

CEDAR ACRES WATER MAIN UPGRADE CAPITAL PROJECT W-8223 CONTRACT NO. 24-3811

| QUANTITIES | | | | |
|--------------------------------|------------|------------|---------------------------|----------------------------------|
| ITEM | QUANTITIES | | TYPE MATERIAL | SUPPLIER |
| | ESTIMATED | AS BUILT | | |
| 8" WATER | 3620 L.F. | 3627 L.F. | DIP | U.S. PIPE AND FOUNDRY COMPANY |
| 8" VALVE | 8 EA. | 8 EA. | RESILIENT SEAT GATE VALVE | U.S. PIPE AND FOUNDRY COMPANY |
| 8" x 8" TAPPING SLEEVE & VALVE | 1 EA. | 1 EA. | RESILIENT SEAT GATE VALVE | U.S. PIPE AND FOUNDRY COMPANY |
| 6" VALVE | 6 EA. | 5 EA. | RESILIENT SEAT GATE VALVE | U.S. PIPE AND FOUNDRY COMPANY |
| AIR RELEASE VALVE & VAULT | 3 EA. | 5 EA. | | ATLANTIC CONCRETE PRODUCTS, INC. |
| FIRE HYDRANT | 5 EA. | 5 EA. | AWWA C-502 | U.S. PIPE AND FOUNDRY COMPANY |
| 3/4" WATER | 1270 L.F. | 451.5 L.F. | TYPE "K" COPPER TUBE | BELAIR ROAD SUPPLY |
| 4" WHC | 25 L.F. | | D.I.P. | U.S. PIPE AND FOUNDRY COMPANY |

NOTE:
"SEDIMENT CONTROL TO BE IMPLEMENTED IN ACCORDANCE WITH VOLUME 4, ARTICLE 15 OF THE HOWARD COUNTY DESIGN MANUAL AND THESE PLANS."

ENGINEER'S CERTIFICATION

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

James G. Spasm DATE: 12-12-00
WALLACE, MONTGOMERY & ASSOCIATES
110 WEST ROAD, SUITE 345
TOWSON, MARYLAND 21204
(410) 494 9093

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

J. H. Warfield 12/14/00
S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR THE SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John R. Roberts 12/14/00
APPROVED DATE
HOWARD SOIL CONSERVATION DISTRICT

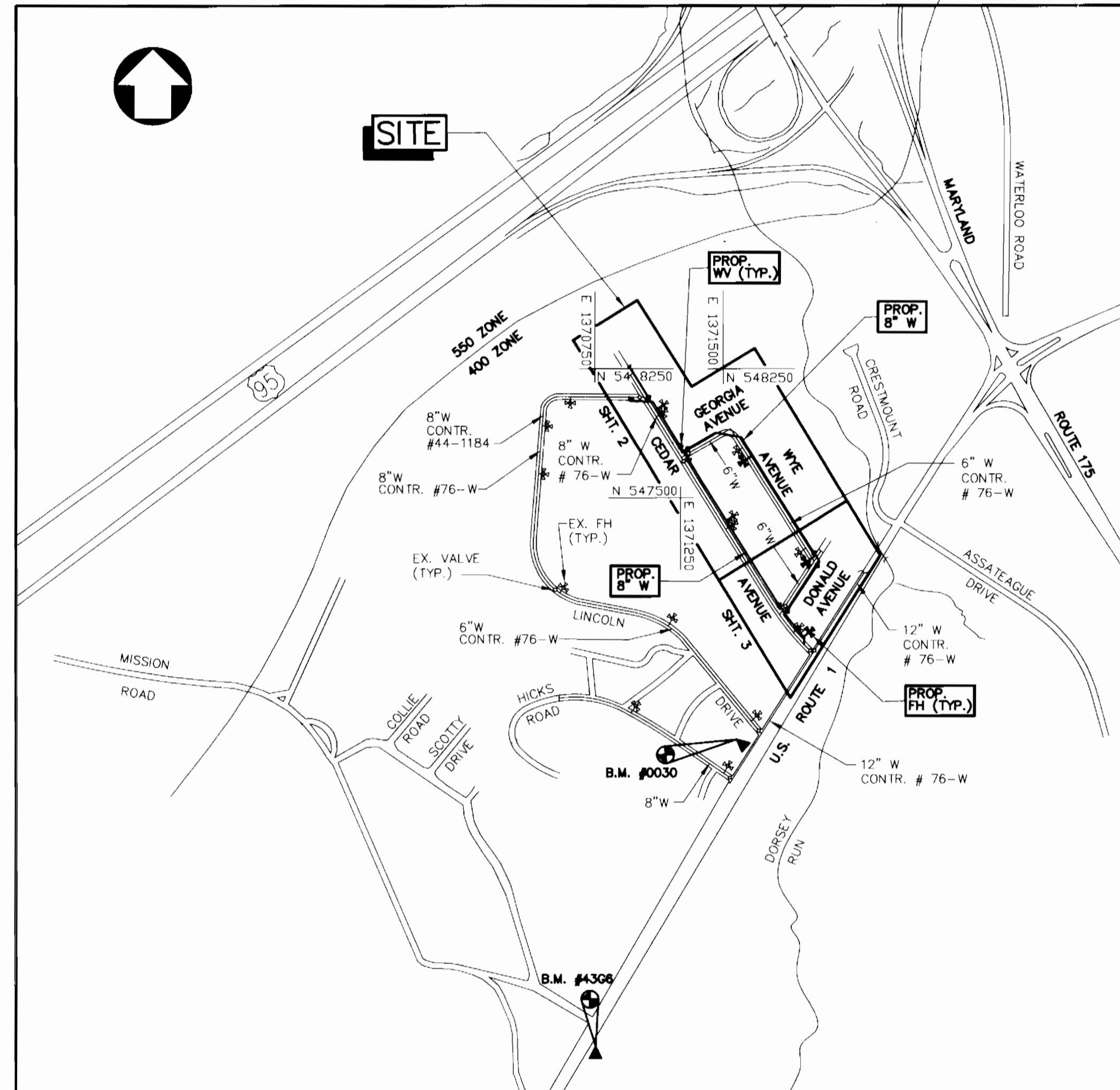
DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT."

Donald G. Lepson 12/13/00
SIGNATURE OF DEVELOPER DATE
PRINT NAME BELOW SIGNATURE
DONALD G. LEPSON

MDE PERMIT NO. _____

| BENCHMARKS | | | | |
|------------|---------|------------|-------------|--|
| NO. | ELEV. | NORTHING | EASTING | DESCRIPTION |
| 0030 | 217.502 | 545924.889 | 1371561.666 | LOCATED ON THE NORTHWEST CORNER OF HICKS ROAD AND US ROUTE 1, 28.3' FROM A FIRE HYDRANT LOCATED ON THE NORTH SIDE OF HICKS ROAD AND 16.1' FROM A 6" DIA. STEEL POLE. |
| 4306 | 220.115 | 544117.545 | 1370550.824 | LOCATED APPROXIMATELY 0.39 MILES SOUTH OF BENCHMARK # 0030 ON THE EAST SIDE OF US ROUTE 1, 18.8' FROM THE NORTHWEST CORNER OF THE CHAIN LINK FENCE ON THE PROPERTY OF 8205 WASHINGTON BLVD. AND 68.8' FROM THE FIRE HYDRANT. |



| | | |
|--|---|--|
| TYPE OF BUILDING: RESIDENTIAL NUMBER OF PARCELS: 68 WATER HOUSE CONNECTIONS: 69 DRAINAGE AREA: DORSEY RUN | VICINITY MAP SCALE: 1" = 600' | WATER CODE FOR COUNTY USE ONLY WATER NO. B02 SEWER CODE: 3340000 |
|--|---|--|

| INDEX OF SHEETS | | | |
|-----------------|-------------|-------|-------------------------------------|
| SHEET | DESCRIPTION | SHEET | DESCRIPTION |
| 1 | TITLE SHEET | 8 | CATHODIC PROTECTION LAYOUT |
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| 5 | PROFILE | 12 | SEDIMENT CONTROL NOTES |
| 6 | PROFILE | | RESTORATION & ABANDONMENT SCHEDULES |
| 7 | PROFILE | 13 | SEDIMENT CONTROL DETAILS |

GENERAL NOTES:

PART I

- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES, NAD 83/91.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD 29.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12". CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [] AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

| | |
|--------------------------------------|----------------|
| AT&T..... | 1-800-526-2000 |
| BGE(CONTRACTOR SERVICES)..... | 410-850-4620 |
| BGE(UNDERGROUND DAMAGE CONTROL)..... | 410-787-9068 |
| BUREAU OF UTILITIES..... | 410-313-4900 |
| BELL ATLANTIC MARYLAND, INC..... | 1-800-621-9900 |
| COLONIAL PIPELINE CO..... | 410-795-1390 |
| MISS UTILITY..... | 1-800-257-7777 |
| STATE HIGHWAY ADMINISTRATION..... | 410-531-5533 |
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.

PART II WATER

- ALL WATER MAINS SHALL BE D.I.P. CLASS 52 WITH RESTRAINED JOINTS UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- FIVE DAYS PRIOR TO TIE-IN CONNECTIONS, CONTACT THE HOWARD COUNTY BUREAU OF UTILITIES, 410-313-4900, FOR ASSISTANCE.
- REPLACEMENT WATER SERVICES SHALL MATCH EXISTING SIZE OF 3/4-INCH UNLESS OTHERWISE NOTED.
- ALL EXISTING FIRE HYDRANTS TO BE ABANDONED SHALL BE RETURNED TO THE BUREAU OF UTILITIES, 8270 OLD MONTGOMERY ROAD, COLUMBIA, MD.

AS-BUILT

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

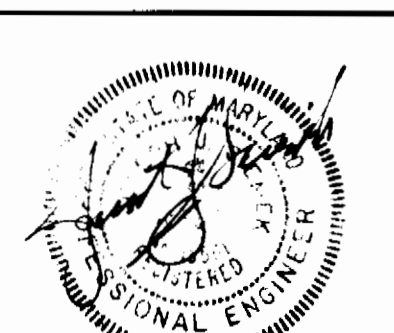
Samuel A. New 12/21/00
DIRECTOR OF PUBLIC WORKS DATE

Robert W. Brumby 12-20-00
CHIEF, BUREAU OF UTILITIES DATE

Donald G. Lepson 12/13/00
CHIEF, BUREAU OF ENGINEERING DATE

Dee Ann Lee 12-13-00
CHIEF, UTILITY DESIGN DIVISION DATE

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204



| | | | | |
|-----------------|---------|----------|------|--|
| DES: L.A.F. | | | | |
| DRN: K.J.P. | | | | |
| CHK: J.J.S. | | | | |
| DATE: DEC. 2000 | BY: NO. | REVISION | DATE | |

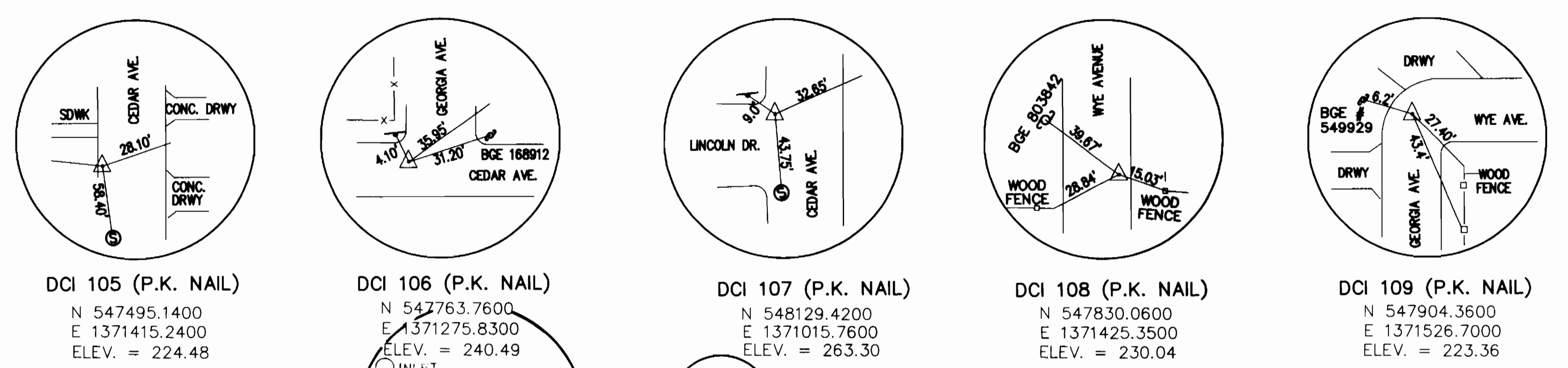
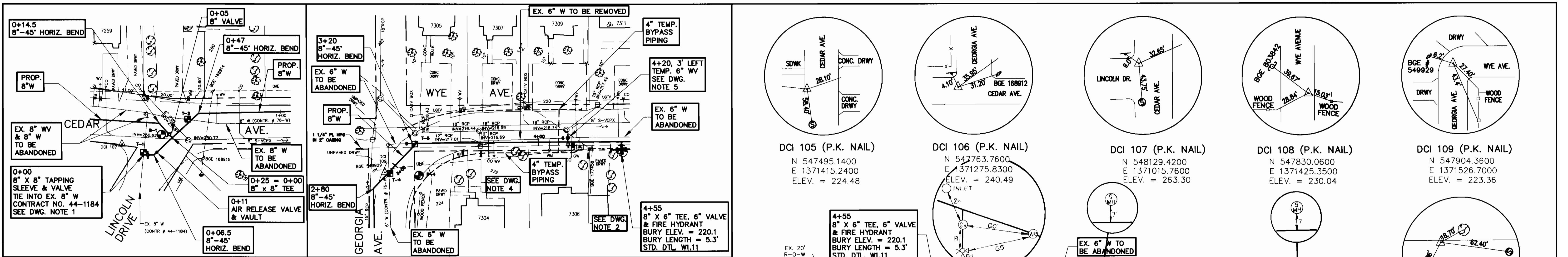
TITLE SHEET

600' SCALE MAP NO. 43 BLOCK NO. 8

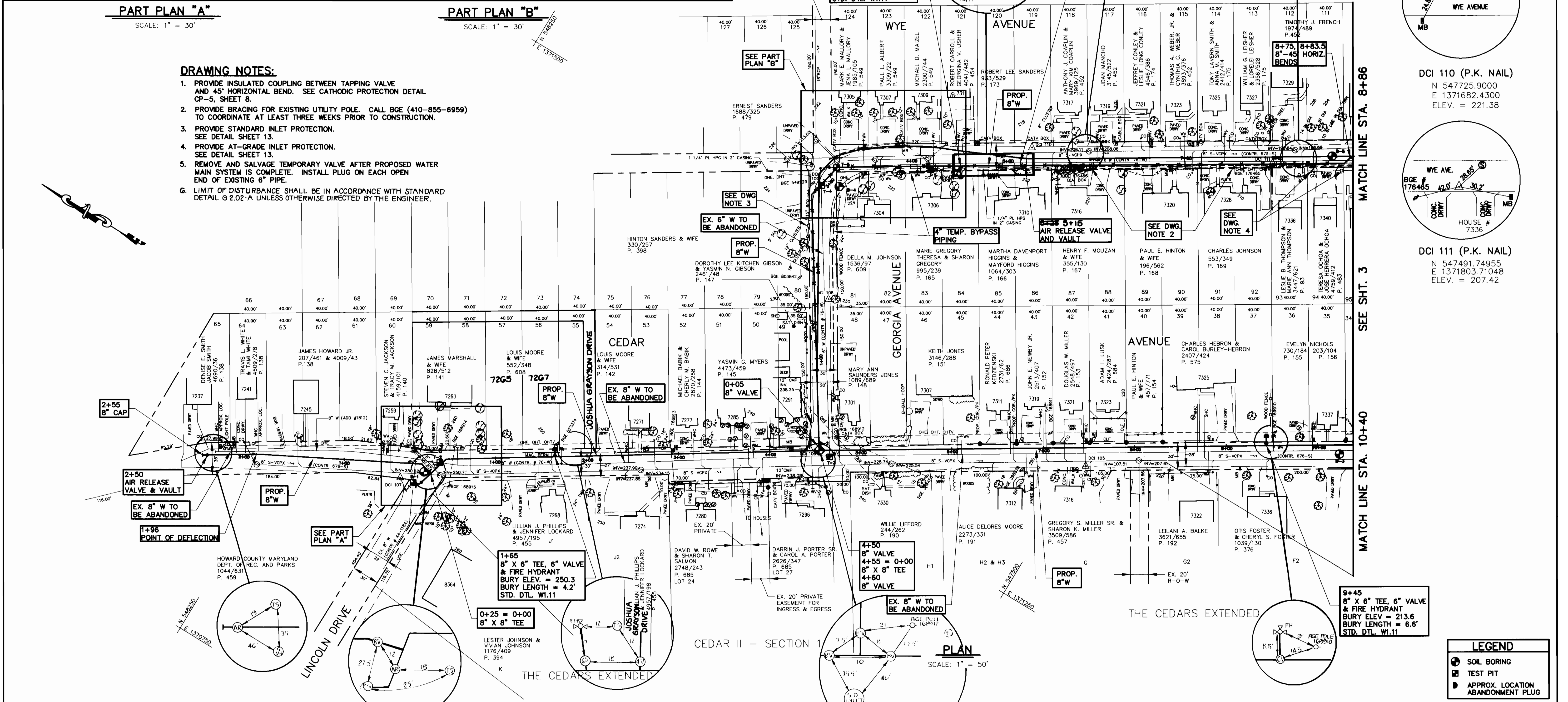
CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 1 OF 13



- DRAWING NOTES:**
1. PROVIDE INSULATED COUPLING BETWEEN TAPPING VALVE AND 45° HORIZONTAL BEND. SEE CATHODIC PROTECTION DETAIL CP-5, SHEET 8.
 2. PROVIDE BRACING FOR EXISTING UTILITY POLE. CALL BGE (410-855-6959) TO COORDINATE AT LEAST THREE WEEKS PRIOR TO CONSTRUCTION.
 3. PROVIDE STANDARD INLET PROTECTION. SEE DETAIL SHEET 13.
 4. PROVIDE AT-GRADE INLET PROTECTION. SEE DETAIL SHEET 13.
 5. REMOVE AND SALVAGE TEMPORARY VALVE AFTER PROPOSED WATER MAIN SYSTEM IS COMPLETE. INSTALL PLUG ON EACH OPEN END OF EXISTING 8" PIPE.
 6. LIMIT OF DISTURBANCE SHALL BE IN ACCORDANCE WITH STANDARD DETAIL G 2.02-A UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



MATCH LINE STA. 8+86

SEE SHT. 3

MATCH LINE STA. 10+40

| LEGEND | |
|--------|-----------------------------------|
| | SOIL BORING |
| | TEST PIT |
| | APPROX. LOCATION ABANDONMENT PLUG |

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. ... 12/21/00
DIRECTOR OF PUBLIC WORKS DATE

... 12/13/00
CHIEF, BUREAU OF UTILITIES DATE

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204

| | |
|-----------------|--|
| DES: L.A.F. | |
| DRN: K.J.P. | |
| CHK: J.J.S. | |
| DATE: DEC. 2000 | |

PLAN

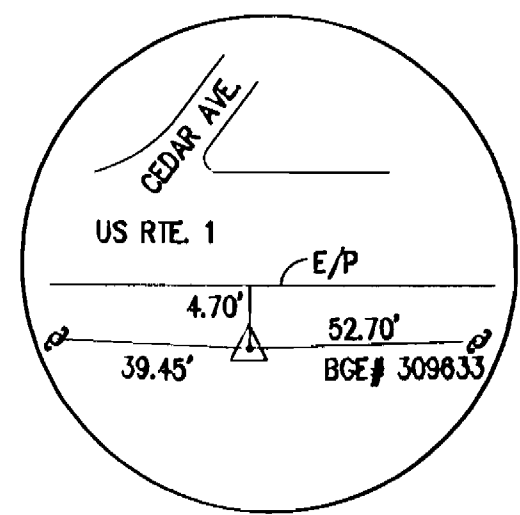
600' SCALE MAP NO. 43 BLOCK NO. 8

CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

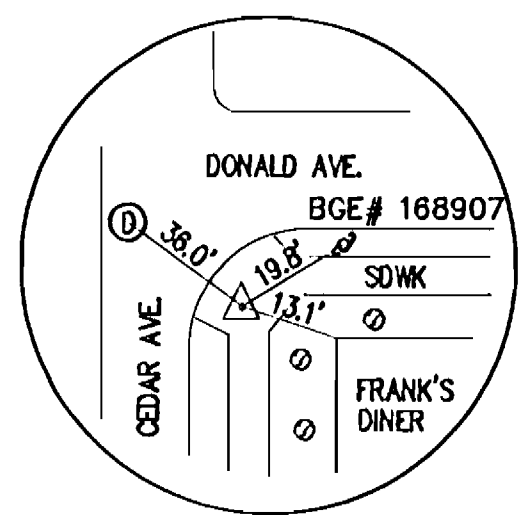
SCALE AS SHOWN
SHEET 2 OF 13

WATER MAIN PROCEDURES

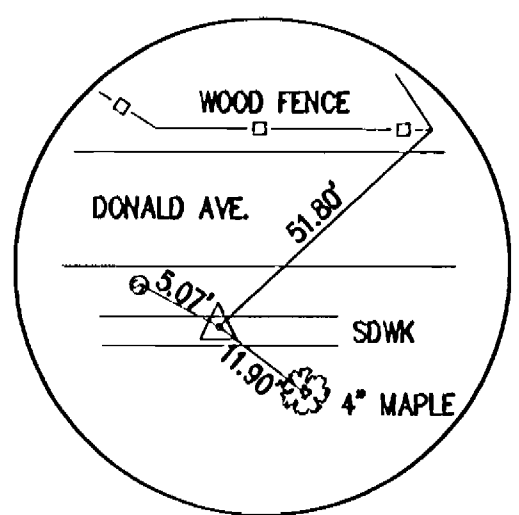
- A. GENERAL**
- INSTALL MAINTENANCE OF TRAFFIC DEVICES IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 - BRACE EXISTING UTILITY POLES WHERE INDICATED.
- B. CEDAR AND DONALD AVENUES**
- INSTALL 8" X 8" TAPPING SLEEVE AND VALVE.
 - INSTALL PROPOSED 8" WATER MAINS AND FIRE HYDRANTS. CONSTRUCT BUTTRESSES AND ANCHORS IN ACCORDANCE WITH THE HOWARD COUNTY STANDARD DETAILS
 - PERFORM HYDROSTATIC TESTING AND DISINFECTION PROCEDURES IN ACCORDANCE WITH THE HOWARD COUNTY SPECIFICATIONS.
 - TIE INTO EXISTING 8" WATER MAIN WITH INSULATED COUPLINGS.
 - CONNECT EXISTING WATER HOUSE CONNECTIONS TO THE PROPOSED 8" WATER MAINS.
- C. GEORGIA AND WYE AVENUES**
- CLOSE EXISTING 6" VALVES AT WEST ENDS OF GEORGIA AND DONALD AVENUES.
 - INSTALL TEMPORARY 6" VALVE AT STA. 4+20.
 - OPEN THE EXISTING 6" VALVES IN DONALD AND GEORGIA AVENUES.
 - INSTALL 4" TEMPORARY BYPASS PIPING IN ACCORDANCE WITH THE SPECIFICATIONS.
 - INSTALL TEMPORARY WATER HOUSE CONNECTIONS.
 - CLOSE THE 6" TEMPORARY VALVE AT STA. 4+20 AND THE EXISTING 6" VALVE AT THE WEST END OF GEORGIA AVENUE.
 - INSTALL PROPOSED 8" WATER MAINS AND FIRE HYDRANTS. CONSTRUCT BUTTRESSES AND ANCHORS IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAILS.
 - PERFORM HYDROSTATIC TESTING AND DISINFECTION PROCEDURES IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATIONS.
 - CONNECT EXISTING WATER HOUSE CONNECTIONS TO THE PROPOSED 8" WATER MAINS.
 - REMOVE TEMPORARY BYPASS PIPING.
- D. GENERAL**
- ABANDON EXISTING WATER MAINS, VALVES & HYDRANTS. REFER TO ABANDONMENT SCHEDULE AND NOTES ON SHEET 12.
 - REMOVE AND SALVAGE TEMPORARY 6" VALVE AT STA. 4+20 ON WYE AVENUE. INSTALL PLUGS ON OPEN ENDS OF PIPE.
 - RESTORE TRENCHES TO THEIR ORIGINAL CONDITION WITH TEMPORARY PAVING IN ACCORDANCE WITH HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
 - INSTALL PERMANENT PAVING PATCH OVER TRENCH. REFER TO RESTORATION SCHEDULE AND NOTES ON SHEET 12.



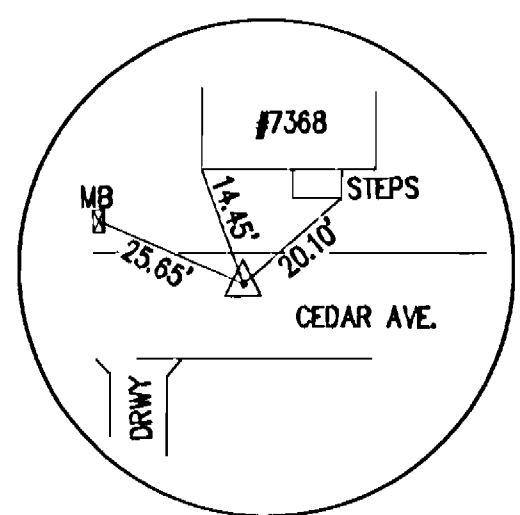
DCI 100 (REBAR & CAP)
 N 546663.82149
 E 1372104.36290
 ELEV. = 195.5111



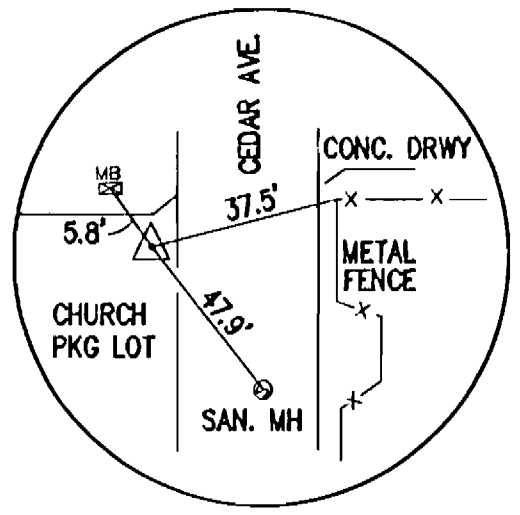
DCI 101 (X-CUT IN SDWK)
 N 546817.4300
 E 1371870.5200
 ELEV. = 201.76



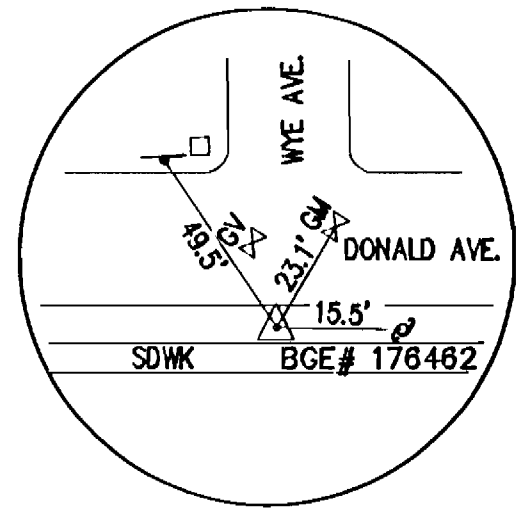
DCI 102 (X-CUT IN SDWK)
 N 546932.6300
 E 1371928.7500
 ELEV. = 215.28



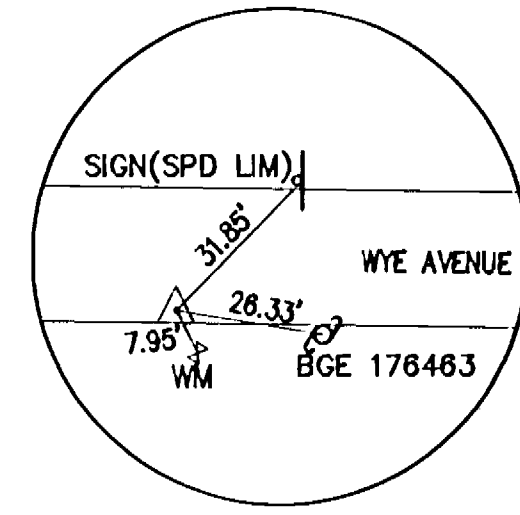
DCI 103 (P.K. NAIL)
 N 546985.6000
 E 1371727.1700
 ELEV. = 205.15



DCI 104 (P.K. NAIL)
 N 547197.3000
 E 1372052.79493
 ELEV. = 209.35



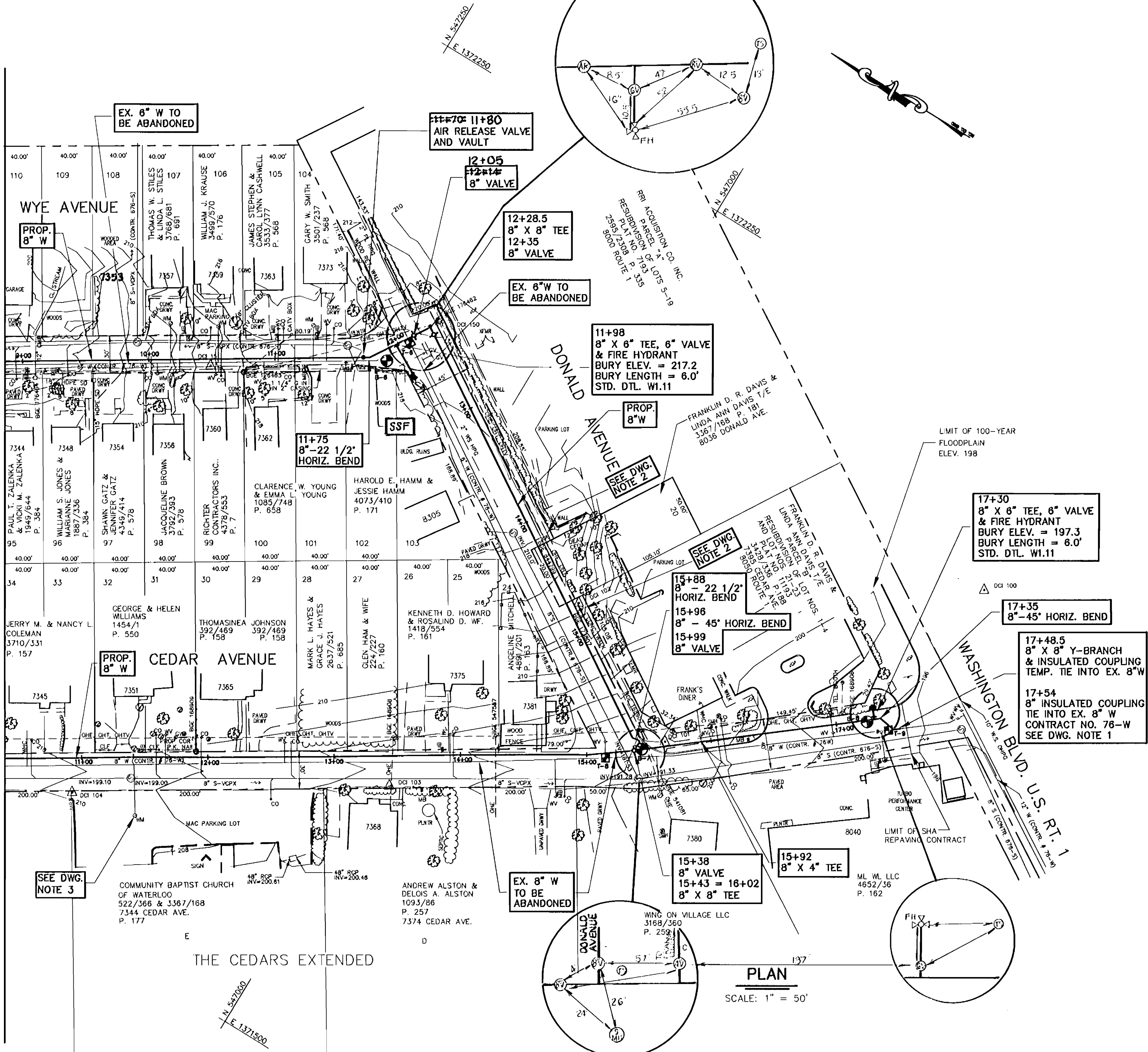
DCI 105 (HUB & TACK)
 N 547128.35184
 E 1372052.79493
 ELEV. = 216.76



DCI 106 (P.K. NAIL)
 N 547278.1300
 E 1371936.6400
 ELEV. = 215.35

MATCH LINE - STA. 8+86

MATCH LINE - STA. 10+40



PLAN
SCALE: 1" = 50'

DRAWING NOTES:

- FOR INSULATED COUPLING SEE CATHODIC PROTECTION DETAIL CP-5, SHEET 8.
- PROVIDE BRACING FOR EXISTING UTILITY POLE. CALL BGE (410-855-6959) TO COORDINATE AT LEAST THREE WEEKS PRIOR TO CONSTRUCTION.
- CONFIRM SIZE OF EXISTING WATER SERVICE PRIOR TO CONSTRUCTION.
- LIMIT OF DISTURBANCE SHALL BE IN ACCORDANCE WITH STANDARD DETAIL 02.02-A UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

**STAKEOUT TABLE: 8" WATER MAIN
SHEET 2**

| STATION | DESCRIPTION | PROFILE | NORTH | EAST |
|--|--------------------------------|---------|-----------|------------|
| LINCOLN DRIVE | | | | |
| 0+00 | 8" X 8" TAPPING SLEEVE & VALVE | SHT. 4 | 548113.69 | 1371018.96 |
| 0+06.5 | 8" - 45° HORIZ. BEND | SHT. 4 | 548107.85 | 1371020.51 |
| 0+11 | AIR RELEASE VALVE & VAULT | SHT. 4 | 548107.14 | 1371023.19 |
| 0+25 = 0+00 | 8" X 8" TEE | SHT. 4 | 548103.37 | 1371036.40 |
| CEDAR AVENUE - NORTH OF LINCOLN DRIVE | | | | |
| 0+00 = 0+25 | 8" X 8" TEE | SHT. 4 | 548103.37 | 1371036.40 |
| 0+05 | 8" VALVE | SHT. 4 | 548106.24 | 1371037.28 |
| 0+14.5 | 8" - 45° HORIZ. BEND | SHT. 4 | 548116.98 | 1371040.56 |
| 1+96 | POINT OF DEFLECTION | SHT. 4 | 548277.04 | 1370955.54 |
| 2+50 | AIR RELEASE VALVE & VAULT | SHT. 4 | 548322.63 | 1370928.97 |
| 2+55 | 8" CAP | SHT. 4 | 548328.80 | 1370924.22 |
| CEDAR AVENUE | | | | |
| 0+47 | 8" - 45° HORIZ. BEND | SHT. 4 | 548096.99 | 1371059.04 |
| 1+55 | 8" X 8" TEE, 8" VALVE, & F.H. | SHT. 4 | 547996.77 | 1371123.15 |
| 4+50 | 8" VALVE | SHT. 4 | 547757.58 | 1371276.16 |
| 4+55 = 0+00 | 8" X 8" TEE | SHT. 4 | 547753.29 | 1371278.92 |
| 4+60 | 8" VALVE | SHT. 4 | 547749.03 | 1371281.55 |
| 9+45 | 8" X 8" TEE, 8" VALVE, & F.H. | SHT. 4 | 547337.75 | 1371536.69 |
| GEORGIA AVENUE | | | | |
| 0+00 = 4+55 | 8" X 8" TEE | SHT. 6 | 547753.29 | 1371278.92 |
| 0+05 | 8" VALVE | SHT. 6 | 547756.01 | 1371283.11 |
| 2+80 | 8" - 45° HORIZ. BEND | SHT. 6 | 547906.33 | 1371513.00 |
| WYE AVENUE | | | | |
| 3+20 | 8" 45° HORIZ. BEND | SHT. 6 | 547896.81 | 1371553.66 |
| 4+55 | 8" X 8" TEE, 8" VALVE, & F.H. | SHT. 6 | 547762.18 | 1371624.61 |
| 5+25 | AIR RELEASE VALVE & VAULT | SHT. 6 | 547722.27 | 1371661.34 |

**STAKEOUT TABLE: 8" WATER MAIN
SHEET 3**

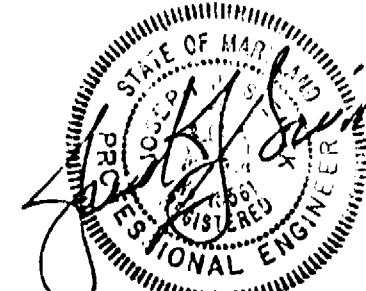
| STATION | DESCRIPTION | PROFILE | NORTH | EAST |
|----------------------|-------------------------------|---------|-----------|------------|
| CEDAR AVENUE | | | | |
| 15+00 | 8" PIPE DEFLECTION | SHT. 5 | 546865.02 | 1371829.38 |
| 15+38 | 8" VALVE | SHT. 5 | 546834.78 | 1371851.80 |
| 15+43 = 15+02 | 8" X 8" TEE | SHT. 5 | 546830.91 | 1371854.98 |
| 15+92 | 8" X 4" TEE | SHT. 5 | 546792.90 | 1371855.53 |
| 17+30 | 8" X 8" TEE, 8" VALVE, & F.H. | SHT. 5 | 546685.33 | 1371971.55 |
| 17+35 | 8" - 45° HORIZ. BEND | SHT. 5 | 546681.47 | 1371974.72 |
| 17+48.5 | 8" X 8" Y-BRANCH | SHT. 5 | 546688.08 | 1371972.70 |
| 17+54 | 8" INSULATED COUPLING | SHT. 5 | 546683.77 | 1371976.11 |
| WYE AVENUE | | | | |
| 11+70 | AIR RELEASE VALVE & VAULT | SHT. 7 | 547179.07 | 1372005.30 |
| 11+75 | 8" - 22 1/2° HORIZ. BEND | SHT. 7 | 547174.78 | 1372008.00 |
| 11+98 | 8" X 8" TEE, 8" VALVE, & F.H. | SHT. 7 | 547182.49 | 1372027.46 |
| 12+14 | 8" VALVE | SHT. 7 | 547153.96 | 1372040.99 |
| 12+28.5 | 8" X 8" TEE | SHT. 7 | 547148.22 | 1372053.28 |
| DONALD AVENUE | | | | |
| 12+28.5 | 8" X 8" TEE | SHT. 7 | 547148.22 | 1372053.28 |
| 12+35 | 8" VALVE | SHT. 7 | 547140.70 | 1372049.76 |
| 15+88 | 8" - 22 1/2° HORIZ. BEND | SHT. 7 | 546841.11 | 1371859.55 |
| 15+98 | 8" - 45° HORIZ. BEND | SHT. 7 | 546835.38 | 1371860.36 |
| 15+99 | 8" VALVE | SHT. 7 | 546833.15 | 1371857.67 |
| 18+02 = 15+43 | 8" X 8" TEE | SHT. 7 | 546830.91 | 1371854.98 |

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James M. Lewis
DIRECTOR OF PUBLIC WORKS
DATE: 12-20-00

Robert M. Reinger
CHIEF, BUREAU OF UTILITIES
DATE: 12-13-00

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204



DES: L.A.F.
DRN: K.J.P.
CHK: J.J.S.
APRIL
DATE: 2000

| BY | NO. | REVISION | DATE |
|----|-----|----------|------|
| | | | |

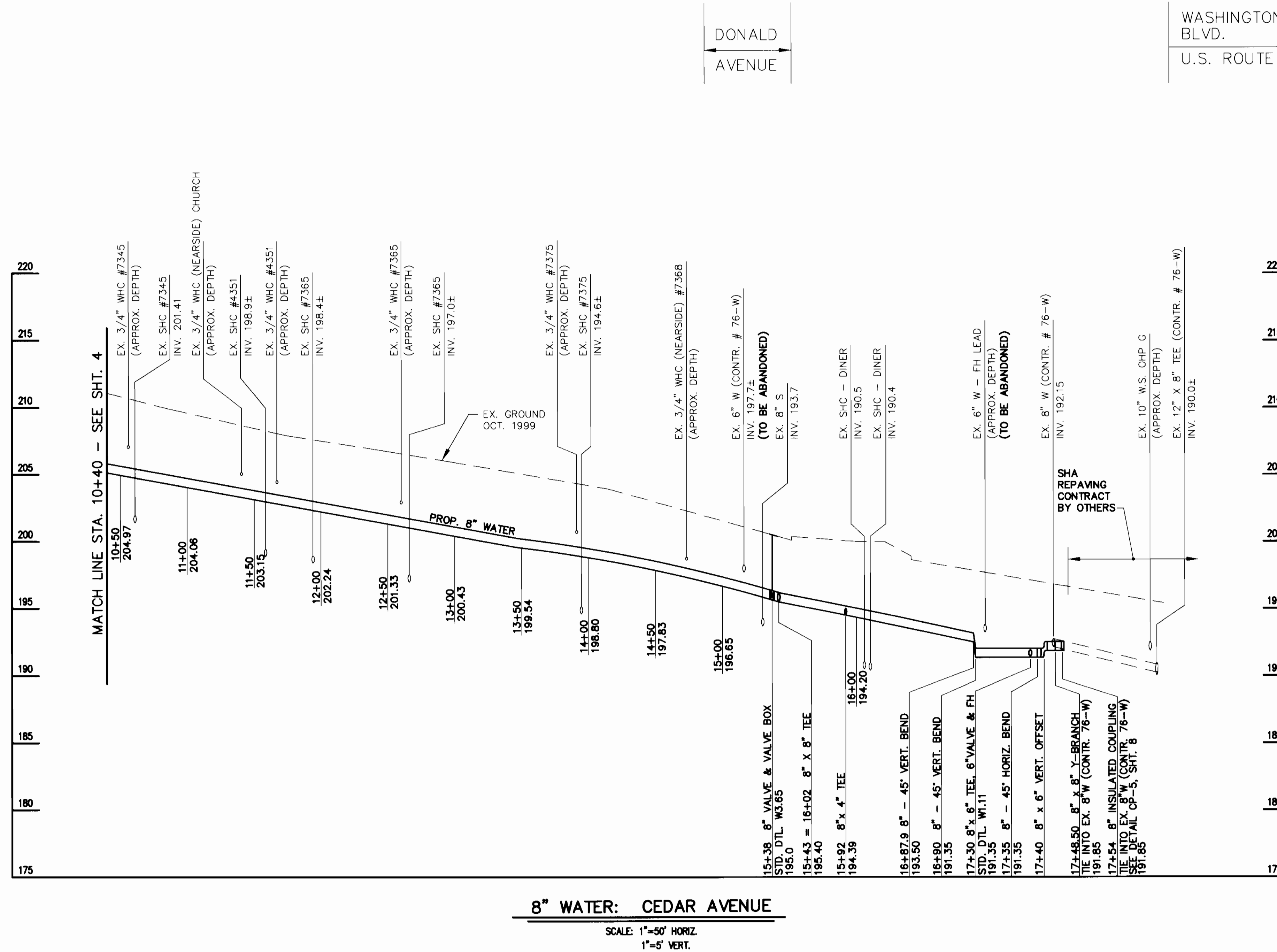
PLAN

600' SCALE MAP NO. 43, BLOCK NO. 8

**CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND**

SCALE
AS
SHOWN

SHEET
3 OF 13



DONALD
AVENUE

WASHINGTON
BLVD.
U.S. ROUTE 1

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

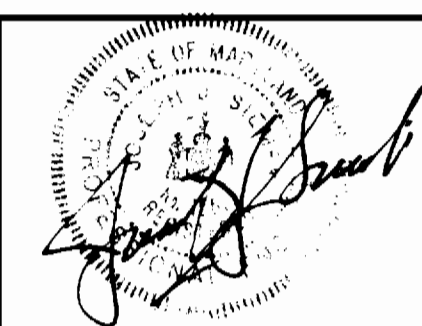
James M. Lewis 12/21/00
DIRECTOR OF PUBLIC WORKS DATE

Robert M. Boinger 12-20-00
CHIEF, BUREAU OF UTILITIES DATE

Robert J. Pappas 12/13/00
CHIEF, BUREAU OF ENGINEERING DATE

Dr. Don Kuan 12-13-00
CHIEF, UTILITY DESIGN DIVISION DATE

**WALLACE,
MONTGOMERY
& ASSOCIATES**
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204



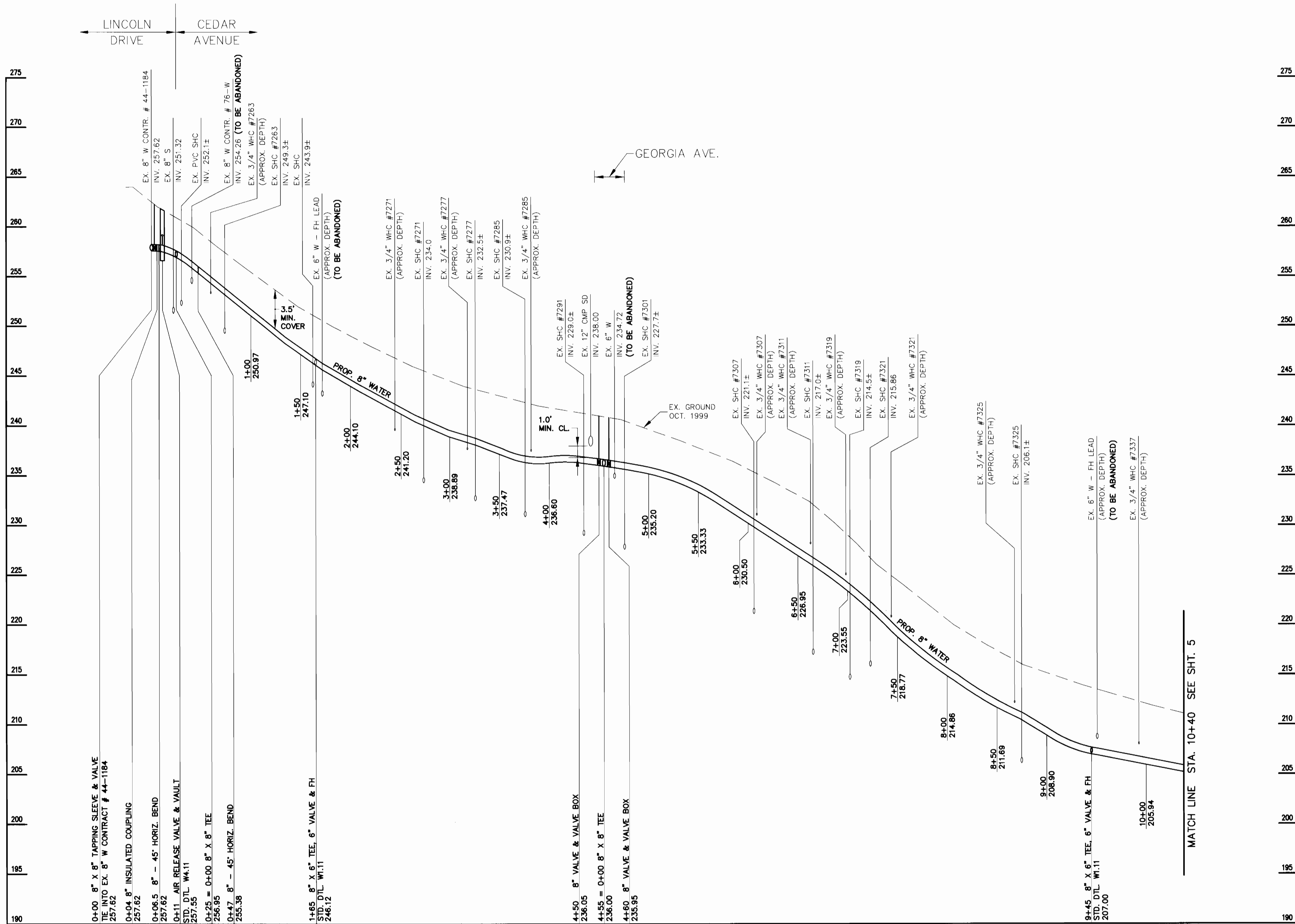
| | | | | | |
|-------|-----------|----------|------|--|--|
| DES: | L.A.F. | | | | |
| DRN: | K.J.P. | | | | |
| CHK: | J.J.S. | | | | |
| DATE: | DEC. 2000 | | | | |
| BY | NO. | REVISION | DATE | | |

PROFILE

600' SCALE MAP NO. 43 BLOCK NO. 8

CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 5 OF 13



8" WATER: CEDAR AVENUE

SCALE: 1"=50' HORIZ.
1"=5' VERT.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

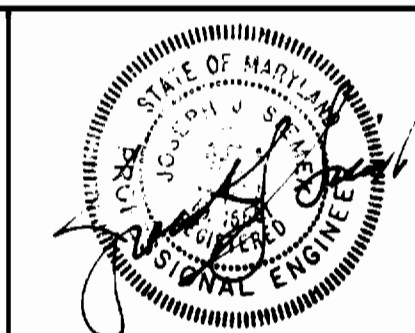
James P. Chew 12/21/00
DIRECTOR OF PUBLIC WORKS DATE

Robert M. Bauninger 12-20-00
CHIEF, BUREAU OF UTILITIES DATE

Paul R. Popom 12/13/00
CHIEF, BUREAU OF ENGINEERING DATE

David D. ... 12-13-00
CHIEF, UTILITY DESIGN DIVISION DATE

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204



| | | | |
|-------|-----------|----------|------|
| DES: | L.A.F. | | |
| DRN: | K.J.P. | | |
| CHK: | J.J.S. | | |
| DATE: | DEC. 2000 | | |
| BY: | NO. | REVISION | DATE |

PROFILE

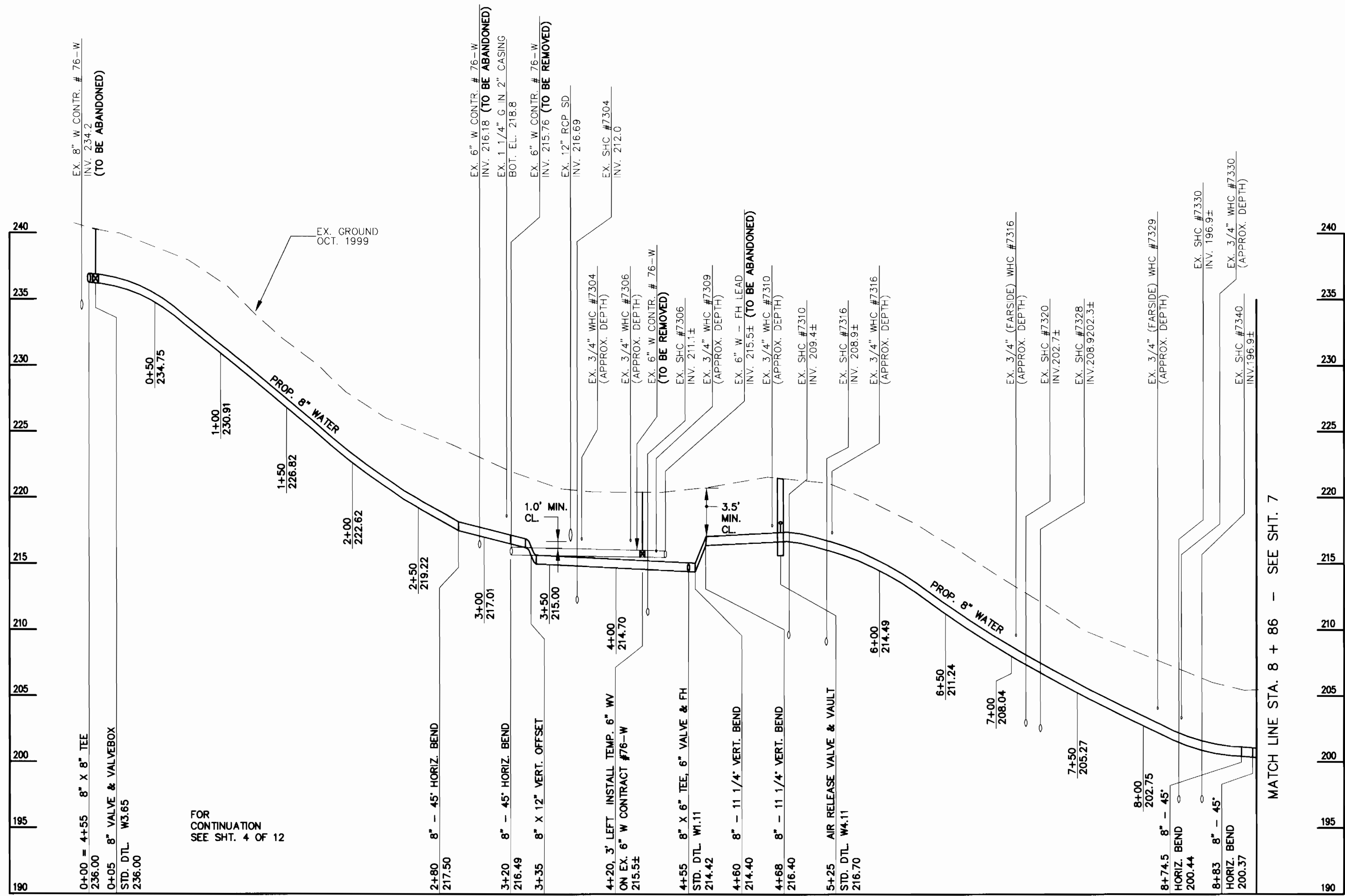
600' SCALE MAP NO. 43 BLOCK NO. 8

CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

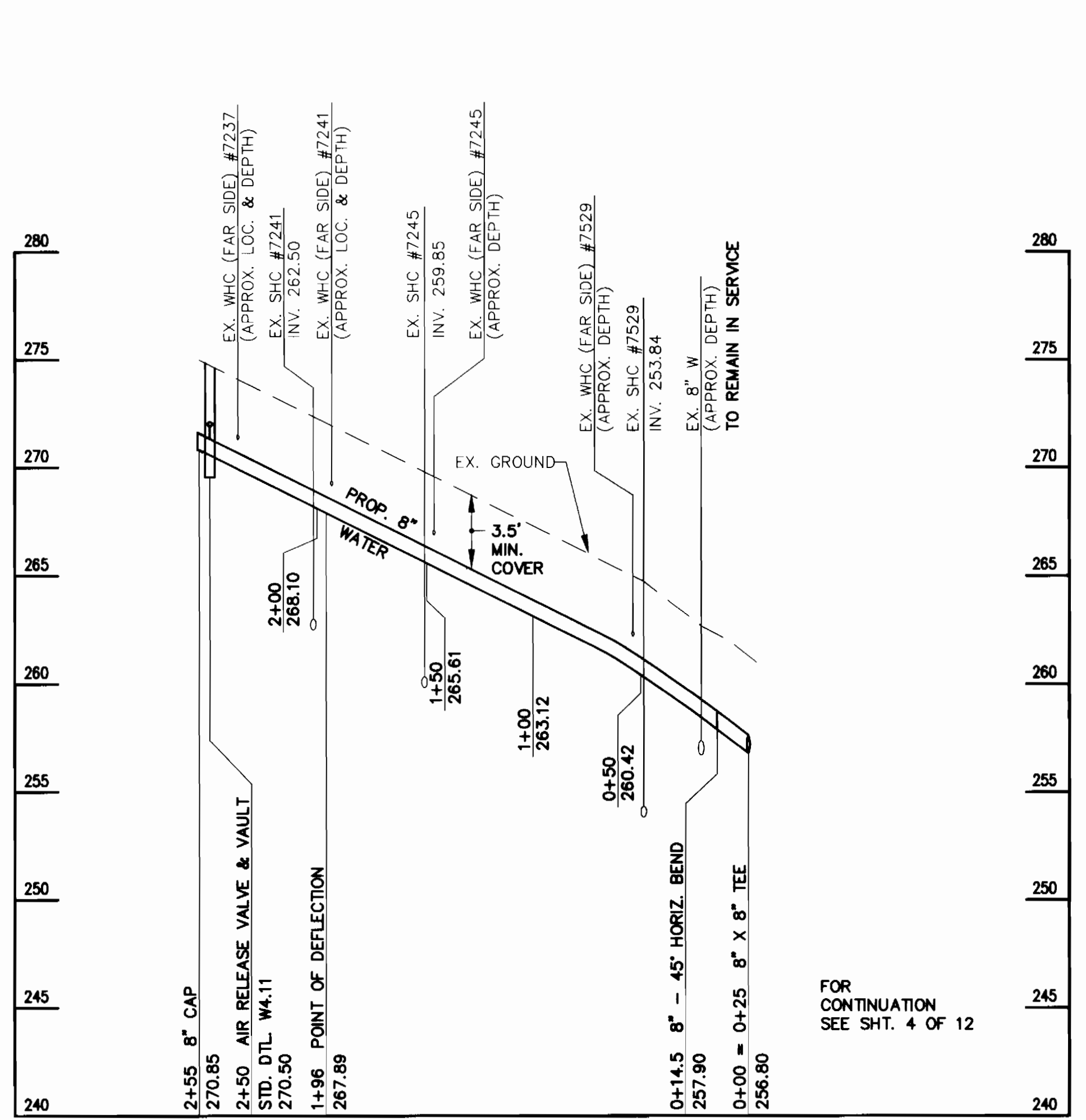
SCALE AS SHOWN

SHEET 4 OF 13

CEDAR AVE. GEORGIA AVE. WYE AVE.



8" WATER: GEORGIA AVENUE & WYE AVENUE
 SCALE: 1"=50' HORIZ.
 1"=5' VERT.



8" WATER: CEDAR AVENUE - NORTH OF LINCOLN DR.
 SCALE: 1"=50' HORIZ.
 1"=5' VERT.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

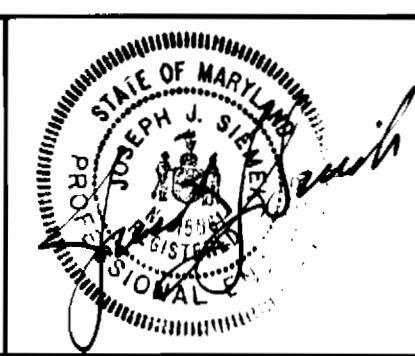
James J. Stuenkel 12/13/00
 DIRECTOR OF PUBLIC WORKS DATE

Robert M. Swanson 12-20-00
 CHIEF, BUREAU OF UTILITIES DATE

Robert J. Sponem 12/13/00
 CHIEF, BUREAU OF ENGINEERING DATE

Debra L. Quinn 12-13-00
 CHIEF, UTILITY DESIGN DIVISION DATE

WALLACE, MONTGOMERY & ASSOCIATES
 CIVIL AND STRUCTURAL ENGINEERS
 110 WEST ROAD
 TOWSON, MARYLAND 21204

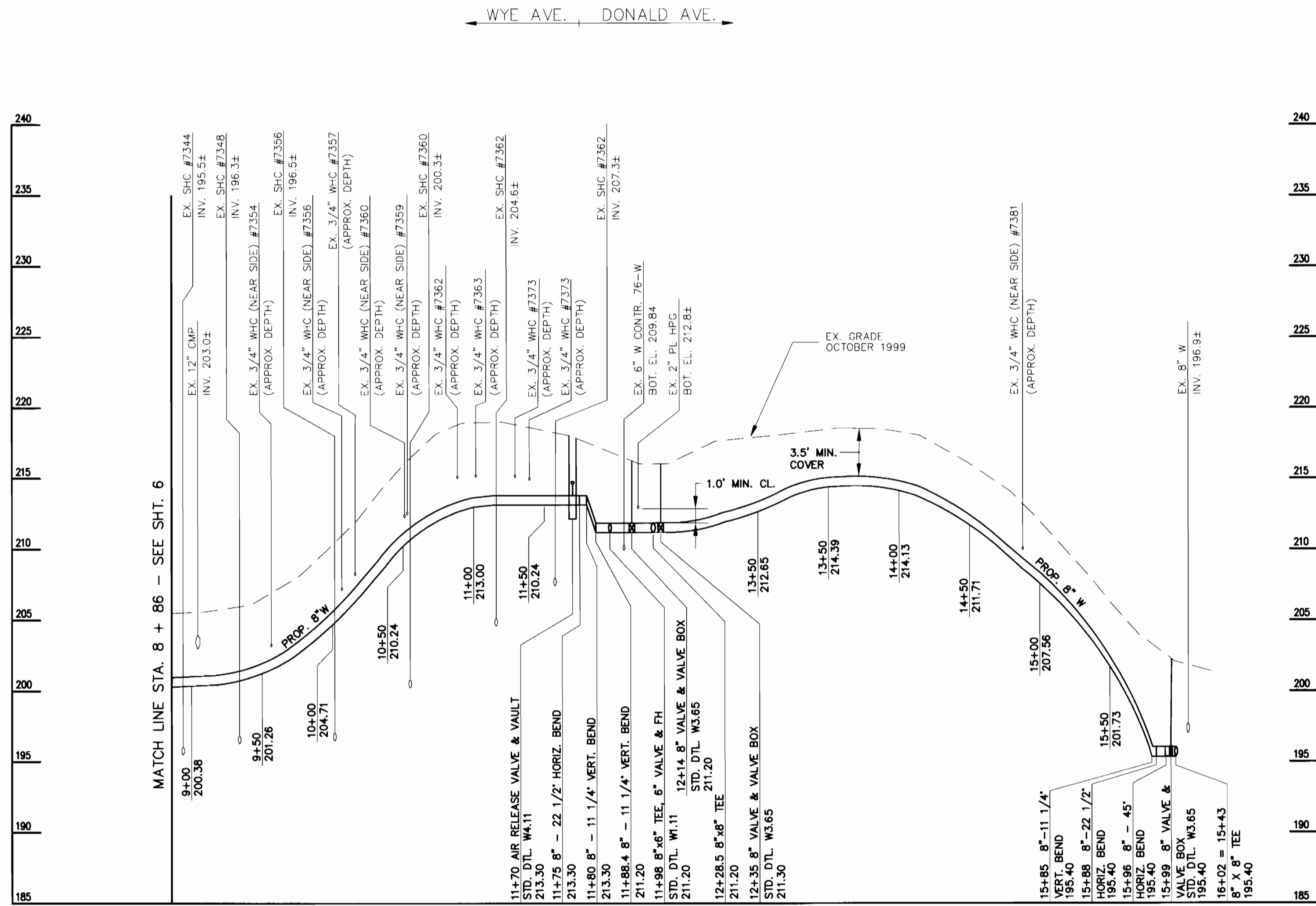


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|-------|-----------|----------|------|-----------------------|-------------|
| DES: | L.A.F. | | | | |
| DRN: | K.J.P. | | | | |
| CHK: | J.J.S. | | | | |
| DATE: | DEC. 2000 | | | | |
| BY: | NO. | REVISION | DATE | 600' SCALE MAP NO. 43 | BLOCK NO. 8 |

PROFILE

CEDAR ACRES
 CAPITAL PROJECT W-8223
 CONTRACT NO. 24-3811
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 6 OF 13



8" WATER: WYE AVENUE & DONALD AVENUE

SCALE: 1"=50' HORIZ.
1"=5' VERT.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

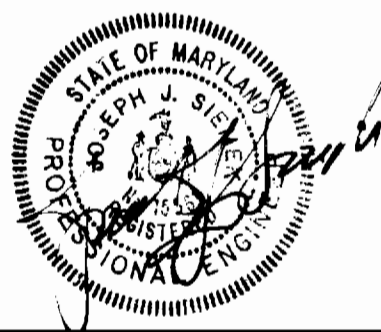
Robert Baumer 12-20-00
DIRECTOR OF PUBLIC WORKS DATE

Robert Baumer 12-20-00
CHIEF, BUREAU OF UTILITIES DATE

Robert Baumer 12/13/00
CHIEF, BUREAU OF ENGINEERING DATE

Robert Baumer 12-13-00
CHIEF, UTILITY DESIGN DIVISION DATE

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204



| | |
|-----------------|-------------|
| DES: L.A.F. | |
| DRN: K.J.P. | |
| CHK: J.J.S. | |
| DATE: DEC. 2000 | |
| BY: _____ | NO. _____ |
| REVISION: _____ | DATE: _____ |

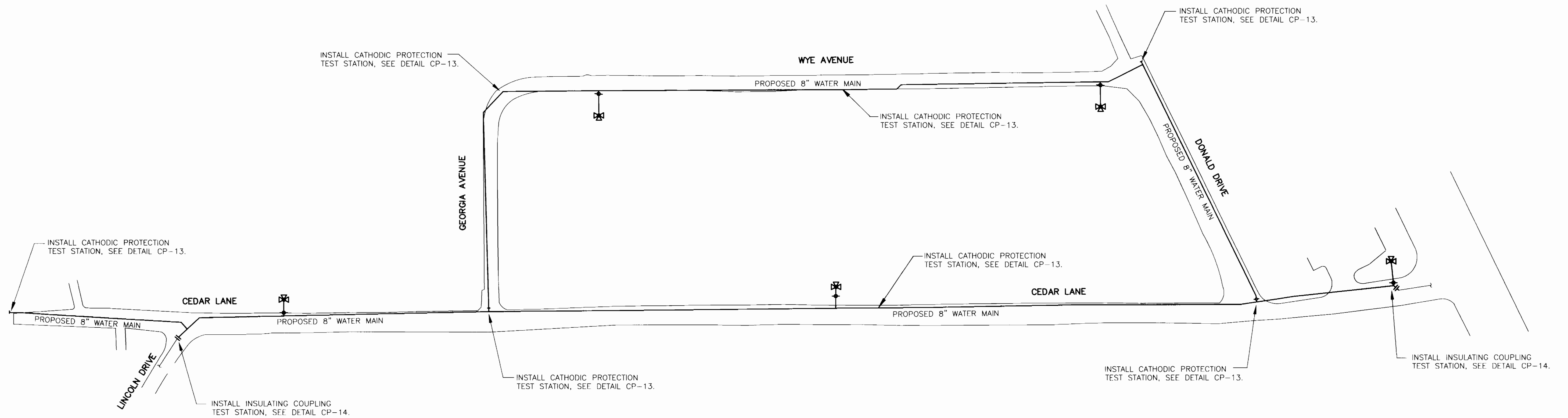
PROFILE

600' SCALE MAP NO. 43 BLOCK NO. 8

CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 7 OF 13



CATHODIC PROTECTION LAYOUT
NOT TO SCALE

NOTES:

1. WATER SERVICES NOT SHOWN.
2. ALL WATER SERVICE CONNECTIONS MUST BE ELECTRICALLY ISOLATED FROM WATER MAIN. SEE DETAIL CP-6. PLASTIC SERVICES DO NOT REQUIRE ISOLATION.
3. ELECTRICAL ISOLATION IS REQUIRED FOR ALL CONNECTIONS TO NEW DUCTILE IRON WATER MAIN. SEE DETAILS CP-5 AND CP-6.
4. INSTALL SEPARATOR MESH ON WATER MAIN AT EXISTING UTILITY CROSSINGS IF THERE IS LESS THAN 12 INCHES OF SPACING BETWEEN THEM. SEE DETAIL CP-7.
5. COAT ALL NEW DUCTILE IRON PIPING WITH POLYURETHANE IN ACCORDANCE WITH THE SPECIFICATIONS.
6. COAT ALL JOINTS AND FITTINGS IN ACCORDANCE WITH THE SPECIFICATIONS.
7. BOND ALL NEW DUCTILE IRON PIPE JOINTS EXCEPT THOSE THAT ARE SPECIFIED TO BE ELECTRICALLY ISOLATED. SEE DETAILS CP-1, CP-2, CP-3 AND CP-4.

LEGEND:

- PROPOSED WATER MAIN
- |— INSULATING COUPLING

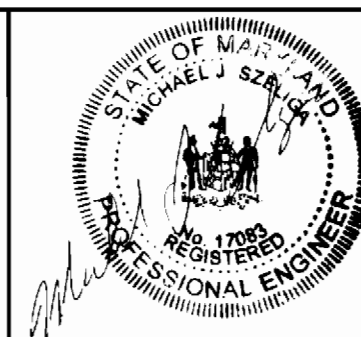
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James J. Blum
DIRECTOR OF PUBLIC WORKS
DATE: 12/20/00

Paul J. Sposon
CHIEF, BUREAU OF ENGINEERING
DATE: 12/13/00

RUSSELL CORROSION CONSULTANTS, INC.
5405 TWIN KNOLLS RD., SUITE 3
COLUMBIA, MD 21045



| | | | | | |
|--------------|----|-----|----------|-----|--|
| DES: MJS | | | | | |
| DRN: ZGS | | | | | |
| CHK: MJS/DMS | | | | | |
| DATE: 8/00 | BY | NO. | REVISION | NO. | |

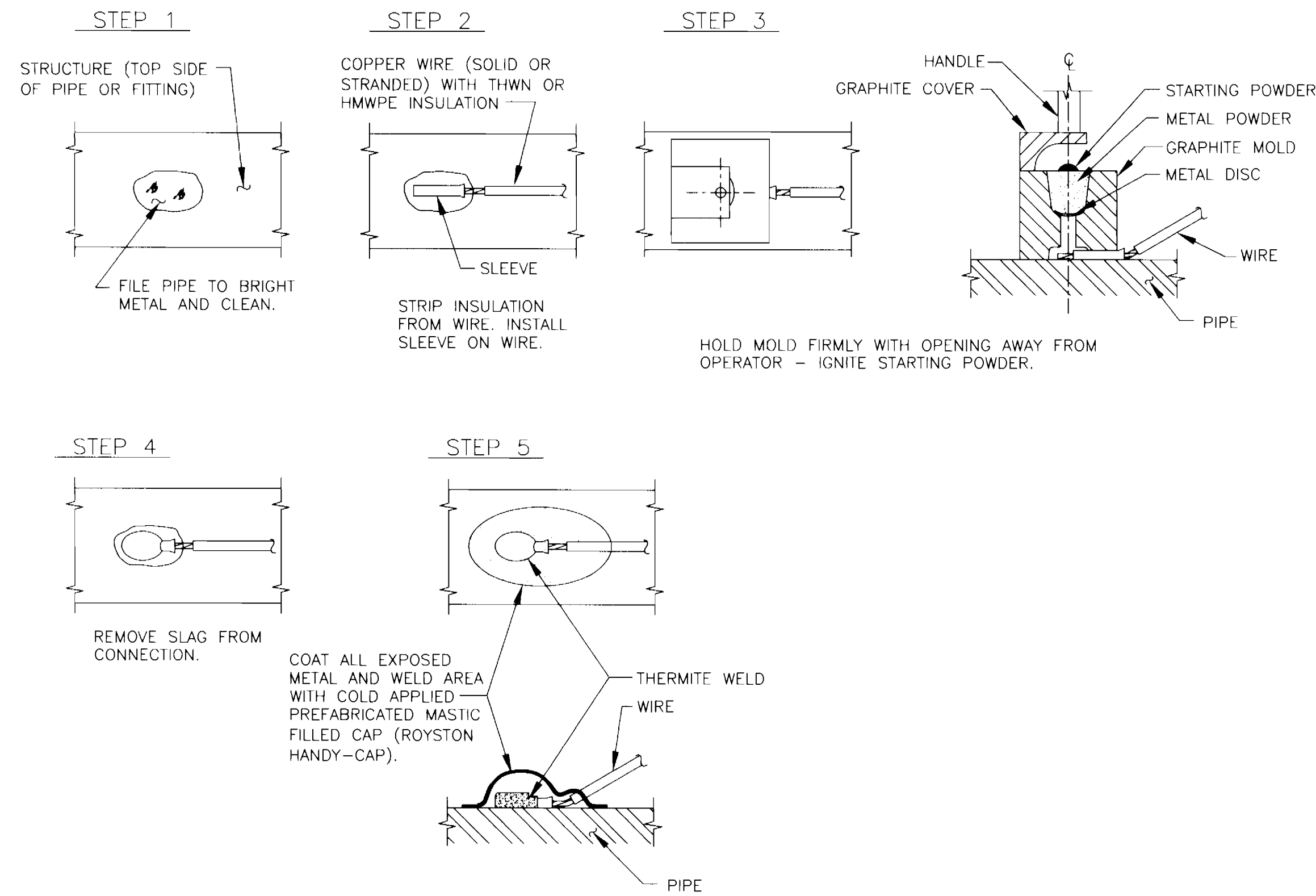
CATHODIC PROTECTION LAYOUT

600' SCALE MAP NO. 43 BLOCK NO. 8

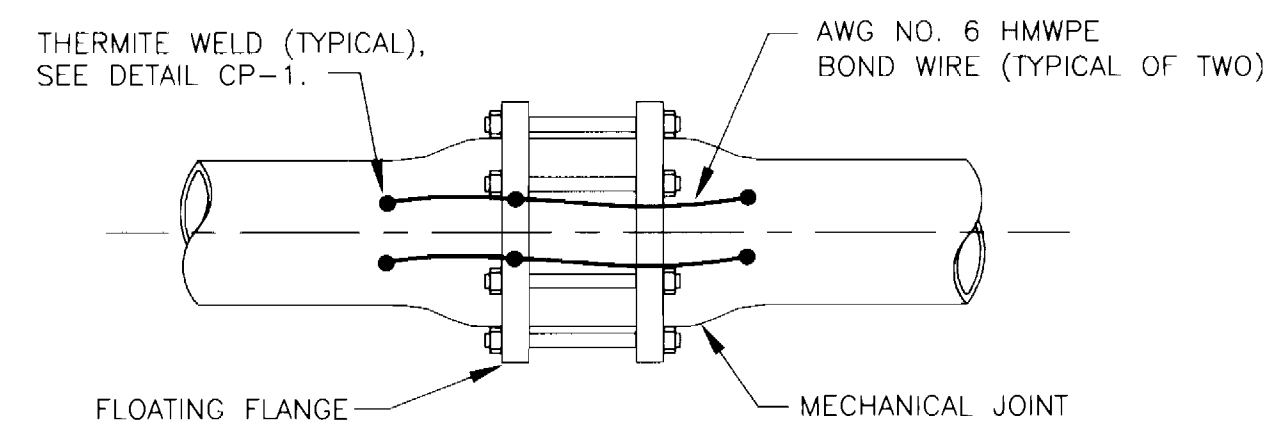
CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE:
NONE

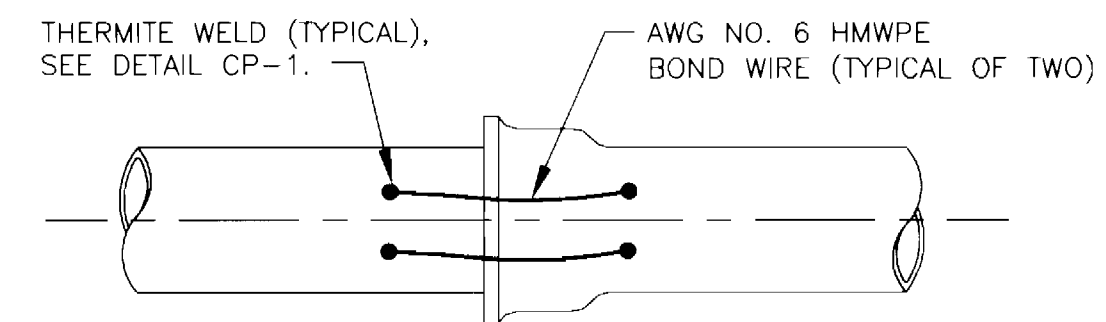
SHEET
8 OF 13



CP-1: TYPICAL THERMITE WELD

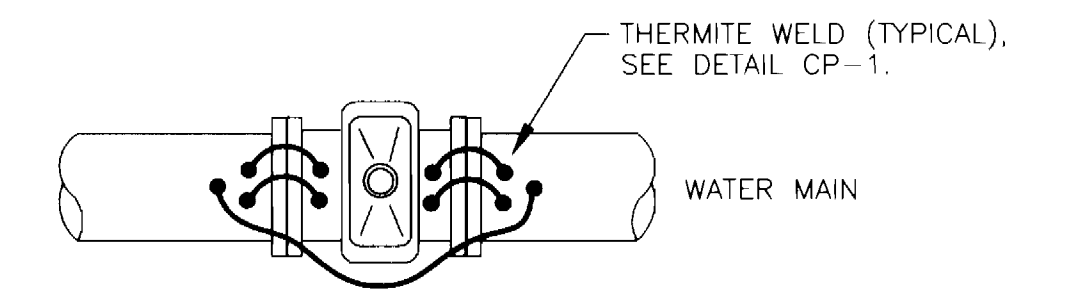


MECHANICAL JOINT

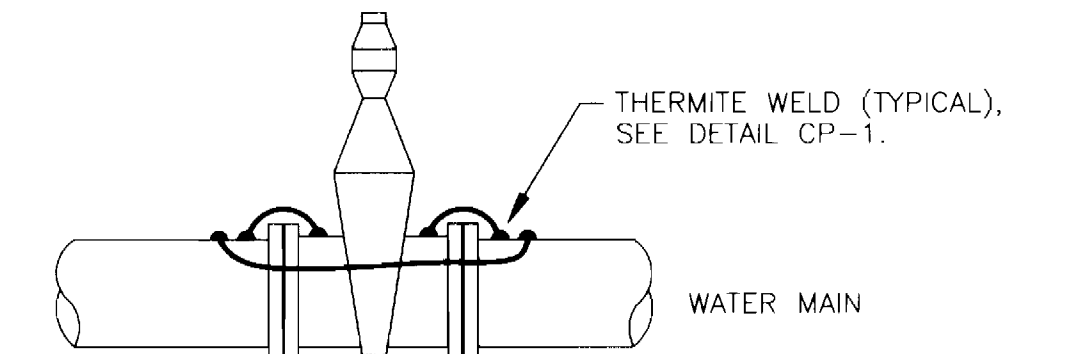


BELL AND SPIGOT JOINT

CP-2: TYPICAL PIPE JOINT BOND

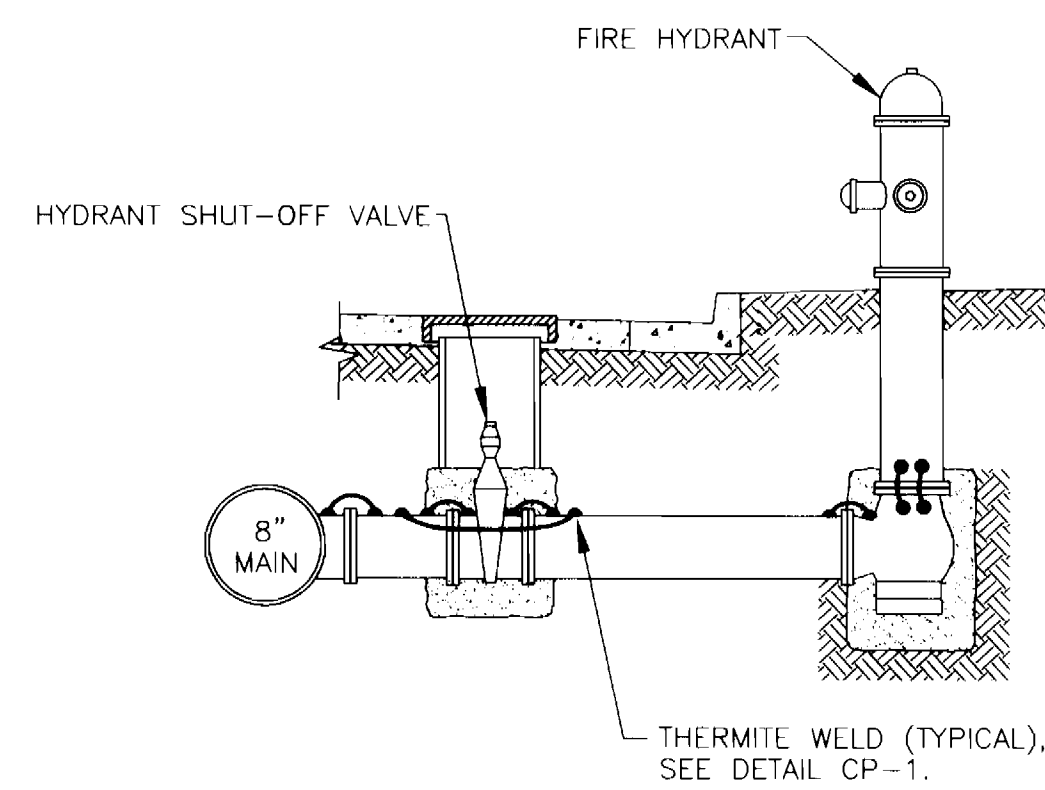


PLAN VIEW



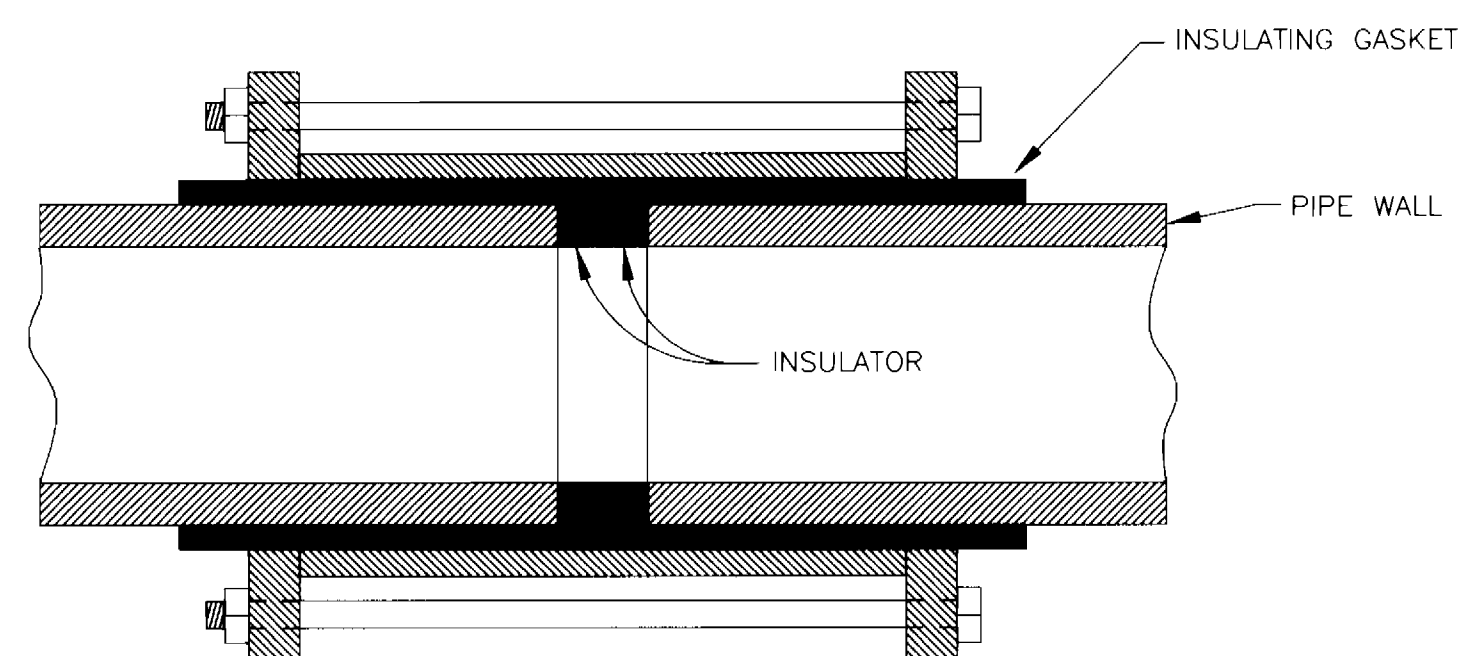
PROFILE

CP-3: BONDING OF VALVES



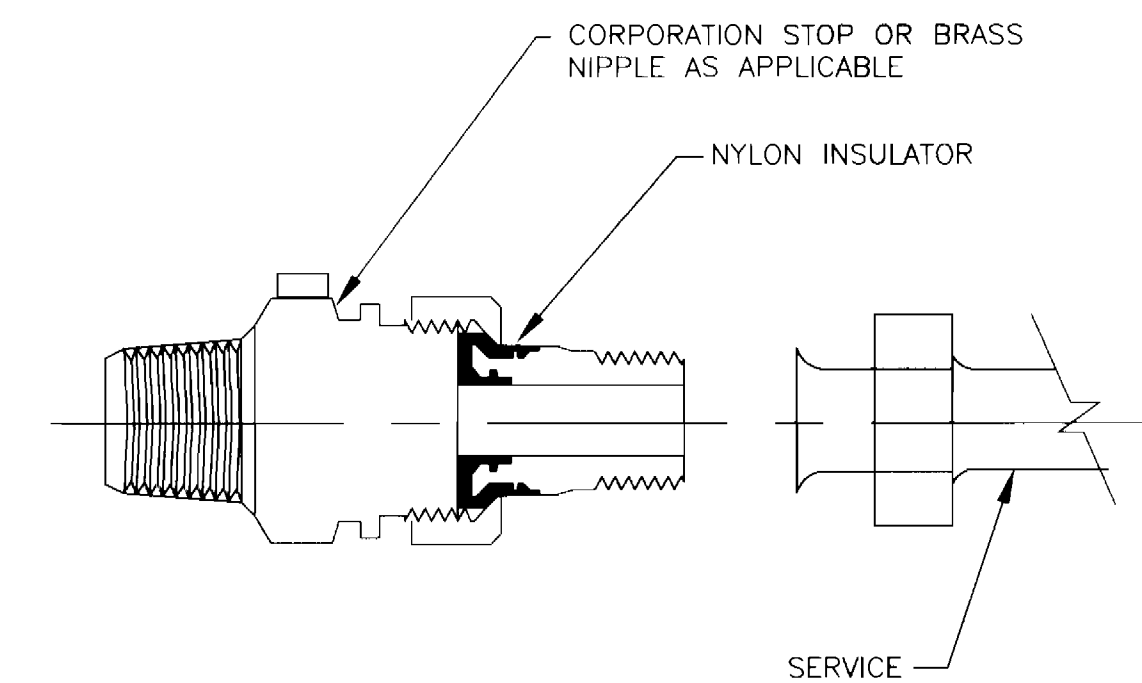
- NOTES:
1. BOND ALL DUCTILE IRON COMPONENTS TOGETHER WITH AWG NO. 6 HMWPE WIRES.
 2. INSTALL BOND WIRES ON TOP OF PIPE OR FITTING WHERE POSSIBLE.
 3. INSTALL A MINIMUM OF TWO BOND CABLES ACROSS EACH PIPE JOINT.
 4. SEE DETAIL CP-3 FOR BONDING OF VALVE.

CP-4: ELECTRICAL BONDING OF HYDRANT PIPING



- NOTE:
- COAT INSULATING COUPLING WITH TWO LAYERS OF TAPE COATING. SEE DETAIL CP-10.

CP-5: INSULATING COUPLING



- NOTES:
1. INSTALL ELECTRICAL ISOLATION ON ALL WATER SERVICE CONNECTIONS TO DUCTILE IRON MAIN.
 2. COAT EXTERIOR OF SERVICE PIPING WITH TWO COATS OF COAL TAR MASTIC (20 MILS TOTAL) FOR A DISTANCE OF 12 INCHES ON EITHER SIDE OF INSULATOR.
 3. ELECTRICAL ISOLATION NOT REQUIRED IF WATER SERVICE PIPING IS PLASTIC.

CP-6: ELECTRICAL ISOLATION FOR SERVICE

THIS DRAWING IS NOT APPLICABLE FOR USE AS STANDARD CORROSION CONTROL PROCEDURES FOR OTHER PROJECTS DUE TO VARIABLE CONDITIONS AT OTHER SITES. NEITHER THIS DESIGN NOR ANY PART THEREOF MAY BE DUPLICATED IN ANY WAY FOR OTHER PROJECTS, EXCEPT BY WRITTEN AGREEMENT WITH RUSSELL CORROSION CONSULTANTS, INC.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

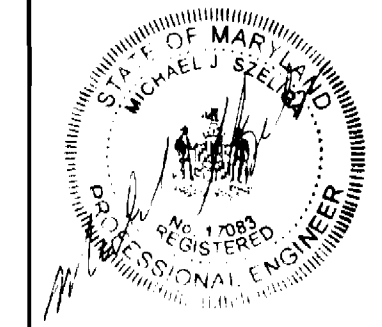
James J. Shaw 12/21/00
DIRECTOR OF PUBLIC WORKS DATE

Paul J. Seppam 12/15/00
CHIEF, BUREAU OF ENGINEERING DATE

Robert J. Berman 12-20-00
CHIEF, BUREAU OF UTILITIES DATE

Orlando J. ... 12-13-00
CHIEF, UTILITY DESIGN DATE

RUSSELL CORROSION CONSULTANTS, INC.
5405 TWIN KNOLLS RD., SUITE 3
COLUMBIA, MD 21045



| | | | |
|--------------|---------|----------|-----|
| DES: MJS | | | |
| DRN: ZGS | | | |
| CHK: MJS/DMS | | | |
| DATE: 8/00 | BY: NO. | REVISION | NO. |

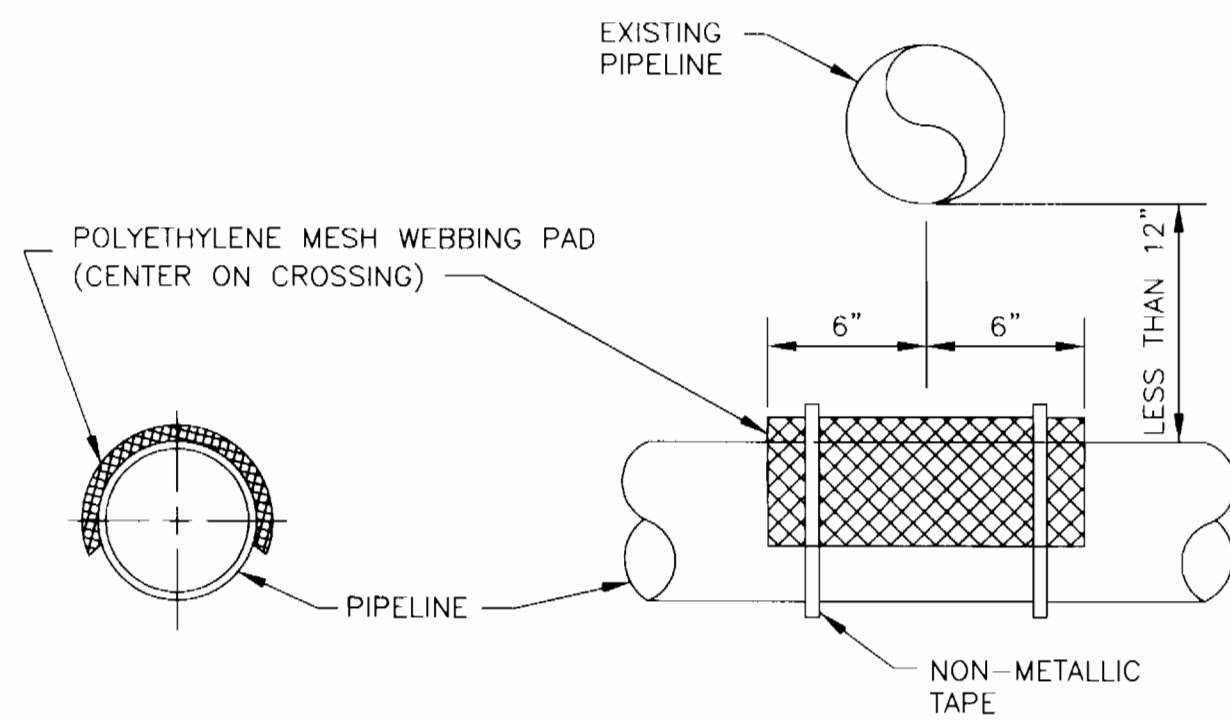
CATHODIC PROTECTION DETAILS-1

600' SCALE MAP NO. 43 BLOCK NO. 8

CEAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

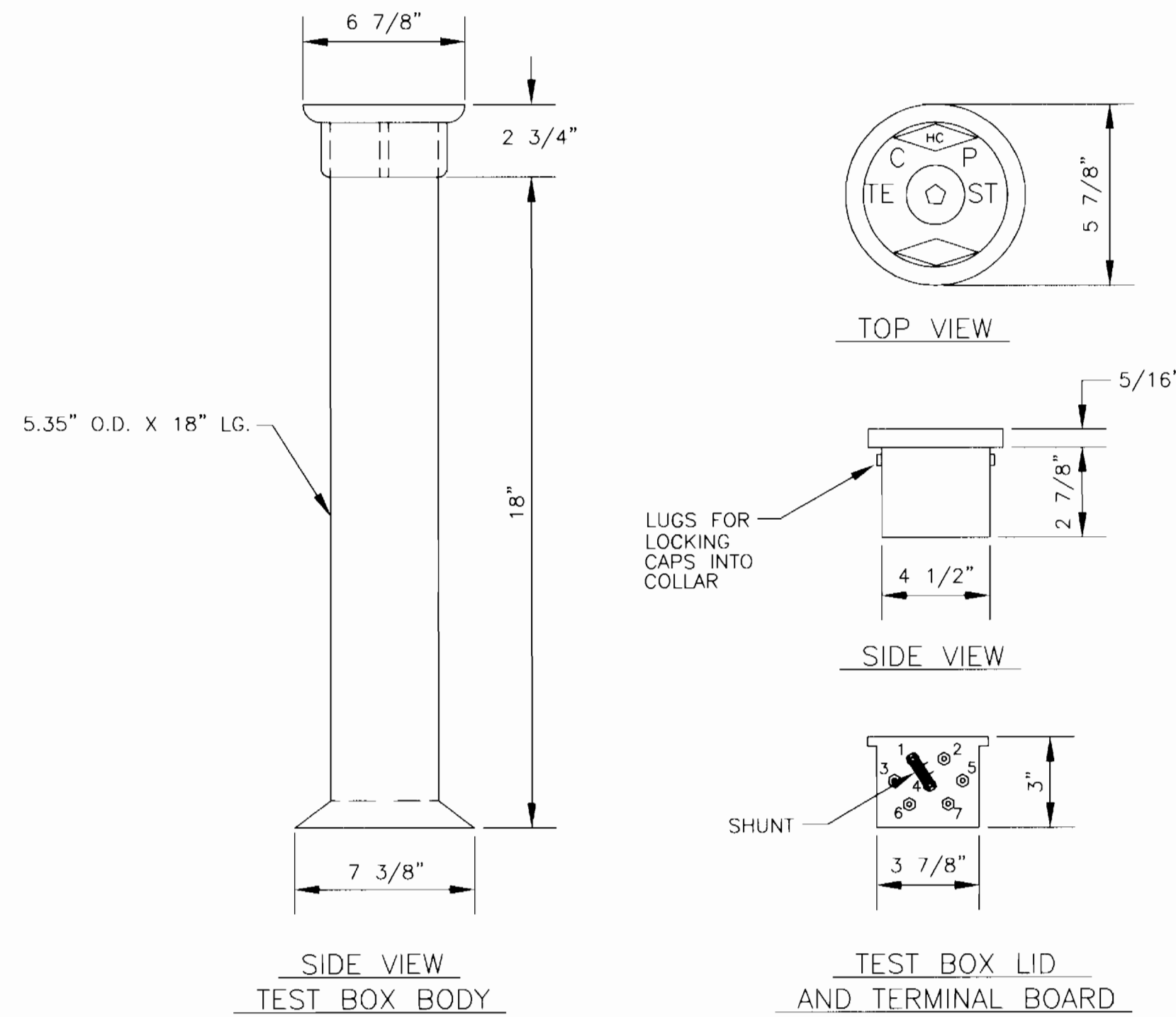
SCALE: NONE

SHEET 9 OF 13

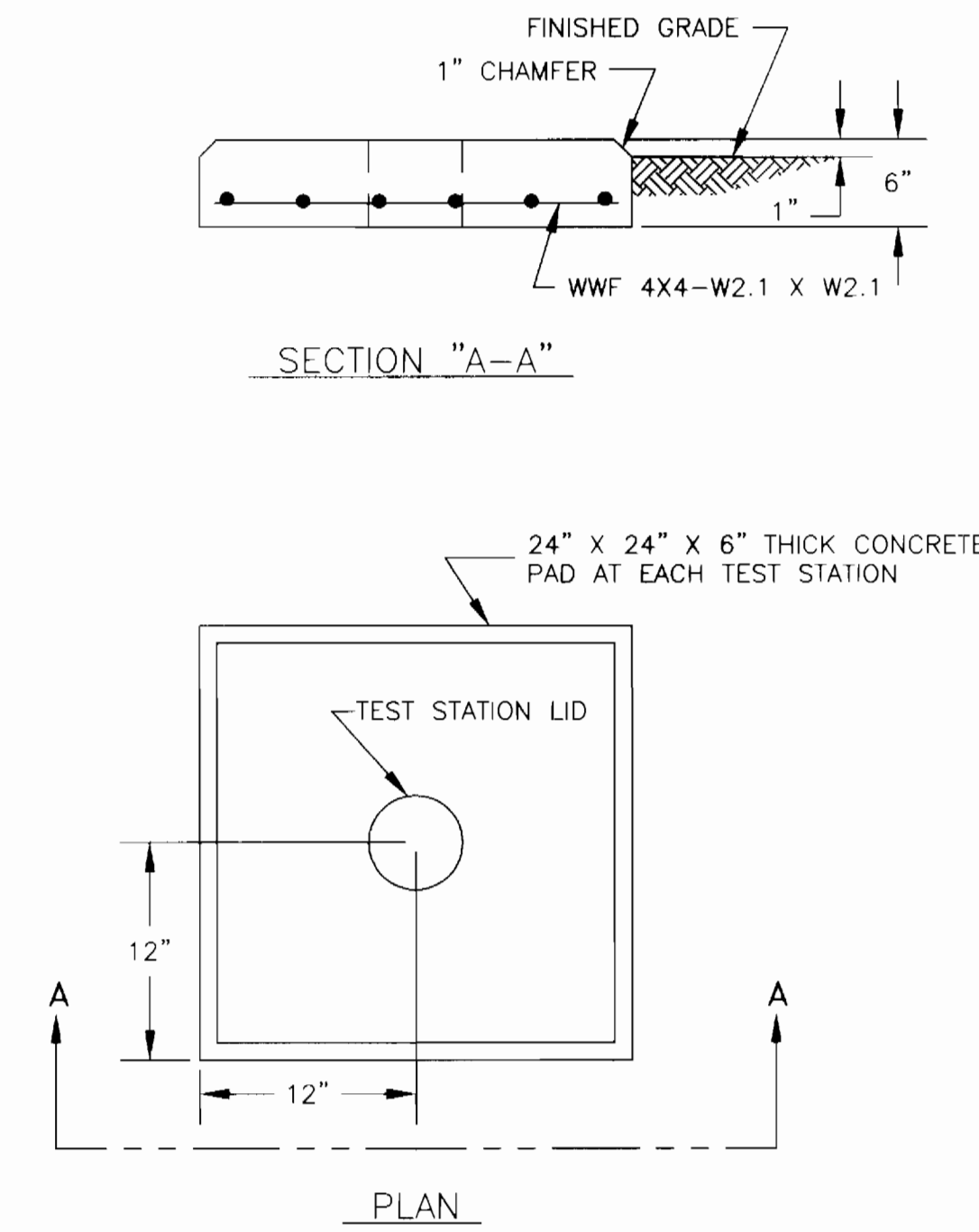


NOTE:
USE ONLY WHEN PIPES ARE LESS THAN 12" APART.

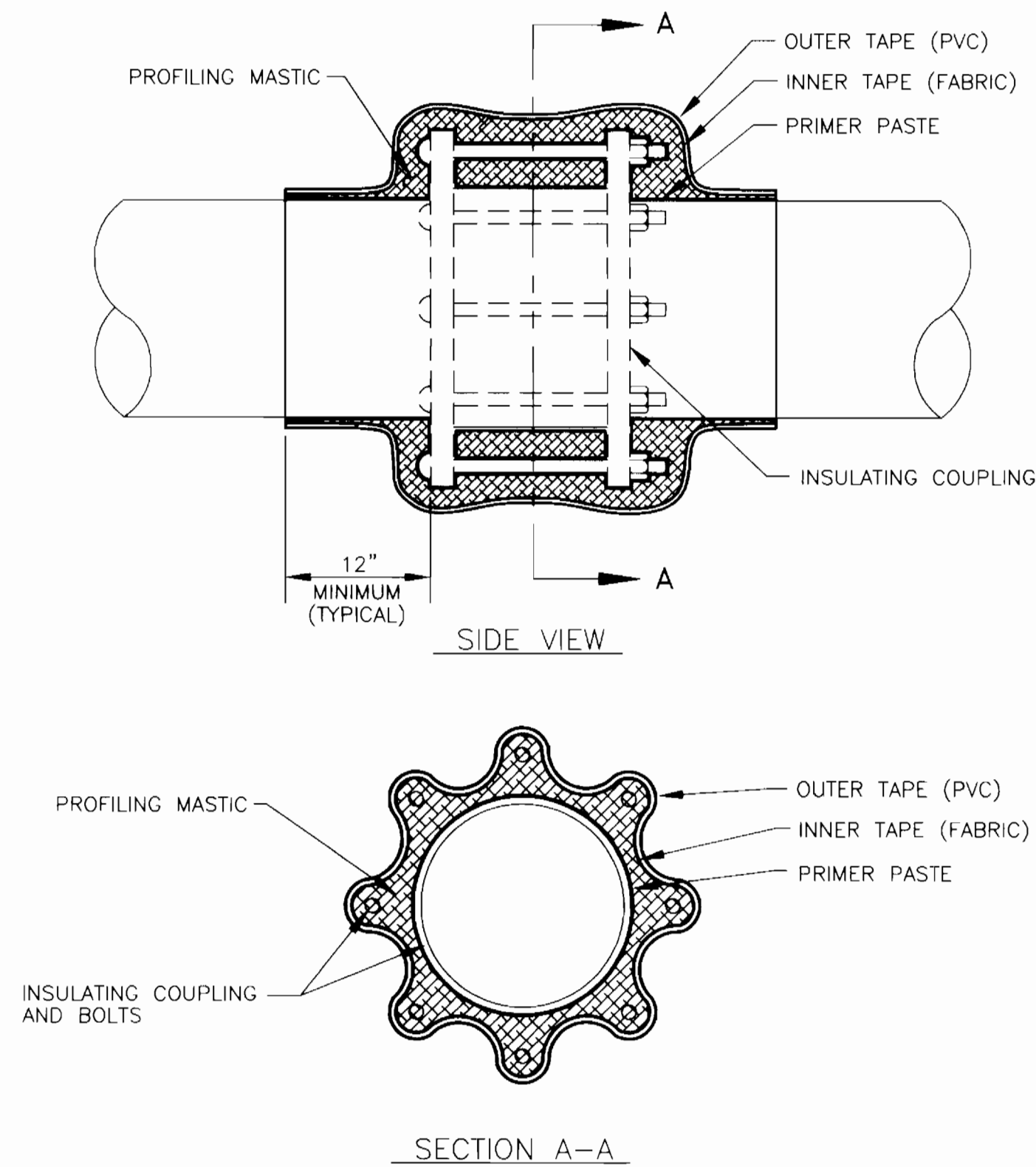
CP-7: SEPARATOR TO AVOID ELECTRICAL CONTACT



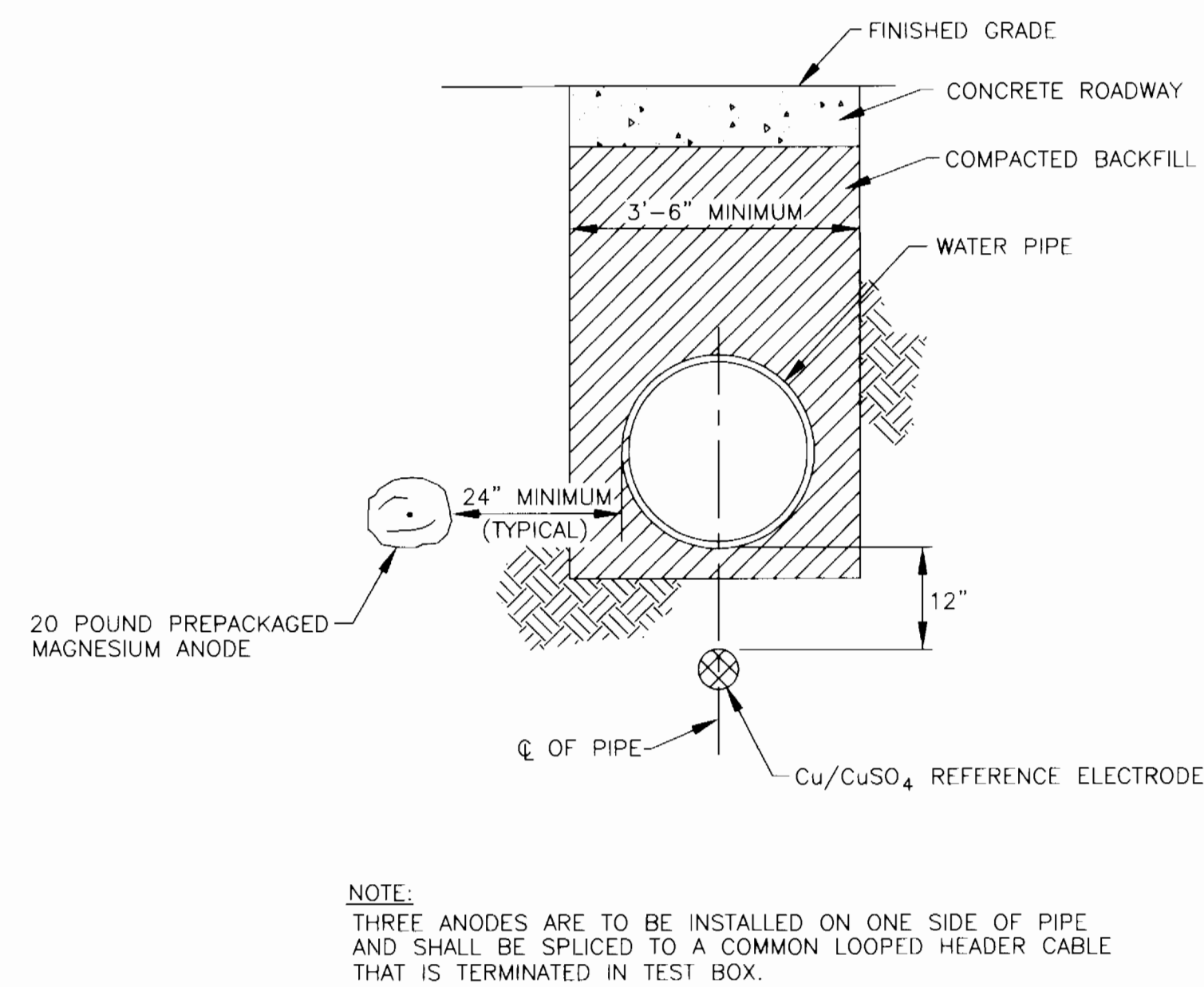
CP-8: TEST BOX



CP-9: TEST STATION PAD

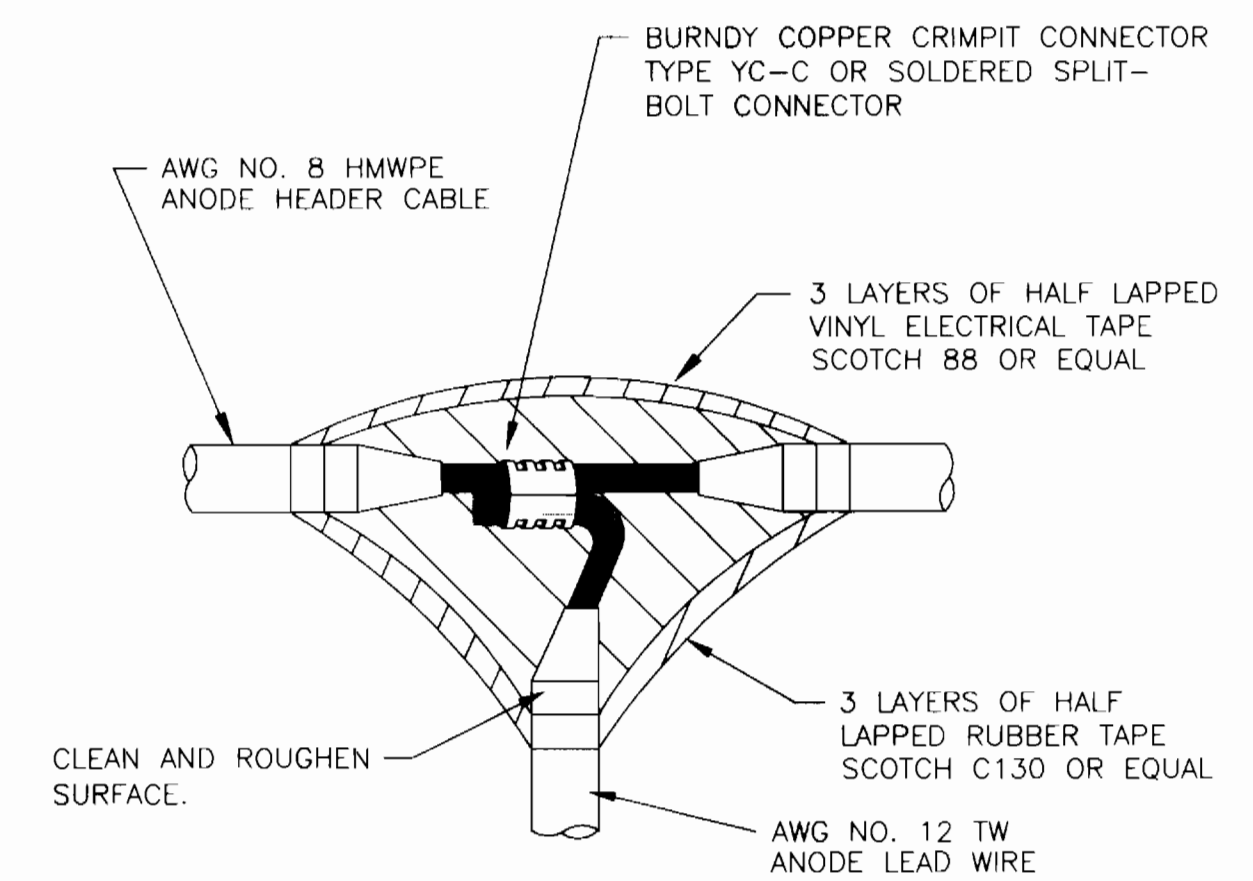


CP-10 : COATING OF INSULATING COUPLING



NOTE:
THREE ANODES ARE TO BE INSTALLED ON ONE SIDE OF PIPE AND SHALL BE SPLICED TO A COMMON LOOPED HEADER CABLE THAT IS TERMINATED IN TEST BOX.

CP-11 : ANODE AND REFERENCE ELECTRODE PLACEMENT



CP-12 : ANODE SPLICE

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. Shum 12/21/00
DIRECTOR OF PUBLIC WORKS DATE

Robert J. Seaton 12/13/00
CHIEF, BUREAU OF ENGINEERING DATE

RUSSELL CORROSION CONSULTANTS, INC.
5405 TWIN KNOLLS RD., SUITE 3
COLUMBIA, MD 21045



| | | | |
|--------------|---------|----------|-----|
| DES: MJS | | | |
| DRN: ZGS | | | |
| CHK: MJS/DMS | | | |
| DATE: 8/00 | BY: NO. | REVISION | NO. |

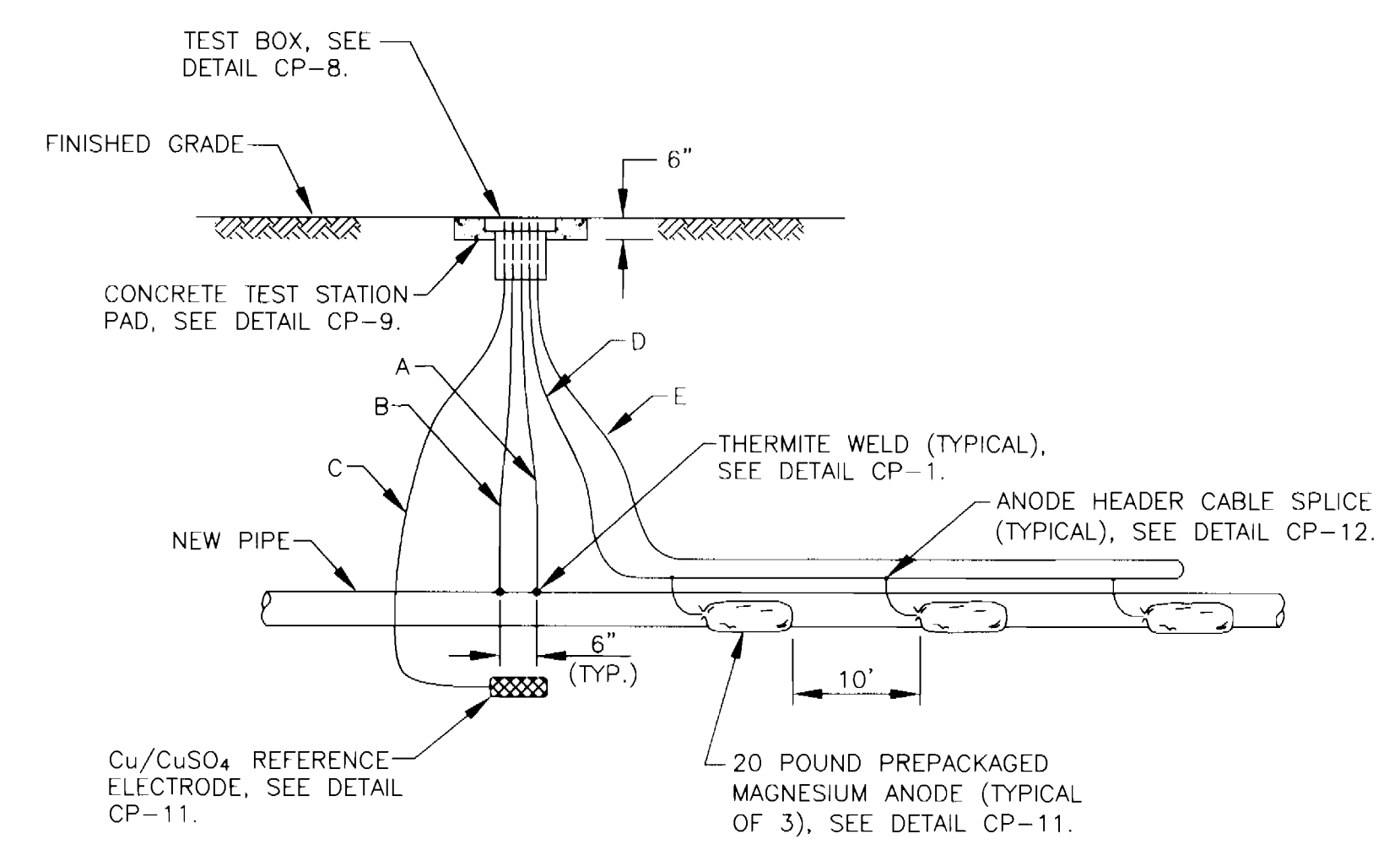
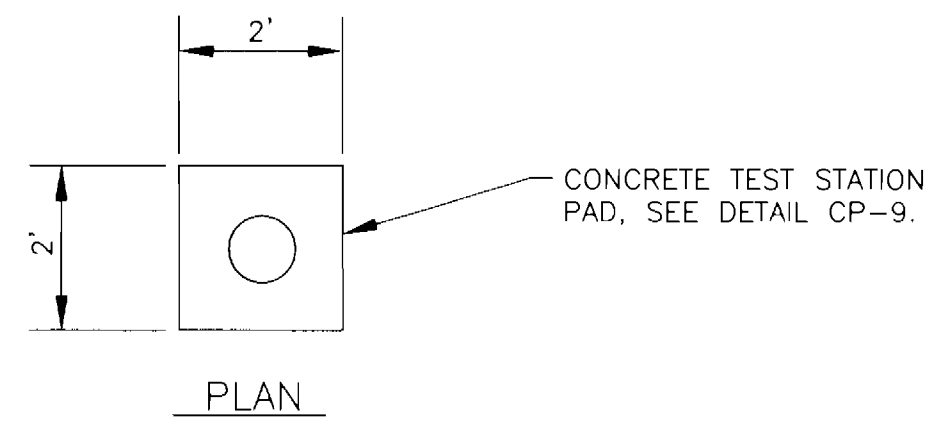
CATHODIC PROTECTION DETAILS-2

600' SCALE MAP NO. 43 BLOCK NO. 8

CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE:
NONE

SHEET
10 OF 13



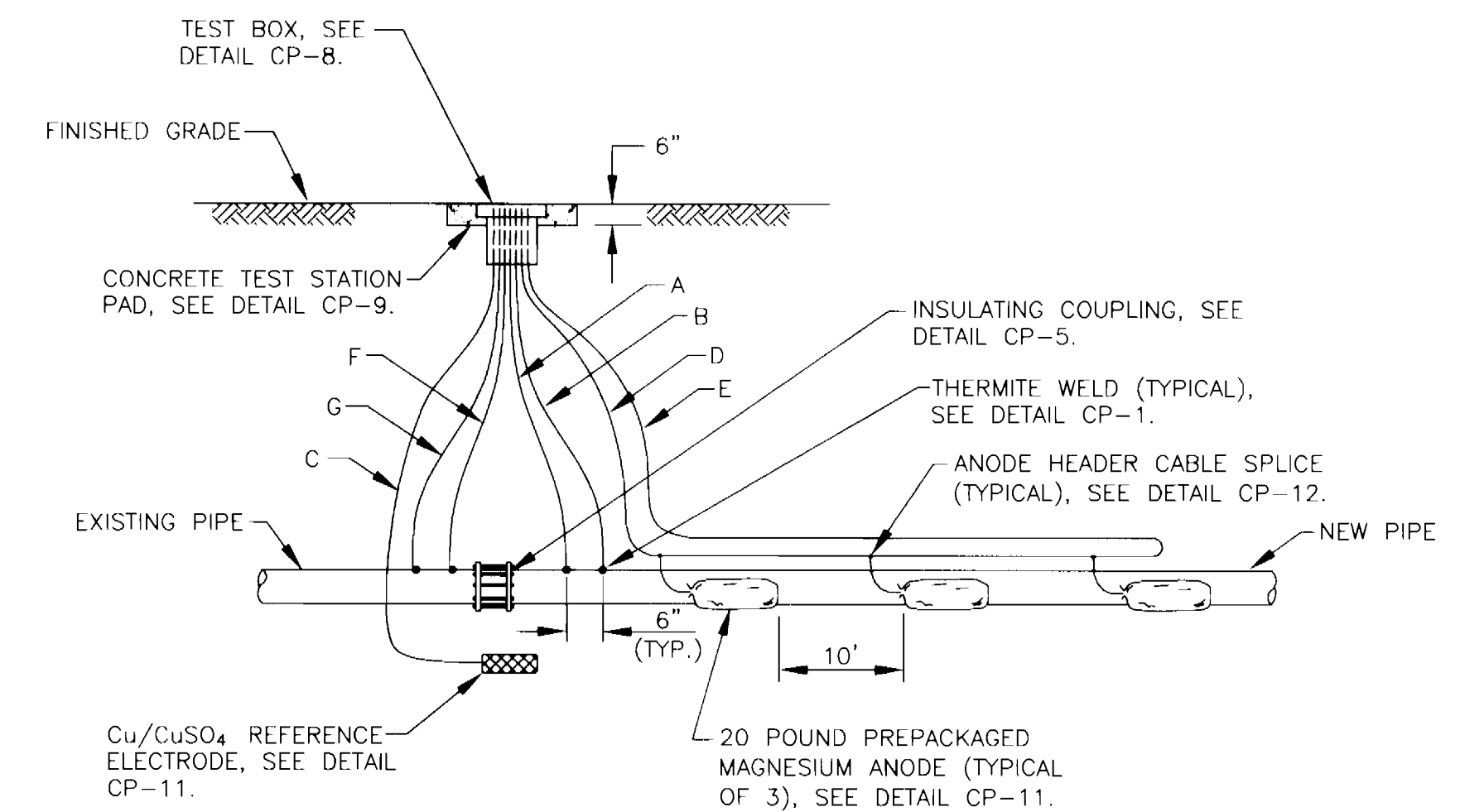
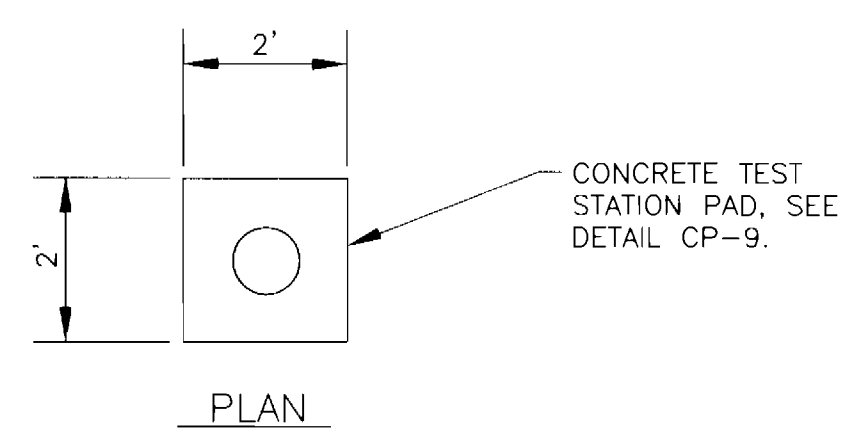
| WIRING SCHEDULE | | | | | |
|-------------------------------|------|-----------------------|---------------|-----------------|------------------|
| DESCRIPTION | WIRE | TEST STATION TERMINAL | AWG WIRE SIZE | TYPE INSULATION | COLOR INSULATION |
| NEW PIPE | A | 1 | #10 | THWN | BLUE |
| | B | 3 | #10 | THWN | BLUE |
| PERMANENT REFERENCE ELECTRODE | C | 6 | #14 | HMWPE | BLACK |
| MAGNESIUM ANODE HEADER CABLE | D | 4 | #8 | HMWPE | BLACK |
| | E | 4 | #8 | HMWPE | BLACK |

- NOTES:
1. ANODES TO BE PLACED AT SAME DEPTH AS THE BOTTOM OF THE PIPE AND AT A MINIMUM OF 24" FROM EDGE OF PIPE. ANODES SHALL BE INSTALLED IN NATIVE EARTH AND NOT IN GRAVEL. SEE DETAIL CP-11 FOR PLACEMENT REQUIREMENTS.
 2. DO NOT SET TEST STATION IN ROADWAY. PLACE TEST BOX IN NON-PAVED AREA NEXT TO ROADWAY. ROUTE ALL WIRES TO FINAL TEST BOX LOCATION.
 3. INSTALL 0.01 OHM/8 AMPERE SHUNT BETWEEN TERMINALS 1 AND 4.

| CATHODIC PROTECTION TEST STATION SCHEDULE CEDAR ACRES | | |
|---|---------------------|---------------|
| LOCATION | TEST STATION TYPE | DETAIL NUMBER |
| NORTHWEST END OF PIPE IN CEDAR LANE | CATHODIC PROTECTION | CP-13 |
| CONNECTION TO EXISTING PIPING IN LINCOLN DRIVE | INSULATING COUPLING | CP-14 |
| TEE AT CEDAR LANE AND GEORGIA AVENUE | CATHODIC PROTECTION | CP-13 |
| WYE AVENUE AT GEORGIA AVENUE | CATHODIC PROTECTION | CP-13 |
| WYE AVE AT DONALD DRIVE | CATHODIC PROTECTION | CP-13 |
| TEE AT CEDAR LANE AND DONALD DRIVE | CATHODIC PROTECTION | CP-13 |
| CONNECTION TO EXISTING PIPING AT EAST END OF CEDAR LANE | INSULATING COUPLING | CP-14 |
| WYE AVENUE BETWEEN DONALD DRIVE AND GEORGIA AVENUE | CATHODIC PROTECTION | CP-13 |
| CEDAR LANE BETWEEN DONALD DRIVE AND GEORGIA AVENUE | CATHODIC PROTECTION | CP-13 |

CP-15: TEST STATION SCHEDULE

CP-13: CATHODIC PROTECTION TEST STATION



| WIRING SCHEDULE | | | | | |
|-------------------------------|------|-----------------------|---------------|-----------------|------------------|
| DESCRIPTION | WIRE | TEST STATION TERMINAL | AWG WIRE SIZE | TYPE INSULATION | COLOR INSULATION |
| NEW PIPE | A | 1 | #10 | THWN | BLUE |
| | B | 3 | #10 | THWN | BLUE |
| PERMANENT REFERENCE ELECTRODE | C | 6 | #14 | HMWPE | BLACK |
| MAGNESIUM ANODE HEADER CABLE | D | 4 | #8 | HMWPE | BLACK |
| | E | 4 | #8 | HMWPE | BLACK |
| EXISTING PIPE | F | 2 | #10 | THWN | WHITE |
| | G | 5 | #10 | THWN | WHITE |

- NOTES:
1. ANODES TO BE PLACED AT SAME DEPTH AS THE BOTTOM OF THE PIPE AND AT A MINIMUM OF 24" FROM EDGE OF PIPE. ANODES SHALL BE INSTALLED IN NATIVE EARTH AND NOT IN GRAVEL. SEE DETAIL CP-11 FOR PLACEMENT REQUIREMENTS.
 2. DO NOT SET TEST STATION IN ROADWAY. PLACE TEST BOX IN NON-PAVED AREA NEXT TO ROADWAY. ROUTE ALL WIRES TO FINAL TEST BOX LOCATION.
 3. INSTALL 0.01 OHM/8 AMPERE SHUNT BETWEEN TERMINALS 1 AND 4.

CP-14: INSULATING COUPLING TEST STATION

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

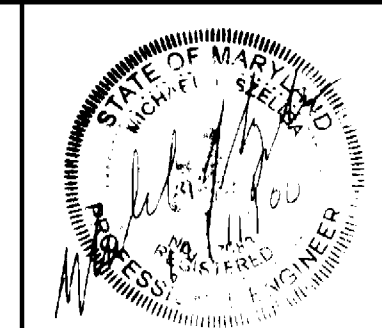
James P. Lewis 12/13/00
DIRECTOR OF PUBLIC WORKS DATE

Robert J. Seaman 12-20-00
CHIEF, BUREAU OF ENGINEERING DATE

Robert J. Seaman 12-20-00
CHIEF, BUREAU OF UTILITIES DATE

Robert J. Seaman 12-13-00
CHIEF, UTILITY DESIGN DATE

RUSSELL CORROSION CONSULTANTS, INC.
5405 TWIN KNOLLS RD., SUITE 3
COLUMBIA, MD 21045



| | | | |
|--------------|--------|----------|-----|
| DES: MJS | | | |
| DRN: ZGS | | | |
| CHK: MJS/DMS | | | |
| DATE: 8/00 | BY NO. | REVISION | NO. |

CATHODIC PROTECTION DETAILS-3

600' SCALE MAP NO. 43 BLOCK NO. 8

CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: NONE

SHEET 11 OF 13

STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITH: A.) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, B.) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING AND MULCHING (SEC. G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
 TOTAL AREA OF SITE = 16.31 ACRES
 AREA DISTURBED = 0.26 ACRES
 AREA TO BE ROOFED OR PAVED = 0.25 ACRES
 AREA TO BE VEGETATIVELY STABILIZED = 0.01 ACRES
 TOTAL CUT = N/A CU. YDS.
 TOTAL FILL = N/A CU. YDS.
 OFF SITE WASTE/BORROW AREA LOCATION: SITE WITH AN ACTIVE GRADING PERMIT AS APPROVED BY ENGINEER
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- PLACE EXCAVATED SOIL ON THE UPHILL SIDE OF THE TRENCHES.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED** - APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.)
- ACCEPTABLE** - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.05 LBS/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE - INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

SEQUENCE OF CONSTRUCTION

- CONTACT HOWARD COUNTY BUREAU OF CONSTRUCTION INSPECTION DIVISION (410-313-1870) PRIOR TO STARTING DATE. (4 DAYS)
- INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS PER SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL VOL. IV. (4 DAYS)
- EXCAVATE AND INSTALL PROPOSED 8" WATER MAINS. EXCAVATE AND CONNECT EXISTING WATER HOUSE CONNECTIONS TO PROPOSED 8" WATER MAINS. (90 DAYS)
- RESTORE TRENCHES TO THEIR ORIGINAL CONDITION WITH TEMPORARY PAVING AS PER HOWARD COUNTY STANDARDS AND SPECIFICATIONS. (4 DAYS)
- UPON PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTION, REMOVE SEDIMENT CONTROL DEVICES. (3 DAYS)
- INSTALL PERMANENT PAVING PATCH OVER TRENCHES. (5 DAYS)

| RESTORATION SCHEDULE | | | |
|---------------------------------------|----------------|----------|---------------------|
| STATION | TO STATION | DISTANCE | MATERIAL |
| CEDAR AVE. - NORTH OF LINCOLN DRIVE | | | |
| 0+00 | 2+50 | 250' | BITUMINOUS PAVING |
| 2+50 | 2+55 | 5' | CONCRETE DRIVEWAY |
| CEDAR AVENUE - SOUTH OF LINCOLN DRIVE | | | |
| 0+00 | 15+50 | 1550' | BITUMINOUS PAVING |
| 1+85, 2.5' LT. | 1+85, 11' LT. | 8.5' | PERMANENT SEEDING |
| 2+80, 2.5' LT. | 4+40, 2' LT. | 180' | BITUMINOUS CURB |
| 9+45, 4' LT. | 9+45, 15' LT. | 11' | PERMANENT SEEDING |
| 13+83, 3.5' LT. | 14+88, 4' LT. | 123' | PERMANENT SEEDING |
| 15+50 | 15+51 | 1' | CONC. CURB & GUTTER |
| 15+51 | 18+40 | 89' | CONC. SIDEWALK |
| 15+92, 2.5' LT. | 15+92, 8' LT. | 5.5' | PERMANENT SEEDING |
| 18+40 | 18+41 | 1' | CONC. CURB & GUTTER |
| 18+41 | 17+54 | 113' | BITUMINOUS PAVING |
| 17+30, 7' LT. | 17+30, 8' LT. | 1' | CONC. CURB & GUTTER |
| 17+30, 8' LT. | 17+30, 15' LT. | 7' | PERMANENT SEEDING |
| GEORGIA AVENUE | | | |
| 0+00 | 3+13 | 313' | BITUMINOUS PAVING |
| 1+80, 3' LT. | 2+50, 3' LT. | 90' | PERMANENT SEEDING |
| 2+74, 3' LT. | 2+84, 3' LT. | 10' | PERMANENT SEEDING |
| WYE AVENUE | | | |
| 3+13 | 12+03 | 890' | BITUMINOUS PAVING |
| 3+80 | 4+38 | 78' | PERMANENT SEEDING |
| 4+38 | 4+48 | 12' | BITUMINOUS DRIVEWAY |
| 4+48 | 4+88 | 40' | PERMANENT SEEDING |
| 4+55, 1' RT. | 4+55, 10' RT. | 9' | PERMANENT SEEDING |

| RESTORATION SCHEDULE | | | |
|------------------------|----------------|----------|---------------------|
| STATION | TO STATION | DISTANCE | MATERIAL |
| WYE AVENUE (CONTINUED) | | | |
| 4+88 | 4+98 | 8' | BITUMINOUS DRIVEWAY |
| 4+98 | 5+12 | 18' | CONCRETE DRIVEWAY |
| 5+12 | 5+80 | 48' | PERMANENT SEEDING |
| 5+80 | 5+83.5 | 3.5' | CONCRETE SIDEWALK |
| 5+83.5 | 5+98 | 34.5' | PERMANENT SEEDING |
| 5+98 | 6+12 | 14' | CONCRETE DRIVEWAY |
| 6+12 | 6+32 | 40' | PERMANENT SEEDING |
| 6+32 | 6+85 | 19' | PERMANENT SEEDING |
| 6+85 | 7+15 | 27' | PERMANENT SEEDING |
| 7+15 | 7+29 | 14' | CONCRETE DRIVEWAY |
| 7+29 | 7+34 | 5' | PERMANENT SEEDING |
| 7+34 | 7+37.5 | 3.5' | CONCRETE SIDEWALK |
| 7+37.5 | 7+64 | 26.5' | PERMANENT SEEDING |
| 7+64 | 7+88 | 24' | CONCRETE DRIVEWAY |
| 7+88 | 8+00 | 12' | PERMANENT SEEDING |
| 8+00 | 8+24 | 24' | CONCRETE DRIVEWAY |
| 8+24 | 8+42 | 18' | PERMANENT SEEDING |
| 8+42 | 8+99 | 27' | BITUMINOUS DRIVEWAY |
| 8+99 | 8+75 | 6' | PERMANENT SEEDING |
| DONALD AVENUE | | | |
| 12+03 | 16+02 | 399' | BITUMINOUS PAVING |
| 11+98 | 11+98, 25' RT. | 25' | BITUMINOUS PAVING |
| 11+98, 25' RT. | 11+98, 35' RT. | 10' | PERMANENT SEEDING |

RESTORATION NOTES:

- SAW CUT THE EXISTING BITUMINOUS PAVING, CURBS, GUTTERS, DRIVEWAYS, AND SIDEWALKS.
- REPAIR BITUMINOUS PAVING IN ACCORDANCE WITH STANDARD DETAIL G4.01.
- REPAIR CURB AND GUTTER IN ACCORDANCE WITH STANDARD DETAIL R 3.01 AND MATCH EXISTING CONDITIONS.
- REPAIR BITUMINOUS CURBS IN ACCORDANCE WITH STANDARD DETAIL R 3.03.
- REPAIR BITUMINOUS DRIVEWAYS IN ACCORDANCE WITH STANDARD DETAIL R 6.06.
- REPAIR CONCRETE DRIVEWAYS IN ACCORDANCE WITH STANDARD DETAIL R 6.10.
- REPAIR CONCRETE SIDEWALK IN ACCORDANCE WITH STANDARD DETAIL R 3.05 AND MATCH EXISTING CONDITIONS.

ABANDONMENT SCHEDULE

| STATION | TO STATION | DESCRIPTION | NOTE |
|---------------------------------------|-----------------|-----------------|------|
| CEDAR AVENUE - NORTH OF LINCOLN DRIVE | | | |
| 0+21, 3.5' RT. | ----- | 8" VALVE | 2 |
| 0+21, 5' RT. | 2+41, 3' RT. | 220 LF 8" W | 1 |
| CEDAR AVENUE - SOUTH OF LINCOLN DRIVE | | | |
| 0+00, 28' LT. | 17+45, 3' RT. | 1755 LF 8" W | 1 |
| 1+72, 8' LT. | ----- | 6" FIRE HYDRANT | 3 |
| 4+85, 0' | 4+85, 6' RT. | 6 LF 8" W | 1 |
| 4+78, 6' RT. | ----- | 8" VALVE | 2 |
| 9+52, 10' LT. | ----- | 6" FIRE HYDRANT | 3 |
| 15+15, 1.5' LT. | 15+14, 4' RT. | 5 LF 8" W | 1 |
| 15+92, 0' RT. | 15+92, 8' RT. | 8 LF 4" W | 1 |
| 16+98, 8' LT. | ----- | 6" FIRE HYDRANT | 3 |
| GEORGIA AVENUE | | | |
| 0+00, 12' RT. | 3+07, 14' LT. | 310 LF 8" W | 1 |
| 0+13.6, 11' RT. | ----- | 6" VALVE | 2 |
| WYE AVENUE | | | |
| 3+07, 14' LT. | 3+15, 6' LT. | 15 LF 6" W | 1 |
| 3+15, 6' LT. | 4+45, 3' LT. | 130 LF 8" W | 5 |
| 4+27, 3' RT. | ----- | 6" FIRE HYDRANT | 3 |
| 4+45, 3' LT. | 12+08.5, 6' RT. | 782 LF 8" W | 1 |
| 4+20, 3' LT. | ----- | 6" TEMP. VALVE | 4 |
| 11+58, 9' RT. | ----- | 6" FIRE HYDRANT | 3 |
| DONALD AVENUE | | | |
| 12+08.5, 35' LT. | 15+88, 24' RT. | 398 LF 8" W | 1 |
| 15+83, 20' RT. | ----- | 6" VALVE | 2 |

ABANDONMENT NOTES:

- INSTALL PLUG ON EACH OPEN END OF PIPE SECTION TO BE ABANDONED.
- WATER VALVES: CLOSE VALVE; REMOVE RISER STEM AND VALVE BOX.
- FIRE HYDRANTS: REMOVE HYDRANT BARREL AND ELBOW. INSTALL PLUG ON OPEN END OF PIPE. RETURN HYDRANT TO THE BUREAU OF UTILITIES, 8270 OLD MONTGOMERY ROAD, COLUMBIA, MD. FOR HYDRANT VALVE, SEE NOTE 2.
- TEMPORARY VALVES: REMOVE AND SALVAGE ENTIRE VALVE. INSTALL PLUG ON EACH OPEN END OF 6" x 4" TEE.
- REMOVE EXISTING WATER MAIN. INSTALL PLUG ON OPEN ENDS OF ADJACENT PIPE.

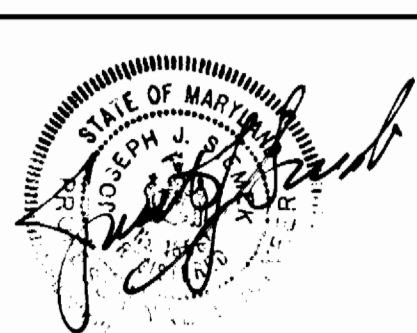
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James A. Vroman 12-15-00
DIRECTOR OF PUBLIC WORKS DATE

Robert W. Baugher 12-20-00
CHIEF, BUREAU OF UTILITIES DATE

Robert W. Baugher 12-13-00
CHIEF, UTILITY DESIGN DIVISION DATE

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204



| | | | |
|-----------------|--|----------|------|
| DES: L.A.F. | | | |
| DRN: K.J.P. | | | |
| CHK: J.J.S. | | | |
| DEC: DATE: 2000 | | | |
| BY NO. | | REVISION | DATE |

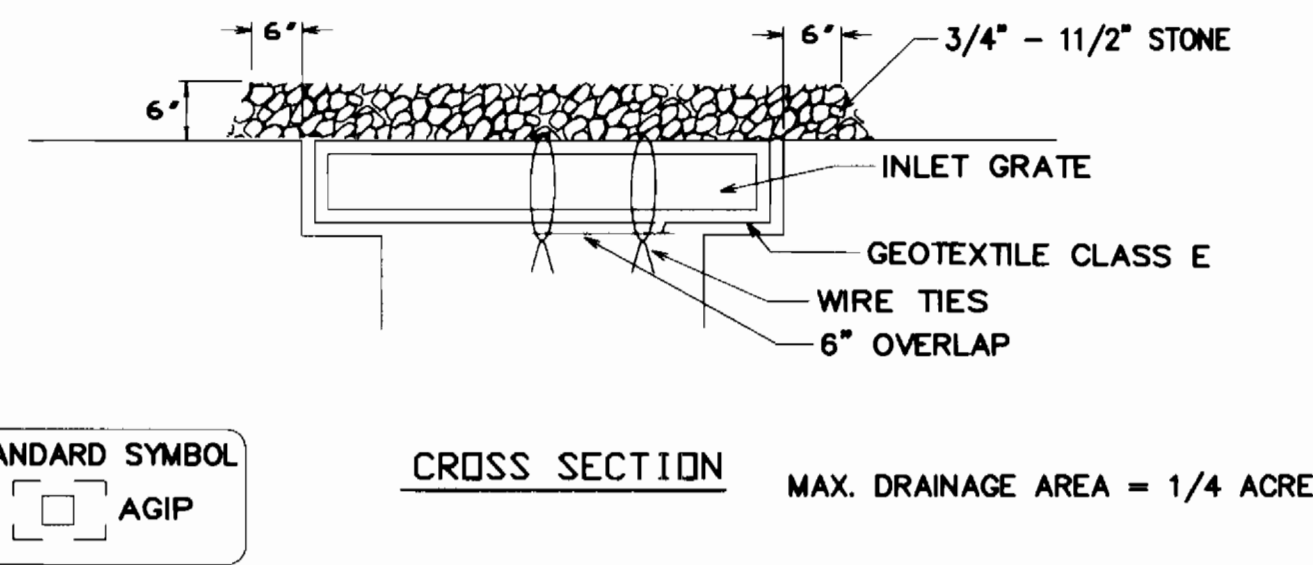
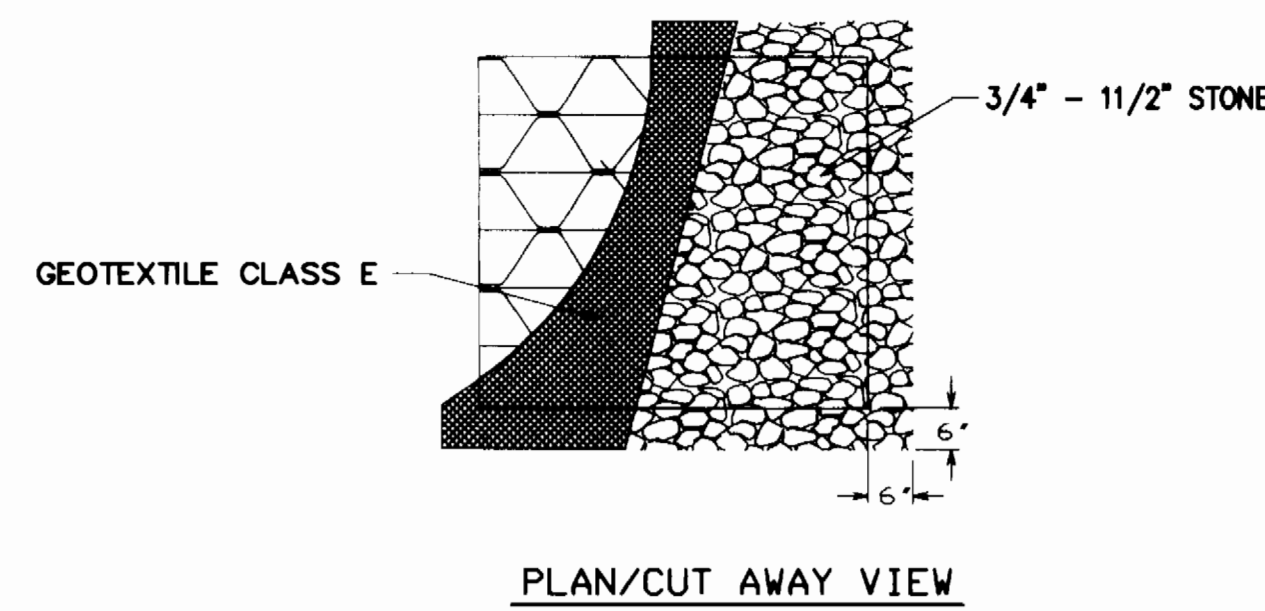
SEDIMENT CONTROL NOTES
RESTORATION & ABANDONMENT
SCHEDULES

600' SCALE MAP NO. 43 BLOCK NO. 8

CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 12 OF 13

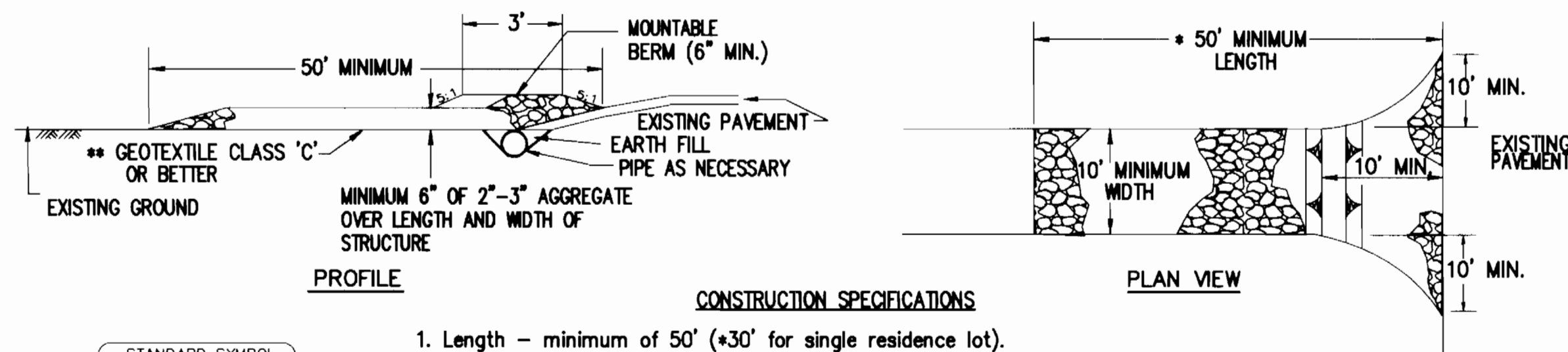


CONSTRUCTION SPECIFICATIONS

- LIFT GRATE AND WRAP WITH GEOTEXTILE CLASS E TO COMPLETELY COVER ALL OPENINGS, THEN SET GRATE BACK IN PLACE.
- PLACE 3/4" TO 1 1/2" STONE, 4"-6" THICK ON THE GRATE TO SECURE THE FABRIC AND PROVIDE ADDITIONAL FILTRATION.

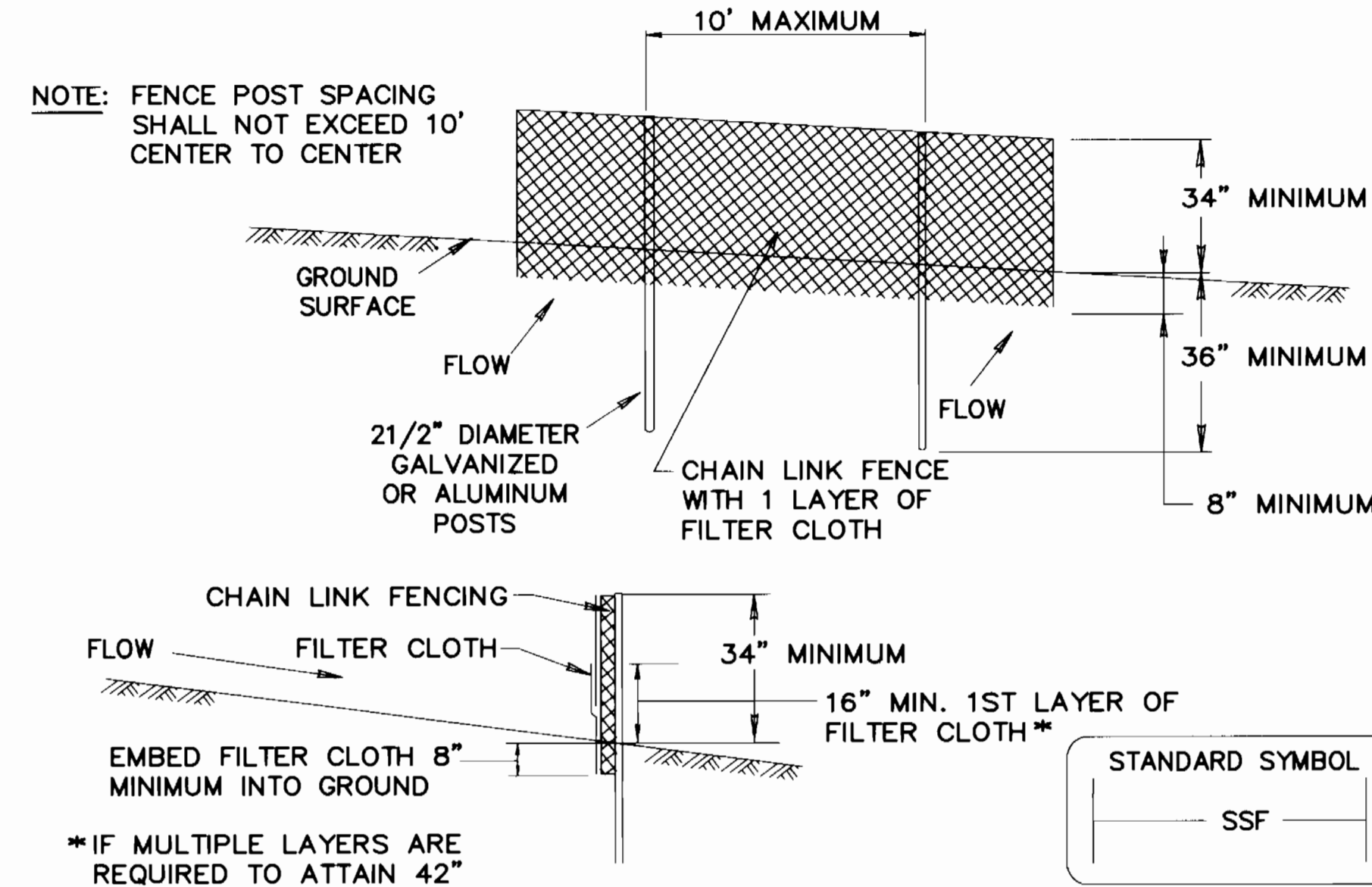
AT-GRADE INLET PROTECTION

NOT TO SCALE



- CONSTRUCTION SPECIFICATIONS**
- Length - minimum of 50' (+30' for single residence lot).
 - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
 - Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
 - Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
 - Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
 - Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

STABILIZED CONSTRUCTION ENTRANCE



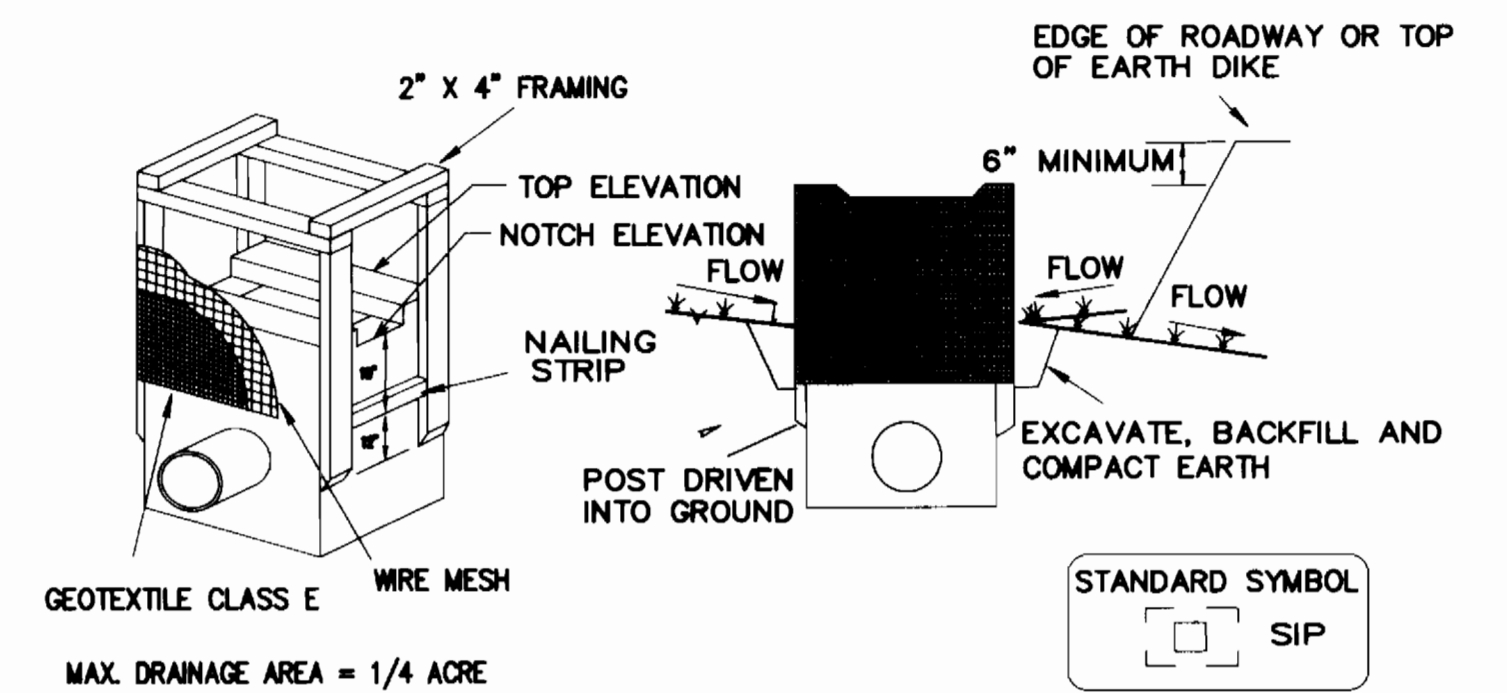
CONSTRUCTION SPECIFICATIONS

- FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.
- CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
- FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT
- FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

| | | |
|----------------------|--|----------------|
| TENSILE STRENGTH | 50 LBS/IN (MIN.) | TEST: MSMT 509 |
| TENSILE MODULUS | 20 LBS/IN (MIN.) | TEST: MSMT 509 |
| FLOW RATE | 0.3 GAL/FT ² /MINUTE (MAX.) | TEST: MSMT 322 |
| FILTERING EFFICIENCY | 75% (MIN.) | TEST: MSMT 322 |

SUPER SILT FENCE

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

- EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18" BELOW THE NOTCH ELEVATION
- DRIVE THE 2" X 4" CONSTRUCTION GRADE LUMBER POSTS 1' INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2" X 4" FRAME USING THE OVERLAP JOINT SHOWN ON DETAIL 23A. THE TOP OF THE FRAME (WEIR) MUST BE 6" BELOW ADJACENT ROADWAYS WHERE FLOODING AND SAFETY ISSUES MAY ARISE.
- STRETCH THE 1/2" X 1/2" WIRE MESH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. THE ENDS MUST MEET AND OVERLAP AT A POST.
- STRETCH THE GEOTEXTILE CLASS E TIGHTLY OVER THE WIRE MESH WITH THE GEOTEXTILE EXTENDING FORM THE TOP OF THE FRAME TO 18" BELOW THE INLET NOTCH ELEVATION. FASTEN THE GEOTEXTILE FIRMLY TO THE FRAME. THE ENDS OF THE GEOTEXTILE MUST MEET AS A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED DOWN.
- BACKFILL AROUND THE INLET IN COMPACTED 6" LAYERS UNTIL THE LAYER OF EARTH IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
- IF THE INLET IS NOT IN A SUMP, CONSTRUCT A COMPACTED EARTH DIKE ACROSS THE DITCH LINE DIRECTLY BELOW IT. THE TOP OF THE EARTH DIKE SHOULD BE AT LEAST 6" HIGHER THAN THE TOP OF THE FRAME.
- THE STRUCTURE MUST BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND THE GEOTEXTILE REPLACED WHEN IT BECOMES CLOGGED.

STANDARD INLET PROTECTION

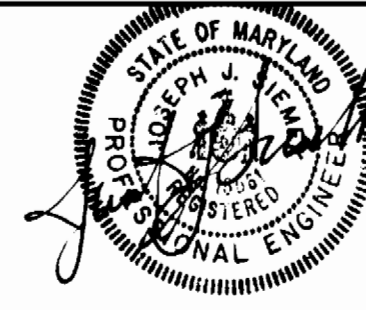
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature]
DIRECTOR OF PUBLIC WORKS
DATE: 12/20/00

[Signature]
CHIEF, BUREAU OF UTILITIES
DATE: 12-20-00

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21284



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|-----------------|---------|----------|------|
| DES: L.A.F. | | | |
| DRN: K.J.P. | | | |
| CHK: J.J.S. | | | |
| DATE: DEC. 2000 | BY: NO. | REVISION | DATE |

SEDIMENT CONTROL
DETAILS

600' SCALE MAP NO. 43 BLOCK NO. 8

CEDAR ACRES
CAPITAL PROJECT W-8223
CONTRACT NO. 24-3811
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
13 OF 13