

ALPHA RIDGE LANDFILL PANELS  
COORDINATES IN NAD'83 FEET  
ELEVATIONS IN FEET

PANEL NUMBER	NORTH	EAST	ELEVATION
HV00	596654.78	1336886.02	526.35
PC01	595733.66	1337856.74	510.81
PC04	597298.09	1338453.33	495.55
PC05	598870.35	1339271.78	548.00
PC06	600370.18	1339244.20	513.06
PC07	598191.26	1336887.65	566.36
PC08	599855.00	1336882.66	561.11
PC09	602346.70	1336578.63	526.17
PC10	597186.12	1334540.67	574.07
PC11	598429.53	1334744.49	576.44
PC12	599799.43	1334659.45	585.44
PC13	601881.34	1335027.83	552.64

# HOWARD COUNTY

## Department of Public Works

6751 Gateway Drive, Suite 514  
Columbia, Maryland 21046

# ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE

## CAPITAL PROJECT NO. C-0190-N SITE DEVELOPMENT PLAN

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PREVIOUS SITE DEVELOPMENT PLAN NUMBER  
CAPITAL PROJECT C-4-0108  
CAPITAL PROJECT C-4-0109  
CAPITAL PROJECT C-0190-B OR SDP-90-90  
CAPITAL PROJECT ~~C-2099~~, LANDFILL GAS TO ENERGY (LFG) FACILITY (C-0299)

WETLANDS PERMIT TRACKING NO.: 1997-63409

NOTE: THIS CAPITAL PROJECT SITE PLAN IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS AS OUTLINED IN APPENDIX 'D' OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL. FOREST CONSERVATION OBLIGATIONS HAVE BEEN PREVIOUSLY ADDRESSED BY SDP-97-128, ALPHA RIDGE LANDFILL

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15212, EXPIRATION DATE: 12/24/2012. THIS SEAL APPLIES ONLY TO REVISION 3 ON THIS SHEET.

DPW HAS APPROVED THE ENVIRONMENTAL CONCEPT PLAN AND THE SWM DESIGN FOR THE 2014 IMPROVEMENTS.

- CO-1 SITE DEVELOPMENT PLAN
- CO-2 MISCELLANEOUS DETAILS
- CO-3 DRAINAGE DETAILS
- CO-4 BIO-SWALE DETAILS
- CO-5 GRADING, EROSION & SEDIMENT CONTROL PLAN
- CO-6 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
- CO-7 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
- CO-8 DRAINAGE AREA MAP
- CO-9 WATER/SANITARY AND ELECTRICAL SERVICE PLAN

SUBDIVISION NAME	LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220,11,302	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
10-847/606 16-878/215 10-891/314	REC-RC-DEO	10 & 16
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30-3000

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

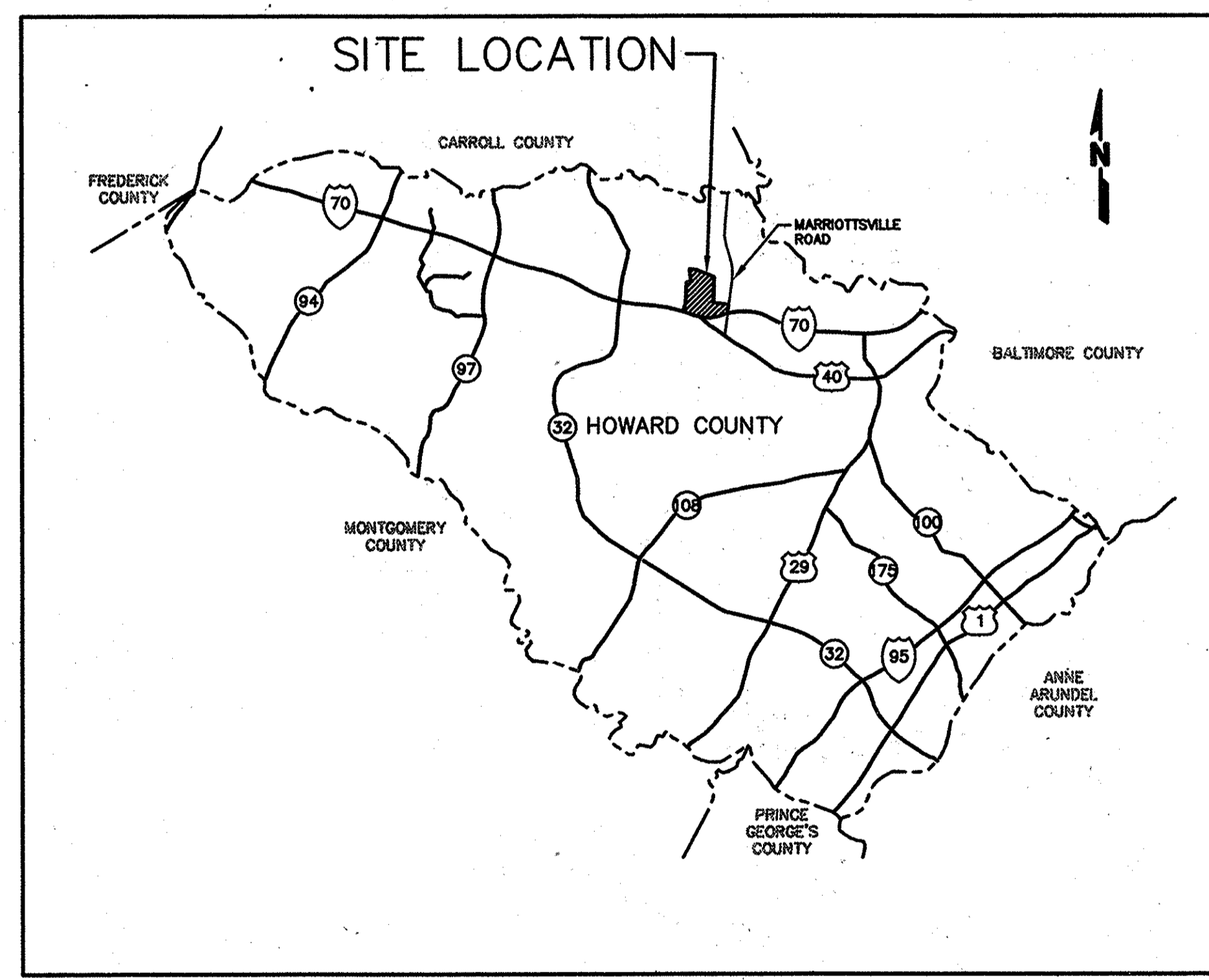
*[Signature]* 10/31/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

NOTE: DISTURBANCE FROM THE ALPHA RIDGE LANDFILL GAS TO ENERGY (LFG) PROJECT IS PROPOSED TO BE LESS THAN 5,000 SQUARE FEET IN AREA ON THE EASTERN SIDE OF THE ALPHA RIDGE LANDFILL SITE. EXAMINATION OF THE FOREST CONSERVATION EASEMENTS SHOWS THAT THE PROPOSED SITE FOR THE PROJECT DOES NOT FALL WITHIN A DESIGNATED FOREST CONSERVATION EASEMENT. DUE TO THE SMALL AREA OF LAND DISTURBED FOR THIS PROJECT, A FOREST CONSERVATION PLAN IS NOT REQUIRED FOR THE ALPHA RIDGE LFG PROJECT.

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15493, EXPIRATION DATE: 2 JULY 2013. THIS SEAL APPLIES ONLY TO REVISION 2 ON THIS SHEET.

*[Signature]* 10/30/97  
HOWARD COUNTY/MARYLAND HEALTH OFFICER DATE



LOCATION MAP



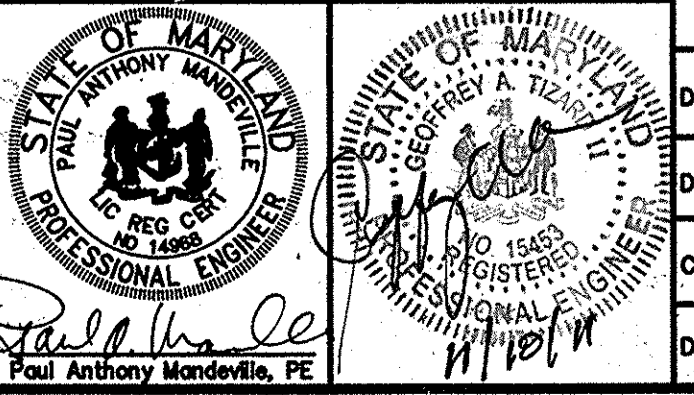
NOTE: This Site Development Plan is comprised of Plan Sheets 1-78 excepting sheets 57 and 58 (Borrow Area Boring Logs). Sheets 79-89 are architectural detail sheets not part of the SDP.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, AST	NO.	REVISION	DATE
JED	1	WEST SHOP PRKING, SOIL STORAGE SHELTER, TOC	6/9/14
CSN	2	ALPHA RIDGE LANDFILL COMPOST FACILITY	3/10/12
CJS	3	ALPHA RIDGE LANDFILL GAS TO ENERGY PROJECT	10/9/11
MRG	4	DELETED REC. AREA SHEETS 63-66	11/9/99

COVER SHEET

REDLINE SDP 97-128 (JUNE 2014)  
COMPRISED OF SHEETS 1, 64, 64, 124-131 ONLY

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

SCALE: AS NOTED

SHEET 1 OF 131

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SDP 97-128

GENERAL NOTES  
NON-RESIDENTIAL  
SITE DEVELOPMENT PLAN

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND THE MARYLAND STATE HIGHWAY ADMINISTRATION IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF WASTE MANAGEMENT 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 WITH (MAXIMUM TWO FOOT) CONTOUR INTERVALS PREPARED BY AIR SURVEY CORPORATION, INC. JANUARY, 1997.
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.) HOWARD COUNTY MONUMENT NOS. PC-06 AND PC-09 WERE USED FOR THIS PROJECT.
7. WATER IS PRIVATE.
8. SEWER IS PRIVATE.
9. STORMWATER MANAGEMENT CONTROL IS PRIVATE AND IS OWNED AND MAINTAINED BY HOWARD COUNTY.
10. EXISTING UTILITIES ARE BASED ON HOWARD COUNTY RECORDS.
11. THE FLOODPLAIN DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY CENTURY ENGINEERING, DATED 1978, UPDATED IN 1986 BY BERNARD JOHNSON, INC.
12. THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY HOWARD SOIL CONSERVATION SERVICE, DATED JANUARY 17, 1997, AND WAS APPROVED (PENDING) AS OF SEPTEMBER, 1997.
13. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
14. SUBDIVISION NAME HOWARD COUNTY ALPHA RIDGE LANDFILL, TAX MAP 10 & 16.
15. 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 CONTRACTORS EXPENSE.
16. MAGNETIC LOCATION TAPE IS TO BE PLACED ABOVE ON ALL BURIED PLASTIC PIPELINE UTILITIES DURING CONSTRUCTION.

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/808 16-878/215 10-891/314	ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*James B. Bester* 11/3/97  
DIRECTOR DATE

*[Signature]* 10/30/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Conrad Hamilton* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

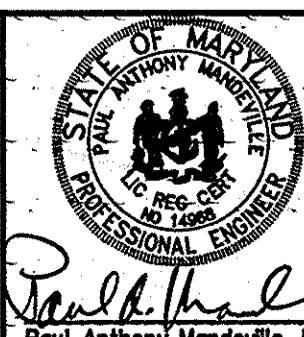
*James M. Bond* 10/30/97  
HOWARD COUNTY, MARYLAND  
HEALTH OFFICER DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James J. Lewis* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John O'Hara* 10/30/97  
CHIEF BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, AST					
DRN: SPC					
CHK: PAM					
DATE: 10-30-97	BY:	NO.	REVISION	DATE	

GENERAL NOTES

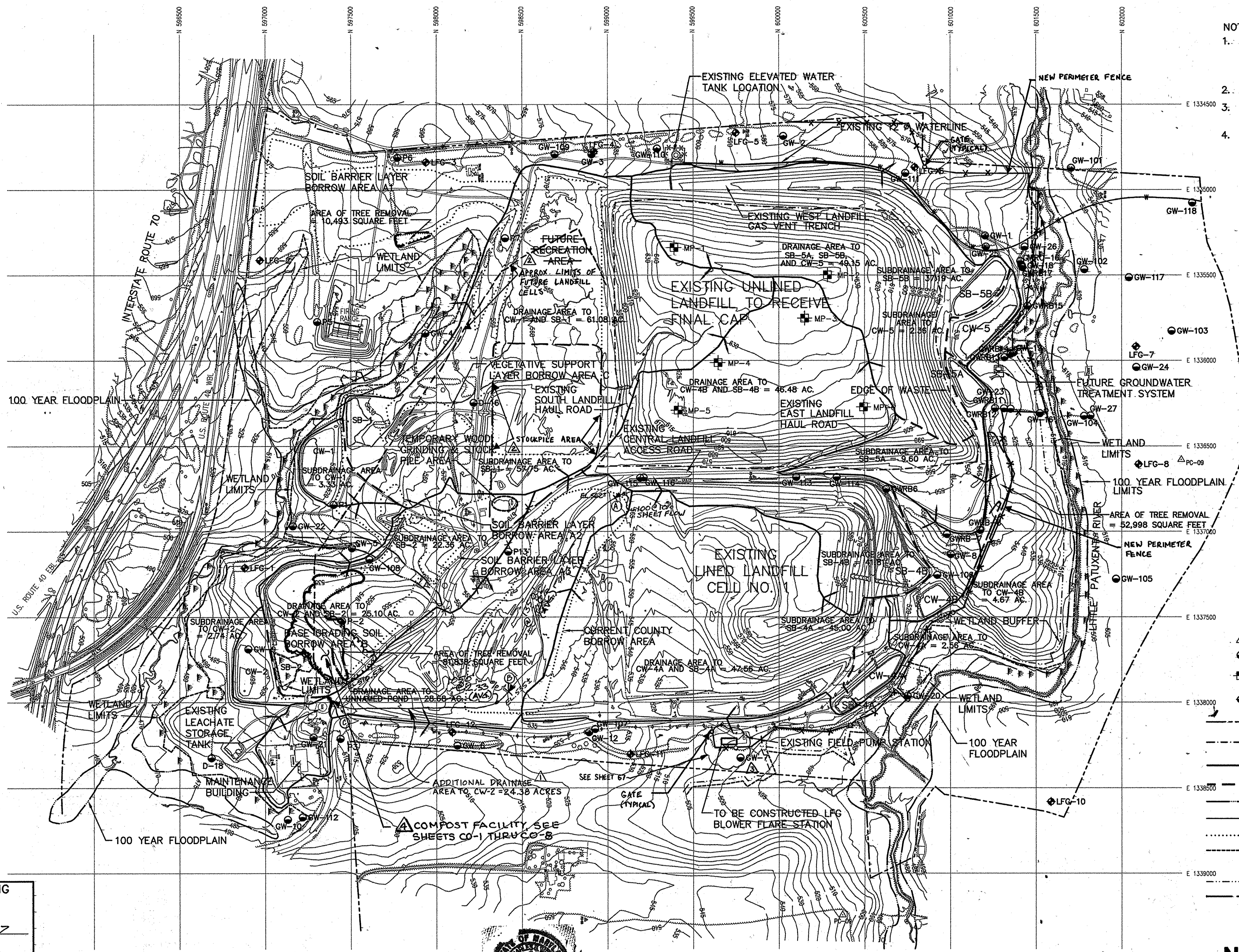
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:  
NO SCALE  
SHEET  
2 OF 13

GENNOTES-B M: 295077.01 FINAL



- NOTES:
1. TOPOGRAPHIC INFORMATION SHOWN ON THIS SHEET WAS COMPILED BY AIR SURVEY CORPORATION, INC. FROM AIR PHOTOGRAPHY DATED JANUARY, 1997.
  2. LFG PROBES INSTALLED IN APRIL, 1996.
  3. LFG MONITORING WELLS INSTALLED IN MAY, 1996.
  4. 100 YEAR FLOODPLAIN INFORMATION PROVIDED BY HOWARD CO. INFORMATION IS BASED ON THE 1978 FLOOD PLAIN DELINEATION BY CENTURY ENGINEERING AND THE 1986 UPDATE BY BERNARD JOHNSON, INC. HOWARD CO. MAPS: GC-0119-T-36-38, GC-0119-T-35-38, GC-0119-T-234-38, GC-0119-T-35-39.

LEGEND

	△ PC-09	SURVEY CONTROL MONUMENT
	● GW-101	GROUNDWATER WELLS(EXISTING)
	⊕ MP-3	LFG PROBES(EXISTING)
	⊕ LFG-9	LFG MONITORING WELLS(EXISTING)
	---	PROPERTY LINE
	---	EDGE OF WASTE
	---	DRAINAGE DIVIDES
	---	SUBDRAINAGE DIVIDES
	---	100 YEAR FLOODPLAIN
	---	EXISTING WATER LINE
	---	BORROW AREA LIMITS
	---	WETLAND LIMITS
	---	WETLANDS
	---	WETLAND BUFFER
	---	TREE REMOVE AREA

SUBDIVISION NAME	LOT/PARCEL
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220,11,30z
LIBER/FOLIO	ZONE TAX/ZONE MAP
10-847/608 16-826/215 10-891/314	-PEC RC-D60 10 & 16
WATER CODE	SEWER CODE CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING 4030,06 50-36

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 10/30/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 10/30/97  
HOWARD COUNTY, MARYLAND  
HEALTH OFFICER DATE

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19452, EXPIRATION DATE: 2 JULY 2013. THIS SEAL APPLIES ONLY TO REVISIONS ON THIS SHEET.



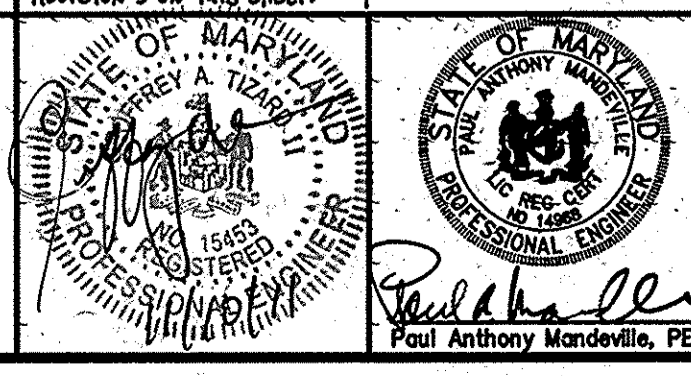
SEAL & SIGNATURE FOR REV. ONLY

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, AST	CSN	ALPHA RIDGE LANDFILL COMPOST FACILITY	3/19/12
DRN. AST, EGC	C/S	ALPHA RIDGE LANDFILL GAS TO ENERGY PROJECT	10/4/11
CHK. PAM	MRG	DELETED REG. AREA; ADDED STOCKPILE AREA, ETC.	11-9-11
DATE: 10-30-97	BY NO.	DRAINAGE AREA TO BASIN CW-2	4-28-99
		REVISION	DATE

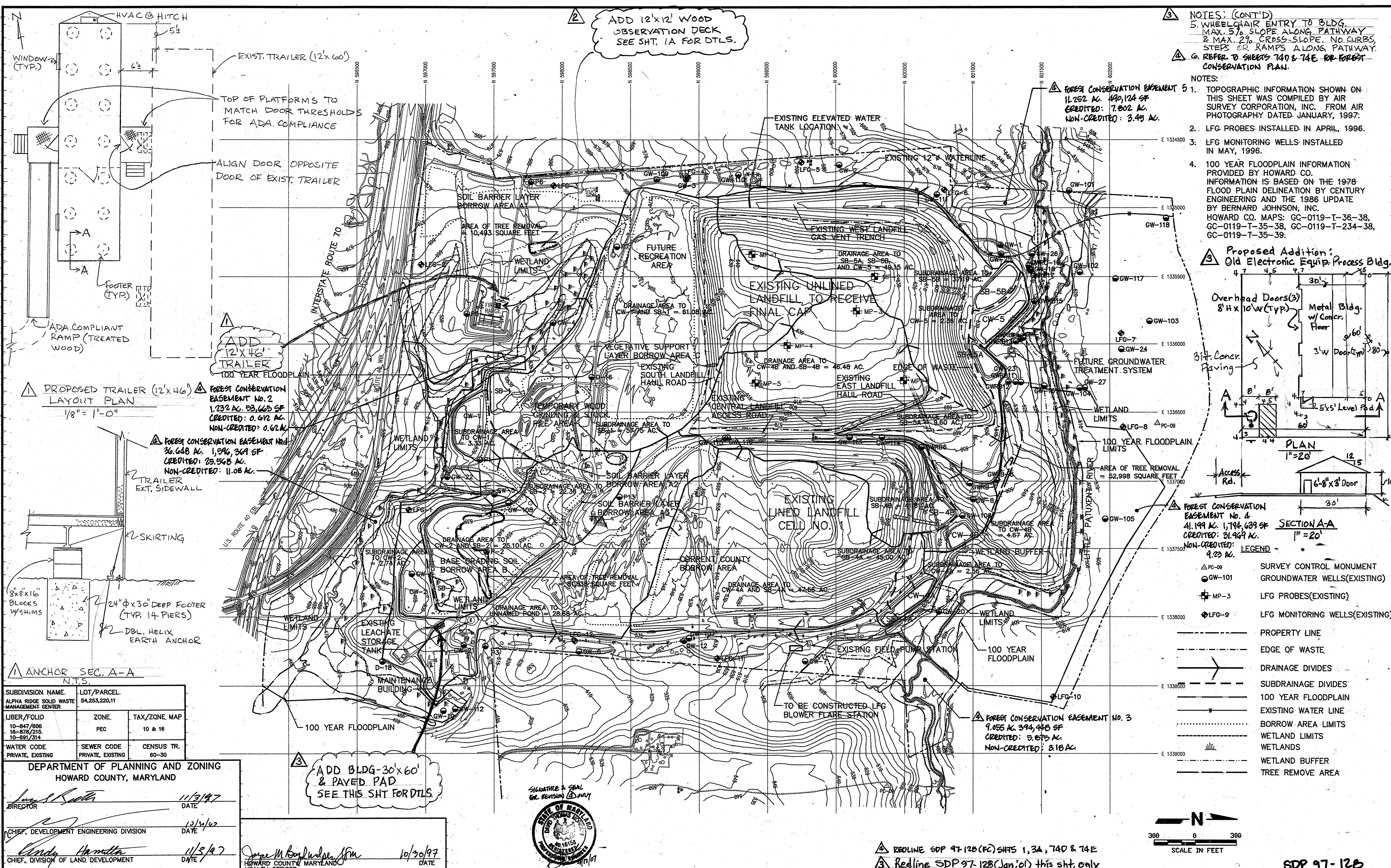
OVERALL SITE PLAN

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

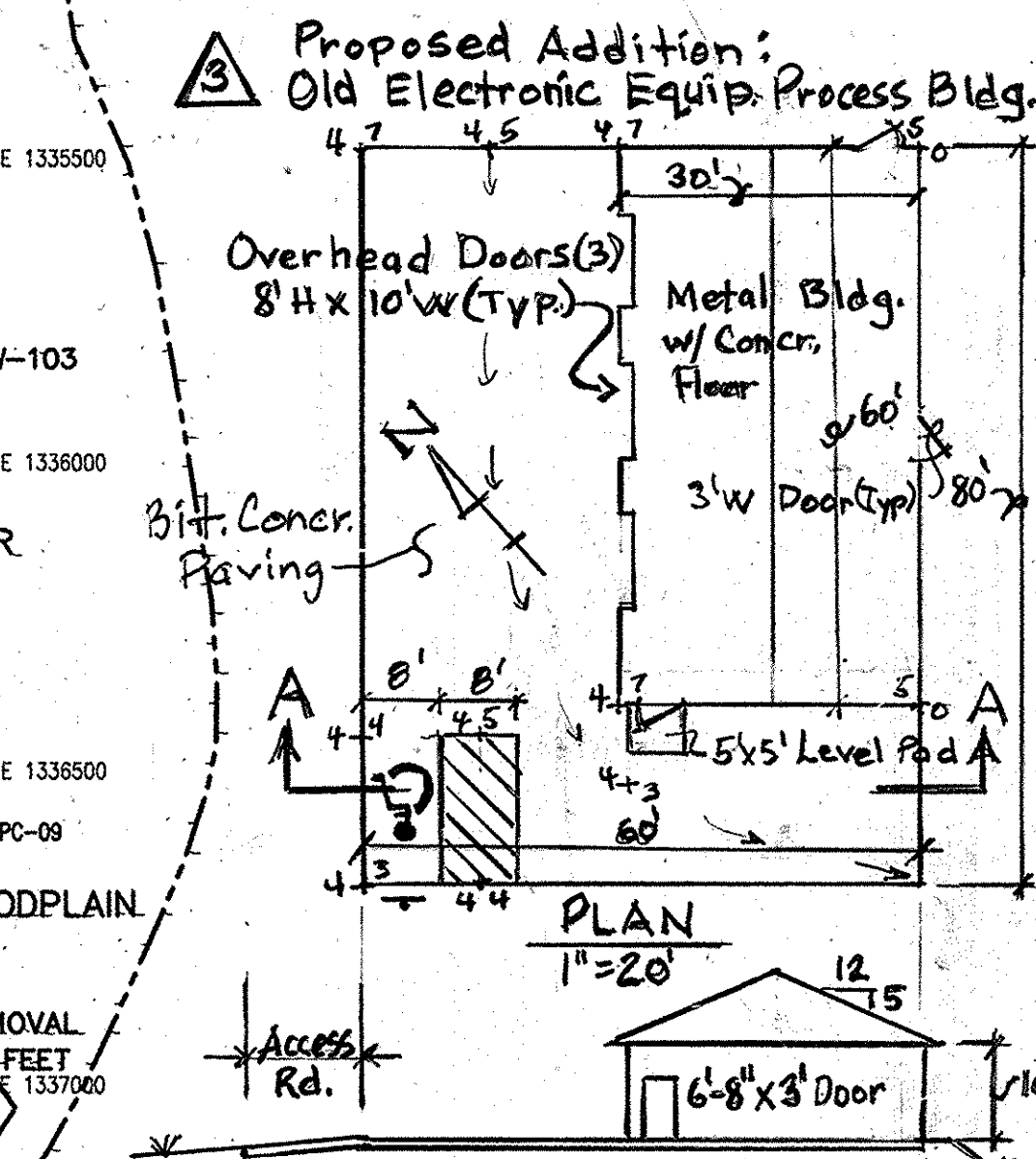
SCALE:  
1"=300'  
SHEET  
3 OF 13

SDP 97-128



**NOTES: (CONT'D)**  
 5. WHEELCHAIR ENTRY TO BLDG. MAX. 5% SLOPE ALONG PATHWAY & MAX. 2% CROSS-SLOPE. NO CURBS, STEPS OR RAMPS ALONG PATHWAY.  
 6. REFER TO SHEETS 740 & 74E FOR FOREST CONSERVATION PLAN.

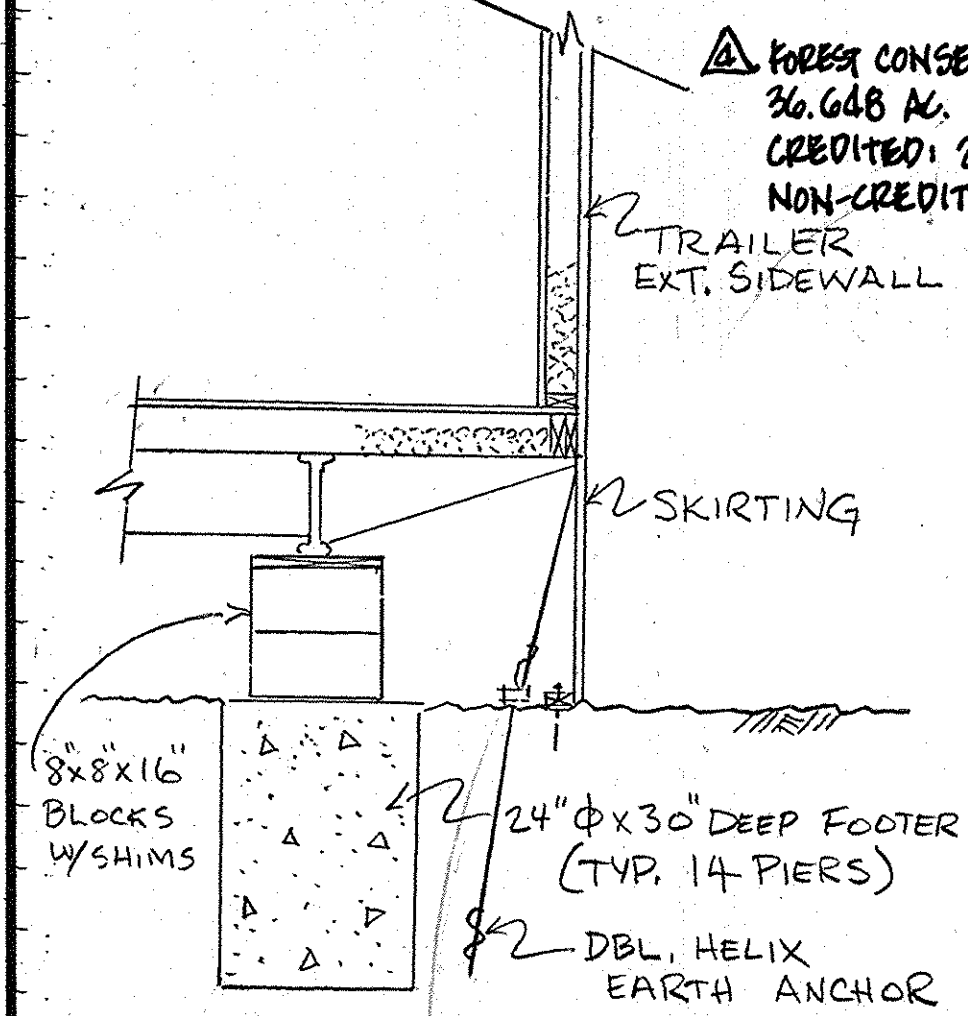
**NOTES:**  
 1. TOPOGRAPHIC INFORMATION SHOWN ON THIS SHEET WAS COMPILED BY AIR SURVEY CORPORATION, INC. FROM AIR PHOTOGRAPHY DATED JANUARY, 1997.  
 2. LFG PROBES INSTALLED IN APRIL, 1996.  
 3. LFG MONITORING WELLS INSTALLED IN MAY, 1996.  
 4. 100 YEAR FLOODPLAIN INFORMATION PROVIDED BY HOWARD CO. INFORMATION IS BASED ON THE 1978 FLOOD PLAIN DELINEATION BY CENTURY ENGINEERING AND THE 1986 UPDATE BY BERNARD JOHNSON, INC. HOWARD CO. MAPS: GC-0119-T-36-38, GC-0119-T-35-38, GC-0119-T-234-38, GC-0119-T-35-39.



**LEGEND**

- △ PC-09 SURVEY CONTROL MONUMENT
- GW-101 GROUNDWATER WELLS (EXISTING)
- ⊕ MP-3 LFG PROBES (EXISTING)
- ⊙ LFG-9 LFG MONITORING WELLS (EXISTING)
- PROPERTY LINE
- - - EDGE OF WASTE
- - - DRAINAGE DIVIDES
- - - SUBDRAINAGE DIVIDES
- - - 100 YEAR FLOODPLAIN
- - - EXISTING WATER LINE
- - - BORROW AREA LIMITS
- - - WETLAND LIMITS
- - - WETLANDS
- - - WETLAND BUFFER
- - - TREE REMOVE AREA

**PROPOSED TRAILER (12'x46')**  
 1/8" = 1'-0"



SUBDIVISION NAME		LOT/PARCEL
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		54,253,220,11
LIBER/FOLIO	ZONE	TAX/ZONE MAP
10-847/806 16-872/215 10-991/314	PEC	10 & 16
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
 DIRECTOR DATE

*[Signature]* 12/30/97  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/5/97  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 10/30/97  
 HEALTH OFFICER DATE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
 DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
 CHIEF BUREAU OF WASTE MANAGEMENT DATE

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

*[Signature]*  
 PROFESSIONAL ENGINEER

DES. RTT, AST	ADD FOREST CONSERVATION EASEMENT	4-17-01
DRN. AST, EGC	ADD BLDG (30'x60') & PAVED PAD	1-10-01
CHK. PAM	ADD 12'x12' WOOD OBSERVATION DECK	6-25-99
	ADD 12'x46' TRAILER @ POLICE PILOT RANGE	9-30-98
DATE: 10-30-97	BY: NO.	REVISION
		DATE

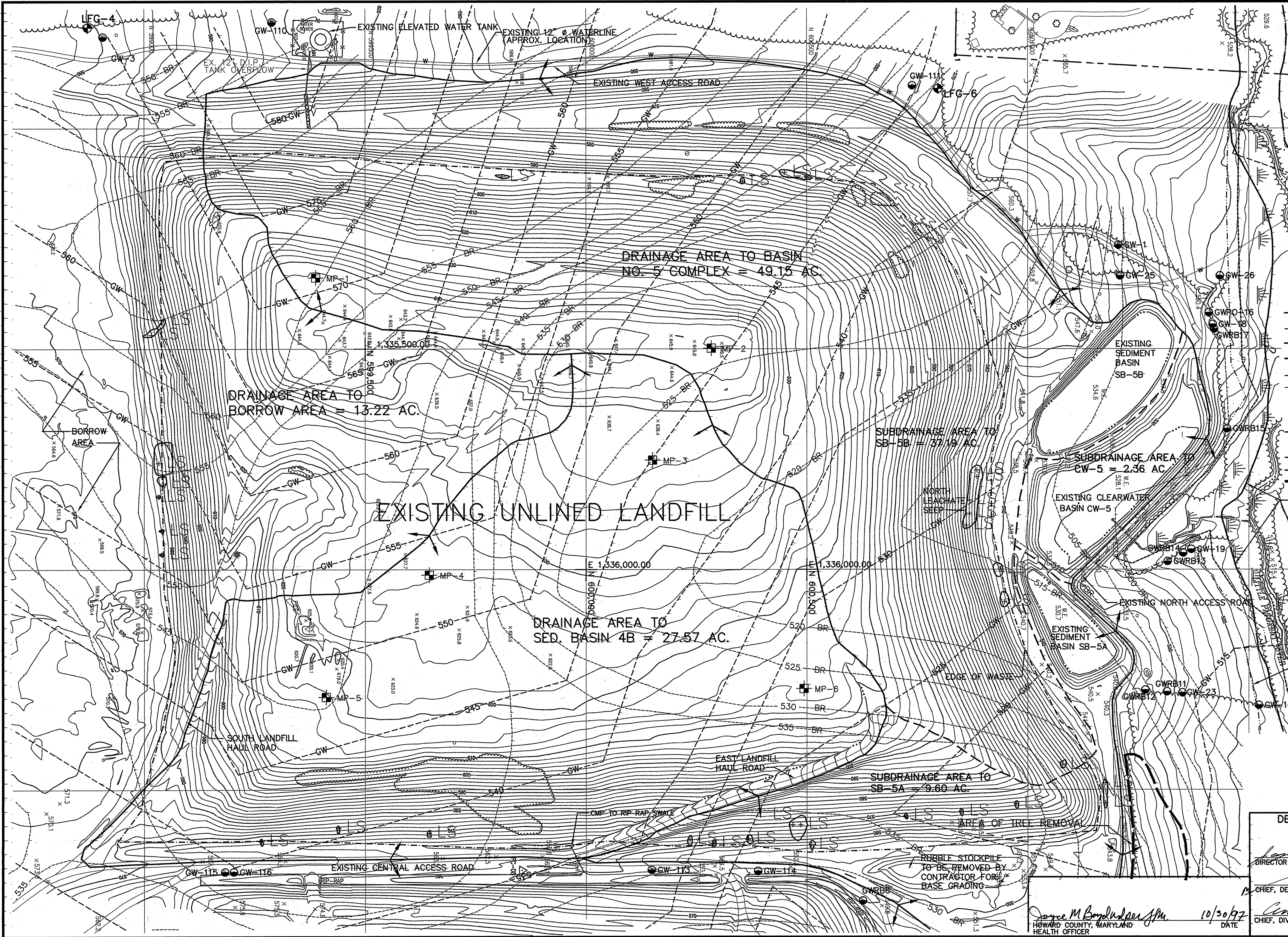
Redline SDP 97-128 (Jun.'99)  
 Comprised of Shts 1A & 3A only  
**OVERALL SITE PLAN**  
 Red line SDP 97-128 (Sep.'98)  
 Comprised of Sht. 1A & 3A only

ALPHA RIDGE LANDFILL  
 UNLINED CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

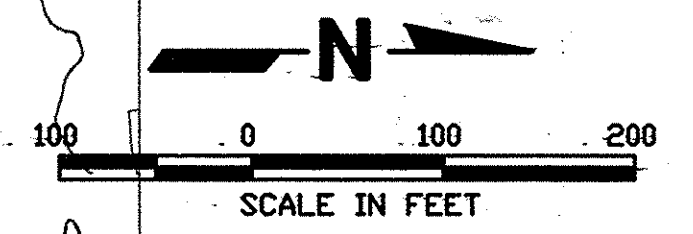
SCALE:  
 1" = 300'

SHEET  
 3A OF 13A



- NOTES:
1. TOPOGRAPHIC INFORMATION SHOWN ON THIS SHEET WAS COMPILED BY AIR SURVEY CORPORATION, INC. FROM AIR PHOTOGRAPHY DATED JANUARY, 1997.
  2. LFG PROBES INSTALLED IN APRIL, 1996.
  3. LFG MONITORING WELLS INSTALLED IN MAY, 1996.
  4. GROUNDWATER CONTOUR ELEVATIONS BASED ON MAY 1994 MEASUREMENTS.
  5. 100 YEAR FLOODPLAIN INFORMATION PROVIDED BY HOWARD CO. INFORMATION IS BASED ON THE 1978 FLOOD PLAIN DELINEATION BY CENTURY ENGINEERING AND THE 1986 UPDATE BY BERNARD JOHNSON, INC. HOWARD CO. MAPS: GC-0119-T-36-38, GC-0119-T-35-38, GC-0119-T-234-38, GC-0119-T-35-39.

- LEGEND
- LS LEACHATE SEEP LOCATIONS
  - GW-102 GROUNDWATER WELLS(EXISTING)
  - MP-3 LFG PROBES(EXISTING)
  - LFG-6 LFG MONITORING WELLS(EXIST.)
  - PROPERTY LINE
  - CONFIRMED LIMITS OF WASTE
  - EXISTING DRAINAGE DIVIDE
  - DRAINAGE SUB-DIVIDES
  - GW GROUNDWATER CONTOURS
  - BR BEDROCK CONTOURS
  - EXISTING TREE LINE
  - EXISTING SCRUBS & WOODS VEGETATION
  - WETLAND LIMITS
  - WETLANDS
  - WETLAND BUFFER
  - EDGE OF WASTE
  - TREE REMOVE AREA
  - 100 YR. FLOODPLAIN



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220.11	
LIBER/FOLIO 10-847/606 18-878/215 10-891/314	ZONE PEC	TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

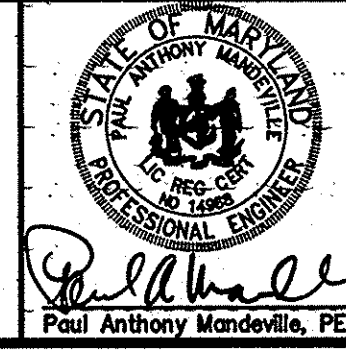
*[Signature]* 10/30/97  
HOWARD COUNTY, MARYLAND HEALTH OFFICER DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	BY	NO.	REVISION	DATE
DRN: EGC				
CHK. PAM				
DATE: 10-30-97				

EXISTING CONDITIONS  
PLAN

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=100'  
SHEET  
4 OF 13/13

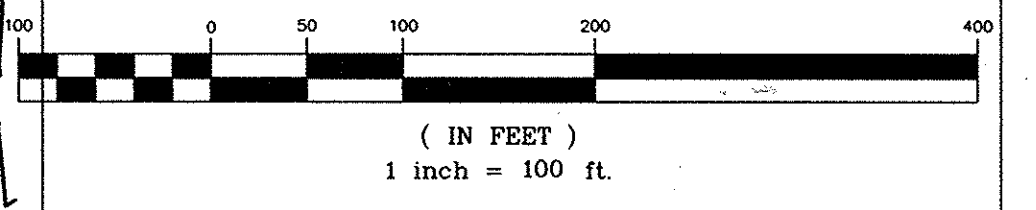
ECP-B N: 295077.01 FINAL

E 1335000

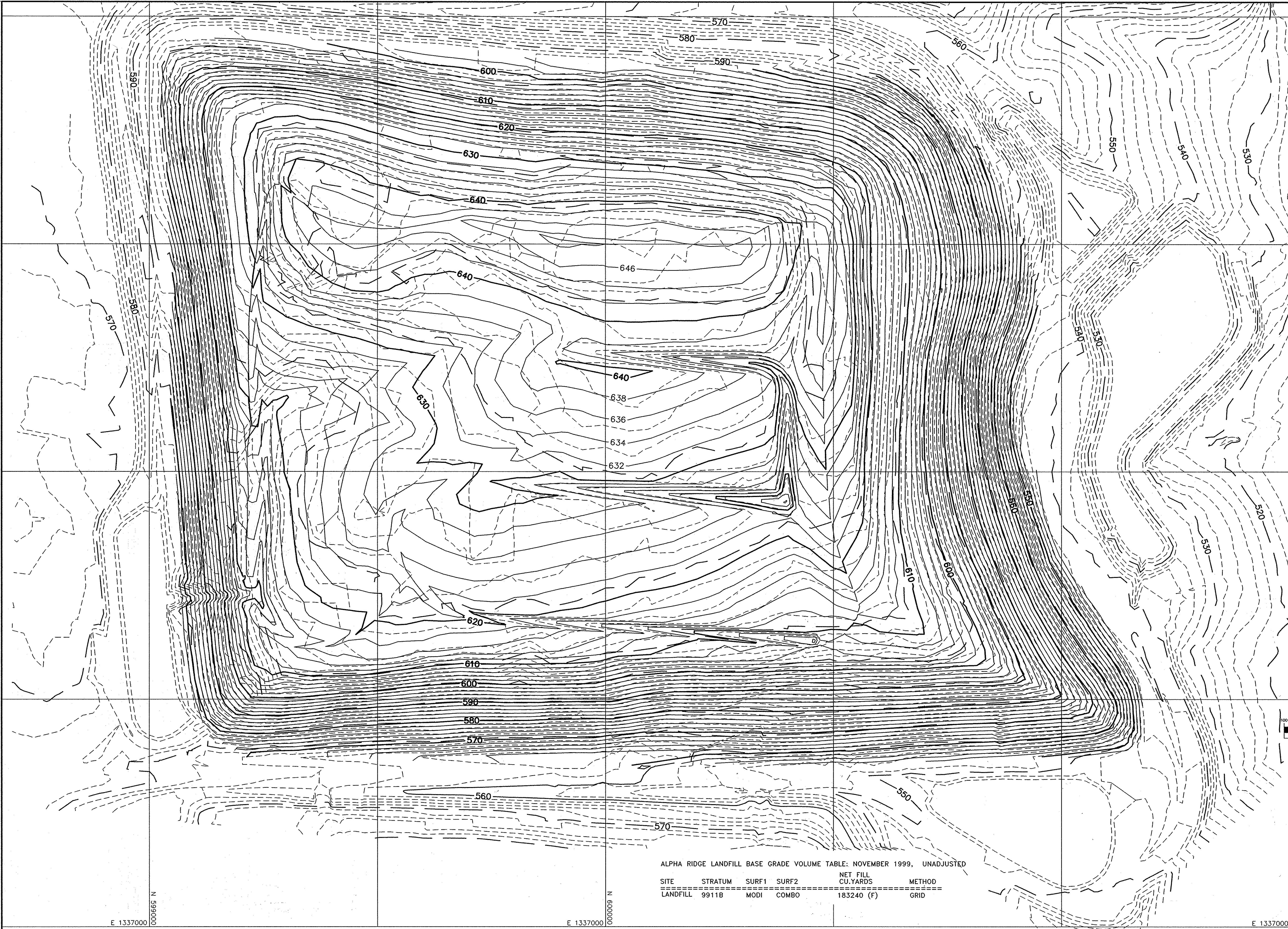
E 1336000



GRAPHIC SCALE



NOTE: EXISTING SURFACE WAS MODIFIED TO REFLECT TRASH REMOVED FROM THE SITE.  
NOTE: SOLID CONTOURS INDICATE AREA OF SURVEY. FIELD DATE: 11-30-1999



ALPHA RIDGE LANDFILL BASE GRADE VOLUME TABLE: NOVEMBER 1999, UNADJUSTED

SITE	STRATUM	SURF1	SURF2	NET FILL CU.YARDS	METHOD
LANDFILL	9911B	MODI	COMBO	183240 (F)	GRID

E 1337000

E 1337000

E 1337000

DESIGNED BY:	DATE	DATE	BY	DESCRIPTION
DRAWN BY: TWH	12-7			
CHECKED BY:	DATE			
APPROVED BY:	DATE			

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565

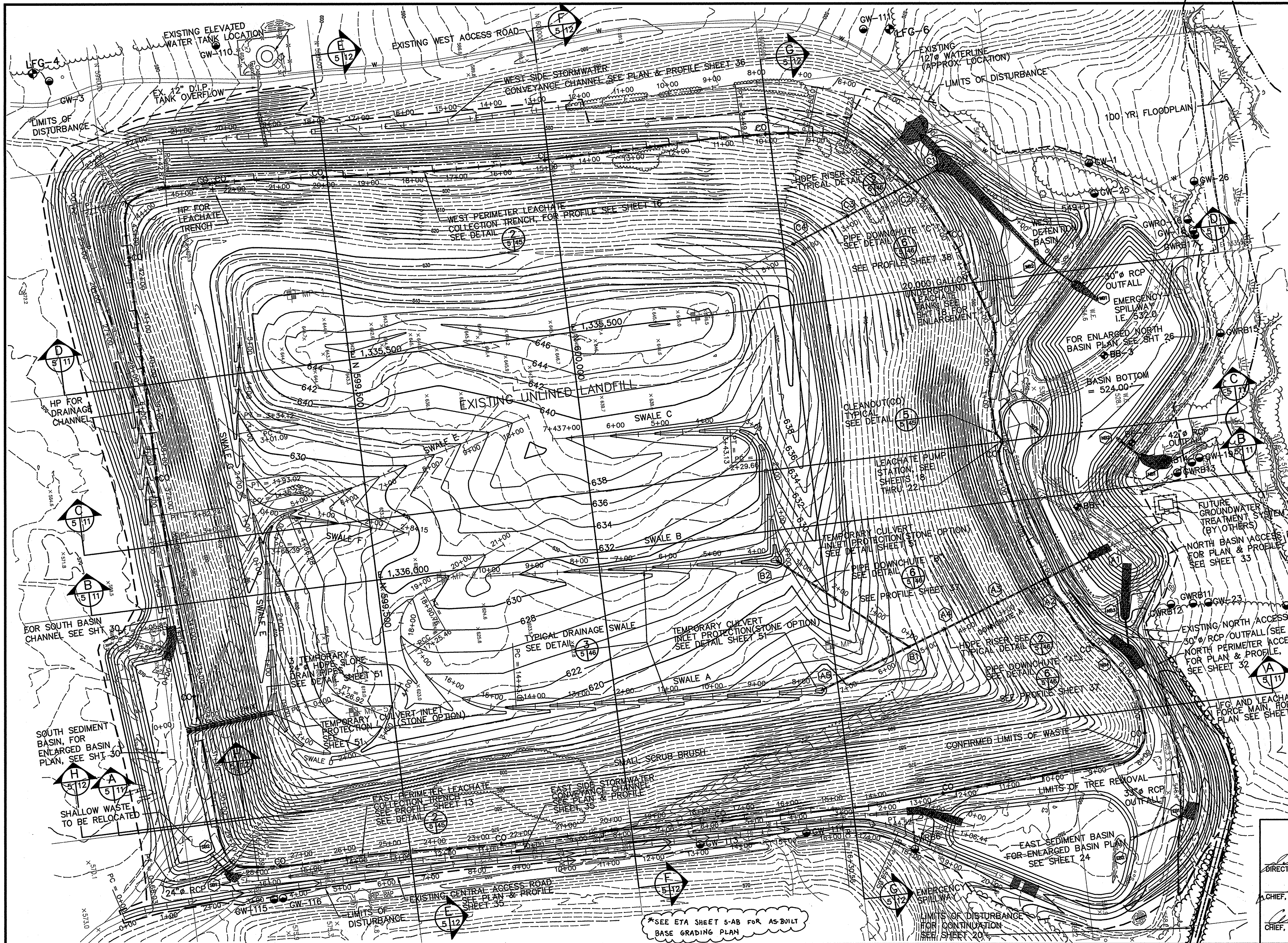


BASE GRADING AS-BUILT AND VOLUME

## ALPHA RIDGE LANDFILL CELL CLOSURE

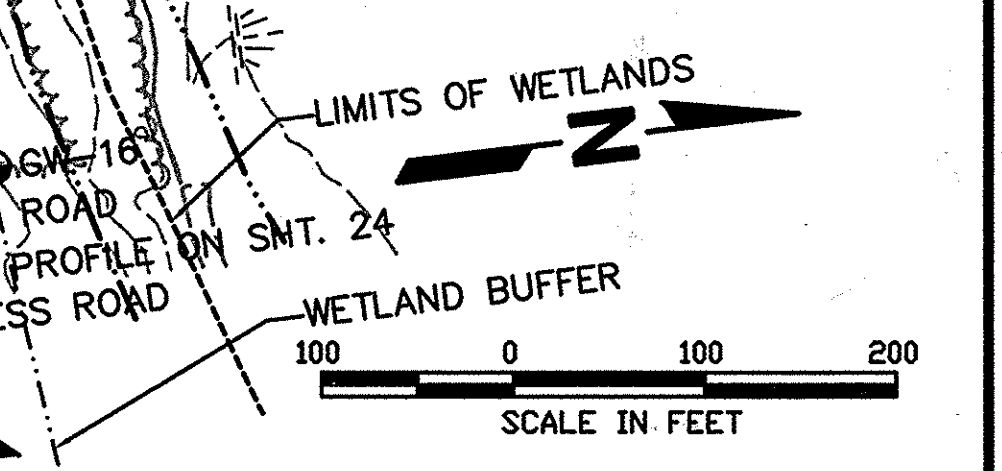
HOWARD COUNTY MARYLAND

SCALE : 1"=100' CONTRACT NO.: 98801.10 DATE : 2-11-2000 SHEET : 5-AB



- NOTES:
- TOPOGRAPHIC INFORMATION SHOWN ON THIS SHEET WAS COMPILED BY AIR SURVEY CORPORATION, INC. FROM AIR PHOTOGRAPHY DATED JANUARY, 1997.
  - LFG PROBES INSTALLED APRIL, 1996.
  - LFG MONITORING WELLS INSTALLED IN MAY, 1996.
  - 100 YEAR FLOODPLAIN INFORMATION PROVIDED BY HOWARD CO. INFORMATION IS BASED ON THE 1978 FLOOD PLAIN DELINEATION BY CENTURY ENGINEERING AND THE 1986 UPDATE BY BERNARD JOHNSON, INC. HOWARD CO. MAPS: GC-0119-T-36-38, GC-0119-T-35-38, GC-0119-T-234-38, GC-0119-T-35-39.
  - LFG PROBES MP-1, MP-2, MP-4, MP-5, & AND MP-6 TO BE REMOVED BY CONTRACTOR (SEE SHEET G2).
  - HORIZONTAL AND VERTICAL SURVEY CONTROL WILL BE ESTABLISHED BY HOWARD COUNTY PRIOR TO CONSTRUCTION.

- LEGEND
- GW-102 GROUNDWATER WELLS(EXISTING)
  - ⊕ MP-3 LFG PROBES(TO BE REMOVED) SEE SHEET G2
  - ⊕ LFG-6 LFG MONITORING WELLS(EXIST.)
  - PROPERTY LINE
  - - - - - CONFIRMED LIMITS OF WASTE
  - HP HIGH POINT
  - ⬠ STRUCTURE DESIGNATION
  - NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPES
  - NEW LEACHATE COLLECTION TRENCH
  - NEW LEACHATE FORCEMAIN
  - ~ EXISTING TREE LINE
  - ~ EXISTING SCRUB BRUSH VEGETATION
  - ~ PROPOSED TREE LINE
  - WETLAND LIMITS
  - WETLANDS
  - WETLAND BUFFER LIMITS
  - LIMITS OF DISTURBANCE
  - TREE REMOVAL AREA
  - CO = CLEANOUT



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11	LIBER/FOLIO 10-947/806 18-872/215 10-881/314	ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30		

*James M. Boyd* 1/30/97  
 HOWARD COUNTY, MARYLAND  
 HEALTH OFFICER

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

*James M. Boyd* 1/30/97  
 DIRECTOR DATE

*James M. Boyd* 1/30/97  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

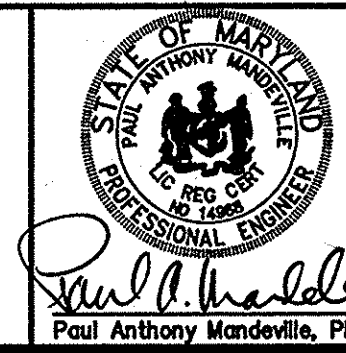
*James M. Boyd* 1/30/97  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*James M. Boyd* 1/30/97  
 DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 1/30/97  
 CHIEF BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	⊕		
DRN. EGC, JCB	⊕		
CHK. PAM	⊕	REVISED GRADES *	7/23/98
DATE: 10-30-97	⊕	REVISED GRADES *	7/17/98
BY NO.	⊕	REVISION	DATE

BASE GRADING PLAN

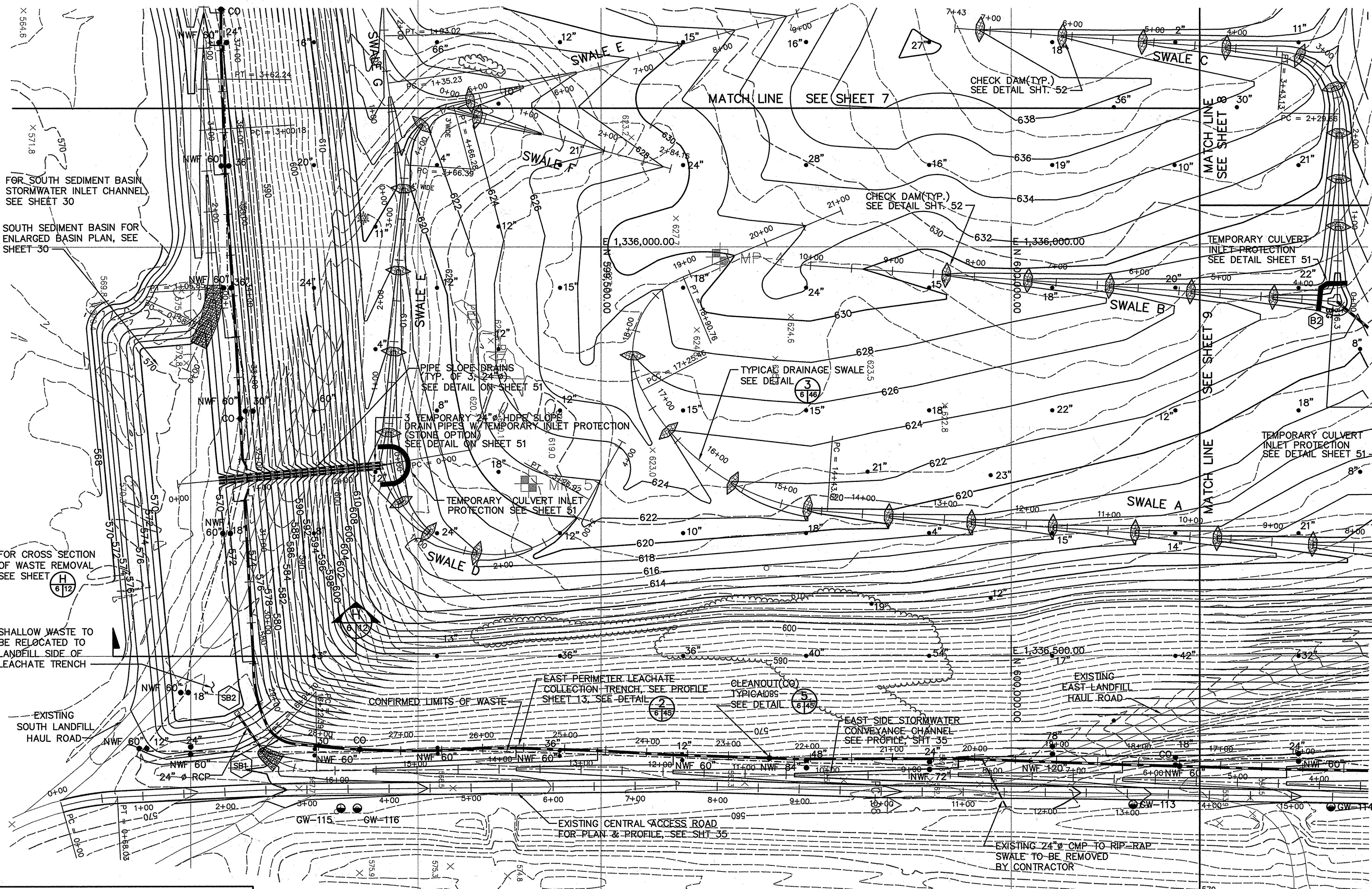
ALPHA RIDGE LANDFILL  
 UNLINED CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE:  
 1"=100'

SHEET 5 OF 13

M: 295077.01 FINAL BGP-B



- LEGEND**
- GW-102 GROUNDWATER WELLS(EXIST.)
  - ⊕ MP-3 LFG PROBES(TO BE REMOVED) SEE SHEET G2
  - - - PROPERTY LINE
  - - - CONFIRMED LIMITS OF WASTE
  - 24" AUGER LOCATION W/ APPROX. EXISTING SOIL COVER OVER EXISTING WASTE NOTED.
  - NWF 120" NO WASTE FOUND AT DEPTH SHOWN
  - SB2 DRAINAGE STRUCTURE NUMBER
  - NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPES
  - NEW LEACHATE COLLECTION TRENCH
  - NEW LEACHATE FORCEMAIN
  - EXISTING TREE LINE
  - EXISTING SCRUB BRUSH VEGETATION
  - PROPOSED TREE LINE
  - CO = CLEAN OUT
  - ☪ CHECK DAM
  - ☪ TEMPORARY CULVERT INLET PROTECTION

- NOTES:**
1. FOR INDIVIDUAL DRAINAGE SWALE PROFILES, SEE SHEETS 37-39.
  2. FOR EROSION AND SEDIMENT CONTROL PLAN SEE SHEET 49.

FOR SOUTH SEDIMENT BASIN STORMWATER INLET CHANNEL, SEE SHEET 30

SOUTH SEDIMENT BASIN FOR ENLARGED BASIN PLAN, SEE SHEET 30

FOR CROSS SECTION OF WASTE REMOVAL, SEE SHEET 6112

SHALLOW WASTE TO BE RELOCATED TO LANDFILL SIDE OF LEACHATE TRENCH

EAST PERIMETER LEACHATE COLLECTION TRENCH, SEE PROFILE SHEET 13, SEE DETAIL 6145

CLEANOUT(CO) TYPICAL, SEE DETAIL 6145

EAST SIDE STORMWATER CONVEYANCE CHANNEL, SEE PROFILE, SHT 35

EXISTING 24" CMP TO RIP-RAP SWALE TO BE REMOVED BY CONTRACTOR

BGP-SE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

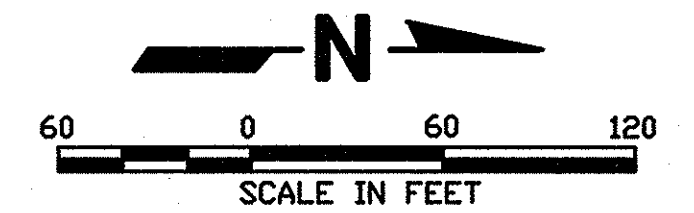
*[Signature]* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/606 16-879/215 10-891/314	ZONE PEC
TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING
CENSUS TR. 60-30	

*[Signature]* 10/30/97  
JOYCE M. BONDARD  
HEALTH OFFICER DATE

\* SEE ETA SHEET 5-AB FOR AS-BUILT BASE GRADING PLAN



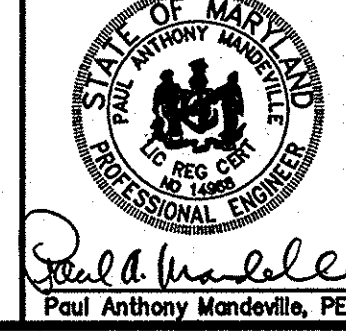
BGP-SE-B

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
JOHN O'HARA  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	BY	NO.	REVISION	DATE
DRN. EGC, JCB				
CHK. PAM				
DATE: 10-30-97				7/17/98

BASE GRADING PLAN  
SE QUADRANT

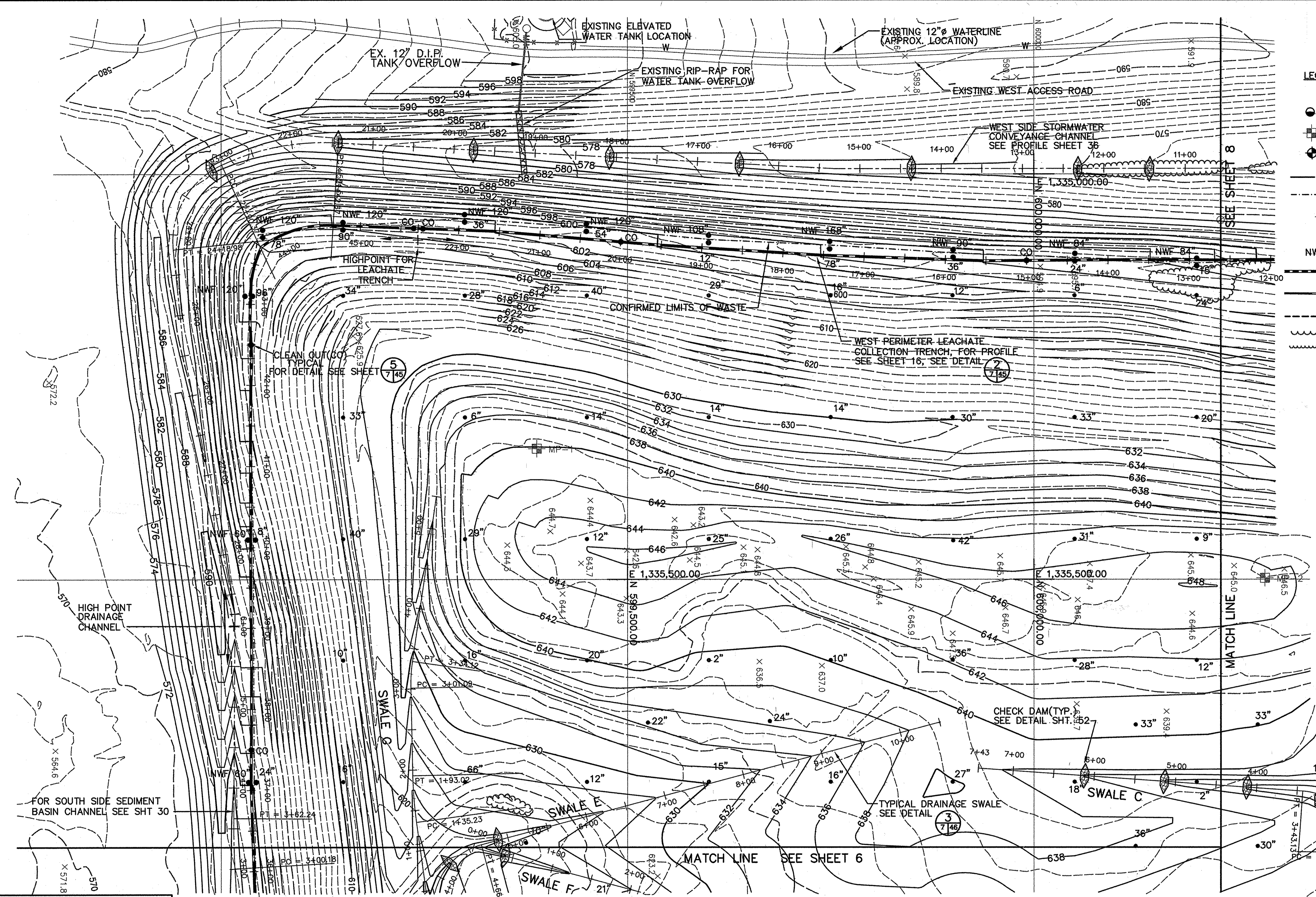
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=60'

SHEET:  
6 OF 13

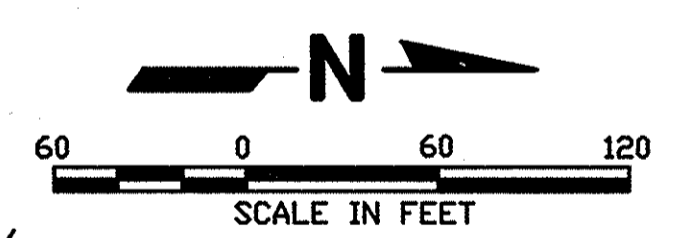




- LEGEND**
- GW-102 GROUNDWATER WELLS(EXISTING)
  - MP-3 LFG PROBES(TO BE REMOVED) SEE SHEET G2
  - ◆ LFG-6 LFG MONITORING WELLS(EXIST.)
  - PROPERTY LINE
  - - - - - CONFIRMED LIMITS OF WASTE
  - 24" AUGER LOCATION W/ APPROX. EXISTING SOIL COVER OVER EXISTING WASTE NOTED.
  - NWF 120" NO WASTE FOUND
  - NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPES
  - NEW LEACHATE COLLECTION TRENCH
  - NEW LEACHATE FORCEMAIN
  - EXISTING TREE LINE
  - EXISTING SCRUB BRUSH VEGETATION
  - CO = CLEAN OUT
  - ⊕ CHECK DAM
  - ⊕ TEMPORARY CULVERT INLET PROTECTION

**NOTES:**

- FOR INDIVIDUAL DRAINAGE SWALE PROFILES, SEE SHEETS 37 & 38.



\* SEE ETA SHEET 5-A-B FOR AS-BUILT BASE GRADING PLAN

BGP-SW-2  
M:\295077\01\FINAL  
BGP-SW-B

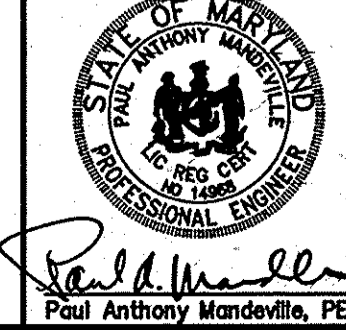
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
DIRECTOR	11/3/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/23/97
CHIEF, DIVISION OF LAND DEVELOPMENT	11/3/97

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/806 16-878/215 10-881/314	ZONE PEC
TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING
CENSUS TR. 60-30	

James M. Bond... 10/30/97  
HEALTH OFFICER

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
DIRECTOR OF PUBLIC WORKS	10/30/97
CHIEF, BUREAU OF WASTE MANAGEMENT	10/30/97

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



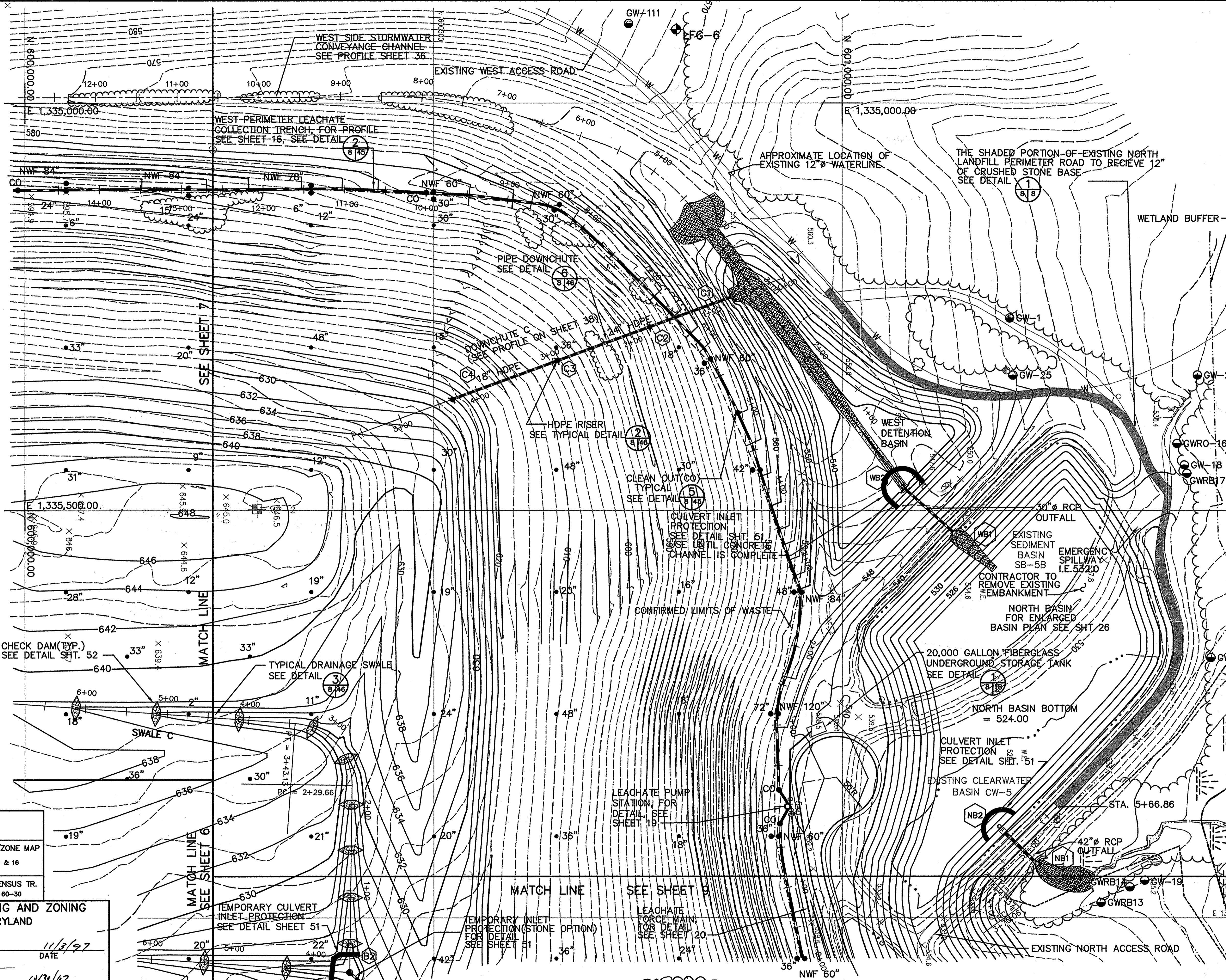
DES. RTT, EGC			
DRN. EGC			
CHK. PAM			
DATE: 10-30-97	BY NO.	REVISION	DATE
		REVISED GRADES*	7/17/98

**BASE GRADING PLAN  
SW QUADRANT**

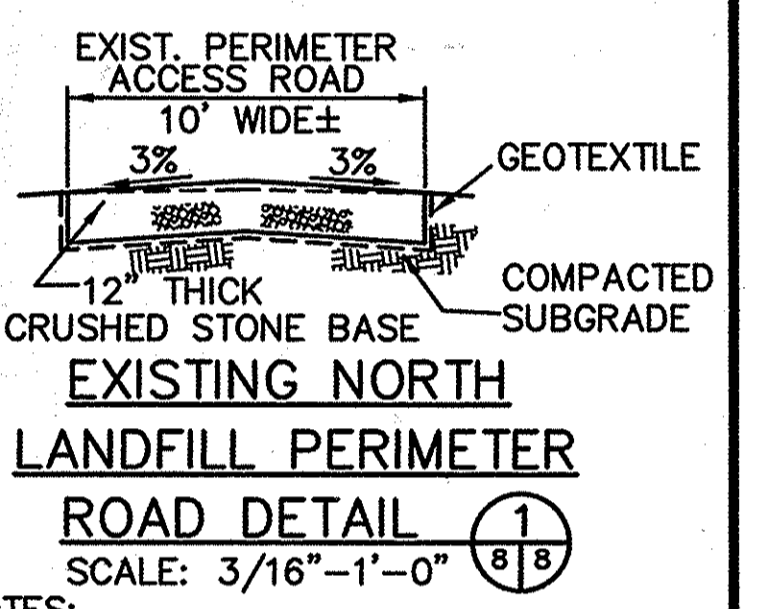
**ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE**  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=60'  
SHEET  
7 OF 13



- LEGEND**
- GW-102 GROUNDWATER WELLS(EXIST.)
  - ⊕ MP-3 LFG PROBES(TO BE REMOVED) SEE SHEET G2
  - ⊕ LFG-6 LFG MONITORING WELLS(EXIST.)
  - PROPERTY LINE
  - CONFIRMED LIMITS OF WASTE
  - 24" AUGER LOCATION W/ APPROX. EXISTING SOIL COVER OVER EXISTING WASTE NOTED.
  - NWF 120" NO WASTE FOUND AT DEPTH SHOWN
  - (B1) DRAINAGE STRUCTURE DESIGNATION
  - NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPES
  - NEW LEACHATE COLLECTION TRENCH
  - NEW LEACHATE FORCEMAIN
  - EXISTING TREE LINE
  - EXISTING SCRUB BRUSH VEGETATION
  - WETLAND LIMITS
  - WETLAND BUFFER
  - WETLANDS
  - CO = CLEAN OUT
  - CHECK DAM
  - TEMPORARY CULVERT INLET PROTECTION



NOTES:  
1. FOR INDIVIDUAL DOWNCHUTE & SWALE PROFILES, SEE SHEETS 37 & 38.

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/806 16-878/215 10-881/314	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING
CENSUS TR. 60-30	

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

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 11/20/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

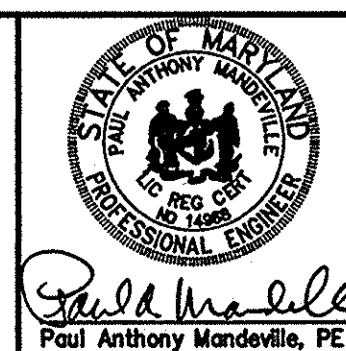
*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	
DRN. EGC, JCB	
CHK. PAM	
DATE: 10-30-97	
BY	NO.
REVISION	DATE
REVISED GRADES *	7/17/98

**BASE GRADING PLAN  
NW QUADRANT**

**ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE**  
CAPITAL PROJECT NO. C-0190-N

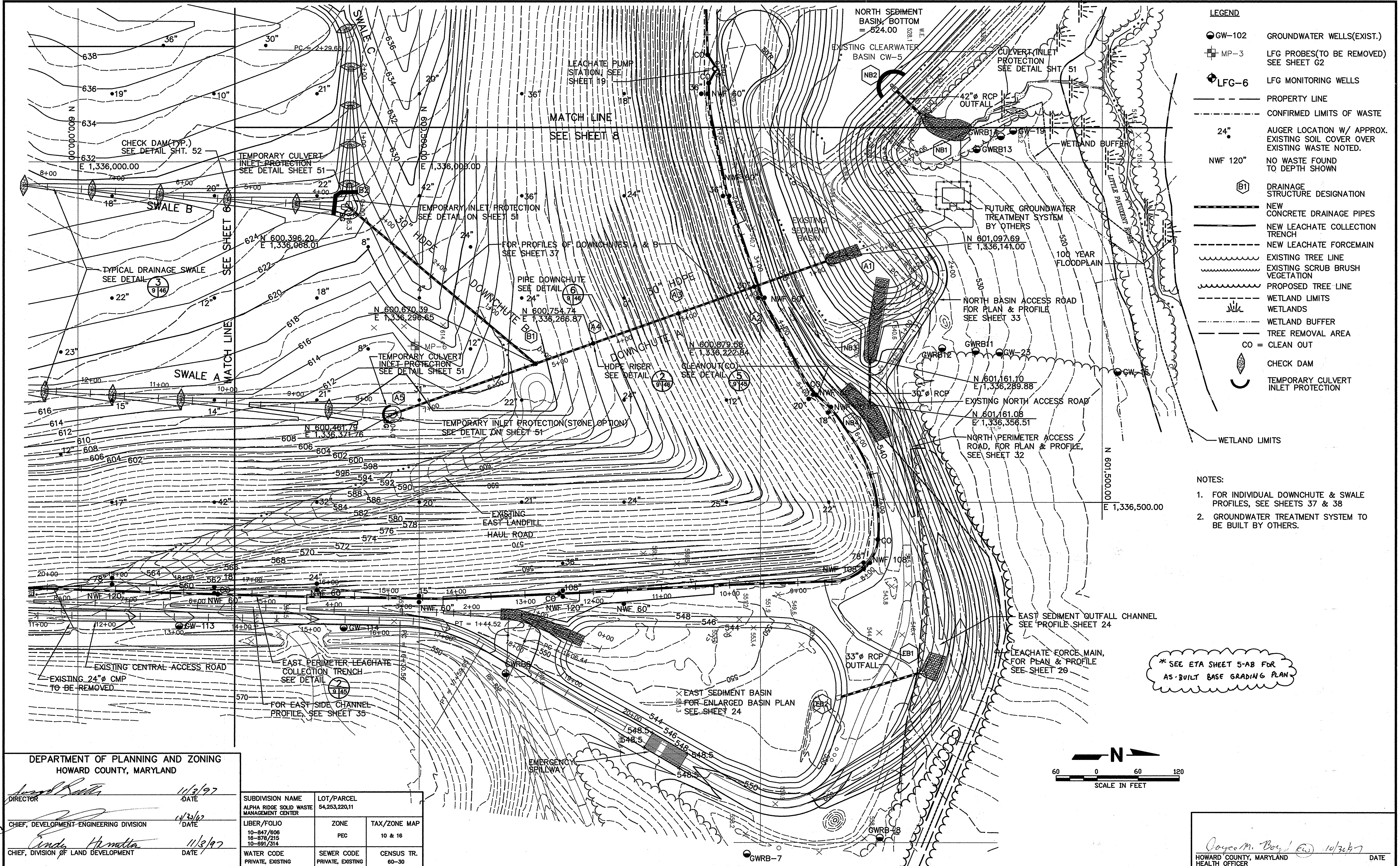
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE:  
1"=60'  
SHEET  
8 OF 13

\* SEE ETA SHEET 5-AB FOR AS-BUILT BASE GRADING PLAN

BGP-NW-B M: 295077.01\FINAL

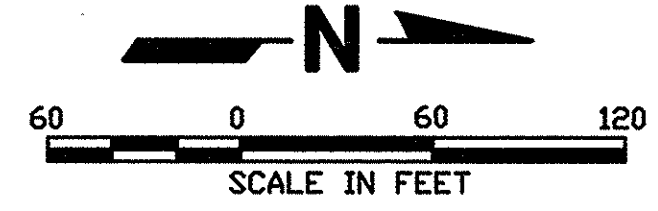
SP-97-128



- LEGEND**
- GW-102 GROUNDWATER WELLS(EXIST.)
  - ⊕ MP-3 LFG PROBES(TO BE REMOVED) SEE SHEET G2
  - ⊕ LFG-6 LFG MONITORING WELLS
  - PROPERTY LINE
  - - - - - CONFIRMED LIMITS OF WASTE
  - 24" AUGER LOCATION W/ APPROX. EXISTING SOIL COVER OVER EXISTING WASTE NOTED.
  - NWF 120" NO WASTE FOUND TO DEPTH SHOWN
  - (B1) DRAINAGE STRUCTURE DESIGNATION
  - NEW CONCRETE DRAINAGE PIPES
  - NEW LEACHATE COLLECTION TRENCH
  - - - - - NEW LEACHATE FORCEMAIN
  - ~ ~ ~ ~ ~ EXISTING TREE LINE
  - ~ ~ ~ ~ ~ EXISTING SCRUB BRUSH VEGETATION
  - ~ ~ ~ ~ ~ PROPOSED TREE LINE
  - WETLAND LIMITS
  - WETLANDS
  - WETLAND BUFFER
  - TREE REMOVAL AREA
  - CO = CLEAN OUT
  - ☪ CHECK DAM
  - ☪ TEMPORARY CULVERT INLET PROTECTION

- NOTES:**
1. FOR INDIVIDUAL DOWNCHUTE & SWALE PROFILES, SEE SHEETS 37 & 38
  2. GROUNDWATER TREATMENT SYSTEM TO BE BUILT BY OTHERS.

\* SEE ETA SHEET 5-AB FOR AS-BUILT BASE GRADING PLAN



DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*James W. Miller* 11/3/97  
DIRECTOR DATE

*Conde Hammit* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

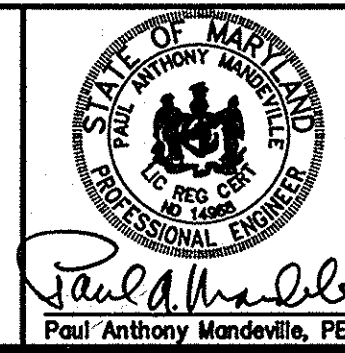
SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11	LIBER/FOLIO 10-847/806 16-878/215 10-691/314	ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30		

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James W. Miller* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	△			
DRN. EGC	△			
CHK. PAM	△	REVISED GRADES *	7/23/98	
DATE: 10-30-97	BY NO.	REVISION	DATE	

BASE GRADING PLAN  
NE QUADRANT

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

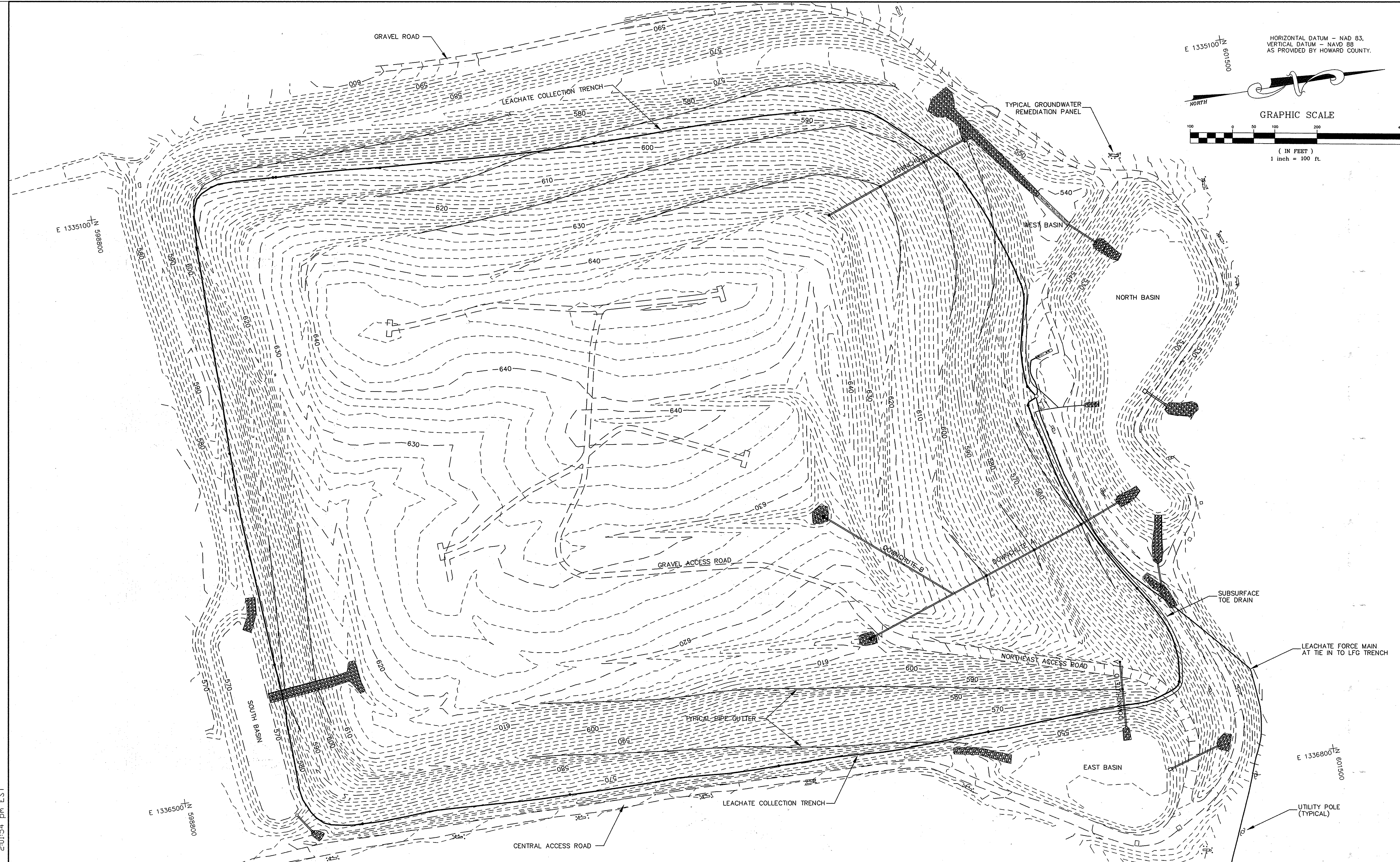
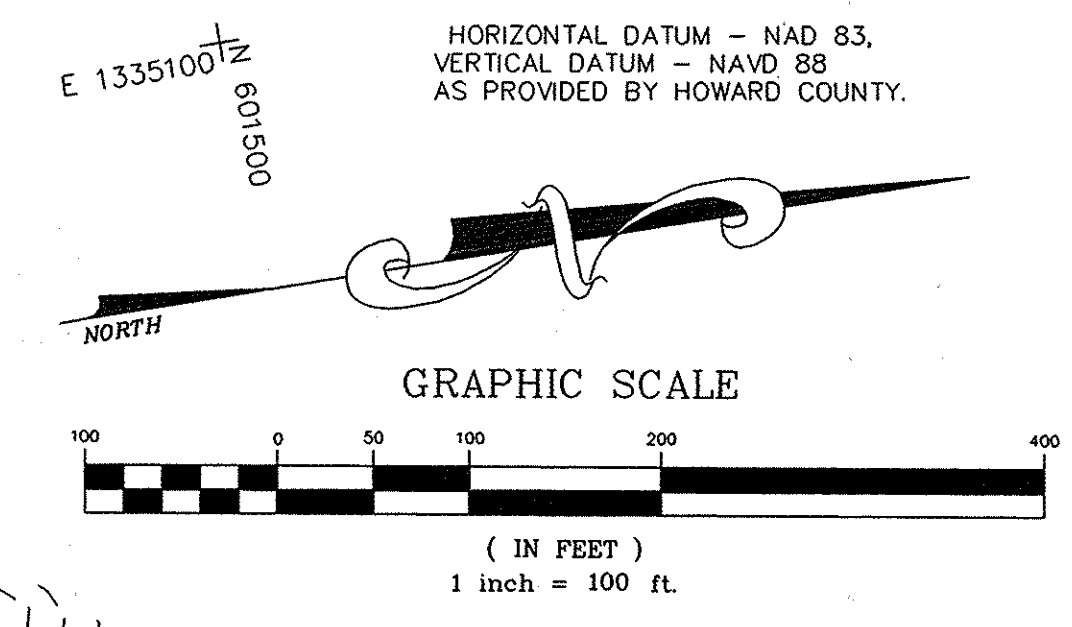
SCALE:  
1"=60'  
SHEET  
9 OF 13

DATE: 10/30/97  
HOWARD COUNTY HEALTH OFFICER

BGP-NE-B  
BGP-NE  
M:\295077.01\FINAL

SDA-97-128

Finish.dwg 4-17-01 2:01:54 pm EST



Finish.dwg 4-17-01 2:01:54 pm EST

DESIGNED BY:		DATE	REVISIONS	
DRAWN BY:	TWH	2-26-00	DATE	DESCRIPTION
CHECKED BY:			10-17-00	TWH REMOVED GROUNDWATER TRENCH AND BUILDING.
APPROVED BY:			4-4-01	TWH REVISED CONTOURS AROUND SOUTH BASIN.

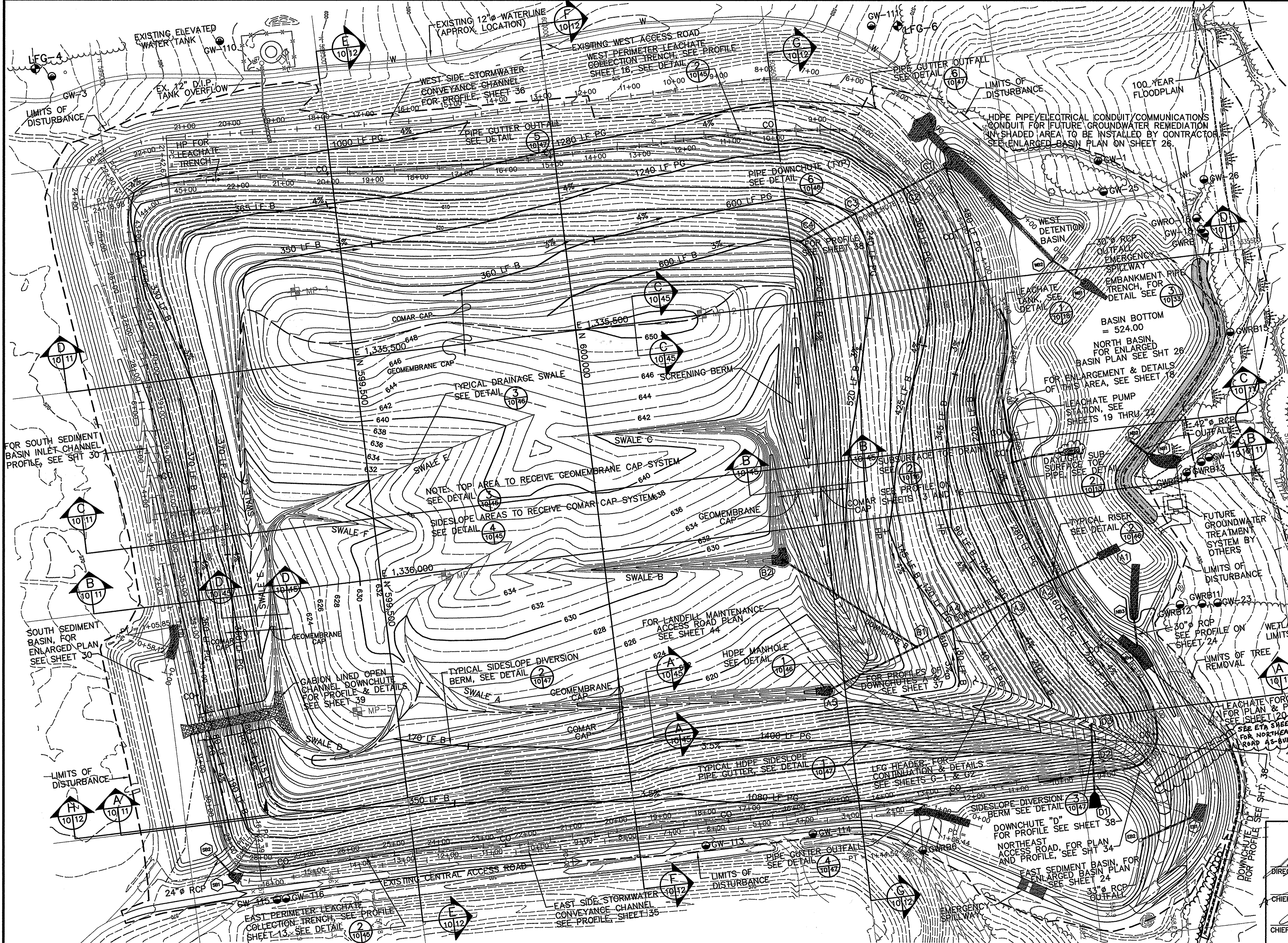
**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565



FINAL SURFACE AS-BUILT

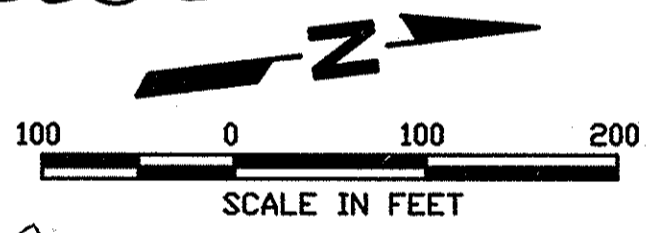
**ALPHA RIDGE LANDFILL CELL CLOSURE**

HOWARD COUNTY MARYLAND  
 SCALE : 1" = 100' CONTRACT NO.: 98301.10 DATE : 2-26-2000 SHEET 10-AB  
 OF 13



- NOTES:
- TOPOGRAPHIC INFORMATION SHOWN ON THIS SHEET WAS COMPILED BY AIR SURVEY CORPORATION, INC. FROM AIR PHOTOGRAPHY DATED JANUARY, 1997.
  - LFG PROBES INSTALLED APRIL, 1996.
  - LFG MONITORING WELLS INSTALLED IN MAY, 1996.

- LEGEND
- GW-102 GROUNDWATER WELLS(EXIST.)
  - MP-3 LFG PROBES(TO BE REMOVED) SEE SHEET G2
  - LFG-6 LFG MONITORING WELLS(EXIST.)
  - PROPERTY LINE
  - CONFIRMED LIMITS OF WASTE
  - B = BERM
  - PG = PIPE GUTTER
  - HP = HIGH POINT
  - BT DRAINAGE STRUCTURE DESIGNATION
  - HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPES
  - NEW LEACHATE COLLECTION TRENCH
  - NEW LEACHATE FORCEMAIN
  - EXISTING TREE LINE
  - EXISTING SCRUB BRUSH VEGETATION
  - PROPOSED TREE LINE
  - WETLAND LIMITS
  - WETLANDS
  - LIMITS OF GEOMEMBRANE CAP
  - CO = CLEAN OUT
  - CONDUIT AREA
  - WETLAND BUFFER
  - TREE REMOVAL AREA
  - LIMITS OF DISTURBANCE
- SEE ETA SHEET 10-AB FOR AS-BUILT FINAL SURFACE GRADING PLAN



SUBDIVISION NAME	ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL	54,253,220,11
LIBER/FOLIO	10-847/806 16-878/215 10-891/314	ZONE	PEC
WATER CODE	PRIVATE, EXISTING	SEWER CODE	PRIVATE, EXISTING
		CENSUS TR.	60-30

Howard M. Boyd (Signature) 10/30/97 DATE  
 HOWARD COUNTY, MARYLAND HEALTH OFFICER

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

James B. Smith (Signature) 11/3/97 DATE  
 DIRECTOR

Chief, Development Engineering Division (Signature) 10/30/97 DATE

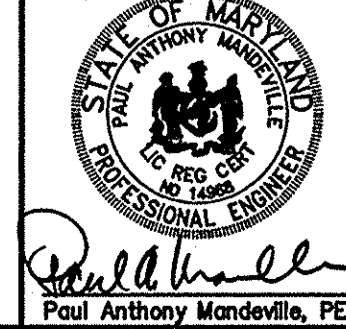
Cindy Hamilton (Signature) 11/3/97 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

James B. Smith (Signature) 10/30/97 DATE  
 DIRECTOR OF PUBLIC WORKS

John J. O'Hara (Signature) 10/30/97 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. RTT, EGC				
DRN. EGC, JCB				
CHK. PAM				
DATE: 10-30-97	BY NO.	REVISION	DATE	

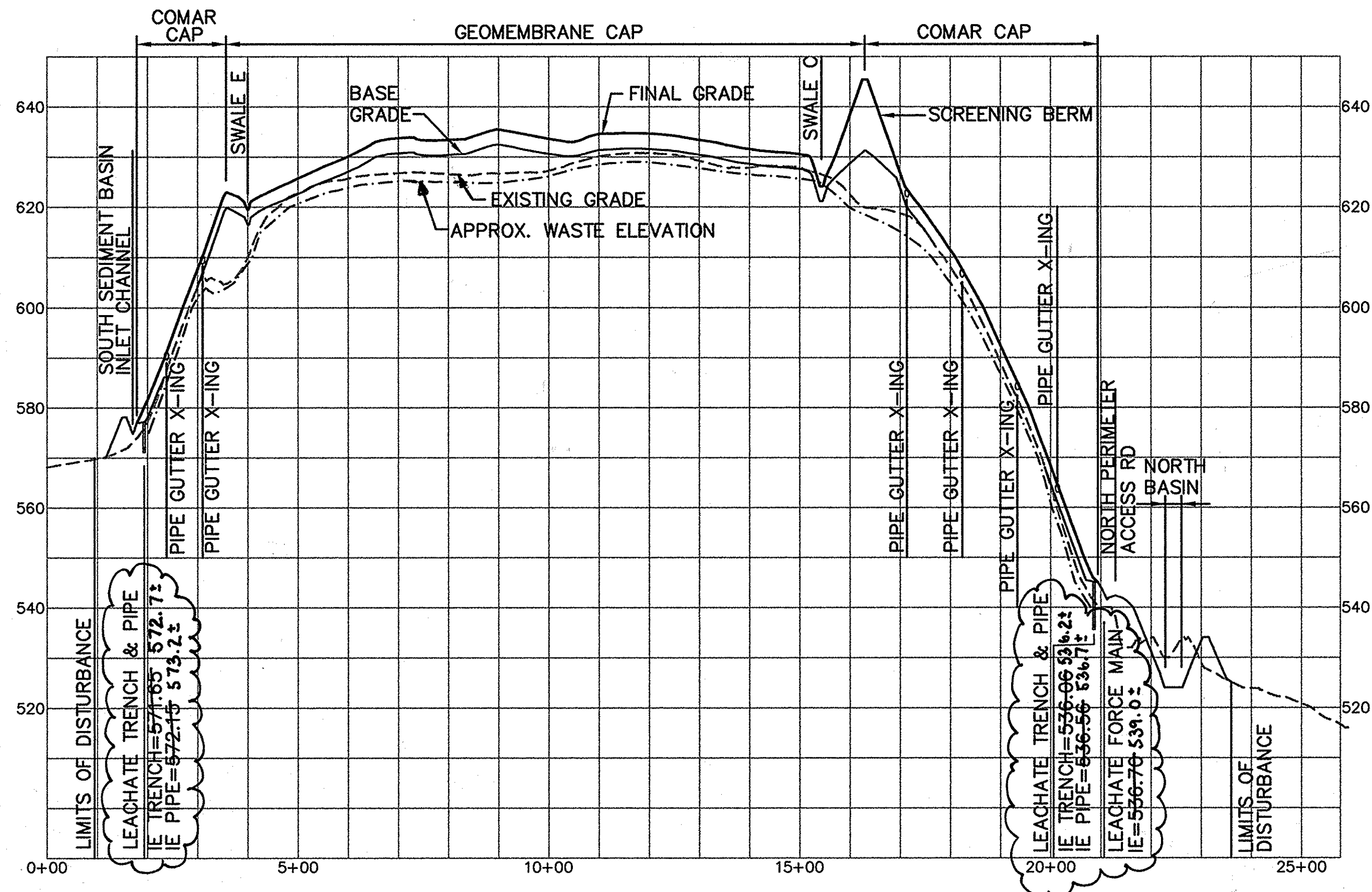
FINAL SURFACE  
 GRADING PLAN

ALPHA RIDGE LANDFILL  
 UNLINED CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190-N

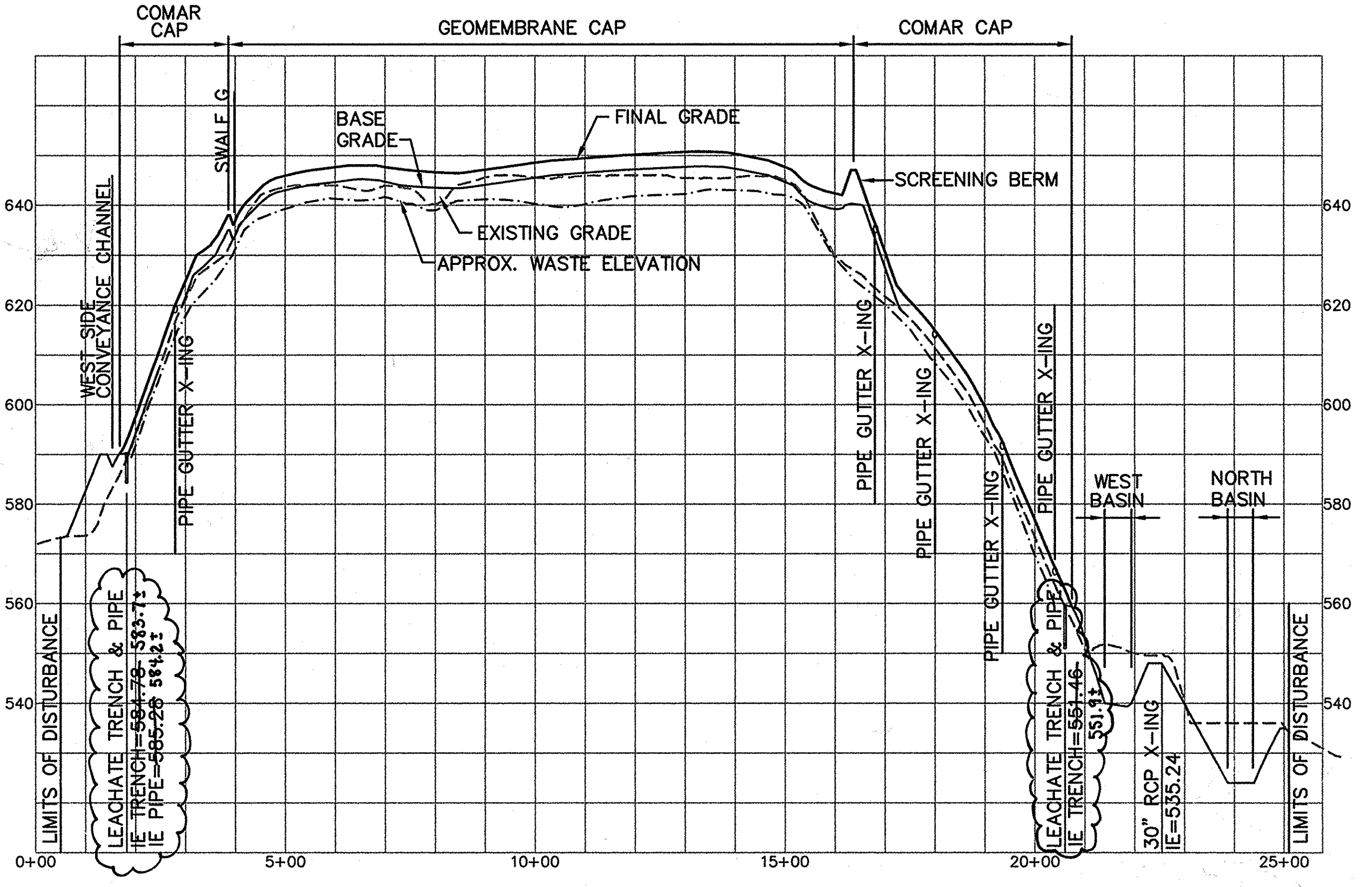
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1"=100'  
 SHEET 10 OF 13

SDP-97-128



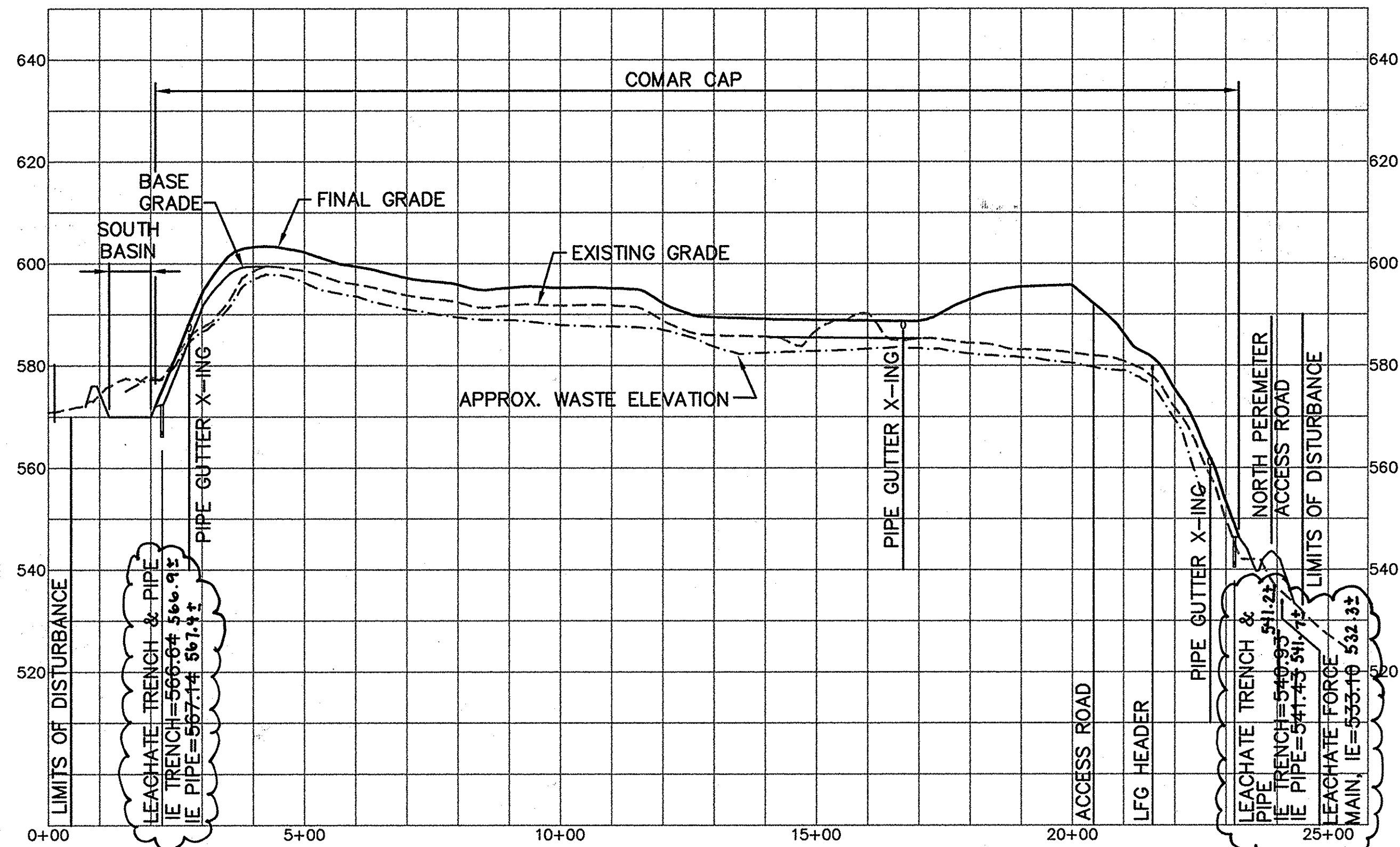
SECTION B  
SCALE: 1"=200'  
5, 10



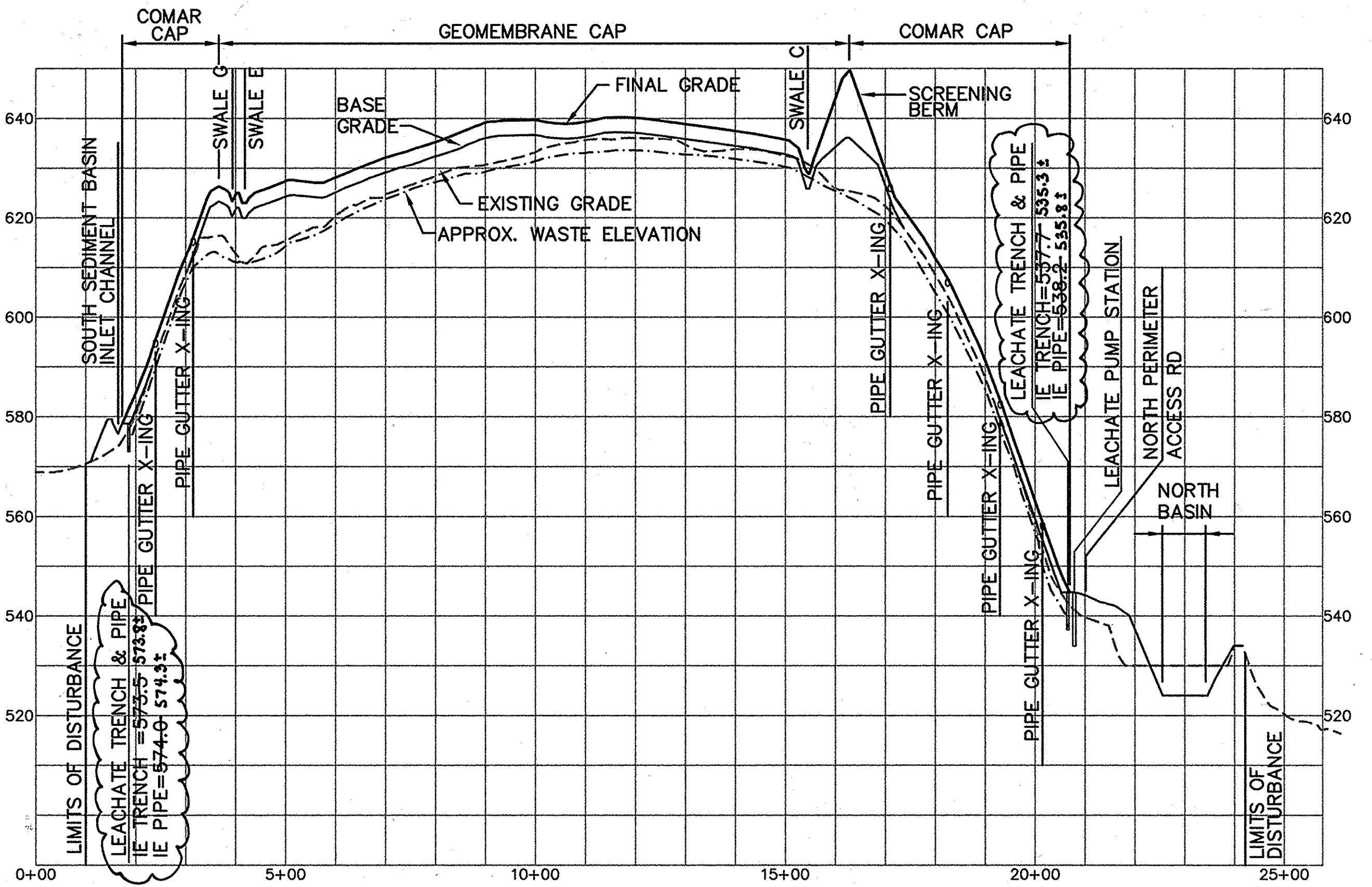
SECTION D  
SCALE: 1"=200'  
5, 10

FOR COMAR CAP DETAILS SEE 4  
11/45

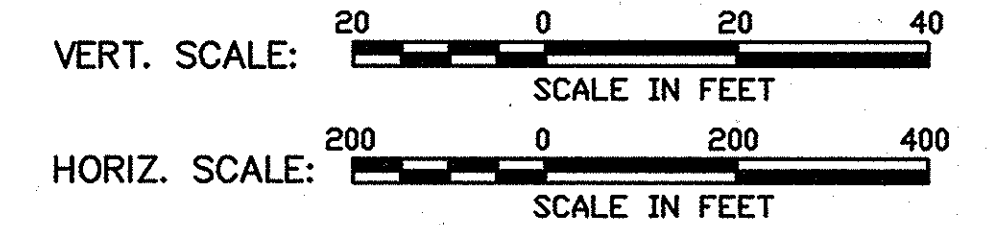
FOR GEOMEMBRANE CAP DETAILS SEE 3  
11/45



SECTION A  
SCALE: 1"=200'  
5, 10



SECTION C  
SCALE: 1"=200'  
5, 10



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/508 16-578/215 10-891/314		ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*August S. Carter* 11/3/97  
DIRECTOR DATE

*Walter J. ...* 10/2/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

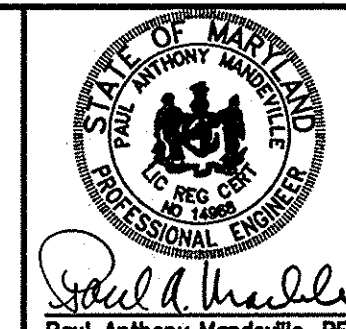
*Condy Hamilton* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James A. ...* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	▲			
DRN. EGC	▲			
CHK. PAM	▲			
DATE: 10-30-97	BY: NO.	REVISION	DATE	

LANDFILL  
CROSS-SECTIONS

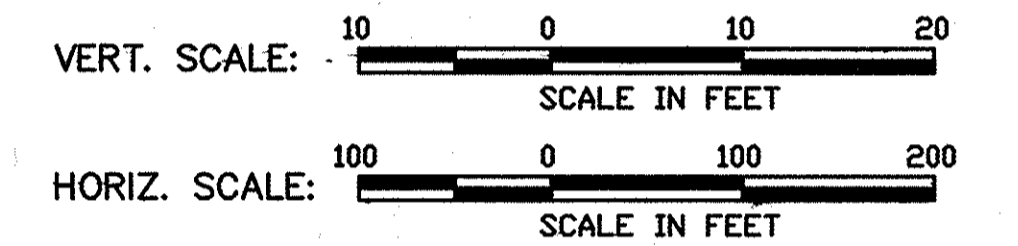
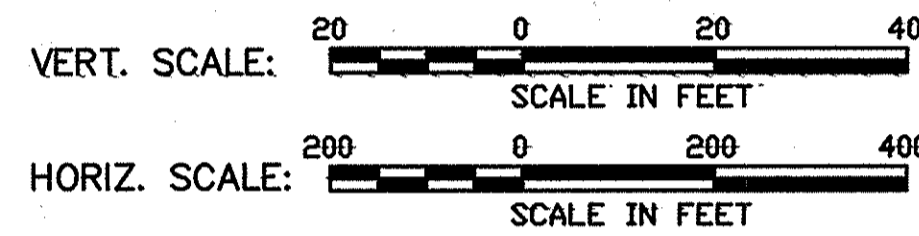
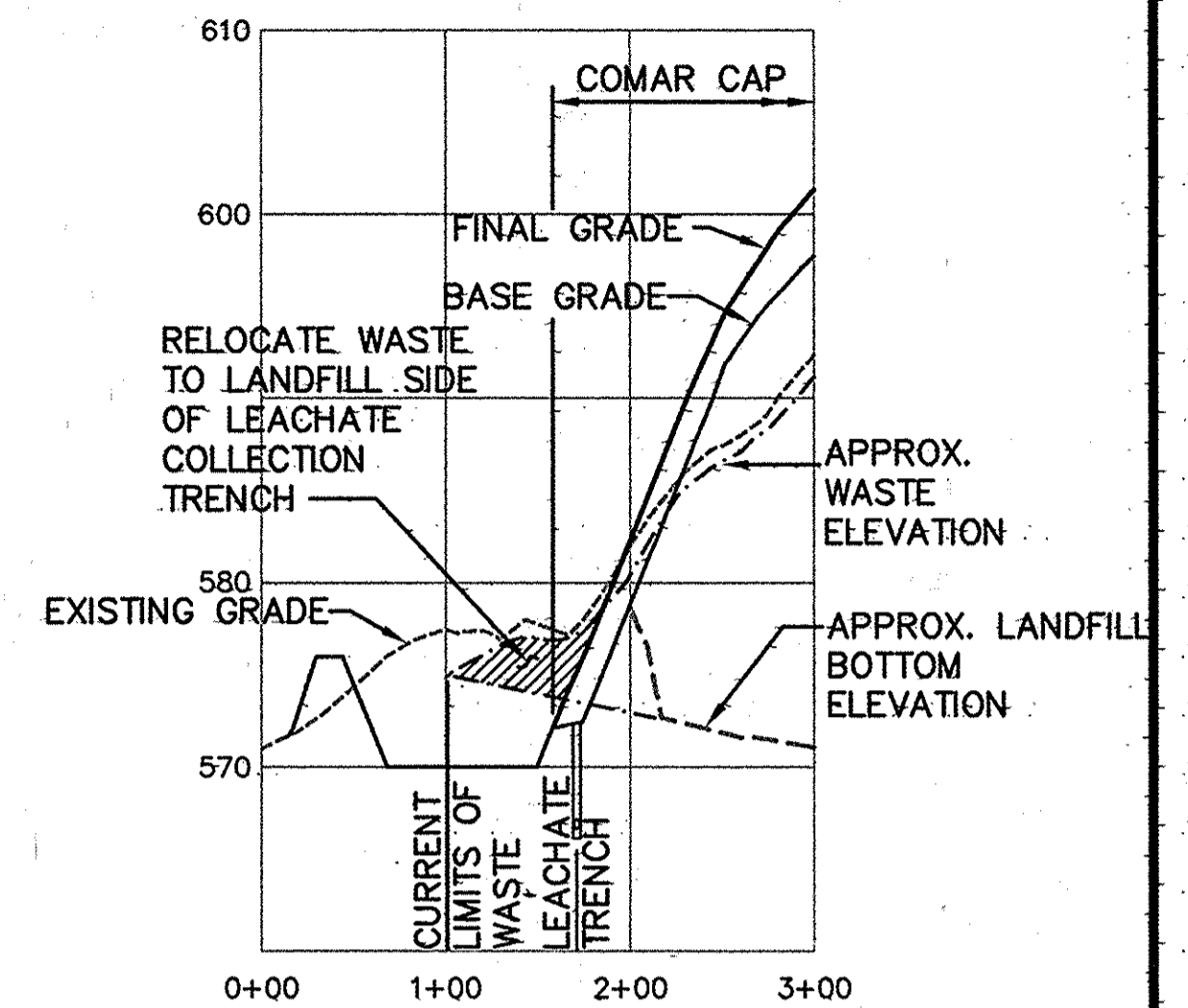
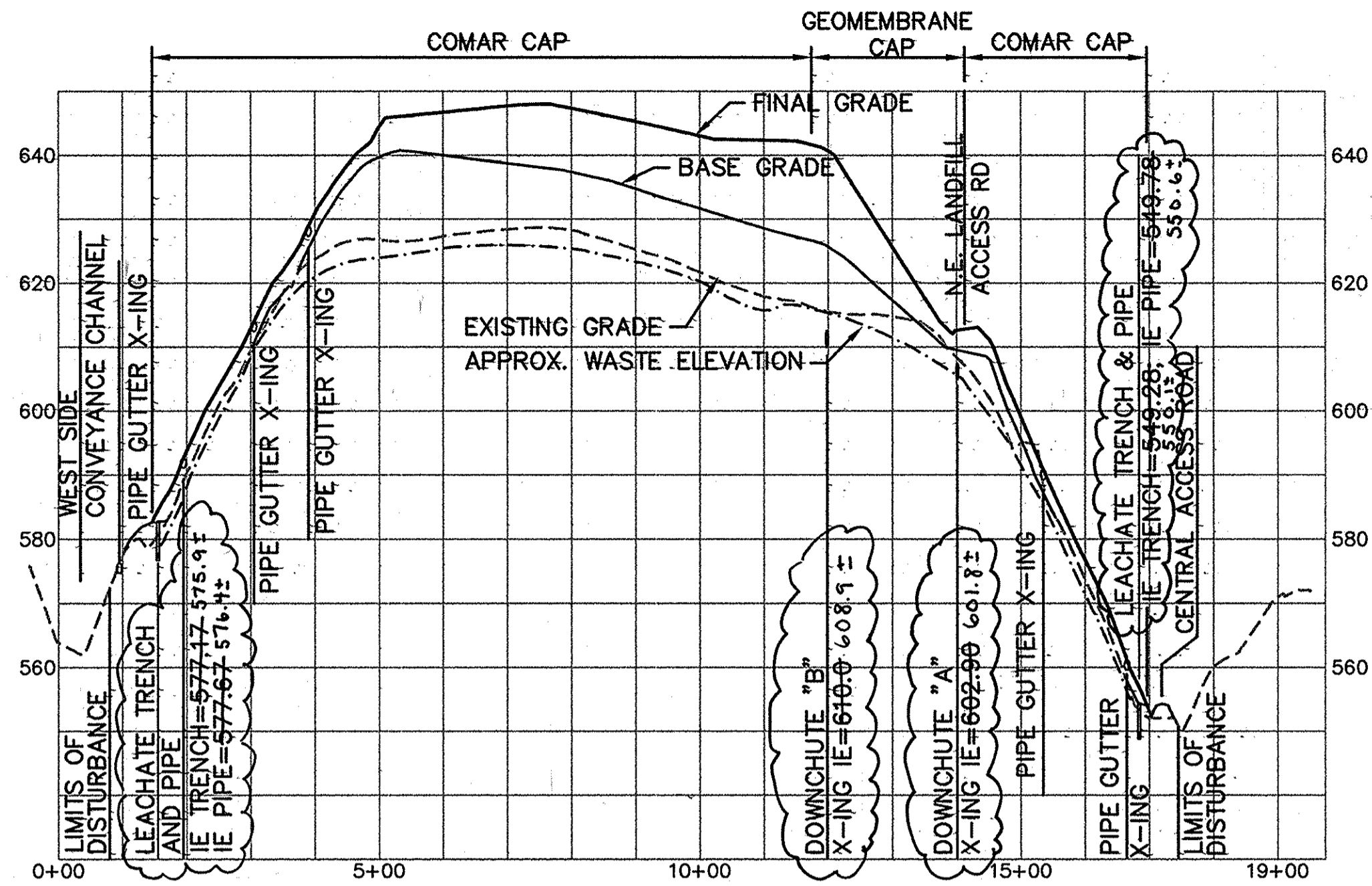
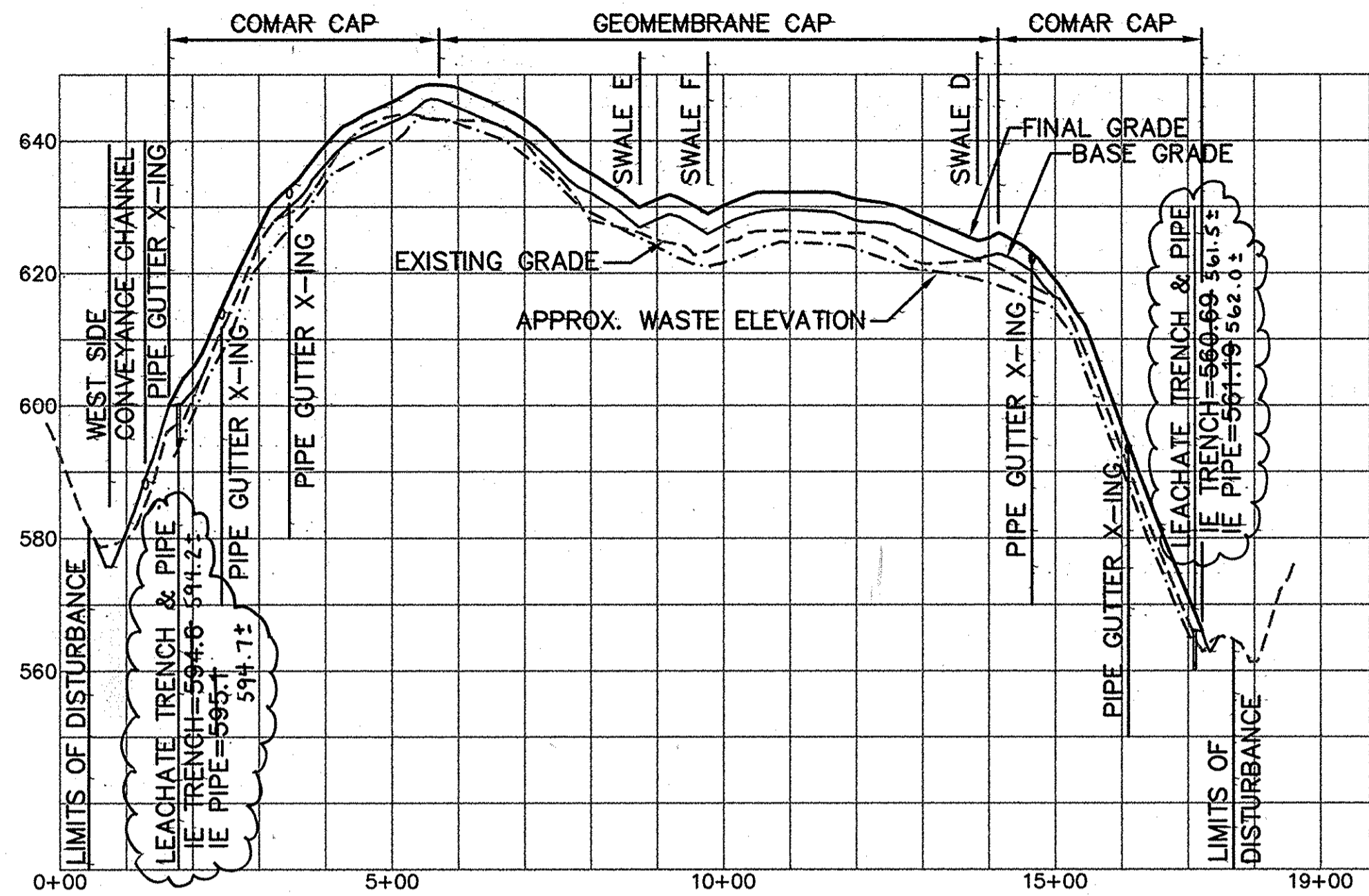
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED

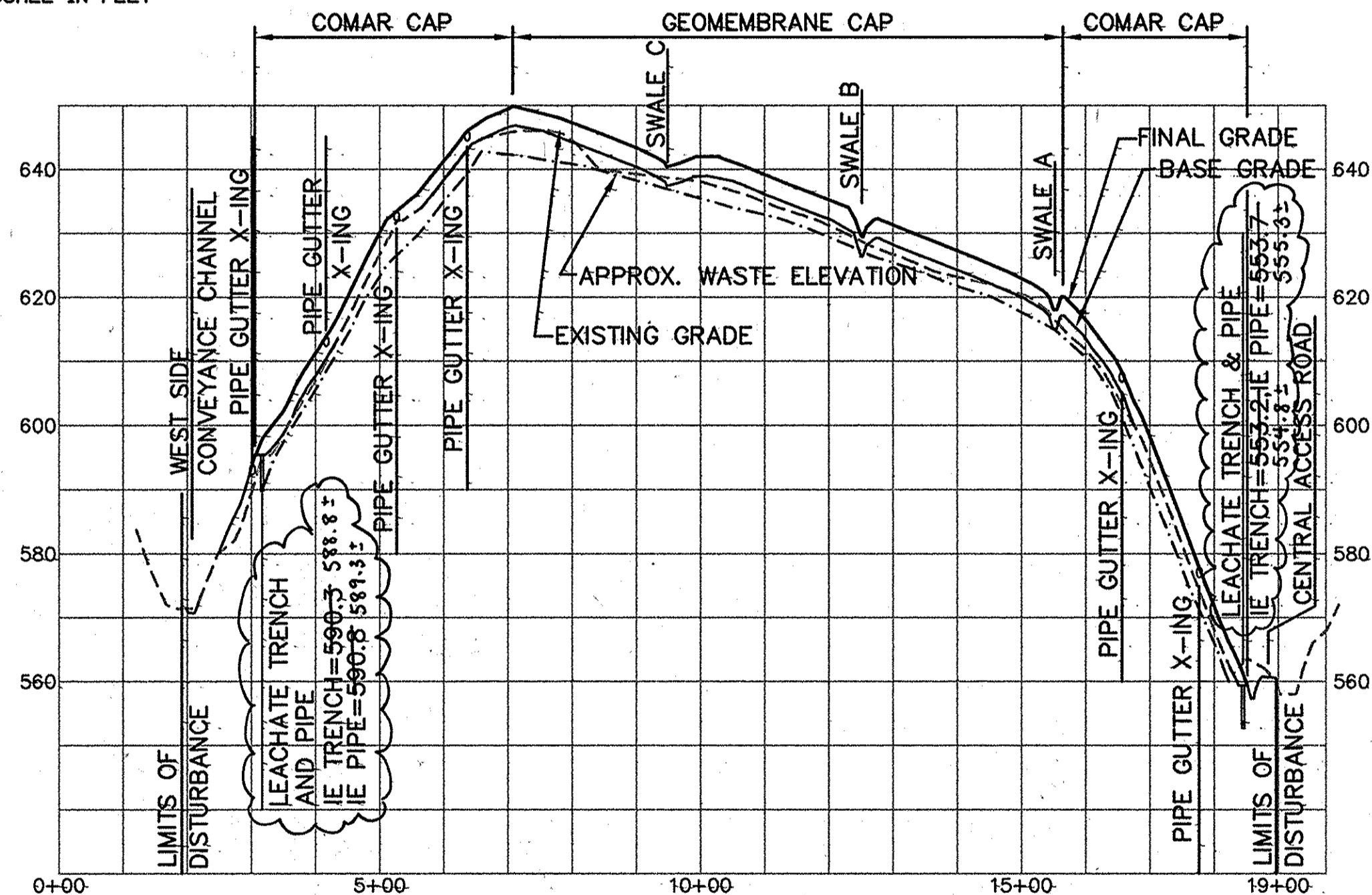
SHEET  
11 of 13

LFXSEC-B M:\285077.01\FINAL LFXSEC



FOR COMAR CAP DETAILS SEE 4  
12/45

FOR GEOMEMBRANE CAP DETAILS SEE 3  
12/45



SUBDIVISION NAME		LOT/PARCEL
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		54,253,220,11
LIBER/FOLIQ	ZONE	TAX/ZONE MAP
10-847/606 16-878/215 10-891/314	PEC	10 & 16
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

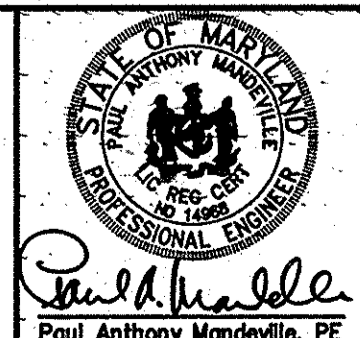
*[Signature]* 11/2/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/20/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/20/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	BY	NO.	REVISION	DATE
DRN: EGC				
CHK. PAM				
DATE: 10-30-97				

LANDFILL  
CROSS-SECTIONS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

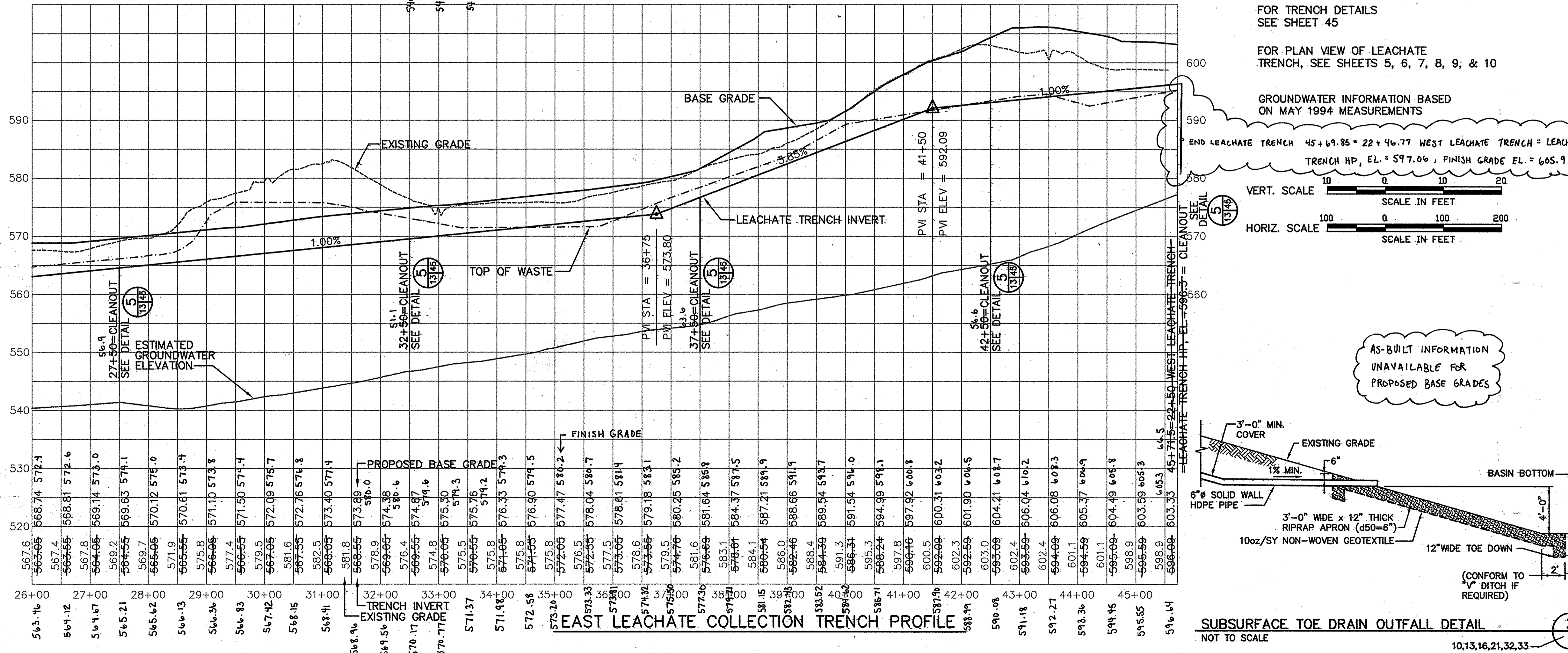
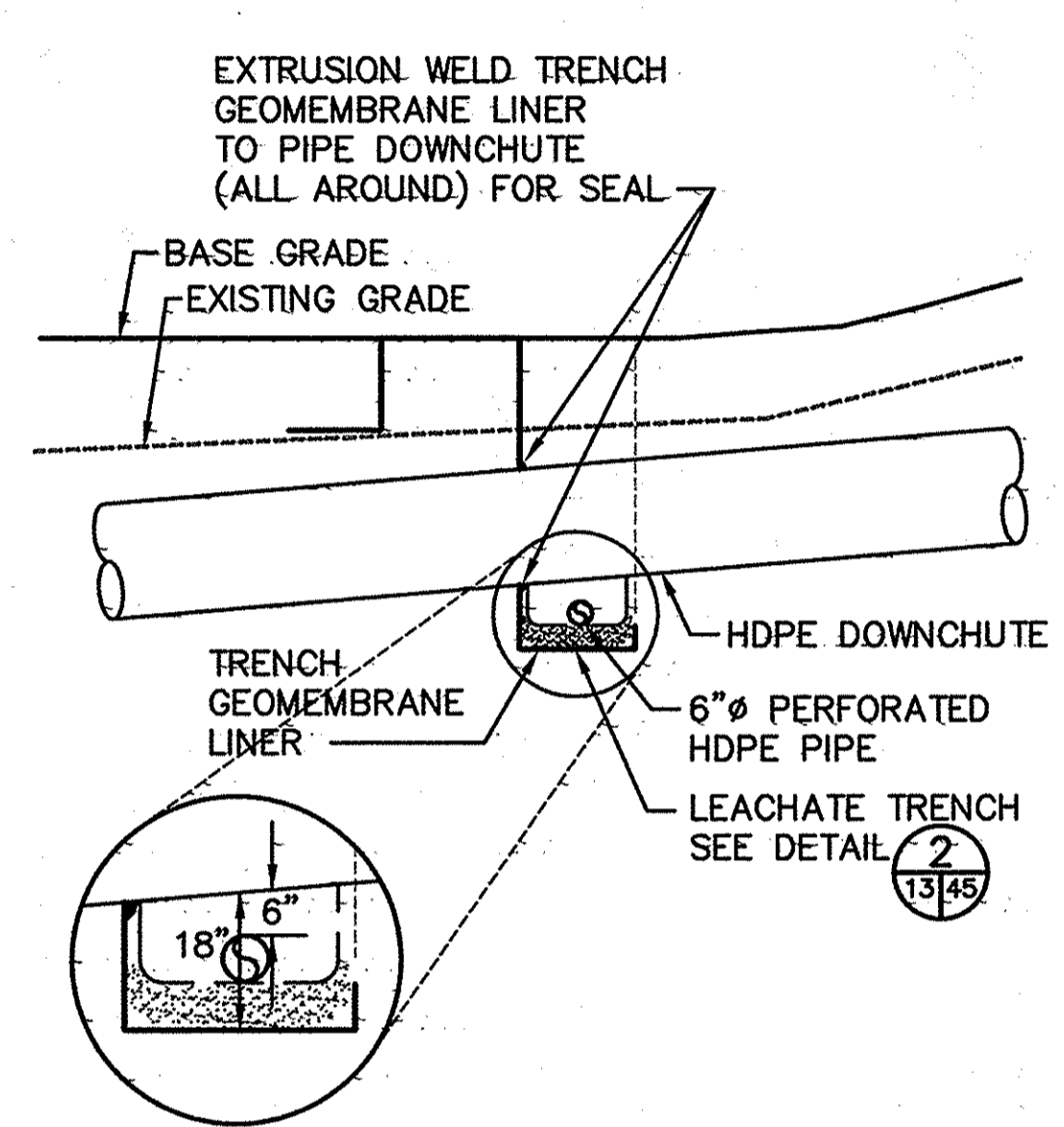
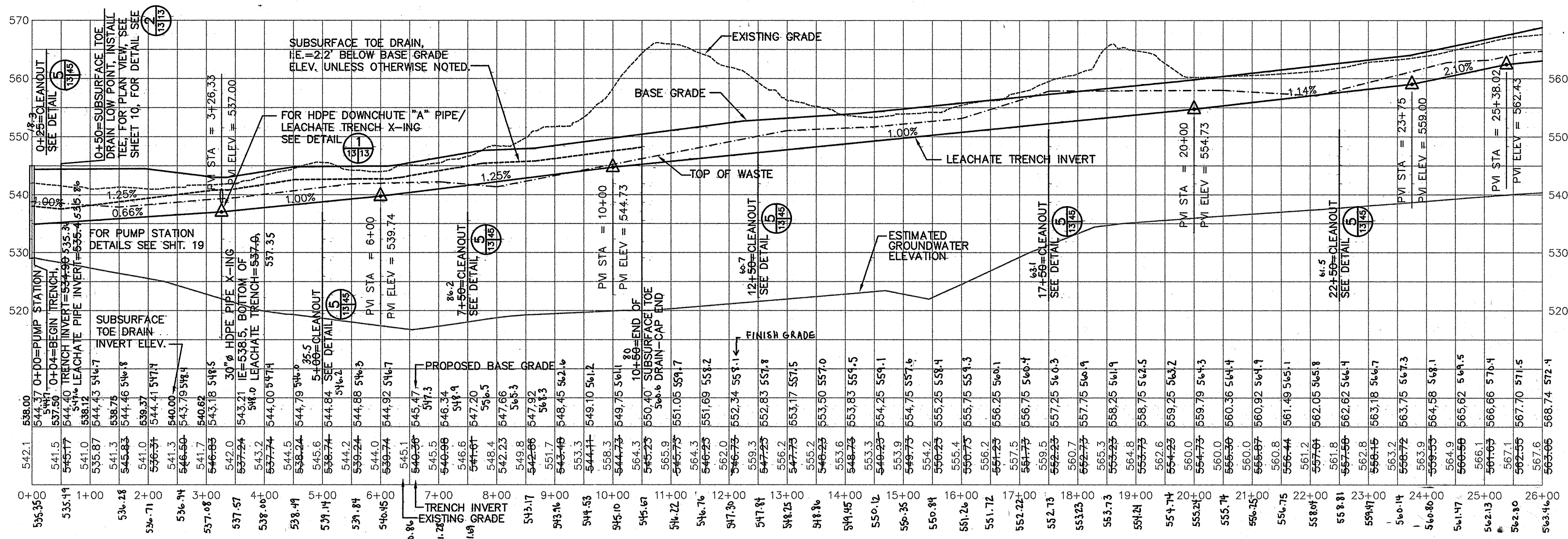
3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED  
SHEET  
12 OF 13

M:\295077\01\FINAL\LFXSEC1\SECH

LFXSEC1-B



FOR TRENCH DETAILS SEE SHEET 45

FOR PLAN VIEW OF LEACHATE TRENCH, SEE SHEETS 5, 6, 7, 8, 9, & 10

GROUNDWATER INFORMATION BASED ON MAY 1994 MEASUREMENTS

END LEACHATE TRENCH 45+69.85 + 22+46.77 WEST LEACHATE TRENCH = LEACHATE TRENCH HP, EL. = 597.06, FINISH GRADE EL. = 605.9

VERT. SCALE 1" = 10'

HORIZ. SCALE 1" = 100'

AS-BUILT INFORMATION UNAVAILABLE FOR PROPOSED BASE GRADES

SUBSURFACE TOE DRAIN OUTFALL DETAIL NOT TO SCALE

SUBDIVISION NAME		LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		64,253,220,11	
LIBER/FOLIO		ZONE	TAX/ZONE MAP
10-847/606 16-876/215 10-891/314		PEC	10 & 16
WATER CODE		SEWER CODE	CENSUS TR.
PRIVATE, EXISTING		PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

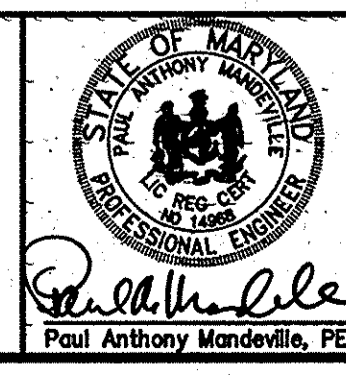
*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

SCS ENGINEERS  
CONSULTING ENGINEERS  
11280 ROGER BACON DRIVE  
SUITE 300  
RESTON, VIRGINIA 22090  
PH. (703) 471-6150  
FAX. (703) 471-6676



DES.	RTT, EGC		
DRN.	EGC		
CHK.	PAM		
DATE: 10-30-97		BY	NO.
		REVISION	DATE

EAST LEACHATE COLLECTION TRENCH PROFILE

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

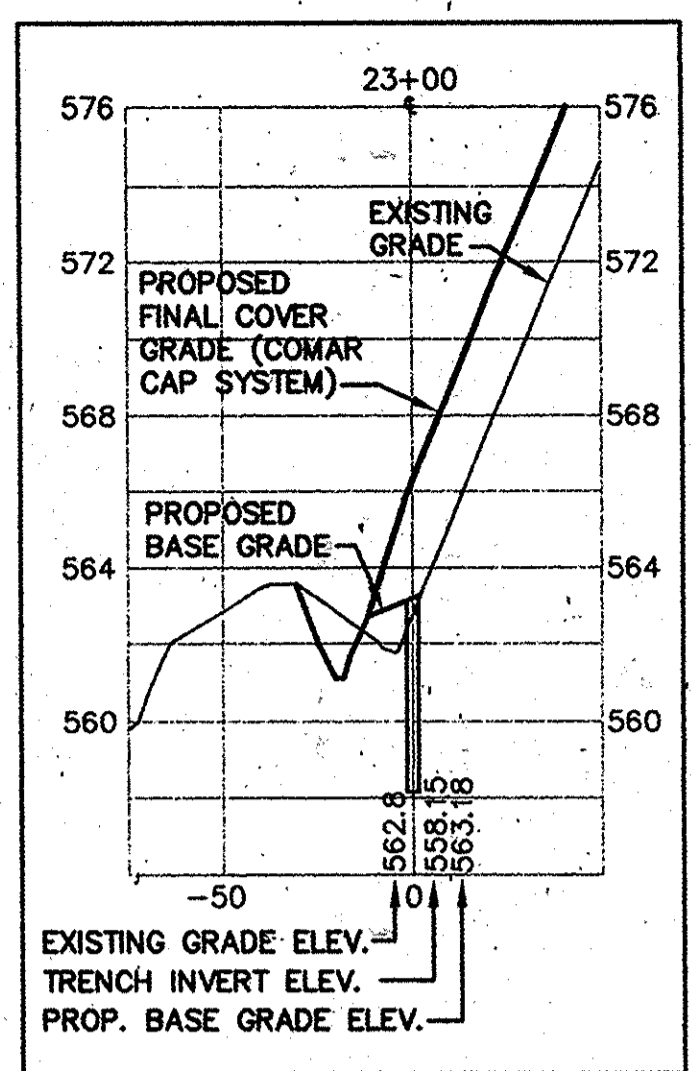
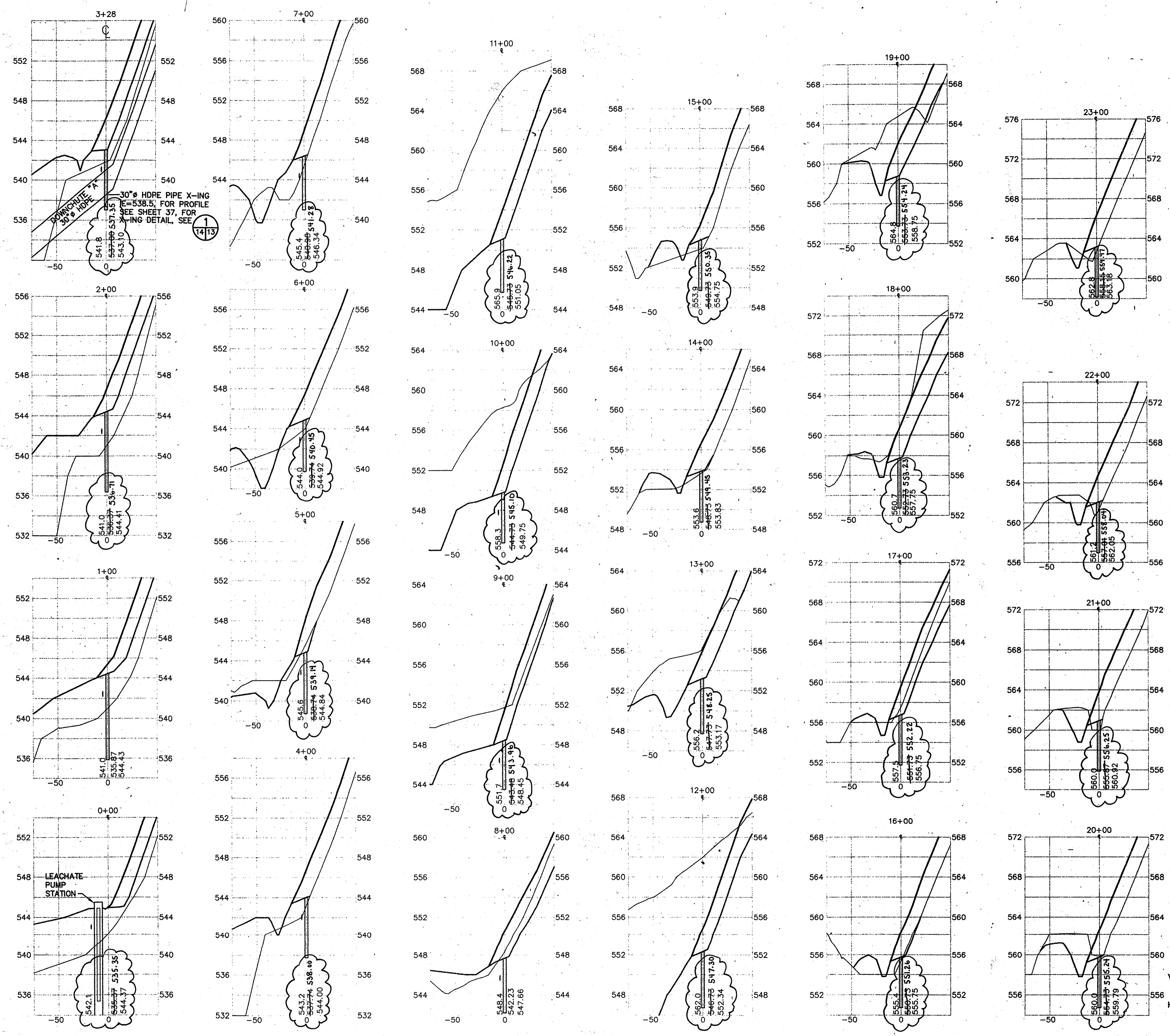
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE: 1" = 100'

SHEET 13 OF 136

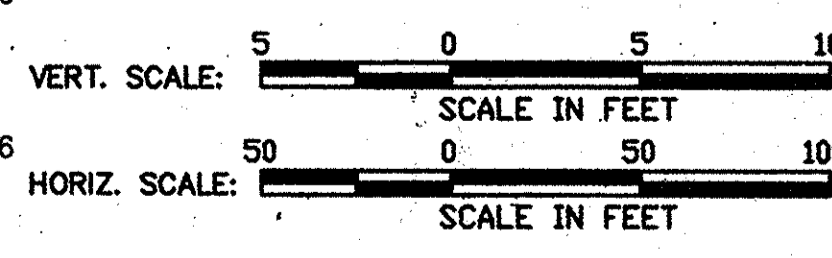
LEACHPROE M: 295077.01 \FINAL LPRO-E, TR-XING, TOEDRAIN





NOTE:  
FOR TYPICAL LEACHATE TRENCH CROSS-SECTION DETAILS, SEE SHEET 45.

AS-BUILT INFORMATION UNAVAILABLE FOR PROPOSED BASE GRADES



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11	ZONE PEC	TAX/ZONE MAP 10 & 16
LIBER/FOLIO 10-847/806 10-878/215 10-891/314			
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*David R. Miller* 11/3/97  
DIRECTOR DATE

*John J. Hanotta* 10/30/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chris Hanotta* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James M. ...* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. Hanotta* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	▲			
DRN. EGC	▲			
CHK. PAM	▲			
DATE: 10-30-97	BY	NO.	REVISION	DATE

EAST LEACHATE COLLECTION  
TRENCH CROSS-SECTIONS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

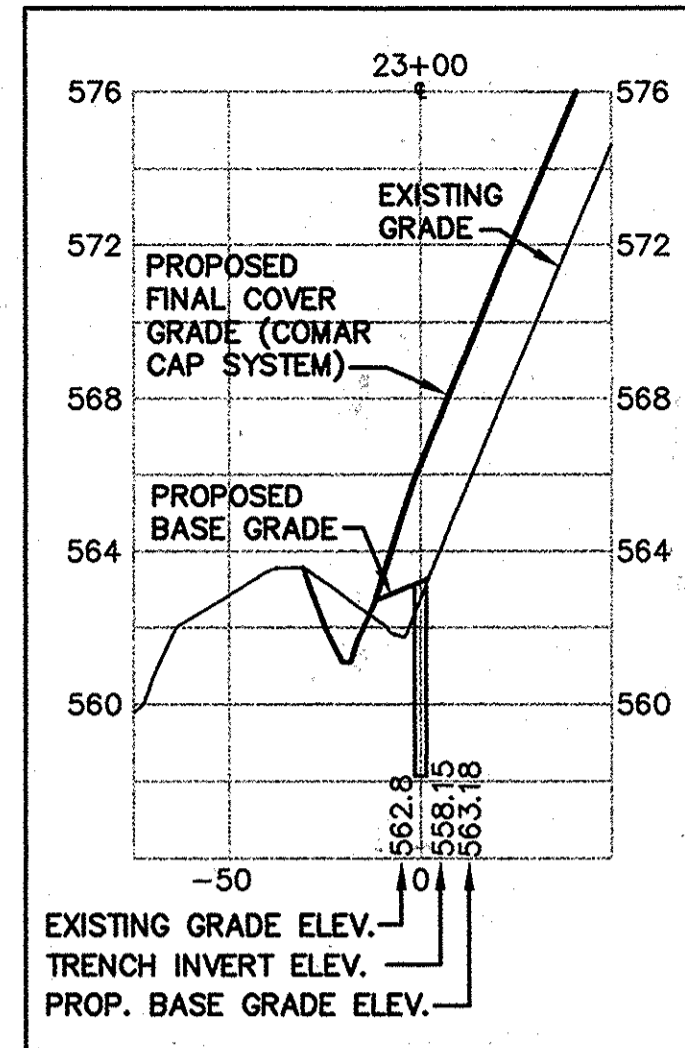
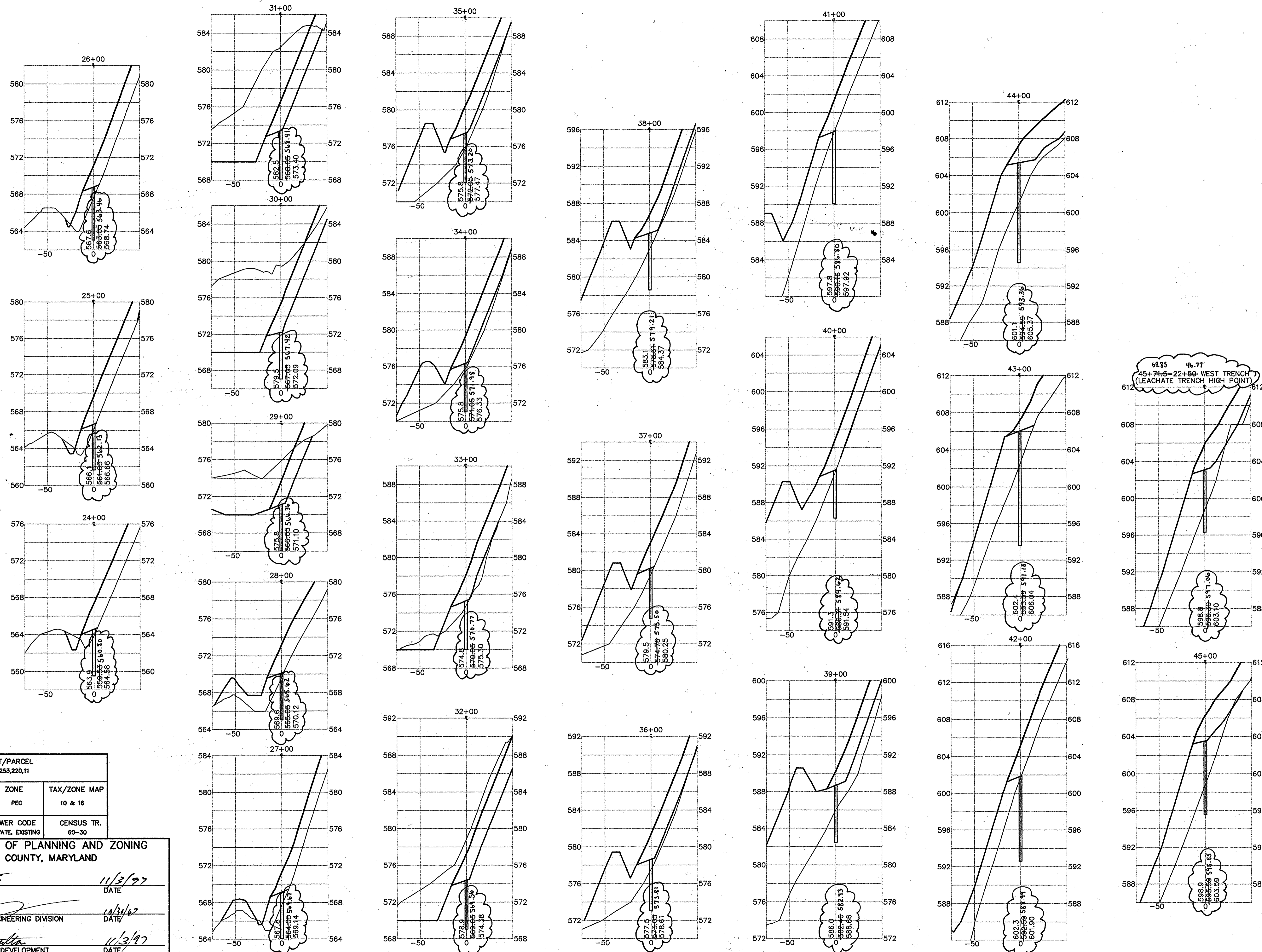
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED

SHEET  
14 OF 128

M:\295077.01\FINAL LSECI-E

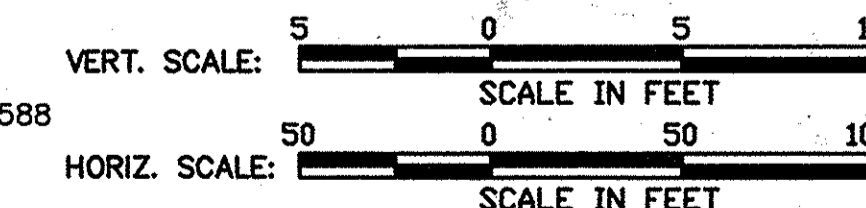
LSECI-EB



TYPICAL LEGEND FOR CROSS-SECTIONS

NOTE:  
FOR TYPICAL LEACHATE TRENCH CROSS-SECTION DETAILS, SEE SHEET 45.

AS-BUILT INFORMATION UNAVAILABLE FOR PROPOSED BASE GRADES



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/608 16-878/215 10-891/314		ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING		SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*David S. Smith* 11/3/97  
DIRECTOR DATE

*John J. O'Hara* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

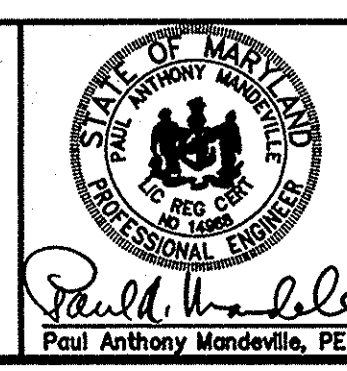
*Charles Hamilton* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James P. Lewis* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	▲				
DRN. EGC	▲				
CHK. PAM	▲				
DATE: 10-30-97	BY	NO.	REVISION	DATE	

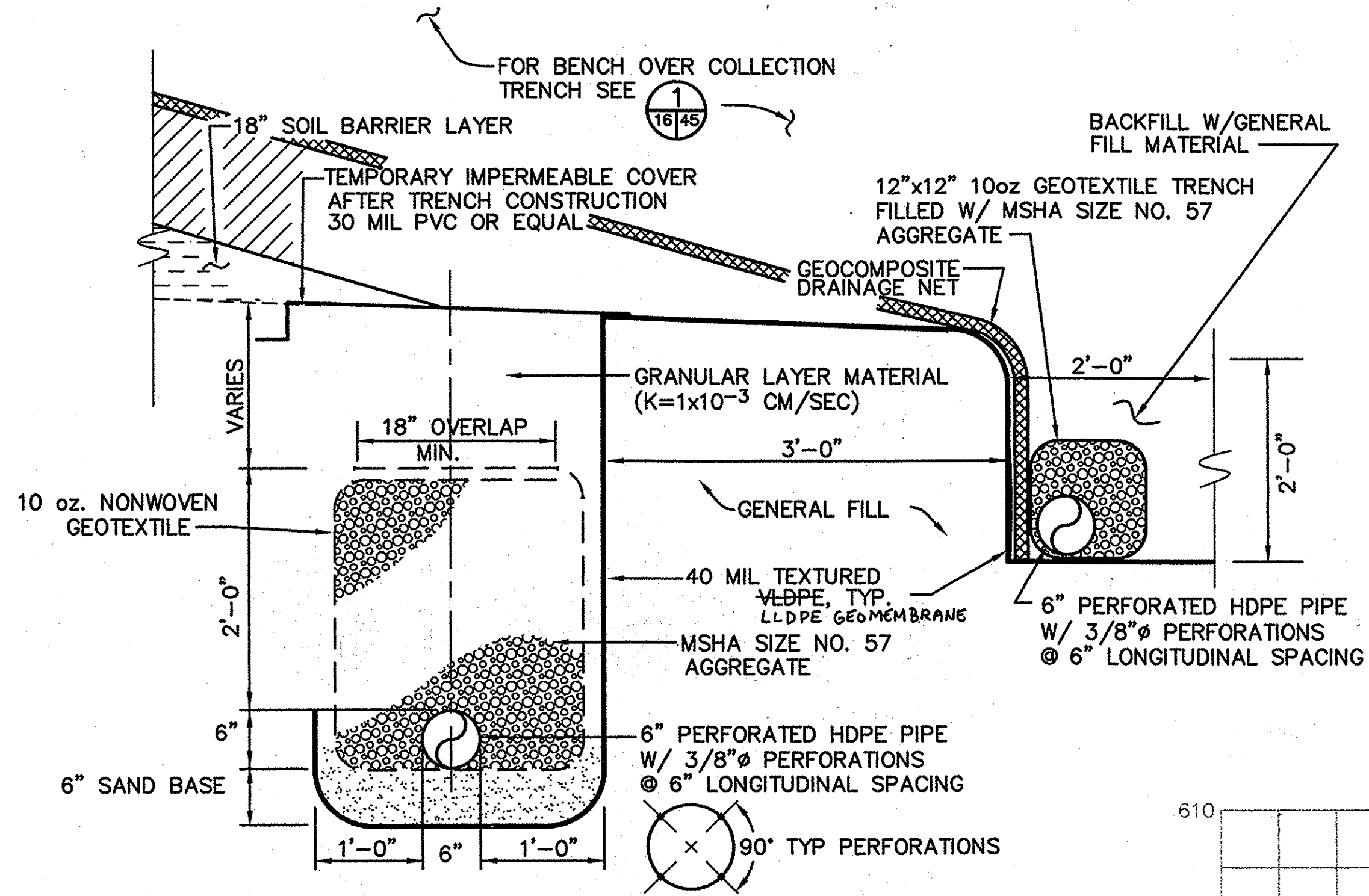
EAST LEACHATE COLLECTION  
TRENCH CROSS-SECTIONS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

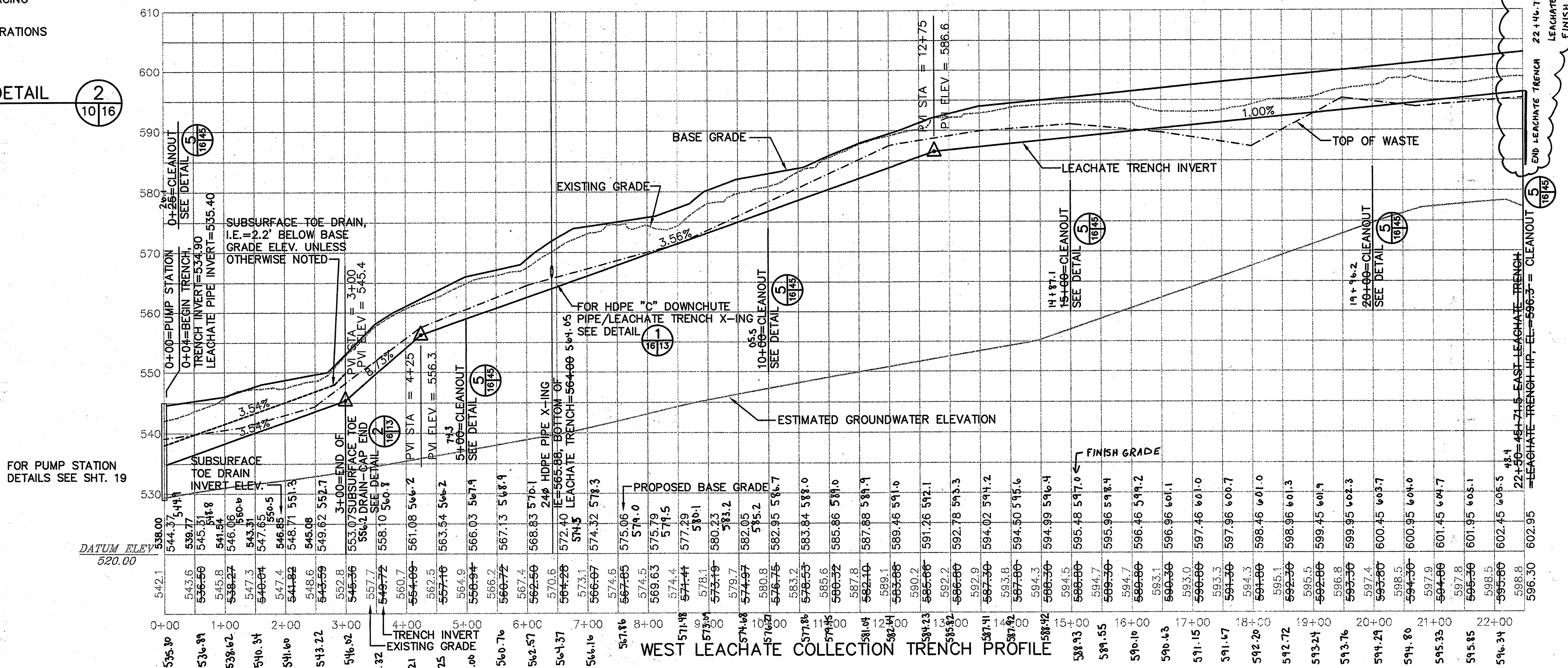
SCALE:  
AS NOTED  
SHEET  
15 OF 181

M:\295077\01\FINAL LSEC2-EB



LEACHATE TRENCH WITH TOE DRAIN DETAIL  
SCALE: 1" = 1'-0"

AS-BUILT INFORMATION UNAVAILABLE FOR PROPOSED BASE GRADES



SUBDIVISION NAME		LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		54,253,220,11	
LIBER/FOLIO		ZONE	TAX/ZONE MAP
10-847/806 18-876/215 10-891/314		PEC	10 & 16
WATER CODE		SEWER CODE	CENSUS TR.
PRIVATE, EXISTING		PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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

DES. RTT, EGC			
DRN. EGC			
CHK. PAM			
DATE: 10-30-97	BY	NO.	REVISION

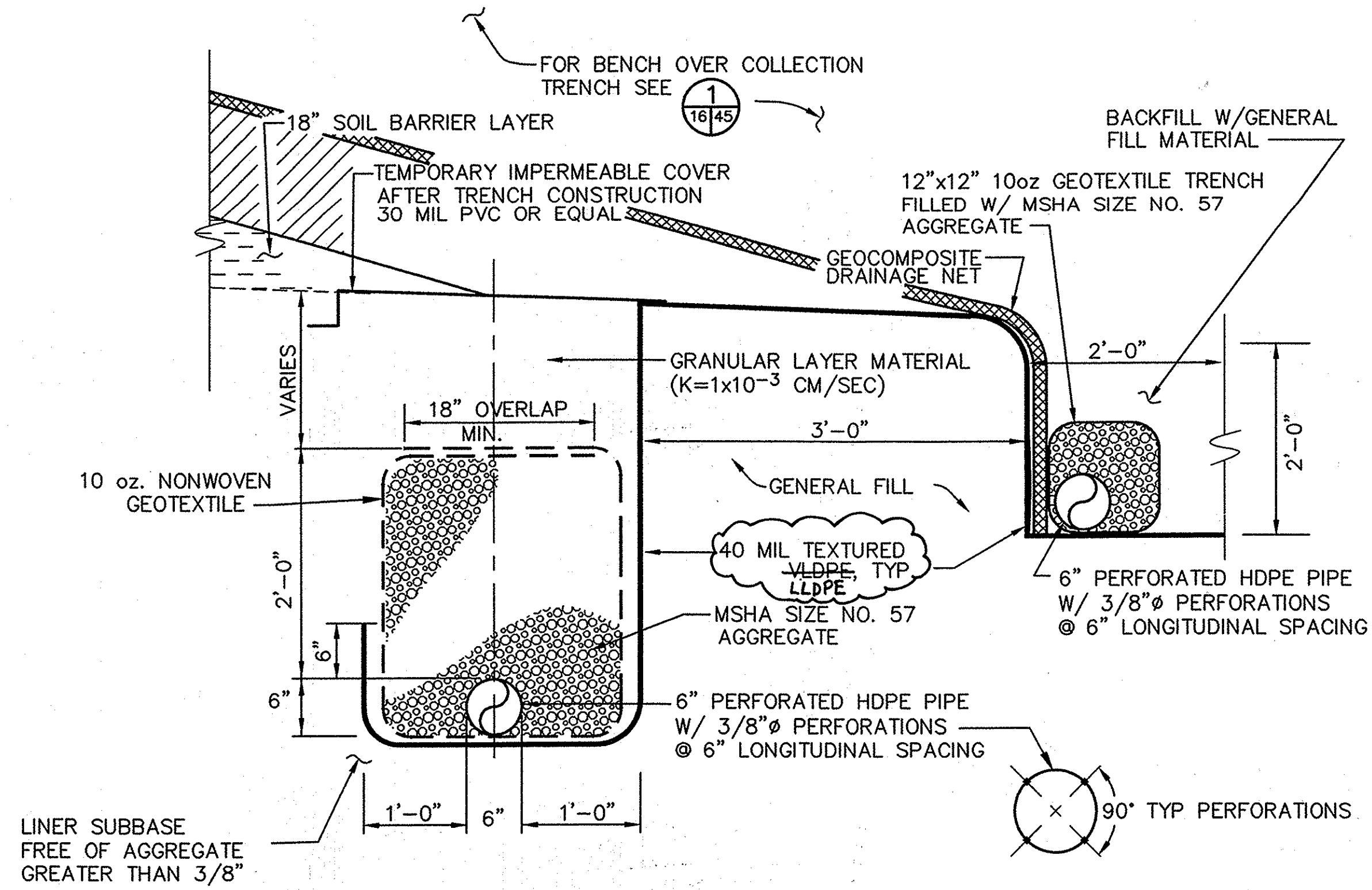
WEST LEACHATE COLLECTION TRENCH PROFILE

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

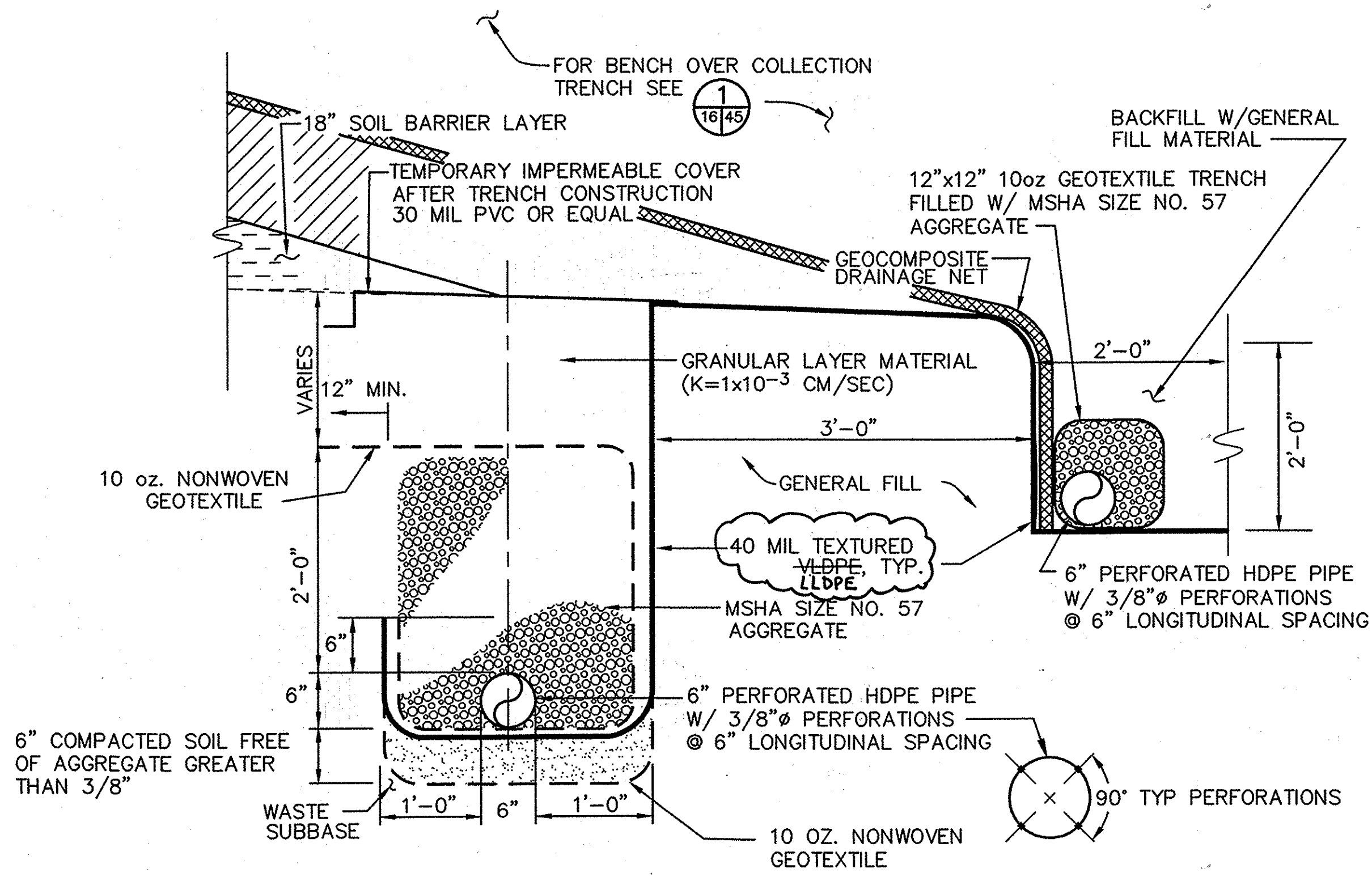
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=100'  
SHEET  
16 OF 136

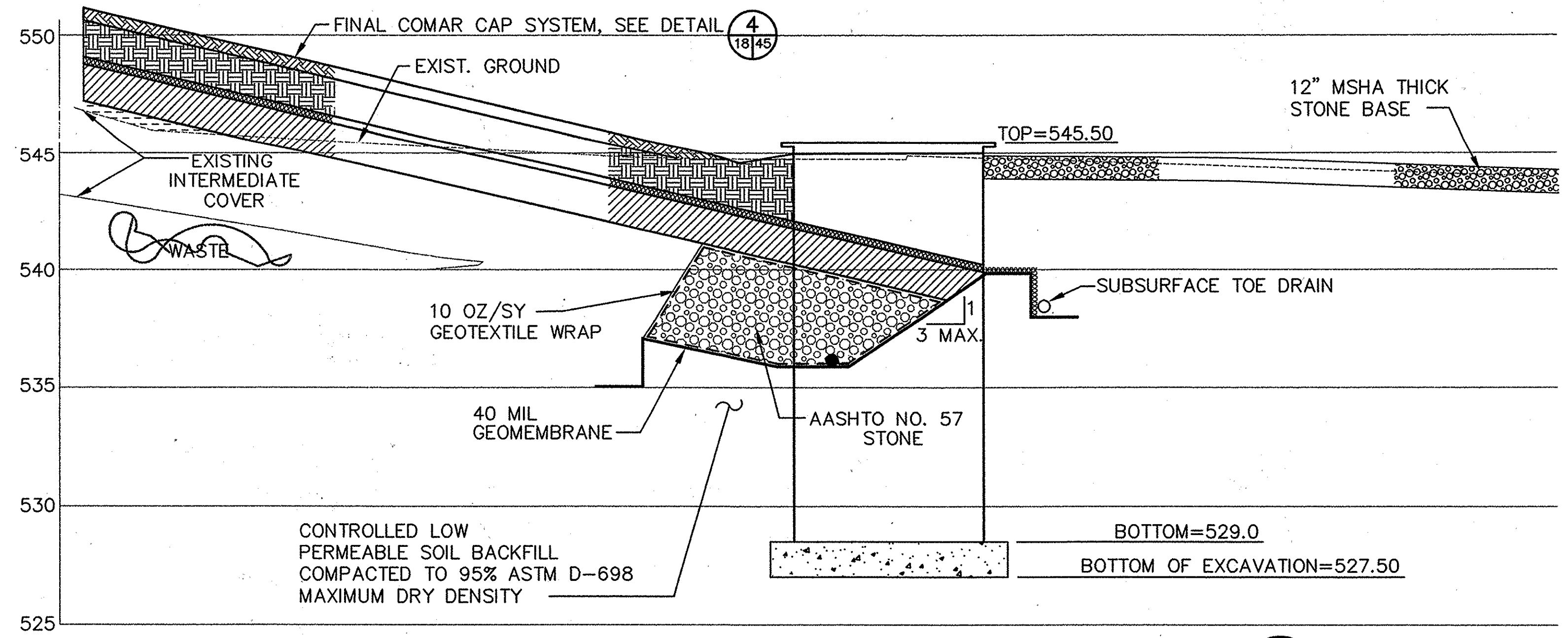
LEACHPROW M:\295077.01\FINAL LPRO-W



LEACHATE TRENCH WITH TOE DRAIN DETAIL IN SOIL (2A)  
SCALE: 1" = 1'-0"



LEACHATE TRENCH WITH TOE DRAIN DETAIL OVER WASTE (2B)  
SCALE: 1" = 1'-0"

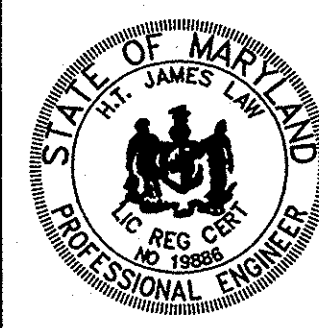


SECTION THRU LEACHATE PUMP STATION (B)  
SCALE: 1/4" = 1'-0"

M: 295077.01  
SHT-16A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
DIRECTOR OF PUBLIC WORKS	DATE
CHIEF, BUREAU OF WASTE MANAGEMENT	DATE

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



DES.	HJL			
DRN.	SPS			
CHK.	PAM			
DATE:	03-30-99	BY	NO.	REVISION
				DATE

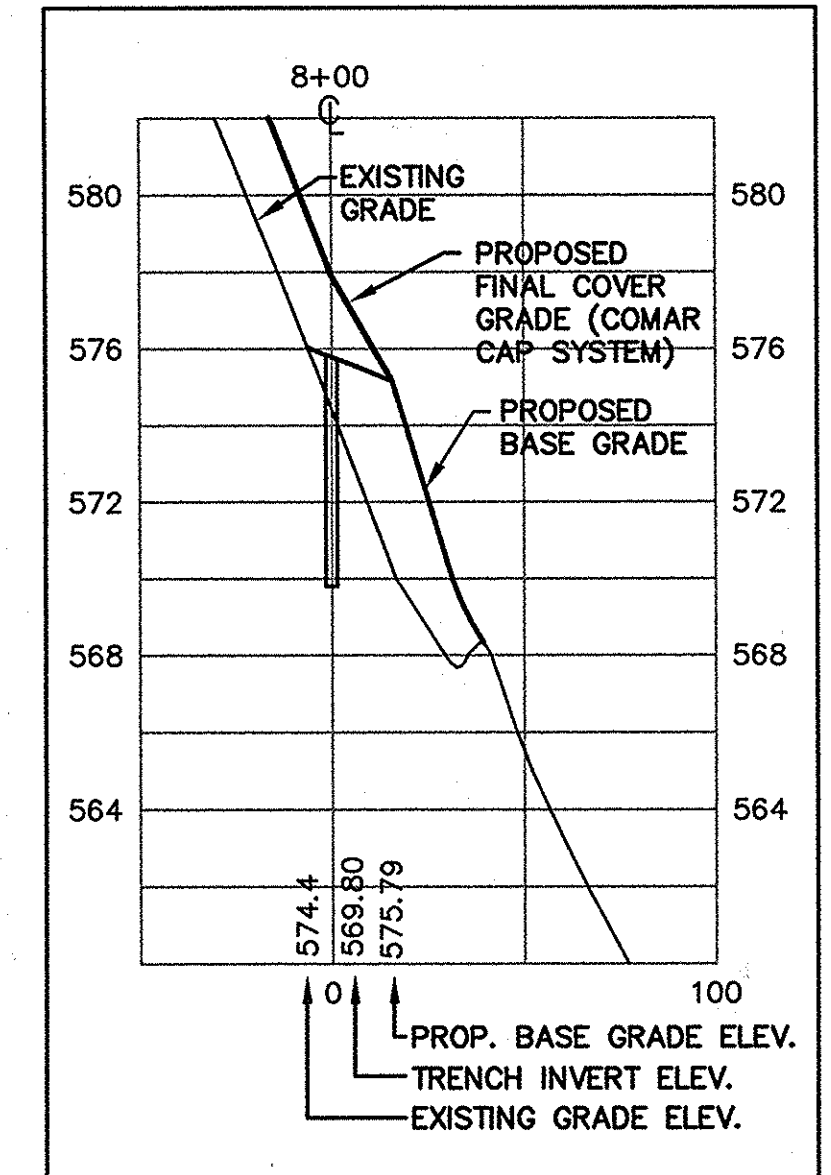
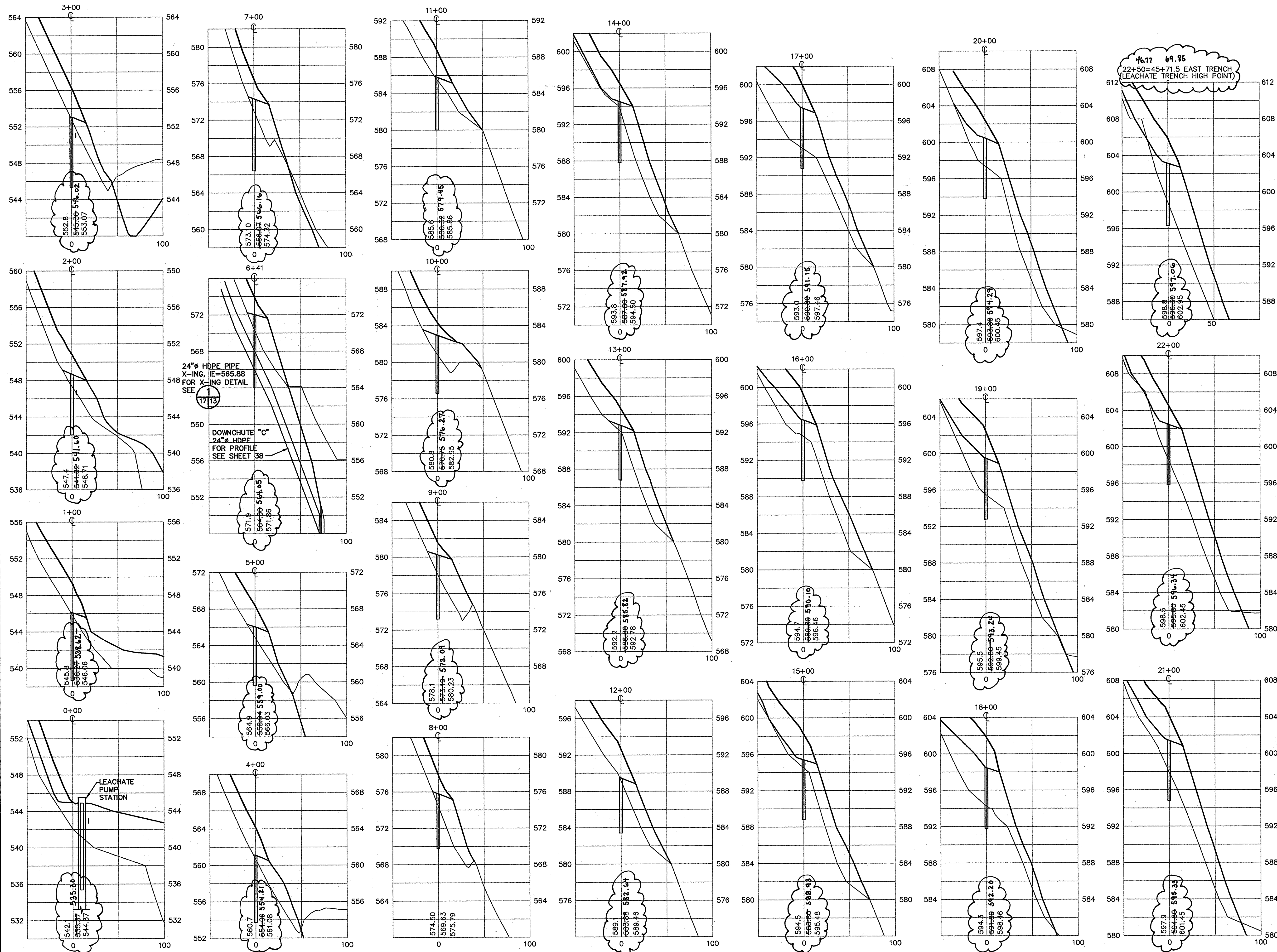
MISCELLANEOUS DETAILS

ALPHA RIDGE LANDFILL  
CELL CLOSURE  
CAPITAL PROJECT NO. C-0190  
1st ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED  
SHEET  
16A OF 17

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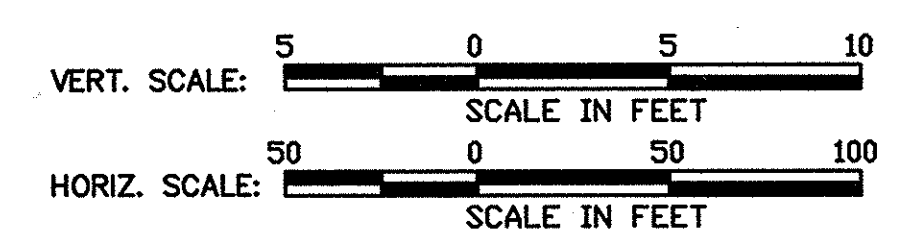
LSEC-WB



TYPICAL LEGEND FOR CROSS-SECTIONS

NOTE:  
FOR TYPICAL LEACHATE TRENCH CROSS-SECTION DETAILS, SEE SHEET 45.

AS-BUILT INFORMATION UNAVAILABLE FOR PROPOSED BASE GRADES



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/606 16-878/215 10-691/314	ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

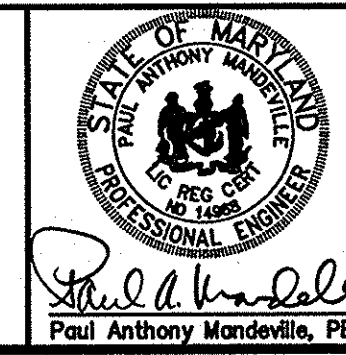
*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC			
DRN. EGC			
CHK. PAM			
DATE: 10-30-97	BY	NO.	REVISION
			DATE

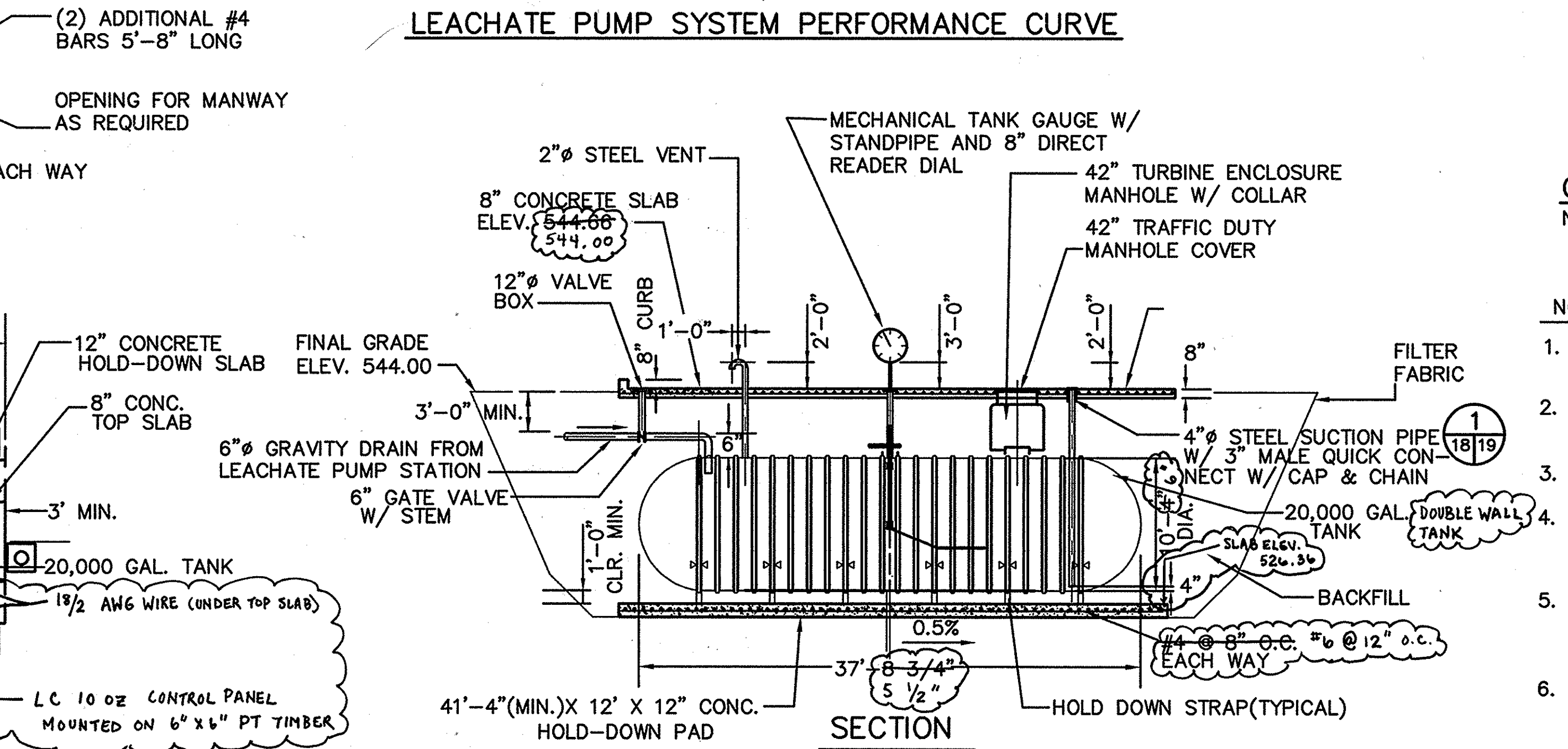
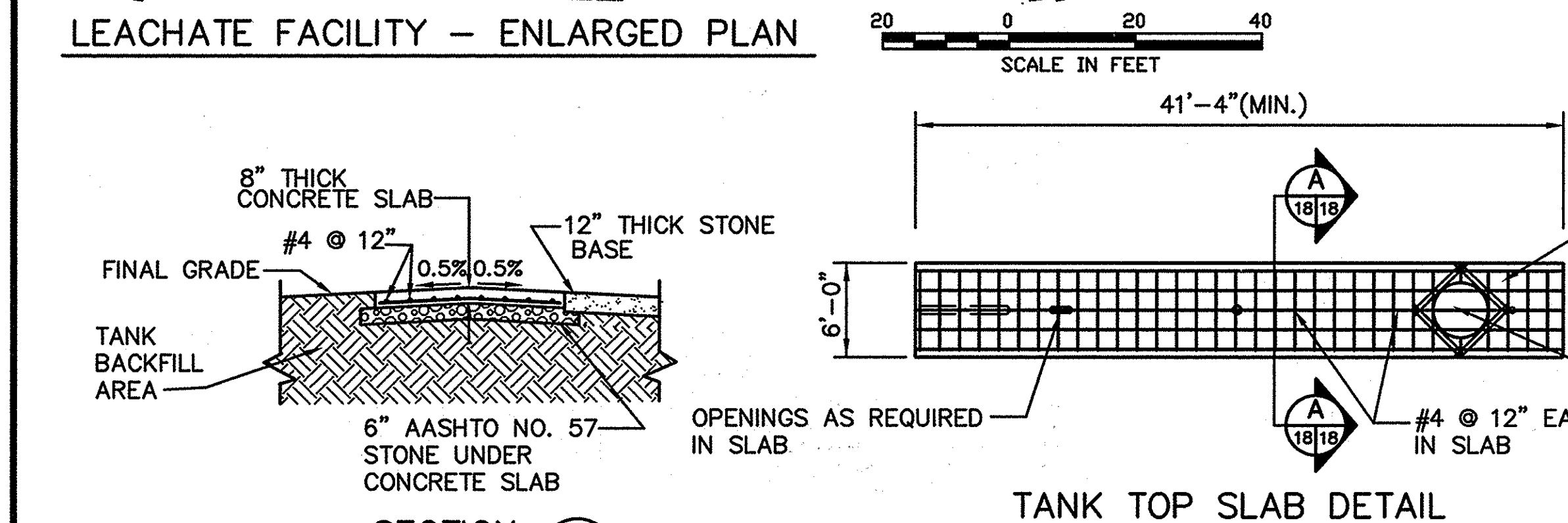
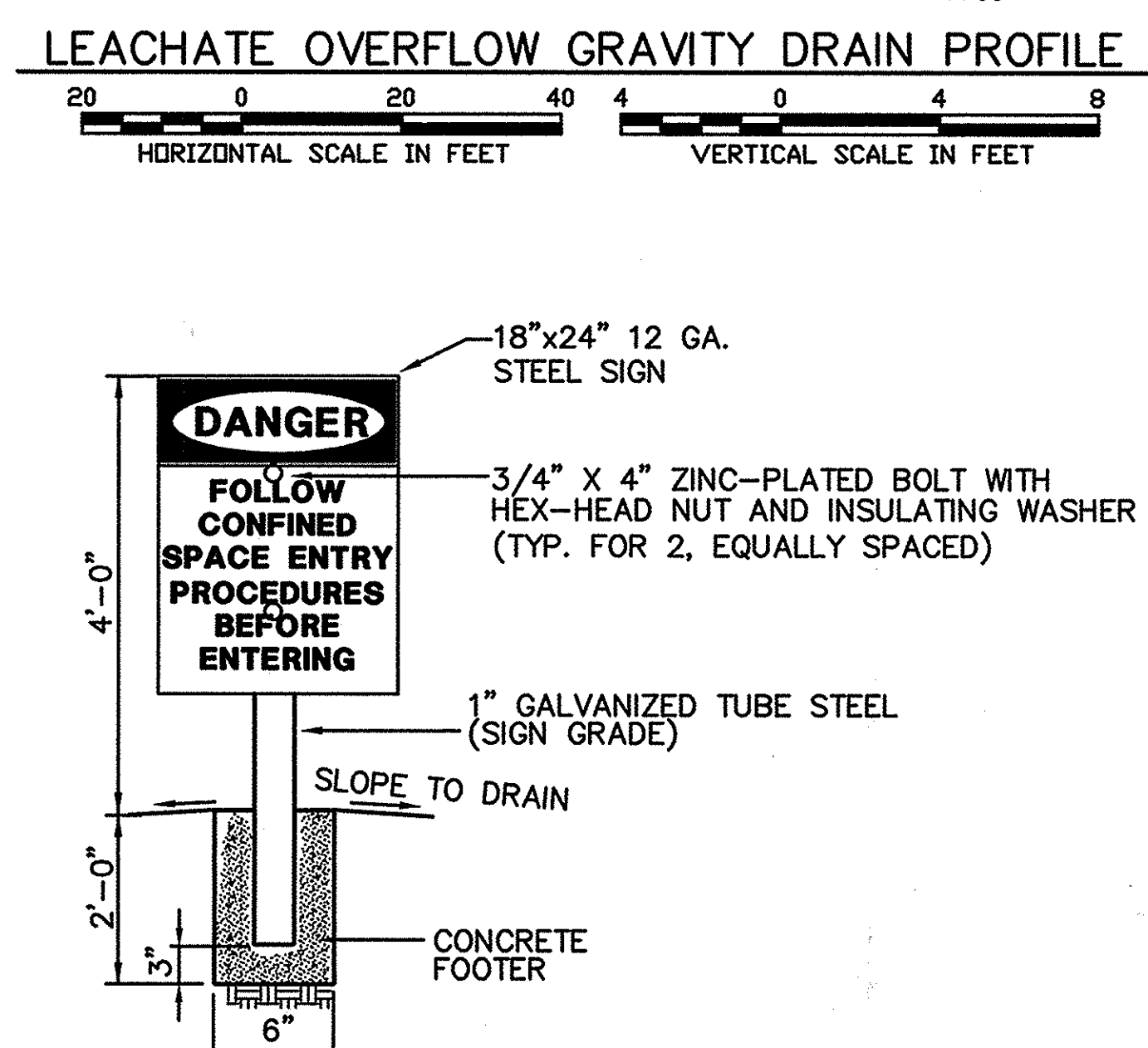
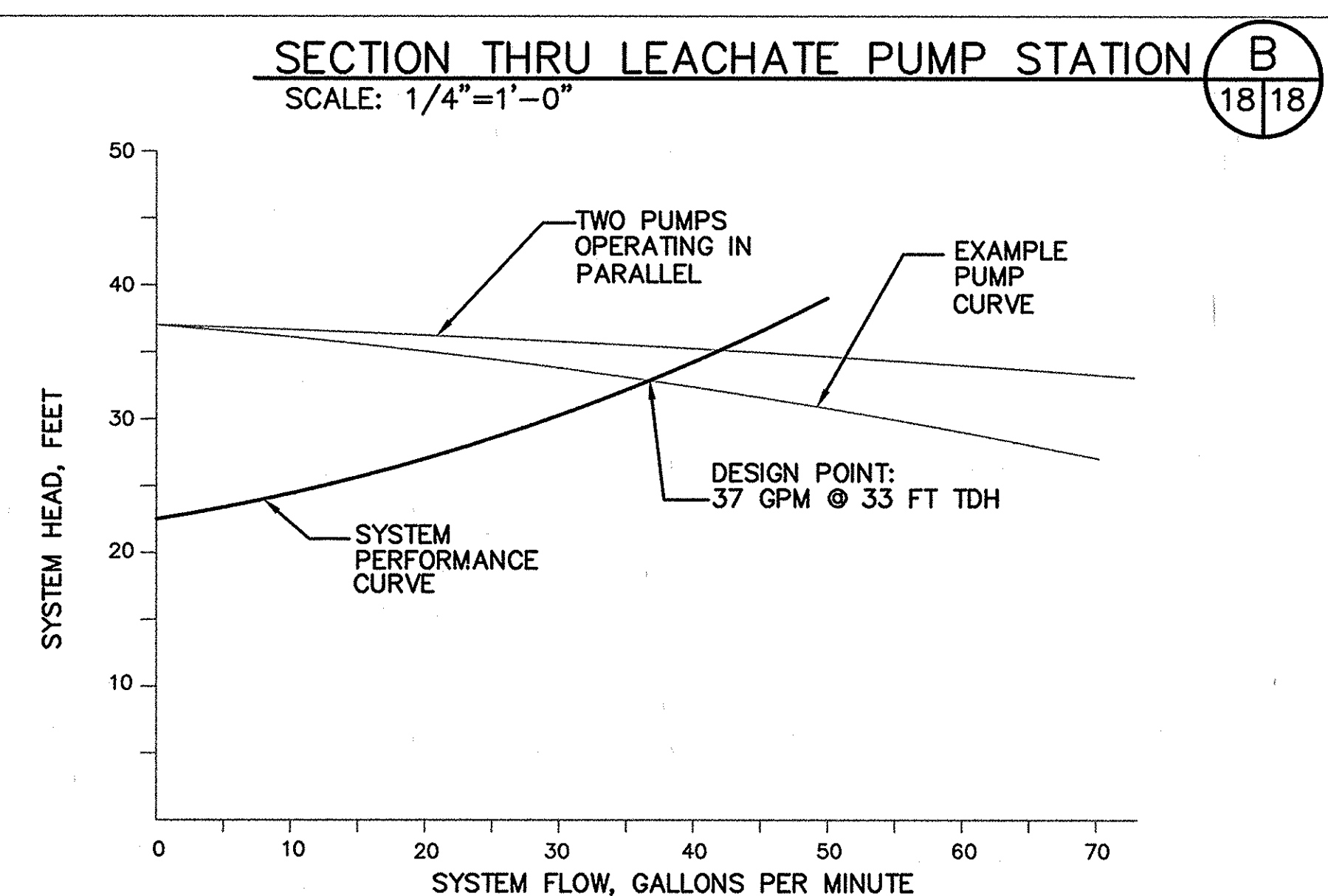
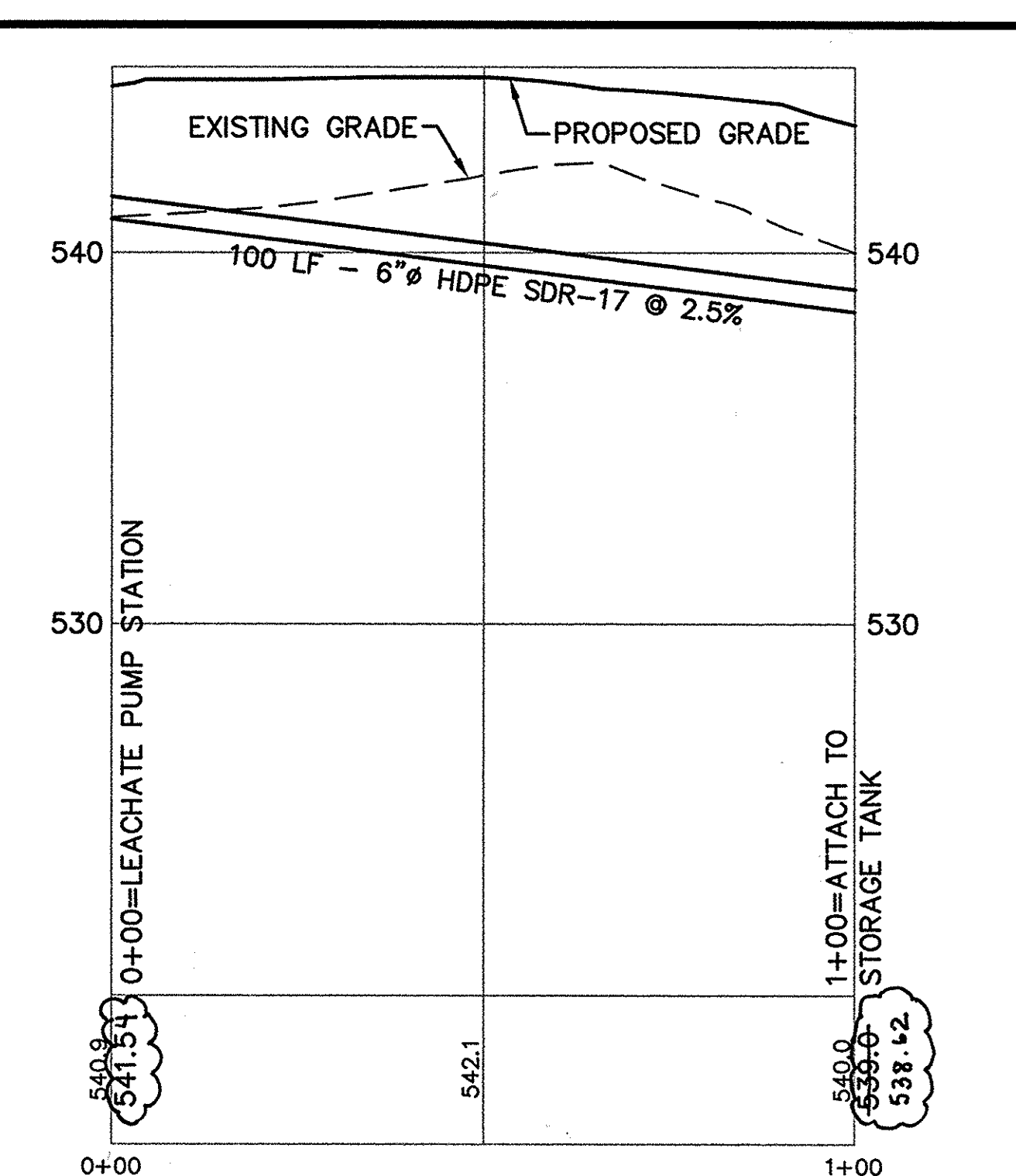
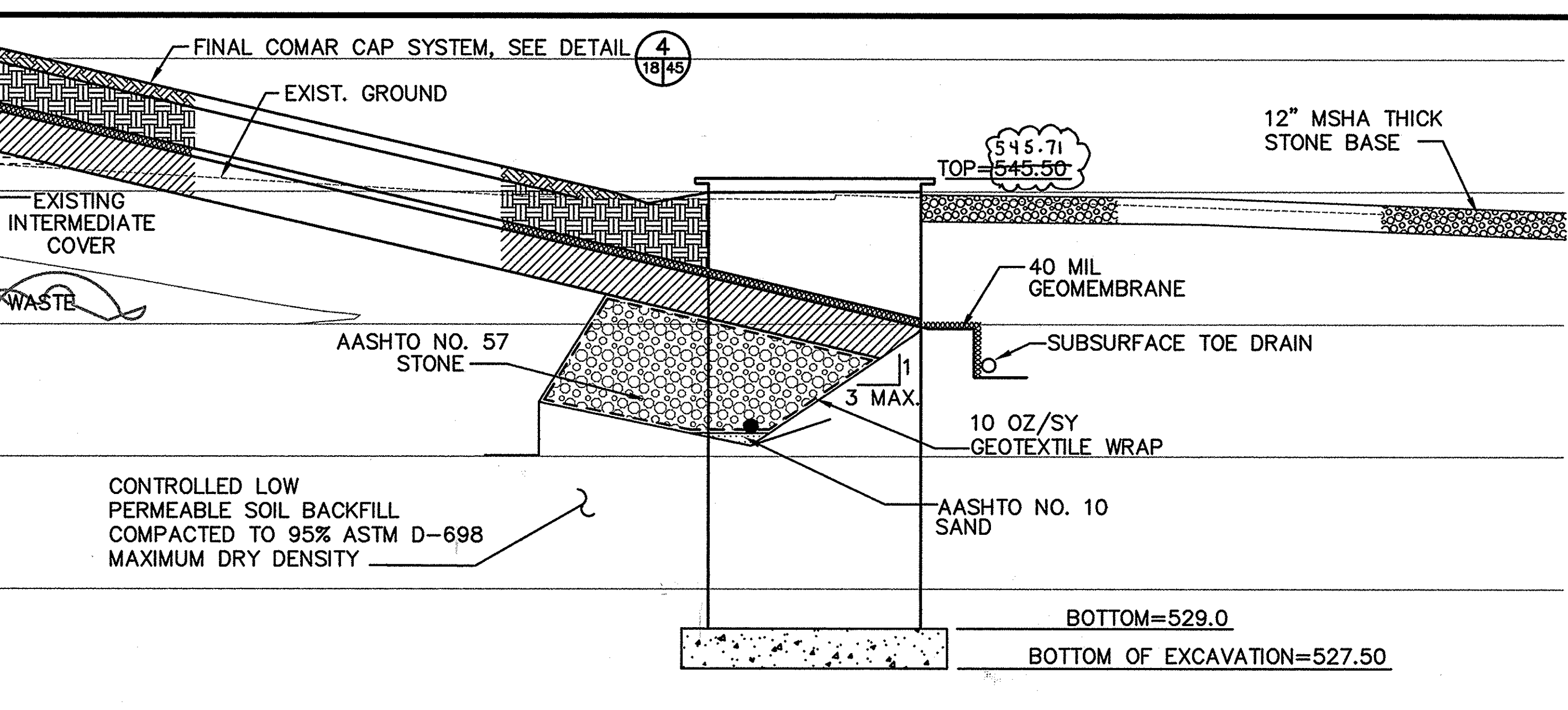
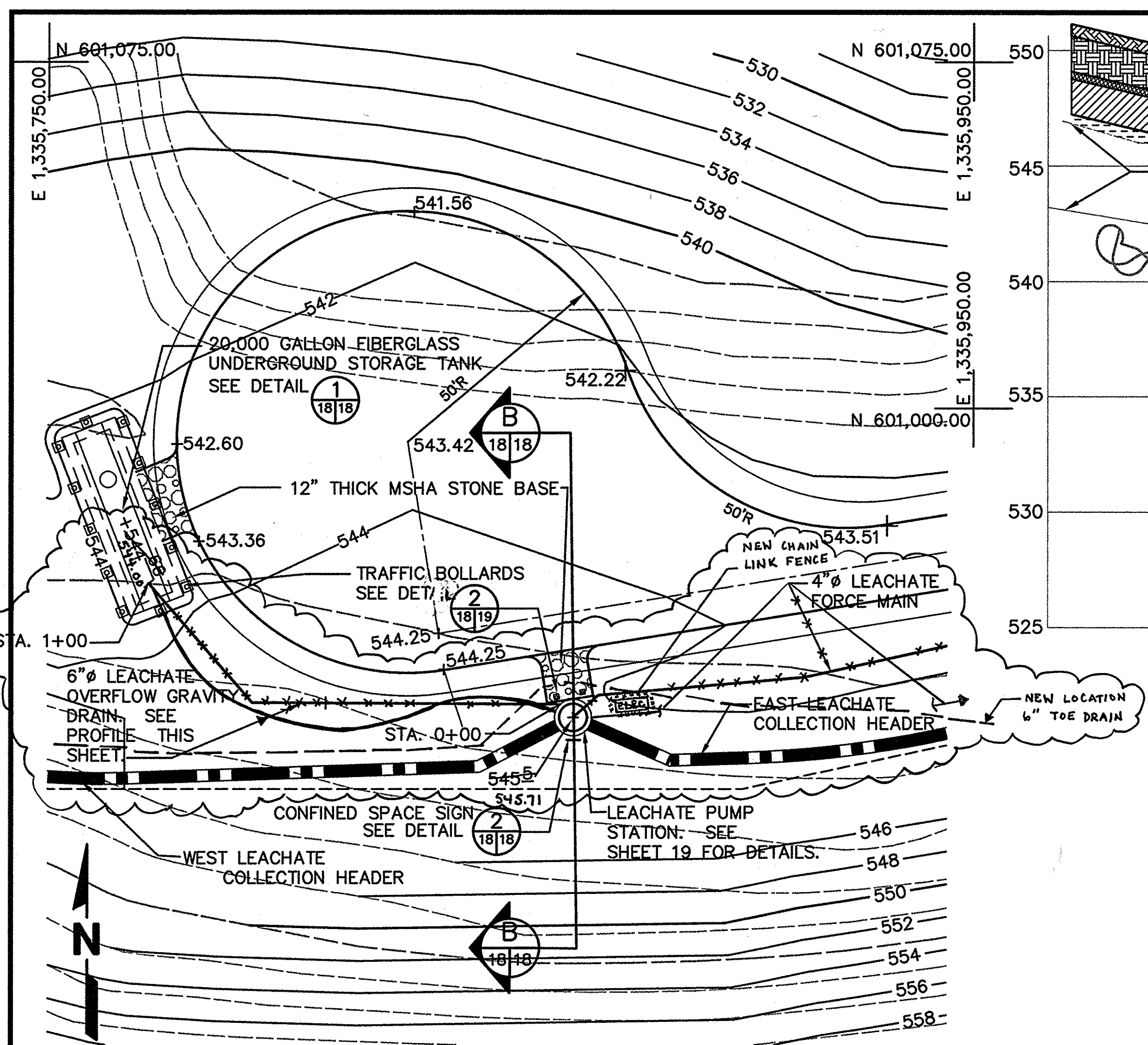
WEST LEACHATE COLLECTION  
TRENCH CROSS-SECTIONS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED

SHEET  
17 of 18



- NOTES:
- UNDERGROUND STORAGE TANK (UST) - PROVIDE 20,000 GALLON SINGLE WALL FIBERGLASS UST WITH OPENINGS AS INDICATED.
  - THE LOCATION PLACEMENT AND NUMBER OF HOLD DOWN STRAPS SHALL BE AS SPECIFIED BY THE MANUFACTURER.
  - UST BACKFILL SHALL BE AS SPECIFIED BY THE MANUFACTURER.
  - INSTALL THE UST IN ACCORDANCE WITH THE UST MANUFACTURER'S WRITTEN INSTRUCTIONS AND PETROLEUM EQUIPMENT INSTITUTE (PEI) 100-94.
  - CONCRETE SLAB SHALL BE CONSTRUCTED SO A 0.5% SLOPE IS MAINTAINED FROM THE CENTER (HIGH POINT) TO EACH CORNER OF SLAB (LOW POINT).
  - CONCRETE MINIMUM COMPRESSIVE STRENGTH SHALL BE 4,000 PSI AS PER SPECIFICATION 03300 "CONCRETE".
  - FOR ADDITIONAL OPENINGS OR IF OPENING LOCATIONS DIFFER FROM THOSE INDICATED DUE TO TANK MANUFACTURER'S REQUIREMENTS, CONTRACTOR SHALL SUBMIT A REVISED REINFORCING PLAN FOR ENGINEERS APPROVAL.
  - CONCRETE PAD SHALL BE BROOM FINISHED.

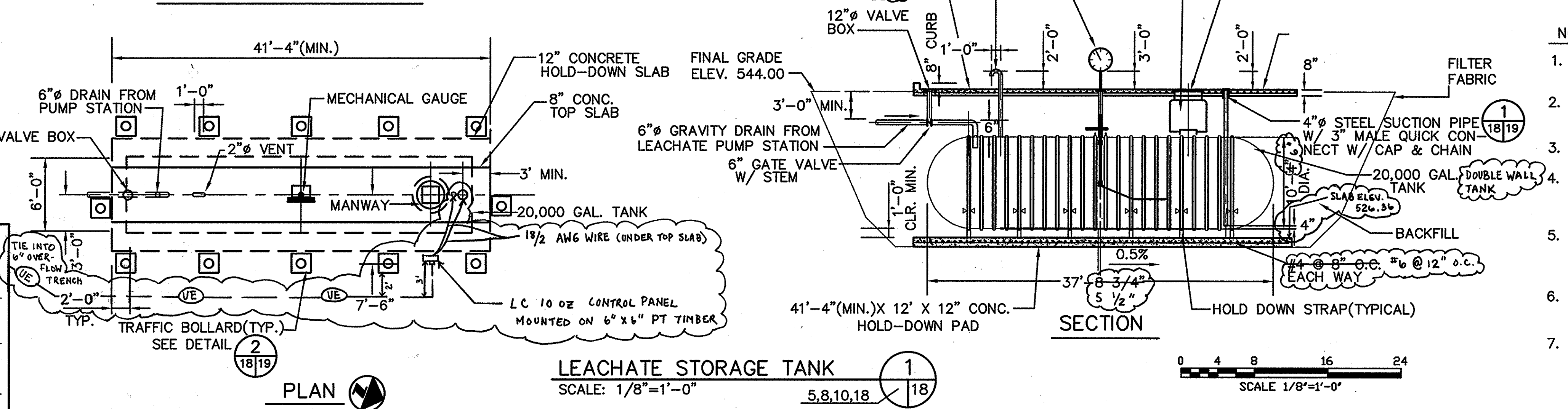
SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-347/808 16-878/215 10-891/314		TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING		SEWER CODE PRIVATE, EXISTING	
CENSUS TR. 60-30			

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 10/30/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

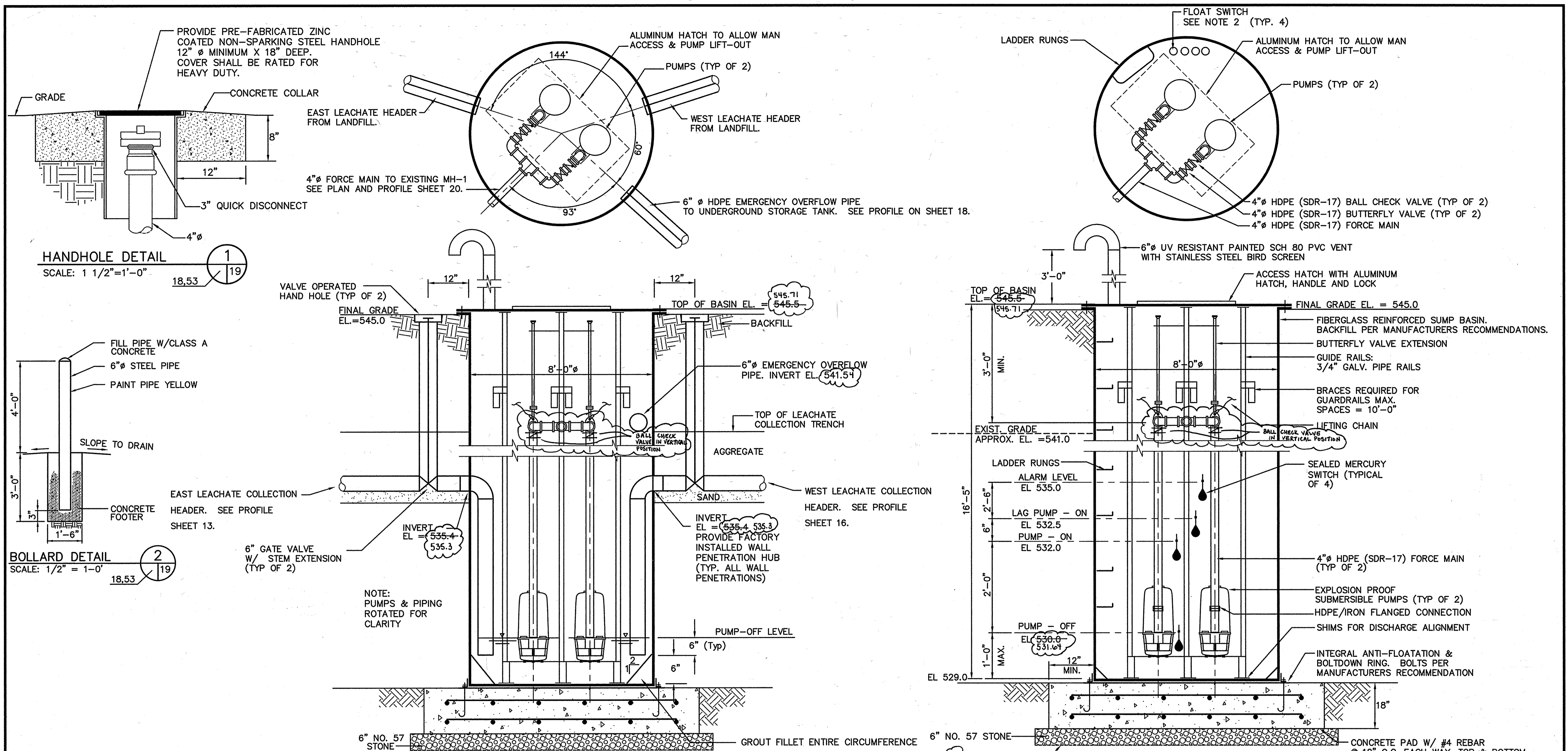
*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>[Signature]</i> 10/30/97 DIRECTOR OF PUBLIC WORKS DATE		SCS ENGINEERS CONSULTING ENGINEERS 11260 ROGER BACON DRIVE SUITE 300 RESTON, VIRGINIA 22090 PH. (703) 471-6150 FAX. (703) 471-6676				DES. RTT, FDB DRN. FTB, EGC CHK. PAM DATE: 10-30-97 BY NO. REVISION DATE		LEACHATE FACILITY LAYOUT AND DETAILS		ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE CAPITAL PROJECT NO. C-0190-N 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		SCALE: AS NOTED SHEET 18 OF 18
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M: 285077.01 FINAL PLAN2, GRAVPRO, L-TANK, PSMOTES, PUMPSPEC, SYSTEMCURVE, SIGN

SDP-97-128



M: 285077.01 FINAL

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/806 16-878/215 10-891/314	ZONE PEC	TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

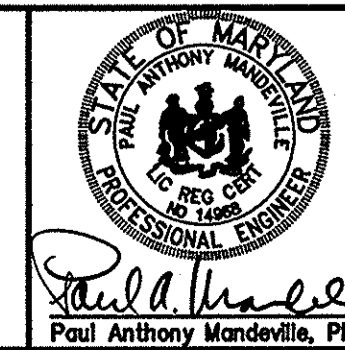
*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES.	RTT	6			
DRN.	FDB	3			
CHK.	PAM	3			
DATE: 10-30-97	BY	NO.	REVISION	DATE	

LEACHATE PUMP STATION DETAILS

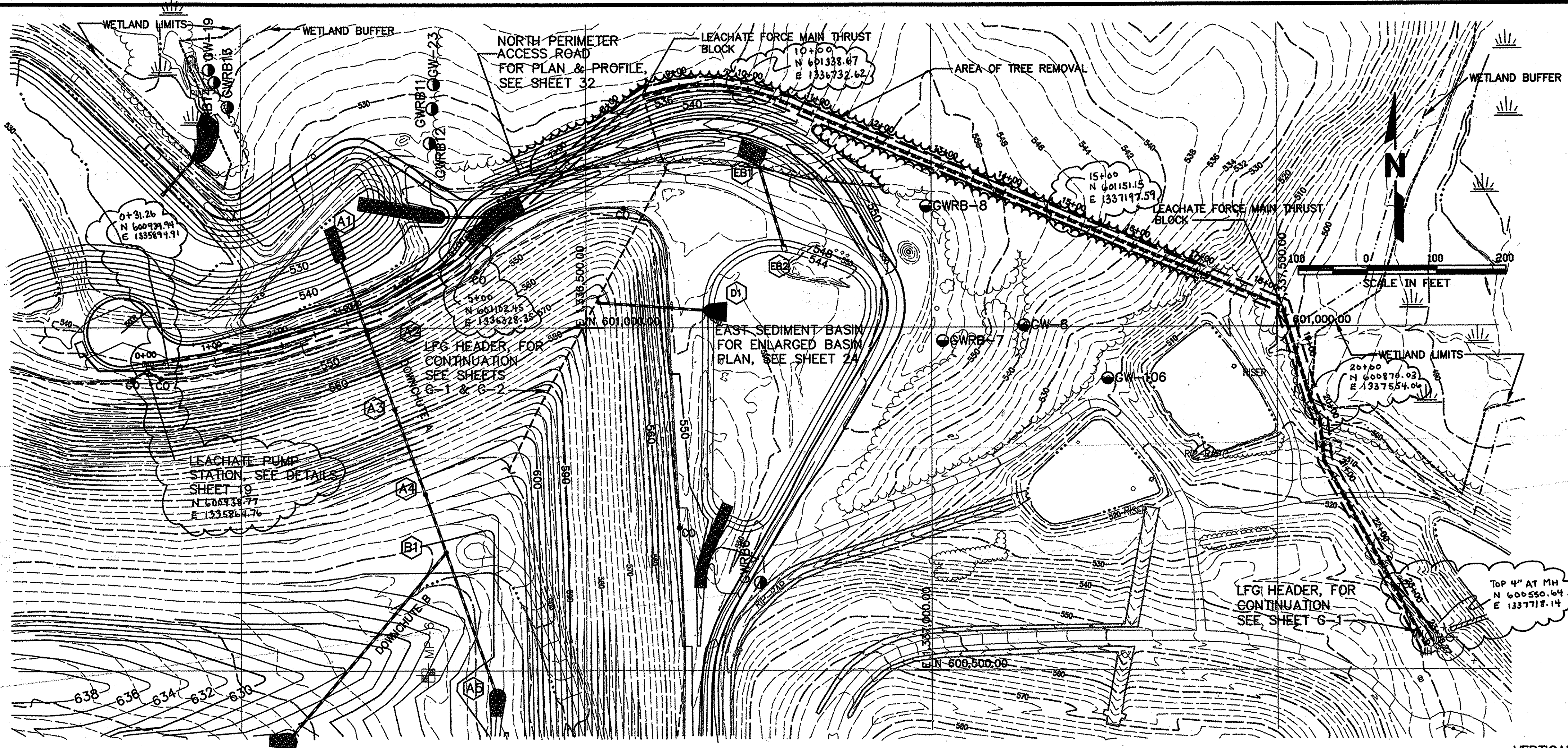
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

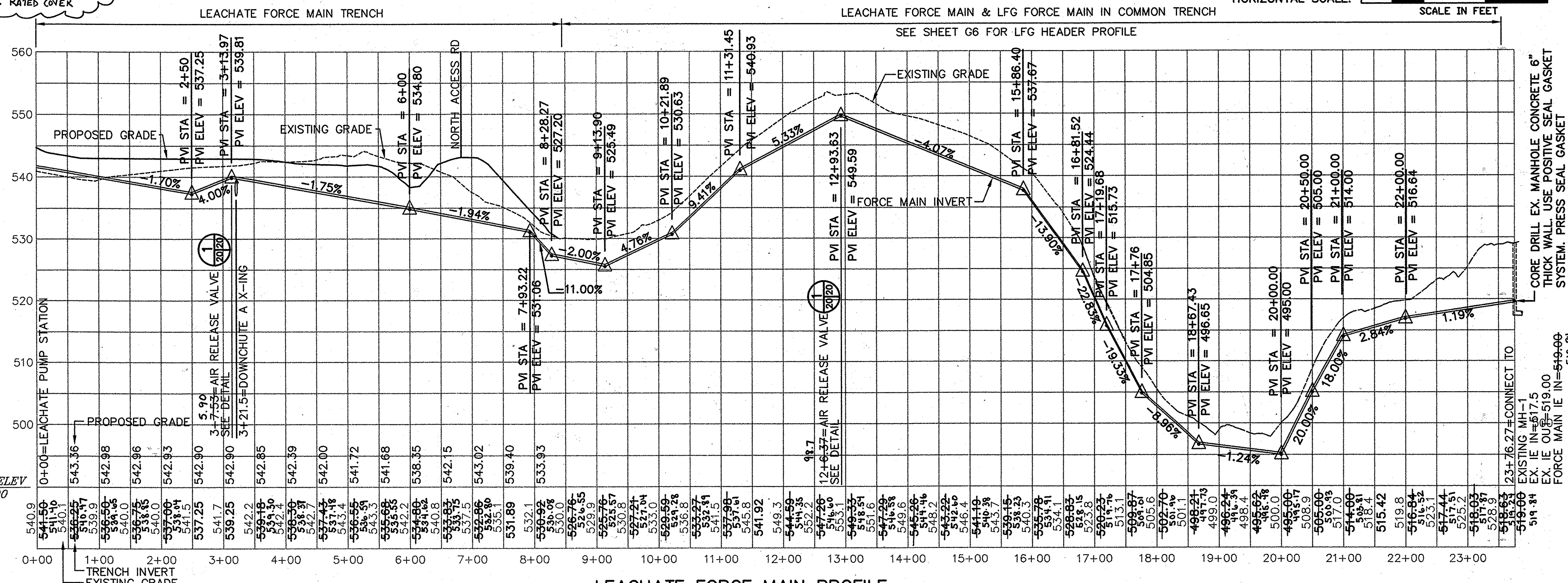
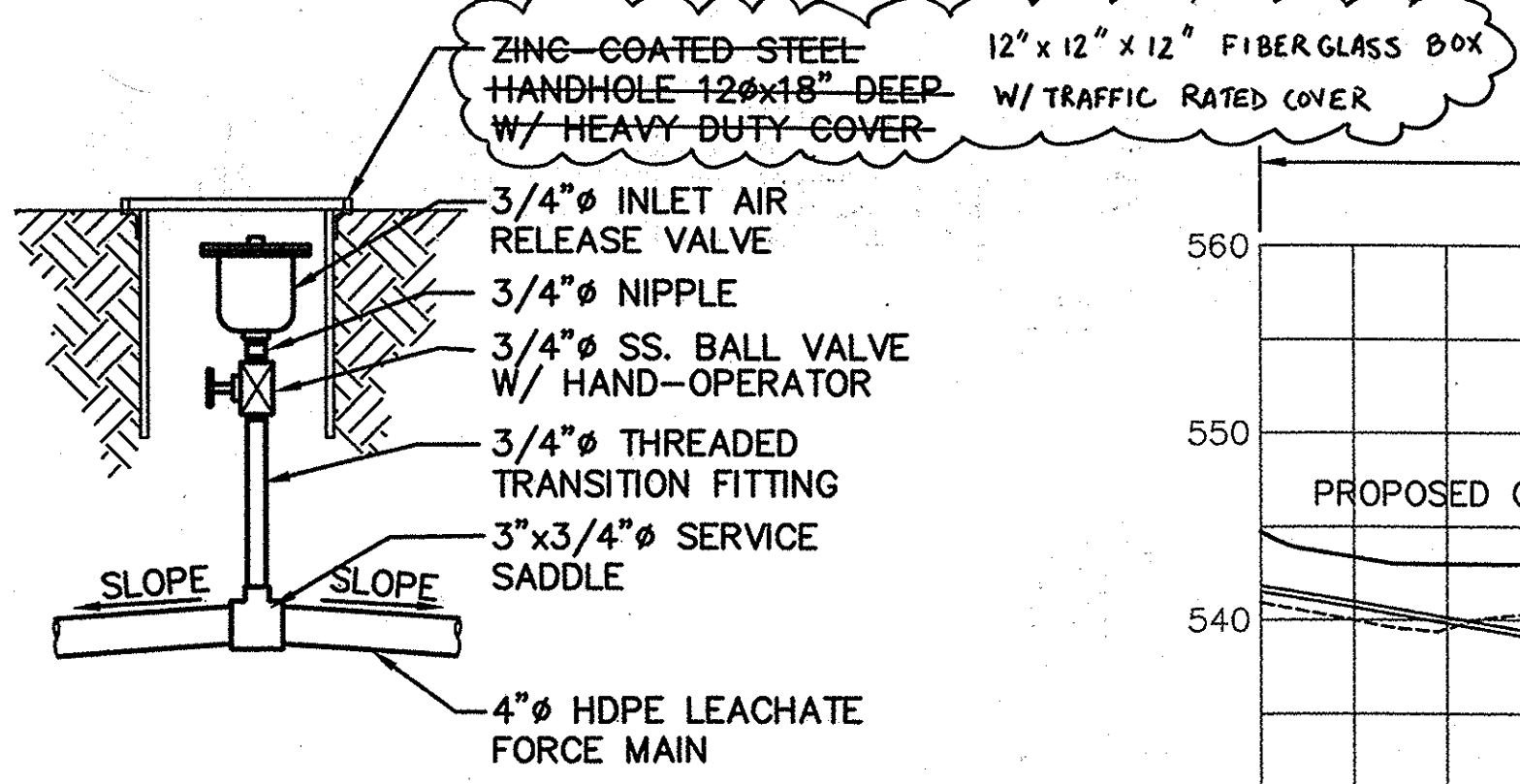
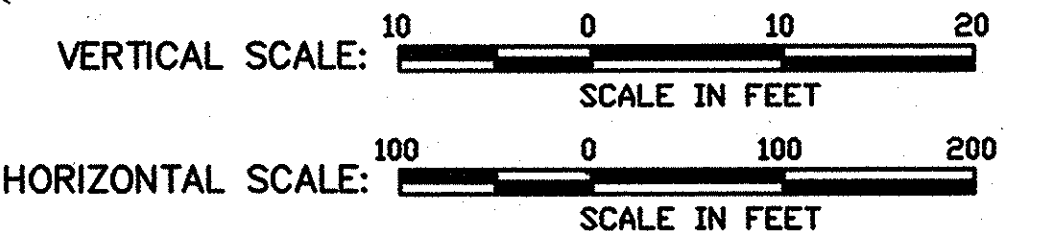
SCALE:  
AS NOTED

SHEET  
19 OF 131

SDP-97-128



LEACHATE FORCE MAIN PLAN



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/806 16-878/215 10-691/314		ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

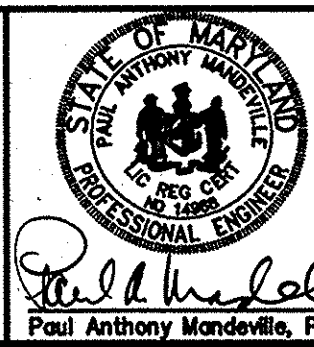
DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

Director: *[Signature]* DATE: 11/6/97  
 Chief, Development Engineering Division: *[Signature]* DATE: 10/21/97  
 Chief, Division of Land Development: *[Signature]* DATE: 11/3/97

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 10/30/97  
 Chief, Bureau of Waste Management: *[Signature]* DATE: 10/30/97

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



DES. RTT, EGC	[Signature]	DATE: 10-30-97
DRN. EGC	[Signature]	
CHK. PAM	[Signature]	
BY	[Signature]	
NO.	[Signature]	
REVISION		
DATE		

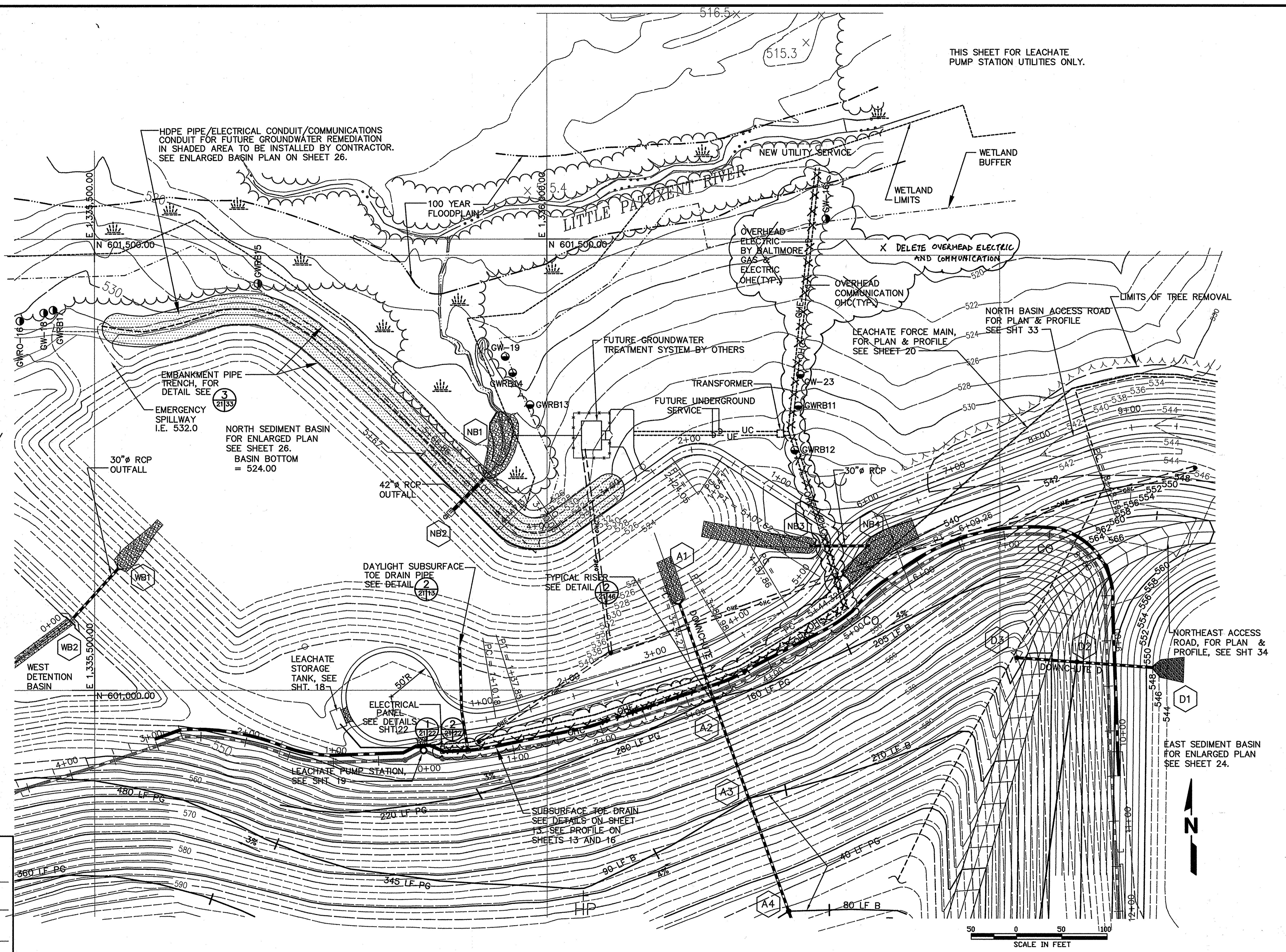
LEACHATE FORCE MAIN  
PLAN & PROFILE

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N



THIS SHEET FOR LEACHATE PUMP STATION UTILITIES ONLY.

- LEGEND**
- GW-102 GROUNDWATER WELLS(EXIST.)
  - ⊕ MP-3 LFG PROBES(TO BE REMOVED) SEE SHEET G2
  - ⊕ LFG-6 LFG MONITORING WELLS(EXIST.)
  - PROPERTY LINE
  - CONFIRMED LIMITS OF WASTE
  - B = BERM
  - PG = PIPE GUTTER
  - HP = HIGH POINT
  - (B1) DRAINAGE STRUCTURE DESIGNATION
  - NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPES
  - NEW LEACHATE COLLECTION TRENCH
  - NEW LEACHATE FORCEMAIN
  - EXISTING TREE LINE
  - EXISTING SCRUB BRUSH VEGETATION
  - PROPOSED TREE LINE
  - WETLAND LIMITS
  - WETLANDS
  - LIMITS OF GEOMEMBRANE CAP
  - CO = CLEAN OUT
  - CONDUIT AREA
  - DAYLIGHT SUBSURFACE TOE DRAIN PIPE
  - WETLAND BUFFER
  - LIMITS OF TREE REMOVAL
  - LIMITS OF DISTURBANCE



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
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WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*David R. Smith* 11/3/97  
DIRECTOR DATE

*John J. O'Hara* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

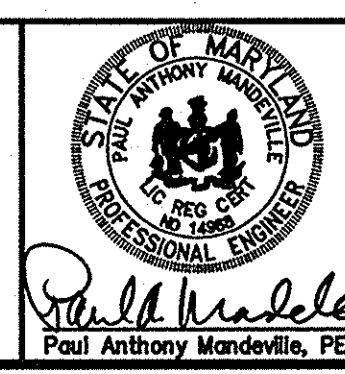
*Wanda Hamilton* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James P. Lee* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT	△			
DRN. EGC,MEH	△			
CHK. PAM	△			
DATE: 10-30-97	BY	NO.	REVISION	DATE

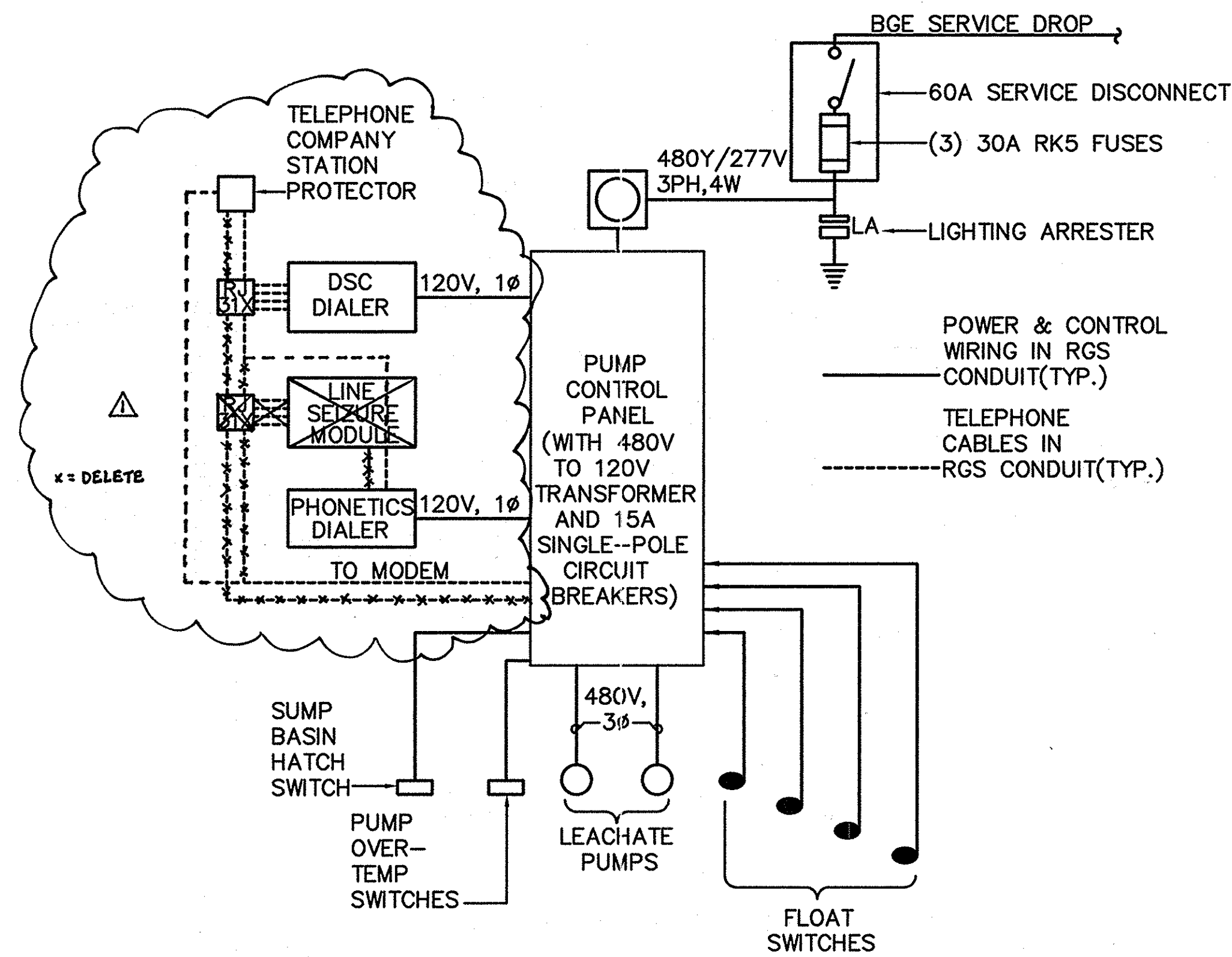
LEACHATE PUMP STATION  
ELECTRICAL SITE PLAN

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=50'  
SHEET  
21 OF 1813

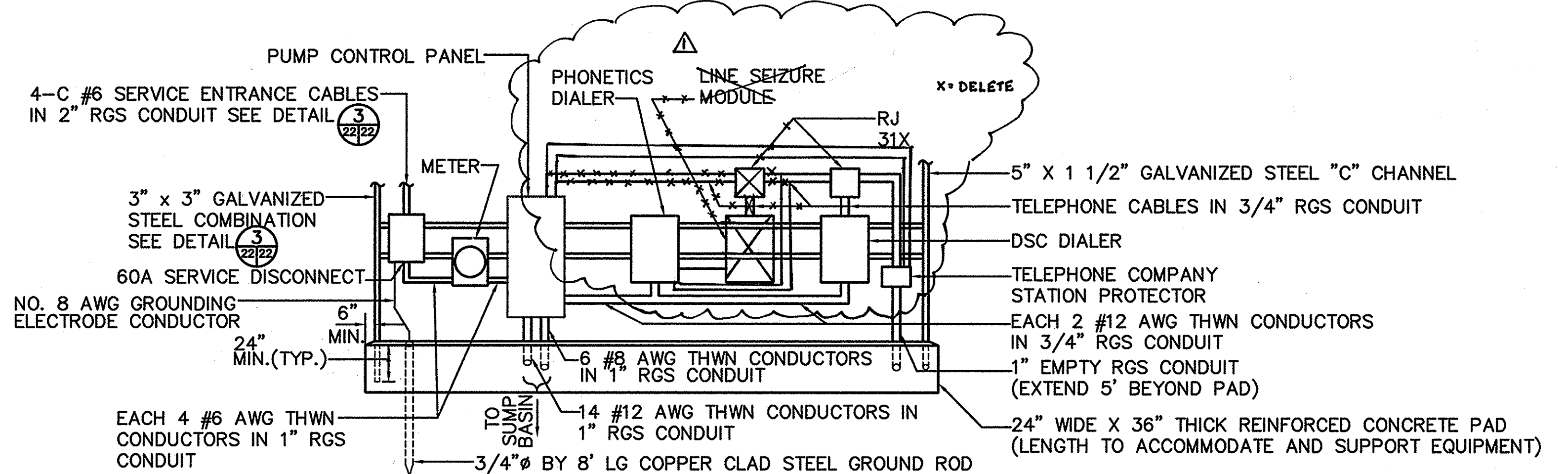
SDP-97-128



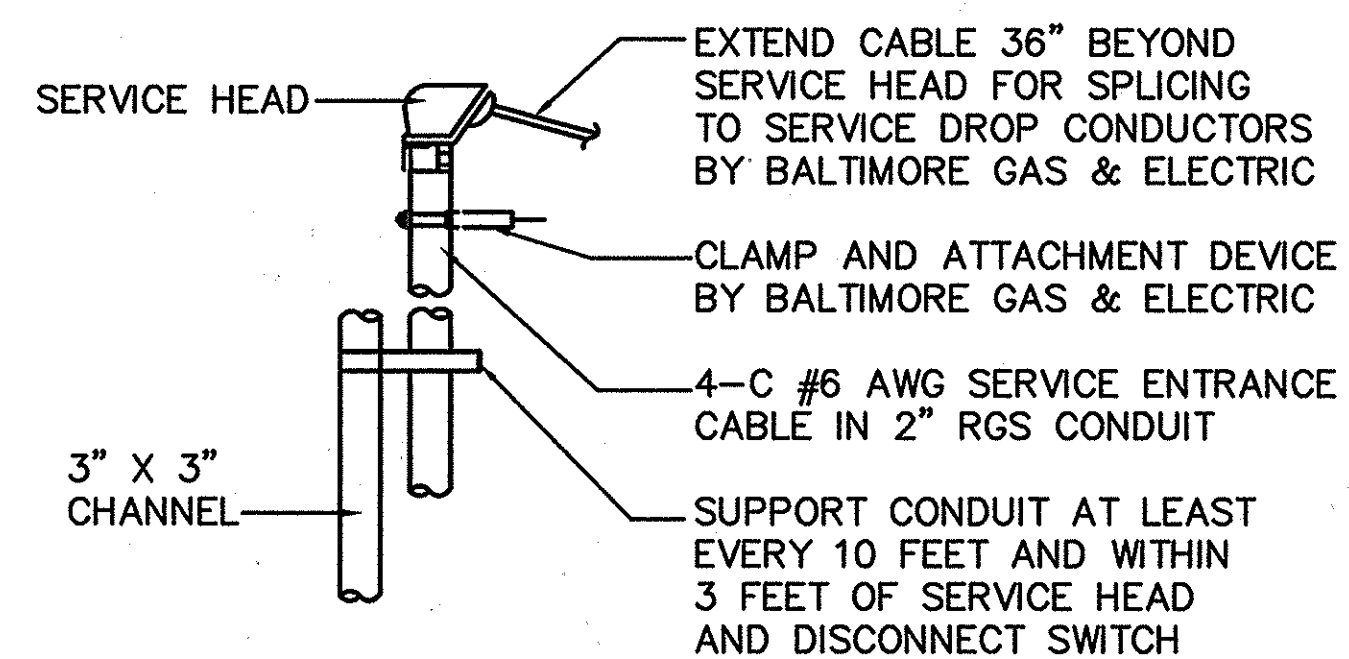
**SINGLE LINE DIAGRAM DETAIL 1**  
NO SCALE

**NOTES:**

- BALTIMORE GAS & ELECTRIC WILL INSTALL SERVICE CABLE FROM THEIR POWER SOURCE TO THE SERVICE HEAD
- EQUIPMENT SHALL BE ATTACHED TO THE CHANNELING WITH 3/4" GALVANIZED BOLTS, NUTS AND WASHERS.
- CONTRACTOR SHALL OBTAIN METER BASE FROM BALTIMORE GAS & ELECTRIC AND INSTALL IT.



**ELECTRICAL RISER DIAGRAM DETAIL 2**  
NO SCALE



**DETAIL 3**  
NO SCALE

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/806 16-878/215 10-891/314		ZONE PEC	TAX/ZONE MAP 10 & 16
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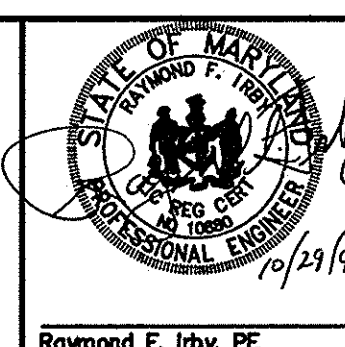
DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

<i>[Signature]</i> DIRECTOR	11/13/97 DATE
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	11/30/97 DATE
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	11/13/97 DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

<i>[Signature]</i> DIRECTOR OF PUBLIC WORKS	10/30/97 DATE	<i>[Signature]</i> CHIEF, BUREAU OF WASTE MANAGEMENT	10/30/97 DATE
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**SCS ENGINEERS**  
CONSULTING ENGINEERS  
11260 ROGER BACON DRIVE  
SUITE 300  
RESTON, VIRGINIA 22090  
PH. (703) 471-6150  
FAX. (703) 471-6676



DES.	RFI		
DRN.	MEH		
CHK.	PAM		
DATE:	10-30-97	BY:	NO.
REVISION		DATE	
1. MODIFICATION TO ELECTRICAL DIAGRAMS		8/26/98	

**LEACHATE PUMP STATION  
ELECTRICAL DETAILS**

**ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE**  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED

SHEET  
22 OF 131

ELEC-SING-B M:\295077.01\FINAL\

ELEC-SING-B

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 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 J. O'Hara, DATE: 10/30/97

( ) 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: Paul A. Mandeville, DATE: 10/30/97

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.

USDA - NATURAL RESOURCES CONSERVATION SERVICE, DATE: 10/30/97

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

HOWARD CO. SOIL CONSERVATION DISTRICT, DATE: 10/30/97

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 of Engineer: Michael R. Johnson, PE NO. 17650, DATE: 10/10/01

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.

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.

SPECIFICATIONS FOR SEDIMENT CONTROL AND POND CONSTRUCTION

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.

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", AND FROZEN OR OTHER OBJECTIONABLE MATERIALS.

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" THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL.

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.

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.

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.

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.

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.

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 ON 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.

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.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY 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 MARYLAND SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE 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.

CORRUGATED HDPE DRAINAGE PIPE- ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED HDPE DRAINAGE PIPE:

1. BASIC MATERIALS:

A. PIPE AND FITTINGS: THE PIPE AND FITTINGS SHALL BE MADE OF HIGH DENSITY, HIGH MOLECULAR WEIGHT POLYETHYLENE PIPE MATERIAL MEETING THE REQUIREMENTS OF TYPE III, CLASS C, CATEGORY 5, GRADE P34, AS DEFINED IN ASTM D 1248 STANDARD SPECIFICATION FOR POLYETHYLENE PLASTICS MOLDING AND EXTRUSION MATERIALS.

B. OTHER PIPE MATERIALS: MATERIALS OTHER THAN THOSE SPECIFIED IN SECTION A MAY BE USED AS PART OF THE PROFILE CONSTRUCTION E.G. AS A CORE TUBE TO SUPPORT THE SHAPE OF THE PROFILE DURING PROCESSING.

C. GASKETS: GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F 477 AND BE MOLDED INTO A CIRCULAR FORM OR EXTRUDED TO THE PROPER SECTION AND THEN SPliced INTO CIRCULAR FORM AND SHALL BE MADE OF A PROPERLY CURED HIGH GRADE ELASTOMERIC COMPOUND.

D. LUBRICANT: THE LUBRICANT USED FOR ASSEMBLY OF GASKET JOINTS SHALL HAVE NO DETRIMENTAL EFFECT ON THE GASKET OR ON THE PIPE.

E. THERMAL WELDING MATERIAL: THE MATERIAL USED FOR THERMALLY WELDED PIPE JOINTS SHALL MEET THE REQUIREMENTS ESTABLISHED FOR THE BASIC PIPE MATERIALS AS DETAILED IN SECTION A.

2. REQUIREMENTS:

A. APART FROM THE BUILT-IN VOIDS AND HOLLOW ASSOCIATED WITH SOME PROFILE WALL DESIGNS, THE PIPE AND FITTINGS SHALL BE HOMOGENEOUS THROUGHOUT AND FREE FROM VISIBLE CRACKS, HOLES, FOREIGN INCLUSIONS OR OTHER INJURIOUS DEFECTS.

B. DIMENSIONS: PIPE DIMENSIONS- THE AVERAGE INSIDE DIAMETER AND THE MINIMUM WALL THICKNESS OF THE WATERWAY OF THE PIPE SHALL COMPLY WITH THE VALUES SHOWN IN TABLE 1.

C. FLATTENING: THERE SHALL BE NO EVIDENCE OF SPLITTING, CRACKING OR BREAKING WHEN THE PIPE IS TESTED IN ACCORDANCE WITH SECTION 3C (FLATTENING).

D. RING STIFFNESS CONSTANT: NORMAL RING STIFFNESS CONSTANT (RSC) VALUES FOR THE PIPE BETWEEN BELL AND SPIGOT SECTIONS SHALL COMPLY WITH THE MINIMUM VALUES SHOWN IN TABLE 2 WHEN TESTED IN ACCORDANCE WITH SECTION 3C (RING STIFFNESS).

E. JOINT TIGHTNESS BELL AND SPIGOT CONNECTIONS WHETHER GASKET STYLE OR THERMAL WELD TYPE WHEN JOINED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS SHALL SHOW NO SIGN OF LEAKAGE WHEN TESTED IN ACCORDANCE WITH 3C (JOINT TIGHTNESS).

PIPE JOINTS SHALL BE BELL AND SPIGOT TYPE, DESIGNED TO REMAIN WATER TIGHT UNDER BOTH AN INTERNAL AND EXTERNAL HYDROSTATIC PRESSURE OF 10.8 POUNDS PER SQUARE INCH.

TABLE 2: MINIMUM RING STIFFNESS CONSTANT (RSC) VALUES

Table with 2 columns: NOMINAL PIPE CLASSIFICATION, RSC (LBS./FT. OF LENGTH). Values: 63, 100.

3. INSPECTION AND TESTING:

A. CERTIFICATION: AS THE BASIS OF THE ACCEPTANCE OF THE PRODUCT, THE MANUFACTURER SHALL FURNISH A CERTIFICATE OF CONFORMANCE TO THESE SPECIFICATIONS UPON REQUEST.

B. PHYSICAL TEST REQUIREMENTS: SAMPLING- THE SELECTION OF THE SAMPLE(S) PRIOR TO AND DURING TESTS SHALL BE AS AGREED UPON BY THE PURCHASER AND THE MANUFACTURER.

CONDITIONING- CONDITIONING OF SAMPLES PRIOR TO AND DURING TESTS SHALL BE AS AGREED UPON BY THE PURCHASER AND MANUFACTURER. IN CASE OF NO PRIOR AGREEMENT, THE CONDITIONING PROCEDURE USED BY THE MANUFACTURER SHALL BE DEEMED ADEQUATE.

RETEST AND REJECTION- IF THE RESULTS OF ANY TESTS DO NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION, THE TESTS MAY BE CONDUCTED AGAIN IN ACCORDANCE WITH AGREEMENT BETWEEN PURCHASER AND SELLER.

C. TEST METHODS: RING STIFFNESS CONSTANT- DETERMINE THE RSC BY DIVIDING THE PARALLEL PLATE LOAD, IN POUNDS PER FOOT OF PIPE, BY THE RESULTING DEFLECTION, IN PERCENT, AT 3% DEFLECTION.

FLATTENING- FLATTEN THREE SPECIMENS OF PIPE, PREPARED IN ACCORDANCE WITH THE PRECEDING SECTION, IN A SUITABLE PRESS UNTIL THE INTERNAL DIAMETER HAS BEEN REDUCED TO 40% OF THE ORIGINAL INSIDE DIAMETER OF THE PIPE.

JOINT TIGHTNESS- TEST IN ACCORDANCE WITH ASTM D 3212 WITH THE EXCEPTION THAT THE SHEAR LOAD TRANSFER BARS AND SUPPORTS SHALL BE REPLACED WITH 6" WIDE SUPPORT BLOCKS THAT CAN BE EITHER FLAT OR CONTOURED TO CONFORM TO THE PIPE'S OUTER CONTOUR.

NOTE: RING STIFFNESS CONSTANT, FLATTENING AND JOINT TIGHTNESS TESTS ARE NOT INTENDED TO BE ROUTINE QUALITY CONTROL TESTS BUT RATHER TO QUALIFY PIPE TO A SPECIFIED LEVEL OF PERFORMANCE.

TABLE 1: PIPE DIMENSIONS AND TOLERANCES

Table with 6 columns: NOMINAL ID (INS), AVERAGE ID (INS), MIN. WALL IN PIPE WATERWAY (INS), RSC CLASS 40, RSC CLASS 63, RSC CLASS 100, RSC CLASS 160.

Table with 4 columns: SUBDIVISION NAME, LOT/PARCEL, LIBER/FOLIO, WATER CODE, SEWER CODE, CENSUS TR.

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

Signatures and dates for Department of Planning and Zoning: Director (11/3/97), Chief, Development Engineering Division (10/24/97), Chief, Division of Land Development (11/3/97).

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

Signatures and dates for Department of Public Works: Director of Public Works (10/30/97), Chief, Bureau of Waste Management (10/30/97).

SCS ENGINEERS CONSULTING ENGINEERS

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



Table with 6 columns: DES., RTT, DRN., SC, CHK., PAM, DATE: 10-30-97, BY, NO., REVISION, DATE.

POND CONSTRUCTION SPECIFICATIONS AND CERTIFICATIONS

3rd ELECTION DISTRICT

ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE CAPITAL PROJECT NO. C-0190-N

HOWARD COUNTY, MARYLAND

SCALE: AS NOTED

SHEET 23 of 131

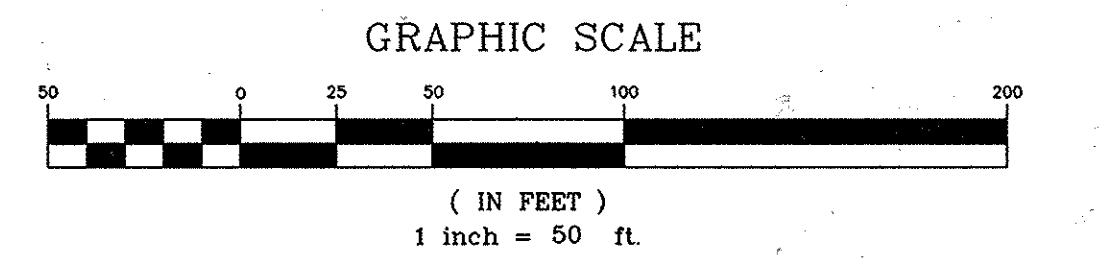
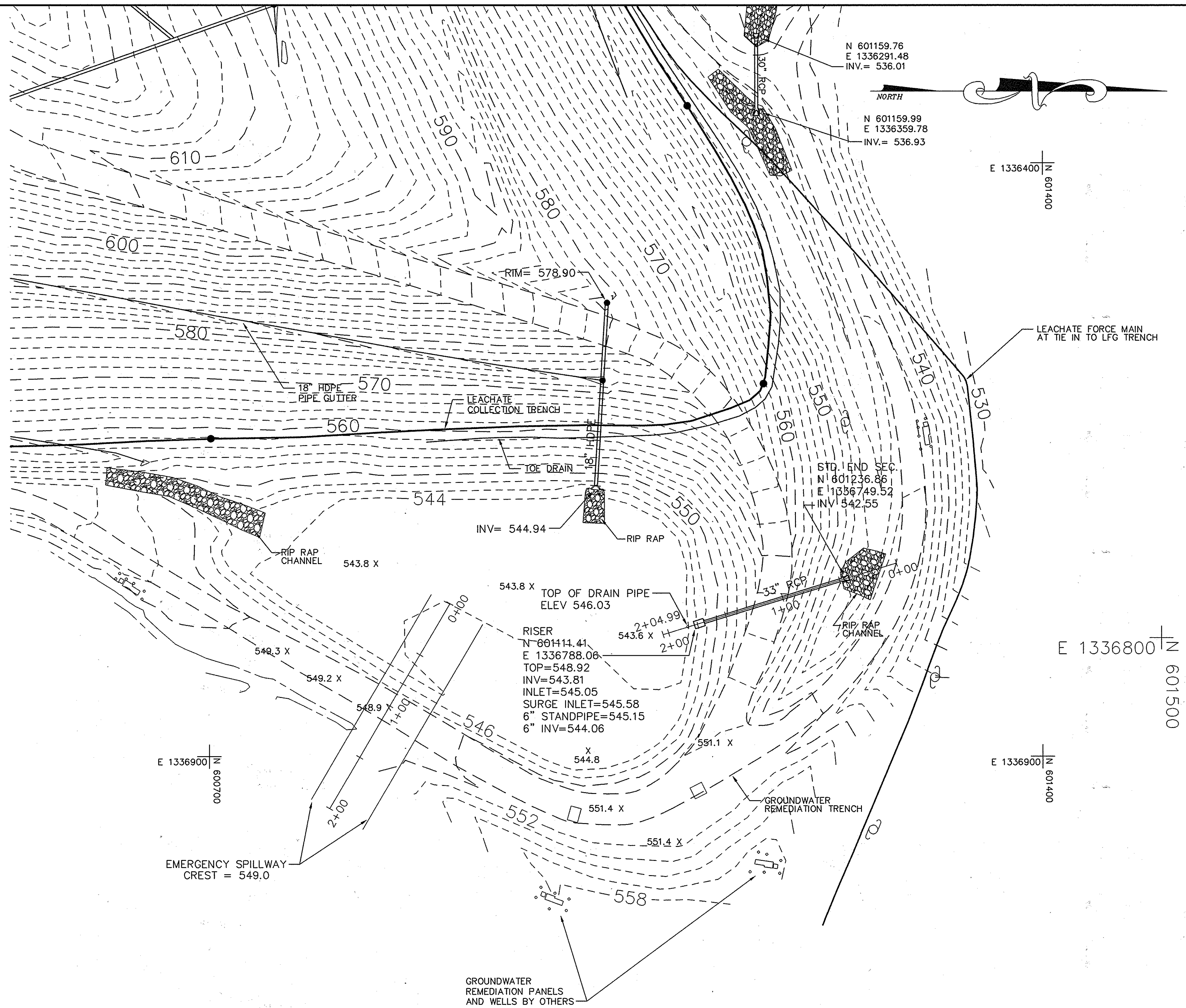
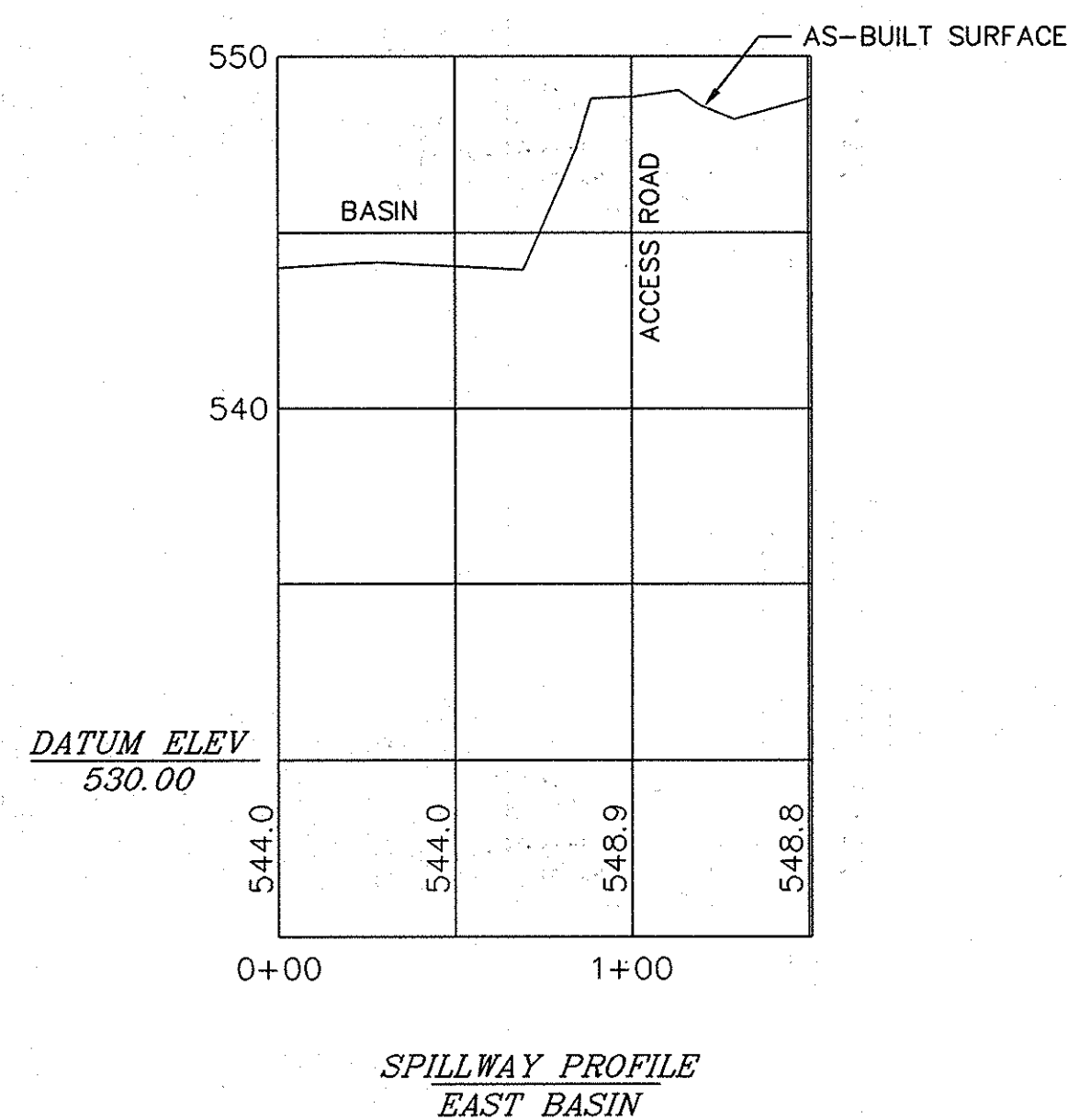
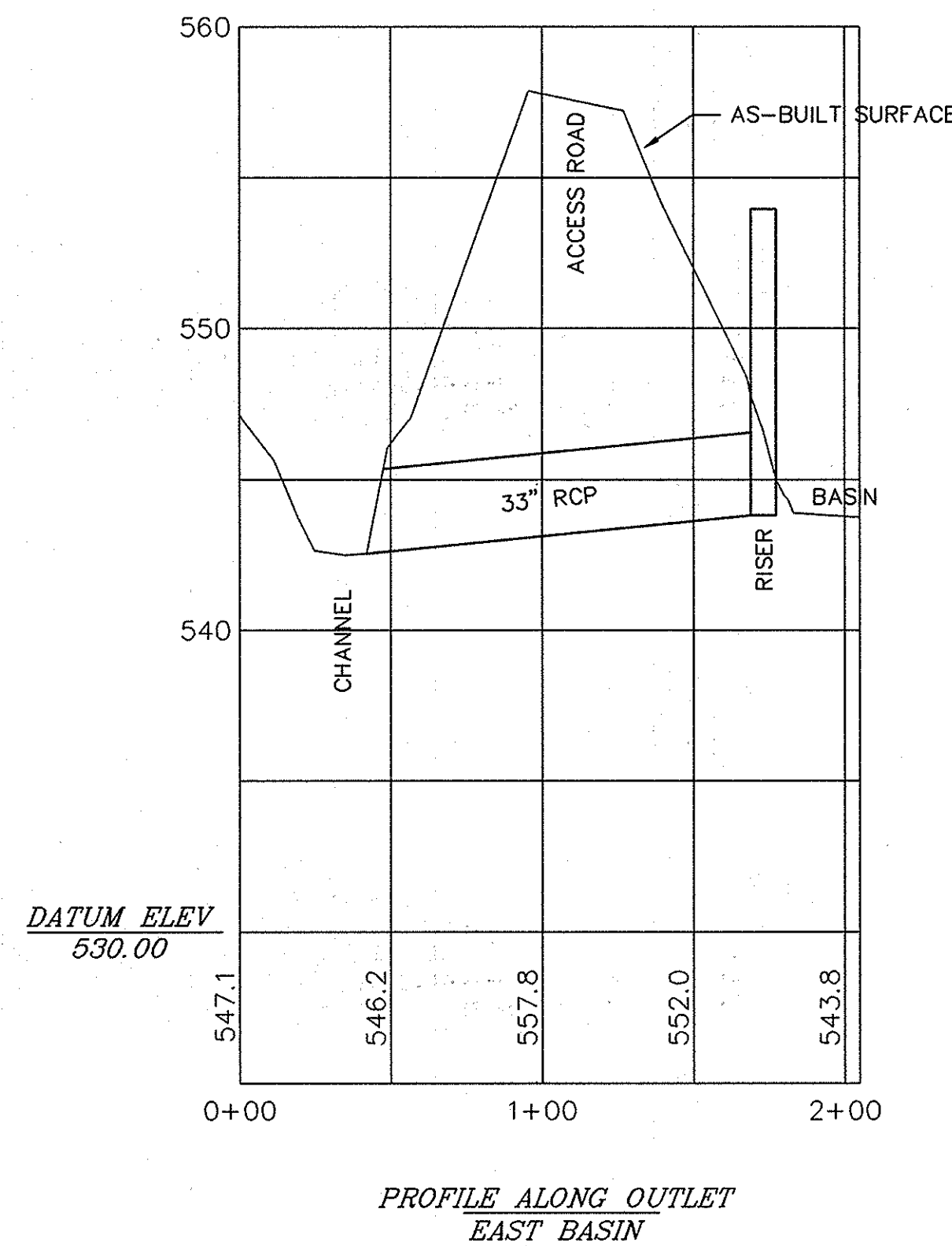
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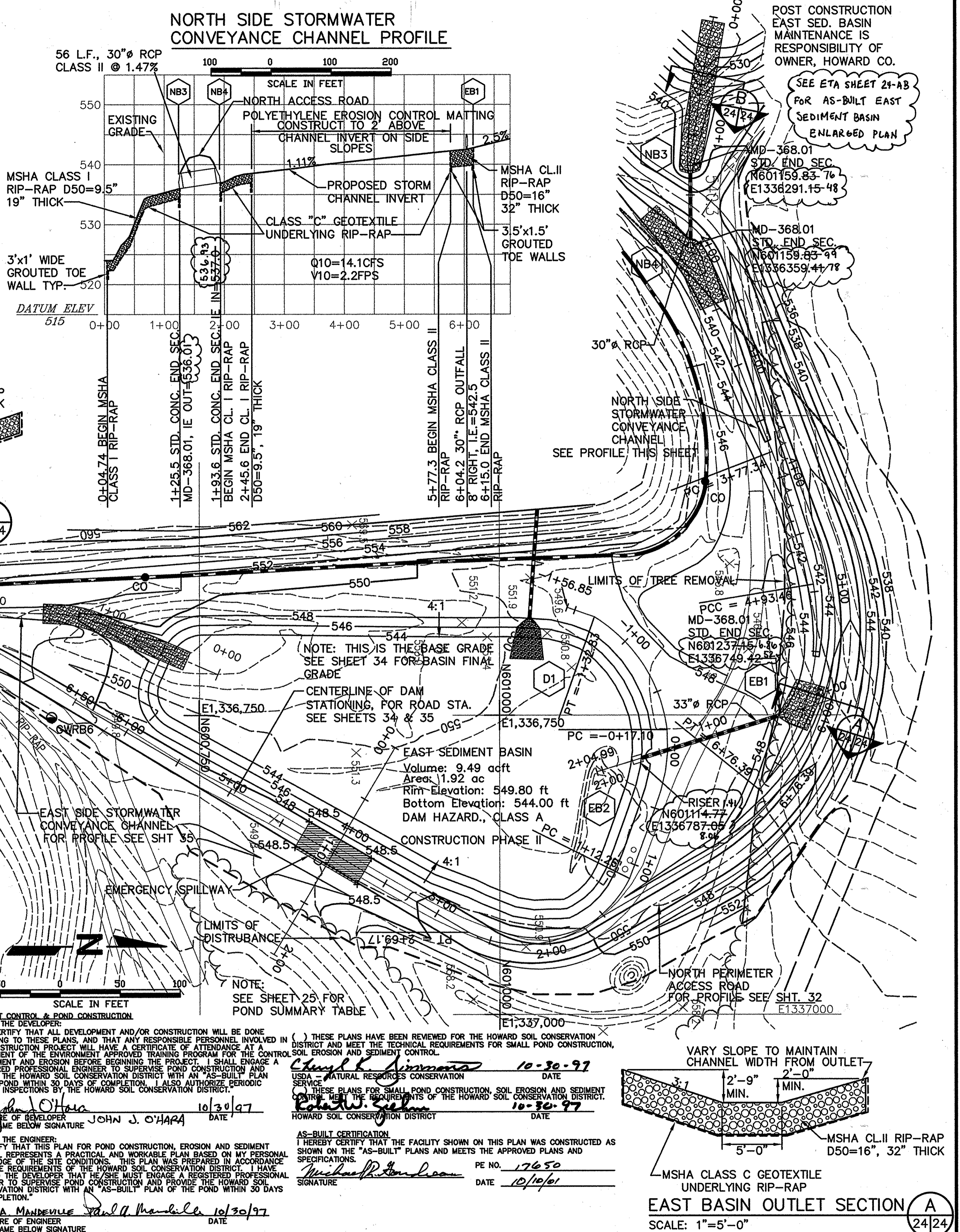
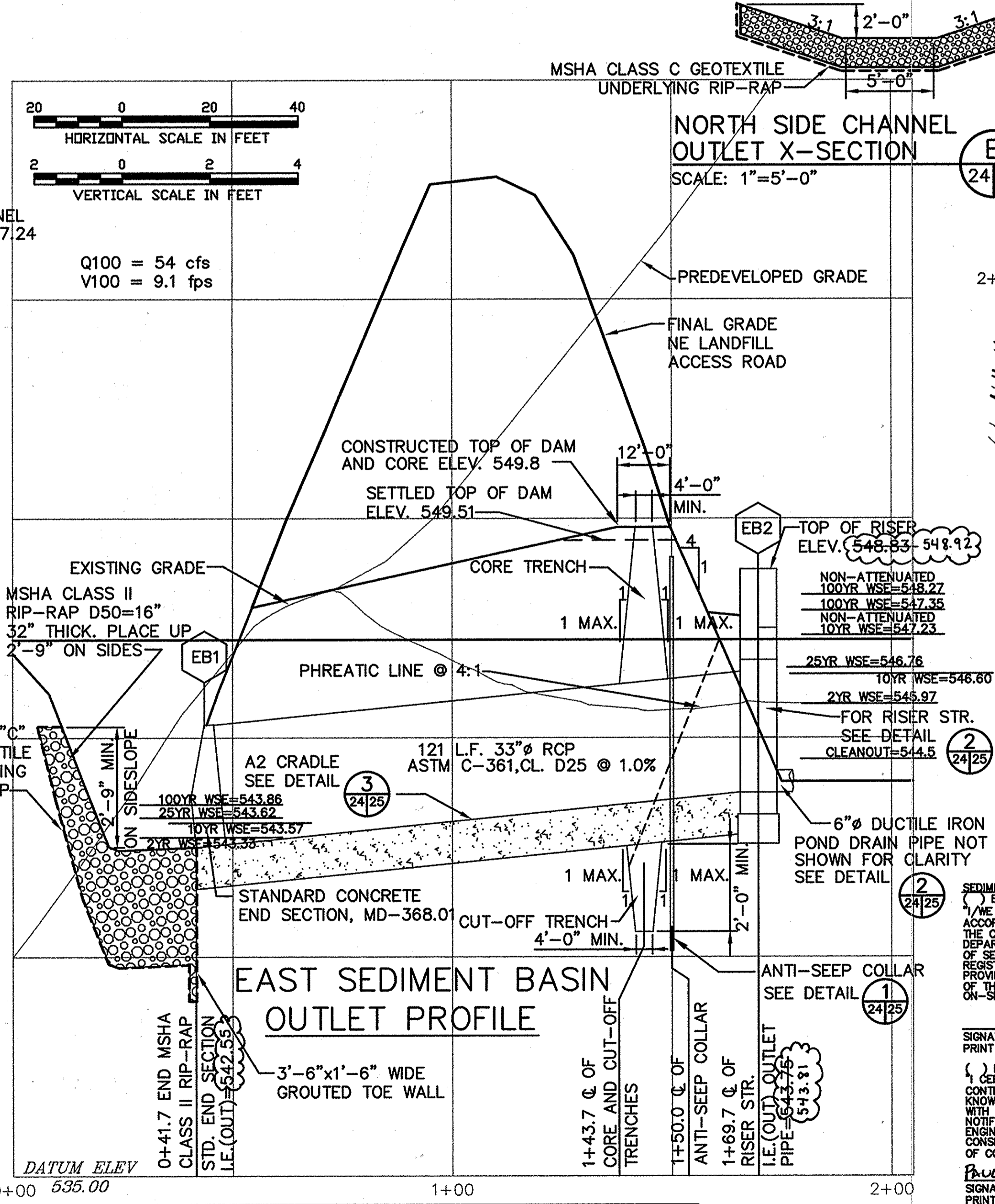
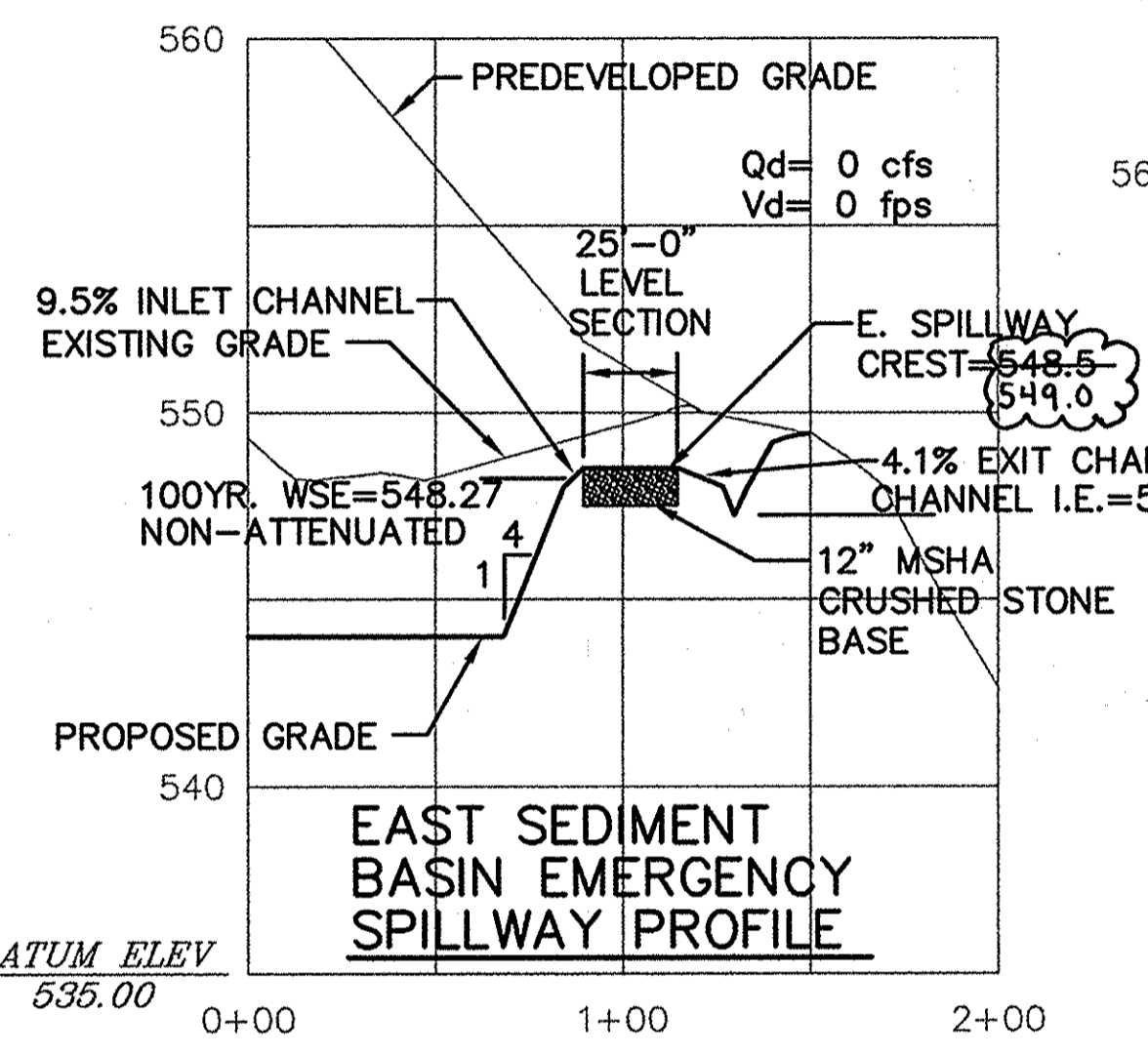
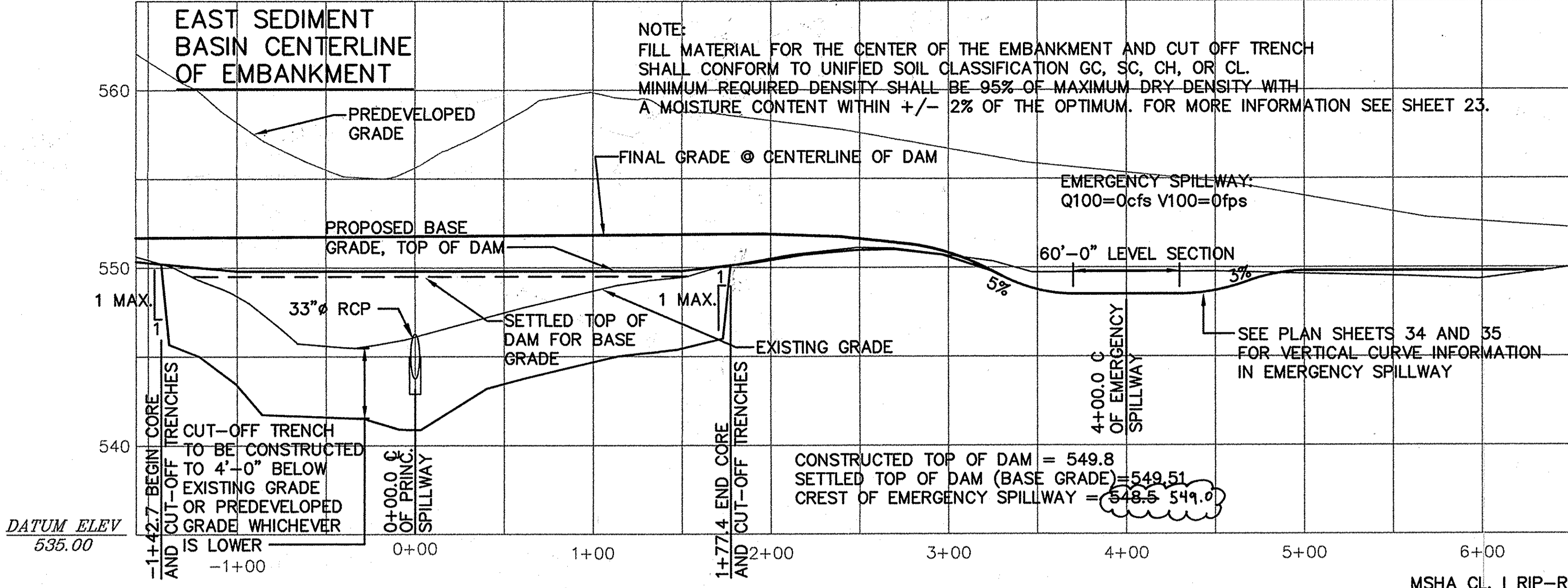


DESIGNED BY:		DATE		REVISIONS	
DRAWN BY:	TWH	DATE:	2-26-00	DATE:	BY:
CHECKED BY:		DATE:		DATE:	BY:
APPROVED BY:		DATE:		DATE:	BY:
				DESCRIPTION:	
				ADDED PROFILES	
				LABEL EMERGENCY SPILLWAY.	

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
ENGINEERS \* PLANNERS \* SURVEYORS  
3458 ELLICOTT CENTER DRIVE, SUITE 101  
ELLICOTT CITY, MARYLAND 21043  
BALTO. (410)461-9920 FAX (410)750-8565



EAST BASIN AS-BUILT			
<b>ALPHA RIDGE LANDFILL CELL CLOSURE</b>			
HOWARD COUNTY	CONTRACT NO.:	DATE:	MARYLAND
SCALE: 1"=50'	98301.10	2-27-2000	SHEET 24-AB



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 SUCCESSORS 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 HOWARD 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	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220,11	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
10-847/806 16-878/215 10-891/314	PEC	10 & 16
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*James A. Lewis* 11/3/97  
DIRECTOR DATE

*John J. O'Hara* 10/30/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

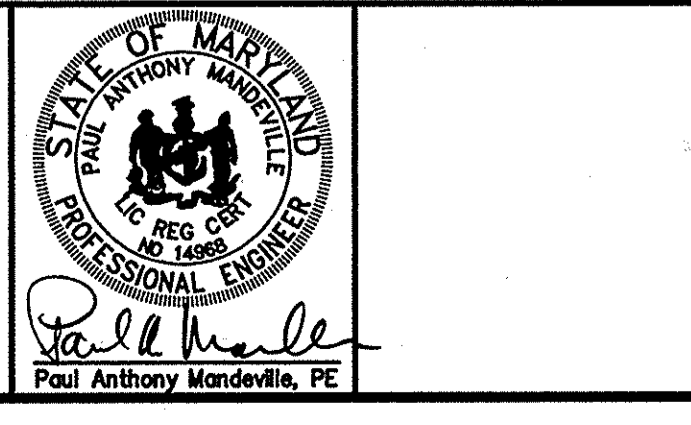
*Cindy Hamilton* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James A. Lewis* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. AST,RTT	6
DRN. AST,EGC	6
CHK. PAM	6
DATE: 10-30-97	BY NO.
REVISION	DATE

EAST SEDIMENT BASIN  
ENLARGED PLAN AND PROFILES

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

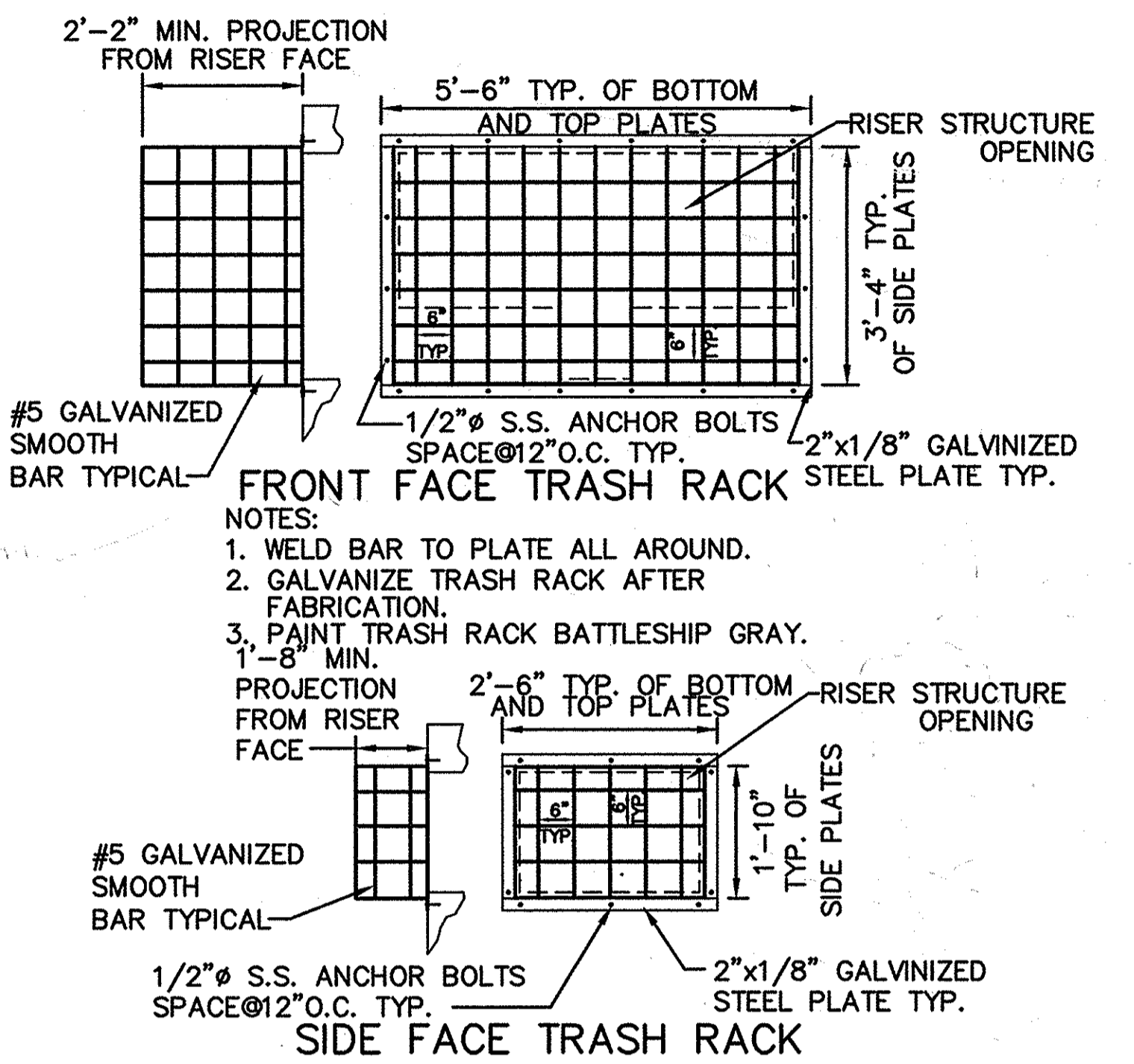
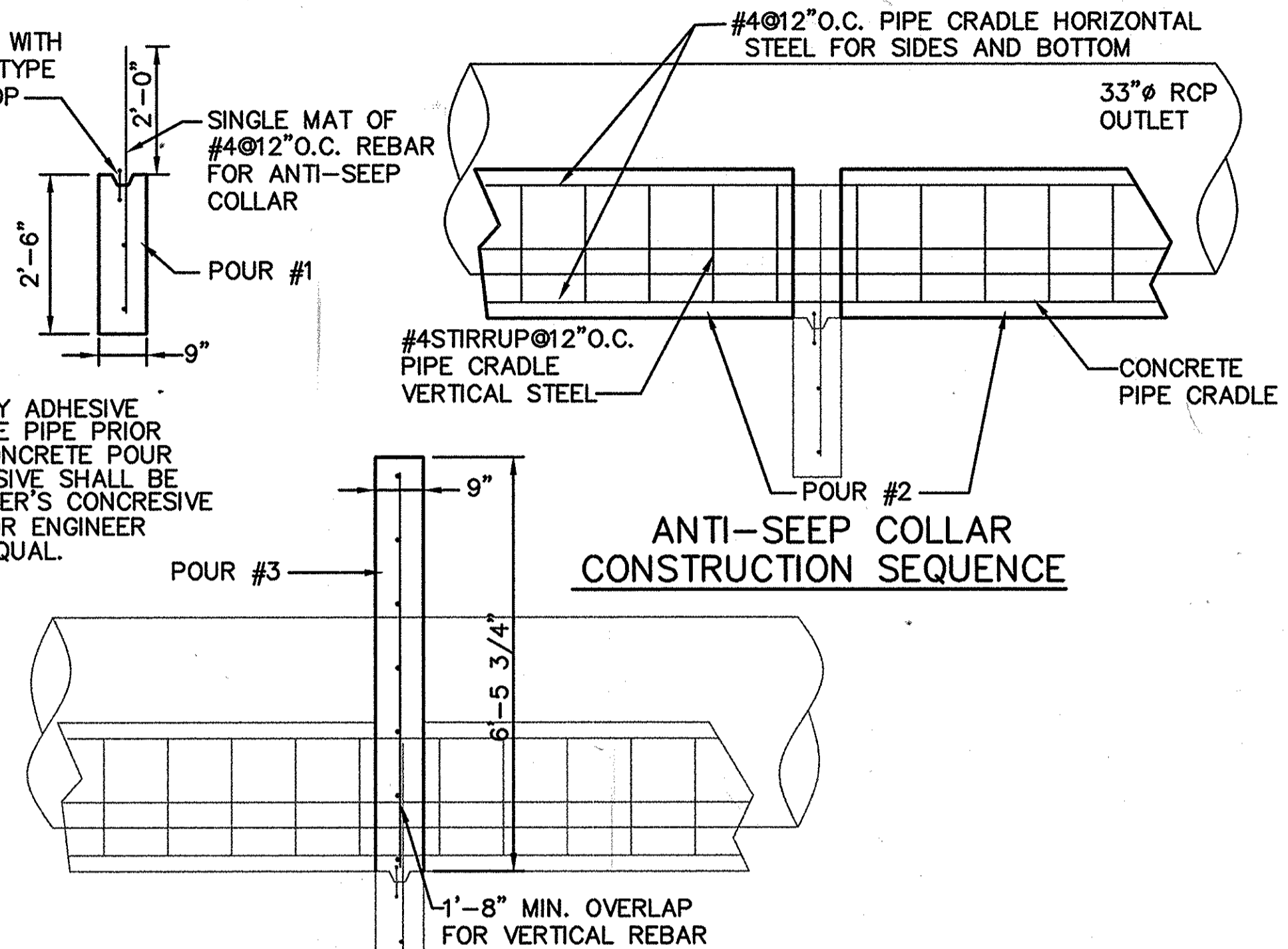
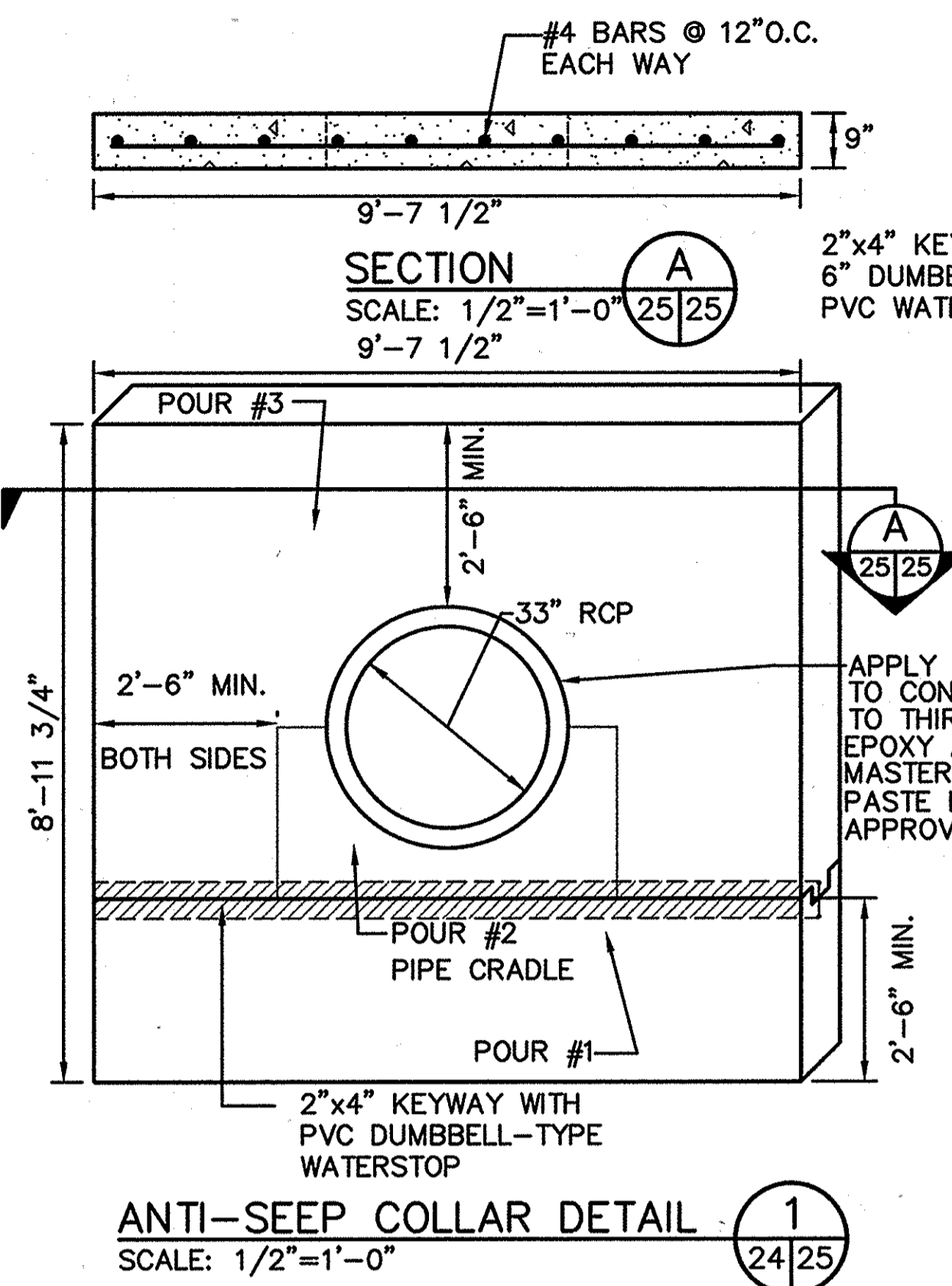
SCALE: AS NOTED  
SHEET 24 OF 133

M: 295077.01 VFINAL EBSN-B EBSN-EBCLDAM,PRF-EBSN,PRF-RDPP, XS-RDPP, XS-EBO

POND	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.	CORE TRENCH		CUT-OFF TRENCH		WATER SURFACE ELEV.			
																TOP WIDTH FT.	SIDE SLOPES	BOT. WIDTH FT.	SIDE SLOPES	2 YR.	10 YR.	25 YR.	100 YR.
EAST	2'-2"	5'	546.13 546.08	6.33' x 8.33'	33	121	543.81 543.75	542.55' 542.50'	1	8.98' H. 9.63' W.	12'	549.8	549.51	544.0 543.5	60'	4'	1:1	4'	1:1	545.97	546.60	546.76	547.35

POST CONSTRUCTION EAST SEDIMENT BASIN MAINTENANCE IS RESPONSIBILITY OF OWNER, HOWARD COUNTY

- 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:  $f_c = 4,000$  psi @ 28 DAYS.



SEDIMENT CONTROL & POND CONSTRUCTION

I, THE DEVELOPER, 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: 10/30/97

I, THE ENGINEER, 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: Paul A. Mandeville, Date: 10/30/97

USDA - NATURAL RESOURCES CONSERVATION SERVICE

I, THE ENGINEER, CERTIFY THAT 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: Robert W. Zieher, Date: 10-30-97

HOWARD SOIL CONSERVATION DISTRICT 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: Michael R. Gaudman, Date: 10/10/01

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.

SUBDIVISION NAME	LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220,11	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
10-847/806	PEC	10 & 16
16-878/215		
10-691/314		
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

Signature: [Signature], Date: 11/3/97  
DIRECTOR

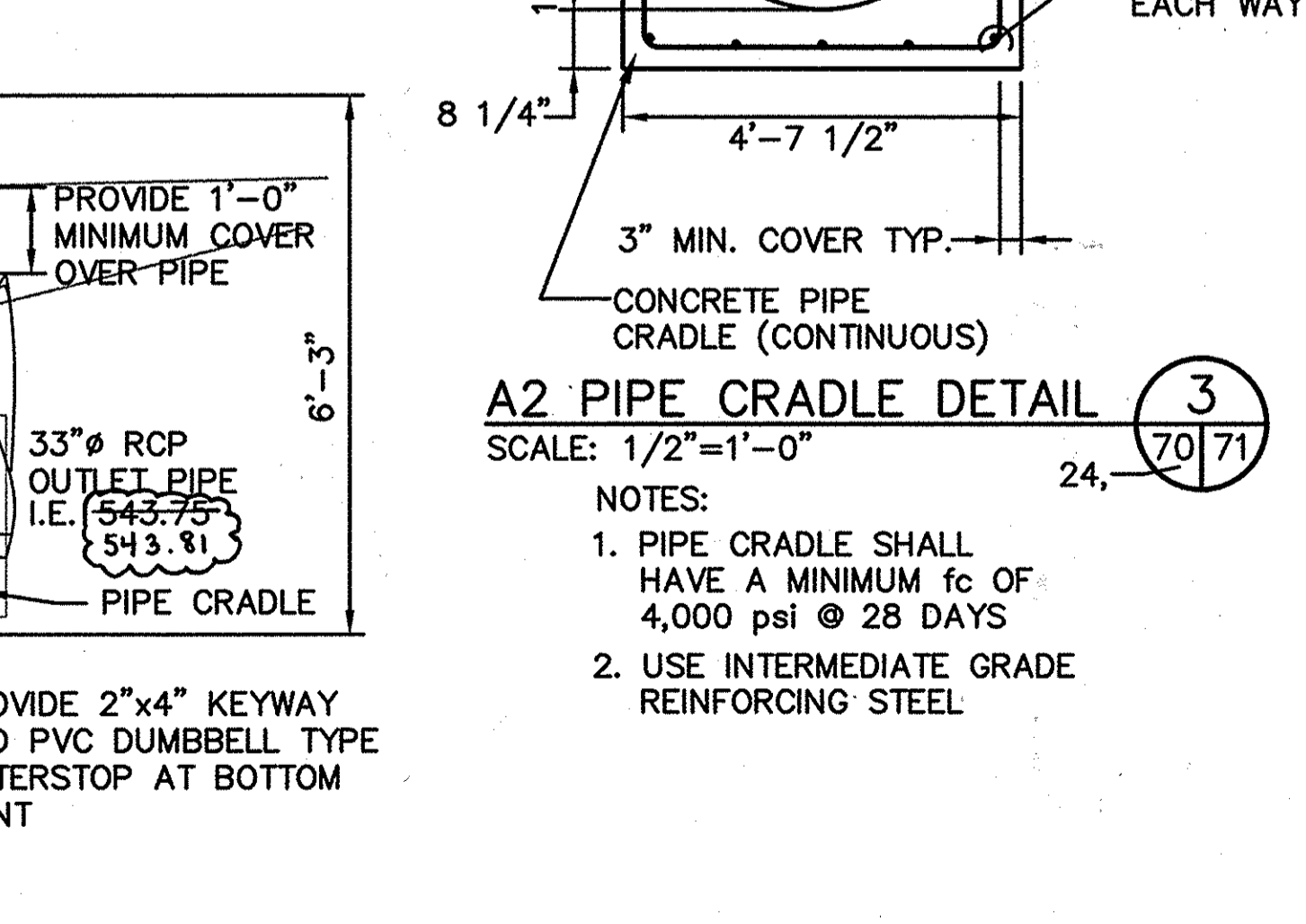
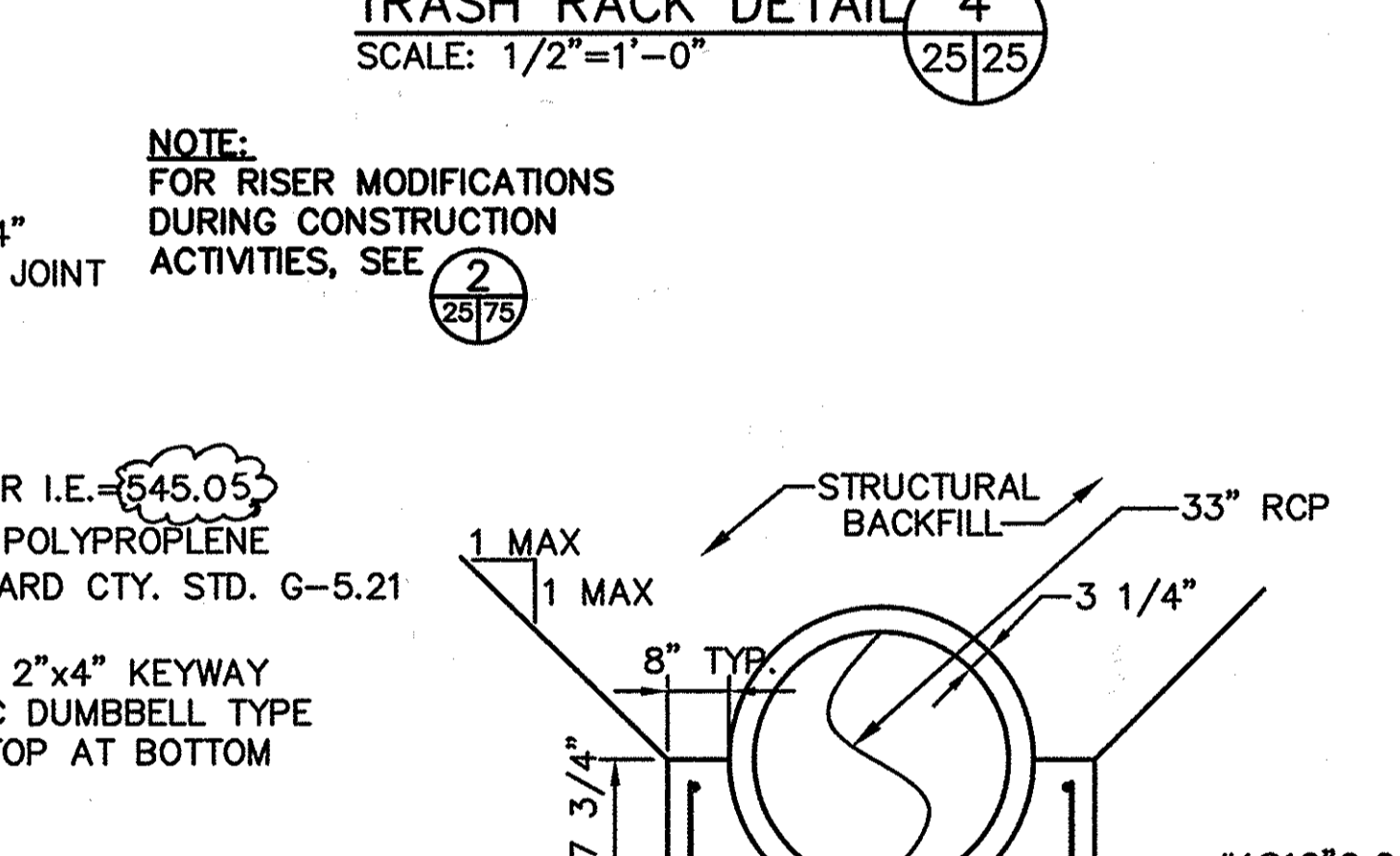
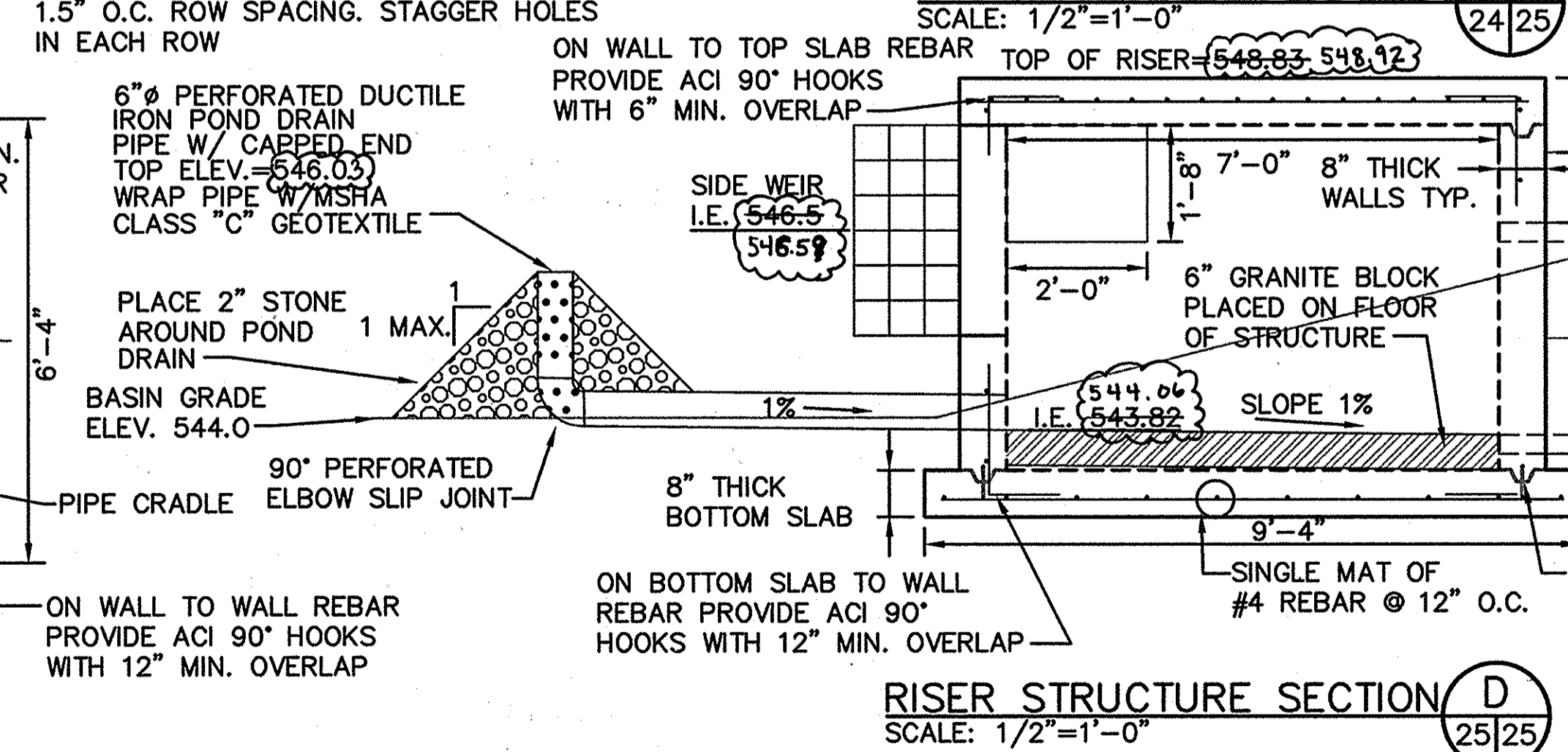
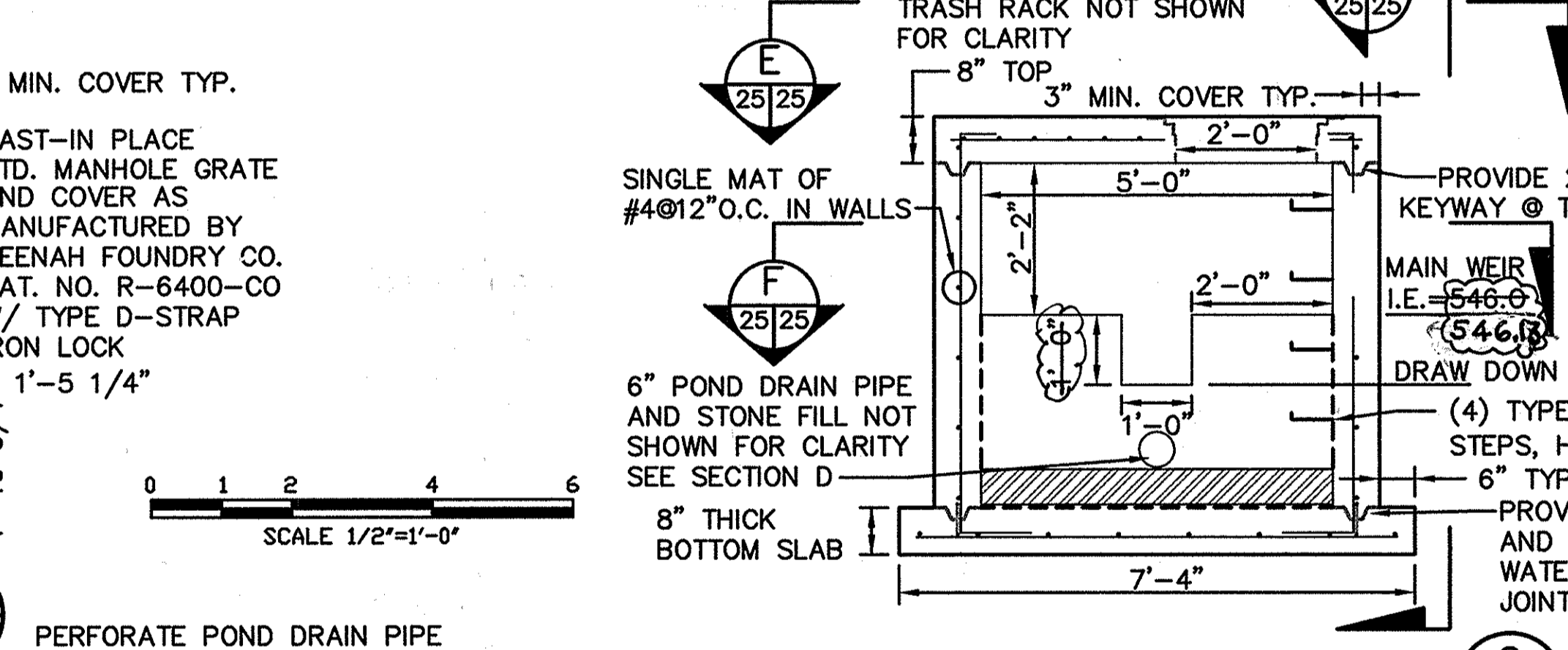
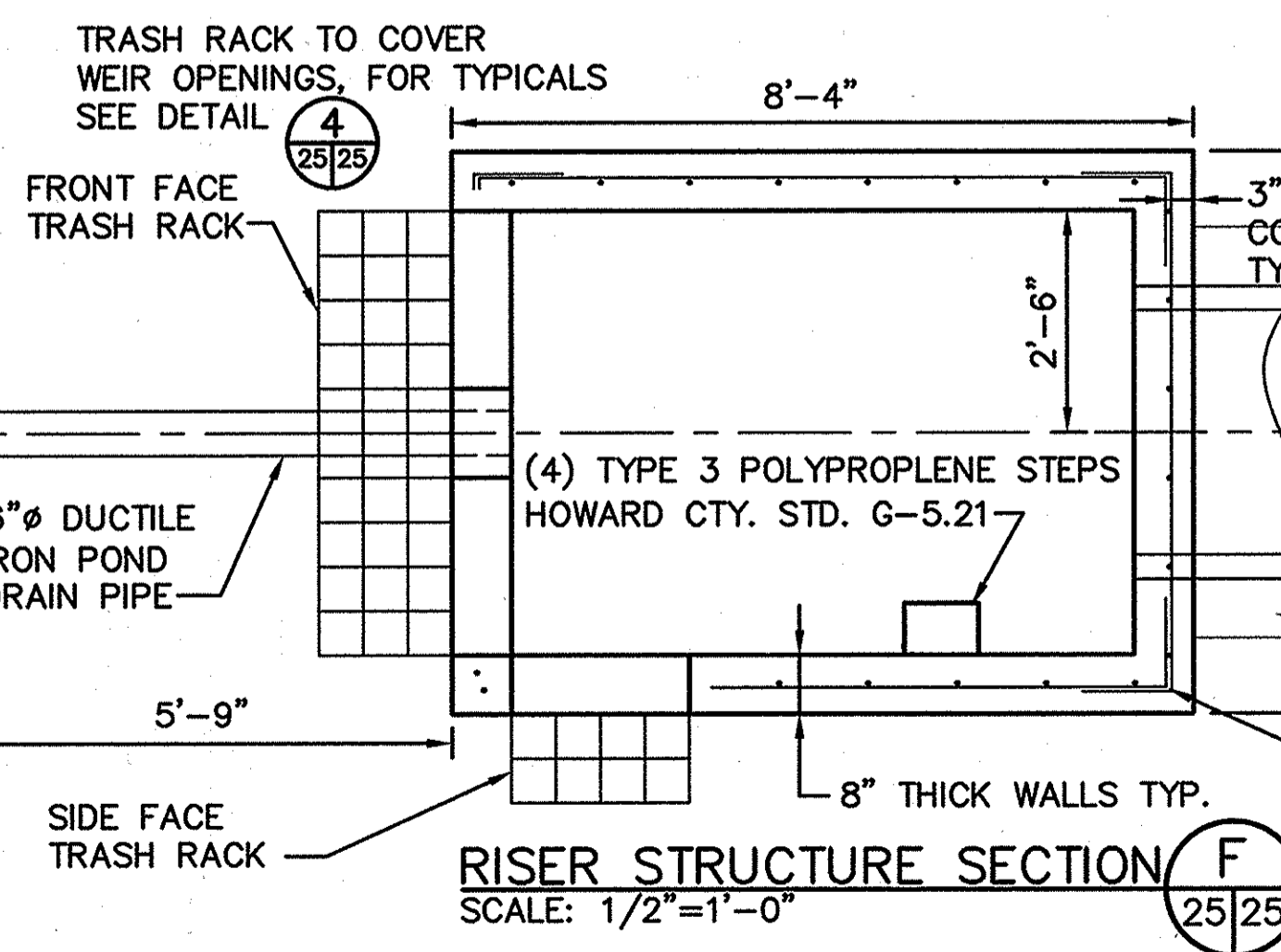
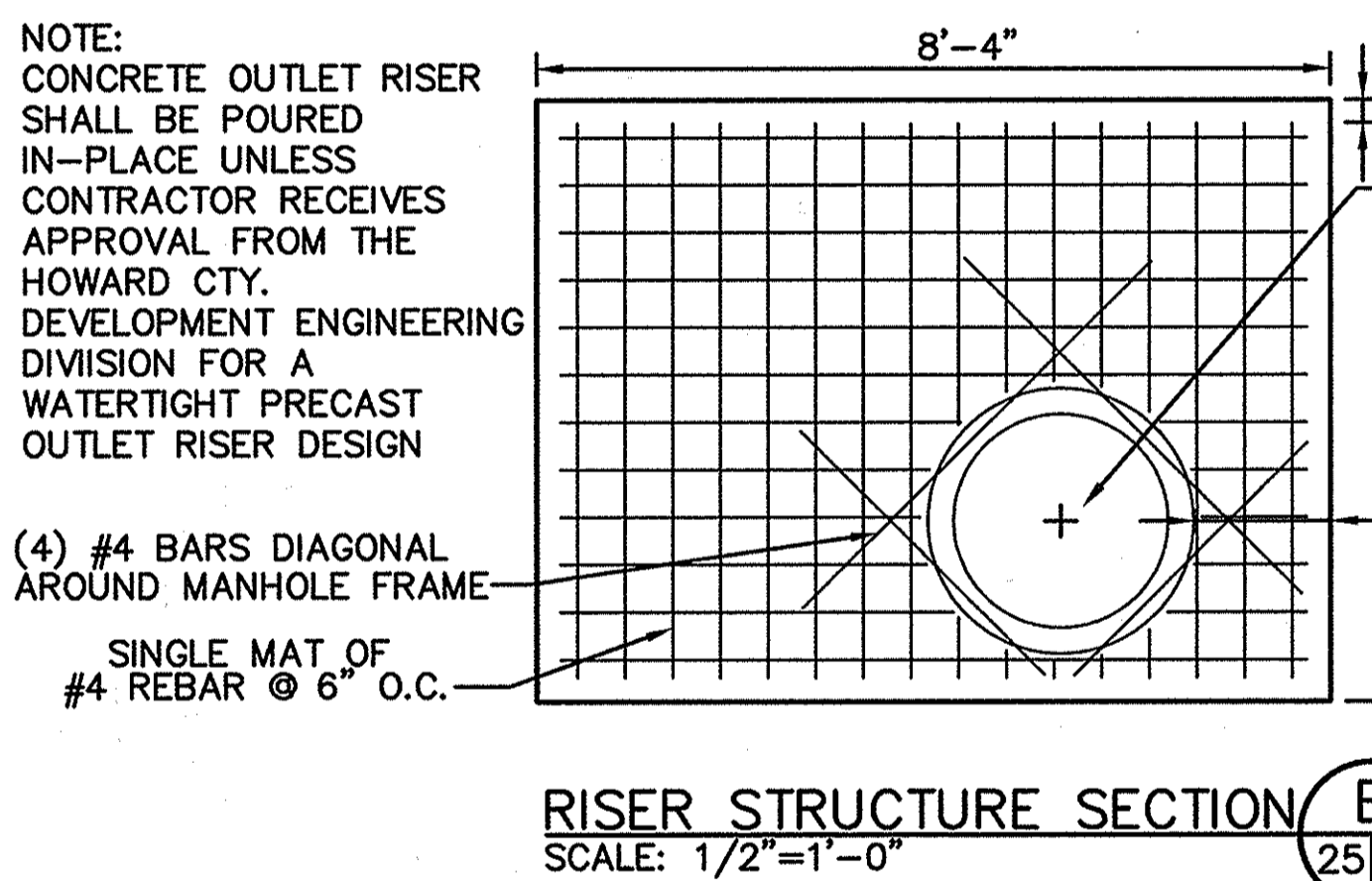
Signature: [Signature], Date: 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Signature: [Signature], Date: 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Signature: [Signature], Date: 10/30/97  
DIRECTOR OF PUBLIC WORKS

Signature: [Signature], Date: 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT



DES.	AST,RTT				
DRN.	AST,EGC				
CHK.	PAM				
DATE:	10-30-97	BY	NO.	REVISION	DATE

EAST SEDIMENT BASIN DETAILS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE: AS NOTED  
SHEET 25 of 131

M: 295077.01\FINAL ANTSP-EB,CRADLE-EB,RISER-EB,A2,TRK-EB,TBL-EB EBSN2-B

SDP-97-128

N 601500

E 1335500

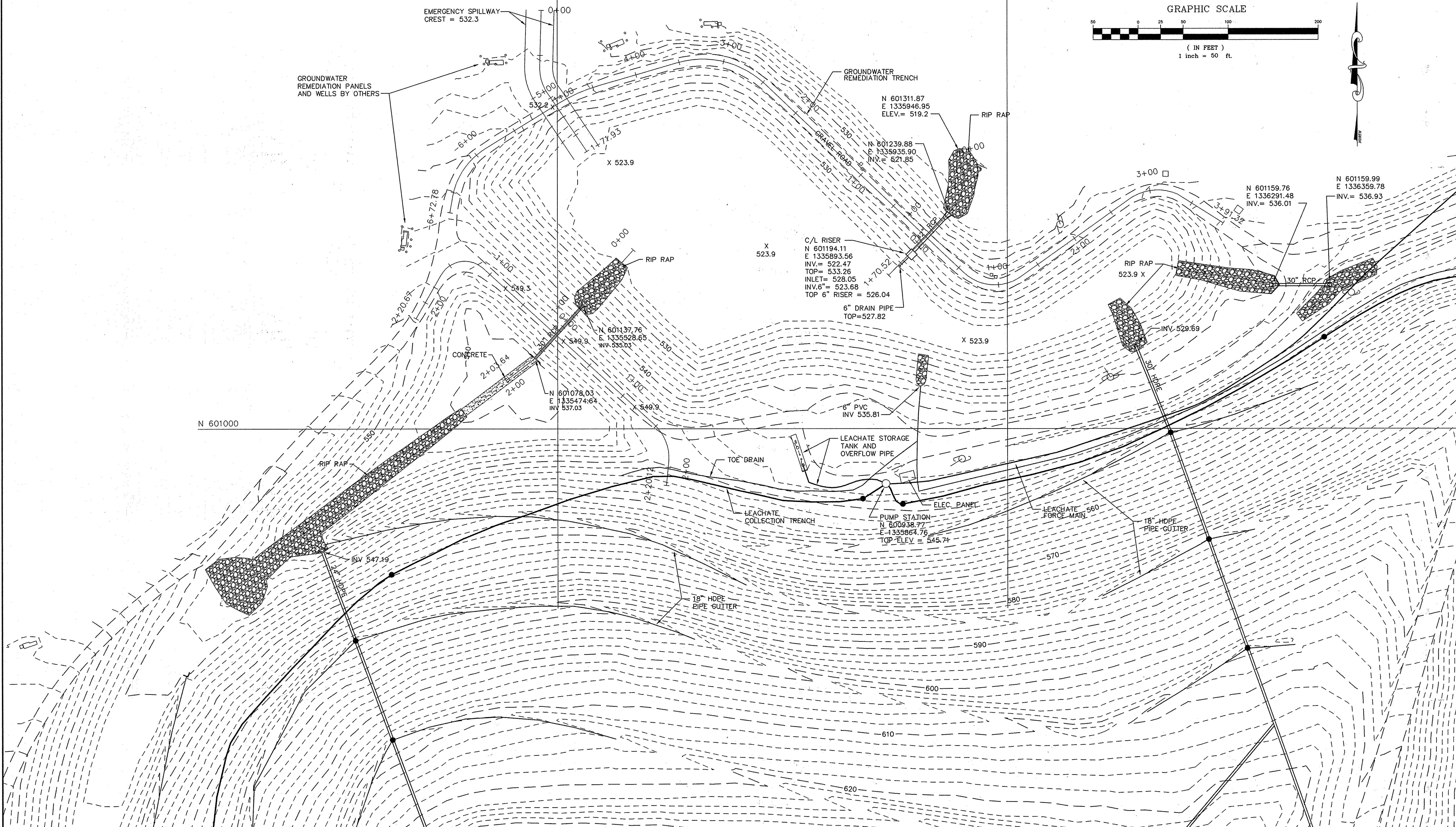
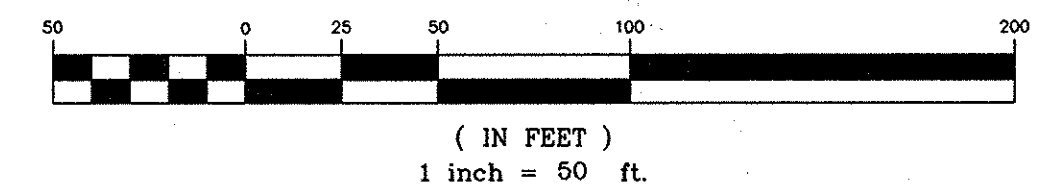
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E 1336500

EMERGENCY SPILLWAY  
CREST = 532.3

GROUNDWATER  
REMEDIATION PANELS  
AND WELLS BY OTHERS

GRAPHIC SCALE



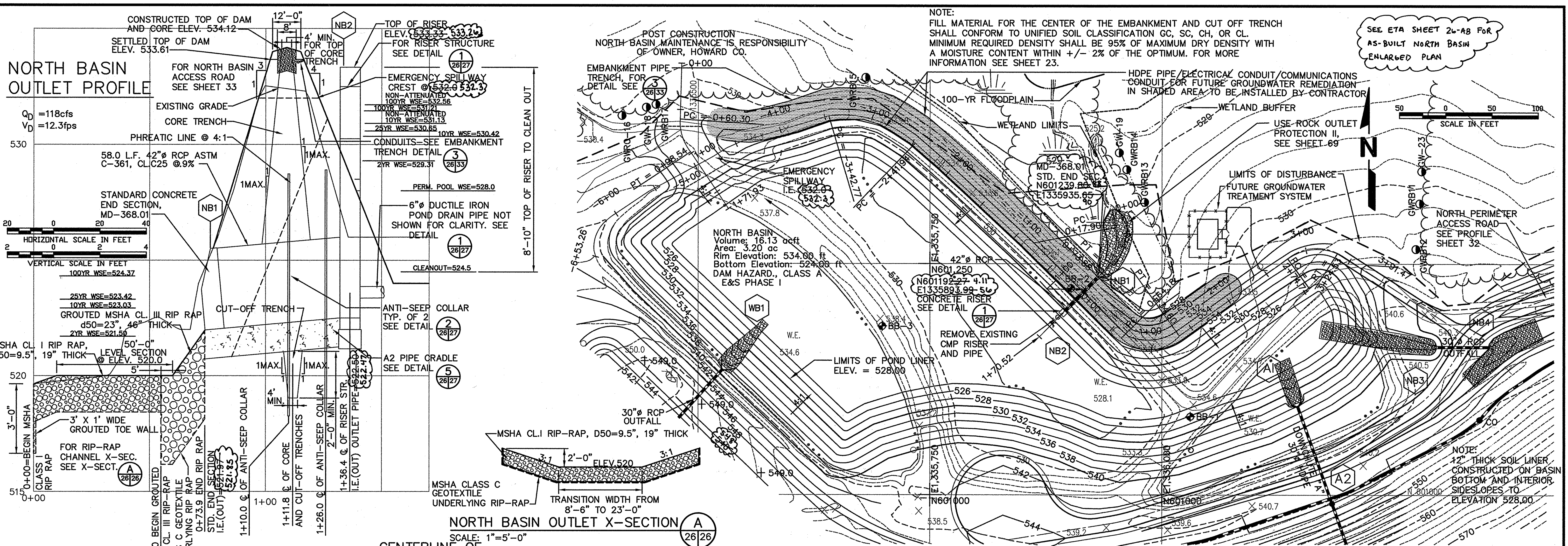
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DESIGNED BY:		DATE		REVISIONS	
DRAWN BY:	TWH	DATE	7-21-98	DATE	BY
CHECKED BY:		DATE	10-17-00	DATE	DESCRIPTION
APPROVED BY:		DATE	4-18-01	DATE	
					ADDED STATIONING FOR PROFILES.
					LABELED EMERGENCY SPILLWAY.
					ADDED 6' RISER ELEVATION.

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE, SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565



AS-BUILT NORTH AND WEST BASINS  
**ALPHA RIDGE LANDFILL CELL CLOSURE**  
 HOWARD COUNTY MARYLAND  
 SCALE : 1"=50' CONTRACT NO.: 98301.10 DATE : 2-27-2000 SHEET : 26-AB

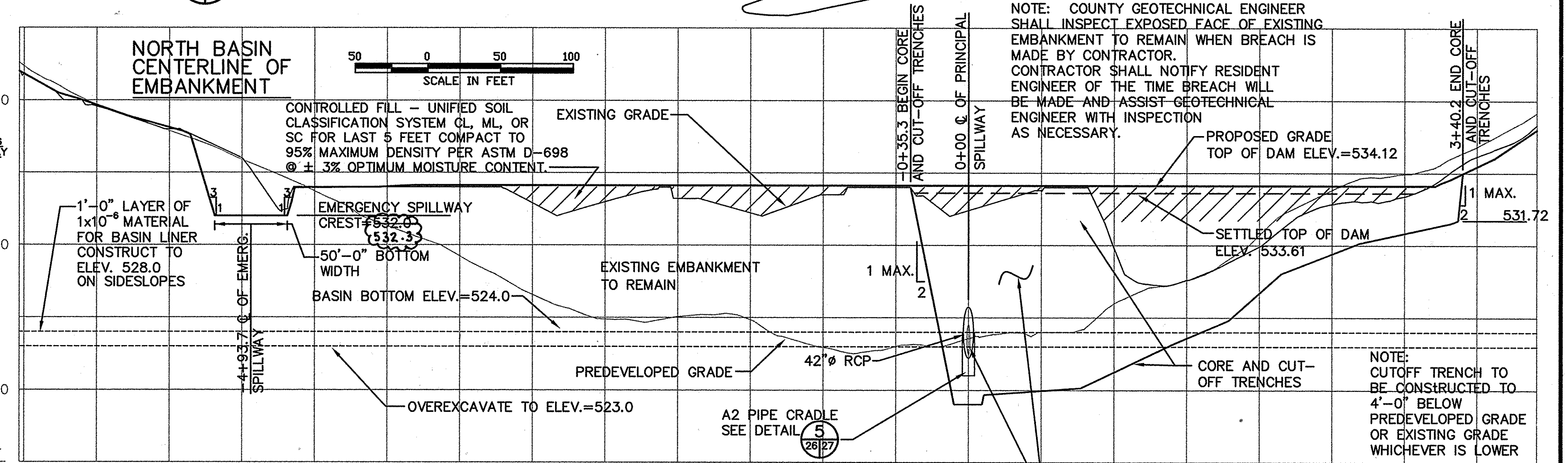
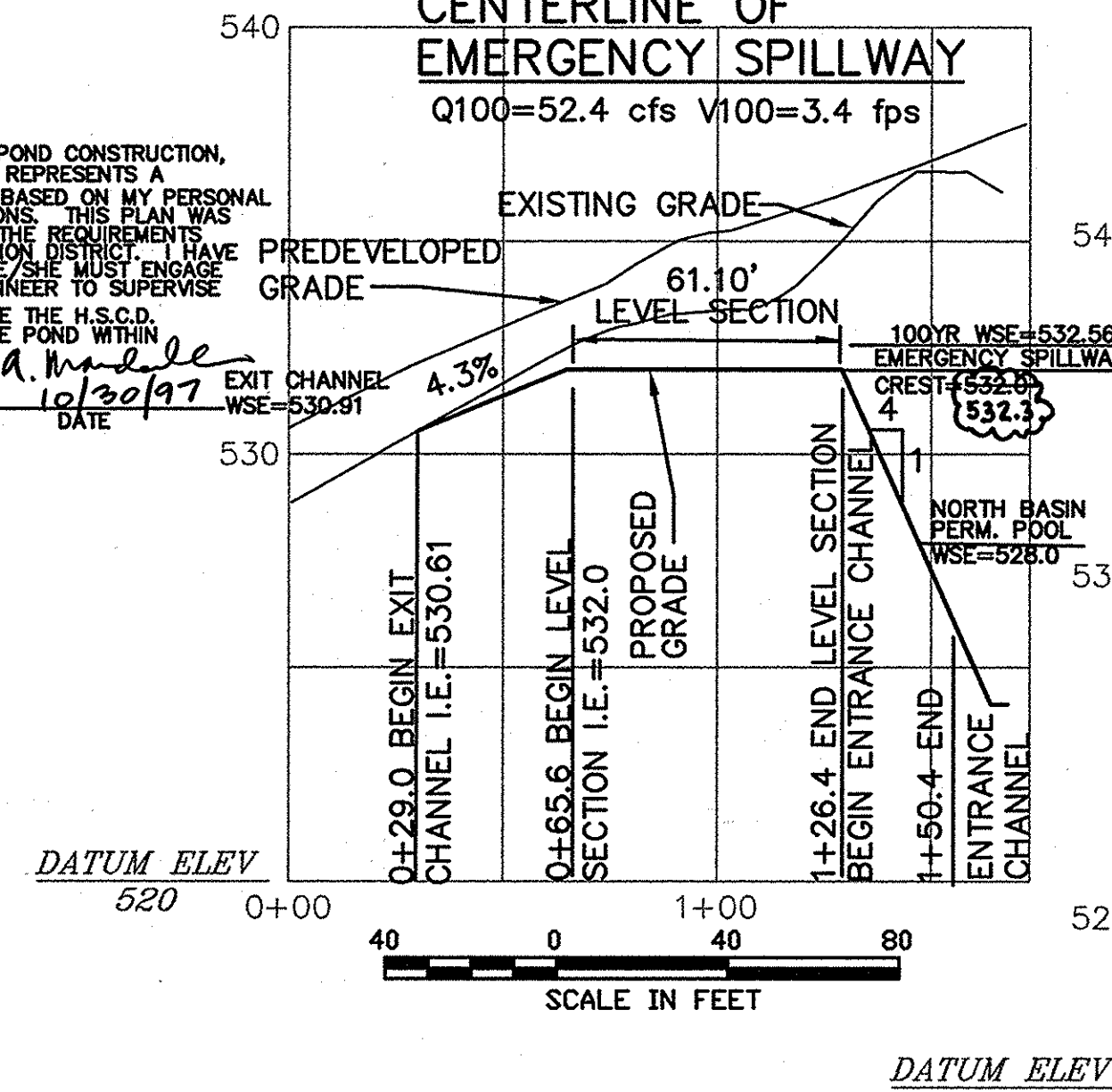


**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE PLAN AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.  
 SIGNATURE: *Michael R. Anderson*  
 DATE: 10/10/97  
 PE NO.: 171650  
 CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION OF THE FACILITY AND APPROPRIATE 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 LEGAL OBLIGATION. COMMONLY ACCEPTED INDUSTRY PRACTICES.

( ) 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 DISTRICT AND HAVE THE DISTRICT ENGINEER OR A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE H.S.C.D. WITH AN AS-BUILT PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
 SIGNATURE OF ENGINEER: *Paul A. Mandeville*  
 DATE: 10/30/97  
 PRINT NAME BELOW SIGNATURE: Paul A. Mandeville

( ) 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. THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 SIGNATURE: *Michael R. Anderson*  
 DATE: 10-30-97  
 HOWARD SOIL CONSERVATION DISTRICT

SUBDIVISION NAME	LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220.11	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
10-847/808 16-878/215 10-881/314	PEC	10 & 16
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30



**DEPARTMENT OF PLANNING AND ZONING**  
 HOWARD COUNTY, MARYLAND  
 SIGNATURE: *Frank S. ...*  
 DATE: 11/3/97  
 DIRECTOR

SIGNATURE: *...*  
 DATE: 11/3/97  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

SIGNATURE: *...*  
 DATE: 11/3/97  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND  
 SIGNATURE: *James J. ...*  
 DATE: 10/30/97  
 DIRECTOR OF PUBLIC WORKS

SIGNATURE: *John J. ...*  
 DATE: 10/30/97  
 CHIEF, BUREAU OF WASTE MANAGEMENT

**OPERATION, MAINTENANCE AND INSPECTION**  
 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 INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

**SEDIMENT CONTROL & POND CONSTRUCTION**  
 ( ) BY THE DEVELOPER:  
 I HAVE CERTIFIED 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 H.S.C.D. 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 (PRINT NAME BELOW SIGNATURE): *John J. ...*  
 DATE: 10/30/97

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

STATE OF MARYLAND  
 PAUL ANTHONY MANDEVILLE  
 PROFESSIONAL ENGINEER

POND	RISER				OUTLET PIPE				ANTI-SEEP COLLAR	DAM	EMERG. SPILLWAY	CORE TRENCH	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
NORTH	4.0'	7.00'	528.41 528.51	8.67'	42	51	522.47 522.56	521.85 521.97	2	10.46' H 10.92' W	12'	534.12	533.61	532.3 532.6	25	4'	1:1	4'	1:1	529.31	530.42	530.65	531.21

**NORTH BASIN ENLARGED PLAN AND PROFILES**

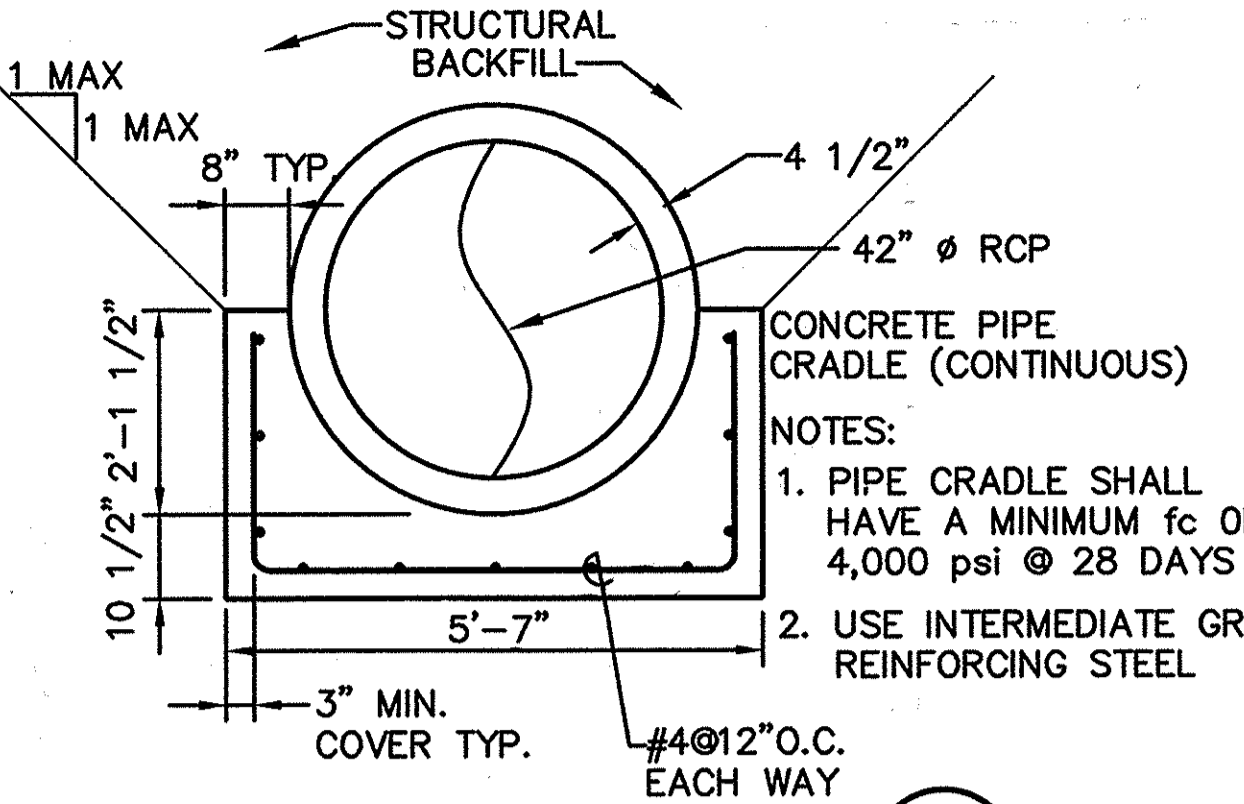
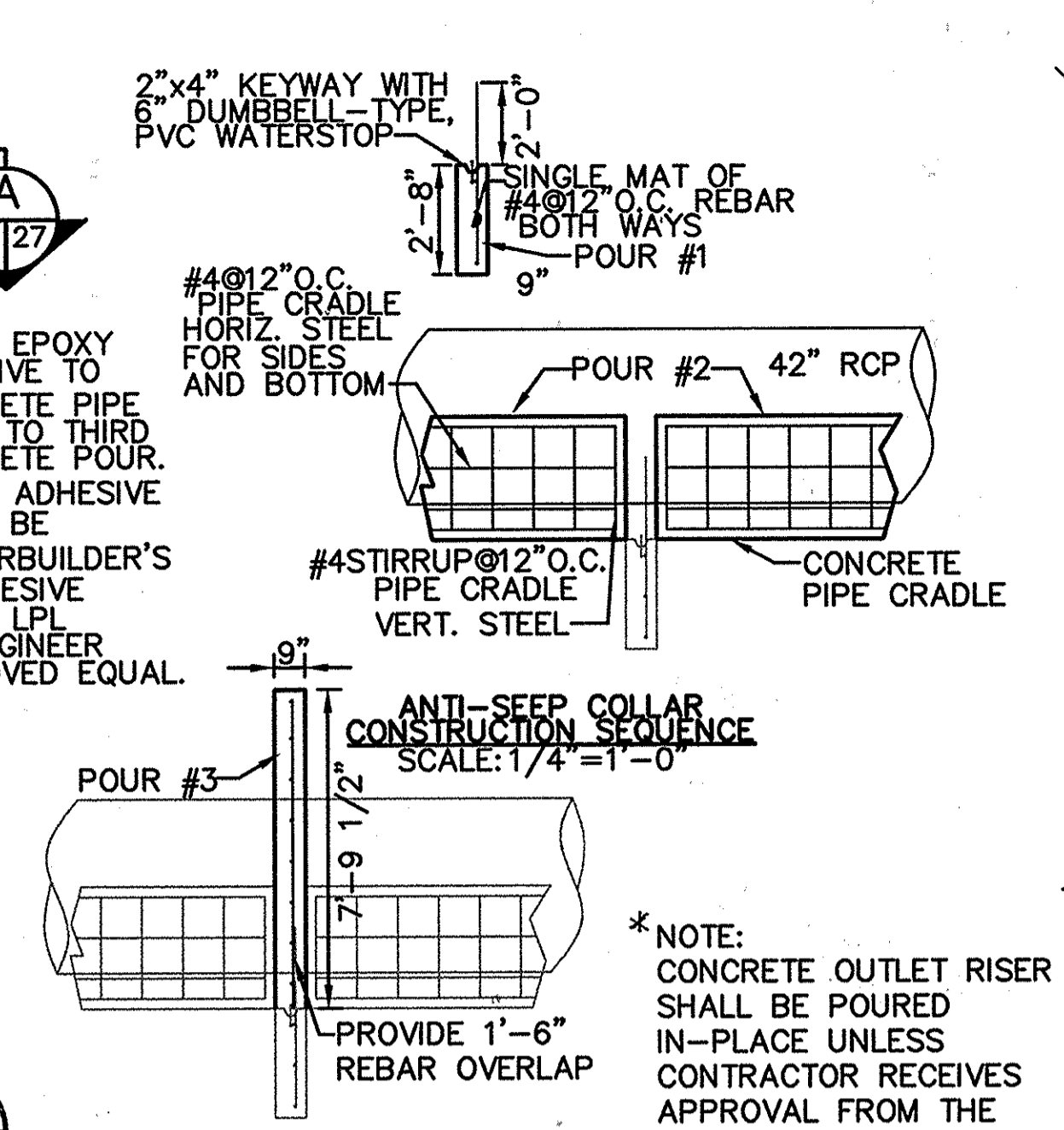
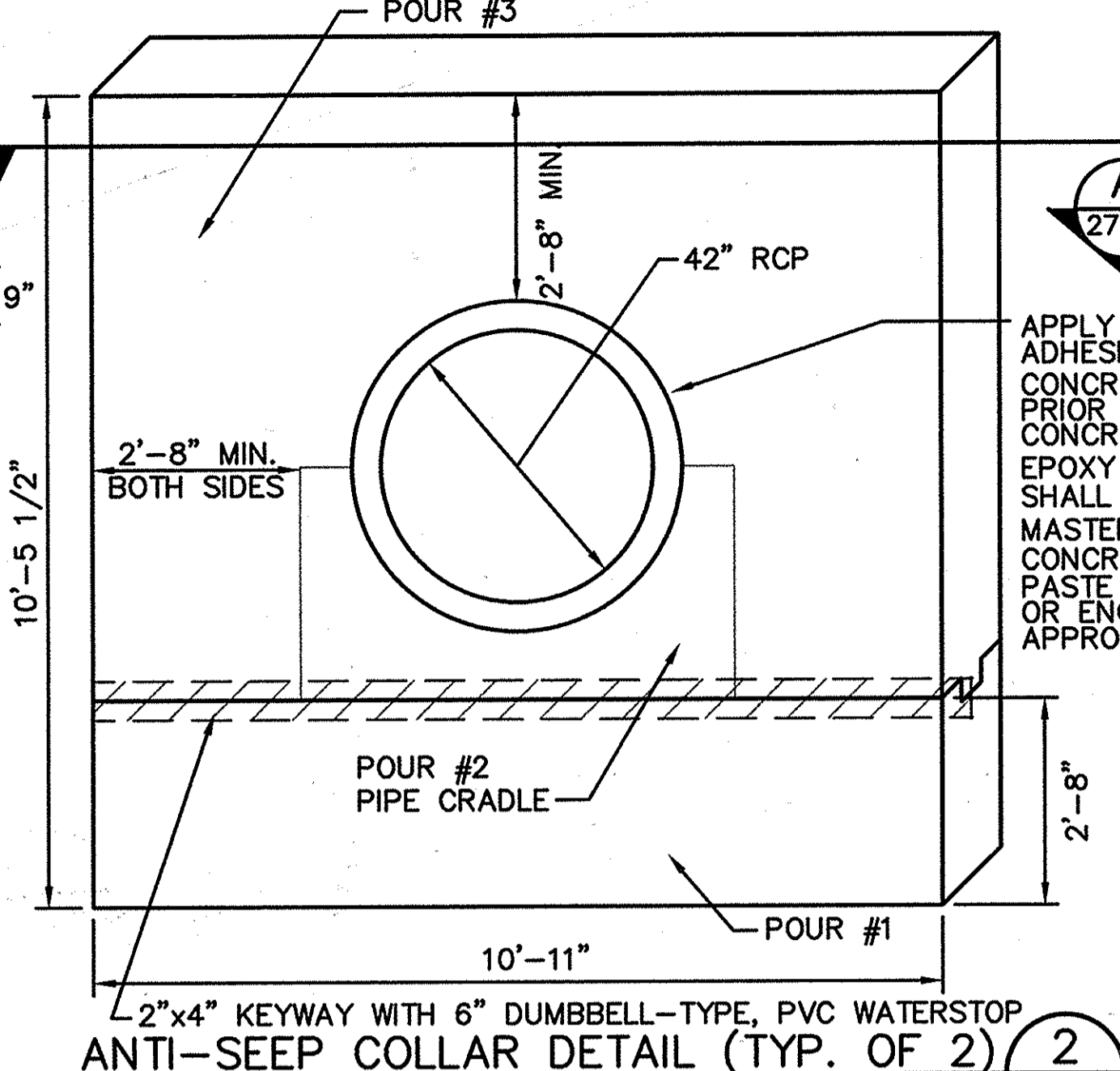
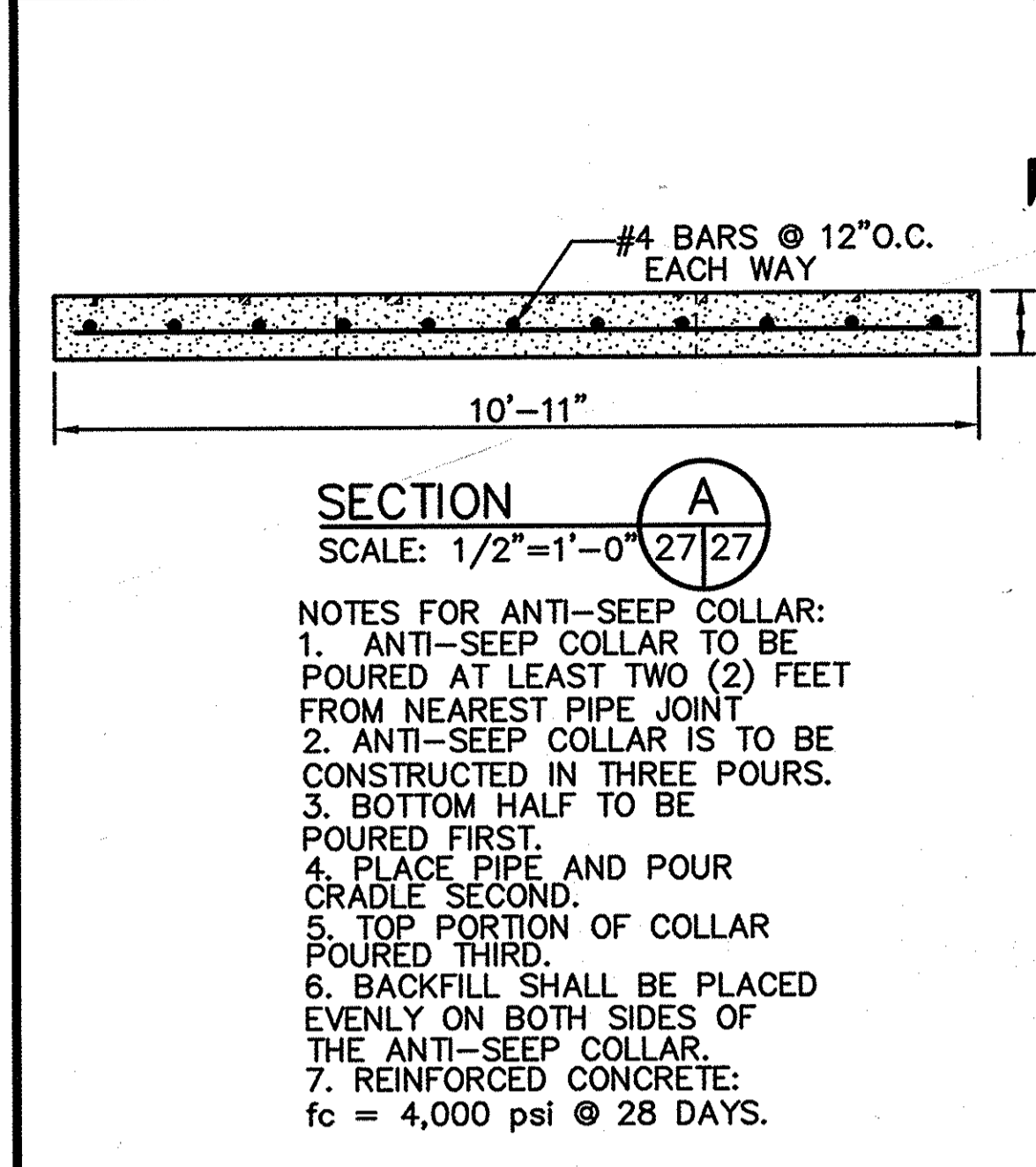
**ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE**  
 CAPITAL PROJECT NO. C-0190-N  
 3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE: AS NOTED  
 SHEET 26 OF 136

NBSN-NSCLDAM.PRF-98SN, NBCLCS.XS-NBO, MIKENOTE  
 M: 2989077.01.FINAL  
 NBSN-B

SDP-97-128



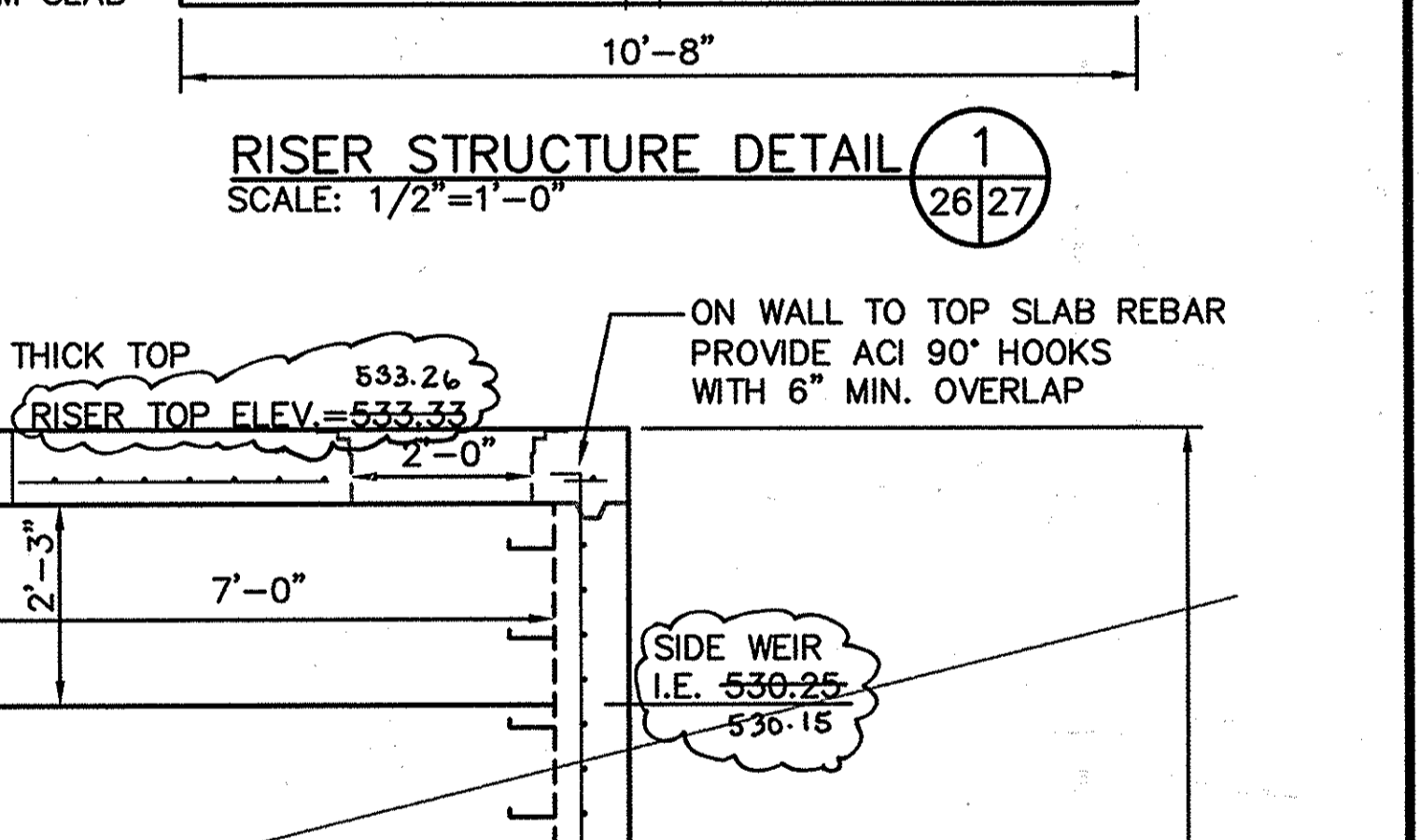
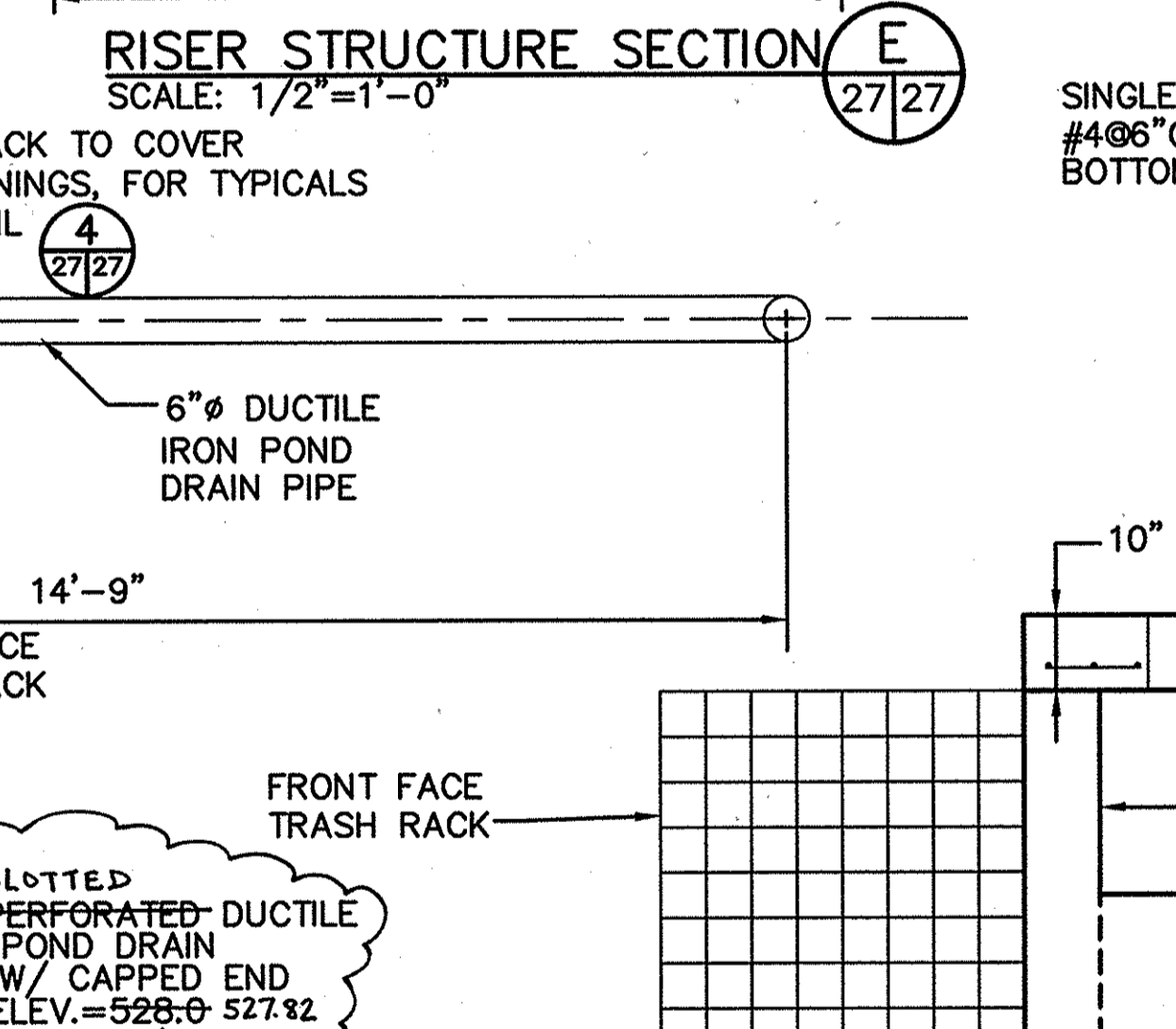
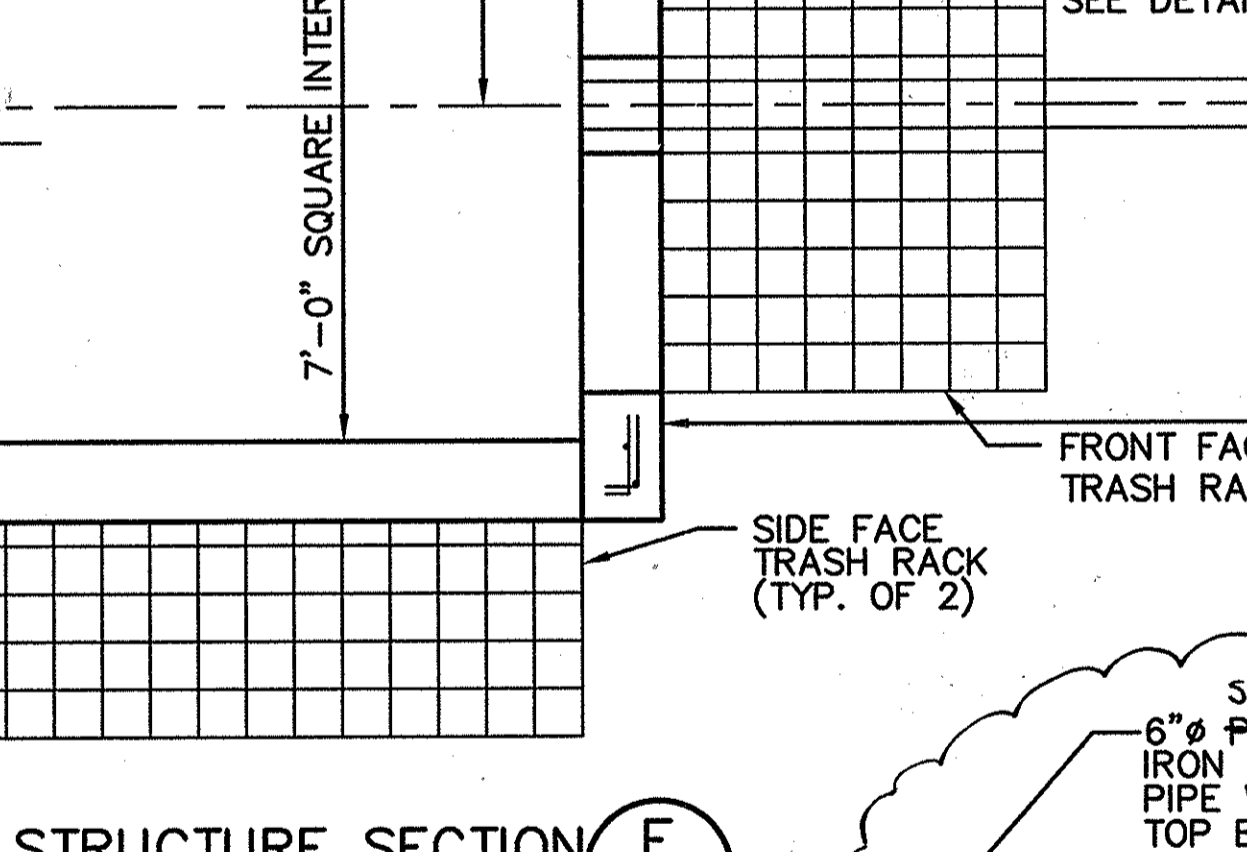
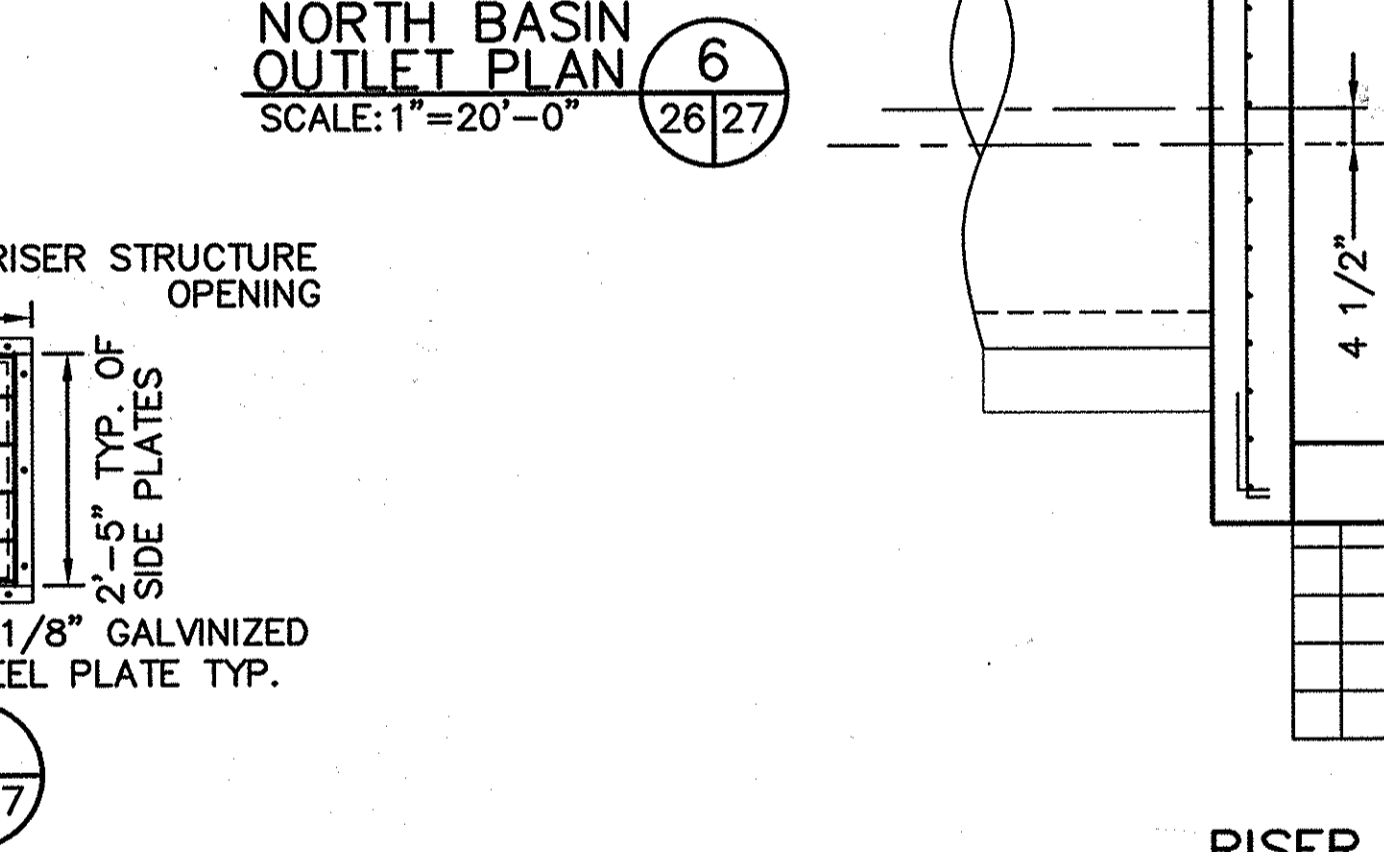
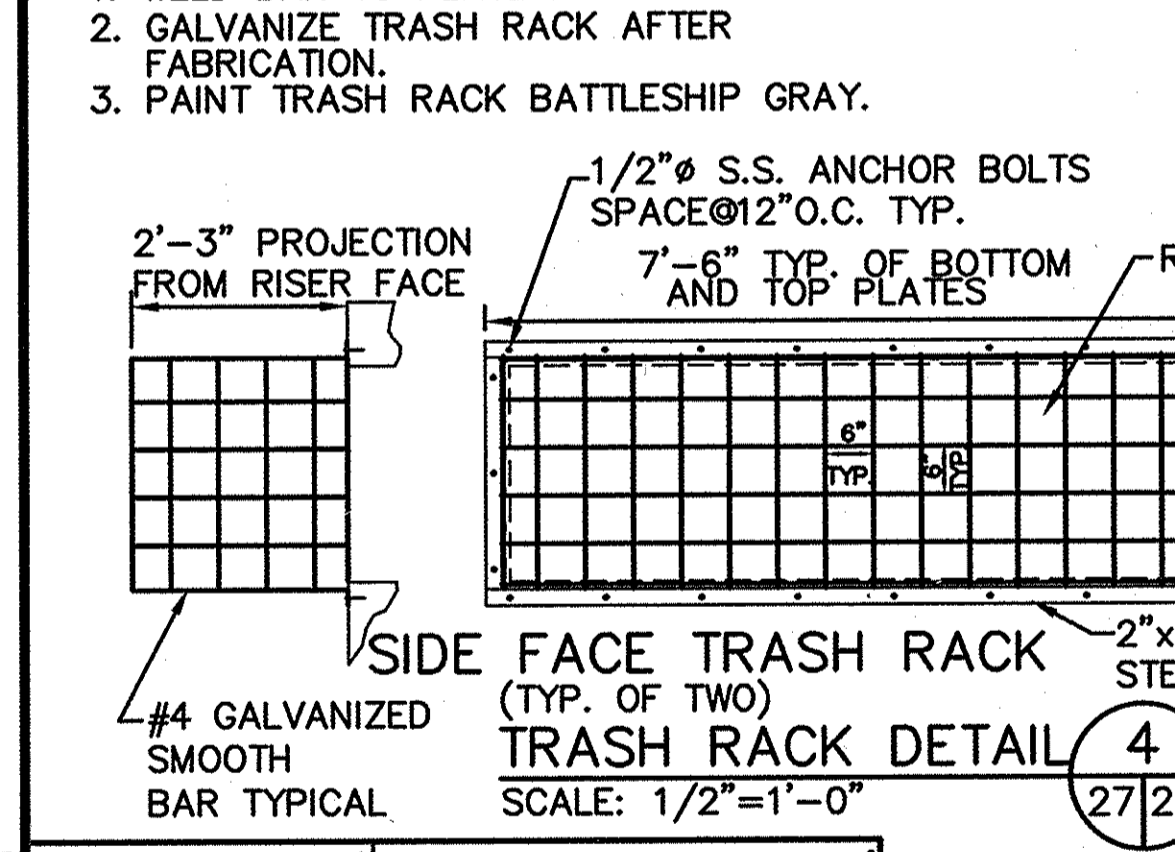
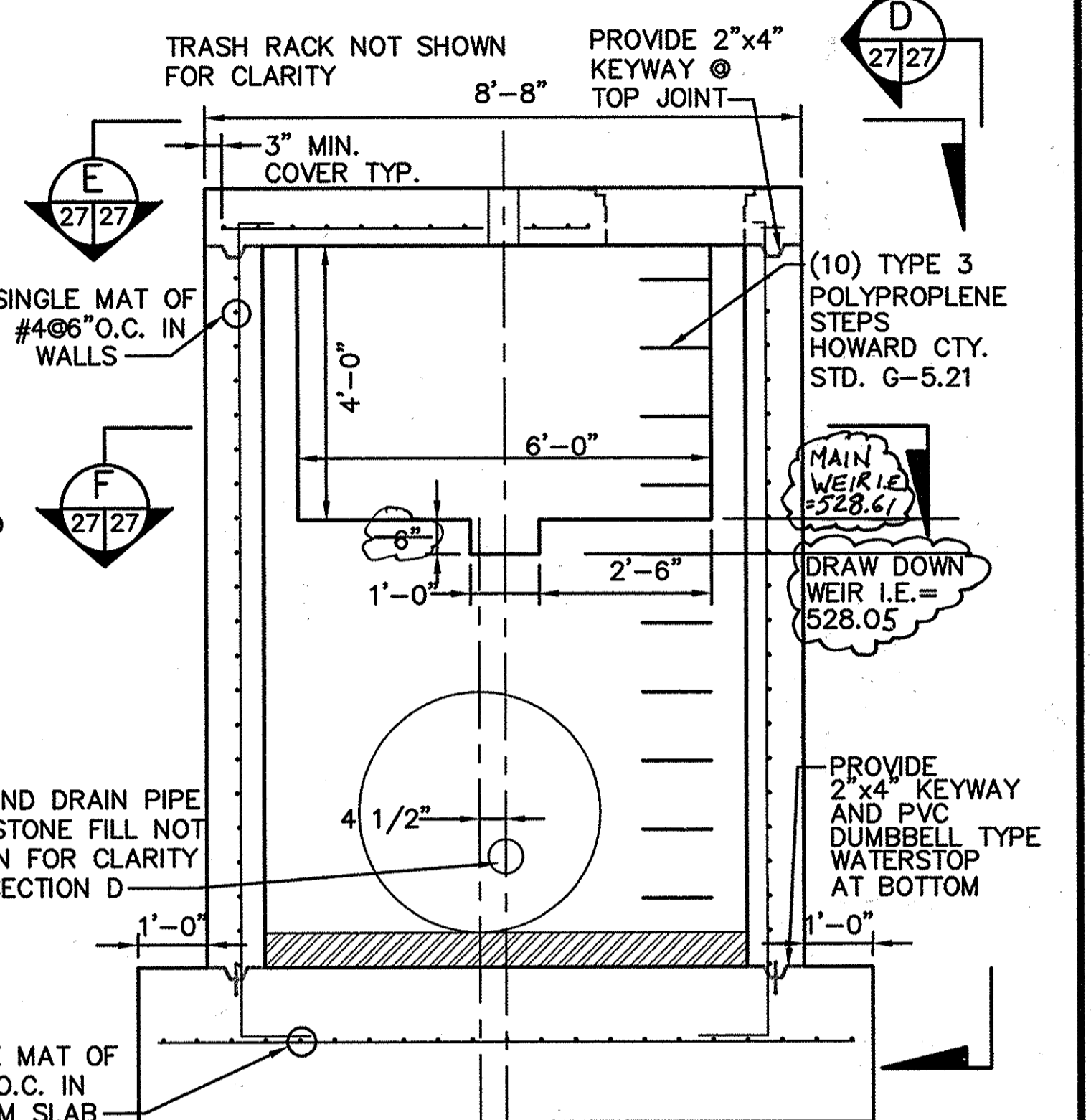
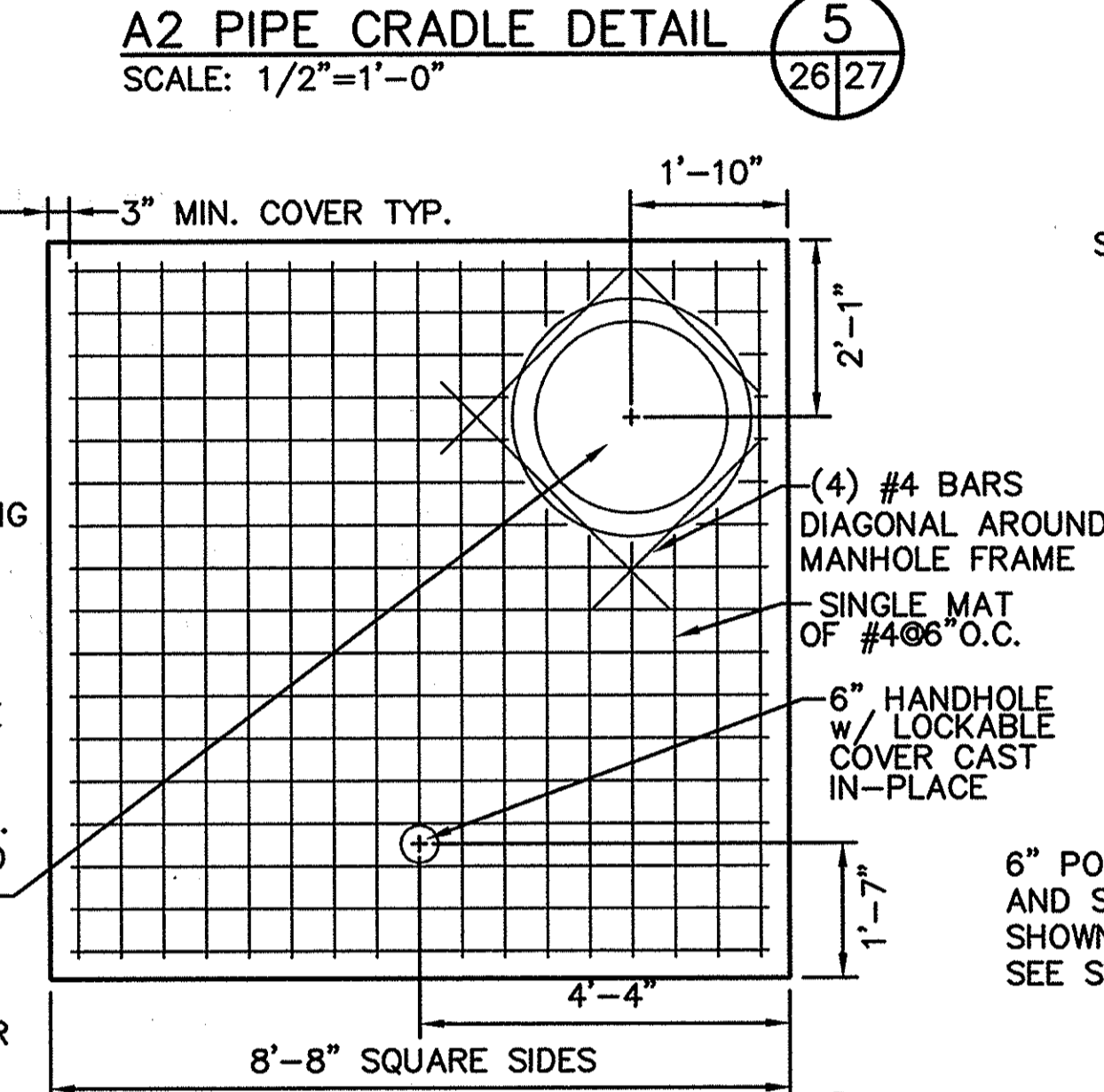
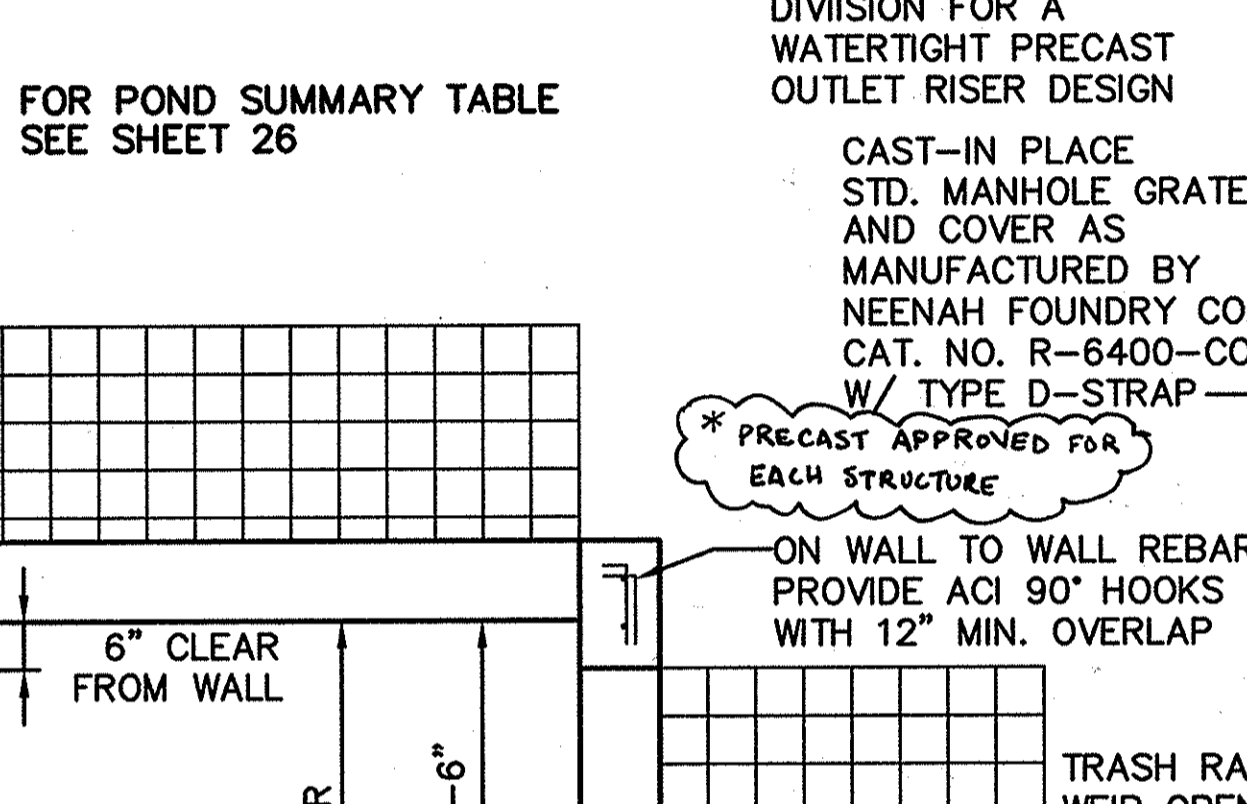
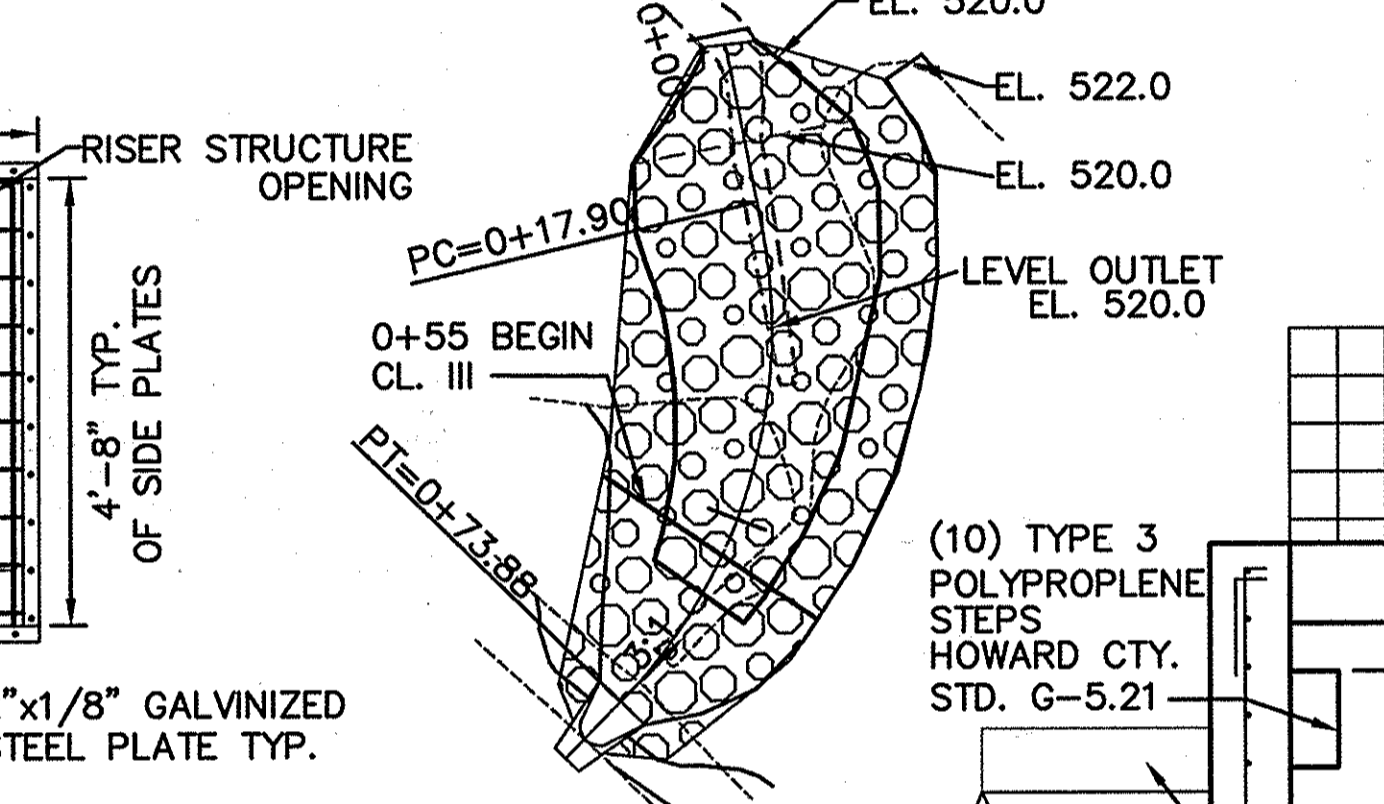
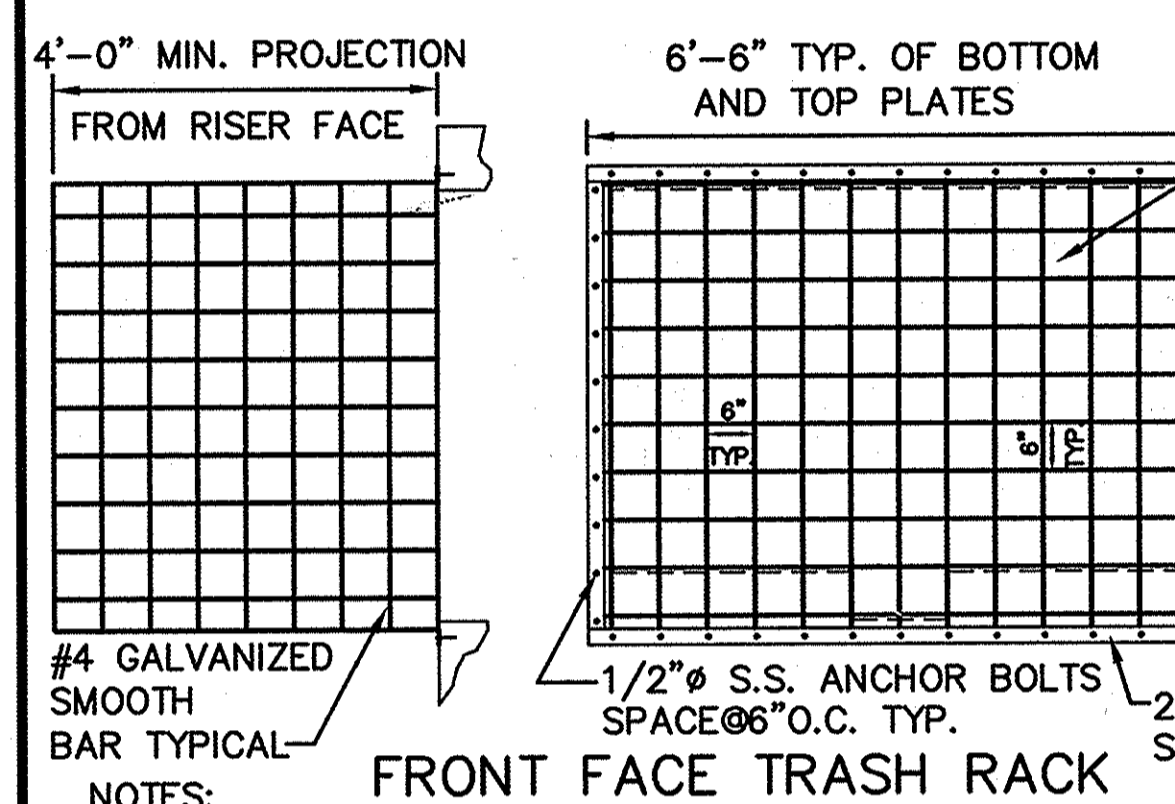


**AS-BUILT CERTIFICATION**  
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Michael R. Howard  
SIGNATURE  
PE NO. 17650 DATE 10/16/97

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 WHICH ARE CONDUCTED DURING CONSTRUCTION ARE 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, OF 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.



LIBER/FOLIO		ZONE	TAX/ZONE MAP
10-847/606 16-878/215 10-891/314		PEC	10 & 16
WATER CODE		SEWER CODE	CENSUS TR.
PRIVATE, EXISTING		PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

Director: [Signature] DATE: 11/3/97  
Chief, Development Engineering Division: [Signature] DATE: 10/26/97  
Chief, Division of Land Development: [Signature] DATE: 11/2/97

PERMIT 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 H.S.C.D. 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 S. O'Hara DATE: 10/30/97

( ) 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 H.S.C.D. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE H.S.C.D. WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

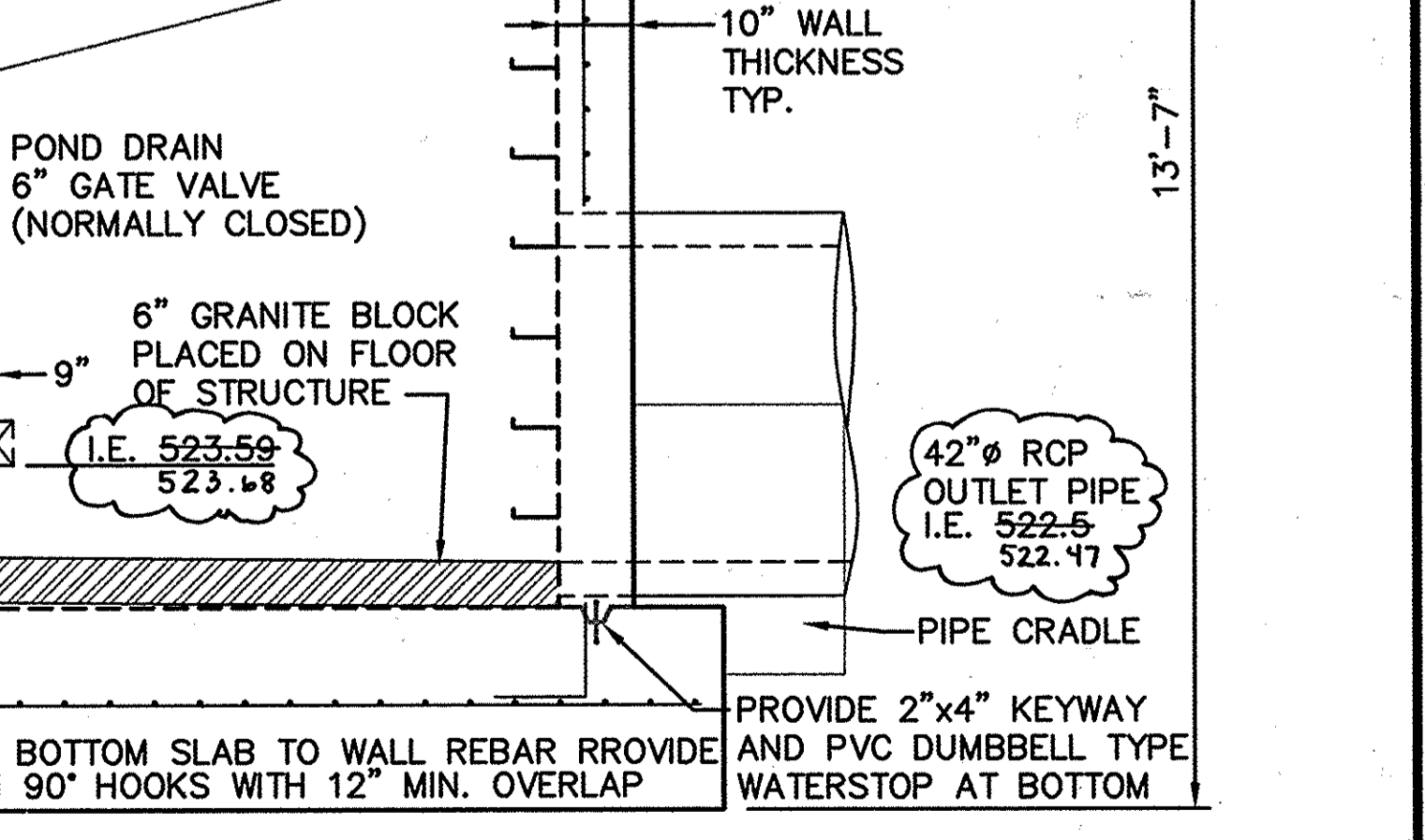
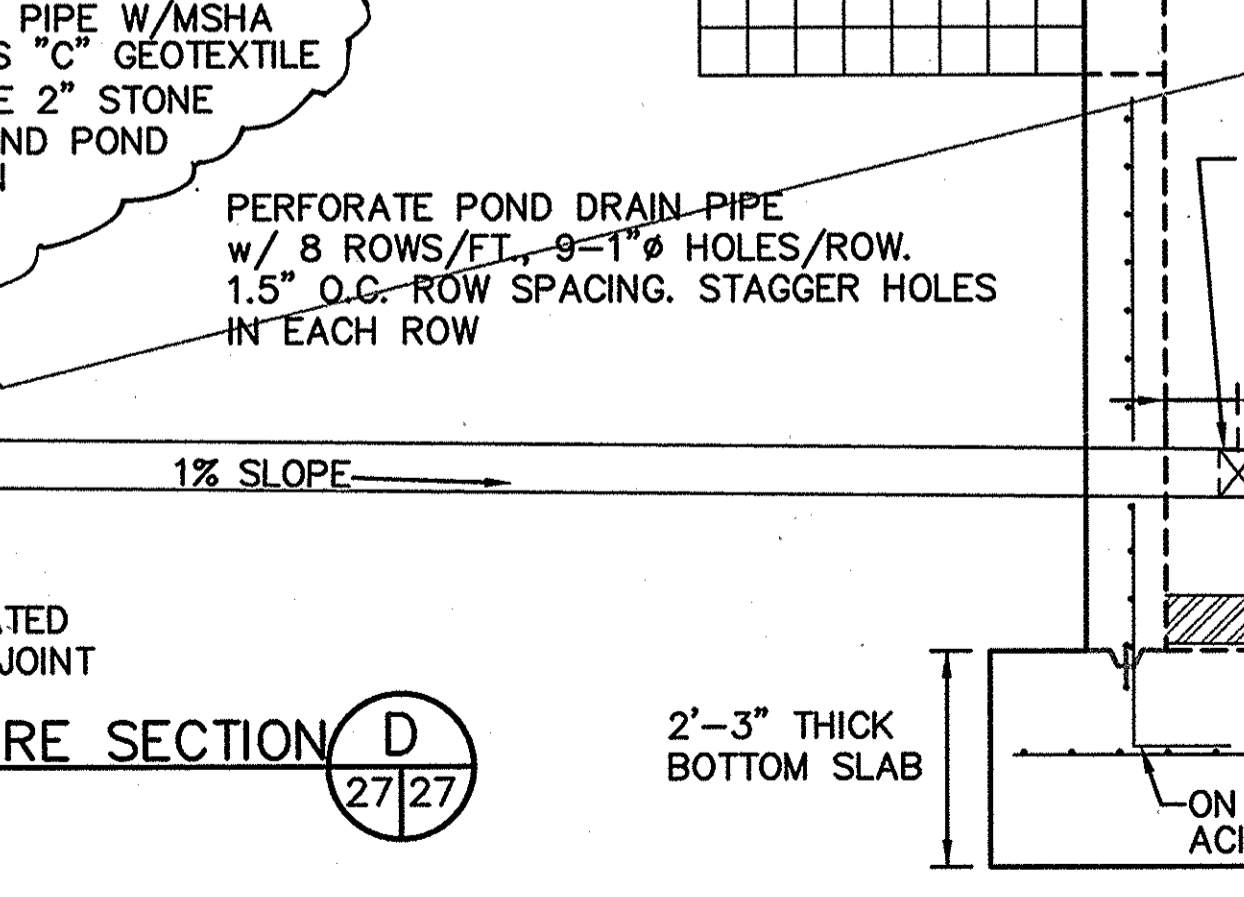
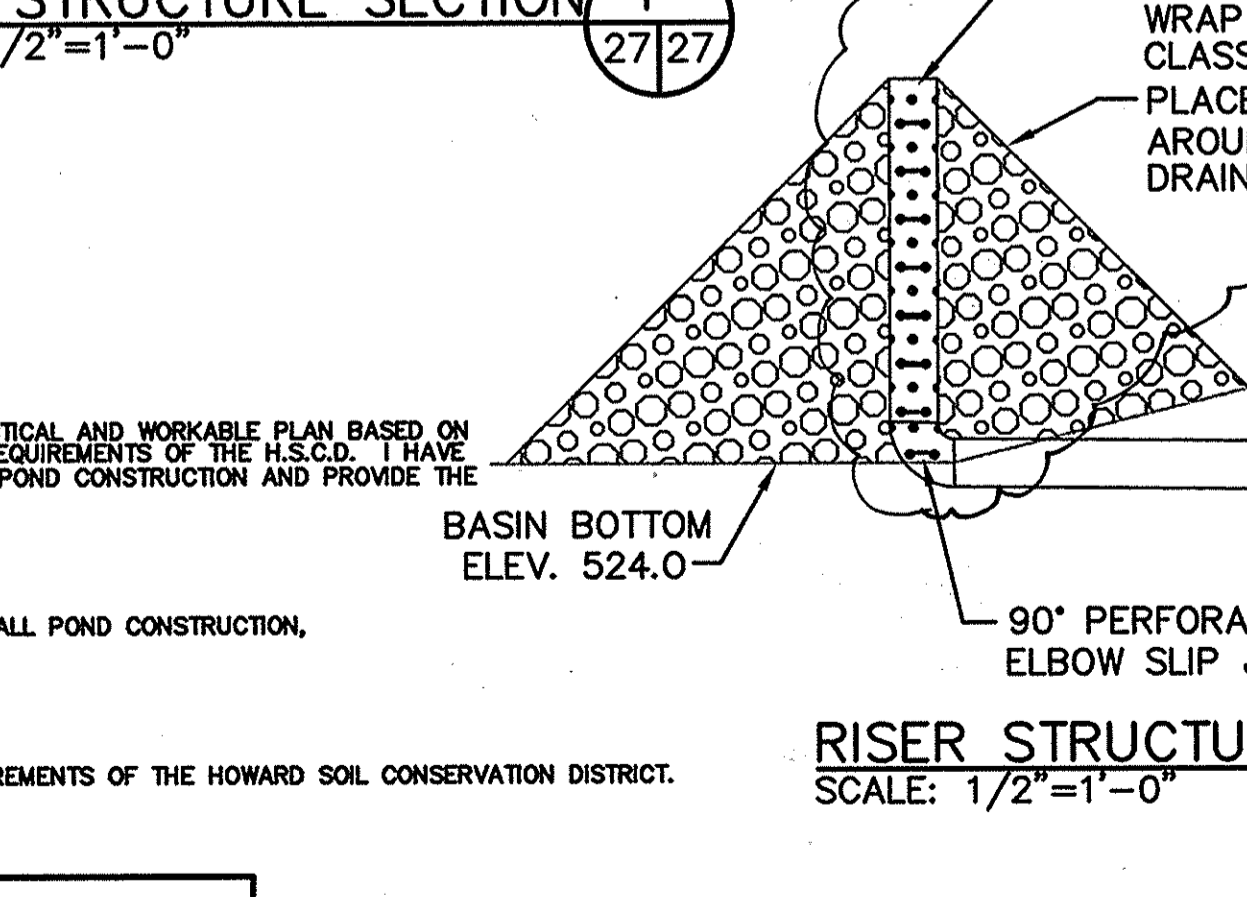
Signature of Engineer: Paul A. Mandeville DATE: 10/30/97

( ) THESE PLANS HAVE BEEN REVIEWED FOR THE H.S.C.D. AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Signature of Reviewer: Charles R. Howard DATE: 10-30-97

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

Signature of Reviewer: [Signature] DATE: 10-30-97



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature] DATE: 10/30/97  
Chief Bureau of Waste Management: [Signature] DATE: 10/30/97

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

Paul Anthony Mandeville, PE

DES. AST,RTT			
DRN. AST,EGC			
CHK. PAM			
DATE: 10-30-97	BY NO.	REVISION	DATE

**NORTH BASIN DETAILS**

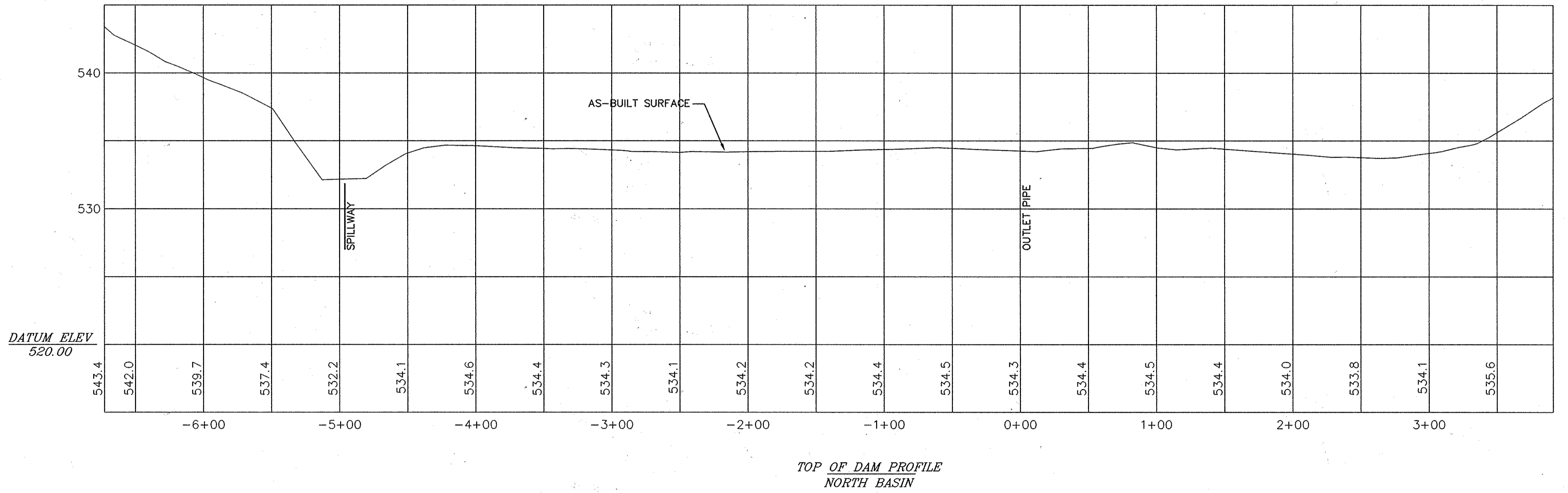
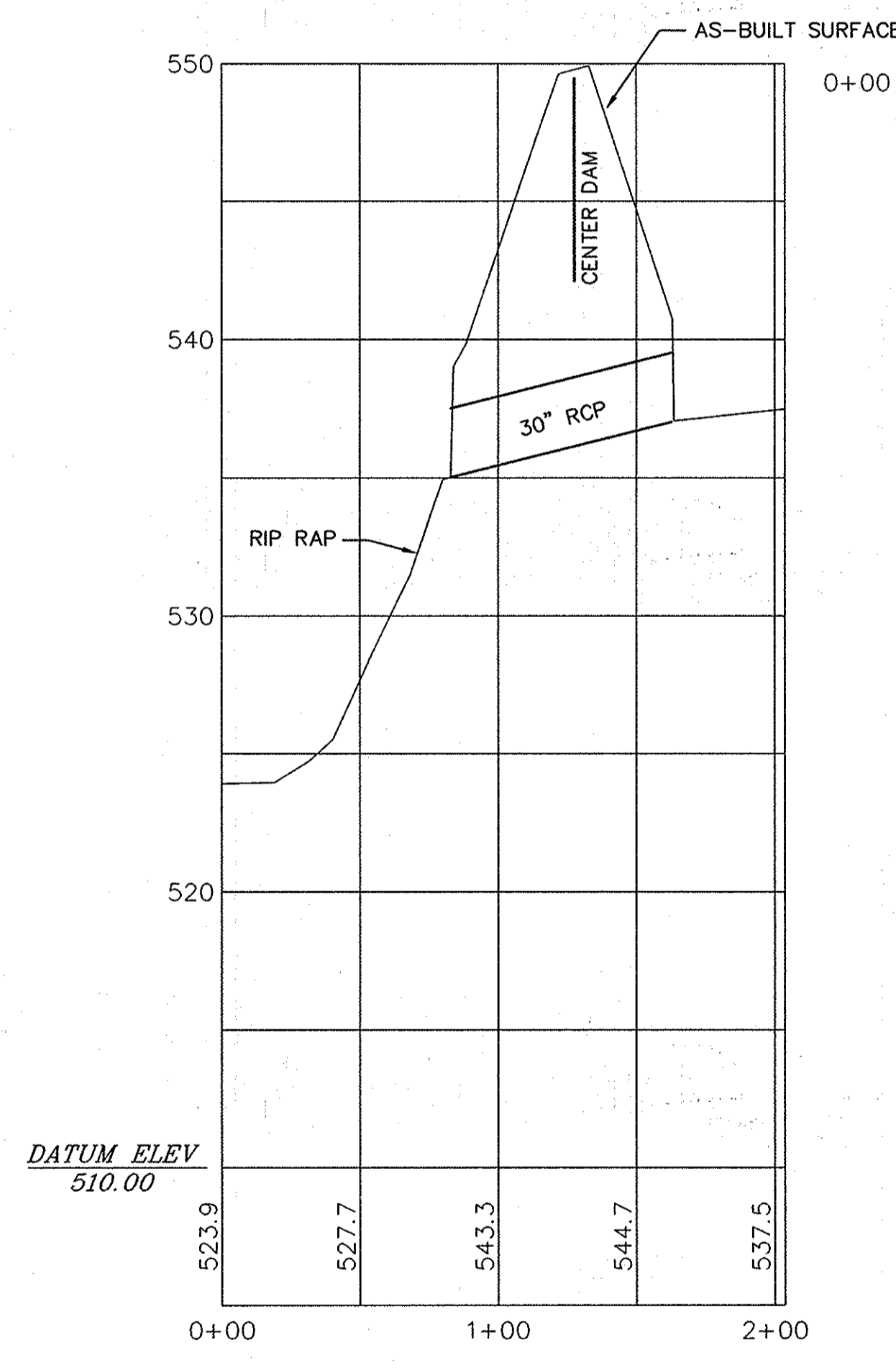
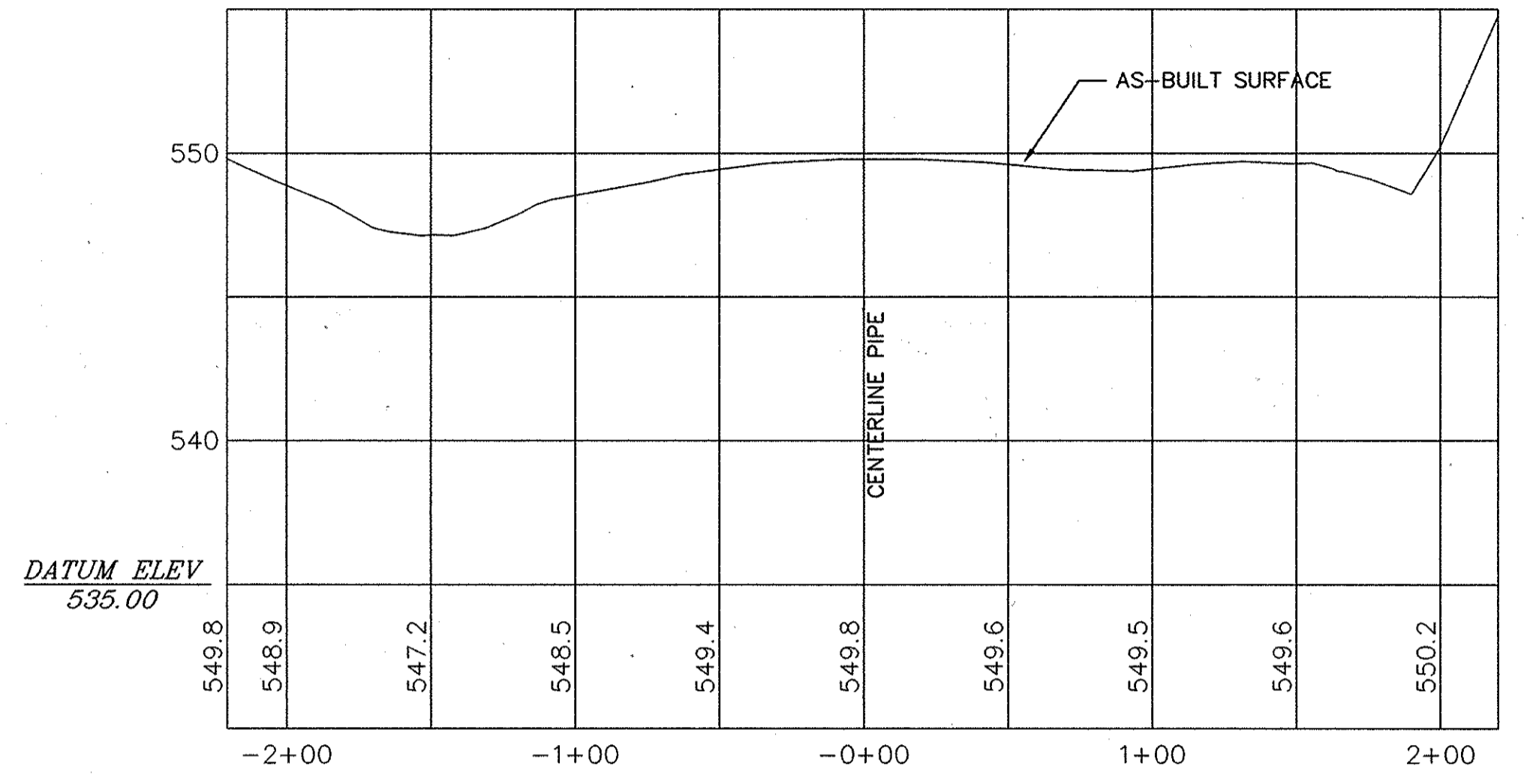
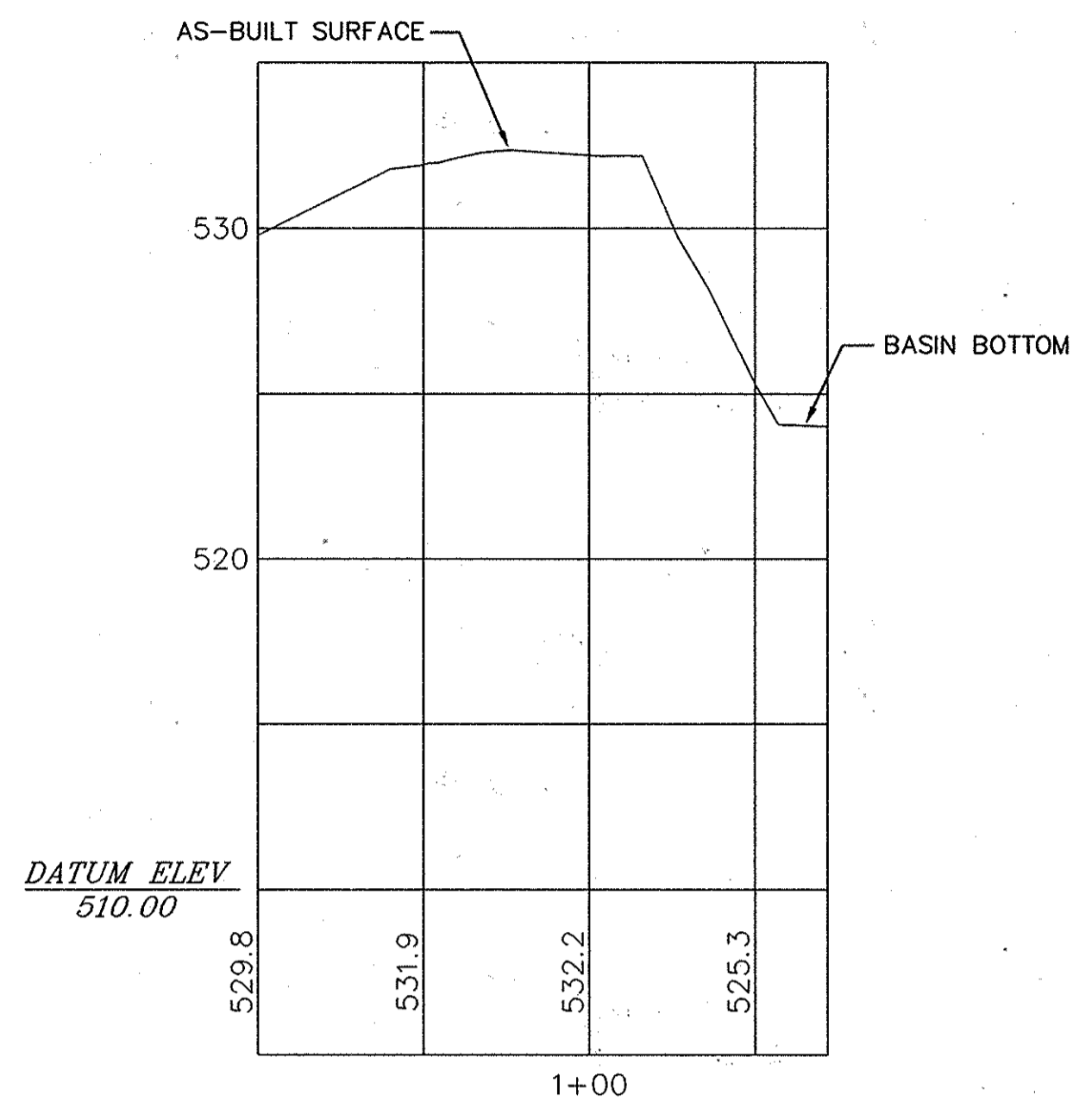
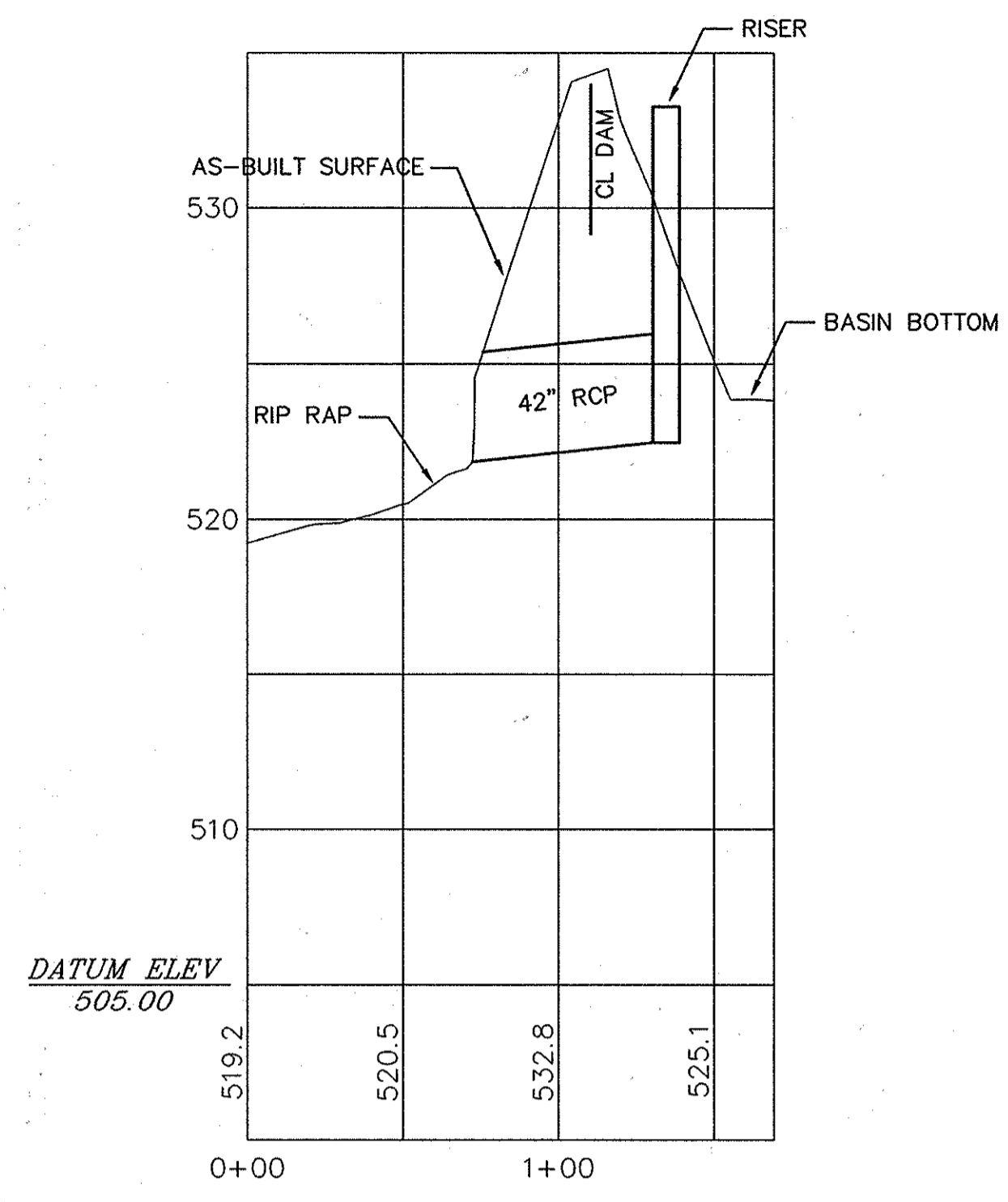
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE: AS NOTED  
SHEET 27 OF 31

M: 295077.01\FINAL\ ANTSP-5B,CRADLE-5B,RISER-5B,TBL-5B,TRK-5B,DEWTR-5B

SDP-97-128



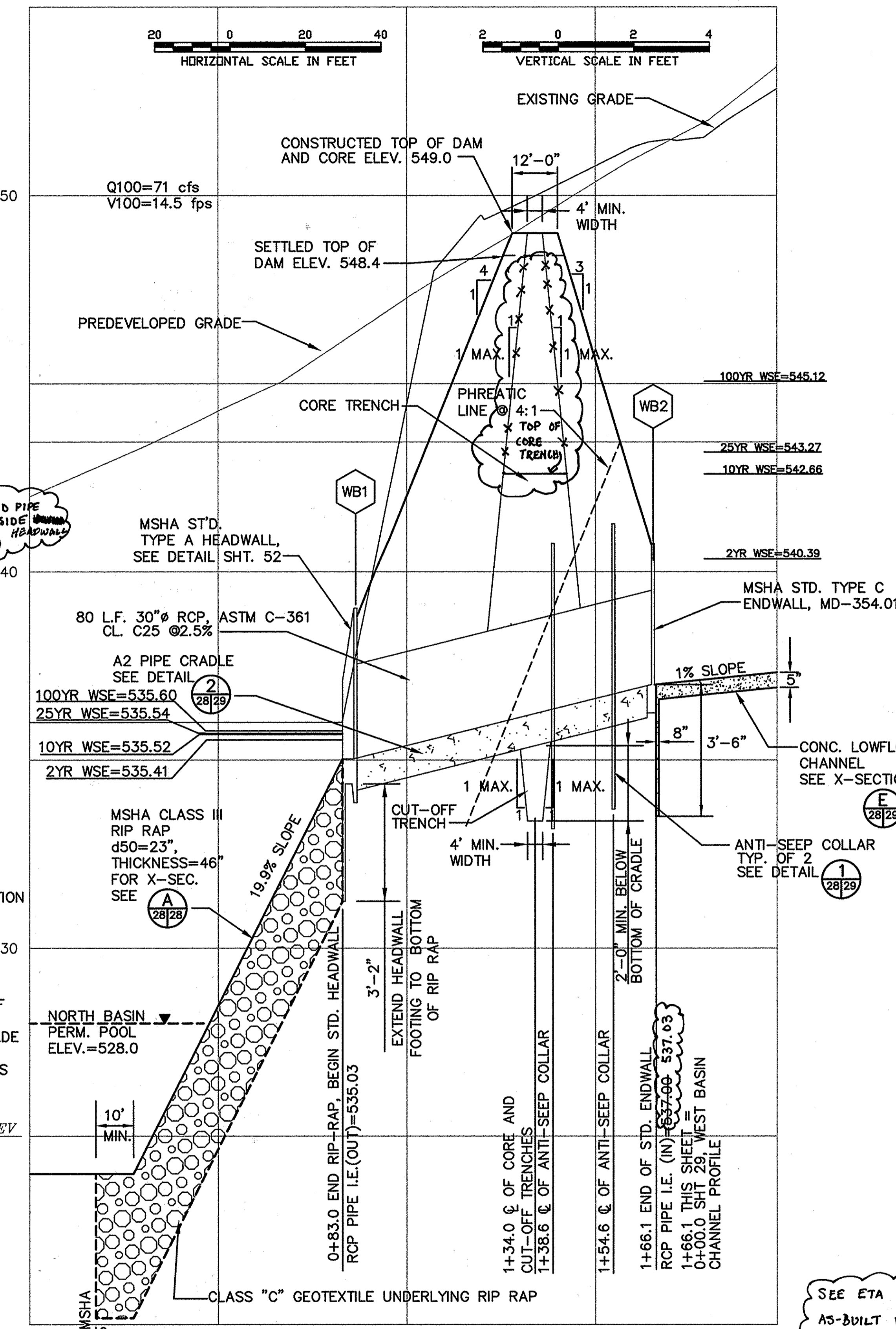
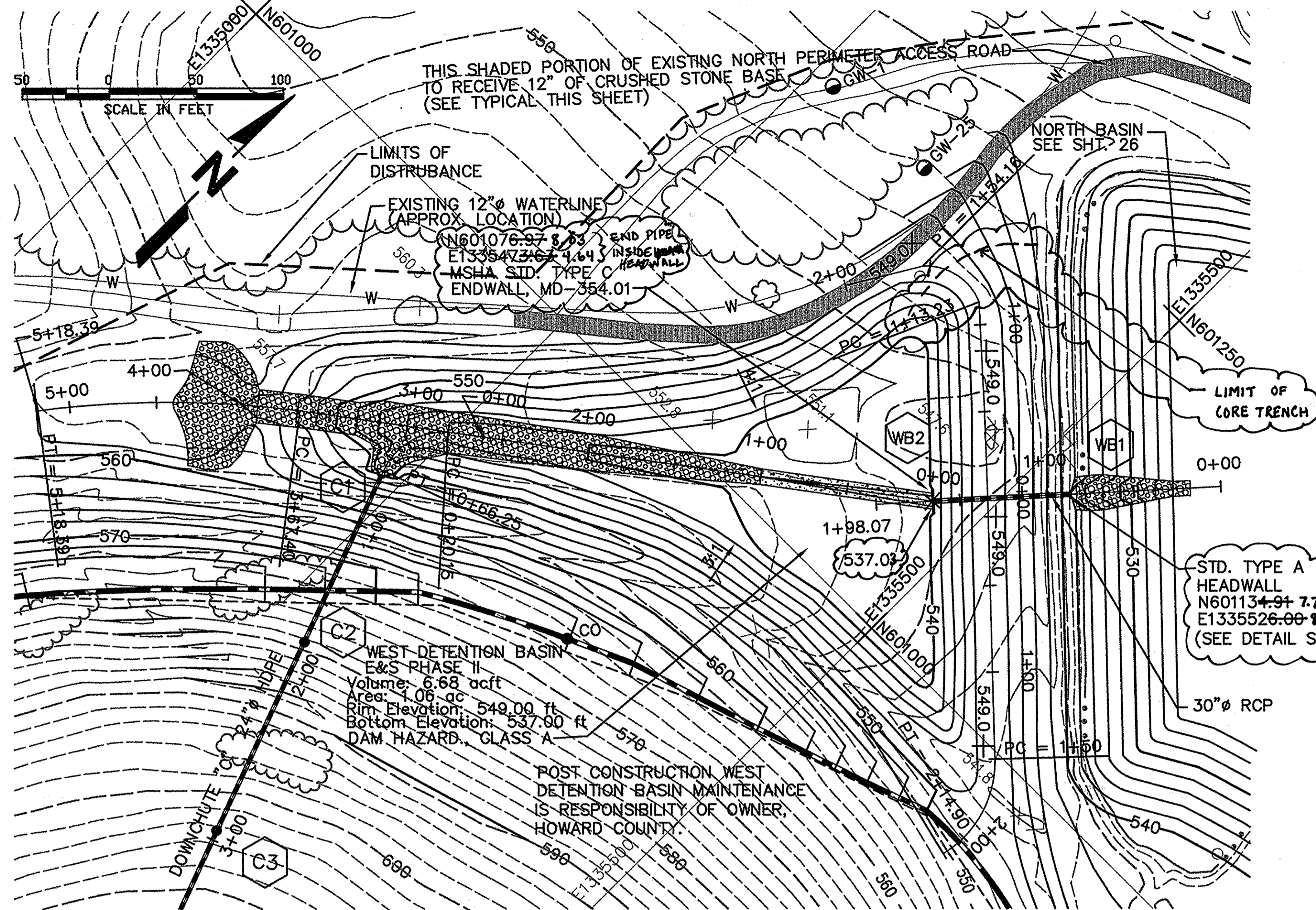
HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'

DESIGNED BY:	DATE:	REVISIONS	
TWH	4-3-00	DATE	DESCRIPTION
CHECKED BY:	DATE	BY	
APPROVED BY:	DATE		

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
ENGINEERS \* PLANNERS \* SURVEYORS  
3458 ELLICOTT CENTER DRIVE SUITE 101  
ELLICOTT CITY, MARYLAND 21043  
BALTO. (410)461-9920 FAX (410)750-8565



AS-BUILT PROFILES NORTH AND WEST BASINS			
<b>ALPHA RIDGE LANDFILL CELL CLOSURE</b>			
HOWARD COUNTY	CONTRACT NO.: 98901.10	DATE: 4-3-2000	MARYLAND
SCALE: AS NOTED			SHEET 28-AB



**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 10/30/97  
 SIGNATURE OF DEVELOPER JOHN J. O'HARA 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.

Paul A. Mandeville Paul A. Mandeville 10/30/97  
 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.

Cheryl L. Semman 10-30-97  
 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.

Robert Ziehm 10-30-97  
 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.

Michael R. Sanderson PE No. 17650  
 SIGNATURE DATE 10/30/01

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.

SEE ETA SHEET 26AB AND 28AB FOR AS-BUILT WEST DETENTION BASIN ENLARGED PLAN AND PROFILES

NOTE: FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL. MINIMUM REQUIRED DENSITY SHALL BE 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2% OF THE OPTIMUM. FOR MORE INFORMATION SEE SHEET 23.

SUBDIVISION NAME		LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		54,253,220,11	
LIBER/FOLIO		ZONE	TAX/ZONE MAP
10-847/806 16-878/215 10-891/314		PEC	10 & 16
WATER CODE		SEWER CODE	CENSUS TR.
PRIVATE, EXISTING		PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

Director: 11/3/97  
 Chief, Development Engineering Division: 10/30/97  
 Chief, Division of Land Development: 10/30/97

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Director of Public Works: 10/30/97  
 Chief, Bureau of Waste Management: 10/30/97

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

STATE OF MARYLAND  
 PAUL ANTHONY MANDEVILLE  
 PROFESSIONAL ENGINEER

DES.	AST,RTT				
DRN.	AST,EGC				
CHK.	PAM				
DATE:	10-30-97	BY	NO.	REVISION	DATE

WEST DETENTION BASIN  
 ENLARGED PLAN AND PROFILES

ALPHA RIDGE LANDFILL  
 UNLINED CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190-N

SCALE: AS NOTED

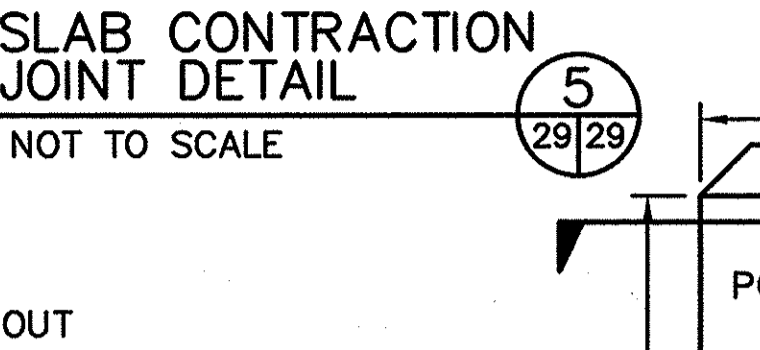
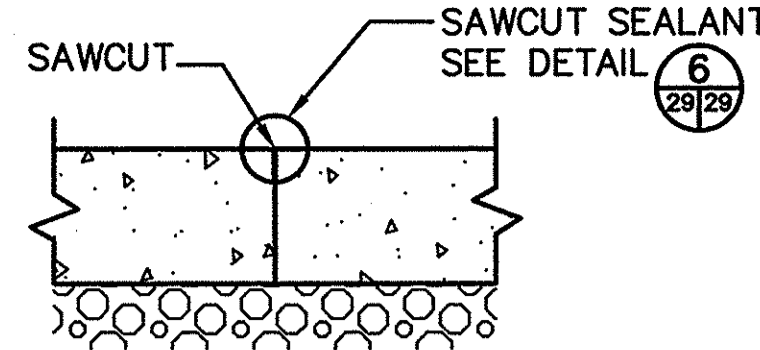
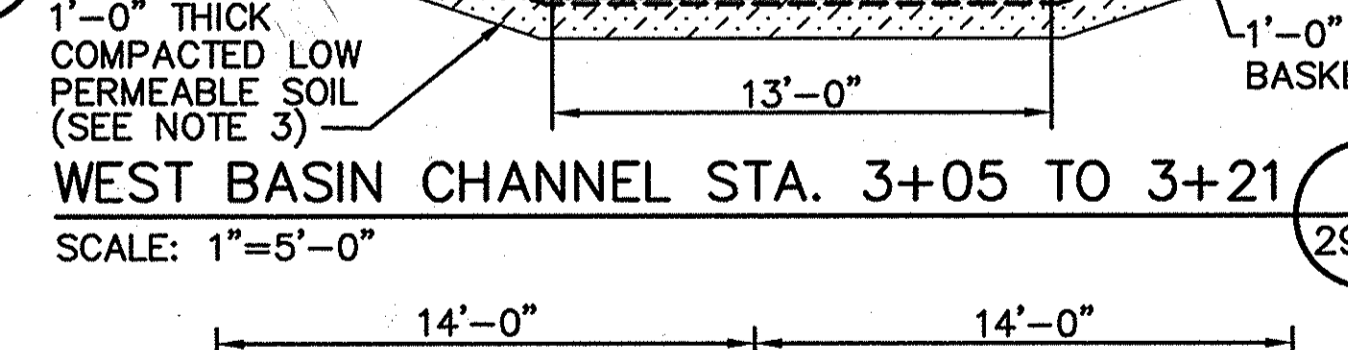
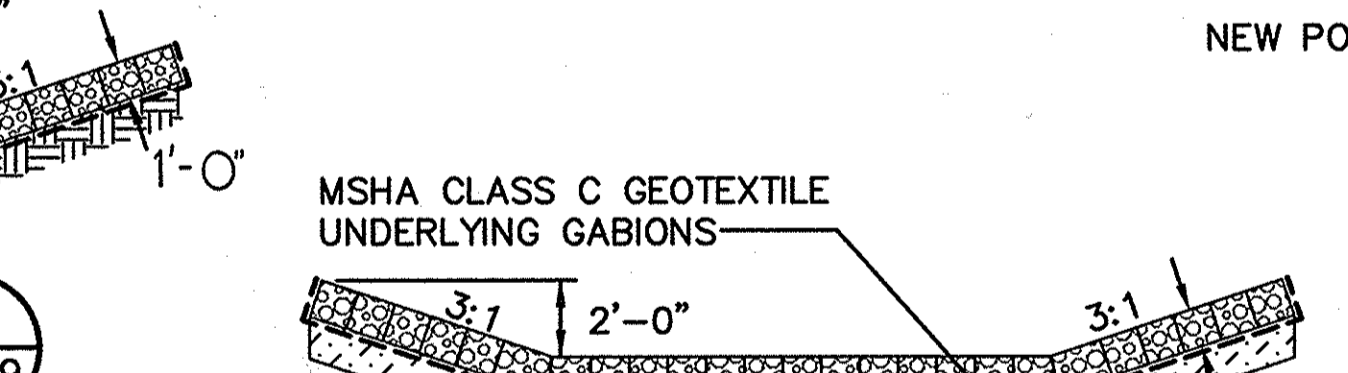
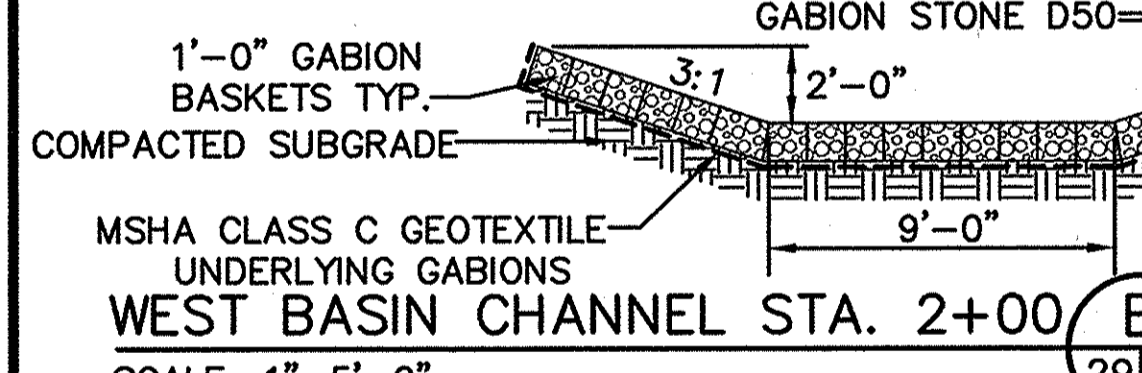
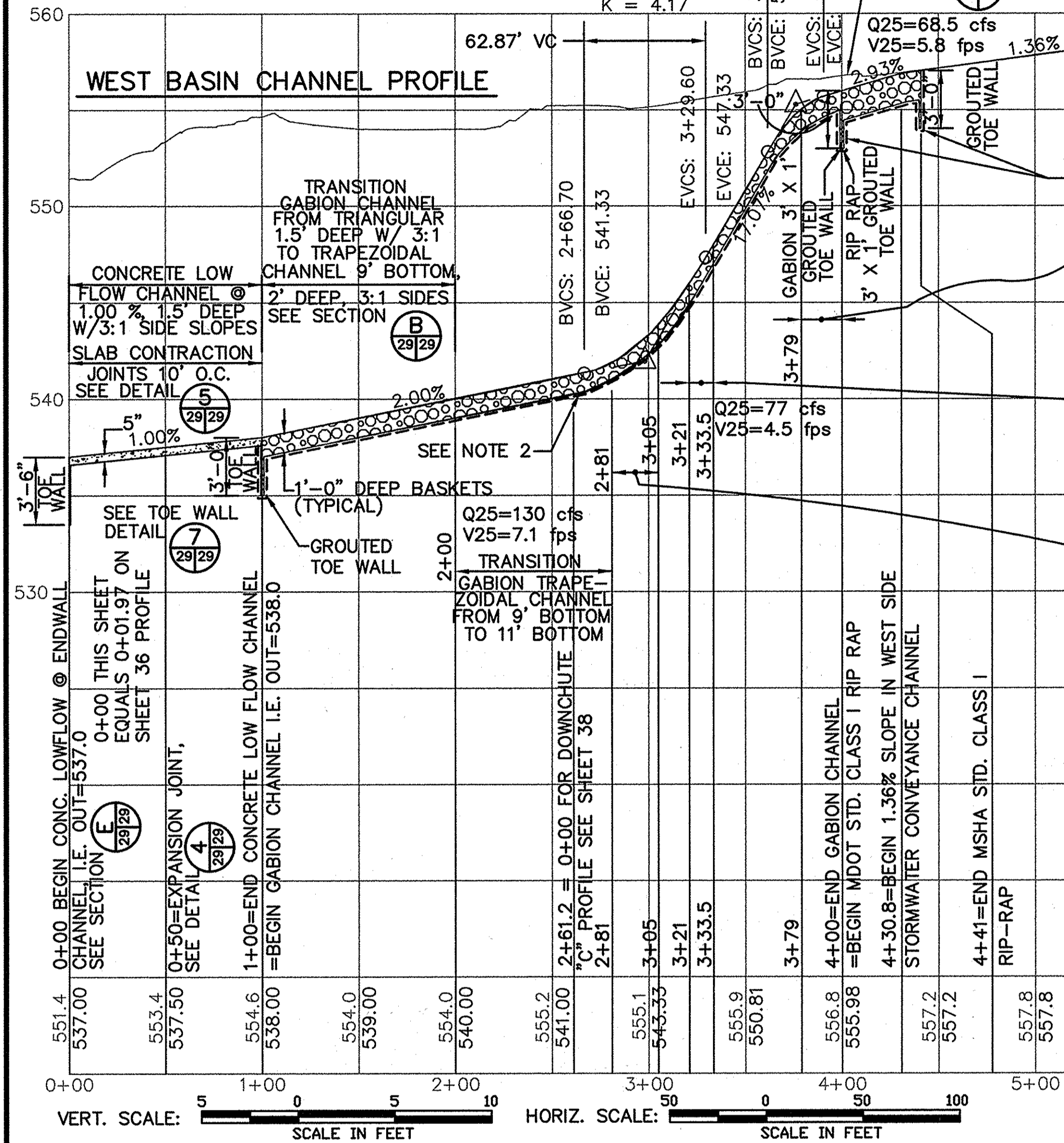
SHEET 28 OF 131

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SDP-97-128

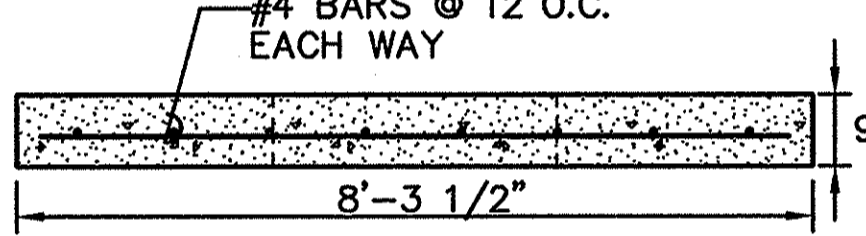
M:\285077.01\FINAL WBSN-WBCLDAM.PRF-WBSX.MIKENOTE WBSN-B

- NOTES:  
 1. RIP-RAP FOR GABION BASKETS TO BE d50 = 7".  
 2. INSTALL CLASS C GEOTEXTILE UNDER ALL RIP-RAP AND GABIONS.  
 3. PROVIDE 1'-0" CL OR SC MATERIAL COMPACTED TO 95% (ASTM D698) BELOW GEOTEXTILE FROM STA. 2+81 TO STA. 4+00.

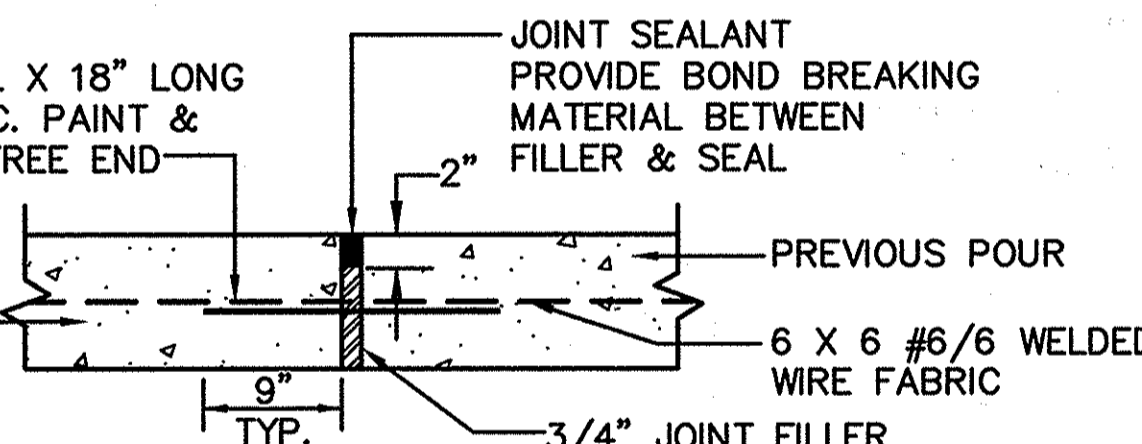


- NOTES:  
 1. ANTI-SEEP COLLAR TO BE POURED AT LEAST TWO (2) FEET FROM NEAREST PIPE JOINT.  
 2. ANTI-SEEP COLLAR TO BE CONSTRUCTED IN THREE POURS.  
 3. BOTTOM HALF TO BE POURED FIRST.  
 4. PLACE PIPE AND POUR CRADLE SECOND.  
 5. TOP PORTION OF COLLAR POURED THIRD.  
 6. BACKFILL SHALL BE PLACED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

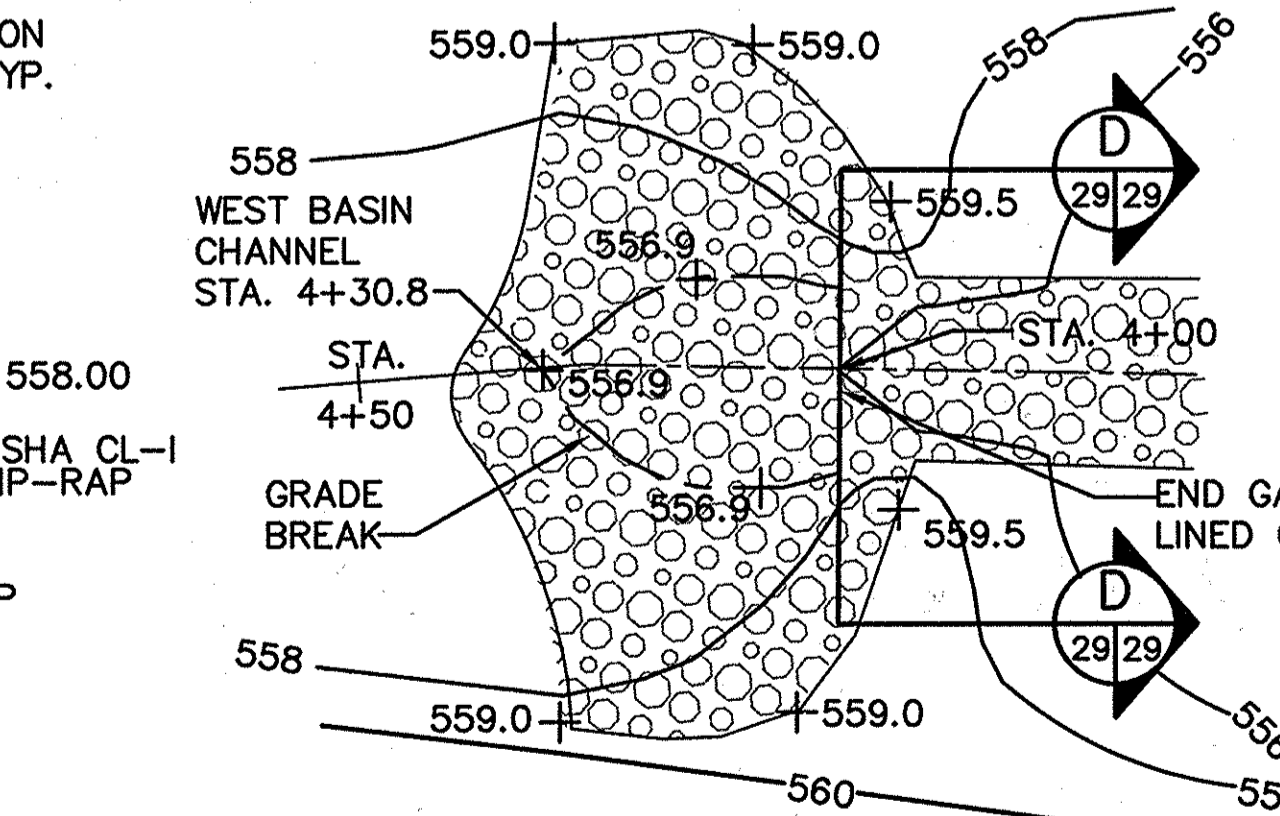
ANTI-SEEP COLLAR DETAIL (TYP. OF 2)  
 SCALE: 1/2"=1'-0"



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



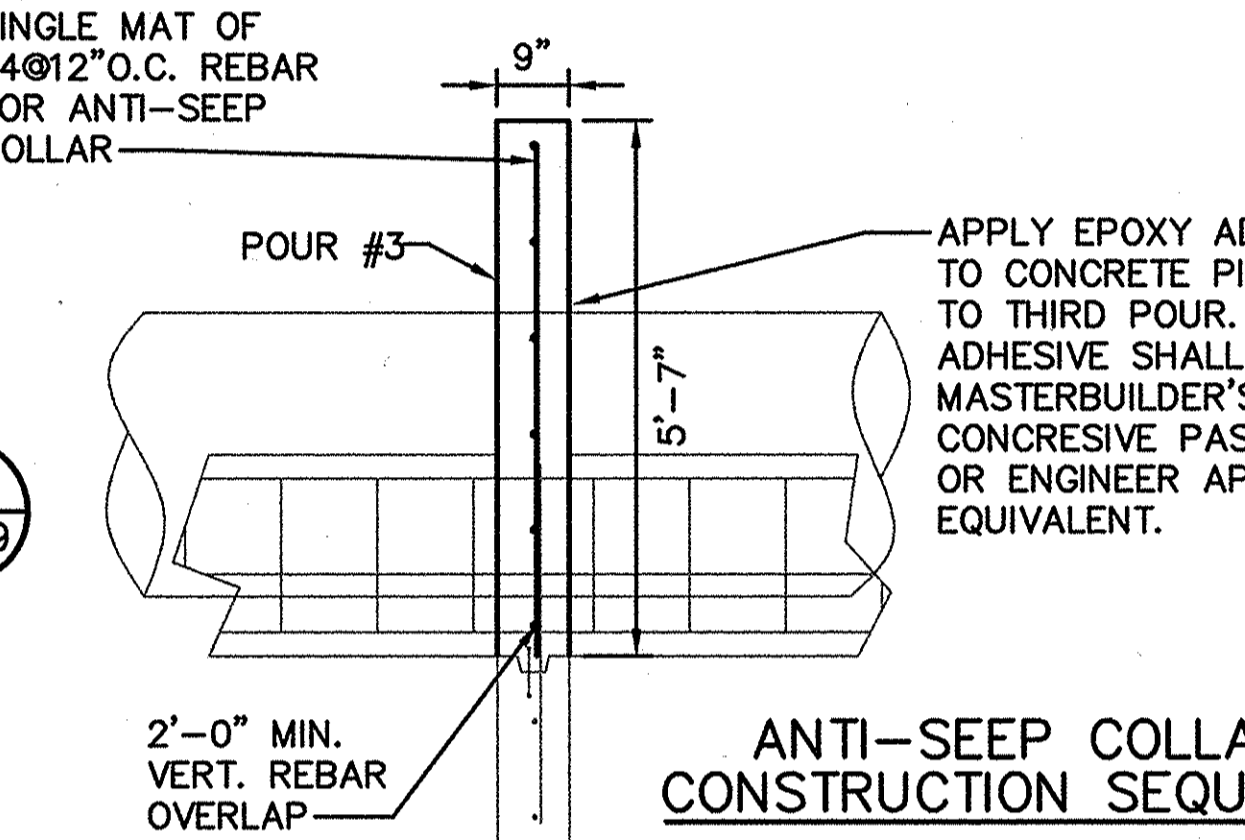
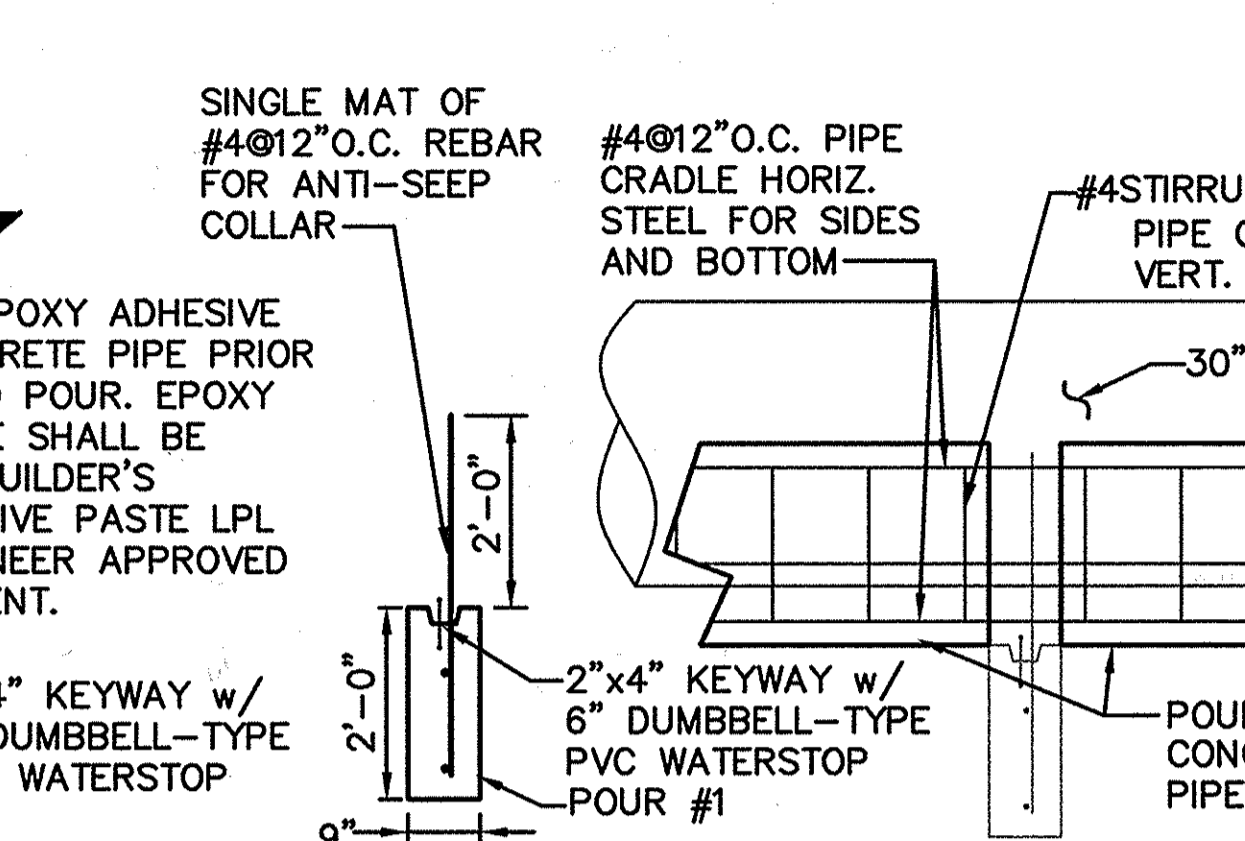
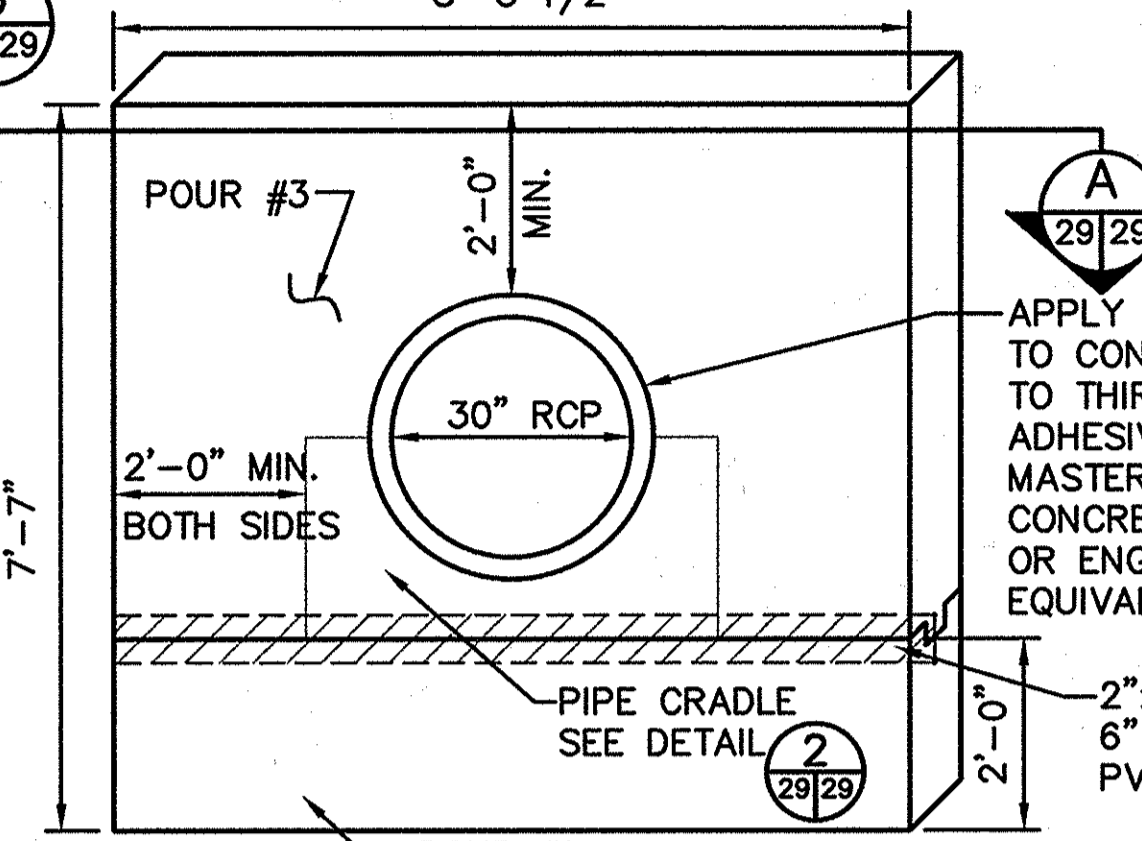
CONCRETE SLAB EXPANSION JOINT DETAIL  
 NOT TO SCALE



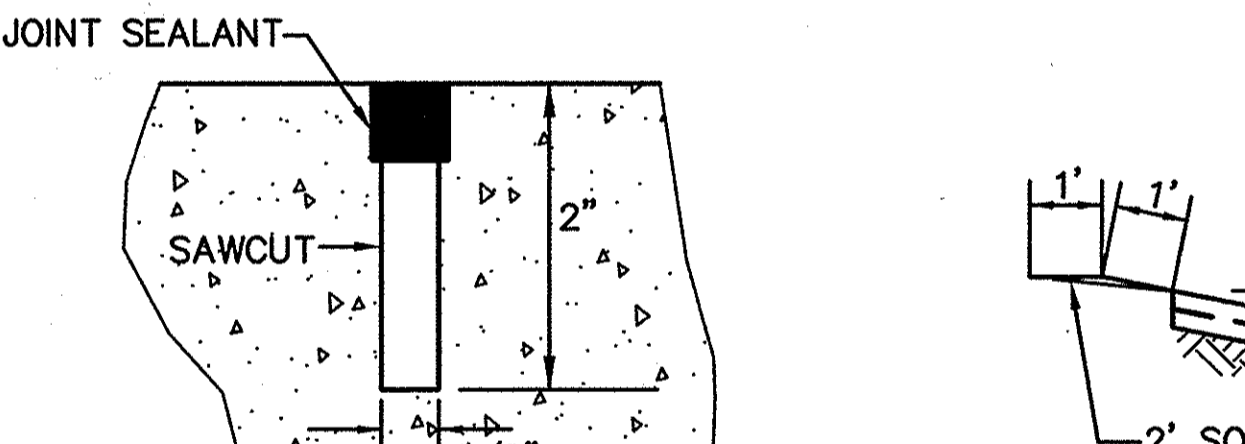
WEST BASIN INLET DETAIL  
 SCALE: 1"=20'-0"

POND	WEIR			STR. WIDTH	DIA. IN.	OUTLET PIPE			ANTI-SEEP COLLAR	DAM		EMERG. SPILLWAY	CORE TRENCH		CUT-OFF TRENCH		WATER SURFACE ELEV.						
	HT.	WIDTH	CREST ELEV.			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.
WEST	N/A	N/A	N/A	N/A	30	80.0	537.03	535.03	2	7.58' HT. 8.29' W.	12'	549.0	548.4	N/A	N/A	4'	1:1	4'	1:1	540.39	542.66	543.27	545.12

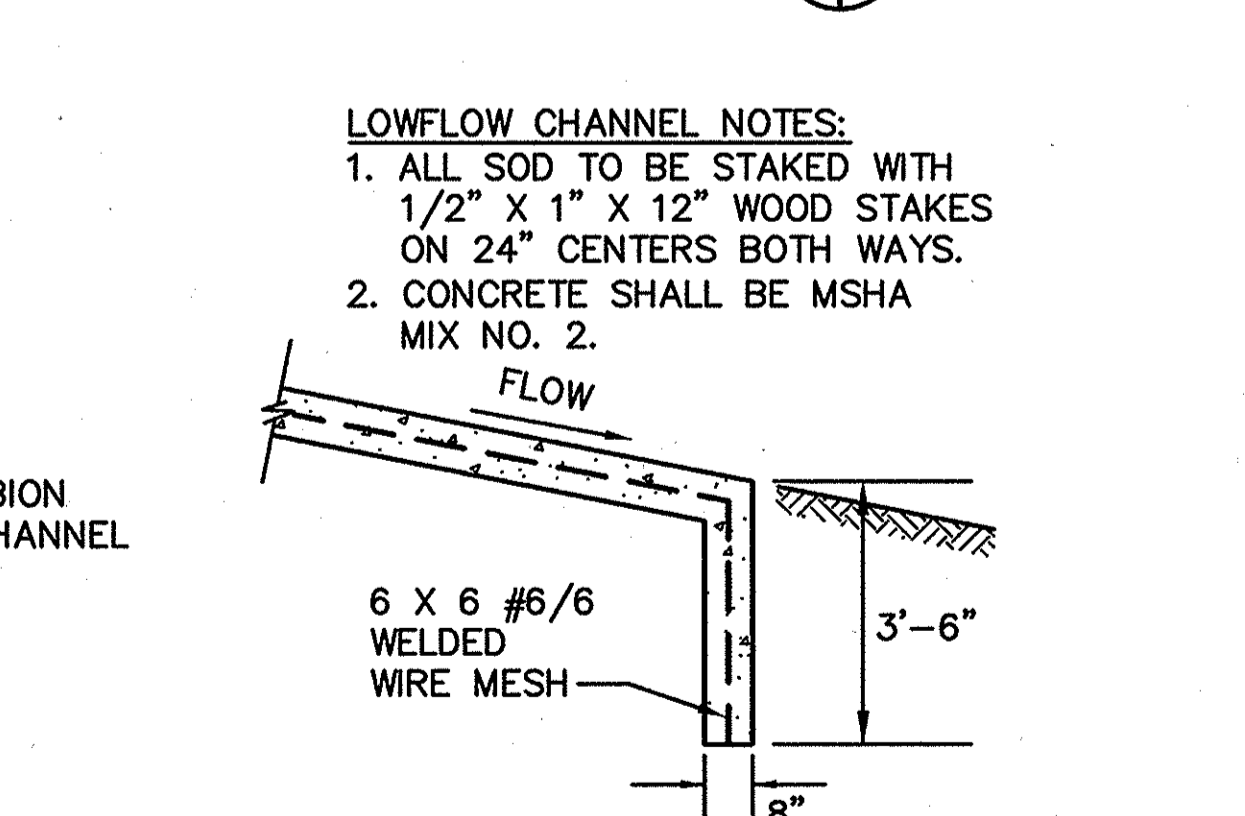
POST CONSTRUCTION WEST DETENTION BASIN MAINTENANCE IS RESPONSIBILITY OF OWNER, HOWARD COUNTY.



ANTI-SEEP COLLAR CONSTRUCTION SEQUENCE



SAWCUT SEALANT DETAIL  
 NOT TO SCALE



TOE WALL DETAIL  
 NOT TO SCALE

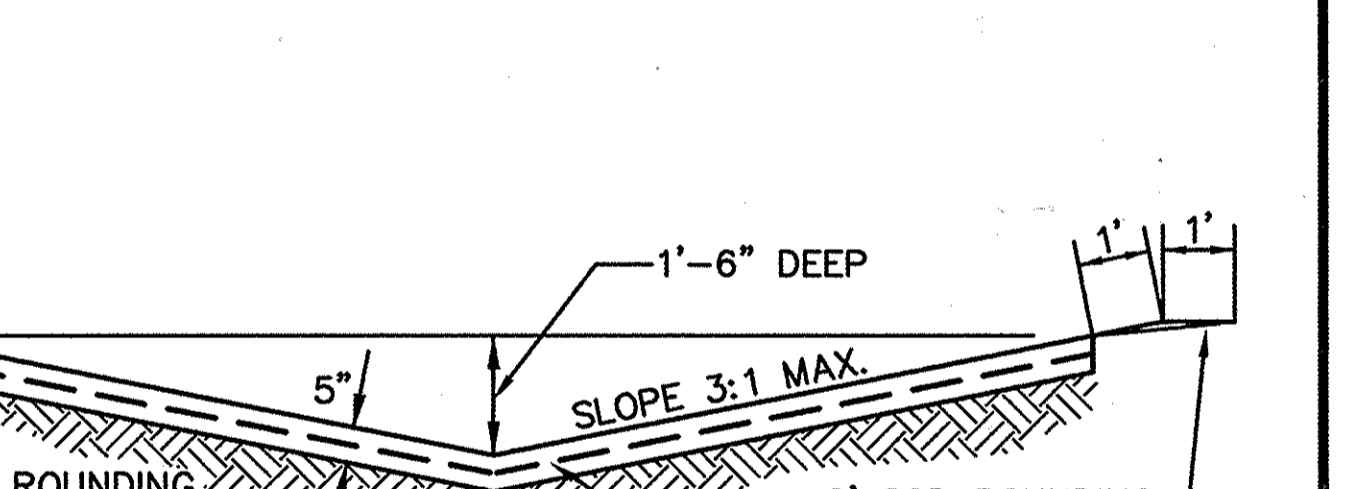
SEDIMENT CONTROL & POND CONSTRUCTION  
 BY THE DEVELOPER:  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED 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 of Developer: *John J. O'Hara* DATE: 10/30/97  
 PRINT NAME BELOW SIGNATURE: JOHN J. O'HARA  
 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.

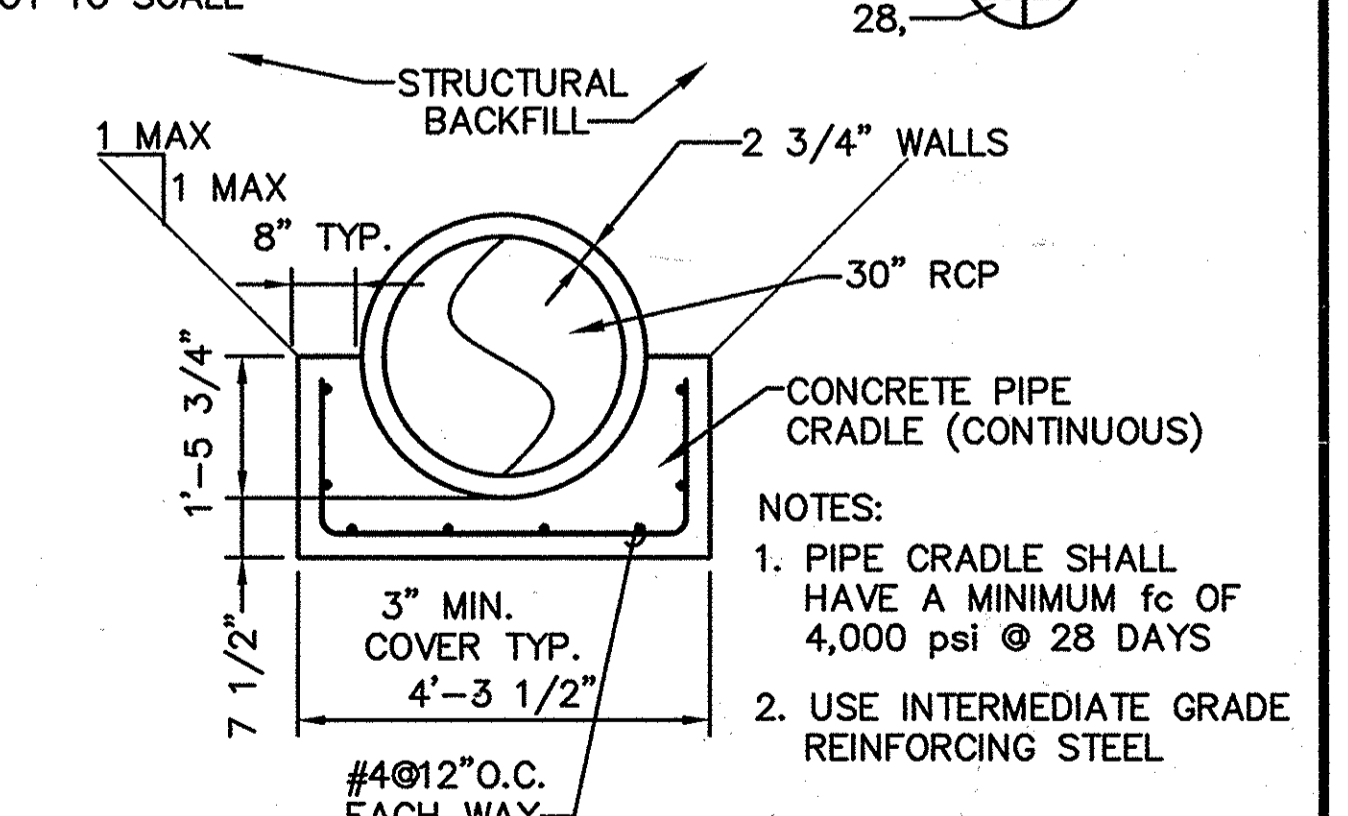
Signature of Engineer: *Paul A. Mandeville* DATE: 10/30/97  
 PRINT NAME BELOW SIGNATURE: PAUL A. MANDEVILLE  
 THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Signature of Engineer: *Charles J. Simmons* DATE: 10-30-97  
 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 of Engineer: *Michael R. Gordon* DATE: 10/10/01  
 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.



CONCRETE TRIANGULAR X-SECTION  
 NOT TO SCALE



A2 PIPE CRADLE DETAIL  
 SCALE: 1/2"=1'-0"

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11	TAX/ZONE MAP 10 & 16	
LIBER/FOLIO 10-847/806 16-878/215 10-891/314	ZONE PEC	CENSUS TR. 60-30	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

Signature: *James P. Smith* DATE: 11/3/97  
 DIRECTOR

Signature: *John J. O'Hara* DATE: 10/30/97  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

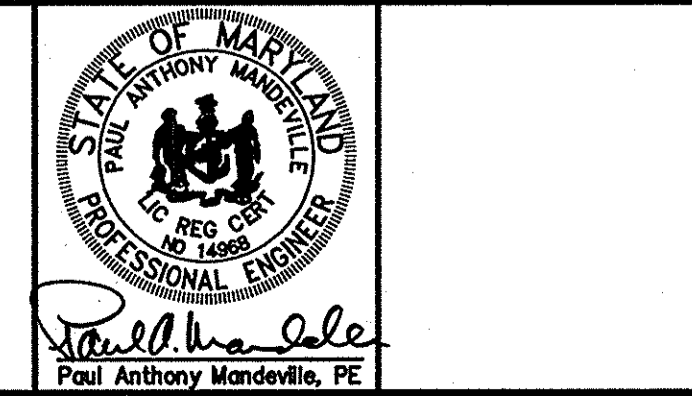
Signature: *Cindy Hamilton* DATE: 11/9/97  
 CHIEF, DIVISION OF LAND DEVELOPMENT

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Signature: *James P. Smith* DATE: 10/30/97  
 DIRECTOR OF PUBLIC WORKS

Signature: *John J. O'Hara* DATE: 10/30/97  
 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



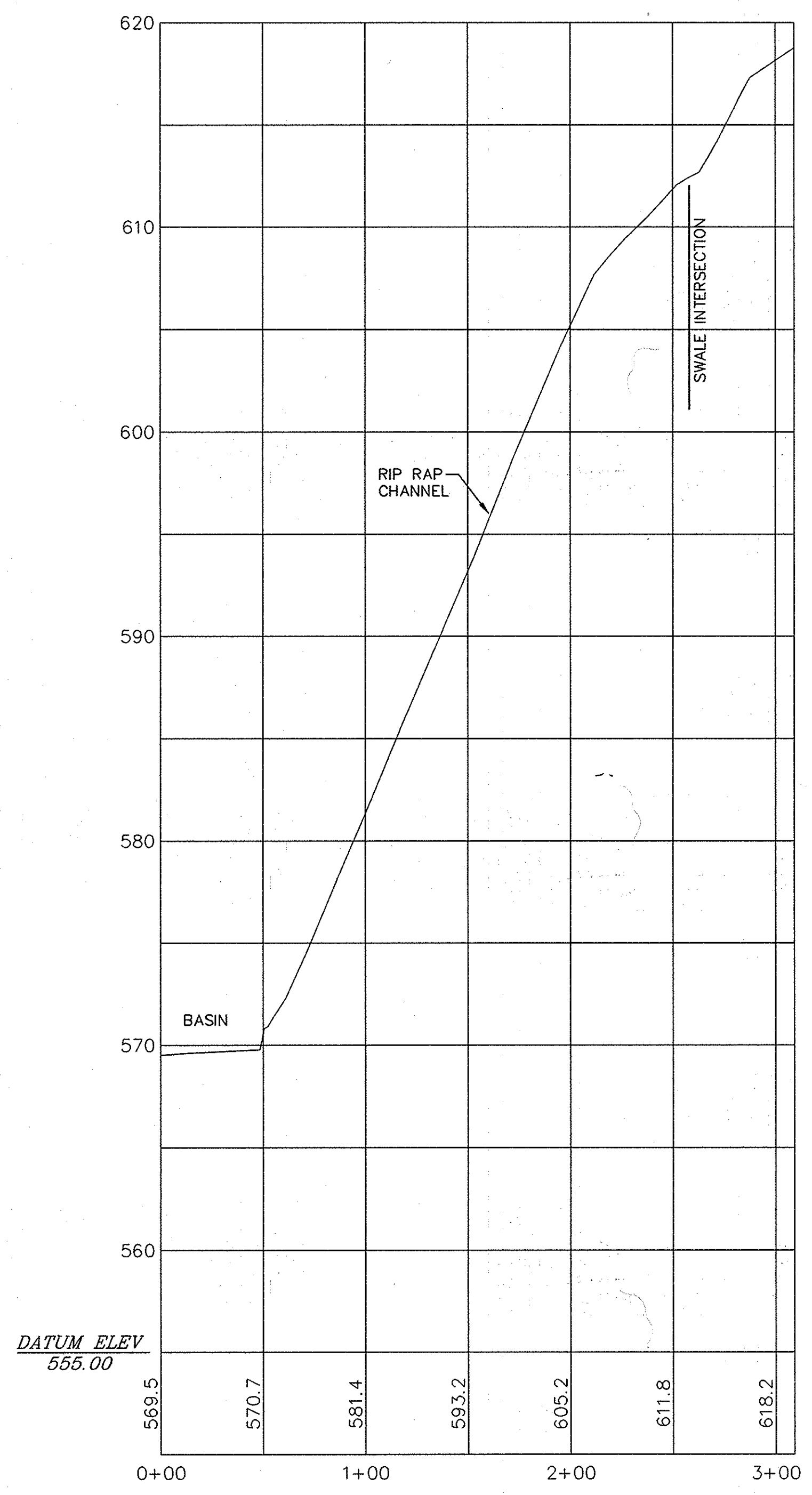
DES.	AST,RTT	▲			
DRN.	AST,EGC	▲			
CHK.	PAM	▲			
DATE: 10-30-97	BY	NO.	REVISION	DATE	

WEST DETENTION BASIN DETAILS

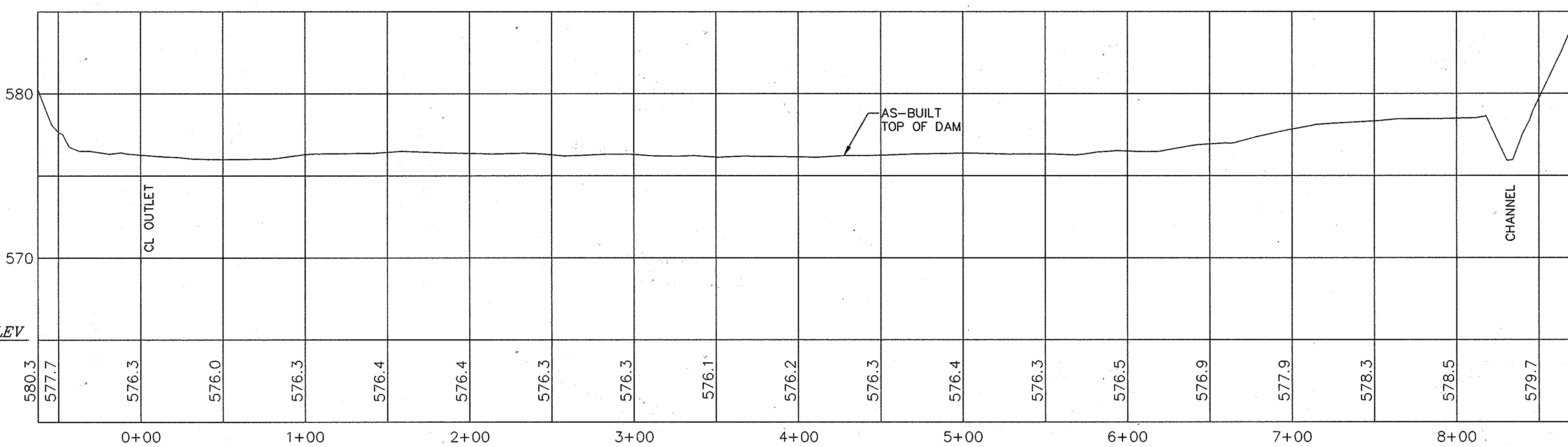
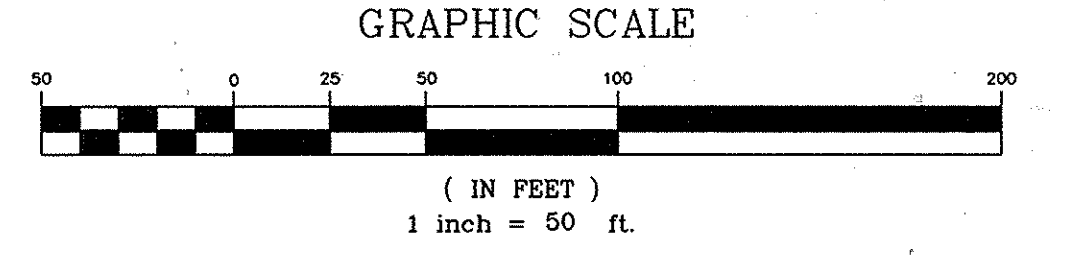
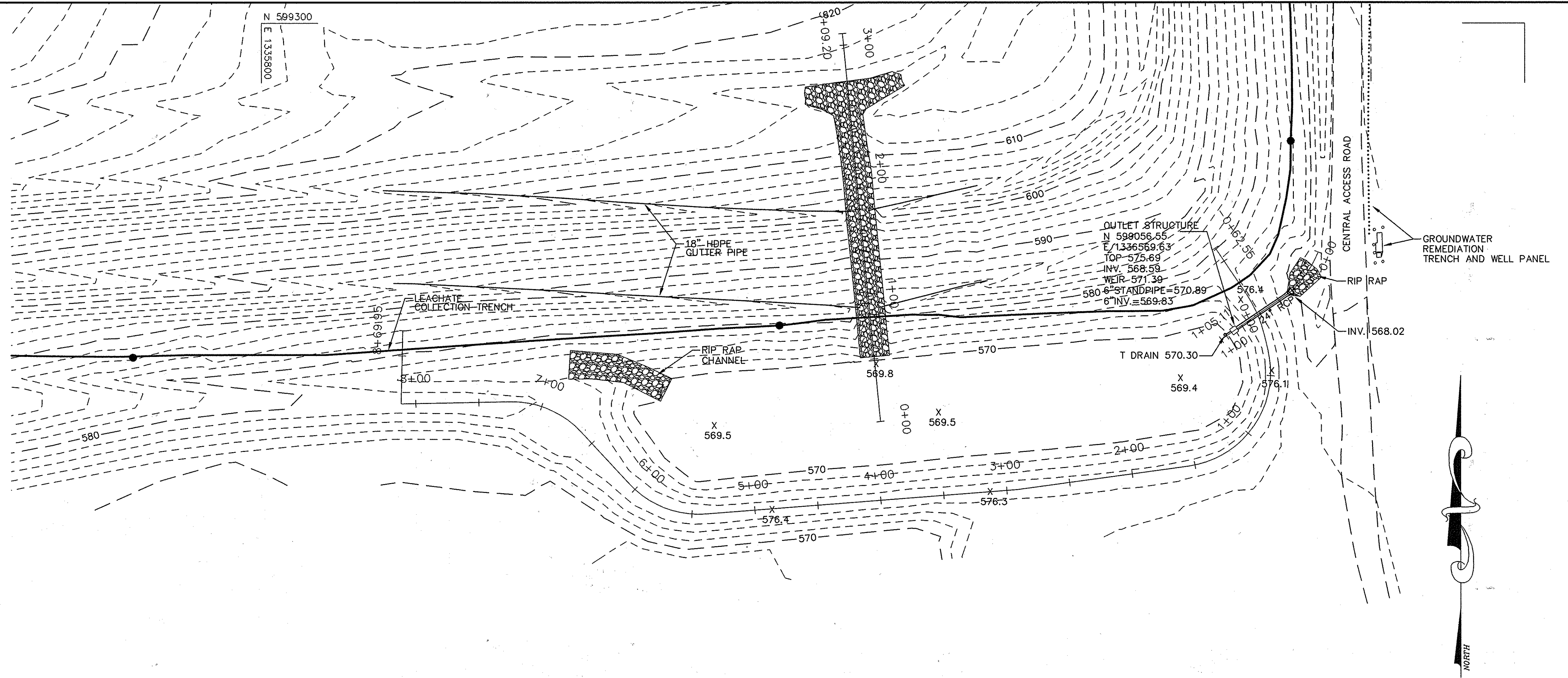
ALPHA RIDGE LANDFILL  
 UNLINED CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

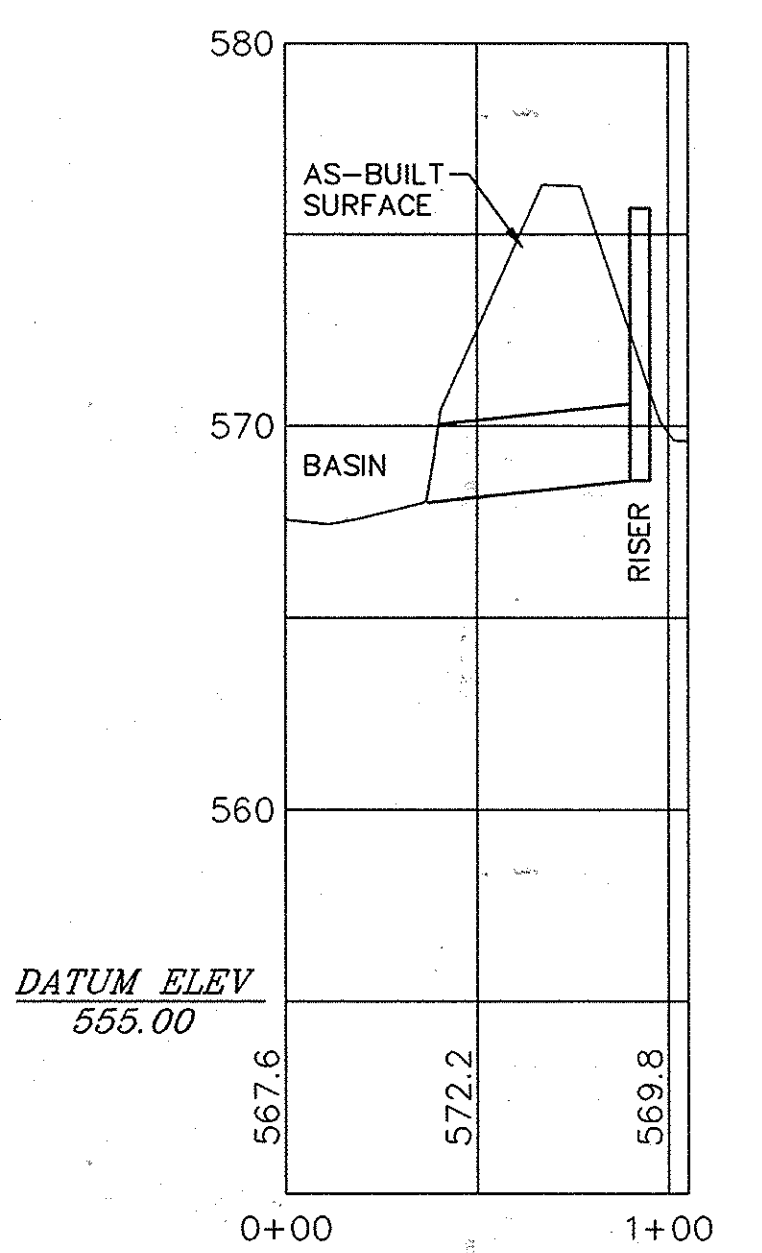
SCALE: AS NOTED  
 SHEET 29 OF 121



DOWNCHUTE PROFILE  
SOUTH BASIN



TOP OF DAM PROFILE  
SOUTH BASIN



OUTLET PROFILE  
SOUTH BASIN

Sh-csltdwg 4-18-01 85628 on EST

DESIGNED BY:		DATE		REVISIONS	
DATE	BY	DATE	BY	DESCRIPTION	
11-21-98	TWH	4-6-00	TWH	ADDED PROFILES	
		10-30-00	TWH	ADDED RISER DRAIN ELEVATIONS.	
		4-18-01	TWH	REVISED CONTOURS OF BERM AND PROFILE GRADES.	

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565

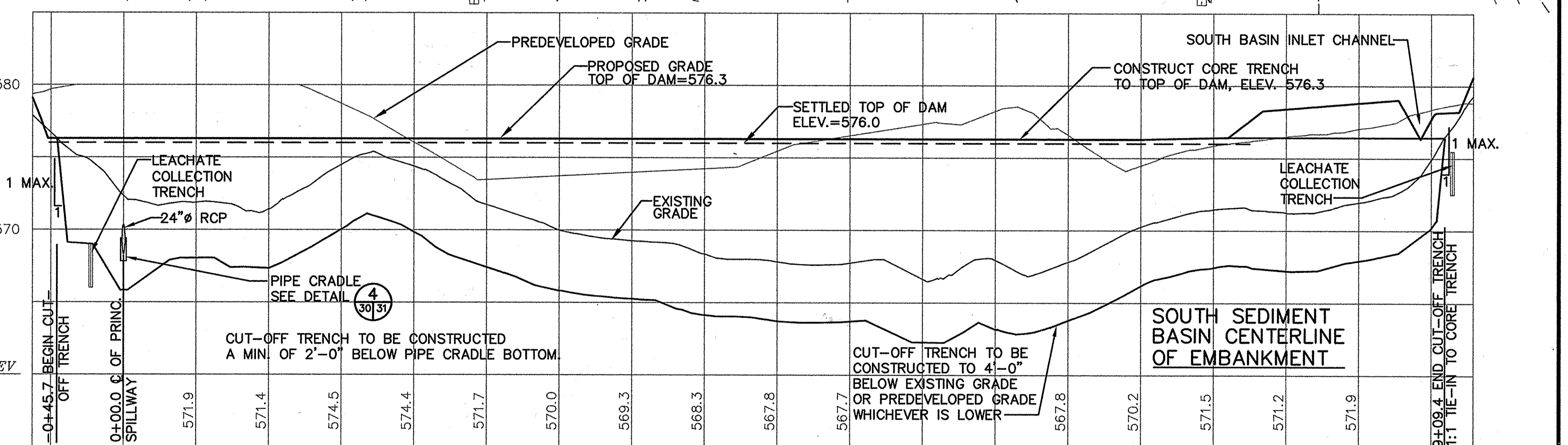
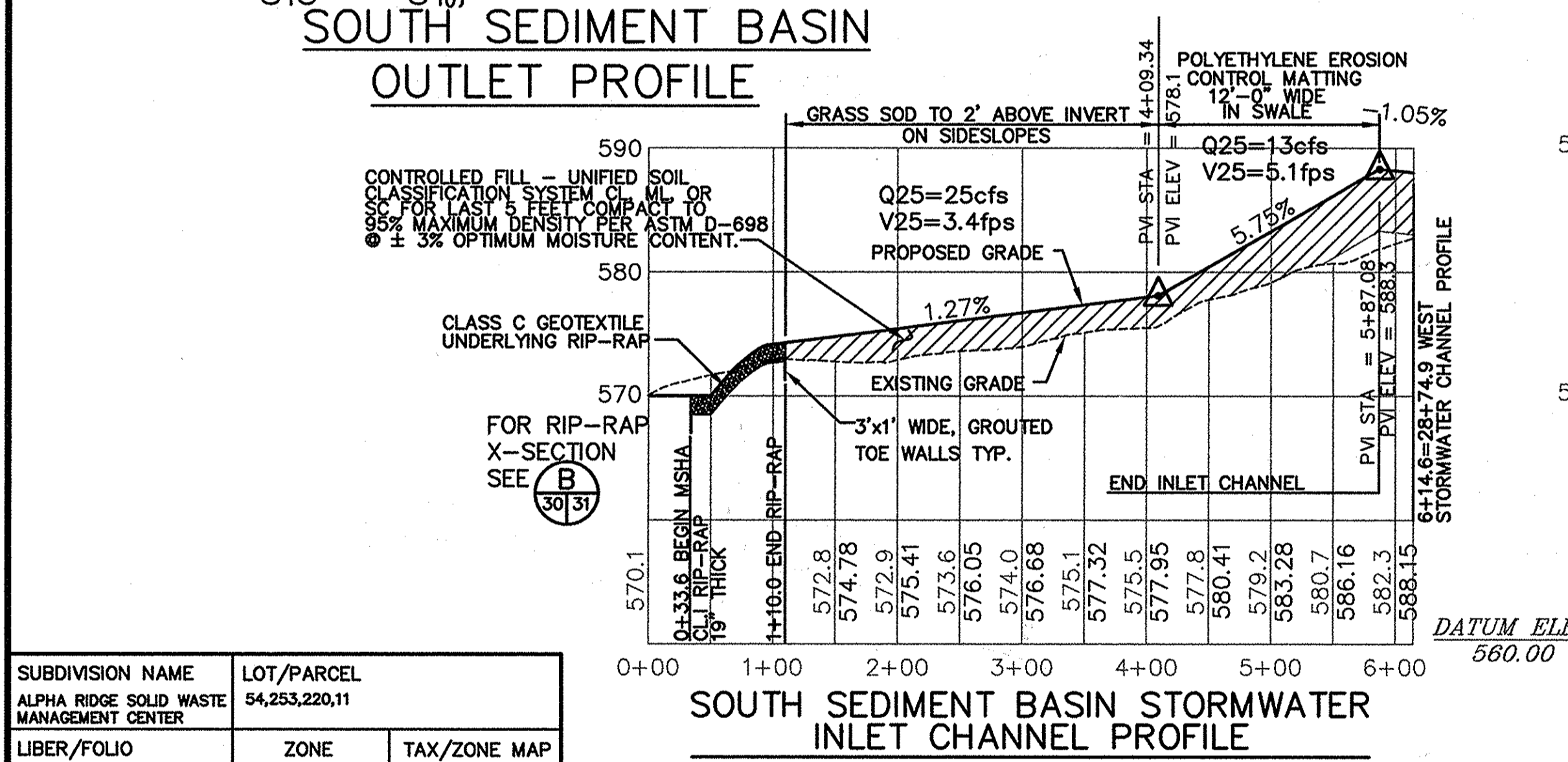
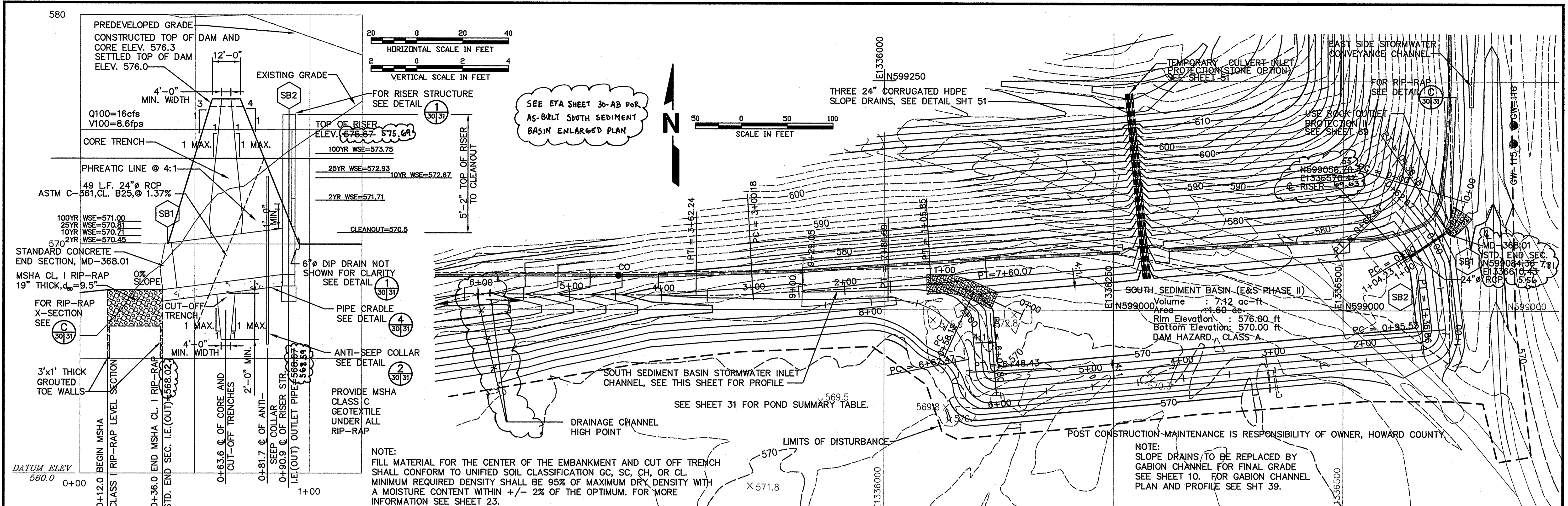


SOUTH BASIN AS-BUILT

## ALPHA RIDGE LANDFILL CELL CLOSURE

HOWARD COUNTY MARYLAND

SCALE : 1"=50' CONTRACT NO.: 98301.10 DATE : 2-27-2000 SHEET 30-AB



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/606 16-878/215 10-881/314		ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING		SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

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

*David Smith* 11/3/97  
DIRECTOR DATE

*John O'Hara* 10/30/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*John O'Hara* 10/30/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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

*John O'Hara* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John O'Hara* 10/30/97  
CHIEF BUREAU OF WASTE MANAGEMENT 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.

*Michael R. Donham* PE NO. 17650  
SIGNATURE DATE 10/10/01

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.

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

*Paul Anthony Mandeville*  
PROFESSIONAL ENGINEER

**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* 10/30/97  
SIGNATURE OF DEVELOPER DATE

**( ) 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.

*Paul A. Mandeville* 10/30/97  
PRINT NAME BELOW SIGNATURE DATE  
SIGNATURE OF ENGINEER

( ) 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.

*Charles J. Jimenez* 10-30-97  
DATE  
USDA - NATURAL RESOURCES CONSERVATION

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

*Robert W. Ziel* 10-30-97  
DATE  
HOWARD SOIL CONSERVATION DISTRICT

DES.	AST,RTT	
DRN.	AST,EGC	
CHK.	PAM	
DATE: 10-30-97	BY NO.	REVISION
		DATE

**SOUTH SEDIMENT BASIN  
ENLARGED PLAN AND PROFILES**

**ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE**  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

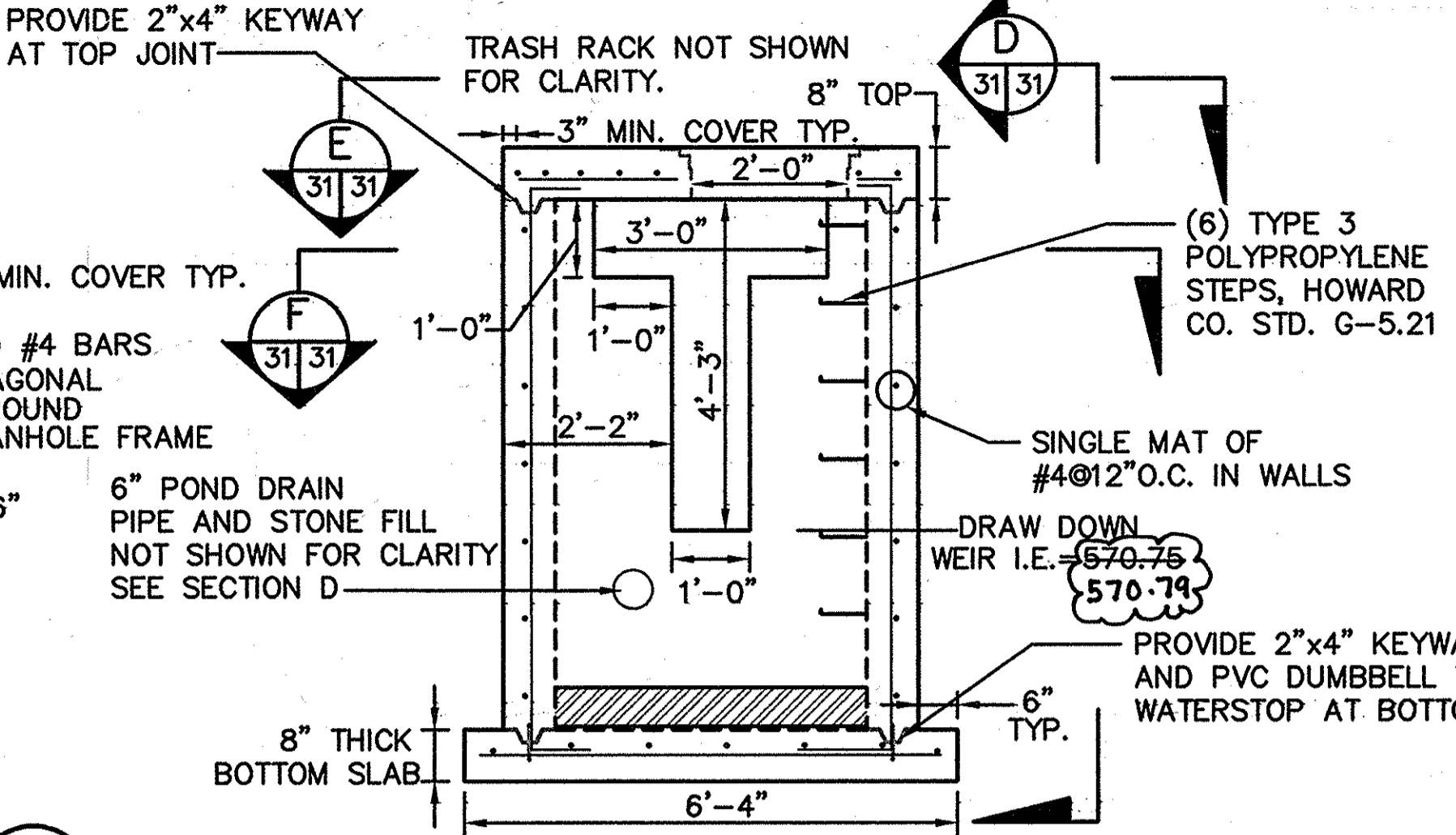
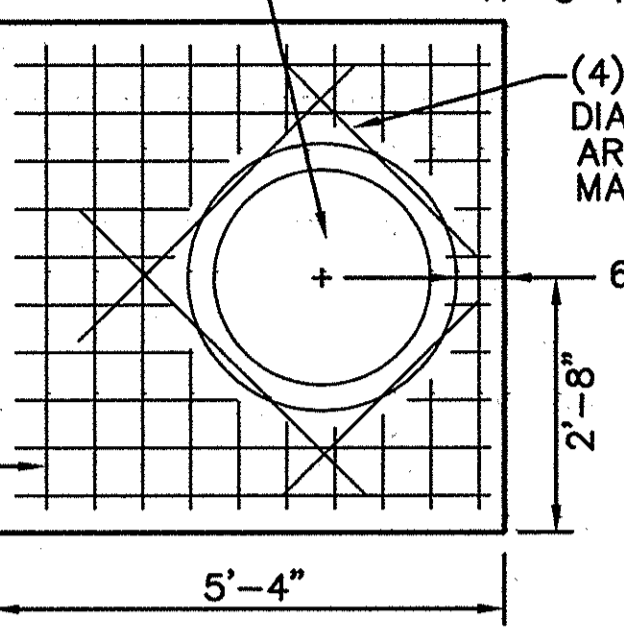
SCALE:  
AS NOTED

SHEET  
30 of 136

SDP-97-128

NOTE: CONCRETE OUTLET RISER SHALL BE POURED IN PLACE UNLESS CONTRACTOR RECEIVES APPROVAL FROM THE HOWARD CO. DEVELOPMENT ENGINEERING DIVISION FOR A WATERTIGHT PRECAST OUTLET RISER DESIGN.

CAST-IN PLACE STD. MANHOLE GRATE AND COVER AS MANUFACTURED BY NEENAH FOUNDRY CO. CAT. NO. R-6400-CO W/ TYPE D-STRAP IRON LOCK



POND	RISER		OUTLET PIPE		ANTI-SEEP COLLAR	DAM	EMERG. SPILLWAY	CORE TRENCH	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
SOUTH	4'-3"	1'	573.96 572	5'-4"	24	49	568.59 568.67	568.02	1	9.00 H. 9.83 W.	12'	576.3	576.0	N/A	N/A	4'	1:1	4'	1:1	571.71	572.67	572.93	573.75

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

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: *Michael R. Jordan* PE NO. 17650  
DATE: 10/10/01

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 THE SCS STANDARDS AND SPECIFICATIONS FOR PONDS (MID-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 INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING. 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: 10/30/97  
PRINT NAME BELOW SIGNATURE: JOHN J. O'HARA

( ) 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: *Paul A. Mandeville* DATE: 10/30/97  
PRINT NAME BELOW SIGNATURE: PAUL A. MANDEVILLE

( ) 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: *Charles J. Jordan* DATE: 10-30-97  
USA - NATURAL RESOURCES CONSERVATION SERVICE

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

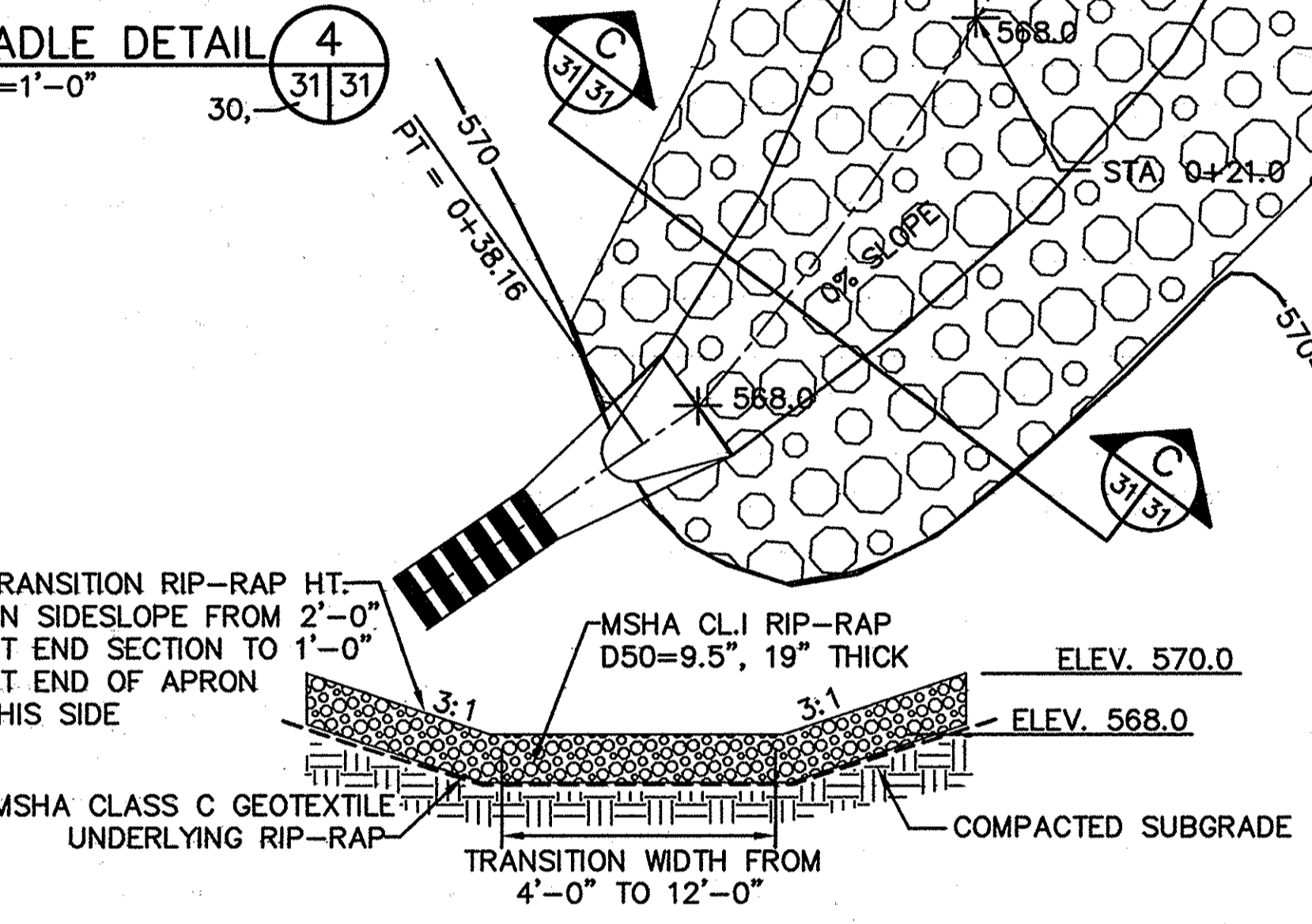
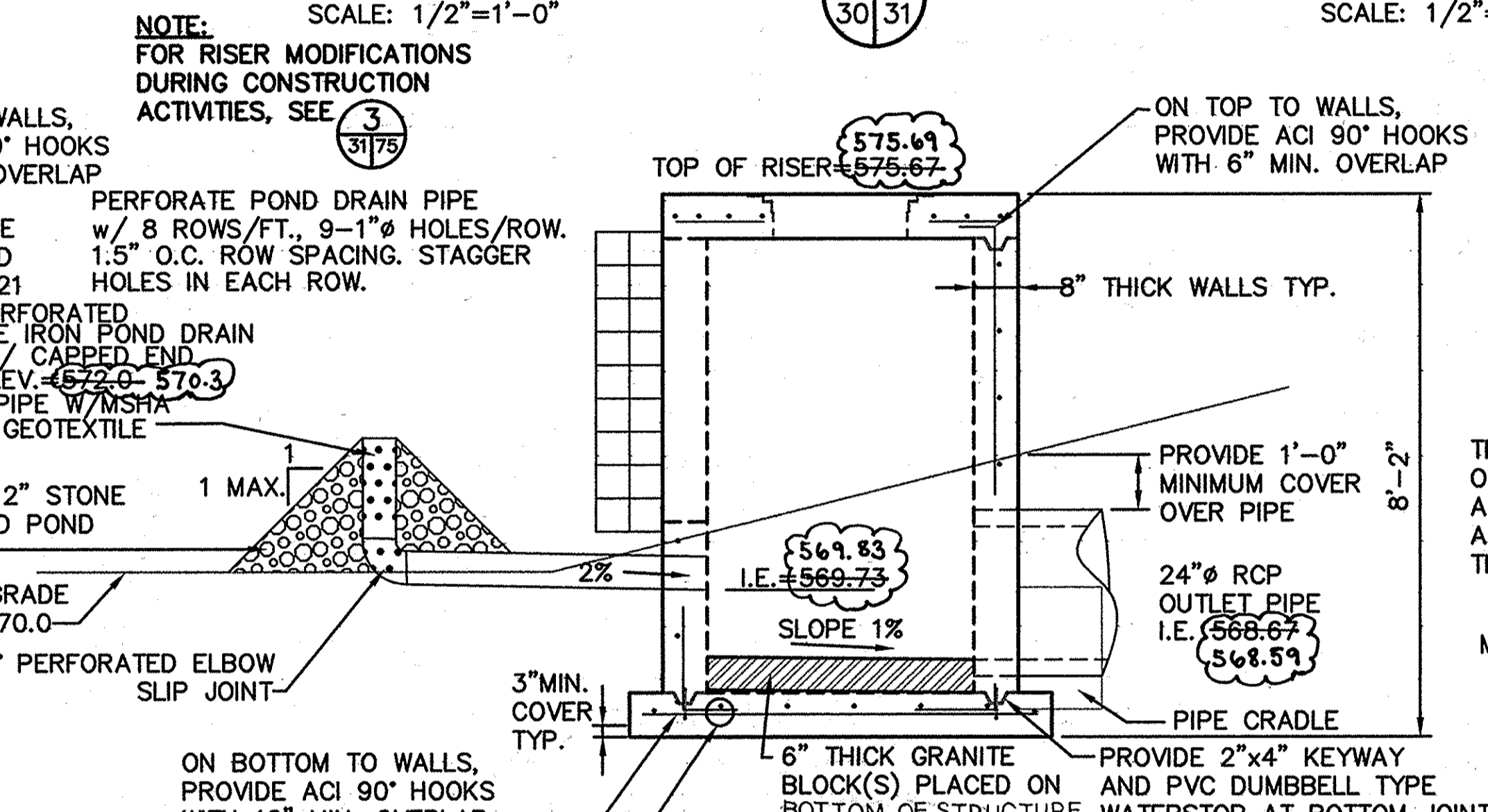
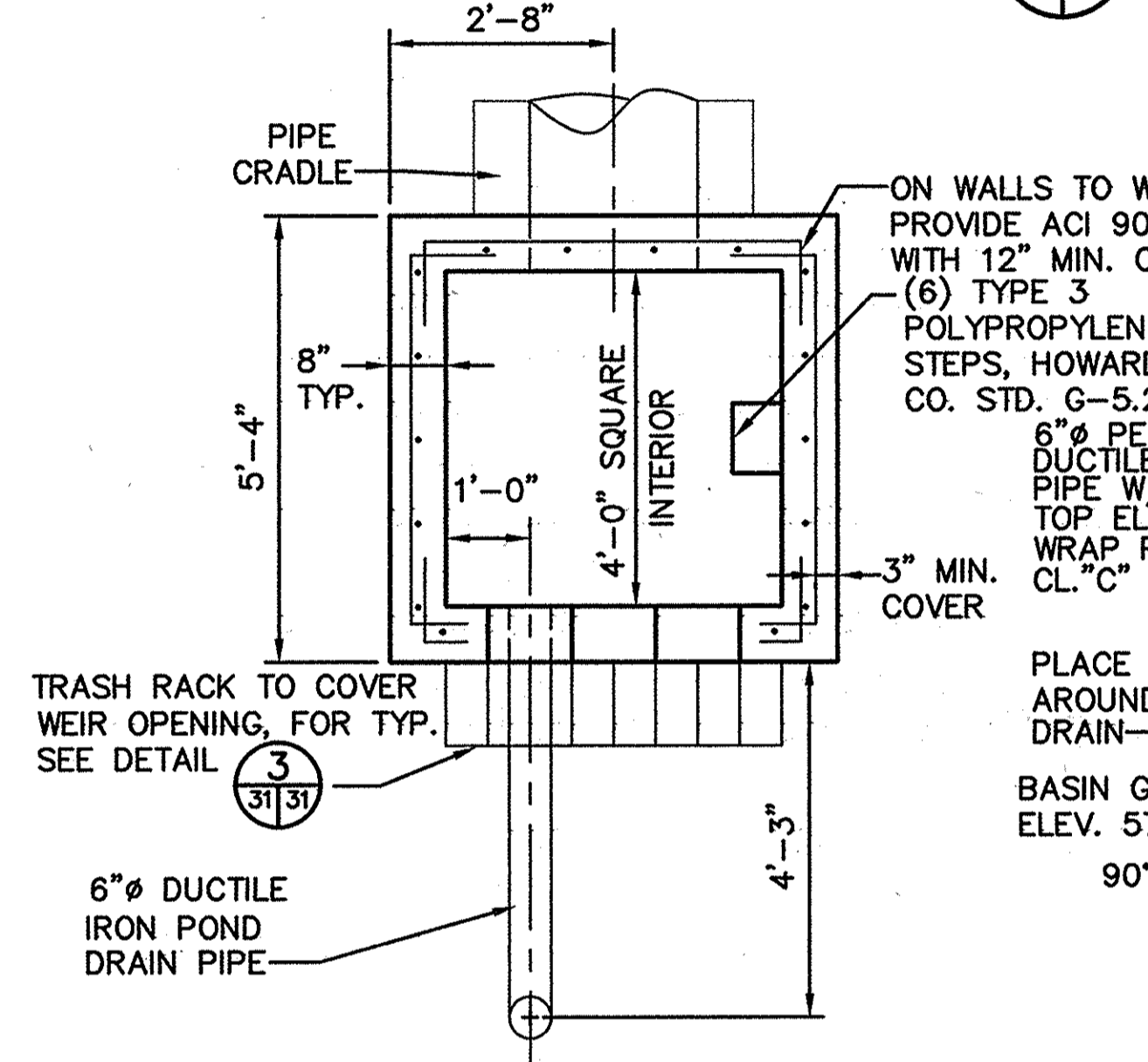
Signature: *Robert W. Zichner* DATE: 10-30-97  
HOWARD SOIL CONSERVATION DISTRICT

MSHA CL. 1 RIP-RAP D50=9.5", 19" THICK

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

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

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

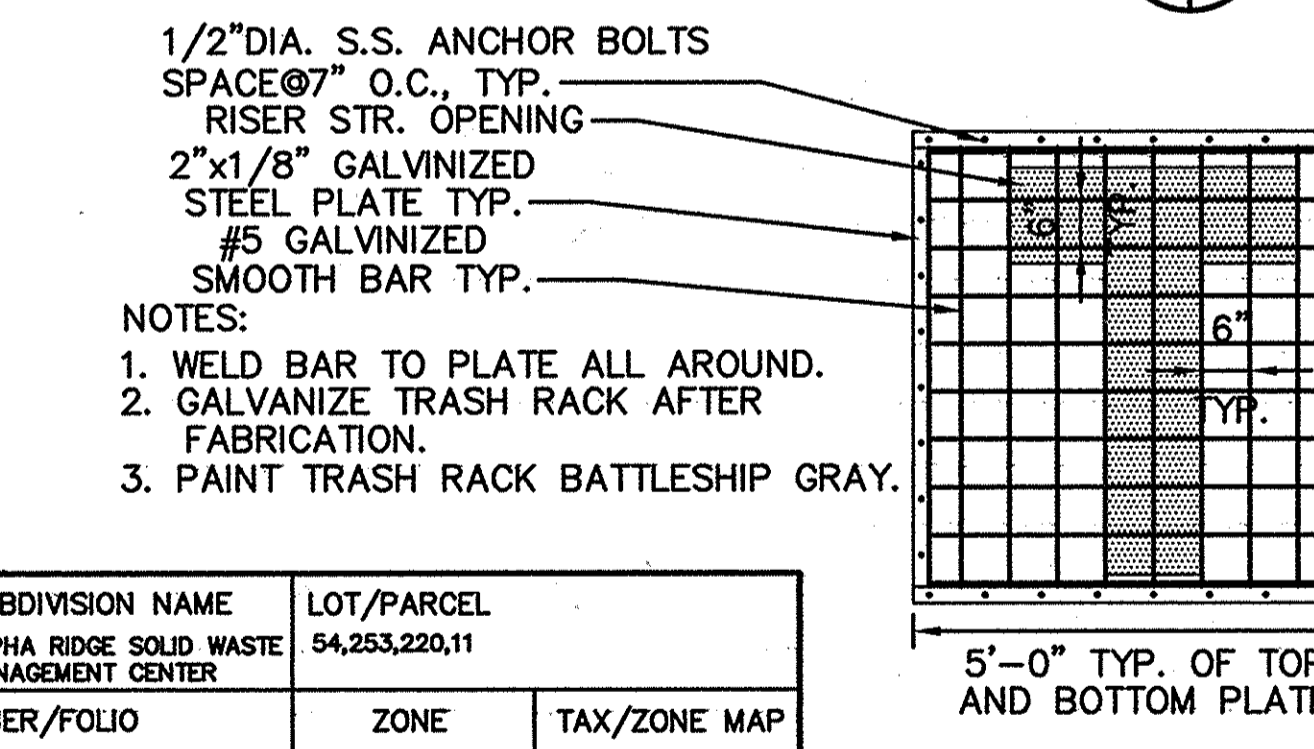


SOUTH BASIN OUTLET CHANNEL X-SECTION C SCALE: 1"=5'-0"

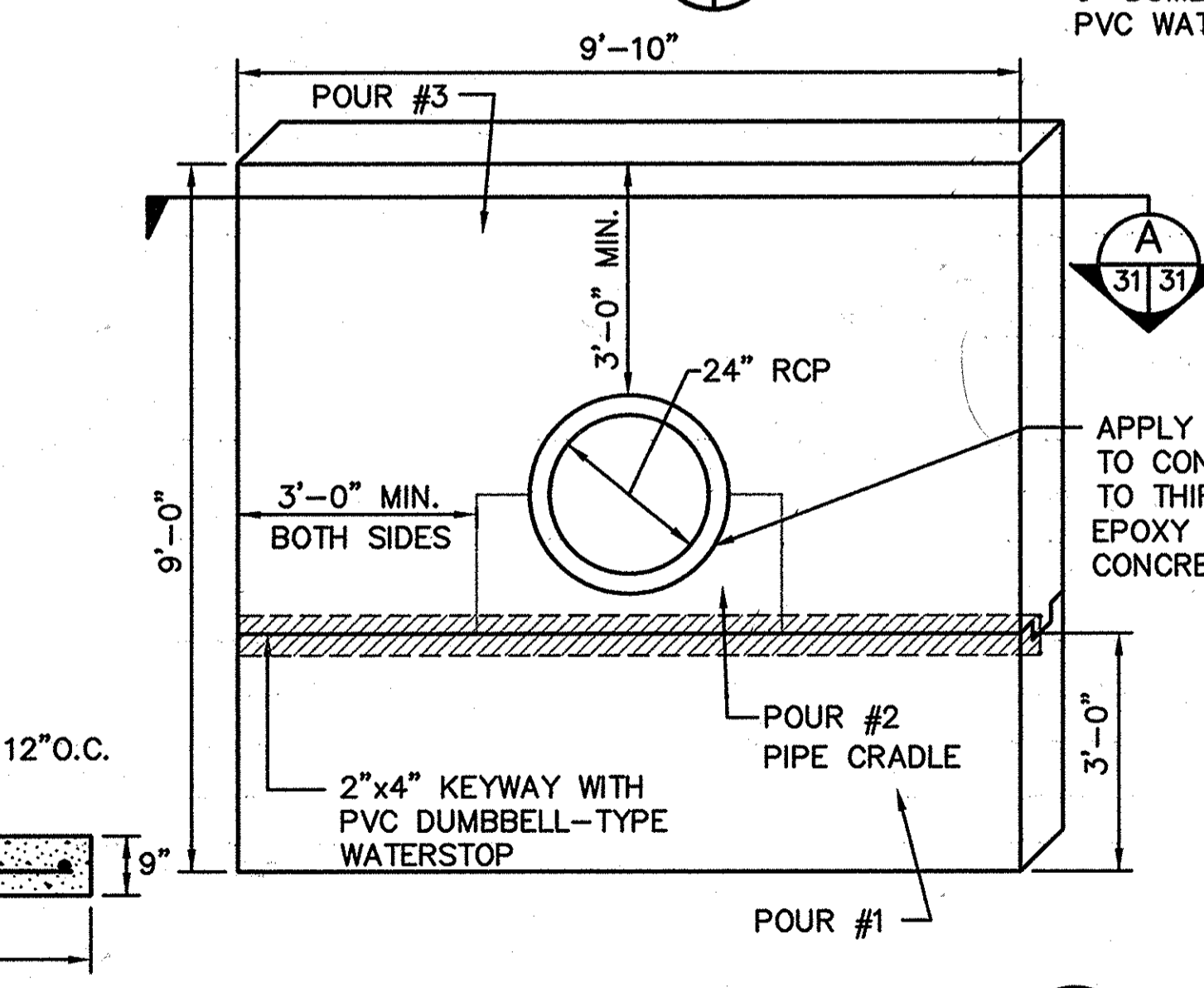
RISER STRUCTURE SECTION F SCALE: 1/2"=1'-0"

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

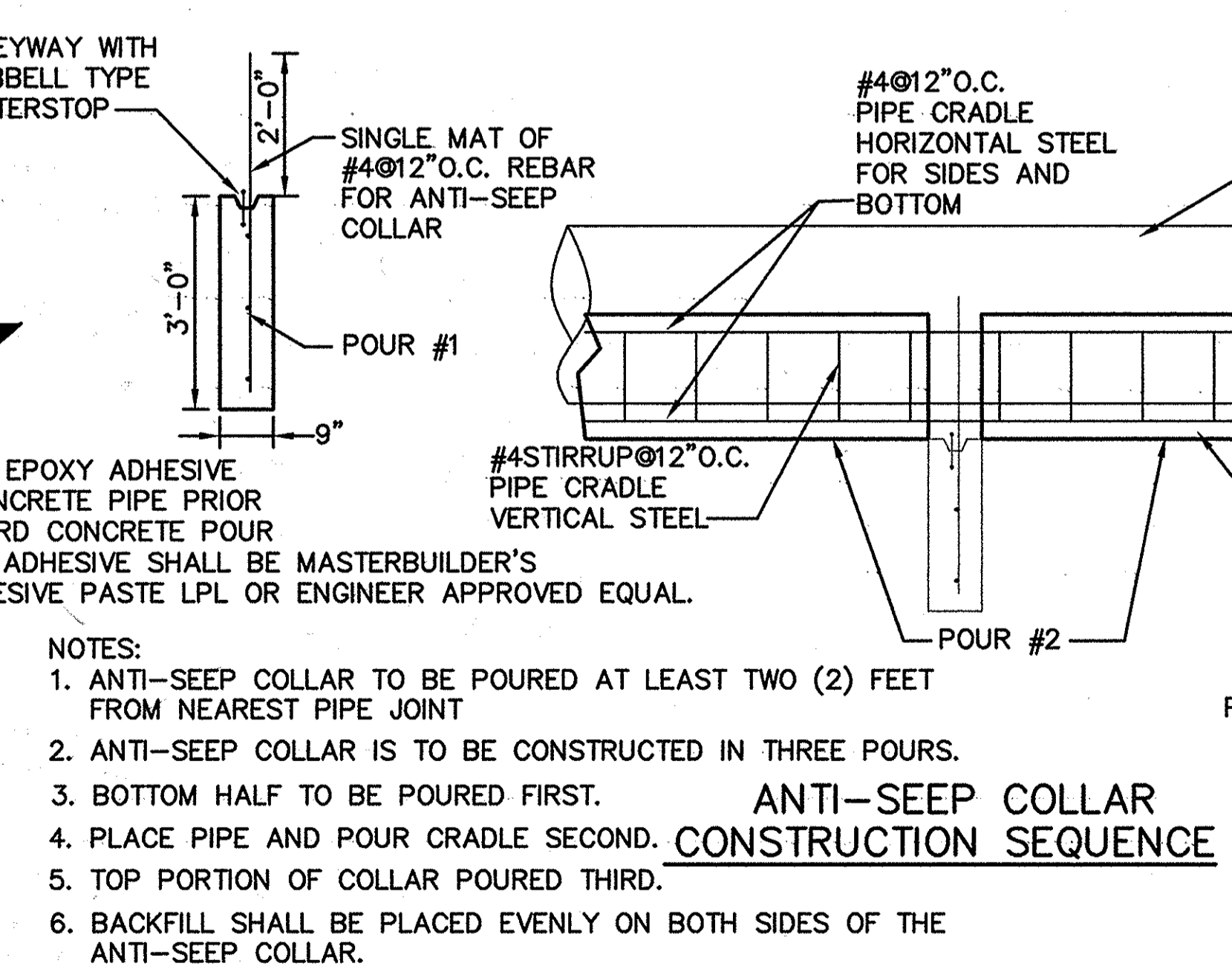
SOUTH BASIN OUTLET CHANNEL X-SECTION C SCALE: 1"=5'-0"



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



ANTI-SEEP COLLAR DETAIL 2 SCALE: 1/2"=1'-0"



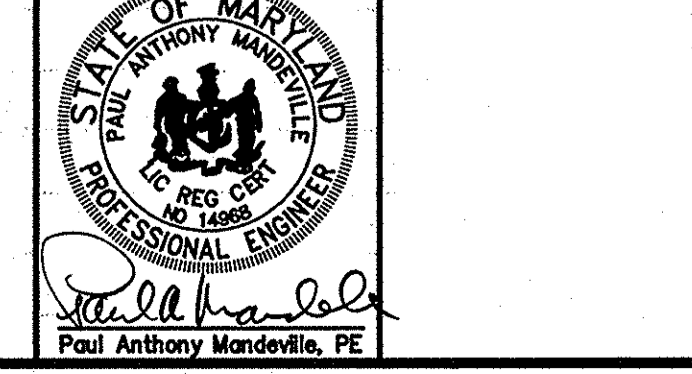
SOUTH SIDE STORMWATER INLET CHANNEL X-SECTION B SCALE: 1"=5'-0"

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/606 16-878/215 10-581/314	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING
	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
Director: *James S. Suter* DATE: 11/3/97  
Chief, Development Engineering Division: *John J. O'Hara* DATE: 10/30/97  
Chief, Division of Land Development: *Charles J. Jordan* DATE: 10/30/97

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Director of Public Works: *James S. Suter* DATE: 10/30/97  
Chief, Bureau of Waste Management: *John J. O'Hara* DATE: 10/30/97

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

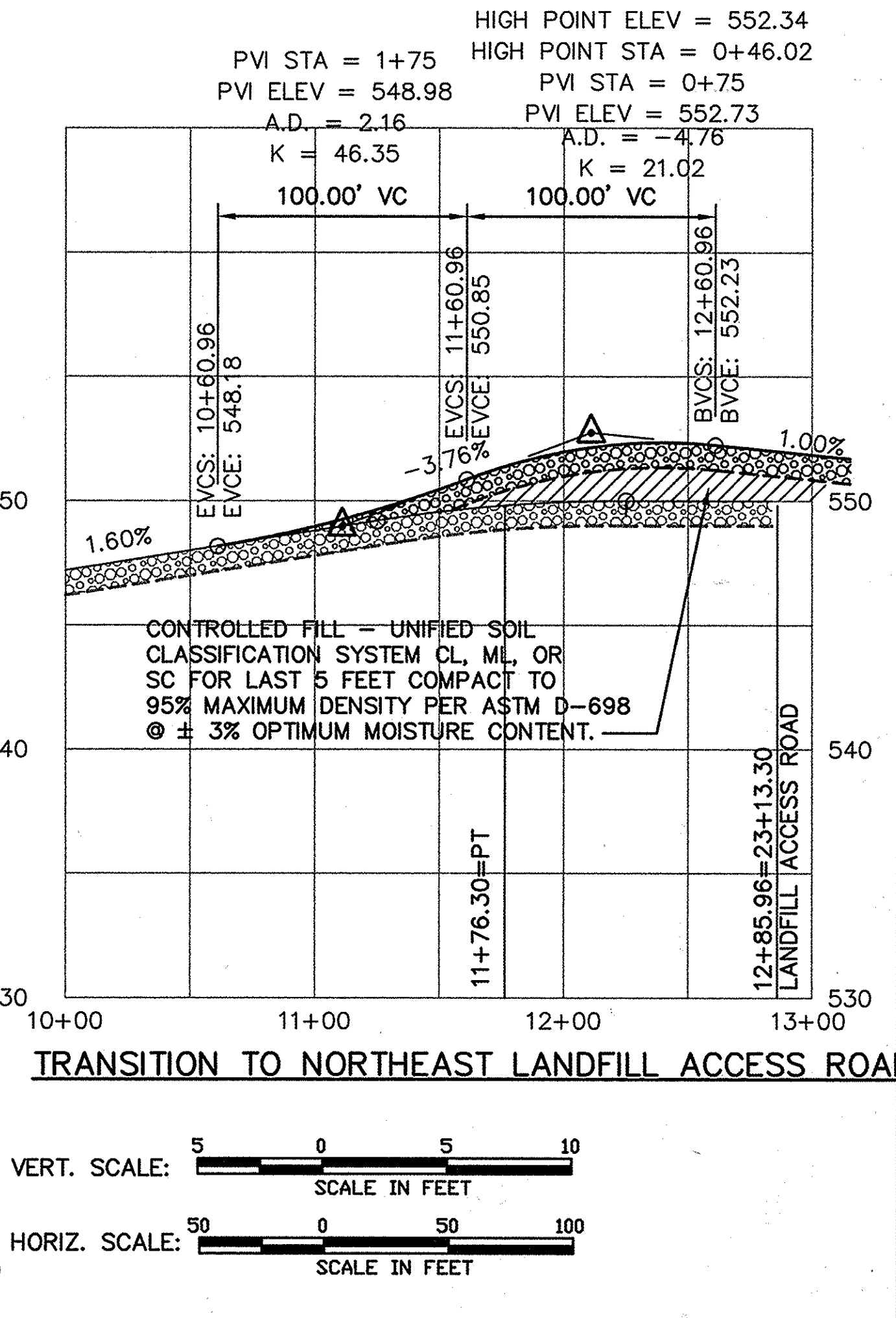
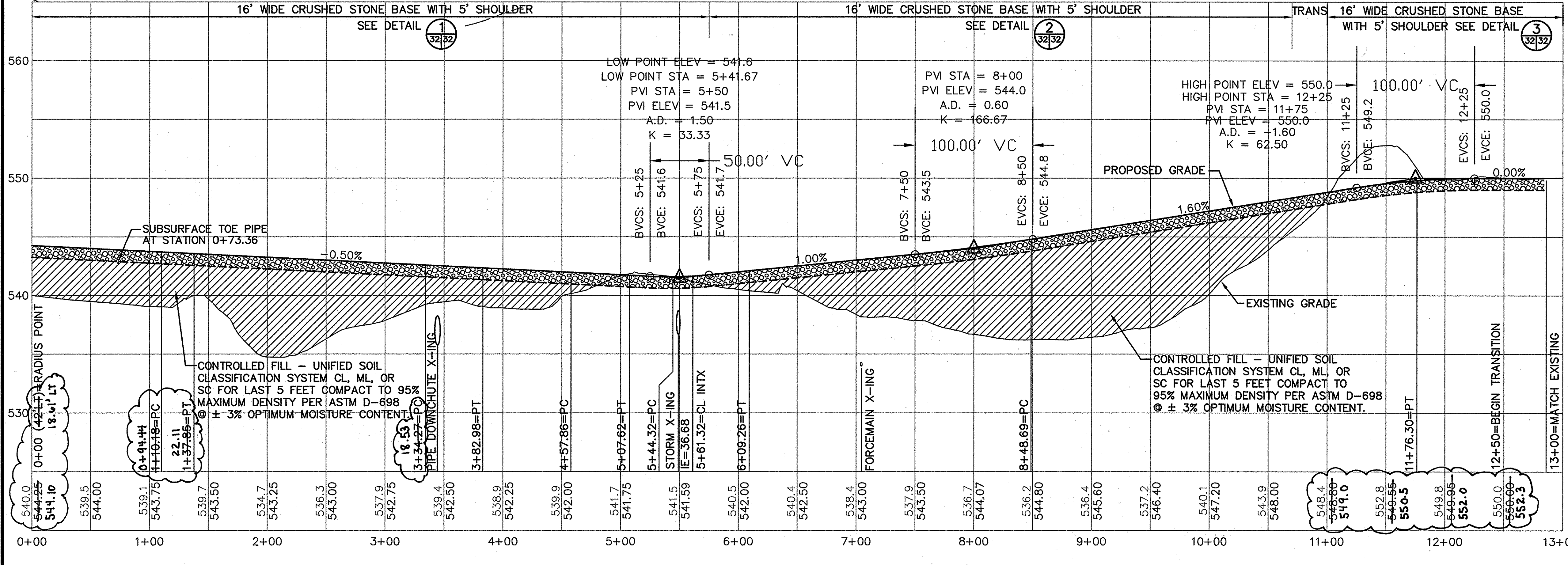
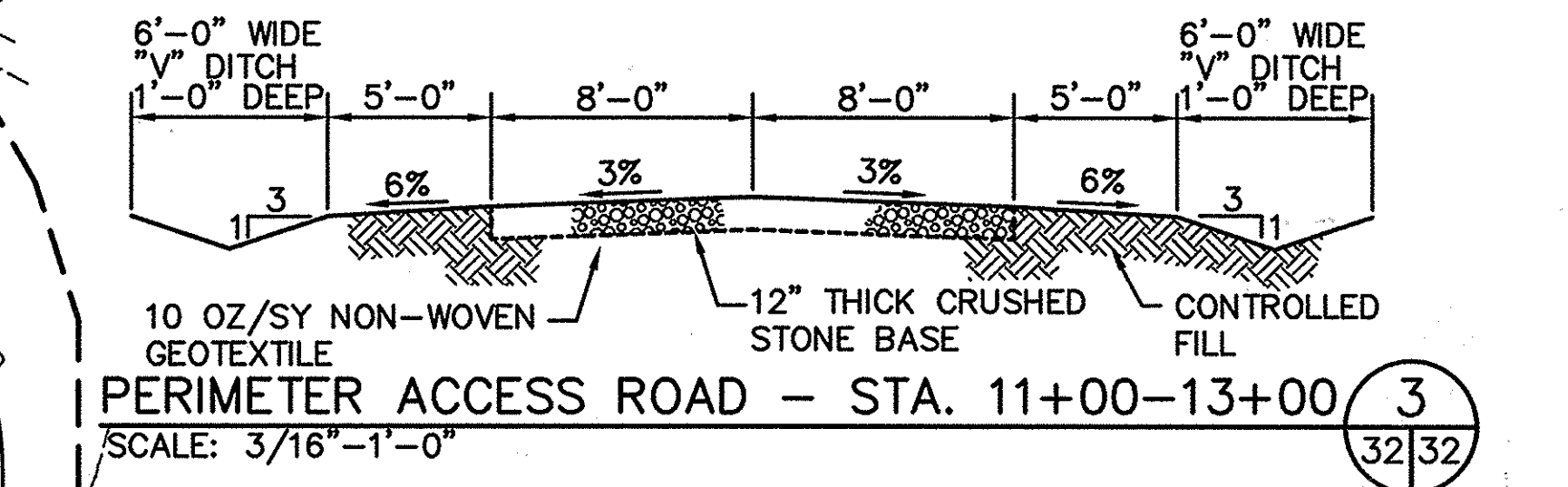
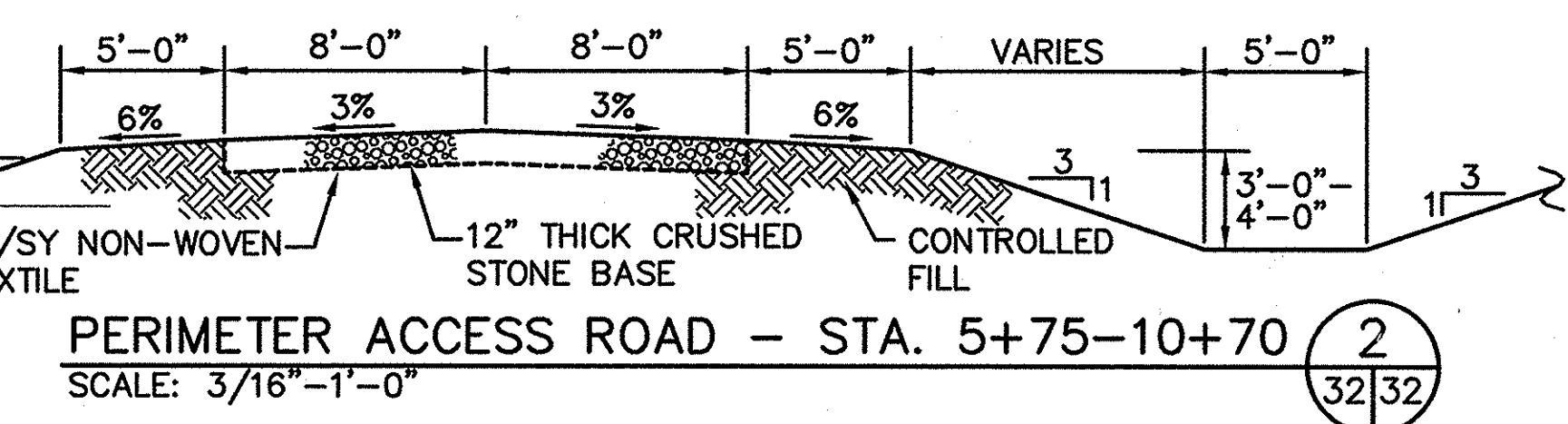
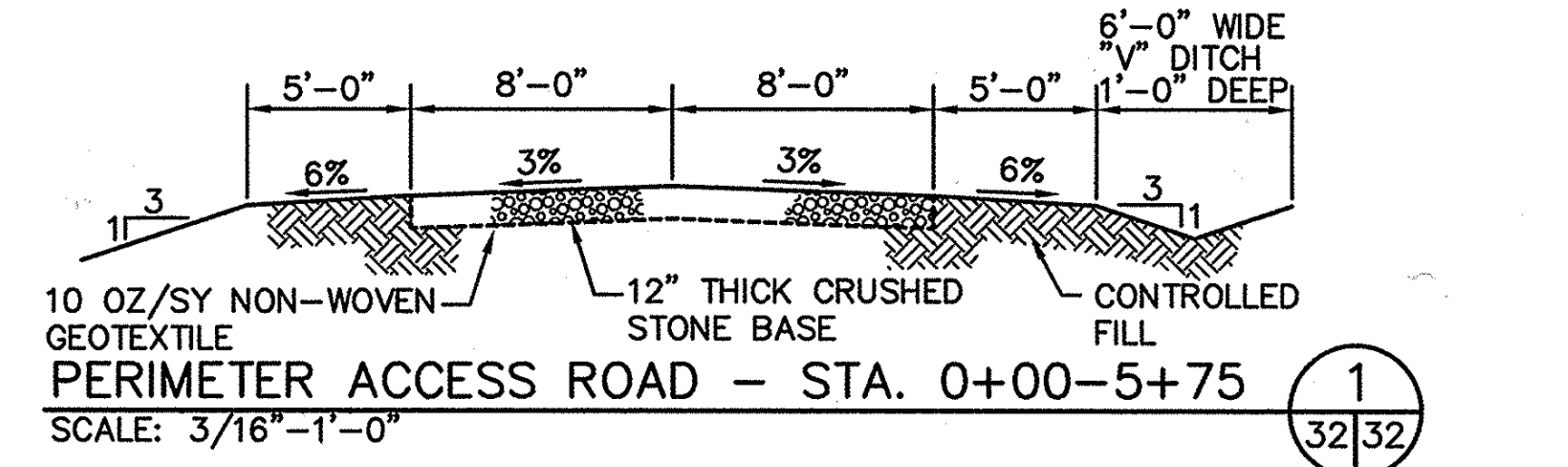
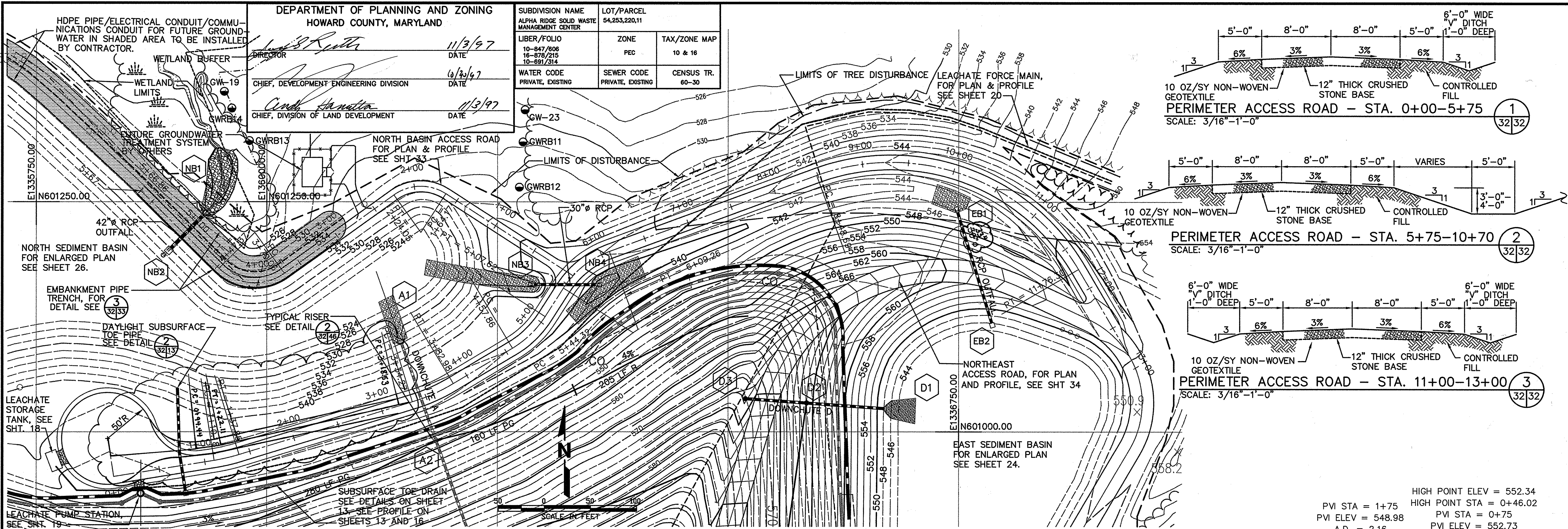


DES.	AST,RTT	DATE
DRN.	AST,EGC	
CHK.	PAM	
DATE: 10-30-97	BY NO.	REVISION

SOUTH SEDIMENT BASIN DETAILS

ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N  
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SCALE: AS NOTED  
SHEET 31 OF 1313

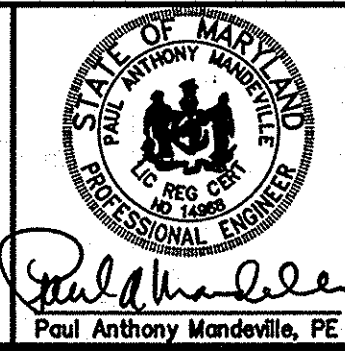
SDP-97-128



RDPLN-B  
 M:\295077\01\FINAL  
 RDPLN, ROSEC1, ROSEC2, ROSEC3

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director: *John P. O'Hara* 10/30/97  
 Chief, Bureau of Waste Management: *John P. O'Hara* 10/30/97

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



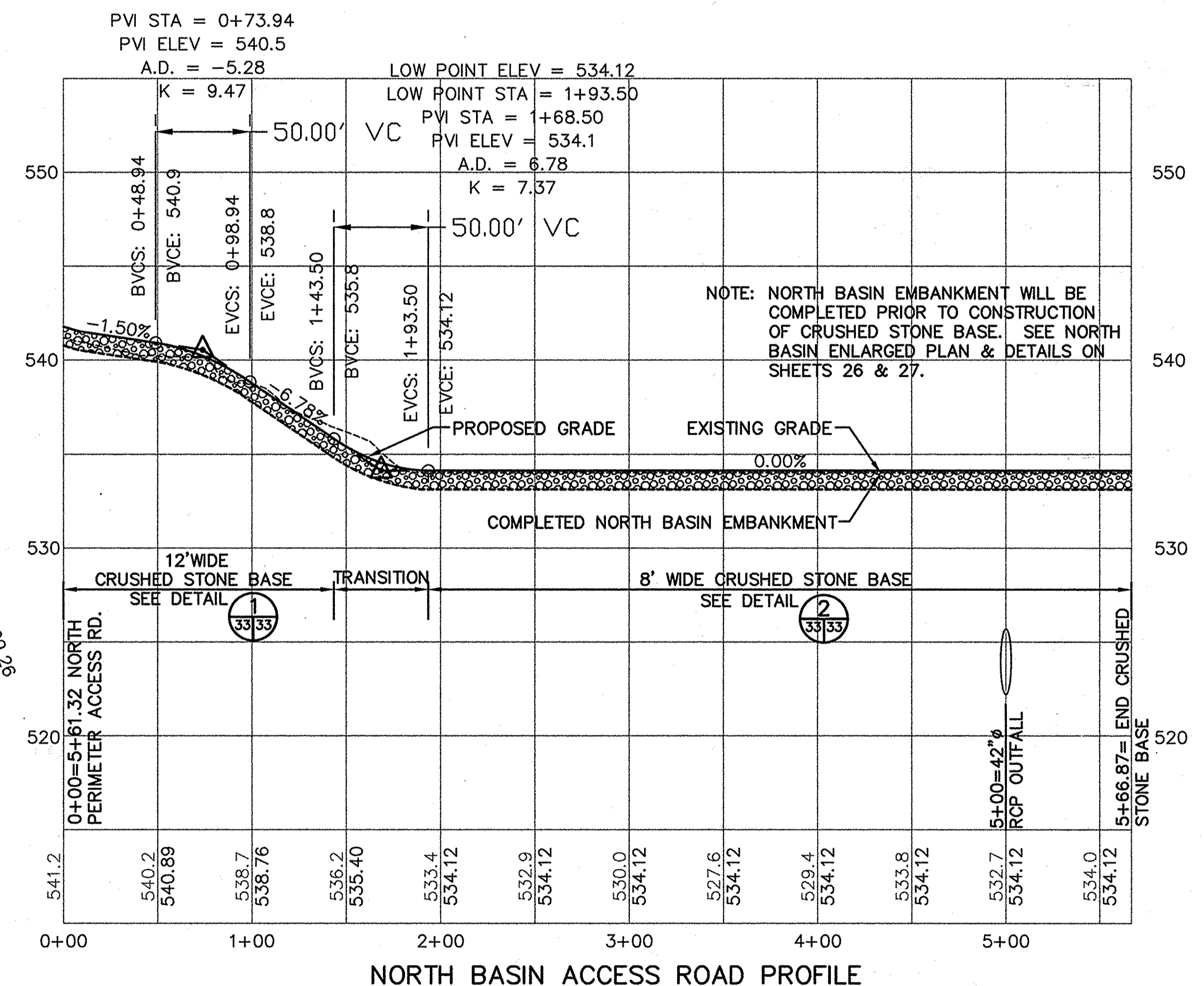
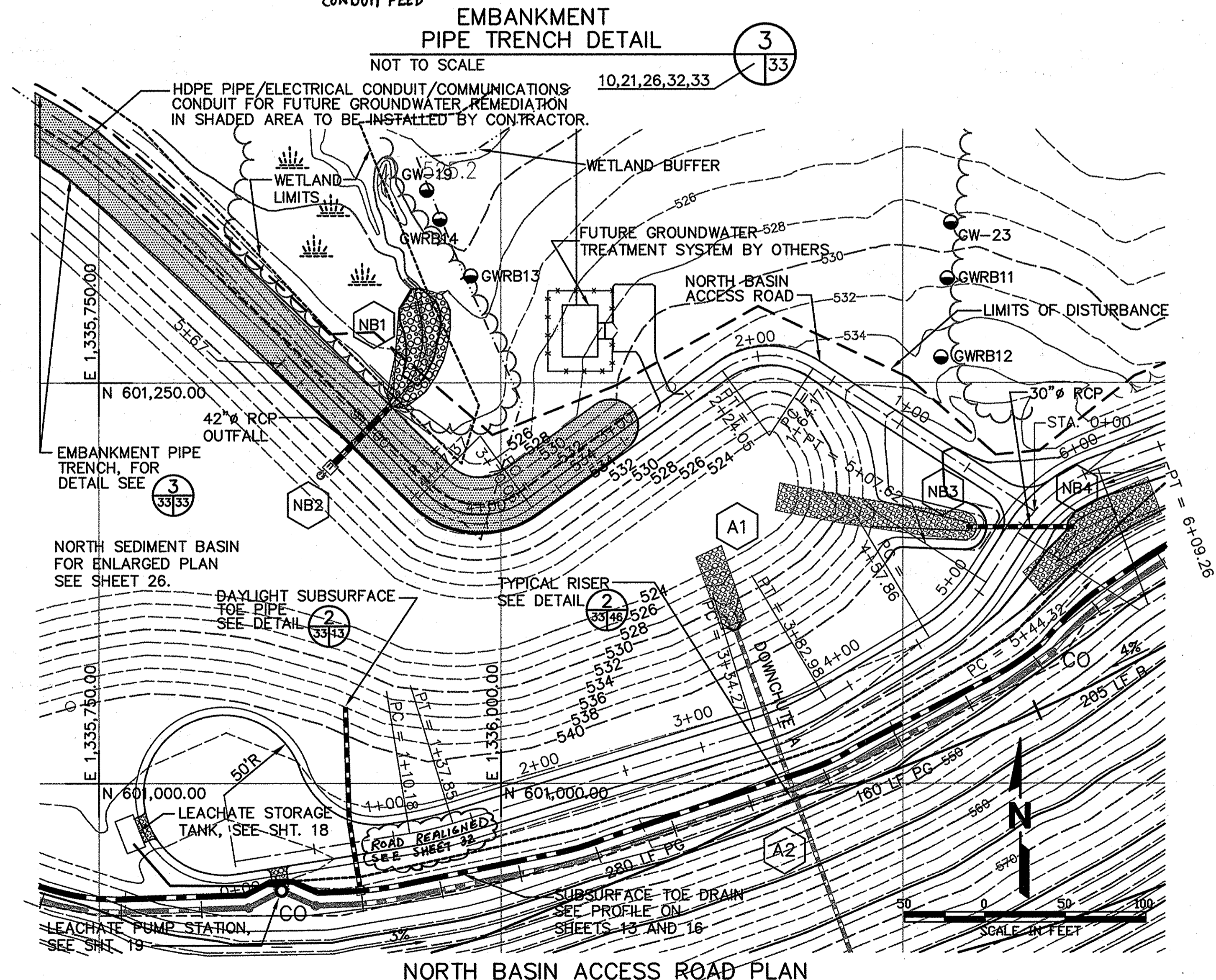
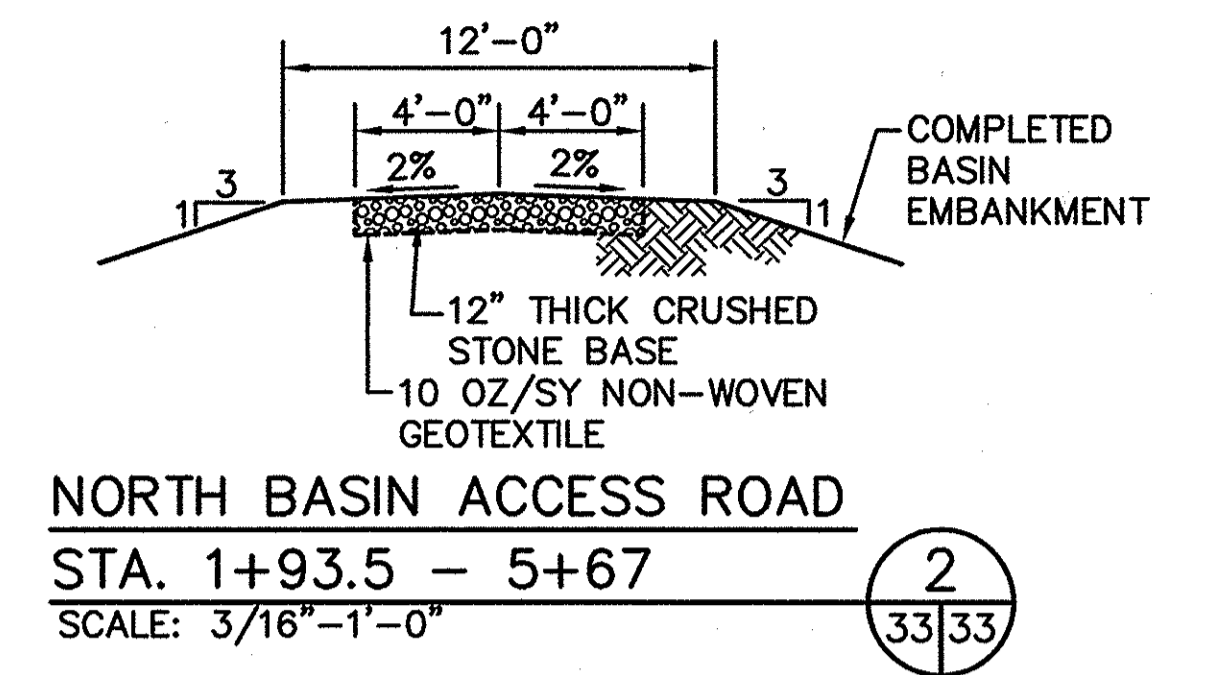
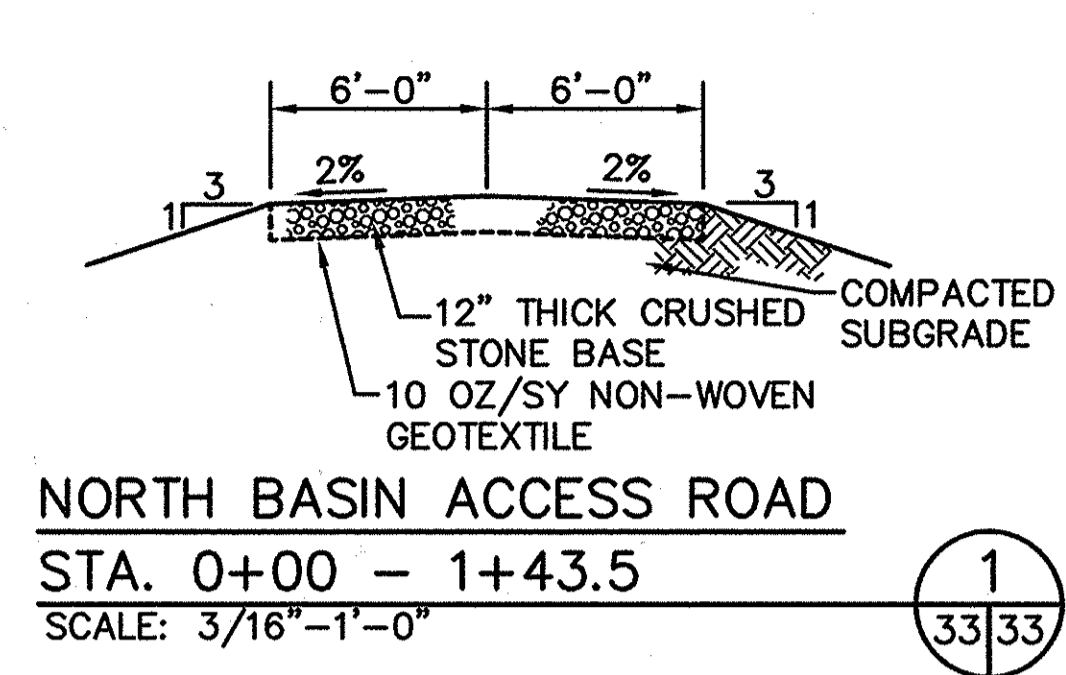
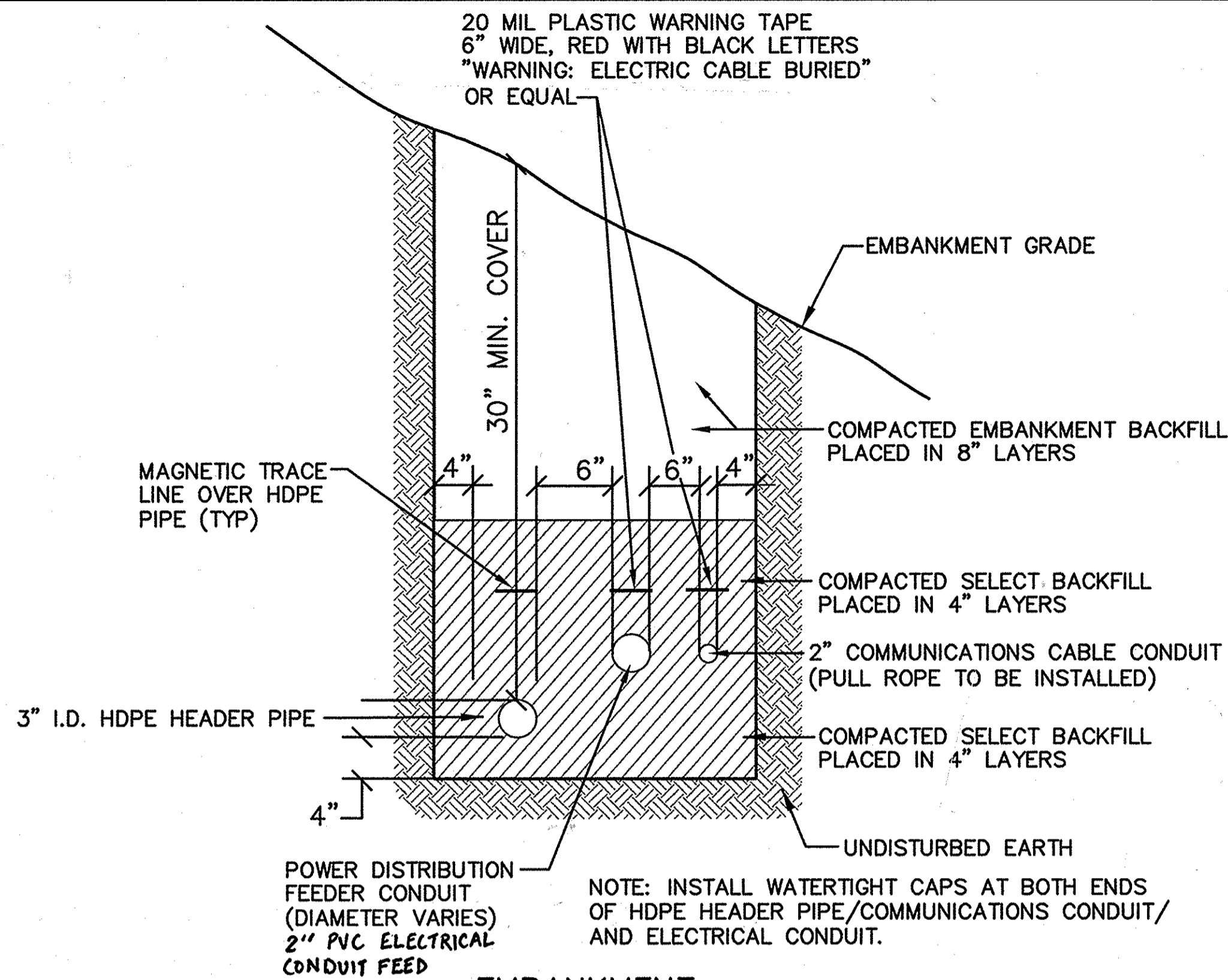
DES. RTT, EGC	
DRN. EGC, JOB	
CHK. PAM	
DATE: 10-30-97	BY NO. REVISION DATE

NORTH PERIMETER ACCESS  
 ROAD PLAN & PROFILE

ALPHA RIDGE LANDFILL  
 UNLINED CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190-N  
 3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 SCALE: 1"=50'  
 SHEET 32 OF 131

SDP-97-128





SUBDIVISION NAME		LOT/PARCEL
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		54,253,220,11
LIBER/FOLIO	ZONE	TAX/ZONE MAP
10-847/606 16-876/215 10-891/214	PEC	10 & 16
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

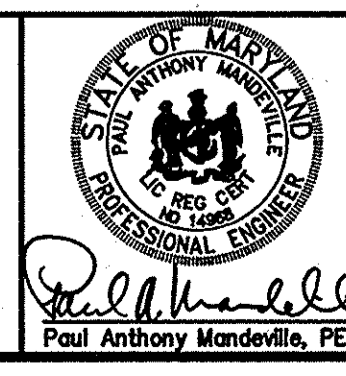
*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. EGC, RTT			
DRN. EGC, JCB			
CHK. PAM			
DATE: 10-30-97	BY	NO.	REVISION

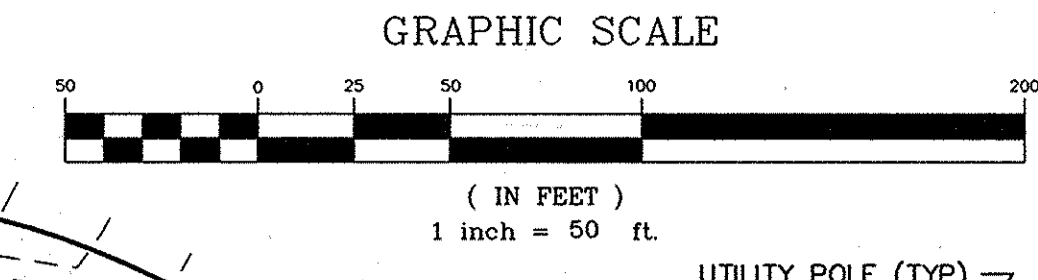
NORTH BASIN  
ACCESS ROAD PROFILE

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

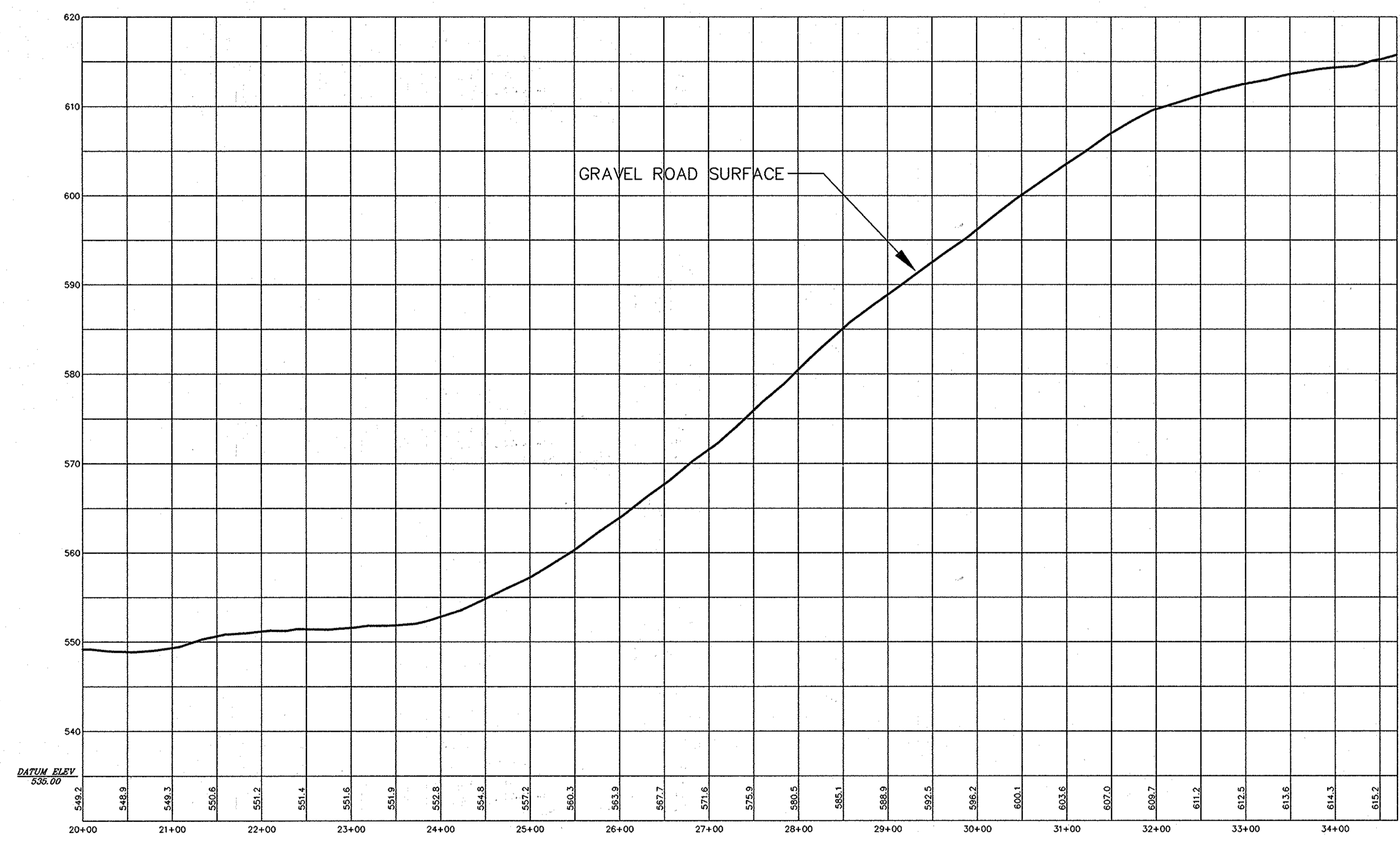
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=50'  
SHEET  
33 OF 131

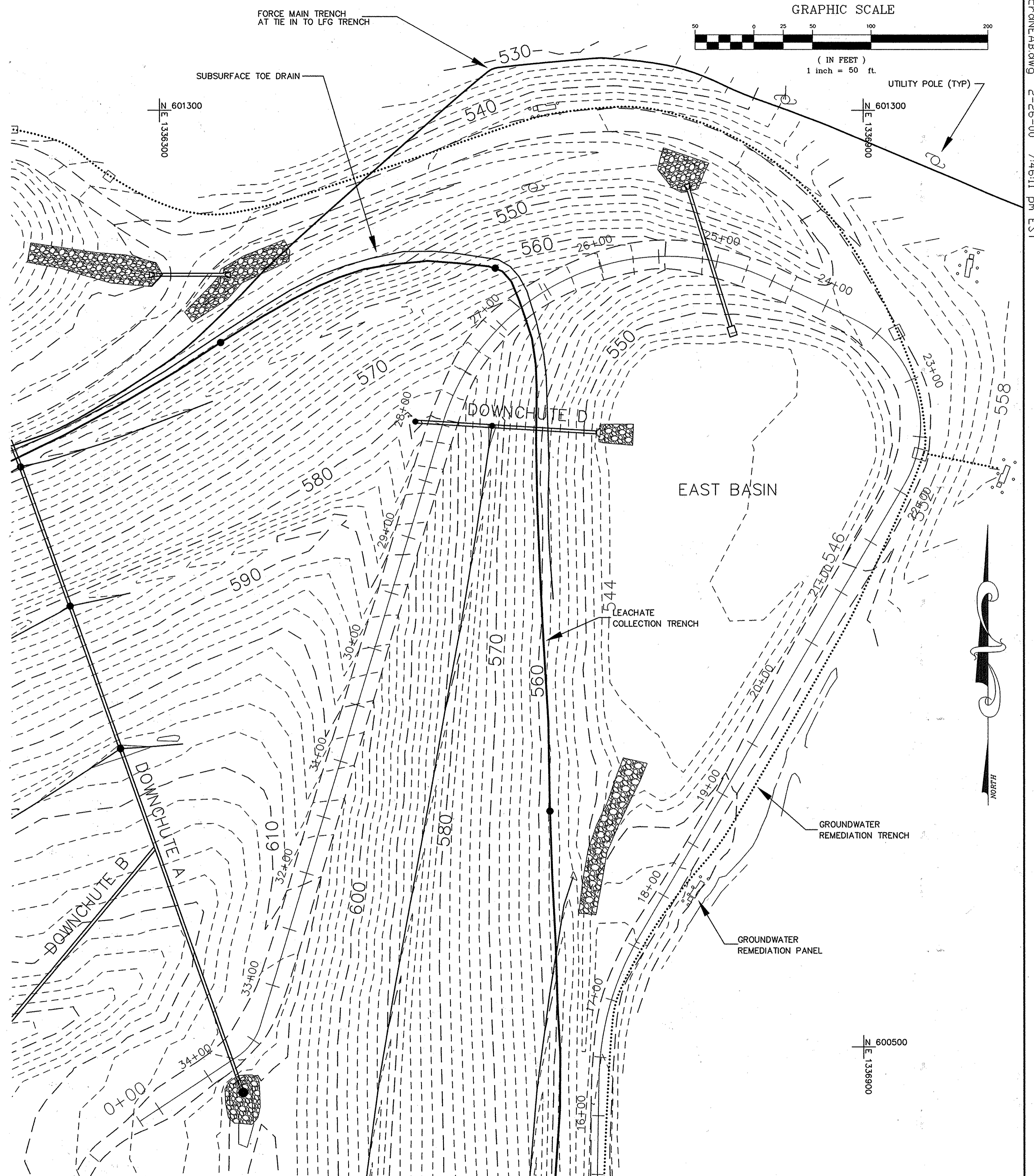
M: 295077.01\FINAL NBASINRD-RDSEC8, RDSEC9 NBARDPLN NBASINRD-B



HORIZONTAL SCALE - 1"=100'  
VERTICAL SCALE - 1"=10'



NORTHEAST LANDFILL ACCESS ROAD PROFILE

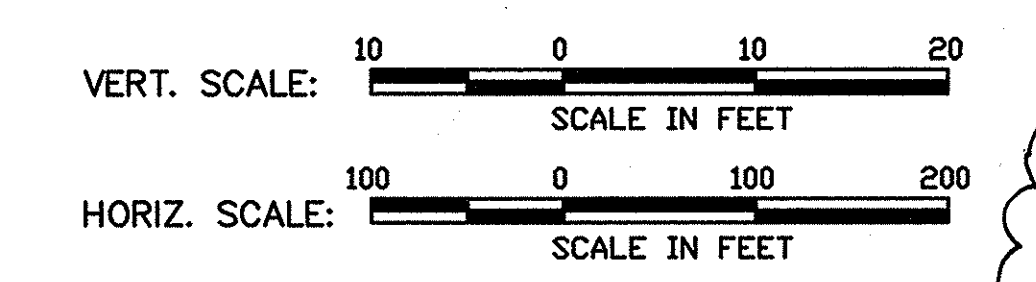
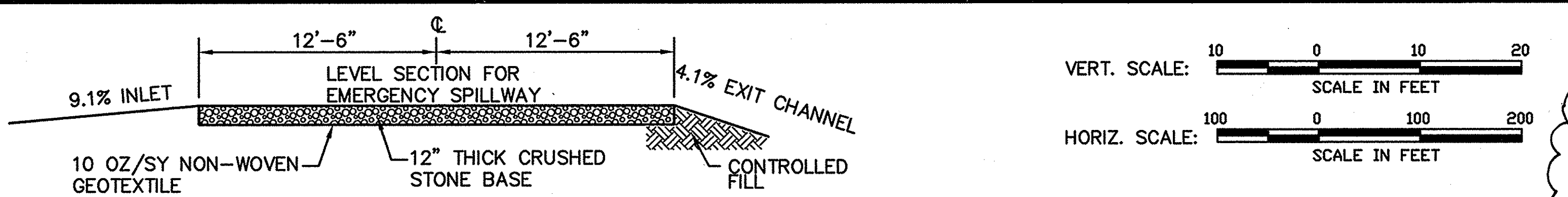


DESIGNED BY:		DATE		REVISIONS	
_____	_____	_____	_____	DATE	DESCRIPTION
DRAWN BY: TWH		9-13-99		DATE	
CHECKED BY: _____		DATE			
APPROVED BY: _____		DATE			

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565

H. E. SARGENT, INC.  
 CONTRACTORS • STILLWATER, NE.

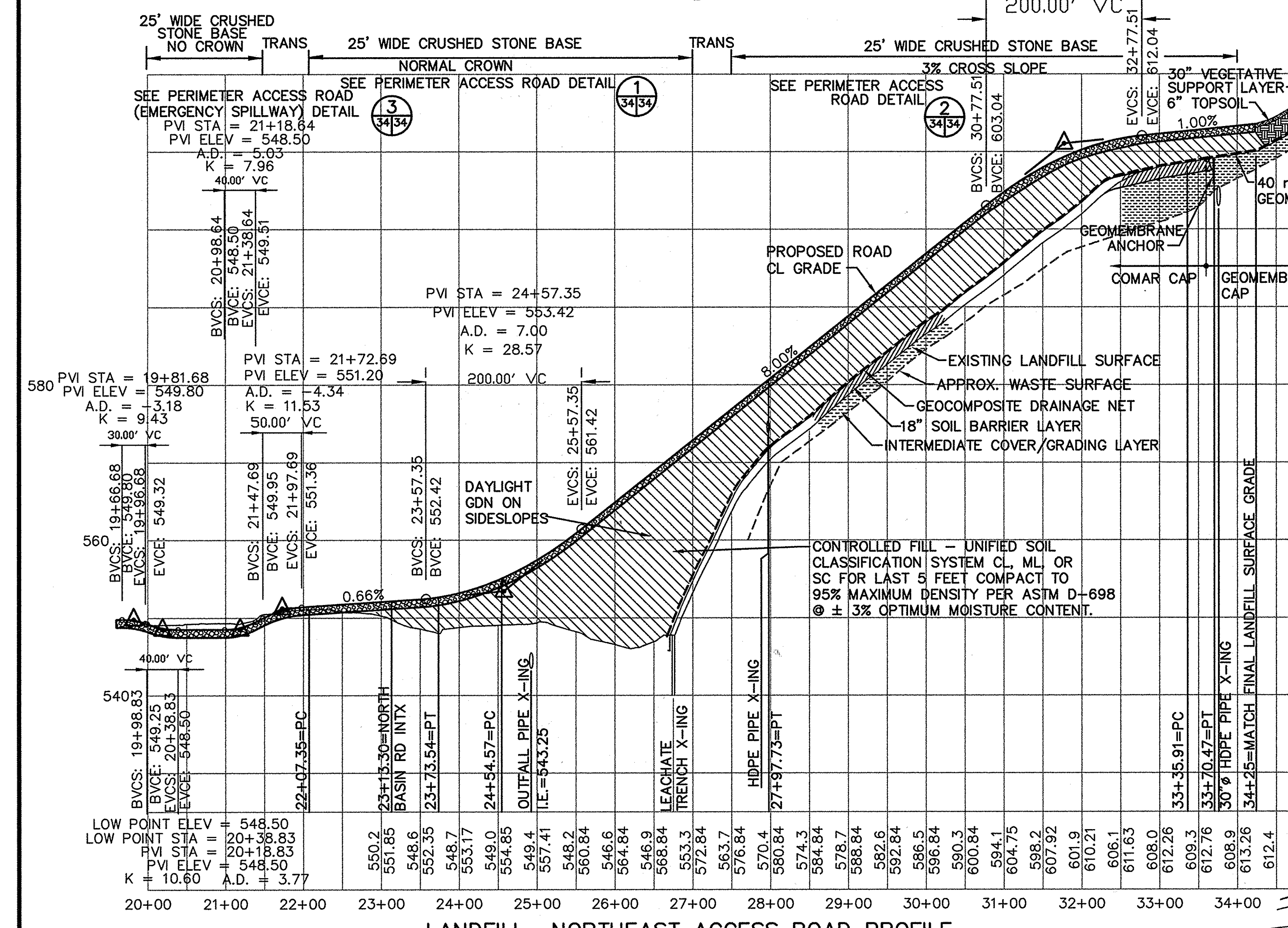
NORTHEAST ACCESS ROAD AS-BUILT  
**ALPHA RIDGE LANDFILL CELL CLOSURE**  
 HOWARD COUNTY MARYLAND  
 SCALE : AS NOTED CONTRACT NO.: 98301.10 DATE : 2-25-2000 SHEET : 34-AB



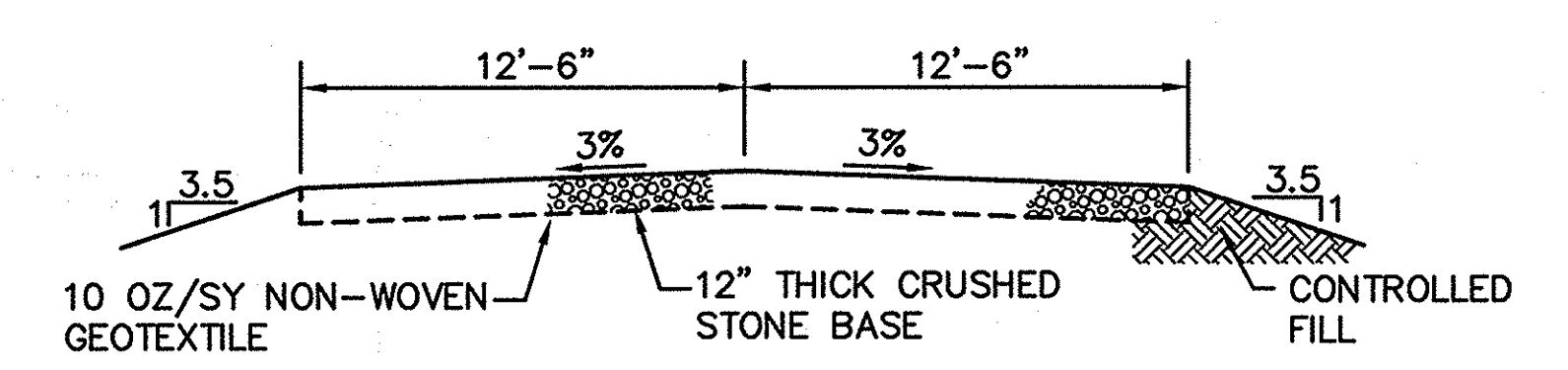
SEE ETA SHEET 34-AB FOR FINAL GRADE REVISION AND VERTICAL REALIGNMENT OF NORTHEAST ACCESS ROAD

PERIMETER ACCESS ROAD - STA. 19+99-21+48  
SCALE: 3/16"=1'-0" (3) 34/34

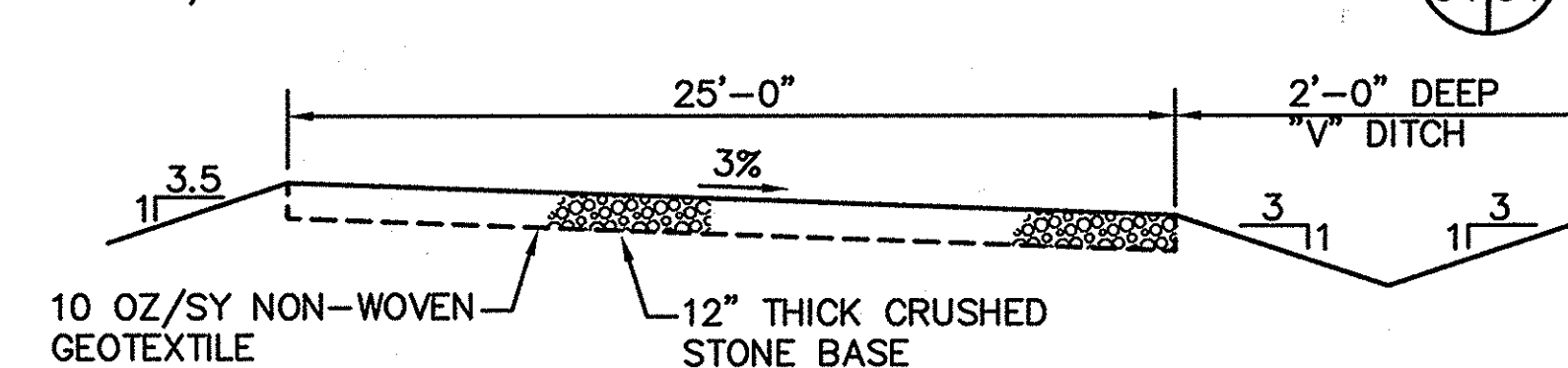
PVI STA = 31+77.51  
PVI ELEV = 611.04  
A.D. = -7.00  
K = 28.57  
200.00' VC



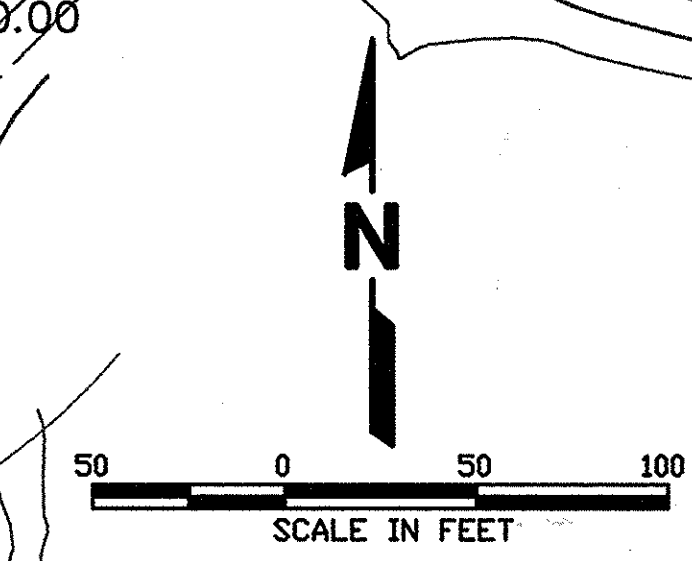
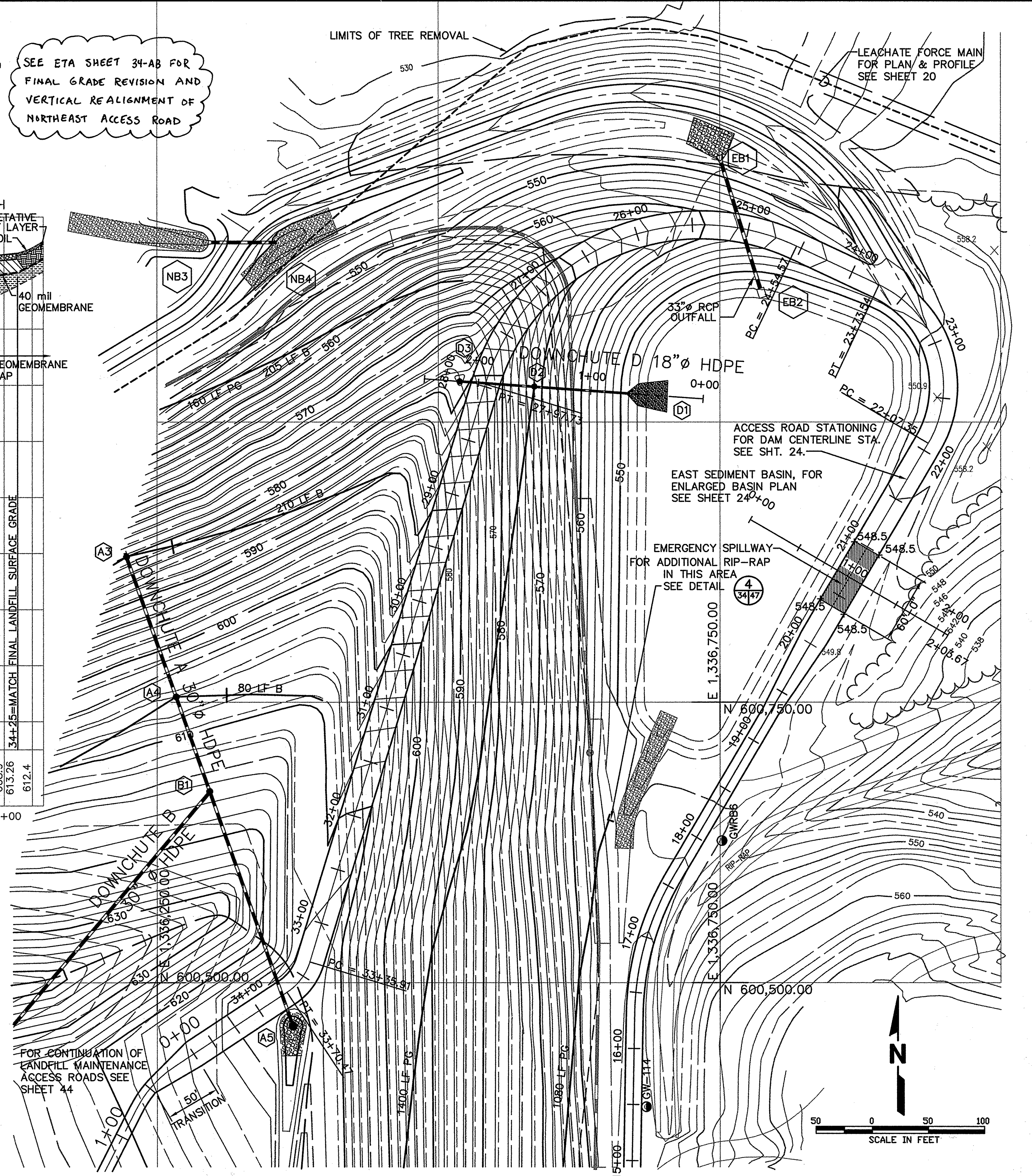
LANDFILL NORTHEAST ACCESS ROAD PROFILE



PERIMETER ACCESS ROAD - STA. 22+07-27+00  
SCALE: 3/16"=1'-0" (1) 34/34



PERIMETER ACCESS ROAD - STA. 27+50-34+25  
SCALE: 3/16"=1'-0" (2) 34/34



ACCRD - B ACCRD, ACCORDONE, R050CS, R050CS M: 129507.01 FINAL

SUBDIVISION NAME		LOT/PARCEL
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		54,253,220,11
LIBER/FOLIO	ZONE	TAX/ZONE MAP
10-847/806 16-876/215 10-891/314	PEC	10 & 16
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*James S. Lewis* 11/3/97  
DIRECTOR DATE

*John J. O'Hara* 10/23/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

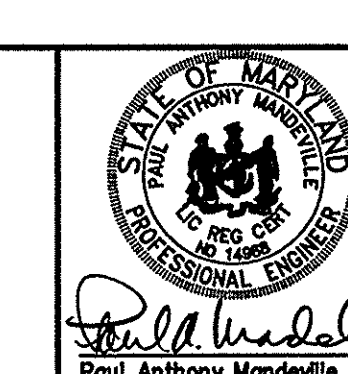
*Conny Hammita* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James S. Lewis* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	BY	NO.	REVISION	DATE
DRN. EGC/JCB				
CHK. PAM				
DATE: 10-30-97				

NORTHEAST LANDFILL  
ACCESS ROAD PLAN & PROFILE

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE: AS NOTED  
SHEET 34 OF 136

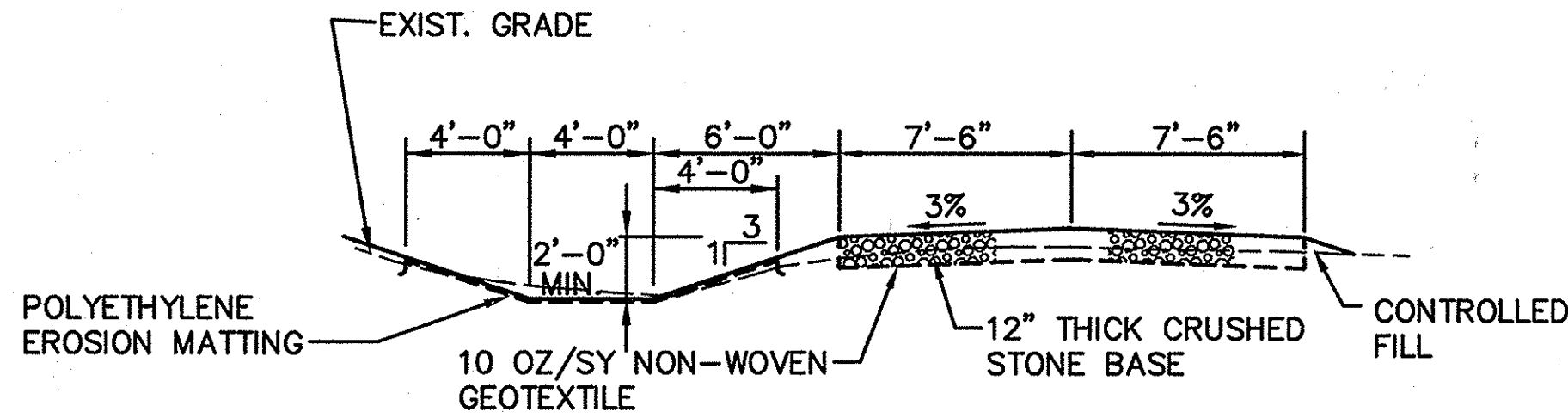
SDA-97-128

SOUTH SEDIMENT BASIN FOR ENLARGED BASIN PLAN, SEE SHEET 30

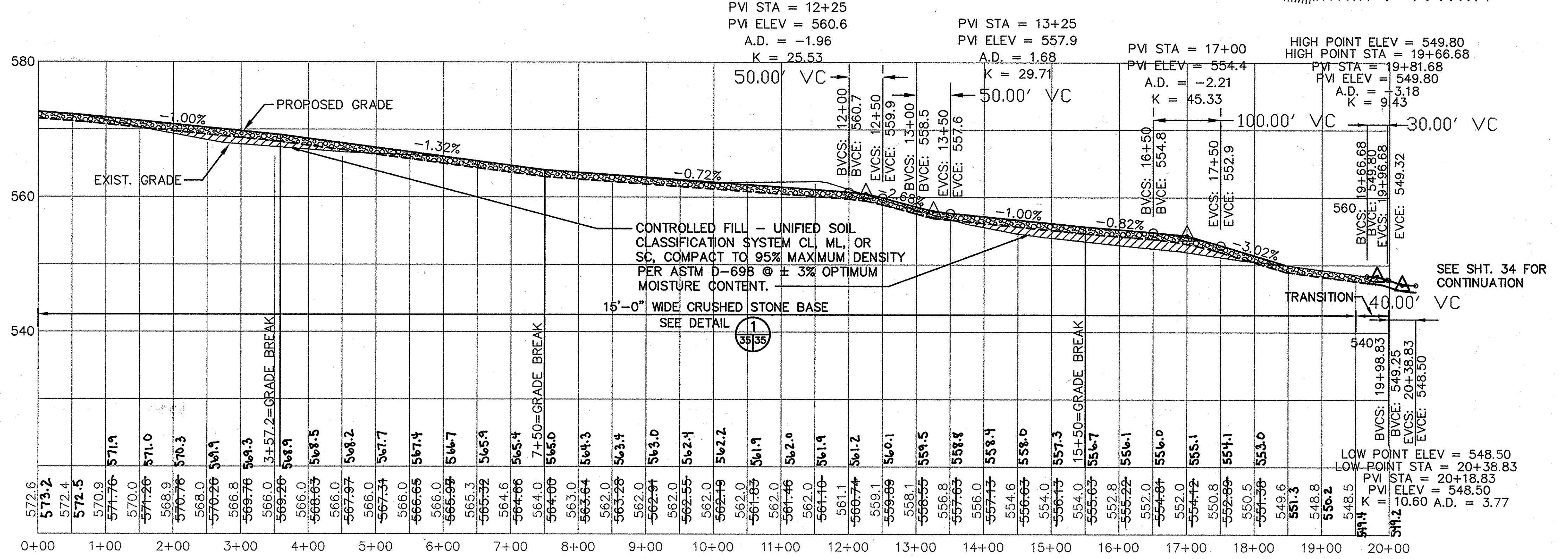
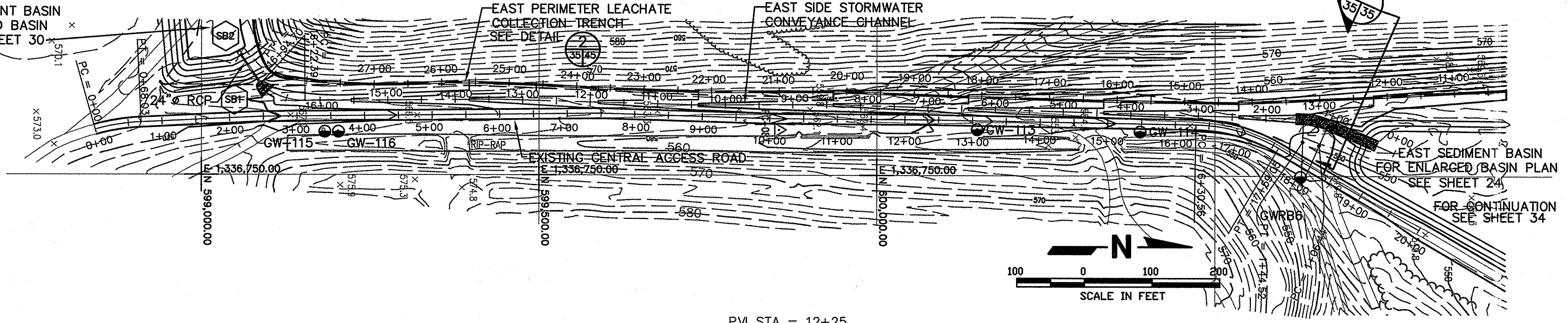
EAST PERIMETER LEACHATE COLLECTION TRENCH SEE DETAIL

EAST SIDE STORMWATER CONVEYANCE CHANNEL

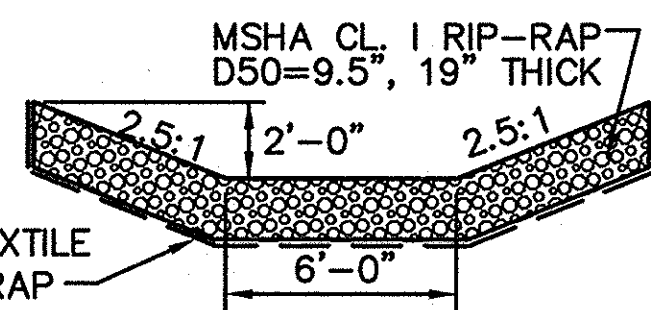
EAST SEDIMENT BASIN FOR ENLARGED BASIN PLAN FOR CONTINUATION SEE SHEET 34



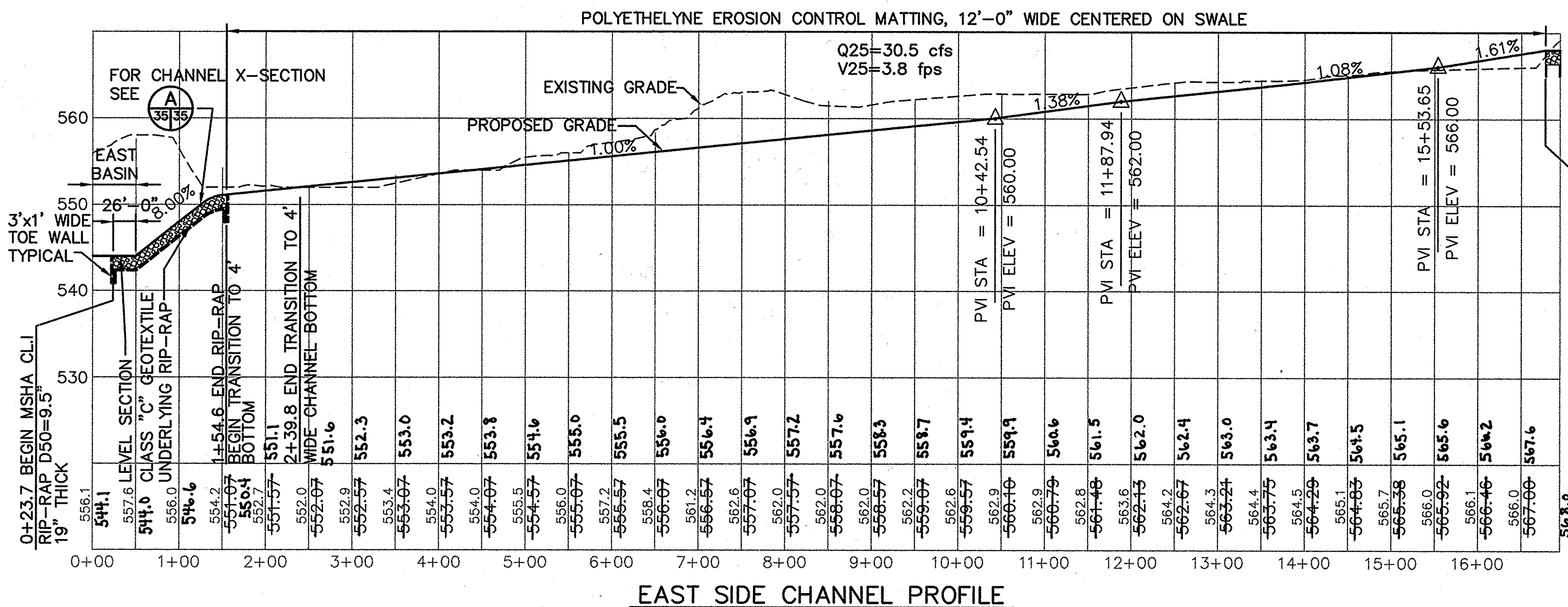
**CENTRAL ACCESS ROAD - TYPICAL X-SECTION**  
SCALE: 3/16" = 1'-0"  
35/35



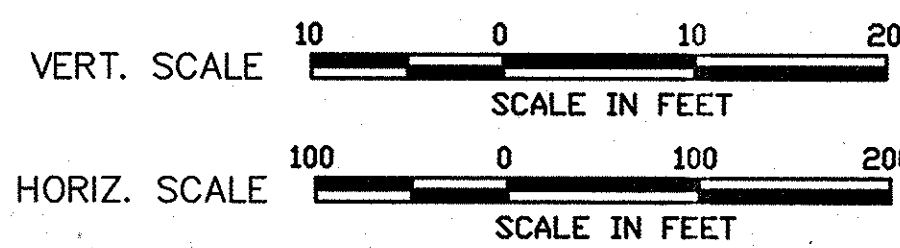
**CENTRAL ACCESS ROAD PROFILE**



**EAST SEDIMENT BASIN AND RIPRAP STORMWATER INLET X-SECTION**  
SCALE: 1" = 5'-0"  
35/35



**EAST SIDE CHANNEL PROFILE**



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/608 16-876/215 10-891/314		ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

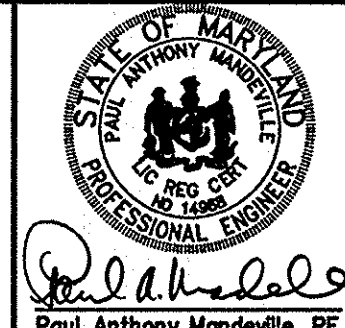
*John J. O'Hara* 11/3/97  
DIRECTOR DATE

*John J. O'Hara* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*John J. O'Hara* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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. RTT, EGC	
DRN. EGC	
CHK. PAM	
DATE: 10-30-97	BY NO. REVISION DATE

CENTRAL ACCESS ROAD &  
EAST SIDE CHANNEL  
PLAN & PROFILE

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:  
1"=100'  
SHEET  
35 OF 138

M: 295077.01\FINAL CENRD-PLN, CENRD-PRO, ECHAN-PRO, ROSEC4

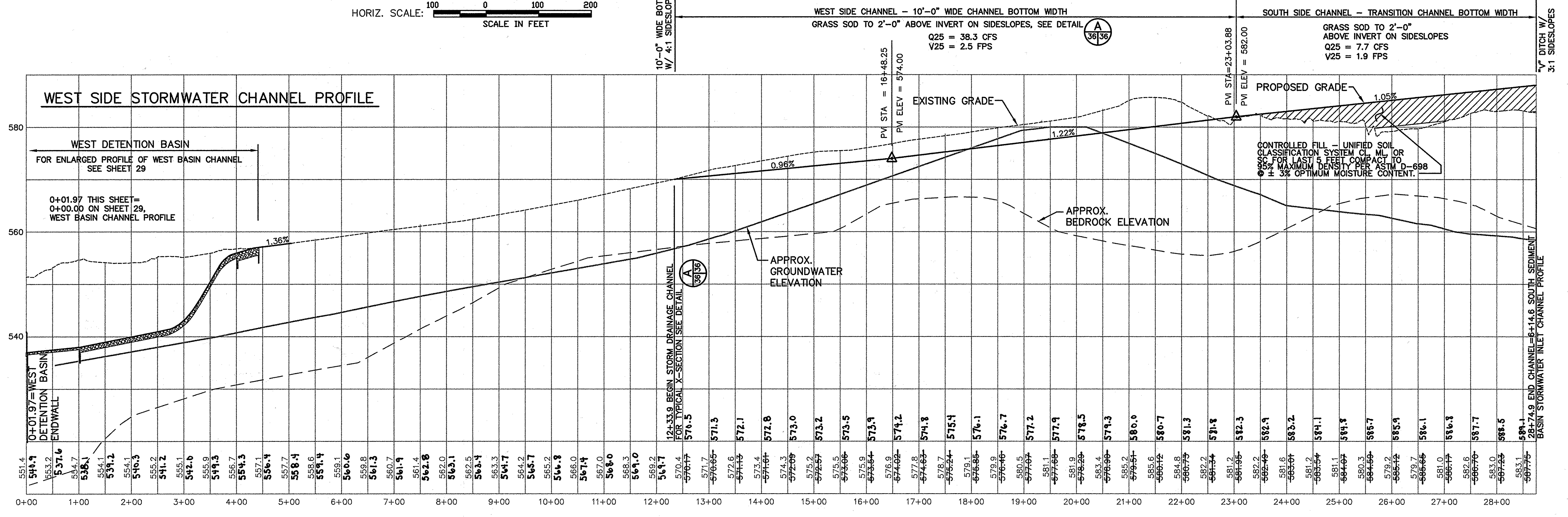
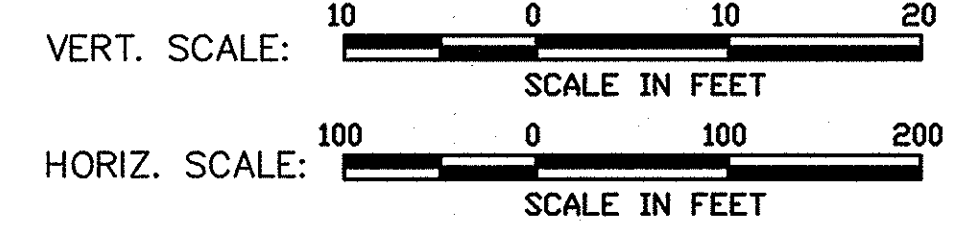
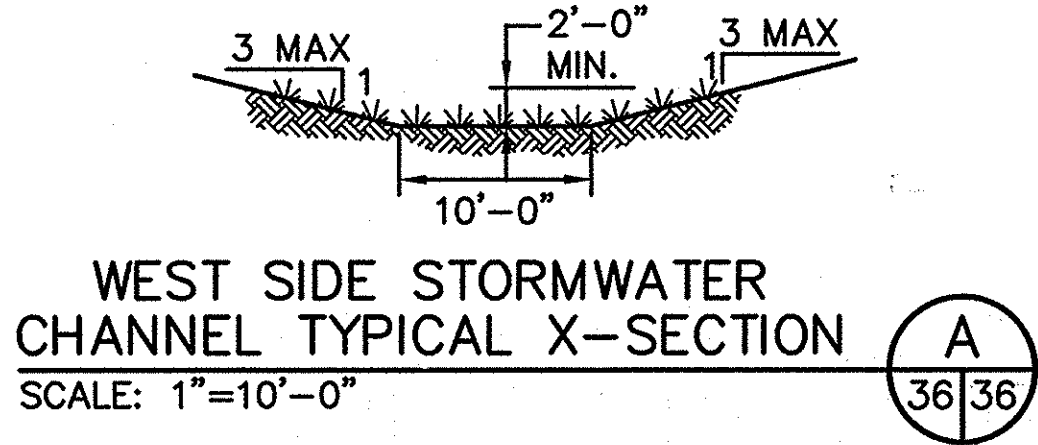
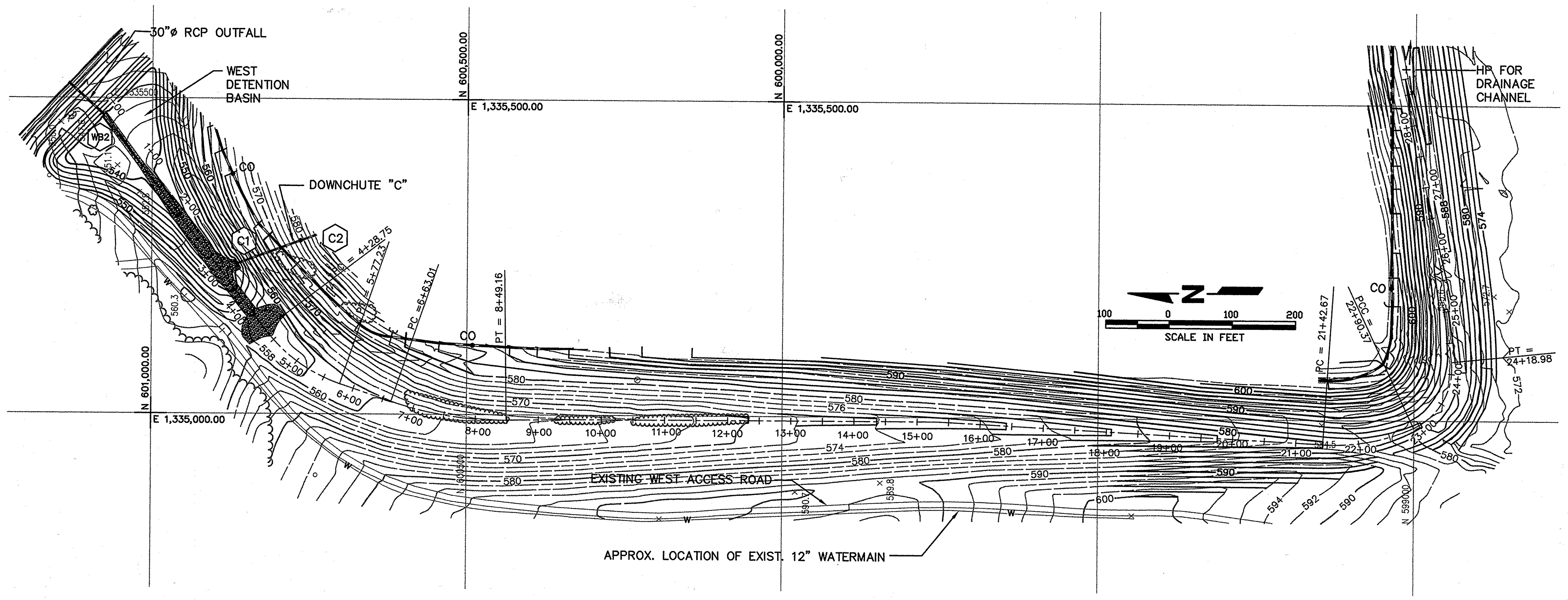
CENRD-B

SDP-97-28

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/808 16-876/215 10-891/314		ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING		SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
DIRECTOR <i>Leah B. Smith</i>	DATE 11/3/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION <i>Condy Hamilton</i>	DATE 11/30/97
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 11/3/97



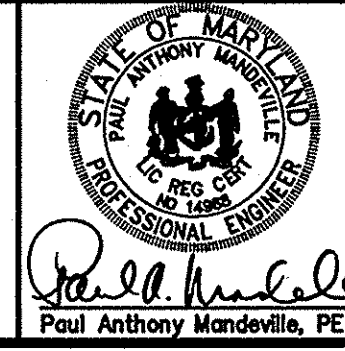
M:\296077\01\FINAL\WCHANPRO.WCHANPLN, DETAILS\VS-WSS

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Ramon A. Lewis* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES.	AST		
DRN.	EGC/JCB		
CHK.	PAM		
DATE:	10-30-97	BY:	NO.
REVISION		DATE	

WEST SIDE CHANNEL  
PLAN AND PROFILE

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED  
SHEET  
36 OF 131

SDA-97-128

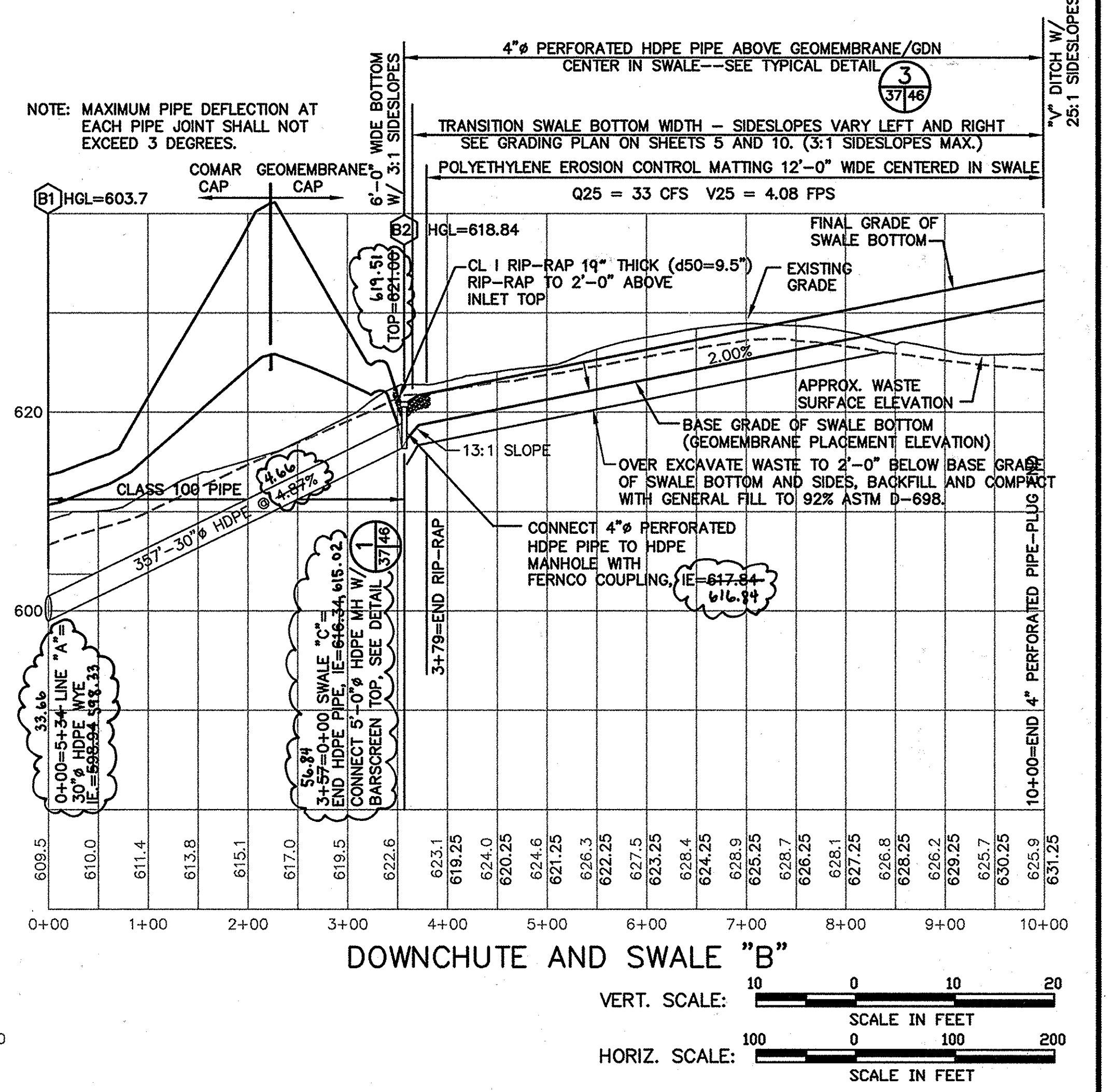
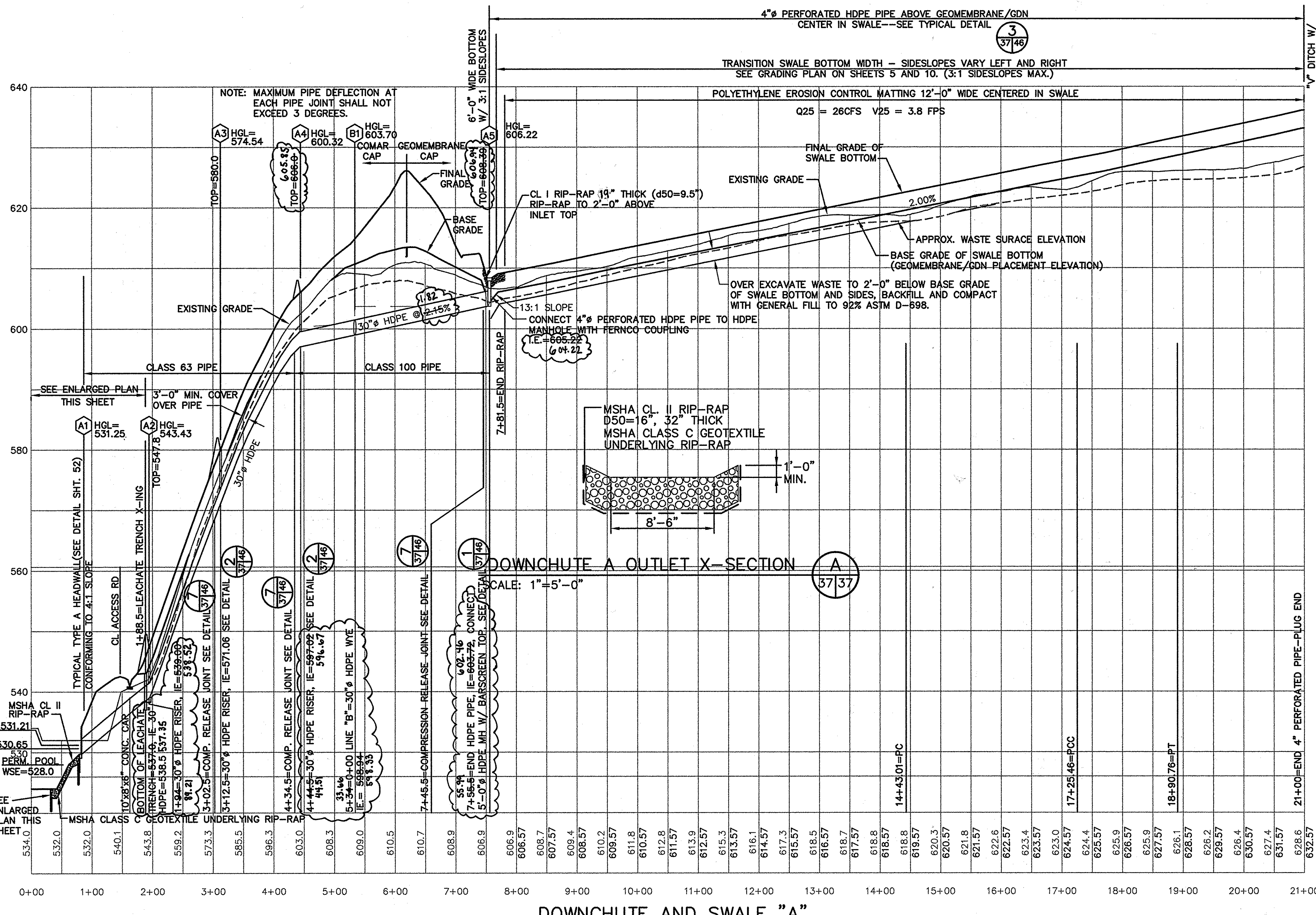
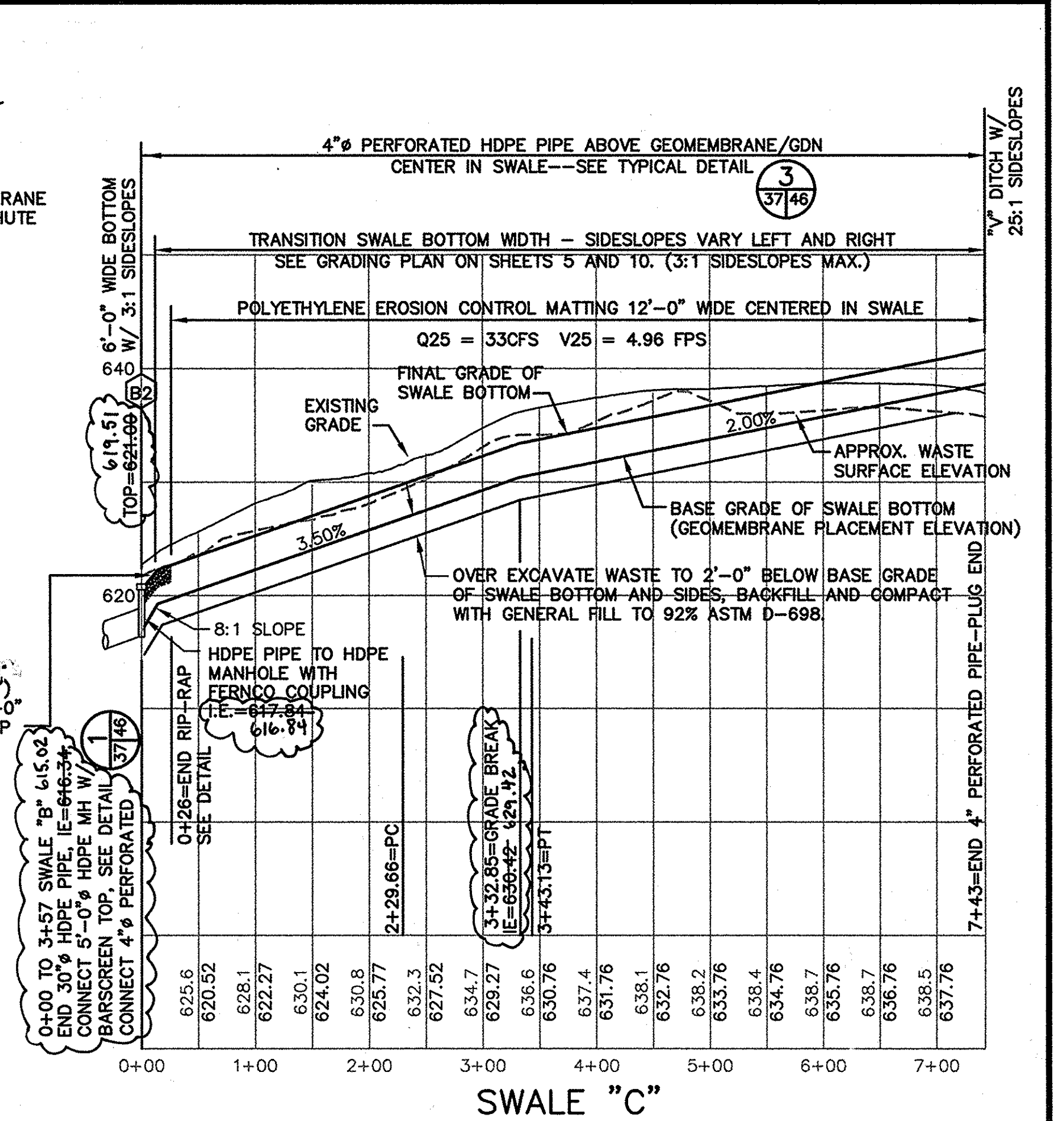
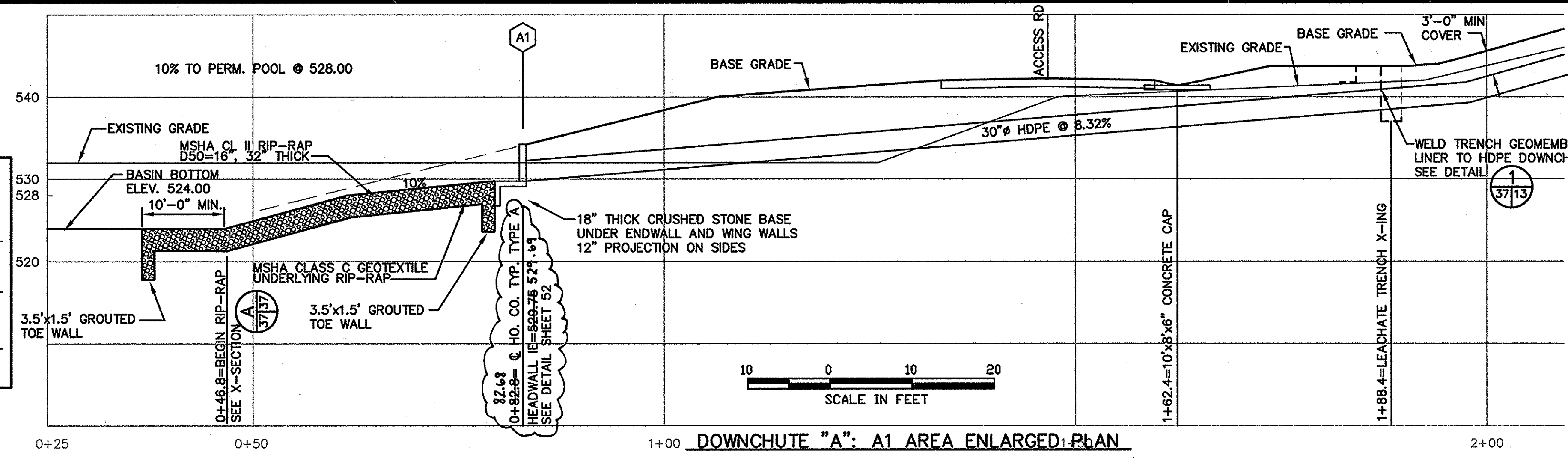
SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/806 16-878/215 10-891/314	ZONE PEC
WATER CODE PRIVATE, EXISTING	TAX/ZONE MAP 10 & 16
SEWER CODE PRIVATE, EXISTING	CENSUS TR. 80-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 1/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE



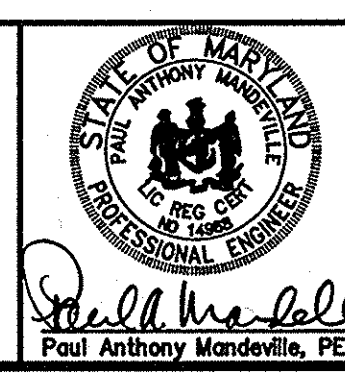
M:\296077\01\FINAL SWLPRO - PROADET, XS-NBIDA SWLPRO-B

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	
DRN. EGC, JCB	
CHK. PAM	REVISED WASTE SURFACE ELEVATION 7/27/98
	REVISED GRADES 7/17/98
DATE: 10-30-97	BY NO. REVISION DATE

DOWNCHUTES  
& SWALE PROFILES

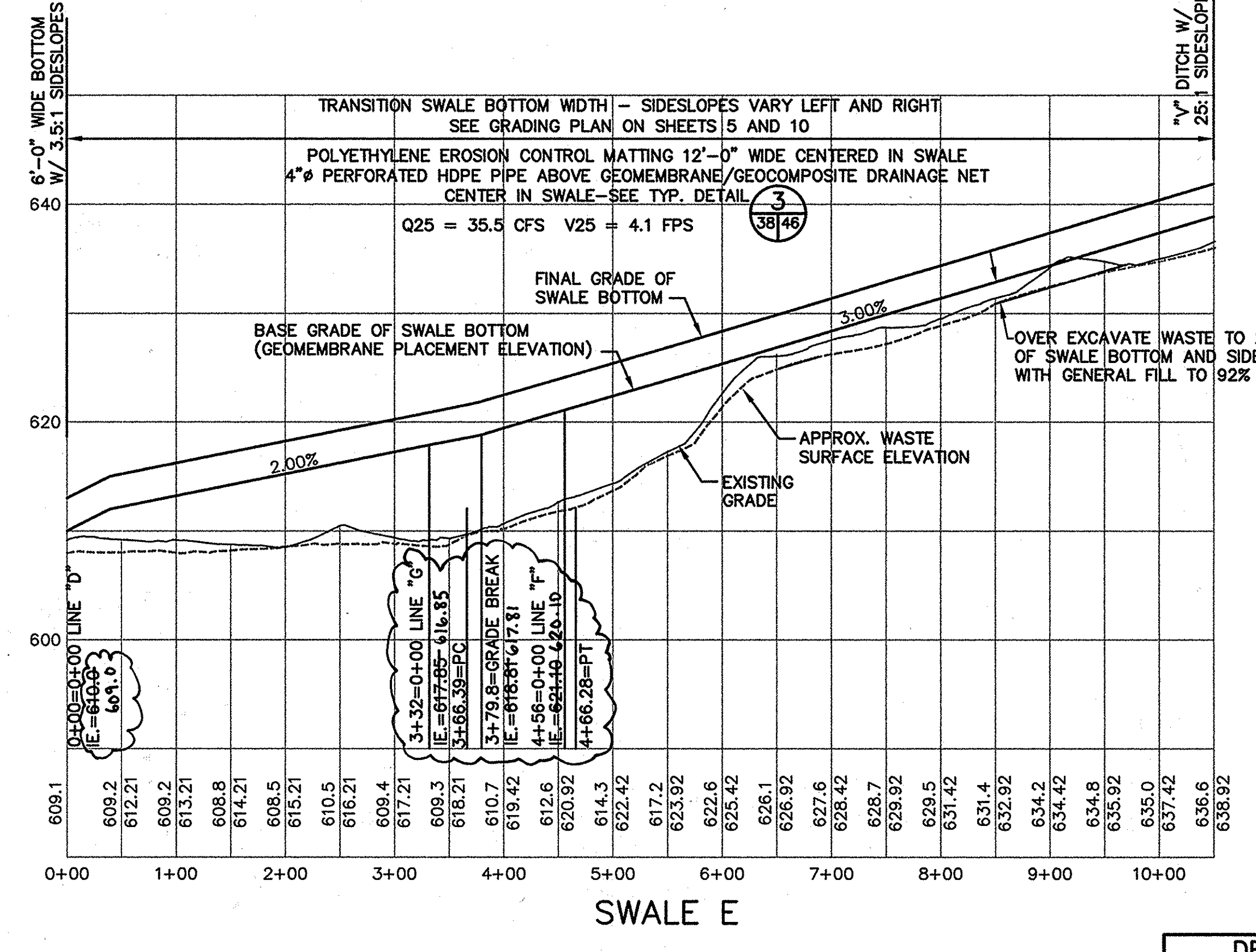
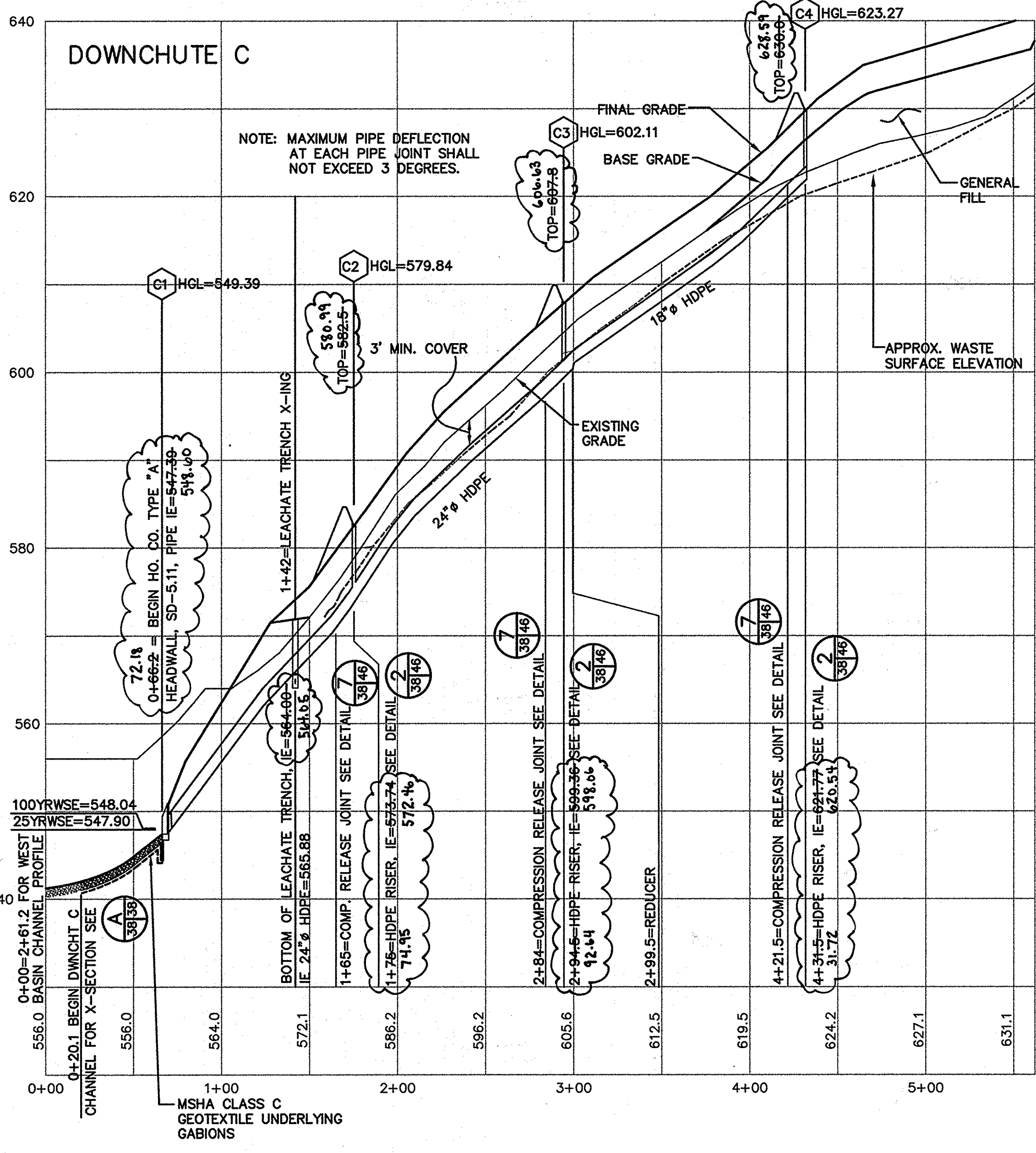
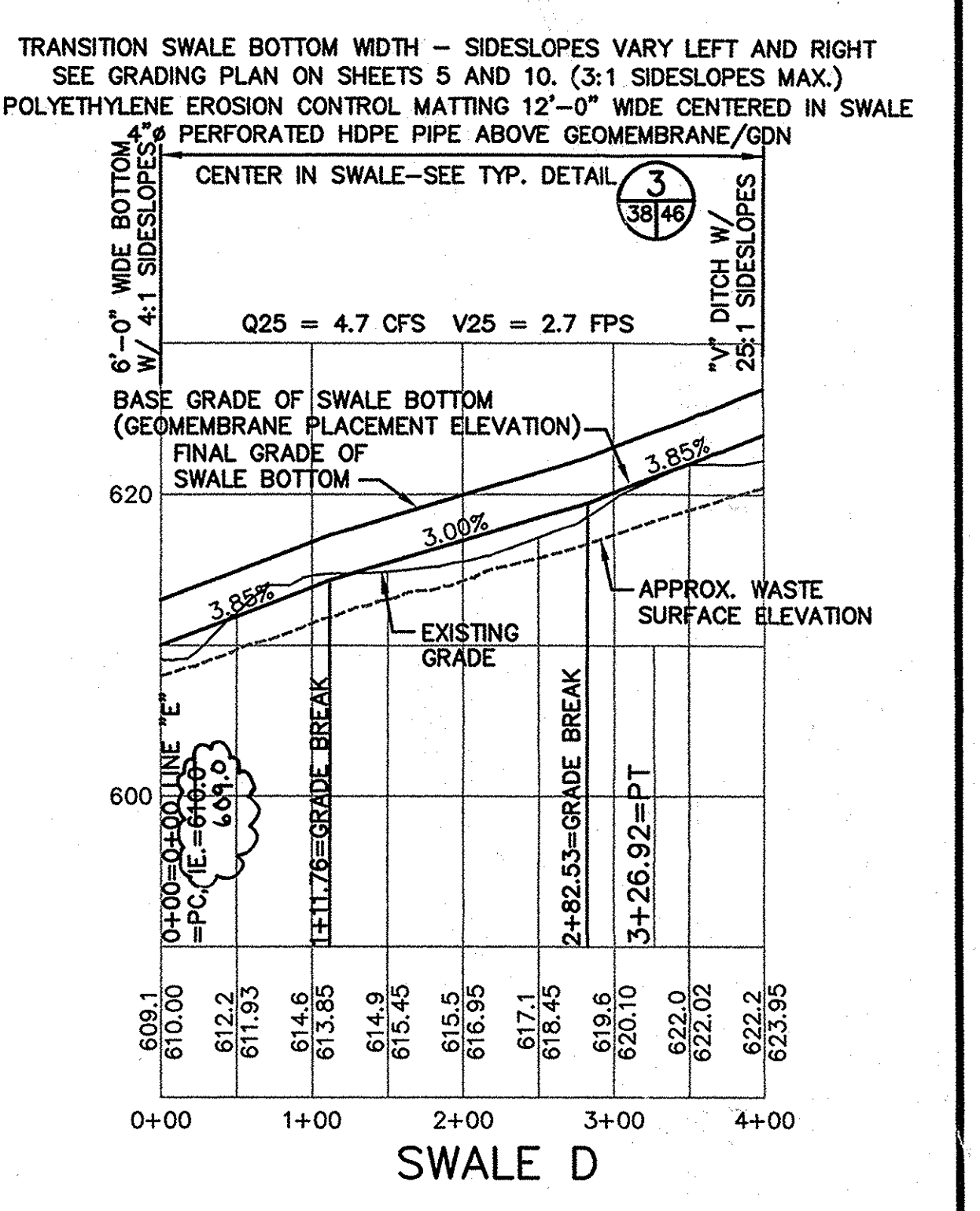
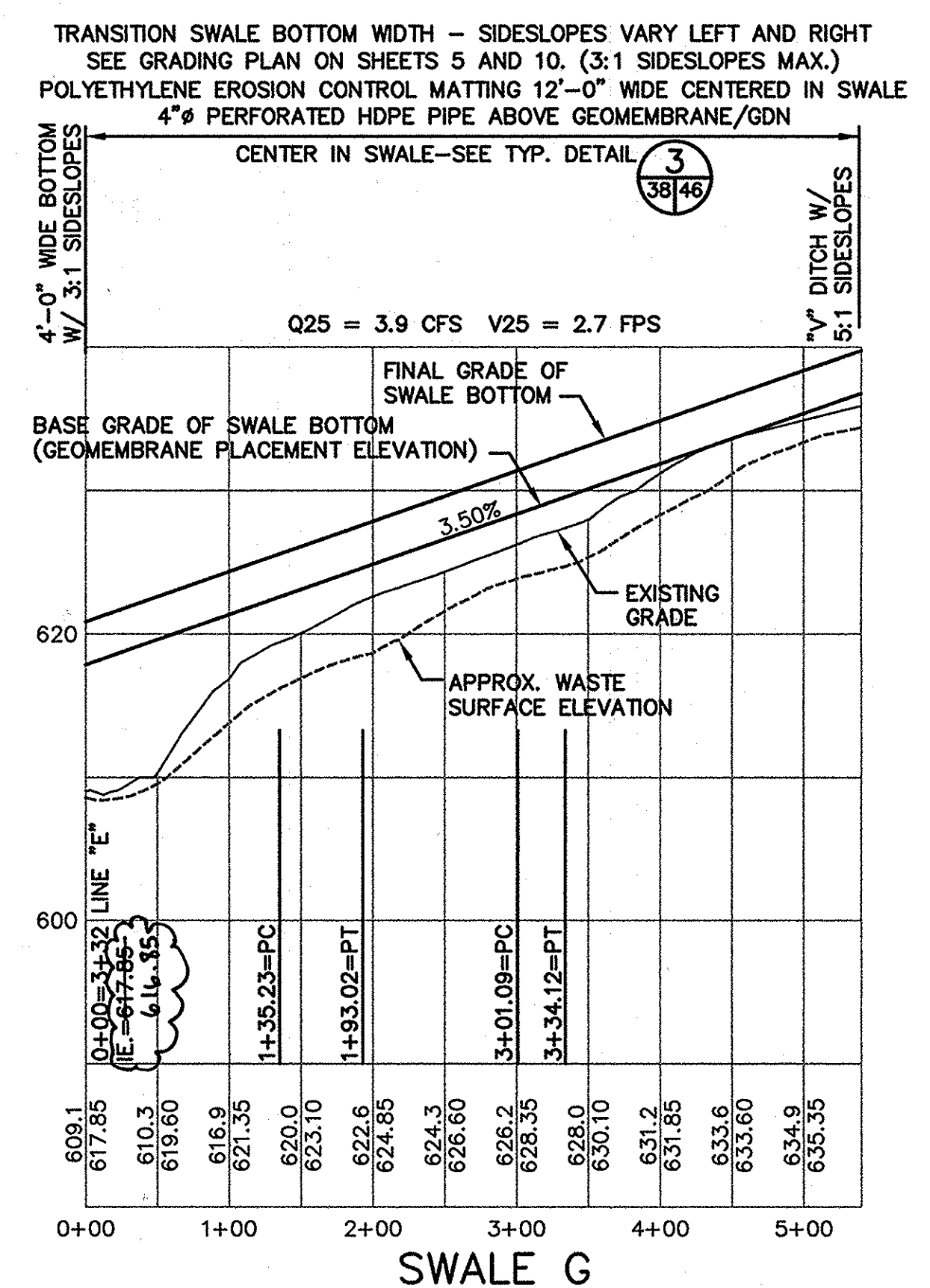
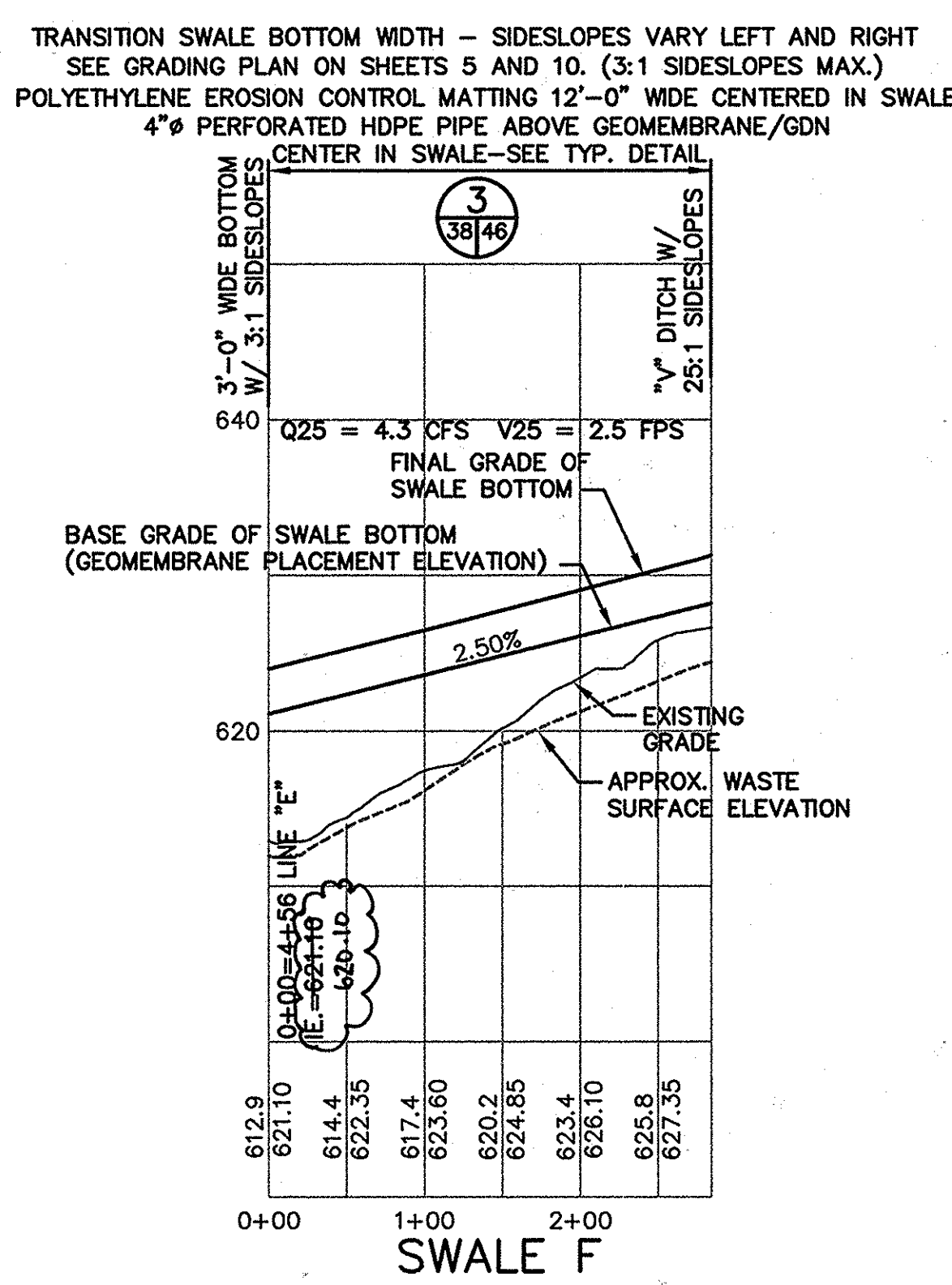
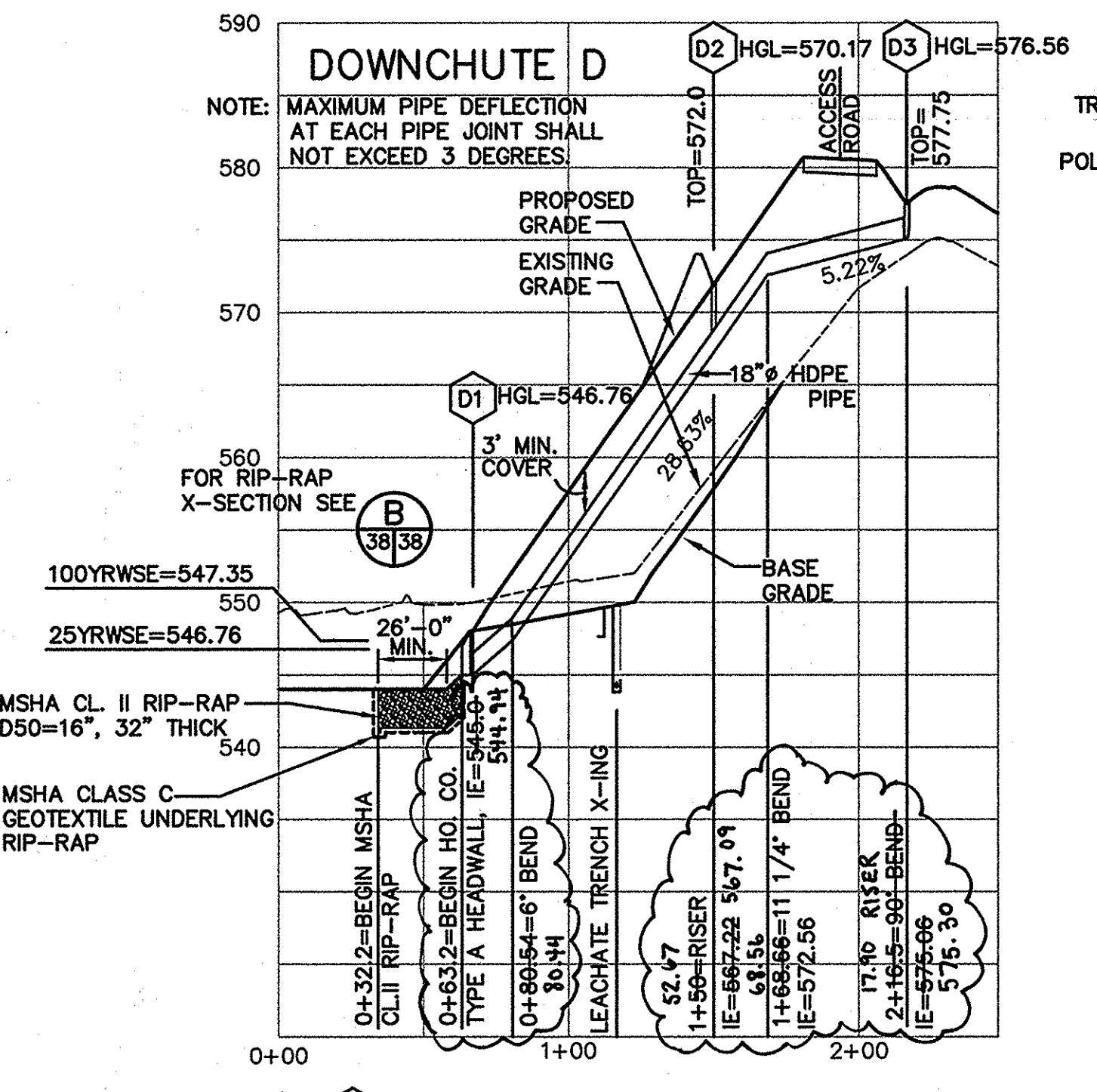
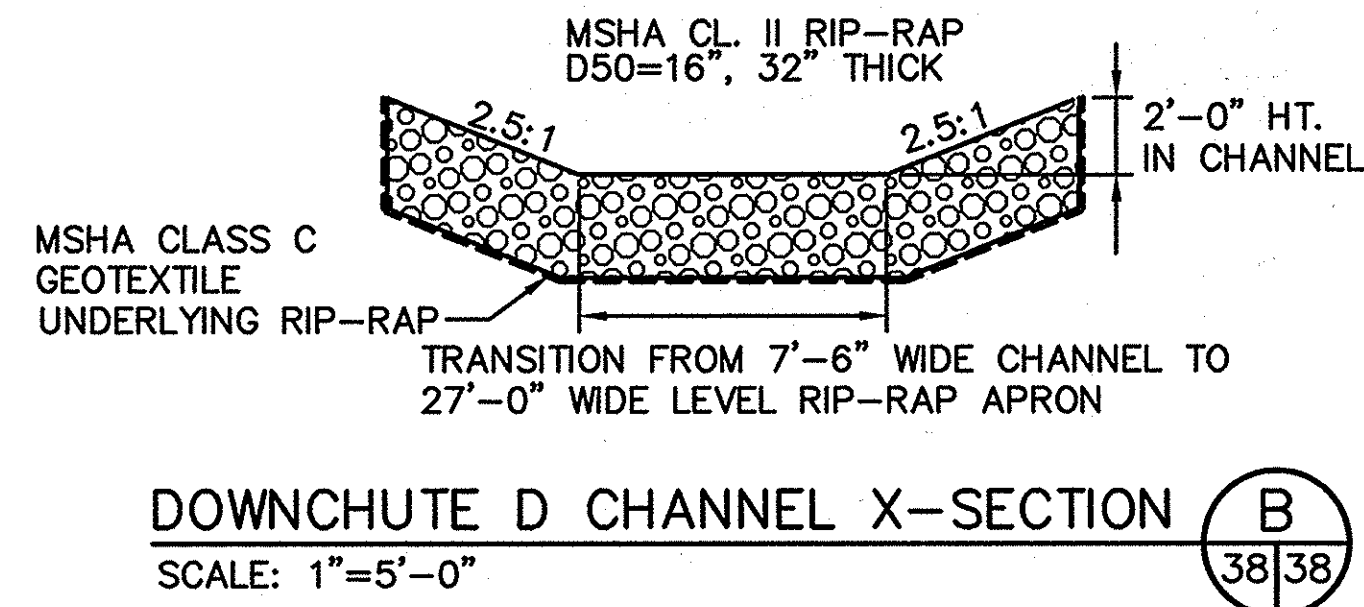
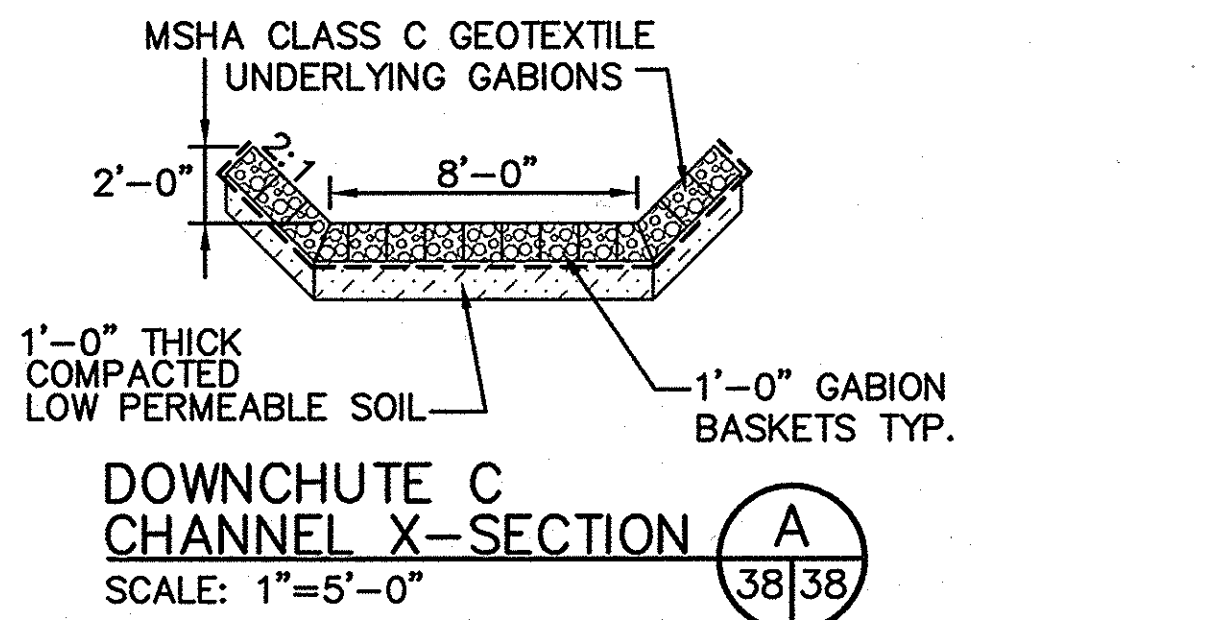
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED

SHEET  
37 OF 191

SDA-97-128



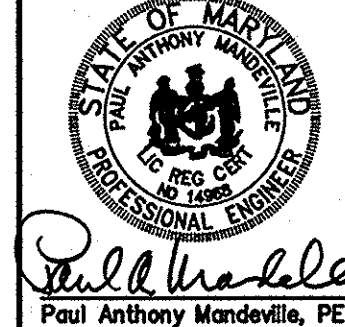
SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/606 16-878/215 10-881/314	ZONE PEC	TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

DIRECTOR: *[Signature]* DATE: 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 10/30/97  
CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 11/2/97

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

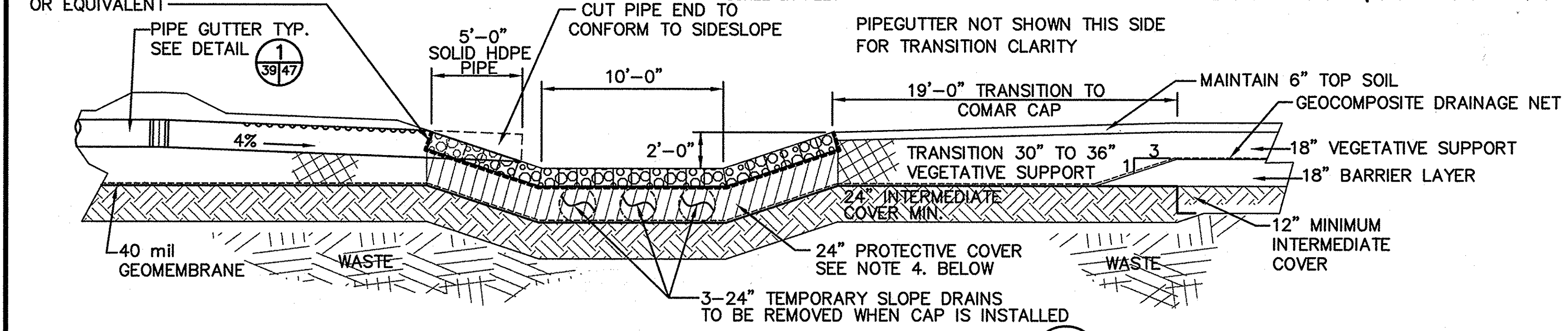
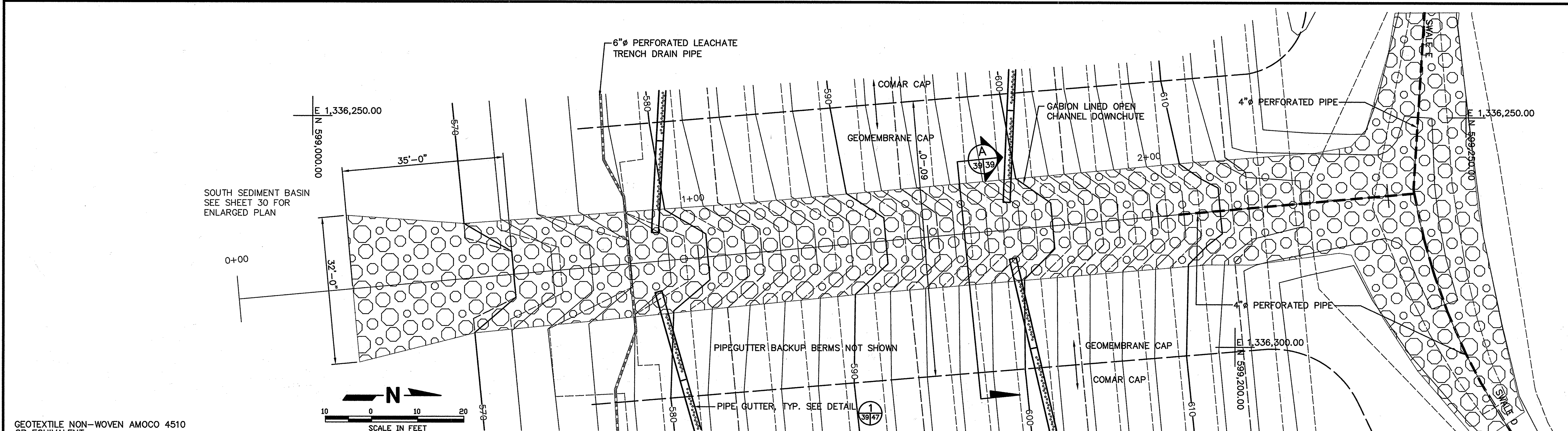
SCS ENGINEERS  
CONSULTING ENGINEERS  
11260 ROGER BACON DRIVE  
SUITE 300  
RESTON, VIRGINIA 22090  
PH. (703) 471-6150  
FAX. (703) 471-6676



DES. RTT, EGC	△		
DRN. EGC, AST	△		
CHK. PAM	△	REVISED WASTE SURFACE ELEVATION	7/27/98
	△	REVISED GRADES	7/17/98
DATE: 10-30-97	BY NO.	REVISION	DATE

DOWNCHUTES & SWALE PROFILES

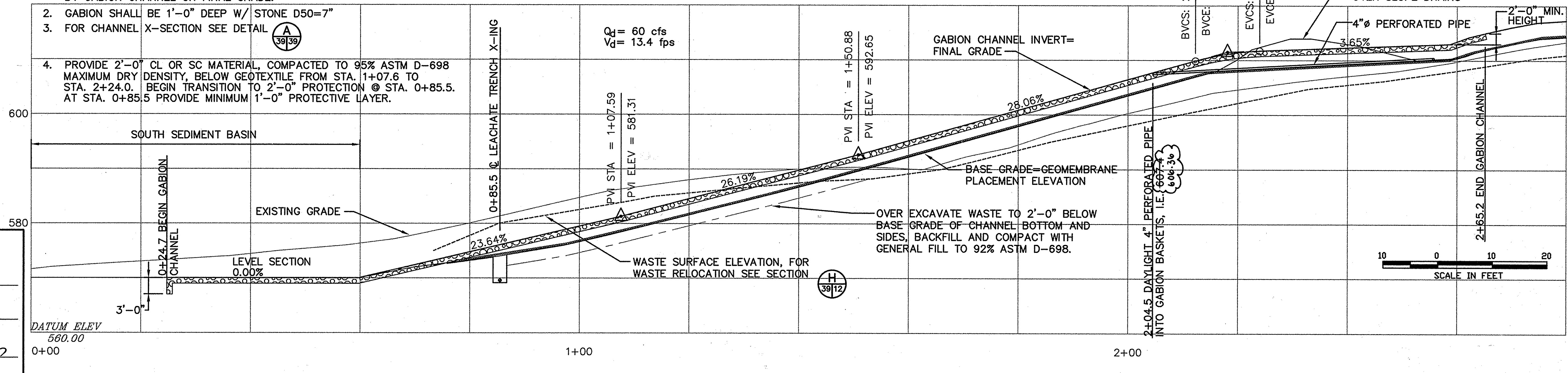
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N



**SOUTH GATION CHANNEL AND CAP TRANSITION X-SECTION**  
SCALE: 1"=5'-0"

- NOTES:
- TEMPORARY 3-24" HDPE SLOPE DRAINS ON BASE GRADE TO BE REPLACED BY GATION CHANNEL ON FINAL GRADE.
  - GATION SHALL BE 1'-0" DEEP W/ STONE D50=7"
  - FOR CHANNEL X-SECTION SEE DETAIL (A) 39/39
  - PROVIDE 2'-0" CL OR SC MATERIAL, COMPACTED TO 95% ASTM D-698 MAXIMUM DRY DENSITY, BELOW GEOTEXTILE FROM STA. 1+07.6 TO STA. 2+24.0. BEGIN TRANSITION TO 2'-0" PROTECTION @ STA. 0+85.5. AT STA. 0+85.5 PROVIDE MINIMUM 1'-0" PROTECTIVE LAYER.

**GATION DOWNCHUTE TO SOUTH BASIN**  
SCALE: 1"=10'



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/606 16-876/215 10-891/314	ZONE PEC	TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

Director: *[Signature]* DATE: 11/3/97

Chief, Development Engineering Division: *[Signature]* DATE: 11/3/97

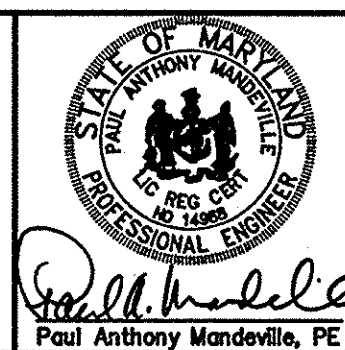
Chief, Division of Land Development: *[Signature]* DATE: 11/3/97

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 10/30/97

Chief, Bureau of Waste Management: *[Signature]* DATE: 10/30/97

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



DES. RTT, EGC	[Signature]
DRN. EGC	[Signature]
CHK. PAM	[Signature]
DATE: 10-30-97	BY NO.
REVISION	DATE

**DOWNCHUTES & SWALE PROFILES**

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

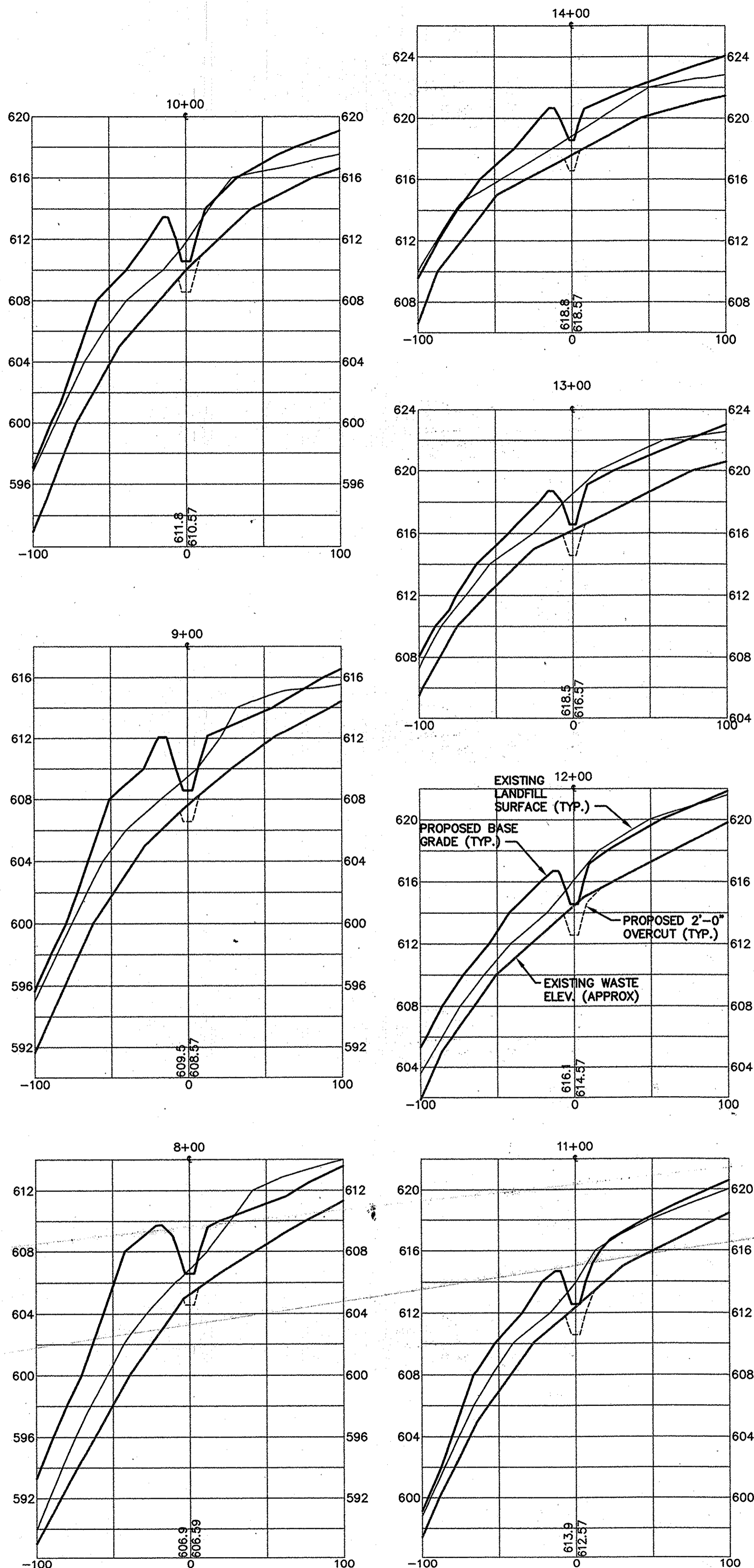
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS NOTED  
SHEET 39 OF 131

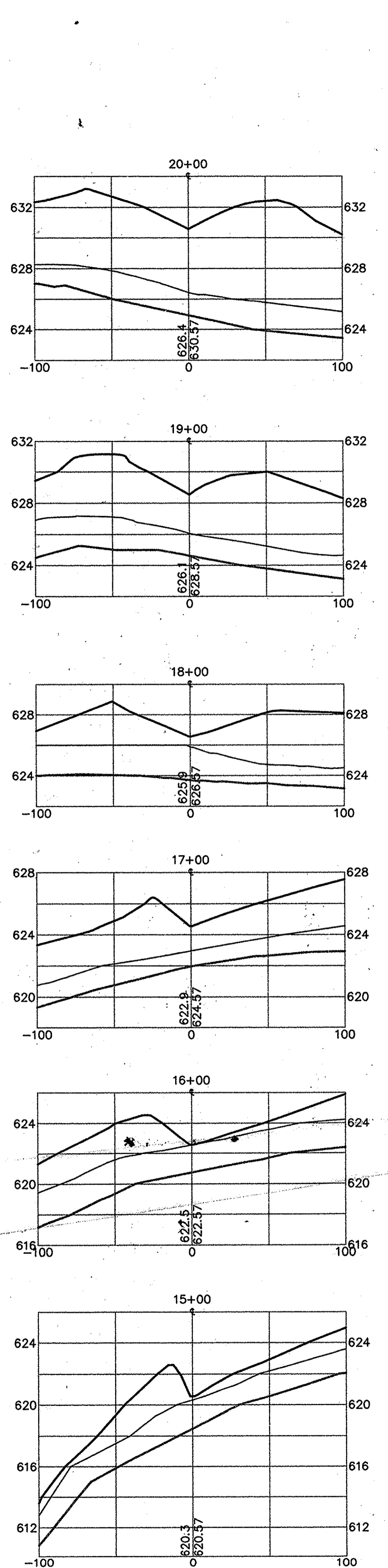
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SDP-97-128

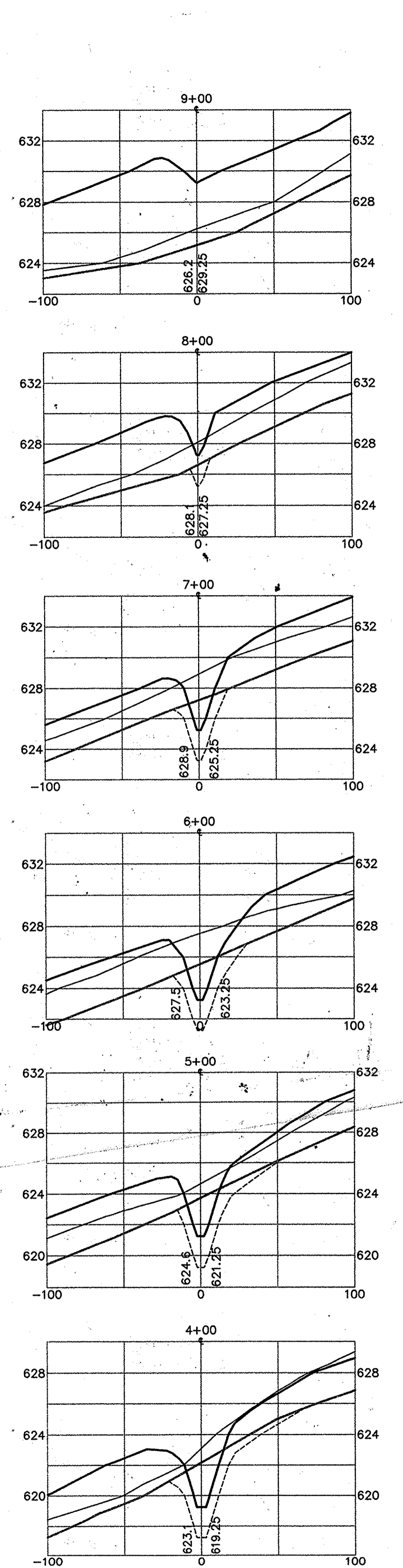




SWALE A CROSS-SECTIONS



SWALE B CROSS-SECTIONS



SWALE C CROSS-SECTIONS

**LEGEND**  
 — EXISTING LANDFILL SURFACE  
 — PROPOSED BASE GRADE  
 - - - PROPOSED 2'-0" OVERCUT  
 — EXISTING APPROX. WASTE ELEVATION

VERT. SCALE: 5 0 5 10  
 SCALE IN FEET  
 HORIZ. SCALE: 50 0 50 100  
 SCALE IN FEET

SEE ETA SHEET 10-AB FOR AS-BUILT  
 FINAL SURFACE GRADING PLAN

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54-253,220,11	
LIBER/FOLIO 10-847/606 16-878/215 10-891/314		ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

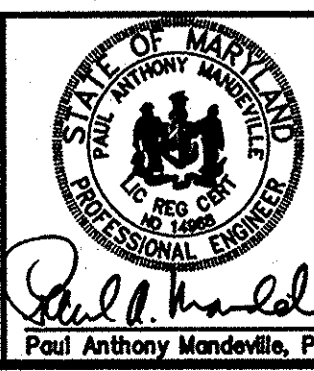
DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

DIRECTOR: *[Signature]* DATE: 11/3/97  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 10/29/97  
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 11/3/97

M:\295077.01\FINAL SWLX1-B

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. RTT, EGC				
DRN. EGC				
CHK. PAM				
DATE: 10-30-97	BY	NO.	REVISION	DATE

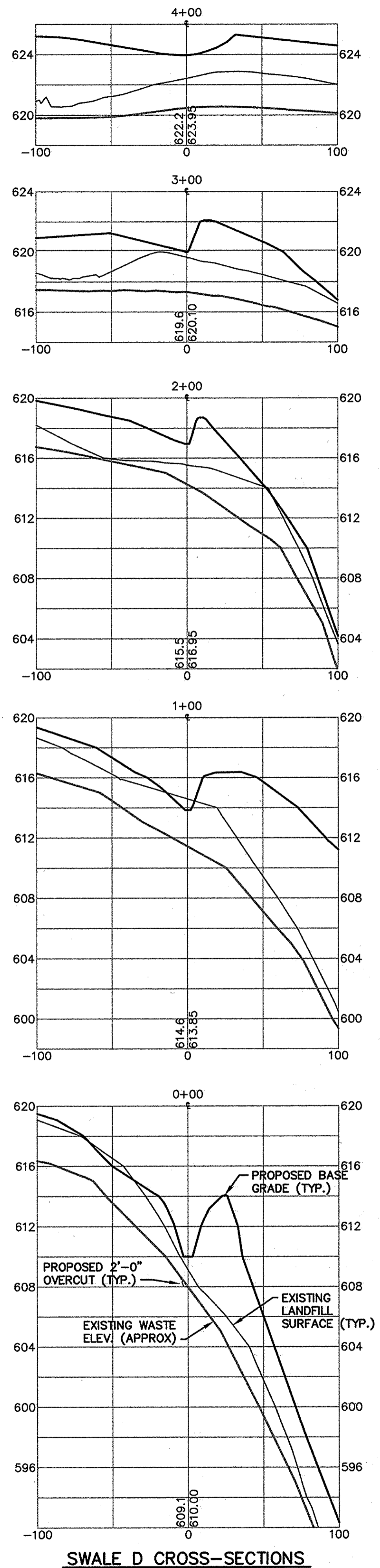
SWALE CROSS-SECTIONS

ALPHA RIDGE LANDFILL  
 UNLINED CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190-N

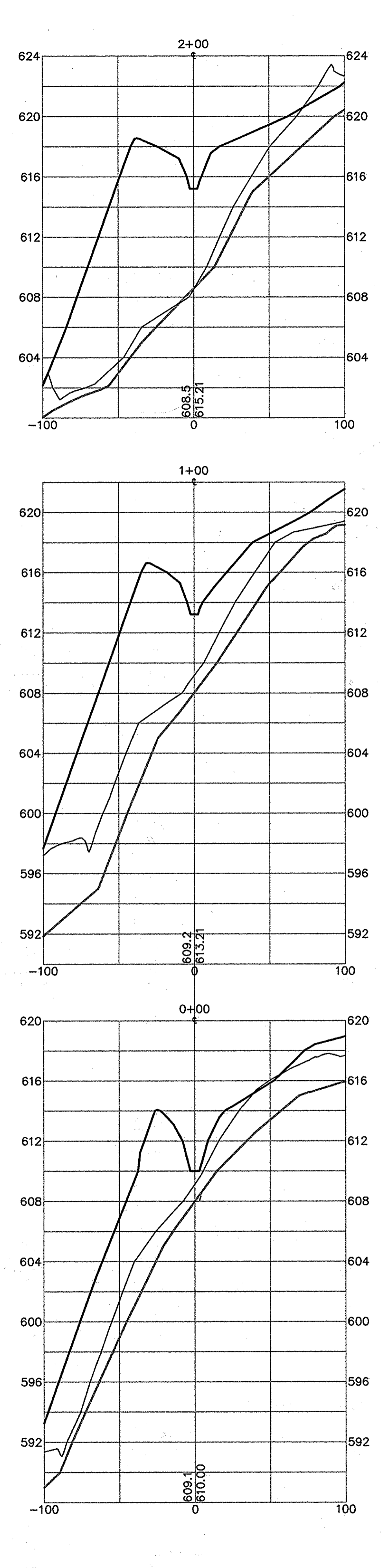
3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

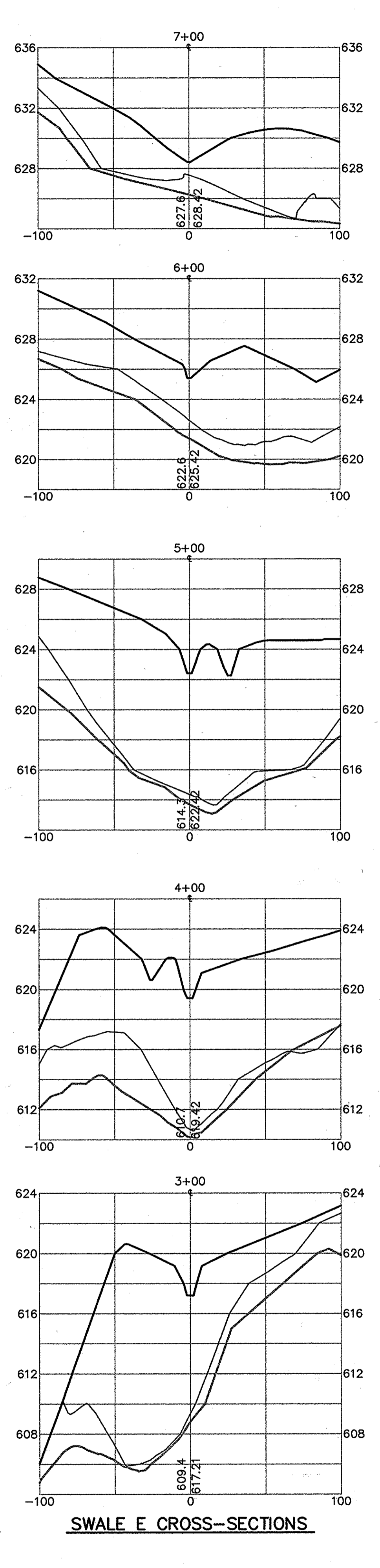
SCALE:  
 AS-NOTED  
 SHEET  
 40 OF 126



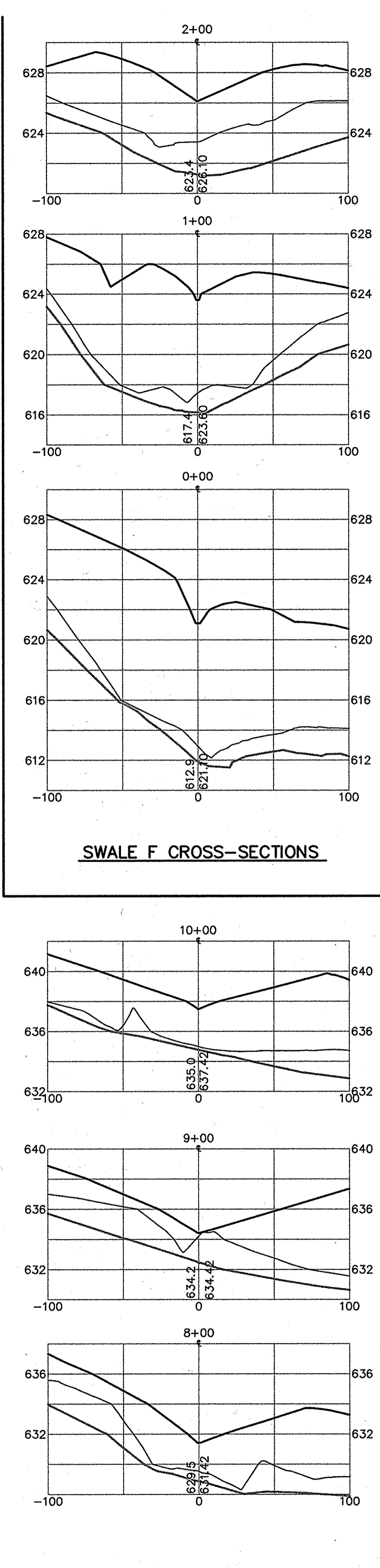
SWALE D CROSS-SECTIONS



SWALE E CROSS-SECTIONS

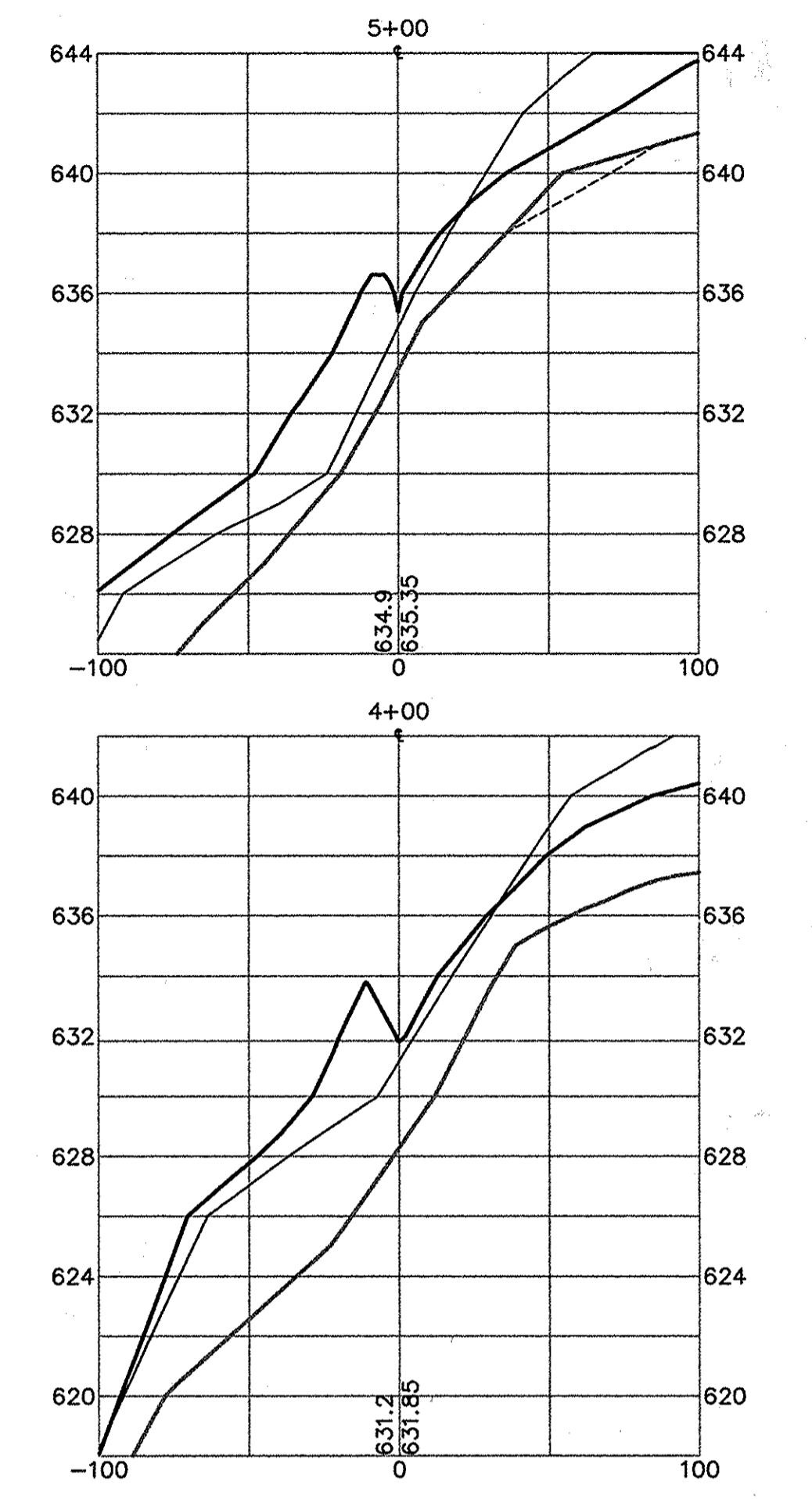


SWALE F CROSS-SECTIONS



SWALE G CROSS-SECTIONS

**LEGEND**  
 — EXISTING LANDFILL SURFACE  
 — PROPOSED BASE GRADE  
 - - - PROPOSED 2'-0" OVERCUT  
 — EXISTING APPROX. WASTE ELEVATION



SEE ETA SHEET 10-AB FOR AS-BUILT FINAL SURFACE GRADING PLAN

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11	ZONE PEC	TAX/ZONE MAP 10 & 16
LIBER/FOLIO 10-847/606 16-878/215 10-691/314	WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

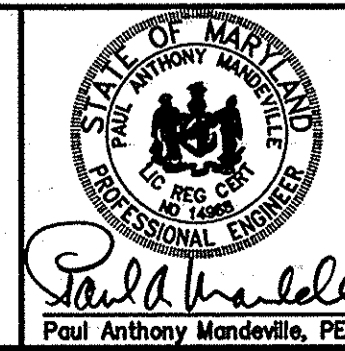
*David S. Rutter* 11/3/97  
 DIRECTOR DATE

*John J. O'Hara* 11/3/97  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cathy Hanfta* 11/3/97  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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. RTT, EGC			
DRN. EGC			
CHK. PAM			
DATE: 10-30-97	BY	NO.	REVISION

SWALE CROSS-SECTIONS

ALPHA RIDGE LANDFILL  
 UNLINED CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190-N

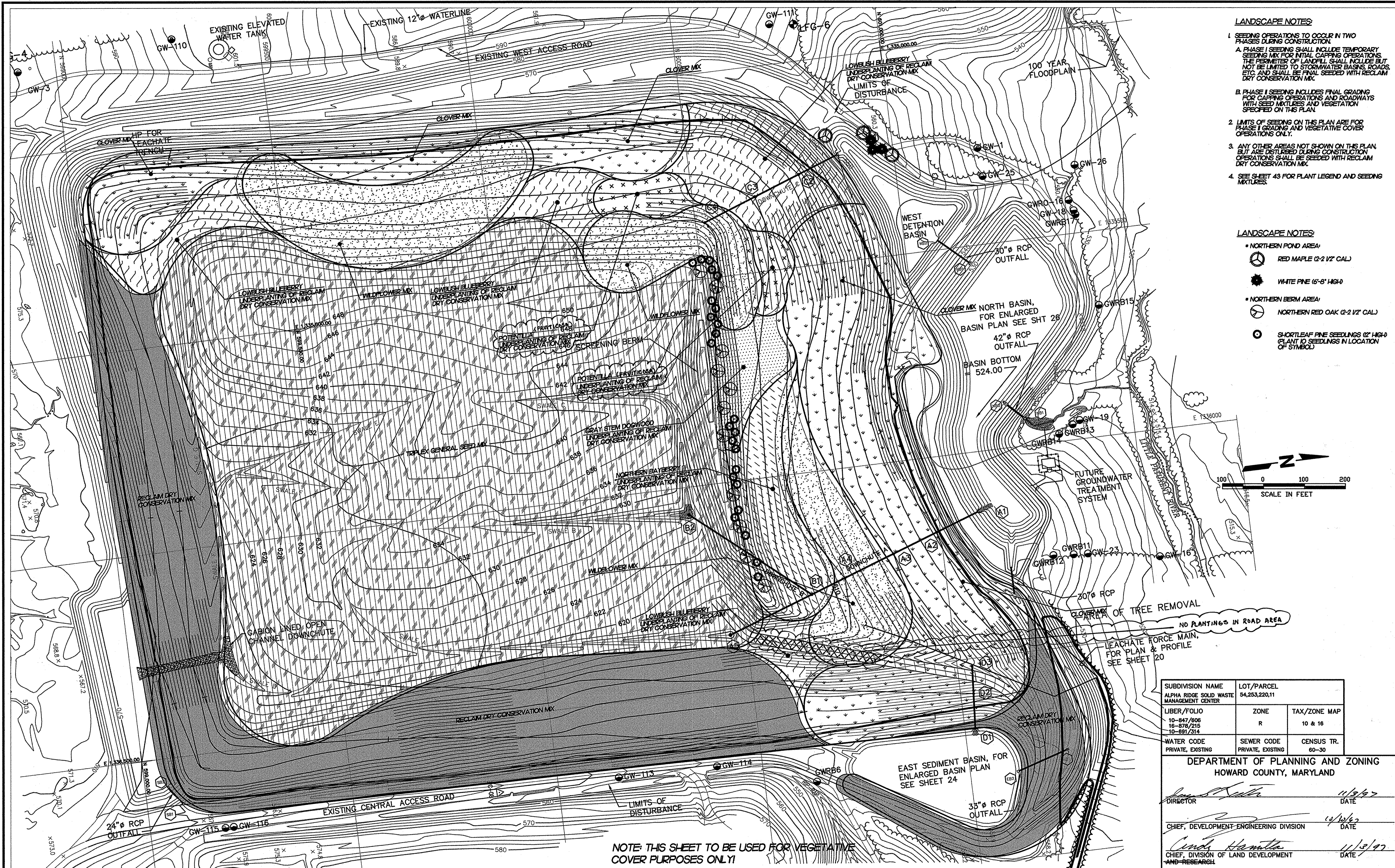
3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:  
 AS NOTED  
 SHEET  
 41 of 131

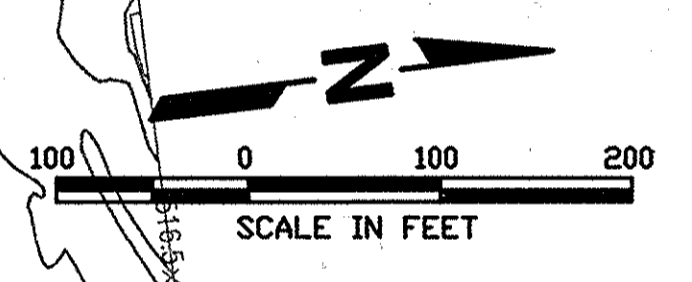
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SDP-97-128



- LANDSCAPE NOTES:**
- SEEDING OPERATIONS TO OCCUR IN TWO PHASES DURING CONSTRUCTION.
    - PHASE I SEEDING SHALL INCLUDE TEMPORARY SEEDING MIX FOR INITIAL CAPPING OPERATIONS. THE PERIMETER OF LANDFILL SHALL INCLUDE BUT NOT BE LIMITED TO STORMWATER BASINS, ROADS, ETC. AND SHALL BE FINAL SEEDING WITH RECLAIM DRY CONSERVATION MIX.
    - PHASE II SEEDING INCLUDES FINAL GRADING FOR CAPPING OPERATIONS AND ROADWAYS WITH SEED MIXTURES AND VEGETATIVE COVER SPECIFIED ON THIS PLAN.
  - LIMITS OF SEEDING ON THIS PLAN ARE FOR PHASE I GRADING AND VEGETATIVE COVER OPERATIONS ONLY.
  - ANY OTHER AREAS NOT SHOWN ON THIS PLAN BUT ARE DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDING WITH RECLAIM DRY CONSERVATION MIX.
  - SEE SHEET 43 FOR PLANT LEGEND AND SEEDING MIXTURES.

- LANDSCAPE NOTES:**
- NORTHERN POND AREA:
    - RED MAPLE (2-2 1/2' CAL)
    - WHITE PINE (6'-8' HIGH)
  - NORTHERN BERM AREA:
    - NORTHERN RED OAK (2-2 1/2' CAL)
    - SHORTLEAF PINE SEEDLINGS (2' HIGH PLANT 10 SEEDLINGS IN LOCATION OF SYMBOL)



NOTE: THIS SHEET TO BE USED FOR VEGETATIVE COVER PURPOSES ONLY!

SUBDIVISION NAME		LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		54,253,220,11	
LIBER/FOLIO		ZONE	TAX/ZONE MAP
10-847/806 16-878/215 10-891/314		R	10 & 16
WATER CODE		SEWER CODE	CENSUS TR.
PRIVATE, EXISTING		PRIVATE, EXISTING	60-30
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND			
DIRECTOR		DATE	
CHIEF, DEVELOPMENT ENGINEERING DIVISION		DATE	
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH		DATE	

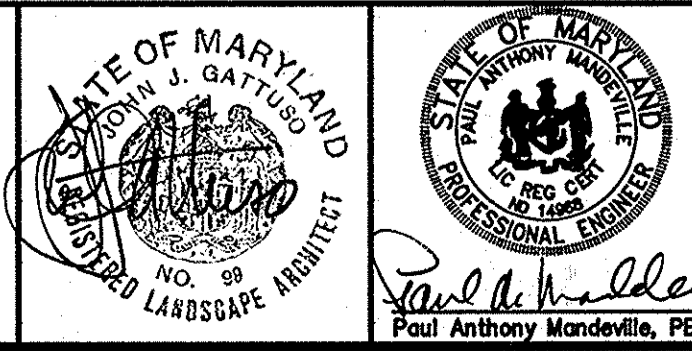
M: 295077.01 FINAL.PSA 2636BASE, 2636FILL

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James P. Shaw* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES.	MB				
DRN.	KS				
CHK.	PAM				
DATE:	10-30-97	BY:	NO.	REVISION	DATE

VEGETATIVE COVER PLAN

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=100'

SHEET  
42 of 136

SDP-97-128

PERMANENT SEED MIXTURES

A. TRI-PLEX GENERAL SEED MIX

Table with 3 columns: INGREDIENTS, % OF MIXTURE, MINIMUM PERCENT PURE LIVE SEED. Rows include Baron Kentucky Bluegrass, Jamestown II Cheewings Fescue, Palmer II Perennial Ryegrass.

\* SEED SHALL BE APPLIED AT THE RATE OF 4 LBS/1000 SQUARE FEET OR 170 LBS/ACRE

B. RECLAIM DRY CONSERVATION MIX

Table with 3 columns: INGREDIENTS, % OF MIXTURE, MINIMUM PERCENT PURE LIVE SEED. Rows include Rebel II Tall Fescue, Weeping Lovegrass, Reliant Hard Fescue, etc.

\* SEED SHALL BE APPLIED AT THE RATE OF 5 LBS/1000 SQUARE FEET OR 210 LBS/ACRE

C. CLOVER MIX

Table with 3 columns: INGREDIENTS, % OF MIXTURE, MINIMUM PERCENT PURE LIVE SEED. Rows include Ladino Clover, Reliant Hard Fescue.

\* SEED SHALL BE APPLIED AT THE RATE OF 4.4 LBS/1000 SQUARE FEET OR 190 LBS/ACRE

D. PERENNIAL WILDFLOWER MIXTURE

Table with 3 columns: INGREDIENTS, % OF MIXTURE, MINIMUM PERCENT PURE LIVE SEED. Rows include Siberian Wallflower, Perennial Gaillardia, Lanceleaf Coreopsis, etc.

\* SEED SHALL BE APPLIED AT THE RATE OF 10 LBS/ACRE FOR BROADCASTING (INCREASE RATE OF APPLICATION OT 20 LBS/ACRE FOR HYDROSEEDING)

E. ANNUAL WILDFLOWER MIXTURE (FALL AMENDMENT)

Table with 3 columns: INGREDIENTS, % OF MIXTURE, MINIMUM PERCENT PURE LIVE SEED. Rows include California Poppy, Baby's Breath, Bachelors Button, etc.

\* SEED SHALL BE APPLIED AT THE RATE OF 8 LBS/ACRE FOR BROADCASTING (INCREASE RATE OF APPLICATION OT 16 LBS/ACRE FOR HYDROSEEDING)

E. ANNUAL WILDFLOWER MIXTURE (SPRING AMENDMENT)

Table with 3 columns: INGREDIENTS, % OF MIXTURE, MINIMUM PERCENT PURE LIVE SEED. Rows include California Poppy, Bachelors Button, Baby's Breath, etc.

\* SEED SHALL BE APPLIED AT THE RATE OF 8 LBS/ACRE FOR BROADCASTING (INCREASE RATE OF APPLICATION OT 16 LBS/ACRE FOR HYDROSEEDING)

\*\* FOR SEEDING MID-SEPTEMBER TO EARLY NOVEMBER (FALL), A MIXTURE OF TWO-THIRDS PERENNIAL WILDFLOWER WITH ONE-THIRD ANNUAL WILDFLOWER (FALL AMENDMENT ONLY)

\*\*\* FOR SEEDING EARLY MARCH TO LATE APRIL (SPRING), USE A MIXTURE OF TWO-THIRDS PERENNIAL WILDFLOWERS WITH ONE-THIRD ANNUAL WILDFLOWER (SPRING AMENDMENT ONLY)

TEMPORARY SEEDING RATES, DEPTHS, AND DATES

Table with columns: SPECIES, MINIMUM SEEDING RATES (PER ACRE, LBS/1000 SQ. FT.), PLANTING DEPTH, HARDINESS ZONES AND SEEDING DATES (7A & 7B, 6B, 6A & 5B), FERTILIZER RATE.

36 APPLICABLE ON SLOPES OF 3:1 OR FLATTER
37 REFER TO FIGURE A - ADOPTED FROM USDA, ARS MISCELLANEOUS PUBLICATION #1475, JANUARY 1990
38 BETWEEN FALL AND SPRING SEEDING DATES, USE MULCH ONLY IF GROUND IS FROZEN AND RESEED WHEN THAWED
39 MAY BE USED AS A NURSE CROP FOR LATE FALL/EARLY WINTER PERMANENT SEEDINGS, ADD 56 LBS/AC TO THE PERMANENT SEEDING MIXTURE
40 MARYLAND STATE HIGHWAY ADMINISTRATION TEMPORARY SEED MIX
41 MAY BE USED AS A NURSE CROP FOR MID-SUMMER PERMANENT SEEDINGS. ADD 2 LBS/AC TO PERMANENT SEED MIX.
42 MAY BE USED AS A NURSE CROP FOR MID-SUMMER PERMANENT SEEDINGS. ADD 10 LBS/AC TO THE PERMANENT SEED MIX.

GENERAL NOTES:

STAKE ALL DECIDUOUS TREES UNDER 3" CAL. SET STAKES VERTICAL AND AT SAME HEIGHT. GUY TREES 3" CAL. AND OVER.

PRUNE TO THIN AND SHAPE TREE CANOPY. 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.

1/4" GALV. GUYING CABLE (THREE PER TREE.) SEE PLAN VIEW DETAIL.

BOARD FLAG-1"x4"x10" PAINTED WHITE.

TREE WRAP.

4" GALV. TURNBUCKLE.

SET ROOT COLLAR AT 3" MIN. ABOVE FINISHED GRADE.

REMOVE BURLAP FROM TOP 1/3 OF BALL.

2" MIN. MULCH.

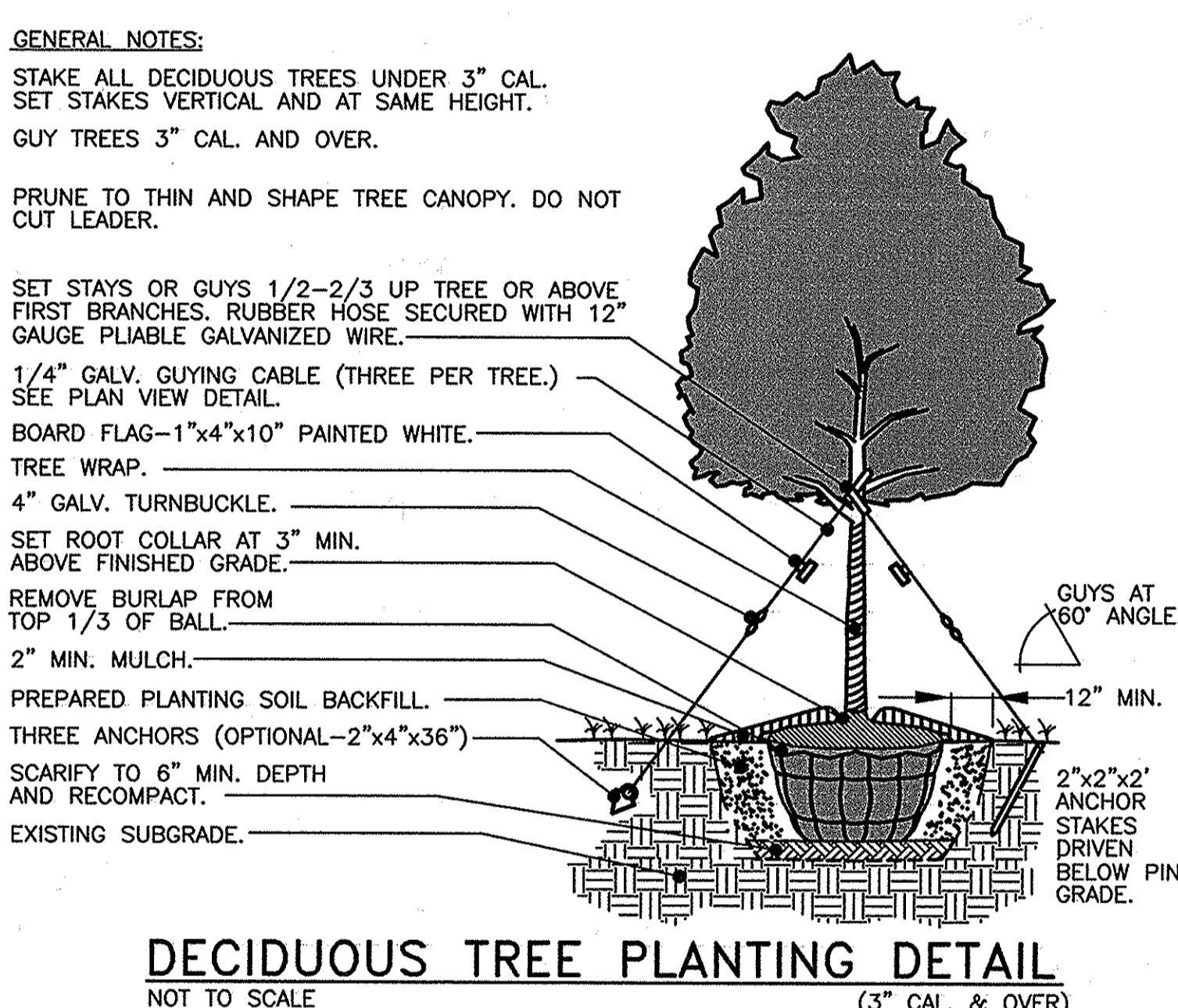
PREPARED PLANTING SOIL BACKFILL.

THREE ANCHORS (OPTIONAL-2"x4"x36")

SCARIFY TO 6" MIN. DEPTH AND RECOMPACT.

EXISTING SUBGRADE.

DECIDUOUS TREE PLANTING DETAIL (3" CAL. & OVER)



GENERAL NOTES:

DO NOT PRUNE EVERGREENS, EXCEPT TO REMOVE DEAD AND BROKEN BRANCHES.

THIN BRANCHES AND FOLIAGE BY 1/3 RETAINING NORMAL PLANT SHAPE. (DO NOT REMOVE ALL BRANCH TIPS. DO NOT THIN EVERGREENS).

REMOVE BURLAP FROM TOP 1/3 OF BALL OR WITH CONTAINER PLANTS REMOVE POTS AND SPLIT AS SPECIFIED.

1/2"

CONTAINER RESTS VERTICALLY SLICE OUTSIDE OF ROOTBALL TO PROHIBIT CIRCULAR GROWTH OF ROOTS.

PLAN VIEW

SET ROOT COLLAR AT 1/8 VERTICAL HEIGHT OF CONTAINER, ABOVE FINISHED GRADE

BALLED AND BURLAPPED SHRUBS

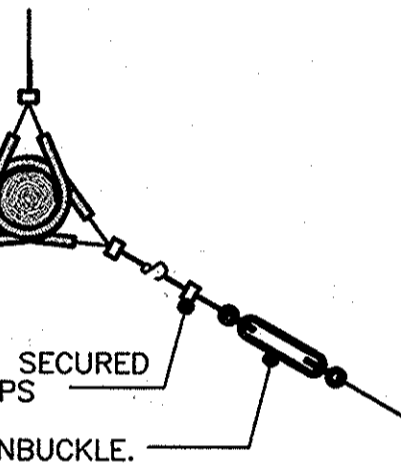
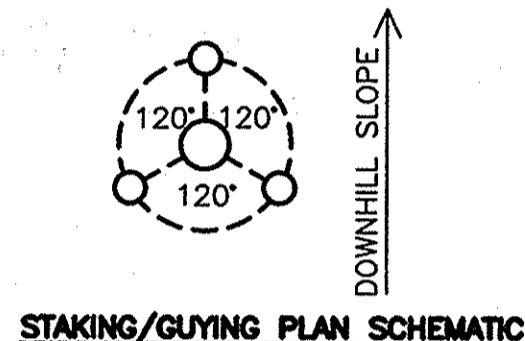
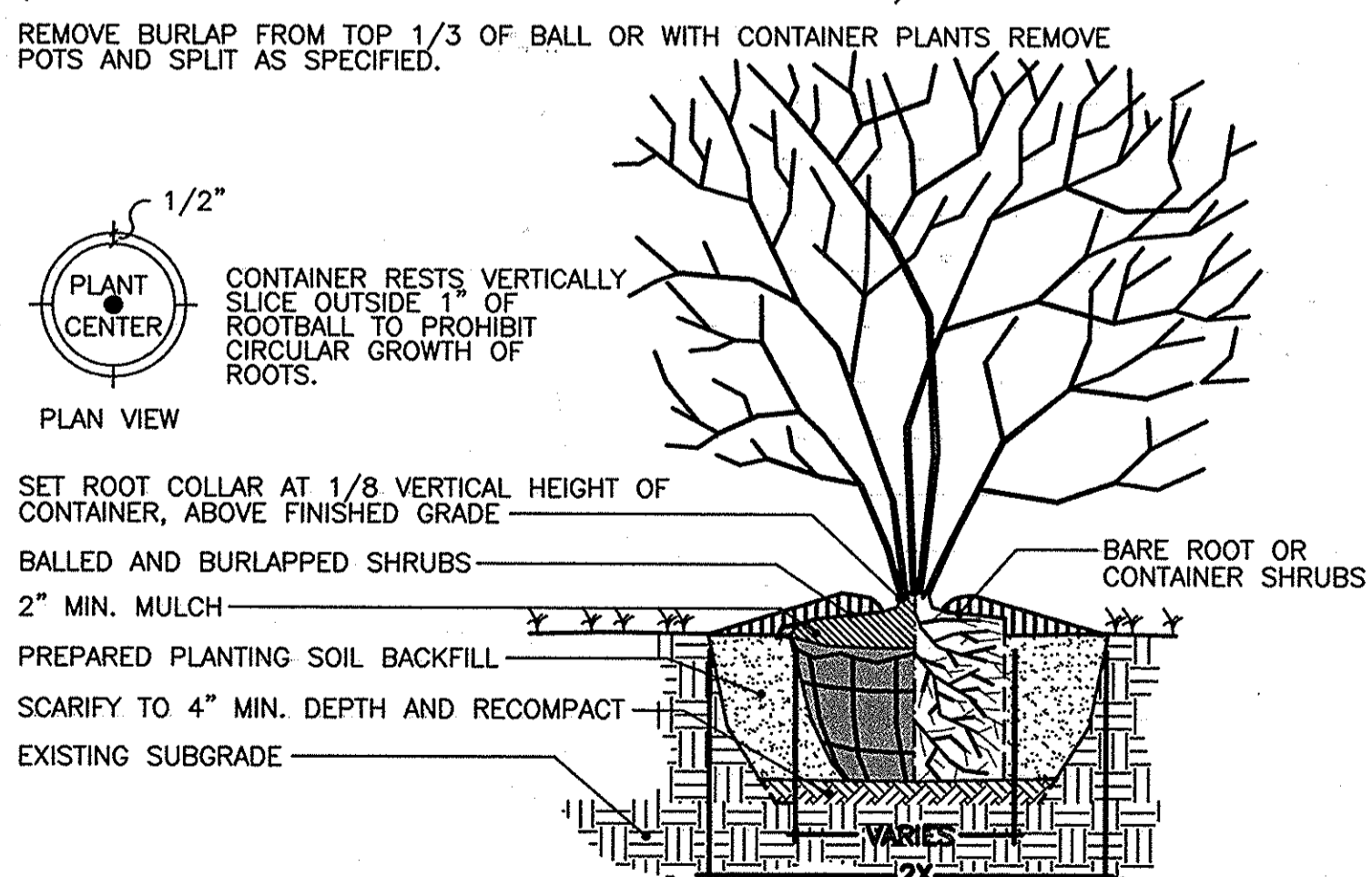
2" MIN. MULCH

PREPARED PLANTING SOIL BACKFILL

SCARIFY TO 4" MIN. DEPTH AND RECOMPACT

EXISTING SUBGRADE

SHRUB PLANTING DETAIL



TREE STAKING AND GUYING

PLANT LEGEND:

Table with columns: QUANTITY, BOTANICAL NAME, COMMON NAME, SIZE, PLANTING METHOD, REMARKS. Lists trees like Acer rubrum, Pinus strobus, etc.

SHRUBS:

Table with columns: QUANTITY, BOTANICAL NAME, COMMON NAME, SIZE, PLANTING METHOD, REMARKS. Lists shrubs like Myrica pennsylvanica, etc.

SEEDING MIXTURES:

Table with columns: MIXTURE NAME, COVERAGE (SQUARE FEET), REMARKS. Lists Clover Mix, Reclaim Conservation Mix, etc.

\* CONTRACTOR RESPONSIBLE FOR ACTUAL QUANTITIES NECESSARY TO ACHIEVE PLANT SPACING REQUIREMENTS DESIGNATED WITHIN THE "REMARKS" COLUMN OF THE PLANT LEGEND.

GENERAL NOTES:

STAKE ALL EVERGREEN TREES UNDER 12'. PRUNE ONLY TO REMOVE DAMAGED OR BROKEN BRANCHES. DO NOT CUT LEADERS, IF PRUNING FOR SHAPE.

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

SET ROOT COLLAR AT 3" MIN. ABOVE FINISHED GRADE.

REMOVE BURLAP FROM TOP 1/3 OF BALL.

2" MIN. MULCH.

PREPARED TOPSOIL AS SPECIFIED.

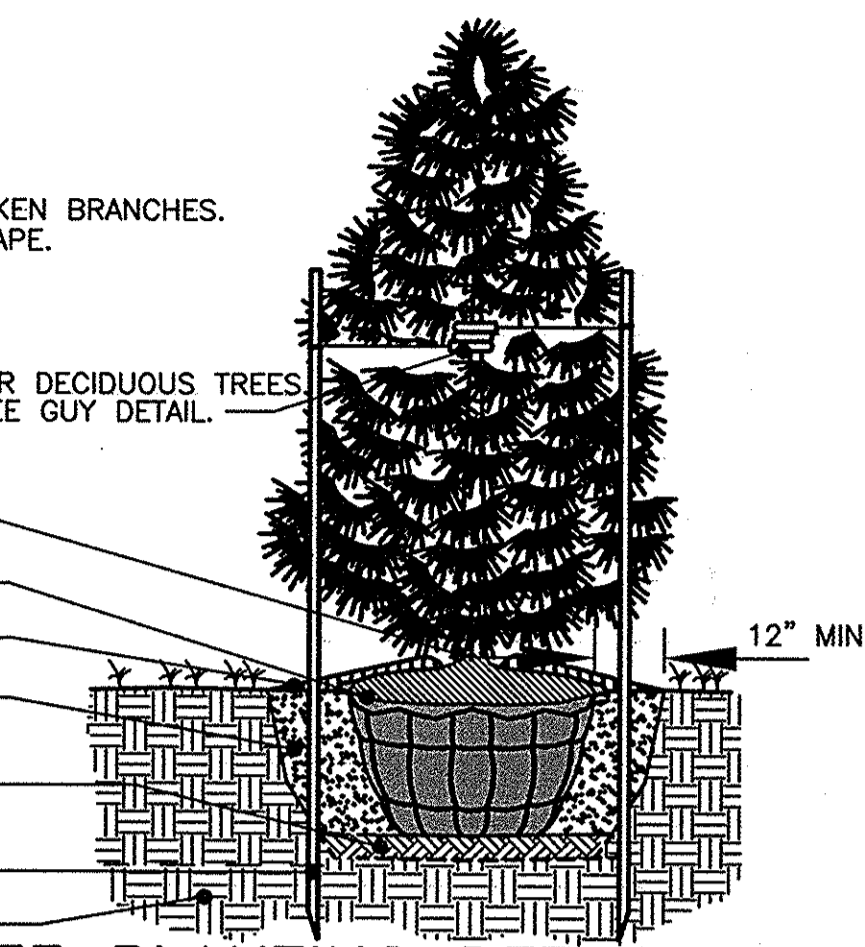
SCARIFY TO 4" MIN. DEPTH AND RECOMPACT.

STAKES TO EXTEND 18" MIN. BELOW TREE PIT IN UNDISTURBED GROUND.

EXISTING SUBGRADE.

EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



GENERAL NOTES:

STAKE ALL DECIDUOUS TREES UNDER 3" CAL. SET STAKES VERTICAL AND AT SAME HEIGHT.

GUY TREES 3" CAL. AND OVER.

PRUNE TO THIN AND SHAPE TREE CANOPY. 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.

SET ROOT COLLAR AT 3" MIN. ABOVE FINISHED GRADE.

REMOVE BURLAP FROM TOP 1/3 OF BALL.

2" MIN. MULCH.

PREPARED PLANTING SOIL BACKFILL.

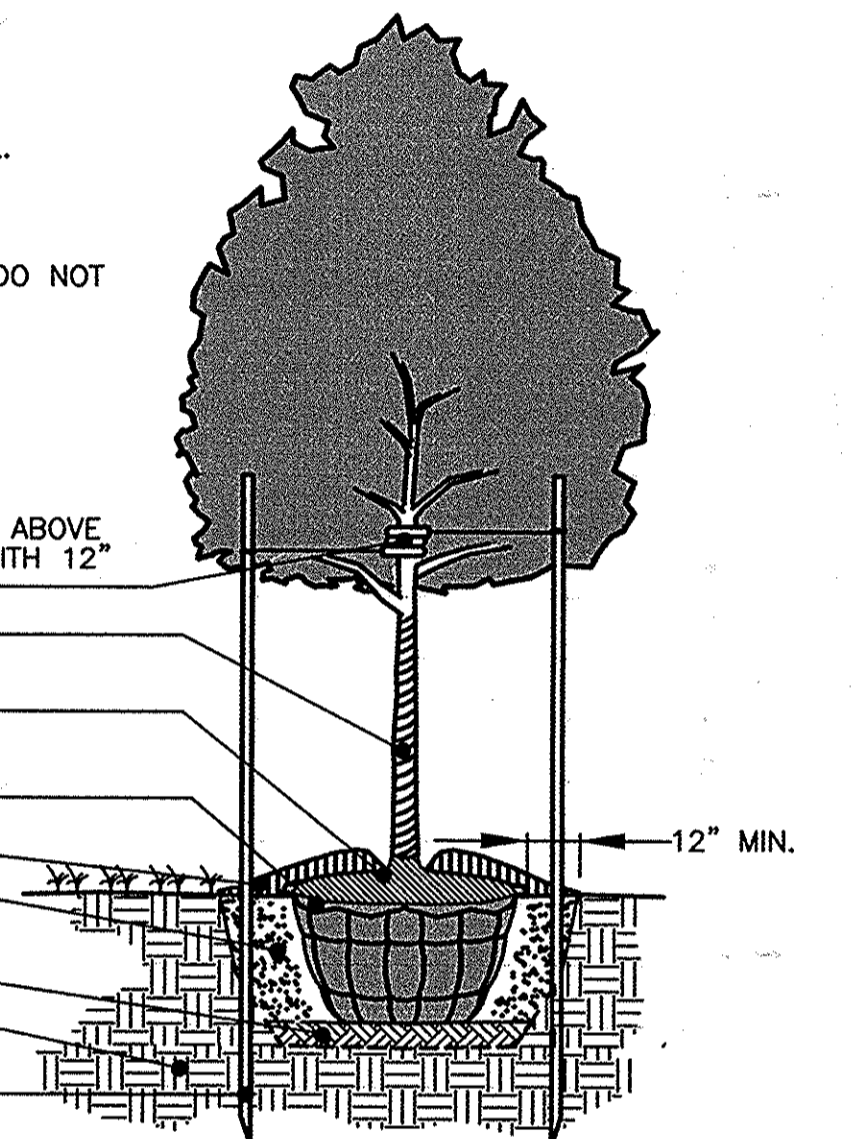
SCARIFY TO 6" MIN. DEPTH AND RECOMPACT.

EXISTING SUBGRADE.

STAKES TO EXTEND 18" BELOW TREE PIT IN UNDISTURBED GROUND.

DECIDUOUS TREE PLANTING DETAIL (UNDER 3" CAL.)

NOT TO SCALE



DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

Approval signatures and dates for Director, Chief Development Engineering Division, and Chief Division of Land Development.

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

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

Director of Public Works and Chief Bureau of Waste Management signatures and dates.

SCS ENGINEERS CONSULTING ENGINEERS 11260 ROGER BACON DRIVE SUITE 300 RESTON, VIRGINIA 22090

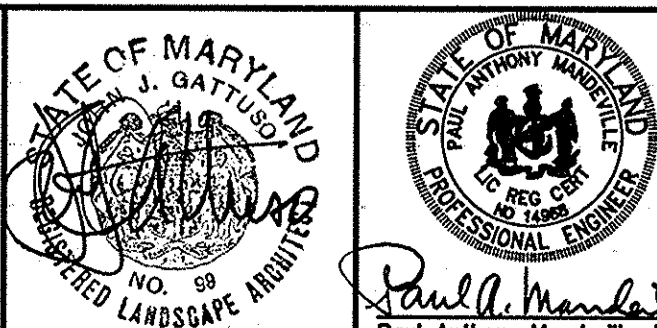


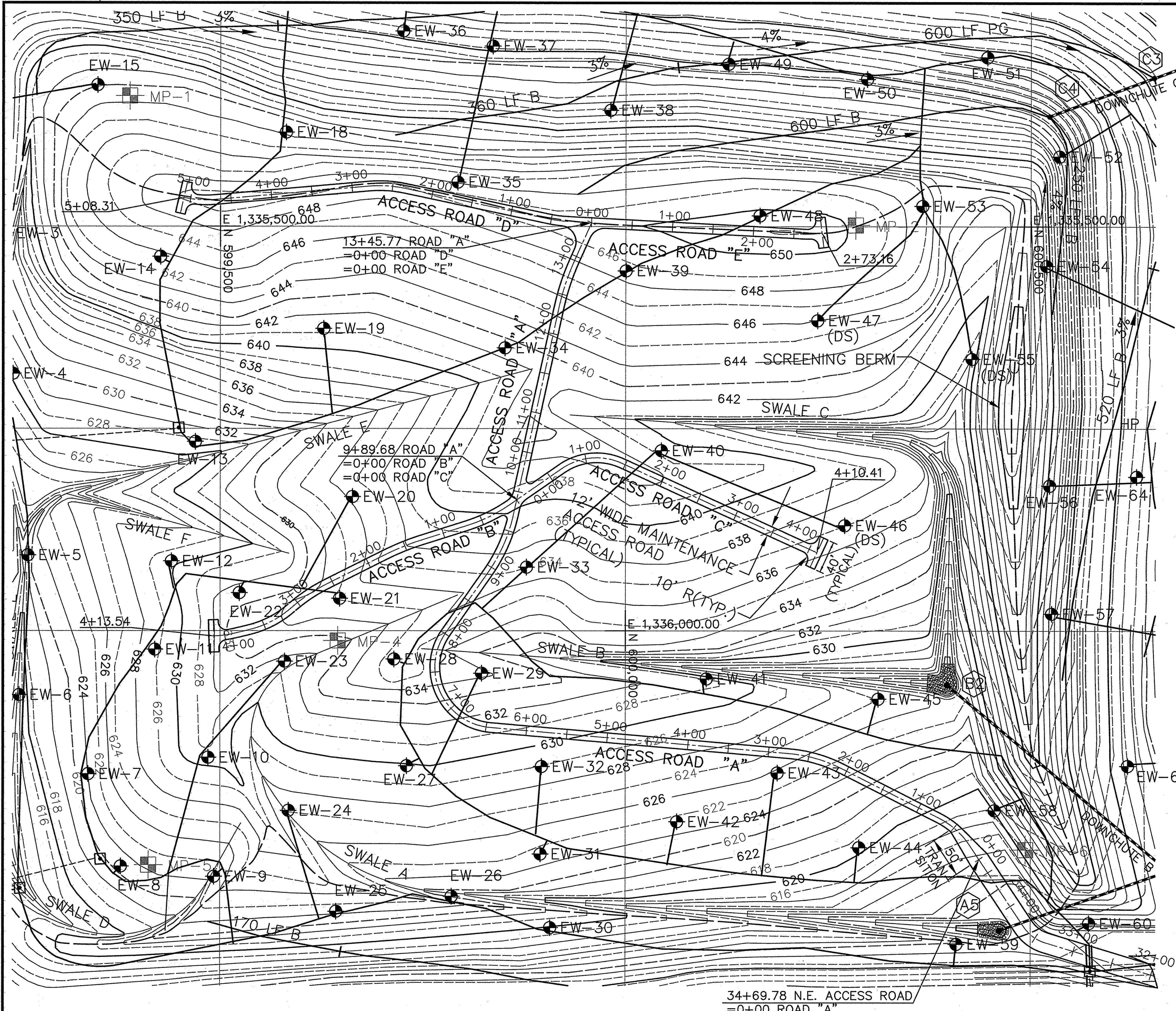
Table for revision tracking: DES. MB, DRN. KS, CHK. PAM, DATE, BY, NO., REVISION, DATE.

VEGETATIVE COVER DETAILS

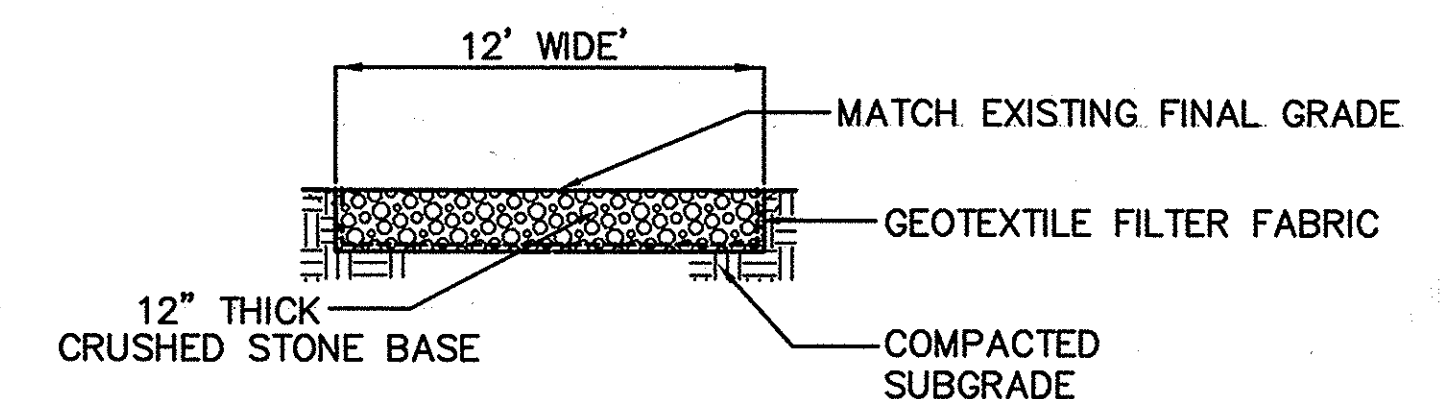
ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS NOTED SHEET 43 OF 125



- NOTES:
1. LFG PROBES INSTALLED APRIL, 1996.
  2. LFG MONITORING WELLS INSTALLED IN MAY, 1996.



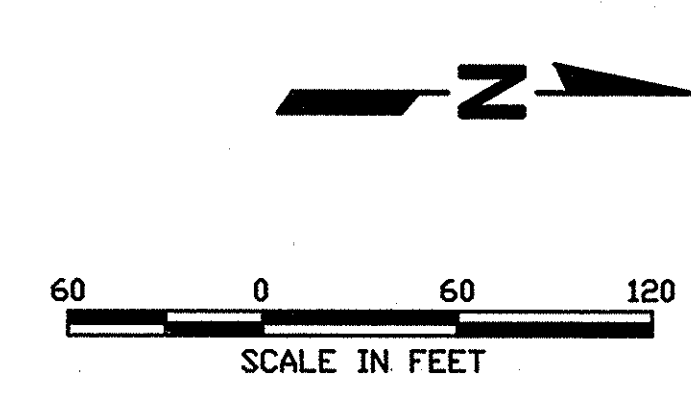
TYPICAL SECTION  
LANDFILL ACCESS ROAD  
SCALE: 3/16"=1'-0"

LEGEND

- MP-3 LFG PROBES (TO BE REMOVED—SEE SHEET G2)
- EW-62 LFG EXTRACTION WELL (EXISTING)
- EW-19 LFG EXTRACTION WELL (EXISTING) (DS = DOWNSLOPE)
- LFG HEADER/LATERAL
- CONDENSATE TRAP DETAIL
- B = BERM
- PG = PIPE GUTTER
- (B1) DRAINAGE STRUCTURE DESIGNATION
- NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPES

SEE ETA SHEET G2-AB FOR LANDFILL GAS WELLS AND PIPING LAYOUT

SEE ETA SHEET 10-AB FOR AS-BUILT FINAL SURFACE GRADING PLAN



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220.11	
LIBER/FOLIO 10-847/606 16-878/215 10-891/314	ZONE PEC	TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

FOR CONTINUATION OF N.E. LANDFILL ACCESS ROAD  
SEE SHEET 34

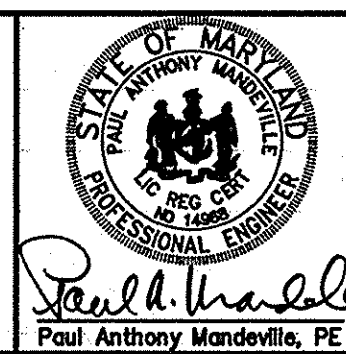
M: 295077.01/FINAL  
CSROADS

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
JOHN O'HARA  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



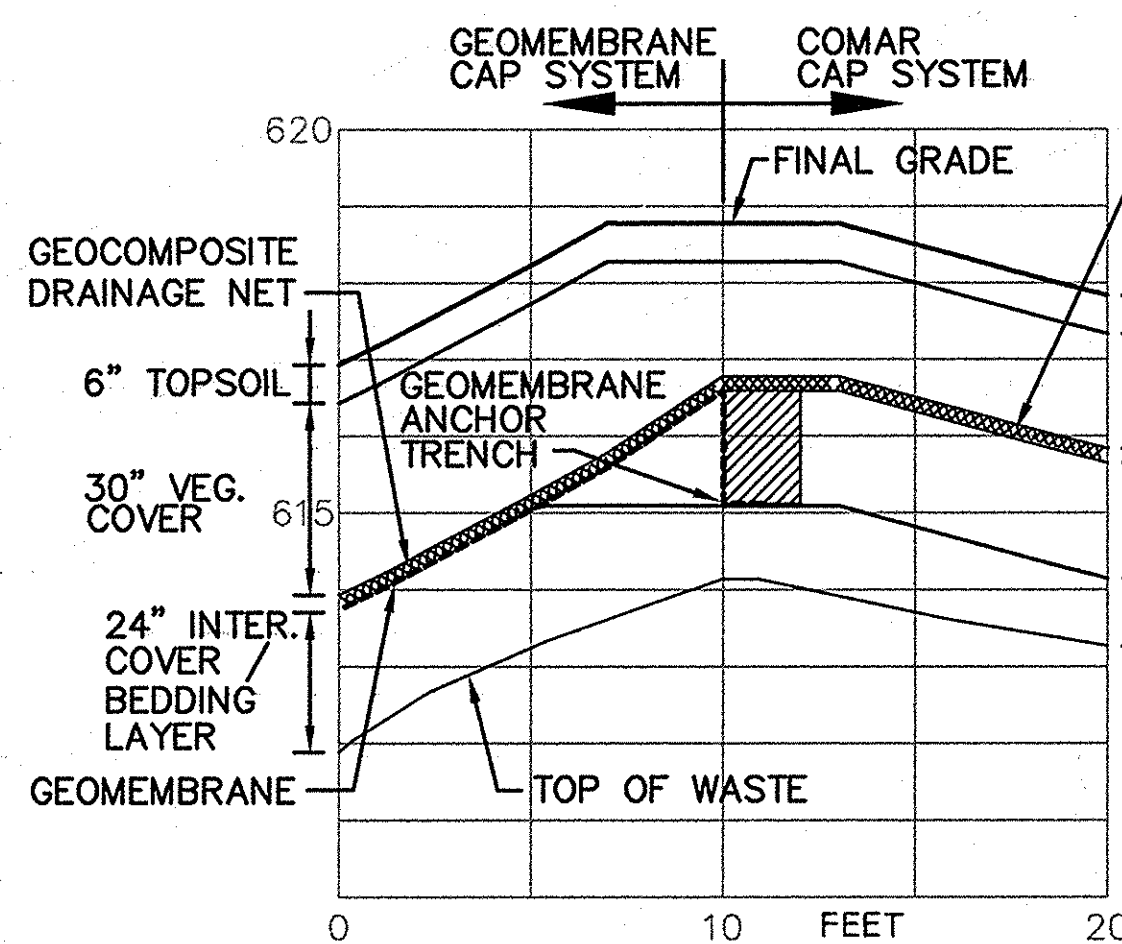
DES. RTT,EGC	BY	NO.	REVISION	DATE
DRN. EGC,MEH				
CHK. PAM				
DATE: 10-30-97				

LANDFILL MAINTENANCE  
ACCESS ROAD PLAN

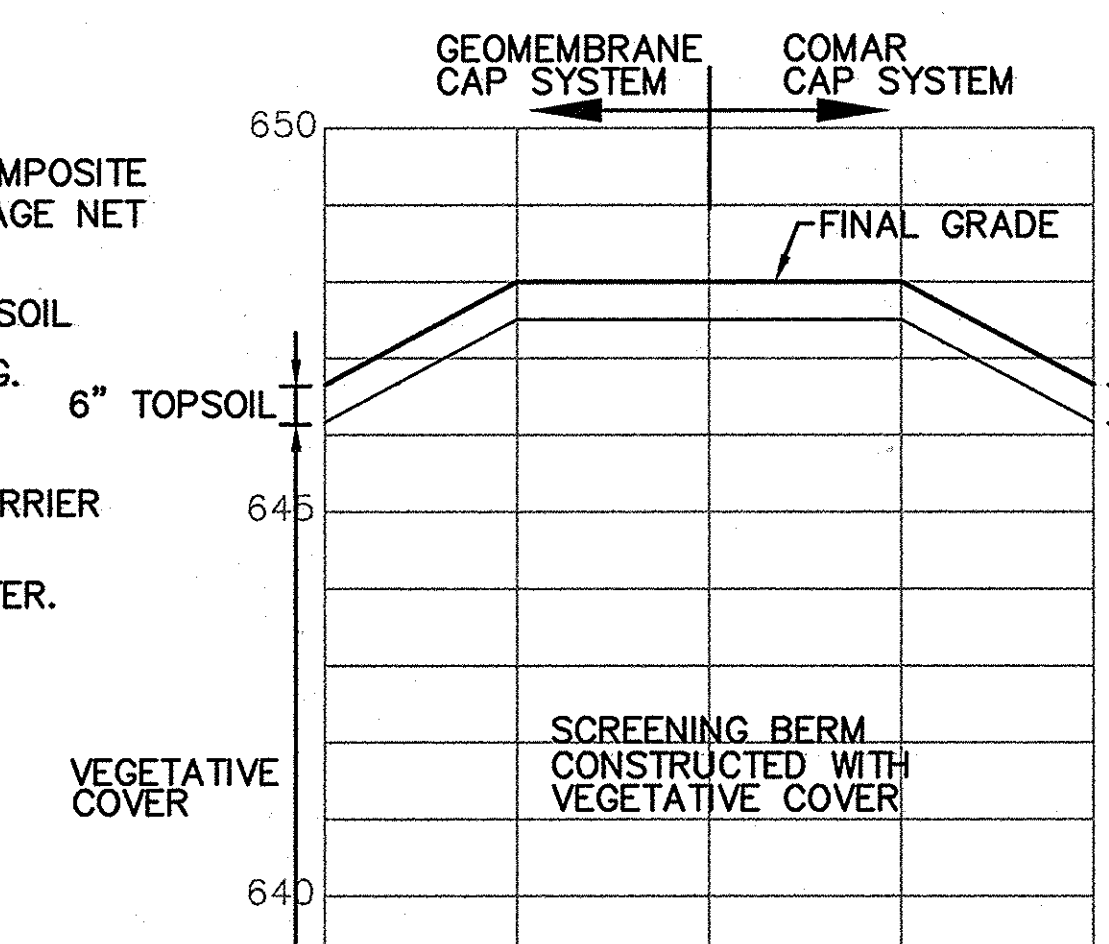
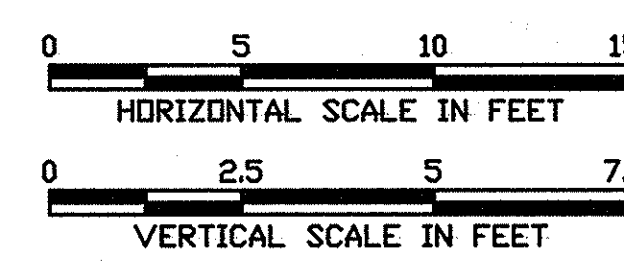
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

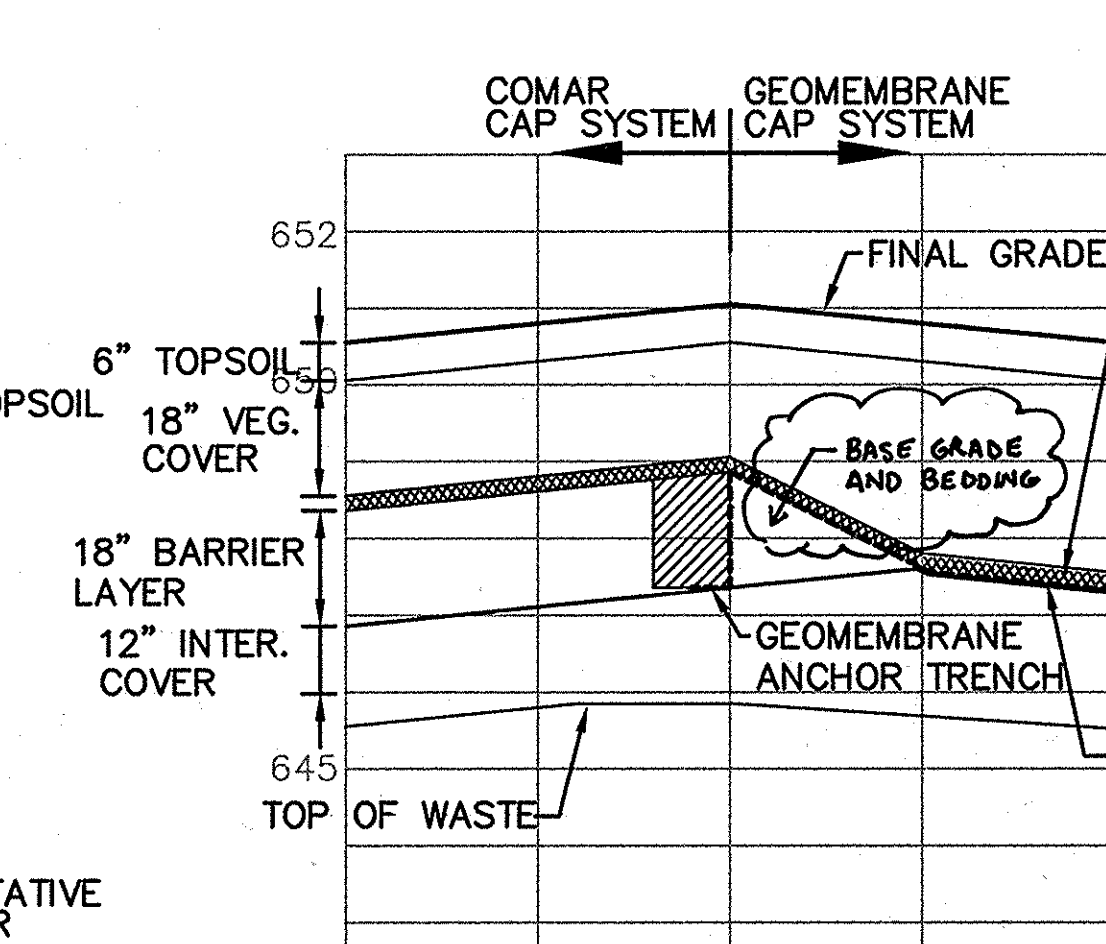
SCALE:  
1"=60'  
SHEET  
44 OF 121



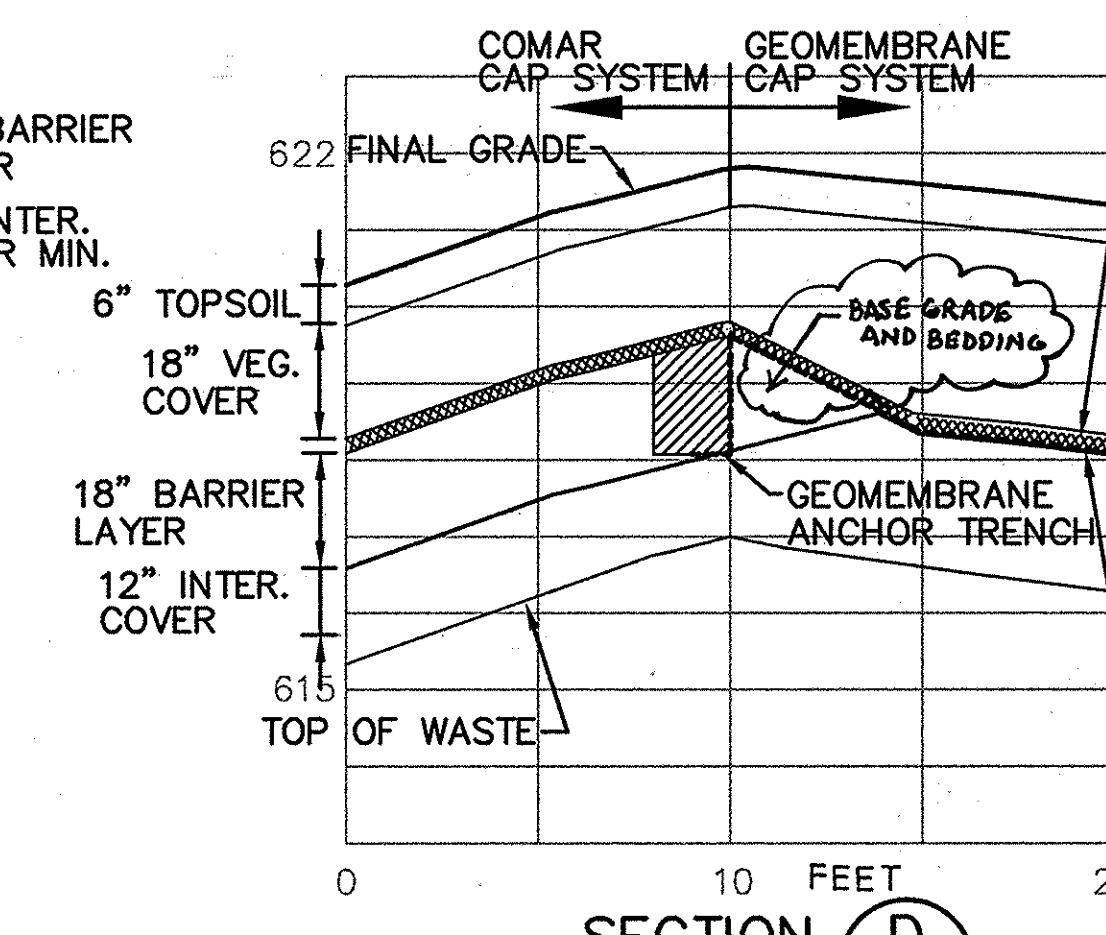
SECTION A  
10/45



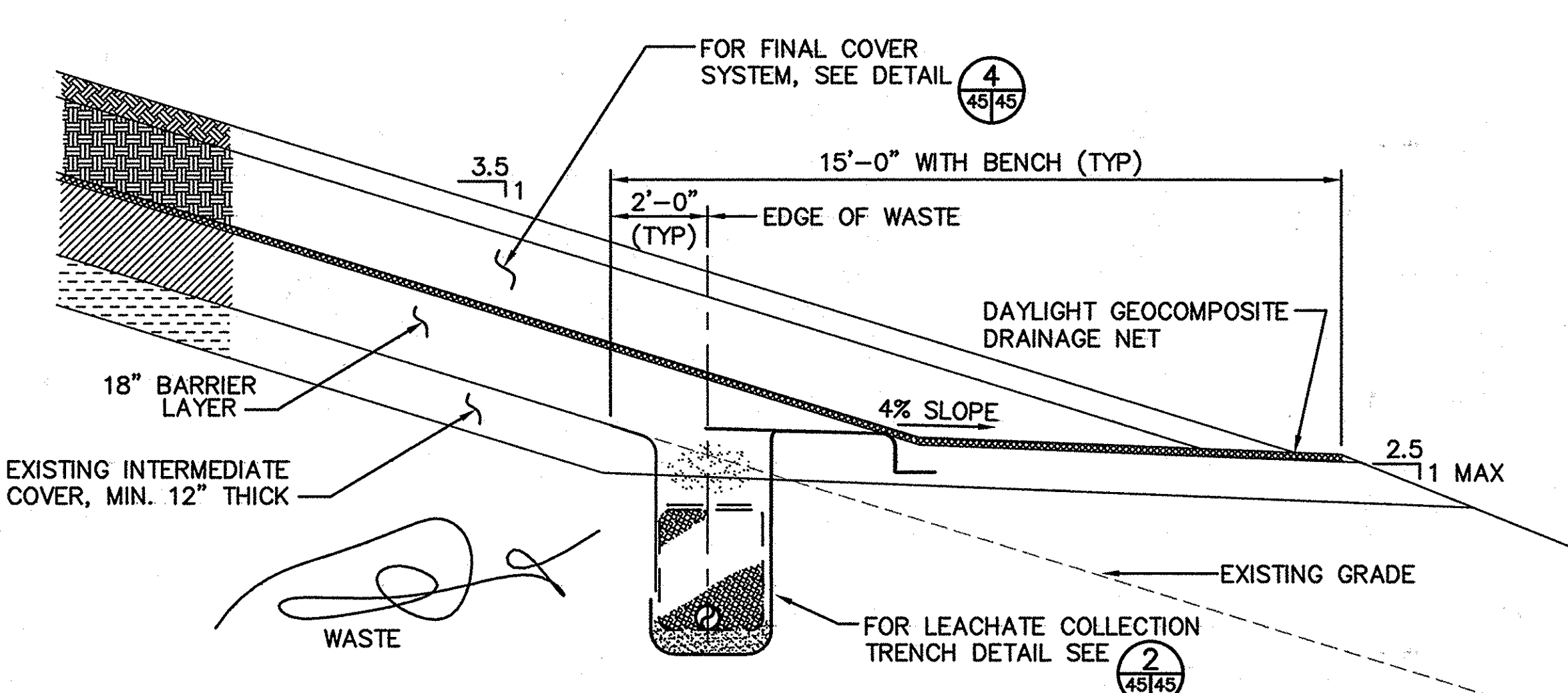
SECTION B  
10/45



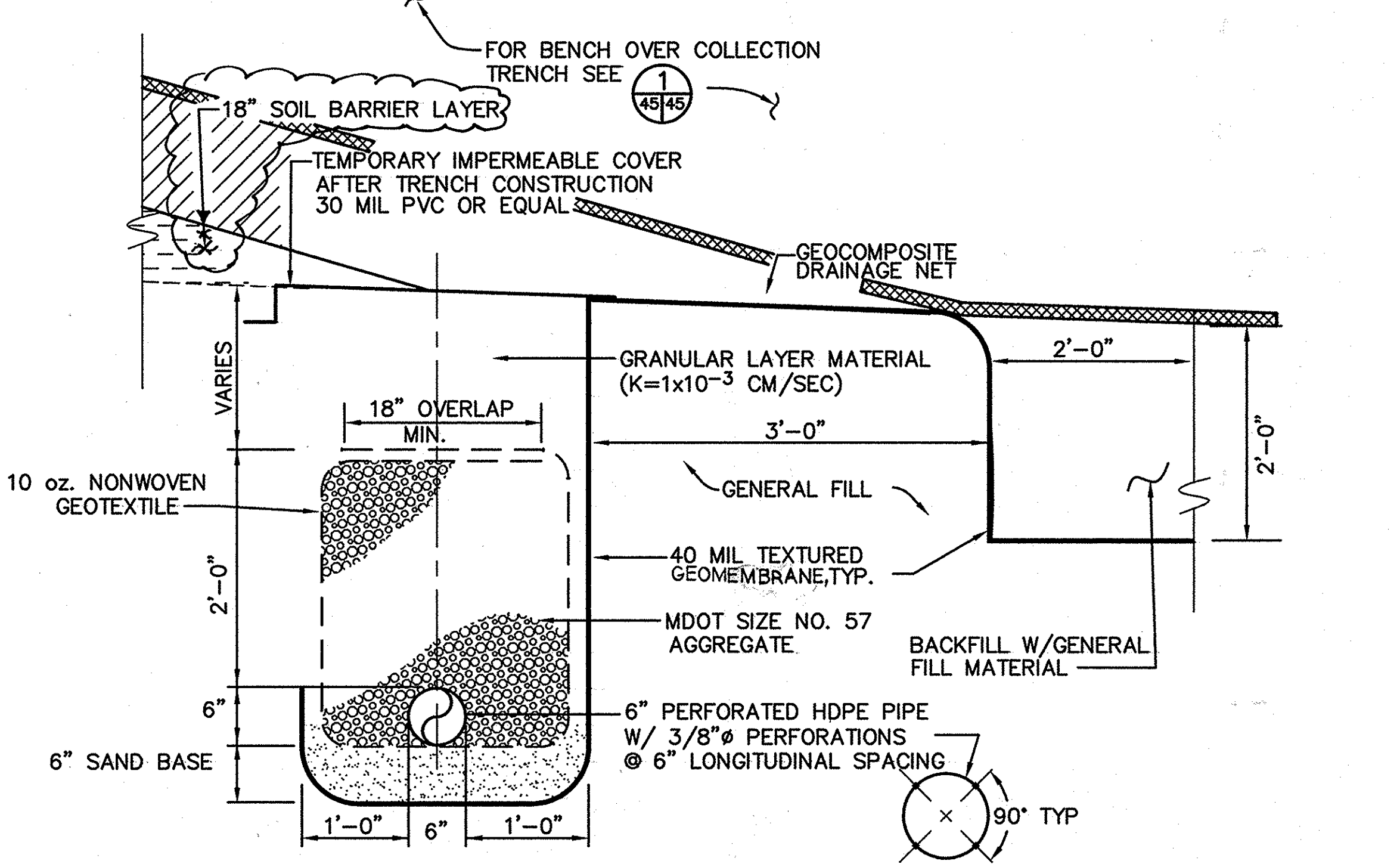
SECTION C  
10/45



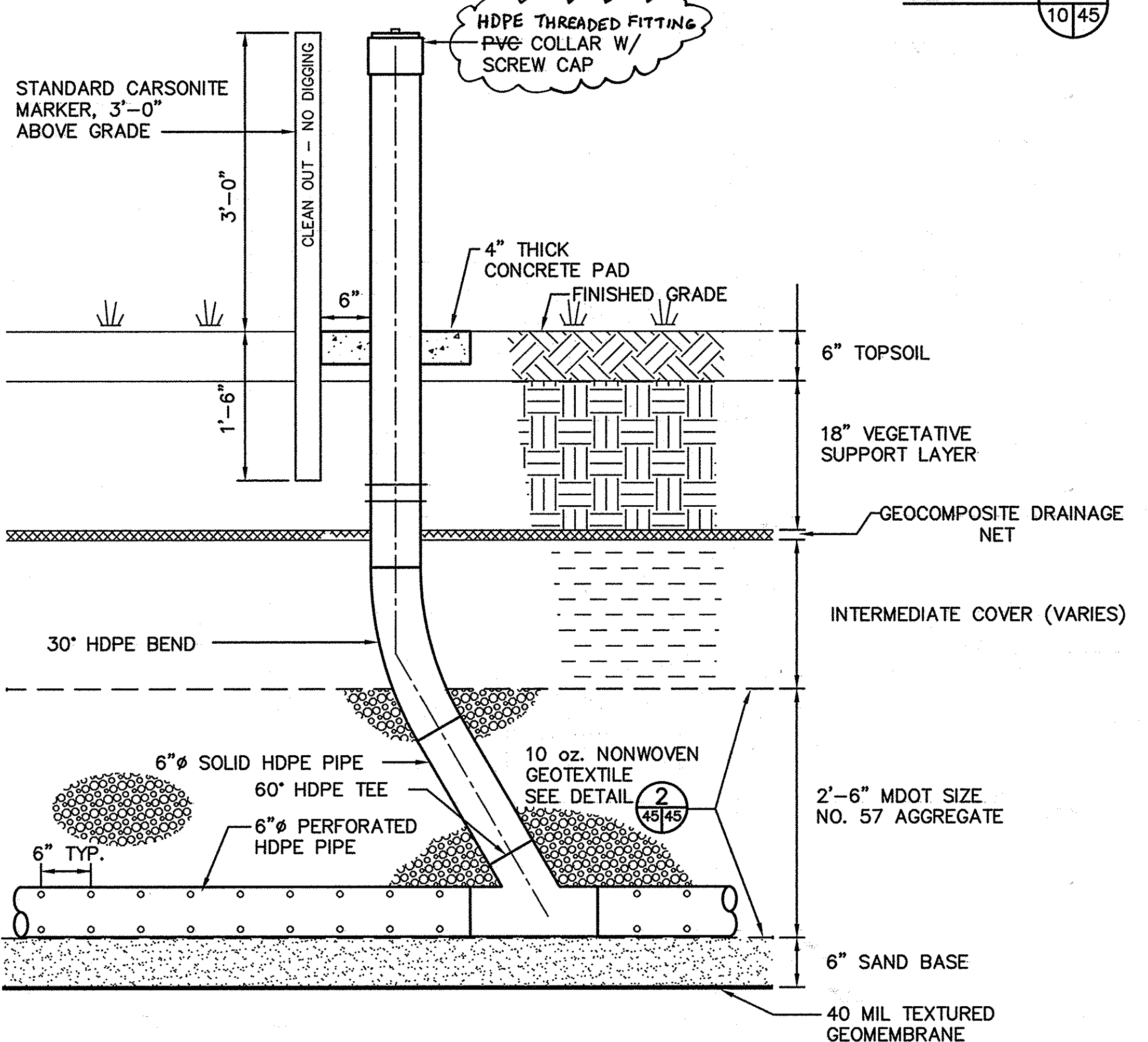
SECTION D  
10/45



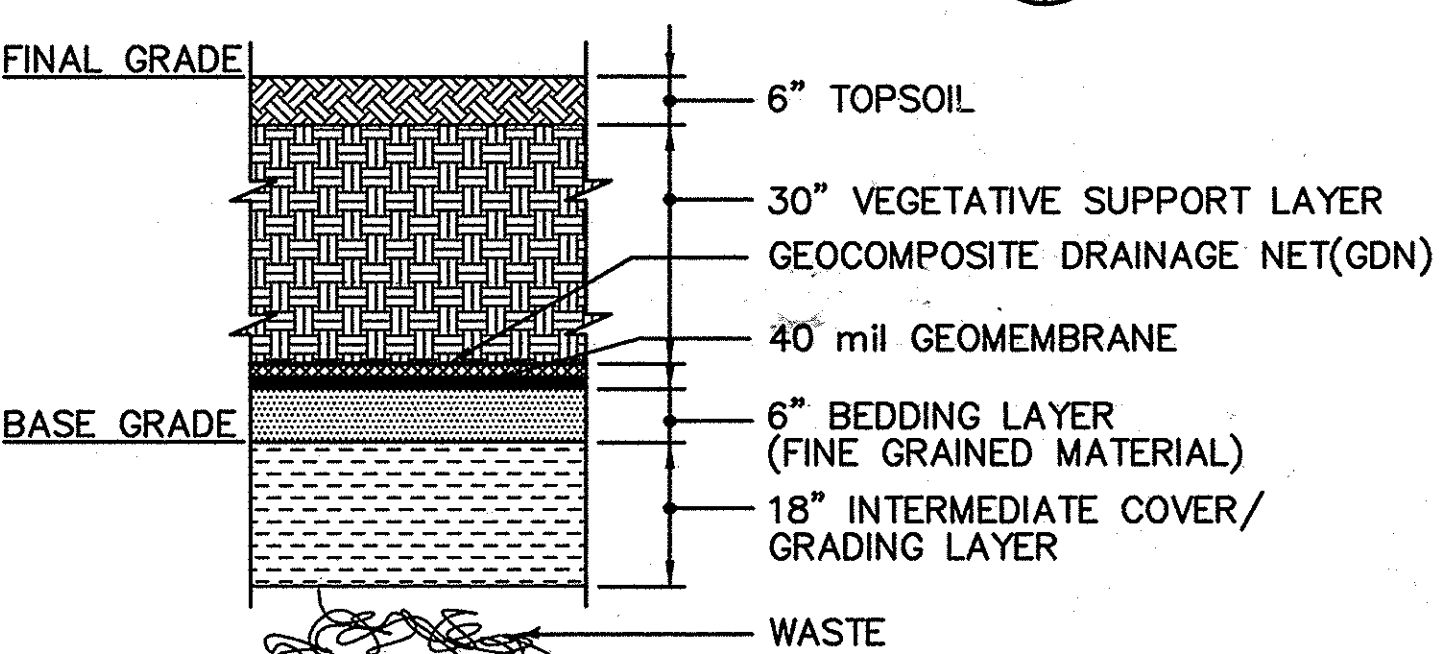
BENCH OVER LEACHATE COLLECTION TRENCH  
SCALE: 3/8" = 1'-0"



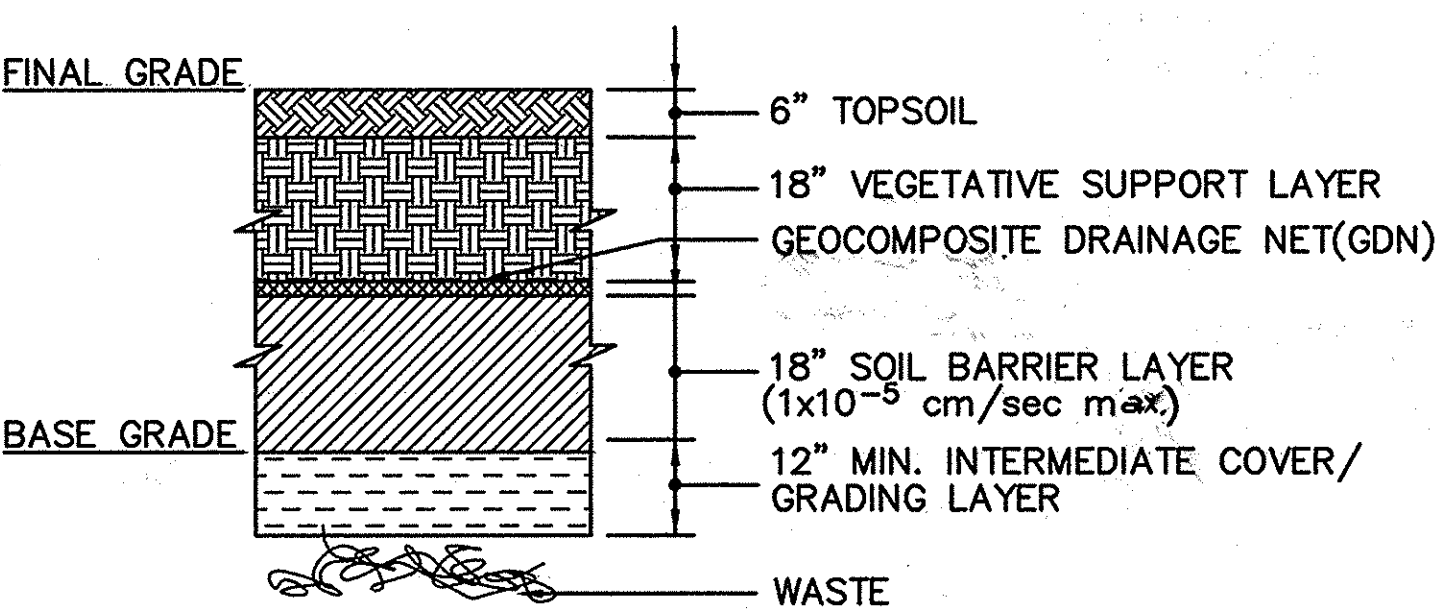
PERIMETER LEACHATE COLLECTION TRENCH  
SCALE: 1" = 1'-0"



PERIMETER LEACHATE COLLECTION TRENCH CLEANOUT  
SCALE: 1" = 1'-0"



FINAL COVER SYSTEM - TOP  
(GEOMEMBRANE CAP SYSTEM)  
SCALE: 1/2" = 1'-0"



FINAL COVER SYSTEM - SIDE SLOPES  
(COMAR CAP SYSTEM)  
SCALE: 1/2" = 1'-0"

SEE SHEET 45A FOR DETAILS OF PERIMETER LEACHATE COLLECTION TRENCH IN SOIL AND OVER WASTE

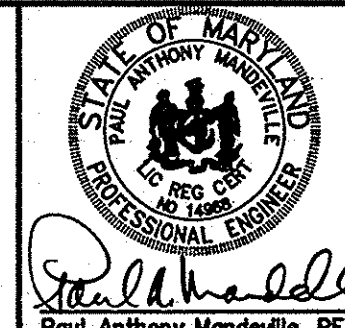
SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/806 16-878/215 10-891/314		ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING		SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
<i>James S. Smith</i> DIRECTOR	11/13/97 DATE
<i>John O'Hara</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/22/97 DATE
<i>Cindy Hanotta</i> CHIEF, DIVISION OF LAND DEVELOPMENT	11/10/97 DATE

DET1 M:\295077\01\FINAL\DETAILS CAPSYS, LEACHBN, LEACHCO, LEACHTR, XS-COMAR

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

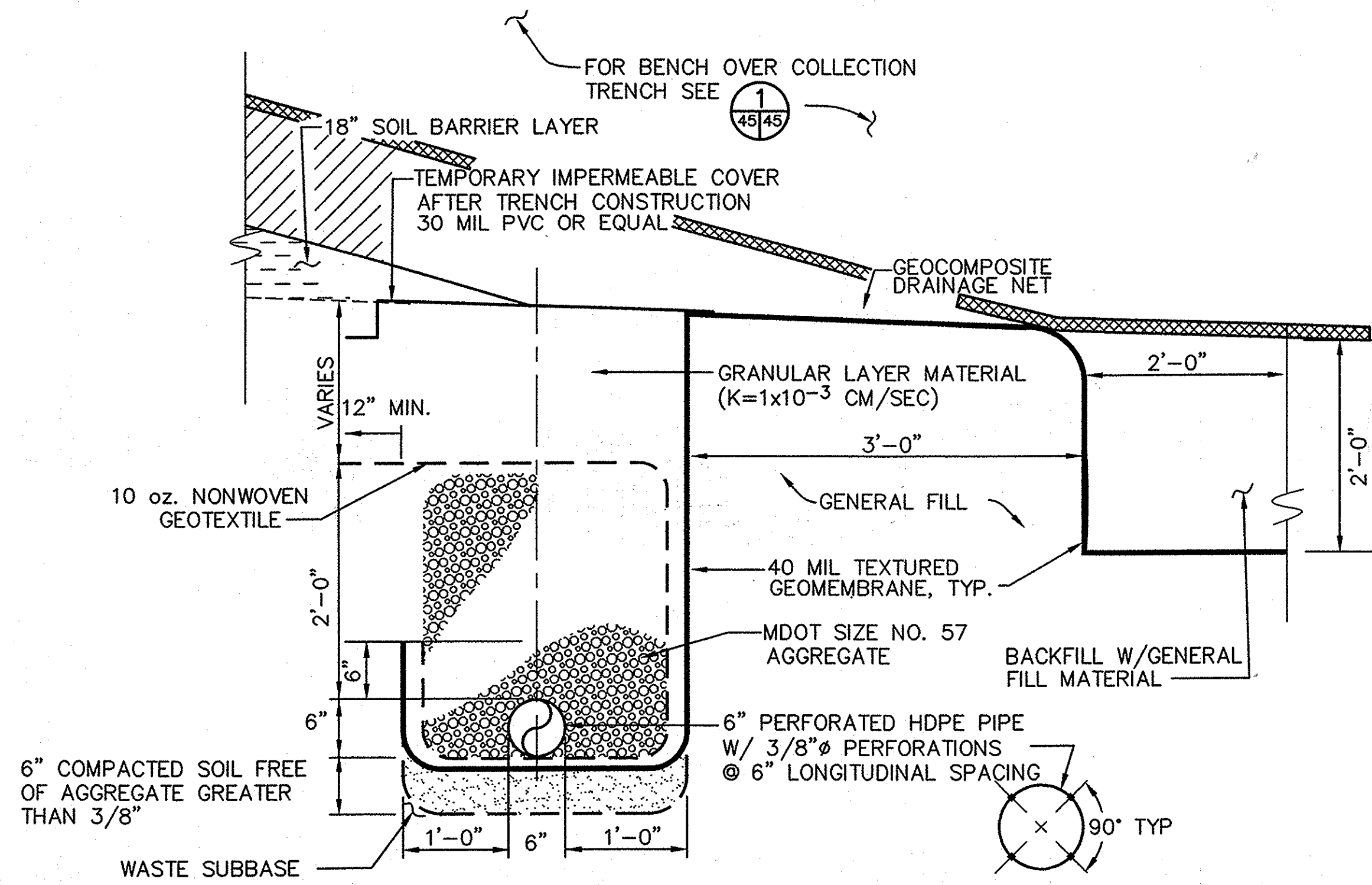
SCS ENGINEERS  
CONSULTING ENGINEERS  
11260 ROGER BACON DRIVE  
SUITE 300  
RESTON, VIRGINIA 22090  
PH. (703) 471-6150  
FAX. (703) 471-6676



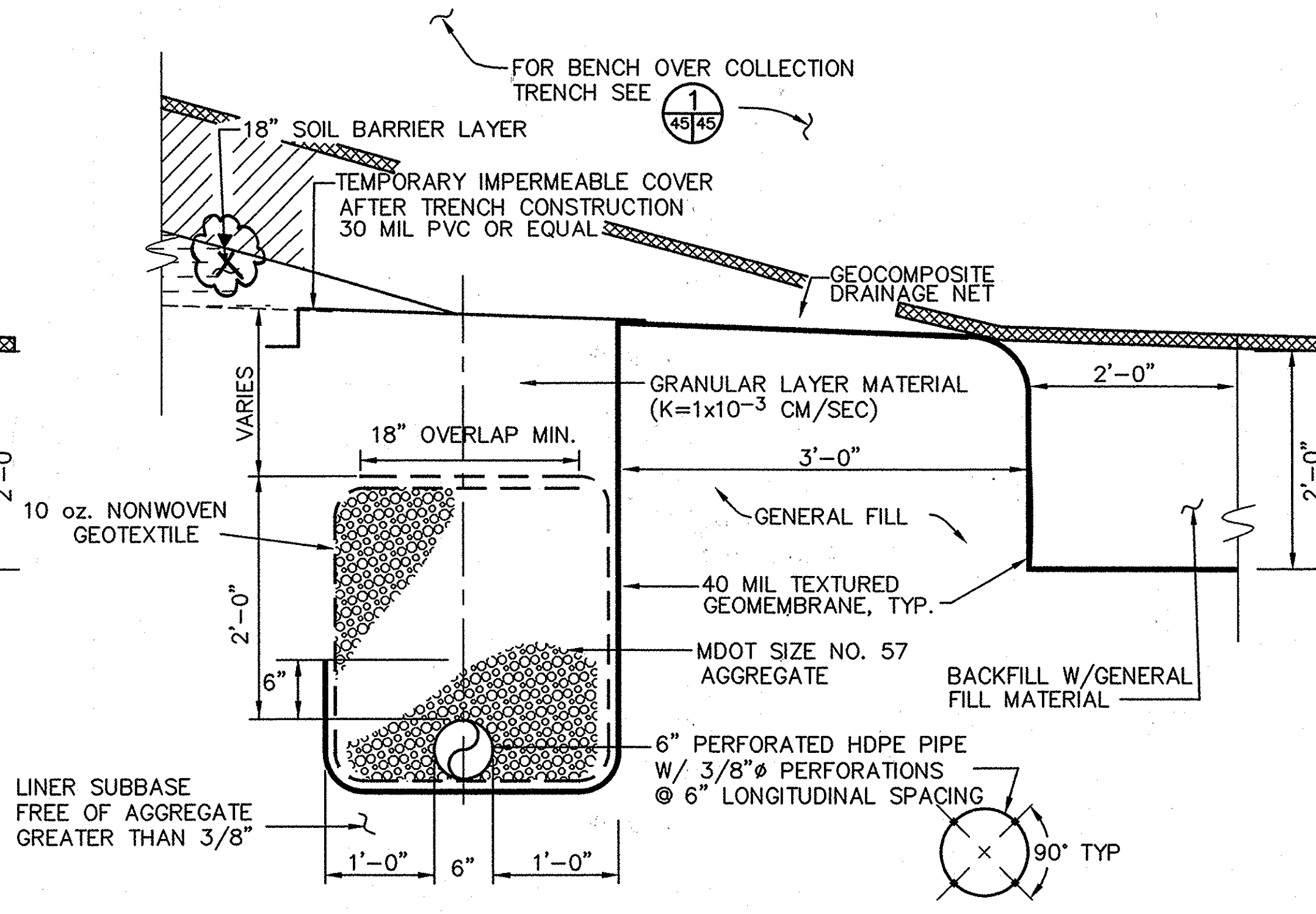
DES.	RTT				
DRN.	EGC				
CHK.	PAM				
DATE:	10-30-97	BY:	NO.	REVISION	DATE

MISCELLANEOUS DETAILS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N  
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SCALE: AS NOTED  
SHEET 45 OF 131



PERIMETER LEACHATE COLLECTION TRENCH OVER WASTE (2A)  
 SCALE: 1" = 1'-0"  
 5,6,7,8,9,10,13,35,45,48,49

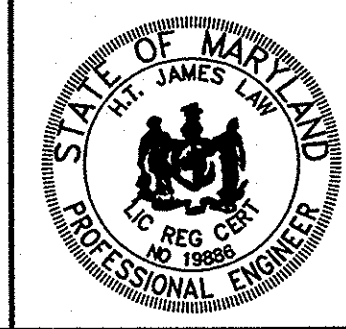


PERIMETER LEACHATE COLLECTION TRENCH IN SOIL (2B)  
 SCALE: 1" = 1'-0"  
 5,6,7,8,9,10,13,35,45,48,49

SHT-45A

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



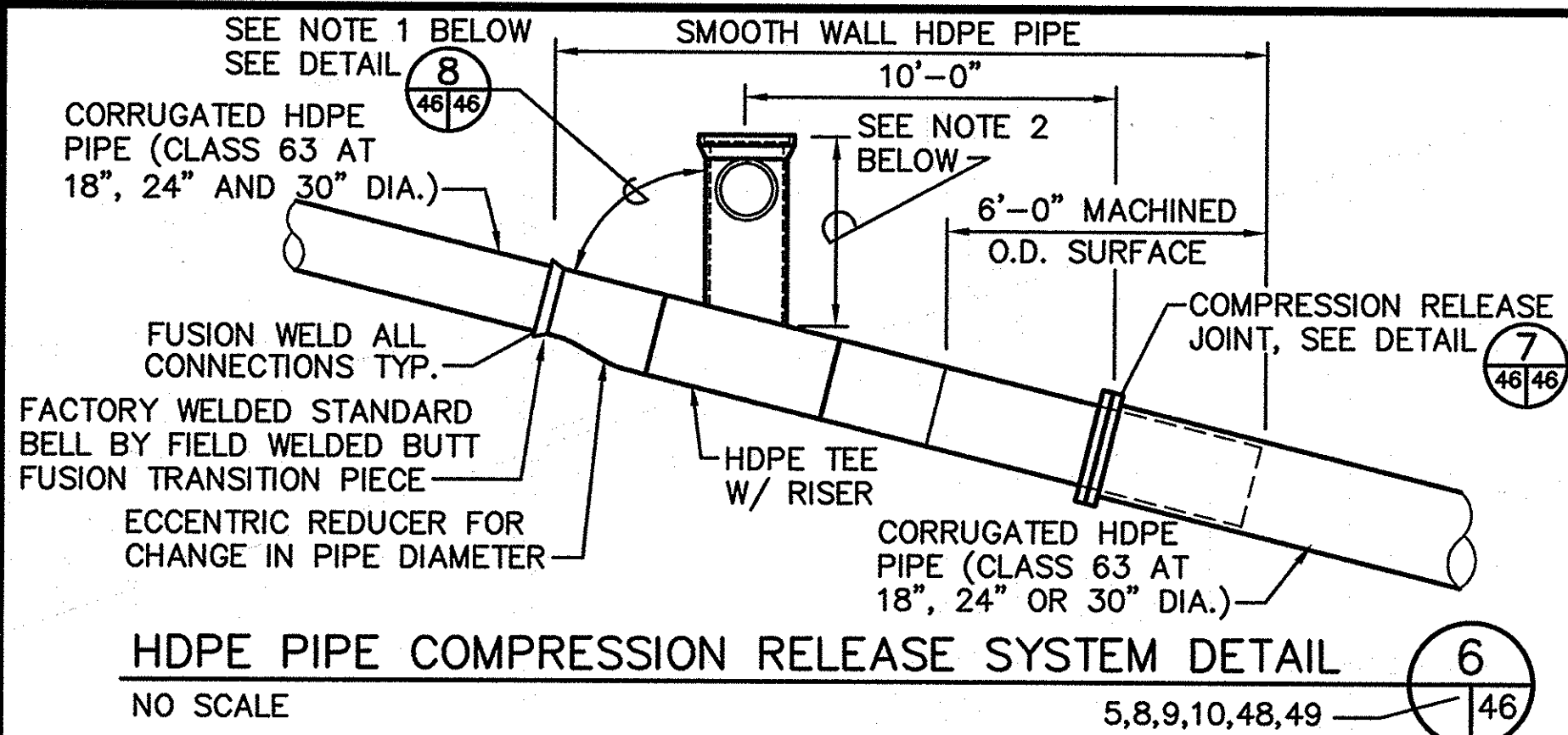
DES.	HJL				
DRN.	SPS				
CHK.	PAM				
DATE:	03-30-99	BY	NO.	REVISION	DATE

MISCELLANEOUS DETAILS

ALPHA RIDGE LANDFILL  
 CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190

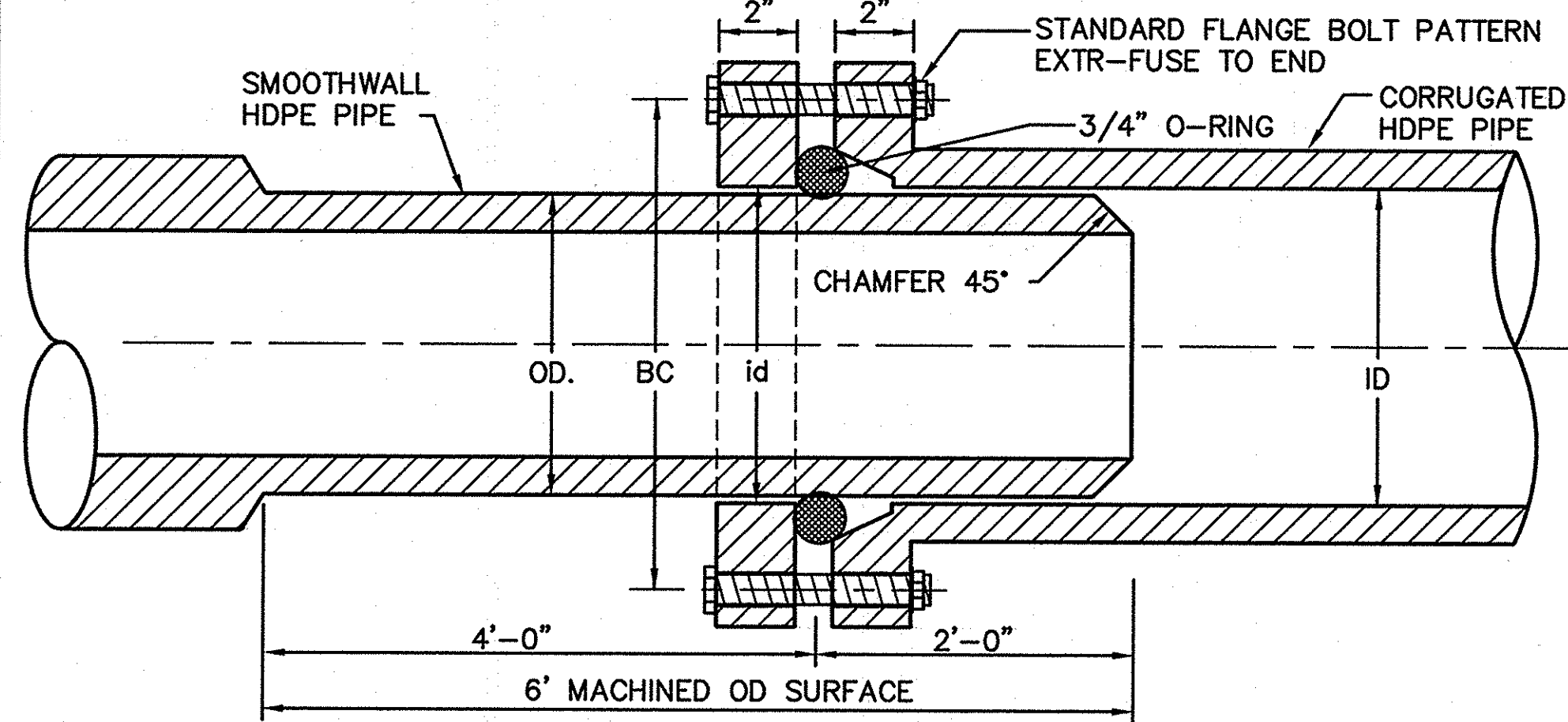
SCALE:  
 AS NOTED

SHEET  
 45A of 131



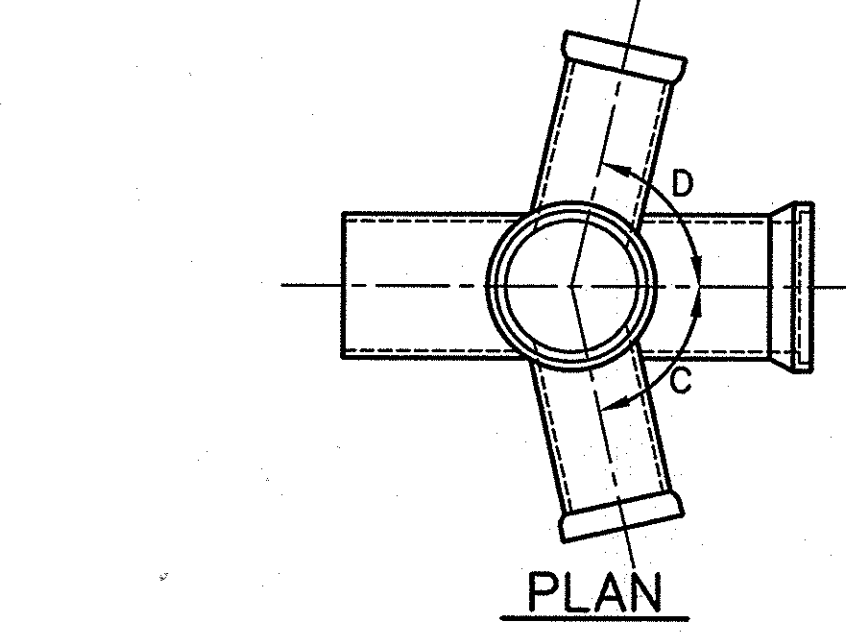
- NOTES:**
1. THE ANGLE BETWEEN PIPE LINE AND RISER IS TO BE VERIFIED BY THE PIPE MANUFACTURER AND CONTRACTOR AND SHOWN ON SHOP DRAWINGS PRIOR TO FABRICATION OF EACH RISER.
  2. THE HEIGHT OF RISER AND ALL DIMENSIONS ARE TO BE VERIFIED BY THE PIPE MANUFACTURER AND CONTRACTOR AND SHOWN ON SHOP DRAWINGS PRIOR TO FABRICATION OF EACH RISER.

SMOOTH WALL SIZE: FEEDSTOCK	SMOOTH WALL SDR-IPS PIPE	SMOOTH WALL OD-MACHIN.	CORRUGATED HDPE ID-NOM. CLASS 63	FLANGE "id"	FLANGE BC.
18"	11	17 1/2"	18"	18 1/4"	22 3/4"
24"	17	23 1/2"	24"	24 1/4"	29 1/2"
30"	17	29 1/2"	30"	30 1/4"	36"



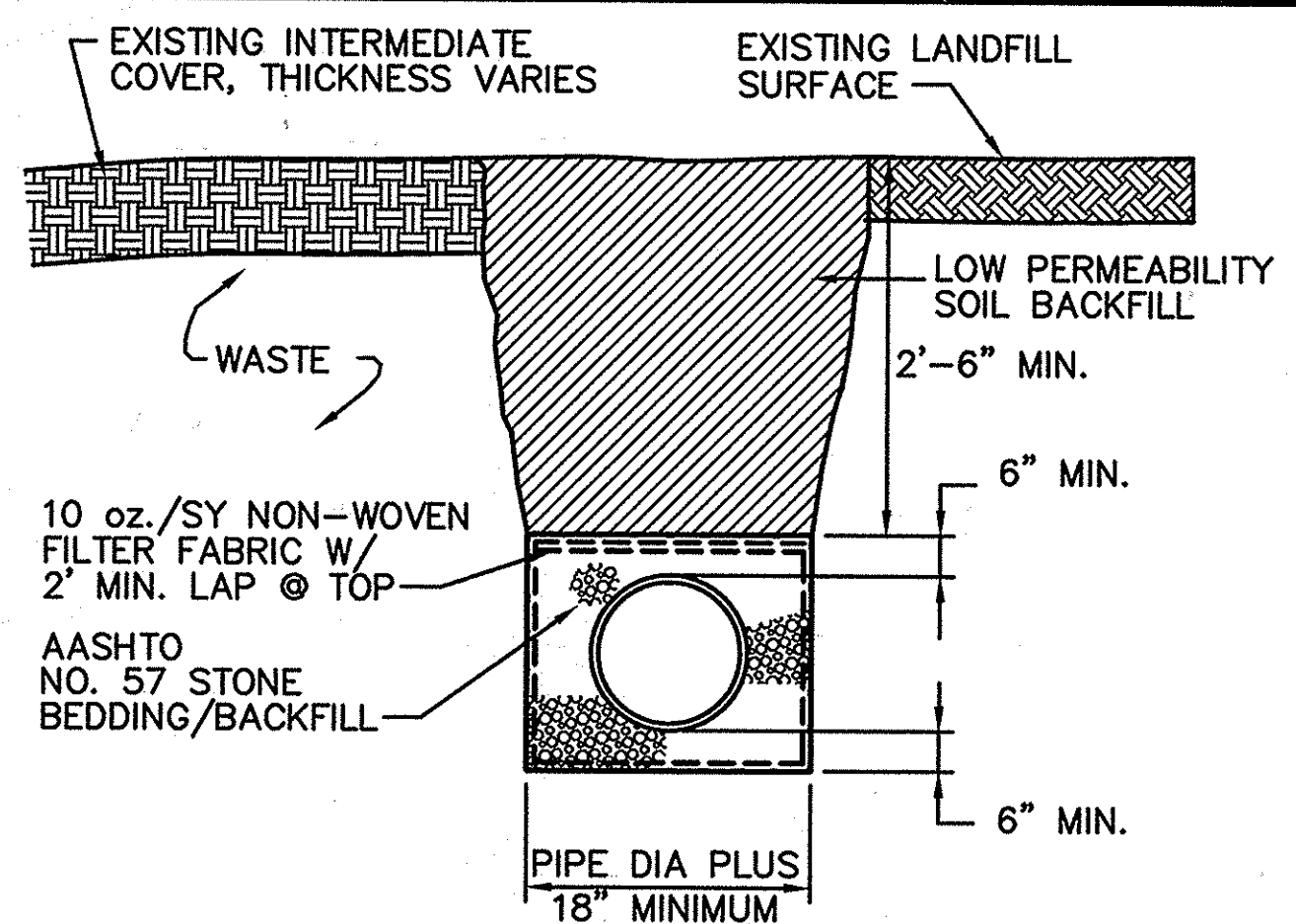
**COMPRESSION RELEASE JOINT DETAIL**  
NO SCALE 37,38,46 (46)

BOLTS: ASTM A 193/A193M, GRADE B8, STAINLESS STEEL  
NUTS: ASTM A 194/194M, GRADE 8, STAINLESS STEEL  
WASHERS: ASTM F 436, FLAT CIRCULAR STAINLESS STEEL LOCK WASHERS



RISER	SIZE	A	B	C	D
A2	30"ø	6'-6"	82'00"	82'69"	84'14"
A3	30"ø	6'-6"	75'31"	78'28"	83'44"
A4	30"ø	6'-6"	84'00"	77'08"	72'31"
C2	24"ø	6'-6"	79'00"	70'46"	83'33"
C3	24"ø	6'-6"	79'00"	49'06"	84'00"
C4	18"ø	6'-6"	73'00"	38'69"	93'00"
D2	18"ø	3'-0"	74'00"	N/A	85'82"

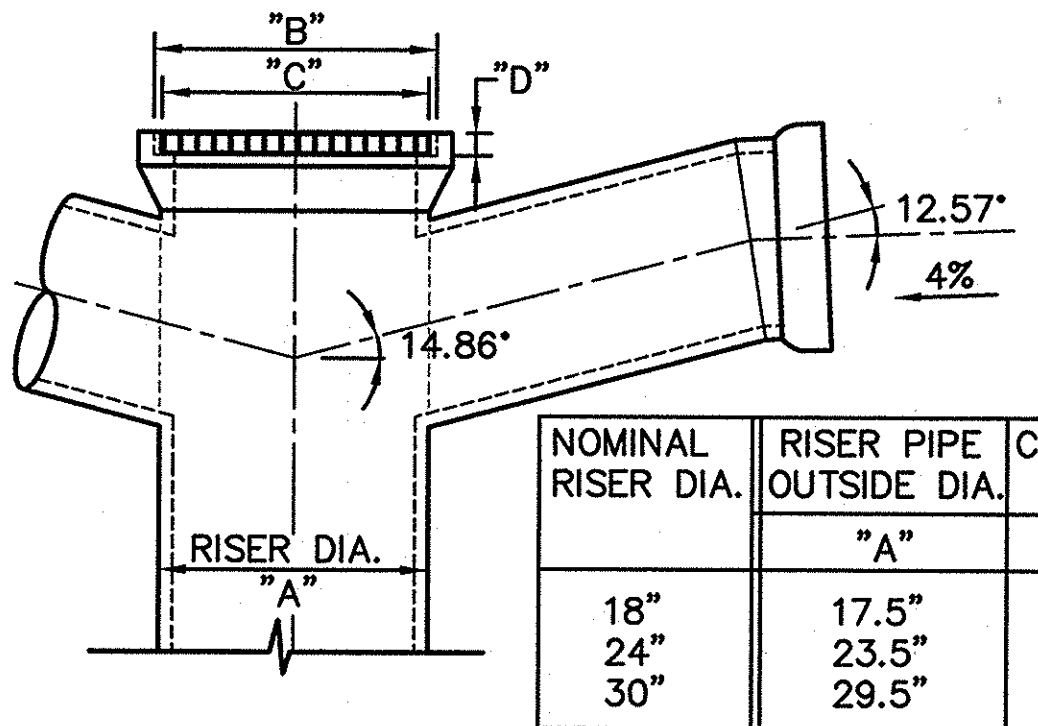
**RISER FABRICATION DETAIL**  
NO SCALE 46 (46)



**HDPE PIPE BEDDING AND TRENCH DETAIL**  
NTS 46 (46)

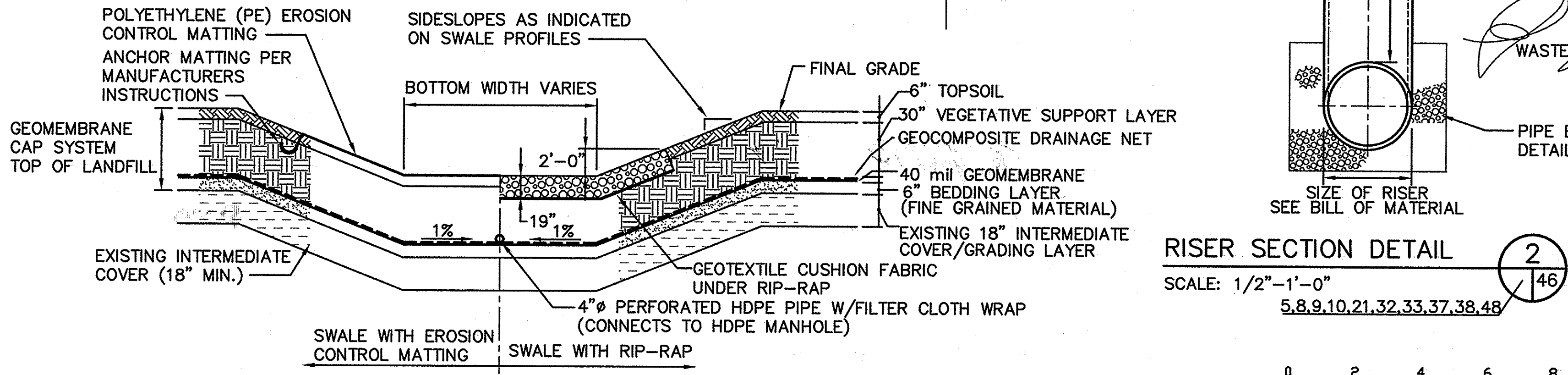
- NOTES:**
1. EXISTING LANDFILL COVER MATERIALS SHALL BE STOCKPILED SEPARATELY AS TO TYPE AND NOT MIXED DURING EXCAVATION OR BACKFILL OPERATIONS.
  2. EXCAVATED REFUSE SHALL BE DISPOSED OF AS ON-SITE FILL OR AT ACTIVE LANDFILL.

3. DETAIL DOES NOT APPLY TO DOWNCHUTE "D"

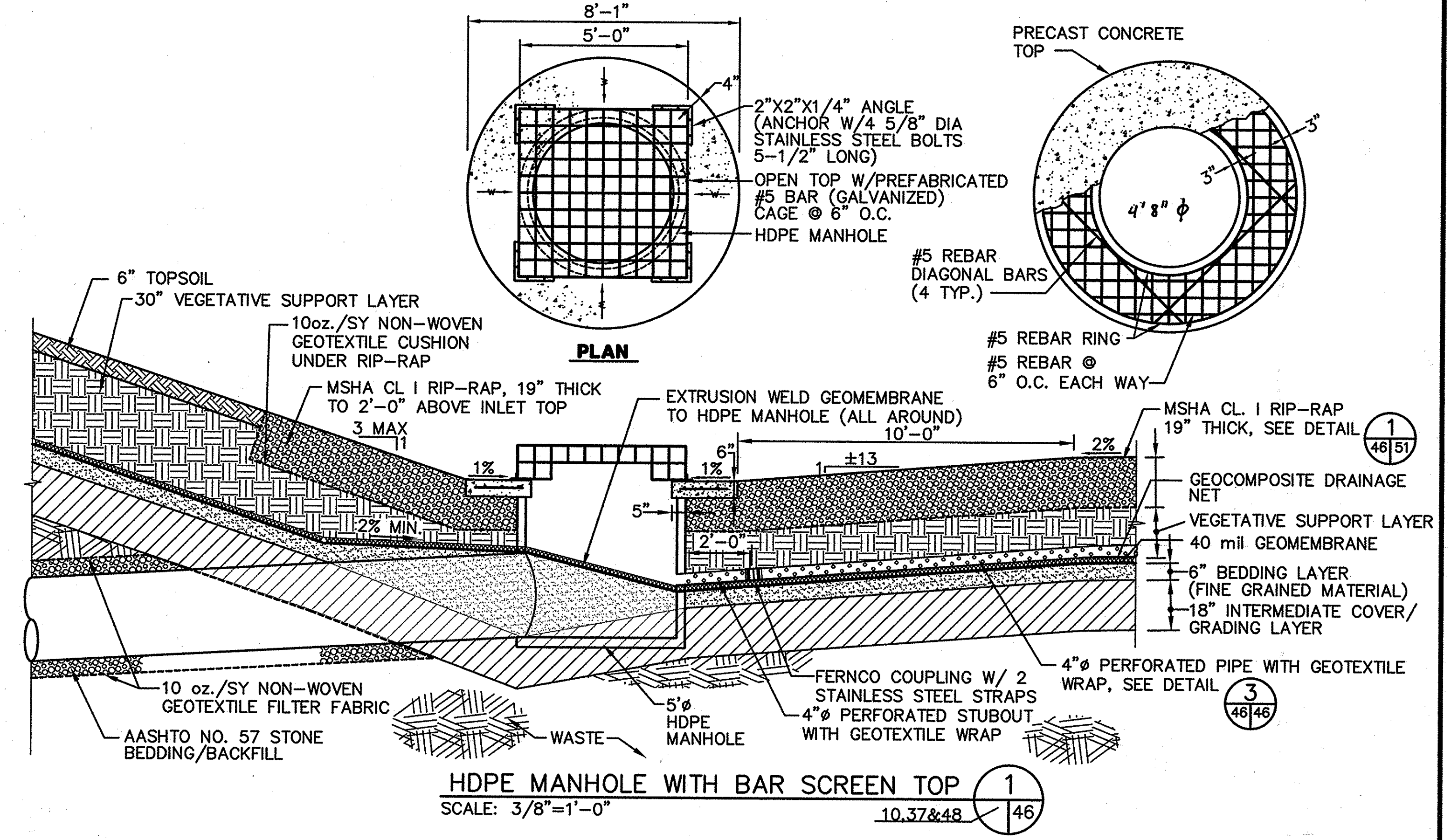


**RISER TOP DETAIL**  
NO SCALE 5,46,49 (46)

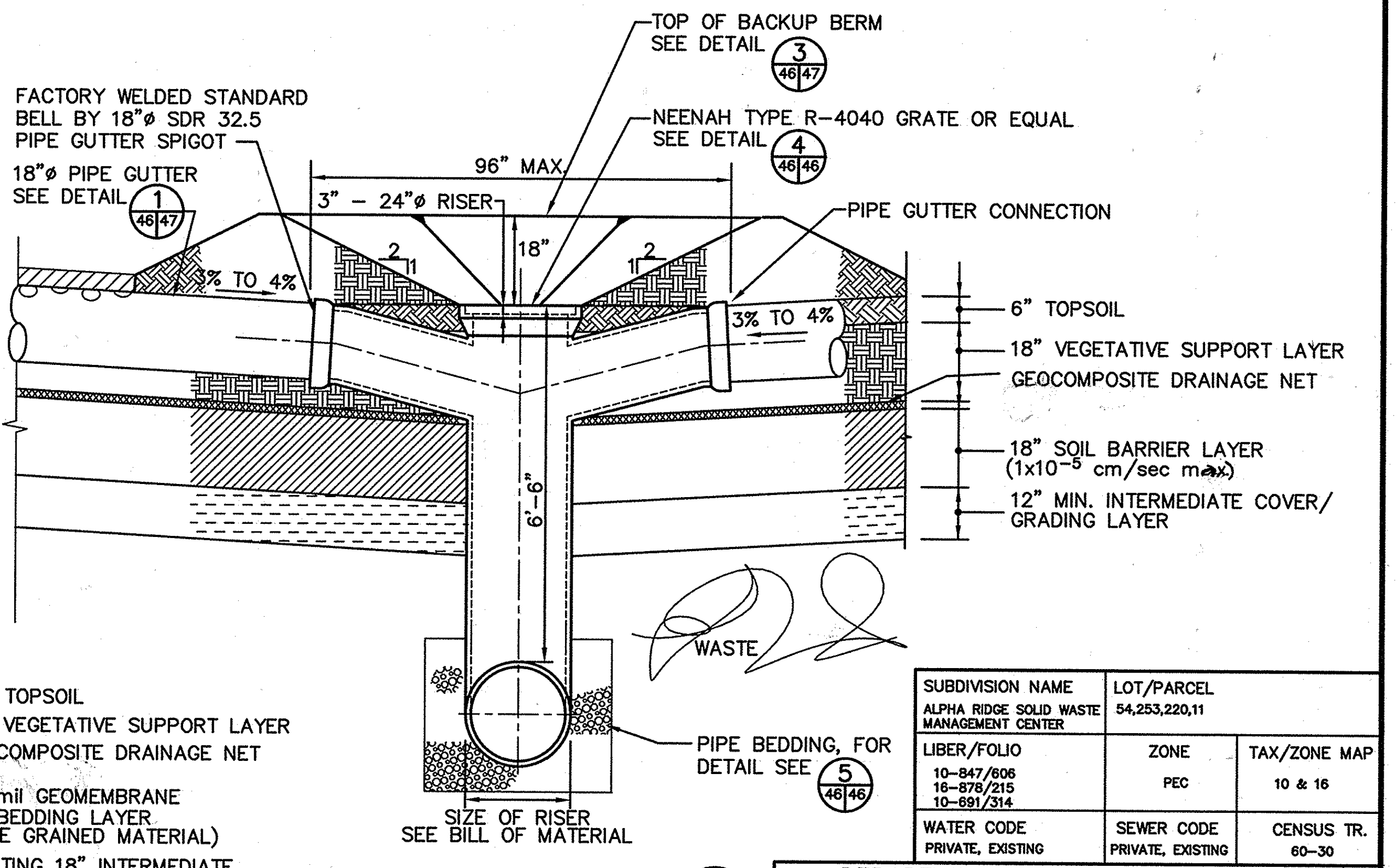
NOMINAL RISER DIA.	RISER PIPE OUTSIDE DIA.	CLOSURE BELL INSIDE DIA.	NEENAH R-4040 DIA. THICKNESS	
			"A"	"D"
18"	17.5"	22.5"	22.0"	2.75"
24"	23.5"	26.0"	25.5"	3.0"
30"	29.5"	33.25"	32.75"	3.5"



**TYPICAL SURFACE DRAINAGE SWALE DETAIL**  
NO SCALE 5,6,7,8,9,10,12,37,38,46&49 (46)



**HDPE MANHOLE WITH BAR SCREEN TOP**  
SCALE: 3/8"=1'-0" 10,37&48 (46)



**RISER SECTION DETAIL**  
SCALE: 1/2"=1'-0" 5,8,9,10,21,32,33,37,38,48 (46)

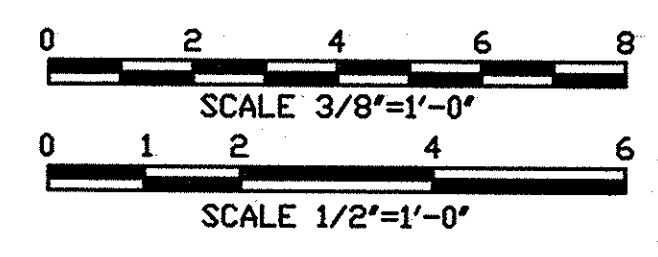
SUBDIVISION NAME	LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220,11	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
10-847/606 16-878/215 10-891/314	PEC	10 & 16
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30

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

DIRECTOR: *John P. ...* DATE: 11/2/97

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *...* DATE: 10/3/97

CHIEF, DIVISION OF LAND DEVELOPMENT: *Condy Harmita* DATE: 11/3/97

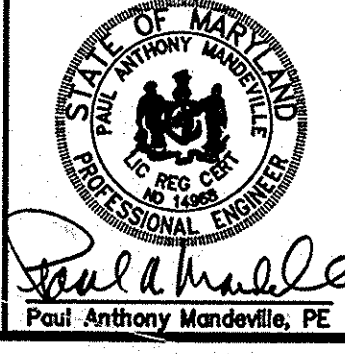


**DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND**

DIRECTOR OF PUBLIC WORKS: *...* DATE: 10/30/97

CHIEF, BUREAU OF WASTE MANAGEMENT: *...* DATE: 10/30/97

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



DES.	RTT	DRN.	EGC	CHK.	PAM	DATE	BY	NO.	REVISION	DATE
						10-30-97				

**MISCELLANEOUS DETAILS**

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

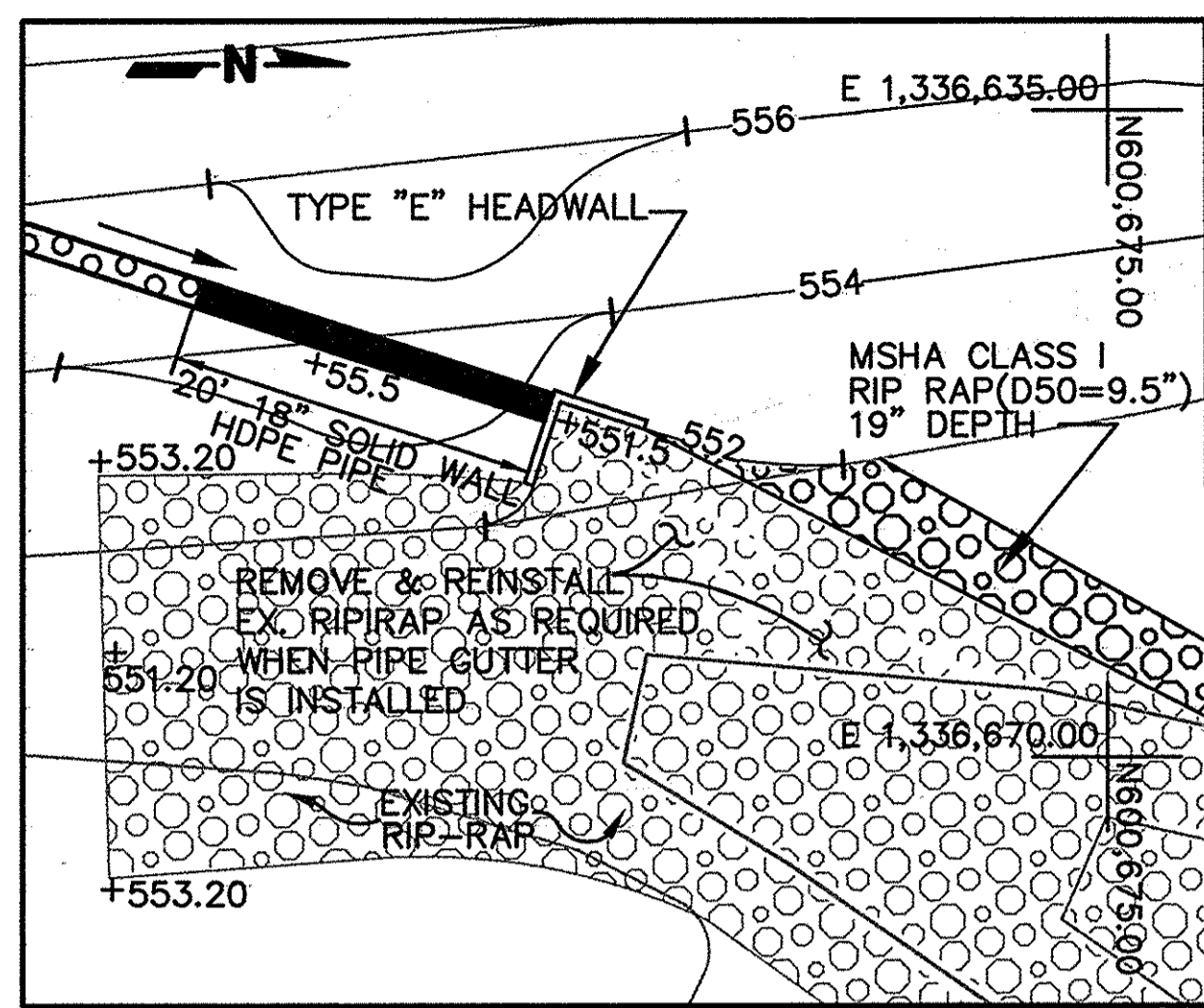
SCALE: AS NOTED

SHEET 46 OF 126

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SDP-97-128

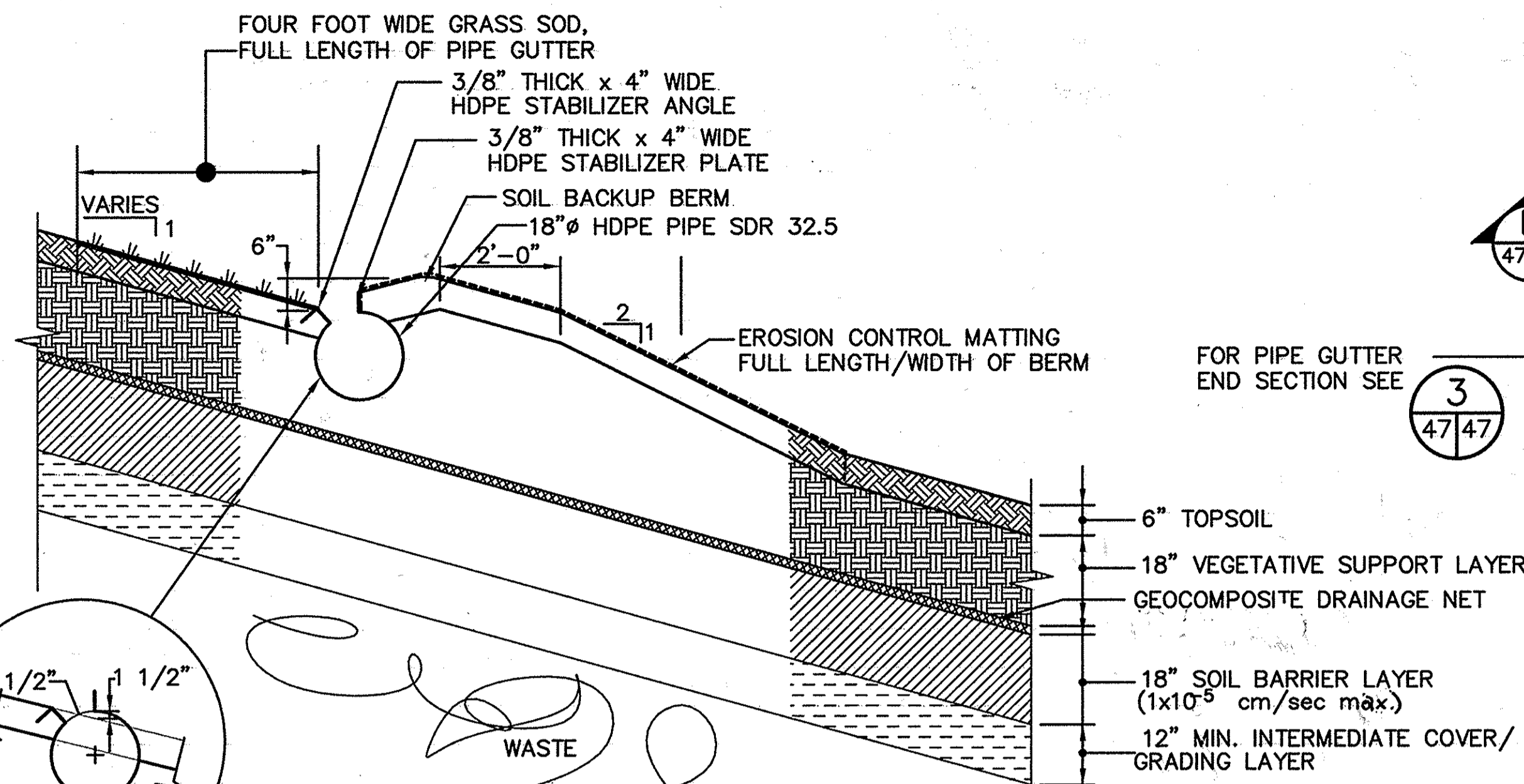




PIPEGUTTER OUTFALL INTO EAST BASIN  
DETAIL

SCALE: 1"=10'

10,34,48

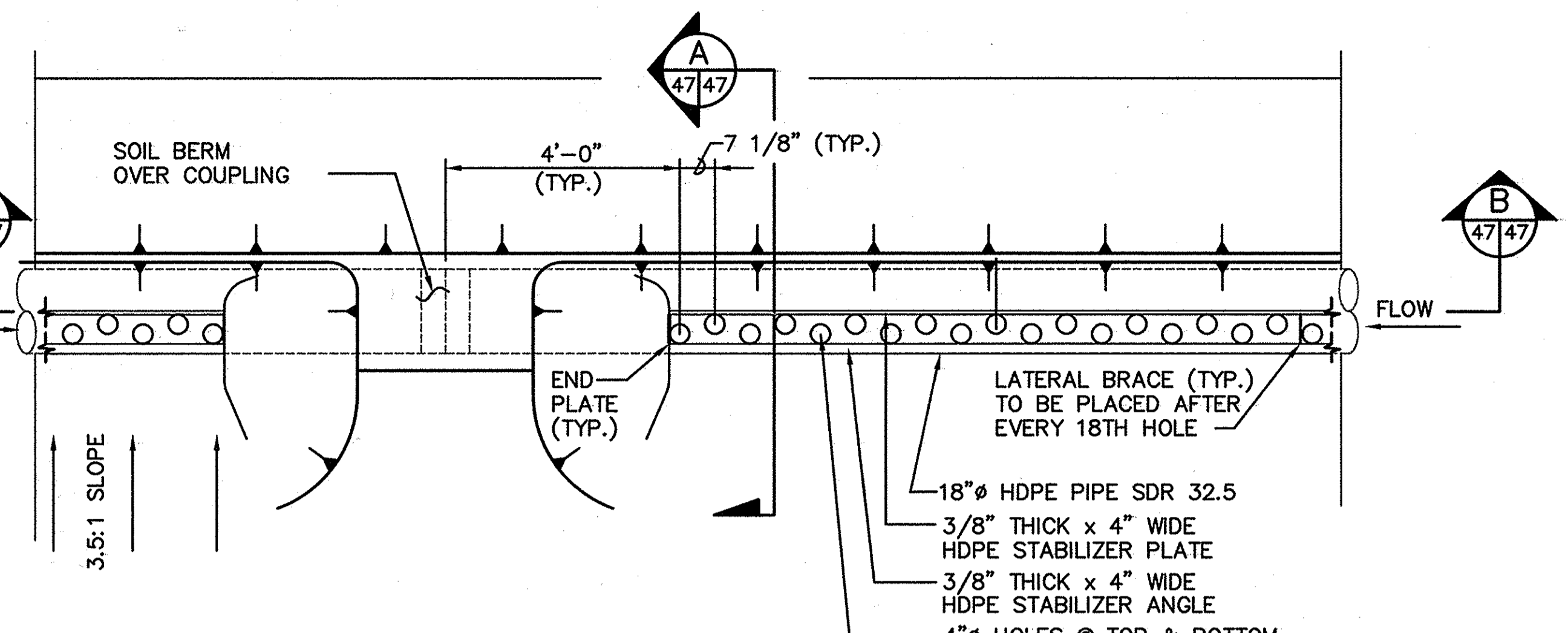


SECTION (FINAL SURFACE)

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



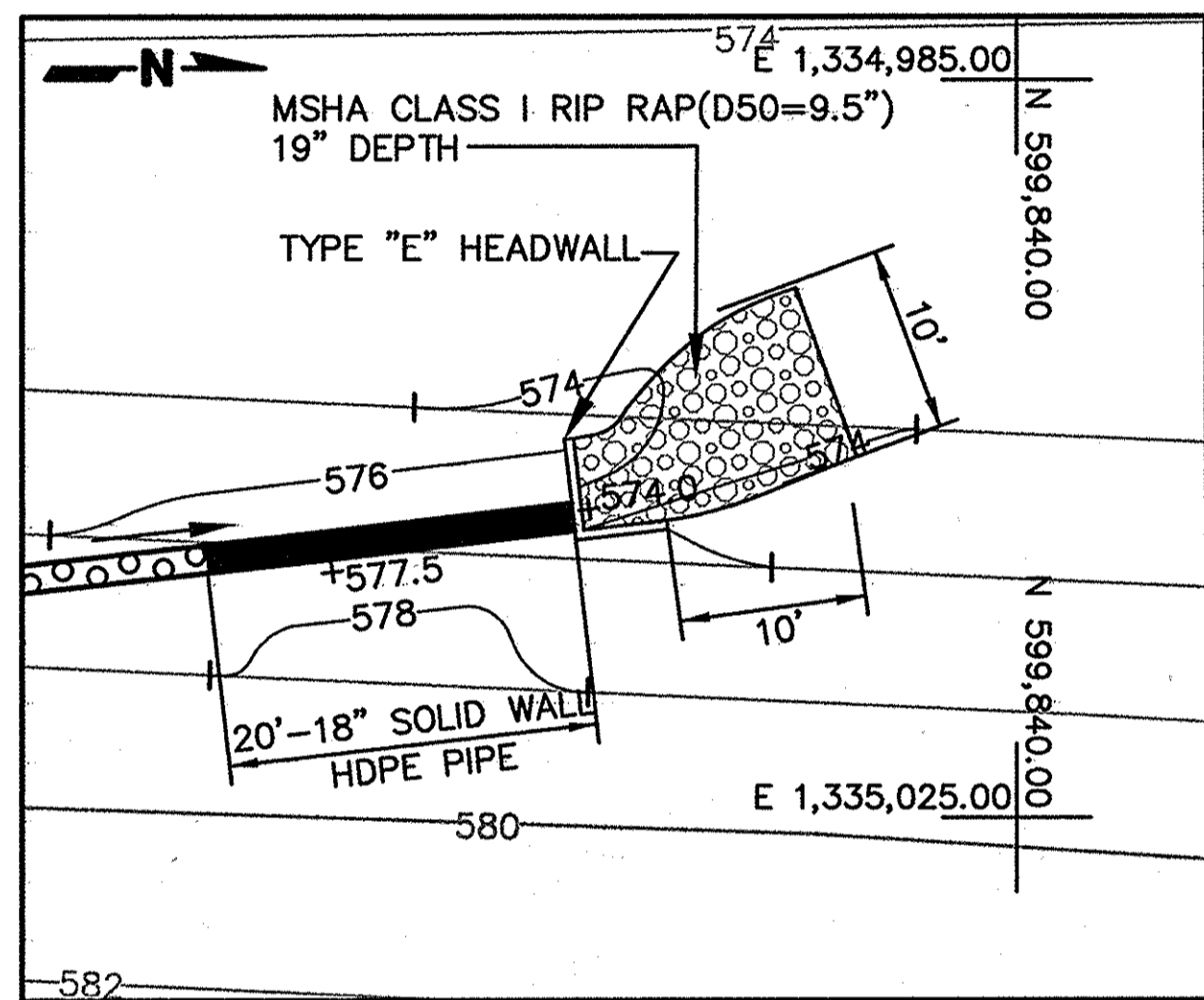
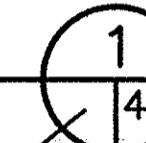
FOR PIPE GUTTER  
END SECTION SEE



HDPE SIDESLOPE PIPE GUTTER DRAINAGE SYSTEM

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

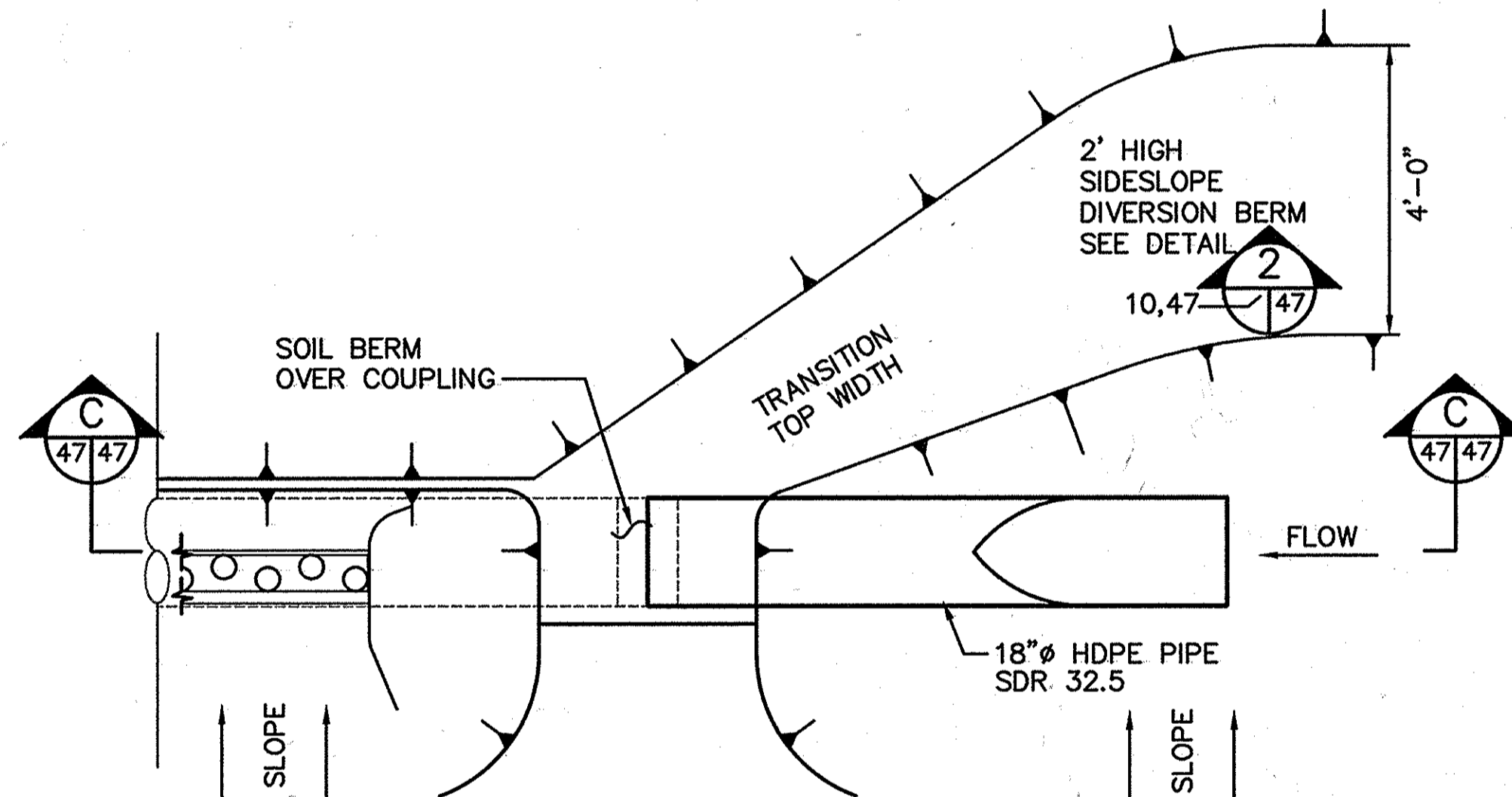
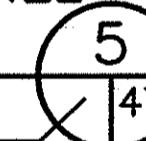
10,39,46,48



PIPEGUTTER OUTFALL INTO WEST CHANNEL  
DETAIL

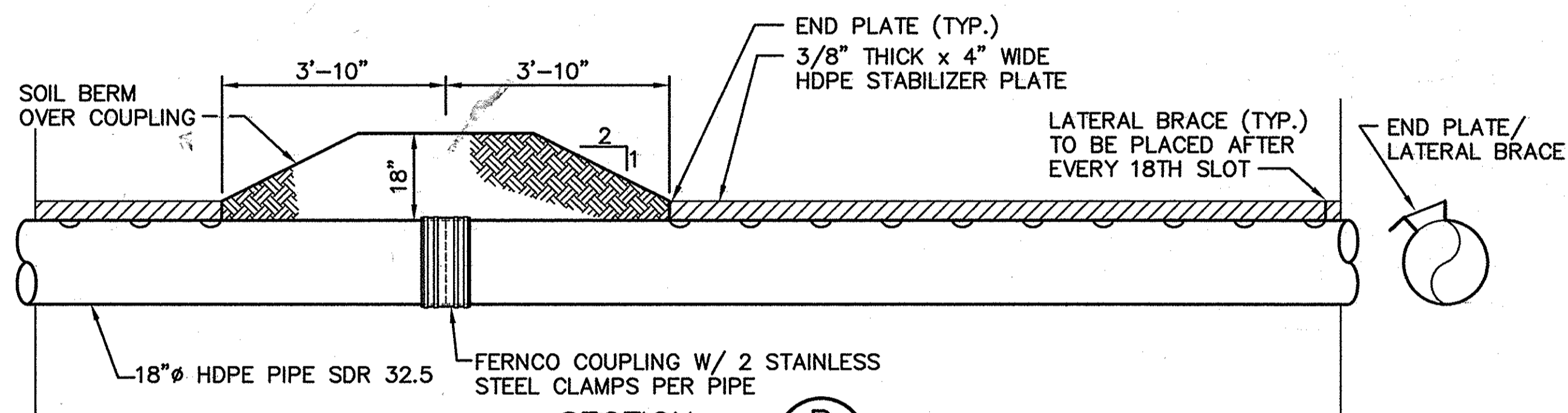
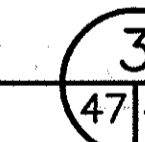
SCALE: 1"=10'

10,48



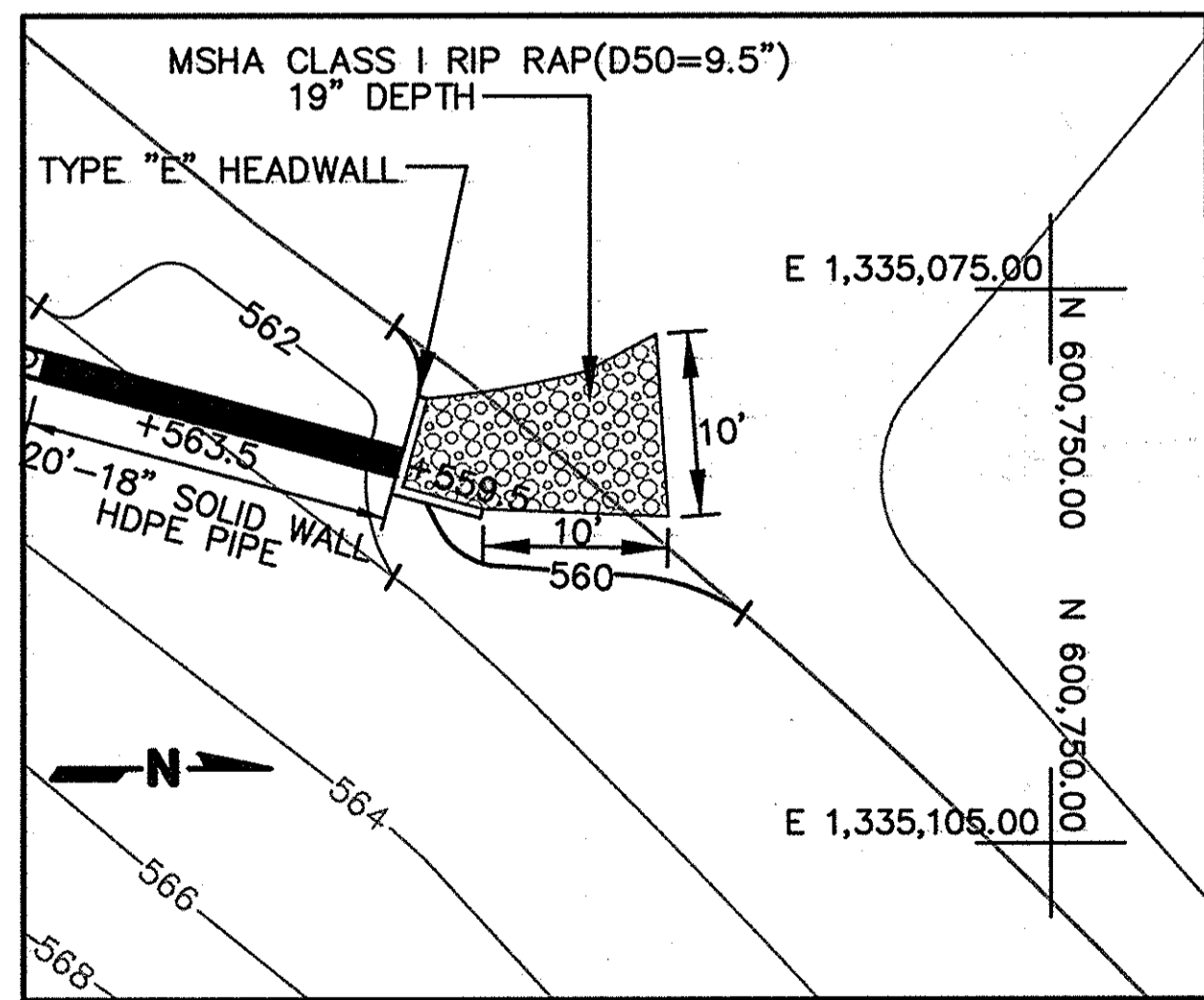
PIPE GUTTER END SECTION

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



SECTION

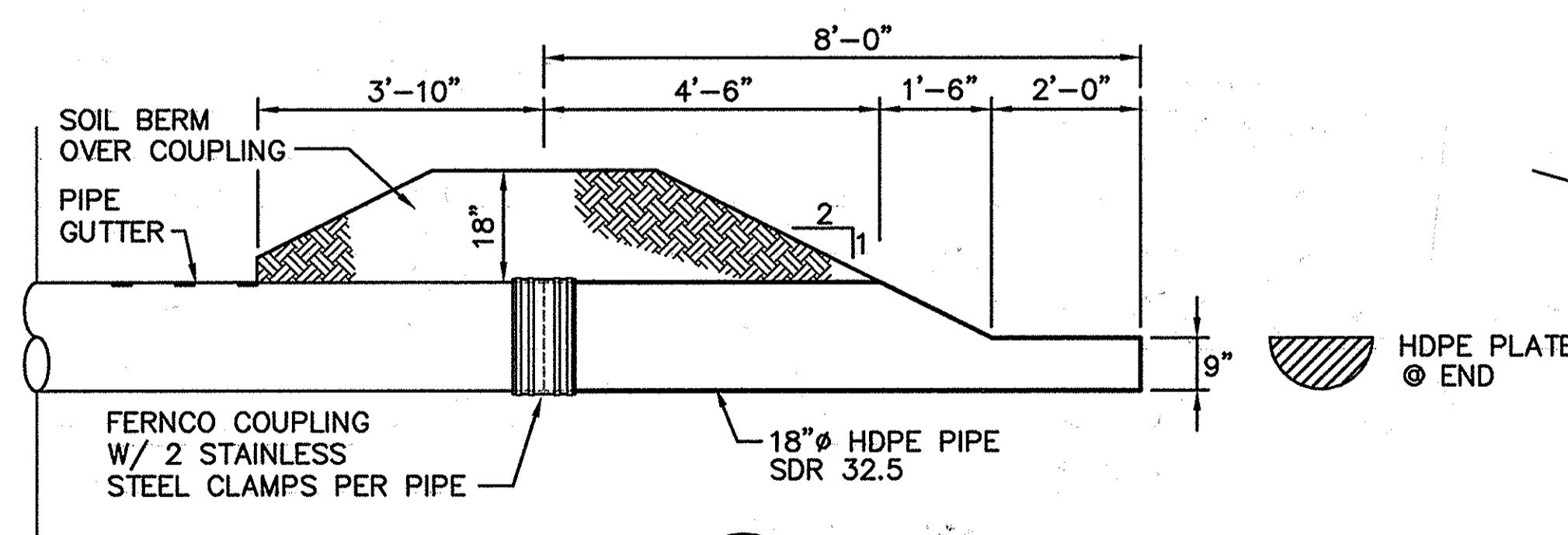
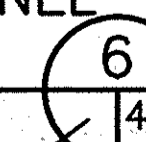
SCALE: 1/2"=1'-0"



PIPEGUTTER OUTFALL INTO WEST CHANNEL  
DETAIL

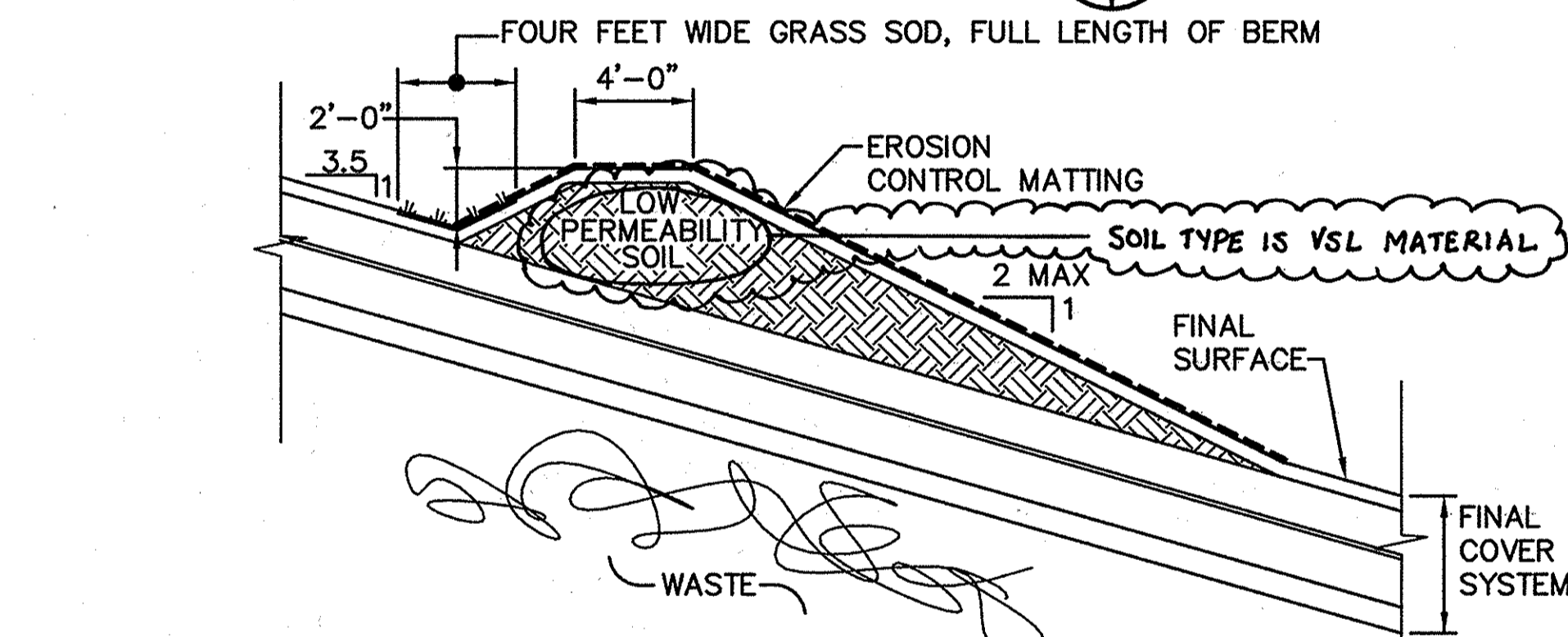
SCALE: 1"=10'

10,48



SECTION

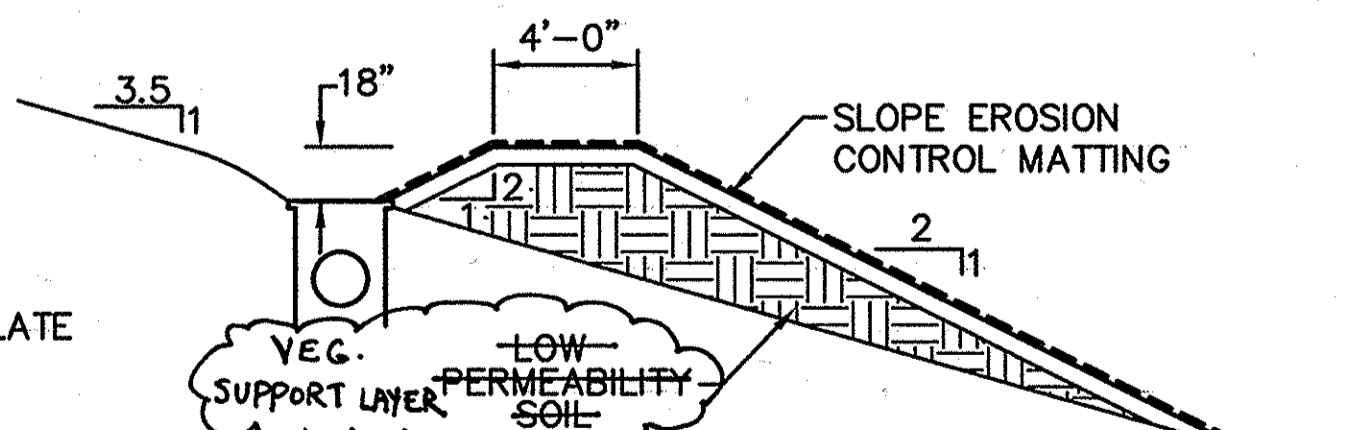
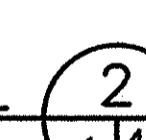
SCALE: 1/2"=1'-0"



SIDESLOPE DIVERSION BERM DETAIL

SCALE: 3/16"=1'-0"

10,47,48



SIDESLOPE DIVERSION BERM  
AT HDPE RISER DETAIL

SCALE: 3/16"=1'-0"

10,46



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11		
LIBER/FOLIO 10-847/806 16-878/215 10-891/314	ZONE PEC	TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

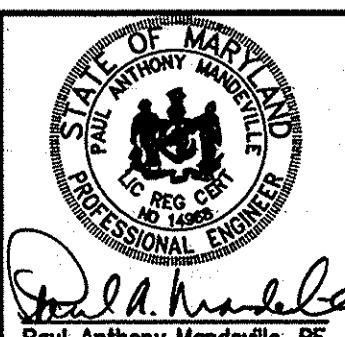
<i>[Signature]</i> DIRECTOR	11/8/97 DATE
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/30/97 DATE
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	11/3/97 DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES.	RTT				
DRN.	EGC				
CHK.	PAM				
DATE: 10-30-97	BY	NO.	REVISION	DATE	

MISCELLANEOUS DETAILS

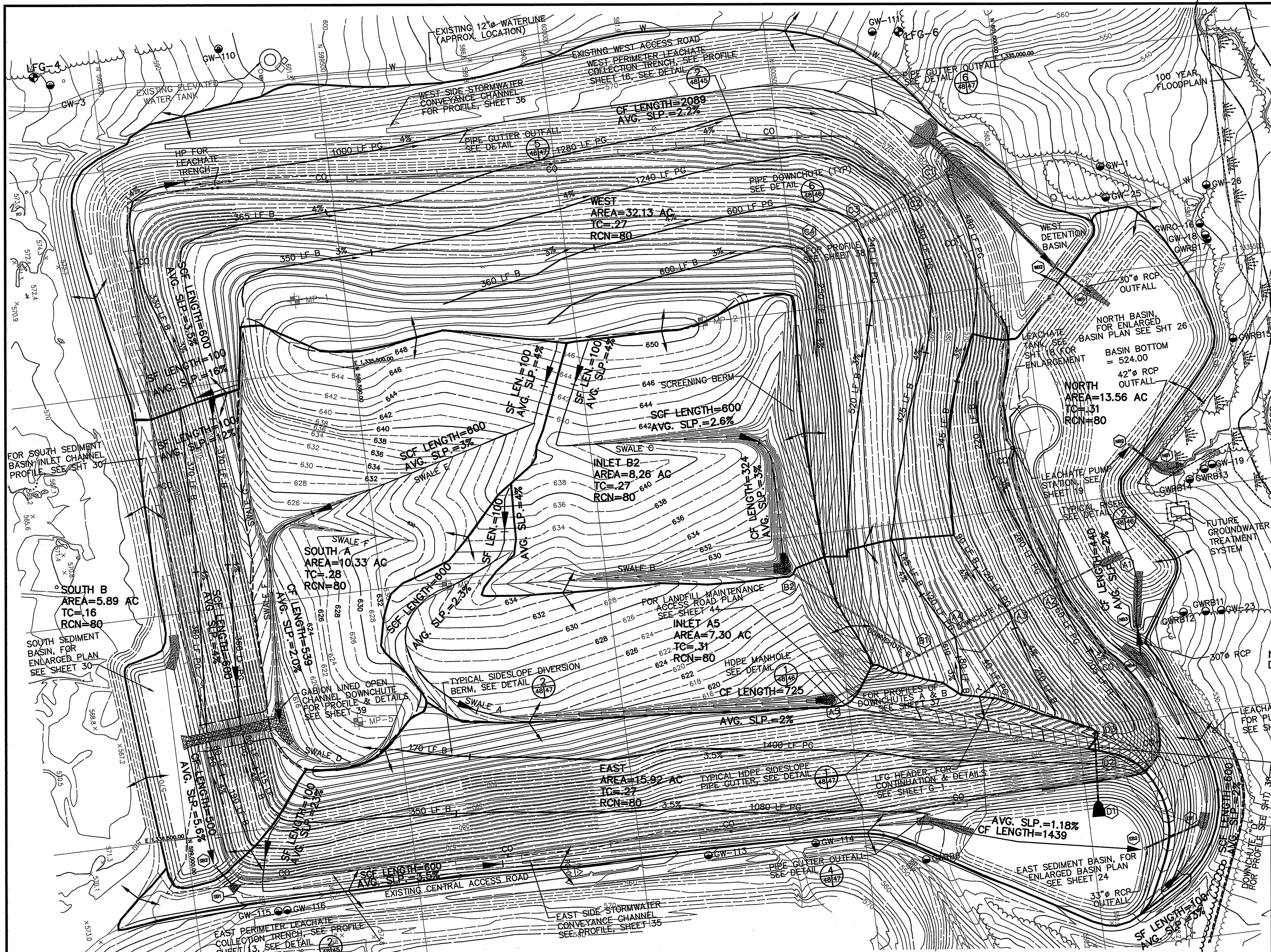
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED  
SHEET  
47 OF 131

SDP-97-128



TOTAL DRAINAGE AREA=93.39 AC.  
10% IMPERVIOUS AREA

NOTES:

1. TOPOGRAPHIC INFORMATION SHOWN ON THIS SHEET WAS COMPILED BY AIR SURVEY CORPORATION, INC. FROM AIR PHOTOGRAPHY DATED JANUARY, 1997.
2. ALL SOIL CONSIDERED TYPE D IN THE POSTDEVELOPED CONDITION.
3. LFG MONITORING WELLS INSTALLED IN MAY, 1996.
4. 100 YEAR FLOODPLAIN INFORMATION PROVIDED BY HOWARD CO. INFORMATION IS BASED ON THE 1978 FLOOD PLAIN DELINEATION BY CENTURY ENGINEERING AND THE 1986 UPDATE BY BERNARD JOHNSON, INC. HOWARD CO. MAPS: GC-0119-T-36-38, GC-0119-T-35-38, GC-0119-T-234-38, GC-0119-T-35-39.

100 0 100 200  
SCALE IN FEET

**LEGEND**

- MP-3 LFG PROBES (TO BE REMOVED) SEE SHEET G-2
- GW-102 GROUNDWATER WELLS (EXIST.)
- LFG-6 LFG MONITORING WELLS (EXIST.)
- PROPERTY LINE
- CONFIRMED LIMITS OF WASTE
- 100 YR. FLOODPLAIN
- DRAINAGE FLOW
- SUB-DRAINAGE DIVIDE
- DRAINAGE DIVIDE
- CF = CHANNEL FLOW
- SCF = SHALLOW CONC. FLOW
- SF = SHALLOW FLOW
- B = BERM
- PG = PIPE GUTTER
- HP = HIGH POINT
- (B1) DRAINAGE STRUCTURE DESIGNATION
- NEW HDPE PIPE/DOWNCHUTES/ CONCRETE DRAINAGE PIPES
- NEW LEACHATE COLLECTION TRENCH
- NEW LEACHATE FORCEMAIN
- EXISTING TREE LINE
- EXISTING SCRUB BRUSH VEGETATION
- PROPOSED TREE LINE
- WETLAND LIMITS
- WETLANDS

NOTE: THIS SHEET TO BE USED FOR OVERALL DRAINAGE DIVIDE PURPOSES ONLY.

SEE ETA SHEET 10 AB FOR AS-BUILT FINAL SURFACE GRADING PLAN

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11	ZONE PEC	TAX/ZONE MAP 10 & 16
LIBER/FOLIO 10-847/606 16-878/215 10-891/314		SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 10/31/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

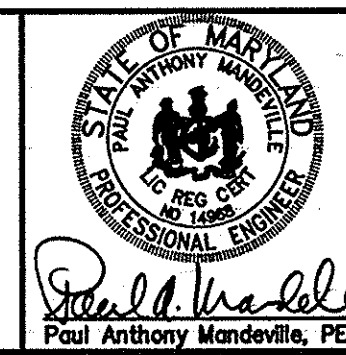
*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. AST,RTT			
DRN. AST,ECC			
CHK. PAM			
DATE: 10-30-97	BY	NO.	REVISION
			DATE

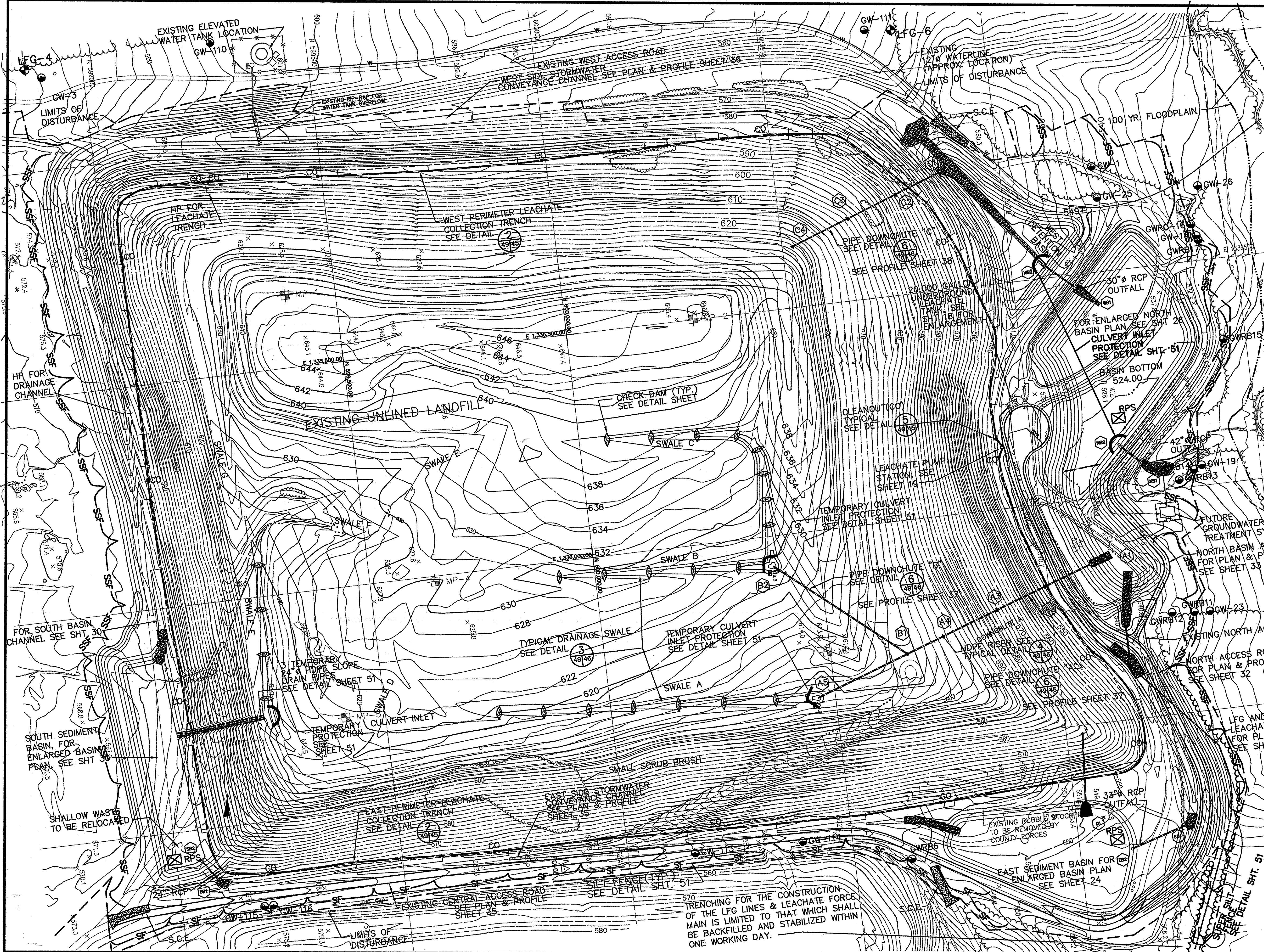
UNLINED CELL  
DRAINAGE DIVIDES

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=100'  
SHEET  
48 of 131

M: 295077.01 FINAL FGP-DD-B FGP-DD

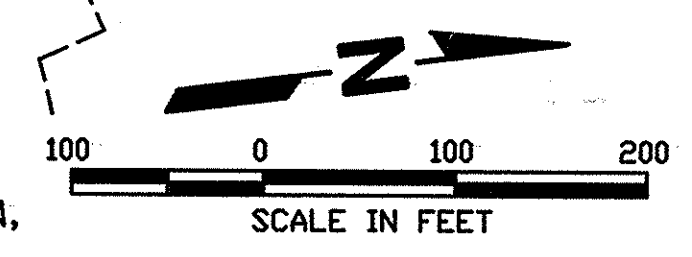


- NOTES:
1. TOPOGRAPHIC INFORMATION SHOWN ON THIS SHEET WAS COMPILED BY AIR SURVEY CORPORATION, INC. FROM AIR PHOTOGRAPHY DATED JANUARY, 1997.
  2. 100 YEAR FLOODPLAIN INFORMATION PROVIDED BY HOWARD CO. INFORMATION IS BASED ON THE 1978 FLOOD PLAIN DELINEATION BY CENTURY ENGINEERING AND THE 1986 UPDATE BY BERNARD JOHNSON, INC. HOWARD CO. MAPS: GC-0119-T-36-38, GC-0119-T-35-38, GC-0119-T-234-38, GC-0119-T-35-39.
  3. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL".
  4. FOR TEMPORARY CONDITIONS POND TABLES, SEE SHEET 76

- LEGEND
- GW-102 GROUNDWATER WELLS (EXISTING)
  - ⊕ MP-3 LFG PROBES (TO BE REMOVED, SEE SHT. 12)
  - ⊕ LFG-6 LFG MONITORING WELLS (EXISTING)
  - PROPERTY LINE
  - - - - - CONFIRMED LIMITS OF WASTE
  - - - - - LIMITS OF DISTURBED AREA
  - SF — SILT FENCE
  - SSF — SUPER SILT FENCE
  - ▬ STABILIZED CONSTRUCTION ENTRANCE (S.C.E.)
  - - - - - SUB-DRAINAGE DIVIDE
  - - - - - DRAINAGE DIVIDE
  - ⊗ RPS REMOVABLE PUMP STATION FOR DETAIL AND SPECIFICATIONS SEE 1994 MARYLAND STDS. & SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL, PAGES D-12-3 TO D-12-5

NOTE: THIS SHEET TO BE USED FOR EROSION & SEDIMENT CONTROL PURPOSES ONLY.  
SEE ETA SHEET 10AB FOR AS-BUILT FINAL SURFACE GRADING PLAN

LIMITS OF WETLANDS  
THE AREA OF DISTURBANCE FOR THIS SHEET IS 95.4 ACRES.



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/606 16-876/215 10-891/314	ZONE PEC
TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING
CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

DIRECTOR: *[Signature]* 11/3/97 DATE

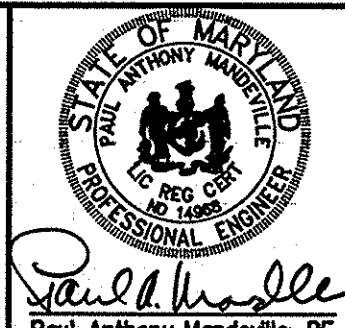
CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 11/3/97 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* 11/3/97 DATE

TRENCHING FOR THE CONSTRUCTION OF THE LFG LINES & LEACHATE FORCE MAIN IS LIMITED TO THAT WHICH SHALL BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY.

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. RTT, EGC	▲			
DRN. EGC, JCB	▲			
CHK. PAM	▲			
DATE: 10-30-97	BY	NO.	REVISION	DATE

UNLINED CELL EROSION & SEDIMENT CONTROL PLAN

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE:  
1"=100'  
SHEET  
49 OF 138

ESEDCON-B M: V295077.01.FINAL ESEDCON

*[Signature]* 10/30/97 DATE  
DIRECTOR OF PUBLIC WORKS

*[Signature]* 10/30/97 DATE  
CHIEF, BUREAU OF WASTE MANAGEMENT

SEQUENCE OF CONSTRUCTION

- A. THE GRADING PERMIT FOR THE PROJECT HAS BEEN OBTAINED BY HOWARD COUNTY.
- B. ACCESS THE LANDFILL BY THE EXISTING HAUL ROADS ON THE EAST SIDE AND SOUTH SIDE. ACCESS THE PERIMETER OF THE LANDFILL BY THE CENTRAL ACCESS ROAD AND THE PERIMETER ACCESS ROADS ON NORTH AND WEST SIDES. ACCESS THE BORROW AREA AND RECREATION AREA BY THE EXISTING LANDFILL HAUL ROAD ON THE SOUTH SIDE.
- C. PHASE I (ESTIMATED CONSTRUCTION DURATION - 4 MONTHS) - NORTH SIDE STORM WATER MANAGEMENT, ACCESS, AND LEACHATE PUMP STATION, UNDERGROUND STORAGE TANK, AND FORCE MAIN IMPROVEMENTS.
  - INSTALL CONSTRUCTION ENTRANCES WHERE INDICATED.
  - INSTALL SILT FENCE ALONG THE PERIMETER OF THE NORTH SIDE. DE-WATER EXISTING CLEAR WATER BASIN (CW-5) USING THE EXISTING DE-WATER CONTROL VALVE. 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 OUTFALL CONTROL STRUCTURE, OUTFALL PIPE, AND RIP RAP OUTFALL PROTECTION. RECONSTRUCT BASIN EMBANKMENT THROUGH BREACH. LEAVE THE NEW DE-WATERING CONTROL VALVE IN THE OPEN POSITION AND ALLOW BASIN TO DRAIN.
  - REMOVE EMBANKMENT BETWEEN EXISTING SB-5B AND CW-5 BASINS AND CONSTRUCT EMBANKMENT ON SOUTH SIDE OF THE NORTH BASIN, CREATING THE ROAD BED FOR THE NORTH PERIMETER ACCESS ROAD.
  - REMOVE EMBANKMENT BETWEEN SB-5A AND CW-5. CONSTRUCT THE REMAINING NORTH BASIN EMBANKMENT. CONSTRUCT NORTH BASIN ACCESS ROAD AND ROAD CULVERT N1-N2. EXCAVATE, FILL AND GRADE INTERIOR OF NORTH BASIN, CONSTRUCT 12-INCH THICK SOIL LINER. AFTER NORTH BASIN IS COMPLETED, PERMANENTLY STABILIZE ALL DENUDEED AREAS BY SEEDING AND MULCHING.
  - CONSTRUCT LEACHATE PUMP STATION AND UNDERGROUND STORAGE TANK.
  - INSTALL SILT FENCE PRIOR TO CLEARING FOR LEACHATE FORCE MAIN CONSTRUCTION. AFTER CONSTRUCTION OF LEACHATE FORCE MAIN, PERMANENTLY STABILIZE DENUDEED AREAS BY SEEDING AND MULCHING.
  - REMOVE TEMPORARY SEDIMENT CONTROLS FOR PHASE I CONSTRUCTION UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- D. PHASE II (ESTIMATED CONSTRUCTION DURATION - 4 MONTHS) - CONSTRUCT EAST AND SOUTH SEDIMENT BASINS, WEST DETENTION BASIN, RETROFIT EXISTING CLEAR WATER BASINS CW-1 AND CW-2, BEGIN LANDFILL GAS AND LEACHATE SYSTEMS.
  - EAST SEDIMENT BASIN
    - INSTALL SILT FENCE AND CONSTRUCT ROADSIDE DITCH TO ROAD CULVERT N1-N2. CONSTRUCT OUTLET CONTROL STRUCTURE, OUTLET PIPE, RIPRAP OUTFALL PROTECTION. EXCAVATE BASIN AND CONSTRUCT BASIN EMBANKMENT.
    - PERMANENTLY STABILIZE ALL DENUDEED AREAS BY SEEDING AND MULCHING.
    - REMOVE TEMPORARY SEDIMENT CONTROLS FOR EAST SEDIMENT BASIN UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
  - SOUTH SEDIMENT BASIN
    - INSTALL SILT FENCE, AND RELOCATE SHALLOW WASTE. CONSTRUCT OUTLET CONTROL STRUCTURE, OUTLET PIPE, RIP RAP OUTFALL PROTECTION. EXCAVATE BASIN AND CONSTRUCT BASIN EMBANKMENT.
    - PERMANENTLY STABILIZE ALL DENUDEED AREAS BY SEEDING AND MULCHING.
    - REMOVE TEMPORARY SEDIMENT CONTROLS FOR SOUTH SEDIMENT BASIN UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
  - WEST DETENTION BASIN
    - INSTALL SILT FENCE AND CULVERT INLET PROTECTION. CONSTRUCT OUTLET PIPE, END WALLS, AND RIP RAP OUTFALL PROTECTION. EXCAVATE BASIN AND CONSTRUCT BASIN EMBANKMENT. INSTALL CONCRETE LOW FLOW CHANNEL AND GABION INLET CHANNEL.
    - PERMANENTLY STABILIZE ALL DENUDEED AREAS BY SEEDING AND MULCHING.
    - REMOVE TEMPORARY SEDIMENT CONTROLS FOR WEST DETENTION BASIN UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
  - RETROFIT EXISTING CLEAR WATER BASINS CW-1 AND CW-2
    - INSTALL TEMPORARY EROSION CONTROLS, STABILIZE CONSTRUCTION ENTRANCE AND REMOVE EXISTING CMP PRINCIPAL SPILLWAY AND CMP OUTFALL PIPE OF SB-1 AND SB-2.
    - DE-WATER CLEAR WATER BASIN CW-2 THEN REMOVE EXISTING CMP PRINCIPAL SPILLWAY AND CMP OUTFALL PIPE AND CONSTRUCT NEW CONCRETE OUTFALL PIPE AND PRINCIPAL SPILLWAY. WHEN NEW PRINCIPAL SPILLWAY AND OUTFALL PIPE HAS BEEN COMPLETED, CONSTRUCT CW-2 BASIN TO THE GRADES INDICATED.
    - DE-WATER CLEAR WATER BASIN CW-1 THEN REMOVE EXISTING CMP PRINCIPAL SPILLWAY AND CMP OUTFALL PIPE AND CONSTRUCT NEW CONCRETE OUTFALL PIPE AND PRINCIPAL SPILLWAY. WHEN NEW PRINCIPAL SPILLWAY AND OUTFALL PIPE HAS BEEN COMPLETED, CONSTRUCT ENLARGED CW-1 TO THE GRADES INDICATED.
    - UPON COMPLETION OF BASIN RETROFITS, STABILIZE DENUDEED AREAS AND INSTALL PERMANENT CHANNEL/DITCH INLET AND OUTFALL EROSION CONTROLS.
    - REMOVE TEMPORARY SEDIMENT CONTROLS UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
  - LANDFILL GAS AND LEACHATE SYSTEMS
    - BEGIN BLOWER/FLARE STATION.
    - INSTALL LEACHATE OVERFLOW TANK AT FIELD PUMP STATION
- E. PHASE III - CONSTRUCT PIPE DOWN CHUTES A, B AND C, TEMPORARY SLOPE DRAINS INTO SOUTH BASIN, AND EAST AND WEST LEACHATE COLLECTION TRENCHES. (ESTIMATED CONSTRUCTION DURATION - 4 MONTHS)
  - THE CONTRACTOR SHALL NOT HAVE MORE THAN SEVEN (7) ACRES OF LANDFILL SURFACE AREA DISTURBED AT ANY ONE TIME DURING THE CONSTRUCTION OF THE FINAL CAP.
  - CONSTRUCT DOWN CHUTES ON NORTH SIDE OF LANDFILL, BEGINNING WITH CONCRETE HEADWALL AND RIP RAP OUTFALL PROTECTION. COORDINATE DOWN CHUTE AND LEACHATE COLLECTION TRENCH CROSSINGS. AT THE TERMINUS OF DOWN CHUTES A AND B, GRADE PIPE INLET SUMPS AND INSTALL CULVERT INLET PROTECTION.
  - GRADE SIDESLOPE AND INSTALL TEMPORARY SLOPE DRAINS INTO SOUTH BASIN.
  - CONSTRUCT EAST AND WEST LEACHATE COLLECTION TRENCHES AND ALL ASSOCIATED SURFACE GRADING.
  - STABILIZE ALL DENUDEED AREAS BY TEMPORARY SEEDING AND MULCHING.

- F. PHASE IV (ESTIMATED CONSTRUCTION DURATION - 4 MONTHS) - DEVELOP BORROW AREAS A-3 AND B, BASE GRADING OF LANDFILL TOP SURFACE AND LFG WELL AND SYSTEM INSTALLATION.
  - THE CONTRACTOR SHALL NOT HAVE MORE THAN SEVEN (7) ACRES OF LANDFILL SURFACE AREA DISTURBED AT ANY ONE TIME DURING THE CONSTRUCTION OF THE FINAL CAP.
  - INSTALL TEMPORARY EROSION SEDIMENT CONTROLS WHERE INDICATED AND DIRECT RUNOFF TO BASIN CW-2.
  - DEVELOP BORROW AREAS A-3 AND B TO OBTAIN SOIL MATERIALS FOR BASE GRADING OF THE LANDFILL AND SOIL BARRIER LAYER MATERIAL.
  - PERFORM BASE GRADING OF LANDFILL DRAINAGE SWALES ON TOP OF LANDFILL WHILE MAINTAINING POSITIVE DRAINAGE INTO DOWNCHUTE INLETS AND INLETS TO TEMPORARY SLOPE DRAINS.
  - STABILIZE BASE GRADE SURFACES IMMEDIATELY WITH TEMPORARY SEEDING AND MULCHING. INSTALL STONE CHECK DAMS IN LANDFILL DRAINAGE SWALES AS INDICATED.
  - INSTALL LFG WELLS ON TOP SURFACE.
  - BEGIN LINED CELL NO. 1 LFG COLLECTION SYSTEM CONSTRUCTION INCLUDING HEADER LINE BETWEEN THE UNLINED CELL AND THE FLARE STATION.
- G. PHASE V (ESTIMATED CONSTRUCTION DURATION - 4 MONTHS) - DEVELOP BORROW AREAS A-1, A-2, AND C, INSTALL FINAL COVER SYSTEM AND INSTALL LFG HEADER PIPING ON TOP OF THE LANDFILL.
  - THE CONTRACTOR SHALL NOT HAVE MORE THAN SEVEN (7) ACRES OF LANDFILL SURFACE AREA DISTURBED AT ANY ONE TIME DURING THE CONSTRUCTION OF THE FINAL CAP.
  - INSTALL TEMPORARY EROSION SEDIMENT CONTROLS WHERE INDICATED AND DIRECT RUNOFF TO BASIN CW-1.
  - DEVELOP BORROW AREAS A-1, A-2, AND C TO OBTAIN BARRIER LAYER AND VEGETATIVE SUPPORT LAYER SOIL MATERIALS.
  - BEGIN FINAL COVER SYSTEM ON THE RIDGE ON TOP OF THE LANDFILL. PROCEED DOWN GRADIENT, NORTH AND SOUTH TOWARD THE DRAINAGE INLETS, EVENTUALLY INSTALLING THE PERMANENT INLET STRUCTURES TO DOWNCHUTES A AND B.
  - ONCE THE FINAL COVER SYSTEM HAS REACHED THE TEMPORARY SLOPE DRAINS ON THE SOUTH SIDE, REMOVE THE TEMPORARY SLOPE DRAINS, CONSTRUCT THE FINAL COVER SYSTEM DOWN THE SLOPE AND CONSTRUCT THE PERMANENT GABION DOWNCHUTE INTO THE SOUTH SEDIMENT BASIN.
  - REMOVE TEMPORARY SEDIMENT CONTROLS UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR
  - INSTALL LFG HEADER PIPING WITHIN THE COVER SYSTEM ON TOP OF LANDFILL.
  - STABILIZE FINAL SURFACES IMMEDIATELY WITH PERMANENT SEEDING AND MULCHING.
- H. PHASE VI (ESTIMATED CONSTRUCTION DURATION - 8 MONTHS) - BASE GRADE AND INSTALL THE FINAL COVER SYSTEM ON THE SIDESLOPES OF THE LANDFILL, COMPLETE PERIMETER ACCESS ROADS AND DRAINAGE CHANNELS.
  - THE CONTRACTOR SHALL NOT HAVE MORE THAN SEVEN (7) ACRES OF LANDFILL SURFACE AREA DISTURBED AT ANY ONE TIME DURING THE CONSTRUCTION OF THE FINAL CAP, EXCEPT AS NOTED BELOW.
  - AFTER THE FINAL COVER SYSTEM HAS BEEN PLACED ON TOP OF THE LANDFILL, BEGIN BASE GRADING OF THE SIDESLOPES ON THE NORTHEAST SIDE OF THE LANDFILL IMMEDIATELY FOLLOWED BY THE FINAL COVER SYSTEM.
  - WHEN THE FINAL COVER SYSTEM IS COMPLETED ON THE NORTHEAST CORNER, BEGIN CONSTRUCTION OF THE LANDFILL ACCESS ROAD AND DOWNCHUTE "D" CONTINUE WITH BASE GRADING AND CONSTRUCTION OF THE FINAL COVER SYSTEM ON THE SIDESLOPES, PROCEEDING COUNTER CLOCKWISE AROUND THE LANDFILL.
  - WHEN SIDESLOPE AREAS RECEIVE THE FINAL COVER SYSTEM, CONSTRUCT SIDESLOPE PIPE GUTTERS AND DIVERSION BERMS. INSTALL PERMANENT SOD AND EROSION CONTROL MATTING AS INDICATED.
  - AS EARTHWORK AND DRAINAGE SYSTEM CONSTRUCTION IS COMPLETED FOR LANDFILL, PERFORM FINAL GRADING OF PERIMETER CHANNELS/DITCHES AND PERIMETER ACCESS ROADS. CONSTRUCT GRAVEL BASE COURSE FOR ACCESS ROADS, CLEAN OUT SEDIMENT ACCUMULATION IN ALL BASINS.
  - WHEN BORROW ACTIVITIES HAVE BEEN COMPLETED, STABILIZE ALL DENUDEED AREAS AND INSTALL PERMANENT CHANNEL/DITCH/INLET AND OUTFALL EROSION CONTROLS. REMOVE ACCUMULATED SEDIMENT FROM BASIN CW-1 AND CW-2.
  - INSTALL LFG COLLECTION SYSTEM (WELLS AND HEADER PIPING) ON LANDFILL SIDESLOPES.
  - STABILIZE FINAL SURFACES IMMEDIATELY WITH PERMANENT SEEDING AND MULCHING.
  - REMOVE TEMPORARY SEDIMENT CONTROLS UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- I. PHASE VII (ESTIMATED CONSTRUCTION DURATION - 2 MONTHS) - RECREATION AREA.
  - THE CONTRACTOR SHALL NOT HAVE MORE THAN FIVE (5) ACRES OF LANDFILL SURFACE AREA DISTURBED AT ANY ONE TIME DURING THE CONSTRUCTION OF THE RECREATION AREA.
  - CONTRACTOR SHALL LIMIT HIS BORROW AND GRADING ACTIVITIES WITHIN THE RECREATION AREA TO A MAXIMUM OF 7 ACRES OF DISTURBANCE AT ALL TIMES. MAINTAIN STORM DRAINAGE TOWARD BASINS CW-1 AND CW-2.
  - INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS PRIOR TO AREAS BEING DISTURBED.
  - INSTALL STORM DRAIN PIPES AND STRUCTURES AT OPPORTUNE TIMES AS GRADING ALLOWS.
  - STABILIZE AREAS WHICH HAVE ACHIEVED FINAL GRADES.
  - UPON ACHIEVING FINAL GRADES AND STABILIZATION FOR THE 5 SOCCER FIELDS, INSTALL TEMPORARY EROSION CONTROLS AND BEGIN EARTHWORK FOR THE LANDFILL ACCESS ROAD.
  - UPON COMPLETION OF THE ACCESS ROAD, STABILIZE ALL DENUDEED AREAS.
  - REMOVE TEMPORARY SEDIMENT CONTROLS UPON RECEIVING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES

A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).

ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED 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.

ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL 1, CHAPTER 7 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. 6). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

SITE ANALYSIS:  $\Delta$

TOTAL AREA OF SITE = 550 ACRES  
 AREA DISTURBED = 150 ACRES  
 AREA TO BE ROOFED OR PAVED = 0.00 ACRES  
 AREA TO BE VEGETATIVELY STABILIZED = 150 ACRES  
 TOTAL CUT = 560,000 CY  
 TOTAL FILL = 560,000 CY  
 OFFSITE WASTE/BORROW AREA LOCATION: N/A

ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

SEDIMENT CONTROL

( ) PROVIDE THE FOLLOWING CERTIFICATION BLOCKS ON SEDIMENT CONTROL PLANS:  
 ( ) 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 10/30/97  
 SIGNATURE OF DEVELOPER JOHN J. O'HARA DATE  
 PRINT NAME BELOW SIGNATURE

( ) 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."

Paul A. Mandeville 10/30/97  
 SIGNATURE OF ENGINEER Paul A. Mandeville DATE  
 PRINT NAME BELOW SIGNATURE

( ) REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

Charles H. Johnson 10-30-97  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Robert D. Ziehm 10-30-97  
 HOWARD SCD DATE

FOR LANDFILL CONSTRUCTION SEQUENCE PLAN, SEE SHEET 67  
 FOR SEQUENCE OF CONSTRUCTION FOR BORROW AREA AND RECREATION AREA, SEE SHEET 68

"AFTER MODIFYING THE NORTH BASIN RISER (PER REVISION  $\Delta$ , SHEET 27) THE DRAINAGE AREA TO THE WEST DETENTION BASIN SHALL NOT HAVE MORE THAN FOURTEEN (14) ACRES OF LANDFILL SURFACE DISTURBED AT ANY ONE TIME."

SEDNOTE-8 M: 295077.01\FINAL

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/606 16-876/215 10-881/314	ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

[Signature] 11/3/97  
 DIRECTOR DATE

[Signature] 10/30/97  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

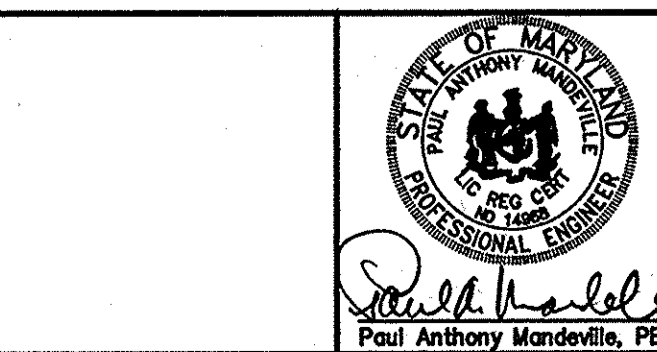
[Signature] 11/3/97  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

[Signature] 10/30/97  
 DIRECTOR OF PUBLIC WORKS DATE

[Signature] 10/30/97  
 CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, AST			
DRN. SPC			
CHK. RTT		DELETED REC. AREA	11/9/99
		SEQUENCE ITEM H.1.	7/21/99
DATE: 10-30-97	BY	DISTURBED AREA	4-28-99
		REVISION	

EROSION AND SEDIMENT CONTROL NOTES  
 CONSTRUCTION SEQUENCE

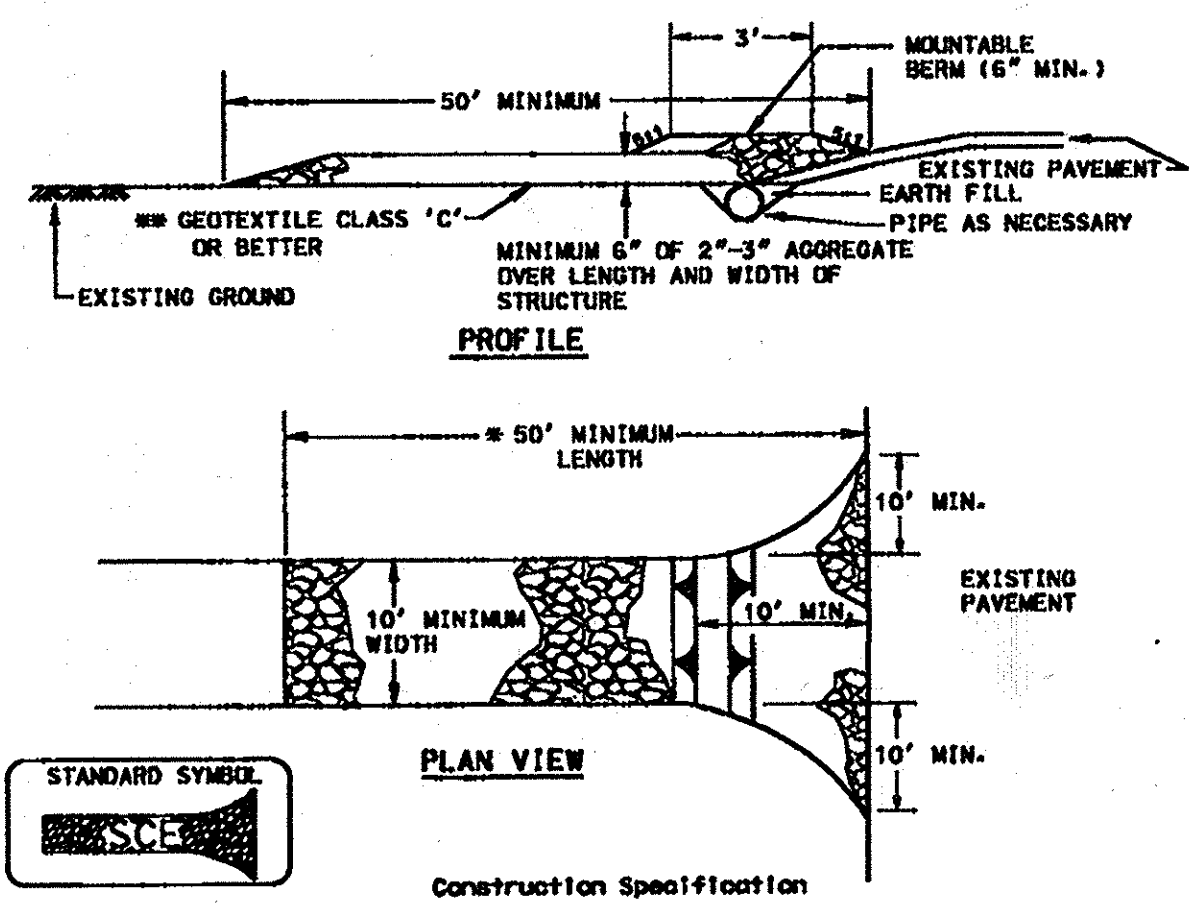
ALPHA RIDGE LANDFILL  
 UNLINED CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE:  
 NO SCALE

SHEET  
 50 OF 131

**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**

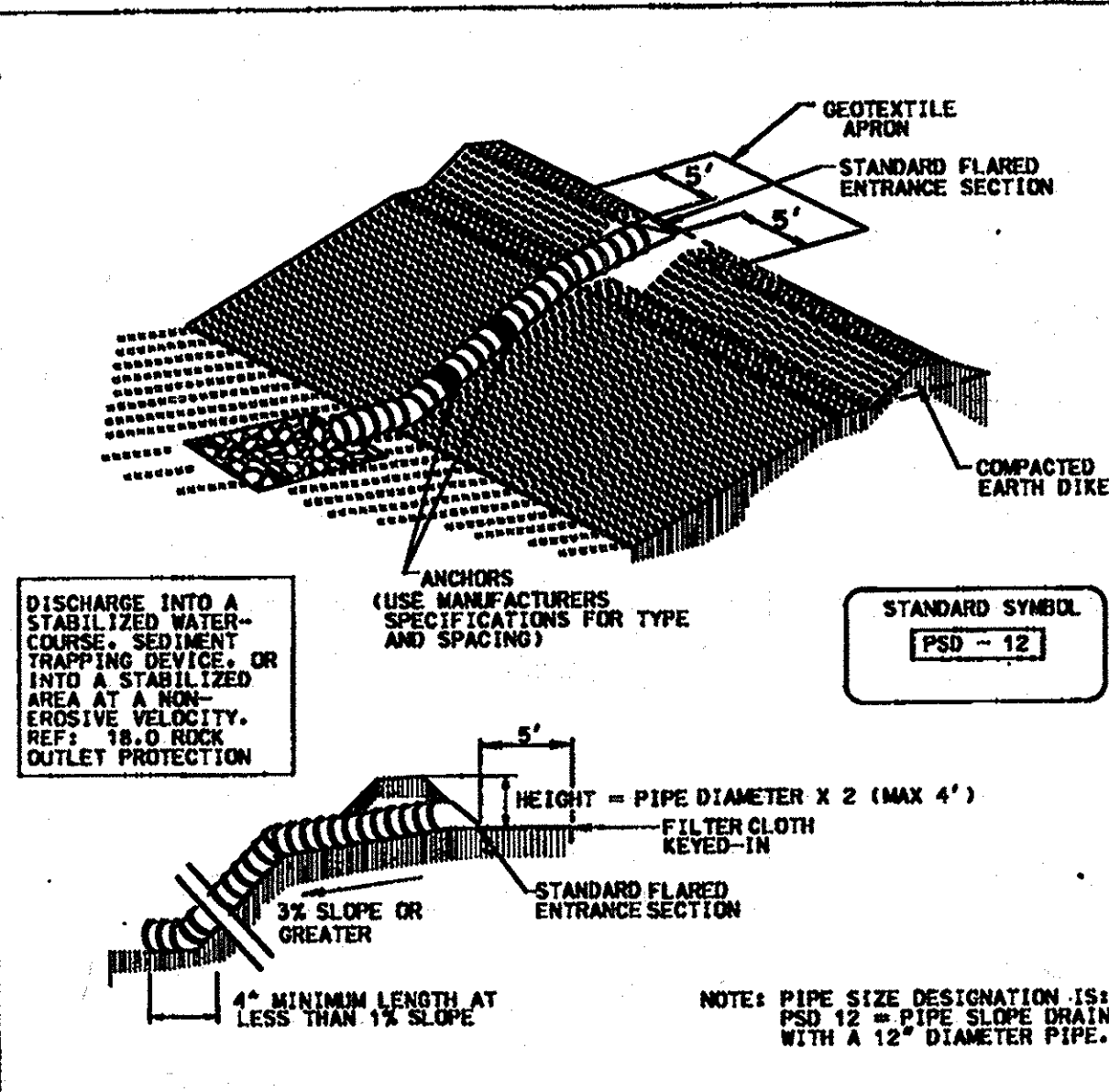


- Construction Specifications**
- Length - minimum of 50' (450' for single residence lot).
  - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
  - Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. If the plan approval authority may not require single family residences to use geotextile.
  - Stone - crushed aggregate (2" to 3") or recycled or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
  - Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mounable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe shall be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 5' minimum will be required.
  - Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 7 - 27 - 8 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

1994

**DETAIL 4 - PIPE SLOPE DRAIN**



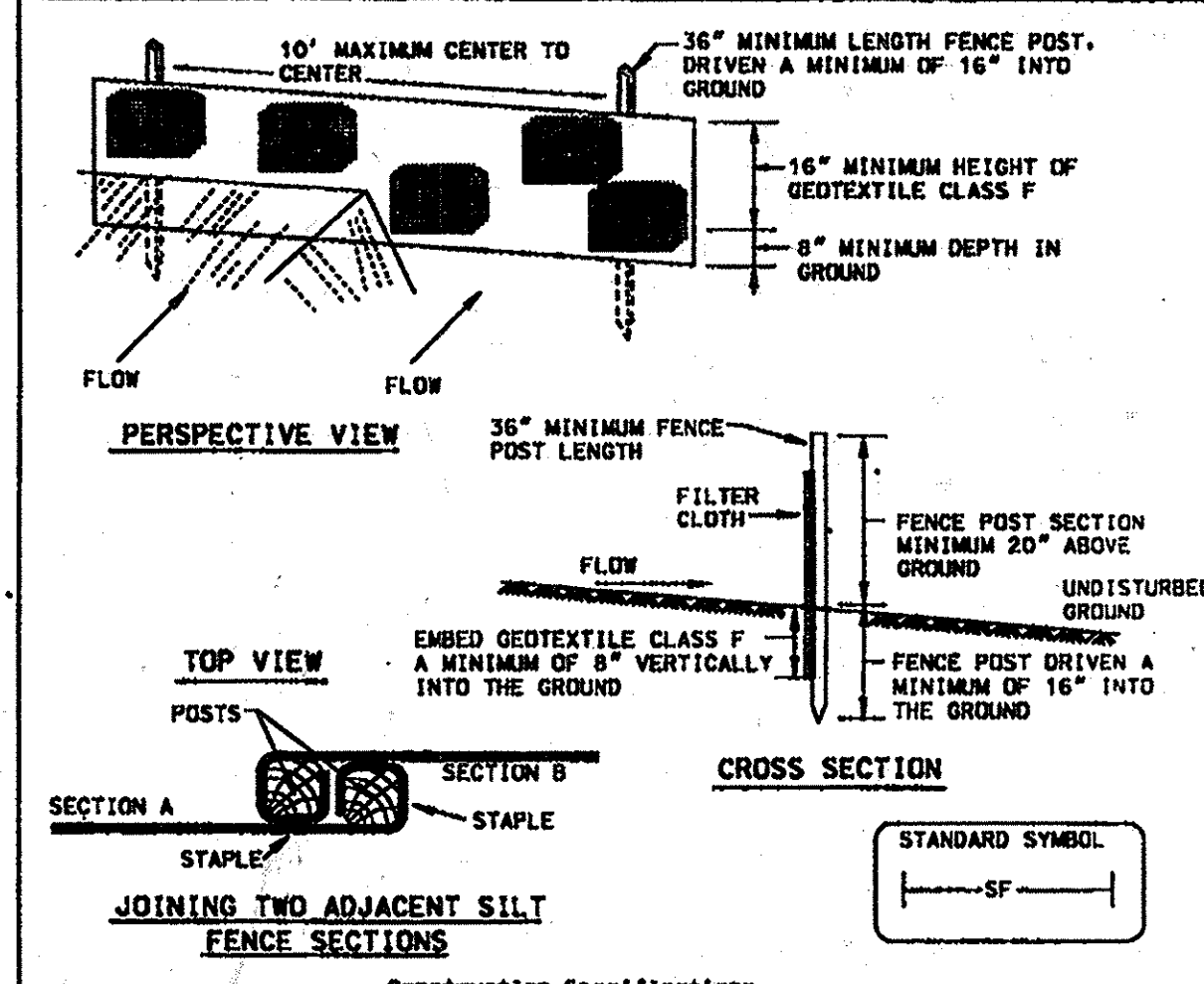
**Table 6 Design Criteria for Pipe Slope Drain**

Size	Pipe/Tubing Diameter (D) in	Maximum Drainage Area (Acres)
PSD-12	12	0.5
PSD-18	18	1.5
PSD-21	21	2.5
PSD-24	24	3.5
PSD-24 (2)	24	5.0

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1994

**DETAIL 22 - SILT FENCE**

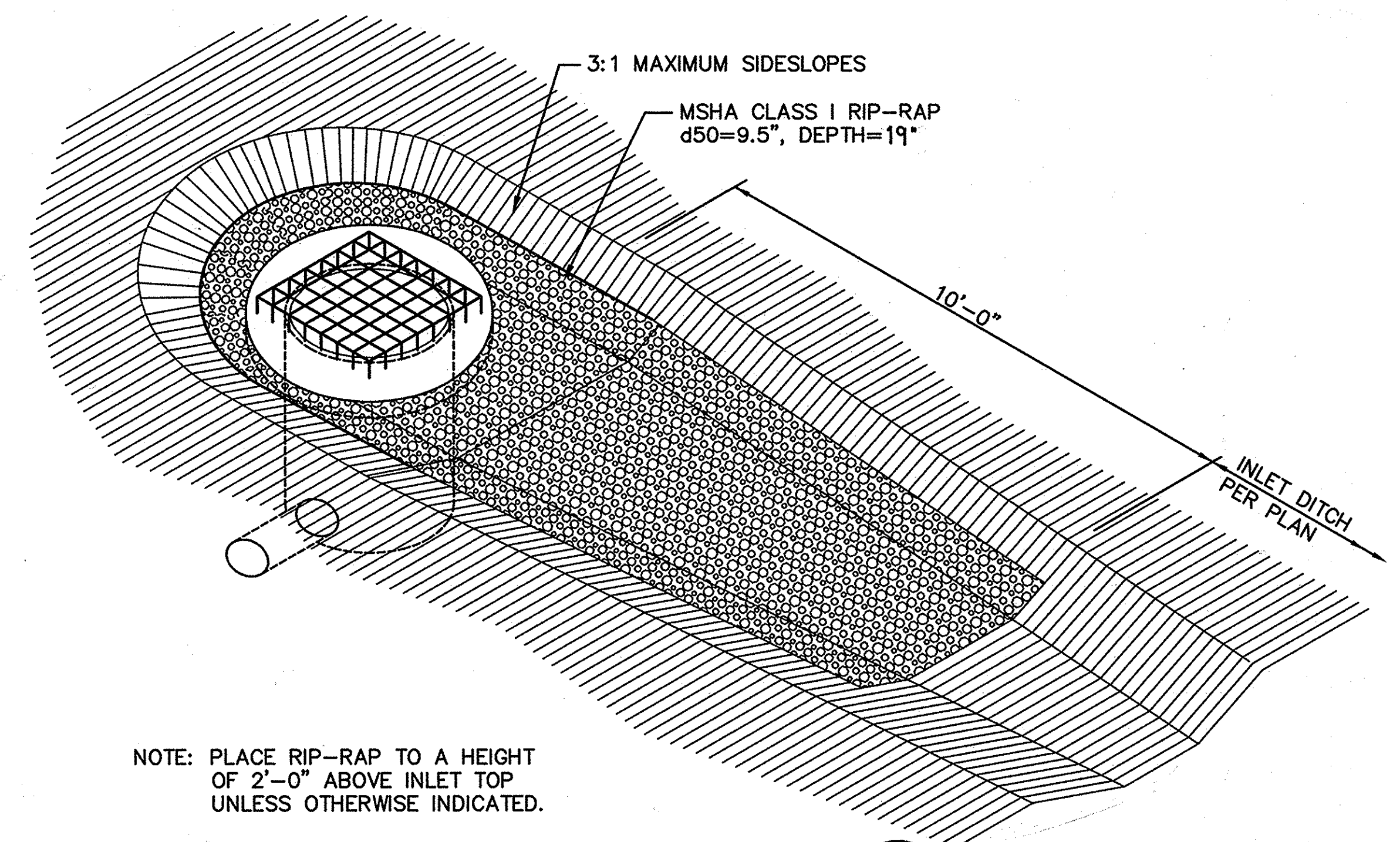


- Construction Specifications**
- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/2" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
  - Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Tests MSMT 509
Tensile Modulus	20 lbs/in (min.)	Tests MSMT 509
Flow Rate	0.3 gal 4"/4" (min. max.)	Tests MSMT 322
Filtering Efficiency	75% (min.)	Tests MSMT 322
  - Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
  - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 8 - 28 - 5 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

1994



NOTE: PLACE RIP-RAP TO A HEIGHT OF 2'-0" ABOVE INLET TOP UNLESS OTHERWISE INDICATED.

**INLET PROTECTION DETAIL**  
NO SCALE  
5, 46

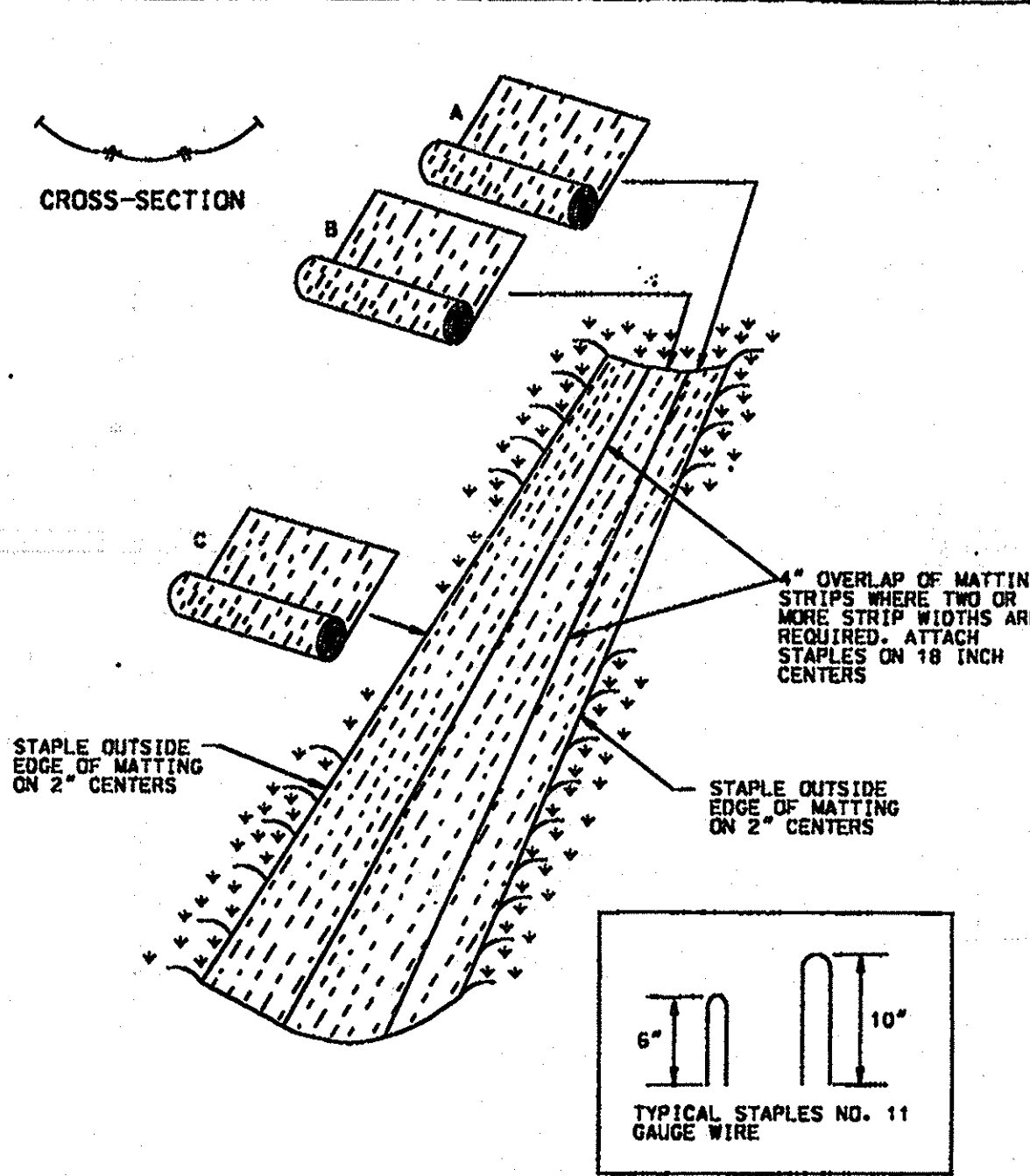
1/51

**EROSION CONTROL MATTING**

**Construction Specifications**

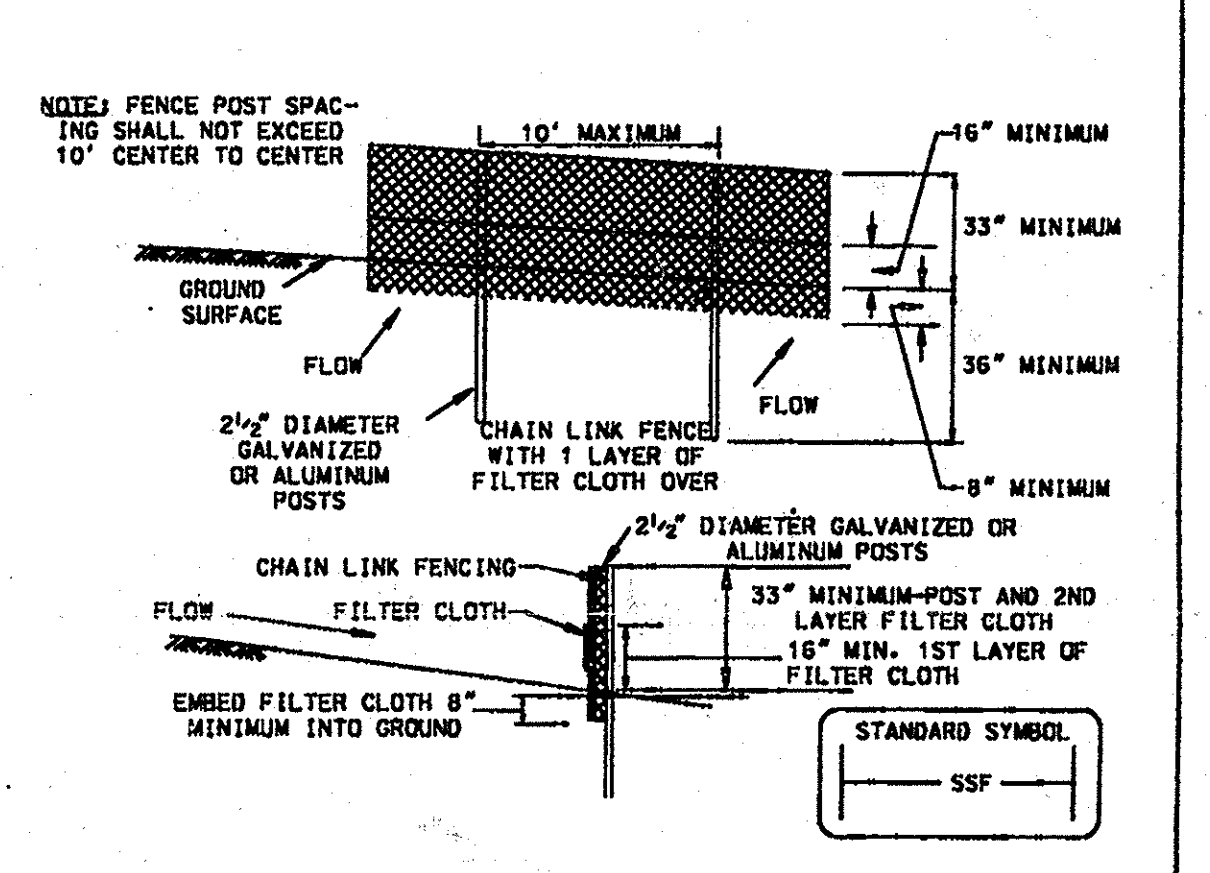
- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4' down slope from the trench. Spacing between staples is 6'.
  - Staple the 4' overlap in the channel center using an 18" spacing between staples.
  - Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
  - Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
  - Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4', shiplap fashion. Reinforce the overlap with a double row of staples spaced 6' apart in a staggered pattern on either side.
  - The discharge end of the matting liner should be similarly secured with 2 double rows of staples.
- Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

**DETAIL 30 EROSION CONTROL MATTING**



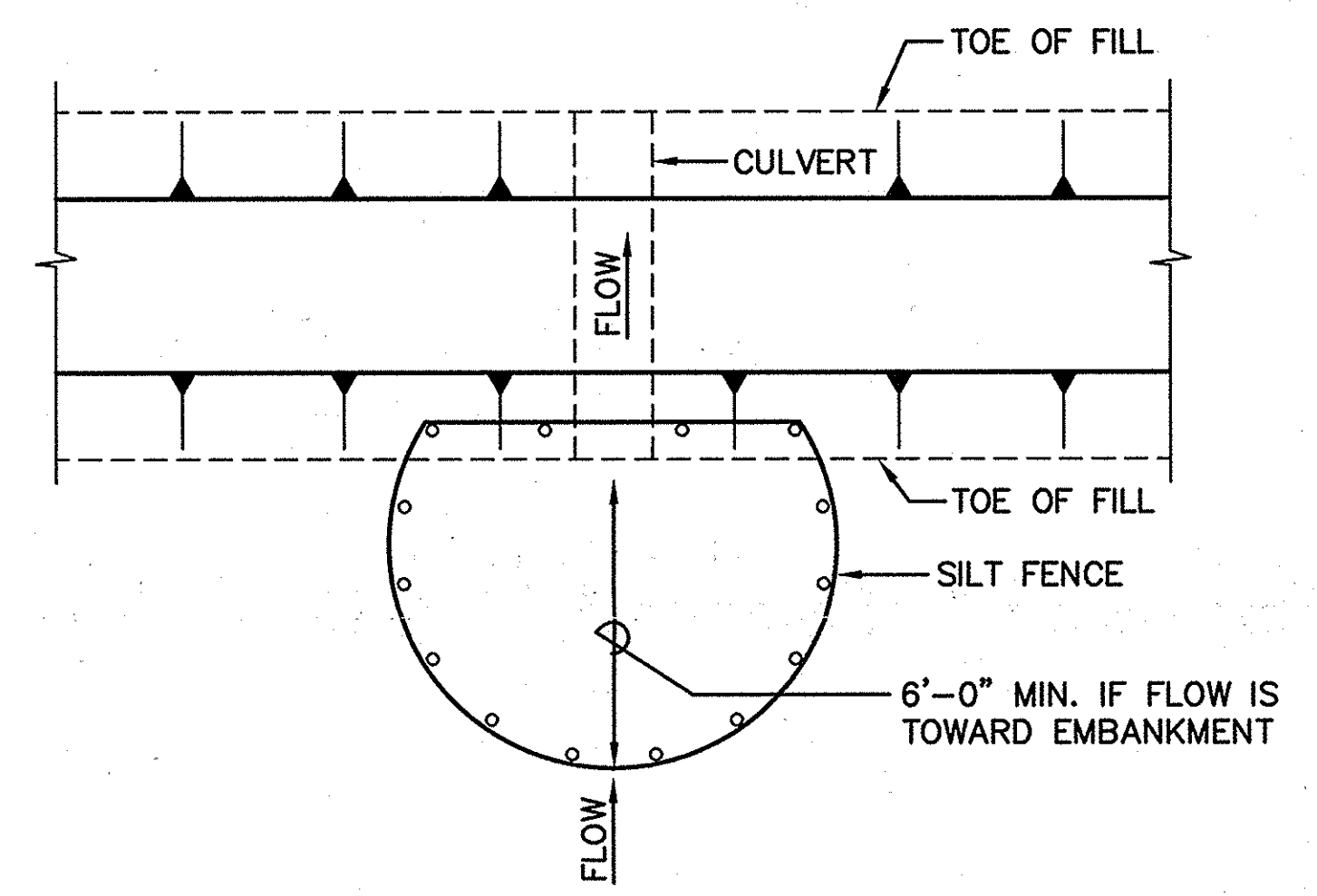
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 9 - 31 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

**DETAIL 33 - SUPER SILT FENCE**

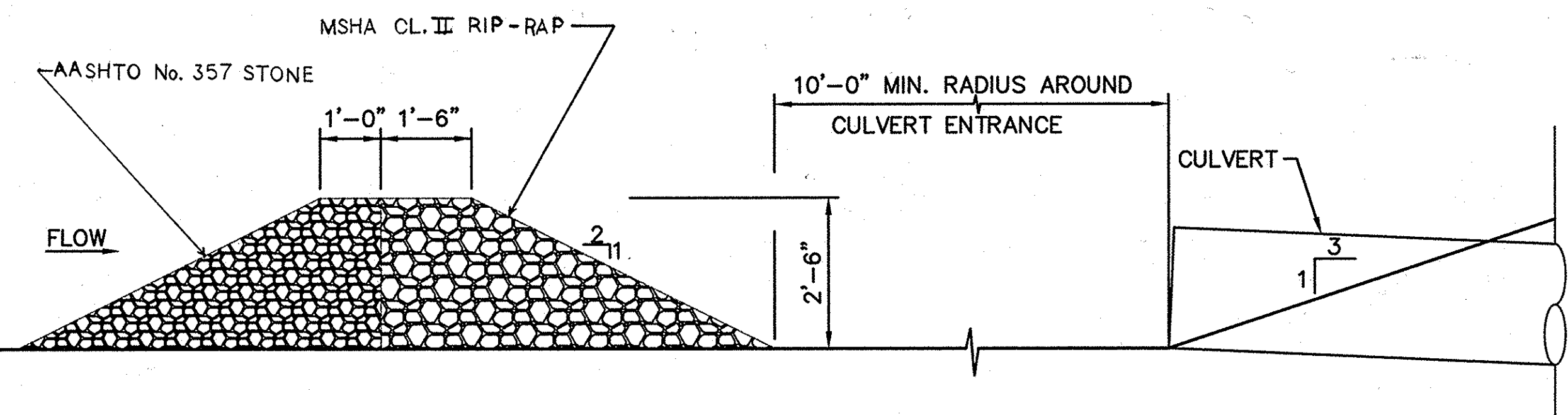


- Construction Specifications**
- Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.
- The poles do not need to set in concrete.
  - Chain link fence shall be fastened securely to the fence posts with wire ties or staples.
  - Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
  - Filter cloth shall be embedded a minimum of 6" into the ground.
  - When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
  - Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 11 - 33 - 5 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION



**TEMPORARY CULVERT INLET PROTECTION**  
SILT FENCE OPTION



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

SUBDIVISION NAME	LOT/PARCEL
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220,11
LIBER/FOLIO	ZONE TAX/ZONE MAP
10-847/808 16-878/215 10-891/314	PEC 10 & 16
WATER CODE	SEWER CODE CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING 60-30

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

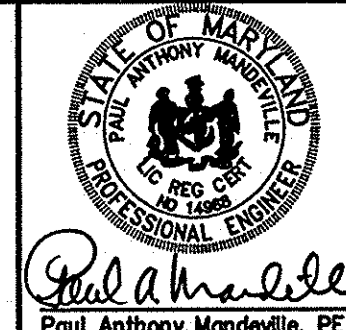
*James R. Smith* 11/3/97  
DIRECTOR DATE

*John J. Hamilton* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Conny Hamilton* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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

**SCS ENGINEERS**  
CONSULTING ENGINEERS  
11280 ROGER BACON DRIVE  
SUITE 300  
RESTON, VIRGINIA 22090  
PH. (703) 471-6150  
FAX. (703) 471-6676



DES. RTT, EGC	▲			
DRN. EGC	▲			
CHK. PAM	▲			
DATE: 10-30-97	BY: NO.	REVISION	DATE	

**EROSION & SEDIMENT CONTROL DETAILS**

**ALPHA RIDGE LANDFILL**  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

SCALE:  
AS NOTED  
SHEET  
51 OF 134

3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SDP-97-128

M: 298077.01/FINAL/DETAILS INLETPRO, INLET3D, CE, SD, MATT, SF, SSF ESDT

Section IV - Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

A. General specifications

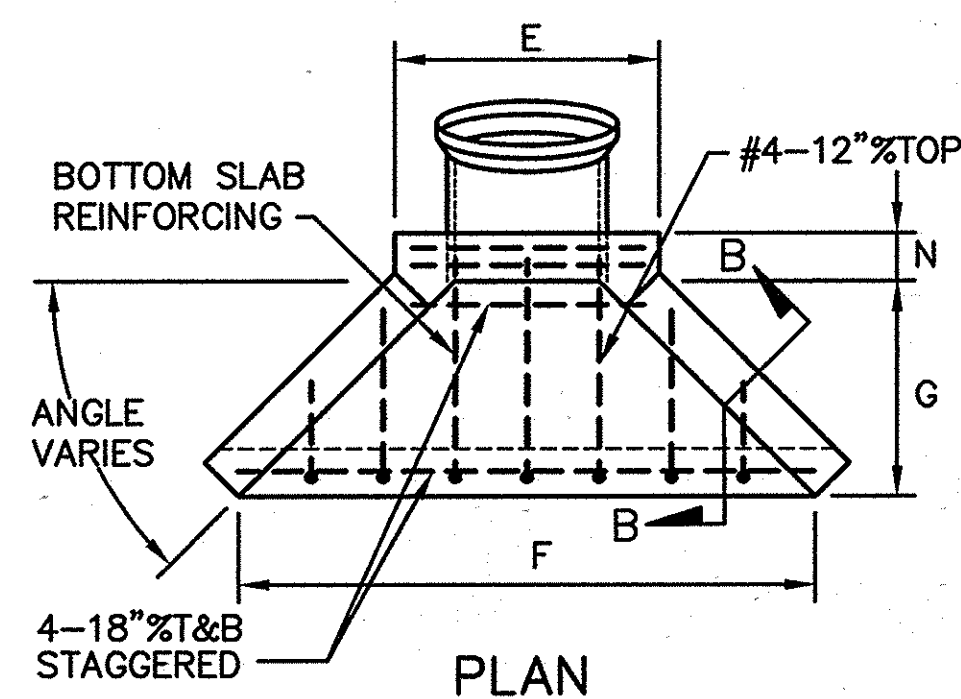
- i. Class of turfgrass sod shall be Maryland or Virginia State Certified or Approved. Sod labels shall be made available to the job foreman and inspector.
- ii. Sod shall be machine cut at a uniform soil thickness of 3/4", plus or minus 1/4", at the time of cutting. Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the suppliers-width and length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable.
- iii. Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
- iv. Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
- v. Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be approved by an agronomist or soil scientist prior to its installation. B. Sod Installation

B: Sod Installation

- i. During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
- ii. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
- iii. Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod roots and the underlying soil surface.
- iv. Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any piece of sod shall be completed within eight hours. C. Sod Maintenance

B: Sod Maintenance

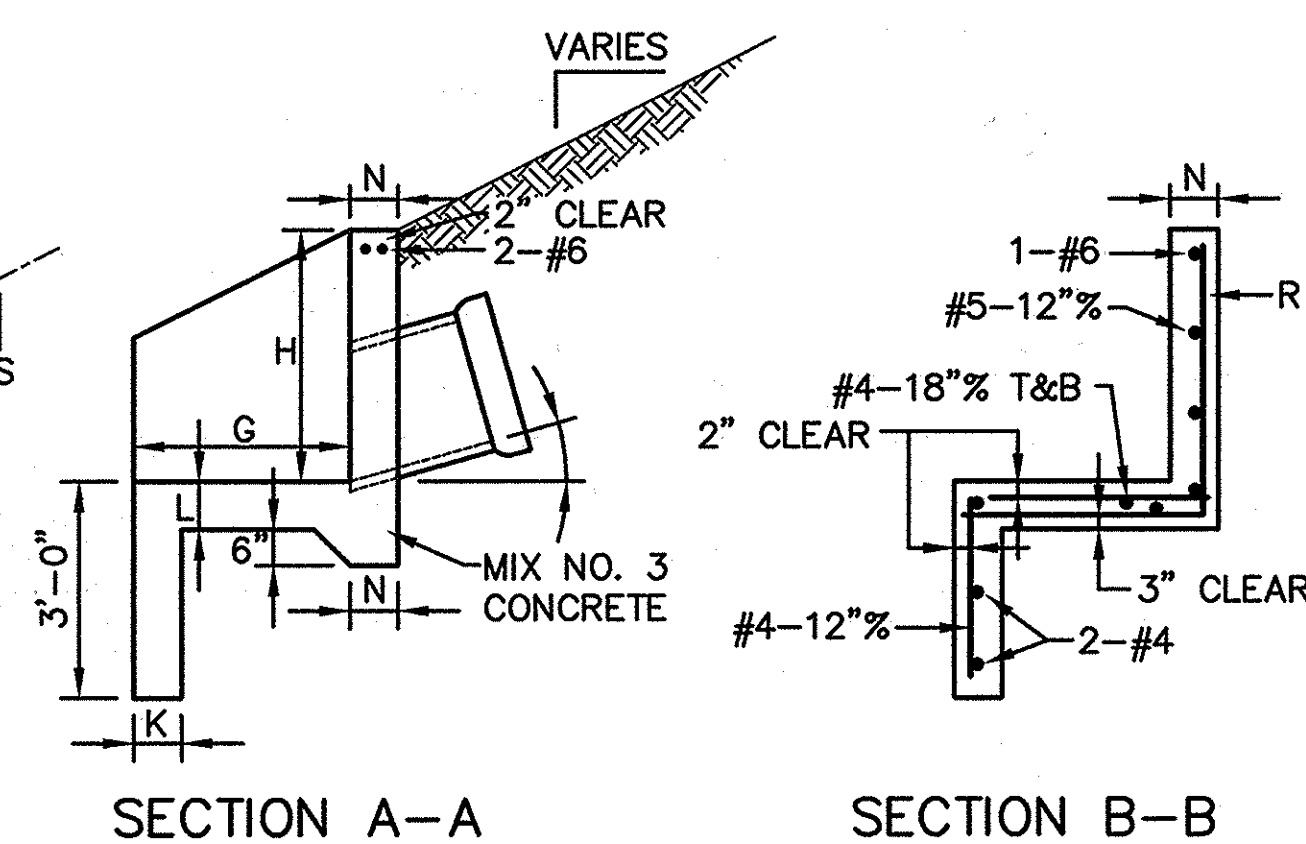
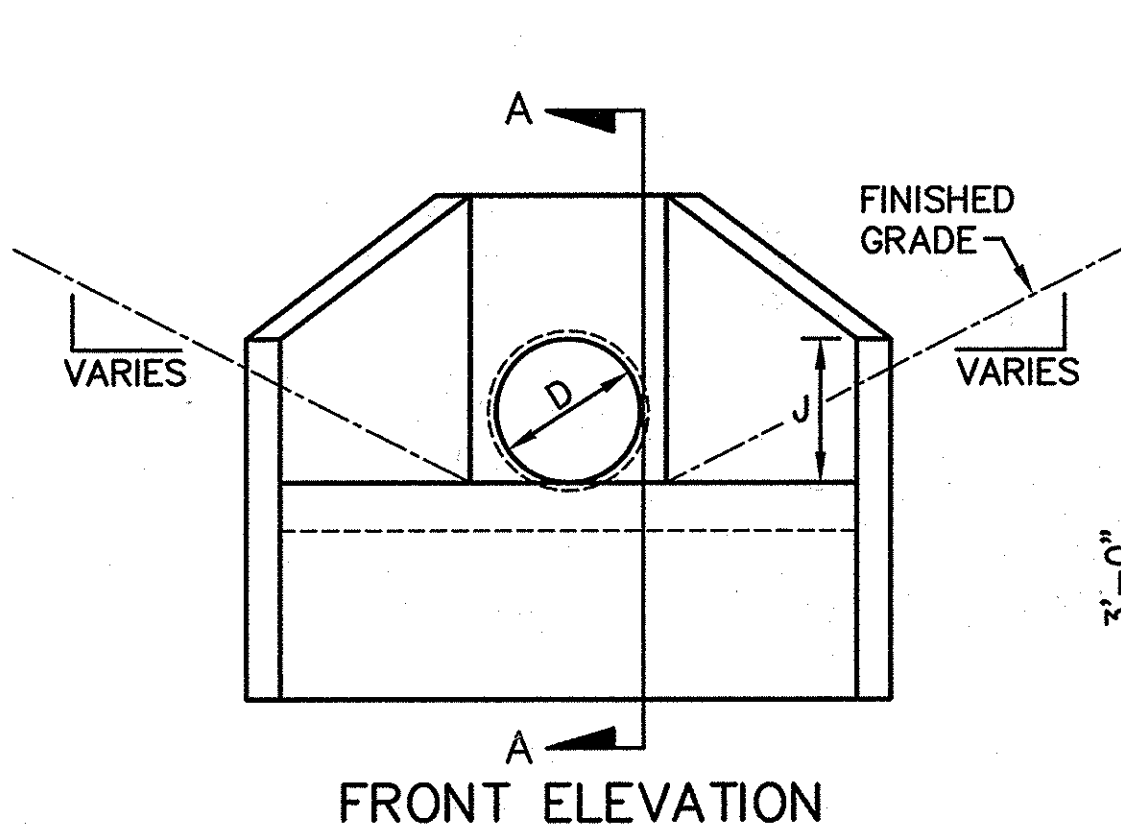
- i. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4". Watering should be done during the heat of the day to prevent wilting.
- ii. After the first week, sod watering is required as necessary to maintain adequate moisture content.
- iii. The first mowing of sod should not be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2" and 3" unless otherwise specified. G-20-10



D	E	F	G	H	J	K	L	N	R	VOL. C.Y.
18"	3'-0"	7'-6"	3'-0"	3'-0"	2'-0"	8"	8"	8"	#5-12"	1.70
24"	3'-8"	8'-0"	3'-0"	3'-6"	2'-0"	8"	8"	8"	#5-12"	1.90
30"	4'-2"	8'-6"	3'-0"	4'-0"	2'-0"±	8"	8"	10"	#5-12"	2.85

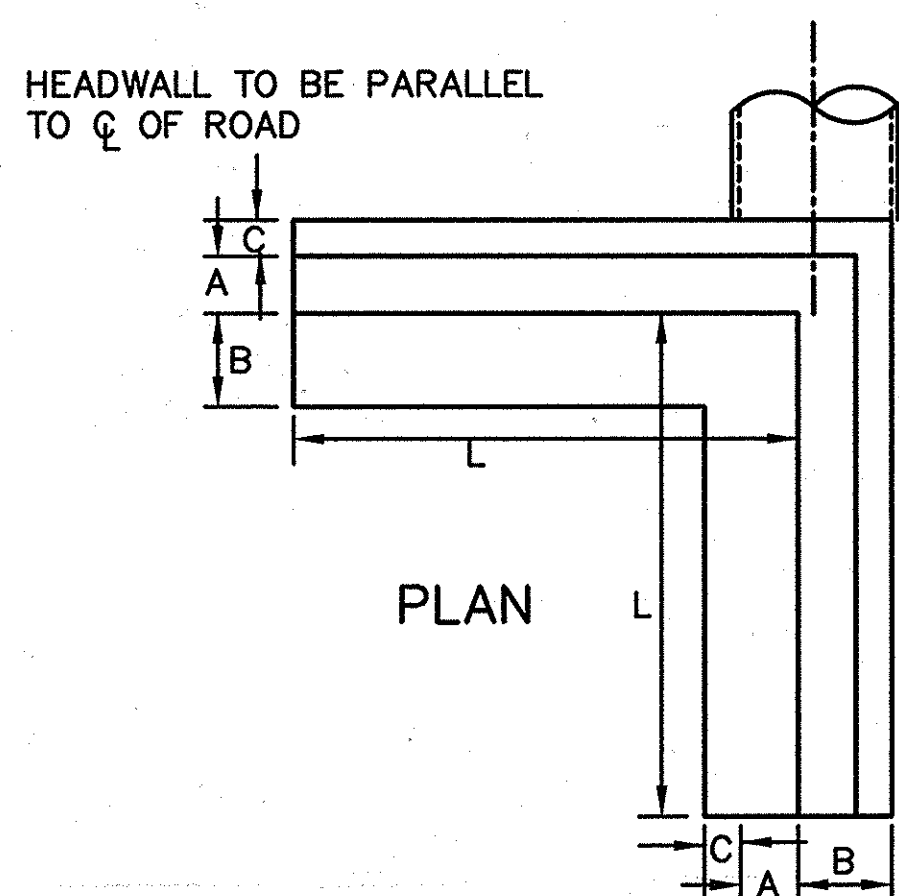
▲ - BASED ON 2:1 CHANNEL SIDE SLOPES AND 45° ANGLE

NOTE:  
CONTRACTOR SHALL PROVIDE  
3"-45° BEVEL AROUND PIPE  
OPENINGS ON UPSTREAM HEADWALLS



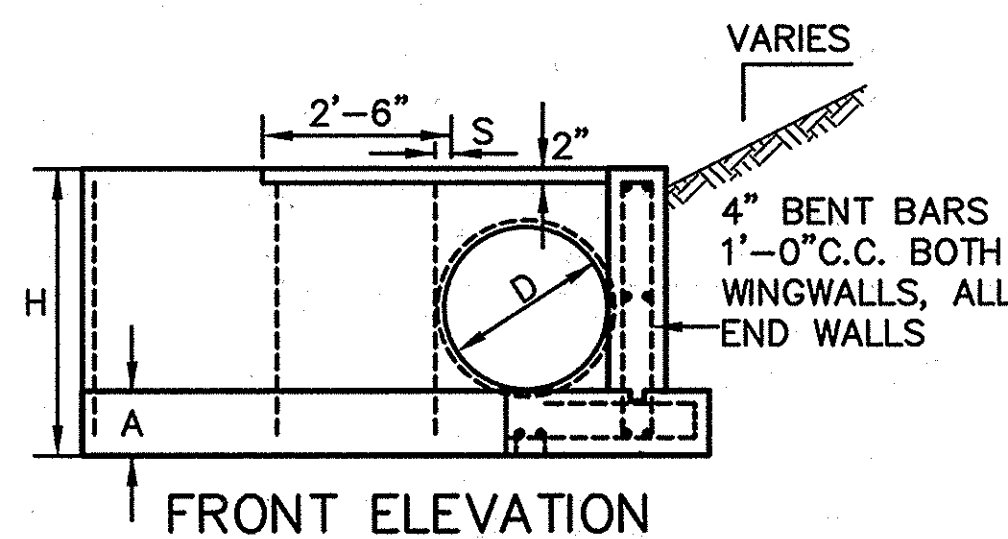
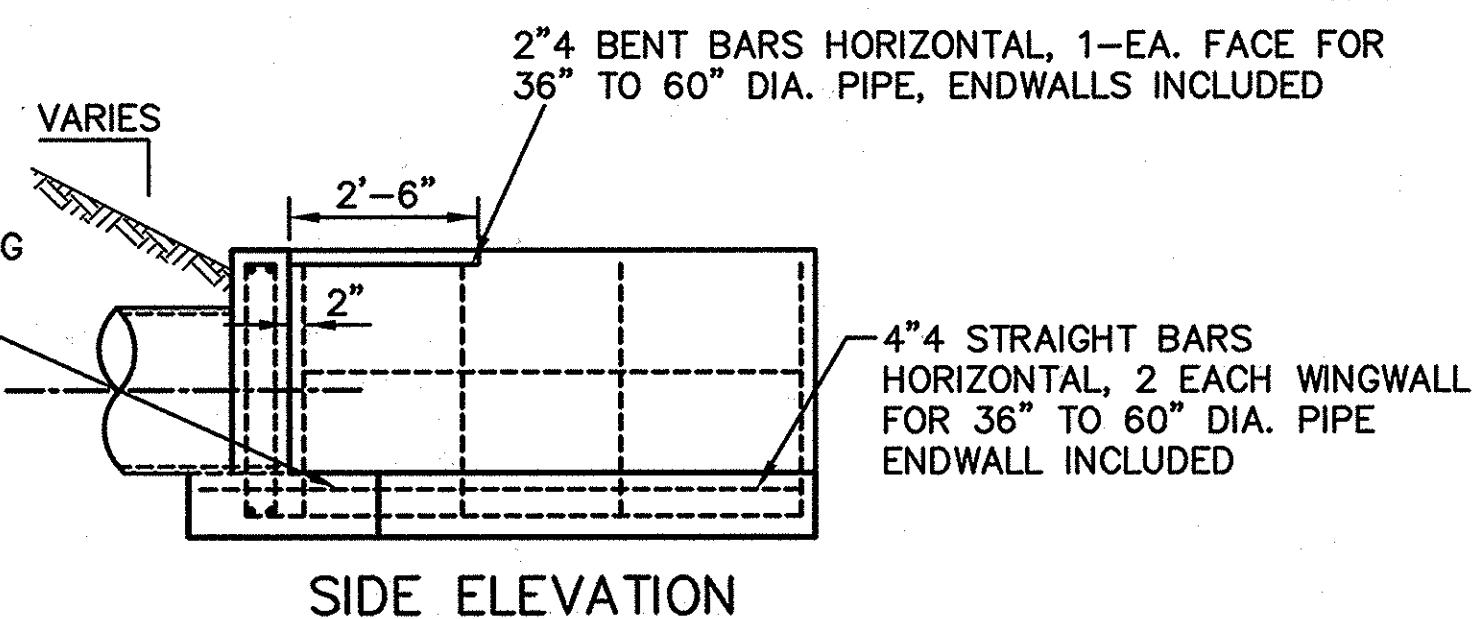
TYPE "A" HEADWALL

PIPE DIA-D	DIMENSIONS					VOL. Con.Cy	STEEL LBS.
	A	B	C	H	L		
12"	9"	6"	6"	1'-9"	3'-6"	0.73	56
15"	9"	6"	6"	2'-0"	4'-3"	0.93	77
18"	9"	6"	6"	2'-3"	5'-0"	1.14	89
24"	9"	14"	6"	2'-9"	6'-6"	1.8	124
30"	9"	14"	6"	3'-6"	8'-0"	2.6	160
36"	12"	16"	10"	4'-0"	9'-6"	5.0	287
42"	12"	16"	10"	4'-6"	11'-0"	6.2	333
48"	12"	16"	10"	5'-0"	12'-6"	7.4	387
54"	12"	20"	12"	5'-6"	14'-0"	9.2	458
60"	12"	20"	12"	6'-0"	15'-6"	9.2	519

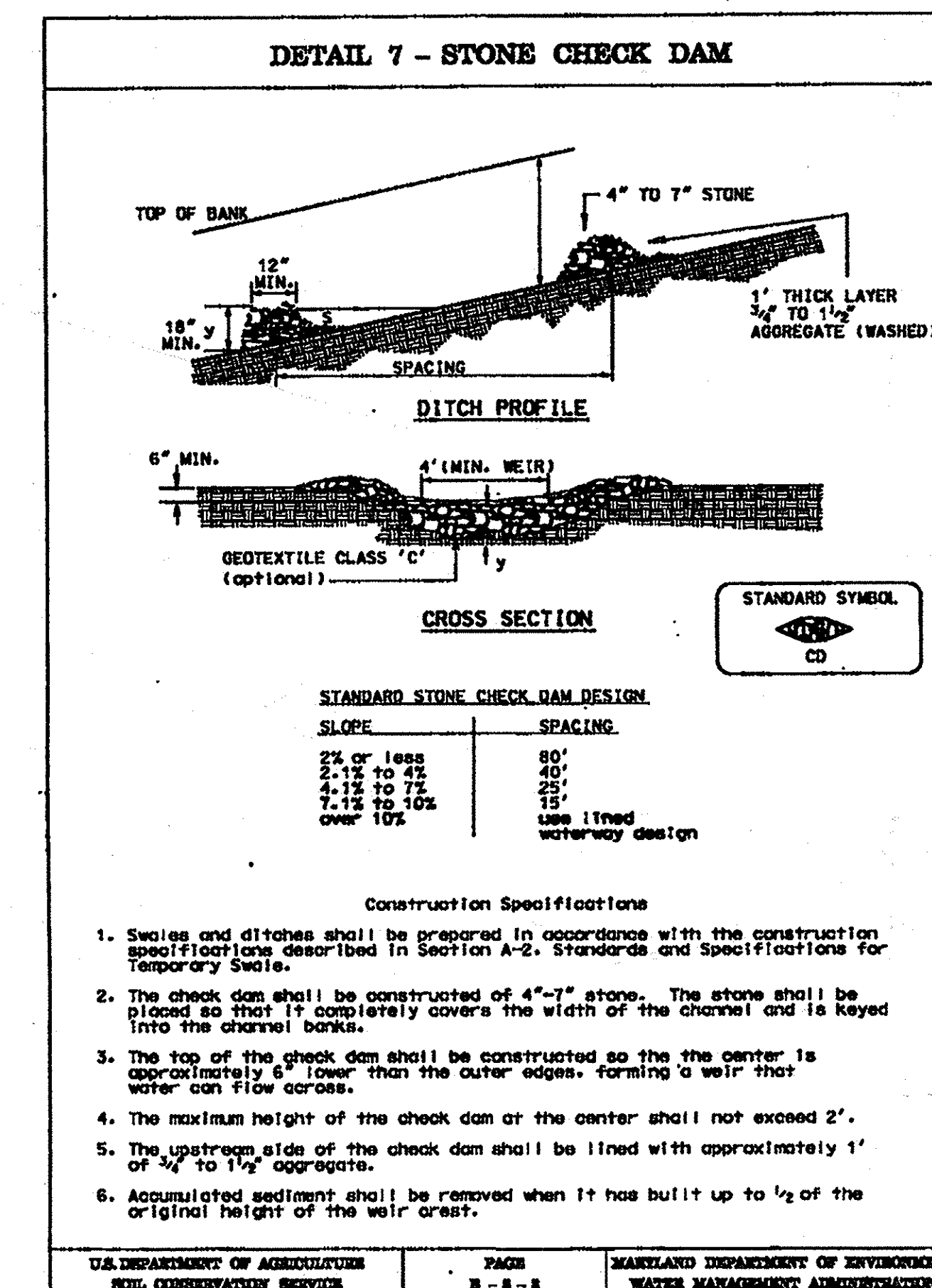


NOTES

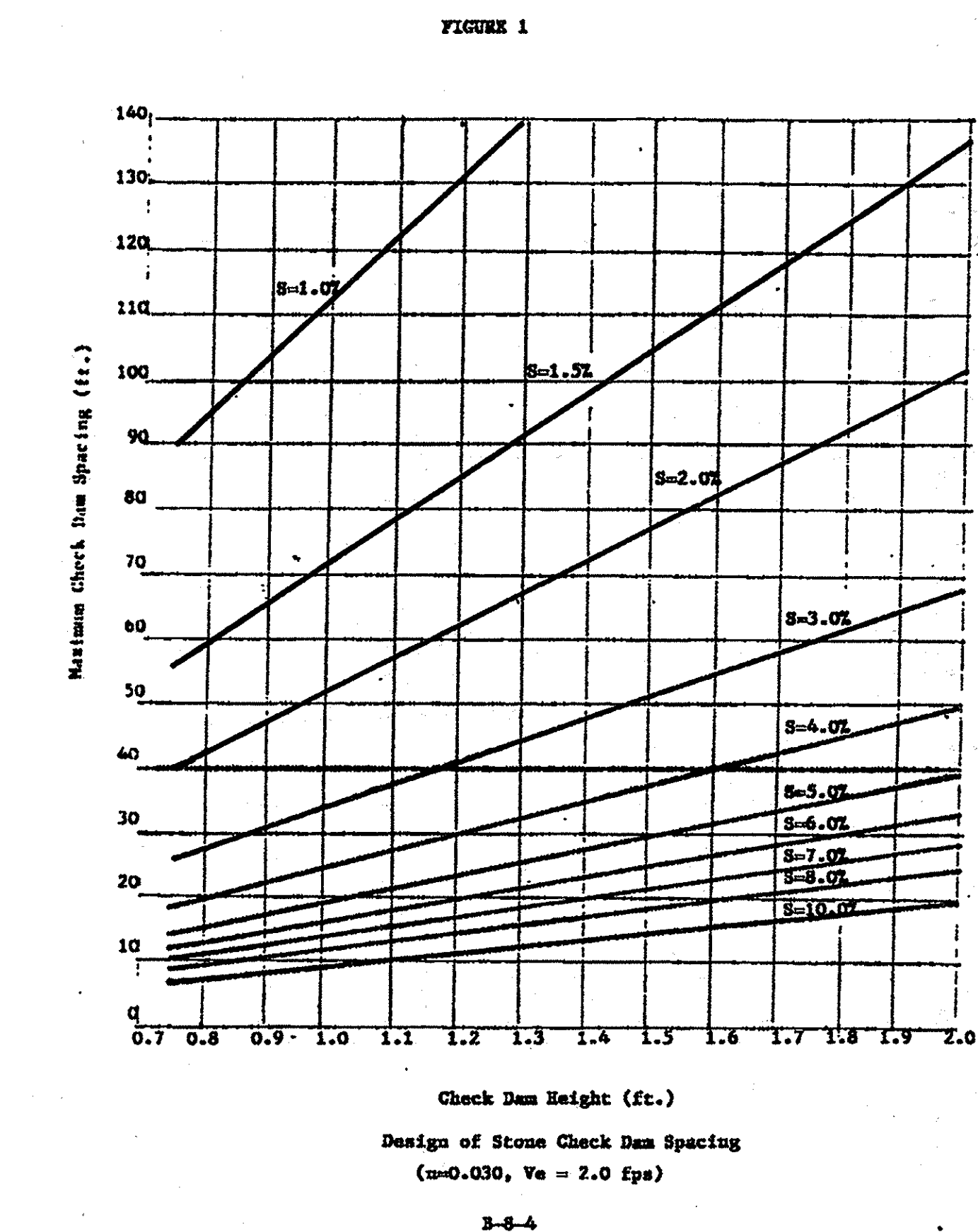
1. CHAMFER ALL EXPOSED EDGES 1" X 1".
2. USE 4" STEEL BARS 1/2"Ø.
3. "S" DISTANCE (INSIDE PIPE SURFACE TO VERTICAL BARS) IS 4" FOR 12" DIA. TO 18" DIA. PIPE INCLUDED, 6" FOR 24" DIA. PIPE INCLUDED, 8" FOR 42" TO 60" DIA. PIPE INCLUDED.
4. SPACE VERTICAL BARS 12" TO 18" MAX. FOR 12" TO 18" DIA. PIPE INCLUDED, 18" MIN. TO 24" TO 60" DIA. PIPE INCLUDED.
5. QUANTITIES IN TABLE FOR ESTIMATING ONLY.
6. CONCRETE TO BE S.H.A. MIX NO. 2.



TYPE "E" HEADWALL



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 8-8-8 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION 1994



SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/808 16-878/215 10-891/314		ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING		SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

Director: *[Signature]* DATE: 11/3/97

Chief, Development Engineering Division: *[Signature]* DATE: 10/30/97

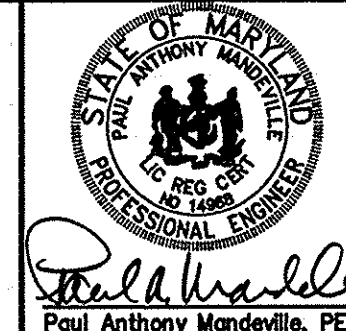
Chief, Division of Land Development: *[Signature]* DATE: 11/5/97

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 10/30/97

Chief, Bureau of Waste Management: *[Signature]* DATE: 10/30/97

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



DES.	RTT, EGC	DRN.	EGC	CHK.	PAM	DATE	10-30-97	BY	NO.	REVISION	DATE
▲		▲		▲							
▲		▲		▲							
▲		▲		▲							
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EROSION & SEDIMENT CONTROL  
AND MISCELLANEOUS DETAILS

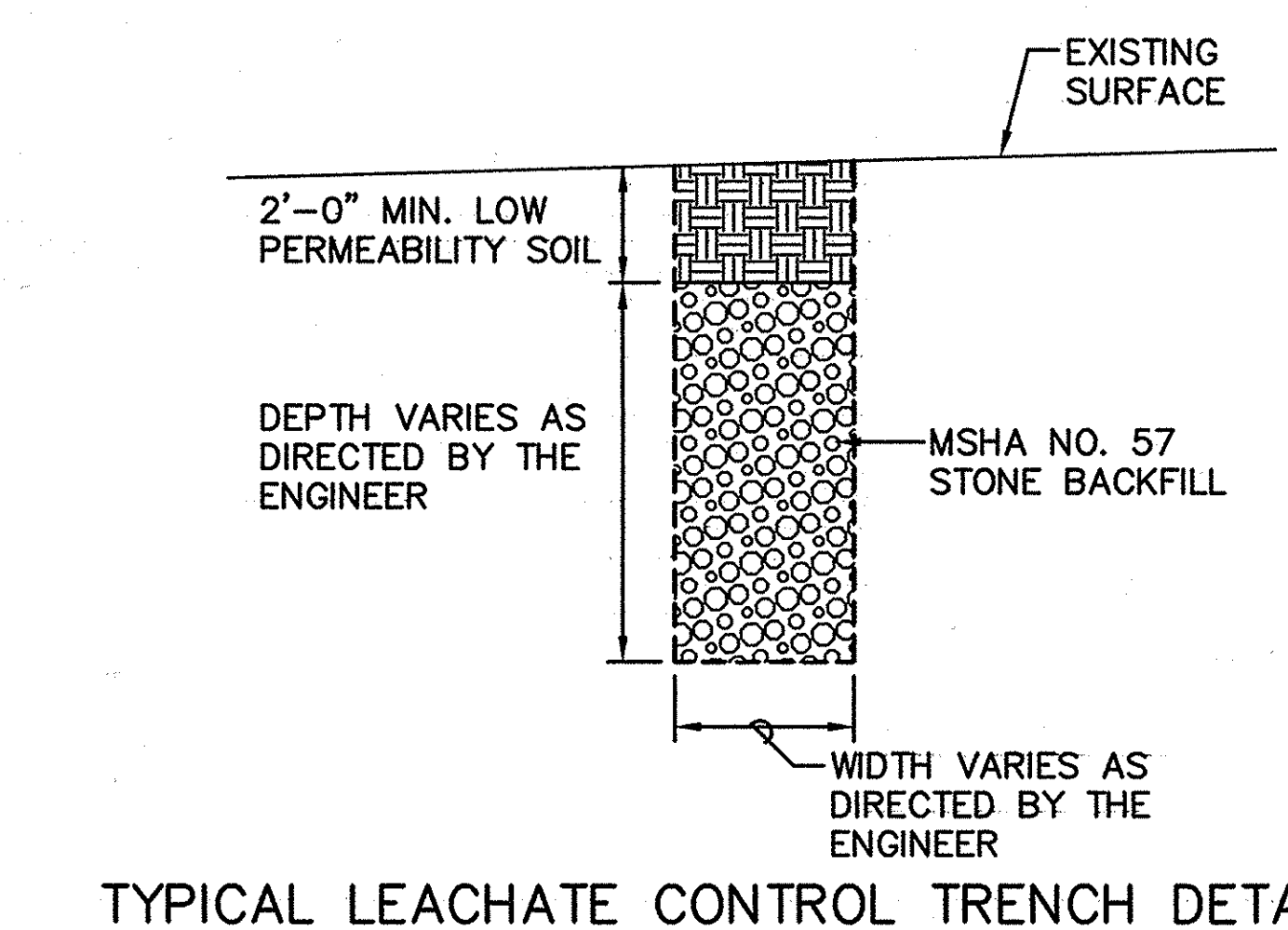
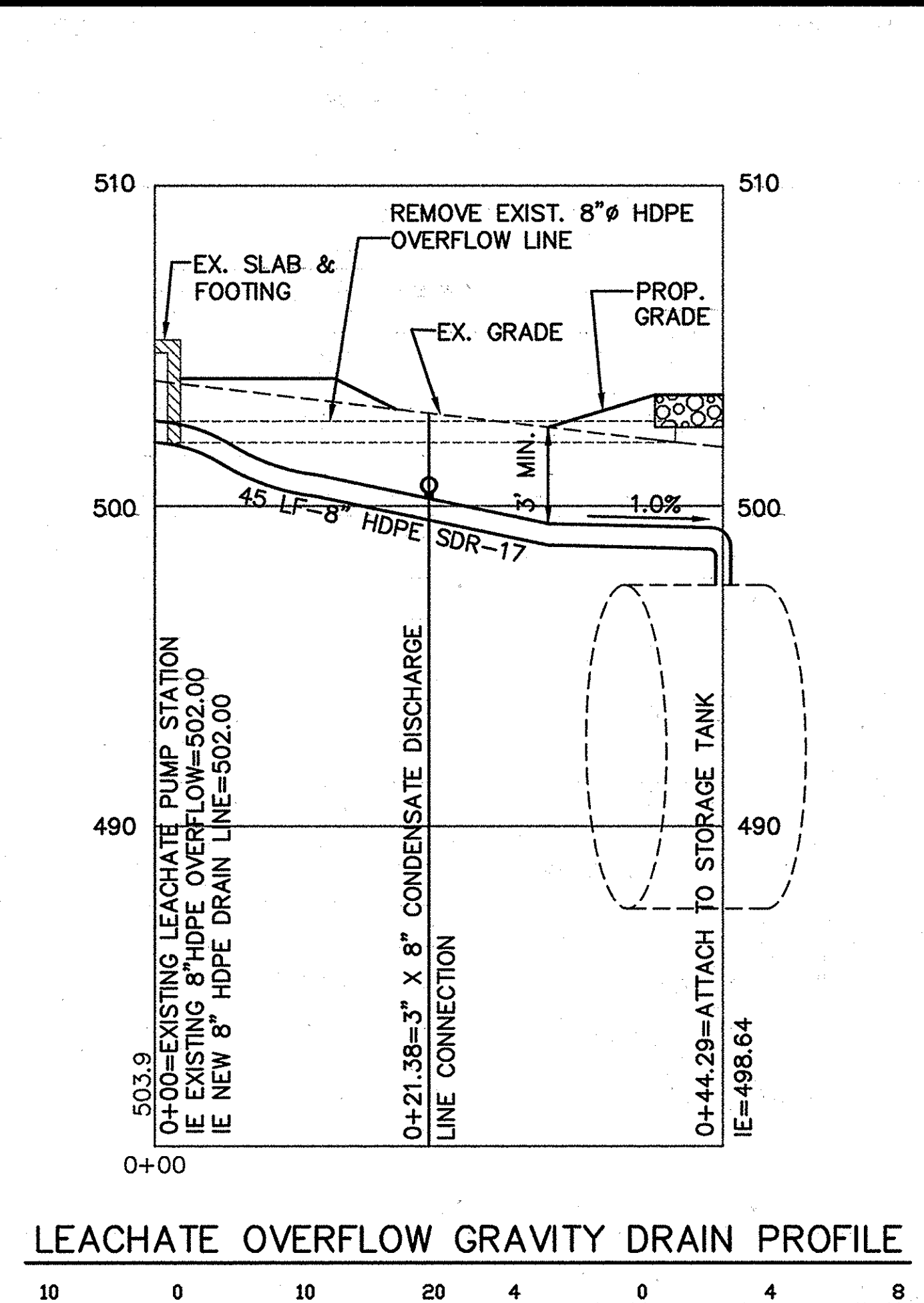
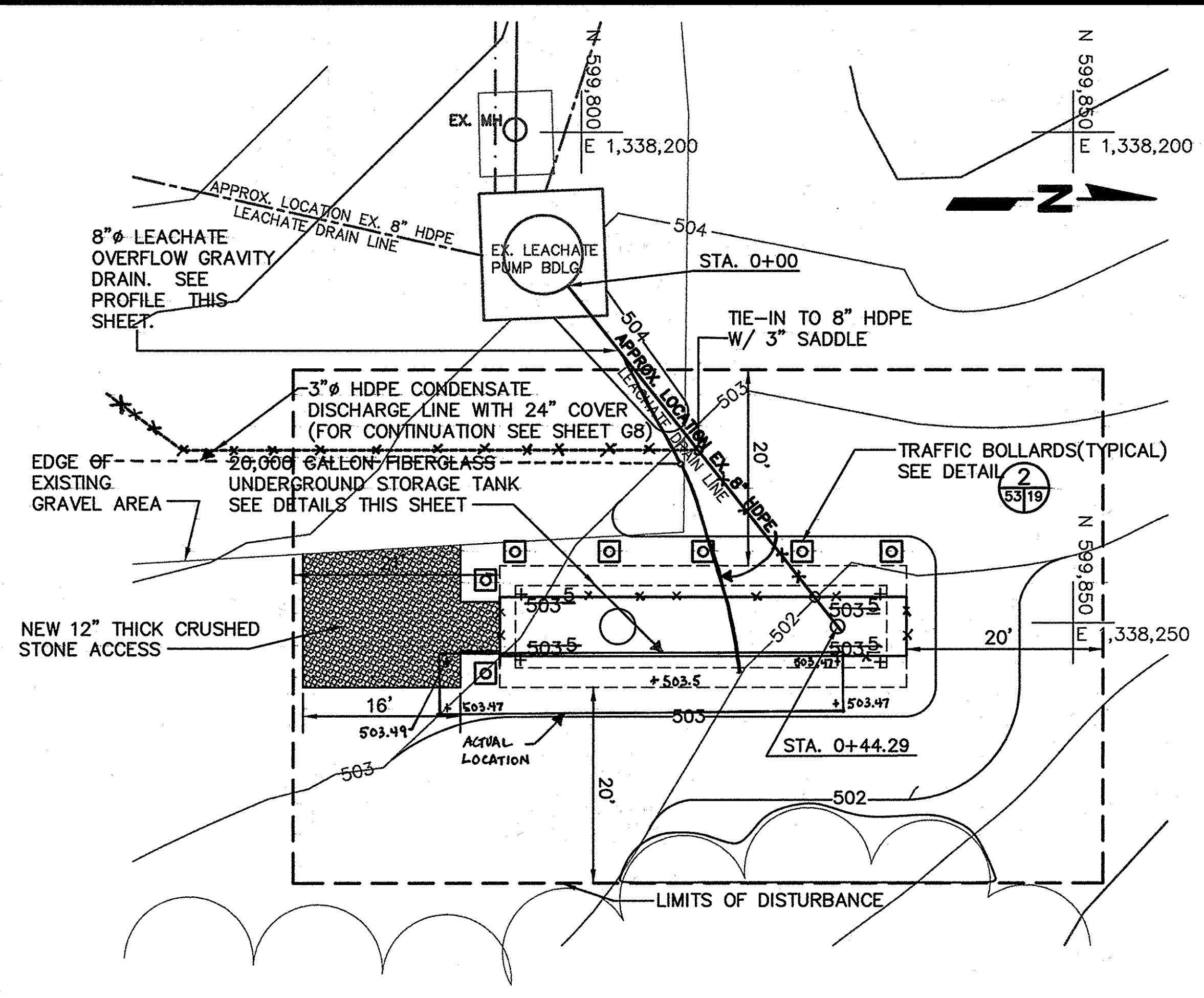
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED

SHEET  
52 of 136

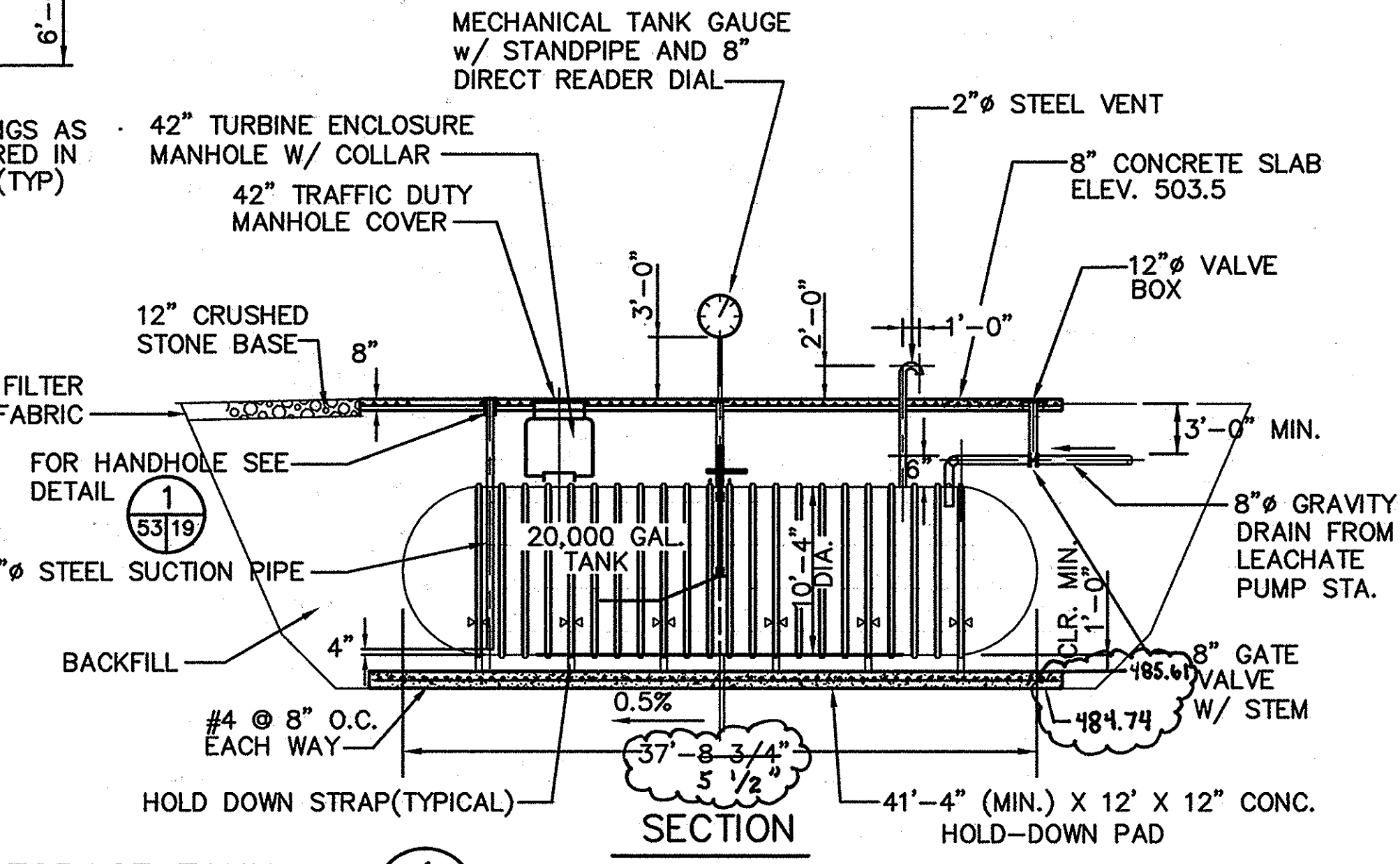
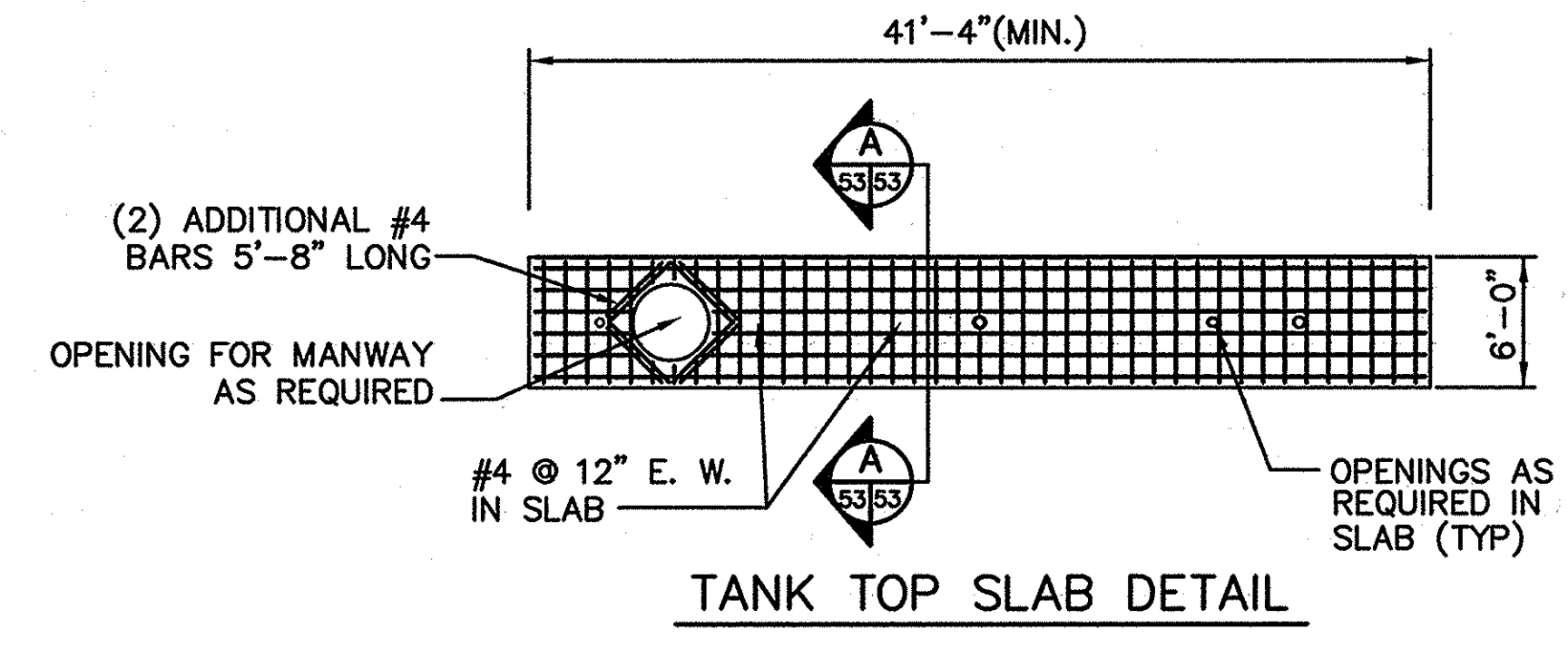
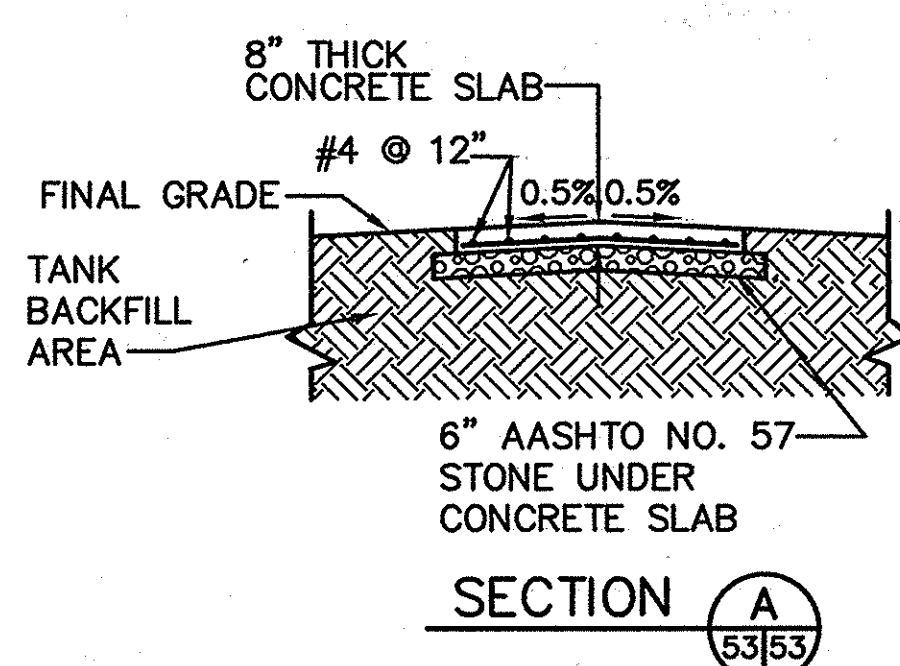
M: 295077.01 FINAL DETAILS TRENCH ESDET1



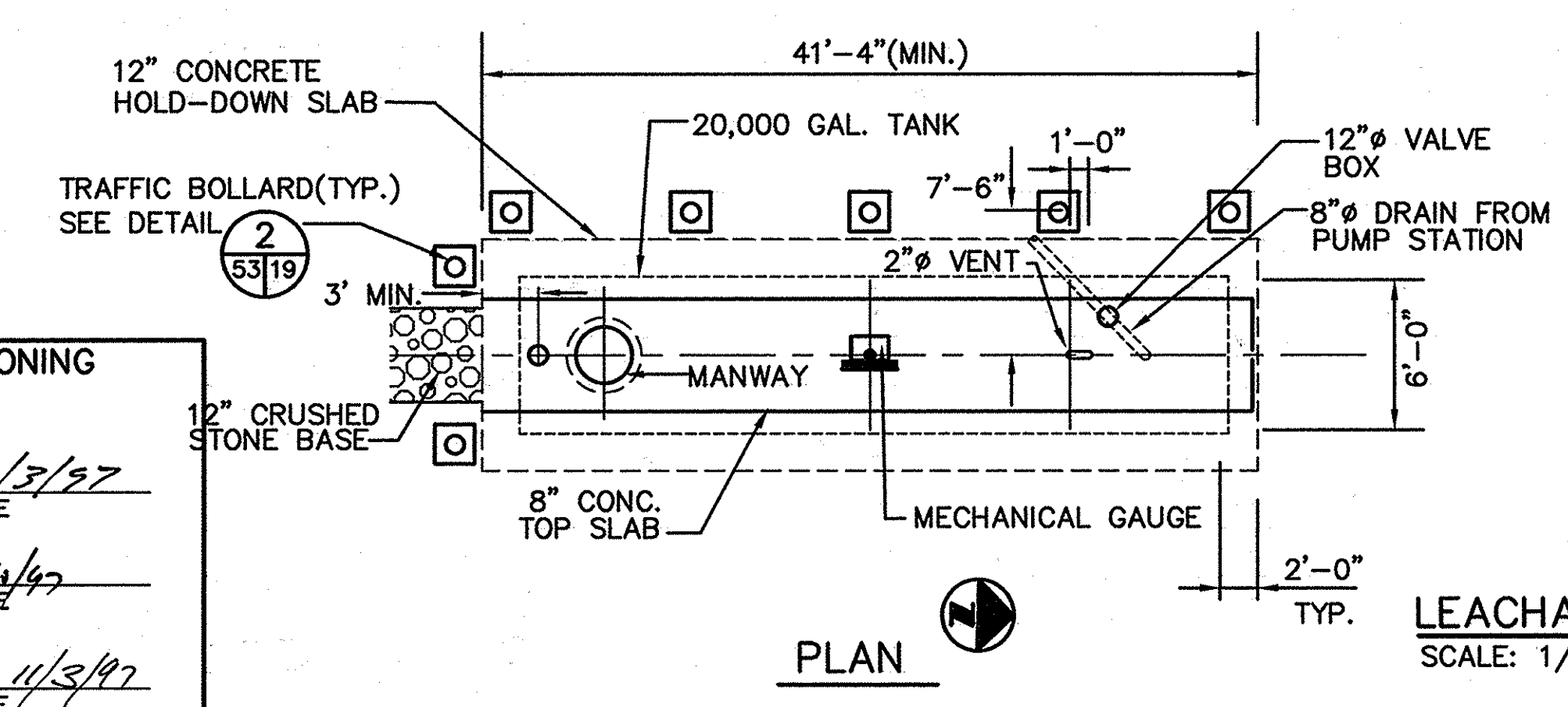
NOTE:  
THIS DETAIL OF CONSTRUCTION WILL BE USED WHEN REQUIRED TO CONTROL LEACHATE FROM ESCAPING TO THE ENVIRONMENT WHEN EXCESSIVE LEACHATE IS ENCOUNTERED DURING CONSTRUCTION. THE TRENCH WILL BE AUTHORIZED BY THE ENGINEER/COUNTY THROUGH A FIELD ORDER. QUANTITIES OF EXCAVATION, GEOTEXTILE, MSHA NO. 57, AND BACKFILL WILL BE PAID FOR BY THE CONTINGENCY UNIT PRICES. ACTUAL DIMENSIONS OF THE LEACHATE CONTROL TRENCH WILL BE SPECIFIED BY THE ENGINEER PRIOR TO CONSTRUCTION.

LEACHATE FACILITY - ENLARGED PLAN  
SCALE: 1" = 10'-0"

LEACHATE OVERFLOW GRAVITY DRAIN PROFILE  
HORIZONTAL SCALE IN FEET: 1" = 20'-0"  
VERTICAL SCALE IN FEET: 1" = 4'-0"



- NOTES:
- UNDERGROUND STORAGE TANK (UST) - PROVIDE 20,000 GALLON DOUBLE WALL FIBERGLASS UST WITH OPENINGS AS INDICATED.
  - THE LOCATION PLACEMENT AND NUMBER OF HOLD DOWN STRAPS SHALL BE AS SPECIFIED BY THE MANUFACTURER.
  - UST BACKFILL SHALL BE AS SPECIFIED BY THE MANUFACTURER.
  - INSTALL THE UST IN ACCORDANCE WITH THE UST MANUFACTURER'S WRITTEN INSTRUCTIONS AND PETROLEUM EQUIPMENT INSTITUTE (PEI) 100-94.
  - CONCRETE SLAB SHALL BE CONSTRUCTED SO A 0.5% SLOPE IS MAINTAINED FROM THE CENTER (HIGH POINT) TO EACH CORNER OF SLAB (LOW POINT).
  - CONCRETE MINIMUM COMPRESSIVE STRENGTH SHALL BE 4,000 PSI AS PER SPECIFICATION 03300 "CONCRETE".
  - FOR ADDITIONAL OPENINGS OR IF OPENING LOCATIONS DIFFER FROM THOSE INDICATED DUE TO TANK MANUFACTURER'S REQUIREMENTS, CONTRACTOR SHALL SUBMIT A REVISED REINFORCING PLAN FOR ENGINEER'S APPROVAL.
  - CONCRETE PAD SHALL BE BROOM FINISHED.



LEACHATE STORAGE TANK  
SCALE: 1/8" = 1'-0"  
SCALE IN FEET: 1" = 8'-0"

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/806 16-878/215 10-891/314	ZONE PEC TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*James R. Butler* 11/3/97  
DIRECTOR DATE

*John J. Hamilton* 11/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

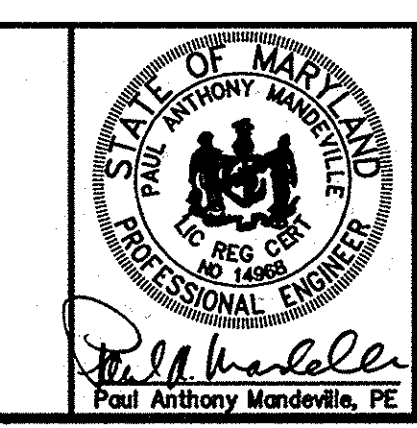
*John J. Hamilton* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John J. Hamilton* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. Hamilton* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES.	RTT,MEH				
DRN.	MEH				
CHK.	PAM				
DATE:	10-30-97	BY:	NO.	REVISION	DATE

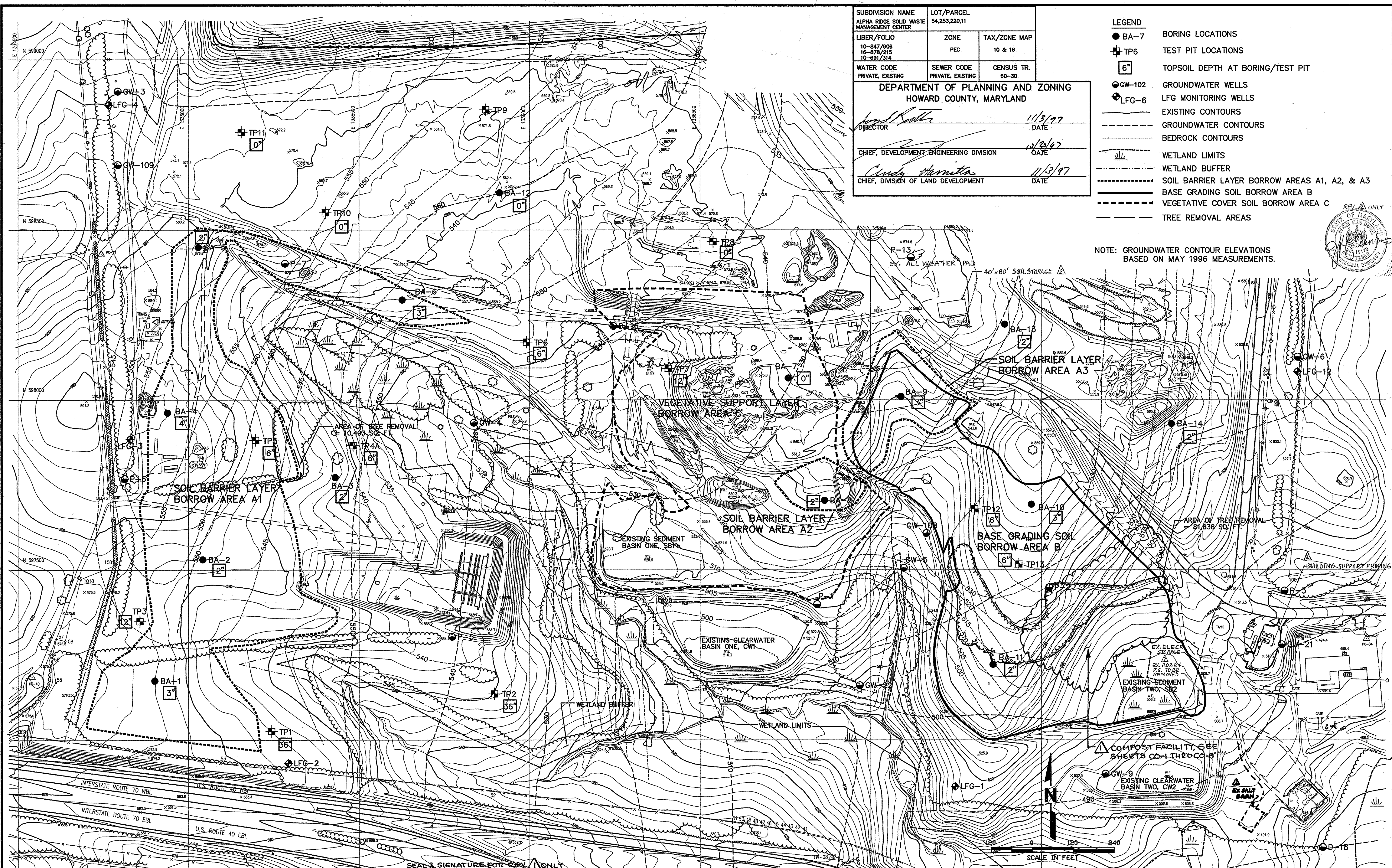
LEACHATE FACILITY LAYOUT AND DETAILS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE: AS NOTED  
SHEET 53 OF 131

M: \295077.01\FINAL PLAN2A.GRAPH202L-TANK2.PSNOTES-2



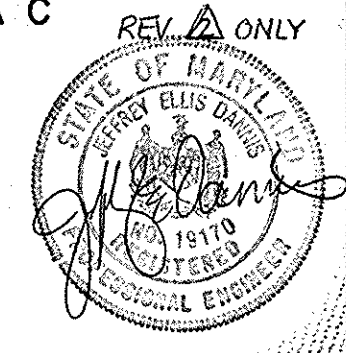
SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/806 16-876/215 10-691/314		ZONE PEC	TAX/ZONE MAP 10 & 18
WATER CODE PRIVATE, EXISTING		SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND		
DIRECTOR	<i>[Signature]</i>	11/3/97 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	<i>[Signature]</i>	12/30/97 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	<i>[Signature]</i>	11/3/97 DATE

- LEGEND**
- BA-7 BORING LOCATIONS
  - ⊕ TP6 TEST PIT LOCATIONS
  - 6" TOPSOIL DEPTH AT BORING/TEST PIT
  - GW-102 GROUNDWATER WELLS
  - LFG-6 LFG MONITORING WELLS
  - EXISTING CONTOURS
  - GROUNDWATER CONTOURS
  - BEDROCK CONTOURS
  - WETLAND LIMITS
  - WETLAND BUFFER
  - SOIL BARRIER LAYER BORROW AREAS A1, A2, & A3
  - BASE GRADING SOIL BORROW AREA B
  - VEGETATIVE COVER SOIL BORROW AREA C
  - TREE REMOVAL AREAS

NOTE: GROUNDWATER CONTOUR ELEVATIONS BASED ON MAY 1996 MEASUREMENTS.



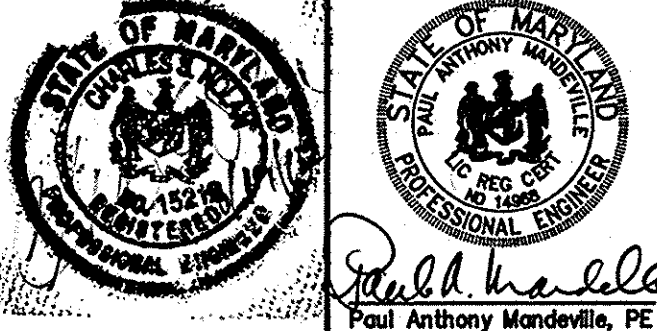
M: 1295077.01 BORROW

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT, EGC	▲		
DRN. EGC	▲		
CHK. PAM	▲		
	JED	ADD EX. STRUCTURES, SUPPORT PARKING	6/9/14
	CSN	ALPHA RIDGE LANDFILL COMPOST FACILITY	3/19/12
DATE: 10-30-97	BY NO.	REVISION	DATE

BORROW AREA EXISTING  
CONDITIONS PLAN

REVISD SDP (JUNE 2014)

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

SCALE: 1"=120'

SHEET 54 OF 131

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND



LOGS-B M:\295077.01\BORINGS TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP10

TEST PIT LOG 1-4

DEPTH (FT)	ELEV.	SAMPLE NUMBER	SYMBOL LOG	DESCRIPTION
1				TOPSOIL & GRASS
2				TOPSOIL, LOAM SOME ROCK (FILL)
3				
4				
5				TAN FINE SAND AND FINE GRAVEL SOME DECOMPOSED ROCK (SP-SM)(NP)
6				
7				
8				
9				
10				
11				
12				SOLID ROCK

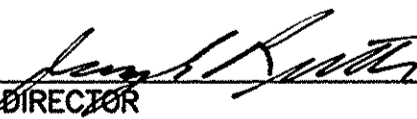
PROJECT NAME: ALPHA RIDGE LANDFILL TEST PIT NO. 1  
CLIENT: HOWARD COUNTY, MD.  
SCS JOB NO.: 295077.01  
DATE: 2-24-97 SURFACE ELEV.: 565.7  
EXCAVATED BY: HOWARD COUNTY COORDINATES: N 587025.799 E 1335243.828  
LOGGED BY: R. BARTOLDUS TOTAL DEPTH: 13

TEST PIT LOG 5-10


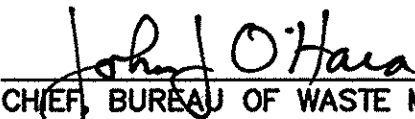
DEPTH (FT)	ELEV.	SAMPLE NUMBER	SYMBOL LOG	DESCRIPTION
1				TOPSOIL & GRASS
2				TOPSOIL
3		5-1		LIGHT BROWN SILTY CLAY (ML)
4				
5		5-2		GRAY FINE SAND (SM)(NP)
6				
7		5-3		TAN FINE TO COARSE SAND, SOME FINE GRAVEL AND WEATHERED ROCK (SM)(NP)
8				
9				
10				ROCK

PROJECT NAME: ALPHA RIDGE LANDFILL TEST PIT NO. 5  
CLIENT: HOWARD COUNTY, MD.  
SCS JOB NO.: 295077.01  
DATE: 2-21-97 SURFACE ELEV.: 577.70  
EXCAVATED BY: HOWARD COUNTY COORDINATES: N 587881.732 E 1335196.830  
LOGGED BY: R. BARTOLDUS TOTAL DEPTH: 12

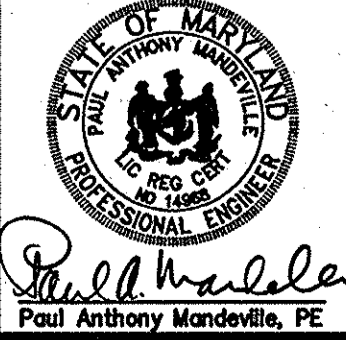
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

 DIRECTOR	DATE: 11/3/97	SUBDIVISION NAME: ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		
CHIEF, DEVELOPMENT ENGINEERING DIVISION		DATE: 11/30/97	LOT/PARCEL: 54,253,220,11	
CHIEF, DIVISION OF LAND DEVELOPMENT		DATE: 11/3/97	LIBER/FOLIO: 10-847/806	ZONE: PEC
			18-878/215	TAX/ZONE MAP: 10 & 16
			10-891/314	
			WATER CODE: PRIVATE, EXISTING	SEWER CODE: PRIVATE, EXISTING
				CENSUS TR.: 60-30

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

 DIRECTOR OF PUBLIC WORKS	DATE: 10/30/97	 CHIEF, BUREAU OF WASTE MANAGEMENT	DATE: 10/30/97
---	----------------	--	----------------

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



DES. EGC, RTT	<input type="checkbox"/>	BY	NO.	REVISION	DATE
DRN. EGC	<input type="checkbox"/>				
CHK. PAM	<input type="checkbox"/>				
DATE: 10-30-97					

BORROW AREA TEST PIT LOGS

ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE CAPITAL PROJECT NO. C-0190-N		SCALE: AS NOTED
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		SHEET 55 OF 131

TEST PIT LOG				
PROJECT NAME: ALPHA RIDGE LANDFILL		TEST PIT NO. 11		
CLIENT: HOWARD COUNTY, MD.		SCS JOB NO.: 285077.01		
DATE: 2-24-97	SURFACE ELEV.: 572.40			
EXCAVATED BY: HOWARD COUNTY	COORDINATES: N 588787.120			
LOGGED BY: R. BARTOLDUS	E 1335154.785			
		TOTAL DEPTH: 13		
DEPTH (FT)	ELEV.	SAMPLE NUMBER	SYMBOL LOG	DESCRIPTION
1				
2				GRAY-BROWN FINE SAND, SILT AND BROKEN ROCK, SOME BOULDERS, SOME ORGANIC BOG, RAGS (FILL)
3				
4				
5				
6				
7				
8				TAN AND GRAY FINE SAND AND SILT, TRACE OF DECOMPOSED ROCK (SM)(NP)
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

TEST PIT LOG				
PROJECT NAME: ALPHA RIDGE LANDFILL		TEST PIT NO. 12		
CLIENT: HOWARD COUNTY, MD.		SCS JOB NO.: 285077.01		
DATE: 2-21-97	SURFACE ELEV.: 542.10			
EXCAVATED BY: HOWARD COUNTY	COORDINATES: N 587879.289			
LOGGED BY: R. BARTOLDUS	E 1337304.636			
		TOTAL DEPTH: 10 FT		
DEPTH (FT)	ELEV.	SAMPLE NUMBER	SYMBOL LOG	DESCRIPTION
1				TOPSOIL
2				
3				
4				
5				RED BROWN SANDY SILT AND CLAY, SOME WEATHERED AND DECOMPOSED ROCK (SM)(NP)
6				
7				
8				
9				WEATHERED ROCK (SHALE)
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

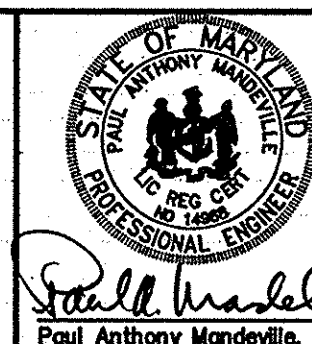
TEST PIT LOG				
PROJECT NAME: ALPHA RIDGE LANDFILL		TEST PIT NO. 13		
CLIENT: HOWARD COUNTY, MD.		SCS JOB NO.: 285077.01		
DATE: 2-21-97	SURFACE ELEV.: 545.40			
EXCAVATED BY: HOWARD COUNTY	COORDINATES: N 587516.920			
LOGGED BY: R. BARTOLDUS	E 1337434.084			
		TOTAL DEPTH: 9 FT		
DEPTH (FT)	ELEV.	SAMPLE NUMBER	SYMBOL LOG	DESCRIPTION
1				TOPSOIL
2				
3				
4				
5				ORANGE BROWN CLAY, SOME SILT (SM)
6				
7				
8				RED BROWN SANDY SILT AND CLAY, SOME ROCK (SM)(NP)
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

M:\285077.01\BORINGS TP11, TP12, TP13

LOGS1-B

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND			
DIRECTOR	DATE	SUBDIVISION NAME	LOT/PARCEL
<i>James P. Smith</i>	11/3/97	ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220,11
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	LIBER/FOLIO	ZONE TAX/ZONE MAP
<i>Chris Hamilton</i>	11/3/97	10-847/606 16-878/215 10-691/314	PEC 10 & 16
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	WATER CODE	SEWER CODE CENSUS TR.
		PRIVATE, EXISTING	PRIVATE, EXISTING 60-30

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	
DIRECTOR OF PUBLIC WORKS	DATE	CHIEF, BUREAU OF WASTE MANAGEMENT	DATE
<i>James P. Smith</i>	10/30/97	<i>John J. O'Hara</i>	10/30/97



DES. EGC, RTT			
DRN. EGC			
CHK. PAM			
DATE: 10-30-97	BY	NO.	REVISION

BORROW AREA  
TEST PIT LOGS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED  
SHEET  
56 OF 131

SDP-974728

Client: Howard County, MD  
Location: Alpha Ridge Landfill  
Date Drilled: 5/7/98  
Drilled by: Robert B. Balter Co., Inc.

Surface Elevation: 67.4 ft. MSL  
Coordinates: N 58774.8; E 133490.1  
Total borehole depth: 20.5 ft.  
Logged by: J. Stoffel

**BORING LOG BA-1**  
Project No: 0295077.01

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
5		S-1 45		2-2-3-8			Dark brown clayey SILT - 3" Topsoil
		S-2 80		11-11-14-15			Yellowish-brown-red, highly plastic clayey SILT, trace of fine sand, silty, moist (SM)
		S-3 50		4-5-9-10			Same - slightly moist
		S-4 55		9-9-11-14			Brownish-yellow, silty, fine to coarse SAND, trace of clay, silty, moist (SM)
		S-5 25		6-6-7-7			Same - orange-brown
10	564.0						
15		S-6 45		8-8-9			Orange-brown-gray-black, silty, very fine SAND, silty, trace of weathered rock, very moist (SM)
20	554.0	S-7 100		28-38-40			Same - very fine to coarse SAND, weathered rock (SM)

Page 1 of 1

Client: Howard County, MD  
Location: Alpha Ridge Landfill  
Date Drilled: 5/8/98  
Drilled by: Robert B. Balter Co., Inc.

Surface Elevation: 67.4 ft. MSL  
Coordinates: N 587530.7; E 1335041.9  
Total borehole depth: 20.5 ft.  
Logged by: J. Stoffel

**BORING LOG BA-2**  
Project No: 0295077.01

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
5		S-1 45		1-3-3-7			Brown clayey SILT - 2" Topsoil with 2.5% organic matter
		S-2 50		20-15-15-18			Yellowish-brown-red, highly plastic clayey SILT, trace of fine sand, dry (SM)
		S-3 25		8-8-8-9			Same - silty
		S-4 85		9-11-11-14			Brownish-yellow, silty, very fine to medium SAND, silty, moist (SM)
		S-5 35		5-8-8-8			Same - orange-brown
10	564.0						
15		S-6 5	50/2				Same - brown-gray-orange-black, silty, trace of weathered rock fragments, moist (SM)
20	554.0	S-7 25		23-8-18			Same - very fine to coarse SAND, weathered rock, wet (SM)

Page 1 of 1

Client: Howard County, MD  
Location: Alpha Ridge Landfill  
Date Drilled: 5/8/98  
Drilled by: Robert B. Balter Co., Inc.

Surface Elevation: 68.5 ft. MSL  
Coordinates: N 587772.3; E 1335428.9  
Total borehole depth: 18.5 ft.  
Logged by: J. Stoffel

**BORING LOG BA-3**  
Project No: 0295077.01

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
5		S-1 45		3-4-6-10			Brown silty SAND - 2" Topsoil with 3.1% organic matter
		S-2 50		7-8-12-7			Brown, silty, very fine to medium SAND (SM)
		S-3 25		6-5-8-21			Same - orange-brown, very fine to coarse SAND, silty, moist (SM)
		S-4 85		8-5-8-35			Same - with fine gravel (SM)
		S-5 35		7-4-4-8			Same - no gravel
10	555.0						
15		S-6 5		10-14-14			Same - green-brown, silty, fine to medium SAND, silty, moist (SM)
20	545.0	S-7 25		12-15-18			Same - orange-brown-black, mottled, wet (SM)

Page 1 of 1

Client: Howard County, MD  
Location: Alpha Ridge Landfill  
Date Drilled: 5/8/98  
Drilled by: Robert B. Balter Co., Inc.

Surface Elevation: 68.8 ft. MSL  
Coordinates: N 587961.8; E 1334938.9  
Total borehole depth: 20.0 ft.  
Logged by: J. Stoffel

**BORING LOG BA-4**  
Project No: 0295077.01

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
5		S-1 35		1-4-5-8			Brown-red clayey sandy SILT (SM) - 4" Topsoil with 1.8% organic matter
		S-2 5		10-12-12-12			Brown-orange-red, highly plastic clayey sandy SILT, slightly moist (SM)
		S-3 80		3-3-7-8			Yellow-brown, silty SAND, silty, moist (SM)
		S-4 30		8-9-9-7			Same - yellow-brown-black
		S-5 60		4-5-8-7			Same - red-orange
10	578.0						
15		S-6 0		5-10-12			Same - yellow-black-gray, very fine SAND (SM)
20	568.0	S-7 70		27-50/5			Same - yellow-brown-black

Page 1 of 1

Client: Howard County, MD  
Location: Alpha Ridge Landfill  
Date Drilled: 5/7/98  
Drilled by: Robert B. Balter Co., Inc.

Surface Elevation: 68.2 ft. MSL  
Coordinates: N 588448.7; E 1335028.1  
Total borehole depth: 20.5 ft.  
Logged by: J. Stoffel

**BORING LOG BA-5**  
Project No: 0295077.01

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
5		S-1 30		2-7-9-12			Brown sandy SILT - 2" Topsoil with 4.2% organic matter
		S-2 50		13-12-18-12			Orange-brown, highly plastic clayey SILT, trace of very fine sand, dry (SM)
		S-3 25		6-5-7-7			Brownish-orange, silty, fine SAND, silty, moist (SM)
		S-4 40		7-7-7-6			Same - orange-brown
		S-5 30		4-4-4-8			Same - orange-brown
10	572.0						
15		S-6 50		12-9-7			Same - orange-brown, very fine to medium SAND, wet (SM)
20	562.0	S-7 100		15-28-40			Same - trace of weathered rock, very fine to coarse SAND, weathered rock (SM)

Page 1 of 1

Client: Howard County, MD  
Location: Alpha Ridge Landfill  
Date Drilled: 5/7/98  
Drilled by: Robert B. Balter Co., Inc.

Surface Elevation: 55.8 ft. MSL  
Coordinates: N 588283.8; E 1335826.4  
Total borehole depth: 10.0 ft.  
Logged by: J. Stoffel

**BORING LOG BA-6**  
Project No: 0295077.01

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
5		S-1 50		2-8-8-18			Dark brown clayey SILT (SM) - 3" Topsoil with 2.5% organic matter
		S-2 30		11-12-12-18			Orange-brown, highly plastic sandy SILT, trace of coarse sand, dry (SM)
		S-3 40		4-5-7-8			Orange-brown-red, clayey, very fine to medium SAND, slightly moist (SM)
		S-4 80		6-6-5-8			Orange-brown, silty, very fine SAND, silty, moist, silty, trace of coarse gravel (SM)
		S-5 75		6-7-10-12			Same - wet, trace of weathered rock
10	548.0						
15							
20	538.0						

Page 1 of 1

Client: Howard County, MD  
Location: Alpha Ridge Landfill  
Date Drilled: 5/8/98  
Drilled by: Robert B. Balter Co., Inc.

Surface Elevation: 59.7 ft. MSL  
Coordinates: N 588084.3; E 1338758.8  
Total borehole depth: 20.5 ft.  
Logged by: J. Stoffel

**BORING LOG BA-7**  
Project No: 0295077.01

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
5		S-1 30		9-9-9-23			Brown silty, fine SAND, some cobbles, silty, moist (SM)
		S-2 10		10-11-9-10			Same - orange-red-brown, slightly moist
		S-3 15		7-9-5-5			Same - orange-red-brown, slightly moist
		S-4 50		4-5-4-3			Orange-gray, silty, fine to coarse SAND, trace of gravel, silty, moist (SM)
		S-5 25		10-11-12-12			Same - wet, trace of weathered rock
10	557.0						
15		S-6 50		8-10-11			Same - yellow-brown, trace of weathered rock, dry (SM)
20	547.0	S-7 80		10-12-15			Boring Terminated at 20.5 feet Notes: Water Level at 24 hours: dry Caved in at 24 hours: 12.5' Bulk samples taken at 9-12" (F8)

Page 1 of 1

Client: Howard County, MD  
Location: Alpha Ridge Landfill  
Date Drilled: 5/8/98  
Drilled by: Robert B. Balter Co., Inc.

Surface Elevation: 65.0 ft. MSL  
Coordinates: N 587704.3; E 1338884.7  
Total borehole depth: 18.2 ft.  
Logged by: J. Stoffel

**BORING LOG BA-8**  
Project No: 0295077.01

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
5		S-1 25		1-3-3-8			Brown sandy SILT, slightly moist, 2" Topsoil with 2.5% organic matter
		S-2 40		9-7-5-5			Brown sandy highly plastic SILT, moist (SM)
		S-3 30		3-4-4-8			Same - brown-orange, moist
		S-4 65		8-5-8-18			Orange-brown, poorly-graded, silty fine SAND, silty, moist (SM)
		S-5 40		14-5-7-9			Same - orange-brown-black, trace of weathered rock, dry
10	540.0						
15		S-6 100		50/4			Same - orange-gray, weathered rock (SM)
20	530.0						Boring Terminated at 18.2 feet Notes: Water Level at 24 hours: dry Caved in at 24 hours: 10.7' Bulk samples taken at 2-4" (F2), 11-8" (F2)

Page 1 of 1

Client: Howard County, MD  
Location: Alpha Ridge Landfill  
Date Drilled: 5/8/98  
Drilled by: Robert B. Balter Co., Inc.

Surface Elevation: 55.0 ft. MSL  
Coordinates: N 588010.0; E 1337088.9  
Total borehole depth: 20.5 ft.  
Logged by: J. Stoffel

**BORING LOG BA-9**  
Project No: 0295077.01

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
5		S-1 30		2-2-3-4			Brown clayey SILT, moist, 3" Topsoil, 5.1% organic matter
		S-2 80		5-5-10-8			Brown-red, highly plastic clayey SILT, silty, moist (SM)
		S-3 65		4-4-6-8			Red-brown silty, fine to medium SAND, silty, moist (SM)
		S-4 70		7-7-8-14			Same - brown-orange, trace of weathered rock (SM)
		S-5 100		50/4			Same - brown-orange, weathered rock, silty, moist (SM)
10	540.0						
15		S-6 70		18-24-28			Same - weathered rock, very moist (SM)
20	530.0	S-7 600		17-18-23			Boring Terminated at 20.5 feet Notes: Water Level at 24 hours: dry Caved in at 24 hours: 14.3' Bulk samples taken at 4-7" (F1), 7-8" (F2), and 14-18" (F3)

Page 1 of 1

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.	AST	BY	NO.	REVISION	DATE

BORROW AREA  
BORING LOGS

ALPHA RIDGE LANDFILL  
CELL CLOSURE  
CAPITAL PROJECT NO. C-0190

1st ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:  
NO SCALE  
- SHEET  
57 OF 128

SDP-97-128

Client: Howard County, MD Surface Elevation: 656 ft. MSL BORING LOG BA-10  
Location: Alpha Ridge Landfill Coordinates: N 89°09.3', E 133°17'0.5" Project No: 0295077.01  
Date Drilled: 5/9/98 Total borehole depth: 20.5 ft.  
Drilled by: Robert B. Balter Co., Inc. Logged by: J. Stoffel

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
		S-1 30	1-2-2-3				Brown clayey SAND (SC) - 3" Topsoil with 4.3% organic matter
		S-2 40	3-3-5-3				Orange-brown clayey fine to medium SAND, silty, silty, silty (SC)
		S-3 30	3-3-4-5				Sand - dry
		S-4 45	4-4-5-5				Red-brown, silty, fine to medium SAND, dry, silty, trace of weathered rock (SM)
	645.0	S-5 30	5-5-4-6				Brown gray-white, silty, very fine to medium SAND, silty, trace of weathered rock (SM)
		S-6 80	12-18-25				Sand - orange-white
		S-7 80	20-18-14				

Boring Terminated at 20.5 feet  
Notes: Water Level at 24 hours: dry  
Caved in at 24 hours: 15.3'  
Bulk samples taken at 2'-4" (#22), 4'-8" (#23), 14'-0" (#24)

Page 1 of 1

Client: Howard County, MD Surface Elevation: 636 ft. MSL BORING LOG BA-11  
Location: Alpha Ridge Landfill Coordinates: N 89°22.2' E 133°35.3" Project No: 0295077.01  
Date Drilled: 5/9/98 Total borehole depth: 19.3 ft.  
Drilled by: Robert B. Balter Co., Inc. Logged by: J. Stoffel

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
		S-1 40	2-3-4-5				Brown silty fine to medium SAND, moist - 2" topsoil (SM)
		S-2 100	8-12-12-21				Orange-brown silty fine SAND, silty, silty (SM)
		S-3 40	8-12-21-19				Sand - dry
		S-4 60	14-18-11-18				Brown-orange-white silty, fine SAND, rock fragments, silty, dry (SP-3M)
	625.0	S-5 100	35-50/2				Sand - Dark gray-white, weathered rock (SM)
		S-6 80	4-8-9				Sand - yellow-brown-black, weathered rock, slightly moist (SM)
		S-7 100	50/4				

Boring Terminated at 19.3 feet  
Notes: Water Level at 24 hours: dry  
Caved in at 24 hours: 14.7'  
Bulk samples taken at 2'-4" (#22), 4'-8" (#23), 14'-0" (#24)

Page 1 of 1

Client: Howard County, MD Surface Elevation: 682 ft. MSL BORING LOG BA-12  
Location: Alpha Ridge Landfill Coordinates: N 89°09.3', E 133°39.1" Project No: 0295077.01  
Date Drilled: 5/7/98 Total borehole depth: 18.5 ft.  
Drilled by: Robert B. Balter Co., Inc. Logged by: J. Stoffel

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
		S-1 30	2-2-3-4				Brown, sandy highly elastic SILT, silty, silty (SM)
		S-2 50	5-7-8-8				Sand - dry
		S-3 30	3-4-6-7				Orange-brown, silty, very fine to medium SAND, silty, dry (SM)
		S-4 70	8-8-9-9				Sand - orange-brown, trace of weathered rock
	552.0	S-5 40	6-7-9-8				
		S-6 80	15-15-17				Sand - orange-brown mottled, weathered rock, moist (SM)
		S-7 100	24-50/4				

Boring Terminated at 18.5 feet  
Notes: Water Level at 24 hours: dry  
Caved in at 24 hours: 12.5'  
Bulk samples taken at 4'-8" (#25)

Page 1 of 1

Client: Howard County, MD Surface Elevation: 695 ft. MSL BORING LOG BA-13  
Location: Alpha Ridge Landfill Coordinates: N 89°33.0', E 133°38.1" Project No: 0295077.01  
Date Drilled: 5/9/98 Total borehole depth: 20.5 ft.  
Drilled by: Robert B. Balter Co., Inc. Logged by: J. Stoffel

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
		S-1 20	3-4-4-5				Brown silty very fine to medium SAND, moist - 2" topsoil with 3.2% organic matter
		S-2 70	6-8-11-11				Orange-brown silty very fine to medium SAND, silty, silty, silty (SM)
		S-3 40	7-8-4-3				Sand - dry
		S-4 50	5-5-4-5				
	555.0	S-5 80	5-7-17-23				Sand - light gray-brown, weathered rock, silty, dry (SM)
		S-6 80	28-27-29				Sand - dry
		S-7 30	12-15-14				

Boring Terminated at 20.5 feet  
Notes: Water Level at 24 hours: dry  
Caved in at 24 hours: 14.5'  
Bulk samples taken at 4'-8" (#26), 8'-14" (#29)

Page 1 of 1

Client: Howard County, MD Surface Elevation: 645 ft. MSL BORING LOG BA-14  
Location: Alpha Ridge Landfill Coordinates: N 89°33.0', E 133°38.1" Project No: 0295077.01  
Date Drilled: 6/10/98 Total borehole depth: 20.5 ft.  
Drilled by: Robert B. Balter Co., Inc. Logged by: J. Stoffel

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
		S-1 60	2-2-4-5				Brown-red silty SAND, slightly moist, 2" topsoil
		S-2 80	6-8-9-12				Sand - brown-orange-red, silty, silty, silty (SM)
		S-3 80	4-5-7-7				Sand - dry
		S-4 70	8-8-9-7				Orange-light brown-gray, poorly-graded, silty fine SAND, silty, silty, trace of weathered rock, dry (SP)
	535.0	S-5 80	5-5-8-8				
		S-6 85	8-7-7				Sand - brown-gray-black, silty SAND, weathered rock (SM)
		S-7 100	8-8-20				

Boring Terminated at 20.5 feet  
Notes: Water Level at 24 hours: dry  
Caved in at 24 hours: 18.2'  
Bulk samples taken at 1'-1" (#30), 4'-0" (#31), 12'-18" (#32)

Page 1 of 1

Client: Howard County, MD Surface Elevation: ft. MSL BORING LOG BB-1  
Location: Alpha Ridge Landfill Coordinates: N : E Total borehole depth: 18.0 ft.  
Date Drilled: 5/13/98  
Drilled by: Robert B. Balter Co., Inc. Logged by: J. Stoffel

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
		S-1 35	2-4-9-8				Gravel 1"
		S-2 70	7-10-11-11				Brown clayey SILT, silty, silty, slightly moist (ML)
		S-3 60	4-8-7-8				Orange-brown clayey SAND, slightly moist (SC)
		S-4 50	6-8-8-7				Orange-brown silty SAND, silty, silty, moist (SM)
		S-5 70	2-3-3-2				Light brown silty, fine to coarse SAND, silty, silty, moist (SP-3M)
		S-6 80	3-3-4-4				Brown-yellow silty SAND, dry (SM)
		S-7 100	2-3-4-5				Sand - brown, trace of weathered rock, wet (SM)
		S-8 80	3-4-5-8				

Boring Terminated at 18 feet  
Notes: Water Level at 24 hours: 5.4'  
Caved in at 24 hours: 15.4'  
Bulk samples taken at 0'-5" (#33), 5'-9" (#34), 10'-13" (#35)

Page 1 of 1

Client: Howard County, MD Surface Elevation: ft. MSL BORING LOG BB-2  
Location: Alpha Ridge Landfill Coordinates: N : E Total borehole depth: 20.0 ft.  
Date Drilled: 5/13/98  
Drilled by: Robert B. Balter Co., Inc. Logged by: J. Stoffel

DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
		S-1 15	4-14-8-8				Gravel 2"
		S-2 50	6-8-10-8				Orange clayey SILT, silty, silty, dry (ML)
		S-3 10	4-4-4-4				Yellow-brown sandy CLAY, moist (CL)
		S-4 30	4-4-4-4				Yellow-brown sandy SILT, silty, silty, moist (ML)
		S-5 0	2-2-2-3				Brown silty CLAY, very soft and moist (CL)
		S-6 20	1-2-2-3				
		S-7 80	4-3-4-4				Brown-orange sandy SILT, moist (ML)
		S-8 40	4-5-9-14				
		S-9 70	12-18-14-14				Gray silty very fine to coarse SAND, silty, silty, moist (SP-3M)
		S-10 75	4-3-3-4				Sand - brown, some small gravel and trace of weathered rock, wet

Boring Terminated at 20 feet  
Notes: Water Level at 24 hours: 11.7'  
Caved in at 24 hours: 17.5'  
Bulk samples taken at 0'-5" (#36), 8'-12" (#37), 14'-8" (#38)

Page 1 of 1

Client: Howard County, MD Surface Elevation: ft. MSL BORING LOG BB-3  
Location: Alpha Ridge Landfill Coordinates: N : E Total borehole depth: 12.0 ft.  
Date Drilled: 5/13/98  
Drilled by: Robert B. Balter Co., Inc. Logged by: J. Stoffel

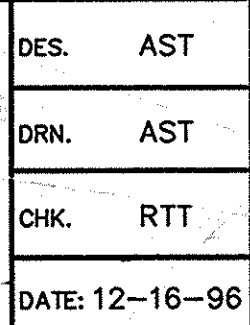
DEPTH (ft.)	ELEVATION (ft. MSL)	SAMPLE INTERVAL (ft.)	% RECOVERY	BLOWS	HEADSPACE (ft.)	SYMBOL LOG	DESCRIPTION
		S-1 25	2-5-8-8				Brown silty CLAY, slightly moist, 2" Topsoil
		S-2 85	10-10-9-9				Sand - brown silty CLAY, silty, silty, dry (CL)
		S-3 5	4-8-8-10				Sand - dry
		S-4 75	9-8-8-9				Brown-orange-gray, silty very fine to medium SAND, silty, silty, slightly moist (SM)
		S-5 70	2-3-3-4				Sand - orange-brown-black, wet
		S-6 80	2-3-3-4				

Boring Terminated at 12 feet  
Notes: Water Level at 24 hours: 7.5'  
Caved in at 24 hours: 9.3'  
Bulk samples taken at 0'-5" (#39), 5'-0" (#40)

Page 1 of 1

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.	AST				
DRN.	AST				
CHK.	RTT				
DATE:	12-16-96	BY:	NO.	REVISION	DATE

BORROW AREA  
BORING LOGS

ALPHA RIDGE LANDFILL  
CELL CLOSURE  
CAPITAL PROJECT NO. C-0190

1st ELECTION DISTRICT

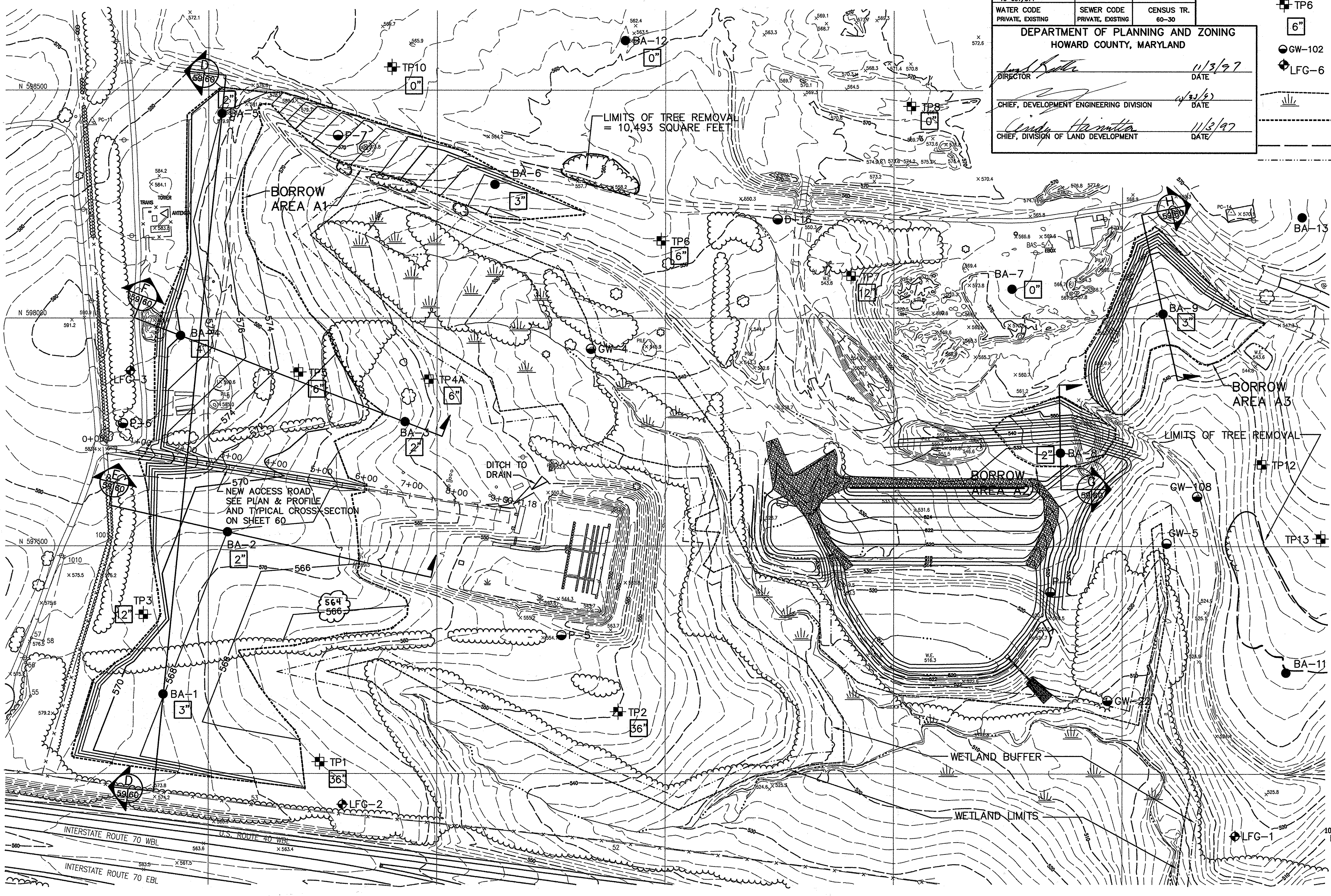
HOWARD COUNTY, MARYLAND

SCALE:  
NO SCALE  
SHEET  
58 OF 131

SDA-97-128

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/608 18-878/215 10-881/314	ZONE PEC	TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND			
DIRECTOR <i>[Signature]</i>		DATE 11/3/97	
CHIEF, DEVELOPMENT ENGINEERING DIVISION <i>[Signature]</i>		DATE 11/3/97	
CHIEF, DIVISION OF LAND DEVELOPMENT <i>[Signature]</i>		DATE 11/3/97	

LEGEND	
● BA-7	BORING LOCATIONS
⊕ TP6	TEST PIT LOCATIONS
6"	TOPSOIL DEPTH AT BORING/TEST PIT
● GW-102	GROUNDWATER WELLS
⊕ LFG-6	LFG MONITORING WELLS
—	EXISTING CONTOURS
—	WETLAND LIMITS
---	SOIL BARRIER LAYER BORROW AREAS A1, A2, & A3
---	TREE REMOVAL AREAS
---	WETLAND BUFFER



SEE ETA SHEET 70-A3  
FOR AS BUILT CLEARWATER 1  
BASIN PLAN

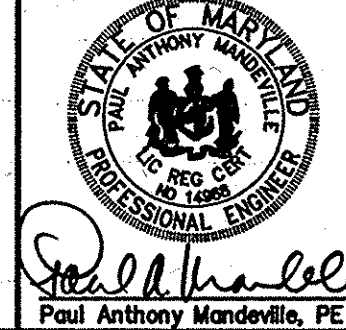
M:\2956077\01 BORROW BORROWS

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. EGC, RTT	▲			
DRN. EGC	▲			
CHK. PAM	▲			
DATE: 10-30-97	BY	NO.	REVISION	DATE

SOIL BARRIER LAYER  
BORROW AREAS A1, A2, & A3

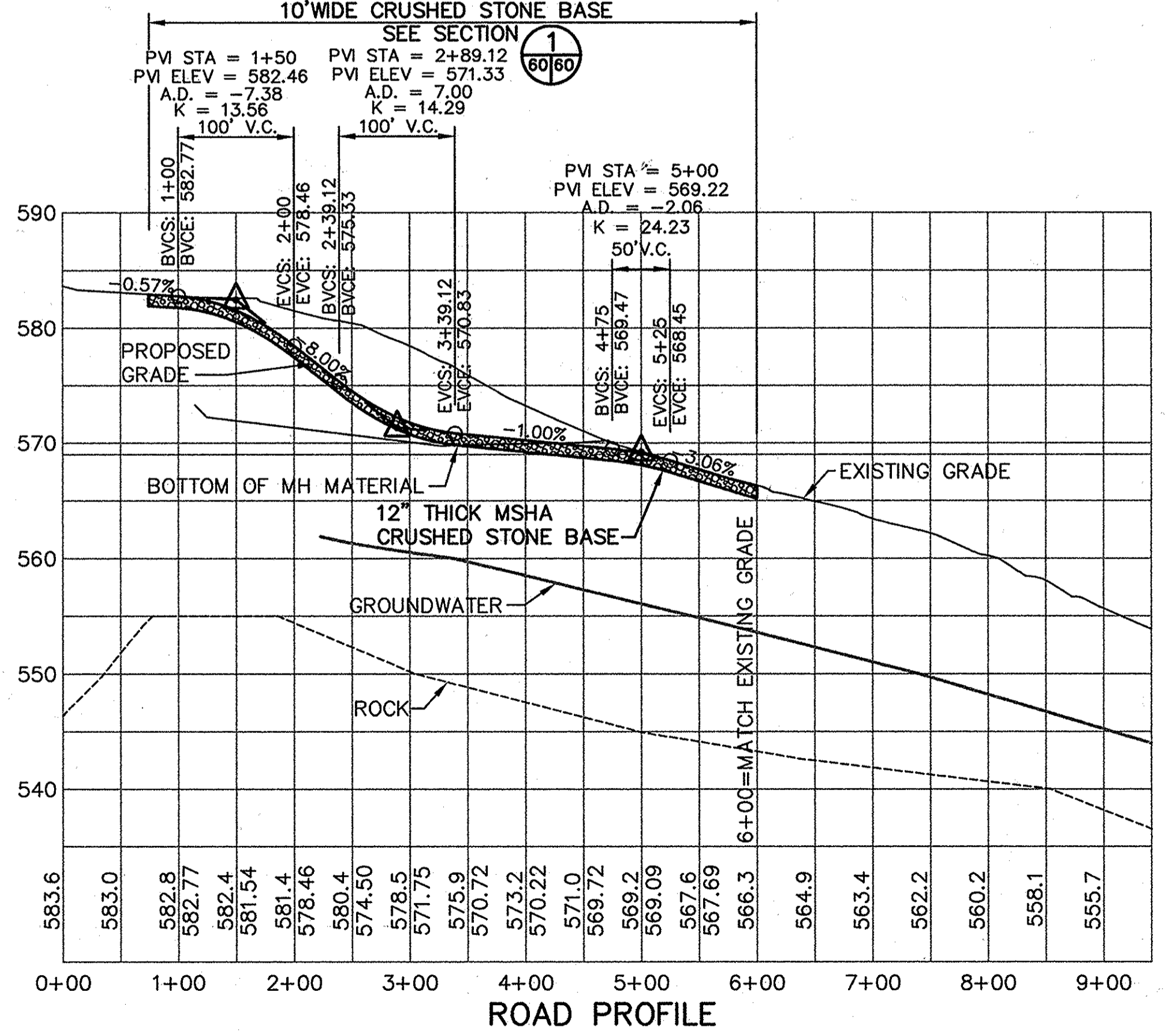
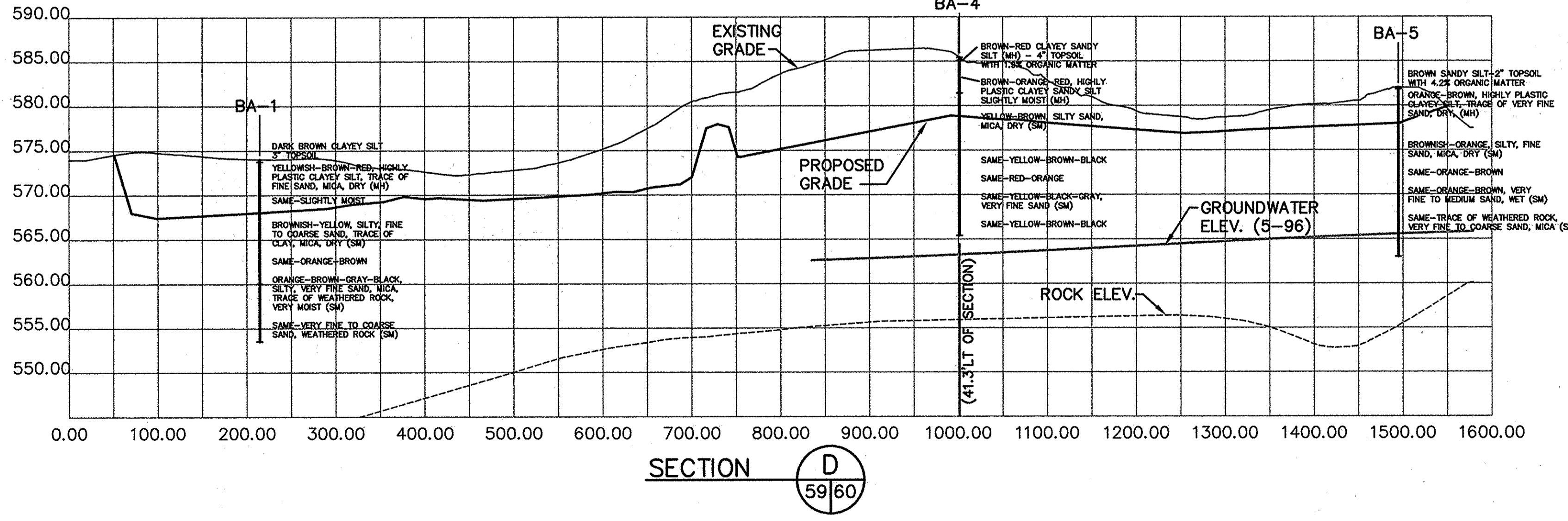
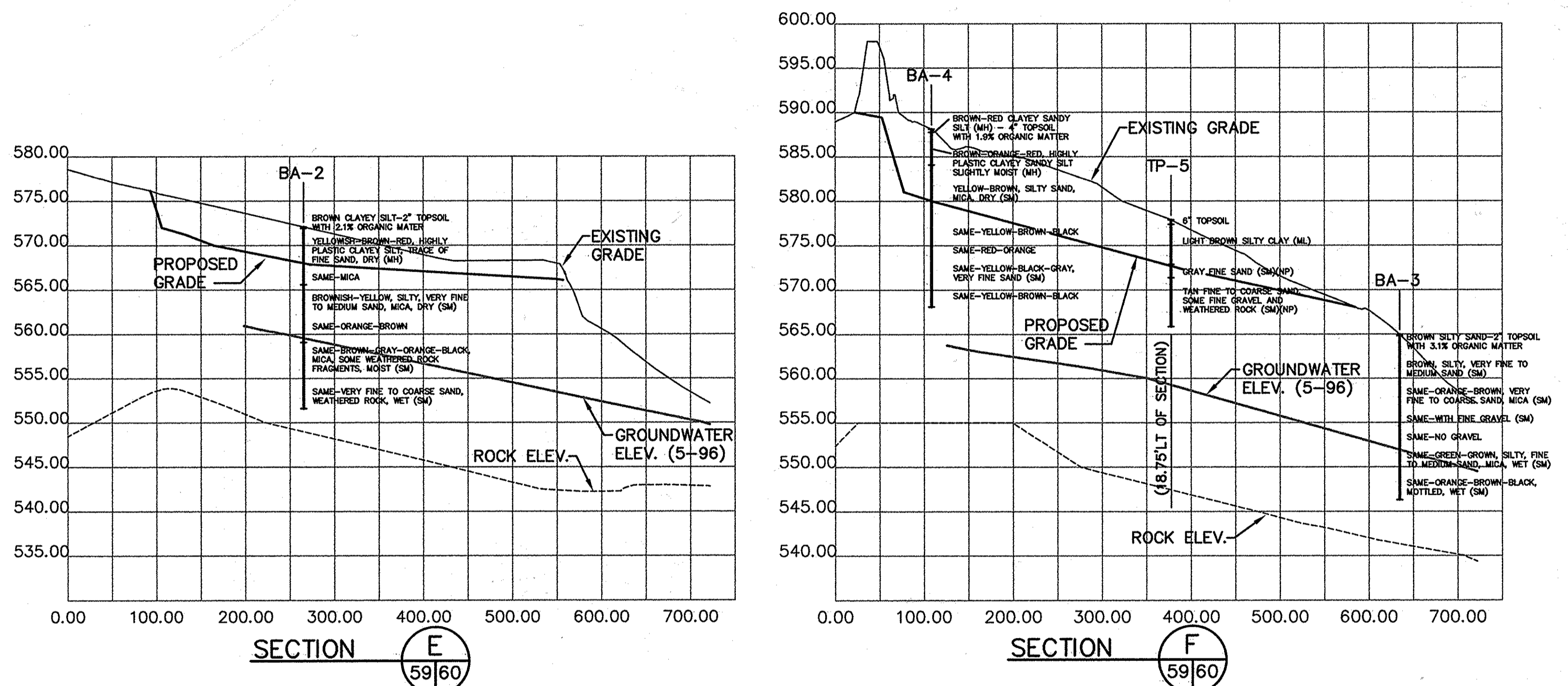
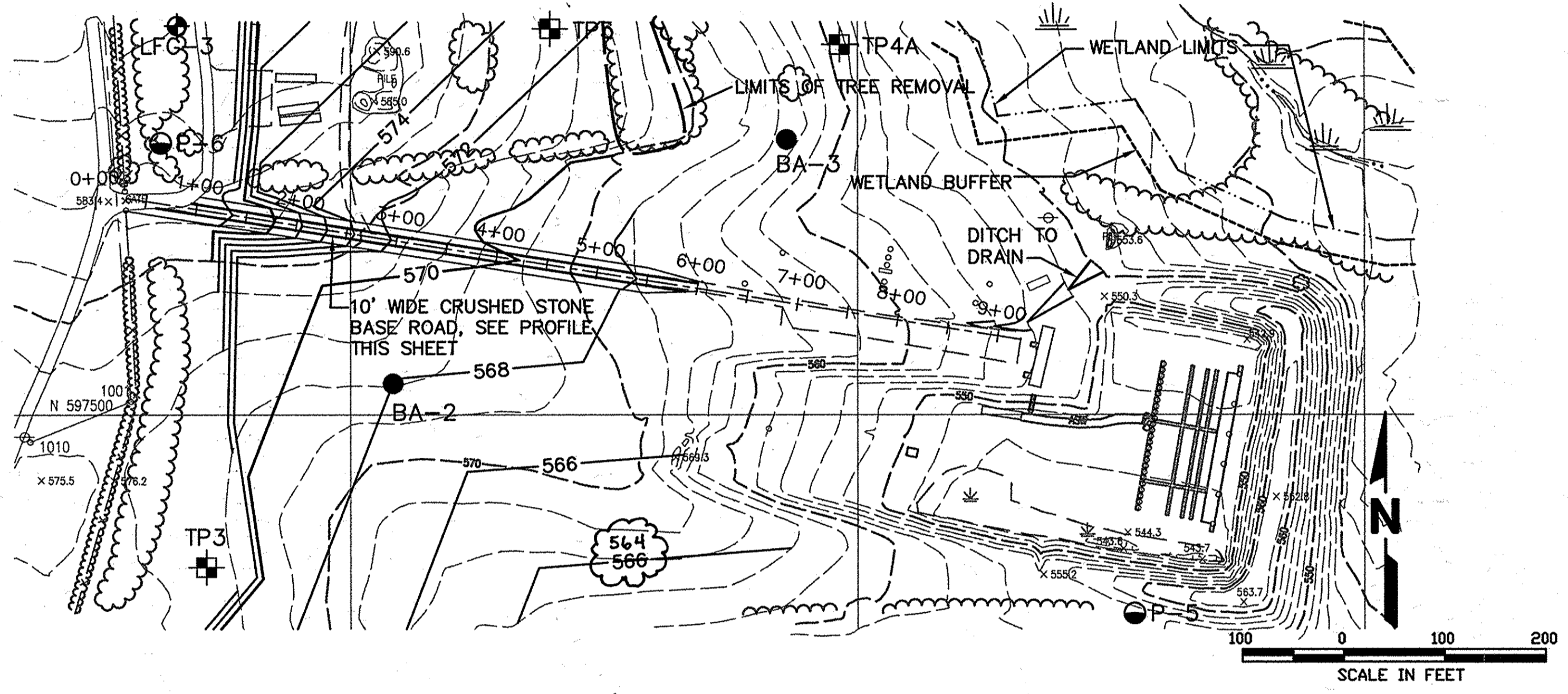
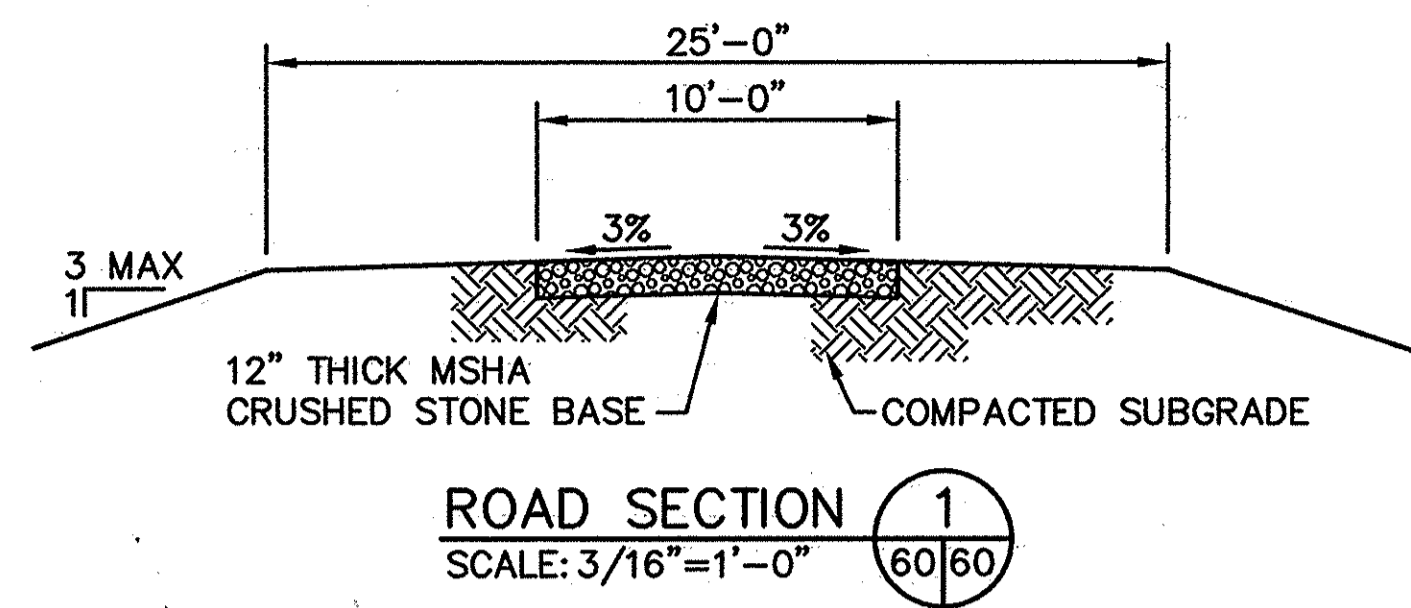
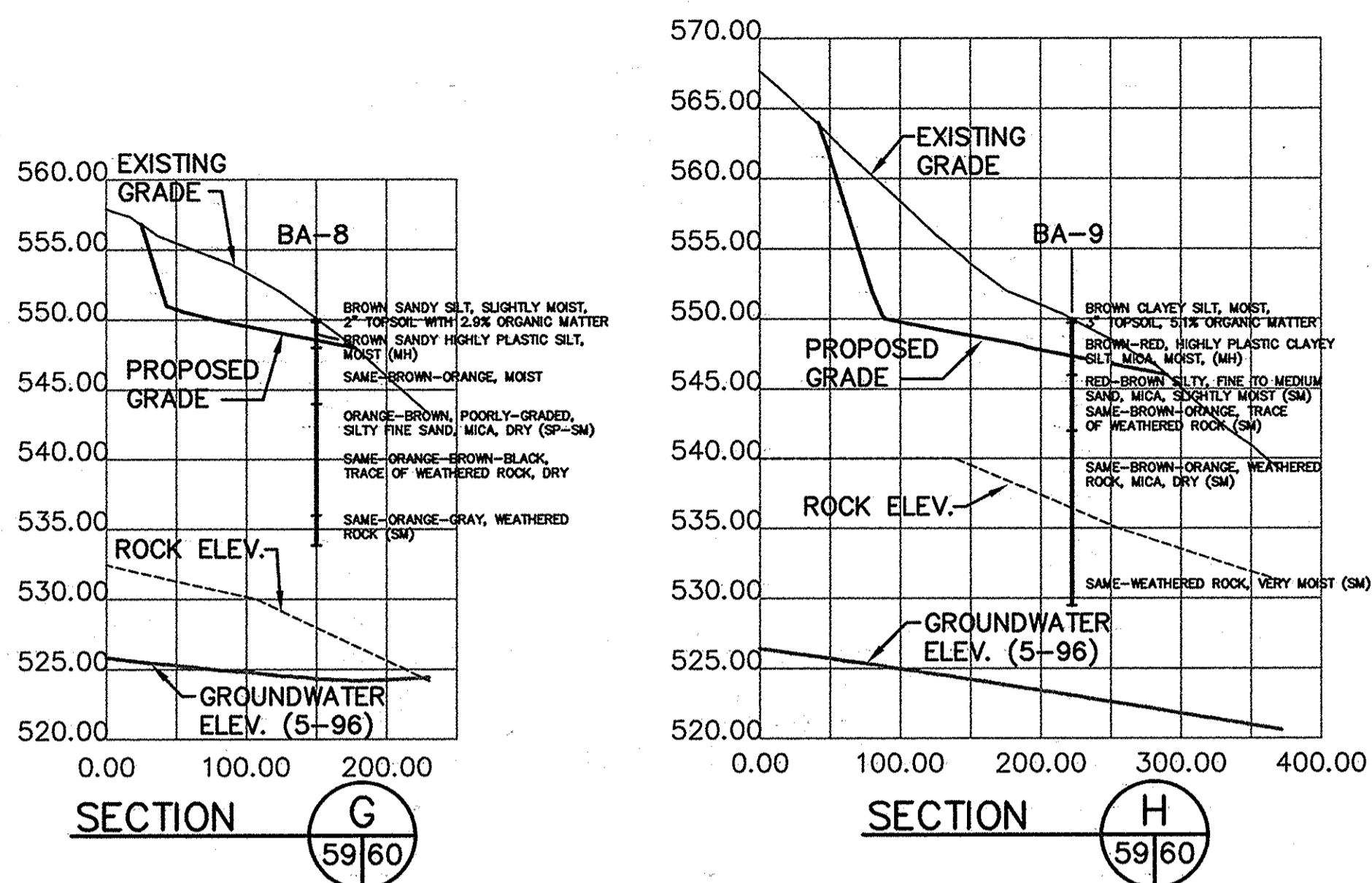
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=100'  
SHEET  
59 OF 138

SDP-97-128

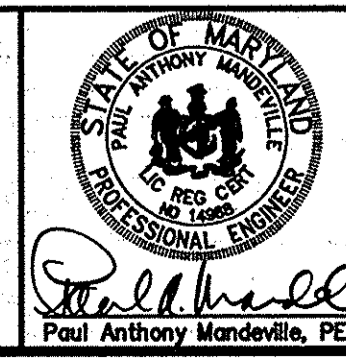
SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/808 18-878/215 10-891/314		ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING		SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND			
DIRECTOR <i>[Signature]</i>		DATE 11/3/97	
CHIEF, DEVELOPMENT ENGINEERING DIVISION <i>[Signature]</i>		DATE 12/3/97	
CHIEF, DIVISION OF LAND DEVELOPMENT <i>[Signature]</i>		DATE 11/3/97	



M:\295077\01\BORROW SECDEF, ROADPRO BORRJA

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director: *[Signature]* 10/30/97  
 Date: 10/30/97  
 Chief, Bureau of Waste Management: *[Signature]* 10/30/97  
 Date: 10/30/97

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



DES. EGC, RTT	▲			
DRN. EGC	▲			
CHK. PAM	▲			
DATE: 10-30-97	BY	NO.	REVISION	DATE

SOIL BARRIER BORROW AREA  
 CROSS-SECTIONS AND DETAILS

ALPHA RIDGE LANDFILL  
 UNLINED CELL CLOSURE  
 CAPITAL PROJECT NO. C-0190-N  
 3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 SCALE: 1"=100'  
 SHEET 60 OF 123  
 5DP-97-128

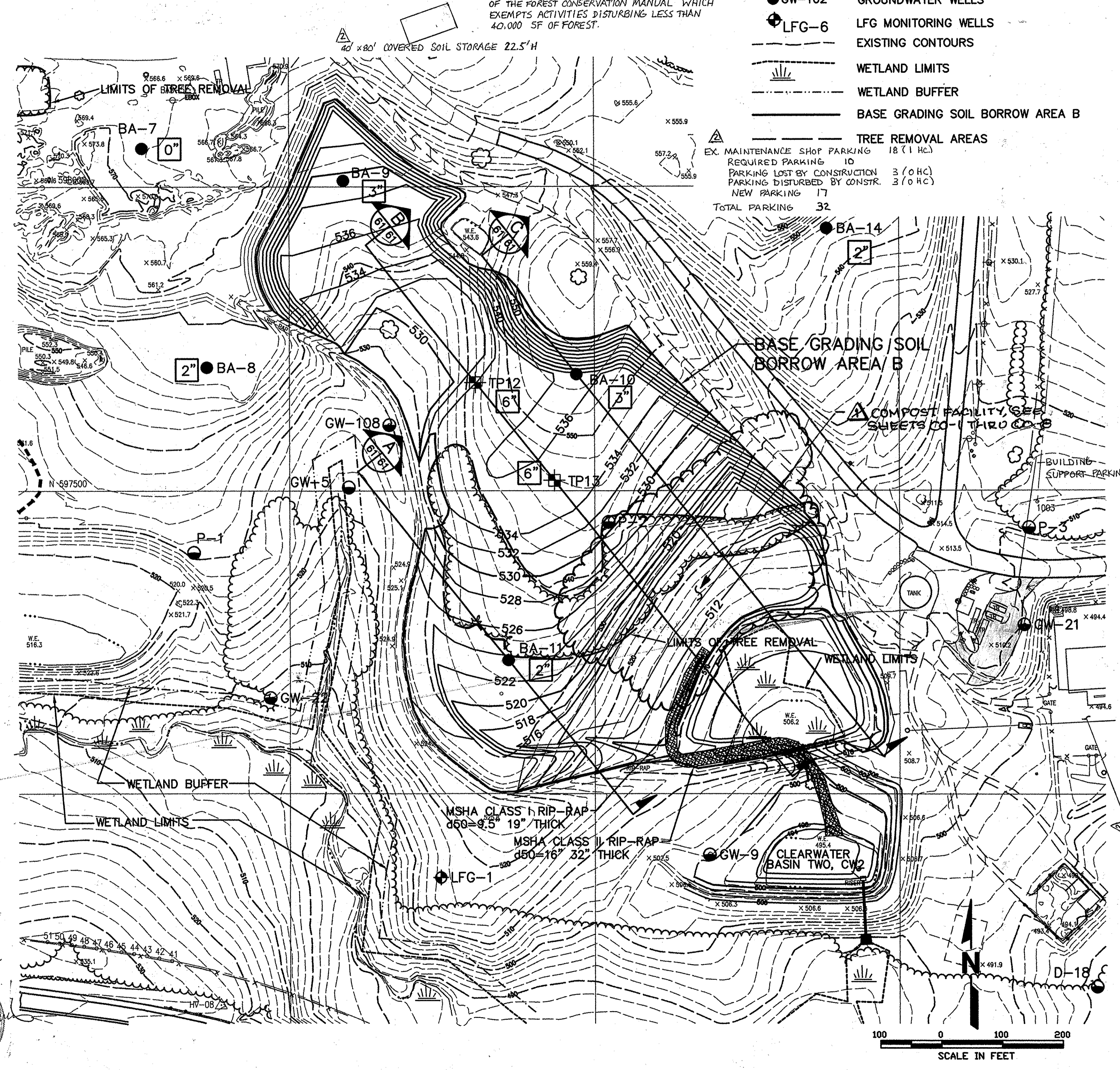
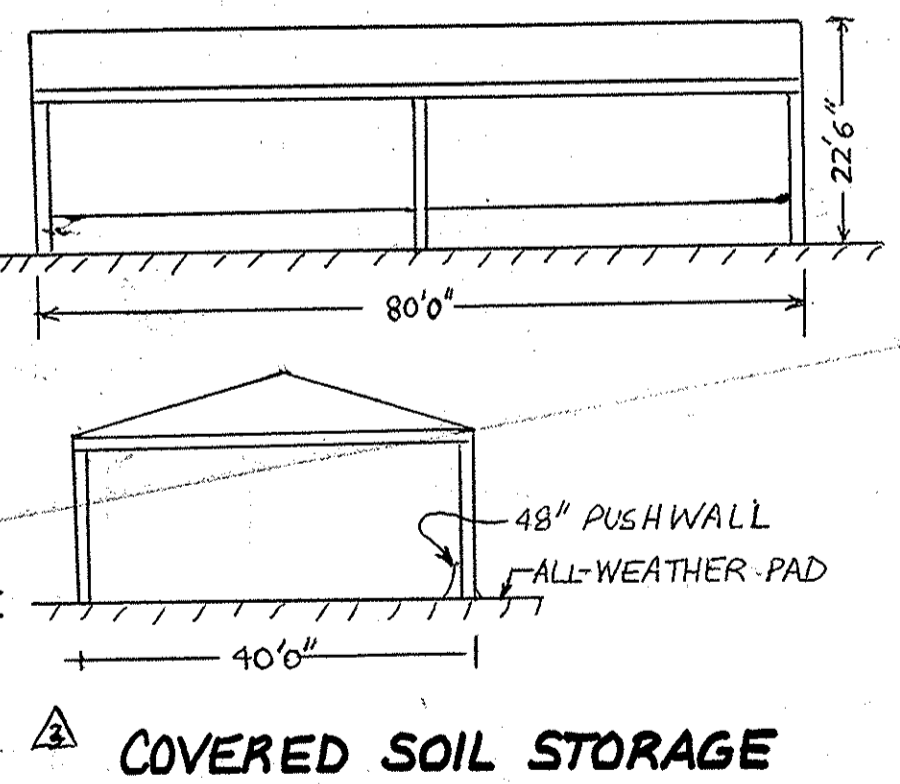
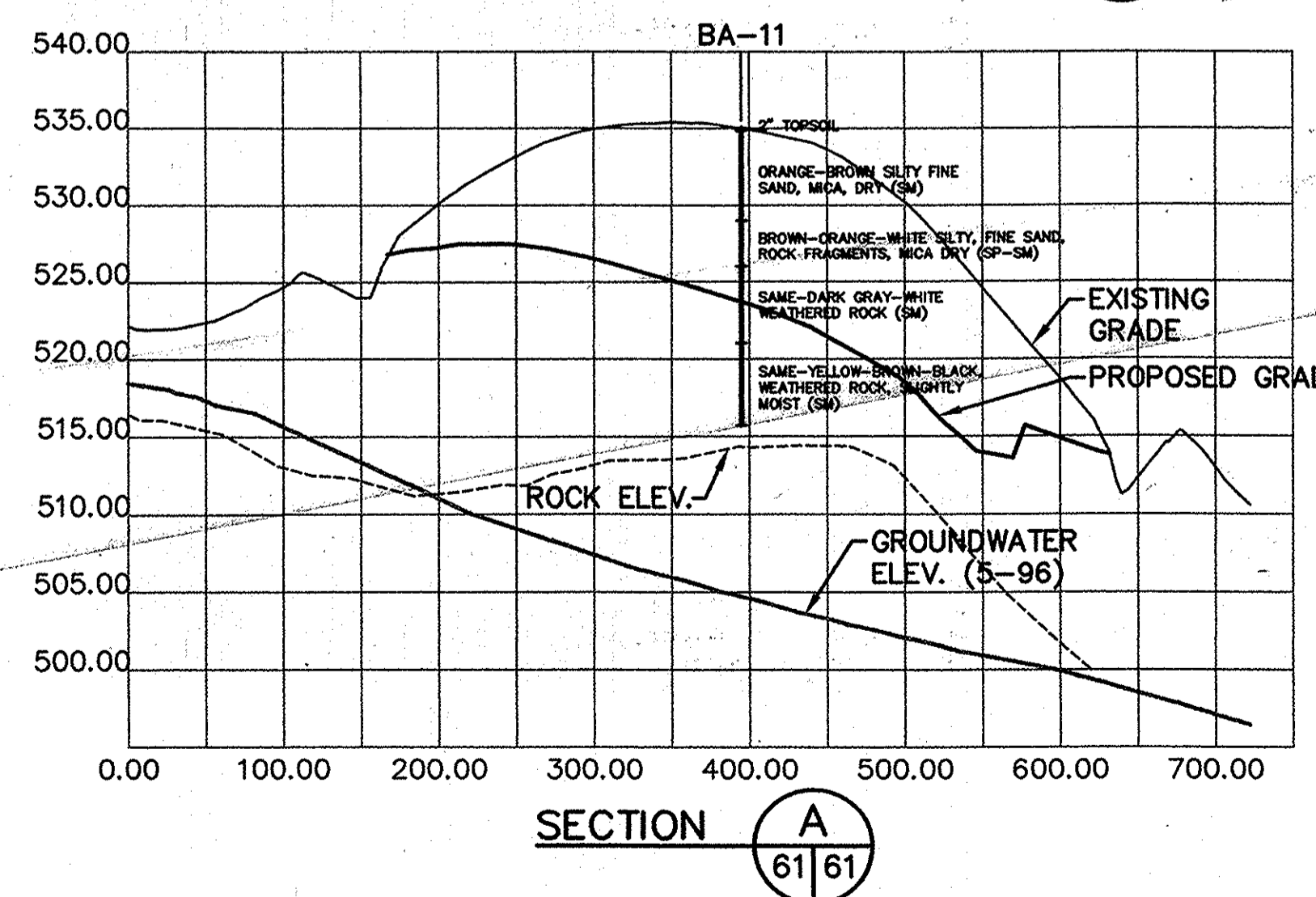
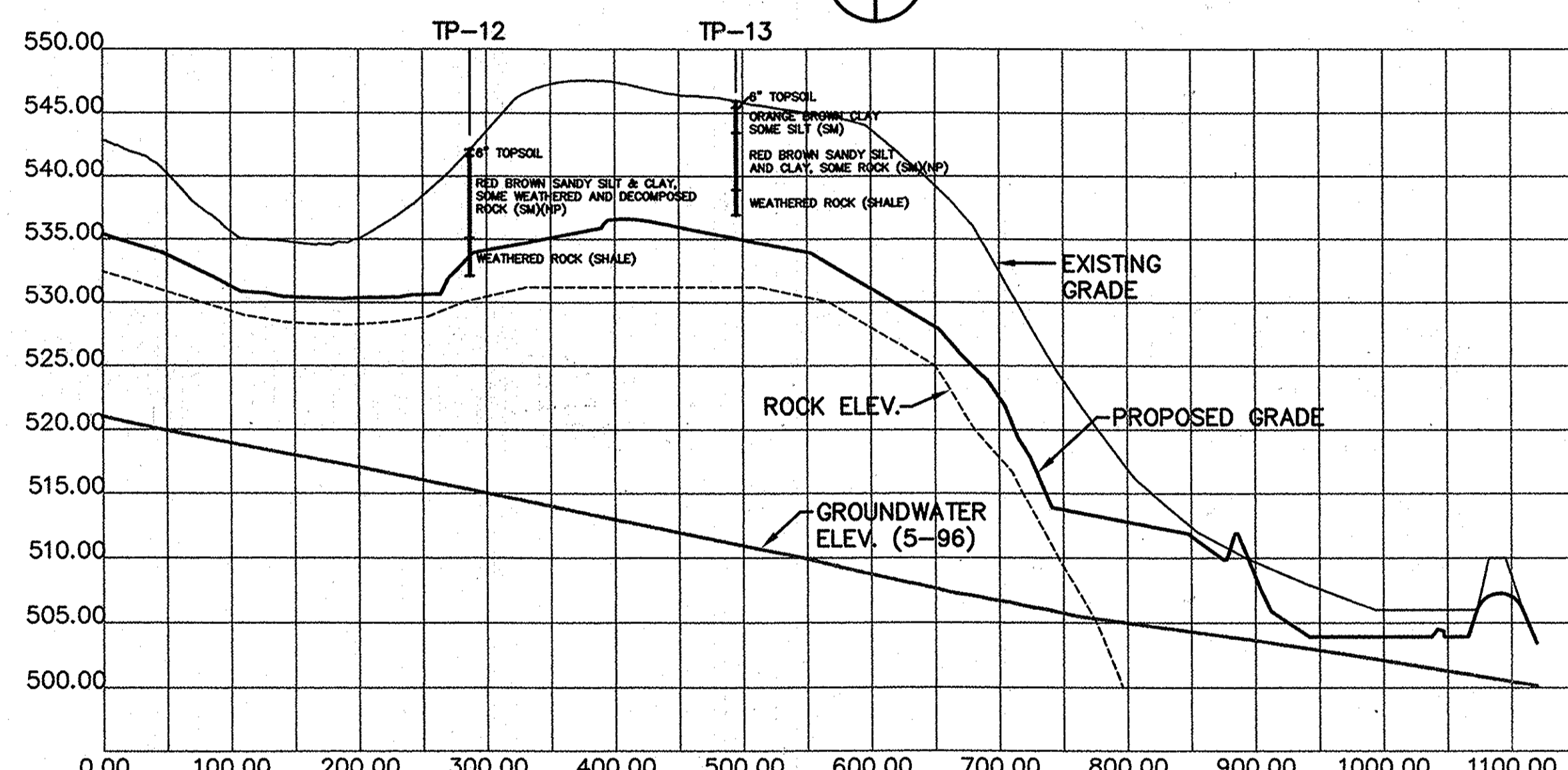
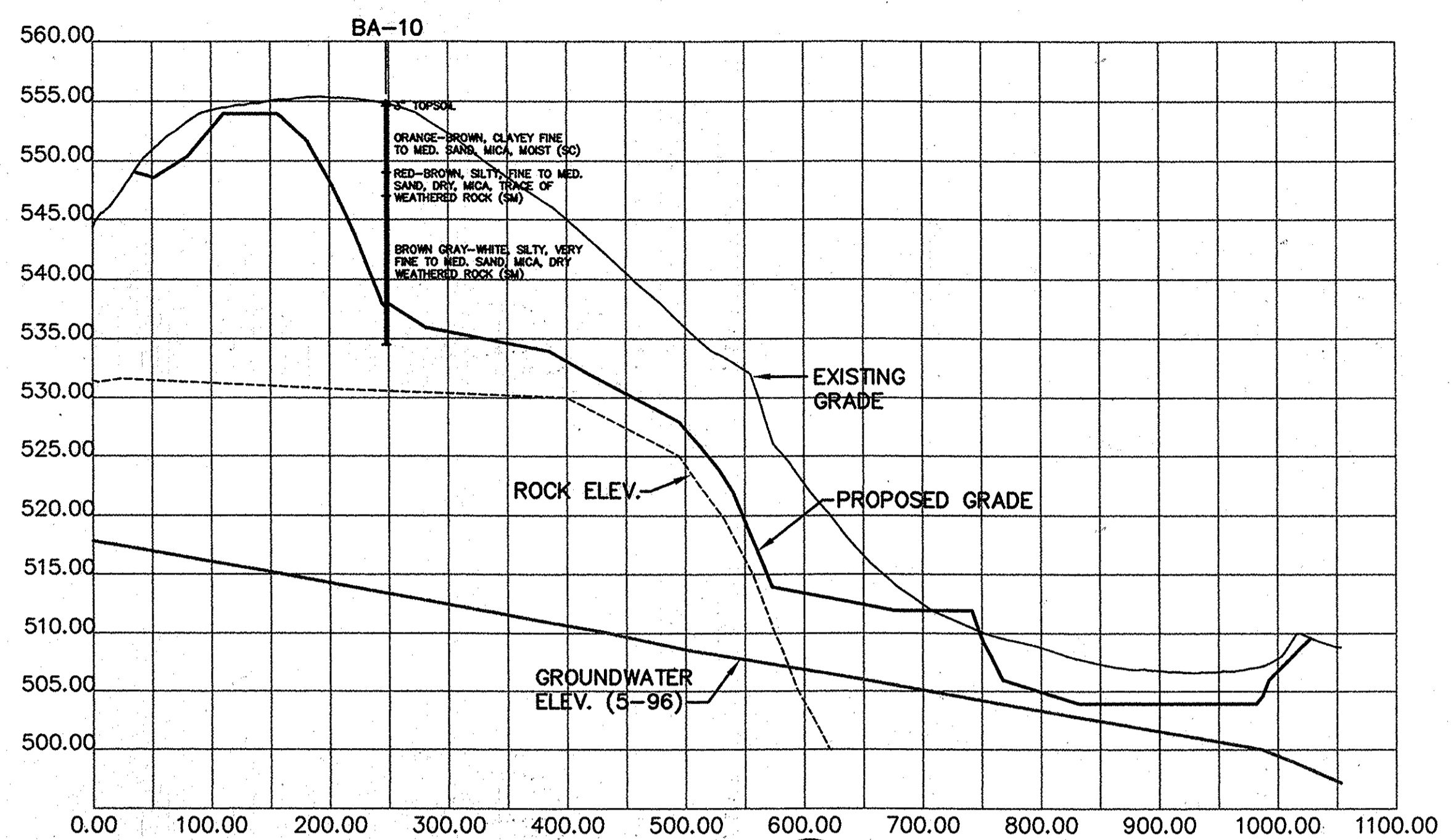
DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

DIRECTOR *James P. Sullivan* 11/3/97 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *10/30/97* DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT *11/3/97* DATE

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/806 16-876/215 10-891/314	ZONE PEC TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING CENSUS TR. 60-30

ADDITIONAL PARKING IS EXEMPT FROM FOREST CONSERVATION IN ACCORDANCE WITH APPENDIX O OF THE FOREST CONSERVATION MANUAL WHICH EXEMPTS ACTIVITIES DISTURBING LESS THAN 40,000 SF OF FOREST.

- LEGEND**
- BA-7 BORING LOCATIONS
  - ⊕ TP6 TEST PIT LOCATIONS
  - 6" TOPSOIL DEPTH AT BORING/TEST PIT
  - GW-102 GROUNDWATER WELLS
  - LFG-6 LFG MONITORING WELLS
  - - - EXISTING CONTOURS
  - - - WETLAND LIMITS
  - - - WETLAND BUFFER
  - - - BASE GRADING SOIL BORROW AREA B
  - △ TREE REMOVAL AREAS
  - EX. MAINTENANCE SHOP PARKING 18 (1 HC)
  - REQUIRED PARKING 10
  - PARKING LOST BY CONSTRUCTION 3 (0 HC)
  - PARKING DISTURBED BY CONSTR. 3 (0 HC)
  - NEW PARKING 17
  - TOTAL PARKING 32



M:\295077.01\BORROW BORROW2

BORR2

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

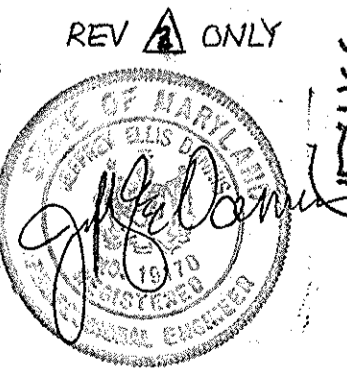
SCS ENGINEERS  
CONSULTING ENGINEERS  
11260 ROGER BACON DRIVE  
SUITE 300  
RESTON, VIRGINIA 22090  
PH. (703) 471-6150  
FAX. (703) 471-6676

DES. EGC, RTT	△		
DRN. EGC	△		
CHK. PAM	△		
BY NO.	CSN	ADD EX. STRUCTURES, SUPPORT PARKING, SOIL STORAGE	6/9/14
		ALPHA RIDGE LANDFILL COMPOST FACILITY	3/19/12
DATE	10-30-97	REVISION	DATE

BASE GRADING SOIL  
BORROW AREA B  
AND CROSS-SECTIONS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

SCALE:  
1"=100'  
SHEET  
61 of 121



SEAL & SIGNATURE FOR REV. ONLY

*James P. Sullivan* 10/30/97 DATE  
 CHIEF, BUREAU OF WASTE MANAGEMENT *John O'Hara* 10/30/97 DATE

REVISED SDP (JUNE 2016)

3rd ELECTION DISTRICT

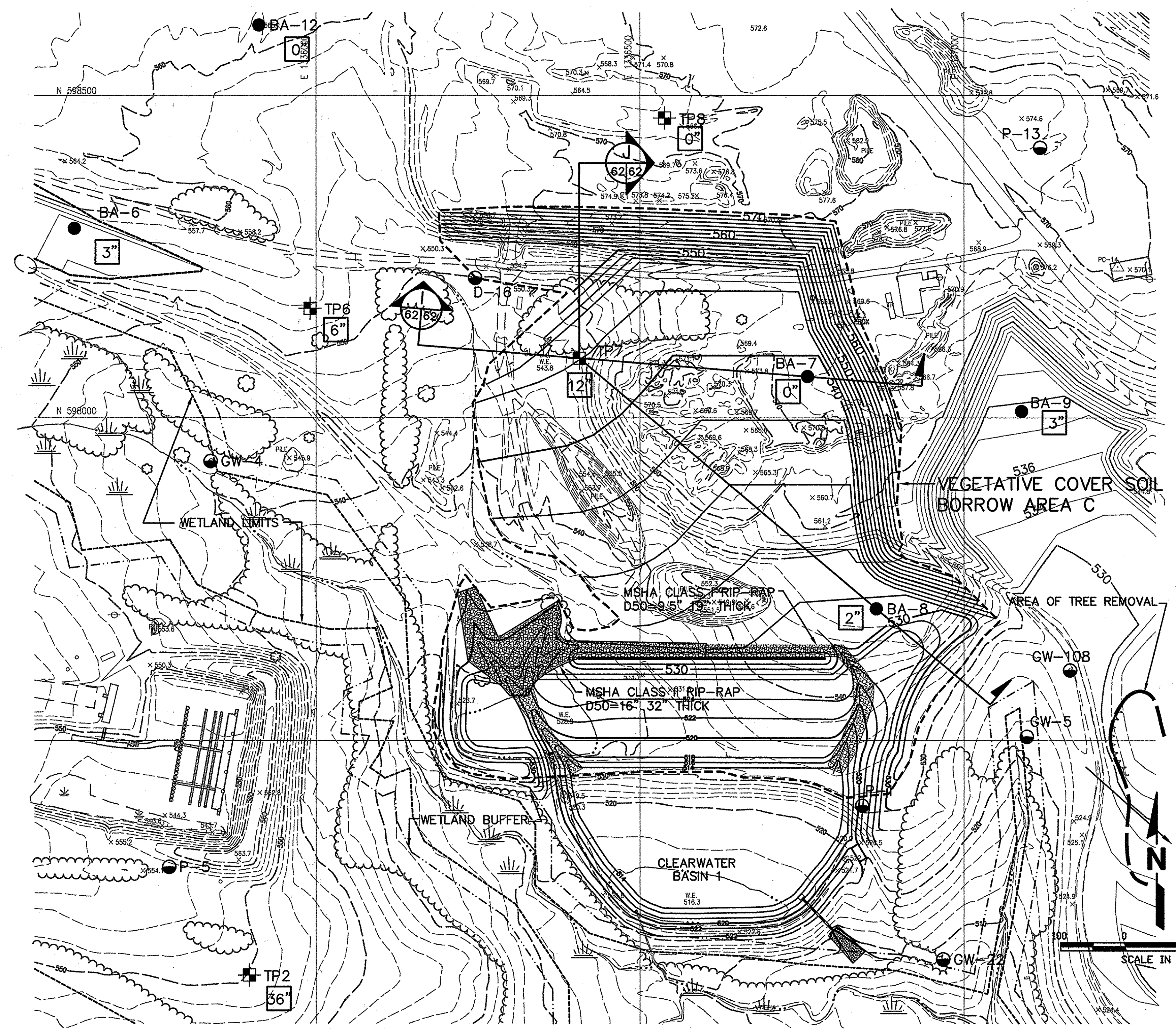
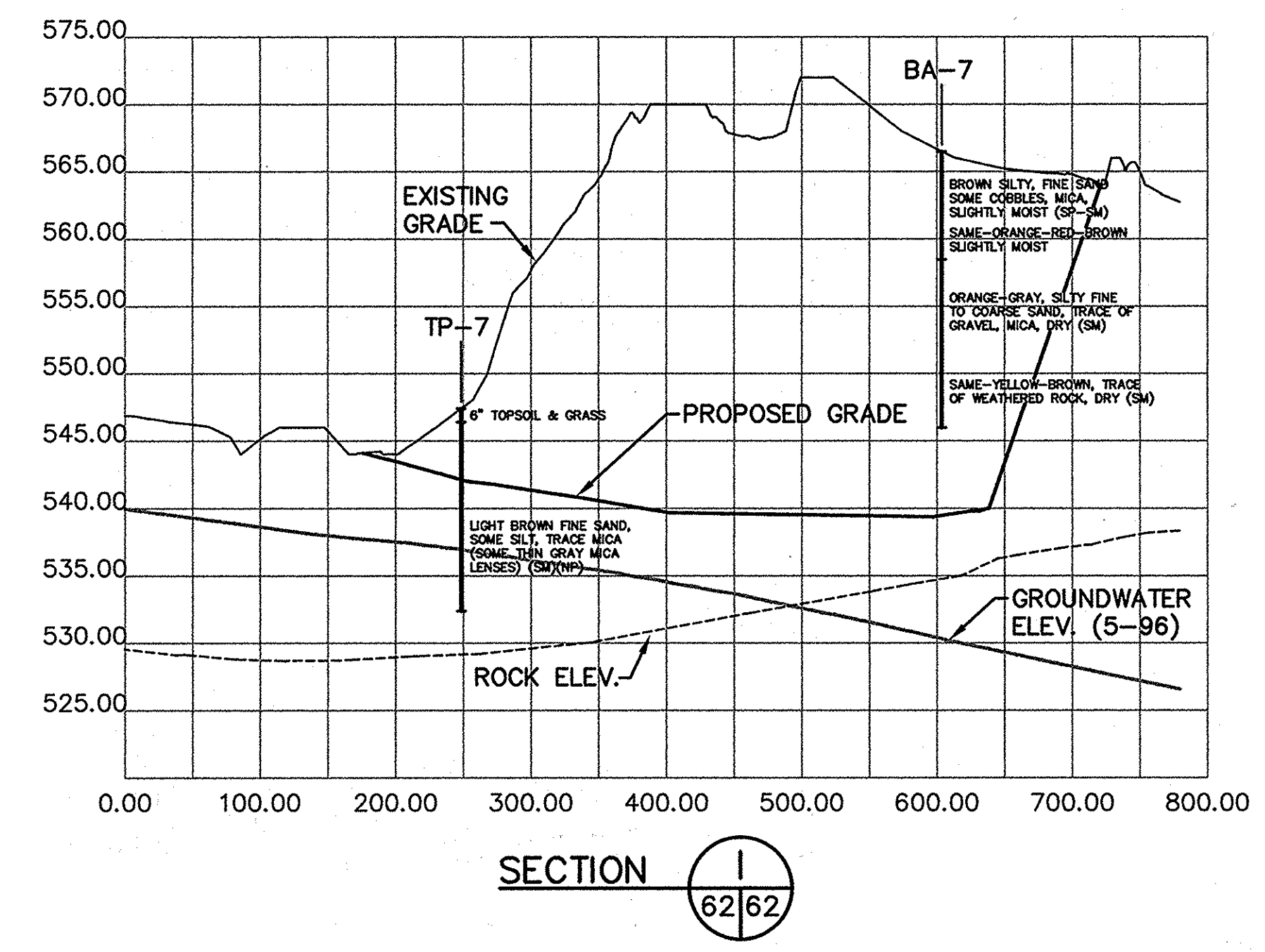
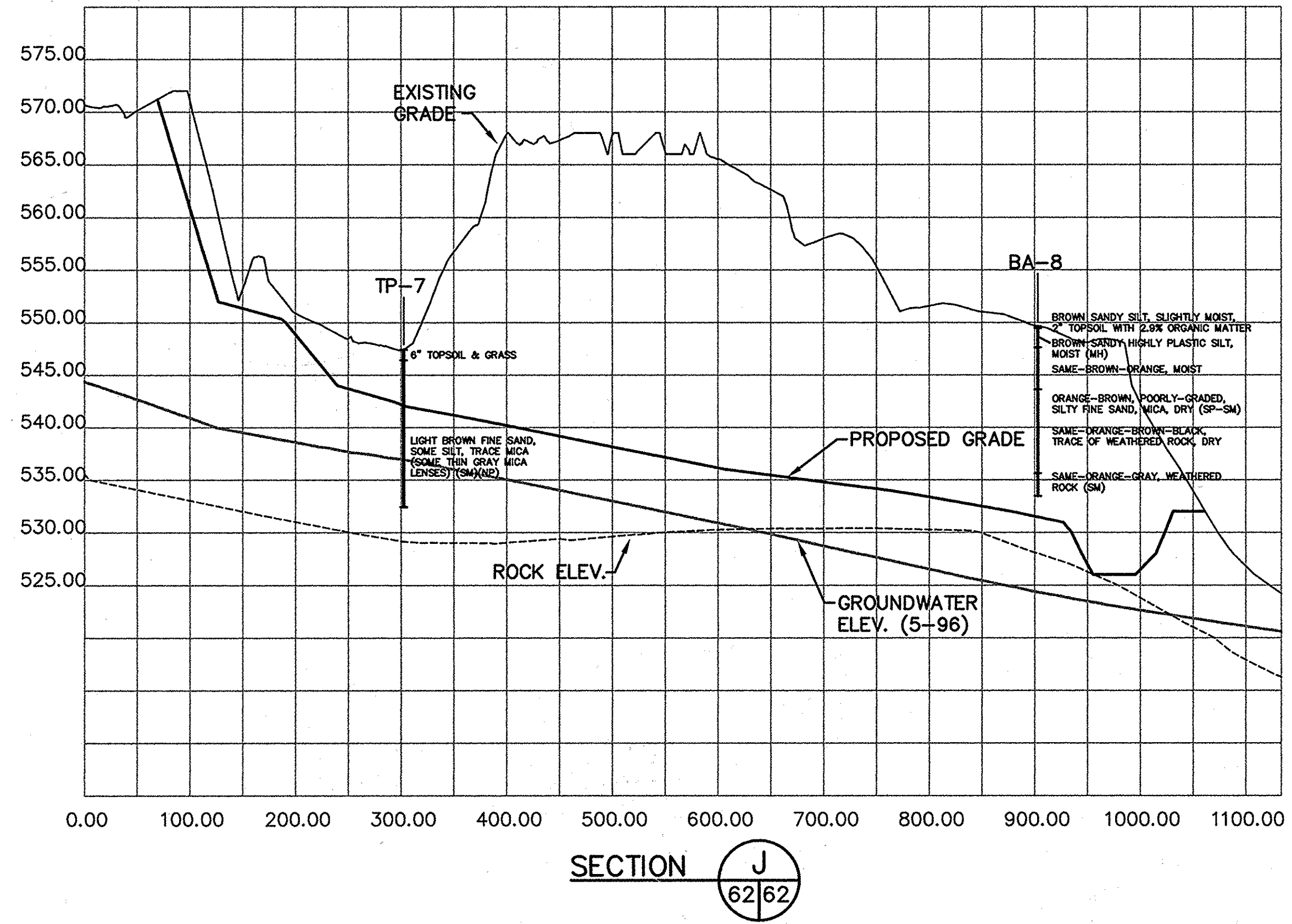
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

DIRECTOR *[Signature]* 11/3/97 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 10/30/97 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 11/3/97 DATE

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/806 16-878/215 10-891/314	ZONE PEC TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING CENSUS TR. 60-30

- LEGEND
- BA-7 BORING LOCATIONS
  - ⊕ TP6 TEST PIT LOCATIONS
  - 6" TOPSOIL DEPTH AT BORING/TEST PIT
  - GW-102 GROUNDWATER WELLS
  - ⊕ LFG-6 LFG MONITORING WELLS
  - EXISTING CONTOURS
  - WETLAND LIMITS
  - VEGETATIVE COVER SOIL BORROW AREA C
  - WETLAND BUFFER
  - TREE REMOVAL AREAS



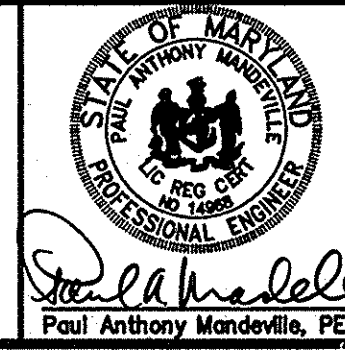
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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97 DATE  
 DIRECTOR OF PUBLIC WORKS

*[Signature]* 10/30/97 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. EGC, RTT	△		
DRN. EGC	△		
CHK. PAM	△		
DATE: 10-30-97	BY	NO.	REVISION

VEGETATIVE COVER SOIL  
BORROW AREA C  
AND CROSS-SECTIONS

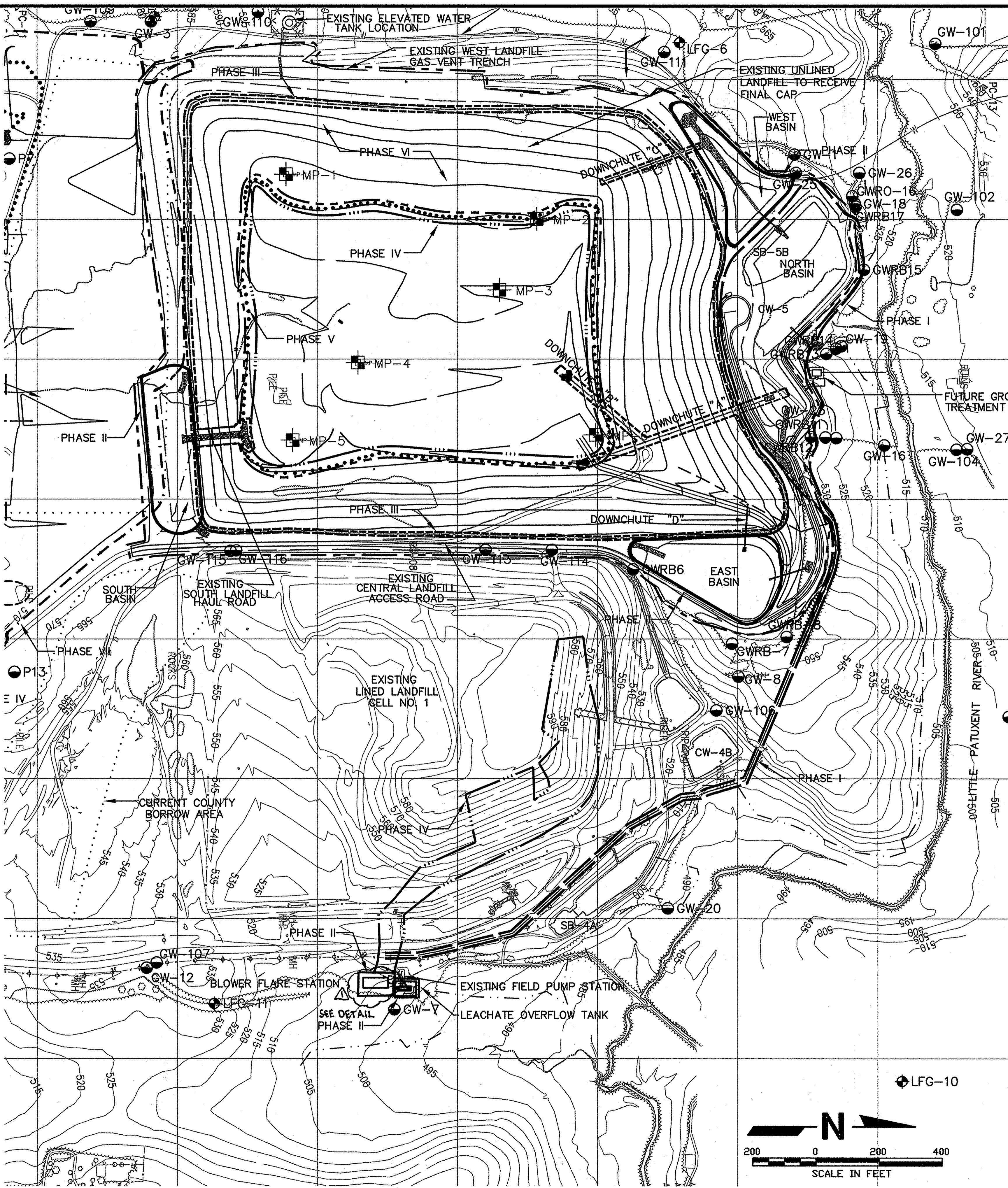
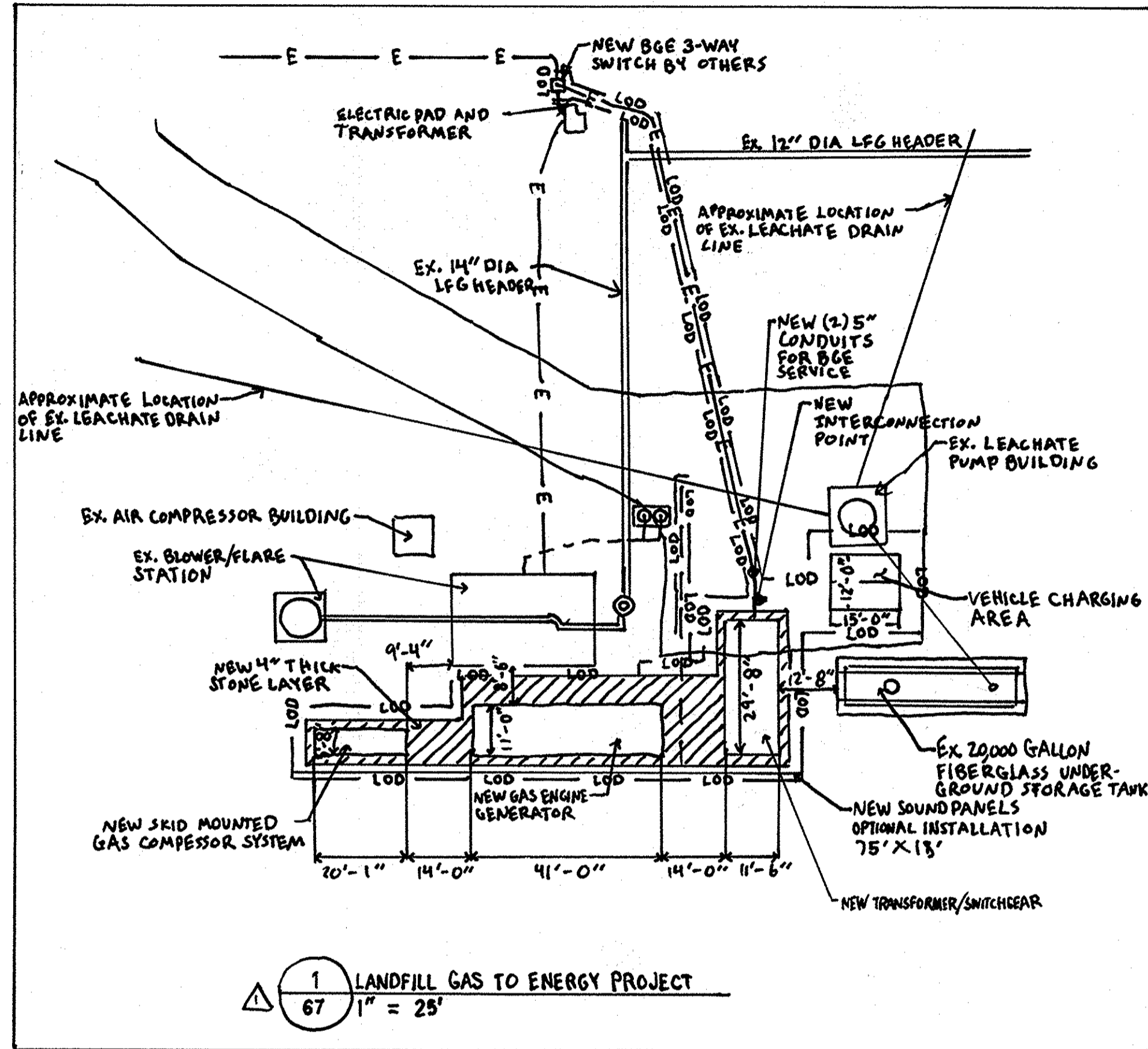
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=100'  
SHEET  
62 of 181

SDP-97-128





**NOTE:**  
FOR CLARITY, THE LFG SYSTEM WITHIN THE FOOTPRINT OF THE UNLINED CELL IS NOT SHOWN ON THIS SHEET. SEE THE WRITTEN DESCRIPTION OF EACH PHASE OF CONSTRUCTION ON SHEET 50 FOR THE CONSTRUCTION SEQUENCE OF THE LFG SYSTEM WITHIN THE FOOTPRINT OF THE UNLINED CELL

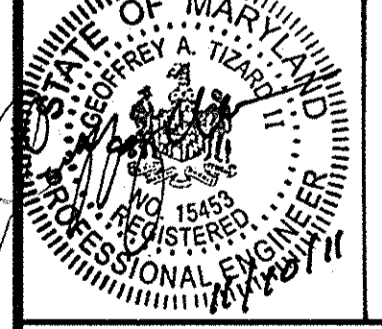
**NOTE:**  
THIS SHEET FOR BORROW AREA SEQUENCE ONLY. WETLAND LIMITS, PROPERTY LINE AND 100 YEAR FLOODPLAIN LIMITS HAVE NOT BEEN SHOWN FOR CLARITY.

**LEGEND**

———	PHASE I CONSTRUCTION
———	PHASE II CONSTRUCTION
———	PHASE III CONSTRUCTION
———	PHASE IV CONSTRUCTION
.....	PHASE V CONSTRUCTION
.....	PHASE VI CONSTRUCTION
.....	PHASE VII CONSTRUCTION

SEE SHEET 50 FOR WRITTEN DESCRIPTION OF EACH PHASE OF CONSTRUCTION

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15453, EXPIRATION DATE: 2 JULY 2013. THIS SEAL APPLIES ONLY TO REVISION 1 ON THIS SHEET.

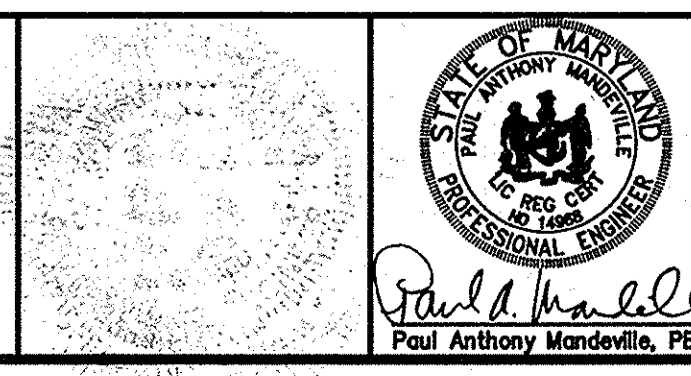


DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
DIRECTOR	11/3/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/2/97
CHIEF, DIVISION OF LAND DEVELOPMENT	11/3/97

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11,302
LIBER/FOLIO 10-847/806 16-878/215 10-891/314	ZONE RC-OEO
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING
TAX/ZONE MAP 10 & 16	
CENSUS TR. 6030-58-30	

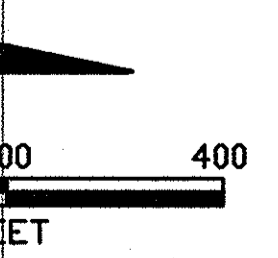
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
DIRECTOR OF PUBLIC WORKS	10/30/97
CHIEF, BUREAU OF WASTE MANAGEMENT	10/30/97

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



DES. RTT,MEH	
DRN. MEH	
CHK. PAM	
CJS	ALPHA RIDGE LANDFILL GAS TO ENERGY PROJECT
BY NO.	REVISION
	DATE

**LANDFILL CONSTRUCTION SEQUENCE PLAN**



ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N  
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

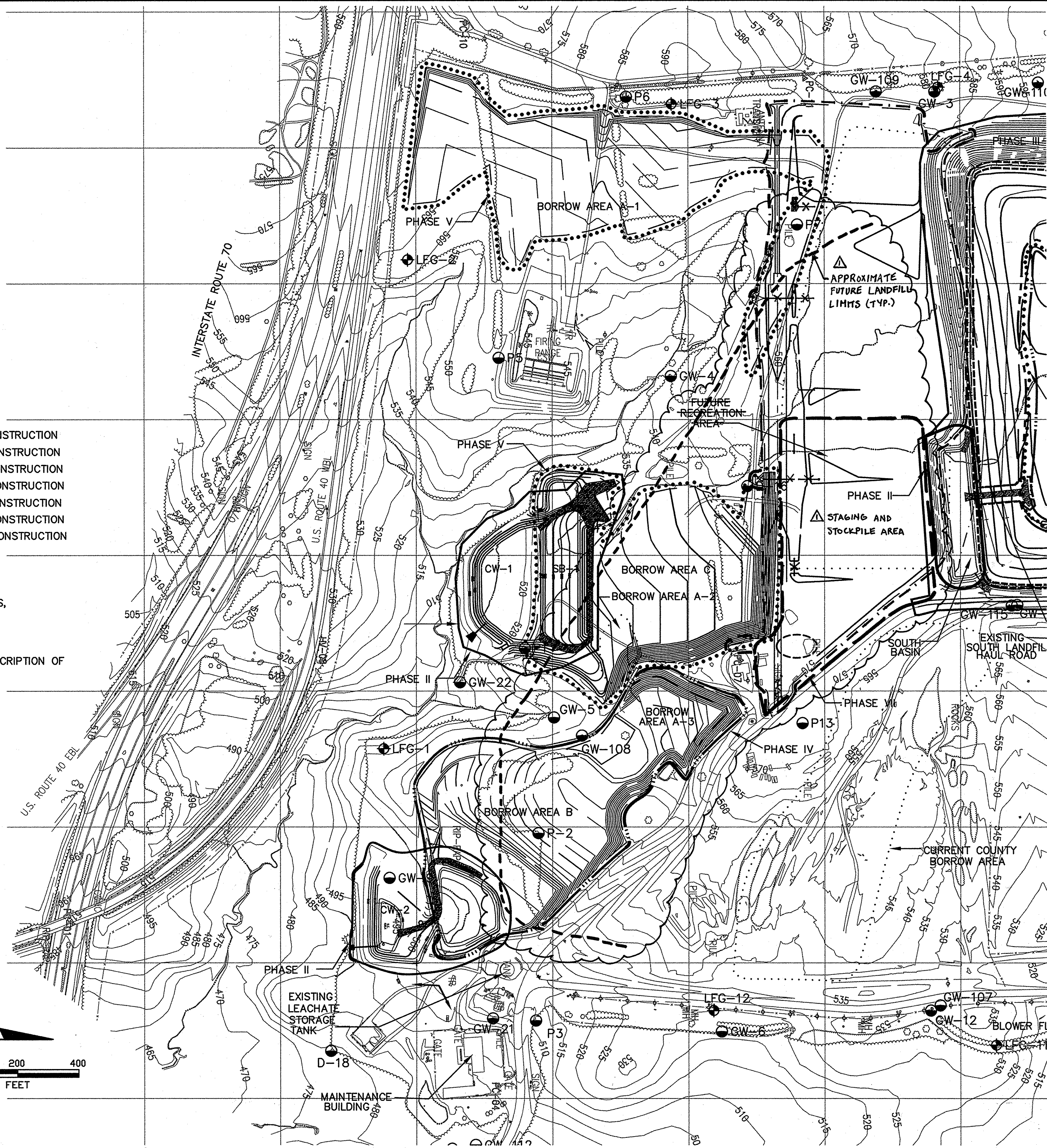
SCALE:  
1"=200'  
SHEET  
67 OF 121

LFSEQUENCE OVERALL-O M: 295077.01 BORROW

OVERALL-O

M: 285077.01 \BORROW\

BWSEQUENCE

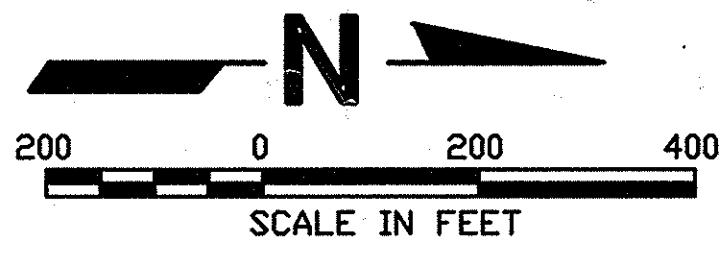


**LEGEND**

- PHASE I CONSTRUCTION
- PHASE II CONSTRUCTION
- PHASE III CONSTRUCTION
- PHASE IV CONSTRUCTION
- ..... PHASE V CONSTRUCTION
- PHASE VI CONSTRUCTION
- PHASE VII CONSTRUCTION

**NOTE:**  
 THIS SHEET FOR BORROW AREA SEQUENCE ONLY. WETLAND LIMITS, PROPERTY LINE AND 100 YEAR FLOODPLAIN LIMITS HAVE NOT BEEN SHOWN FOR CLARITY.

SEE SHEET 50 FOR WRITTEN DESCRIPTION OF EACH PHASE OF CONSTRUCTION



DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	
<i>[Signature]</i> DIRECTOR	11/3/97 DATE
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/22/97 DATE
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	11/2/97 DATE

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/606 16-378/215 10-691/314	ZONE PEC
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING
	CENSUS TR. 60-30

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>[Signature]</i> DIRECTOR OF PUBLIC WORKS	10/30/97 DATE
<i>[Signature]</i> CHIEF, BUREAU OF WASTE MANAGEMENT	10/30/97 DATE

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



DES.	RTT,MEH		
DRN.	MEH		
CHK.	PAM		
DATE:	10-30-97		
BY	MRG		
NO.		DELETED REC-AREA, ADDED STOCKPILE AREA, ETC.	11/9/99
		REVISION	DATE

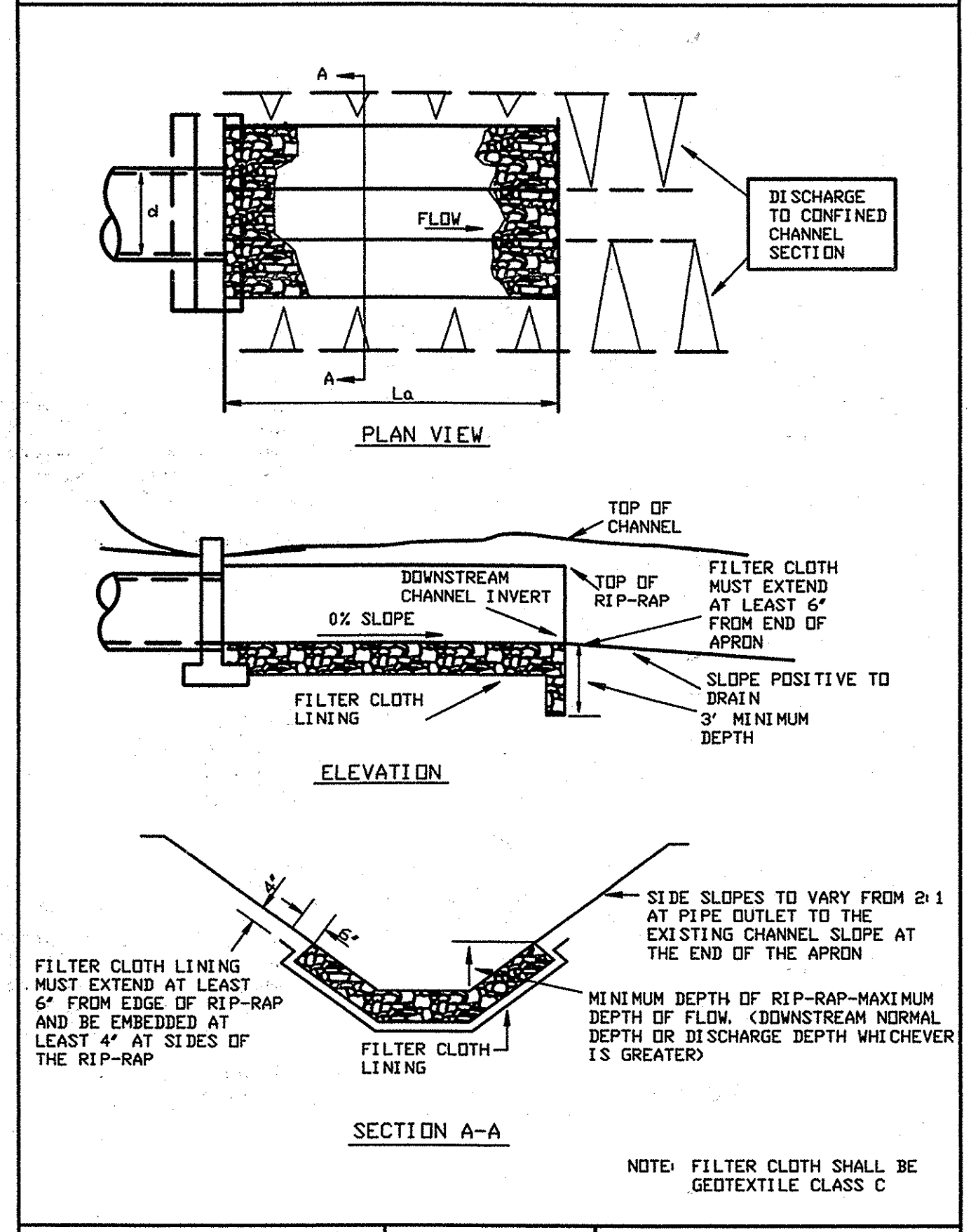
**BORROW AREA SEQUENCE PLAN**

**ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE**  
 CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE:  
 1"=200'  
 SHEET  
 68 OF 131

DETAIL 26 - ROCK OUTLET PROTECTION II



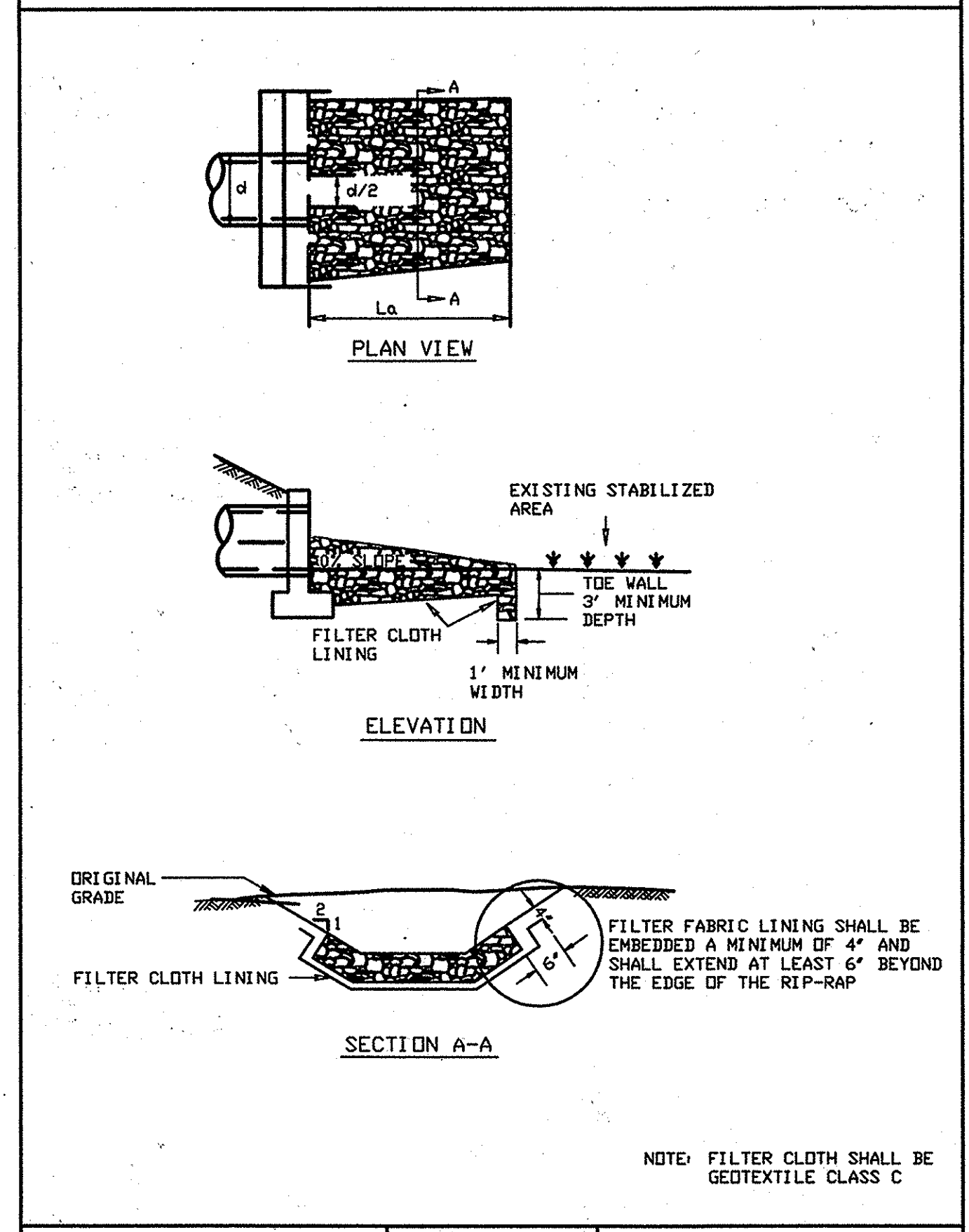
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-18-9 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NOTE: USE ROCK OUTLET PROTECTION II FOR NORTH BASIN, SOUTH SEDIMENT BASIN

ROCK OUTLET PROTECTION II Construction Specifications

- 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.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
- 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.
- 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.
- 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.

DETAIL 27 - ROCK OUTLET PROTECTION III



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-18-10 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NOTE: USE ROCK OUTLET PROTECTION III FOR CLEARWATER BASIN ONE, CLEARWATER BASIN TWO

Rock Outlet Protection III Construction Specifications

- 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.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
- 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.
- 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.
- 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.

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/806 18-878/215 10-891/314	ZONE PEC	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*Paul A. Smith* 11/3/97  
DIRECTOR DATE

*John J. O'Hara* 11/5/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

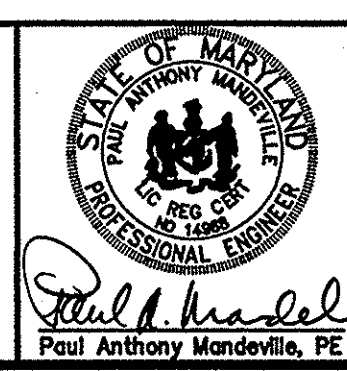
*Conrad Hamilton* 11/5/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James P. Lee* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. RTT				
DRN. JCB				
CHK. PAM				
DATE: 10-30-97	BY	NO.	REVISION	DATE

MISCELLANEOUS E & S  
DETAILS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

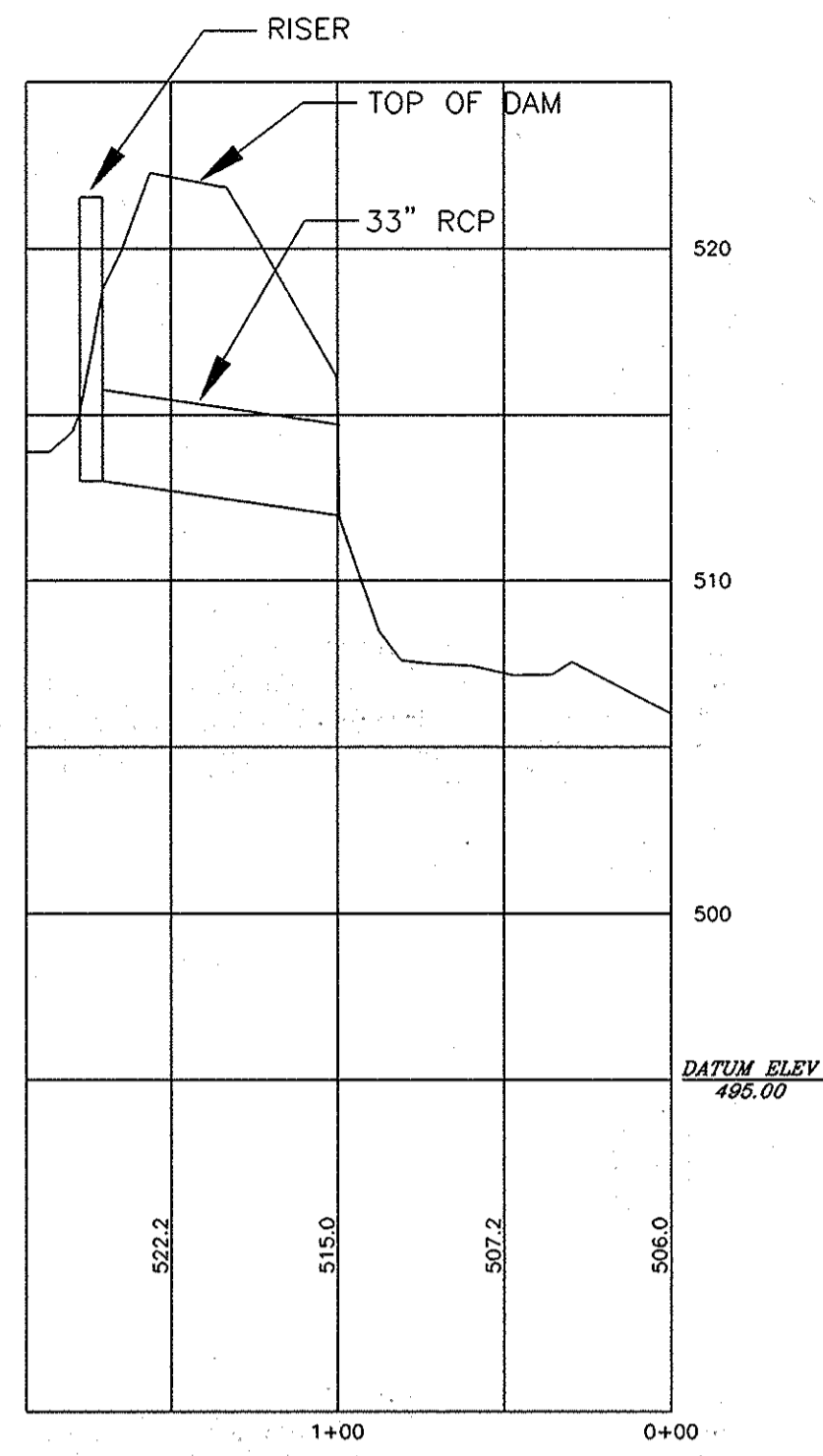
3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

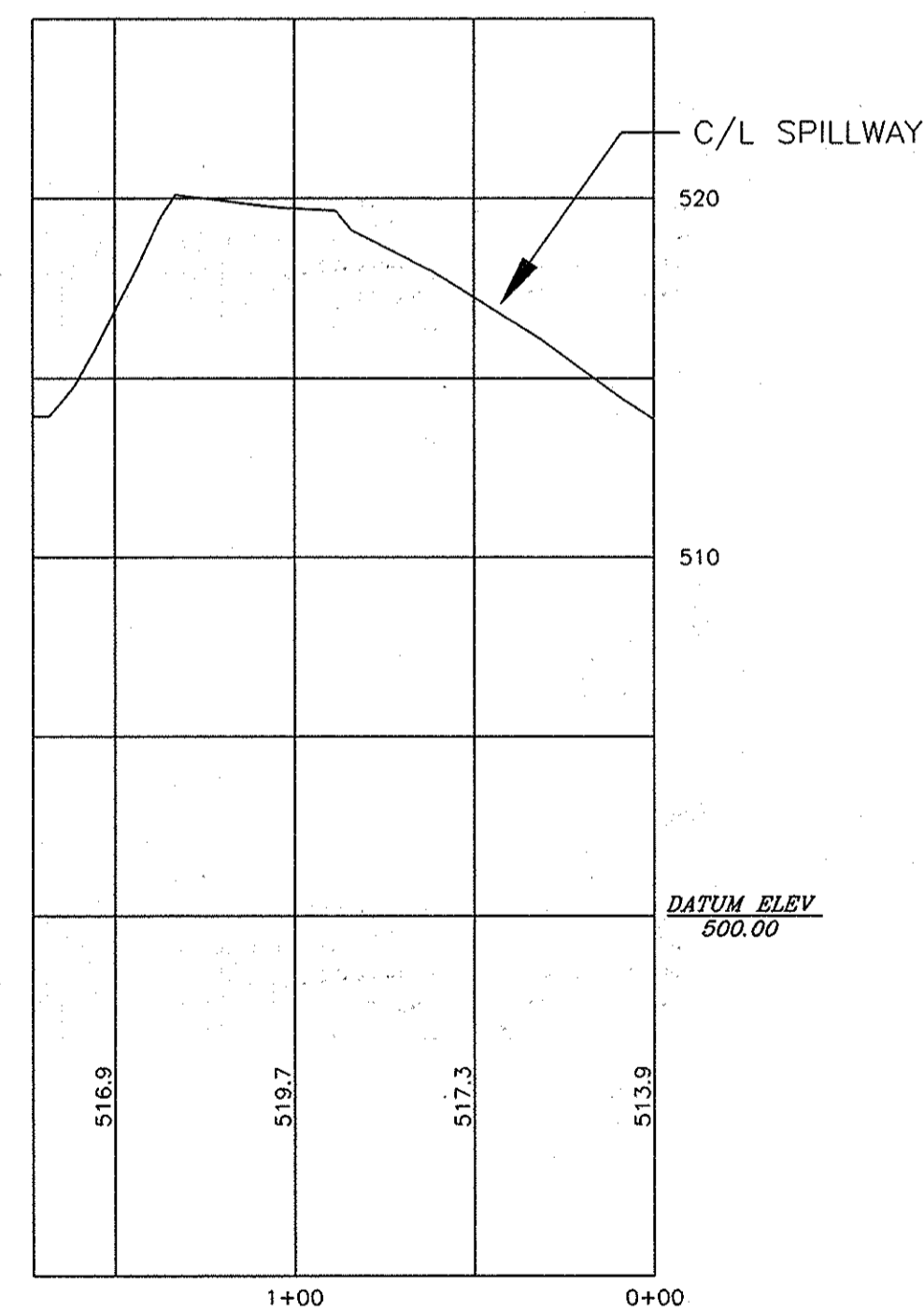
SCALE:  
AS NOTED  
SHEET  
69 OF 131

M:\295077\01\FINAL\DETAILS

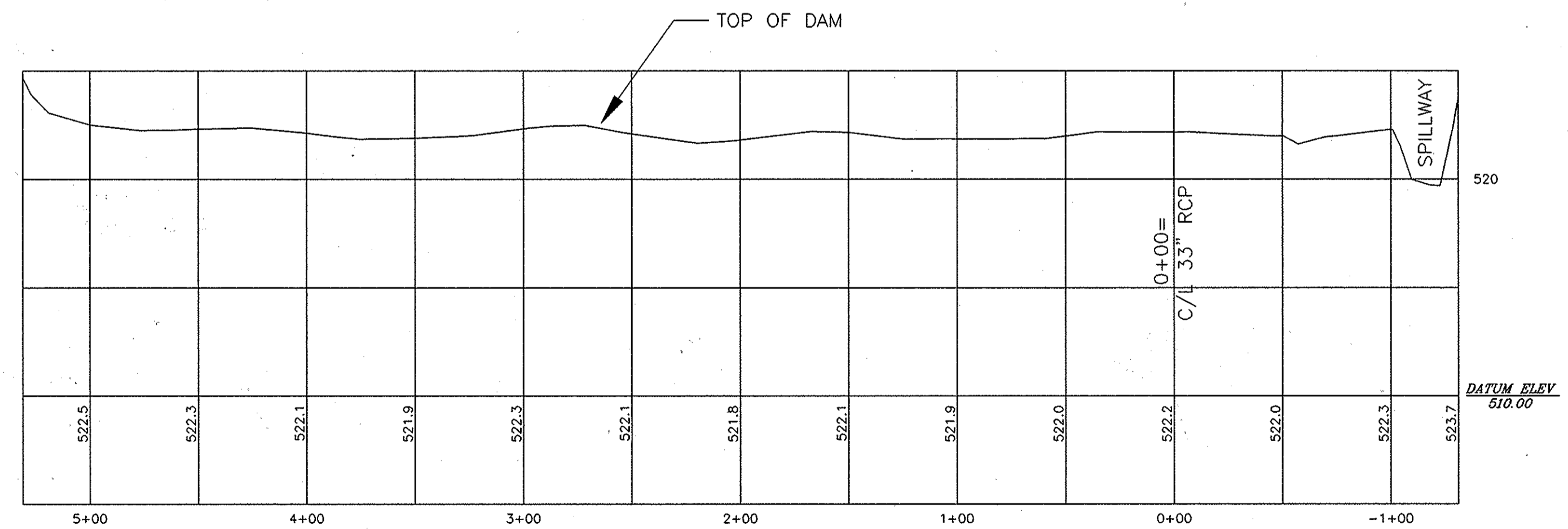
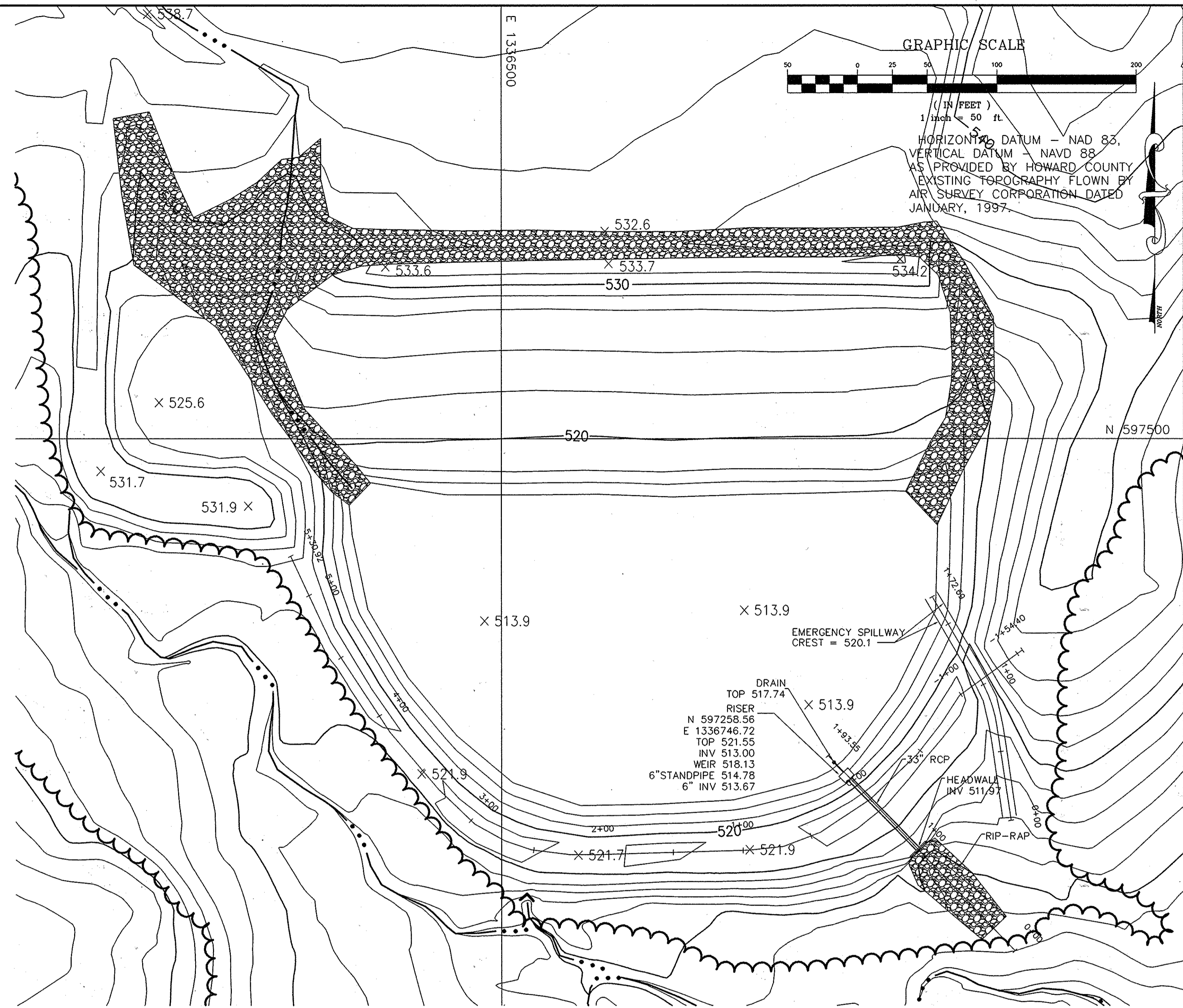
DET4



AS-BUILT OUTLET PIPE PROFILE  
CLEARWATER 1



AS-BUILT SPILLWAY PROFILE  
CLEARWATER 1

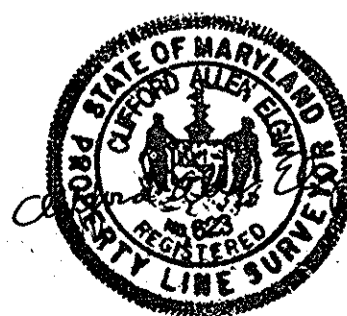


AS-BUILT DAM PROFILE  
CLEARWATER 1

C:\p1\dwg 10-25-00 10:55:50 on EST

DESIGNED BY:				REVISIONS			
DATE	DATE	BY	DESCRIPTION	DATE	DATE	BY	DESCRIPTION
2-23-00	3-30-2000	TWH	ADDED ALIGNMENTS AND PROFILES	10-17-00	TWH		LABELLED EMERGENCY SPILLWAY.

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565

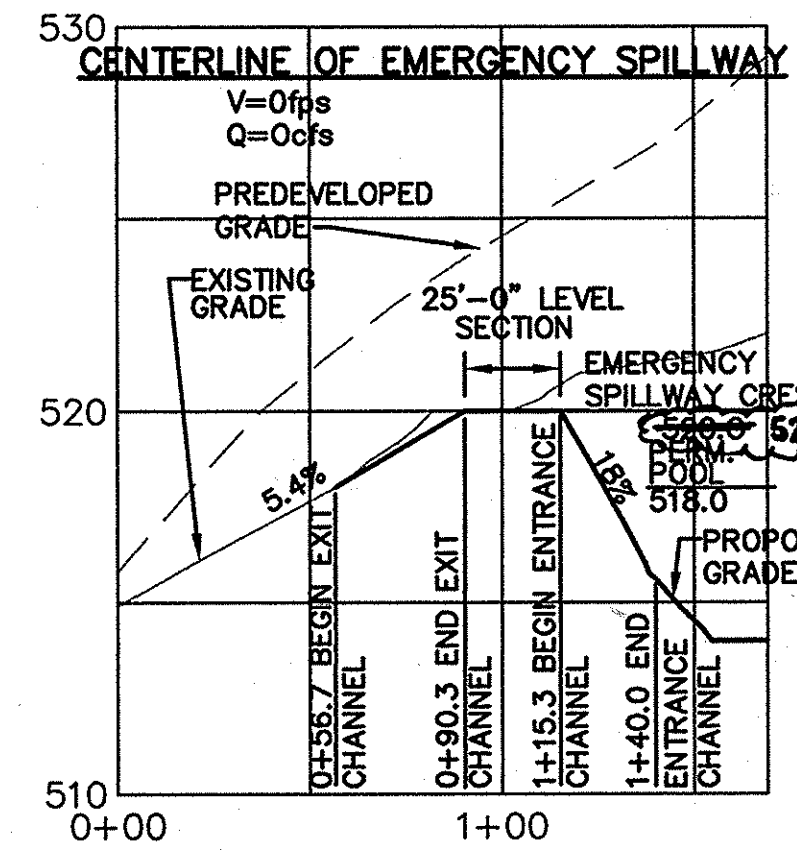
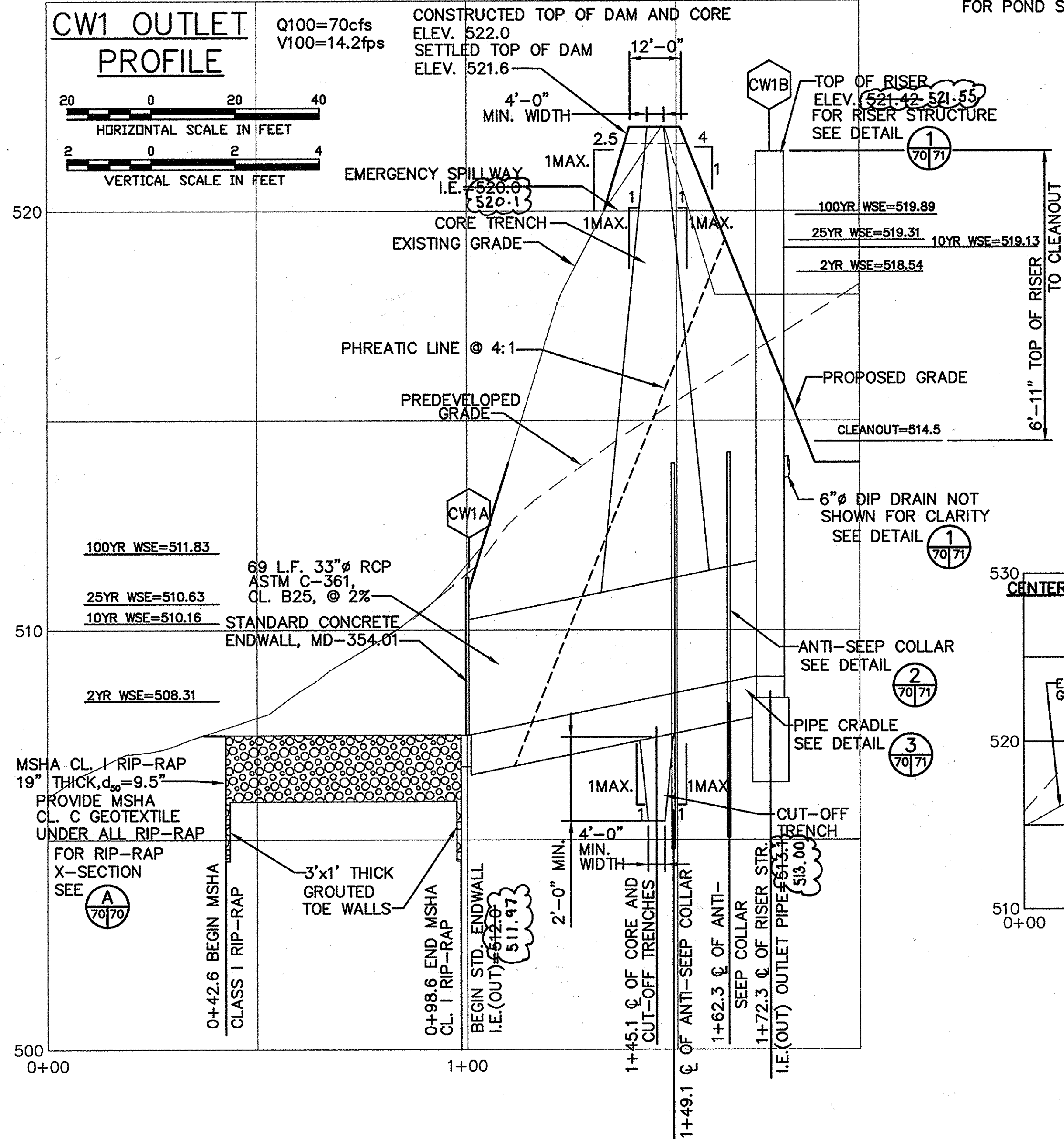
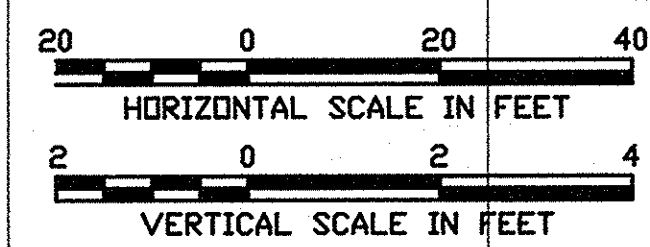


CLEARWATER 1 BASIN - ENLARGED PLAN AS-BUILT			
<b>ALPHA RIDGE LANDFILL CELL CLOSURE</b>			
HOWARD COUNTY	MARYLAND	SCALE: 1" = 50'	CONTRACT NO.: 98301.10
		DATE: 2-23-2000	SHEET: 70-AB

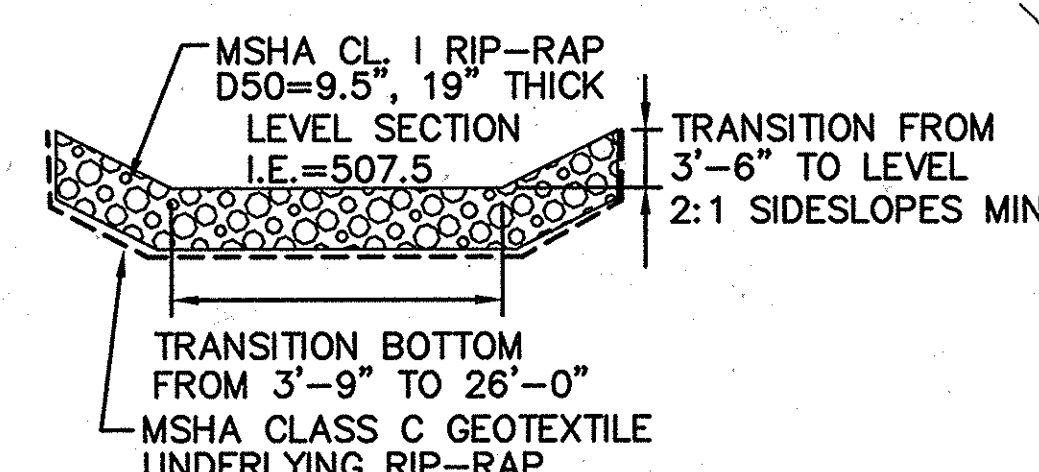
FOR POND SUMMARY TABLE SEE SHT. 71

**CW1 OUTLET PROFILE**

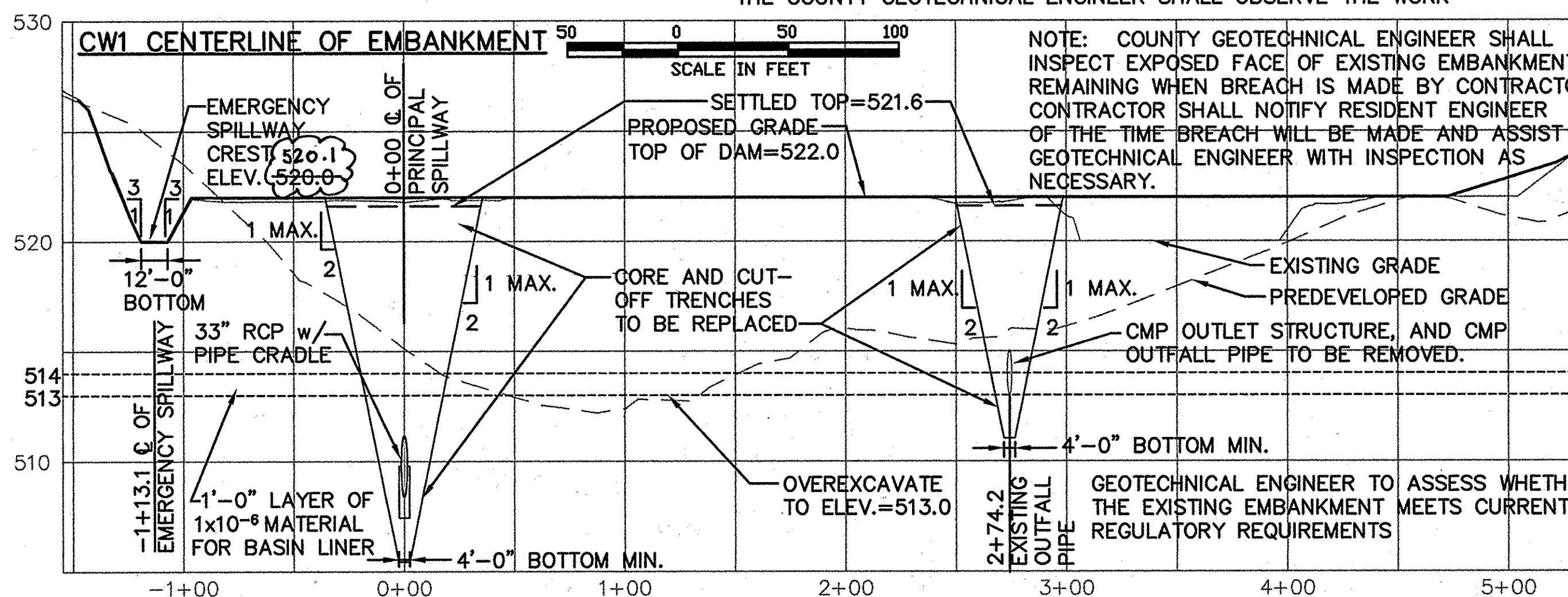
Q100=70cfs  
V100=14.2fps



SEE ETA SHEET 70A-B  
FOR AS BUILT CLEARWATER 1  
BASIN ENLARGED PLAN



**CW1 OUTLET X-SECTION (A)**  
SCALE: 1"=5'-0"

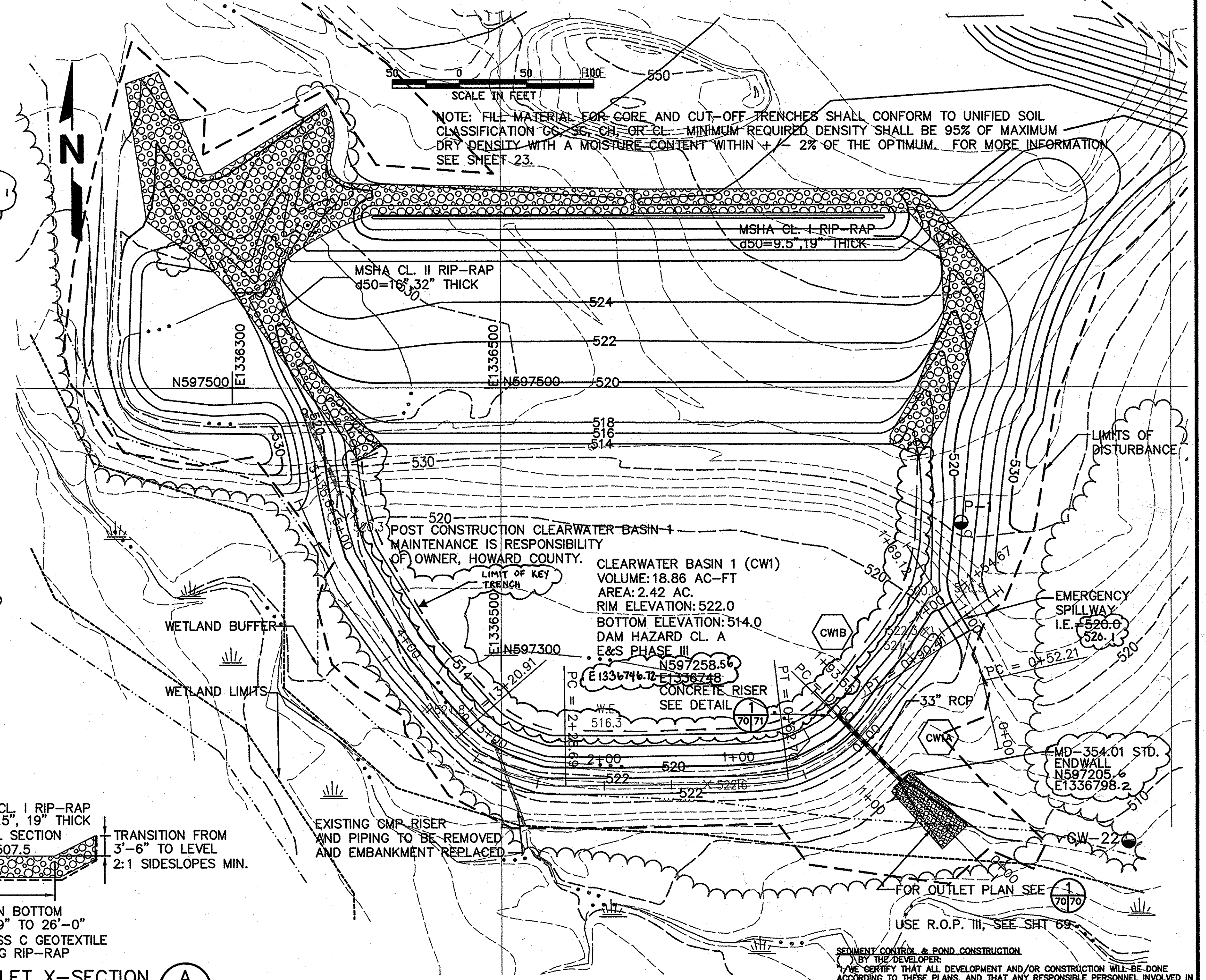


DES.	AST	BY	NO.	REVISION	DATE

**CLEARWATER 1 BASIN  
ENLARGED PLAN AND PROFILES**

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N  
SCALE: AS NOTED  
SHEET 70 OF 125



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.

SUBDIVISION NAME	LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220,11	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
10-847/606 18-876/215 10-891/314	PEC	10 & 16
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*Paul A. Mandeville* 10/30/97  
DIRECTOR DATE

*Condy Hamilton* 10/30/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

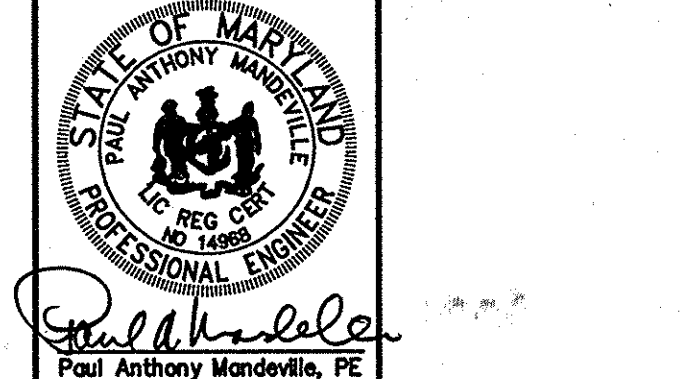
*John J. O'Hara* 10/30/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James J. Lewis* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



CONTRACTOR SHALL SCARIFY, BLEND AND COMPACT THE NEW CORE TRENCH WITH THE EXISTING CORE TRENCH TO REMAIN. THE COUNTY GEOTECHNICAL ENGINEER SHALL OBSERVE THE WORK

NOTE: COUNTY GEOTECHNICAL ENGINEER SHALL INSPECT EXPOSED FACE OF EXISTING EMBANKMENT REMAINING WHEN BREACH IS MADE BY CONTRACTOR. CONTRACTOR SHALL NOTIFY RESIDENT ENGINEER OF THE TIME BREACH WILL BE MADE AND ASSIST GEOTECHNICAL ENGINEER WITH INSPECTION AS NECESSARY.

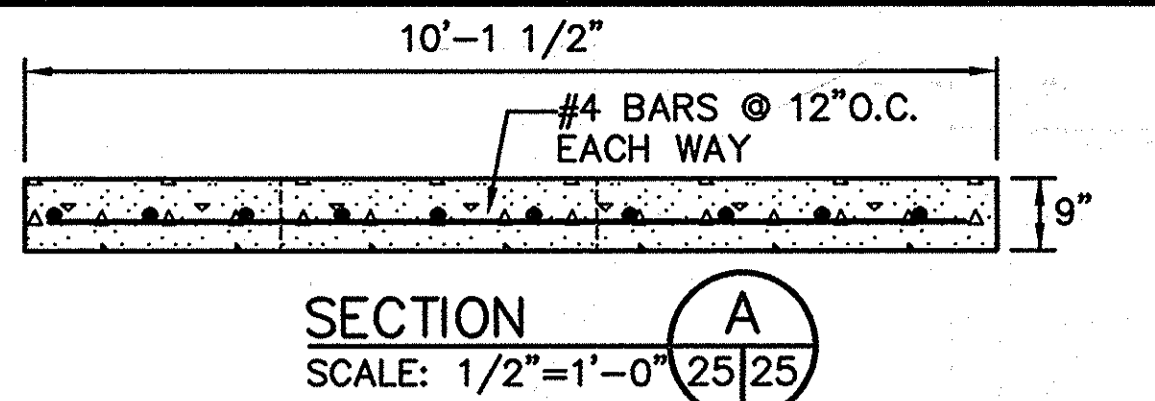
NOTE: THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION SOIL EROSION AND SEDIMENT CONTROL.

*Charles S. Hammond* 10-30-97  
USDA - NATURAL RESOURCES CONSERVATION DATE

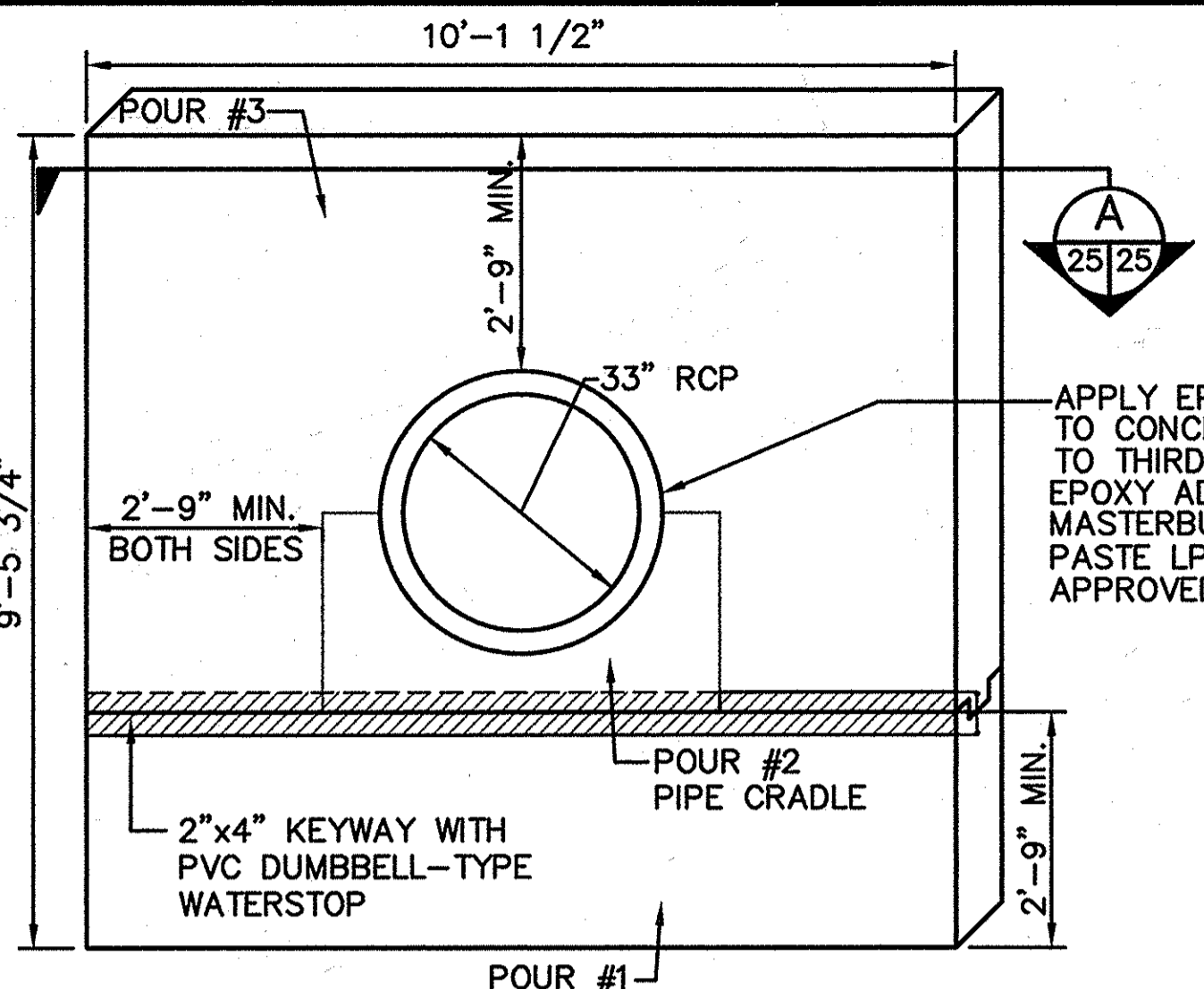
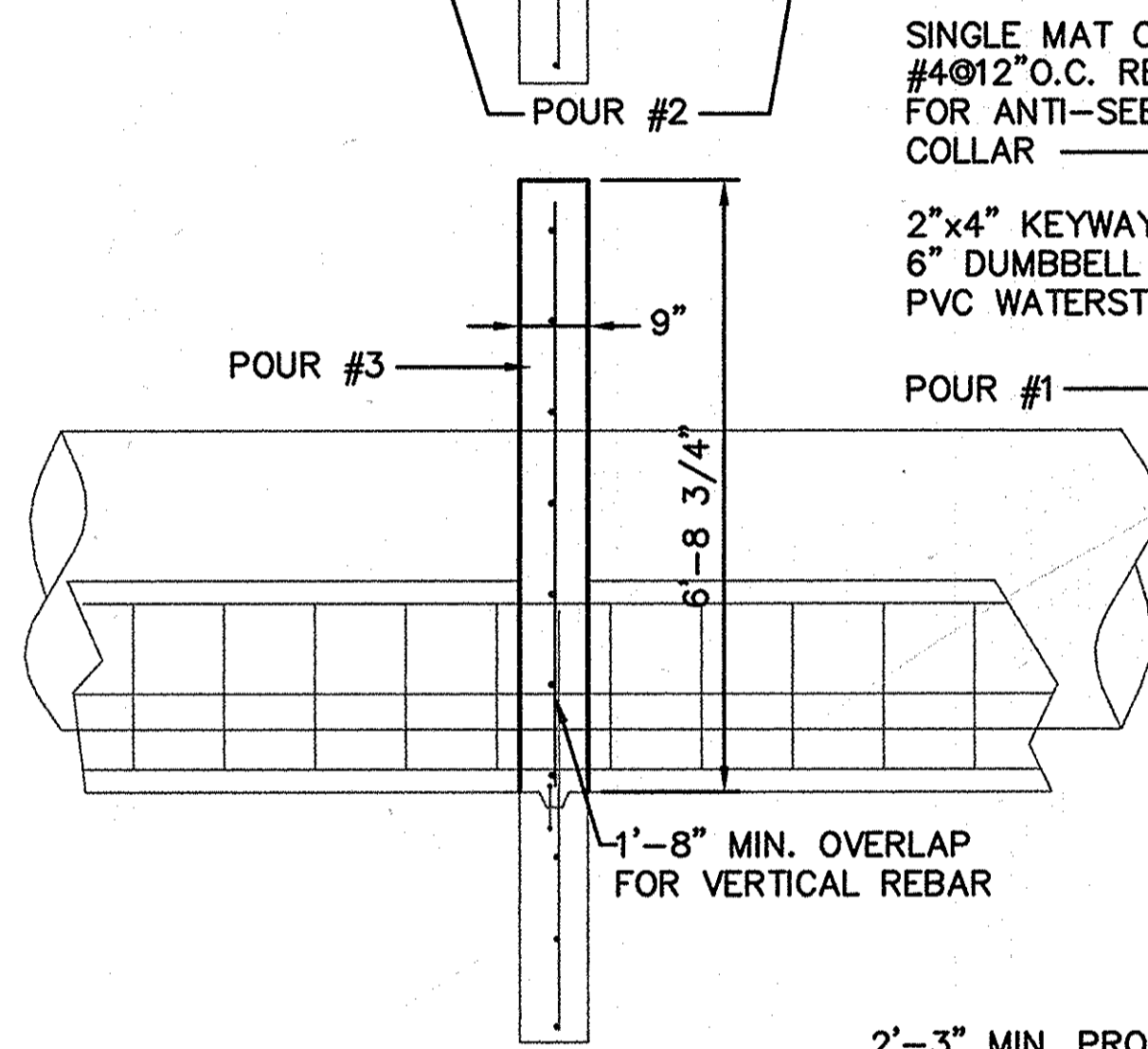
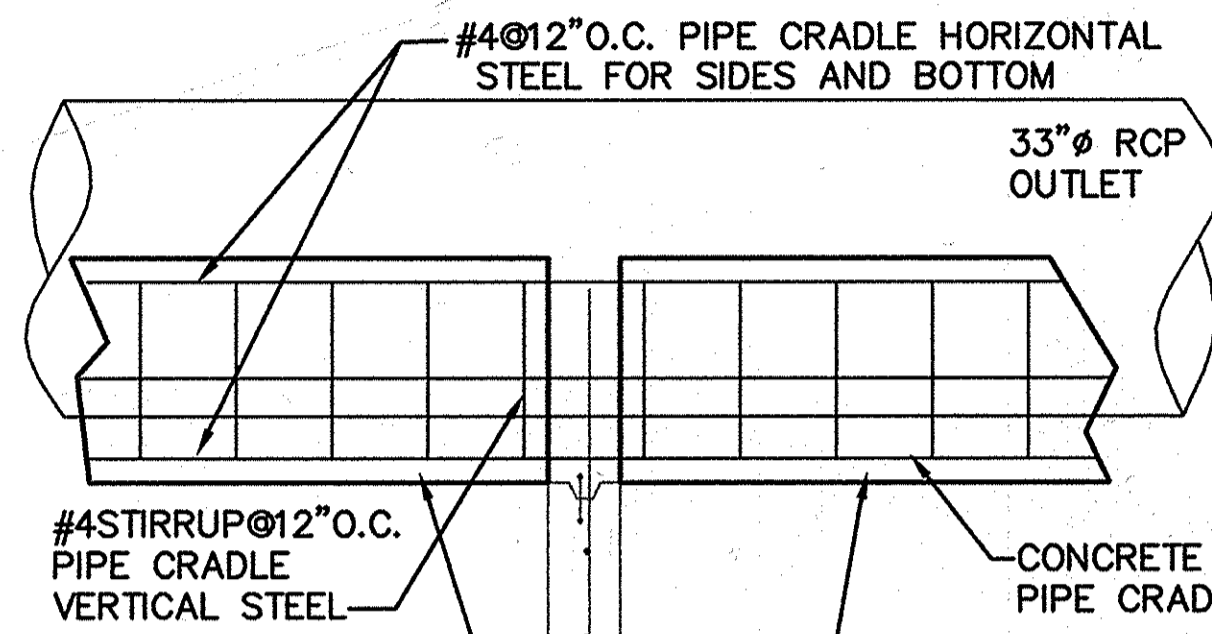
*Paul A. Mandeville* 10-30-97  
HOWARD SOIL CONSERVATION DISTRICT DATE

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. 17652  
*Paul A. Mandeville* DATE 10/30/97

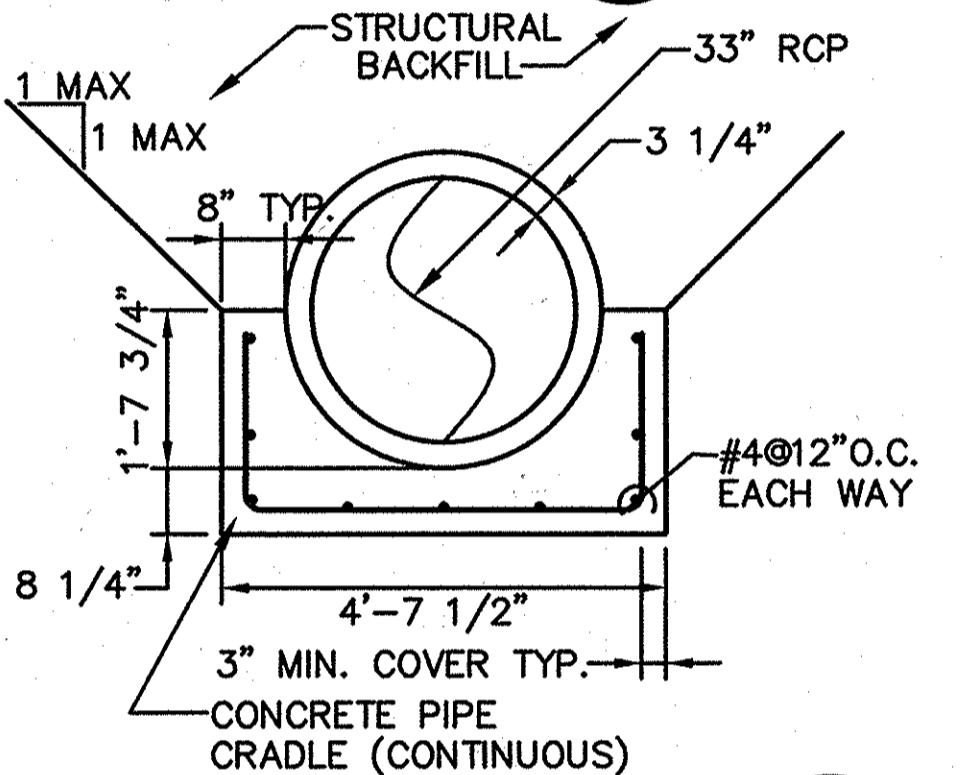
CW1PLAN-B M: 295077.01 FINAL BRW4CW1.PRF-CW1OUT.PRF-CW1DAM.CW1RPLAN.XS-CW10



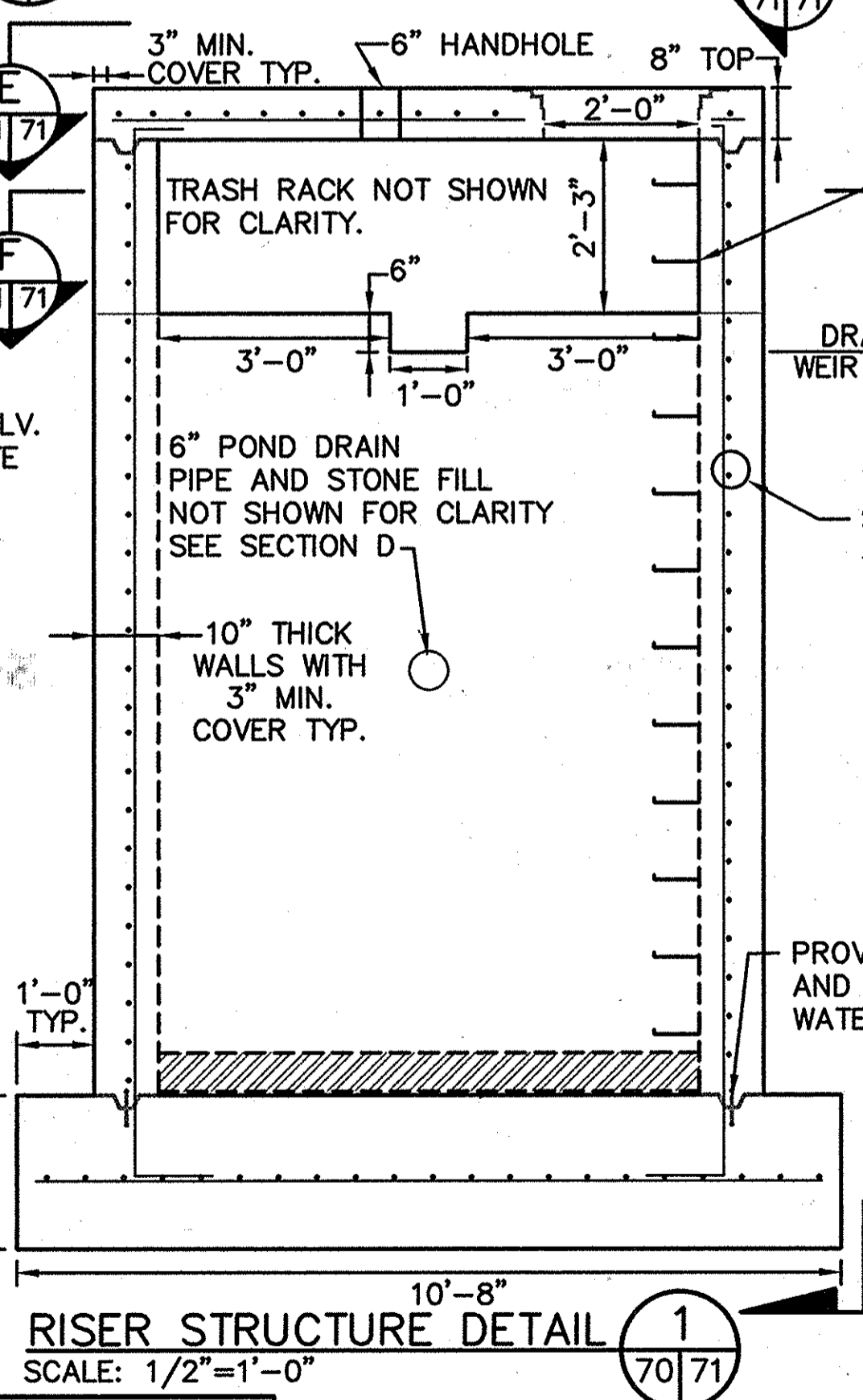
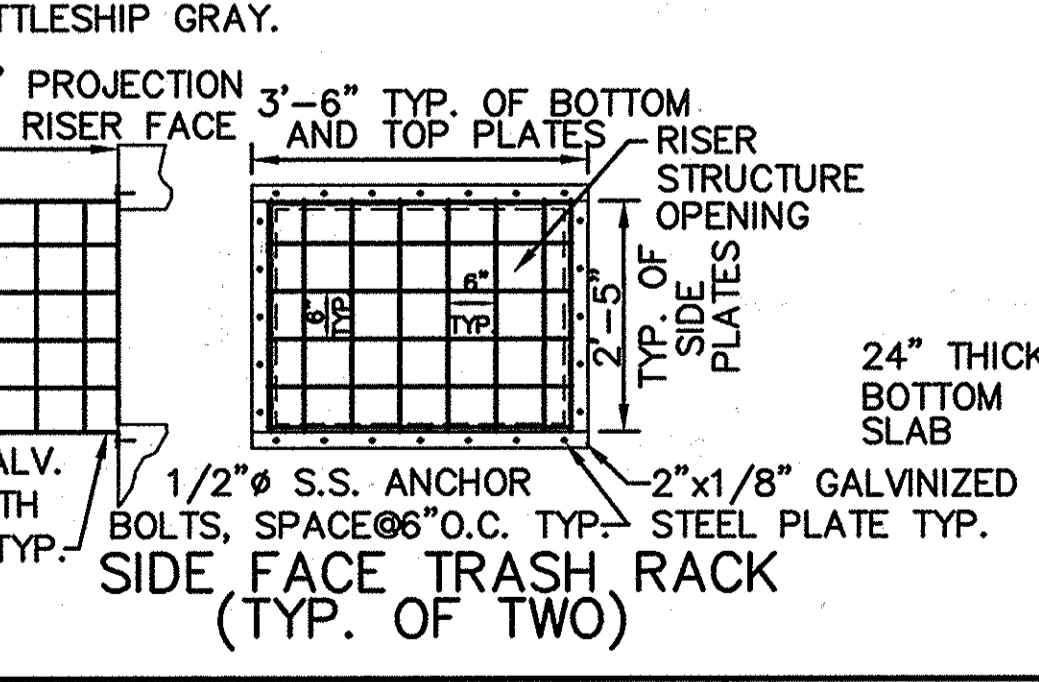
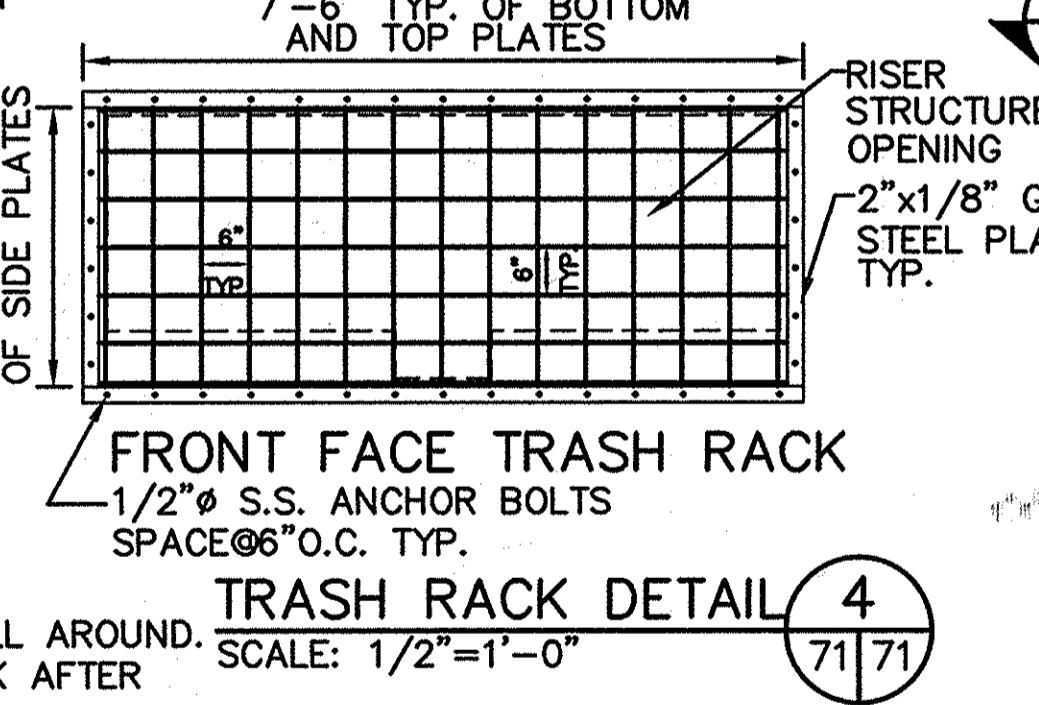
- NOTES:
- ANTI-SEEP COLLAR TO BE POURED AT LEAST TWO (2) FEET FROM NEAREST PIPE JOINT
  - ANTI-SEEP COLLAR IS TO BE CONSTRUCTED IN THREE POURS. BOTTOM HALF TO BE POURED FIRST.
  - PLACE PIPE AND POUR CRADLE SECOND.
  - TOP PORTION OF COLLAR POURED THIRD.
  - BACKFILL SHALL BE PLACED EVENLY ON BOTH SIDES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



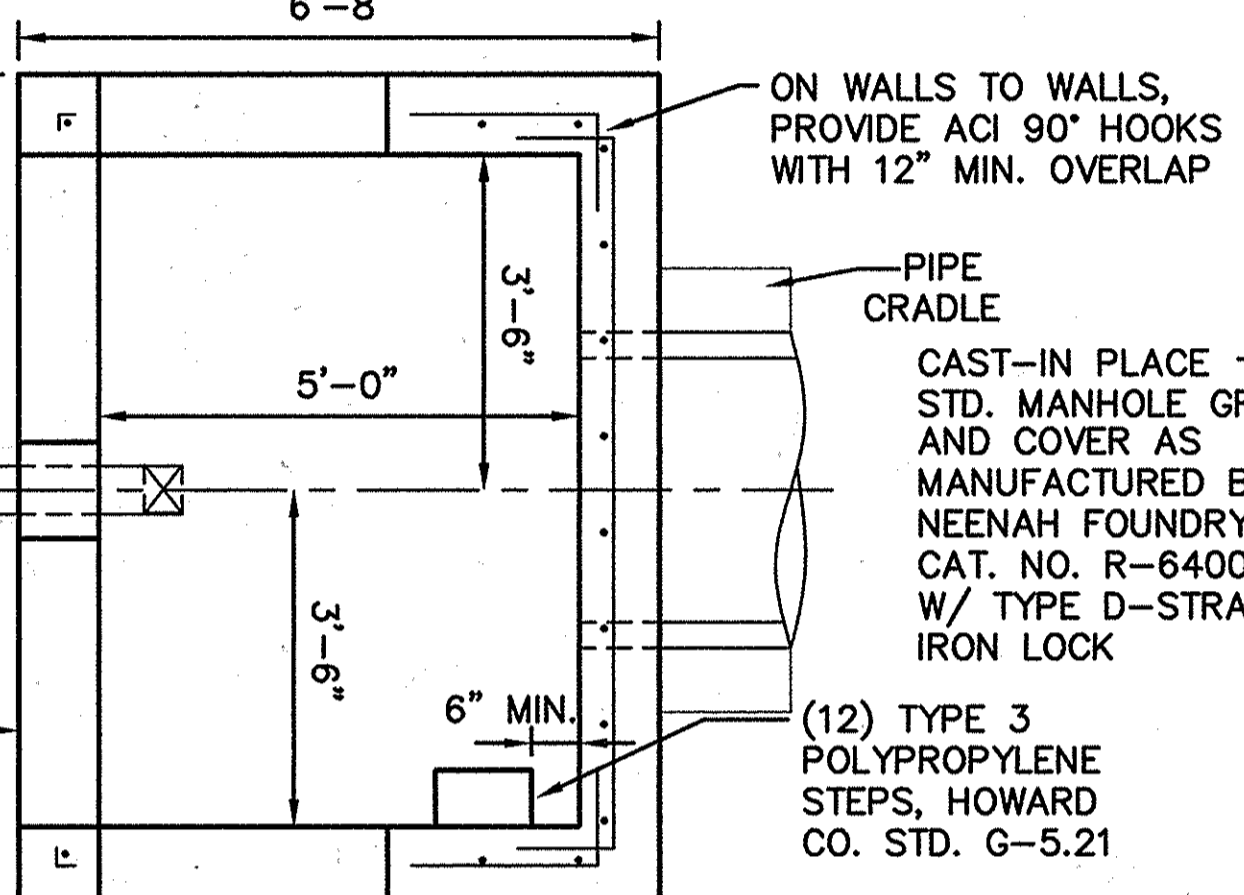
ANTI-SEEP COLLAR DETAIL (TYPICAL OF TWO)  
SCALE: 1/2"=1'-0"



- A2 PIPE CRADLE DETAIL  
SCALE: 1/2"=1'-0"
- NOTES:
- PIPE CRADLE SHALL HAVE A MINIMUM  $f_c$  OF 4,000 psi @ 28 DAYS
  - USE INTERMEDIATE GRADE REINFORCING STEEL



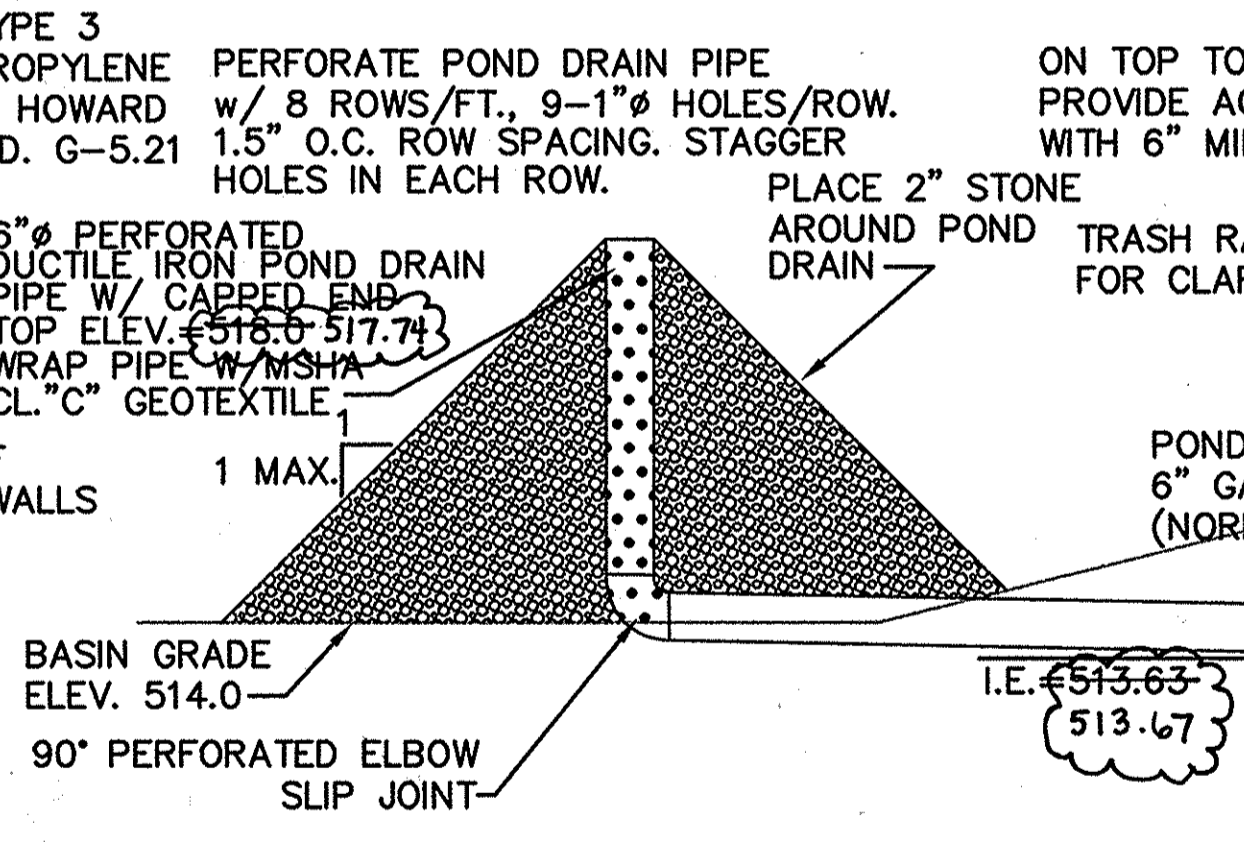
RISER STRUCTURE SECTION F  
SCALE: 1/2"=1'-0"



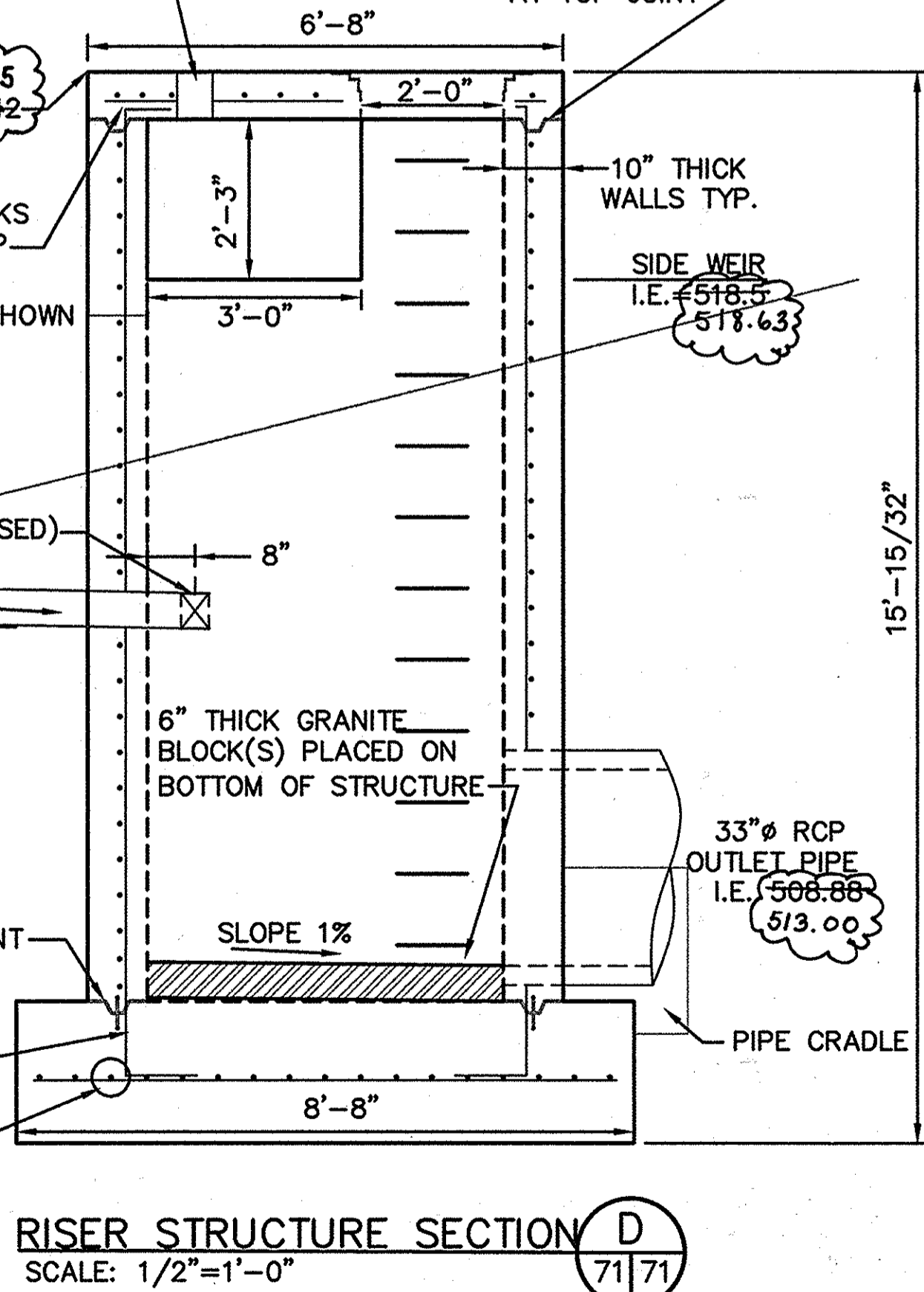
RISER STRUCTURE SECTION E  
SCALE: 1/2"=1'-0"

NOTE: FOR RISER MODIFICATIONS DURING CONSTRUCTION ACTIVITIES, SEE (1) 7/1/75

NOTE: RISER STRUCTURE TO BE POURED IN-PLACE



SCALE 1/2"=1'-0"



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

POND	RISER				OUTLET PIPE				ANTI-SEEP COLLAR		DAM		EMERG. SPILLWAY		CORE TRENCH		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.	25 YR.	100 YR.
CW1	2'-3"	12'	518.63	6.67' x 518.67'	33	69	513.00	511.97	2	9.48' H. 10.13' W.	12'	522	521.6	520.0	12	4'	1:1	4'	1:1	518.54	519.13	519.31	519.89

POST CONSTRUCTION CLEARWATER 1 BASIN MAINTENANCE IS RESPONSIBILITY OF OWNER, HOWARD COUNTY

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.

DATE: 10/30/97  
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE): JOHN J. O'HARA

( ) 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.

DATE: 10/31/97  
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE): PAUL A. MANDEVILLE

( ) 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.

DATE: 10-30-97  
SIGNATURE: [Signature]

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

DATE: 10-30-97  
SIGNATURE: [Signature]

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.

DATE: 10/10/01  
SIGNATURE: [Signature]

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-578). THE POND OWNER(S) AND ANY OTHER 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 ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/606 18-878/215 10-591/314	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING
CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

DATE: 11/3/97  
DATE: 10/30/97  
DATE: 11/3/97

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DATE: 10/30/97  
DATE: 10/30/97

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



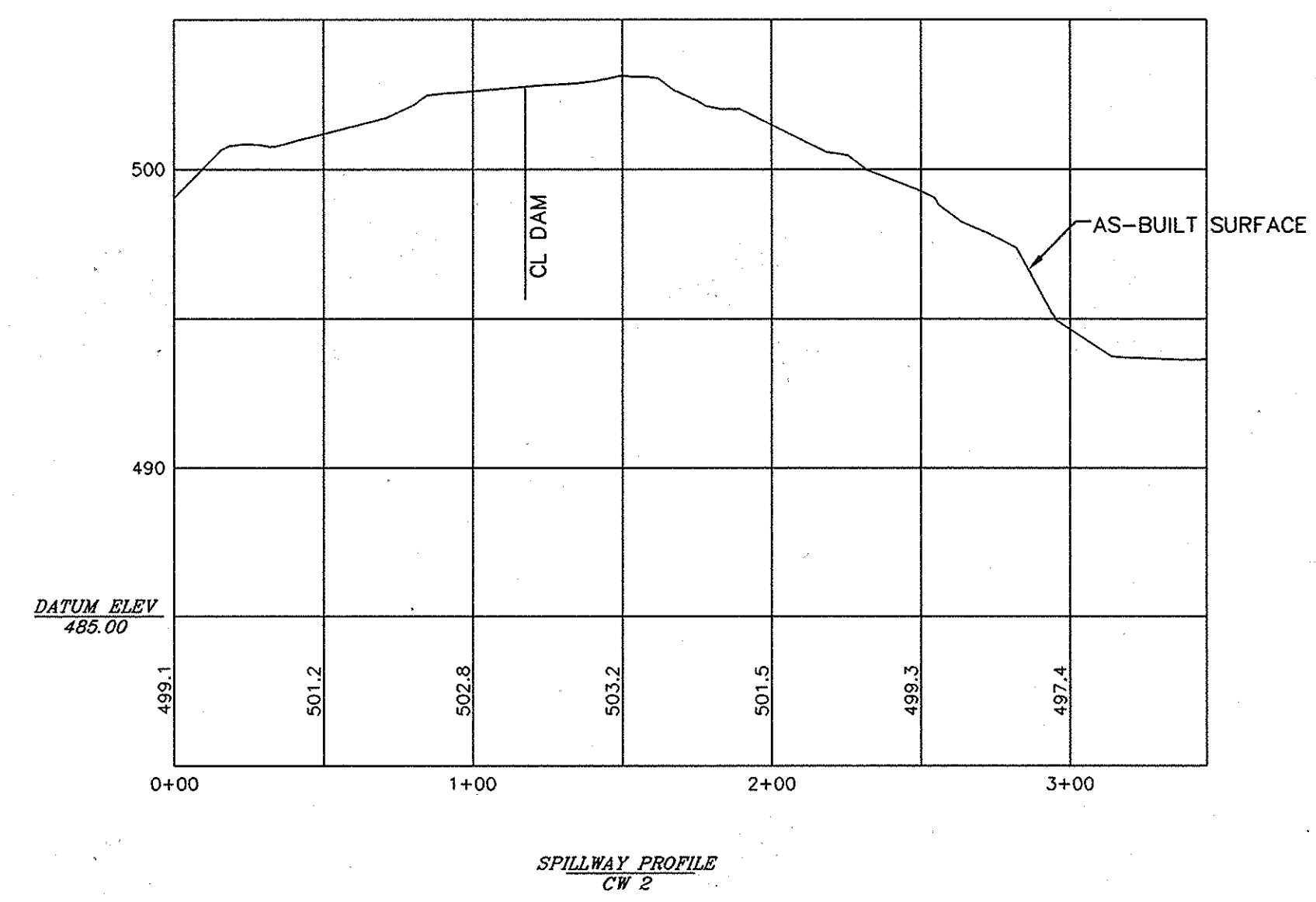
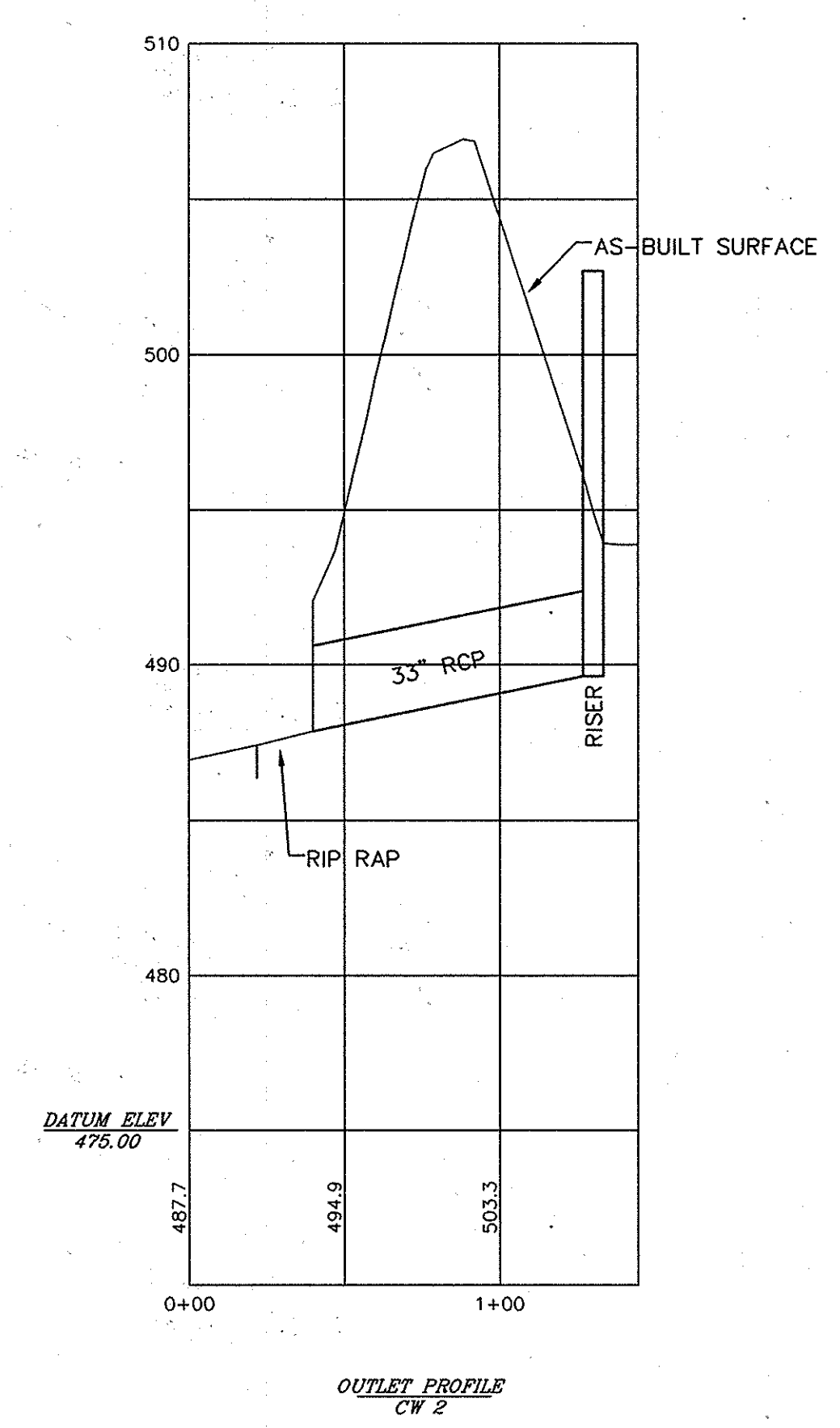
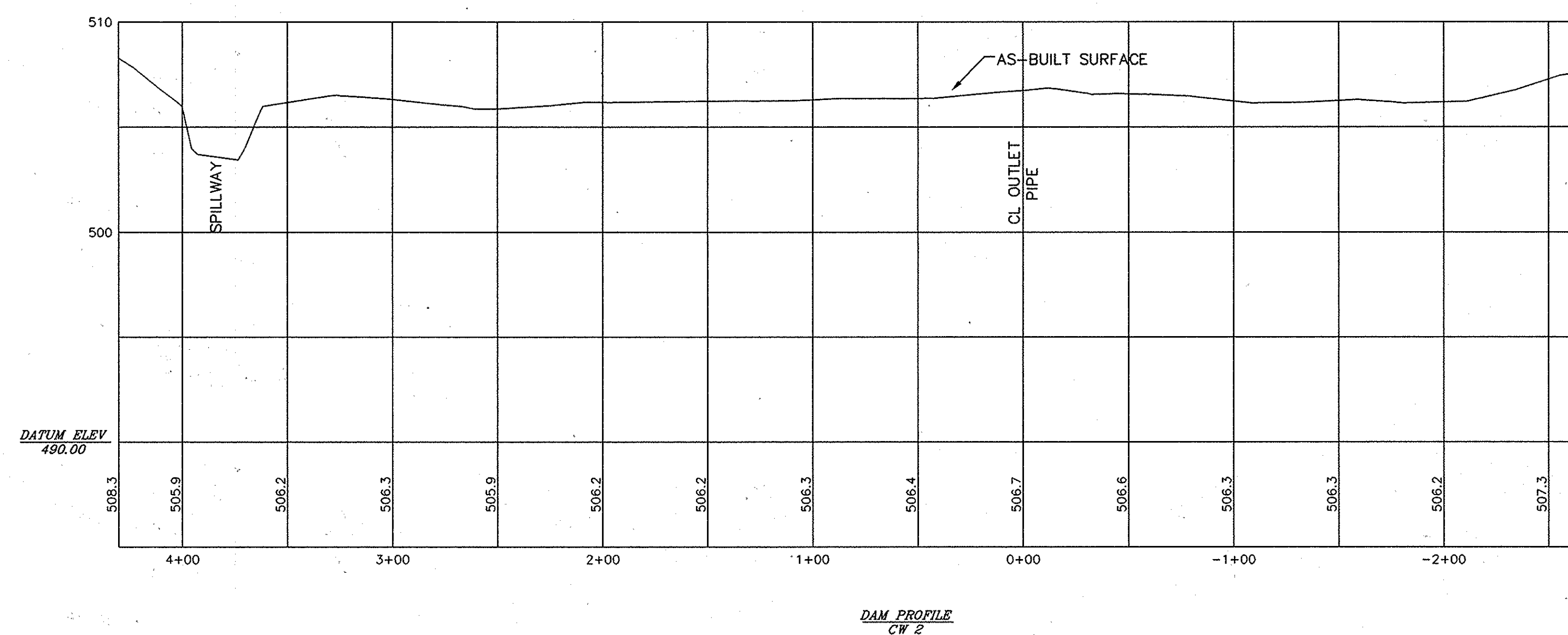
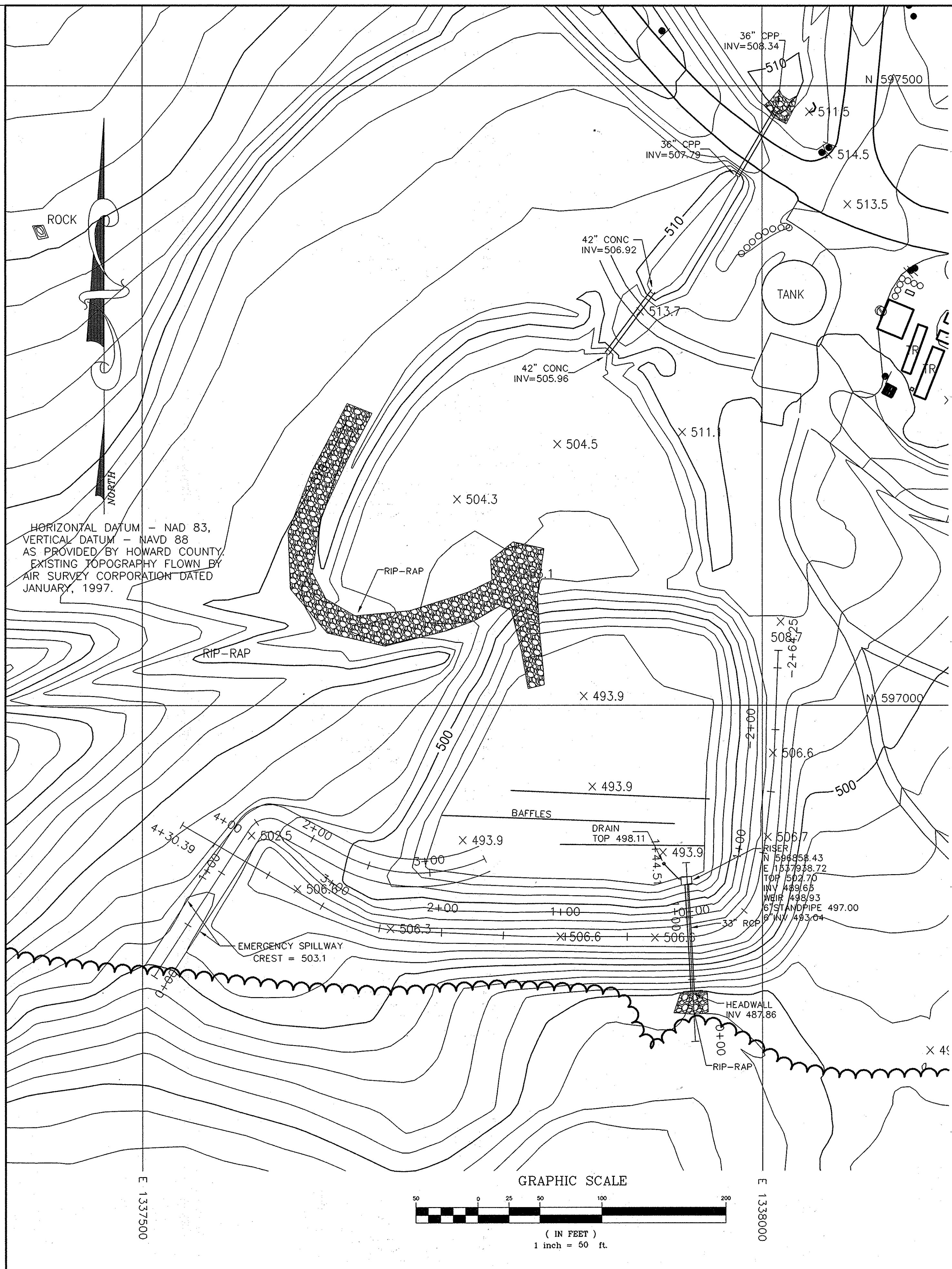
DES. AST	BY	NO.	REVISION	DATE
DRN. AST				
CHK. PAM				
DATE: 10-30-97				

CLEARWATER 1 BASIN DETAILS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

SCALE: AS NOTED  
SHEET 71 OF 128

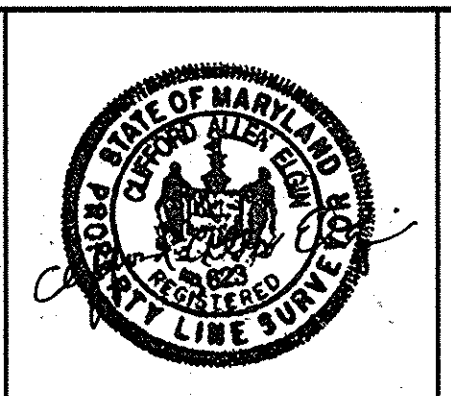
CW1DTS-B M. 295077-01/FINAL ANTSP-CWI-CRADLE-CWI-RISER-CWI, TRK-CWI, TEL-CWI



CW2.dwg 10-25-00 11:02:24 am EST

DESIGNED BY:	DATE	DATE	BY	DESCRIPTION
DRAWN BY: TWH	2-23-00	4-6-00	TWH	ADDED PROFILES
CHECKED BY:	DATE	10-17-00	TWH	LABELED EMERGENCY SPILLWAY.
APPROVED BY:	DATE			

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
ENGINEERS \* PLANNERS \* SURVEYORS  
3458 ELLICOTT CENTER DRIVE SUITE 101  
ELLICOTT CITY, MARYLAND 21043  
BALTO. (410)461-9920 FAX (410)750-8565



CLEARWATER 2 BASIN - ENLARGED PLAN AS-BUILT  
**ALPHA RIDGE LANDFILL CELL CLOSURE**  
HOWARD COUNTY MARYLAND  
SCALE : 1"=50' CONTRACT NO.: 98301.10 DATE : 2-23-2000 SHEET 72-AB OF 121

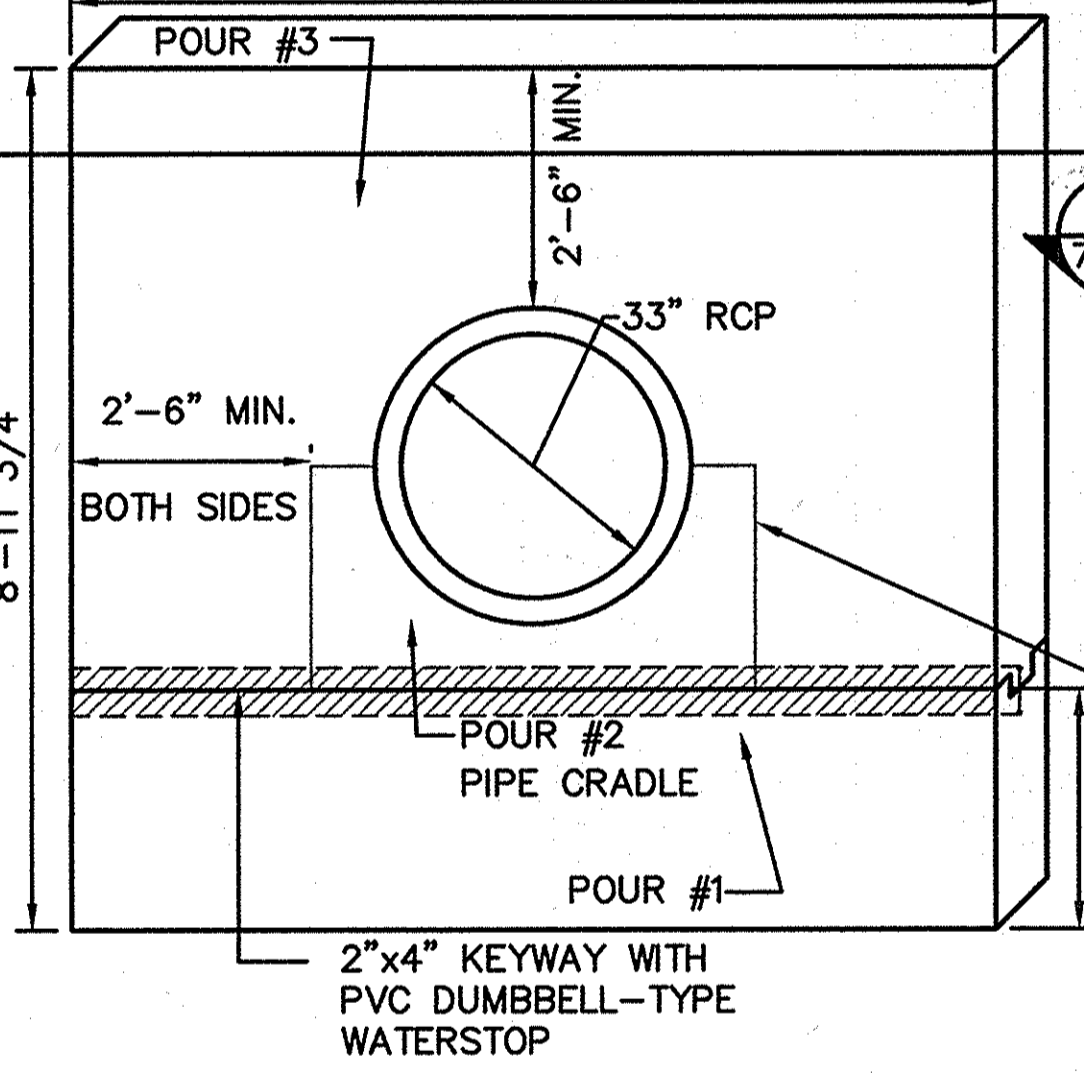
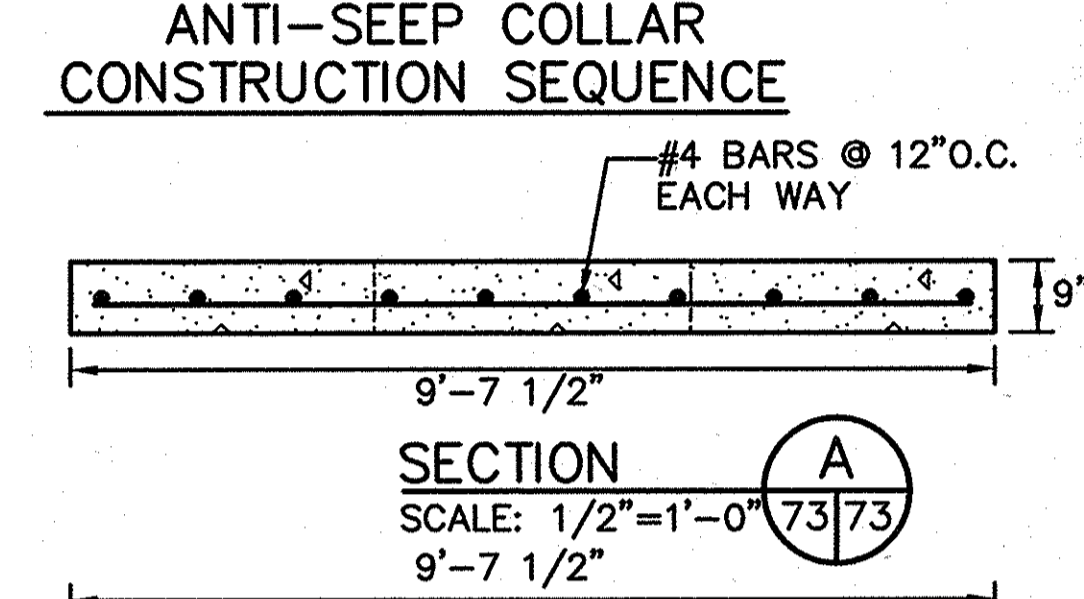
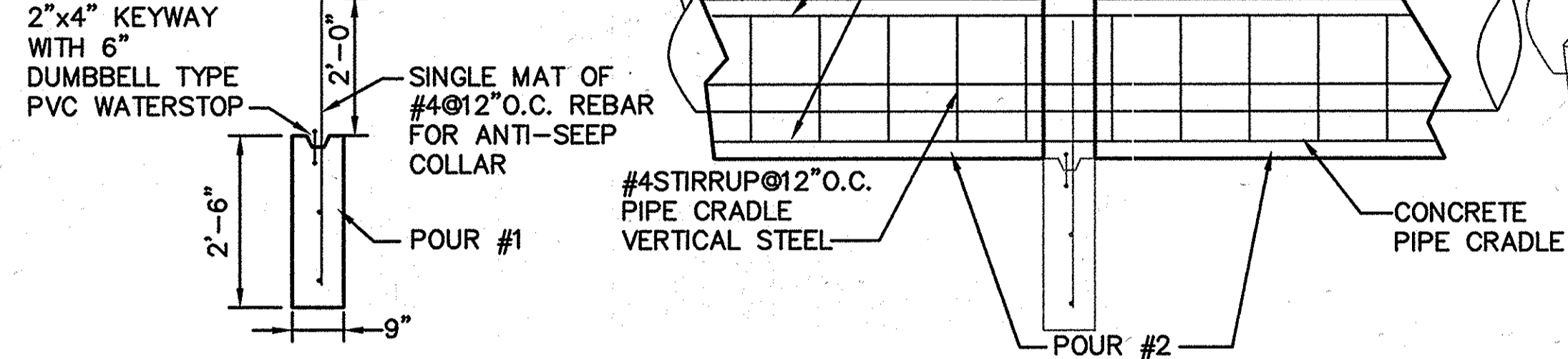




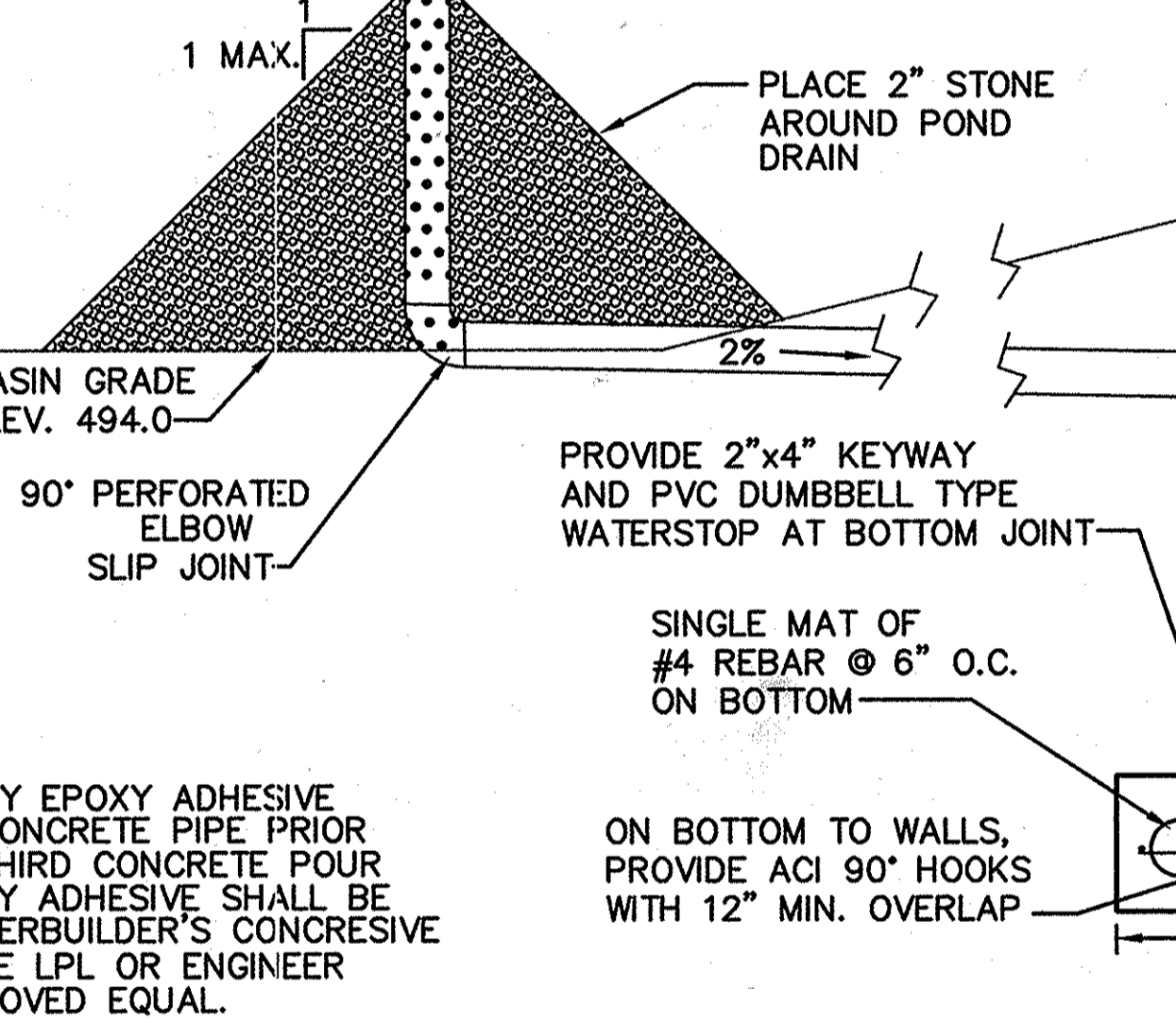
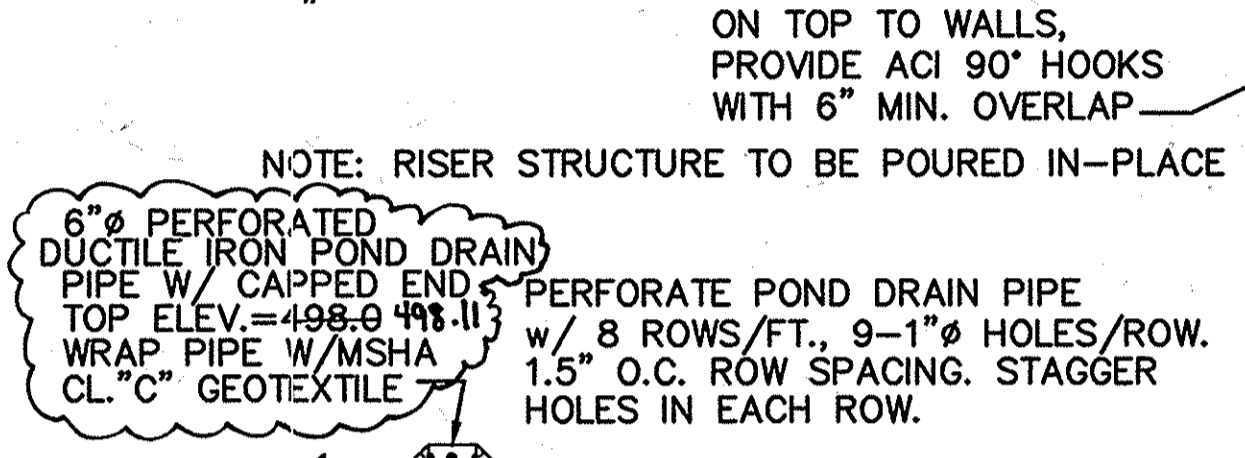
POND	RISER				OUTLET PIPE				ANTI-SEEP COLLAR		DAM		EMERG. SPILLWAY		CORE TRENCH		CUT-OFF TRENCH		WATER SURFACE ELEV.				
	WEIR HT.	WEIR WIDTH	CREST ELEV.	STR. WIDTH	DIA. IN.	L FT.	U/S INV.	D/S INV.	QTY.	APPROX. SIZE	TOP WIDTH FT.	CONSTR. HEIGHT	SETTLED HEIGHT	ELEV.	BOTTOM WIDTH FT.	TOP WIDTH FT.	SIDE SLOPES	BOT. WIDTH FT.	SIDE SLOPES	2 YR.	10 YR.	25 YR.	100 YR.
CW2	2'-0"	12'	506.16	16.67' x 500.08	33	89	489.63	487.86	2	8.98' H. 9.63' W.	15'	506	505.4	503.1	10	4'	1:1	4'	1:1	498.70	500.07	500.33	501.07

POST CONSTRUCTION CLEARWATER 2 BASIN MAINTENANCE IS RESPONSIBILITY OF OWNER, HOWARD COUNTY

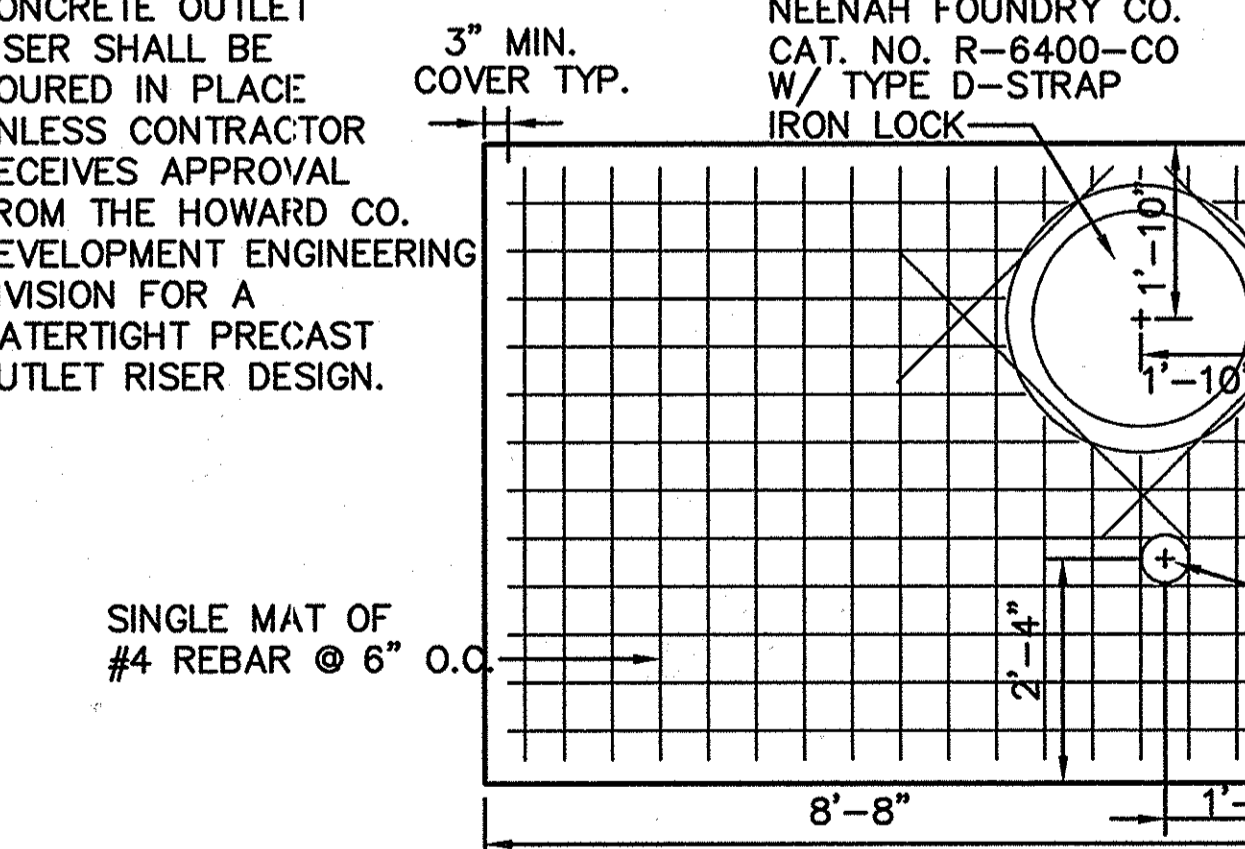
- NOTES:
- ANTI-SEEP COLLAR TO BE POURED AT LEAST TWO (2) FEET FROM NEAREST PIPE JOINT
  - ANTI-SEEP COLLAR IS TO BE CONSTRUCTED IN THREE POURS.
  - BOTTOM HALF TO BE POURED FIRST.
  - PLACE PIPE AND POUR CRADLE SECOND.
  - TOP PORTION OF COLLAR POURED THIRD.
  - BACKFILL SHALL BE PLACED EVENLY ON BOTH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



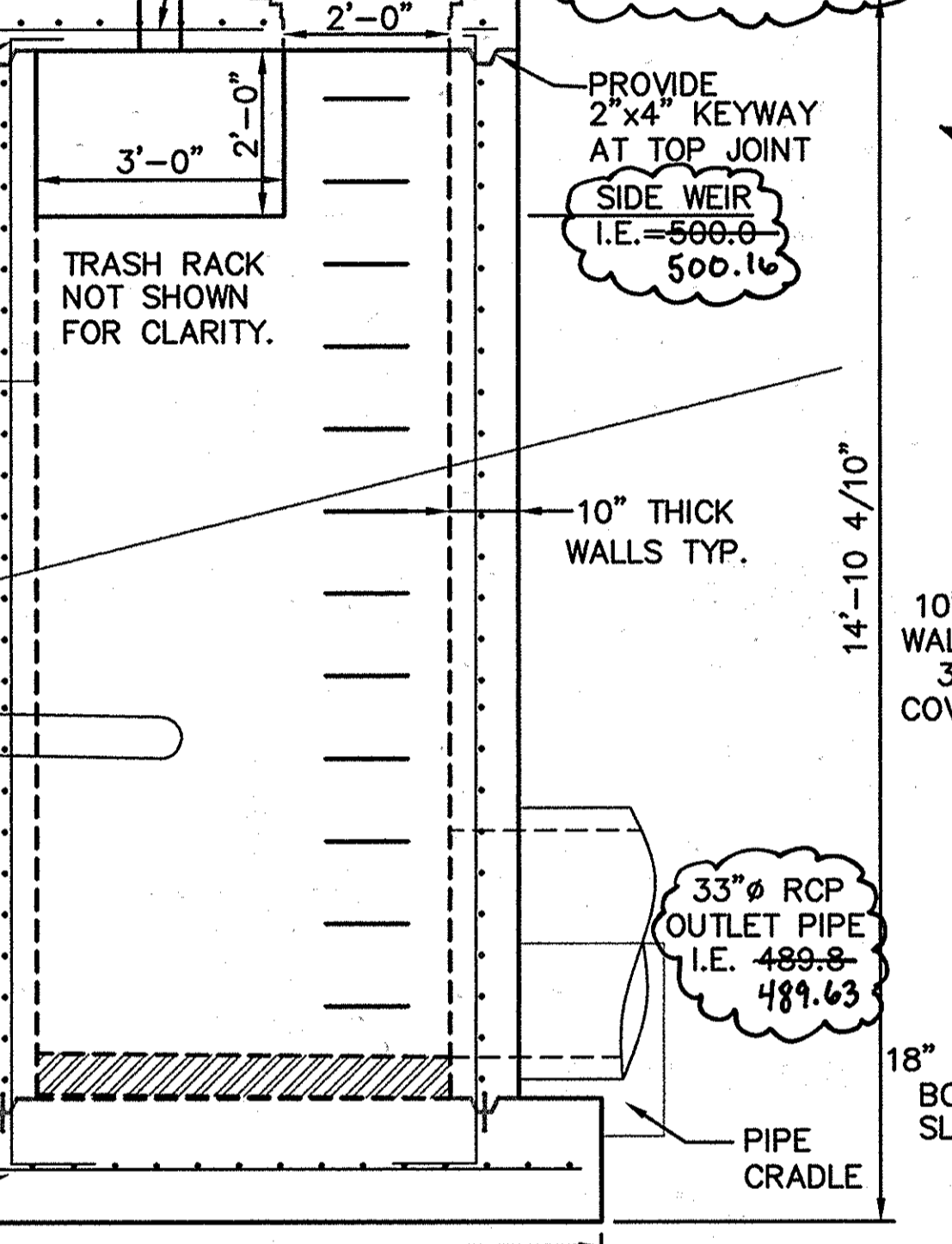
ANTI-SEEP COLLAR DETAIL (TYPICAL OF TWO) SCALE: 1/2"=1'-0" 72/73



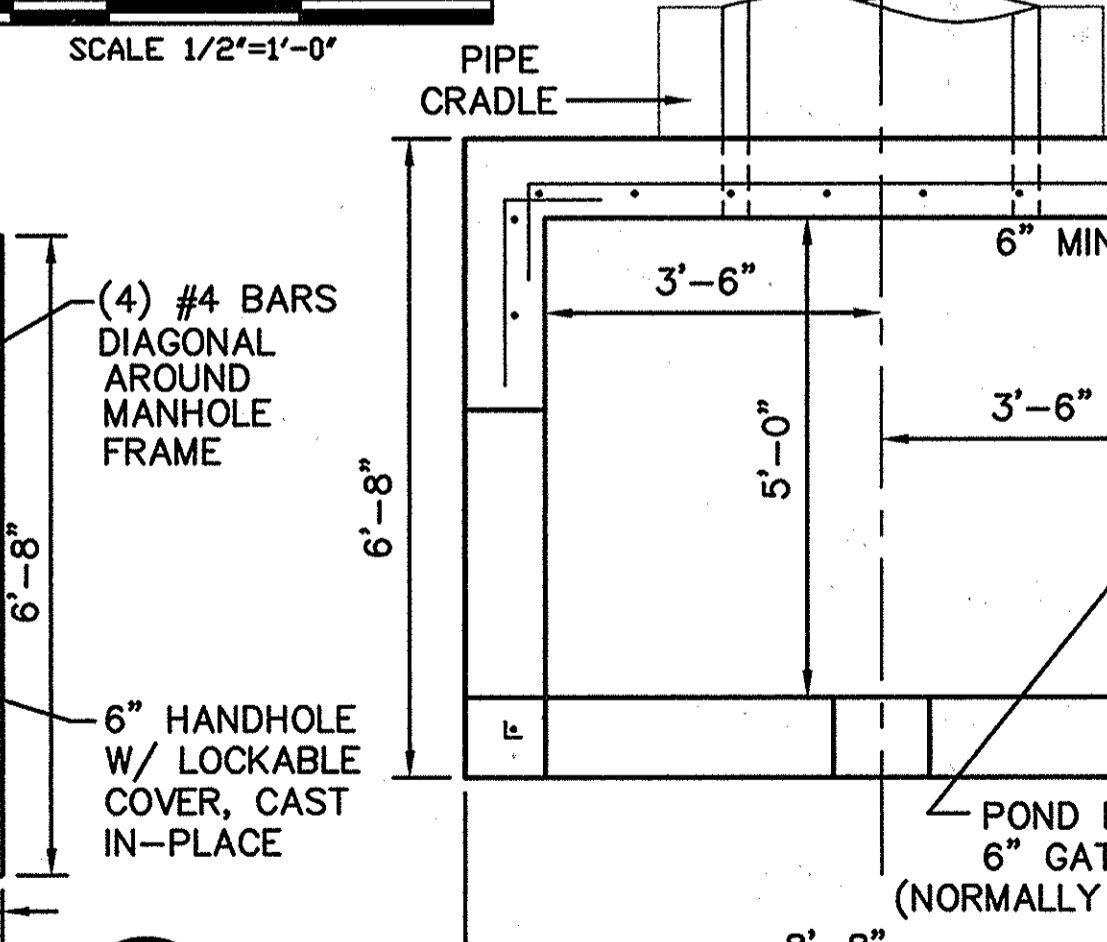
RISER STRUCTURE SECTION D SCALE: 1/2"=1'-0" 73/73



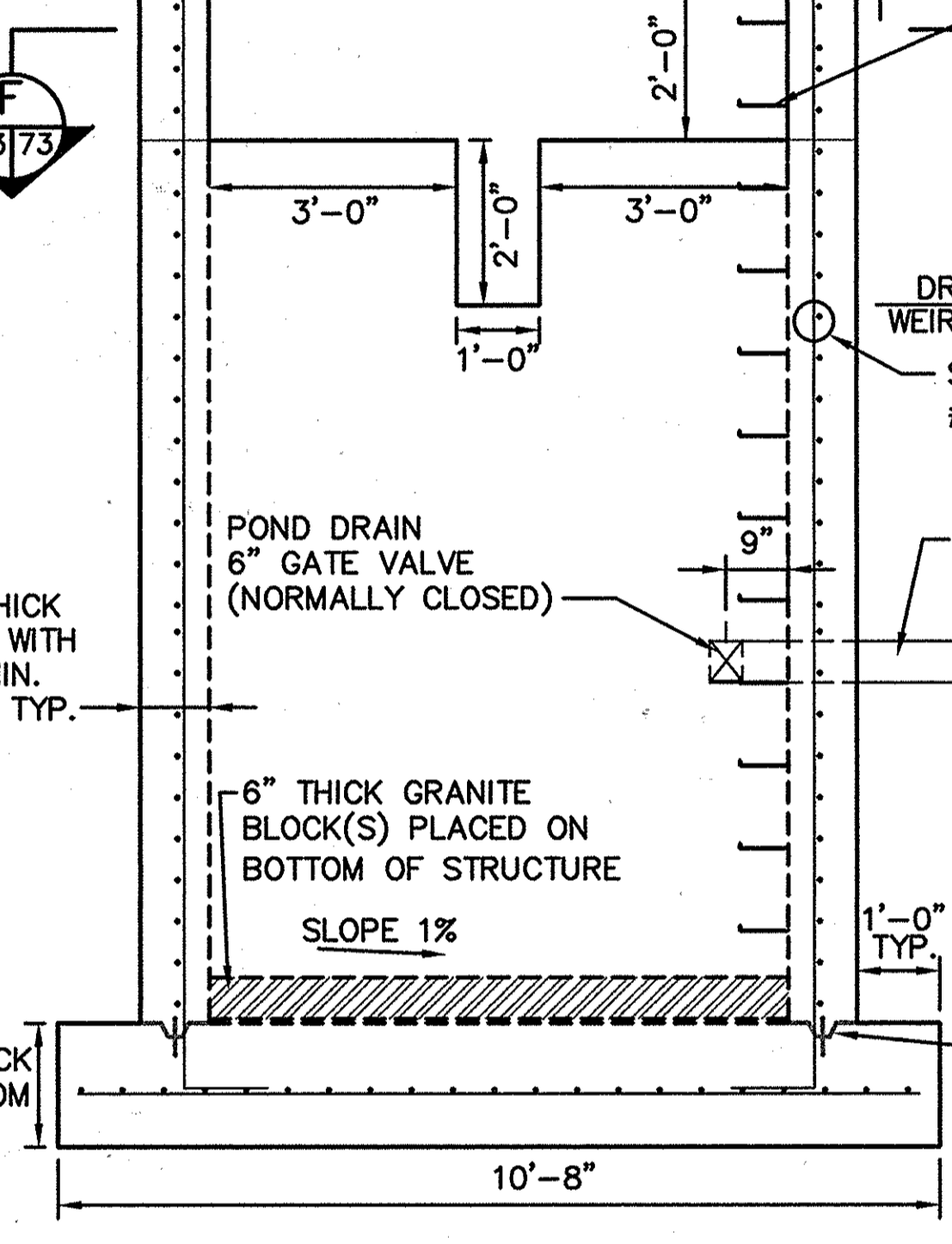
RISER STRUCTURE SECTION E SCALE: 1/2"=1'-0" 73/73



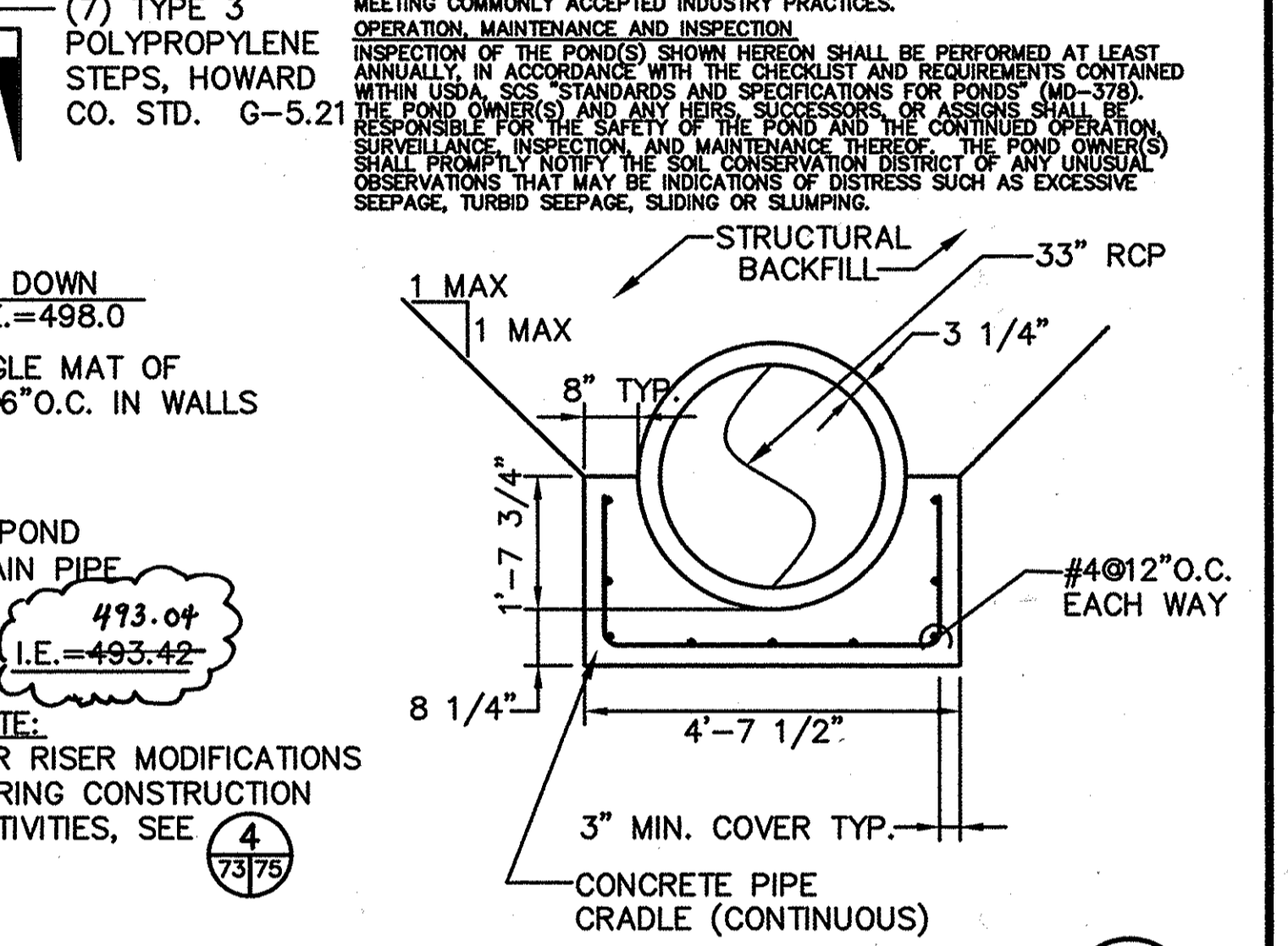
RISER STRUCTURE DETAIL 1 SCALE: 1/2"=1'-0" 72/73



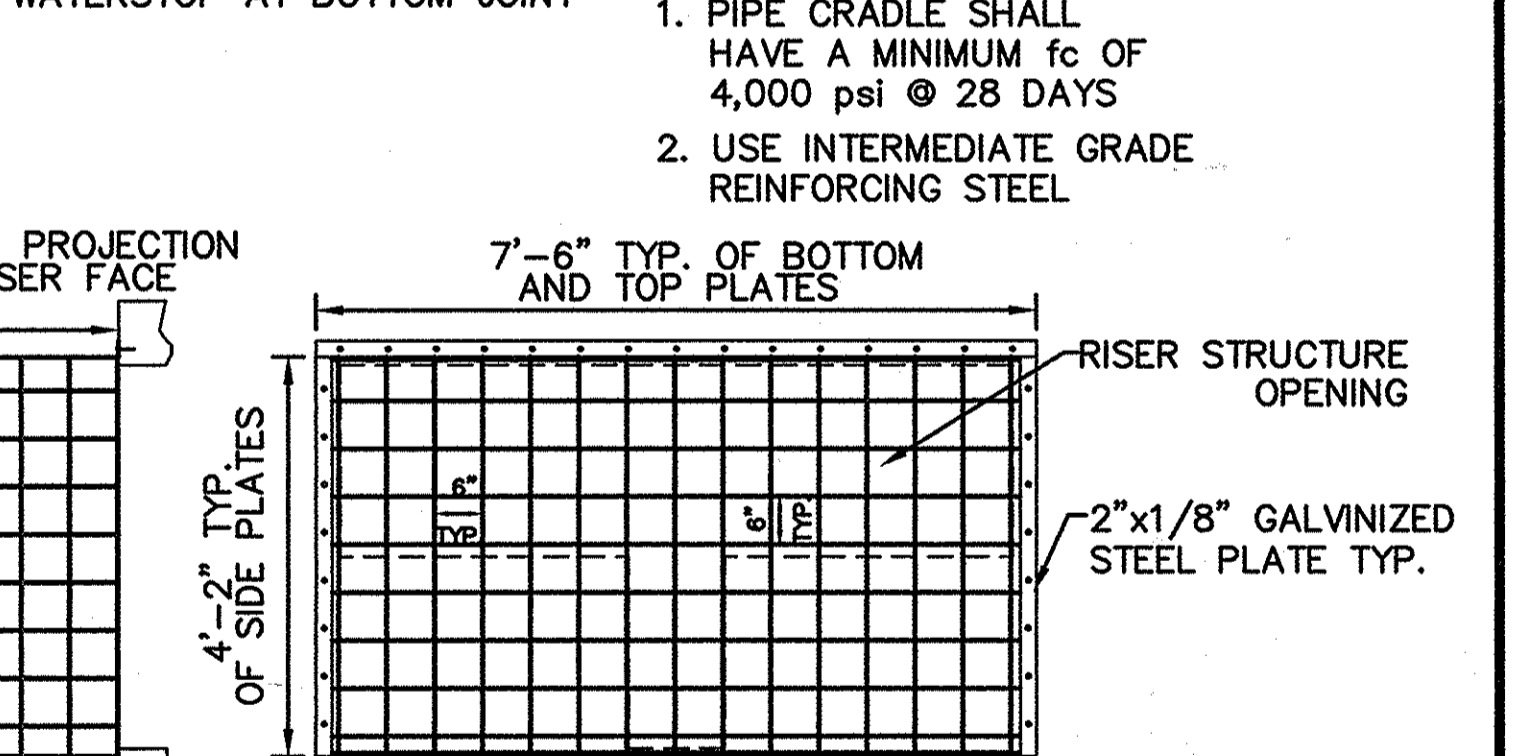
RISER STRUCTURE SECTION F SCALE: 1/2"=1'-0" 73/73



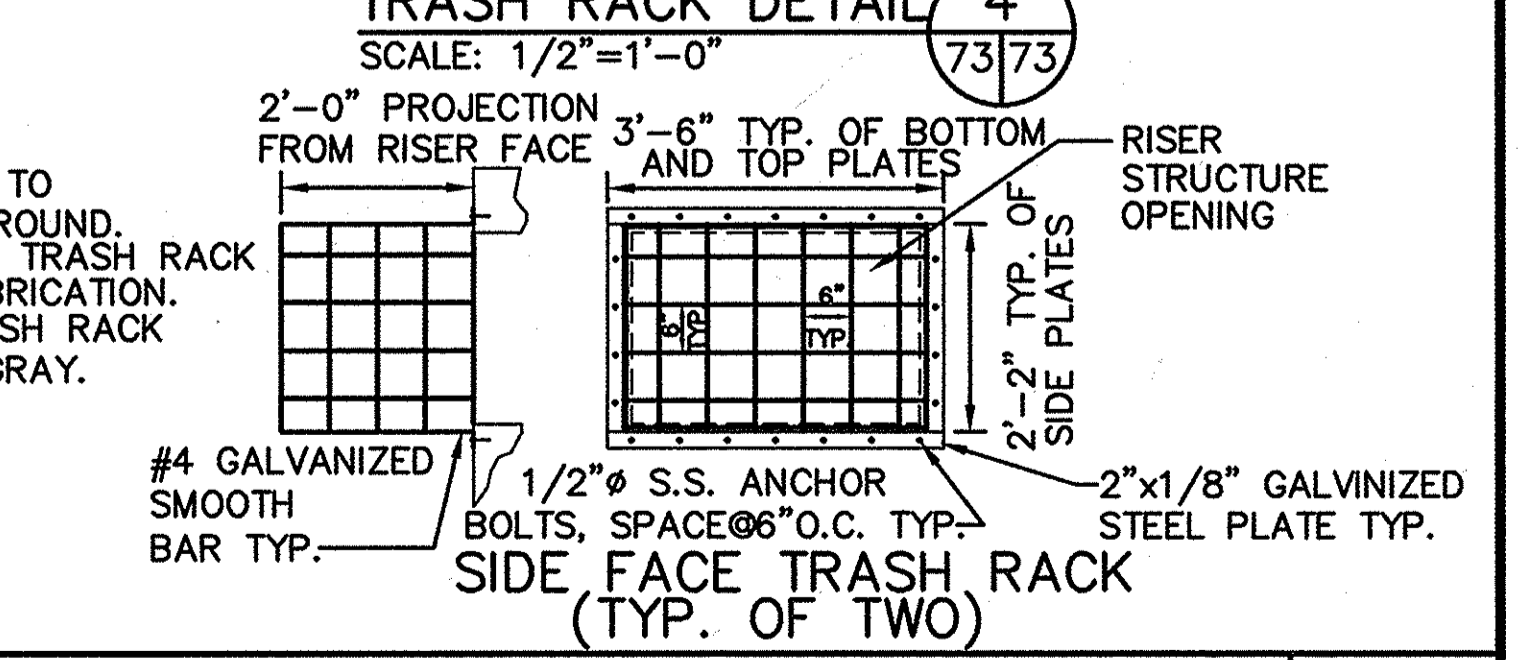
RISER STRUCTURE DETAIL 2 SCALE: 1/2"=1'-0" 72/73



A2 PIPE CRADLE DETAIL 3 SCALE: 1/2"=1'-0" 72/73



FRONT FACE TRASH RACK TRASH RACK DETAIL 4 SCALE: 1/2"=1'-0" 73/73



SIDE FACE TRASH RACK (TYP. OF TWO) SCALE: 1/2"=1'-0" 73/73

ANTSP-CW2-CRADLE-CW2-RISER-CW2-TRK-CW2-CW2-TBL-CW2  
 M: 295077.01 FINAL  
 CW2BETS-B

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/606 18-878/215 10-891/314	TAX/ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING
CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR DATE

*[Signature]* 10/30/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

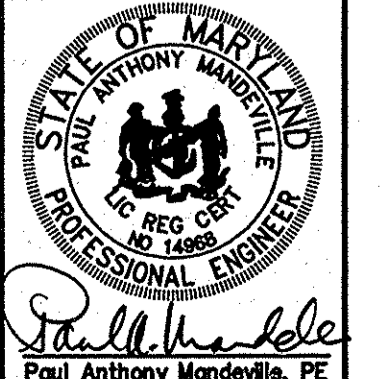
*[Signature]* 10/30/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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



DES. AST			
DRN. AST			
CHK. PAM			
DATE: 10-30-97	BY NO.	REVISION	DATE

CLEARWATER 2  
BASIN DETAILS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

SCALE: AS NOTED  
SHEET 73 OF 134

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]* 10-30-97  
DATE

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

*[Signature]* 10-30-97  
DATE

HOWARD SOIL CONSERVATION DISTRICT  
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]* PE NO. 17650  
DATE 10/30/97

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 THESE INSPECTIONS AND TESTS PERFORMED BY THE ENGINEER AND APPROVED BY COMMON 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 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 (M0-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, OPERATION, INSPECTION AND MAINTENANCE OF THE POND. 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.

DIRECTOR: *[Signature]* DATE: 11/3/97  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 11/30/97  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH: *[Signature]* DATE: 11/2/97

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220.11
LIBER/FOLIO 10-847/006 16-878/215 10-681/314	ZONE PEC
TAX/ZONE MAP 10 & 16	CENSUS TR. 60-30

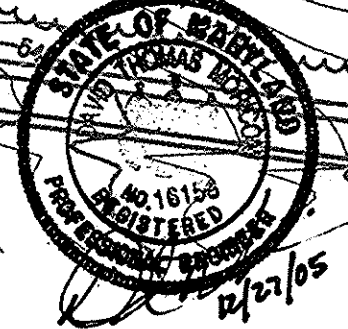
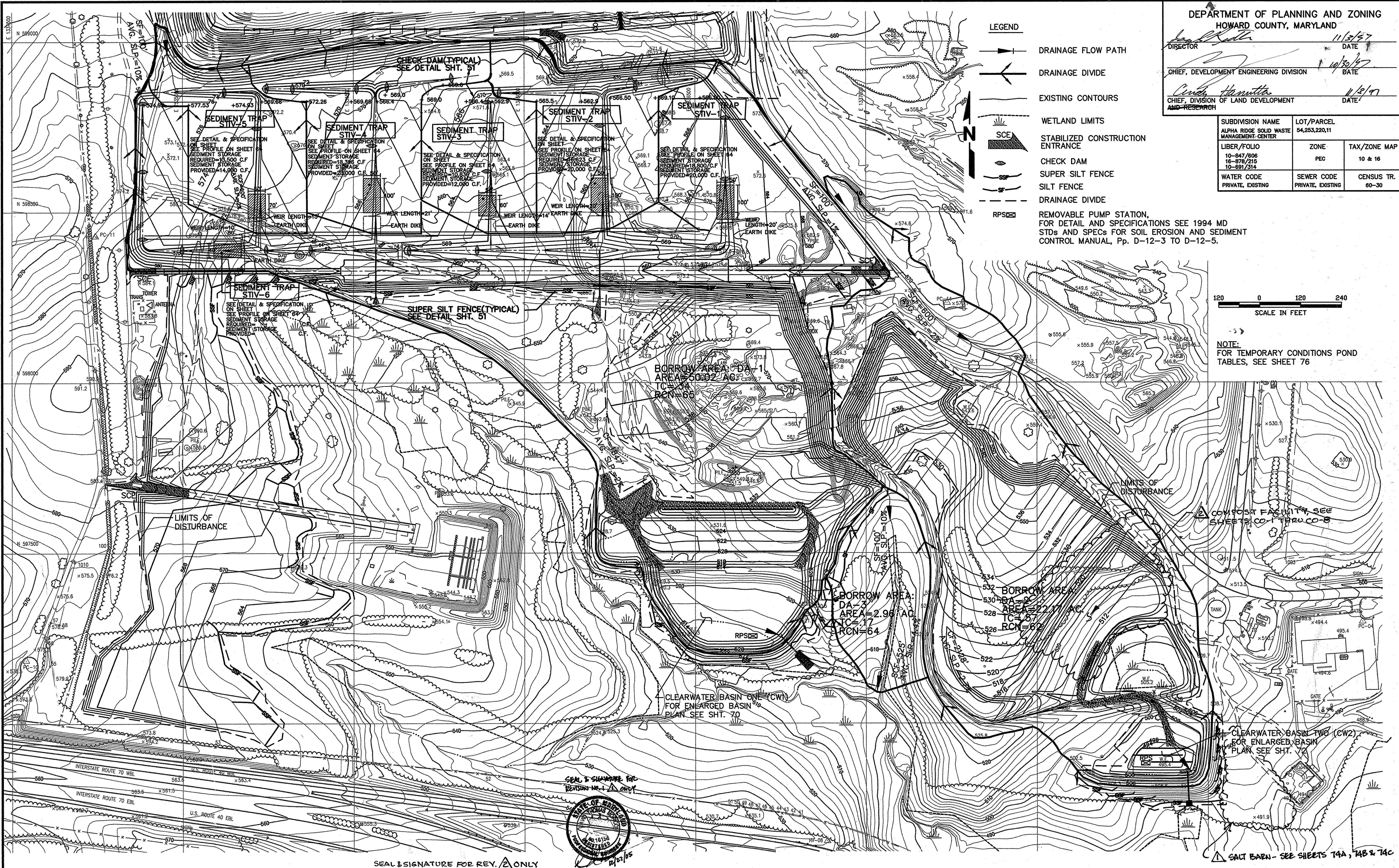
LEGEND

- DRAINAGE FLOW PATH
- DRAINAGE DIVIDE
- EXISTING CONTOURS
- WETLAND LIMITS
- STABILIZED CONSTRUCTION ENTRANCE
- CHECK DAM
- SUPER SILT FENCE
- SILT FENCE
- DRAINAGE DIVIDE
- RPS

REMOVABLE PUMP STATION, FOR DETAIL AND SPECIFICATIONS SEE 1994 MD STDs AND SPECS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL, Pp. D-12-3 TO D-12-5.



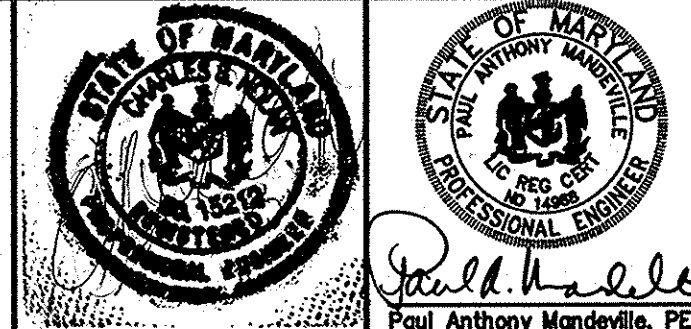
NOTE: FOR TEMPORARY CONDITIONS POND TABLES, SEE SHEET 76



SEAL & SIGNATURE FOR REV. ONLY

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.	AST			
DRN.	LJT			
CHK.	PAM	C.S.N	ALPHA RIDGE LANDFILL COMPOST FACILITY	3/19/92
DTM.			ADDED SALT BARN; REVISED SDF	12/1/95
DATE:	10-30-97	BY	NO.	REVISION

BORROW AREA DRAINAGE DIVIDES / EROSION & SEDIMENT CONTROL

ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

SCALE: 1"=120'  
SHEET 74 OF 131

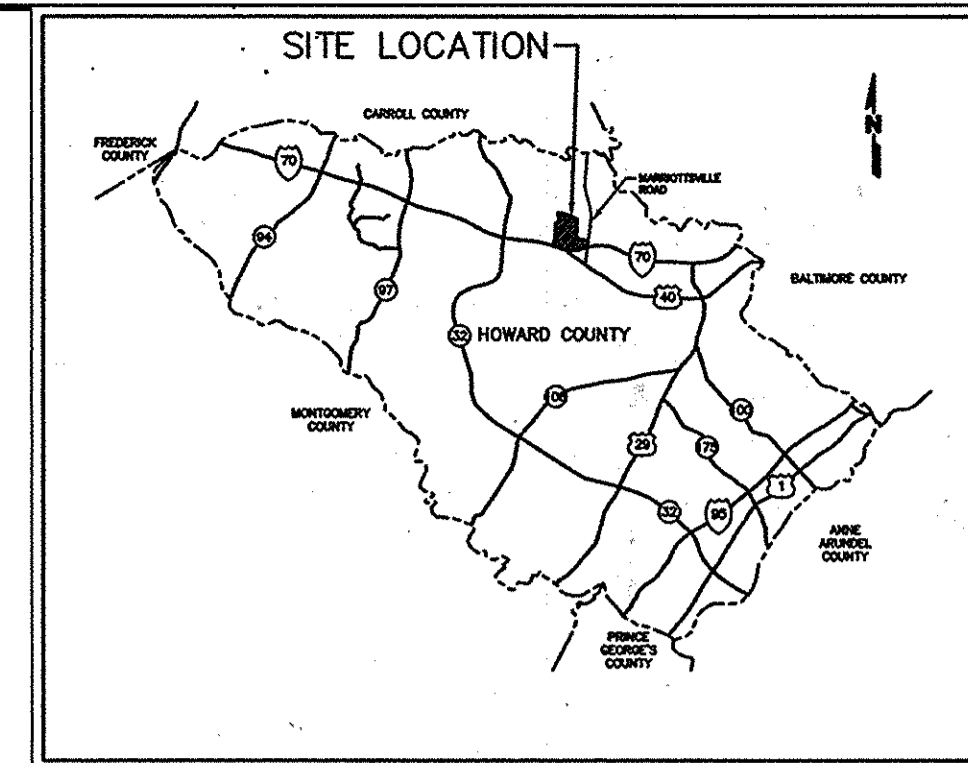
E&S/DIVIDE M:\2965077.01\FINAL SEDCTRL

# ALPHA RIDGE SALT BARN

## HOWARD COUNTY CAPITAL PROJECT NO. C-0254

### HOWARD COUNTY, MARYLAND

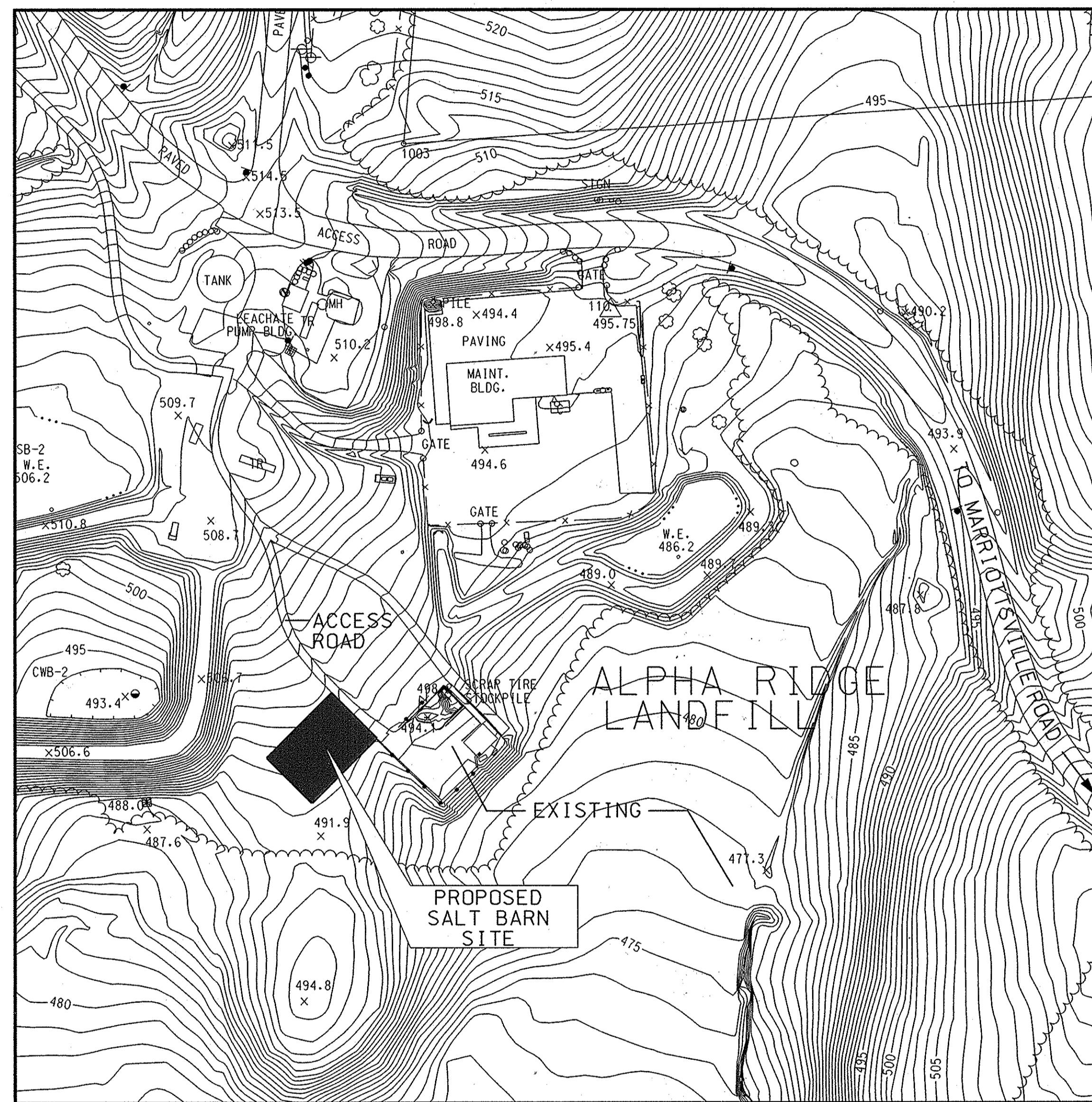
# SITE DEVELOPMENT PLAN



VICINITY MAP  
NTS

#### INDEX OF DRAWINGS

SHEET NO.	TITLE
74A	TITLE SHEET
74B	SITE GRADING PLAN AND EROSION & SEDIMENT CONTROL PLAN
74C	EROSION & SEDIMENT CONTROL NOTES & DETAILS



#### GENERAL NOTES:

- CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND MSHA STANDARDS AND SPECIFICATIONS WHERE APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- PLAN DIMENSIONS ARE TO THE EDGES OF PAVED SURFACES UNLESS OTHERWISE NOTED.
- HORIZONTAL DATUM: MARYLAND STATE PLANE COORDINATE GRID. BASED ON NORTH AMERICAN ADJUSTMENT OF 1983.
- VERTICAL DATUM: BASED ON NORTH AMERICAN VERTICAL ADJUSTMENT OF 1988.
- AERIAL TOPOGRAPHY FROM ASC, STERLING, VA. 703 471-4510.
- EXISTING UTILITIES TO BE FIELD VERIFIED.
- A TRAFFIC CONTROL PLAN IS NOT REQUIRED.
- STORMWATER MANAGEMENT IS PROVIDED BY GRASS CHANNEL AND/OR SHEET FLOW CREDITS.
- NO WETLANDS OR FLOODPLAINS EXIST WITHIN THE PROPOSED AREA OF WORK.
- NO LANDSCAPING IS REQUIRED. NO LANDSCAPE SURETY IS REQUIRED SINCE THIS IS A HOWARD COUNTY CAPITAL PROJECT.
- SUPER SILT FENCE WILL SERVE AS TREE PROTECTION FENCE.

**ENGINEER'S CERTIFICATE**  
 "I certify that this plan for sediment and erosion 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."

*David T. Moriconi*  
 Signature of Engineer (print name below signature) Date  
 DAVID T. MORICONI 7/23/05

**DEVELOPER'S CERTIFICATE**  
 "I/we certify that all development and construction will be done according to this plan for sediment and erosion control, and that all 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."

*William F. Malone, Jr.*  
 Signature of Developer (print name below signature) Date  
 William F. Malone, Jr. 3-17-06

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*Chief, Development Engineering Division* Date  
 2/2/06

*Chief, Division of Land Development* Date  
 4/4/06

*Director* Date  
 7/5/06

Reviewed for Howard SCD and meets Technical Requirements

*Jim Meyer* Date  
 2/9/06  
 USDN - Natural Resources Conservation Service

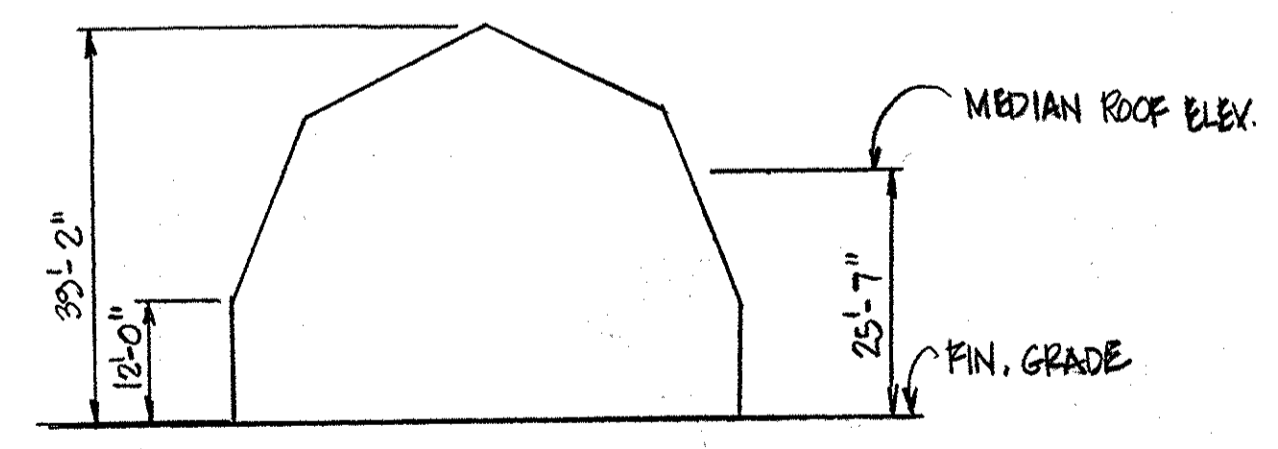
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT

*John R. Johnston* Date  
 2/9/06  
 Howard SCD

**APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS**

*Robert J. Weber* Date  
 3/3/06  
 County Health Officer  
 Howard County Health Department

VICINITY MAP  
 SCALE 1" = 100'  
 SEE SDP-97-128



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

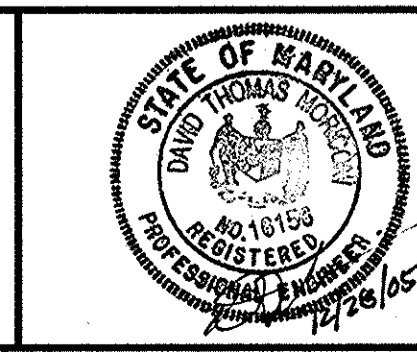
*Director of Public Works* Date  
 3/16/06

*Chief, Bureau of Engineering* Date  
 3/16/06

*Chief, Bureau of Environmental Services* Date  
 3/16/06

*Chief, Bureau of Highways* Date  
 3-16-06

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: (410) 785-7220



DES: DTM/RKK	
DRN: WHS	
CHK: DTM/RKK	
DTM	NEW SHEET FOR PROP. SALT BARN; REVISED SDP-97-128
DATE: 12/05	12/05
BY	NO.
	REVISION
	DATE

TITLE SHEET

SCALE MAP NO. N/A BLOCK NO.

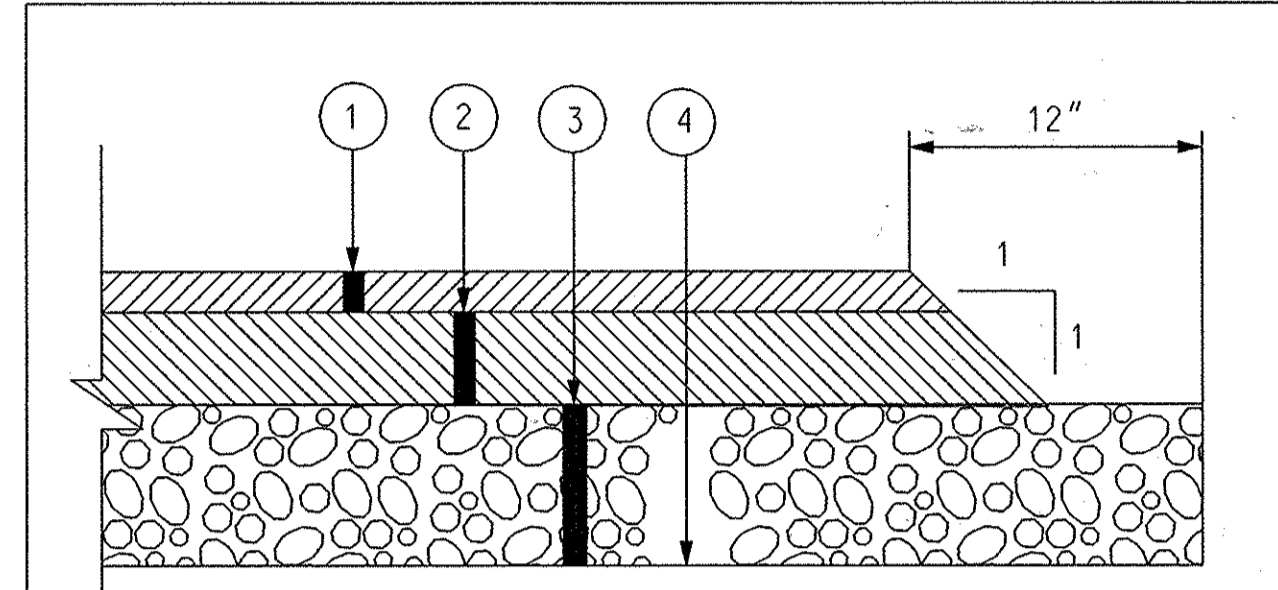
REVISED SITE DEVELOPMENT PLAN  
 ALPHA RIDGE SALT BARN

3RD ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

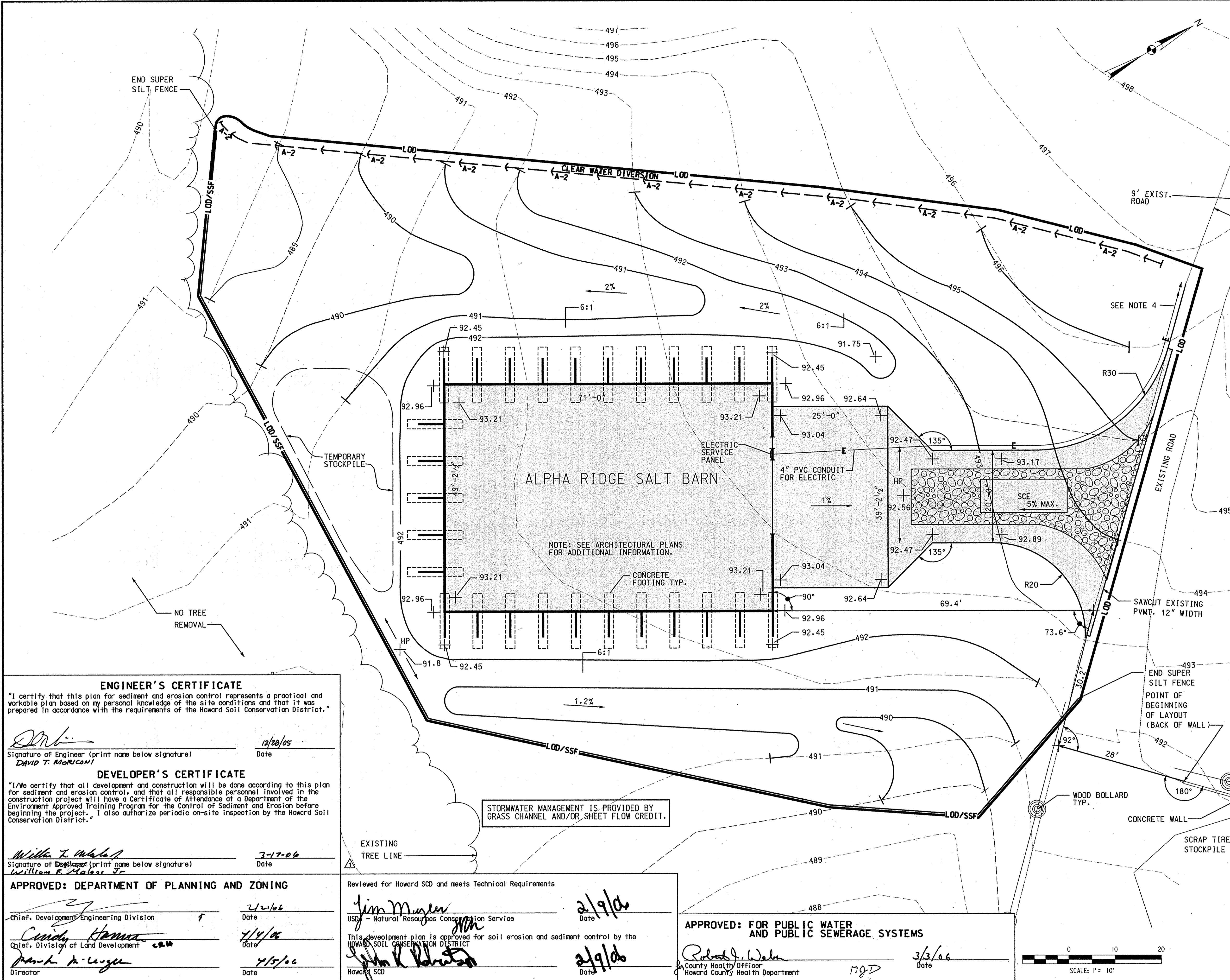
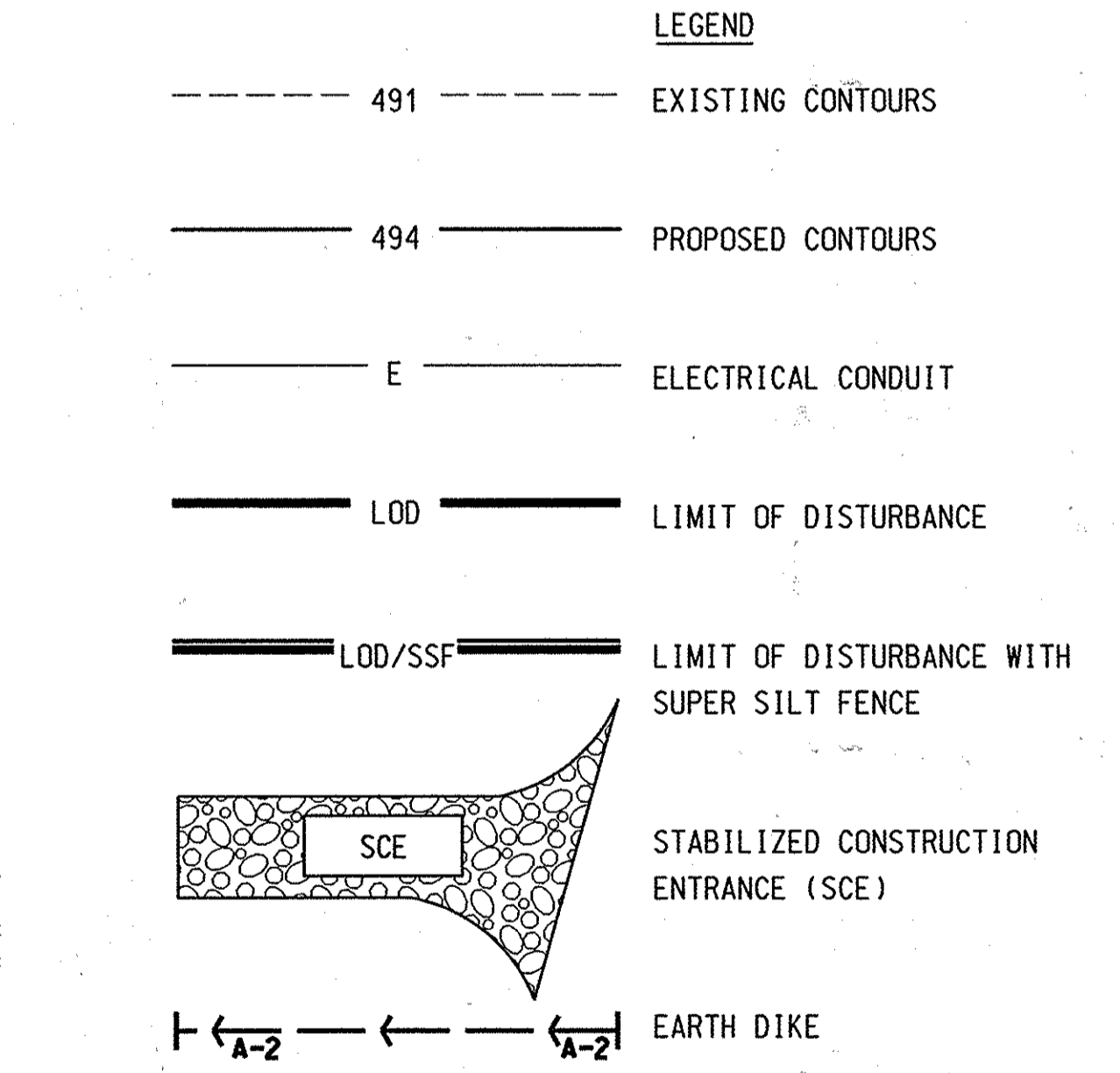
SCALE  
 AS SHOWN

SHEET  
 74A OF 128

- NOTES:**
1. SURVEY BASED ON MARYLAND STATE PLANE COORDINATE SYSTEM NAD 1983.
  2. VERTICAL DATUM BASED ON NAVD 1988.
  3. CONTRACTOR SHALL STAKE THE IMPROVEMENTS IN THE FIELD AND OBTAIN APPROVAL FROM THE COUNTY PRIOR TO CONSTRUCTION.
  4. ELECTRICAL SERVICE TO BE COORDINATED WITH BGE FOR CONNECTION TO NEAREST POLE FOR SERVICE.



1. 1.5" SURFACE COURSE - HMA SUPERPAVE 9.5 MM FOR BASE - PG 76-22, LEVEL 3
2. 3.5" BASE COURSE - HMA SUPERPAVE 19.5 MM FOR BASE - PG 76-22, LEVEL 3
3. 6.0" GRADED AGGREGATE BASE COURSE
4. LIMIT OF EXCAVATION / BOTTOM OF BASE COURSE



**ENGINEER'S CERTIFICATE**  
 "I certify that this plan for sediment and erosion 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."

Signature of Engineer (print name below signature) *David T. Moriconi* Date 12/28/05

**DEVELOPER'S CERTIFICATE**  
 "I/we certify that all development and construction will be done according to this plan for sediment and erosion control, and that all 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."

Signature of Developer (print name below signature) *William E. Malone Jr* Date 3-17-06

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

Chief, Development Engineering Division *[Signature]* Date 2/2/06

Chief, Division of Land Development *[Signature]* Date 1/4/06

Director *[Signature]* Date 4/15/06

Reviewed for Howard SCD and meets Technical Requirements

USDA - Natural Resources Conservation Service *[Signature]* Date 2/9/06

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT

Howard SCD *[Signature]* Date 2/9/06

**APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS**

County Health Officer *[Signature]* Date 3/3/06

Howard County Health Department

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

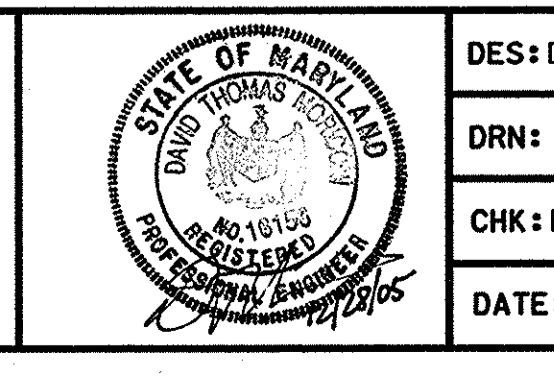
Director of Public Works *[Signature]* Date 3/9/06

Chief, Bureau of Engineering *[Signature]* Date 3/16/06

Chief, Bureau of Environmental Services *[Signature]* Date 3/16/06

Chief, Bureau of Highways *[Signature]* Date 3/16/06

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: (410) 785-7220



DES: DTM/RKK	
DRN: WHS	
CHK: DTM/RKK	
DATE: 12/05	
DTM	NEW SHEET FOR PROP. SALT BARN; REVISED SDP-97-128
BY	NO.
	REVISION
	DATE

**SITE GRADING AND EROSION & SEDIMENT CONTROL PLAN**

SCALE MAP NO. N/A BLOCK NO.

**REVISED SITE DEVELOPMENT PLAN**  
 ALPHA RIDGE SALT BARN

3RD ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 74B OF 101

**HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION, PRIOR TO THE START OF ANY CONSTRUCTION. (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE '1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL', AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1. BY 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7 OF "HOWARD COUNTY DESIGN MANUAL", STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE '1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL' FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G.) TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
 

TOTAL AREA OF SITE	SEE SDP 97-128
AREA DISTURBED	= 0.49 ACRES (AREA OF SALT BARN LOD)
AREA TO BE ROOFED OR PAVED	= 0.13 ACRES (SALT BARN)
AREA TO BE VEGETATIVELY STABILIZED	= 0.36 ACRES (SALT BARN SITE)
TOTAL CUT	= CUBIC YARDS
TOTAL FILL	= CUBIC YARDS
OFFSITE WASTE/BORROW LOCATION	= N/A TO BE DETERMINED BUT MUST BE A SITE WITH AN ACTIVE GRADING PERMIT

**TEMPORARY SEEDING NOTES**

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING (UNLESS PREVIOUSLY LOOSENED).

SOILS AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (4 LBS./1000 SQ.FT.)

SEEDING: FOR PERIODS MARCH 1 THROUGH OUT APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2 1/2" BU. PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.), FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.7 LB. S/1000 SQ.FT.). FOR THE PERIOD OF NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING OR USE SOD.

SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.5 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

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

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

**PERMANENT SEEDING NOTES**

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

SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING (UNLESS PREVIOUSLY LOOSENED).

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

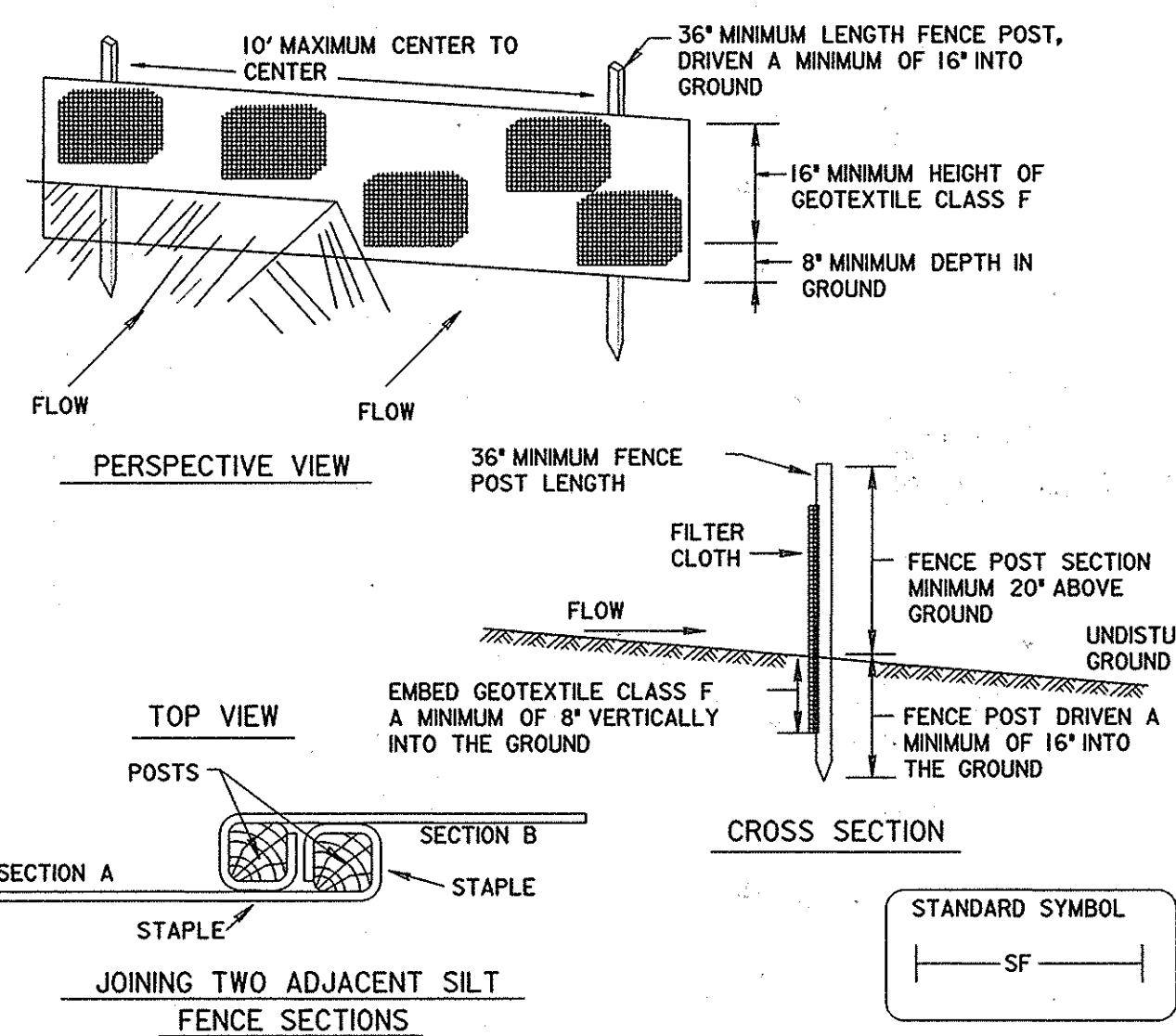
PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (4 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ.FT.)

ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

**TOPSOIL CONSTRUCTION AND MATERIAL SPECIFICATIONS**

- TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SGS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
- TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
  - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND, OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY.
  - TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINNERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
  - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
  - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
  - FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
    - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 2.0.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
    - TOPSOIL APPLICATION
    - WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
    - GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 8" HIGHER IN ELEVATION.
    - TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

**DETAIL 22 - SILT FENCE**



Construction Specifications

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

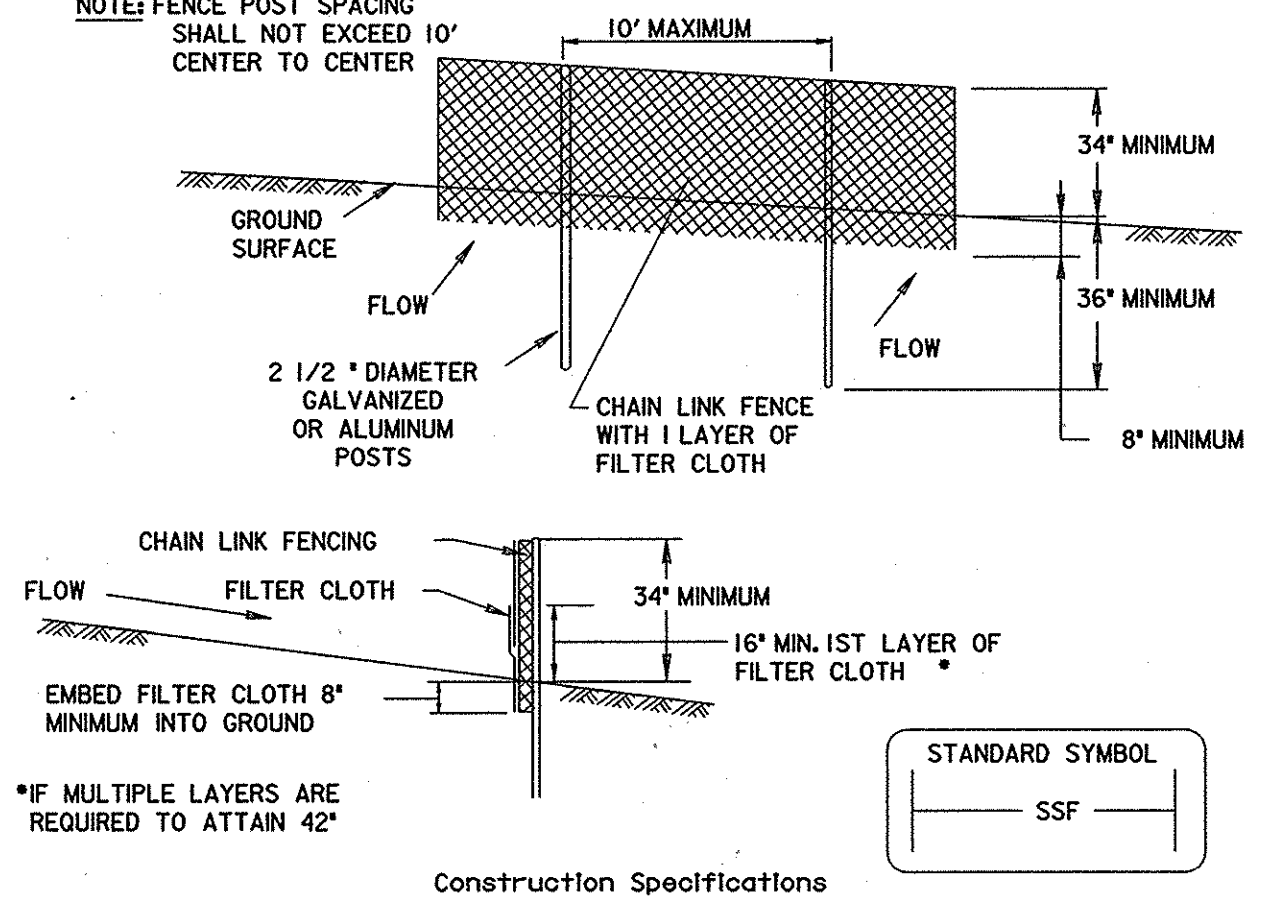
IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION. WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

V. THESE TOPSOIL SPECIFICATIONS HAVE BEEN EDITED FROM THE 1994 EROSION AND SEDIMENT CONTROL STANDARDS TO FIT THIS PROJECT. IT IS STILL THE INTENTION TO FOLLOW THE REFERENCED 1994 EROSION AND SEDIMENT CONTROL STANDARDS IN THEIR ENTIRETY.

**SEQUENCE OF CONSTRUCTION**

- OBTAIN HOWARD COUNTY GRADING PERMIT. (1 DAY)
  - NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. PHONE (410) 313-1855 (1 DAY) AND MARK RAAB AT (410) 313-4730.
  - INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM, AND INSTALL SILT FENCE AND EARTH DIKE.
  - INSTALL PERIMETER CONTROLS: SUPER SILT FENCE, AS SHOWN ON THE PLAN.
  - GRUB SITE WITHIN THE LIMITS OF DISTURBANCE.
  - STRIP AND STOCKPILE TOPSOIL. (2 DAYS)
  - CONSTRUCT THE FOLLOWING (5 WEEKS):
    - GRADE SITE TO THE PROPOSED ELEVATIONS AS INDICATED ON THE SITE PLAN.
    - CONSTRUCT SALT BARN AND PAVING.
  - FINE GRADE AND STABILIZE SITE. PLACE SALVAGED TOPSOIL. (3 DAYS)
  - AFTER SITE IS STABILIZED, OBTAIN PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AND REMOVE SEDIMENT CONTROL MEASURES.
  - REMOVE ALL SEDIMENT CONTROL MEASURES AFTER RECEIVING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR. (4 DAYS)
- NOTE: THIS SEQUENCE MAY BE MODIFIED AFTER RECEIVING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR AS LONG AS THE INTENTION AND INTEGRITY OF THIS PLAN IS NOT COMPROMISED.

**DETAIL 33 - SUPER SILT FENCE**

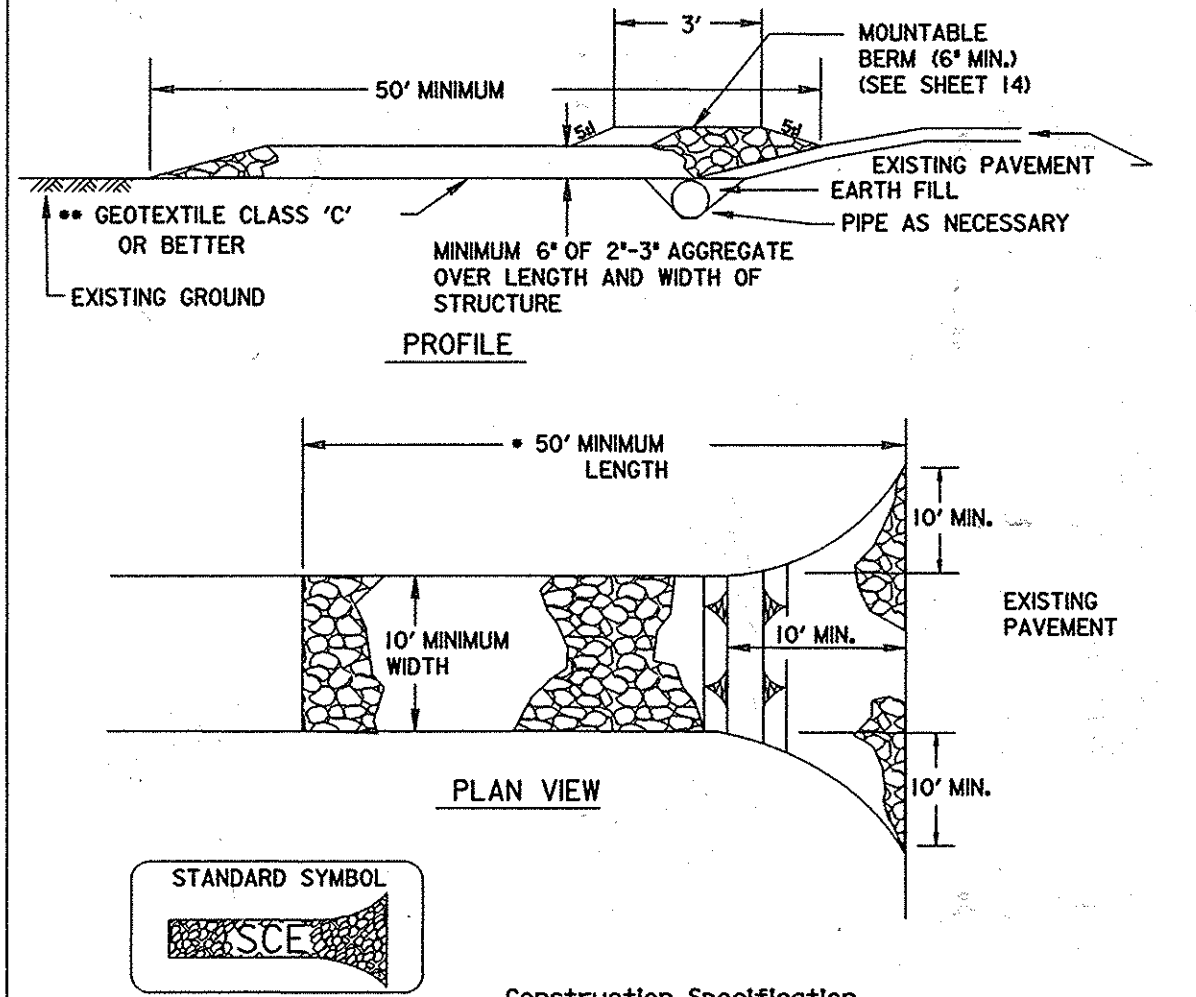


Construction Specifications

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

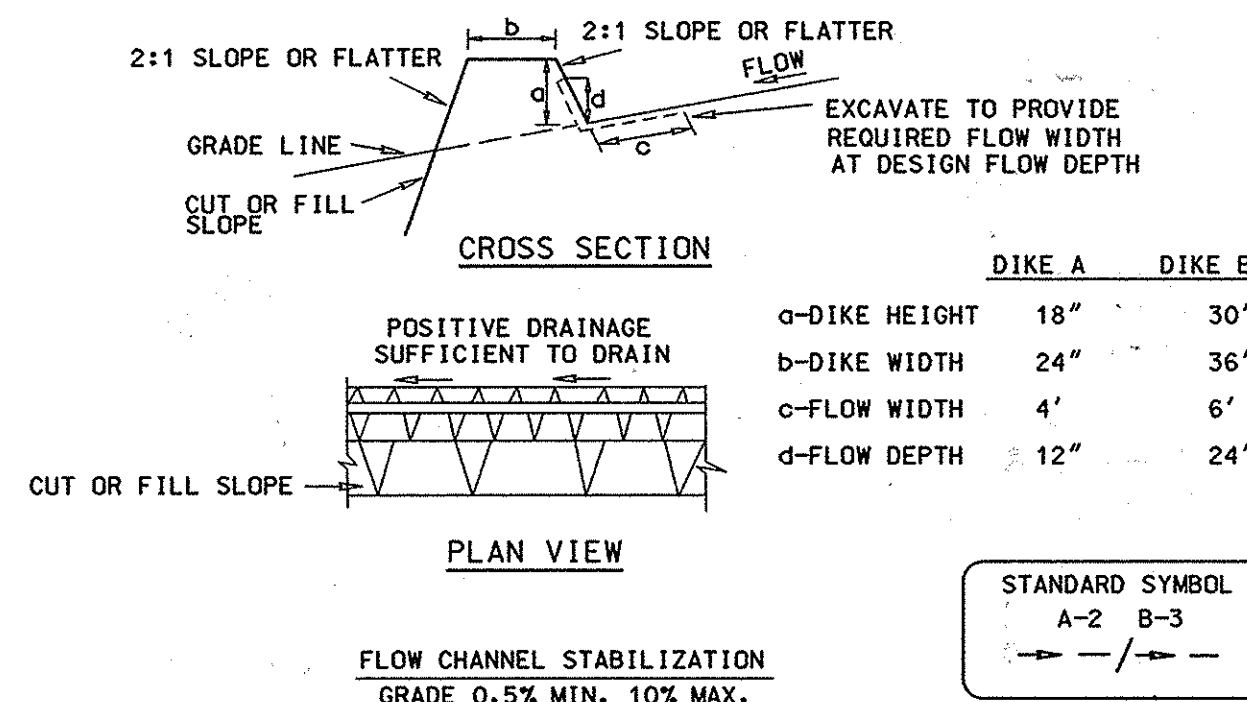
**STABILIZED CONSTRUCTION ENTRANCE**



Construction Specifications

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

**DETAIL 1 - EARTH DIKE**



Construction Specifications

- Seed and cover with straw mulch.
- Seed and cover with Erosion Control Matting or line with sod.
- 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

- All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
- Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
- Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
- All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
- The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
- Fill shall be compacted by earth moving equipment.
- All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
- Inspection and maintenance must be provided periodically and after each rain event.

**ENGINEER'S CERTIFICATE**

"I certify that this plan for sediment and erosion 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."

*David T. Morican* 12/28/05  
Signature of Engineer (print name below signature) Date

**DEVELOPER'S CERTIFICATE**

"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all 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."

*William F. Malachuk* 3-17-06  
Signature of Developer (print name below signature) Date

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

Chief, Development Engineering Division 2/2/06  
Chief, Division of Land Development 4/4/06  
Director 4/5/06

Reviewed for Howard SCD and meets Technical Requirements

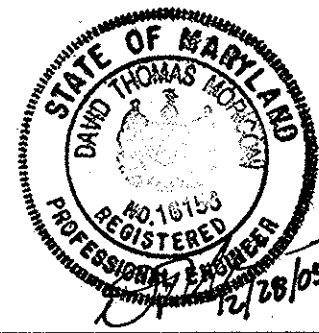
*Jim Meyer* 2/9/06  
USDA - Natural Resources Conservation Service  
*John R. DeWitt* 2/9/06  
Howard SCD

**APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS**

*Robert W. DeWitt* 3/3/06  
County Health Officer  
Howard County Health Department

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

*John J. DeWitt* 3/2/06  
DIRECTOR OF PUBLIC WORKS DATE  
*William F. Malachuk* 3/1/06  
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE  
*William F. Malachuk* 3-16-06  
CHIEF, BUREAU OF HIGHWAYS DATE



DES:DTM/RKK		
DRN: WHS		
CHK:DTM/RKK		
DATE: 12/05	DTM	NEW SHEET FOR PROPOSED SALT BARN; REVISED SDP-97-128 12/05
BY	NO.	REVISION
DATE		

**EROSION & SEDIMENT CONTROL NOTES & DETAILS**

SCALE MAP NO. N/A BLOCK NO.

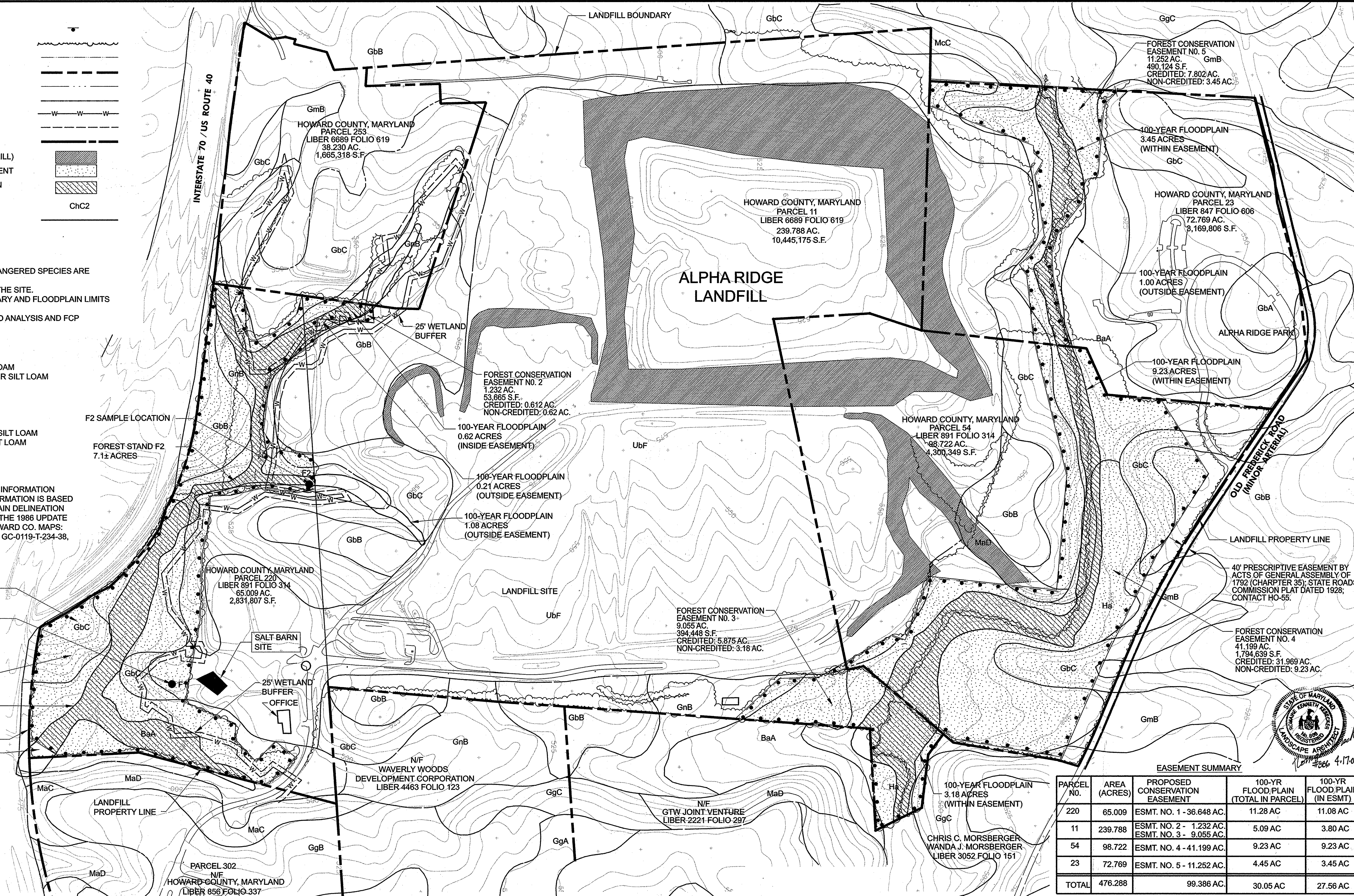
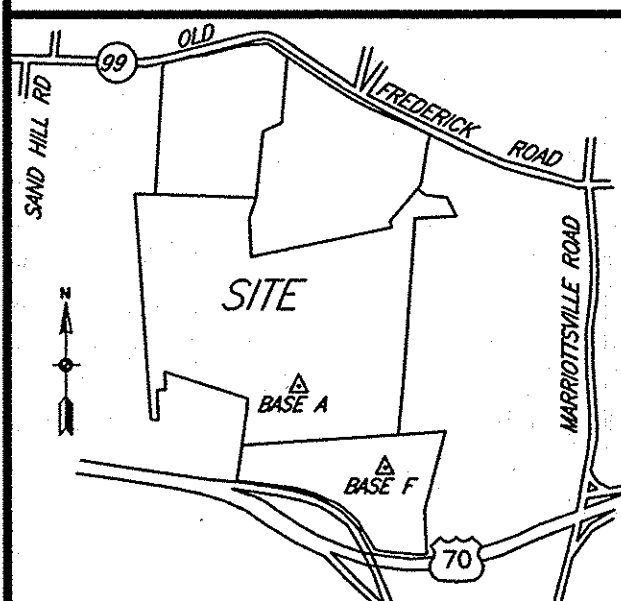
**REVISED SITE DEVELOPMENT PLAN**  
ALPHA RIDGE SALT BARN

3RD ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE NONE  
SHEET 14 OF 13

- LEGEND**
- FOREST CONSERVATION SIGN
  - EXISTING TREE LINE
  - EXISTING STREAM
  - PARCEL BOUNDARY
  - CONSERVATION EASEMENT
  - 100-YEAR FLOODPLAIN
  - WETLAND BOUNDARY
  - 25' WETLAND BUFFER
  - 50' STREAM BUFFER
  - STEEP SLOPES (RELATED TO LANDFILL)
  - PROPOSED CONSERVATION EASEMENT
  - NON-CREDITED FLOODPLAIN WITHIN CONSERVATION EASEMENT
  - SOILS TYPE
  - SOILS AREA BOUNDARY

- NOTE:**
1. NO RARE, THREATENED OR ENDANGERED SPECIES ARE KNOWN TO EXIST ON THE SITE.
  2. NO SPECIMEN TREES EXIST ON THE SITE.
  3. EXISTING TOPOGRAPHY BOUNDARY AND FLOODPLAIN LIMITS PROVIDED BY HOWARD COUNTY.
  4. SEE SHEET 2 FOR FOREST STAND ANALYSIS AND FCP WORKSHEETS.
  5. SOILS DATA
    - F1
      - Ba - BAILE SILT LOAM
      - CgC2 - CESTER GRAVELLY SILT LOAM
      - ChB2, ChC2, ChC3, ChD2 - CHESTER SILT LOAM
      - Ha - HATBORO SILT LOAM
      - M1D2 - MANOR LOAM
    - F2
      - Ba - BAILE SILT LOAM
      - Cgb2, CgC2 - CESTER GRAVELLY SILT LOAM
      - ChB2, ChC2, ChC3 - CHESTER SILT LOAM
      - GnB2 - GLENVILLE SILT LOAM
      - Ha - HATBORO SILT LOAM
      - M1D2 - MANOR LOAM
  6. EXISTING 100 YEAR FLOODPLAIN INFORMATION PROVIDED BY HOWARD CO. INFORMATION IS BASED ON THE 1978 FLOODPLAIN DELINEATION BY CENTURY ENGINEERING AND THE 1986 UPDATE BY BERNARD JOHNSON, INC. HOWARD CO. MAPS: GC-0119-T-36-38, GC-0119-T-35-38, GC-0119-T-234-38, GC-0119-T-35-39.



**EASEMENT SUMMARY**

PARCEL NO.	AREA (ACRES)	PROPOSED CONSERVATION EASEMENT	100-YR FLOODPLAIN (TOTAL IN PARCEL)	100-YR FLOODPLAIN (IN ESMT)
220	65.009	ESMT. NO. 1 - 36.648 AC.	11.28 AC	11.08 AC
11	239.788	ESMT. NO. 2 - 1.232 AC.	5.09 AC	3.80 AC
54	98.722	ESMT. NO. 4 - 41.199 AC.	9.23 AC	9.23 AC
23	72.769	ESMT. NO. 5 - 11.252 AC.	4.45 AC	3.45 AC
<b>TOTAL</b>	<b>476.288</b>	<b>99.386 AC.</b>	<b>30.05 AC</b>	<b>27.56 AC</b>

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 Director: *René A. Gage* 4/14/07  
 Chief, Development Engineering Division: *J. Krista-Maechel* 4/12/07  
 Date: 4/12/07

**OWNER**  
 HOWARD COUNTY GOVERNMENT  
 3430 COURT HOUSE DRIVE  
 ELLICOTT CITY, MD 21043  
 410-313-2330

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: (410) 785-1220

DES: DTM/RKK  
 DRN: WJG  
 CHK: DTM/RKK  
 DATE: 11/06

DTM: [Symbol]  
 BY: [Symbol]  
 NO.: [Symbol]

ADDED NEW SHEET TO SDP 97-128  
 REVISION  
 DATE: 4/17/07

**COMBINED FOREST STAND DELINEATION AND FOREST CONSERVATION PLAN**

ALPHA RIDGE LAND FILL  
 TAX MAP 10 - GRID 2,3 & 7  
 TAX MAP 16 - GRID 8

3RD ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE  
 1"=250'

SHEET  
 74 OF 131

SDP-97-128 (FC)

**FOREST STAND ANALYSIS TABLE**

KEY	A. TYPE OF COMMUNITY	B. AREA	C. SOIL INFORMATION			D. EXISTING VEGETATION (Dominant Species and Approximate %)	E. STAND CHARACTERISTICS			F. FOREST AREA IN SENSITIVE ENVIRONMENTS (Area)	G. HABITAT VALUE
			1. Soil Types	2. Typical forest cover for soil type*	3. Woodland Suitability Index		1. Size (Diam)	2. Age	3. General Conditions		
F1	Tree Layer Maple/Oak	23.82 Acres	Chester	Oak	74-84	Red Maple 50%	2"-10"	25	Fair	Floodplain 7.2 Acres Wetland and Buffers 5.3 Acres	Good
			Baile	Oak/Maple	65-74	White Oak 20%	20"-28"	40			
			Hatboro Manor	Oak/Maple/ Holly Mixed Oak	95 65-74	Hickory 15% Tulip Poplar 10%	8"-15" 20"-28"	25 25			
	Shrub Layer					Spice Bush 60% Blackhaw Viburnum 40%					
	Ground Layer					Invasives 95%				Total 12.5 Acres	

**FOREST STAND ANALYSIS TABLE**

KEY	A. TYPE OF COMMUNITY	B. AREA	C. SOIL INFORMATION			D. EXISTING VEGETATION (Dominant Species and Approximate %)	E. STAND CHARACTERISTICS			F. FOREST AREA IN SENSITIVE ENVIRONMENTS (Area)	G. HABITAT VALUE
			1. Soil Types	2. Typical forest cover for soil type*	3. Woodland Suitability Index		1. Size (Diam)	2. Age	3. General Conditions		
F2	Tree Layer Cherry/Walnut	7.12 Acres	Chester	Oak	75-84	Black Cherry 50%	8"-15"	20	Fair	Floodplain 3.5 Acres Wetland and Buffers 0.8 Acres	Good
			Baile	Oak/Maple	65-74	Black Walnut 25%	8"-15"				
			Glenville Manor	Wet Tolerant Hardwoods Mixed Oak	65-74 65-74	Tulip Poplar 15% Red Oak 10%	12"-20" 10"-15"				
	Shrub Layer					Spice Bush 100%				Total 4.3 Acres	
	Ground Layer					Invasives 100%					

**FOREST STAND DELINEATION NARRATIVE – PARCEL 220**

**Stand F1**

Stand F1 is a middle successional Maple/Oak forest. It is about 40 to 50 years old in its growth. Very little understory exists due to deer browse. What little understory that does exist is either not palatable (Spice Bush) or too high to browse (Blackhaw Viburnum). The ground layer consists of predominately invasive species (Garlic Mustard, Tear Thumb, Japanese Stilt Grass etc) with a few Jack-in-the-Pulpit and Christmas Ferns scattered throughout, an more so in wet areas. Not withstanding the deer browse trees seem to be in good condition and growing well.

Because 76% of Stand F1 covers environmentally sensitive lands (wetlands and 100 year floodplain) it is recommended that the forest be preserved in conservation easement. In addition, the canopy is in good condition and dense. With control of the deer population the understory may recover.

**Stand F2**

Stand F2 is an early successional mixed hardwood forest. It is about 20 to 30 years old in its growth. Very little understory exists due to deer browse. What little understory that does exist is not palatable (Spice Bush). The ground layer consists of Japanese Stilt Grass. Not withstanding the deer browse trees seem to be in good condition and growing well.

Because 81% of Stand F2 covers environmentally sensitive lands (wetlands and 100 year floodplains) it is recommended that the forest be preserved in conservation easement. While the canopy is open the trees are in good condition and will eventually fill in. The added area outside of the wetlands will act as additional filtering area for runoff.

Min. 11"

# FOREST RETENTION AREA

---

MACHINERY, DUMPING  
OR STORAGE OF  
ANY MATERIALS IS  
**PROHIBITED**

---

VIOLATORS ARE SUBJECT TO  
FINES AS IMPOSED BY THE  
MARYLAND FOREST  
CONSERVATION ACT OF  
1991

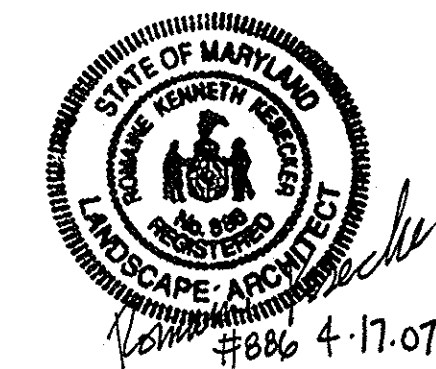
Min.  
15"

**Note:**

- Signs shall be of high-impact, durable, waterproof plastic. Background color shall be white, and text / graphics color shall be forest green.
- Signs shall be mounted on metal 'T' or 'U' posts of 7' length, painted (green color) with welded anchor flange. Drive post 2.5' into ground. Mount signs flush to top of post with 2 galvanized bolts and washers per sign, with anti-theft security nuts.
- Signs shall be located at each turn of conservation easement, and at 100' maximum spacing.

**FOREST CONSERVATION SIGN**

NOT TO SCALE



**FOREST CONSERVATION WORKSHEET  
VERSION 1.0  
(Enter in Yellow Cells)**

**NET TRACT AREA:**

A. Total tract area.....=	476.29
B. Area within 100 year floodplain.....=	30.05
C. Area to remain in agricultural production.....=	0.00
D. Net tract area.....=	446.24

**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	0	0	1

E. Afforestation Threshold.....	15% x D =	66.94
F. Conservation Threshold.....	15% x D =	66.94

**EXISTING FOREST COVER:**

G. Existing forest cover (excluding floodplain).....=	83.70
H. Area of forest above afforestation threshold.....=	16.76
I. Area of forest above conservation threshold.....=	16.76

**BREAK EVEN POINT:**

J. Forest retention above threshold with no mitigation.....=	70.29
K. Clearing permitted without mitigation.....=	13.41

**PROPOSED FOREST CLEARING:**

L. Total area of forest to be cleared.....=	11.87
M. Total area of forest to be retained.....=	71.83

**PLANTING REQUIREMENTS:**

N. Reforestation for clearing above conservation threshold...=	2.97
P. Reforestation for clearing below conservation threshold...=	0.00
Q. Credit for retention above conservation threshold.....=	4.89
R. Total reforestation required.....=	0.00
S. Total afforestation required.....=	0.00
T. Total reforestation and afforestation required.....=	0.00

**Note: Howard County proposes to provide 99.39 acres of Conservation Easement on the four parcels for FCP requirements of which 71.83 is "credited" FCE with 27.56 acres of "non-credited".**

**DETAILS  
COMBINED FOREST STAND DELINEATION AND  
FOREST CONSERVATION PLAN**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
DIRECTOR, Planning & Zoning  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 10/12/07

**OWNER**  
HOWARD COUNTY GOVERNMENT  
3430 COURT HOUSE DRIVE  
ELLCOTT CITY, MD 21043  
410-313-2330

PREPARED BY  
**URS**  
4 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND  
TEL: (410) 765-7220

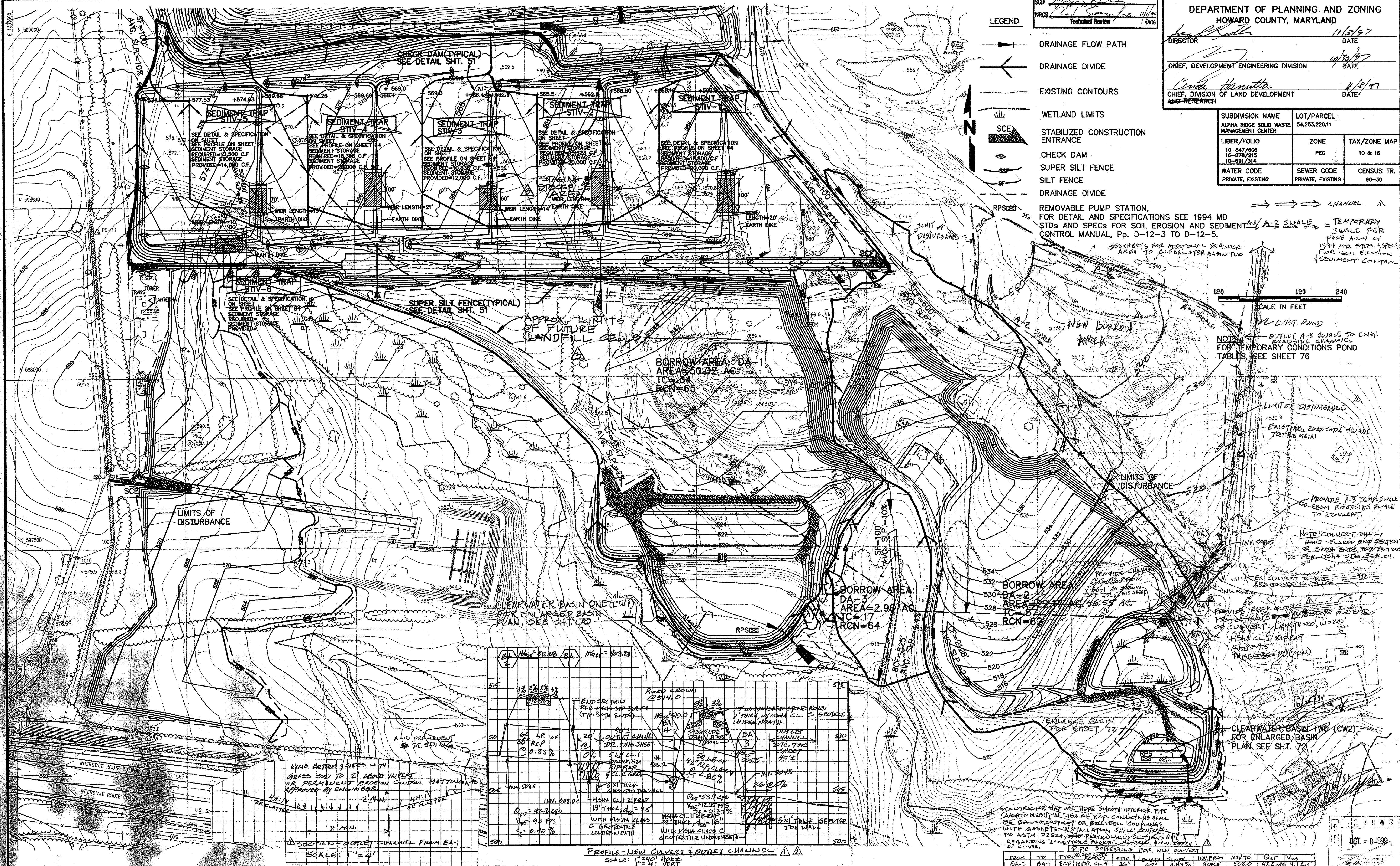
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DRN: WJG	
CHK: DTM/RKK	
DATE: 11/06	
DTM	ADDED NEW SHEET TO SDP 97-128
BY	NO.
REVISION	DATE

SCALE  
NONE

ALPHA RIDGE LAND FILL

3RD ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SHEET  
74 OF 131



**APPROVED PLAN REVISION**

SCD: [Signature]  
 NRCS: [Signature]  
 Technical Review: [Signature]  
 Date: [Signature]

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

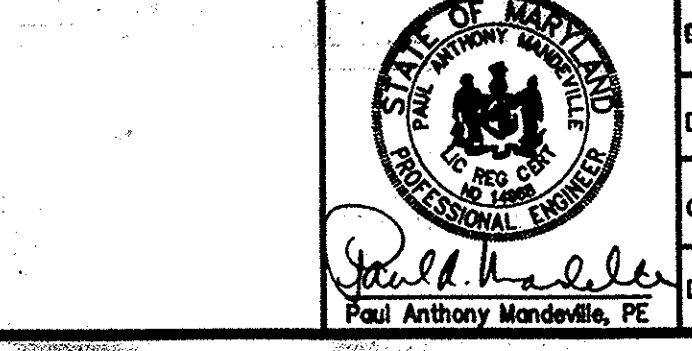
DIRECTOR: [Signature] DATE: 11/3/97  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: [Signature] DATE: 10/30/97  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH: [Signature] DATE: 11/3/97

SUBDIVISION NAME	LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220,11	
LIBER/FOLIO	ZONE	TAX/ZONE MAP
10-847/606 16-876/215 10-891/214	PEC	10 & 16
WATER CODE	SEWER CODE	CENSUS TR.
PRIVATE, EXISTING	PRIVATE, EXISTING	60-30

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

Director of Public Works: [Signature] DATE: 10/30/97  
 Chief, Bureau of Waste Management: [Signature] DATE: 10/30/97

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



DES.	AST	DRN.	LTJ	CHK.	PAM	DATE	BY	NO.	REVISION	DATE
						11-9-99			ADDED STAGING & STOCKPILE AREA AND BULKHEAD LANDFILL	11-9-99
						10-6-99			ADDED CULVERT BA-3, BA-4 & RIPRAP	10-6-99
						4-28-99			BORROW AREA GRADING, ERS CONTRA, & SWALES	4-28-99

**BORROW AREA DRAINAGE DIVIDES / EROSION & SEDIMENT CONTROL**

**ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE**  
 CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

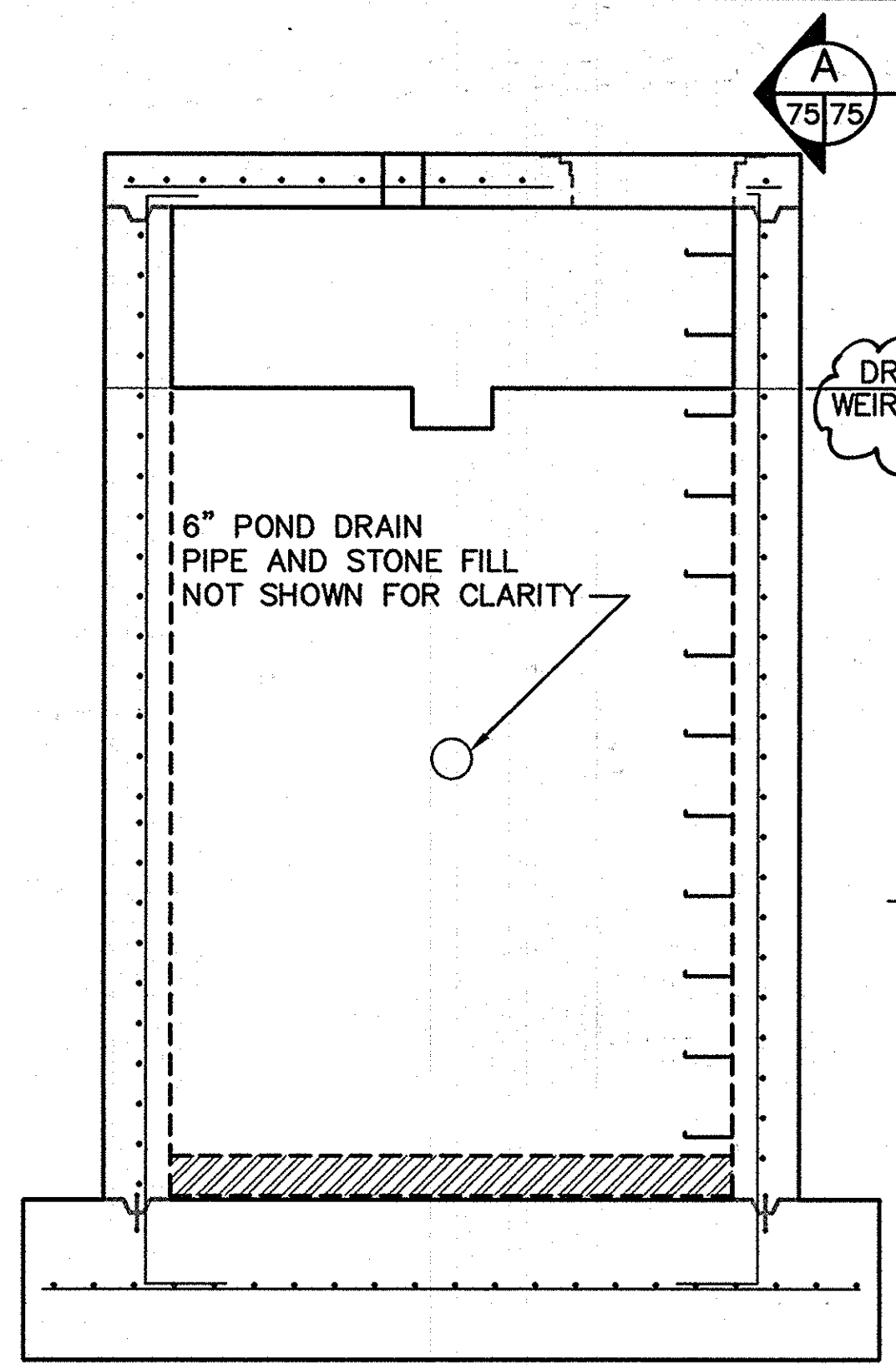
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 SHEET: 74 OF 181

E&S/DIVIDE

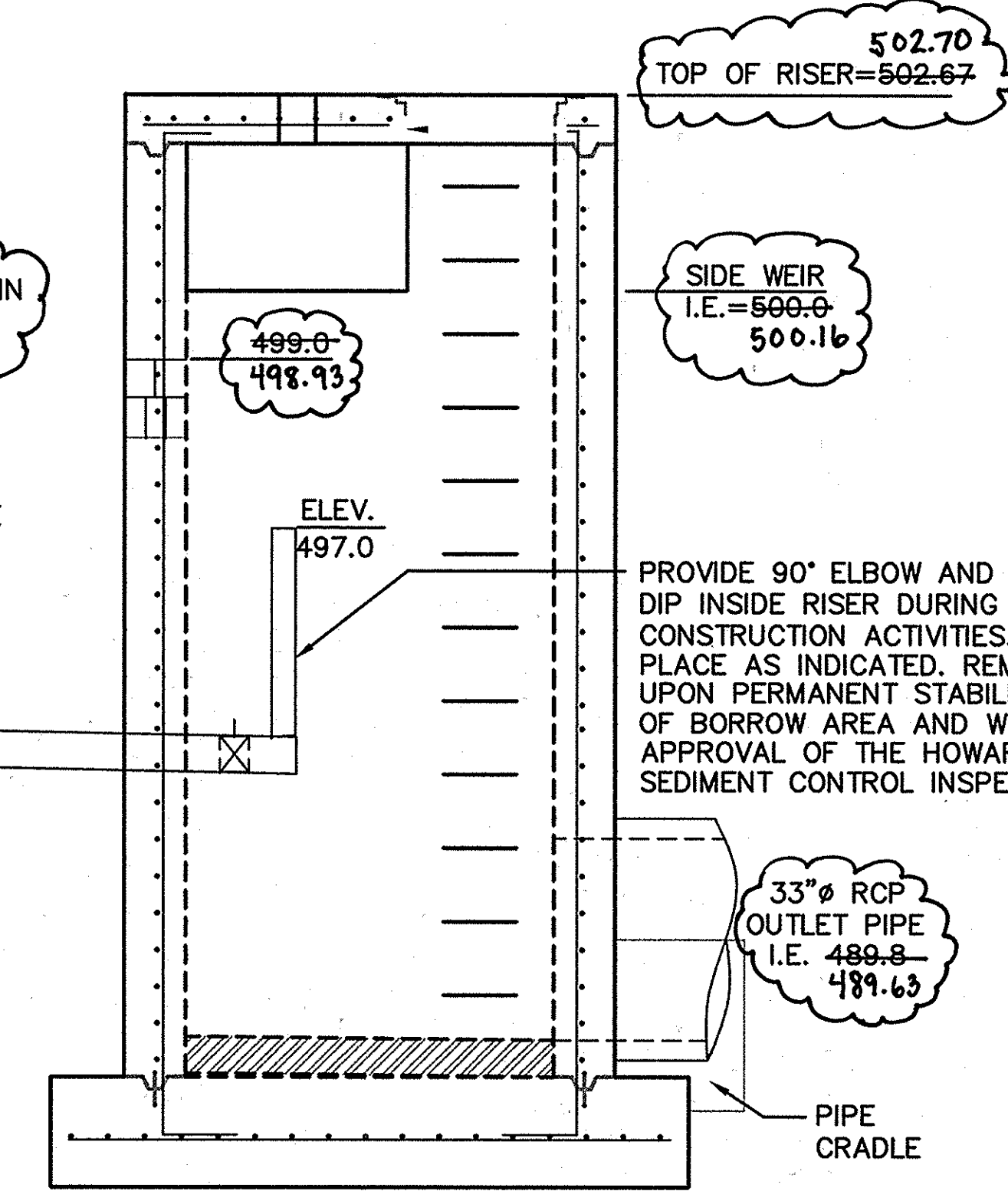
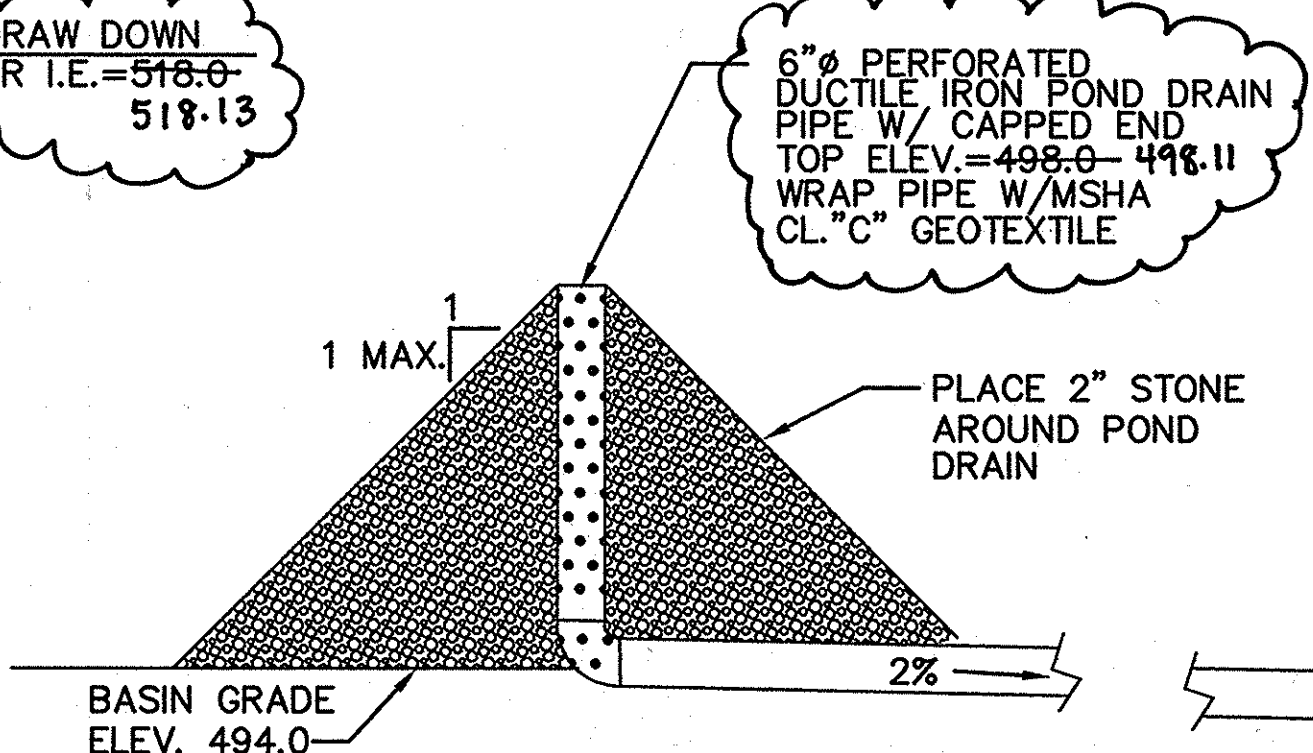


Ms:\298077.01\FINAL\DETAILS ESI2DET

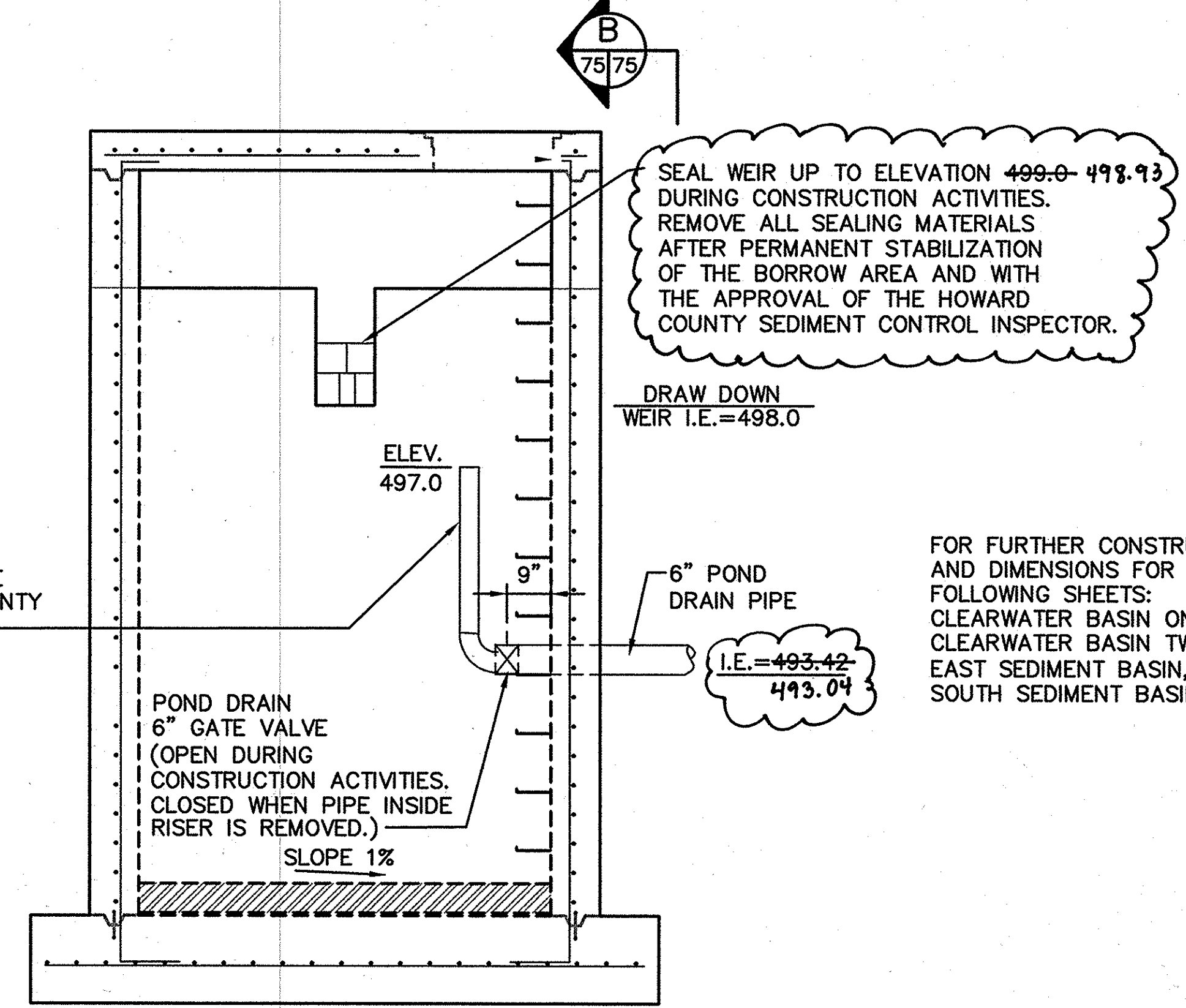
ESI2ET2



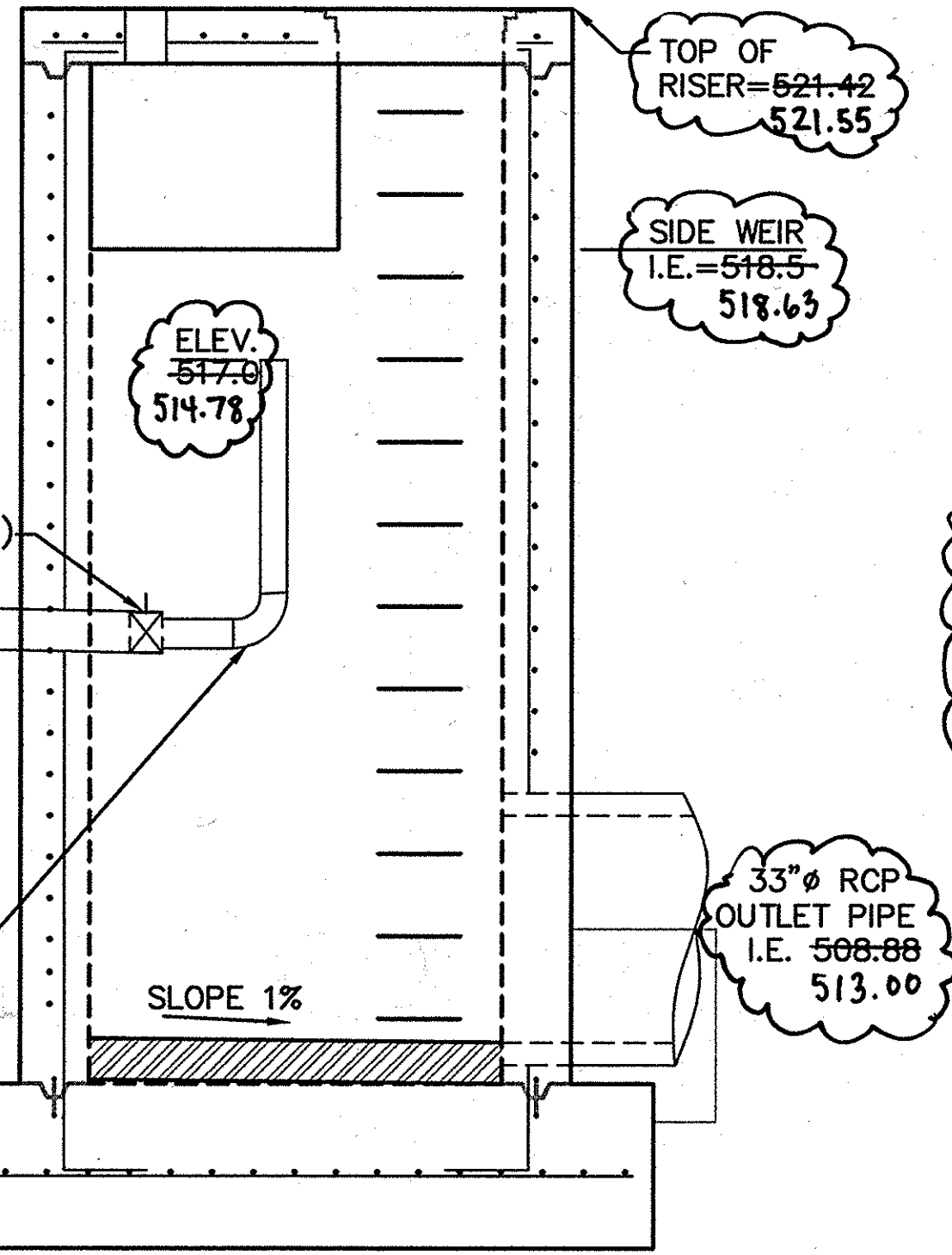
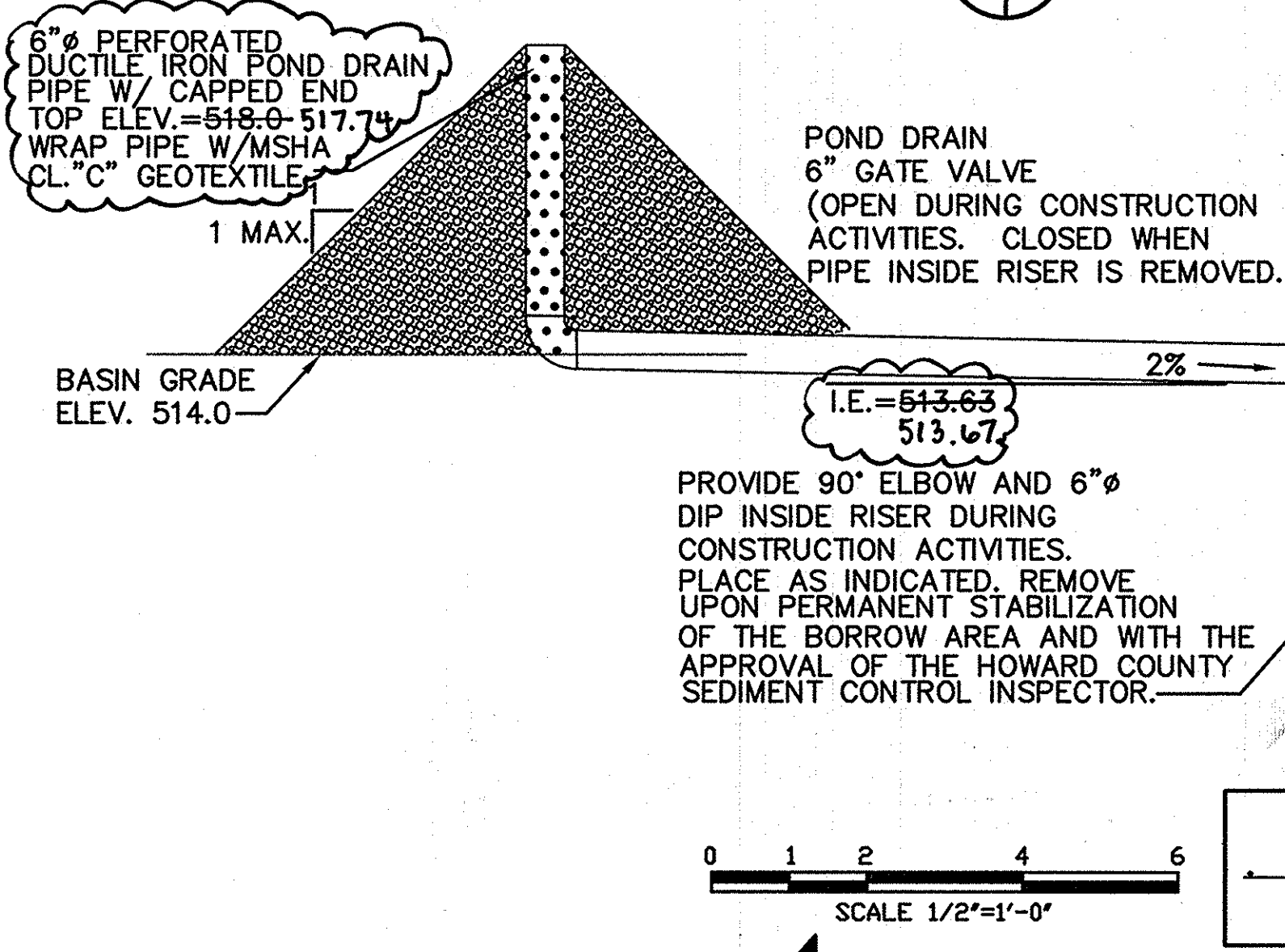
CW1 RISER STRUCTURE DETAIL 1  
SCALE: 1/2"=1'-0"



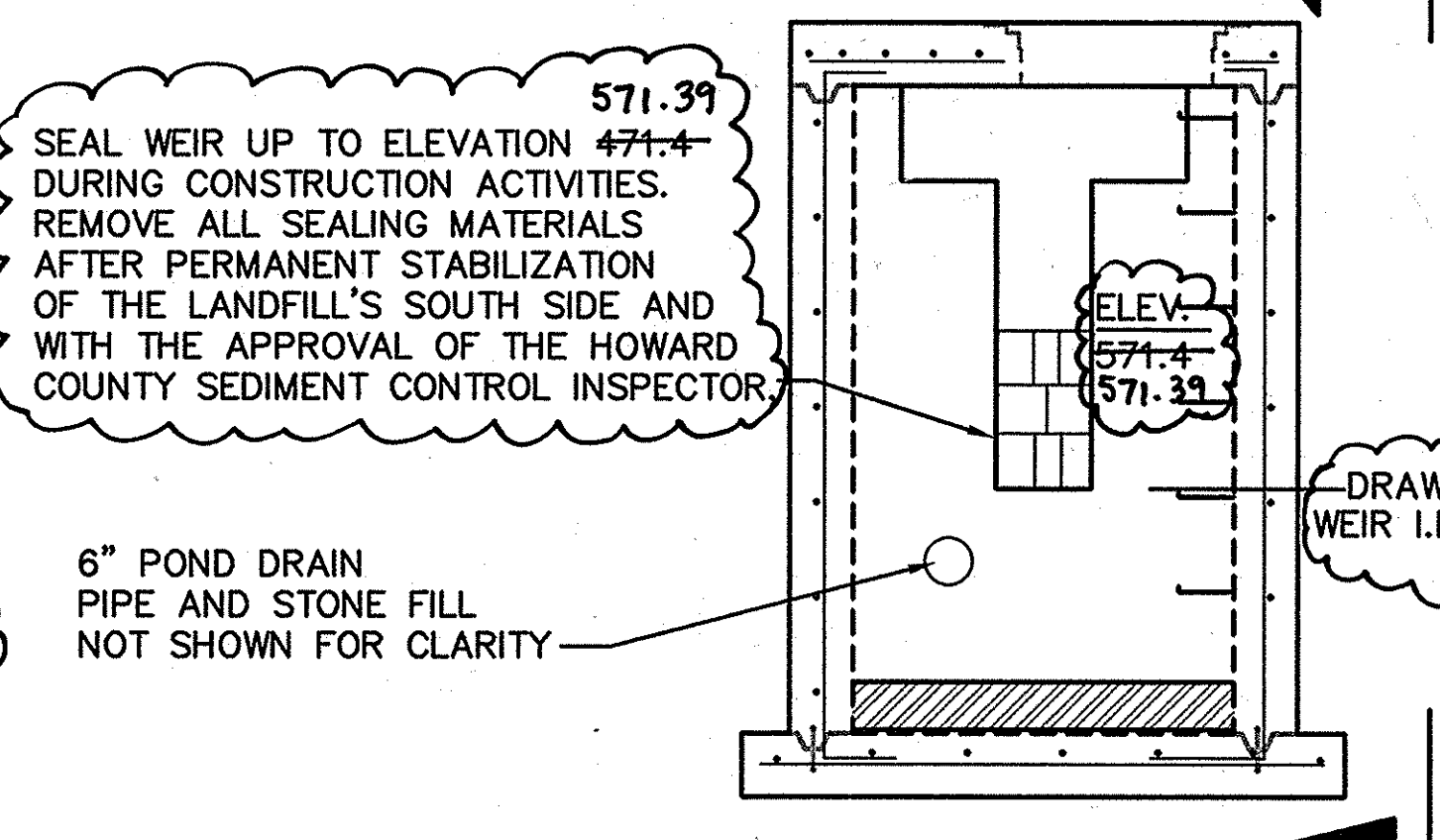
CW2 RISER STRUCTURE SECTION B  
SCALE: 1/2"=1'-0"



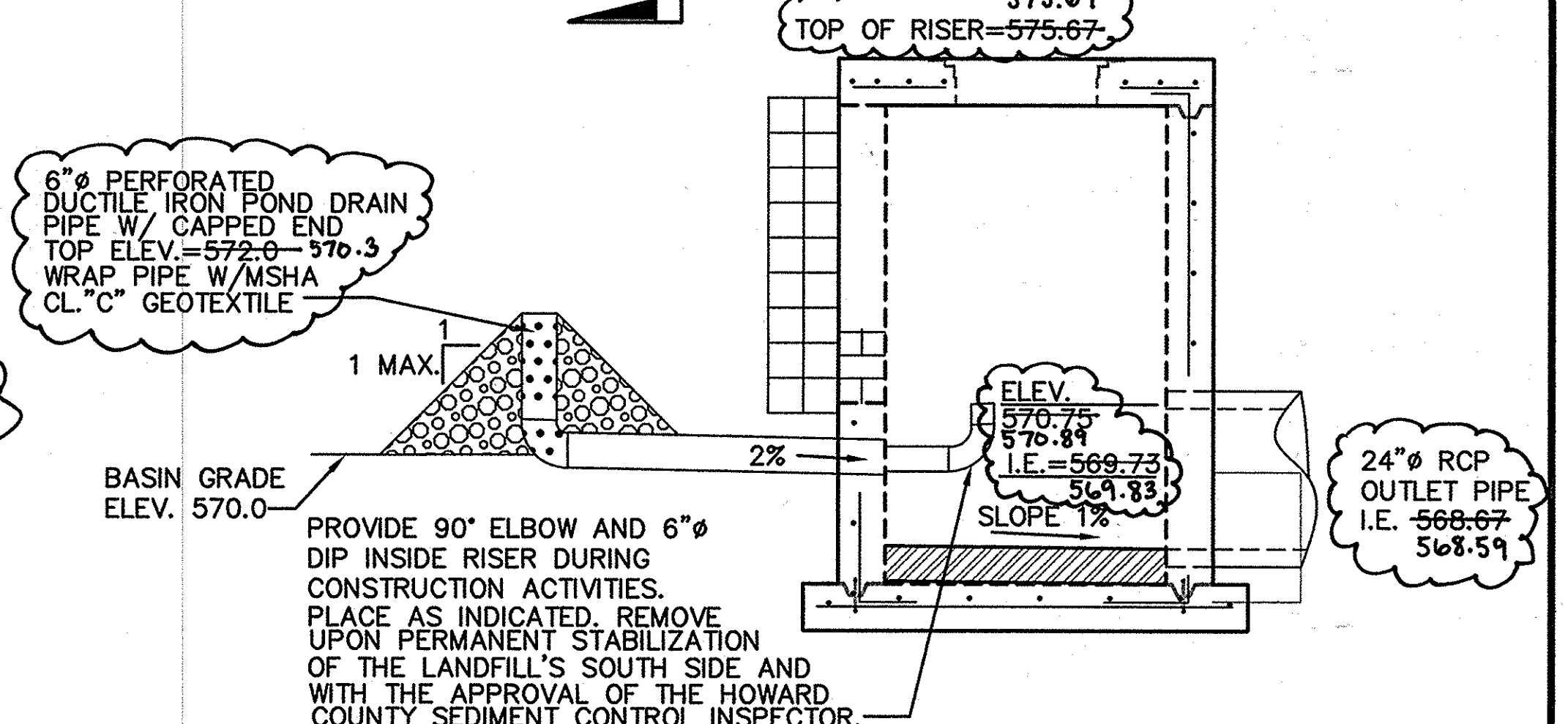
CW2 RISER STRUCTURE DETAIL 4  
SCALE: 1/2"=1'-0"



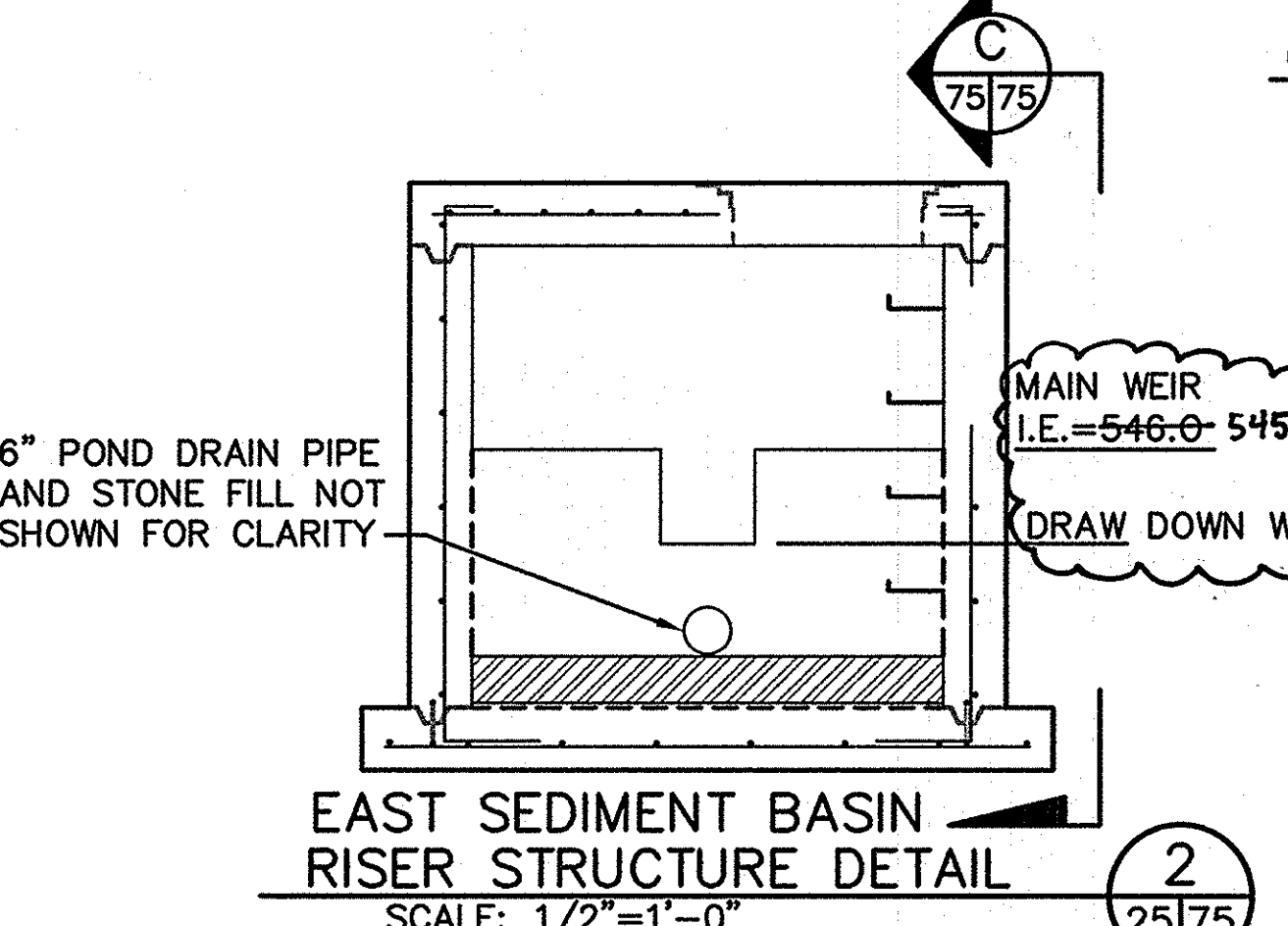
CW1 RISER STRUCTURE SECTION A  
SCALE: 1/2"=1'-0"



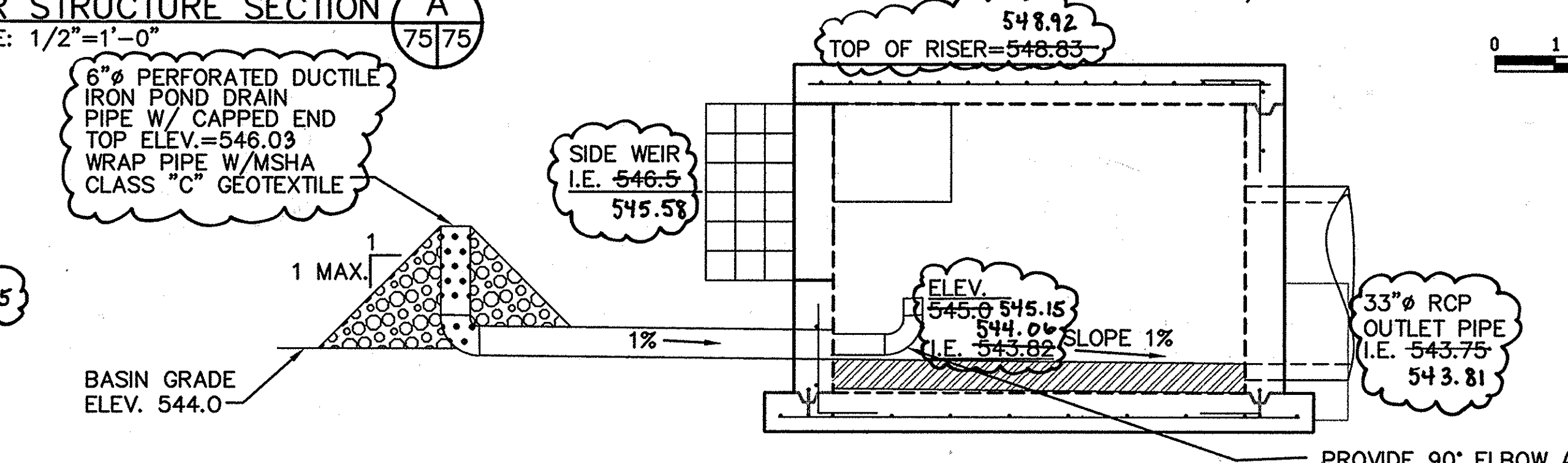
SOUTH SEDIMENT BASIN RISER STRUCTURE DETAIL 3  
SCALE: 1/2"=1'-0"



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



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



EAST SEDIMENT BASIN RISER STRUCTURE SECTION C  
SCALE: 1/2"=1'-0"

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220.11	
LIBER/FOLIO 10-847/606 16-878/215 10-891/314	ZONE PEC	TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

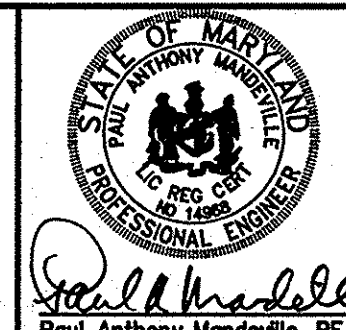
*James R. Smith* 11/13/97  
DIRECTOR DATE

*John J. O'Hara* 11/13/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Hamilton* 11/13/97  
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

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. AST	
DRN. LTJ	
CHK. PAM	
DATE: 10-30-97	
BY NO.	
REVISION	
DATE	

RISER MODIFICATIONS DURING  
CONSTRUCTION ACTIVITIES

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED  
SHEET  
75 OF 131

SDP-97-128

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 10/20/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

SUBDIVISION NAME  
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER

LOT/PARCEL  
54,253,220,11,302

LIBER/FOLIO  
10-847/006  
16-870/215  
10-891/314

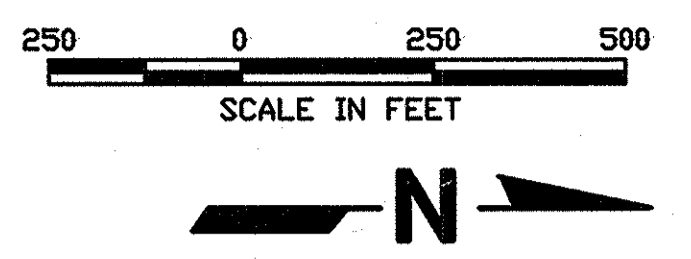
ZONE  
REC-DEO

TAX/ZONE MAP  
10 & 16

WATER CODE  
PRIVATE, EXISTING

SEWER CODE  
PRIVATE, EXISTING

CENSUS TR.  
1030.00-30



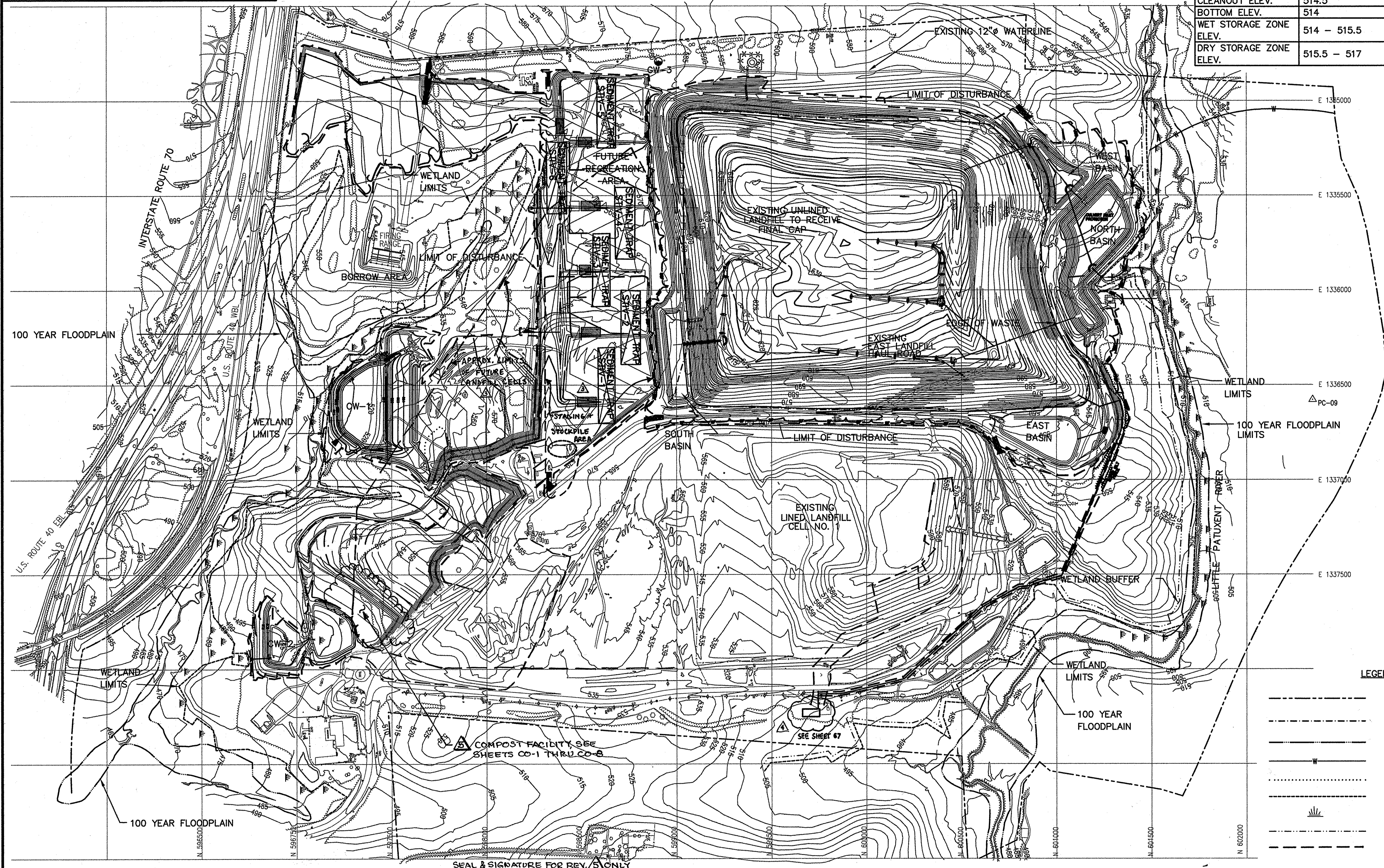
BASIN NAME		CLEARWATER 1	
DRAINAGE AREA (AC)	WET	50.02	90036
STORAGE REQUIRED (cf)	DRY	90036	90036
	TOTAL	180072	
STORAGE PROVIDED (cf)	WET	90036	90036
	DRY	90036	90036
	TOTAL	180072	
RISER CREST ELEV.		518.0	
WET STORAGE ELEV.		515.5	
CLEANOUT ELEV.		514.5	
BOTTOM ELEV.		514	
WET STORAGE ZONE ELEV.		514 - 515.5	
DRY STORAGE ZONE ELEV.		515.5 - 517	

BASIN NAME		EAST SEDIMENT	
DRAINAGE AREA (AC)	WET	15.92	28656
STORAGE REQUIRED (cf)	DRY	28656	28656
	TOTAL	57312	
STORAGE PROVIDED (cf)	WET	28656	28656
	DRY	28656	28656
	TOTAL	57312	
RISER CREST ELEV.		545	
WET STORAGE ELEV.		544.5	
CLEANOUT ELEV.		544.5	
BOTTOM ELEV.		544.0	
WET STORAGE ZONE ELEV.		544.0 - 544.5	
DRY STORAGE ZONE ELEV.		544.5 - 545.0	

BASIN NAME		SOUTH SEDIMENT	
DRAINAGE AREA (AC)	WET	16.22	29196
STORAGE REQUIRED (cf)	DRY	29196	29196
	TOTAL	58392	
STORAGE PROVIDED (cf)	WET	29196	29196
	DRY	29196	29196
	TOTAL	58392	
RISER CREST ELEV.		571.43	
WET STORAGE ELEV.		570.75	
CLEANOUT ELEV.		570.5	
BOTTOM ELEV.		570.0	
WET STORAGE ZONE ELEV.		570.0 - 570.75	
DRY STORAGE ZONE ELEV.		570.75 - 571.43	

BASIN NAME		NORTH SEDIMENT	
DRAINAGE AREA (AC)	WET	61.53	110754
STORAGE REQUIRED (cf)	DRY	110754	110754
	TOTAL	221508	
STORAGE PROVIDED (cf)	WET	110754	175,111
	DRY	110754	203,425
	TOTAL	221508	378,536
RISER CREST ELEV.		528	
WET STORAGE ELEV.		525.29	526.0
CLEANOUT ELEV.		524.5	
BOTTOM ELEV.		524	
WET STORAGE ZONE ELEV.		524 - 525.29	
DRY STORAGE ZONE ELEV.		526.0 - 528.0	

BASIN NAME		CLEARWATER 2	
DRAINAGE AREA (AC)	WET	22.17	46,55
STORAGE REQUIRED (cf)	DRY	39906	83,790
	TOTAL	79812	167,580
STORAGE PROVIDED (cf)	WET	39906	105,000
	DRY	39906	95,000
	TOTAL	79812	200,000
RISER CREST ELEV.		499.0	
WET STORAGE ELEV.		496.9	
CLEANOUT ELEV.		494.5	
BOTTOM ELEV.		494	
WET STORAGE ZONE ELEV.		494 - 496.9	
DRY STORAGE ZONE ELEV.		496.9 - 498.7	



- LEGEND
- PROPERTY LINE
  - - - EDGE OF WASTE
  - - - 100 YEAR FLOODPLAIN
  - - - EXISTING WATER LINE
  - - - BORROW AREA LIMITS
  - - - WETLAND LIMITS
  - - - WETLANDS
  - - - WETLAND BUFFER
  - - - LIMIT OF DISTURBANCE

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15453, EXPIRES ON DATE 2 JULY 2013.  
THIS SEAL APPLIES ONLY TO REVISIONS ON THIS SHEET.

*[Signature]*  
Paul Anthony Mandeville, PE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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

*[Seal]*  
Paul Anthony Mandeville, PE

DES.	LTJ	CSN	ALPHA RIDGE LANDFILL COMPOST FACILITY	3/19/12
DRN.	LTJ	CJS	ALPHA RIDGE LANDFILL GAS TO ENERGY PROJECT	10/4/11
CHK.	PAM	BJD	DELETED SED. TRAPS + ADDED STOCKPILE AREAS	11/9/99
			NORTH SED. BASIN VOLUMES AND ELEV.'S	7/21/99
			L.O.D. TO CW-2; CW2 STORAGE VOLUMES	4-28-97
BY	NO.		REVISION	DATE

OVERALL LIMITS OF DISTURBANCE

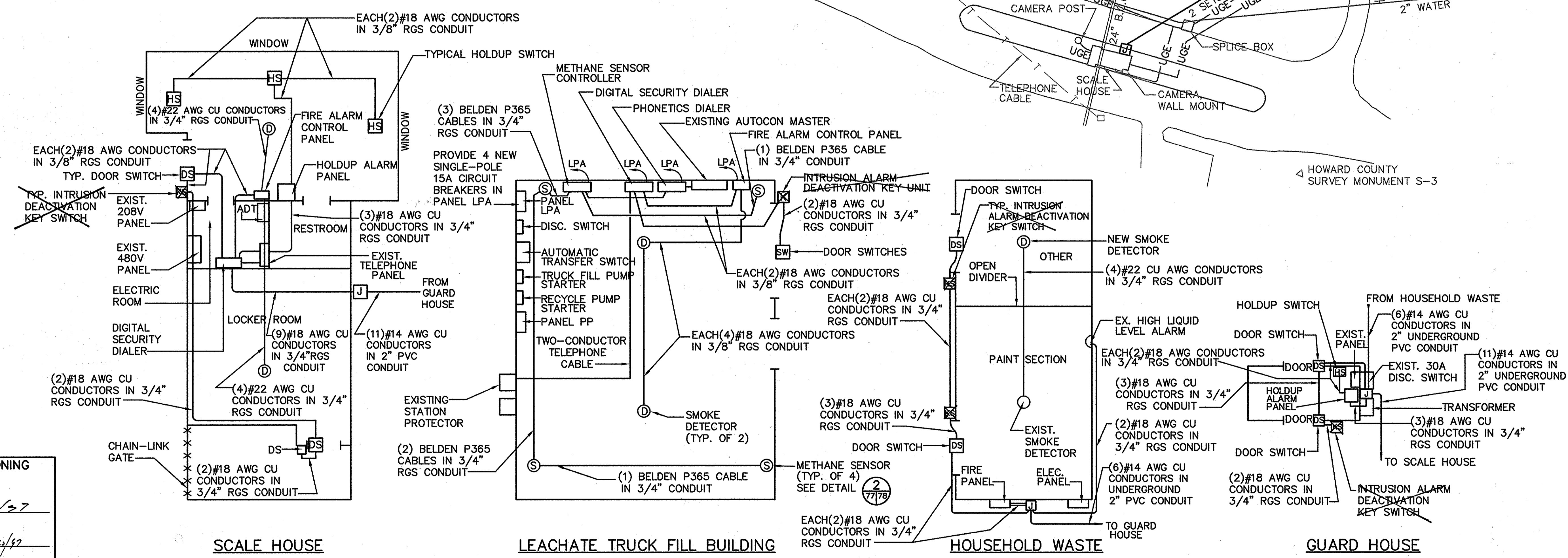
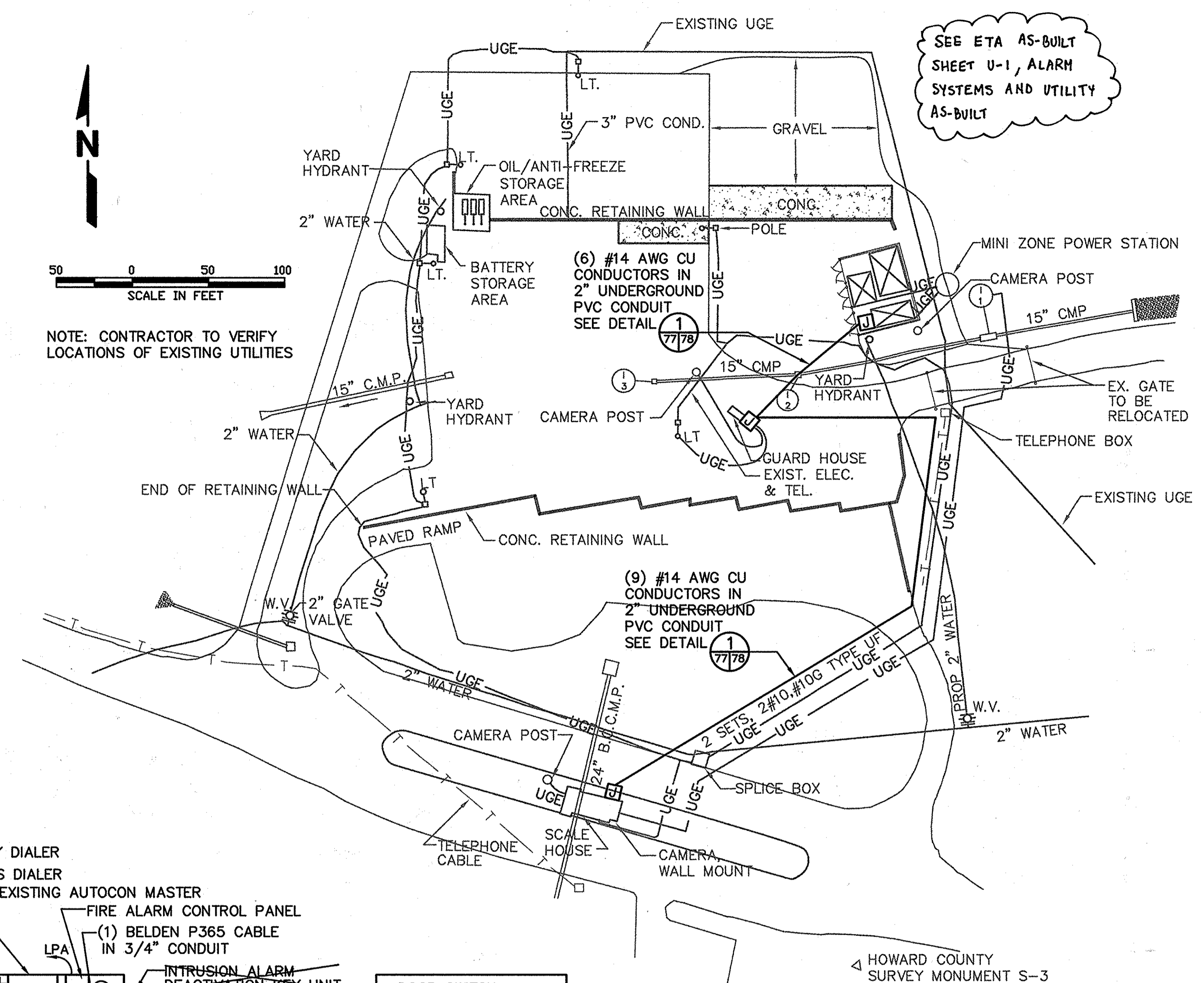
ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=250'

SHEET  
76 OF 131

SDP-97-128



X - DELETED

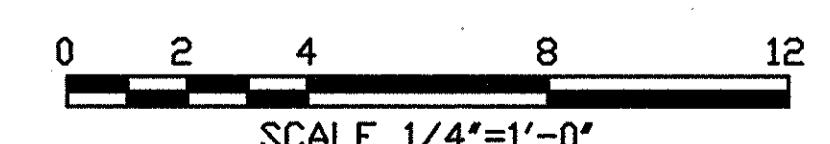
SUBDIVISION NAME		LOT/PARCEL	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		54,253,220,11	
LIBER/FOLIO		ZONE	
10-847/808 10-878/215 10-881/314		R	
WATER CODE		SEWER CODE	
PRIVATE, EXISTING		PRIVATE, EXISTING	
CENSUS TR.		CENSUS TR.	
80-30		80-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 10/31/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

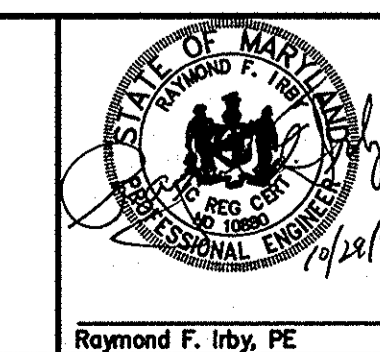


DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT 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.	MEH				
CHK.	PAM				
DATE:	10-30-97	BY	NO.	REVISION	DATE

MISCELLANEOUS BUILDING  
ALARM SYSTEMS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

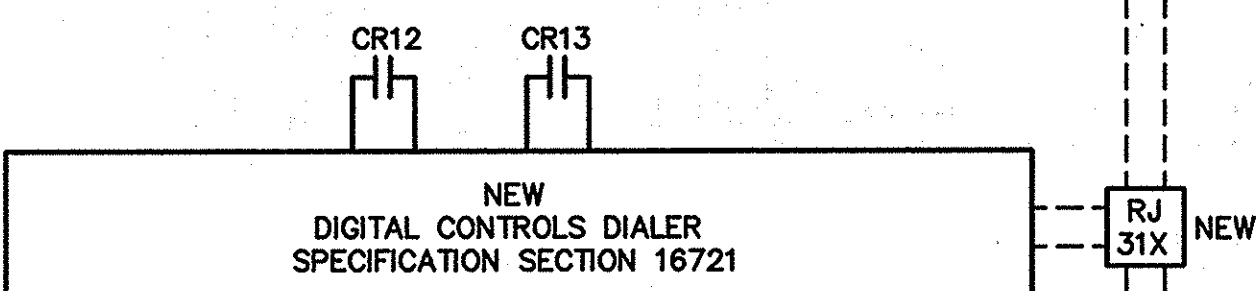
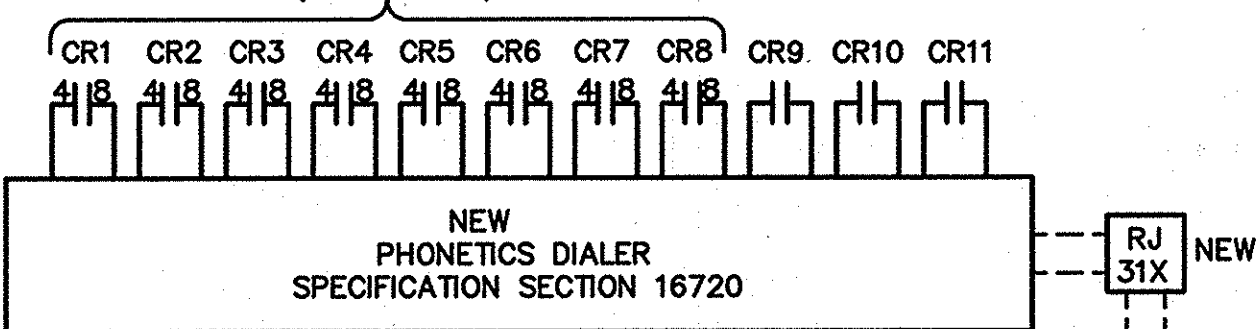
SCALE:  
AS NOTED

SHEET  
77 OF 131

ALARM-B M: 295077.01\FINAL\ ELEC SITE, ALARM

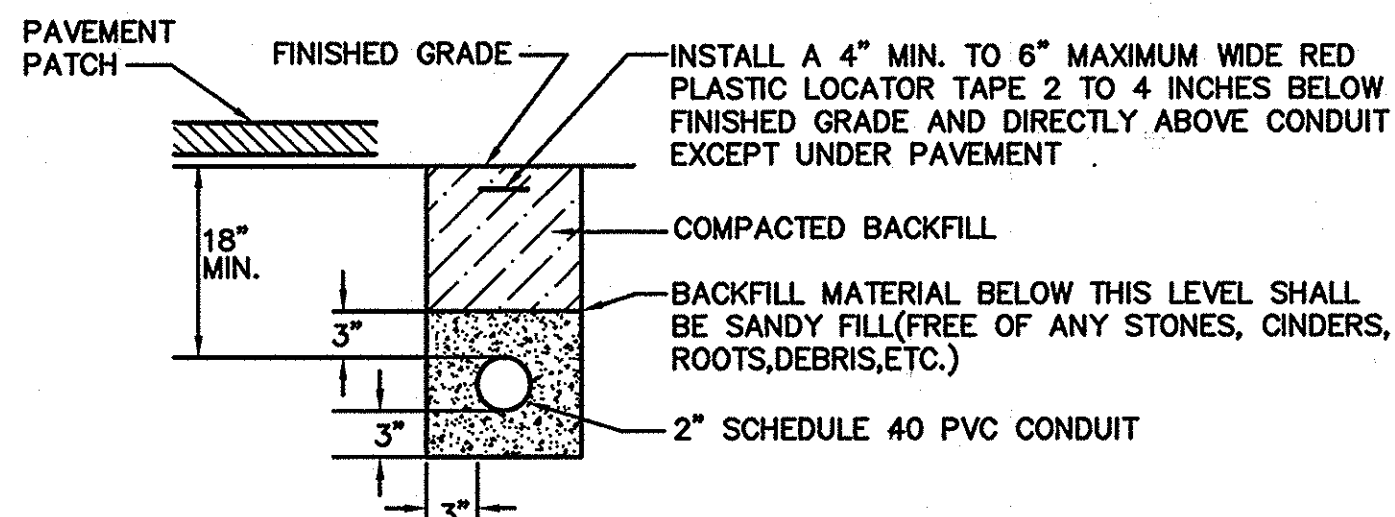
SDA-97-125

CONTACTS LOCATED IN EXISTING AUTOCON MASTER  
(SEE NOTE 1)

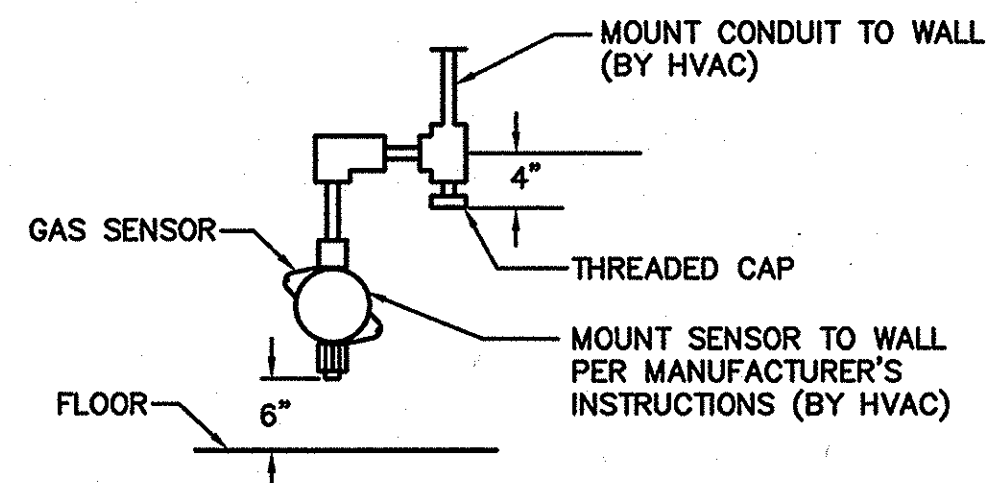


- LEGEND**
- CR1 LEACHATE PUMPS HIGH LEVEL (EXIST.)
  - CR2 LEACHATE PUMPS LOW LEVEL/PUMPS OFF (EXIST.)
  - CR3 LEACHATE CONTROL HIGH LEVEL/PUMPS OFF (EXIST.)
  - CR4 LEACHATE CONTROL HIGH LEVEL (EXIST.)
  - CR5 LEACHATE CONTROL LOW LEVEL/TRUCK PUMP OFF (EXIST.)
  - CR6 GENERAL CONTROL GENERAL FAULT (EXIST.)
  - CR7 AUTO TRANSFER SWITCH OP. EMERGENCY POWER (EXIST.)
  - CR8 AUTO TRANSFER SWITCH MAN. TRANSFER (EXIST.)
  - CR9 METHANE SENSOR HIGH (NEW)
  - CR10 METHANE SENSOR LOW (NEW)
  - CR11 METHANE SENSOR TROUBLE (NEW)
  - CR12 SMOKE ALARM (NEW)
  - CR13 INTRUSION ALARM (NEW)
- EXISTING STATION PROTECTOR  
TELEPHONE LINE
- NOTE: 1. REMOVE THE WIRES CONNECTED TO THESE TERMINALS AND ADD WIRES TO CONNECT TO THE NEW PHONETICS DIALER.

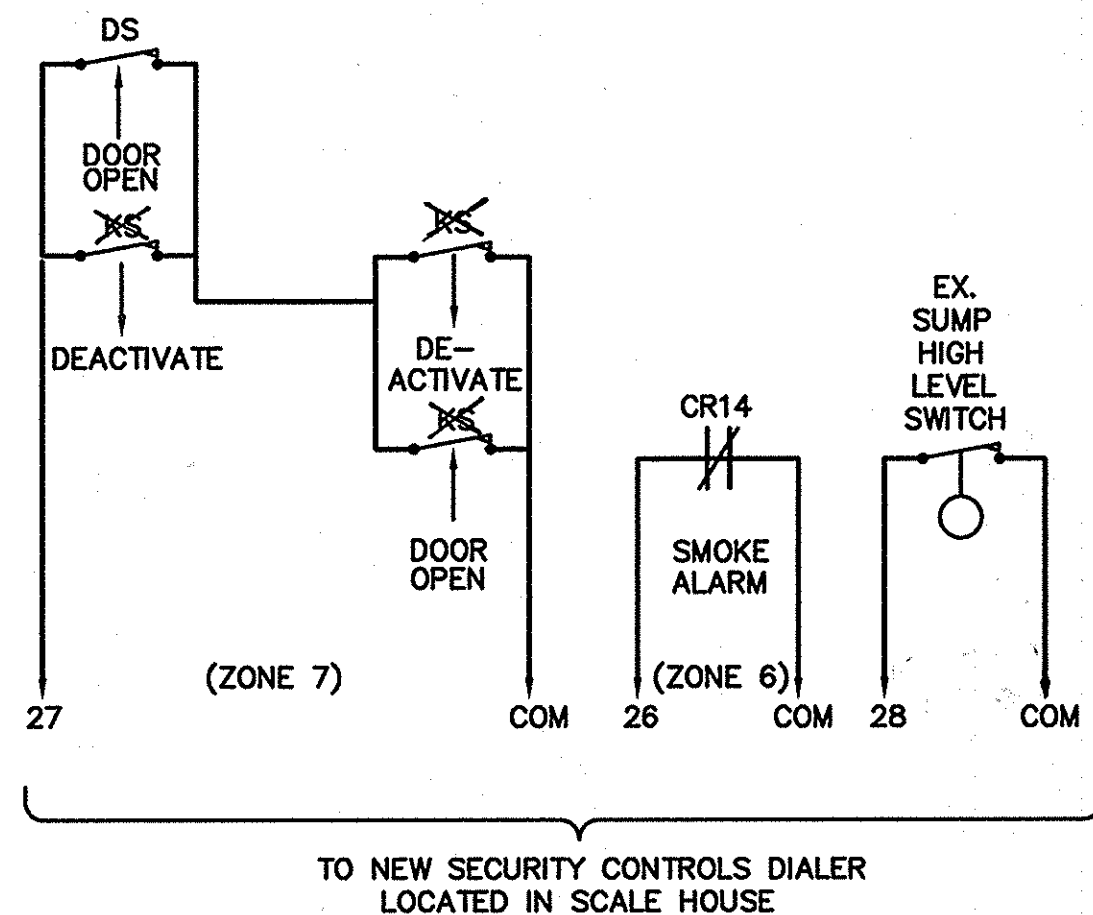
**ALARM DIALER CONNECTIONS IN LEACHATE TRUCK  
FILL STATION**



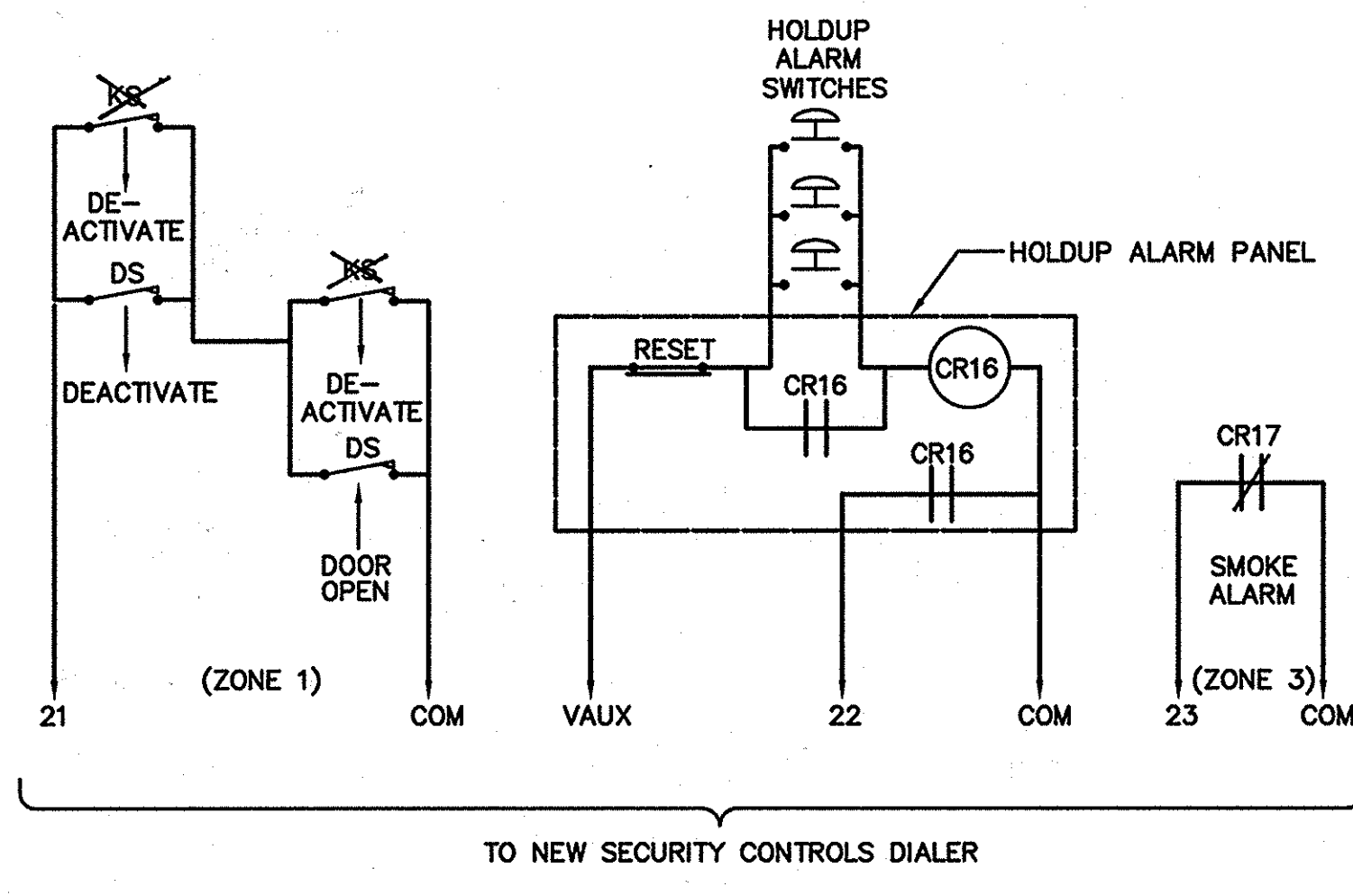
**DETAIL OF INSTALLATION OF ELECTRICAL  
CONDUIT UNDERGROUND**



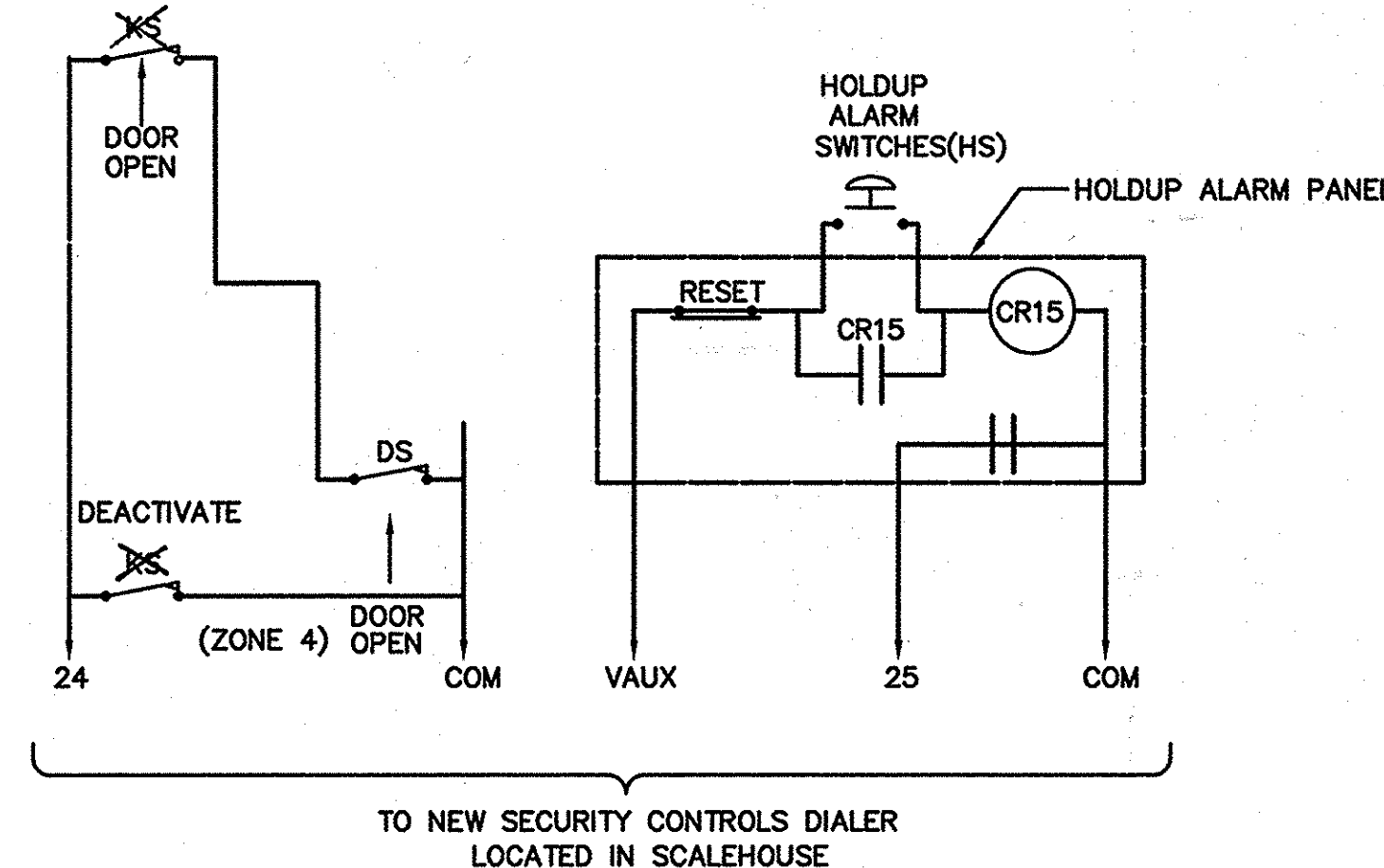
**METHANE SENSOR MOUNTING DETAIL**



**ALARM CONNECTIONS IN HOUSEHOLD  
HAZARD WASTE AREA**



**ALARM CONNECTIONS IN SCALE HOUSE**



**ALARM CONNECTIONS IN GUARD HOUSE**

X - DELETED

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT/PARCEL 54,253,220,11
LIBER/FOLIO 10-847/606 16-876/215 10-891/314	ZONE TAX/ZONE MAP R 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE CENSUS TR. PRIVATE, EXISTING 60-30

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 11/3/97  
DIRECTOR DATE

*[Signature]* 10/3/97  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

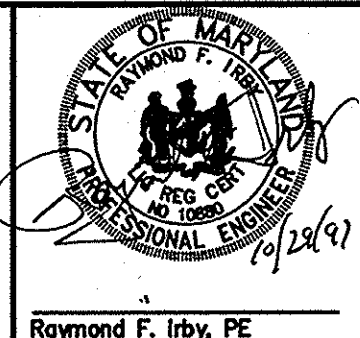
*[Signature]* 11/3/97  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT 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. MEH	△		
CHK. PAM	△		
DATE: 10-30-97	BY NO.	REVISION	DATE

MISCELLANEOUS BUILDING  
ALARM SYSTEMS DETAILS

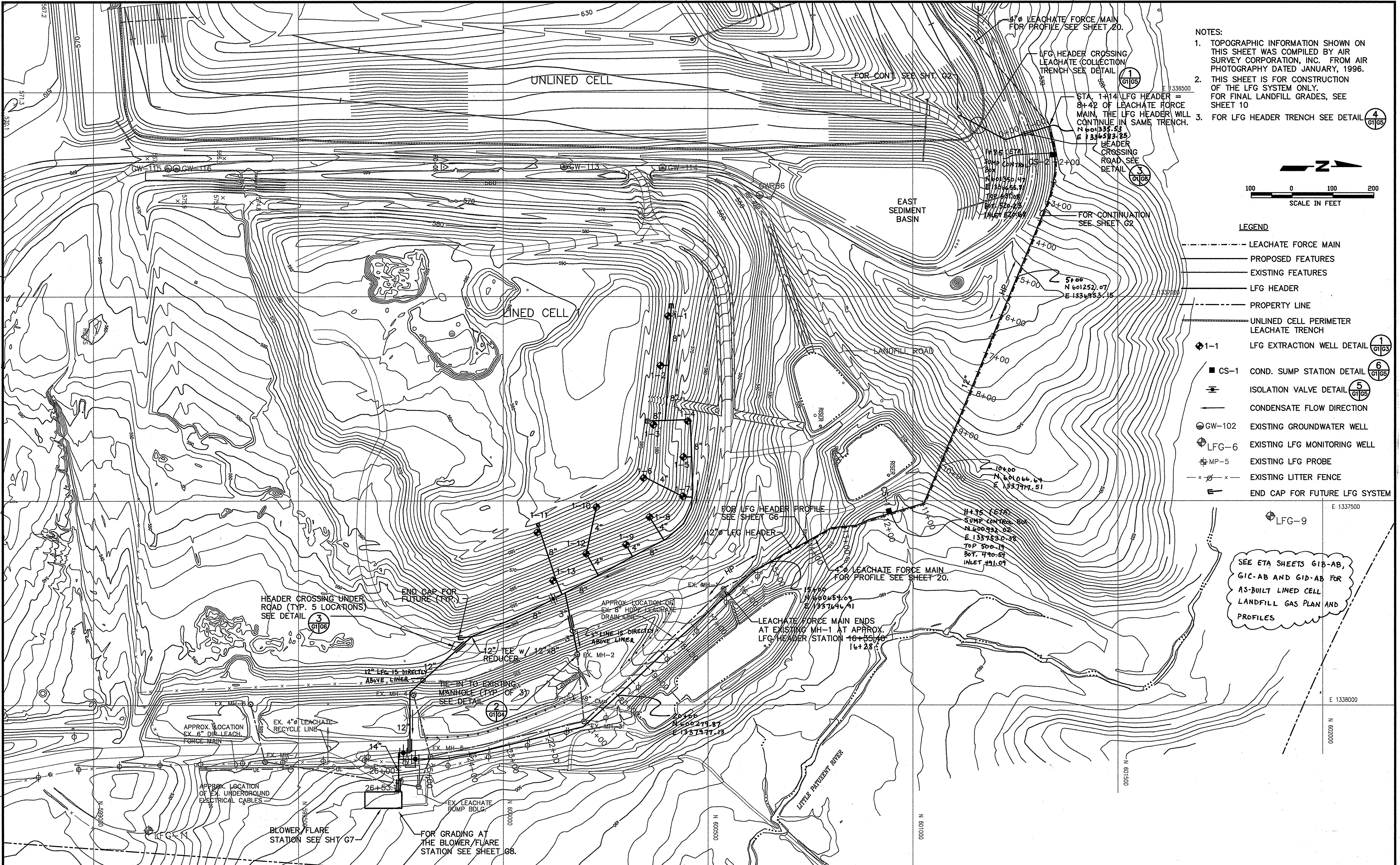
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT

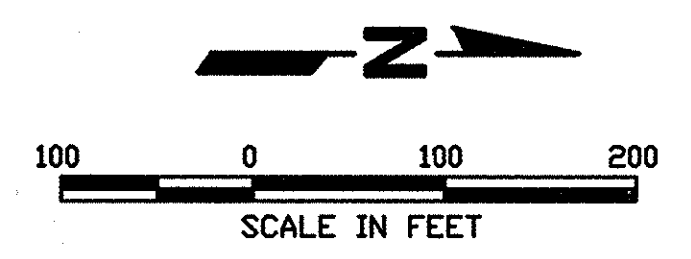
HOWARD COUNTY, MARYLAND

SCALE:  
NO SCALE  
SHEET  
78 OF 131

ALARM-DETAIL M:\295077\01\FINAL\



- NOTES:
1. TOPOGRAPHIC INFORMATION SHOWN ON THIS SHEET WAS COMPILED BY AIR SURVEY CORPORATION, INC. FROM AIR PHOTOGRAPHY DATED JANUARY, 1996.
  2. THIS SHEET IS FOR CONSTRUCTION OF THE LFG SYSTEM ONLY. FOR FINAL LANDFILL GRADES, SEE SHEET 10.
  3. FOR LFG HEADER TRENCH SEE DETAIL 4 (G165)

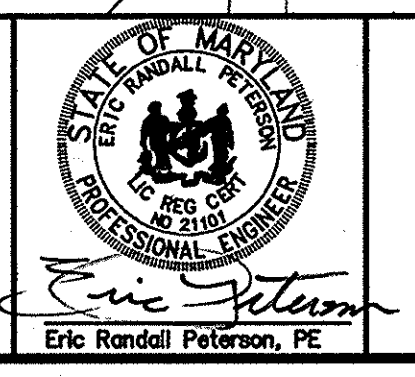


- LEGEND
- LEACHATE FORCE MAIN
  - PROPOSED FEATURES
  - EXISTING FEATURES
  - LFG HEADER
  - PROPERTY LINE
  - UNLINED CELL PERIMETER LEACHATE TRENCH
  - 1-1 LFG EXTRACTION WELL DETAIL (G165)
  - CS-1 COND. SUMP STATION DETAIL (G165)
  - ISOLATION VALVE DETAIL (G165)
  - CONDENSATE FLOW DIRECTION
  - GW-102 EXISTING GROUNDWATER WELL
  - LFG-6 EXISTING LFG MONITORING WELL
  - MP-5 EXISTING LFG PROBE
  - x-x-x EXISTING LITTER FENCE
  - END CAP FOR FUTURE LFG SYSTEM

SEE ETA SHEETS G1B-AB, G1C-AB AND G1D-AB FOR AS-BUILT LINED CELL LANDFILL GAS PLAN AND PROFILES

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.	BJD				
CHK.	ERP				
DATE:	10-30-97	BY		NO.	
			REVISION		DATE

LINED CELL  
LFG SYSTEM LAYOUT

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

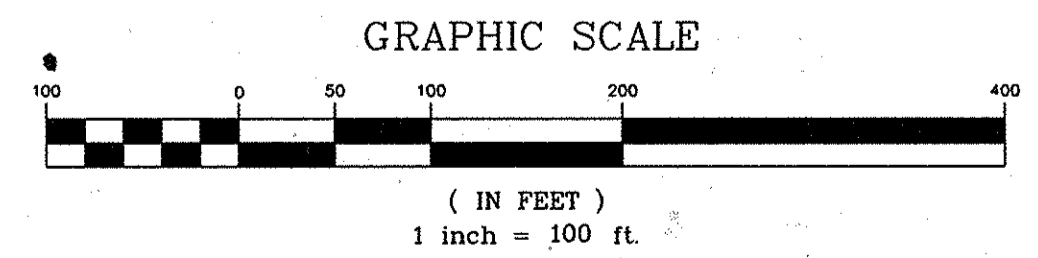
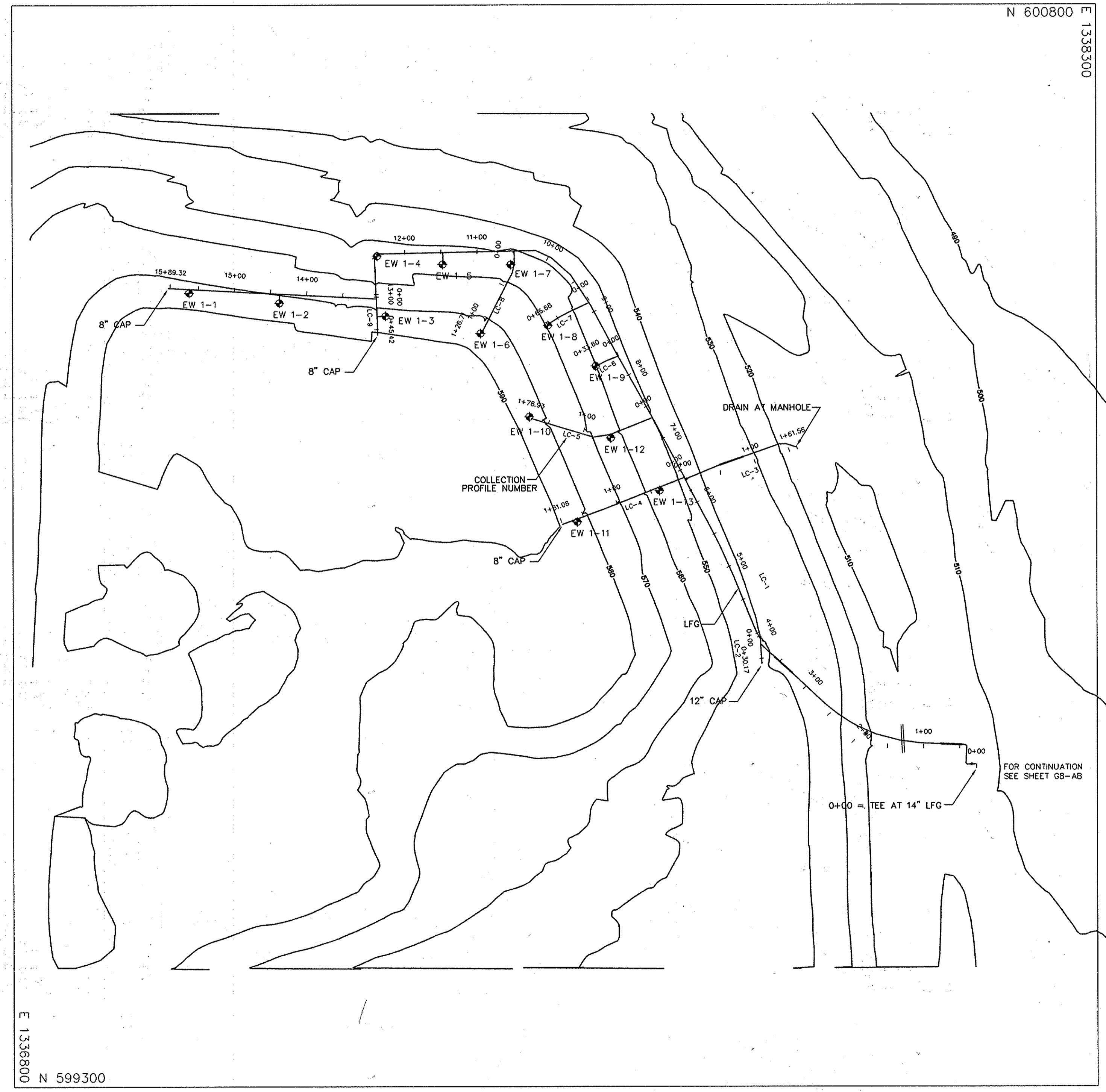
3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE:  
1"=100'-0"  
SHEET  
G1 OF 131

SHT-G1 M:\295077-02\FINAL\ 200SITE

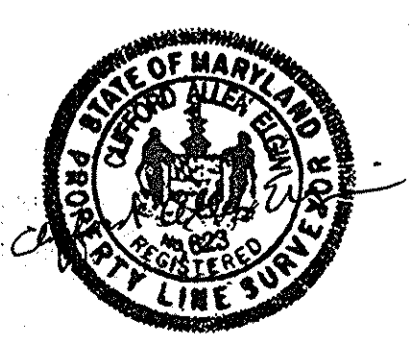
*James Lee* 10/30/97 DATE DIRECTOR OF PUBLIC WORKS  
*John O'Hara* 10/30/97 DATE CHIEF, BUREAU OF WASTE MANAGEMENT



LFgh2ab.dwg 10-19-00 2:01:35 pm EST

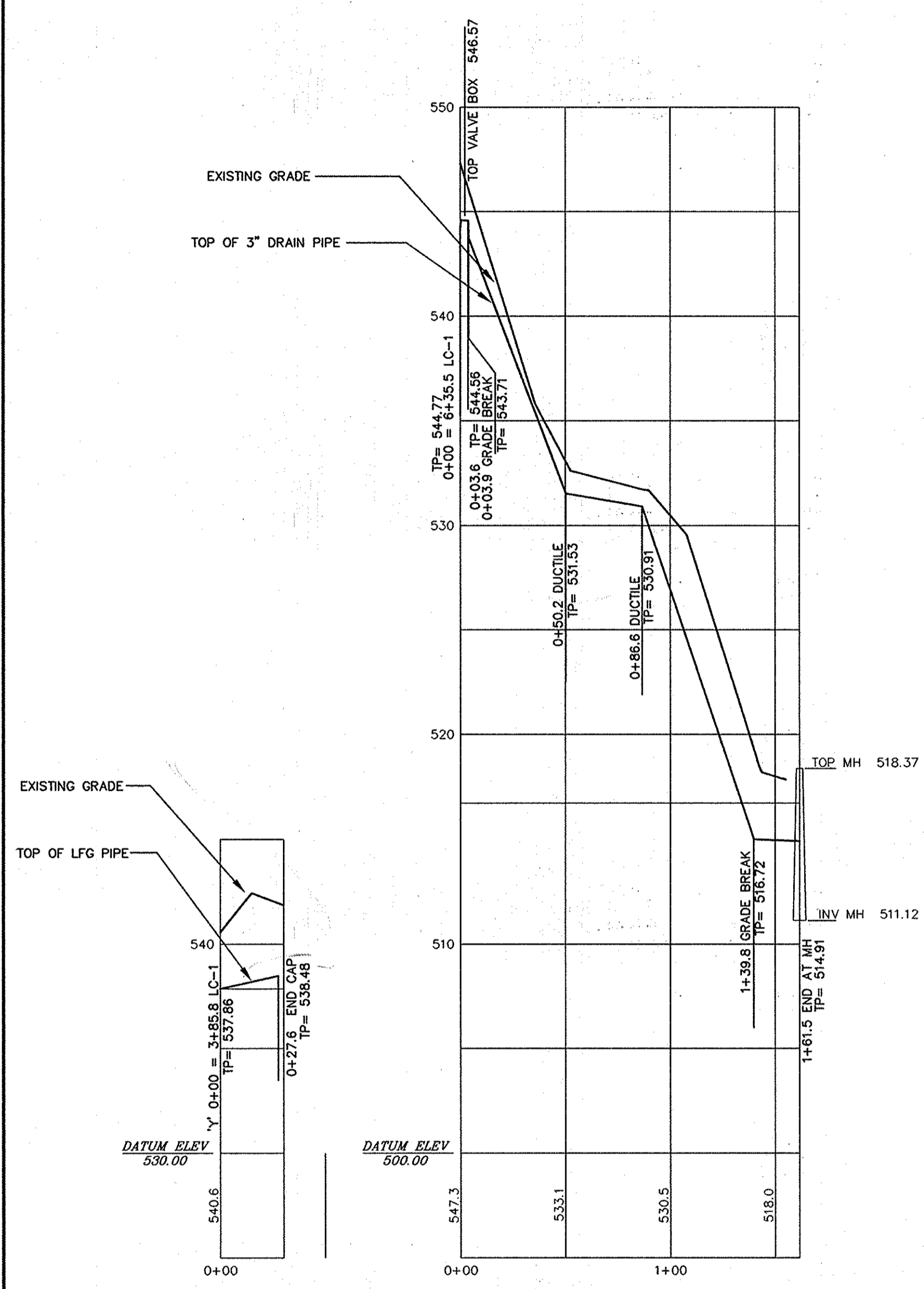
DESIGNED BY:		DATE		REVISIONS	
DATE	BY	DATE	BY	DESCRIPTION	
10-19-00	TWH	12-28	TWH	ADDED WELLS AND LABELS.	

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565

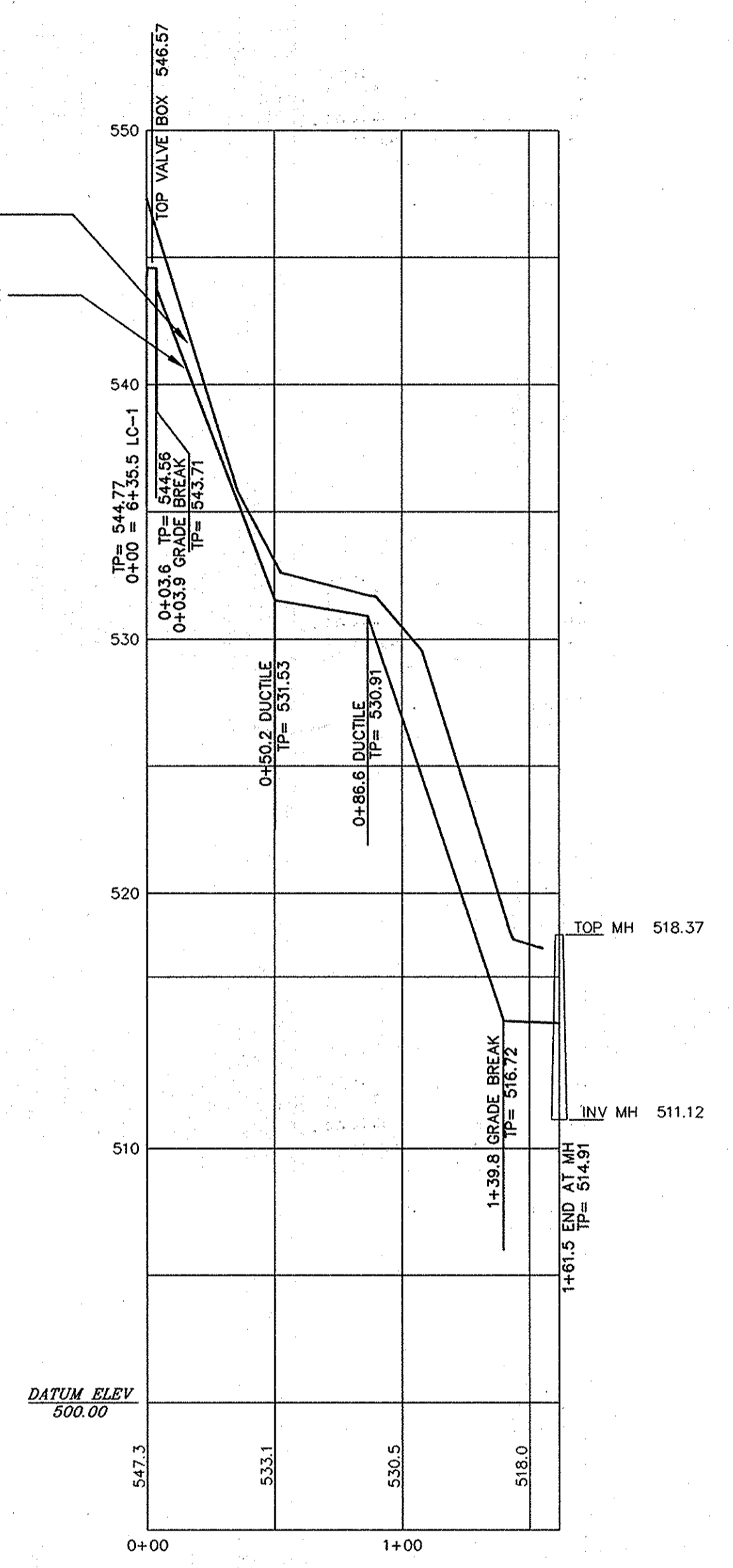


LINED CELL LANDFILL GAS AS-BUILT  
**ALPHA RIDGE LANDFILL CELL CLOSURE**

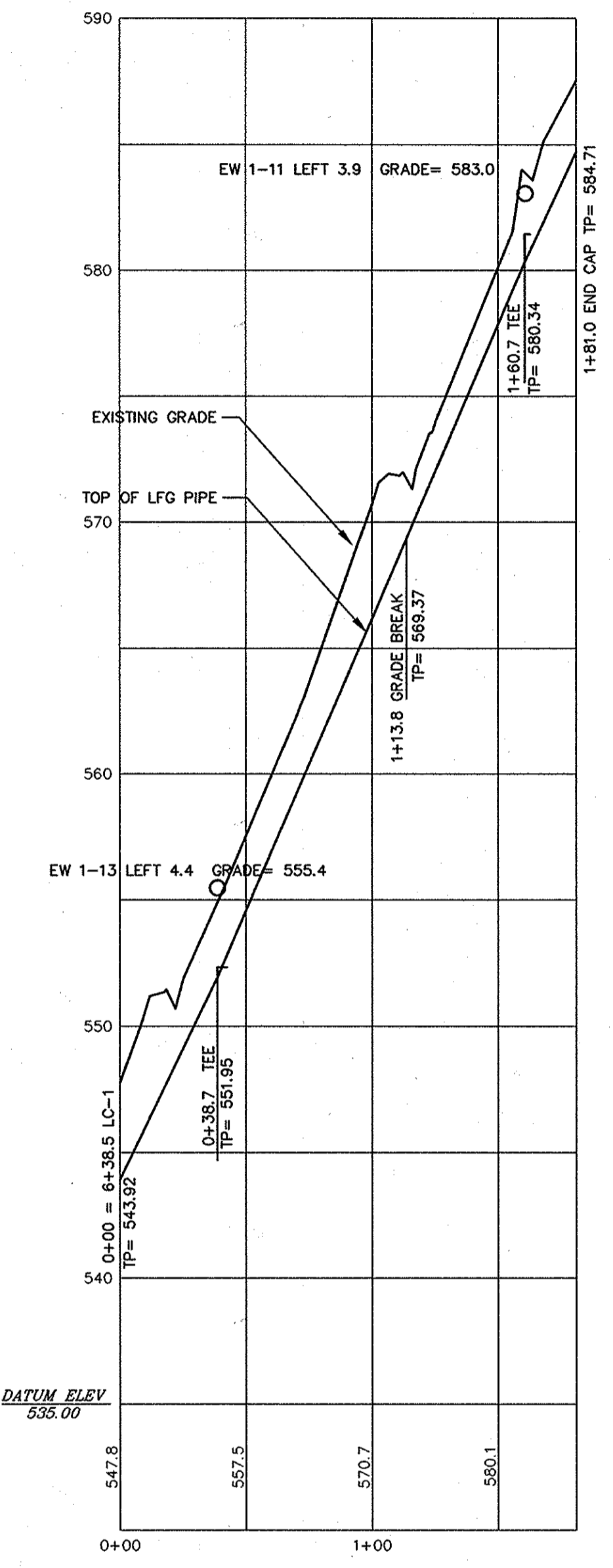
HOWARD COUNTY MARYLAND  
 SCALE : 1"=100' CONTRACT NO.: 98301.10 DATE : 12-28-1998 SHEET : G1B-AB OF 12



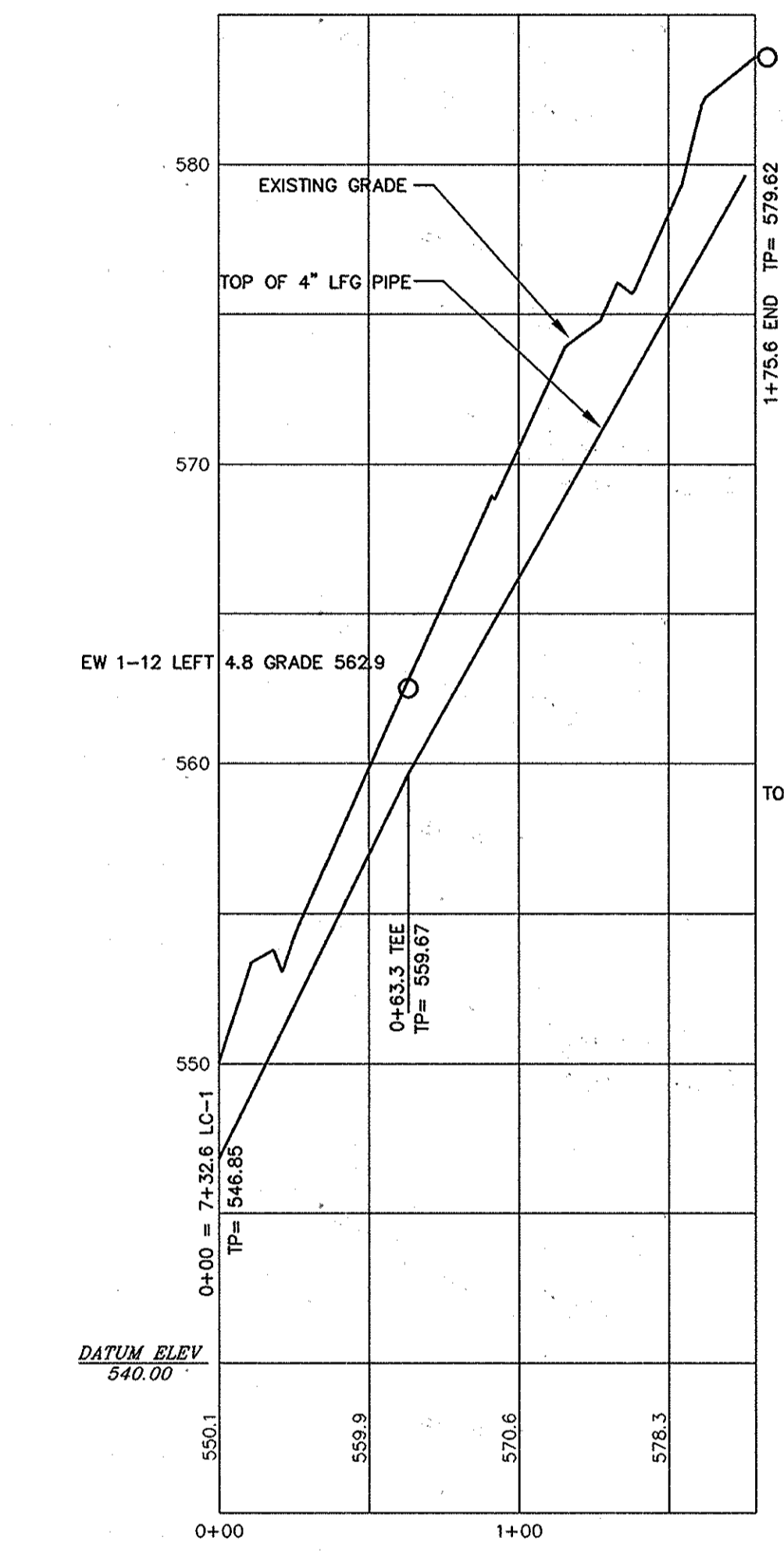
PROFILE LC-2



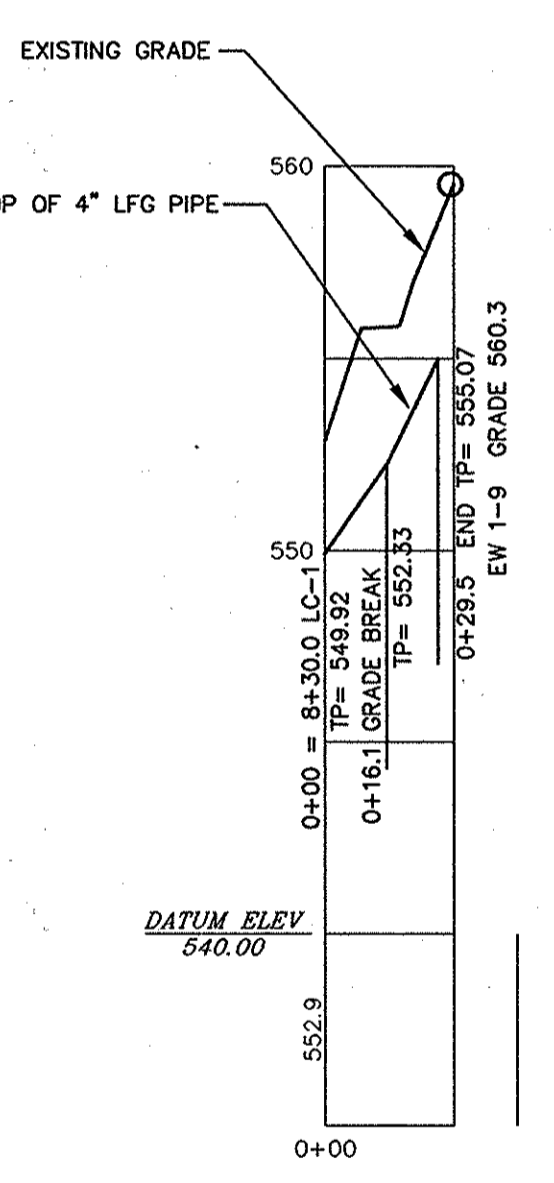
PROFILE LC-3



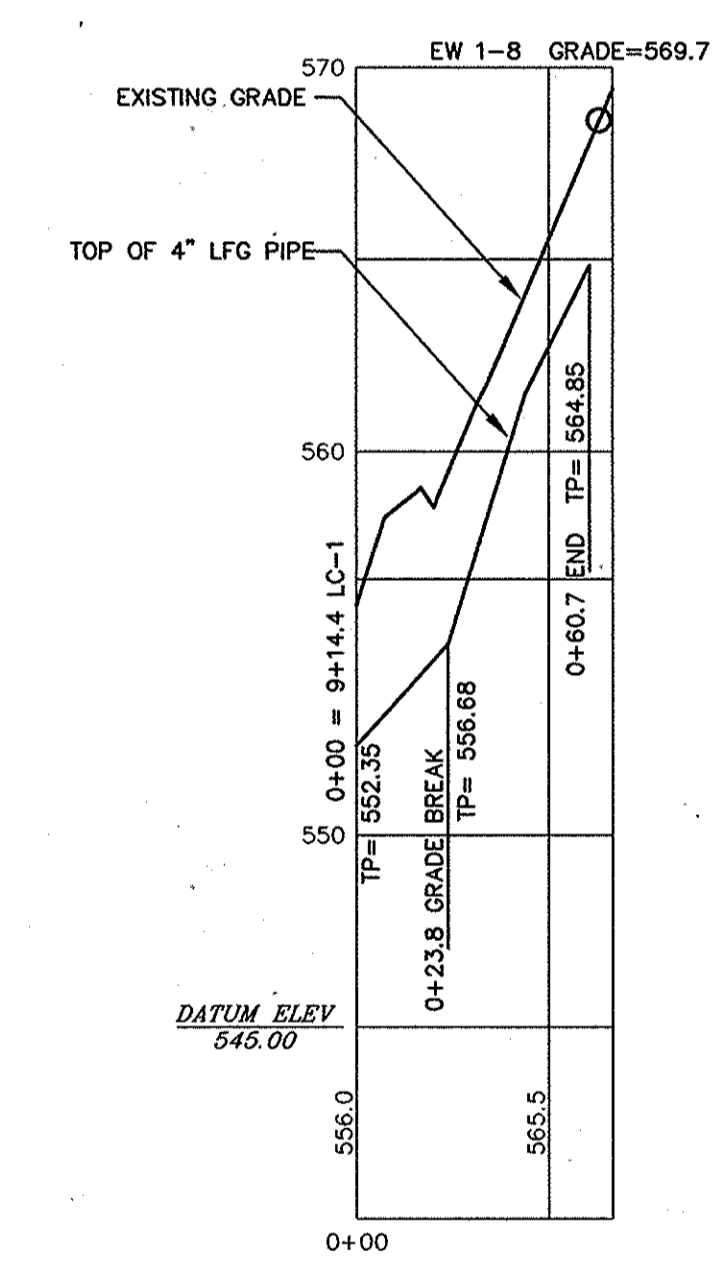
PROFILE LC-4



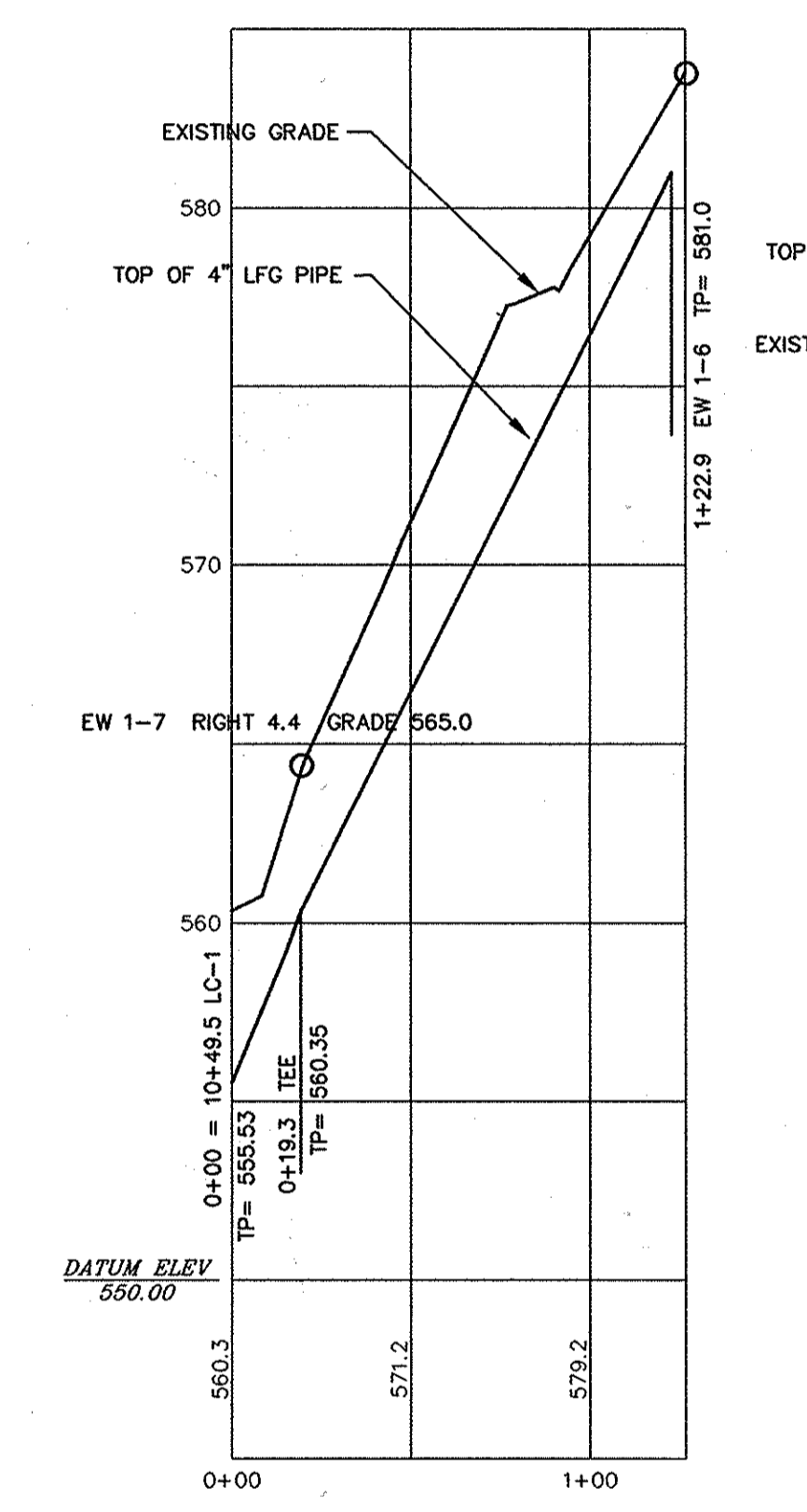
PROFILE LC-5



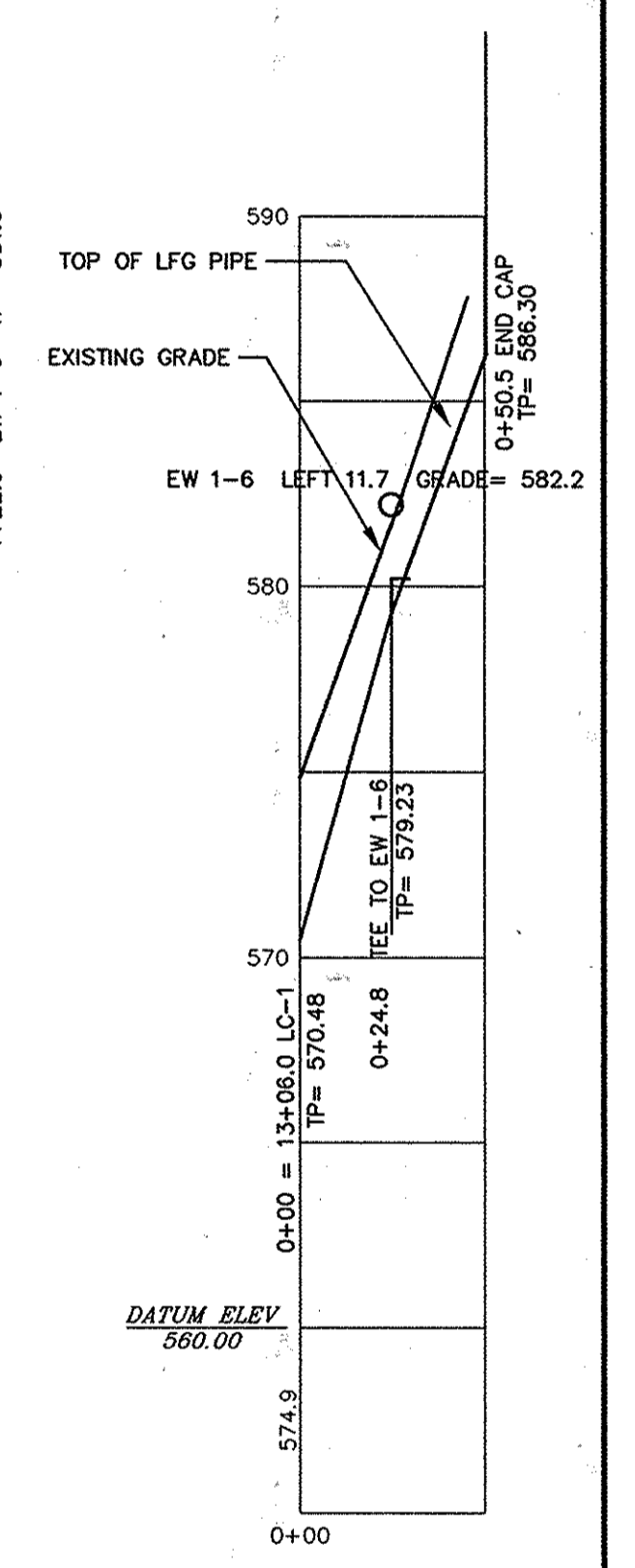
PROFILE LC-6



PROFILE LC-7



PROFILE LC-8

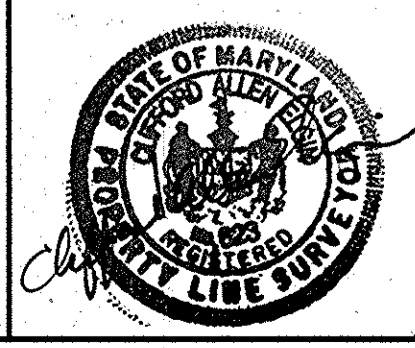


PROFILE LC-9

HORIZONTAL: 1"=50'  
VERTICAL: 1"=5'

DESIGNED BY:				REVISIONS			
DATE	DATE	BY	DESCRIPTION				
12-28							

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565

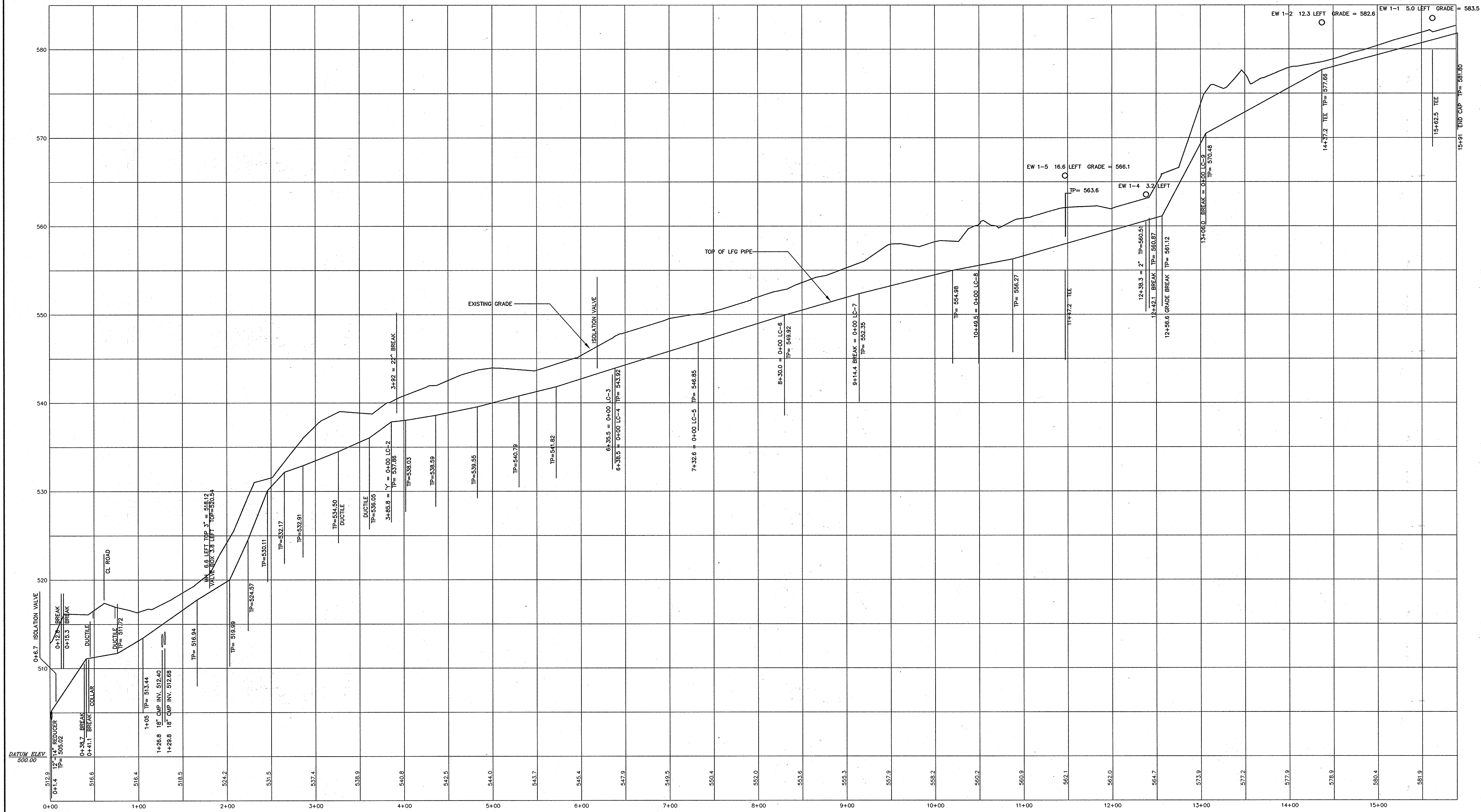


LINED CELL / LFG AS-BUILT PROFILES

## ALPHA RIDGE LANDFILL CELL CLOSURE

HOWARD COUNTY MARYLAND

SCALE : AS NOTED CONTRACT NO.: 98301.10 DATE : 12-28-1998 SHEET : G1C-AB OF 12



PROFILE  
LC-1

HORIZONTAL: 1"=50'  
VERTICAL: 1"=5'

LF92a20.dwg 4-26-00 3:42:13 pm EST

DESIGNED BY:	DATE	REVISIONS	
DRAWN BY: TWH	12-28	DATE	DESCRIPTION
CHECKED BY:	DATE		
APPROVED BY:	DATE		

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
ENGINEERS \* PLANNERS \* SURVEYORS  
3458 ELLICOTT CENTER DRIVE SUITE 101  
ELLICOTT CITY, MARYLAND 21043  
BALTO. (410)461-9920 FAX (410)750-8565



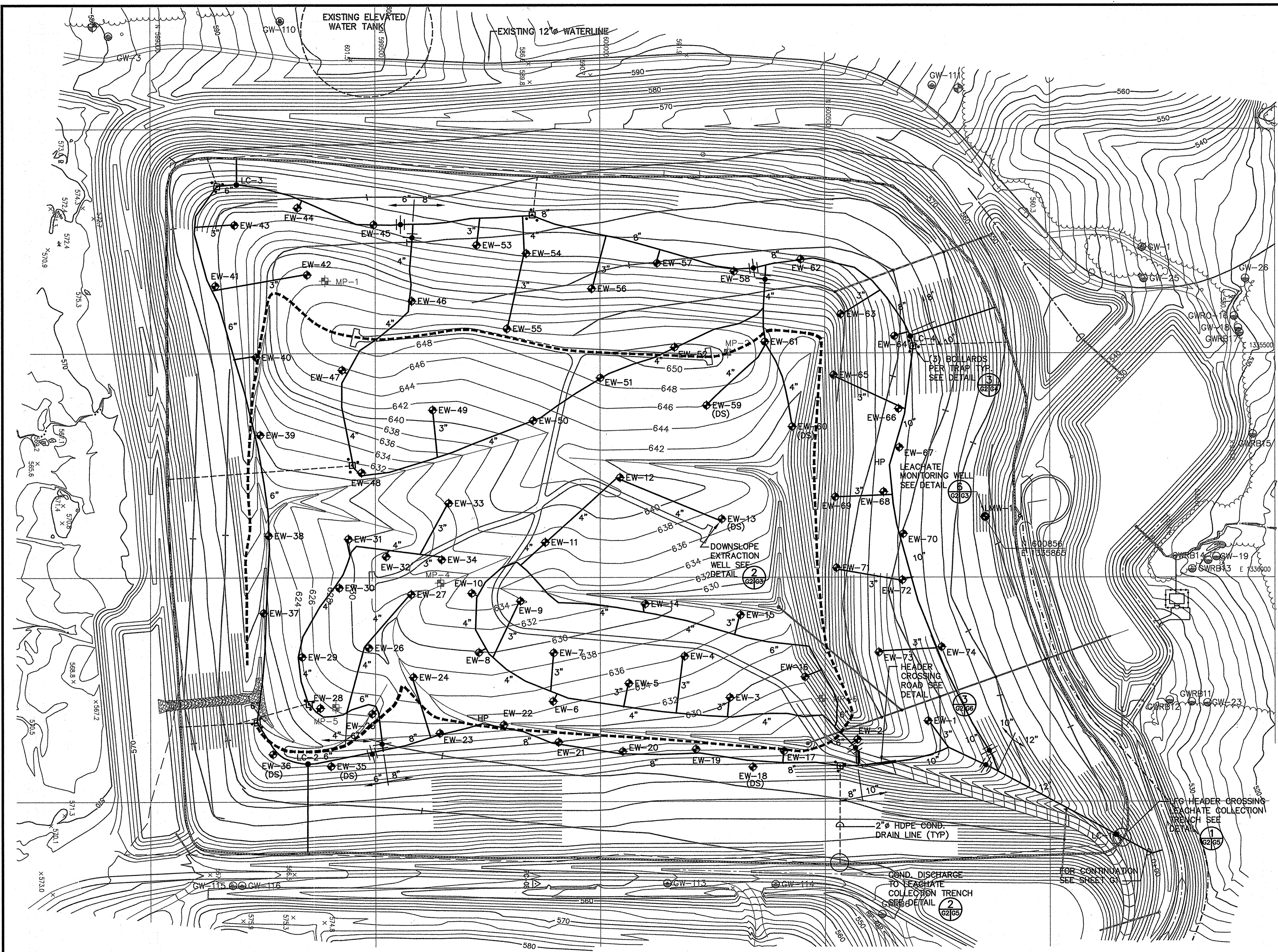
LINED CELL / LFG AS-BUILT PROFILES

## ALPHA RIDGE LANDFILL CELL CLOSURE

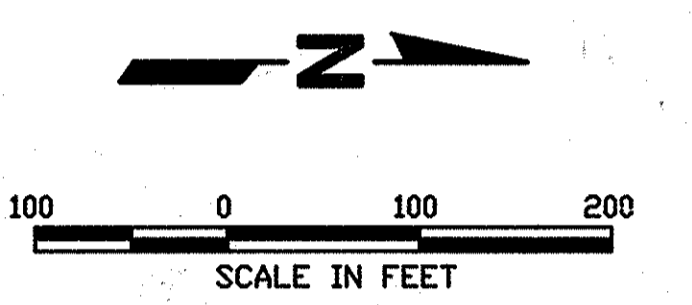
HOWARD COUNTY MARYLAND

SCALE : AS NOTED CONTRACT NO.: 98301.10 DATE : 12-28-1998 SHEET: G1D-AB OF 129





- NOTES:
1. TOPOGRAPHIC INFORMATION SHOWN ON THIS SHEET WAS COMPILED BY AIR SURVEY CORPORATION, INC. FROM AIR PHOTOGRAPHY DATED JANUARY, 1996.
  2. THIS SHEET IS FOR CONSTRUCTION OF THE LFG SYSTEM ONLY. FOR FINAL LANDFILL GRADES, SEE SHEET 10.
  3. FOR LFG HEADER TRENCH SEE DETAIL (4) (62/65)
  4. EXISTING LFG MONITORING PROBES TO BE ABANDONED BY CUTTING OFF TOP OF PROBE TO A MIN. OF 3' BELOW FINAL CAP SYSTEM.



- LEGEND
- LIMITS OF GEOMEMBRANE
  - LEACHATE TRENCH GAS COLLECTOR SEE DETAIL (3) (62/65)
  - EW-62 LFG EXTRACTION WELL SEE DETAIL (1) (62/63)
  - EW-19 LFG EXTRACTION WELL (DS = DOWNSLOPE) SEE DETAIL (2) (62/63)
  - CONDENSATE TRAP WITH BOLLARDS, SEE DETAILS (1) (62/64) (3) (62/64)
  - ISOLATION VALVE DETAIL (5) (62/65)
  - LFG HEADER/LATERAL
  - CONDENSATE GRAVITY DRAIN LINE
  - GW-102 EXISTING GROUNDWATER WELL
  - MP-3 EXISTING LFG PROBE (SEE NOTE 4)
  - LFG-6 EXISTING LFG MONITORING WELL
  - PROPERTY LINE
  - LEACHATE COLLECTION TRENCH
  - LMW-1 LEACHATE MONITORING WELL (6) (62/63)
  - STORM DRAIN

SEE ETA SHEETS G2-AB AND G2A-AB FOR AS-BUILT UNLINED CELL LANDFILL GAS PLAN AND LATERALS

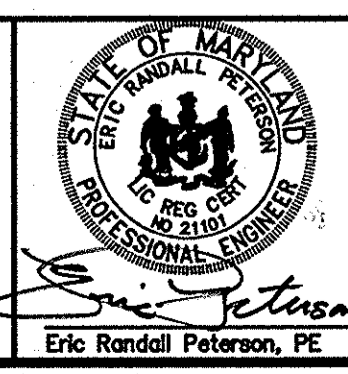
M:\295077.02\FINAL\ FG-LFG SH1-G2

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Ramon J. Law* 10/30/97 DATE  
DIRECTOR OF PUBLIC WORKS

*John J. O'Hara* 10/30/97 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



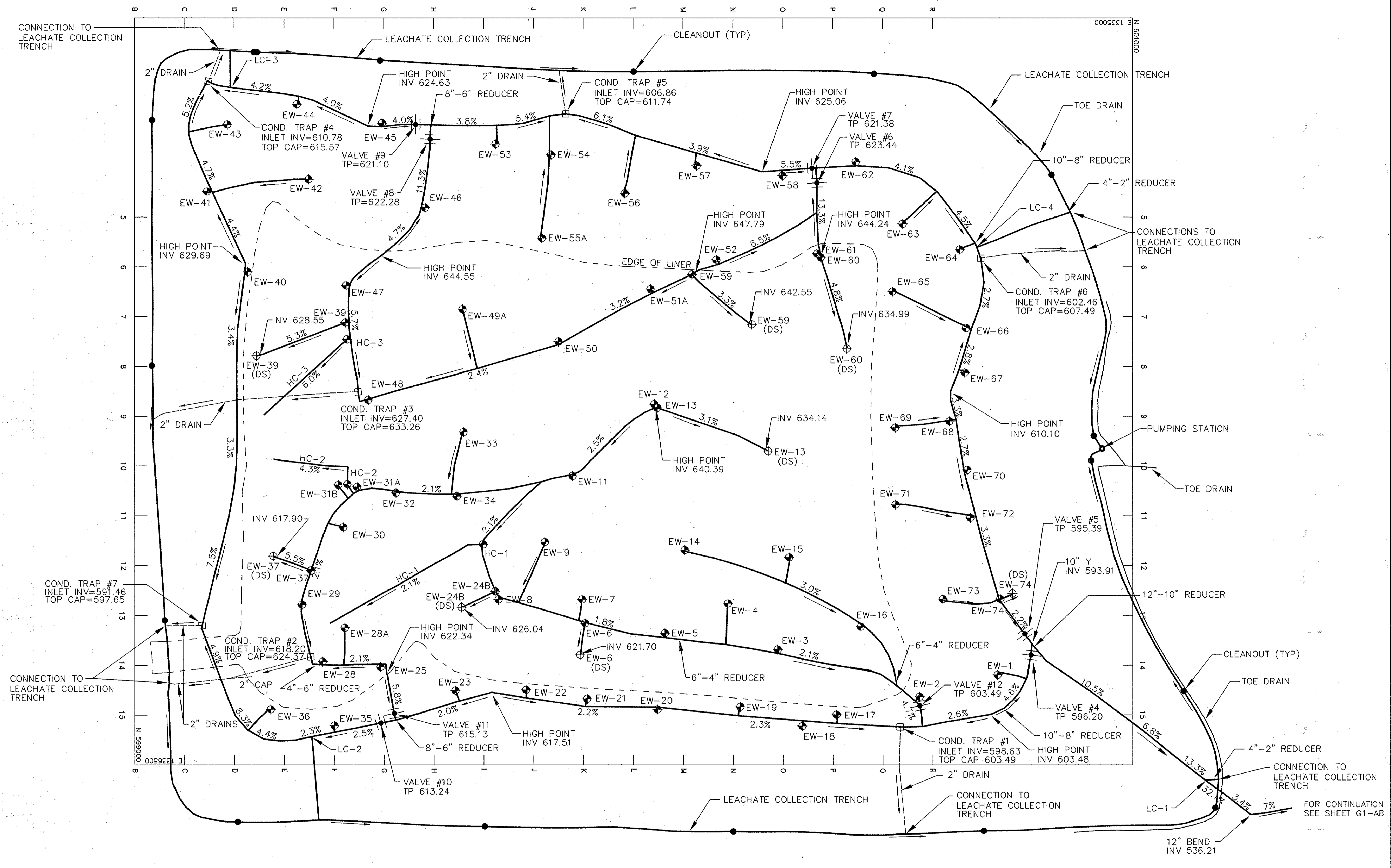
DES.	CMS	BY	NO.	REVISION	DATE
			1	REALIGNMENT OF LFG HEADER, MODIFICATIONS TO HEADER SIZE AND CHANGE TO DOWN-SLOPE (FROM NORMAL) EXTRACTION WELLS	4/22/99
			2	REALIGNMENT OF LFG HEADER AND MODIFICATIONS TO HEADER SIZE	4/22/99
			3	REALIGNMENT OF LFG HEADER	9/24/99
			4	ADD HC-1,2,3, AND EW-31A, B; DEL. EW-26,27,31,38	9/18/99
DATE:	10-30-97				

UNLINED CELL LFG  
COLLECTION SYSTEM LAYOUT

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
1"=100'  
CS# 82  
SHEET  
G2 OF 131



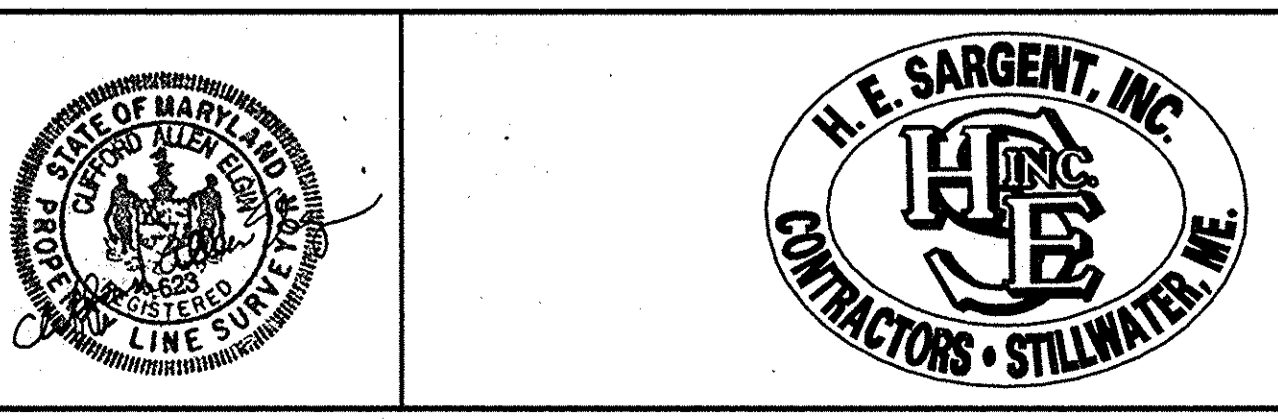
NOTE  
 TP= TOP OF PIPE  
 INV=INVERT OF PIPE

INDICATES DIRECTION OF CONDENSATE FLOW

GRAPHIC SCALE  
 ( IN FEET )  
 1 inch = 100 ft.

REVISIONS				
DESIGNED BY:	DATE	DATE	BY	DESCRIPTION
DRAWN BY:		12-21-00	TWH	NOTE FOR CLARIFICATION OF ELEVATIONS.
CHECKED BY:		1-12-01	TWH	INDICATORS FOR DIRECTION OF CONDENSATE FLOW.
APPROVED BY:				

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565

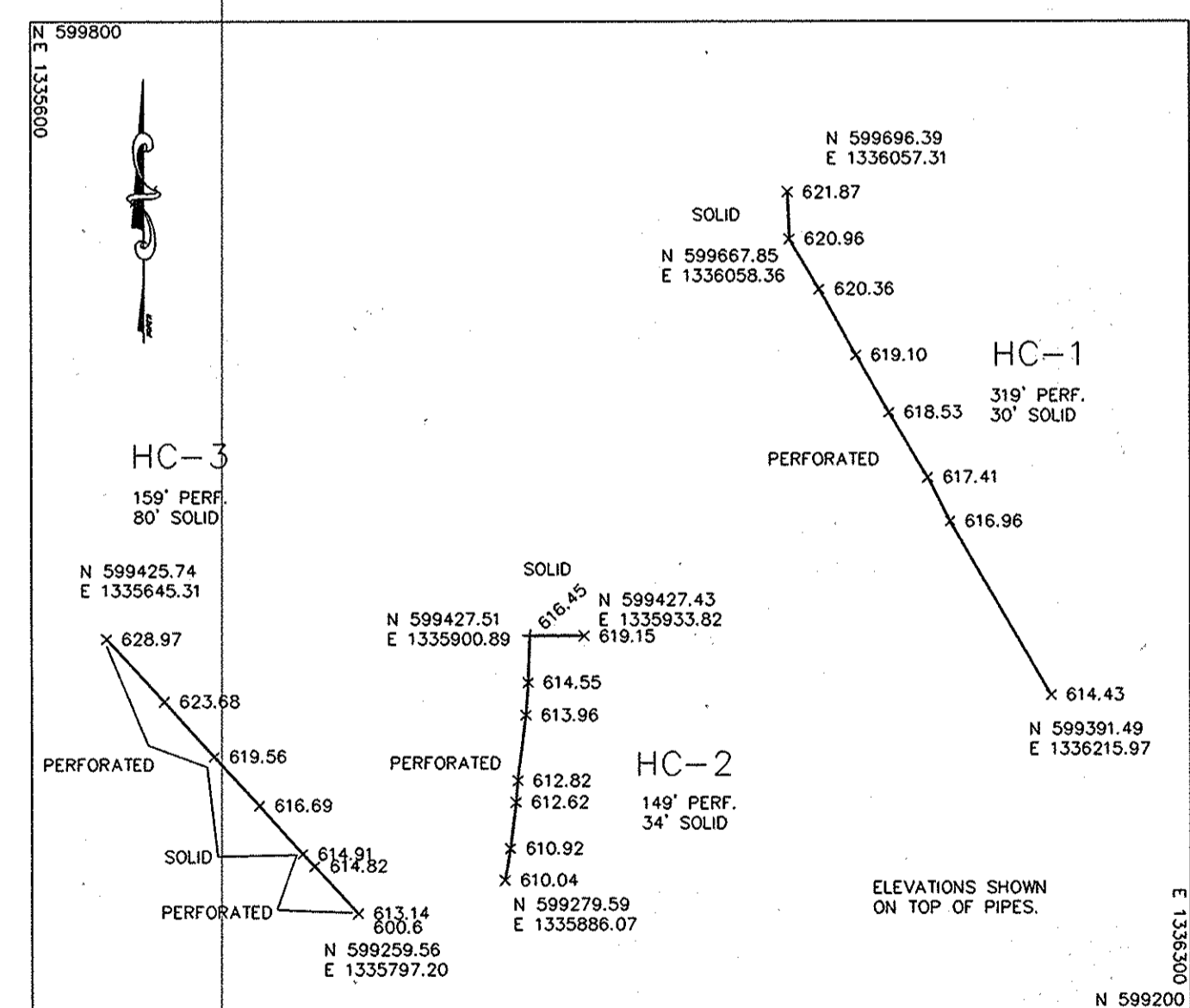


AS-BUILT LANDFILL GAS

**ALPHA RIDGE LANDFILL CELL CLOSURE**

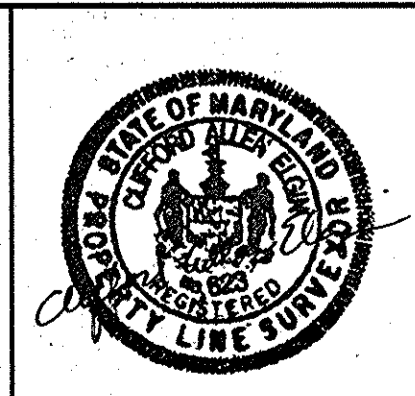
HOWARD COUNTY MARYLAND

SCALE : 1"=100' CONTRACT NO.: 98301.10 DATE : 1-11-2000 SHEET : G2-AB OF 177



DESIGNED BY:		DATE		REVISIONS	
DATE	BY	DATE	BY	DESCRIPTION	
9-25-98	TWH	10-19-00	TWH	ADDED NOTE FOR ELEVATIONS.	
DATE					
DATE					
DATE					

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565



AS-BUILTS OF GAS LATERALS

**ALPHA RIDGE LANDFILL CELL CLOSURE**

HOWARD COUNTY MARYLAND

SCALE : 1"=100' CONTRACT NO.: 98301.10 DATE : 9-25-1998

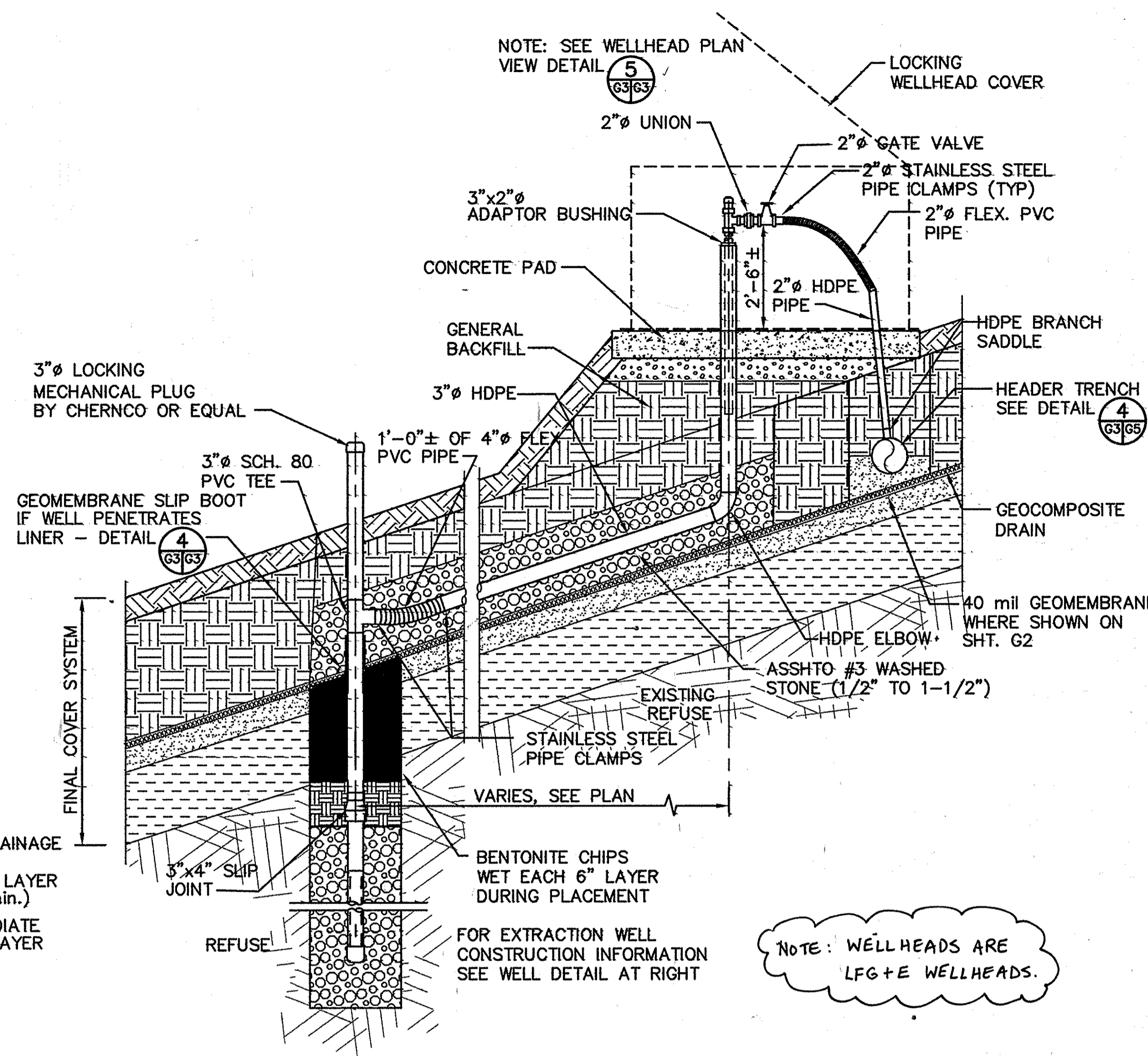
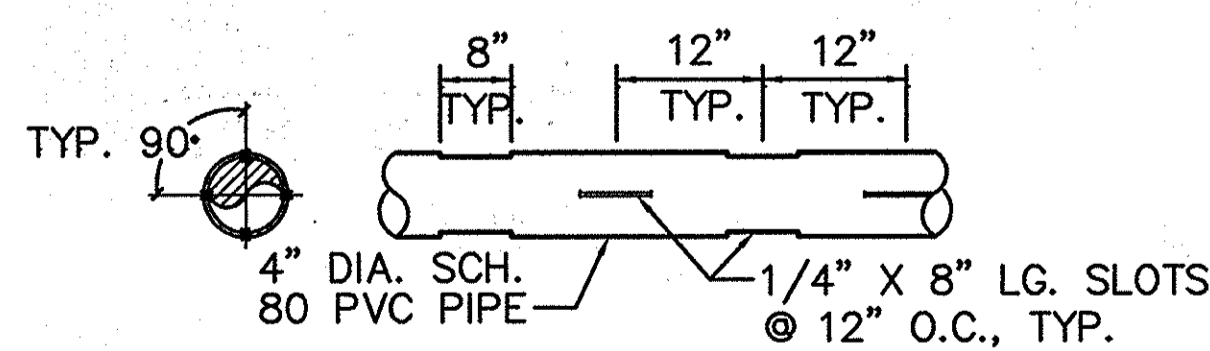
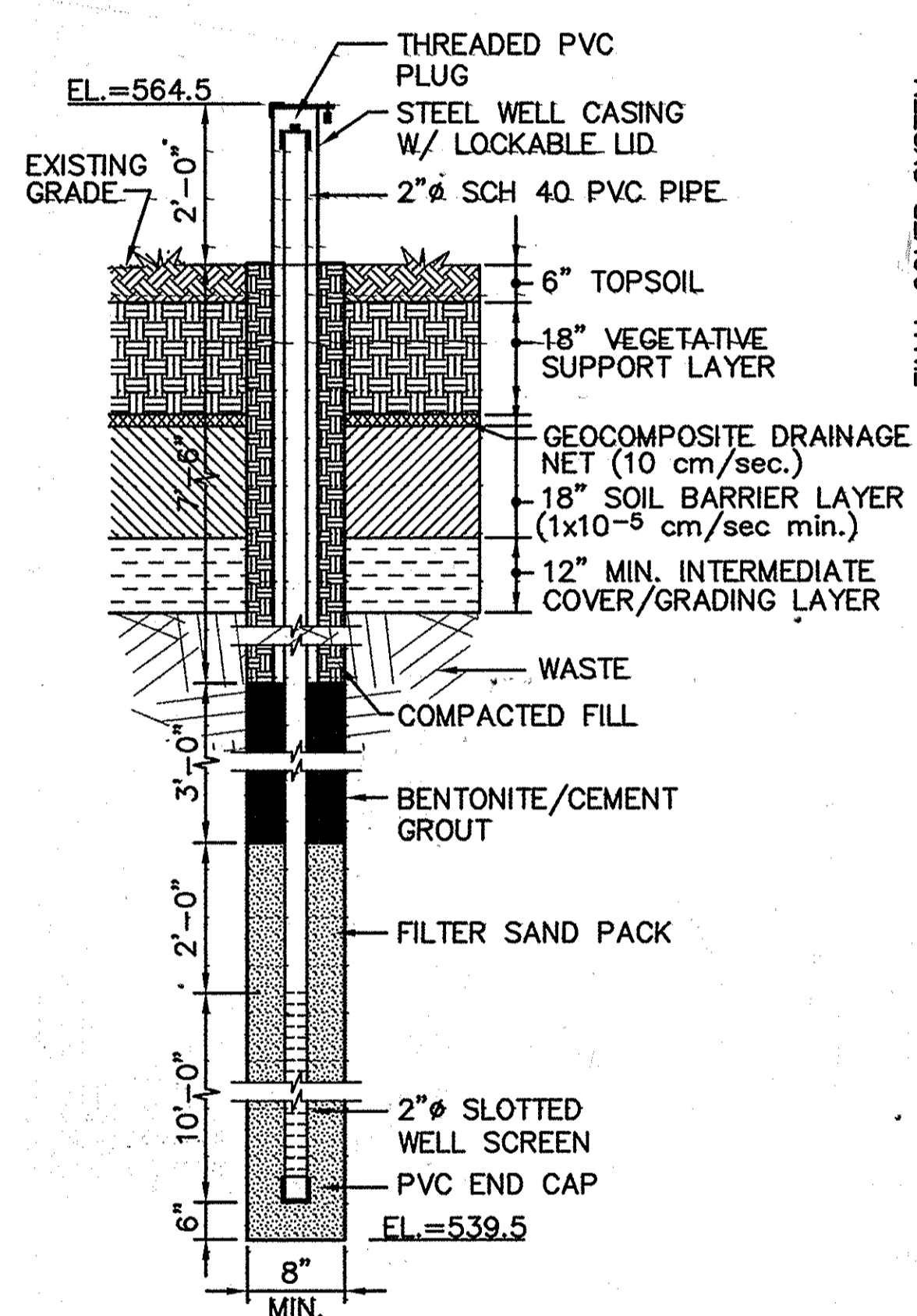
SHEET 86 OF 127 G2A-AB

MS: 295077-02 (FINAL) DS: WELL, WELLSCH, EXTWELL, GNMWELL, SLIP, SLOTPPE, WELLPIN SHT-63

EXTRACTION WELL SCHEDULE				
WELL NO.	NORTHING	EASTING	WELL DEPTH (FT)	SLOTTED PIPE LENGTH (FT)
1	N 600729.0	E 1336320.3	35	25
2	N 600572.0	E 1336361.7	35	25
3	N 600288.4	E 1336268.1	40	25
4	N 600187.5	E 1336175.9	40	25
5	N 600063.6	E 1336236.2	40	25
6	N 599895.1	E 1336276.2	40	25
7	N 599896.6	E 1336168.1	40	25
8	N 599730.1	E 1336167.2	40	25
9	N 599822.6	E 1336052.7	40	25
10	N 599714.4	E 1336035.2	40	25
11	N 599877.9	E 1335921.5	50	35
12	N 600044.1	E 1335777.3	55	35
13	N 600270.4	E 1335869.8	55	35
14	N 600099.9	E 1336059.5	55	35
15	N 600311.9	E 1336084.4	50	35
16	N 600455.4	E 1336222.2	40	25
17	N 600408.5	E 1336387.5	30	30
18	N 600339.2	E 1336423.0	38	25
19	N 600212.6	E 1336383.2	42	30
20	N 600049.9	E 1336388.1	42	30
21	N 599907.1	E 1336367.3	40	25
22	N 599785.5	E 1336328.5	40	25
23	N 599643.2	E 1336347.1	40	25
24	N 599584.4	E 1336222.3	40	25
25	N 599492.5	E 1336303.9	45	30
26	N 599485.3	E 1336156.9	40	25
27	N 599579.6	E 1336037.9	50	35
28	N 599377.4	E 1336291.2	40	25
29	N 599337.3	E 1336177.2	40	25
30	N 599419.6	E 1336023.0	45	30
31	N 599440.0	E 1335913.9	45	30
32	N 599523.8	E 1335953.1	45	30
33	N 599663.1	E 1335834.2	45	30
34	N 599647.5	E 1335960.1	45	30
35	N 599401.2	E 1336420.6	35	25
36	N 599272.2	E 1336394.1	37	25
37	N 599251.9	E 1336079.3	35	25
38	N 599262.7	E 1335906.6	40	25
39	N 599244.2	E 1335682.1	35	25
40	N 599235.0	E 1335508.6	30	20
41	N 599144.6	E 1335349.5	25	15
42	N 599348.5	E 1335325.2	40	25
43	N 599187.2	E 1335213.7	25	15
44	N 599327.2	E 1335175.3	25	15
45	N 599496.4	E 1335213.0	25	15
46	N 599581.2	E 1335383.5	40	25
47	N 599426.3	E 1335537.2	45	30
48	N 599469.4	E 1335766.2	45	30
49	N 599627.6	E 1335626.3	45	30
50	N 599851.2	E 1335650.2	50	35
51	N 600000.4	E 1335554.9	45	35
52	N 600165.6	E 1335486.8	35	15
53	N 599725.6	E 1335258.7	30	20
54	N 599792.8	E 1335445.3	45	30
55	N 599836.0	E 1335277.4	30	20
56	N 599981.4	E 1335356.4	40	25
57	N 600126.8	E 1335299.4	30	30
58	N 600298.0	E 1335317.9	35	25
59	N 600236.9	E 1335616.4	40	25
60	N 600427.3	E 1335664.0	50	35
61	N 600366.4	E 1335474.8	35	25
62	N 600446.4	E 1335291.1	30	30
63	N 600535.3	E 1335413.3	35	25
64	N 600654.7	E 1335462.0	30	20
65	N 600519.3	E 1335548.9	35	25
66	N 600663.7	E 1335624.1	35	25
67	N 600665.4	E 1335710.6	45	30
68	N 600630.4	E 1335809.4	45	30
69	N 600523.1	E 1335820.6	55	35
70	N 600674.1	E 1335903.1	45	30
71	N 600525.8	E 1335979.0	55	35
72	N 600671.9	E 1336006.1	45	30
73	N 600619.7	E 1336167.3	40	25
74	N 600759.2	E 1336155.6	40	25

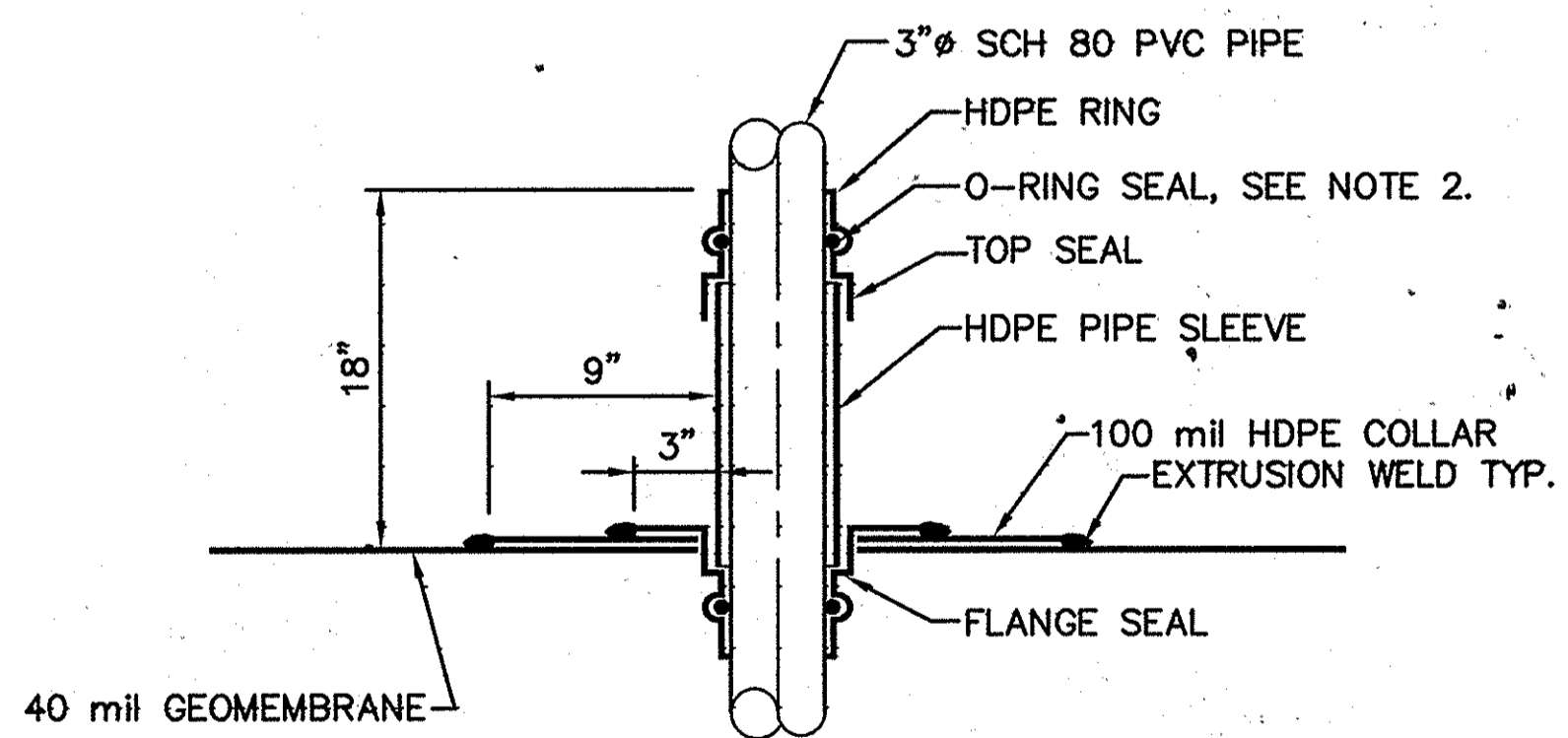
EXTRACTION WELL SCHEDULE (CONT.)				
WELL NO.	NORTHING	EASTING	WELL DEPTH (FT)	SLOTTED PIPE LENGTH (FT)
1-1	N 600402.6	E 1337047.9	25	15
1-2	N 600384.3	E 1337168.7	30	20
1-3	N 600367.2	E 1337314.0	30	20
1-4	N 600450.7	E 1337304.9	20	10
1-5	N 600440.1	E 1337393.0	20	10
1-6	N 600342.7	E 1337444.5	35	25
1-7	N 600438.8	E 1337489.3	25	15
1-8	N 600357.3	E 1337539.6	25	15
1-9	N 600299.9	E 1337607.4	20	10
1-10	N 600227.4	E 1337515.2	35	25
1-11	N 600083.0	E 1337577.1	40	25
1-12	N 600202.3	E 1337629.7	25	15
1-13	N 600121.9	E 1337695.7	20	10

SEE RECORD DRAWING SHEET G-3 FOR AS-BUILT WELL DEPTHS



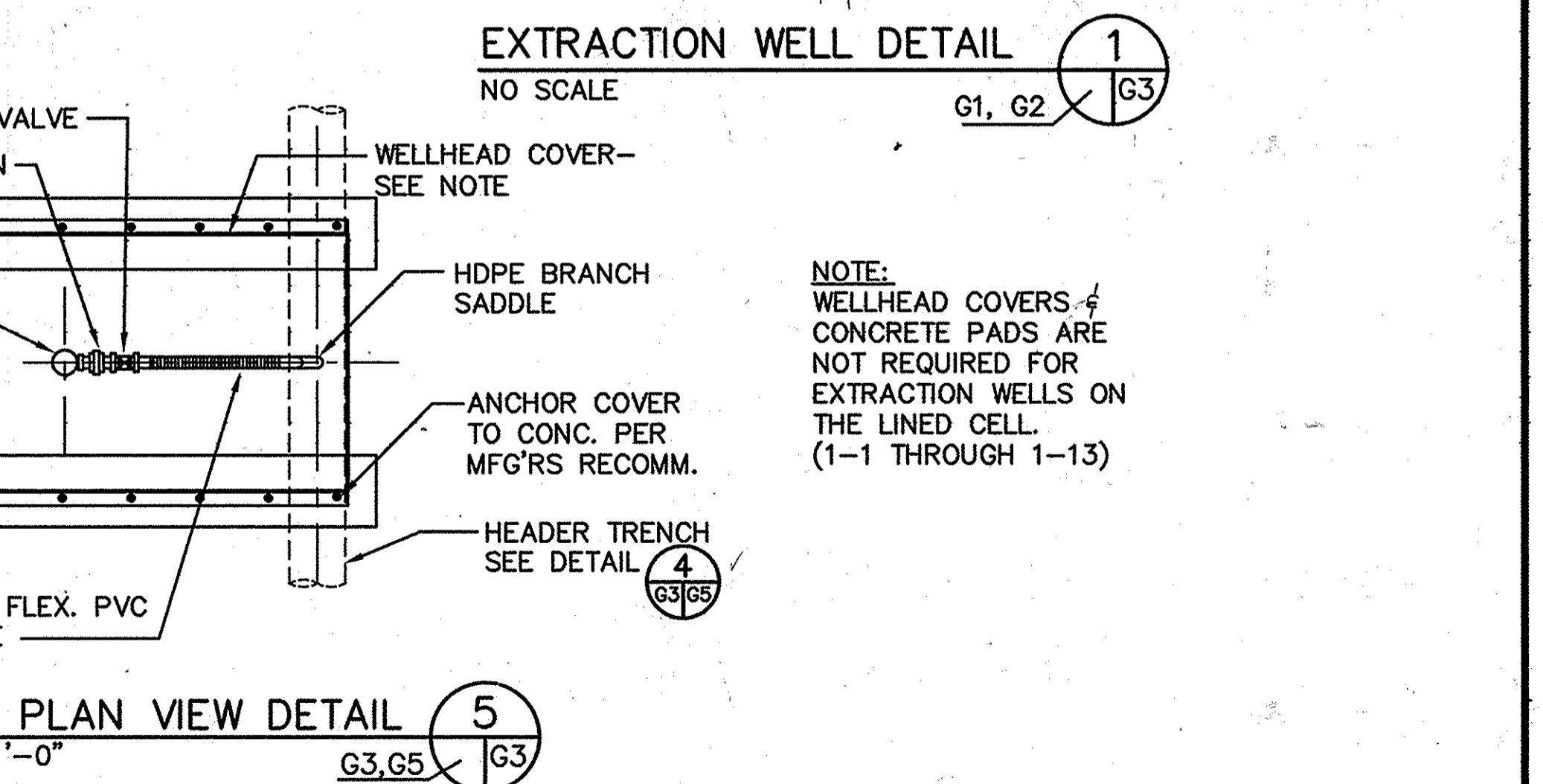
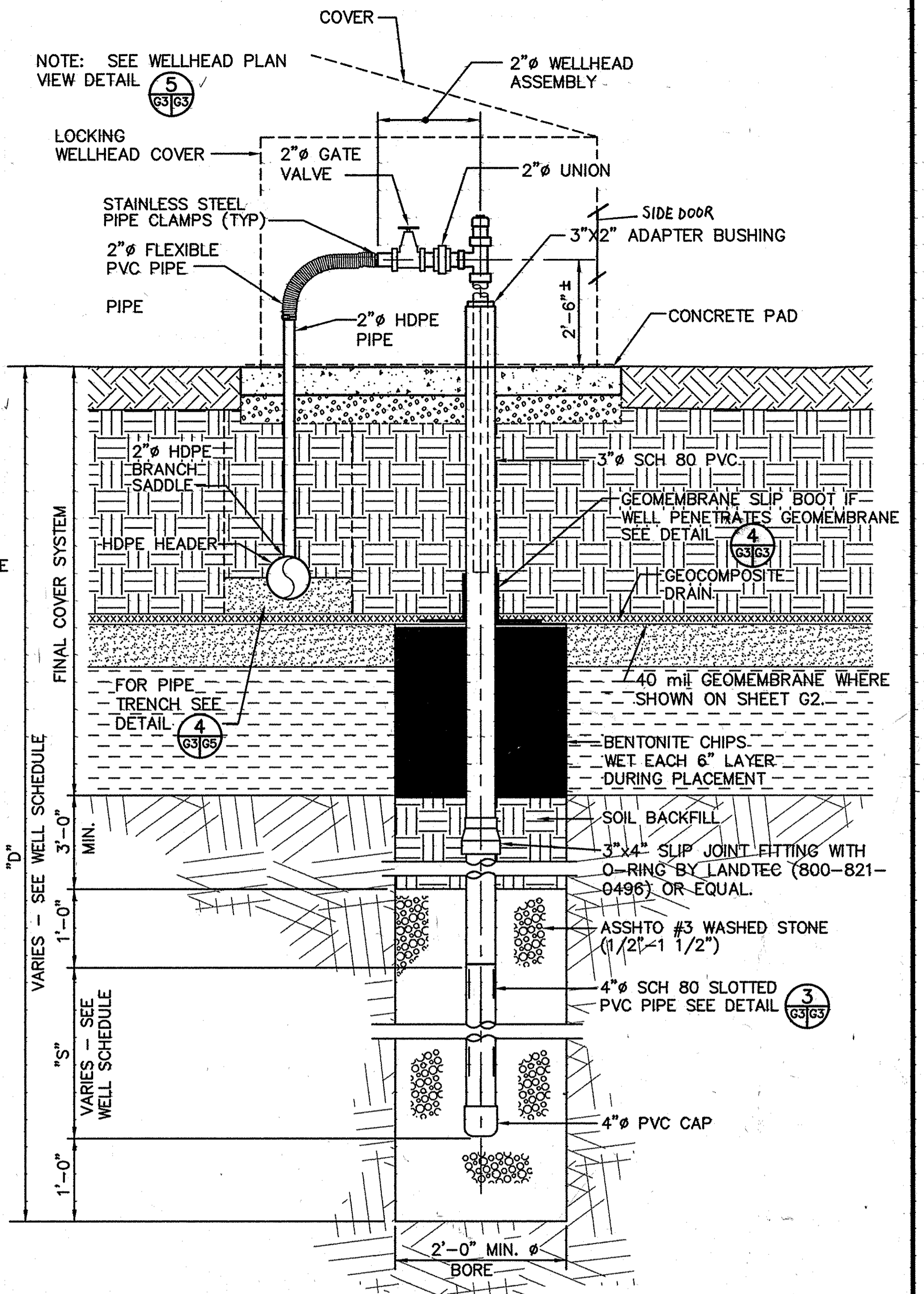
- NOTES:**
- WELL BORING DEPTHS AND SLOTTED LENGTHS WILL BE AS NOTED IN THE WELL SCHEDULE
  - THIS DETAIL APPLIES TO EW-13, 18, 35, 36, 59 & 60.

**DOWNSLOPE (DS) EXTRACTION WELL BELOW GRADE PIPING DETAIL (2)**  
SCALE: 1/2"=1'-0"



- PVC PIPE SHALL BE CONTINUOUS LENGTH OF PIPE (NO CPLGS.) IN THE ANTICIPATED SETTLEMENT RANGE OF THE SYNTHETIC MEMBRANE.
- RUBBER GASKET "O" RING SHALL BE NEOPRENE RUBBER WITH A DUROMETER HARDNESS OF 55 SHORE.
- TOP SEAL AND FLANGE SEAL VACUUM FORMED FROM PIPE GRADE RESIN WITH CARBON BLACK CONTENT MEETING THE REQUIREMENTS OF ASTM 1248-A PE 94, CLASS C.
- SLIP BOOT IS SERROT MODEL NO. SSB2 OR APPROVED EQUAL.

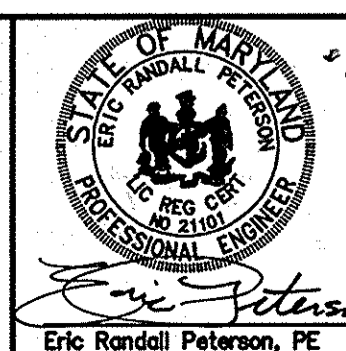
**SLIP BOOT DETAIL (4)**  
SCALE: 1"=1'-0"



**NOTE:** WELLHEAD COVERS & CONCRETE PADS ARE NOT REQUIRED FOR EXTRACTION WELLS ON THE LINED CELL (1-1 THROUGH 1-13)

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

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



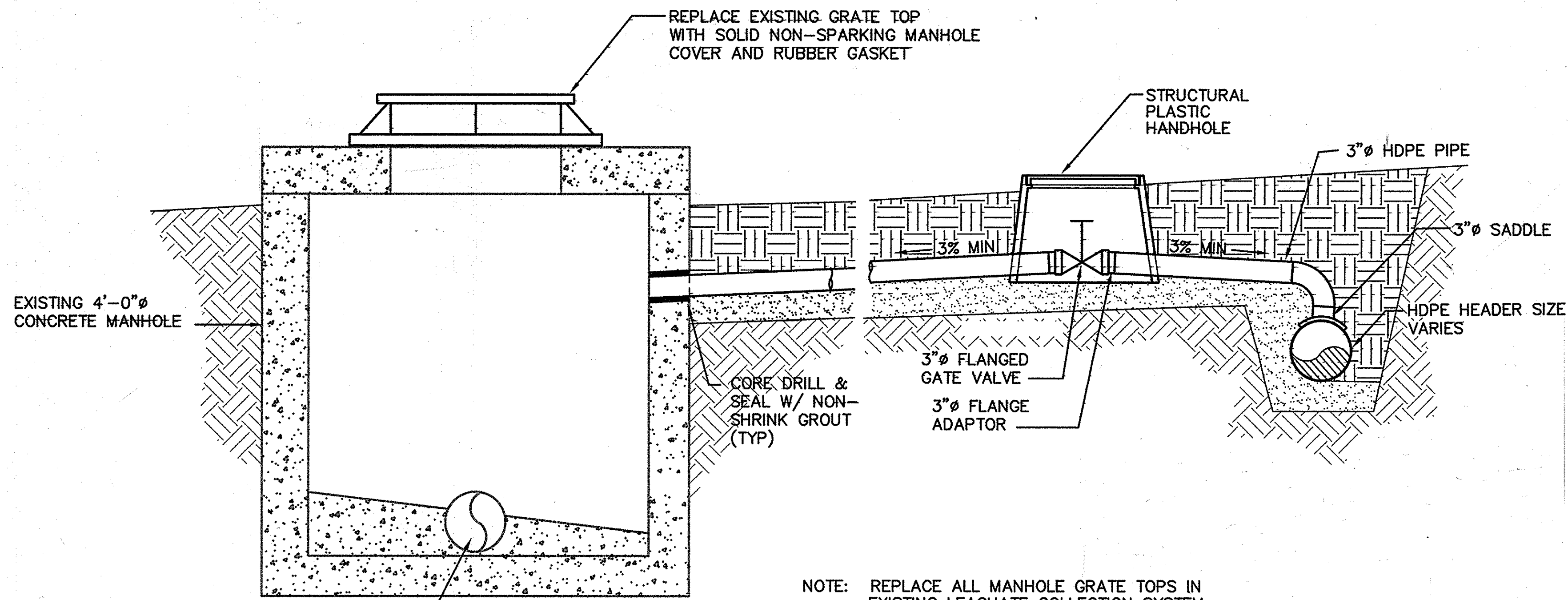
DES.	SCW/CMS	DRN.	BJD	CHK.	ERP	DATE	10-30-97	BY	NO.	REVISION	DATE

LFG COLLECTION SYSTEM  
EXTRACTION WELL DETAILS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

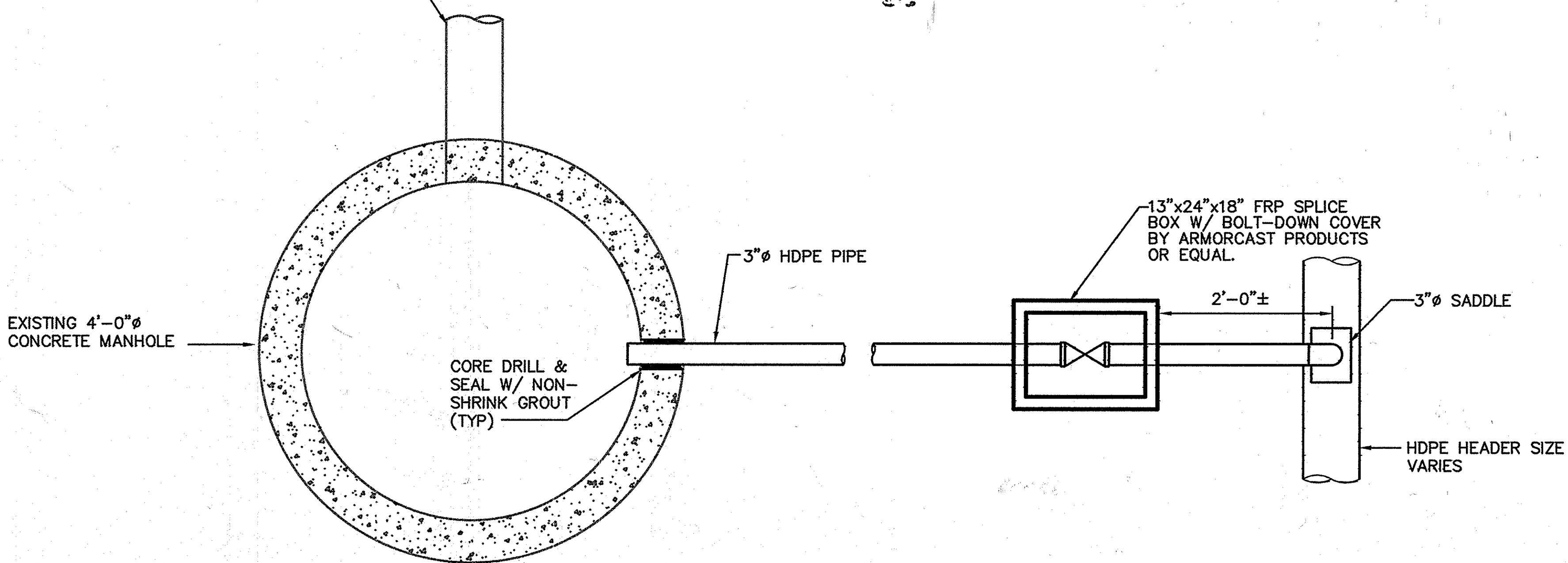
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED  
SHEET  
G3 OF 131



SECTION VIEW

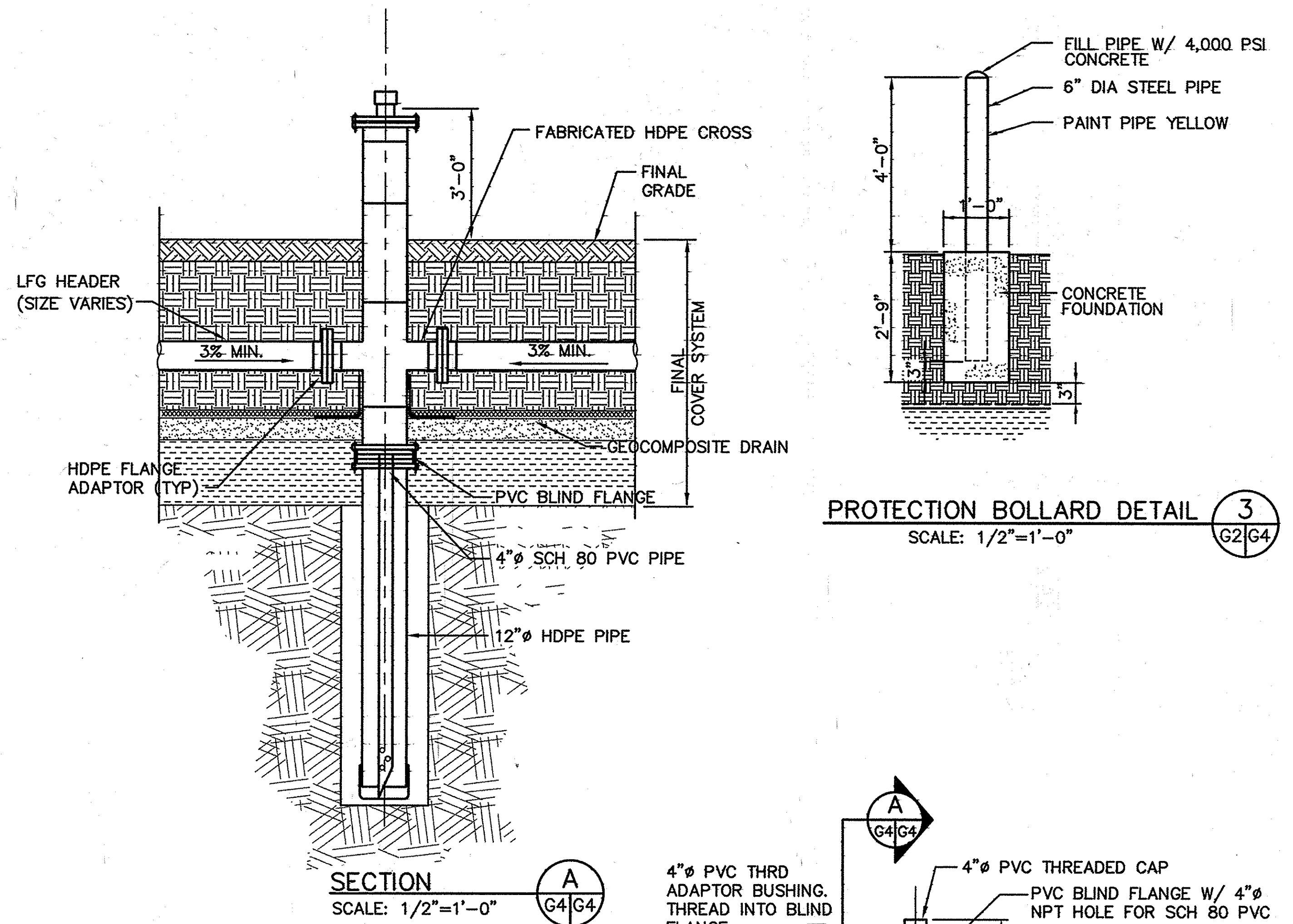
EX. 8" HDPE TO LEACHATE COLLECTION SYSTEM



PLAN VIEW

TIE-IN TO EXISTING MH-1, 2, & 4 DETAIL  
SCALE: 1"=1'-0"

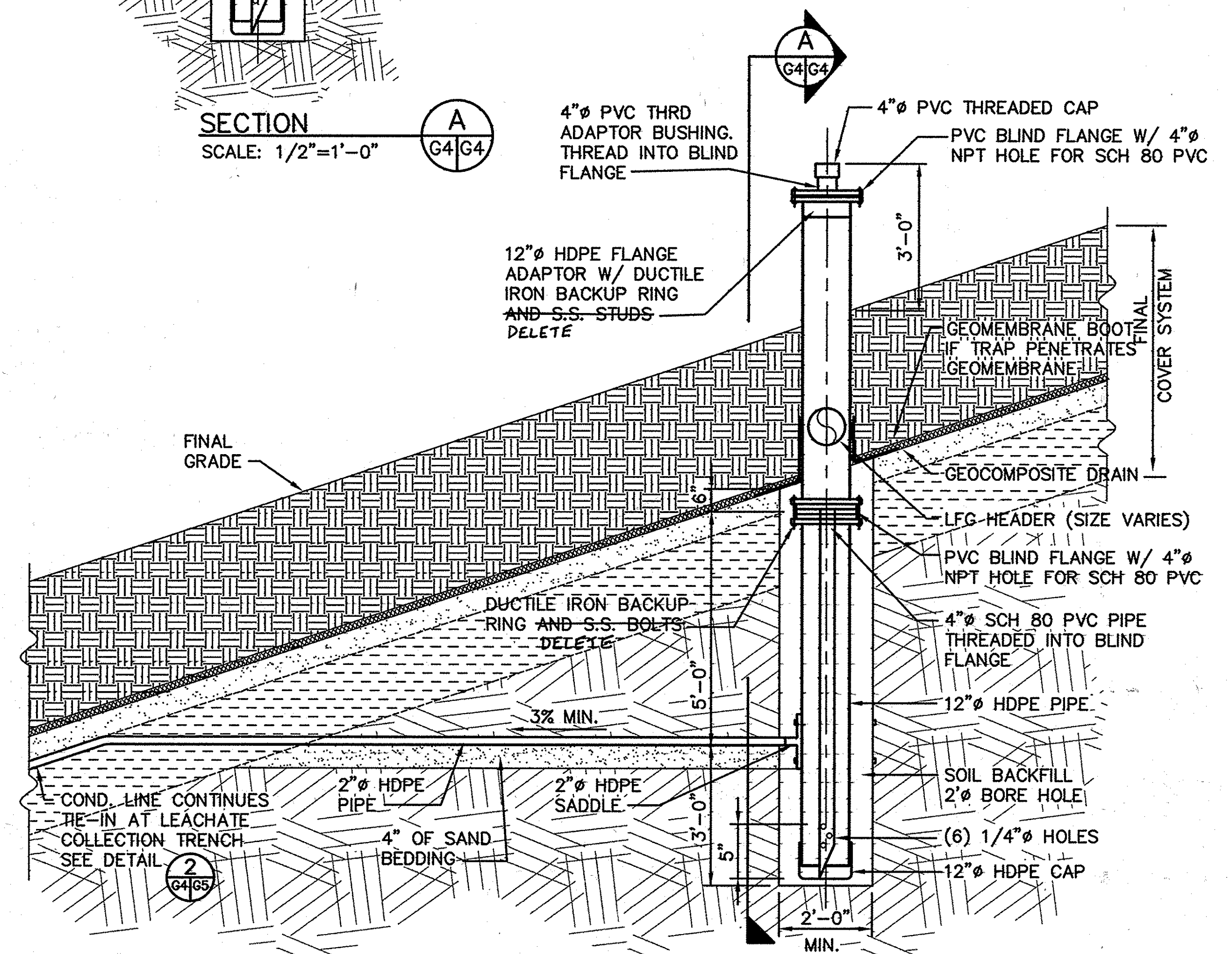
2  
G1/G4



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

PROTECTION BOLLARD DETAIL  
SCALE: 1/2"=1'-0"

3  
G2/G4



CONDENSATE TRAP DETAIL  
SCALE: 1/2"=1'-0"

1  
G2/G5

M:\295077.02\FINAL\CONTEN. CONDTRAP. SECT-A

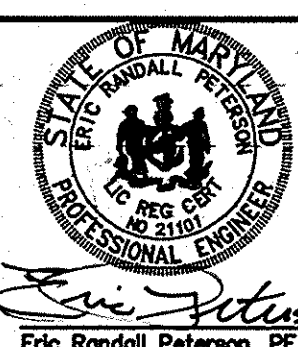
SHT-04

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James J. Lee* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John J. O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

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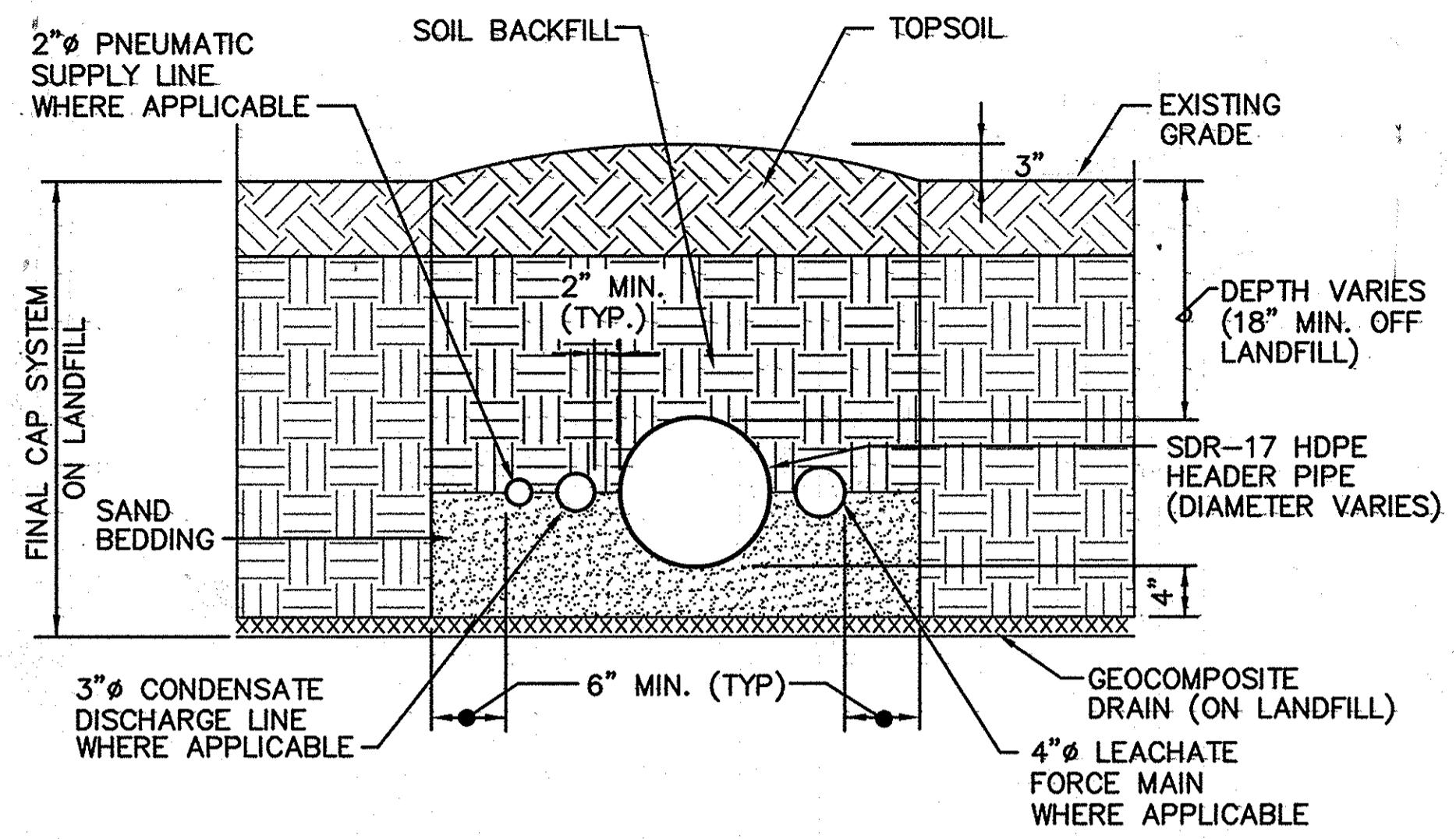
DES.	SCW				
DRN.	BJD				
CHK.	ERP				
DATE:	10-30-97	BY:	NO.	REVISION	DATE

LFG COLLECTION SYSTEM DETAILS

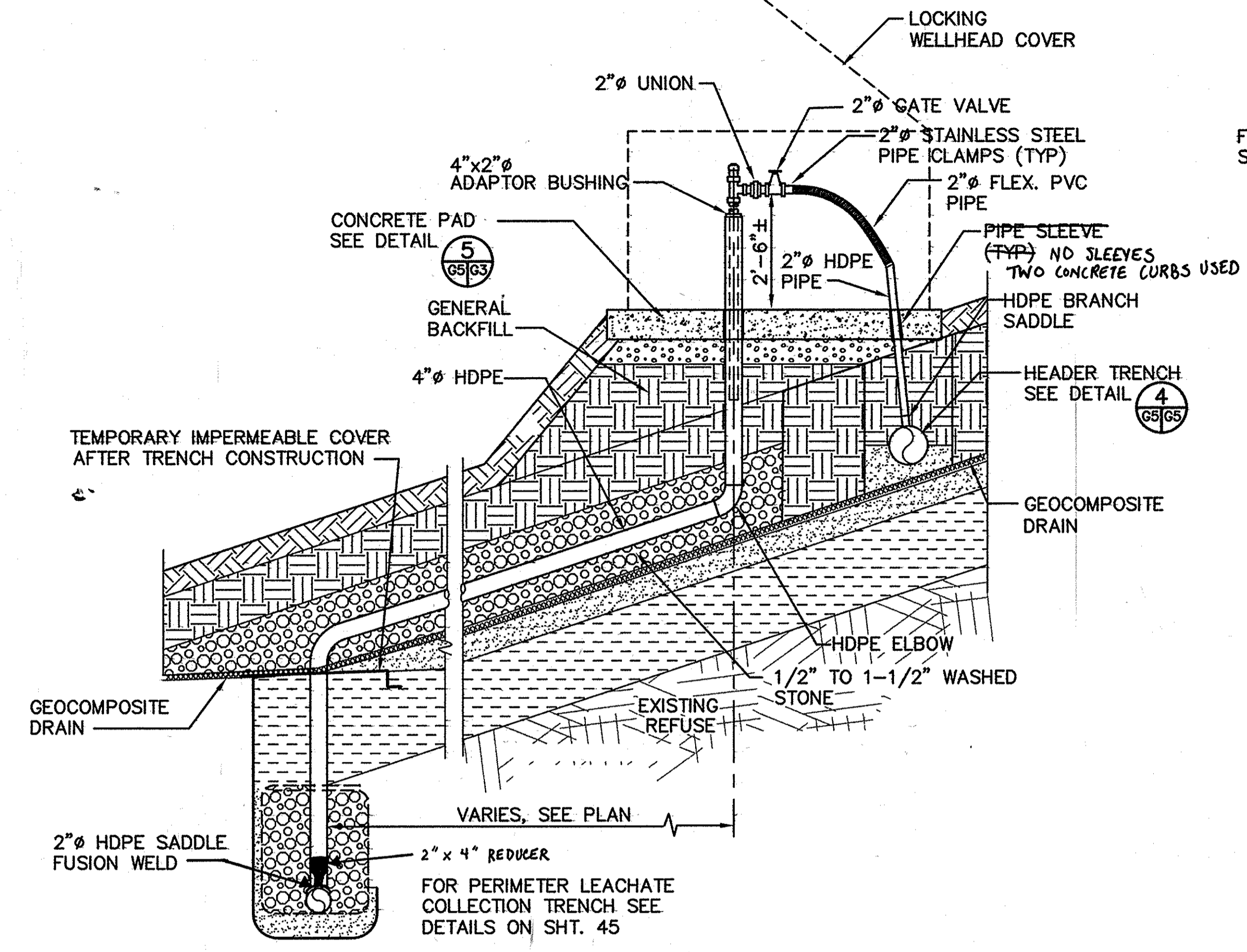
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

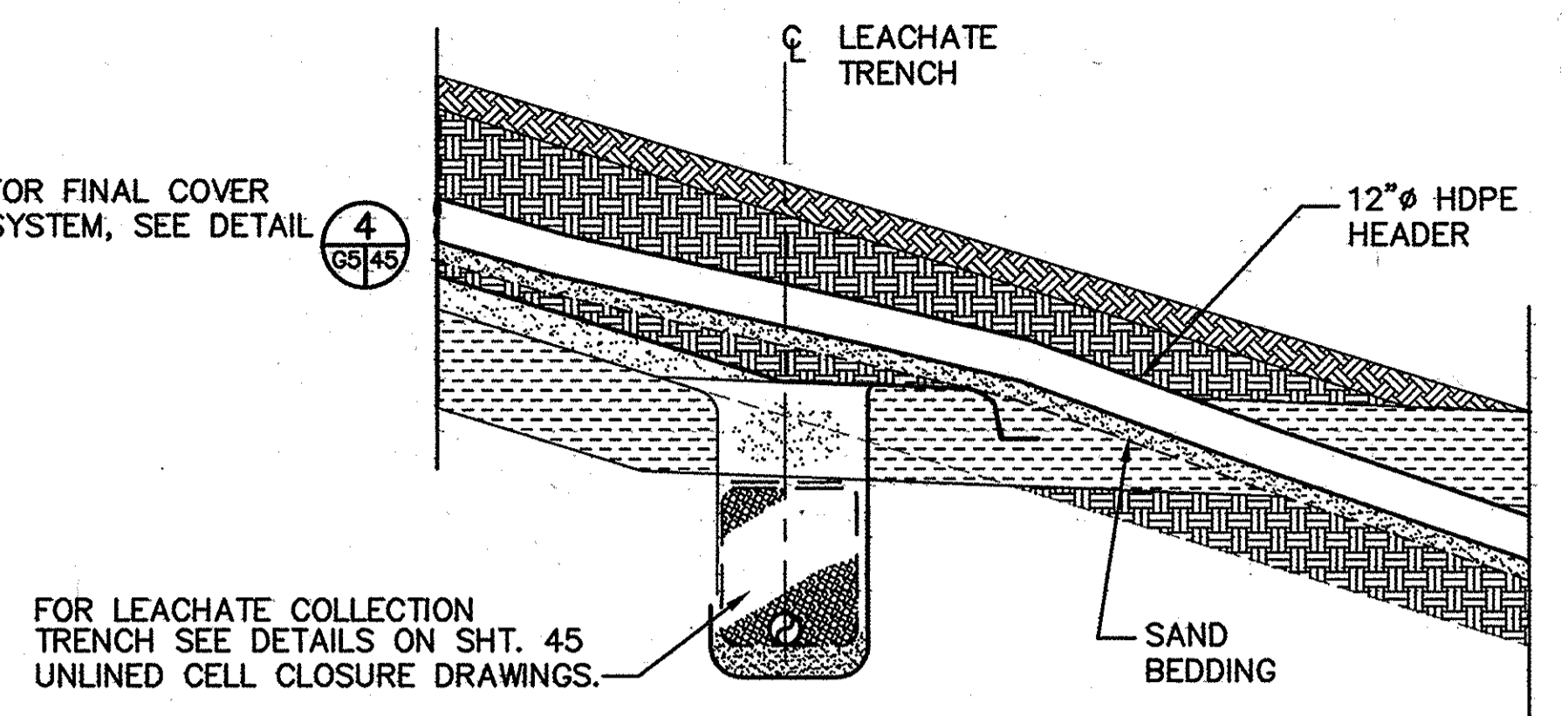
SCALE:  
AS NOTED  
(SHT-04)  
SHEET  
G4 OF 131



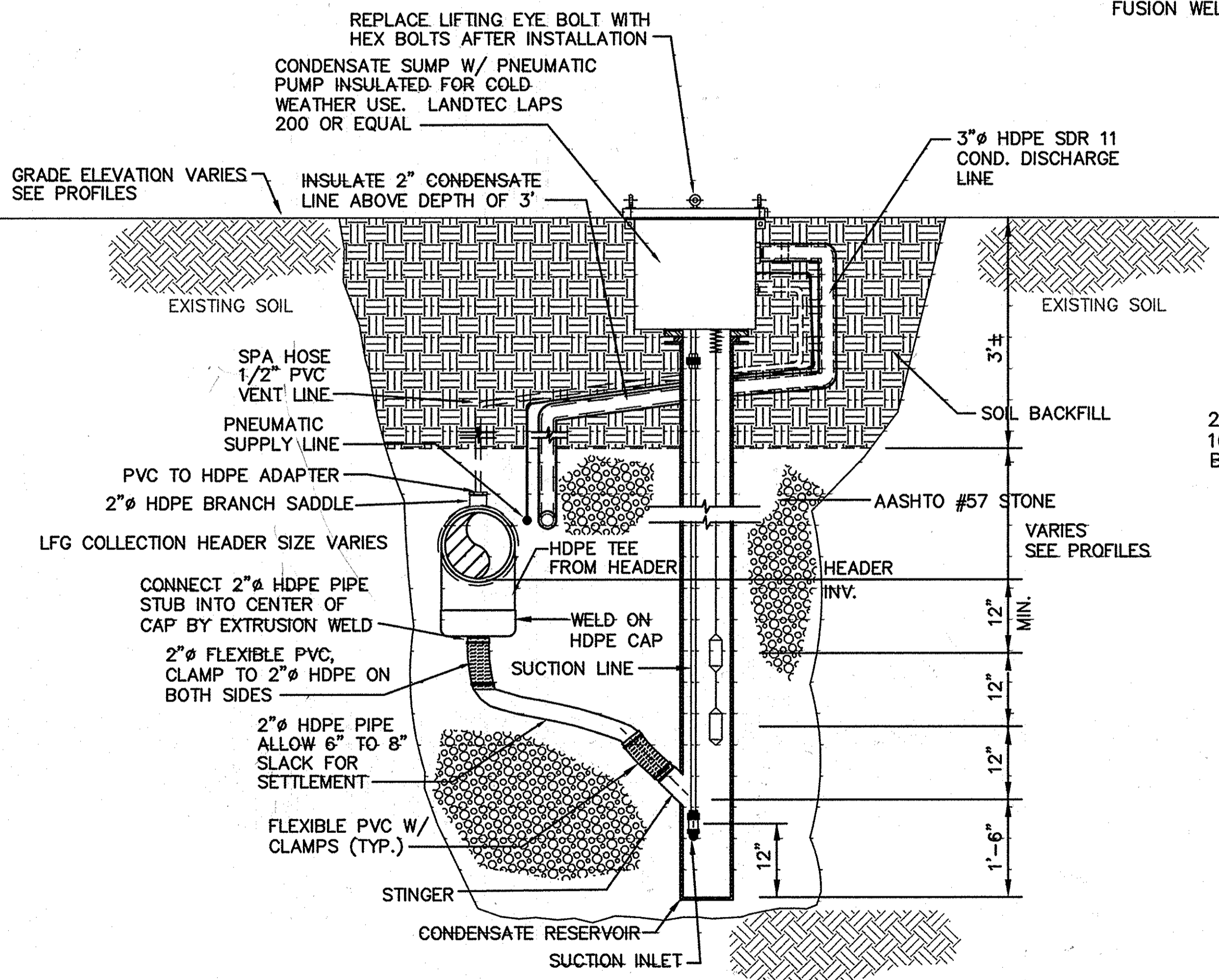
**PIPE TRENCH DETAIL 4**  
NO SCALE G1, G2, G3, G5



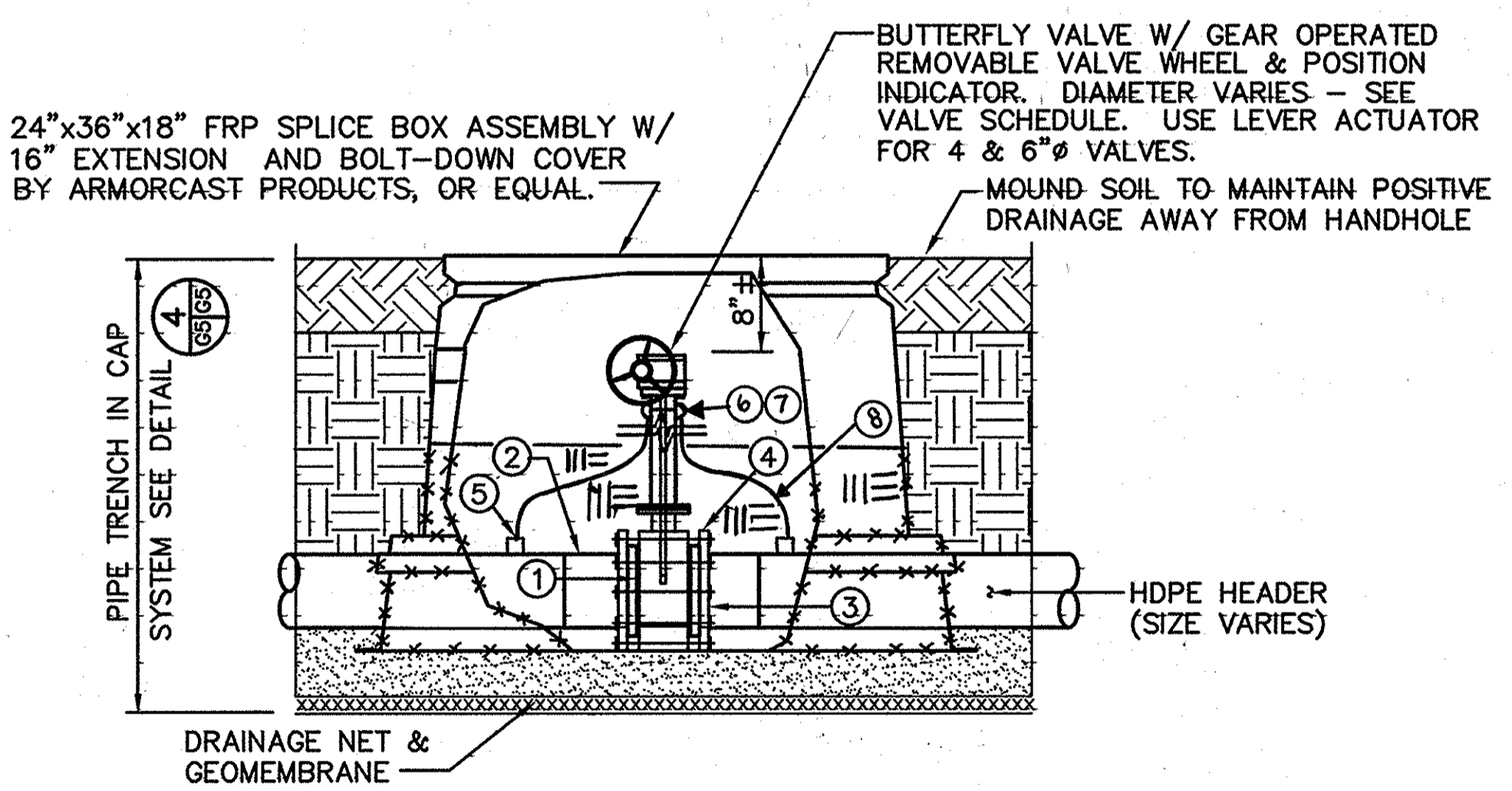
**LEACHATE TRENCH GAS COLLECTOR DETAIL 3**  
SCALE: 1/2" = 1'-0" G2, G5



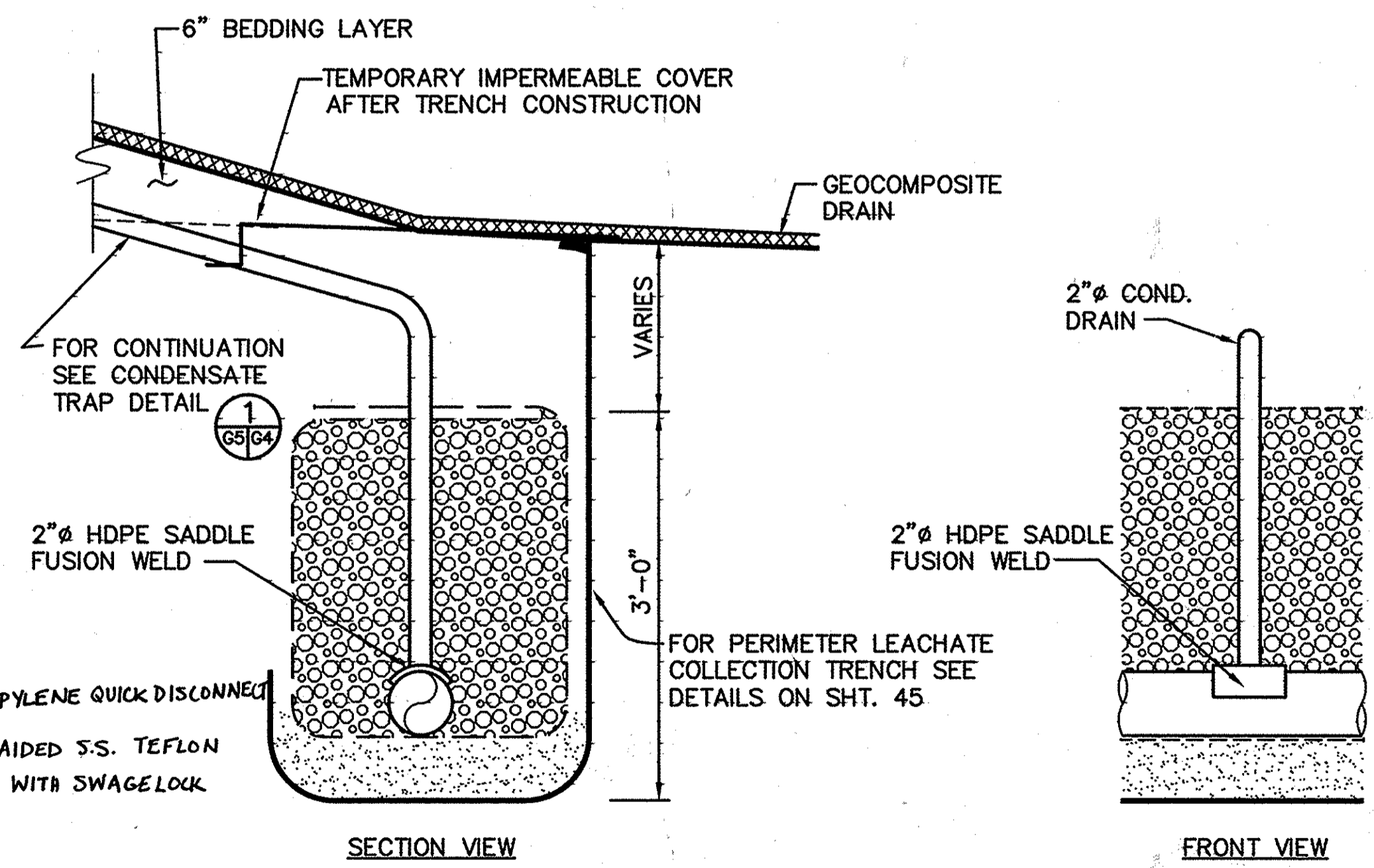
**LFG HEADER CROSSING LEACHATE TRENCH DETAIL 1**  
SCALE: 3/8" = 1'-0" G1, G2, G5



**CS-1, CS-2, AND CS-3 CONDENSATE SUMP OFF LANDFILL DETAIL 6**  
SCALE: 3/4" = 1'-0" G1, G6, G7, G5



**BURIED ISOLATION VALVE ON LANDFILL DETAIL 5**  
NO SCALE G1, G2, G5

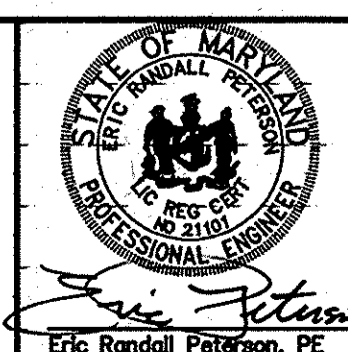


**CONDENSATE DISCHARGE TO PERIMETER LEACHATE COLLECTION TRENCH DETAIL 2**  
SCALE: 1" = 1'-0" G1, G2, G4, G5

M: 295077.02.FINAL  
CONSUMP, LT-XING, LTCASCOL, RDXING, TRENCH2, PER-TRN, VALVE  
SHT-05

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DES.	SCW/CMS				
DRN.	BUD				
CHK.	ERP				
DATE:	10-30-97	BY:	NO.	REVISION	DATE

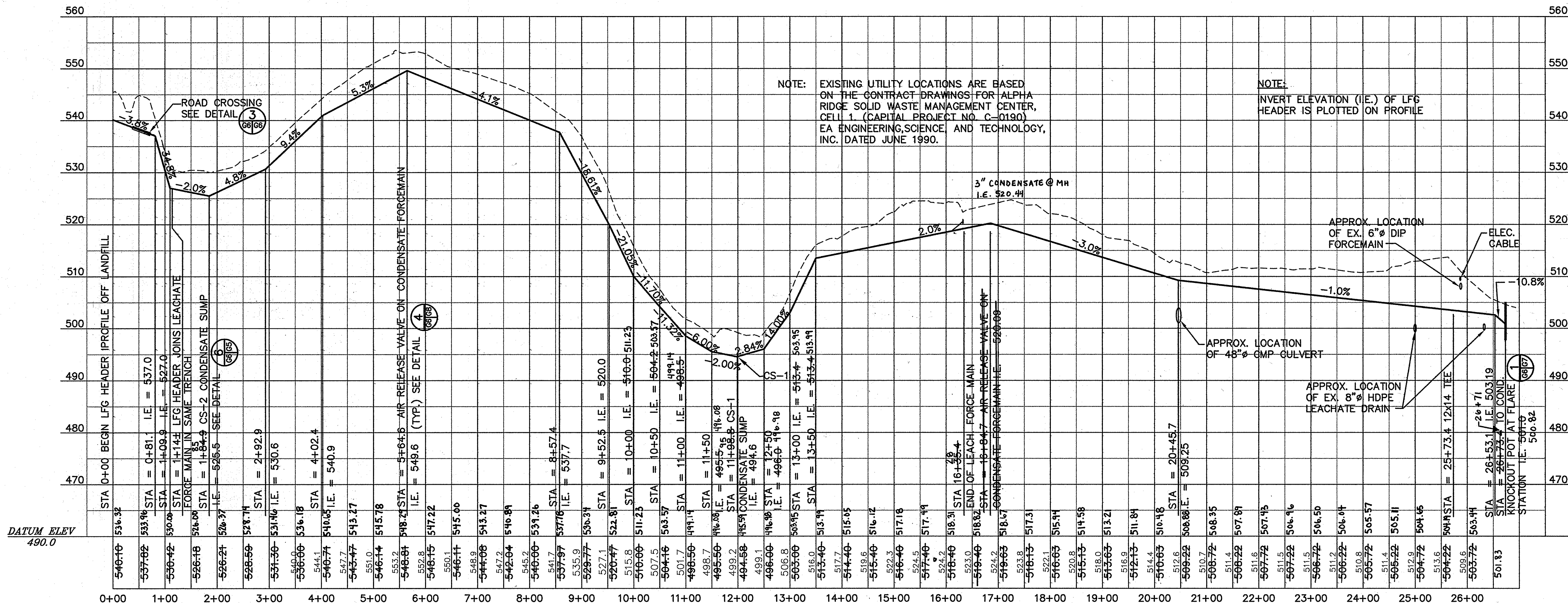
LFG COLLECTION SYSTEM DETAILS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

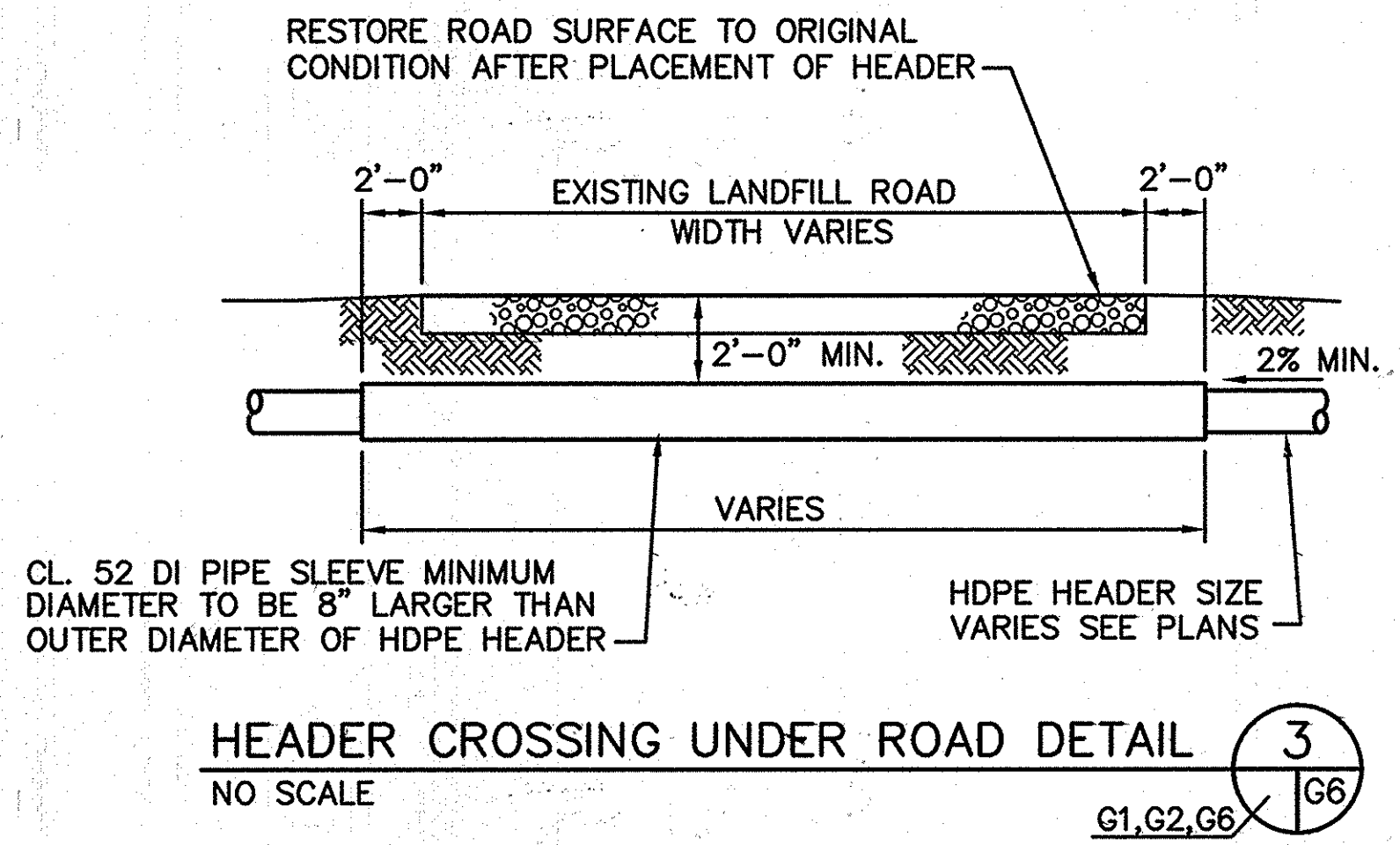
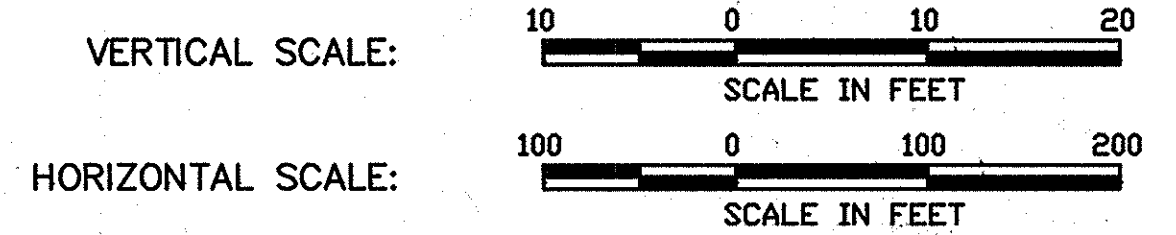
SCALE:  
AS NOTED  
SHEET  
G5 OF 131

3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND



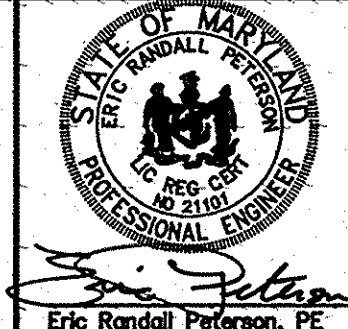
LFG MAIN HEADER PROFILE  
LFG CONDENSATE FORCE MAIN PROFILE



M:\295077.02\FINAL\PROFILE  
SHT-06

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

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FAX. (703) 471-6676

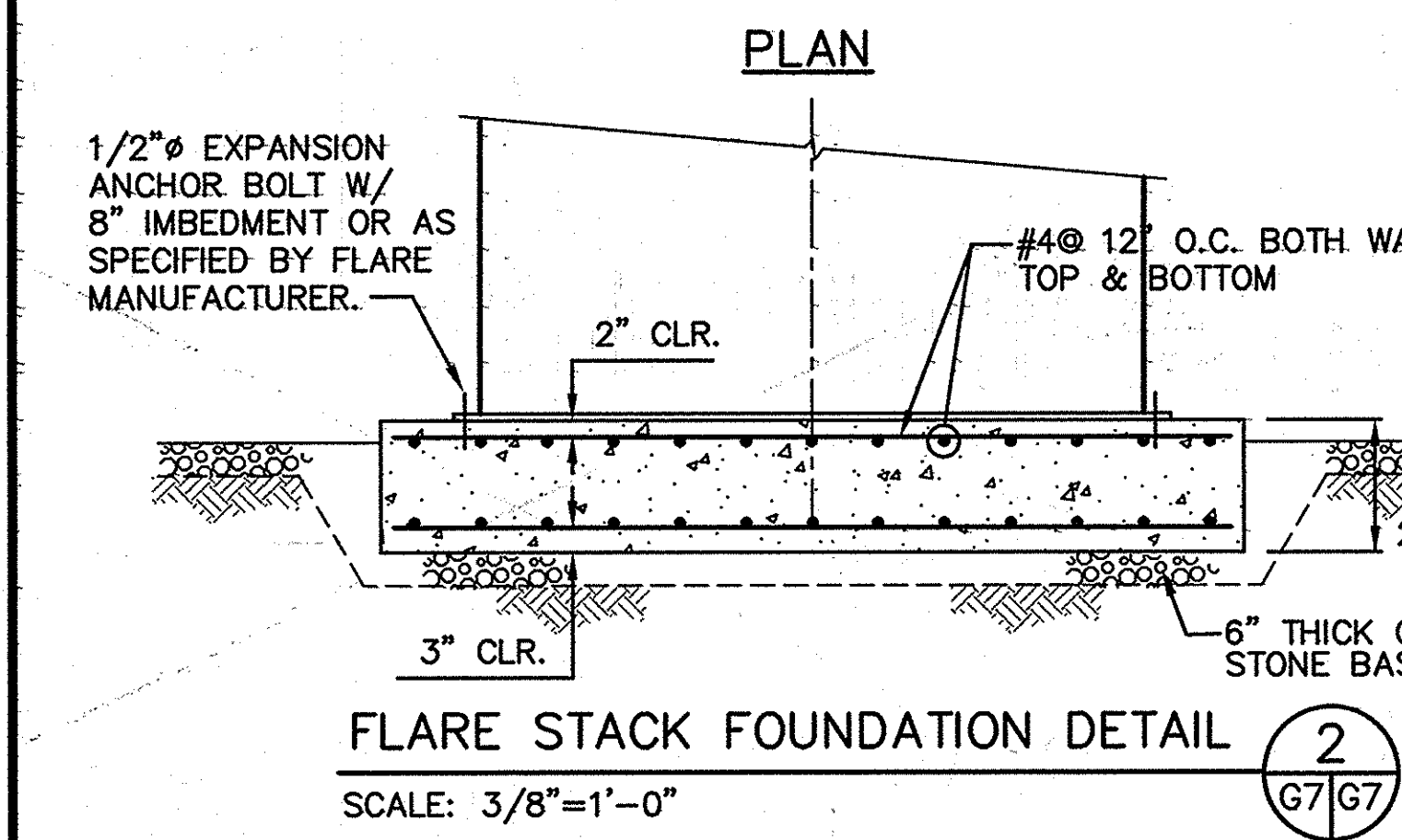
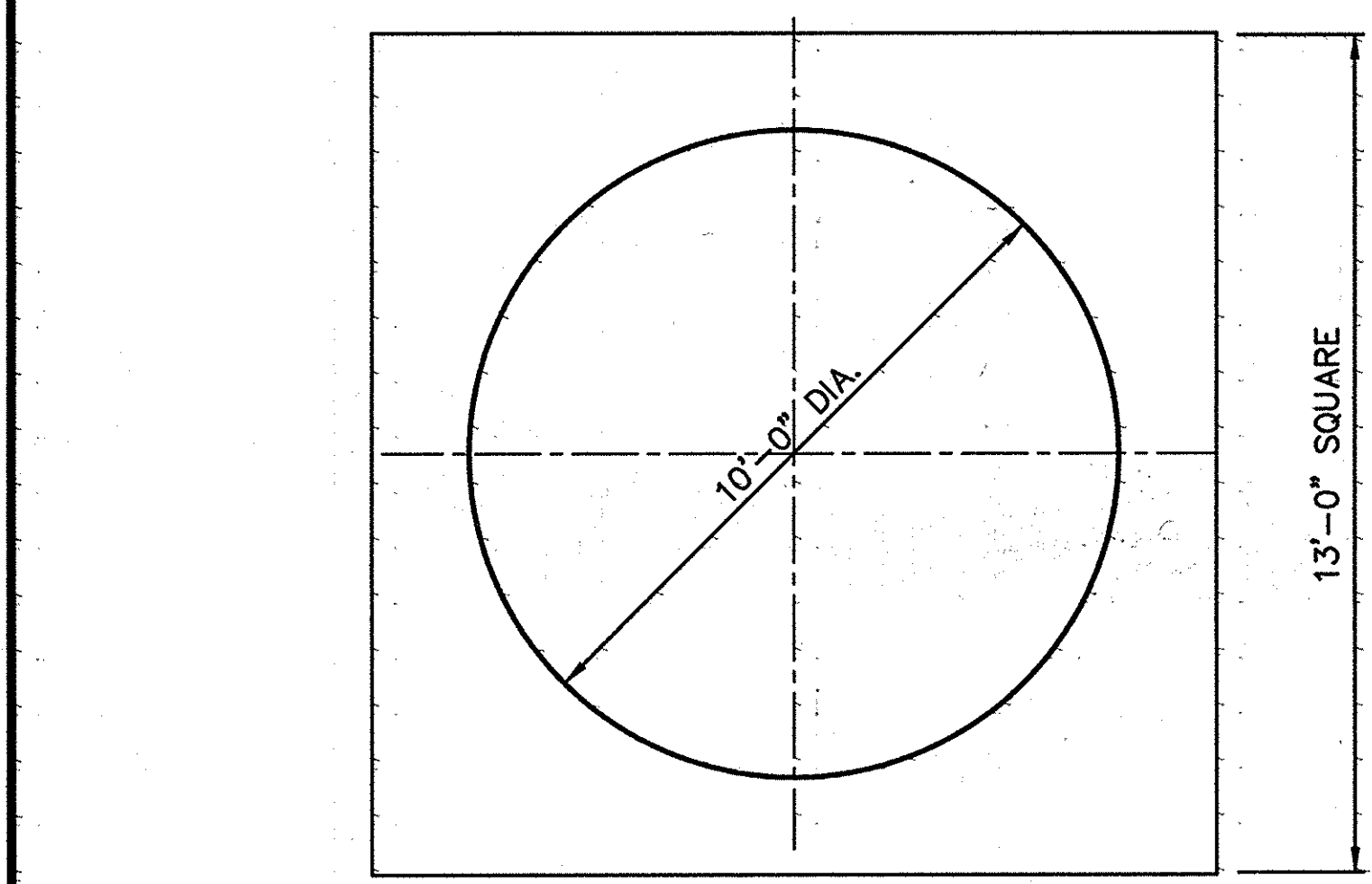
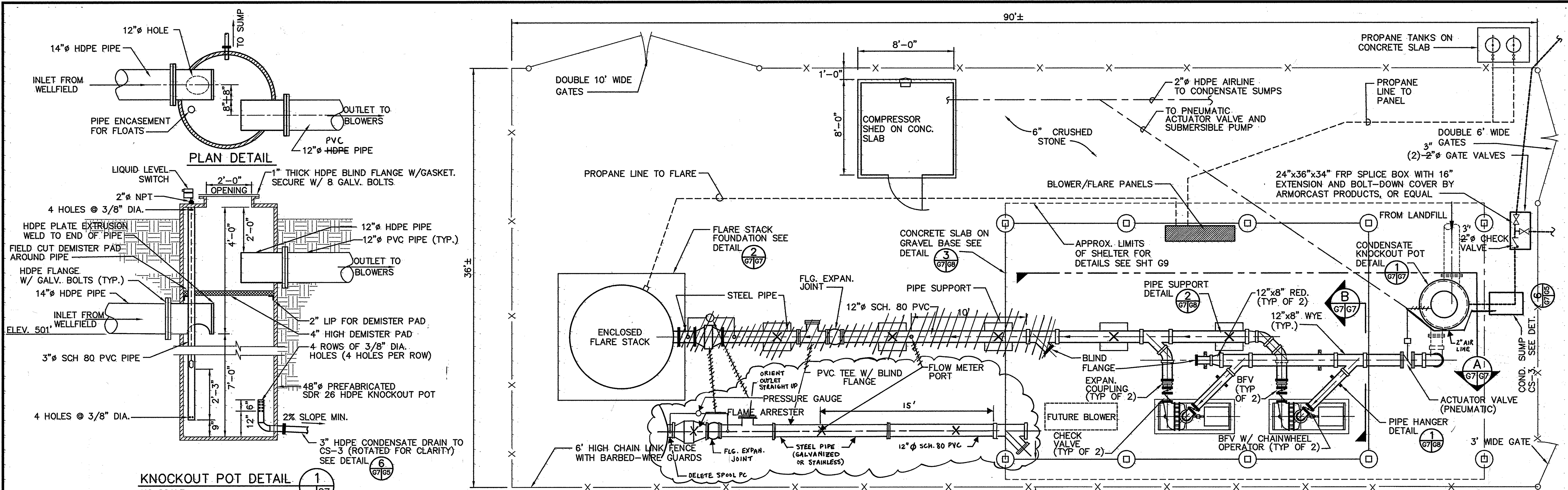


DES. SCW/CMS	
DRN. BJD/SCW	
CHK. ERP	
DATE: 10-30-97	
BY	NO.
REVISION	DATE

LFG HEADER PROFILE

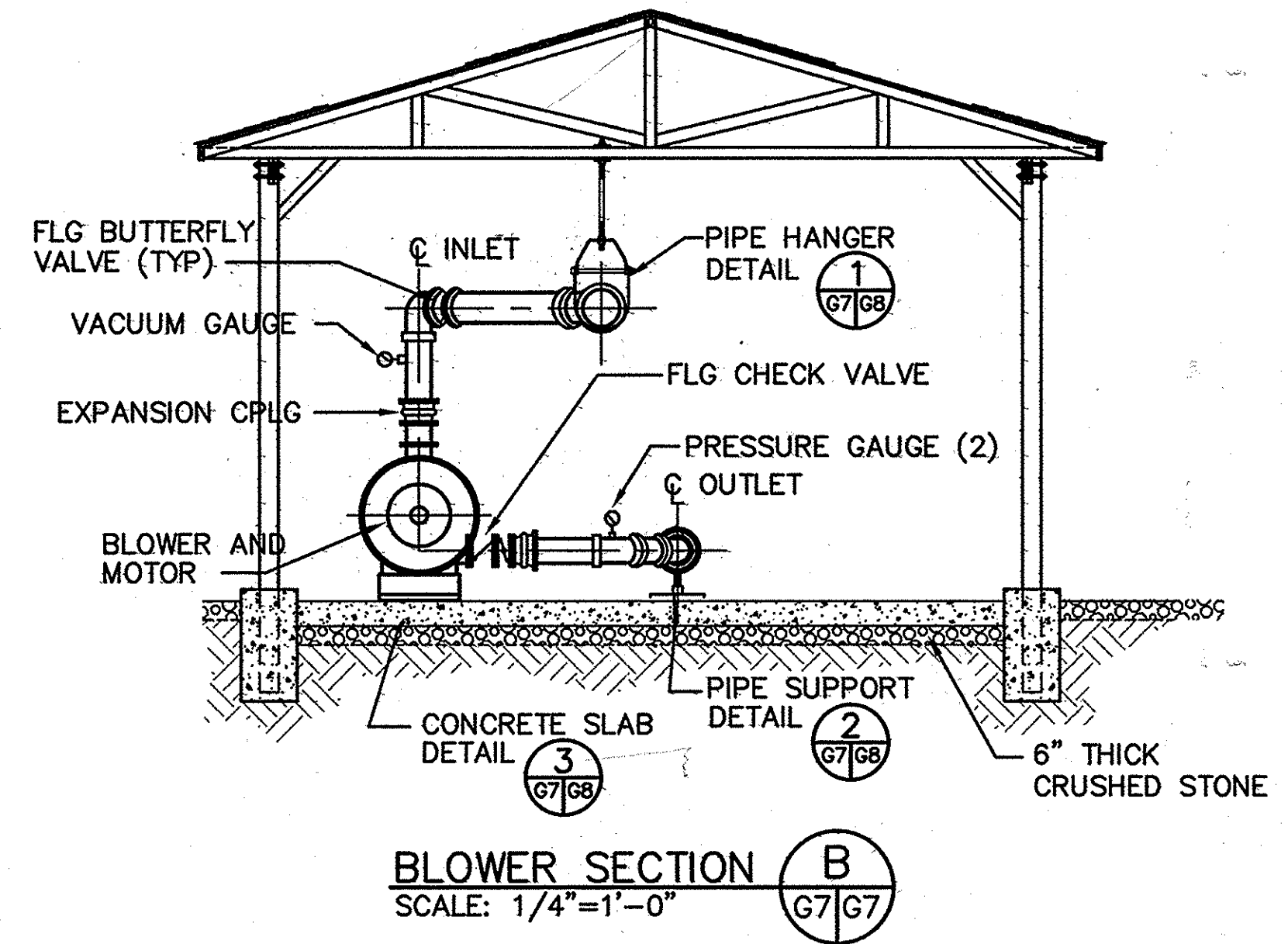
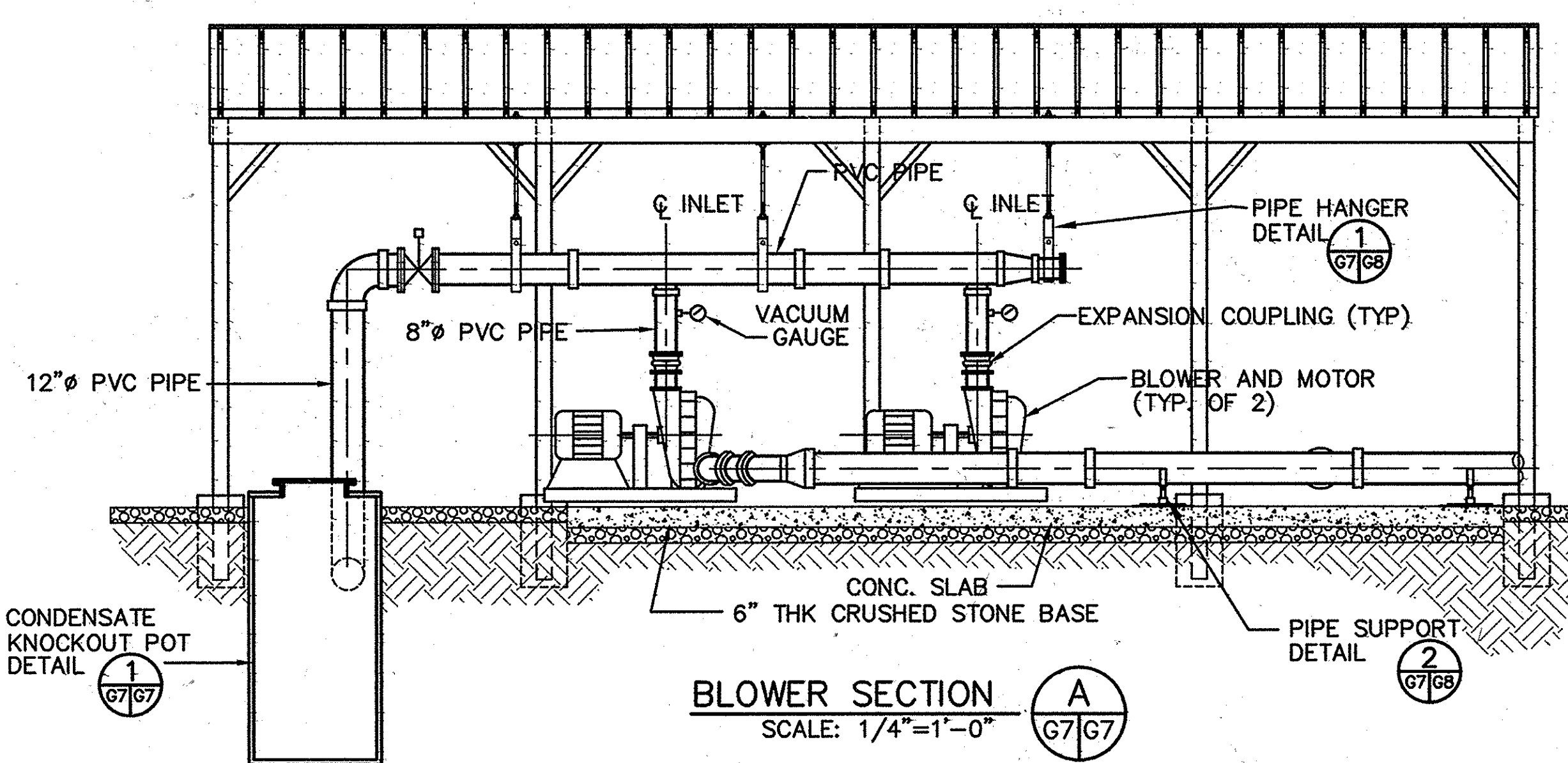
ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N  
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED  
Sheet 097  
G6 OF 131



- NOTES:**
1. ALL EXPOSED CONDENSATE DRAIN PIPING TO BE INSULATED.
  2. ALL PVC PIPE SHALL BE SCH 80 UNLESS OTHERWISE NOTED.
  3. SIZE SHED PER COMPRESSOR MANUFACTURER'S RECOMMENDATIONS TO PROVIDE NECESSARY CLEARANCE BETWEEN EQUIPMENT AND BUILDING WALLS.

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



**BLOWER SECTION A**  
SCALE: 1/4"=1'-0"

**BLOWER SECTION B**  
SCALE: 1/4"=1'-0"

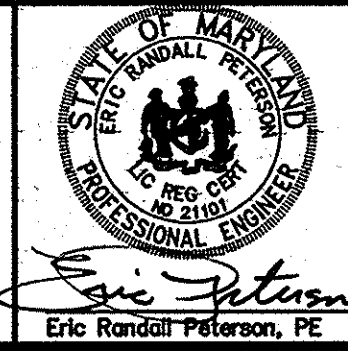
M:\295077.02\FINAL\BF-SITE, BSECTA, BSECTB, FLARE, KOPOT SH1-67

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James Lee* 10/30/97  
DIRECTOR OF PUBLIC WORKS DATE

*John O'Hara* 10/30/97  
CHIEF, BUREAU OF WASTE MANAGEMENT DATE

SCS ENGINEERS  
CONSULTING ENGINEERS  
11260 ROGER BACON DRIVE  
SUITE 300  
RESTON, VIRGINIA 22090  
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DES.	CMS				
DRN.	BJD				
CHK.	ERP				
DATE:	10-30-97	BY:	NO.	REVISION	DATE

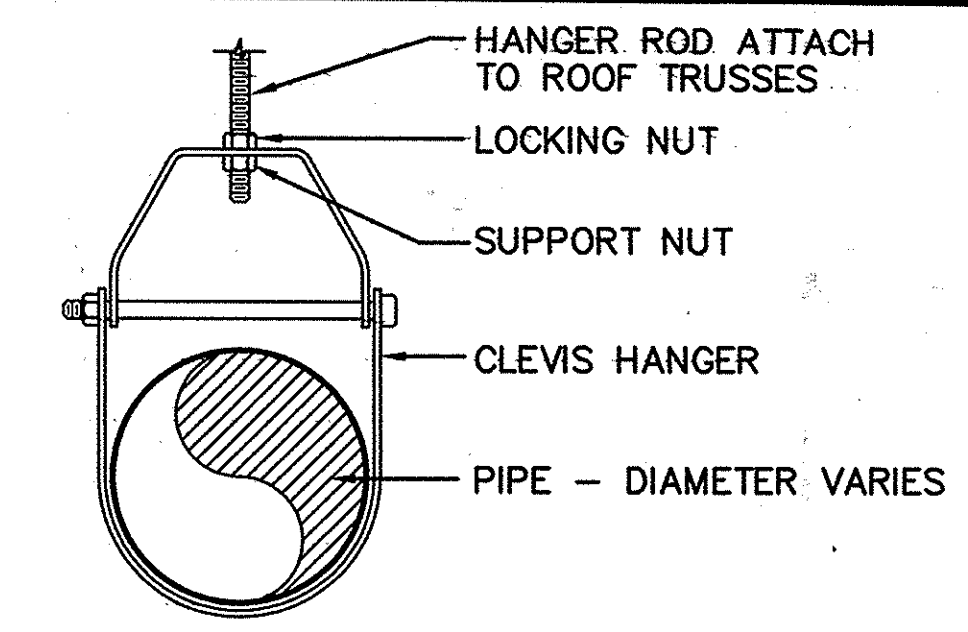
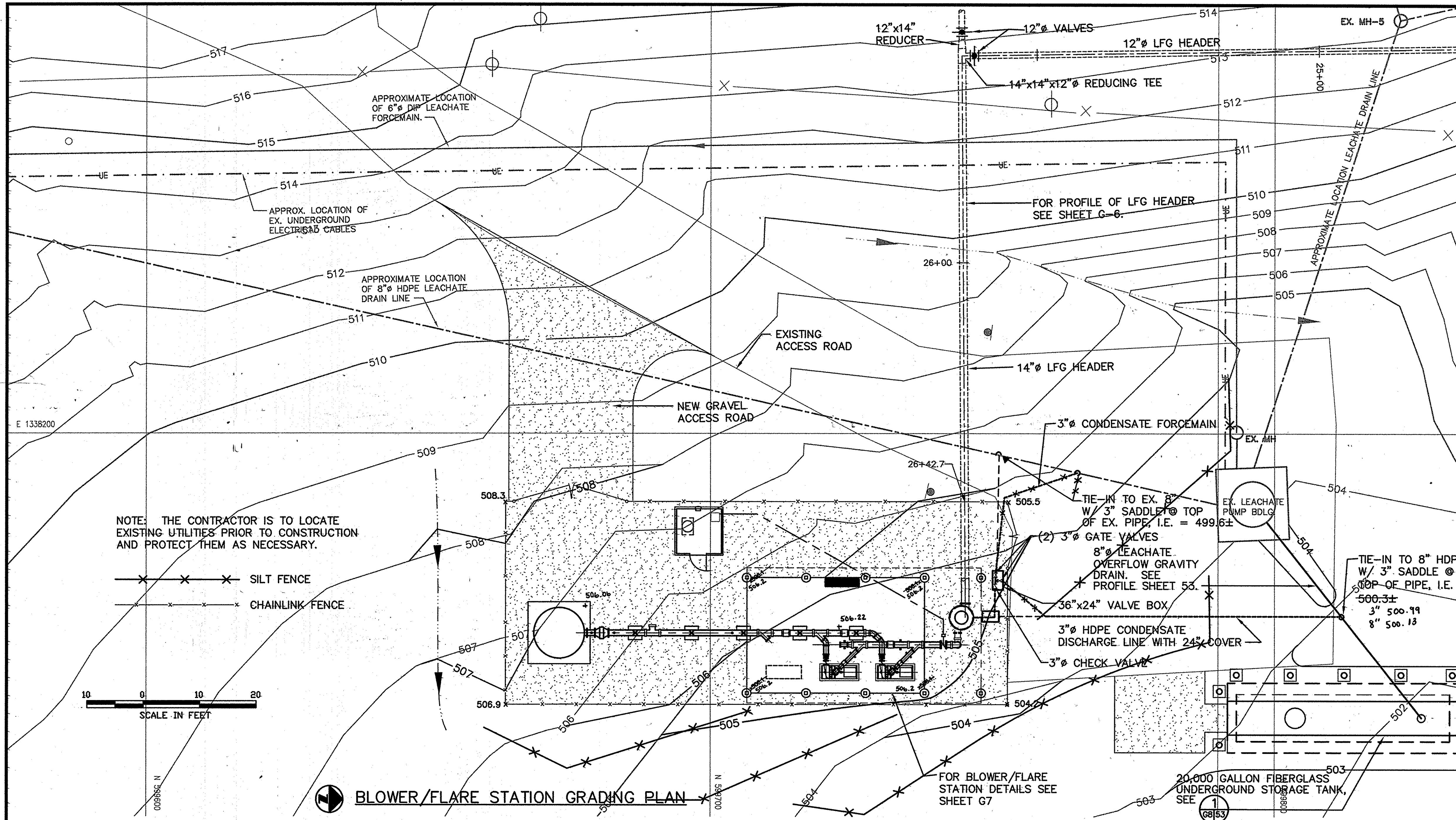
**BLOWER/FLARE STATION DETAILS**

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

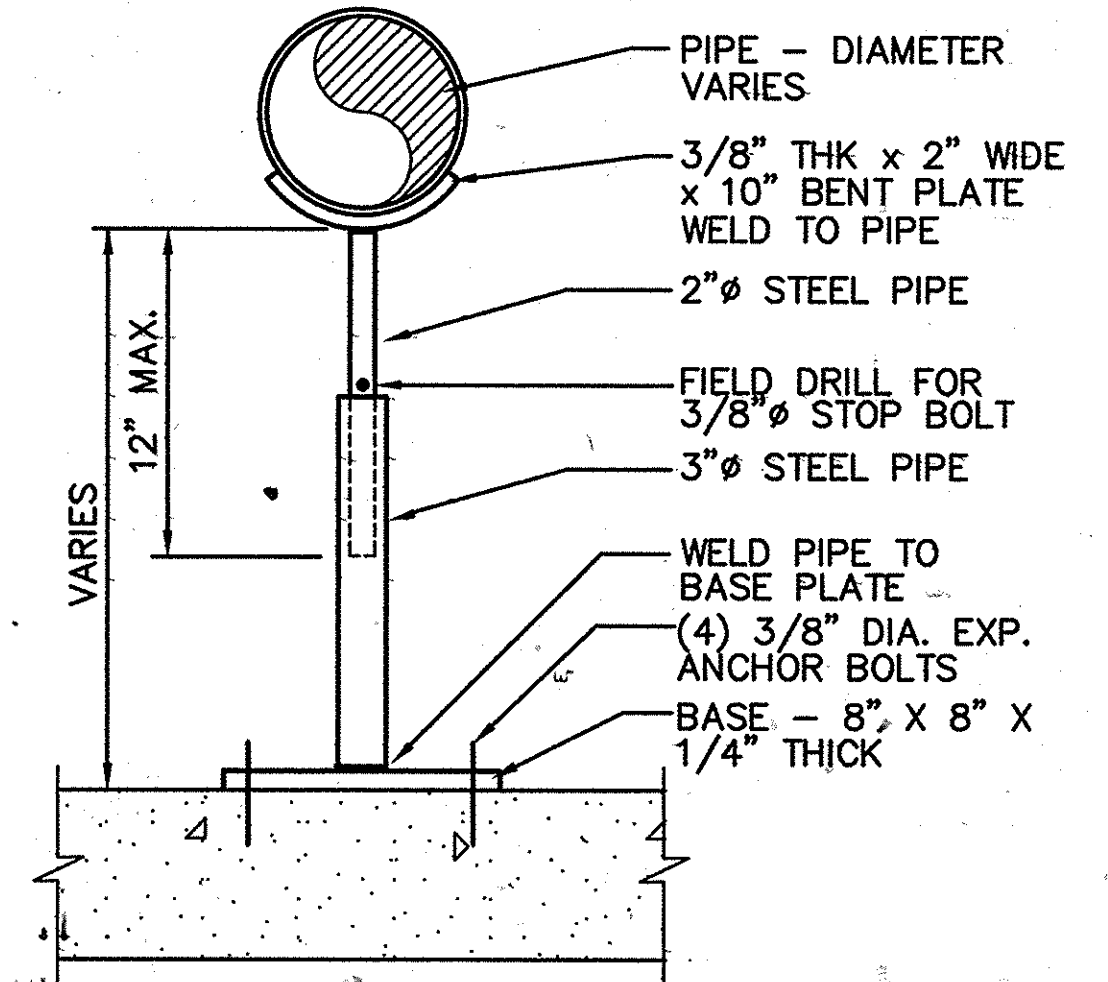
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE:  
AS NOTED  
(5th 96)  
SHEET  
G7 OF 121





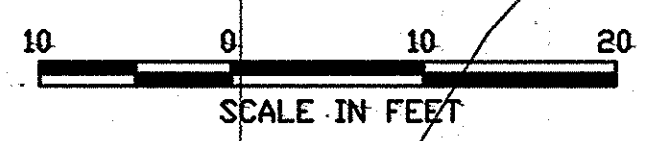
PIPE HANGER DETAIL 1  
NO SCALE G7/G8



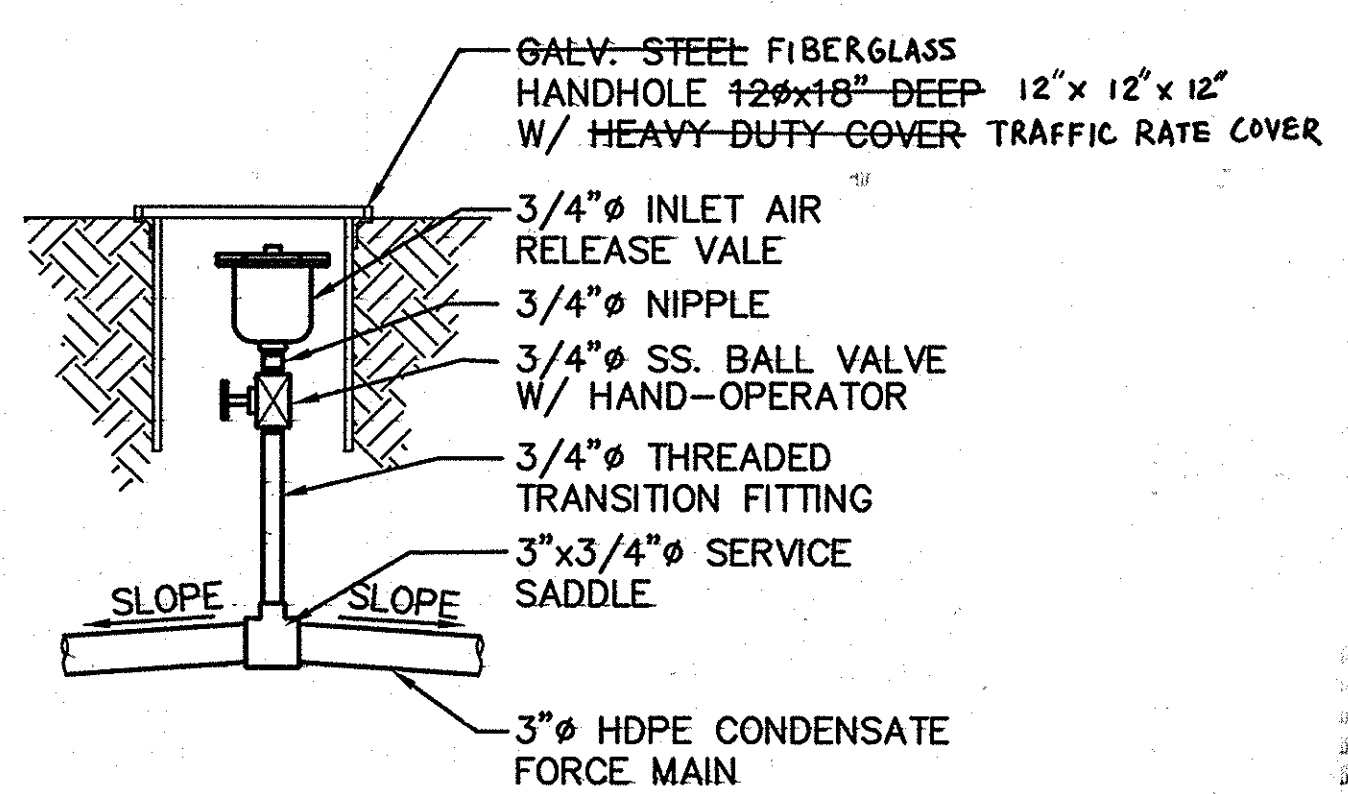
PIPE SUPPORT DETAIL 2  
NO SCALE G7/G8

NOTE: THE CONTRACTOR IS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION AND PROTECT THEM AS NECESSARY.

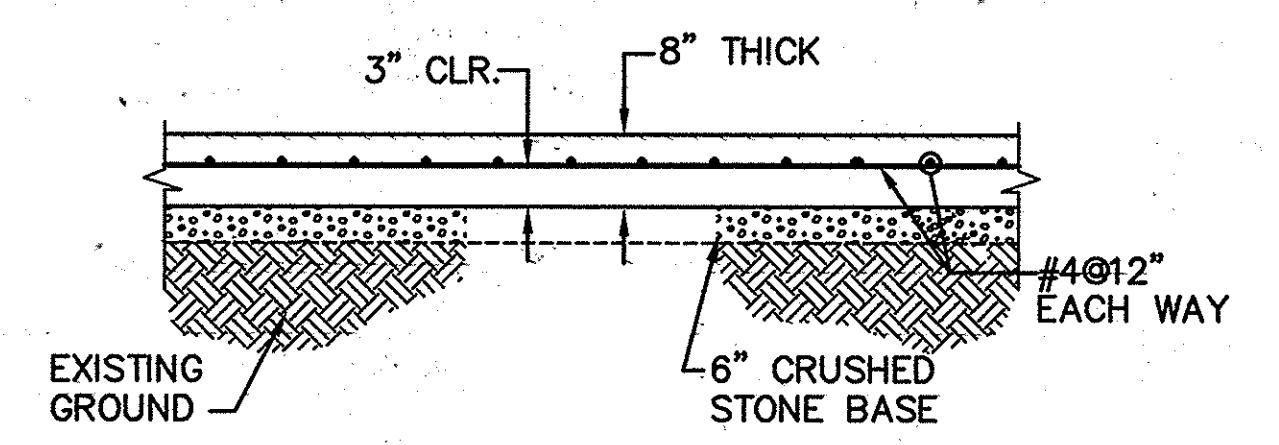
—\*—\*—\*— SILT FENCE  
—x—x—x— CHAINLINK FENCE



**BLOWER/FLARE STATION GRADING PLAN**



AIR RELEASE VALVE DETAIL 4  
SCALE: 1"=1'-0" G6/G8



- STRUCTURAL NOTES:
1. CONCRETE SLAB SHALL BE CONSTRUCTED SO THAT A 0.5% SLOPE IS MAINTAINED FROM THE CENTER (HIGH POINT) TO EACH CORNER OF SLAB (LOW POINT).
  2. CONCRETE MINIMUM COMPRESSIVE STRENGTH SHALL BE 4000 PSI.
  3. CONCRETE SLAB SHALL BE BROOM FINISHED.

CONCRETE SLAB DETAIL 3  
SCALE: 3/8"=1'-0" G7/G8

SEE ETA SHEET G8-AB FOR FLARE STATION AS-BUILT

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER		LOT/PARCEL 54,253,220,11	
LIBER/FOLIO 10-847/806 18-878/215 10-891/314	ZONE PEC	TAX/ZONE MAP 10 & 16	
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30	

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

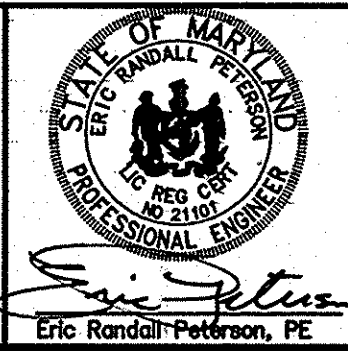
DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_

CHIEF, DEVELOPMENT ENGINEERING DIVISION \_\_\_\_\_ DATE \_\_\_\_\_

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH \_\_\_\_\_ DATE \_\_\_\_\_

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HOWARD COUNTY, MARYLAND

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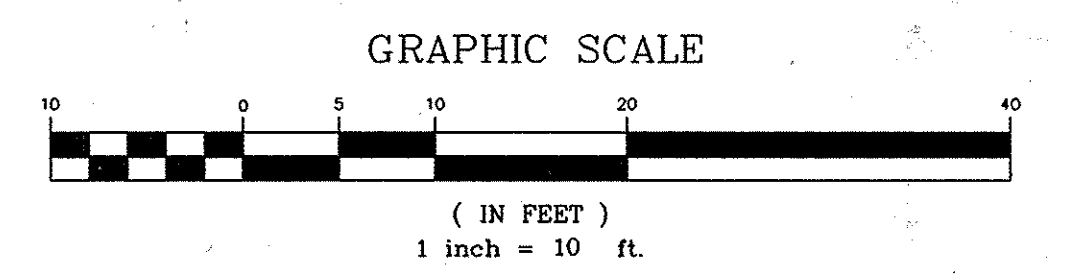
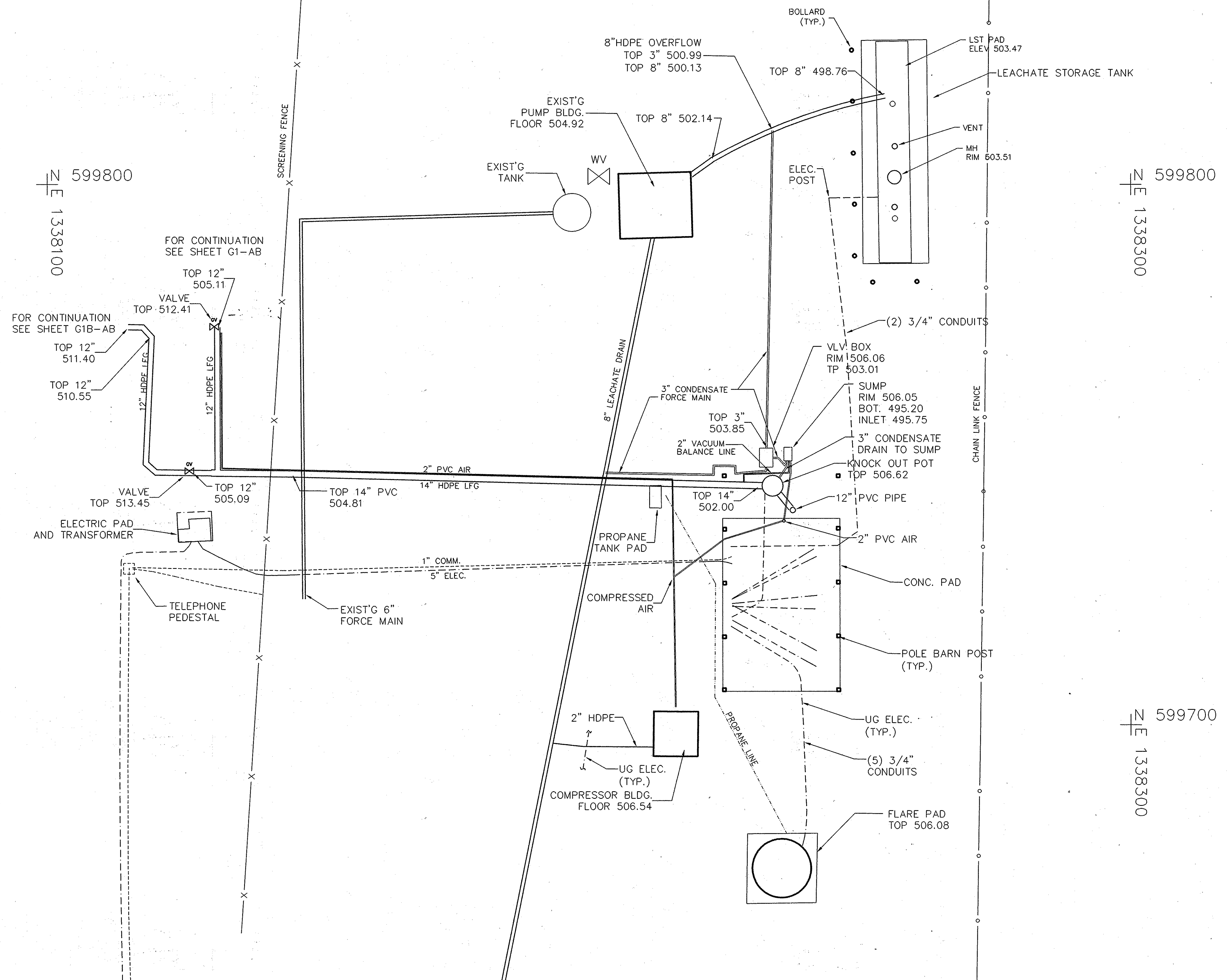
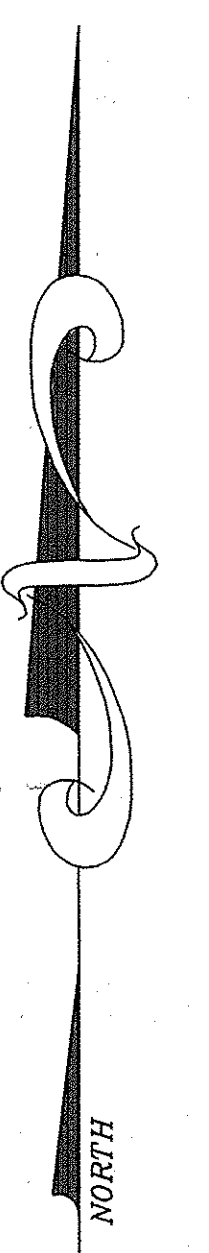
DES.	BJD		
DRN.	BJD		
CHK.	ERP		
DATE:	10-30-97	BY:	NO.
		REVISION:	DATE:

BLOWER STATION  
MISCELLANEOUS DETAILS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

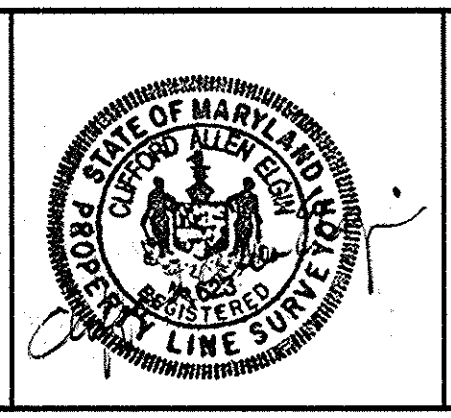
SCALE:  
AS NOTED  
SHEET  
G8 OF 13

M:\295077.02\FINAL\PSUPPORT, HANGER, BFRGRAD, CFM-PROF, PRV, SLAB SHT-G8

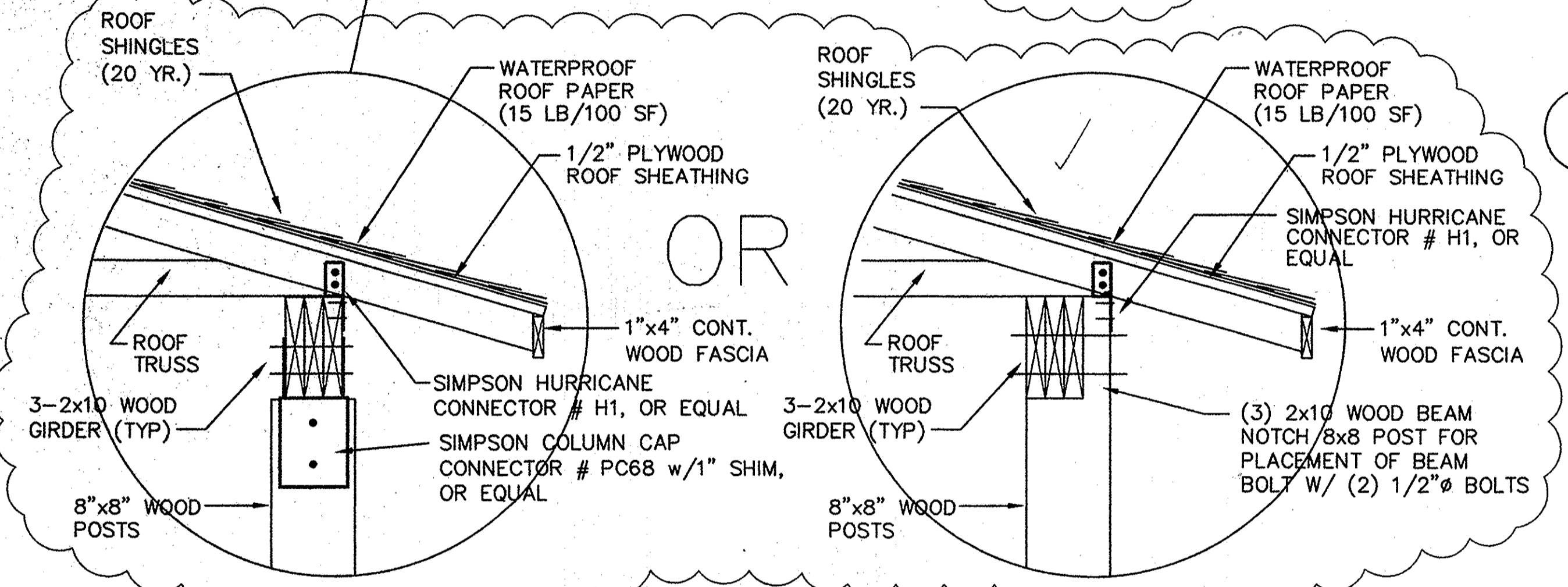
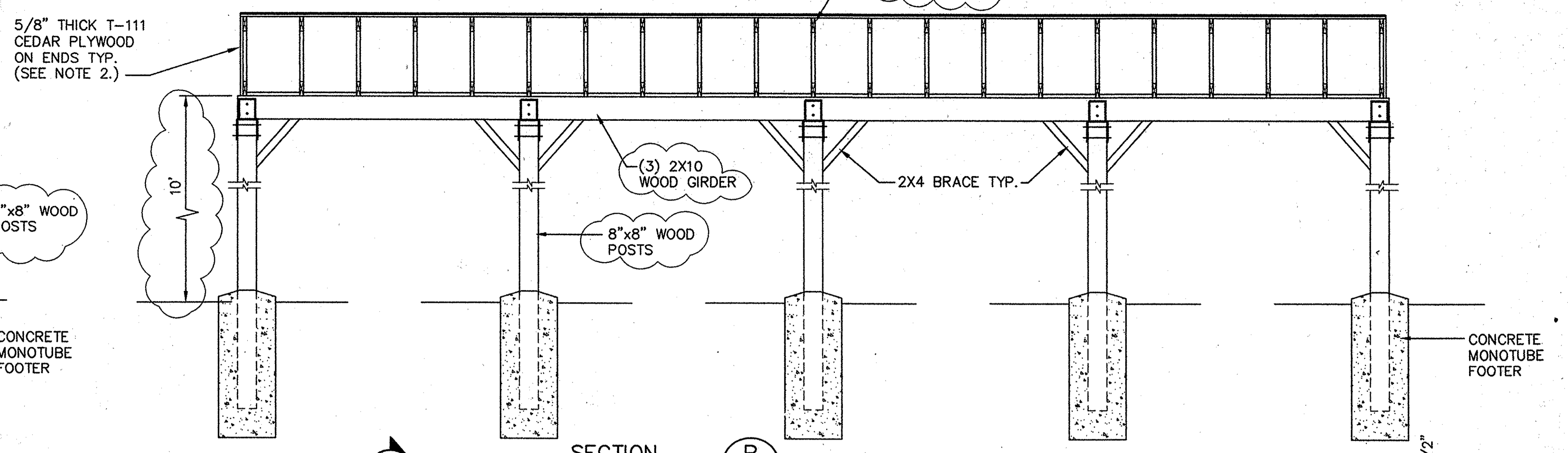
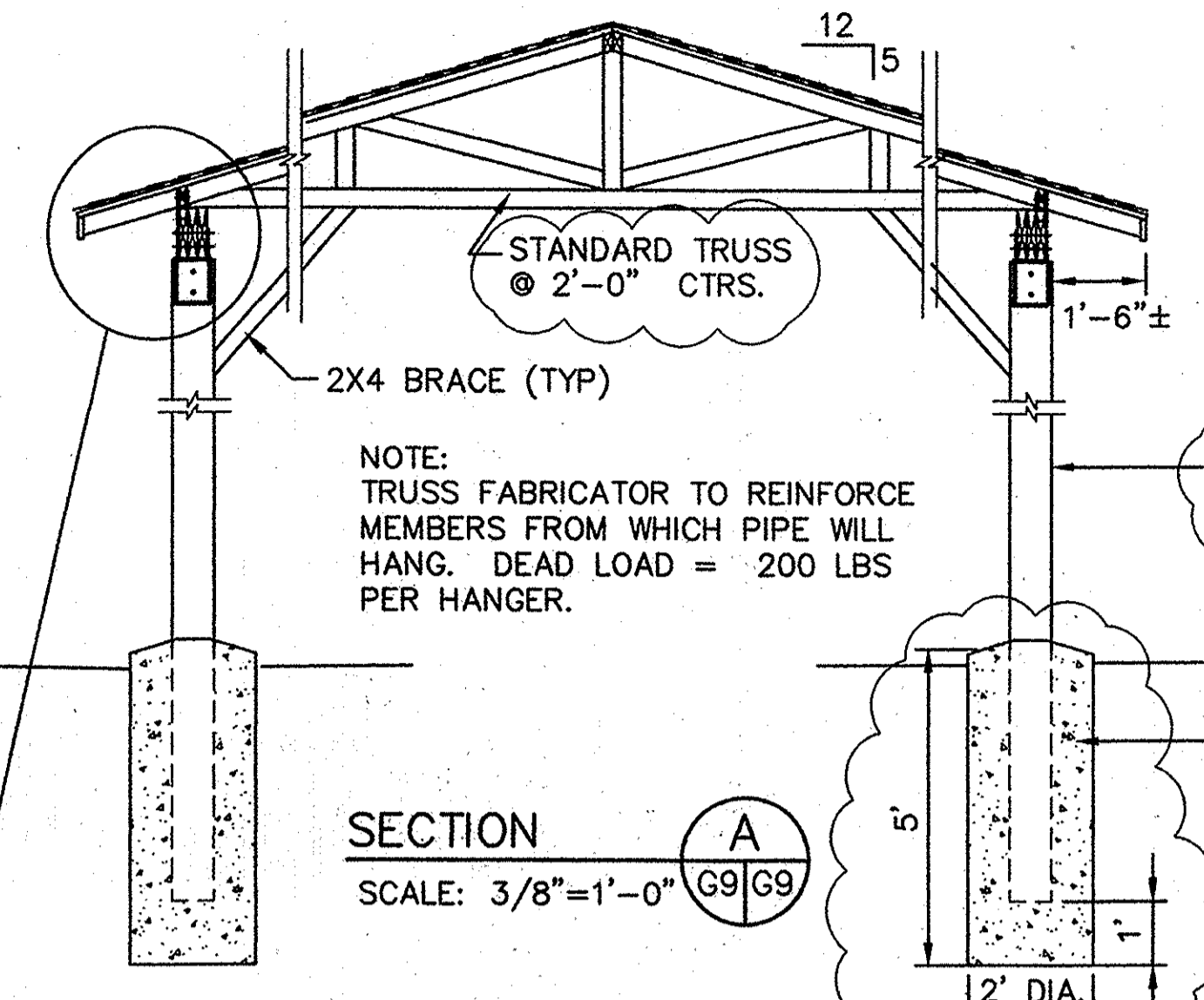


DESIGNED BY:		DATE		REVISIONS	
DATE	BY	DATE	BY	DESCRIPTION	
12-8-98	TWH	12-21-2000	TWH	AMENDED PIPING LABELS AND ROUTING.	
4-9-2001	TWH			AMENDED PIPING LABELS AND ROUTING.	

**ENGINEERING TECHNOLOGIES ASSOCIATES, INC.**  
 ENGINEERS \* PLANNERS \* SURVEYORS  
 3458 ELLICOTT CENTER DRIVE SUITE 101  
 ELLICOTT CITY, MARYLAND 21043  
 BALTO. (410)461-9920 FAX (410)750-8565



FLARE STATION AS-BUILT			
<b>ALPHA RIDGE LANDFILL CELL CLOSURE</b>			
HOWARD COUNTY	CONTRACT NO.: 98301.10	DATE : 2-14-2000	SCALE : 1"=10'
MARYLAND 6/12/01 G8-AB			



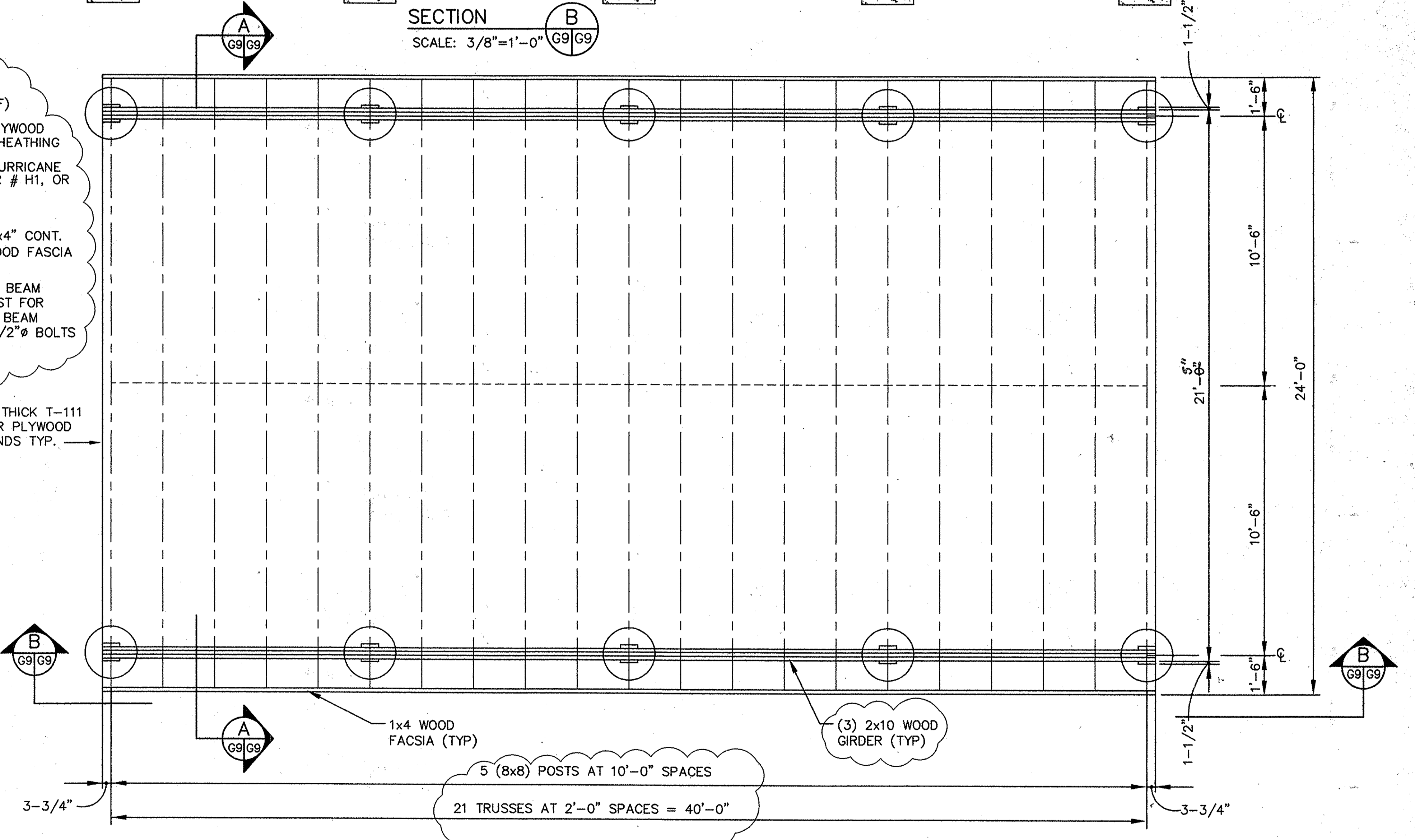
TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING MINIMUM LOADS:

WIND LOAD:	15 PSF
SNOW LOAD:	12 PSF
ROOF LIVE LOAD:	20 PSF
ROOF DEAD LOAD:	*15 PSF

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

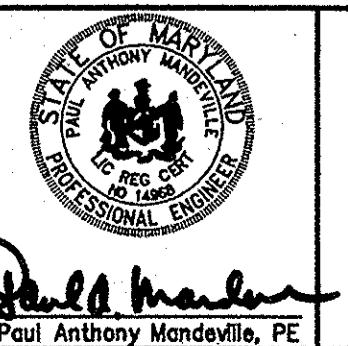
NOTES:

- ALL WOOD TO BE PRESSURE TREATED.
- THESE SHELTER PLANS HAVE BEEN REVISED TO INCORPORATE THE TRUSS DESIGN AS SUBMITTED BY H.E. SARGENT AND FABCO @ 2' TRUSS SPACING



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FAX. (703) 471-6676



DES.	BJD			
DRN.	BJD			
CHK.	ERP			
DATE:	10-30-97	SCW	TRUSS SPACING, BEAMS, COLS, FTNGS, LENGTH, CON	10-16-98
		BY	NO.	REVISION

BLOWER STATION  
SHELTER DETAILS

ALPHA RIDGE LANDFILL  
UNLINED CELL CLOSURE  
CAPITAL PROJECT NO. C-0190-N

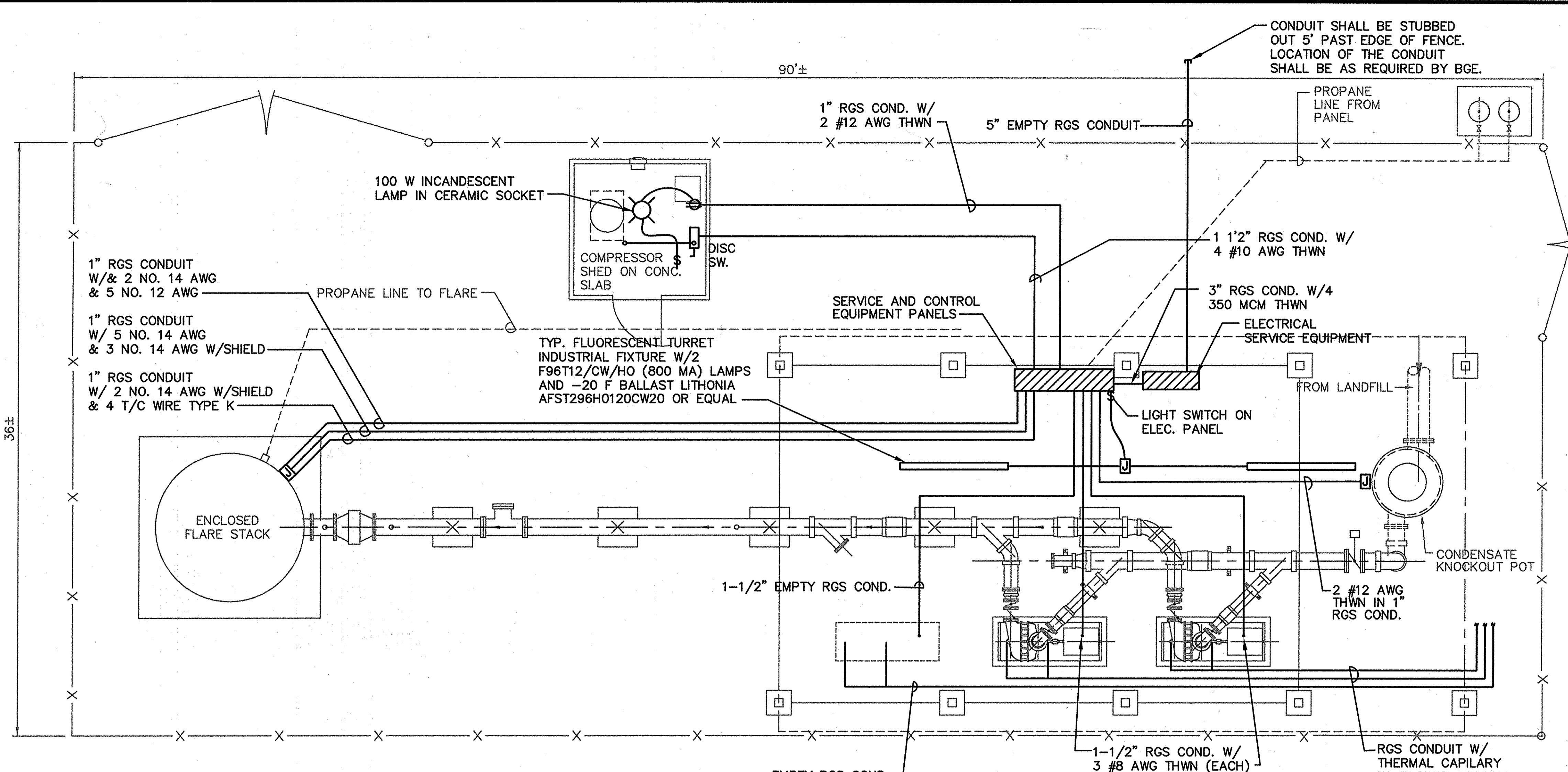
SCALE:  
AS NOTED  
(Sht 93)  
SHEET  
G9 OF 131

SHT-G9 M:\295077\02\FINAL\ SHP40

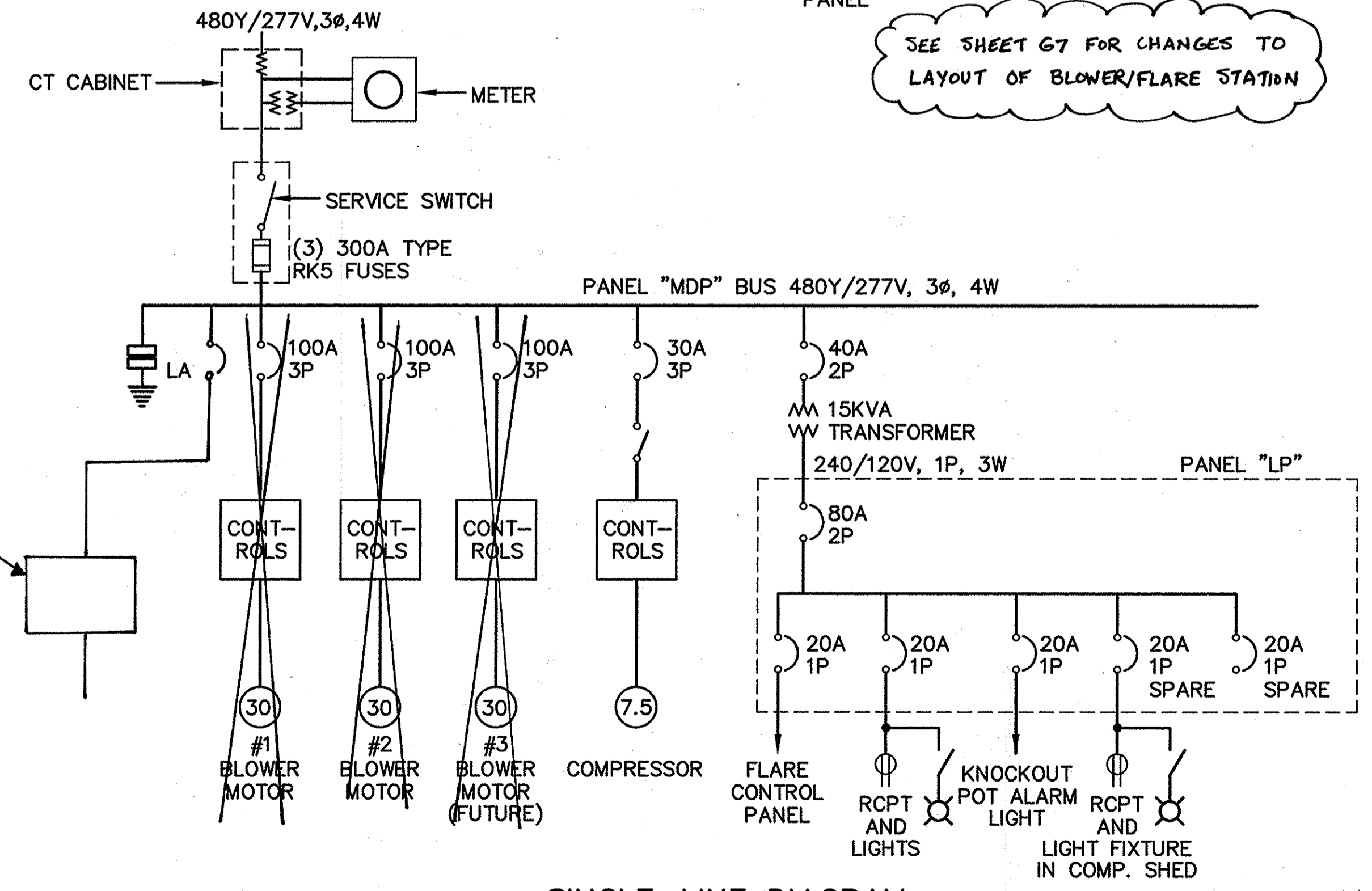
DIRECTOR OF PUBLIC WORKS DATE CHIEF, BUREAU OF WASTE MANAGEMENT DATE

3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND



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



**SINGLE-LINE DIAGRAM**  
NO SCALE

SEE SHEET G7 FOR CHANGES TO LAYOUT OF BLOWER/FLARE STATION

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 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.

M: 295077-02 (FINAL) E-BLOWER, LDIAGRAM, ENOTES SHT-G10

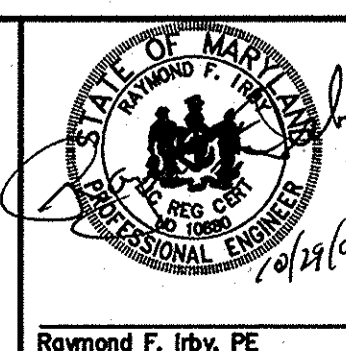
**DEPARTMENT OF PLANNING AND ZONING**  
HOWARD COUNTY, MARYLAND

DIRECTOR	DATE	SUBDIVISION NAME	LOT/PARCEL
<i>[Signature]</i>	10/30/97	ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	54,253,220,11
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	LIBER/FOLIO	ZONE
<i>[Signature]</i>	10/30/97	10-847/806 16-878/215 10-691/314	R
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH	DATE	TAX/ZONE MAP	CENSUS TR.
<i>[Signature]</i>	10/30/97	10 & 16	60-30
		WATER CODE	SEWER CODE
		PRIVATE, EXISTING	PRIVATE, EXISTING

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

DIRECTOR OF PUBLIC WORKS	DATE	CHIEF, BUREAU OF WASTE MANAGEMENT	DATE
<i>[Signature]</i>	10/30/97	<i>[Signature]</i>	10/30/97

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



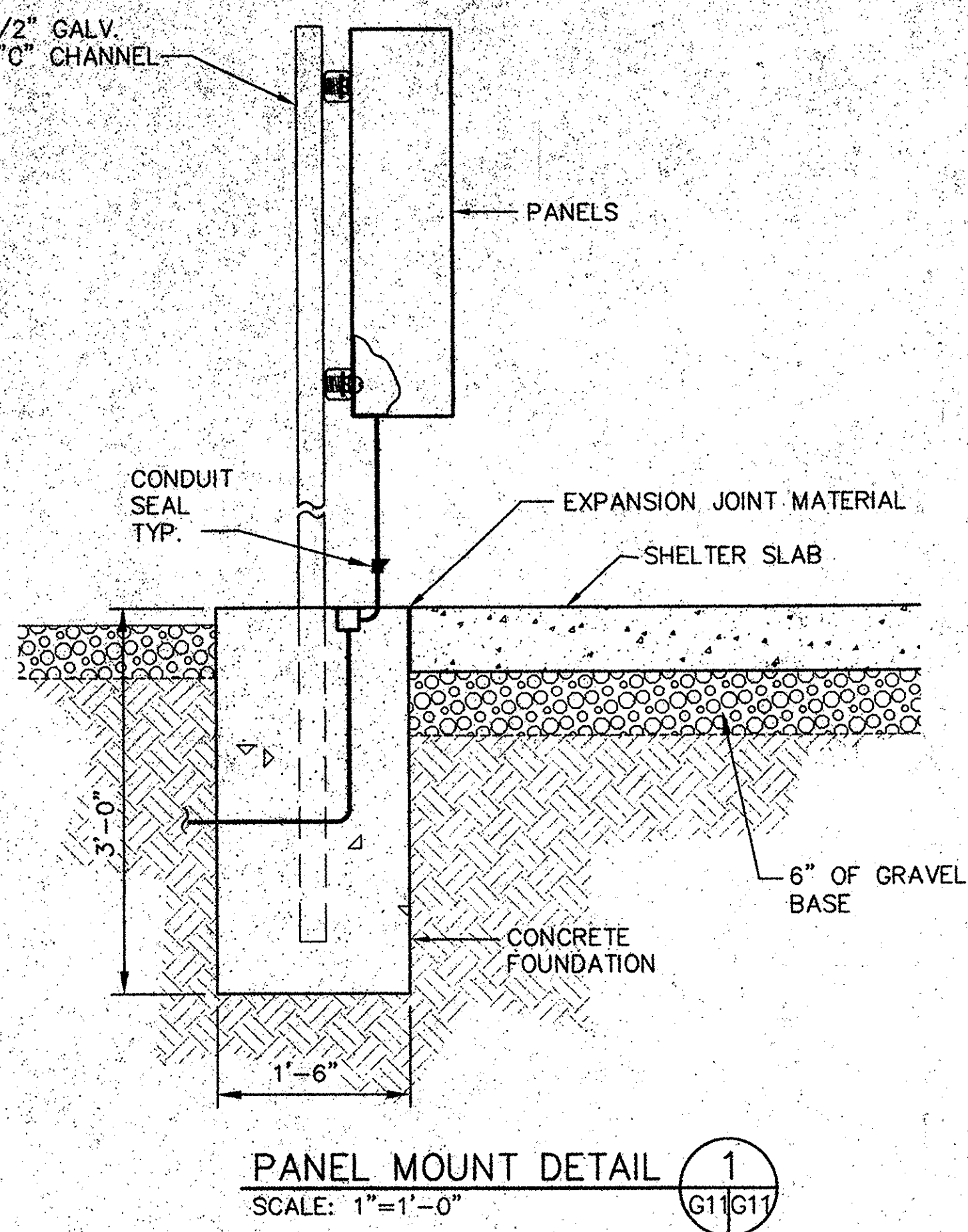
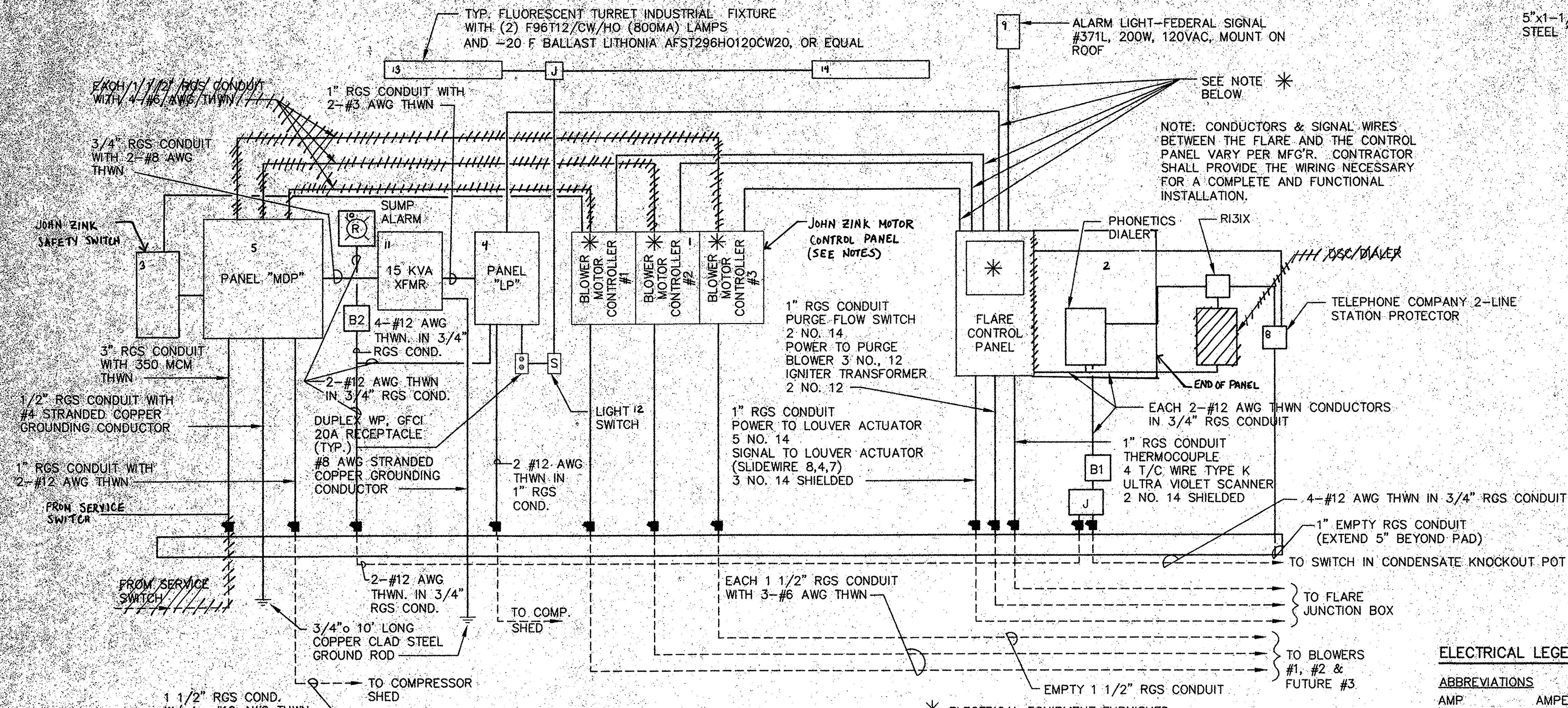
DES.	RFI	
DRN.	BJD/SPC	
CHK.	RI	
DATE:	10-30-97	
BY	NO.	REVISION
		DATE

**ELECTRICAL DETAILS**

**ALPHA RIDGE LANDFILL UNLINED CELL CLOSURE**  
CAPITAL PROJECT NO. C-0190-N

3rd ELECTION DISTRICT      HOWARD COUNTY, MARYLAND

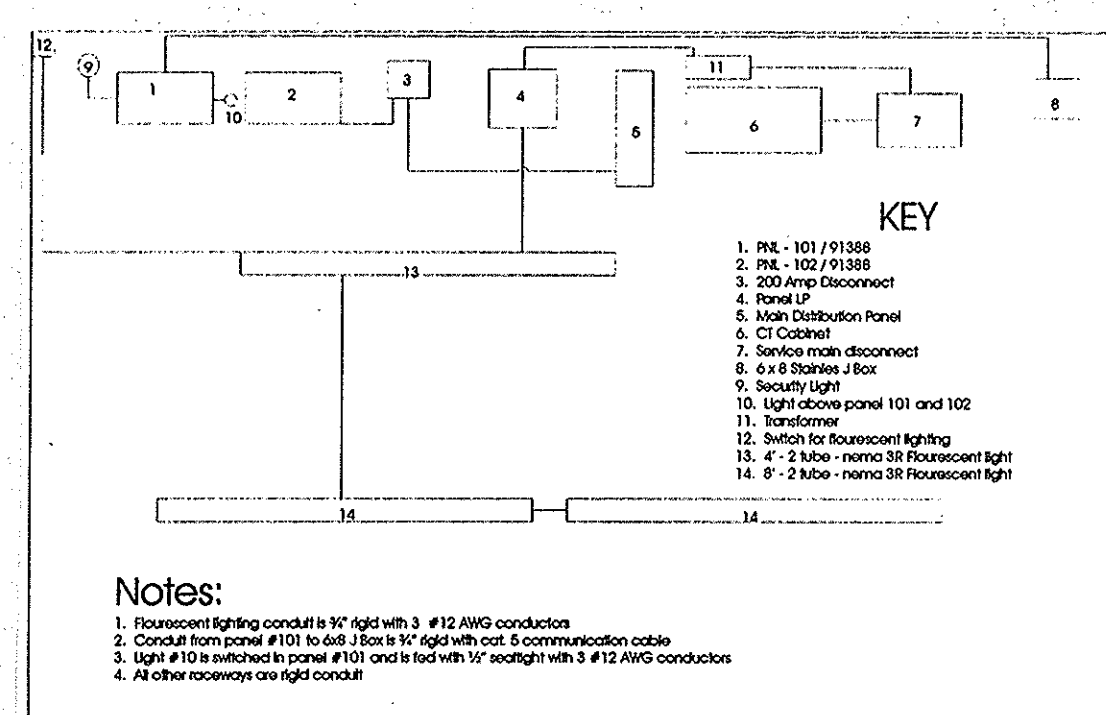
SCALE: AS NOTED  
547-941 SHEET  
G10 of 131



**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.



**Flare Station Alpha Ridge**  
THIS AS-BUILT LAYOUT PROVIDED BY H.E. SARGENT, INC.

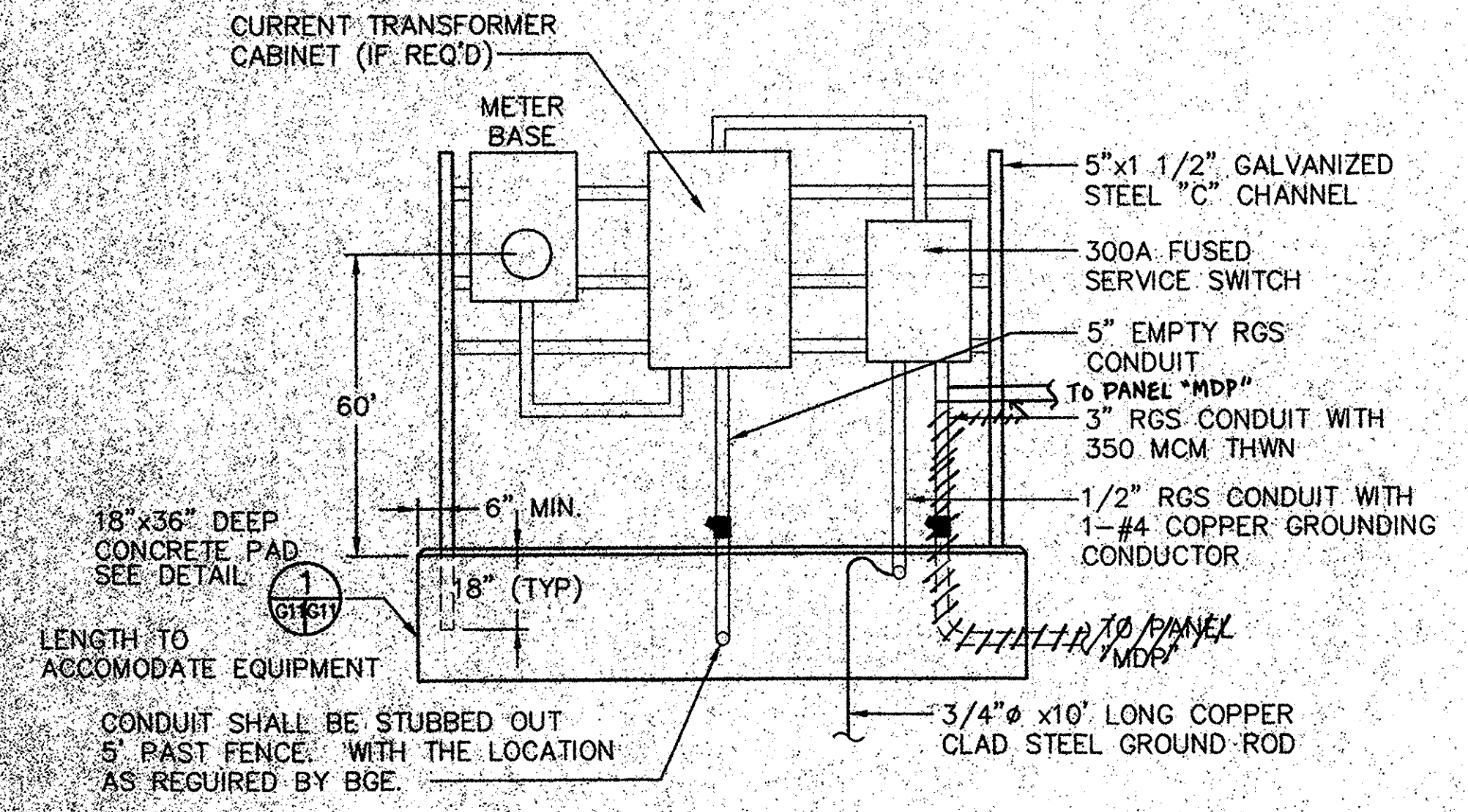
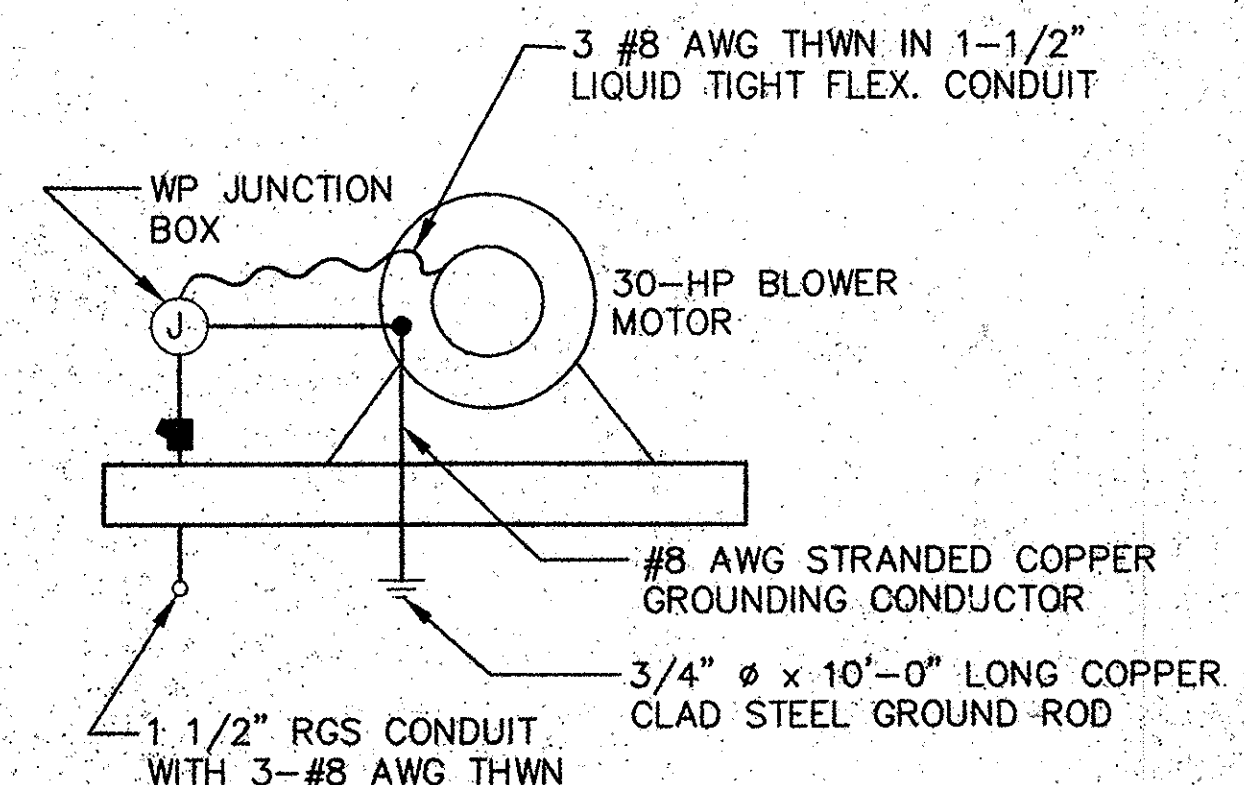
**ELECTRICAL LEGEND**

ABBREVIATIONS

AMP	AMPERE
AWG	AMERICAN WIRE GAUGE
CKT. BKR	CIRCUIT BREAKER
CND.	CONDUIT
CU	COPPER
GFI	GROUND FAULT INTERRUPTER
HP	HORSEPOWER
I/AW	IN ACCORDANCE WITH
KW	KILOWATT
MDP	MAIN DISTRIBUTION PANEL
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
OCPD	OVERCURRENT PROTECTIVE DEVICE
PNL, PB	PANEL, PANELBOARD
THWN	MOISTURE AND HEAT RESISTANT THERMOPLASTIC CONDUCTOR INSULATION
UG	UNDERGROUND
V	VOLT
WP	WEATHER-PROOF
XFMR	TRANSFORMER
RCPT	RECEPTACLE
LP	LIGHTING PANEL

SYMBOLS

Ø	PHASE
—	CONDUCTORS IN CONDUIT
~	FLEXIBLE, LIQUID-TIGHT METAL CONDUIT
⊕	JUNCTION BOX
⊖	CONDUIT SEAL
⊘	SWITCH
⚡	LIGHTNING ARRESTER



- NOTES:
- REFER TO JOHN ZINK OPERATION AND MAINTENANCE MANUAL FOR DETAILS.
  - THIS RISER DIAGRAM IS FOR SCHEMATIC PURPOSES AND DOES NOT REFLECT ACTUAL LOCATIONS OF PANELS/EQUIPMENT. (SEE AS-BUILT LAYOUT THIS SHEET FOR LEGEND OF NUMERIC IDENTIFICATION)
- NOTES:
- BGE WILL INSTALL SERVICE CABLE FROM THEIR POWER SOURCE TO THE CURRENT TRANSFORMER AND METER BASE.
  - EQUIPMENT SHALL BE ATTACHED TO THE CHANNELING WITH 3/4" GALV. BOLTS, NUTS AND WASHERS.
  - THE CONTRACTOR SHALL LEAVE A SUFFICIENT AMOUNT OF CONDUCTOR CABLE COILED INSIDE THE CURRENT TRANSFORMER CABINET TO PERMIT BGE TO MAKE THEIR CONNECTION.
  - CONTRACTOR SHALL OBTAIN METER BASE FROM BGE AND INSTALL IT.
  - CONTRACTOR SHALL PROVIDE CURRENT TRANSFORMER CABINET, COORDINATING SIZE, ETC. WITH BGE.

SUBDIVISION NAME			LOT/PARCEL			DIRECTOR		DATE	
ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER			54,253,220,11						
LIBER/FOLIO		ZONE	TAX/ZONE MAP		CHIEF, DEVELOPMENT ENGINEERING DIVISION		DATE		
10-847/805 16-879/215 10-881/314		R	10 & 16						
WATER CODE		SEWER CODE	CENSUS TR.		CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH		DATE		
PRIVATE, EXISTING		PRIVATE, EXISTING	60-30						

GENERAL NOTES - NON-RESIDENTIAL  
SITE DEVELOPMENT PLAN

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK
- IF REQUIRED FOR THIS PROJECT, TRAFFIC DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY HOWARD COUNTY, DATED DECEMBER 2008.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINANCE SYSTEM. CONTROL FOR THIS PROJECT IS PROVIDED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS FIELD MONUMENTATION.
- STORMWATER MANAGEMENT (ESD) MEASURES ARE PROVIDED THROUGH THE USE OF A BIO-SWALE, CISTERN AND GRASS CHANNELS. MANAGEMENT OF THE 10 YR. 24-HOUR STORM HAS BEEN PROVIDED UNDER SDP-97-128.
- EXISTING UTILITIES ARE BASED ON "AS-BUILT" DRAWINGS.
- THERE IS NO FLOODPLAIN ON THIS SITE.
- THERE IS NO WETLANDS ON THIS SITE.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
- THERE ARE NO DESIGN MANUAL WAIVERS PLANNED FOR THIS PROJECT IN REGARDS TO ENVIRONMENTAL DISTURBANCES.
- FOREST CONSERVATION OBLIGATIONS HAVE BEEN PREVIOUSLY ADDRESSED BY SDP-97-128, ALPHA RIDGE LANDFILL.

INSTALL SOIL STABILIZATION MATTING  
STA. 100+80 TO 101+15, LT. (GRASS CHANNEL NO. 2) 170 S.Y.  
STA. 101+11 TO 101+41.5, LT. (GRASS CHANNEL NO. 1) 198 S.Y.  
STA. 100+80 TO, RT. TO 104+85, LT. (GRASS CHANNEL NO. 3&5) 1130 S.Y.  
STA. 100+54.5, RT. TO 105+26, LT. (GRASS CHANNEL NO. 4) 550 S.Y.  
STA. 101+64 TO 102+01, LT. 70 S.Y.  
STA. 104+34 TO 104+80, LT. 80 S.Y.

INSTALL TRENCH DRAIN  
(SEE PLAN AND DETAIL, SHEET CO-3)  
STA. 101+65.9 TO 102+00.9, 58' LT. 35 L.F.  
STA. 101+65.9 TO 102+00.9, 87' LT. 35 L.F.

CONSTRUCTION BIO-SWALE SECTION  
STA. 102+07.5 TO 104+44.5, 117.5' LT. 237 L.F.  
(SEE DETAILS, SHEET CO-4)

INSTALL HARDWOOD MULCH (BIO-SWALE) 3" DEPTH  
STA. 104+45 TO 102+08, LT. 18 C.Y.

INSTALL CLASS I RIPRAP OUTLET PROTECTION (19" DEPTH)  
(SEE RIPRAP CONTROL TABLE)  
STA. 100+27 TO 100+76, LT. 85 S.Y.

INSTALL TURFGRASS SOD  
STA. 101+86 TO 104+51, LT. (BIO-SWALE) 380 S.Y.  
STA. 100+14 TO 100+55.5, RT. 110 S.Y.

NOTE: FOR REPAIR OF EQUIPMENT ACCESS ROAD DISTURBANCE SEE GRAVEL PAVING REPAIR SECTION ON SHEET CO-2

DIVERSION BERM/SWALE CONSTRUCTION TO REPLACE GRASS CHANNEL NO. 4

GRASS CHANNEL NOT CONSTRUCTED

LEGEND

- HOT MIX ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- SOIL STABILIZATION MATTING
- MULCH
- TURFGRASS SOD
- CLASS I RIPRAP/GABION WEIR
- BORING LOCATION

BSB-1 SITE ANALYSIS DATA

- TAX MAP: 10 & 16
- PARCEL NO'S: 54, 253, 220 & 11
- ELECTION DISTRICT: 3
- ZONING: PEC
- AREA OF PROJECT: 3.04 AC.
- AREA OF WETLANDS: 0.0 AC.
- AREA OF WETLAND BUFFER: 0.0 AC.
- AREA OF FLOODPLAIN: 0.0 AC.
- AREA OF STREAM BUFFER: 0.0 AC.
- AREA OF STEEP SLOPES: 0.0 AC. (SITE PREVIOUSLY MASS GRADED)
- AREA OF FOREST: 0.0 AC.
- AREA OF DISTURBANCE: 3.04 AC.
- AREA OF NEW IMPERVIOUS: 0.87 AC.
- AREA OF REDEVELOPMENT: 0.02 AC.
- AREA OF IMPERVIOUS REMOVED: 0.0 AC.
- SITE HAS BEEN PREVIOUSLY MASS GRADED. ORIGINAL SOILS IN AREA ARE CHESTER, HYDROLOGIC CLASS B. BASED ON THE 1968 SOIL SURVEY FOR HOWARD COUNTY.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Charles S. Nolan, P.E. 3/14/12  
DATE

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS ARE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15212, EXPIRATION DATE: 12/24/2012.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Director of Public Works: [Signature] 3/15/12  
Chief, Bureau of Environmental Services: [Signature] 3/15/12

NOLAN Associates, Inc.  
Engineers - Civil/Structural/Inspections  
4785 Dorsey Hall Drive Suite 124  
Ellicott City, Maryland 21042  
Phone: (410) 995-3951 Fax: (410) 995-1963

DES:	GWF
DRN:	JRW
CHK:	
DATE:	MARCH 2012
BY:	NO.
REVISION:	
DATE:	

SITE DEVELOPMENT PLAN  
600' SCALE MAP NO. 16 BLOCK NO. 8

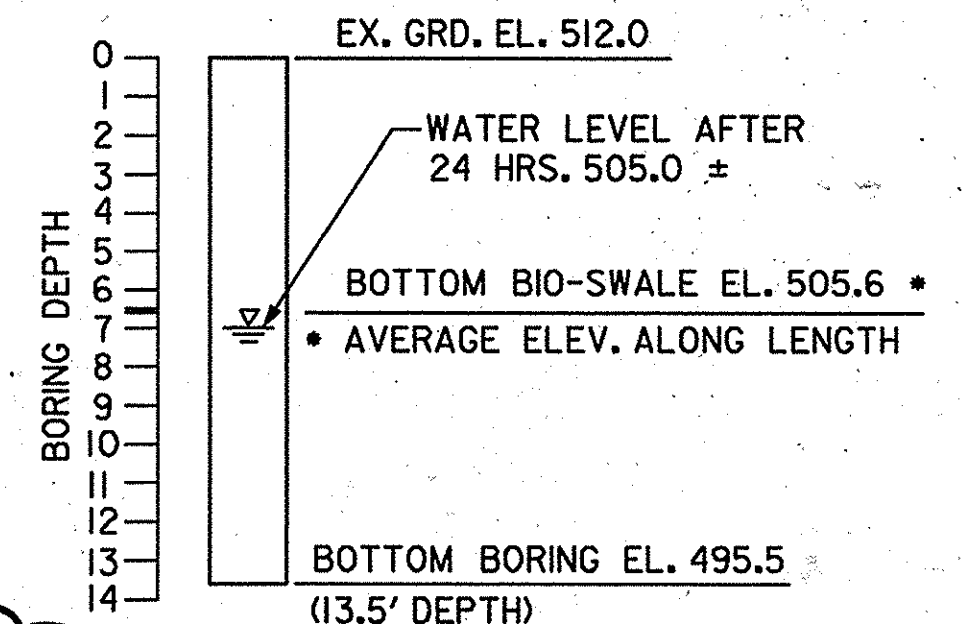
ALPHA RIDGE LANDFILL  
AERATED STATIC PILE COMPOST FACILITY  
CAPITAL PROJECT NO. C-0299  
TAX MAP 10 & 16, PARCEL NUMBERS 54, 253, 220 & 11  
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN  
SHEET 9 OF 9  
TOTAL OF 9

INSTALL HOT MIX ASPHALT CURB DIVERSION (HO. CO. DETAIL R-3.03)  
STA. 101+65.9 40' LT. TO 102+00, 30' LT. 36 L.F.

INSTALL GABION WEIR (BIO-SWALE)  
(SEE DETAILS, SHEET CO-4)  
STA. 100+94, 128' LT. 2 C.Y.  
STA. 104+41.5, 131.5' LT. 2 C.Y.

CONSTRUCT HOT MIX ASPHALT PAVEMENT SECTION  
(SEE PAVEMENT SECTION DETAIL, SHEET CO-2) 36,293 S.F.

CONSTRUCT CONCRETE PAVEMENT SECTION  
(SEE PAVEMENT SECTION LOCATION PLAN & DETAIL, SHEET CO-2) 420 S.F.



AS-BUILT INFORMATION SHOWN REFLECT FIELD CONDITION CHANGES AS APPROVED BY THE DEVELOPMENT ENGINEERING DIVISION (DED) BY EMAIL DATED JULY 18, 2013.

PURPOSE STATEMENT  
THE PURPOSE OF THIS REVISION TO SDP-97-128 IS TO INCORPORATE THE CONSTRUCTION OF THE AERATED STATIC PILE COMPOST FACILITY ON THE GROUNDS OF THE ALPHA RIDGE LANDFILL.

SUBDIVISION NAME	ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT / PARCEL	54, 253, 220, 11
LIBER / FOLIO	10-847636 16-878216 10-691314	ZONE	PEC
TAX / ZONE MAP			10 & 16
WATER CODE	PRIVATE, EXISTING	SEWER CODE	PRIVATE, EXISTING
CENSUS TR.			60-30

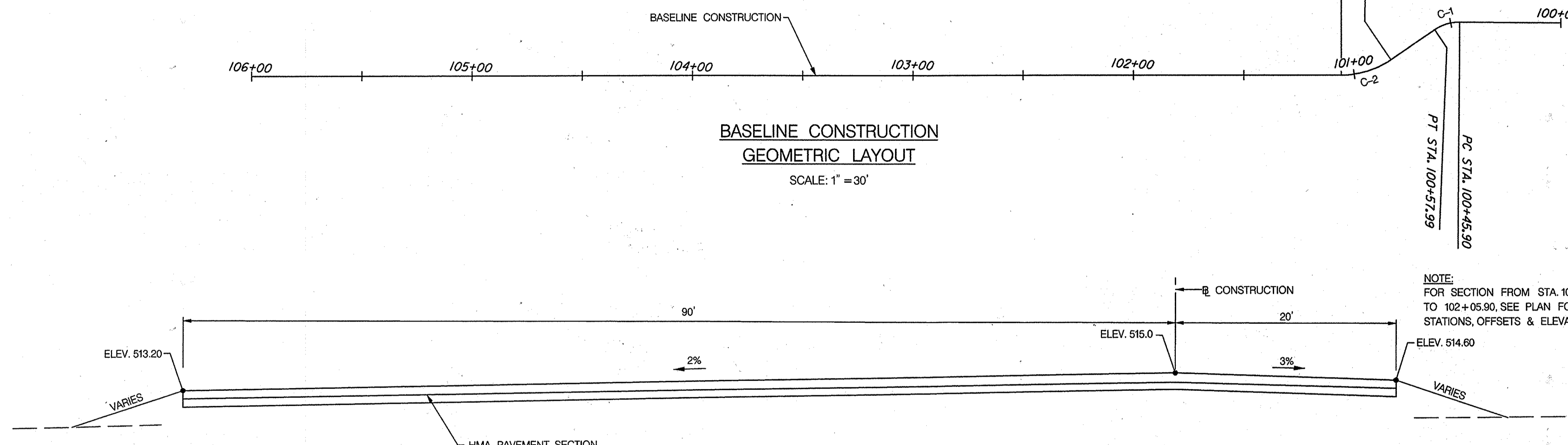
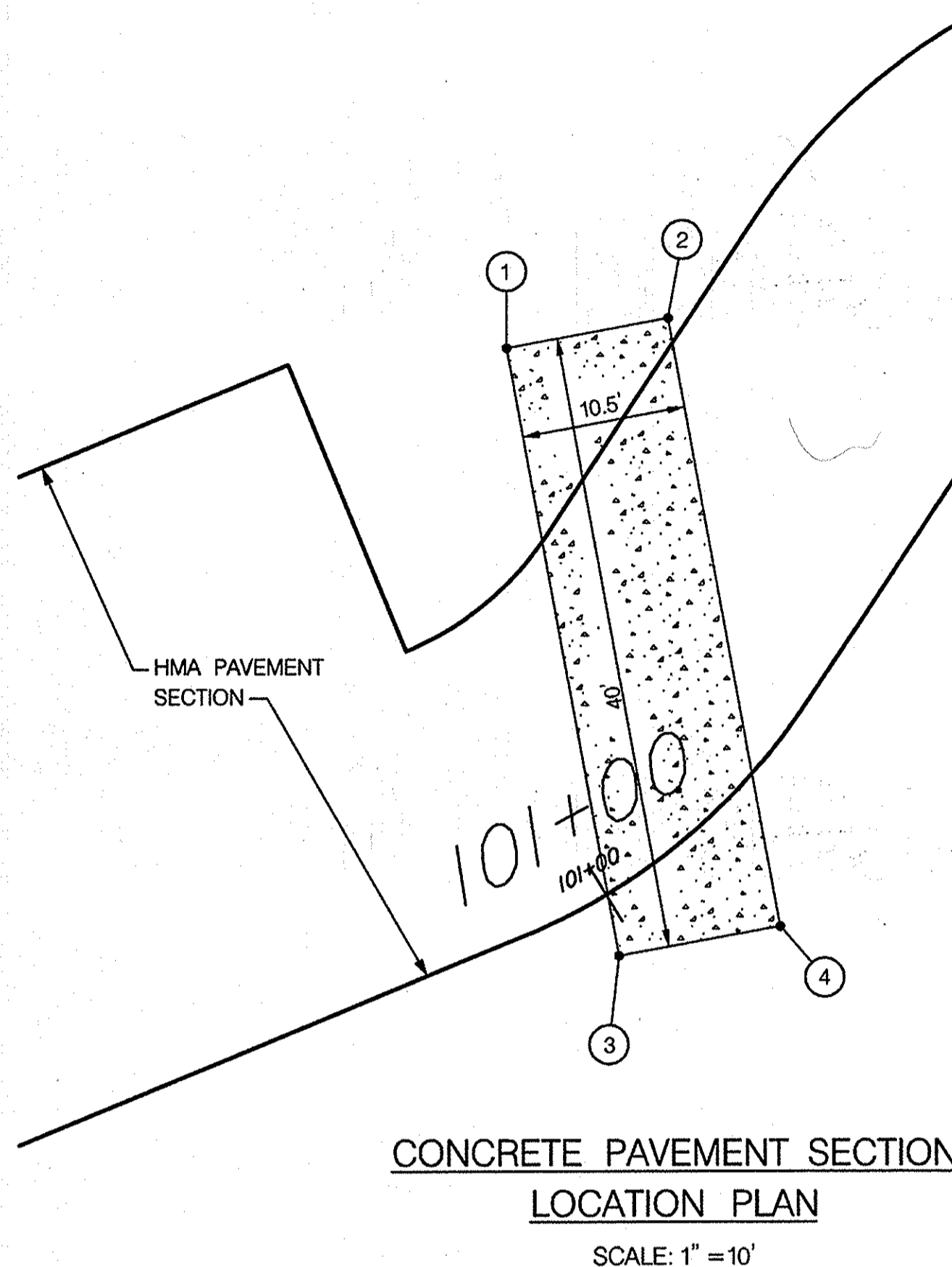
CONTROL POINT	STA.	OFFSET
①	100+27.3	39.7' LT.
②	100+26.1	29.2' LT.
③	100+28.1	18.4' LT.
④	100+37.8	10.9' LT.
⑤	100+46.5	10.2' LT.
⑥	100+62.3	13.5' LT.
⑦	100+76.6	21.3' LT.

PLAN SCALE: 1" = 30'

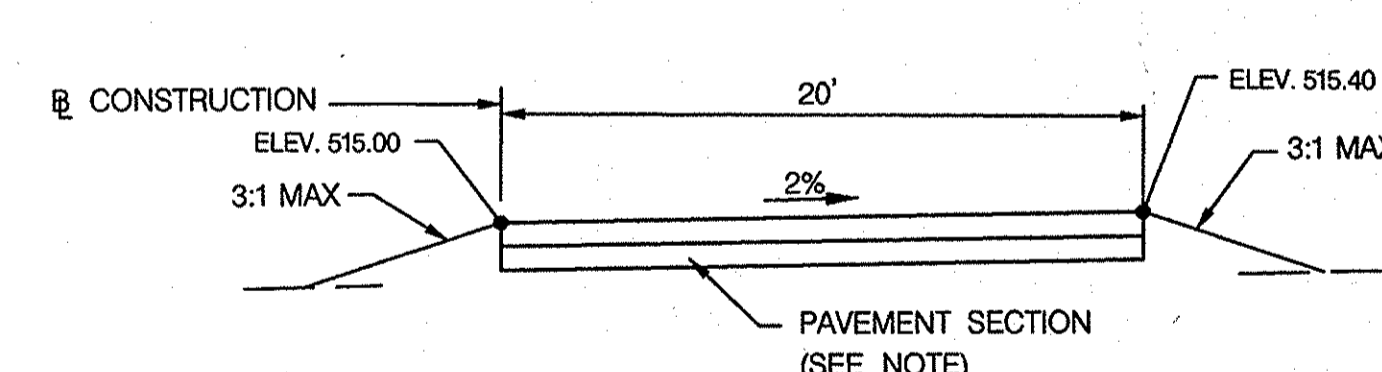
CONCRETE PAVEMENT SECTION DATA			
POINT	STATION	OFFSET	ELEVATION
1	100+73.41	28.77' RT.	515.50
2	100+66.08	21.11' RT.	515.60
3	101+22.00	3.83' LT.	514.72
4	100+92.87	8.29' LT.	514.50

BASELINE CONSTRUCTION CURVE DATA						
CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
C-1	34°37'40.56" LT	286°28'44.03'	20.00'	6.23'	12.09'	0.95'
C-2	34°10'18.37" RT	143°14'22.02'	40.00'	12.29'	23.86'	1.85'

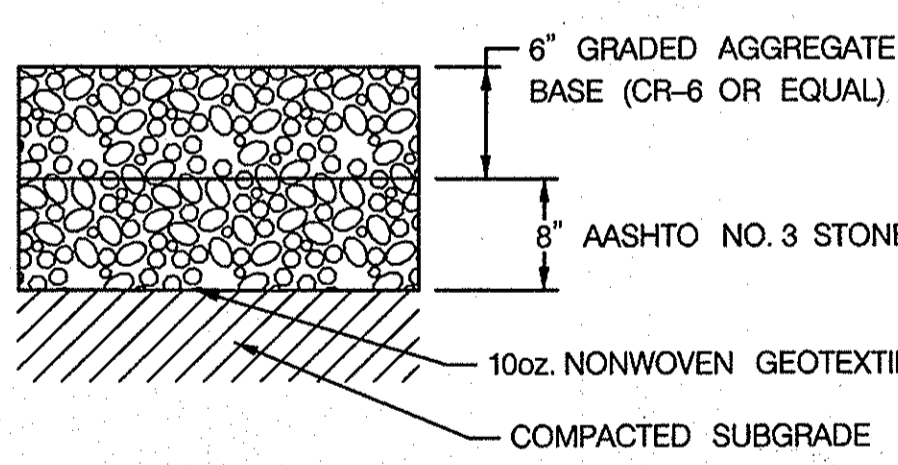
BASELINE CONSTRUCTION CONTROL COORDINATES		
STATION	NORTH	EAST
POB STA. 100+00.00	597,584.6477	1,337,829.7804
PC STA. 100+45.90	597,552.3041	1,337,797.2087
PT STA. 100+57.99	597,541.7822	1,337,791.6406
PC STA. 100+82.05	597,518.1336	1,337,787.2263
PT STA. 101+05.90	597,497.3152	1,337,776.3152
POE STA. 106+00	597,146.3855	1,337,428.4936



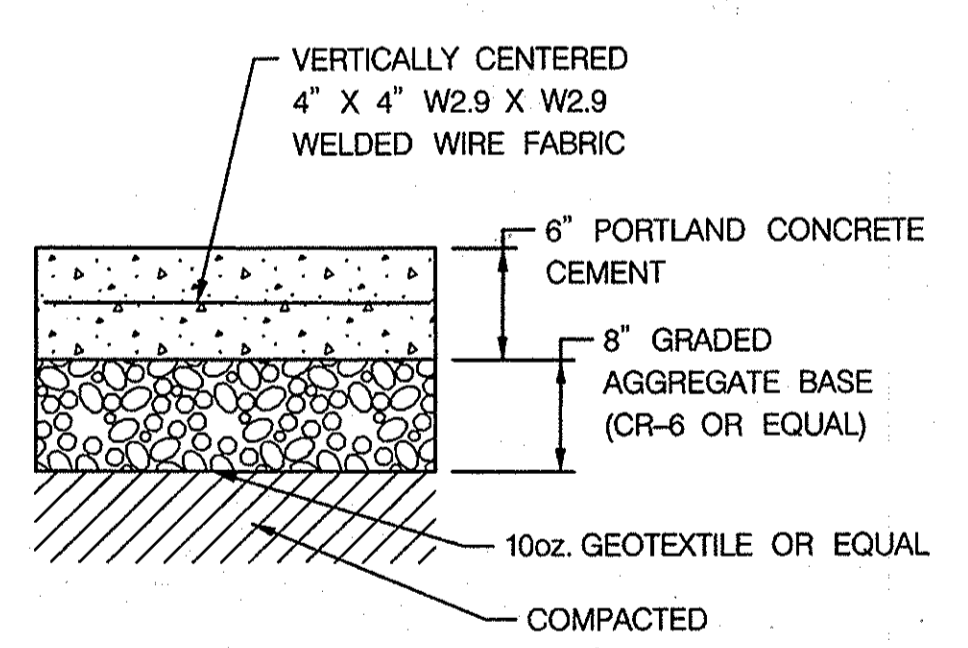
TYPICAL SECTION - FACILITY SLAB  
STA. 102+05.90 TO STA. 104+50.90  
NOT TO SCALE



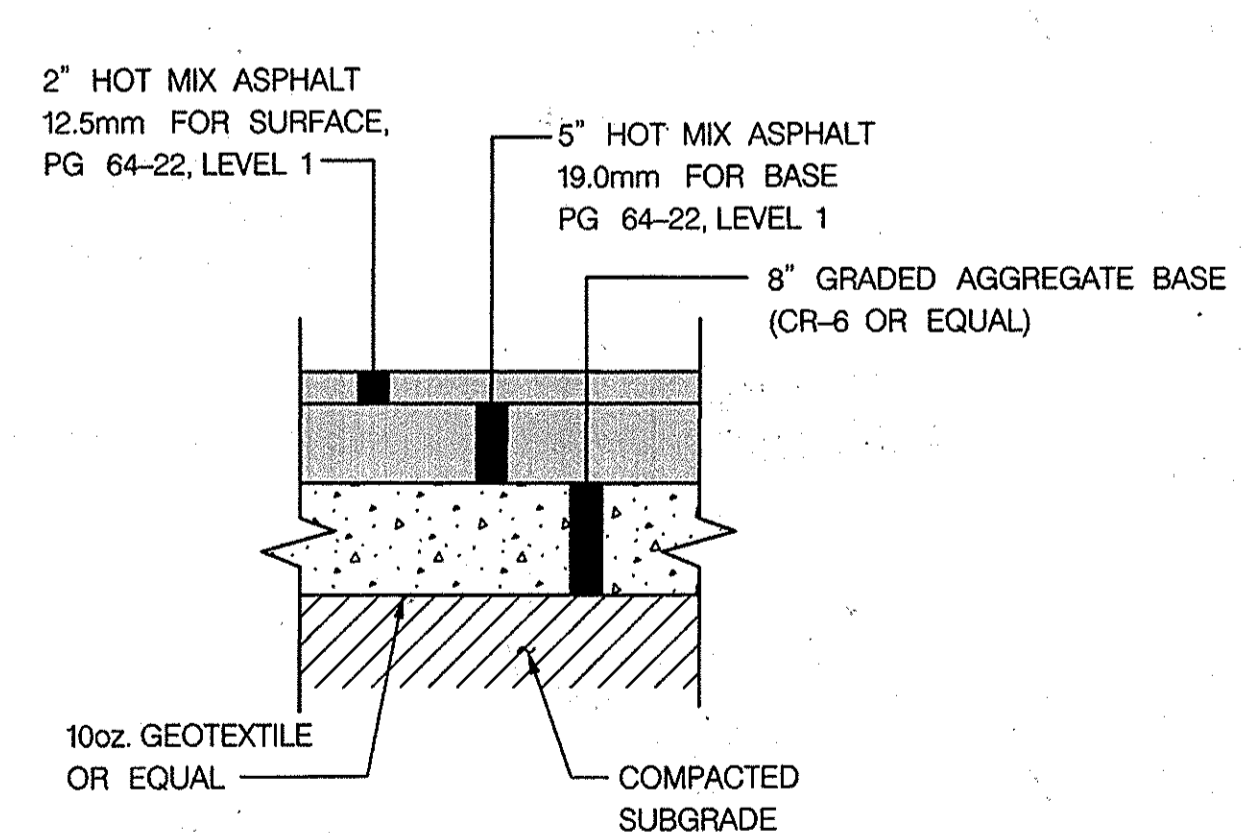
TYPICAL SECTION - ACCESS ROAD  
STA. 100+27.05 TO STA. 101+05.90  
NOT TO SCALE



GRAVEL PAVING REPAIR SECTION DETAIL  
NOT TO SCALE



CONCRETE PAVEMENT SECTION DETAIL  
NOT TO SCALE



HOT MIX ASPHALT PAVEMENT SECTION DETAIL  
NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Chad Edwards* 3-29-12  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Victor R. ...* 4-02-12  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Baruch ...* 3/15/12  
 DIRECTOR DATE

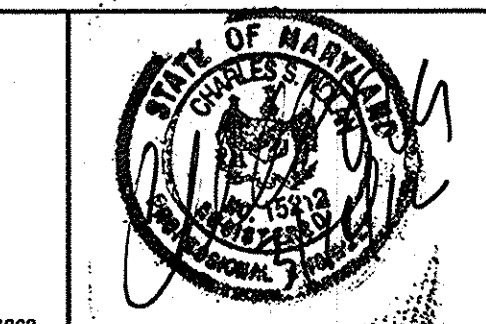
(FOR PROFESSIONAL CERTIFICATION SEE SHEET CO-1)

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT / PARCEL 54, 253, 220, 11	ZONE PEC	TAX / ZONE MAP 10 & 16
LIBER / FOLIO 10-847608 16-878215 10-891314	WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Evlyn E. ...* 3/15/12  
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

Engineers - Civil/Structural/Inspections  
 4785 Dorsey Hall Drive  
 Suite 124  
 Bellicott City, Maryland 21042  
 Phone: (410) 995-3851 Fax: (410) 995-1363



DES:	GWF			
DRN:	JRW			
CHK:				
DATE:	MARCH 2012	BY:	NO.	REVISION

MISCELLANEOUS DETAILS

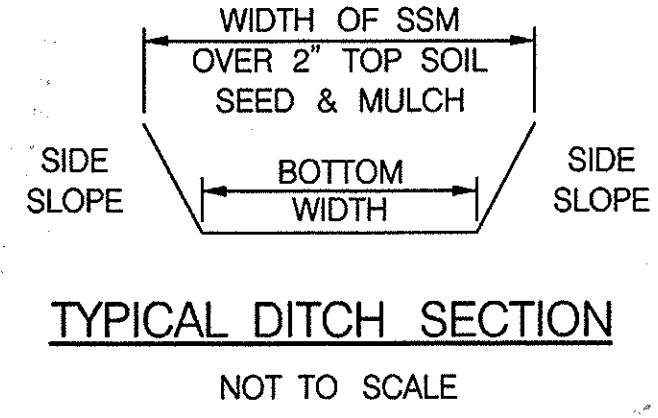
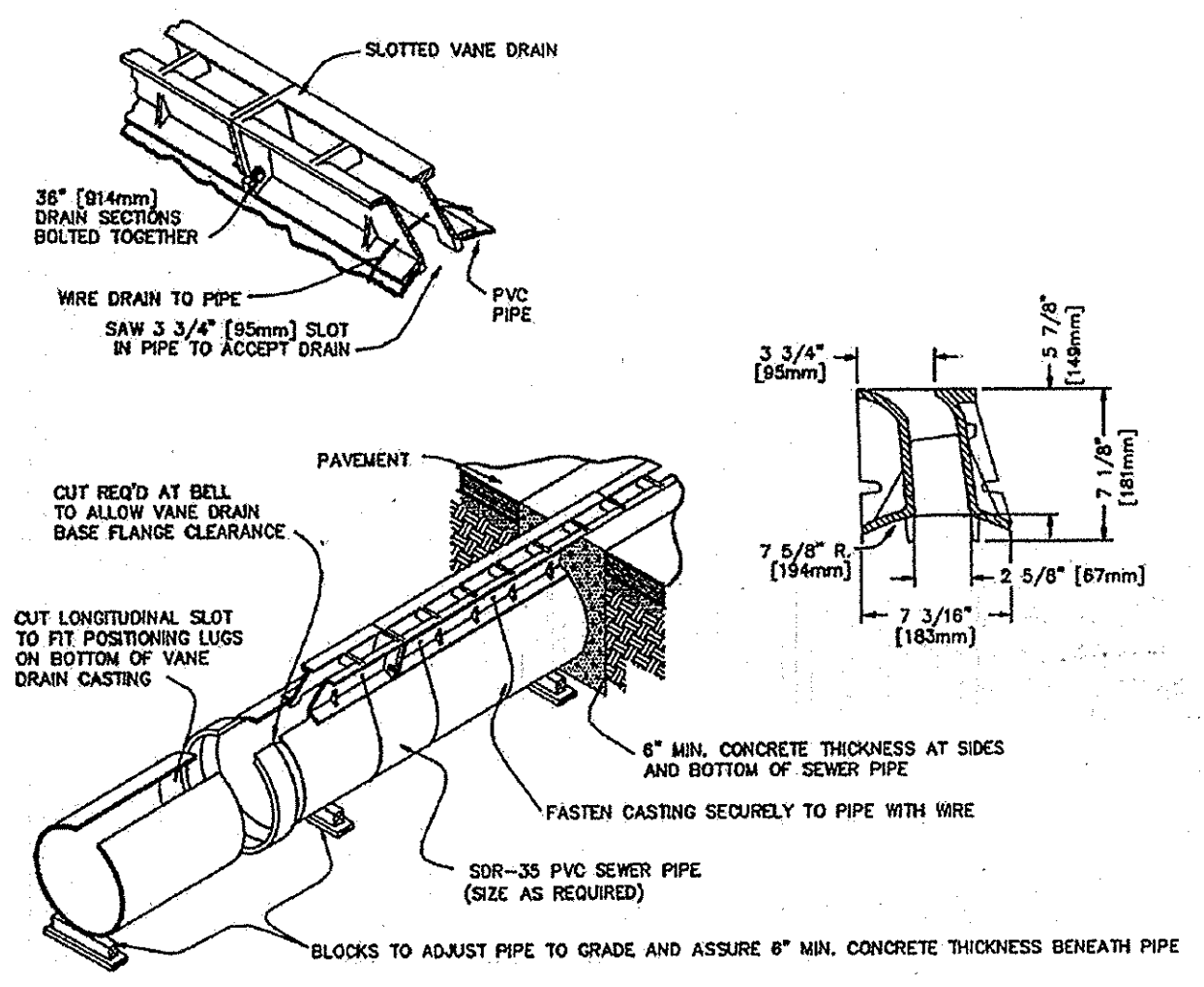
600' SCALE MAP NO. 16 BLOCK NO. 2

ALPHA RIDGE LANDFILL  
AERATED STATIC PILE COMPOST FACILITY  
CAPITAL PROJECT NO. C-0299  
TAX MAP 10 & 16. PARCEL NUMBERS 54, 253, 220 & 11  
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

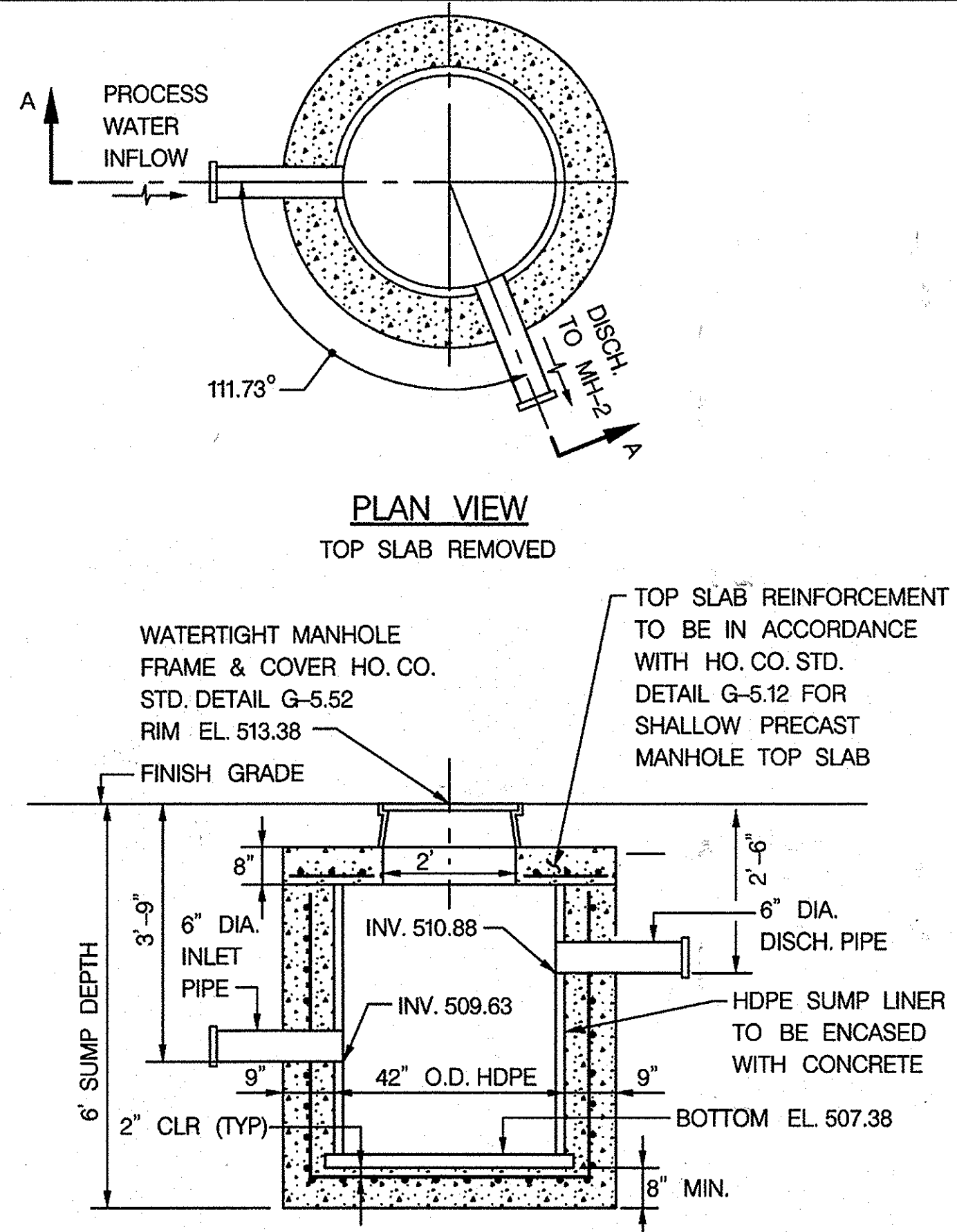
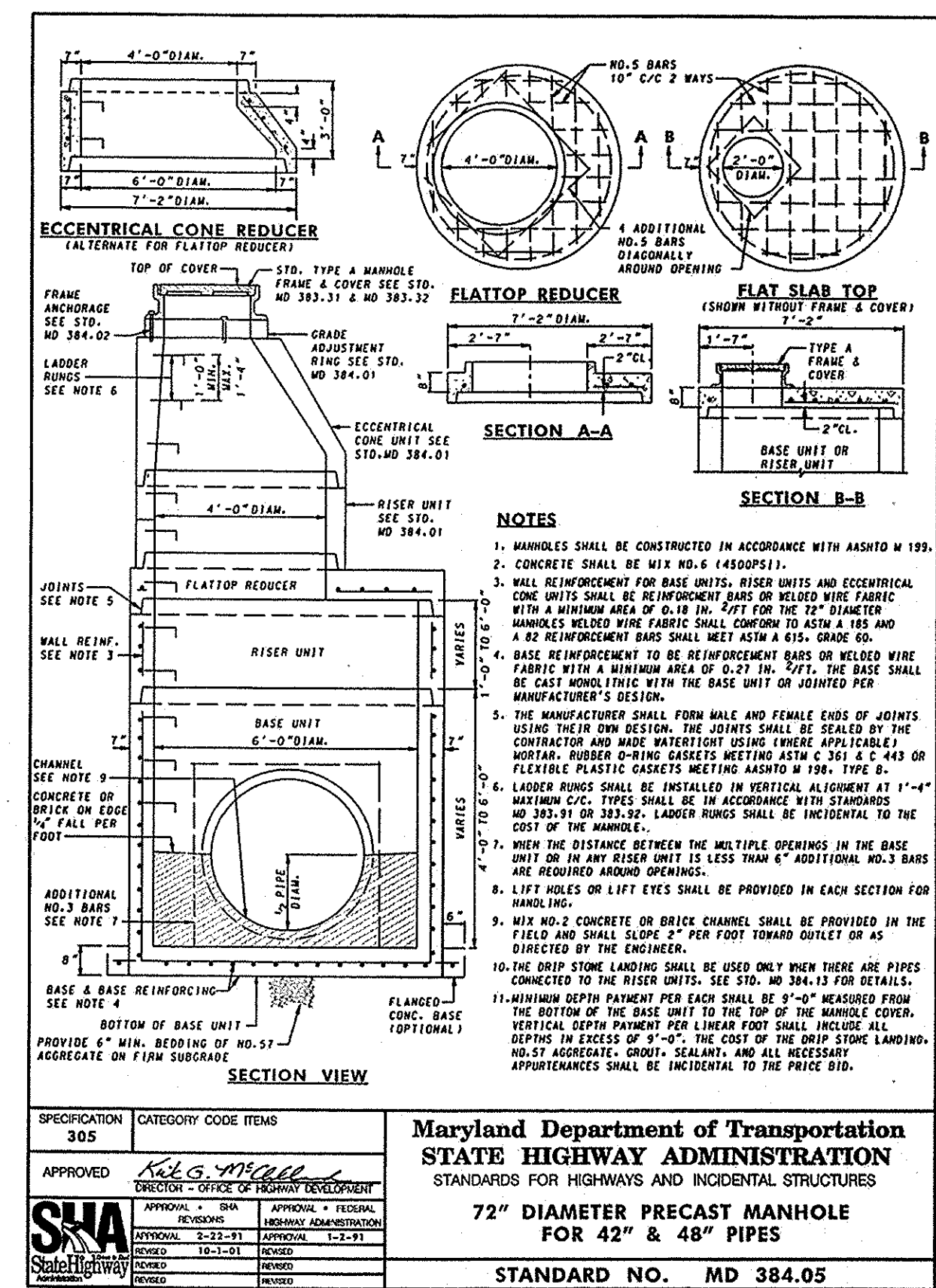
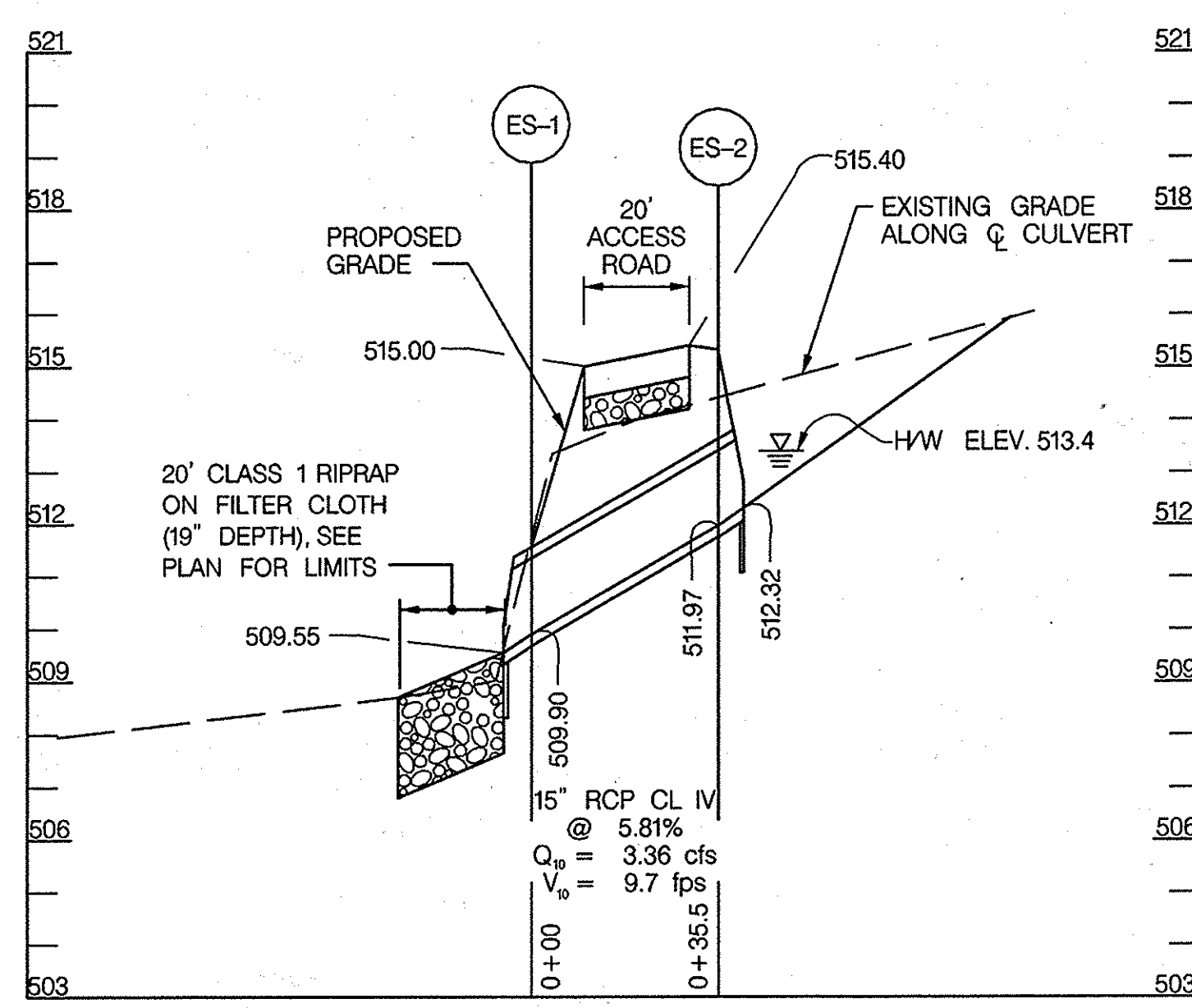
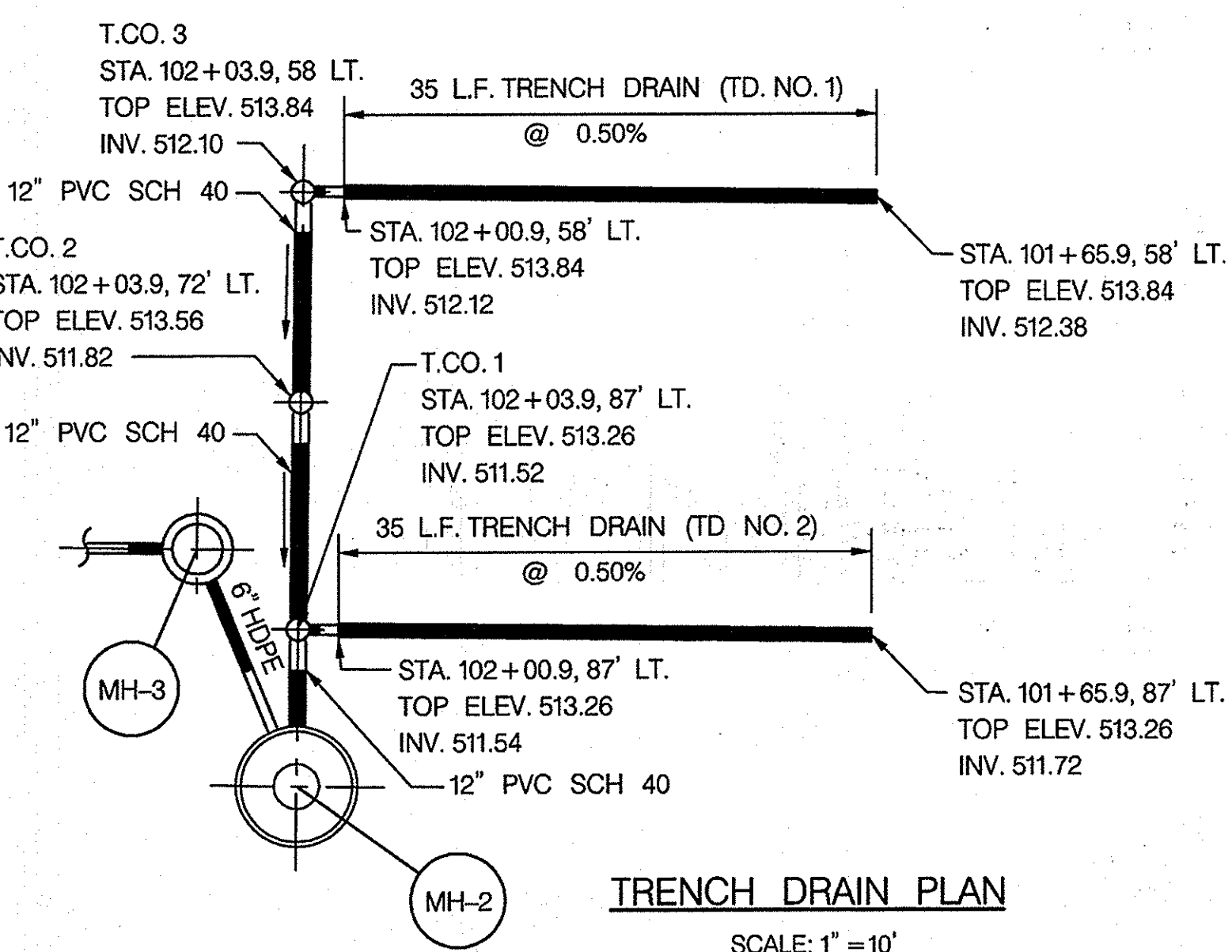
SCALE: AS SHOWN

54-97  
SHEET  
CO-2 OF 9  
TOTAL OF 31

GRASS CHANNEL SCHEDULE						
GRASS CHANNEL	BOTTOM WIDTH	SIDE SLOPES	Q <sub>10</sub> (cfs)	V <sub>10</sub> (cfs)	FLOW DEPTH (ft)	WIDTH OF SSM
NO. 1	7 ft	3:1	0.3	0.6	0.1	13'
NO. 2	4 ft	3:1	0.3	0.7	0.1	10'
NO. 3	12 ft	3:1 (MAX)	2.2	0.9	0.2	18'
NO. 4	4 ft	3:1	3.1	1.3	0.5	10'
NO. 5	12 ft	3:1 (MAX)	5.1	1.3	0.3	18'



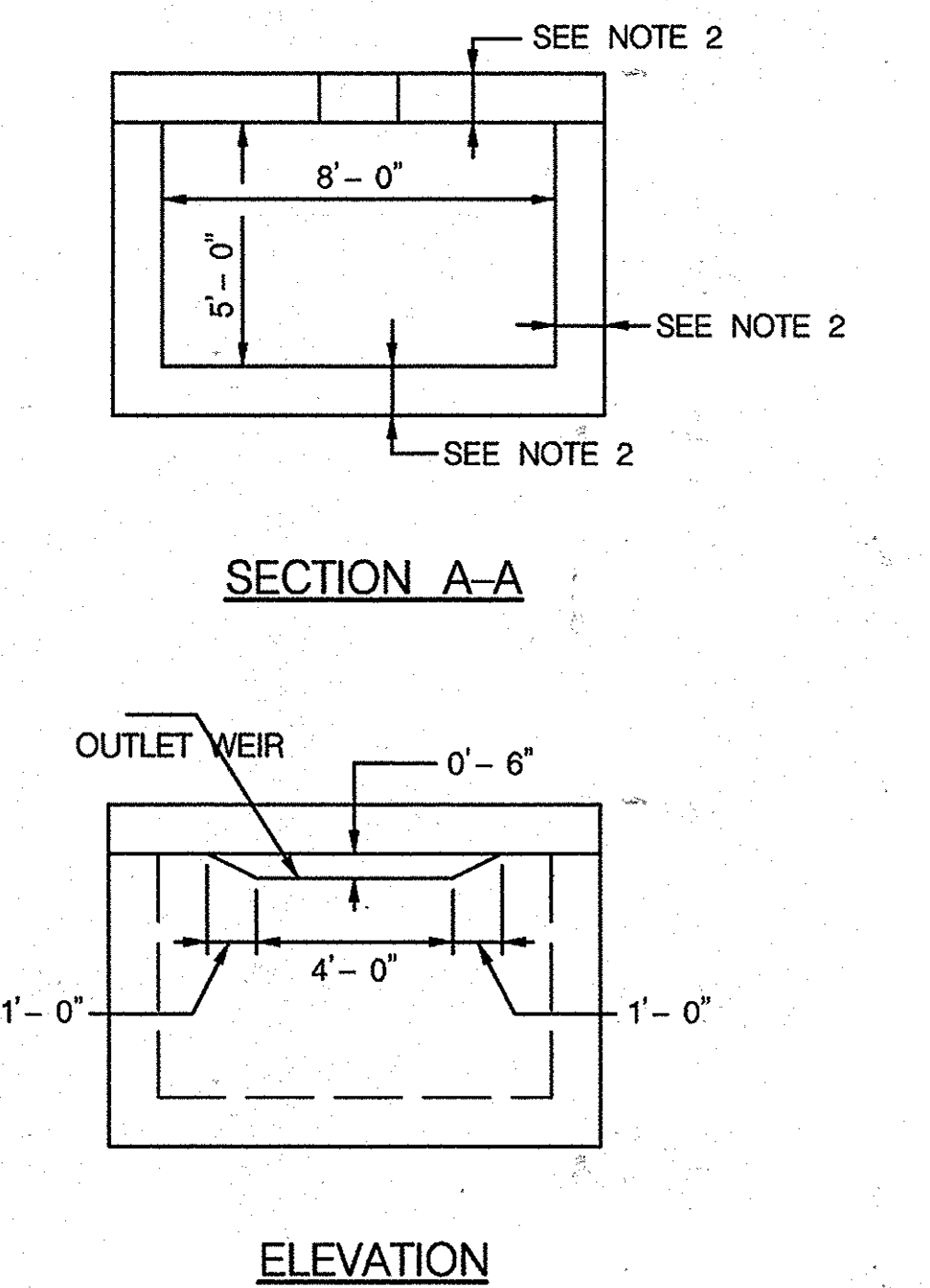
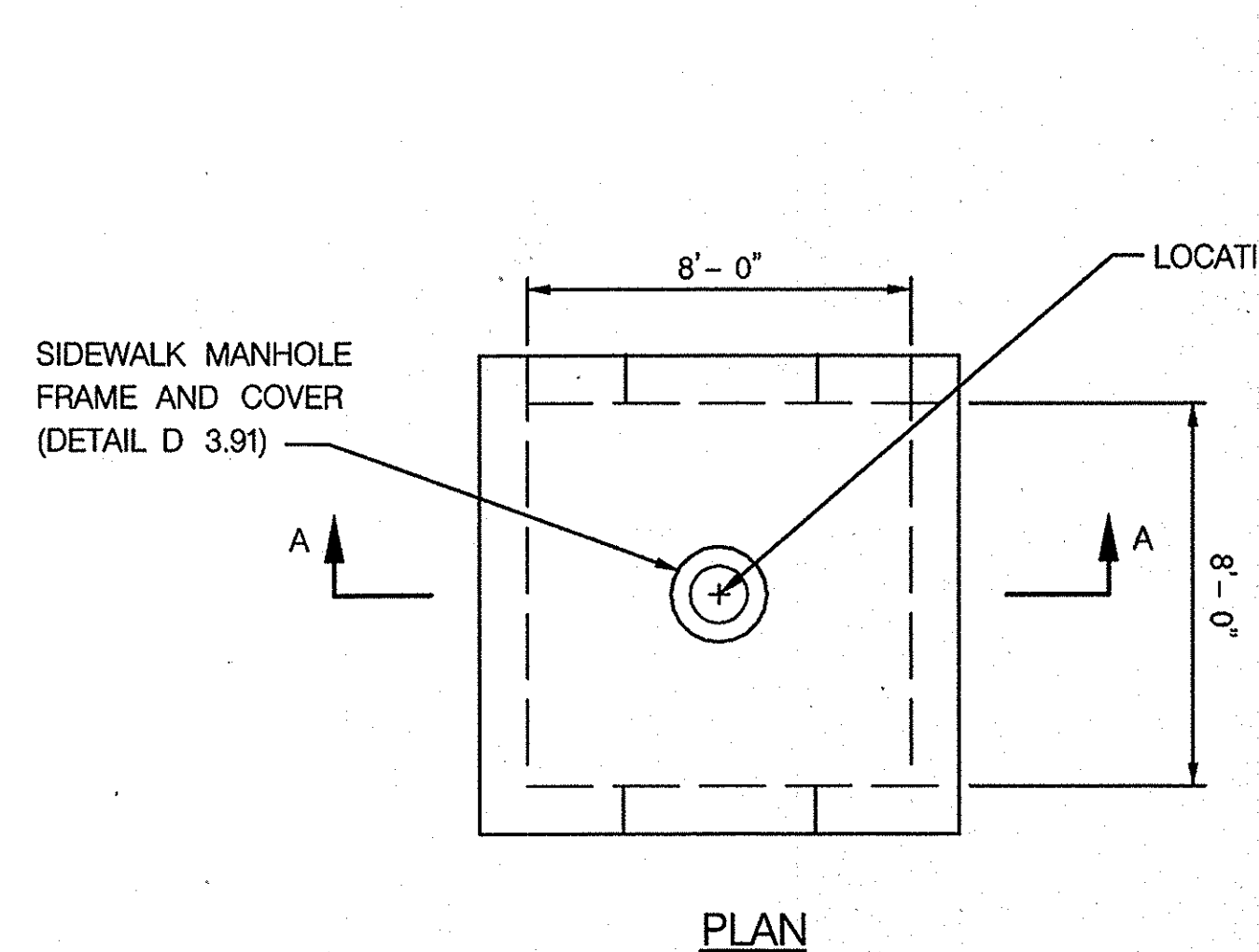
- NOTES:
- TRENCH DRAIN TO BE NEENAH FOUNDRY TYPE R-3599-A OR APPROVED EQUAL.
  - PIPE SIZE TO BE 12-INCH PVC SCH 40.



DRAINAGE PIPE SCHEDULE				
FROM STRUCT.	TO STRUCT.	SIZE (IN.)	TYPE	LENGTH (FT.)
MH-1	OUTFALL	6"	PVC SCH 40 *	97'
MH-1	BIO-SWALE	6"	PVC SCH 40 *	40'
BIO-SWALE	CO-1	6"	PERF. PVC SCH 40	35'
CO-1	CO-2	6"	PERF. PVC SCH 40	100'
CO-2	CO-3	6"	PERF. PVC SCH 40	100'
ES-1	ES-2	15"	RCCP CL IV	36'
MH-3	MH-2	6"	HDPE	30'

DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP EL.	STD. NO.
MH-1	PRECAST MANHOLE	STA. 101+69.01, 117' LT.	505.04	504.94	511.50	G - 5.12
ES-1	15" CONCRETE END SECTION	STA. 100+39.3, 10' LT.	509.90	509.55	---	D - 5.51
ES-2	15" CONCRETE END SECTION	STA. 100+30.8, 24' LT.	512.32	511.97	---	D - 5.51
CO-1	CLEAN OUT	STA. 102+43.3, 117.5' LT.	---	506.42	509.5	SEE DETAIL
CO-2	CLEAN OUT	STA. 103+43.3, 117.5' LT.	---	505.92	509.5	SEE DETAIL
CO-3	CLEAN OUT	STA. 104+43.3, 117.5' LT.	---	505.42	509.5	SEE DETAIL
CISTERN	SEE DETAIL	STA. 101+62.9, 100' LT.	---	---	512.0	SEE DETAIL
MH-2	72" DIA. PRECAST MANHOLE	STA. 102+03.9, 97.5' LT.	510.45 (6") 509.95 (12")	504.45 (1)	512.45	MD SHA STD. NO. MD 384.05
MH-3	POURED IN PLACE MANHOLE	STA. 102+10.75, 80.75' LT.	509.63	510.88	513.38	SEE DETAIL (2)

- (1) BOTTOM OF MANHOLE ELEVATION & 4" PVC INV. OUT ELEVATION. MANHOLE MH-2 TO ALSO BE USED AS HOLDING / STORAGE FACILITY FOR TRENCH DRAIN / PROCESS WATER DRAINAGE SYSTEMS.
- (2) INLET TO BE CAST IN PLACE AROUND PROCESS WATER HDPE SUMP LINER (TO BE SUPPLIED BY OTHERS).



- NOTES:
- CISTERN TO BE USED AS HOLDING TANK FOR STORMWATER RUNOFF TO BE USED FOR COMPOST FACILITY IRRIGATION PURPOSES.
  - WALL THICKNESS SHOWN AS 1'-0" FOR INFORMATIONAL PURPOSES. CISTERN TO BE PRE-CAST WITH THICKNESS AND REINFORCEMENT DETERMINED BY PRE-CAST MANUFACTURER.

CISTERN DETAILS  
SCALE 1/4" = 1'-0"

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Ch. Chapman* 3-29-12  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Katrina Duda* 4-02-12  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

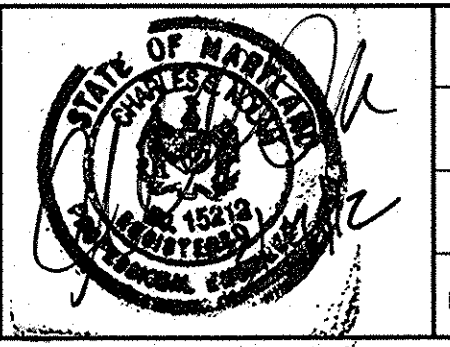
*Mark A. Wynn* 4/16/12  
DIRECTOR DATE

(FOR PROFESSIONAL CERTIFICATION SEE SHEET CO-1)

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Evelyn E. Joubert* 3/15/12  
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

**NOLAN**  
Associates, Inc.  
Engineers - Civil/Structural/Inspections  
4785 Dorsey Hall Drive  
Suite 124  
Ellicott City, Maryland 21042



DES:	GWF				
DRN:	JRW				
CHK:					
DATE:	MARCH 2012	BY:	NO.	REVISION	DATE

600' SCALE MAP NO. 16 BLOCK NO. 8

ALPHA RIDGE LANDFILL  
AERATED STATIC PILE COMPOST FACILITY  
CAPITAL PROJECT NO. C-0299  
TAX MAP 10 & 16, PARCEL NUMBERS 54, 253, 220 & 11  
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
SHEET 00-3 OF 9  
TOTAL OF 9

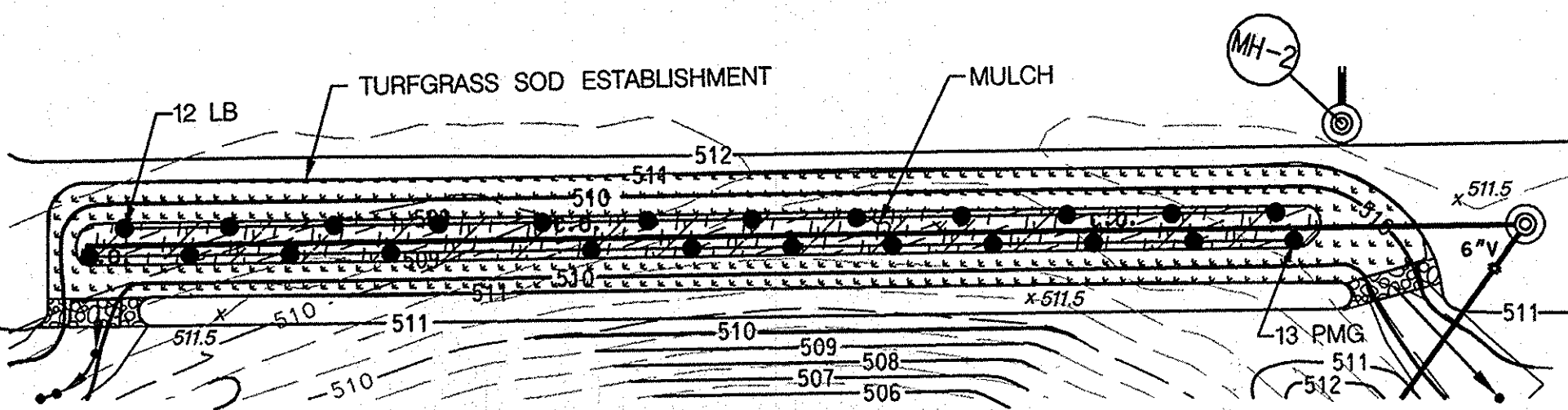


**BIO-SWALE SPECIFICATIONS**

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTING SOIL ORGANIC CONTENT	LOAMY SAND (60 - 65%) & COMPOST (35 - 40%) OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%) MIN. 10% BY DRY WEIGHT (ASTM D 2974)		USDA SOIL TYPES LOAMY SAND OR SANDY LOAM; CLAY CONTENT < 5%
MULCH	SHREDDED HARDWOOD	3" DEPTH	AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS
GEOTEXTILE			PE TYPE 1 NONWOVEN
AGGREGATE	AASHTO M-43	NO. 57 OR NO. 7 AGGREGATE	
PEA GRAVEL	ASTM-D-448	NO. 6 OR 2" TO 5" STONE	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-728	6" RIGID SCHEDULE 40 PVC OR SDR35	SLOTTED OR PERFORATED PIPE; 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 4" OF GRAVEL OVER PIPES AND UNDERNEATH PIPE. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4"-INCH GALVANIZED HARDWARE CLOTH
TURFGRASS SOD ESTABLISHMENT	REFER TO SECTION 708 OF THE SPECIFICATIONS		

**OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION SWALE**

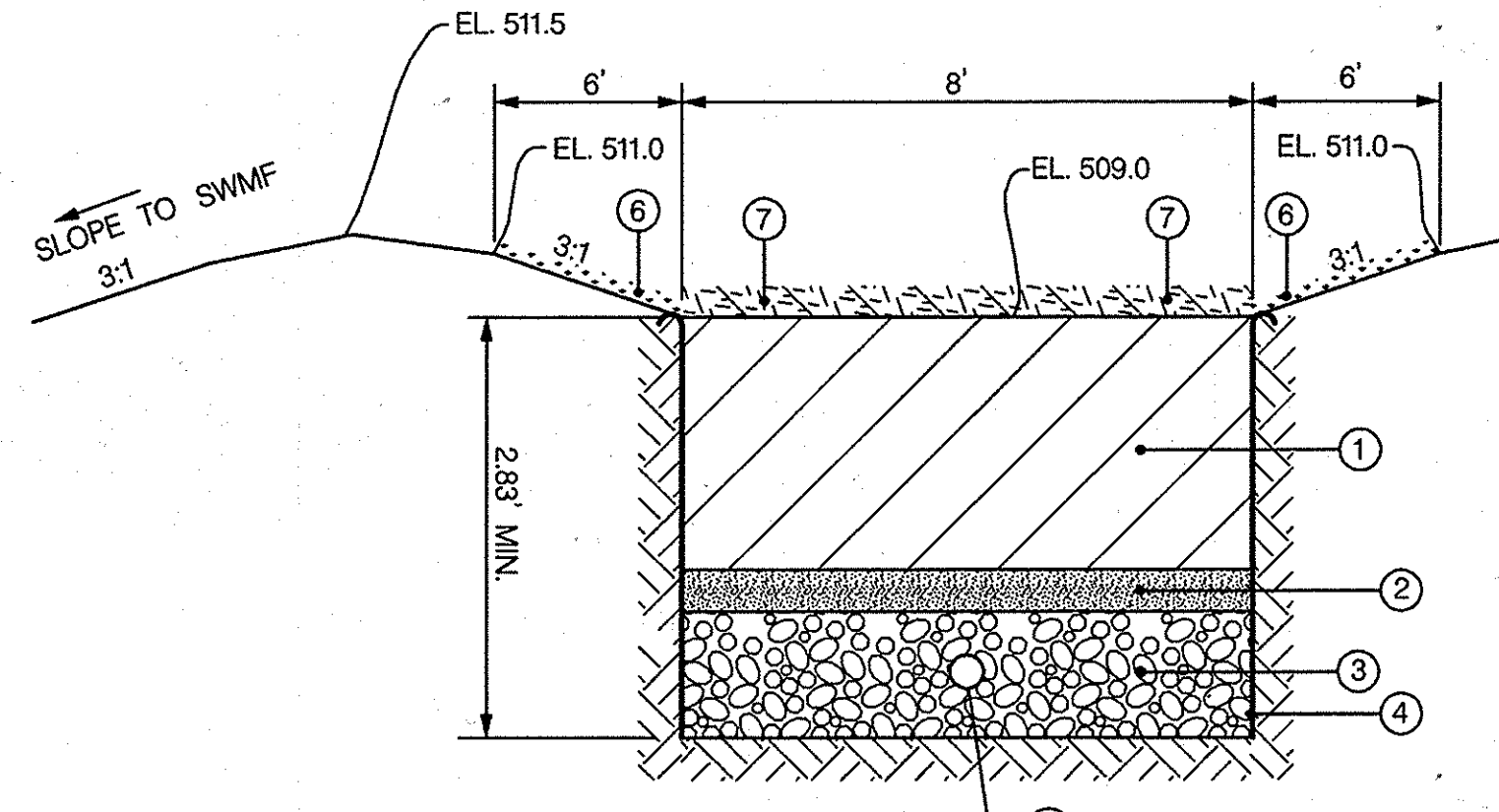
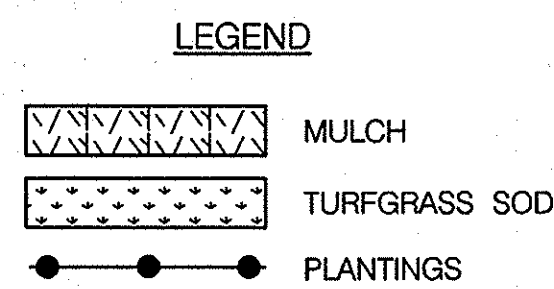
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTION AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.



**BIO-SWALE PLANTING PLAN**  
SCALE: 1" = 30'

**BIO-SWALE PLANTING LIST**

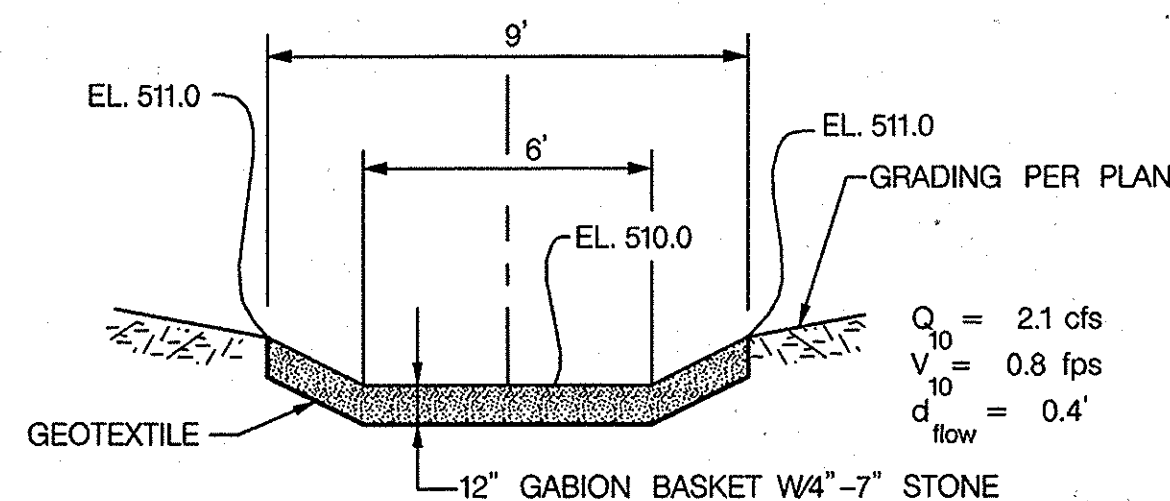
SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	NUMBER
LB	ANDROPOGON GLOMERATUS	LITTLE BLUESTEM	GALLON	12
PMG	MUHLENBERGIA GLOMERATA	PINK MUHLYGRASS	GALLON	13



**BIO-SWALE SECTION**  
NOT TO SCALE

**LEGEND**

- 1'-6" BIORETENTION SOIL MIXTURE
- 4-INCH PEA GRAVEL
- 1-FOOT NO. 57 AGGREGATE (MIN.)
- GEOTEXTILE, PE TYPE 1 NONWOVEN (ON SIDES AND BOTTOM)
- 6" INCH PERF. UNDERDRAIN, WRAP WITH HARDWARE MESH
- TURFGRASS SOD ESTABLISHMENT
- MULCH, 3" DEPTH WITH BIO-SWALE PLANTINGS

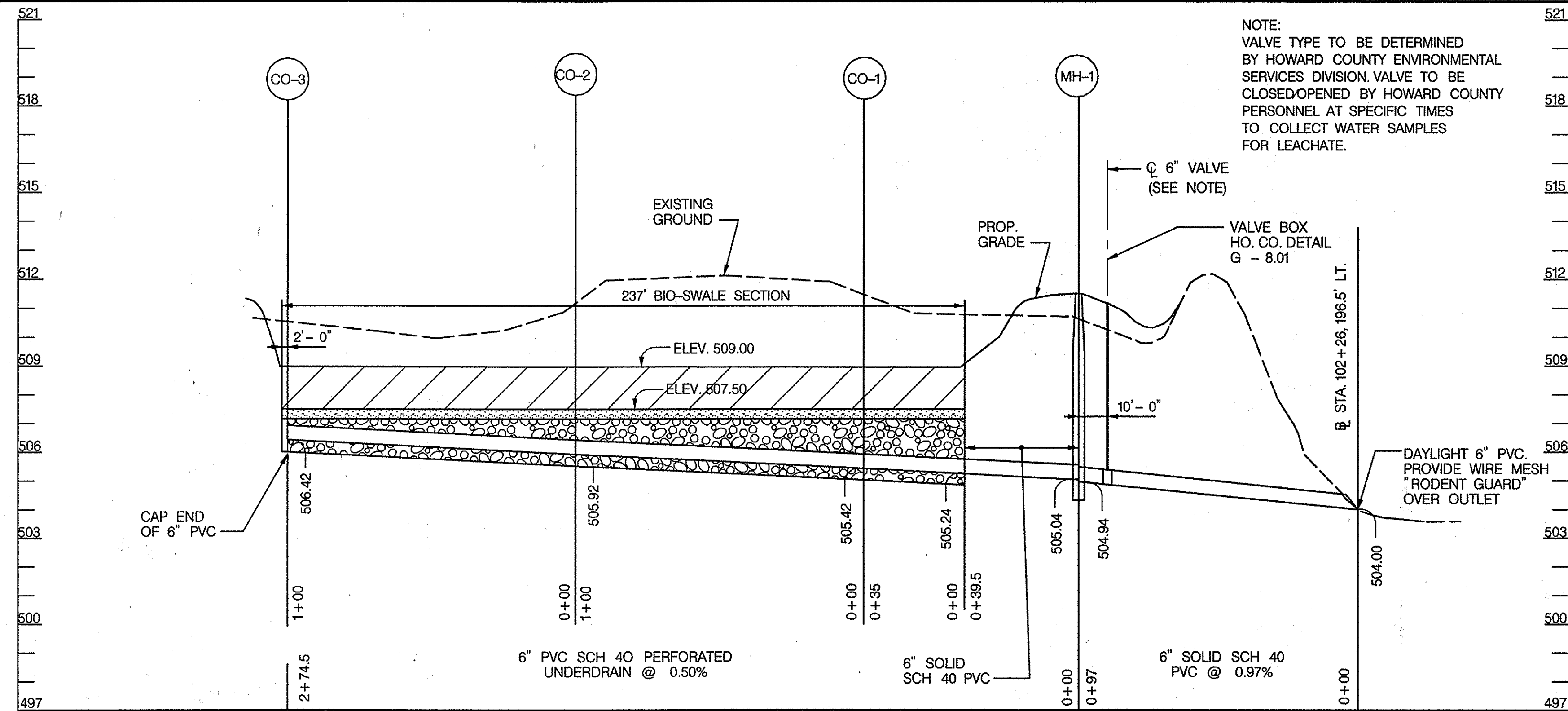


NOTE: SEE SCS DETAIL 6 FOR ADDITIONAL INFORMATION

**SECTION A-A**

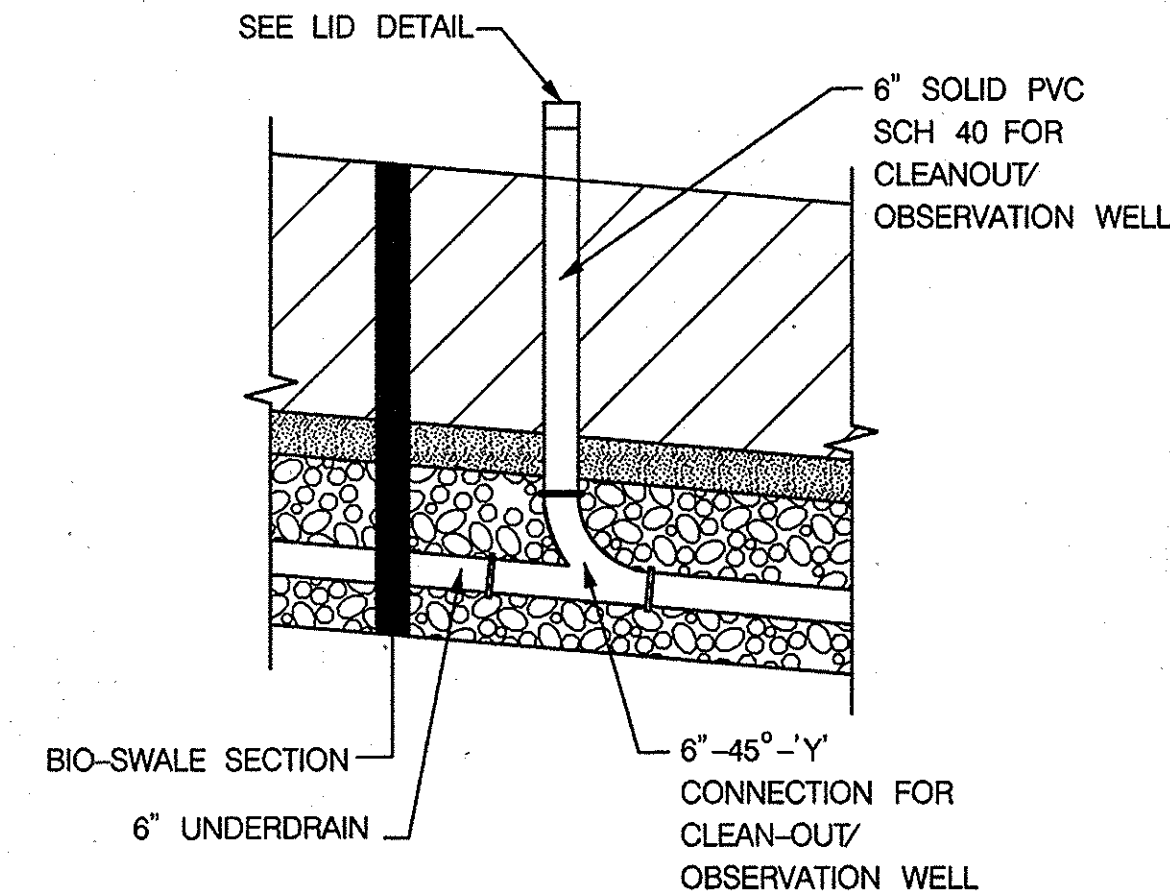
**BIO-SWALE FACILITY OUTLET WEIR DETAIL**

NOT TO SCALE



**PROFILE ALONG BIO-SWALE AND OUTLET PIPE**

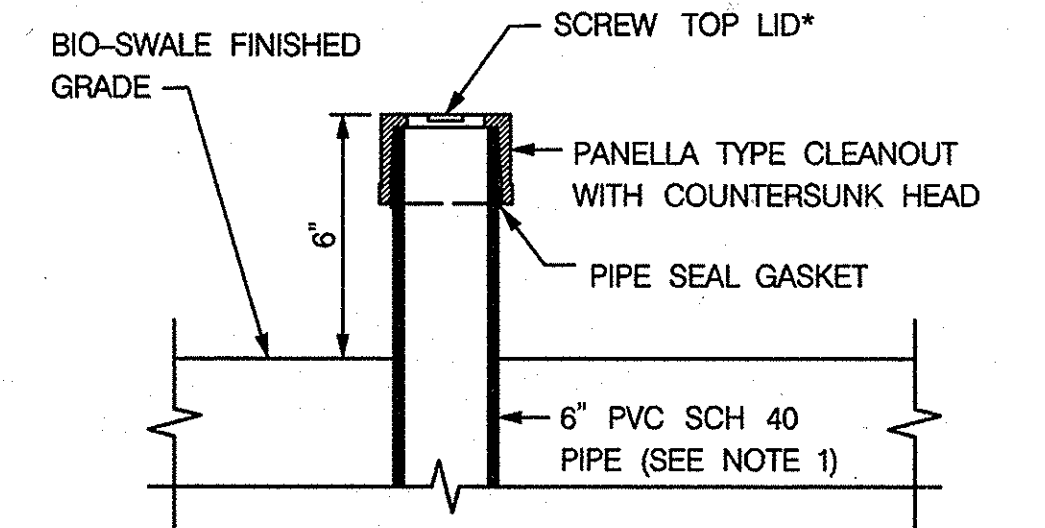
SCALE: HORIZ. 1" = 30'  
VERT. 1" = 3'



NOTE: BIO-SWALE CLEAN-OUT/OBSERVATION WELL SHALL BE INCIDENTAL TO THE UNIT COST OF BIO-SWALE PAY ITEM.

**BIO-SWALE CLEANOUT/OBSERVATION WELL DETAIL**

NOT TO SCALE



\*ABOVE DETAIL PROVIDED AS SCHEMATIC SCREW TOP PVC WELL CAP ONLY. SEE NOTE 2

**BIO-SWALE CLEANOUT/OBSERVATION WELL LID DETAIL**

NOT TO SCALE

**NOTES:**

- THE TUBE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRA-VIOLET RAYS.
- FOR LOCATION, SEE DRAINAGE STRUCTURE SCHEDULE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 3-29-12  
  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 4-02-12  
  
 DIRECTOR  
 DATE: 4/16/12

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES  
 DATE: 2/15/12

Engineers - Civil/Structural/Inspections  
 4785 Dorsey Hall Drive  
 Suite 124  
 Bellicott City, Maryland 21042  
 Phone: (410) 995-9851 Fax: (410) 995-1363



DES:	GWF			
DRN:	JRW			
CHK:				
DATE:	MARCH 2012	BY:	NO.	REVISION
				DATE

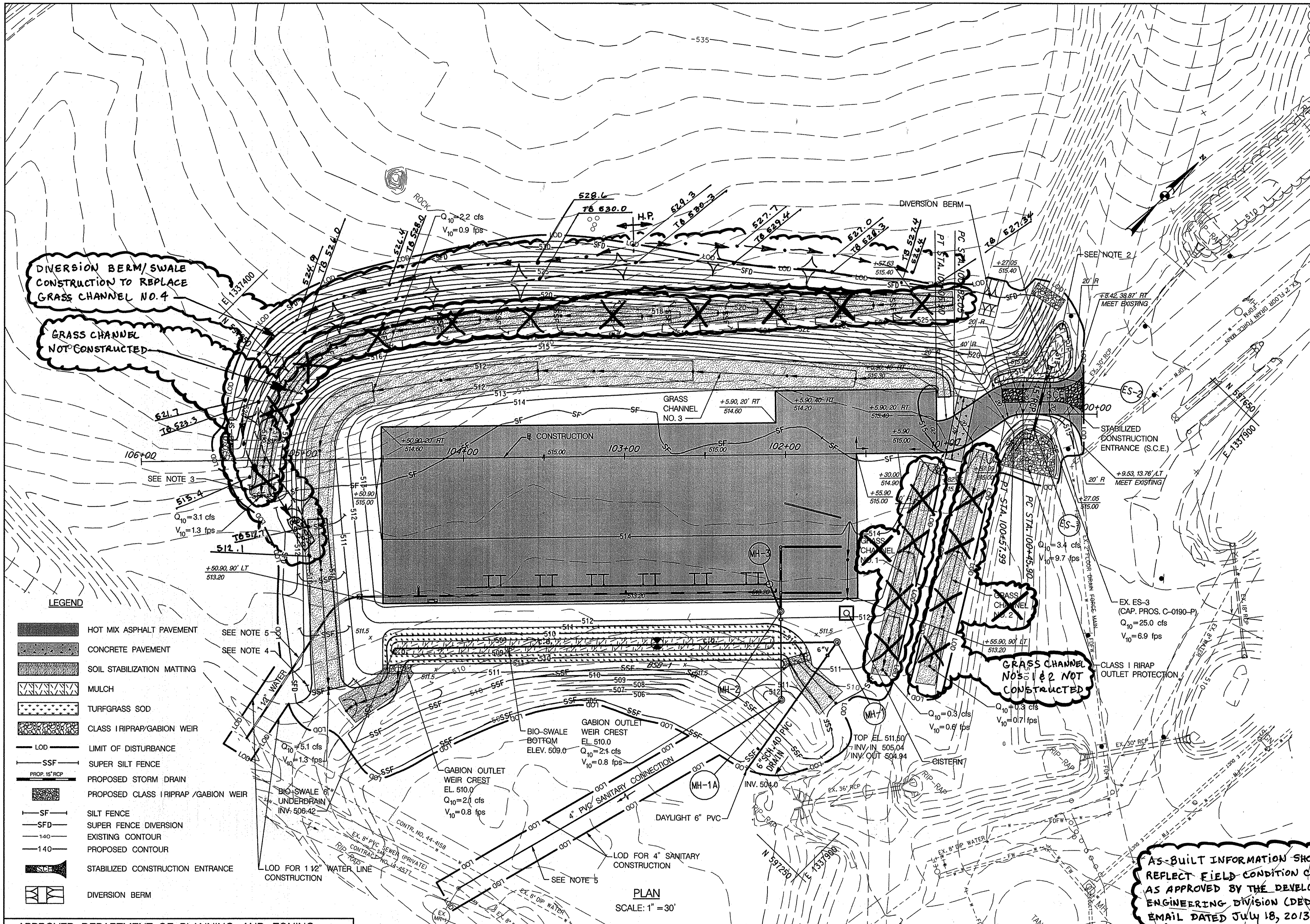
**BIO-SWALE DETAILS**

600' SCALE MAP NO. 16 BLOCK NO. 8

ALPHA RIDGE LANDFILL  
AERATED STATIC PILE COMPOST FACILITY  
CAPITAL PROJECT NO. C-0299

TAX MAP 10 & 16, PARCEL NUMBERS 54, 253, 220 & 11  
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
5/1/99 SHEET  
CO-4 OF 9  
TOTAL OF 13



INSTALL SILT FENCE		
STA. 100+15 TO 100+76.5, LT.	75 L.F.	
STA. 100+24 TO 100+78, LT.	75 L.F.	
STA. 100+80 TO 101+10, LT.	155 L.F.	
STA. 101+03 TO 105+22, LT.	460 L.F.	

INSTALL SUPER FENCE DIVERSION		
STA. 100+42 TO 100+49, RT.	18 L.F.	
STA. 100+51 TO 105+44, RT.	550 L.F.	
STA. 104+94 TO 105+18, LT.	140 L.F.	

INSTALL SUPER SILT FENCE		
STA. 101+45 TO 104+68, LT.	420 L.F.	
STA. 102+27 TO 104+62, LT.	260 L.F.	

INSTALL RIPRAP SLOPE (INFLOW) PROTECTION		
STA. 100+27 TO 100+42, RT.	18 S.Y.	
STA. 105+44 TO 105+52, RT.	14 S.Y.	

INSTALL STABILIZED CONSTRUCTION ENTRANCE		
STA. 100+09 TO 100+54, RT.	40 TON	

CONSTRUCT DIVERSION BERM		
STA. 100+49 TO 100+51, RT.		SEE DETAIL, SHEET CO-6

- NOTES:**
- NO STOCKPILING OF MATERIAL WILL BE PERMITTED WITHIN THE LIMITS OF THIS PROJECT.
  - AREA TO BE STABILIZED WITH TURFGRASS SOD. REFER TO SITE DEVELOPMENT PLAN FOR LIMITS AND QUANTITY.
  - INSTALL SSF (25' LONG SECTIONS) AT INTERVALS OF 35' ALONG GRASS CHANNEL AS INDICATED (350 L.F. TOTAL).
  - INSTALL SSF (35' LONG SECTIONS) AT INTERVALS OF 35' ALONG GRASS CHANNEL AS INDICATED (140 L.F. TOTAL).
  - FOR CONSTRUCTION OF WATER LINE AND SANITARY SEWER CONNECTION CONTRACTOR SHALL LIMIT THE AMOUNT OF CONSTRUCTION THAT CAN BE BACKED FILLED AND STABILIZED WITHIN THE SAME WORK DAY. AREA TO BE STABILIZED WITH SEED AND MULCH.

- LEGEND**
- HOT MIX ASPHALT PAVEMENT
  - CONCRETE PAVEMENT
  - SOIL STABILIZATION MATTING
  - MULCH
  - TURFGRASS SOD
  - CLASS I RIPRAP/GABION WEIR
  - LOD - LIMIT OF DISTURBANCE
  - SSF - SUPER SILT FENCE
  - PROPOSED STORM DRAIN
  - PROPOSED CLASS I RIPRAP/GABION WEIR
  - SF - SILT FENCE
  - SFD - SUPER FENCE DIVERSION
  - 140 - EXISTING CONTOUR
  - 140 - PROPOSED CONTOUR
  - SCE - STABILIZED CONSTRUCTION ENTRANCE
  - DB - DIVERSION BERM

By the Owner/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 project. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

*Evelyn E. Tomlin*  
 Evelyn E. Tomlin  
 Signature of Owner/Developer  
 Print name below signature  
 3/14/2012  
 Date

By the Owner/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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

*Charles S. Nolan*  
 Charles S. Nolan  
 Signature of Engineer  
 Print name below signature  
 3/14/2012  
 Date

These plans are approved for soil erosion and sediment control by the Howard Soil Conservation District.

*John K. Roberts*  
 John K. Roberts  
 Signature of Engineer  
 Print name below signature  
 3/27/12  
 Date

AS-BUILT INFORMATION SHOWN REFLECT FIELD CONDITION CHANGE AS APPROVED BY THE DEVELOPMENT ENGINEERING DIVISION (DED) BY EMAIL DATED JULY 18, 2013.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Chad Edwards* 3/29/12  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE

*Kate Schaefer* 4/2/12  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE

*Mark A. Grogan* 4/4/12  
 DIRECTOR  
 DATE

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL PURPOSES ONLY

(FOR PROFESSIONAL CERTIFICATION SEE SHEET CO-1)

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*Evelyn E. Tomlin* 3/15/12  
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES  
 DATE

**NOLAN**  
 Associates, Inc.  
 Engineers - Civil/Structural/Inspections  
 4785 Dorsey Hall Drive  
 Suite 124  
 Ellicott City, Maryland 21042  
 Phone: (410) 995-3251 Fax: (410) 995-1363

DES: GWF  
 DRN: JRW  
 CHK:  
 DATE: MARCH 2012

GRADING, EROSION & SEDIMENT CONTROL PLAN

600' SCALE MAP NO. 16 BLOCK NO. 8

ALPHA RIDGE LANDFILL  
 AERATED STATIC PILE COMPOST FACILITY  
 CAPITAL PROJECT NO. C-0299  
 TAX MAP 10 & 16, PARCEL NUMBERS 54, 253, 220 & 11  
 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
 SHEET 100 OF 100  
 CO-5 OF 9  
 TOTAL OF 131



### DETAIL 33 - SUPER SILT FENCE

**NOTE:** FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER

**Construction Specifications**

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: ASTM D-4595
Tensile Modulus	20 lbs/in (min.)	Test: ASTM D-4595
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max.)	Test: ASTM D-5141
Filtering Efficiency	75% (min.)	Test: ASTM D-5141

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE H-26-3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL 22 - SILT FENCE

**Construction Specifications**

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: ASTM D-4595
Tensile Modulus	20 lbs/in (min.)	Test: ASTM D-4595
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max.)	Test: ASTM D-5141
Filtering Efficiency	75% (min.)	Test: ASTM D-5141

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E-16-3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

**Construction Specifications**

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

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

### DETAIL 30 - EROSION CONTROL MATTING

**Construction Specifications**

- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
- Staple the 4" overlap in the channel center using an 18" spacing between staples.
- Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
- Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
- Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shingle fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
- The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be key-in.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE G-22-2 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL 5 - RIP-RAP INFLOW PROTECTION

**Construction Specifications**

- Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".
- Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
- Entrance and exit sections shall be installed as shown on the detail section.
- Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
- Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
- Rip-rap should blend into existing ground.
- Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale Lining Criteria.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE B-6-2 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### SUPER SILT FENCE

Design Criteria			
Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE H-26-3A | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### SILT FENCE

Slope Steepness	Silt Fence Design Criteria	
	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

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### SUPER FENCE DIVERSION

**Construction Specifications**

- FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY ADMINISTRATION (SHA) DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATIONS FOR A 6'-0" FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.
- THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
- CHAIN LINK FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE. THE CHAIN LINK FENCING SHALL BE SIX (6) GAUGE OR HEAVIER.
- MIRAFLO MCF 1212 OR APPROVED EQUIVALENT SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- MIRAFLO MCF 1212 OR APPROVED EQUIVALENT SHALL BE EMBEDDED MINIMUM OF 8" INTO THE GROUND.
- WHEN THE TWO SECTIONS OF MIRAFLO MCF 1212 OR APPROVED EQUIVALENT ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED.
- MAXIMUM FLOW SLOPE 10.0%
- MAXIMUM DRAINAGE AREA 5 Ac

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### EROSION CONTROL MATTING

**Construction Specifications**

- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
- Staple the 4" overlap in the channel center using an 18" spacing between staples.
- Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
- Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
- Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shingle fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
- The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be key-in.

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *Chris Edwards*, 3-29-12  
 Chief, Division of Land Development: *Kurt Schindler*, 4-2-12  
 Director: *Marche A. Leavelle*, 4/4/12

(FOR PROFESSIONAL CERTIFICATION SEE SHEET CO-1)

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E-16-3A | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DES: GWF  
 DRN: JRW  
 CHK:  
 DATE: MARCH 2012

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

600' SCALE MAP NO. 14 BLOCK NO. 7

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT /PARCEL 54, 253, 220, 11	SCALE: AS SHOWN
LIBER /FOLIO 10-847608 16-878215 10-891314	ZONE PEC	TAX / ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING	CENSUS TR. 60-30

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*Evelyn E. Jond*, 3/15/12  
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

**NOLAN Associates, Inc.**  
 Engineers - Civil/Structural/Inspections  
 4785 Dorsey Hall Drive  
 Suite 124  
 Ellicott City, Maryland 21042  
 Phone: (410) 995-9851 Fax: (410) 995-1363

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

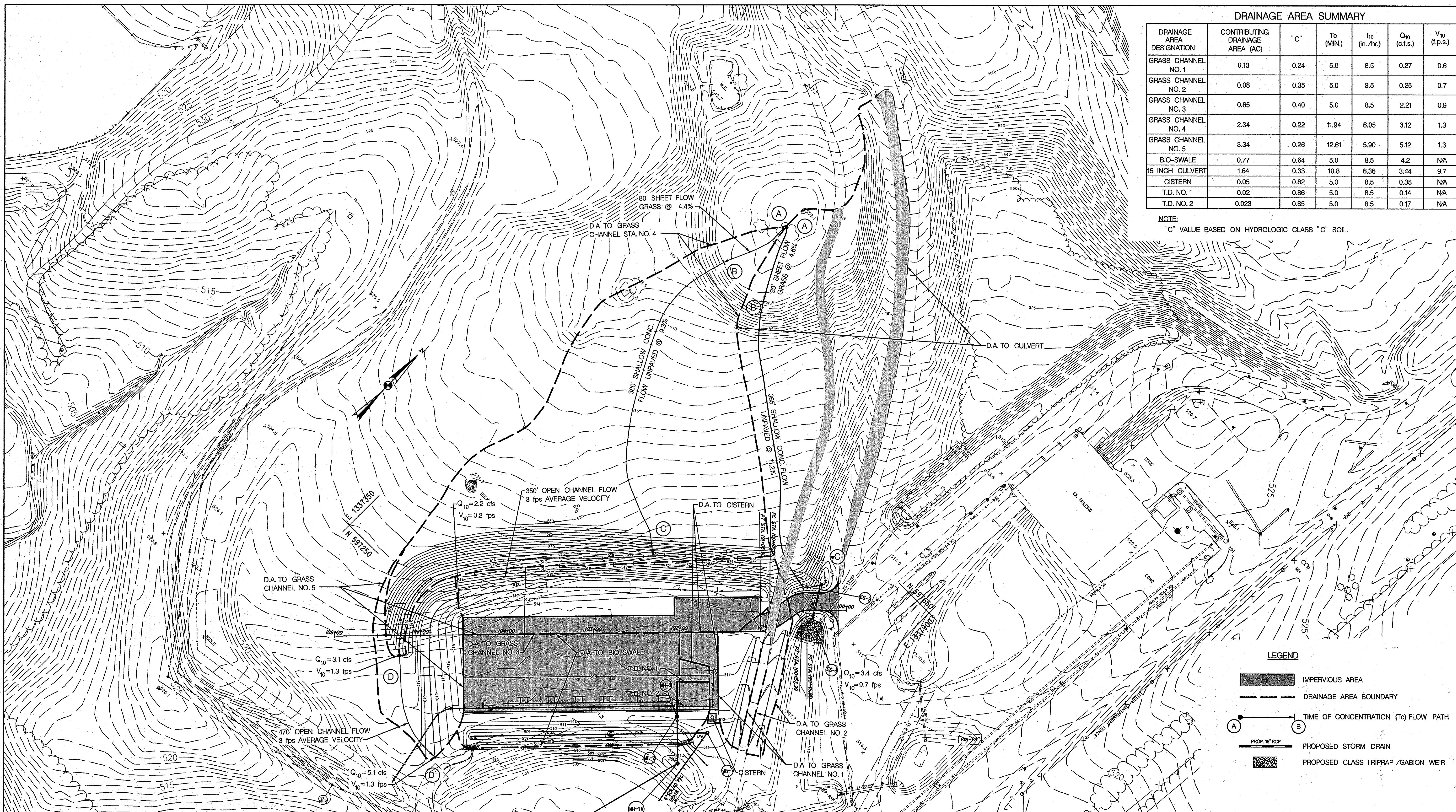
ALPHA RIDGE LANDFILL  
 AERATED STATIC PILE COMPOST FACILITY  
 CAPITAL PROJECT NO. C-0299  
 TAX MAP 10 & 16. PARCEL NUMBERS 54, 253, 220 & 11  
 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
 SHEET CO-7 OF 9  
 TOTAL OF 33

DRAINAGE AREA SUMMARY

DRAINAGE AREA DESIGNATION	CONTRIBUTING DRAINAGE AREA (AC)	"C"	Tc (MIN.)	ln (in./hr.)	Q <sub>10</sub> (c.f.s.)	V <sub>10</sub> (f.p.s.)
GRASS CHANNEL NO. 1	0.13	0.24	5.0	8.5	0.27	0.6
GRASS CHANNEL NO. 2	0.08	0.35	5.0	8.5	0.25	0.7
GRASS CHANNEL NO. 3	0.65	0.40	5.0	8.5	2.21	0.9
GRASS CHANNEL NO. 4	2.34	0.22	11.94	6.05	3.12	1.3
GRASS CHANNEL NO. 5	3.34	0.26	12.61	5.90	5.12	1.3
BIO-SWALE	0.77	0.64	5.0	8.5	4.2	NA
15 INCH CULVERT	1.64	0.33	10.8	6.36	3.44	9.7
CISTERN	0.05	0.82	5.0	8.5	0.35	NA
T.D. NO. 1	0.02	0.86	5.0	8.5	0.14	NA
T.D. NO. 2	0.023	0.85	5.0	8.5	0.17	NA

NOTE:  
"C" VALUE BASED ON HYDROLOGIC CLASS "C" SOIL.



**LEGEND**

- IMPERVIOUS AREA
- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION (Tc) FLOW PATH
- PROPOSED STORM DRAIN
- PROPOSED CLASS I RIPRAP / GABION WEIR

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Chief Engineer*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 3-29-12

*Chief of Land Development*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 4-02-12

*Director*  
 DIRECTOR  
 DATE: 4/4/12

PLAN  
SCALE: 1" = 50'

(FOR PROFESSIONAL CERTIFICATION, SEE SHEET CO-1)

SUBDIVISION NAME ALPHA RIDGE SOLID WASTE MANAGEMENT CENTER	LOT / PARCEL 54, 253, 220, 11
LIBER / FOLIO 10-847605 16-878215 10-891314	ZONE PEC TAX / ZONE MAP 10 & 16
WATER CODE PRIVATE, EXISTING	SEWER CODE PRIVATE, EXISTING CENSUS TR. 60-30

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Evelyn E. Jand*  
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES  
 DATE: 3/15/12

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DES:	GW F.	BY:		NO.:		REVISION:		DATE:	MARCH 2012
DRN:	JRW	BY:		NO.:		REVISION:		DATE:	
CHK:		BY:		NO.:		REVISION:		DATE:	

DRAINAGE AREA MAP

600' SCALE MAP NO. 16 BLOCK NO. 7

ALPHA RIDGE LANDFILL  
AERATED STATIC PILE COMPOST FACILITY  
CAPITAL PROJECT NO. C-0299  
TAX MAP 10 & 16, PARCEL NUMBERS 54, 253, 220 & 11  
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE:  
AS SHOWN  
SHEET  
541103  
CO-8 OF 9  
TOTAL OF 91