

HOWARD COUNTY

Department of Public Works

6751 Gateway Drive, Suite 514

Columbia, Maryland 21046

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

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- R4. HILLSBOROUGH ROAD SIGNING AND PAVEMENT MARKING PLAN*
- R5. HILLSBOROUGH ROAD TRAFFIC CONTROL PLAN *
- R6. HILLSBOROUGH ROAD PROFILES *
- R7. HILLSBOROUGH ROAD CROSS SECTIONS *
- R8. HILLSBOROUGH ROAD CROSS SECTIONS *
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- V2. AERATION AND SEDIMENTATION VAULT SCHEMATIC DETAILS *
- V3. AERATION AND SEDIMENTATION VAULT SCHEMATIC GENERAL NOTES & TYPICAL DETAILS *
- V4. AERATION AND SEDIMENTATION VAULT PLANS AND DETAILS *

*(SHEET 4, SHEET 26, SHEETS G1-G3, G5-G11, R1-R12, V1-V4 ARE NOT PART OF SDP SUBMITTAL)

SEDIMENT CONTROL & POND CONSTRUCTION

() BY THE DEVELOPER:
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 7/6/99
SIGNATURE OF DEVELOPER DATE
PRINT NAME BELOW SIGNATURE

() BY THE ENGINEER:
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

[Signature] 7-6-99
SIGNATURE OF ENGINEER DATE
PRINT NAME BELOW SIGNATURE
MICHAEL R. GOUDREAU

() THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

[Signature] 9/8/99
USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

() THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 9/8/99
HOWARD SOIL CONSERVATION DISTRICT DATE
AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

PE NO. _____
SIGNATURE _____ DATE _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

OPERATION, MAINTENANCE AND INSPECTION
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS STANDARDS AND SPECIFICATIONS FOR PONDS (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

[Signature] 9/14/99
DIRECTOR DATE

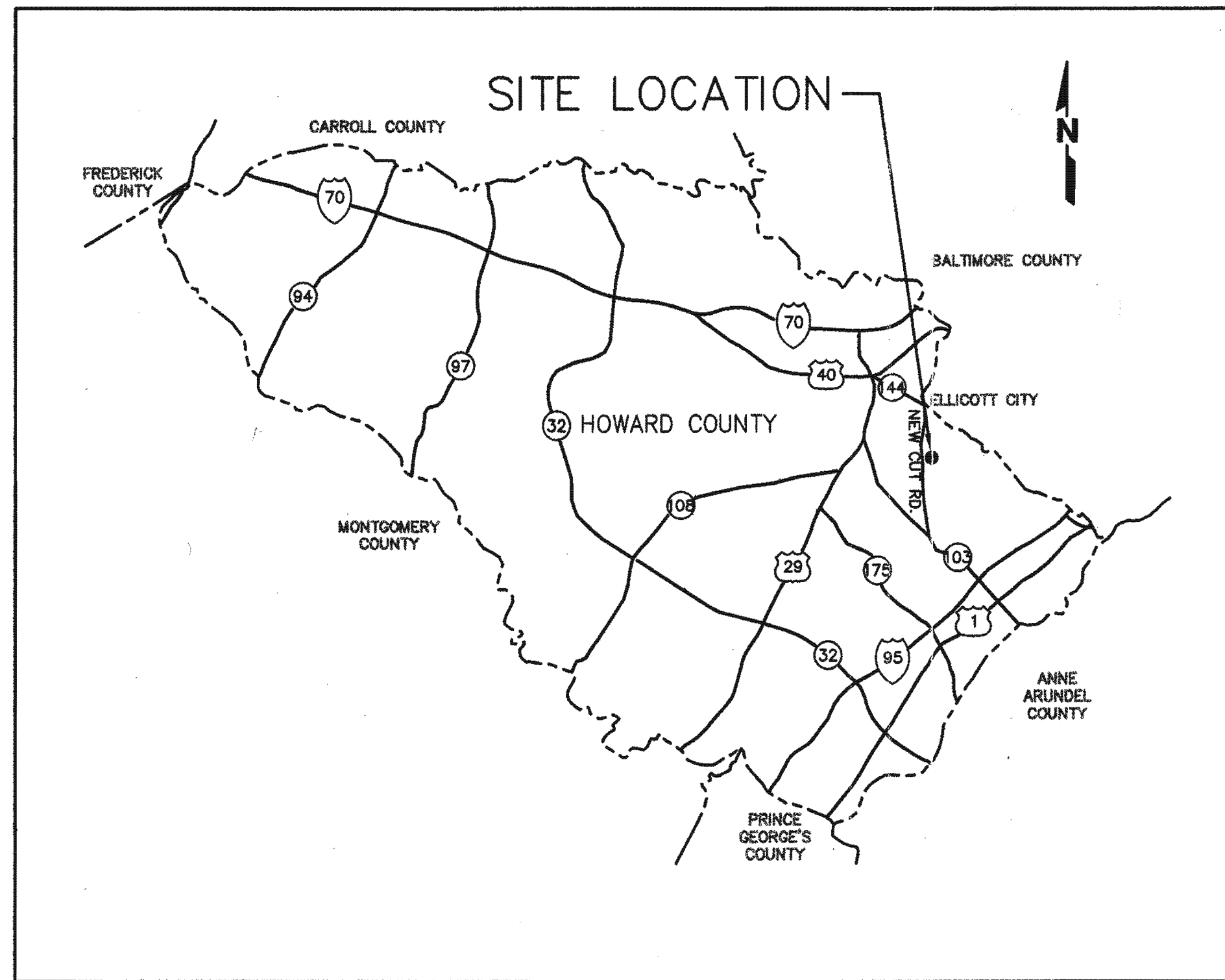
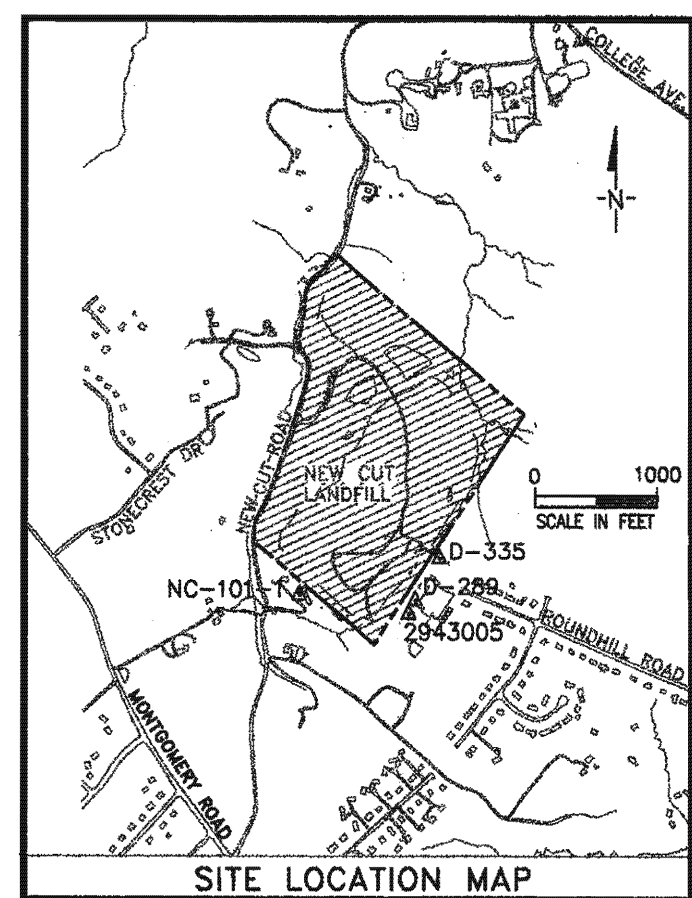
[Signature] 9/9/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 7/13/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

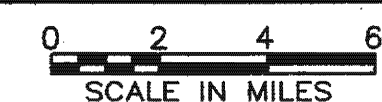
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 7/6/99
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE



LOCATION MAP



WETLANDS PERMIT TRACKING NO. : 199963005

[Signature] 9/8/99
HOWARD COUNTY, MARYLAND DATE
HEALTH OFFICER

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES. MRG				
DRN. JCS				
CHK. RHI				
DATE: 07-01-99	BY	NO.	REVISION	DATE

TITLE SHEET

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:
AS SHOWN

SHEET
1 OF 39

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

- 1) NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- 2) PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- 3) DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- 4) PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- 5) REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- 6) RECTIFY ANY NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- 7) ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (*LOLIUM MULTIFLORUM*), MILLET (*SETARIA ITALICA*), BARLEY (*HORDEUM SP.*), OATS (*UNIOLA SP.*), AND/OR RYE (*SECALE CEREALE*). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDING AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
- 8) AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- 9) TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:

USE 1 WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
- 10) STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- 11) CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

INCREMENTAL STABILIZATION - CUT SLOPES

- I. ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDING AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 15'.
- II. CONSTRUCTION SEQUENCE (REFER TO FIGURE 1 BELOW):
 - A. EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO CONVEY RUNOFF FROM THE EXCAVATION.
 - B. PERFORM PHASE 1 EXCAVATION, DRESS, AND STABILIZE.
 - C. PERFORM PHASE 2 EXCAVATION, DRESS, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
 - D. PERFORM FINAL PHASE EXCAVATION, DRESS, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

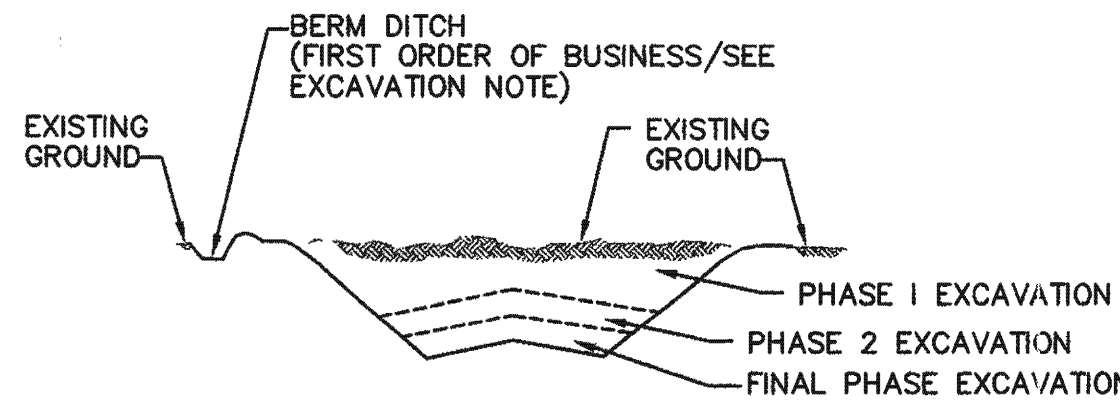


FIGURE 1 - INCREMENTAL STABILIZATION - CUT

INCREMENTAL STABILIZATION OF EMBANKMENTS - FILL SLOPES

- I. EMBANKMENTS SHALL BE CONSTRUCTED IN LIFTS AS PRESCRIBED IN THE PLANS AND SPECIFICATIONS.
- II. SLOPES SHALL BE STABILIZED IMMEDIATELY WHEN THE VERTICAL HEIGHT OF THE MULTIPLE LIFTS REACHES 15', OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
- III. AT THE END OF EACH DAY, TEMPORARY BERMS AND PIPE SLOPE DRAINS SHOULD BE CONSTRUCTED ALONG THE TOP EDGE OF THE EMBANKMENT TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER TO A SEDIMENT TRAPPING DEVICE.
- IV. CONSTRUCTION SEQUENCE: REFER TO FIGURE 2 (BELOW).
 - A. EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SLOPE SILT FENCE ON LOW SIDE OF FILL AS SHOWN IN FIGURE 5, UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
 - B. PLACE PHASE 1 EMBANKMENT, DRESS AND STABILIZE.
 - C. PLACE PHASE 2 EMBANKMENT, DRESS AND STABILIZE.
 - D. PLACE FINAL PHASE EMBANKMENT, DRESS AND STABILIZE. OVERSEE PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

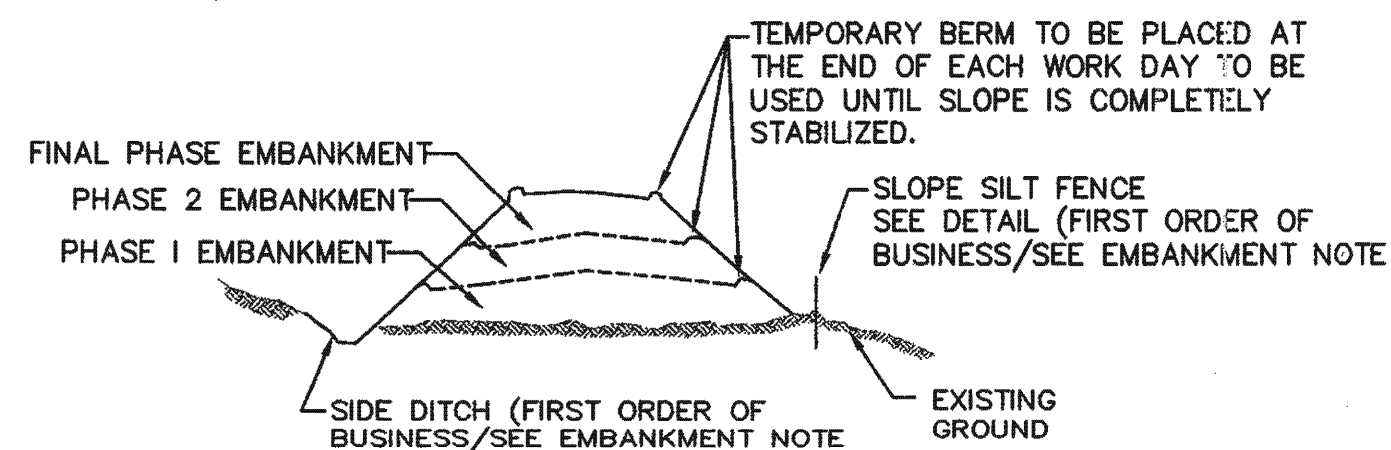


FIGURE 2 - INCREMENTAL STABILIZATION - FILL

**GENERAL NOTES
NON-RESIDENTIAL
SITE DEVELOPMENT PLAN**

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, THE TECHNICAL SPECIFICATIONS (DIVISION 1 TO 16) OF THE PROJECT MANUAL, THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY DESIGN MANUAL (VOL. IV), AND THE MARYLAND STATE HIGHWAY ADMINISTRATION IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENVIRONMENTAL SERVICES AT (410) 313-6444 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
5. THE EXISTING TOPOGRAPHY IS TAKEN FROM AIR PHOTOGRAPHY PREPARED BY AIR SURVEY CORPORATION, INC. JANUARY, 1998. SUPPLEMENTED WITH FIELD SURVEY (OCTOBER, 1998 BY DANIELS CONSULTANTS, INC.)
6. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM NAD, 1983 (HORIZ.) & NAVD, 1988 (VERT.)
7. STORMWATER MANAGEMENT CONTROL IS PRIVATE AND IS OWNED AND MAINTAINED BY HOWARD COUNTY.
8. EXISTING UTILITIES ARE BASED ON HOWARD COUNTY RECORDS.
9. THE FLOODPLAIN MAPPING SHOWN FOR THIS PROJECT IS FROM HOWARD COUNTY FLOODPLAIN MAPS FP 29-43/87 & FP 30-43/87.
10. THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY J. E. HARMS AND ASSOCIATES, DATED AUGUST, 1996, AND WAS APPROVED IN SPRING, 1998 BY U.S. ARMY CORPS OF ENGINEERS.
11. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
12. SUBDIVISION NAME IS HOWARD COUNTY GOVERNMENT.
13. CONTRACTOR SHALL PROTECT ALL EXISTING GROUNDWATER AND LANDFILL GAS WELLS BY MEANS OF BARRICADES AND OR CONCRETE JERSEY BARRIERS AS NECESSARY TO PREVENT DAMAGE FROM CONSTRUCTION VEHICLES. WELLS DAMAGED AS A RESULT OF CONTRACTOR'S OPERATION SHALL BE REPAIRED/REPLACED BY HOWARD COUNTY AT THE CONTRACTOR'S EXPENSE.
14. MAGNETIC LOCATION TAPE IS TO BE PLACED ABOVE ALL BURIED PLASTIC PIPELINE UTILITIES DURING CONSTRUCTION.
15. THE CONTRACTOR SHALL COORDINATE ALL WORK WITHIN THE AT&T CABLE RIGHT-OF-WAY WITH AT&T (1-800-252-1133 OR 1-410-992-0419) PRIOR TO ANY WORK IN THE AT&T RIGHT-OF-WAY.
16. NIC MEANS "NOT IN CONTRACT".
17. ALL WASTE EXCAVATED SHALL BE DISPOSED AT ALPHA RIDGE LANDFILL, 2350 MARRIOTTVILLE ROAD, MARRIOTTVILLE, MD.) OR OTHER FACILITY WITH AN ACTIVE GRADING PERMIT, APPROVED BY ENGINEER. AT ALPHA RIDGE LANDFILL NO TIPPING FEE WILL BE CHARGED FOR WASTE, WITH ENGINEER'S APPROVAL. CONTRACTOR SHALL PROVIDE LOADING AND HAULING.
18. ADD SITE SECURITY AND ROAD CLOSED SIGNS.
19. SCENIC ROAD REQUIREMENTS FOR NEW CUT RD. WERE ADDRESSED UNDER PUBLIC WORKS BOARD MEETING OF MAY 11, 1999 FOR CAPITAL IMPROVEMENT PROJECT C-0237.
20. FOREST CONSERVATION REQUIREMENTS FOR THIS SITE HAVE BEEN MET BY RETENTION OF EXISTING FOREST ON SITE AS SHOWN ON SHEET 27. THE EXISTING FOREST SHOWN TO BE RETAINED IS PROTECTED BY RESTRICTIVE COVENANTS IN A DEED RECORDED AT LIBER _____, FOLIO _____ IN THE LAND RECORDS OF HOWARD COUNTY.

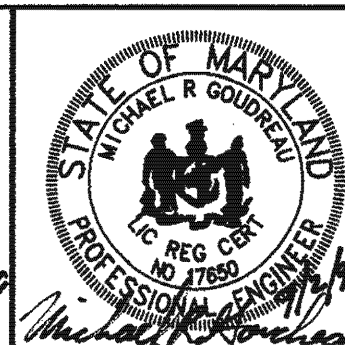
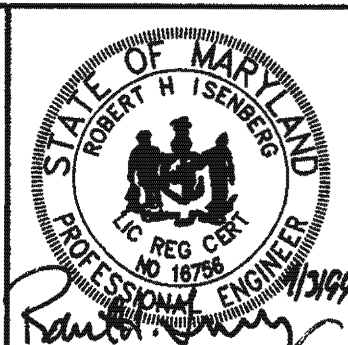
M: 296024.01\100 PERCENT GENNOTES, OUTSLOPE.FILL

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
<i>[Signature]</i> DIRECTOR	9/19/99 DATE
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	9/19/99 DATE
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	9/13/99 DATE

SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>[Signature]</i> DIRECTOR OF PUBLIC WORKS	9/16/99 DATE
<i>[Signature]</i> CHIEF, BUREAU OF ENVIRONMENTAL SERVICES	9/17/99 DATE

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG		
DRN.	JCS		
CHK.	RHI		
DATE:	07-01-99		
BY	NO.	REVISION	DATE
		ADDED BMP NOTES FOR NON-TIDAL WETLANDS, ETC.	9-2-99

GENERAL NOTES	
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NEW CUT LANDFILL IMPROVEMENTS	
CAPITAL PROJECT NO. C-0237-H	
2nd ELECTION DISTRICT	HOWARD COUNTY, MARYLAND
SCALE: NO SCALE	SHEET 2 OF 39

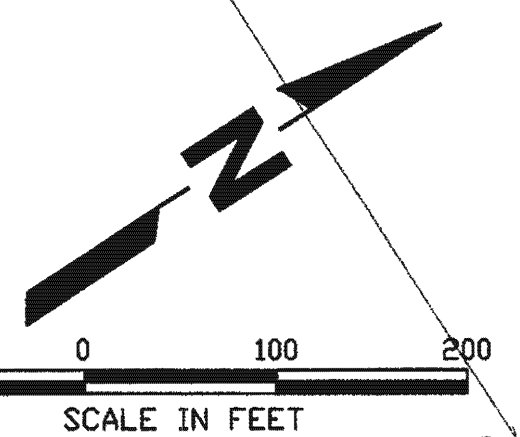
LEGEND

- EW-10 EXISTING LFG EXTRACTION WELL
- VW-16 EXISTING LFG MONITORING WELLS
- EXISTING INDEX CONTOUR
- - - EXISTING INTERMEDIATE CONTOUR
- - - EXISTING TREELINE
- PROPERTY BOUNDARY
- LIMITS OF WASTE
- LIMITS OF WETLANDS
- 25' WETLAND BUFFER
- EXISTING OVERBURDEN WELL
- ⊠ EXISTING BEDROCK WELL
- EXISTING RESIDENTIAL WELL
- ⊕ EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (NIC)
- ☁ AREA FIELD SURVEY LIMITS

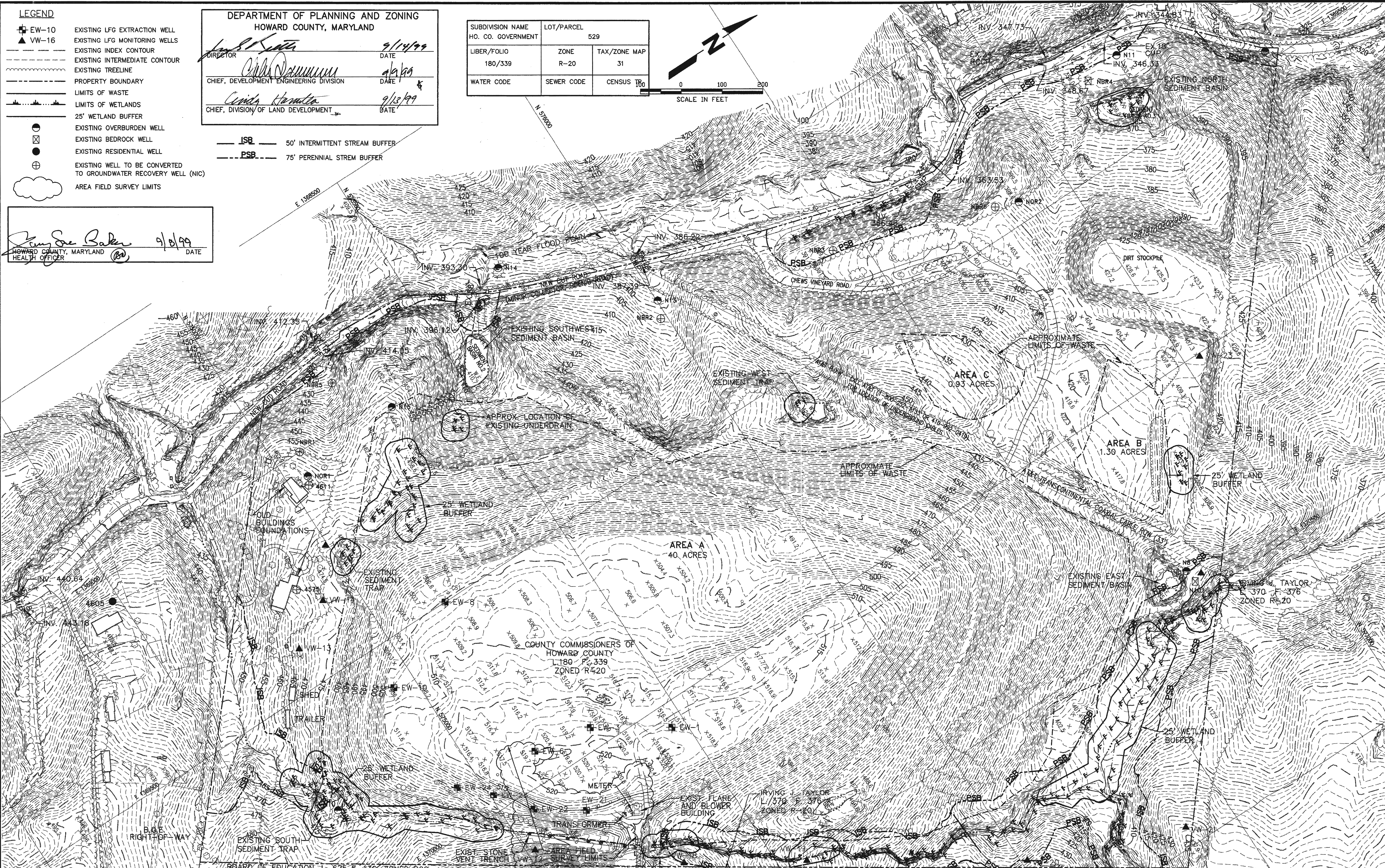
**DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND**

DIRECTOR <i>[Signature]</i>	DATE 9/14/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION <i>[Signature]</i>	DATE 9/14/99
CHIEF, DIVISION OF LAND DEVELOPMENT <i>[Signature]</i>	DATE 9/15/99

SUBDIVISION NAME HO. CO. GOVERNMENT		LOT/PARCEL 529	
LIBER/FOLIO 180/339	ZONE R-20	TAX/ZONE MAP 31	
WATER CODE	SEWER CODE	CENSUS 180	



[Signature] 9/16/99
DATE
HOWARD COUNTY, MARYLAND
HEALTH OFFICER

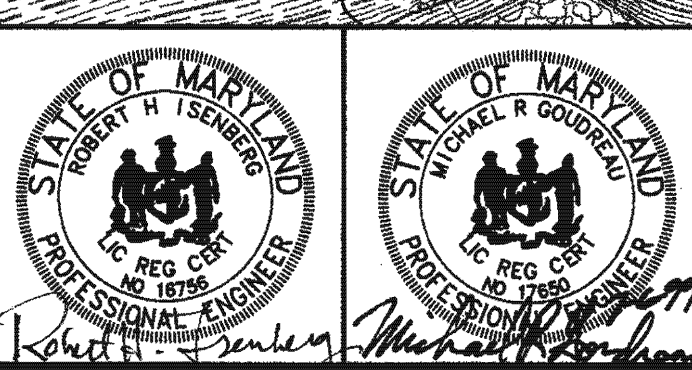


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**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

DIRECTOR OF PUBLIC WORKS <i>[Signature]</i>	DATE 9/16/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES <i>[Signature]</i>	DATE 9/16/99

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES. MRG	APR				
DRN. JCS	APR				
CHK. RHI	APR				
DATE: 07-01-99	BY	NO.	REVISION	DATE	

**EXISTING SITE
CONDITIONS**

**NEW CUT LANDFILL
IMPROVEMENTS**

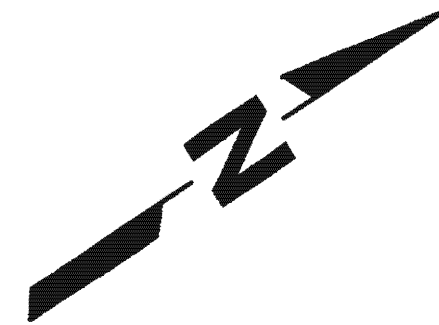
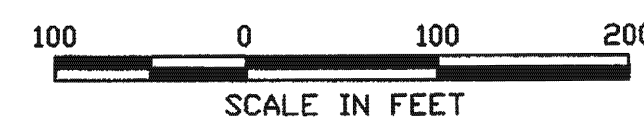
CAPITAL PROJECT NO. C-0237-H
2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE:
1"=100'
SHEET
3 OF 39

LEGEND

- TEST PIT LOCATIONS FOR WASTE LIMITS (TIER 1)
- ⊕ TEST PIT LOCATIONS FOR WASTE LIMITS (TIER 2)
- ⊕ 72" 30" AUGER BORING LOCATIONS FOR SOIL COVER THICKNESS
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING TREELINE
- PROPERTY BOUNDARY
- LIMITS OF WASTE
- LIMITS OF WETLANDS
- 24" SOIL COVER ISOPACH THICKNESS (IN INCHES)
- ◆ HA-3 SOIL BORING (HAND AUGER)

NOTE:
SOIL COVER ISOPACH THICKNESS LINES ARE ESTIMATES BASED ON OBSERVED SOIL COVER AT AUGER BORING LOCATIONS.



M: 286024.01 100 PERCENT ISOPACH

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG				
DRN.	JCS				
CHK.	RHI				
DATE:	03-08-99	BY	NO.	REVISION	DATE

COVER THICKNESS ISOPACH
AND TEST PIT LOCATIONS

NEW CUT LANDFILL
IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:

1"=100'

SHEET

4 OF 39

SDP-99-109

- LEGEND**
- EW-10 EXISTING LFG EXTRACTION WELL
 - W-31 PROPOSED LFG EXTRACTION WELL
 - W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
 - VW-16 EXISTING LFG MONITORING WELLS
 - 310 NEW INDEX CONTOUR
 - EXISTING INDEX CONTOUR
 - EXISTING TREELINE
 - PROPERTY BOUNDARY
 - APPROXIMATE LIMITS OF WASTE
 - LIMITS OF WETLANDS
 - LIMITS OF TREE REMOVAL
 - PROPOSED GROUNDWATER RECOVERY WELL (NIC)
 - EXISTING OVERBURDEN WELL
 - EXISTING BEDROCK WELL
 - EXISTING RESIDENTIAL WELL
 - EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (NIC)
 - BENCH (ARROW SHOWS DIRECTION OF FLOW)
 - SWALE
 - APPROX. LIMITS OF DISTURBANCE CHANNEL
 - GATE
 - 50' INTERMITTENT STREAM BUFFER
 - 75' PERENNIAL STREAM BUFFER

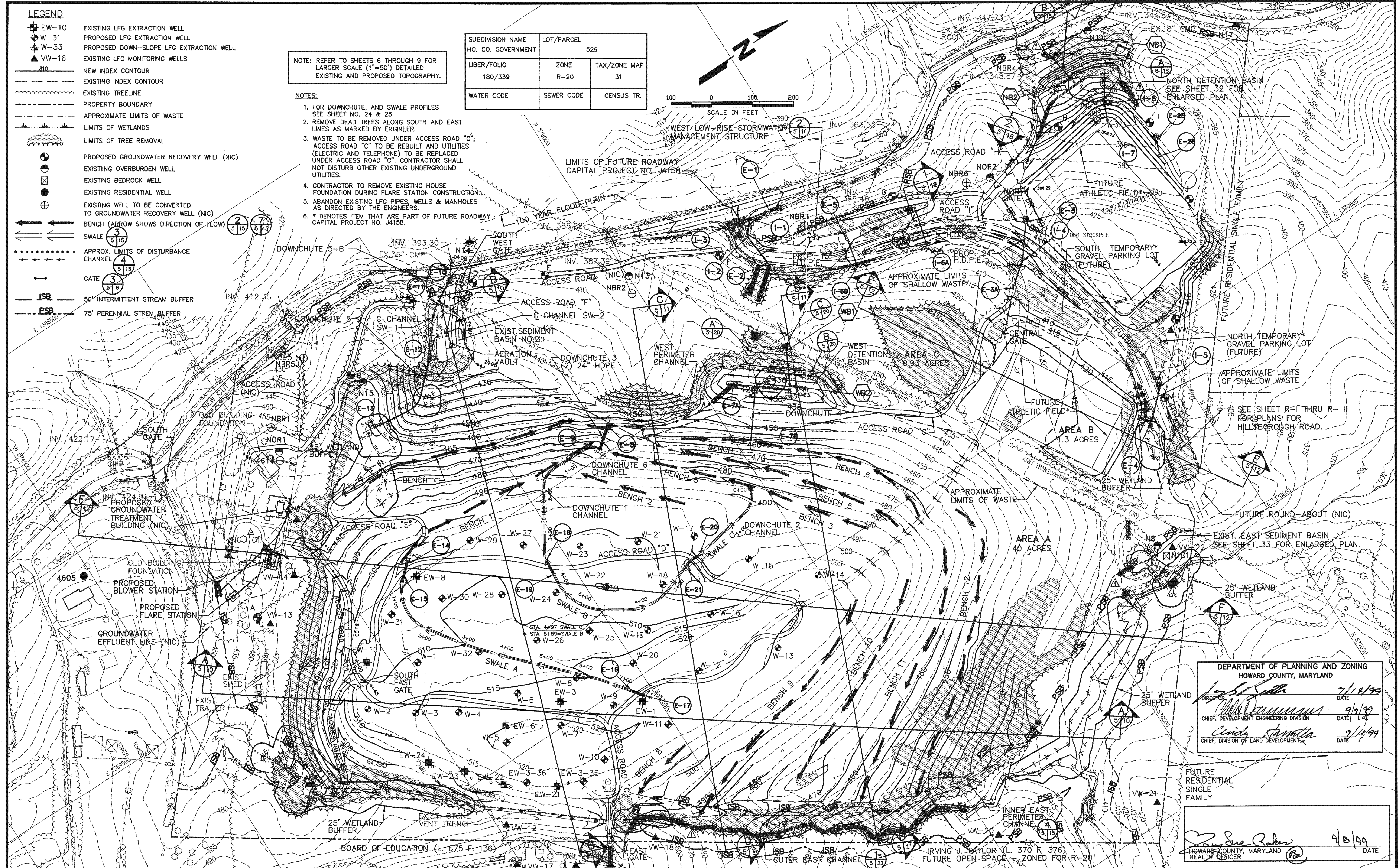
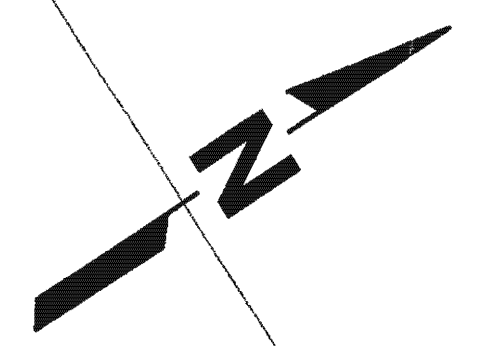
NOTE: REFER TO SHEETS 6 THROUGH 9 FOR LARGER SCALE (1"=50') DETAILED EXISTING AND PROPOSED TOPOGRAPHY.

SUBDIVISION NAME		LOT/PARCEL
HO. CO. GOVERNMENT		529
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

NOTES:

1. FOR DOWNCHUTE, AND SWALE PROFILES SEE SHEET NO. 24 & 25.
2. REMOVE DEAD TREES ALONG SOUTH AND EAST LINES AS MARKED BY ENGINEER.
3. WASTE TO BE REMOVED UNDER ACCESS ROAD "C"; ACCESS ROAD "C" TO BE REBUILT AND UTILITIES (ELECTRIC AND TELEPHONE) TO BE REPLACED UNDER ACCESS ROAD "C". CONTRACTOR SHALL NOT DISTURB OTHER EXISTING UNDERGROUND UTILITIES.
4. CONTRACTOR TO REMOVE EXISTING HOUSE FOUNDATION DURING FLARE STATION CONSTRUCTION.
5. ABANDON EXISTING LFG PIPES, WELLS & MANHOLES AS DIRECTED BY THE ENGINEERS.
6. * DENOTES ITEM THAT ARE PART OF FUTURE ROADWAY CAPITAL PROJECT NO. J4158.

SCALE IN FEET
0 100 200



DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

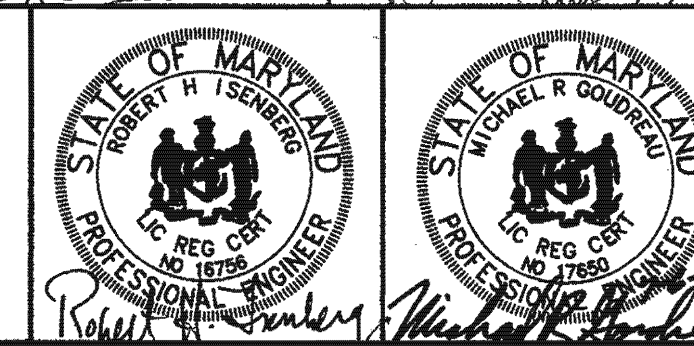
[Signature] 7/14/99 DATE
[Signature] 9/7/99 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 9/15/99 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 9/8/99 DATE
 FUTURE RESIDENTIAL SINGLE FAMILY
 HOWARD COUNTY, MARYLAND
 HEALTH OFFICER

M: 296024.01 100 PERCENT FG PLAN

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG	
DRN.	JCS	
CHK.	RHI	
DATE:	07-01-99	
BY:	MFG	
NO.	N. BASIN OUTFALL; ADDED RIPRAP SYMBOL.	8/77
REVISION	GAB/09	

OVERALL SITE PLAN

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:
1"=100'
SHEET
5 OF 39

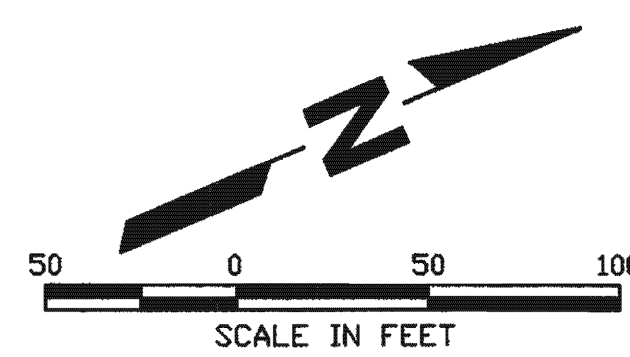
SDP-99-104

LEGEND

- EW-10 EXISTING LFG EXTRACTION WELL
- W-31 PROPOSED LFG EXTRACTION WELL
- W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
- VW-16 EXISTING LFG MONITORING WELLS
- 310 NEW INDEX CONTOUR
- NEW INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING TREELINE
- PROPERTY BOUNDARY
- APPROX. LIMITS OF WASTE
- LIMITS OF WETLANDS
- LIMITS OF TREE REMOVAL
- PROPOSED GROUNDWATER RECOVERY WELL (NIC)
- EXISTING OVERBURDEN WELL
- EXISTING BEDROCK WELL
- EXISTING RESIDENTIAL WELL
- EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (NIC)
- NEW HOPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPE
- EXISTING PIPE
- LIMITS OF FUTURE ROADWAY CAPITAL PROJECT NO. J4158
- 50' INTERMITTENT STREAM BUFFER
- 75' PERENNIAL STREAM BUFFER

NOTES:

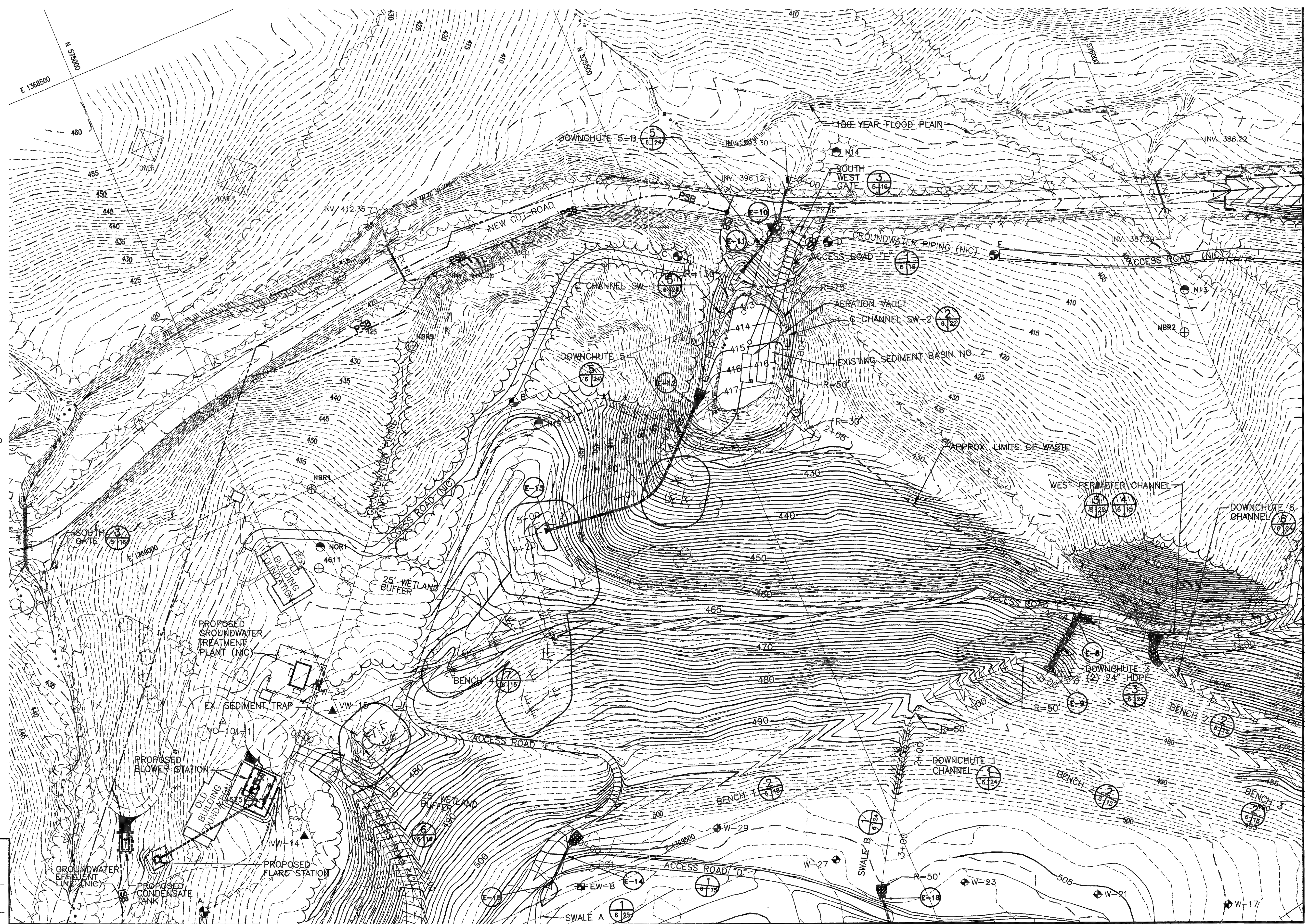
1. FOR DOWNCHUTE, AND SWALE PROFILES SEE SHEET NO. 24 & 25.
2. REMOVE DEAD TREES ALONG SOUTH AND EAST LINES AS MARKED BY ENGINEER.
3. REMOVE EXISTING CMP RISER AND OUTFALL AT EXISTING SEDIMENT BASIN NO. 2. EXISTING SEDIMENT BASIN NO. 2 TO BE ABANDONED AND REGRADED FOR POSITIVE DRAINAGE.
4. EXISTING SEDIMENT TRAP NEAR VW-15 TO BE UPGRADED AND USED DURING CONSTRUCTION (SEE SHEET 30), AND THEN REGRADED FOR POSITIVE DRAINAGE.
5. CONTRACTOR TO REMOVE EXISTING HOUSE FOUNDATION DURING BLOWER STATION CONSTRUCTION.
6. ABANDON EXISTING LFG PIPES, WELLS & MANHOLES AS DIRECTED BY THE ENGINEER.
7. FOR DETAILS OF AERATION VAULT, SEE SHEETS V1 THROUGH V4.
8. CONSTRUCT ACCESS ROAD ON BENCH 4 PER DETAIL 7, SHEET 15.



SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

<i>[Signature]</i>	7/14/99
DIRECTOR	DATE
<i>[Signature]</i>	9/14/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	9/13/99
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE



MATCHLINE SEE SHEET 8

MATCHLINE SEE SHEET 7

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

<i>[Signature]</i>	7/6/99	<i>[Signature]</i>	7/6/99
DIRECTOR OF PUBLIC WORKS	DATE	CHIEF BUREAU OF ENVIRONMENTAL SERVICES	DATE

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG		
DRN.	JCS		
CHK.	RHI		
DATE:	07-01-99	BY:	
		NO.	
		REVISION	
		DATE	

FINAL GRADING PLAN
SW-QUADRANT

NEW CUT LANDFILL
IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

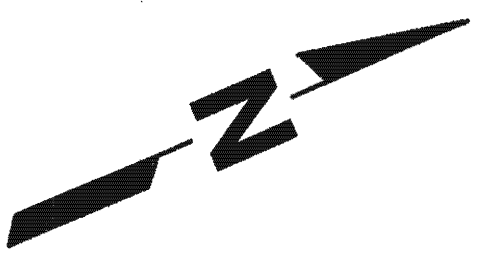
SCALE:
1"=50'
SHEET
6 OF 39

LEGEND

- EW-10 EXISTING LFG EXTRACTION WELL
- W-31 PROPOSED LFG EXTRACTION WELL
- W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
- VW-16 EXISTING LFG MONITORING WELLS
- 310 NEW INDEX CONTOUR
- NEW INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING TREELINE
- PROPERTY BOUNDARY
- APPROX. LIMITS OF WASTE
- LIMITS OF WETLANDS
- LIMITS OF TREE REMOVAL
- PROPOSED GROUNDWATER RECOVERY WELL (NIC)
- EXISTING OVERBURDEN WELL
- EXISTING BEDROCK WELL
- EXISTING RESIDENTIAL WELL
- EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (NIC)
- NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPE
- EXISTING PIPE
- 50' INTERMITTENT STREAM BUFFER

NOTES:

1. FOR DOWNCHUTE, AND SWALE PROFILES SEE SHEET NO. 24 & 25.
2. REMOVE DEAD TREES ALONG SOUTH AND EAST LINES AS MARKED BY ENGINEER.
3. REMOVE EXISTING CMP OUTFALL IN EXISTING SOUTH SEDIMENT TRAP. PROVIDE TEMPORARY SEDIMENT STORAGE (PER SHEET 31) DURING CONSTRUCTION, THEN CLEAN OUT AND REGRADE FOR POSITIVE DRAINAGE.
4. ELECTRIC AND TELEPHONE LINES ALONG EAST ACCESS ROAD TO BE REMOVED TO BE REMOVED BY THE CONTRACTOR. WASTE TO BE REMOVED UNDER ACCESS ROAD "C" PER PER SHEET G1,G8. ACCESS ROAD "C" TO BE REBUILT AND UTILITIES TO BE REPLACED UNDER ACCESS ROAD "C". (SEE SHEETS G1-G11). CONTRACTOR SHALL COMPLETE THE WASTE REMOVAL BETWEEN JUNE AND AUGUST. WASTE IS TO BE REMOVED AS DIRECTED BY THE COUNTY, AND A STONE VENT TRENCH PROVIDED.
5. ABANDON EXISTING LFG PIPES, WELLS & MANHOLES AS DIRECTED BY THE ENGINEERS.
6. REMOVE SURFACE DEBRIS AND LEAVE SITE CLEAR OF DEBRIS.
7. REMOVE EXISTING TEMPORARY ASPHALT BERM, AND PROVIDE MODIFIED COMBINATION CURB AND GUTTER (PER HOWARD COUNTY DTL R-3.01) WHERE ACCESS ROAD "C" MEETS SCHOOL PARKING LOT.



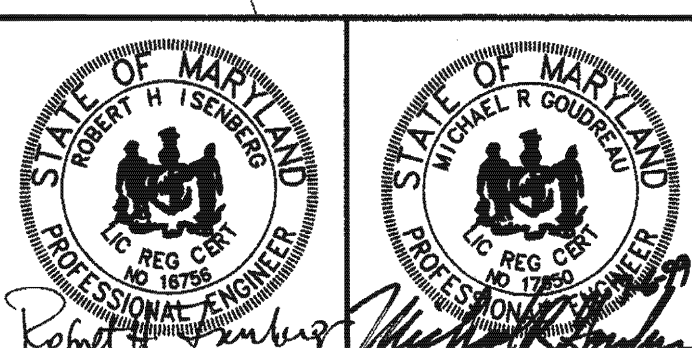
MATCHLINE SEE SHEET 9

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
DIRECTOR <i>[Signature]</i>	DATE 9/14/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION <i>[Signature]</i>	DATE 9/6/99
CHIEF, DIVISION OF LAND DEVELOPMENT <i>[Signature]</i>	DATE 9/13/99

SUBDIVISION NAME	LOT/PARCEL		
HO. CO. GOVERNMENT	529		
LIBER/FOLIO	ZONE	TAX/ZONE MAP	
180/339	R-20	31	
WATER CODE	SEWER CODE	CENSUS TR.	

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
DIRECTOR OF PUBLIC WORKS <i>[Signature]</i>	DATE 7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES <i>[Signature]</i>	DATE 7/6/99

SCS ENGINEERS
 CONSULTING ENGINEERS
 11260 ROGER BACON DRIVE
 SUITE 300
 RESTON, VIRGINIA 20190
 PH. (703) 471-6150
 FAX. (703) 471-6676



DES.	MRG	6			
DRN.	JCS	5			
CHK.	RHI	4			
DATE:	07-01-99	BY	NO.	REVISION	DATE

FINAL GRADING PLAN
 SE-QUADRANT

NEW CUT LANDFILL IMPROVEMENTS
 CAPITAL PROJECT NO. C-0237-H
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE:
 1" = 50'
 SHEET
 7 OF 39

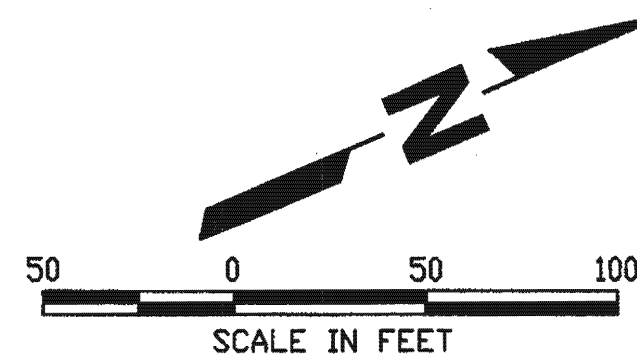
M: 296024.01/100 PERCENT FG/PLANT

LEGEND

- EW-10 EXISTING LFG EXTRACTION WELL
- W-31 PROPOSED LFG EXTRACTION WELL
- W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
- VW-16 EXISTING LFG MONITORING WELLS
- HA-7 SOIL BORING (HAND AUGER)
- 310 NEW INDEX CONTOUR
- NEW INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING TREELINE
- PROPERTY BOUNDARY
- APPROX. LIMITS OF WASTE
- LIMITS OF WETLANDS
- LIMITS OF TREE REMOVAL
- PROPOSED GROUNDWATER RECOVERY WELL (NIC)
- EXISTING OVERBURDEN WELL
- EXISTING BEDROCK WELL
- EXISTING RESIDENTIAL WELL
- EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (NIC)
- NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPE
- EXISTING PIPE
- LIMITS OF FUTURE ROADWAY CAPITAL PROJECT NO. J4158
- PSB 75' PERENNIAL STREAM BUFFER

NOTES:

1. * DENOTES FUTURE ROADWAY CAPITAL PROJECT ITEMS
2. CONTRACTOR SHALL NOT DISTURB EXISTING UNDERGROUND UTILITIES IN THE AT&T TRANSCONTINENTAL CABLE R.O.W. SEE GENERAL NOTE 15 ON SHEET 2. SEE PROFILE AND NOTES ON SHEET 20.
3. ERODED SIDE SLOPES OF EXISTING GULLIES SHALL BE CUT BACK TO 2H : 1V SLOPE AND STABILIZED WITH VEGETATIVE COVER. SEE REPAIR TO EXISTING GULLY DETAIL THIS SHEET.
4. REMOVE EXISTING CMP CULVERT AND BRICK HEADWALL. NEXT TO SOUTH TEMPORARY GRAVEL PARKING LOT. PROVIDE NEW 24" HDPE AT SAME VERTICAL AND HORIZONTAL ALIGNMENT. USE FLARED HDPE END SECTIONS AT BOTH ENDS OF NEW CULVERT.
5. USE STANDARD CONCRETE VALLEY GUTTER PER MSHA STD. MD-389.01 WHERE SHOWN.
6. EXISTING SEDIMENT TRAP TO BE CONVERTED TO WEST BASIN FOR TEMPORARY SEDIMENT STORAGE & PERMANENT STORMWATER MANAGEMENT.
7. CONTRACTOR SHALL REMOVE EXISTING PIPE AT INTERSECTION OF HILLSBOROUGH & NEW CUT ROADS.
8. EXISTING NORTH SEDIMENT BASIN TO BE RE-CONSTRUCTED FOR TEMPORARY SEDIMENT STORAGE AND PERMANENT STORMWATER MANAGEMENT.
9. POST CONSTRUCTION MAINTENANCE FOR THE NORTH DETENTION BASIN, WEST DETENTION BASIN AND WEST-LOW RISE STORMWATER DETENTION MANAGEMENT STRUCTURE IS RESPONSIBILITY OF HOWARD COUNTY DPW.

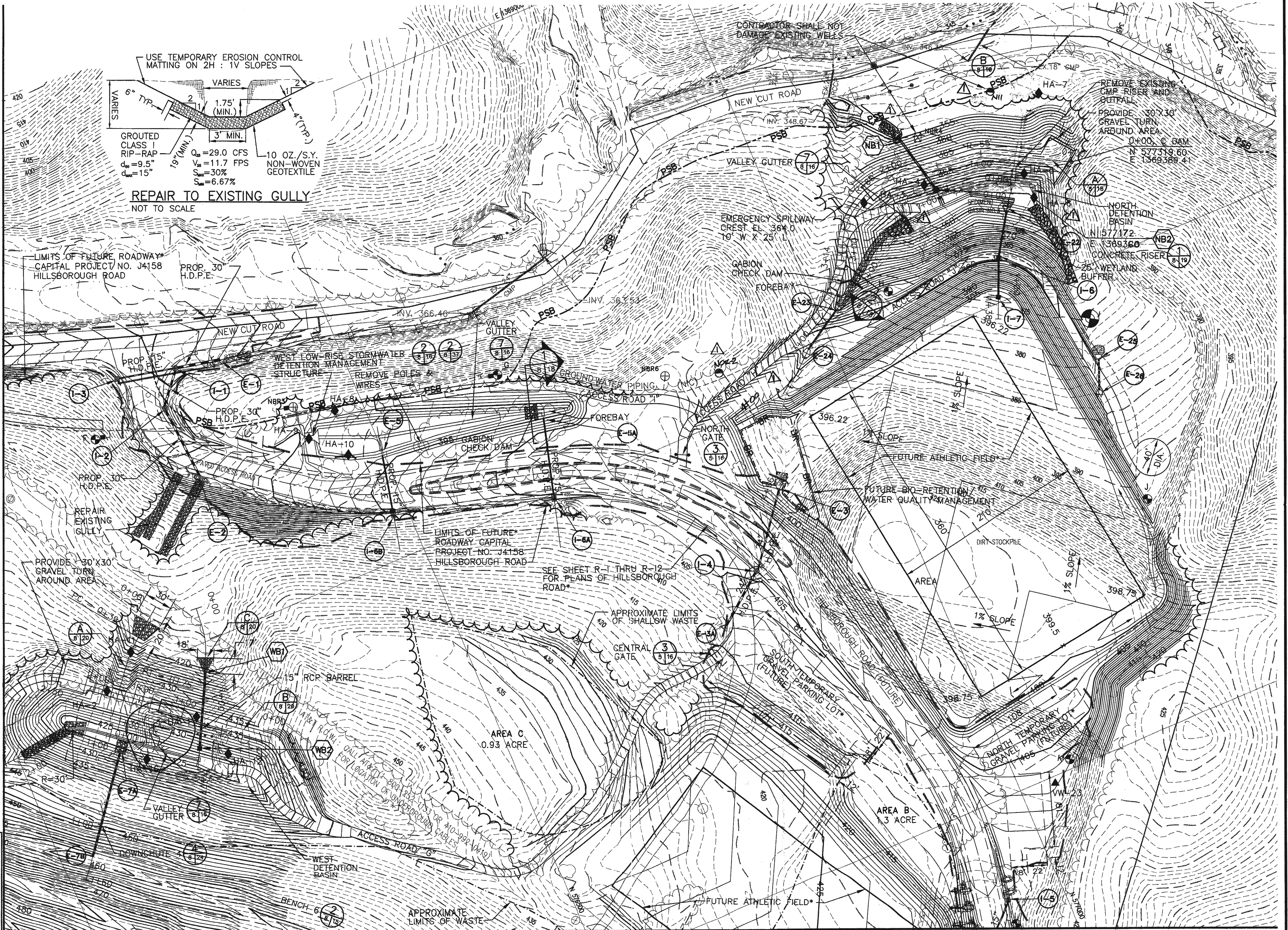


SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

DIRECTOR *[Signature]* 9/14/99 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 9/9/99 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 9/9/99 DATE

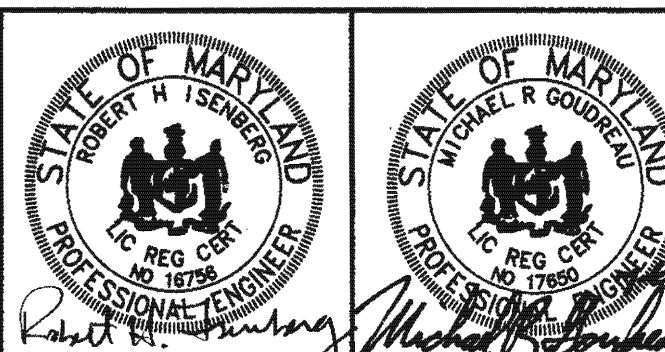
MATCHLINE SEE SHEET 6



MATCHLINE SEE SHEET 9

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DIRECTOR OF PUBLIC WORKS *[Signature]* 7/6/99 DATE
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES *[Signature]* 7/14/99 DATE

SCS ENGINEERS
 CONSULTING ENGINEERS
 11260 ROGER BACON DRIVE
 SUITE 300
 RESTON, VIRGINIA 20190
 PH. (703) 471-6150
 FAX. (703) 471-6676



DES. MRG	6
DRN. JCS	4
CHK. RHI	3
DATE: 07-01-99	BY NO. <i>[Signature]</i> 3/5/99
	REVISION: <i>[Signature]</i> 3/5/99

FINAL GRADING PLAN
 NW-QUADRANT
 CAPITAL PROJECT NO. C-0237-H
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

NEW CUT LANDFILL
 IMPROVEMENTS
 SCALE: 1" = 50'
 SHEET 8 OF 39
 SDP-44-104

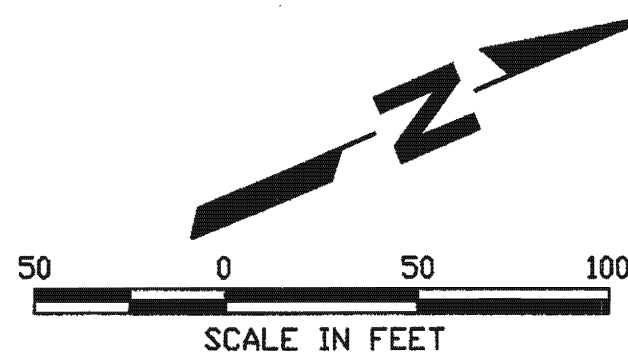
MATCHLINE SEE SHEET 8

LEGEND

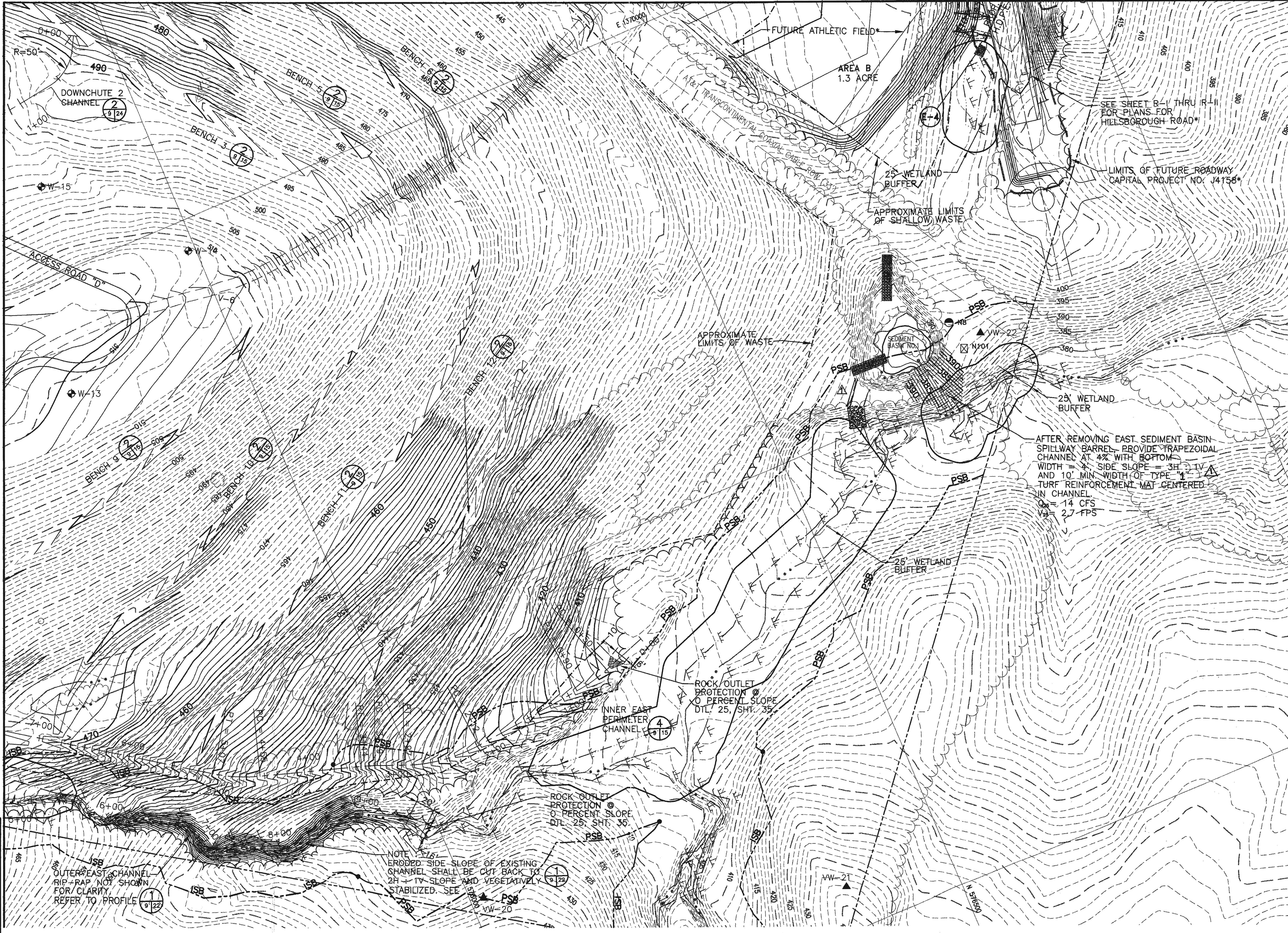
- EW-10 EXISTING LFG EXTRACTION WELL
- W-31 PROPOSED LFG EXTRACTION WELL
- W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
- VW-16 EXISTING LFG MONITORING WELLS
- 310 NEW INDEX CONTOUR
- NEW INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING TREELINE
- PROPERTY BOUNDARY
- APPROX. LIMITS OF WASTE
- LIMITS OF WETLANDS
- LIMITS OF TREE REMOVAL
- PROPOSED GROUNDWATER RECOVERY WELL (NIC)
- EXISTING OVERBURDEN WELL
- EXISTING BEDROCK WELL
- EXISTING RESIDENTIAL WELL
- EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (NIC)
- NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPE
- EXISTING PIPE
- LIMITS OF FUTURE ROADWAY CAPITAL PROJECT NO. J4158

NOTES:

1. FOR DOWNCHUTE, AND SWALE PROFILES SEE SHEET NO. 24 & 25.
2. REMOVE DEAD TREES OUTSIDE EAST LIMITS OF TREE REMOVAL AS MARKED BY ENGINEER.
3. REMOVE EXISTING CMP RISER AND OUTFALL IN EXISTING SEDIMENT BASIN NO. 1. EXISTING SEDIMENT BASIN NO. 1 TO BE RETROFITTED FOR TEMPORARY USE DURING CONSTRUCTION (SEE SHEET 33) THEN ABANDONED BY REGRADING FOR POSITIVE DRAINAGE AS SHOWN ON THIS SHEET.
4. ABANDON EXISTING LFG PIPES, WELLS & MANHOLES AS DIRECTED BY THE ENGINEERS.
5. REMOVE SURFACE DEBRIS AND LEAVE SITE CLEAR OF DEBRIS.
6. * DENOTES FUTURE ROADWAY CAPITAL PROJECT ITEMS.



MATCHLINE SEE SHEET 7



SUBDIVISION NAME		LOT/PARCEL	
HO. CO. GOVERNMENT		529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP	
180/339	R-20	31	
WATER CODE	SEWER CODE	CENSUS TR.	

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

[Signature] 9/14/99 DATE
DIRECTOR

[Signature] 9/14/99 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 9/13/99 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

M:\296024.01\90 PERCENTY FG\PLAN1

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 7/6/99 DATE
DIRECTOR OF PUBLIC WORKS

[Signature] 7/6/99 DATE
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676

DES.	MRG		
DRN.	JCS		
CHK.	RHI		
DATE:	07-01-99		
BY	NO.	REVISION	DATE
		Revised TYPE "A" to TYPE 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	

FINAL GRADING PLAN
NE-QUADRANT

NEW CUT LANDFILL
IMPROVEMENTS

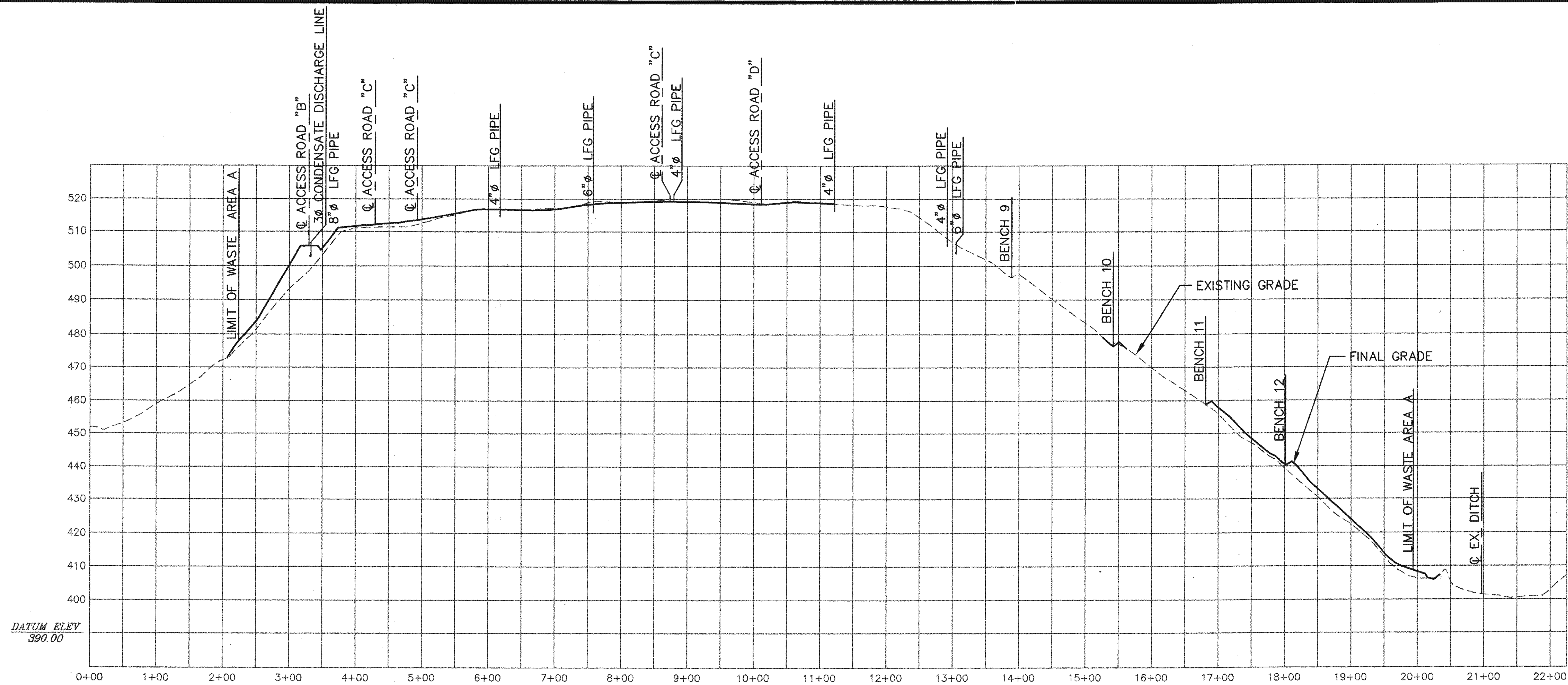
CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

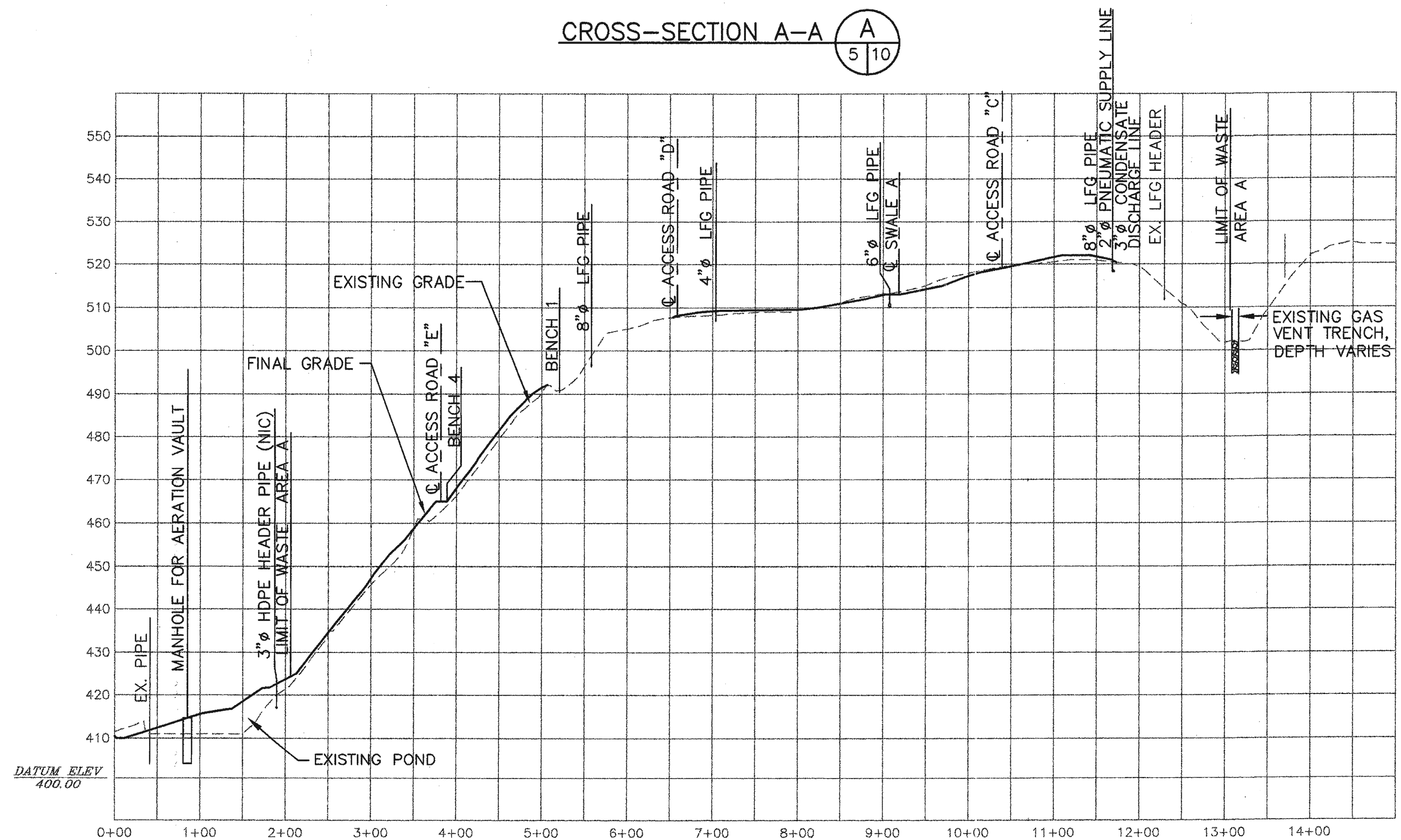
SCALE:
1" = 50'

SHEET
9 OF 39

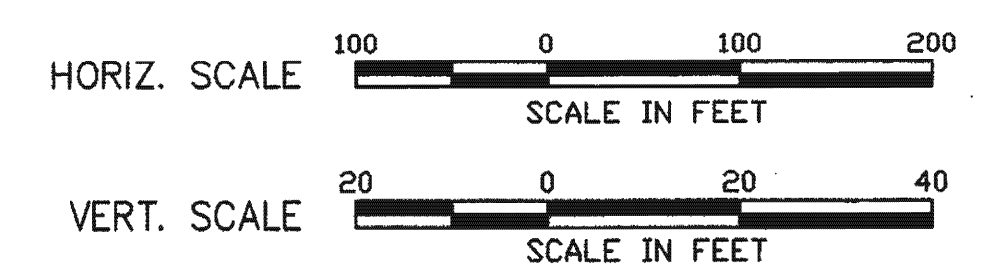
SDP-99-109



CROSS-SECTION A-A (A) 5/10



CROSS-SECTION B-B (B) 5/10



SUBDIVISION NAME		LOT/PARCEL	
HO. CO. GOVERNMENT		529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP	
180/339	R-20	31	
WATER CODE	SEWER CODE	CENSUS TR.	

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
DIRECTOR	DATE
<i>[Signature]</i>	7/14/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	9/6/99
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	9/13/99

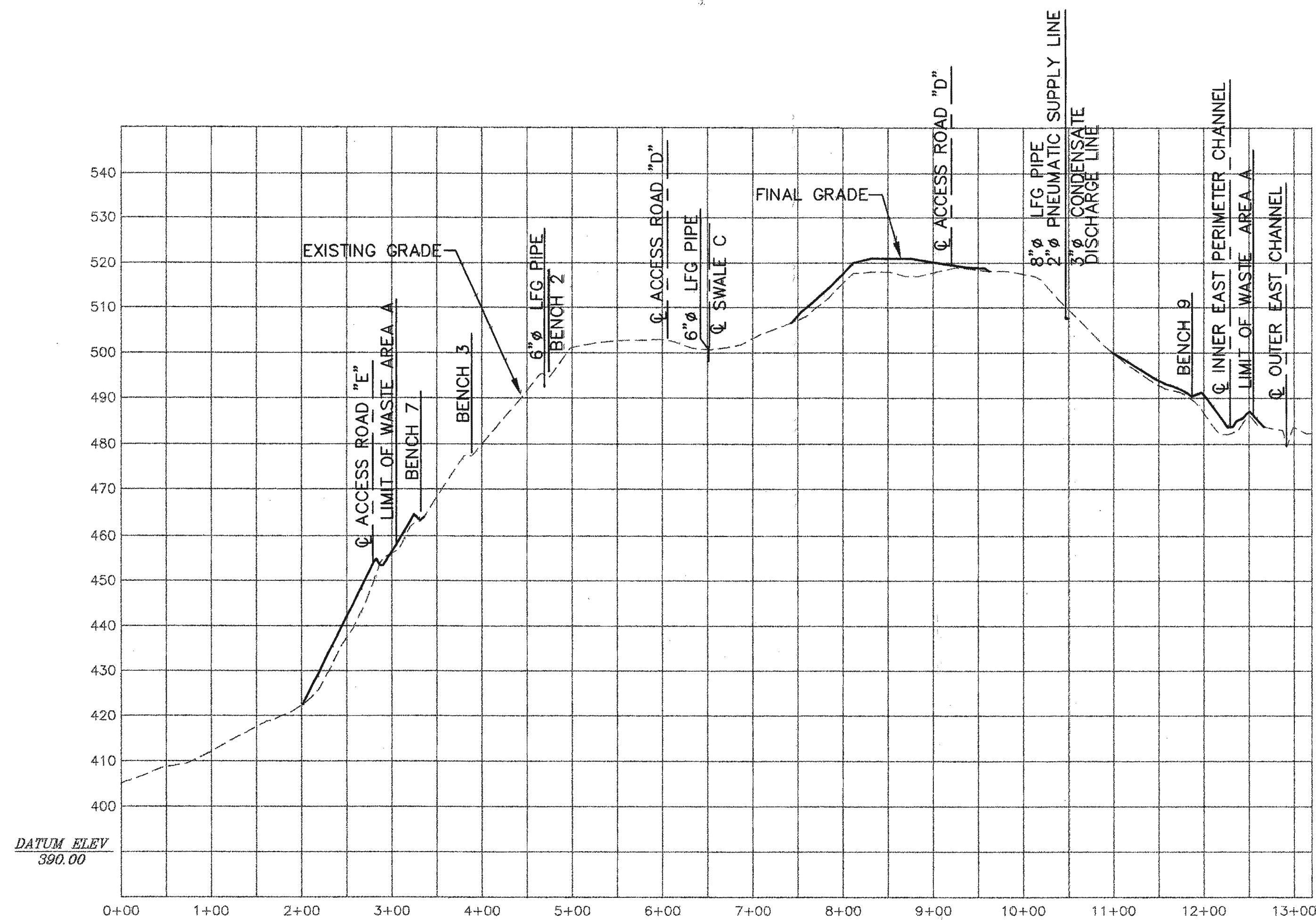
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
DIRECTOR OF PUBLIC WORKS	DATE
<i>[Signature]</i>	7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES	DATE
<i>[Signature]</i>	7/6/99

SCS ENGINEERS
 CONSULTING ENGINEERS
 11260 ROGER BACON DRIVE
 SUITE 300
 RESTON, VIRGINIA 20190
 PH. (703) 471-6150
 FAX. (703) 471-6676

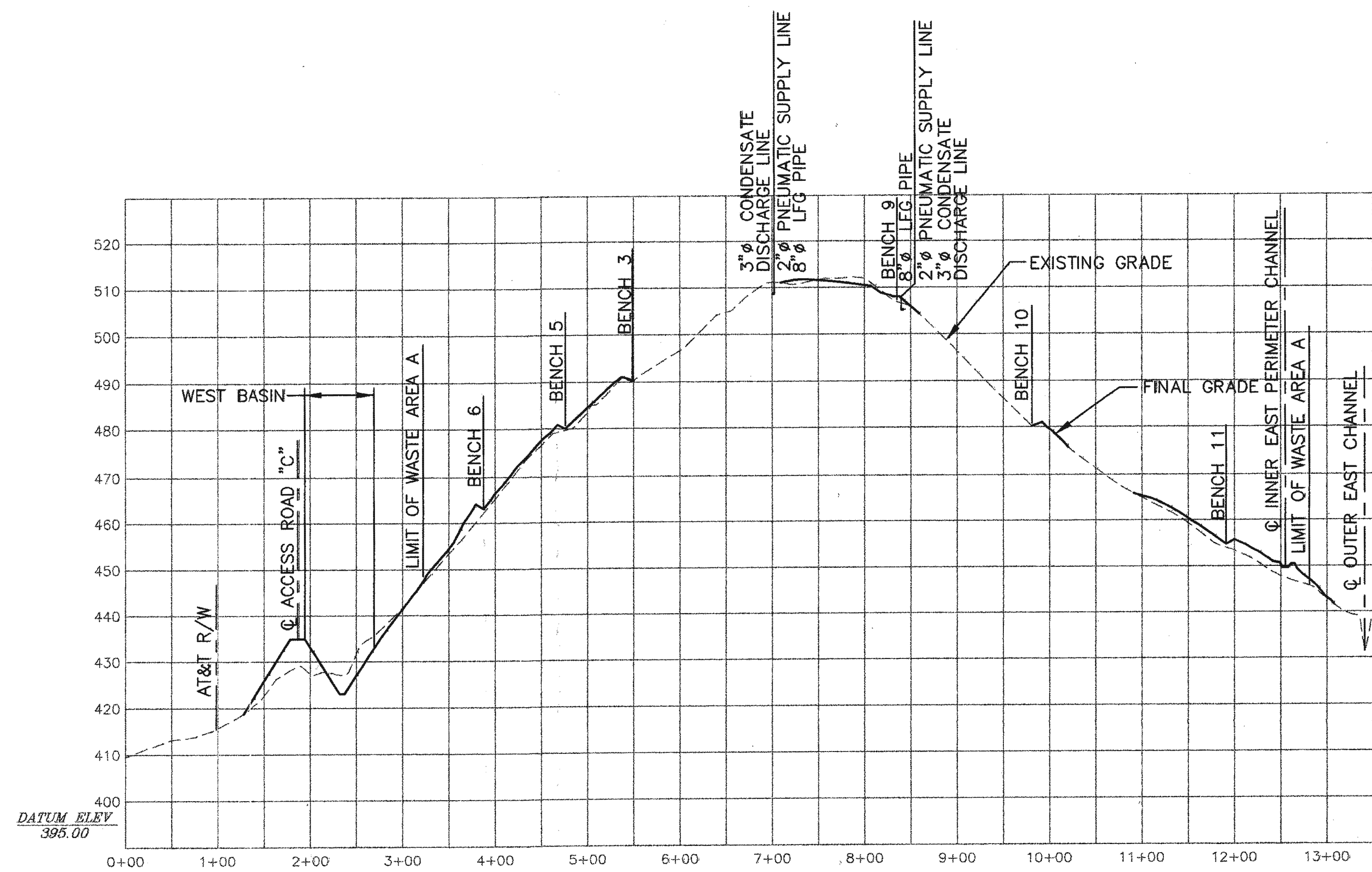
DES.	MRG				
DRN.	JCS				
CHK.	RHI				
DATE:	03-12-99	BY	NO.	REVISION	DATE

LANDFILL
CROSS SECTIONS

NEW CUT LANDFILL
IMPROVEMENTS
CAPITAL PROJECT NO. C-0237-H
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND



CROSS-SECTION C-C C
5 | 11



CROSS-SECTION D-D D
5 | 11

M:\296024\01\90 PERCENT\PROFILES\ C1-C1, D1-D1

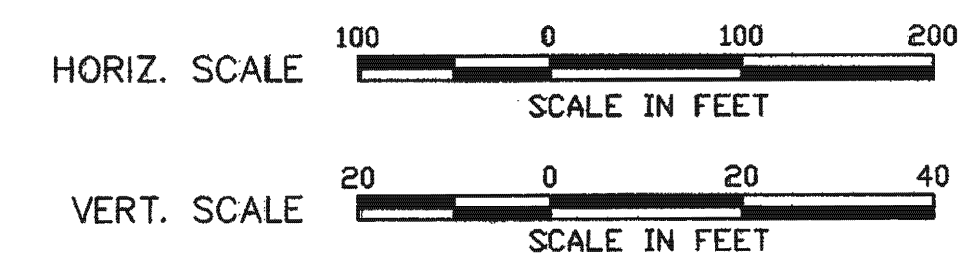
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

[Signature] 9/14/99
DIRECTOR DATE

[Signature] 9/9/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 9/13/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

SUBDIVISION NAME	LOT/PARCEL		
HO. CO. GOVERNMENT	529		
LIBER/FOLIO	ZONE	TAX/ZONE MAP	
180/339	R-20	31	
WATER CODE	SEWER CODE	CENSUS TR.	

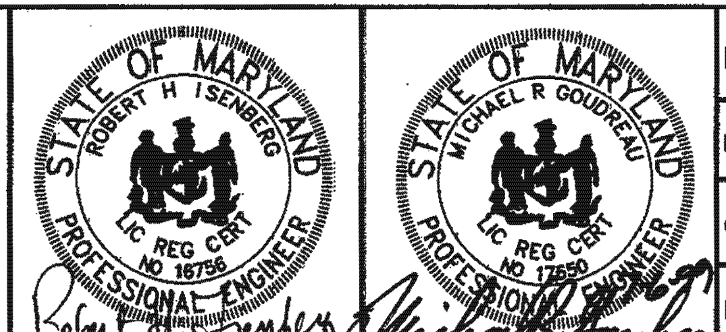


DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 7/6/99
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG			
DRN.	JCS			
CHK.	RHI			
DATE:	03-12-99	BY	NO.	REVISION
				DATE

LANDFILL
CROSS SECTIONS

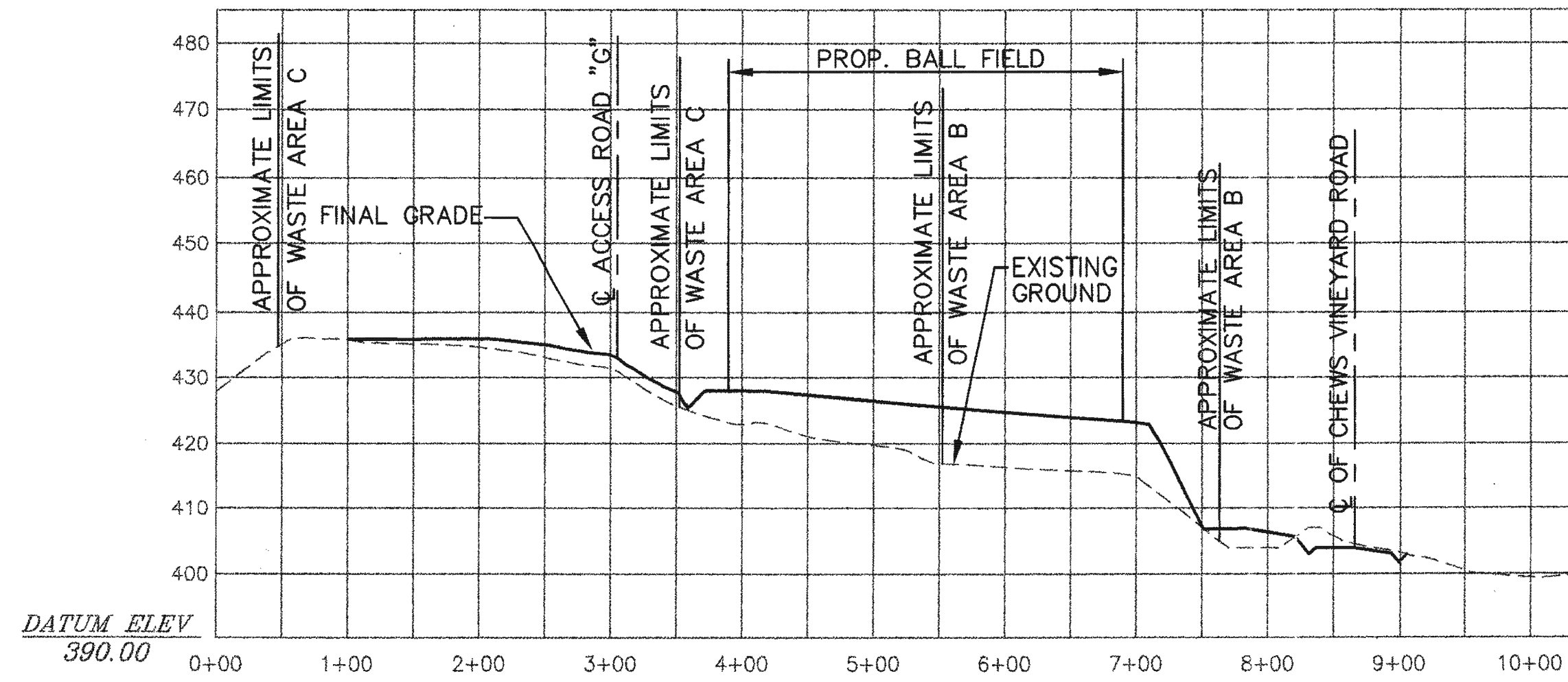
NEW CUT LANDFILL
IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

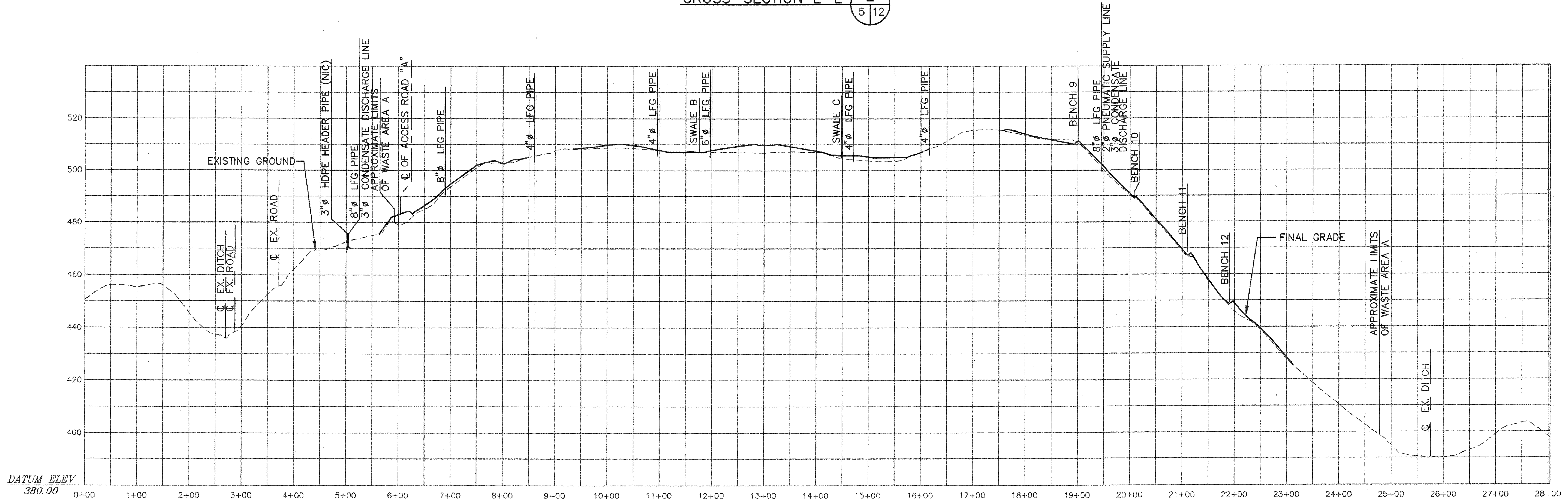
2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE:
AS SHOWN

SHEET
11 OF 39



CROSS-SECTION E-E E
5 | 12



CROSS-SECTION F-F F
5 | 12

M:\296024.01\90 PERCENT\PROFILES\ E1-E1, F-1-F-1

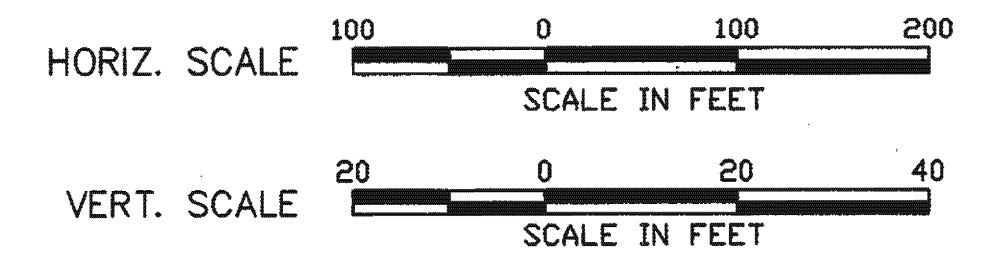
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

[Signature] 9/14/99
DIRECTOR DATE

[Signature] 9/9/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 7/13/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

SUBDIVISION NAME	LOT/PARCEL		
HO. CO. GOVERNMENT	529		
LIBER/FOLIO	ZONE	TAX/ZONE MAP	
180/339	R-20	31	
WATER CODE	SEWER CODE	CENSUS TR.	

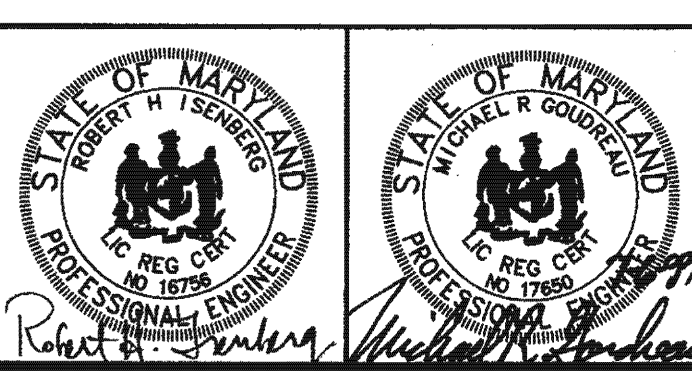


DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 7/6/99
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

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CONSULTING ENGINEERS
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SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG		
DRN.	JCS		
CHK.	RHI		
DATE:	03-08-99	BY	NO.
		REVISION	DATE

LANDFILL
CROSS SECTIONS

NEW CUT LANDFILL
IMPROVEMENTS

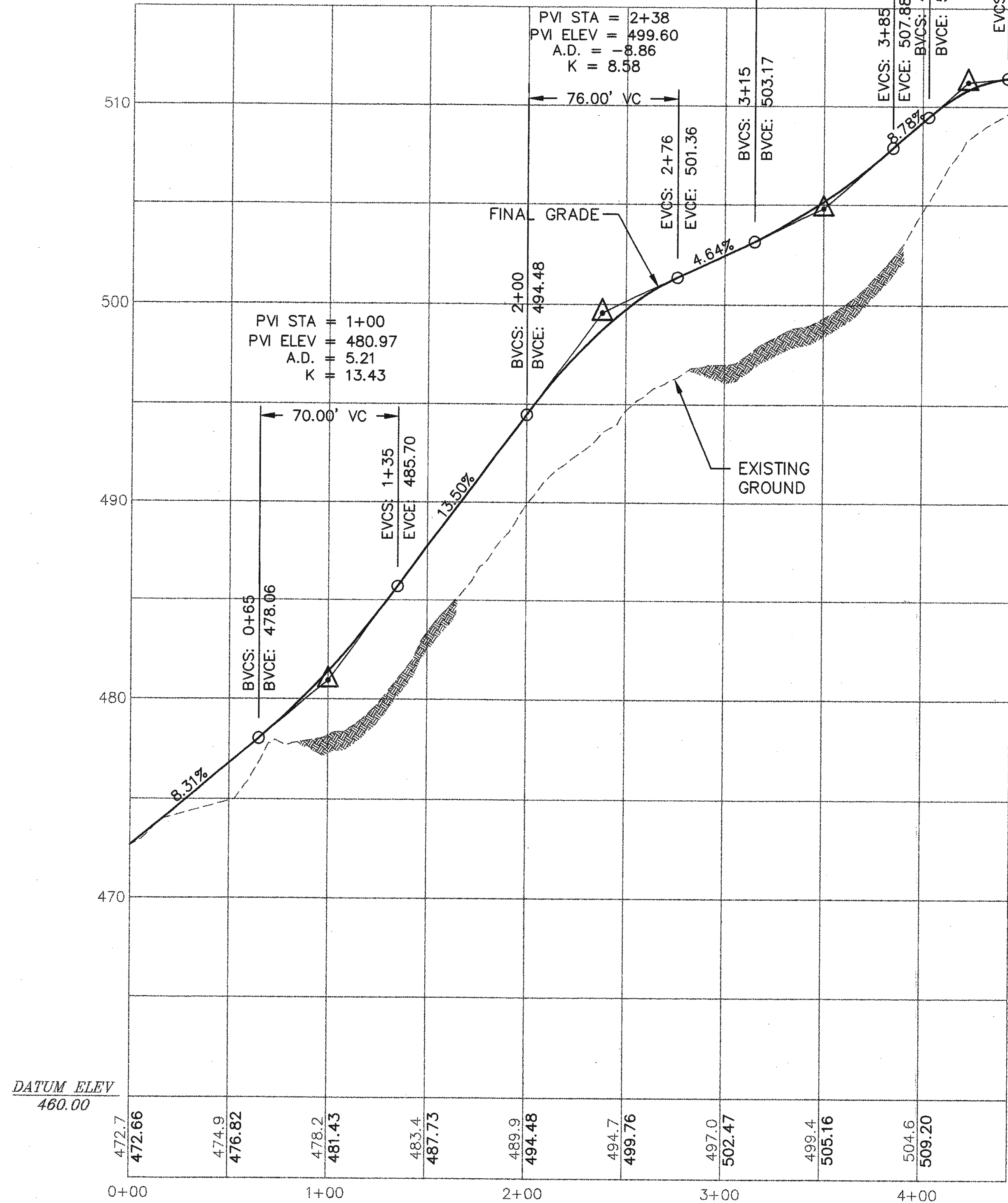
CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

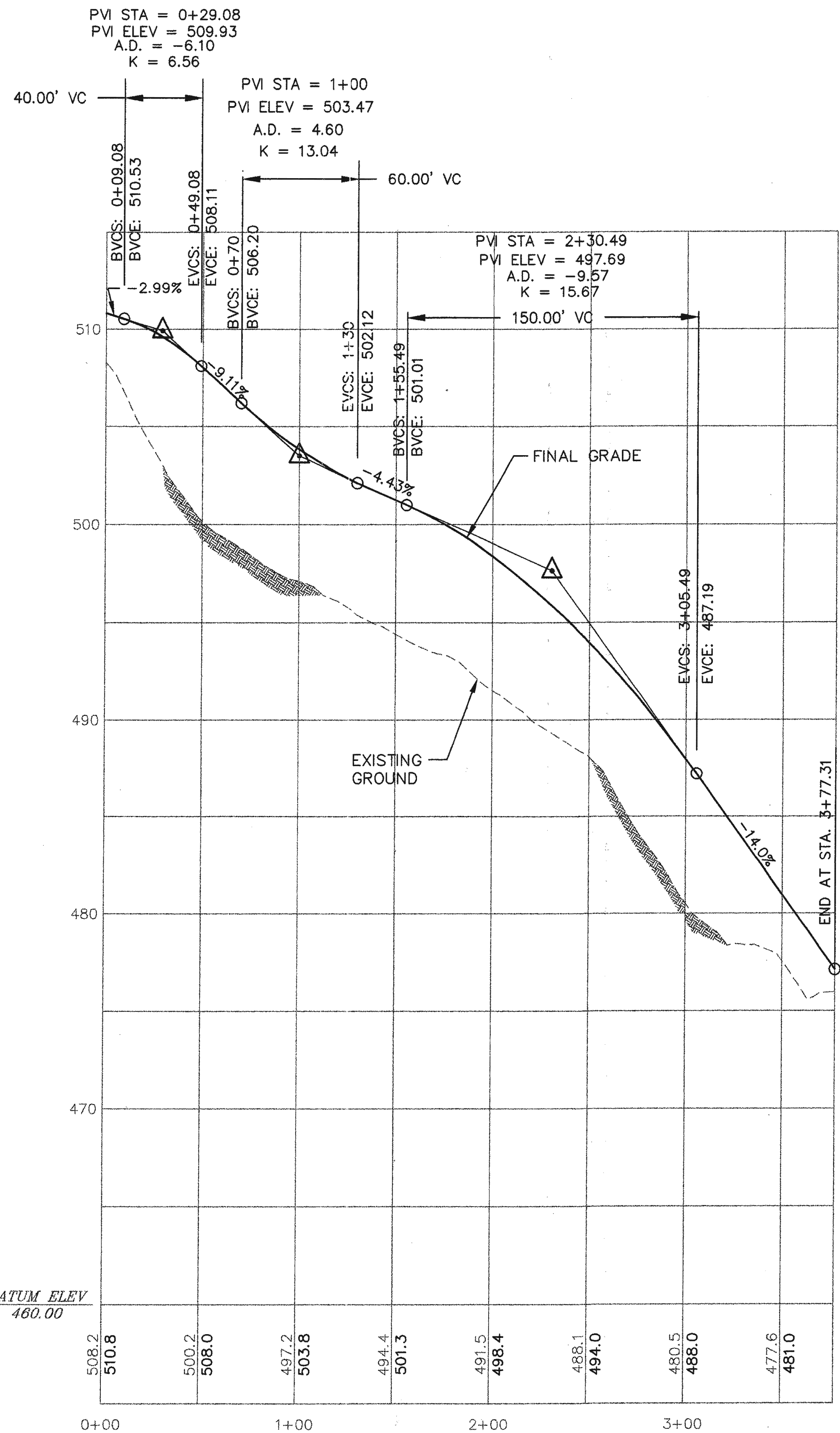
SCALE:
AS SHOWN

SHEET
12 OF 39

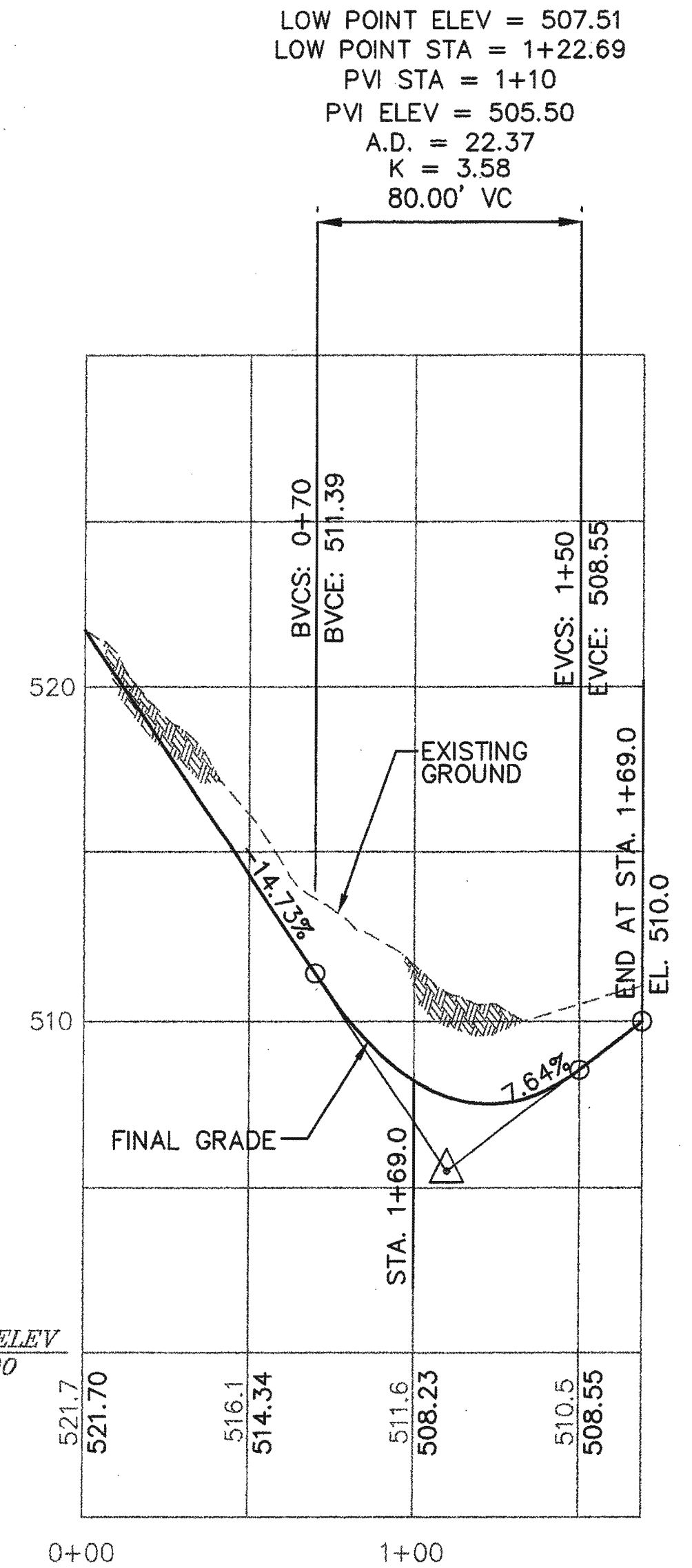
M:\296024\01\90 PERCENT\PROFILES\XSECTION\RD--PROF



LANDFILL ACCESS ROAD A (1/13)
5,6,7,29,30,31



LANDFILL ACCESS ROAD B (2/13)
5,7,29,31



LANDFILL ACCESS ROAD C (3/13)
5,7,29,31

- NOTES:
- FOR DETAIL OF ACCESS ROAD A & B REFER TO SHEET 15.
 - FOR GATE LOCATION ALONG LANDFILL ACCESS ROAD "A", "B" & "C" SEE SHEET 7.

LOW POINT ELEV = 507.51
LOW POINT STA = 1+22.69
PVI STA = 1+10
PVI ELEV = 505.50
A.D. = 22.37
K = 3.58
80.00' VC

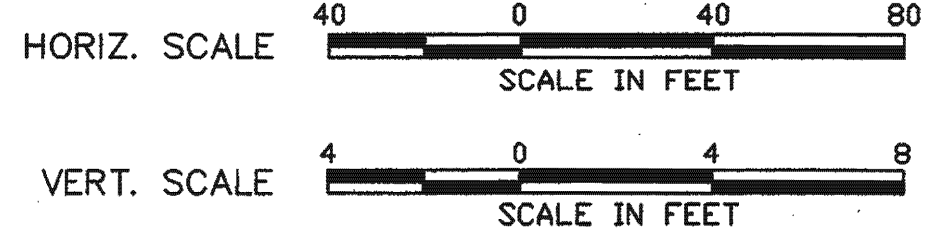
SUBDIVISION NAME HO. CO. GOVERNMENT	LOT/PARCEL 529	
LIBER/FOLIO 180/339	ZONE R-20	TAX/ZONE MAP 31
WATER CODE	SEWER CODE	CENSUS TR.

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

DIRECTOR: *[Signature]* 9/14/99
DATE: 9/14/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 9/14/99
DATE: 9/14/99

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* 9/13/99
DATE: 9/13/99

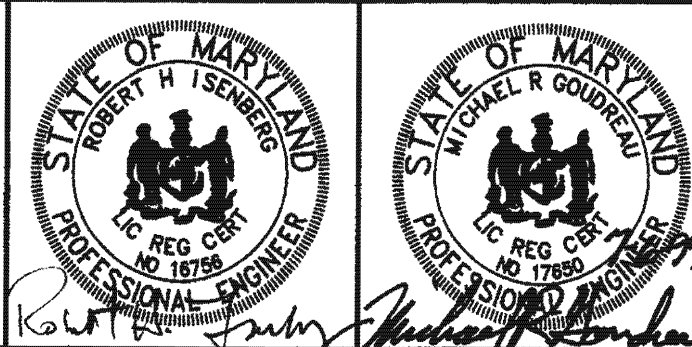


DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 7/6/99
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

SCS ENGINEERS
CONSULTING ENGINEERS
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SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG				
DRN.	JCS				
CHK.	RHI				
DATE:	06-02-99	BY:	NO.	REVISION	DATE

ACCESS ROAD PROFILES

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

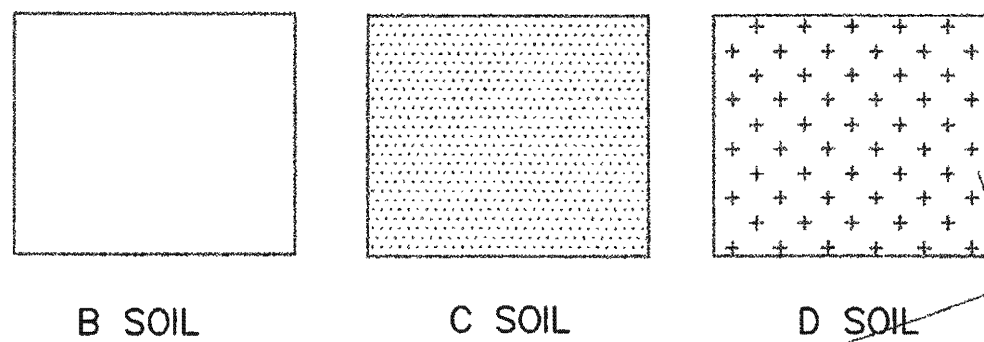
SCALE: AS SHOWN

SHEET 13 OF 39

SDP-99-109

LEGEND

- ⊕ EW-10 EXISTING LFG EXTRACTION WELL
- ⊕ W-31 PROPOSED LFG EXTRACTION WELL
- ⊕ W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
- ▲ VW-16 EXISTING LFG MONITORING WELLS
- CS-1 PROPOSED CONDENSATE SUMP
- 310 NEW INDEX CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING TREELINE
- PROPERTY BOUNDARY
- LIMITS OF WETLANDS
- ⊕ PROPOSED GROUNDWATER RECOVERY WELL (BY OTHERS)
- ⊕ EXISTING OVERBURDEN WELL
- ⊕ EXISTING BEDROCK WELL
- ⊕ EXISTING RESIDENTIAL WELL
- ⊕ EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (BY OTHERS)
- DRAINAGE AREA DIVIDE
- DRAINAGE SUB-AREA DIVIDE
- LIMITS OF ROADWAY CAPITAL PROJECT*
- CHANNEL
- ← BENCH (ARROW SHOWS DIRECTION OF FLOW)
- SWALE



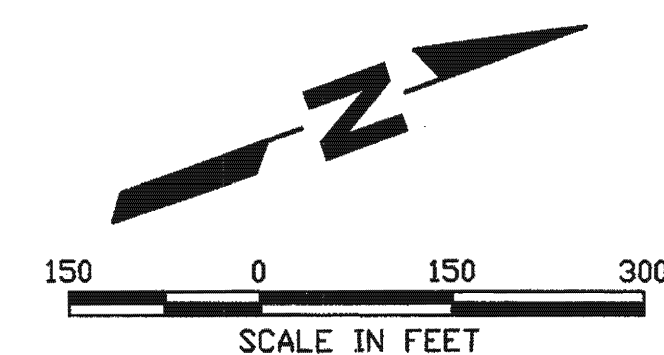
NOTE:
 1. * DENOTES ROADWAY CAPITAL PROJECT ITEMS.
 2. SLOPES SHOWN FOR Tc FLOW PATHS ARE AVERAGES

AREA AND C FACTOR TABULATION

STRUCTURE NAME	SUB AREA (Ac.)	AREA (Ac.)	C FACTOR	PERCENT IMPERVIOUS
DOWNCHUTE 4	1.0	1.0	0.32	0
DOWNCHUTE 5	2.6	2.6	0.32	0
DOWNCHUTE 5B	3.3	5.9	0.31	0
E-24	7.06	7.06	0.38	12.91
E-26	0.51	0.51	0.31	5.9
I-7	1.18	1.18	0.19	0
I-6	0.37	1.55	0.42	22.3
SWALE A (E-15, E-17)	2.9	2.9	0.25	0
SWALE B (E-19)	1.8	1.8	0.25	0
DOWNCHUTE 3 (E-9)	12.5	12.5	0.28	0
SWALE C (E-21)	2.9	2.9	0.32	0

POST-LANDFILL DEVELOPMENT PEAK FLOW RATES

AREA NAME	AREA (Ac.)	RCN	Tc (hrs)	PEAK FLOW, Q, PER STORM EVENT (cfs)			
				Q2	Q10	Q25	Q100
A	60.2	72	0.35	53	140	165	248
B	22.73	74	0.36	23	57	66	98
C	6.87	72	0.10	9	23	27	40
D	3.80	74	0.11	6	14	16	23
E	12.46	75	0.31	3	8	17	40
F	0.7	60	0.13	<1	1	2	3
G	26.9	72	0.33	8	20	29	75
H	2.51	73	0.13	3	8	10	15
I	2.80	68	0.19	2	7	9	13



**DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND**

DIRECTOR: *[Signature]* 9/11/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 9/19/99
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* 9/13/99

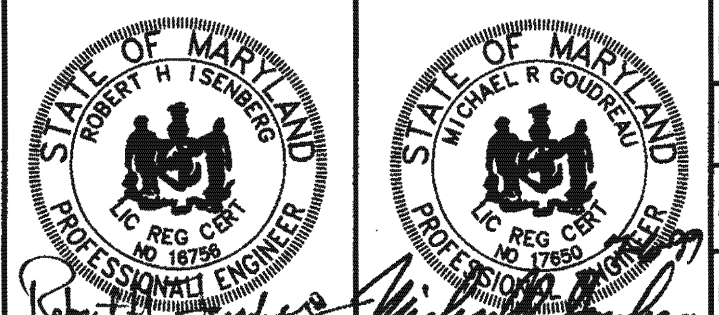
SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

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

DIRECTOR OF PUBLIC WORKS: *[Signature]* 7/6/99
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES: *[Signature]* 7/6/99

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CONSULTING ENGINEERS**

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 FAX. (703) 471-6676



DES. MRG	6
DRN. JCS	5
CHK. RHI	4
DATE: 07-01-99	3
BY NO.	2
REVISION	1

DRAINAGE AREA MAP

**NEW CUT LANDFILL
IMPROVEMENTS**

CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

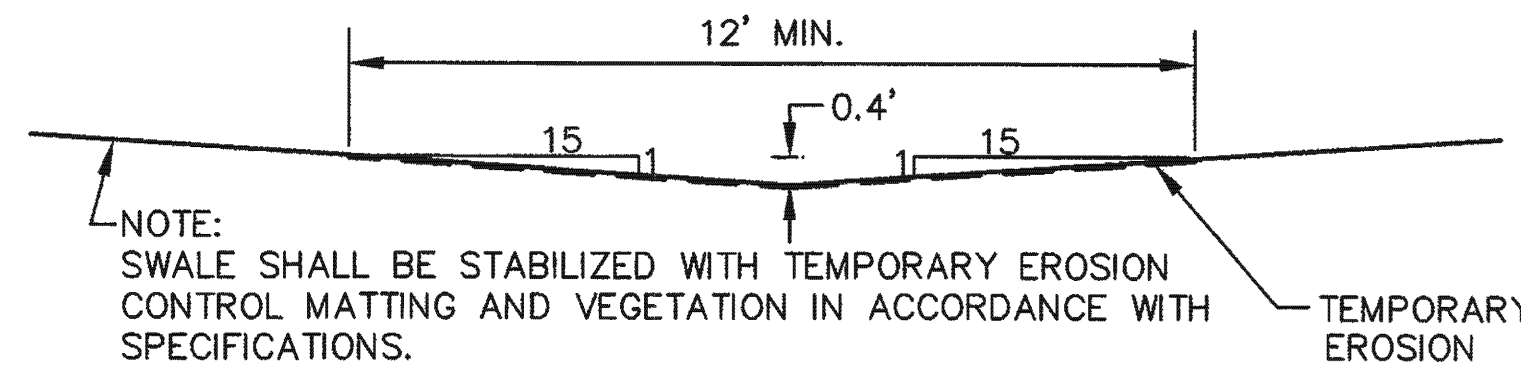
SCALE:
150

SHEET
14 OF 39

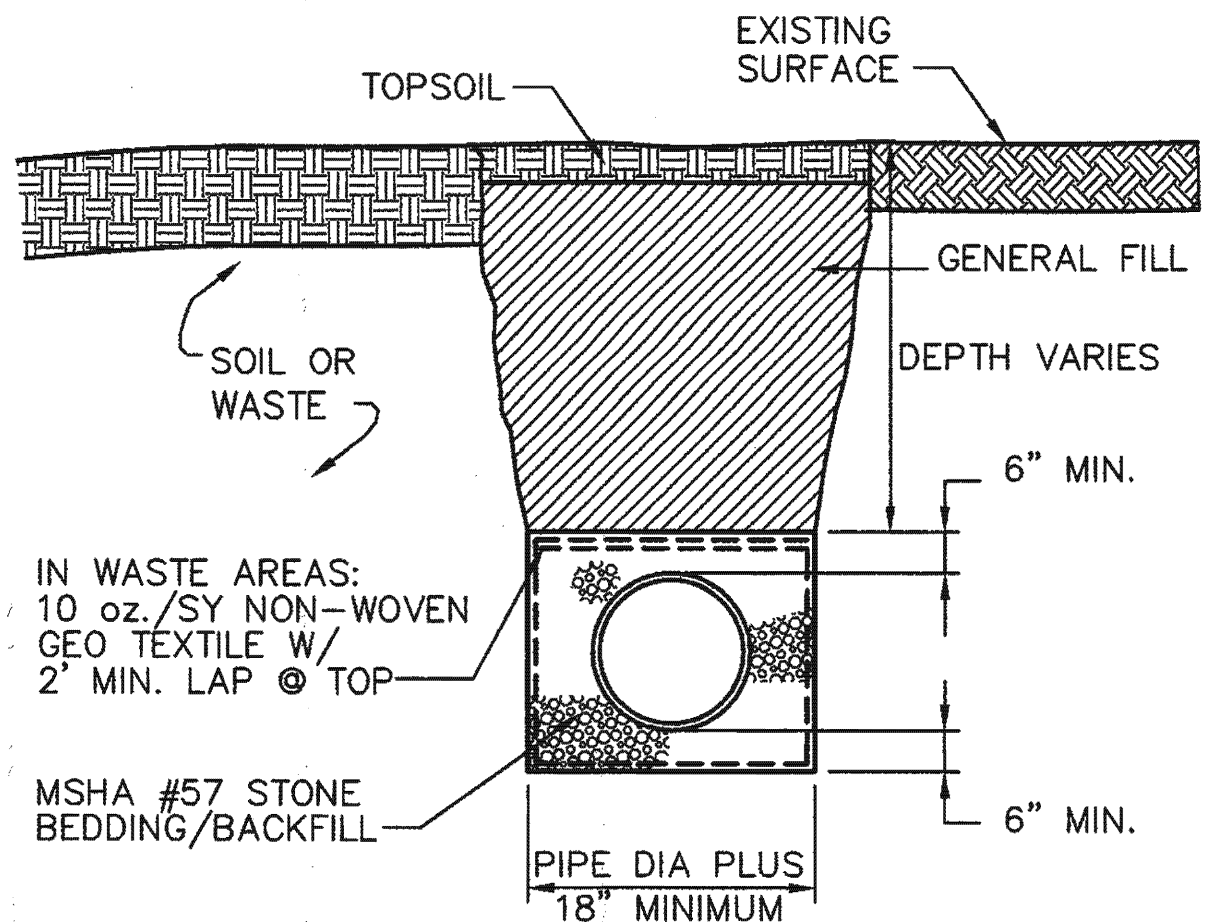
SDP-99-109

M:\296024.01\100PERCENT\ DRAINMAP_POSTDAM_HA03NCRD.DWG3NCRD

NOTE: DURING GRADING ACTIVITIES, THE CONTRACTOR SHALL PLACE EROSION CONTROL MAT, TURF REINFORCEMENT MAT, RIP-RAP AS SOON AS DITCH/BENCH/CHANNEL/DOWNCHUTE GRADE IS ESTABLISHED.

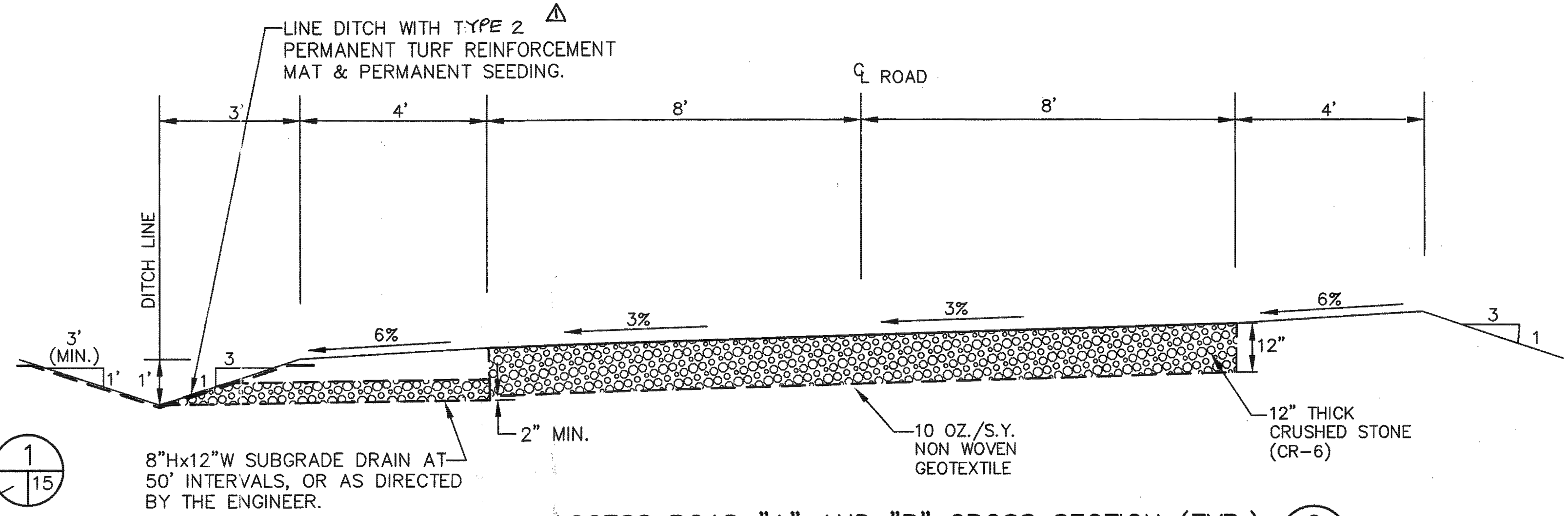


SWALE CROSS-SECTION 3
NO SCALE
5,6,7,8,24,25,29,30,31,32

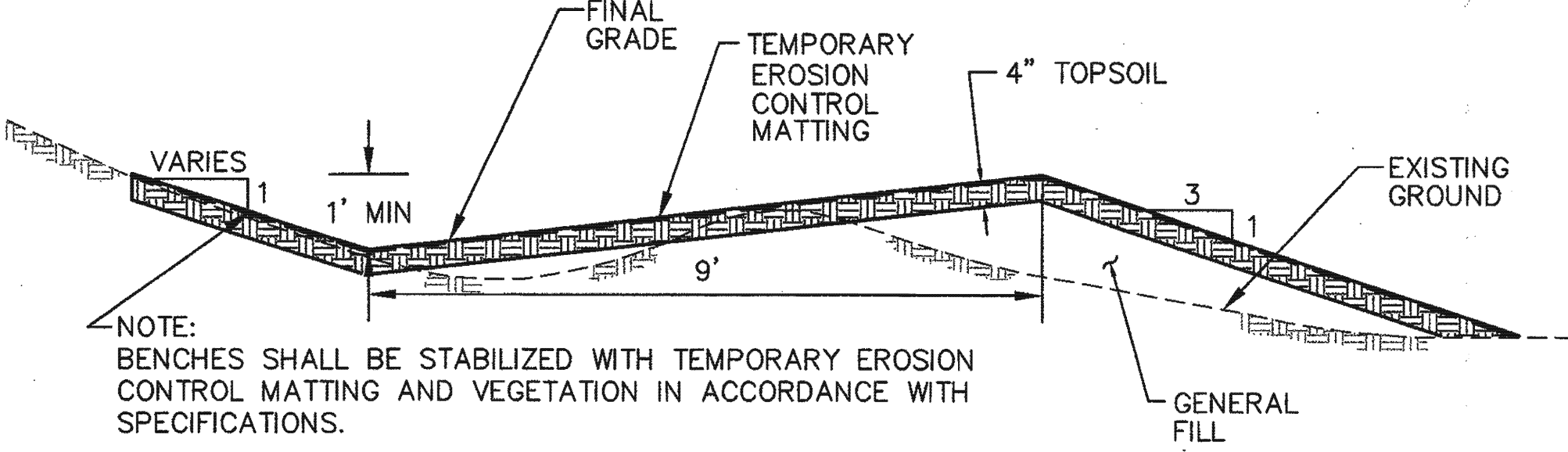


HDPE OUTLET PIPE BEDDING AND TRENCH DETAIL 1
NO SCALE
24,25

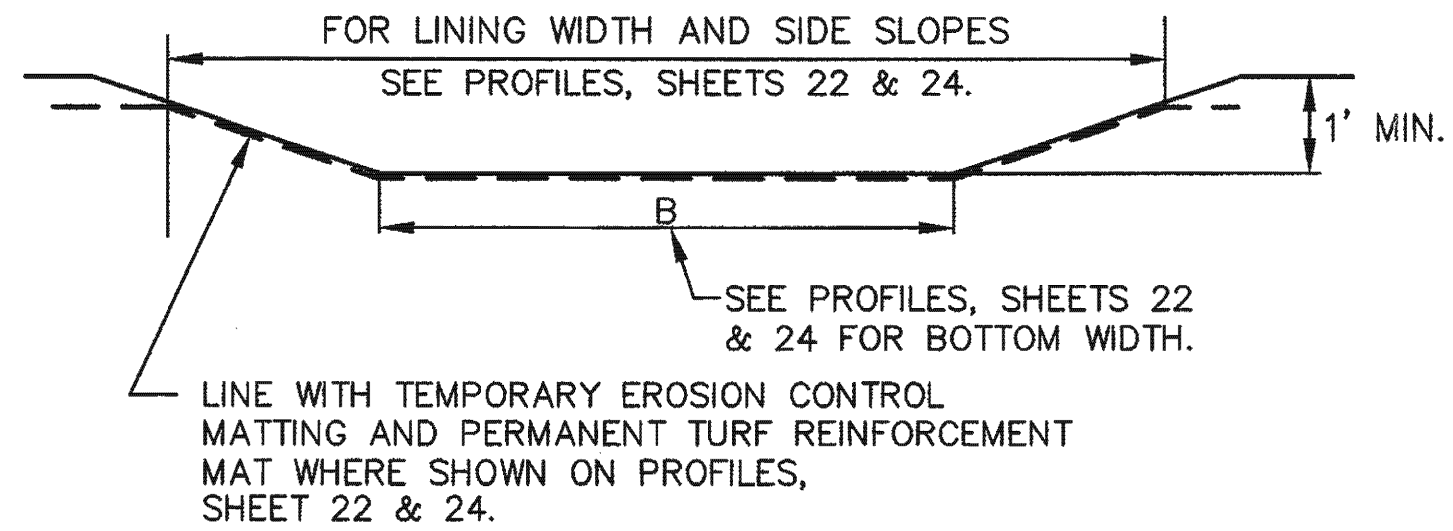
NOTE:
1. REFER TO HDPE PIPE PROFILE FOR PIPE ELEVATIONS.



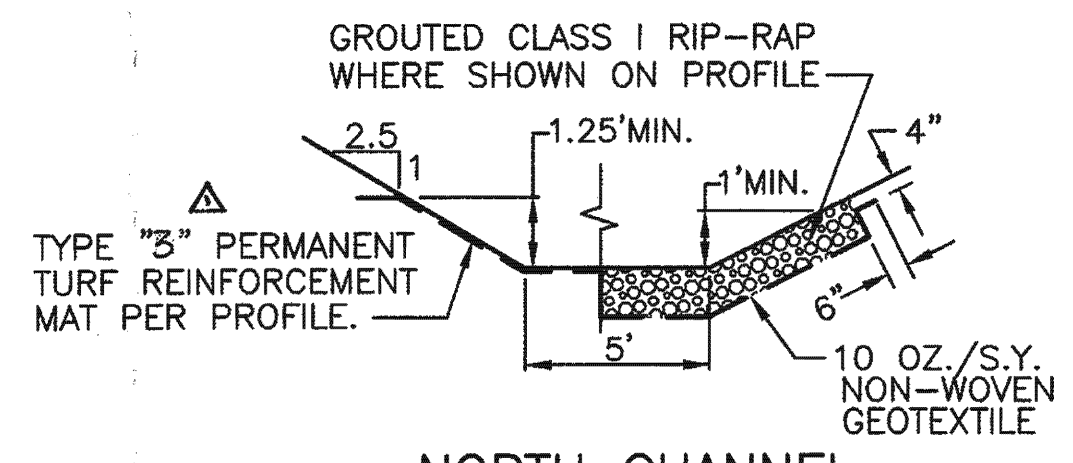
ACCESS ROAD "A" AND "B" CROSS SECTION (TYP.) 6
NO SCALE
5,6,7,29,30,31



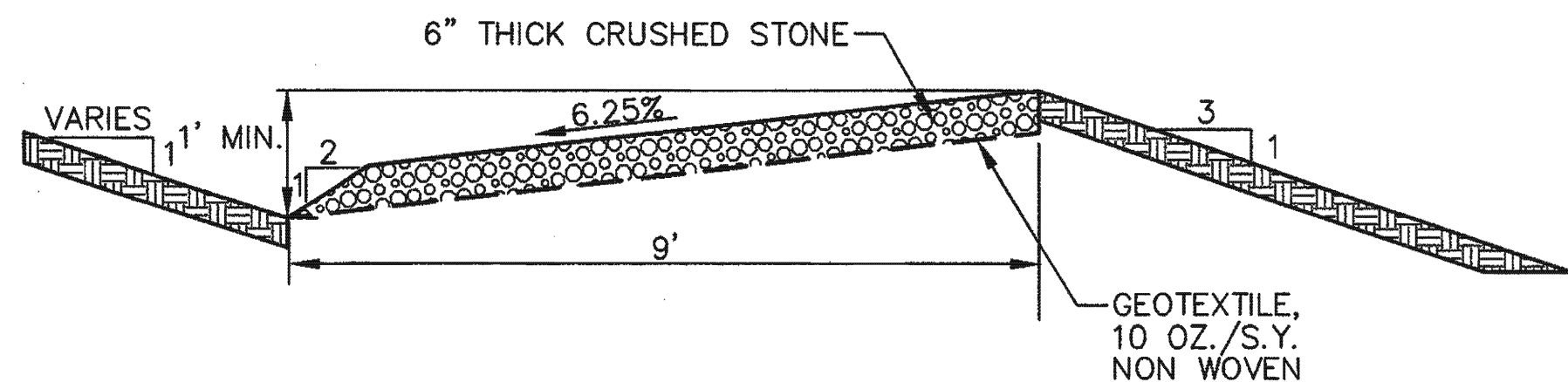
TYPICAL BENCH IMPROVEMENT CROSS-SECTION 2
NO SCALE
5,6,7,8,9,29,30,31,32,33



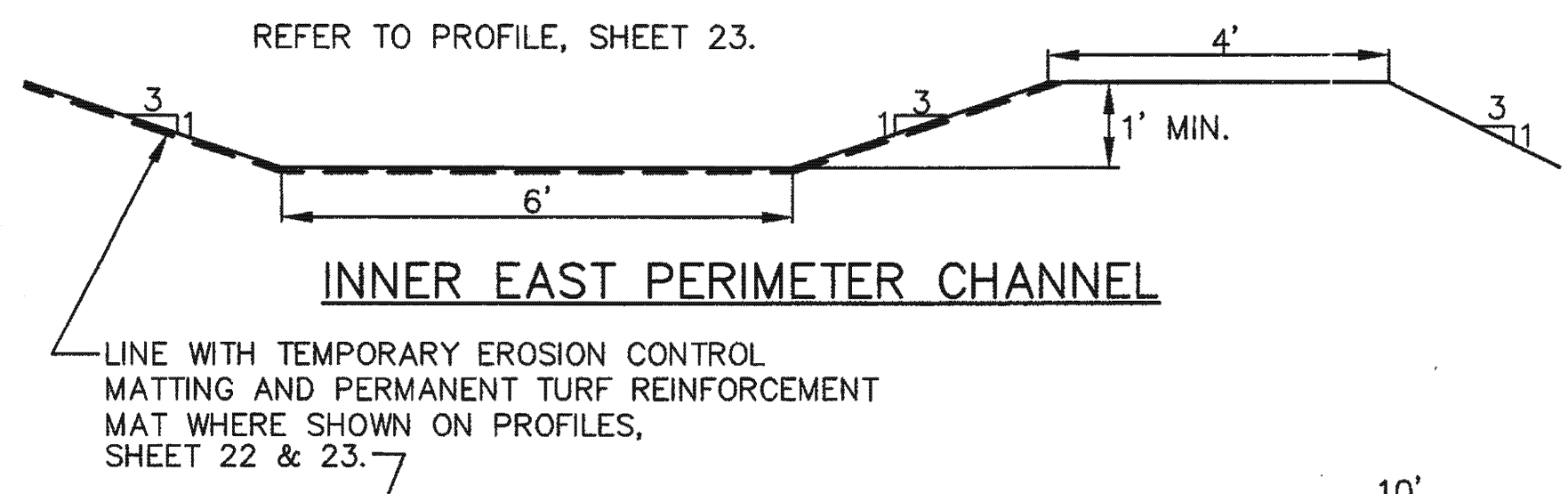
DOWNCHUTE CHANNELS, SW-1, SW-2



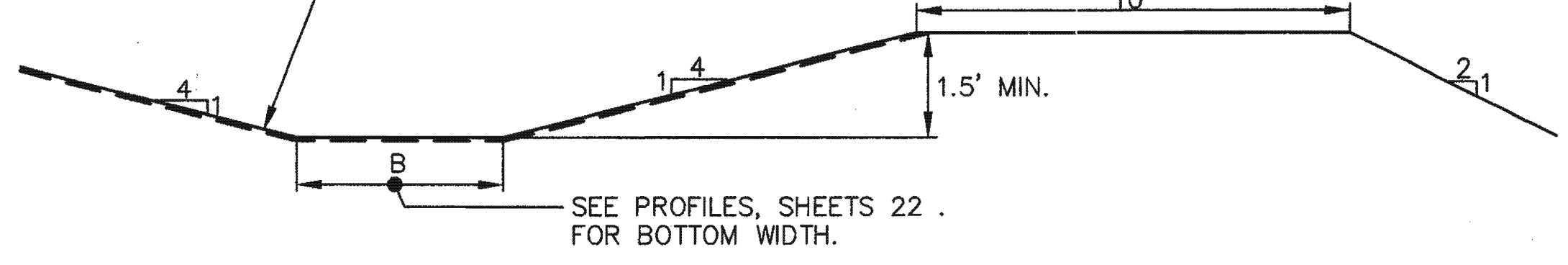
NORTH CHANNEL
NOT TO SCALE



CROSS-SECTION OF BENCH 4 WITH ACCESS ROAD 7
NO SCALE
5,6,29,30



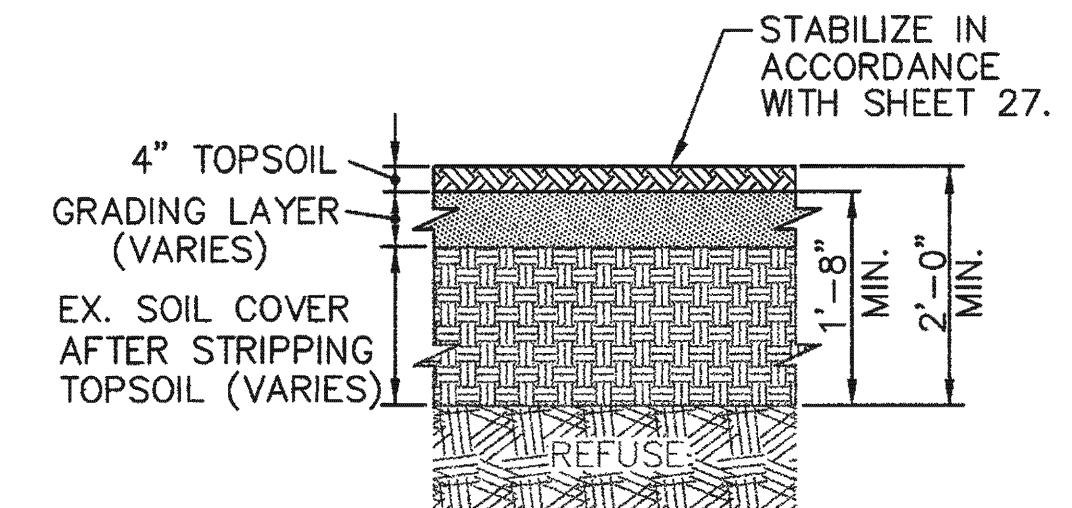
INNER EAST PERIMETER CHANNEL



WEST PERIMETER CHANNEL

NOTE:
ANCHORING OF TEMPORARY AND PERMANENT MAT SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATIONS.

NOTE: DURING GRADING ACTIVITIES, THE CONTRACTOR SHALL PLACE EROSION CONTROL MAT, TURF REINFORCEMENT MAT, RIP-RAP AS SOON AS DITCH/BENCH/CHANNEL/DOWNCHUTE GRADE IS ESTABLISHED.



FINAL CAP IMPROVEMENT SECTION 5
NO SCALE
6, 7, 8, 9

- NOTES:
- EXISTING SOIL COVER THICKNESS VARIES. (SEE SHEET NO. 4).
 - WHERE EXISTING SOIL COVER EXCEEDS 2'-0" (BEFORE TOPSOIL STRIPPING), TOPSOIL, GRADE AS SHOWN ON PLANS, TO MEET MINIMUM SLOPE AND THICKNESS REQUIREMENTS, AND STABILIZE WITH TOPSOIL AND VEGETATIVE COVER.
 - WHERE EXISTING SOIL COVER IS LESS THAN 2'-0" (BEFORE TOPSOIL STRIPPING), STRIP AND STOCKPILE EXISTING TOPSOIL, AND PLACE GRADING LAYER SOIL TO MEET MINIMUM SLOPE AND THICKNESS REQUIREMENTS. THE COMBINED MINIMUM THICKNESS OF LOW PERMEABILITY GRADING LAYER SOIL PLUS EXISTING SOIL COVER SHALL BE 20 INCHES IN THESE AREAS.

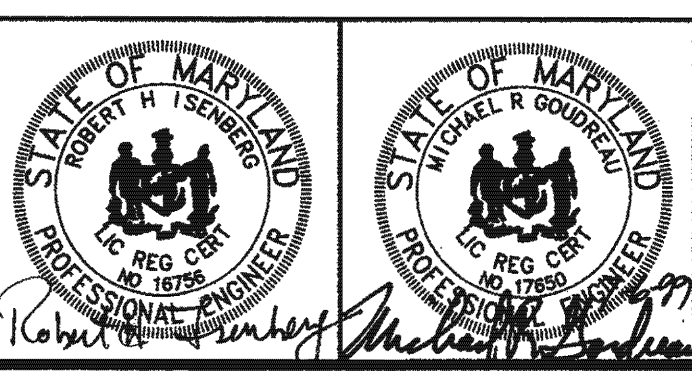
CHANNEL CROSS-SECTIONS 4
NO SCALE
5,6,7,9,22,23,29,30,31,33

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
<i>[Signature]</i> DIRECTOR	9/14/99
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	9/9/99
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	9/13/99

SUBDIVISION NAME HO. CO. GOVERNMENT	LOT/PARCEL 529
LIBER/FOLIO 180/339	ZONE R-20
TAX/ZONE MAP 31	CENSUS TR.
WATER CODE	SEWER CODE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>[Signature]</i> DIRECTOR OF PUBLIC WORKS	7/6/99
<i>[Signature]</i> CHIEF, BUREAU OF ENVIRONMENTAL SERVICES	7/6/99

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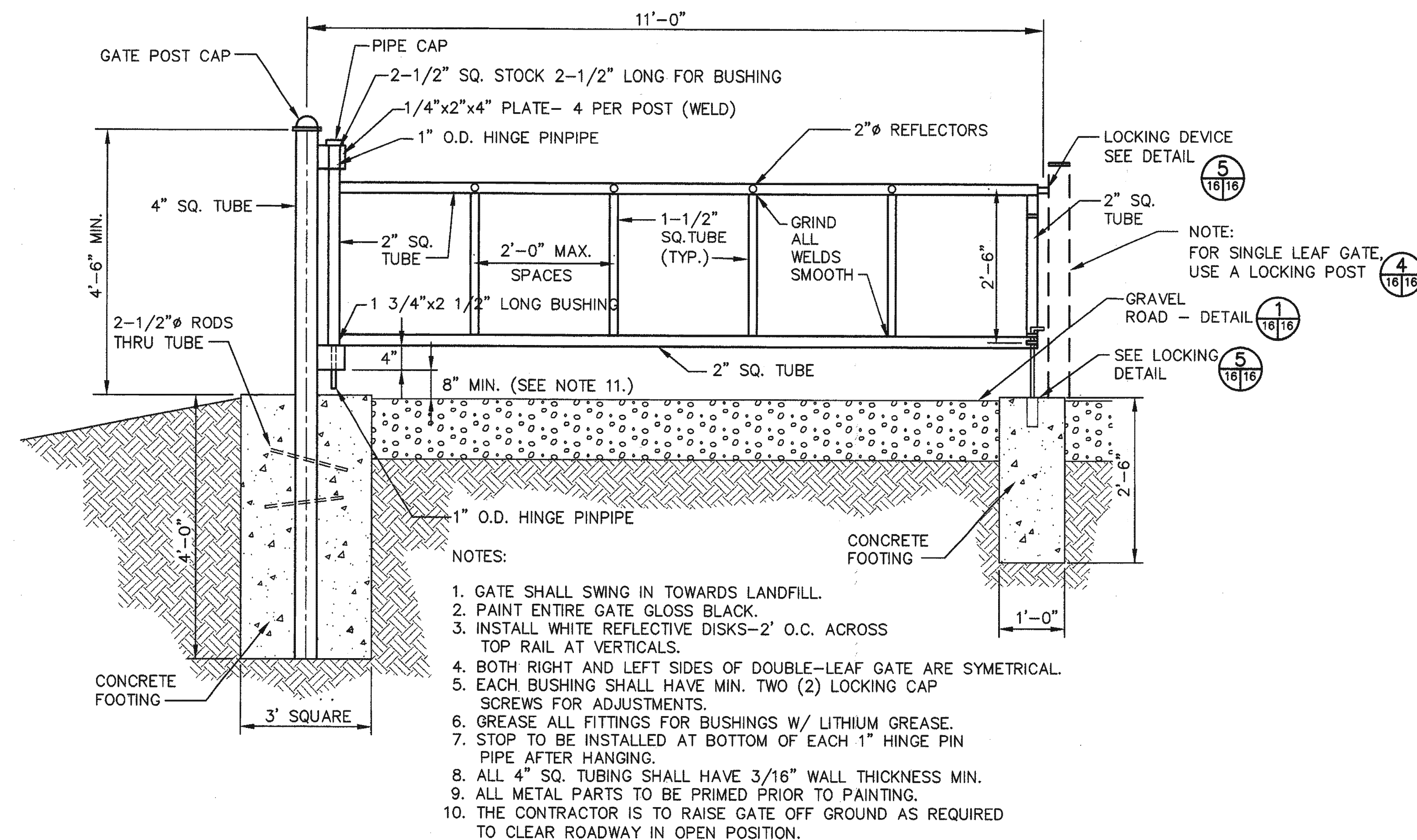
DES. MRG	
DRN. JCS	
CHK. RHI	
DATE: 06-02-99	
BY: [Signature]	
NO. 1	
REVISION	Changed TURF B" TO TYPE 2" & "C" TO 3" & 4"
DATE	

FINAL COVER DETAILS AND
ACCESS ROAD DETAILS

NEW CUT LANDFILL
IMPROVEMENTS
CAPITAL PROJECT NO. C-0237-H
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

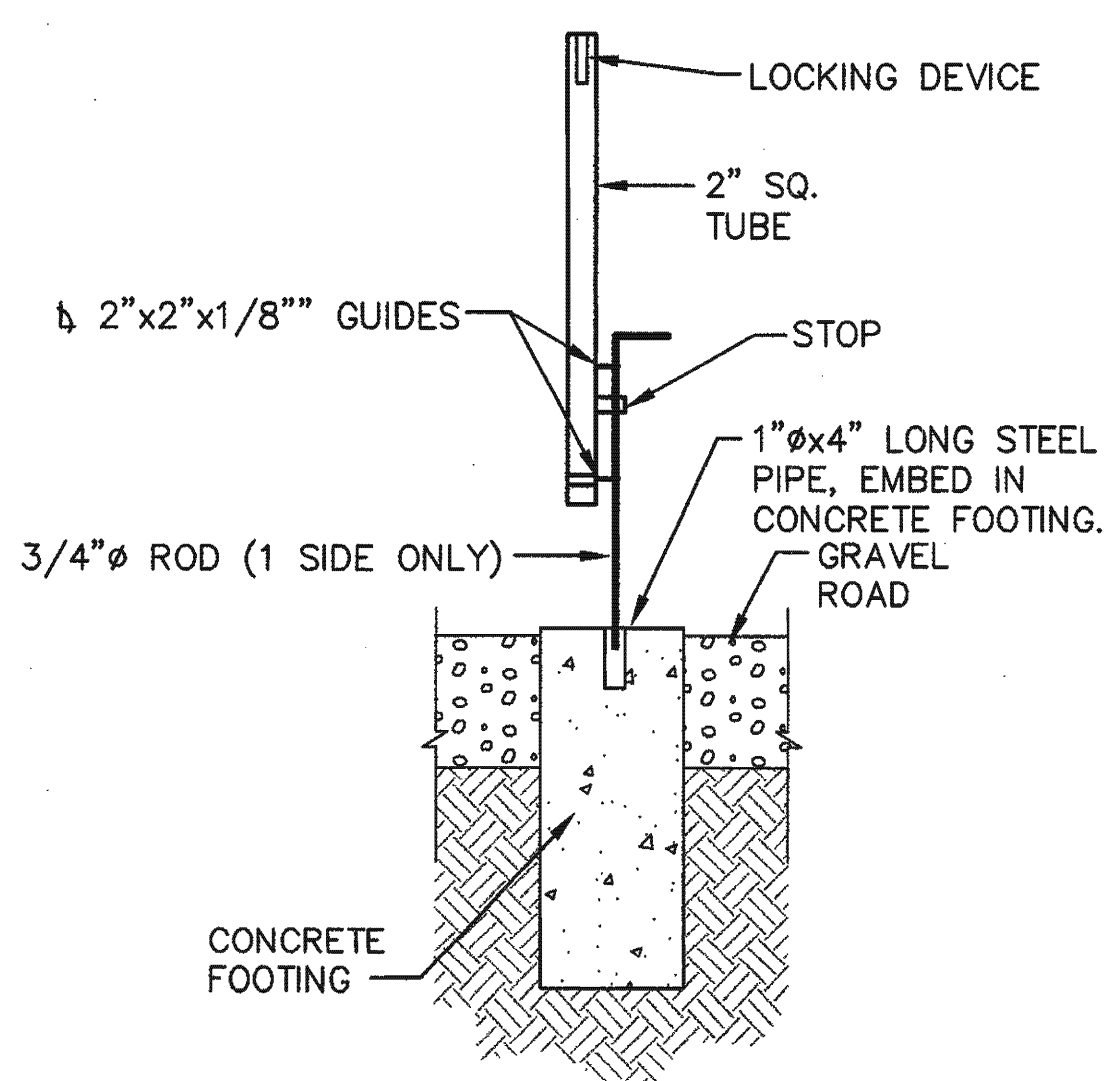
SCALE:
AS SHOWN
SHEET
15 OF 39

STRUCTURE NO.	LL	LOW-FLOW WEIR CREST ELEV.	LH	HIGH-FLOW WEIR CREST ELEV.	TOP ELEV.	DEWATER DEVICE INV. ELEV.	DESIGN PEAK DISCHARGE AND WATER SURFACE ELEVATION (WSE)	
							2YEAR	10-YEAR
WEST	0'-6"	392.5	5'-0"	392.75	393.0	390.0	1 CFS @ WSE 391.5	2 CFS @ WSE 392.7

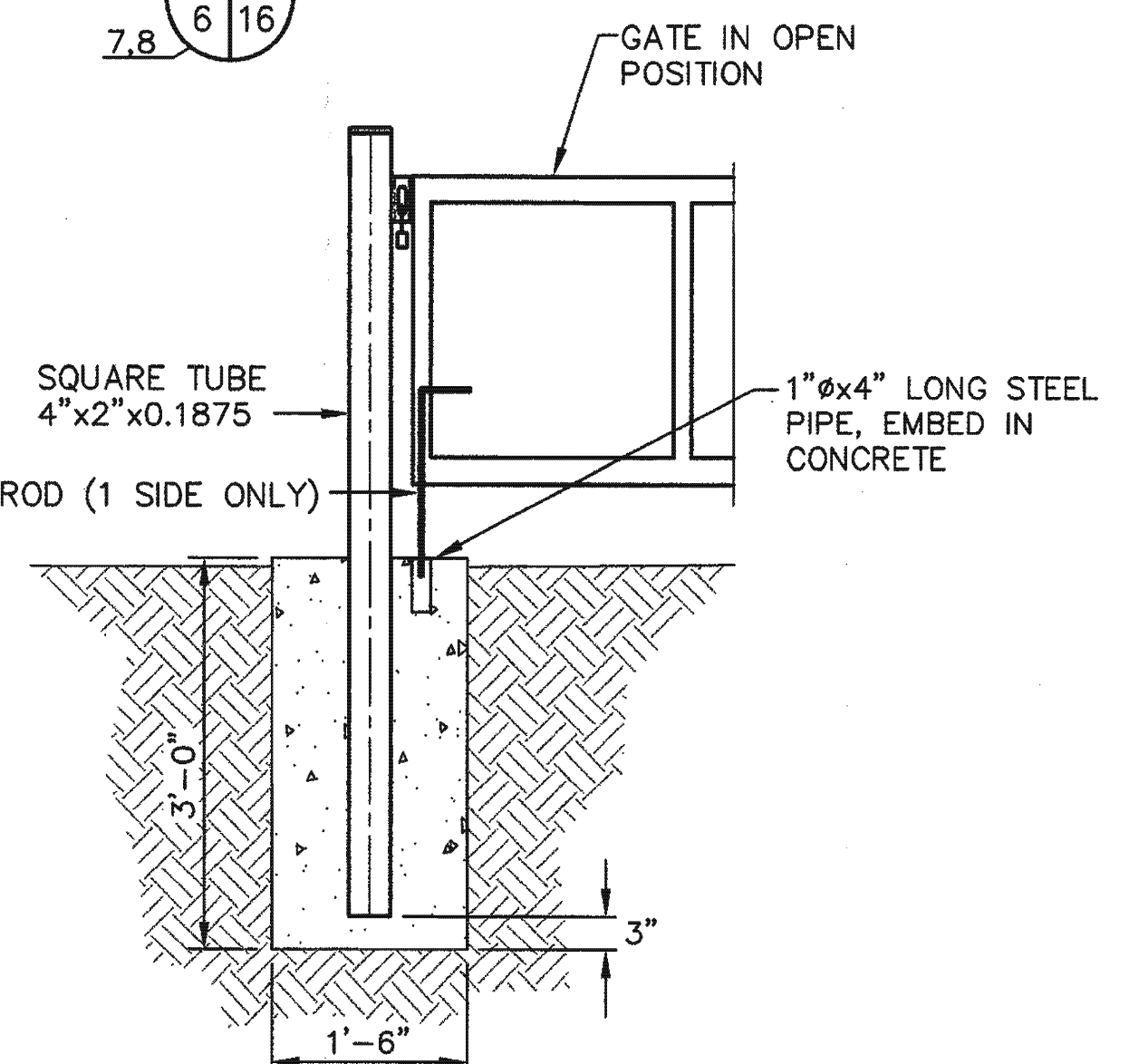


- NOTES:
- GATE SHALL SWING IN TOWARDS LANDFILL.
 - PAINT ENTIRE GATE GLOSS BLACK.
 - INSTALL WHITE REFLECTIVE DISKS-2' O.C. ACROSS TOP RAIL AT VERTICALS.
 - BOTH RIGHT AND LEFT SIDES OF DOUBLE-LEAF GATE ARE SYMMETRICAL.
 - EACH BUSHING SHALL HAVE MIN. TWO (2) LOCKING CAP SCREWS FOR ADJUSTMENTS.
 - GREASE ALL FITTINGS FOR BUSHINGS W/ LITHIUM GREASE.
 - STOP TO BE INSTALLED AT BOTTOM OF EACH 1" HINGE PIN PIPE AFTER HANGING.
 - ALL 4" SQ. TUBING SHALL HAVE 3/16" WALL THICKNESS MIN.
 - ALL METAL PARTS TO BE PRIMED PRIOR TO PAINTING.
 - THE CONTRACTOR IS TO RAISE GATE OFF GROUND AS REQUIRED TO CLEAR ROADWAY IN OPEN POSITION.

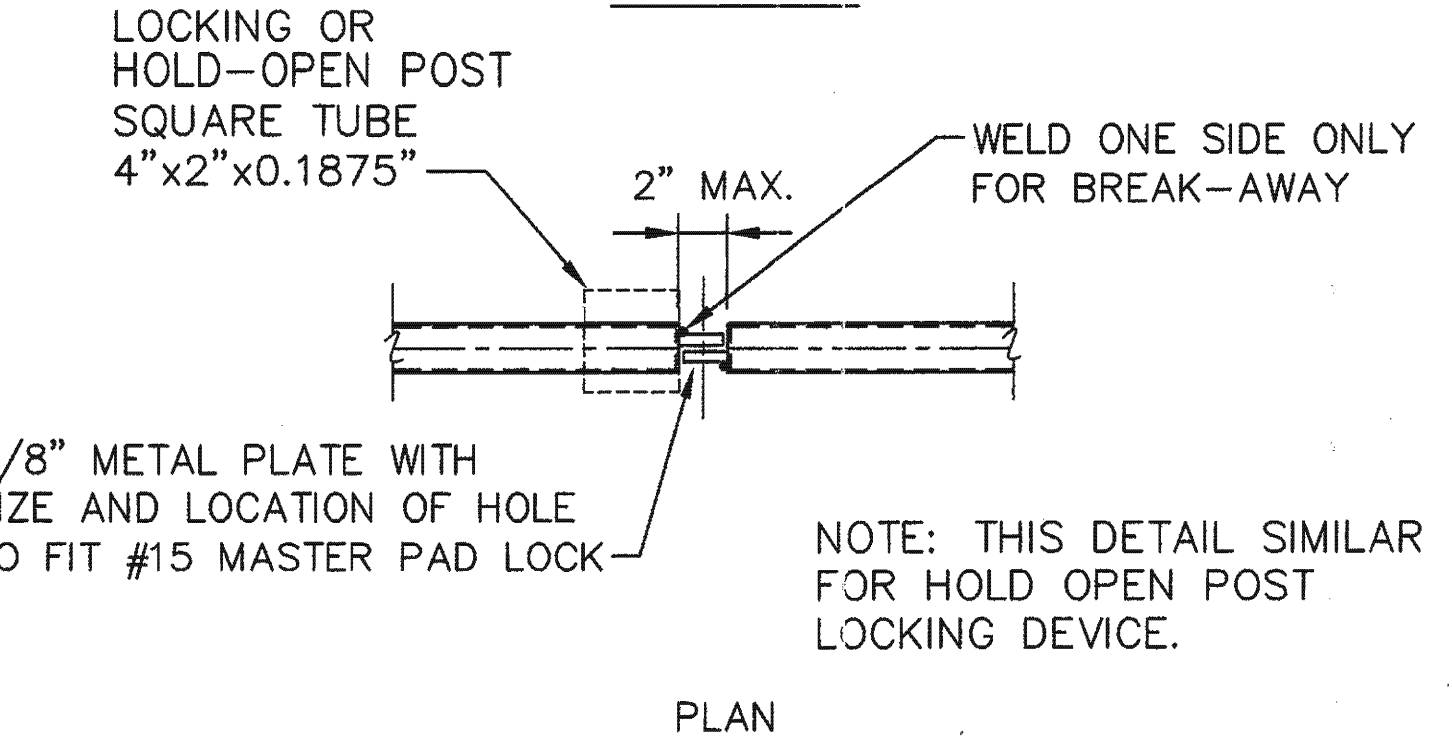
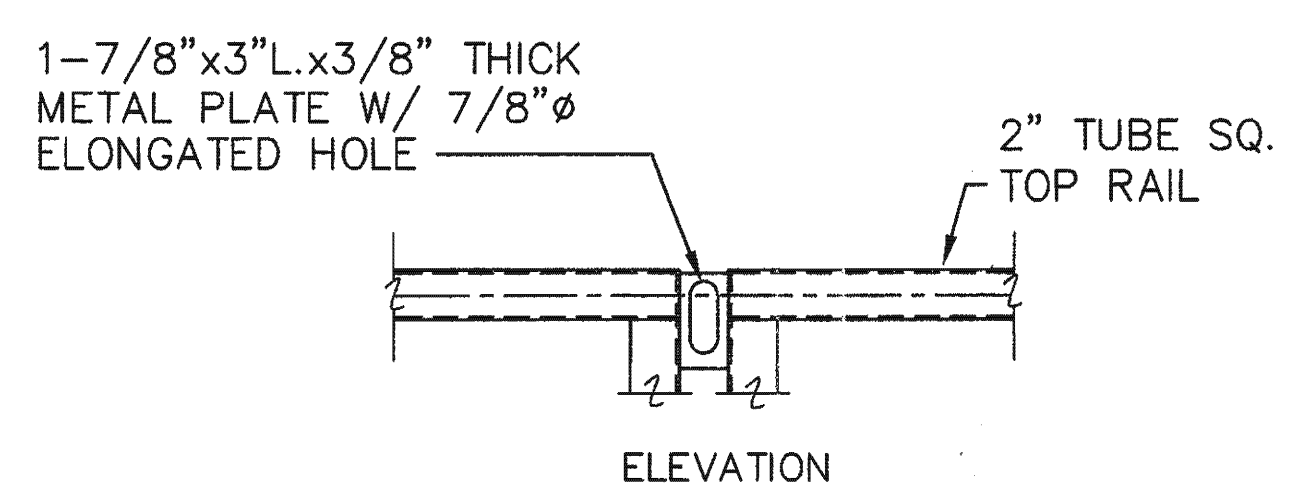
ENTRY GATE DETAIL (3)
SCALE: 3/4"=1'-0"



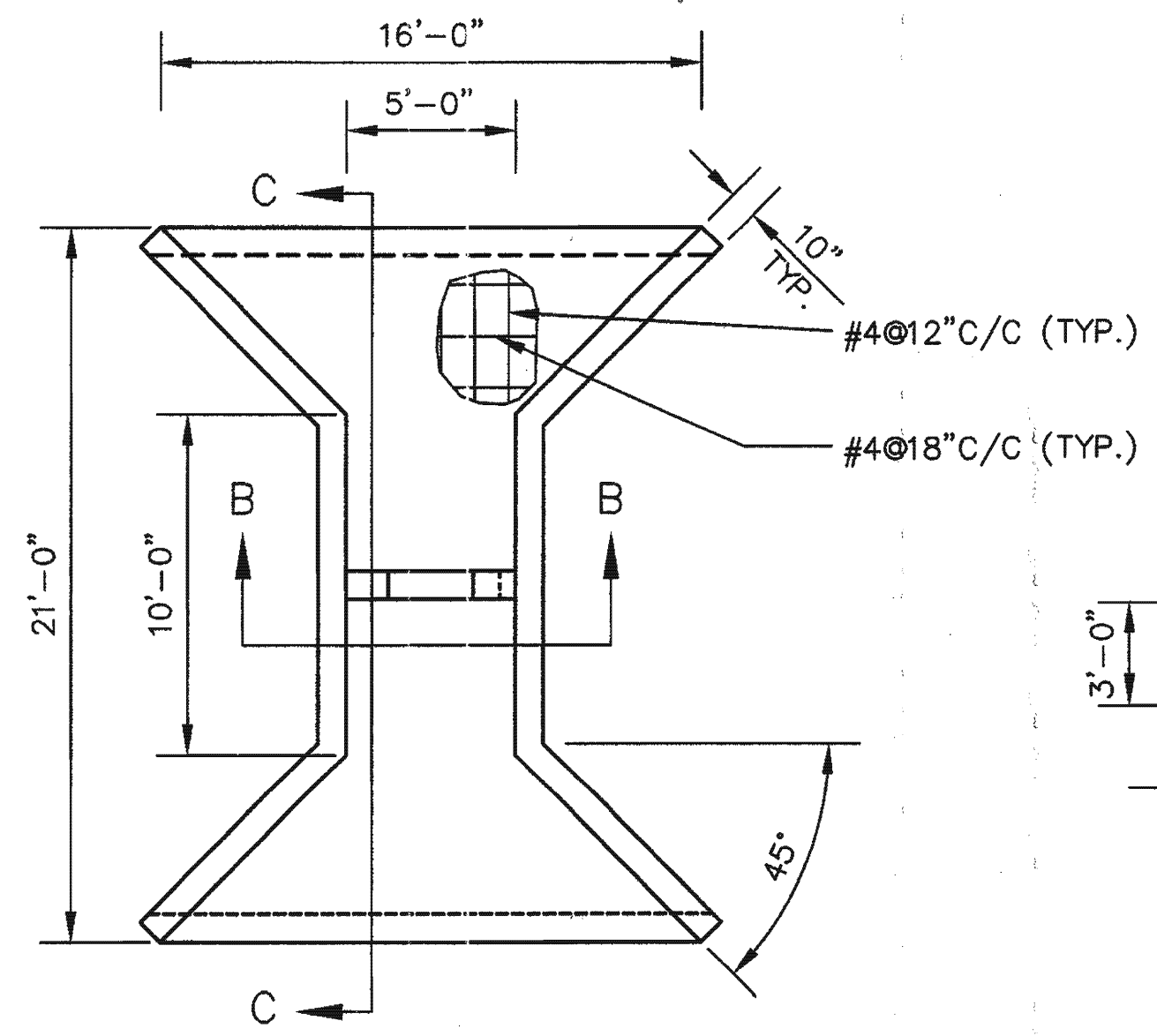
GATE IN CLOSED POSITION DETAIL (6)
SCALE: 3/4"=1'-0"



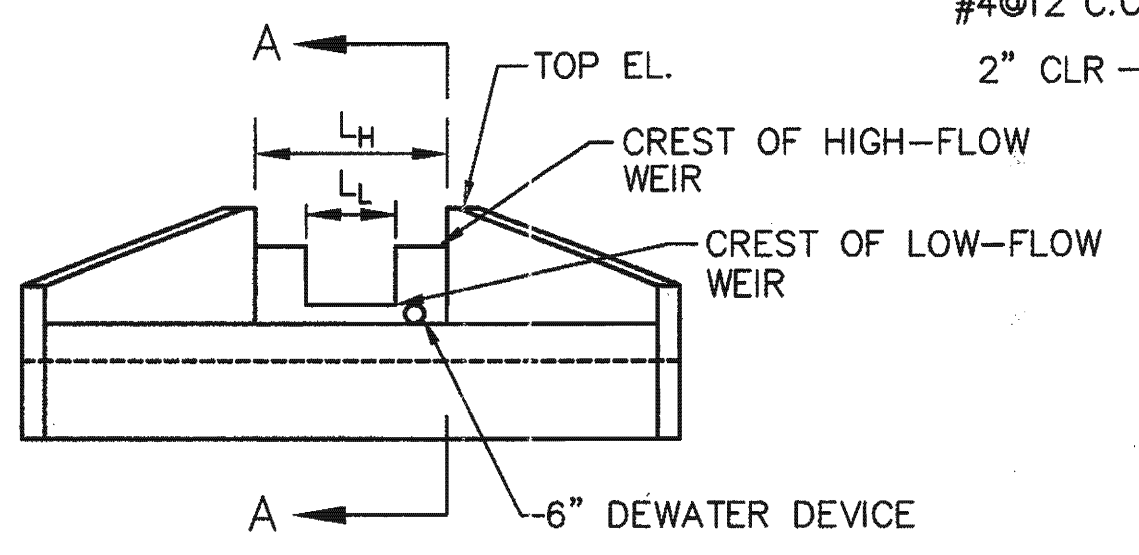
LOCKING OR HOLD-OPEN POST (4)
SCALE: 3/4"=1'-0"



LOCKING DEVICE DETAIL (5)
SCALE: 1 1/2"=1'-0"

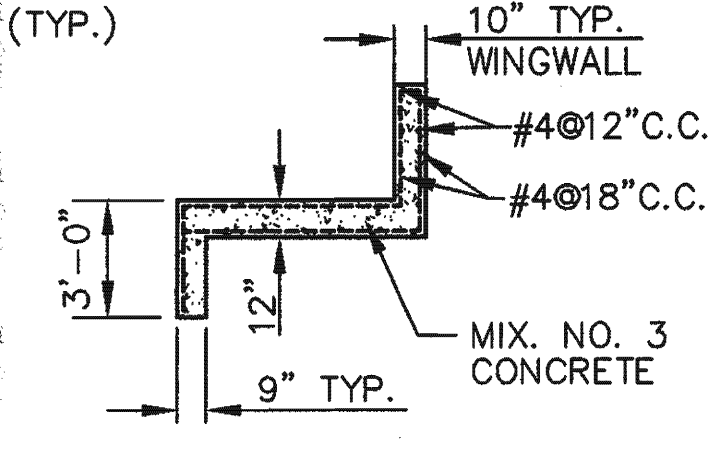


PLAN

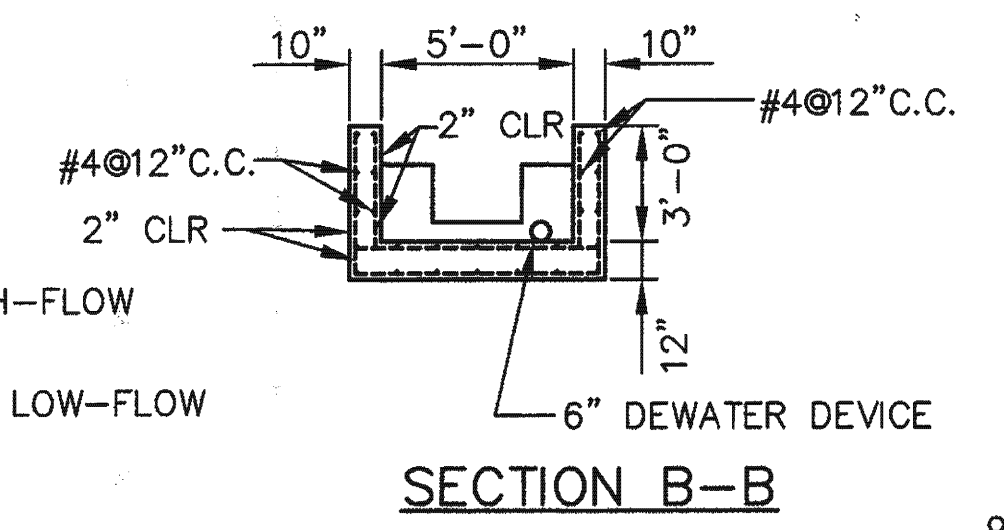


FRONT ELEVATION

- NOTES:
- ALL EXPOSED EDGES TO HAVE 3/4" X 3/4" CHAMFER OR AS DIRECTED.
 - CONCRETE SHALL BE SHA MIX NO. 3 (fc=3500 PSI @ 28 DAYS)
 - REINFORCING STEEL SHALL BE ASTM A-615 GRADE 60.
 - QUANTITIES IN TABLE FOR ESTIMATING ONLY.
 - WEIR CONTROL SECTION IS SIZED FOR CONTROL OF DISCHARGE RATES AS SHOWN IN TABLE.
 - FOR STRUCTURE MODIFICATIONS DURING CONSTRUCTION ACTIVITIES, SEE DETAIL (2)

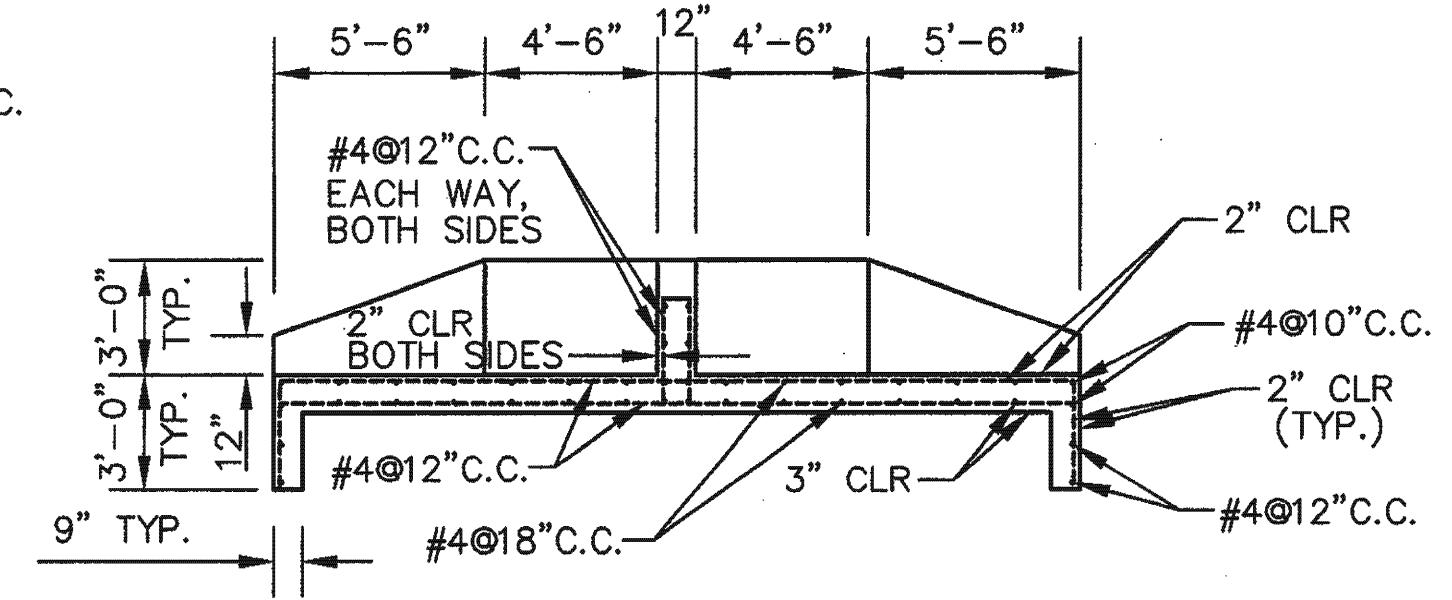


SECTION A-A



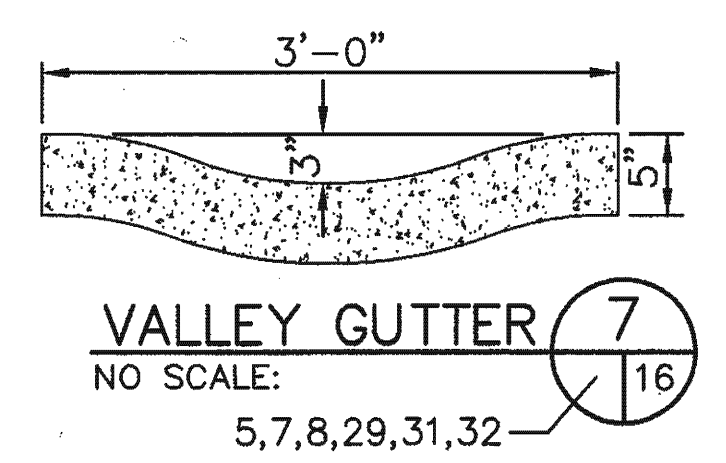
SECTION B-B

VOL CONC. (cy)	STEEL (lbs)
14.5	1100

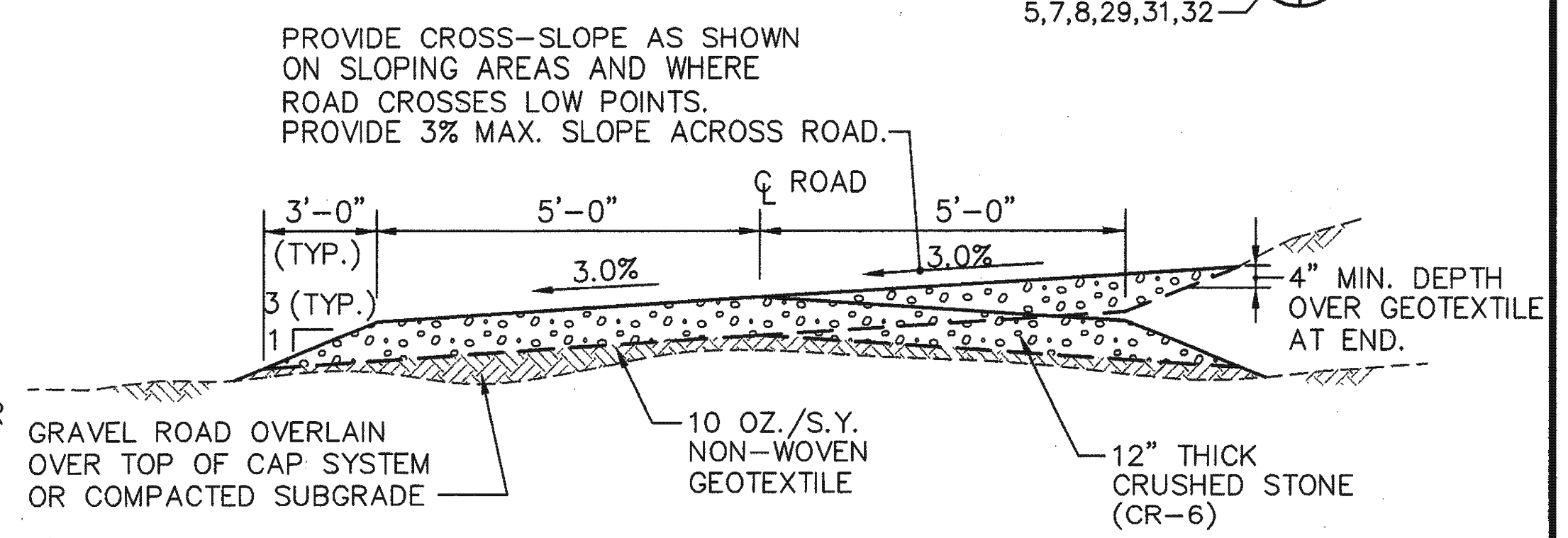


SECTION C-C

LOW RISE STORMWATER MANAGEMENT CONTROL STRUCTURE (2)
NO SCALE



VALLEY GUTTER (7)
NO SCALE:



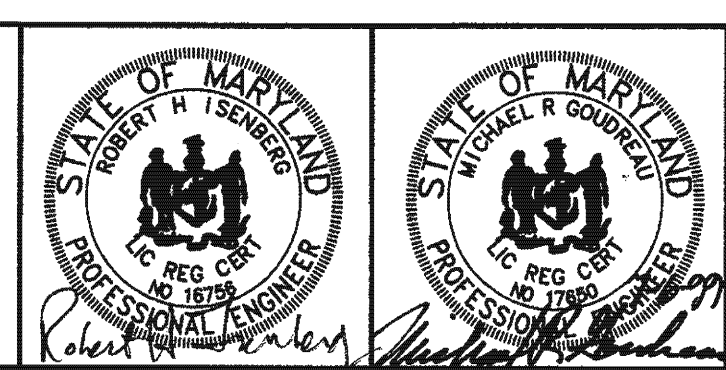
ACCESS ROAD C, D, E, F, G, H, I & J CROSS-SECTION (1)
NO SCALE

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
DIRECTOR	DATE 2/14/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/9/99
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9/13/99

SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
DIRECTOR OF PUBLIC WORKS	DATE 7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES	DATE 7/6/99

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CONSULTING ENGINEERS
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PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG	DRN.	JCS	CHK.	RHI	DATE: 07-01-99	BY	NO.	REVISION	DATE

MISCELLANEOUS DETAILS

NEW CUT LANDFILL IMPROVEMENTS
CAPITAL PROJECT NO. C-0237-H
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

M: 296024.01\90 PERCENT PROFILES CHAIN ENTRANCE, GATE, GRAY-RD, LRSWMS, HOLD OPEN

SPECIFICATIONS FOR PERMANENT POND CONSTRUCTION

SPECIFICATIONS FOR TEMPORARY POND CONSTRUCTION (APPLIES EAST SEDIMENT BASIN ONLY)

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD CO. SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer: John O'Hara, Date: 7/6/99

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD CO. SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD CO. SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Signature of Engineer: Michael R. Goldshead, Date: 7-6-99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD CO. SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Signature: Cheryl Summers, Date: 9/8/99

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD CO. SOIL CONSERVATION DISTRICT.

Signature: John V. Adams, Date: 9/8/99

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Signature and Date fields for AS-Built Certification

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORM WATER MANAGEMENT PONDS, A MINIMUM OF A 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SPECIFIC QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL- THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER (PROVIDED BY THE CONTRACTOR AT NO COST TO THE COUNTY).

PLACEMENT- AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION- THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIERED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHERE A MINIMUM REQUIRED DENSITY IS SPECIFIED, IT SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (ASTM D698).

CUT OFF TRENCH- THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

REINFORCED CONCRETE PIPE- ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS- REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.

2. BEDDING- ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10 % OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3 INCHES, OR AS SHOWN ON THE DRAWINGS.

3. LAYING PIPE- BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 2 FEET FROM THE RISER.

4. BACK FILLING SHALL CONFORM TO "STRUCTURE BACKFILL". 5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 608, MIX NO. 3.

ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 905.

THE RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THE RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, CONSTRUCTION AND MATERIALS, SECTION 919.12.

CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM THE VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM OF REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTION OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

CONSTRUCTION SPECIFICATIONS FOR TEMPORARY SEDIMENT BASINS

1. SITE PREPARATION: PERIMETER SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING. AREAS WHERE THE EMBANKMENT IS TO BE PLACED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. THE POOL AREA SHALL NOT BE CLEARED UNTIL COMPLETION OF THE DAM EMBANKMENT UNLESS THE POOL AREA IS TO BE USED FOR BORROW. IN ORDER TO FACILITATE CLEAN-OUT AND RESTORATION, THE POOL AREA (MEASURED AT THE TOP OF THE PIPE SPILLWAY) SHALL BE CLEARED OF ALL BRUSH, TREES, AND OTHER OBJECTIONABLE MATERIALS.

2. CUT-OFF TRENCH: A CUT-OFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF EARTH FILL EMBANKMENTS. THE MINIMUM DEPTH SHALL BE FOUR FEET. THE CUT-OFF TRENCH SHALL EXTEND UP BOTH ABUTMENTS TO THE RISER CREST ELEVATION. THE MINIMUM BOTTOM WIDTH SHALL BE TWO FEET, BUT WIDE ENOUGH TO PERMIT OPERATION OF EXCAVATION AND COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS SHALL BE THE SAME AS THOSE FOR THE EMBANKMENT. THE TRENCH SHALL BE DEWATERED DURING THE BACKFILLING-COMPACTION OPERATIONS. FOR DEWATERING SEE SECTION D OF THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

3. EMBANKMENT: THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED AREAS SHOWN ON THE PLANS. IT SHALL BE CLEAN MINERAL SOIL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, OR OTHER OBJECTIONABLE MATERIAL. RELATIVELY PERVIOUS MATERIALS SUCH AS SAND OR GRAVEL (UNIFIED SOIL CLASSES GW, GP, SW & SP) OR ORGANIC MATERIALS (UNIFIED SOIL CLASSES OL AND OH) SHALL NOT BE PLACED IN THE EMBANKMENT. AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IT CAN BE FORMED BY HAND INTO A BALL WITHOUT CRUMBLING. IF WATER CAN BE SQUEEZED OUT OF THE BALL, IT IS TOO WET FOR PROPER COMPACTION. FILL MATERIAL SHALL BE PLACED IN SIX-INCH TO EIGHT-INCH THICK CONTINUOUS LIFTS OVER THE ENTIRE LENGTH OF THE FILL. COMPACTION SHALL BE OBTAINED BY ROUTING AND HAULING THE CONSTRUCTION EQUIPMENT OVER THE FILL SO THAT THE ENTIRE SURFACE OF EACH LAYER OF THE FILL IS TRAVERSED BY AT LEAST ONE WHEEL OR TREAD TRACK OF THE EQUIPMENT OR BY THE USE OF A COMPACTOR. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLEMENT.

4. PRINCIPAL SPILLWAY: STEEL RISERS SHALL BE SECURELY ATTACHED TO THE BARREL OR BARREL STUB BY WELDING THE FULL CIRCUMFERENCE MAKING A WATERTIGHT STRUCTURAL CONNECTION. CONCRETE RISERS SHALL BE POURED WITH THE PRINCIPAL SPILLWAY IN PLACE OR PRECAST WITH VOIDS AROUND THE PRINCIPAL SPILLWAY FILLED WITH CONCRETE OR SHRINK PROOF GROUT FOR WATERTIGHT CONNECTION. THE BARREL STUB MUST BE ATTACHED TO THE RISER AT THE SAME PERCENT (ANGLE) OF GRADE AS THE OUTLET CONDUIT. THE CONNECTION BETWEEN THE RISER AND THE RISER BASE SHALL BE WATERTIGHT. ALL CONNECTIONS BETWEEN BARREL SECTIONS MUST BE ACHIEVED BY APPROVED WATERTIGHT BAND ASSEMBLIES. THE BARREL AND RISER SHALL BE PLACED ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL AS THE EMBANKMENT IS CONSTRUCTED. BREACHING THE EMBANKMENT TO INSTALL THE BARREL IS UNACCEPTABLE. PERVIOUS MATERIALS SUCH AS SAND, GRAVEL, OR CRUSHED STONE SHALL NOT BE USED AS BACKFILL AROUND THE PIPE OR ANTI-SEEP COLLARS. THE FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE PLACED IN FOUR INCH LIFTS AND HAND COMPACTED UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. A DEPTH OF 1.5 TIMES THE PIPE DIAMETER (MIN.) SHALL BE BACKFILLED OVER THE PRINCIPAL SPILLWAY AND HAND COMPACTED BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.

5. EMERGENCY SPILLWAY: THE EMERGENCY SPILLWAY SHALL BE INSTALLED IN UNDISTURBED GROUND. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADES, DESIGN WIDTH, ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE EMERGENCY SPILLWAY AND MUST BE CONSTRUCTED WITHIN A TOLERANCE OF +/- 0.2 FEET.

6. VEGETATIVE TREATMENT: STABILIZE THE EMBANKMENT IN ACCORDANCE WITH THE APPROPRIATE VEGETATIVE STANDARD AND SPECIFICATIONS IMMEDIATELY FOLLOWING CONSTRUCTION. IN NO CASE SHALL THE EMBANKMENT REMAIN UNSTABILIZED FOR MORE THAN SEVEN (7) DAYS. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON BASIN COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE BASIN.

7. SAFETY: LOCAL REQUIREMENTS CONCERNING FENCING AND SIGNS SHALL BE MET, WARNING THE PUBLIC OF HAZARDS OF SOFT SEDIMENT AND FLOODWATER.

8. MAINTENANCE: REPAIR ALL DAMAGE CAUSED BY SOIL EROSION AND CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE SPECIFIED DISTANCE BELOW THE TOP OF THE RISER AS SHOWN ON THE RISER. THIS SEDIMENT SHALL BE PLACED IN SUCH A MANNER THAT IT WILL NOT ERODE FROM THE SITE. THE SEDIMENT SHALL NOT BE DEPOSITED DOWNSTREAM FROM THE EMBANKMENT, ADJACENT TO A STREAM OR FLOODPLAIN. DISPOSAL AREAS MUST BE STABILIZED.

9. FINAL DISPOSAL: WHEN TEMPORARY STRUCTURES HAVE SERVED THEIR INTENDED PURPOSE AND THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, THE EMBANKMENT AND RESULTING SEDIMENT DEPOSITS ARE TO BE LEVELED OR OTHER-WISE DISPOSED OF IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN. THE PROPOSED USE OF A SEDIMENT BASIN SITE WILL OFTEN DICTATE FINAL DISPOSITION OF THE BASIN AND ANY SEDIMENT CONTAINED THEREIN. IF THE SITE IS SCHEDULED FOR FUTURE CONSTRUCTION, THEN THE BASIN MATERIAL AND TRAPPED SEDIMENTS MUST BE REMOVED AND SAFELY DISPOSED OF AND THE BASIN SHALL BE BACKFILLED WITH A STRUCTURAL FILL. WHEN THE BASIN AREA IS TO REMAIN OPEN SPACE, THE POND MAY BE PUMPED DRY (USING METHODS IN SECTION D - DEWATERING PRACTICES, 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL), GRADED, AND BACK FILLED.

10. CONVERSION TO STORMWATER MANAGEMENT STRUCTURE: AFTER PERMANENT STABILIZATION OF ALL DISTURBED CONTRIBUTORY DRAINAGE AREAS, TEMPORARY SEDIMENT BASINS, IF INITIALLY BUILT AND CERTIFIED TO MEET PERMANENT STANDARDS, MAY BE CONVERTED TO PERMANENT STORMWATER MANAGEMENT STRUCTURES. TO CONVERT THE BASIN FROM TEMPORARY TO PERMANENT USE, THE OUTLET STRUCTURE MUST BE MODIFIED IN ACCORDANCE WITH APPROVED STORMWATER MANAGEMENT DESIGN PLANS. ADDITIONAL GRADING MAY ALSO BE NECESSARY TO PROVIDE THE REQUIRED STORAGE VOLUME IN THE BASIN. CONVERSION CAN ONLY TAKE PLACE AFTER ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED TO THE SATISFACTION OF THE INSPECTION AUTHORITY AND STORM DRAINS HAVE BEEN FLUSHED.

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

Signature and Date fields for Department of Planning and Zoning

Table with columns: SUBDIVISION NAME, LOT/PARCEL, LIBER/FOLIO, ZONE, TAX/ZONE MAP, WATER CODE, SEWER CODE, CENSUS TR.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

Signature and Date fields for Department of Public Works

SCS ENGINEERS CONSULTING ENGINEERS 11260 ROGER BACON DRIVE SUITE 300 RESTON, VIRGINIA 20190 PH. (703) 471-6150 FAX. (703) 471-6676

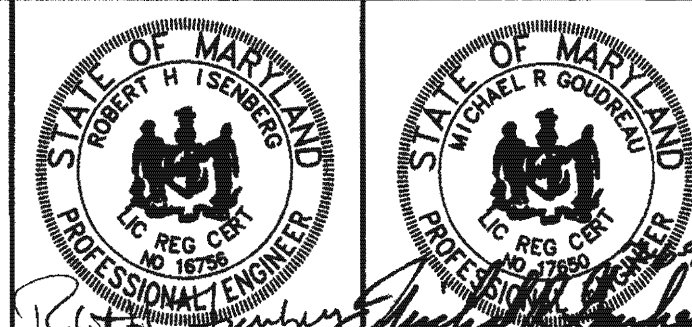


Table with columns: DES. MRG, DRN. JCS, CHK. RHI, DATE: 06-02-99, BY NO., REVISION, DATE

POND CONSTRUCTION SPECIFICATIONS AND CERTIFICATIONS

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: NO SCALE SHEET 17 OF 39

SEDIMENT CONTROL & POND CONSTRUCTION

() BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

John J. O'Hara 7/6/99
 SIGNATURE OF DEVELOPER DATE
 PRINT NAME BELOW SIGNATURE

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 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Michael R. Goudreau 7-6-99
 SIGNATURE OF ENGINEER DATE
 PRINT NAME BELOW SIGNATURE

() THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Carol Simon 9/8/99
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

() THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

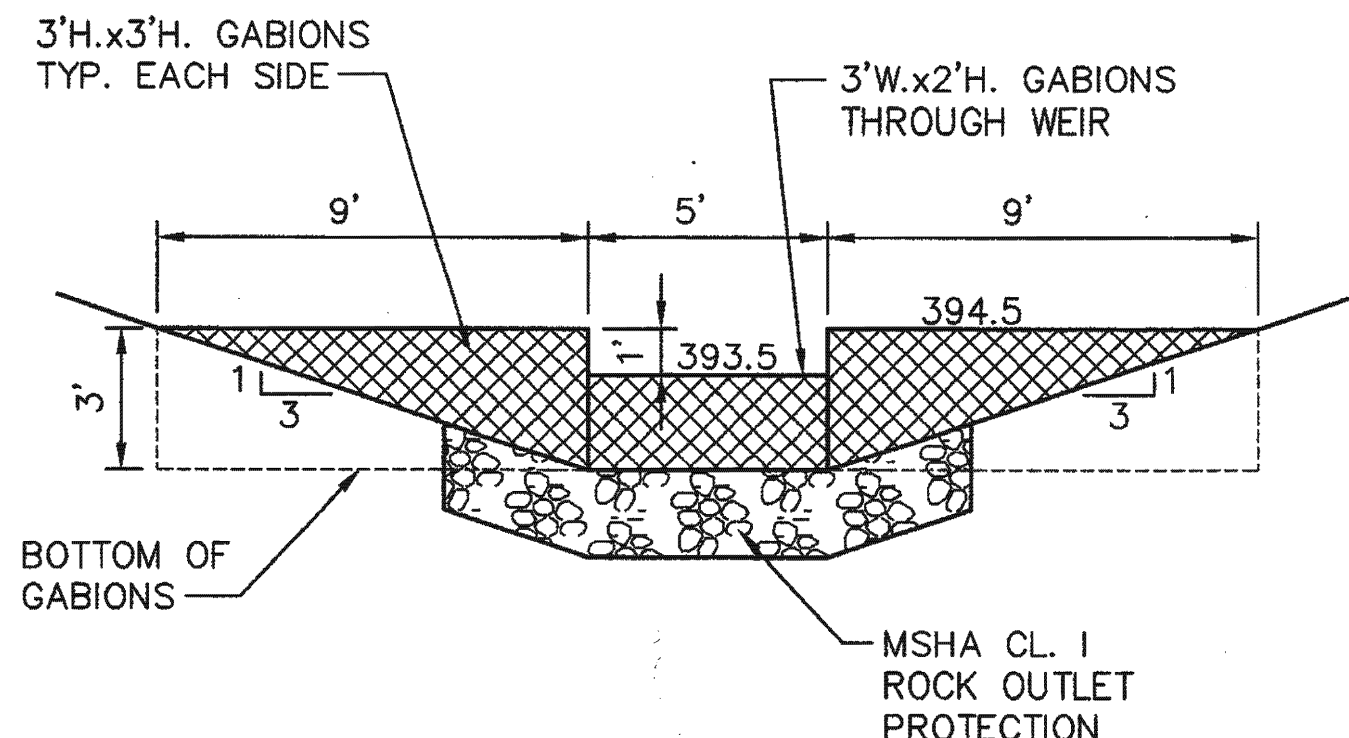
Michael R. Goudreau 7/6/99
 HOWARD SOIL CONSERVATION DISTRICT DATE
 AS-BUILT CERTIFICATION

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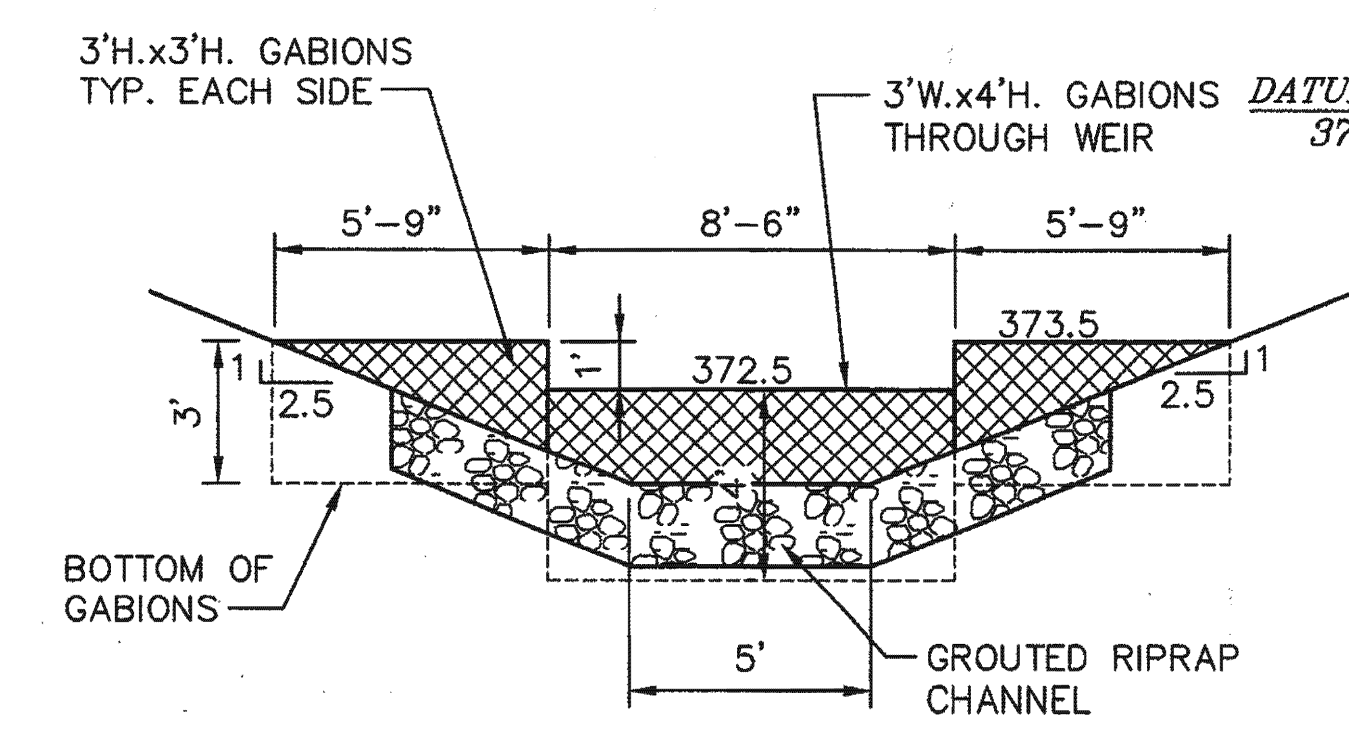
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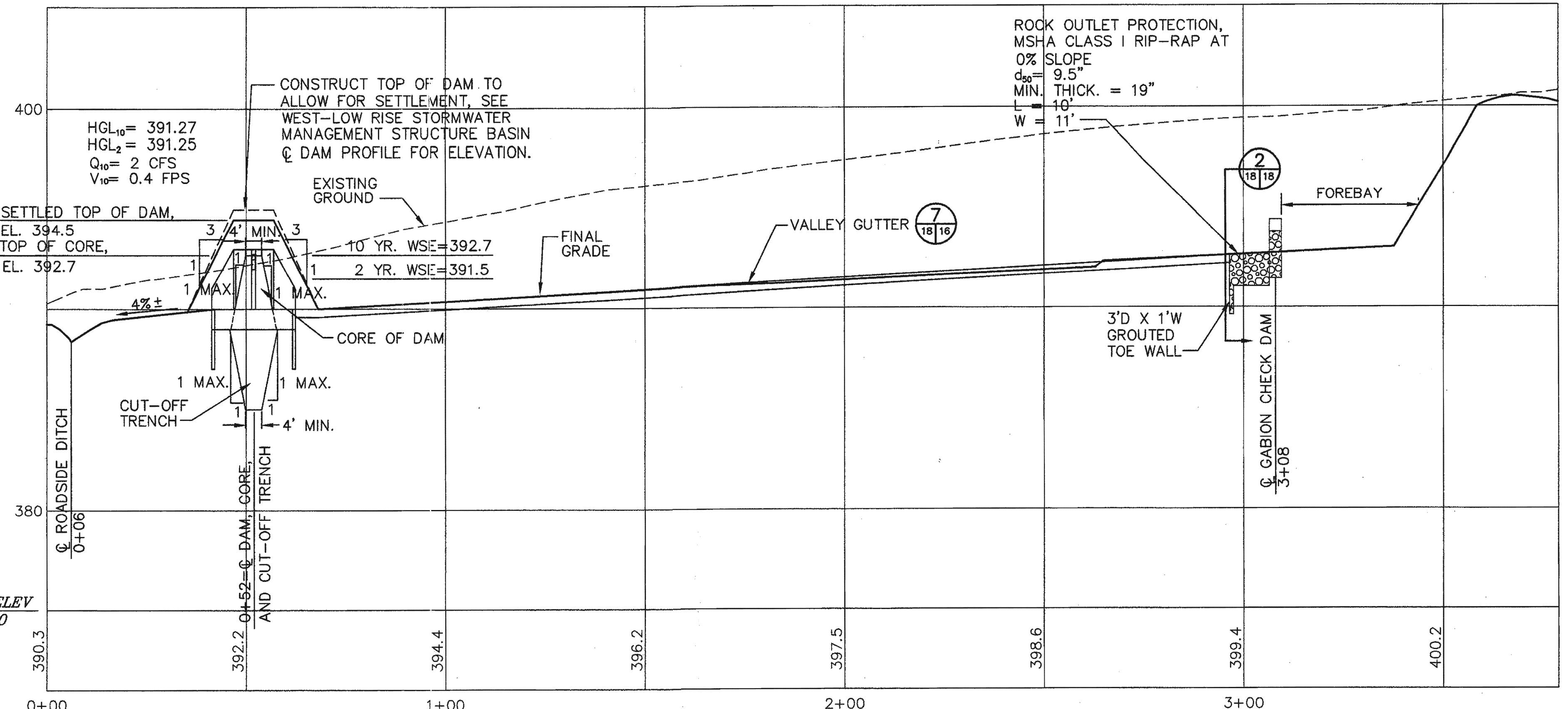
OPERATION, MAINTENANCE AND INSPECTION
 INSPECTION OF THE PONDS SHOWN HEREIN SHALL BE PERFORMED AT LEAST ANNUALLY IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.



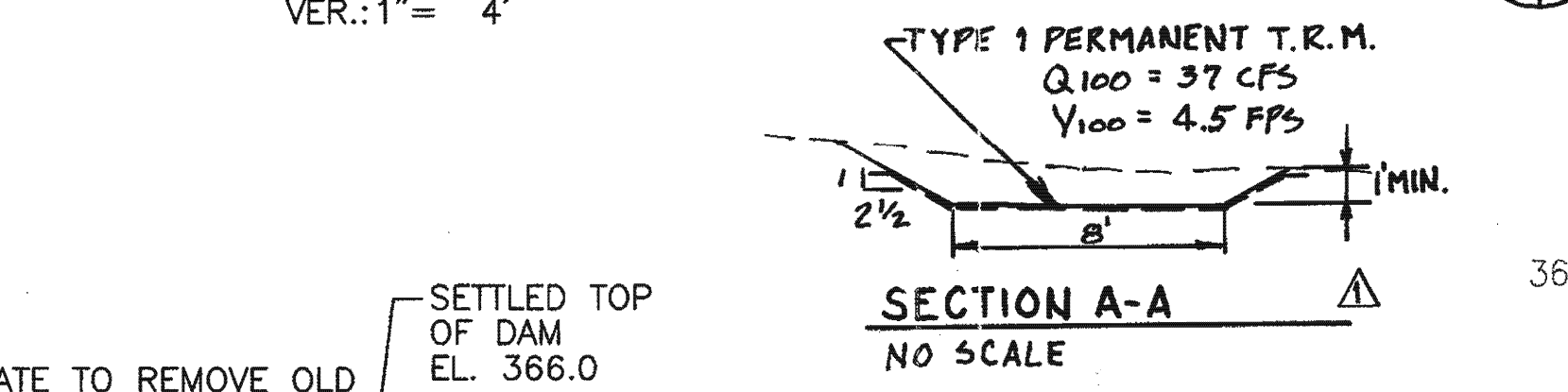
WEIR SECTION 1
 SCALE: 1/4"=1'-0"
 8,32



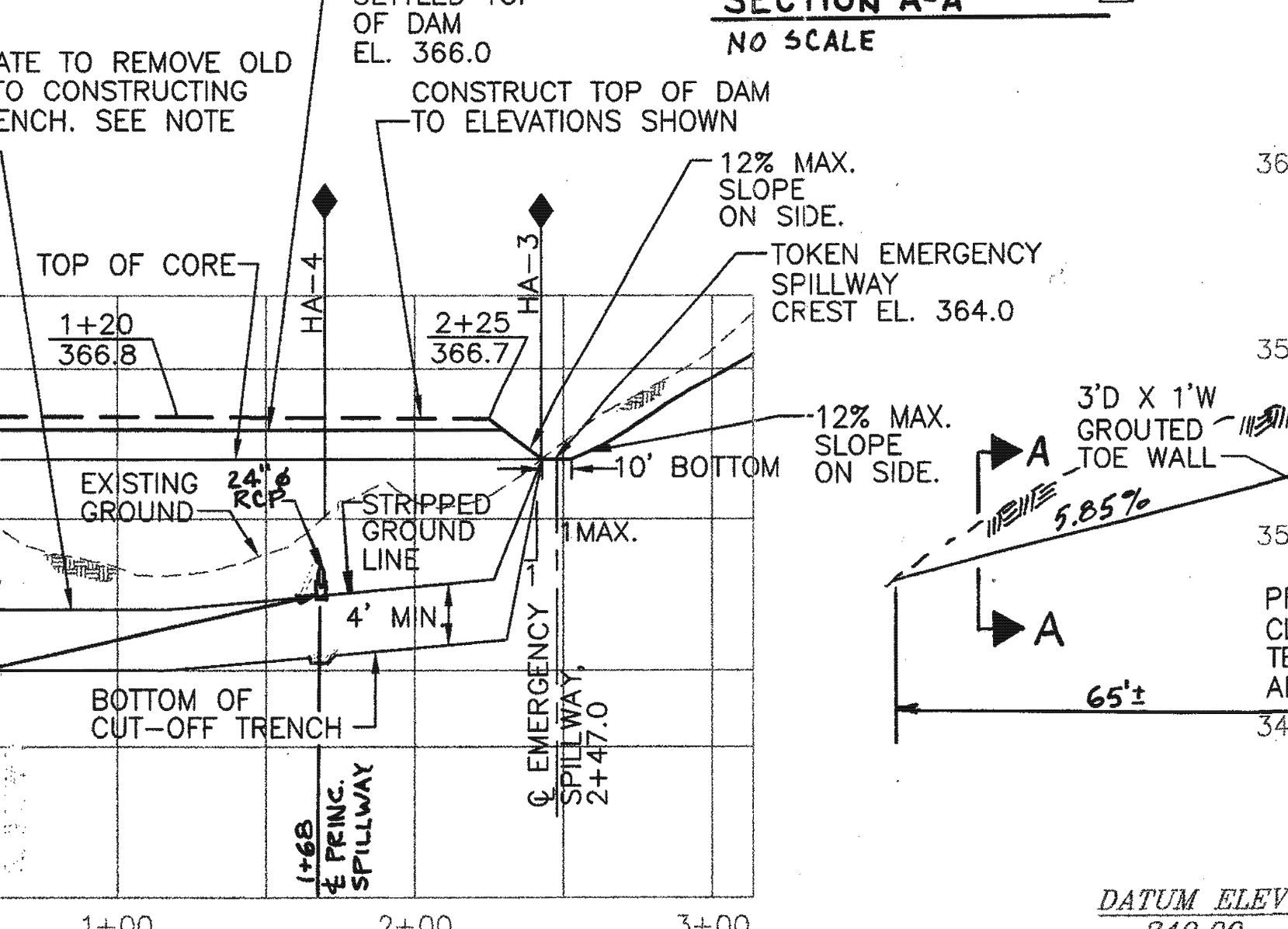
WEIR SECTION 2
 SCALE: 1/4"=1'-0"
 8,18,32



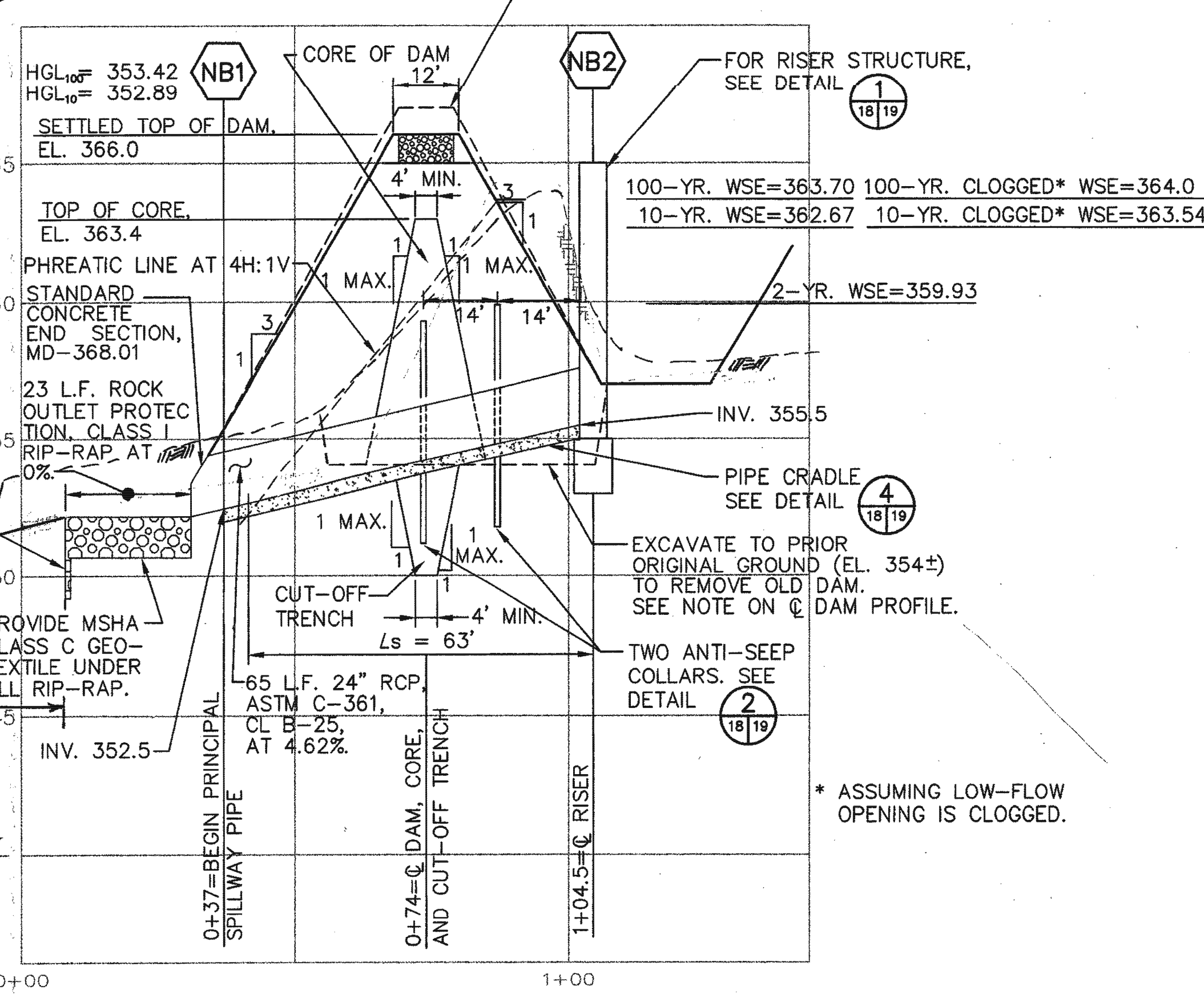
WEST-LOW RISE STORMWATER MANAGEMENT STRUCTURE BASIN & PRINCIPAL SPILLWAY PROFILE C
 SCALE: HORIZ.: 1"= 20'
 VER.: 1"= 4'



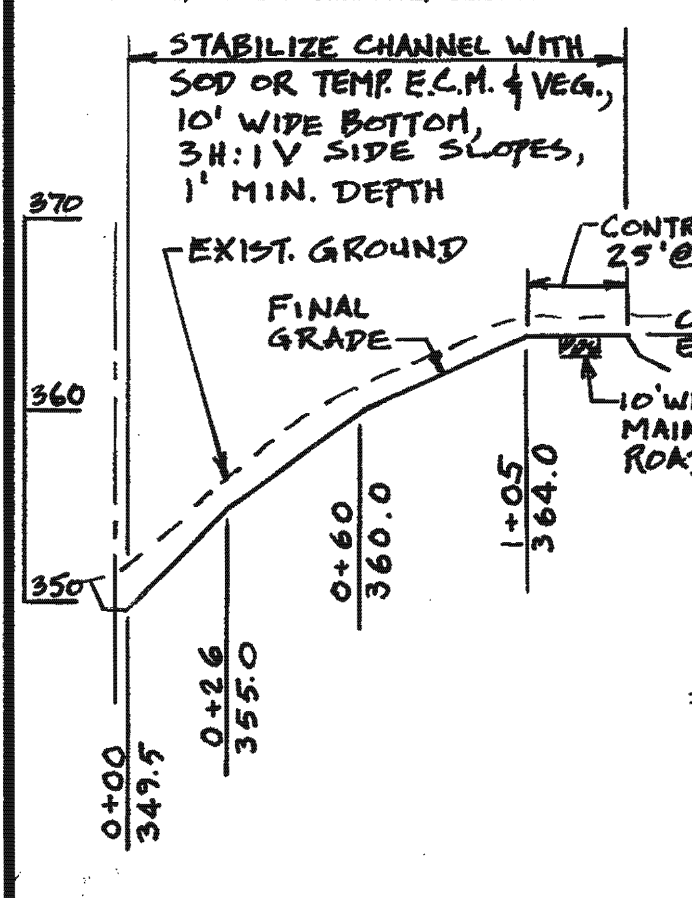
SECTION A-A
 NO SCALE



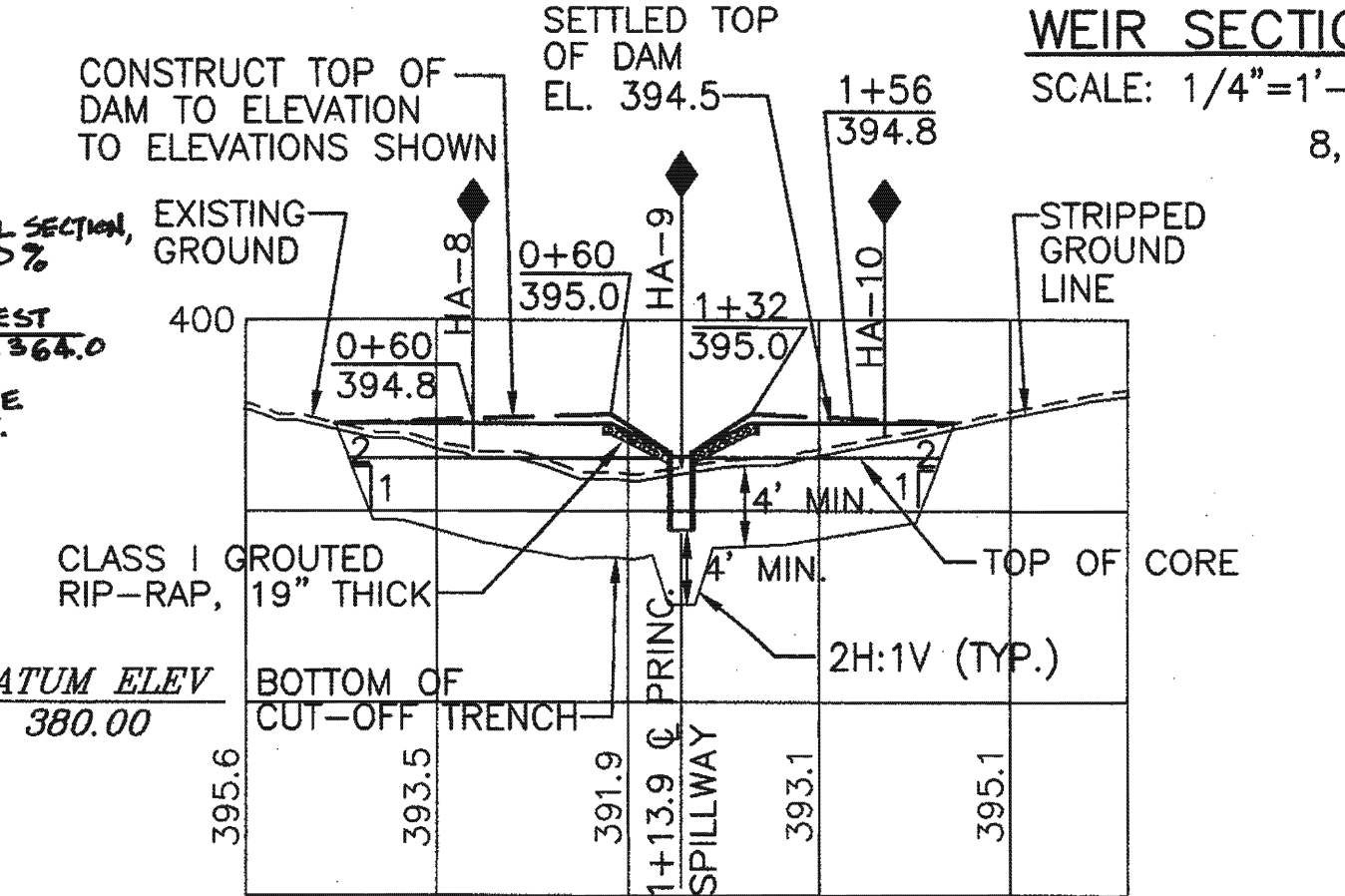
NORTH BASIN & TOKEN EMERGENCY SPILLWAY PROFILE A
 SCALE: HORIZ.: 1"= 50'
 VER.: 1"= 10'



NORTH BASIN & PRINCIPAL SPILLWAY PROFILE B
 SCALE: HORIZ.: 1"= 20'
 VER.: 1"= 4'



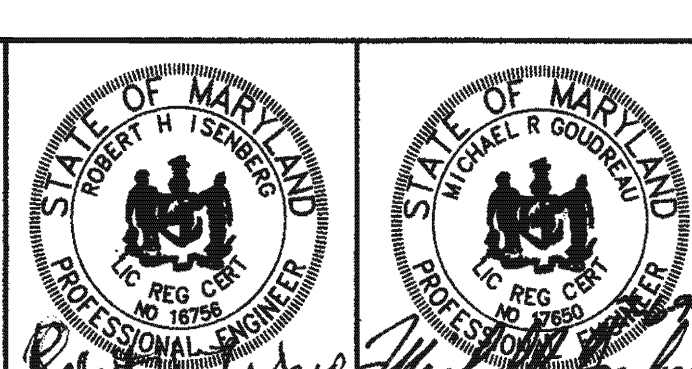
NORTH BASIN & TOKEN EMERGENCY SPILLWAY PROFILE
 SCALE: HORIZ.: 1"= 50'
 VERT.: 1"= 10'



WEST-LOW RISE STORMWATER MANAGEMENT STRUCTURE BASIN & DAM PROFILE D
 SCALE: HORIZ.: 1"= 50'
 VER.: 1"= 10'

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
<i>Ann S. Butler</i> 9/14/99 DIRECTOR DATE	
<i>Michael R. Goudreau</i> 9/14/99 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	
<i>Cinda Hamlett</i> 7/14/99 CHIEF, DIVISION OF LAND DEVELOPMENT DATE	
SUBDIVISION NAME HO. CO. GOVERNMENT	LOT/PARCEL 529
LIBER/FOLIO 180/339	TAX/ZONE MAP 31
WATER CODE	SEWER CODE CENSUS TR.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>James J. Shaw</i> 7/6/99 DIRECTOR OF PUBLIC WORKS DATE	<i>John J. O'Hara</i> 7/6/99 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

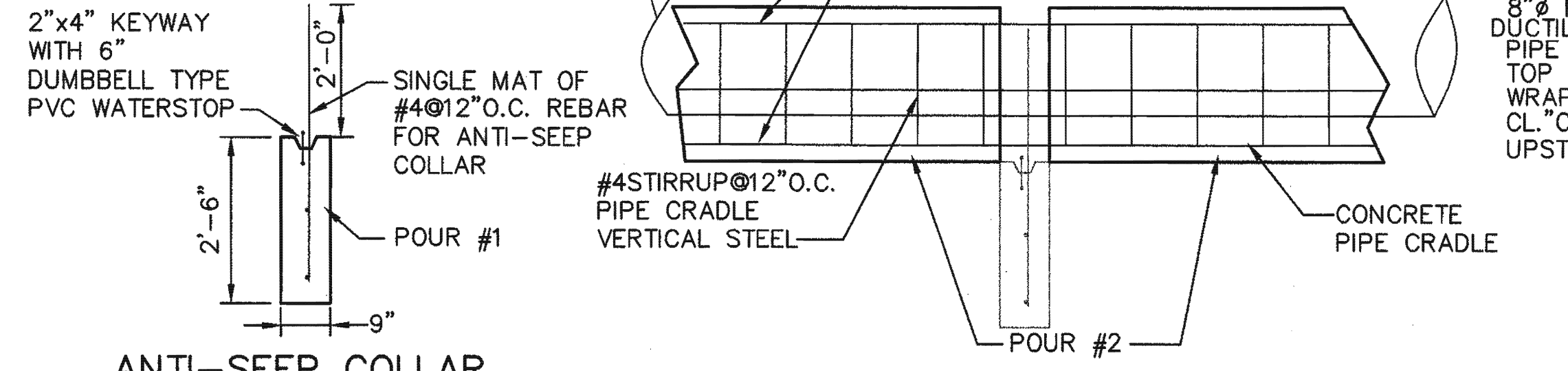


DES. MRG	DRN. JCS	CHK. RHI	DATE: 06-02-99
BY NO.	NO.	NO.	NO.
REVISED PROFILES & ADDED SECTION A-A 8/99			

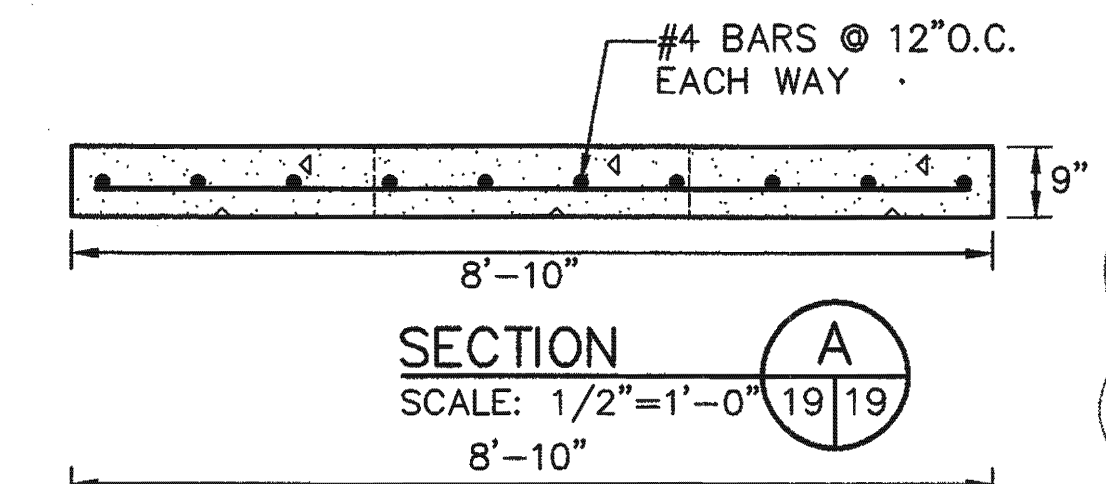
NORTH BASIN AND WEST LOW-RISE STORMWATER MANAGEMENT STRUCTURE PROFILES

NEW CUT LANDFILL IMPROVEMENTS
 CAPITAL PROJECT NO. C-0237-H
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

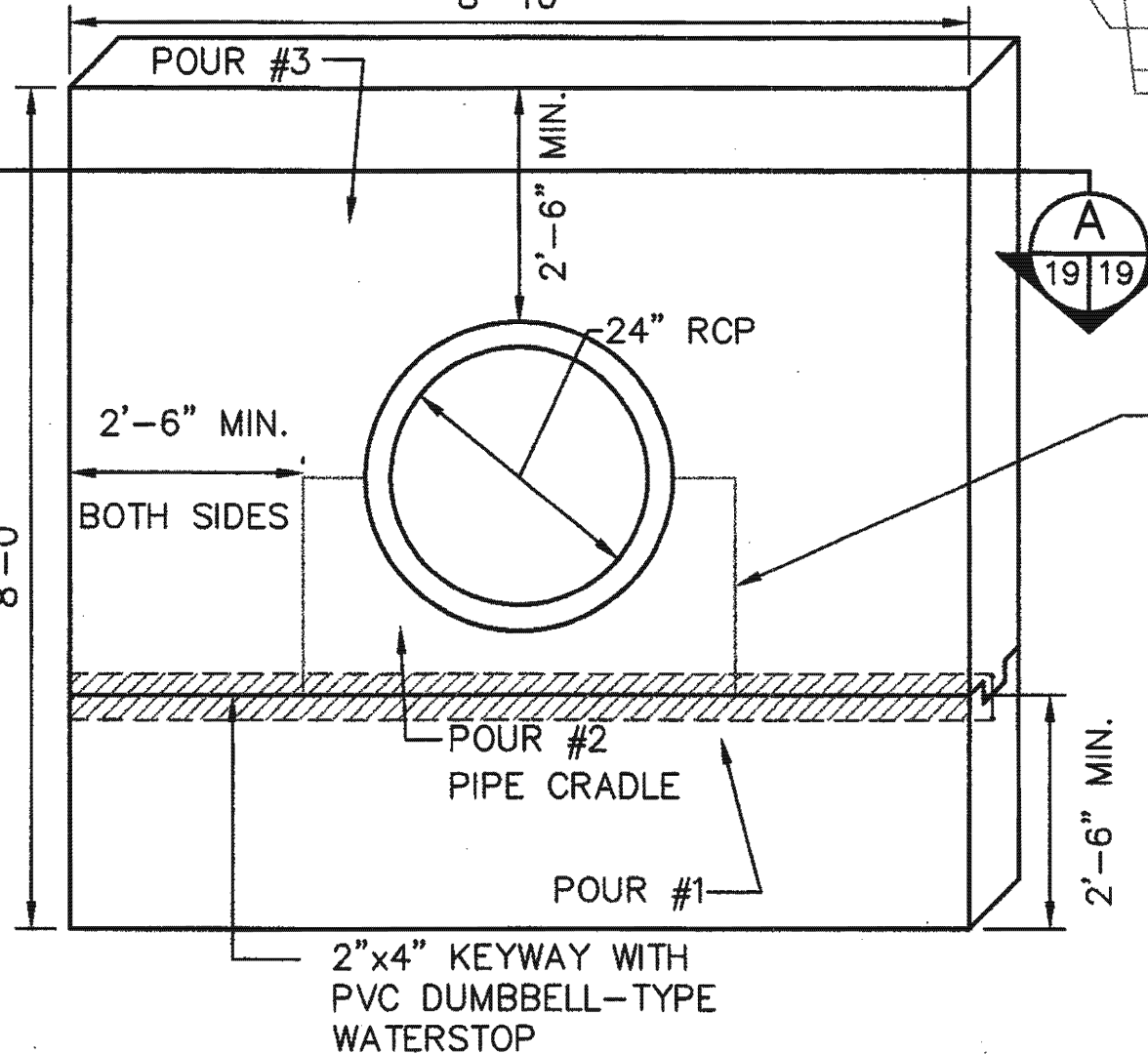
- NOTES:
 1. ANTI-SEEP COLLAR TO BE POURED AT LEAST TWO (2) FEET FROM NEAREST PIPE JOINT.
 2. ANTI-SEEP COLLAR IS TO BE CONSTRUCTED IN THREE POURS.
 3. BOTTOM HALF TO BE POURED FIRST.
 4. PLACE PIPE AND POUR CRADLE SECOND.
 5. TOP PORTION OF COLLAR POURED THIRD.
 6. BACKFILL SHALL BE PLACED EVENLY ON BOTH SIDES OF THE ANTI-SEEP COLLAR.
 7. REINFORCED CONCRETE:
 fc = 4,000 psi @ 28 DAYS.



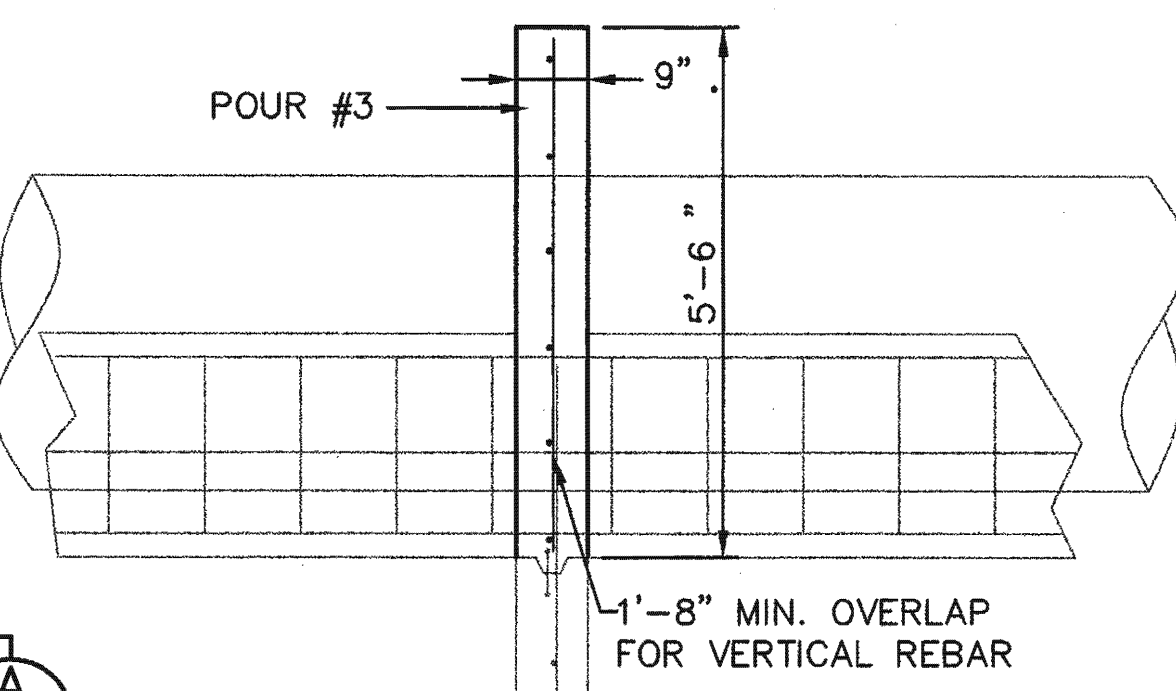
ANTI-SEEP COLLAR CONSTRUCTION SEQUENCE



SECTION A
SCALE: 1/2"=1'-0" 19/19



ANTI-SEEP COLLAR DETAIL (TYPICAL OF TWO)
NOT TO SCALE 18/19



APPLY EPOXY ADHESIVE TO CONCRETE PIPE PRIOR TO THIRD CONCRETE POUR. EPOXY ADHESIVE SHALL BE MASTERBUILDER'S CONCRECRE PASTE LPL OR ENGINEER APPROVED EQUAL.

SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

SEDIMENT CONTROL & POND CONSTRUCTION
 () BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: John Othman 7/6/99 DATE

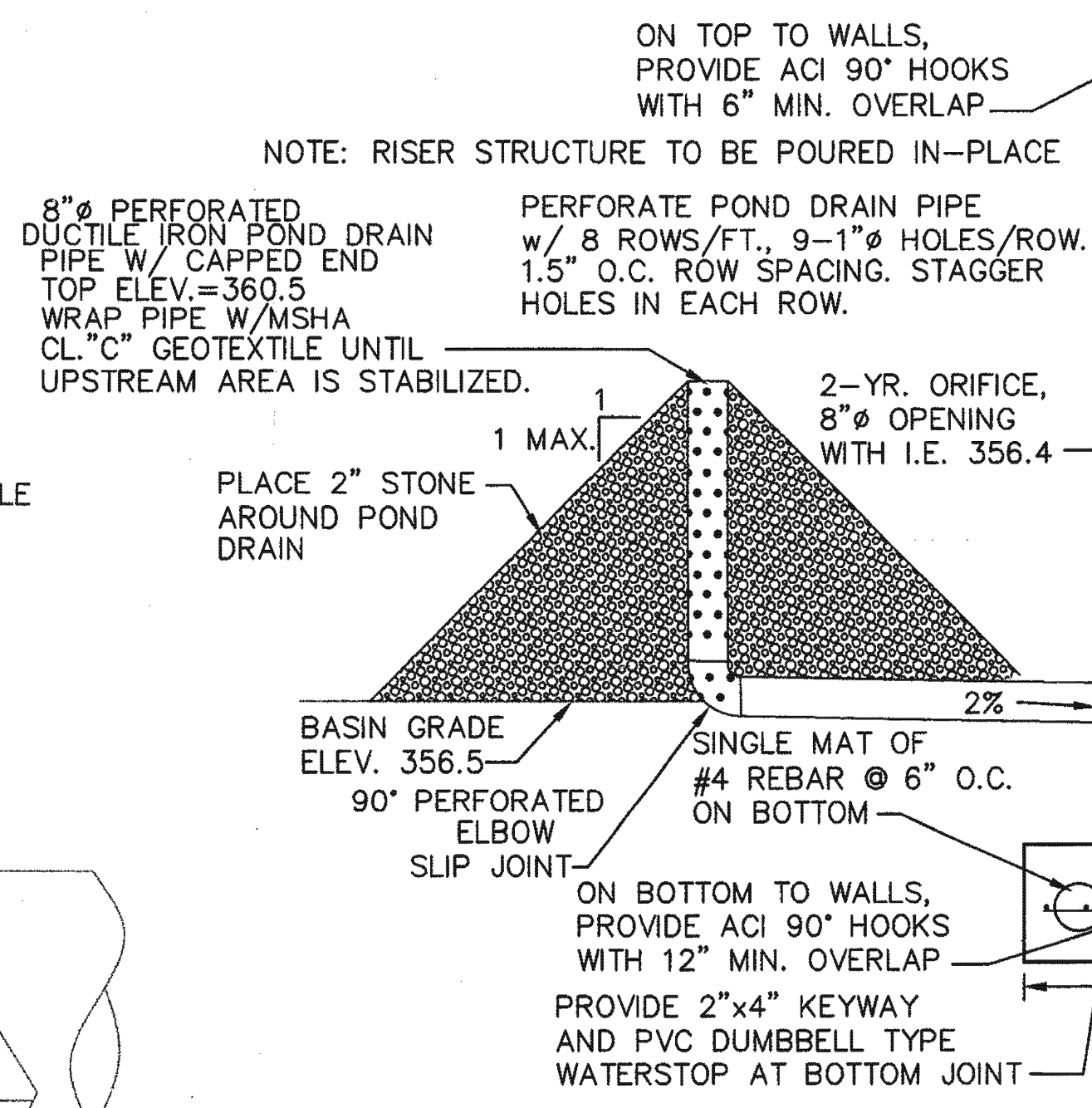
() THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
 Signature: [Signature] 7/6/99 DATE
 USDA - NATURAL RESOURCES CONSERVATION SERVICE

() THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: [Signature] 7/6/99 DATE
 HOWARD SOIL CONSERVATION DISTRICT AS-BUILT CERTIFICATION

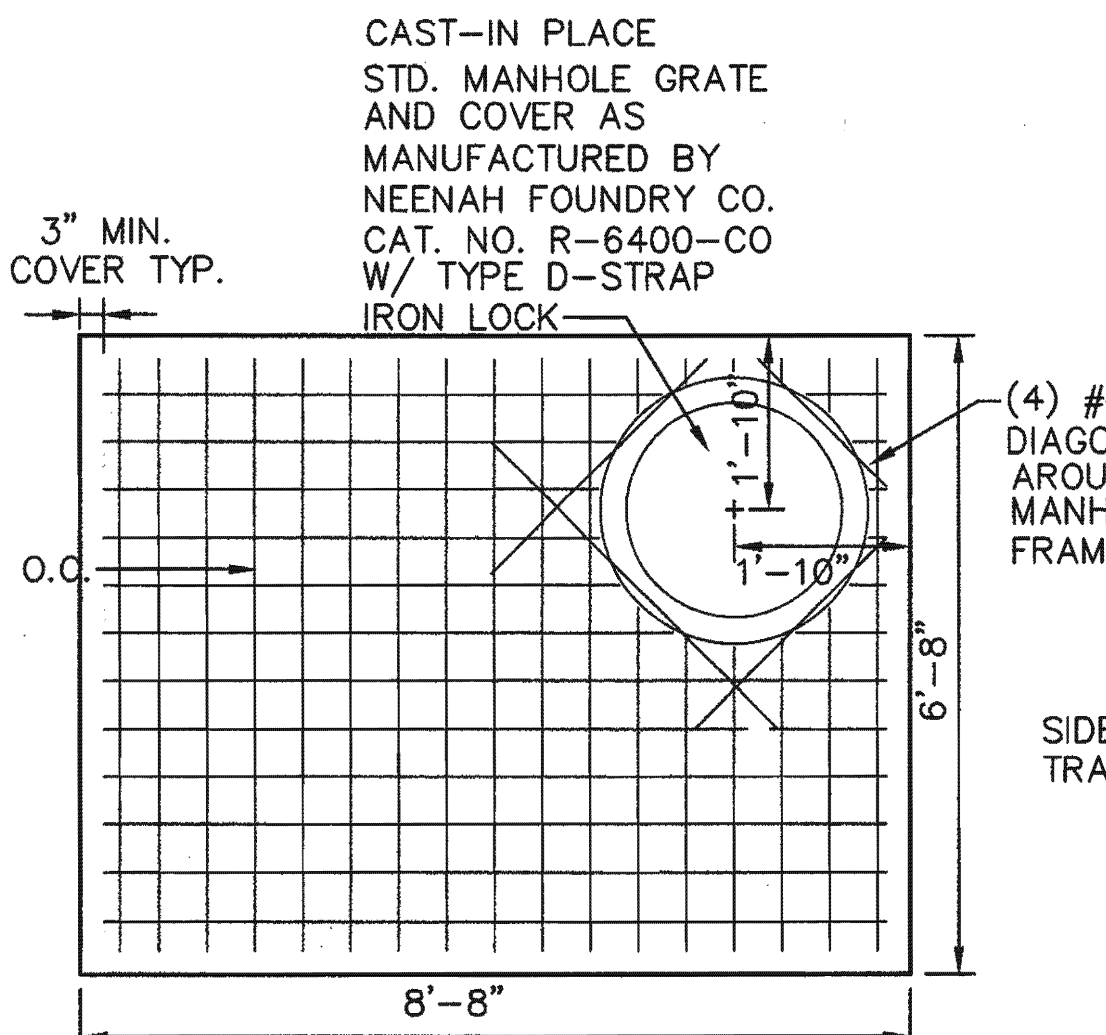
() BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.
 Signature: Michael R. Goudreau 7-6-99 DATE
 PRINT NAME BELOW SIGNATURE: MICHAEL R. GOUDREAU

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 SIGNATURE _____ DATE _____ PE NO. _____

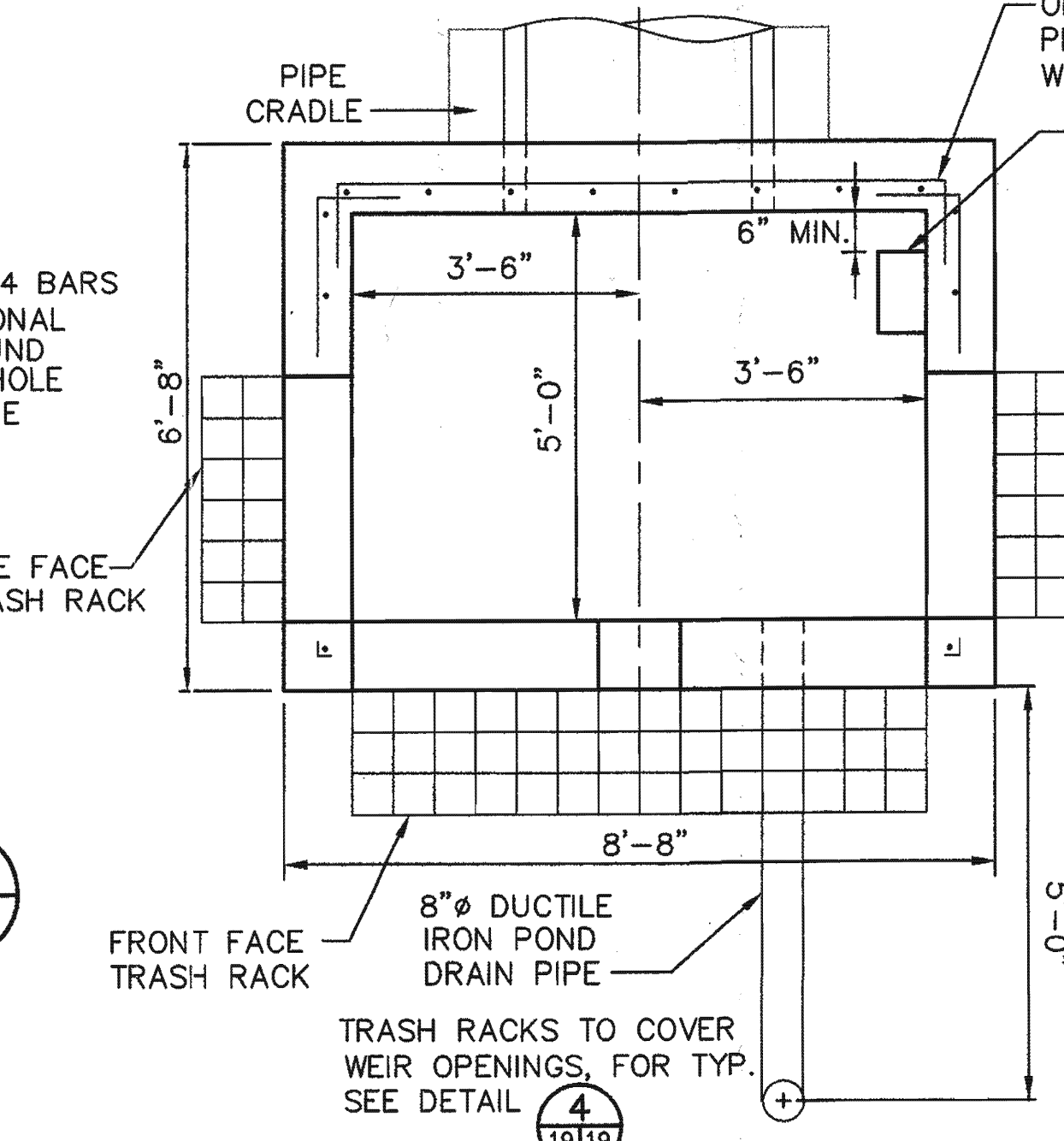
CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.
 OPERATION, MAINTENANCE AND INSPECTION
 INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (WD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.



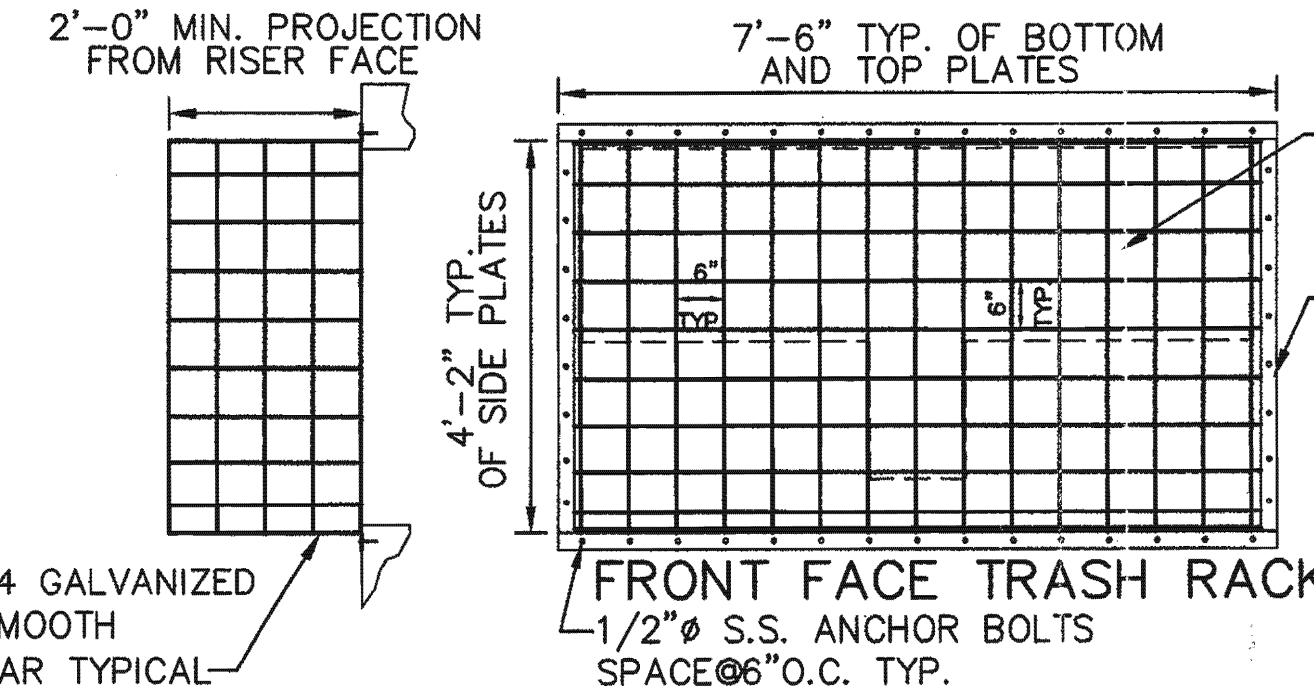
RISER STRUCTURE SECTION D
SCALE: 1/2"=1'-0" 19/19



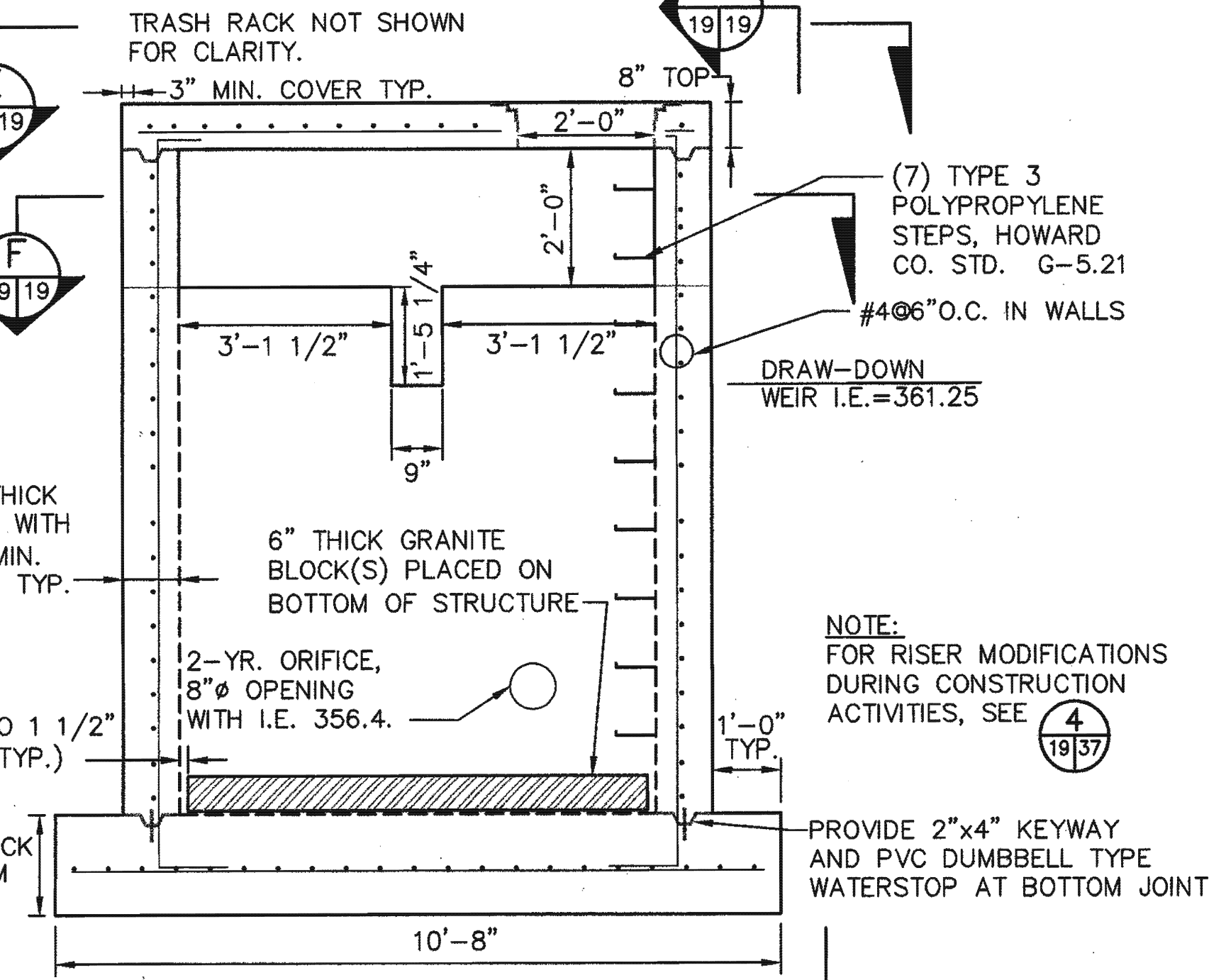
RISER STRUCTURE SECTION E
SCALE: 1/2"=1'-0" 19/19



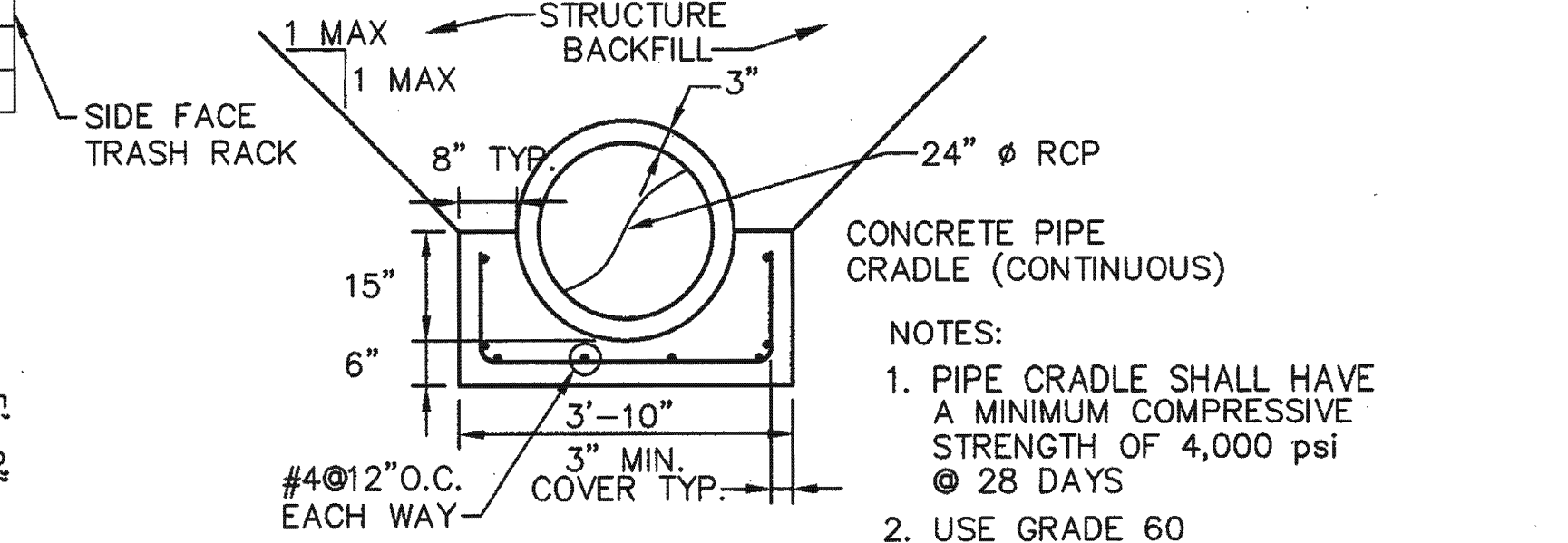
RISER STRUCTURE SECTION F
SCALE: 1/2"=1'-0" 19/19



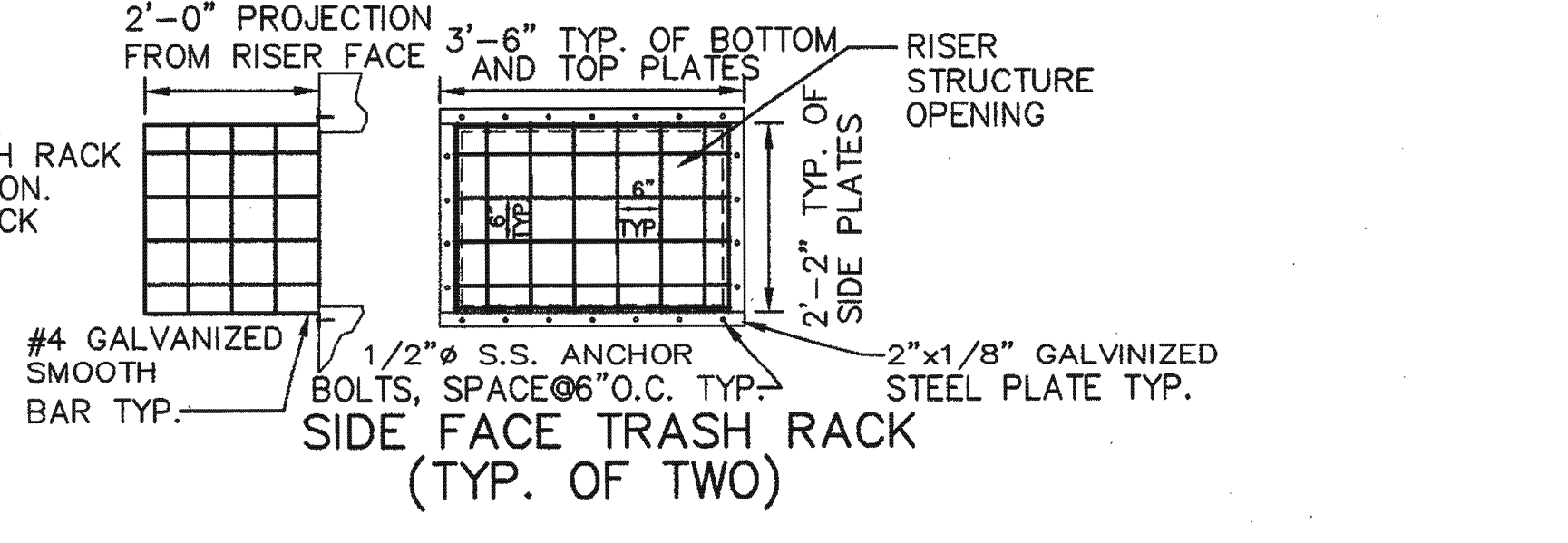
FRONT FACE TRASH RACK
1/2" S.S. ANCHOR BOLTS SPACE@6" O.C. TYP.



RISER STRUCTURE DETAIL 1
SCALE: 1/2"=1'-0" 8/19



PIPE CRADLE DETAIL 4
SCALE: 1/2"=1'-0" 18/19

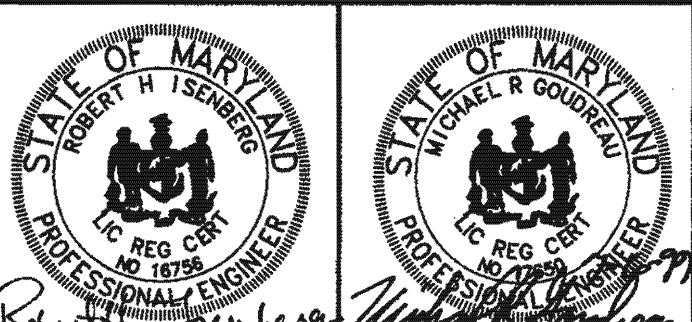


TRASH RACK DETAIL 4
SCALE: 1/2"=1'-0" 19/19

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND
 Director: [Signature] 9/14/99 DATE
 Chief, Development Engineering Division: [Signature] 9/6/99 DATE
 Chief, Division of Land Development: [Signature] 7/13/99 DATE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

SCS ENGINEERS
 CONSULTING ENGINEERS
 11260 ROGER BACON DRIVE
 SUITE 300
 RESTON, VIRGINIA 20190
 PH. (703) 471-6150
 FAX. (703) 471-6676



DES.	MRG	
DRN.	JCS	
CHK.	RHI	
DATE:	07-01-99	
BY	NO.	REVISION
		DATE

NORTH BASIN DETAILS

NEW CUT LANDFILL IMPROVEMENTS
 CAPITAL PROJECT NO. C-0237-H
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN
 SHEET 19 OF 39
 SDP-99-109

SEDIMENT CONTROL & POND CONSTRUCTION

() BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

John O'Hara 7/6/99
 SIGNATURE OF DEVELOPER DATE
 PRINT NAME BELOW SIGNATURE

() BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Michael R. Goudreau 7-6-99
 SIGNATURE OF ENGINEER DATE
 PRINT NAME BELOW SIGNATURE

() THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Paul Simon 9/8/99
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

() THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

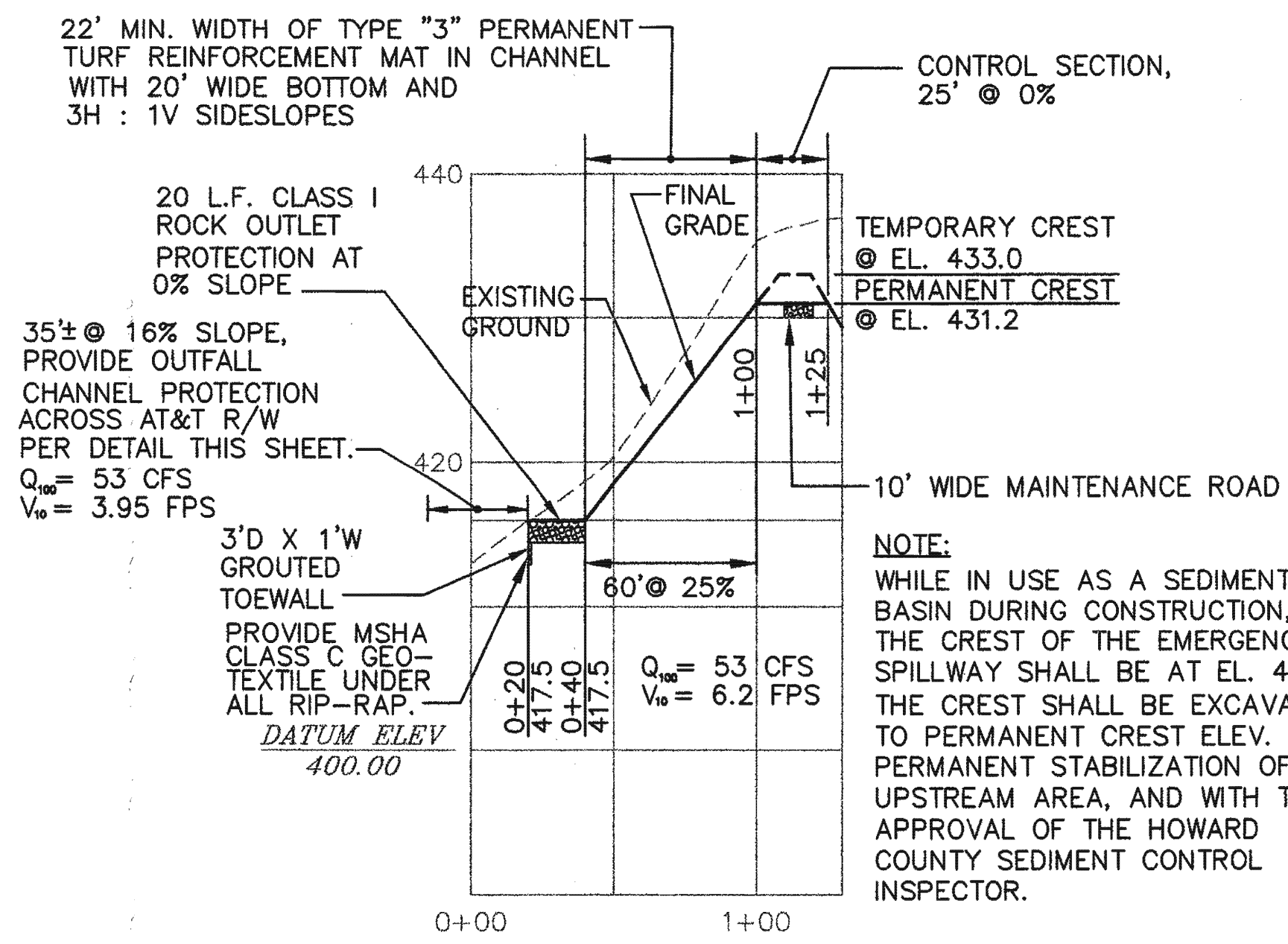
John W. Adley 9/8/99
 HOWARD SOIL CONSERVATION DISTRICT DATE
 AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

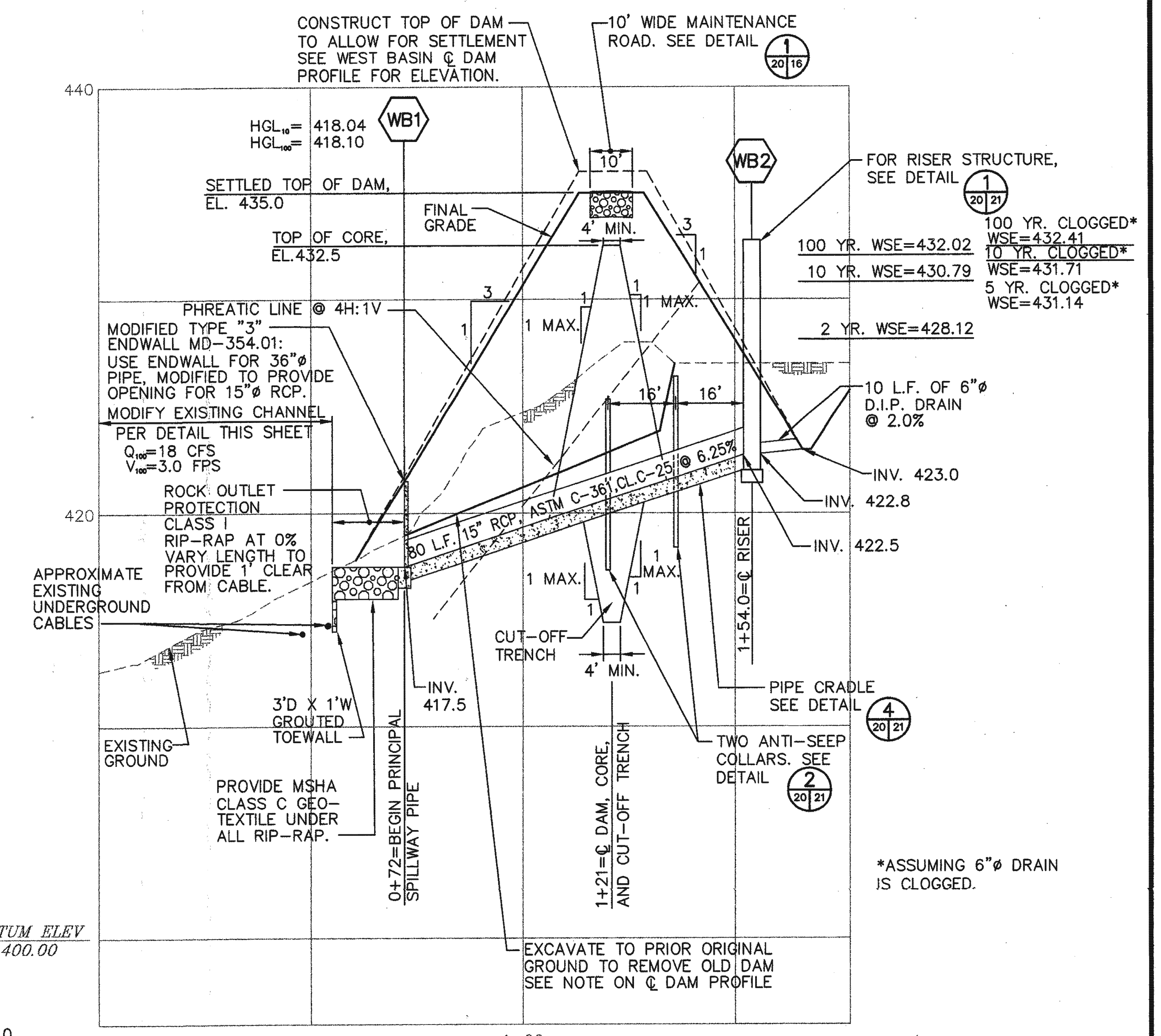
PE NO. _____
 SIGNATURE _____ DATE _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

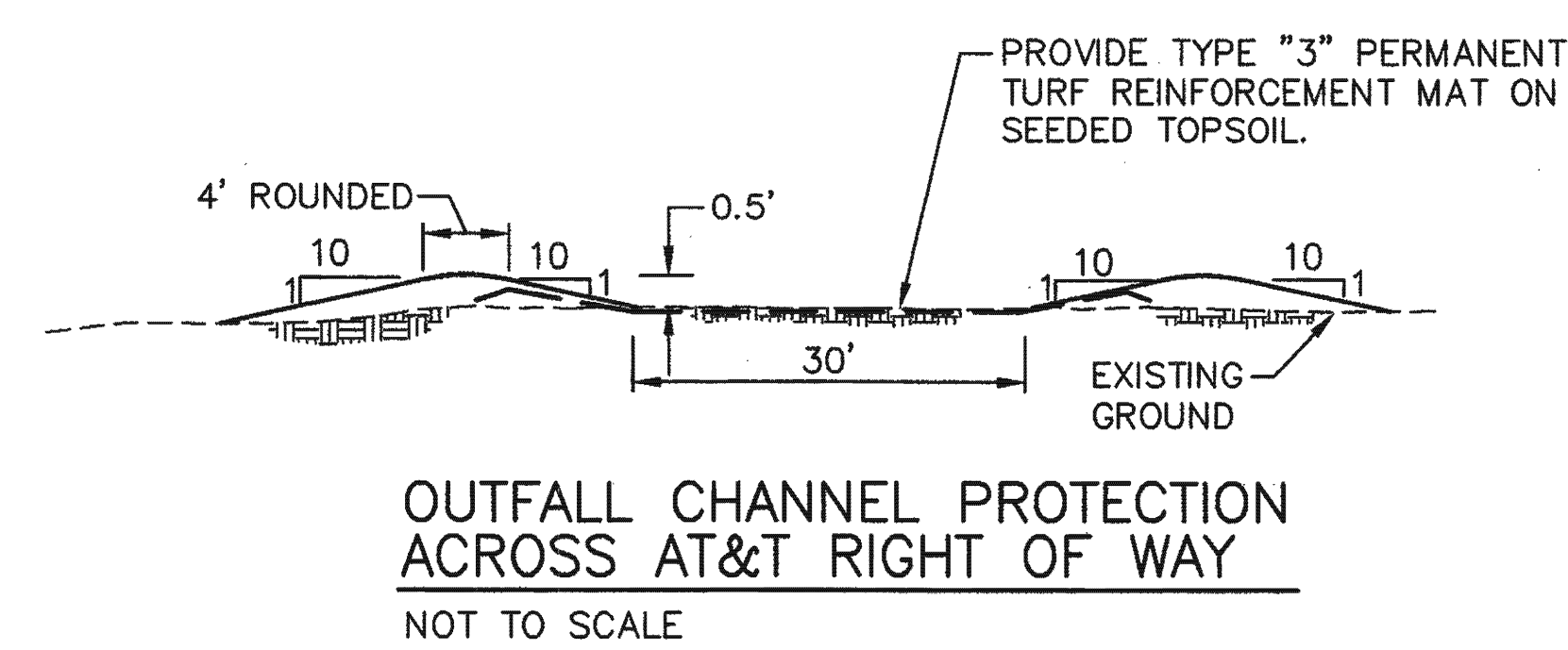
OPERATION, MAINTENANCE AND INSPECTION
 INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SSC'S "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.



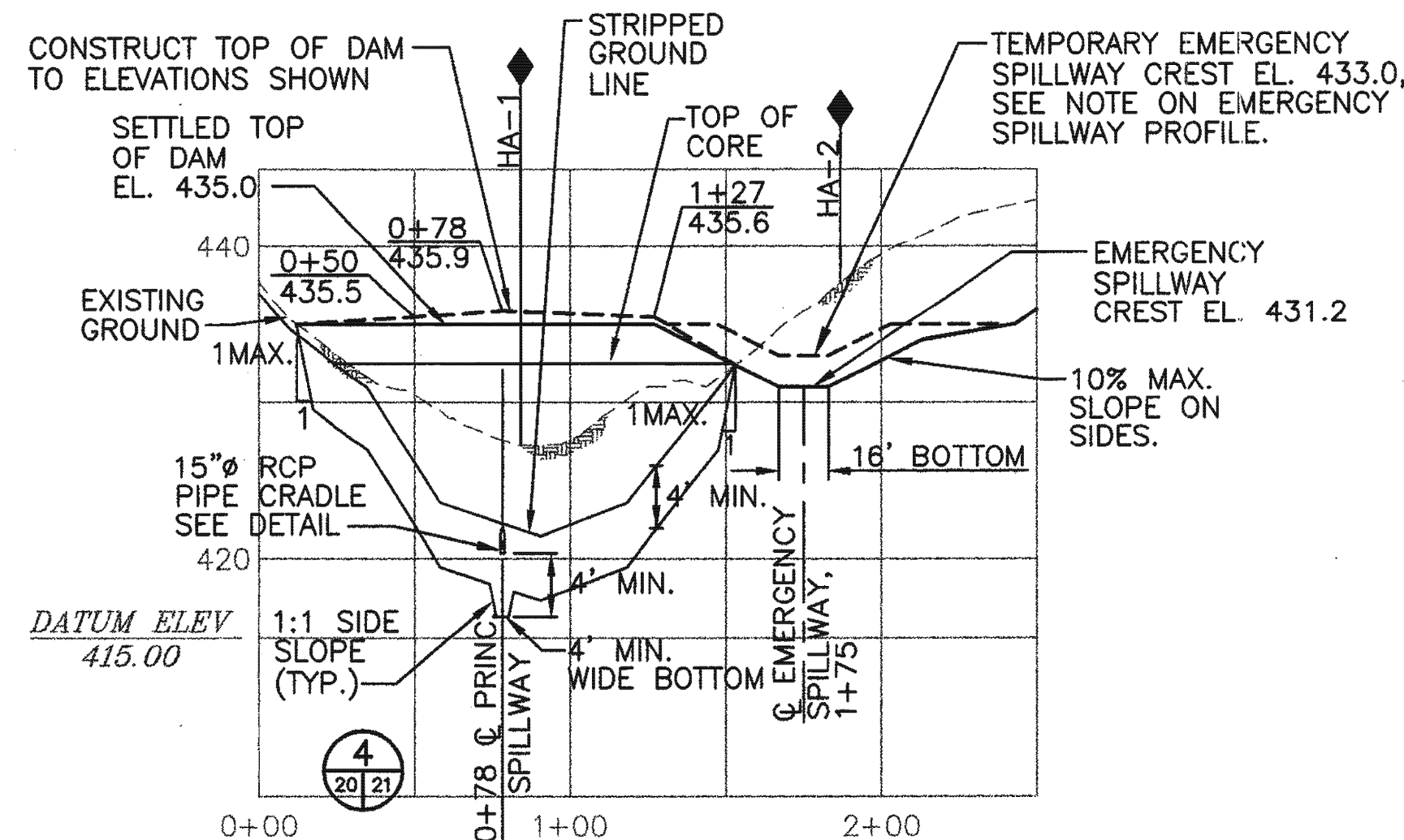
WEST BASIN @ EMERGENCY SPILLWAY PROFILE (A)
 SCALE: HORIZ.: 1" = 50'
 VER.: 1" = 10'
 5,8,29,32



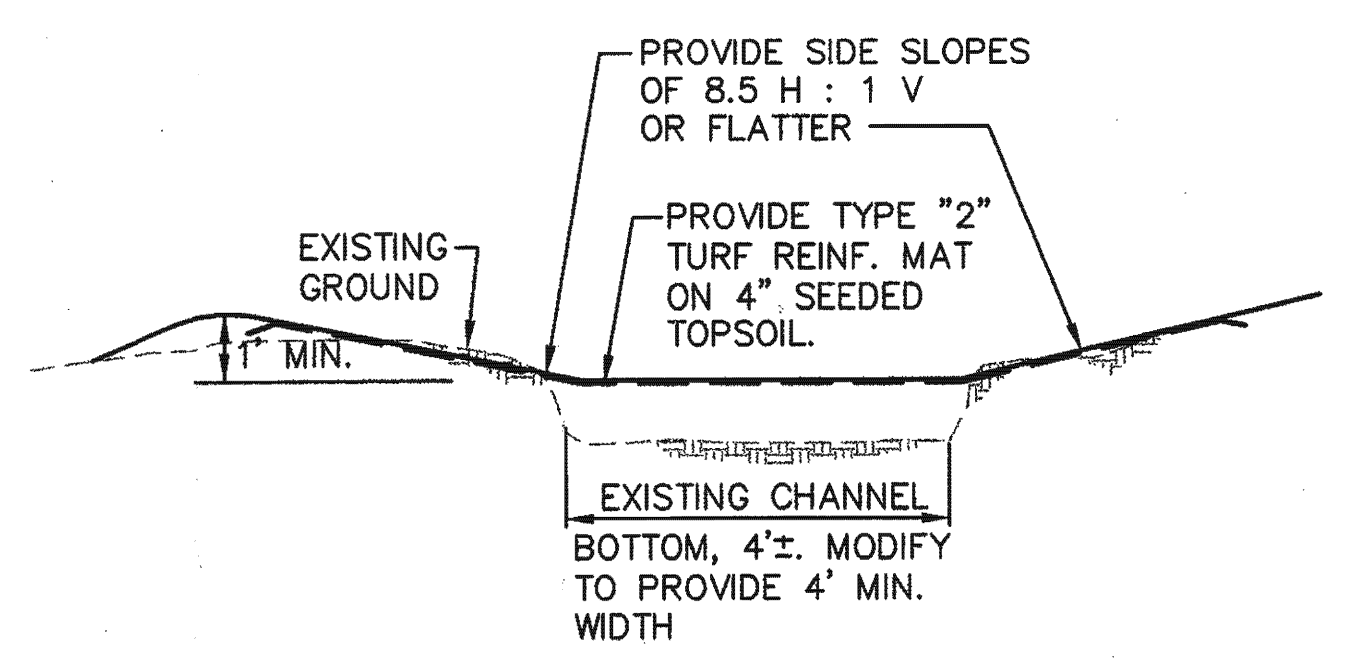
WEST BASIN @ PRINCIPAL PROFILE (C)
 SCALE: HORIZ.: 1" = 20'
 VER.: 1" = 4'
 5,8,29,32



OUTFALL CHANNEL PROTECTION ACROSS AT&T RIGHT OF WAY
 NOT TO SCALE



WEST BASIN @ DAM PROFILE (B)
 SCALE: HORIZ.: 1" = 50'
 VER.: 1" = 10'
 5,8,29,32



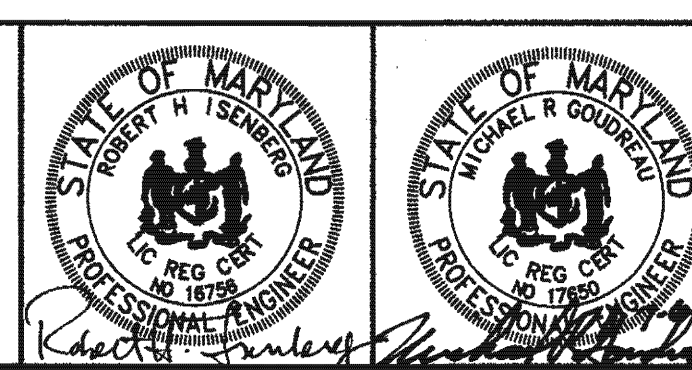
EXISTING CHANNEL MODIFICATION
 NOT TO SCALE

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
<i>Paul Simon</i> 9/14/99 DIRECTOR DATE	<i>John O'Hara</i> 9/9/99 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
<i>Chris Harvata</i> 9/13/99 CHIEF, DIVISION OF LAND DEVELOPMENT DATE	

SUBDIVISION NAME HO. CO. GOVERNMENT	LOT/PARCEL 529
LIBER/FOLIO 180/339	ZONE R-20
TAX/ZONE MAP 31	
WATER CODE	SEWER CODE
	CENSUS TR.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>James O'Brien</i> 9/6/99 DIRECTOR OF PUBLIC WORKS DATE	<i>John O'Hara</i> 7/6/99 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

SCS ENGINEERS
 CONSULTING ENGINEERS
 11260 ROGER BACON DRIVE
 SUITE 300
 RESTON, VIRGINIA 20190
 PH. (703) 471-6150
 FAX. (703) 471-6676



DES. MRG			
DRN. JCS			
CHK. RHI			
DATE: 06-02-99	BY NO.	REVISION	DATE

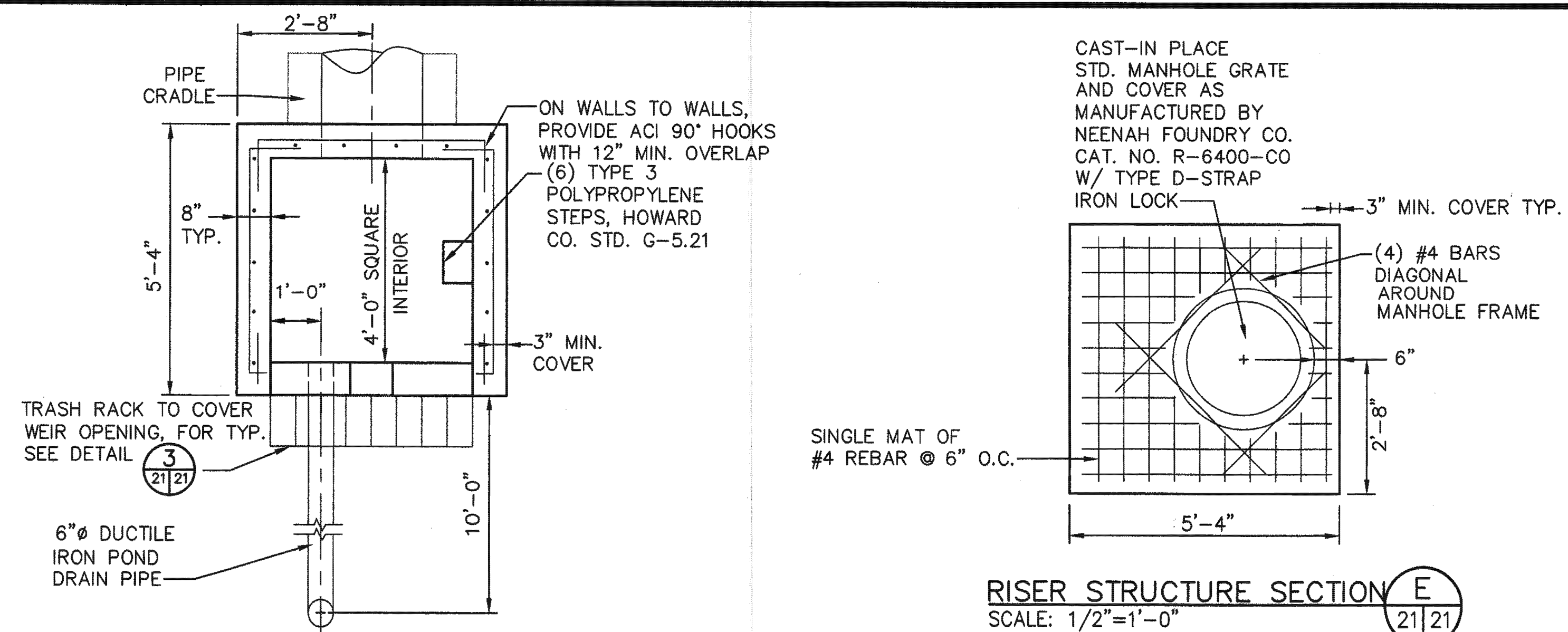
WEST BASIN PROFILES

NEW CUT LANDFILL IMPROVEMENTS
 CAPITAL PROJECT NO. C-0237-H
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

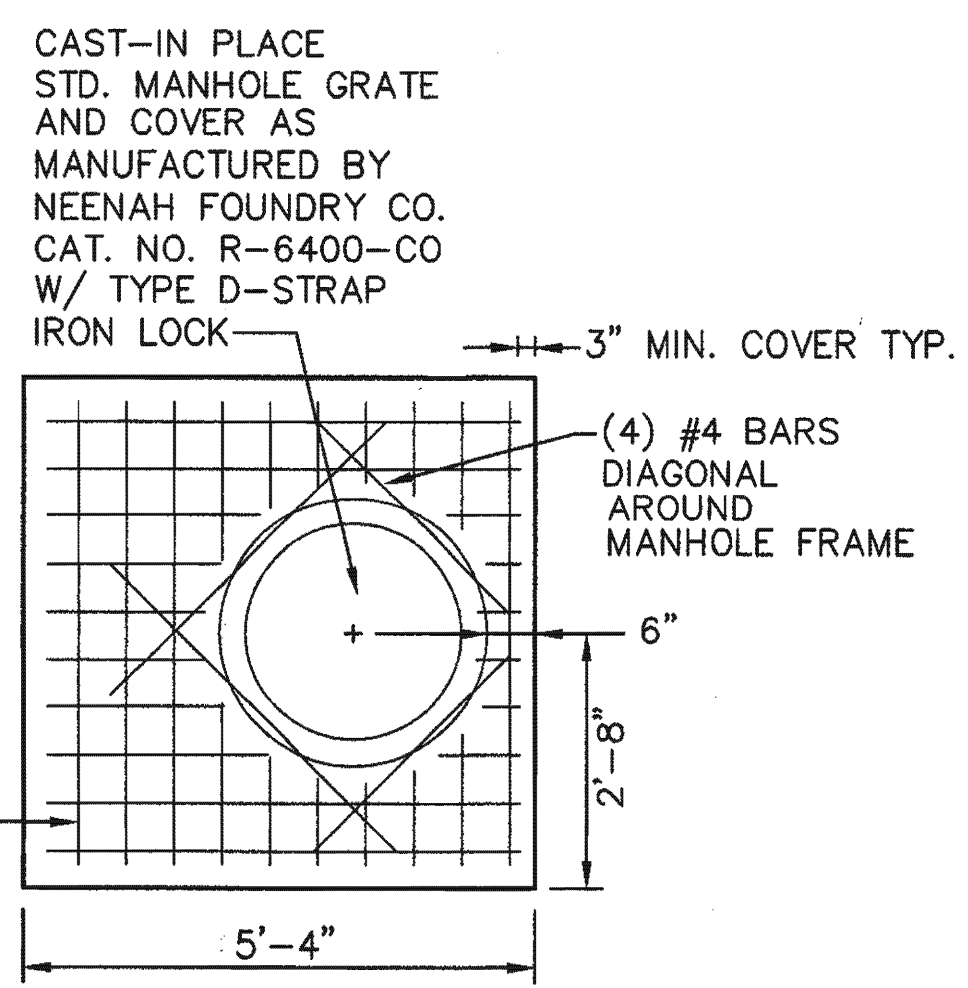
SCALE:
 AS SHOWN
 SHEET
 20 OF 39

POND	RISER		OUTLET PIPE		ANTI-SEEP COLLAR		DAM		EMERG. SPILLWAY		CORE		CUT-OFF TRENCH		WATER SURFACE ELEV.							
	WEIR HT.	WEIR WIDTH	CREST ELEV.	STR. WIDTH	DIA. IN.	L FT.	U/S INV.	D/S INV.	QTY.	APPROX. SIZE	TOP WIDTH FT.	CONSTR. HEIGHT	SETTLED HEIGHT	ELEV.	BOTTOM WIDTH FT.	TOP WIDTH FT.	SIDE SLOPES	BOT. WIDTH FT.	SIDE SLOPES	2 YR.	10 YR.	100 YR.
WEST	3'-10"	0'-10"	430.0	5'-4"	15	80	422.5	417.5	1	8.00 H. 9.08 W.	12'	VARIES	435.0	431.0	16	4'	1:1	4'	1:1	428.12	430.79	432.02

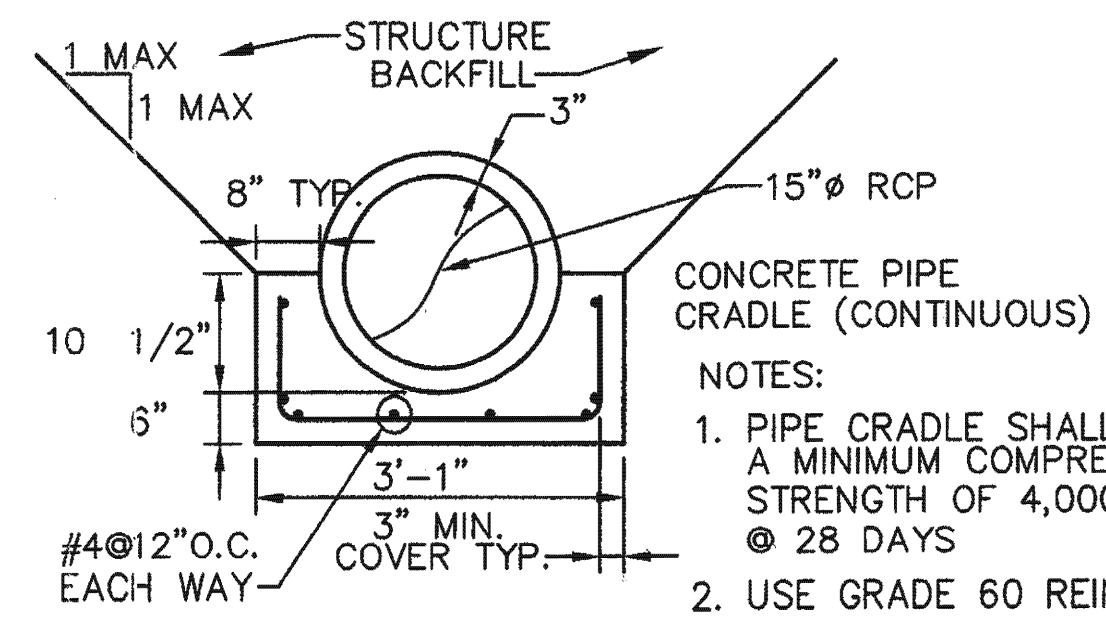
POST CONSTRUCTION WEST BASIN MAINTENANCE IS RESPONSIBILITY OF OWNER, HOWARD COUNTY.



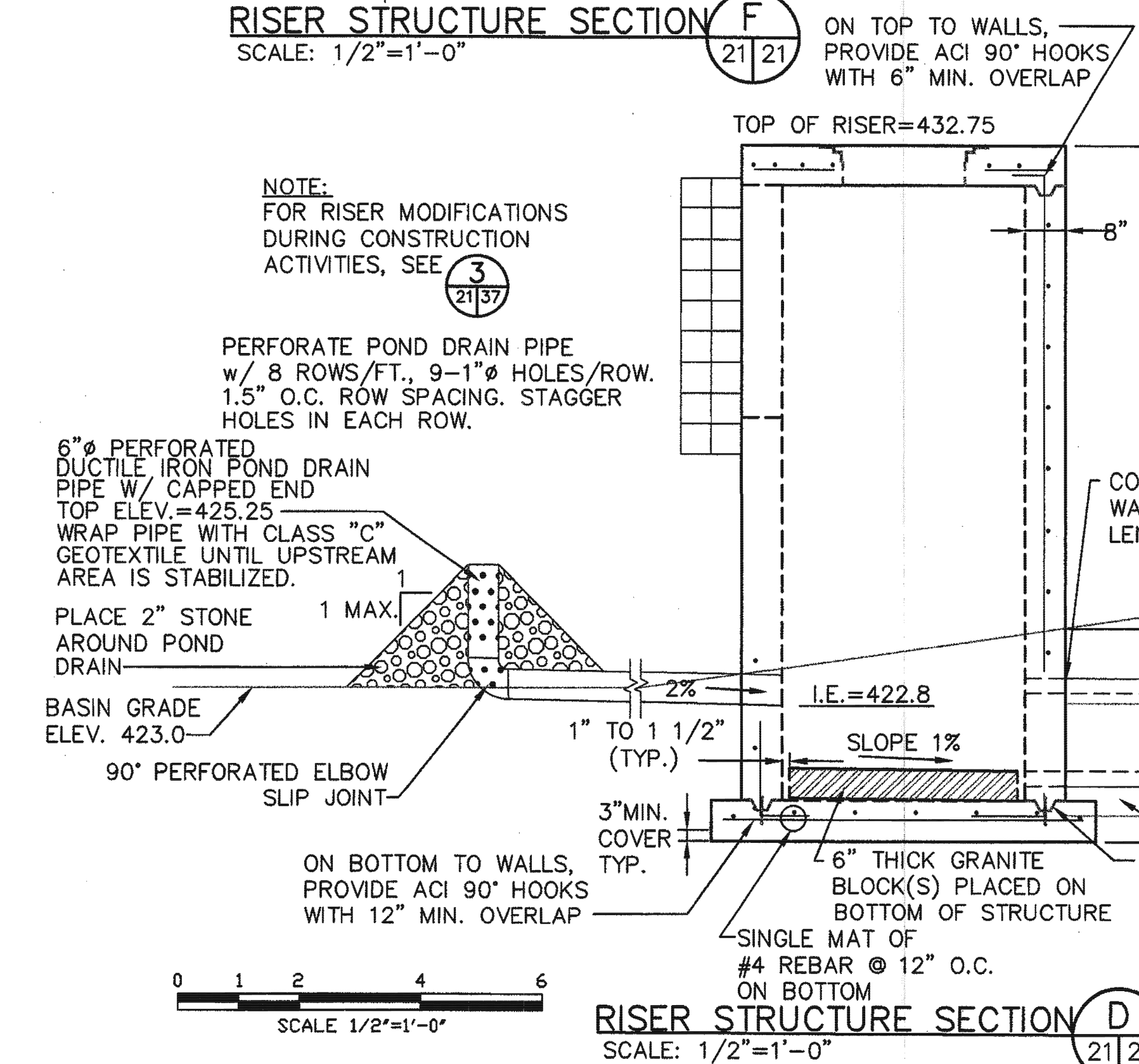
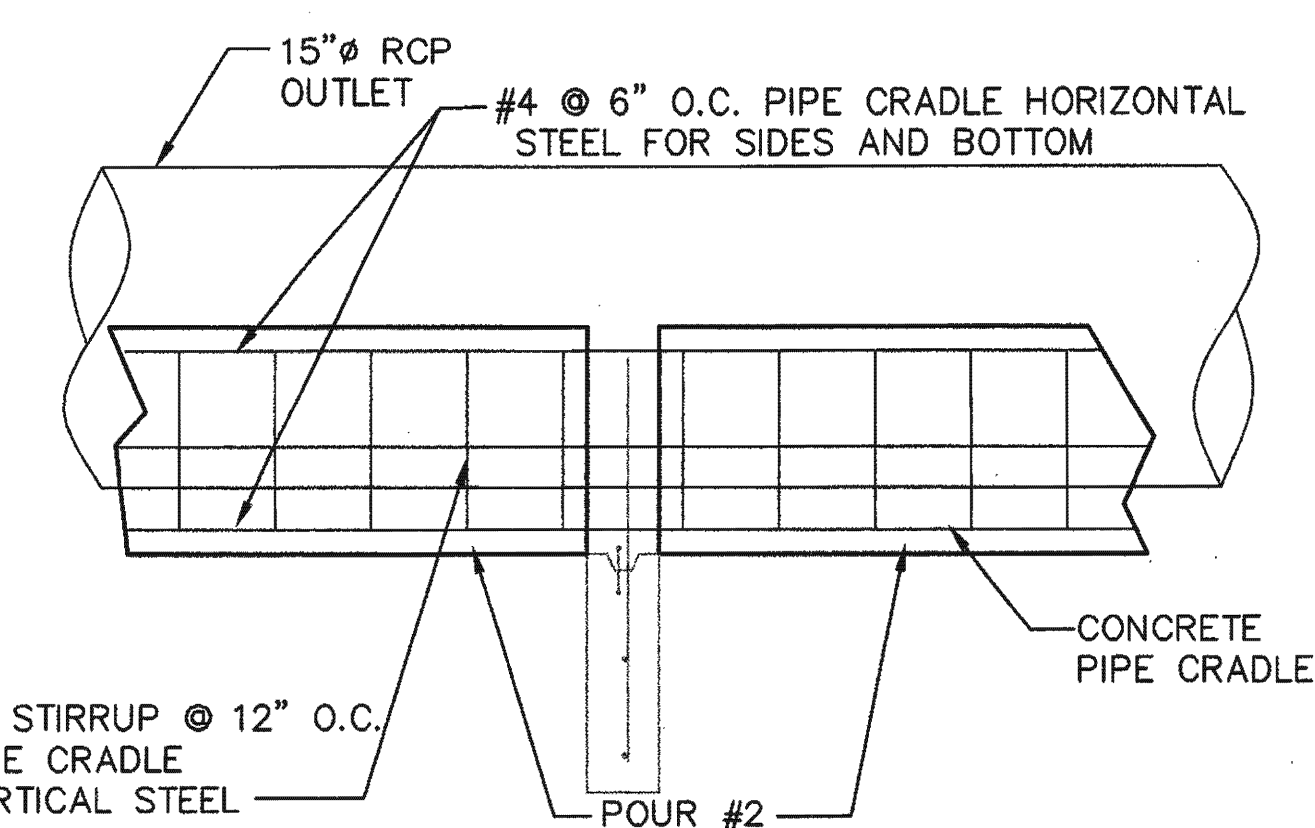
RISER STRUCTURE SECTION F
SCALE: 1/2"=1'-0"



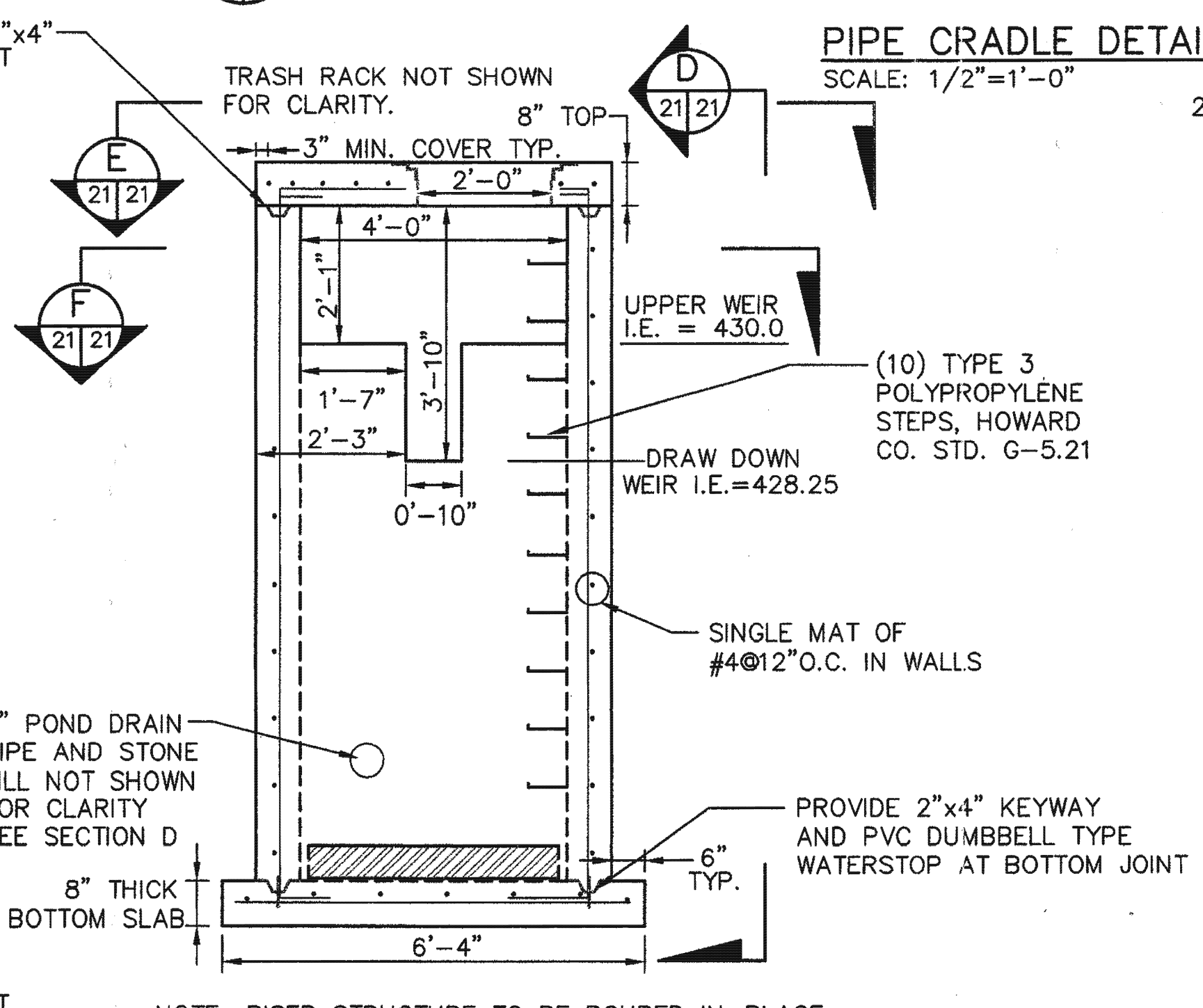
RISER STRUCTURE SECTION E
SCALE: 1/2"=1'-0"



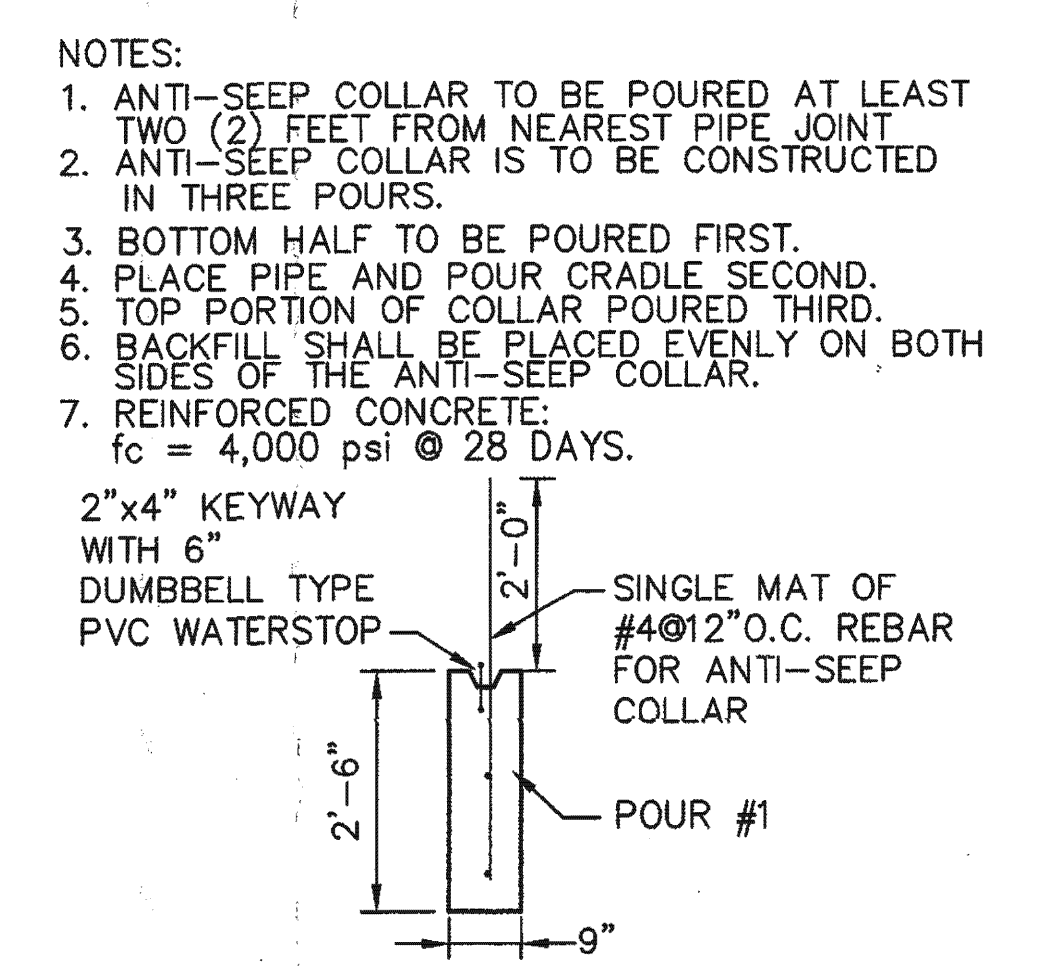
- NOTES:
- PIPE CRADLE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 psi @ 28 DAYS
 - USE GRADE 60 REINFORCING STEEL
 - CONCRETE CRADLE SHALL CONFORM TO THE REQUIREMENTS OF "SCS TR-46 A-2 CONCRETE CRADLE."



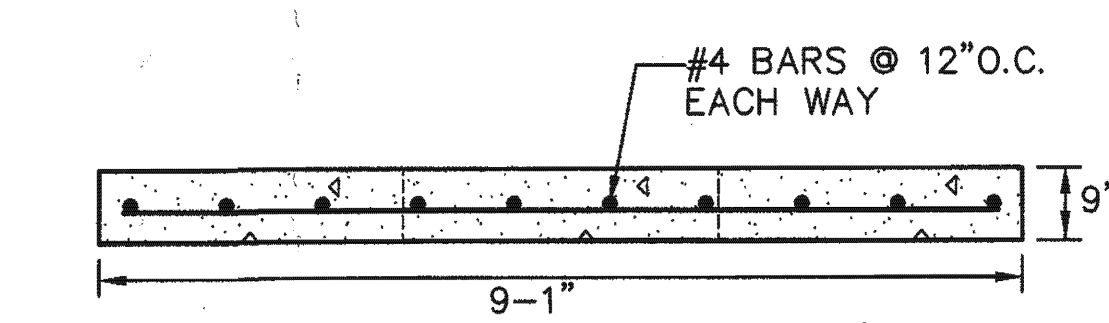
RISER STRUCTURE SECTION D
SCALE: 1/2"=1'-0"



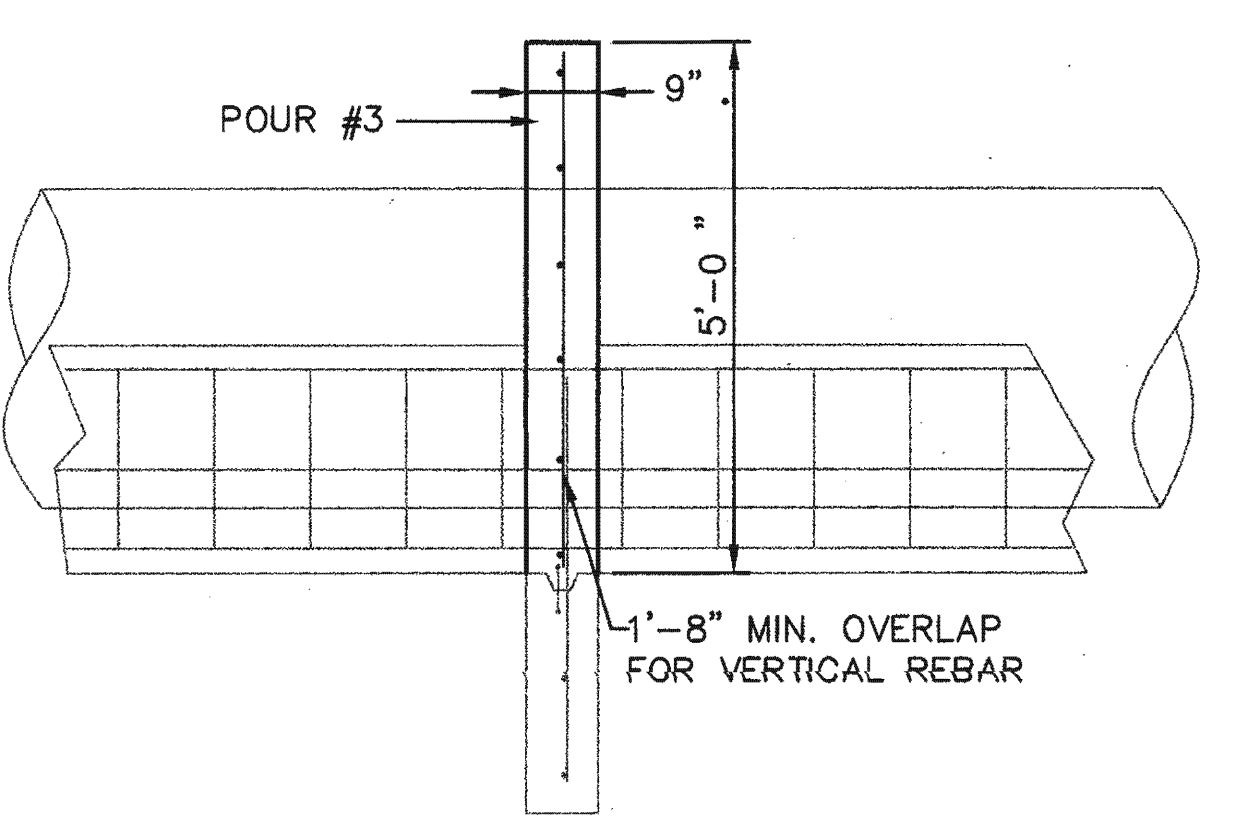
RISER STRUCTURE DETAIL 1
SCALE: 1/2"=1'-0"



ANTI-SEEP COLLAR CONSTRUCTION SEQUENCE



SECTION A
NOT TO SCALE



ANTI-SEEP COLLAR DETAIL (TYPICAL OF TWO)
NOT TO SCALE

SEDIMENT CONTROL & POND CONSTRUCTION
() BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *John J. O'Hara* DATE: 7/6/99

() THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Signature: *Chief Sumner* DATE: 9/8/99
USDA - NATURAL RESOURCES CONSERVATION SERVICE

() THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *Michael R. Gaudreau* DATE: 9/8/99
HOWARD SOIL CONSERVATION DISTRICT AS-BUILT CERTIFICATION

() BY THE ENGINEER:
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Signature: *Michael R. Gaudreau* DATE: 7-6-99

SUBDIVISION NAME	LOT/PARCEL
HO. CO. GOVERNMENT	529
LIBER/FOLIO	ZONE TAX/ZONE MAP
180/339	R-20 31
WATER CODE	SEWER CODE CENSUS TR.

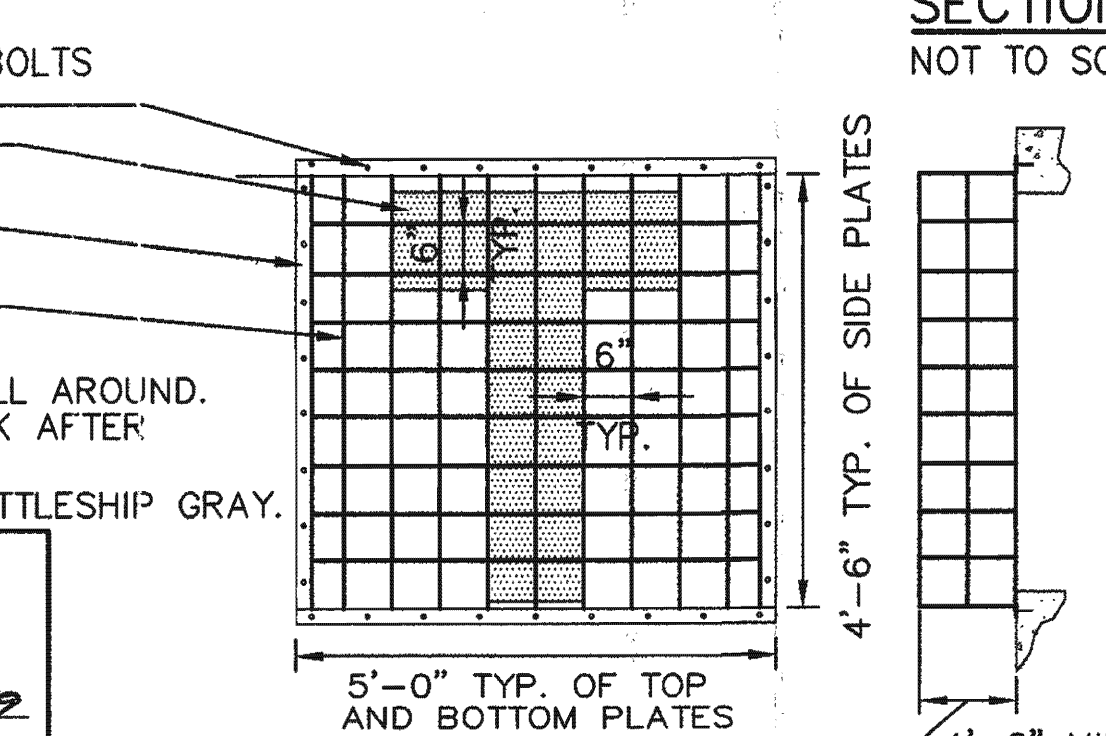
OPERATION, MAINTENANCE AND INSPECTION
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIR, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Signature: *David Smith* DATE: 9/14/99
DIRECTOR

Signature: *Michael R. Gaudreau* DATE: 9/9/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Signature: *Conita Donatta* DATE: 9/14/99
CHIEF, DIVISION OF LAND DEVELOPMENT



TRASH RACK DETAIL 3
SCALE: 1/2"=1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Signature: *James M. Shaw* DATE: 9/6/99
DIRECTOR OF PUBLIC WORKS

Signature: *John J. O'Hara* DATE: 7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676

DES.	MRG	▲
DRN.	JCS	▲
CHK.	RHI	▲
DATE: 06-02-99	BY NO.	REVISION

WEST BASIN DETAILS

NEW CUT LANDFILL IMPROVEMENTS

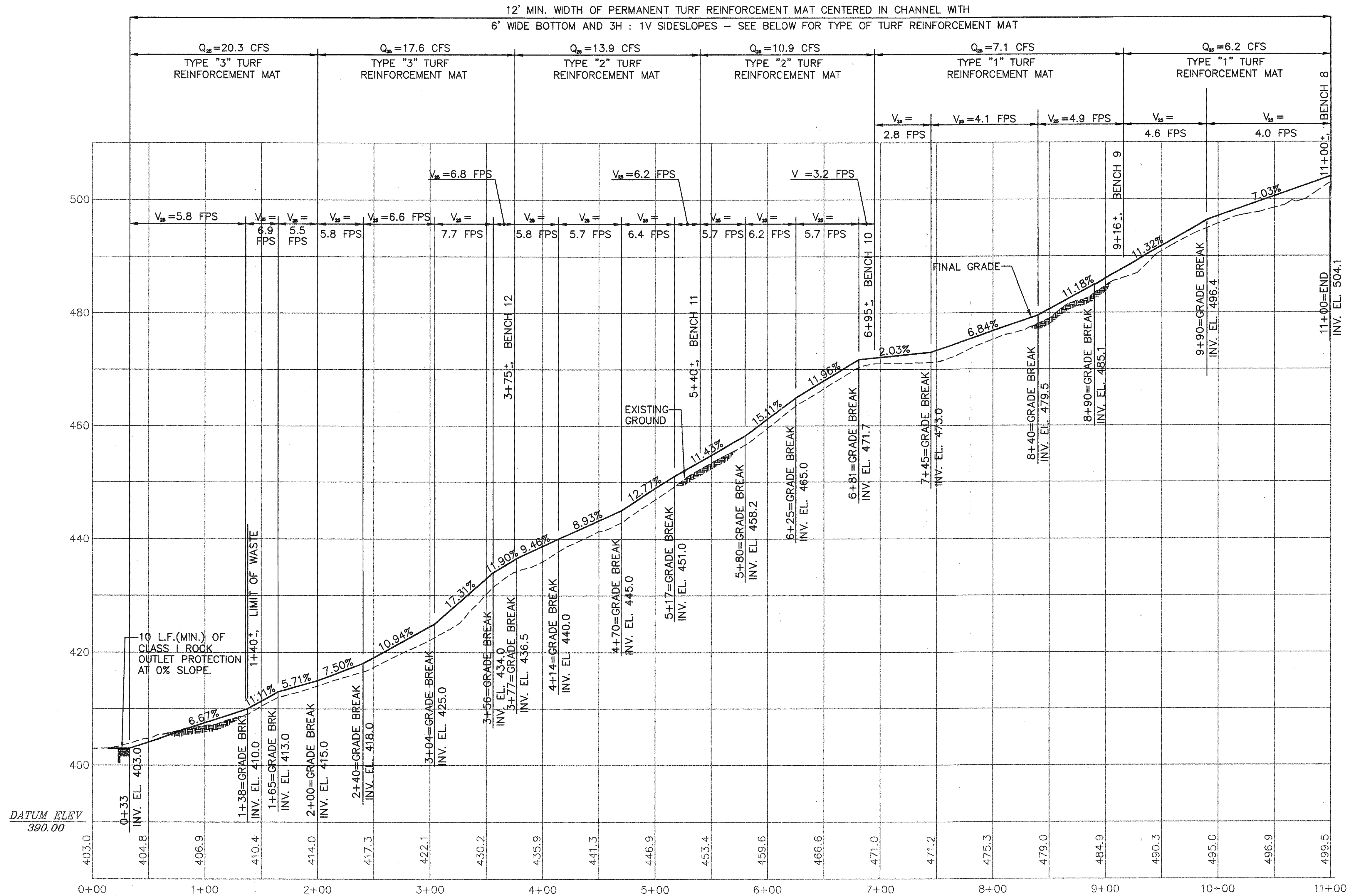
CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

M: 1296024.01\90 PERCENT\DETAILS\ RISER-SB, TEL-SB, CRADLE-SB, ANTISP-SB, TRK-SB

E-CHPRO

M:\296024\01\90 PERCENT\PROFILES\

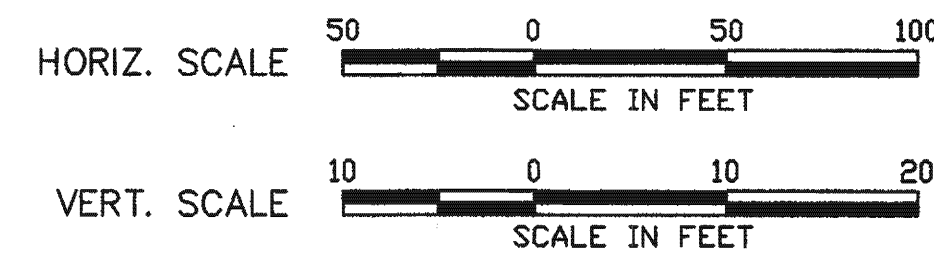


INNER EAST PERIMETER CHANNEL 1/23

NOTE: DURING GRADING ACTIVITIES, THE CONTRACTOR SHALL PLACE EROSION CONTROL MAT, TURF REINFORCEMENT MAT, RIP-RAP AS SOON AS DITCH/BENCH/CHANNEL/DOWNCHUTE GRADE IS ESTABLISHED.

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
<i>[Signature]</i> DIRECTOR	9/11/99
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	9/16/99
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	9/15/99

SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.



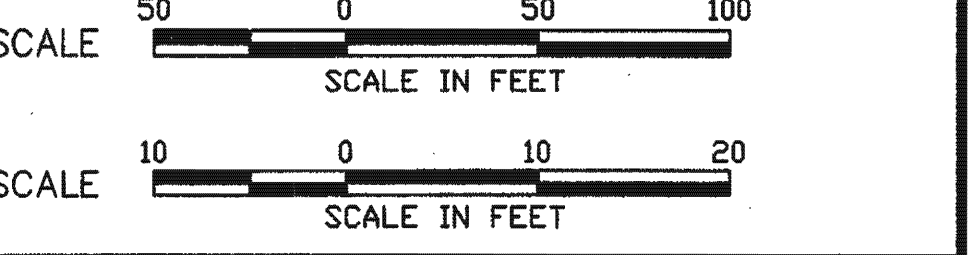
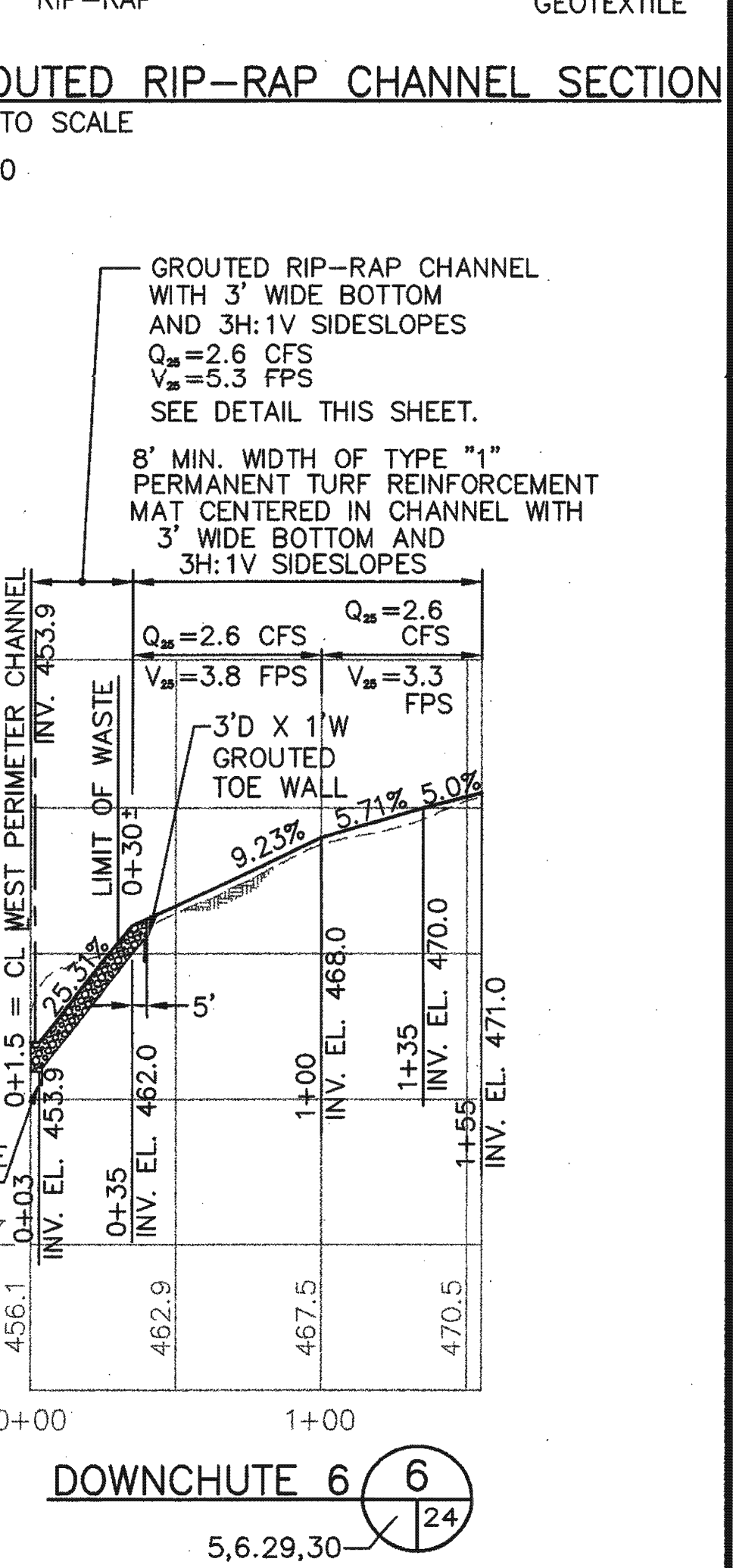
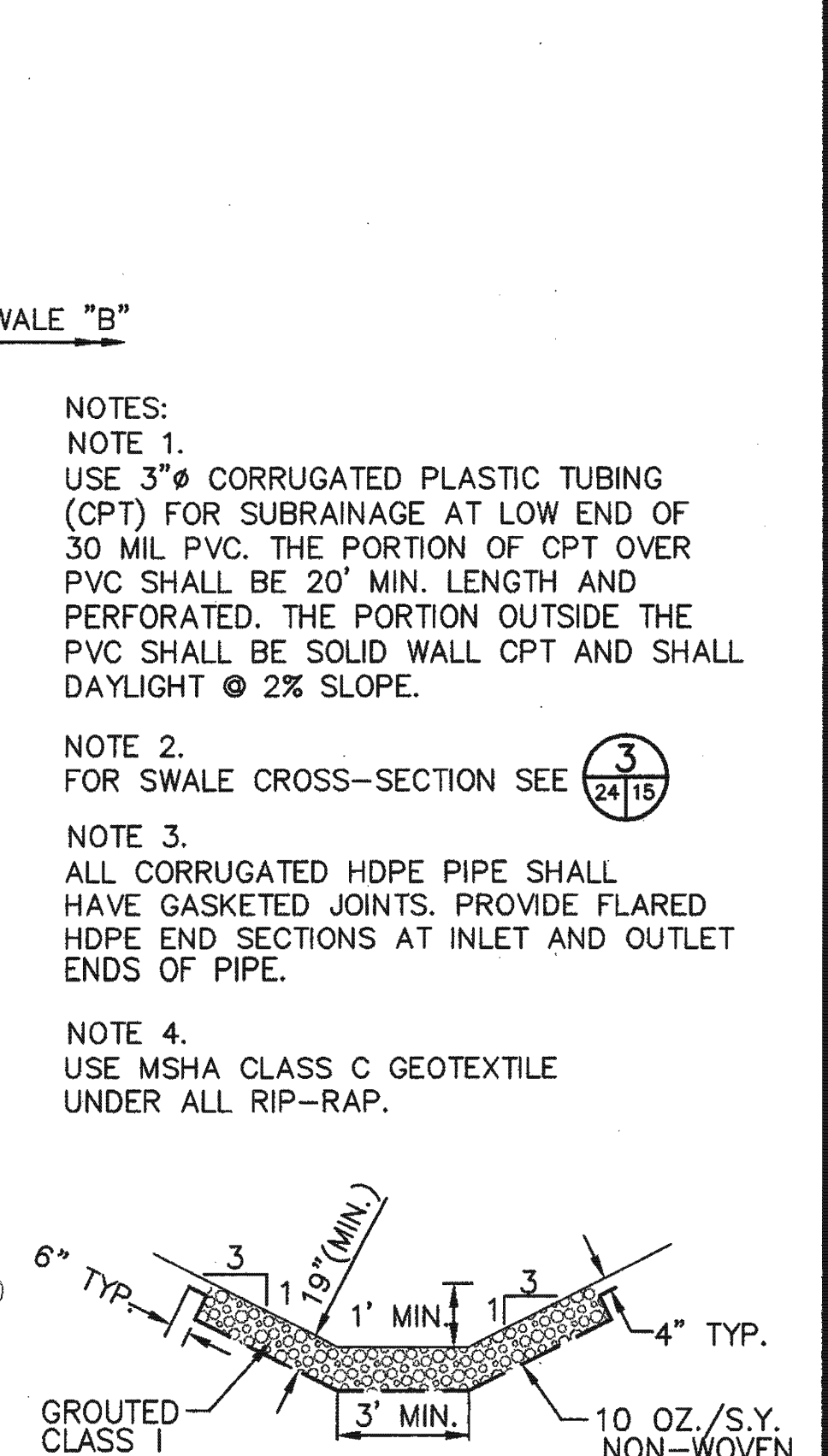
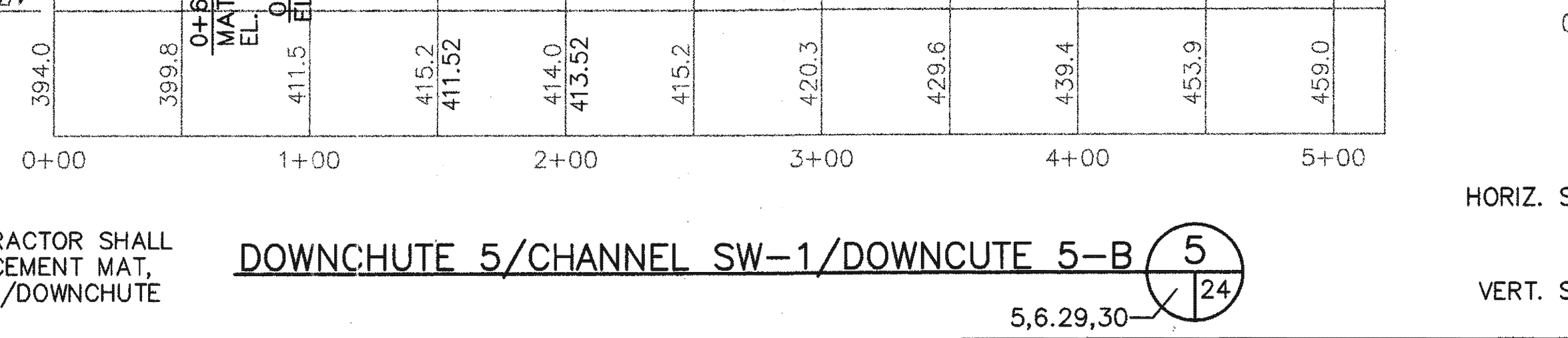
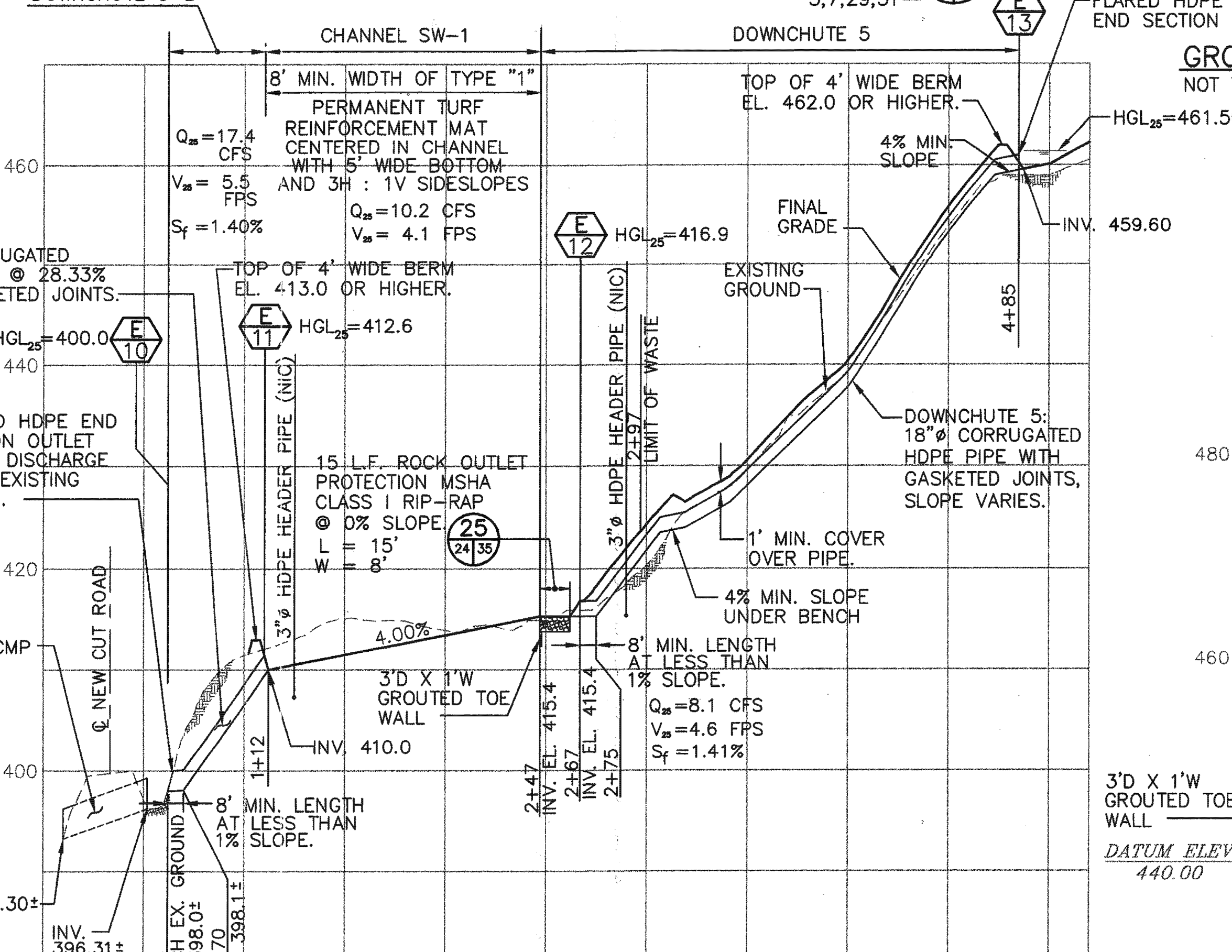
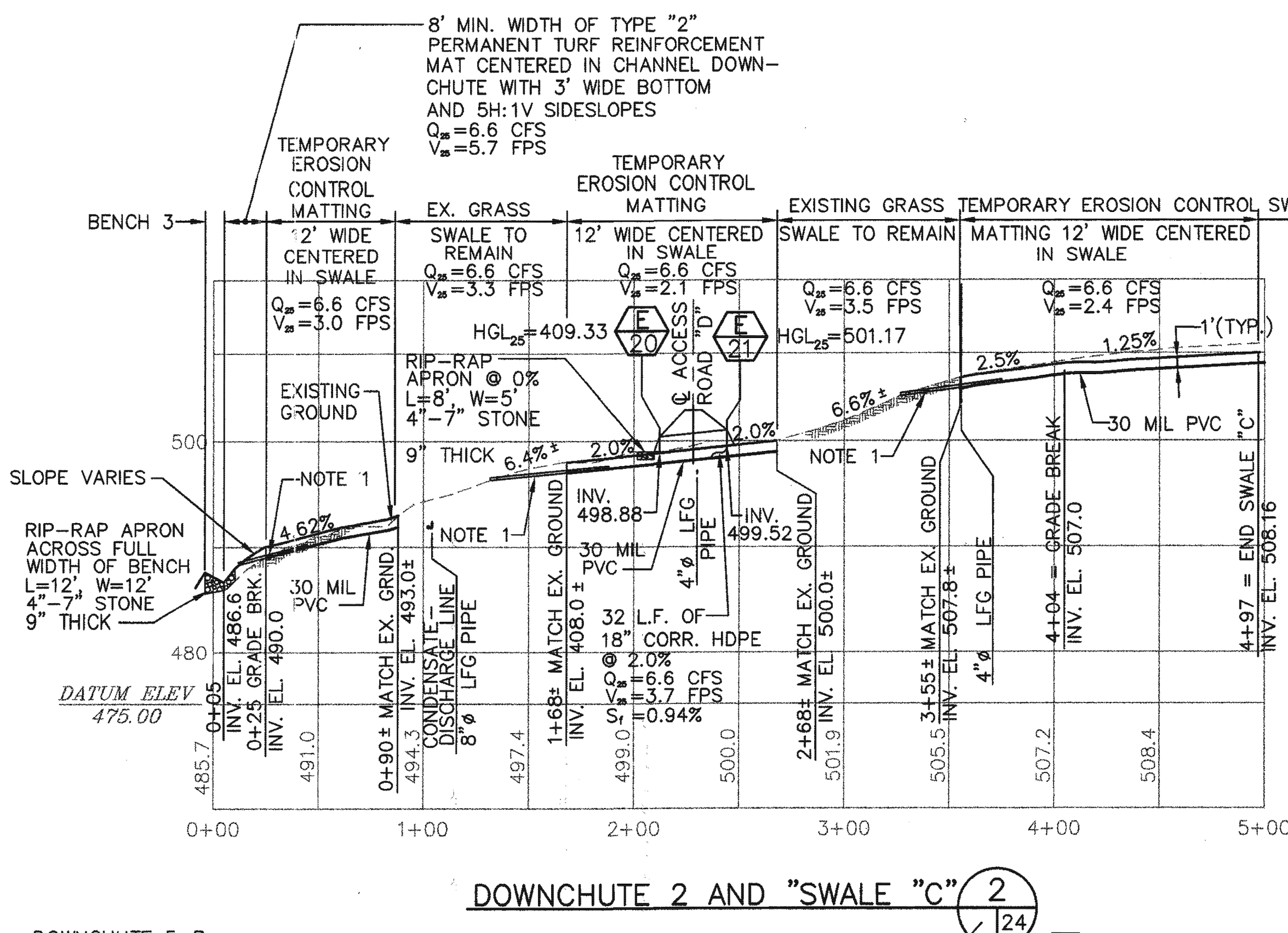
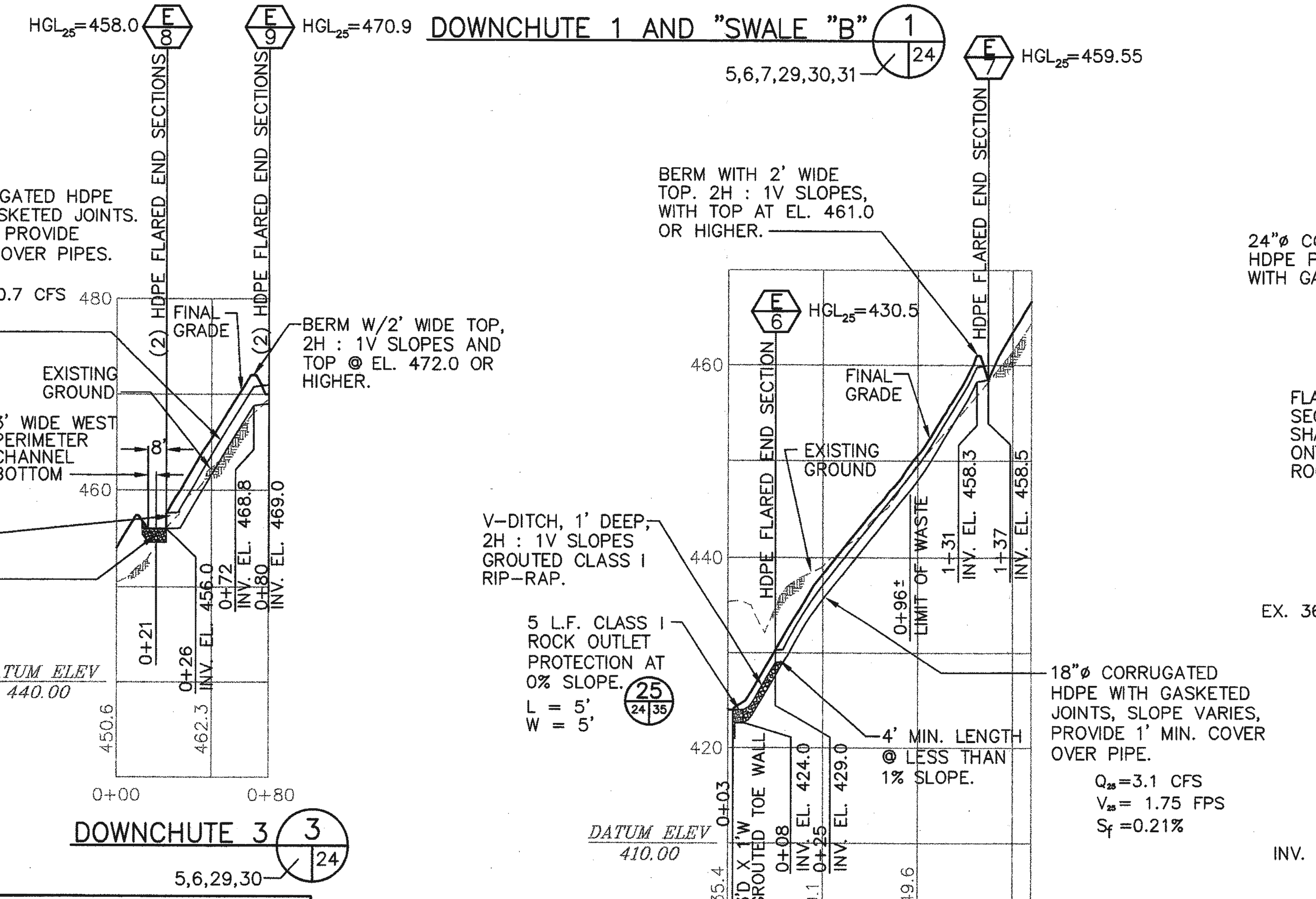
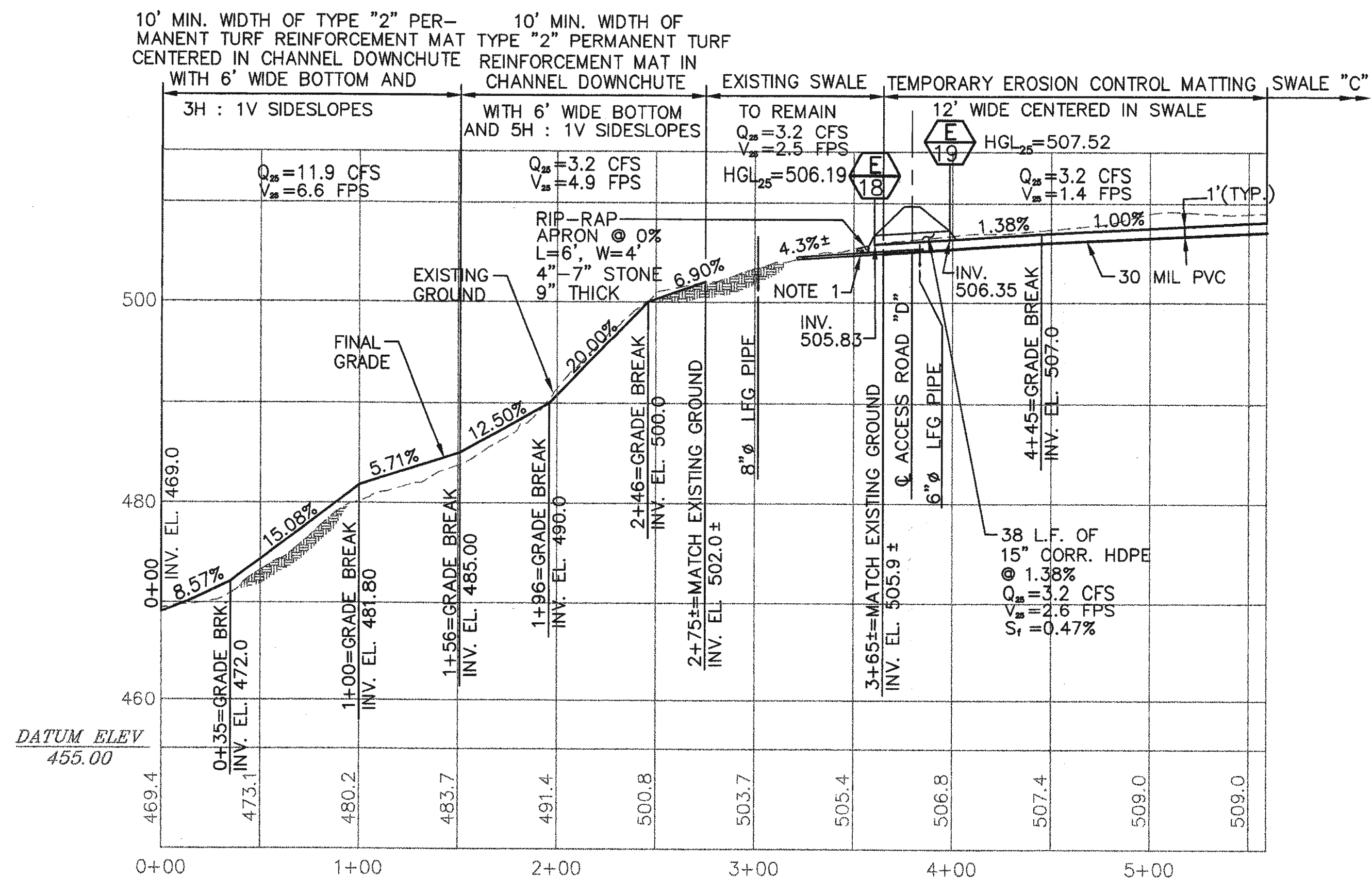
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>[Signature]</i> DIRECTOR OF PUBLIC WORKS	7/6/99
<i>[Signature]</i> CHIEF, BUREAU OF ENVIRONMENTAL SERVICES	7/6/99

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676

DES. MRG	DRN. JCS	CHK. RHI	DATE: 06-02-99
BY NO.	REVISION	DATE	

CHANNEL PROFILES

NEW CUT LANDFILL IMPROVEMENTS
CAPITAL PROJECT NO. C-0237-H
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND



NOTES:
 NOTE 1. USE 3" Ø CORRUGATED PLASTIC TUBING (CPT) FOR SUBRINAGE AT LOW END OF 30 MIL PVC. THE PORTION OF CPT OVER PVC SHALL BE 20' MIN. LENGTH AND PERFORATED. THE PORTION OUTSIDE THE PVC SHALL BE SOLID WALL CPT AND SHALL DAYLIGHT @ 2% SLOPE.
 NOTE 2. FOR SWALE CROSS-SECTION SEE 24/15.
 NOTE 3. ALL CORRUGATED HDPE PIPE SHALL HAVE GASKETED JOINTS. PROVIDE FLARED HDPE END SECTIONS AT INLET AND OUTLET ENDS OF PIPE.
 NOTE 4. USE MSHA CLASS C GEOTEXTILE UNDER ALL RIP-RAP.

M: 296024.01\90 PERCENT\PROFILES\DCPRO

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND
 DIRECTOR: [Signature] 9/14/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: [Signature] 9/16/99
 CHIEF, DIVISION OF LAND DEVELOPMENT: [Signature] 9/13/99

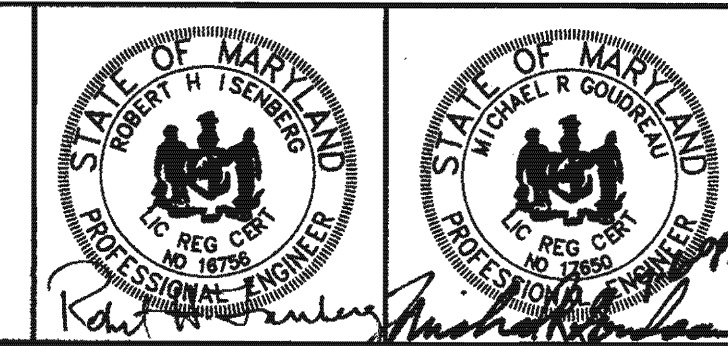
SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

DOWNCHUTE 4
 5,8,29,33

NOTE: DURING GRADING ACTIVITIES, THE CONTRACTOR SHALL PLACE EROSION CONTROL MAT, TURF REINFORCEMENT MAT, RIP-RAP AS SOON AS DITCH/BENCH/CHANNEL/DOWNCHUTE GRADE IS ESTABLISHED.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DIRECTOR OF PUBLIC WORKS: [Signature] 7/6/99
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES: [Signature] 7/6/99

SCS ENGINEERS
 CONSULTING ENGINEERS
 11260 ROGER BACON DRIVE
 SUITE 300
 RESTON, VIRGINIA 20190
 PH. (703) 471-6150
 FAX. (703) 471-6676



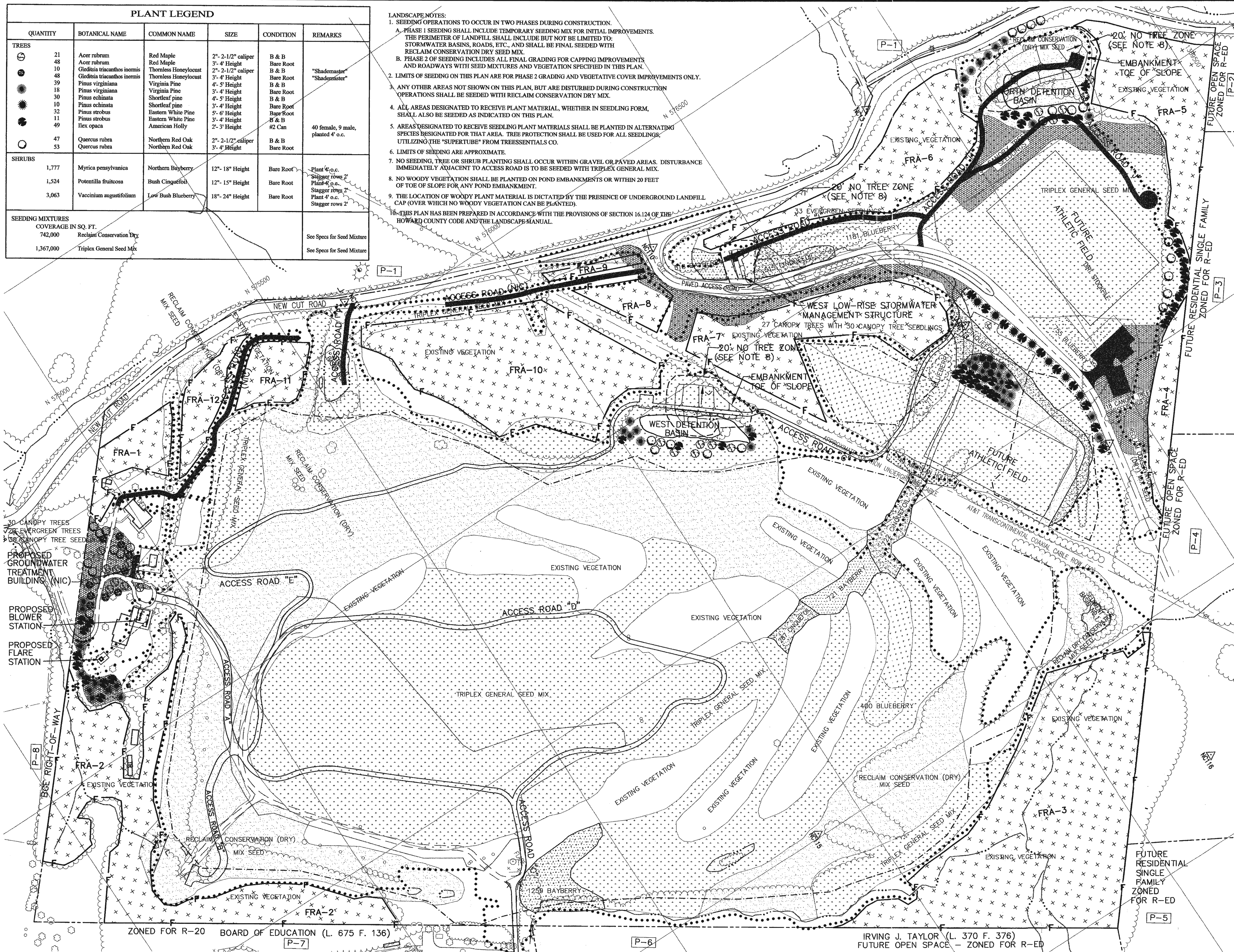
DES.	MRG	
DRN.	JCS	
CHK.	RHI	
DATE:	07-01-99	
BY	NO.	REVISION
		DATE

DOWNCHUTE AND SWALE PROFILES

NEW CUT LANDFILL IMPROVEMENTS
 CAPITAL PROJECT NO. C-0237-H
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SHEET 24 OF 39
 SCALE: AS SHOWN

PLANT LEGEND					
QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	REMARKS
TREES					
21	Acer rubrum	Red Maple	2" - 2-1/2" caliper	B & B	
48	Acer rubrum	Red Maple	3" - 4" Height	Bare Root	
10	Gleditsia triacanthos inermis	Thornless Honeylocust	2" - 2-1/2" caliper	B & B	"Shademaster"
48	Gleditsia triacanthos inermis	Thornless Honeylocust	3" - 4" Height	Bare Root	"Shademaster"
39	Pinus virginiana	Virginia Pine	4" - 5" Height	B & B	
18	Pinus virginiana	Virginia Pine	3" - 4" Height	Bare Root	
10	Pinus echinata	Shortleaf pine	4" - 5" Height	B & B	
30	Pinus echinata	Shortleaf pine	3" - 4" Height	Bare Root	
10	Pinus strobus	Eastern White Pine	3" - 4" Height	B & B	
11	Pinus strobus	Eastern White Pine	3" - 4" Height	Bare Root	
49	Ilex opaca	American Holly	2" - 3" Height	#2 Can	40 female, 9 male, planted 4' o.c.
47	Quercus rubra	Northern Red Oak	2" - 2-1/2" caliper	B & B	
53	Quercus rubra	Northern Red Oak	3" - 4" Height	Bare Root	
SHRUBS					
1,777	Myrica pensylvanica	Northern Bayberry	12" - 18" Height	Bare Root	Plant 4' o.c. Stagger rows 2'
1,524	Potentilla fruticosa	Bush Cinquefoil	12" - 15" Height	Bare Root	Plant 4' o.c. Stagger rows 2'
3,063	Vaccinium angustifolium	Low Bush Blueberry	18" - 24" Height	Bare Root	Plant 4' o.c. Stagger rows 2'
SEEDING MIXTURES					
742,000	Reclaim Conservation Dry				See Specs for Seed Mixture
1,367,000	Triplex General Seed Mix				See Specs for Seed Mixture

- LANDSCAPE NOTES:
- SEEDING OPERATIONS TO OCCUR IN TWO PHASES DURING CONSTRUCTION.
 - PHASE 1 SEEDING SHALL INCLUDE TEMPORARY SEEDING MIX FOR INITIAL IMPROVEMENTS. THE PERIMETER OF LANDFILL SHALL INCLUDE BUT NOT BE LIMITED TO: STORMWATER BASINS, ROADS, ETC. AND SHALL BE FINAL SEEDING WITH RECLAIM CONSERVATION DRY SEED MIX.
 - PHASE 2 OF SEEDING INCLUDES ALL FINAL GRADING AND VEGETATIVE COVER IMPROVEMENTS AND ROADWAYS WITH SEED MIXTURES AND VEGETATION SPECIFIED IN THIS PLAN.
 - LIMITS OF SEEDING ON THIS PLAN ARE FOR PHASE 2 GRADING AND VEGETATIVE COVER IMPROVEMENTS ONLY.
 - ANY OTHER AREAS NOT SHOWN ON THIS PLAN, BUT ARE DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDING WITH RECLAIM CONSERVATION DRY MIX.
 - ALL AREAS DESIGNATED TO RECEIVE PLANT MATERIAL, WHETHER IN SEEDLING FORM, SHALL ALSO BE SEEDING AS INDICATED ON THIS PLAN.
 - AREAS DESIGNATED TO RECEIVE SEEDLING PLANT MATERIALS SHALL BE PLANTED IN ALTERNATING SPECIES DESIGNATED FOR THAT AREA. TREE PROTECTION SHALL BE USED FOR ALL SEEDLINGS; UTILIZING THE "SUPERTUBE" FROM TREESSENTIALS CO.
 - LIMITS OF SEEDING ARE APPROXIMATE.
 - NO SEEDING, TREE OR SHRUB PLANTING SHALL OCCUR WITHIN GRAVEL OR PAVED AREAS. DISTURBANCE IMMEDIATELY ADJACENT TO ACCESS ROADS IS TO BE SEEDING WITH TRIPLEX GENERAL MIX.
 - NO WOODY VEGETATION SHALL BE PLANTED ON POND EMBANKMENTS OR WITHIN 20 FEET OF TOE OF SLOPE FOR ANY POND EMBANKMENT.
 - THE LOCATION OF WOODY PLANT MATERIAL IS DICTATED BY THE PRESENCE OF UNDERGROUND LANDFILL CAP (OVER WHICH NO WOODY VEGETATION CAN BE PLANTED).
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.



FOREST CONSERVATION WORKSHEET
VERSION 1.0

NET TRACT AREA:

A. TOTAL TRACT AREA.....	89.99
B. AREA WITHIN 100 YEAR FLOODPLAIN.....	0.31
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION.....	0.00
D. NET TRACT AREA.....	89.68

LAND USE CATEGORY: (FROM TABLE 3.2.1, PAGE 40, MANUAL)

INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.

ARA MDR IDA HDR MPD CIA
0 0 0 1 0 0

E. AFFORESTATION THRESHOLD.....	15 % X D = 13.45
F. CONSERVATION THRESHOLD.....	20 % X D = 17.94

EXISTING FOREST COVER:

G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN).....	27.79
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD.....	14.34
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD.....	9.85

BREAK EVEN POINT:

J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION.....	19.91
K. CLEARING PERMITTED WITHOUT MITIGATION.....	7.88

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED.....	5.02
M. TOTAL AREA OF FOREST TO BE RETAINED.....	22.77

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD.....	1.26
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD.....	4.83
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD.....	0.00
R. TOTAL REFORESTATION REQUIRED.....	0.00
S. TOTAL AFFORESTATION REQUIRED.....	0.00
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED.....	0.00

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS							
	P-1/B	P2/A	P3/C	P4/A	P5/C	P6/A	P7/A	P8/A
EDGE #/LANDSCAPE TYPE	2750'	220'	670'	910'	190'	1300'	1110'	1100'
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	YES	YES	YES	YES	YES	YES	YES	YES
CREDIT FOR EXISTING VEGETATION	2550'	220'	470'	880'	190'	1300'	1100'	1090'
CREDIT FOR WALL, FENCE OR BERM	NO	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED	5	0	5	0	0	0	0	0
SHADE TREES	4	0	10	0	0	0	0	0
EVERGREEN TREES	0	0	0	0	0	0	0	0
SHRUBS	0	0	0	0	0	0	0	0

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	2530'
NUMBER OF TREES REQUIRED	51
SHADE TREES	63
EVERGREEN TREES	0
CREDIT FOR EXISTING VEGETATION	55%
CREDIT FOR OTHER LANDSCAPING	45%

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Director: *[Signature]* DATE: 9/19/99

Chief, Development Engineering Division: *[Signature]* DATE: 9/19/99

Chief, Division of Land Development: *[Signature]* DATE: 9/19/99

0 100 200 300
SCALE IN FEET

LEGEND

EXISTING VEGETATION	FOREST RETENTION AREAS (FRA-)
AMERICAN HOLLY	POND EMBANKMENT
BAYBERRY	LANDSCAPE EDGE NUMBER
BLUEBERRY	APPROX. LIMITS OF DISTURBANCE
CANOPY TREES	
CINQUEFOIL	
EVERGREEN TREES	
RECLAIM CONSERVATION (DRY) SEED MIX	
TRIPLEX GENERAL SEED MIX	

NEW CUT LANDFILL IMPROVEMENTS

ACIULLI, SIMMONS AND ASSOCIATES, LTD.
ENGINEERING PLANNING SURVEYING LANDSCAPE ARCHITECTURE
11212 WAPLES MILL DR., FAIRFAX, VIRGINIA 22030 (703) 934-0900

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 9/19/99

Chief, Bureau of Environmental Services: *[Signature]* DATE: 9/19/99

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676

Professional Engineer Seal: *[Seal]*

DES.	DRN.	CHK.	DATE:	BY	NO.	REVISION	DATE
	JCS	RHI	6-2-99	MRG	1	ADDED P4Z SIGN. BLOCK	9-8-99

LANDSCAPE,
VEGETATIVE COVER PLAN &
FOREST CONSERVATION PLAN

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1"=100'

SHEET 27 OF 39

SDP-99-109

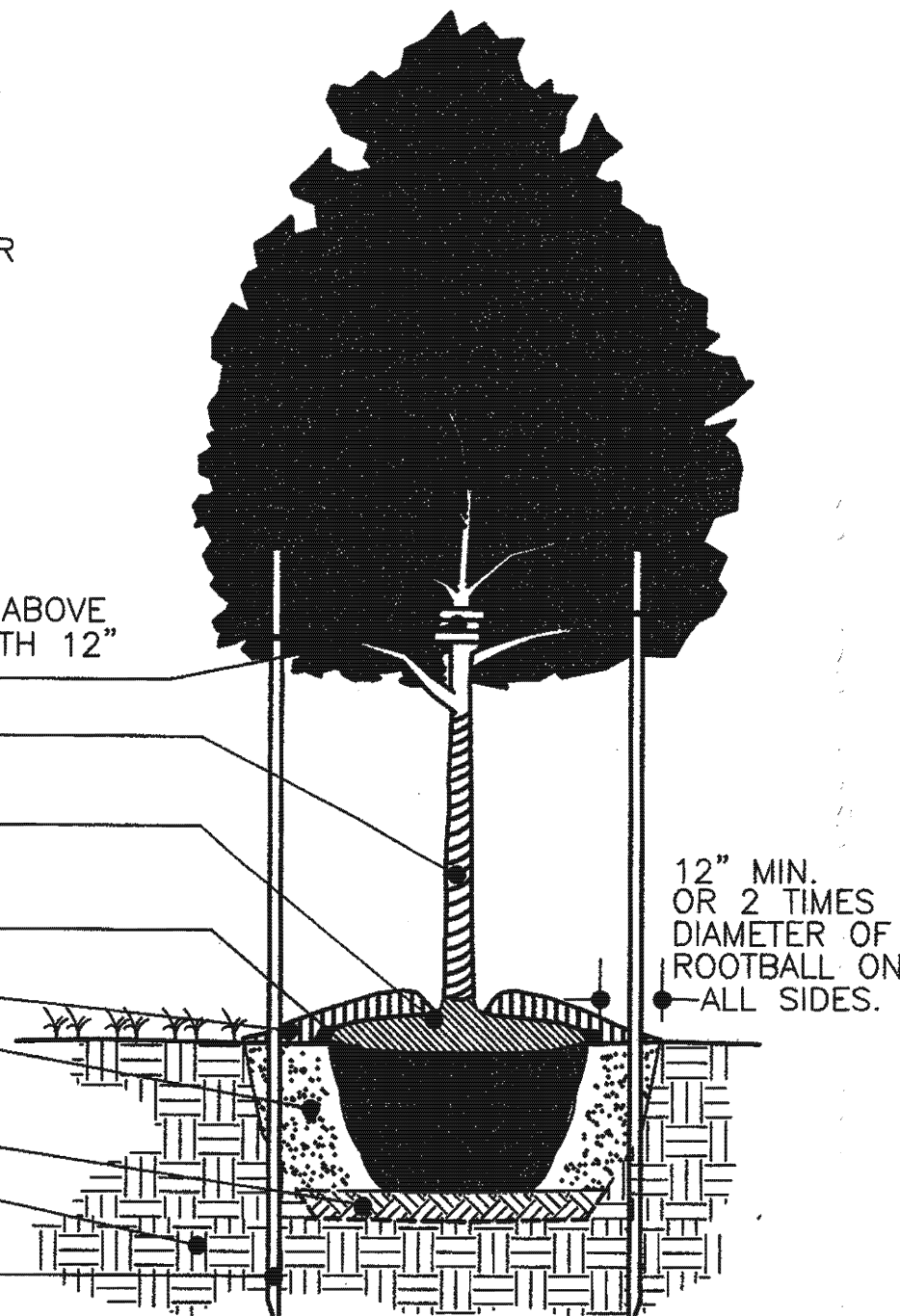
D:\296024.01\100PERCENT\990. LS-LEGEN. LS-NOTES. LS-TABLE

GENERAL NOTES:

STAKE ALL DECIDUOUS TREES UNDER 3" CAL.
SET STAKES VERTICAL AND AT SAME HEIGHT.
SEE PLAN VIEW DETAIL FOR TREE STAKING
AND GUYING LOCATION.

PRUNE TREES TO REMOVE DEAD, DAMAGED OR
INTERFERING LIMBS. DO NOT CUT LEADER.

SET STAYS OR GUYS 1/2-2/3 UP TREE OR ABOVE
FIRST BRANCHES. RUBBER HOSE SECURED WITH 12"
GAUGE PLIABLE GALVANIZED WIRE.
TREE WRAP. (SEE NOTE #11)
1/8 OF PLANT BALL SHALL EXTEND
ABOVE FINISHED GRADE.
CUT AND REMOVE ROPE, BURLAP OR
WIRE FROM TOP 1/2 OF BALL.
2" MIN. MULCH.
PREPARED PLANTING SOIL BACKFILL.
SCARIFY TO 6" MIN. DEPTH
AND RECOMPACT.
EXISTING SUBGRADE.
STAKES TO EXTEND 18" BELOW TREE
PIT IN UNDISTURBED GROUND.



DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE (UNDER 3" CAL.)

GENERAL NOTES:

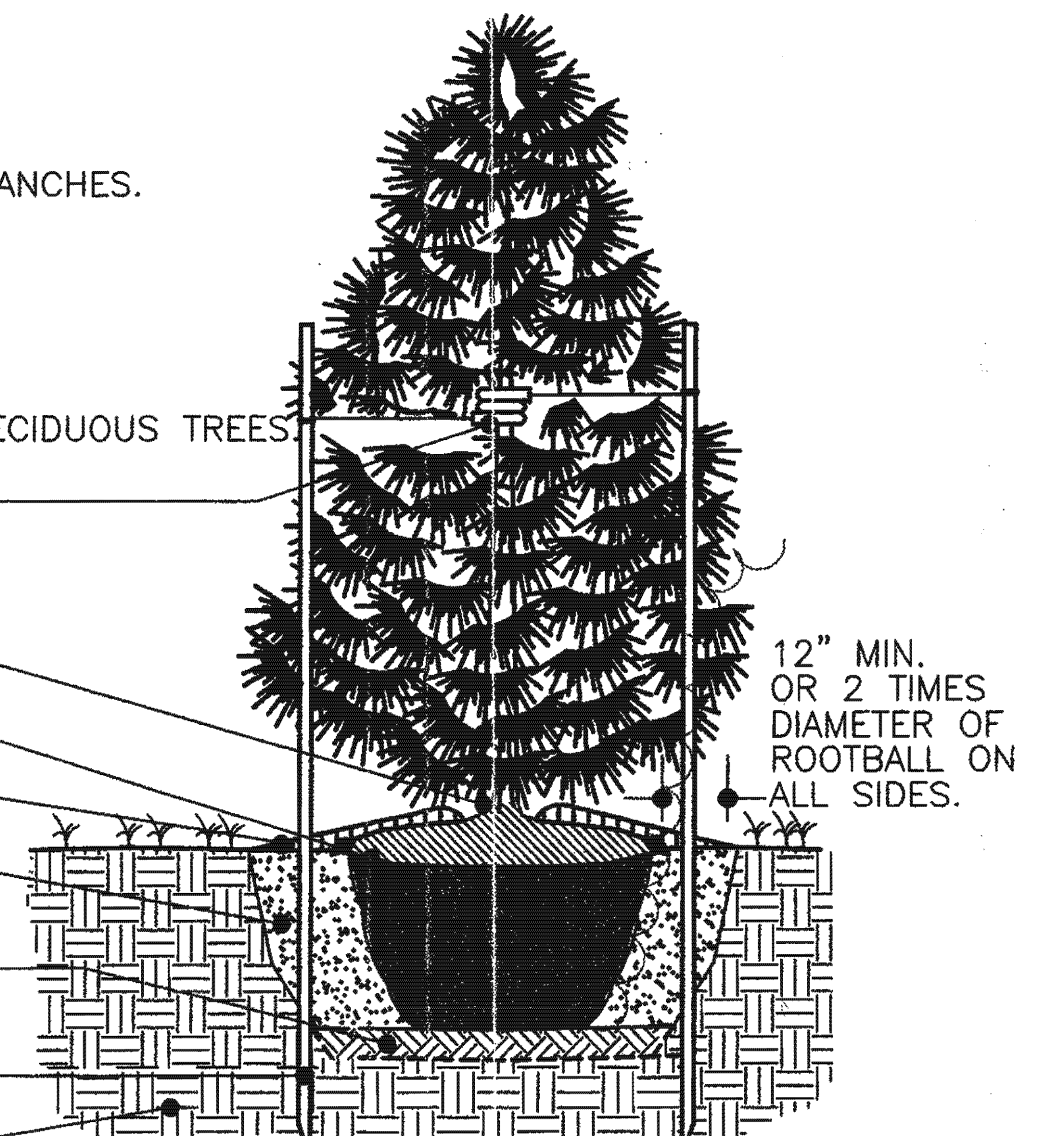
STAKE ALL EVERGREEN TREES UNDER 12'.

PRUNE ONLY TO REMOVE DEAD OR DAMAGED BRANCHES.
DO NOT CUT LEADERS.

GUY TREES 12' AND OVER AS SPECIFIED FOR DECIDUOUS TREES.
SET STAYS OR GUYS 1/2-2/3 UP TREE.
SEE TREE STAKING AND GUYING DETAIL BELOW.

1/8 OF PLANT BALL SHALL EXTEND
ABOVE FINISHED GRADE.
CUT AND REMOVE ROPE, BURLAP OR WIRE
FROM TOP 1/2 OF BALL.
2" MIN. MULCH.

PREPARED TOPSOIL AS SPECIFIED.
SCARIFY TO 4" MIN. DEPTH
AND RECOMPACT.
STAKES TO EXTEND 18" MIN. BELOW TREE
PIT IN UNDISTURBED GROUND.
EXISTING SUBGRADE.

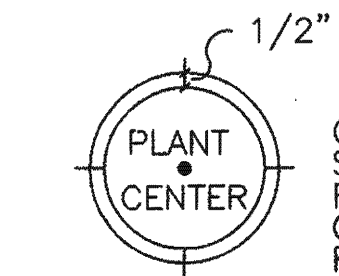


EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

GENERAL NOTES:

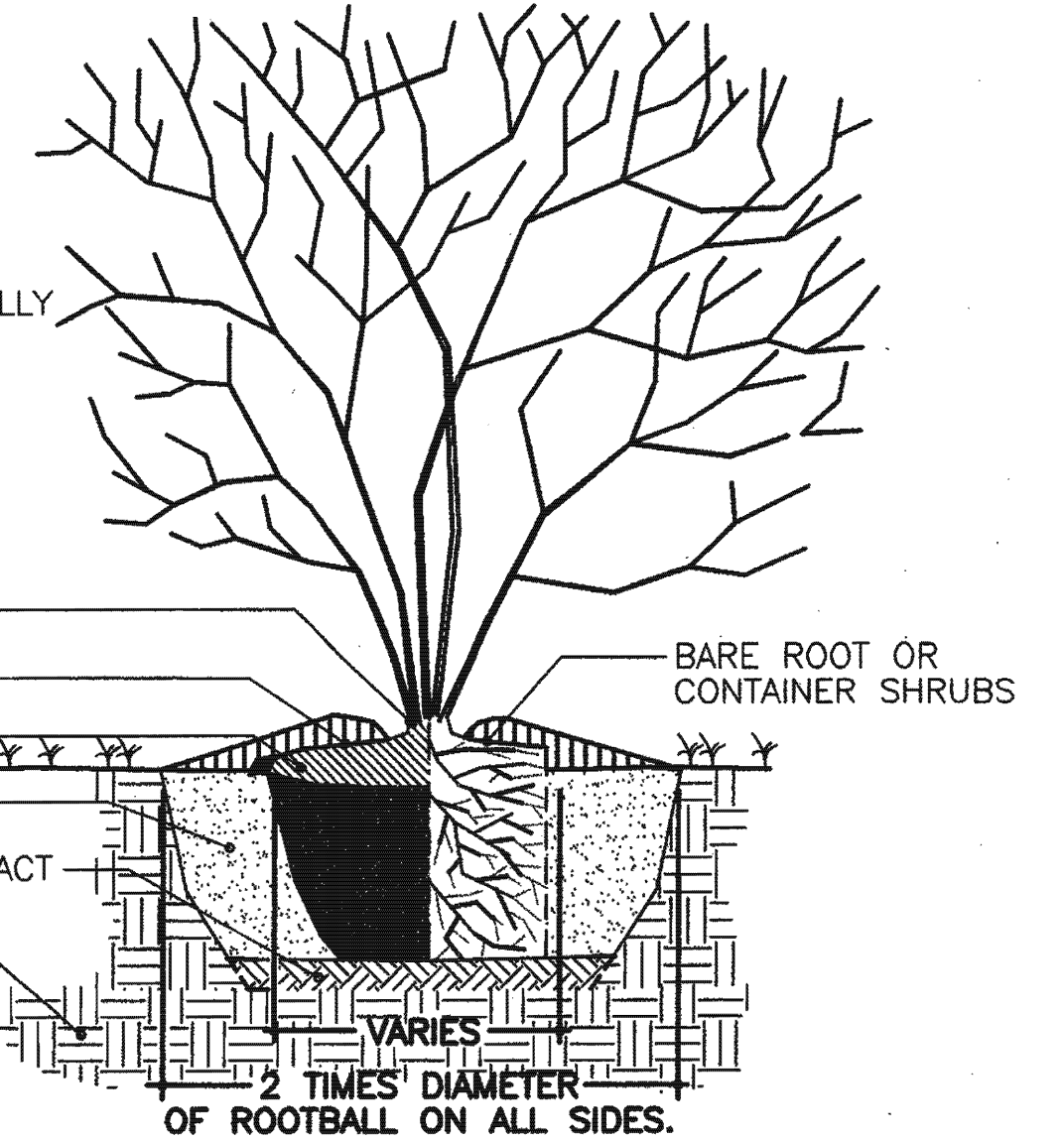
DO NOT PRUNE SHRUBS, EXCEPT TO REMOVE DEAD AND BROKEN BRANCHES.
DO NOT REMOVE ALL BRANCH TIPS.

CUT AND REMOVE ROPE, BURLAP OR WIRE FROM TOP 1/2 OF BALL OR WITH
CONTAINER PLANTS REMOVE POTS AND SPLIT AS SPECIFIED.



PLAN VIEW

1/8 OF ROOTBALL SHALL EXTEND
ABOVE FINISHED GRADE.
BALLED AND BURLAPPED SHRUBS
2" MIN. MULCH
PREPARED PLANTING SOIL BACKFILL
SCARIFY TO 4" MIN. DEPTH AND RECOMPACT
EXISTING SUBGRADE



SHRUB PLANTING DETAIL
NOT TO SCALE

M:\296024.01\90 PERCENT\ SHRUB,DEC,EVERGREEN

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND		SUBDIVISION NAME		LOT/PARCEL	
<i>[Signature]</i> DIRECTOR	9/14/99 DATE	HO. CO. GOVERNMENT		529	
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	7/6/99 DATE	LIBER/FOLIO	ZONE	TAX/ZONE MAP	
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	7/15/99 DATE	180/339	R-20	31	
		WATER CODE	SEWER CODE	CENSUS TR.	

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		SCS ENGINEERS CONSULTING ENGINEERS 11260 ROGER BACON DRIVE SUITE 300 RESTON, VIRGINIA 20190 PH. (703) 471-6150 FAX. (703) 471-6676	
<i>[Signature]</i> DIRECTOR OF PUBLIC WORKS	7/6/99 DATE	<i>[Signature]</i> CHIEF, BUREAU OF ENVIRONMENTAL SERVICES	7/6/99 DATE



DES.	MRG		▲		
DRN.	JCS		▲		
CHK.	RHI		▲		
DATE: 03-08-99	BY	NO.		REVISION	DATE

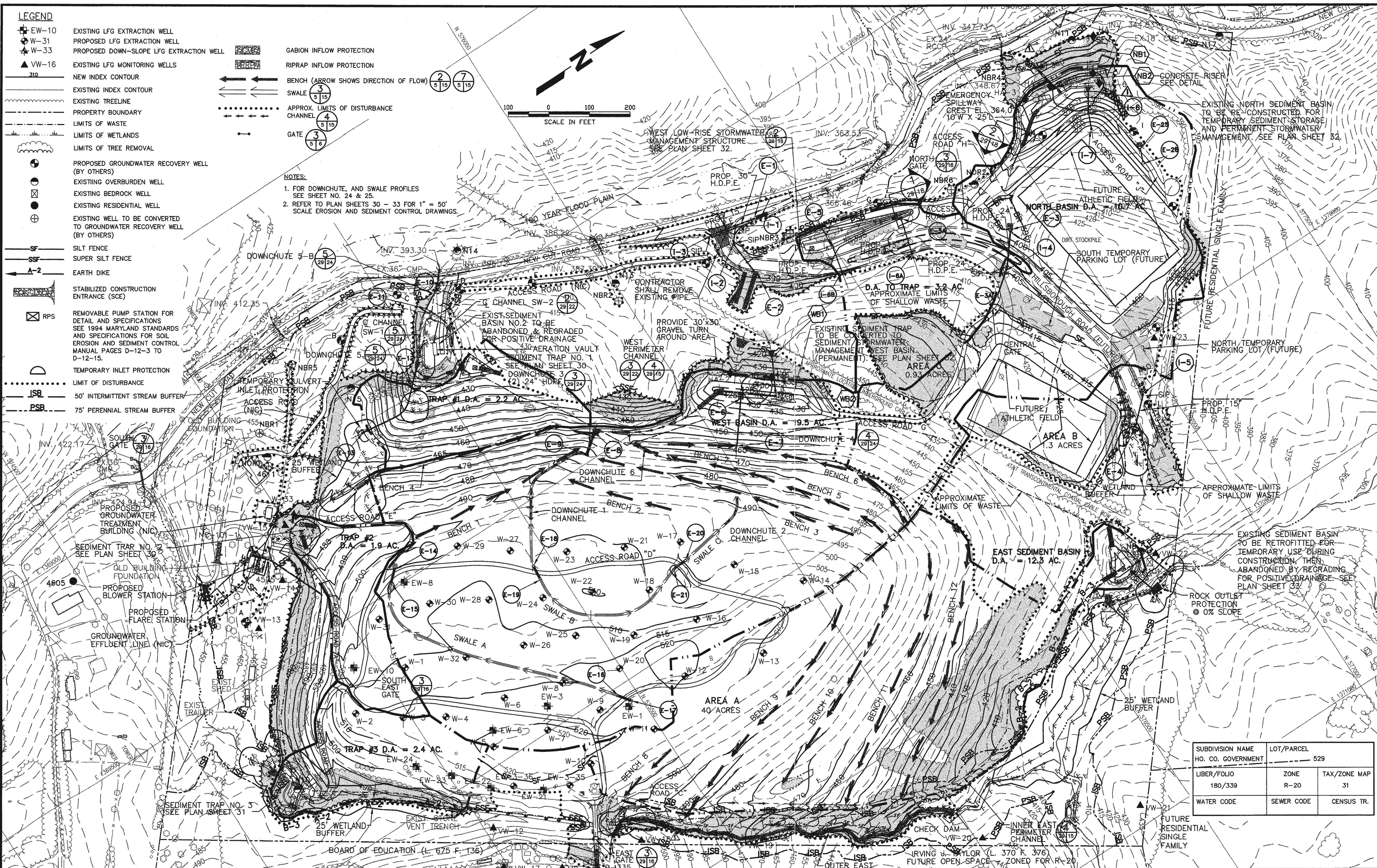
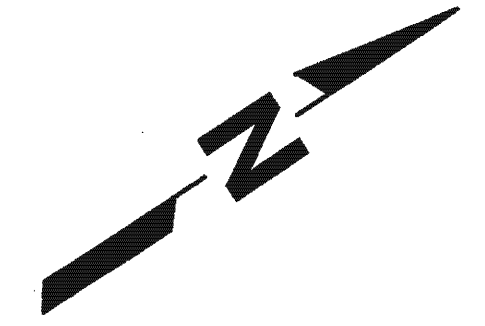
VEGETATIVE
COVER DETAILS

NEW CUT LANDFILL IMPROVEMENTS		SCALE: AS SHOWN
CAPITAL PROJECT NO. C-0237-H		SHEET 28 OF 39
2nd ELECTION DISTRICT	HOWARD COUNTY, MARYLAND	

LEGEND

- EW-10 EXISTING LFG EXTRACTION WELL
- W-31 PROPOSED LFG EXTRACTION WELL
- W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
- VW-16 EXISTING LFG MONITORING WELLS
- 310 NEW INDEX CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING TREELINE
- PROPERTY BOUNDARY
- LIMITS OF WASTE
- LIMITS OF WETLANDS
- LIMITS OF TREE REMOVAL
- PROPOSED GROUNDWATER RECOVERY WELL (BY OTHERS)
- EXISTING OVERBURDEN WELL
- EXISTING BEDROCK WELL
- EXISTING RESIDENTIAL WELL
- EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (BY OTHERS)
- SF SILT FENCE
- SSF SLOTTED SILT FENCE
- A-2 EARTH DIKE
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- RPS REMOVABLE PUMP STATION FOR DETAIL AND SPECIFICATIONS SEE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL PAGES D-12-3 TO D-12-15.
- TEMPORARY INLET PROTECTION
- LIMIT OF DISTURBANCE
- 50' INTERMITTENT STREAM BUFFER
- 75' PERENNIAL STREAM BUFFER
- GABION INFLOW PROTECTION
- RIPRAP INFLOW PROTECTION
- BENCH (ARROW SHOWS DIRECTION OF FLOW)
- SWALE
- APPROX. LIMITS OF DISTURBANCE CHANNEL
- GATE

NOTES:
 1. FOR DOWNCHUTE, AND SWALE PROFILES SEE SHEET NO. 24 & 25.
 2. REFER TO PLAN SHEETS 30 - 33 FOR 1" = 50' SCALE EROSION AND SEDIMENT CONTROL DRAWINGS.

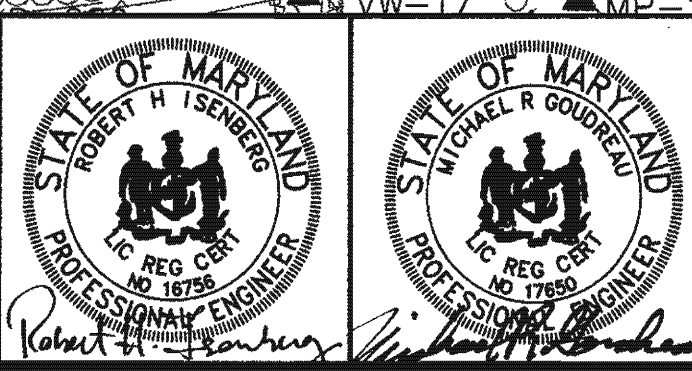


SUBDIVISION NAME		LOT/PARCEL	
HO. CO. GOVERNMENT		529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP	
180/339	R-20	31	
WATER CODE	SEWER CODE	CENSUS TR.	

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

John J. O'Hara 7/6/99
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

SCS ENGINEERS
 CONSULTING ENGINEERS
 11260 ROGER BACON DRIVE
 SUITE 300
 RESTON, VIRGINIA 20190
 PH. (703) 471-6150
 FAX. (703) 471-6676



DES.	MRG	6
DRN.	JCS	4
CHK.	RHI	2
DATE:	07-01-99	
BY:	NO.	1202/99
	REVISION	ADDED GABION MAT, MOVED DESIGN OF FALLS RIPRAP SYMBOLS
	DATE	8/9/99

OVERALL EROSION AND
 SEDIMENT CONTROL PLAN

NEW CUT LANDFILL
 IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:
 1"=100'

SHEET
 29 OF 39

SDP-99-109

LEGEND

- EW-10 EXISTING LFG EXTRACTION WELL
- W-31 PROPOSED LFG EXTRACTION WELL
- W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
- VW-16 EXISTING LFG MONITORING WELLS
- 310 NEW INDEX CONTOUR
- NEW INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING TREELINE
- PROPERTY BOUNDARY
- LIMITS OF WASTE
- LIMITS OF WETLANDS
- LIMITS OF TREE REMOVAL
- PROPOSED GROUNDWATER RECOVERY WELL (BY OTHERS)
- EXISTING OVERBURDEN WELL
- EXISTING BEDROCK WELL
- EXISTING RESIDENTIAL WELL
- EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (BY OTHERS)
- GROUNDWATER PIPING (BY OTHERS)
- SILT FENCE
- SUPER SILT FENCE
- A-2 EARTH DIKE
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- RPS REMOVABLE PUMP STATION: FOR DETAIL AND SPECIFICATIONS SEE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL PAGES D-12-3 TO D-12-5.
- TEMPORARY INLET PROTECTION
- NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPE
- EXISTING PIPE
- LIMIT OF DISTURBANCE
- PHASE IV LIMIT OF DISTURBANCE
- GABION INFLOW PROTECTION
- RIPRAP INFLOW PROTECTION
- AREAS TO BE STABILIZED WITHIN ONE WORKING DAY (SEE NOTE 1, THIS SHEET)
- 50' INTERMITTENT STREAM BUFFER
- 75' PERENNIAL STREAM BUFFER

- NOTES:**
1. DISTURBANCE FOR AND CONSTRUCTION OF THESE ACCESS ROADS IS LIMITED TO THAT WHICH SHALL BE STABILIZED WITHIN ONE WORKING DAY, UNLESS OTHERWISE APPROVED BY THE SEDIMENT CONTROL INSPECTOR.
 2. DISTURBANCE IN THE AREA BELOW SEDIMENT TRAPS NO. 1 AND NO. 2 IS LIMITED TO THAT WHICH SHALL BE STABILIZED WITHIN ONE WORKING DAY, UNLESS OTHERWISE APPROVED BY THE SEDIMENT CONTROL INSPECTOR.
 3. FOR SED. TRAP NO. 2, THE INITIAL BOTTOM DIMENSIONS SHALL BE PROVIDED UNTIL SWALE A AND BENCH A ARE CONSTRUCTED TO DIVERT FLOW TO WEST DETENTION BASIN. AFTER DIVERTING THIS FLOW, THE BOTTOM DIMENSIONS MAY BE REDUCED TO THE FINAL BOTTOM DIMENSIONS IN ORDER TO CONSTRUCT ACCESS ROAD A.
 4. EXIST. SED. BASIN NO. 2 SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS STABILIZED.

SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

**DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND**

DIRECTOR *[Signature]* DATE 7/14/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* DATE 7/9/99

CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* DATE 7/13/99

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

DIRECTOR OF PUBLIC WORKS *[Signature]* DATE 7/6/99

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES *[Signature]* DATE 7/6/99

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG				
DRN.	JCS				
CHK.	RHI				
DATE:	07-01-99	BY	NO.	REVISION	DATE

**EROSION AND SEDIMENT CONTROL PLAN
SW-QUADRANT**

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

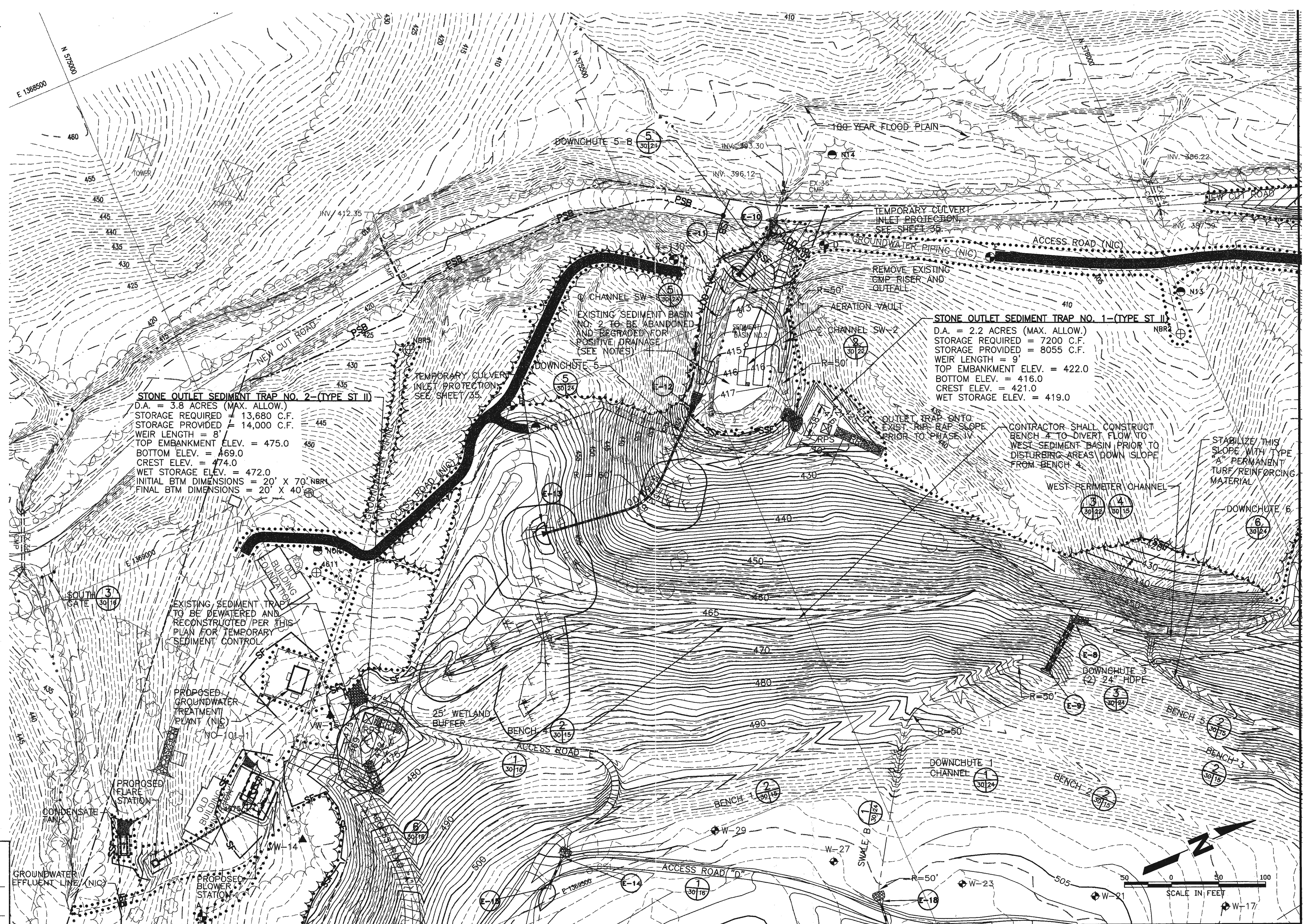
2nd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:
1"=50'
SHEET
30 OF 39

MATCHLINE SEE SHEET 32

MATCHLINE SEE SHEET 31

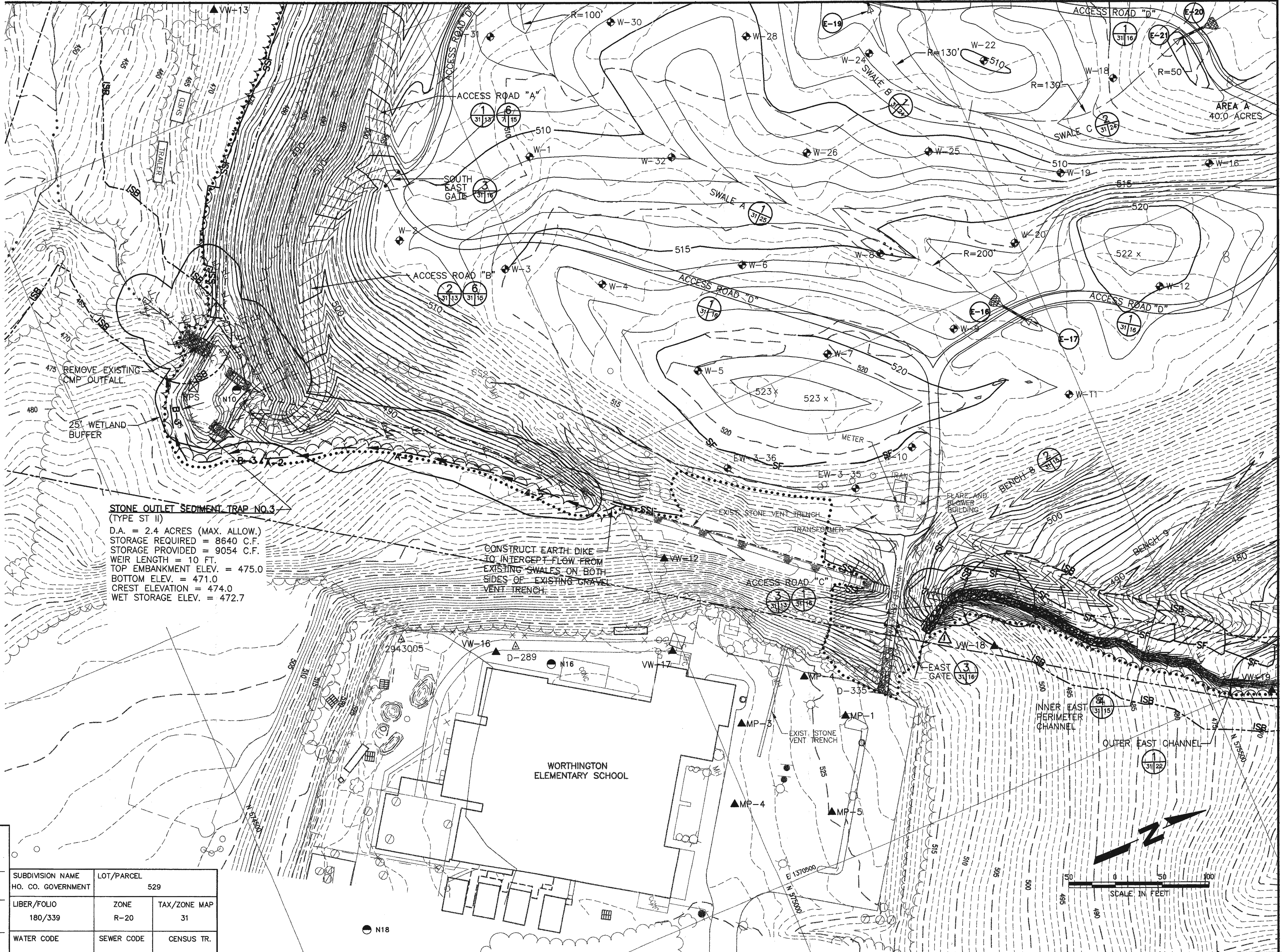


M: 296024.01/100 PERCENT E&S1, LEGEND2

LEGEND

- EW-10 EXISTING LFG EXTRACTION WELL
- W-31 PROPOSED LFG EXTRACTION WELL
- W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
- VW-16 EXISTING LFG MONITORING WELLS
- 310 NEW INDEX CONTOUR
- NEW INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING TREELINE
- PROPERTY BOUNDARY
- LIMITS OF WASTE
- LIMITS OF WETLANDS
- LIMITS OF TREE REMOVAL
- PROPOSED GROUNDWATER RECOVERY WELL (BY OTHERS)
- EXISTING OVERBURDEN WELL
- EXISTING BEDROCK WELL
- EXISTING RESIDENTIAL WELL
- EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (BY OTHERS)
- GROUNDWATER PIPING (BY OTHERS)
- SF SILT FENCE
- SSF SUPER SILT FENCE
- A-2 EARTH DIKE
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- RPS REMOVABLE PUMP STATION: FOR DETAIL AND SPECIFICATIONS SEE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL PAGES D-12-3 TO D-12-5.
- TEMPORARY INLET PROTECTION
- NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPE
- EXISTING PIPE
- LIMIT OF DISTURBANCE
- PHASE IV LIMIT OF DISTURBANCE
- GABION INFLOW PROTECTION
- RIPRAP INFLOW PROTECTION
- AREAS TO BE STABILIZED WITHIN ONE WORKING DAY (SEE NOTE 1, THIS SHEET)
- ISB 50' INTERMITTENT STREAM BUFFER
- PSB 75' PERENNIAL STREAM BUFFER

MATCHLINE SEE SHEET 30



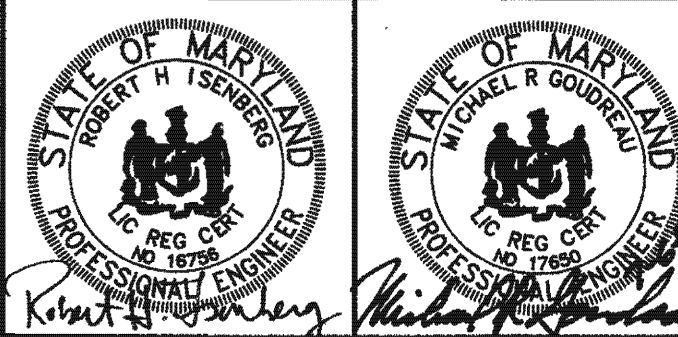
NOTE: WORK IN THE OUTER EAST CHANNEL SHALL BE LIMITED TO THAT WHICH SHALL BE STABILIZED WITHIN ONE WORKING DAY, UNLESS OTHERWISE APPROVED BY THE SEDIMENT CONTROL INSPECTOR.

MATCHLINE SEE SHEET 33

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND			
DIRECTOR	DATE	9/14/99	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	9/14/99	
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	9/13/99	
SUBDIVISION NAME	LOT/PARCEL	529	
HO. CO. GOVERNMENT	ZONE	R-20	
LIBER/FOLIO	TAX/ZONE MAP	31	
180/339			
WATER CODE	SEWER CODE	CENSUS TR.	

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND			
DIRECTOR OF PUBLIC WORKS	DATE	CHIEF BUREAU OF ENVIRONMENTAL SERVICES	DATE
7/6/99		7/6/99	

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG		
DRN.	JCS		
CHK.	RHI		
DATE: 07-01-99	BY	NO.	REVISION
			ADDED RIPRAP SYMBOL
			9/5/99

EROSION AND SEDIMENT CONTROL PLAN
SE-QUADRANT

NEW CUT LANDFILL IMPROVEMENTS
CAPITAL PROJECT NO. C-0237-H
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE:
1" = 50'
SHEET
31 OF 39

M:\296024.01\90 PERCENT E&S1. LEGEND2

- LEGEND**
- EW-10 EXISTING LFG EXTRACTION WELL
 - W-31 PROPOSED LFG EXTRACTION WELL
 - W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
 - VW-16 EXISTING LFG MONITORING WELLS
 - 310 NEW INDEX CONTOUR
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 - EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (BY OTHERS)
 - GROUNDWATER PIPING (BY OTHERS)
 - SF SILT FENCE
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 - A-2 EARTH DIKE
 - STABILIZED CONSTRUCTION ENTRANCE (SCE)
 - RPS REMOVABLE PUMP STATION: FOR DETAIL AND SPECIFICATIONS SEE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL PAGES D-12-3 TO D-12-5.
 - TEMPORARY INLET PROTECTION
 - NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPE
 - EXISTING PIPE
 - LIMIT OF DISTURBANCE
 - GABION INFLOW PROTECTION
 - RIPRAP INFLOW PROTECTION
 - AREAS TO BE STABILIZED WITHIN ONE WORKING DAY (SEE NOTE 1, THIS SHEET)
 - ISB 50' INTERMITTENT STREAM BUFFER
 - PSB 75' PERENNIAL STREAM BUFFER

- NOTE**
1. DISTURBANCE FOR AND CONSTRUCTION OF THESE ACCESS ROADS IS LIMITED TO THAT WHICH SHALL BE STABILIZED WITHIN ONE WORKING DAY.
 2. WORK IN THE AREA BELOW THE WEST DETENTION BASIN, WEST LOW-RISE STORMWATER MGT. STRUCTURE, AND NORTH DETENTION BASIN SHALL BE LIMITED TO THAT WHICH SHALL BE STABILIZED WITHIN ONE WORKING DAY, UNLESS OTHERWISE APPROVED BY SEDIMENT CONTROL INSPECTOR.

SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

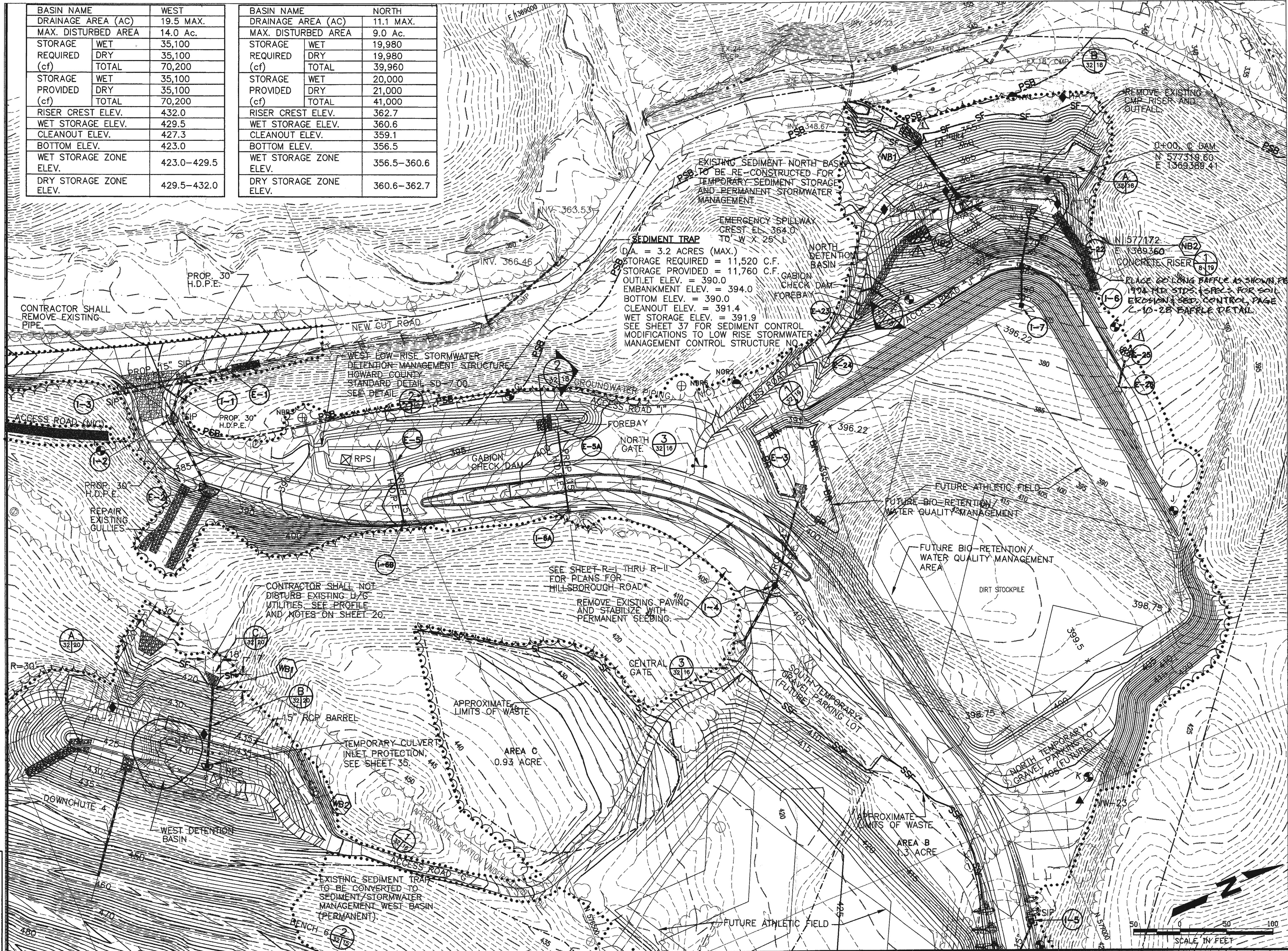
[Signature] 9/14/99
DIRECTOR DATE

[Signature] 9/14/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 9/13/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

BASIN NAME WEST			BASIN NAME NORTH		
DRAINAGE AREA (AC)	19.5 MAX.		DRAINAGE AREA (AC)	11.1 MAX.	
MAX. DISTURBED AREA	14.0 Ac.		MAX. DISTURBED AREA	9.0 Ac.	
STORAGE REQUIRED (cf)	WET 35,100	DRY 35,100	STORAGE REQUIRED (cf)	WET 19,980	DRY 19,980
TOTAL	70,200		TOTAL	39,960	
STORAGE PROVIDED (cf)	WET 35,100	DRY 35,100	STORAGE PROVIDED (cf)	WET 20,000	DRY 21,000
TOTAL	70,200		TOTAL	41,000	
RISER CREST ELEV.	432.0		RISER CREST ELEV.	362.7	
WET STORAGE ELEV.	429.5		WET STORAGE ELEV.	360.6	
CLEANOUT ELEV.	427.3		CLEANOUT ELEV.	359.1	
BOTTOM ELEV.	423.0		BOTTOM ELEV.	356.5	
WET STORAGE ZONE ELEV.	423.0-429.5		WET STORAGE ZONE ELEV.	356.5-360.6	
DRY STORAGE ZONE ELEV.	429.5-432.0		DRY STORAGE ZONE ELEV.	360.6-362.7	

MATCHLINE SEE SHEET 30



MATCHLINE SEE SHEET 33

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 9/16/99
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 9/16/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676

DES.	MRG	
DRN.	JCS	
CHK.	RHI	
DATE:	07-01-99	
BY	NO.	REVISION

EROSION AND SEDIMENT CONTROL PLAN-QUADRANT NW-QUADRANT

NEW CUT LANDFILL CELL CLOSURE IMPROVEMENTS

CAPITAL PROJECT NO. C-0237

2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

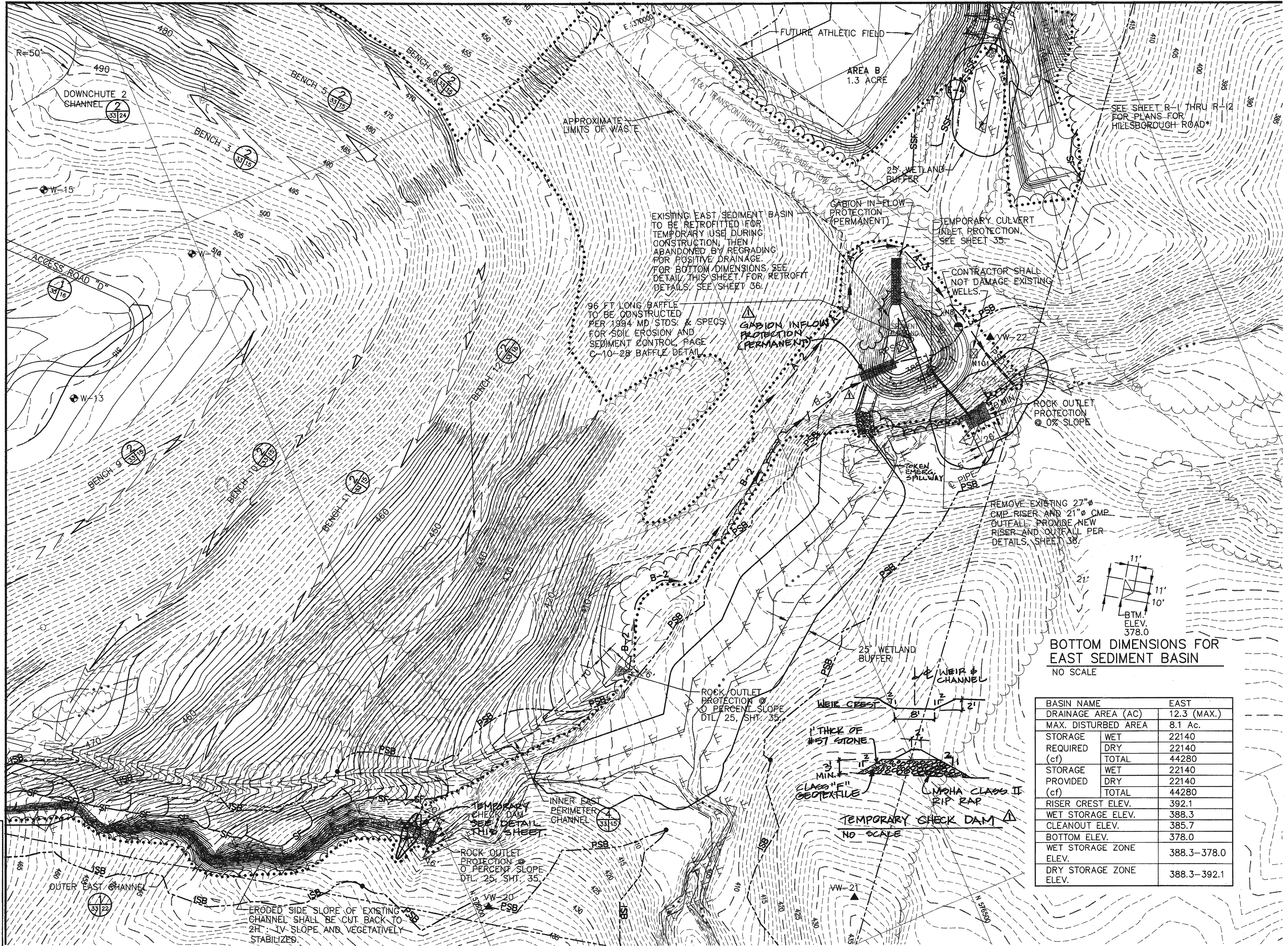
SHEET 32 OF 39

M: 1296024.01 190 PERCENT E&S, LEGEND 2

MATCHLINE SEE SHEET 32

- LEGEND**
- EW-10 EXISTING LFG EXTRACTION WELL
 - W-31 PROPOSED LFG EXTRACTION WELL
 - W-33 PROPOSED DOWN-SLOPE LFG EXTRACTION WELL
 - VW-16 EXISTING LFG MONITORING WELLS
 - 310 NEW INDEX CONTOUR
 - NEW INTERMEDIATE CONTOUR
 - EXISTING INDEX CONTOUR
 - EXISTING INTERMEDIATE CONTOUR
 - EXISTING TREELINE
 - PROPERTY BOUNDARY
 - LIMITS OF WASTE
 - LIMITS OF WETLANDS
 - LIMITS OF TREE REMOVAL
 - PROPOSED GROUNDWATER RECOVERY WELL (BY OTHERS)
 - EXISTING OVERBURDEN WELL
 - EXISTING BEDROCK WELL
 - EXISTING RESIDENTIAL WELL
 - EXISTING WELL TO BE CONVERTED TO GROUNDWATER RECOVERY WELL (BY OTHERS)
 - GROUNDWATER PIPING (BY OTHERS)
 - SILT FENCE
 - SUPER SILT FENCE
 - EARTH DIKE
 - STABILIZED CONSTRUCTION ENTRANCE (SCE)
 - RPS REMOVABLE PUMP STATION: FOR DETAIL AND SPECIFICATIONS SEE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL PAGES D-12-3 TO D-12-5.
 - TEMPORARY INLET PROTECTION
 - NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPE
 - EXISTING PIPE
 - LIMIT OF DISTURBANCE
 - PHASE IV LIMIT OF DISTURBANCE
 - GABION INFLOW PROTECTION
 - RIPRAP INFLOW PROTECTION
 - AREAS TO BE STABILIZED WITHIN ONE WORKING DAY (SEE NOTE 1, THIS SHEET)
 - 50' INTERMITTENT STREAM BUFFER
 - 75' PERENNIAL STREAM BUFFER

MATCHLINE SEE SHEET 31



BOTTOM DIMENSIONS FOR EAST SEDIMENT BASIN
NO SCALE

BASIN NAME		EAST
DRAINAGE AREA (AC)		12.3 (MAX.)
MAX. DISTURBED AREA		8.1 Ac.
STORAGE REQUIRED (cf)	WET	22140
	DRY	22140
	TOTAL	44280
STORAGE PROVIDED (cf)	WET	22140
	DRY	22140
	TOTAL	44280
RISER CREST ELEV.		392.1
WET STORAGE ELEV.		388.3
CLEANOUT ELEV.		385.7
BOTTOM ELEV.		378.0
WET STORAGE ZONE ELEV.		388.3-378.0
DRY STORAGE ZONE ELEV.		388.3-392.1

NOTE: WORK IN THE OUTER EAST CHANNEL SHALL BE LIMITED TO THAT WHICH SHALL BE STABILIZED WITHIN ONE WORKING DAY, UNLESS OTHERWISE APPROVED BY THE SEDIMENT CONTROL INSPECTOR.

SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Director: *[Signature]* 9/14/99 DATE

Chief, Development Engineering Division: *[Signature]* 9/14/99 DATE

Chief, Division of Land Development: *[Signature]* 9/13/99 DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 7/6/99 DATE

Chief, Bureau of Environmental Services: *[Signature]* 7/6/99 DATE

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676

DES.	MRG	
DRN.	JCS	
CHK.	RHI	
DATE:	07-01-99	
BY:	NO.	
REVISION	TEMP. CHECK DAM LABEL TAKEN	8/5/99
	EM. SPILLWAY	

EROSION AND SEDIMENT CONTROL PLAN-QUADRANT
NE-QUADRANT

NEW CUT LANDFILL IMPROVEMENTS
CAPITAL PROJECT NO. C-0237-H
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE:
AS SHOWN
SHEET
33 OF 39

M: 296024.01 100 PERCENTY E&S1, LEGEND2

SEQUENCE OF CONSTRUCTION

- A. THE GRADING PERMIT FOR THE PROJECT WILL BE OBTAINED BY HOWARD COUNTY. REFER TO SPEC. SECTIONS 02250 - EROSION AND SEDIMENT CONTROL, AND 02275 - ENVIRONMENTAL PROTECTION AND RESTORATION FOR REQUIREMENTS.
- B. I. ACCESS THE LANDFILL BY THE EXISTING ENTRANCE ON THE WEST SIDE OF THE LANDFILL ALONG NEW CUT ROAD. ACCESS THE PROPOSED FLARE STATION AREA BY THE EXISTING ENTRANCE AT THE SOUTHWEST CORNER OF THE SITE, AT NEW CUT ROAD.
- 2. INSTALL TREE PROTECTION DEVICES BETWEEN FOREST RETENTION AREAS & LIMITS OF DISTURBANCES.
- C. PHASE I - (ESTIMATED CONSTRUCTION DURATION - 1 WEEK - PERIMETER CONTROLS.
 - 1. INSTALL CONSTRUCTION ENTRANCES WHERE INDICATED.
 - 2. INSTALL SILT FENCE ALONG THE PERIMETER OF THE WORK WHERE INDICATED. RECEIVE PERMISSION FROM SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING WITH PHASE II.
- D. PHASE II (ESTIMATED CONSTRUCTION DURATION - 2 MONTHS) - CONSTRUCT NORTH AND WEST SEDIMENT BASINS. CONSTRUCT SEDIMENT TRAPS 1, 2 & 3, AND EAST SEDIMENT BASIN. BEGIN LANDFILL GAS SYSTEM.
 - 1. NORTH SEDIMENT BASIN
 - A) INSTALL SILT FENCE AND REMOVE EXISTING CMP OUTFALL AND DAM. CONSTRUCT OUTLET CONTROL STRUCTURE, OUTLET PIPE, RIP RAP OUTLET PROTECTION. EXCAVATE BASIN AND CONSTRUCT BASIN EMBANKMENT.
 - B) PERMANENTLY STABILIZE ALL DENUDED AREAS BY SEEDING AND MULCHING.
 - C) REMOVE TEMPORARY SEDIMENT CONTROLS FOR NORTH SEDIMENT BASIN UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 - 2. WEST SEDIMENT BASIN
 - A) INSTALL SILT FENCE AND REMOVE EXISTING DAM. CONSTRUCT OUTLET CONTROL STRUCTURE, OUTLET PIPE, RIP RAP OUTLET PROTECTION. EXCAVATE BASIN AND CONSTRUCT BASIN EMBANKMENT.
 - B) PERMANENTLY STABILIZE ALL DENUDED AREAS BY SEEDING AND MULCHING.
 - C) REMOVE TEMPORARY SEDIMENT CONTROLS FOR WEST SEDIMENT BASIN UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 - 3. CONSTRUCT SEDIMENT TRAPS
 - A) INSTALL SILT FENCE AND CULVERT INLET PROTECTION, AND REMOVE EXISTING OUTLET PIPE WHERE INDICATED. CONSTRUCT THE WEST LOW-RISE STORMWATER MANAGEMENT STRUCTURES, RIP-RAP OUTLET PROTECTION, AND STRUCTURE MODIFICATIONS. EXCAVATE AS INDICATED. CONSTRUCT BENCH #4 AND WEST PERIMETER CHANNEL PRIOR TO SEDIMENT TRAP #1**. CONSTRUCT SEDIMENT TRAPS #1 & #2. INSTALL TEMPORARY EARTH DIKE TO DIVERT OFF-SITE FLOW FROM SITE OF SED. TRAP #3. CONSTRUCT SED. TRAP #3.
 - B) PERMANENTLY STABILIZE ALL DENUDED AREAS BY SEEDING AND MULCHING.
 - C) REMOVE TEMPORARY SEDIMENT CONTROLS FOR THE WEST LOW-RISE STORMWATER MANAGEMENT STRUCTURE UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 - 4. RETROFIT EAST SEDIMENT BASIN.
 - A) DE-WATER EXISTING BASIN. INSTALL CULVERT INLET PROTECTION AROUND THE EXISTING CMP OUTLET CONTROL STRUCTURE AS INDICATED. REMOVE EXISTING EMBANKMENT, CMP OUTLET CONTROL STRUCTURE, AND OUTFALL PIPE. CONSTRUCT NEW OUTLET CONTROL STRUCTURE, OUTFALL PIPE, AND RIP RAP OUTLET PROTECTION. RECONSTRUCT BASIN EMBANKMENT THROUGH BREACH.
 - B) PERMANENTLY STABILIZE ALL DENUDED AREAS BY SEEDING AND MULCHING.
 - C) REMOVE TEMPORARY SEDIMENT CONTROLS FOR EAST SEDIMENT BASIN UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 - 5. LANDFILL GAS (LFG) SYSTEM.
 - A) CONSTRUCT ACCESS CONTROL GATE TO TREATMENT AREA.
 - B) BEGIN BLOWER/FLARE STATION, AND CONDENSATE TANK.
 - 6. RECEIVE PERMISSION FROM SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING WITH PHASE III.

SEQUENCE OF CONSTRUCTION (cont.)

- E. PHASE III - (ESTIMATED CONSTRUCTION DURATION- 10 MONTHS). CONSTRUCT STORM DRAINS, BENCHES, CHANNELS AND FINAL GRADING FOR LANDFILL, ROADWAY, AND BALLFIELD IMPROVEMENTS.
 - 1. REMOVE WASTE NEAR SCHOOL BETWEEN JUNE AND AUGUST AND CONSTRUCT STONE VENT TRENCH EXTENSION.
 - 2. THE CONTRACTOR SHALL NOT HAVE MORE THAN 20 ACRES* OF SURFACE AREA DISTURBED AND UNSTABILIZED AT ANY ONE TIME DURING CONSTRUCTION OF THE FINAL GRADING. CONSTRUCT TEMP. CHECK DAMS & OUTER EAST CHANNELS REFER TO ONE DAY STABILIZATION NOTES. CONSTRUCT STORM DRAINS AND ROUGH GRADING FOR ROADS. CONSTRUCT SWALE A, BENCH 1, AND DOWNCHUTES 1 & 3 PRIOR TO ACCESS ROAD A.** CONSTRUCT ACCESS ROADS A AND B. CONSTRUCT OTHER PERIMETER CHANNELS AND DOWNCHUTES**. CONSTRUCT TEMPORARY SEDIMENT CONTROLS SUCH AS CHECK DAMS AND CULVERT INLET PROTECTION AS INDICATED.
 - 3. GRADE LANDFILL SIDESLOPES AND REMAINING BENCHES.**
 - 4. STABILIZE ALL DENUDED AREAS BY TEMPORARY OR PERMANENT SEEDING AND MULCHING.
 - 5. RECEIVE PERMISSION FROM SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING WITH PHASE IV.
- F. PHASE IV (ESTIMATED CONSTRUCTION DURATION - 2 MONTHS). LFG WELL AND SYSTEM CONSTRUCTION AND ROAD PAVING.
 - 1. INSTALL LFG WELLS WHERE INDICATED. CONSTRUCT LFG COLLECTION SYSTEM INCLUDING HEADERS AND LATERALS BETWEEN THE WELLFIELD AND THE FLARE STATION. CONNECT EXIST. LFG WELLS AS INDICATED.
 - 2. STABILIZE FINAL SURFACES IMMEDIATELY WITH PERMANENT SEEDING AND MULCHING.
 - 3. REMOVE SED. BASIN #2 AND CONSTRUCT IMPROVEMENTS PERMANENT AND STABILIZED AS INDICATED WITHIN "LOD-IV" ON SHEET 30 (BELOW TRAP #1) WITHIN A 5 DAY CLEAR WEATHER FORECAST ISSUED BY NATIONAL WEATHER SERVICE. LINE CHANNELS AS INDICATED**.
 - 4. REMOVE TEMPORARY SEDIMENT CONTROLS UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 - 5. CONSTRUCT HILLSBOROUGH ROAD PAVING.
 - 6. RECEIVE PERMISSION FROM SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING WITH PHASE V.
- G. PHASE V (ESTIMATED CONSTRUCTION DURATION - 1 MONTH). WITH PERMISSION FROM SEDIMENT CONTROL INSPECTOR, REMOVE TEMPORARY SEDIMENT CONTROL MEASURES AND TEMPORARY FENCING.
 - 1. DEWATER EAST SED. BASIN. GRADE AS SHOWN ON FINAL GRADING PLANS.**
 - 2. DEWATER SED. TRAPS #1, #2 & #3 AND TRAP AT WEST LOW-RISE STORMWATER MGT. STRUCTURE. REMOVE TEMPORARY DEWATERING PIPES AND SEALING MATERIALS. GRADE BOTTOM AS SHOWN ON FINAL GRADING PLANS.
 - 3. DEWATER NORTH AND WEST BASINS, REMOVE TEMPORARY RISER MODIFICATIONS AND GRADE BOTTOM AS SHOWN ON FINAL GRADING PLANS.

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- 1. 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).
- 2. 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.
- 3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: 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.
- 4. 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.
- 5. 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.
- 6. 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.

* NOTE: MAXIMUM UNSTABILIZED AREA TO NORTH BASIN = 9 ACRES
MAXIMUM UNSTABILIZED AREA TO WEST BASIN = 14 ACRES

** NOTE: DURING GRADING ACTIVITIES, THE CONTRACTOR SHALL PLACE EROSION CONTROL MAT, TURF REINFORCEMENT MAT, RIP-RAP AS SOON AS DITCH/BENCH/CHANNEL/DOWNCHUTE GRADE IS ESTABLISHED.

SITE ANALYSIS:

- 7. TOTAL AREA OF SITE = 90 ACRES
AREA DISTURBED = 53 ACRES
AREA TO BE ROOFED OR PAVED = 2 ACRES
AREA TO BE VEGETATIVELY STABILIZED = 51 ACRES
TOTAL CUT = 86,000 CY
TOTAL FILL = 128,000 CY
OFFSITE WASTE/BORROW AREA LOCATION: TO BE DETERMINED, AND SHALL HAVE AN APPROVED AND ACTIVE GRADING PERMIT.
- 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- 9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 10. 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.
- 11. TRENCHING FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY.

SEDIMENT CONTROL CERTIFICATION BLOCKS

BY THE DEVELOPER:

"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."

John J. O'Hara 7/6/99
SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:

"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."

Michael R. Goudreau 7-6-99
SIGNATURE OF ENGINEER MICHAEL R. GOUDREAU DATE
PRINT NAME BESIDE SIGNATURE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

Cheryl Sumner 9/8/99
USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Jeffrey V. Selig 9/8/99
HOWARD SCD DATE

M: 1296024.01.90 PERCENT SECONOTES

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

John S. Butler 7/14/99
DIRECTOR DATE

John Damann 9/6/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cinda Hamilton 9/13/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

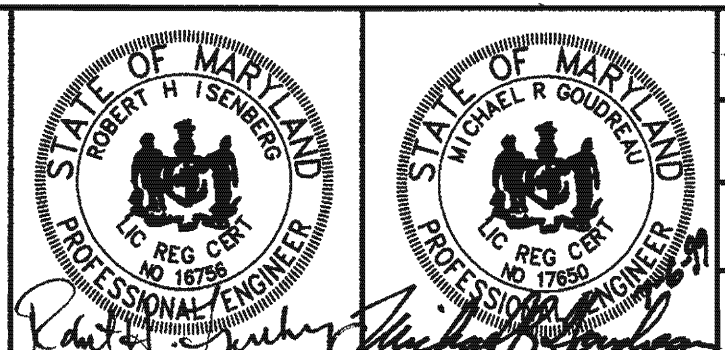
SUBDIVISION NAME	LOT/PARCEL		
HO. CO. GOVERNMENT	529		
LIBER/FOLIO	ZONE	TAX/ZONE MAP	
180/339	R-20	31	
WATER CODE	SEWER CODE	CENSUS TR.	

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. Ull 7/6/99
DIRECTOR OF PUBLIC WORKS DATE

John O'Hara 7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG				
DRN.	BJD				
CHK.	RHI				
DATE:	07-01-99	BY	NO.	REVISED SEQUENCE	8/5/99
				REVISION	

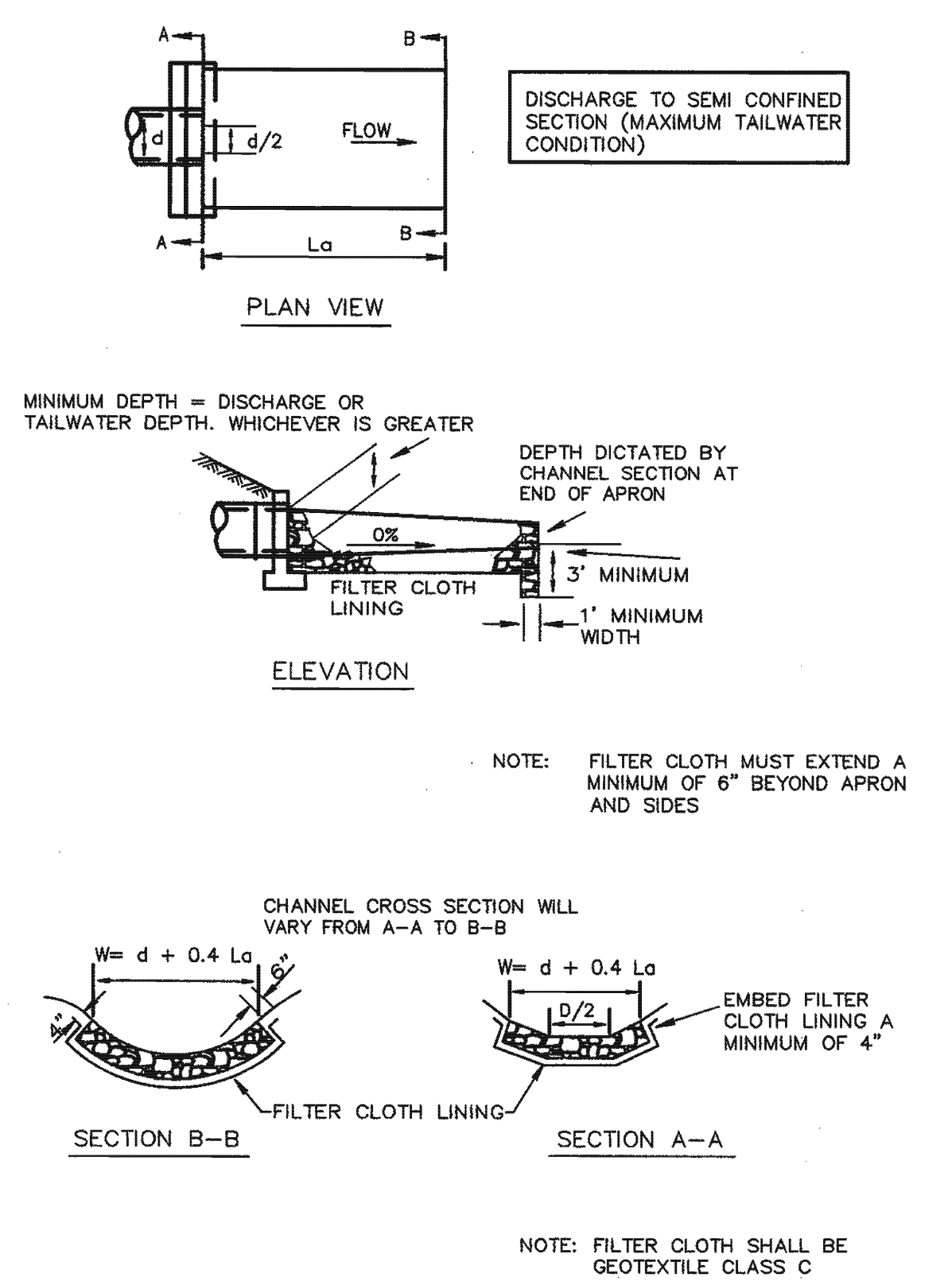
EROSION AND SEDIMENT CONTROL NOTES AND CONSTRUCTION SEQUENCE

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

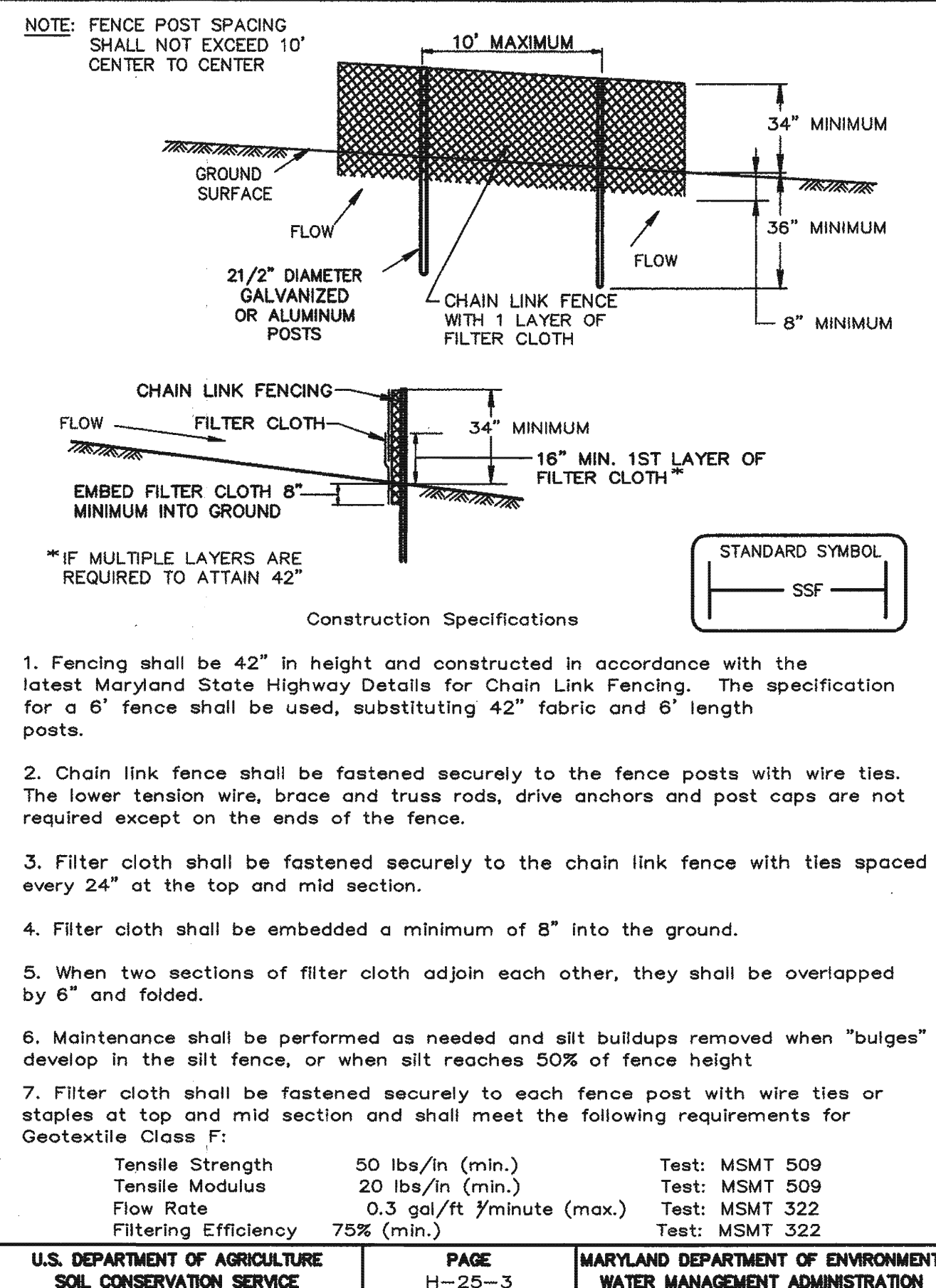
DETAIL 25 - ROCK OUTLET PROTECTION I



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F-18-8	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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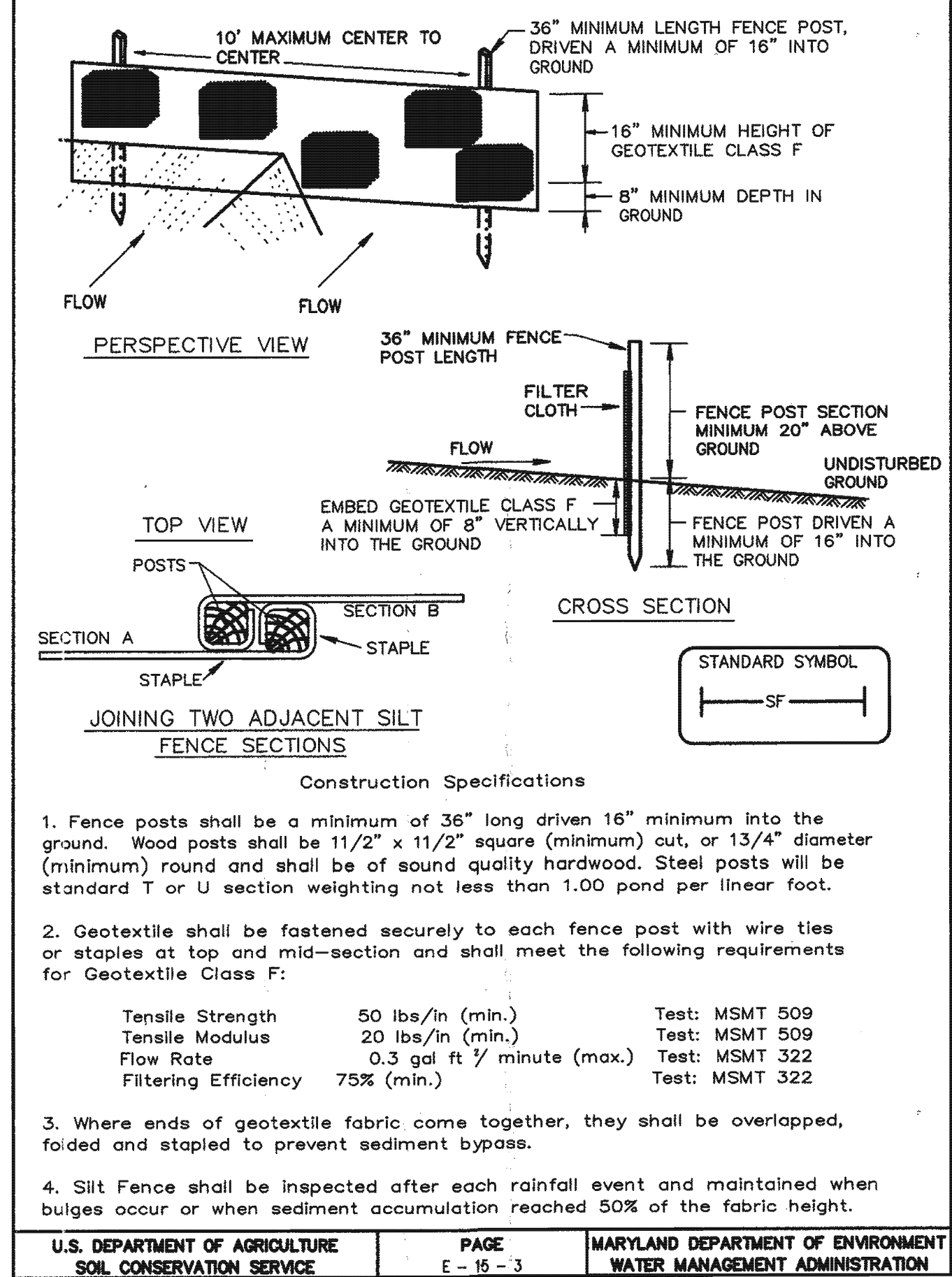
- NOTES:**
1. FILTER CLOTH LINING SHALL BE 10 OZ./S.Y. NON-WOVEN GEOTEXTILE.

DETAIL 33 - SUPER SILT FENCE



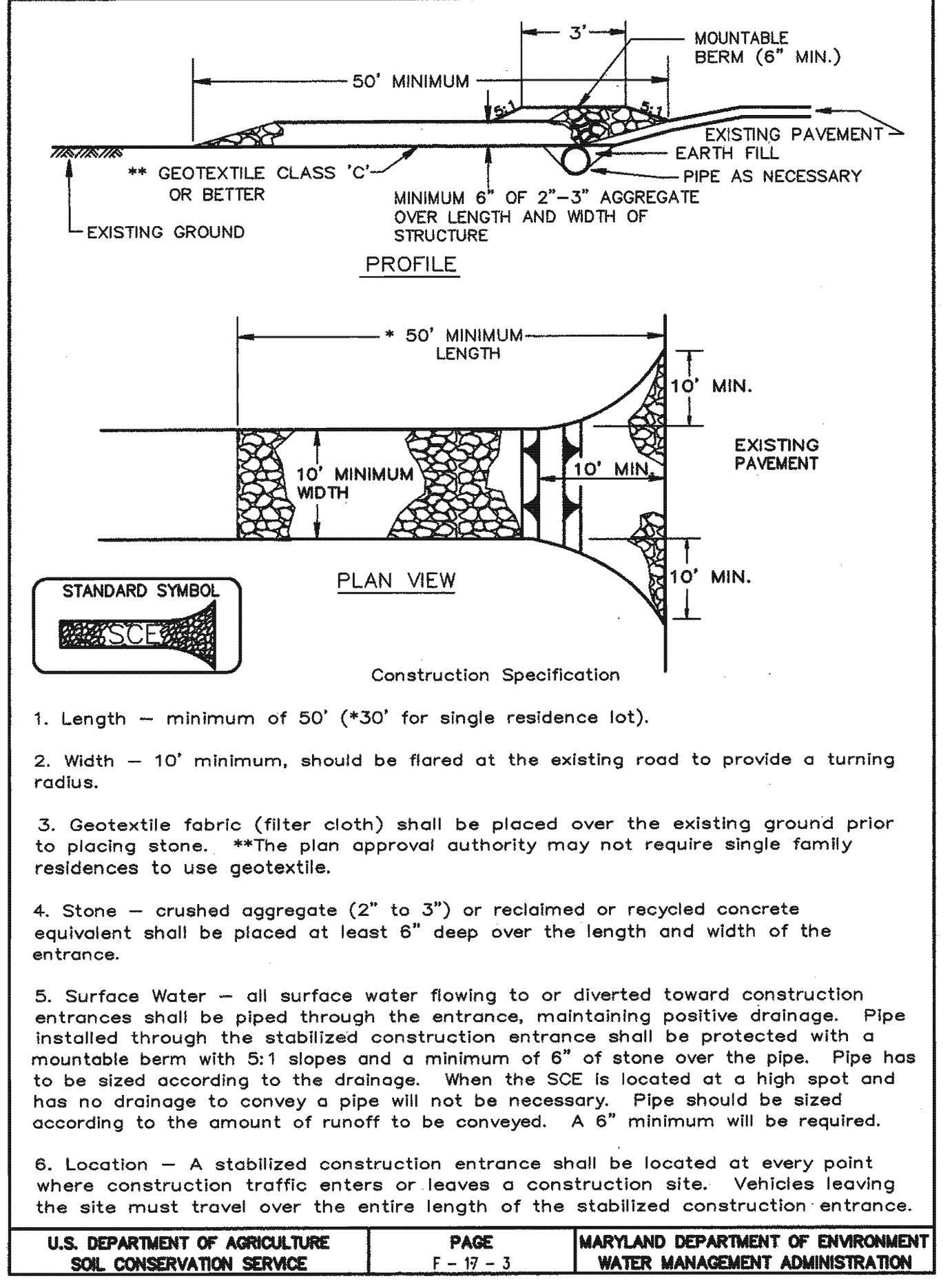
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H-25-3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 22 - SILT FENCE



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E-18-3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

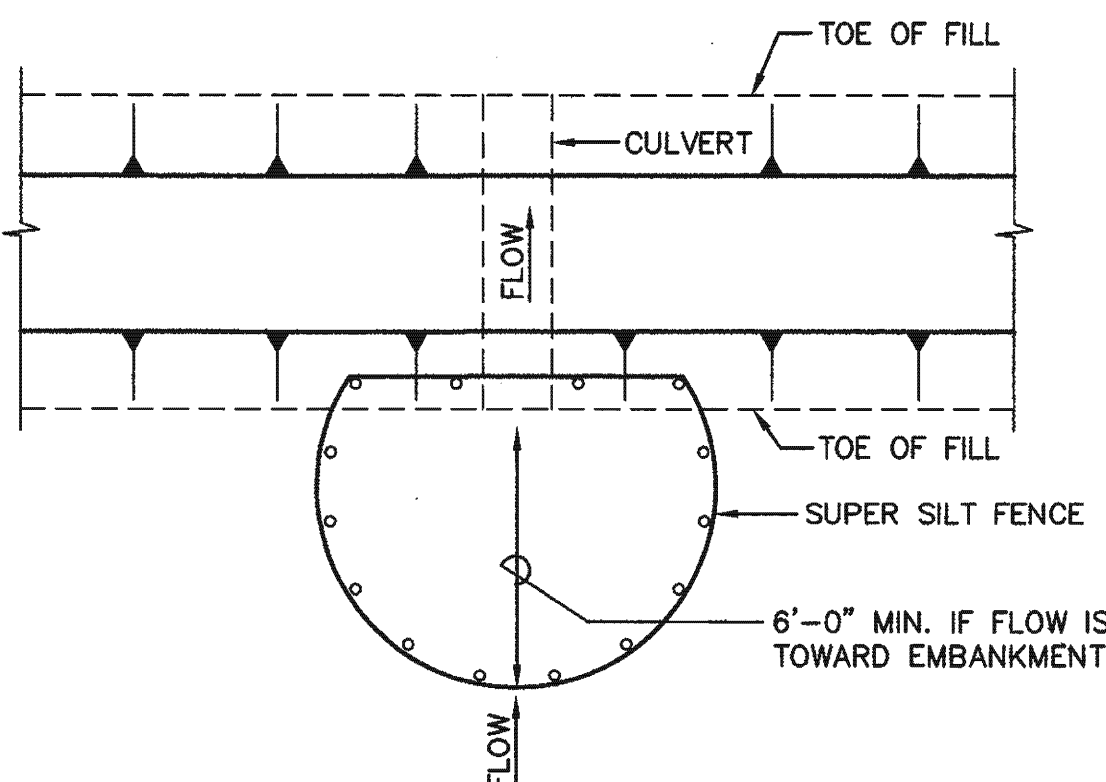


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F-17-3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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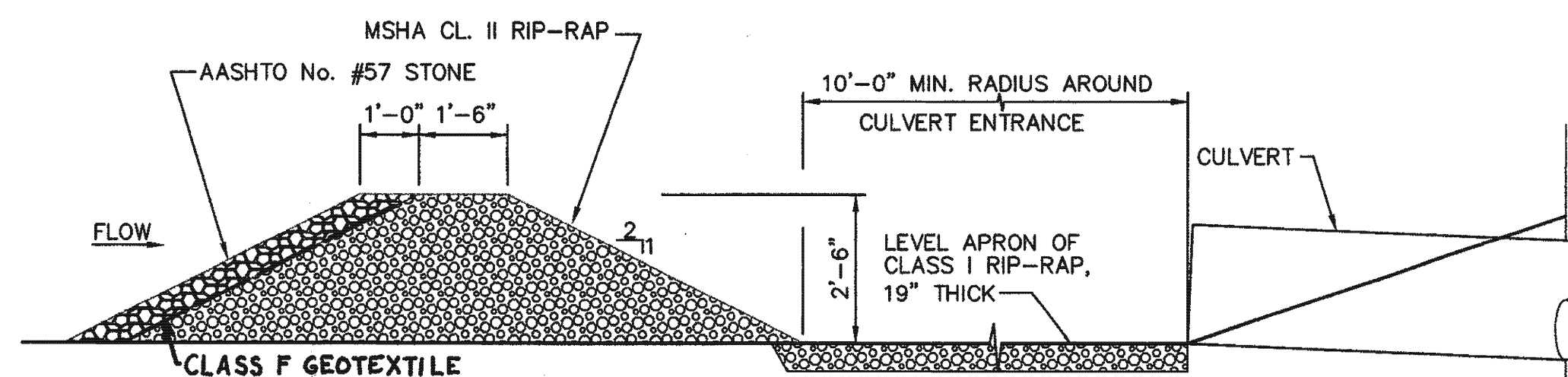
ROCK OUTLET PROTECTION

- Construction Specifications
1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
 2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
 3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
 4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
 5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F-18-8A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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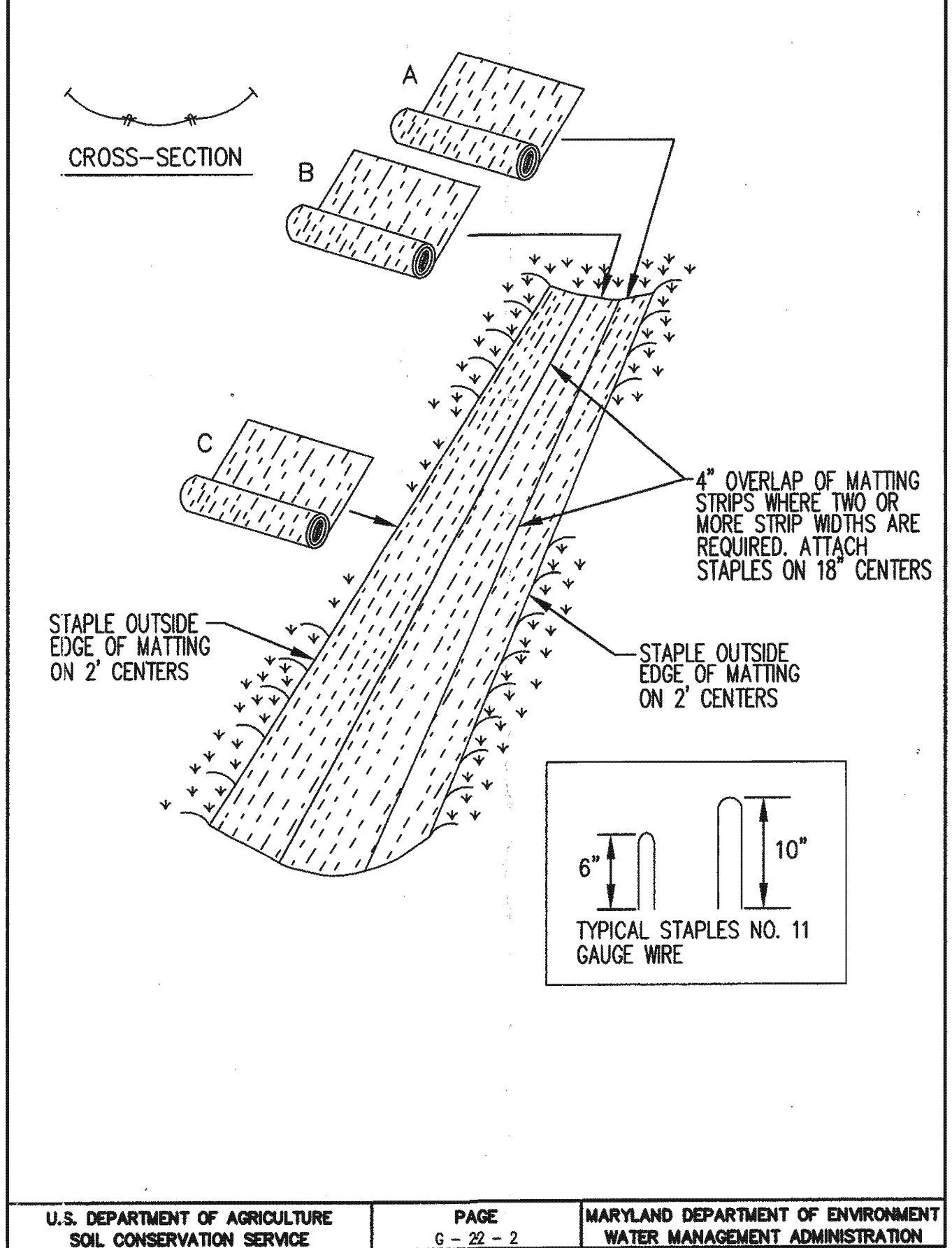


**TEMPORARY CULVERT INLET PROTECTION
SUPER SILT FENCE OPTION**



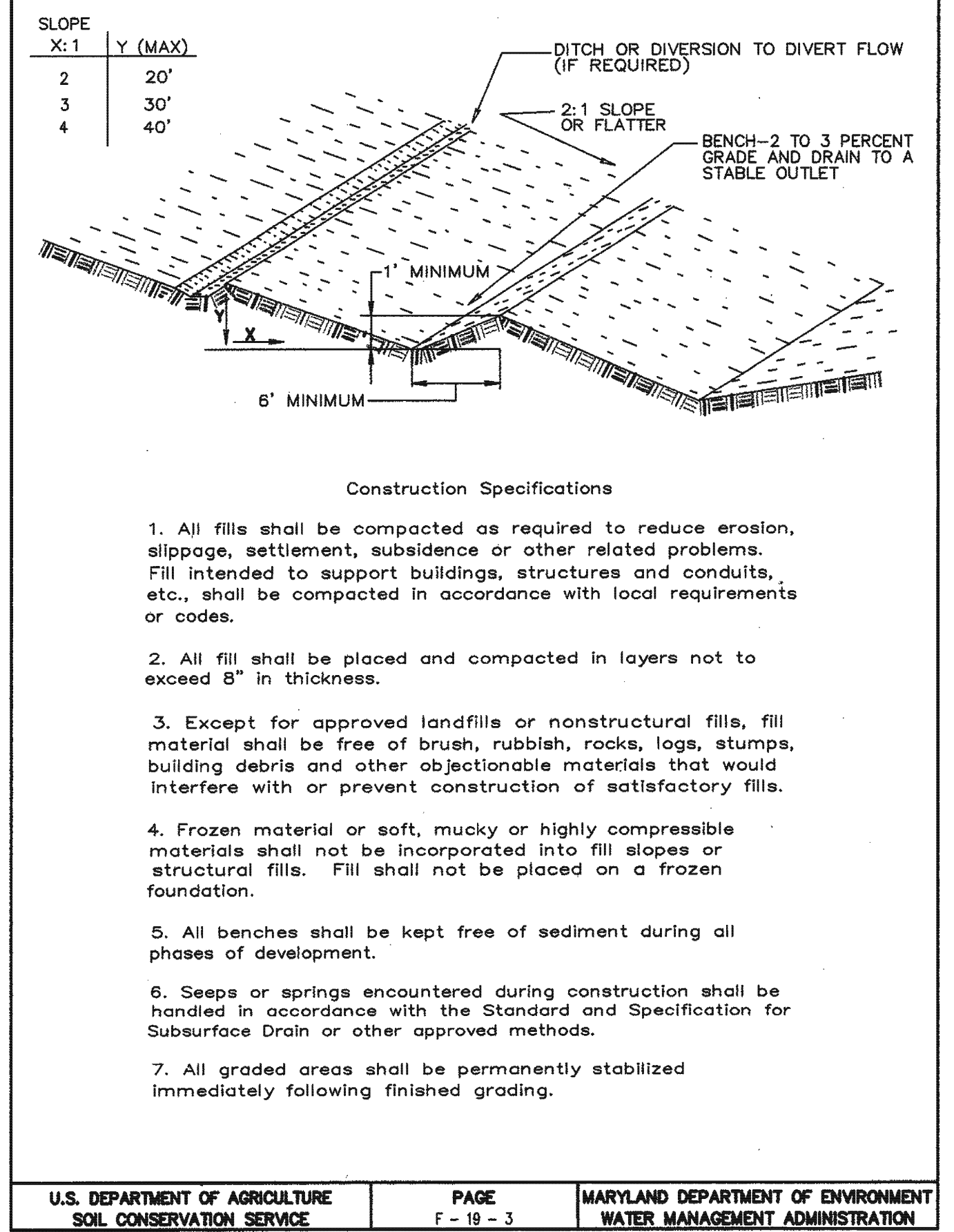
**TEMPORARY CULVERT INLET PROTECTION
STONE COMBINATION OPTION**
SCALE: 1/2"=1'-0"

DETAIL 30 - EROSION CONTROL MATTING



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE G-22-2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 28 - BENCHED SLOPES



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F-19-3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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**DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND**

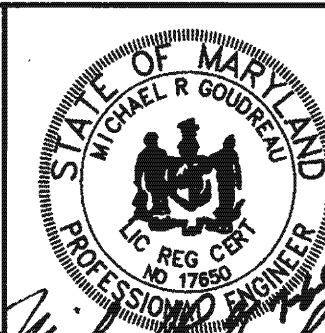
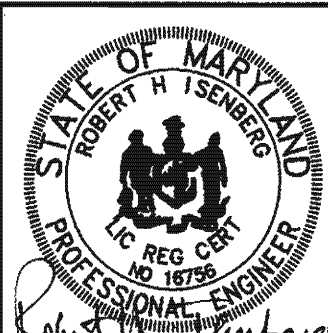
DIRECTOR: *[Signature]* DATE: 7/14/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 9/1/99
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 7/13/99

SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

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

DIRECTOR OF PUBLIC WORKS: *[Signature]* DATE: 7/6/99
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES: *[Signature]* DATE: 7/6/99

SCS ENGINEERS
 CONSULTING ENGINEERS
 11260 ROGER BACON DRIVE
 SUITE 300
 RESTON, VIRGINIA 20190
 PH. (703) 471-6150
 FAX. (703) 471-6676

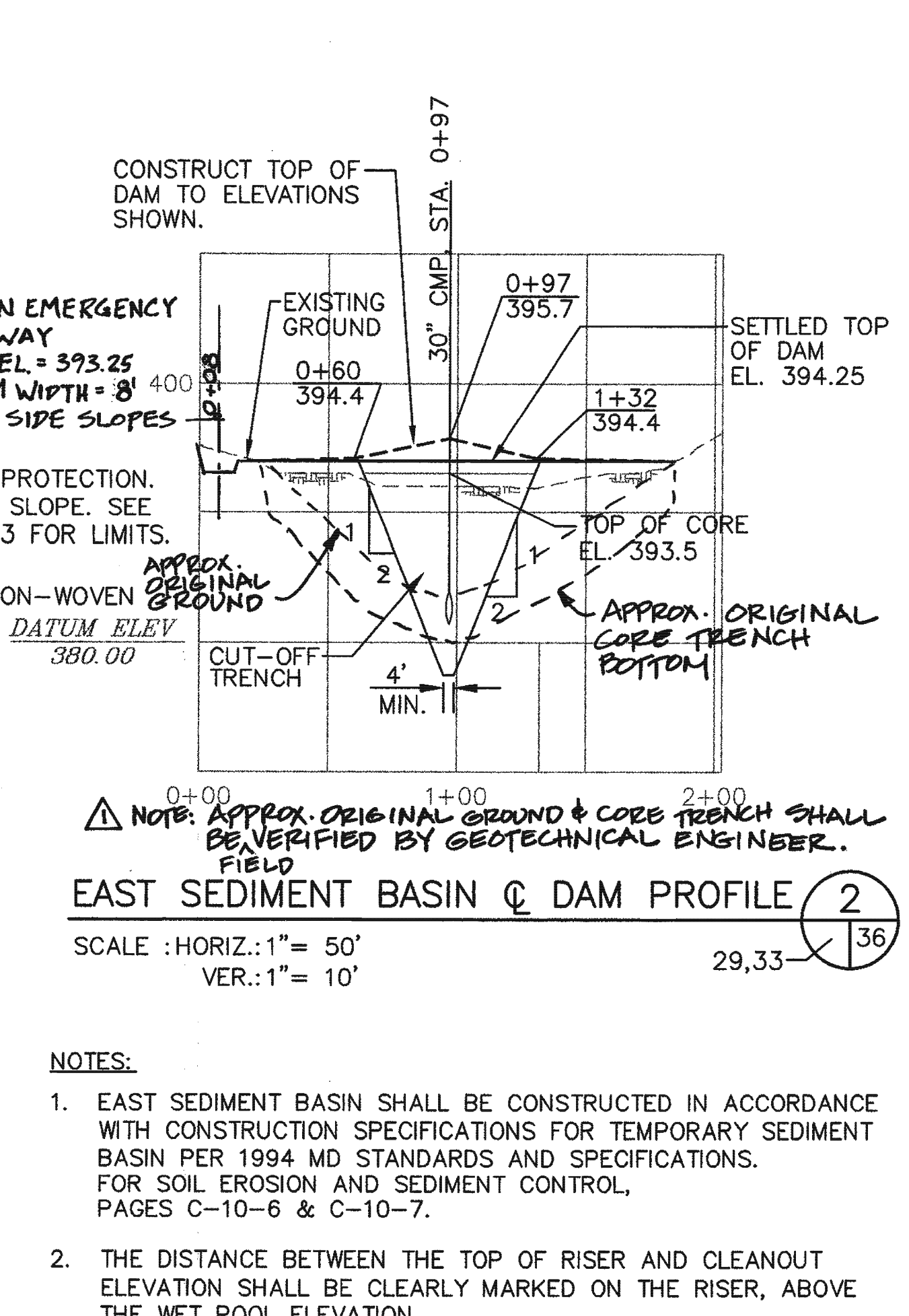
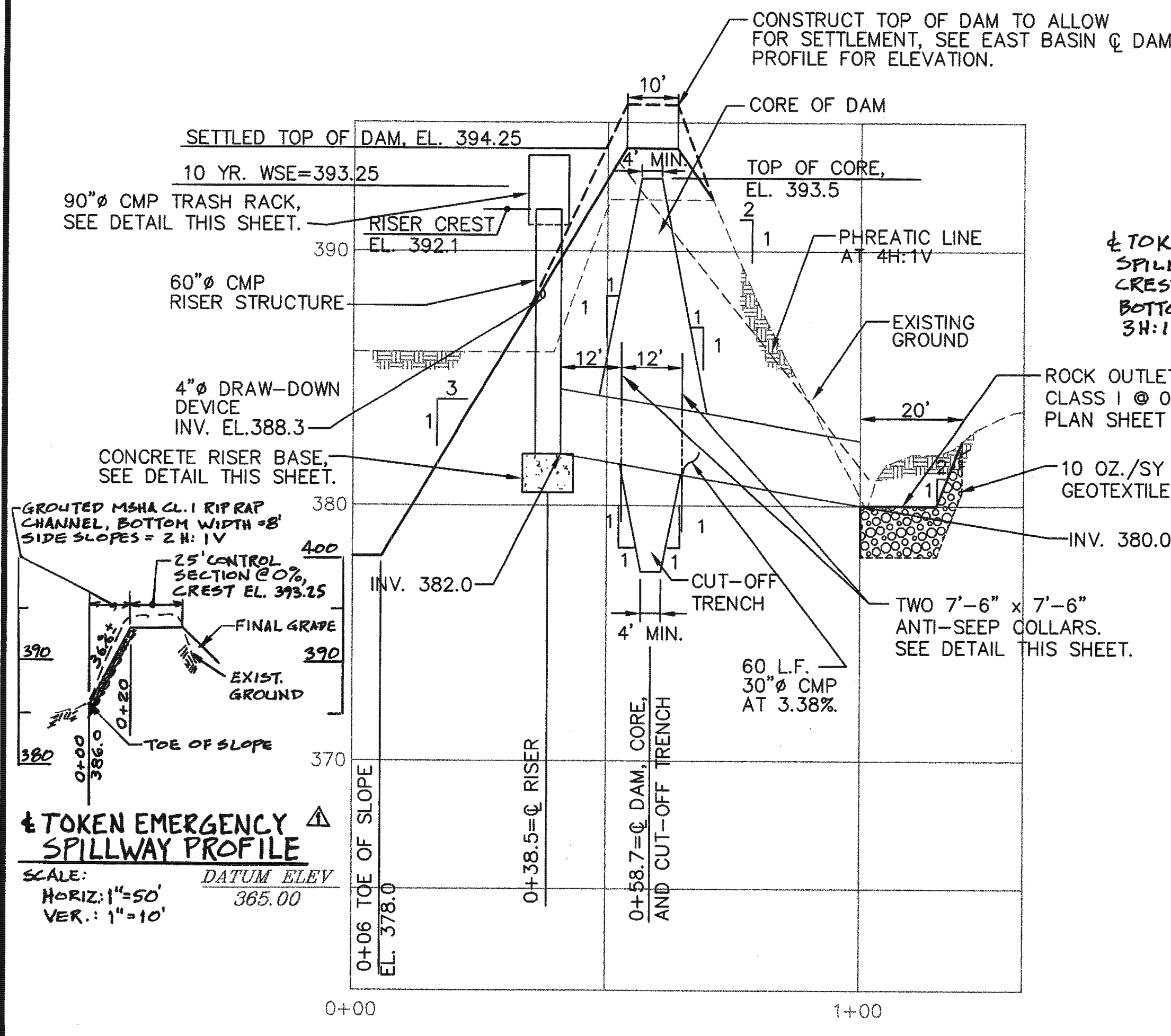


DES.	MRG	
DRN.	JCS	
CHK.	RHI	
DATE:	6-2-99	
BY	NO.	REVISION
		DATE

EROSION AND SEDIMENT CONTROL DETAILS

NEW CUT LANDFILL IMPROVEMENTS

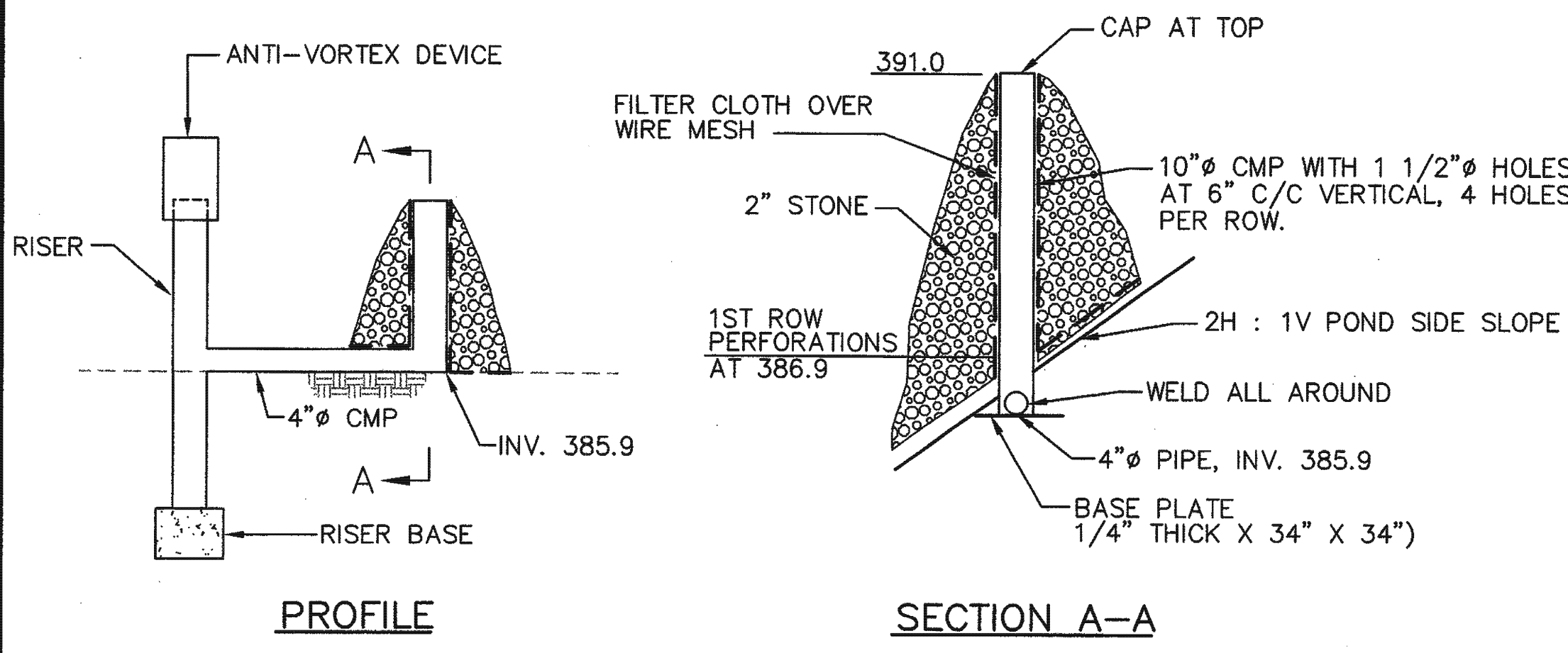
CAPITAL PROJECT NO. C-0237-H
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN
 SHEET 35 OF 39
 SDP-99-109



EAST SEDIMENT BASIN & DAM PROFILE
 SCALE: HORIZ.: 1" = 50'
 VER.: 1" = 10'

- NOTES:**
- EAST SEDIMENT BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS FOR TEMPORARY SEDIMENT BASIN PER 1994 MD STANDARDS AND SPECIFICATIONS. FOR SOIL EROSION AND SEDIMENT CONTROL, PAGES C-10-6 & C-10-7.
 - THE DISTANCE BETWEEN THE TOP OF RISER AND CLEANOUT ELEVATION SHALL BE CLEARLY MARKED ON THE RISER, ABOVE THE WET POOL ELEVATION.

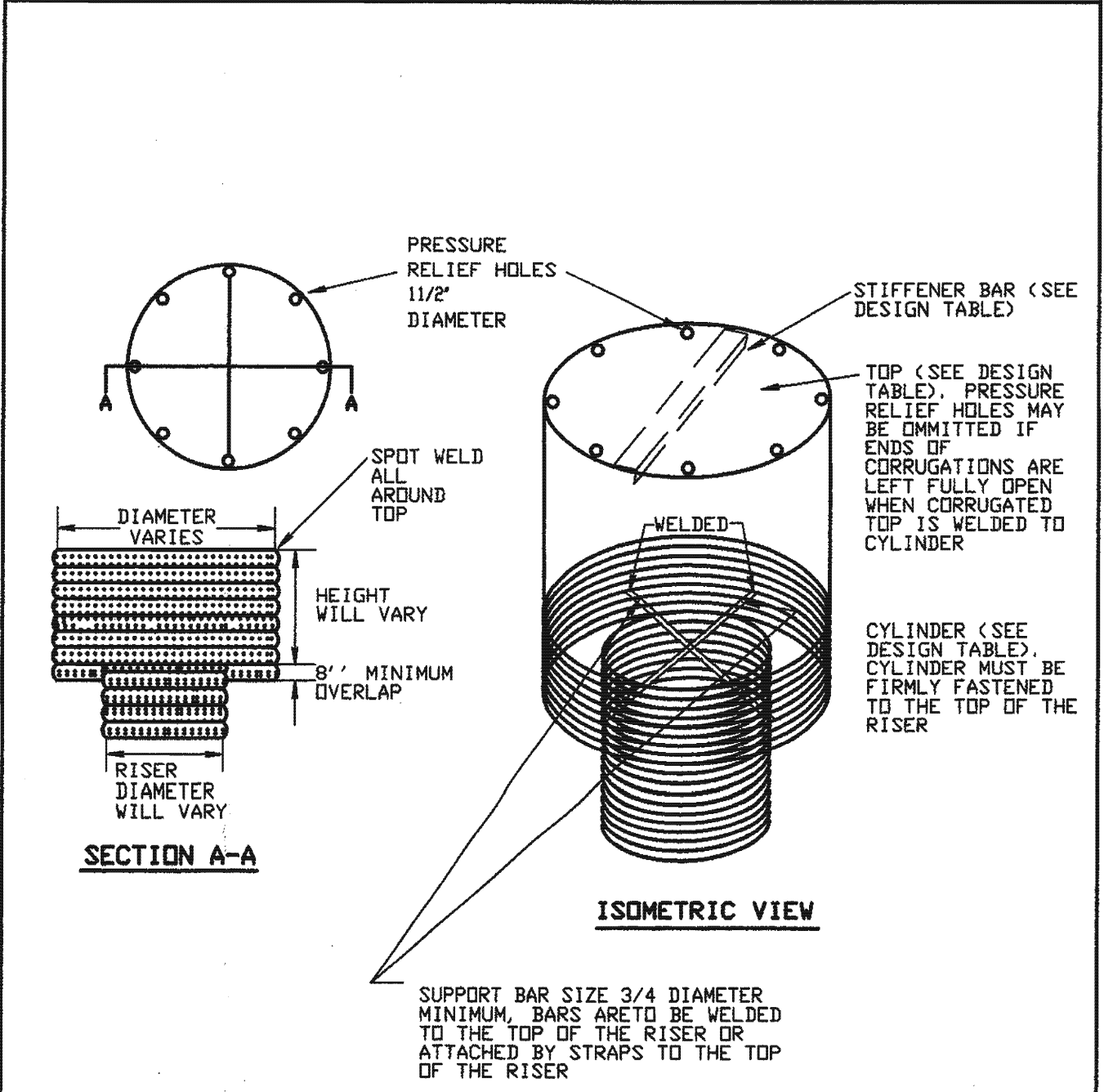
EAST SEDIMENT BASIN & PRINCIPAL SPILLWAY PROFILE
 SCALE: HORIZ.: 1" = 20'
 VER.: 1" = 4'



DRAW-DOWN DEVICE DETAIL
 NOT TO SCALE

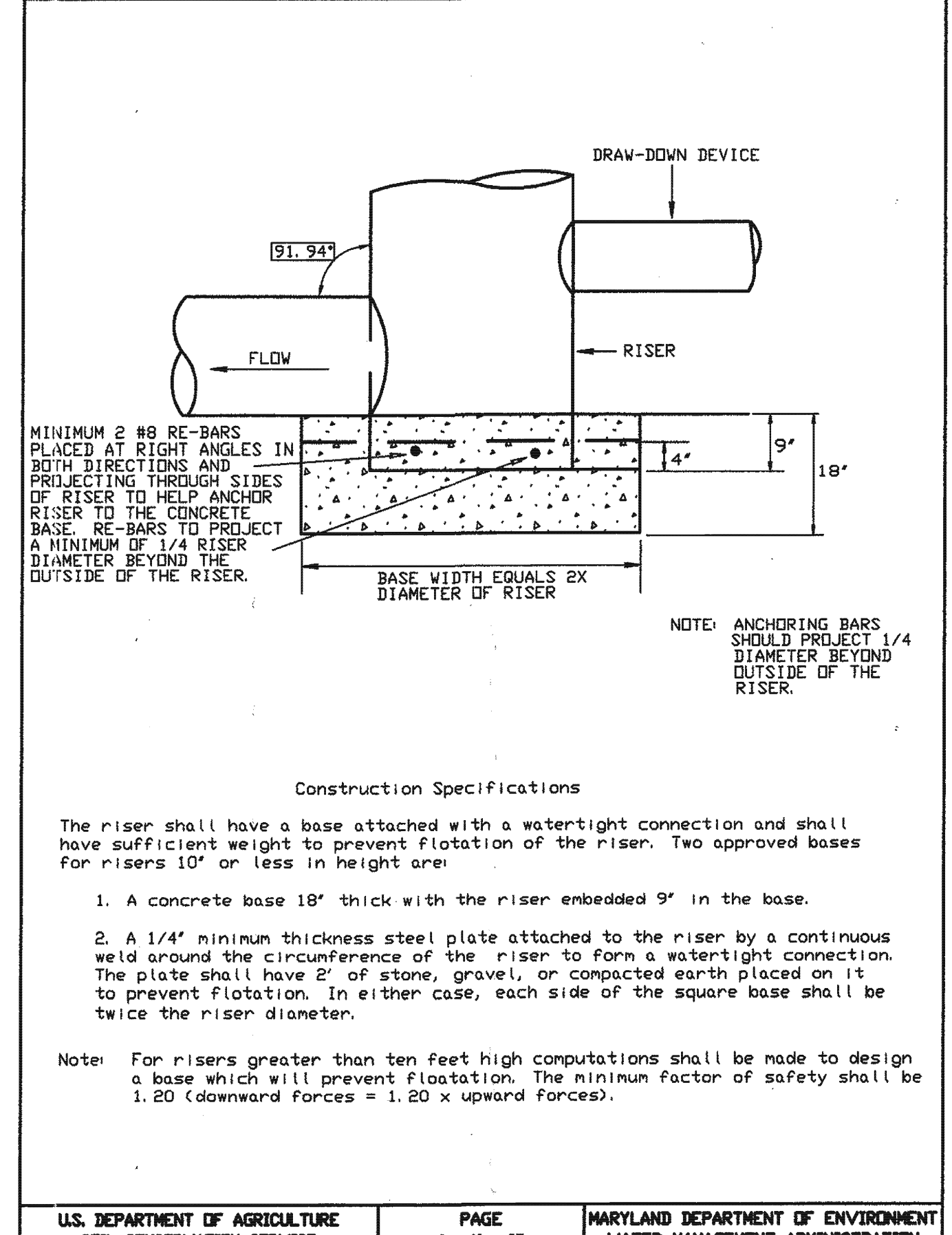
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND			
DIRECTOR	DATE	SUBDIVISION NAME	LOT/PARCEL
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	LIBER/FOLIO	ZONE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	180/339	R-20
		WATER CODE	SEWER CODE
			CENSUS TR.

DETAIL 16 - CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



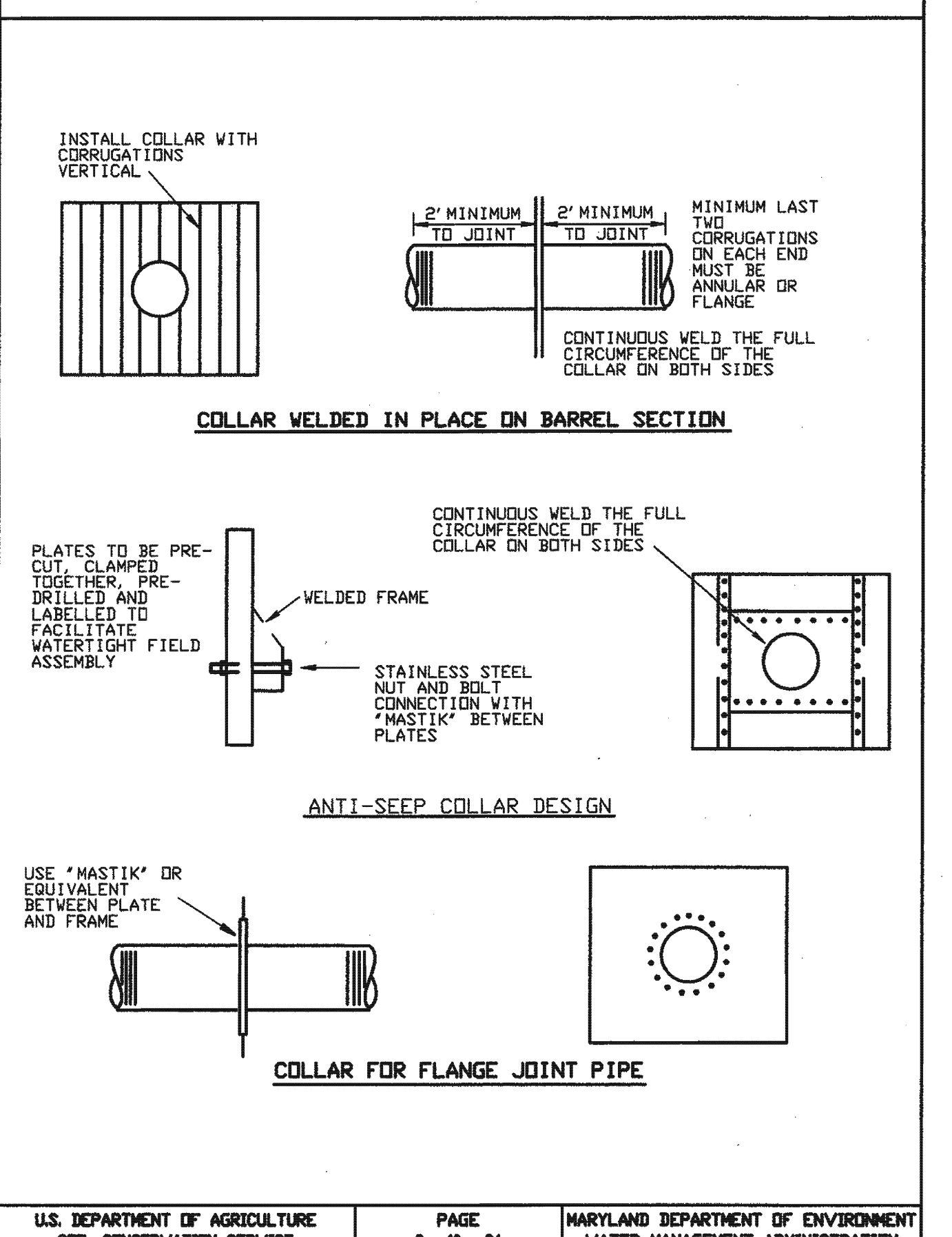
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C-10-25	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 15 - RISER BASE DETAIL



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C-10-25	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 14 - TYPICAL ANTI-SEEP COLLARS



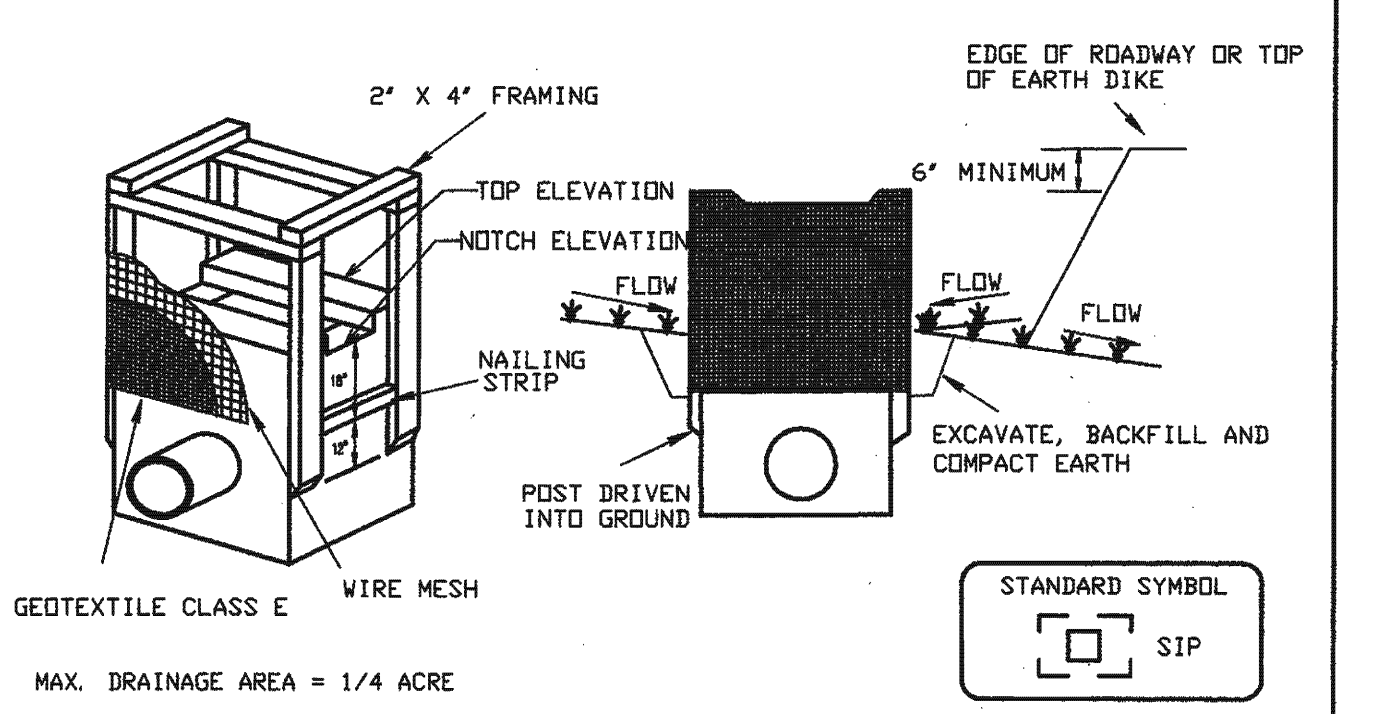
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C-10-24	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 16 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE (continued)

Riser Diam., in.	Trash Rack Cylinder Diam., in.	Trash Rack Thick., in.	H., in.	Minimum Size Support Bar	Minimum Top Thickness	Stiffener
12	18	16	6	#6 Rebar	16 ga.	---
15	21	16	7	"	"	---
18	27	16	8	"	"	---
21	30	16	11	"	"	---
24	36	16	13	"	14 ga.	---
27	42	16	15	"	14 ga.	---
36	54	14	17	#8 Rebar	12 ga.	---
42	60	14	19	"	"	---
48	72	12	21	1-1/4" pipe or 1-1/4 x 1-1/4 x 1/4 angle	10 ga.	---
54	78	12	25	"	"	---
60	90	12	29	1-1/2" pipe or 1-1/2 x 1-1/2 x 1/4 angle	8 ga.	---
66	96	10	33	2" pipe or 2x2x3/16 angle	8 ga.	2x2x1/4 w/stiffener angle
72	102	10	36	"	"	2-1/2x2-1/2x1/4 angle
78	114	10	39	2-1/2" pipe or 2x2x1/4 angle	"	"
84	120	10	42	2-1/2" pipe or 2-1/2x2-1/2x1/4 angle	"	2-1/2 x2-1/2x 5/16 angle

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C-10-25A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 23A - STANDARD INLET PROTECTION



- 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 from 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 at 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E-16-5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR: [Signature] DATE: 9/14/99

CHIEF, DIVISION OF PUBLIC WORKS: [Signature] DATE: 9/15/99

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES: [Signature] DATE: 7/6/99

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676

DES. MRG
DRN. JCS
CHK. RHI

DATE: 06-02-99

BY: [Signature] NO. [Signature]

APPROX. ORIG. GROUND & CORE TRENCH 3/5/99

EROSION AND SEDIMENT CONTROL DETAILS

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

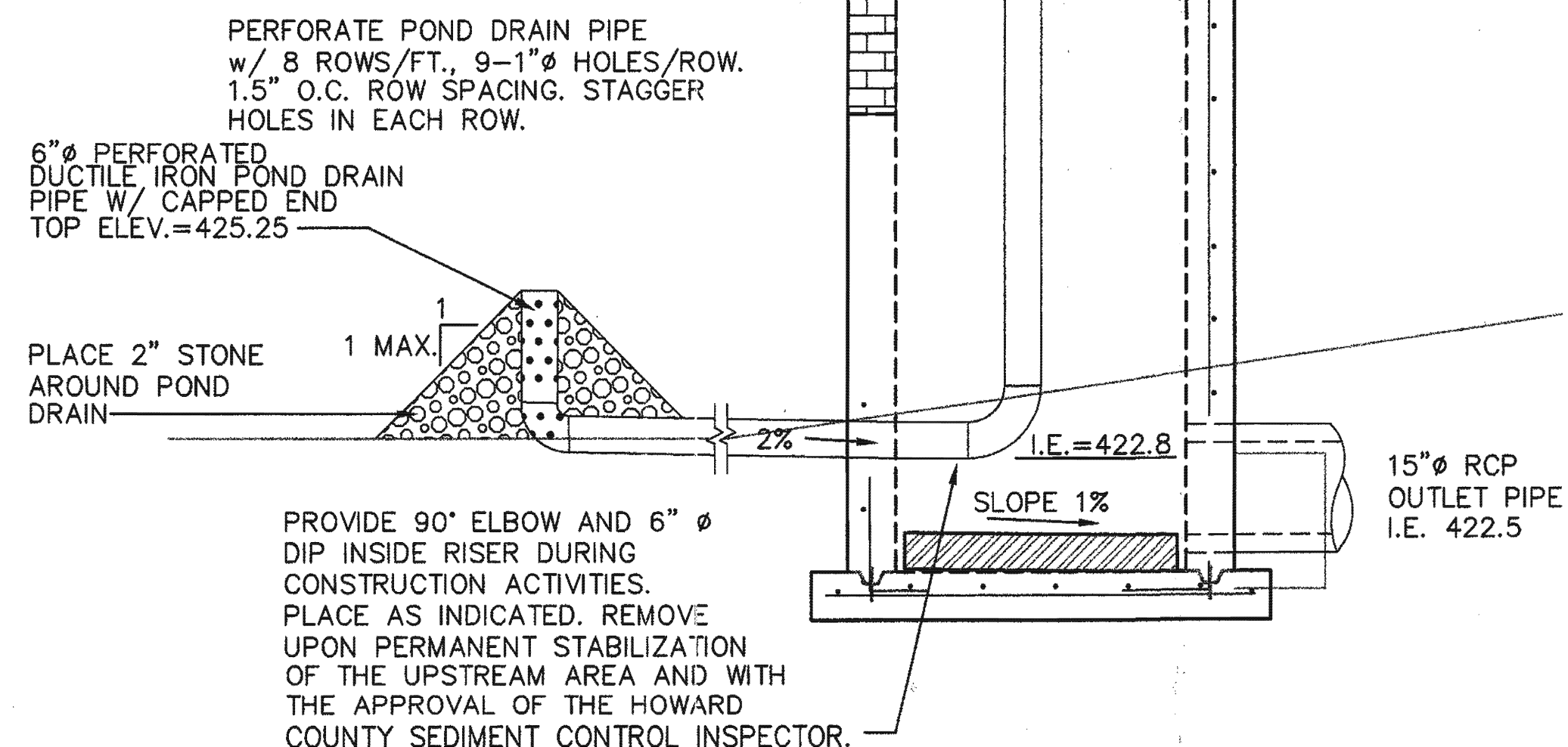
SCALE: AS SHOWN

SHEET 36 OF 39

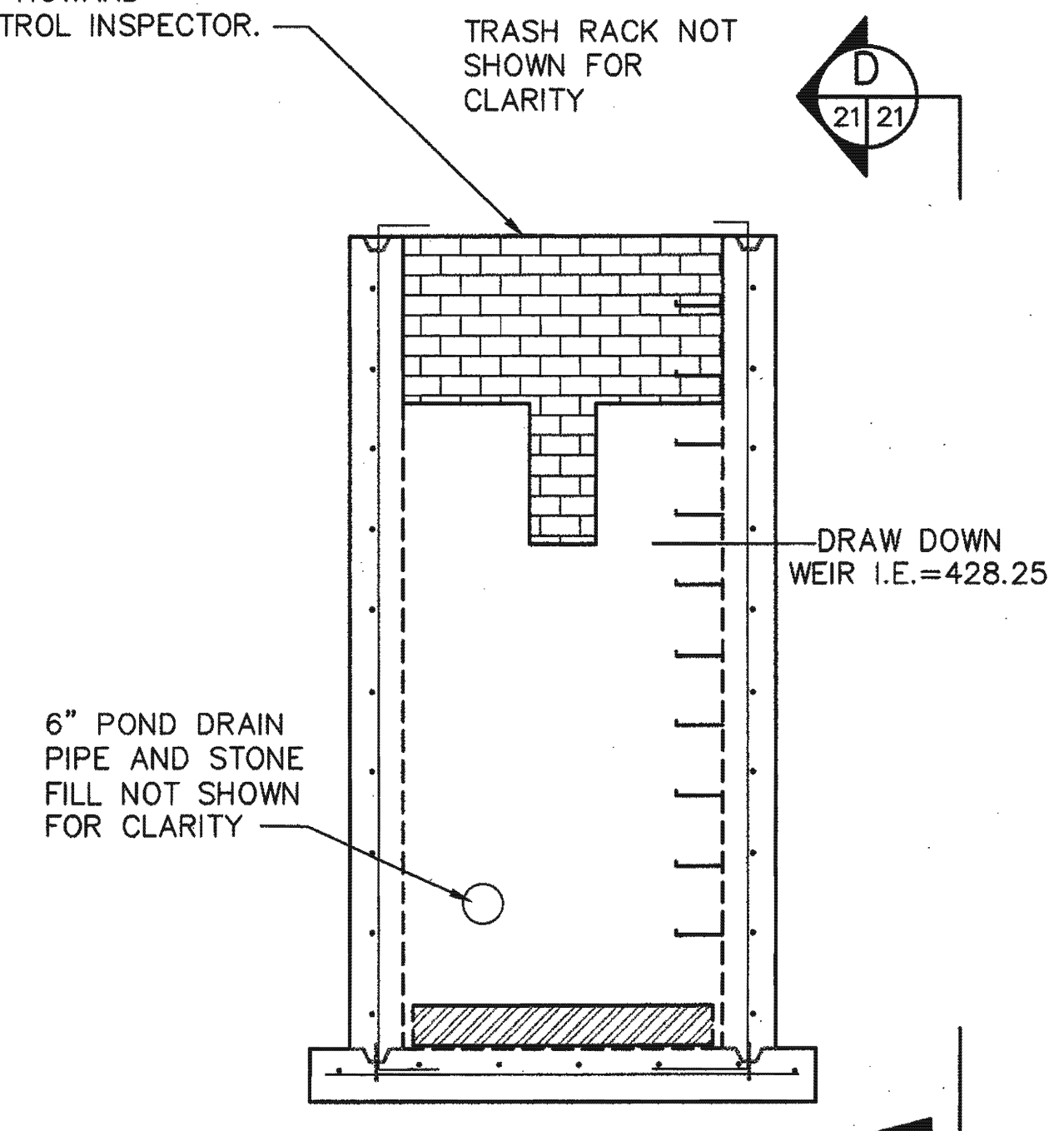
SDP-99-109

PROVIDE 8'-0" CMP TRASH RACK DURING CONSTRUCTION ACTIVITIES. TRASH RACK SHALL BE SECURELY ATTACHED TO RISER. REFER TO TRASH RACK DETAIL ON SHEET 36. REMOVE UPON PERMANENT STABILIZATION OF THE UPSTREAM AREA, AND WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

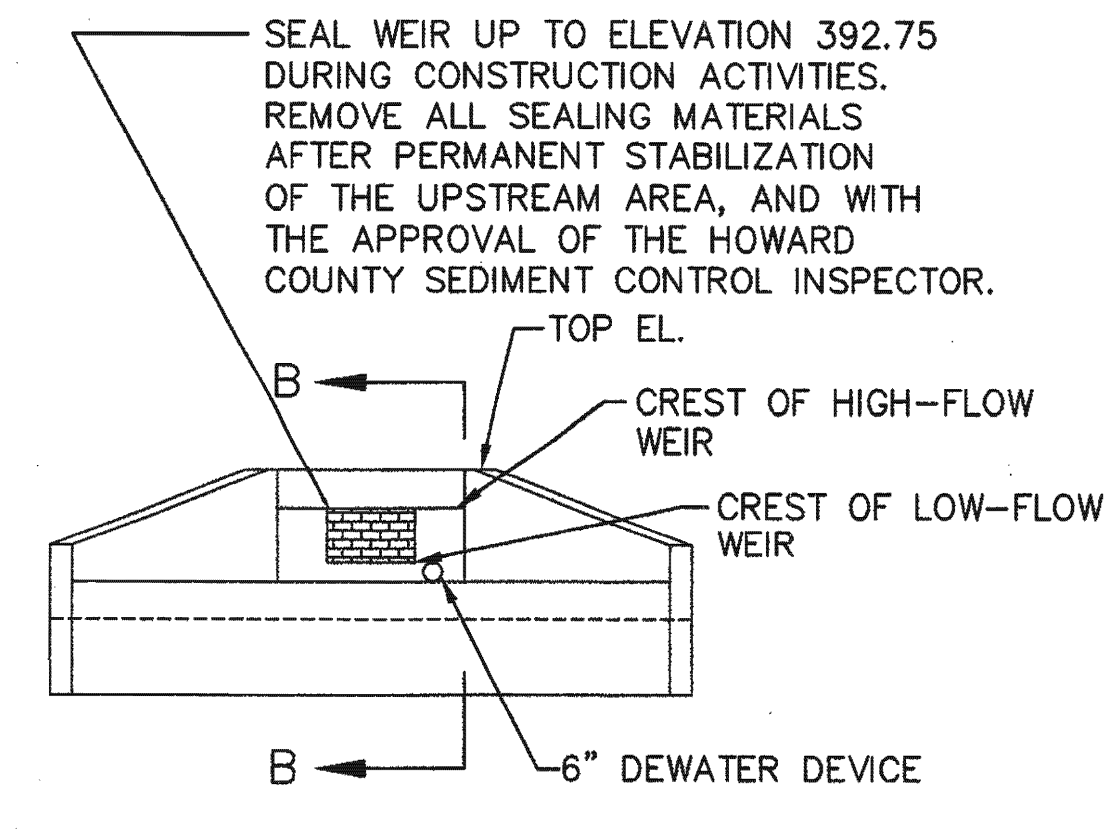
SEAL WEIR UP TO ELEVATION 432.0 DURING CONSTRUCTION ACTIVITIES. REMOVE ALL SEALING MATERIALS AFTER PERMANENT STABILIZATION OF THE UPSTREAM AREA AND WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.



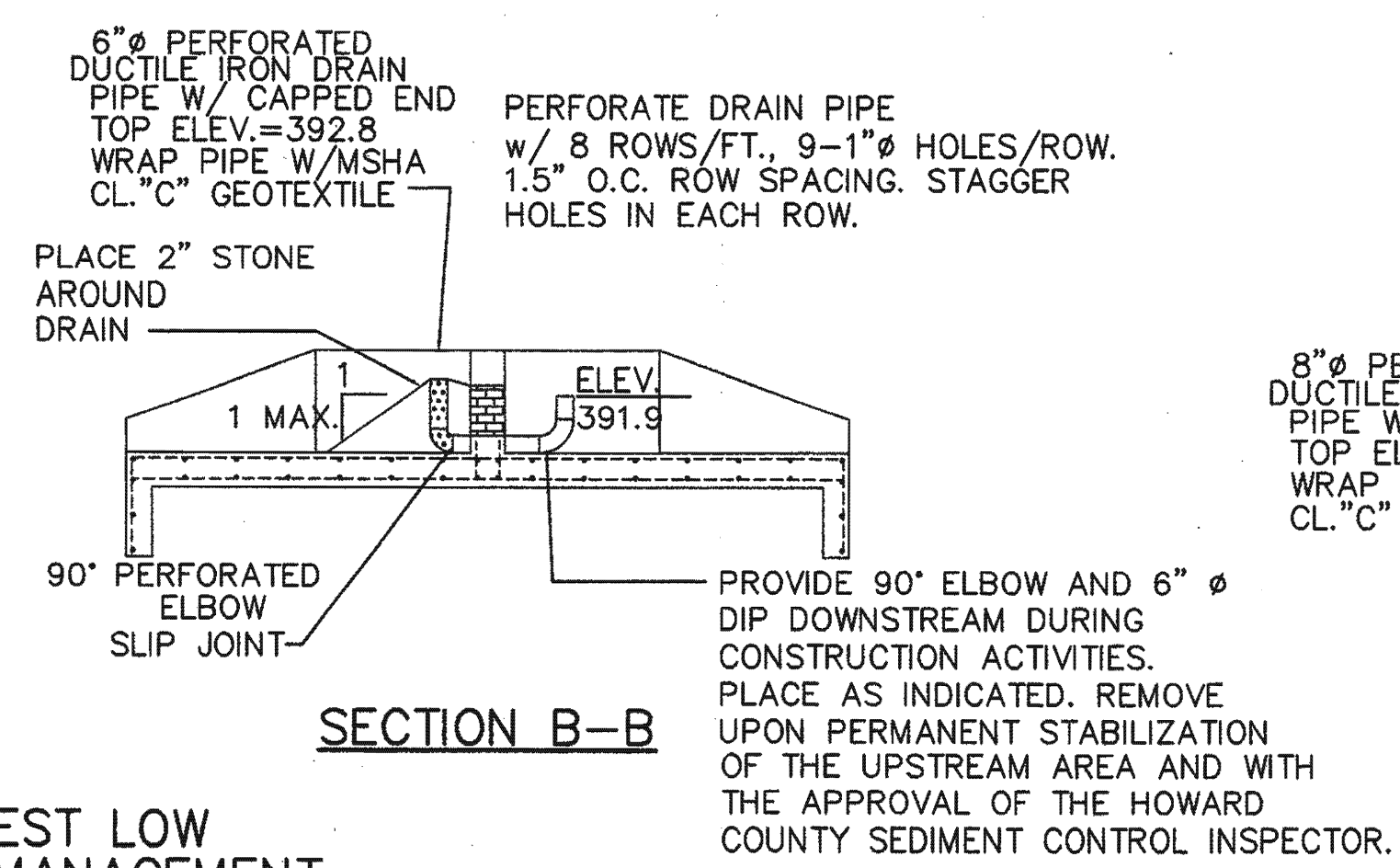
WEST DETENTION BASIN RISER STRUCTURE SECTION D
SCALE: 1/2"=1'-0"



WEST DETENTION BASIN RISER STRUCTURE DETAIL 3
SCALE: 1/2"=1'-0"

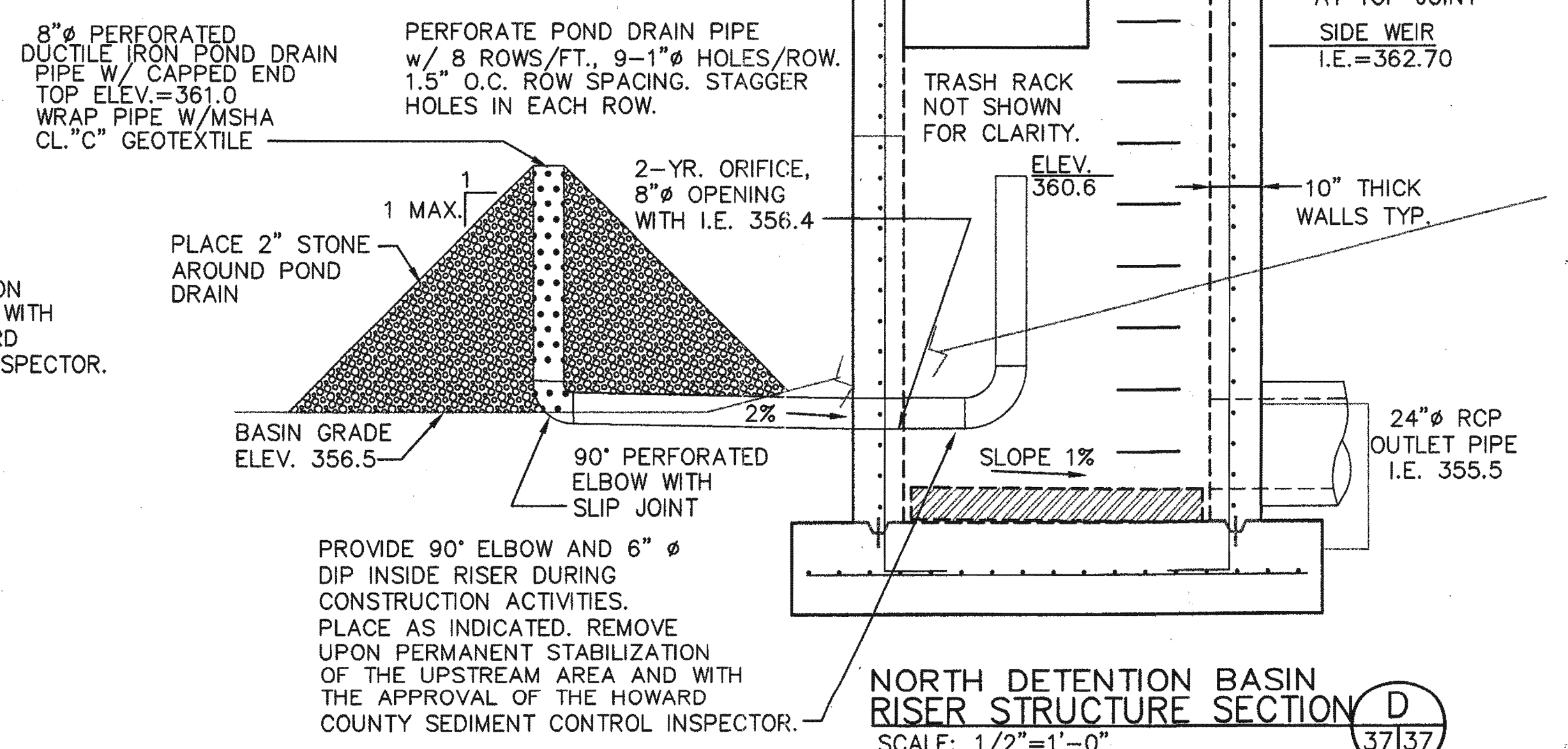


FRONT ELEVATION

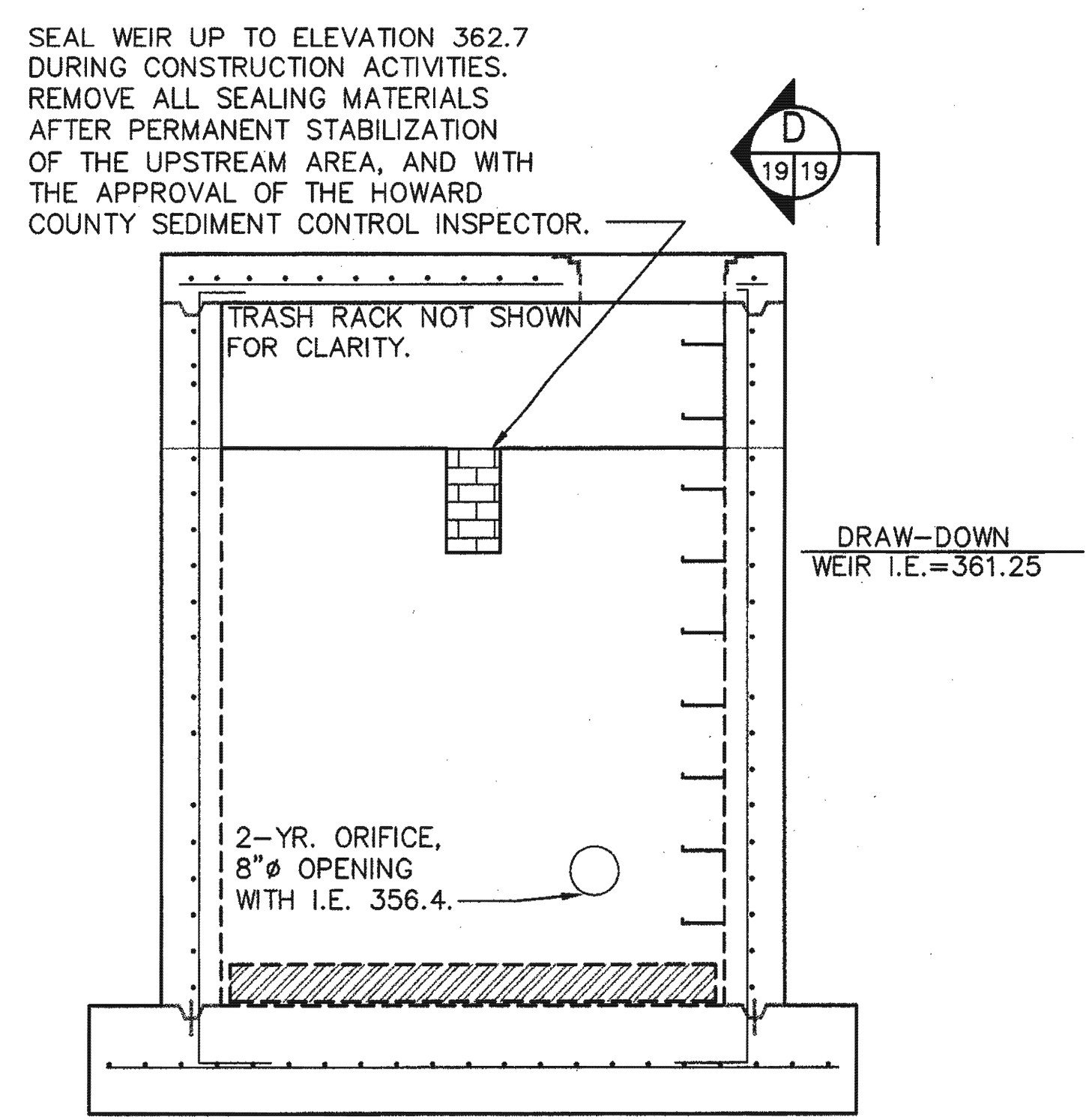


SECTION B-B

MODIFICATION TO WEST LOW RISE STORMWATER MANAGEMENT CONTROL STRUCTURE
NO SCALE



NORTH DETENTION BASIN RISER STRUCTURE SECTION D
SCALE: 1/2"=1'-0"



NORTH DETENTION BASIN RISER STRUCTURE DETAIL 4
SCALE: 1/2"=1'-0"

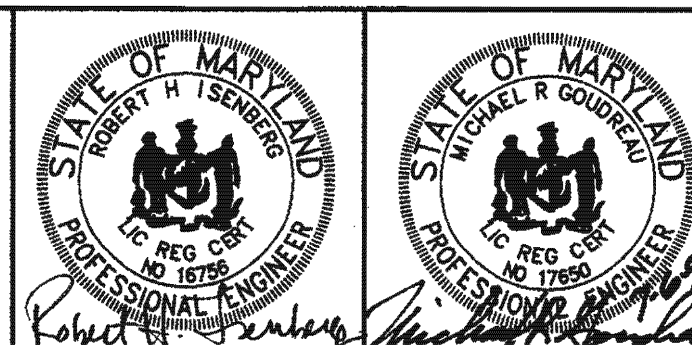
M: 296024.01 (100 PERCENT DETAILS) LRM0D, NRISERMOD, WRISERMOD

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
DIRECTOR	DATE 9/14/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/14/99
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 7/14/99

SUBDIVISION NAME	LOT/PARCEL	
HO. CO. GOVERNMENT	529	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
180/339	R-20	31
WATER CODE	SEWER CODE	CENSUS TR.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
DIRECTOR OF PUBLIC WORKS	DATE 7/16/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES	DATE 7/16/99

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	MRG	
DRN.	MRG	
CHK.	RHI	
DATE: 06-02-99	BY	NO.
	REVISION	DATE

RISER/STRUCTURE MODIFICATIONS DURING CONSTRUCTION

NEW CUT LANDFILL IMPROVEMENTS
CAPITAL PROJECT NO. C-0237-H
2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
SHEET 37 OF 39
SDP-99-109

SCS ENGINEERS		BORING LOG		WELL NO. HA-1	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 12-2-98					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 10 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		3" TOPSOIL/ORGANIC MATERIAL			
2		BROWN SILT, SOME CLAY, TRACE OF ORGANIC MATTER (ML)			
3		LIGHT BROWN & GRAY SILT, SOME CLAY, TRACES OF FINE TO COARSE SAND & SOME FINE GRAVEL (ML)			
4		LIGHT BROWN SILT, SOME CLAY TRACE OF FINE TO MEDIUM SAND, DRY (ML)			
5		LIGHT ORANGE CLAYEY SILT, MOTTLED, SLIGHTLY MOIST, TRACE OF FINE GRAVEL (ML)			
6		DARK GREEN CLAYEY SILT, SLIGHTLY MOIST, TRACE OF VERY FINE GRAVEL TO COARSE GRAVEL (ML)			
7		LIGHT BROWN GREEN SILT, TRACE OF CLAY, MICACEOUS, SLIGHTLY MOIST (ML)			
8		LIGHT BROWN FINE TO MEDIUM SAND, TRACES OF SILT & CLAY, SLIGHTLY MOIST (SM)			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-4	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 12-2-98					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 10 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		2" TOPSOIL/ORGANIC MATERIAL			
2		DARK GREEN SILT, SOME SAND AND CLAY, TRACE OF FINE GRAVEL, SLIGHTLY MOIST (ML)			
3		LT. BROWN GRAY SILT, TRACE OF ORGANICS, SLIGHTLY MOIST (CL)			
4		ORANGE BROWN FINE TO COARSE SAND, SOME SILT & CLAY, TRACE OF FINE GRAVEL (SM)			
5		BROWN GREEN SILT AND VERY FINE TO MEDIUM SAND TRACE OF CLAY & ORGANIC MATTER (ML/SM)			
6		DARK GREEN VERY FINE TO MEDIUM SAND, SOME SILT & TRACE OF CLAY, HARD, WEATHERED ROCK (SM)			
7		DARK GREEN VERY FINE TO COARSE SAND, TRACE OF SILT MICACEOUS, HARD, WEATHERED ROCK (SM)			
8		LIGHT BROWN GREEN VERY FINE TO COARSE SAND, TRACE OF SILT, HARD, WEATHERED ROCK (SP)			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-7	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 12-3-98					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 6.6 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		3" TOPSOIL/ORGANIC MATERIAL			
2		LIGHT BROWN ORANGE SILT, SOME CLAY, TRACE OF VERY FINE TO COARSE SAND, MICACEOUS, DRY (ML)			
3		LIGHT BROWN GRAY SILT & CLAY, TRACE OF VERY FINE TO MEDIUM SAND, MICACEOUS, DRY (ML)			
4		LIGHT GRAY CLAYEY SILT, TRACE OF VERY FINE SAND, DRY (MH)			
5		GRAY CLAY, MOTTLED, TRACE OF SILT & VERY FINE SAND, SLIGHTLY MOIST (CH)			
6		ORANGE GRAY BLACK MOTTLED VERY FINE TO COARSE SAND, TRACE OF SILT & CLAY, MICACEOUS, SLIGHTLY MOIST, WEATHERED ROCK (SM)			
7		END OF BORING REFUSAL ON HARD WEATHERED ROCK, VERY SLOW AUGERING.)			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-10	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 04-13-99					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 2 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		3" TOPSOIL/ORGANIC MATERIAL			
2		BROWN FINE SANDY SILT (ML), TRACES OF CLAY AND FINE GRAVEL, MICACEOUS, SLIGHTLY MOIST FINE TO COARSE SAND AND GRAVEL			
3		TRACES OF SILT, MICACEOUS, DRY (HARD WEATHERED ROCK)			
4		END OF BORING (HAND AUGER REFUSAL ON HARD WEATHERED ROCK, VERY SLOW AUGERING.)			
5		END OF BORING			
6		END OF BORING			
7		END OF BORING			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-13	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 04-14-99					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 8.5 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		DARK BROWN CLAY (CL), SOME SILT, TRACES OF SMALL TO MEDIUM GRAVEL AND ORGANIC MATERIALS, MICACEOUS, MOST (F)			
2		DARK BROWN CLAY & SILT (CL) TRACES OF VERY FINE SAND AND ORGANIC MATERIALS, MICACEOUS, SLIGHTLY MOIST (F)			
3		RED DARK GREEN CLAY & SILT (CL), SOME SMALL GRAVEL, TRACES OF VERY FINE SAND AND ORGANIC MATERIALS, MICACEOUS, SLIGHTLY MOIST (F)			
4		RED BROWN SILT & CLAY (CL), TRACES OF VERY FINE SAND AND ORGANIC MATERIALS (F)			
5		DARK GREEN SILT (ML), SOME CLAY TRACES OF VERY FINE SAND AND ORGANIC MATERIALS, MICACEOUS, SLIGHTLY MOIST (F)			
6		DARK GREEN SILT (ML), SOME CLAY AND SMALL GRAVEL, TRACES OF VERY FINE AND ORGANIC MATERIALS, MOST (F)			
7		DARK BROWN CLAY (CL), SOME SILT, TRACES OF VERY FINE SAND AND SMALL TO MEDIUM GRAVEL, MICACEOUS, MOIST (F)			
8		END OF BORING (REFUSAL ON OBSTRUCTION AT 8.5')			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-16	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 04-14-99					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 7 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		TOPSOIL/ORGANIC MATERIAL			
2		BROWN SILT (ML), TRACES OF VERY FINE TO COARSE SAND, MICACEOUS, VERY MOIST			
3		LIGHT BROWN RED & BLACK SILT (ML), SOME VERY FINE TO COARSE SAND, TRACES OF CLAY AND ORGANIC MATERIALS, MICACEOUS, VERY WET			
4		BROWN RED MOTTLED BLACK SILT, TRACES OF VERY FINE TO COARSE SAND, MICACEOUS, SLIGHTLY MOIST.			
5		END OF BORING			
6		END OF BORING			
7		END OF BORING (WET MATERIAL SLUMPING BACK IN THE HOLE, SLOW AUGERING.)			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-2	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 12-2-98					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 10 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		2" TOPSOIL/ORGANIC MATERIAL			
2		BROWN ORANGE FINE TO COARSE SAND, SOME SILT & CLAY, MICACEOUS, SLIGHTLY MOIST (SM)			
3		DARK GREEN CLAY, TRACE OF SILT & SAND, SLIGHTLY MOIST (CL)			
4		DARK GREEN VERY FINE TO FINE SAND, TRACES OF CLAY & SILT SLIGHTLY MOIST (SM)			
5		END OF BORING			
6		END OF BORING			
7		END OF BORING			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-5	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 12-3-98					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 10 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		TOPSOIL/ORGANIC MATERIAL, SLIGHTLY MOIST			
2		LIGHT BROWN ORANGE SILT AND VERY FINE SAND, SOME CLAY, TRACE OF FINE TO MEDIUM GRAVEL, MICACEOUS, TRACE OF LARGE GRAVEL, DRY (SM)			
3		LIGHT BROWN GRAY GREEN SILT, SOME VERY FINE TO MEDIUM SAND, TRACE OF CLAY, TRACE OF FINE TO LARGE GRAVEL, SLIGHTLY MOIST (ML)			
4		BROWN ORANGE SILT, SOME CLAY, TRACE OF FINE TO MEDIUM SAND, TRACE LARGE GRAVEL, MICACEOUS (ML)			
5		DARK GREEN CLAY SOME SILT, TRACE OF FINE GRAVEL, MICACEOUS, SLIGHTLY MOIST (CL)			
6		END OF BORING			
7		END OF BORING			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-8	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 04-13-99					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 8 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		2" TOPSOIL/ORGANIC MATERIAL			
2		RED BROWN CLAY (CL), SOME SAND & SILT, TRACES OF SMALL GRAVELS AND ORGANIC MATERIALS, MICACEOUS, MOIST			
3		BROWN SILT (ML), SOME FINE SAND, TRACES OF CLAY, AND FINE GRAVEL, MICACEOUS, SLIGHTLY MOIST			
4		END OF BORING			
5		END OF BORING			
6		END OF BORING			
7		END OF BORING			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-11	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 04-13-99					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 4.0 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		2" TOPSOIL/ORGANIC MATERIAL			
2		RED BROWN CLAY & SILT (CL), MICACEOUS, TRACES OF ORGANIC MATERIALS, SLIGHTLY MOIST			
3		GREEN BROWN RED SILT (ML), TRACES OF CLAY & ORGANIC MATERIALS, MICACEOUS, SLIGHTLY MOIST			
4		DARK GREEN SILT (ML), TRACES OF VERY FINE SAND AND ORGANIC MATERIALS, MICACEOUS, SLIGHTLY MOIST			
5		BROWN ORANGE FINE TO COARSE SILTY SAND (SM), TRACE OF FINE TO MEDIUM GRAVEL, MICACEOUS, SLIGHTLY MOIST (HEATHERED ROCK WITH QUARTZ)			
6		END OF BORING			
7		END OF BORING			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-14	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 04-14-99					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 9.0 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		TOPSOIL/ORGANIC MATERIAL			
2		RED CLAY (CL), SOME SILT, TRACE OF ORGANIC MATERIALS, SLIGHTLY MOIST			
3		RED BROWN GREEN CLAY & SILT (CL), TRACES OF VERY FINE SAND AND ORGANIC MATERIALS, MICACEOUS, SLIGHTLY MOIST			
4		DARK GREEN SILT (ML), SOME CLAY, TRACE OF VERY FINE SAND, MICACEOUS, SLIGHTLY MOIST			
5		END OF BORING			
6		END OF BORING			
7		END OF BORING			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-3	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 12-2-98					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 10 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		2" TOPSOIL/ORGANIC MATERIAL			
2		FILL MATERIAL: DARK BROWN CLAY, SOME SILT & FINE TO COARSE SAND, TRACES OF FINE TO COARSE GRAVEL & SMALL COBBLES, SLIGHTLY MOIST (CL)			
3		ORANGE BROWN SILT TRACE OF VERY FINE SAND & CLAY, MICACEOUS, SLIGHTLY MOIST (ML)			
4		BROWN GREEN VERY FINE TO MEDIUM SAND, SOME SILT, TRACE OF CLAY & FINE GRAVEL, MICACEOUS, SLIGHTLY MOIST, HARD, WEATHERED ROCK (SM)			
5		BROWN GREEN VERY FINE TO MEDIUM SAND, SOME SILT, TRACE OF CLAY & FINE GRAVEL, MICACEOUS, SLIGHTLY MOIST, HARD, WEATHERED ROCK (SM)			
6		END OF BORING			
7		END OF BORING			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-6	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 12-3-98					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 6.7 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		LIGHT GREEN BROWN ORGANIC SILT, SLIGHTLY MOIST, MICACEOUS (ML)			
2		LIGHT GREEN BROWN SILTY, VERY FINE TO FINE SAND MICACEOUS, TRACE OF SMALL GRAVEL, SLIGHTLY MOIST (SM)			
3		BROWN SILT, SOME SAND & CLAY, TRACE OF SMALL GRAVEL, MICACEOUS, SLIGHTLY MOIST (ML)			
4		BROWN ORANGE CLAY SOME SILT MICACEOUS SLIGHTLY MOIST (CL)			
5		BROWN GRAY CLAY SOME SILT, TRACE OF VERY FINE SAND, MICACEOUS, SLIGHTLY MOIST (CL)			
6		BROWN MOTTLED VERY FINE TO MEDIUM SAND SOME SILT & CLAY, MICACEOUS, SLIGHTLY MOIST, HARD, WEATHERED ROCK (SM)			
7		END OF BORING REFUSAL ON ROCK			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-9	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 04-13-99					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 4.0 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		2" TOPSOIL/ORGANIC MATERIAL			
2		BROWN SILT (ML), SOME FINE SAND, TRACES OF CLAY AND FINE GRAVEL, MICACEOUS, SLIGHTLY MOIST			
3		GREEN BROWN FINE TO COARSE SILTY SAND (SM), TRACES OF FINE GRAVEL, MICACEOUS, SLIGHTLY MOIST			
4		LIGHT BROWN PINK, FINE TO COARSE SAND AND GRAVEL, TRACE OF SILT, MICACEOUS, SLIGHTLY MOIST (HARD WEATHERED ROCK)			
5		END OF BORING (AUGER REFUSAL ON WEATHERED ROCK, VERY SLOW HAND AUGERING)			
6		END OF BORING			
7		END OF BORING			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-12	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 04-14-99					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 6.0 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		1" TOPSOIL/ORGANIC MATERIAL			
2		ORANGE BROWN SILTY CLAY (CL), TRACES VERY FINE SAND AND ORGANIC MATERIALS, MICACEOUS, SLIGHTLY MOIST			
3		DARK BROWN CLAY (CL), TRACES OF FINE TO COARSE SAND AND FINE GRAVEL, MICACEOUS, MOIST, AT 3' WET			
4		LIGHT BROWN SILTY CLAY (CL), TRACES OF COARSE SAND, MICACEOUS, DRY TO SLIGHTLY MOIST			
5		END OF BORING (REFUSAL ON OBSTRUCTION AT 6.0)			
6		END OF BORING			
7		END OF BORING			
8		END OF BORING			
9		END OF BORING			
10		END OF BORING			

SCS ENGINEERS		BORING LOG		WELL NO. HA-15	
PROJECT NAME: NEW CUT LANDFILL					
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: _____					
SCS JOB NO.: 296024.01 COORDINATES: _____					
DATE STARTED: 04-14-99					
DRILLING CONTR.: _____					
DRILLING METHOD: HAND AUGER WELL DIAMETER: N/A					
INSPECTOR: J. STOFFEL TOTAL DEPTH: 7 FEET					
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION			
1		DARK BROWN CLAY (CL), TRACE OF SILT, MICACEOUS, MOIST			
2		ORANGE BROWN CLAY (CL), TRACES OF SILT AND VERY FINE GRAVEL, MICACEOUS, SLIGHTLY MOIST, AT 3' VERY WET			
3		BROWN ORANGE GREEN CLAY (CL), SOME SILT AND FINE TO COARSE GRAVEL, TRACES OF VERY FINE SAND AND SMALL			

SCS ENGINEERS BORING LOG		WELL NO. VW-16
PROJECT NAME: NEW CUT LANDFILL		
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: 529.18		
SCS JOB NO.: 296024.02 TASK 6 COORDINATES: 574815.25		
DATE STARTED: 8-20-98 1370148.53		
DRILLING CONTR.: GILES ENGINEERING ASSOC.		
DRILLING METHOD: HOLLOW STEM CORE WELL DIAMETER: 8 INCH		
INSPECTOR: J. STOFFEL TOTAL DEPTH: 60 FEET		
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION
1		4" TOPSOIL LIGHT SILT, SOME SMALL TO MEDIUM GRAVEL TRACE CLAY, DRY
2		
3		
4		ORANGE BROWN CLAY, SOME SMALL GRAVEL, SLIGHTLY MOIST, NO LFG ODOR
5		
6		
7		
8		
9		
10		
11		
12		
13		ORANGE BROWN CLAY, SLIGHTLY MOIST TO MOST, NO LFG ODOR
14		
15		
16		
17		ORANGE BROWN CLAY, SLIGHTLY MOIST, NO LFG ODOR
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		RED-SLIGHTLY BROWN CLAY, SOME SILT, SLIGHTLY MOIST, NO LFG ODOR
29		
30		
31		
32		
33		
34		
35		
36		
37		RED BROWN SILT, TRACE CLAY, MICASIOUS, DRY NO LFG ODOR
38		
39		
40		
41		RED BROWN SILT, SOME CLAY, MICASIOUS, DRY NO LFG ODOR
42		
43		
44		
45		
46		
47		
48		
49		
50		RED BROWN SILT, CLAY, TRACE SILT, MICASIOUS, SLIGHTLY MOIST TO MOST, NO LFG ODOR
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		END OF BORING

SCS ENGINEERS BORING LOG		WELL NO. VW-17
PROJECT NAME: NEW CUT LANDFILL		
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: 528.95		
SCS JOB NO.: 296024.02 TASK 6 COORDINATES: 574990.02		
DATE STARTED: 8-21-98 1370221.42		
DRILLING CONTR.: GILES ENGINEERING ASSOC.		
DRILLING METHOD: HOLLOW STEM CORE WELL DIAMETER: 8 INCH		
INSPECTOR: J. STOFFEL TOTAL DEPTH: 58 FEET		
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION
1		LIGHT BROWN SILT, SOME SMALL TO MEDIUM GRAVEL TRACE CLAY, DRY, NO LFG ODOR
2		
3		ORANGE BROWN CLAY, SOME FINE TO MEDIUM GRAVEL, TRACE SILT, NO LFG ODOR
4		
5		
6		
7		
8		BROWN CLAY, TRACE FINE TO MEDIUM GRAVEL, SLIGHTLY MOIST, NO LFG ODOR
9		
10		
11		
12		
13		
14		DARK BROWN CLAY, TRACE FINE TO COARSE SAND, SLIGHTLY MOIST, NO LFG ODOR
15		
16		GRAVEL LAYER (1/4" TO 1")
17		
18		
19		
20		LIGHT BROWN CLAY & SILT TRACE FINE TO COARSE SAND, SLIGHTLY MOIST, NO LFG ODOR
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		RED BROWN SILT & CLAY MICASIOUS, SLIGHTLY MOIST NO LFG ODOR
38		
39		
40		
41		RED BROWN SILT & CLAY MICASIOUS, SLIGHTLY MOIST TRACE FINE TO MEDIUM GRAVEL, NO LFG ODOR
42		
43		
44		
45		
46		
47		
48		
49		
50		BROWN CLAY, TRACE SILT, TRACE FINE TO MEDIUM GRAVEL, NO LFG ODOR
51		
52		
53		
54		
55		SOME HARD MATERIAL AT 55-58" POSSIBLE STONE
56		
57		
58		END OF BORING

SCS ENGINEERS BORING LOG		WELL NO. VW-18
PROJECT NAME: NEW CUT LANDFILL		
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: 508.19		
SCS JOB NO.: 296024.02 TASK 6 COORDINATES: 575308.90		
DATE STARTED: 8-3-98 137352.05		
DRILLING CONTR.: GILES ENGINEERING ASSOC.		
DRILLING METHOD: HOLLOW STEM CORE WELL DIAMETER: 8 INCH		
INSPECTOR: J. STOFFEL TOTAL DEPTH: 50 FEET		
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION
1		3" TOPSOIL
2		
3		
4		ORANGE BROWN SILT, SOME FINE TO COARSE SAND, DRY, NO LFG ODOR
5		
6		
7		
8		
9		
10		LIGHT BROWN SILT, TRACE FINE TO COARSE SAND, DRY, NO LFG ODOR
11		
12		
13		
14		
15		LIGHT BROWN/BROWN SILT, TRACE FINE TO MEDIUM SAND, NO LFG ODOR
16		
17		
18		
19		
20		
21		
22		BROWN SILT, TRACE FINE TO MEDIUM SAND DRY, NO LFG ODOR
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		DARKER BROWN SILT, MICASIOUS TRACE FINE TO MEDIUM SAND, TRACE CLAY, DRY, NO LFG ODOR
34		
35		
36		
37		
38		
39		
40		FINE TO MEDIUM GRAVEL LAYER, NO LFG ODOR
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		BROWN SILT, TRACE FINE SAND TRACE CLAY, NO LFG ODOR
51		
52		
53		
54		
55		
56		
57		
58		END OF BORING

SCS ENGINEERS BORING LOG		WELL NO. VW-19
PROJECT NAME: NEW CUT LANDFILL		
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: 470.85		
SCS JOB NO.: 296024.02 TASK 6 COORDINATES: 575563.91		
DATE STARTED: 9-2-98 1370511.78		
DRILLING CONTR.: GILES ENGINEERING ASSOC.		
DRILLING METHOD: HOLLOW STEM CORE WELL DIAMETER: 8 INCH		
INSPECTOR: J. STOFFEL TOTAL DEPTH: 20 FEET		
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION
1		4" LIGHT BROWN SILT, TRACE CLAY, SOME FINE GRAVEL, DRY, NO LFG ODOR
2		
3		
4		LIGHT BROWN ORANGE SILT, TRACE CLAY, SOME FINE GRAVEL, DRY, NO LFG ODOR
5		
6		
7		
8		
9		
10		GREEN CLAY & SILT SLIGHTLY MOIST, NO LFG ODOR
11		
12		
13		LIGHT BROWN SAND & SILT TRACE FINE GRAVEL SLIGHTLY MOIST, NO LFG ODOR
14		
15		
16		LIGHT BROWN/BROWN SILT, TRACE FINE TO MEDIUM SAND, NO LFG ODOR
17		
18		
19		18-19' ESTIMATED WATER TABLE
20		END OF BORING

SCS ENGINEERS BORING LOG		WELL NO. VW-21
PROJECT NAME: NEW CUT LANDFILL		
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: 435.59		
SCS JOB NO.: 296024.02 TASK 6 COORDINATES: 576382.99		
DATE STARTED: 9-3-98 1370953.05		
DRILLING CONTR.: GILES ENGINEERING ASSOC.		
DRILLING METHOD: HOLLOW STEM CORE WELL DIAMETER: 8 INCH		
INSPECTOR: J. STOFFEL TOTAL DEPTH: 20 FEET		
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION
1		3" TOPSOIL
2		
3		
4		
5		LIGHT BROWN GREEN SILT, SOME FINE TO COARSE SAND, DRY, NO LFG ODOR
6		
7		
8		
9		
10		YELLOW BROWN SILT, TRACE CLAY, MICASIOUS, DRY NO LFG ODOR
11		
12		
13		
14		
15		BROWN GREEN SILT & CLAY, DRY NO LFG ODOR
16		
17		
18		
19		BROWN CLAY, SILT, DRY, NO LFG ODOR
20		END OF BORING

SCS ENGINEERS BORING LOG		WELL NO. VW-23
PROJECT NAME: NEW CUT LANDFILL		
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: 410.90		
SCS JOB NO.: 296024.02 TASK 6 COORDINATES: 577007.34		
DATE STARTED: 9-2-98 1370007.34		
DRILLING CONTR.: GILES ENGINEERING ASSOC.		
DRILLING METHOD: HOLLOW STEM CORE WELL DIAMETER: 8 INCH		
INSPECTOR: J. STOFFEL TOTAL DEPTH: 20 FEET		
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION
1		
2		BROWN SILT, TRACE CLAY & FINE SAND, SOME FINE GRAVEL, DRY, NO LFG ODOR
3		
4		
5		
6		
7		
8		
9		LIGHT GREEN CLAY & SILT, SLIGHTLY MOIST NO LFG ODOR
10		
11		
12		
13		
14		BROWN SILT & SAND, SOME GRAVEL/CEMENTED SAND DRY, NO LFG ODOR
15		
16		
17		
18		LIGHT BROWN SILT & SAND, DRY NO LFG ODOR
19		
20		END OF BORING

SCS ENGINEERS BORING LOG		WELL NO. VW-20
PROJECT NAME: NEW CUT LANDFILL		
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: 437.38		
SCS JOB NO.: 296024.02 TASK 6 COORDINATES: 576014.54		
DATE STARTED: 9-2-98 1370807.69		
DRILLING CONTR.: GILES ENGINEERING ASSOC.		
DRILLING METHOD: HOLLOW STEM CORE WELL DIAMETER: 8 INCH		
INSPECTOR: J. STOFFEL TOTAL DEPTH: 25.5 FEET		
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION
1		4" TOPSOIL
2		
3		
4		
5		LIGHT BROWN GREEN SILT, SOME FINE TO COARSE SAND, DRY, NO LFG ODOR
6		
7		
8		
9		
10		
11		
12		
13		
14		LIGHT BROWN SILT, SOME FINE TO COARSE SAND, DRY, NO LFG ODOR
15		
16		
17		
18		
19		
20		
21		LIGHT BROWN GREEN SILT & CLAY TRACE FINE SAND NO LFG ODOR
22		
23		
24		
25		END OF BORING

SCS ENGINEERS BORING LOG		WELL NO. VW-22
PROJECT NAME: NEW CUT LANDFILL		
CLIENT: HOWARD COUNTY, MD. SURFACE ELEV.: 393.62		
SCS JOB NO.: 296024.02 TASK 6 COORDINATES: 576753.19		
DATE STARTED: 9-2-98 1370453.02		
DRILLING CONTR.: GILES ENGINEERING ASSOC.		
DRILLING METHOD: HOLLOW STEM CORE WELL DIAMETER: 8 INCH		
INSPECTOR: J. STOFFEL TOTAL DEPTH: 10 FEET		
DEPTH (FT.)	SYMBOL LOG	DESCRIPTION
1		3" BROWN SILT, TRACE SAND, TRACE CLAY, DRY, NO LFG ODOR
2		
3		
4		DARK GREEN CLAY & SILT, SLIGHTLY MOIST NO LFG ODOR
5		
6		
7		
8		
9		LIGHT BROWN CLAY, SOME SILT, SLIGHTLY MOIST NO LFG ODOR
10		END OF BORING

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

RECORDED: *[Signature]* DATE: 9/14/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 9/16/99

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 9/15/99

M: 296024.01 \90PERCENT\BORING(6,17,18,19,20,21,22,23)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS: *[Signature]* DATE: 9/16/99

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES: *[Signature]* DATE: 9/16/99

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 20190
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	BJD				
DRN.	BJD				
CHK.					
DATE:	06-02-99	BY	NO.	REVISION	DATE

SOIL BORING LOGS

NEW CUT LANDFILL IMPROVEMENTS

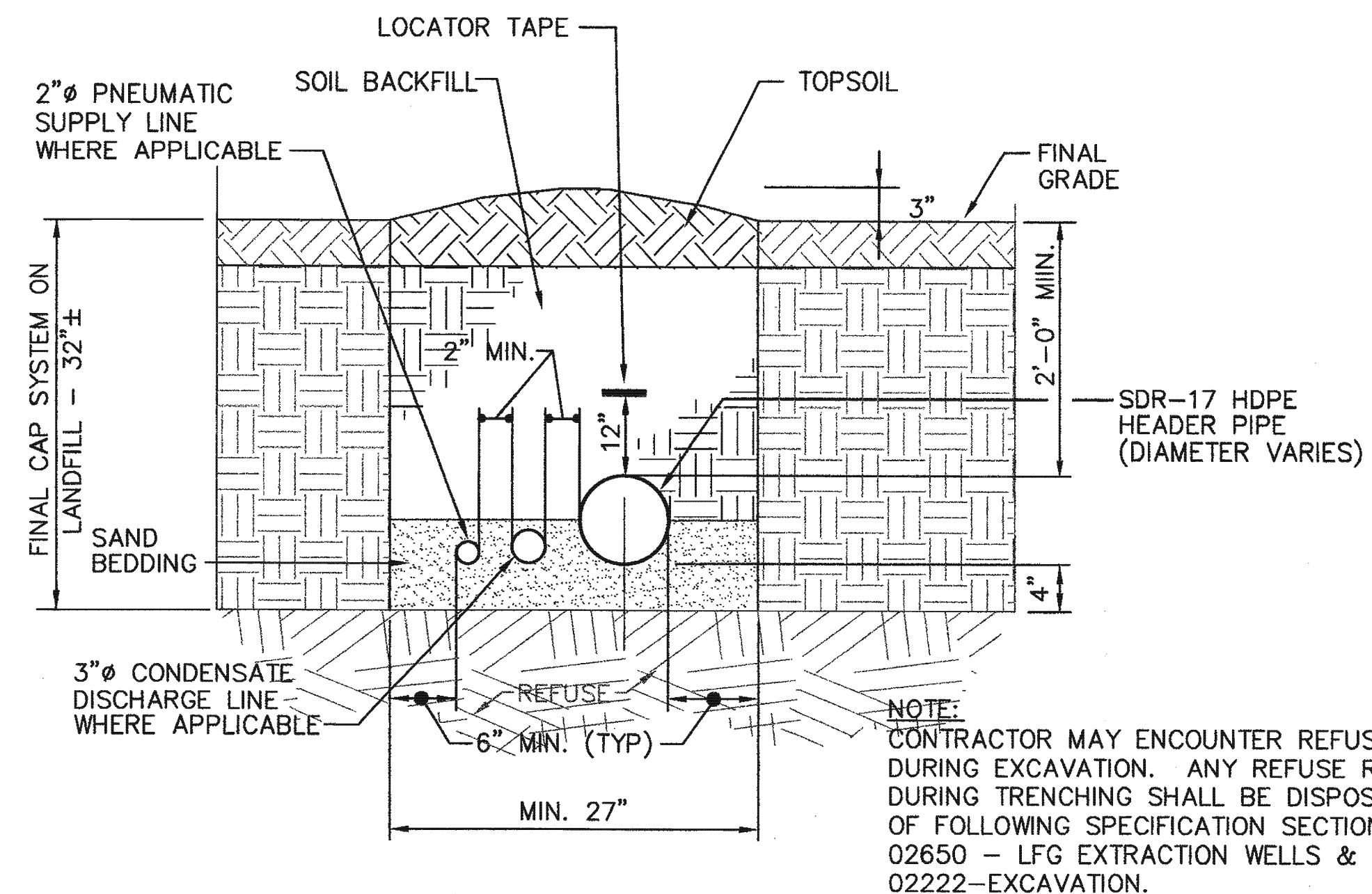
CAPITAL PROJECT NO. C-0237-H

2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

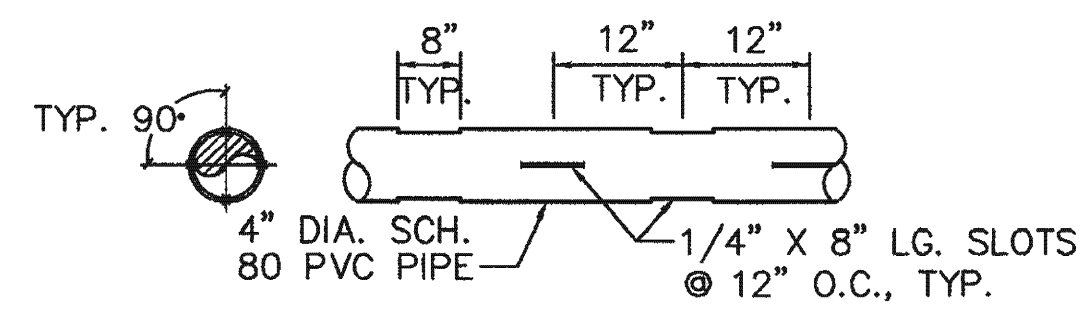
SCALE: NONE

SHEET 39 OF 39

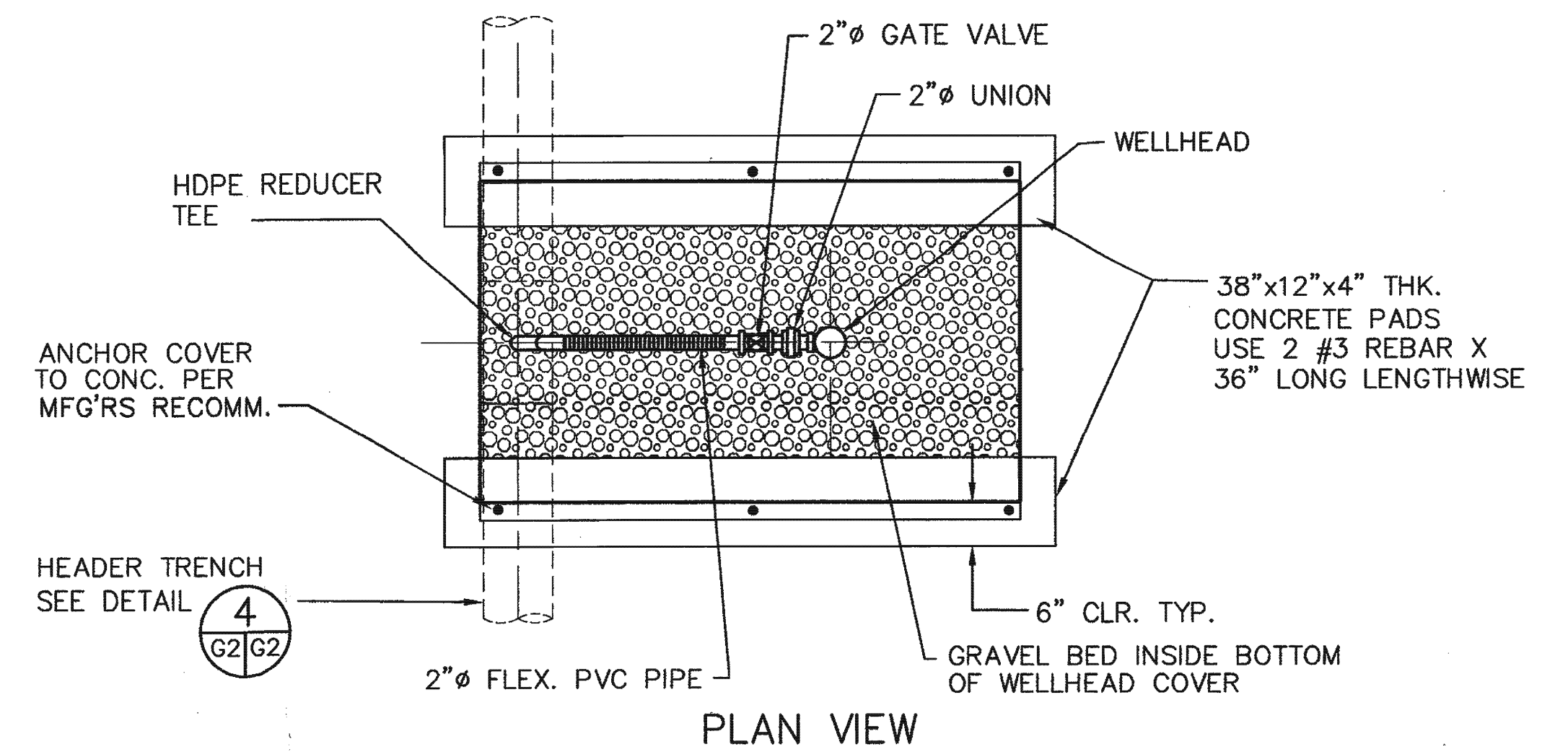
SDP-99-109



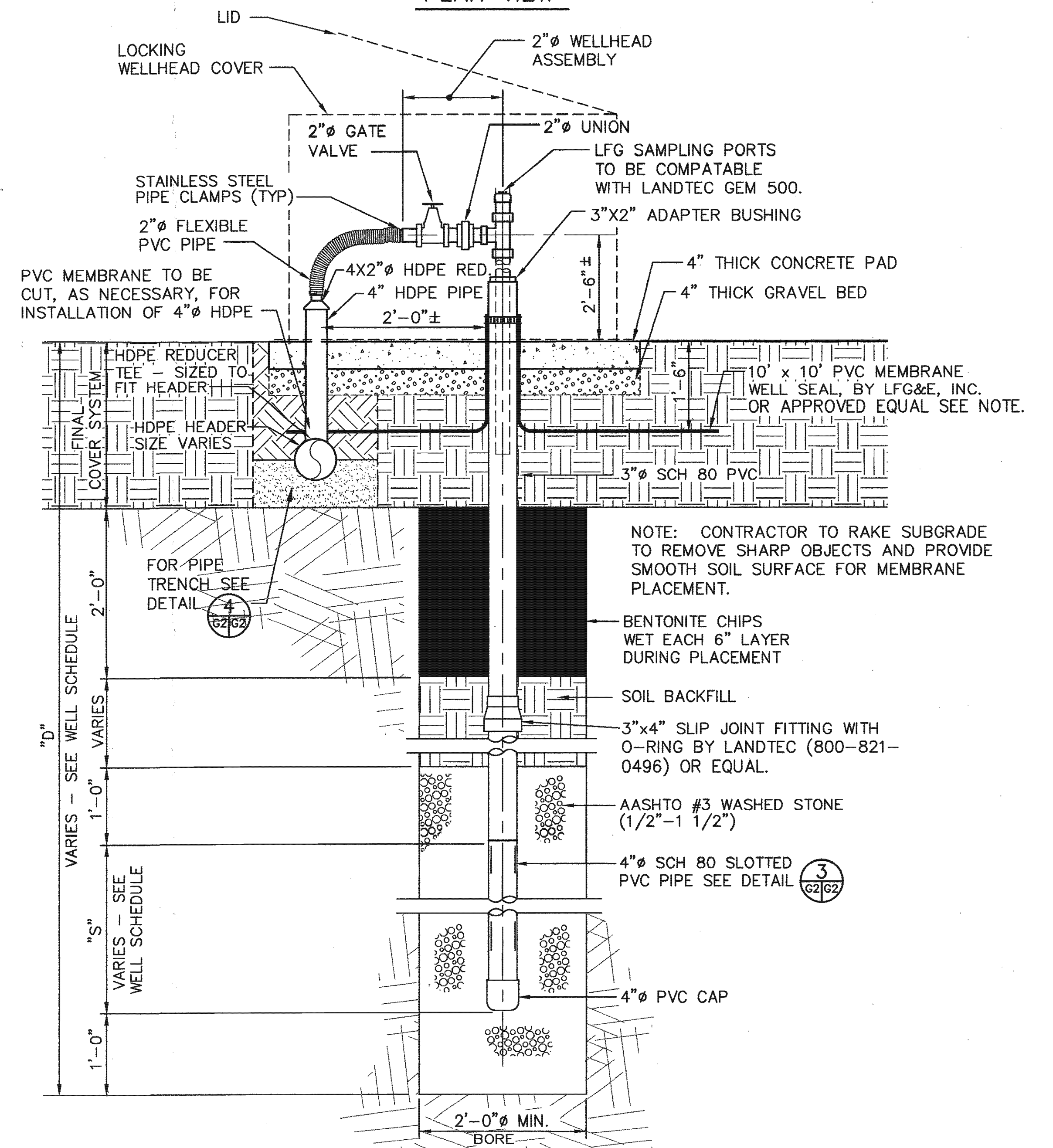
PIPE TRENCH DETAIL 4
NO SCALE



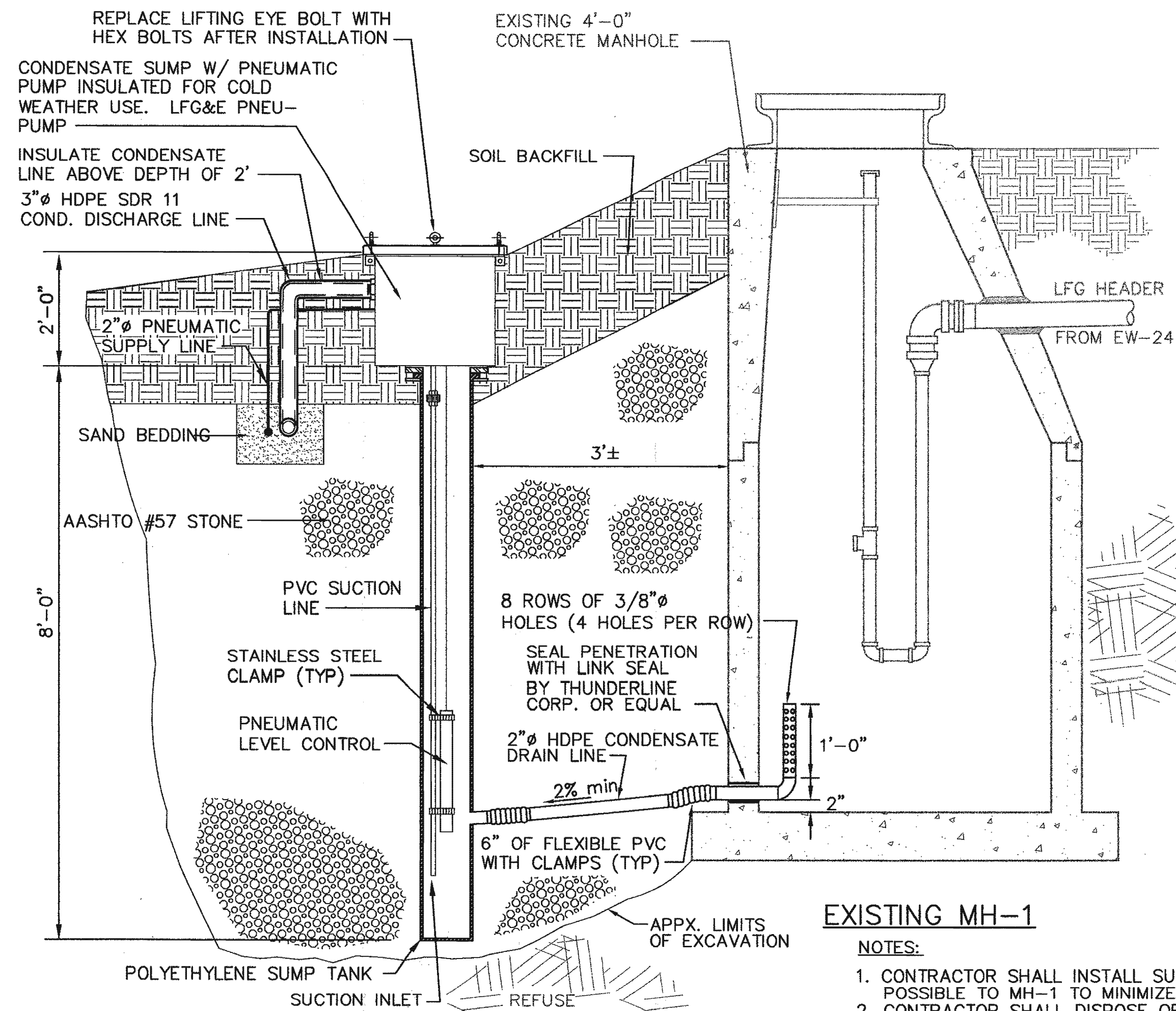
SLOTTED PIPE FOR VERTICAL WELLS DETAIL 3
NO SCALE



PLAN VIEW



EXTRACTION WELL DETAIL 1
NO SCALE



CONDENSATE SUMP DETAIL 2
NO SCALE

EXTRACTION WELL SCHEDULE				
WELL NO.	NORTHING	EASTING	"D" WELL DEPTH (FT)	"S" SLOTTED PIPE LENGTH (FT)
W3-1	575054	1369676	25	10
W3-2	574891	1369704	25	10
W3-3	574983	1369776	25	10
W3-4	575073	1369832	25	10
W3-5	575132	1369957	25	10
W3-6	575219	1369871	25	10
W3-7	575266	1369995	25	10
W3-8	575360	1369918	25	10
W3-9	575401	1370024	25	10
W3-10	575310	1370122	25	10
W3-11	575487	1370136	35	20
W3-12	575621	1370068	40	25
W3-13	575814	1370127	50	35
W3-14	575992	1370033	45	30
W3-15	575871	1369907	35	20
W3-16	575721	1369968	35	20
W3-17	575790	1369788	25	10
W3-18	575658	1369841	25	10
W3-19	575571	1369915	25	10
W3-20	575496	1369965	25	10
W3-21	575667	1369724	25	10
W3-22	575542	1369773	25	10
W3-23	575542	1369656	30	15
W3-24	575432	1369718	25	10
W3-25	575450	1369839	25	10
W3-26	575329	1369789	25	10
W3-27	575427	1369578	30	15
W3-28	575318	1369649	30	15
W3-29	575324	1369498	30	15
W3-30	575190	1369578	30	15
W3-31	575065	1369542	25	10
W3-32	575194	1369736	30	15
W3-33	575017	1369172	30	15
W3-34	574983	1369212	35	20
W3-35	575238	1370139	35	20
W3-36	575120	1370065	35	20

NOTE:
WELL DEPTHS ("D") ARE BASED ON DRILLING FROM PROPOSED GRADES INDICATED ON SHEET G-1

EXISTING MH-1

- NOTES:
- CONTRACTOR SHALL INSTALL SUMP AS CLOSE AS POSSIBLE TO MH-1 TO MINIMIZE EXCAVATION.
 - CONTRACTOR SHALL DISPOSE OF REFUSE AS SPECIFIED IN SECTION 02222 - EXCAVATION.
 - CONTRACTOR SHALL BACKFILL EXCAVATION WITH #57 STONE OR AGGREGATE AS APPROVED BY ENGINEER, TO FACILITATE COMPACTION.
 - CONTRACTOR SHALL FOLLOW OSHA CONFINED SPACE ENTRY PROCEDURES FOR WORK WITHIN MANHOLE.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 22090
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	SCW				
DRN.	JGR				
CHK.	ERP				
DATE:	6-2-99	BY:	NO.	REVISION	DATE

LFG COLLECTION SYSTEM DETAILS

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

3rd ELECTION DISTRICT

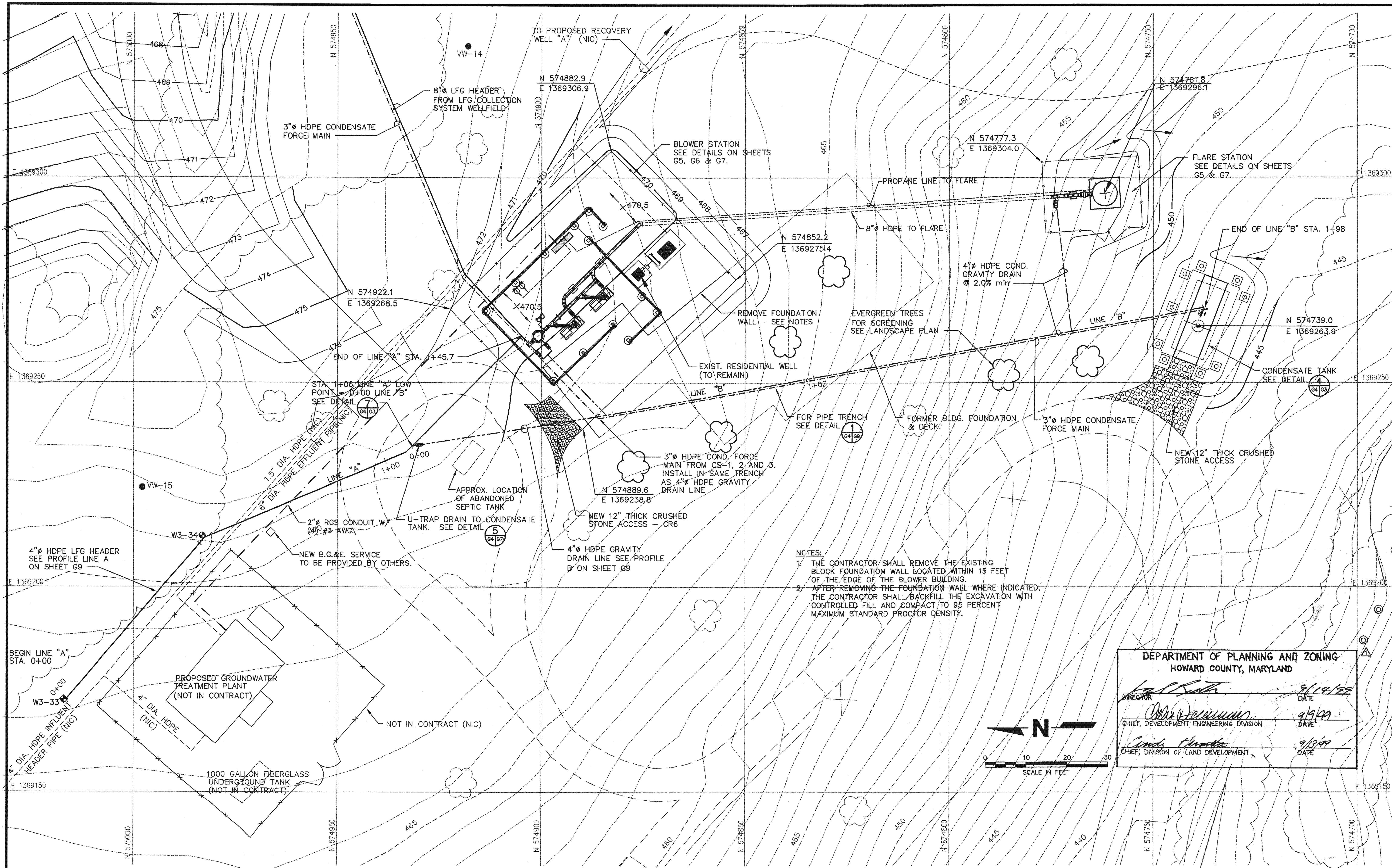
HOWARD COUNTY, MARYLAND

SCALE:

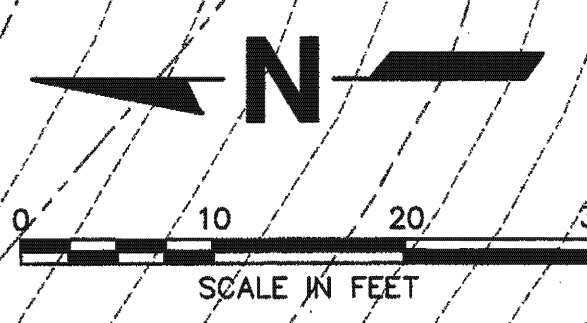
AS NOTED

SHEET

G2 OF 11



- NOTES:**
1. THE CONTRACTOR SHALL REMOVE THE EXISTING BLOCK FOUNDATION WALL LOCATED WITHIN 15 FEET OF THE EDGE OF THE BLOWER BUILDING.
 2. AFTER REMOVING THE FOUNDATION WALL WHERE INDICATED, THE CONTRACTOR SHALL BACKFILL THE EXCAVATION WITH CONTROLLED FILL AND COMPACT TO 95 PERCENT MAXIMUM STANDARD PROCTOR DENSITY.



DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

DIRECTOR: *[Signature]* 9/19/99 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 9/19/99 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* 9/19/99 DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 7/6/99 DATE
DIRECTOR OF PUBLIC WORKS

[Signature] 7/6/99 DATE
CHIEF, BUREAU OF WASTE MANAGEMENT

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 22090
PH. (703) 471-6150
FAX. (703) 471-6676



DES.	BJD/ERP	NO.	REVISION	DATE
DRN.	BJD			
CHK.	ERP			
DATE:	6-2-99	MRG	ADDED P&Z SIGN. BLOCK	9-8-99
BY:	NO.			

**BLOWER FLARE
SITE PLAN LAYOUT**

**NEW CUT LANDFILL
IMPROVEMENTS**

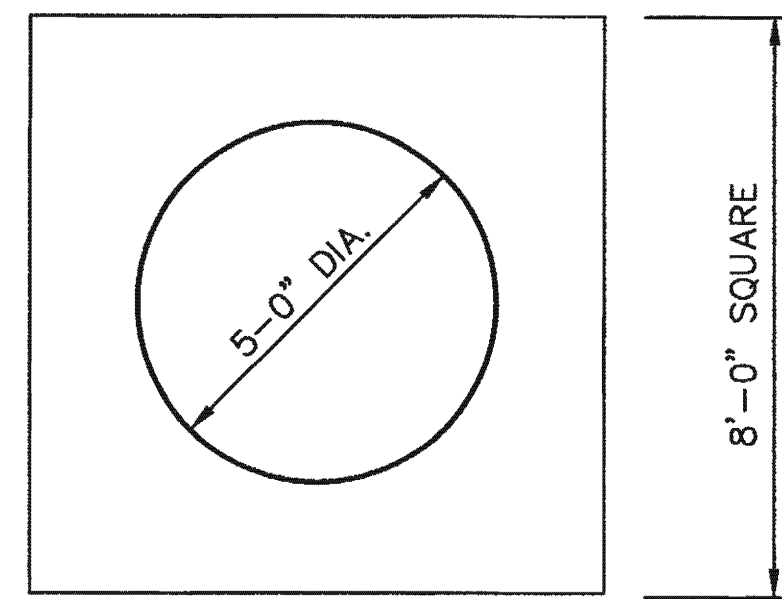
CAPITAL PROJECT NO. C-0237-H
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE:
1"=10'

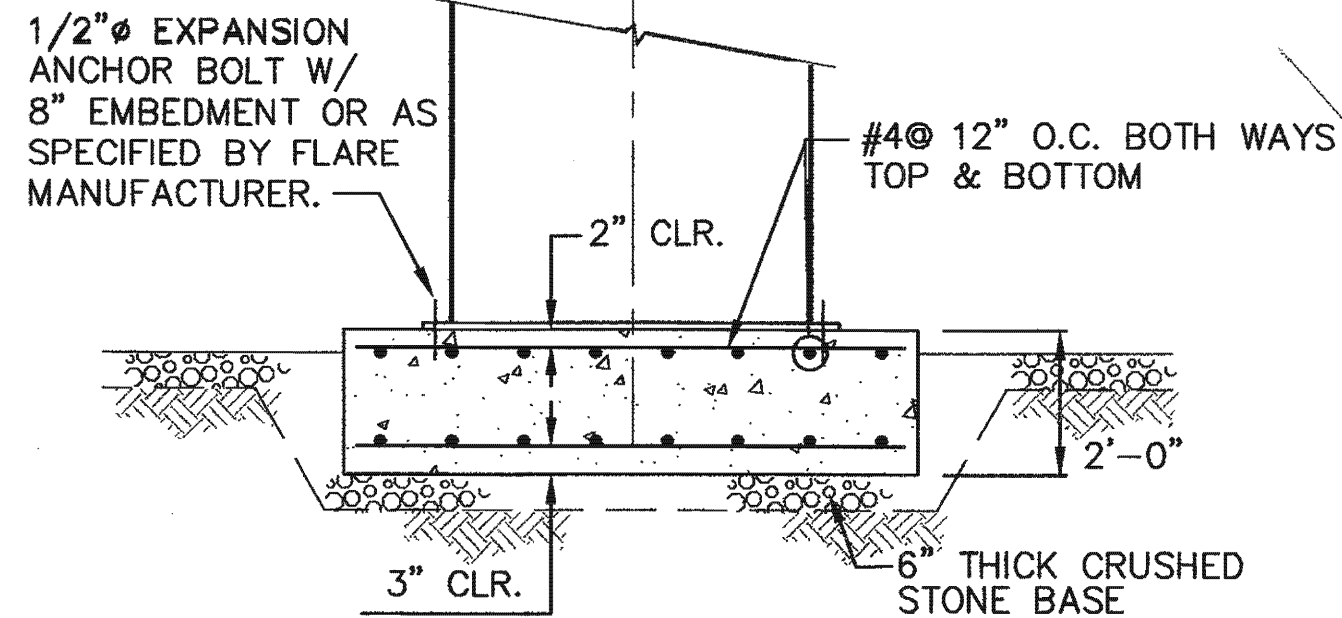
SHEET
G4 OF 11

SDP-99-109

NOTE: CONDUITS FOR FLARE ELECTRICAL/CONTROLS SHALL PENETRATE THE SLAB - SEE SHEET G10 & G11.

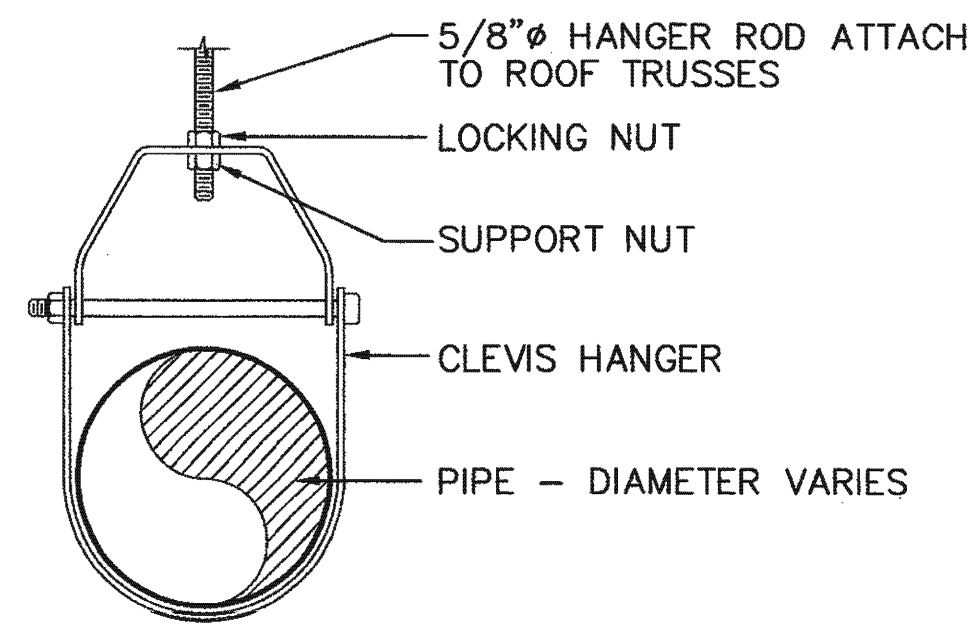


PLAN



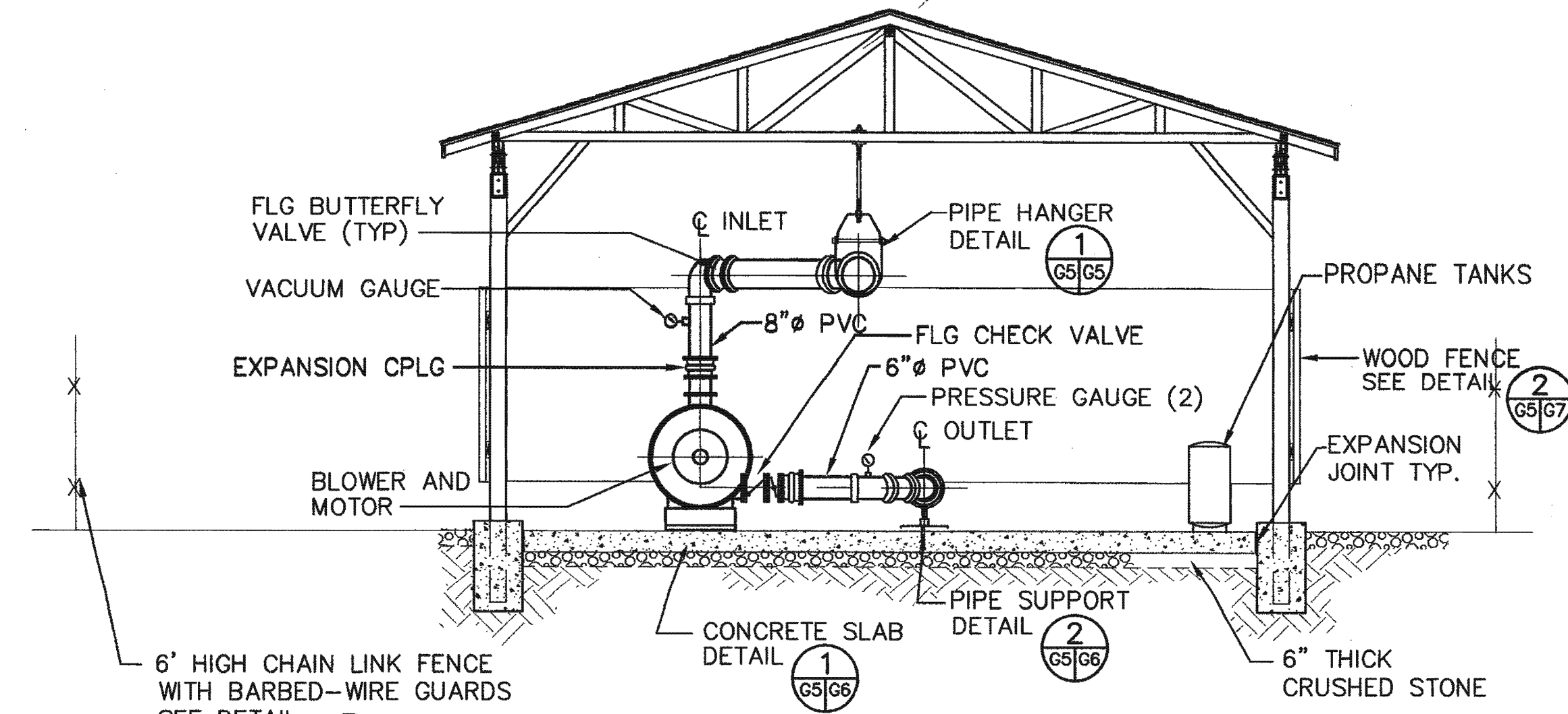
FLARE STACK FOUNDATION DETAIL

SCALE: 3/8"=1'-0"



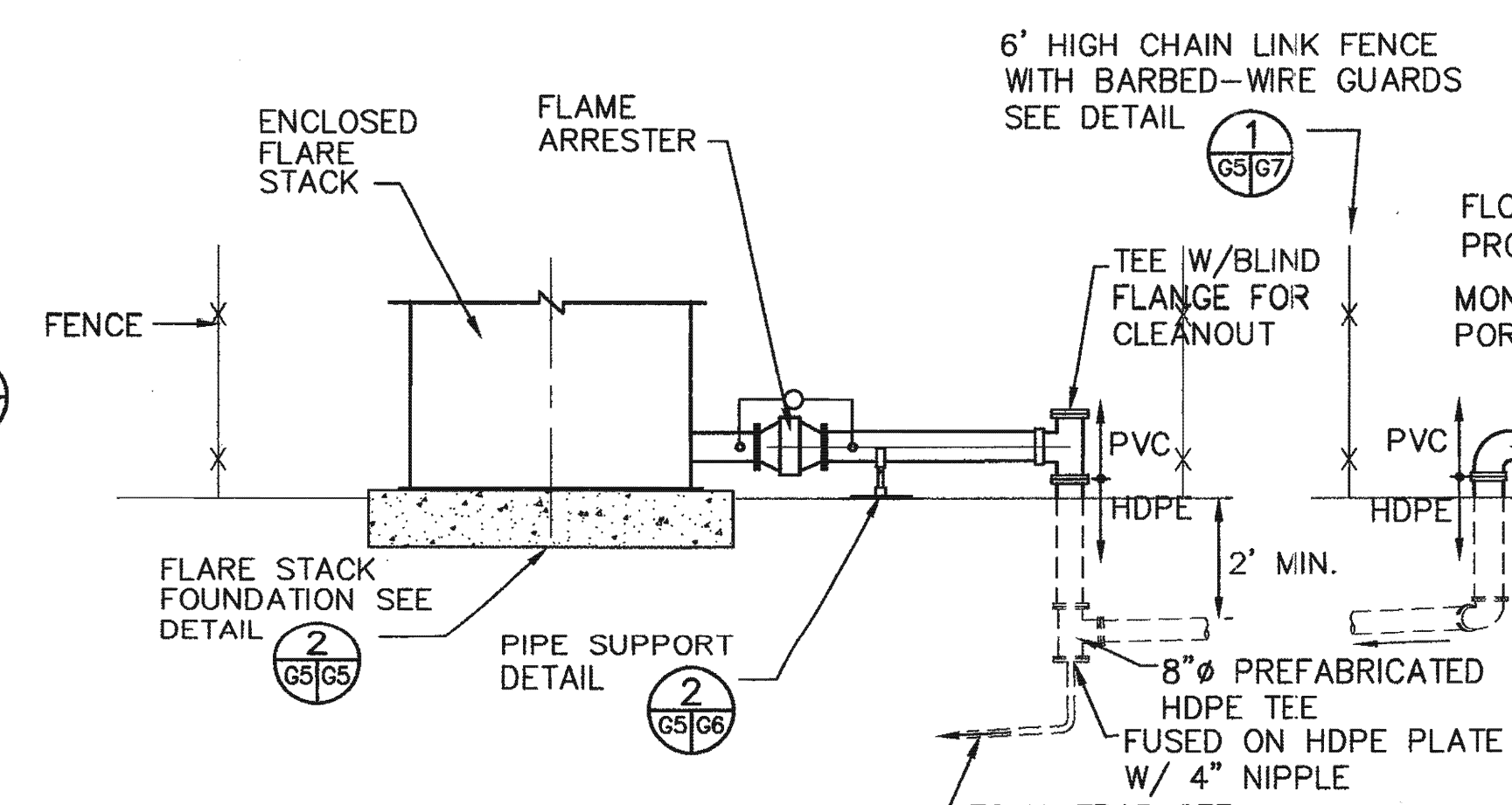
PIPE HANGER DETAIL

NO SCALE



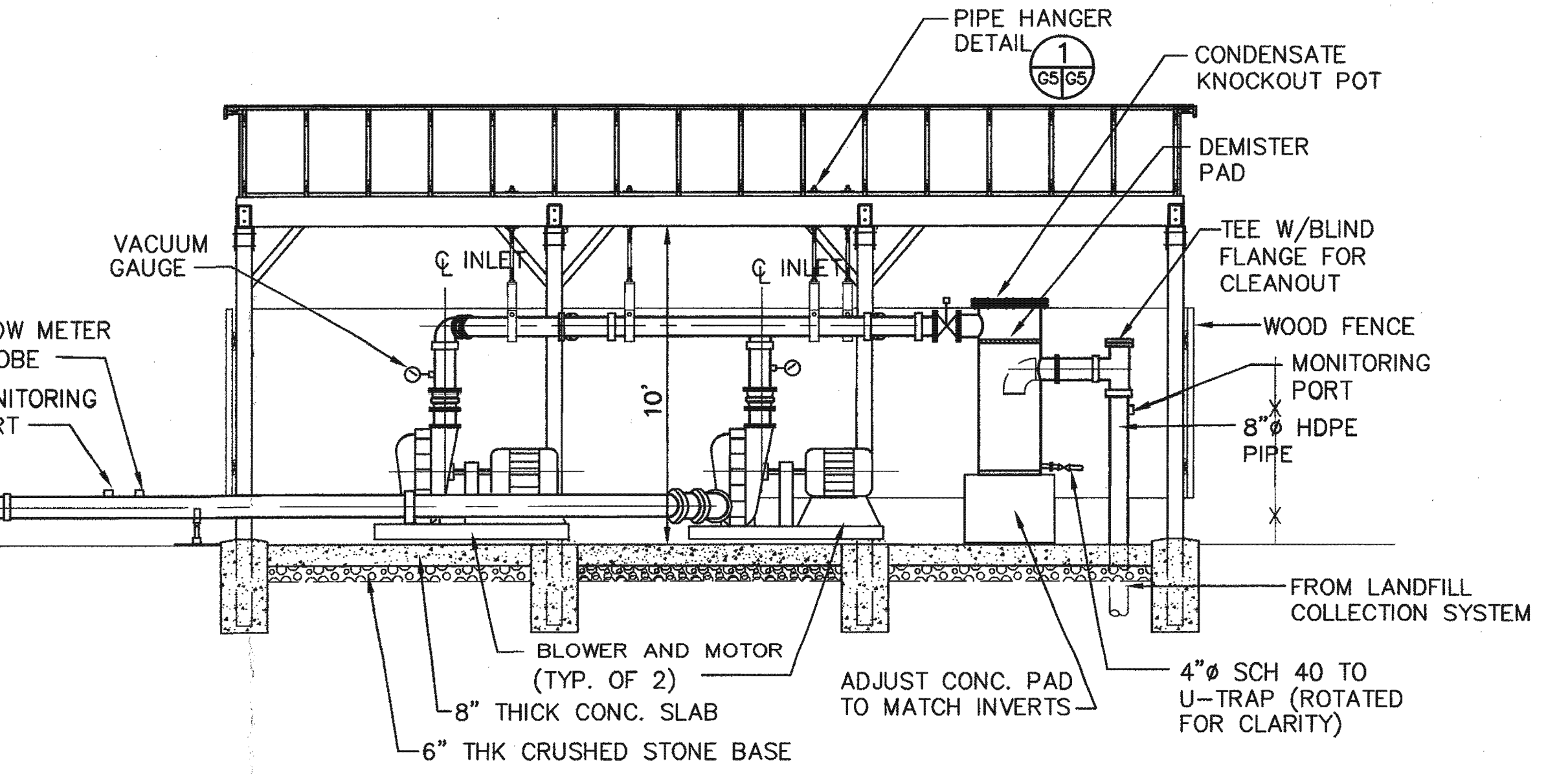
BLOWER SECTION B

SCALE: 1/4"=1'-0"



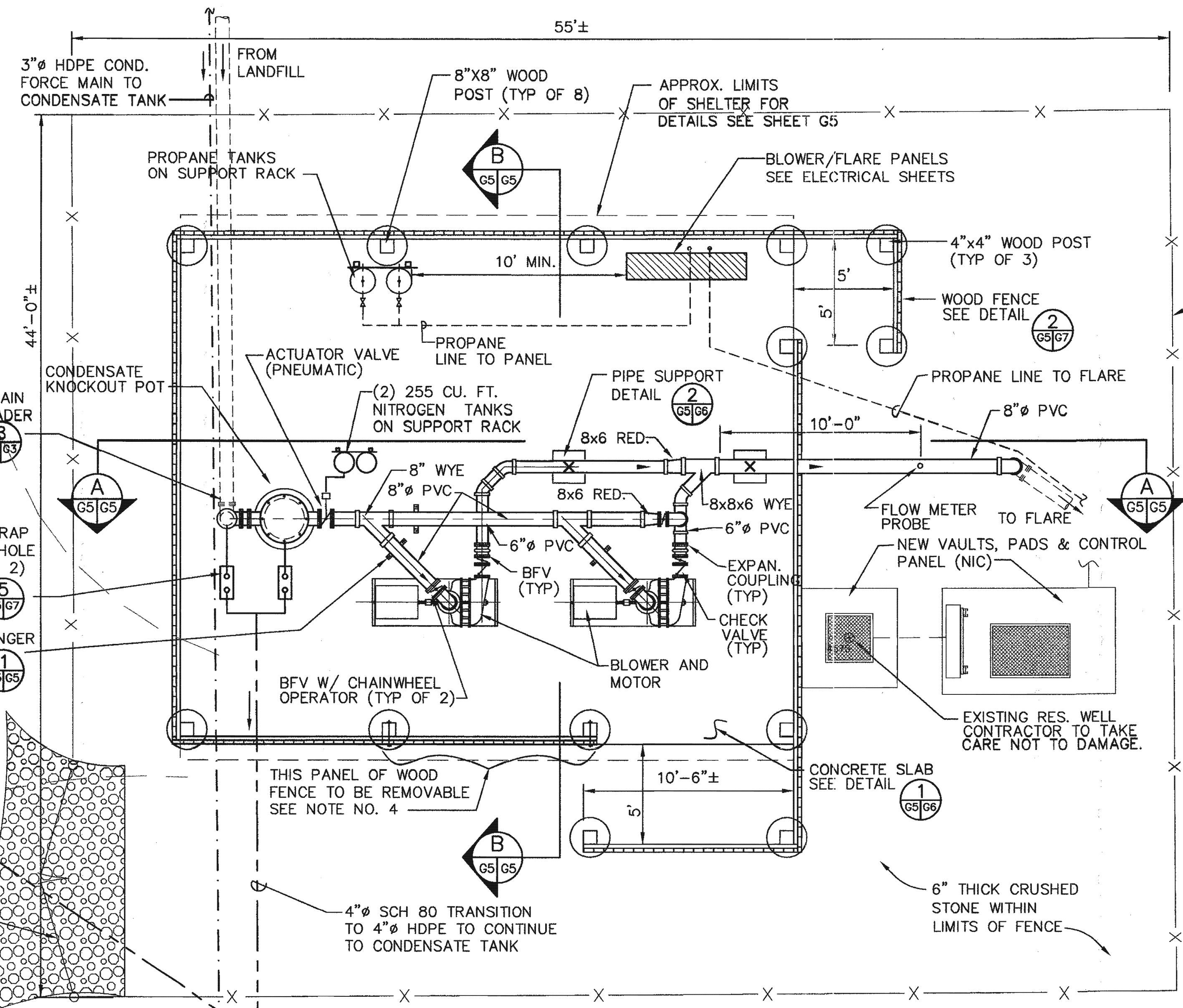
BLOWER SECTION C

SCALE: 1/4"=1'-0"



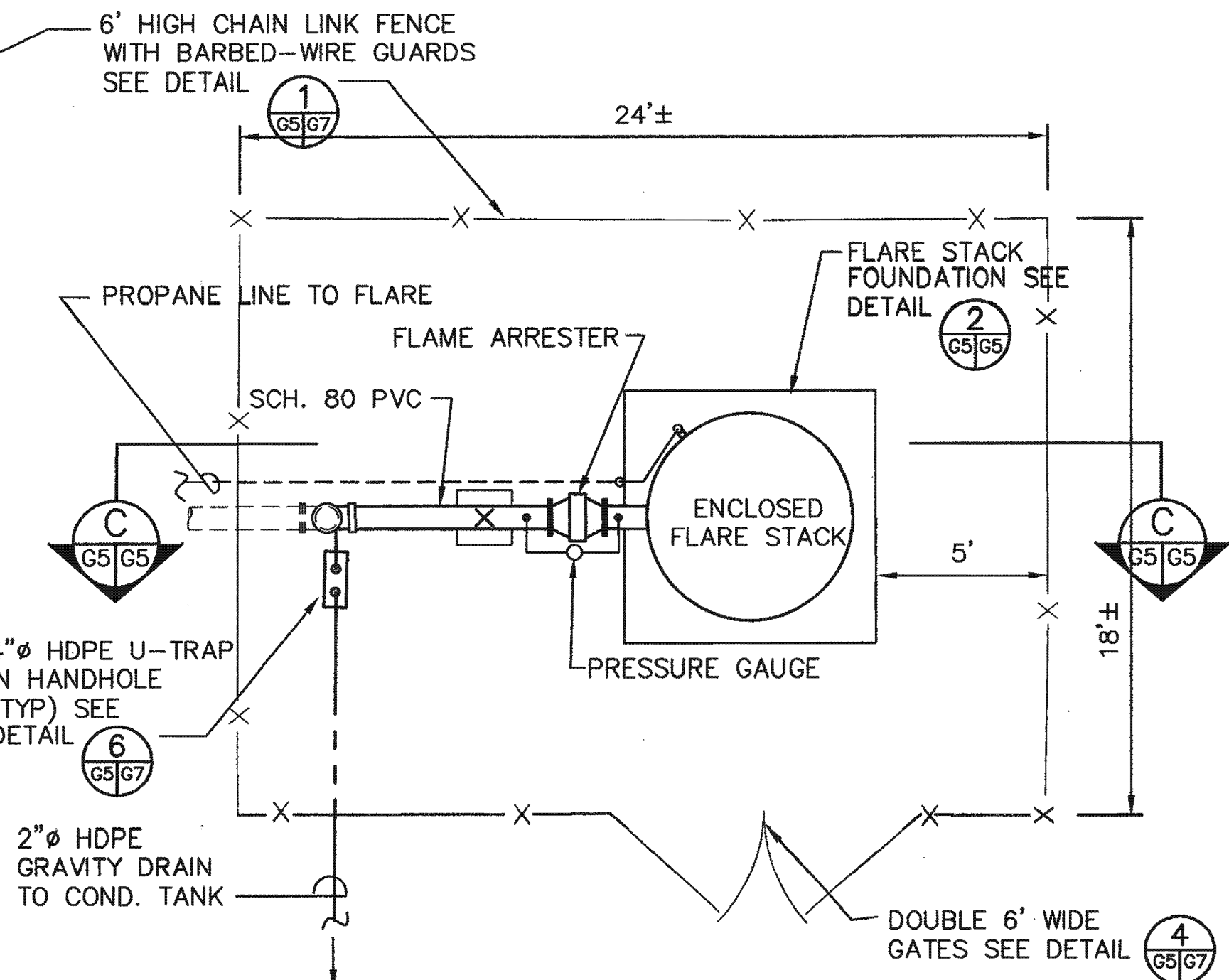
BLOWER SECTION A

SCALE: 1/4"=1'-0"



BLOWER STATION PLAN

SCALE: 1/4"=1'-0"



FLARE STATION PLAN

SCALE: 1/4"=1'-0"

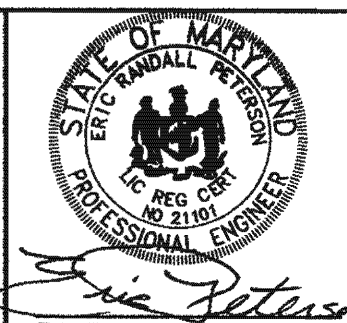
NOTES:

1. FOR CONTINUATION OF FLARE STATION PIPING SEE SHT. G4.
2. ALL EXPOSED CONDENSATE DRAIN PIPING TO BE INSULATED W/ 1" THICK URETHANE FOAM INSULATION & ALUMINUM JACKET.
3. TOP SURFACE OF CONCRETE SONOTUBE FOOTINGS SHALL EXTEND 2" MIN. ABOVE FINISHED CONCRETE SLAB.
4. THE CONTRACTOR SHALL BOLT THE WOOD FENCE PANEL TO 8"x8" WOOD POST WITH (2) 5/8" GALV. BOLTS W/ NUT & WASHERS PER POST.

M:\296024-02\BLOWER FLARE, HANGER, BSECT-A, BSECT-B, BSECT-C, PLAN

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
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RESTON, VIRGINIA 22090
PH. (703) 471-6150
FAX. (703) 471-6676



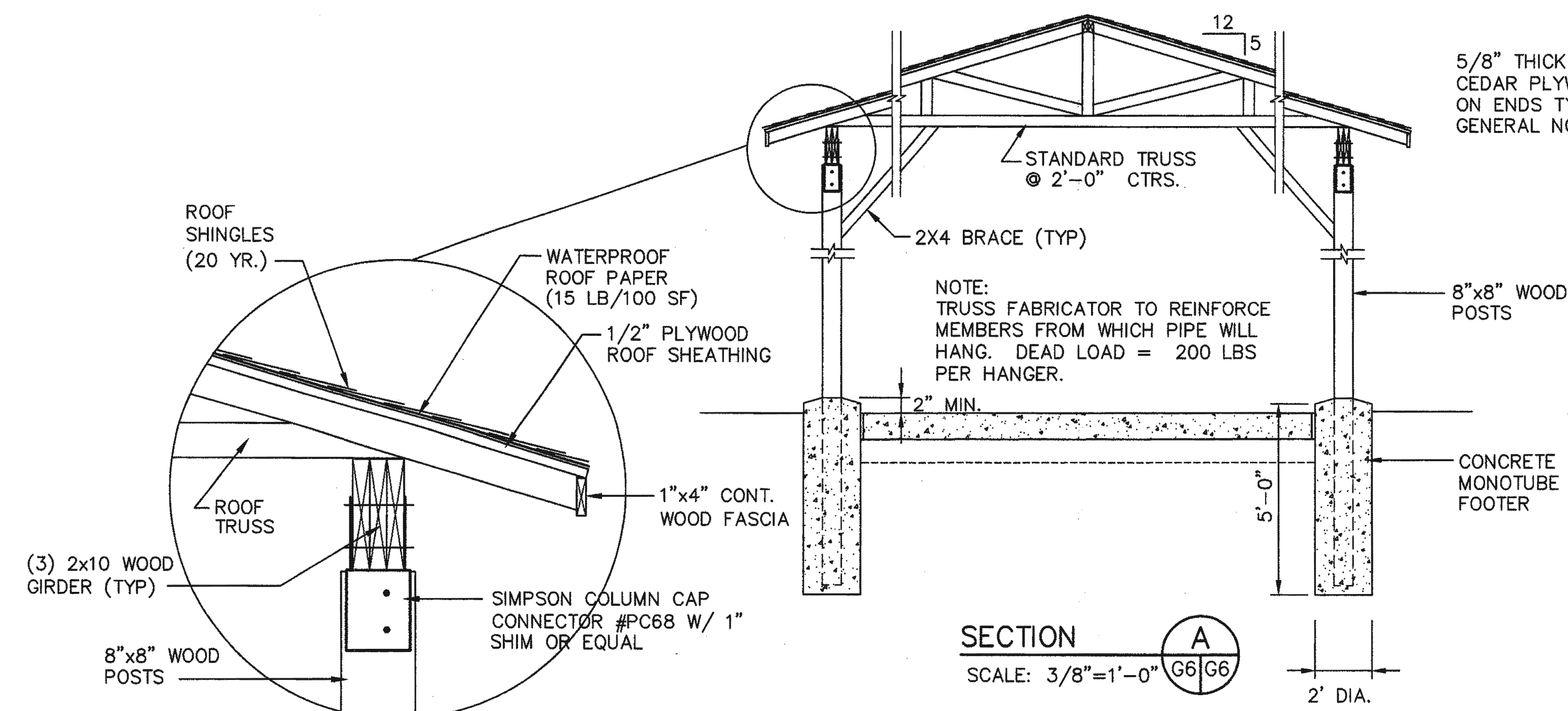
DES.	BJD/SCW				
DRN.	BJD				
CHK.	ERP				
DATE:	6-2-99	BY:	NO.	REVISION	DATE

BLOWER FLARE
PLAN AND DETAILS

NEW CUT LANDFILL
IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H
3rd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE:
AS NOTED
SHEET
G5 OF 11

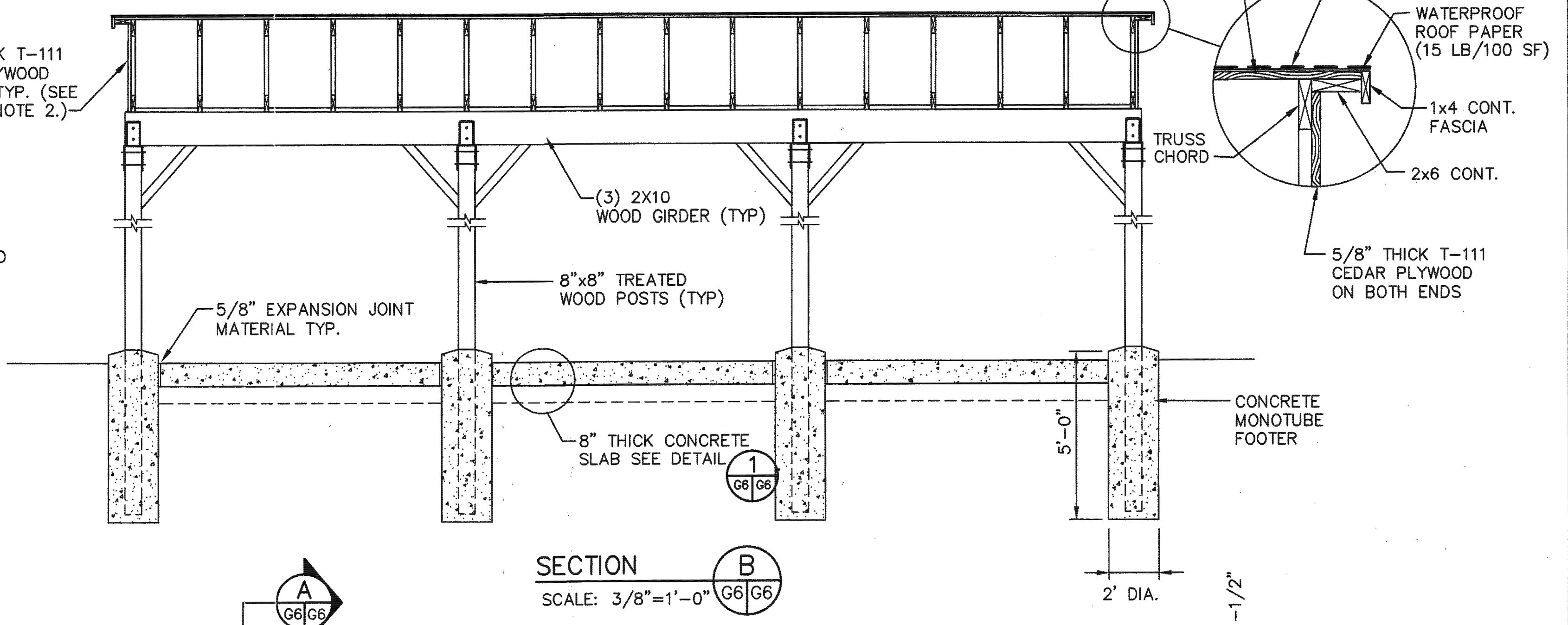


5/8" THICK T-111 CEDAR PLYWOOD ON ENDS TYP. (SEE GENERAL NOTE 2.)

STANDARD TRUSS @ 2'-0" CTRS.

NOTE: TRUSS FABRICATOR TO REINFORCE MEMBERS FROM WHICH PIPE WILL HANG. DEAD LOAD = 200 LBS PER HANGER.

SECTION A
SCALE: 3/8"=1'-0" G6/G6



SECTION B
SCALE: 3/8"=1'-0" G6/G6

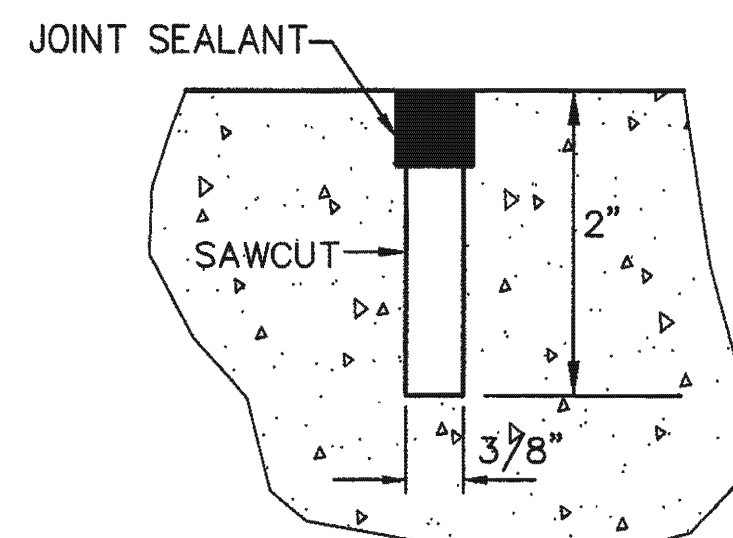
TRUSSES SHALL BE CONSTRUCTED FOR THE FOLLOWING MINIMUM LOADS:

- WIND LOAD: 10 psf
- SNOW LOAD: 14 psf
- ROOF LIVE LOAD: 20 psf
- ROOF DEAD LOAD: *10 psf

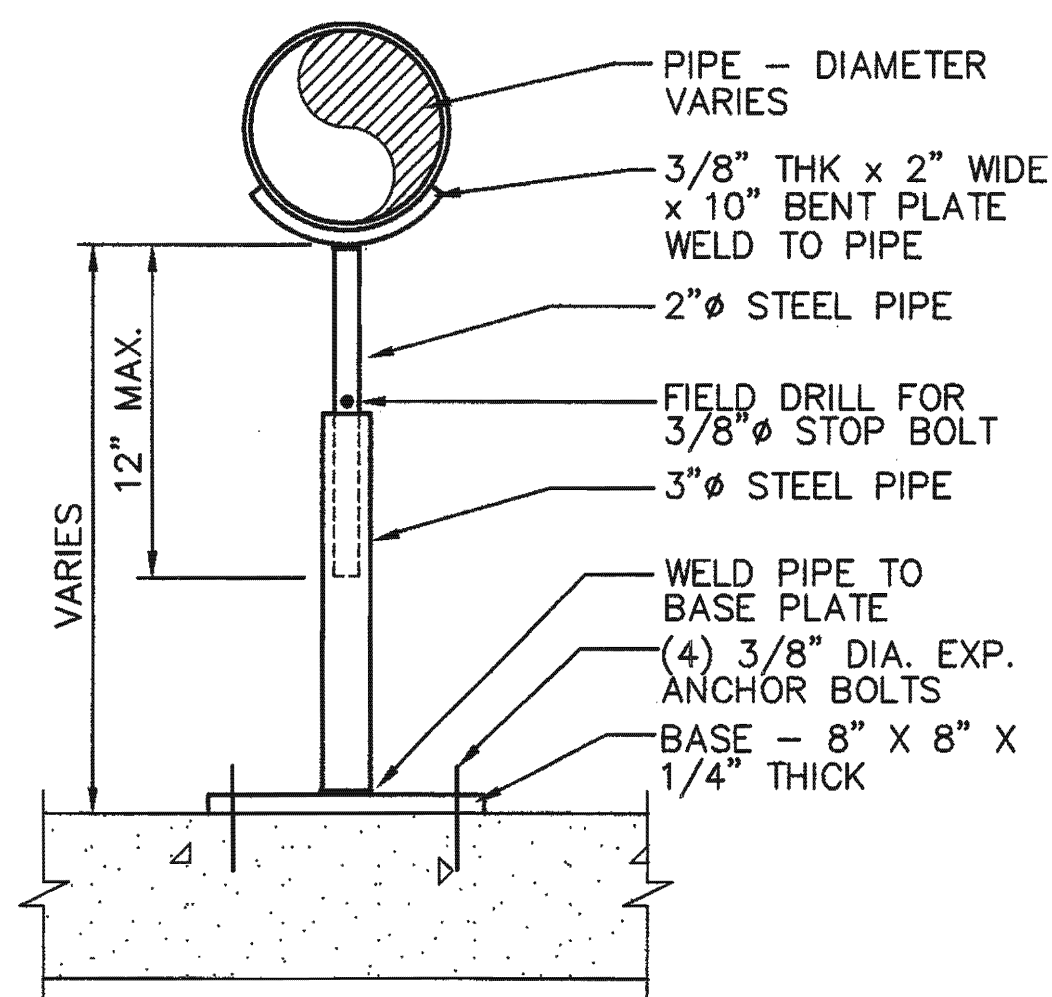
* ROOF DEAD LOADS ESTIMATED FOR GABLE TRUSSES AND MAY VARY DEPENDING ON ACTUAL TRUSS DESIGN.

GENERAL NOTES:

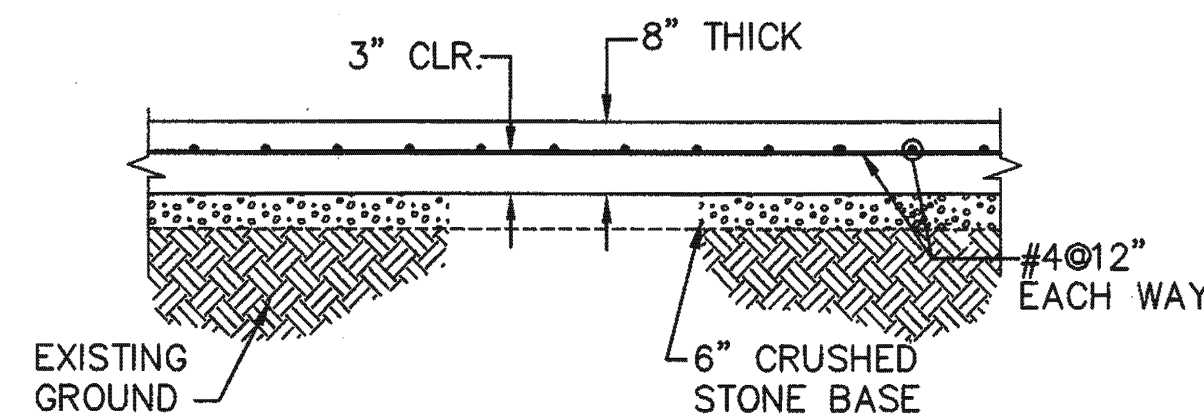
1. ALL WOOD TO BE PRESSURE TREATED.
2. APPLY 2 COATS MIN. THIN BODIED ALKYD-OIL PAINT TO CEDAR PLYWOOD. GLIDDEN #9700 ENDURANCE OIL STAIN OR EQUAL.
3. THE CONTRACTOR'S TRUSS FABRICATOR SHALL PROVIDE DESIGN DRAWINGS SIGNED AND SEALED BY A MARYLAND PROFESSIONAL ENGINEER.
4. THE CONTRACTOR SHALL OBTAIN A BUILDING PERMIT FROM THE DEPARTMENT OF LICENSES, INSPECTIONS & PERMITS PRIOR TO CONSTRUCTION.



SAWCUT SEALANT DETAIL 3
NOT TO SCALE G6/G6



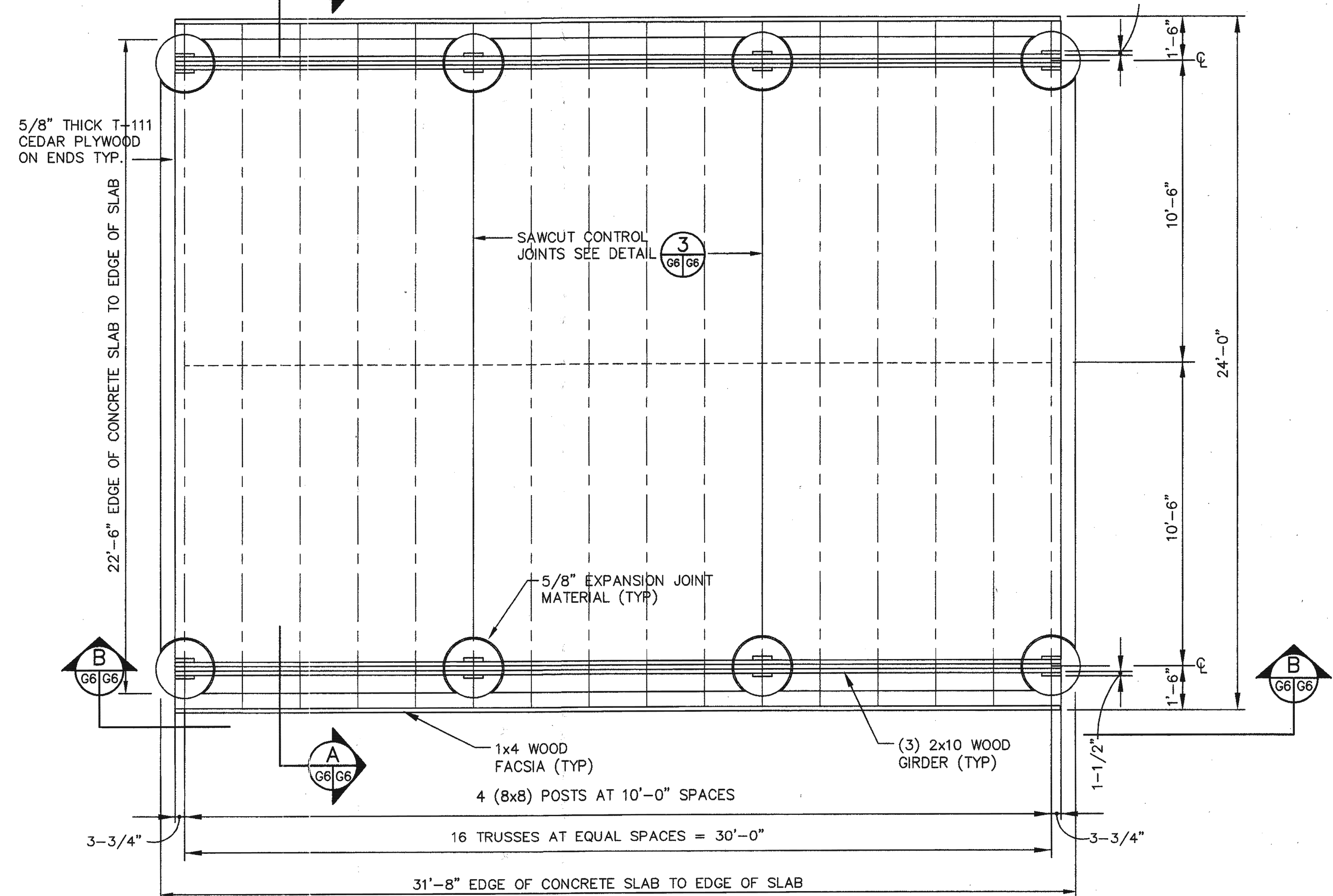
PIPE SUPPORT DETAIL 2
NO SCALE G5/G6



CONCRETE SLAB DETAIL 1
SCALE: 3/8"=1'-0" G5, G6 G6

STRUCTURAL NOTES:

1. CONCRETE SLAB SHALL BE CONSTRUCTED SO THAT A 0.5% SLOPE IS MAINTAINED FROM THE CENTER RIDGE LINE (HIGH POINT) TO EACH LONG SIDE OF SLAB (LOW POINT).
2. CONCRETE MINIMUM COMPRESSIVE STRENGTH SHALL BE 4000 PSI.
3. CONCRETE SLAB SHALL BE BROOM FINISHED.



SHELTER - PLAN
SCALE: 3/8"=1'-0"

SH-PLAN, SLAB, PSUPPORT, SAWCUT

M:\296024.02\BLOWER

SHT-06

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John J. O'Hara 7/6/99
DIRECTOR OF PUBLIC WORKS DATE
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 22090
PH. (703) 471-6150
FAX. (703) 471-6676



Eric Randall Paterson, PE 7-1-99

DES.	BJD/RB				
DRN.	BJD				
CHK.	ERP				
DATE:	6-2-99	BY:	NO.	REVISION	DATE

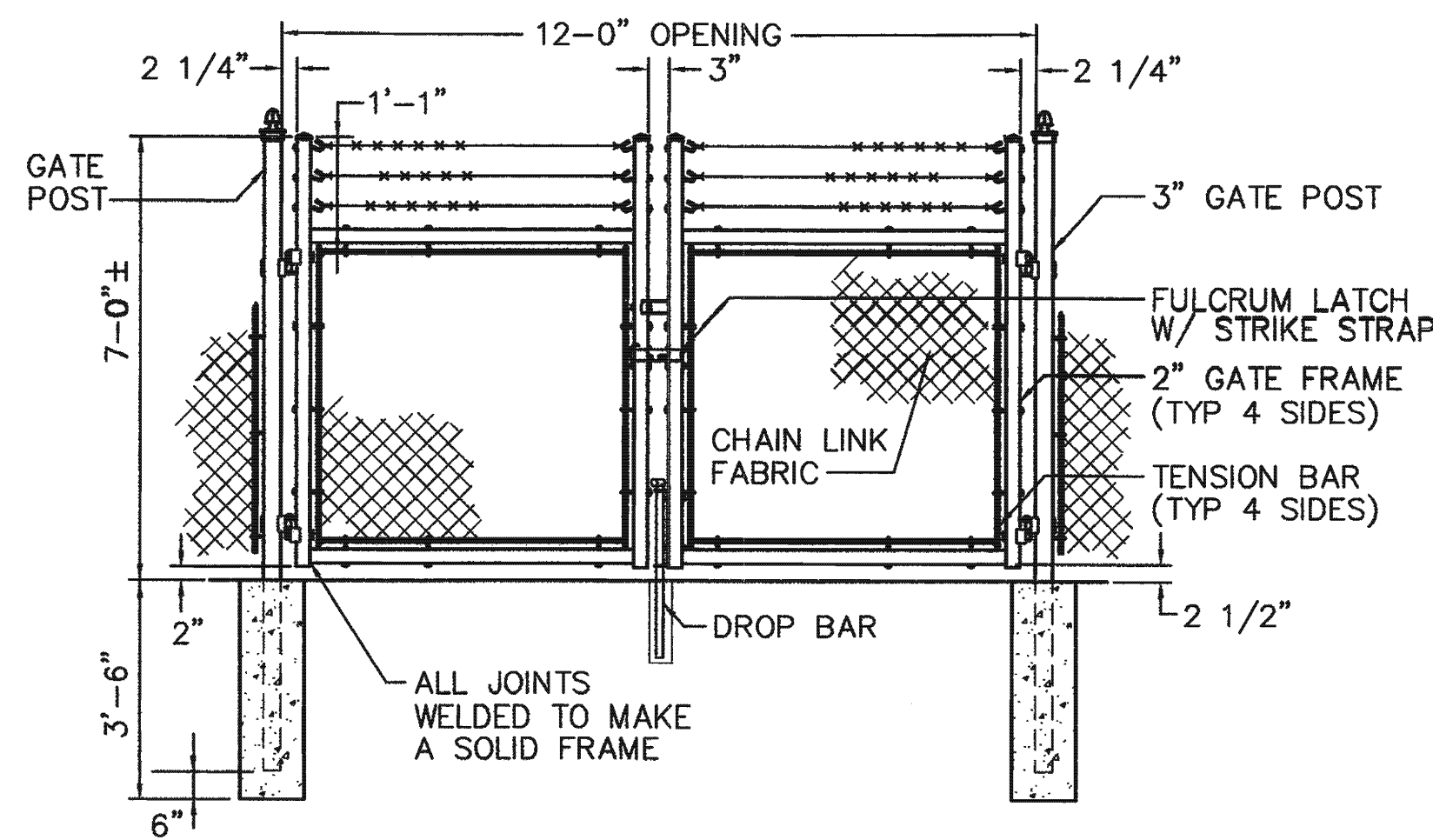
BLOWER/FLARE SHELTER
PLAN AND DETAILS

NEW CUT LANDFILL
IMPROVEMENTS

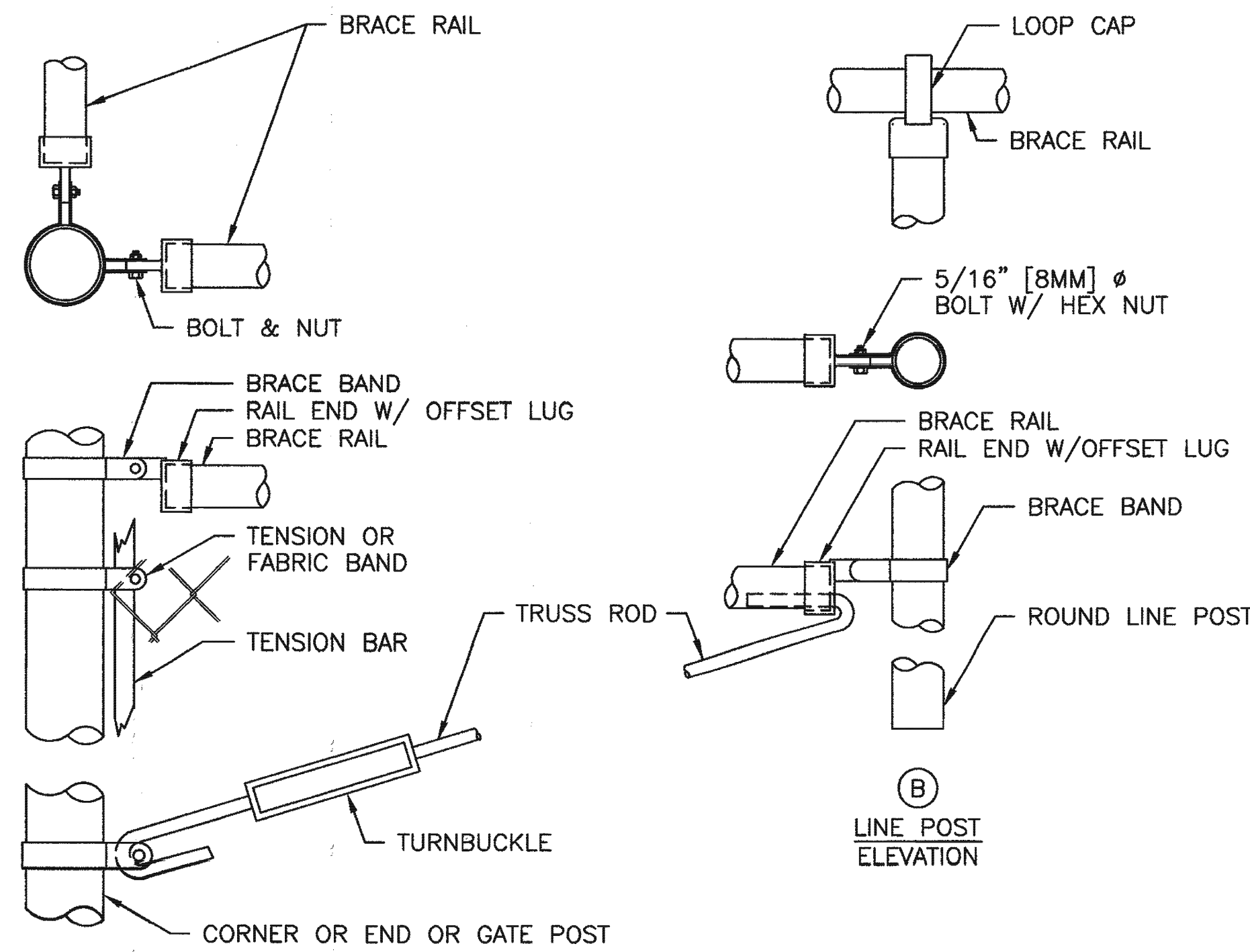
CAPITAL PROJECT NO. C-0237-H
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE:
AS NOTED

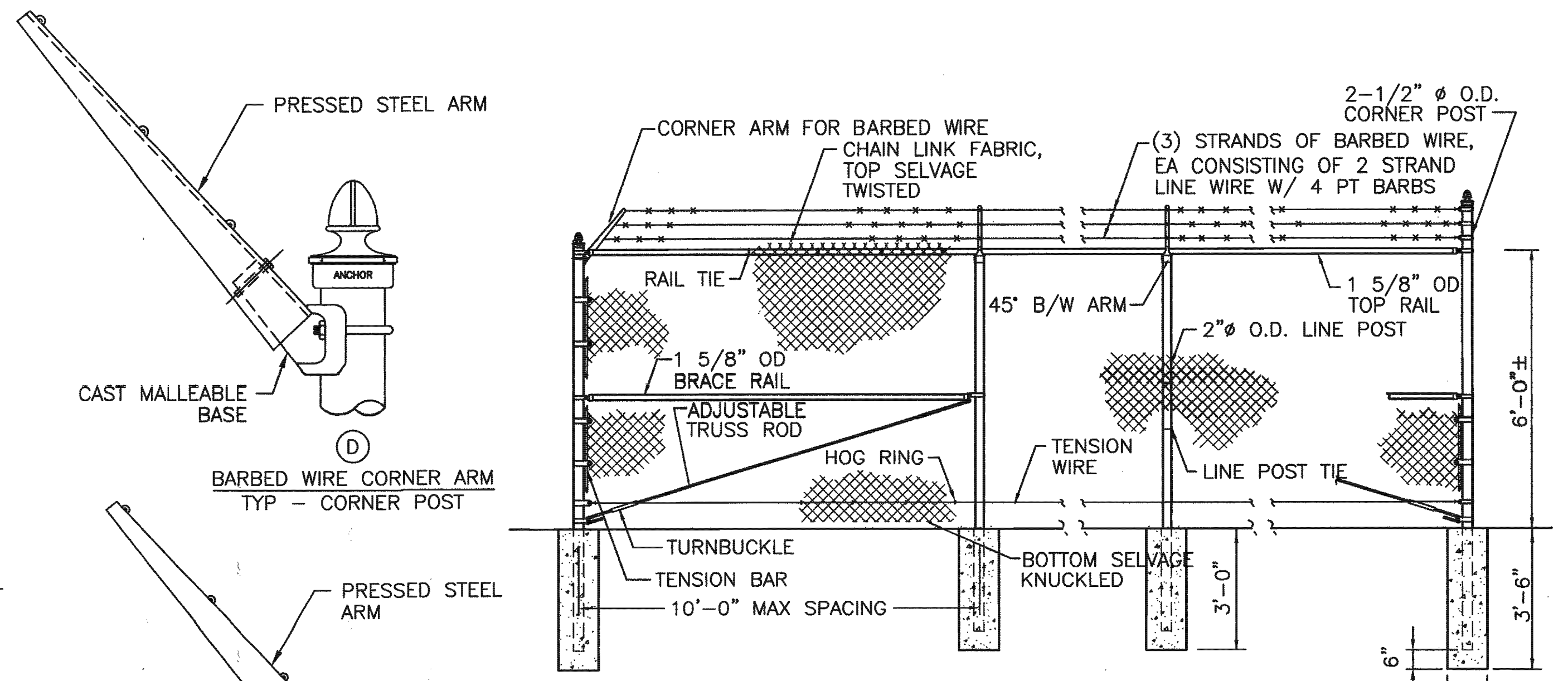
SHEET
G6 OF 11



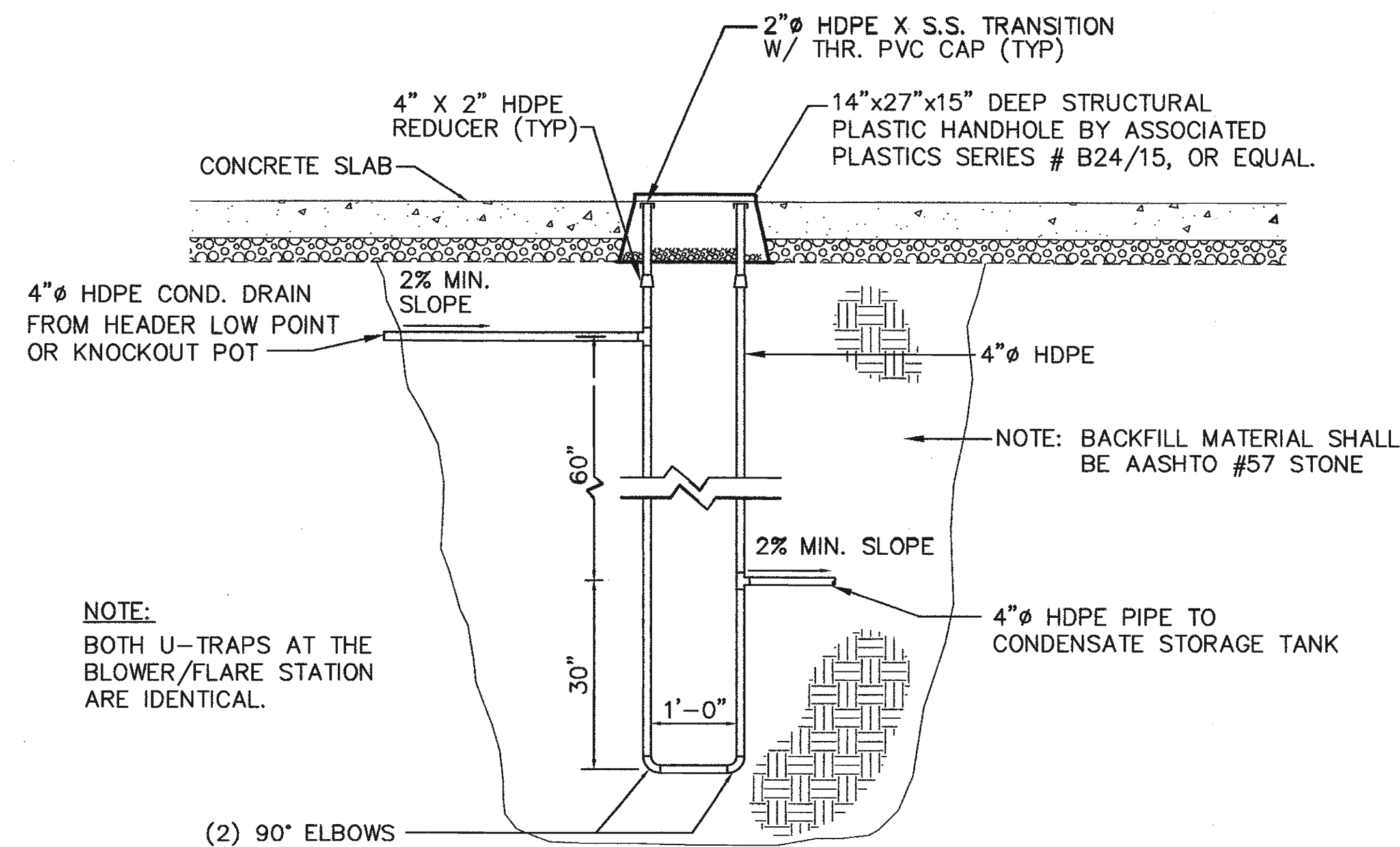
GATE W/ BARBED WIRE DETAIL 4
SCALE: 3/8" = 1'-0" (G5/G7)



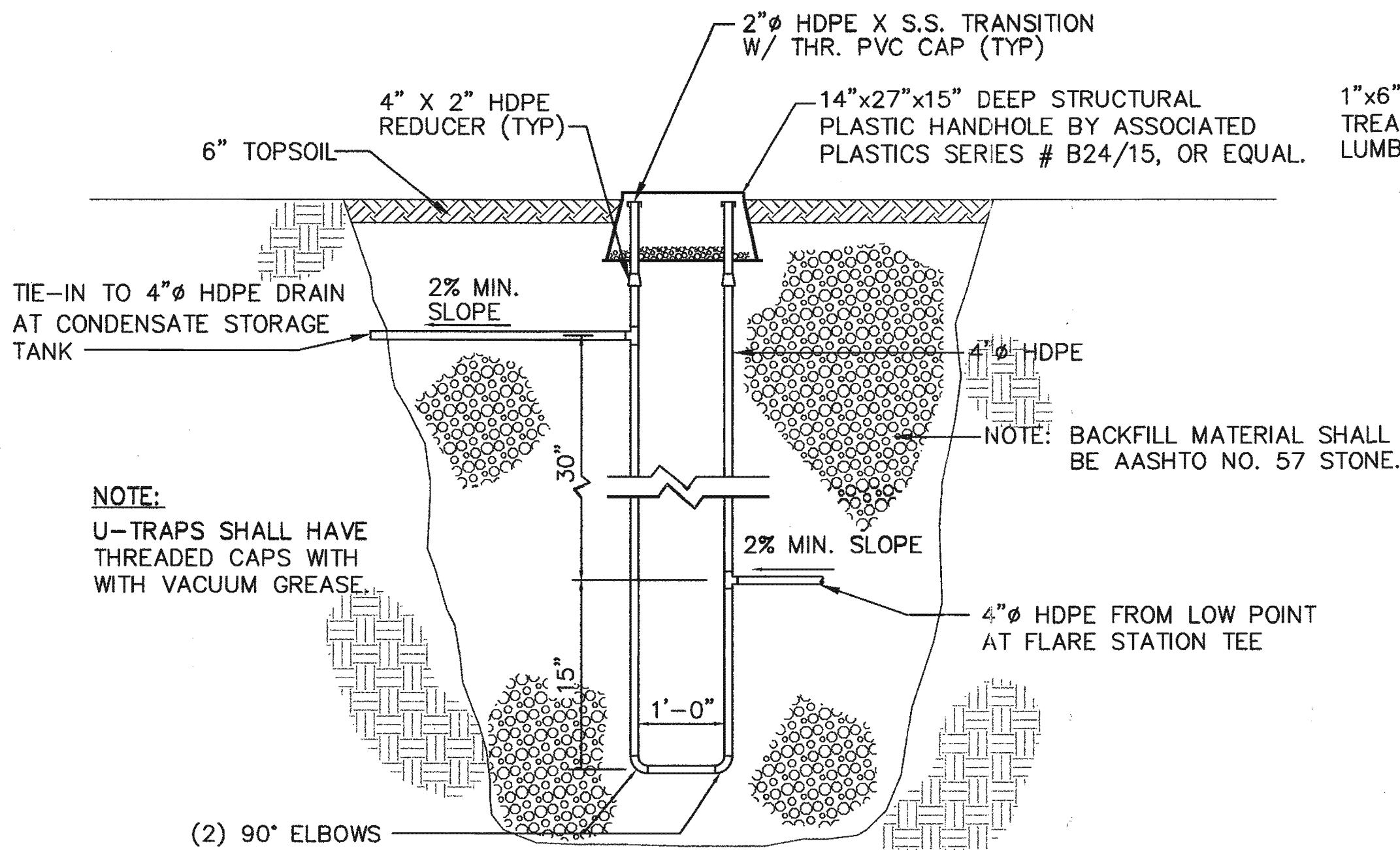
ROUND TERMINAL POST DETAILS 3
SCALE: 1/4" = 1'-0" (G7/G7)



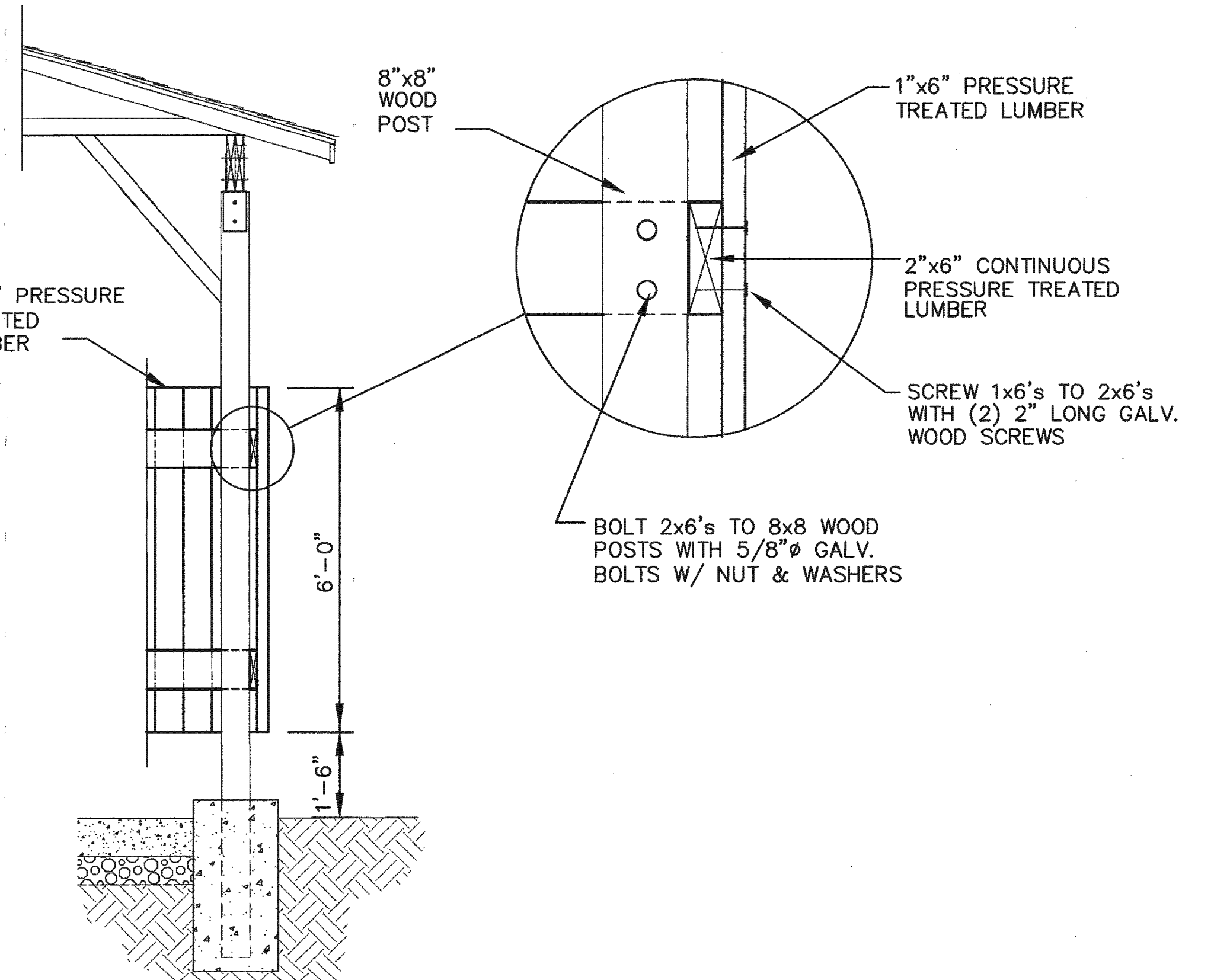
CHAIN LINK FENCE W/ BARBED WIRE DETAIL 1
SCALE: 3/8" = 1'-0" (G5/G7)



U-TRAP DETAIL FOR CONDENSATE DISCHARGE 5
NO SCALE (G3, G4, G5) (G7)



POSITIVE PRESSURE U-TRAP AT FLARE STATION 6
NO SCALE (G5/G7)

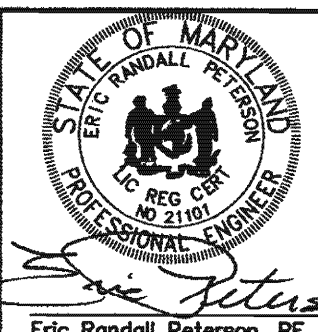


WOOD FENCE DETAIL 2
NO SCALE (G5/G7)

M:\296024.02\BLOWER RDPOST, BWFENCE, WD-FENCE, UTRAP, BWGATE SH1-67

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 22090
PH. (703) 471-6150
FAX. (703) 471-6676



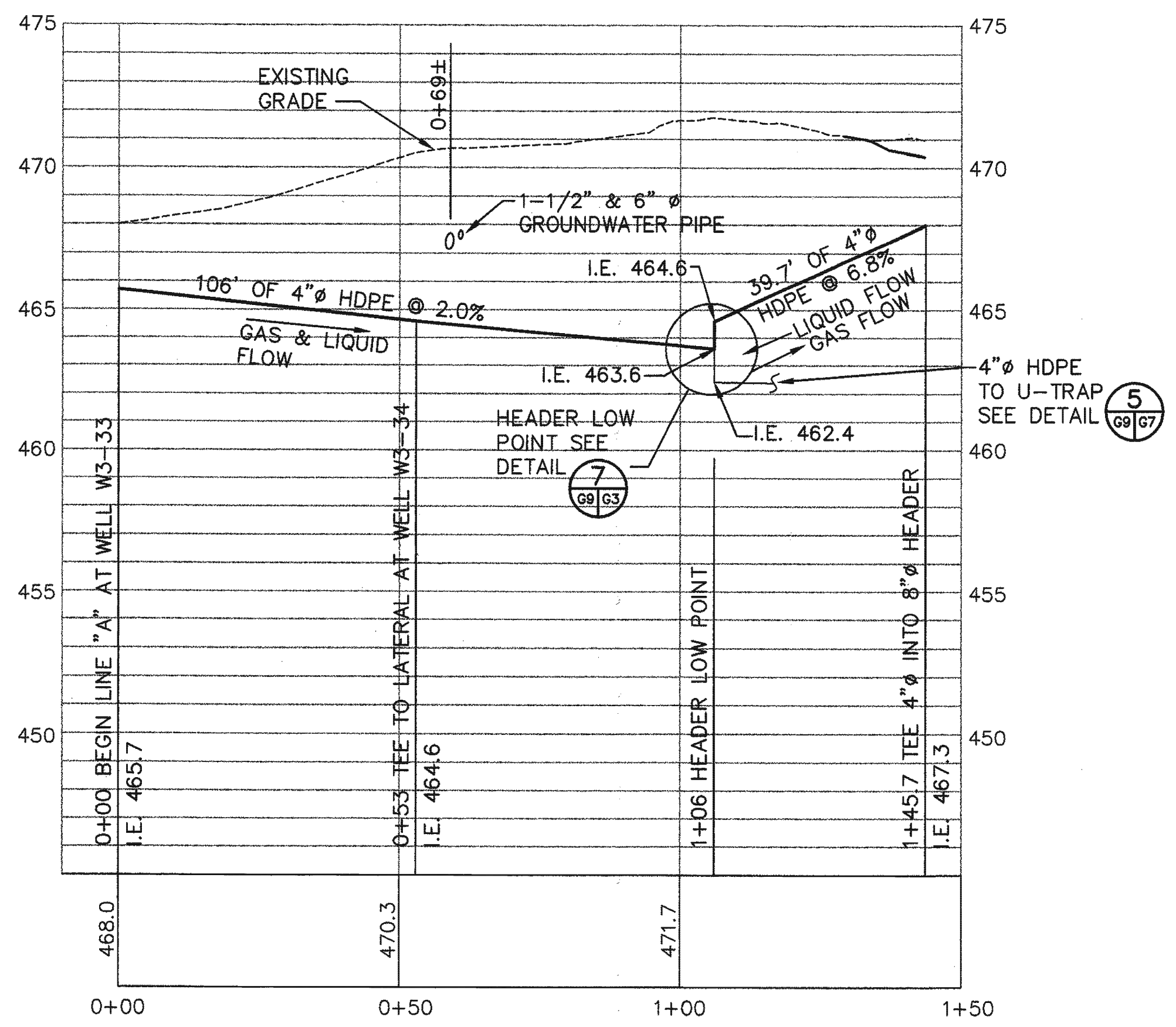
DES.	BJD	6			
DRN.	BJD	6			
CHK.	ERP	6			
DATE:	6-2-99	BY	NO.	REVISION	DATE

BLOWER/FLARE SHELTER
FENCE & MISC. DETAILS

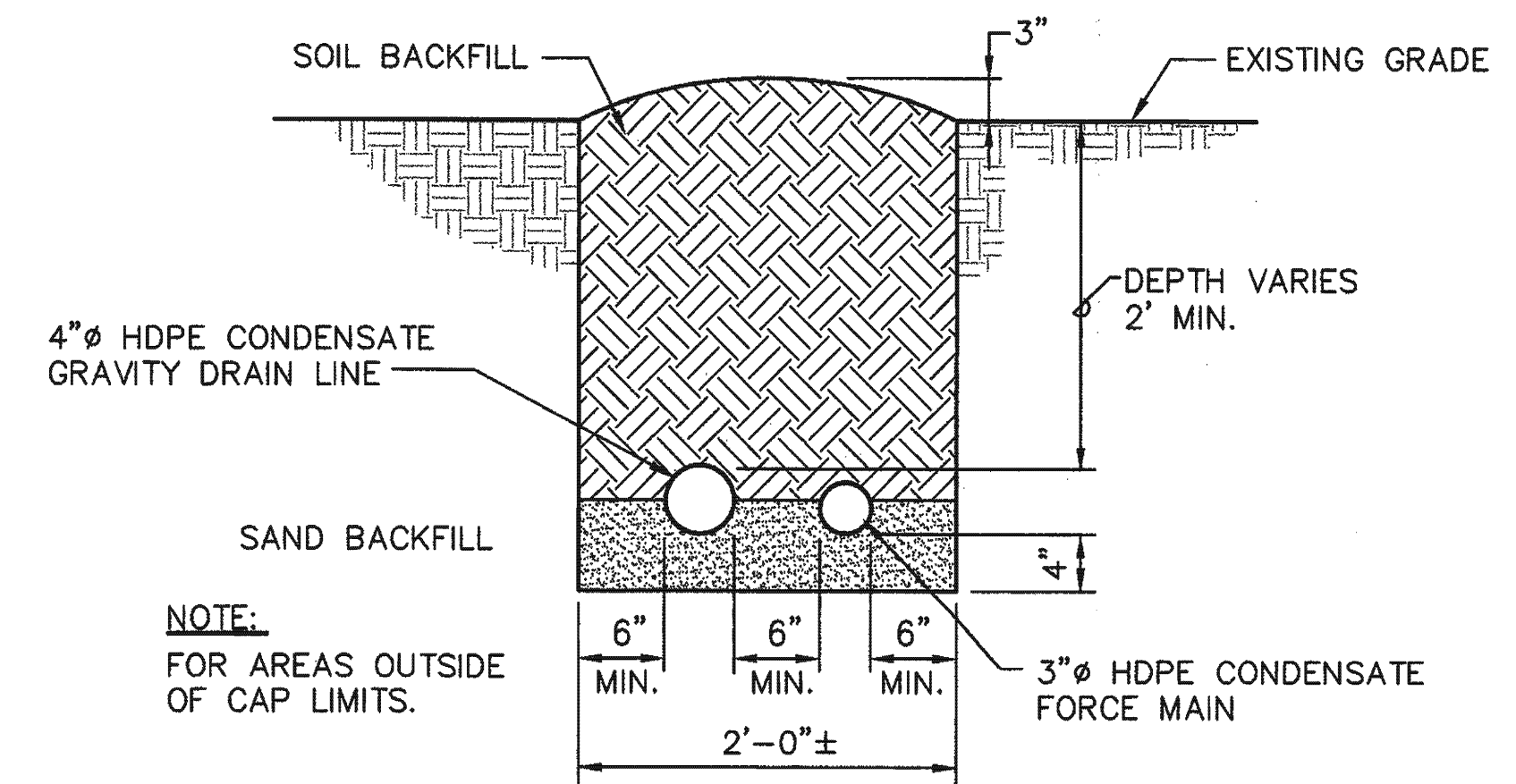
NEW CUT LANDFILL
IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H
3rd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

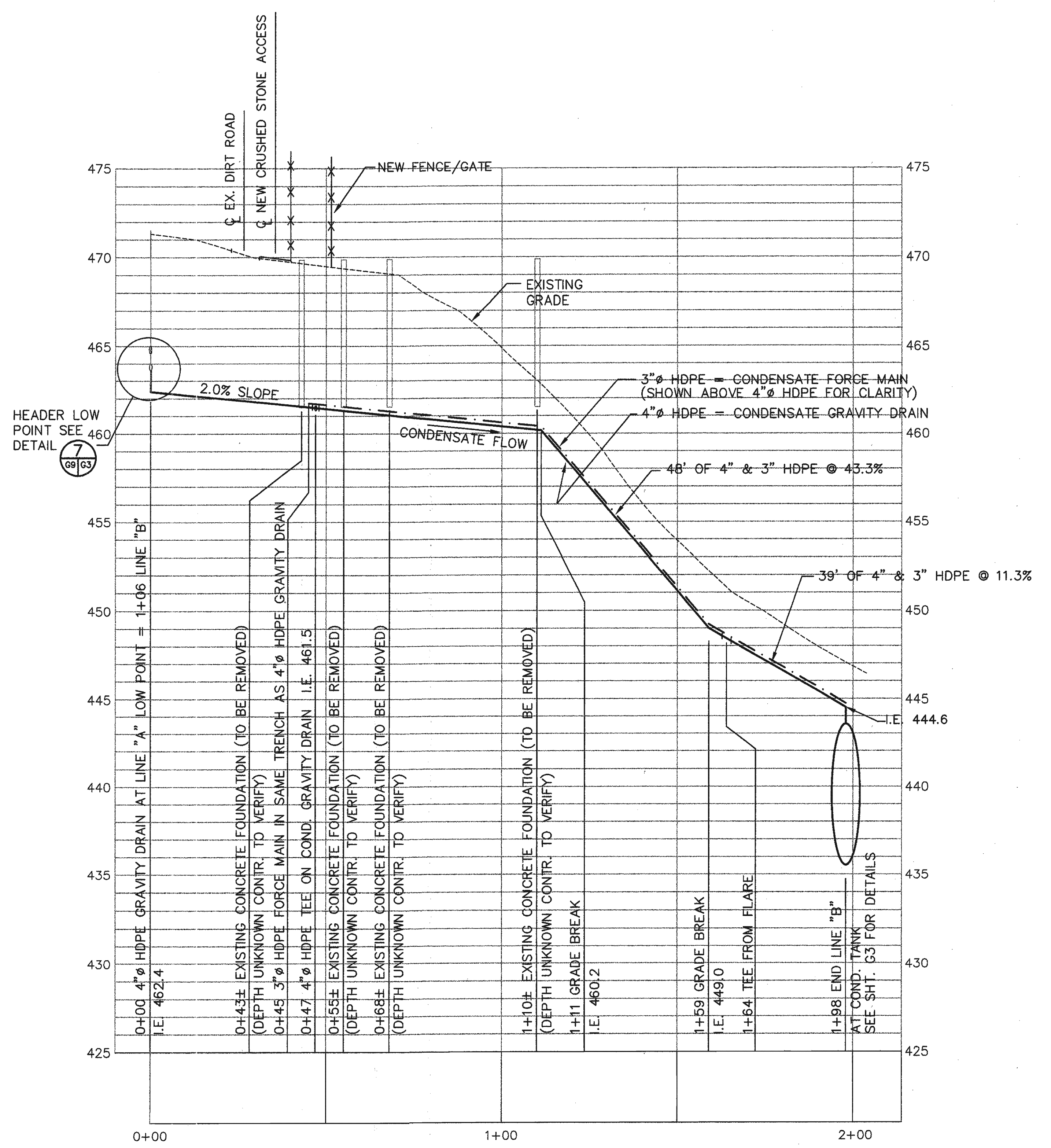
SCALE:
AS NOTED
SHEET
G7 OF 11



LINE "A" LFG HEADER PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



HEADER TRENCH IN SOIL DETAIL
NO SCALE

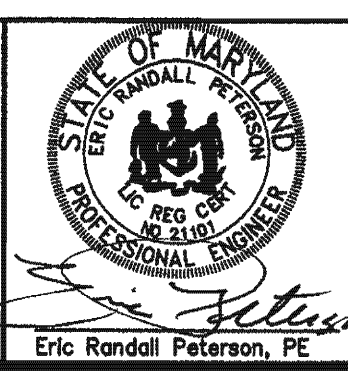


LINE "B" CONDENSATE GRAVITY & FORCE MAIN PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

SHT-09 M:\296024.02\BLOWER PROFILES, TRENCH

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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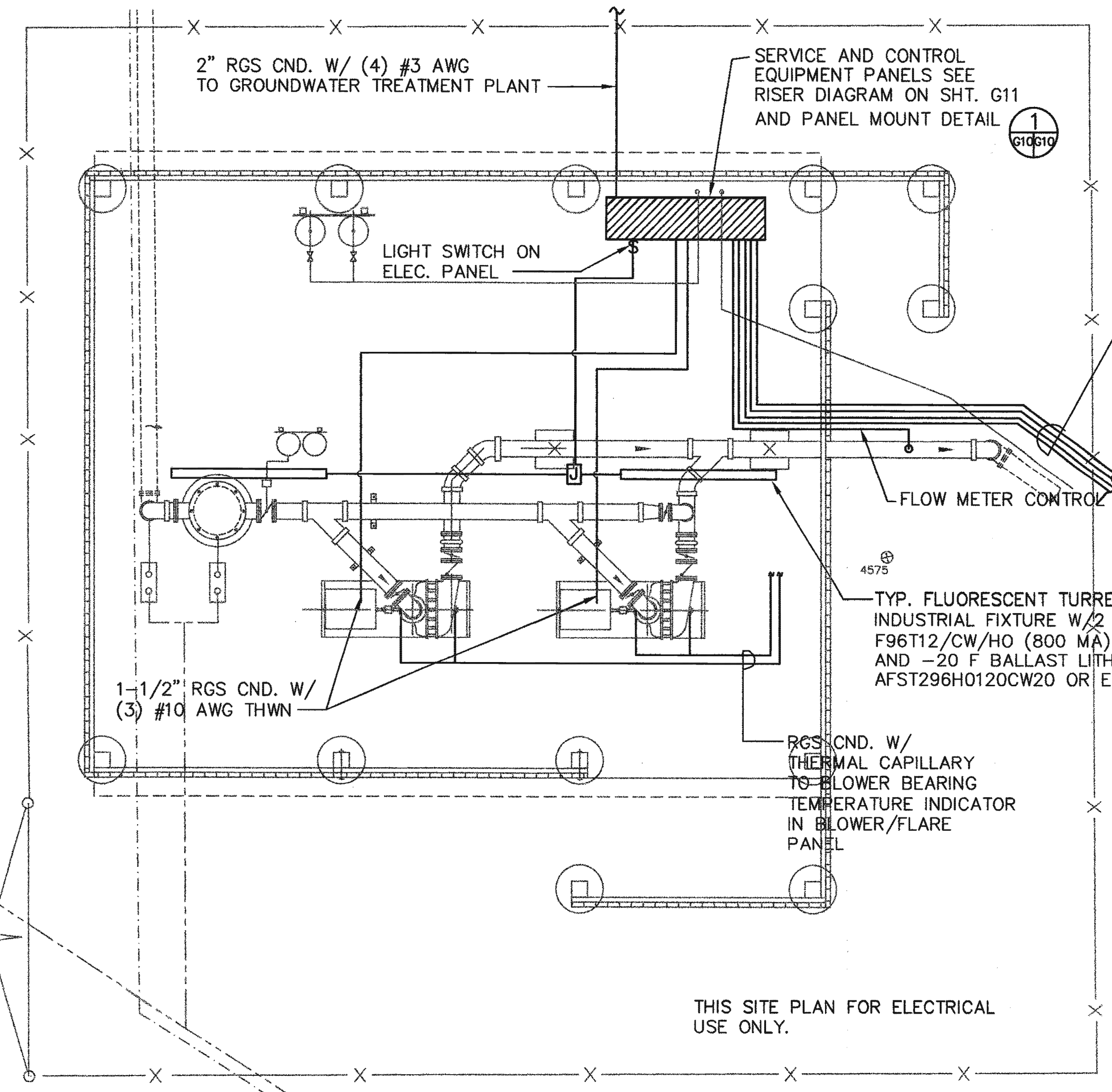


DES.	BJD	6	
DRN.	BJD	4	
CHK.	ERP	3	
DATE:	6-2-99	BY	NO.
		REVISION	DATE

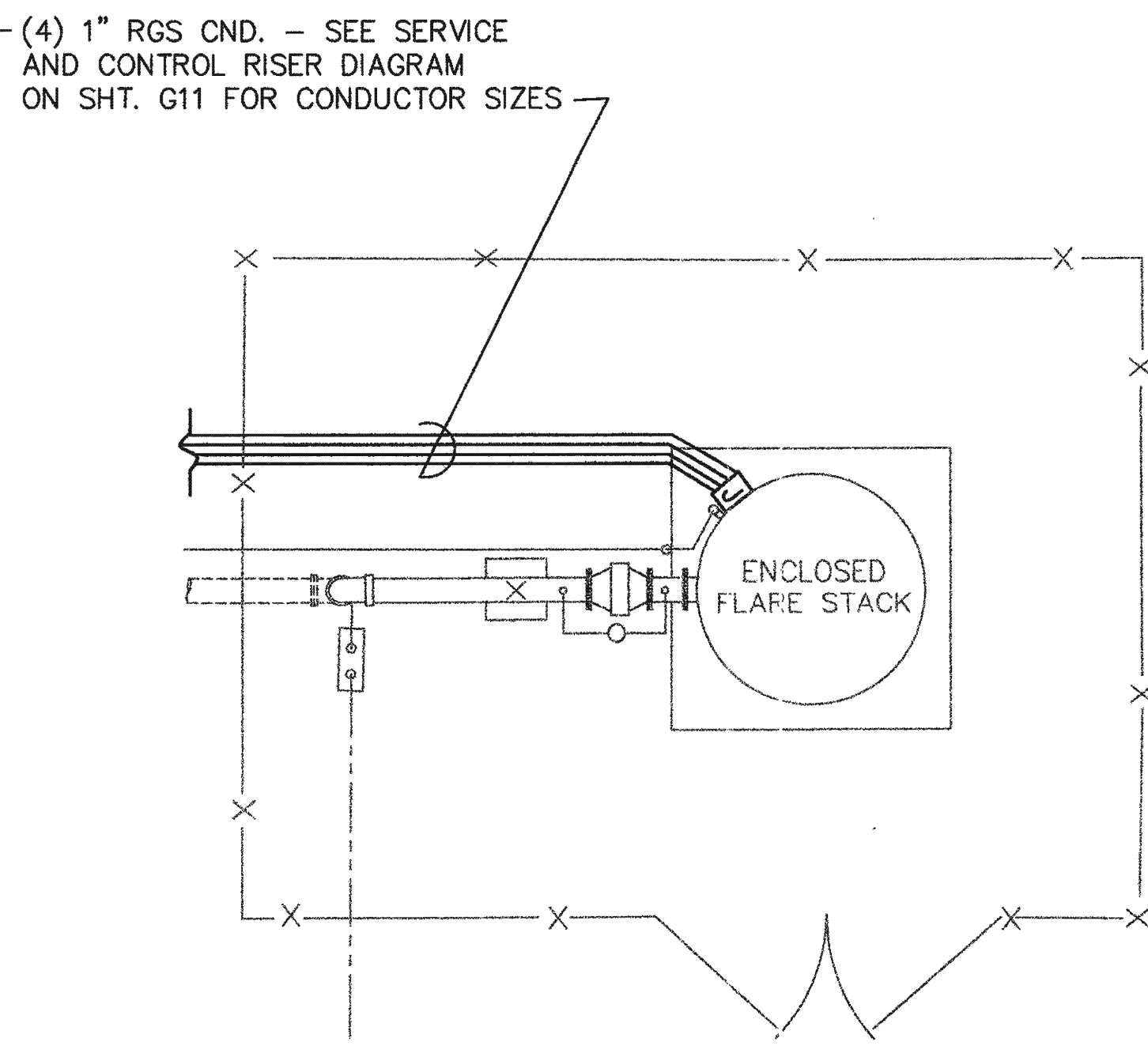
PROFILES AND DETAILS

NEW CUT LANDFILL IMPROVEMENTS
CAPITAL PROJECT NO. C-0237-H
3rd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

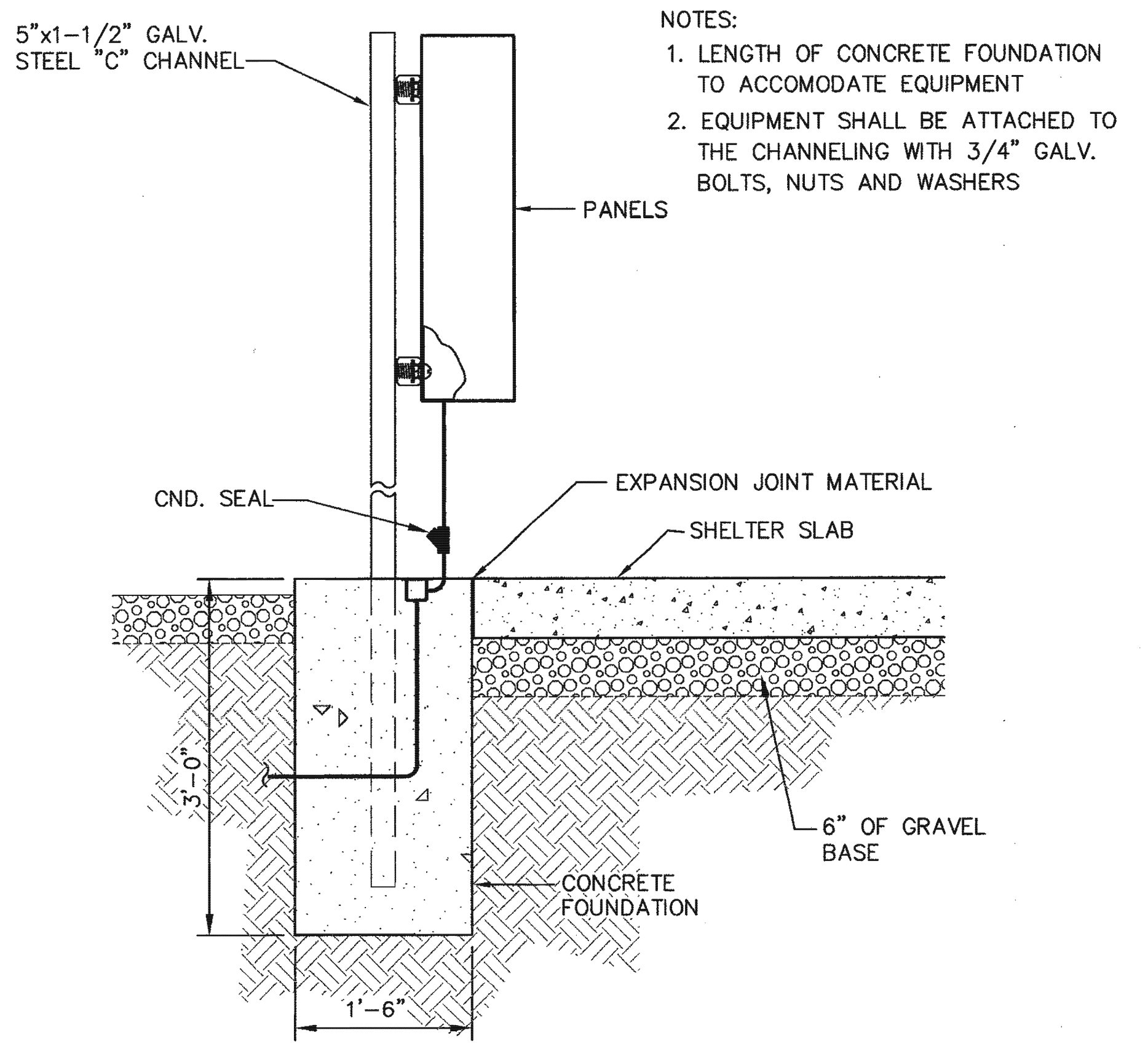
SCALE:
AS NOTED
SHEET
G9 OF 11



BLOWER STATION ELECTRICAL PLAN
SCALE: 1/4"=1'-0"



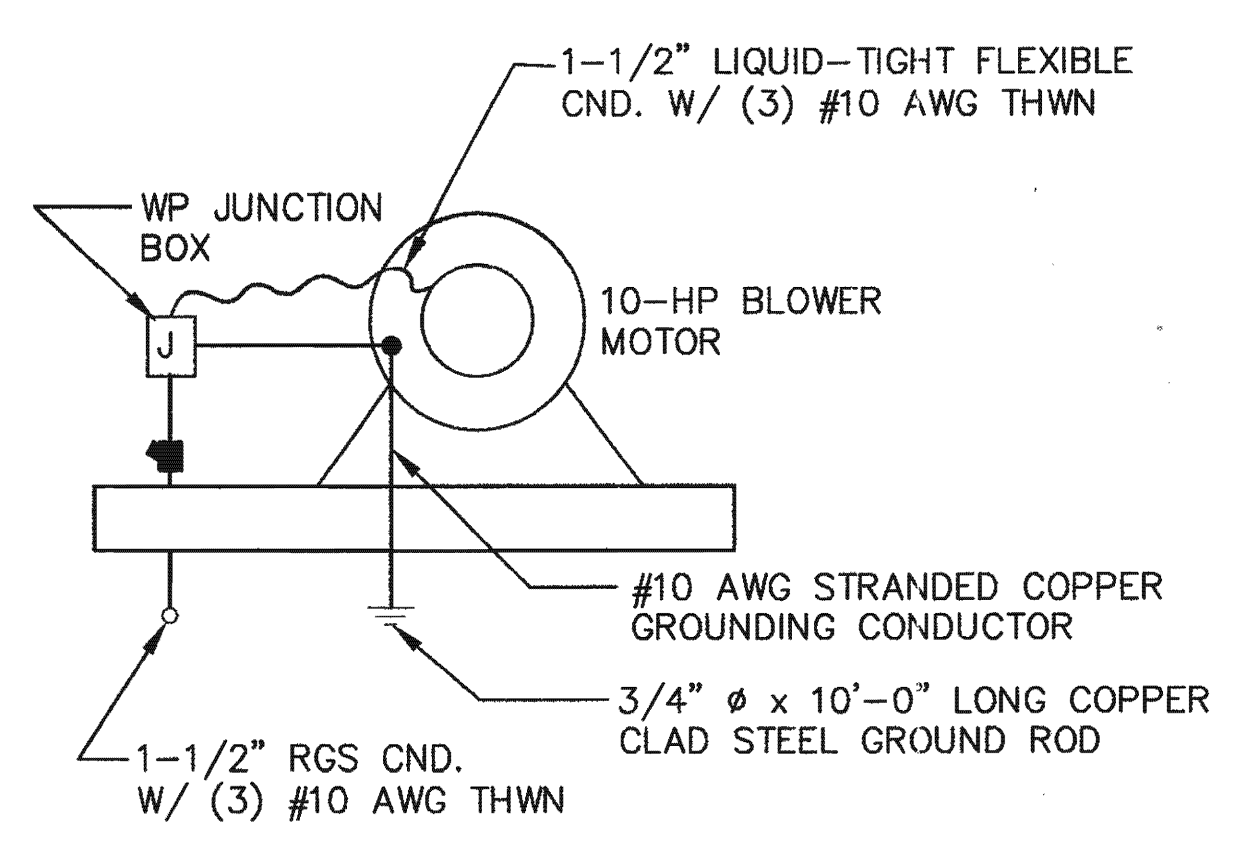
FLARE STATION ELECTRICAL PLAN
SCALE: 1/4"=1'-0"



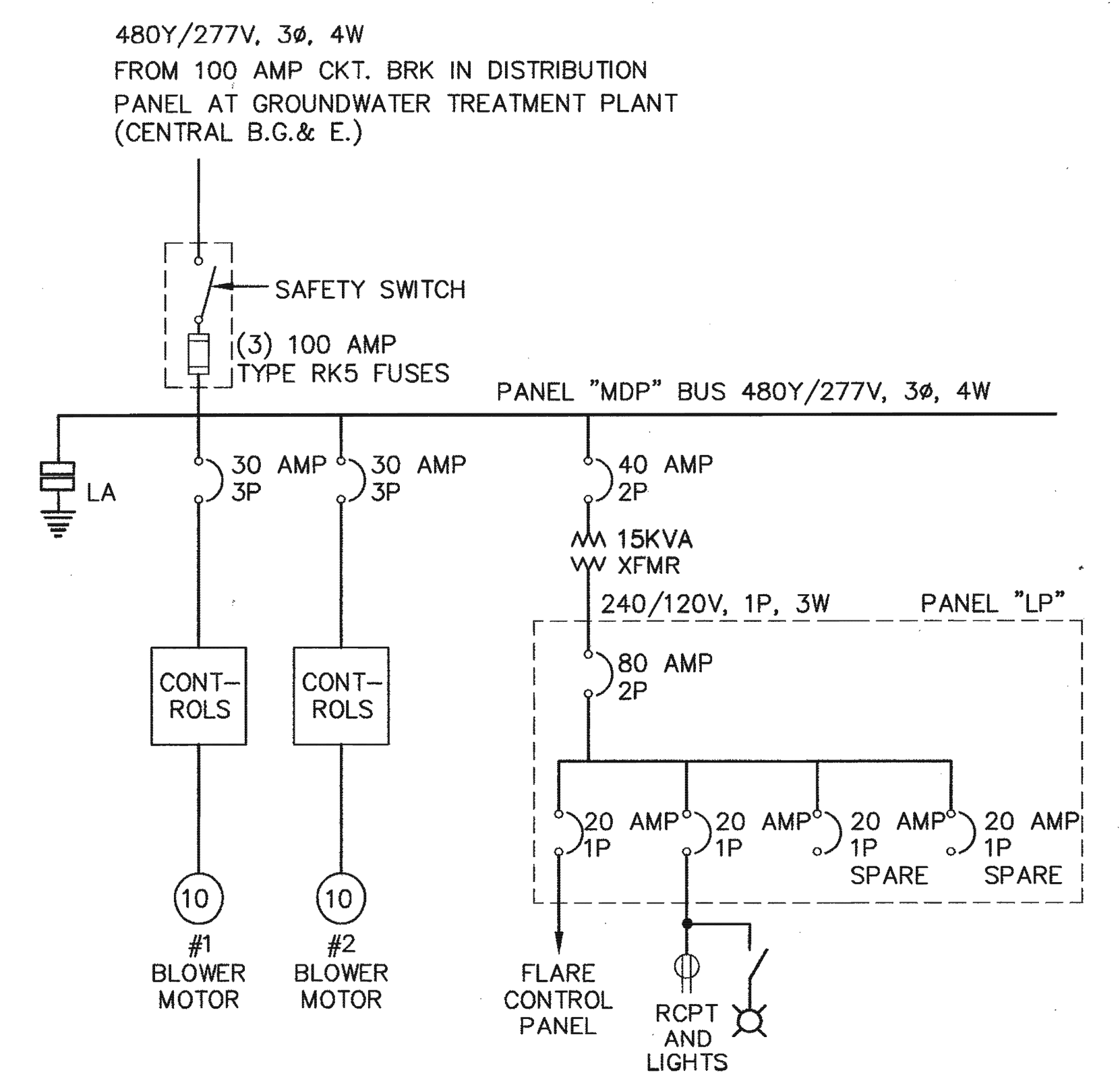
PANEL MOUNT DETAIL
SCALE: 1"=1'-0"

ELECTRICAL LEGEND

ABBREVIATIONS		SYMBOLS	
AMP	AMPERE	∅	PHASE OR DIAMETER
AWG	AMERICAN WIRE GAUGE	#	NUMBER
CKT. BKR	CIRCUIT BREAKER	—	CONDUCTORS IN CONDUIT
CND.	CONDUIT	~	FLEXIBLE, LIQUID-TIGHT METAL CONDUIT
CU	COPPER	J	JUNCTION BOX
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	⬇	CONDUIT SEAL
HP	HORSEPOWER	⊗	SWITCH
IAW	IN ACCORDANCE WITH	LA	LIGHTNING ARRESTER
KW	KILOWATT		
LP	LIGHTING PANEL		
MDP	MAIN DISTRIBUTION PANEL		
N	NEUTRAL		
NEC	NATIONAL ELECTRICAL CODE		
OCPTD	OVERCURRENT PROTECTIVE DEVICE		
P	POLE		
PNL, PB	PANEL, PANELBOARD		
RCPT	RECEPTACLE		
RGS	RIGID GALVANIZED STEEL		
THWN	MOISTURE AND HEAT RESISTANT THERMOPLASTIC CONDUCTOR INSULATION, UNDERGROUND		
UG	UNDERGROUND		
V	VOLT		
W	WIRE		
W/	WITH		
WP	WEATHER-PROOF		
XFMR	TRANSFORMER		
Y	WYE		



BLOWER SCHEMATIC
NO SCALE



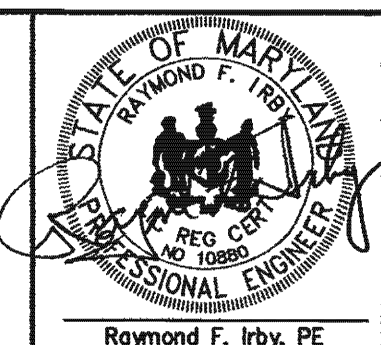
SINGLE-LINE DIAGRAM
NO SCALE

M:\296024.02\ELECTRICAL EBF-PLAN, B-SCHEM, E-LEGND, E-MOUNT, L-DIAGRAM

SHT-G10

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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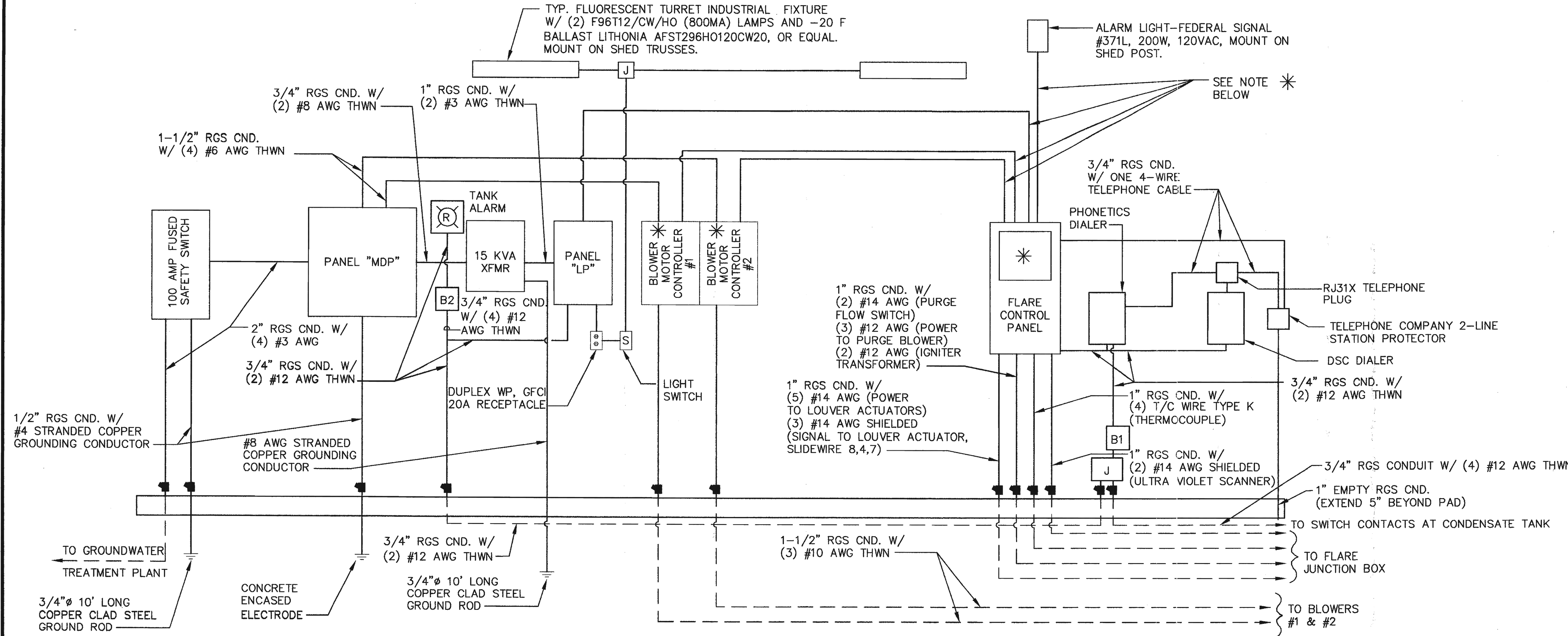


DES.	RFI	6		
DRN.	TE, DDD	4		
CHK.	ERP	3		
DATE:	6-2-99	1		
BY	NO.		REVISION	DATE

LFG COLLECTION
ELECTRICAL DETAILS

NEW CUT LANDFILL
IMPROVEMENTS
CAPITAL PROJECT NO. C-0237-H
3rd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE:
AS NOTED
SHEET
G10 of 11



SERVICE AND CONTROL EQUIPMENT RISER
NO SCALE

- BARRIER B1: SHUNT-DIODE SAFETY BARRIER—MAXIMUM VOLTAGE AND END-TO-END RESISTANCE AS SPECIFIED BY DIALER MANUFACTURER.
- BARRIER B2: ONE-CHANNEL SWITCH OPERATED RELAY WITH FULLY FLOATING INPUT CIRCUIT. 120-VOLT AC OPERATING VOLTAGE. CONTACT RATING 250V, 5A, AC RESISTIVE LOAD ISOLATION: 250V AC BETWEEN INPUT, OUTPUT AND POWER SUPPLY TERMINALS. SAFETY DESCRIPTION: 7V, 300 OHM, 22 MA.

* ELECTRICAL EQUIPMENT FURNISHED PRE-ASSEMBLED BY FLARE MANUFACTURER, INSTALLED BY CONTRACTOR. 15 KVA TRANSFORMER AND PANEL "LP" MAY ALSO BE FURNISHED BY FLARE MANUFACTURER.

NOTE: CONDUCTORS & SIGNAL WIRES BETWEEN THE FLARE AND THE CONTROL PANEL VARY PER MFG'R. CONTRACTOR SHALL PROVIDE THE WIRING NECESSARY FOR A COMPLETE AND FUNCTIONAL INSTALLATION.

1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70-1993 & APPLICABLE LOCAL CODES. THE MANUFACTURER'S RECOMMENDATIONS SHALL BE FOLLOWED AS REQUIRED. ALL MATERIALS, AS A MINIMUM, SHALL BE NEW AND UNDERWRITERS LABORATORY (U.L.) LISTED.
2. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, CERTIFICATES OF INSPECTION, ETC. REQUIRED BY THE AUTHORITIES HAVING JURISDICTION OVER THIS WORK.
3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND/OR MANUFACTURER'S LITERATURE, FOR ALL EQUIPMENT AND MATERIAL PROPOSED FOR INSTALLATION TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO RELEASING AN ORDER FOR FABRICATION AND/OR SHIPMENT. EQUIPMENT AND MATERIAL INCLUDED SHALL BE ITEMS SUCH AS, BUT NOT LIMITED TO, METERING EQUIPMENT, SERVICE EQUIPMENT, SWITCHES, DISCONNECTS, PANELBOARDS, BREAKERS, LIGHTING FIXTURES, OUTLET DEVICES, WIRING AND CONDUIT, ETC.
4. STATEMENT OF WORK: THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ELECTRICAL EQUIPMENT AND LABOR TO ENSURE THE COMPLETE WORKING ORDER OF THE LANDFILL GAS EXTRACTION SYSTEM, INCLUDING A NEW ELECTRICAL SERVICE AS DESCRIBED ON CONTRACT DRAWINGS.
5. THE CONTRACTOR SHALL PROVIDE ALL SUPERVISION, LABOR, MATERIALS, EQUIPMENT, MACHINERY, AND ANY AND ALL OTHER ITEMS NECESSARY TO COMPLETE THE SYSTEM. IT IS THE INTENT OF THESE PLANS AND DOCUMENTS TO PROVIDE A COMPLETELY FINISHED, TESTED, AND OPERATIONAL ELECTRICAL SYSTEM. ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND READY FOR OPERATION, EVEN IF NOT COMPLETELY SHOWN, SHALL BE FURNISHED, DELIVERED AND INSTALLED BY THE CONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
6. THE CONTRACTOR AND SUB-CONTRACTORS SHALL BE EXPERIENCED AND KNOWLEDGEABLE OF INSTALLATION PRACTICES AND LOCAL CODE REQUIREMENTS. EACH SHALL MAKE KNOWN TO THE OWNER'S REPRESENTATIVE WITH THE SUBMISSION OF HIS PROPOSAL OF ANY MATERIALS OR APPARATUS BELIEVED TO BE INADEQUATE, UNSUITABLE, IN VIOLATION OF APPLICABLE LAWS, ORDINANCES, OR RULES, AND OF ANY NECESSARY ITEMS OF WORK OMITTED. IN THE ABSENCE OF SUCH WRITTEN NOTICE, IT IS MUTUALLY AGREED THAT THE CONTRACTOR AND HIS SUB-CONTRACTORS HAVE INCLUDED THE COST OF ALL REQUIRED ITEMS IN THEIR BID, AND THAT THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROVED SATISFACTORY FUNCTIONING OF THE ENTIRE SYSTEM WITHOUT EXTRA COMPENSATION.
7. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL "OWNER FURNISHED REQUIREMENTS" REQUIRED BY LOCAL POWER COMPANY TO PROVIDE ELECTRICAL SERVICE. COORDINATION WITH THE LOCAL POWER COMPANY, BALTIMORE GAS AND ELECTRIC COMPANY, SOUTH/WEST CUSTOMER OPERATIONS 7317 PARKWAY DRIVE SOUTH, HANOVER, MARYLAND 21076. PHONE (410) 850-4620, SHALL BE PART OF THIS WORK. THE OWNER SHALL PAY ALL ELECTRIC CO. FEES.
8. THE ELECTRICAL CONTRACTOR SHALL CONSULT DRAWINGS OF ALL OTHER TRADES FOR RELATED AND ADJOINING WORK AND COORDINATE INSTALLATION INTERFERENCES.
9. THE DRAWING(S) IS DIAGRAMMATIC AND DOES NOT PURPORT TO SHOW ALL MATERIAL NECESSARY FOR A COMPLETE AND USABLE SYSTEM. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL NECESSARY FOR A COMPLETE USABLE SYSTEM AND SHALL BE RESPONSIBLE FOR APPROVAL OF WORK BY THE AUTHORITY HAVING JURISDICTION.
10. THE CONTRACTOR SHALL PROVIDE AND INSTALL BRACES/SUPPORTS FOR HIS WORK.
11. ALL LIGHTING FIXTURES SHALL BE PROVIDED COMPLETE WITH LENS, BALLASTS, TRIMS, LAMPS, ETC.
12. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR WITH ALL CIRCUITS IAW NFPA 70 ARTICLE 250 WHETHER SHOWN OR NOT ON THE PLANS. ADJUST FEEDER AND BRANCH CIRCUIT RACEWAY SIZE IF REQUIRED.
13. VERIFY EQUIPMENT LOCATIONS FOR ELECTRICAL ROUGH-INS WITH OWNER/USER REPRESENTATIVE, FIELD MEASUREMENTS, AND WITH THE REQUIREMENTS OF THE ACTUAL EQUIPMENT TO BE CONNECTED. CONFLICTS WITH OTHER EQUIPMENT AND FEATURES SHALL BE RESOLVED PRIOR TO INSTALLATIONS.
14. COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES AND CONDUIT TO BE SET IN POURED IN PLACE CONCRETE.
15. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED, COORDINATE WITH OWNER'S REPRESENTATIVE.
16. INSTALL ELECTRICAL EQUIPMENT TO FACILITATE MAINTENANCE AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS.
17. COORDINATE CONNECTION OF ELECTRICAL SYSTEMS WITH EXTERIOR UNDERGROUND UTILITIES AND SERVICES. COMPLY WITH REQUIREMENTS OF GOVERNING REGULATIONS, FRANCHISED SERVICE COMPANIES, AND CONTROLLING AGENCIES. PROVIDE REQUIRED CONNECTION FOR ELECTRICAL SERVICE.
18. PROVIDE AND ARRANGE FOR REPAIRS REQUIRED TO RESTORE OTHER WORK BECAUSE OF DAMAGE CAUSED AS A RESULT OF ELECTRICAL INSTALLATIONS.
19. NO ADDITIONAL COMPENSATION WILL BE AUTHORIZED FOR CUTTING AND PATCHING WORK THAT IS NECESSITATED BY ILL-TIMED, DEFECTIVE, OR NON-CONFORMING INSTALLATIONS.
20. IN GENERAL, THE WORD "PROVIDE" MEANS TO FURNISH AND INSTALL.
21. ALL CONDUCTORS SHALL BE COPPER AND HAVE 75 DEGREE C, INSULATION. ALL EQUIPMENT LUGS SHALL BE U. L. LISTED FOR 75 DEGREE C. WHERE EQUIPMENT IS NOT LISTED AS SUCH, ADJUST CONDUCTOR AMPACITY IAW NFPA 70 ARTICLE 310, TABLE 16.
22. THE DESIGN OF ALL BRANCH CIRCUITS IS BASED ON COPPER CONDUCTORS.
23. MINIMUM CONDUCTOR SIZE IS #12 AWG. (UNLESS OTHERWISE NOTED)
24. CONTRACTOR SHALL PROVIDE CONDUCTORS/CABLE/CONDUIT I.A.W. N.E.C. AND PRECEDING 3 NOTES.
25. ANY BRANCH CIRCUIT REQUIRING A NEUTRAL SHALL BE PROVIDED WITH ITS OWN NEUTRAL. NO COMMON NEUTRAL SHALL BE PERMITTED.
26. THE CONTRACTOR SHALL PROVIDE CONNECTIONS FOR ALL ELECTRICAL EQUIPMENT INSTALLED ON THIS PROJECT. CONNECTIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND/OR CONSISTENT WITH INDUSTRY PRACTICE.
27. ALL CONDUIT SHALL BE RIGID GALVANIZED STEEL UNLESS OTHERWISE NOTED.

PANEL "MDP" SCHEDULE										
MAINS: 480Y/277V, 3φ, 4W(100%S/N)										
CIRCUIT BREAKERS			MAIN: 100A MLO							
			BRANCH: 10,000AIC BOLT-ON							
DESIGNATION	BRKR. F/T/P	WIRE SIZE	CIRCUIT NO.	CONNECTED AMPERES BUS A	CONNECTED AMPERES BUS B	CONNECTED AMPERES BUS C	CIRCUIT NO.	WIRE SIZE	BRKR. F/T/P	DESIGNATION
BLOWER MOTOR #1	100/30/3	#10AWG	1	14						
				14			2	#10AWG	100/30/3	BLOWER MOTOR #2
BLOWER MOTOR #1		#10AWG	3		14					
					14		4	#10AWG		BLOWER MOTOR #2
BLOWER MOTOR #1		#10AWG	5			14				
						14	6	#10AWG		BLOWER MOTOR #2
TRANSFORMER	100/40/2	#8AWG	7	31						
TRANSFORMER		#8AWG	9		31					
			11							
TOTAL CONNECTED AMPERES:				59	59	28				

PANEL "LP" SCHEDULE										
MAINS: 240/120V, 1φ, 3W(100%S/N)										
CIRCUIT BREAKERS			MAIN: 40A, 2P, 22000AIC							
			BRANCH: 10,000AIC							
DESIGNATION	BRKR. F/T/P	WIRE SIZE	CIRCUIT NO.	CONNECTED AMPERES BUS A	CONNECTED AMPERES BUS B	CONNECTED AMPERES BUS C	CIRCUIT NO.	WIRE SIZE	BRKR. F/T/P	DESIGNATION
FLARE CONTROL PANEL	100/20/1	#12AWG	1	10		5	2	#12AWG	100/20/1	RECEPTACLE AND LIGHTS
SPARE			3				4		100/20/1	SPARE
SPACE			5				6			SPACE
SPACE			7				8			SPACE
TOTAL CONNECTED AMPERES:				10	5					

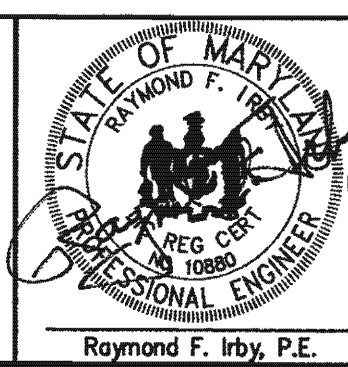
M: 298024-02 ELECTRICAL SERVICE, PNLSCH35, PNLSCHB, ENOTES

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. Elw 7/6/99
DIRECTOR OF PUBLIC WORKS DATE

John J. O'Hara 7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

SCS ENGINEERS
CONSULTING ENGINEERS
11260 ROGER BACON DRIVE
SUITE 300
RESTON, VIRGINIA 22090
PH. (703) 471-6150
FAX. (703) 471-6676



DES. RFI					
DRN. DDD, TE					
CHK. ERP					
DATE: 6-2-99	BY	NO.	REVISION	DATE	

ELECTRICAL DETAILS
LFG COLLECTION

NEW CUT LANDFILL IMPROVEMENTS

CAPITAL PROJECT NO. C-0237-H

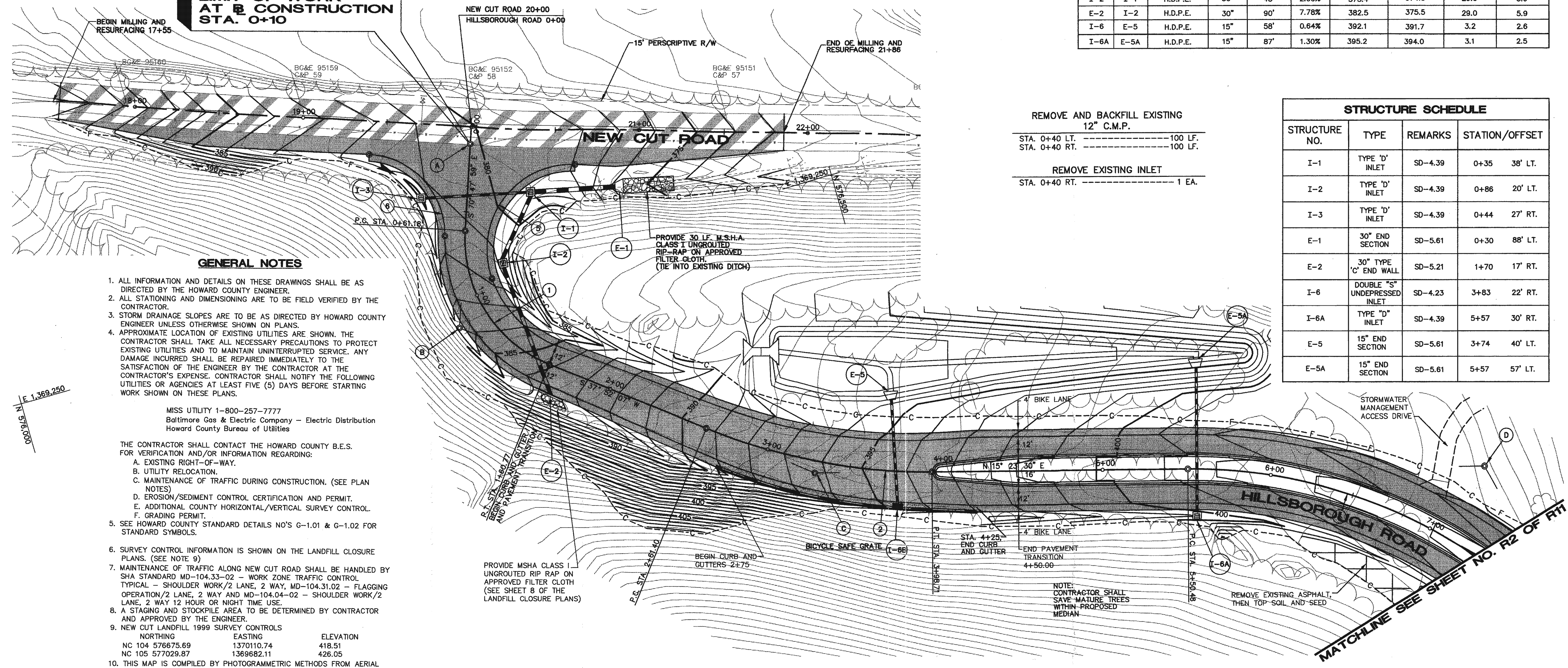
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS NOTED

SHEET G11 OF 11

LIMIT OF WORK AT CONSTRUCTION STA. 0+10

PIPE SCHEDULE									
FROM	TO	TYPE	SIZE	LENGTH	SLOPE	INV. FROM	INV. TO	Q (cfs)	V (fps)
I-1	E-1	H.D.P.E.	30"	50'	2.20%	374.4	373.3	29.0	5.9
I-3	I-1	H.D.P.E.	15"	60'	2.08%	376.9	375.6	2.7	2.2
I-2	I-1	H.D.P.E.	30"	45'	2.00%	375.4	374.5	29.0	5.9
E-2	I-2	H.D.P.E.	30"	90'	7.78%	382.5	375.5	29.0	5.9
I-6	E-5	H.D.P.E.	15"	58'	0.64%	392.1	391.7	3.2	2.6
I-6A	E-5A	H.D.P.E.	15"	87'	1.30%	395.2	394.0	3.1	2.5



GENERAL NOTES

- ALL INFORMATION AND DETAILS ON THESE DRAWINGS SHALL BE AS DIRECTED BY THE HOWARD COUNTY ENGINEER.
- ALL STATIONING AND DIMENSIONING ARE TO BE FIELD VERIFIED BY THE CONTRACTOR.
- STORM DRAINAGE SLOPES ARE TO BE AS DIRECTED BY HOWARD COUNTY ENGINEER UNLESS OTHERWISE SHOWN ON PLANS.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.
 - MISS UTILITY 1-800-257-7777
 - Baltimore Gas & Electric Company - Electric Distribution
 - Howard County Bureau of Utilities
- THE CONTRACTOR SHALL CONTACT THE HOWARD COUNTY B.E.S. FOR VERIFICATION AND/OR INFORMATION REGARDING:
 - A. EXISTING RIGHT-OF-WAY.
 - B. UTILITY RELOCATION.
 - C. MAINTENANCE OF TRAFFIC DURING CONSTRUCTION. (SEE PLAN NOTES)
 - D. EROSION/SEDIMENT CONTROL CERTIFICATION AND PERMIT.
 - E. ADDITIONAL COUNTY HORIZONTAL/VERTICAL SURVEY CONTROL.
 - F. GRADING PERMIT.
- SEE HOWARD COUNTY STANDARD DETAILS NO'S G-1.01 & G-1.02 FOR STANDARD SYMBOLS.
- SURVEY CONTROL INFORMATION IS SHOWN ON THE LANDFILL CLOSURE PLANS. (SEE NOTE 9)
- MAINTENANCE OF TRAFFIC ALONG NEW CUT ROAD SHALL BE HANDLED BY SHA STANDARD MD-104.33-02 - WORK ZONE TRAFFIC CONTROL TYPICAL - SHOULDER WORK/2 LANE, 2 WAY, MD-104.31.02 - FLAGGING OPERATION/2 LANE, 2 WAY AND MD-104.04-02 - SHOULDER WORK/2 LANE, 2 WAY 12 HOUR OR NIGHT TIME USE.
- A STAGING AND STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR AND APPROVED BY THE ENGINEER.
- NEW CUT LANDFILL 1999 SURVEY CONTROLS

NORTHING	EASTING	ELEVATION
NC 104 576675.69	1370110.74	418.51
NC 105 577029.87	1369682.11	426.05
- THIS MAP IS COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 3-3-96. GRID BASED ON MARYLAND STATE PLANE COORDINATE SYSTEM NAD 1983. VERTICAL DATUM BASED ON NAVD 1988.
- ALL COMPACTION UNDER THE ROAD BED IN EMBANKMENT AREAS SHALL BE IN ACCORDANCE WITH AASHTO T-180 REQUIREMENTS.

REMOVE AND BACKFILL EXISTING 12" C.M.P.
 STA. 0+40 LT. ----- 100 LF.
 STA. 0+40 RT. ----- 100 LF.

REMOVE EXISTING INLET
 STA. 0+40 RT. ----- 1 EA.

STRUCTURE SCHEDULE			
STRUCTURE NO.	TYPE	REMARKS	STATION/OFFSET
I-1	TYPE 'D' INLET	SD-4.39	0+35 38' LT.
I-2	TYPE 'D' INLET	SD-4.39	0+86 20' LT.
I-3	TYPE 'D' INLET	SD-4.39	0+44 27' RT.
E-1	30" END SECTION	SD-5.61	0+30 88' LT.
E-2	30" TYPE 'C' END WALL	SD-5.21	1+70 17' RT.
I-6	DOUBLE "S" UNDEPRESSED INLET	SD-4.23	3+83 22' RT.
I-6A	TYPE "D" INLET	SD-4.39	5+57 30' RT.
E-5	15" END SECTION	SD-5.61	3+74 40' LT.
E-5A	15" END SECTION	SD-5.61	5+57 57' LT.

PLAN
SCALE: 1"=30'

CONSTRUCTION & GEOMETRY			
POINT NO.	NORTH	EAST	REMARK
A	576298.605	1369174.317	STA. 0+10.00 LIMIT OF WORK
B	576262.893	1369276.866	STA. 1+18.59 P.I., CURVE NO. 1
C	576442.556	1369416.572	STA. 3+30.95 P.I., CURVE NO. 2
D	576825.685	1369522.044	STA. 7+26.54 P.I., CURVE NO. 3

CURVE DATA						
CURVE NO.	P.C. STA./OFFSET	P.T. STA./OFFSET	Δ	R	T	L
1	0+61.18/0.0'	1+60.77/0.0'	71° 19' 54"	80.00'	57.41'	99.60'
2	2+61.40/0.0'	3+98.71/0.0'	22° 28' 37"	350.00'	69.55'	137.30'
3	5+50.48/0.0'	8+68.91/0.0'	60° 48' 52"	300.00'	176.06'	318.42'
5	0+18.28/62.77' LT.	0+93.60/12.00' LT.	112° 26' 39"	50.00'	74.75'	98.13'
6	0+19.94/59.52' RT.	0+64.49/12.00' RT.	88° 24' 14"	47.00'	45.71'	72.52'

LEGEND

- [Hatched Box] - FULL DEPTH CONSTRUCTION
- [Diagonal Lines] - MILL AND RESURFACE
- [Cross-hatched Box] - EXISTING PAVEMENT TO BE REMOVED
- C--- - TOP OF CUT
- F--- - LIMIT OF FILL

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 	 A/E GROUP, INC. ENGINEERS • PLANNERS 181 E. Main Street Westminster, Maryland 21158 A/E Job No. 98-365-001		DES: F.A.C.		CAPITAL PROJECT NO. C-0237	PLAN SHEET Hillsborough Road Extension	SCALE AS SHOWN SHEET R1 OF R12
			DRN: J.N.W.				

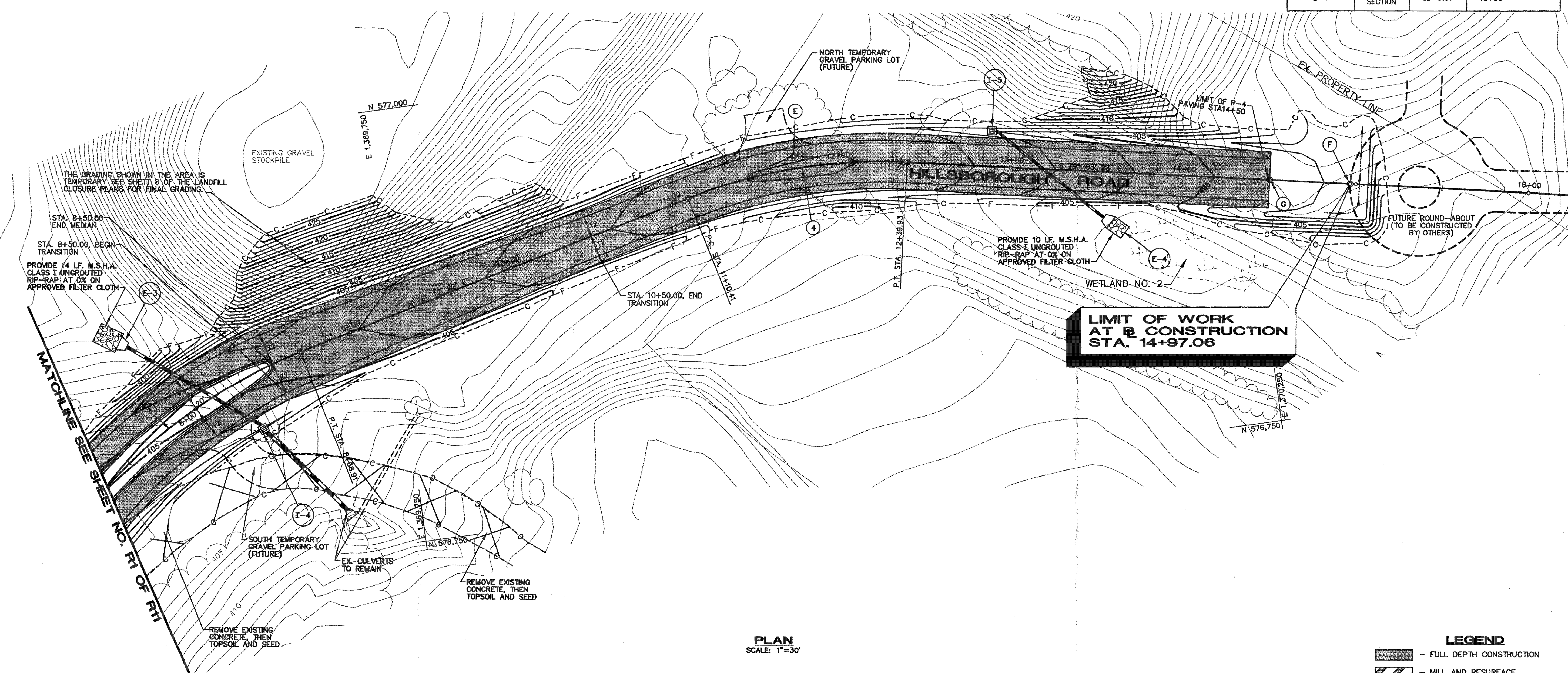


CONSTRUCTION & GEOMETRY			
POINT NO.	NORTH	EAST	REMARK
E	576940.930	1369522.044	STA. 7+26.54 P.I., CURVE NO. 3
F	576879.682	1370308.208	STA. 14+97.06 LIMIT OF WORK

CURVE DATA						
CURVE NO.	P.C. STA./OFFSET	P.T. STA./OFFSET	Δ	R	T	L
3	5+50.48/0.0'	8+65.91/0.0'	60° 48' 52"	300.00'	176.06'	318.42'
4	11+10.41/0.0'	12+39.93/0.0'	24° 44' 15"	300.00'	65.79'	129.53'

PIPE SCHEDULE									
FROM	TO	TYPE	SIZE	LENGTH	SLOPE	INV. FROM	INV. TO	Q (cfs)	V (fps)
I-4	E-3	H.D.P.E.	18"	92'	4.89%	399.00	394.50	8.3	4.7
I-5	E-4	H.D.P.E.	15"	88'	0.51%	403.85	403.40	0.5	0.4

STRUCTURE SCHEDULE			
STRUCTURE NO.	TYPE	REMARKS	STATION/OFFSET
I-4	TYPE 'D' INLET	SD-4.39	8+28 30' RT.
I-5	TYPE 'D' INLET	SD-4.39	12+88 20' LT.
E-3	18" END SECTION	SD-5.61	7+88 53' LT.
E-4	15" END SECTION	SD-5.61	13+55 27' RT.



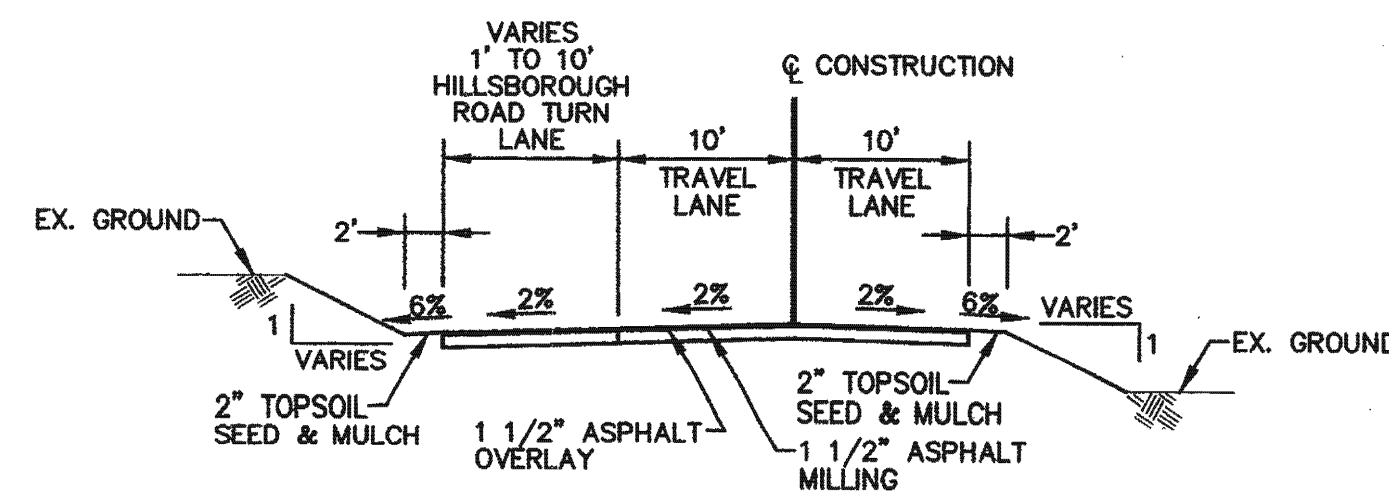
LIMIT OF WORK AT B CONSTRUCTION STA. 14+97.06

PLAN
SCALE: 1"=30'

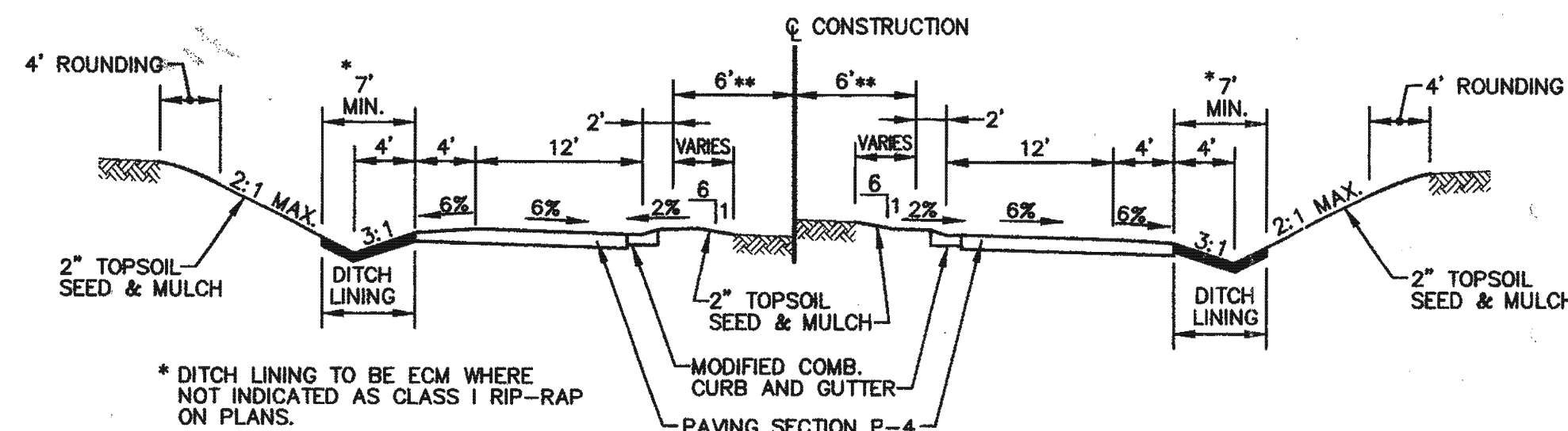
LEGEND

	- FULL DEPTH CONSTRUCTION
	- MILL AND RESURFACE
	- EXISTING PAVEMENT TO BE REMOVED
	- - - C - - - TOP OF CUT
	- - - F - - - LIMIT OF FILL

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>James A. Sullivan</i> 7/6/99 CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION</p> <p><i>Robert J. ...</i> 7/6/99 CHIEF, BUREAU OF ENGINEERING</p> <p><i>Elizabeth A. ...</i> 7/6/99 CHIEF, BUREAU OF HIGHWAYS</p>	<p>A/E GROUP, INC. ENGINEERS • PLANNERS 181 E. Main Street Westminster, Maryland 21158 A/E Job No. 98-365-001</p>	<p>DES: F.A.C. DRN: J.N.W. CHK: W.S.A. DATE: 5/99</p>	<p>CAPITAL PROJECT NO. C-0237</p> <p>PLAN SHEET Hillsborough Road Extension</p> <p>SCALE AS SHOWN SHEET R2 of R12</p>	<p>BY NO. REVISION DATE</p> <p>6/21/99</p>
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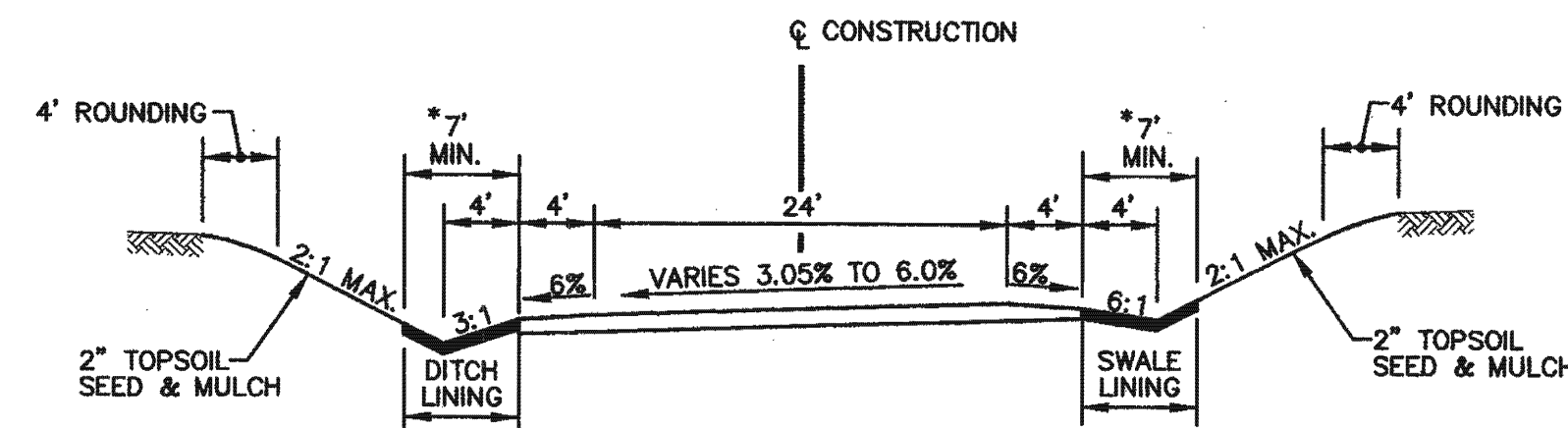


TYPICAL MILLING AND OVERLAY SECTION
NEW CUT ROAD AT HILLSBOROUGH ROAD INTERSECTION
NOT TO SCALE



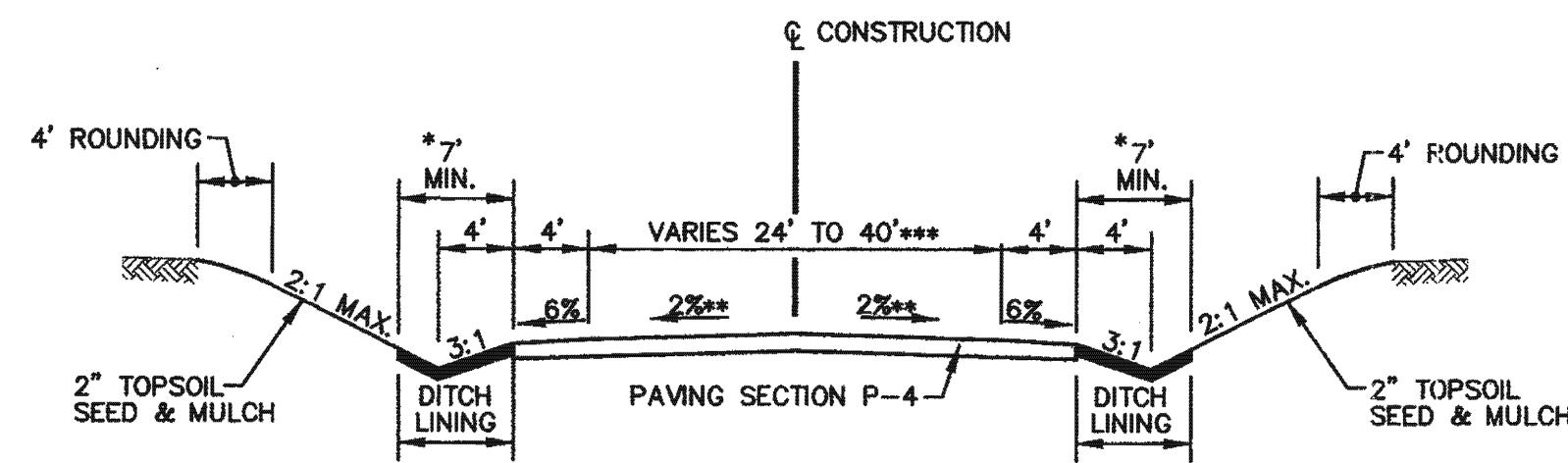
VARIABLES FROM 5' TO 8' STA 4+00.00 TO STA 4+50.00
**VARIABLES FROM 8' TO 5' STA 8+00.00 TO STA 8+50.00

TYPICAL SECTION
STA. 4+25.00 TO STA. 8+50.00
NOT TO SCALE



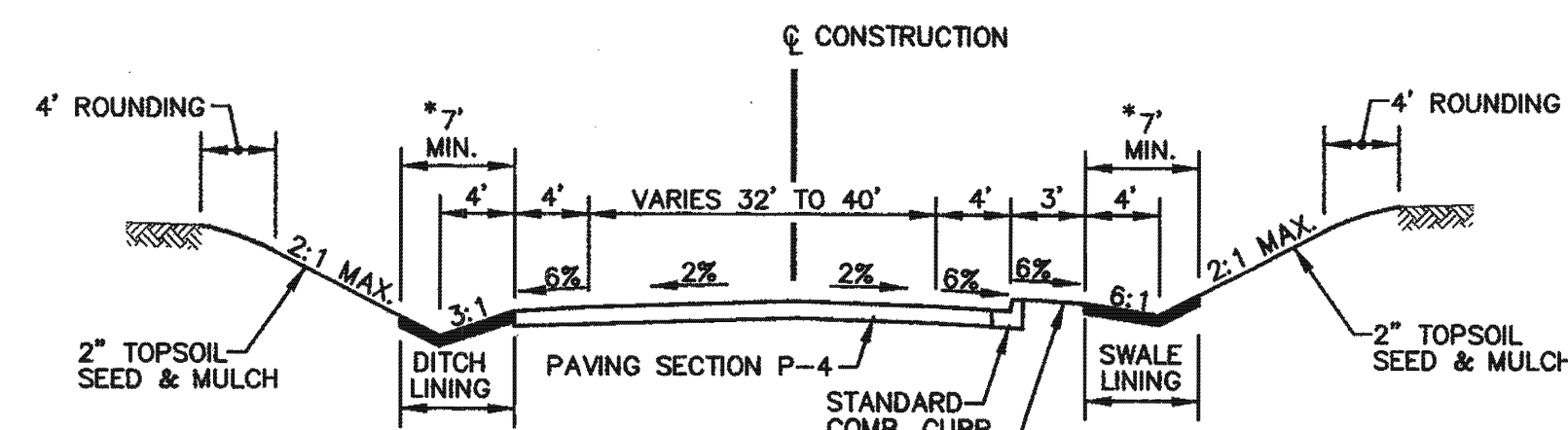
* DITCH OR SWALE LINING TO BE ECM WHERE NOT INDICATED AS CLASS 1 RIP-RAP ON PLANS.

TYPICAL SECTION
STA. 0+10 TO STA. 1+60.77
NOT TO SCALE



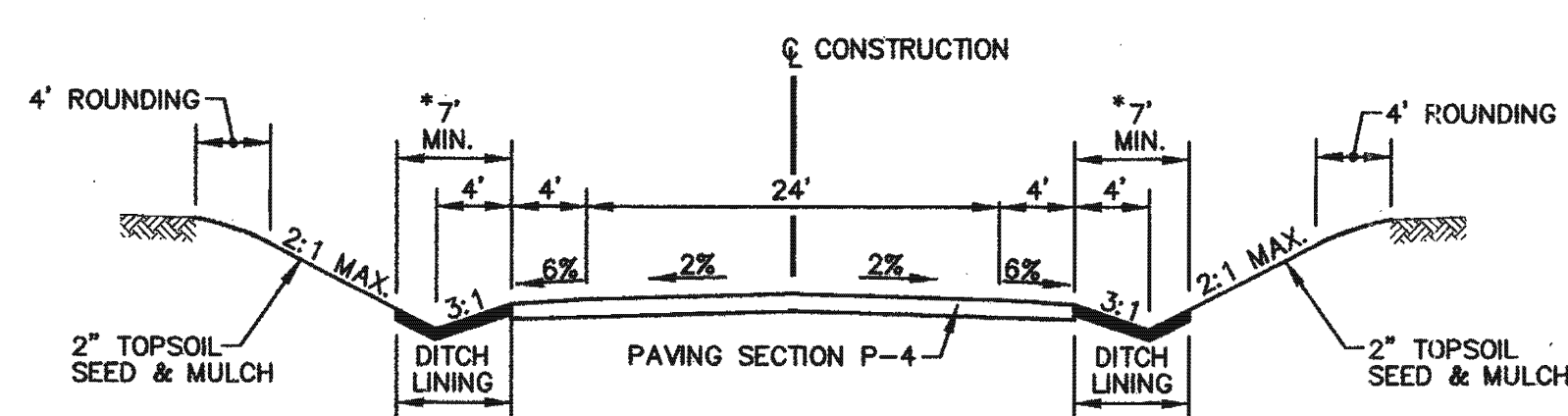
* DITCH LINING TO BE ECM WHERE NOT INDICATED AS CLASS 1 RIP-RAP ON PLANS.
** SEE CURVE #1 & #3 EDGE PROFILES FOR BANKING TRANSITIONS
*** AT STATION 2+75 THE MAXIMUM WIDTH IS 32'

TYPICAL SECTION
STA. 1+60.77 TO STA. 2+75.00
STA. 8+50.00 TO STA. 10+43.91
NOT TO SCALE



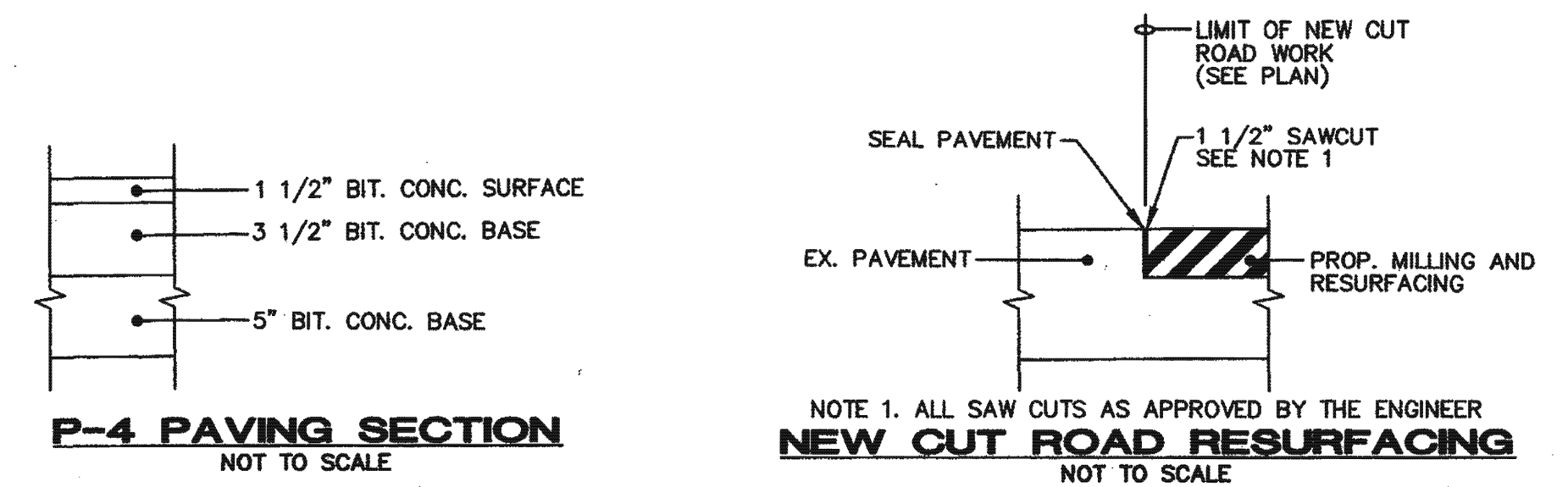
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TYPICAL SECTION
STA. 2+75 TO STA. 4+25
NOT TO SCALE



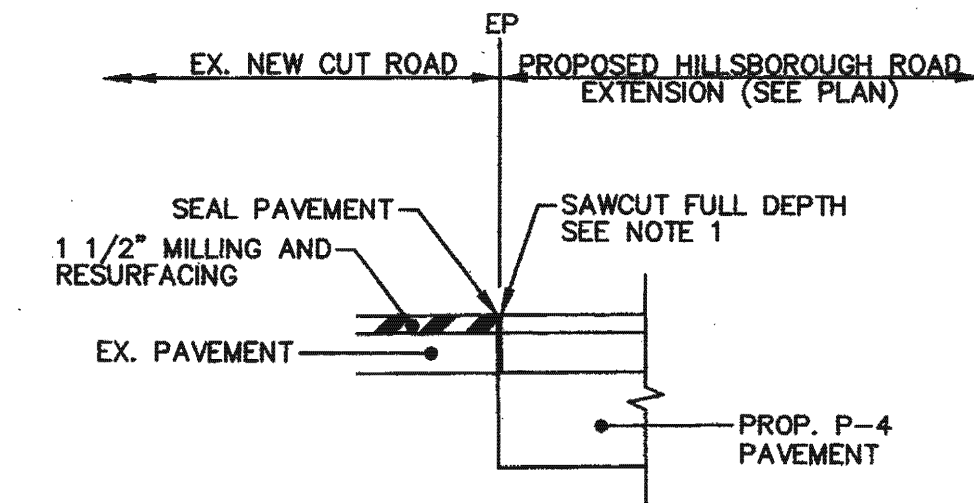
* DITCH LINING TO BE ECM WHERE NOT INDICATED AS CLASS 1 RIP-RAP ON PLANS.

TYPICAL SECTION
STA. 10+43.91 TO STA. 14+50.00
NOT TO SCALE

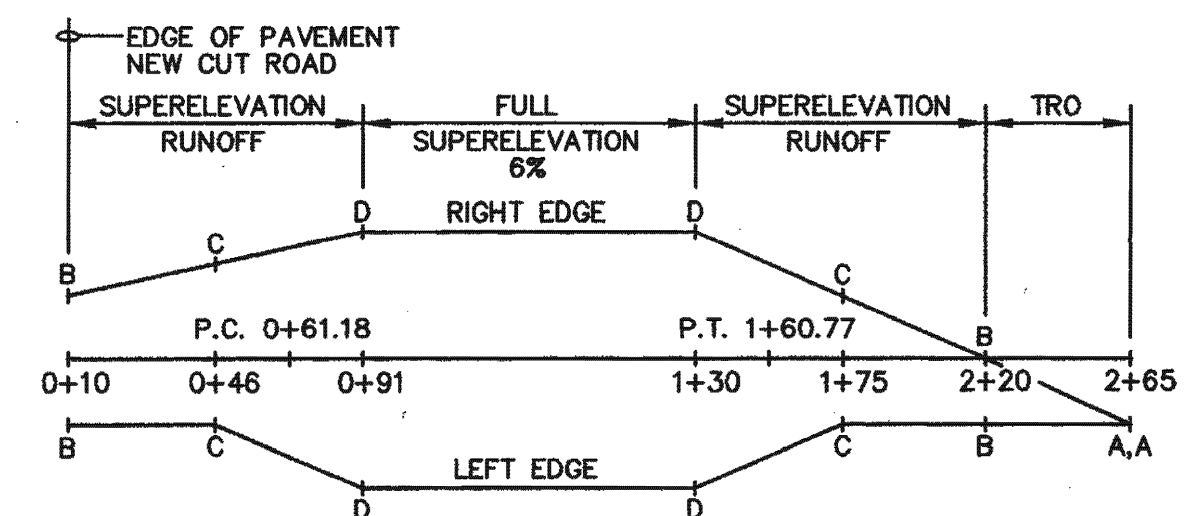


P-4 PAVING SECTION
NOT TO SCALE

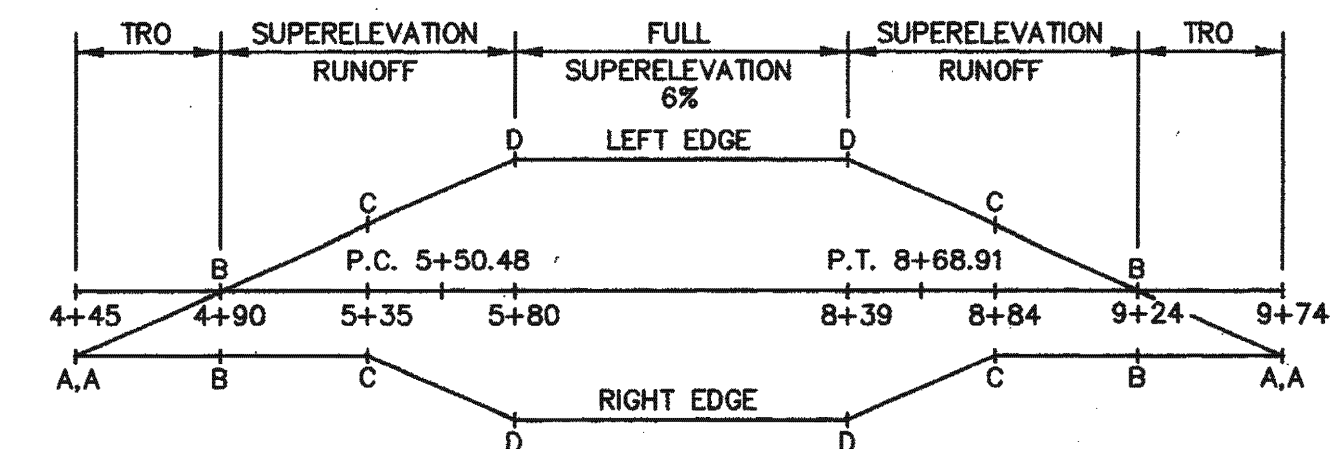
NEW CUT ROAD RESURFACING
NOT TO SCALE



TYPICAL PAVEMENT JOINT
NOT TO SCALE



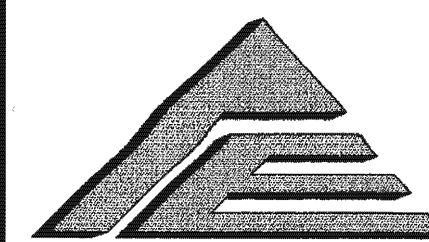
CURVE #1 EDGE PROFILES
NOT TO SCALE



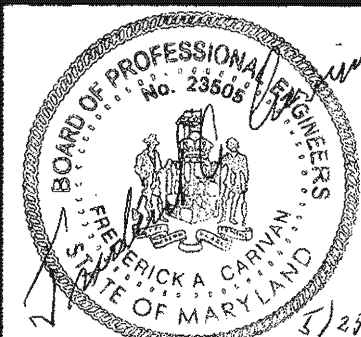
CURVE #3 EDGE PROFILES
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

7/6/99
7/6/99
7/6/99
7-6-99



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Westminster, Maryland 21158
A/E Job No. 98-365-001



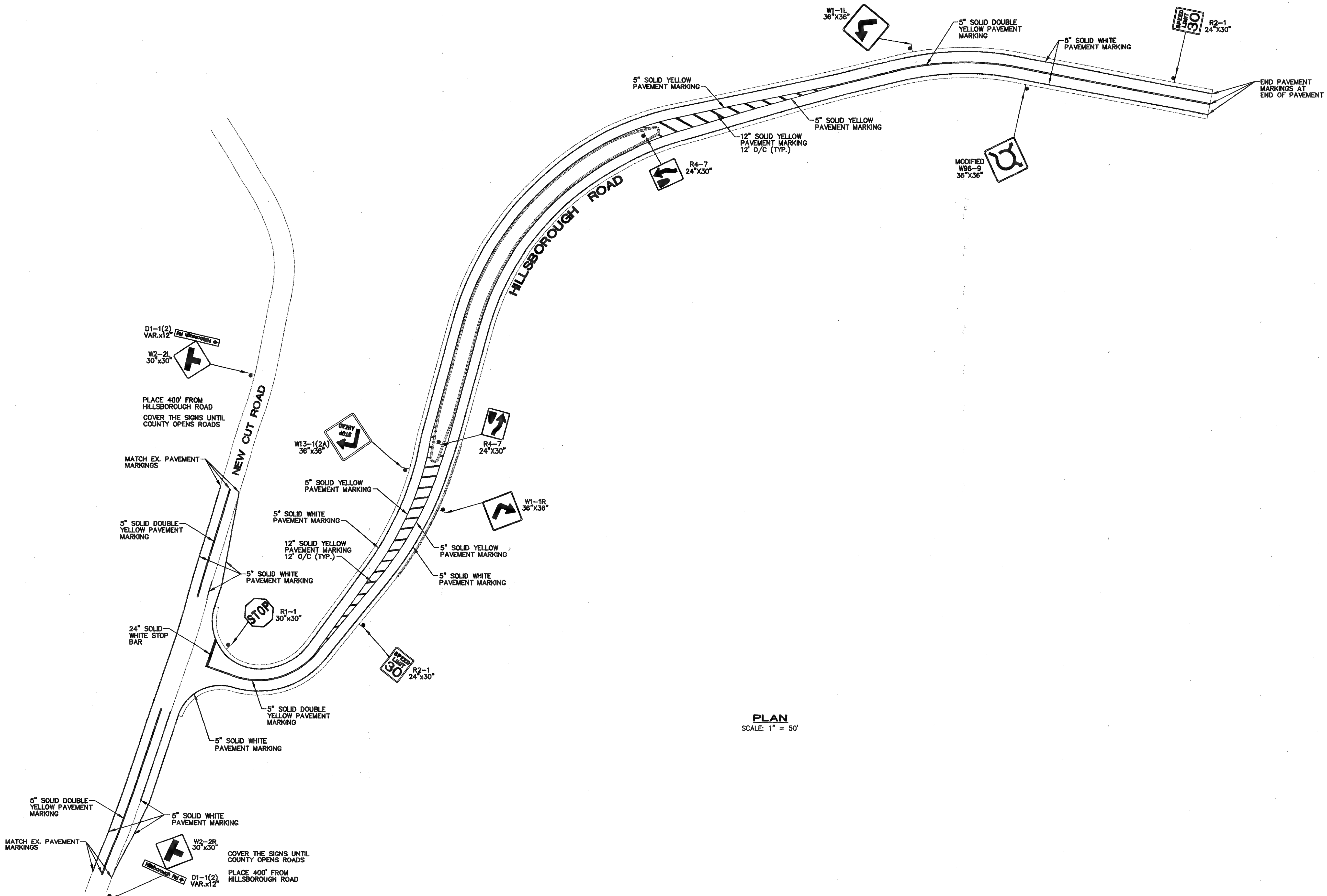
DES: F.A.C.			
DRN: J.N.W.			
CHK: F.A.C.			
DATE: 5/99	BY: NO.	REVISION	DATE

CAPITAL PROJECT NO.
C-0237

TYPICAL SECTIONS
Hillsborough Road Extension

SCALE AS SHOWN

SHEET R3 OF R12



PLAN
SCALE: 1" = 50'

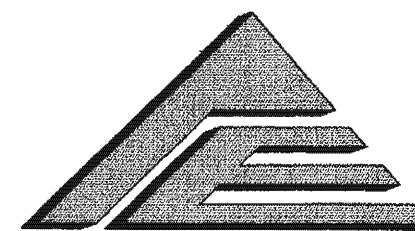
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

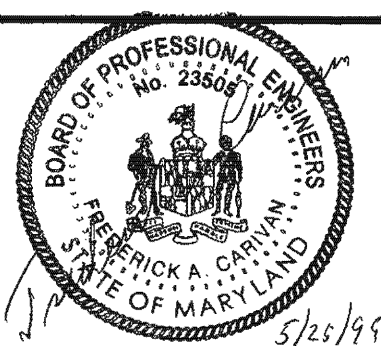
James P. Lee 7/6/99
DEPARTMENT OF PUBLIC WORKS DATE

Richard J. ... 7/6/99
CHIEF, BUREAU OF ENGINEERING DATE

Edw. ... 7/6/99
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION DATE

Richard ... 7-6-99
CHIEF, BUREAU OF HIGHWAYS DATE

 **A/E GROUP, INC.**
ENGINEERS + PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 98-365-001



DES: F.A.C.			
DRN: J.N.W.			
CHK: F.A.C.			
DATE: 5/99	BY NO.	REVISION	DATE

CAPITAL PROJECT NO.
C-0237

600' SCALE MAP NO. _____ DATE: _____

SIGNING AND PAVEMENT MARKING PLAN
Hillsborough Road Extension

SCALE AS SHOWN
SHEET R4 OF R12

GENERAL NOTES

1. THE MAINTENANCE OF TRAFFIC PLAN AS SHOWN HEREON SHALL BE USED BY CONTRACTOR UNLESS AN ALTERNATE PLAN IS SUBMITTED, REVIEWED AND APPROVED BY THE HOWARD COUNTY ENGINEER.

2. SIGNING AND CHANNELIZATION ALONG NEW CUT ROAD SHALL CONFORM WITH MD SHA STANDARD MD 104.04-02 "SHOULDER WORK/2-LANE, 2-WAY/EQU/LESS THAN 40 MPH/OVER 12 HOURS" DURING ALL PHASES OF CONSTRUCTION UNLESS NOTED OTHERWISE ON PHASING DETAILS.

3. LANE CLOSURES OR FLAGGING OPERATIONS ALONG NEW CUT ROAD FOR MILLING AND OVERLAY WILL BE PERMITTED ONLY BETWEEN 9 A.M. AND 3 P.M. MONDAY THRU FRIDAY. ALL SIGNING AND CHANNELIZATION SHALL CONFORM WITH SHA STANDARD MD 104.31-02 "FLAGGING OPERATION/2-LANE, 2-WAY/EQU/LESS 40 MPH/15 MIN.-12 HRS" AS DIRECTED BY ENGINEER.

CONSTRUCTION PHASING

HILLSBOROUGH ROAD WILL BE CONSTRUCTED ENTIRELY ON COUNTY PROPERTY WITHOUT ACCESS TO THE TRAVELING PUBLIC. ONLY AFTER THE WORK HAS BEEN ACCEPTED WILL THE ROADWAY BE OPEN FOR USE AS DIRECTED BY THE COUNTY.

PHASE 1

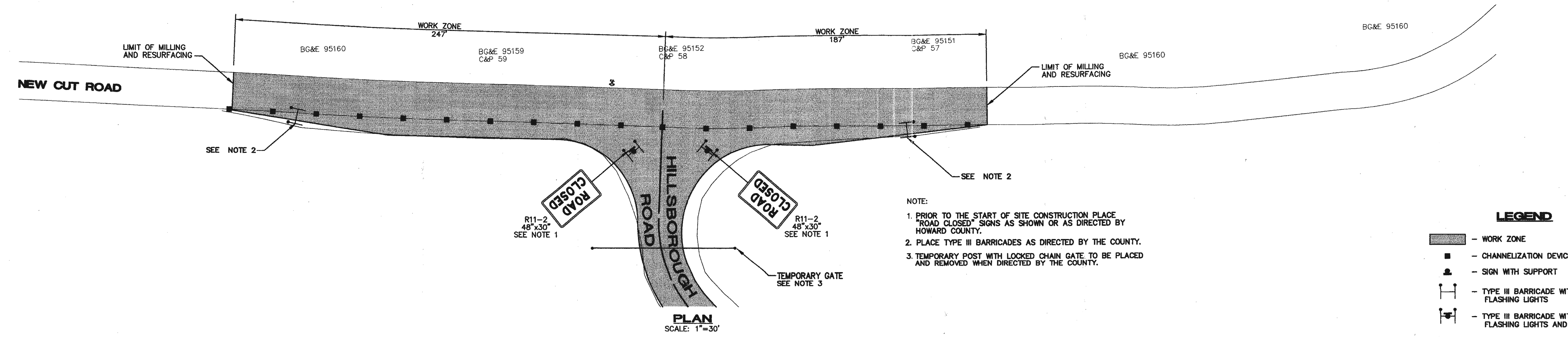
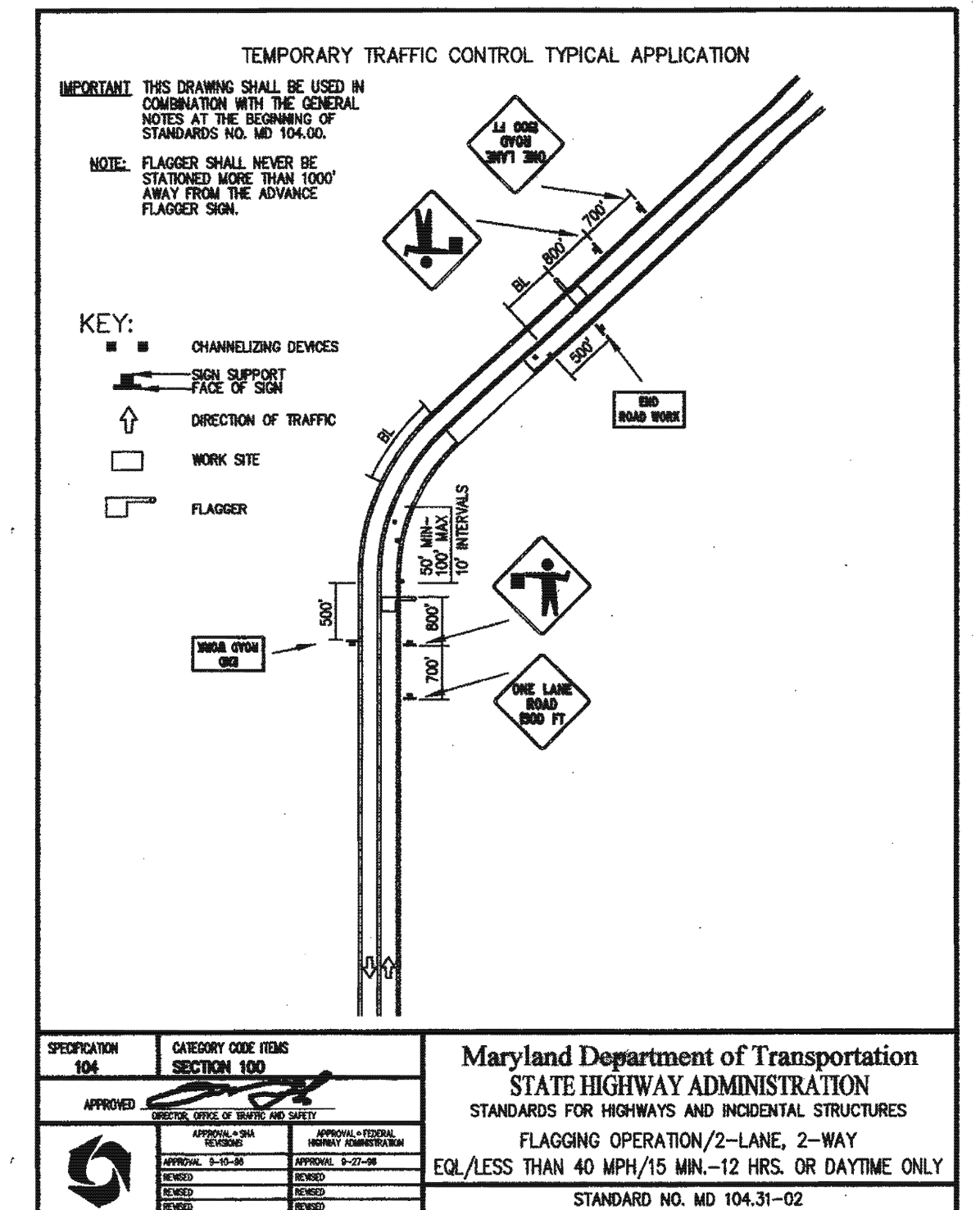
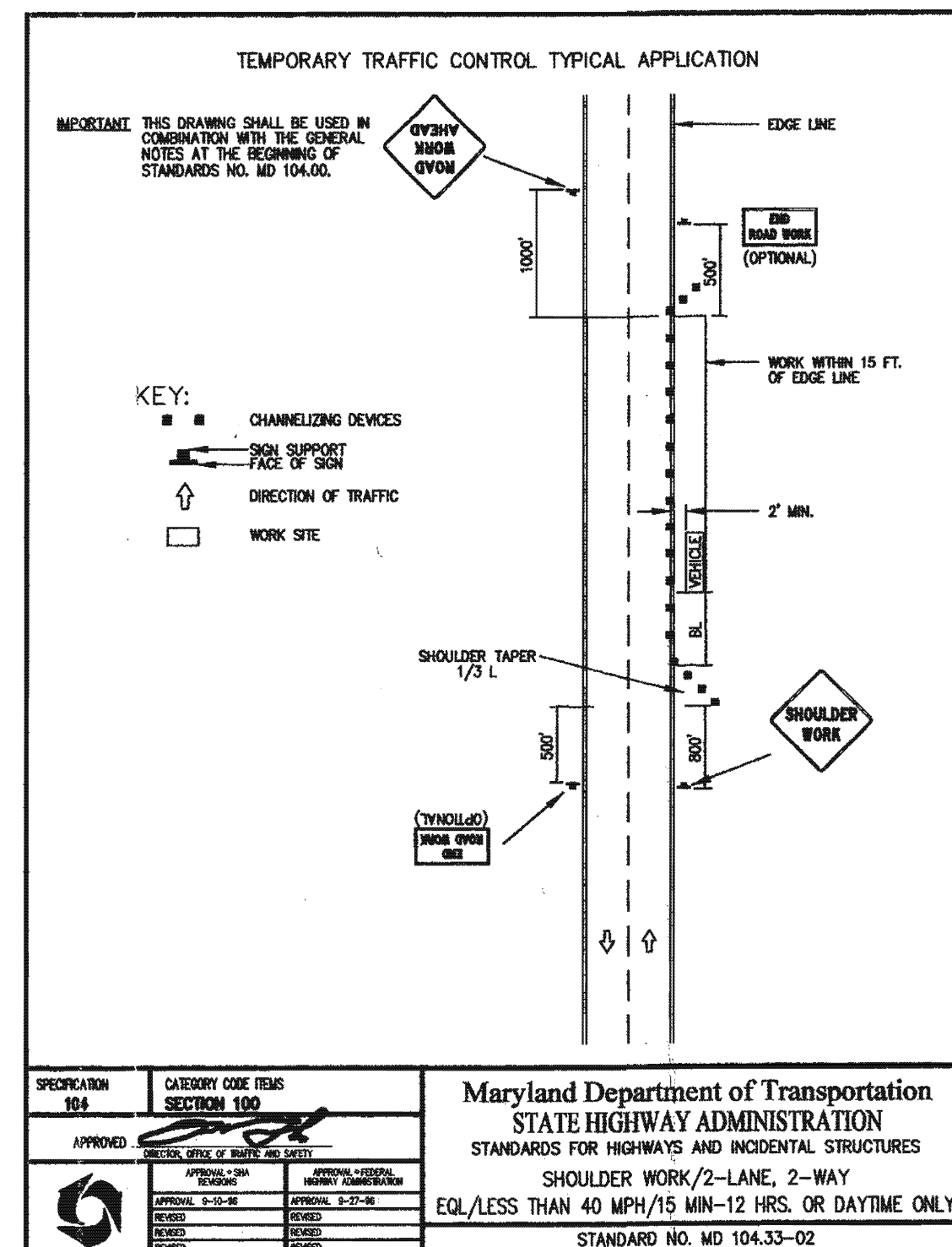
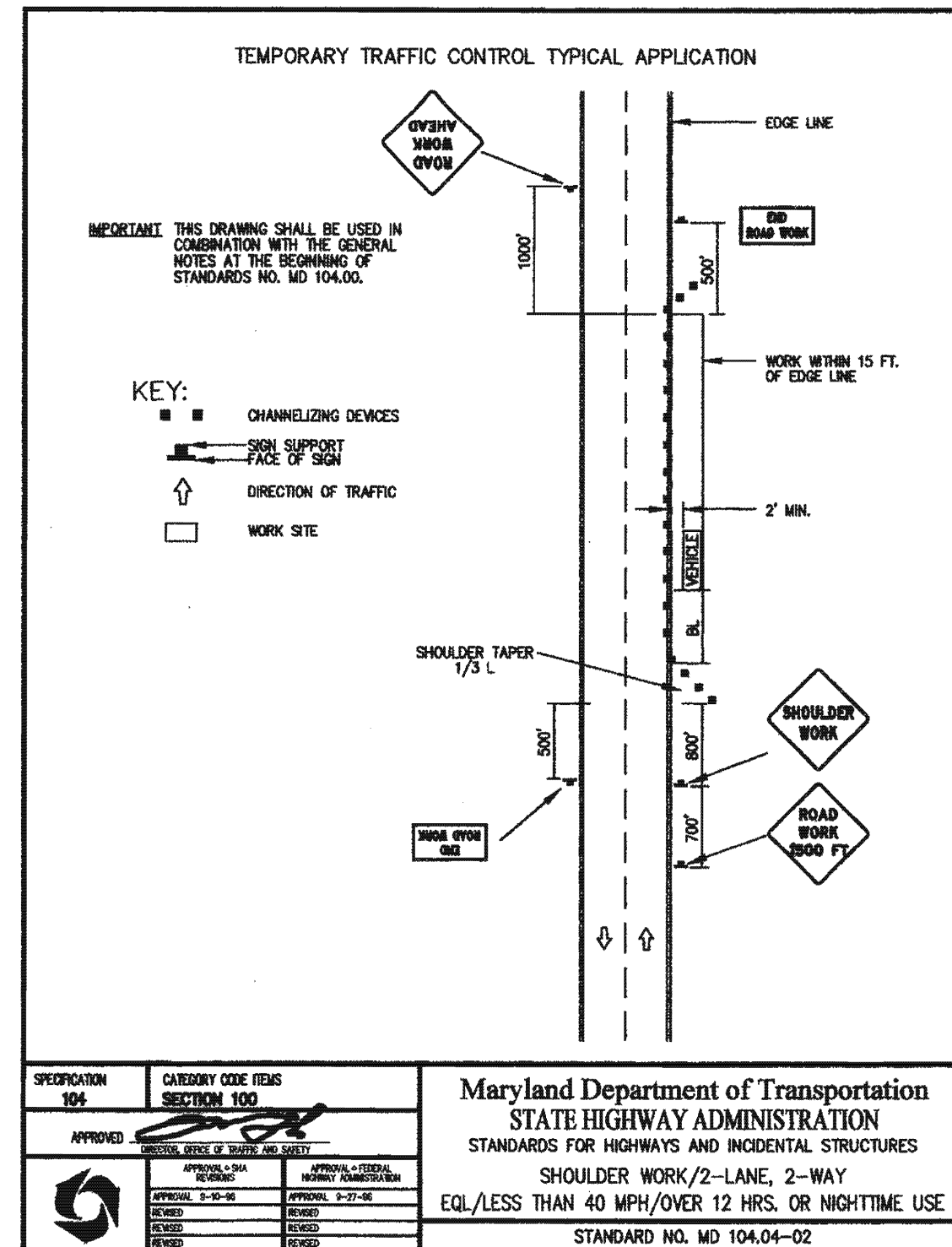
1.1 REMOVE AND RE-GRADE THE EXISTING ACCELERATION AND DECELERATION LANES FOR HILLSBOROUGH ROAD ACCESS ROAD ALONG THE EAST SIDE OF NEW CUT ROAD. ALL SIGNING AND CHANNELIZATION DEVICES AS SHOWN ON MD SHA STANDARD MD104.33-02 "SHOULDER WORK/2-LANE, 2-WAY/EQU/LESS THAN 40 MPH/15 MINUTES-12 HOURS OR DAYTIME ONLY" SHALL BE USED DURING CONSTRUCTION OF ACCESS LANES AS DIRECTED BY HOWARD COUNTY ENGINEER.

1.2 RECONSTRUCT HILLSBOROUGH ROAD ACCESS AND NEW HILLSBOROUGH ROAD PAVEMENT. FOLLOW PHASE 1 DETAIL TO SET-UP SIGNING AND CHANNELIZATION DEVICES AND KEEP IN PLACE UNTILL THE COUNTY HAS ACCEPTED THE ROADWORK AND THE ROAD MAY BE OPEN TO TRAFFIC

PHASE 2

2.1 AFTER THE SECOND BASE COURSE HAS BEEN PLACED ON HILLSBOROUGH ROAD EXTENSION, SAW CUT AND MILL OFF 1 1/2" OF NEW CUT PAVEMENT

2.2 RESURFACE NEW CUT ROAD WHEN PAVING TOP COURSE ON HILLSBOROUGH ROAD. FOR BOTH MILLING AND RESURFACING ON NEW CUT ROAD APPLY SIGNS AND DEVICES AS SHOWN ON MD SHA STANDARD 104.31-02 FLAGGING OPERATION/2-LANE, 2WAY/EQU/LESS THAN 40 MPH/15 MINUTES-12 HOURS OR DAYTIME ONLY.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

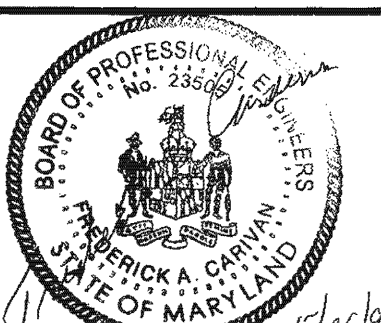
James J. ... 7/6/99
DEPARTMENT OF PUBLIC WORKS DATE

Elizabeth D. Calce 7/6/99
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION DATE

Paul ... 7/6/99
CHIEF, BUREAU OF ENGINEERING DATE

... .. 7-6-99
CHIEF, BUREAU OF HIGHWAYS DATE

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 98-365-001



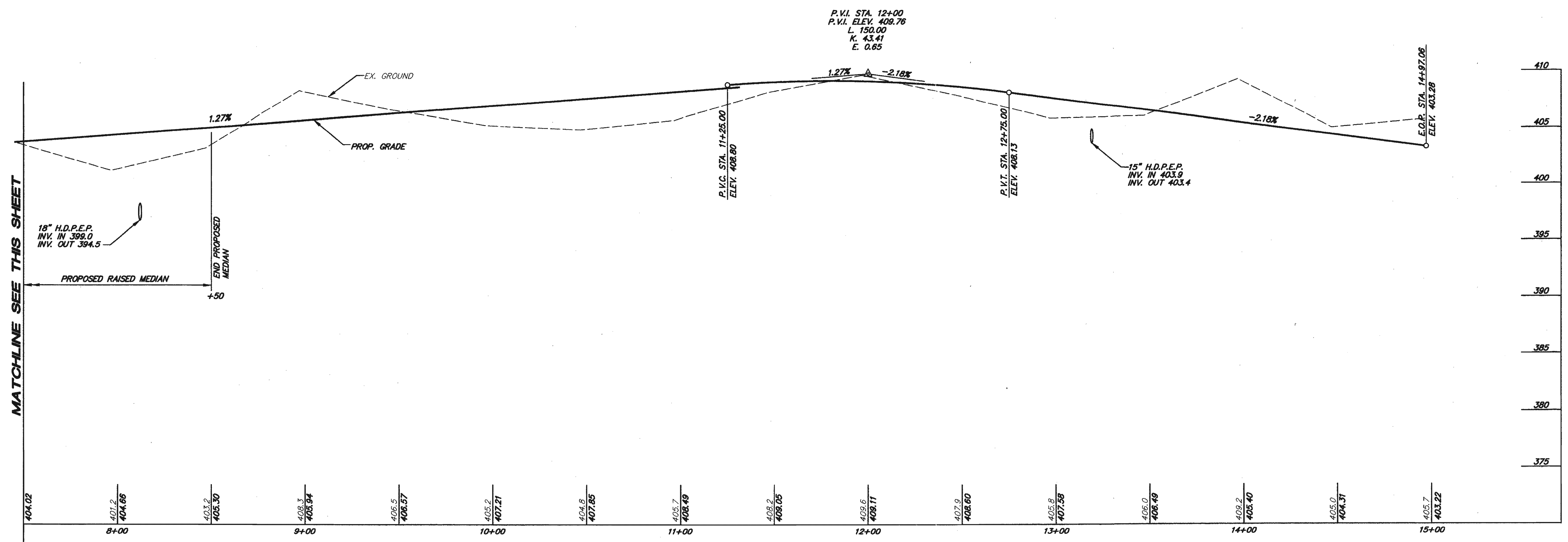
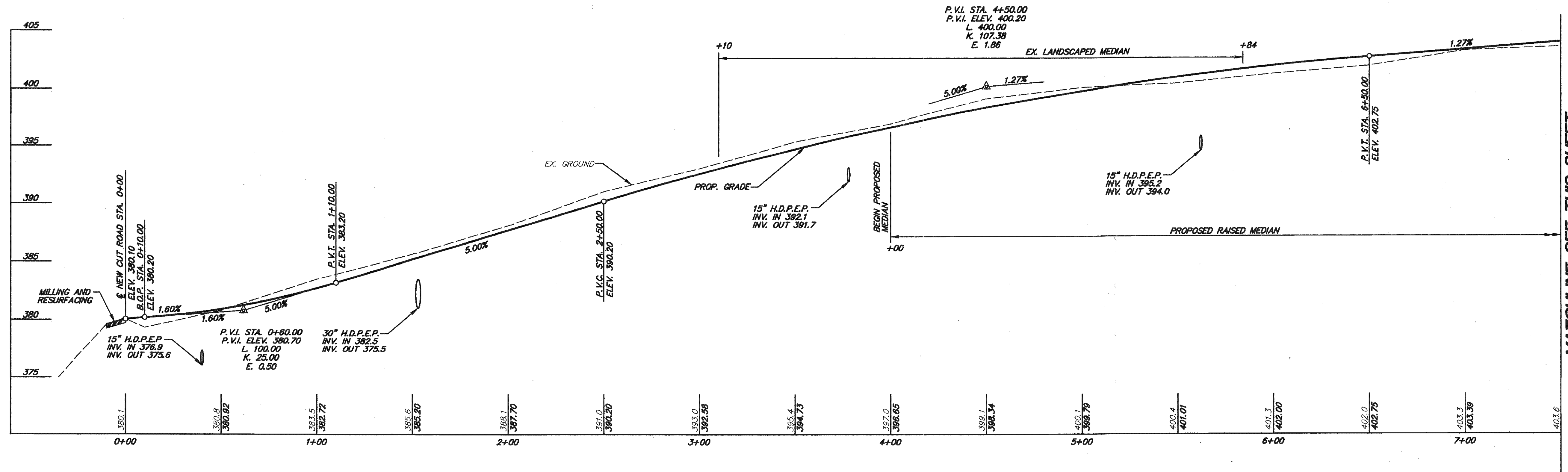
DES: F.A.C.			
DRN: J.N.W.			
CHK: F.A.C.			
DATE: 5/99	BY	NO.	REVISION

CAPITAL PROJECT NO.
C-0237

600' SCALE MAP NO. _____ DATE: _____

TRAFFIC CONTROL PLAN
Hillsborough Road Extension

SCALE AS SHOWN
SHEET R5 OF R12



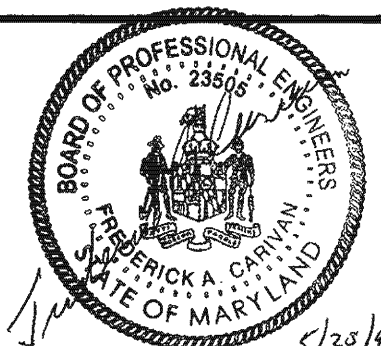
PROFILE
 SCALE: HORIZ. 1" = 30'
 VERT. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

James M. Lewis 7/6/99
 DEPARTMENT OF PUBLIC WORKS DATE
Stephen D. Baker 7/6/99
 CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION DATE

Paul R. Brown 7/6/99
 CHIEF, BUREAU OF ENGINEERING DATE
Andrew M. Smith 7-6-99
 CHIEF, BUREAU OF HIGHWAYS DATE

A/E GROUP, INC.
 ENGINEERS + PLANNERS
 181 E. Main Street
 Westminster, Maryland 21158
 A/E Job No. 98-365-001

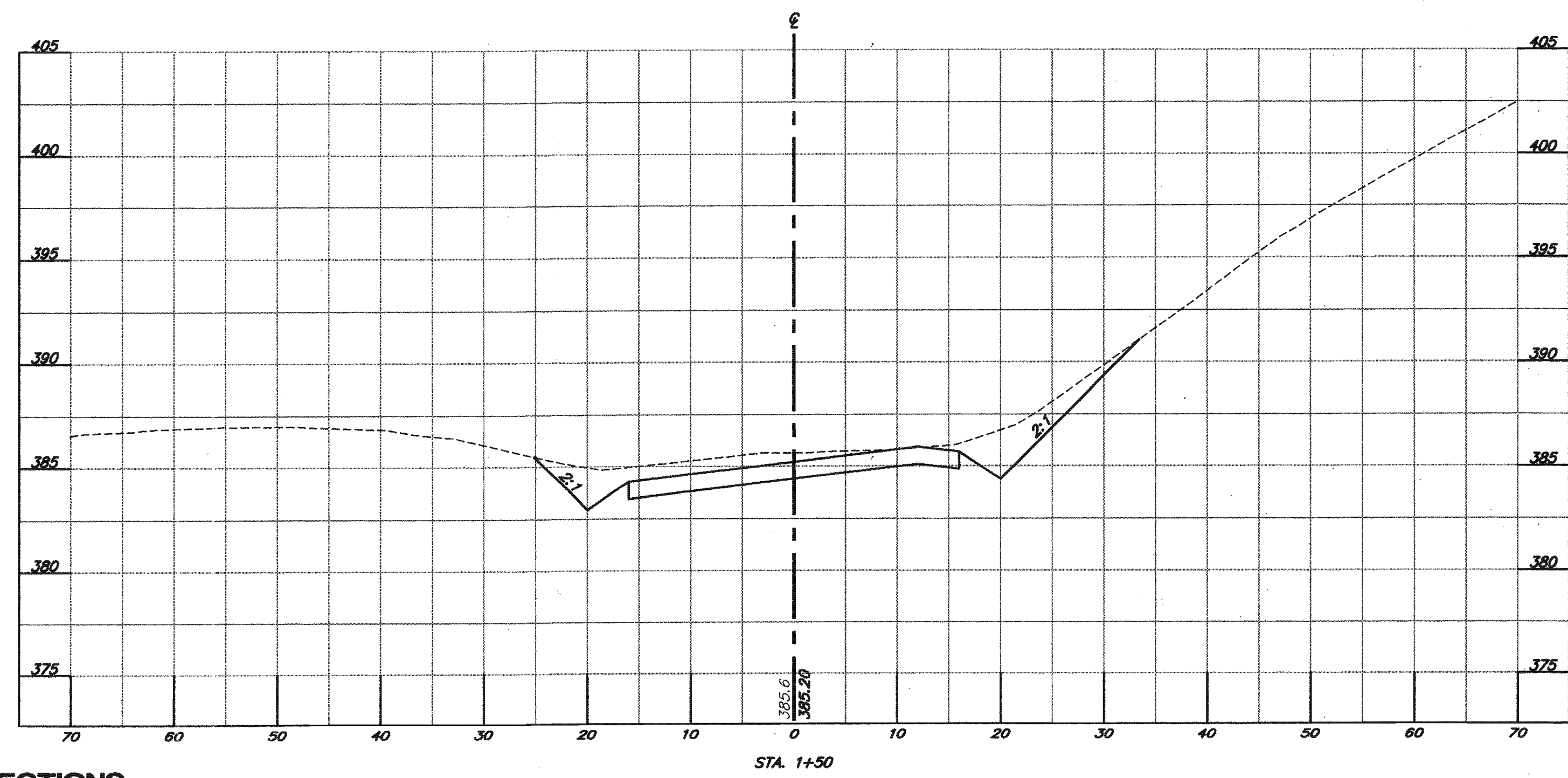
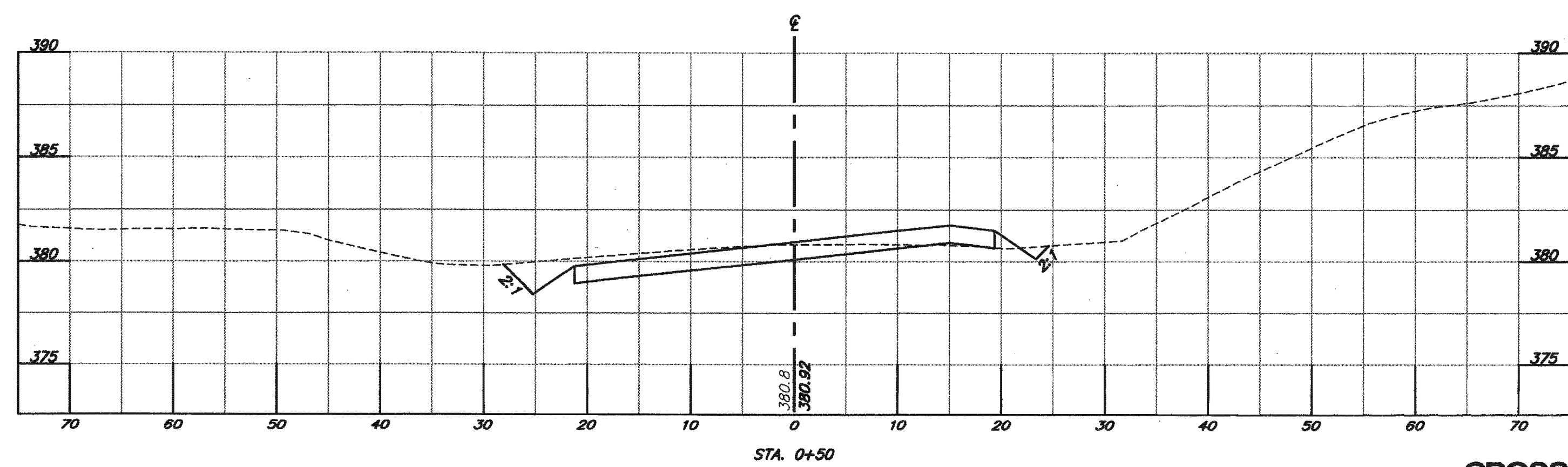
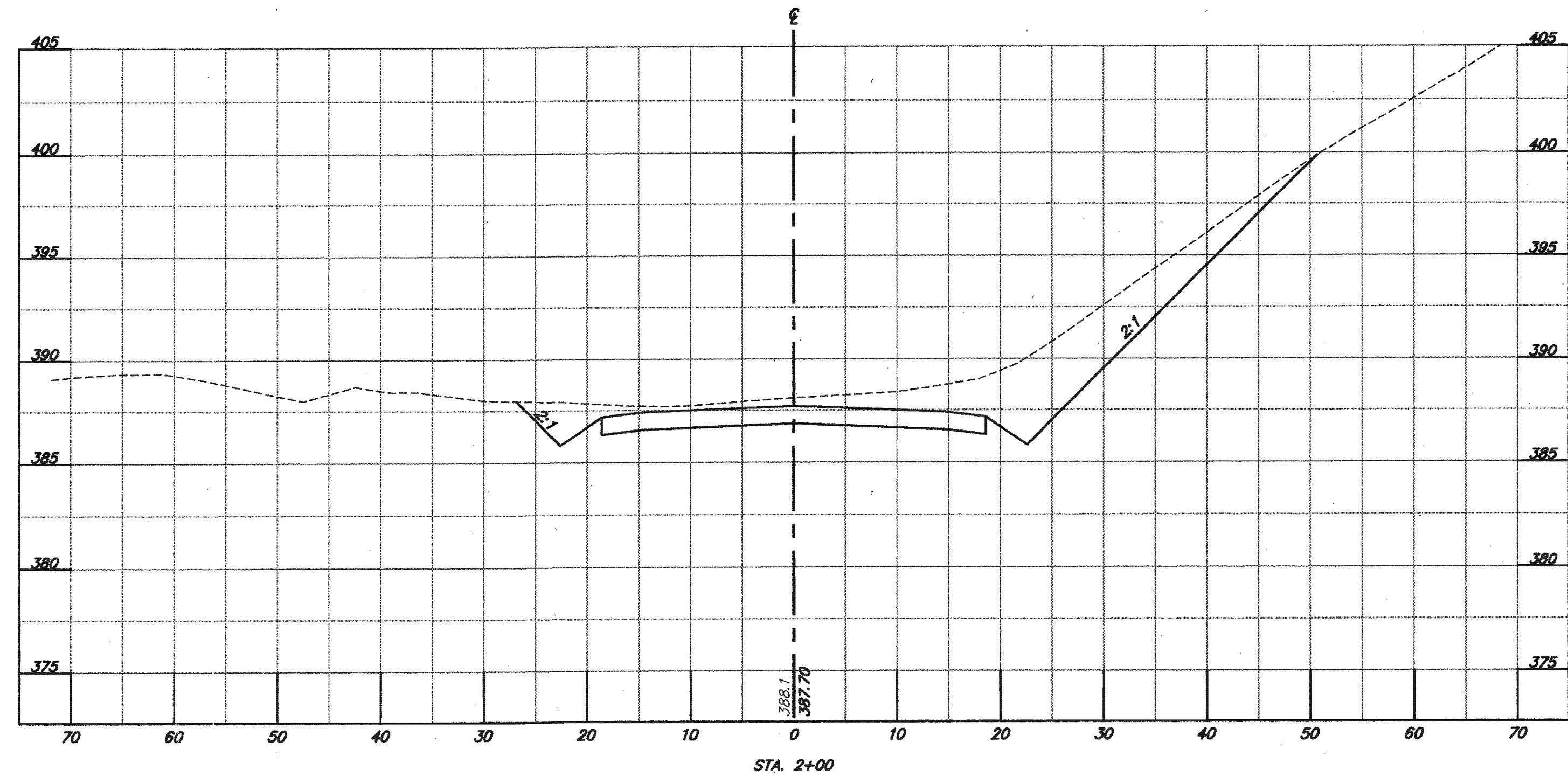
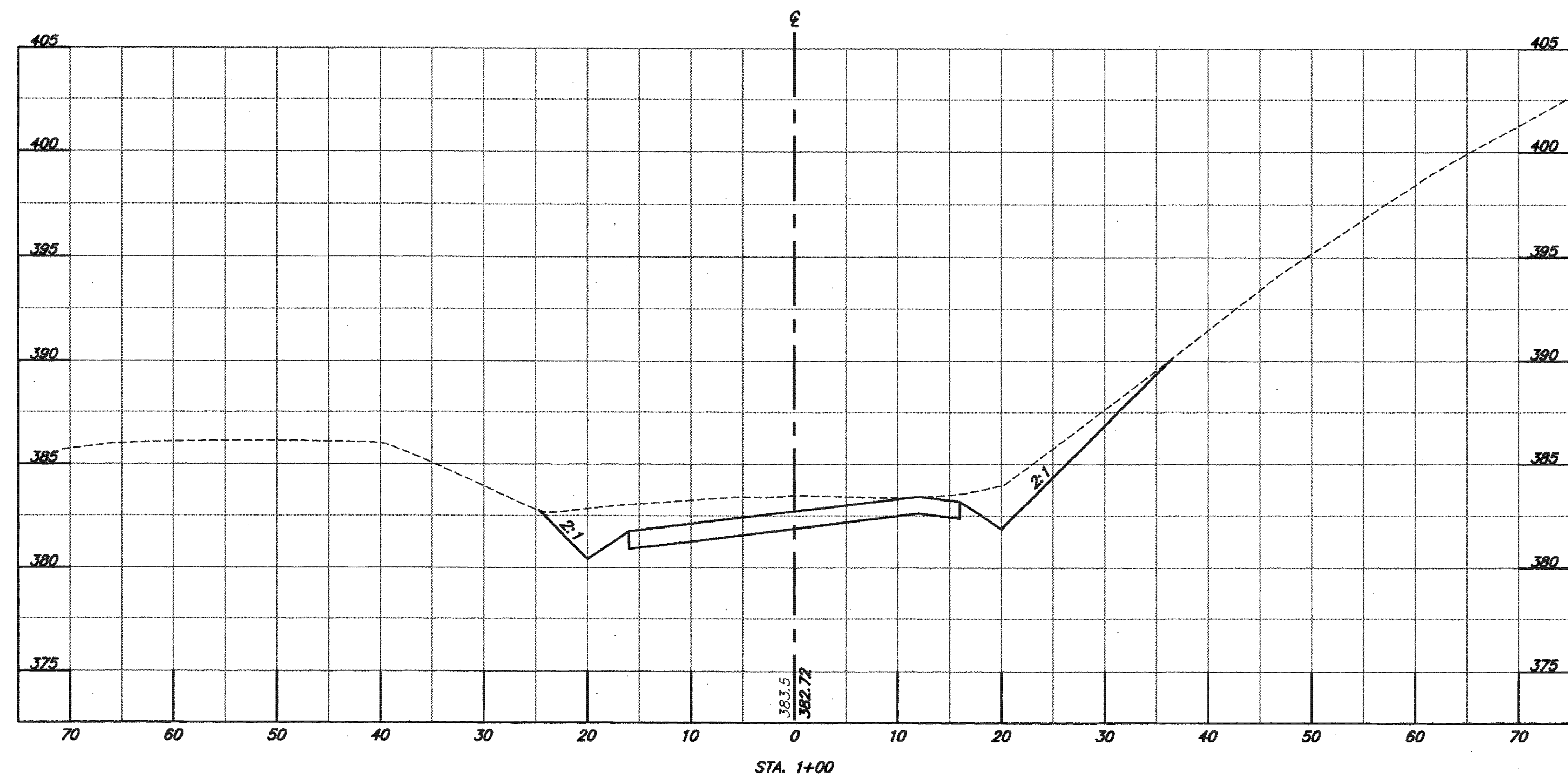


DES: F.A.C.	
DRN: J.N.W.	
CHK: F.A.C.	
DATE: 5/99	
BY NO.	REVISION

CAPITAL PROJECT NO.
C-0237

PROFILE
Hillsborough Road Extension

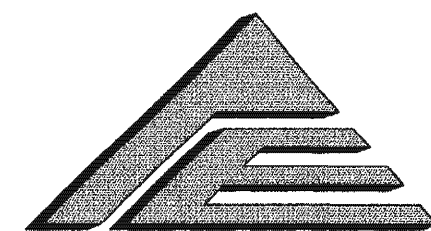
SCALE AS SHOWN
 SHEET R6 OF R12



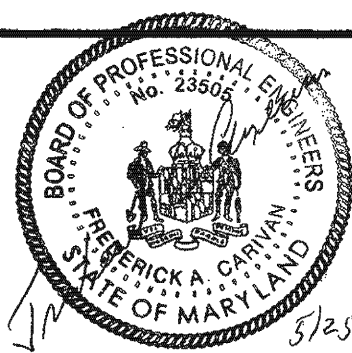
CROSS SECTIONS
 SCALE: HORIZ. 1" = 10'
 VERT. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Robert A. Calva 7/6/99
 CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION
Richard J. ... 7/6/99
 CHIEF, BUREAU OF ENGINEERING
... 7-6-99
 CHIEF, BUREAU OF HIGHWAYS



A/E GROUP, INC.
 ENGINEERS • PLANNERS
 181 E. Main Street
 Westminster, Maryland 21158
 A/E Job No. 98-365-001



DES: F.A.C.
 DRN: J.N.W.
 CHK: F.A.C.
 DATE: 5/99

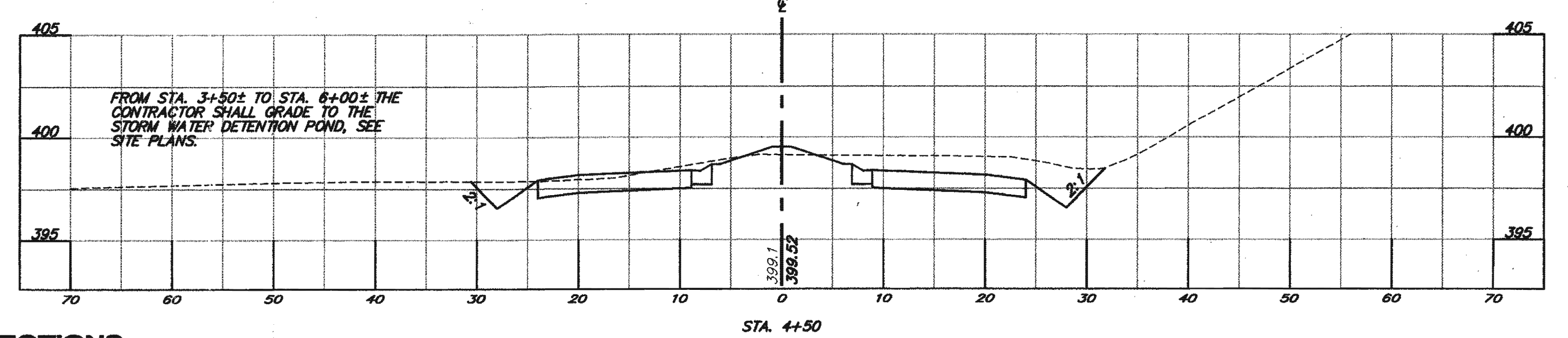
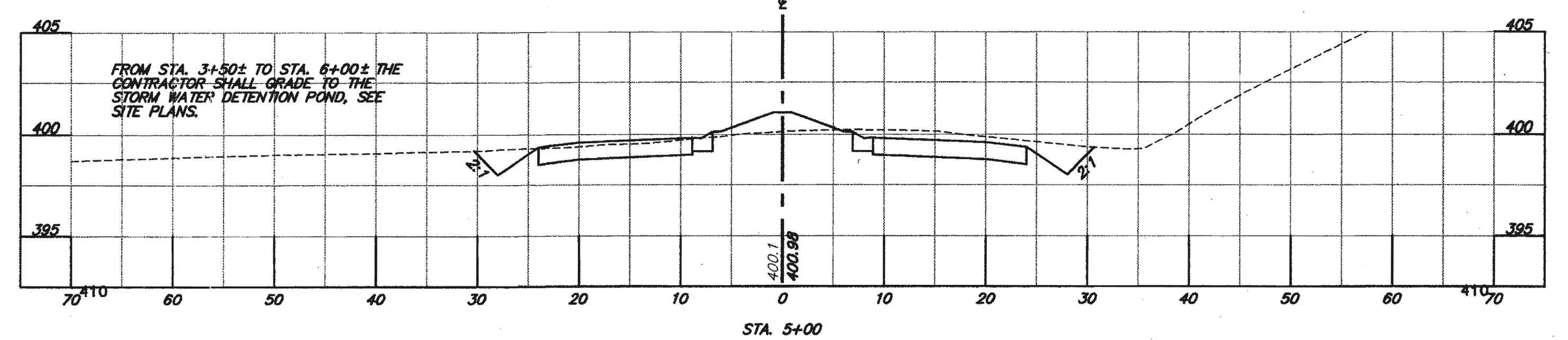
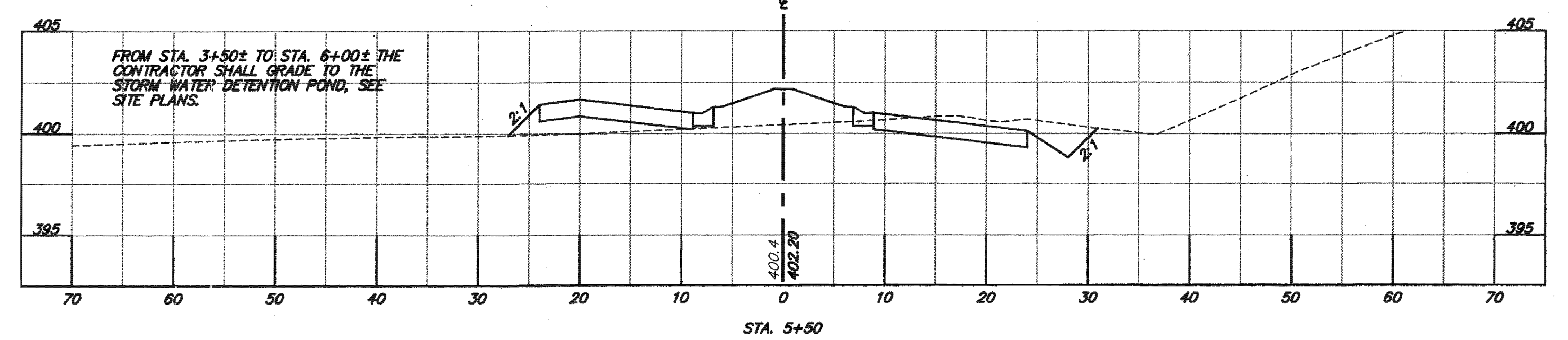
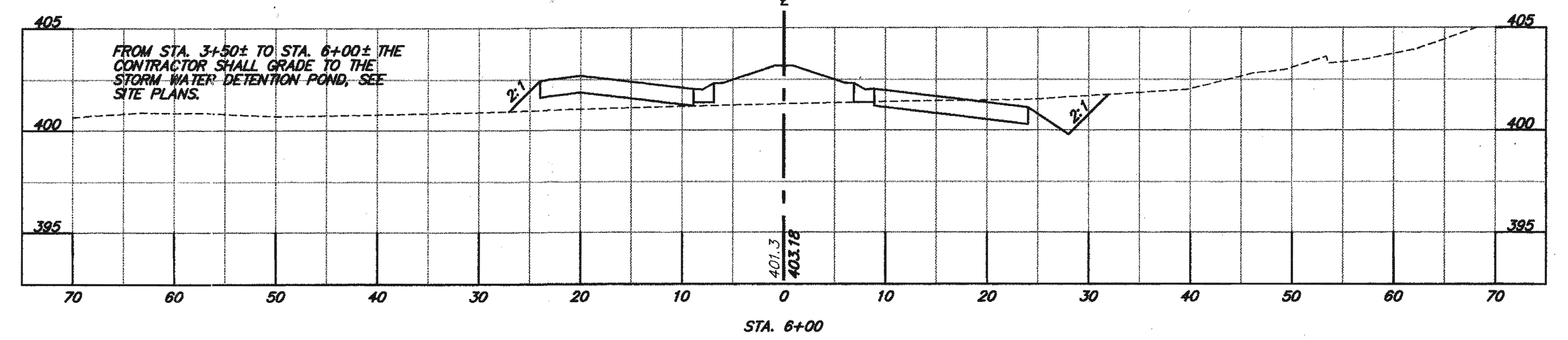
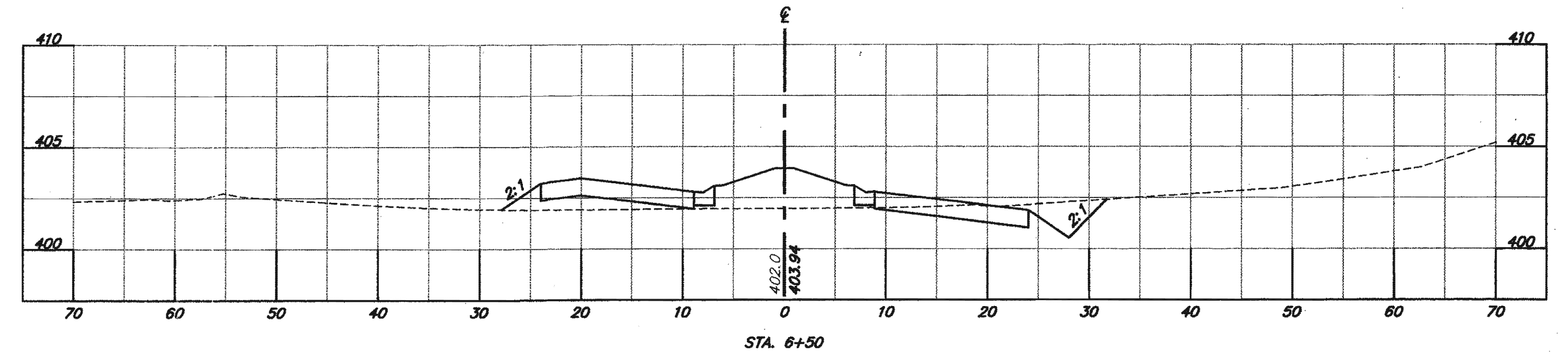
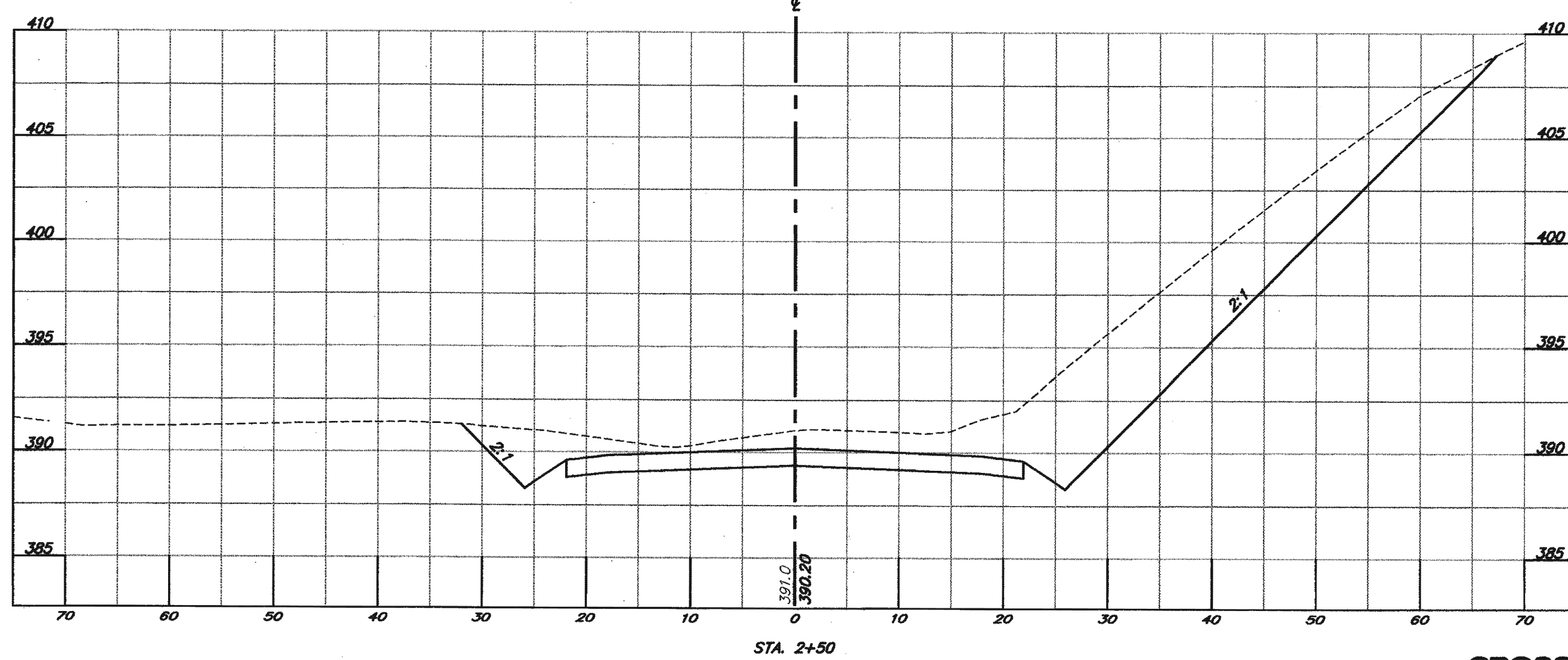
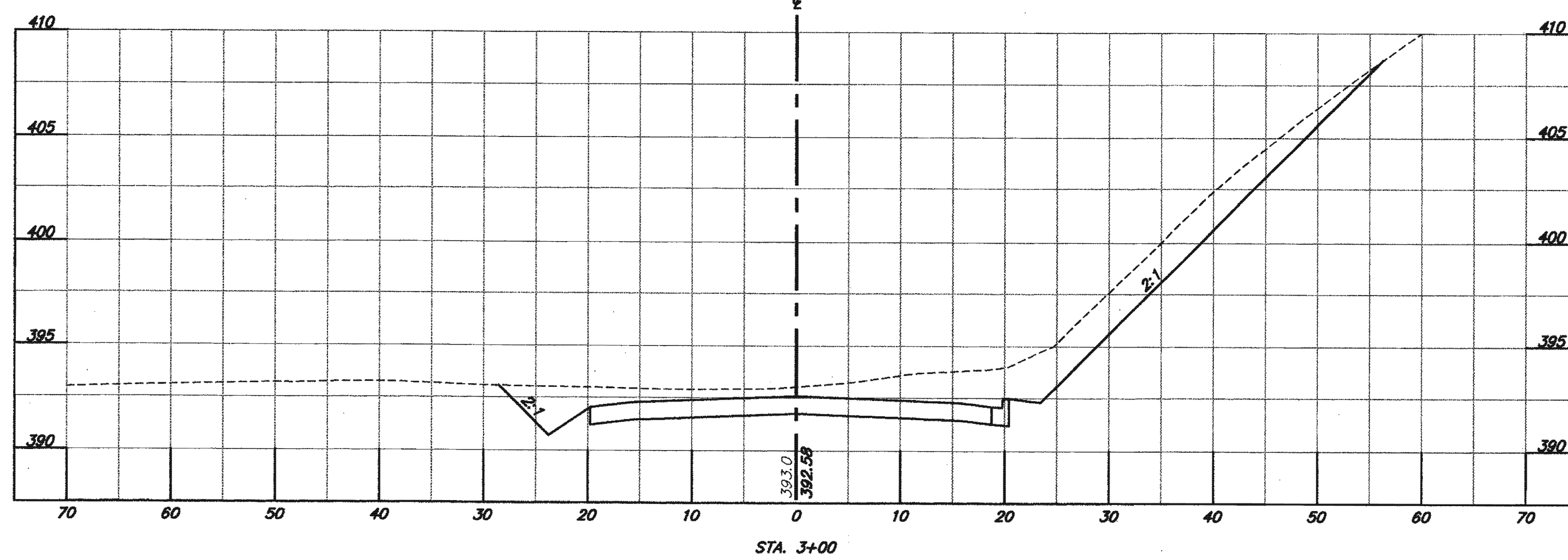
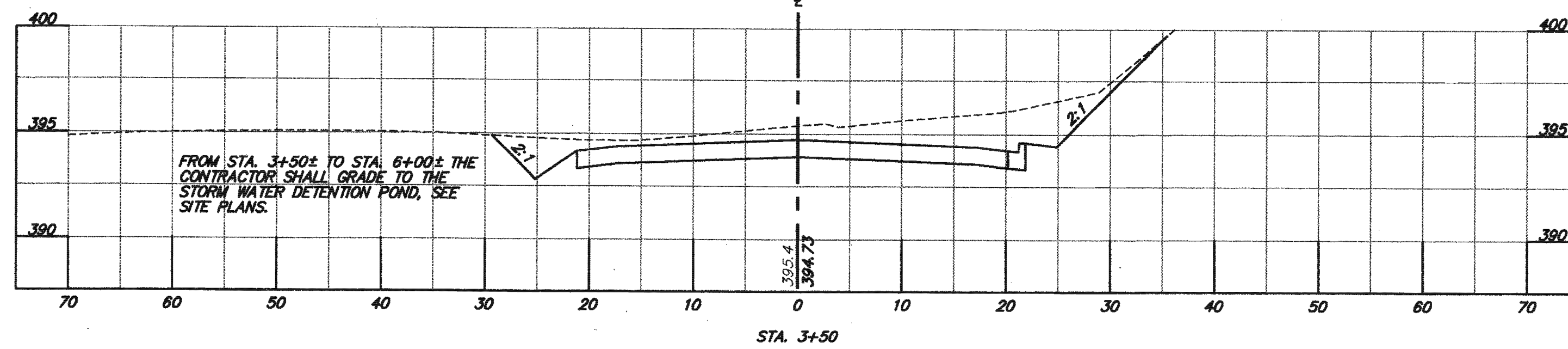
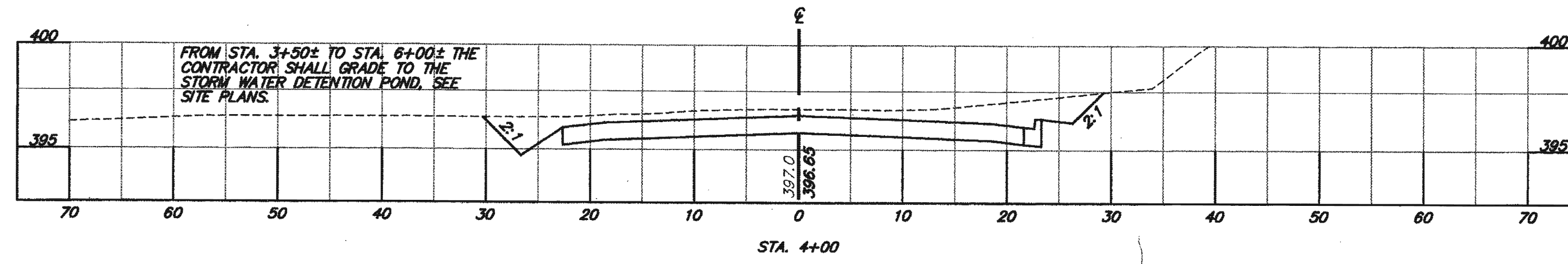
BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.
C-0237

600' SCALE MAP NO. _____ DATE: _____

CROSS SECTIONS
Hillsborough Road Extension

SCALE AS SHOWN
 SHEET R7 OF R12



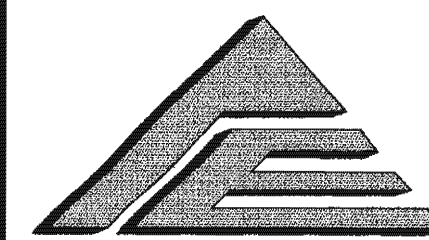
CROSS SECTIONS
SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

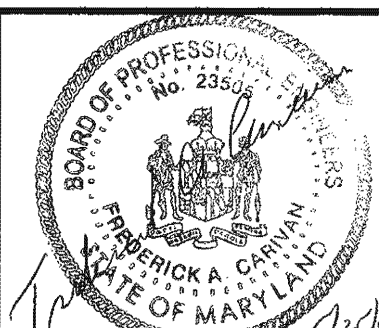
Roma 7/1/99
DEPARTMENT OF PUBLIC WORKS
DATE: 7/1/99
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION

Paul D. ... 7/16/99
CHIEF, BUREAU OF ENGINEERING
DATE: 7/16/99

Andrew M. ... 7-16-99
CHIEF, BUREAU OF HIGHWAYS
DATE: 7-16-99



A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 98-365-001



DES: F.A.C.
DRN: J.N.W.
CHK: F.A.C.
DATE: 5/99

BY	NO.	REVISION	DATE

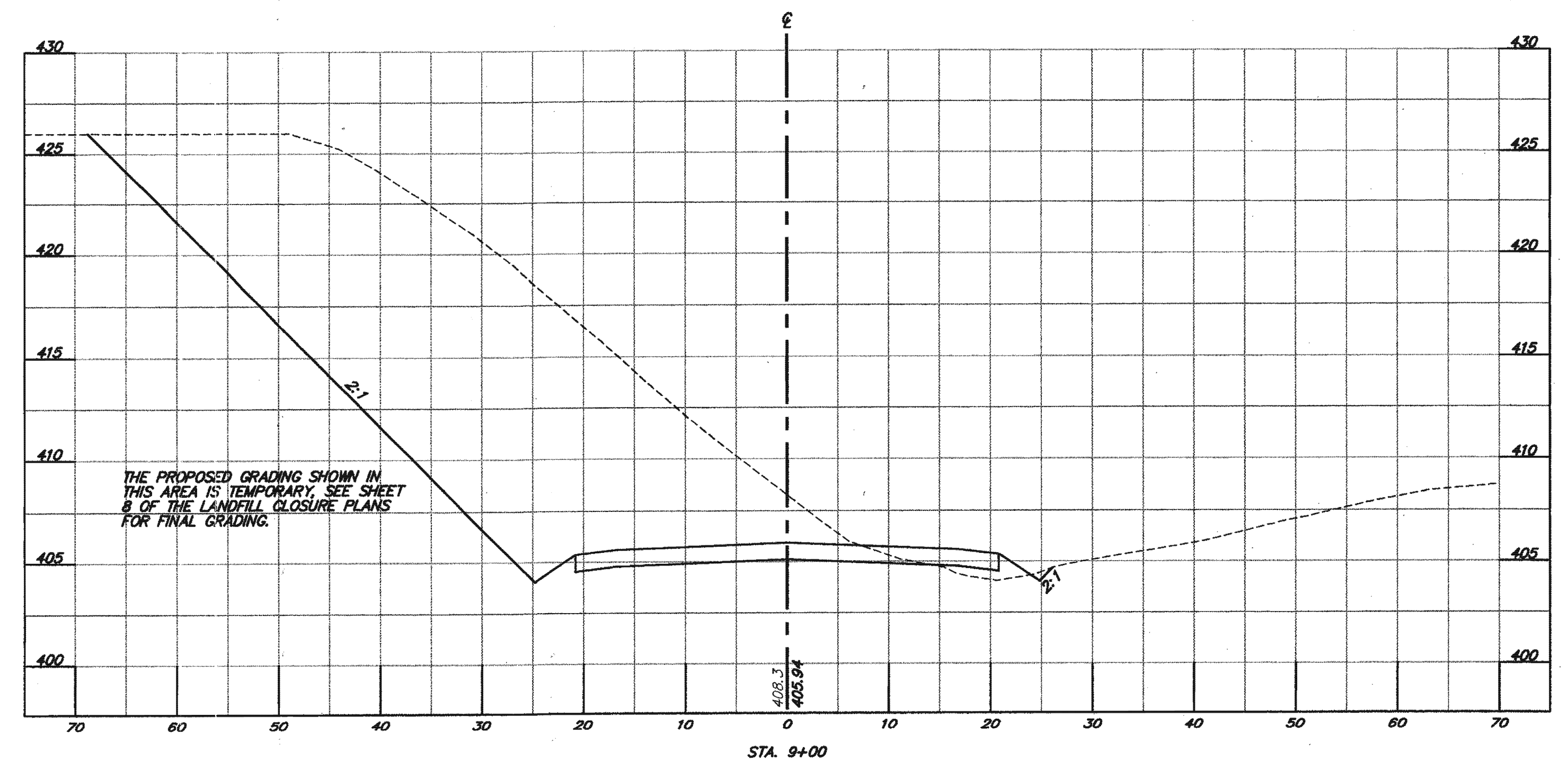
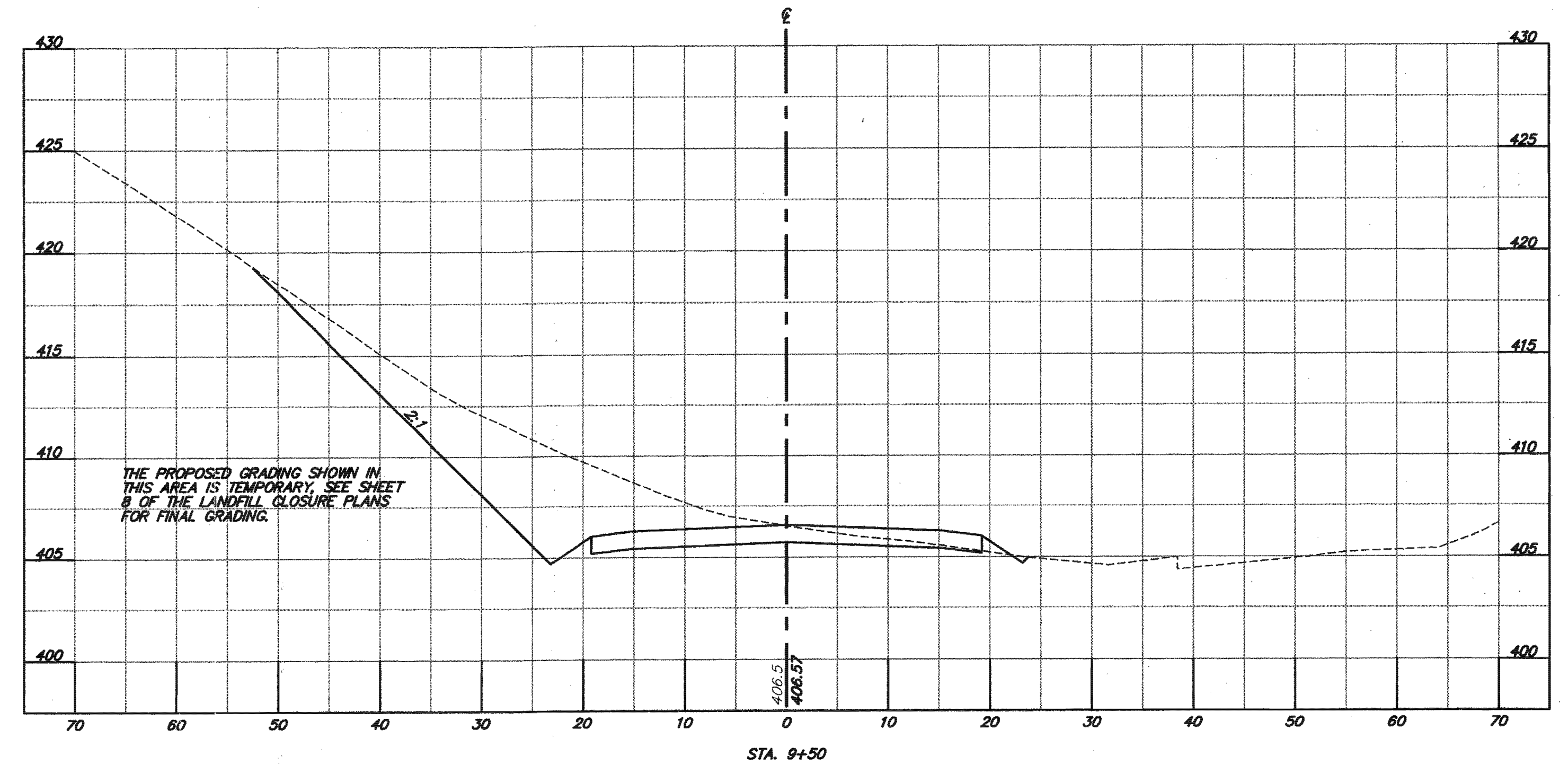
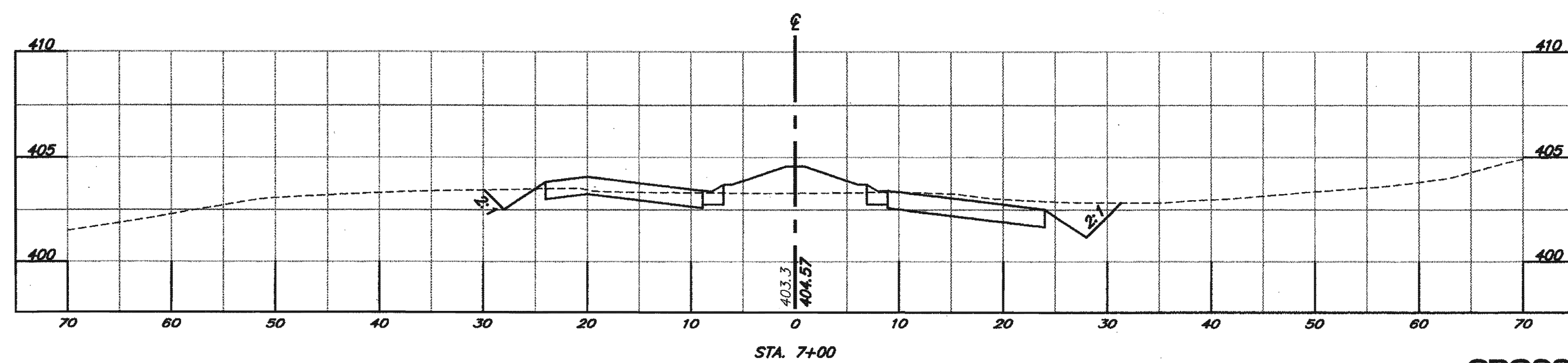
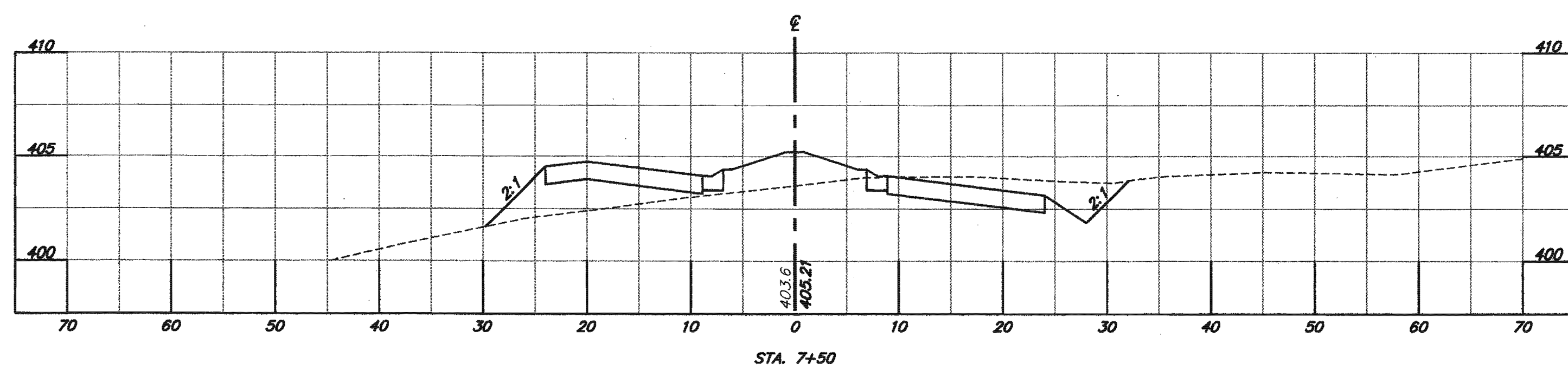
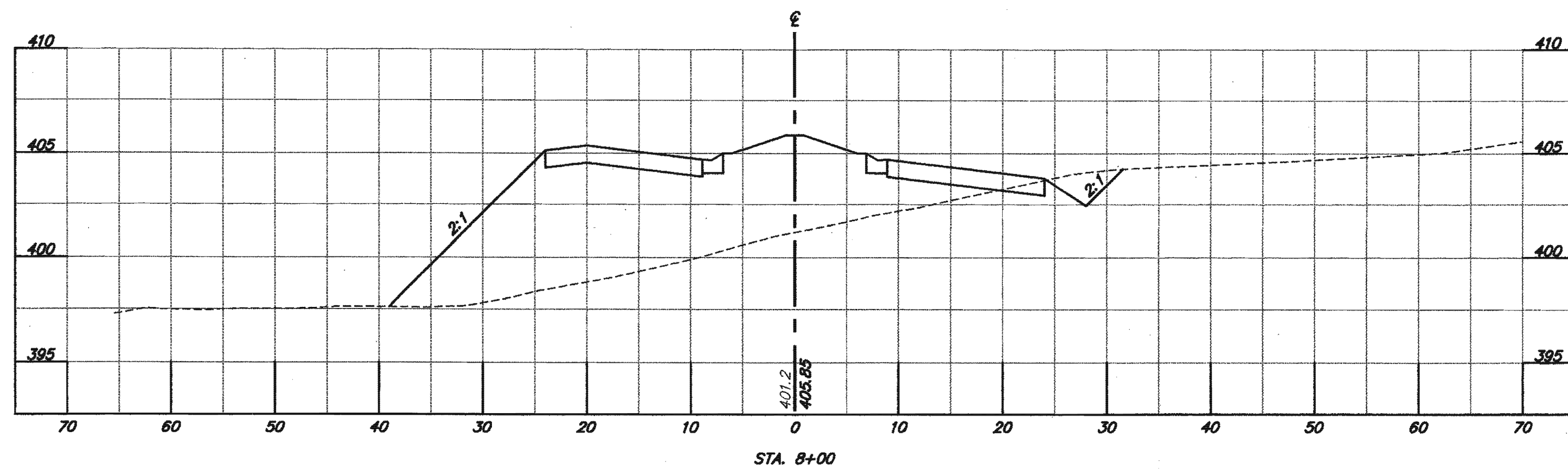
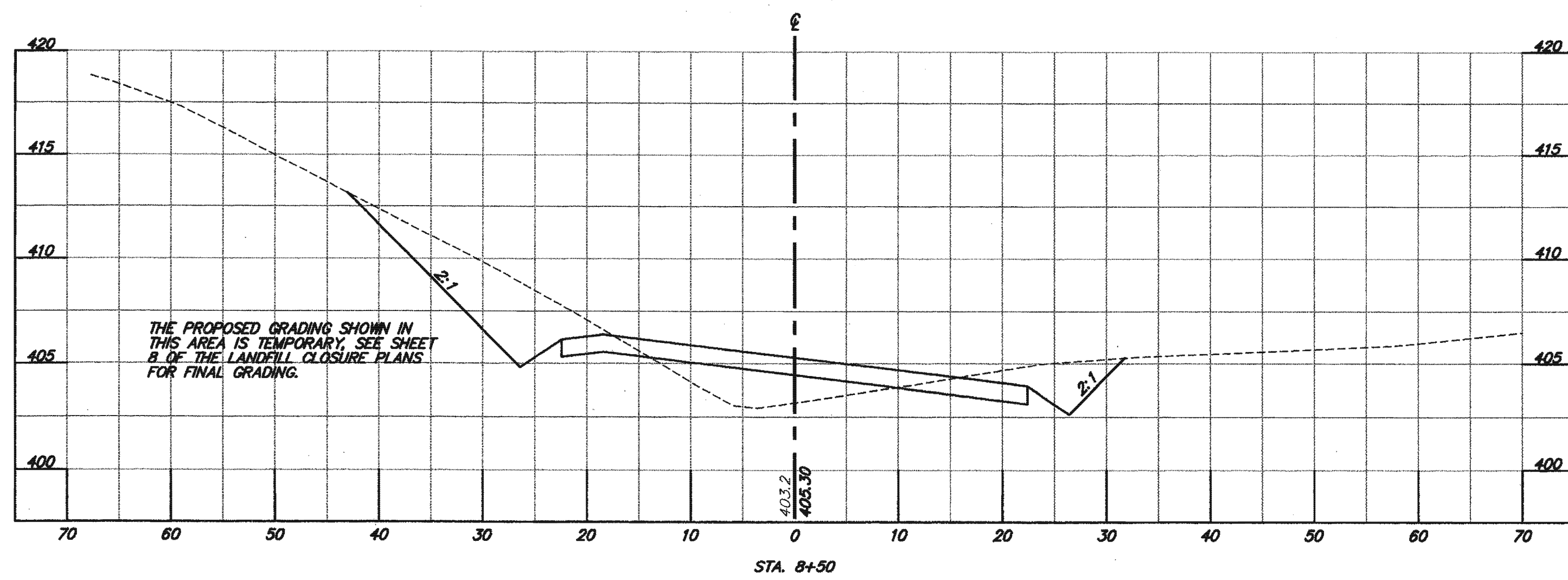
CAPITAL PROJECT NO.
C-0237

600' SCALE MAP NO. _____ DATE: _____

CROSS SECTIONS
Hillsborough Road Extension

SCALE AS SHOWN

SHEET R8 OF R12

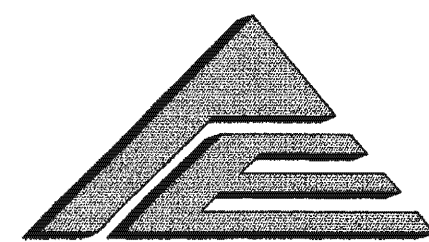


CROSS SECTIONS
SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'

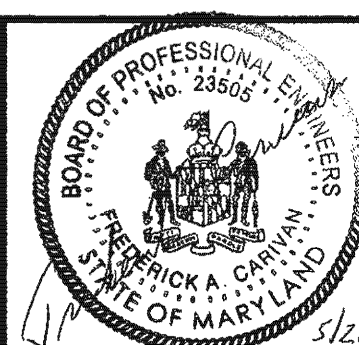
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James M. New 7/6/99
DEPARTMENT OF PUBLIC WORKS DATE
Elizabeth A. Calia 7/6/99
CHIEF, TRANSPORTATION PROJECTS AND WATERSHEDS MANAGEMENT DIVISION DATE

William J. Johnson 7/6/99
CHIEF, BUREAU OF ENGINEERING DATE
Andrew M. Gandy 7-6-99
CHIEF, BUREAU OF HIGHWAYS DATE



A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 98-365-001



DES: F.A.C.
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DATE: 5/99

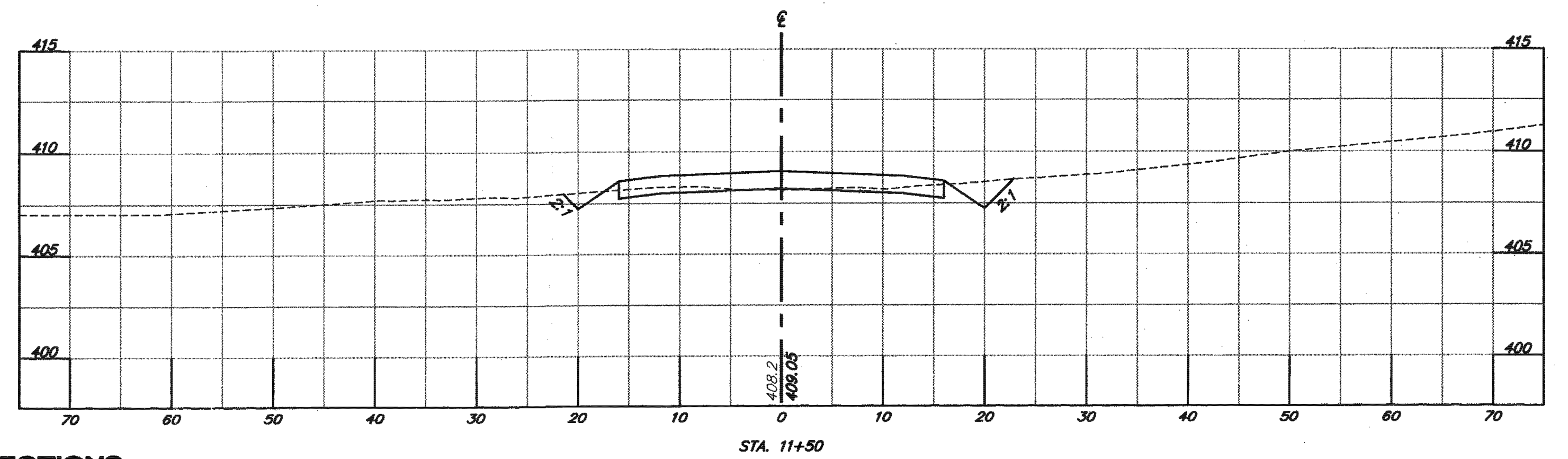
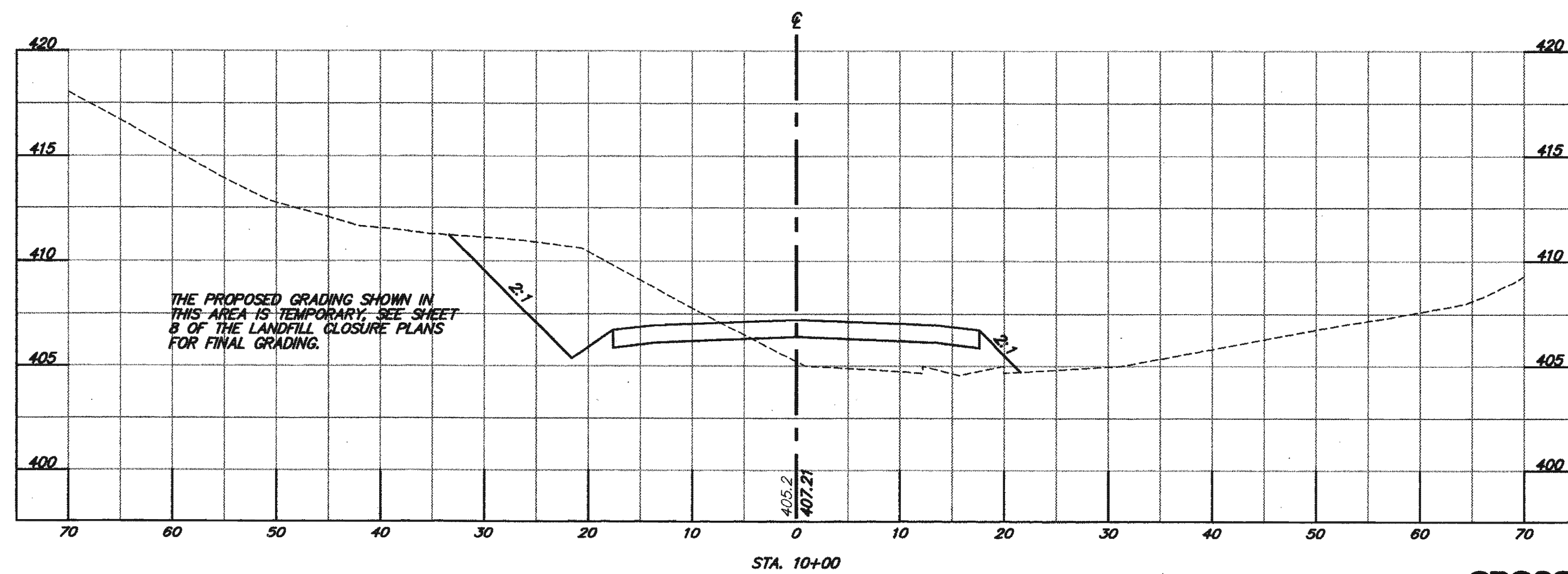
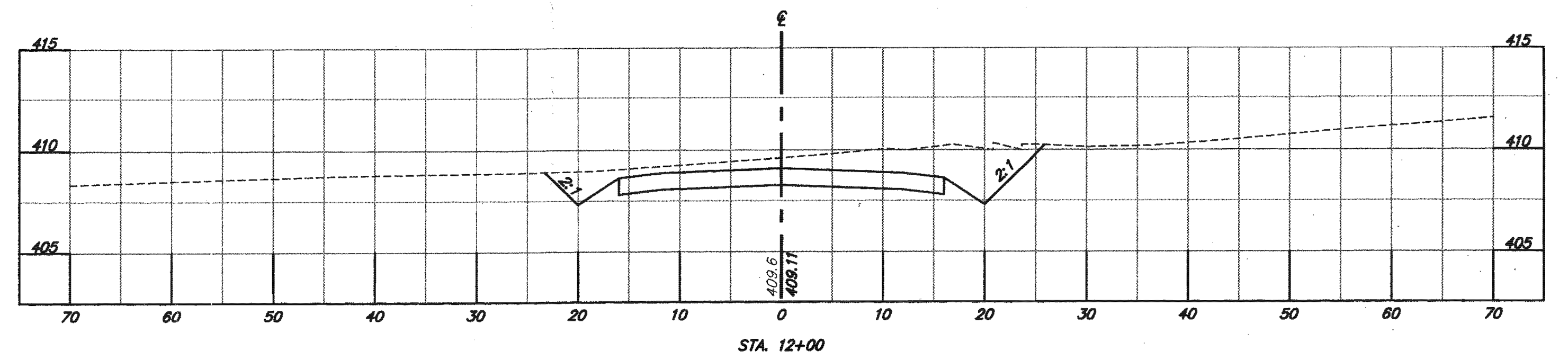
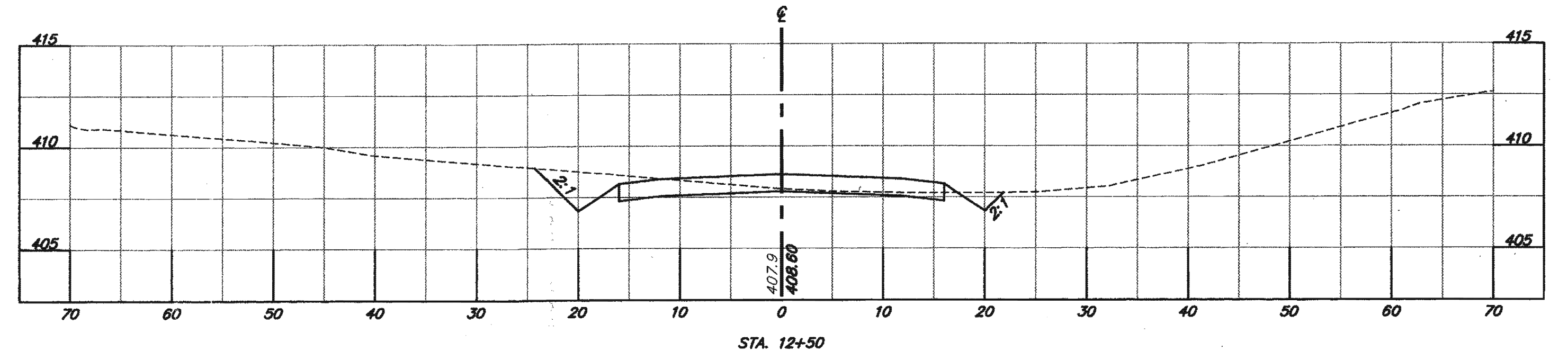
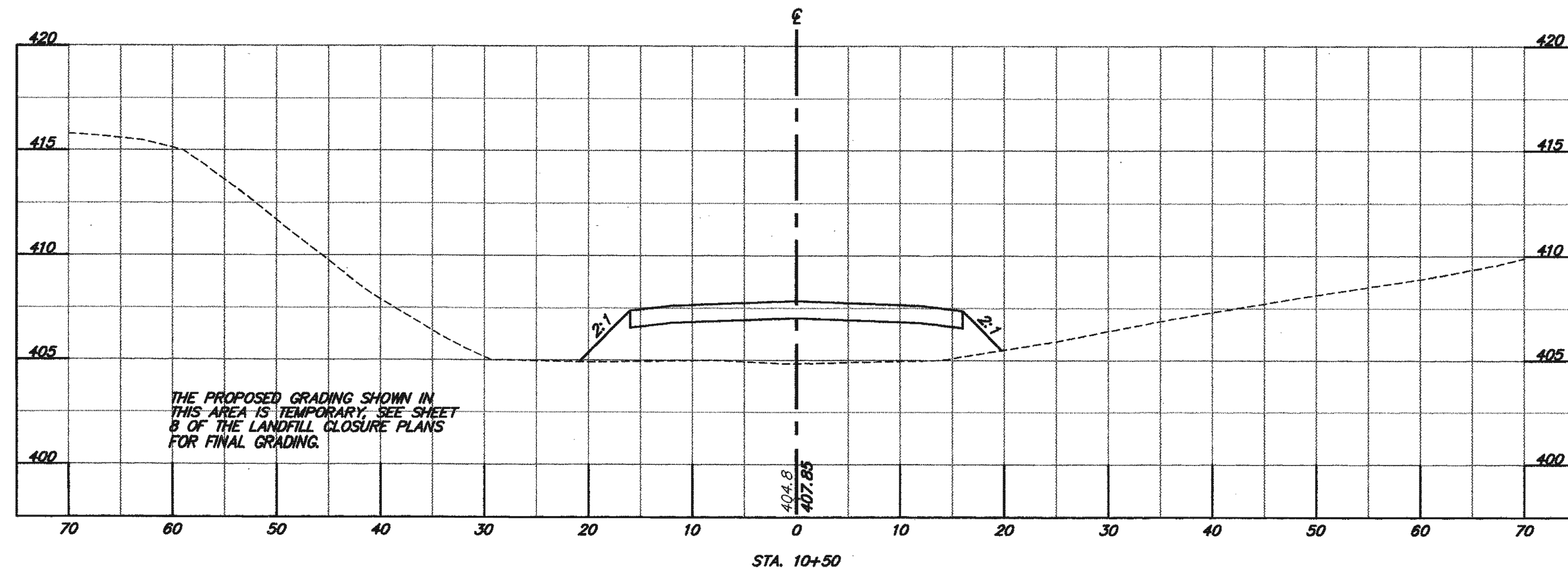
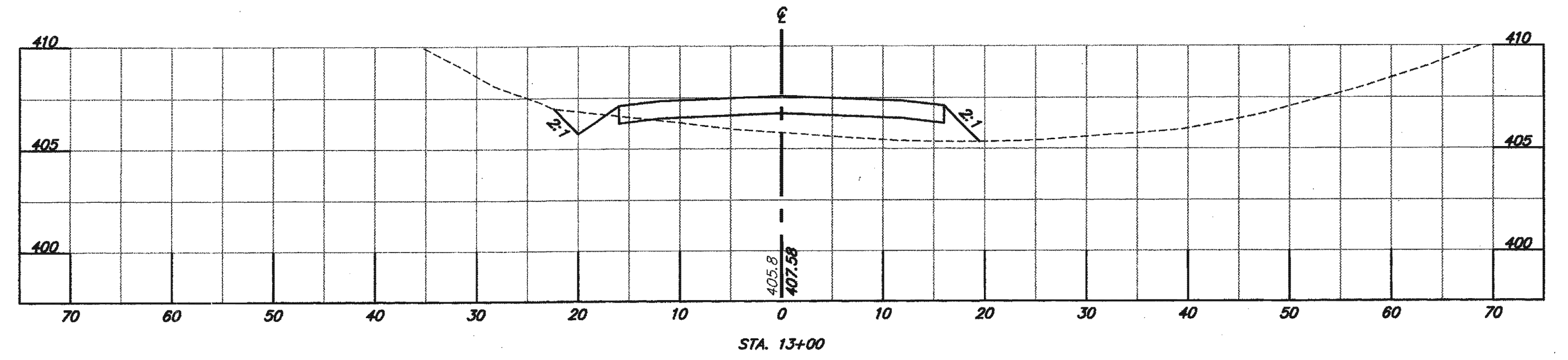
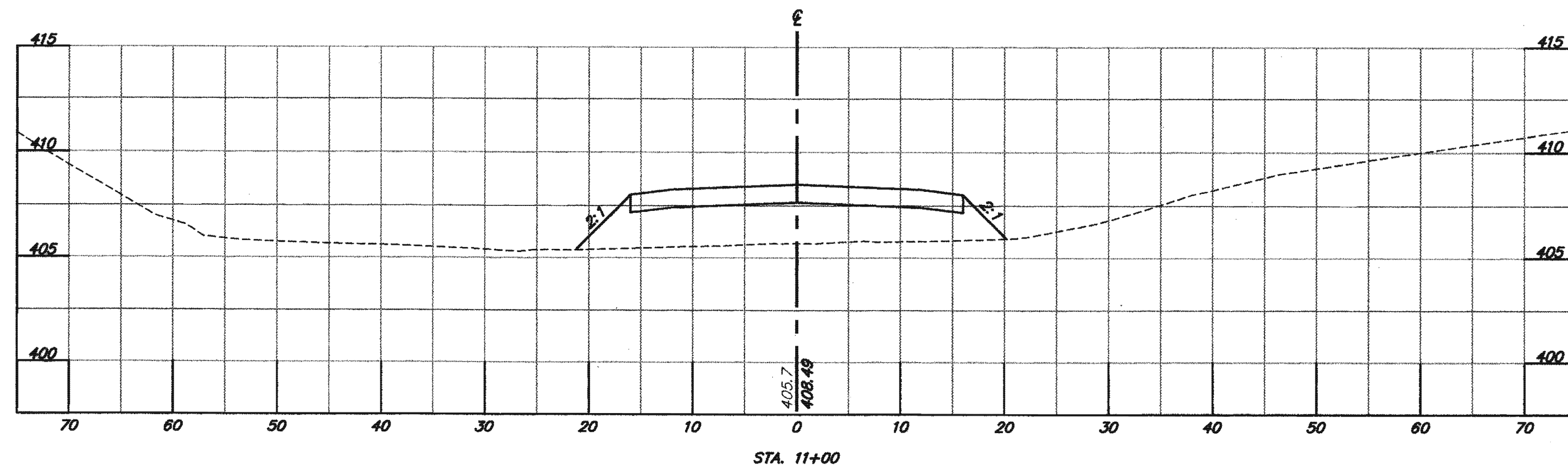
BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.
C-0237

600' SCALE MAP NO. _____ DATE: _____

CROSS SECTIONS
Hillsborough Road Extension

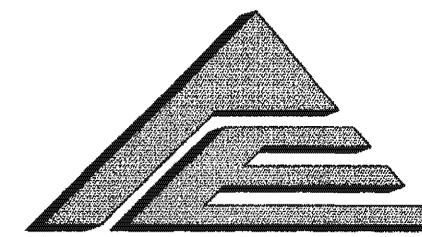
SCALE AS SHOWN
SHEET R9 OF R12



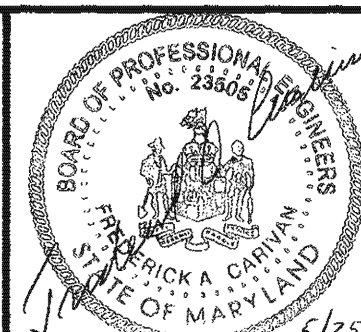
CROSS SECTIONS
 SCALE: HORZ. 1" = 10'
 VERT. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

James M. Shaw 7/6/99
 DEPARTMENT OF PUBLIC WORKS DATE
Robert J. Sisson 7/6/99
 CHIEF, BUREAU OF ENGINEERING DATE
Blawie A. Calan 7/6/99
 CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION DATE
Andrew M. Kaula 7-6-99
 CHIEF, BUREAU OF HIGHWAYS DATE



A/E GROUP, INC.
 ENGINEERS • PLANNERS
 181 E. Main Street
 Westminster, Maryland 21158
 A/E Job No. 98-365-001



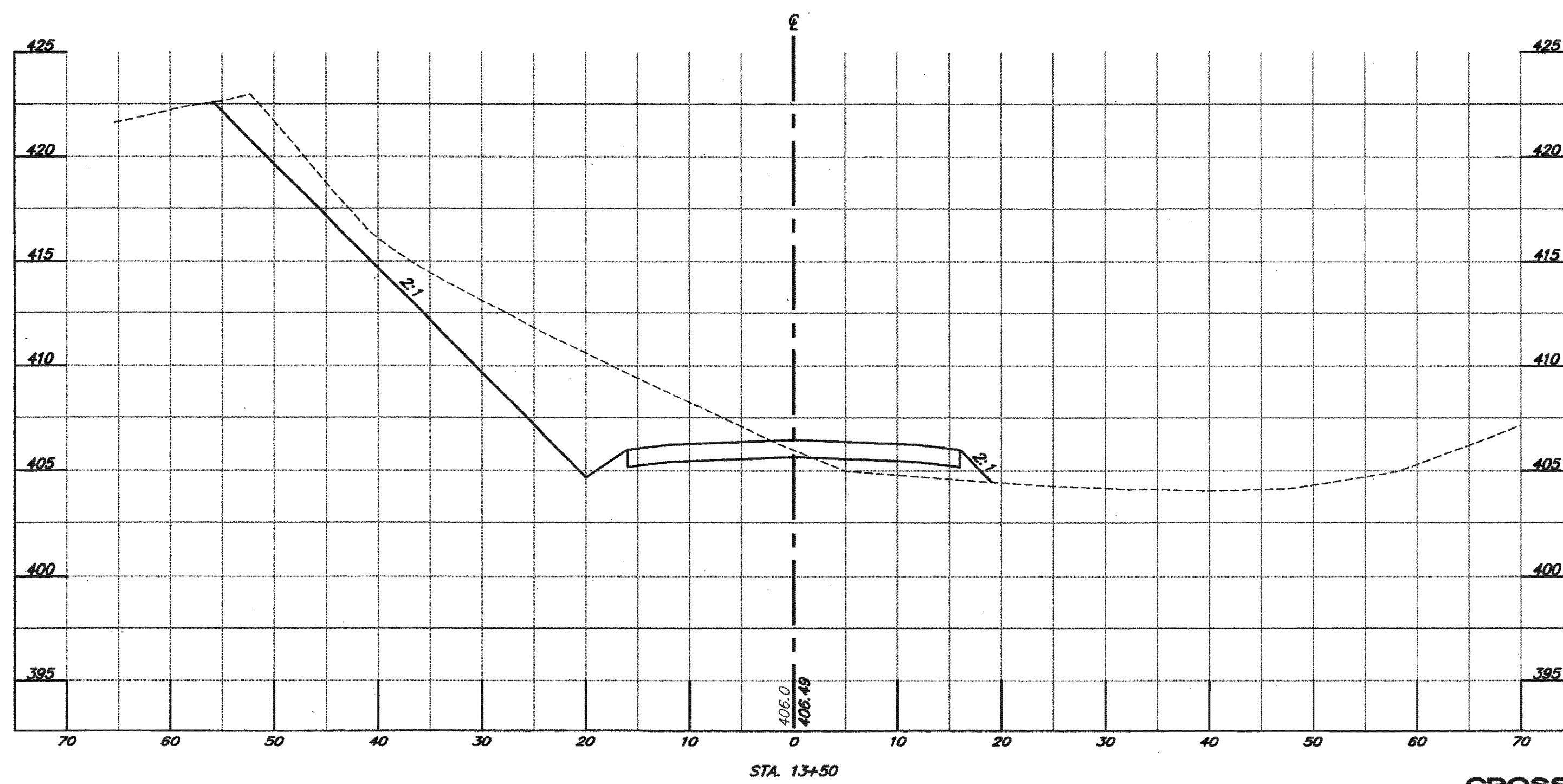
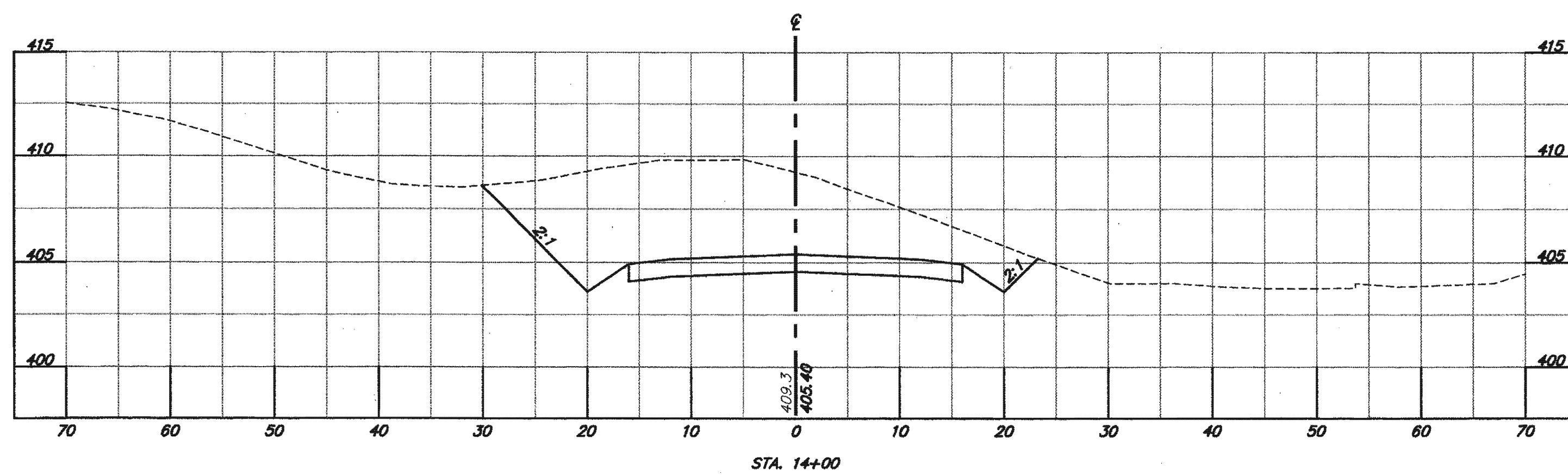
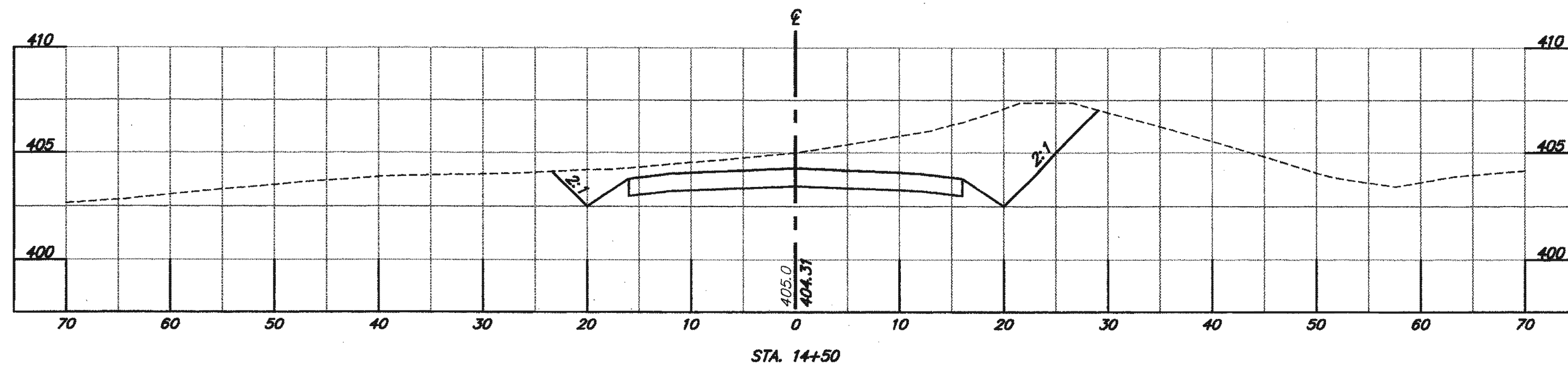
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DRN: J.N.W.	
CHK: F.A.C.	
DATE: 5/99	
BY: _____	NO. _____
REVISION	

CAPITAL PROJECT NO.
C-0237

DATE: 600' SCALE MAP NO. _____ DATE: _____

CROSS SECTIONS
Hillsborough Road Extension

SCALE AS SHOWN
 SHEET R10 OF R12

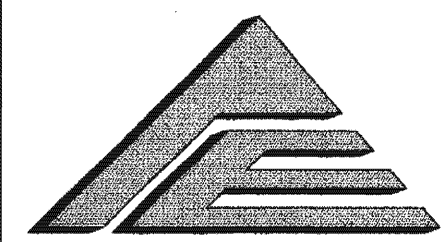


CROSS SECTIONS
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 VERT. 1" = 5'

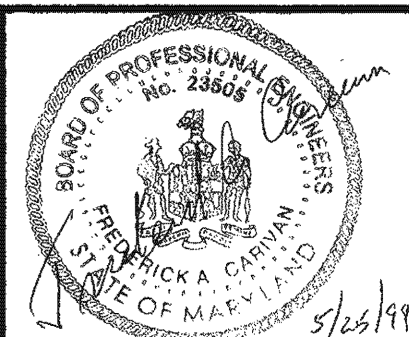
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

James P. Shaw 7/6/99
 DEPARTMENT OF PUBLIC WORKS DATE
Elizabeth A. Calce 7/6/99
 CHIEF, TRANSPORTATION PROJECTS AND WATERSEED MANAGEMENT DIVISION DATE

Robert D. Egan 7/6/99
 CHIEF, BUREAU OF ENGINEERING DATE
Thomas M. Donley 7-6-99
 CHIEF, BUREAU OF HIGHWAYS DATE



A/E GROUP, INC.
 ENGINEERS • PLANNERS
 181 E. Main Street
 Westminster, Maryland 21158
 A/E Job No. 98-365-001



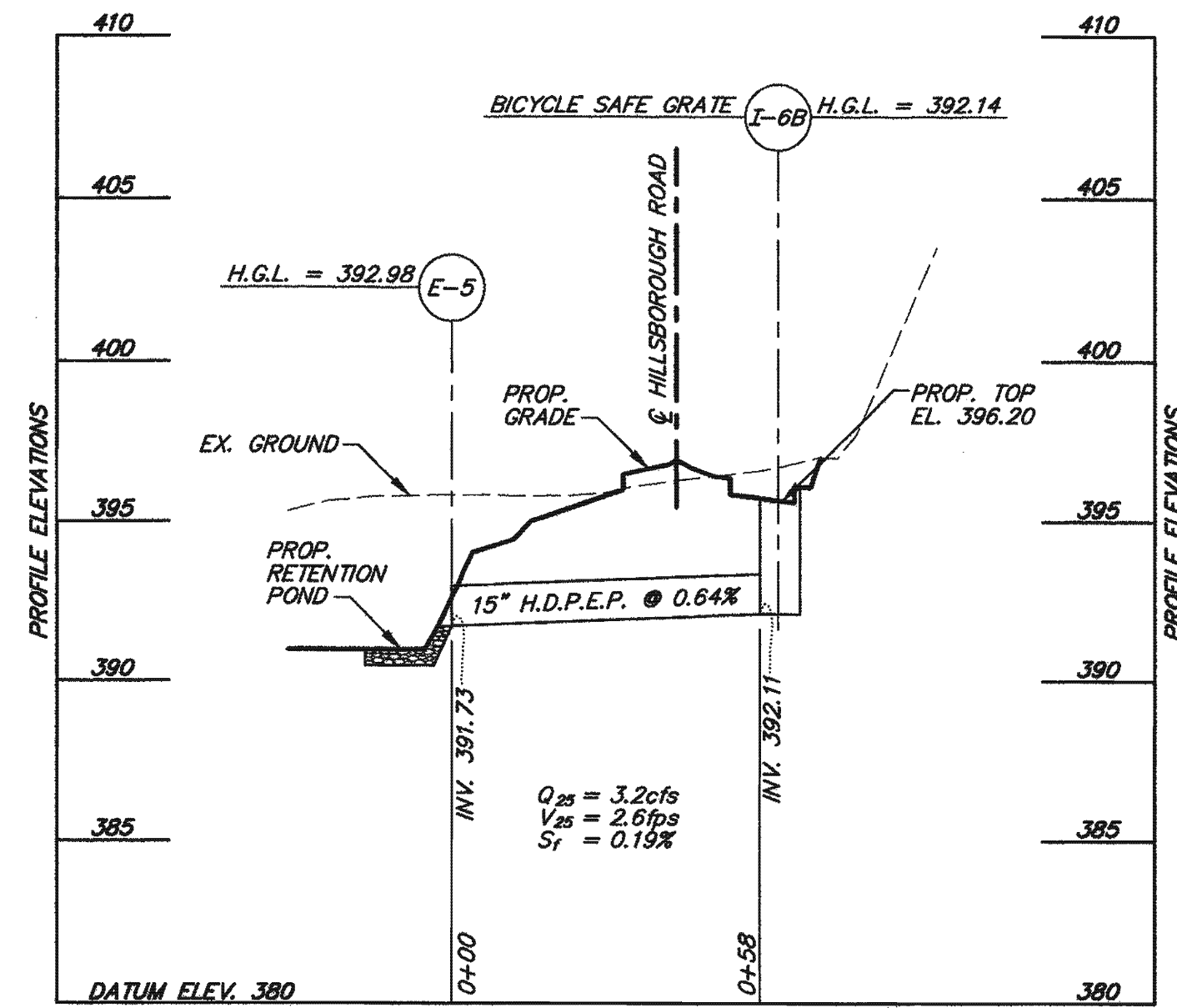
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DRN: J.N.W.			
CHK: F.A.C.			
DATE: 5/99	BY	NO.	REVISION

CAPITAL PROJECT NO.
C-0237

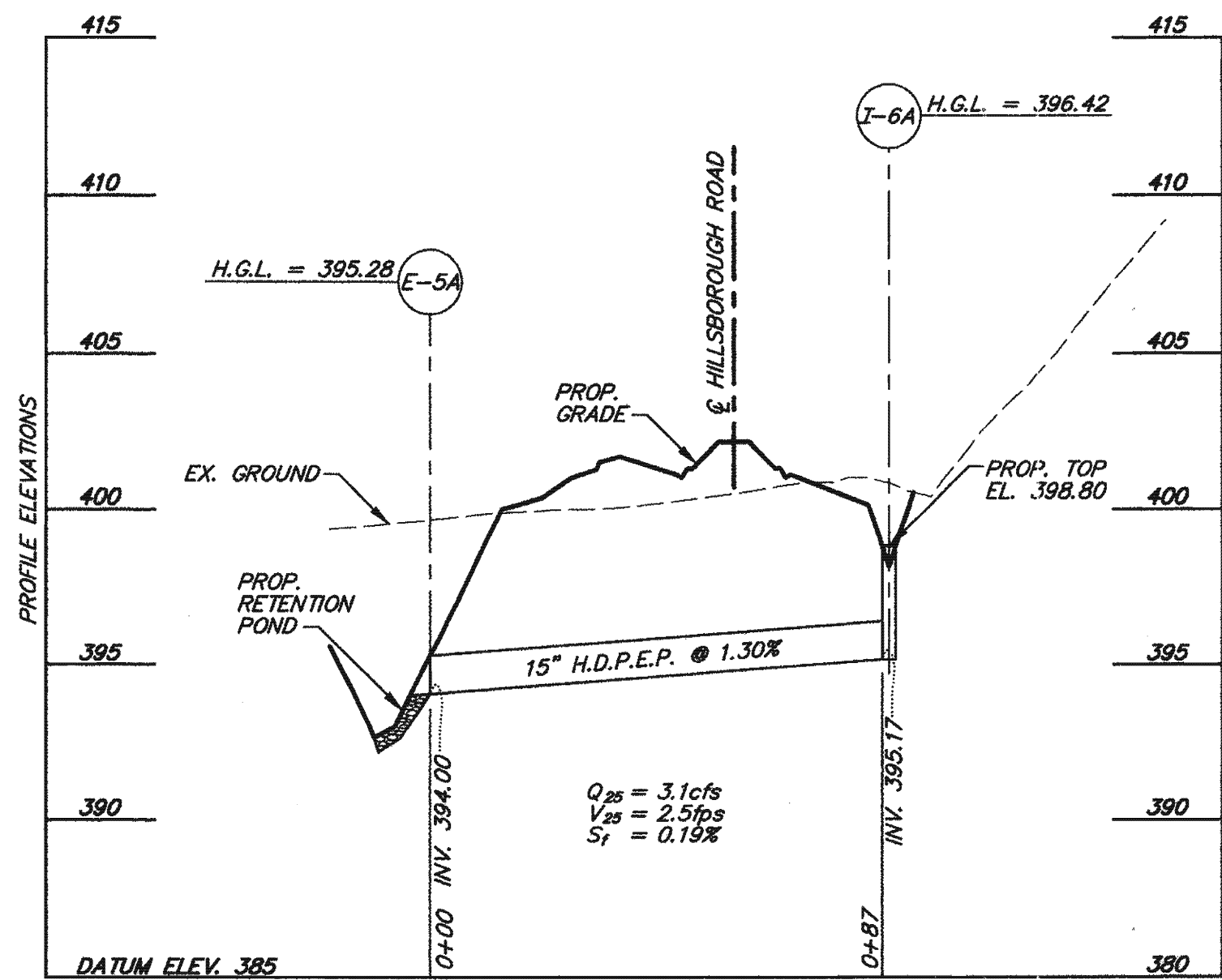
CROSS SECTIONS
**Hillsborough Road
 Extension**

SCALE
 AS
 SHOWN

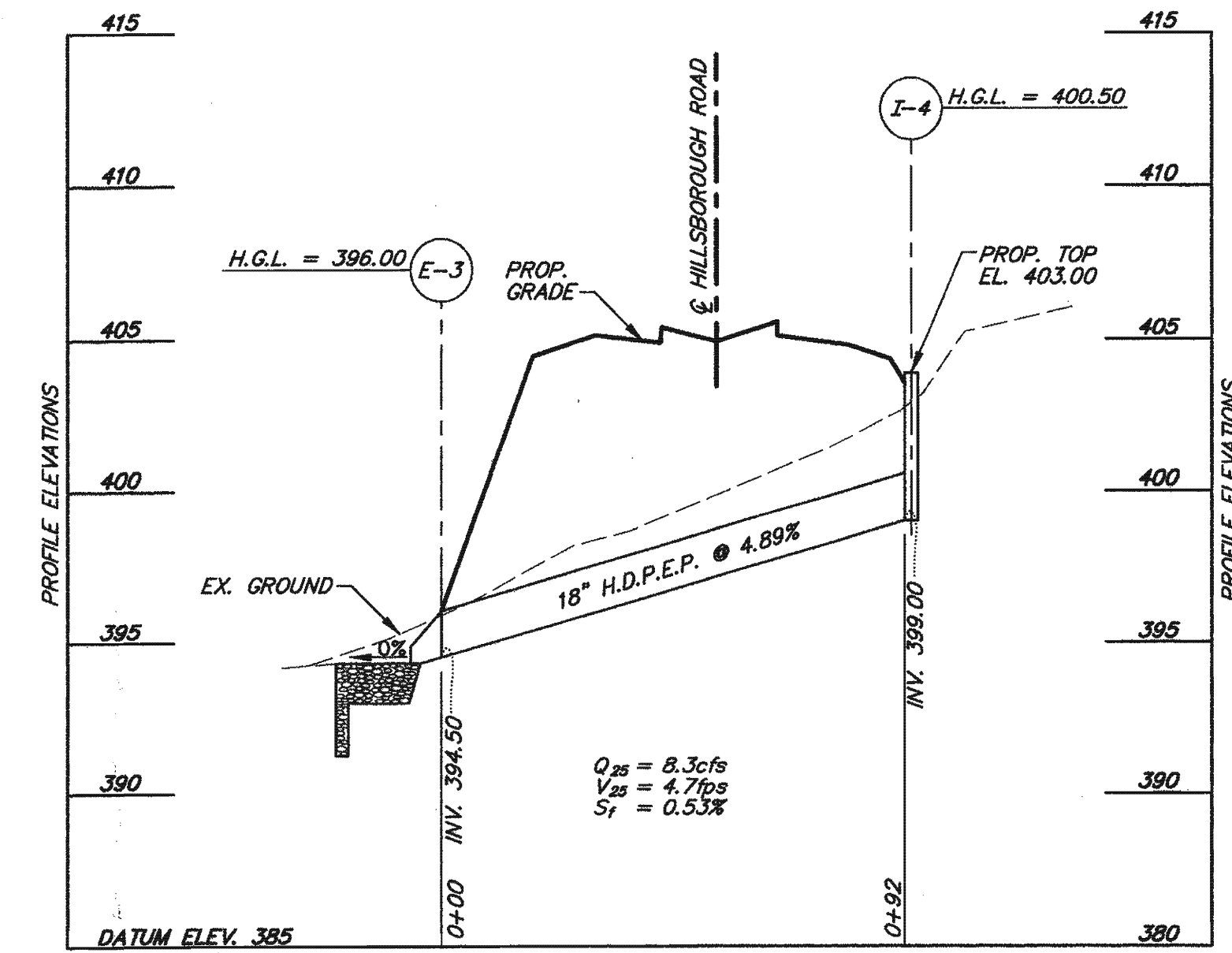
SHEET
 R11 of R12



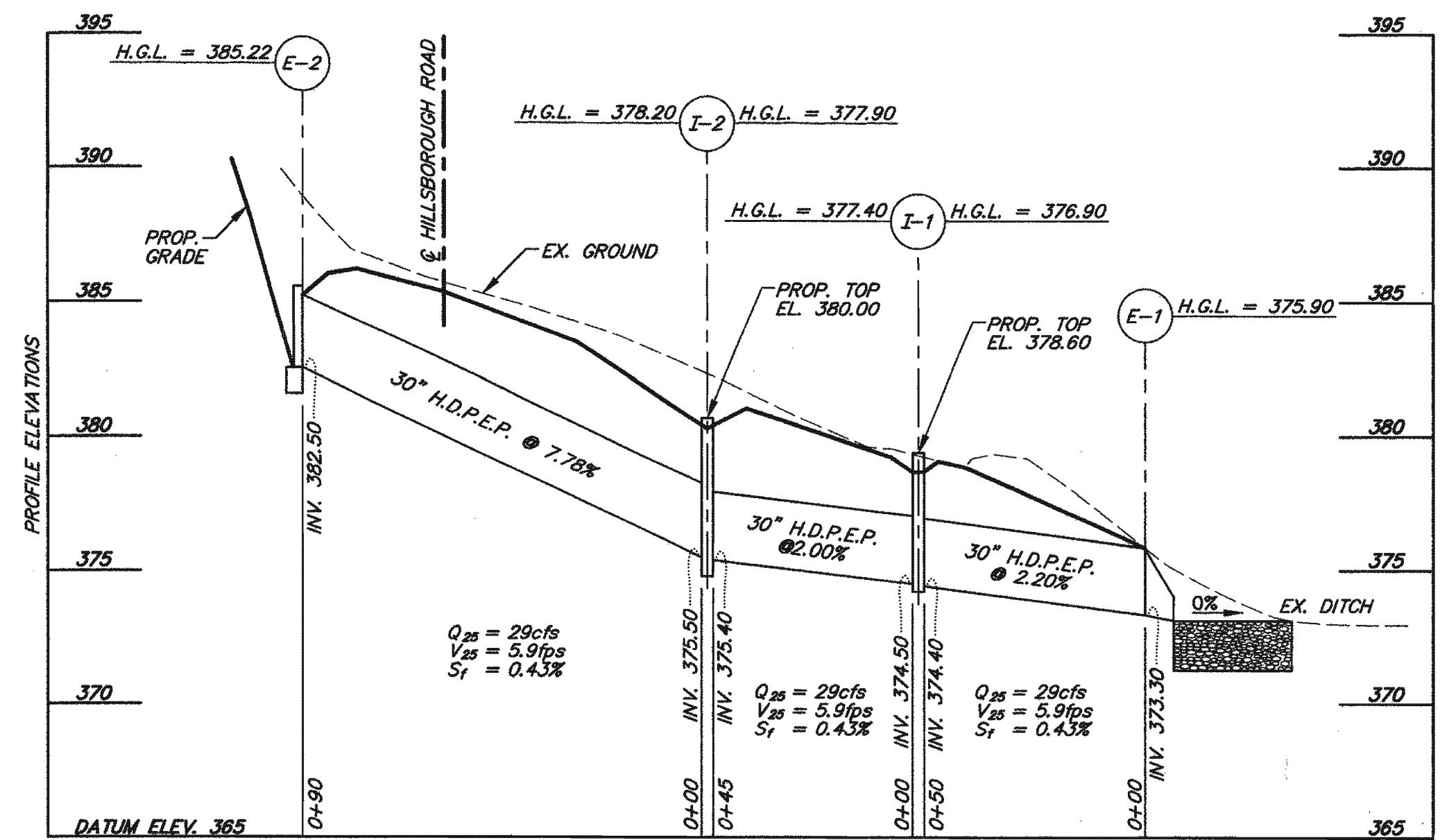
STORM DRAIN PROFILE
SCALE: HORZ. 1" = 30'
VERT. 1" = 5'



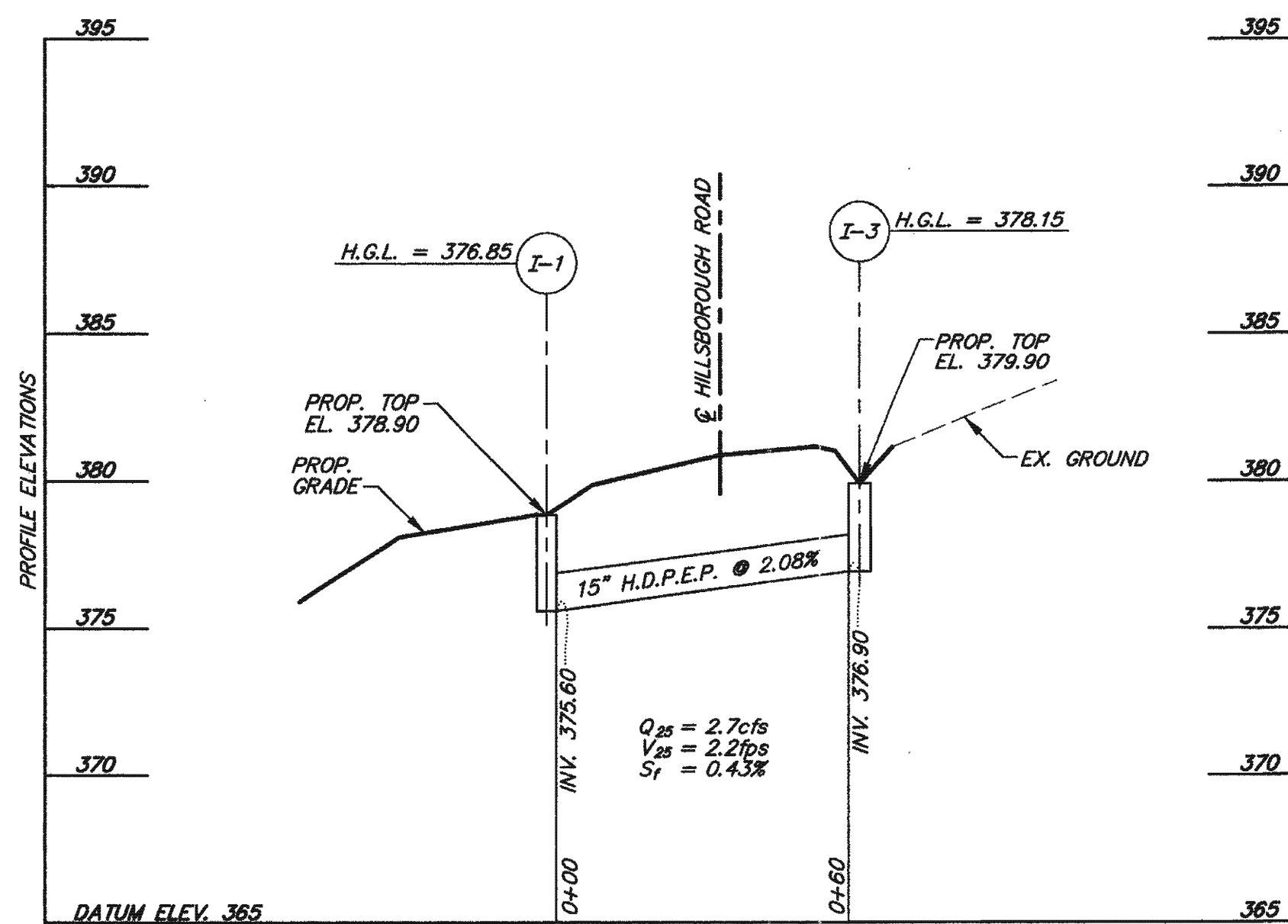
STORM DRAIN PROFILE
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VERT. 1" = 5'



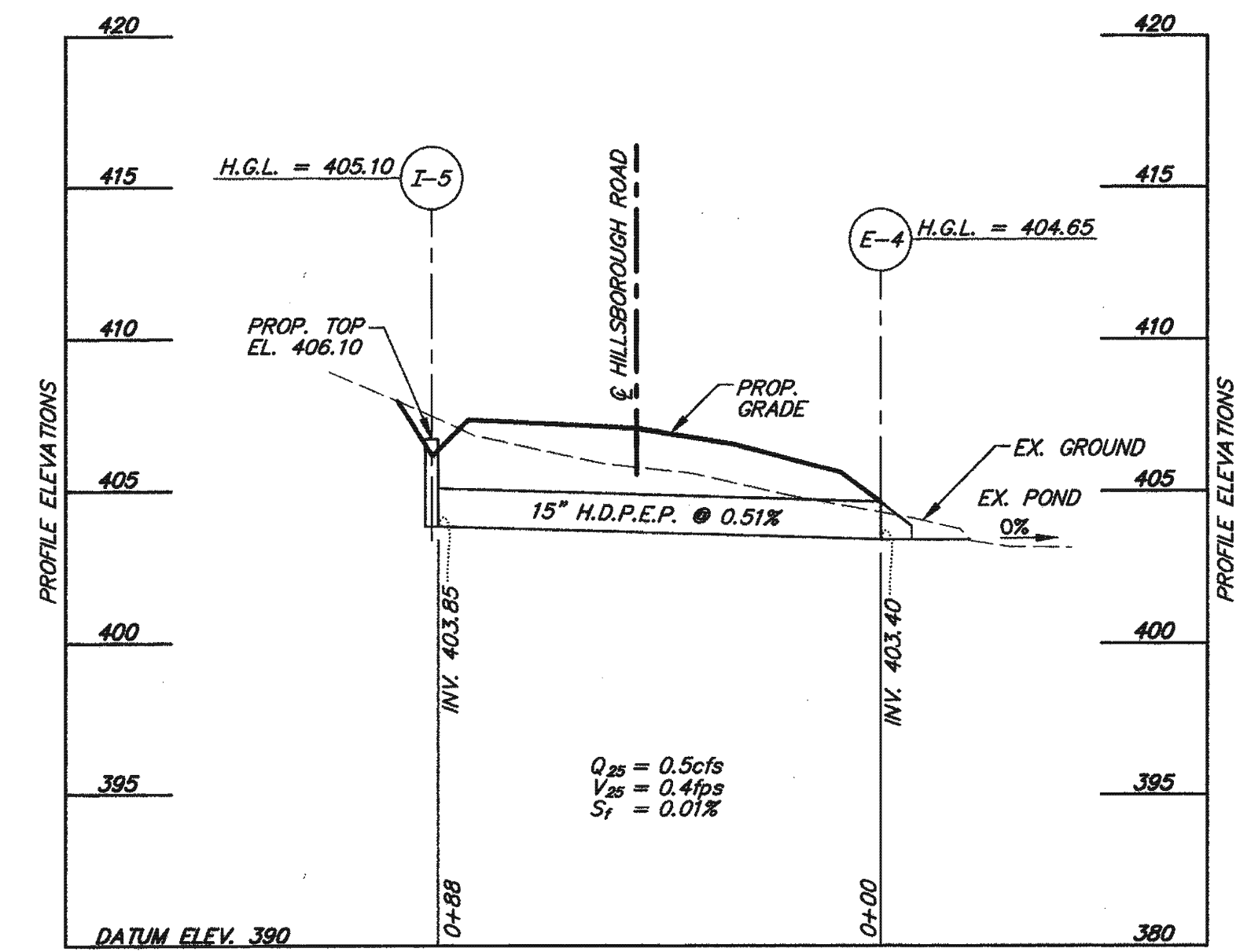
STORM DRAIN PROFILE
SCALE: HORZ. 1" = 30'
VERT. 1" = 5'



STORM DRAIN PROFILE
SCALE: HORZ. 1" = 30'
VERT. 1" = 5'



STORM DRAIN PROFILE
SCALE: HORZ. 1" = 30'
VERT. 1" = 5'



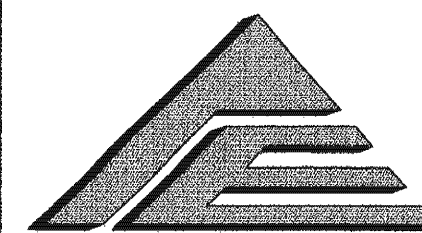
STORM DRAIN PROFILE
SCALE: HORZ. 1" = 30'
VERT. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

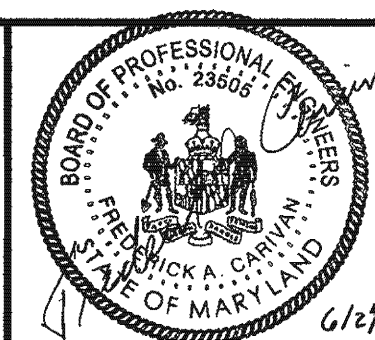
James J. Lee 7/6/99
DEPARTMENT OF PUBLIC WORKS
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION
DATE: 7/6/99

Robert S. Gannon 7/6/99
CHIEF, BUREAU OF ENGINEERING
DATE: 7/6/99

Andrew M. Ouellet 7-6-99
CHIEF, BUREAU OF HIGHWAYS
DATE: 7-6-99



A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 98-365-001



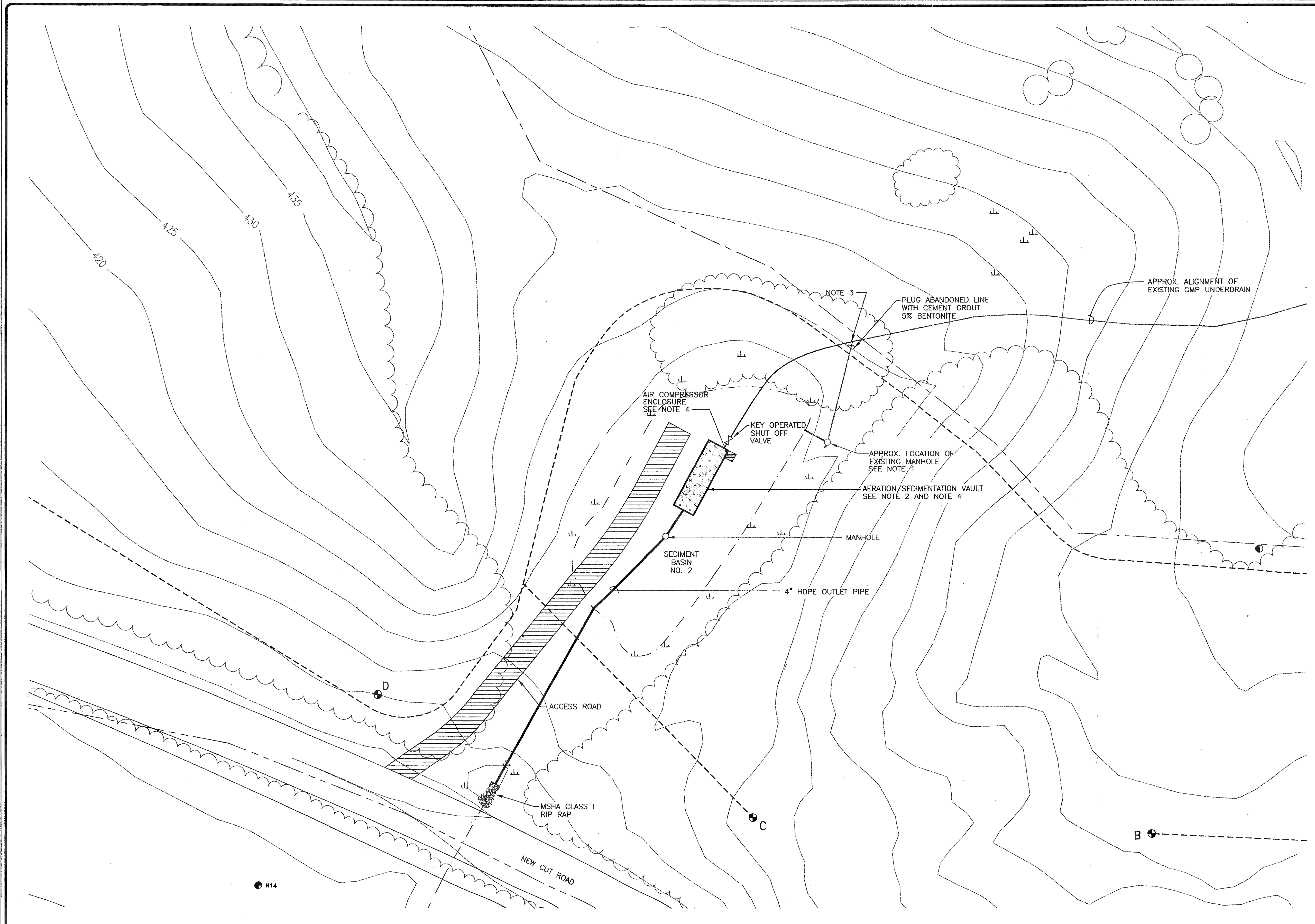
DES: F.A.C.			
DRN: J.N.W.			
CHK: F.A.C.			
DATE: 5/99			
BY: NO.		REVISION	

CAPITAL PROJECT NO.
C-0237

DRAINAGE PROFILES
Hillsborough Road Extension

SCALE AS SHOWN

SHEET R120F-R12



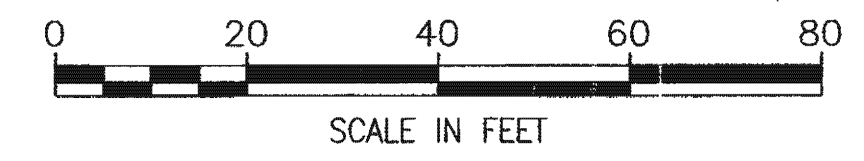
- NOTES:**
1. FEATURE OR STRUCTURE TO BE ABANDONED AND REMOVED BY OTHERS. THE POND WILL BE DRAINED, ABANDONED, AND BACKFILLED PRIOR TO WORK UNDER THIS CONTRACT.
 2. VAULT SHALL BE OF REINFORCED CONCRETE CONSTRUCTION, FINAL LOCATION SUBJECT TO APPROVAL FROM THE ENGINEER AND COUNTY BASED ON FIELD CONDITIONS. FINISH VAULT COVER TO GRADE.
 3. FIELD TIE-IN TO EXISTING CORRUGATED METAL PIPE (CMP) OR COUNTY.
 4. FINAL LOCATION SUBJECT TO APPROVAL FROM THE ENGINEER AND COUNTY BASED ON FIELD CONDITIONS. PROVIDE REQUIRED POWER TO THE COMPRESSOR.
 5. BASE MAP FEATURES PREPARED FROM SCS ENGINEERS DRAWING.
 6. LOCATION OF UTILITIES IS APPROXIMATE. CONTRACTOR IS TO LOCATE UTILITIES 48 HOURS PRIOR TO EXCAVATION FOR CONSTRUCTION. IF UNKNOWN UTILITIES ARE DISCOVERED, THE CONTRACTOR SHALL INFORM ENGINEER PRIOR TO PROCEEDING.
 7. CONTRACTOR SHALL COORDINATE NEW UTILITY SERVICES TO AIR COMPRESSOR ENCLOSURE WITH LOCAL POWER COMPANY.
 8. COORDINATE WORK WITH OTHER CONSTRUCTION ACTIVITY AT SITE THROUGH ENGINEER.
 9. CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS AND LOCATIONS OF PROPOSED EQUIPMENT AS SHOWN ON DRAWINGS PRIOR TO START OF WORK. ANY DEVIATIONS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION AND APPROVED BY THE ENGINEER PRIOR TO PROCEEDING.
 10. TOPOGRAPHY SHOWN IS PRE-FINAL LANDFILL CLOSURE GRADING PLAN. ACTUAL TOPOGRAPHY MAY NOT BE AS SHOWN DURING CONSTRUCTION.
 11. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO EXISTING WELLS AND STRUCTURES.
 12. CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL.

- LEGEND**
- 475 — TOPOGRAPHIC CONTOUR (FT)
 - PROPOSED RECOVERY WELL
 - GROUNDWATER EXTRACTION PIPELINE
 - ~~~~ TREELINE
 - PROPERTY BOUNDARY
 - LIMIT OF LANDFILL
 - WETLAND
 - EXISTING OVERBURDEN WELL
 - ⊗ VALVE
- A — DETAIL OR SECTION ID
 2/4 — DRAWING ON WHICH DETAIL IS SHOWN
 — DRAWING ON WHICH DETAIL IS REFERENCED

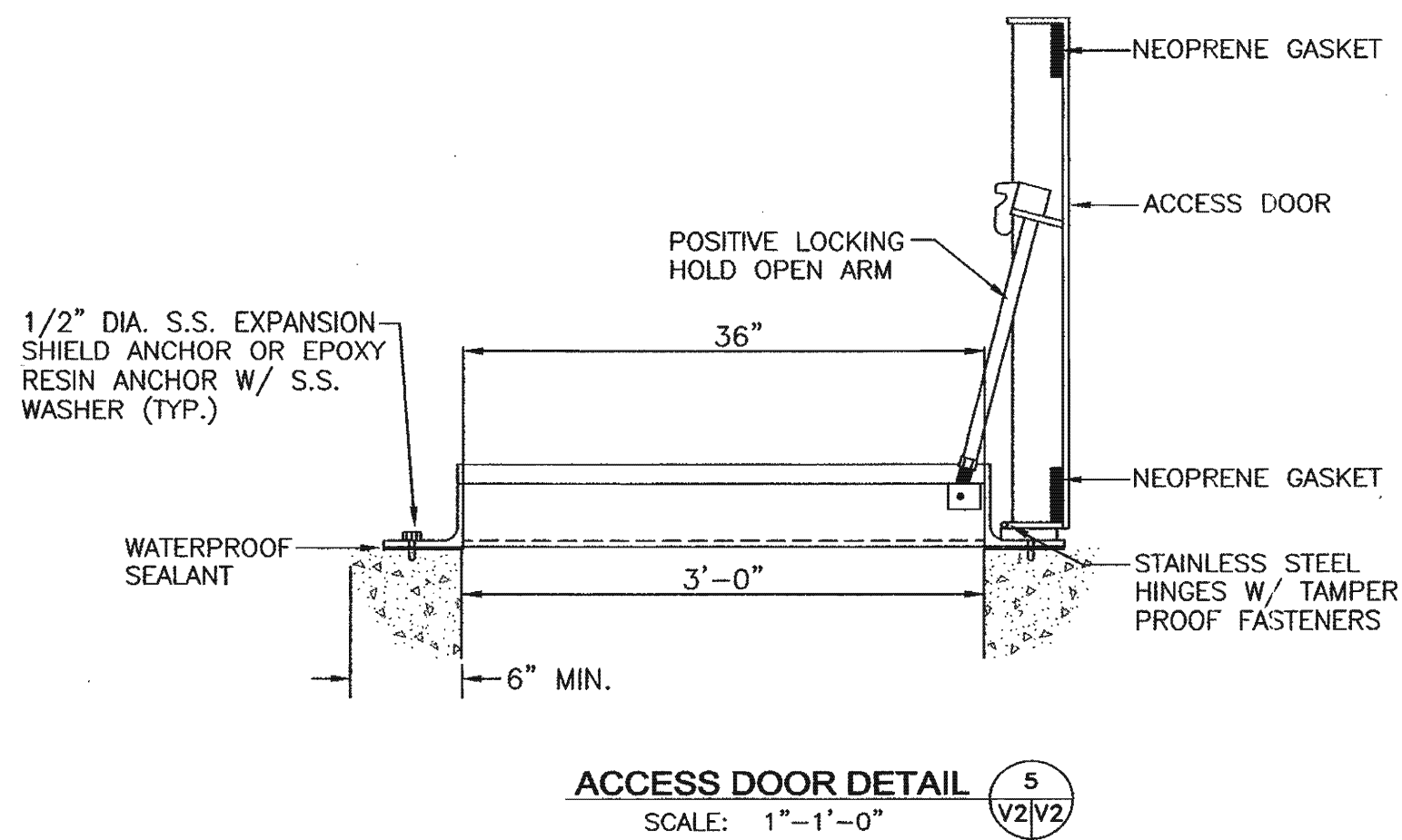
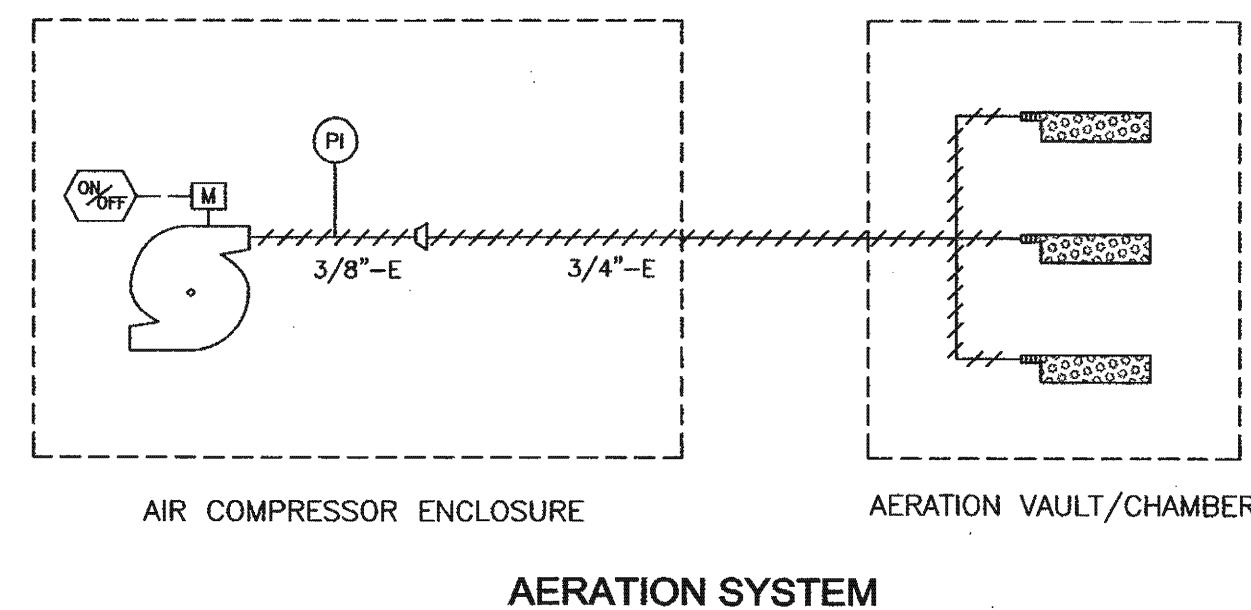
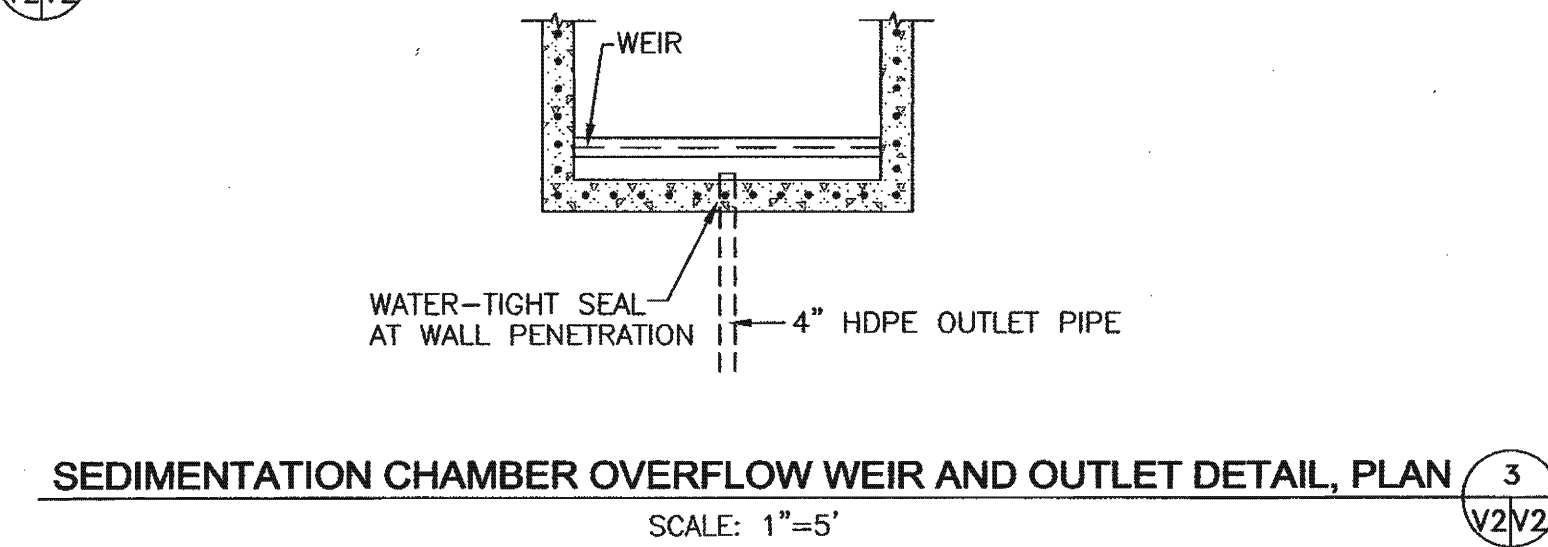
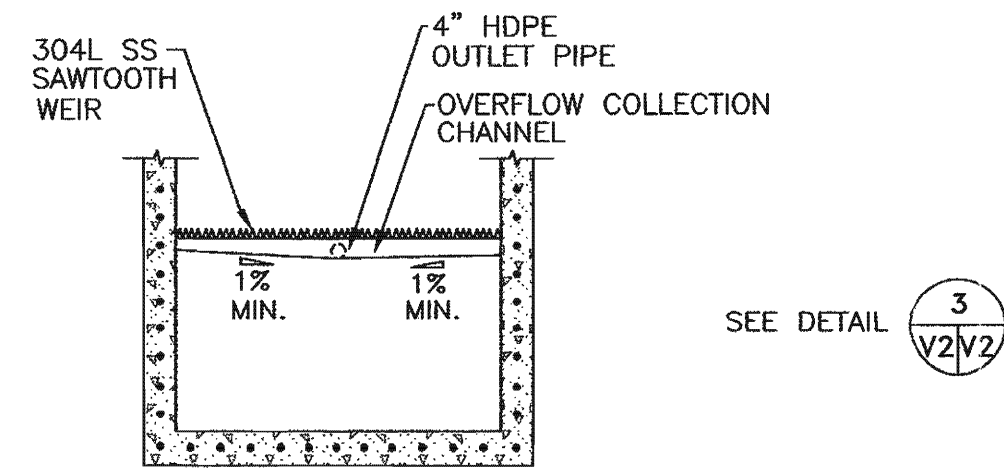
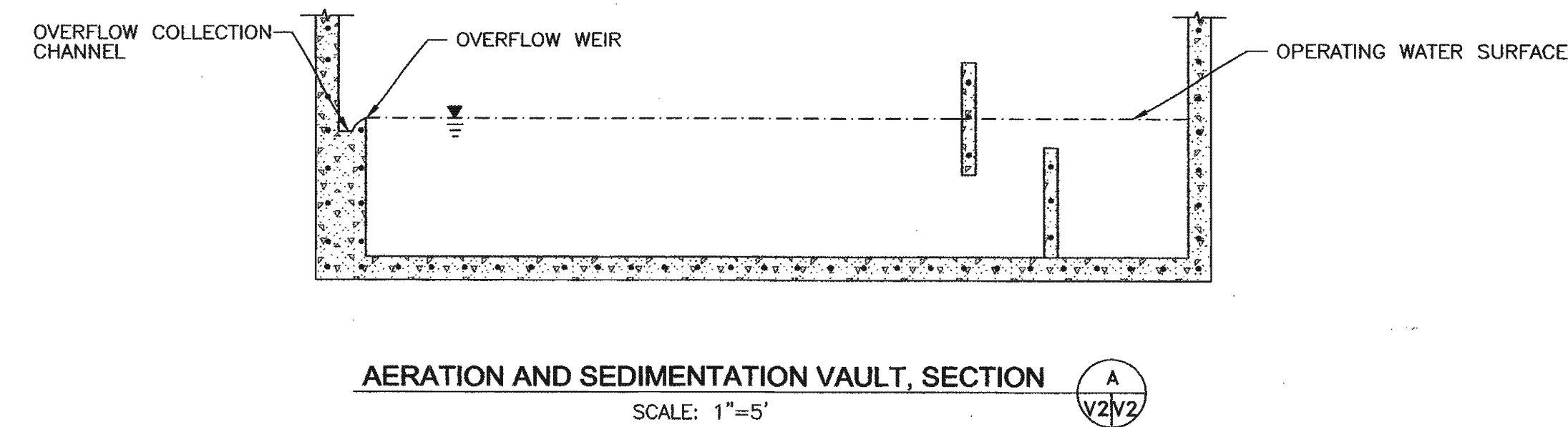
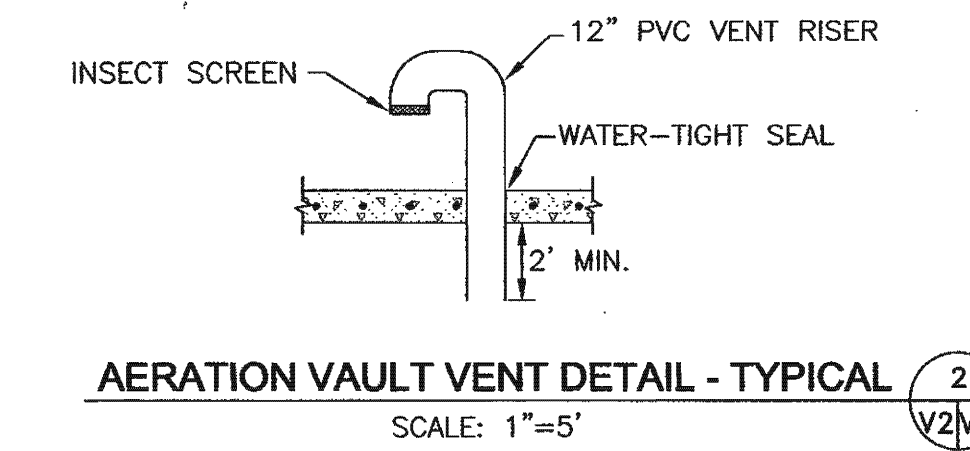
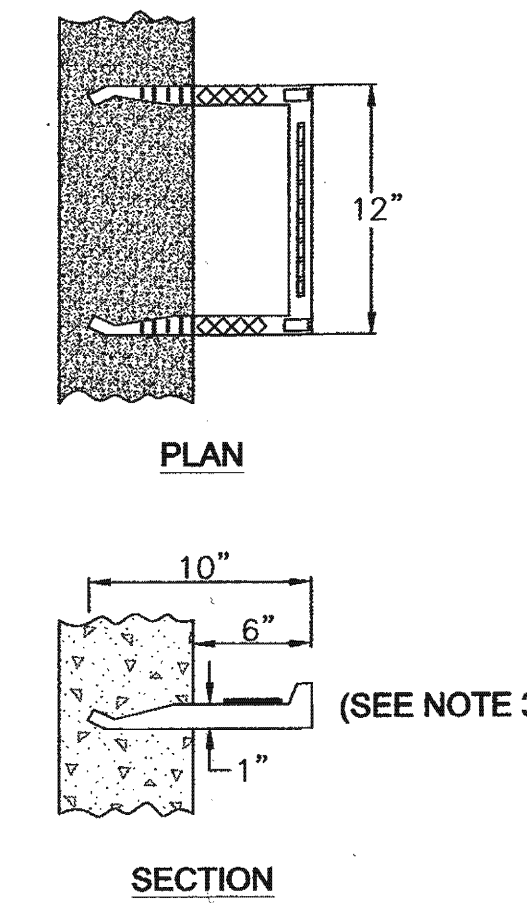
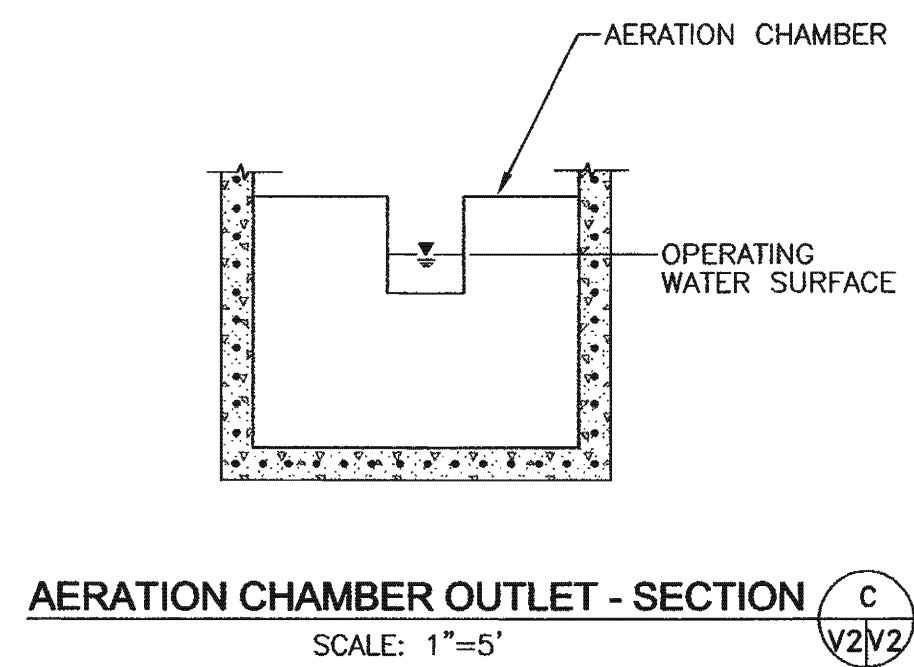
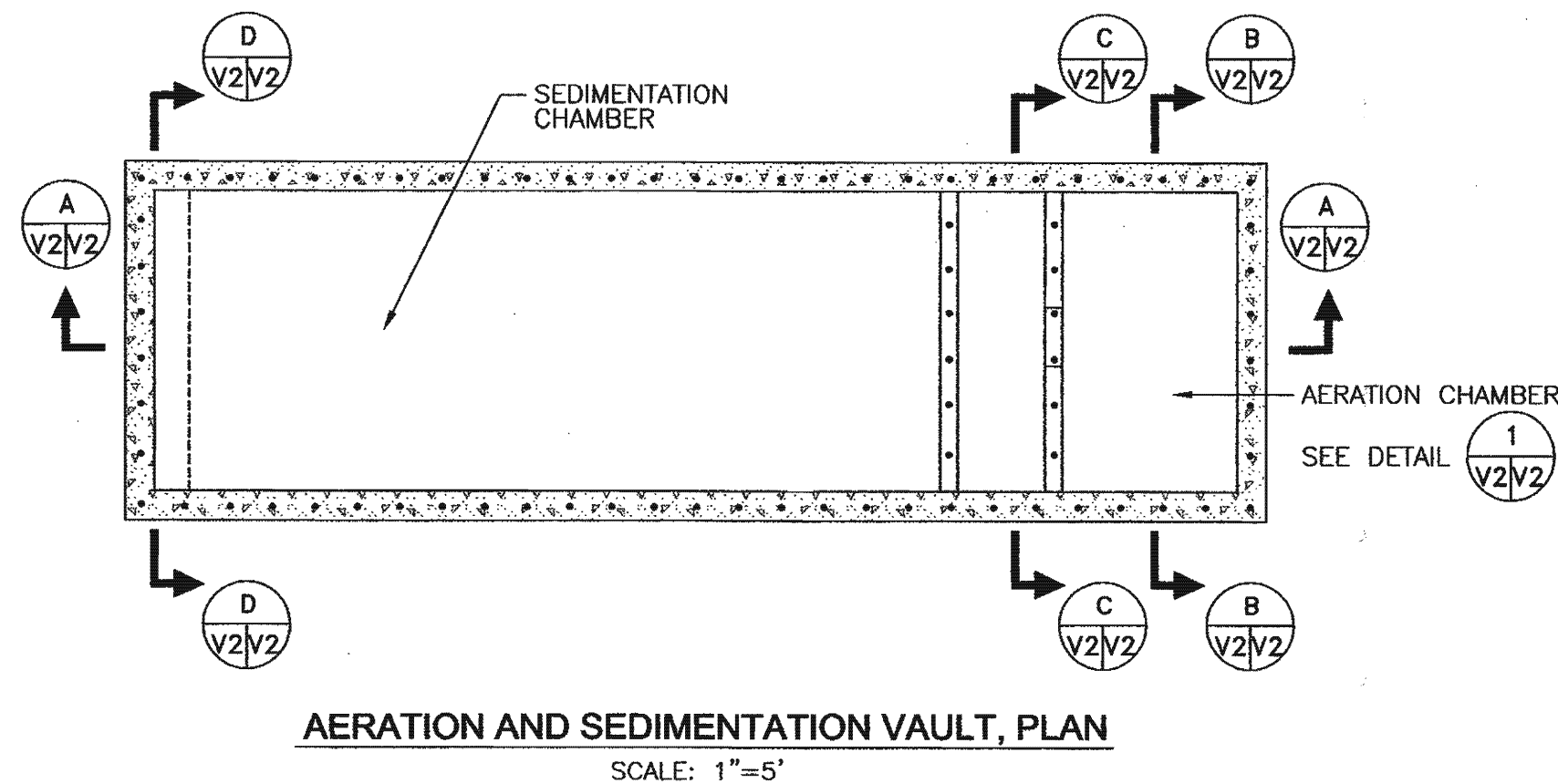
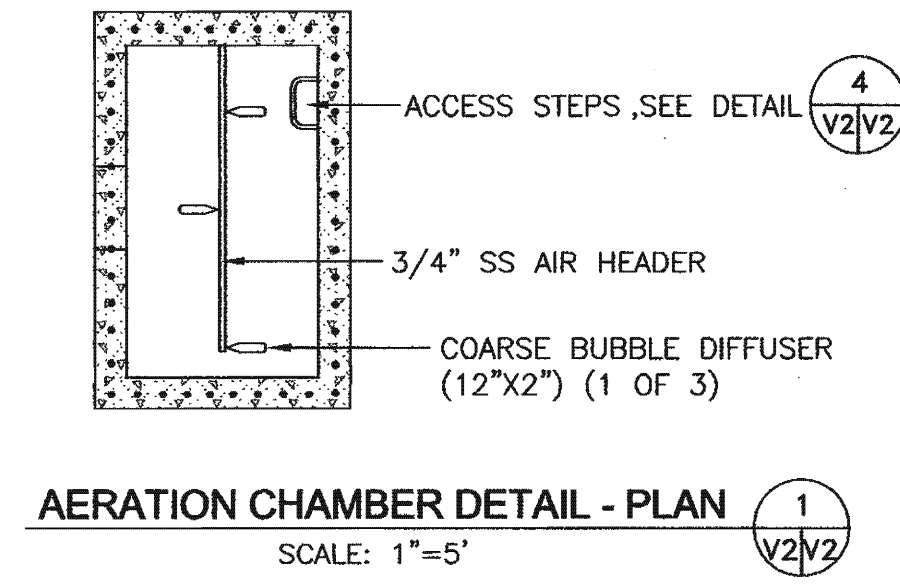
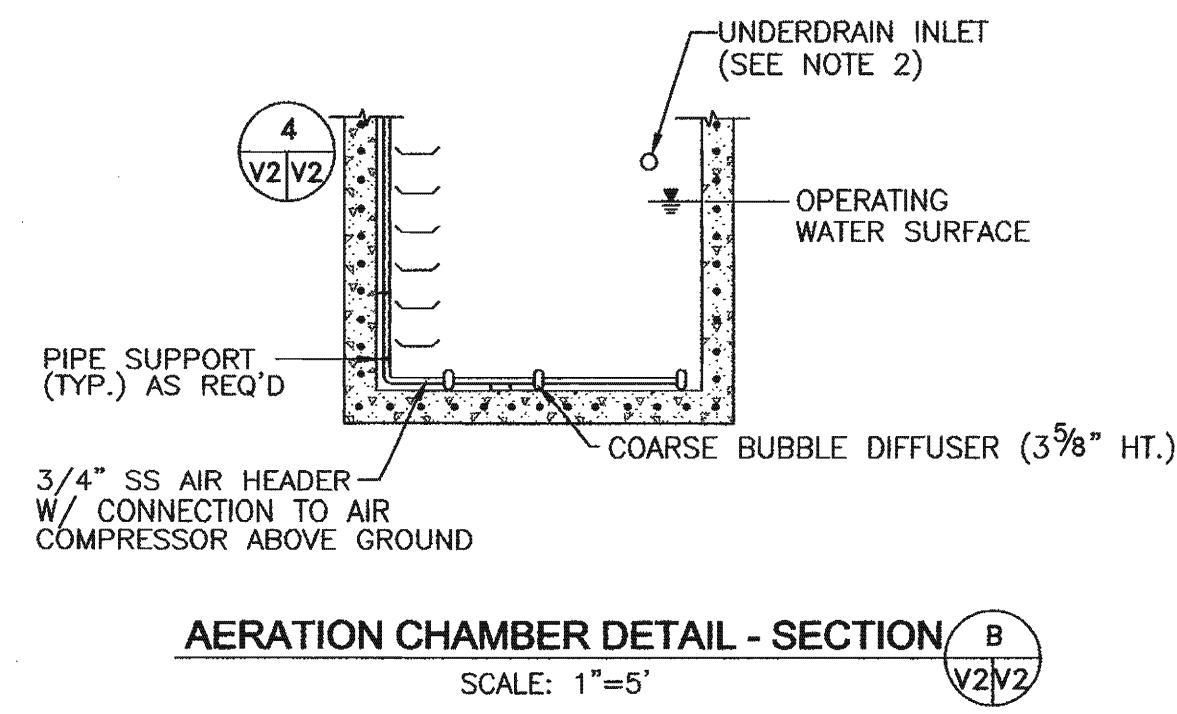
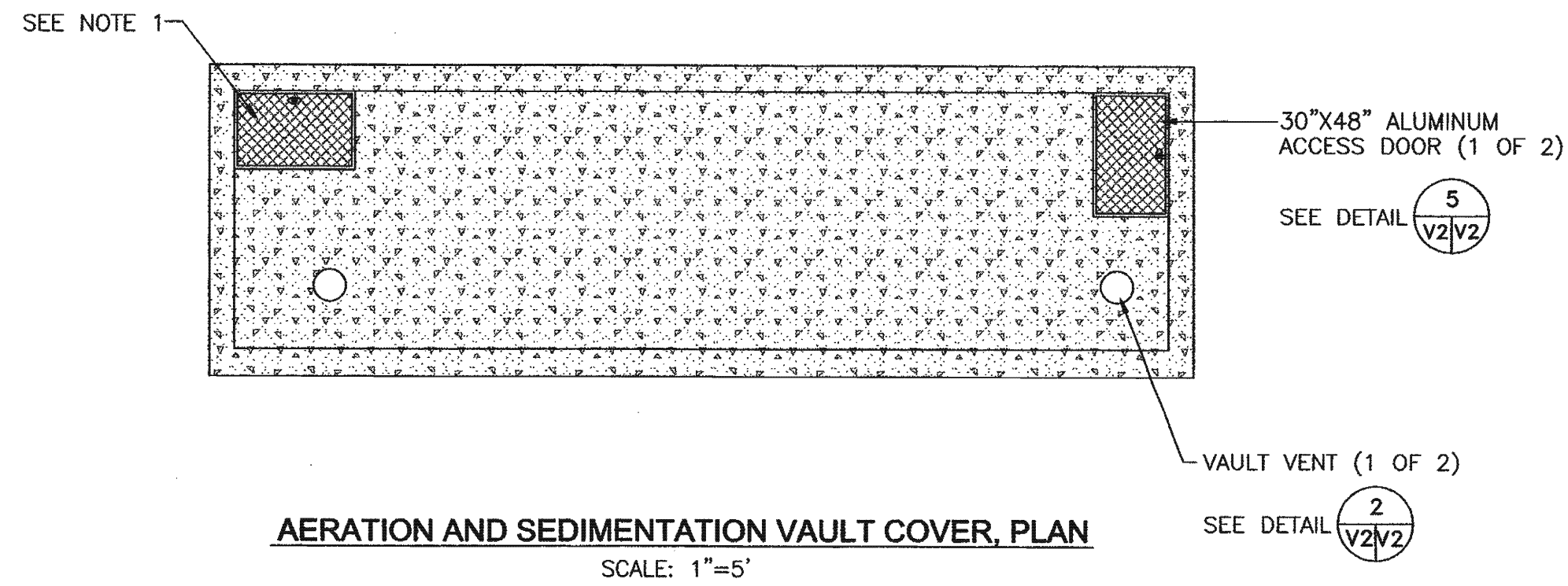
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Jan P. [Signature] 7/6/99
DIRECTOR OF PUBLIC WORKS DATE

John [Signature] 7/6/99
CHIEF BUREAU OF ENVIRONMENTAL SERVICES DATE



APPROVED BY:	DATE:	REVISION:	APRD.:	PROJECT:
				GROUNDWATER REMEDIATION SYSTEM NEW CUT LANDFILL CLOSURE CAPITAL PROJECT C-0237-I Howard County, Maryland
DRAWING TITLE:				DRAWING:
UNDERDRAIN AERATION AND SEDIMENTATION SYSTEM SITE PLAN				V1
CHECKED: EAB DRAFTED: CMP SCALE: AS SHOWN DATE: 2-25-99 FILE: E004046A.DWG				



NOTES:

GENERAL: VAULT CONCRETE, REINFORCING, AND FOUNDATION PLANS AND DETAILS ARE SHOWN ON DRAWINGS V3 AND V4.

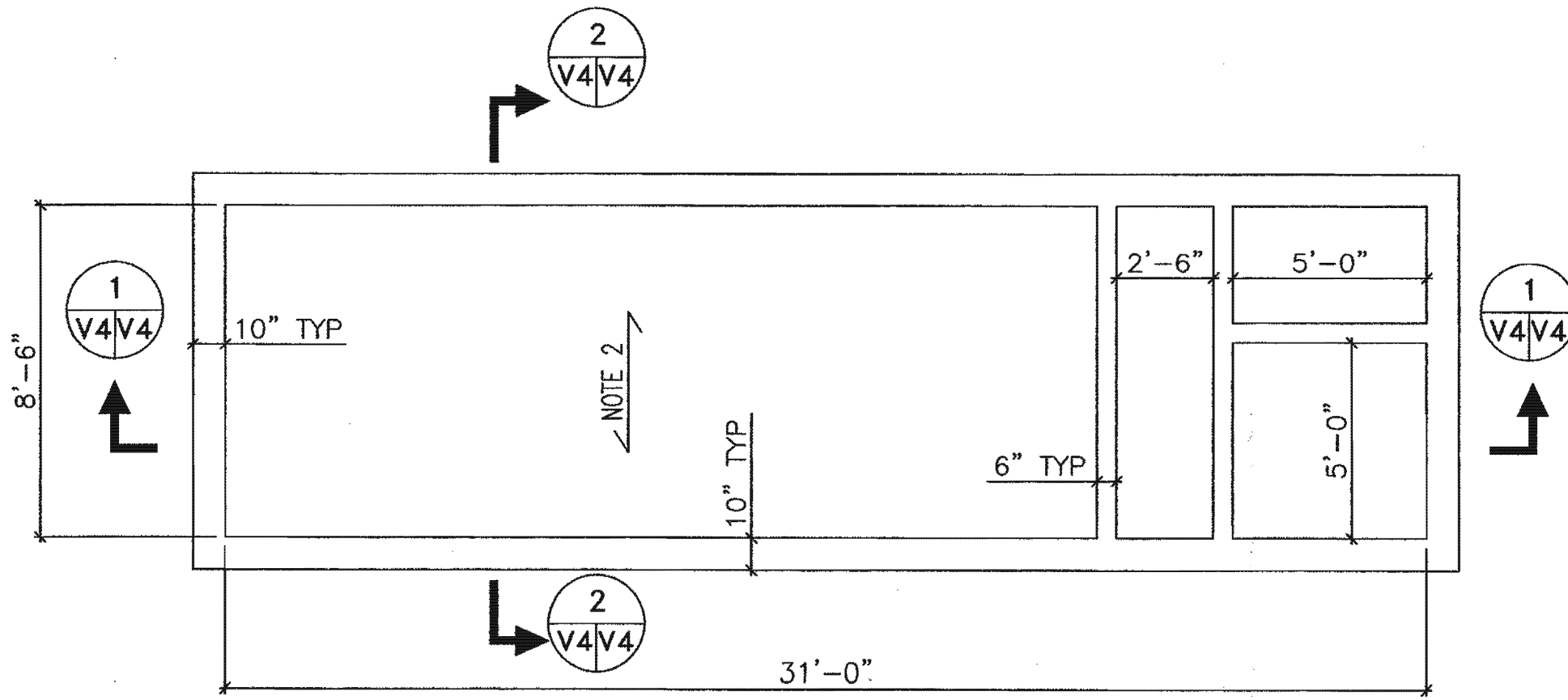
- PROVIDE ACCESS STEPS AT SEDIMENTATION VAULT MANWAY AS SHOWN IN (B) V2/V2 AND OTHER REFERENCED DETAILS.
- THE UNDERDRAIN SHALL BE FIELD INSTALLED BY THE CONTRACTOR INTO THE AERATION CHAMBER AT THE DIRECTION OF THE ENGINEER. THE INSTALLATION SHALL ALLOW FOR A MINIMUM FREEBOARD OF 1 FOOT FROM THE OPERATING WATER SURFACE. THE EXISTING UNDERDRAIN INLET IS APPROXIMATELY 4 FEET BELOW GROUND SURFACE.
- ACCESS STEPS TO BE PLACED AT INTERVALS OF 12 INCHES, MEASURED FROM THE CENTERLINE OF THE STEPS, AS PER OSHA STANDARD 29 CFR 1926.1053 (a)(3)(i).
- ACCESS DOOR DETAIL HALLIDAY PRODUCTS ACCESS DOOR F1R3648 OR APPROVED EQUAL.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 7/6/99
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 7/6/99
CHIEF BUREAU OF ENVIRONMENTAL SERVICES DATE

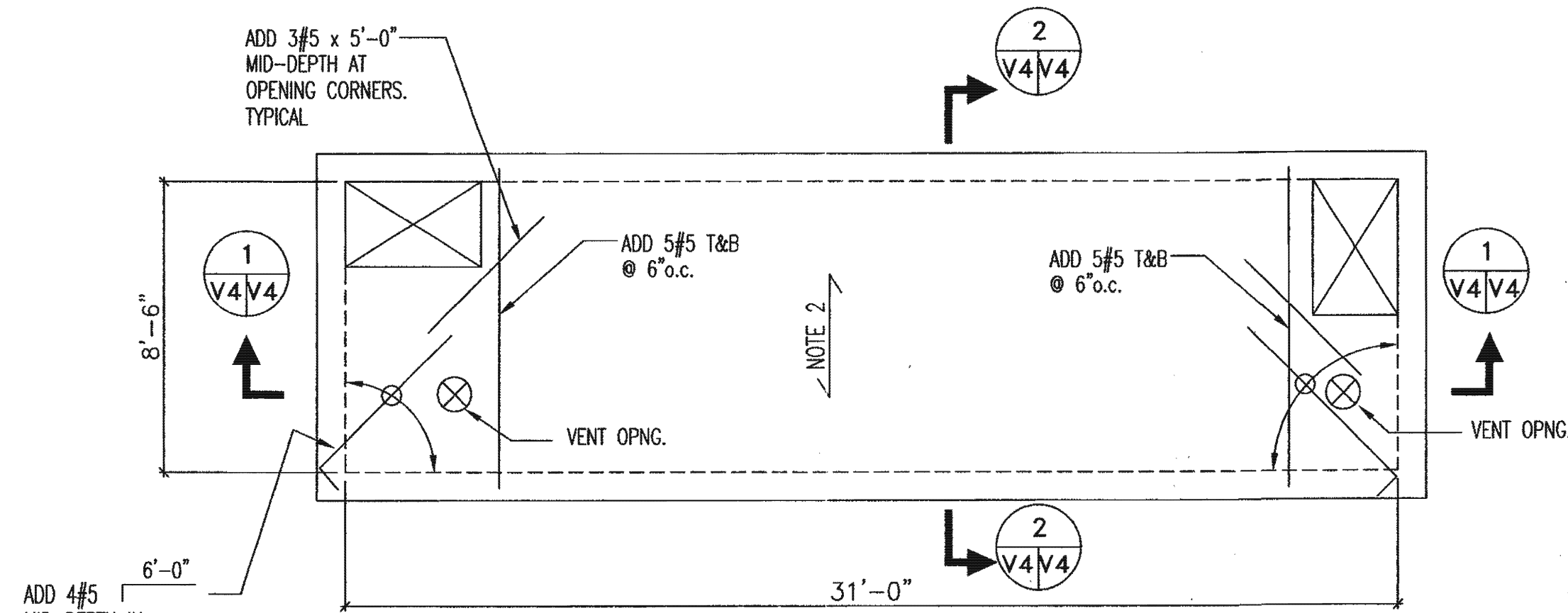
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				GROUNDWATER REMEDIATION SYSTEM NEW CUT LANDFILL CLOSURE CAPITAL PROJECT C-0237-I Howard County, Maryland
DRAWING TITLE:				CHECKED: PAR
AERATION AND SEDIMENTATION VAULT SCHEMATIC DETAILS				DRAFTED: CNP
				SCALE: AS SHOWN
				DATE: 2-26-99
				FILE: E004050A.DWG
				DRAWING: V2



- PLAN NOTES:
1. SEE DWG V3 FOR GENERAL NOTES & TYPICAL DETAILS.
 2. #5's SPAN THIS DIRECTION
 3. ALL REBAR TO BE EPOXY-COATED

VAULT FOUNDATION PLAN

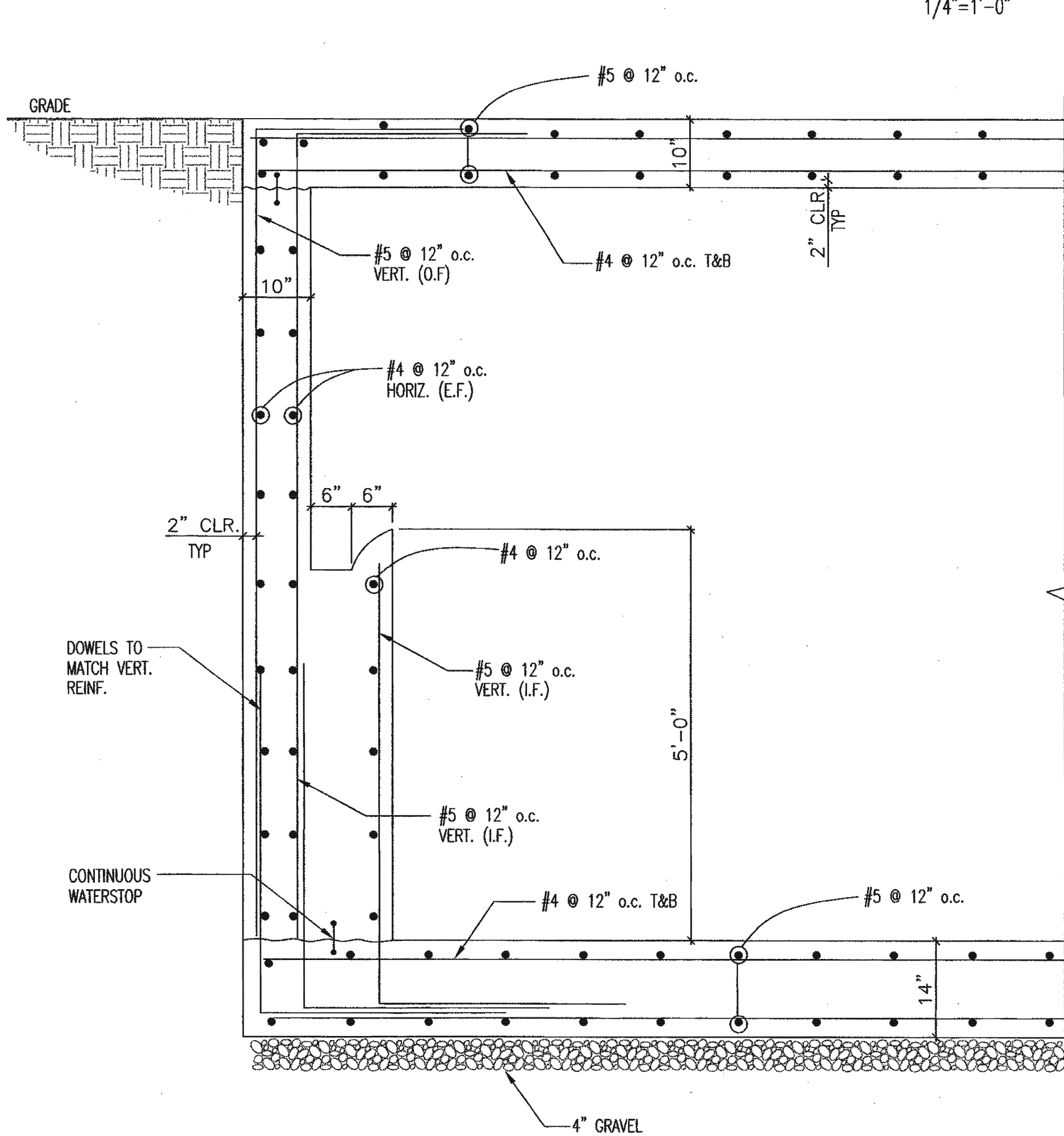
1/4"=1'-0"



- PLAN NOTES:
1. SEE DWG V3 FOR GENERAL NOTES & TYPICAL DETAILS.
 2. #5's SPAN THIS DIRECTION
 3. ALL REBAR TO BE EPOXY-COATED
 4. SEE CIVIL DRAWINGS FOR OPENING SIZES.

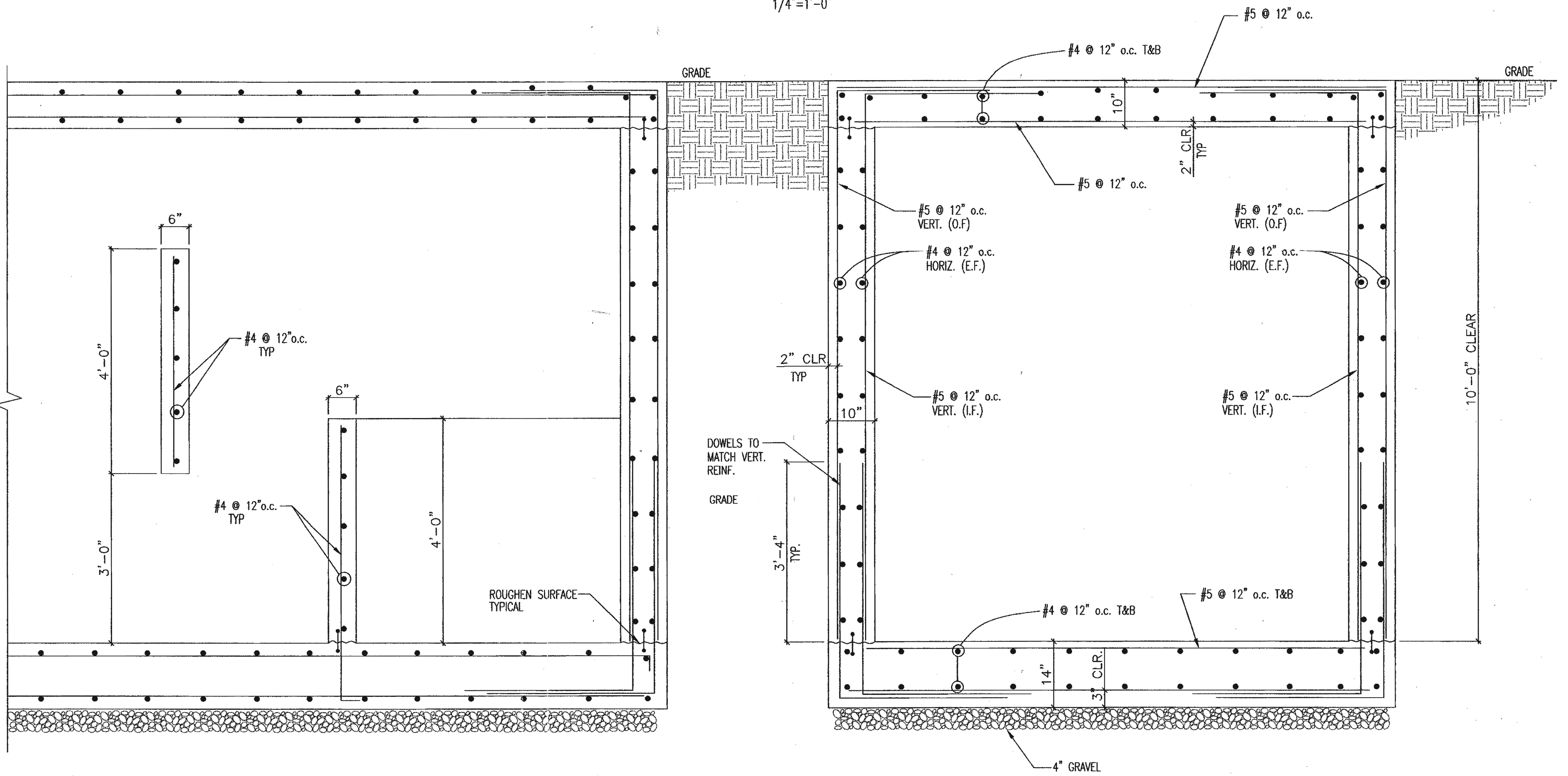
VAULT COVER FRAMING PLAN

1/4"=1'-0"



1 LONGITUDINAL SECTION

3/4"=1'-0"



2 TRANSVERSE SECTION

3/4"=1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 7/6/99
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 7/6/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

APPROVED BY:	DATE:	REVISION:	APPR.:	PROJECT:
				GROUNDWATER REMEDIATION SYSTEM NEW CUT LANDFILL CLOSURE CAPITAL PROJECT C-0237-I Howard County, Maryland
				DRAWING TITLE: AERATION AND SEDIMENTATION VAULT PLANS & DETAILS
				CHECKED: DHH DRAFTED: TMD SCALE: AS SHOWN DATE: 6-26-99 FILE: E004052A.DWG
				DRAWING: V4