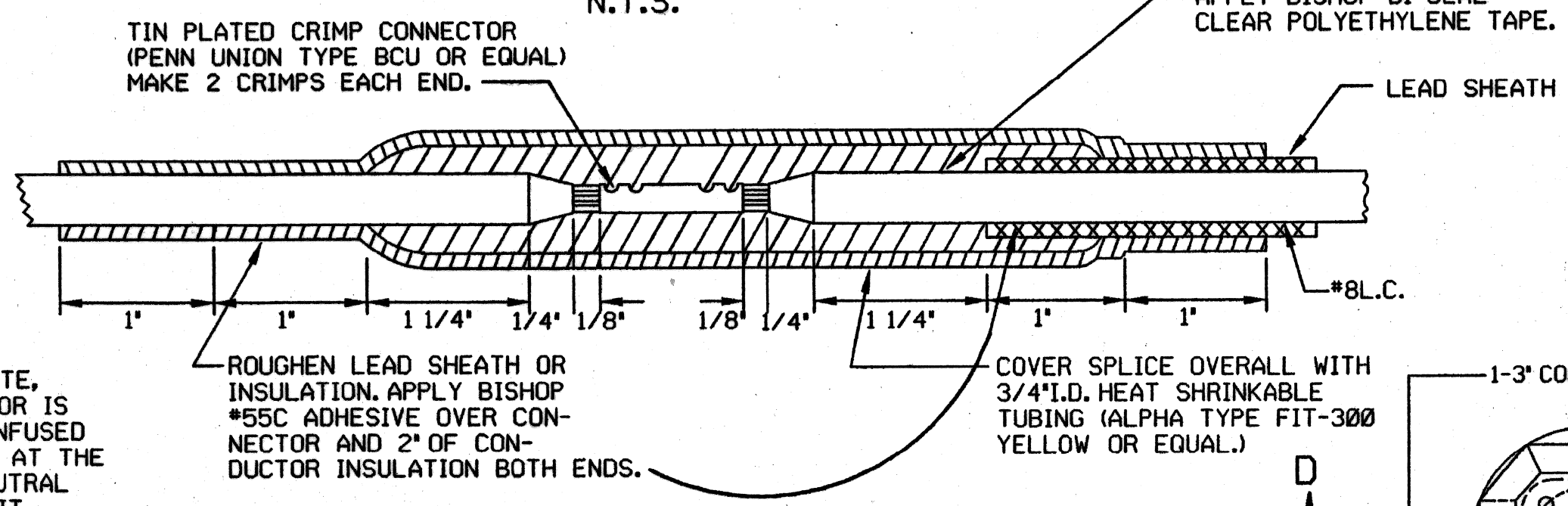
**CLAMP FEEDER ARM**

N.T.S.



**MULTIPLE STREET LIGHTING CABLE DETAIL OF SEALING OF CABLE END**

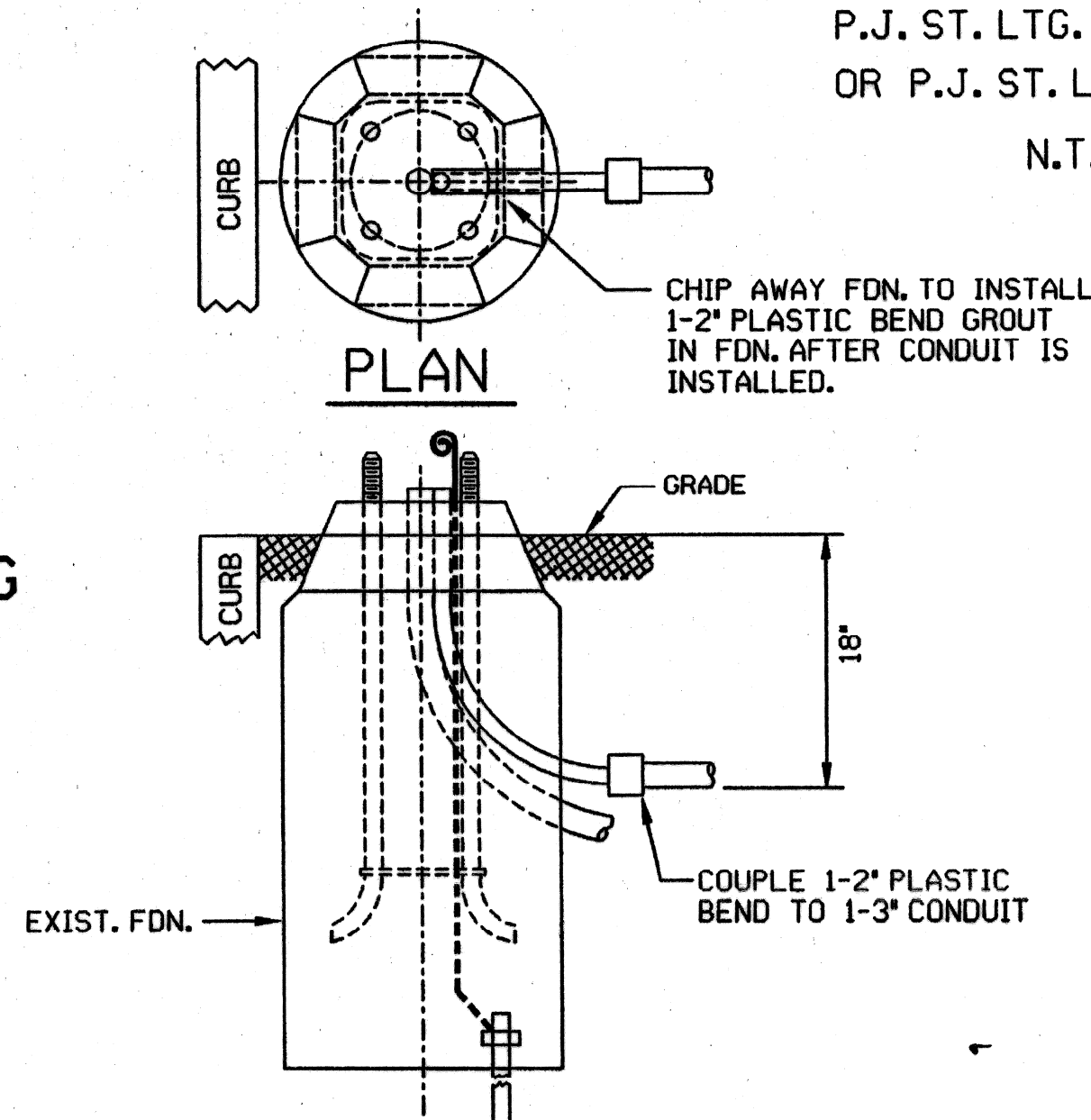
N.T.S.



**MULTIPLE STREET LIGHTING SPLICE DETAIL A**

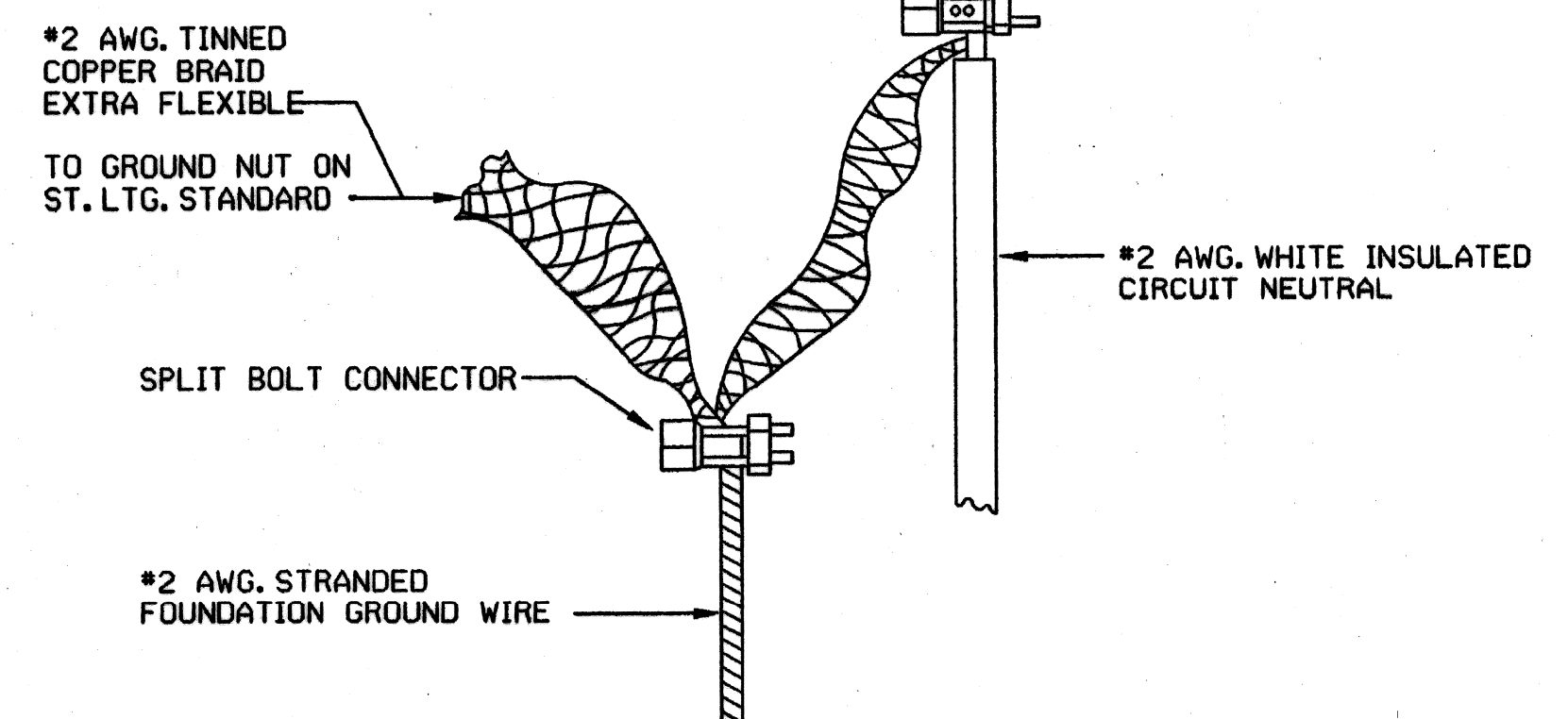
P.J. ST. LTG. TO #8 L.C. ST. LTG. OR P.J. ST. LTG. TO P.J. ST. LTG.

N.T.S.



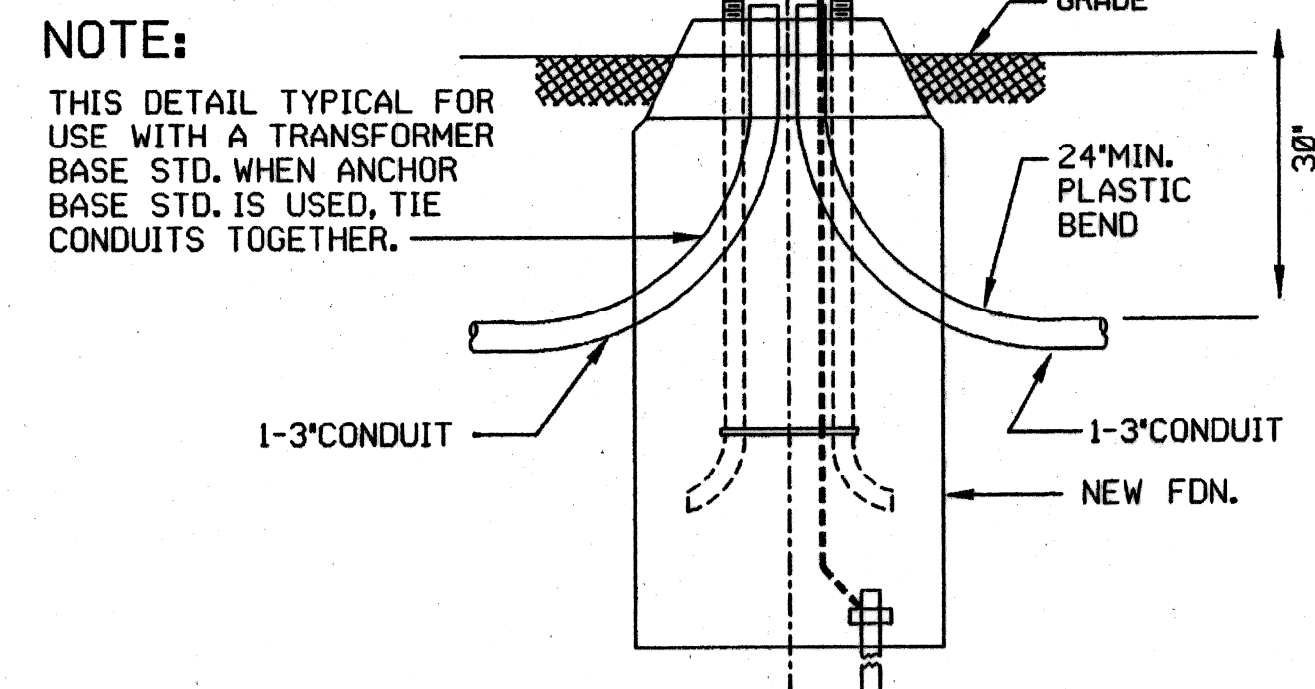
**DETAIL OF INSTALLING CONDUITS INTO EXISTING FDN.**

N.T.S.



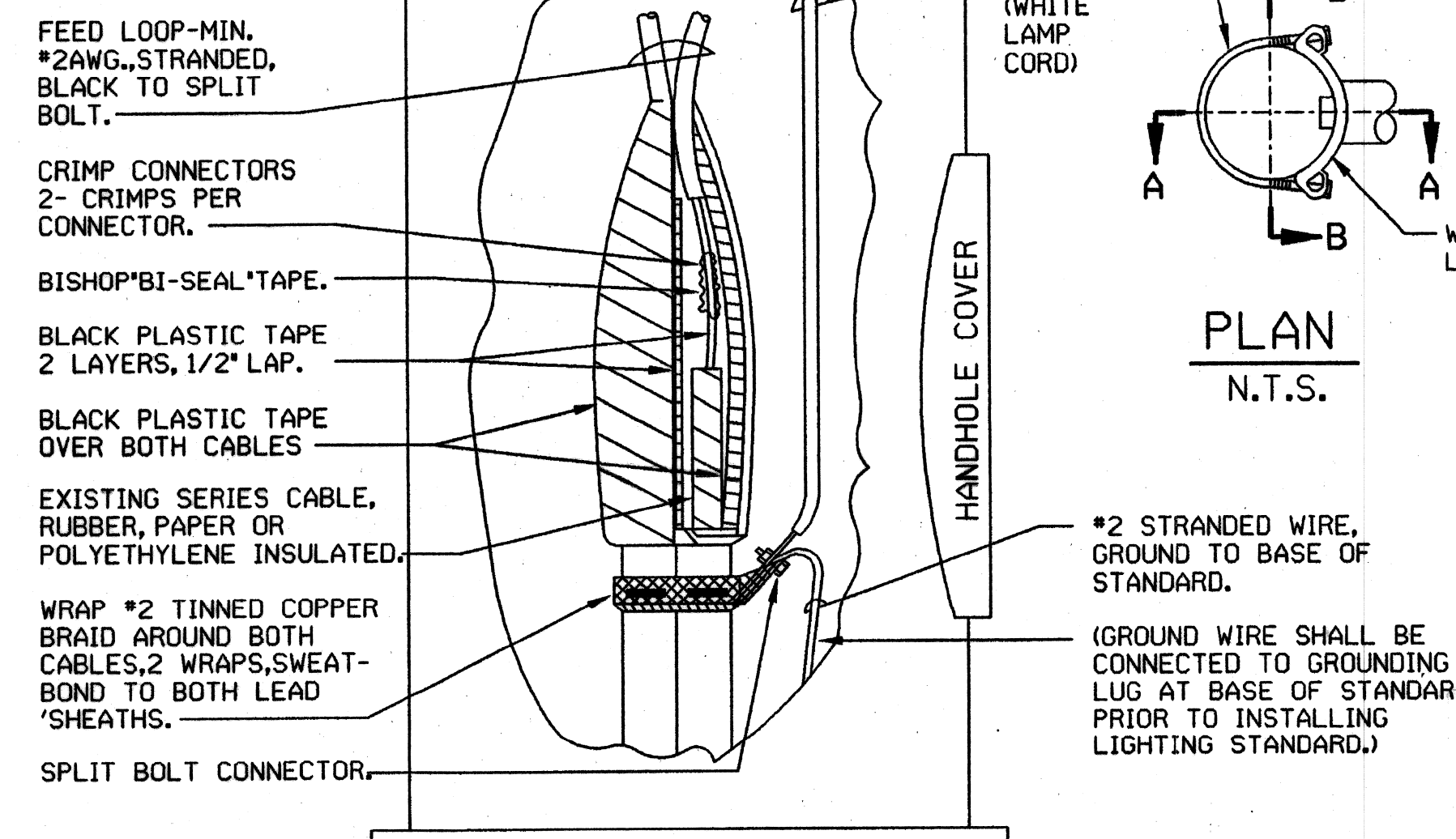
**GROUND CONNECTION**

N.T.S.



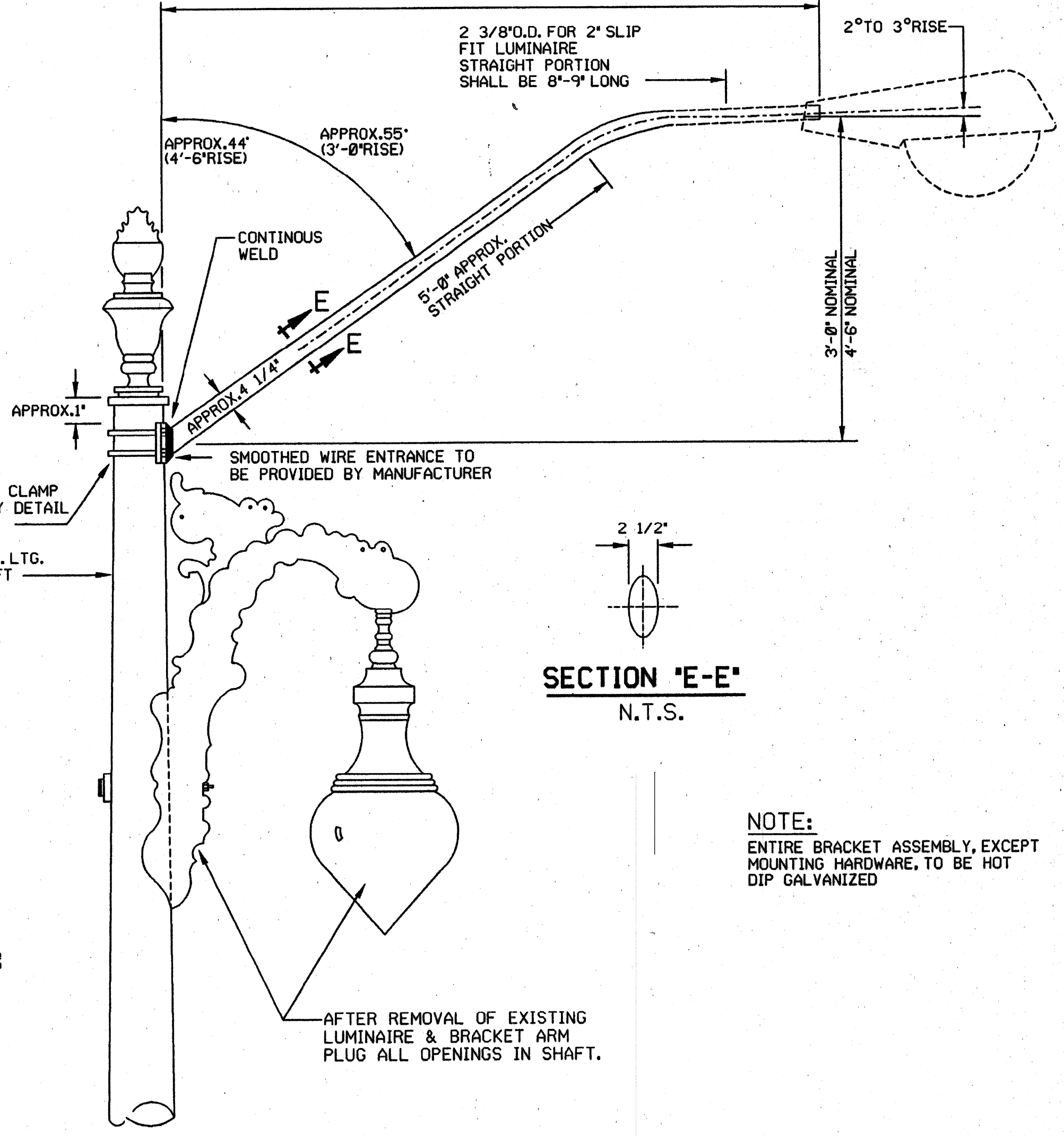
**SECTION D-D DETAIL OF INSTALLING CONDUITS IN & OUT OF NEW FDN.**

N.T.S.



**SERIES-TO-MULTIPLE LIGHTING CONVERSION POLE BASE CONNECTIONS**

N.T.S.

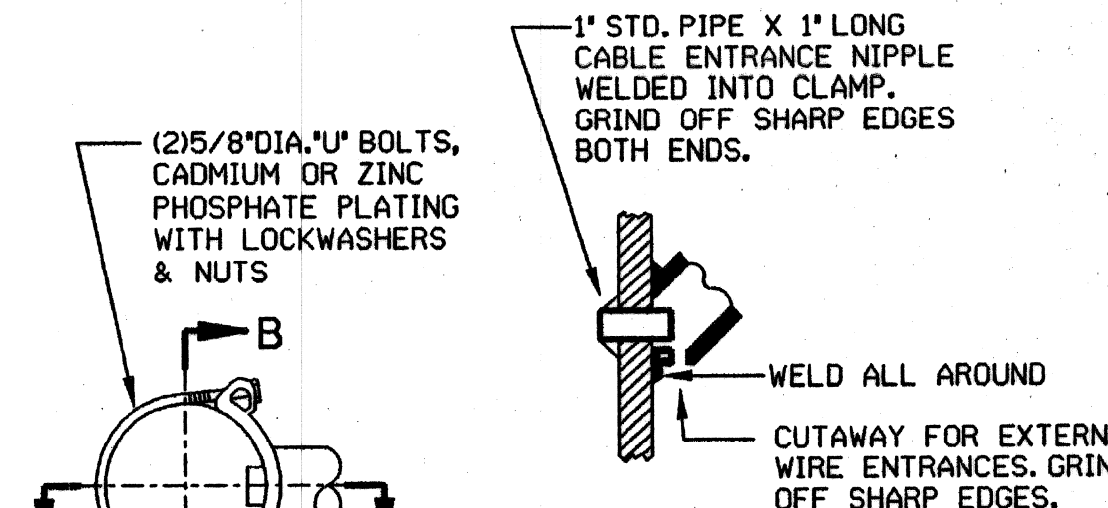


**CLAMP ON BRACKET ARM ELEVATION**

N.T.S.

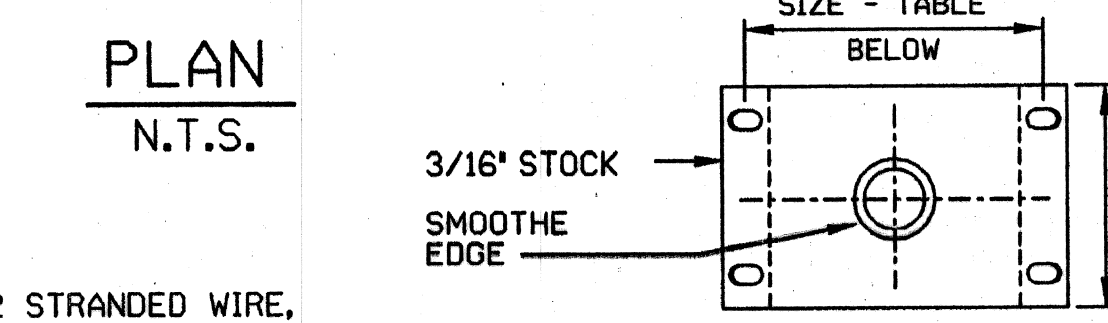
**SECTION "E-E"**

N.T.S.



**SECTION A-A**

N.T.S.



**SECTION B-B**

N.T.S.

| TYPE | POLE DIAMETER |
|------|---------------|
| A    | 3.6"-4-5"     |
| B    | 6.1"-6.9"     |
| C    | 7.5"-8.5"     |

**PIPE CLAMP DETAILS**

N.T.S.

| Date | Description | Chkd. by |
|------|-------------|----------|
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MULT. ST. LTG. CABLE CONNECTIONS, CLAMP-ON ARM & MISC. DETAILS

Drawn CEA  
Checked  
Approved  
Date  
Drwg. No. OF --  
File No. CEA

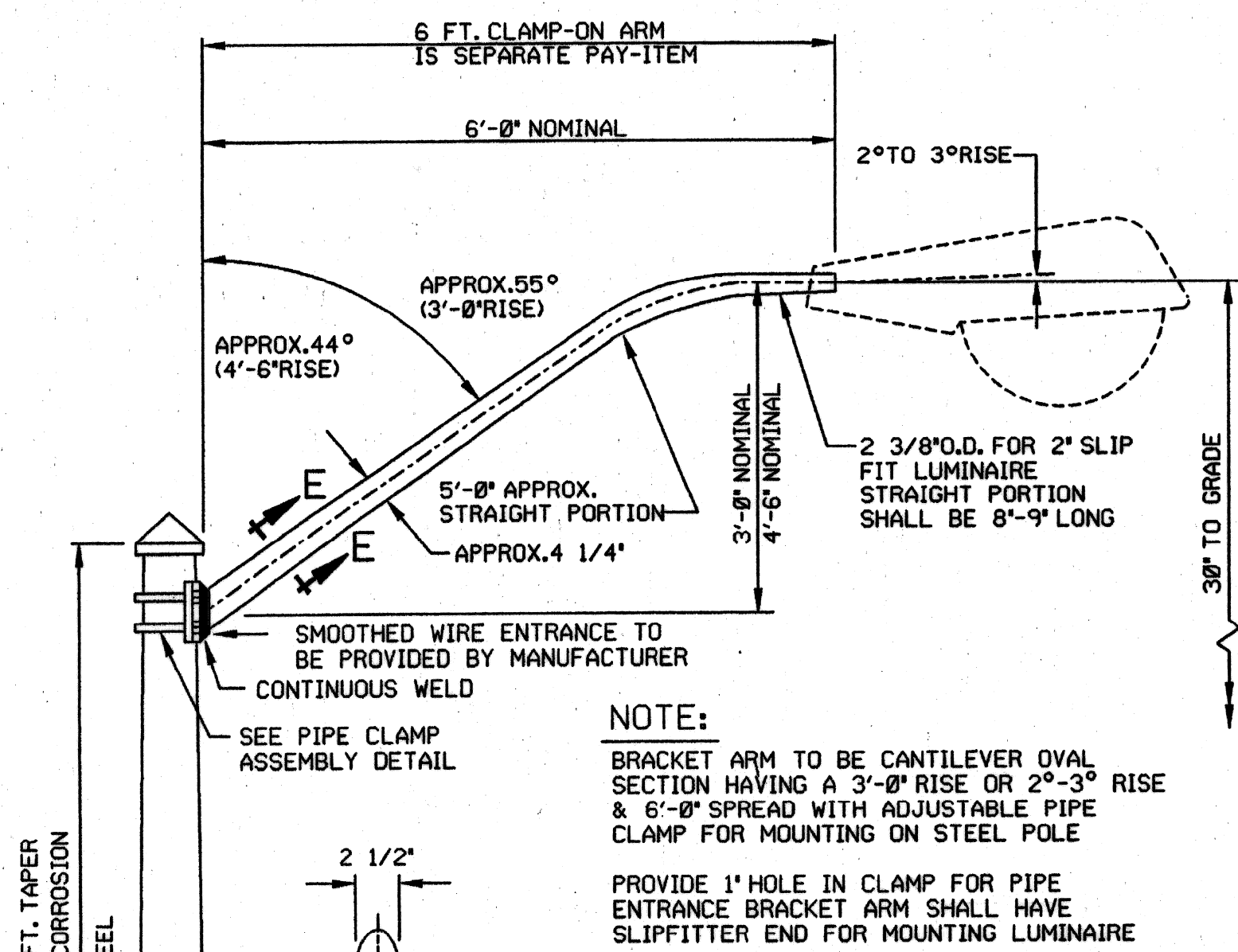
**Consulting Engineers, Inc.**  
15580 WYOMING AVE. DETROIT MICHIGAN 48221  
TELEPHONE: (313) 341-8797 FAX: 341-0205

Checked by  
Approved by

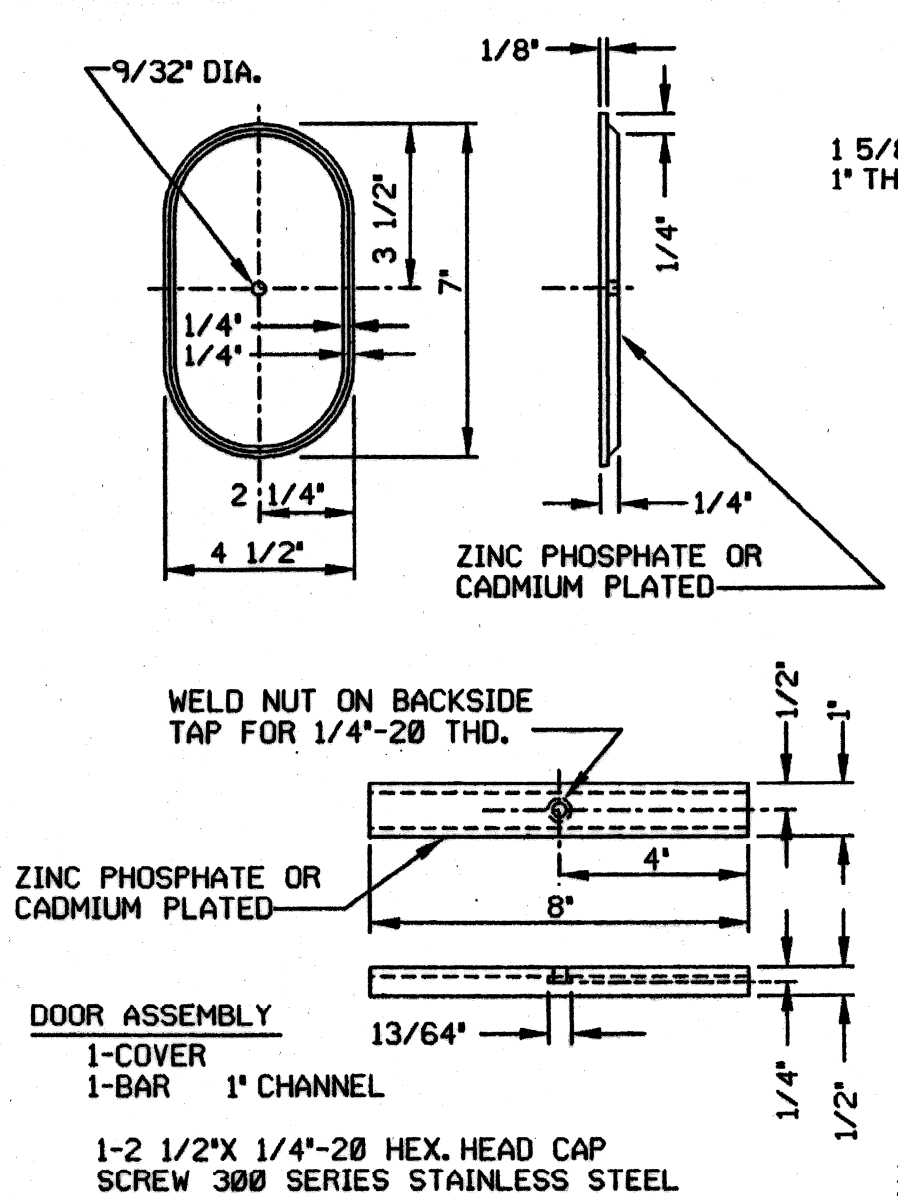
10-01-96 114

**PUBLIC LIGHTING DEPARTMENT**  
CITY OF DETROIT

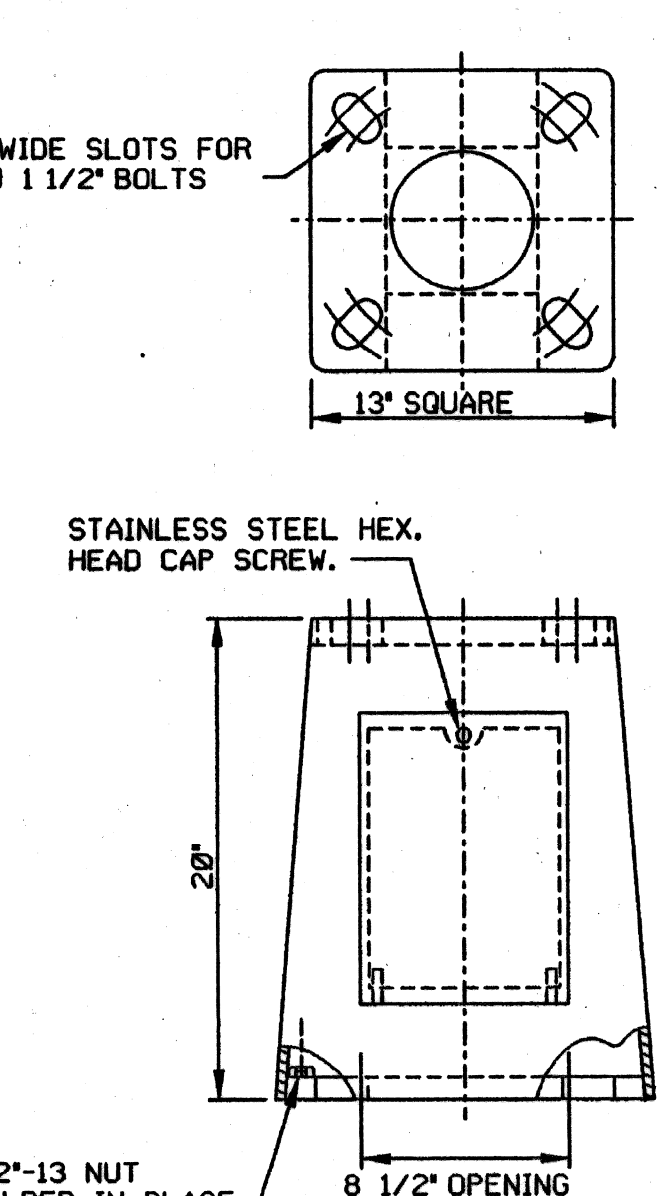
File No.  
Sheet No. 36 of 48  
Date



**6 FT. CLAMP-ON BRACKET ARM**  
N.T.S.



**HANDHOLE COVER DETAIL**  
N.T.S.

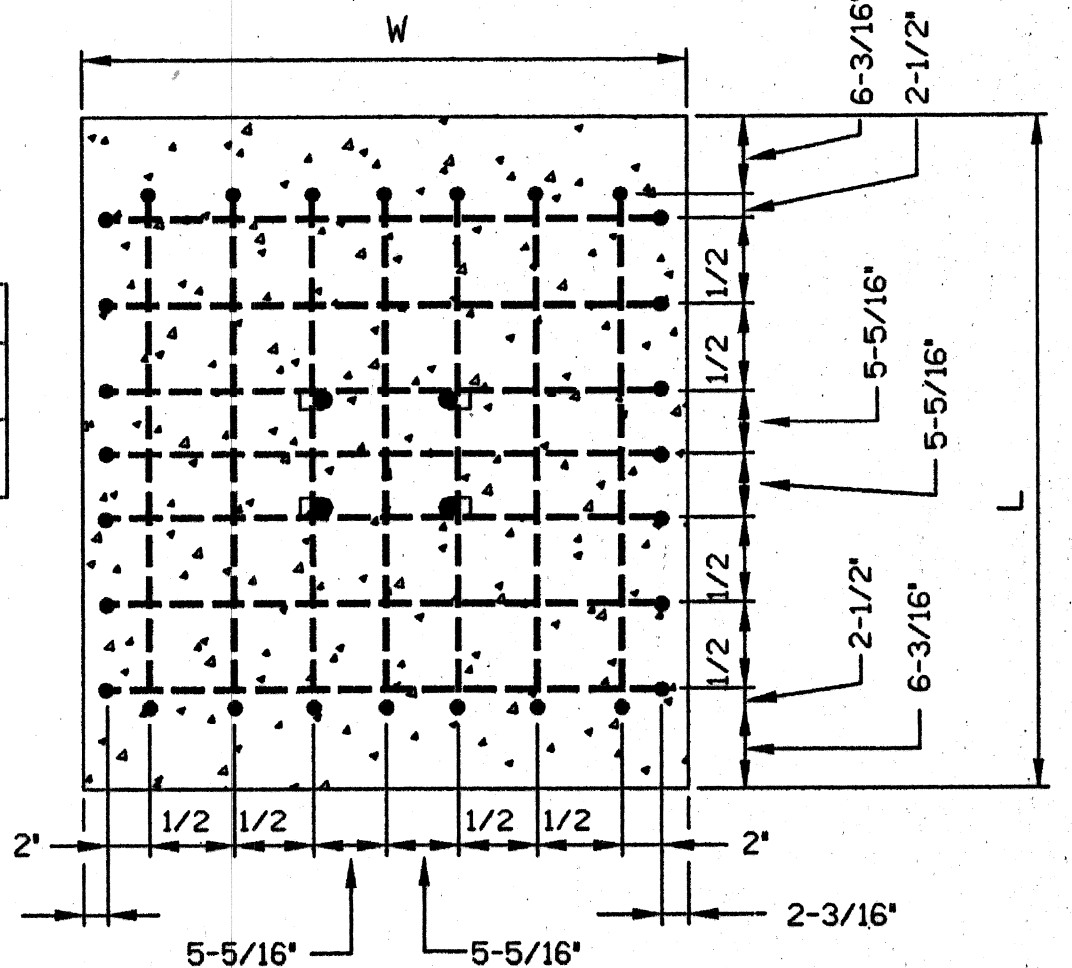


**SPECIAL FDN. PLAN**  
N.T.S.

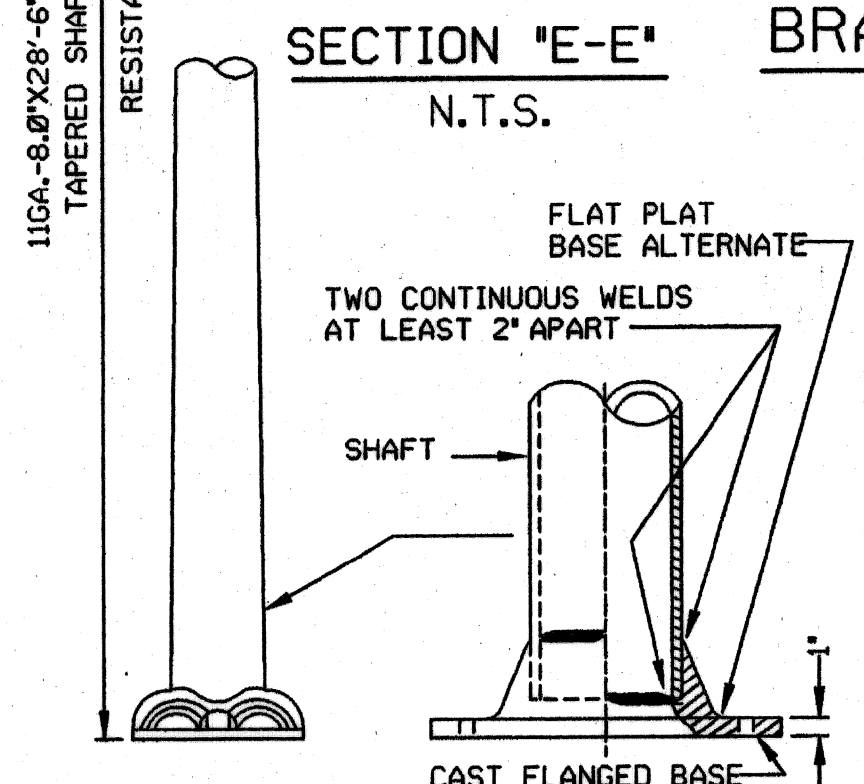
**SPECIAL FOUNDATION**

THERE SHALL BE NO EXTRA PAYMENT FOR SPECIAL FDN.  
(TO BE PAID FOR AS A NORMAL ST. LTG. STD. FDN. INSTALLATION)

| L     | W     | T     |
|-------|-------|-------|
| 5'-0" | 4'-3" | 1'-0" |
| 4'-6" | 3'-6" | 1'-6" |

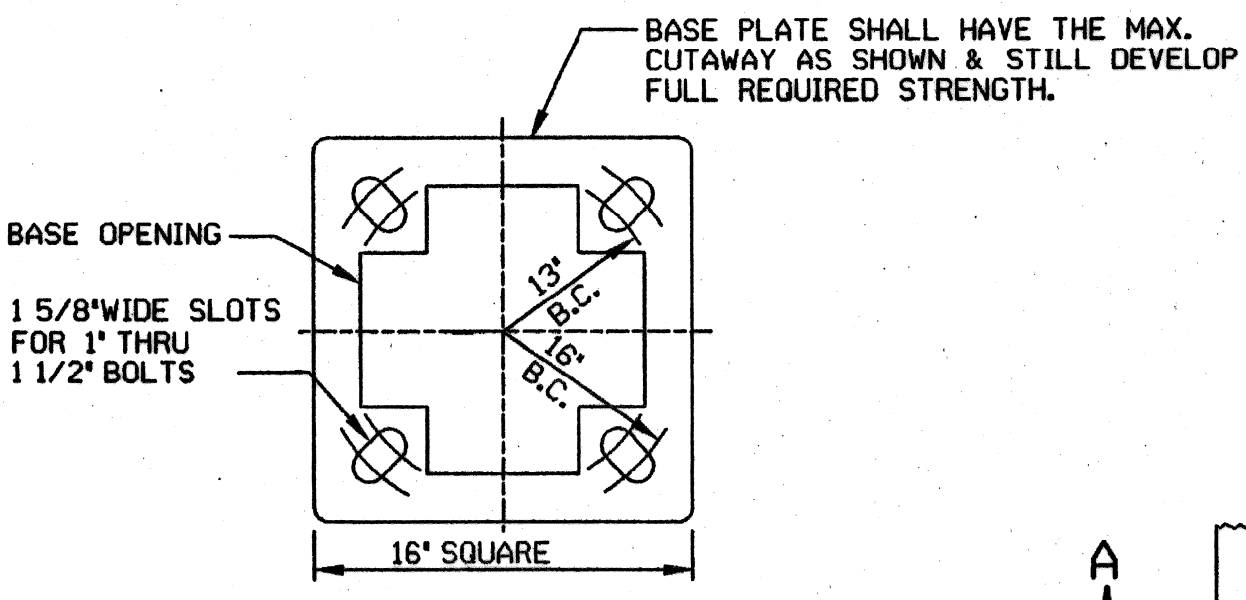


**SECTION D-D**  
N.T.S.



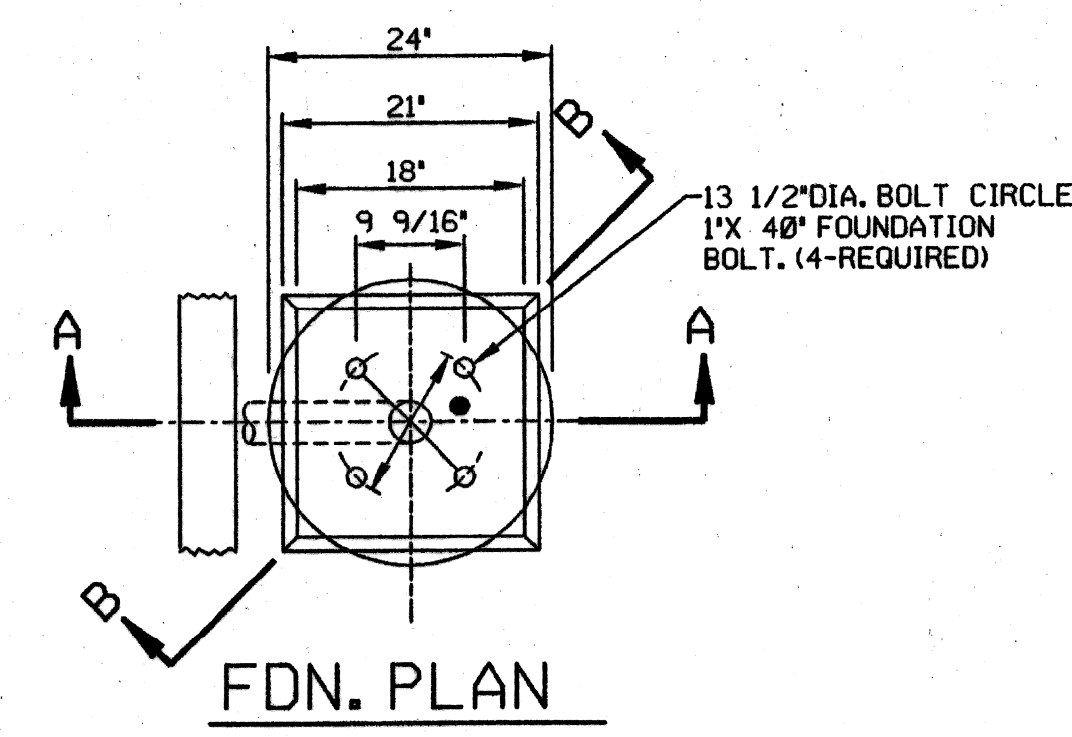
**SHAFT MODIFICATION**  
N.T.S.

**CODE 009-00**  
**STREET LIGHTING STANDARD**  
N.T.S.

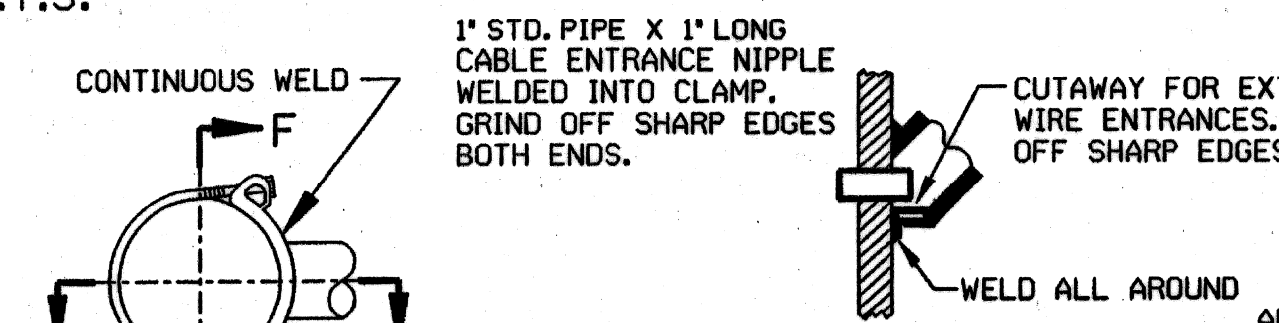


**NOTES:**  
MATERIALS  
1. TOP, BOTTOM & SIDES TO BE GALVANIZED STEEL AS PER MANUFACTURER.  
2. DOOR FASTENING SCREW TO BE ASTM SERIES 300 STAINLESS STEEL, MIN. 1/4"-20 NC, HEX HEAD CAP SCREW ONLY.  
3. THE DOOR FASTENING METHOD SHALL USE ONLY ONE HEX. HEAD CAP SCREW, SERIES 300 STAINLESS STEEL. MULTIPLE SCREWS WILL NO LONGER BE ALLOWED TO INSURE PROPER FIELD INSTALLATION AND OPERATION.

**P.L.D. UNIVERSAL STEEL TRANSFORMER BASE**  
N.T.S.



**FDN. PLAN**

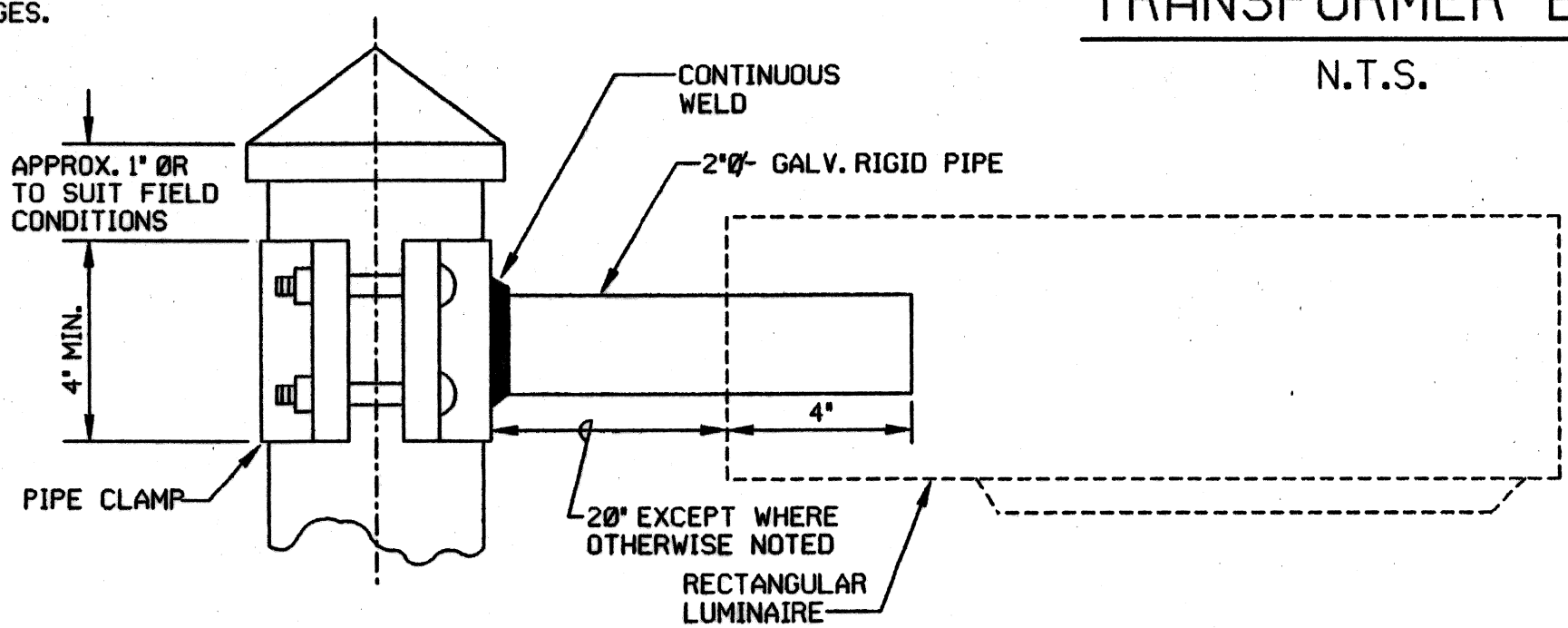


**SECTION G-G**

| TYPE | POLE DIAMETER |
|------|---------------|
| A    | 3.6"-4.5"     |
| B    | 6.1"-6.9"     |
| C    | 7.5"-8.5"     |

**PIPE CLAMP DETAILS**  
N.T.S.

**NOTE:**  
ENTIRE BRACKET ASSEMBLY, EXCEPT MOUNTING HARDWARE, TO BE HOT DIP GALVANIZED

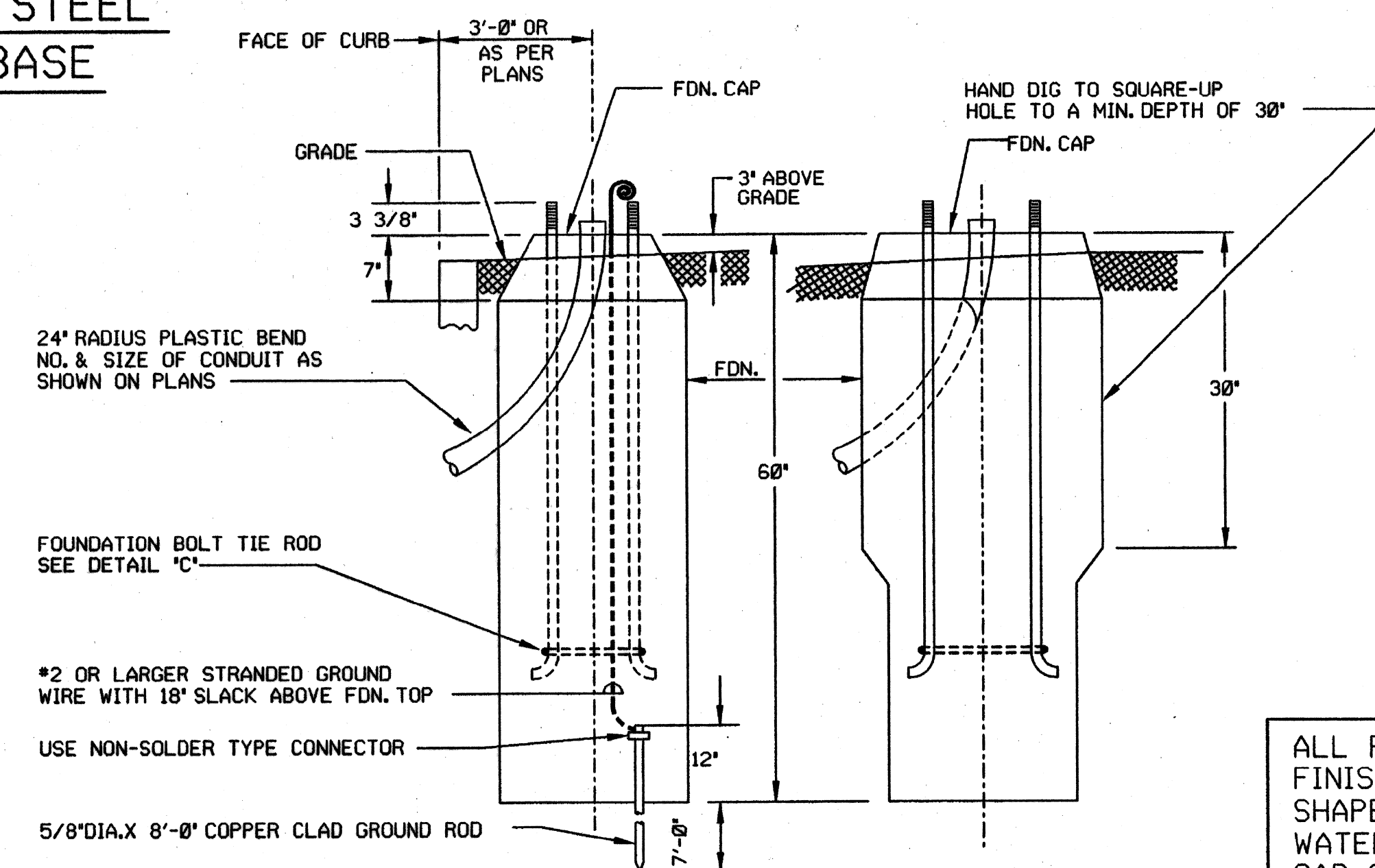


**SECTION F-F**

| STD. CODE NO. | SHAFT LENGTH | SHAFT DEFLECTION | MINIMUM LOAD | ANCHOR BOLT CIRCLE Ø | ANCHOR BOLT Ø & B.A. | HANDHOLE    | LUMINAIRE MOUNTING HEIGHT | BRACKET FITTERS REQ'D | BRACKET LENGTH |
|---------------|--------------|------------------|--------------|----------------------|----------------------|-------------|---------------------------|-----------------------|----------------|
| 009-00        | 28'-6"       | 2.9"             | 880*         | 13 1/2"              | 1" X 40"             | 4" X 6 1/2" | 30'                       | —                     | 6'             |

\* SHAFT DEFLECTION: SHAFT DEFLECTION MEASURED IN INCHES AT TOP, SHALL NOT BE GREATER THAN THAT SHOWN, FOR A HORIZONTAL LOAD OF 120 LBS. APPLIED 18 INCHES BELOW TOP OF SHAFT.  
\*\* SHAFT LOADING: SHAFTS SHALL WITHSTAND, AT THE GUARANTEED MINIMUM YIELD STRENGTH OF THE SHAFT MATERIAL, THE LOADS SHOWN IN THIS TABLE, THE LOAD SHALL BE APPLIED IN A SINGLE HORIZONTAL DIRECTION ANYWHERE AROUND THE CIRCUMFERENCE OF SHAFT 18 INCHES FROM THE TOP.

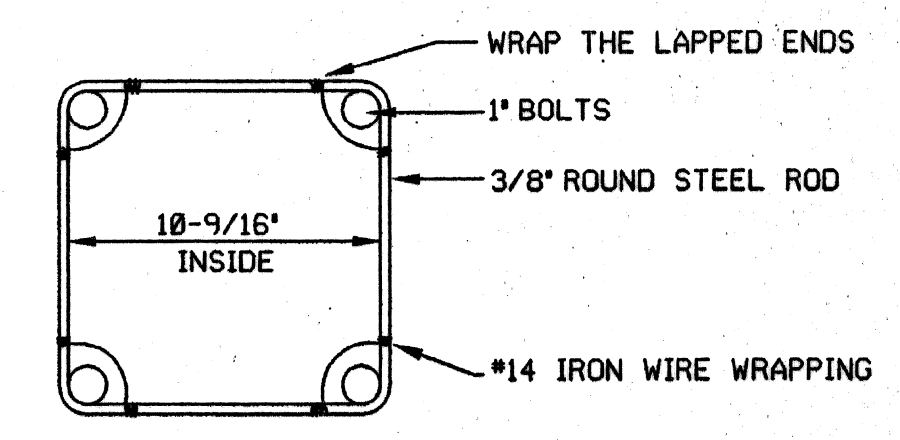
**CLAMP-ON BRACKET & RECTANGULAR LUMINAIRE**  
N.T.S.



**SECTION A-A**  
N.T.S.

**SECTION B-B**  
N.T.S.

**ANCHOR BASE STD. FOUNDATION**



**DETAIL C**

**FDN. BOLT TIE ROD**  
N.T.S.

ALL FOUNDATION CAPS SHALL HAVE A SMOOTH FINISH WITH BEVELED EDGES & SHALL BE SHAPED TO ALLOW COMPLETE DRAINAGE OF WATER. ANCHOR BOLT PROJECTIONS ABOVE CAP SHALL BE CLEANED OF ALL CONCRETE & FULLY USABLE THEIR FULL LENGTH.

DISK FILE

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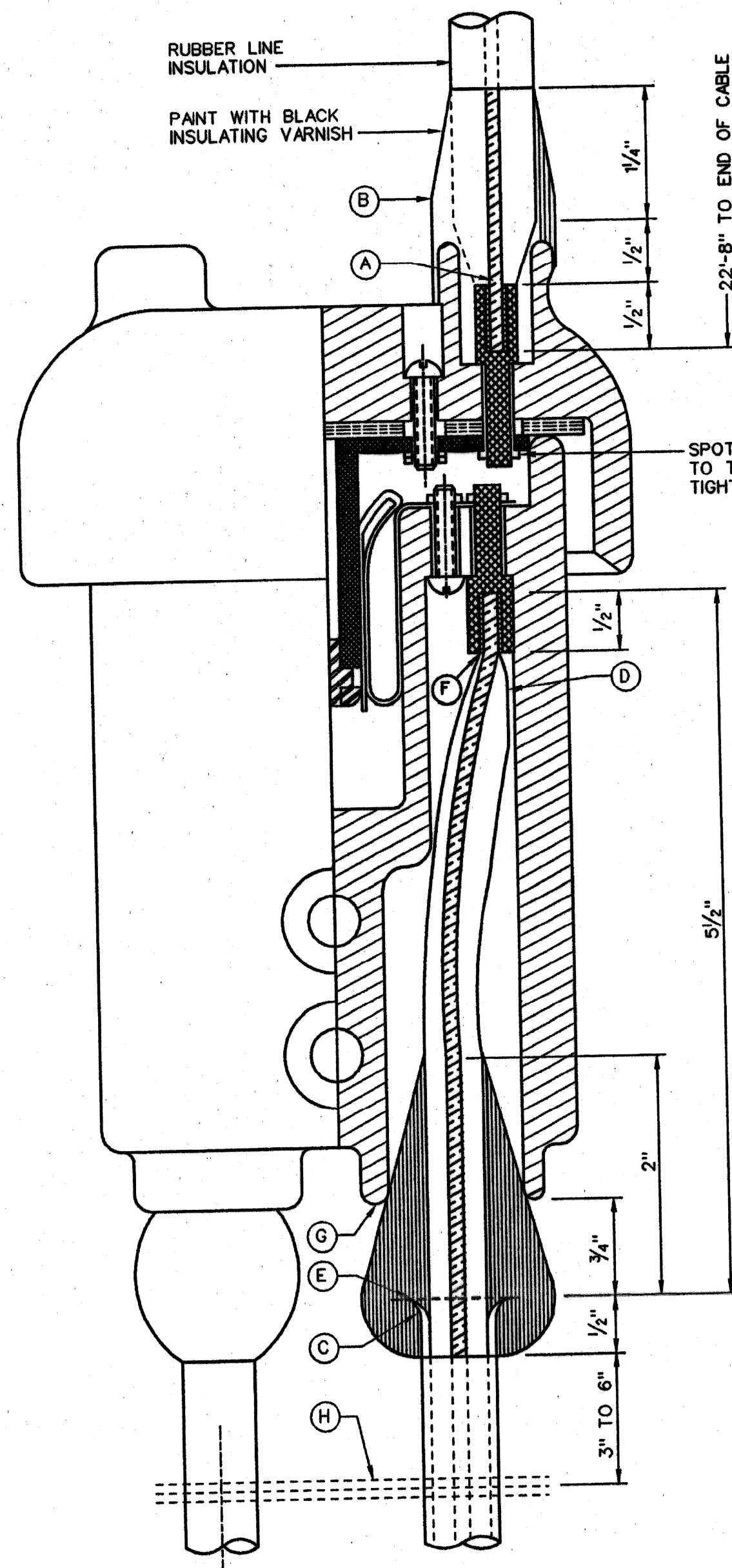
ANCHOR BASE ST. LTG. STD. (CODE 009-00)

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| Drawn    | CEA |
| Checked  |     |
| Approved |     |
| Date     |     |

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| Checked by  |          |
| Approved by |          |
| File No.    | 115      |
| Sheet No.   | 37 of 48 |
| Date        |          |

**PUBLIC LIGHTING DEPARTMENT**  
CITY OF DETROIT

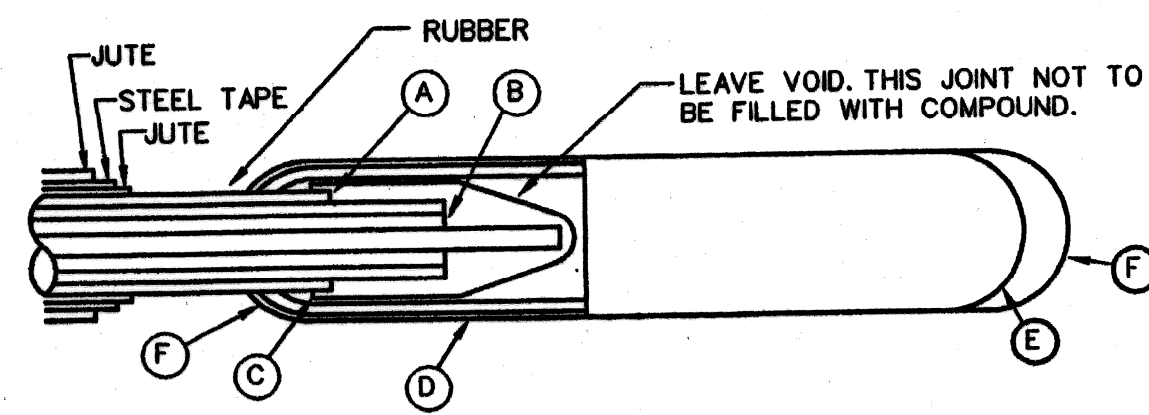
10-01-96 115



**CONNECTION FOR SERIES CUTOUT**  
N.T.S.

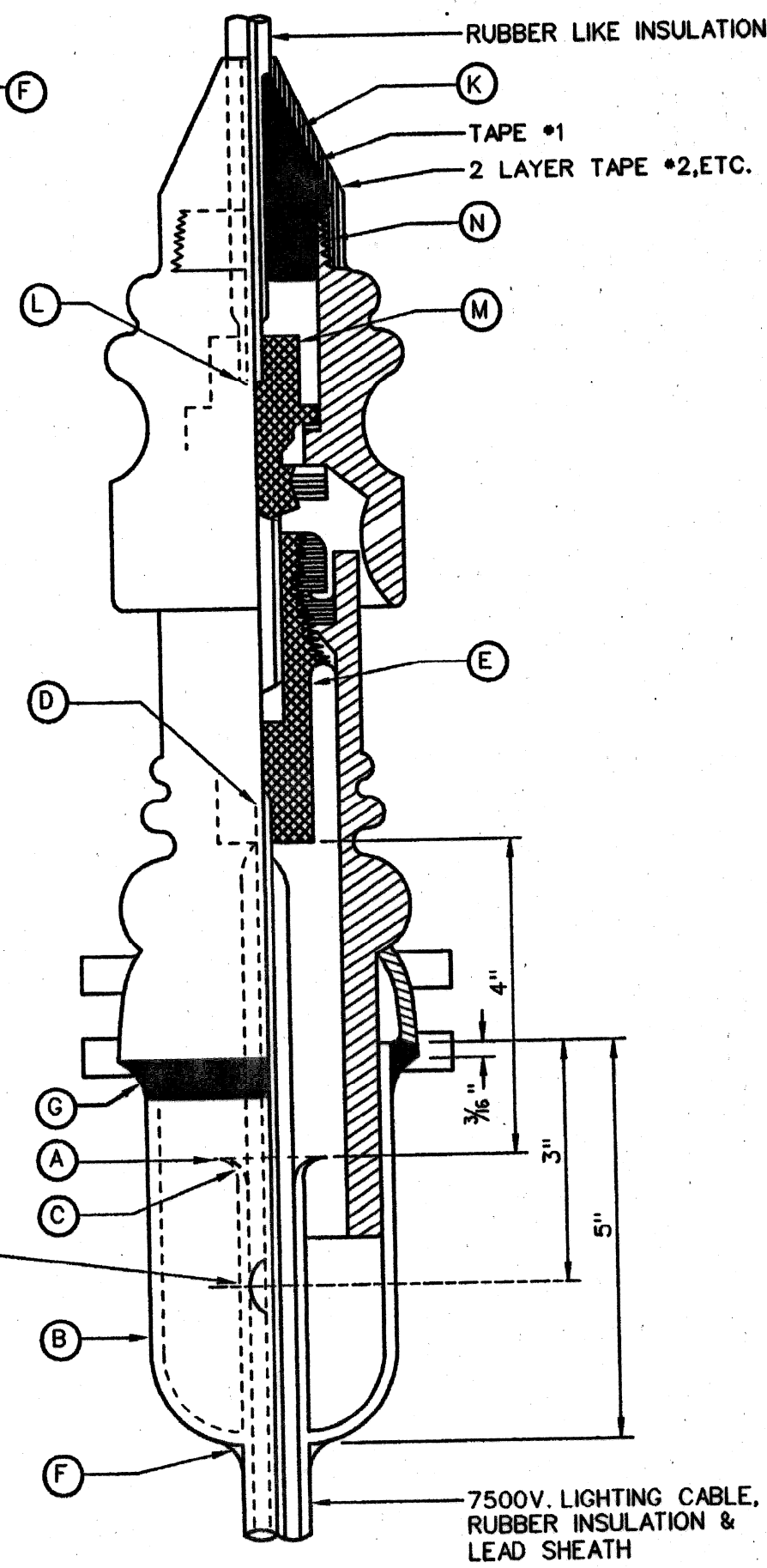
- A - SWEAT TERMINAL & PENCIL RUBBER INSULATION TO FIT SNUGLY IN PORCELAIN CAP OPENING SO THAT THE CONNECTOR NUT IS TIGHTENED, THE OPENING IS COMPLETELY & TIGHTLY FILLED.
- B - BUILD UP WITH #1 TAPE AS SHOWN, & COVER WITH 2 LAYERS, HALF LAP, WITH #2 TAPE. PAINT WITH ONE COAT OF BLACK INSULATING VARNISH.
- C - USE TUBE CUTTER TO SCORE LEAD SHEATH & CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- D - CUT INSULATION & PENCIL SMOOTHLY FOR CONNECTION.
- E - BELL LEAD SHEATH, REMOVE TAPE COMPLETELY, INCLUDING AS MUCH AS CAN BE REMOVED INSIDE OF BELL. FILL SHEATH CAVITY WITH RUBBER CEMENT.
- F - SWEAT CONDUCTOR INTO TERMINAL.
- G - APPLY TAPE #1 OVER BELL AS SHOWN TO FORM A TIGHT FIT BETWEEN INSULATION AND PORCELAIN AT "G" WHEN NUT IS TIGHTENED. COVER TAPE #1 WITH 2 LAYERS OF TAPE #2 APPROX. 3/4" FROM END OF TAPE #1.
- H - #18 SERVICE WIRE OR BRAID 4 WRAPS BETWEEN CABLES & SWEATED TO LEAD SHEATH FOR BOND TIE TO GROUND WIRE.

**NOTE:**  
1. FOR PARKWAY CABLE STRIP JUTE & STEEL TAPE DOWNWARD TO DUCT ENTRANCE.  
2. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A LIST OF ALL SPLICING MATERIALS HE PROPOSES TO USE WITH SUPPORTING DATA THAT THE MATERIAL IS SUITABLE FOR THE APPLICATION AS SHOWN ON THE DRAWINGS.



**#8 LIGHTING CABLE DEAD END CAP**

- A - SCORE LEAD SHEATH WITH TUBE CUTTER & CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- B - CUT INSULATION TO EXPOSE 1" BARE COPPER.
- C - OVERLAP WITH TAPE #2 APPROXIMATELY 1/4" FROM END OF LEAD OF LEAD SHEATH, AT LEAST 2 LAYERS OF TAPE AT THIS POINT.
- D - 1 1/4" X 8" X 1/8" LEAD SLEEVE.
- E - SHAPE AND BEAT LEAD SLEEVE TO FORM A CLOSED END.
- F - CADMIUM ALLOY WIPING METAL. DO NOT POUR METAL FOR WIPE. USE TORCH AND FINGER WIPE MINIMUM OF HEAT.

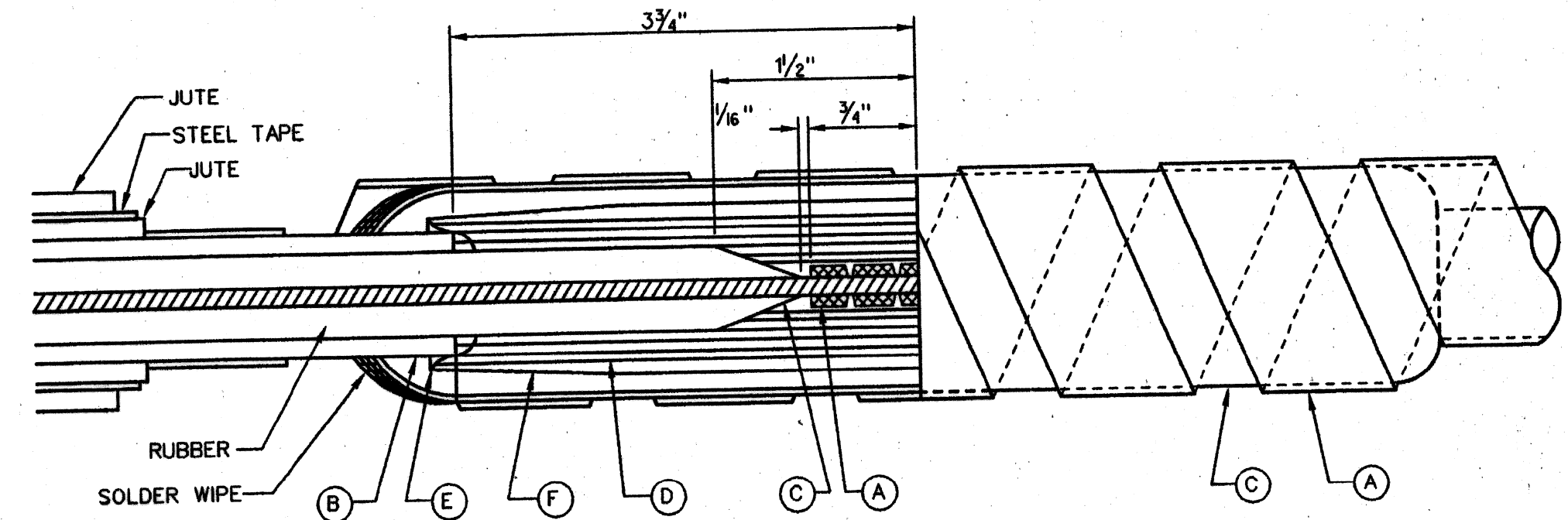


**CONNECTIONS FOR 1/C 7500V. POTHEAD**  
N.T.S.

- A - USE TUBE CUTTER TO SCORE LEAD SHEATH AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING. 4" OF INSULATION TO REMAIN, NOT INCLUDING BARED CONDUCTOR.
- B - FORM BOTTOM OF EMBOSSED SLEEVE & SLIP OVER CABLE. HOLE IN FRONT.
- C - BELL LEAD SHEATH, REMOVE TAPE FROM INSULATION, INCLUDING AS MUCH AS POSSIBLE FROM WITHIN BELLED SHEATH.
- D - SWEAT CONDUCTOR INTO TERMINAL & PENCIL INSULATION SMOOTHLY FOR 3/4"
- E - MOUNT TERMINAL FIRMLY INTO PORCELAIN.
- F - PUSH SLEEVE INTO CAST IRON COLLAR AND WIPER SMOOTHLY TO LEAD SHEATH.
- G - INVERT & FILL JOINT BETWEEN IRON COLLAR AND SLEEVE WITH EPOXY RESIN.
- H - LAY POTHEAD HORIZONTAL & FILL COMPLETELY WITH APPROVED COMPOUND.
- I - INSERT LEAD PLUG INTO EMBOSSED HOLE, TAP FLUSH & FILL WITH LEAD
- J - TRAIN CABLE & MOUNT POTHEAD ON CROSS ARM.
- K - SLIP THE CONE SHAPED RUBBER BUSHING ON THE RUBBER INSULATED CABLE RISER.
- L - SWEAT CONDUCTOR INTO TERMINAL FIRMLY INTO POTHEAD CAP.
- M - MOUNT THE TERMINAL FIRMLY INTO THE POTHEAD CAP.
- N - BUILD UP WITH TAPE #1 AND CARRY 2 LAYERS OVER THE CAP TO POINT "N" AS SHOWN. COVER WITH 2 LAYERS TYPE #2-HALF LAP. PAINT WITH APPROVED BLACK INSULATING VARNISH.

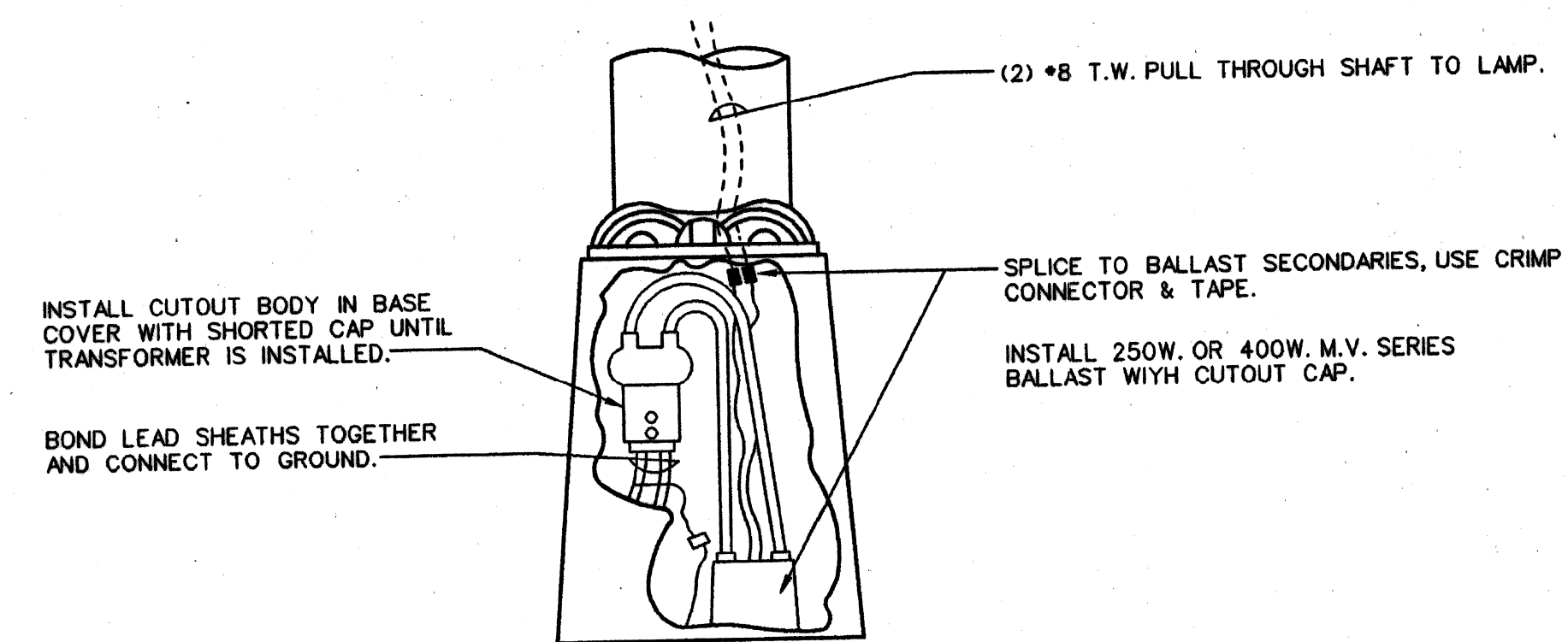
**MATERIAL TYPES**

TAPE #1 - CORONA RESISTING HIGH VOLTAGE RUBBER TAPE ONLY.  
TAPE #2 - BLACK PLASTIC ELECTRICAL TAPE.



**#8 LIGHTING CABLE JOINT**  
N.T.S.

- A - 1/2" #8 TINNED COPPER SLEEVE, 2 CIRCUMFERENTIAL CRIMPS ON EACH END.
- B - SCORE LEAD SHEATH WITH TUBE CUTTER & CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- C - CUT INSULATION & PENCIL SMOOTHLY AS SHOWN, AFTER REMOVING TAPE.
- D - APPLY TAPE #1 APPROXIMATELY 1" DIAMETER OVERALL.
- E - OVERLAP WITH TAPE #1 APPROXIMATELY 1/4" FROM END OF LEAD SHEATH, AT LEAST 2 LAYERS OF TAPE AT THIS POINT.
- F - TWO LAYERS OF TAPE #2 APPLIED HALF LAP.
- G - 1/4" X 8" X 1/8" LEAD SLEEVE.
- H - TWO LAYERS OF TAPE #2 HALF LAP, ON ARMORED PARKWAY CABLE ONLY.



**INCANDESCENT TO MERCURY CONVERSION**  
N.T.S.

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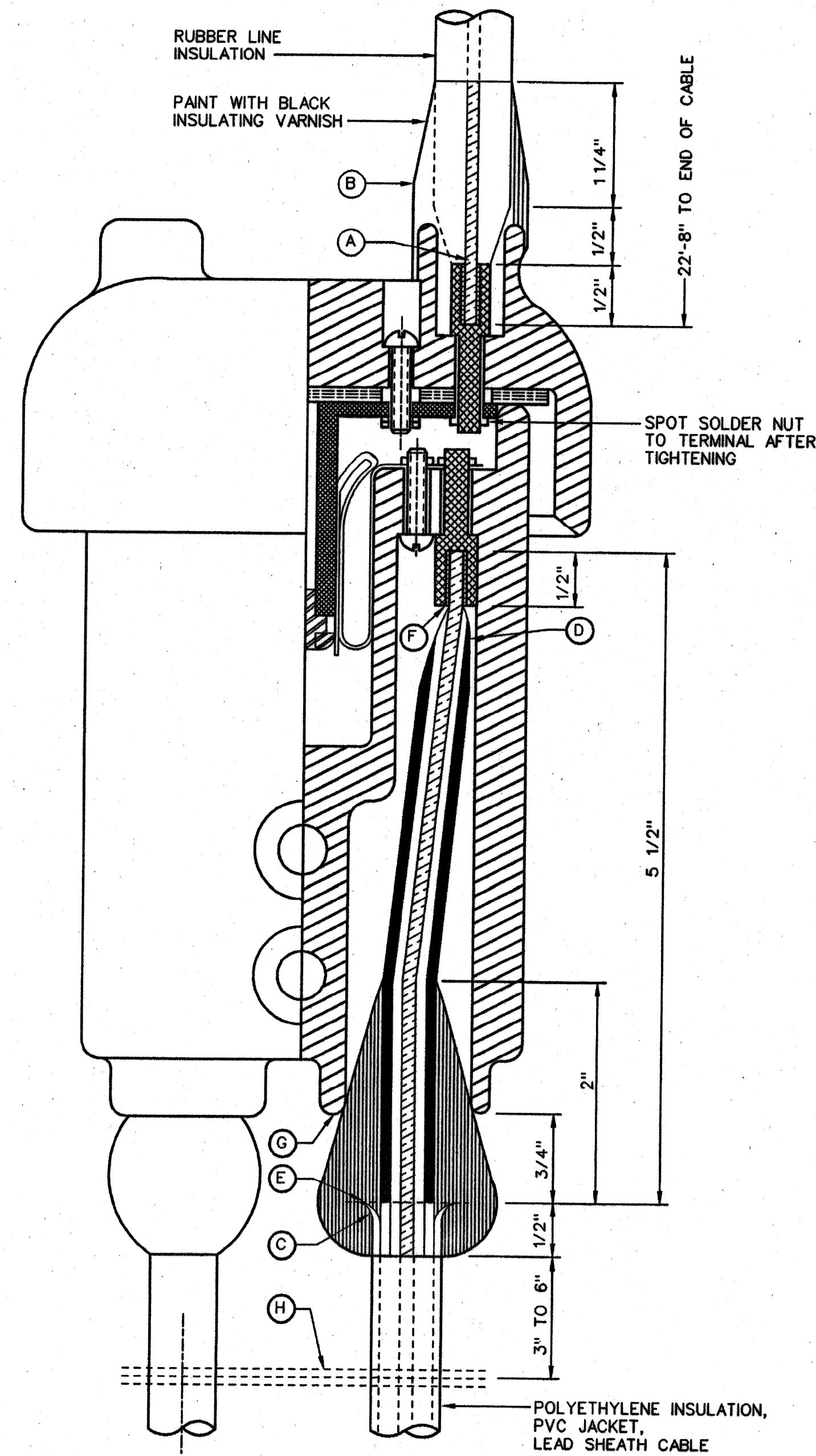
RUBBER INSULATED LEAD SHEATHED SPLICE & CONNECTIONS

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PUBLIC LIGHTING DEPARTMENT  
CITY OF DETROIT

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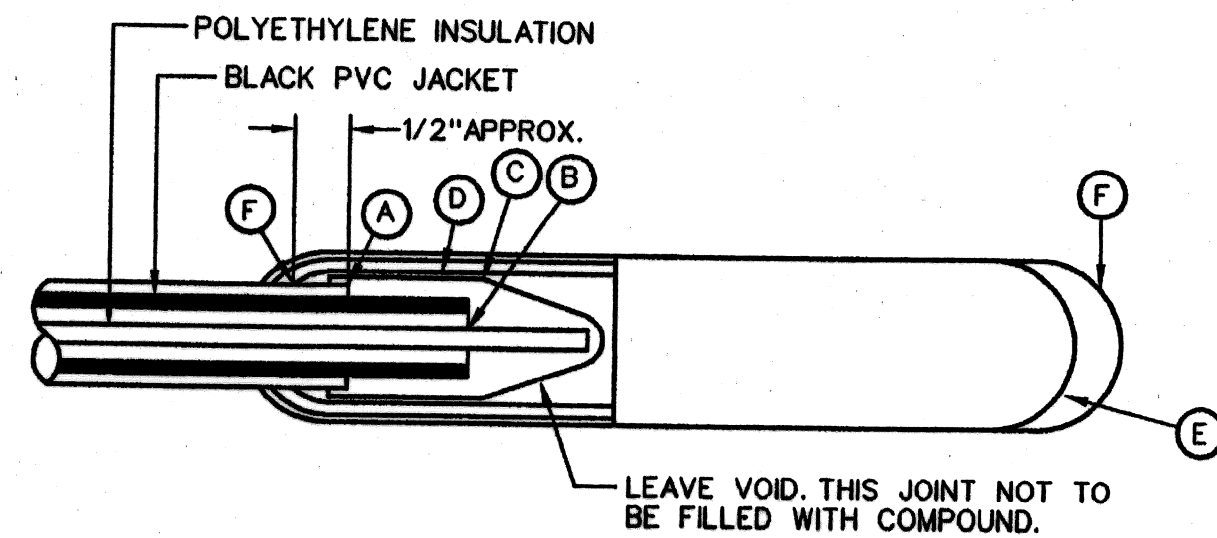
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**CONNECTION FOR SERIES CUTOUT**

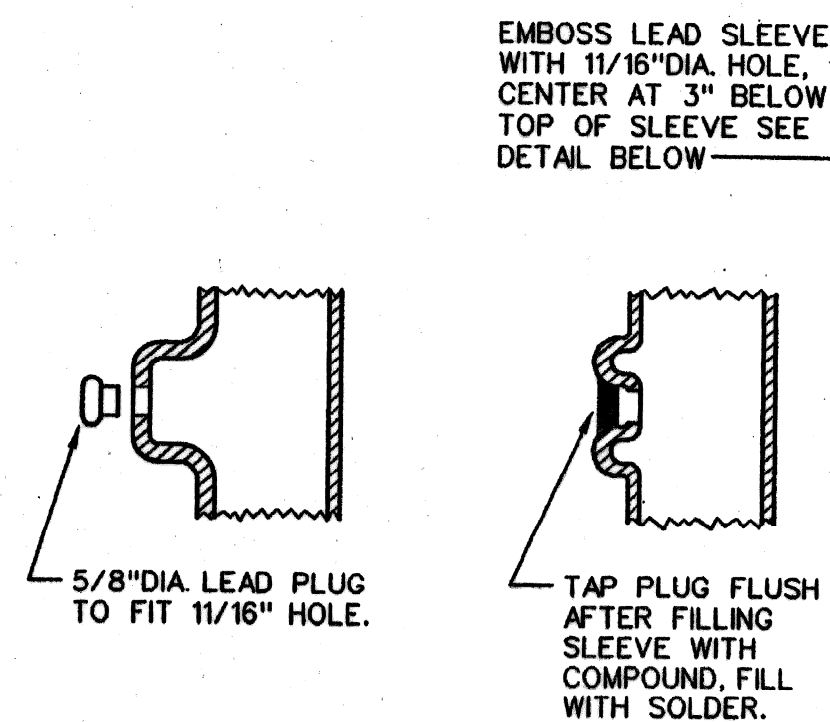
N.T.S.

- A - SWEAT TERMINAL & PENCIL INSULATION TO FIT SNUGLY IN PORCELAIN OPENING SO THAT AS NUT IS DRAWN UP TIGHT THE OPENING IS COMPLETELY AND TIGHTLY FILLED.
- B - BUILD UP WITH #3 TAPE AS SHOWN, & COVER WITH 2 LAYERS, HALF LAP, WITH #2 TAPE AS NOTED.
- C - USE TUBE CUTTER TO SCORE LEAD SHEATH & CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- D - CUT INSULATION & PENCIL SMOOTHLY FOR CONNECTION.
- E - BELL LEAD SHEATH AND FILL SHEATH CAVITY WITH APPROVED ADHESIVE.
- F - SWEAT CONDUCTOR INTO TERMINAL.
- G - APPLY TAPE #1 OVER BELL SUFFICIENTLY TO FORM A TIGHT FIT BETWEEN CABLE AND PORCELAIN AT "G" COVER TAPE #1 WITH 2 LAYERS OF TAPE #2 TO ABOUT 3/4" FROM END OF TAPE #1.
- H - #18 SERVICE WIRE OR BRAID 4 WRAPS BETWEEN CABLES & SWEATED TO LEAD SHEATH FOR BOND TIE TO GROUND WIRE.



**#8 LIGHTING CABLE DEAD END CAP**

- A - SCORE LEAD SHEATH WITH TUBE CUTTER & CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- B - CUT INSULATION TO EXPOSE 1" OF BARE COPPER.
- C - OVERLAP WITH TAPE #2 APPROXIMATELY 1/4" FROM END OF LEAD SHEATH, AT LEAST 2 LAYERS OF TAPE AT THIS POINT.
- D - 1 1/4" X 8" X 1/8" LEAD SLEEVE.
- E - SHAPE AND BEAT LEAD SLEEVE TO FORM A CLOSED END.
- F - CADMIUM ALLOY WIPING METAL. DO NOT POUR METAL FOR WIPE. USE TORCH AND FINGER WIPE WITH MINIMUM OF HEAT.



**CONNECTIONS FOR 1/C 7500V. POTHEAD**

N.T.S.

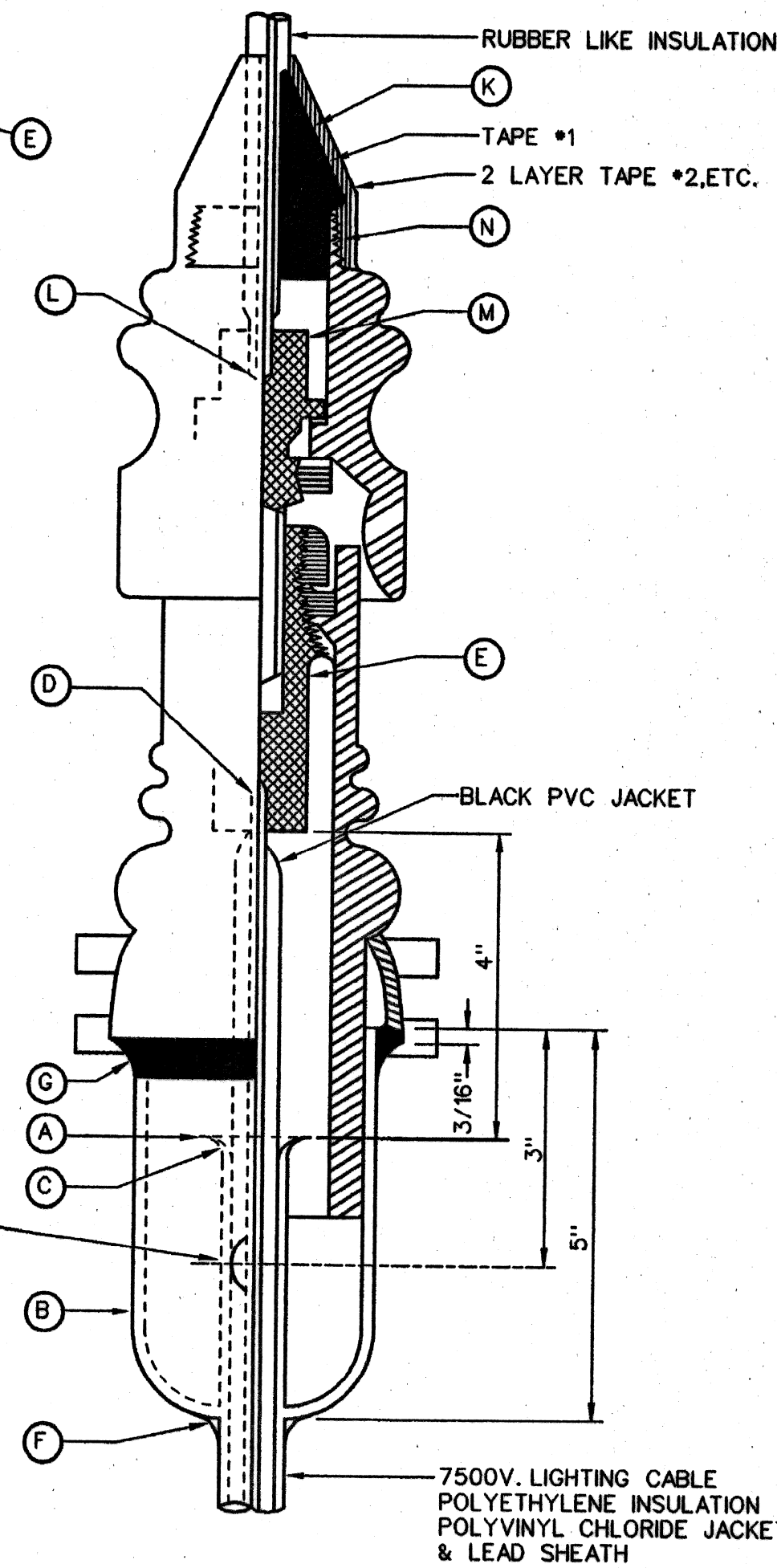
- A - USE TUBE CUTTER TO SCORE LEAD SHEATH AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING. 4" OF INSULATION TO REMAIN, NOT INCLUDING BARED CONDUCTOR.
- B - FORM BOTTOM OF EMBOSSED SLEEVE & SLIP OVER CABLE, HOLE IN FRONT.
- C - BELL LEAD SHEATH.
- D - SWEAT CONDUCTOR INTO TERMINAL & PENCIL INSULATION SMOOTHLY FOR 3/4"
- E - MOUNT TERMINAL FIRMLY INTO PORCELAIN HOUSING.
- F - PUSH SLEEVE INTO CAST IRON COLLAR AND FINGER WIPE TO CABLE SHEATH WITH LOW TEMPERATURE CADMIUM ALLOY. USE MINIMUM OF HEAT. DO NOT POUR METAL.
- G - INVERT & FILL JOINT BETWEEN IRON COLLAR AND LEAD SLEEVE WITH APPROVED EPOXY RESIN.
- H - LAY POTHEAD HORIZONTAL & FILL WITH APPROVED COMPOUND. DO NOT HEAT COMPOUND MORE THAN NECESSARY FOR POURING.
- I - INSERT 5/8" DIA. LEAD PLUG INTO SLEEVE HOLE, TAP FLUSH & FILL WITH SOLDER.
- J - TRAIN THE CABLE AND MOUNT POTHEAD ON CROSS ARM.
- K - SLIP THE CONE SHAPED RUBBER BUSHING ON THE RUBBER INSULATED CABLE RISER.
- L - SWEAT CONDUCTOR INTO TERMINAL "L" AND PENCIL INSULATION AS SHOWN.
- M - MOUNT THE TERMINAL FIRMLY INTO THE POTHEAD CAP.
- N - BUILD UP WITH TAPE #3 AND CARRY 2 LAYERS OVER END OF THE CAP TO POINT "N" AS SHOWN. COVER WITH 2 LAYERS TAPE #2-HALF LAP. PAINT WITH APPROVED BLACK INSULATING VARNISH.

**MATERIAL & SPECIAL PRECAUTIONS**

1. TAPE #1: CLEAR POLYETHYLENE TAPE, 0.02" THICK X 3/4" WIDE  
TAPE #2: BLACK PVC PLASTIC ELECTRICAL TAPE.  
TAPE #3: APPROVED A.S.T.M. RUBBER TAPE.  
FILLING COMPOUND: APPROVED COMPOUND.
2. USE SMALL HAND TORCH FOR WIPING JOINTS, AT MINIMUM TEMPERATURE.
3. WHEN IT IS NECESSARY TO SPLICE POLYETHYLENE INSULATED CABLE TO RUBBER CABLE, USE ABOVE MATERIALS.
4. APPLY ADHESIVE INSIDE BELLED SHEATH CAVITY ONLY. APPLY TAPE AFTER ADHESIVE HAS BECOME TACKY.

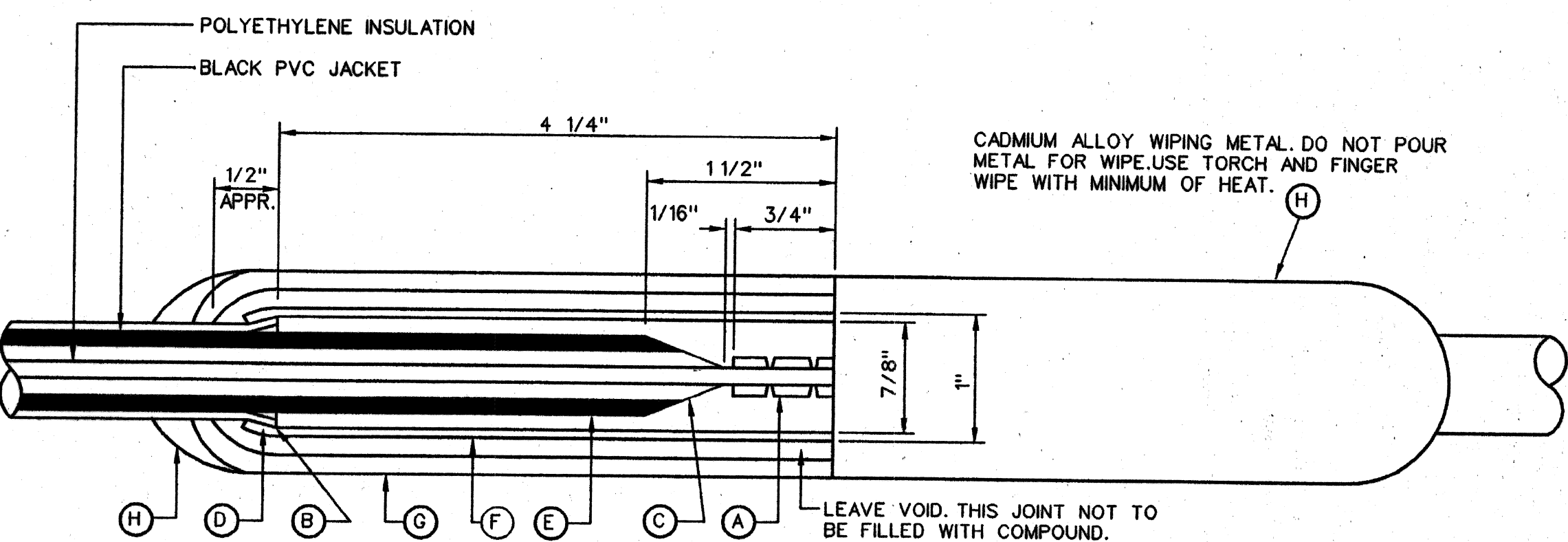
**NOTE:**

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A LIST OF ALL SPLICING MATERIALS HE PROPOSES TO USE WITH SUPPORTING DATA THAT THE MATERIAL IS SUITABLE FOR APPLICATION AS SHOWN ON THE DRAWINGS.

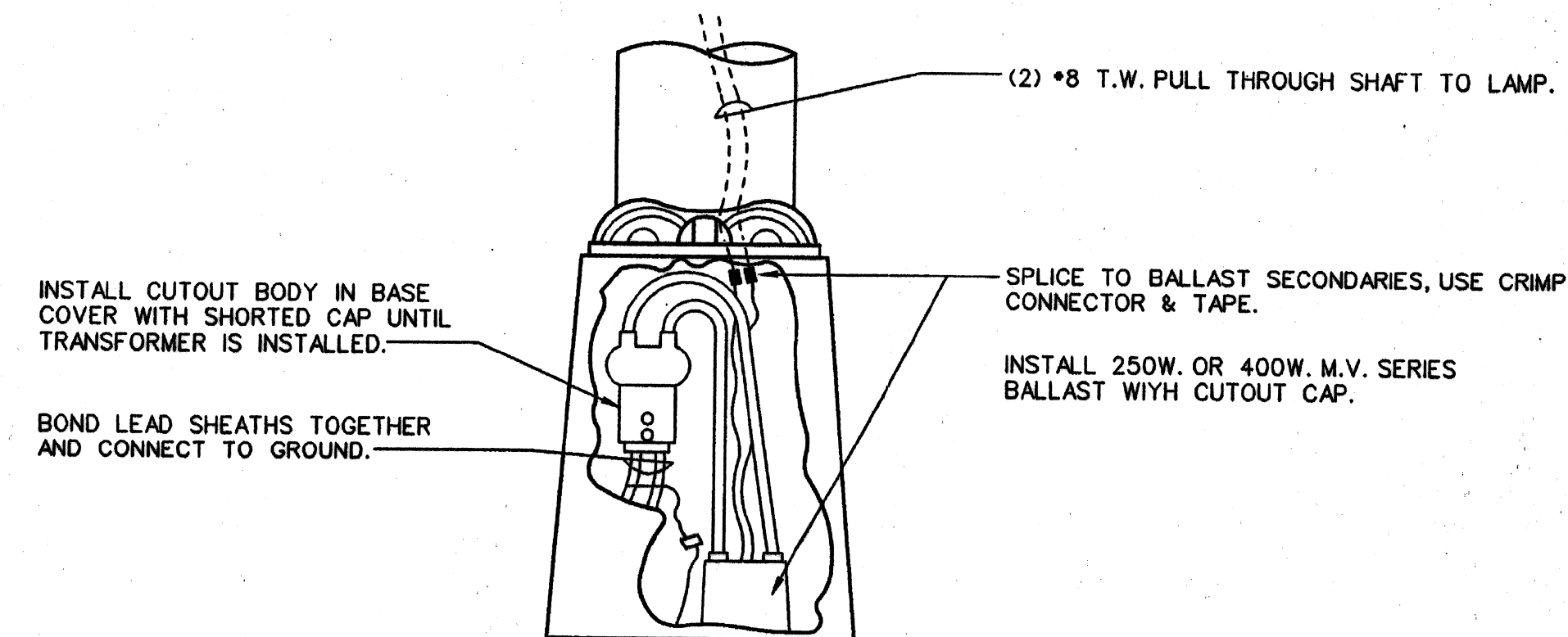


**#8 LIGHTING CABLE JOINT**

N.T.S.



- A - 1 1/2" #8 TINNED COPPER SLEEVE, 2 CIRCUMFERENTIAL CRIMPS ON EACH END.
- B - SCORE LEAD SHEATH WITH TUBE CUTTER & CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- C - CUT INSULATION & PENCIL SMOOTHLY AS SHOWN.
- D - BELL LEAD SHEATH TO DIAMETER SHOWN AND FILL SHEATH CAVITY WITH APPROVED ADHESIVE.
- E - APPLY TAPE #1 OVER PVC JACKET AND BELLED SHEATH TO A DIA. OF 1". OVERLAP BELLED SHEATH WITH TAPE APPROX. 1/4"
- F - TWO LAYERS OF TAPE #2 APPLIED HALF LAP.
- G - LEAD SLEEVE 10" LONG, 1/8" WALL, 1 1/4" INSIDE DIAMETER.
- H - SPECIAL LOW TEMPERATURE CADMIUM ALLOY WIPING METAL.



**INCANDESCENT TO MERCURY CONVERSION**

N.T.S.

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POLYETHYLENE INSUL. P.J. LEAD SHEATHED SPLICE & CONN.

Drawn CEA  
Checked  
Approved  
Date

**Consulting Engineering Associates, Inc.**  
16580 WYOMING AVE. DETROIT MICHIGAN 48221  
TELEPHONE: (313) 341-5797 FAX: 341-0205

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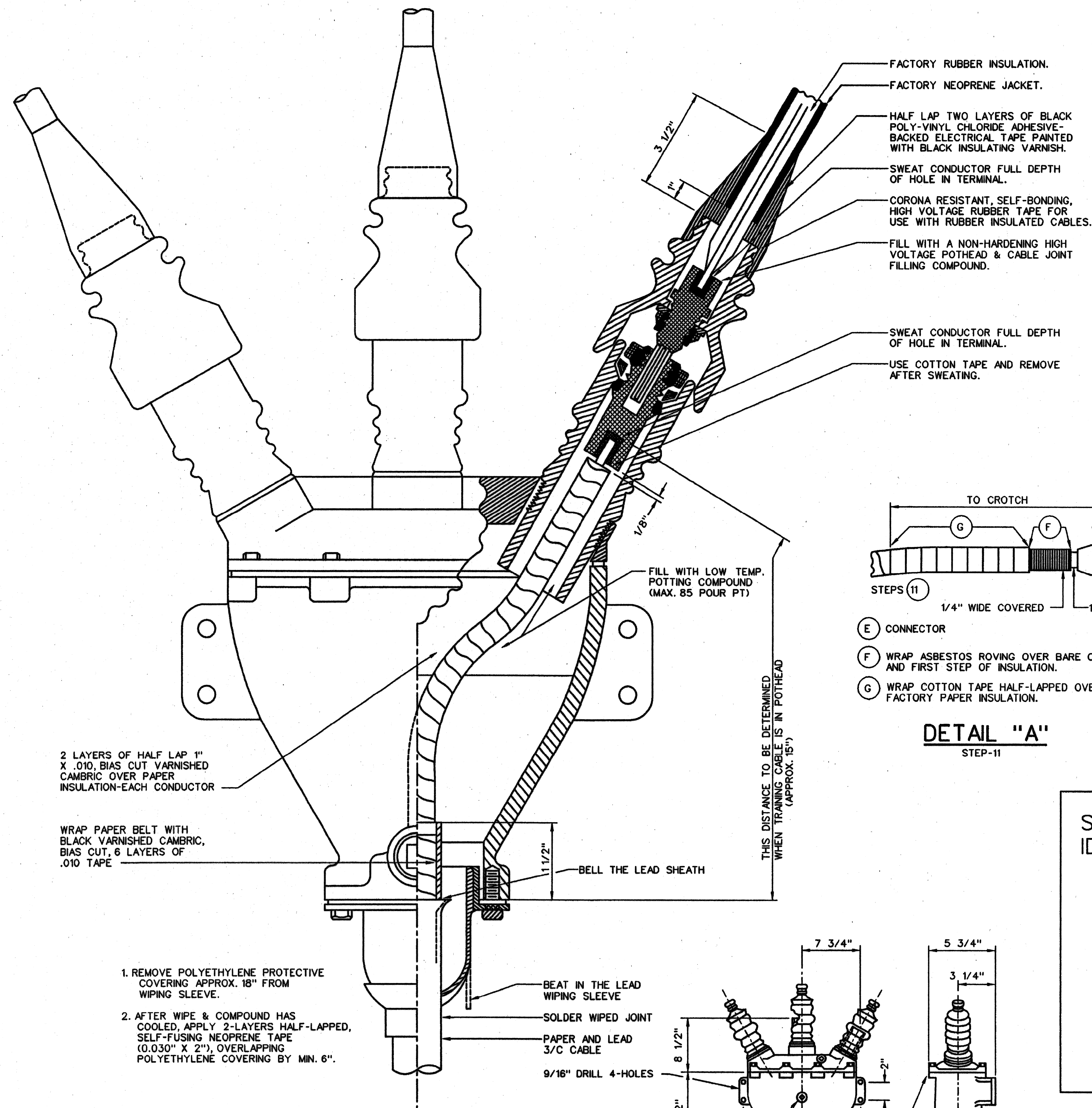
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CITY OF DETROIT

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Sheet No. 39 of 48  
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5000V. & 7500V. 3/C DISC. POTHEAD

N.T.S.

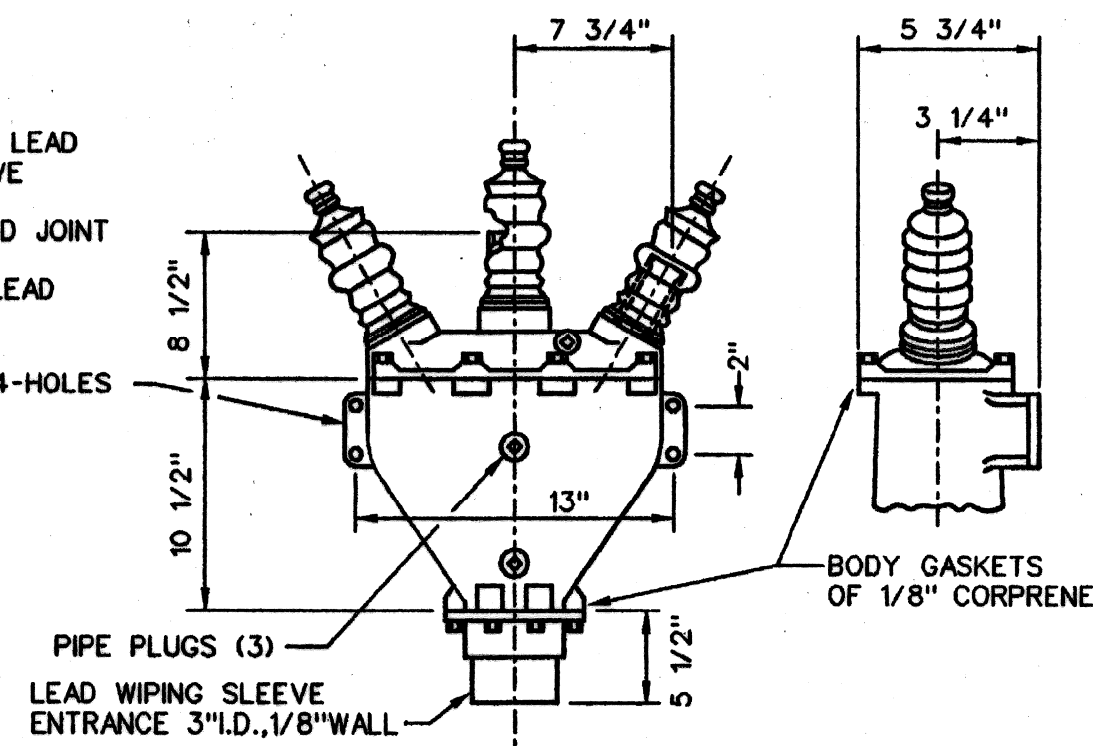
2 LAYERS OF HALF LAP 1" X .010 BIAS CUT VARNISHED CAMBRIC OVER PAPER INSULATION-EACH CONDUCTOR

WRAP PAPER BELT WITH BLACK VARNISHED CAMBRIC, BIAS CUT, 6 LAYERS OF .010 TAPE

1. REMOVE POLYETHYLENE PROTECTIVE COVERING APPROX. 18" FROM WIPING SLEEVE.
2. AFTER WIPE & COMPOUND HAS COOLED, APPLY 2-LAYERS HALF-LAPPED, SELF-FUSING NEOPRENE TAPE (0.030" X 2"), OVERLAPPING POLYETHYLENE COVERING BY MIN. 6".

**NOTES:**

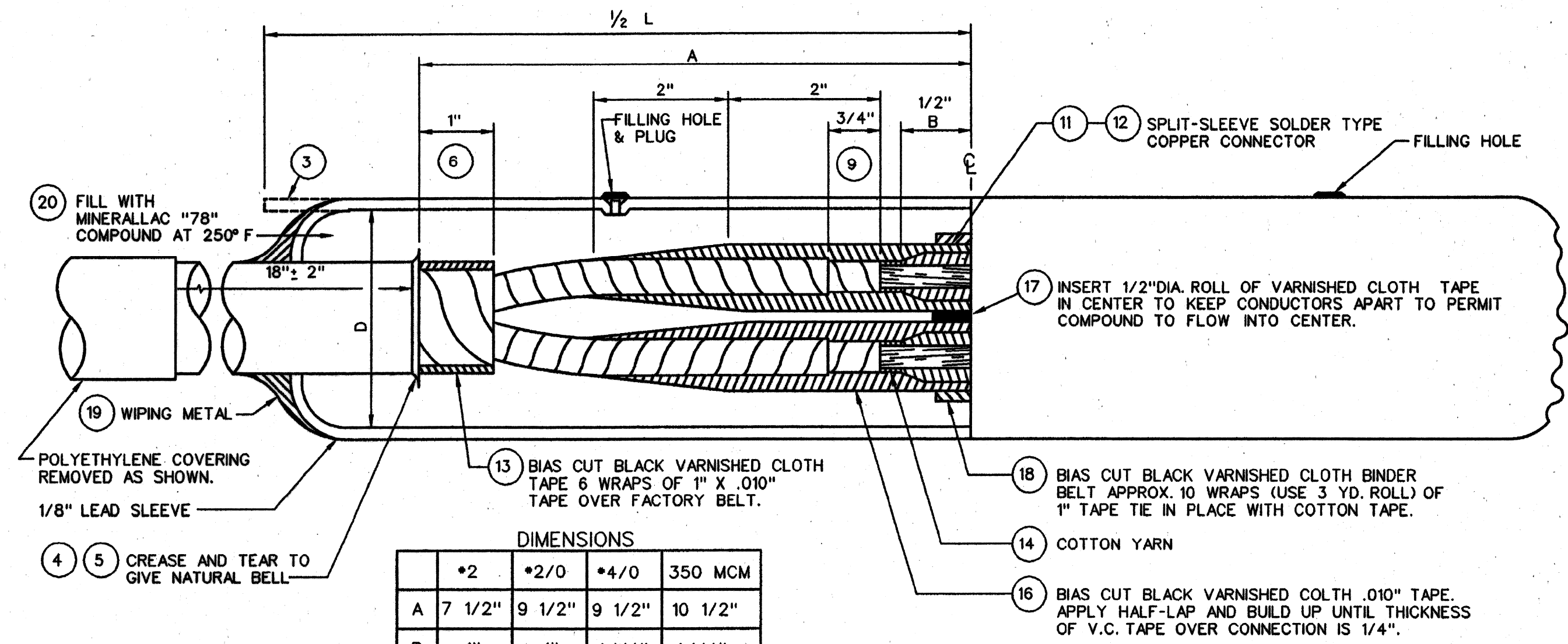
1. SEE SPECIFICATIONS OR P.L.D., WHERE REQUIRED, FOR MATERIAL SPECIFICATIONS.
2. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A LIST OF ALL SPLICING MATERIALS HE PROPOSES TO USE WITH SUPPORTING DATA THAT MATERIAL IS SUITABLE FOR APPLICATION AS SHOWN ON THE DRAWINGS.



ASSEMBLED POTHEAD

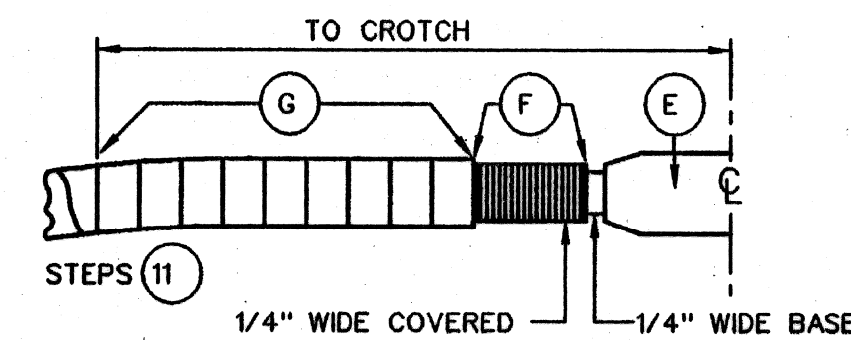
**NOTE:**

DIMENSIONS APPLY TO BOTH 250A & 500A POTHEADS.  
POTHEADS FURNISHED SHALL INCLUDE ENTRANCE SLEEVE & CAPS.



DIMENSIONS

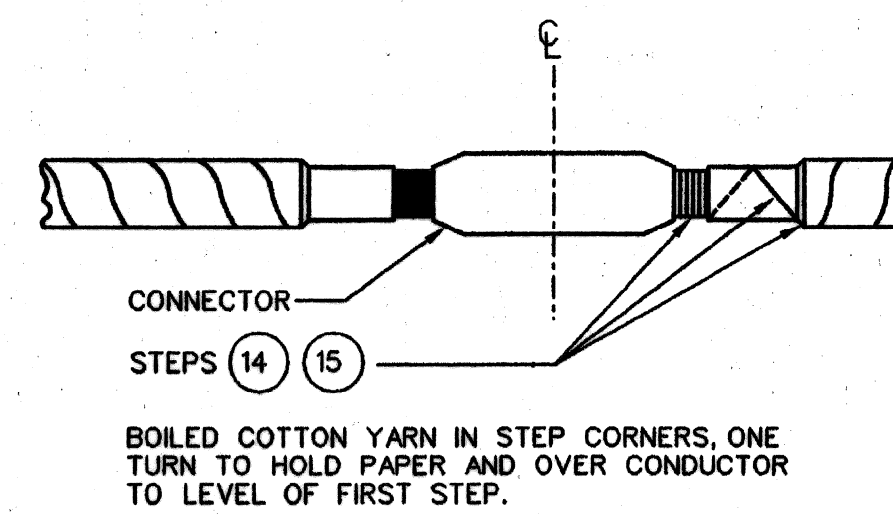
|   | *2     | *2/0   | *4/0   | 350 MCM |
|---|--------|--------|--------|---------|
| A | 7 1/2" | 9 1/2" | 9 1/2" | 10 1/2" |
| B | 1"     | 1"     | 1 1/4" | 1 1/4"  |
| D | 3"     | 3 1/2" | 3 1/2" | 4"      |
| L | 18"    | 24"    | 24"    | 24"     |



- (E) CONNECTOR
- (F) WRAP ASBESTOS ROVING OVER BARE CONDUCTOR AND FIRST STEP OF INSULATION.
- (G) WRAP COTTON TAPE HALF-LAPPED OVER FACTORY PAPER INSULATION.

DETAIL "A"

STEP-11



DETAIL "B"

STEP-15

SUBSTATION CIRCUIT ABBREVIATIONS ON IDENTIFICATION TAGS SHALL BE SPELLED AS FOLLOWS

|     |     |     |
|-----|-----|-----|
| BEL | KSG | POR |
| BUT | LAB | RVS |
| CAN | LEE | STA |
| COB | LOT | STO |
| CON | LUD | TOW |
| CUS | MAP | TRI |
| GRF | MCC | TUR |
| HUD | MON | WAL |
| JSC | PAL | WSU |
| JOY | PHI | JEF |

**NOTE:**

ASBESTOS TAPE CAN ONLY BE USED WITH PERMISSION OF THE P.L.D.

INSTRUCTIONS FOR 3/C 5.0 & 7.0KV. P. & L. BELTED CABLE JOINTS

1. TRAIN CABLE. DO NOT BEND TO RADIUS LESS THAN THE FOLLOWING SPECIFIED MINIMUM: \*2 AND \*2/0-16", \*4/0-17", 350 MCM-20".
2. ESTABLISH CENTERLINE OF JOINT. CUT CABLES THRU CENTERLINE.
3. CLEAN AND CANDLE OUTSIDE OF SLEEVE FOR 2" AT BELL ENDS. SLIDE SLEEVE OVER CABLE.
4. CREASE LEAD SHEATHS THE SPECIFIED DISTANCE FROM CABLE END (DIM.A). CLEAN AND PROTECT SURFACES OF SHEATH WITH STEARINE WHERE WIPES ARE TO BE MADE.
5. REMOVE SHEATH TO CREASE, TEAR SO AS TO GIVE THE SHEATH A NATURAL BELL.
6. REMOVE ALL BINDER TAPES TO 1" FROM END OF SHEATH.
7. REMOVE FILLERS FROM CROTCH, CUTTING WITH KNIFE DIRECTED AWAY FROM INSULATION.
8. TEST FILLER FOR MOISTURE (IN PARAFFIN AT 250 F).
9. STEP INSULATION BY USE OF GILLING TWINE. FOR THE SINGLE STEP REMOVE HALF OF FACTORY INSULATION THICKNESS.
10. REMOVE INSULATION FROM CONDUCTOR FOR THE CONNECTOR BY CUTTING SQUARE WITHOUT NICKING CONDUCTOR.
11. PUT CONNECTORS IN PLACE WITH SPLIT OPENINGS TURNED UPWARD. COVER BARE CONDUCTOR AND FIRST STEPS WITH ASBESTOS ROVING COVER PAPER INSULATION WITH HALF-LAPPED COTTON TAPE. SEE DETAIL "A".
12. SWEAT CONNECTORS IN PLACE. REMOVE ANY SHARP EDGES OF THE CONNECTOR OR SOLDER. REMOVE COTTON TAPE AND ASBESTOS ROVING BEING CAREFUL TO KEEP METAL PARTICLES OFF OF CONDUCTOR AND PAPER INSULATION.
13. APPLY 6 WRAPS OF 1" BLACK V.C. TAPE OVER THE FACTORY BELT ON EACH END OF SPLICE.
14. APPLY STRANDED COTTON YARN BOILED IN PETROLATUM TO FILL IN BETWEEN INSULATION AND CONNECTOR TO LEVEL OF FIRST STEP.
15. ALSO APPLY BOILED COTTON YARN OVER STEPS TO HOLD PAPER TAPE IN PLACE WHILE APPLYING V.C. INSULATION. SEE DETAIL "B".
16. APPLY V.C. TAPE HALF-LAPPED TO EACH CONDUCTOR, BUILDING UP TO A THICKNESS OF 1/4" OVER THE CONNECTOR, TAPERING ENDS AS SHOWN AND HAND WIPING THIN COATING OF PETROLATUM BETWEEN LAYERS OF V.C. TAPE.
17. APPLY 1/2" DIA. SPACER ROLL OF 1" BLACK V.C. TAPE IN CENTER OF CONDUCTOR.
18. INSTALL BINDER BELT OF 1" BLACK V.C. TAPE APPROX. 10 LAYERS (USE 3 YD. ROLL) TIE IN PLACE WITH COTTON TAPE.
19. PULL UP AND CENTER SLEEVE. WIPE SLEEVE TO CABLE SHEATHS. DO NOT USE STEARINE FOR COOLING AT THIS STAGE.
20. FILL JOINT WITH COMPOUND AT 250 F. COOL FOR 45 MINUTES, REFILL, AND COOL FOR 15 MINUTES. REPEAT REFILLS TWICE IF NECESSARY.
21. WHILE JOINT IS COOLING, ATTACH BONDING CONNECTION, FIREPROOF CABLE AND ATTACH CABLE TAGS.
22. SEAL FILLING HOLES AND FINISH FIREPROOFING.
23. APPLY 2" WIDE TAPE NEOPRENE COVERING OVER SLEEVE.

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5000V. & 7000V. BELTED P. & L. CABLE JOINT & POTHEAD SPLICE

Drawn CEA  
Checked  
Approved  
Date

**Consulting Engineering Associates, Inc.**  
16580 WYOMING AVE. DETROIT MICHIGAN 48221  
TELEPHONE: (313) 341-5797 FAX: 341-0205

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CITY OF DETROIT

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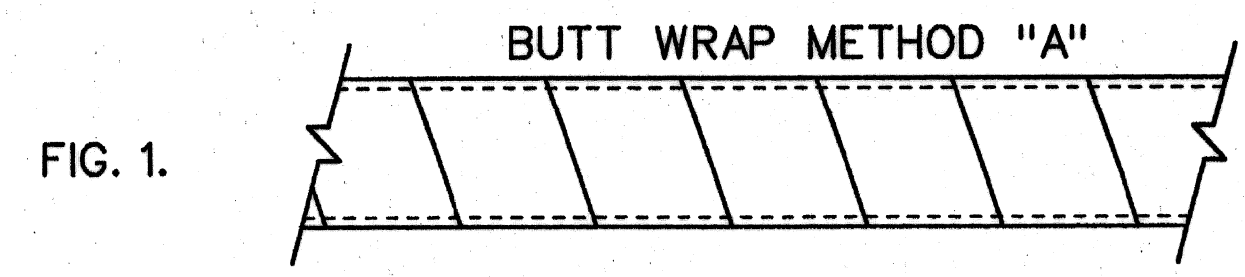


FIG. 1.

FIGURE 1.  
FELTED ASBESTOS INITIAL WRAP BUTT WRAP.

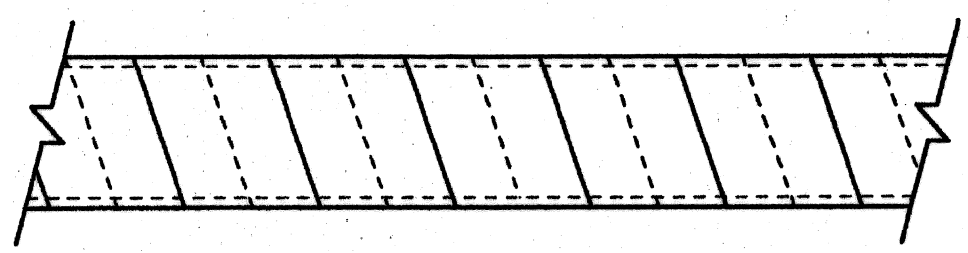


FIG. 2.

FIGURE 2.  
SECOND WRAP FLAME RETARDANT ELASTOMER  
OFFSET BUTT WRAP.

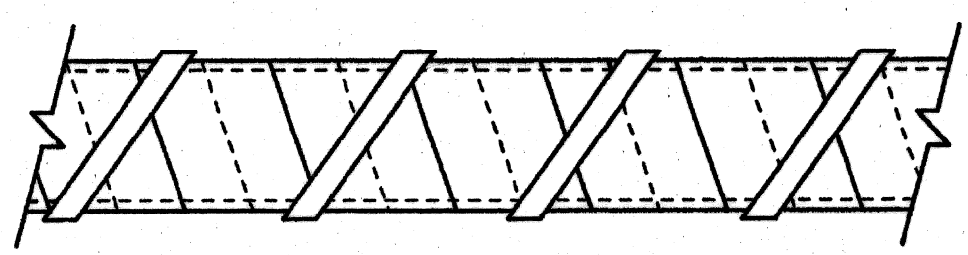


FIG. 3.

FIGURE 3.  
RANDOM WRAP OUTER LAYER WITH A PRESSURE  
SENSITIVE FIBERGLASS ADHESIVE TAPE TO  
PREVENT UNRAVELLING.

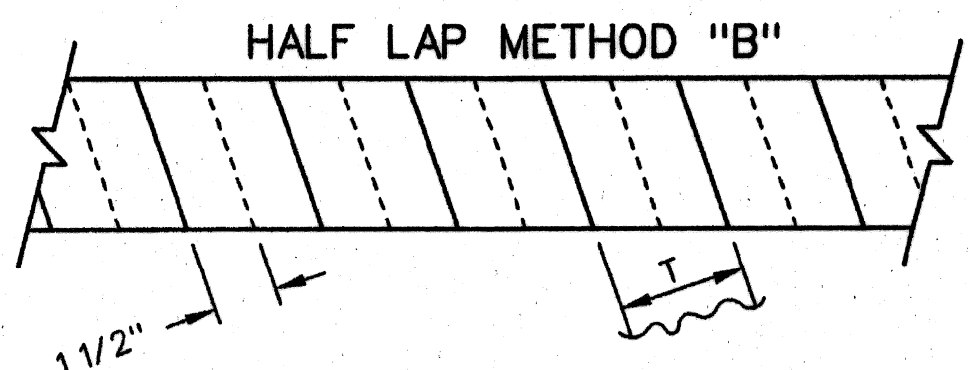


FIG. 4.

FIGURE 4.  
ONE WRAP FLAME RETARDANT ELASTOMER 1/2  
OVERLAPPED RANDOM WRAP WITH PRESSURE  
SENSITIVE FIBERGLASS ADHESIVE TAPE.

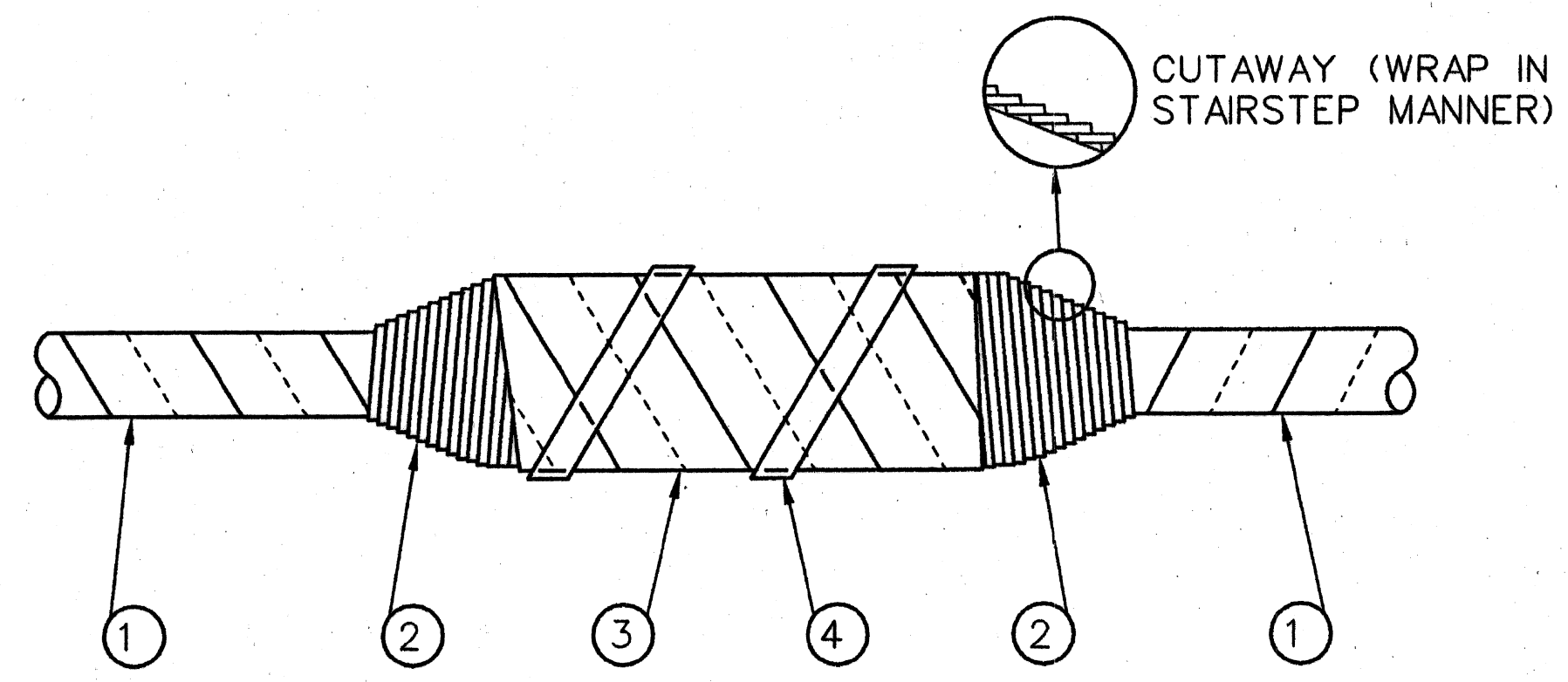
NOTE: ELASTOMER TAPE TO BE APPLIED WITH SMOOTH SIDE  
ON CABLE (ROUGH OR FABRIC SIDE OUT).

APPROXIMATE QUANTITIES REQUIRED PER MANHOLE

**METHOD "A"**  
5 ROLLS 3"X 15'-0" FELTED ASBESTOS TAPE  
4 ROLLS 3"X 20'-0" ELASTOMER TAPE  
1 ROLL FIBERGLASS TAPE

**METHOD "B"**  
8 ROLLS 3"X 20'-0" ELASTOMER TAPE (FLAME RETARDANT)  
1 ROLL FIBERGLASS TAPE

METHOD "A" (ASBESTOS TAPE)  
CAN ONLY BE USED WITH  
PERMISSION OF THE P.L.D.



- ① WRAP CABLE WITH 3" WIDE TAPE METHOD "A" OR "B".
- ② WRAP WIPE WITH 1 1/2" WIDE ELASTOMER TAPE AS SHOWN (SPLIT 3" TAPE WITH SKINNING KNIFE FOR THIS STEP).
- ③ WRAP SPLICE SLEEVE WITH 3" WIDE TAPE THE SAME AS IN #1 ABOVE.
- ④ RANDOM WRAP FIBERGLASS TAPE TO HOLD IN PLACE.

NOTE: WRAP CABLE ON BOTH SIDES OF SPLICE FIRST.  
NEXT WRAP BOTH WIPES AND THEN COVER THE  
SLEEVE.

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CABLE FIREPROOFING

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CABLE & WIRE SPECIFICATIONS, DETAILS

| USE   | VOL T RATING NO. | ITEM NO.   | CONDUCTOR   | SYNTHETIC RUBBER | IMPREG-NATED PAPER | POLYETHYLENE | POLYVINYL-CHLORIDE | SHIELD OVER INSULATED CONDUCTOR | TAPE OVER INSULATED CONDUCTORS | IMPREG-NATED PAPER BELT | JACKET | LEAD SHEATH | COVERING OVER LEAD | STEEL TAPE ARMOR | COVERING OVER STEEL TAPE | COVERING OVER CONDUCTOR       |
|---|------------------|--|---|------------------|--------------------|--------------|--------------------|---------------------------------|--------------------------------|-------------------------|--------|-------------|--------------------|------------------|--------------------------|-------------------------------|
| OVERHEAD LINE WIRE                          | —                | 1  | *2-#6 AWG. H.D. UNCOATED SOLID COPPER A.S.T.M. B1                       |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          | 0.047 INCH BLACK NEOPRENE     |
|   | —                | 2  | *4/#-#2/0AWG. M.H.D. UNCOATED 7/STR. COPPER A.S.T.M. B1                 |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          | 0.063 INCH BLACK NEOPRENE     |
|   | —                | 3  | *2- AWG. H.D. UNCOATED SOLID COPPER A.S.T.M. B1                         |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          | 0.032 INCH BLACK POLYETHYLENE |
|   | —                | 4  | *2- AWG. H.D. UNCOATED SOLID COPPER A.S.T.M. B1                         |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          | 0.047 INCH BLACK POLYETHYLENE |
|   | —                | 5  | *4/#-#2/0AWG. M.H.D. UNCOATED 7/STR. COPPER A.S.T.M. B8                 |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          | 0.063 INCH BLACK POLYETHYLENE |
| SPECIAL EVENT FEEDER,                       | 2000V.           | 6  |   |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
| MULT. ST. L.T.G.                            | 2000V.           | 7  |   |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
| TRAFFIC SIGNAL SECONDARY                    | 2000V.           | 8  |   |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
| RECEPTACLE BRACKET & LAMP POST WIRE         | 600V.            | 9  | *8 AWG./C UNCOATED, SOFT 7/STR. COPPER A.S.T.M. B8                      |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
| 2/C AERIAL SERVICE                          | 600V.            | 10   | 2/C*8 AWG UNCOATED, SOFT 7/STR. COPPER A.S.T.M. B8                      |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
| DISTRIBUTION CABLES                         | 5000V. BELTED    | 11   | 3/C 350 MCM UNCOATED COPPER AEC   |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
|   | 5000V. BELTED    | 12   | 3/C*2/0AWG. SECTOR, SOFT UNCOATED COPPER AEC                            |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
|   | 5000V. BELTED    | 13   | 3/C*2AWG. ROUND, SOFT UNCOATED COPPER AEC                               |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
|   | 7000V. BELTED    | 14   | 3/C 350 MCM UNCOATED COPPER AEC   |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
|   | 7000V. BELTED    | 15   | 3/C*2AWG. SECTOR, SOFT UNCOATED COPPER AEC                              |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
|   | 7000V. BELTED    | 16   | 3/C 350 MCM UNCOATED COPPER AEC   |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
|   | 7500V.           | 17   | 1/C*8 AWG. UNCOATED COPPER ASTM B3                                      |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
|   | 7500V.           | 18   | 1/C*8 AWG. SOLID, SOFT UNCOATED COPPER ASTM B3                          |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
|   | 24000V. SHIELDED | 19   | 3/C 350 MCM SECTOR, SOFT UNCOATED COPPER * AEC                          |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
|   | 24000V. SHIELDED | 20   | 3/C 350 MCM SECTOR, SOFT UNCOATED COPPER * AEC                          |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
| 24000V. SHIELDED                            | 21               | 3/C *2/0 AWG. SECTOR, SOFT UNCOATED COPPER * AEC |   |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
| MULTI-CONDUCTOR SIGNAL CABLE, IN DUCT       | —                | 22   | *14 AWG. SOLID, SOFT UNCOATED COPPER, NO. OF CONDUCTOR AS REQD.         |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
| MULTI-CONDUCTOR SIGNAL CABLE, AERIAL (L.M.) | —                | 23   | *14 AWG. SOLID, SOFT UNCOATED COPPER, NO. OF CONDUCTOR AS REQD.         |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
| 8/C SERIES ST. L.T.G. IN DUCT               | 7500V.           | 24   | 8/C*8 AWG. SOLID, SOFT TINNED COPPER ASTM B33                           |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |
| OVERHEAD FLEXIBLE TRAINER WIRE (SHIELDED)   | —                | 25   | 1/C*2 AWG. & LARGER, SOFT CLASS. 1 OR OVER CON- TINNED COPPER ASTM B173 |                  |                    |              |                    |                                 |                                |                         |        |             |                    |                  |                          |                               |

COLOR CODED AS FOLLOWS:  
 RED - A CIRCUIT  
 BLACK - B CIRCUIT  
 WHITE - NEUTRAL

ALL MULTIPLE STREET LIGHTING, TRAFFIC SIGNAL SECONDARY AND SPECIAL EVENT CABLES INSTALLED IN CONDUIT SHALL BE AS PER THE FOLLOWING: CONDUCTORS COATED, STRANDED COPPER CONDUCTOR PER ASTM B-8 AND B-189, INSULATION MEETS OR EXCEEDS ALL REQUIREMENTS OF LATEST EDITION OF ICEA S-68-516, NEMA WC 8 FOR ETHYLENE-PROPYLENE RUBBER INSULATION AND ASTM D2802-78 AND UL STANDARD 44, JACKET MEETS OR EXCEEDS ALL REQUIREMENTS OF LATEST EDITION OF ICEA S-68-516, NEMA WC8 FOR HEAVY DUTY CHLOROSULFOATED-POLYETHYLENE, LISTED BY UNDERWRITER'S LABORATORIES INC. AS TYPE RHH OR RHM.

NOTE: PRIOR TO PLACING ORDER FOR PURCHASE OF THIS CABLE, A SAMPLE LENGTH OF CABLE MUST FIRST BE SUBMITTED TO P.L.D. FOR THEIR APPROVAL.

0.062 INCH 5% WHITE AS REQD. PIGMENTED NOT PRINTED

0.062 INCH 75% BLACK, 25% WHITE FOR CONSTRUCTION

ACCORDING TO SPECIFICATIONS

SPECIAL INSTRUCTION  
 0.063 INCH OF 30% HEAVY RUBBER AND ONE LAYER OF LAPPED FILLED COTTON TAPE OVER EACH CONDUCTOR CENTRAL CONDUCTOR HAS ADDITIONAL 0.170 INCH VULCANIZED RUBBER TAPE REMAINING 7 CONDUCTORS EACH HAVE ADDITIONAL 0.094 INCH VARNISHED UNCOATED COPPER CABLED WITH PARAFFINED JUTE (OUTSIDE FIL) OVERALL. 0.094 INCH BELT OF OIL SATURATED PAPER OVERALL. 0.115 INCH COPPER BEARINGS LEAD BENEATH OVERALL.

SEMI-CONDUCTING COTTON TAPE OVER CONDUCTOR & OVER CON- TINNED COPPER 0.268 OZONE RESISTING BUTYL

\* CARBON BLACK PAPER TAPE OVER CONDUCTOR

\*\* BINDER TAPE OVER SHIELDED INSULATORS TO BE COPPER OR BRONZE TAPE INTERCALATED WITH PAPER TAPE OR (2) METALLIZED PAPER TAPES

Drawn CEA  
 Checked  
 Approved  
 Date

Consulting Engineering Associates, Inc.  
 16580 WYOMING AVE. DETROIT MICHIGAN 48221  
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Drwg. No. OF CEA  
 File No.

Checked by  
 Approved by

PUBLIC LIGHTING DEPARTMENT  
 CITY OF DETROIT



CERTIFIED TEST REPORTS

SHIPMENTS OF WIRE AND CABLE SHALL NOT BE CONSIDERED COMPLETE UNTIL CERTIFIED TEST REPORTS ARE RECEIVED AND APPROVED. TEST REPORTS FOR VARIOUS ITEMS OF WIRE AND CABLE SHOWN ON SHEET 1 SHALL CONTAIN THE FOLLOWING TEST RESULTS:

ITEMS 1 - 5 INCLUSIVE - OVERHEAD LINE WIRE

1. CONDUCTOR CONTINUITY, RESISTANCE, TENSILE STRENGTH AND ELONGATION TESTS.
2. COVERING THICKNESS, PHYSICAL AND AGING TESTS.
3. WEIGHT OF FINISHED WIRE.

ALL TESTS IN ACCORDANCE WITH THE LATEST REVISION OF ASA 8.34 (NEOPRENE COVERING) OR ASA 8.35 (POLYETHYLENE COVERING).

ITEMS 6 - 10 INCLUSIVE

1. CONDUCTOR CONTINUITY, RESISTANCE, TENSILE STRENGTH, AND ELONGATION TESTS IN ACCORDANCE WITH THE LATEST REVISIONS OF ASTM B8, B33 OR B189.
2. THE PHYSICAL AND OTHER TESTS FOR THE SPECIFIED INSULATION SHOWN ON SHEET 2.
3. INSULATION THICKNESS MEASUREMENTS.
4. THE ALTERNATING-CURRENT VOLTAGE TEST IN ACCORDANCE WITH THE LATEST REVISION OF IPCEA S-61-402.
5. INSULATION RESISTANCE TEST. INSULATION RESISTANCE CONSTANT AS SHOWN ON SHEET 2.
6. (CABLE ITEM 8 ONLY) MINIMUM, MAXIMUM AND AVERAGE LEAD THICKNESS MEASUREMENTS SHALL ALSO BE INCLUDED.
7. (CABLE ITEM 10 ONLY) A RIP TEST SHALL ALSO BE INCLUDED AS FOLLOWS:

A SIX-FOOT SAMPLE OF THE COMPLETED 2 CONDUCTOR WIRE WITH CLEANLY CUT ENDS SHALL BE SUBJECTED TO A TEMPERATURE OF -10° F. FOR ONE HOUR, WHILE STILL COLD. THE TWO INSULATED CONDUCTORS SHALL BE SEPARATED AT ONE END FOR A DISTANCE OF APPROXIMATELY 3 INCHES AND THEN SHALL BE TORN APART WITH STEADY PULL AT A RATE OF 33 INCHES IN ONE SECOND OR LESS. THERE SHALL BE NO DAMAGE TO THE INSULATION.

ITEMS 11 - 16 INCLUSIVE - DISTRIBUTION CABLES UNDER 10KV. RATING

1. CONDUCTOR RESISTANCE.
2. SHEATH THICKNESS MEASUREMENTS.
3. HIGH VOLTAGE TEST.
4. MECHANICAL INTEGRITY TEST.
5. BENDING TEST.
6. SPARK TEST ON COVERING OVER LEAD SHEATH ON EACH LENGTH IF COVERING IS SPECIFIED.

ALL TESTS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF 'SOLID TYPE IMPREGNATED-PAPER-INSULATED LEAD-COVERED CABLE SPECIFICATION' PUBLISHED BY THE ASSOCIATION OF EDISON ILLUMINATING COMPANIES.

ITEMS 17 - 18 INCLUSIVE - SERIES STREET LIGHTING CABLE

1. CONDUCTOR RESISTANCE AND CONTINUITY, IN ACCORDANCE WITH THE LATEST REVISION OF ASTM B-3.
2. THE PHYSICAL AND OTHER TESTS FOR HIGH MOLECULAR WEIGHT POLYETHYLENE INSULATION AS SHOWN ON SHEET 2.
3. THE PHYSICAL AND OTHER TESTS FOR 60° C POLYVINYL-CHLORIDE INSULATION AS SHOWN ON SHEET 2.
4. THE FOLLOWING TESTS SHALL ALSO BE MADE AND REPORTED:

HIGH VOLTAGE TEST-AFTER NOT LESS THAN SIX HOURS IMMERSION IN WATER AT 60° F. AND WHILE STILL IMMERSED, EACH REEL OF INSULATION CABLE WITHOUT LEAD, SHALL WITHSTAND A 60 CYCLE POTENTIAL OF 30,000 VOLTS FOR A PERIOD OF FIVE (5) MINUTES.

INSULATION RESISTANCE TEST-THE INSULATION RESISTANCE SHALL NOT BE LESS THAN 26,500 MEGOHMS PER THOUSAND FEET AT 60° F. THIS TEST SHALL BE CONDUCTED UPON COMPLETION OF THE HIGH VOLTAGE TEST.

SHORT-TIME DIELECTRIC STRENGTH TEST - A TEN(10) FT. SAMPLE OF THE FINISHED CABLE WITH ONLY THE LEAD REMOVED, AFTER TWELVE (2) HOURS SUBMERSION IN WATER AND WHILE STILL IMMERSED, SHALL WITHSTAND A VOLTAGE TEST OF 60,000 VOLTS 60 CYCLE A.C. FOR FIVE (5) MINUTES. ON COMPLETION OF THIS TEST, THE VOLTAGE WILL BE GRADUALLY RAISED IN ACCORDANCE WITH I.P.C.E.A. SPECIFICATIONS, UNTIL THE INSULATION IS PUNCTURED. THIS VOLTAGE SHALL BE RECORDED AND SHALL BE NOT LESS THAN 72,000 VOLTS.

EXTERNAL CORONA TEST-THIS TEST SHALL BE CONDUCTED ON ONE(SAMPLE PER 10,000 FT. OF COMPLETED CABLE EIGHTEEN(18) INCHES LONG WITH ONLY THE LEAD SHEATH REMOVED, AFTER WHICH SHALL BE WIPE WITH A CLEAN DRY CLOTH. THESE SAMPLES SHALL BE BENT AND MAINTAINED IN A 'U-SHAPE' HAVING A BENDING DIAMETER EQUAL TO FIVE TIMES THE INSULATED CABLE DIAMETER. THE BENT SAMPLES SHALL THEN BE PLACED IN A VERTICAL POSITION ON A FLAT METALLIC GROUNDED PLATE AND 60 CYCLE A.C. VOLTAGE SHALL BE GRADUALLY APPLIED WITH A CORONA-LEVEL TEST APPARATUS OF THE FILTER-CIRCUIT TYPE, MAINTAINING SUFFICIENT AMPLIFICATION TO INDICATE THE EXISTENCE OF CORONA DISCHARGE. THIS VOLTAGE SHALL BE RAISED UNTIL CORONA IS INDICATED, AND SHALL NOT BE LESS THAN 8,200 VOLTS RMS.

THE VOLTAGE SHALL THEN BE RAISED TO 25,000 VOLTS AND MAINTAINED FOR SIX(6) HOURS WITHOUT FAILURE OF THE INSULATION. THE VOLTAGE SHALL NOT BE RAISED IN 10% STEPS AT TEN(10) MINUTE INTERVALS UNTIL FAILURE OF THE INSULATION OR FLASHOVER OCCURS.

THESE VOLTAGES SHALL BE RECORDED AND REPORTED.

INTERNAL-CORONA-LEVEL-EACH LENGTH OF COMPLETED CABLE SHALL BE TESTED IN ACCORDANCE WITH SECTION 6.13 OF THE LATEST REVISION OF I.P.C.E.A. STANDARD S-61-402, EXCEPT THAT THE MINIMUM CORONA LEVEL SHALL BE 8,200 VOLTS.

ITEMS 19 - 21 INCLUSIVE - TRANSMISSION CABLES.

1. CONDUCTOR RESISTANCE
2. SHEATH THICKNESS MEASUREMENT
3. HIGH VOLTAGE TEST
4. MECHANICAL INTEGRITY TEST
5. BENDING TEST
6. IONIZATION TEST
7. HIGH VOLTAGE-TIME TEST )
8. DIELECTRIC POWER TEST )
9. POWER FACTOR TEST )
10. SPARK TEST ON COVERING OVERHEAD SHEATH ON EACH LENGTH

ALL TESTS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF 'SOLID-TYPE IMPREGNATED-PAPER-INSULATED LEAD-COVERED CABLE SPECIFICATION,' PUBLISHED BY THE ASSOCIATION OF EDISON ILLUMINATING COMPANIES.

ITEMS 22 -23 INCLUSIVE - MULTI-CONDUCTOR TRAFFIC SIGNAL CABLE

1. INDIVIDUAL CONDUCTOR RESISTANCE IN ACCORDANCE WITH THE LATEST REVISION OF ASTM B3.
2. INSULATION THICKNESS MEASUREMENTS.
3. INSULATION PHYSICAL AND OTHER TESTS FOR 60° C POLYVINYL CHLORIDE IS SHOWN ON SHEET 2.
4. ALTERNATING CURRENT VOLTAGE TEST.
5. INSULATION RESISTANCE TEST INSULATION RESISTANCE CONSTANT AS SHOWN ON SHEET 2.
6. (CABLE ITEM 23 ONLY)
  - a. POLYVINYL CHLORIDE JACKET PHYSICAL AND OTHER TESTS SHOWN ON SHEET 2.
  - b. JACKET THICKNESS MEASUREMENTS.
7. (CABLE ITEM 22 ONLY), LEAD SHEATH THICKNESS MEASUREMENTS.

TESTS NO. 4-7, INCLUSIVE, SHALL BE MADE IN ACCORDANCE WITH THE LATEST REVISION OF I.P.C.E.A. S-61-402, EXCEPT THAT THE INSULATION RESISTANCE CONSTANT SHALL BE 1000 AT 15.0 C.

ITEM 24 - 8/C SERIES STREET LIGHTING CABLE

1. CONDUCTOR CONTINUITY AND RESISTANCE IN ACCORDANCE WITH THE LATEST REVISION OF ASTM B-33.
2. LEAD SHEATH THICKNESS MEASUREMENTS.
3. A HIGH VOLTAGE TEST CONSISTING OF 22,500 VOLTS, 60 CYCLES A.C. FOR A DURATION OF 5 MINUTES, BETWEEN CONDUCTORS AND FROM EACH CONDUCTOR TO THE LEAD SHEATH.

ITEM 25 - FLEXIBLE OVERHEAD TRAINER WIRE

1. CONDUCTOR RESISTANCE, TENSILE STRENGTH AND ELONGATION IN ACCORDANCE WITH THE LATEST REVISION OF ASTM B-173.
2. INSULATION PHYSICAL AND OTHER TESTS SHOWN ON SHEET-2.
3. ADDITIONAL INSULATION TESTS IN ACCORDANCE WITH THE LATEST REVISION OF I.P.C.E.A. S-19-81 AS FOLLOWS:
  - a. ALTERNATING-CURRENT VOLTAGE TEST.
  - b. INSULATION RESISTANCE TEST.
  - c. DIRECT-CURRENT VOLTAGE TEST.
  - d. CORONA LEVEL TEST.
  - e. SHORT-TIME DIELECTRIC STRENGTH TEST.
  - f. COLD-BENDING AND LONG-TIME DIELECTRIC STRENGTH TEST.
  - g. CAPACITY AND POWER FACTOR TEST.
  - h. OZONE RESISTANCE TEST.
4. PHYSICAL AND OTHER TESTS ON THE NEOPRENE JACKET (GENERAL PURPOSE OR HEAVY DUTY), AS SHOWN ON SHEET 2.
5. JACKET THICKNESS MEASUREMENTS

ITEM 26 - SUPERVISORY CONTROL CABLE (MULTI-CONDUCTOR)

1. CONDUCTOR RESISTANCE, TENSILE STRENGTH AND ELONGATION, IN ACCORDANCE WITH THE LATEST REVISION OF ASTM B-3.
2. INSULATION PHYSICAL FOR 60° C PVC INSULATION AND OTHER TESTS SHOWN ON SHEET 2.
3. INSULATION RESISTANCE TESTS.
4. VOLTAGE TESTS PER IPCEA S-61-402.
5. INSULATION THICKNESS.
6. LEAD SHEATH THICKNESS.
7. THICKNESS OF COVERING OVER LEAD SHEATH.
8. SPARK TEST ON COVER LEAD SHEATH ON EACH LENGTH.

ITEM 27 - INTEGRAL MESSENGER COMMUNICATIONS CABLE (MULTI-PAIR)

ITEM 28 - COMMUNICATIONS CABLE

ITEM 29 - COMMUNICATIONS CABLE, LEAD SHEATH

ITEM 30 - COMMUNICATIONS CABLE, LEAD SHEATH, DIRECT BURIAL

MULTI-PAIR COMMUNICATION CABLES (Maximum Mutual Capacities = 90 nf per mile) (ALSO FOR TRAFFIC SIGNAL CHRONOPLAN) AND SUPERVISORY

| ITEM NO. | USE AND RATING      | CONDUCTOR   | INSULATION (b)  | TAPE OVER INSULATION CONDUCTORS                      | INNER BELT  | SHIELD OVER TAPE OR BELT                                 | JACKET OR SHEATH   | COVERING OVER SHEATH                                    |
|----------|---------------------|---|---|--|---|--|--|---|
| 27       | (a) AERIAL 600V.    |   | 0.025 IN. (c) CLASS B POLYETHYLENE (ASTM D 1351)              |  |   | CORRUGATED, LONGITUDINAL, ANNEALED, (c) 0.004-IN. COPPER | BLACK POLYETHYLENE (ASTM D 2308), THICKNESSES OVER CORE AND MESSENGER AND WEB DIMENSIONS IN ACCORDANCE WITH REA SPECIFICATION PE-38. |   |
| 28       | IN DUCT 600V.       | *6 0R #19 AWG, SOLID, UNCOATED COPPER (ASTM B3)-NUMBER OF PAIRS AS REQUIRED |   | 12.5 PERCENT MINIMUM LAP, POLYETHYLENE TEREPHTHALATE | BLACK POLY-ETHYLENE (ASTM D 2308) 0.010-IN. MIN. 0.030-IN. MAX. THICKNESS |  | BLACK POLYETHYLENE (ASTM D 2308), THICKNESS IN ACCORDANCE WITH PARAGRAPH 3.6, 7.3.7 AND TABLE IV OF FED. SPEC. J.C.111.              |   |
| 29       | IN DUCT 600V.       |   | 0.031 IN. (c) DIOCTYL PHTHALATE PLASTICIZED PVC (ASTM D 2219) |  |   |  | LEAD-ANTIMONY THICKNESS PER ITEM 26 EXCEPT 0.063-IN. MIN. THICKNESS (c)  |   |
| 30       | DIRECT BURIAL 600V. | *6 0R #19 AWG, SOLID, TINNED COPPER (ASTM B 33)-NUMBER OF PAIRS AS REQUIRED |   |  |   |  | COMMERCIAL PURE LEAD, THICKNESS PER ITEMS 22 & 23.   | ASPHALTUM-SATURATED JUTE STEEL ARMOR PER ITEMS 17 & 18. |

TEST REPORTS

SHIPMENTS OF WIRE AND CABLE SHALL NOT BE CONSIDERED COMPLETE UNTIL CERTIFIED TEST REPORTS ARE RECEIVED AND APPROVED. TEST REPORTS FOR THE VARIOUS ITEMS ABOVE SHALL SHOW COMPLIANCE WITH CITED SPECIFICATIONS, LISTING TEST RESULTS, AS WELL AS THE FOLLOWING TESTS:

1. CONDUCTOR RESISTANCE OF EACH LENGTH OF EACH CONDUCTOR IN OHMS PER 1000 FT.
2. CERTIFICATION OF MUTUAL CAPACITANCE OF ALL CABLES AND OF NON-INJURIOUS EFFECT OF FLOODING COMPOUND ON ITEM 27.
  - (a) 'FIGURE 8' CONSTRUCTION, MESSENGER SHALL BE 7 STRAND EHS GALVANIZED, CLASS A, 1/4-IN. NORMAL DIAM. (ASTM A 475) AND SHALL BE FULL FLOODED.
  - (b) COLOR CODED PER FEDERAL SPECIFICATION J-C-111.
  - (c) NOMINAL THICKNESS, INCHES.

DISK FILE

| REVISIONS | Date | Description | Chkd. by |
|-----------|------|-------------|----------|
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CABLE & WIRE SPECIFICATIONS

Drawn CEA  
 Checked  
 Approved  
 Date

Drwg. No. OF CEA  
 File No.

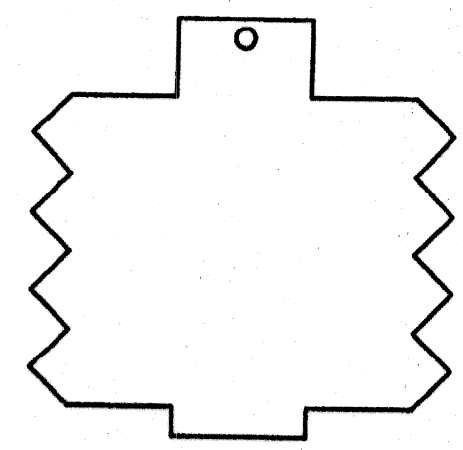
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 Approved by

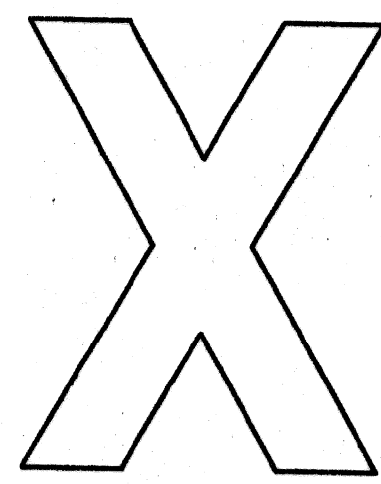
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 Sheet No. 44 of 48  
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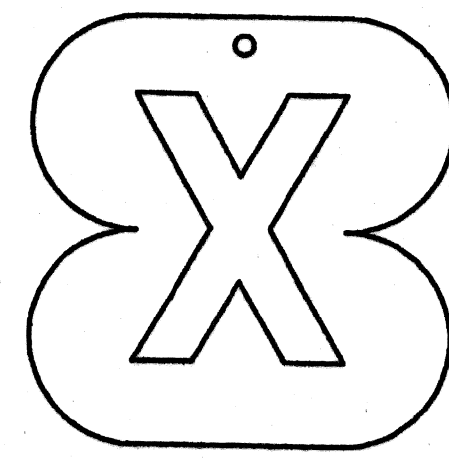
PUBLIC LIGHTING DEPARTMENT  
 CITY OF DETROIT



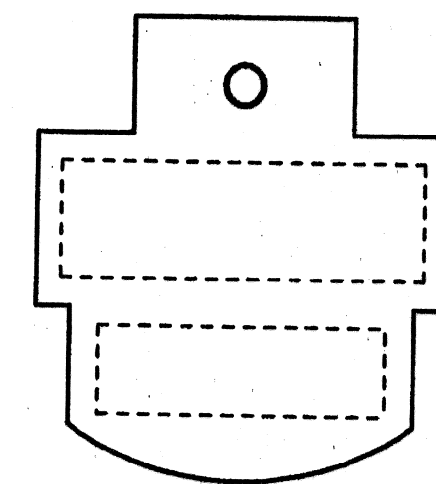
24,000 VOLT TRUNK LINE



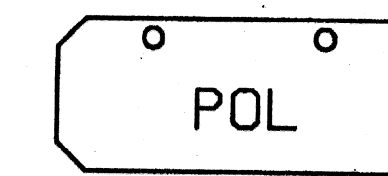
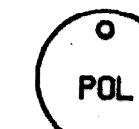
O.H. LINE PHASE TAG



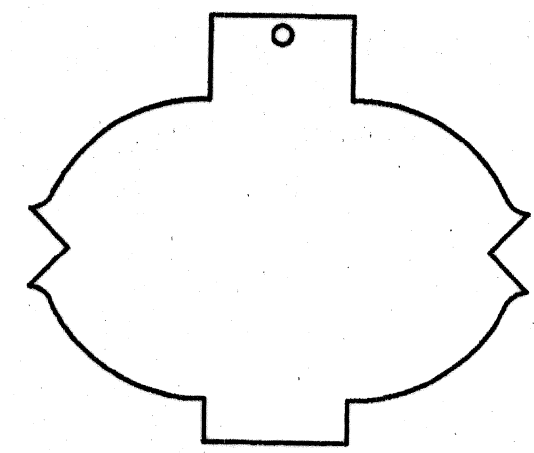
O.H. LINE ØR POTHEAD PHASE TAG



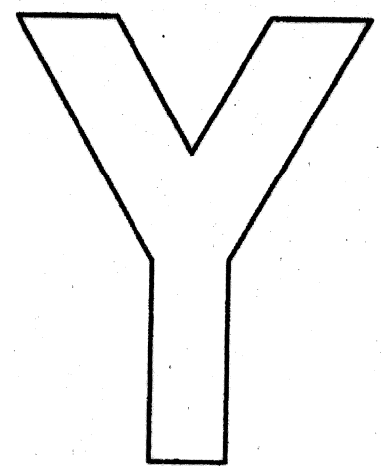
MULTIPLE STREET LIGHTING  
ALL VOLTAGES



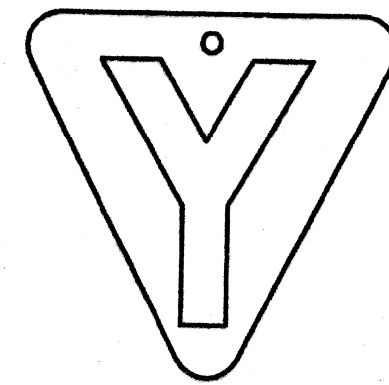
COMMUNICATION



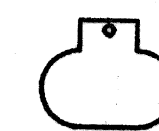
24,000 VOLT FEEDER



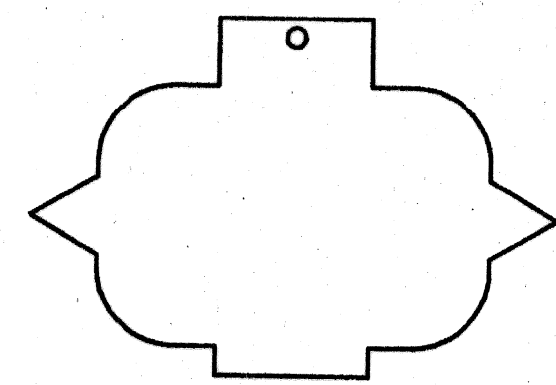
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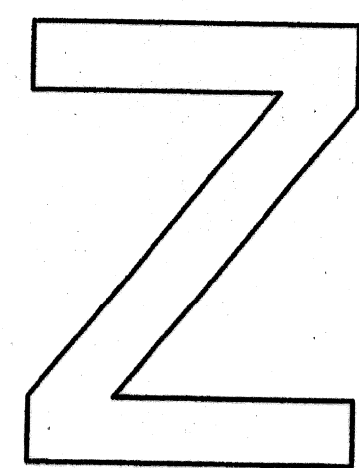
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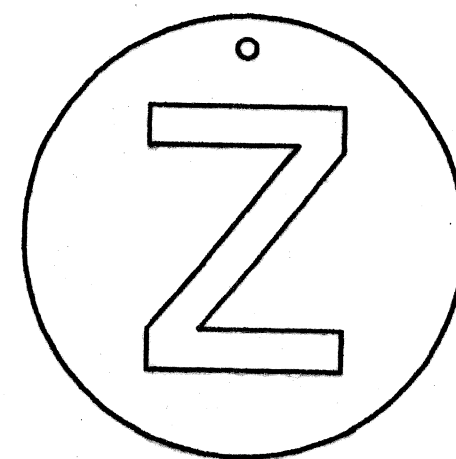
MULTIPLE INC. LTG.



13200 VOLT FEEDER



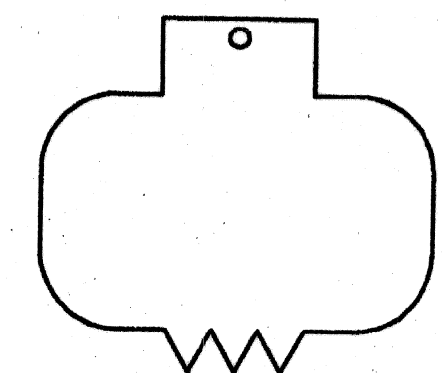
O.H. LINE PHASE TAG



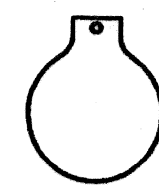
O.H. LINE ØR POTHEAD PHASE TAG

SUBSTATION & CIRCUIT ABBREVIATIONS ON  
IDENTIFICATION TAGS SHALL BE SPELLED  
AS FOLLOWS

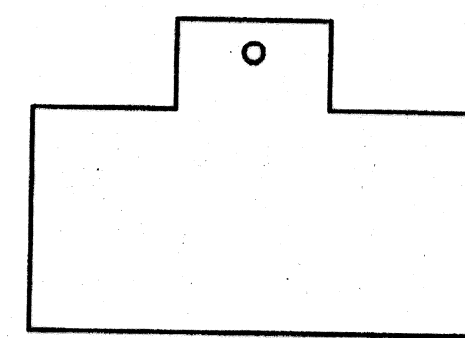
|      |      |      |
|------|------|------|
| BEL. | KSG. | POR. |
| BUT. | LAB. | RUS. |
| CAN. | LEE. | STA. |
| COB. | LOT. | STO. |
| CON. | LUD. | TOW. |
| CUS. | MAP. | TRI. |
| GRF. | MCC. | TUR. |
| HUD. | MON. | WAL. |
| JSC. | PAL. | WSU. |
| JOY. | PHI. | JEF. |



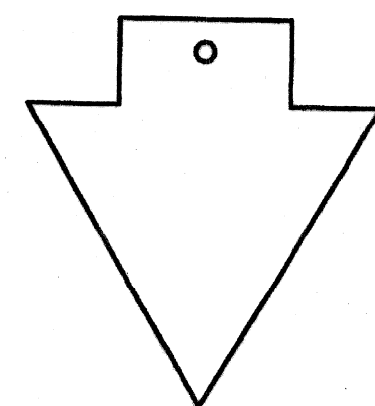
7200 VOLT FEEDER



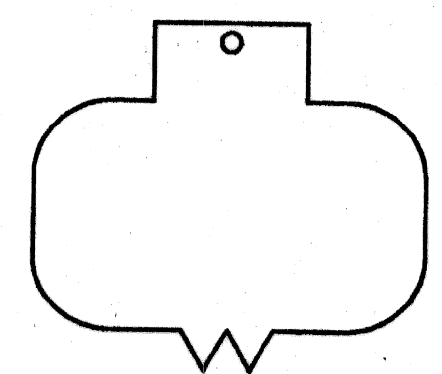
TRAFFIC SIGNALS



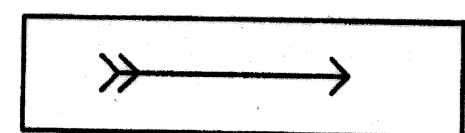
SUPERVISORY CONTROL



DEAD CABLE

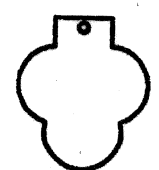


4800 & 5500 VOLT FEEDER



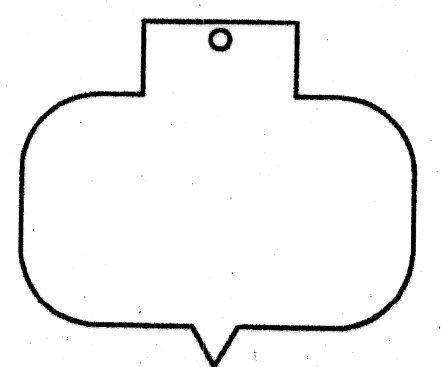
CIRCUIT DIRECTION

SECONDARY POWER TO SAFETY  
ISLANDS & TRAFFIC SIGNALS

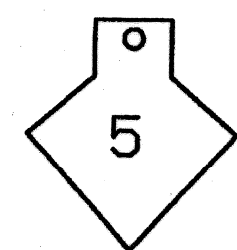


NOTE:

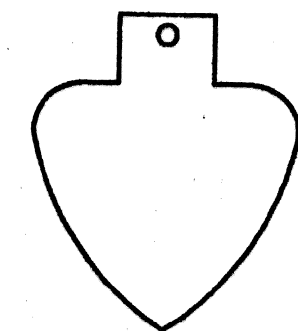
LEAD CABLE IDENTIFICATION TAGS  
WILL BE FURNISHED TO CONTRACTOR  
BY P.L.D. CABLE TAG MARKINGS SUCH  
AS SUBSTATION OR CABLE MARKINGS  
WILL BE AS SHOWN ON PLANS OR WILL  
BE FURNISHED BY P.L.D.



2400 VOLT FEEDER

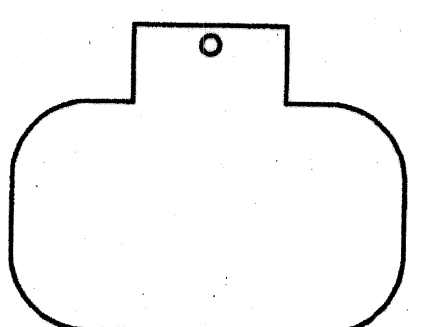
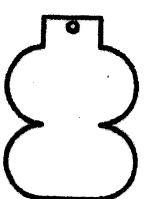


ST. LTG. COND. NO. (FROM 8/C CABLE)

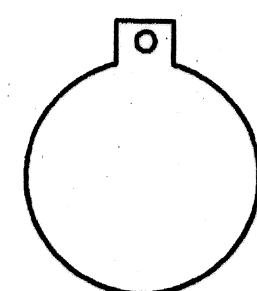


8/C COND. CABLE

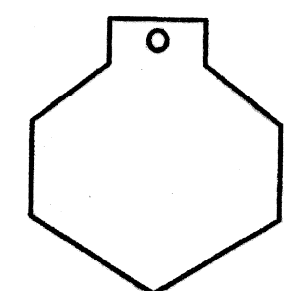
TRAFFIC SIGNAL CHRONOLIZER



MISCELLANEOUS



ST. LTG. CIRC. NUMBER



MULTIPLE LTG, CONTROL

IDENTIFICATION TAGS

MATERIAL : LEAD

| REVISIONS | Date | Description | Chkd. by |
|-----------|------|-------------|----------|
|           |      |             |          |
|           |      |             |          |
|           |      |             |          |
|           |      |             |          |
|           |      |             |          |

CABLE TAGS DETAILS

|          |     |
|----------|-----|
| Drawn    | CEA |
| Checked  |     |
| Approved |     |
| Date     |     |

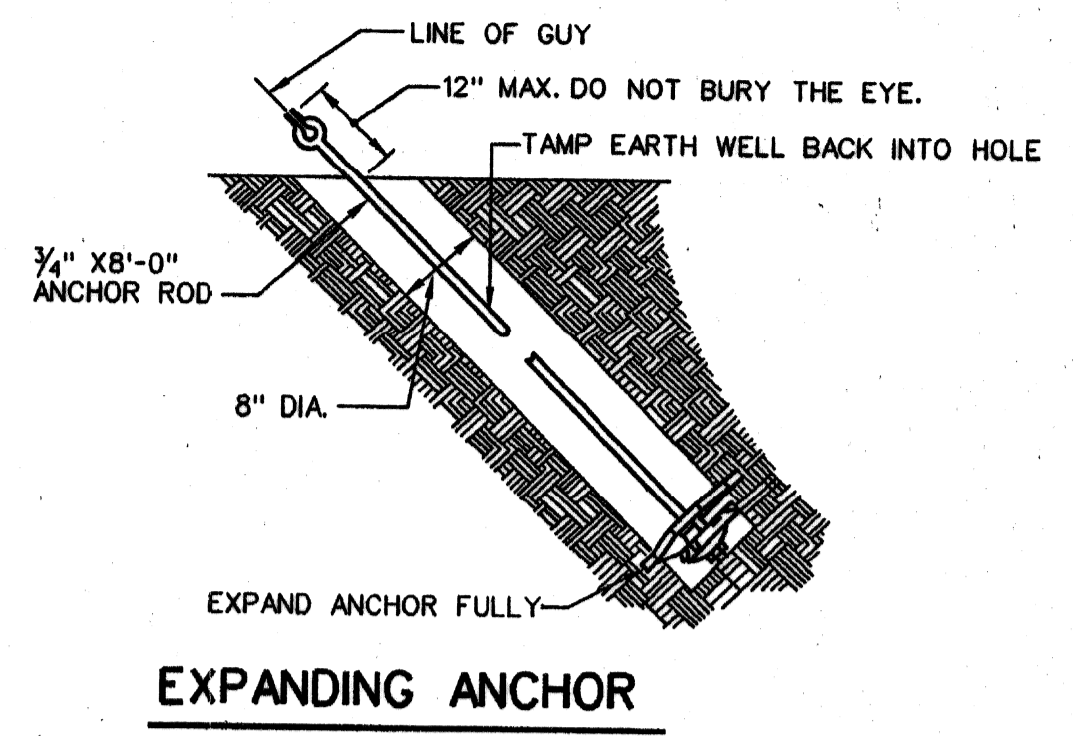
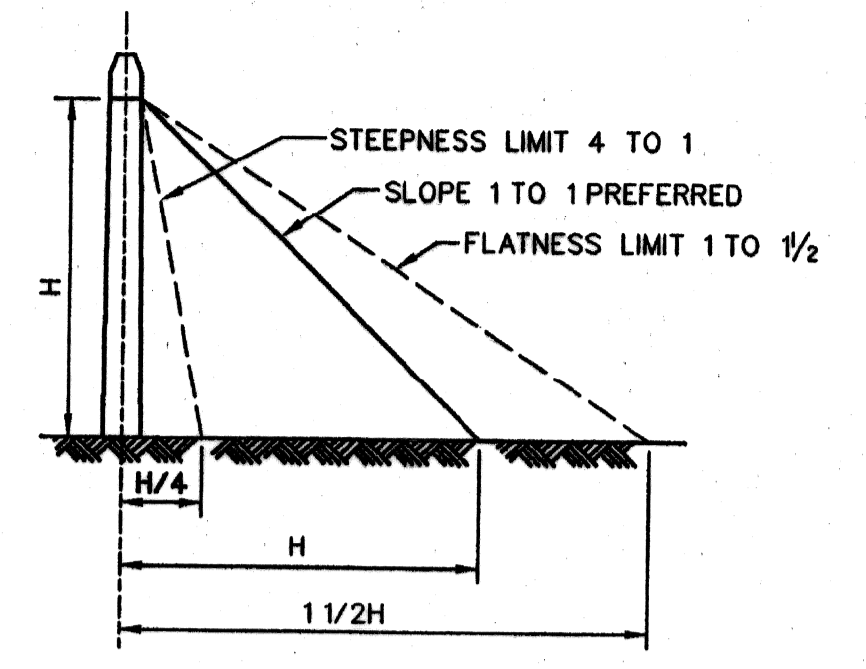
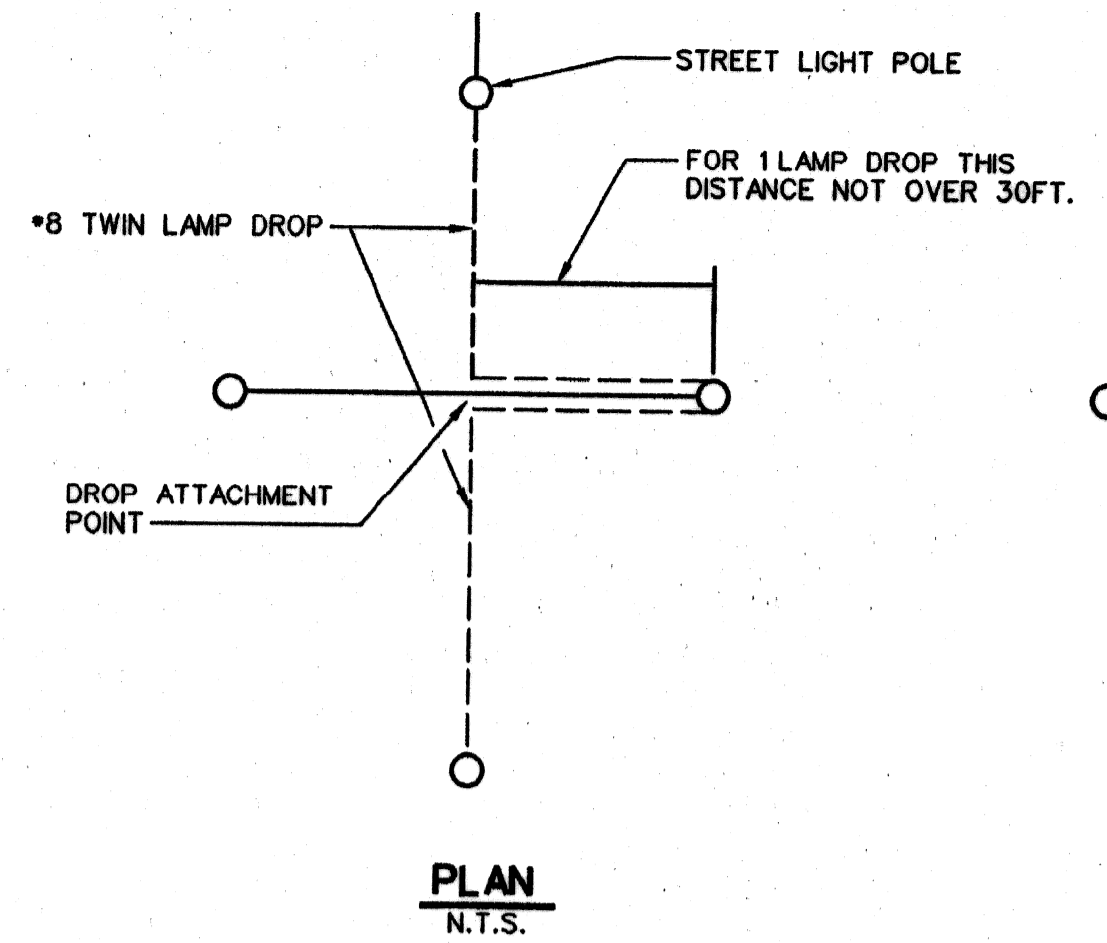
**Consulting Engineering Associates, Inc.**  
16580 WYOMING AVE. DETROIT MICHIGAN 48221  
TELEPHONE: (313) 341-5797 FAX: 341-0205

|             |  |
|-------------|--|
| Checked by  |  |
| Approved by |  |

**PUBLIC LIGHTING DEPARTMENT**  
CITY OF DETROIT

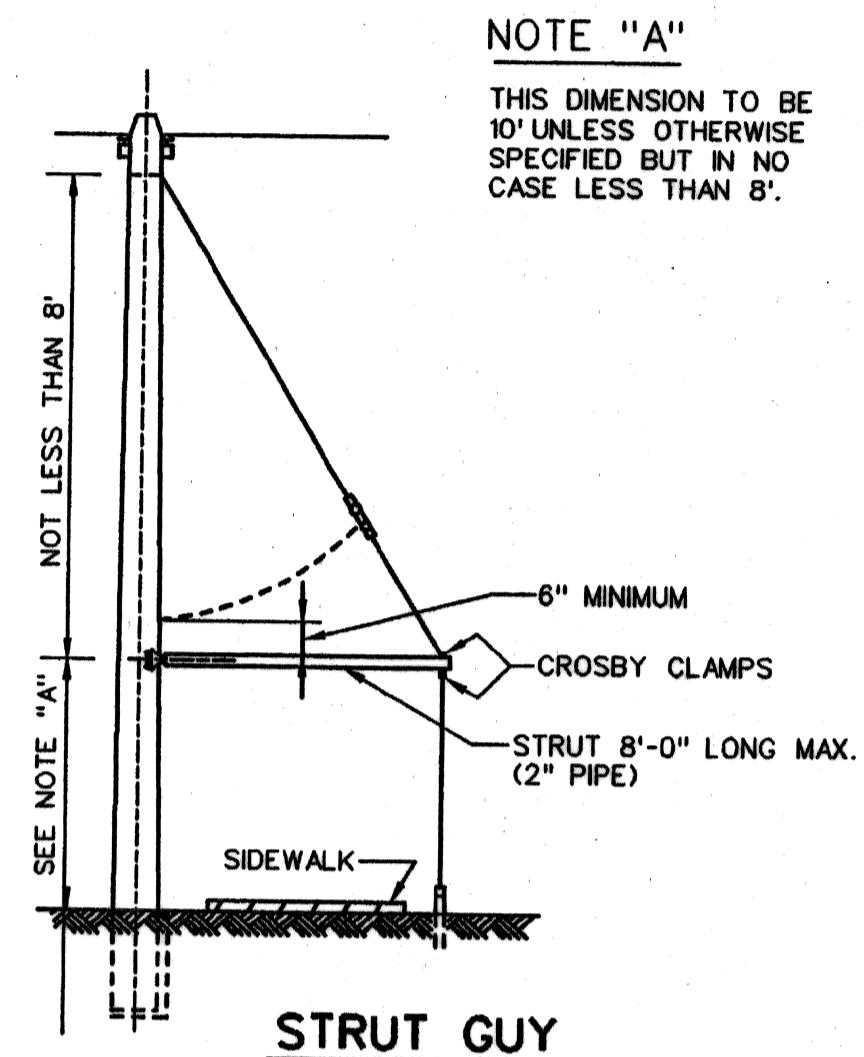
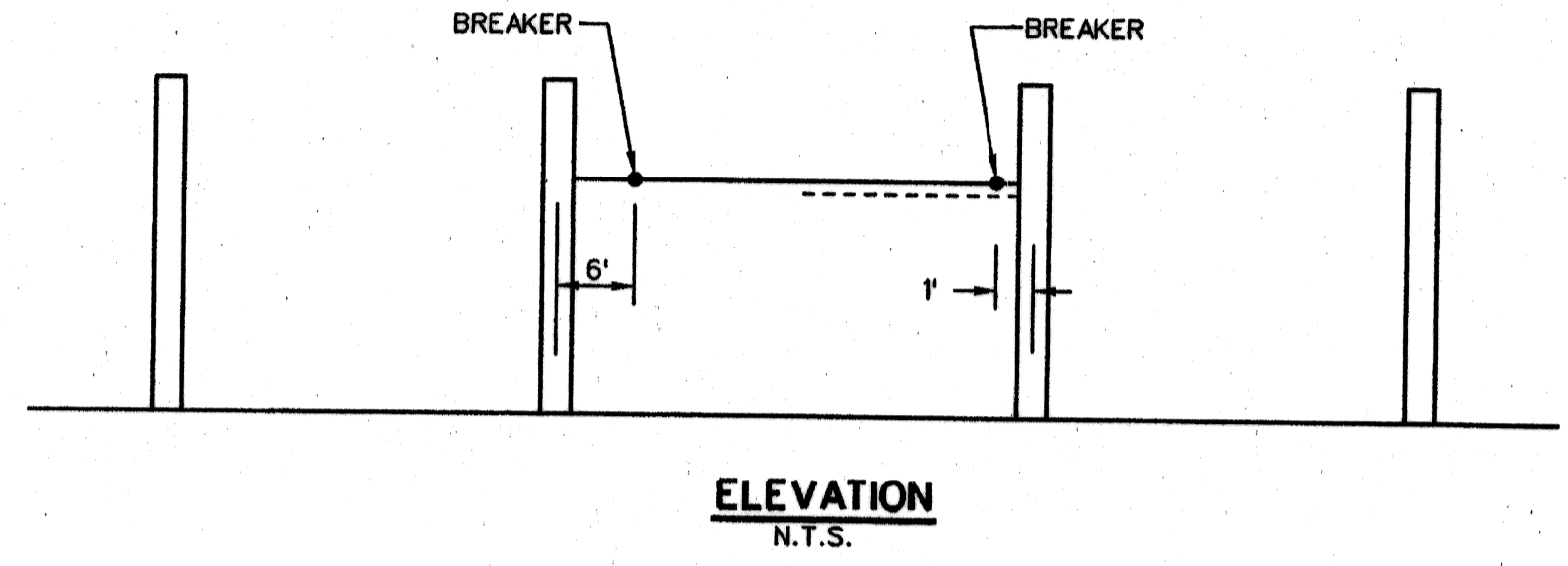
10-01-96 208

|           |          |
|-----------|----------|
| File No.  |          |
| Sheet No. | 45 of 48 |
| Date      |          |



**SLOPE LIMITS FOR ANCHOR GUYS**

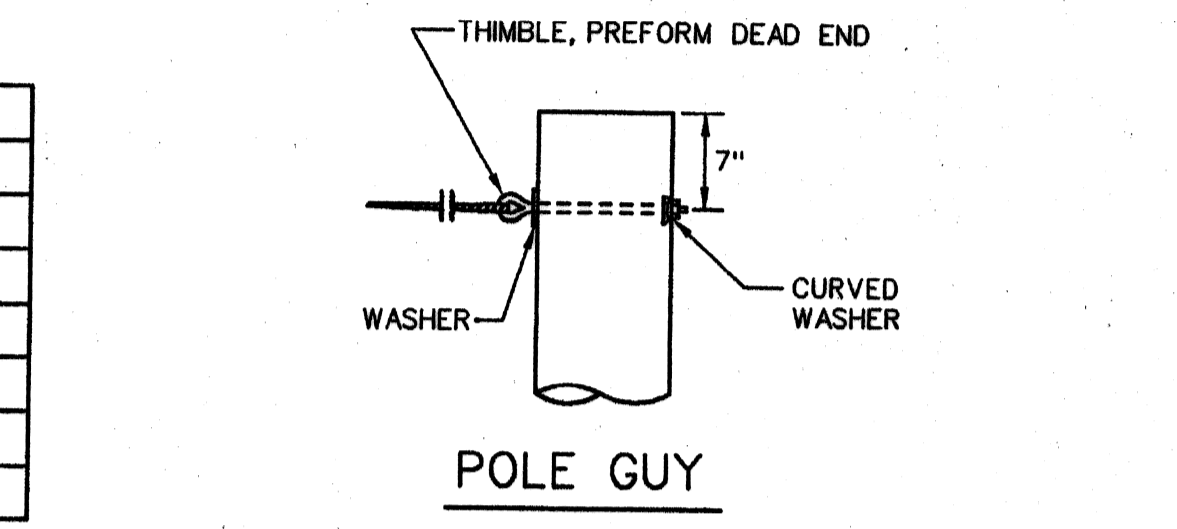
**EXPANDING ANCHOR**



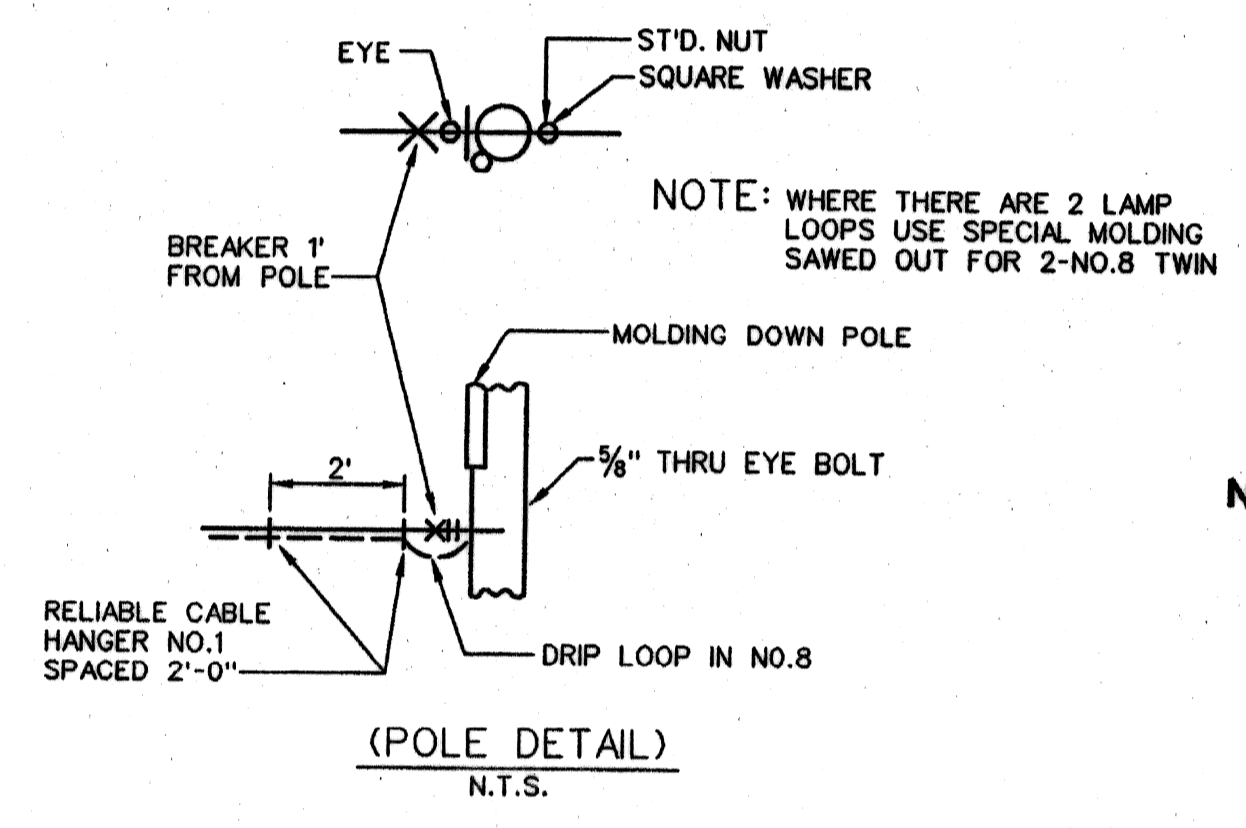
NOTE "A"  
THIS DIMENSION TO BE 10' UNLESS OTHERWISE SPECIFIED BUT IN NO CASE LESS THAN 8'.

| POLE HEIGHT | SETTING DEPTH |
|-------------|---------------|
| 30'         | 6.0'          |
| 35'         | 6.0'          |
| 40'         | 6.0'          |
| 45'         | 6.5'          |
| 50'         | 7.0'          |
| 55'         | 7.5'          |
| 60'         | 8.0'          |

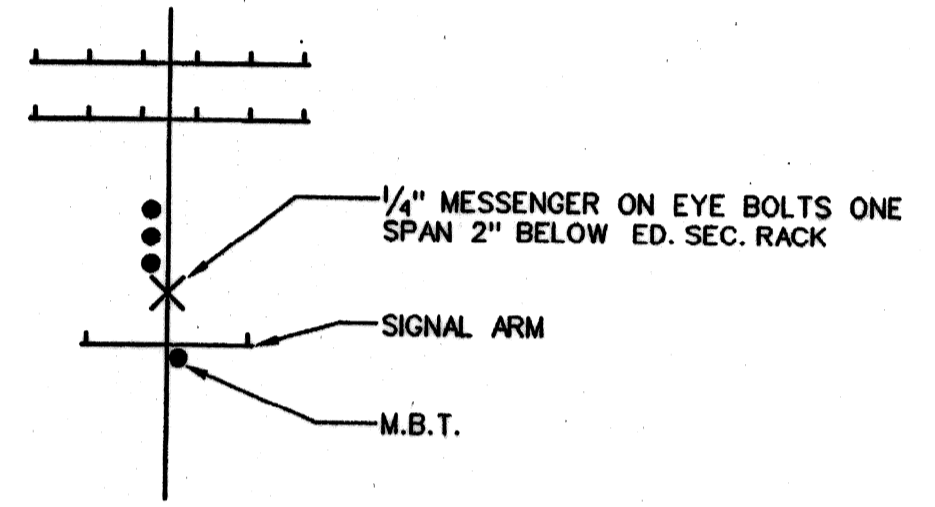
**TYPICAL POLE SETTING DEPTH**



**POLE GUY**

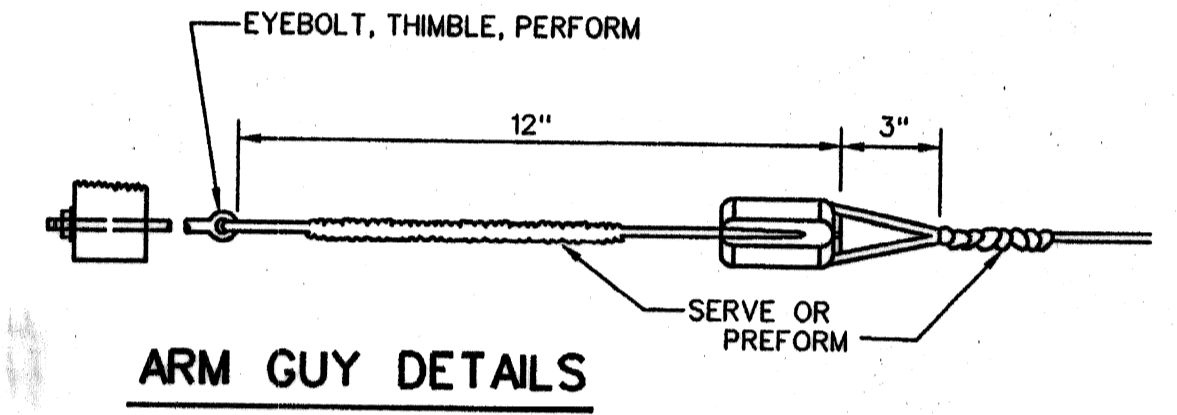


**(POLE DETAIL) N.T.S.**

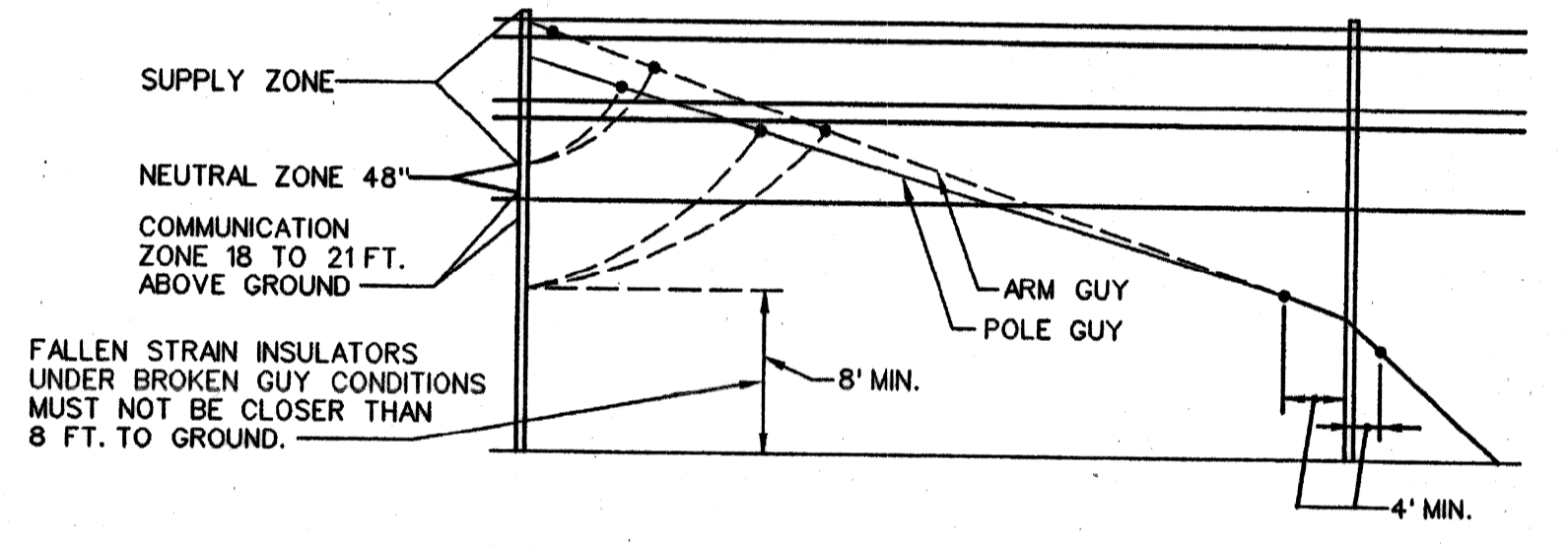


NOTE: INSTALL 1/4" MESSENGER SPAN FIRST WITH SAME SAG AS EDISON SEC. THEN INSTALL NO.8 TWIN DROPS. IN THE CASES WHERE THERE IS A SINGLE DROP AND THE ATTACHMENT POINT IS PULLED OUT AND UP READJUST SAG AT EYE BOLT.

**STRUT GUY**

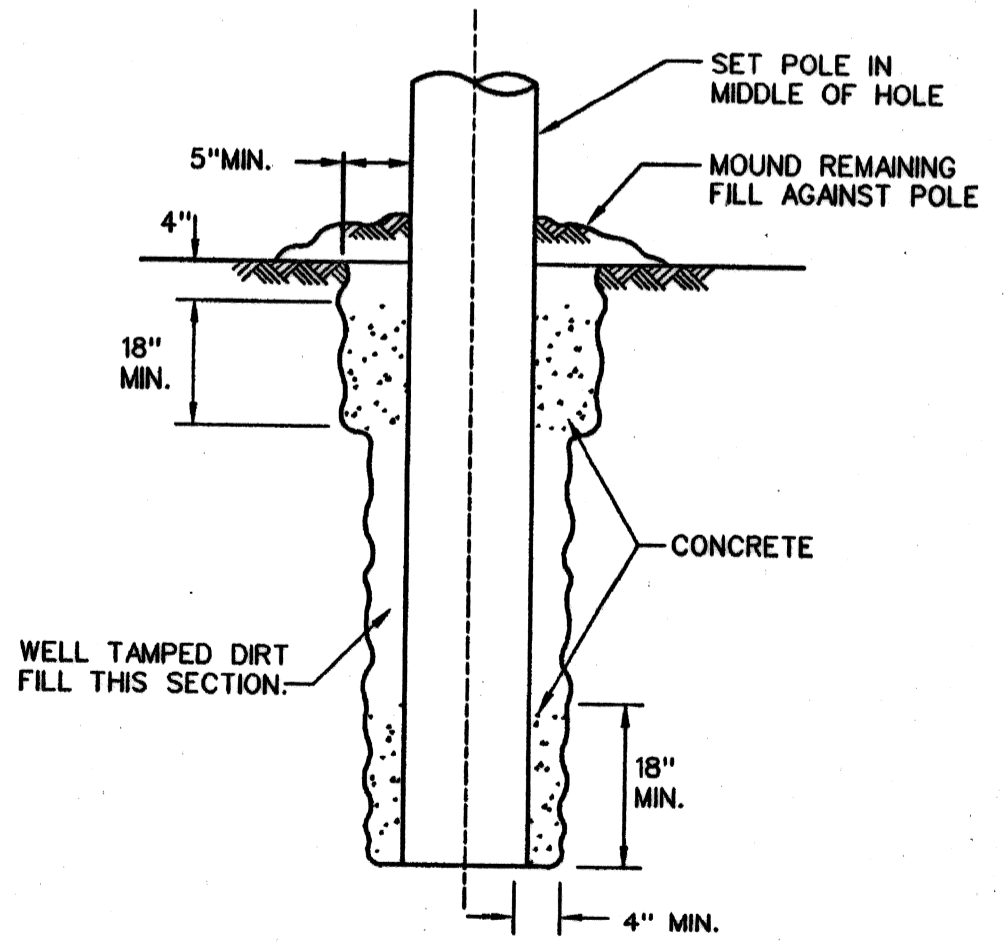


**ARM GUY DETAILS**

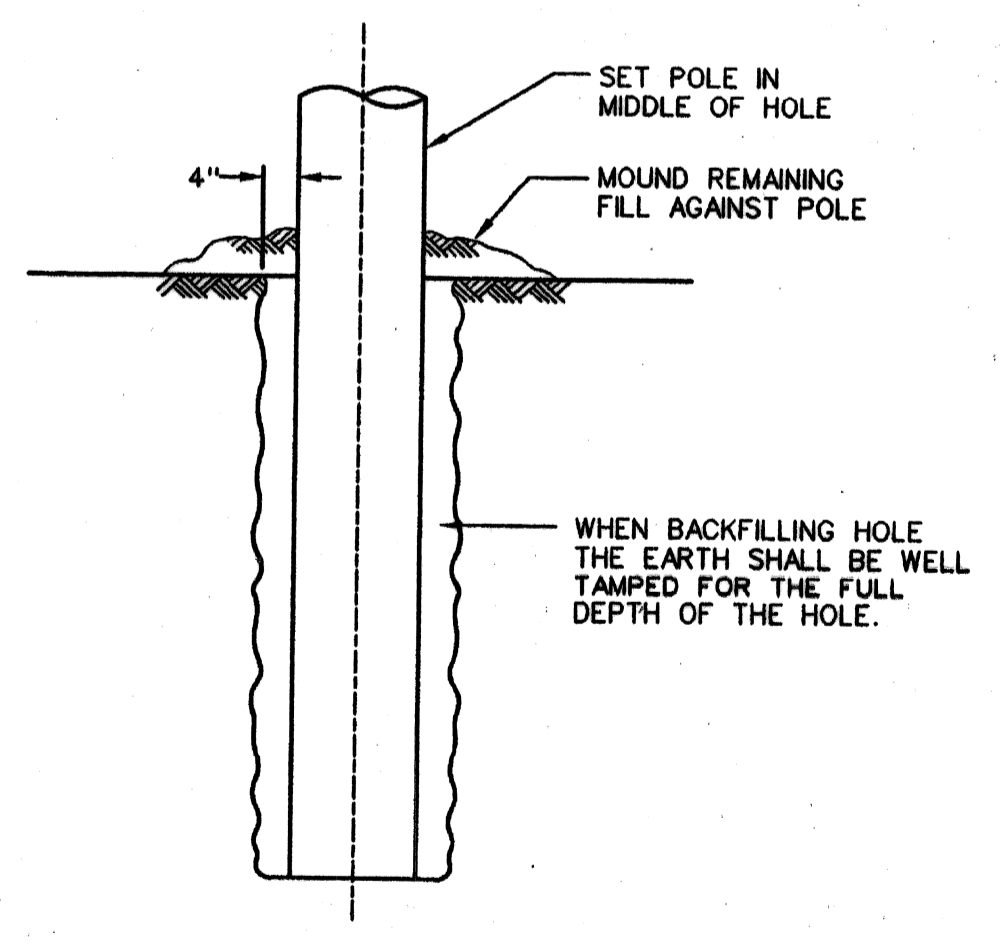


**STRAIN INSULATOR POSITION IN GUY WIRES**

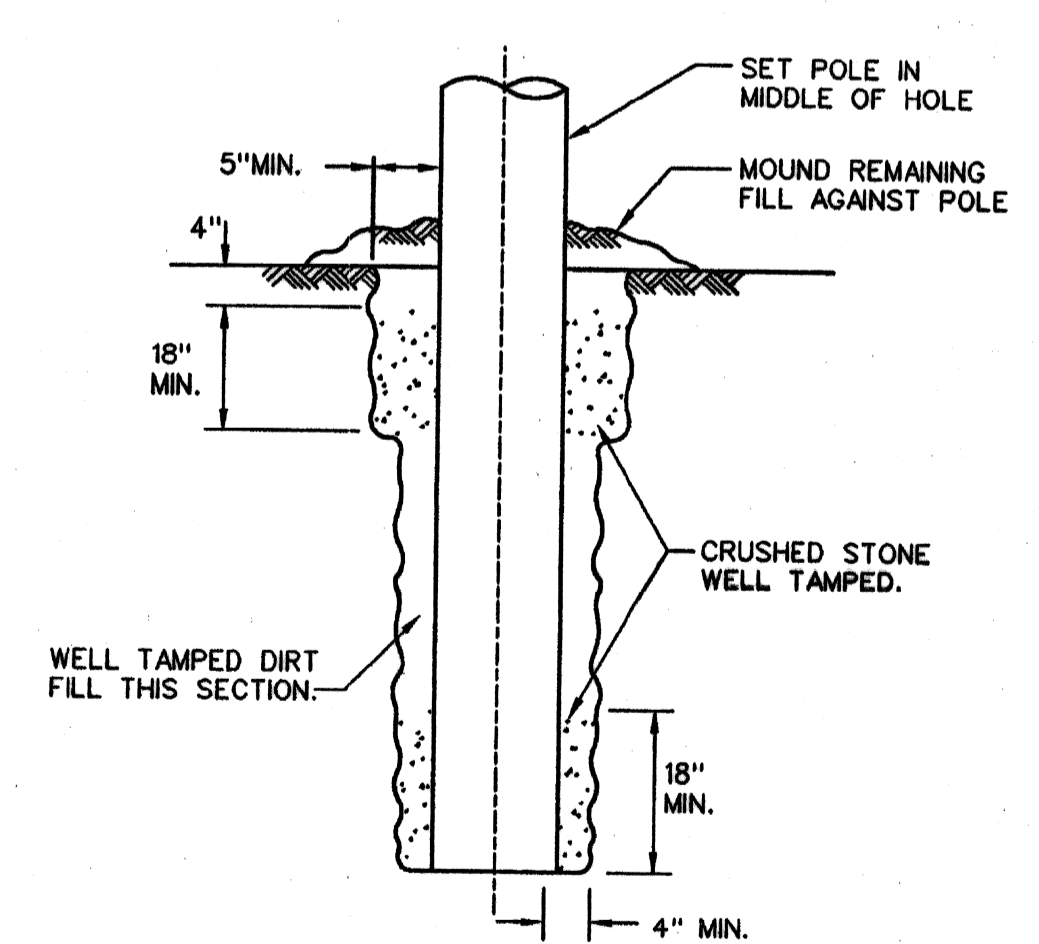
**MESSENGER WIRE LAMP DROP SUPPORT: STANDARD INSTALLATION METHOD**



**WOOD POLE IN CONCRETE N.T.S.**



**WOOD POLE INSTALLATION N.T.S.**



**M.S.S. SELF-SUPPORTING WOOD POLE IN CRUSHED STONE**

DISK FILE: PLD 302

| REVISION | Date | Description | Chkd. by |
|----------|------|-------------|----------|
|          |      |             |          |
|          |      |             |          |
|          |      |             |          |
|          |      |             |          |

MESSENGER WIRE INSTALLATION & MISC.

Drawn **CEA**  
 Checked  
 Approved  
 Date

**Consulting Engineering Associates, Inc.**  
 16550 WYOMING AVE. DETROIT MICHIGAN 48221  
 TELEPHONE: (313) 341-5797 FAX: 341-0205

Drwg. No. **OF** File No. **CEA**

Checked by  
 Approved by

**PUBLIC LIGHTING DEPARTMENT**  
**CITY OF DETROIT**

10-01-96 **302**

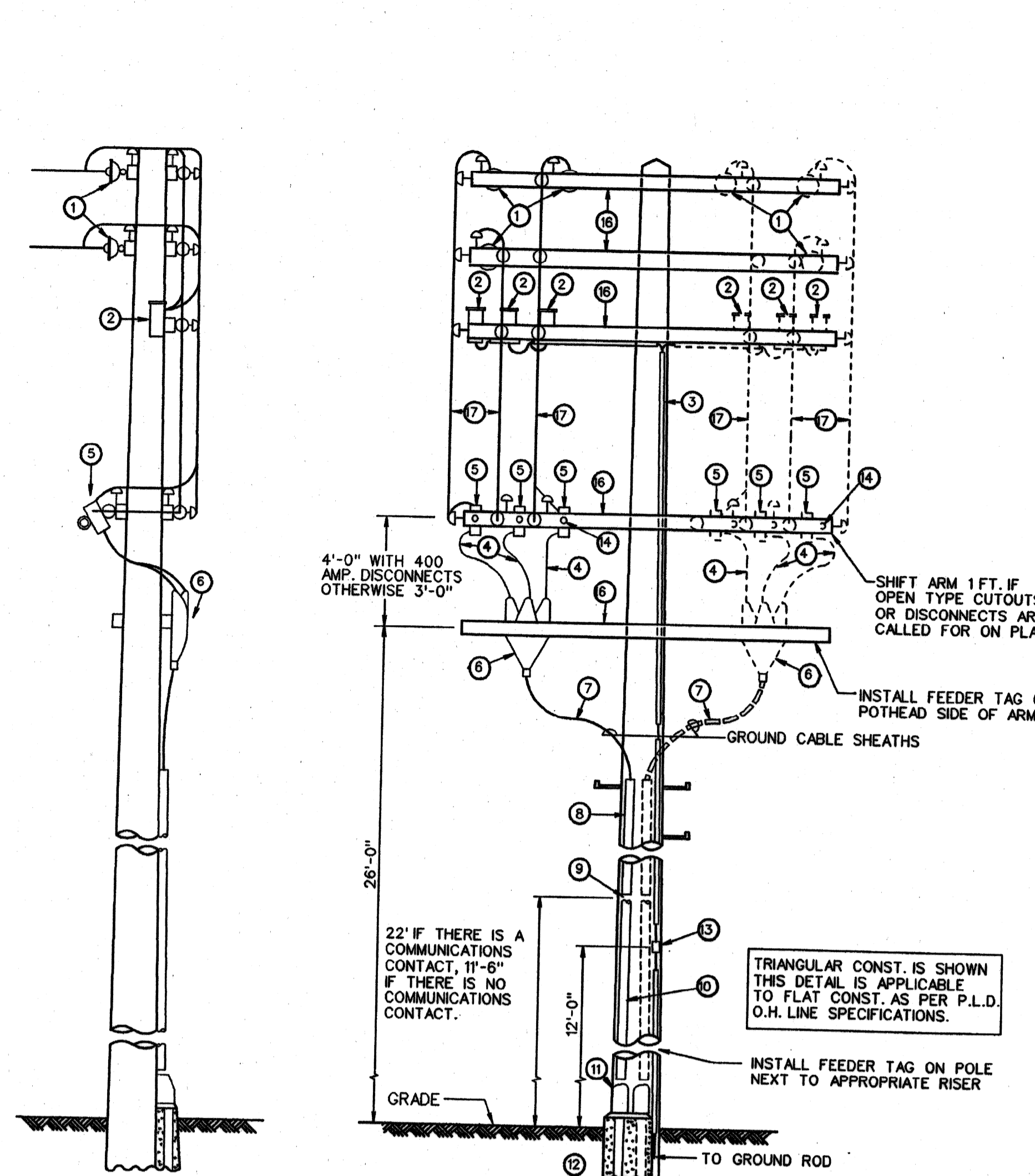
File No.  
 Sheet No. **46 of 48**  
 Date



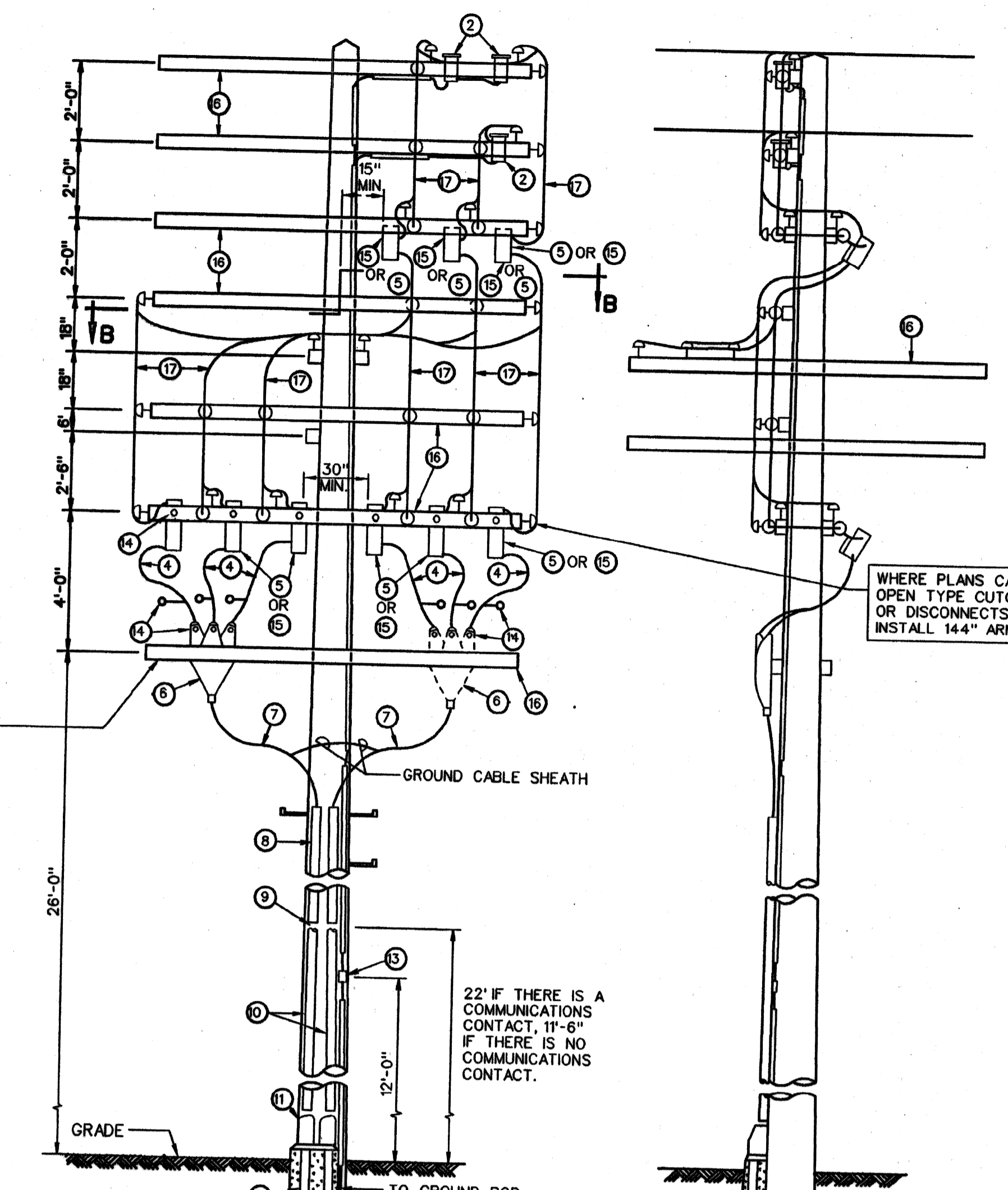


**SUBSTATION CIRCUIT ABBREVIATIONS ON IDENTIFICATION TAGS SHALL BE SPELLED AS FOLLOWS**

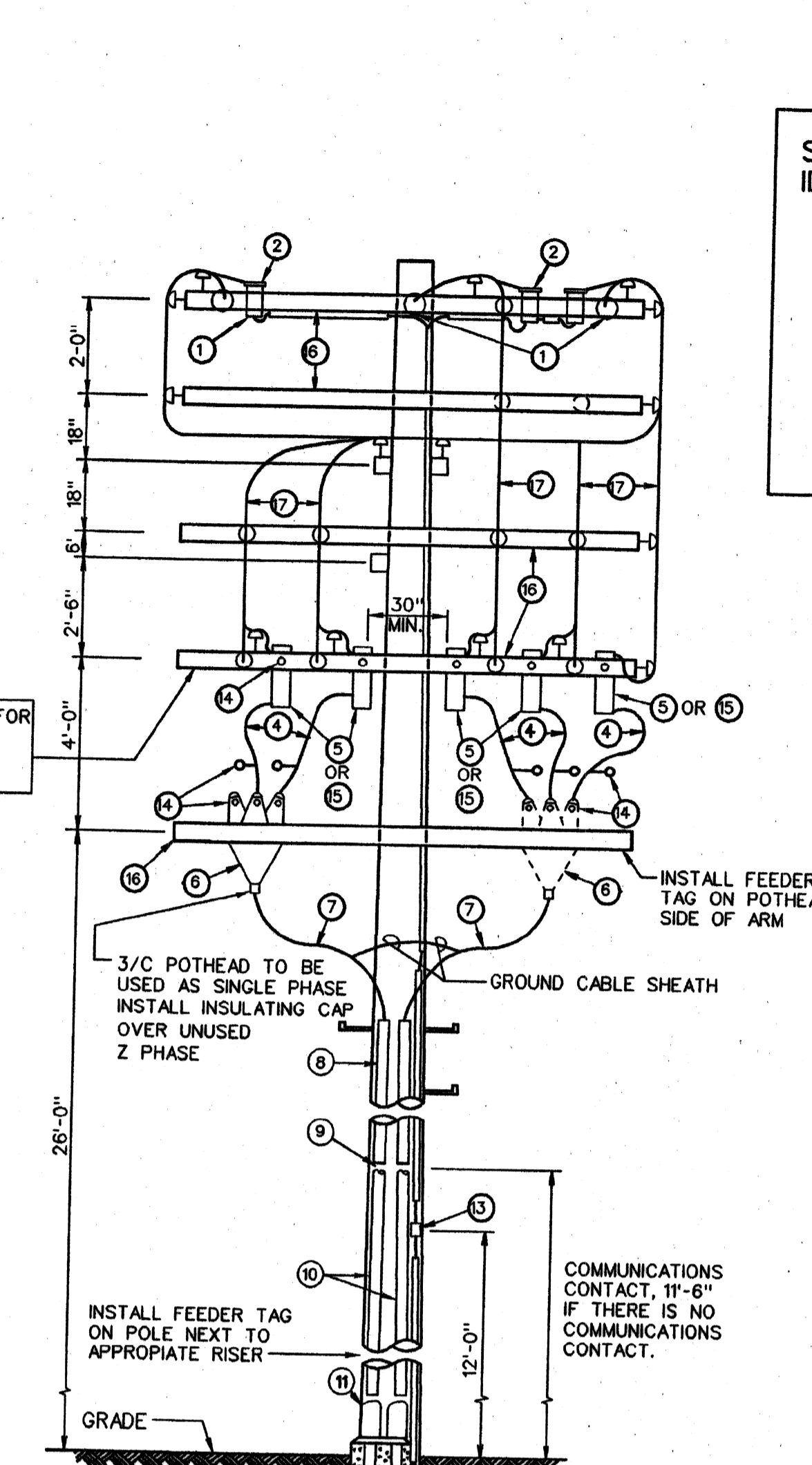
|      |      |      |
|------|------|------|
| BEL. | KSG. | POR. |
| BUT. | LAB. | STA. |
| CAN. | LEE. | TOW. |
| COB. | LOT. | TRI. |
| CON. | LUD. | TUR. |
| CUS. | MAP. | WAL. |
| GRF. | MCC. | WSU. |
| HUJ. | MON. | JEF. |
| JSC. | PAL. |      |
| JOY. | PHL. |      |



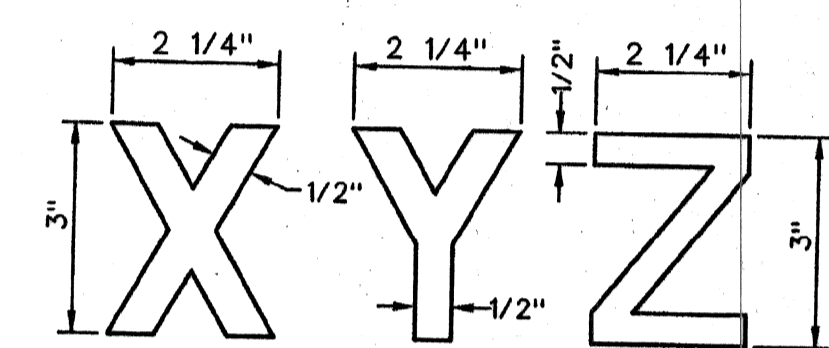
**SIDE VIEW**  
**ELEVATION VIEW**  
**PRIMARY DISTRIBUTION CABLE POLE**  
N.T.S.



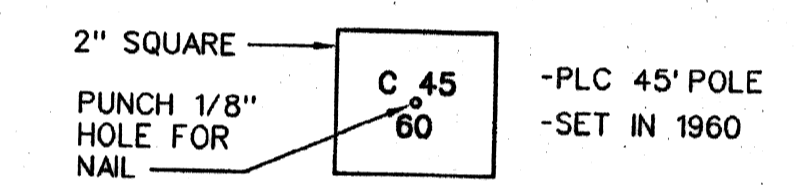
**ELEVATION VIEW**  
**SIDE VIEW**  
**TYPICAL LOOP PRIMARY DISTRIBUTION CABLE POLE**  
N.T.S.



**ELEVATION VIEW**  
**DOUBLE PRIMARY DISTRIBUTION CABLE POLE**  
N.T.S.



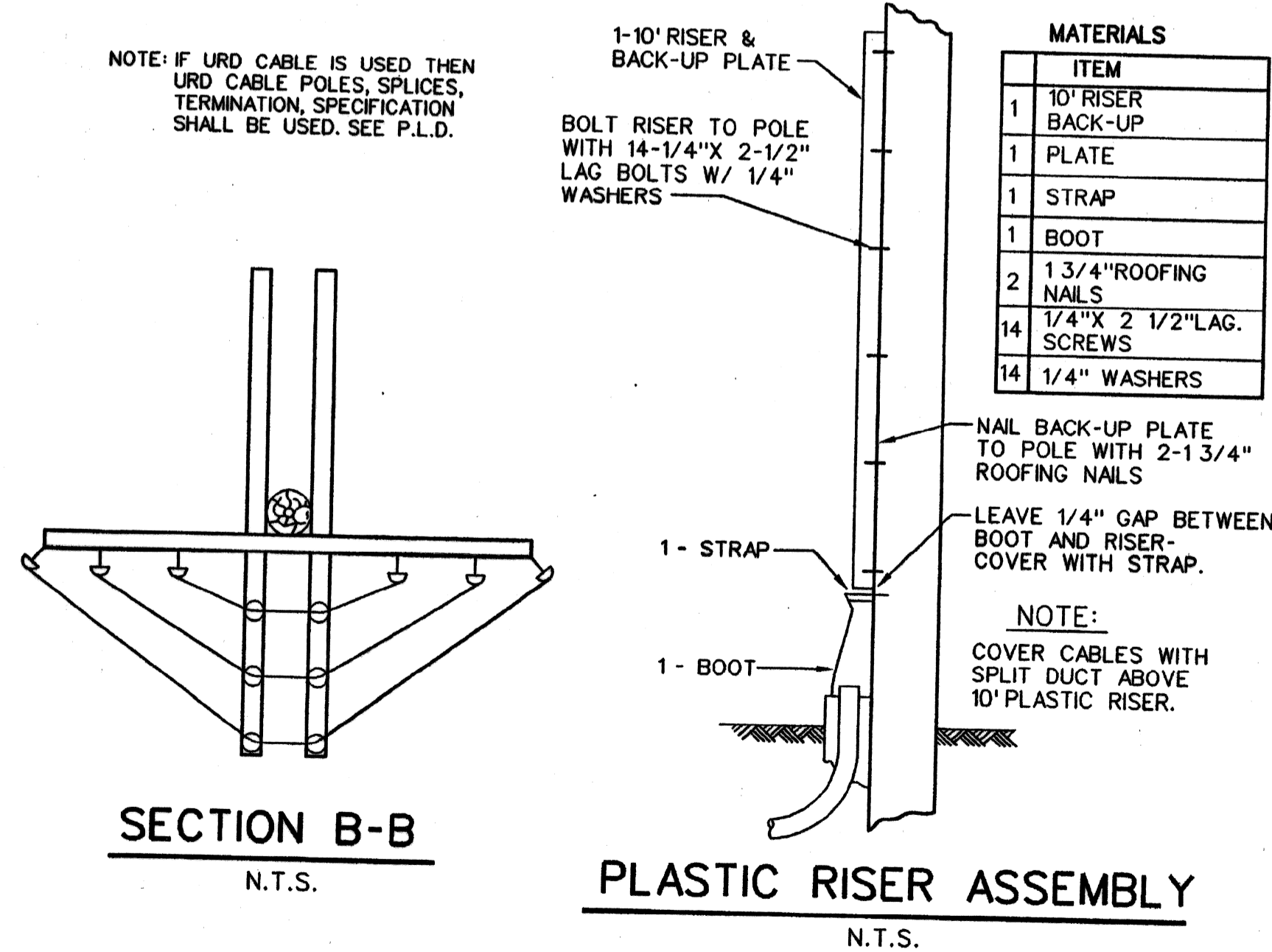
**O.H. LINE PHASE TAGS**  
N.T.S.



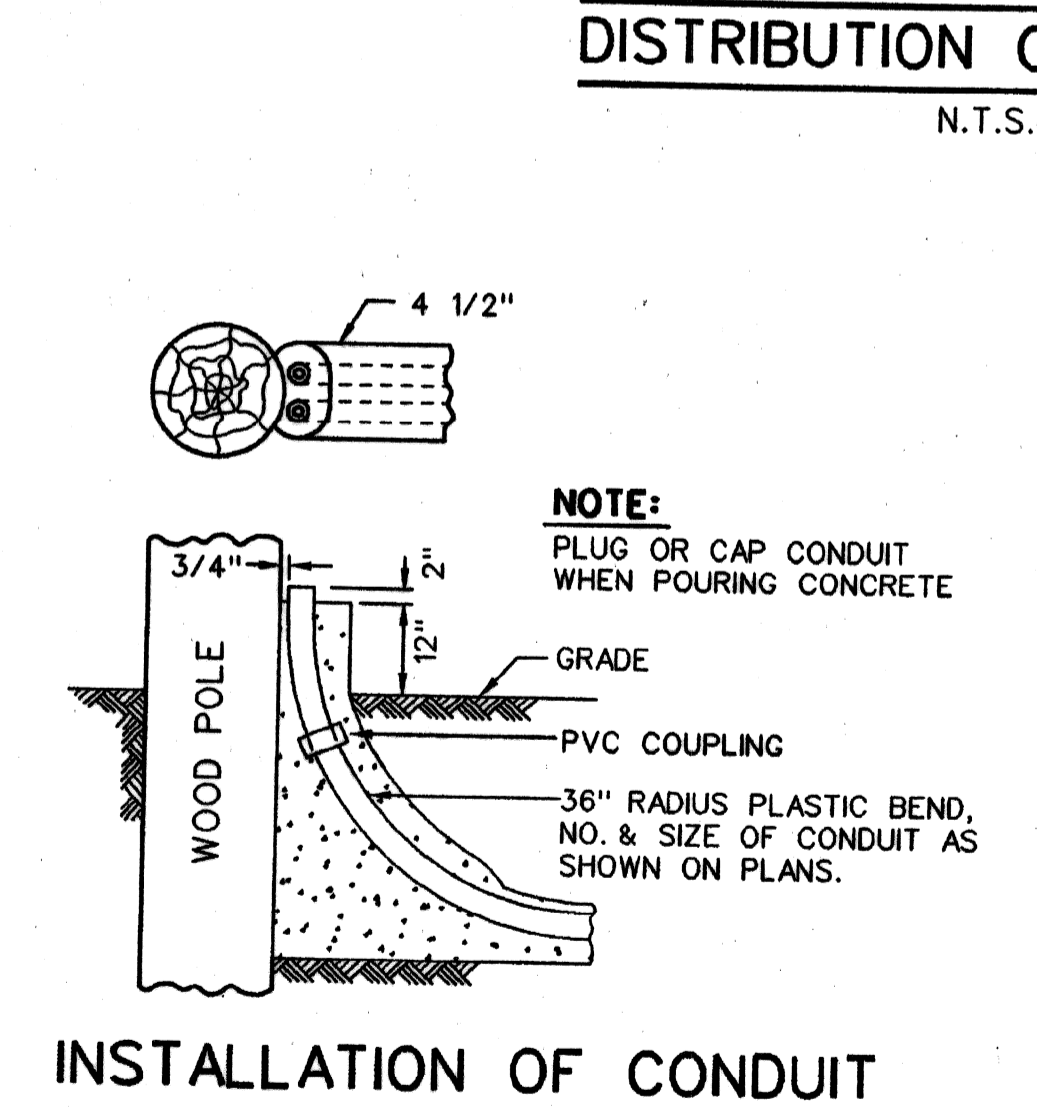
STOCK: 0032" ALUMINUM MILL FINISH  
USE 1/4" STEEL STAMP FOR LETTERING PIN  
SET MARKER 7'-0" ABOVE GRADE

| DETAIL ITEMS |  |
|--------------|--|
| 1            | SUSPENSION INSULATOR   |
| 2            | LIGHTNING ARRESTER-RATING AND TYPE AS REQUIRED                         |
| 3            | * 2 GROUND WIRE UNDER MOULDING   |
| 4            | HIGH VOLTAGE FLEXIBLE TRAINING WIRE 4/0 AWG. EXCEPT AS OTHERWISE NOTED |
| 5            | * PRIMARY SOLID BLADE DISCONNECT                                       |
| 6            | 3/C POTHEAD, 500 AMP., FLAT DIVERGENT                                  |
| 7            | L.C. CABLE   |
| 8            | 4" SPLIT DUCT ABOVE G.I.P.   |
| 9            | WEATHER CAP  |
| 10           | 10" HASKON RISER   |
| 11           | HASKON BOOT  |
| 12           | 36" RADIUS PLASTIC BEND, NO. & SIZE OF CONDUIT AS SHOWN ON PLANS       |
| 13           | FOUR SCREW CONNECTOR   |
| 14           | PHASING TAGS (ON CLIMBING SIDE OF PRIMARY LINE ARMS)                   |
| 15           | * WESTINGHOUSE FUSED CUTOUT  |
| 16           | 120" 8 PINS STANDARD CROSSARM  |
| 17           | * 4/0 TRAINING WIRE, NEOPRENE COVERED, WEATHERPROOF                    |

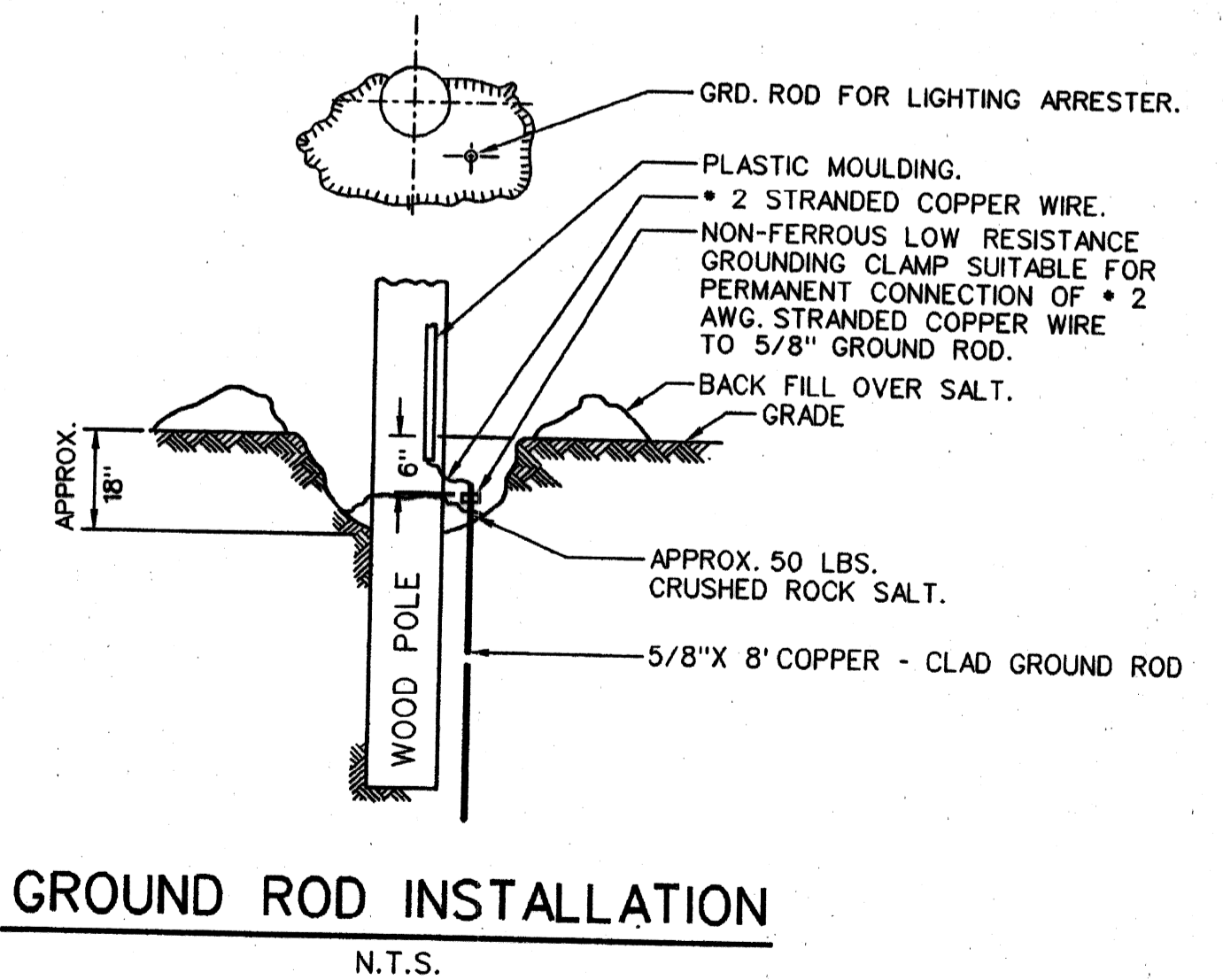
\* SEE WIRING DIAGRAM ON PLANS: FUSE SIZE & ORIENTATION OF FUSE OR SOLID BLADE DISCONNECTS.  
1. KEEP ALL ELECTRICAL EQUIPMENT OUTSIDE OF THE 30" CLIMBING ZONE.  
2. GROUND TO 48" BELOW POTHEAD ARM. INSTALL STEPS ON POLE FROM 8'-0" ABOVE.  
3. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A LIST OF ALL SPLICING MATERIALS HE PROPOSES TO USE WITH SUPPORTING DATA THAT THE MATERIAL IS SUITABLE FOR THE APPLICATION AS SHOWN ON THE DRAWING.



**SECTION B-B**  
N.T.S.  
**PLASTIC RISER ASSEMBLY**  
N.T.S.



**INSTALLATION OF CONDUIT**



**GROUND ROD INSTALLATION**  
N.T.S.

DISK FILE: PLD 367

| Date | Description | Chkd. by |
|------|-------------|----------|
|      |             |          |
|      |             |          |
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|      |             |          |
|      |             |          |

**PRIMARY DISTRIBUTION CABLE POLES DETAILS**

|                     |           |             |           |          |
|---------------------|-----------|-------------|-----------|----------|
| Drawn<br><b>CEA</b> |           | Checked by  | 10-01-96  | 307      |
| Checked             |           | Approved by | File No.  |          |
| Date                | Drwg. No. | File No.    | Sheet No. | 48 of 48 |
|                     | OF        | CEA         | Date      |          |

**PUBLIC LIGHTING DEPARTMENT**  
CITY OF DETROIT