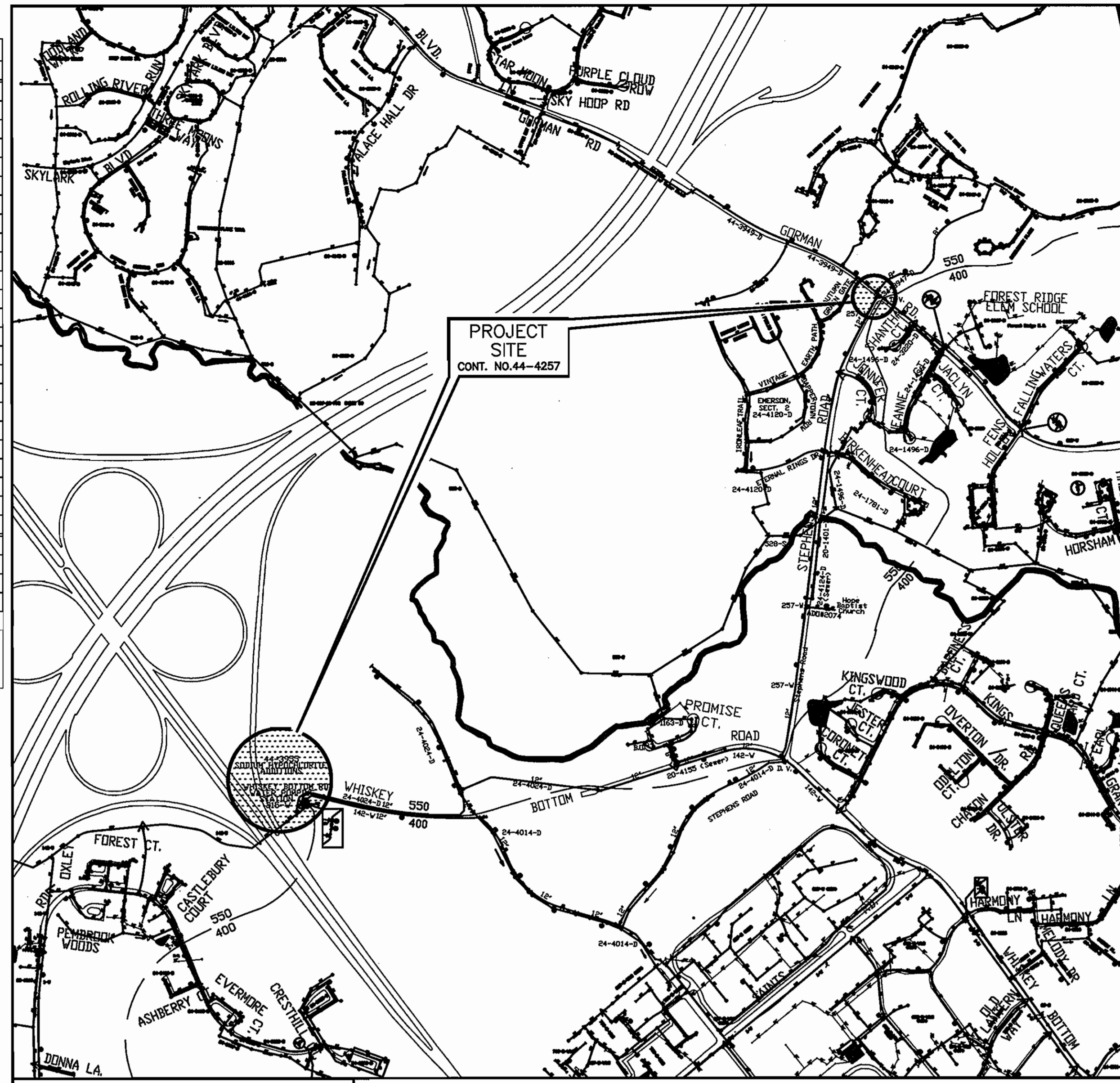


QUANTITIES				
ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
12" DIP	L.F.	220	—	
12" GATE VALVE	EA.	3	3	
12" 90 DEG BEND	EA.	3	—	
12" 45 DEG BEND	EA.	2	—	
22-1/2 DEG BEND	EA.	12	—	
12"x12" TS&V	EA.	1	3	
12" TEE	EA.	1	—	
12"x10" REDUCER	EA.	2	2	
PRV VAULT	EA.	1	—	
10" DIP	L.F.	13	—	
10" PRESSURE REDUCING VALVE	EA.	1	—	CLA-VAL - 133-74
10" TEE	EA.	1	—	
10"x6" REDUCER	EA.	1	—	
6" DIP	L.F.	55	—	
6" GATE VALVE	EA.	1	—	
6" PRESSURE RELIEF VALVE	EA.	1	—	CLA-VAL - 50-01
6" FLAPPER VALVE	EA.	1	—	TROY VALVE
TYPE "C" ENDWALL DEHUMIDIFIER	EA.	1	—	DESERT AIRE - HPRO90
AMERICAN HOLLY	EA.	6	—	
ORNAMENTAL GRASS	EA.	3	—	
SUMP PUMP	EA.	1	—	MYERS - SSM331
100 AMP LIGHTING PANEL	EA.	1	—	
RTU	EA.	1	—	SIEMENS - LC2000
ELECTRIC UNIT HEATER	EA.	1	—	CHROMALAX - HVT-1251
NAME OF UTILITY CONTRACTOR: W.F. WILSON & SONS				
		CHECKBOX		
		AS-BUILT DATE		

NOTE: QUANTITIES IN THE ABOVE TABLE ARE SOLELY FOR RECORD PURPOSES. CONTRACTOR SHALL NOT RELY ON THE QUANTITIES IN THE TABLE AND SHALL USE HIS/HER OWN TAKEOFF TO ESTABLISH MATERIALS AND QUANTITIES NEEDED FOR THIS PROJECT.



WATER AND SEWER CODE FOR COUNTY USE ONLY:	
WATER CODE NO.	CO2
NO. OF CONNECTIONS	0
SEWER CODE NO.	N/A
NO. OF CONNECTIONS	0
DRAINAGE AREA	LITTLE PATUXENT

VICINITY MAP  
SCALE: 1" = 600'

- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)-313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OF ANY COUNTY ROAD FOR LAYING WATER MAINS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(A) OF THE HOWARD COUNTY CODE.
  - EXISTING STORM DRAINS DISTURBED BY THE CONSTRUCTION SHALL BE REPLACED IN KIND AT THE SAME LINE AND GRADE AS THE EXISTING STORM DRAINS.
- WATER NOTES:**
- ALL WATER MAINS SHALL BE D.I.P. CLASS 52 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 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.
  - ALL TIE-INS TO EXISTING WATER MAINS SHALL BE COORDINATED WITH THE HOWARD COUNTY BUREAU OF UTILITIES AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING WORK. A DETAILED PLAN FOR THE SHUT DOWN OF EXISTING WATER MAINS SHALL BE SUBMITTED FOR APPROVAL BY THE COUNTY.
  - THE CONTRACTOR SHALL LOCATE ALL WATER CONNECTIONS, AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THESE EXISTING CONNECTIONS. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. TEMPORARY SERVICE SHALL BE PROVIDED AS REQUIRED.
  - THE CONTRACTOR SHALL INSTALL TEMPORARY TRAFFIC CONTROL MEASURES AS INDICATED ON THE SHA PLATE 104.02-13 (SEE DWG. C-6).
  - THE CONTRACTOR SHALL PROVIDE A CERTIFIED TRAFFIC CONTROL MANAGER AND CERTIFIED FLAGGERS.
  - THE CONTRACTOR SHALL MAINTAIN TRAFFIC AND ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION. TRAFFIC SHALL BE OPEN TO TWO-WAY OPERATION WHEN PRACTICAL. WHEN ONE-LANE OPERATION IS NECESSARY, THE CONTRACTOR SHALL PERFORM ALL OPERATIONS SUCH THAT TWO-LANE TRAFFIC WILL BE OPEN AS SOON AS PRACTICAL.

**GENERAL NOTES:**

- APPROXIMATE LOCATION 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.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON 1/10/05 BY DAFT - McCUNE - WALKER, INC.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:  
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM  
NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS TR 115 (NORTH (sft):535018.454, EAST (sft):1356707.189) AND TR 278 (NORTH (sft):534590.723, EAST (sft):1356461.983).  
ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE IN REFERENCE TO STATION NO. TR 115, EL. 299.438.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. 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 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 DRAWING, 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 (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
AT&T.....1-800-252-1133  
BCE (CONSTRUCTION SERVICES).....410-850-4620  
BCE (EMERGENCY).....410-685-1400  
BUREAU OF UTILITIES.....410-313-4900  
COLONIAL PIPELINE COMPANY.....410-795-1390  
MISS UTILITY.....1-800-257-7777  
STATE HIGHWAY ADMINISTRATION.....410-531-5533  
VERIZON.....1-800-743-0033/410-224-9210  
MCI WORLDCOM.....1-800-624-9675
- 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. ANY TREES, OUTSIDE OF EXISTING EASEMENTS, DISTURBED BY CONSTRUCTION SHALL BE REPLACED IN KIND (3" CALIPER MINIMUM).
- THE 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.

# 400 ZONE IMPROVEMENTS- GORMAN ROAD/STEPHENS ROAD PRV

CAPITAL PROJECT: W-8270  
CONTRACT NO.: 44-4257  
HOWARD COUNTY, MARYLAND  
DEPARTMENT OF PUBLIC WORKS

**LEGEND**  
(PLAN AND PROFILES SHEETS)

- |             |                              |   |                      |
|-------------|------------------------------|---|----------------------|
| — — — — —   | PRESSURE RELIEF BLOW-OFF     | ⊙ | PROPOSED WATER VALVE |
| — — — — —   | PROPERTY LINE/RIGHT-OF-WAY   | ⊙ | WATER VALVE          |
| — E — E —   | UNDG ELECTRIC LINE           | ⊙ | FIRE HYDRANT         |
| — T — T —   | UNDG TELEPHONE LINE          | ⊙ | POINT OF CONNECTION  |
| — C — C —   | UNDG CABLE LINE              | ⊙ | FUTURE LOT NUMBER    |
| — FO — FO — | UNDG FIBER OPTIC LINE        | ⊙ | REDUCER              |
| — G — G —   | UNDG GAS LINE                | ⊙ | UNDG ENDWALL         |
| — OH — OH — | OVERHEAD LINE                | ⊙ | LIGHT POLE           |
| — — — — —   | TOPOGRAPHIC CONTOUR          | ⊙ | UTILITY POLE         |
| — — — — —   | STORM DRAIN                  | ⊙ | STORM DRAIN MANHOLE  |
| — — — — —   | WATER MAIN                   | ⊙ | WATER MAIN MANHOLE   |
| — — — — —   | WATER PRESSURE ZONE BOUNDARY | ⊙ | BENCHMARK            |
| — — — — —   | PROPOSED WATER               | ⊙ | TELEPHONE MANHOLE    |
| ⊙           | BORING LOCATION              | ⊙ | THRUST BLOCK         |
| ⊙           | TREE                         | ⊙ | PROPERTY LINE        |

**DRAWING LIST:**

- COVER SHEET  
C-1 EROSION & SEDIMENT CONTROL - PLAN VIEW  
C-2 EROSION & SEDIMENT CONTROL - SPECIFICATIONS & DETAILS  
C-3 EROSION & SEDIMENT CONTROL - SPECIFICATIONS & DETAILS  
C-4 PARTIAL SITE PLAN  
C-5 400 & 550 ZONE PIPING - PLAN & PROFILES  
C-6 TEMPORARY TRAFFIC CONTROL MEASURES & PLANTING SPECIFICATIONS  
S-1 PRV VAULT - STRUCTURAL PLANS, SECTIONS & DETAILS  
M-1 PRV VAULT - MECHANICAL PLAN, SECTION & DETAIL  
E-1 PRV VAULT - ELECTRICAL PLAN, PANEL SCHEDULE AND DIAGRAMS  
E-2 PRV VAULT - PARTIAL PLAN, ELEMENTARY AND DETAILS

AS-BUILT 10-07

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Jan J. Sh...* 2/15/05  
DIRECTOR OF PUBLIC WORKS DATE

*Robert J. ...* 2-14-05  
CHIEF, BUREAU OF UTILITIES DATE

*...* 2-14-05  
CHIEF, UTILITY DESIGN DIVISION DATE

**O'BRIEN & GERE**  
ENGINEERS, INC.  
8401 Corporate Drive  
Suite 400  
Landover, Maryland 20785  
(301) 731-5622  
FAX: (301) 577-4737



DSN. BY:	MJT				
DRN. BY:	CMD				
CHK. BY:	RJD				
DATE:	2/01/05				
By	NO.	ISSUED FOR CONSTRUCTION	1/05		
		REVISION	DATE		

COVER SHEET

600' SCALE MAP NO. 47 BLOCK NO. 9

400 ZONE IMPROVEMENTS -  
GORMAN ROAD / STEPHENS ROAD PRV

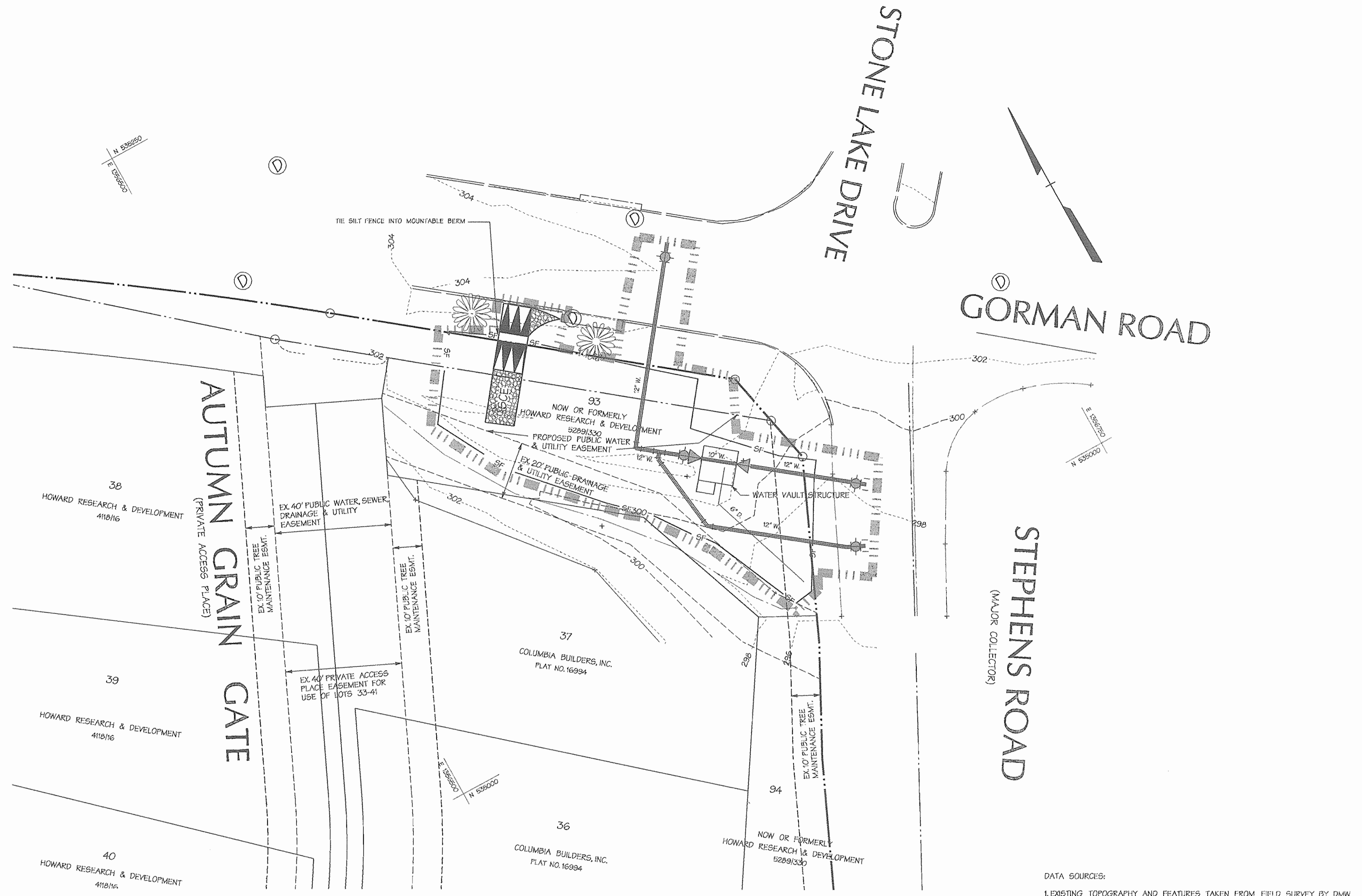
CAPITAL PROJECT: W-8270  
CONTRACT NO.: 44-4257  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 1 OF 11



**LEGEND**

- RIGHT OF WAY LINE
- RIGHT OF WAY LINE
- 500  
--- 502 EXISTING CONTOURS
- EDGE OF EXISTING PAVING
- UGW EXISTING WATER
- FO EXISTING FIBER OPTIC
- GAS EXISTING GAS
- UGT EXISTING TELEPHONE
- LOT LINES
- SF SILT FENCE
- L.O.D.
- STABILIZED CONSTRUCTION ENTRANCE
- TREE MAINTENANCE EASEMENT
- DRAINAGE & UTILITY EASEMENT
- UTILITY POLE
- GUY WIRE
- EXISTING TREE
- STORM DRAIN MANHOLE
- WATER VALVE



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 SOIL CONSERVATION DISTRICT."  
 \_\_\_\_\_ DATE 2/14/05  
 Ronald G. Depson

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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."  
 \_\_\_\_\_ DATE 2/1/05  
 John W. Ranocchi, Sr.

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.  
 \_\_\_\_\_ DATE 2/15/05  
 Jim Meyer  
 NATURAL RESOURCES CONSERVATION SERVICE

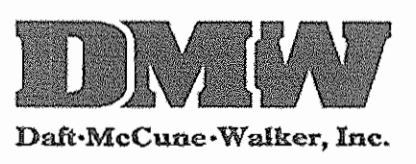
THIS DEVELOPMENT PLAN IS NEW FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 \_\_\_\_\_ DATE 2/15/05  
 John R. Watson  
 HOWARD SOIL CONSERVATION DISTRICT

NOTE: UTILITIES NOT SHOWN FOR CLARITY. REFER TO DWG. C-4 FOR APPROXIMATE UTILITY LOCATION.

- DATA SOURCES:
- EXISTING TOPOGRAPHY AND FEATURES TAKEN FROM FIELD SURVEY BY DMW DATED JAN. 10, 2005.
  - DESIGN AND DRAWING BASED ON MARYLAND COORDINATE SYSTEM NAD 83/91 HORIZONTAL AND NAVD 1988 VERTICAL DATUM.

**SEQUENCE OF CONSTRUCTION**

	NUMBER OF DAYS
1. OBTAIN A GRADING PERMIT.....	1
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE.....	1
3. INSTALL SILT FENCE.....	1
4. INSTALL WATER PIPE AND VAULT STRUCTURE. BACKFILL AND STABILIZE ROADWAY AT THE END OF EACH DAY.....	20
6. STABILIZE ALL AREAS IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS.....	1
7. UPON APPROVAL OF THE SEDIMENT AND EROSION CONTROL INSPECTOR. REMOVE ALL EROSION CONTROL MEASURES.....	1



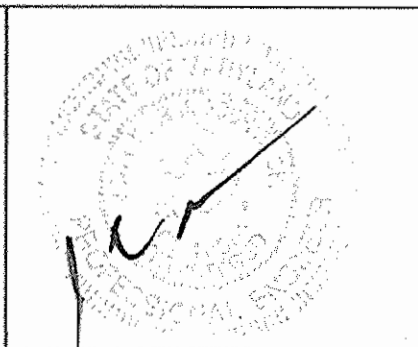
A Team of Land Planners, Landscape Architects, Golf Course Architects, Engineers, Surveyors & Environmental Professionals  
 200 East Pennsylvania Avenue  
 Towson, Maryland 21286  
 (410) 296-3333  
 Fax 296-4705

NOTE: DMW CERTIFICATION IS FOR SEDIMENT CONTROL DESIGN ONLY

**Soil Developer's Certification - No Ponds**

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 \_\_\_\_\_ DATE 2/15/05  
 Director of Public Works - DATE  
 \_\_\_\_\_ DATE 2/14/05  
 Chief - Bureau of Engineering - DATE  
 \_\_\_\_\_ DATE 2-14-05  
 Chief - Bureau of Utilities - DATE  
 \_\_\_\_\_ DATE 2-14-05  
 Chief - Utility Design Division - DATE

**OSRIEN & GIERE ENGINEERS, INC.**  
 2401 Corporate Drive  
 Suite 400  
 Landover, Maryland 20785  
 (301) 731-5622  
 FAX: (301) 577-4737



DESIGN BY:	RLH/JLB
DRAWN BY:	KDE
CHECKED BY:	RLH
DATE:	1-19-05
BY NO.	A
REVISION	ISSUED FOR CONSTRUCTION
DATE	105

**EROSION & SEDIMENT CONTROL PLAN VIEW**

600 SCALE MAP NO. 47 BLOCK NO. 9

**AS-BUILT 10-07**  
 NOTE: USE EROSION CONTROL MATTING AS REQUIRED BY THE INSPECTOR

400 ZONE IMPROVEMENTS  
 GORMAN ROAD / STEPHENS ROAD PRV  
 CAPITAL PROJECT: W-8270  
 CONTRACT No.: 44-4257  
 ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

C-1  
 SCALE: 1"=20'  
 SHEET 2 of 11



- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1665).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, Dikes, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1.
  - FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BAASING SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE "HOWARD COUNTY DESIGN MANUAL," SIGNAGE DIVISION.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 54), SODS (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN 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.

### Sediment Control General Notes

- Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seeded 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 acre Dolomitic Limestone (92 lbs/1000 sq.ft.) and 1000 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/1000sq.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 (14 lbs./1000sq.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 (0.5 lbs./1000sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, prepare site by Option (1) - 2 tons per acre of well anchored straw mulch and seed as soon 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 - 90 lbs./1000sq.ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after applications using mulch anchoring tool or 210 gallons per acre (5 gal/1000sq.ft.) of emulsified asphalt on flat areas. On slopes 6:1 or higher, use 348 gallons per acre (8 gal/1000sq.ft.) for anchoring.
- Maintenance - Inspect all seeding areas and make needed repairs, replacements and reseeded.

### Permanent Seeding Notes

DEVELOPERS CERTIFICATION:

"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 PERMITTED 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 SOIL CONSERVATION DISTRICT."

*Ronald G. Lepson* 2/14/05  
DATE

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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

*John W. Ranoocchia, Sr.* 2/11/05  
DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*Jim Meyer* 2/15/05  
NATURAL RESOURCES CONSERVATION DIVISION DATE

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

*John P. Rhoton* 2/15/05  
HOWARD SOIL CONSERVATION DISTRICT DATE

### Soil Developer's Certification - No Ponds

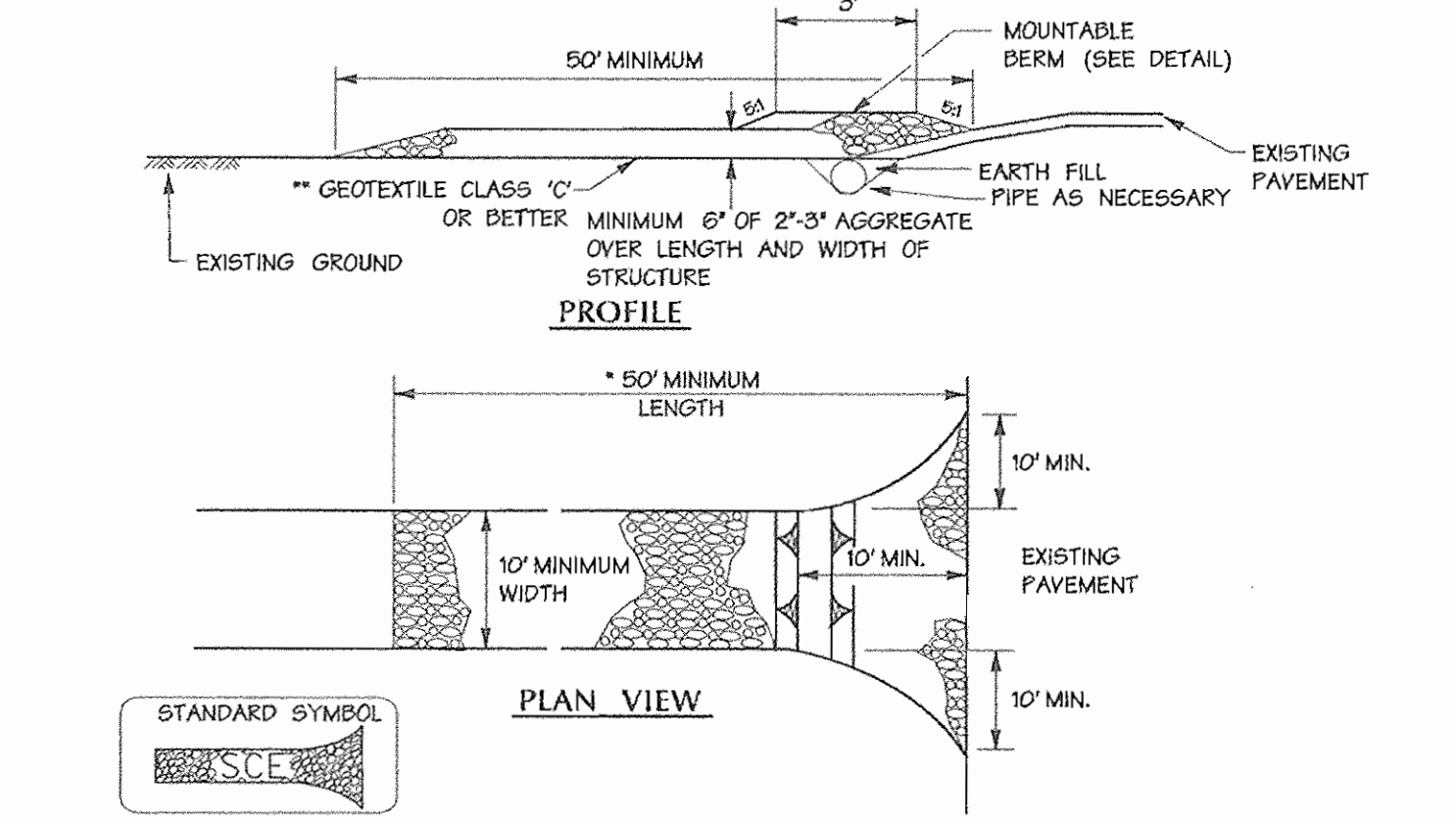
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John W. Ranoocchia, Sr.* 2/15/05  
DIRECTOR OF PUBLIC WORKS - DATE

*Ronald G. Lepson* 2/14/05  
CHIEF - BUREAU OF ENGINEERING - DATE

*John P. Rhoton* 2-15-05  
CHIEF - BUREAU OF UTILITIES - DATE

*John P. Rhoton* 2-14-05  
CHIEF - UTILITY DESIGN DIVISION - DATE



- #### 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 CLASS C (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 6:1 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 2" 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE F - 17 - 3

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### Stabilized Construction Entrance

Not To Scale

- Apply to graded or cleared areas likely to be redisturbed when a short-term vegetative cover is needed.
- Seeded preparation - Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
- Soil amendments - Apply 600 lbs. per acre 10-10-10 fertilizer (1/4 lbs./1000sq.ft.).
- Seeding - For the periods March 1 thru April 30, and August 15 thru October 15, seed with 2-1/2 bushel per acre of annual ryegrass (52 lbs./1000sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.7 lbs./1000sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
- Mulching - Apply 1-1/2 to 2 tons per acre (70 - 90 lbs./1000sq.ft.) of untreated weed free small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 210 gal. per acre (5 gal./1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 6:1 or higher, use 348 gal. per acre (8 gal./1000 sq.ft.) for anchoring.
- Refer to the 1984 Maryland Standards and Specifications for Soil Erosion and Sediment Control for additional rates and methods not covered.

### Temporary Seeding Notes

DMW  
Daft-McCune-Walker, Inc.

200 East Pennsylvania Avenue  
Thunon, Maryland 21288  
(410) 286-3333  
Fax 286-4705

A Team of Land Planners,  
Landscape Architects,  
Golf Course Architects,  
Engineers, Surveyors &  
Environmental Professionals

NOTE: DMW CERTIFICATION IS FOR  
SEDIMENT CONTROL DESIGN ONLY

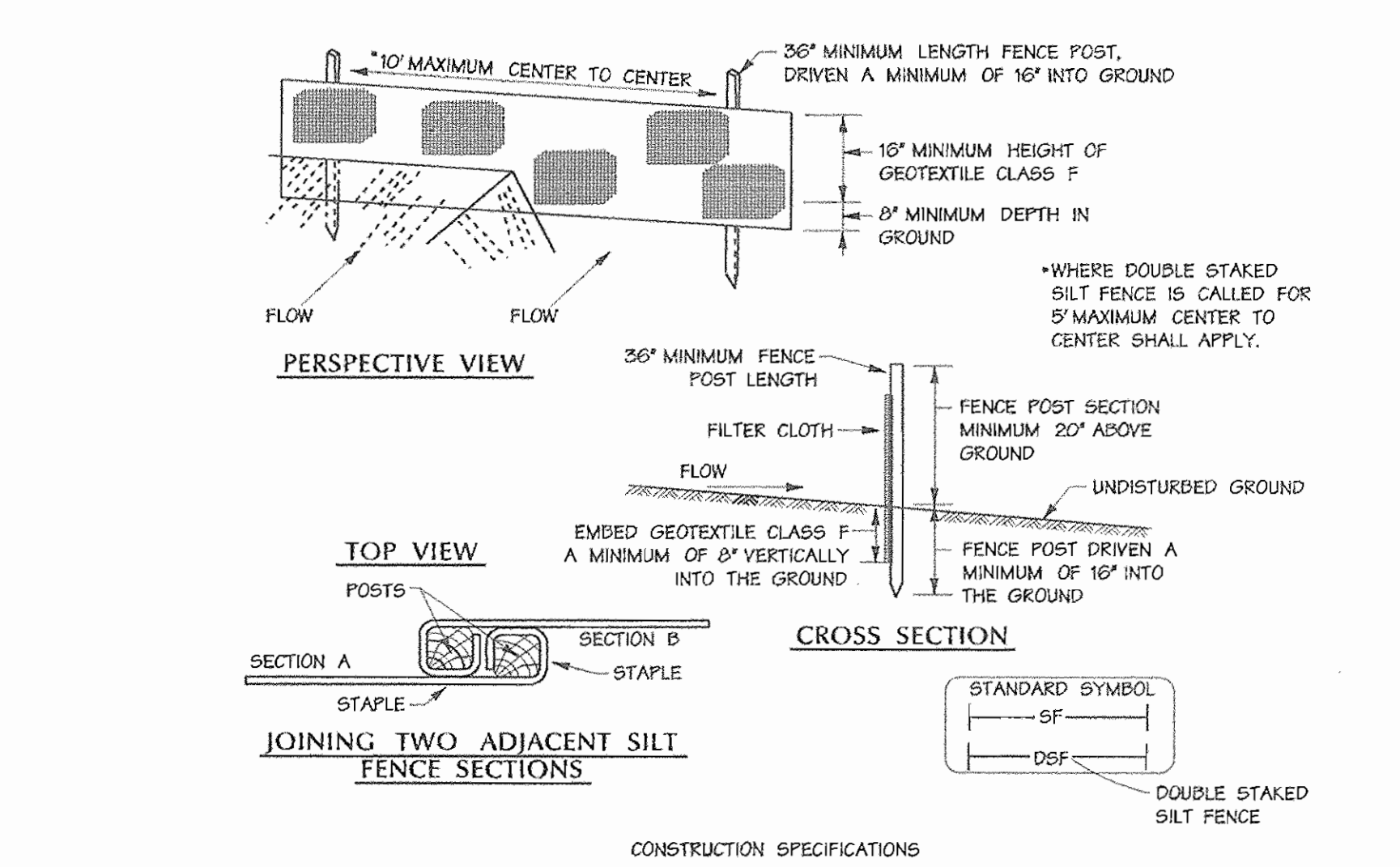
- ### 21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL
- Definition  
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.
- Purpose  
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- Conditions Where Practice Applies
- This practice is limited to areas having 2:1 or flatter slopes where:
    - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
    - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
    - The original soil to be vegetated contains material toxic to plant growth.
    - The soil is so acidic that treatment with limestone is not feasible.
  - For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.
- Construction and Material Specifications
- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.
  - Topsoil Specifications - Soil to be used as topsoil must meet the following:
    - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textures and shall contain less than 5% by volume of cinders, stones, glass, coarse fragments, gravel sticks, roots, trash, and other materials larger than 1/2 inch in diameter.
    - Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
    - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
  - For sites having disturbed areas under 5 acres:
    - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
  - For sites having disturbed areas over 5 acres:
    - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
      - Organic contents of topsoil shall be not less than 1.5 percent by weight.
      - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
    - or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
    - Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
    - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

- ### Silt Fence
- U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE E - 15 - 3
- MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
- Not To Scale
- When topsoiling, maintain needed erosion and sediment control practices such as diversion Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
  - Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
  - Topsoil shall be uniformly distributed in a 4" - 8" layer, and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
  - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.

### Topsoil Specifications

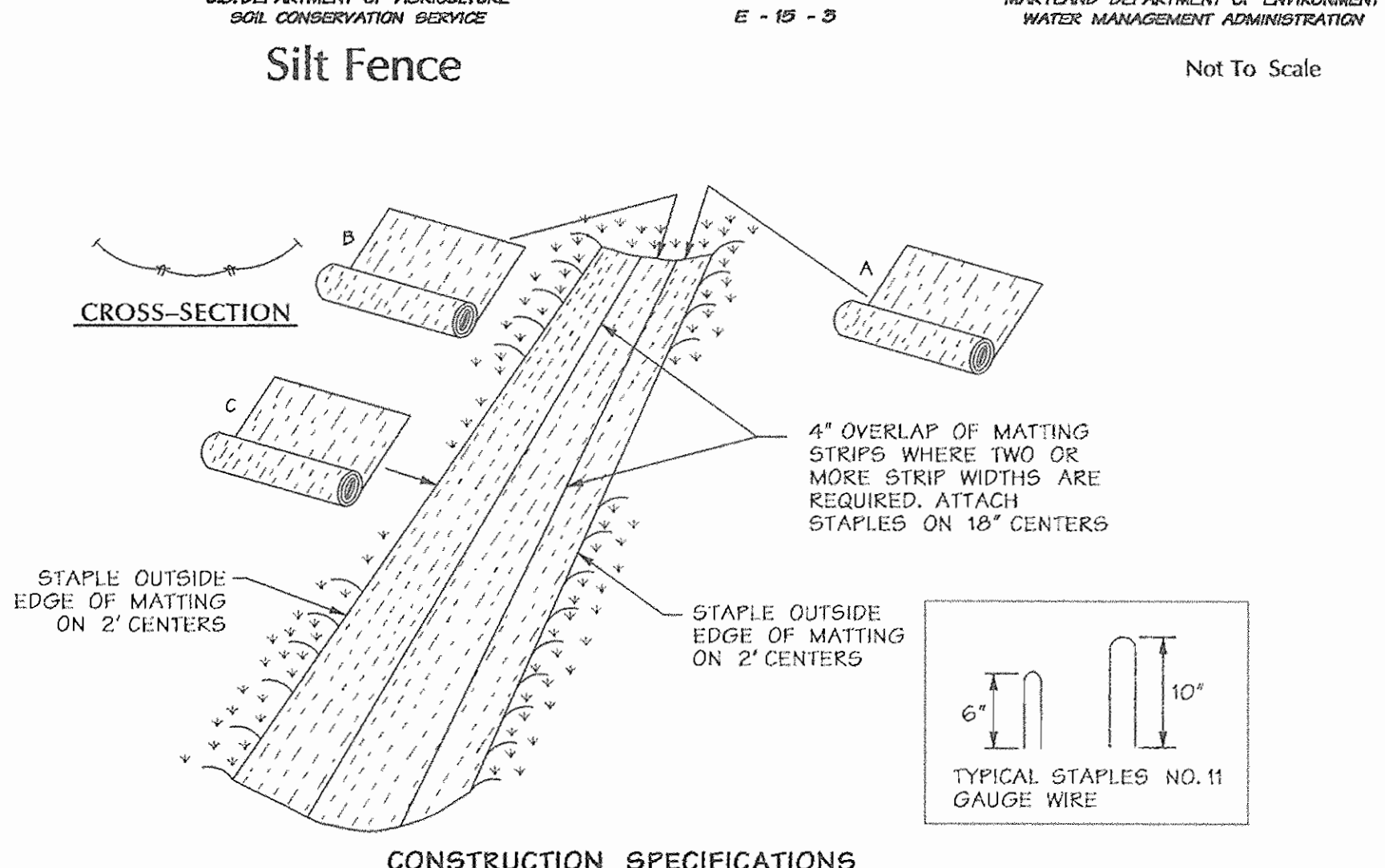
- TEMPORARY METHODS:
- MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
  - VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
  - TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN FLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE FLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR FLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
  - IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THE RUNOFF BEGINS TO FLOW.
  - BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
  - CALCIUM CHLORIDE - APPLY AT A RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.
- PERMANENT METHODS:
- PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER AND PERMANENT STABILIZATION WITH SOIL. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
  - TOPSOILING - COVERING WITH LESS ERODIBLE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
  - STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

### Dust Control Specifications



- #### CONSTRUCTION SPECIFICATIONS
- FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 1 1/2" x 1 1/2" SQUARE (MINIMUM) CUT, OR 1 1/2" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHING NOT LESS THAN 100 POUNDS PER LINEAR FOOT.
  - GEOTEXTILE 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	22 LBS/IN (MIN.)	TEST: MSMT 509
TENSILE RATE	0.5 GAL FT/MIN (MAX)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN)	TEST: MSMT 322
  - WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
  - SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.
- #### SILT FENCE DESIGN CRITERIA
- | SLOPE STEEPNESS         | (MAXIMUM) SLOPE LENGTH | (MAXIMUM) SILT FENCE LENGTH |
|-------------------------|------------------------|-----------------------------|
| FLATTER THAN 50:1 (2%)  | UNLIMITED              | UNLIMITED                   |
| 50:1 TO 10:1 (2-10%)    | 125 FEET               | 1,000 FEET                  |
| 10:1 TO 5:1 (20-33%)    | 100 FEET               | 750 FEET                    |
| 5:1 TO 3:1 (33-50%)     | 60 FEET                | 500 FEET                    |
| 3:1 TO 2:1 (33-50%)     | 40 FEET                | 250 FEET                    |
| 2:1 AND STEEPER (* 50%) | 20 FEET                | 125 FEET                    |
- NOTE: IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL REQUIRED.



- #### CONSTRUCTION SPECIFICATIONS
- KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IN 6".
  - STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
  - BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
  - STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
  - WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4", SHIPLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
  - THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.
- NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.
- U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE G-22-2
- MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### Erosion Control Matting AS-BUILT 10-07

Not To Scale

400 ZONE IMPROVEMENTS  
GORMAN ROAD / STEPHENS ROAD PRV

CAPITAL PROJECT: W-B270  
CONTRACT NO.: 44-4257  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

DESIGN BY: RLH/JLB  
DRAWN BY: KDE  
CHECKED BY: RLH  
DATE: 1-19-05

EROSION & SEDIMENT CONTROL SPECIFICATIONS & DETAILS

ISSUED FOR CONSTRUCTION 105

600 SCALE MAP NO. 47 BLOCK NO. 9

C-2  
SCALE: AS SHOWN  
SHEET 3 of 11



**STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION**

**SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS**

- A. SITE PREPARATION**
- Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
  - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
  - Schedule required soil test to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
- B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)**
- Soil test must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
  - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
  - Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 30 - 100% will pass through a #20 mesh sieve.
  - Incorporate lime and fertilizer into the top 3 - 5 inches of soil by disking or other suitable means.

- C. SEEDBED PREPARATION**
- TEMPORARY SEEDING**
    - Seedbed preparation shall consist of loosening soil to a depth of 3 inches to 5 inches by means of suitable agricultural or construction equipment, such as a disc harrow or chisel plow or ripper mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
    - Apply fertilizer and lime as prescribed on the plans.
    - Incorporate lime and fertilizer into the top 3 - 5 inches of soil by disking or other suitable means.
  - PERMANENT SEEDING**
    - Minimum soil conditions required for permanent vegetative establishment:
      - Soil pH shall be between 6.0 and 7.0.
      - Soluble salts shall be less than 500 parts per million (PPM).
      - The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if Lovegrass or Secelia Lespedeza is to be planted. Then a sandy soil (< 30% silt plus clay) would be acceptable.
      - Soil shall contain 1.5% minimum organic matter by weight.
      - Soil must contain sufficient pore space to permit adequate root penetration.
      - If these conditions cannot be met by the soils on site, adding topsoil is required in accordance with Section 21 - Standard and Specification for Topsoil.
    - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3 - 5 inches to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
    - Apply soil amendments as per soil test or as included on the plans.
    - Mix soil amendments into the top 3 - 5 inches of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1 - 3 inches of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

- D. SEED SPECIFICATIONS**
- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

- Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
- Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75-80 F. can weaken bacteria and make the inoculant less effective.

- E. METHODS OF SEEDING**
- Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or cultipacker seeder.
    - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following:
      - Nitrogen: maximum of 100 pounds per acre total of soluble
      - Nitrogen: P2O5 (phosphorous): 200 pounds per acre; K2O (potassium): 200 pounds per acre.
    - Lime: Use only ground agricultural limestone, (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
    - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
  - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
    - Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the temporary or permanent seeding summaries or tables 25 or 26. The seeded area shall then be rolled with a weighed roller to provide good seed soil contact.
    - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- Drill or cultipacker seeding: Mechanized seeders that apply and cover seed with soil.
  - Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering.
    - Seedbed must be firm after planting.
  - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- F. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)**
- Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weeds seeds as specified in the Maryland Seed Law.
  - Wood cellulose fiber mulch (WCFM)
    - WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
    - WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
    - WCFM, including dye shall contain no germination or growth inhibiting factors.
    - WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
    - WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
    - WCFM must conform to the following physical requirements:
      - Fiber length to approximately 10 mm, diameter approximately 1mm, pH range of 4.0 to 8.5, ash content of 1.8% maximum and water holding capacity of 90% minimum.
- Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

- G. MULCHING SEEDBED AREAS** - Mulch shall be applied to all seeded areas immediately after seeding.
- If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
  - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons per acre. Mulch shall be applied in a uniform loose depth of between 1 1/2 inches and 2 inches. Mulch applied shall achieve a uniform distribution and depth so that the surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons per acre.
  - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 pounds per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

- H. SECURING STRAW MULCH** - Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
- A mulch anchoring tool is a tractor drawn implement design to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
  - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
  - Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys or on crest of banks. The remainder of area should appear uniform after binder application. Synthetic binders - such as Acrylic DLR (agro-tack), DCA-70, Petroret, Terra Tack II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
  - Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

**SECTION II - TEMPORARY SEEDING - SEE SHEET 3**

**SECTION III - PERMANENT SEEDING - SEE SHEET 3**

**SECTION IV - SOD**

To provide quick cover on disturbed areas (2:1 grade or flatter)

- A. GENERAL SPECIFICATIONS**
- Class of turfgrass sod shall be Maryland or Virginia State certified or approved. Sod labels shall be made available to the job foreman and inspector.
  - Sod shall be machine cut at a uniform soil thickness of 9/16", plus or minus 1/16", at the time of cutting. Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the suppliers width length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable.
  - Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
  - Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
  - Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be approved by an agronomist or soil scientist prior to its installation.
- B. SOD INSTALLATION**
- During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
  - The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which air drying of the roots.
  - Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod roots and the underlying soil surface.
  - Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any piece of sod shall be completed within eight hours.

- C. SOD MAINTENANCE**
- In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4 inches. Watering should be done during the heat of the day to prevent wilting.
  - After the first week, sod watering is required as necessary to maintain adequate moisture content.
  - The first mowing of sod should not be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2 inches and 3 inches unless otherwise specified.

**SECTION V - TURFGRASS ESTABLISHMENT**

Areas where turfgrass may be desired may include lawns, parks, playgrounds, and commercial sites which will receive a medium high level of maintenance. Areas to receive seed shall be tilled by disking or other approved methods to a depth of 2 to 4 inches, leveled and raked to prepare a proper seedbed. Stones and debris over 1/2 inches in diameter shall be removed. The resulting seedbed shall be in such condition that future mowing of grasses will pose no difficulty.

Note: Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

- A. TURFGRASS MIXTURES**
- Kentucky Bluegrass - Full sun mixture - For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended certified Kentucky Bluegrass cultivars seeding rate: 1.5 to 2.0 pounds per 1000 square feet. A minimum of three Bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.
  - Kentucky Bluegrass/Perennial Ryegrass - Full sun mixture - For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass cultivars/certified Kentucky Bluegrass seeding rate: 2 pounds mixture per 1000 square feet. A minimum of 3 Kentucky Bluegrass cultivars must be chosen, with each cultivar ranging from 10% to 35% of the mixture by weight.
  - Tall Fescue/Kentucky Bluegrass - Full sun mixture - For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: certified Tall Fescue cultivars 95-100%, certified Kentucky Bluegrass cultivars 0 - 5%, seeding rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
  - Kentucky Bluegrass/Fine Fescue - Shade mixture - For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: certified Kentucky Bluegrass cultivars 30-40% and certified Fine Fescue and 60-70%. Seeding rate: 1 1/2 - 3 pounds per 1000 square feet. A minimum of 3 Kentucky Bluegrass cultivars must be chosen. With each cultivar ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.

Note: Turfgrass varieties should be selected from those listed in the most current University of Maryland publication, agronomy mimeo number 77, "Turfgrass Cultivar Recommendations for Maryland".

- B. IDEAL TIMES OF SEEDING**
- Western Maryland: March 15 - June 1, August 1 - October 1 (hardiness zones - 5B, 6A).  
 Central Maryland: March 1 - May 15, August 15 - October 15 (hardiness zone - 6B).  
 Southern Maryland, Eastern Shore: March 1 - May 15, August 15 - October 15 (hardiness zones - 7A, 7B).
- C. IRRIGATION**
- If soil moisture is deficient, supply new seedlings with adequate water for plant growth (1/2" - 1" every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.
- D. REPAIRS AND MAINTENANCE**
- Inspect all seeded areas for failures and make necessary repairs, replacements, and reseeding within the planting season.
- Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.
  - If the stand provides less than 40% ground coverage, re-establish following original lime, fertilizer, seedbed preparation and seeding recommendations.
  - If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing using half of the rates originally applied may be necessary.
  - Maintenance fertilizer rates for permanent seedings are shown in Table 24, for lawns and other medium high maintenance turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" bulletin number 171.

**TABLE 28 STONE SIZE**

	Size Range	D <sub>50</sub>	D <sub>100</sub>	AASHTO	Weight
Number 57 *	3/8" - 1 1/2"	1/2"	1 1/2"	M-43	N/A
Number 1	2" - 3"	2 1/2"	3"	M-43	N/A
Rip-Rap **	4" - 7"	5 1/2"	7"	N/A	N/A
Class I	N/A	9.5"	15"	N/A	150 Lb. max.
Class II	N/A	16"	24"	N/A	700 Lb. max.
Class III	N/A	23"	34"	N/A	2000 Lb. max.

\* This classification is to be used on the inside face of stone outlets and check dams.  
 \*\* This classification is to be used when ever small rip-rap is required. The State Highway Administration designation for this stone is stone for gabions (905.01.04).

**STONE FOR GABION BASKETS**

Basket Thickness		Size of Individual Stones	
Inches	MM	Inches	MM
6	150	3 - 5	75 - 125
9	225	4 - 7	100 - 175
12	300	4 - 7	100 - 175
18	460	4 - 7	100 - 175
36	910	4 - 12	100 - 300

Note: Recycled concrete equivalent may be substituted for all stone classifications. Recycled concrete equivalent shall be concrete broken into the sizes meeting the appropriate classification, shall contain no steel reinforcement, and shall have a density of 150 pounds per cubic foot.

**TABLE 27 GEOTEXTILE FABRICS**

Class	Apparent Opening Size MM. Max.	Grab Tensile Strength Lb. Min.	Burst Strength PSI. Min.
A	0.30 **	250	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	90	145
F (silt fence)	0.40-0.80 *	90	190

\* US Standard sieve CW-02215      \*\* .50 MM max. for super silt fence

The properties shall be determined in accordance with the following procedures:  
 - Apparent opening size mm# 323  
 - Grab tensile strength ASTM D 1682: 4 x 8" specimen, 1 x 2" clamps, 12" min. strain rate in both principal directions of geotextile fabric.  
 - Burst strength: ASTM D 3786.

The fabric shall be inert to commonly encountered chemicals and hydrocarbons, and will be rot and mildew resistant. It shall be manufactured from fibers consisting of long chain synthetic polymers, and composed of a minimum of 95% by weight of polyolefins, polyesters, or polyamides. The geotextile fabric shall resist deterioration from ultraviolet exposure.

In addition, classes A through E shall have a 0.01 cm./sec. minimum permeability when tested in accordance with mm# 507, and an apparent minimum elongation of 20 percent (20%) when tested in accordance with the grab tensile strength requirements listed above.

Silt fence  
 Class F geotextile fabric for silt fence shall have a 50 lb./in. minimum tensile strength and a 20 lb./in. minimum tensile modulus when tested in accordance with mm# 509. The material shall also have a 0.3 gal./ft.<sup>2</sup> min. flow rate and seventy-five percent (75%) minimum filtering efficiency when tested in accordance with mm# 322. Geotextile fabrics used in the construction of silt fence shall resist deterioration from ultraviolet exposure. The fabric shall contain sufficient amount of ultraviolet ray inhibitors and stabilizers to provide a minimum of 12 months of expected usable construction life at a temperature range of 0 to 120 degrees Fahrenheit.

II - 24 - 1

**MATERIALS SPECIFICATIONS**

**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 SOIL CONSERVATION DISTRICT."

\_\_\_\_\_  
 DATE

\_\_\_\_\_  
 DATE

**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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

\_\_\_\_\_  
 DATE

\_\_\_\_\_  
 DATE

**Soil Developer's Certification - No Ponds**

AS-BUILT 10-07

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE      G - 20 - 1A      MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**DMW**  
 Daft-McCune-Walter, Inc.  
 200 East Pennsylvania Avenue  
 Towson, Maryland 21286  
 (410) 296-3353  
 Fax 296-4706

A Team of Land Planners,  
 Landscape Architects,  
 Golf Course Architects,  
 Engineers, Surveyors &  
 Environmental Professionals

NOTE: DMW CERTIFICATION IS FOR SEDIMENT CONTROL DESIGN ONLY

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND

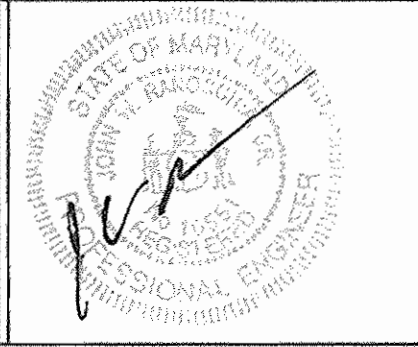
\_\_\_\_\_  
 DIRECTOR OF PUBLIC WORKS - DATE

\_\_\_\_\_  
 CHIEF - BUREAU OF ENGINEERING - DATE

\_\_\_\_\_  
 CHIEF - BUREAU OF UTILITIES - DATE

\_\_\_\_\_  
 CHIEF - UTILITY DESIGN DIVISION - DATE

**O'BRIEN & GERE ENGINEERS, INC.**  
 5401 Corporate Drive  
 Suite 403  
 Landover, Maryland 20785  
 (301) 731-5622  
 FAX: (301) 577-4737



DESIGN BY:	RLH/JLB			
DRAWN BY:	KDE			
CHECKED BY:	RLH			
DATE:	1-19-05	A	ISSUED FOR CONSTRUCTION	105
BY	NO.	REVISION	DATE	600 SCALE MAP NO. 47 BLOCK NO. 9

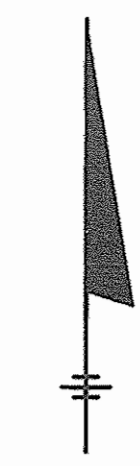
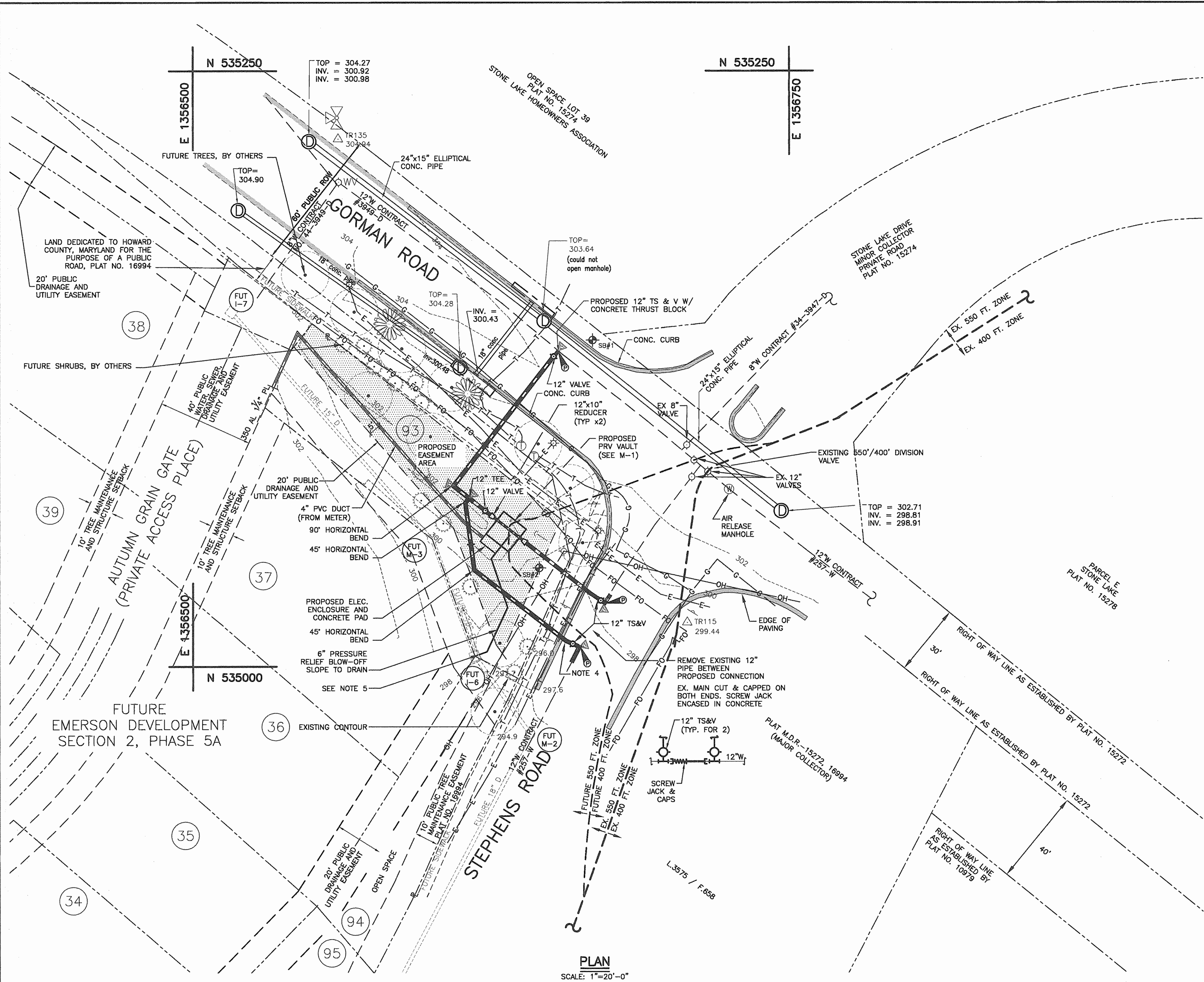
**EROSION & SEDIMENT CONTROL SPECIFICATIONS & DETAILS**

**400 ZONE IMPROVEMENTS**  
**GORMAN ROAD / STEPHENS ROAD PRV**

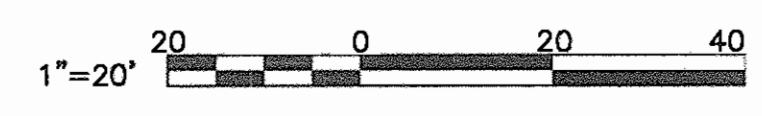
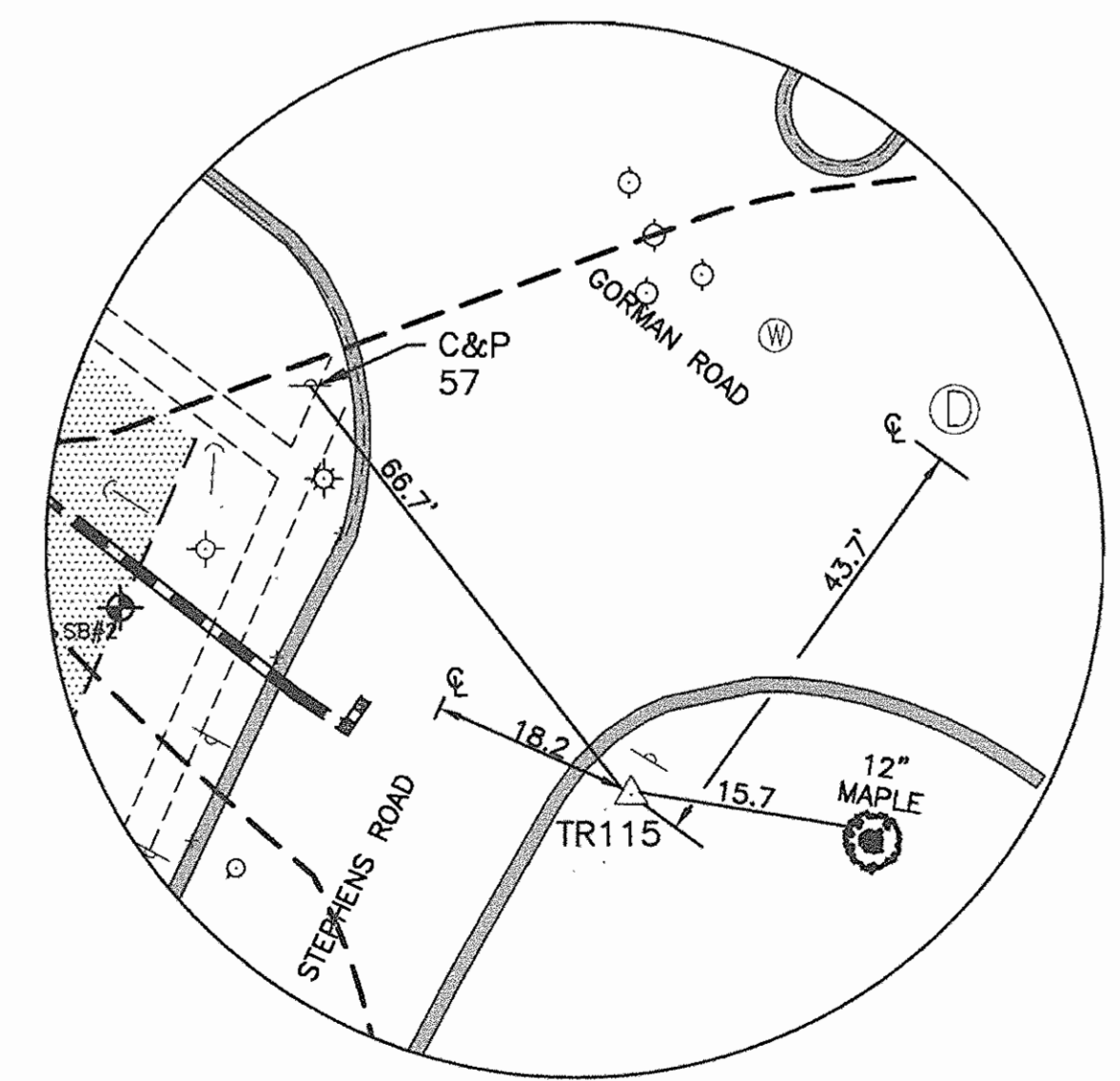
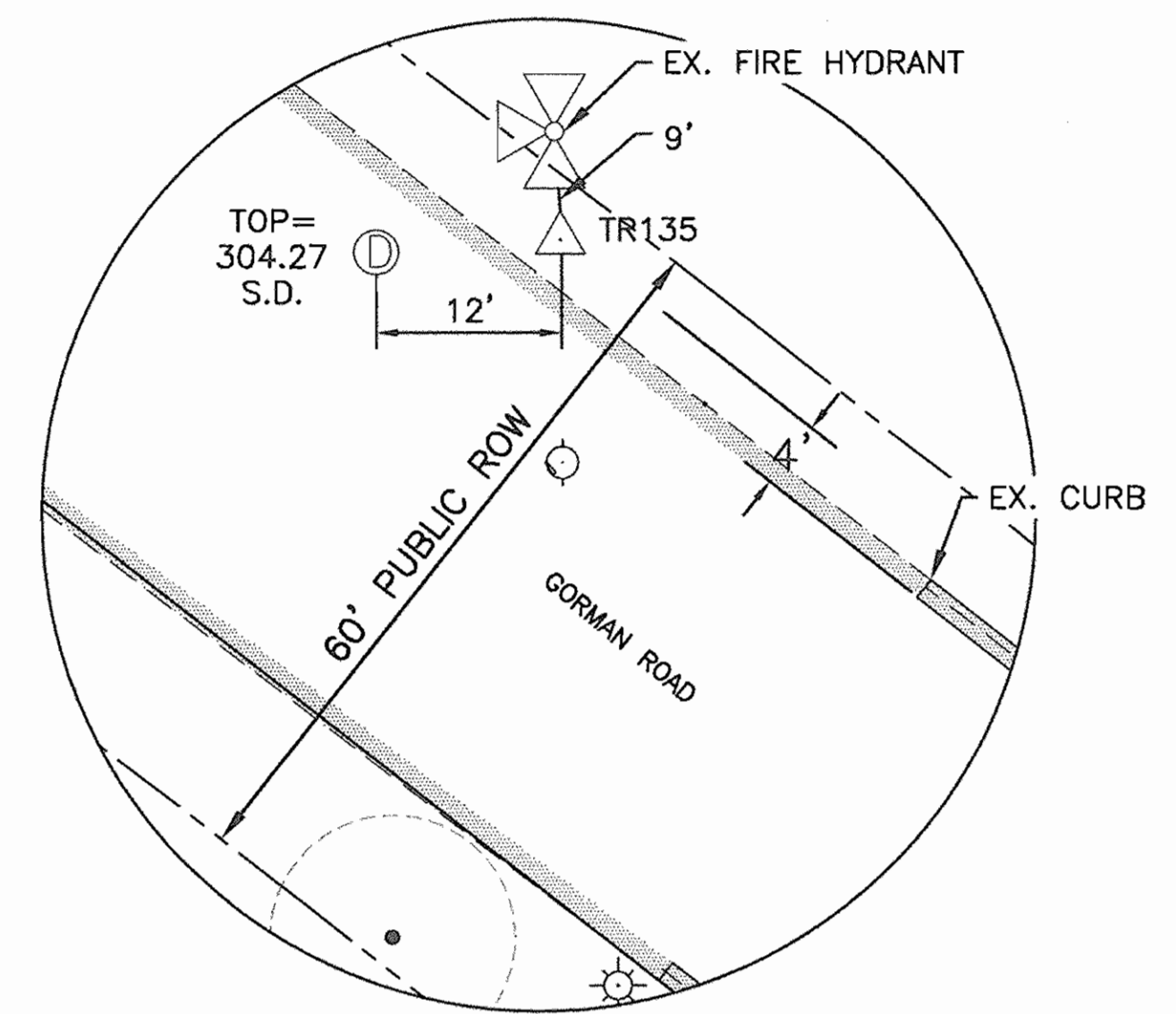
CAPITAL PROJECT: W-8270  
 CONTRACT No.: 44-4257  
 ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

C-3
SCALE: AS SHOWN
SHEET 4 of 11





- NOTES:**
1. LOCATION OF EXISTING UTILITIES ARE APPROXIMATE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL UNDERGROUND UTILITIES AND PROPOSED TIE-IN POINTS PRIOR TO CONSTRUCTION.
  2. UTILIZE CONCRETE THRUST RESTRAINT AT EACH TIE-IN POINT (TYP. x3). ALL PIPING SHALL BE RESTRAINED JOINT. THRUST RESTRAINT (CONCRETE AND MECHANICAL TYPE) SHALL BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
  3. NEW LANDSCAPING NOT SHOWN FOR CLARITY. SEE DWG. C-5 AND C-6.
  4. 11.25-DEGREE BEND. PRIOR TO CONSTRUCTION FIELD VERIFY ELEVATION AND ORIENTATION OF EX. WATER MAIN ON STEPHENS ROAD.
  5. INSTALLED 6-INCH HYDROGATE, MODEL 50C, AT PIPE END WITHIN SD INLET.

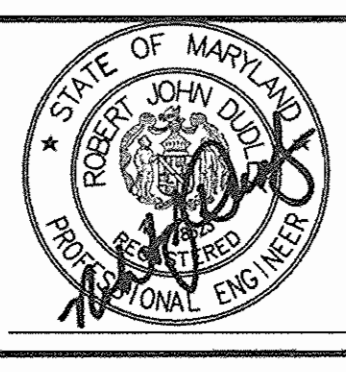


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

Director of Public Works: *James M. ...* DATE: 2/22/08  
 Chief - Bureau of Engineering: *Robert ...* DATE: 2/21-08  
 Chief, Bureau of Utilities: *Steve ...* DATE: 2/21-08  
 Chief, Utility Design Division: *...* DATE: 2/21-08

**O'BRIEN & GERE ENGINEERS, INC.**  
8401 Corporate Drive  
Suite 400  
Landover, Maryland 20785  
(301) 731-5622  
FAX: (301) 577-4737



DSN. BY:	MJT		
DRN. BY:	CMD	3	AS-BUILT
CHK. BY:	RJD	2	EASEMENT CLARIFICATIONS
		1	PROPERTY BOUNDARY CORRECTIONS
		0	ISSUED FOR CONSTRUCTION
DATE:	2/04/05	BY	NO.
		REVISION	DATE

**PARTIAL SITE PLAN**

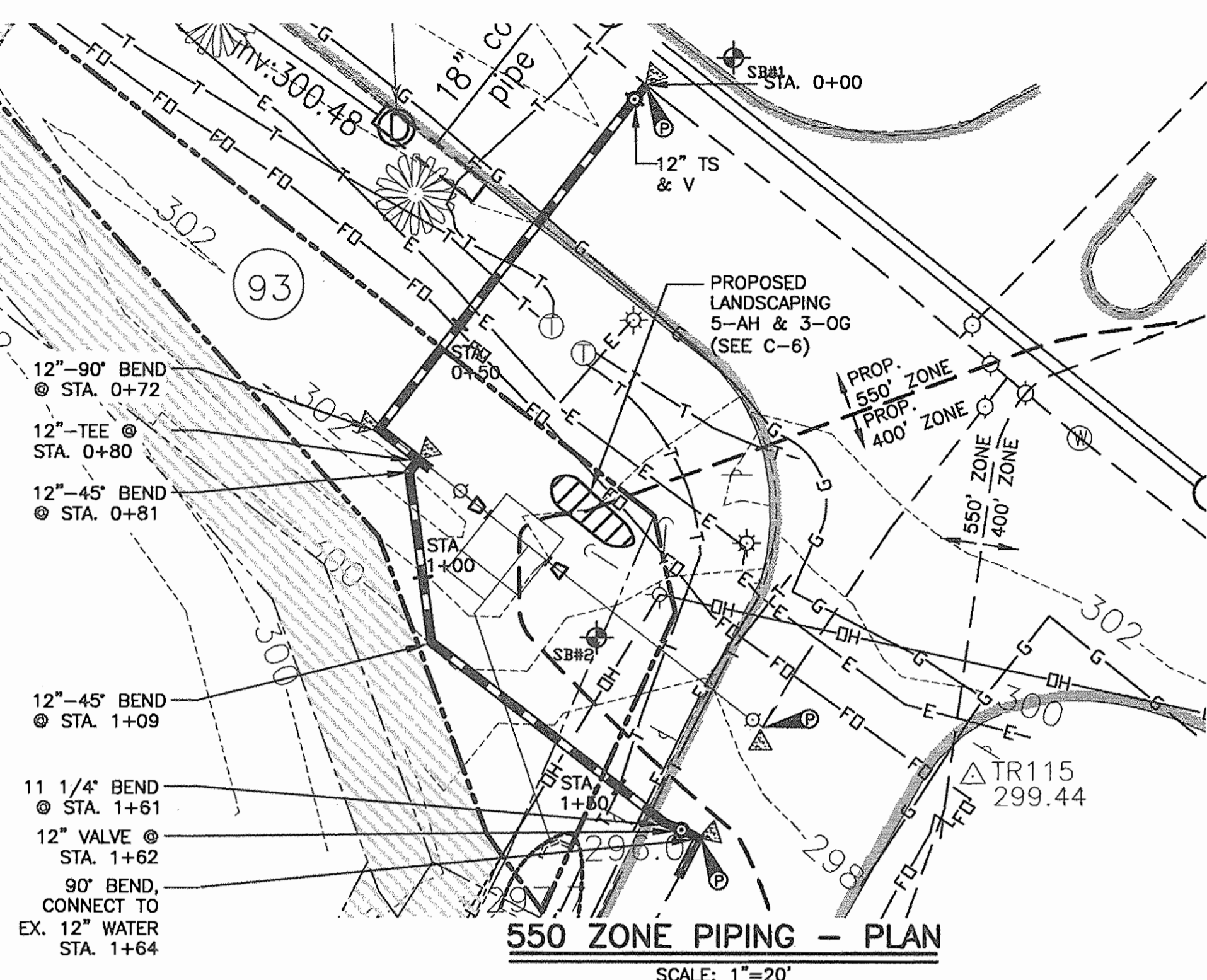
600' SCALE MAP NO. 47 BLOCK NO. 9

**AS-BUILT REPLACEMENT SHEET 10-07**

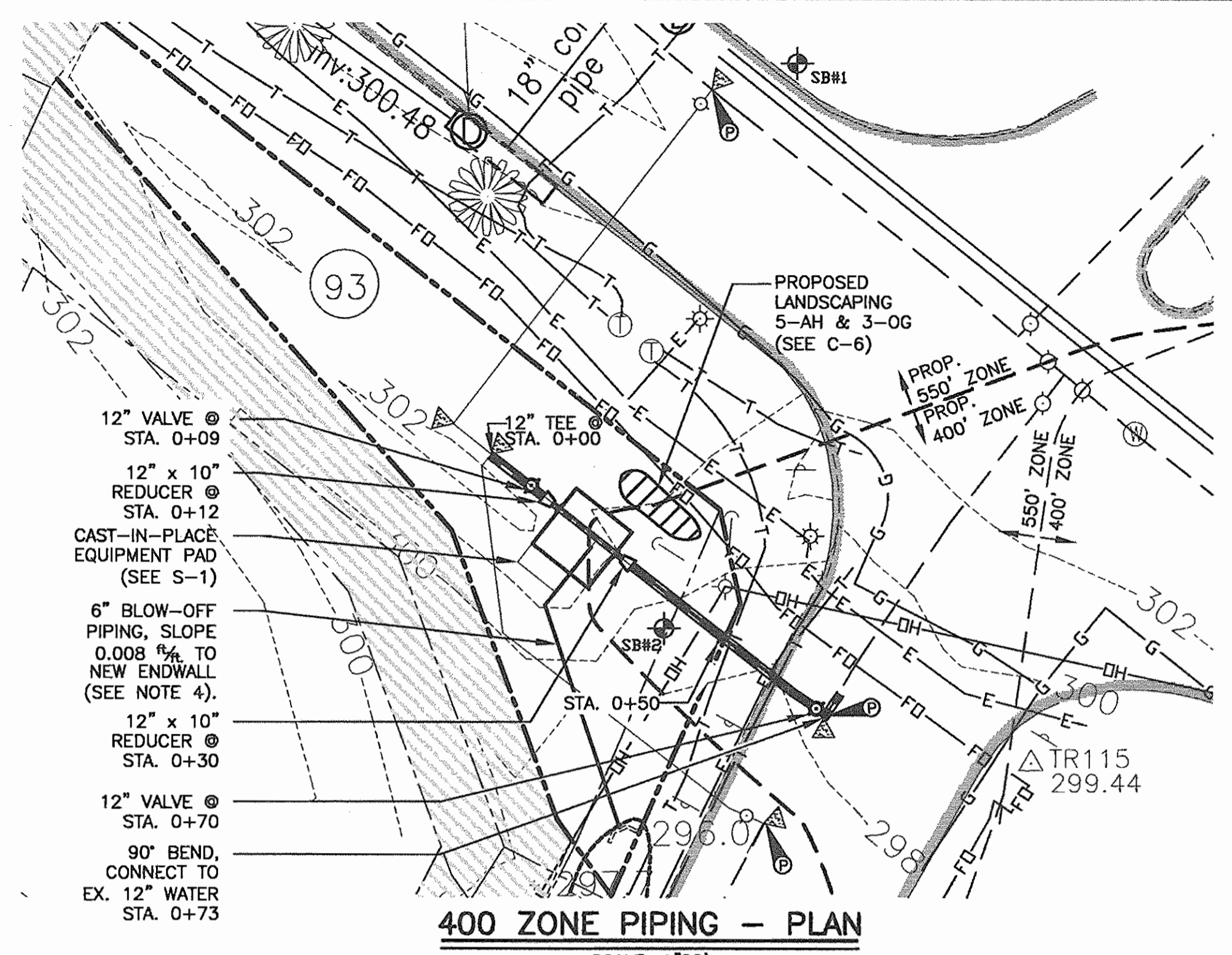
400 ZONE IMPROVEMENTS -  
GORMAN ROAD / STEPHENS ROAD PRV

CAPITAL PROJECT: W-8270  
CONTRACT NO.: 44-4257  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

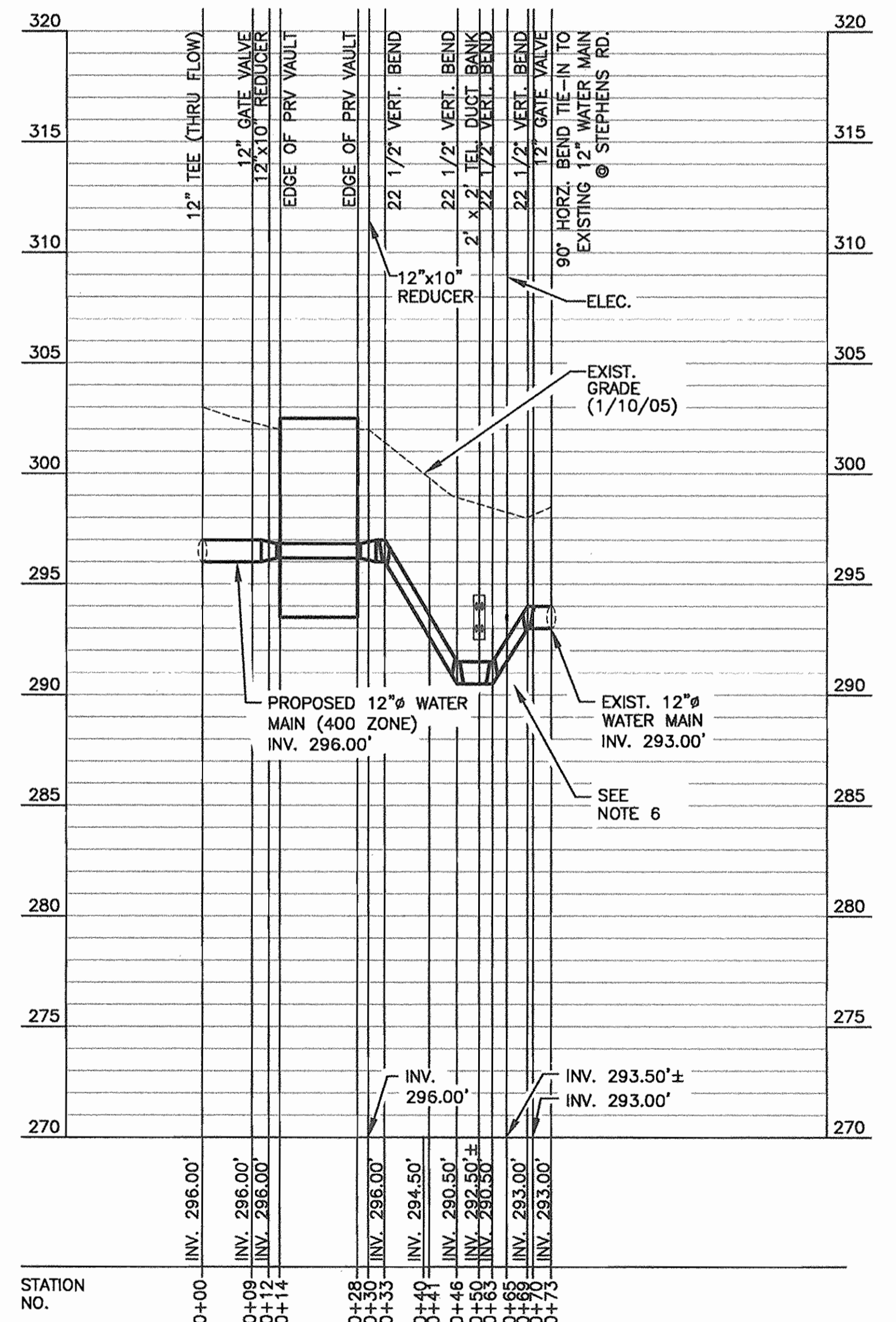
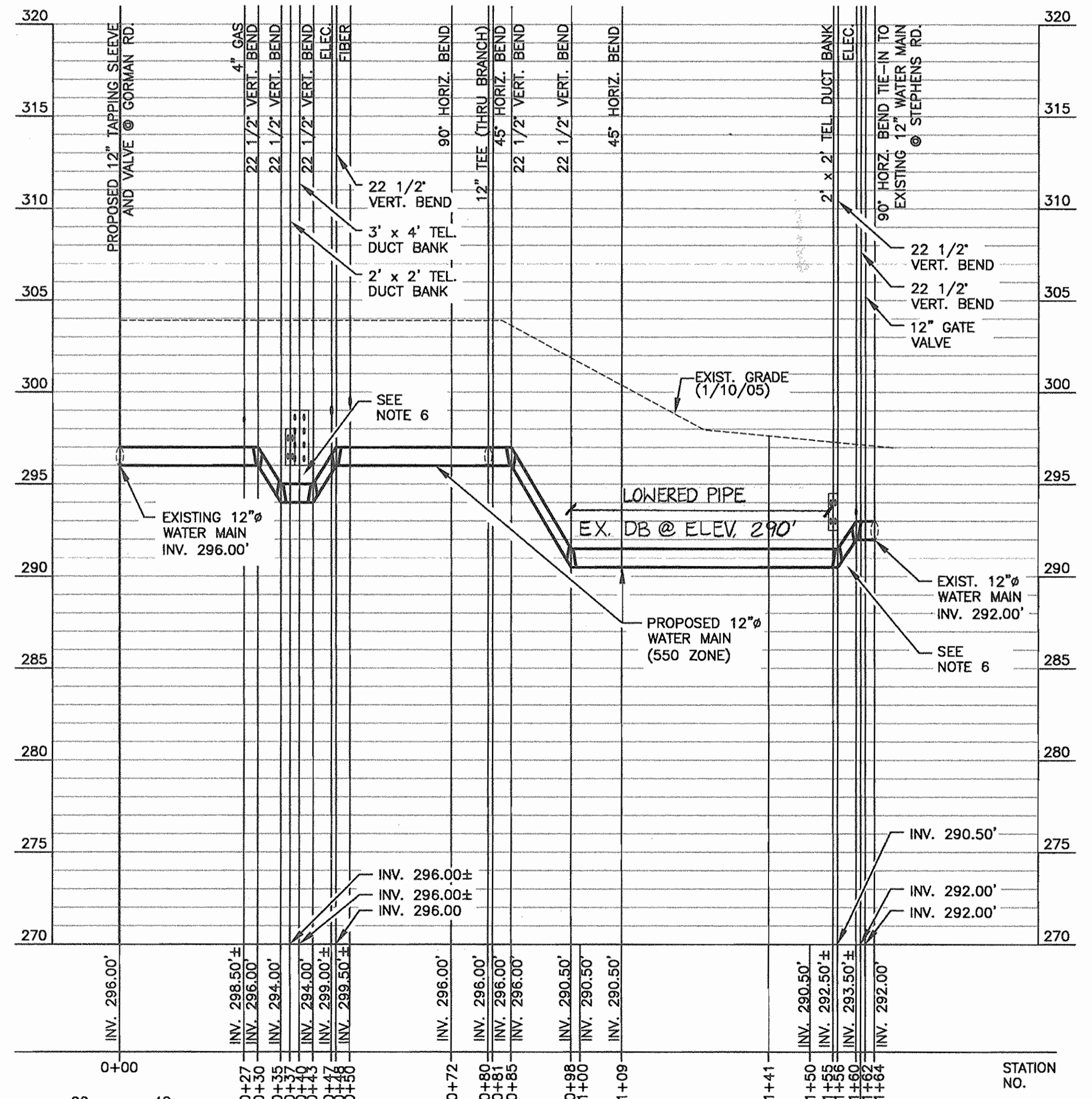




**550 ZONE PIPING - PLAN**  
SCALE: 1"=20'

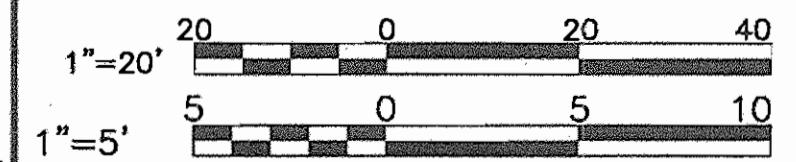


**400 ZONE PIPING - PLAN**  
SCALE: 1"=20'



- PLAN NOTES**
- GRADE ELEVATIONS BASED ON TOPOGRAPHIC SURVEY PERFORMED ON 1/10/05. FIELD VERIFY EXISTING GRADES PRIOR TO CONSTRUCTION.
  - FIELD VERIFY EXISTING WATERMAIN ELEVATIONS PRIOR TO CONSTRUCTION.
  - CONTRACTOR SHALL FIELD VERIFY ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
  - ROUTE PRESSURE RELIEF BLOW-OFF PIPING TO EXISTING RE-GRADED DRAINAGE SWALE AND PROVIDE TYPE "C" END WALL (SD-5.21). INSTALL "FLAPPER" STYLE CHECK VALVE (HYDROGATE, MODEL 50C OR EQUAL) ON END WALL. CONTRACTOR TO FIELD VERIFY PIPING ROUTE PRIOR TO CONSTRUCTION.
  - FROM STATIONS 0+00 TO 0+35 AND 1+41 TO 1+64 ON THE 550 ZONE PIPING PLAN AND FROM STATIONS 0+41 TO 0+73 ON THE 400 ZONE PIPING PLAN, REFILL TRENCH WITH #57 GRAVEL TO ONE FOOT ABOVE CROWN OF THE PIPE. THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED WITH SPECIAL BACKFILL IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
  - BACKFILL AREA BETWEEN PIPE INVERT AND THE BOTTOM OF THE EXISTING DUCTBANKS WITH #57 GRAVEL IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.

**PROFILES**  
HORIZ. SCALE: 1"=20'  
VERT. SCALE: 1"=5'



**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

Director of Public Works: *John J. ...* 2/15/05  
 Chief - Bureau of Engineering: *Robert ...* 2/19/05  
 Chief, Bureau of Utilities: *Red ...* 2-15-05  
 Chief, Utility Design Division: *...* 2-14-05

**O'BRIEN & GERE**  
ENGINEERS, INC.  
8401 Corporate Drive  
Suite 400  
Landover, Maryland 20785  
(301) 731-5622  
FAX: (301) 577-4737



DSN. BY:	MJT	
DRN. BY:	CMD	
CHK. BY:	RJD	
DATE:	2/4/05	
NO.	1	PROPERTY BOUNDARY CORRECTION 2/05
NO.	0	ISSUED FOR CONSTRUCTION 2/05
NO.		REVISION

**400 & 550 ZONE PIPING PLAN & PROFILES**

60' SCALE MAP NO. 47 BLOCK NO. 9

**400 ZONE IMPROVEMENTS**  
GORMAN ROAD / STEPHENS ROAD PRV

CAPITAL PROJECT: W-8270  
 CONTRACT NO.: 44-4257  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND



LANDSCAPE SCHEDULE

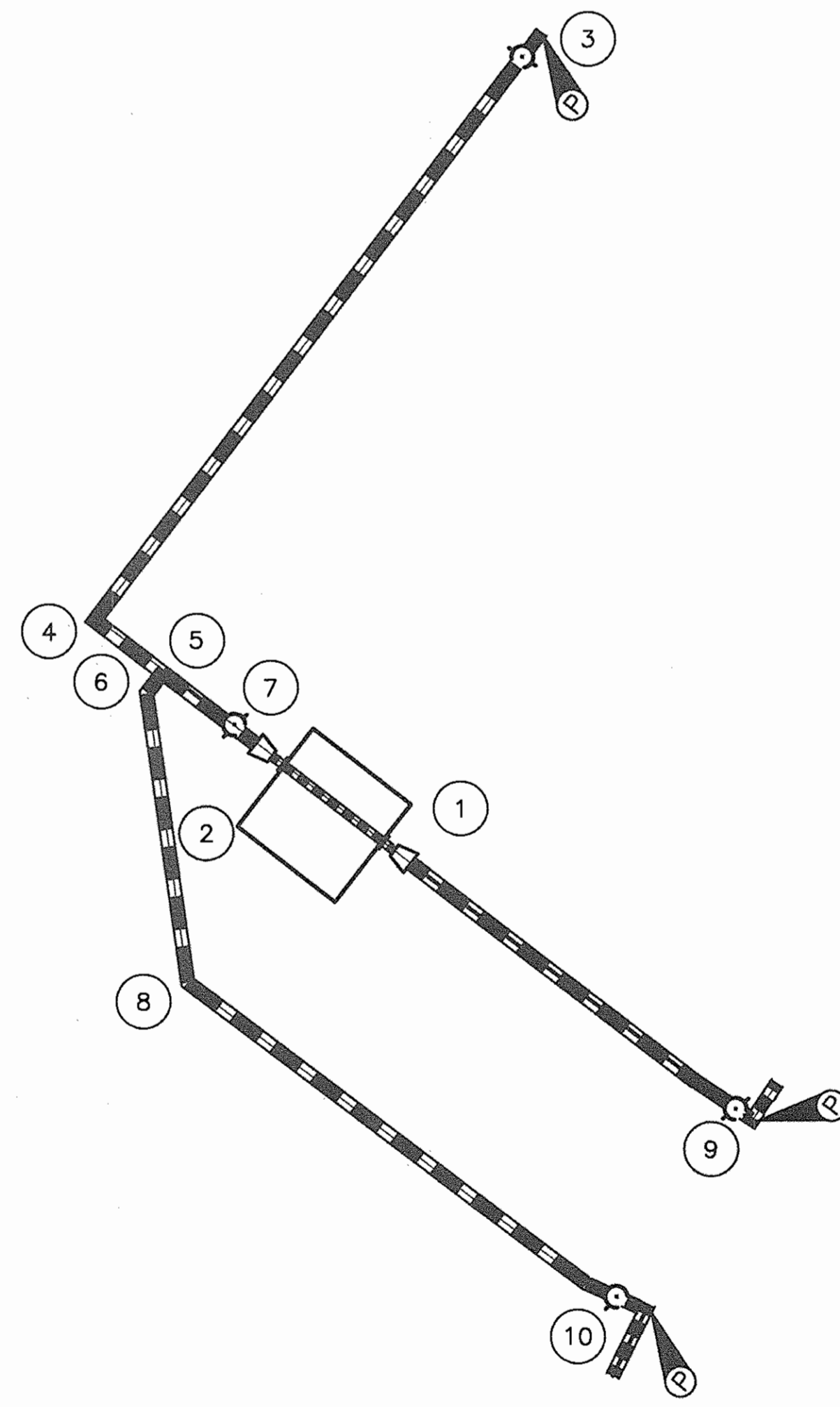
KEY	BOTANICAL NAME	COMMON NAME	Qty.	Size	Container	Spacing
AH	Ilex Opaca	American Holly	5	18" - 24"	3 gal.	2 - 3 ft.
OG	Pennisetum	Ornamental Grass	3	3" - 6"	2" Plugs	2 - 3 ft.

LANDSCAPE NOTES:

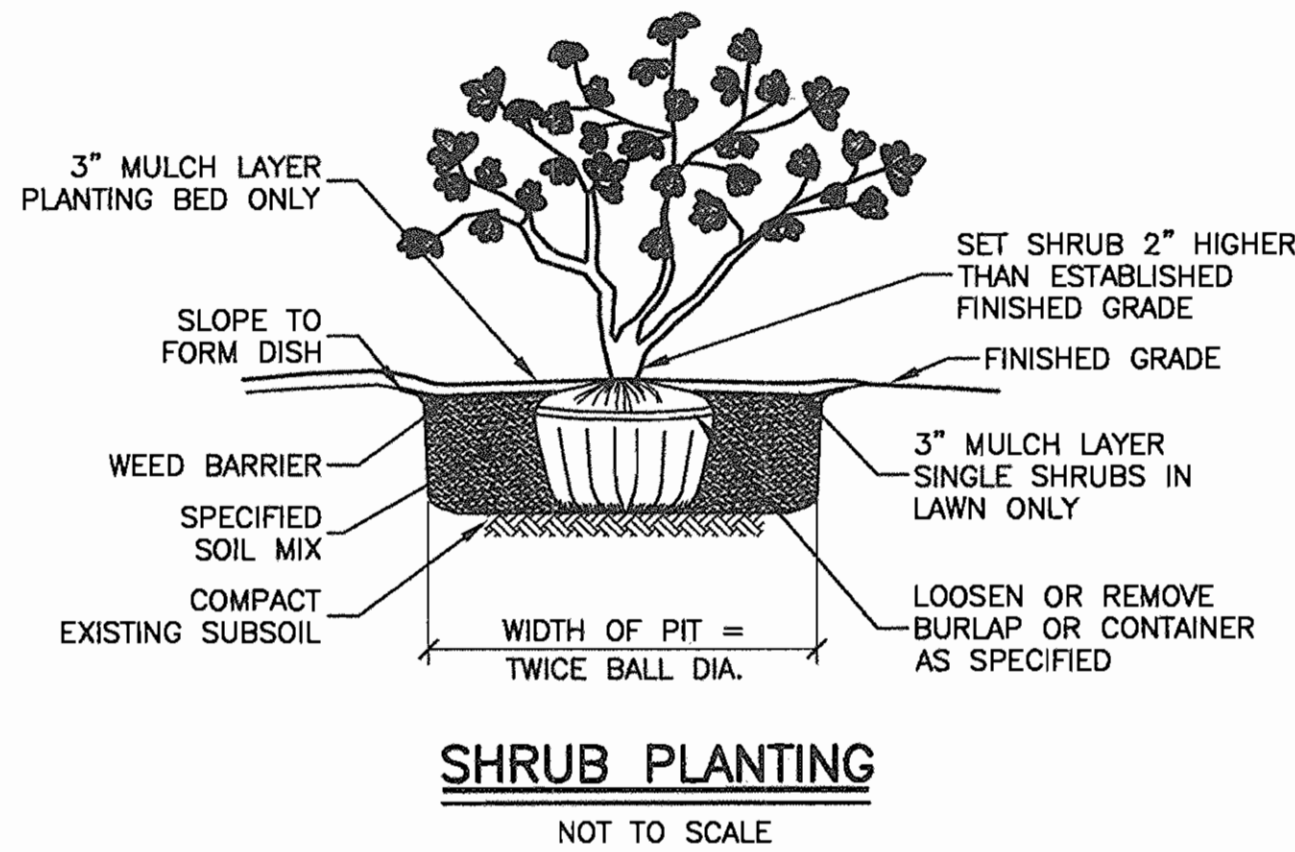
- THE GRASSES SHALL BE PLANTED IN FRONT OF THE HOLLIES AND BE PLANTED IN A STAGGERED (OFFSET 2 - 3 FEET) PATTERN.
- NO CHANGE IN QUANTITY, SIZE, KIND OR QUALITY OF PLANT SPECIFIED WILL BE PERMITTED WITHOUT THE APPROVAL OF THE OWNER.
- TOPSOIL SHALL BE FERTILE, FRIABLE AND TYPICAL OF THE LOCALITY; IT SHALL BE FREE OF STONES, LUMPS, PLANTS, ROOTS, STICKS AND SHALL NOT BE DELIVERED IN A FROZEN OR MUDDY CONDITION.
- PLANTING SOIL (BACKFILL MIX) SHALL BE FIVE PARTS TOPSOIL AND ONE PART WET LOOSE PEATMOSS.
- APPLICABLE SPECIFICATIONS AND STANDARDS:
  - "STANDARDIZED PLANT NAMES." LATEST EDITION AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE.
  - "AMERICAN STANDARD FOR NURSERY STOCK." LATEST EDITION, AMERICAN ASSOCIATION OF NURSERMEN.
- STAKE OUT ON THE GROUND LOCATIONS FOR PLANTS AND OUTLINES OF AREA TO BE PLANTED AND OBTAIN APPROVAL OF THE OWNER BEFORE EXCAVATION IS BEGUN.

RESTORATION NOTES:

- ALL BITUMINOUS CONCRETE, CURBING, AND GUTTERS DISTURBED WITHIN GORMAN ROAD AND STEPHENS ROAD SHALL BE REPLACED IN KIND TO MATCH EXISTING GRADES. ALL RESTORATION WORK SHALL CONSTRUCTED TO HOWARD COUNTY STANDARDS.
- ALL REMAINING AREAS DISTURBED DURING CONSTRUCTION SHALL BE SEEDED PER HOWARD COUNTY STANDARDS.



**SURVEY CONTROL**  
NOT TO SCALE



**SHRUB PLANTING**

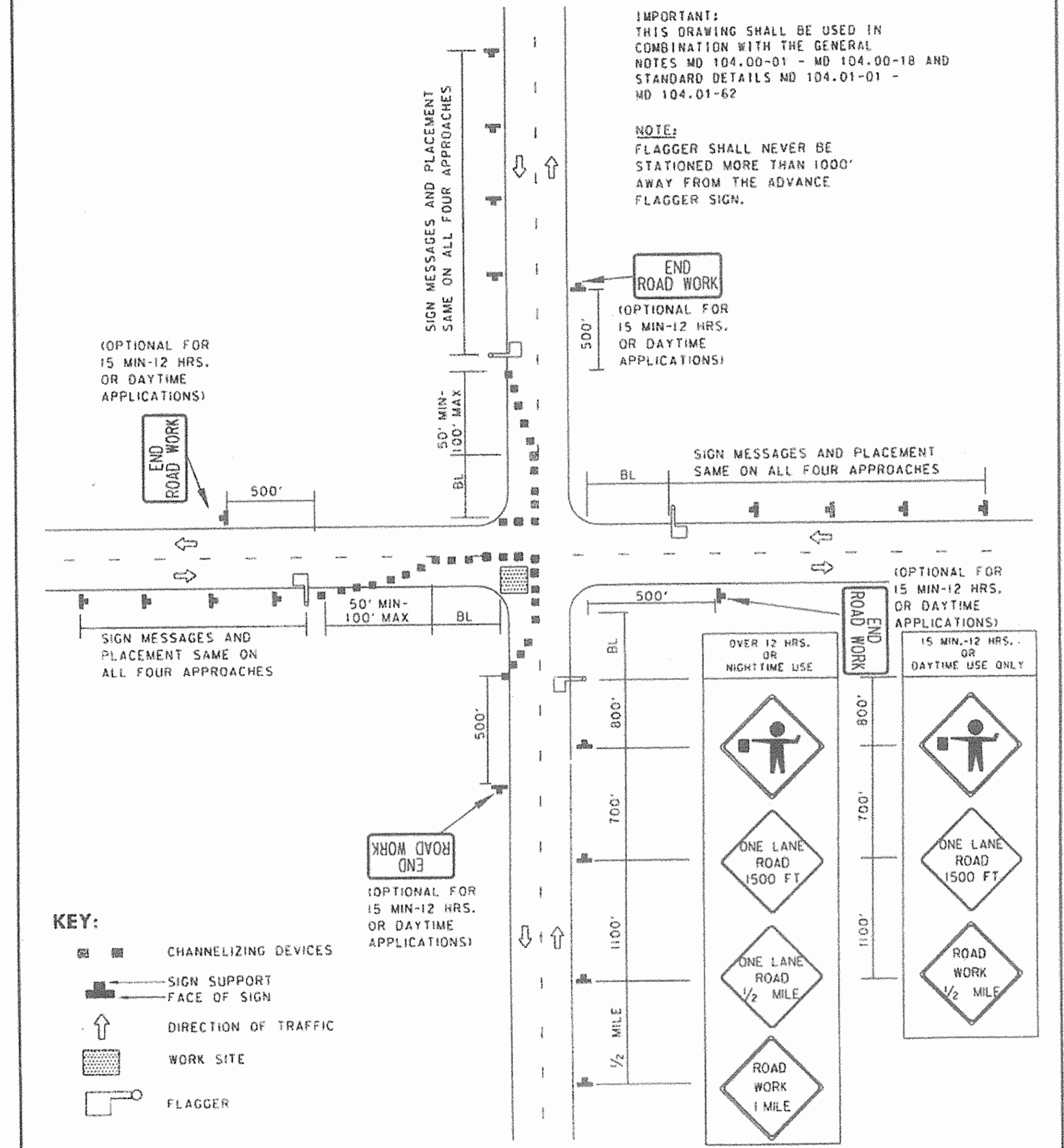
NOT TO SCALE

SURVEY CONTROL

LOCATION	STRUCTURE	NORTHING	EASTING
1	EAST CORNER OF PRV VAULT	535057.63	1356639.66
2	WEST CORNER OF PRV VAULT	535055.70	1356622.81
3	12" TIE-IN @ GORMAN ROAD	535132.57	1356653.06
4	90° HORIZONTAL BEND @ STA. 0+72	535076.05	1356609.39
5	12" TEE @ STA. 0+80	535070.88	1356615.86
6	45° HORIZONTAL BEND @ STA. 0+81	535068.78	1356614.24
7	12" ISOLATION VALVE @ STA. 0+09	535065.57	1356622.61
8	45° HORIZONTAL BEND @ STA. 1+09	535040.54	1356617.85
9	NORTH TIE-IN @ STEPHENS ROAD	535026.56	1356672.50
10	SOUTH TIE-IN @ STEPHENS ROAD	535008.31	1356662.02

SURVEY CONTROL NOTE: CONNECTION LOCATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY LOCATION OF EXISTING WATER MAINS.

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



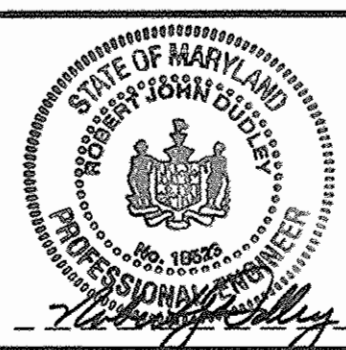
SPECIFICATION 104	CATEGORY CODE ITEMS	<b>Maryland Department of Transportation</b> <b>STATE HIGHWAY ADMINISTRATION</b> STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES <b>INTERSECTION FLAGGING OPERATION</b> 2-LANE, 2-WAY GREATER THAN 40 MPH STANDARD NO. MD 104.02-13	
APPROVED	DIRECTOR - OFFICE OF TRAFFIC AND SAFETY	APPROVAL - SHA REVISIONS APPROVAL - FEDERAL HIGHWAY ADMINISTRATION APPROVAL 8-29-03 APPROVAL 9-23-03	APPROVAL - FEDERAL HIGHWAY ADMINISTRATION APPROVAL 8-29-03 APPROVAL 9-23-03

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 2/15/05  
 Chief - Bureau of Engineering: *[Signature]* 2/14/05  
 Chief, Bureau of Utilities: *[Signature]* 2-15-05  
 Chief, Utility Design Division: *[Signature]* 2-14-05

**O'BRIEN & GERE**  
ENGINEERS, INC.

8401 Corporate Drive  
Suite 400  
Landover, Maryland 20785  
(301) 731-5622  
FAX: (301) 577-4737



DSN. BY: MJT			
DRN. BY: CMD			
CHK. BY: RJD			
DATE: 2/1/05	0	ISSUED FOR CONSTRUCTION	2/05
BY NO.		REVISION	

TEMPORARY TRAFFIC CONTROL  
MEASURES & PLANTING  
SPECIFICATIONS

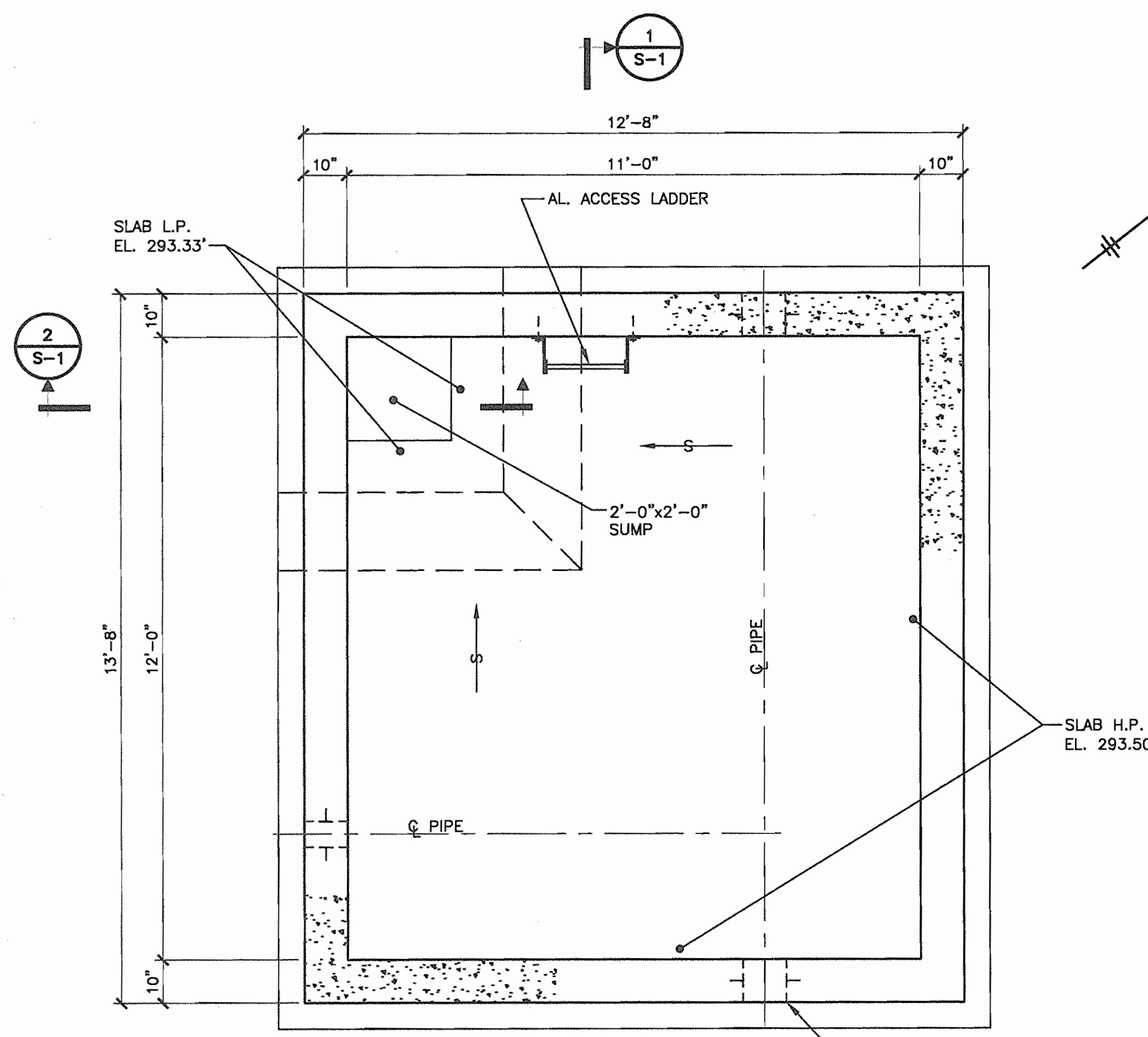
600' SCALE MAP NO. 47 BLOCK NO. 9

400 ZONE IMPROVEMENTS -  
GORMAN ROAD / STEPHENS ROAD PRV

CAPITAL PROJECT: W-8270  
CONTRACT NO.: 44-4257  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

AS-BUILT 10-07

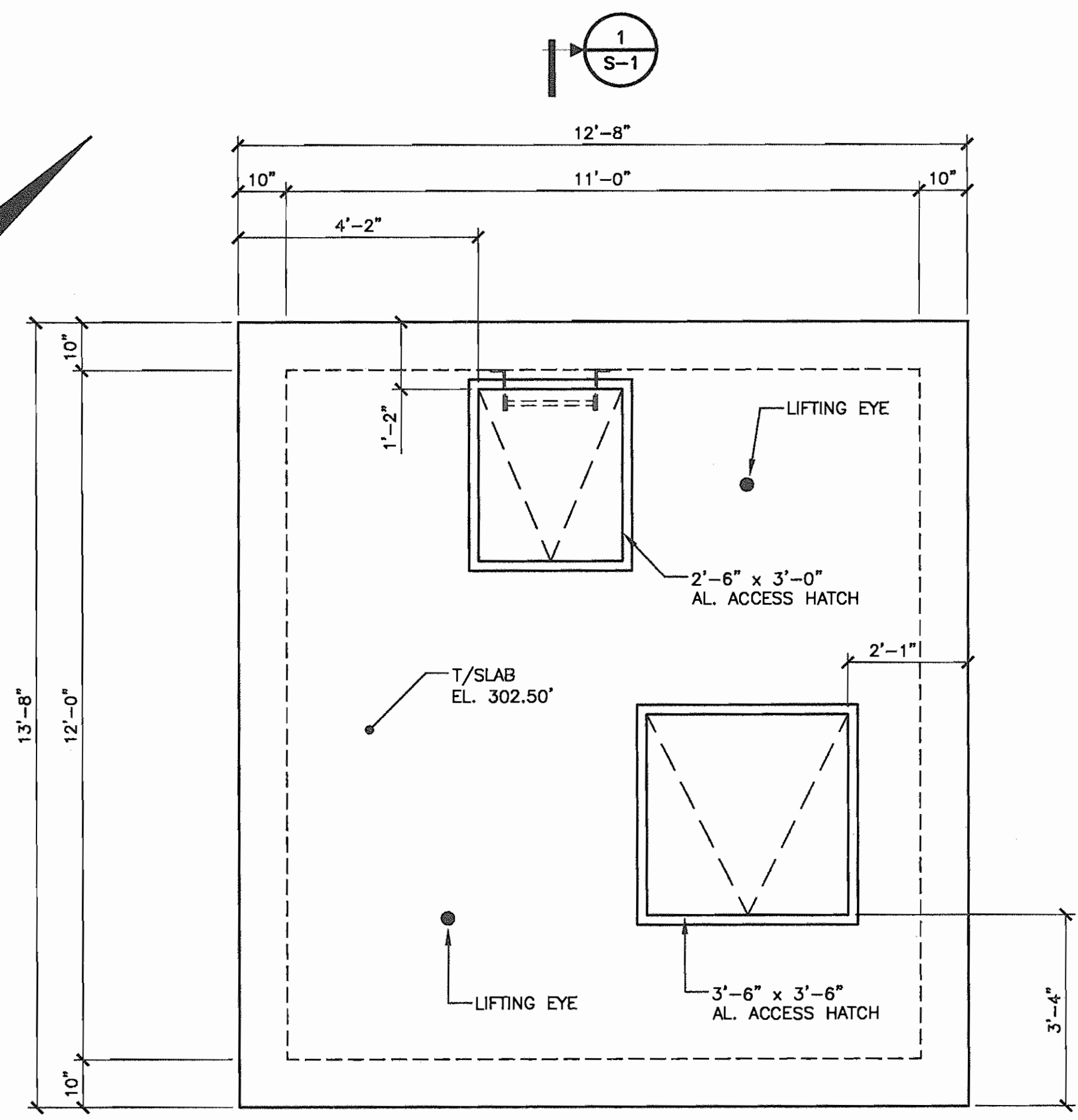




**FOUNDATION PLAN**

SCALE: 1/2" = 1'-0"

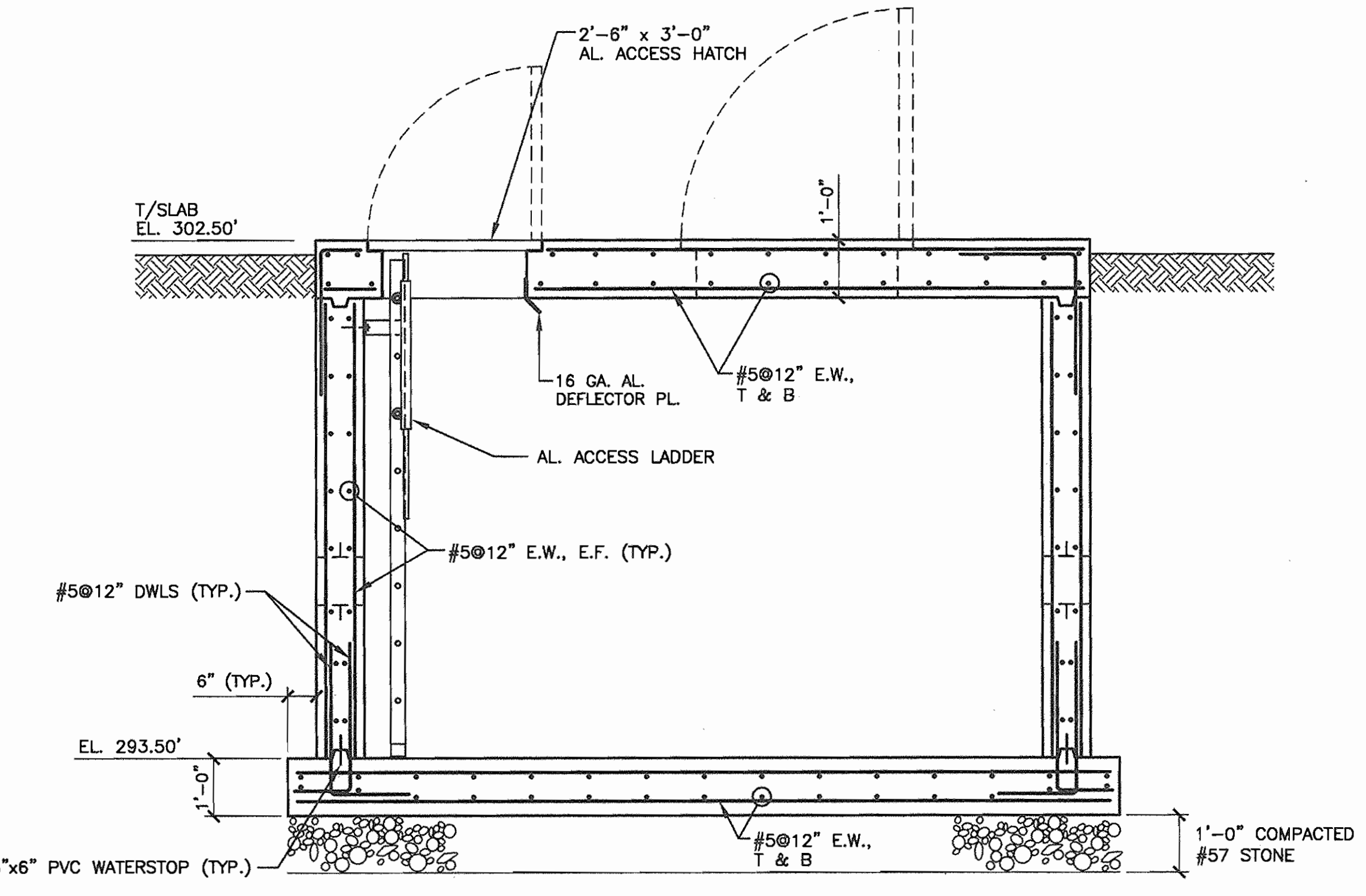
**PLAN NOTES:**  
1. COORDINATE SIZE & LOCATION OF WALL PENETRATIONS WITH MECHANICAL DRAWINGS.



**TOP PLAN**

SCALE: 1/2" = 1'-0"

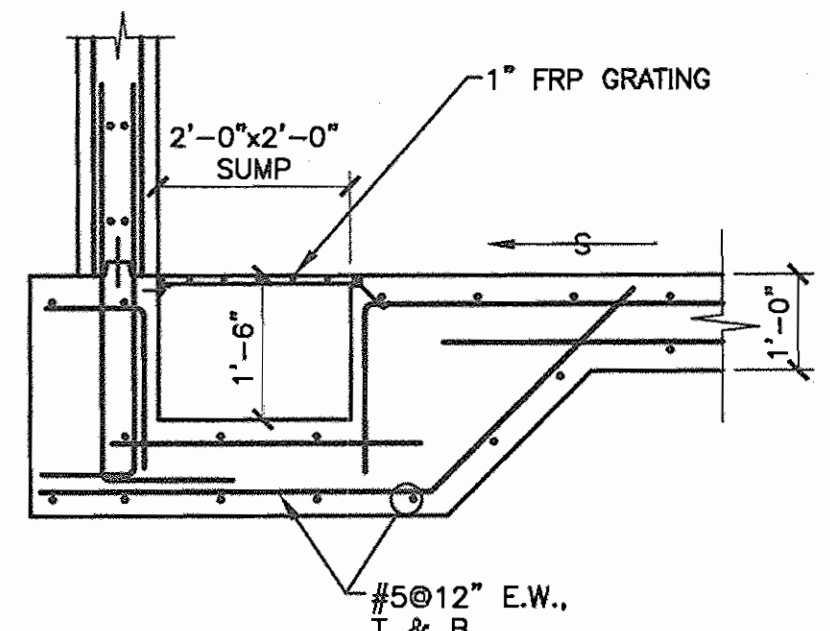
**PLAN NOTES:**  
1. SEE LIFTING EYE DETAIL THIS SHEET. COORDINATE LOCATION OF LIFTING EYES WITH MECHANICAL DRAWINGS.



**SECTION**

SCALE: 1/2" = 1'-0"

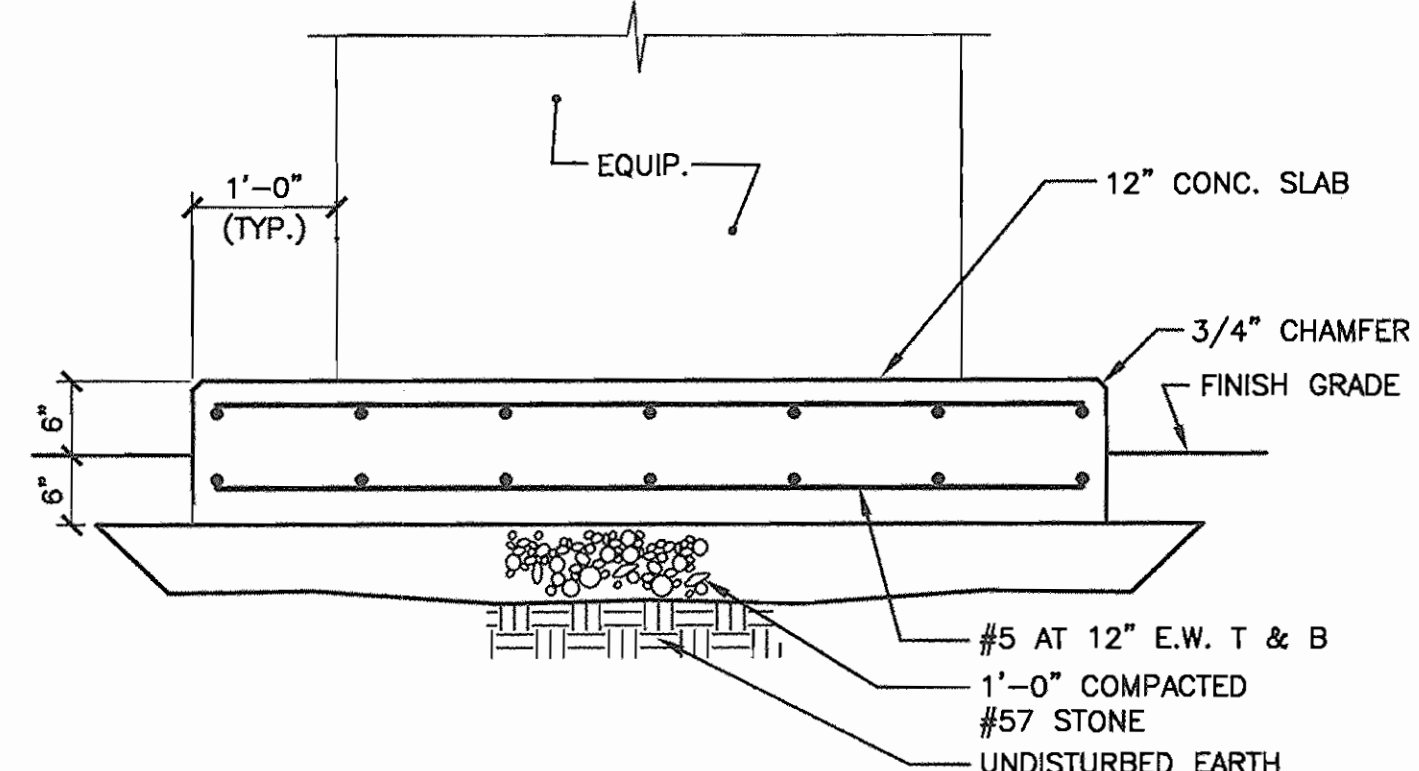
**SECTION NOTES:**  
1. COORDINATE SIZE & LOCATION OF WALL PENETRATIONS WITH MECHANICAL DRAWINGS. SEE ADDITIONAL REINFORCING AT CONCRETE SLAB & WALL OPENINGS DETAIL THIS SHEET.  
2. SLOPE FLOOR SLAB IN VAULT TOWARDS SUMP.  
3. FASTEN DEFLECTOR PL. TO CONCRETE W/ STAINLESS STEEL SCREWS.



**SECTION 2**

SCALE: 1/2" = 1'-0"

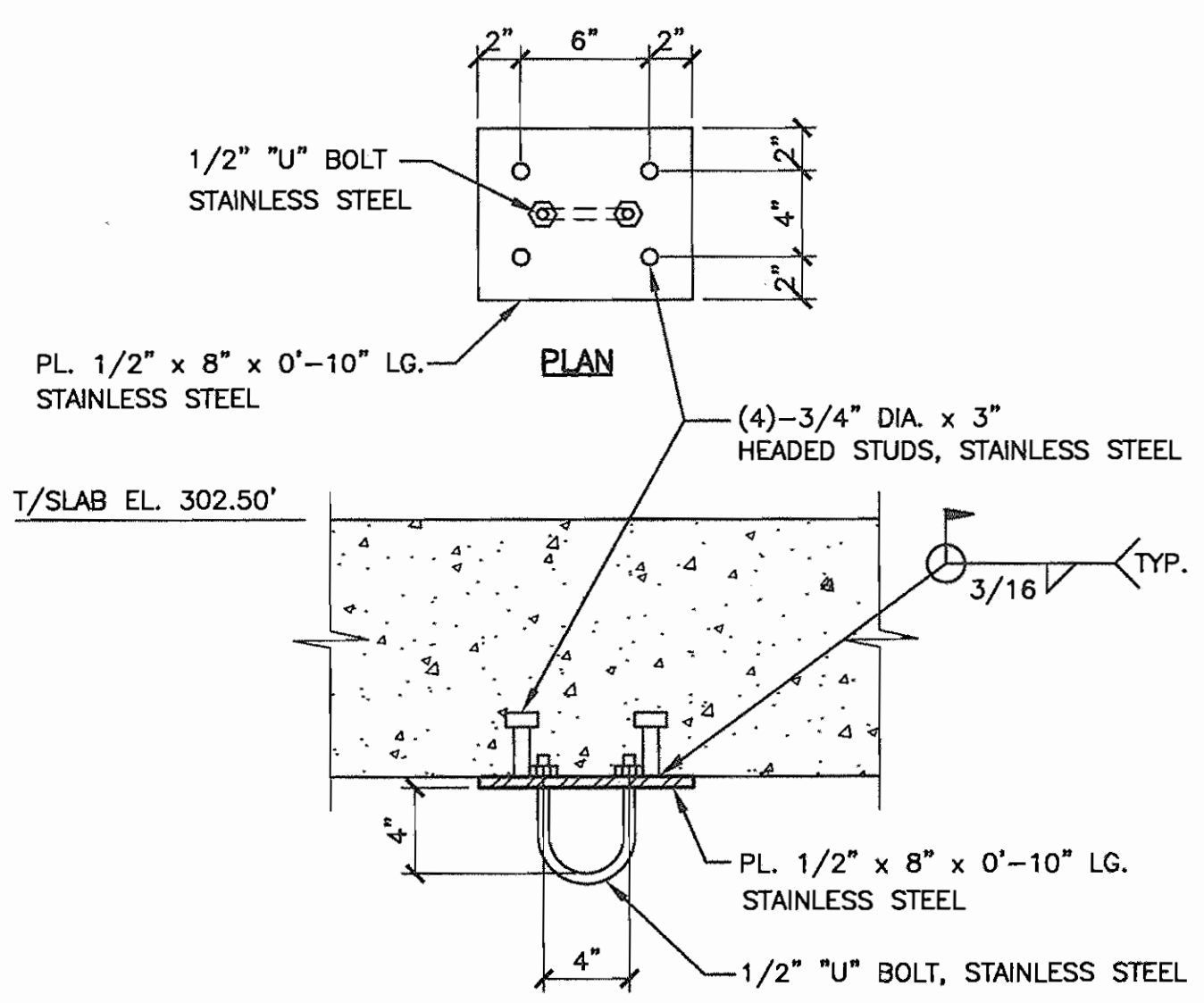
**DRAWING NOTES:**  
1. METAL PIPING SUPPORTS, TIE RODS, COUPLINGS AND PIPE SHALL BE PAINTED WITH TWO COATS OF MAB/PENNSBUY 44 SERIES PLY-MASTIC EPOXY COATING, 10-14 MILS DFT. SURFACE PREPARATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. COPPER TUBING SHALL BE EXCLUDED. COLOR SUBMITTED TO BE APPROVED BY THE COUNTY.



**TYPICAL EXTERIOR EQUIPMENT PAD DETAIL**

NOT TO SCALE

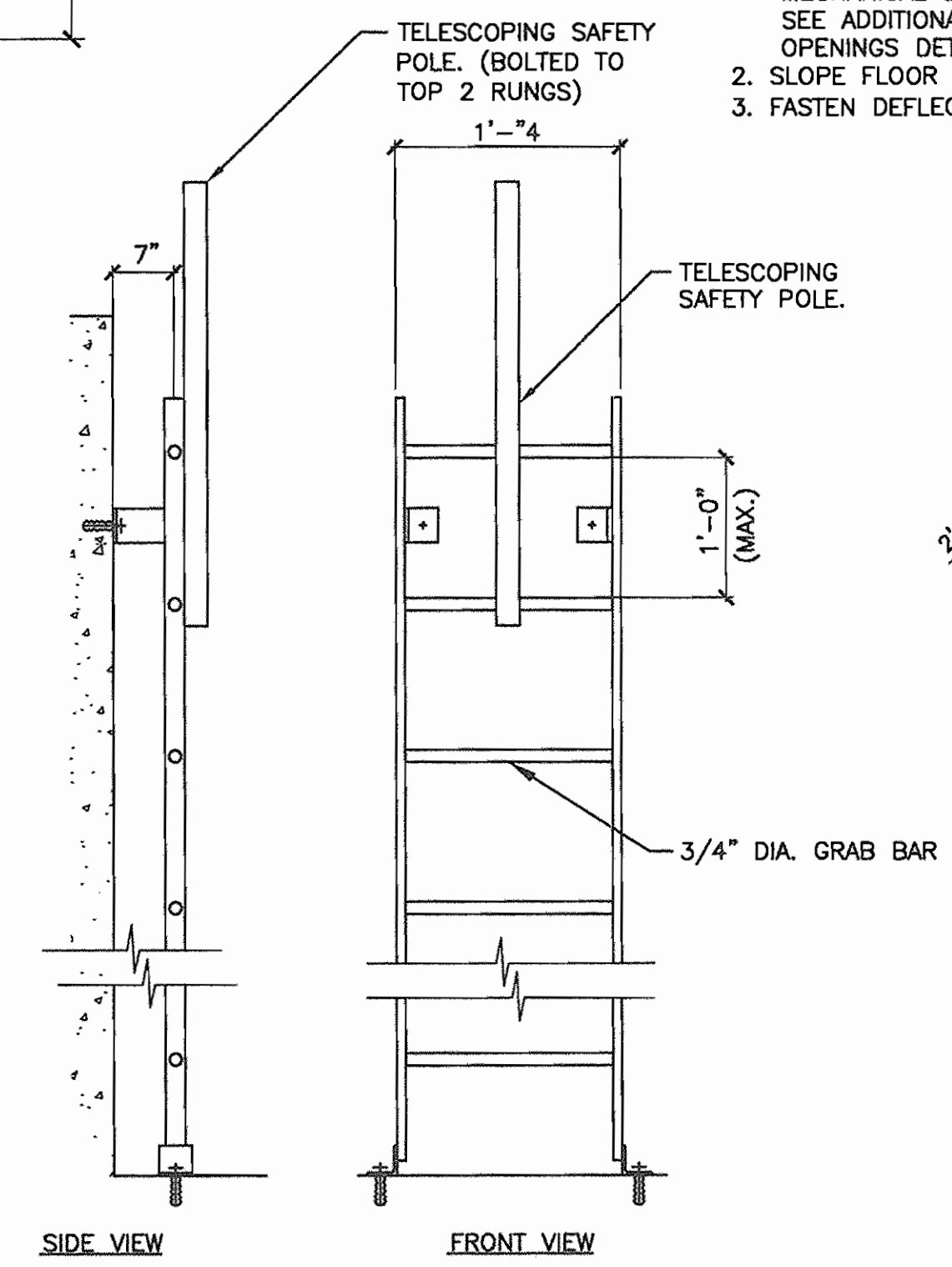
**DETAIL NOTES:**  
1. SEE ELECTRICAL DWGS. FOR SIZE AND LOCATION OF EQUIPMENT PAD.  
2. COORDINATE ANCHOR BOLT LOCATIONS WITH EQUIP. MANUF.



**LIFTING EYE DETAIL**

SCALE: 1 1/2" = 1'-0"

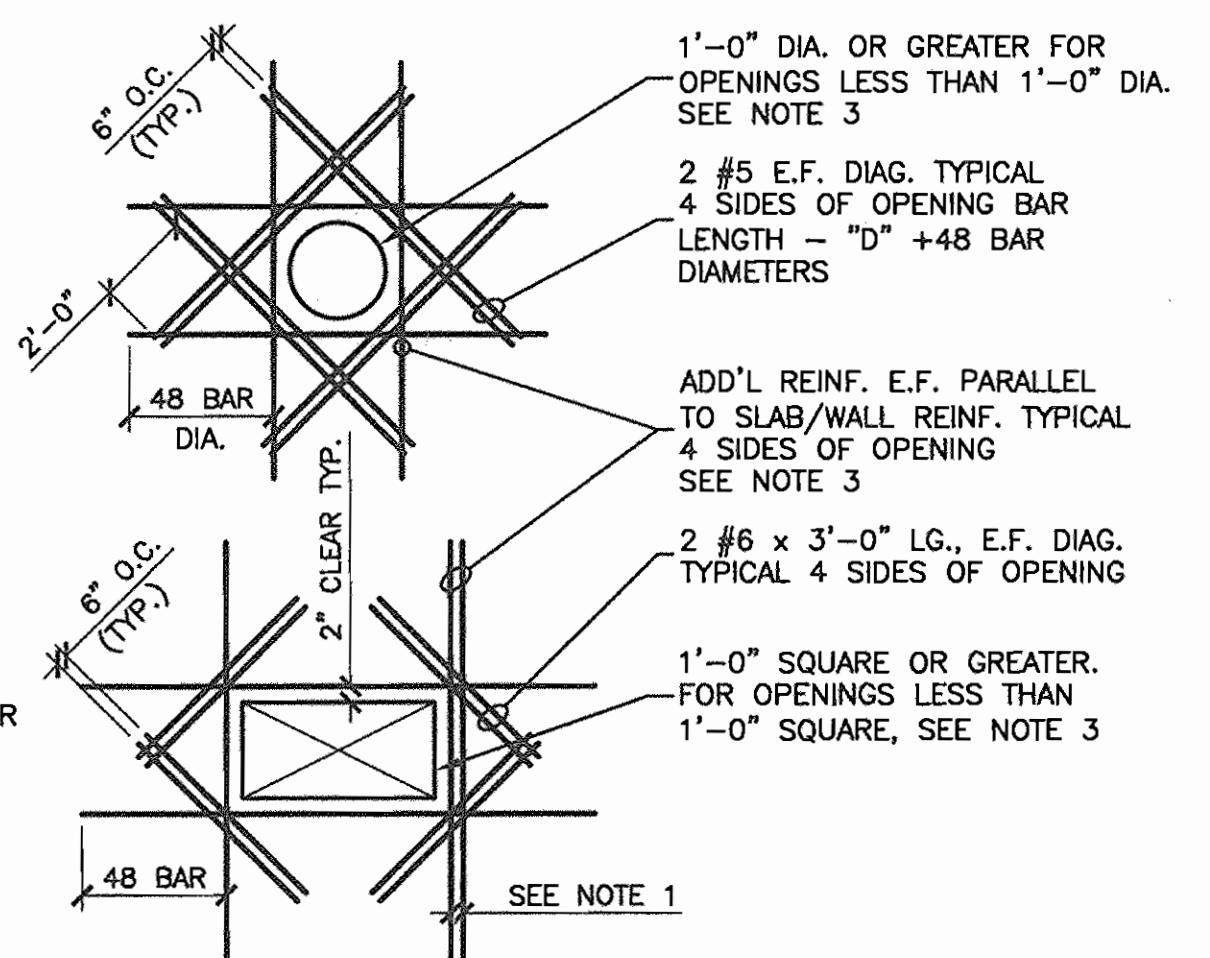
**DETAIL NOTES:**  
1. MAXIMUM LOAD ON LIFTING EYE EQUAL TO 500 POUNDS.



**ALUMINUM LADDER DETAIL**

NOT TO SCALE

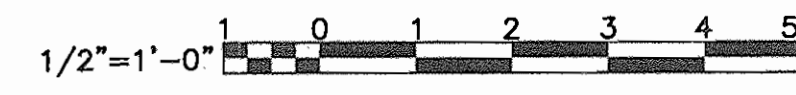
**DETAIL NOTES:**  
1. SUPPORTS SHALL BE AT TOP & BOTTOM W/ S.S. ANCHORS. DESIGN EA. SUPPORT TO RESIST SHEAR & PULLOUT OF A 500 LB. APPLIED LOAD.  
2. MINIMUM DISTANCE TO THE NEAREST PERMANENT OBJECT ON EACH SIDE OF THE LADDER CENTERLINE SHALL BE 2'-6".  
3. LADDERS SHALL BE DESIGNED BY MANUFACTURER TO MEET O.S.H.A. REQUIREMENTS.  
4. LADDER SHALL BE FABRICATED OF 6061-T6 ALUMINUM WITH STANDARD MILL FINISH TO SSHA/ANSI A14.3.  
5. TELESCOPING SAFETY POLE SHALL BE TELESCOPING TUBULAR STAINLESS STEEL TUBE THAT AUTOMATICALLY LOCKS WHEN FULLY EXTENDED POLE SHALL BE CONTROLLED BY ALLOY SPRING BALANCING MECHANISM. SAFETY POLE SHALL BE BILCO LADDER-UP OR EQUAL.



**ADDITIONAL REINFORCING AT CONCRETE SLAB & WALL OPENINGS**

NOT TO SCALE

**DETAIL NOTES:**  
1. WHERE MORE THAN ONE ADDITIONAL BAR IS REQUIRED PARALLEL TO THE EXISTING SLAB/WALL REINFORCING THE ADDITIONAL REINFORCING BARS SHALL BE SPACED AT 4 INCHES ON CENTER.  
2. ADDITIONAL REINFORCING PARALLEL TO THE SLAB/WALL REINFORCING SHALL BE #5 BARS THAT PROVIDE A STEEL AREA ON EACH SIDE OF THE OPENING EQUAL TO 1/2 THE AREA OF THE REINFORCING CUT BY THE OPENING.  
3. FOR OPENINGS WITH SIDES OR DIAMETERS LESS THAN 1'-0" SPREAD THE SLAB/WALL REINFORCING TO CLEAR THE OPENING.



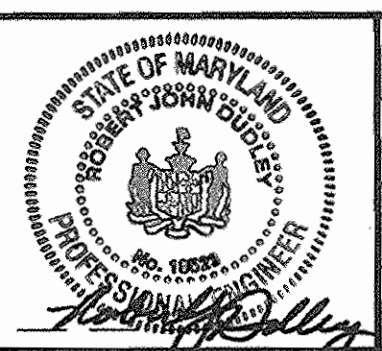
AS-BUILT 10-07

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

Director of Public Works: *John G. ...* 2/15/05  
 Chief, Bureau of Utilities: *...* 2-15-05

Chief, Bureau of Engineering: *...* 2/14/05  
 Chief, Utility Design Division: *...* 2-14-05

**O'BRIEN & GERE ENGINEERS, INC.**  
8401 Corporate Drive  
Suite 400  
Londontown, Maryland 20785  
(301) 731-5622  
FAX: (301) 577-4737



DSN. BY:	CHL			
DRN. BY:	RAE			
CHK. BY:	RFB			
DATE:	2/1/05			
BY:	0	ISSUED FOR CONSTRUCTION	2/05	
NO.		REVISION	DATE	

**PRV VAULT - STRUCTURAL PLANS, SECTIONS & DETAILS**

600' SCALE MAP NO. 47 BLOCK NO. 9

**400 ZONE IMPROVEMENTS**  
GORMAN ROAD / STEPHENS ROAD PRV

CAPITAL PROJECT: W-8270  
 CONTRACT NO.: 44-4257  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND











