

ROAD CONSTRUCTION PLAN WILLIAMS KNOLL SECTION I FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

GENERAL NOTES

- 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/CONSTRUCTION INSPECTIONS DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:

MISS UTILITY	1-800-257-7777
C&P TELEPHONE COMPANY	725-9976
HOWARD COUNTY BUREAU OF UTILITIES	313-4900
AT&T CABLE LOCATION DIVISION	393-3533
BALTIMORE GAS & ELECTRIC	685-0123
STATE HIGHWAY ADMINISTRATION	531-5533
HOWARD COUNTY DEPT. OF PUBLIC WORKS/ CONSTRUCTION INSPECTION DIVISION	313-1880

- PROJECT BACKGROUND:
LOCATION: 1ST ELECTION DISTRICT, TAX MAP 38, PARCELS 229, 230, & 231
DEED REFERENCE: LIBER 3336, FOLIO 0272, LIBER 1021, FOLIO 482.
ZONING: R-SC, R-12
TOTAL TRACT AREA: 19.9 AC±
NUMBER OF PROPOSED LOTS: 41 (33 BUILDABLE)
DATE PREVIOUS PLANS APPROVED AND DPZ REFERENCE #:
- S-95-08, MAY 5, 1995
- WP-96-20, SEPTEMBER 17, 1996
- WP-96-69, FEBRUARY 23, 1996
- AA-96-19
- M-D-E PERMIT/TRACKING #:#199765725

- TWO FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS BASED ON AN AERIAL SURVEY BY WINGS AERIAL MAPPING CO., INC. FLOWN IN 1993. DOWNS RIDGE ROAD PLANS F-96-120 WERE ALSO USED FOR EXISTING TOPOGRAPHY.

- HORIZONTAL AND VERTICAL DATUMS BASED ON MARYLAND STATE COORDINATE SYSTEM (NAD 83).

STA No. 3805	N 558,378.5683	EL.= 193.750
	E 1,396,524.3031	
STA No. 38A9	N 561,056.3802	EL.= 233.455
	E 1,389,634.1843	

- STREET LIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

- WATER AND SEWER ARE PUBLIC, CONTRACT # 14-3620-D

- STORMWATER MANAGEMENT CONTROL WILL BE PROVIDED BY THE METHOD OF EXTENDED DETENTION AND BIORETENTION. STORMWATER MANAGEMENT FACILITY WILL BE PRIVATE.

- GEOTECHNICAL REPORT PREPARED BY HERBST/BENSON & ASSOCIATES DATED DECEMBER 5, 1996.

- ONE (1) 150 WATT HPS VAPOR PENDANT FIXTURE (CUT-OFF) TO BE MOUNTED ON BG&E POLE #___ USING A 20' ARM. DIRECT ARM TOWARDS CENTER OF INTERSECTION.
#1 ABEL ST. STA 0+40, 30' LEFT ±
FOUR (4) STREET LIGHTS: 100 WATT "TRADITIONAIRE" POST TOP FIXTURE MOUNTED ON 14' BLACK FIBERGLASS POLE AT THE FOLLOWING LOCATIONS:
#2 ABEL ST. STA 3+00, 15' RIGHT ±
#3 ABEL ST. STA 5+95, 15' RIGHT ±
#4 ABEL ST. STA 9+86, 15' RIGHT ±
#5 ABEL ST. STA 11+87, 16' LEFT ±

- FLOODPLAIN DELINEATION BASED ON STUDY BY MILDENBERG, BOENDER & ASSOC. DATED JUNE 26, 1996, AND APPROVED SEPTEMBER 26, 1996.

- EXISTING UTILITIES LOCATIONS ARE BASED ON AS-BUILT DRAWINGS ON RECORD AT HOWARD COUNTY.

- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.

- HOUSES NOT CONTROLLED BY THE SWM POND WILL HAVE DRY WELLS AT SDP STAGE.

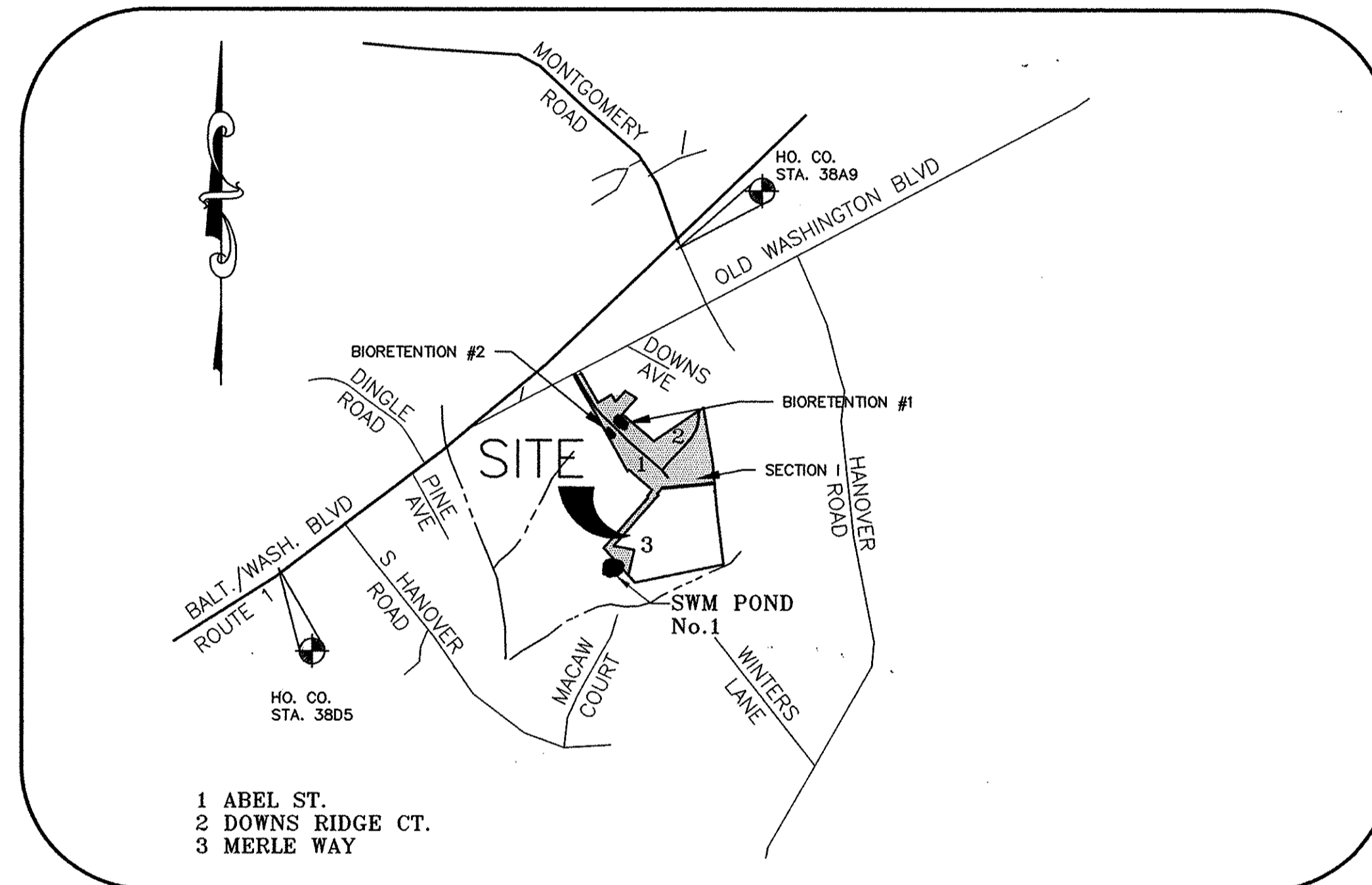
- COMPACTION IN FILL AREAS TO BE 95% DETERMINED PER AASHTO T-180.

- SEE F-96-120 FOR THE DOWNS RIDGE (ADJACENT-P197) ROAD PLANS.

- CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES ON SITE PRIOR TO COMMENSING CONSTRUCTION.

- THE USE OF 25 MPH DESIGN SPEED FOR ABEL STREET APPROVED BY DEVELOPMENT ENGINEERING DIVISION ON 2/23/96

- FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OR CONSERVATION EASEMENT ARE ALLOWED.

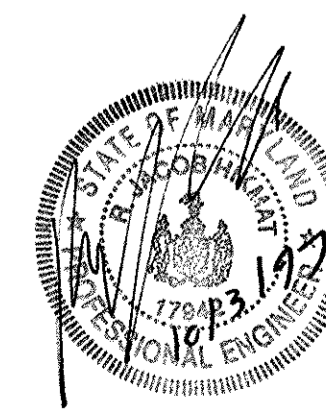


VICINITY MAP

SCALE: 1"=1000'

SHEET INDEX

TITLE SHEET	1
ROAD PLANS AND PROFILES	2
ROAD PLANS AND PROFILES	3
GRADING AND SEDIMENT CONTROL PLAN	4
GRADING AND SEDIMENT CONTROL PLAN	5
EROSION AND SEDIMENT CONTROL NOTES & DETAILS	6
STORM DRAIN PROFILES	7
STORM DRAIN PROFILES	8
STORMWATER MANAGEMENT DETAILS & PROFILES	9
STORMWATER MANAGEMENT DETAILS & PROFILES	10
STORMWATER MANAGEMENT DETAILS & PROFILES	11
STORMWATER MANAGEMENT SPECIFICATIONS	12
LANDSCAPE PLAN	13
LANDSCAPE PLAN	14
DRAINAGE AREA MAP	15
FOREST CONSERVATION AND REFORESTATION PLAN	16



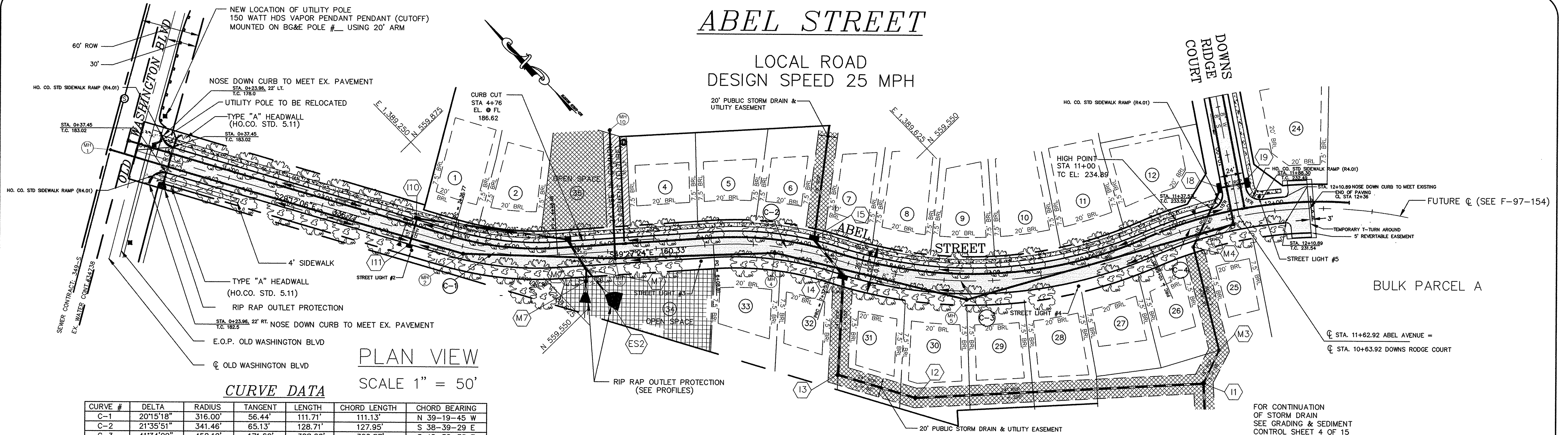
DEVELOPER
JNSD, LC
5570 STERRETT PLACE, SUITE 201
COLUMBIA, MARYLAND 21044
(410) 997-3815, (301) 596-3877

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 _____	P.E. NO.: _____
DATE _____	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 COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.	
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."	
JNSD, LC <i>James L. Newburn</i> 10-5-97 SIGNATURE OF DEVELOPER DATE PRINTED NAME OF DEVELOPER	
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.	
<i>R. Jacob Hikmat</i> 10/31/97 SIGNATURE OF ENGINEER DATE PRINTED NAME 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.	
<i>Cheryl Simmons</i> 10/15/97 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.	
<i>Robert W. Zilber</i> 10/15/97 HOWARD SOIL CONSERVATION DISTRICT DATE	
APPROVED: DEPARTMENT OF PUBLIC WORKS	
<i>Richard M. Donnell</i> 10-24-97 CHIEF BUREAU OF HIGHWAYS DATE	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Andy Harvatta</i> 10/20/97 CHIEF, DIVISION OF LAND DEVELOPMENT DATE	
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 10/21/97	

project 95136	date JUL 1997	illustration engineering	S.D.	S.D.	approval AS SHOWN
TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8 WILLIAMS KNOLL, SECTION I, LOTS 1-41 AND BULK PARCEL "A" HOWARD COUNTY, MARYLAND FIRST ELECTION DISTRICT TITLE SHEET					
MILDENBERG, BOENDER & ASSOC., INC. Engineers Planners Surveyors 5072 Dorsney Hall Drive, Suite 202, Ellicott City, Maryland, 21042 (410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0296 Fax.					
1 OF 16					

ABEL STREET

LOCAL ROAD
DESIGN SPEED 25 MPH



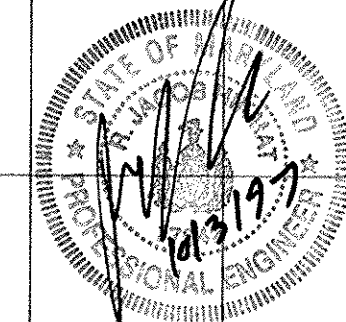
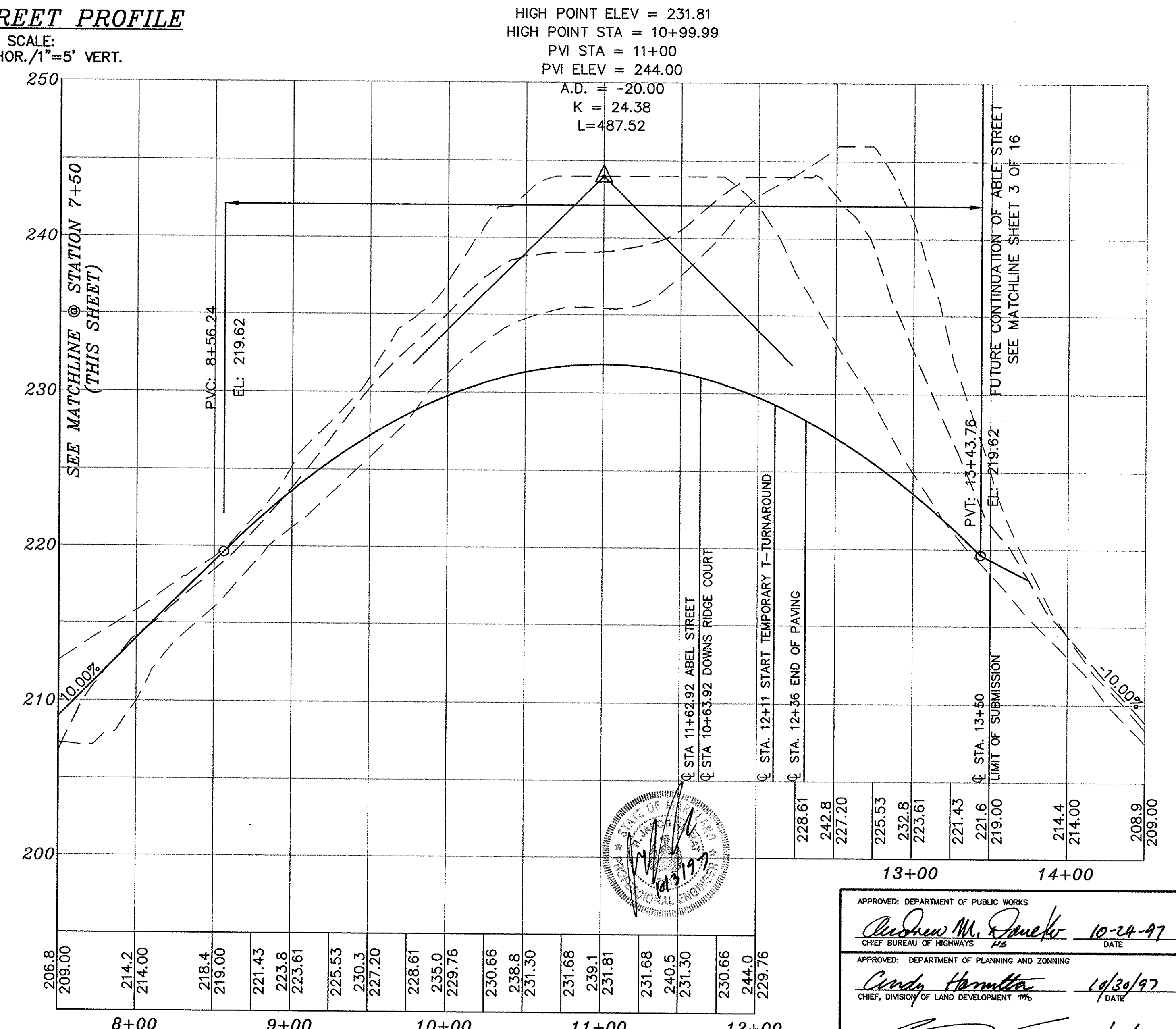
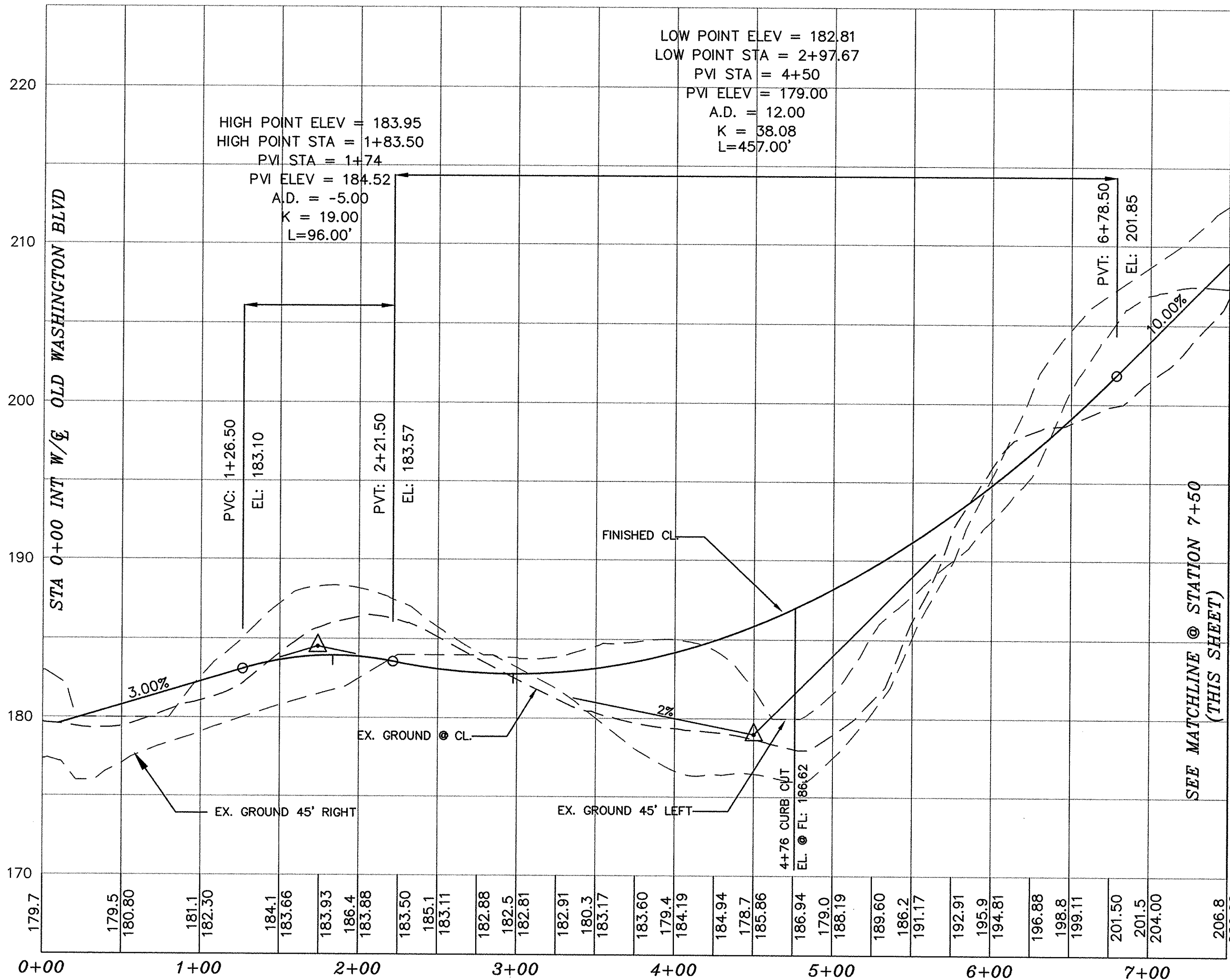
CURVE DATA

CURVE #	DELTA	RADIUS	TANGENT	LENGTH	CHORD LENGTH	CHORD BEARING
C-1	20°15'18"	316.00'	56.44'	111.71'	111.13'	N 39-19-45 W
C-2	21°35'51"	341.46'	65.13'	128.71'	127.95'	S 38-39-29 E
C-3	41°34'09"	452.12'	171.60'	328.02'	320.87'	S 48-38-38 E
C-4	39°59'06"	436.49'	158.80'	304.16'	471.35'	N 36-44-56 W

PLAN VIEW
SCALE 1" = 50'

ABEL STREET PROFILE

SCALE:
1"=50' HOR./1"=5' VERT.



APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Janicko 10-24-97
CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hamilton 10/30/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF ENGINEERING
[Signature] 11/2/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

date	JUL 1997	approval	AS SHOWN
project	95186	illustration	EG
scale	EG	SD	SD

no.	description	date

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION 1, LOTS 1-41
AND BULK PARCEL "A"
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

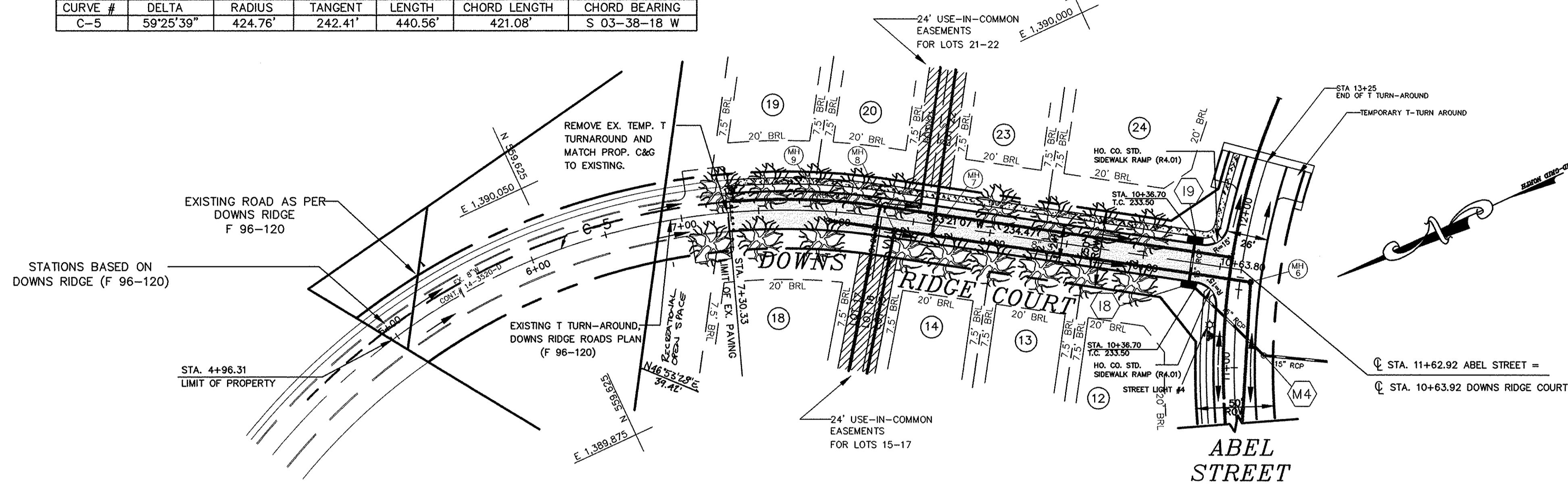
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5075 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0286 Bldg. (301) 621-5821 Wash. (410) 997-0288 Fax.

DOWN'S RIDGE COURT

LOCAL ROAD
DESIGN SPEED 25 MPH

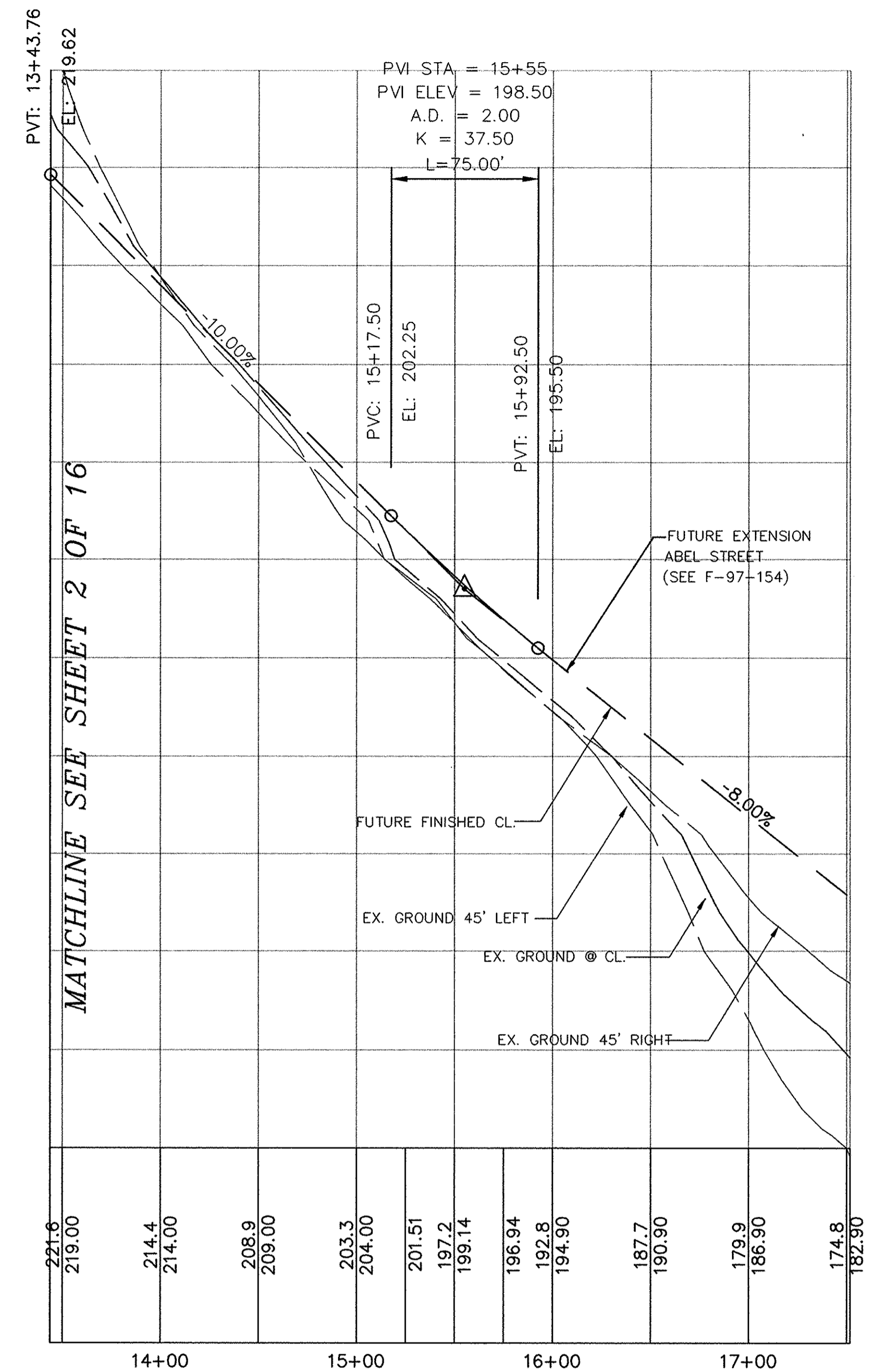
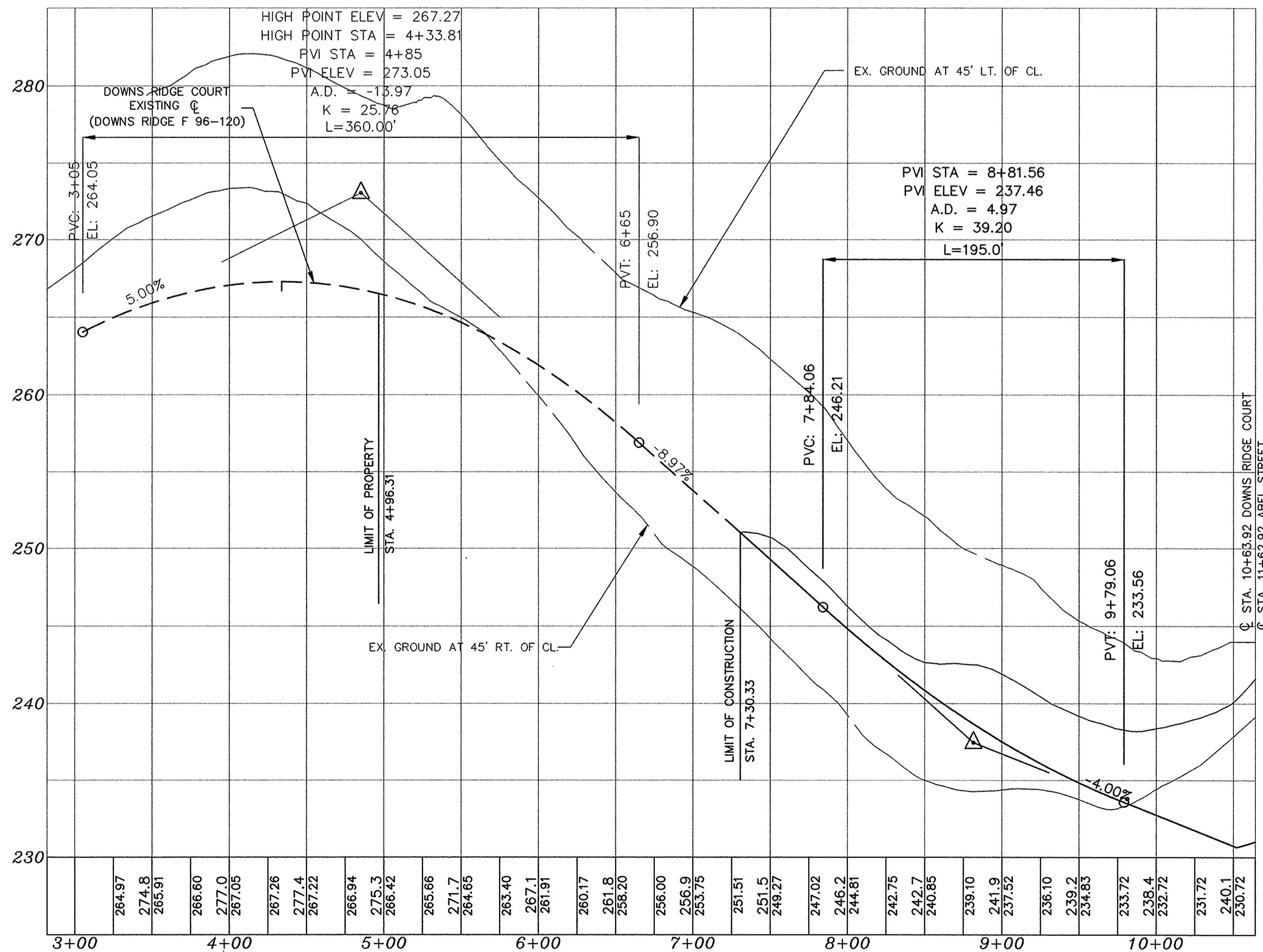
CURVE DATA

CURVE #	DELTA	RADIUS	TANGENT	LENGTH	CHORD LENGTH	CHORD BEARING
C-5	59°25'39"	424.76'	242.41'	440.56'	421.08'	S 03-38-18 W



DOWN'S RIDGE COURT PROFILE

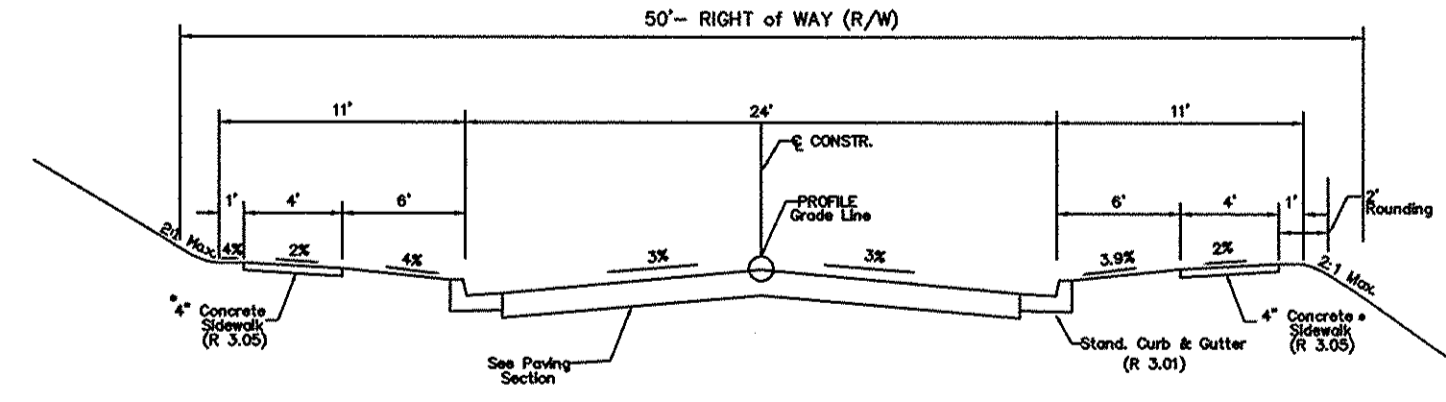
SCALE:
1"=50' HOR./1"=5' VERT.



FUTURE CONTINUATION OF ABLE STREET

CLASSIFICATION: CUL-DE-SAC ROAD

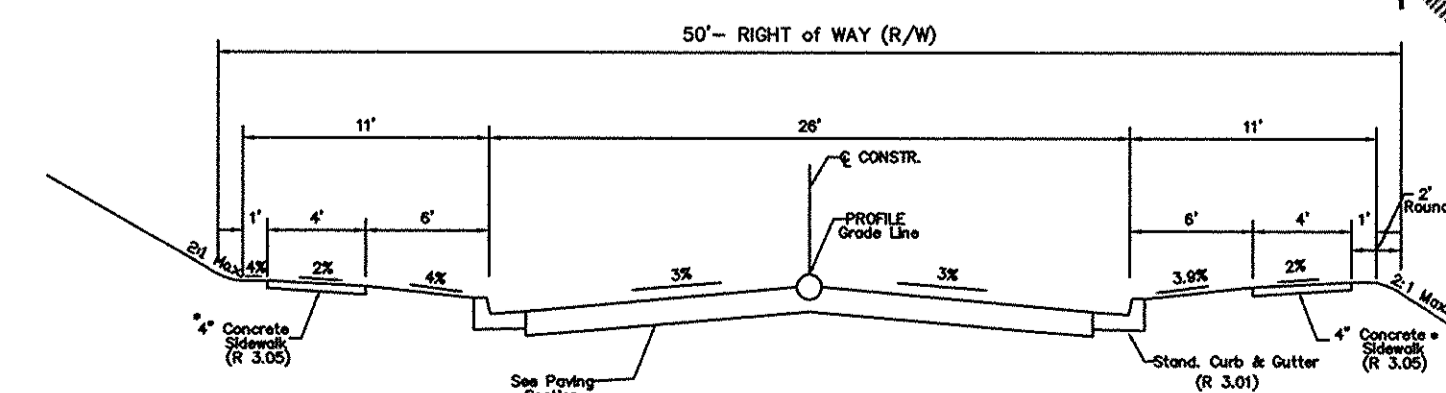
TYPICAL ROADWAY SECTION
DOWN'S RIDGE COURT
P-2 PAVEMENT SECTION



- REFER TO PLAN FOR LOCATION OF SIDEWALK
- STREET TREES TO BE LOCATED THREE(3) FEET FROM FACE OF CURB

CLASSIFICATION: LOCAL ROAD

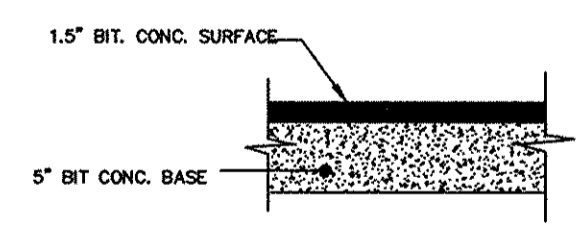
TYPICAL ROADWAY SECTION
ABLE STREET
P-2 PAVEMENT SECTION



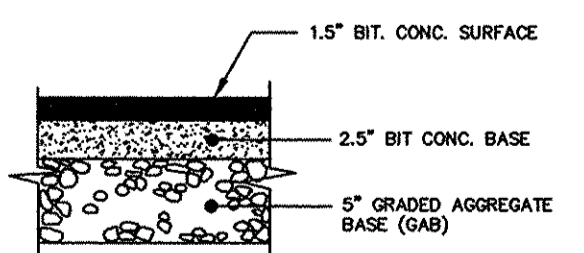
- REFER TO PLAN FOR LOCATION OF SIDEWALK
- STREET TREES TO BE LOCATED THREE(3) FEET FROM FACE OF CURB

PAVING SECTION P-2

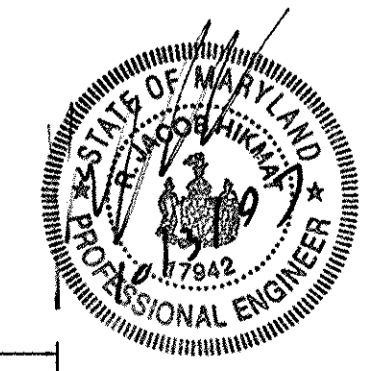
N.T.S.



ALTERNATE 1



ALTERNATE 2



APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 10/24/97
CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cathy Hamilton 10/30/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

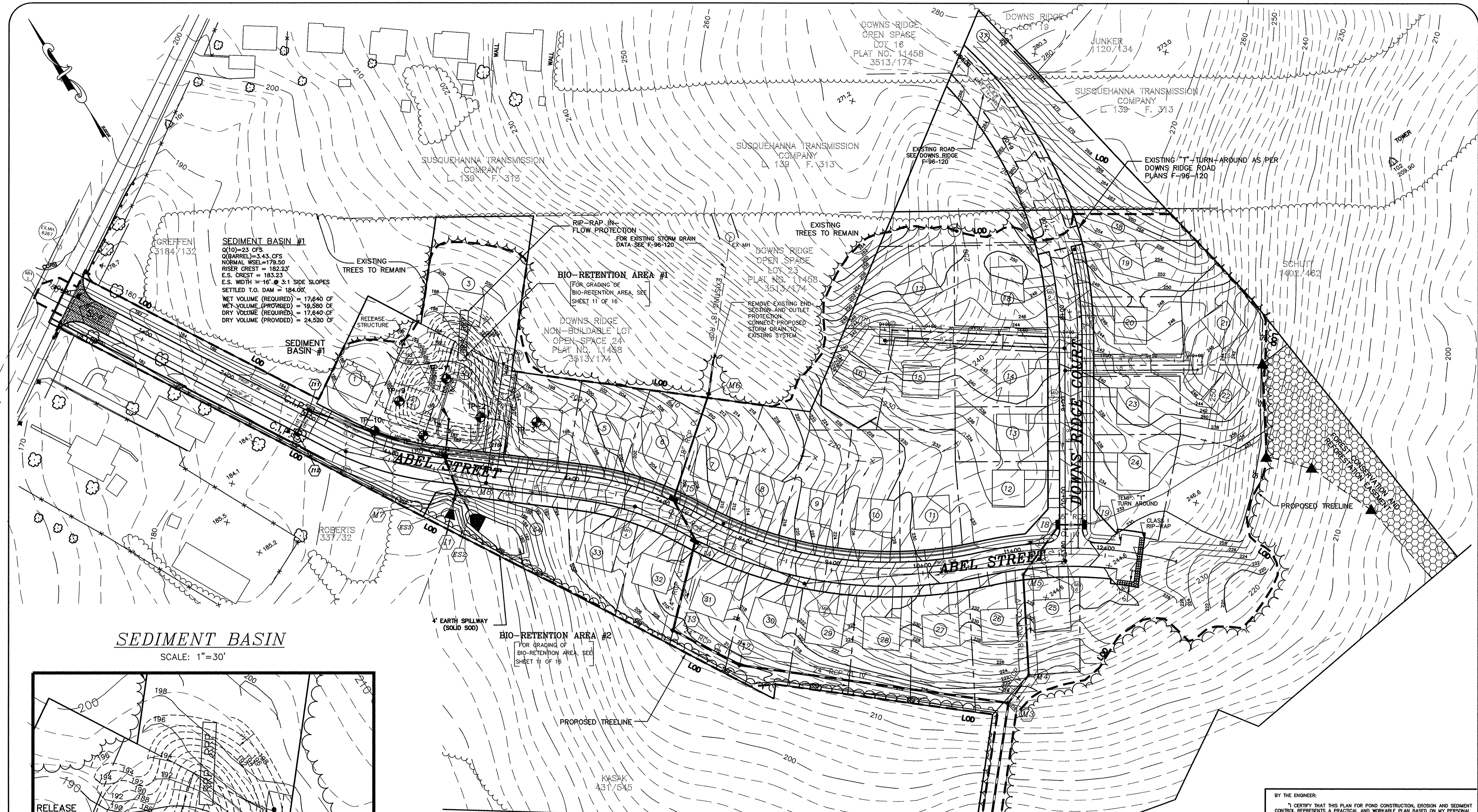
APPROVED: DEPARTMENT OF ENGINEERING
[Signature] 10/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Project	95136	Illustration	SD	Scale	AS SHOWN
Date	JUL 1997	Engineering	SD	Approval	

no.	description	date

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION I., LOTS 1-41
AND BULK PARCEL A
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
ROAD PLANS & PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

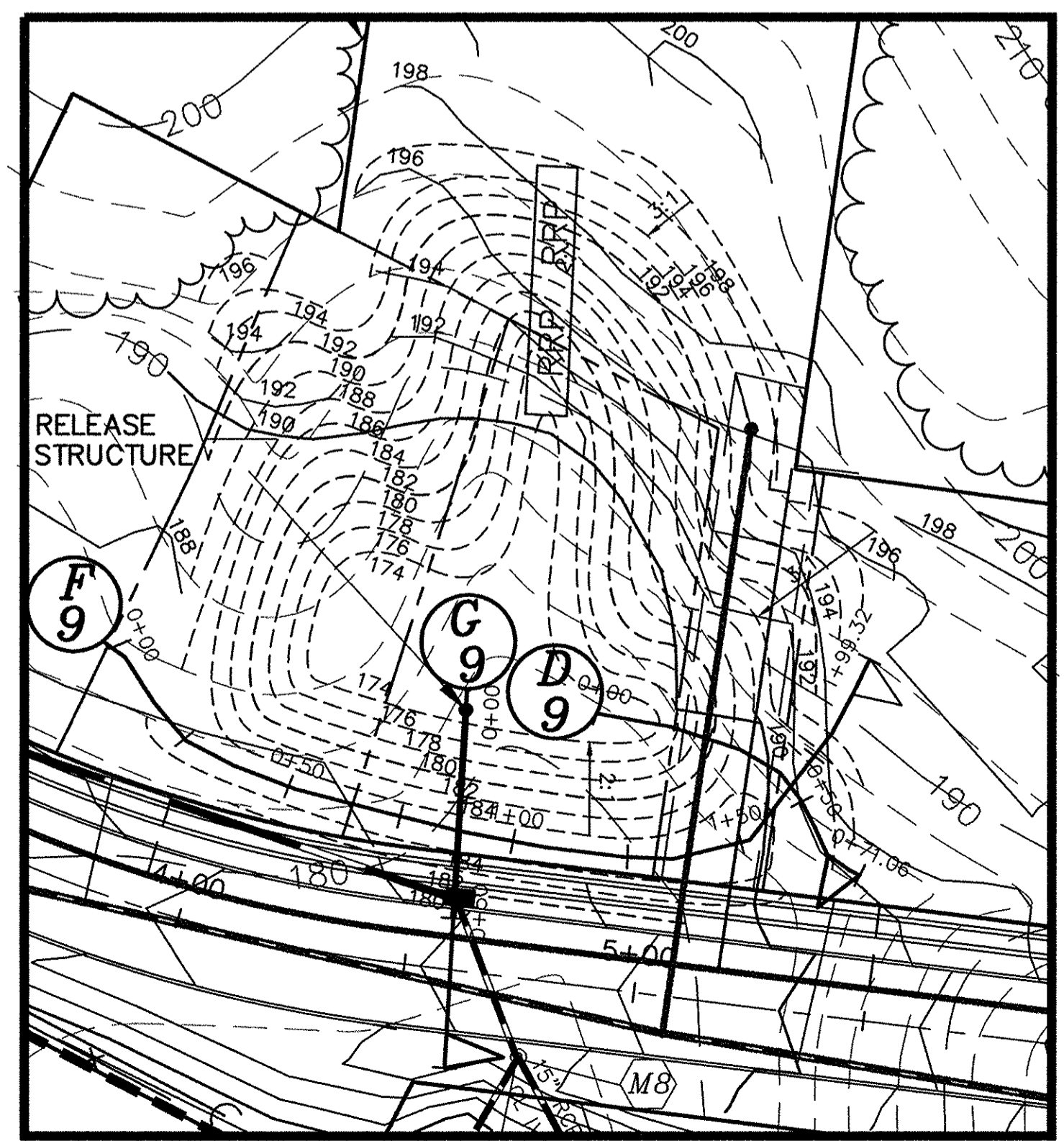


SEDIMENT BASIN #1
 Q(10)=23 CFS
 Q(BARREL)=3.43 CFS
 NORMAL WSEL=179.50
 RISER CREST = 182.23'
 E.S. CREST = 183.23'
 E.S. WIDTH = 16' @ 3:1 SIDE SLOPES
 SETTLED T.O. DAM = 184.00'
 WET VOLUME (REQUIRED) = 17,640 CF
 WET VOLUME (PROVIDED) = 19,980 CF
 DRY VOLUME (REQUIRED) = 17,640 CF
 DRY VOLUME (PROVIDED) = 24,520 CF

BIO-RETENTION AREA #1
 FOR GRADING OF
 BIO-RETENTION AREA, SEE
 SHEET 11 OF 16

BIO-RETENTION AREA #2
 FOR GRADING OF
 BIO-RETENTION AREA, SEE
 SHEET 11 OF 16

SEDIMENT BASIN
 SCALE: 1"=30'



- LEGEND**
- PROPOSED TREELINE
 - LIMIT OF DISTURBANCE
 - SOIL BORINGS
 - STABILIZED CONSTRUCTION ENTRANCE
 - SF SILT FENCE
 - SSF SUPER SILT FENCE
 - CONTOURS FOR SEDIMENT TRAP
 - FOREST CONSERVATION AND REFORESTATION EASEMENT
 - C.I.P. INLET PROTECTION
 - RRP RIP-RAP INFLOW PROTECTION

MATCHLINE SEE GRADING SHEET 5 OF 16



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: _____ P.E. NO.: _____
 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 COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES THE ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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: *James L. Newburn, member* DATE: 10-3-97
 PRINTED NAME OF DEVELOPER: James L. Newburn, member

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: *R. Jacob Hikmat* DATE: 10/3/97
 PRINTED NAME OF ENGINEER: R. JACOB HIKMAT

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.

Robert W. Zedem 10/5/97
 USOR - 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 W. Zedem 10/5/97
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
Richard M. Daniels 10-24-97
 CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Candy Hamilton 10/3/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

James L. Newburn, member 10/2/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

project	95136	date	JUN 1997
illustration	SD	engineering	SD
scale	1"=60'	approval	SD

no.	description	date

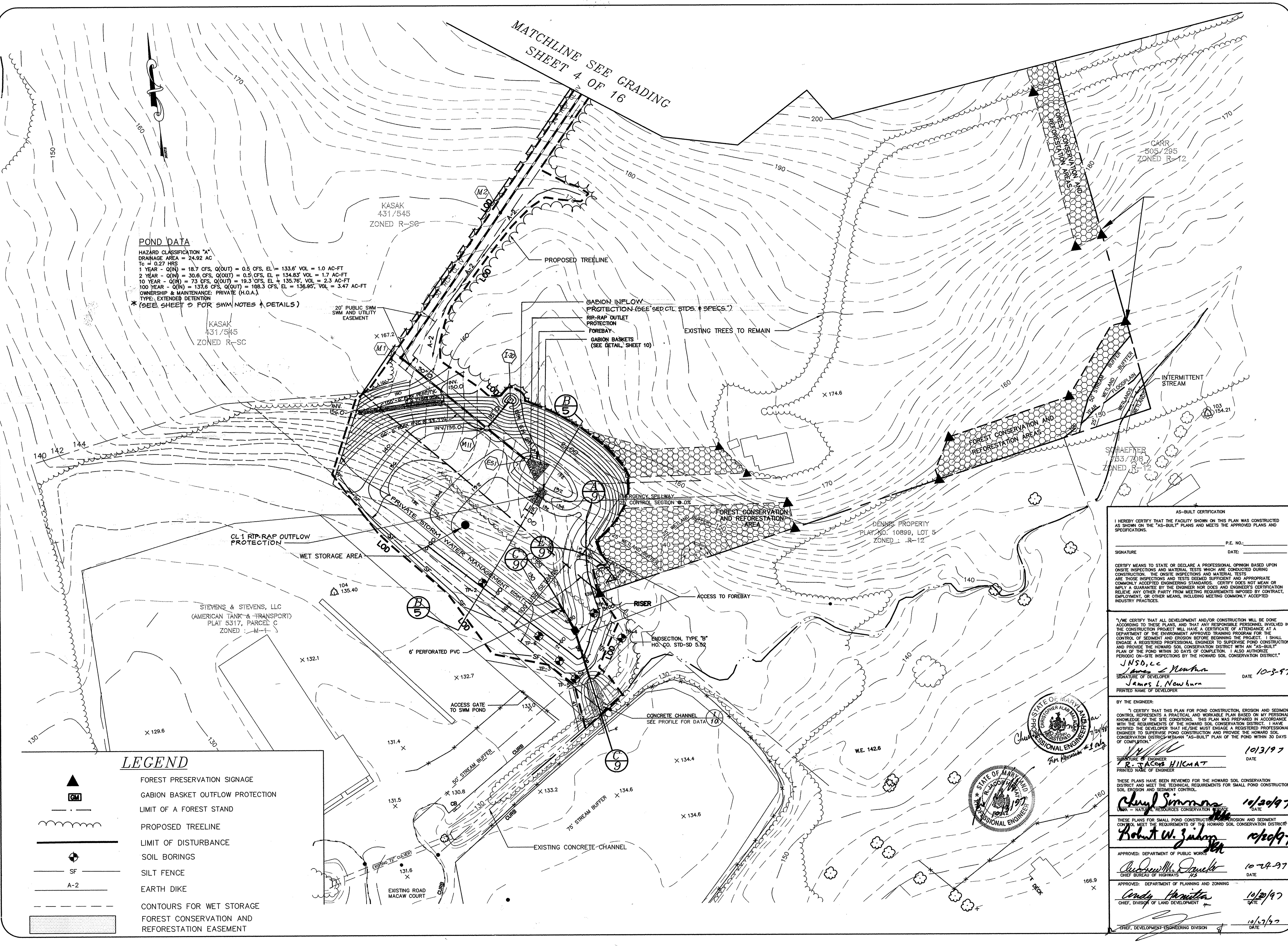
TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
 WILLIAMS KNOLL, SECTION 1, LOTS 1-41
 AND BULK PARCEL "A"
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Jorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax. (301) 621-5521 Wash. (410) 997-0298 Fax.

GRADING AND SEDIMENT CONTROL PLAN

4 OF 16
 F-97-110

F:\95136\DWG\FINAL\PHASE1\ROAD136-GRAD.DWG



POND DATA
 HAZARD CLASSIFICATION "A"
 DRAINAGE AREA = 24.92 AC
 Tc = 0.27 HRS
 1 YEAR - Q(IN) = 18.7 CFS, Q(OUT) = 0.5 CFS, EL = 133.6', VOL = 1.0 AC-FT
 2 YEAR - Q(IN) = 30.6 CFS, Q(OUT) = 0.5 CFS, EL = 134.83', VOL = 1.7 AC-FT
 10 YEAR - Q(IN) = 73 CFS, Q(OUT) = 19.3 CFS, EL = 135.76', VOL = 2.3 AC-FT
 100 YEAR - Q(IN) = 137.6 CFS, Q(OUT) = 108.3 CFS, EL = 138.95', VOL = 3.47 AC-FT
 OWNERSHIP & MAINTENANCE: PRIVATE (H.O.A.)
 TYPE: EXTENDED DETENTION
 *(SEE SHEET 2 FOR SWM NOTES & DETAILS)

- LEGEND**
- FOREST PRESERVATION SIGNAGE
 - GABION BASKET OUTFLOW PROTECTION
 - LIMIT OF A FOREST STAND
 - PROPOSED TREELINE
 - LIMIT OF DISTURBANCE
 - SOIL BORINGS
 - SILT FENCE
 - EARTH DIKE
 - CONTOURS FOR WET STORAGE
 - FOREST CONSERVATION AND REFORESTATION EASEMENT

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: _____ P.E. NO.: _____
 DATE: _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUPPORTIVE 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 MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

JNSD, LLC
 SIGNATURE OF DEVELOPER: *James L. Newburn* DATE: 10-3-97
 PRINTED NAME OF DEVELOPER: James L. Newburn

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.

Robert W. Zukow 10/3/97
 SIGNATURE OF ENGINEER: *Robert W. Zukow* DATE: 10/3/97
 PRINTED NAME OF ENGINEER: Robert W. Zukow

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

Robert W. Zukow 10/3/97
 SIGNATURE OF ENGINEER: *Robert W. Zukow* DATE: 10/3/97
 PRINTED NAME OF ENGINEER: Robert W. Zukow

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Danforth 10-24-97
 SIGNATURE: *Andrew M. Danforth* DATE: 10-24-97
 CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cathy Hamilton 10/30/97
 SIGNATURE: *Cathy Hamilton* DATE: 10/30/97
 CHIEF, DIVISION OF LAND DEVELOPMENT

Robert W. Zukow 10/27/97
 SIGNATURE: *Robert W. Zukow* DATE: 10/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

project	date	illustration	scale
95136	JUN 1996	SD	1" = 50'

description	date
1 REV. POND GRADING (P&A GROUP, INC.)	7-15-96

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
 WILLIAMS KNOLL, SECTION 1, LOTS 1-41
 AND BULK PARCEL A
 HOWARD COUNTY, MARYLAND
 FIRST ELECTION DISTRICT
 GRADING AND SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Surveyors
 Engineers
 Planners
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0286 Bult. (301) 621-5521 Wash. (410) 997-0288 Fax.

HOWARD SOIL CONSERVATION DISTRICT
PERMANENT SEEDING NOTES

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

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

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ.FT.).
2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE 1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. PER ACRE 1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. PER ACRE 1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. (0.5 LBS./1000 SQ.FT.) OF KEENEPOSS LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) - USE SOIL. 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 80 LBS./1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL./1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL./1000 SQ.FT.) FOR ANCHORING.

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

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 THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU NOVEMBER 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 SOG.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 80 LBS./1000 SQ.FT.) OF UNROTTED WEED FREE SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL./1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL./1000 SQ.FT.) FOR ANCHORING.

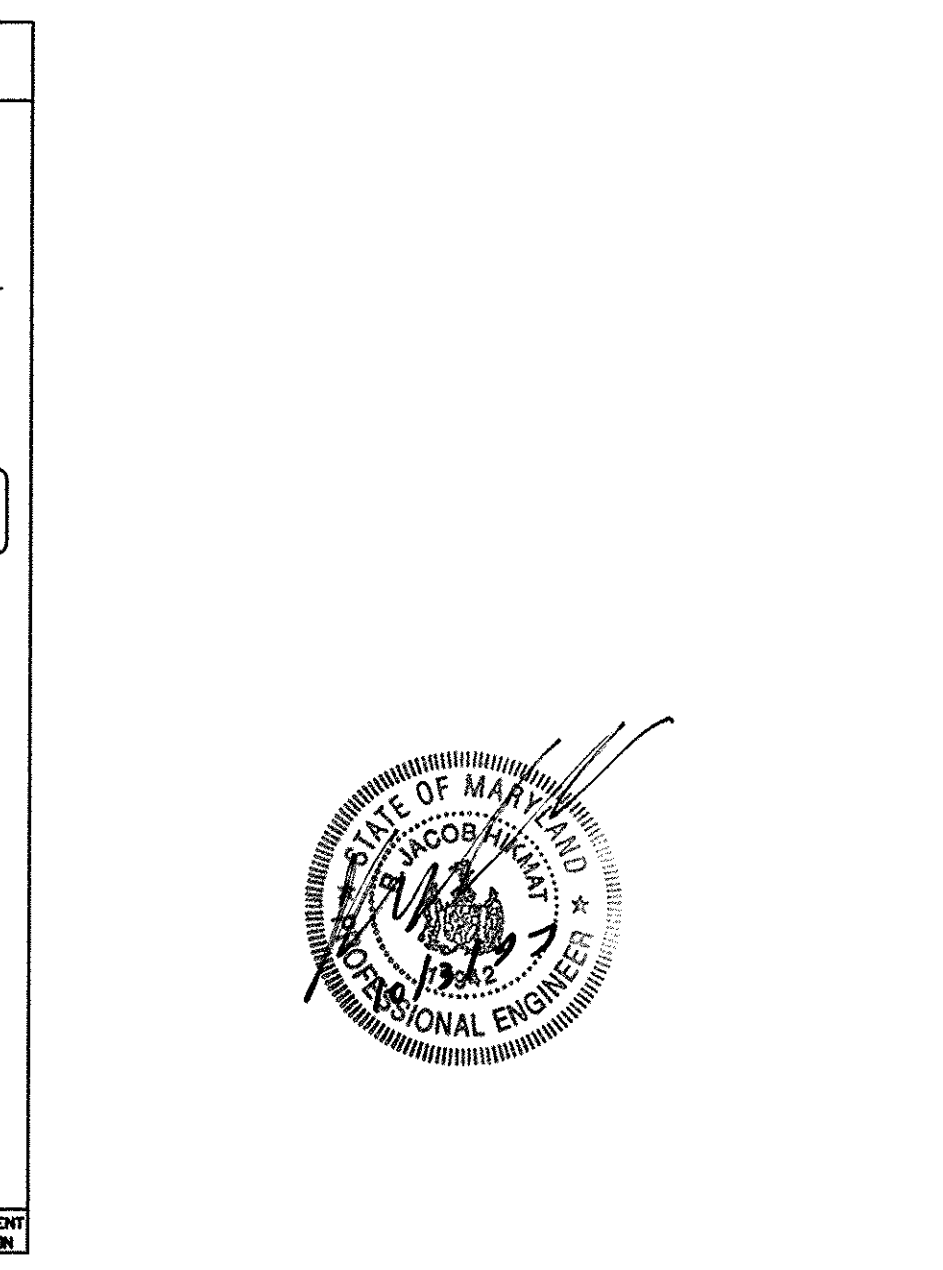
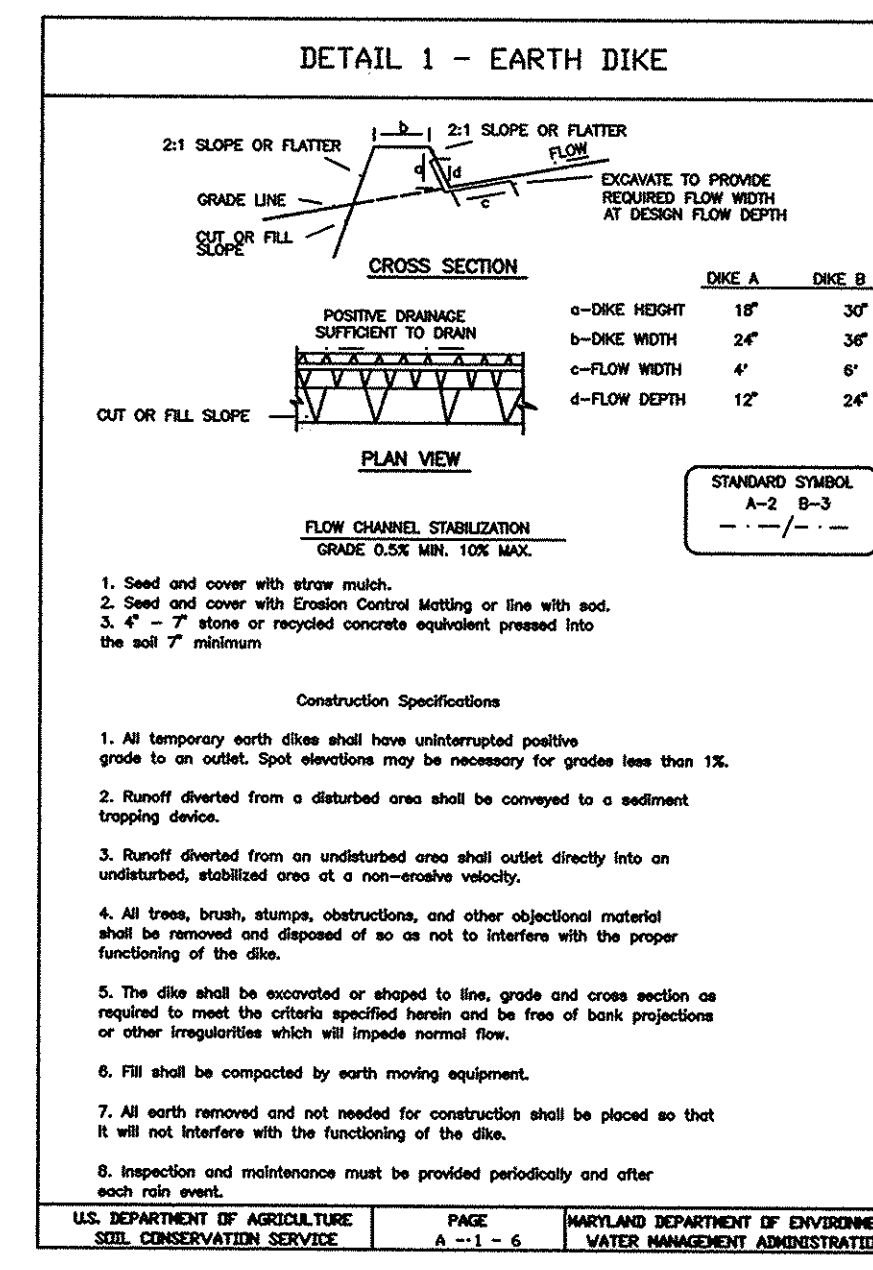
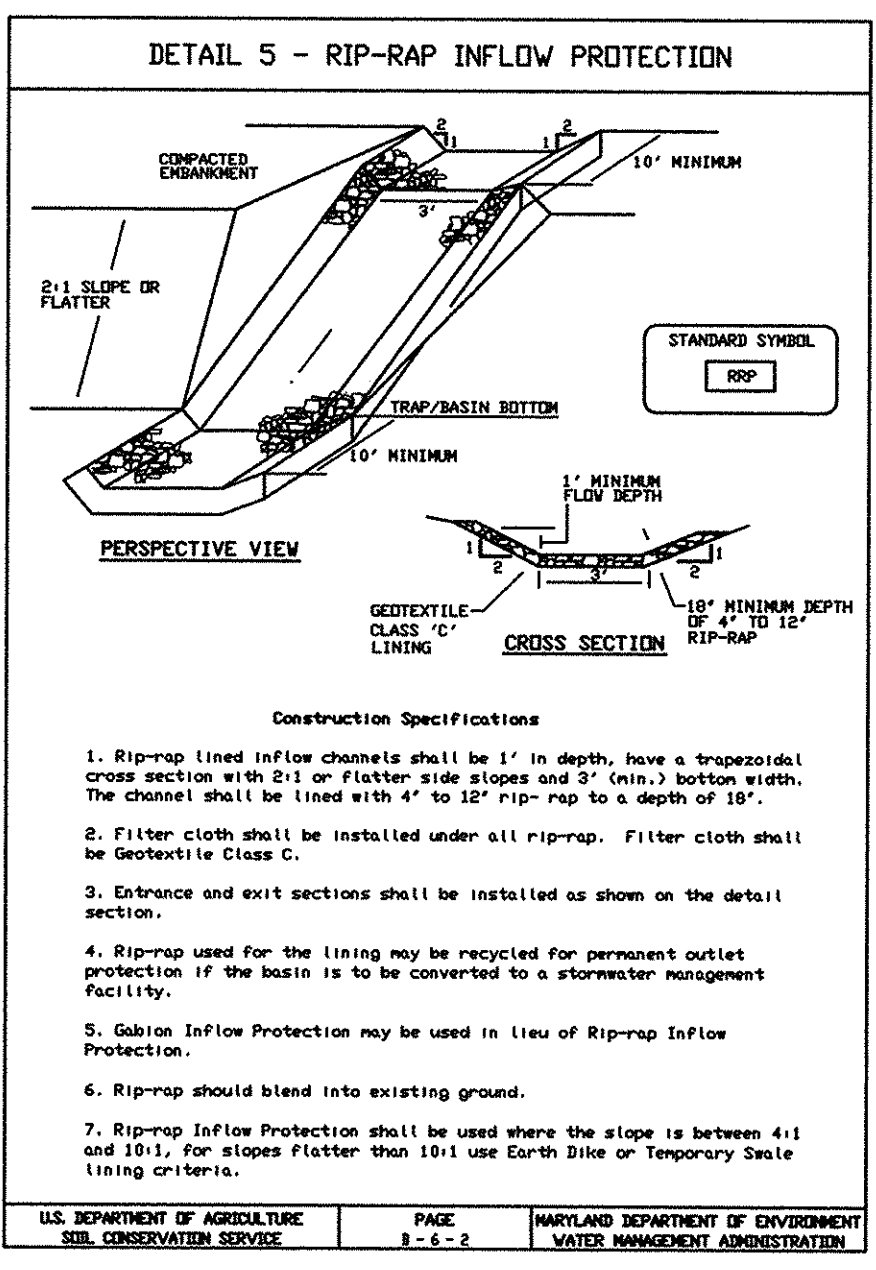
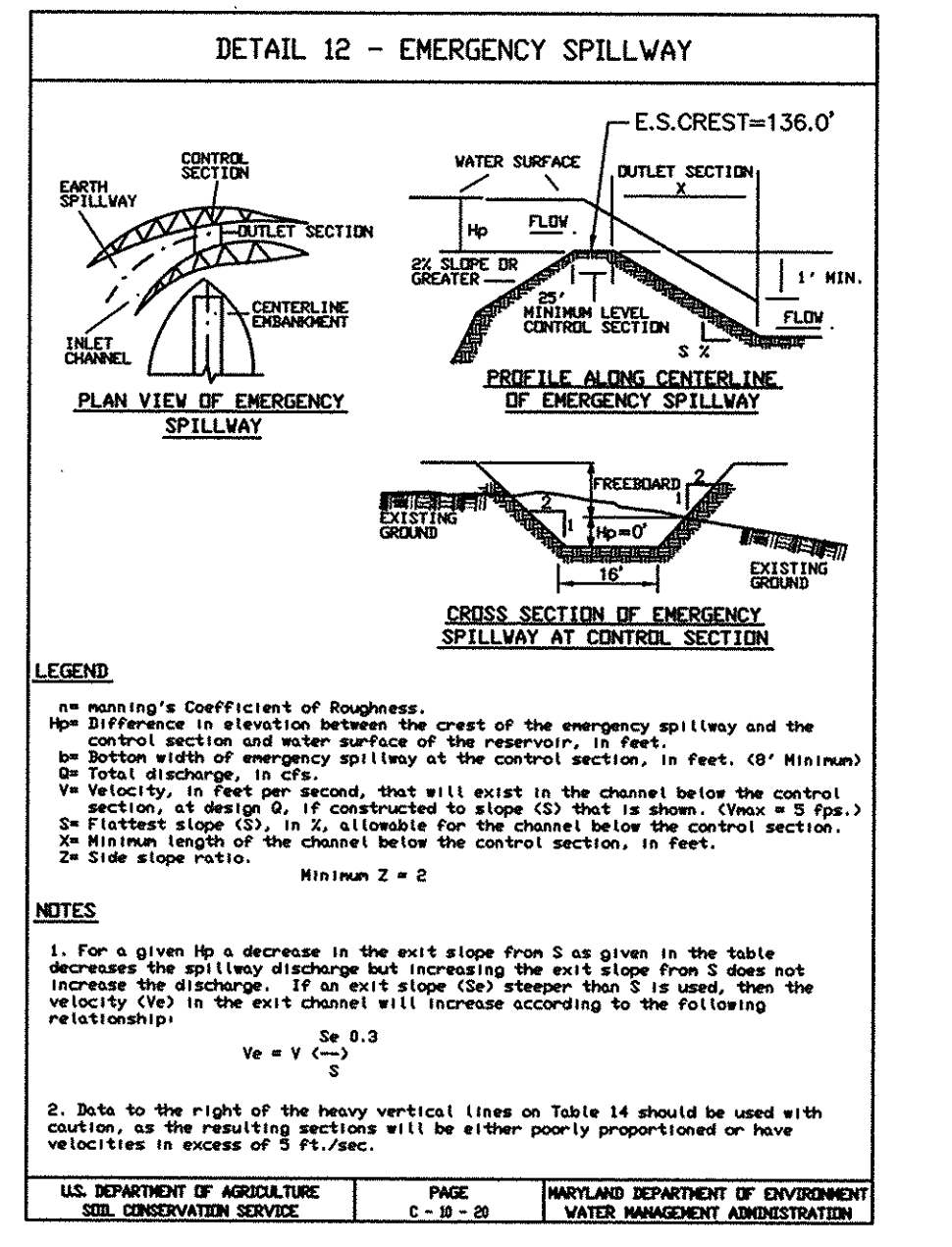
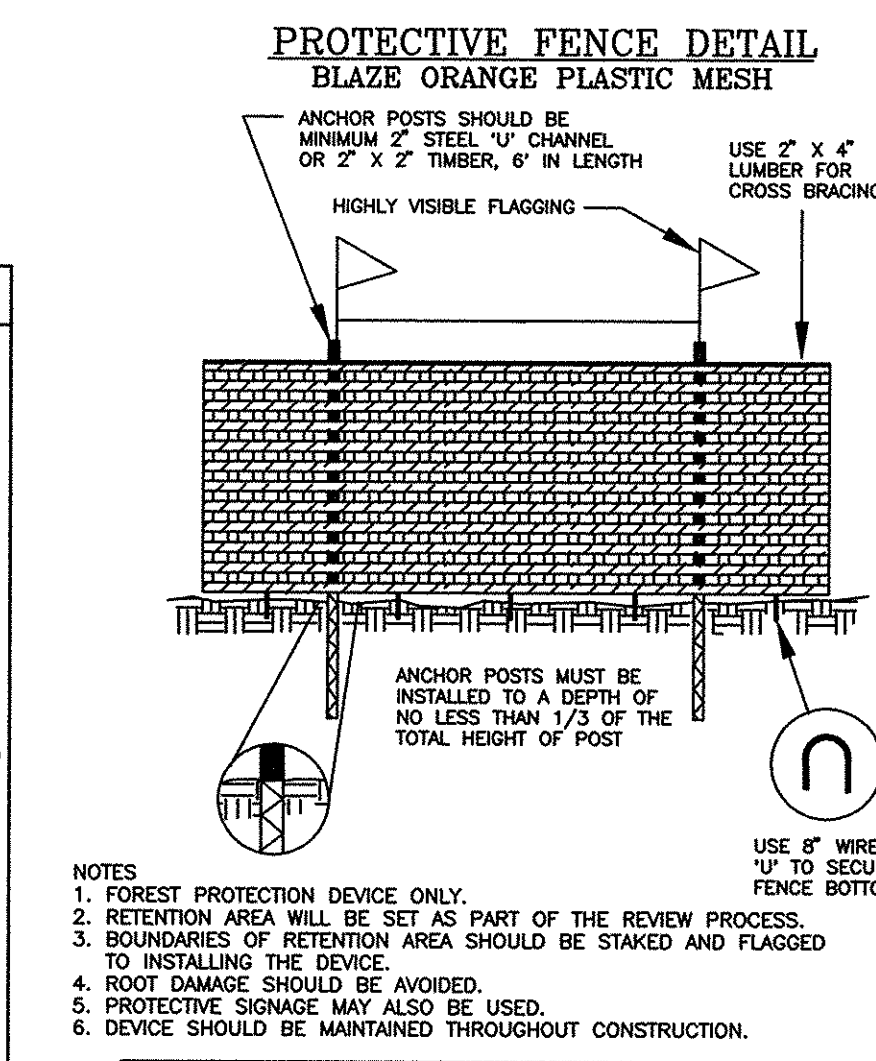
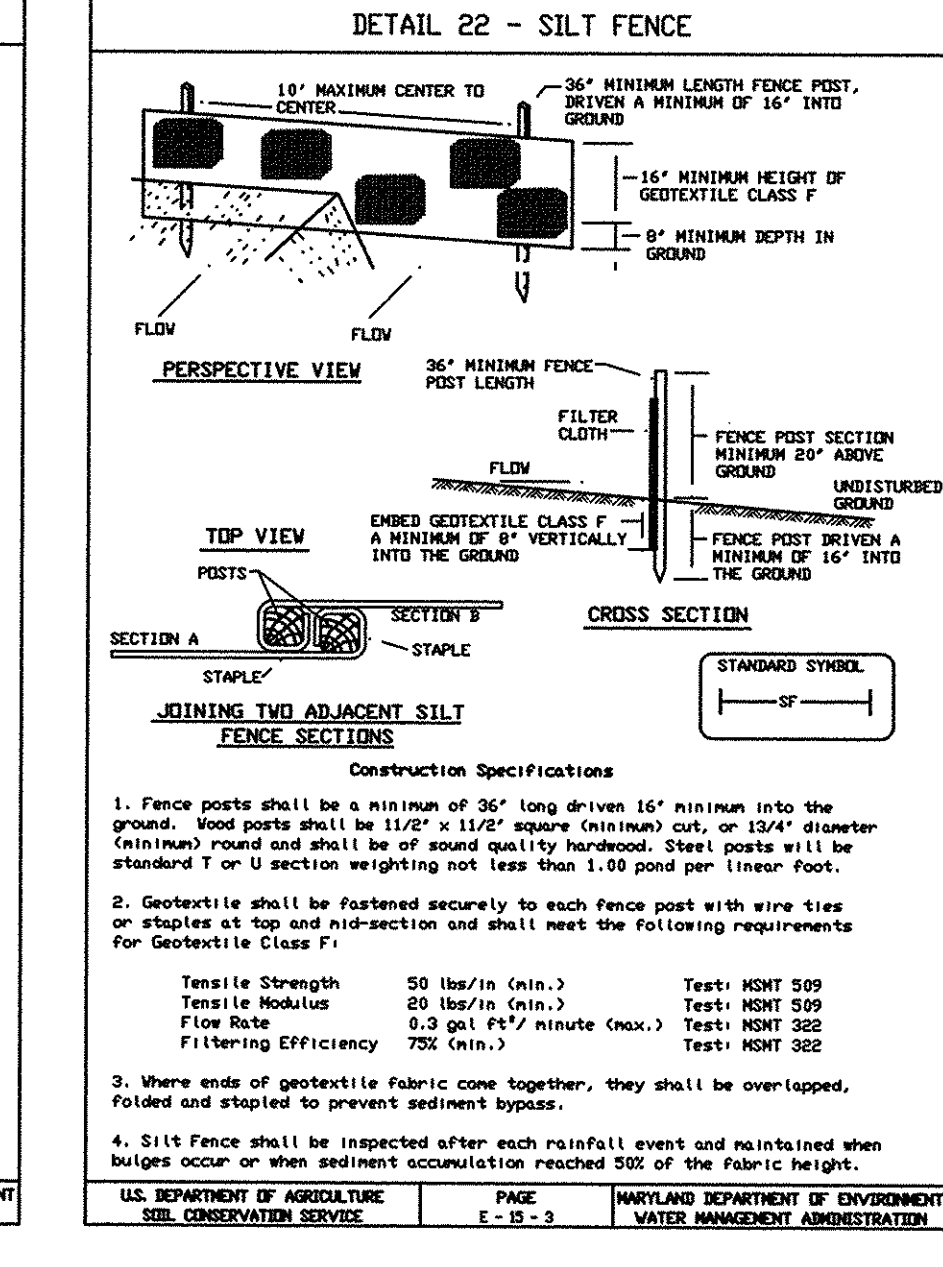
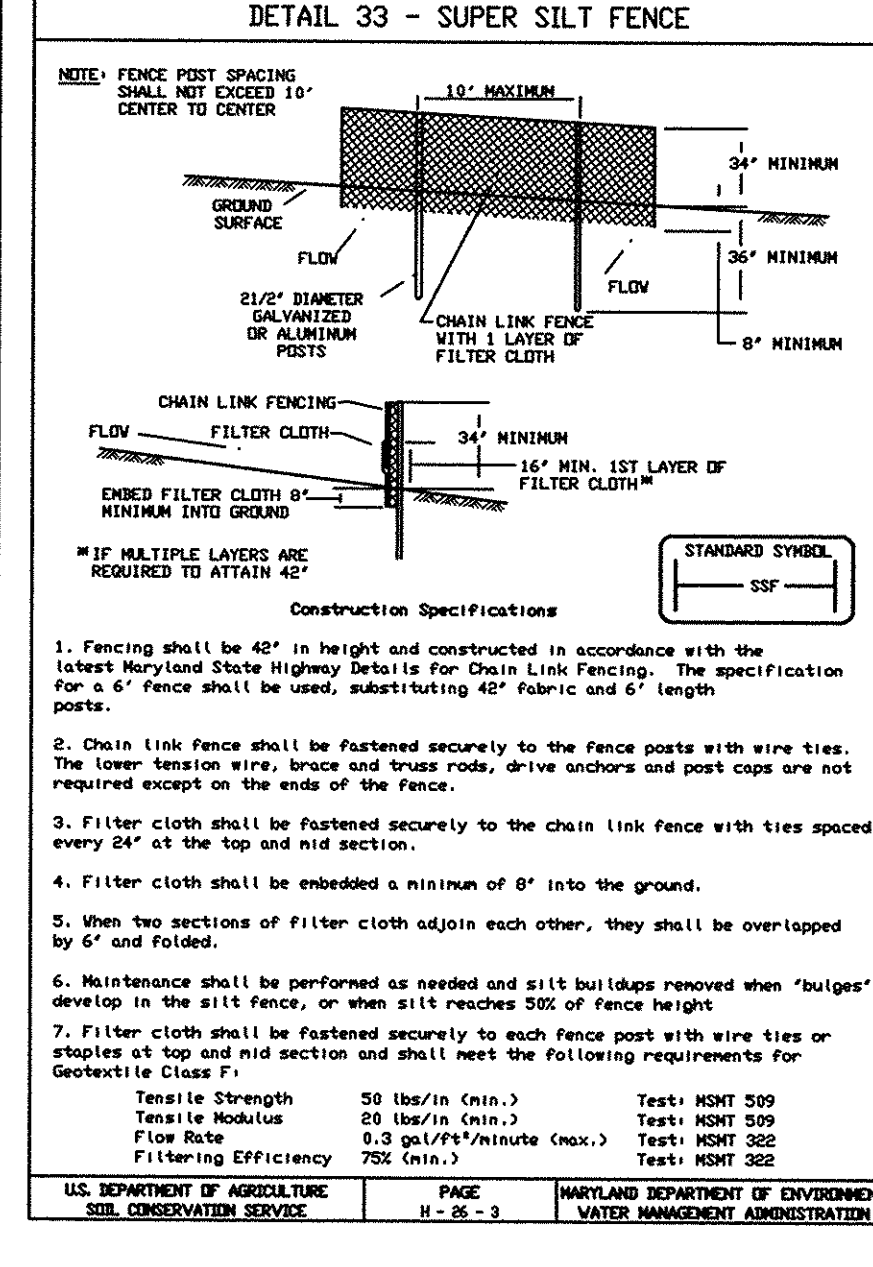
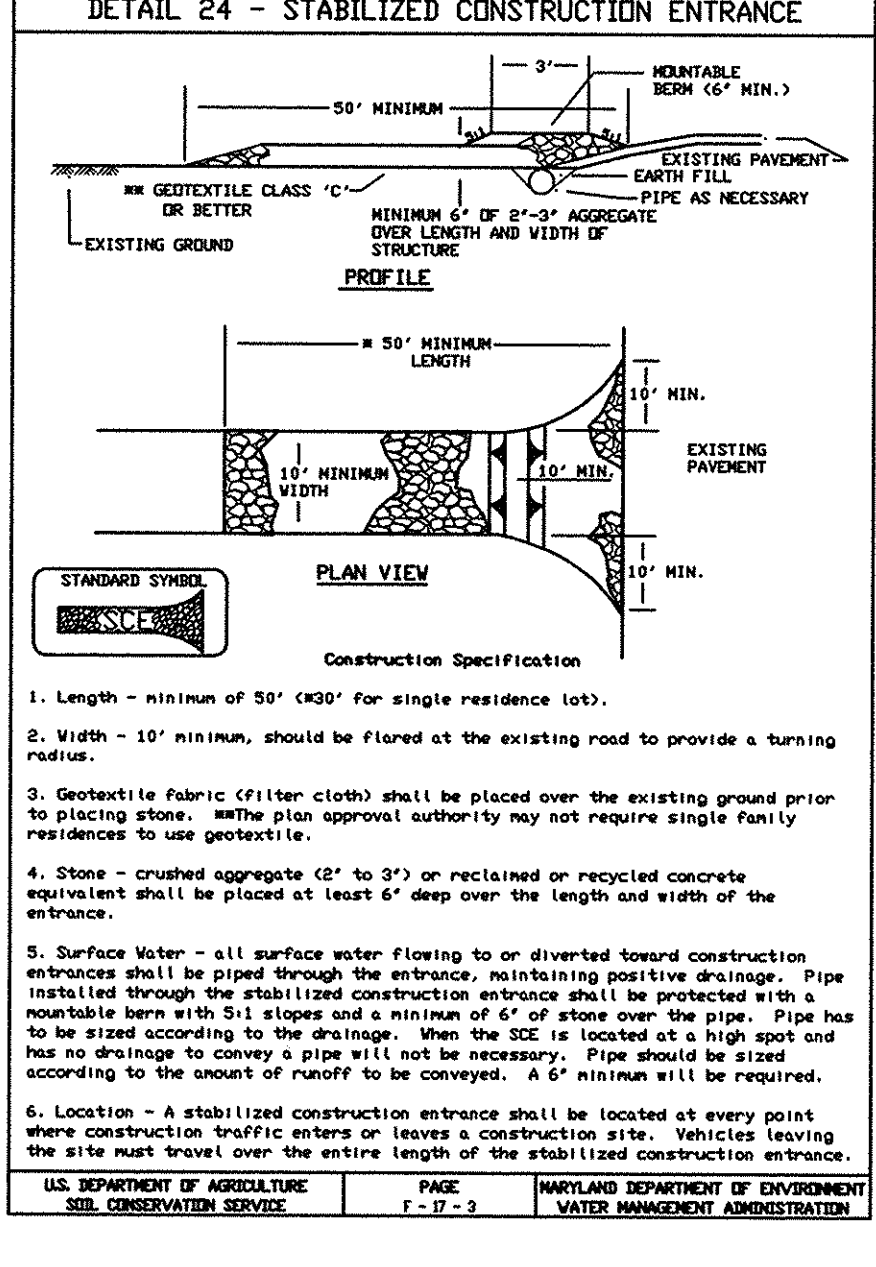
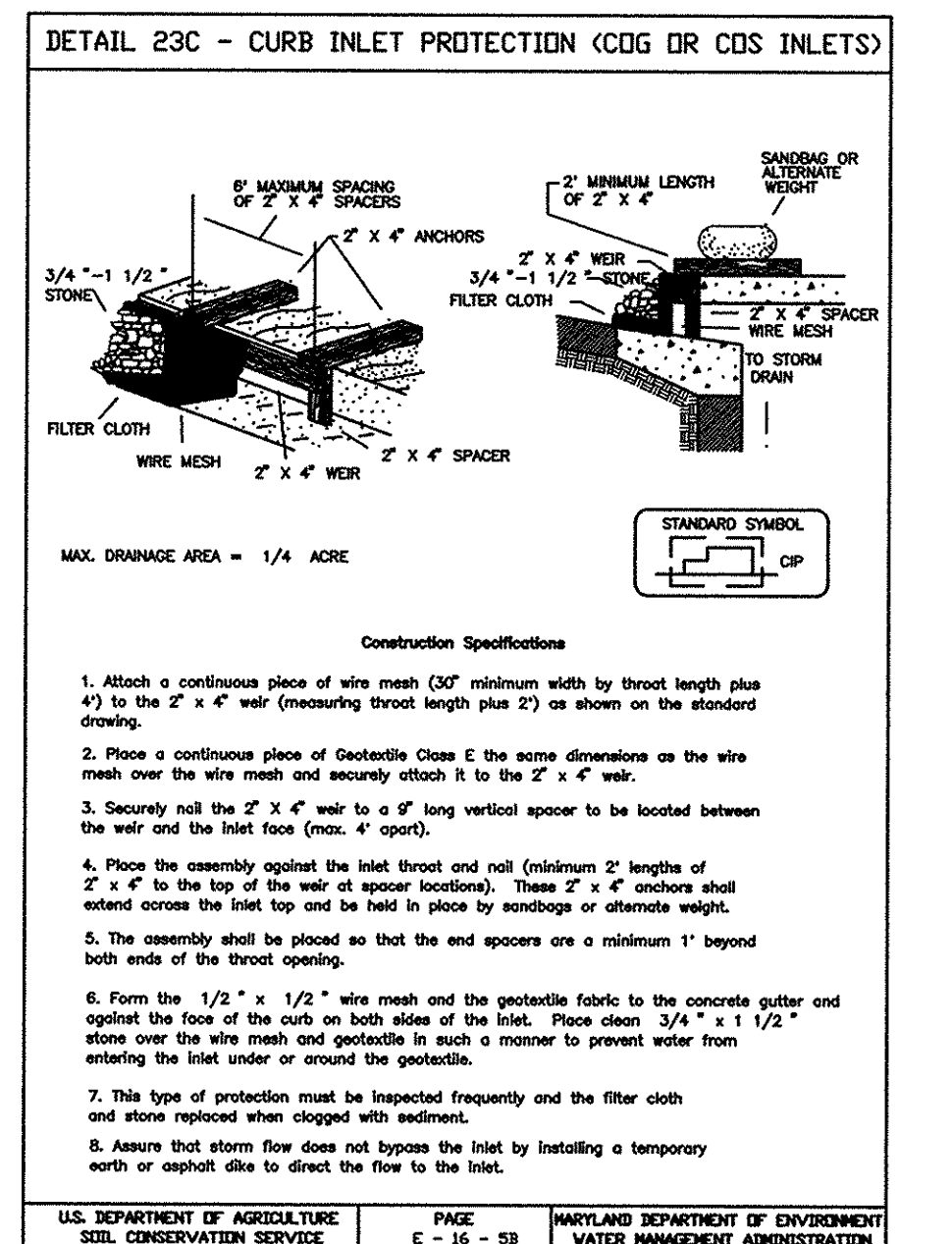
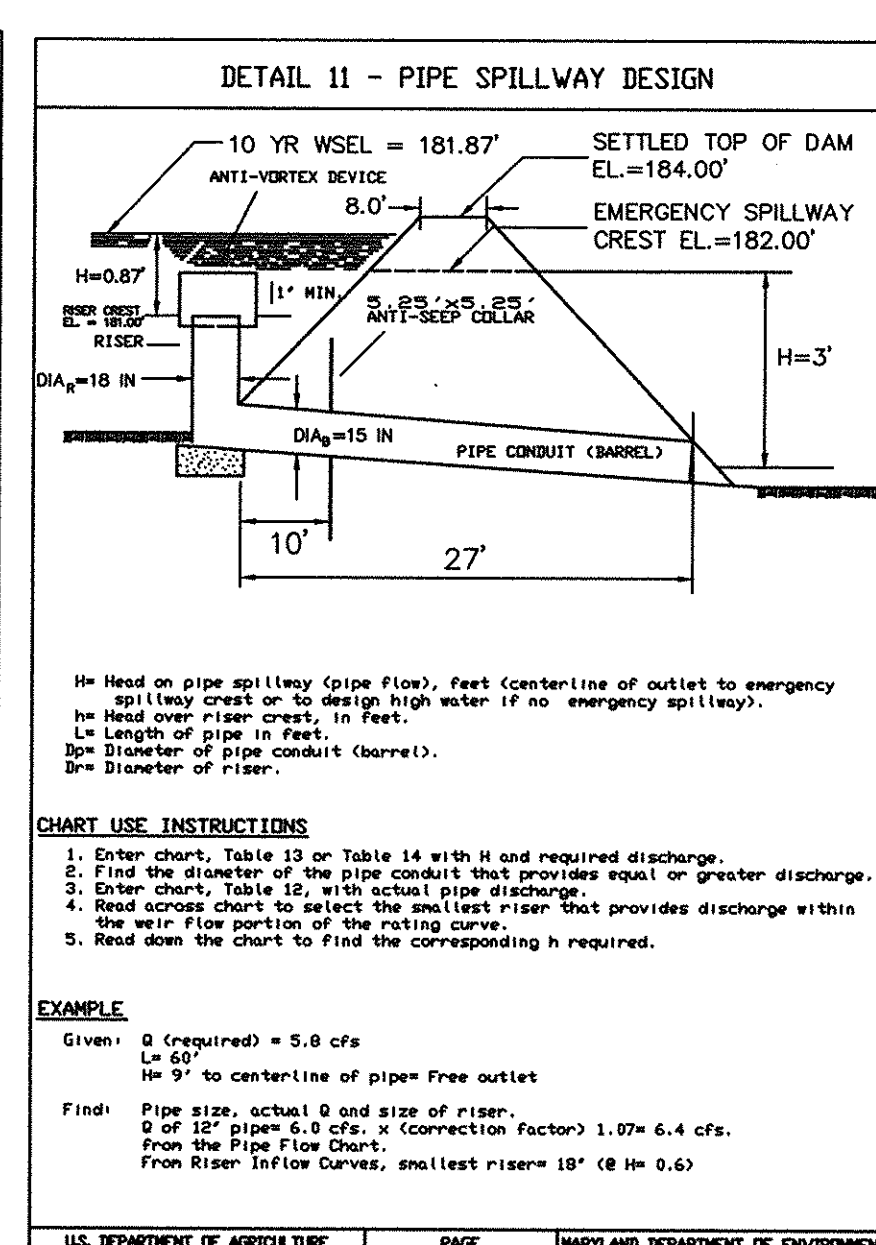
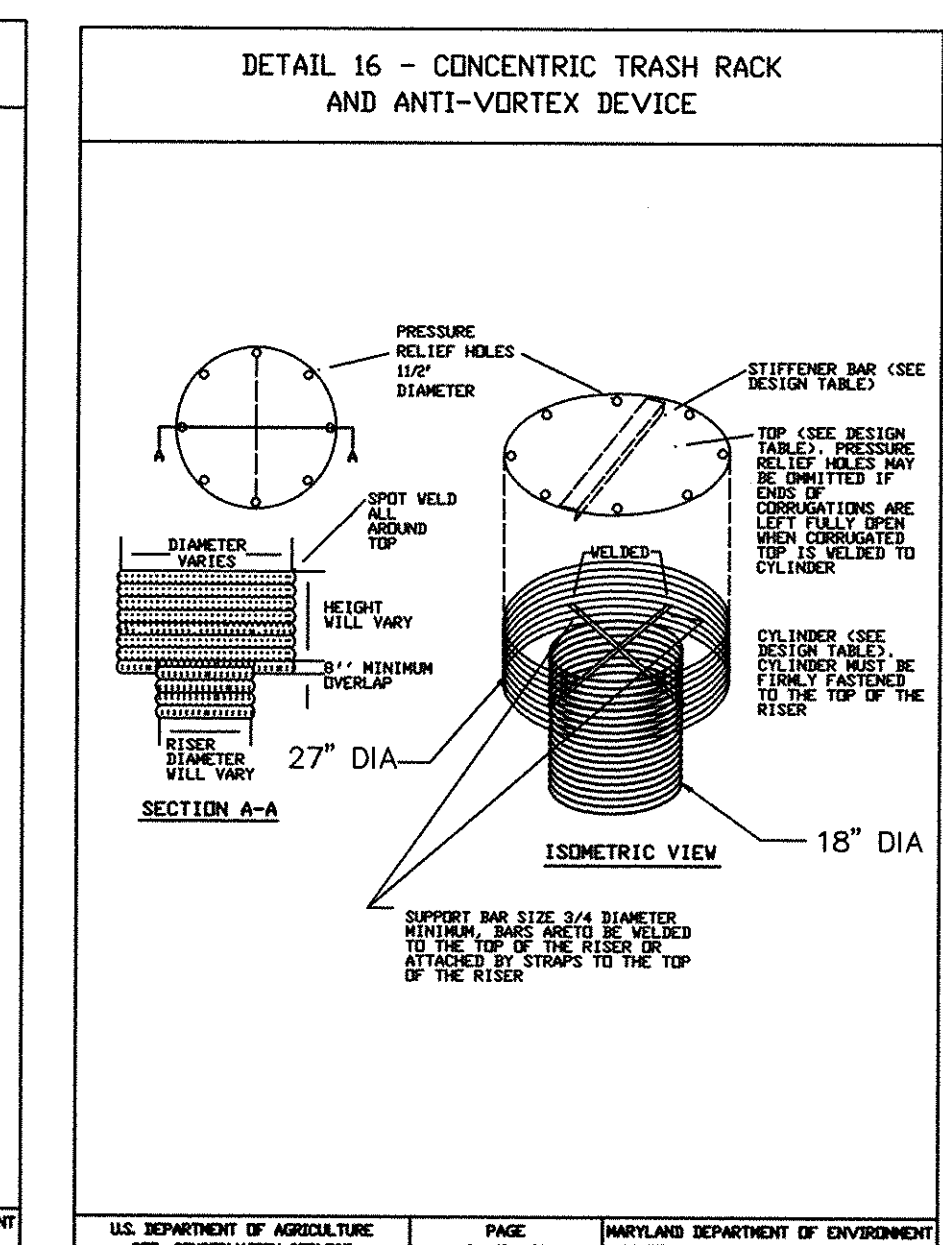
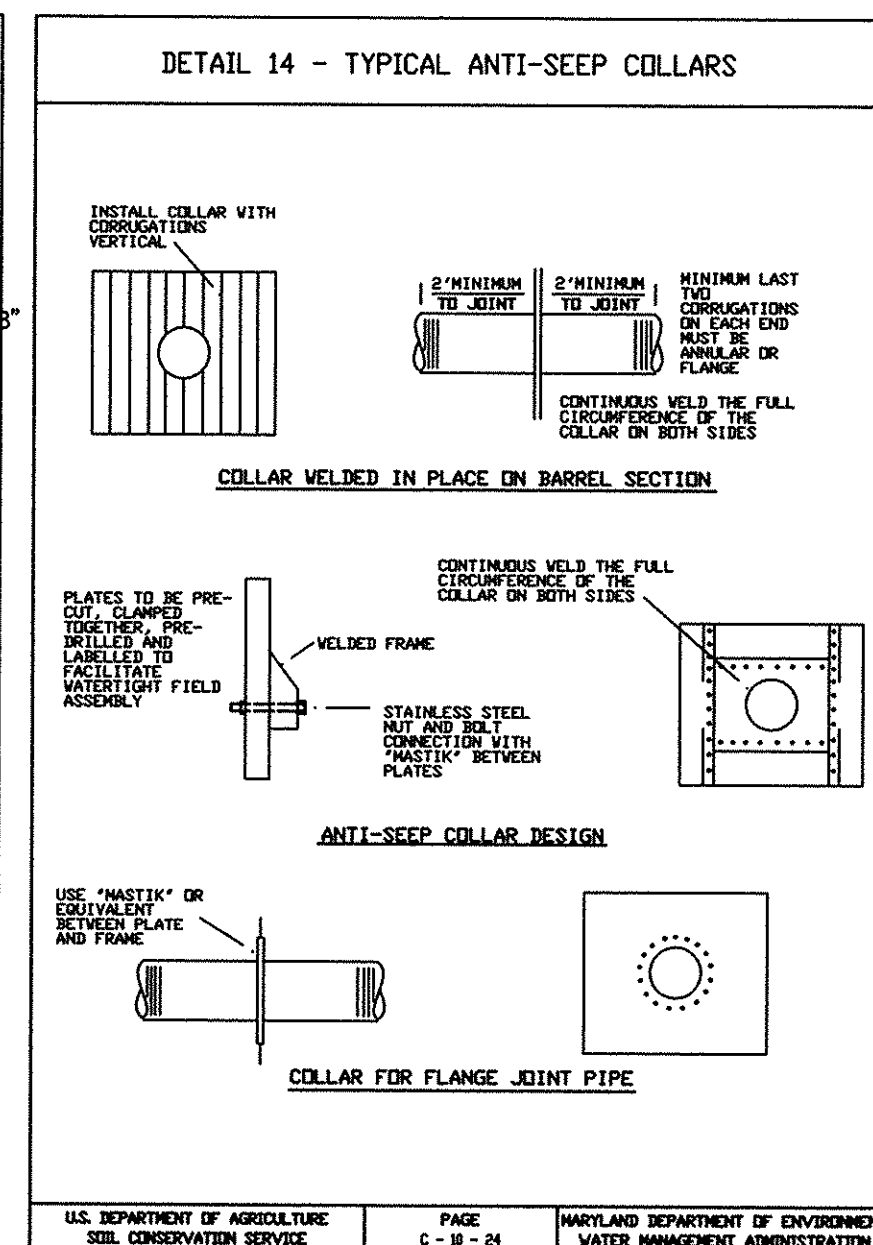
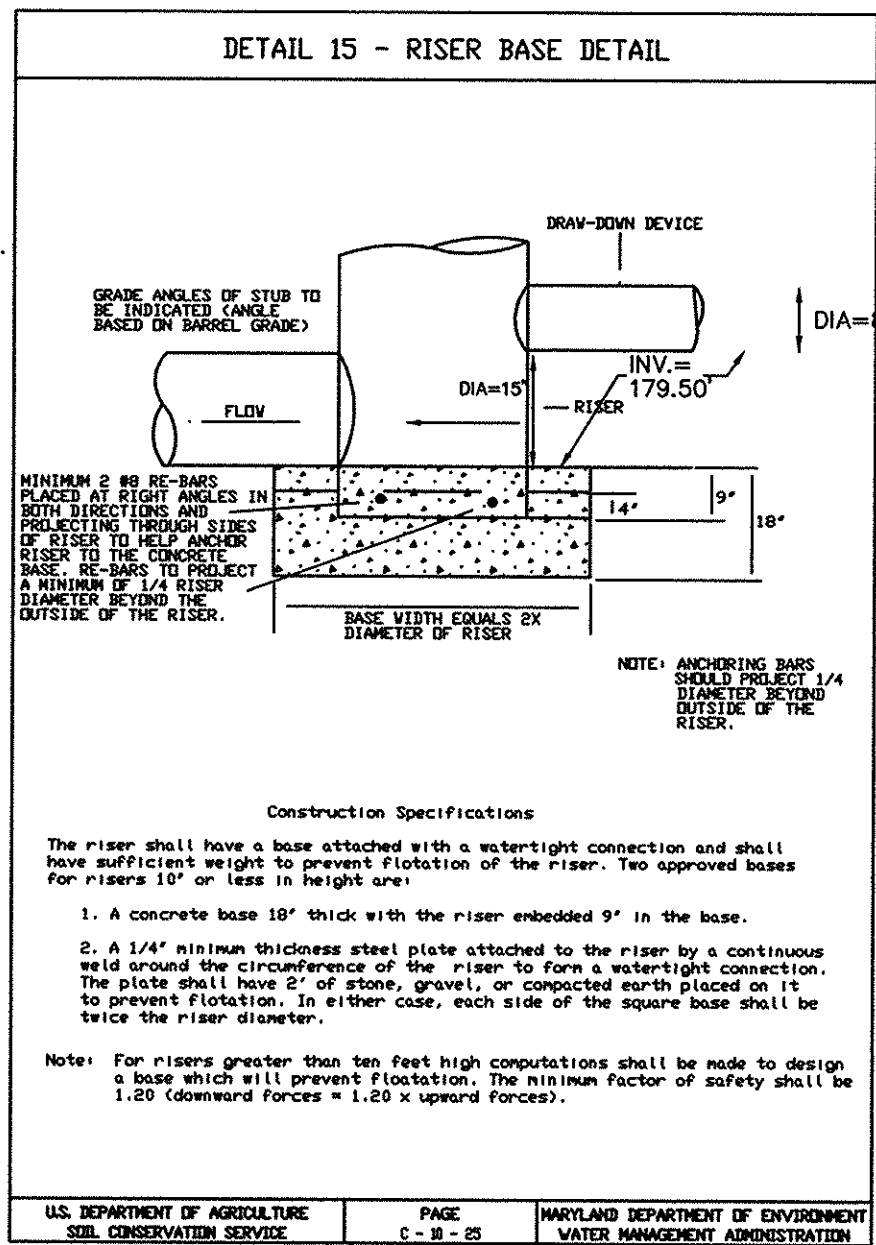
REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

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 MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER 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 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC.51), SOG (SEC. 54), TEMPORARY SEEDING (SEC.52), AND MULCHING (SEC.53). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**
TOTAL AREA OF SITE: 26.67 ACRES
AREA DISTURBED: 14.7 ACRES
AREA TO BE ROOFED OR PAVED: 6.0 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 8.7 ACRES
TOTAL CUT: 16,500 CU. YDS.
TOTAL FILL: 16,500 CU. YDS.
TOTAL WASTE/BORROW AREA LOCATION: 0
- 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 CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (1 DAY)
- CLEAR AND GRUB AREAS SURROUNDING SEDIMENT CONTROL FEATURES. (2 DAYS)
- CONSTRUCT PERMANENT STORMWATER MANAGEMENT POND AND SEDIMENT BASIN TO TEMPORARY GRADES TRAP AND STABILIZE USING TEMPORARY SEEDING METHOD. (5 DAYS)
- BLOCK THE TWO 2.5' WEIRS AT SWM POND RISER. (1 DAY)
- CONSTRUCT SILT FENCE AND EARTH DIKES, STABILIZE EARTH DIKES WITH TEMPORARY SEEDING. (5 DAYS)
- INSTALL FOREST PROTECTION DEVICES (FOR MAINTENANCE AND INSPECTION SEE FOREST CONSERVATION SHEETS). (1 DAY)
- CLEAR SITE PER LIMIT INDICATED PLEASE NOTE THAT NO CLEARING IS TO BE DONE UNTIL THE SEDIMENT CONTROL MEASURES IN F-97-154 HAVE BEEN INSTALLED. (10 DAYS)
- CONSTRUCT SITE TO GRADES INDICATED ON THE PLANS. CONSTRUCT STORM DRAIN SYSTEM, DRAINING TO SWM POND, AND UTILITIES. (14 DAYS)
- CONSTRUCT REMAINDER OF STORM DRAIN SYSTEM. (15 DAY)
- RECONSTRUCT OUTLET OF SEDIMENT BASIN TO CONNECT TO STORM DRAIN SYSTEM. (1 DAY)
- UPON STABILIZATION OF GRADED AREAS, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE STORM DRAIN SYSTEM. (1 DAY)
- DURING CONSTRUCTION, SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT TRAPS AND STORMWATER MANAGEMENT POND WHEN THEIR CLEANOUT ELEVATIONS HAVE BEEN REACHED.
- STABILIZE ALL RIGHT OF WAY AREAS WITH PERMANENT SEEDING. (1 DAY)
- INSPECT ALL SEDIMENT CONTROL DEVICES DAILY AND AFTER EACH RAINFALL, REPAIR AS NECESSARY.
- WHEN ALL CONTRIBUTING AREAS TO SEDIMENT CONTROL DEVICES HAVE BEEN PERMANENTLY STABILIZED, AND AFTER THE APPROVAL OF THE INSPECTOR REMOVE SEDIMENT CONTROL DEVICES, GRADE AREAS DISTURBED, AND PROVIDE PERMANENT SEED AND MULCH AND CONSTRUCT POND TO FINAL GRADE. (1 DAY)
- CONTRACTOR SHALL REMOVE SEDIMENT AND FLUSH STORM DRAIN SYSTEM AT END OF CONSTRUCTION PERIOD. (1 DAY)
- CONTRACTOR SHALL DETAHER THE STORMWATER MANAGEMENT POND AND REMOVE ACCUMULATED SEDIMENTS, REPLACE THE PERFORATED PIPES SERVING AS DETAHERING DEVICES AND RECONSTRUCT THE RISER AS PER THE PLANS. (1 DAY)
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN
A.) 7 CALENDAR DAYS FOR ALL PERIMETER SLOPES AND GREATER THAN 3:1
B.) 14 DAYS FOR ALL OTHER DISTURBED GRADED AREAS ON THE PROJECT SITE.



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: _____ P.E. NO.: _____
DATE: _____

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. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY THE REGISTERED PROFESSIONAL ENGINEER. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES ENGINEER'S CERTIFICATION RELIEVE AN OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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 AUTHORIZED PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER: _____ DATE: 10-3-97
James L.C. Newbarn, member

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 IS 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. I ALSO AUTHORIZED PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF ENGINEER: _____ DATE: 10/3/97
James L.C. Newbarn, member

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.

USA - CIVIL ENGINEER REGISTERED PROFESSIONAL ENGINEER

SIGNATURE OF DEVELOPER: _____ DATE: 10/20/97
Candy Hamilton

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Candy Hamilton, 10/20/97
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS
Candy Hamilton, 10/20/97
CHIEF BUREAU OF HIGHWAYS

95156 DING/FINAL/PHASE 1/ROADS/05-26-95-SED-2

date: JUL 1997
project: 95156
illustration: SD
scale: SD
approval: JAS SHOWN
date: _____
description: _____
revisions: _____

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION I, LOTS 1-41
AND BULK PARCEL "A"
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

EROSION AND SEDIMENT CONTROL NOTES & DETAILS

MILDENBERG, & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Elkoot Chy, Maryland, 21042
(410) 997-0296 Ball. (301) 621-5521 Wash. (410) 997-0298 Fax.

6 OF 16
F-97-110

HOWARD SOIL CONSERVATION DISTRICT PERMANENT SEEDING NOTES

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

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

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

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (8 LBS./1000 SQ.FT.)
- ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE 1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (.05 LBS./1000 SQ.FT.) OF KEPPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU 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 GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

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

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 THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, FOR NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS./1000 SQ.FT.) FOR PERIOD NOVEMBER 16 THRU NOVEMBER 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

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

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

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 MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.

- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER 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 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC.5), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC.52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

- NOTE: SITE ANALYSIS:
TOTAL AREA OF SITE: 26.67 ACRES
AREA DISTURBED: 14.7 ACRES
AREA TO BE ROOFED OR PAVED: 6.0 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 8.7 ACRES
TOTAL CUT: 16,500 CU. YDS.
TOTAL FILL: 16,500 CU. YDS.
TOTAL WASTE/BORROW AREA LOCATION: 0

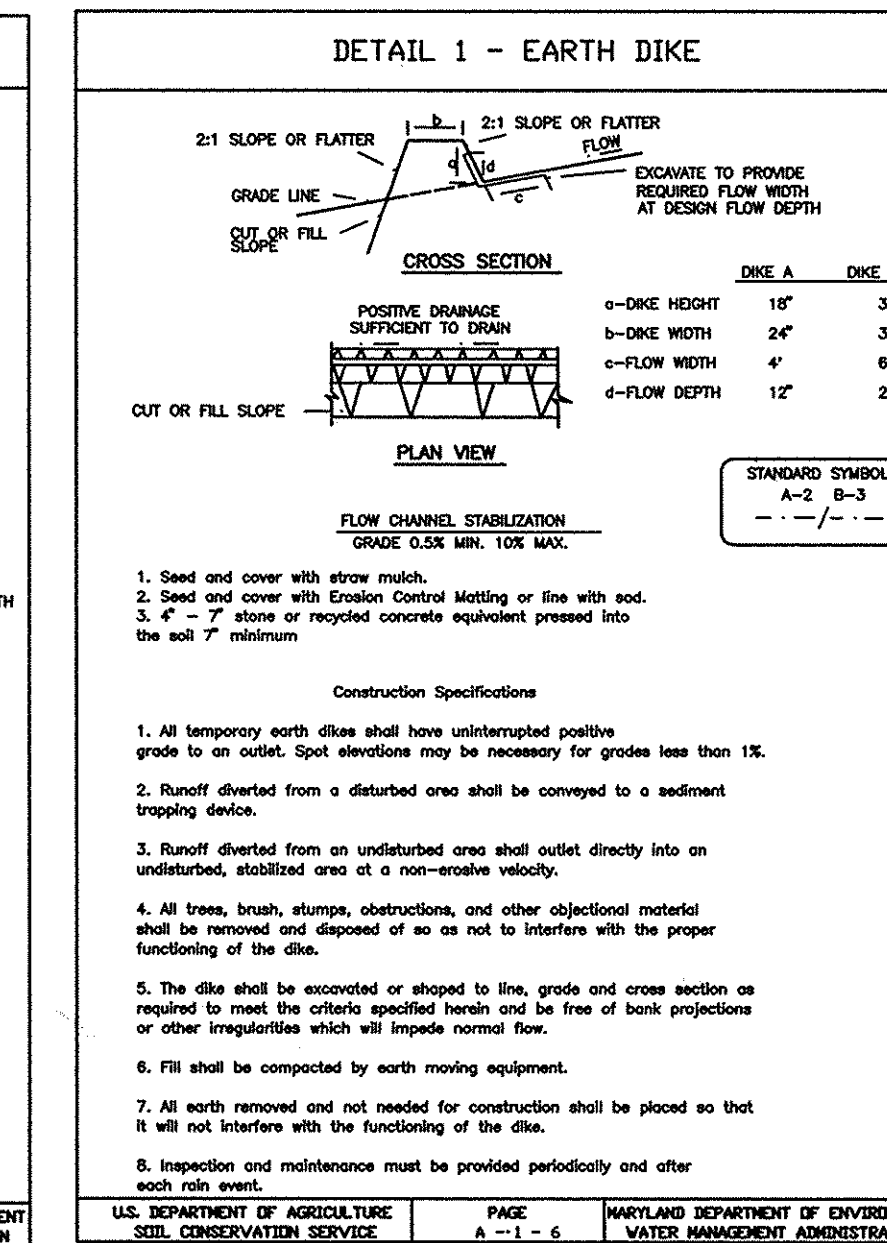
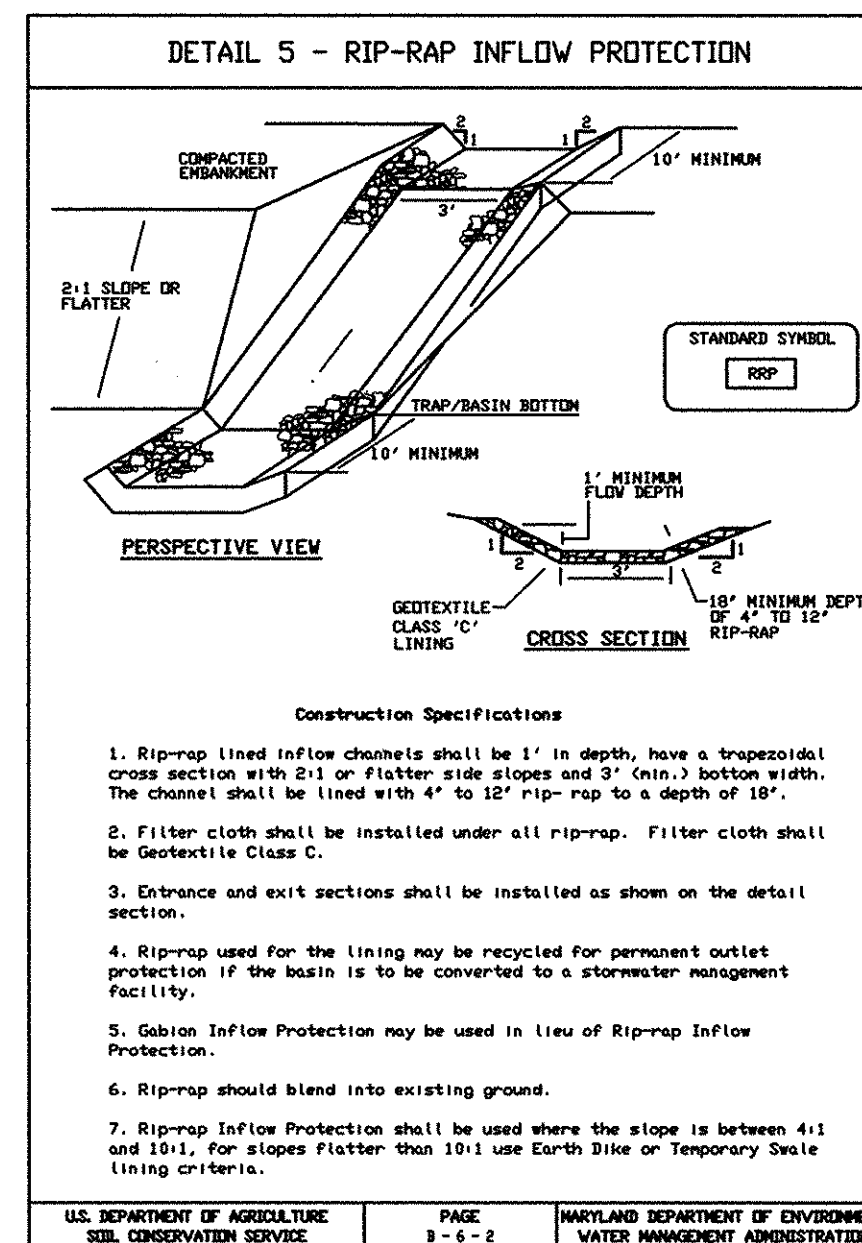
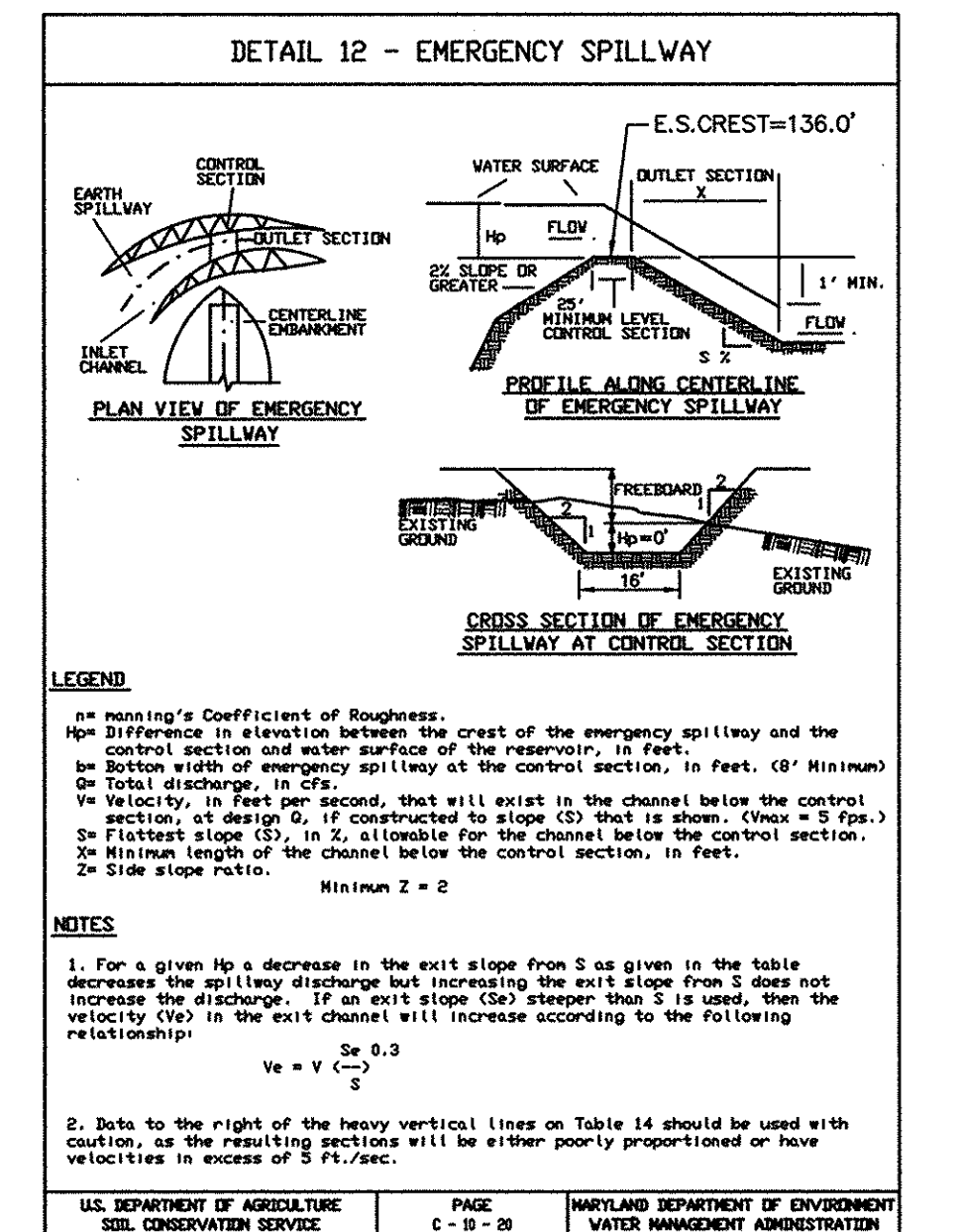
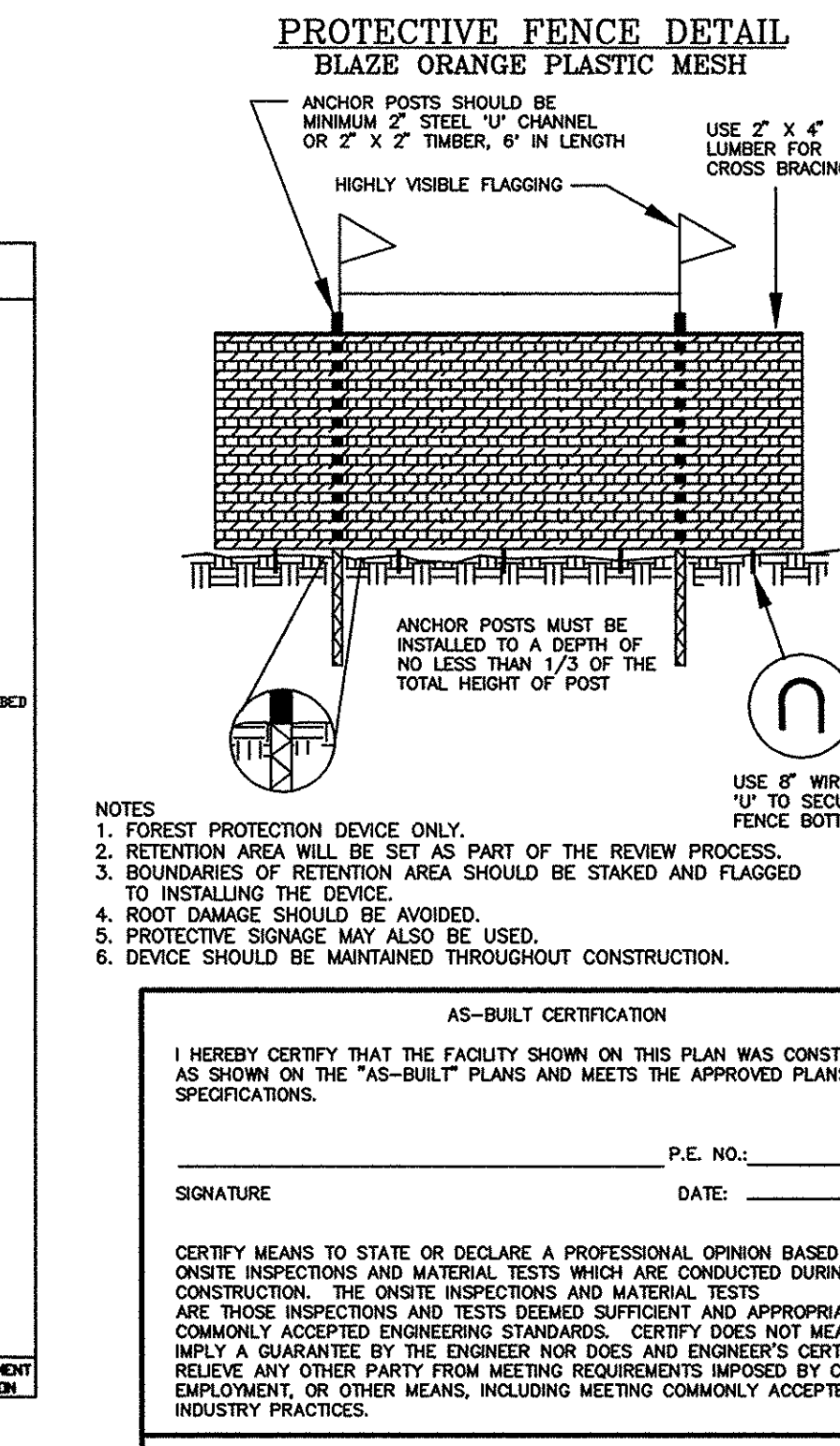
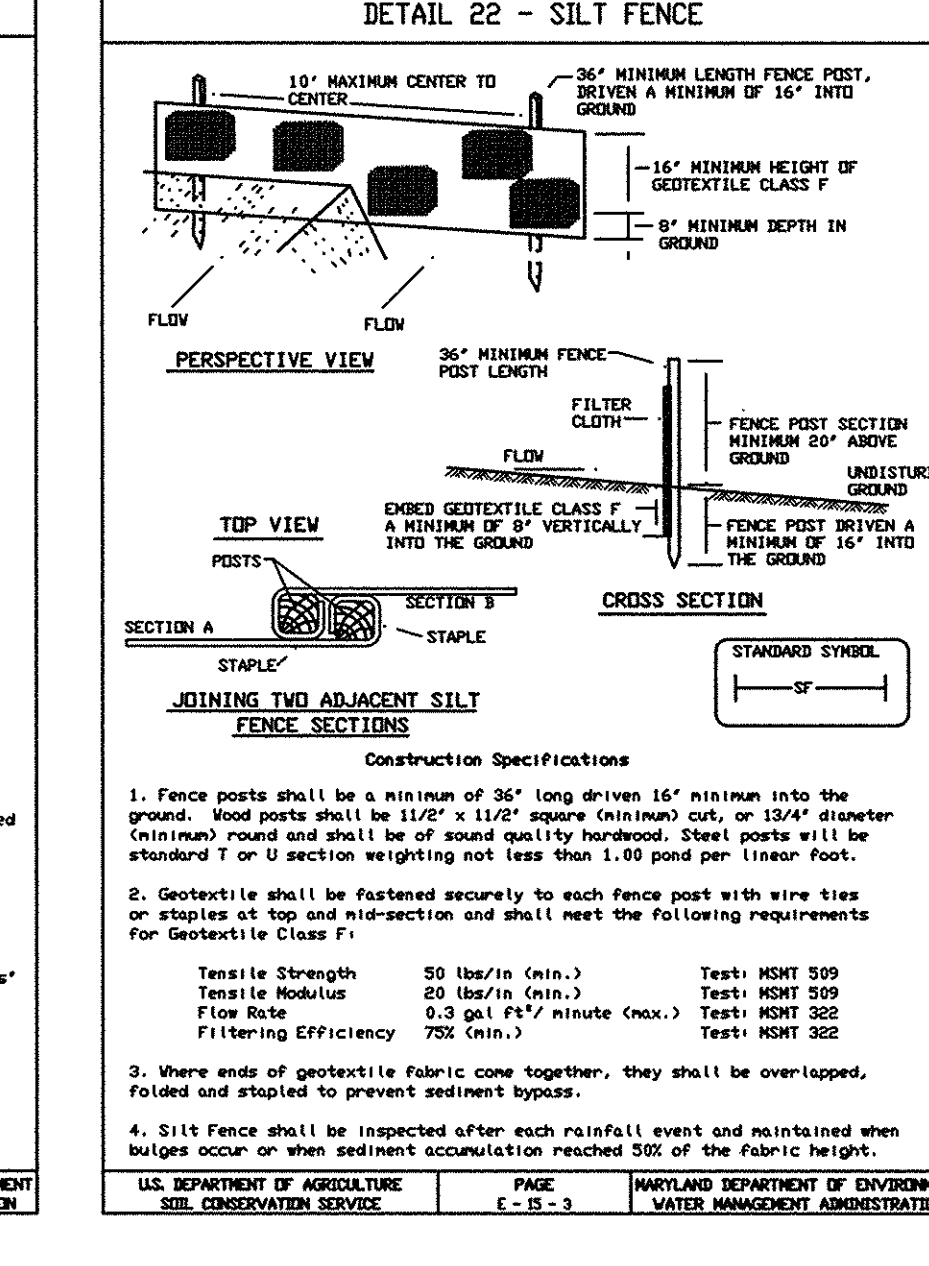
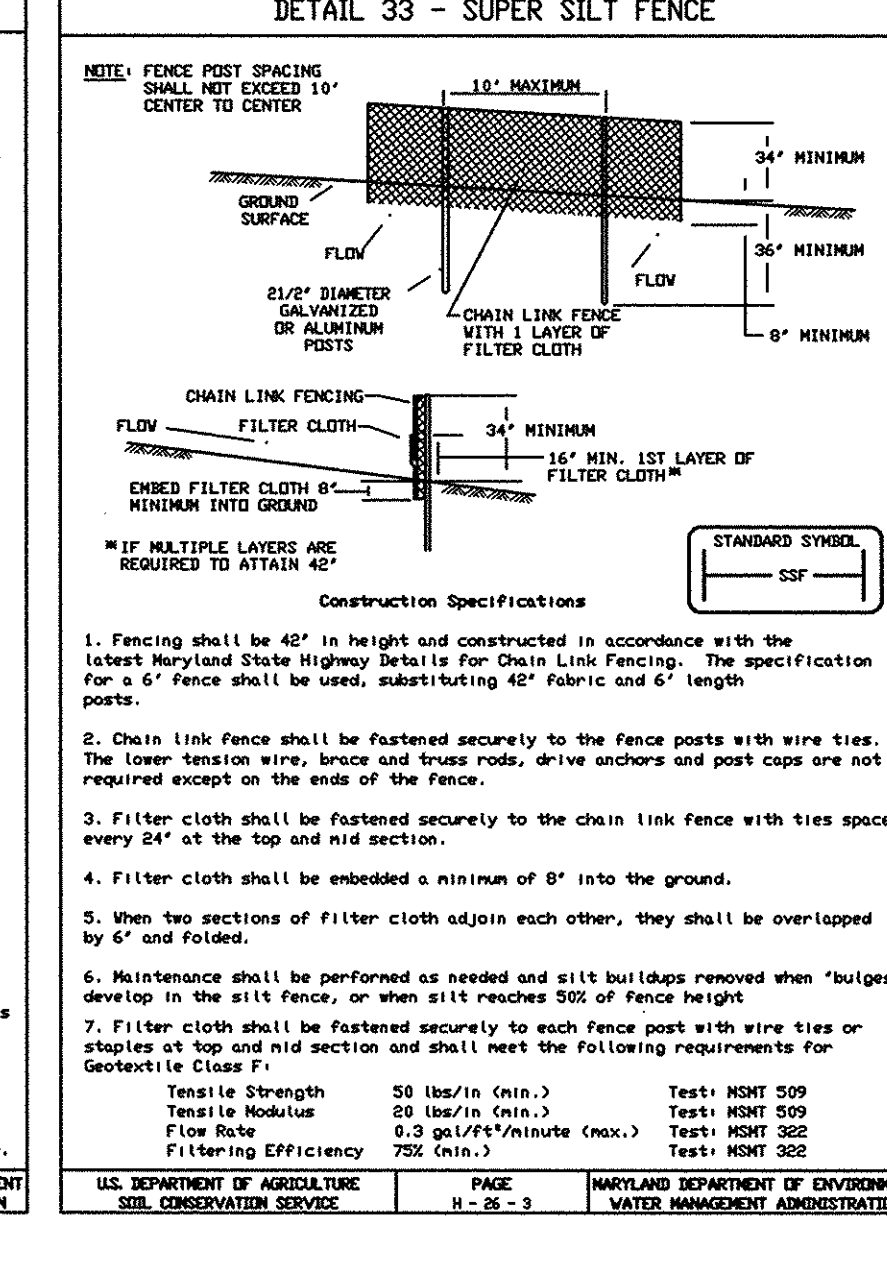
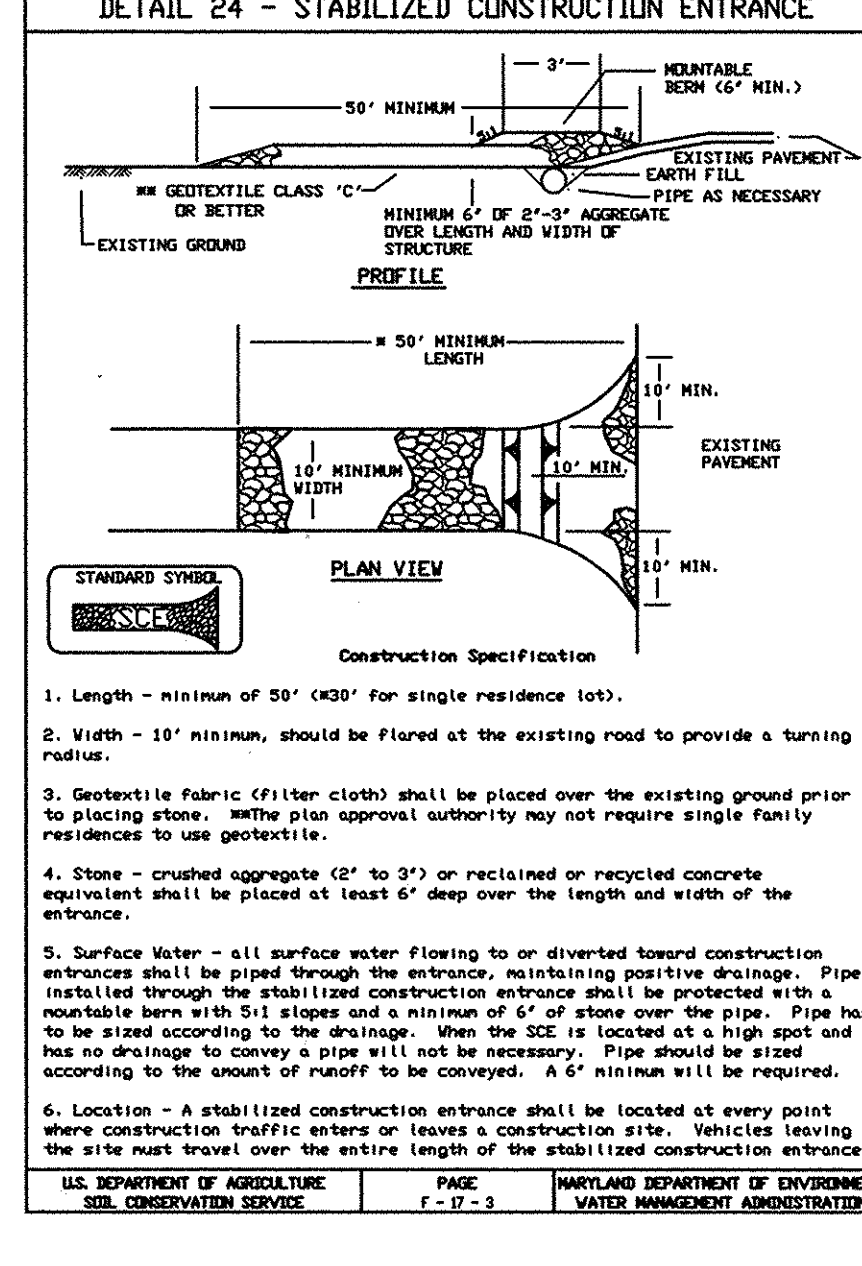
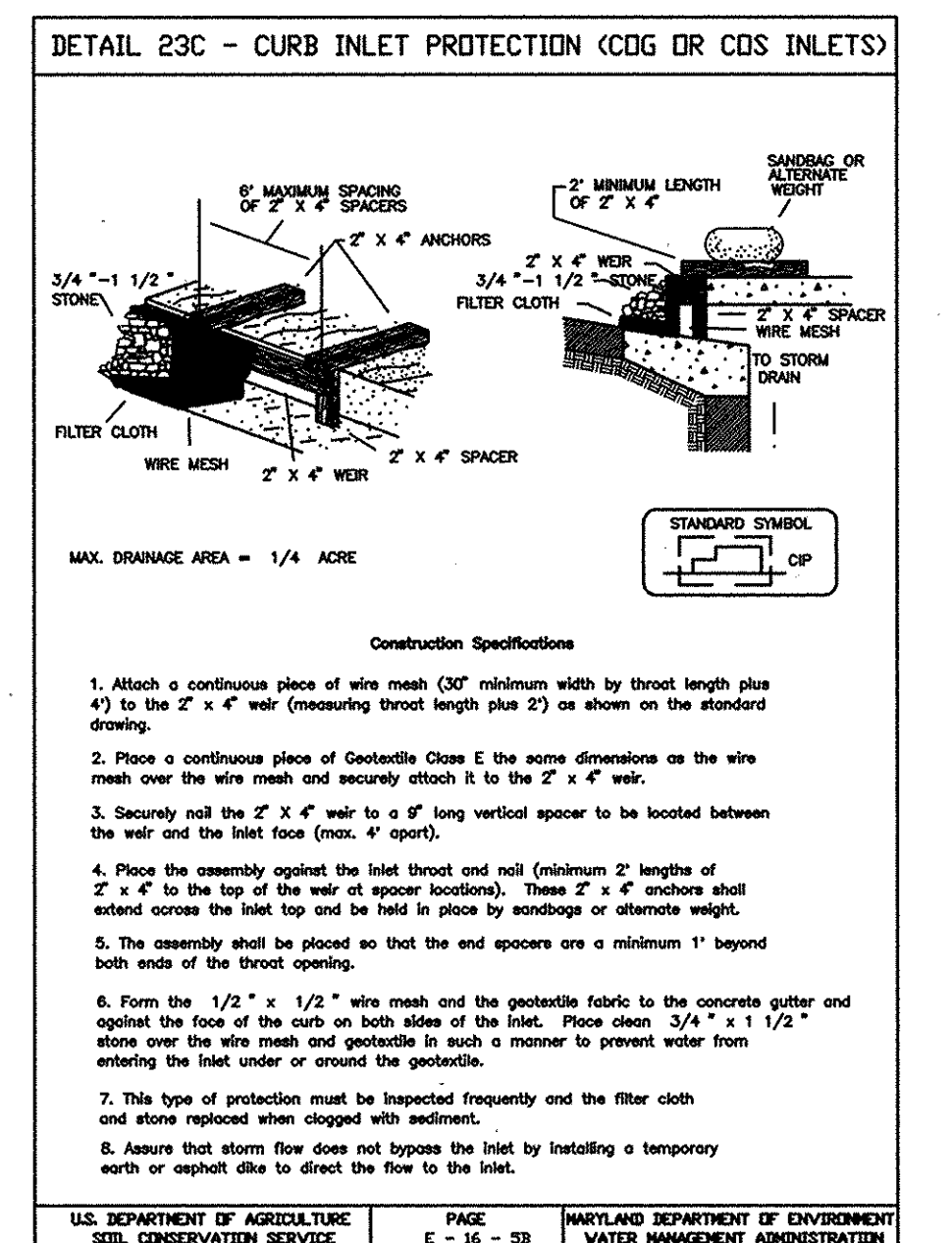
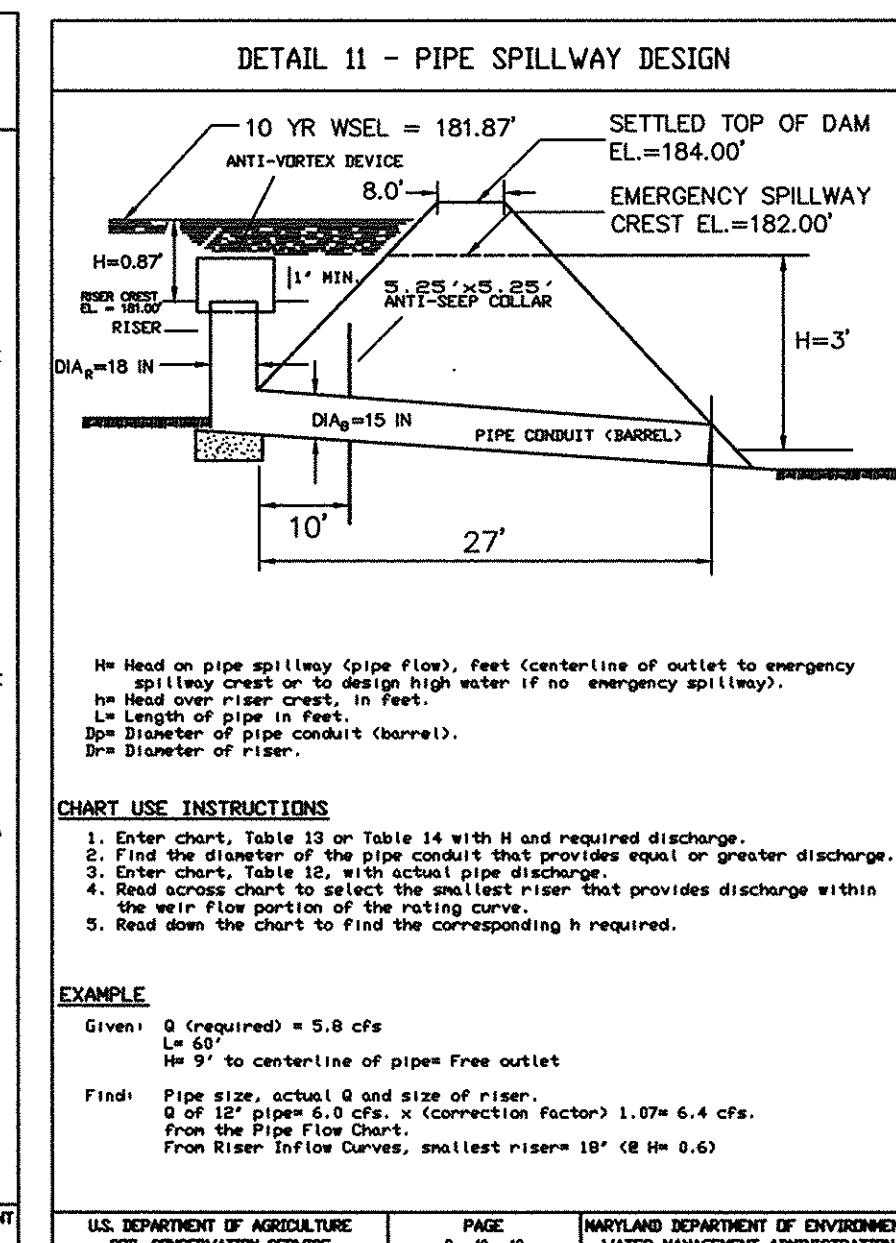
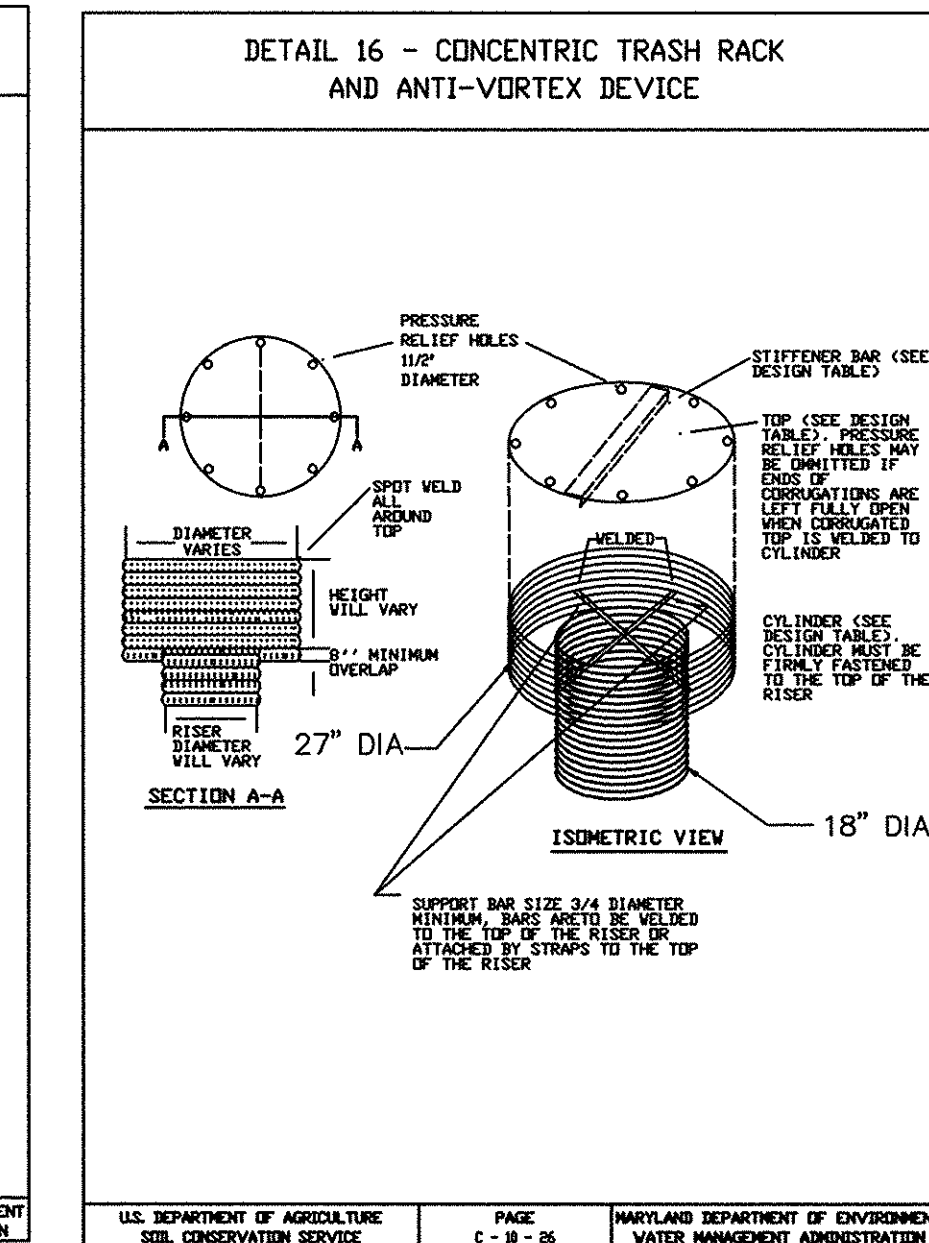
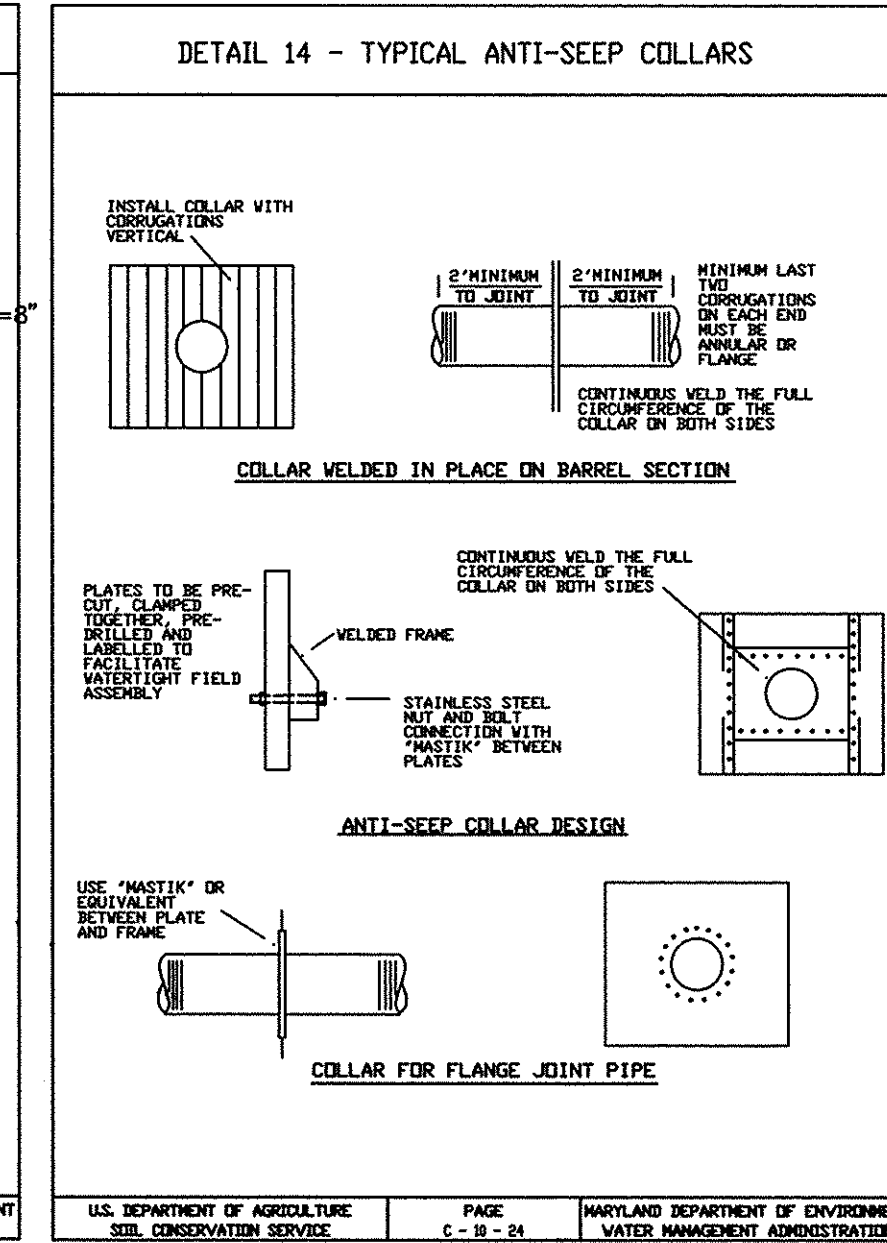
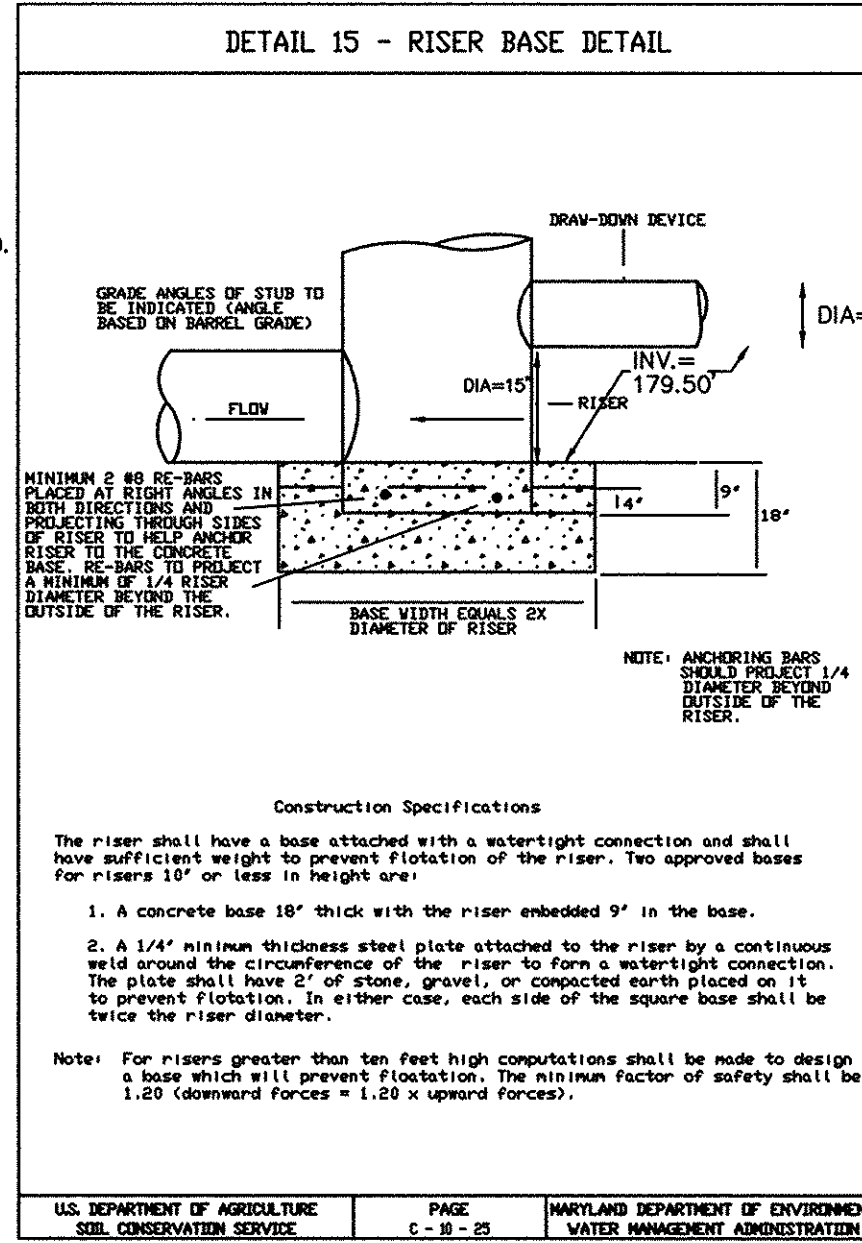
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

- 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 CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE. (1 DAY)
- CLEAR AND GRUB AREAS SURROUNDING SEDIMENT CONTROL FEATURES. (2 DAYS)
- CONSTRUCT PERMANENT STORMWATER MANAGEMENT POND AND SEDIMENT BASIN TO TEMPORARY GRASSES TRAP AND STABILIZE USING TEMPORARY SEEDING METHOD. (5 DAYS)
- BLOCK THE TWO 2.5' WIERS AT SWM POND RISER. (1 DAY)
- CONSTRUCT SILT FENCE AND EARTH DIKES, STABILIZE EARTH DIKES WITH TEMPORARY SEEDING. (3 DAYS)
- INSTALL FOREST PROTECTION DEVICES (FOR MAINTENANCE AND INSPECTION SEE FOREST PROTECTION SHEET). (1 DAY)
- CLEAR SITE PER LIMIT INDICATED PLEASE NOTE THAT NO CLEARING IS TO BE DONE UNTIL THE SEDIMENT CONTROL MEASURES IN F-97-154 HAVE BEEN INSTALLED. (10 DAYS)
- CONSTRUCT SITE TO GRADES INDICATED ON THE PLANS. CONSTRUCT STORM DRAIN SYSTEM, DRAINING TO SWM POND, AND UTILITIES. (14 DAYS)
- CONSTRUCT REMAINDER OF STORM DRAIN SYSTEM. (15 DAY)
- RECONSTRUCT OUTLET OF SEDIMENT BASIN TO CONNECT TO STORM DRAIN SYSTEM. (1 DAY)
- UPON STABILIZATION OF GRADED AREAS, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE STORM DRAIN SYSTEM. (1 DAY)
- DURING CONSTRUCTION, SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT TRAPS AND STORMWATER MANAGEMENT POND WHEN THEIR CLEANOUT ELEVATIONS HAVE BEEN REACHED.
- STABILIZE ALL RIGHT OF WAY AREAS WITH PERMANENT SEEDING. (1 DAY)
- INSPECT ALL SEDIMENT CONTROL DEVICES DAILY AND AFTER EACH RAINFALL, REPAIR AS NECESSARY.
- WHEN ALL CONTRIBUTING AREAS TO SEDIMENT CONTROL DEVICES HAVE BEEN PERMANENTLY STABILIZED, AND AFTER THE APPROVAL OF THE INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES, GRADE AREAS DISTURBED, AND PROVIDE PERMANENT SEED AND MULCH AND CONSTRUCT POND TO FINAL GRADE. (1 DAY)
- CONTRACTOR SHALL REMOVE SEDIMENT AND FLUSH STORM DRAIN SYSTEM AT END OF CONSTRUCTION PERIOD. (1 DAY)
- CONTRACTOR SHALL Dewater the STORMWATER MANAGEMENT POND AND REMOVE ACCUMULATED SEDIMENTS, REPLACE THE PERFORATED PIPES SERVING AS DEWATERING DEVICES AND RECONSTRUCT THE RISER AS PER THE PLANS. (1 DAY)
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN
A) 7 CALENDAR DAYS FOR ALL PERIMETER SLOPES AND GREATER THAN 3:1
B) 14 DAYS FOR ALL OTHER DISTURBED GRADED AREAS ON THE PROJECT SITE.



95136.DWG/FINAL/PHASE 1/ROADS/26-SED-2



OWNERS
PARCEL 229
JNSD, LC
5570 STERRETT PLAC, SUITE 201
COLUMBIA, MARYLAND 21044
(410) 997-3815, (301) 596-3877

DEVELOPER
PARCELS 230 & 231
MICHAEL & SUSAN MULLENDORE
6154 HANOVER ROAD
HANOVER, MARYLAND 21076
(410) 997-3815, (301) 596-3877

DEVELOPER
JNSD, LC
5570 STERRETT PLAC, SUITE 201
COLUMBIA, MARYLAND 21044
(410) 997-3815, (301) 596-3877

AS-BUILT CERTIFICATION

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

P.E. NO.:
DATE:

SIGNATURE: *James L. Newburn* DATE: 10-3-97

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 PERMANENT ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

JNSD, LC
James L. Newburn DATE: 10-3-97
PRINTED NAME OF DEVELOPER

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.

James L. Newburn DATE: 10/3/97
PRINTED NAME OF ENGINEER

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

Charles Seminary DATE: 10/24/97
MSEA - NATURAL RESOURCES CONSERVATION SERVICE

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

Robert W. Zeman DATE: 10/24/97
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief Bureau of Highways DATE: 10-24-97

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Candy Hamilton DATE: 10/20/97
CHIEF, DIVISION OF LAND DEVELOPMENT

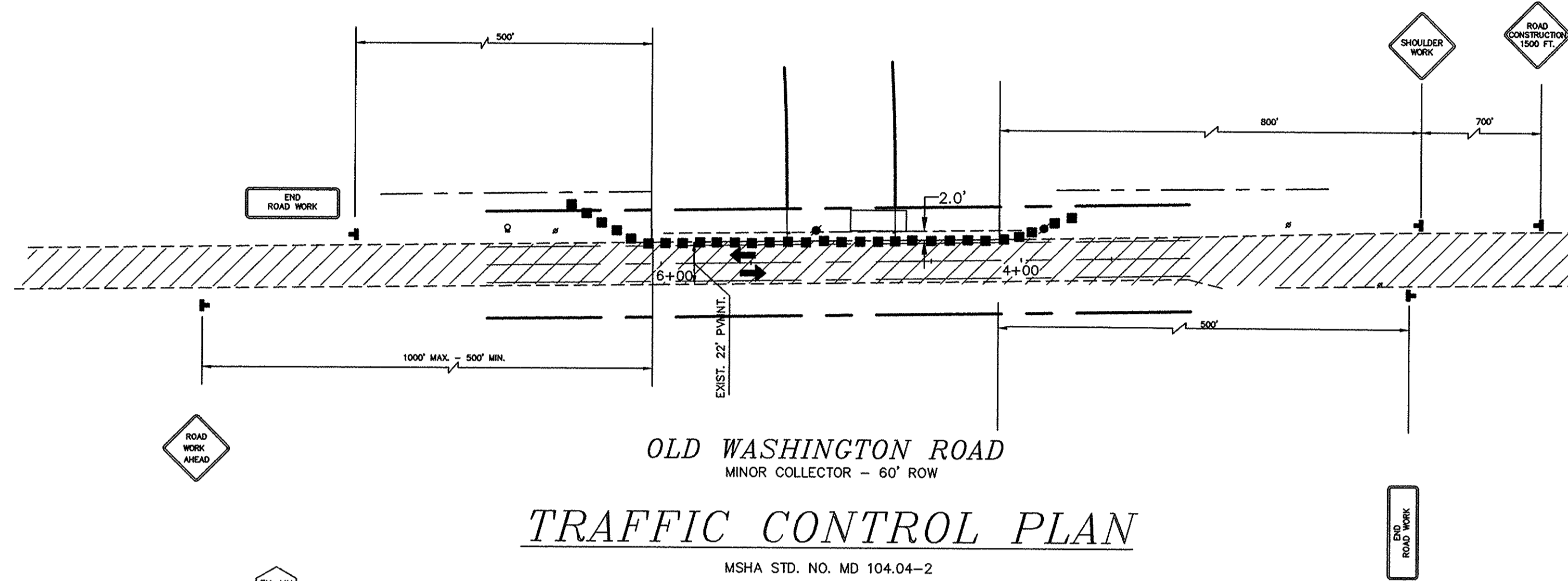
APPROVED: DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
Chief, Development Engineering Division DATE: 10/20/97

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION 1, LOTS 1-41
AND BULK PARCEL A
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
EROSION AND SEDIMENT CONTROL NOTES & DETAILS

date	description	revisions
JUL 1997	engineering	approval
95136	illustration	scale
		AS SHOWN

MILDENBERG & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax (301) 681-5521 Wash. (410) 997-0298 Fax.

ABEL STREET
LOCAL ROAD -- 50' PUBLIC ROW

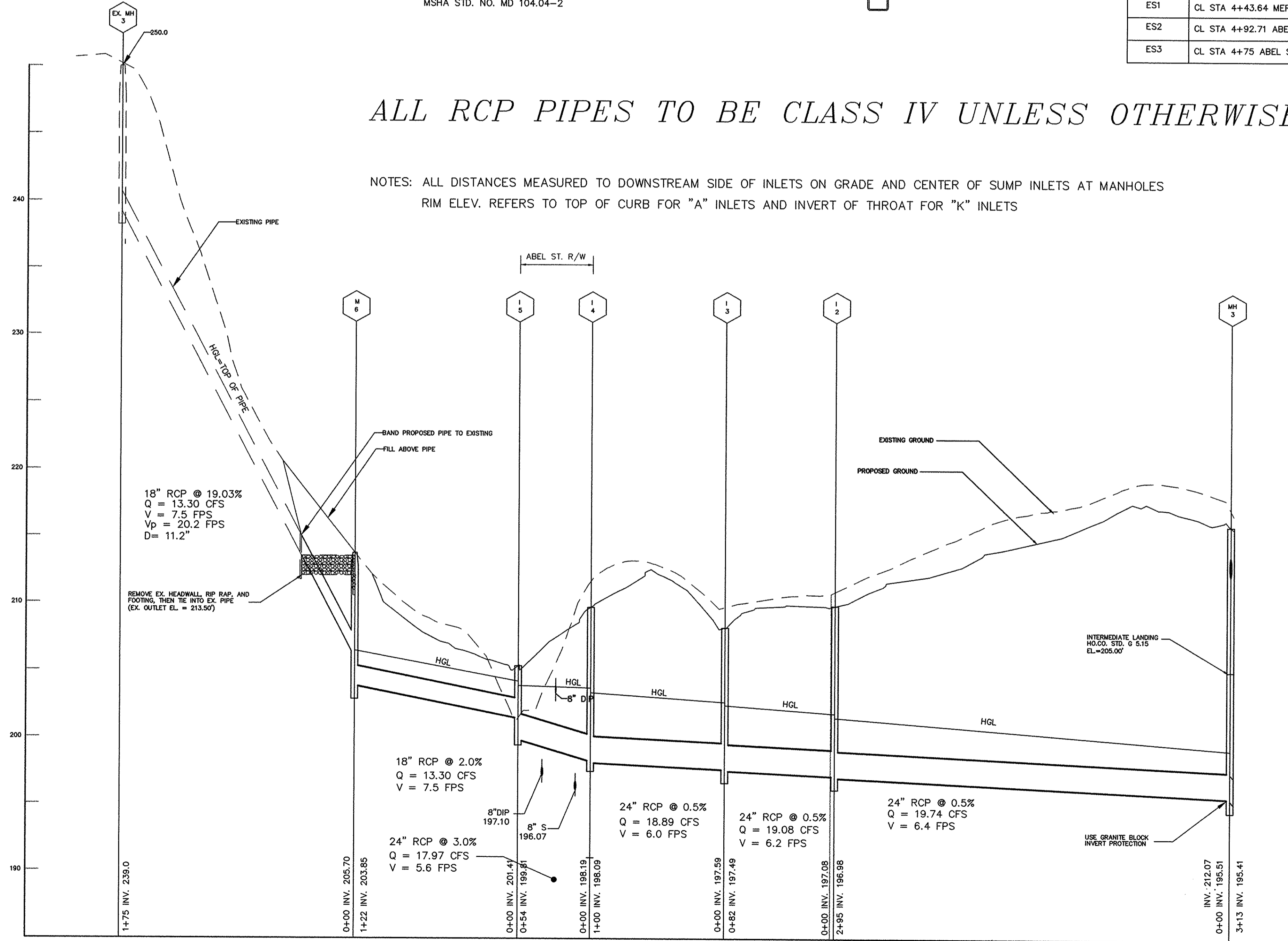


TRAFFIC CONTROL PLAN
MSHA STD. NO. MD 104.04-2

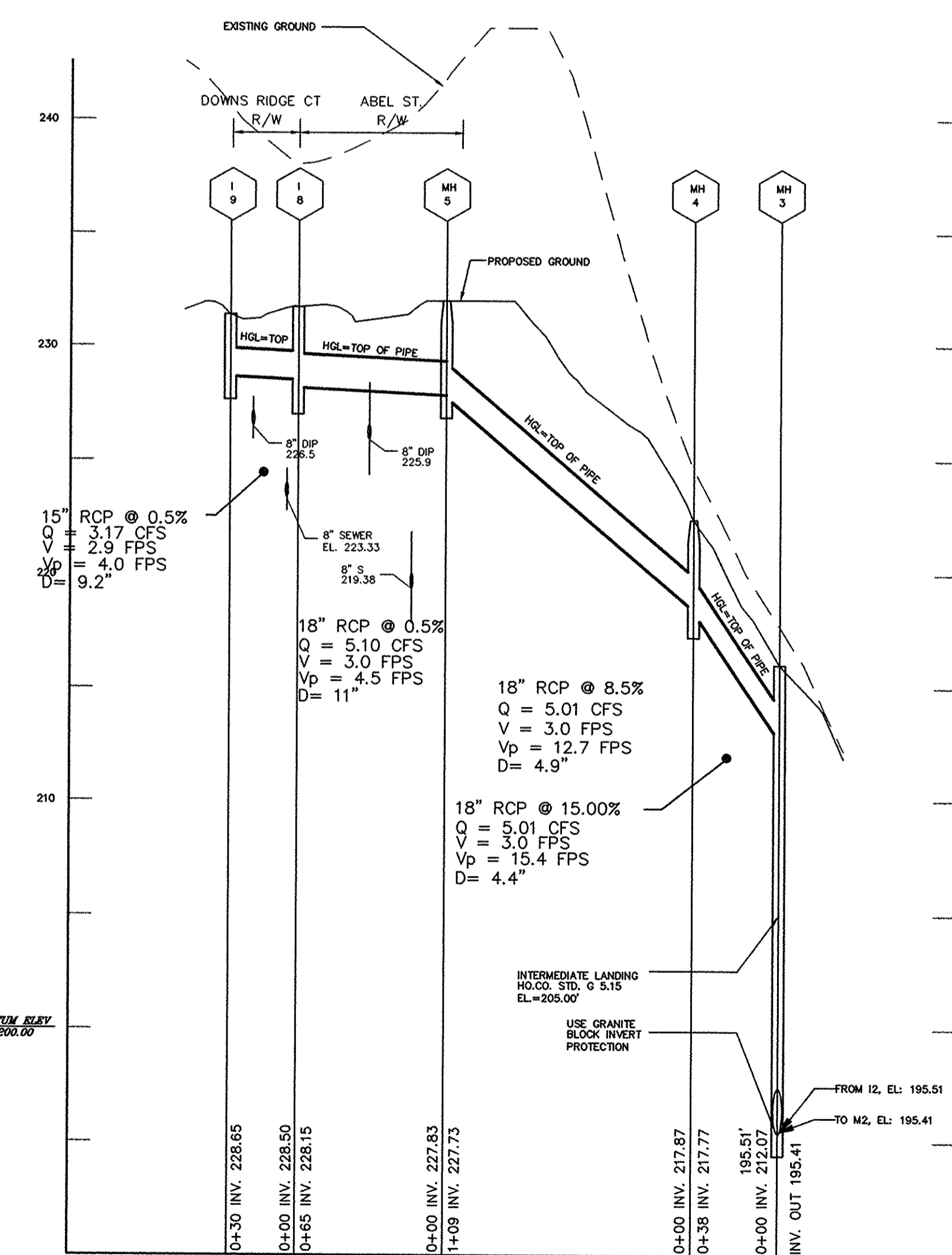
NO.	LOCATION	RIM ELEV.	INV. IN	INV. OUT	COMMENTS
MH3	CL STA 10+60.82, ABEL STREET-153.98 RIGHT	215.5	212.07 195.51	195.41	"K" INLET - SEE HO. CO. STD. DETAIL SD-4.13
I2	CL STA 8+33.28 ABEL STREET-122.90 RIGHT	209.50	197.08	196.98	"K" INLET - SEE HO. CO. STD. DETAIL SD-4.13
I3	CL STA 7+68.98 ABEL STREET-113.40 RIGHT	207.50	197.59	197.49	"K" INLET - SEE HO. CO. STD. DETAIL SD-4.13
I4	CL STA 7+45.84 ABEL STREET - 13' RIGHT	208.58	198.19	198.09	A-5 INLET SEE HO. CO. STD SD 4.01, W=2.5'
I5	CL STA 7+05.05 ABEL STREET - 13' LEFT	204.72	201.41	199.81	20' COG INLET SEE MSHA STD. 374.51
I8	CL STA 10+36.88 DOWNS RIDGE - 13' RIGHT	231.13	228.50	228.15	A-10 INLET SEE HO. CO. STD SD 4.02, W=2.5'
I9	CL STA 10+36.88 DOWNS RIDGE - 13' LEFT	231.13	-----	228.65	A-10 INLET SEE HO. CO. STD SD 4.02, W=2.5'
I10	CL STA 4+60 ABEL STREET - 13' LEFT	186.48	179.02	178.92	A-10 INLET SEE HO. CO. STD SD 4.02, W=2.5'
I11	CL STA 2+97.67 ABEL STREET - 13' LEFT	182.42	179.90	179.80	A-10 INLET SEE HO. CO. STD SD 4.02, W=2.5'
I12	CL STA 2+97.67 ABEL STREET - 13' RIGHT	182.42	-----	180.06	A-5 INLET SEE HO. CO. STD SD 4.01, W=2.5'
MH1	CL STA 5+29.08 MERLE WAY - 227.51 LEFT	164.10	156.08	155.98	MH HO. CO. STD. DTL. G5.01
MH2	CL STA 5+41.46 MERLE WAY - 60.95' LEFT	168.80	163.83 158.85	158.25	MH HO. CO. STD. DTL. G5.01
MH4	CL STA 10+97.07 ABEL STREET - 127.90' RIGHT	222.30	217.87	217.77	MH HO. CO. STD. DTL. G5.01
MH5	CL STA 11+08.18 ABEL STREET - 19' RIGHT	231.80	227.83	227.73	MH HO. CO. STD. DTL. G5.01
MH6	CL STA 7+01.42 ABEL STREET - 135.70' LEFT	214.00	205.70	203.85	MH HO. CO. STD. DTL. G5.01
MH7	CL STA 4+76 ABEL STREET - 29' RIGHT	182.66	179.52	176.08	MH HO. CO. STD. DTL. G5.01
MH8	CL STA 4+77.00 ABEL STREET - 16.80' RIGHT	187.20	178.75	178.65 179.58	MH HO. CO. STD. DTL. G5.01
ES1	CL STA 4+43.64 MERLE WAY - 550.48 LEFT	-----	-----	178.65	HO. CO. STD. DTL. SD 5.61
ES2	CL STA 4+92.71 ABEL STREET - 37.92 RIGHT	-----	-----	178.54	HO. CO. STD. DTL. SD 5.61
ES3	CL STA 4+75 ABEL STREET - 37' RIGHT	-----	-----	176.04	HO. CO. STD. DTL. SD 5.61

ALL RCP PIPES TO BE CLASS IV UNLESS OTHERWISE NOTED

NOTES: ALL DISTANCES MEASURED TO DOWNSTREAM SIDE OF INLETS ON GRADE AND CENTER OF SUMP INLETS AT MANHOLES
RIM ELEV. REFERS TO TOP OF CURB FOR "A" INLETS AND INVERT OF THROAT FOR "K" INLETS



SCALE: 1"=50' HOR
1"=5' VER



SCALE: 1"=50' HOR
1"=5' VER

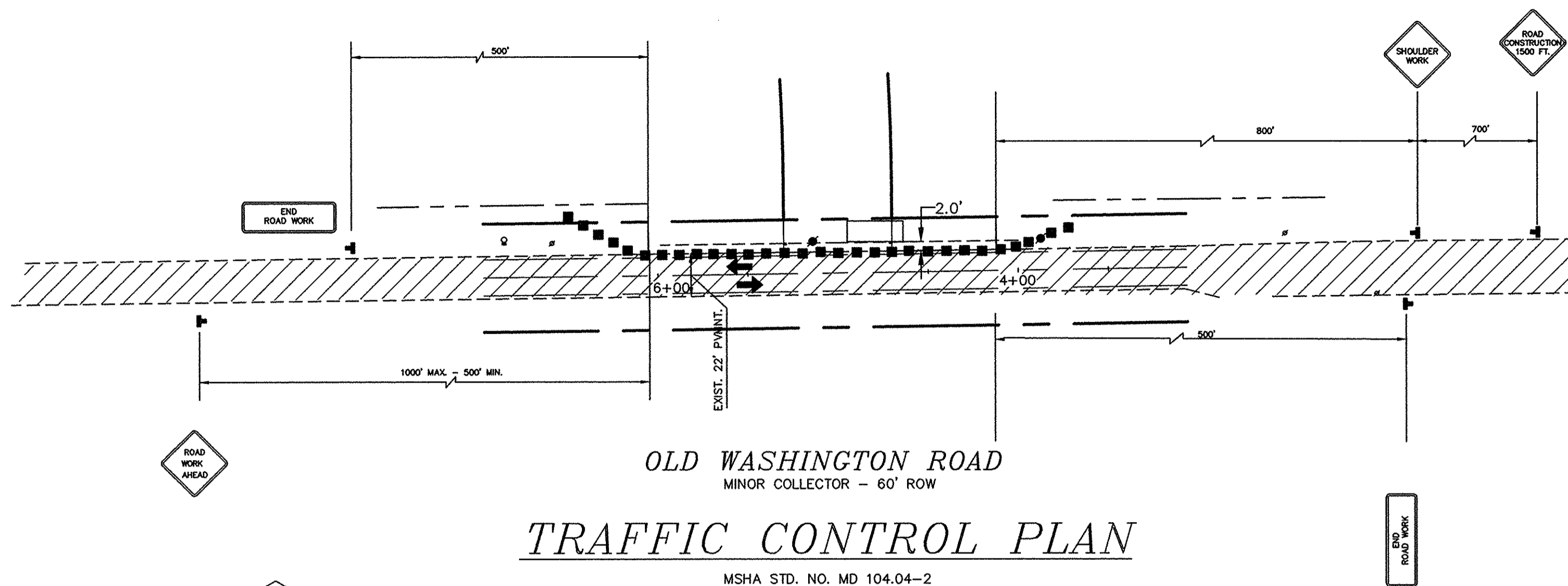


APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Daveler 10-22-97
CHIEF BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Candy Hamilton 10/30/97
CHIEF, DIVISION OF LAND DEVELOPMENT
APPROVED: DEPARTMENT OF ENGINEERING
[Signature] 10/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION 1, LOTS 1-41
AND BULK PARCEL "A"
HOWARD COUNTY, MARYLAND
FIRST ELECTION DISTRICT

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042
(410) 987-0296 Balt. (301) 621-6521 Wash. (410) 997-0298 Fax.

ABEL STREET
LOCAL ROAD -- 50' PUBLIC ROW

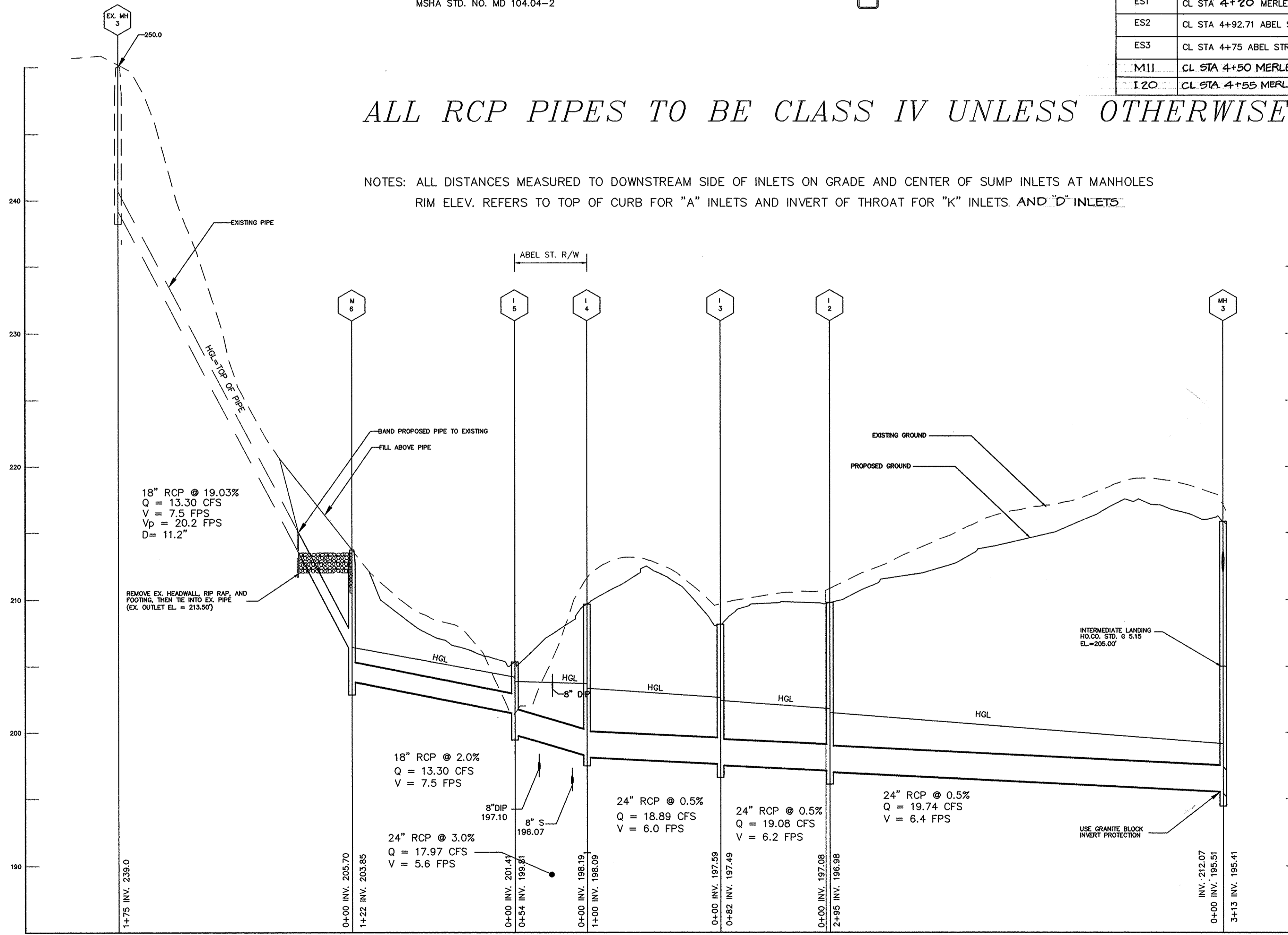


OLD WASHINGTON ROAD
MINOR COLLECTOR - 60' ROW
TRAFFIC CONTROL PLAN
MSHA STD. NO. MD 104.04-2

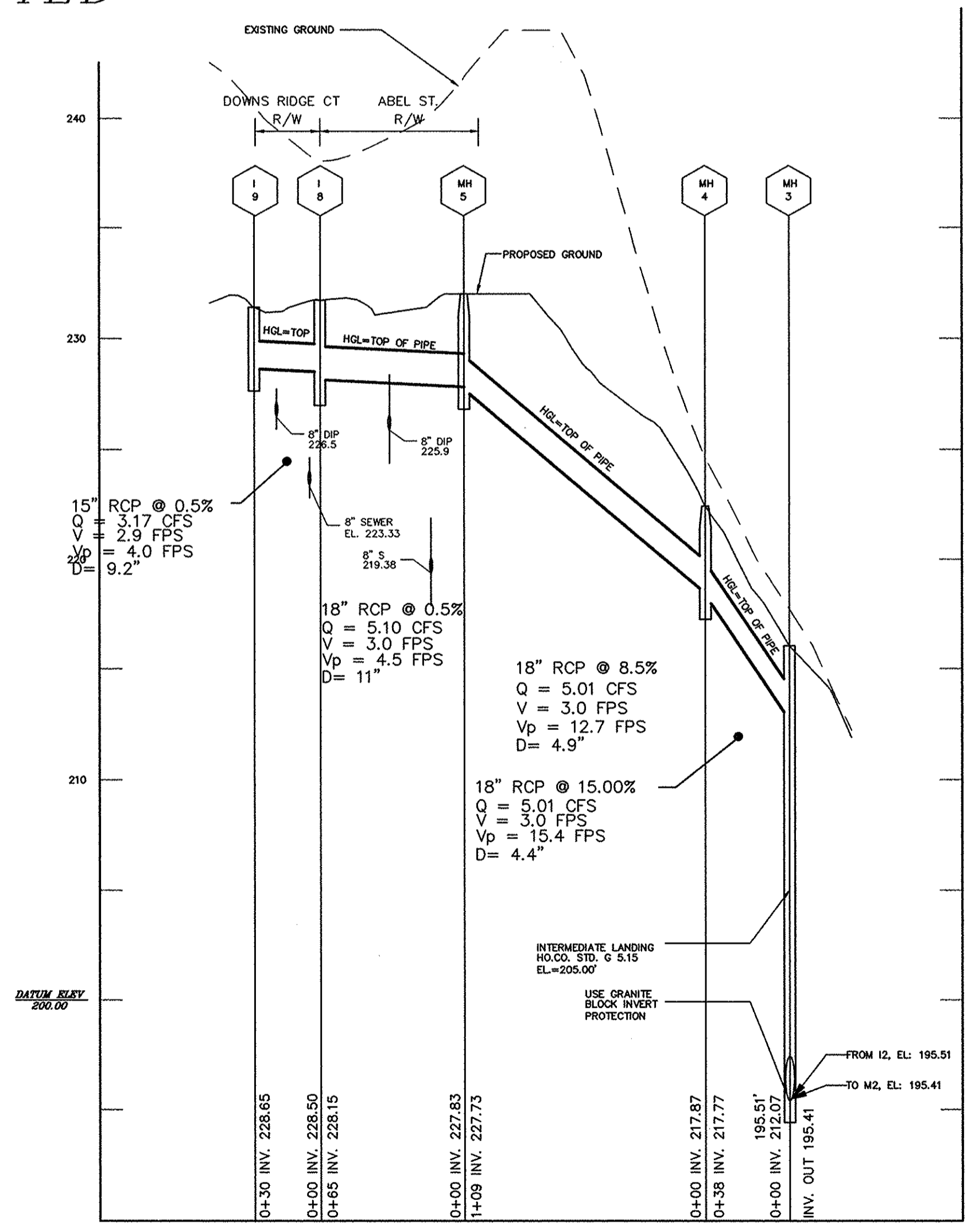
NO.	LOCATION	RIM ELEV.	INV. IN	INV. OUT	COMMENTS
MH3	CL STA 10+60.82, ABEL STREET-153.98 RIGHT	215.5	212.07 195.51	195.41	"K" INLET - SEE HO. CO. STD. DETAIL SD-4.13
I2	CL STA 8+33.28 ABEL STREET-122.90 RIGHT	209.50	197.08	196.98	"K" INLET - SEE HO. CO. STD. DETAIL SD-4.13
I3	CL STA 7+68.98 ABEL STREET-113.40' RIGHT	207.50	197.59	197.49	"K" INLET - SEE HO. CO. STD. DETAIL SD-4.13
I4	CL STA 7+45.84 ABEL STREET - 13' RIGHT	208.58	198.19	198.09	A-5 INLET SEE HO. CO. STD SD 4.01, W=2.5'
I5	CL STA 7+05.05 ABEL STREET - 13' LEFT	204.72	201.41	199.81	20' COG INLET SEE MSHA STD. 374.51
I8	CL STA 10+36.88 DOWNS RIDGE - 13' RIGHT	231.13	228.50	228.15	A-10 INLET SEE HO. CO. STD SD 4.02, W=2.5'
I9	CL STA 10+36.88 ABEL STREET - 13' LEFT	231.13	----	228.65	A-10 INLET SEE HO. CO. STD SD 4.02, W=2.5'
I10	CL STA 4+60 ABEL STREET - 13' LEFT	186.48	179.02	178.92	A-10 INLET SEE HO. CO. STD SD 4.02, W=2.5'
I11	CL STA 2+97.67 ABEL STREET - 13' LEFT	182.42	179.90	179.80	A-10 INLET SEE HO. CO. STD SD 4.02, W=2.5'
I12	CL STA 2+97.67 ABEL STREET - 13' RIGHT	182.42	----	180.06	A-5 INLET SEE HO. CO. STD SD 4.01, W=2.5'
MH1	CL STA 5+29.08 MERLE WAY - 227.51 LEFT	164.10	156.08	155.98	MH HO. CO. STD. DTL. G5.01
MH2	CL STA 5+41.46 MERLE WAY - 60.95' LEFT	168.80	163.83 158.85	158.25	MH HO. CO. STD. DTL. G5.01
MH4	CL STA 10+97.07 ABEL STREET - 127.90' RIGHT	222.30	217.87	217.77	MH HO. CO. STD. DTL. G5.01
MH5	CL STA 11+08.18 ABEL STREET - 19' RIGHT	231.80	227.83	227.73	MH HO. CO. STD. DTL. G5.01
MH6	CL STA 7+01.42 ABEL STREET - 135.70' LEFT	214.00	205.70	203.85	MH HO. CO. STD. DTL. G5.01
MH7	CL STA 4+76 ABEL STREET - 29' RIGHT	182.66	178.00 179.82	176.08	MH HO. CO. STD. DTL. G5.01
MH8	CL STA 4+77.00 ABEL STREET - 16.80' RIGHT	187.20	178.75	178.65 179.58	MH HO. CO. STD. DTL. G5.01
ES1	CL STA 4+20 MERLE WAY - 315' LEFT	----	----	192.00	HO. CO. STD. DTL. SD 5.61
ES2	CL STA 4+92.71 ABEL STREET - 37.92 RIGHT	----	----	178.54	HO. CO. STD. DTL. SD 5.61
ES3	CL STA 4+75 ABEL STREET - 37' RIGHT	----	----	176.04	HO. CO. STD. DTL. SD 5.61
M11	CL STA 4+50 MERLE WAY - 297' LEFT	130.80	135.00 133.00	132.80	HO. CO. STD. DTL. SD G5.01
I 20	CL STA 4+55 MERLE WAY - 254' LEFT	150.35	----	143.00	"D" INLET - SEE HO. CO. STD. 4.11 (4 SIDES)

ALL RCP PIPES TO BE CLASS IV UNLESS OTHERWISE NOTED

NOTES: ALL DISTANCES MEASURED TO DOWNSTREAM SIDE OF INLETS ON GRADE AND CENTER OF SUMP INLETS AT MANHOLES
RIM ELEV. REFERS TO TOP OF CURB FOR "A" INLETS AND INVERT OF THROAT FOR "K" INLETS AND "D" INLETS



SCALE: 1"=50' HOR
1"=5' VER



SCALE: 1"=50' HOR
1"=5' VER



APPROVED: DEPARTMENT OF PUBLIC WORKS
Christopher Mendenhall 10-28-97
CHIEF BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hamilton 10/30/97
CHIEF, DIVISION OF LAND DEVELOPMENT
APPROVED: DEPARTMENT OF ENGINEERING
[Signature] 10/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION

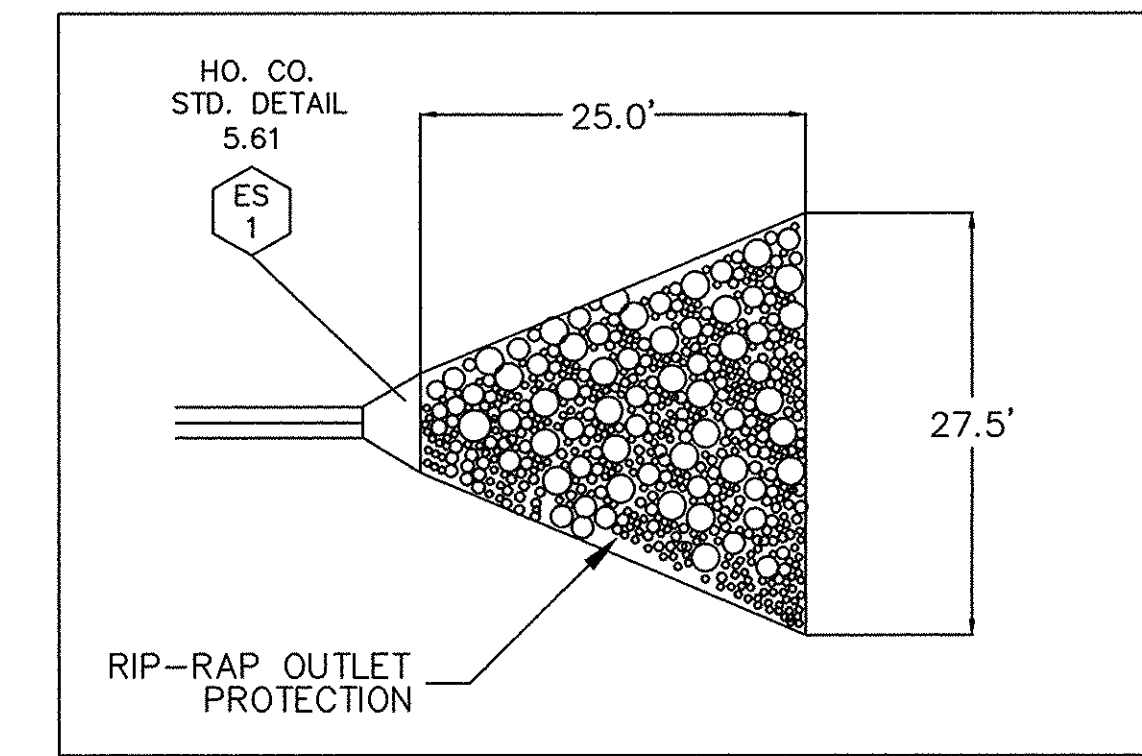
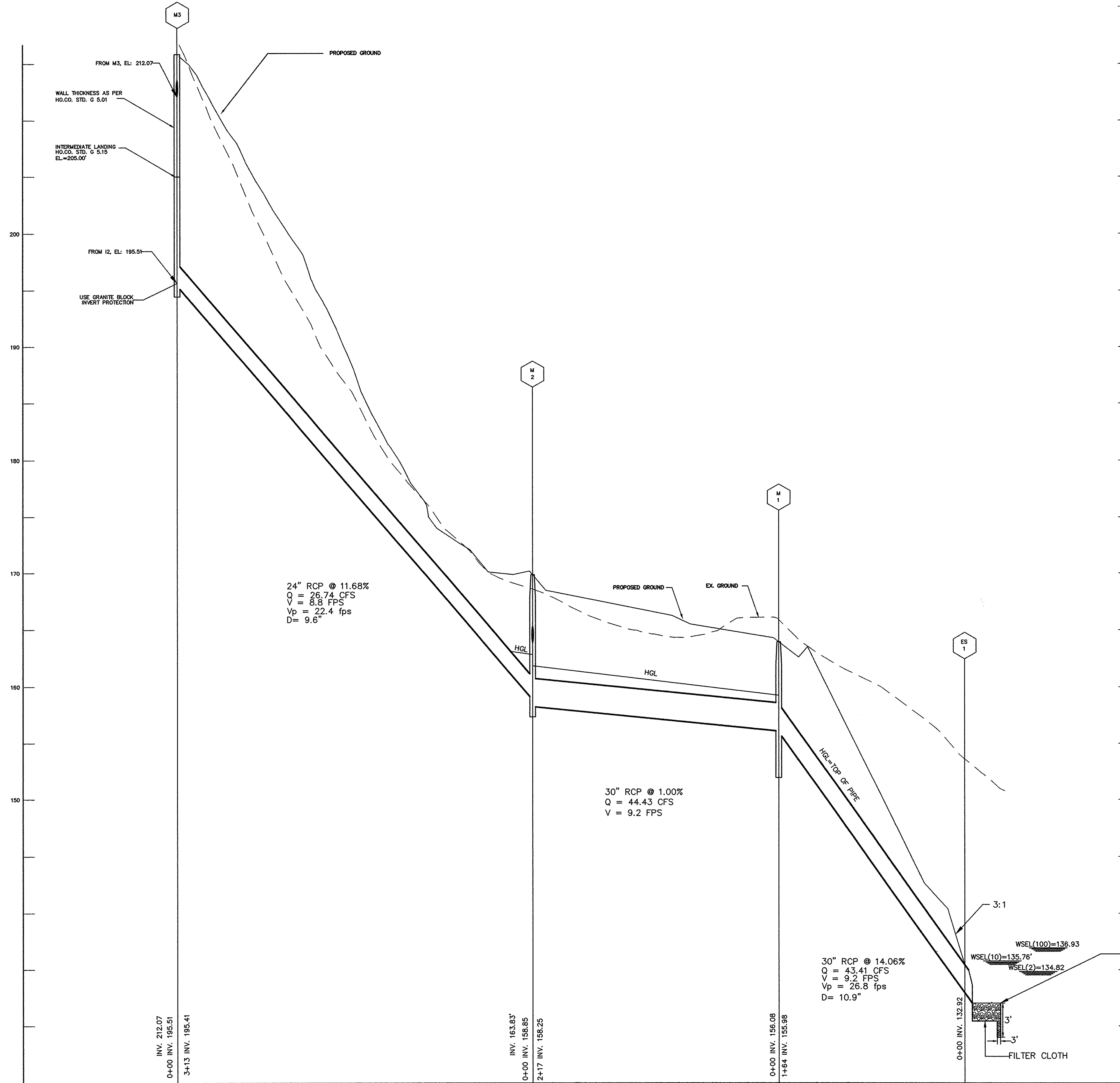
project	95136	date	JUL 1997
illustration	SD	engineering	SD
scale	AS SHOWN	approval	SD

REV.	1	DESCRIPTION	REVISIONS
NO.			

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL SECTION 1, LOTS 1-41
AND BULK PARCEL A
HOWARD COUNTY, MARYLAND
FIRST ELECTION DISTRICT
STORM DRAIN PROFILES

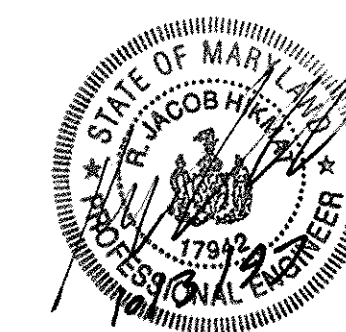
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsy Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 397-0236 Fax: (301) 621-6521 Wash. (410) 397-0238 Fax.

ALL RCP PIPES TO BE CLASS IV UNLESS OTHERWISE NOTED



NOTES: ALL DISTANCES MEASURED TO DOWNSTREAM SIDE OF INLETS ON GRADE AND CENTER OF SUMP INLETS AND MANHOLES
 RIM ELEV. REFERS TO TOP OF CURB FOR "A" INLETS AND INVERT OF THROAT FOR "K" INLETS

SCS ROCK OUTLET PROTECTION I
 CLASS I UNGRADED RIP RAP
 L=25' W=27.5'
 t=19" D(50)=9.5"



APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief Bureau of Highways
 DATE: 10-24-97
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 11/30/97
 Chief, Development Engineering Division
 DATE: 11/27/97

95138 (DWG) FINAL (PG.04) 1.35-SD-1.DWG

SCALE: 1"=50' HOR
 1"=5' VER

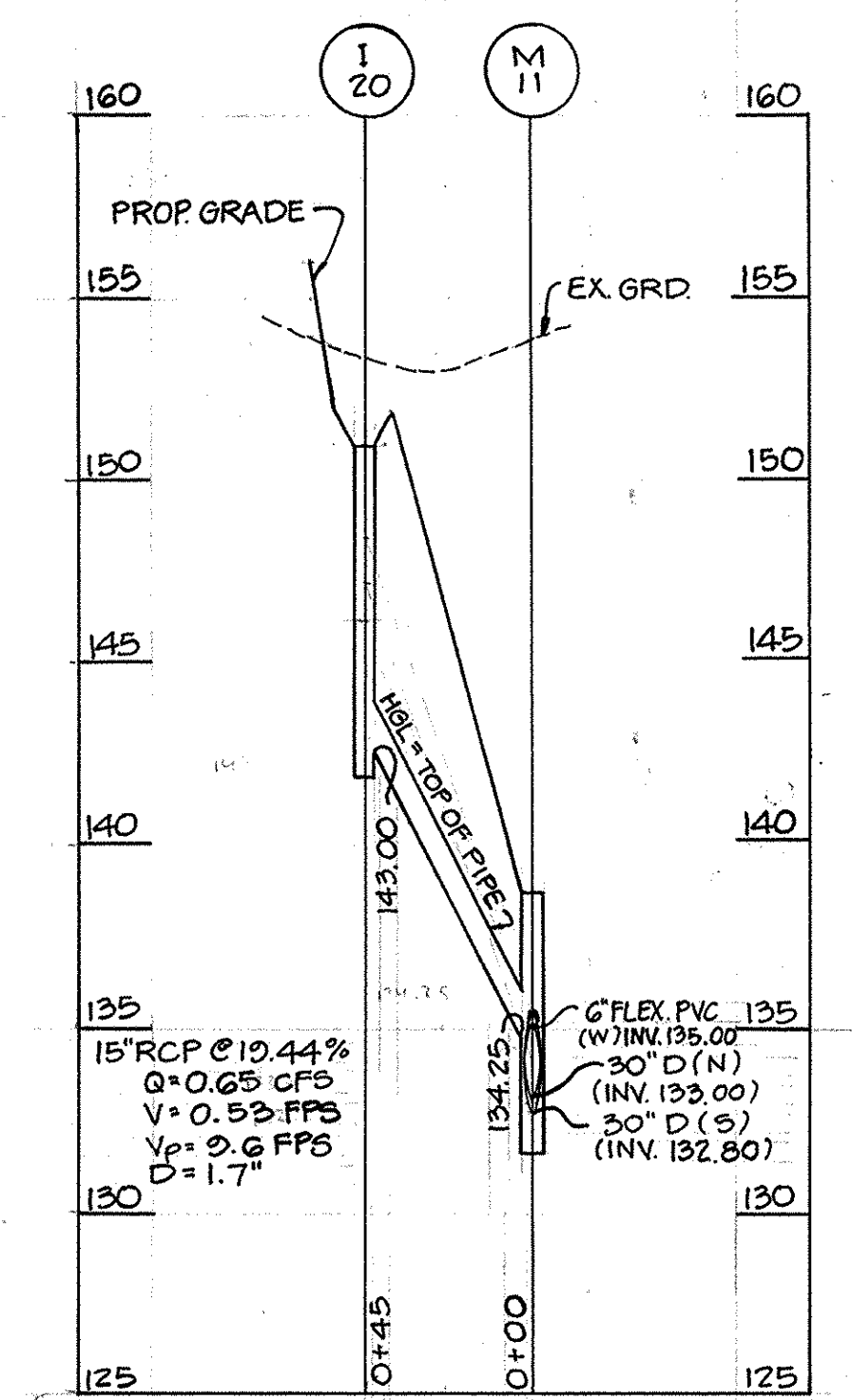
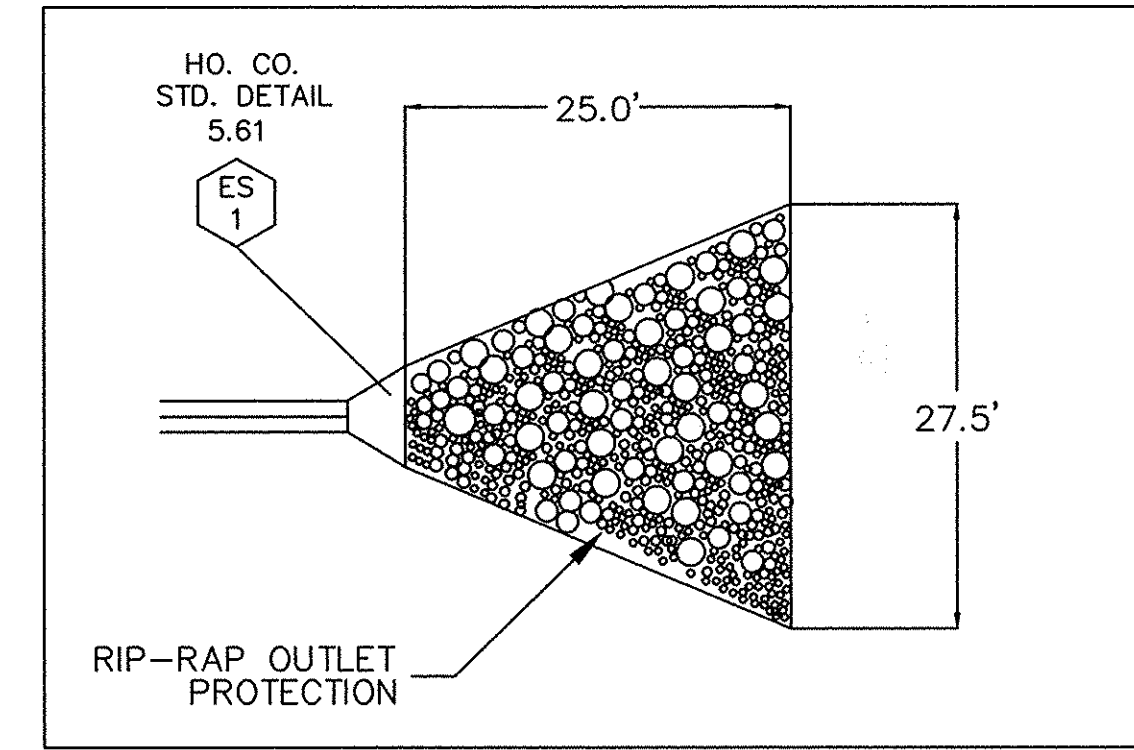
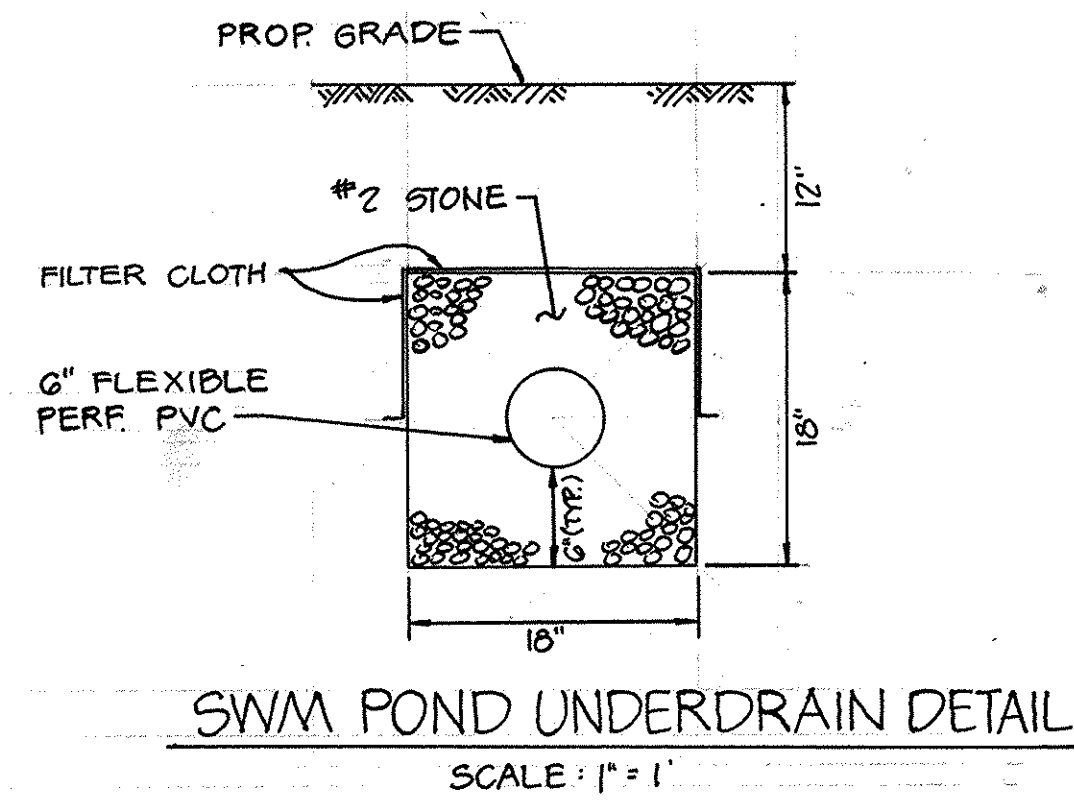
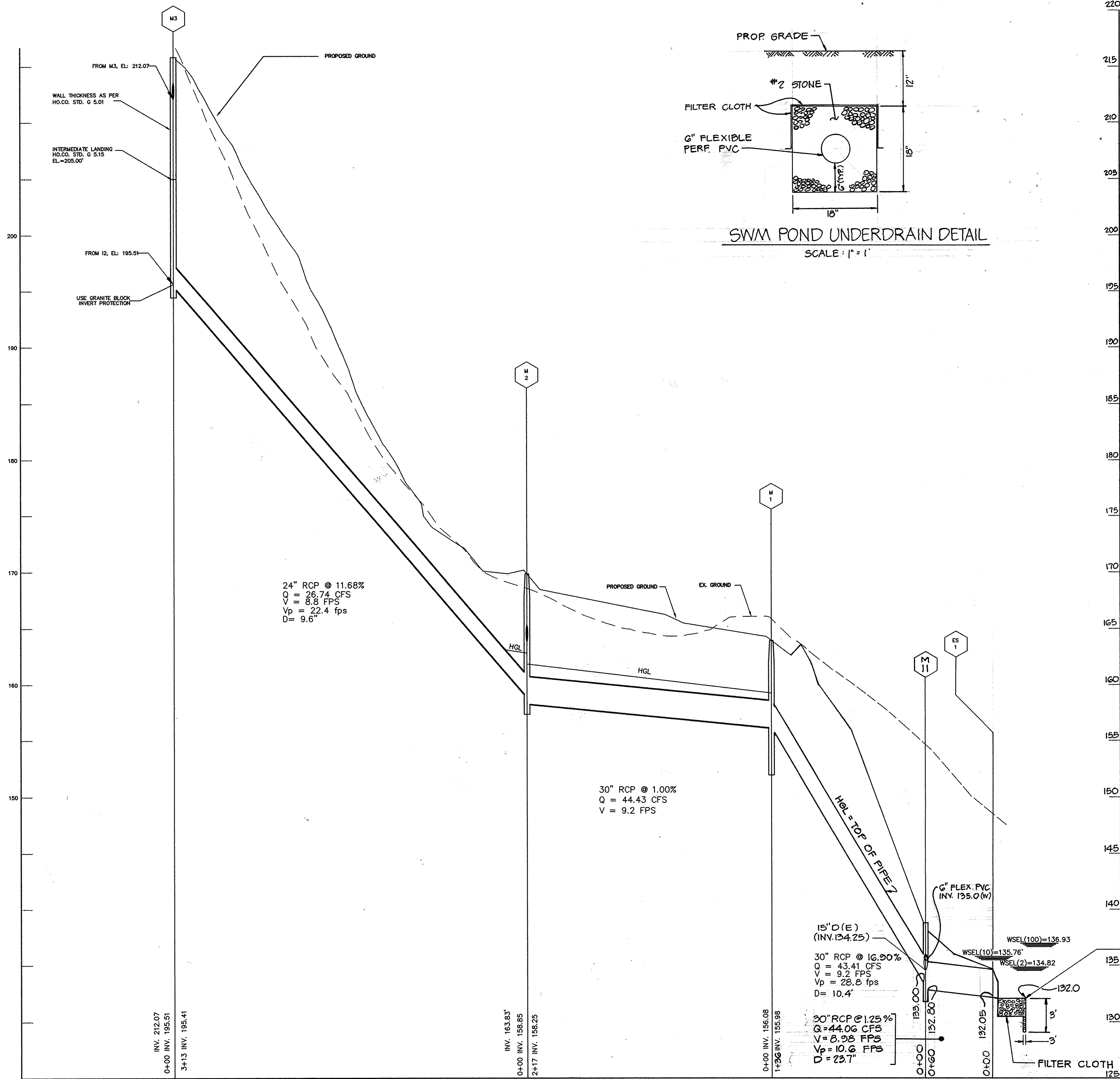
Project	95138	date	JUN 1997
Illustration	SD	engineering	SD
Scale	AS SHOWN	approval	SD

no.	description	date

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
 WILLIAMS KNOLL, SECTION I, LOTS 1-41
 AND BULK PARCEL "A"
 HOWARD COUNTY, MARYLAND
 FIRST ELECTION DISTRICT
 STORM DRAIN PROFILES

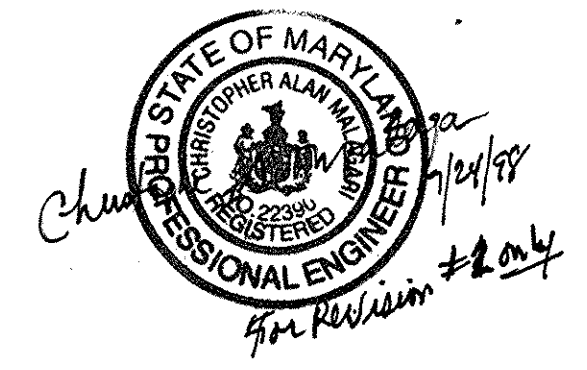
MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Elkton City, Maryland 21042
 (410) 997-0286 Fax. (301) 621-5521 Wash. (410) 997-0288 Fax.

ALL RCP PIPES TO BE CLASS IV UNLESS OTHERWISE NOTED



NOTES: ALL DISTANCES MEASURED TO DOWNSTREAM SIDE OF INLETS ON GRADE AND CENTER OF SUMP INLETS AND MANHOLES
RIM ELEV. REFERS TO TOP OF CURB FOR "A"
INLETS AND INVERT OF THROAT FOR "K" INLETS

SCS ROCK OUTLET PROTECTION I
CLASS I UNGRADED RIP RAP
L=25', W=27.5'
I=19" D(50)=9.5"



APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief Bureau of Highways
 DATE: 10-24-97

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 11/30/97

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Development Engineering Division
 DATE: 11/23/97

95135.DWG/FINAL/ROAD/136-SD-1.DWG

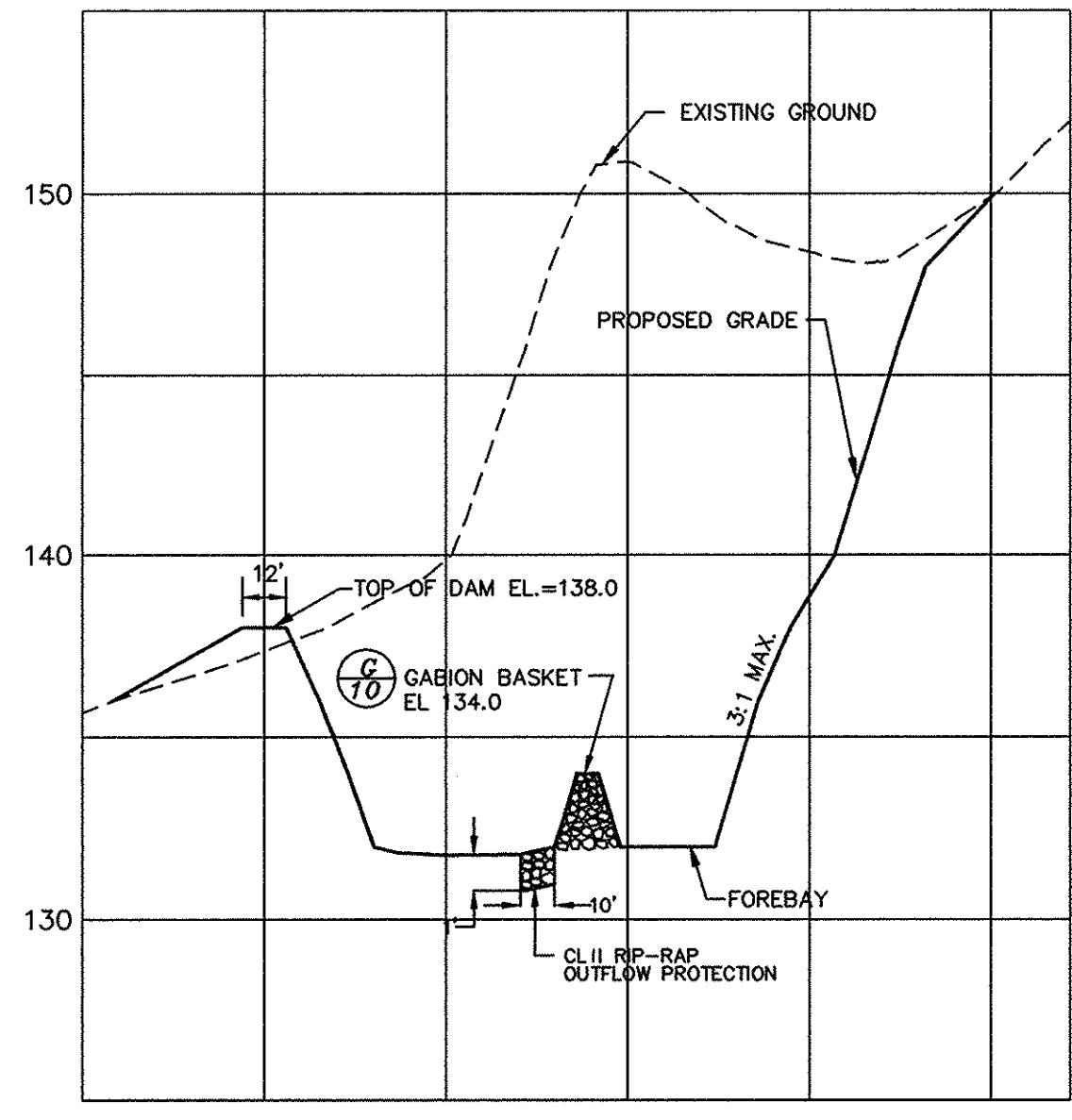
SCALE: 1"=50' HOR
1"=5' VER

project	95136	date	JUN 1997
illustration	SD	engineering	SD
scale	AS SHOWN	approval	

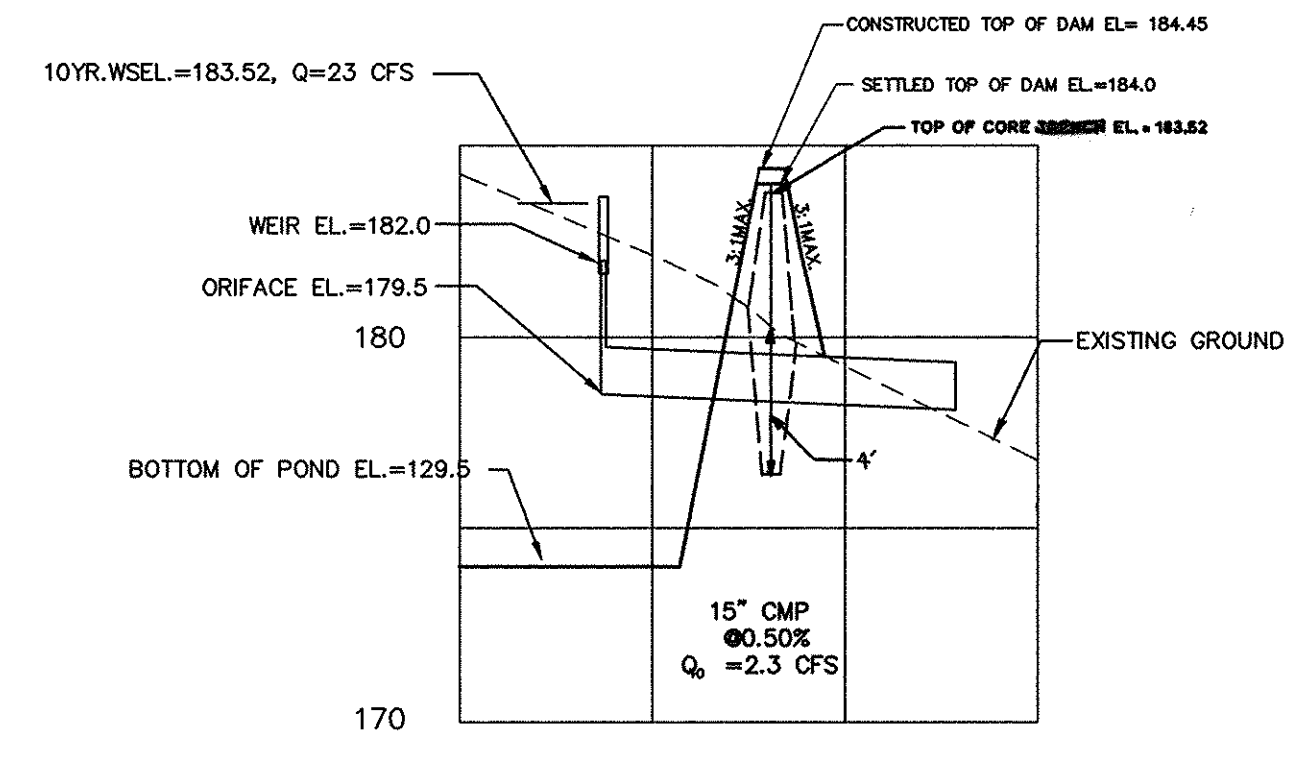
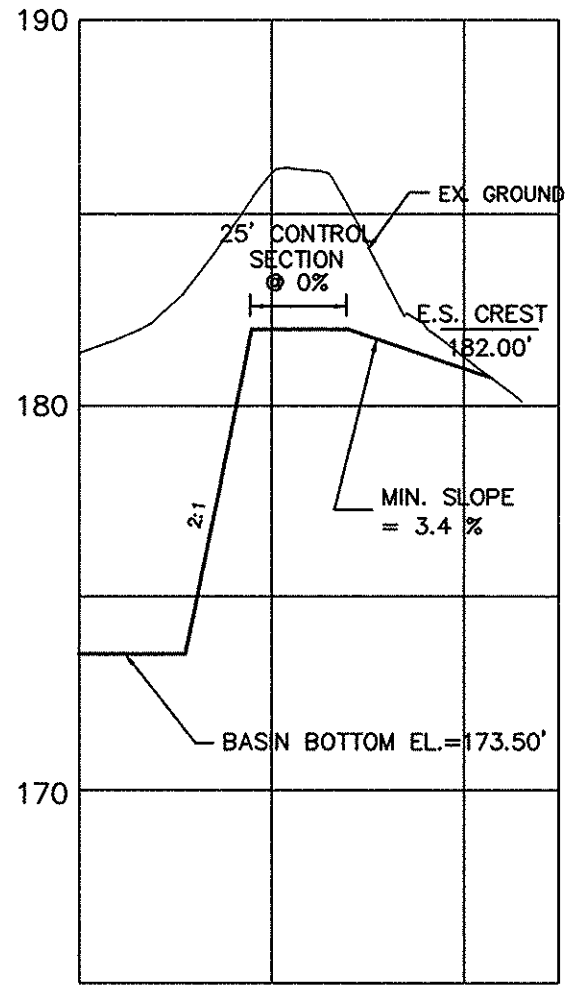
no.	1	description	REV. PROFILE M-11 ES-1 (TSA GROUP, INC.)	date	7-1-98
revisions					

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION 1, LOTS 1-41
AND BULK PARCEL A
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
STORM DRAIN PROFILES

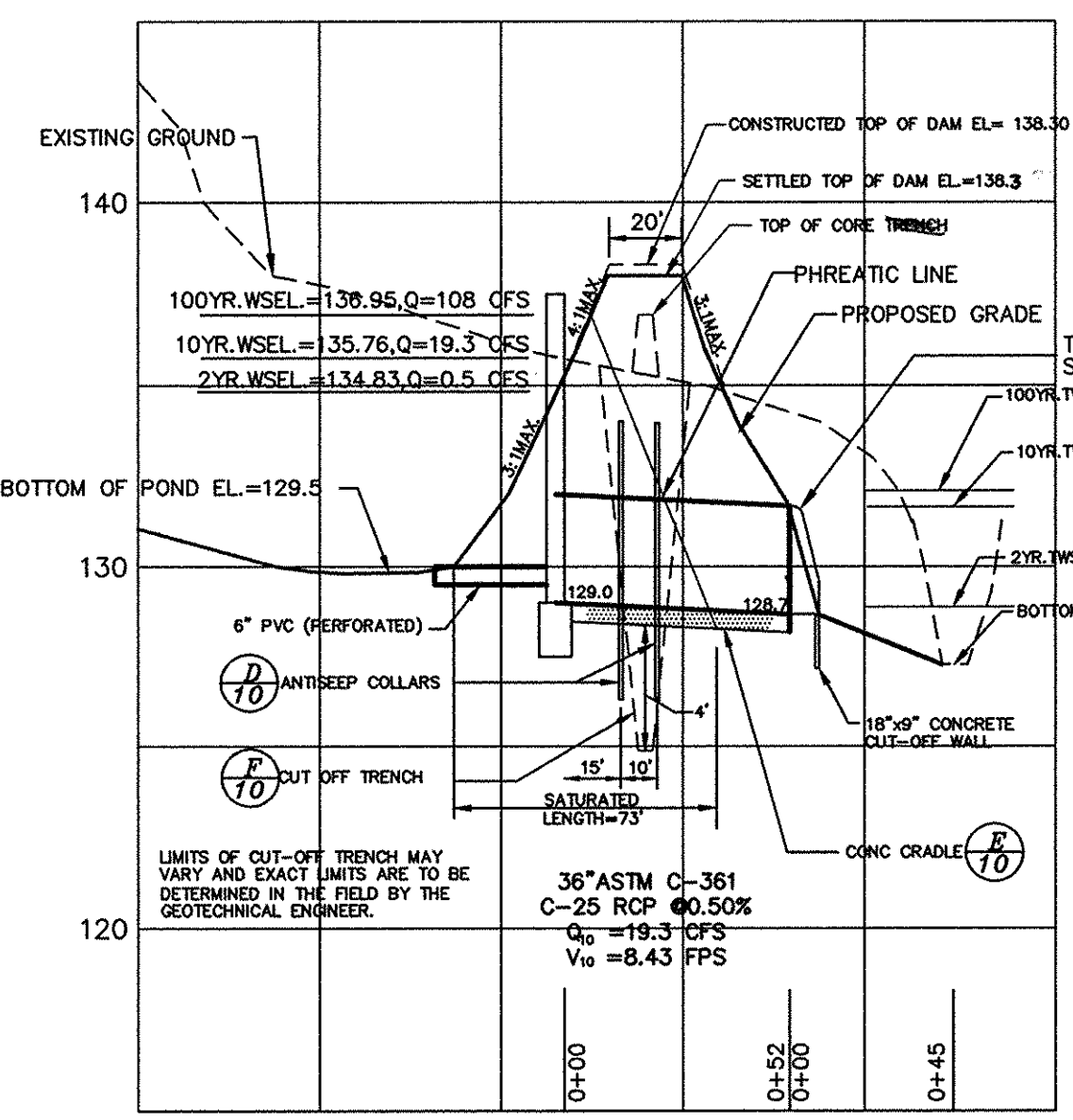
MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 987-0286 Fax: (301) 821-5527 Wash. (410) 997-0288 Fax.



D
4
EMERGENCY SPILLWAY PROFILE
(SEDIMENT BASIN)
HORIZONTAL SCALE : 1" = 50'
VERTICAL SCALE : 1" = 5'

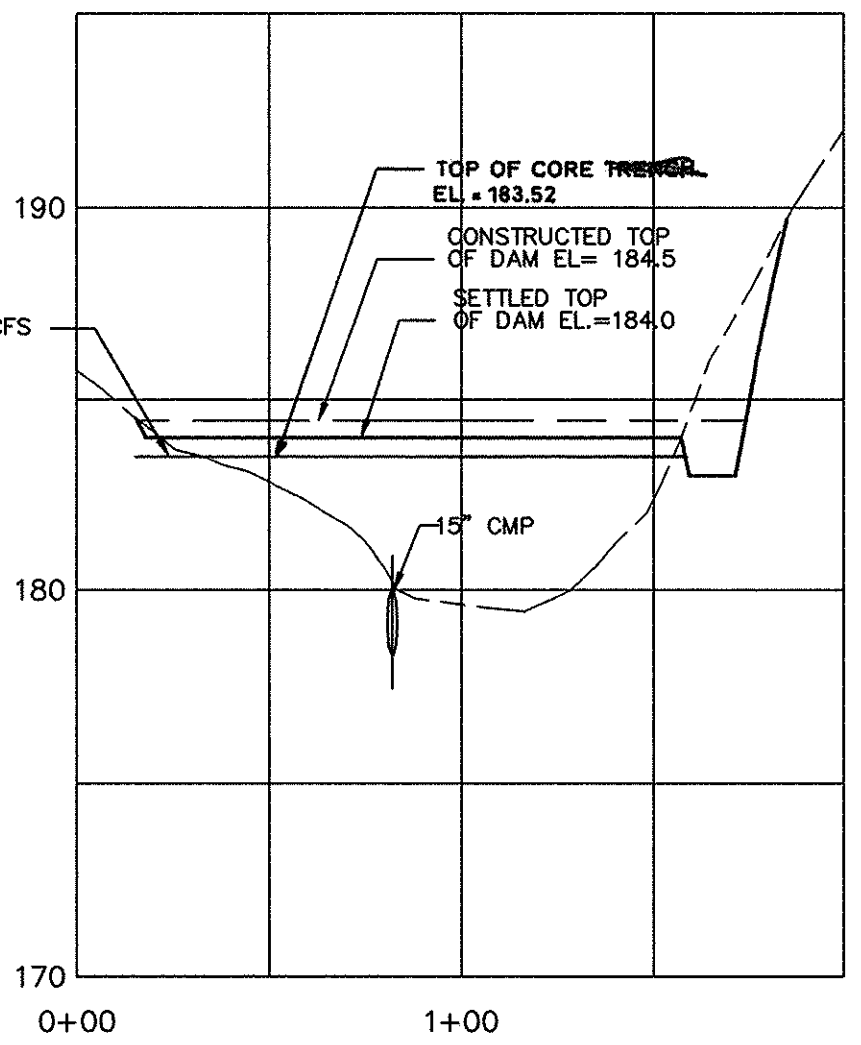


G
4
PRINCIPLE SPILLWAY PROFILE
(SEDIMENT BASIN)
HORIZONTAL SCALE : 1" = 50'
VERTICAL SCALE : 1" = 5'

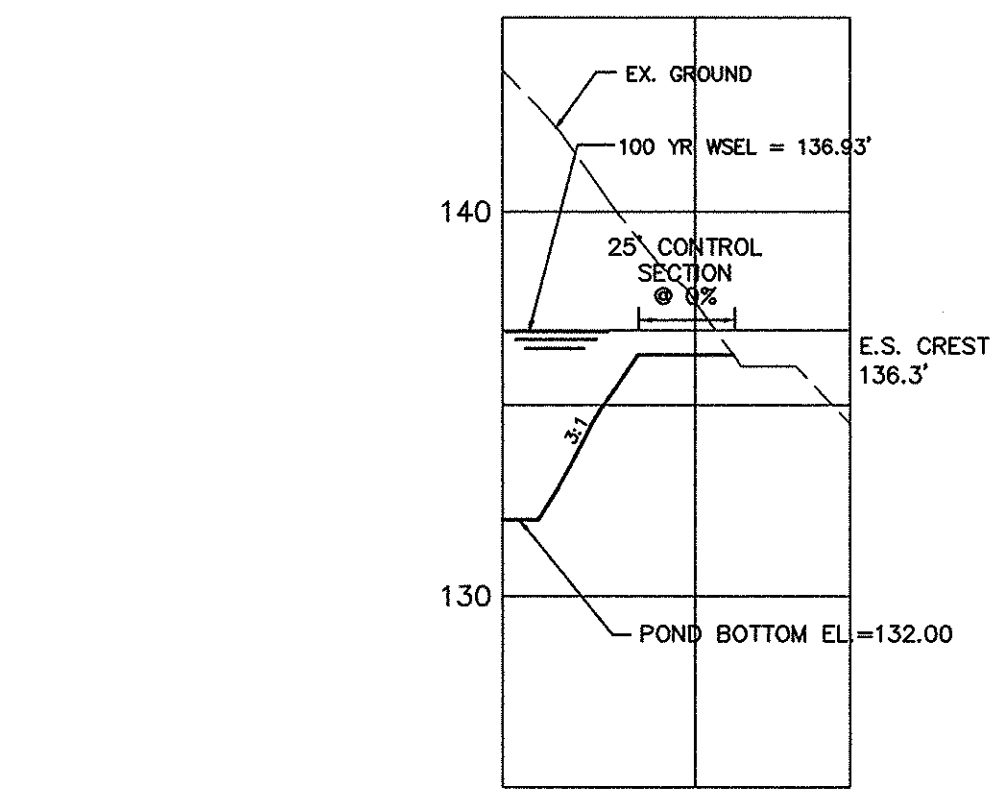


C
5
PRINCIPAL SPILLWAY PROFILE
HORIZONTAL SCALE : 1" = 50'
VERTICAL SCALE : 1" = 5'

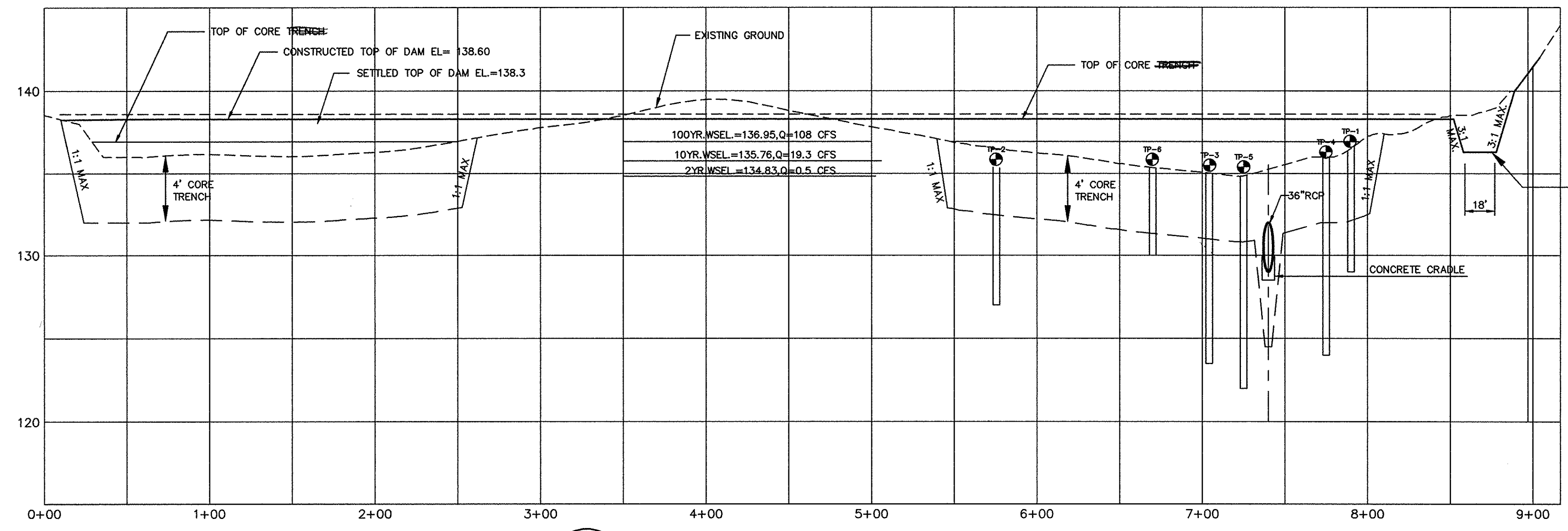
B
5
FOREBAY PROFILE
HORIZONTAL SCALE : 1" = 50'
VERTICAL SCALE : 1" = 5'



F
4
CENTERLINE OF DAM PROFILE
(SEDIMENT BASIN)
HORIZONTAL SCALE : 1" = 50'
VERTICAL SCALE : 1" = 5'



E
5
EMERGENCY SPILLWAY PROFILE
(SWM POND)
HORIZONTAL SCALE : 1" = 50'
VERTICAL SCALE : 1" = 5'



A
5
CENTERLINE OF DAM PROFILE
HORIZONTAL SCALE : 1" = 50'
VERTICAL SCALE : 1" = 5'

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: _____ P.E. NO.: _____
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 COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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.

JNSD, LLC
James L. Newburn 10-3-97
SIGNATURE OF DEVELOPER DATE
James L. Newburn, member
PRINTED NAME OF DEVELOPER

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.

R. Jacobs Hikmat 10/13/97
SIGNATURE OF ENGINEER DATE
R. Jacobs Hikmat
PRINTED NAME 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.

Clayton Sinner 10/30/97
SIGNATURE OF ENGINEER DATE
Clayton Sinner
PRINTED NAME OF ENGINEER

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

Robert W. Sinden 10/30/97
SIGNATURE OF ENGINEER DATE
Robert W. Sinden
PRINTED NAME OF ENGINEER

APPROVED: DEPARTMENT OF PUBLIC WORKS

Richard M. Dwyer 10-24-97
SIGNATURE OF ENGINEER DATE
Richard M. Dwyer
PRINTED NAME OF ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hammett 10/30/97
SIGNATURE OF ENGINEER DATE
Cindy Hammett
PRINTED NAME OF ENGINEER

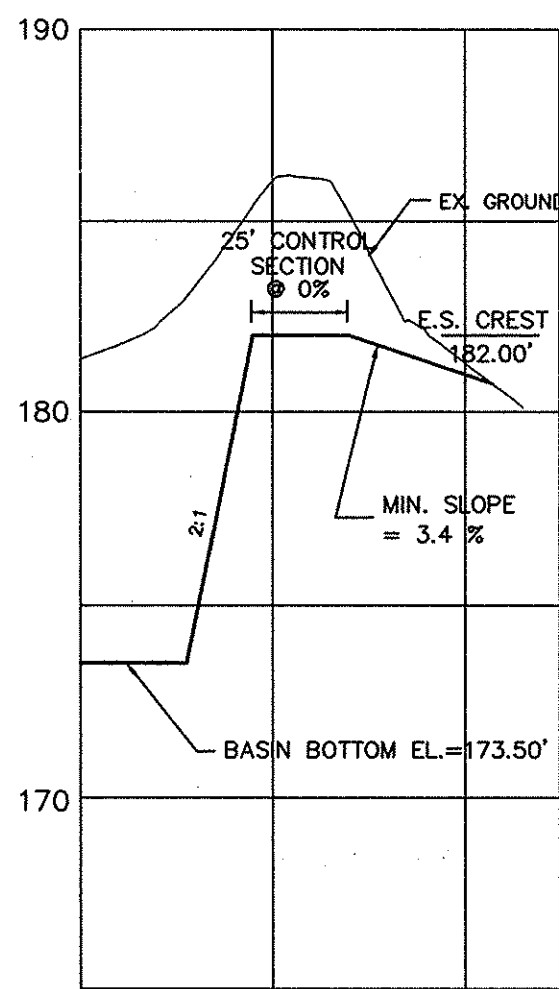
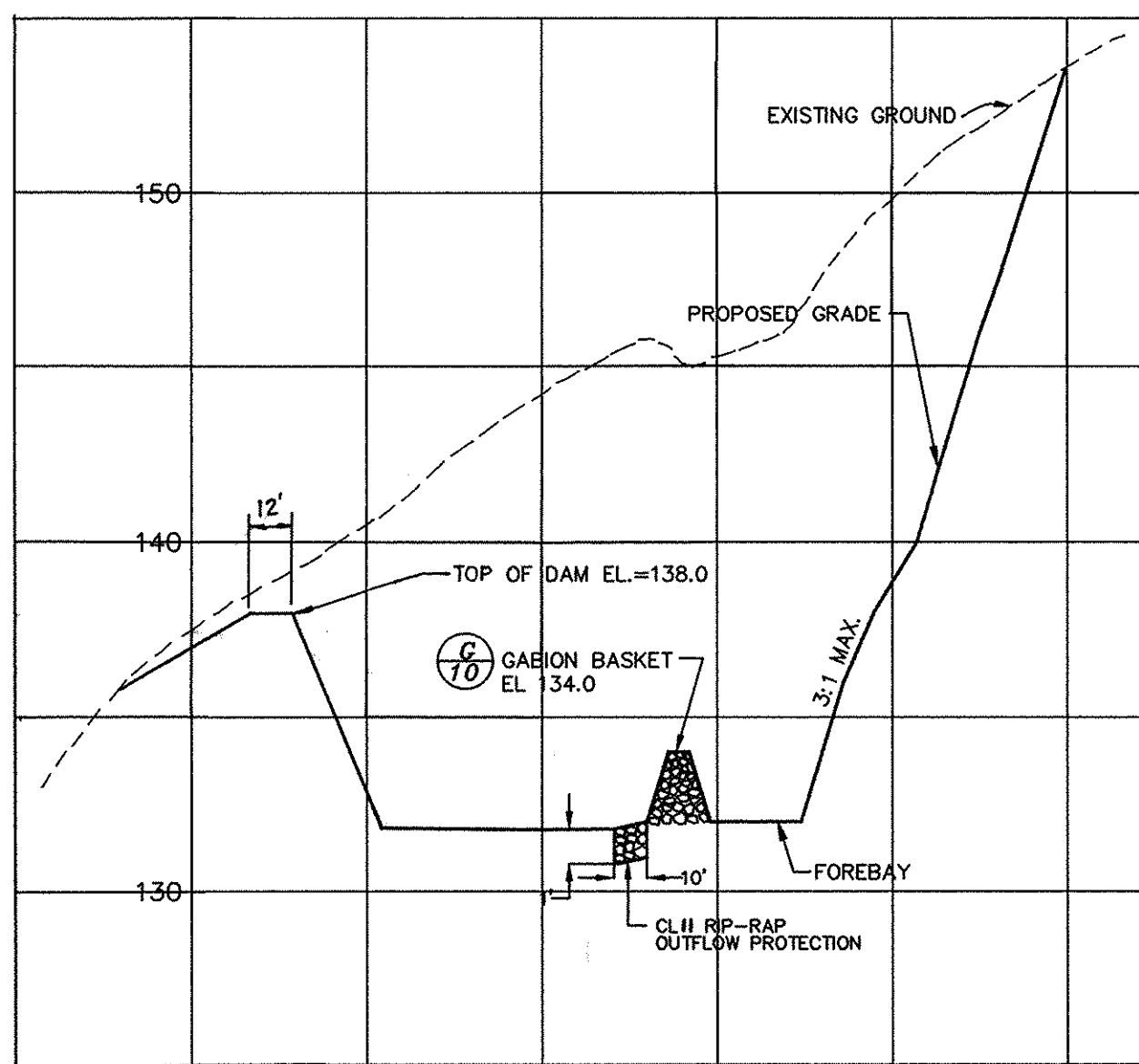
[Signature] 11/16/97
SIGNATURE OF ENGINEER DATE
[Signature]
PRINTED NAME OF ENGINEER



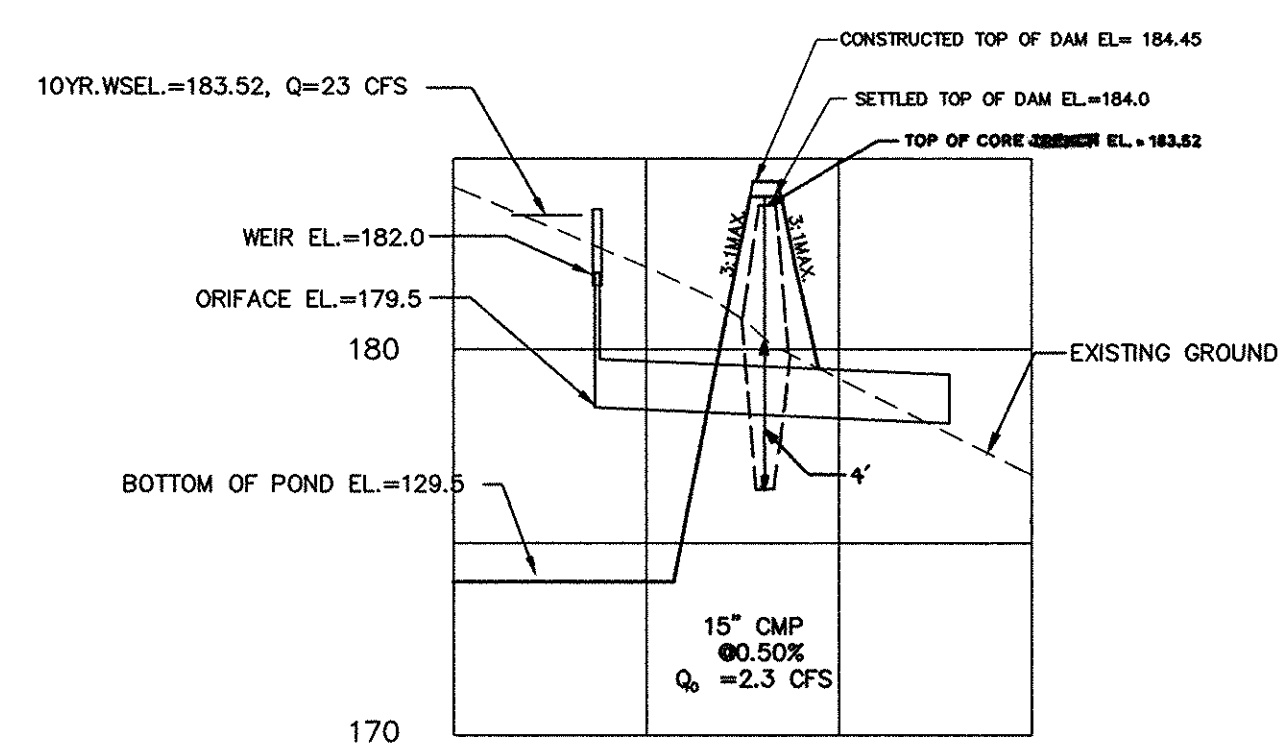
Project	95136	date	JUL 1997
Illustration	SD	engineering	MP
scale	SD	approval	MP
no.		revisions	

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 3
WILLIAMS KNOLL, SECTOR 1, LOTS 1-41
AND BULK PARCEL A
HOWARD COUNTY, MARYLAND
FIRST ELECTION DISTRICT
STORMWATER MANAGEMENT DETAILS AND PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042
(410) 997-0236 Bldg. (301) 621-5521 Wash. (410) 997-0238 Fax

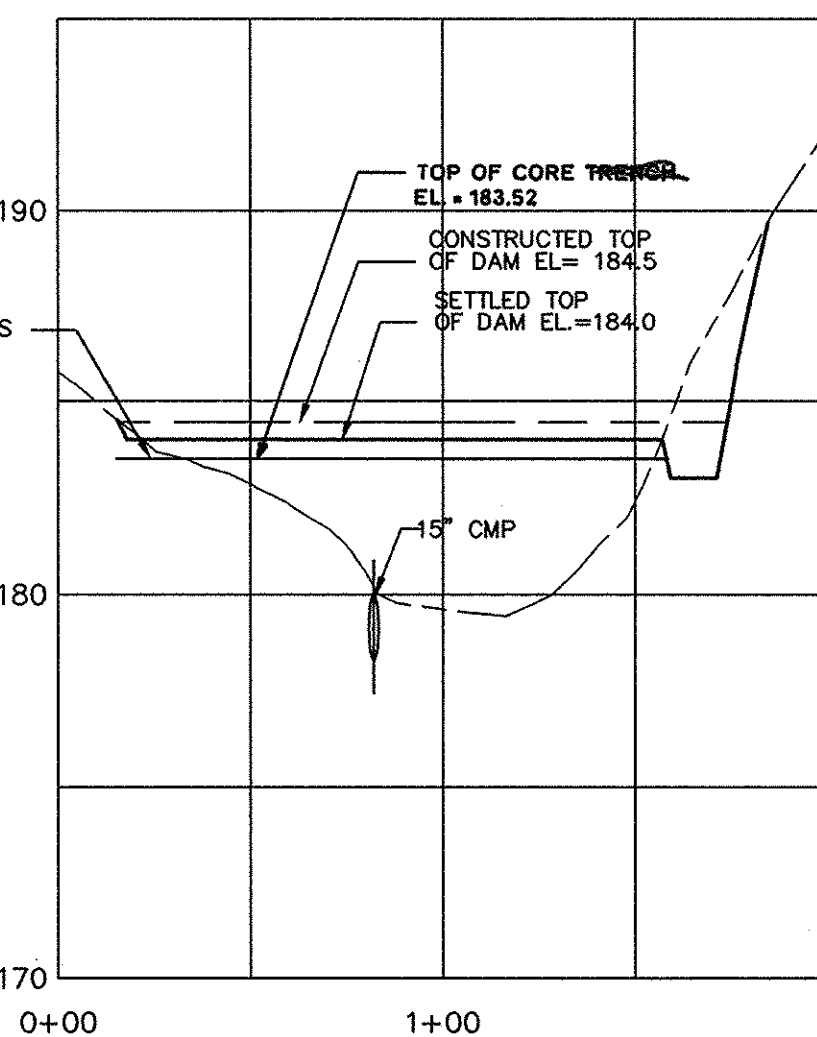
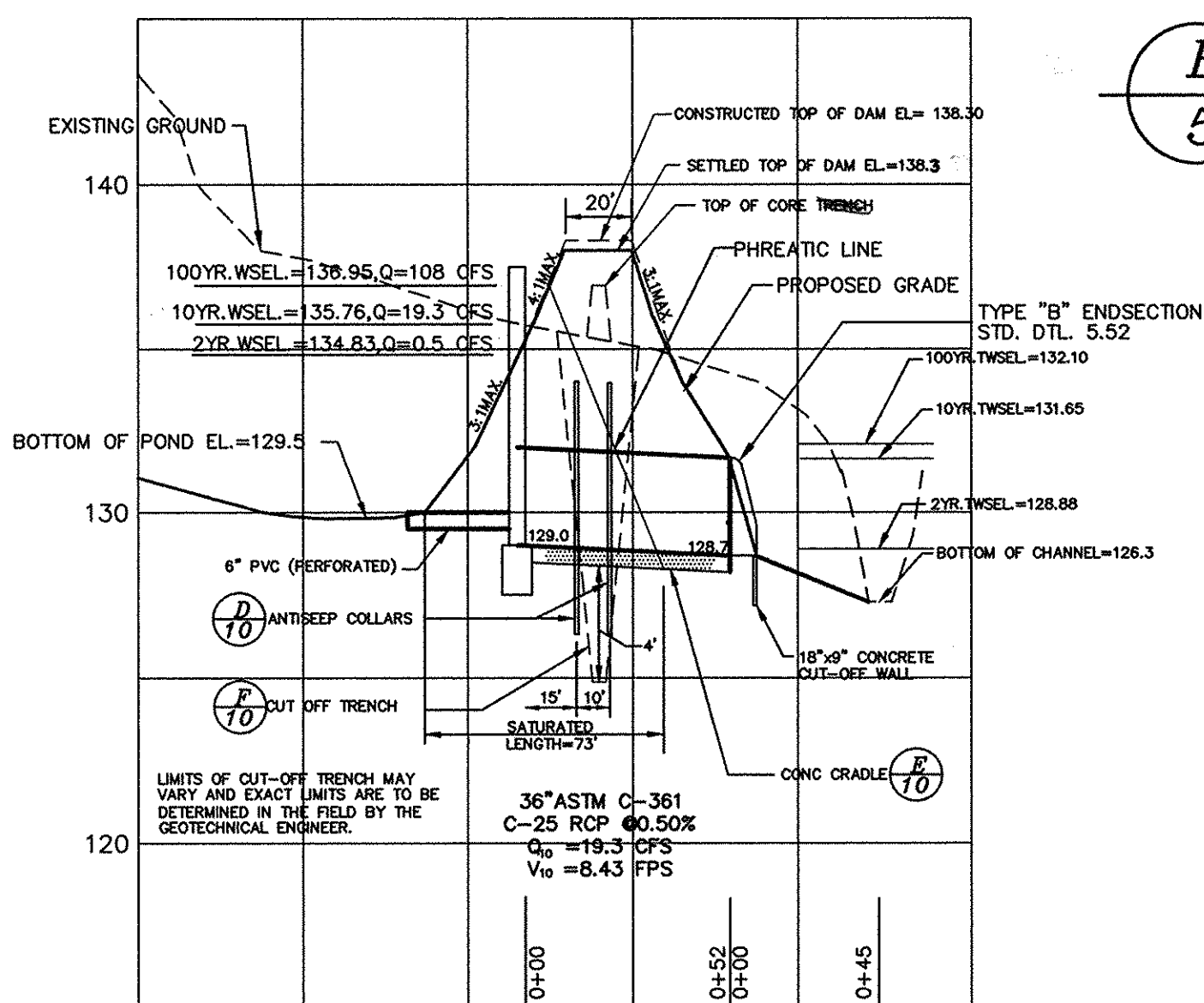


EMERGENCY SPILLWAY PROFILE (SEDIMENT BASIN)
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



PRINCIPLE SPILLWAY PROFILE (SEDIMENT BASIN)
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'

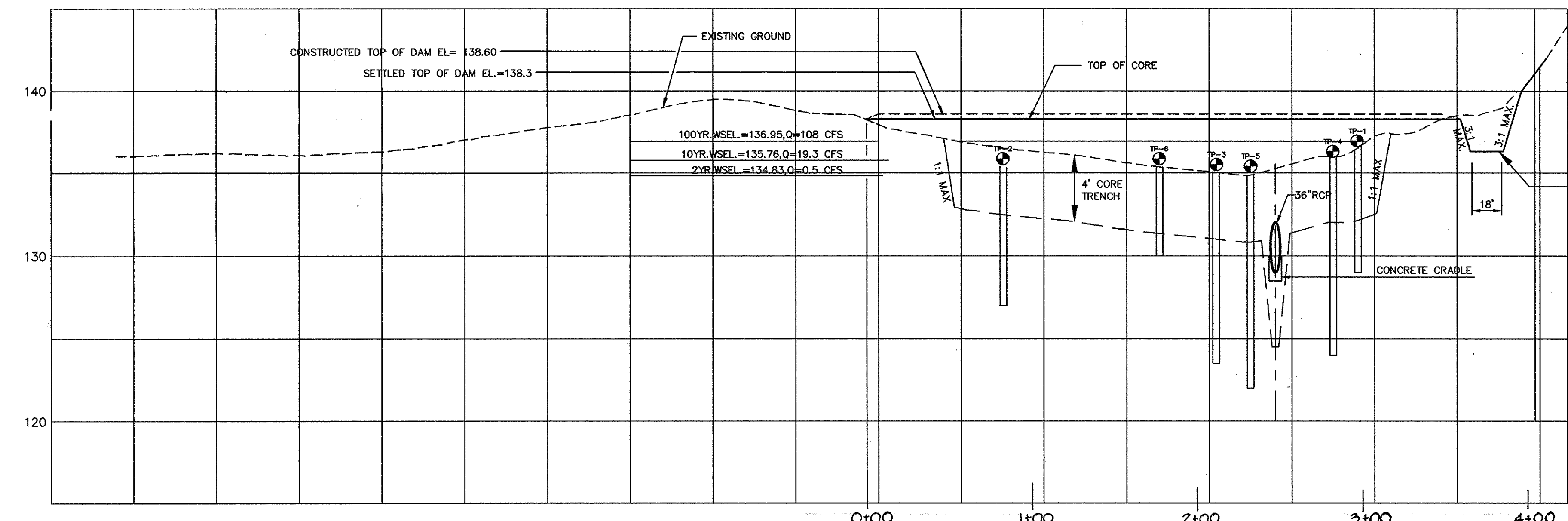
FOREBAY PROFILE
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



EMERGENCY SPILLWAY PROFILE (SWM POND)
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'

PRINCIPAL SPILLWAY PROFILE
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'

CENTERLINE OF DAM PROFILE (SEDIMENT BASIN)
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



CENTERLINE OF DAM PROFILE (SEDIMENT BASIN)
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'

SWM NOTES:

- DURING POND GRADING, THE FINE SANDS ENCOUNTERED WITHIN THE TOP SAND LAYER SHALL BE CONSTRUCTED WITHIN A SHALLOW GRADE.
- ALL FILL MATERIALS IN SLOPE AREAS SHALL BE PLACED IN RELATIVELY LOOSE LIFTS NOT TO EXCEED 6-INCHES IN THICKNESS. THE MATERIALS SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. ALSO, ALL FILL MATERIALS NEED TO BE BENCHED INTO THE EXISTING NATURAL SOILS.
- ANY DISTURBED SOILS ENCOUNTERED WITHIN THE SLOPE DUE TO THE PLACEMENT OF THE STORM DRAIN LINE OR AS A RESULT OF THE TEST PITS, SHOULD BE REMOVED AND REPLACED. THE REMOVED MATERIALS CAN BE REUSED ASSUMING THEY ARE FREE OF ORGANICS. THE MATERIALS SHOULD BE PROPERLY COMPACTED AND BENCHED INTO THE EXISTING NATURAL SOILS.
- CONSTRUCTION OF THE SWAMP IS TO BE SUPERVISED AND CERTIFIED BY A GEOTECHNICAL ENGINEER AS HAVING BEEN CORRECTLY INSTALLED.

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: _____ P.E. NO.: _____
 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 COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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.

JNSD, L.C.
James L. Newbarn 10-2-97
 SIGNATURE OF DEVELOPER DATE
 PRINTED NAME OF DEVELOPER

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 NOTICED 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.

R. JACOB HICKMAT 10/3/97
 SIGNATURE OF ENGINEER DATE
 PRINTED NAME 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.

Cheryl Summers 10/29/97
 SIGNATURE OF ENGINEER DATE
 PRINTED NAME OF ENGINEER

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

Robert W. Gidner 10/29/97
 SIGNATURE OF ENGINEER DATE
 PRINTED NAME OF ENGINEER

APPROVED: DEPARTMENT OF PUBLIC WORKS

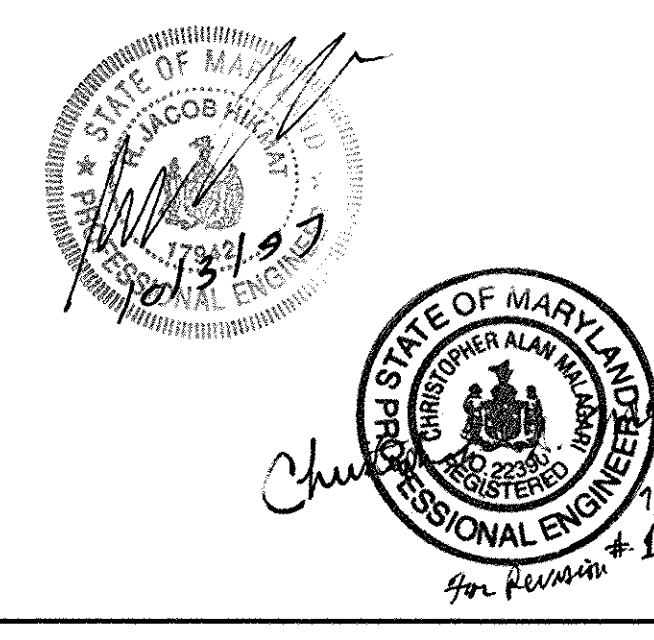
Andrew M. Decker 10-24-97
 SIGNATURE OF ENGINEER DATE
 PRINTED NAME OF ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Charles Hamilton 10/30/97
 SIGNATURE OF ENGINEER DATE
 PRINTED NAME OF ENGINEER

APPROVED: DEPARTMENT OF ENGINEERING

John R. ... 10/29/97
 SIGNATURE OF ENGINEER DATE
 PRINTED NAME OF ENGINEER



TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 3
 WILLIAMS KNOLL, SECTOPN 1, LOTS 1-41
 AND BULK PARCEL
 HOWARD COUNTY, MARYLAND
 FIRST ELECTION DISTRICT

STORMWATER MANAGEMENT DETAILS AND PROFILES

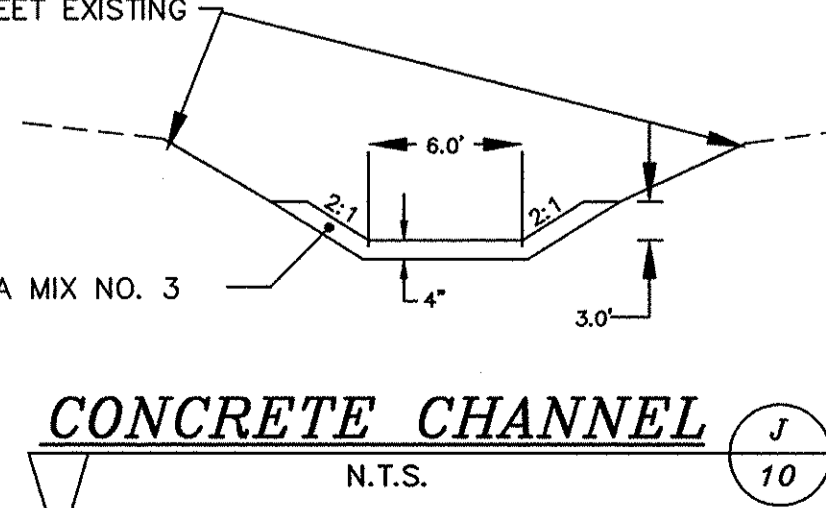
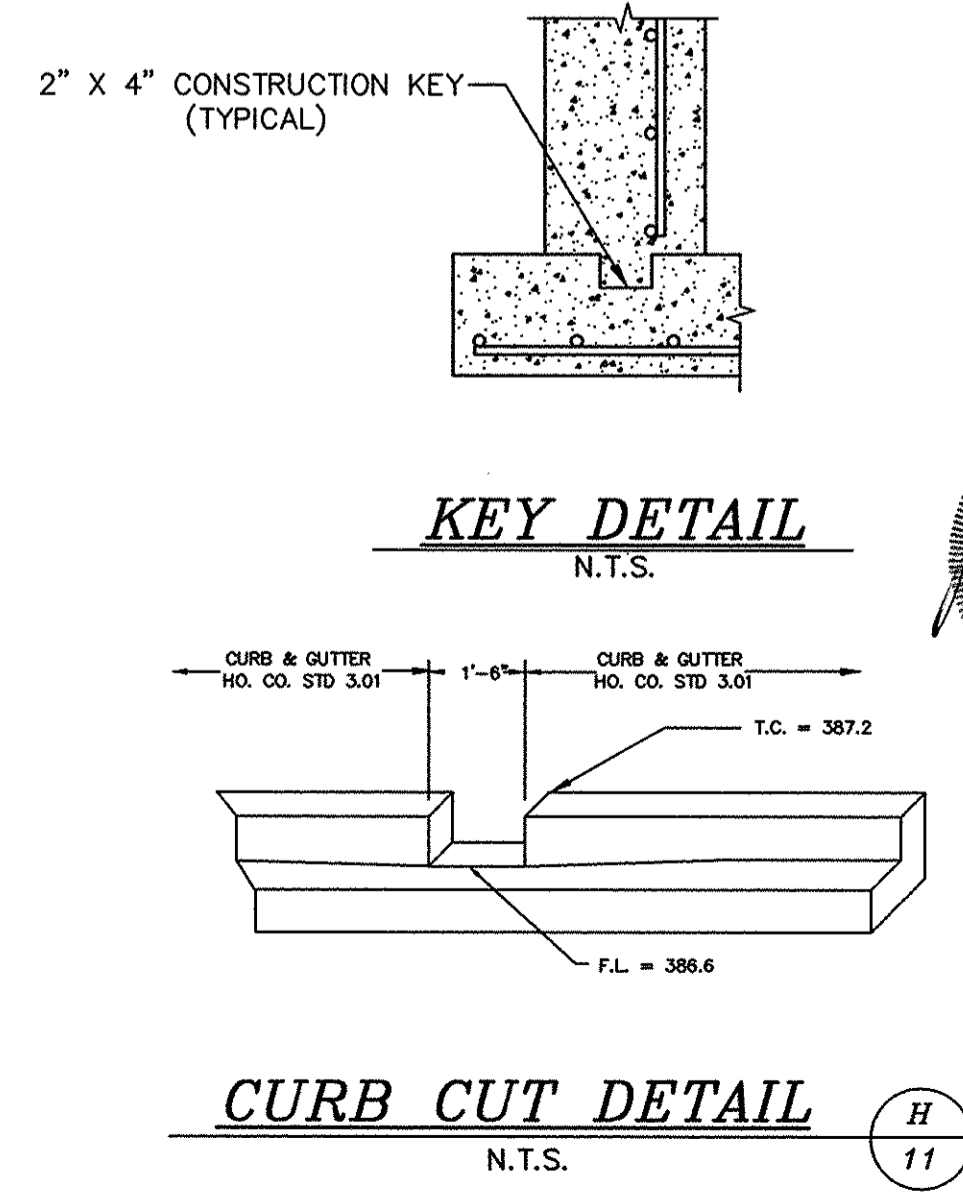
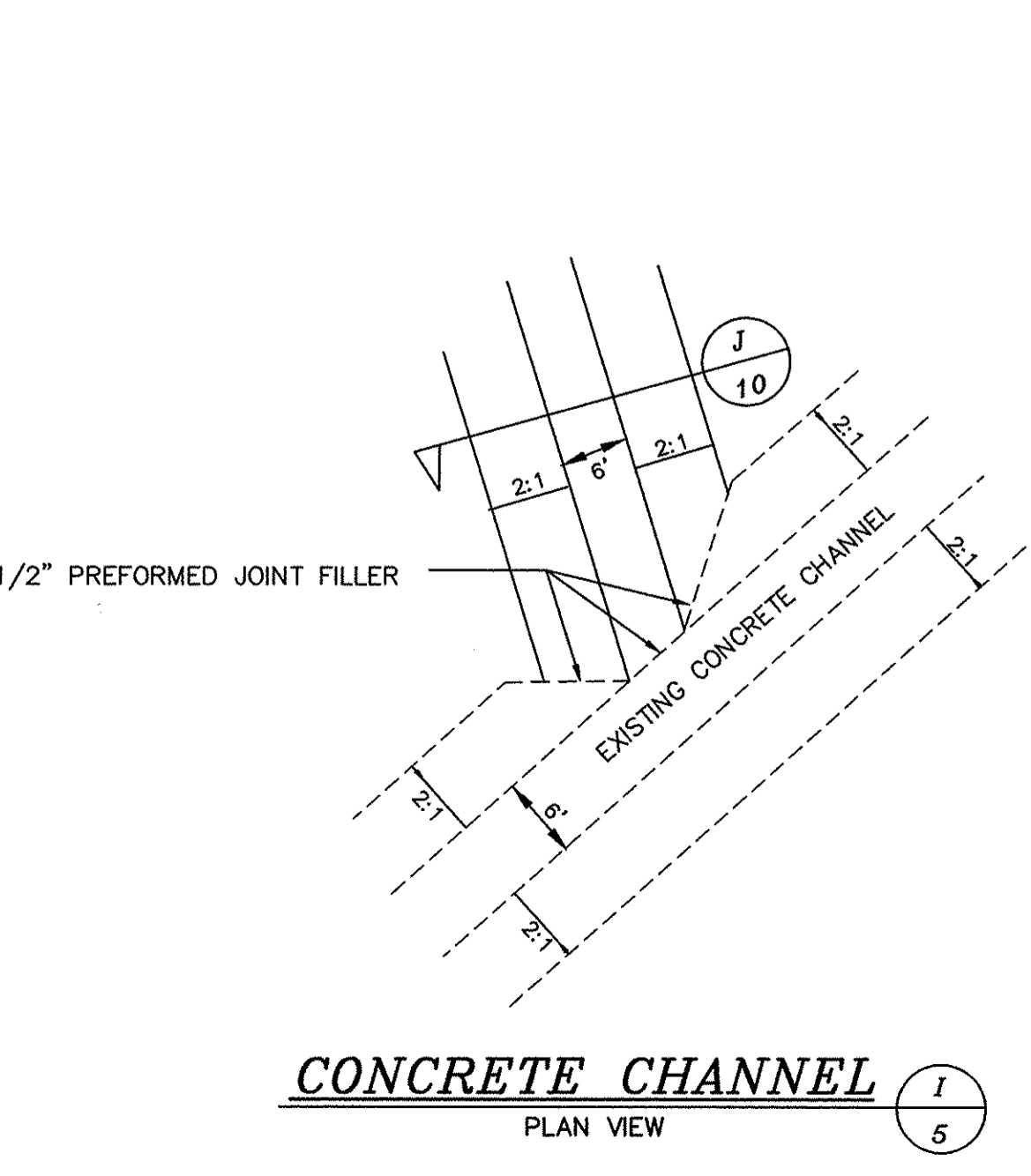
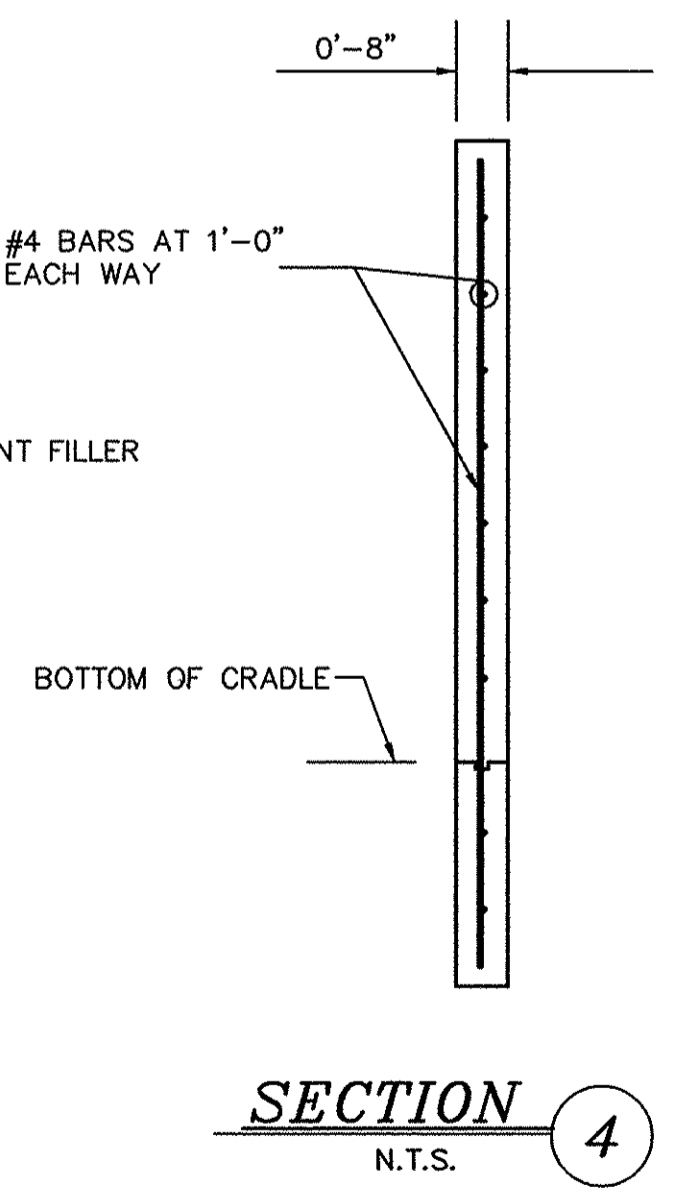
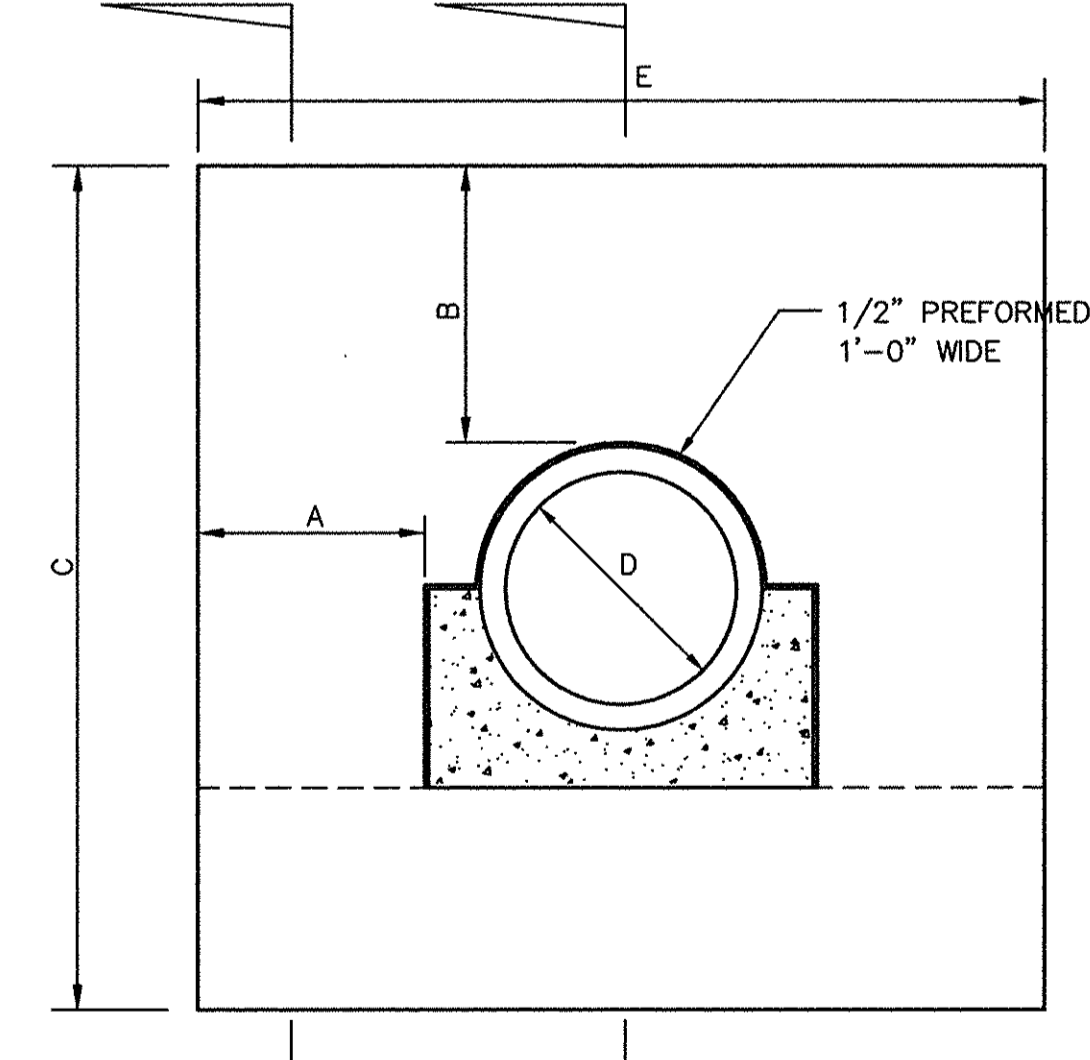
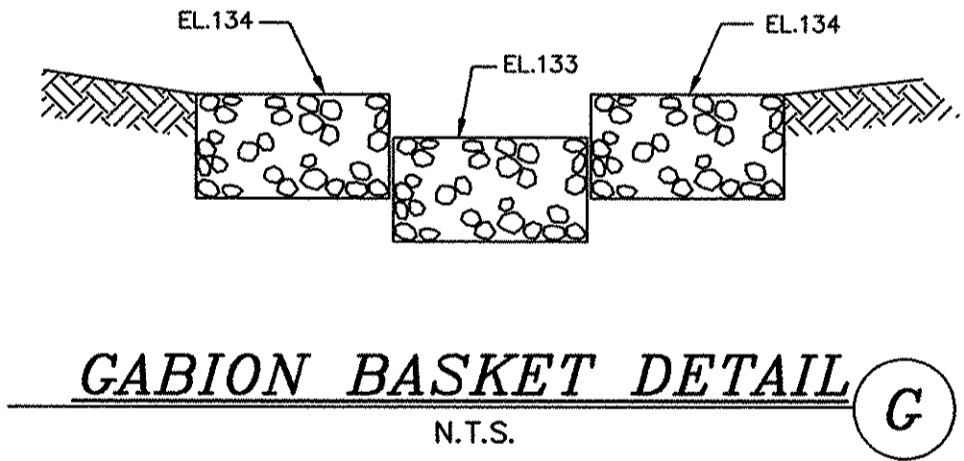
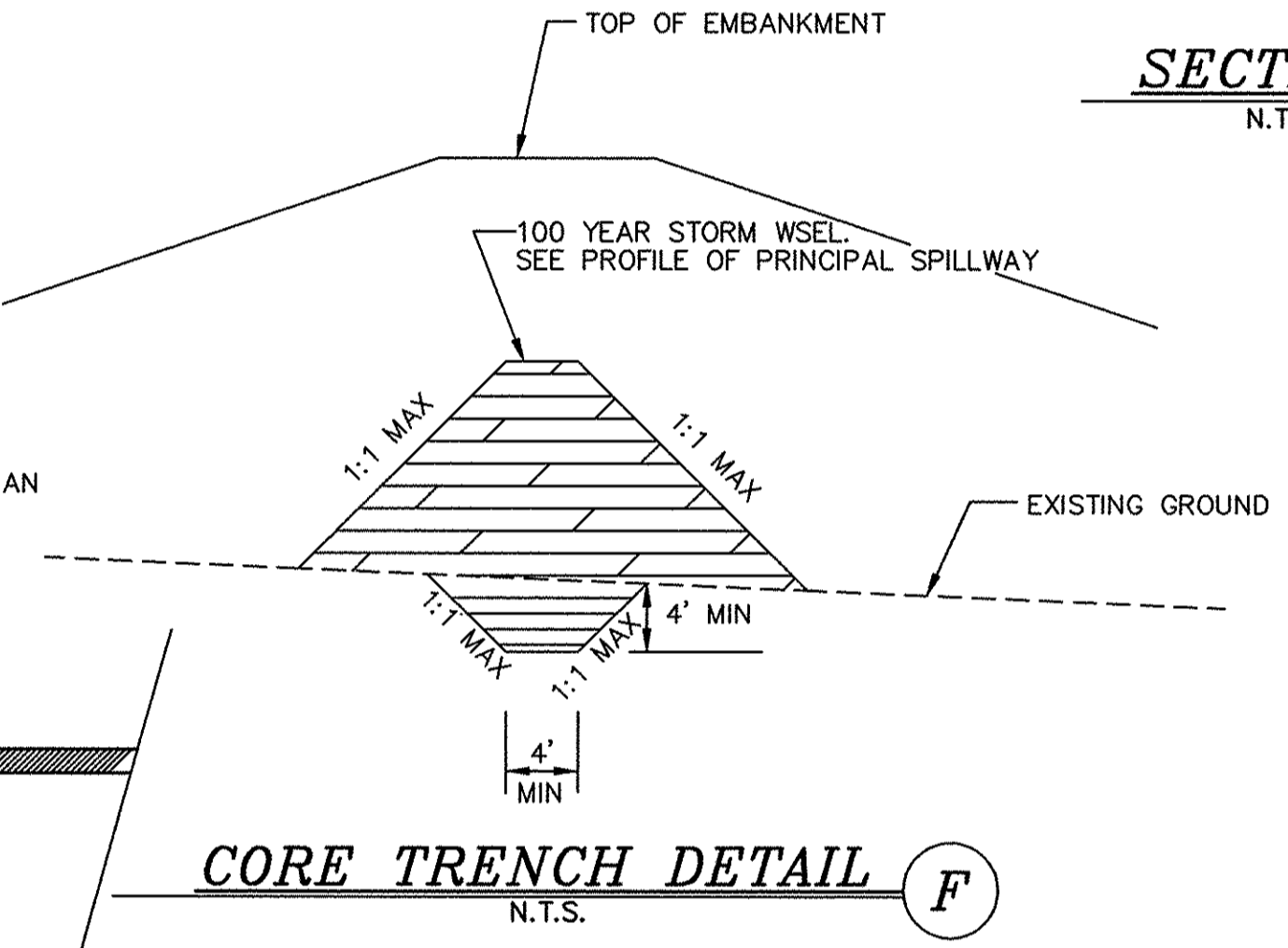
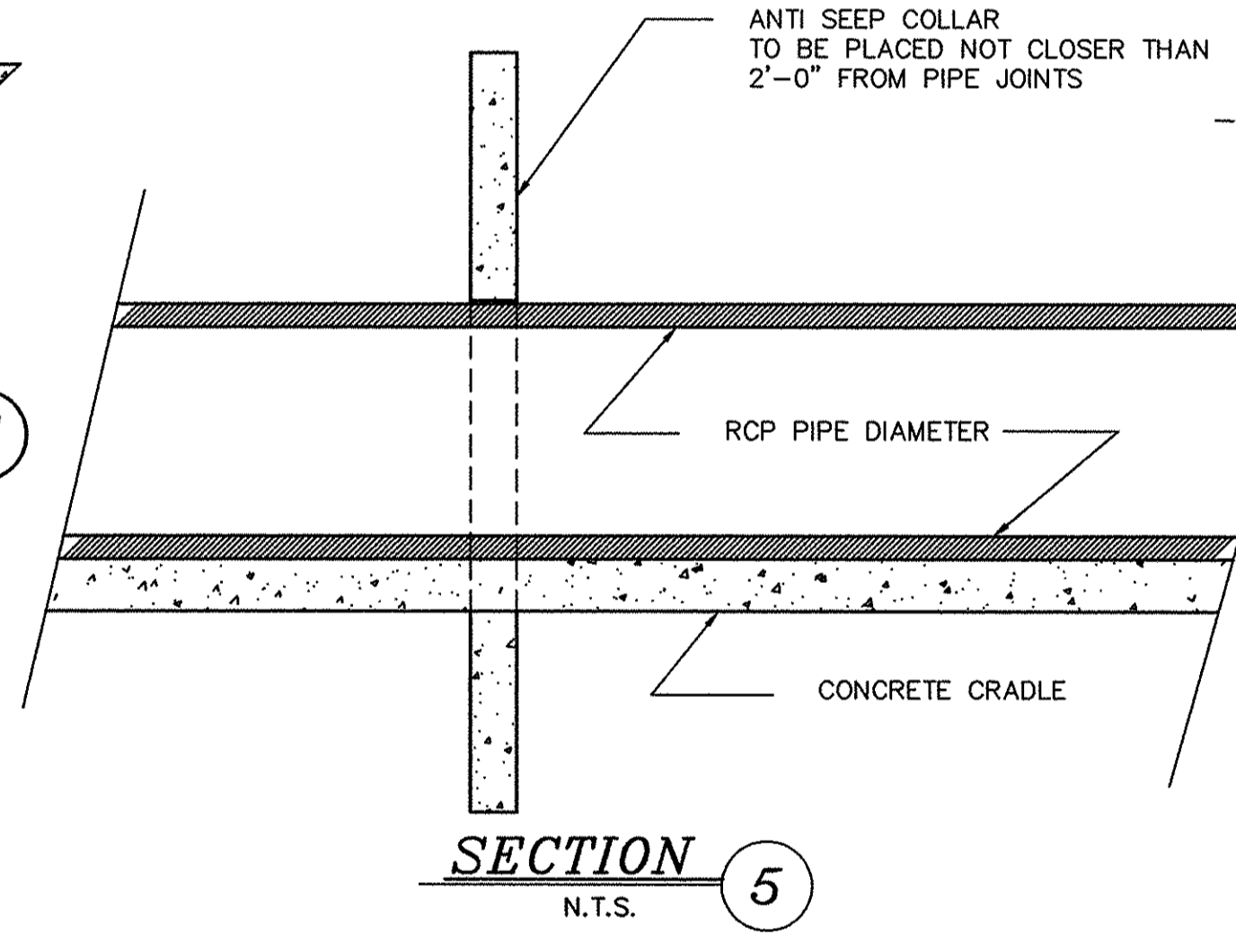
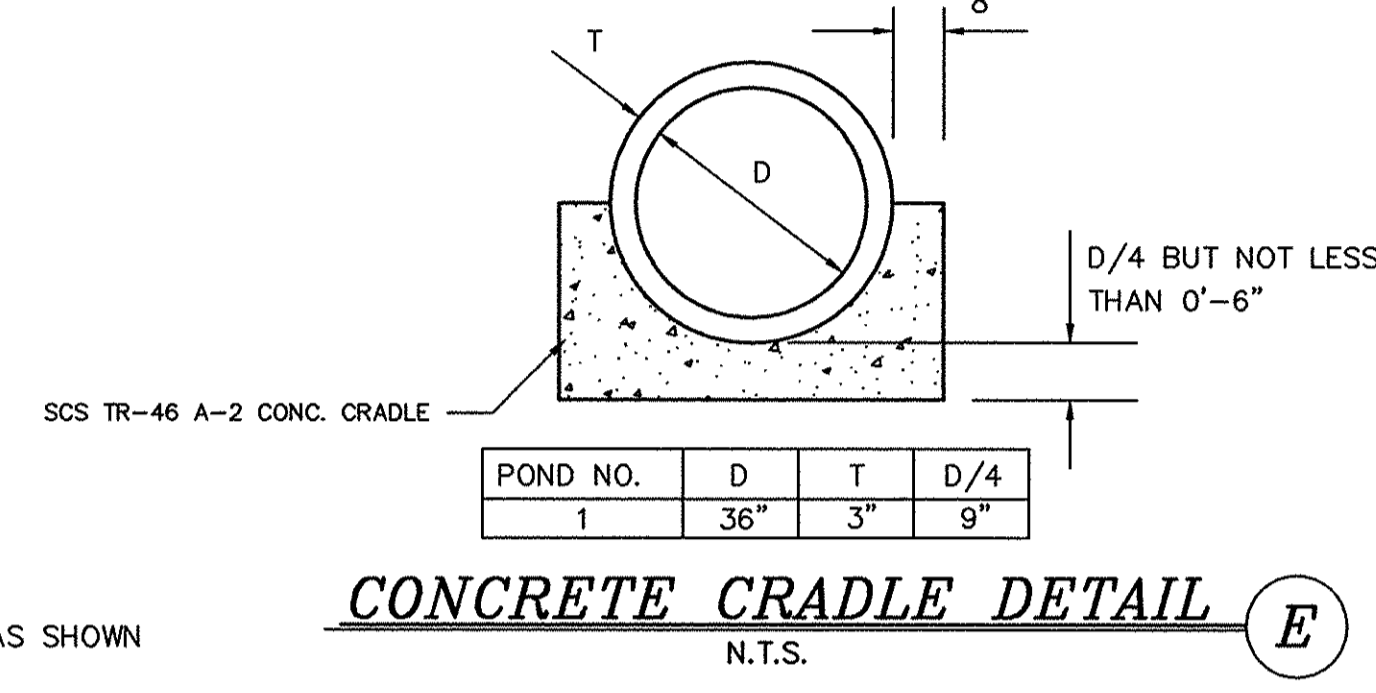
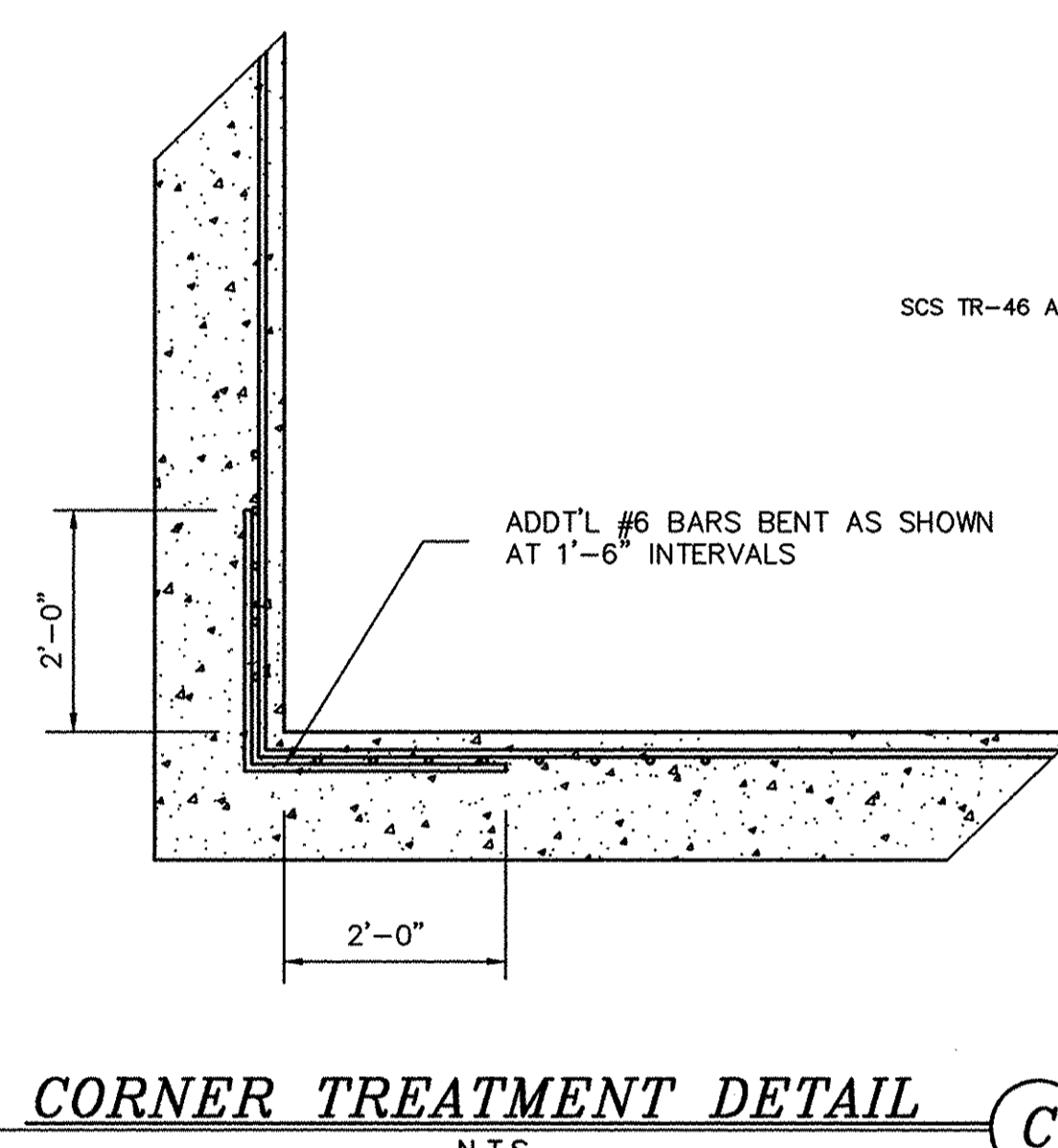
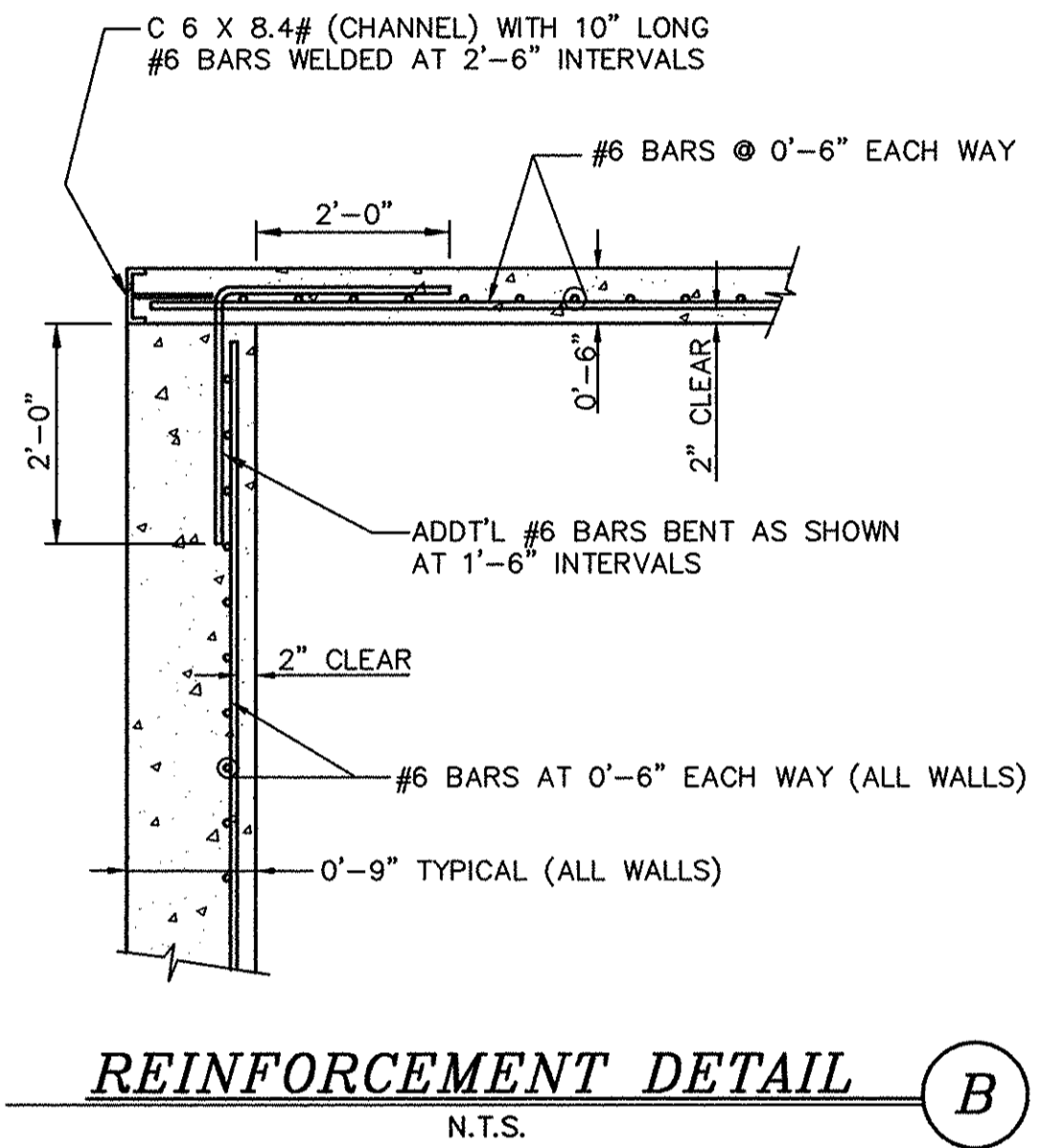
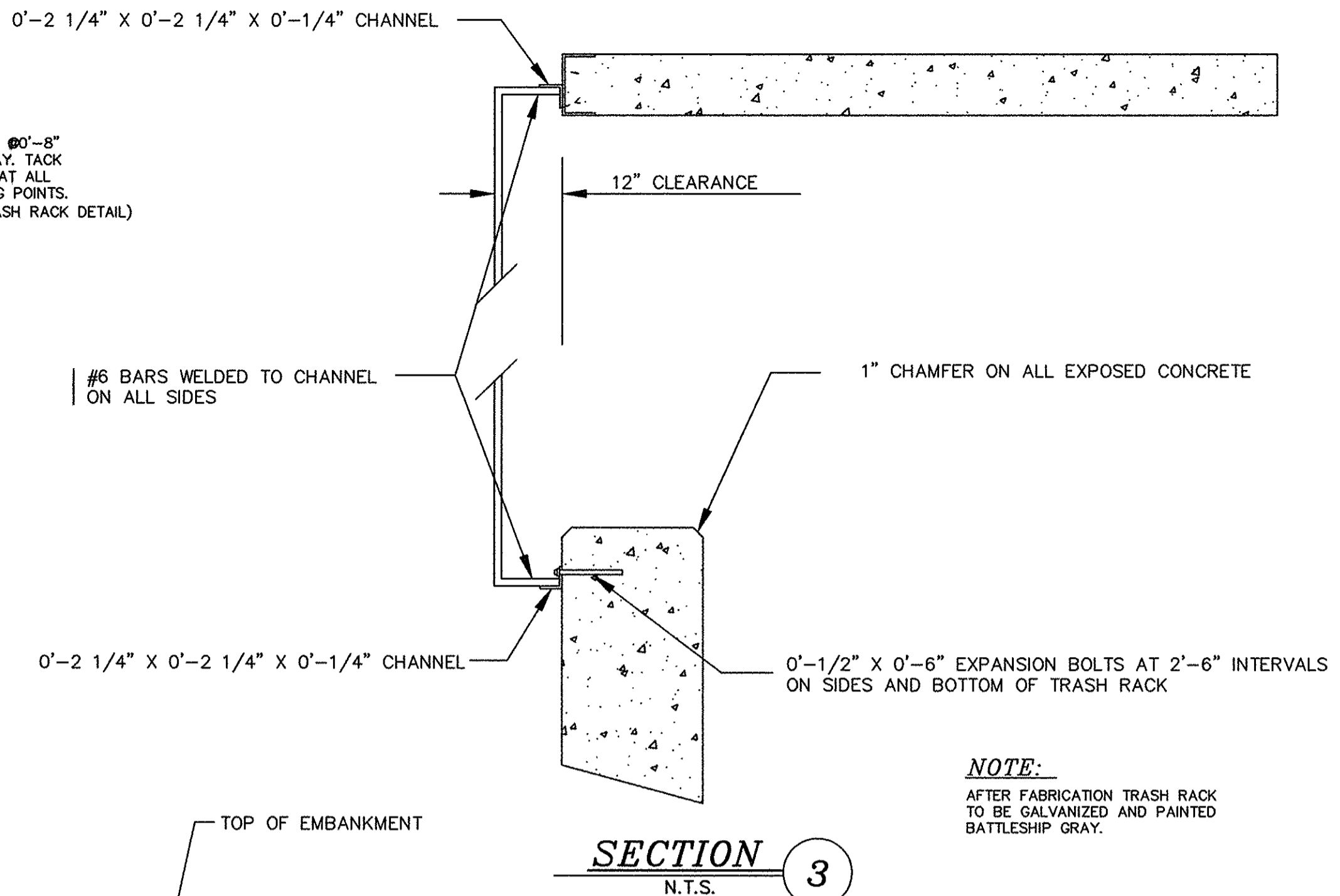
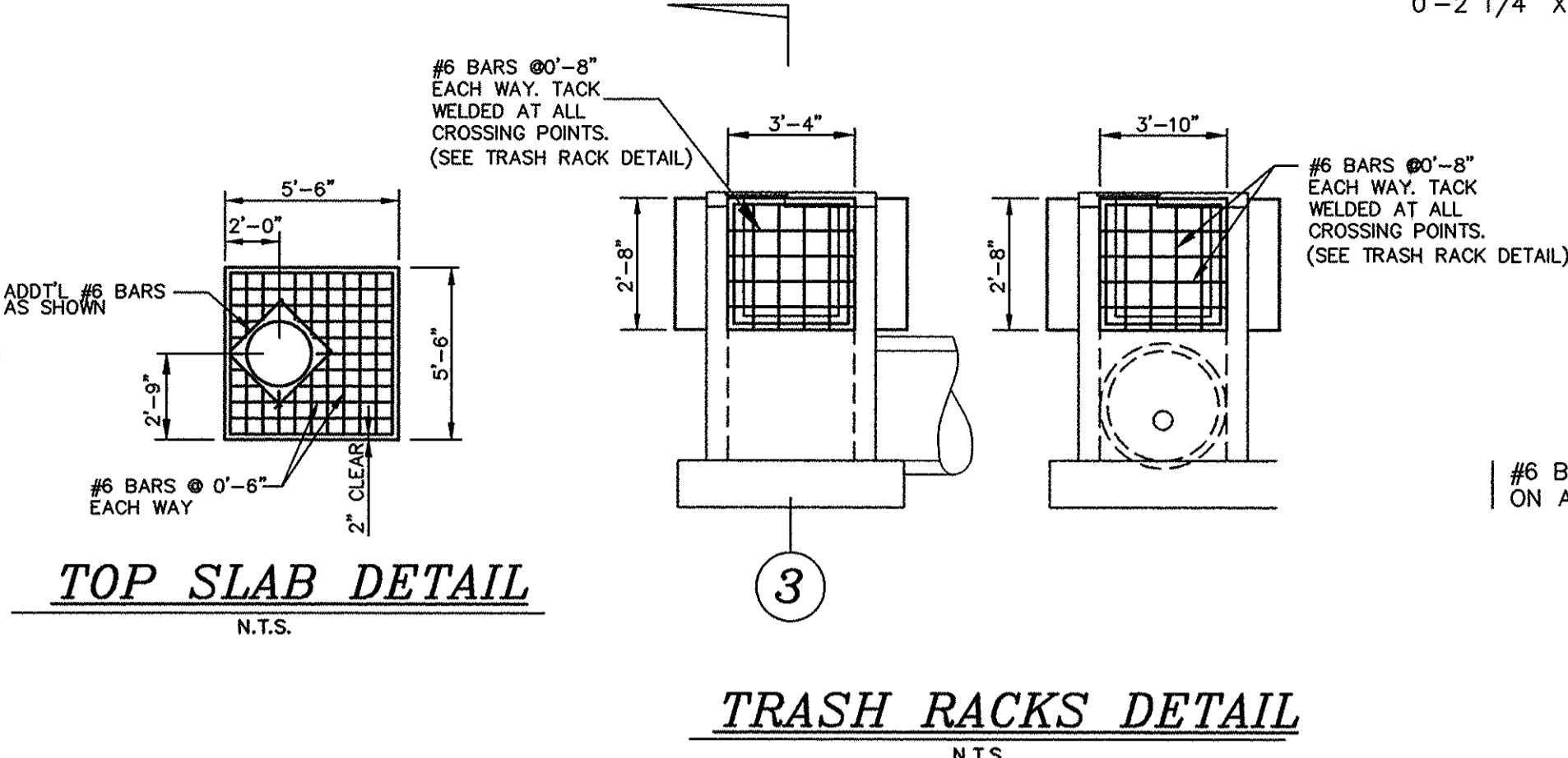
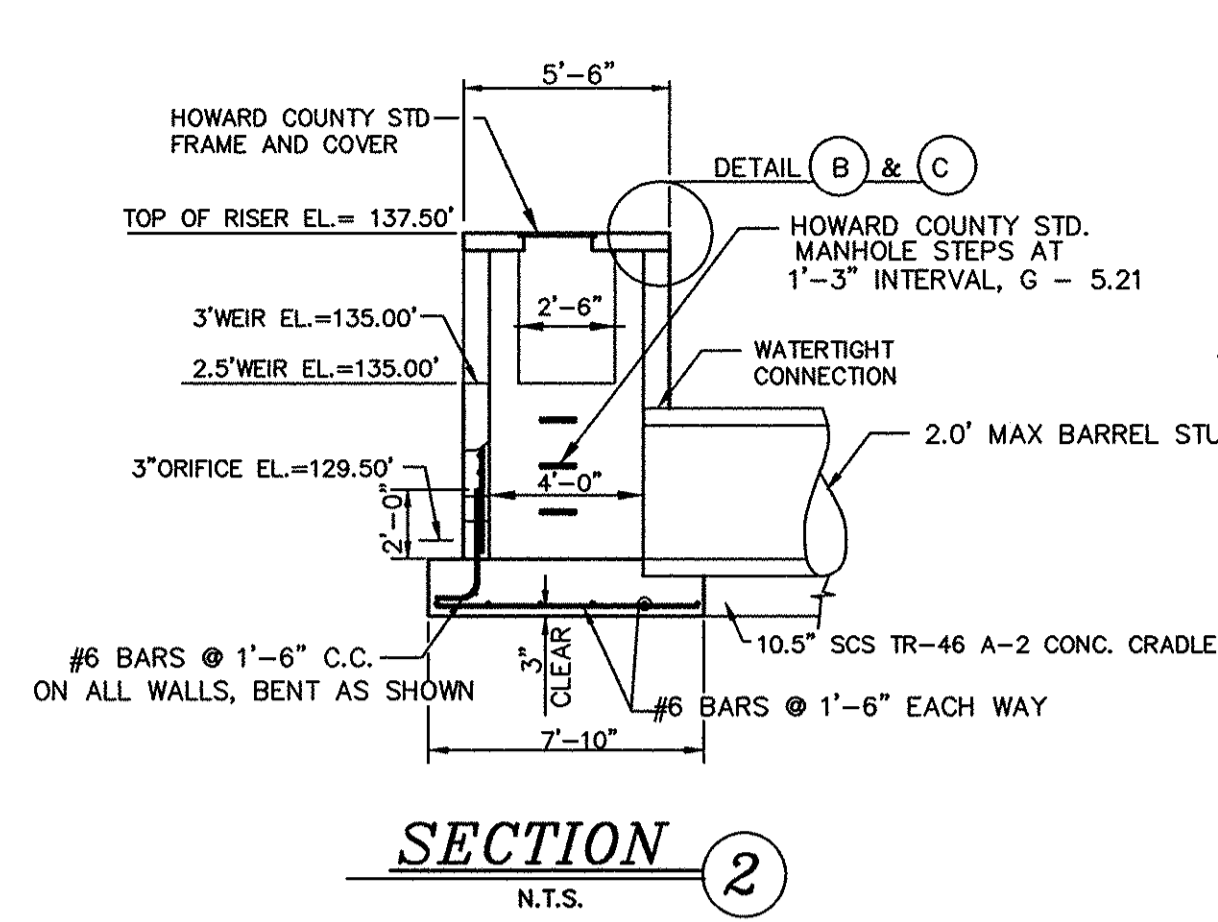
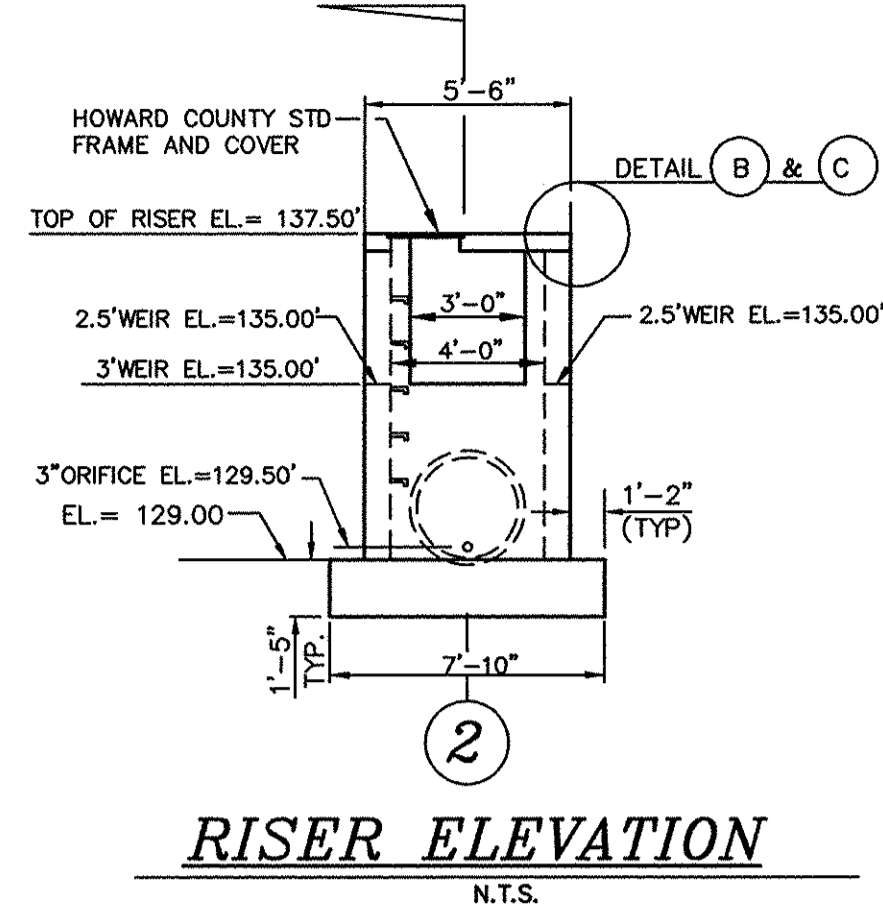
date: JUL 1997
 project: 95198
 illustration: SD
 scale: MP
 approval: SHOWIN

no.: 7-1-95
 description: REV. OF DAM PROFILE (BA GROUP, INC.)
 revisions:

Engineers Planners Surveyors
MILDENBERG, BOENDER & ASSOC., INC.
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax (301) 621-5521 Wash. (410) 997-0999 Fax

9 OF 16
 F-97-110

NOTE: FOR TEMPORARY SWM, 2.50' WEIRS ARE TO BE BRICKED SHUT



POND NO.	A	B	C	D	E
1	3.00'	3.00'	10.25'	36"	10.94'

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: _____ P.E. NO.: _____
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 COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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."

J.S.D., LLC
Signature: *James L. Newkirk* 10-3-97
DATE: 10-3-97
PRINTED NAME OF DEVELOPER: James L. Newkirk

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 NOTICED 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: *R. J. A. Hilmat* 10/3/97
DATE: 10/3/97
PRINTED NAME OF ENGINEER: R. J. A. Hilmat

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: *Cheryl Simmons* 10/20/97
DATE: 10/20/97
PRINTED NAME OF ENGINEER: Cheryl Simmons

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

Signature: *Robert W. Zehm* 10/20/97
DATE: 10/20/97
PRINTED NAME OF ENGINEER: Robert W. Zehm

APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature: *Andrew M. Daniels* 10-24-97
DATE: 10-24-97
PRINTED NAME OF ENGINEER: Andrew M. Daniels

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: *Candy Hamilton* 11/20/97
DATE: 11/20/97
PRINTED NAME OF ENGINEER: Candy Hamilton

APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION
Signature: _____ 12/12/97
DATE: 12/12/97
PRINTED NAME OF ENGINEER: _____



DATE: JUN 1997
PROJECT: 95136
SCALE: SD
APPROVAL: N.T.S.

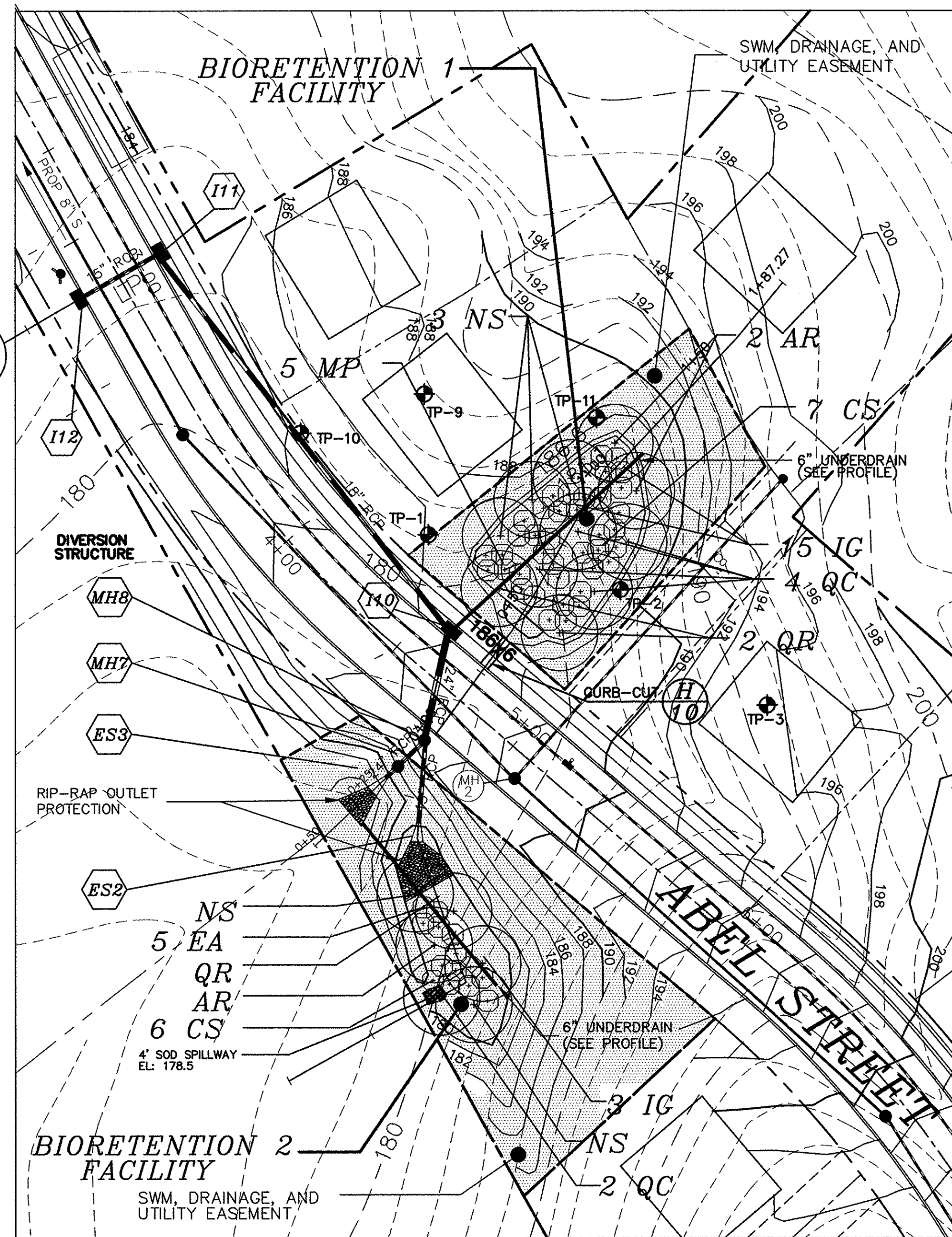
DATE: _____
DESCRIPTION: _____
REVISIONS: _____

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION 1, LOTS 1-41
AND BULK PARCEL A
HOWARD COUNTY, MARYLAND
FIRST ELECTION DISTRICT

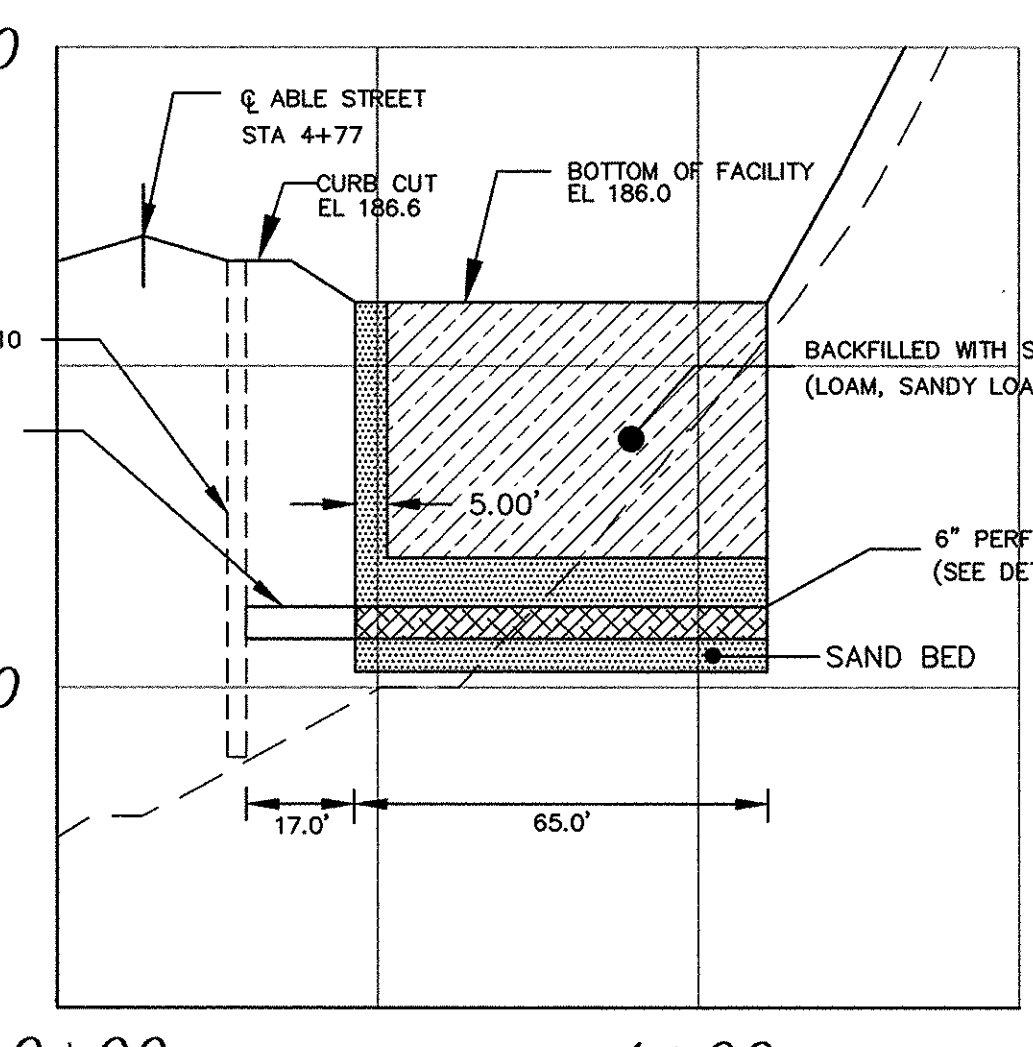
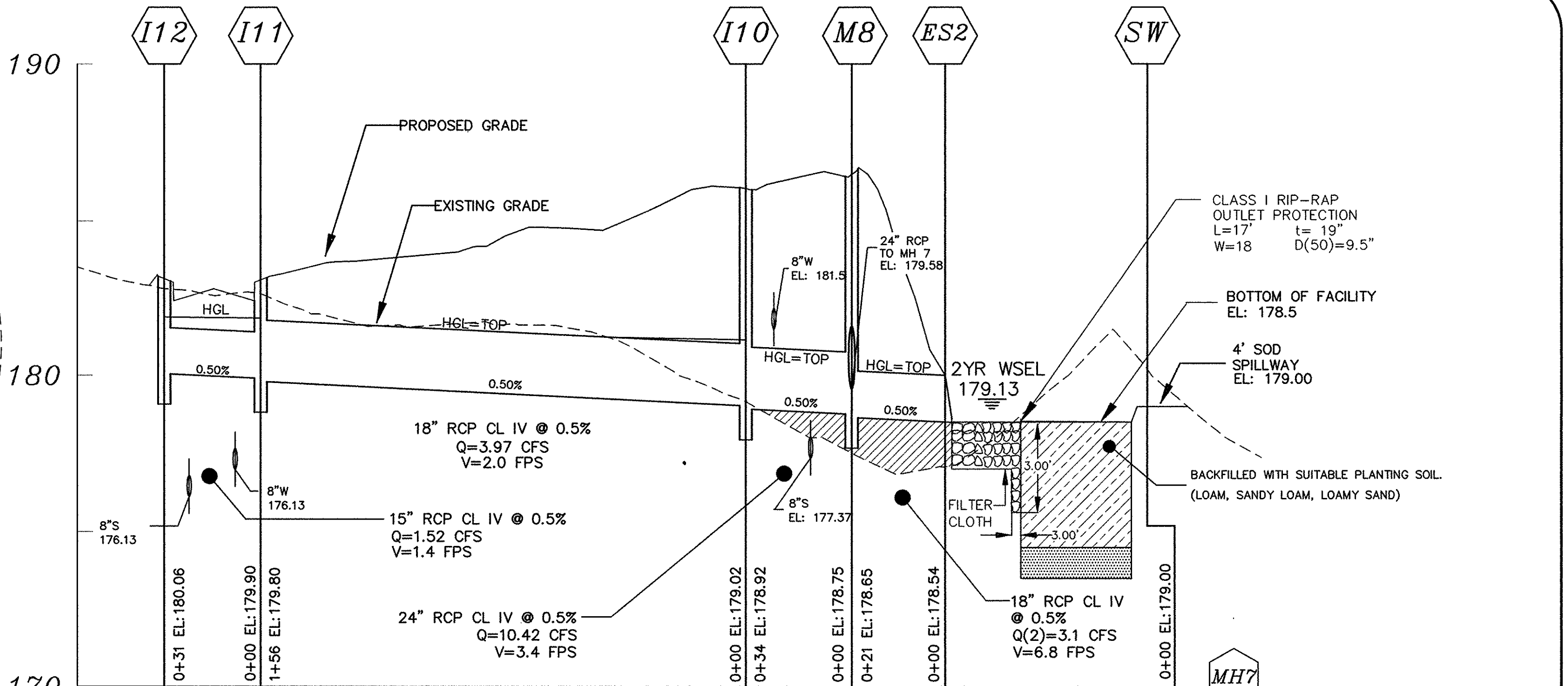
STORMWATER MANAGEMENT DETAILS & PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 987-0236 Fax (301) 621-5521 Wash (410) 987-0238 Fax

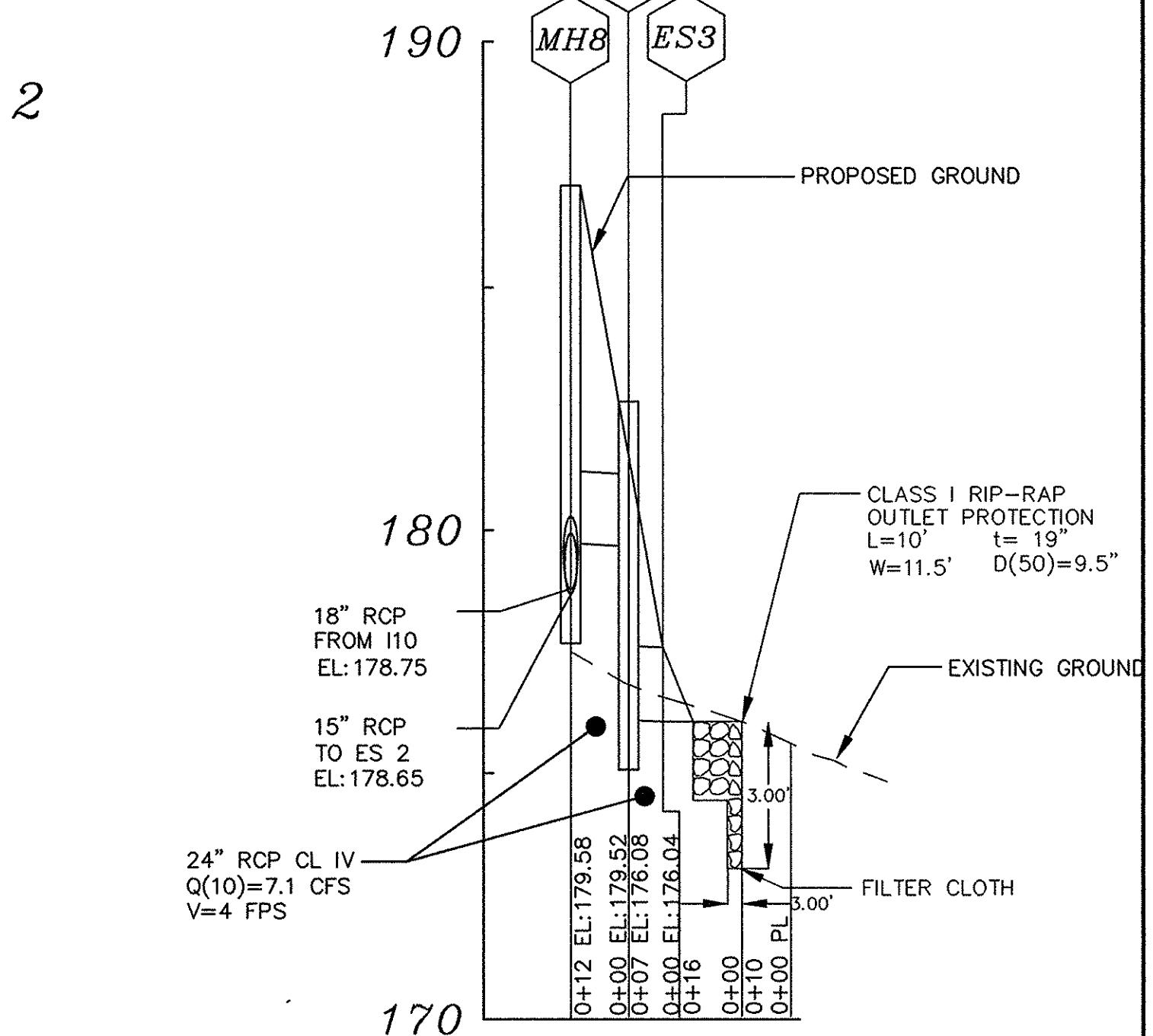
10 OF 16
P-97-110



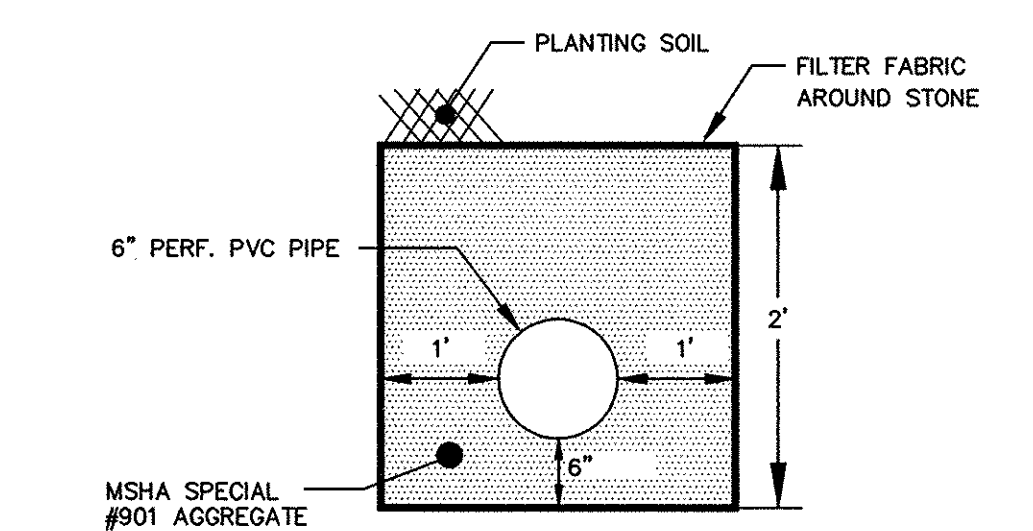
PLAN VIEW
BIORETENTION AREAS 1 AND 2
 SCALE: 1" = 30'



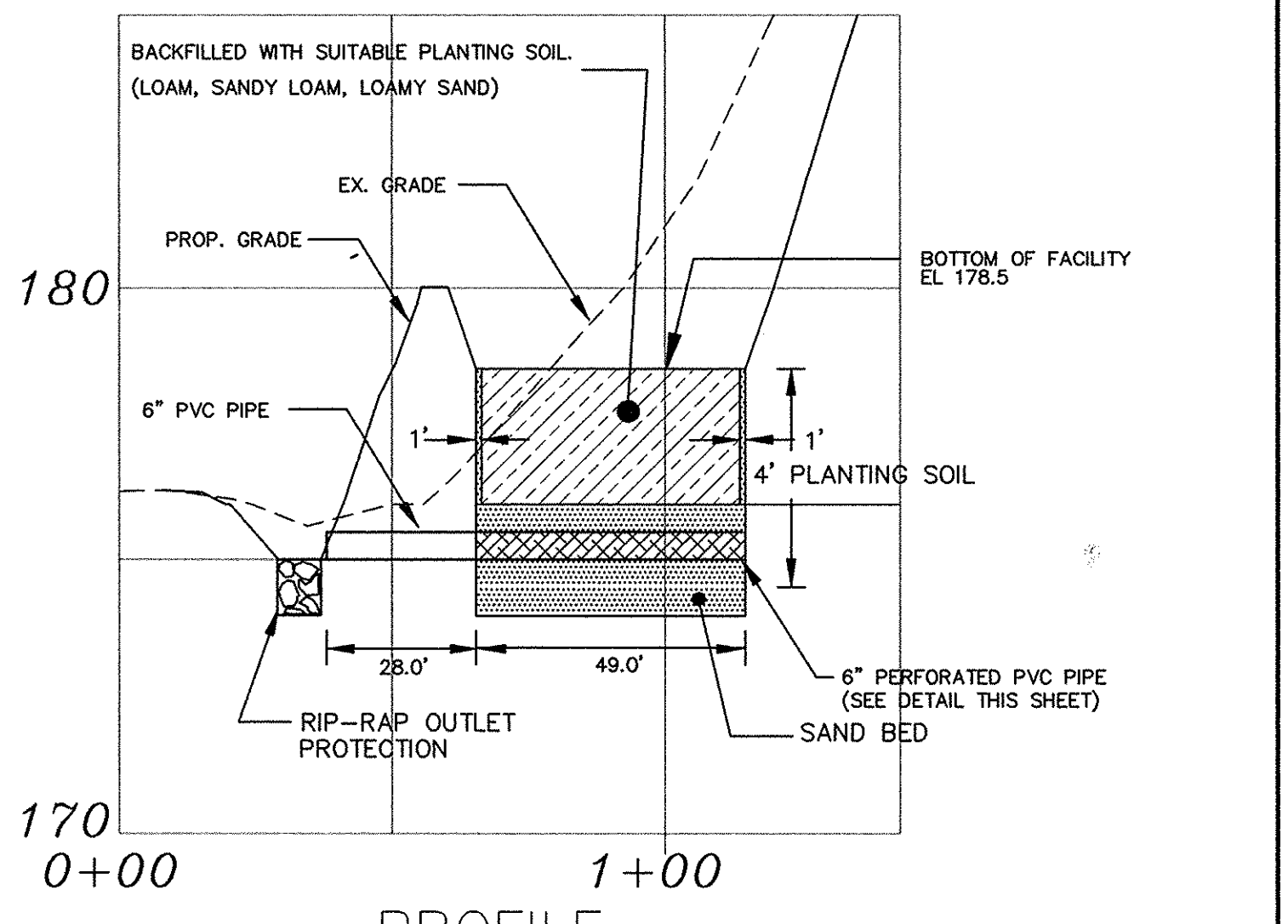
PROFILE
BIORETENTION AREA 1
 SCALE: HOR. 1" = 30'
 VERT. 1" = 3'



PROFILE
DIVERSION STRUCTURE
 SCALE: HOR. 1" = 30'
 VERT. 1" = 3'



DETAIL
UNDERDRAIN CROSS-SECTION
 (NOT TO SCALE)



PROFILE
UNDERDRAIN-BIORETENTION AREA #2
 SCALE: HOR. 1" = 30'
 VERT. 1" = 3'

OWNERS
 PARCEL 229
 JNSD, LC
 5570 STERRETT PLAC, SUITE 201
 COLUMBIA, MARYLAND 21044
 (410) 997-3815, (301) 596-3877

PARCELS 230 & 231
 MICHAEL & SUSAN MULLENDORE
 6154 HANOVER ROAD
 HANOVER, MARYLAND 21076

DEVELOPER
 JNSD, LC
 5570 STERRETT PLAC, SUITE 201
 COLUMBIA, MARYLAND 21044
 (410) 997-3815, (301) 596-3877

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.

P.E. NO.: _____
 DATE: _____

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 COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES THE ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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.

JNSD, LC
 James L. Newburn 12-3-97
 SIGNATURE OF DEVELOPER MEMBER DATE
 James L. Newburn
 PRINTED NAME OF DEVELOPER

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.

R. JACOBI HIKMAT
 10/3/97
 SIGNATURE OF ENGINEER DATE
 R. JACOBI HIKMAT
 PRINTED NAME 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.

Robert W. Zilber
 10/20/97
 USA - NATURAL RESOURCES CONSERVATION SERVICE DATE
 Robert W. Zilber
 HOWARD SOIL CONSERVATION DISTRICT

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

Andy Hamilton
 10/20/97
 APPROVED: DEPARTMENT OF PLANNING AND ZONING DATE
 Andy Hamilton
 CHIEF, DIVISION OF LAND DEVELOPMENT

Andy Hamilton
 10/20/97
 APPROVED: DEPARTMENT OF PUBLIC WORKS DATE
 Andy Hamilton
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

BIORETENTION AREA PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
3	AR	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2" - 3" CAL.
13	CS	CORNUS STOLONIFERA	RED OSIER DOGWOOD	2 1/2" - 3" HT.
5	EA	EUCYNIUS ALATUS	WAXED EUCYNIUS	2 1/2" - 3" HT.
18	IG	ILEX GLABRA	INBERRY	2" - 2 1/2" HT.
5	MP	MYRICA PENNSYLVANICA	BAYBERRY	2" - 2 1/2" HT.
5	NS	NYSSA SYLVATICA	BLACK GUM	2 1/2" - 3" CAL.
6	QC	QUERCUS COCCINEA	SCARLET OAK	2 1/2" - 3" CAL.
3	QR	QUERCUS RUBRA	RED OAK	2 1/2" - 3" CAL.
12	VO	VEURUM DENTATUM	ARROWWOOD	2 1/2" - 3" HT.
TOTAL 70 TREES & SHRUBS (17 TREES, 53 SHRUBS)				

PLANT MATERIAL GUIDELINES
 BALLED & BURLAPPED AND CONTAINERIZED TREES AND SHRUBS SHOULD BE PLANTED BETWEEN MARCH 15 AND JUNE 30 OR SEPTEMBER 15 AND NOVEMBER 15 AS SPECIFIED ON THE ROAD PLAN DRAWINGS. GROUNDCOVERS FOLLOW TREE AND SHRUB PLANTING DATES. GRASSES AND LEGUMES SHOULD BE PLANTED IN THE SPRING.

FOR ALL PLANT INSTALLATION, THE CONTRACTOR SHALL PROVIDE A ONE (1) YEAR 80% CARE AND REPLACEMENT WARRANTY. THIS WARRANTY SHALL BEGIN AFTER INSPECTION AND APPROVAL OF THE COMPLETE INSTALLATION OF ALL PLANT MATERIAL AND CONTINUE FOR ONE (1) YEAR. REPLACEMENT OF PLANT MATERIAL SHALL CONFORM TO THE SPECIFICATIONS SET FORTH IN THE MAINTENANCE SCHEDULE.

INSTALLATION & MAINTENANCE SCHEDULE FOR BIORETENTION SOILS:
 PROVIDE A MINIMUM OF FOUR (4) FEET OF PLANTING SOIL WITH A ONE (1) FOOT SAND LAYER BENEATH. SUITABLE PLANTING SOILS HAVE A SANDY LOAM, LOAMY SAND, OR LOAM TEXTURE.

ORGANIC LAYER:
 ONCE TREES AND SHRUBS HAVE BEEN INSTALLED, THE MULCH MAY BE ADDED. ANY GROUNDCOVERS SPECIFIED AS PLUGS MAY BE INSTALLED ONCE THE MULCH HAS BEEN LAID DOWN. GROUNDCOVERS ESTABLISHED BY SEEDING AND/OR CONSISTING OF GRASSES SHOULD NOT BE COVERED WITH AN ORGANIC LAYER.

SINCE THESE PLANT COMMUNITIES ARE WITHIN AN URBAN LOCATION, THE ORGANIC LAYER TENDS TO BECOME VERY ACIDIC DUE TO PRECIPITATION AND RUNOFF. ONCE TO TWICE A YEAR, TESTING OF PH OF THE ORGANIC LAYER SHALL BE DONE TO DETERMINE THE AMOUNT OF LIMESTONE REQUIRED TO TREAT THE PLANTING SOIL.

ANNUAL SOIL TESTING SHOULD BE CONDUCTED TO DETECT AND PREVENT THE ACCUMULATION OF TOXINS AND HEAVY METALS.

MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING 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.

MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.

WHENEVER NEEDED, REMULCH ANY VOID AREAS BY HAND.

PLANT MATERIAL:
 ONCE PLANTING HAS BEEN COMPLETED, PLANT MATERIAL SHOULD BE WATERED BY HAND AT THE END OF EACH DAY FOR FOURTEEN CONSECUTIVE DAYS.

SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.

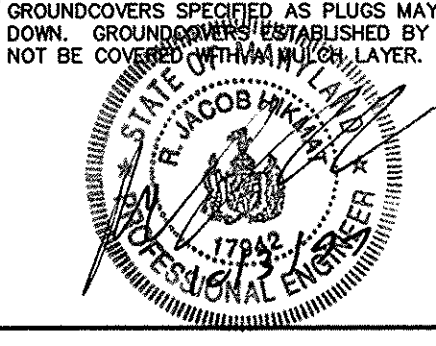
DEAD PLANT MATERIAL SHALL BE REPLACED BETWEEN MARCH 15 AND APRIL 30 OR OCTOBER 1 AND NOVEMBER 30.

DEPENDING ON THE TYPE OF INSECT AND DISEASE INFESTATION, DISEASED TREES AND SHRUBS SHOULD BE TREATED BY HAND AT VARIOUS TIMES DURING THE YEAR.

WHENEVER NEEDED, DEFICIENT STAKES OR WIRES SHOULD BE REPLACED BY HAND. ONCE A YEAR, ONLY IN THE SPRING, STAKES SHOULD BE REPLACED.

NON-ROUTINE MAINTENANCE FOR BIORETENTION AREA

- INSPECT SIDE SLOPES OF FACILITY AND REPAIR WHEN NECESSARY.
- REMOVE WOODY VEGETATION AS REQUIRED.
- REPAIR TRASH RACKS AS REQUIRED.
- REPAIR RIP RAP OUTLET PROTECTION WHEN NECESSARY.
- INSPECT EMBANKMENT FOR SEEPAGE.



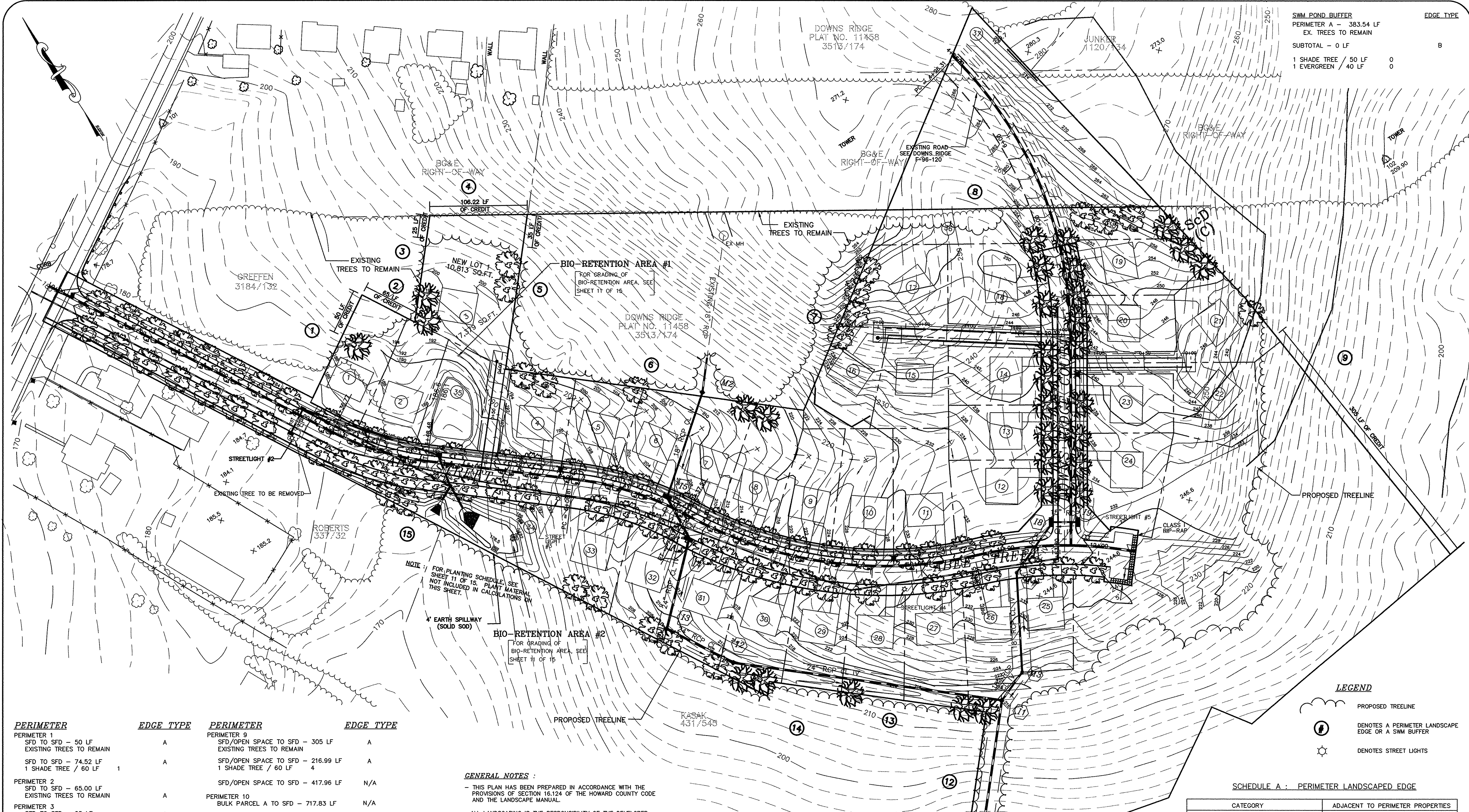
project	95196	date	JUN 1996
illustration		engineering	
SID		SID	
scale		approval	
		AS SHOWN	

no.		date	
description		revisions	

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
 WILLIAMS KNOLL, SECTION 1, LOTS 1-41
 AND BULK PARCEL A
 HOWARD COUNTY, MARYLAND
 FIRST ELECTION DISTRICT

STORMWATER MANAGEMENT DETAILS & PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax: (301) 621-5521 Wash. (410) 997-0298 Fax.



SWM POND BUFFER		EDGE TYPE
PERIMETER A -	383.54 LF	
EX. TREES TO REMAIN		
SUBTOTAL -	0 LF	B
1 SHADE TREE /	50 LF	0
1 EVERGREEN /	40 LF	0

project	date	approval
95158	APR 1997	RH
illustration	engineering	
SD	SJD	
scale	1"=50'	

no.	description	date
	revisions	

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
 WILLIAMS KNOLL, SECTION 1, LOTS 1-41
 AND BULK PARCEL A,
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 LANDSCAPE PLAN

PERIMETER	EDGE TYPE	PERIMETER	EDGE TYPE
PERIMETER 1 SFD TO SFD - 50 LF EXISTING TREES TO REMAIN	A	PERIMETER 9 SFD/OPEN SPACE TO SFD - 305 LF EXISTING TREES TO REMAIN	A
SFD TO SFD - 74.52 LF 1 SHADE TREE / 60 LF	1	SFD/OPEN SPACE TO SFD - 216.99 LF 1 SHADE TREE / 60 LF	4
PERIMETER 2 SFD TO SFD - 65.00 LF EXISTING TREES TO REMAIN	A	SFD/OPEN SPACE TO SFD - 417.96 LF	N/A
PERIMETER 3 SFD TO SFD - 25 LF EXISTING TREES TO REMAIN	A	PERIMETER 10 BULK PARCEL A TO SFD - 717.83 LF	N/A
SFD TO SFD - 92.31 LF 1 SHADE TREE / 60 LF	2	PERIMETER 11 BULK PARCEL A / OPEN SPACE TO SFD - 383.54 LF	N/A
PERIMETER 4 SFD TO SFD - 106.22 LF EXISTING TREES TO REMAIN	A	PERIMETER 12 BULK PARCEL A / OPEN SPACE TO SFD - 578.54 LF	N/A
PERIMETER 5 SFD TO SFD - 35 LF EXISTING TREES TO REMAIN	A	PERIMETER 13 SFD TO SFD - 238.78 LF 1 SHADE TREE / 60 LF	4
SFD TO SFD - 135.67 LF 1 SHADE TREE / 60 LF	2	PERIMETER 14 SFD TO SFD - 16.00 LF 1 SHADE TREE / 60 LF	0
PERIMETER 6 SFD TO SFD/OPEN SPACE - 328.00 LF 1 SHADE TREE / 60 LF	5	PERIMETER 15 ROADWAY - 335 LF	N/A
PERIMETER 7 SFD TO SFD/OPEN SPACE - 30 LF EXISTING TREES TO REMAIN	A	TOTAL PLANTING OBLIGATION	
SFD TO SFD/OPEN SPACE - 206.59 LF 1 SHADE TREE / 60 LF	4	SHADE TREES	34
PERIMETER 8 SFD TO BG&E ROW - 135 LF EXISTING TREES TO REMAIN	A	EVERGREEN TREES	0
SFD TO BG&E ROW - 160.78 LF 1 SHADE TREE / 60 LF	3	SHRUBS	0
		TOTAL	34 SHADE TREES

GENERAL NOTES :
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
 - ALL LANDSCAPING IS THE RESPONSIBILITY OF THE DEVELOPER.
 - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$3,400.00.

LANDSCAPE REQUIREMENT PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
21	(Symbol)	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2" - 3" CAL.
13	(Symbol)	QUERCUS RUBRA	RED OAK	2 1/2" - 3" CAL.
TOTAL				34 SHADE TREES

STREET TREE PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
62	(Symbol)	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2" - 3" CAL.
18	(Symbol)	QUERCUS RUBRA	NORTHERN RED OAK	2 1/2" - 3" CAL.
TOTAL				80 STREET TREES

NOTE : PERIMETER LANDSCAPING FOR PART OF PERIMETER 9 & 12 AND PERIMETERS 10 & 11 WILL BE COVERED UNDER WILLIAMS KNOLL, SECTION II.

MATCHLINE SEE GRADING SHEET 14 OF 16

NOTE: THIS PLAN IS TO BE USED FOR THE PURPOSE OF LANDSCAPING ONLY.

SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING

CATEGORY	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	A
LINEAR FEET OF PERIMETER	2744.20 LF (EXCLUDES ROADWAY ALONG PERIMETER 15)
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	YES, 751.22 LF
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO
NUMBER OF PLANTS REQUIRED	
SHADE TREES	34 SHADE TREES
EVERGREEN TREES	0 EVERGREEN TREES
SHRUBS	0 SHRUBS
NUMBER OF PLANTS PROVIDED	
SHADE TREES	34 SHADE TREES
EVERGREEN TREES	0 EVERGREEN TREES
OTHER TREES (2:1 SUBSTITUTION)	0 SUBSTITUTION TREES
SHRUBS (10:1 SUBSTITUTION)	0 SHRUBS

SCHEDULE A : PERIMETER LANDSCAPED EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	A
LINEAR FEET OF PERIMETER	2744.20 LF (EXCLUDES ROADWAY ALONG PERIMETER 15)
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	YES, 751.22 LF
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO
NUMBER OF PLANTS REQUIRED	
SHADE TREES	34 SHADE TREES
EVERGREEN TREES	0 EVERGREEN TREES
SHRUBS	0 SHRUBS
NUMBER OF PLANTS PROVIDED	
SHADE TREES	34 SHADE TREES
EVERGREEN TREES	0 EVERGREEN TREES
OTHER TREES (2:1 SUBSTITUTION)	0 SUBSTITUTION TREES
SHRUBS (10:1 SUBSTITUTION)	0 SHRUBS



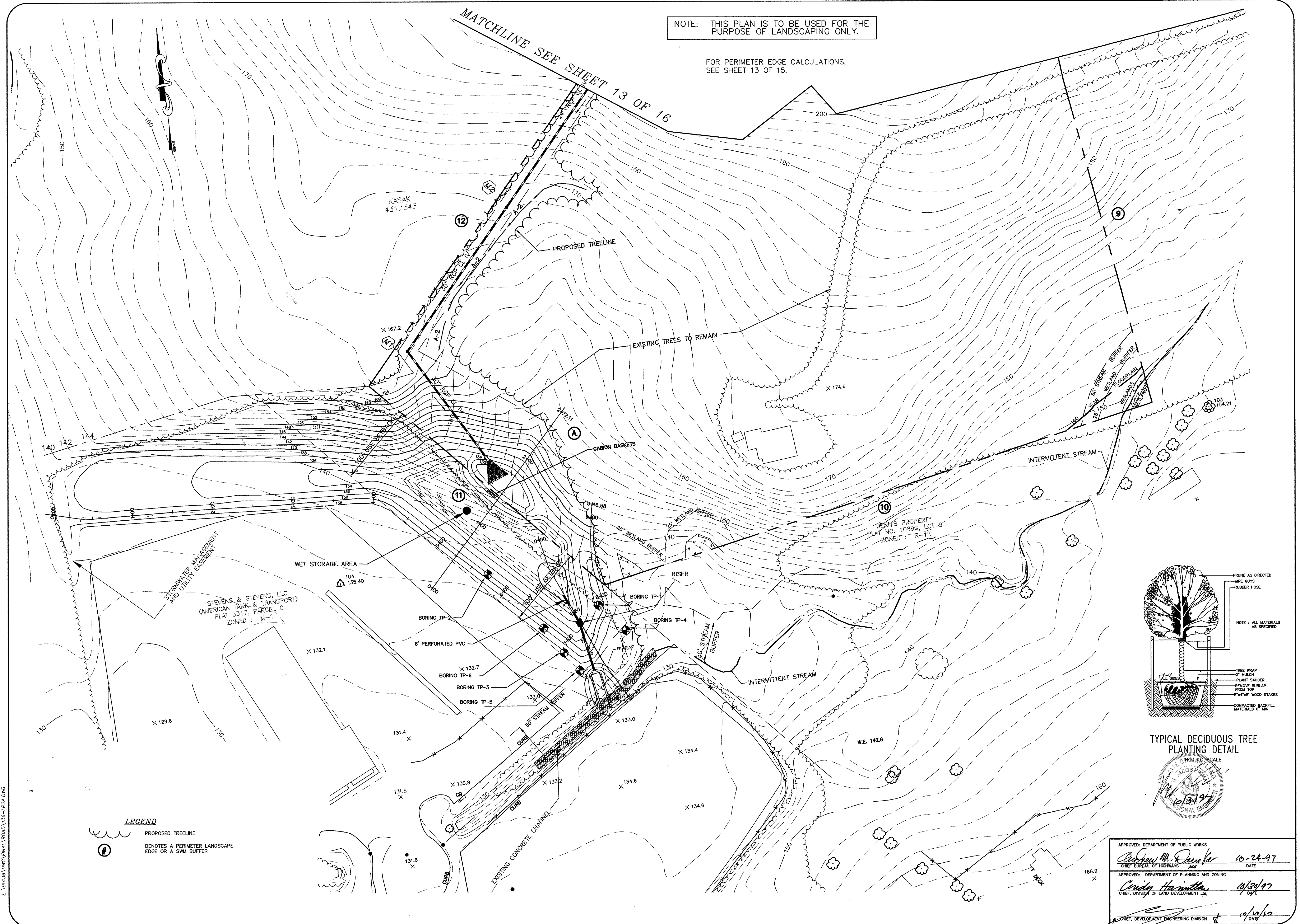
APPROVED: DEPARTMENT OF PUBLIC WORKS
 Andrew M. Pauer 10-27-97
 CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Candy Hamilton 10/20/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF ENGINEERING
 DATE

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

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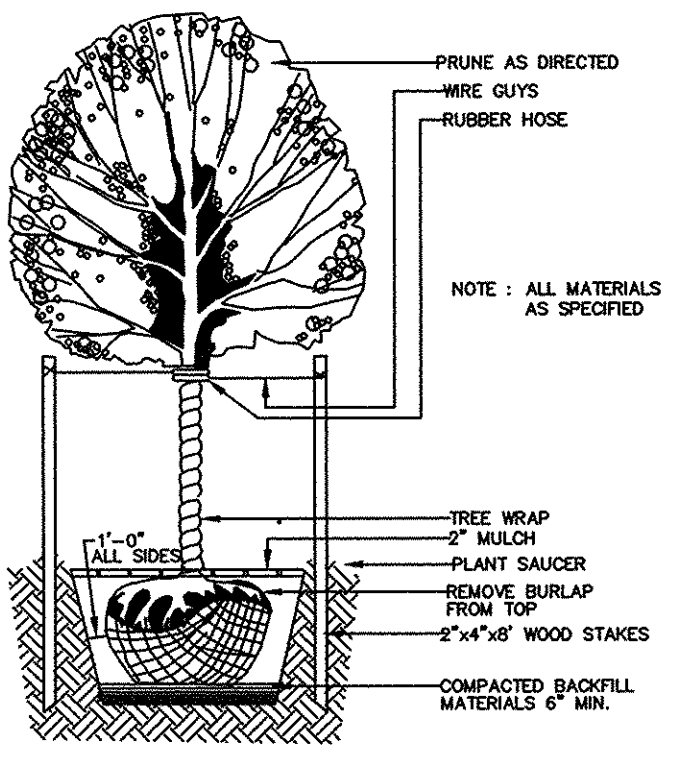
NOTE: THIS PLAN IS TO BE USED FOR THE PURPOSE OF LANDSCAPING ONLY.

FOR PERIMETER EDGE CALCULATIONS, SEE SHEET 13 OF 15.

MATCHLINE SEE SHEET 13 OF 16

LEGEND

PROPOSED TREELINE
 DENOTES A PERIMETER LANDSCAPE EDGE OR A SWM BUFFER



TYPICAL DECIDUOUS TREE PLANTING DETAIL



APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Decker 10-24-97
 CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hamilton 10/30/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 10/20/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

project	95196	date	APR 1997
illustration	SD	engineering	SID
scale	1"=50'	approval	RH

no.	description	date

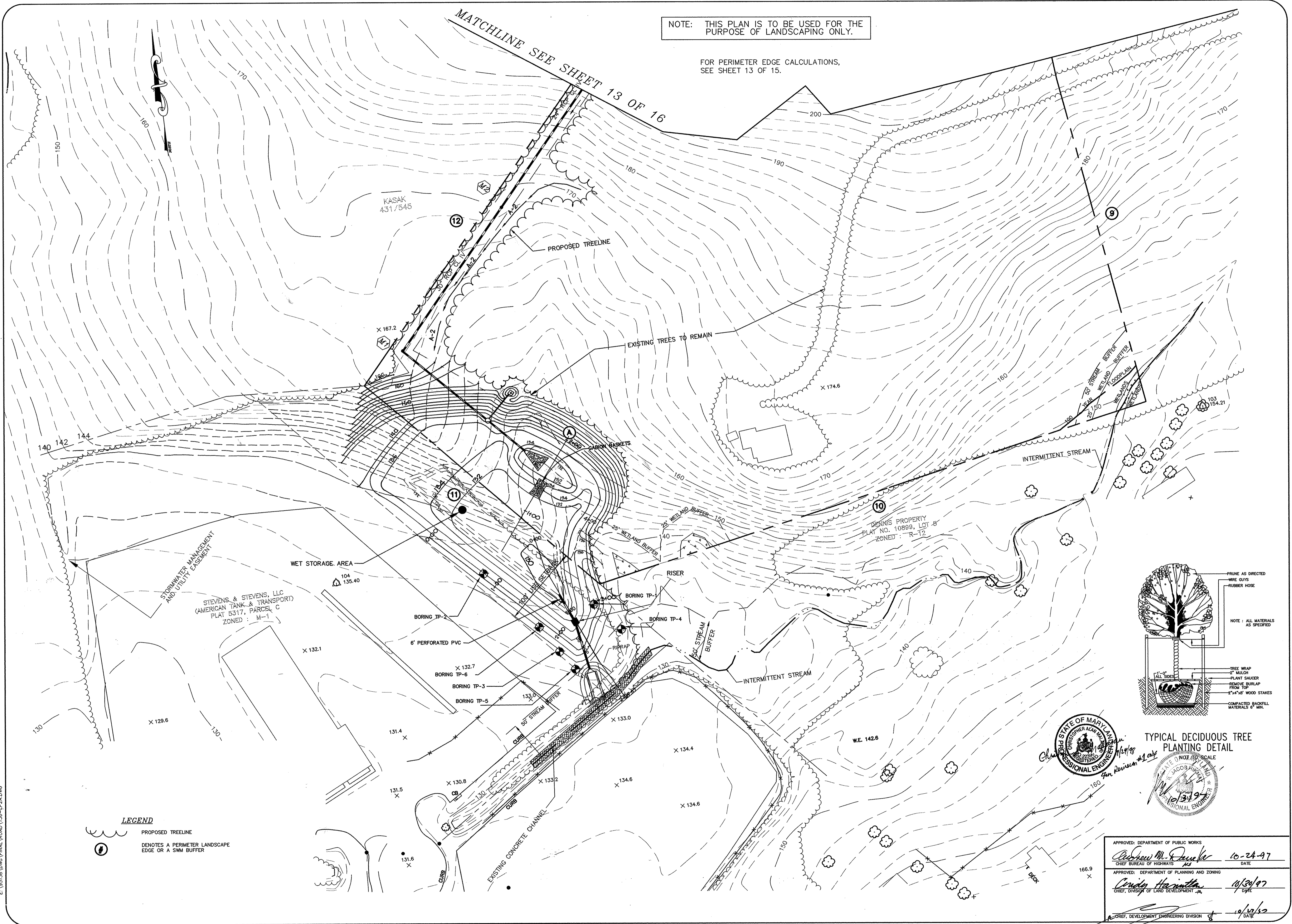
TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION 1, LOTS 1-41
AND BULK PARCEL "A"
 HOWARD COUNTY, MARYLAND
 FIRST ELECTION DISTRICT
 LANDSCAPE PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax: (301) 621-5521 Wash. (410) 997-0298 Fax

MATCHLINE SEE SHEET 13 OF 16

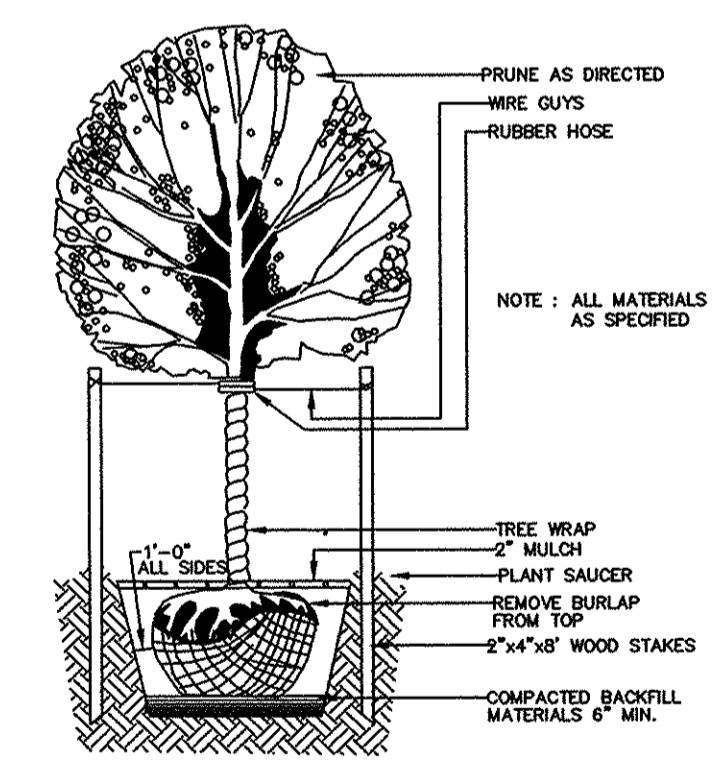
NOTE: THIS PLAN IS TO BE USED FOR THE PURPOSE OF LANDSCAPING ONLY.

FOR PERIMETER EDGE CALCULATIONS, SEE SHEET 13 OF 15.



LEGEND

- PROPOSED TREELINE
- DENOTES A PERIMETER LANDSCAPE EDGE OR A SWM BUFFER



STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 Charles M. Decker
 License No. 112198
 For Review #1 only

TYPICAL DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE
 STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 Charles M. Decker
 License No. 112198

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief Bureau of Highways
 Andrew M. Decker 10-24-97 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Cindy Horvath 10/30/97 DATE

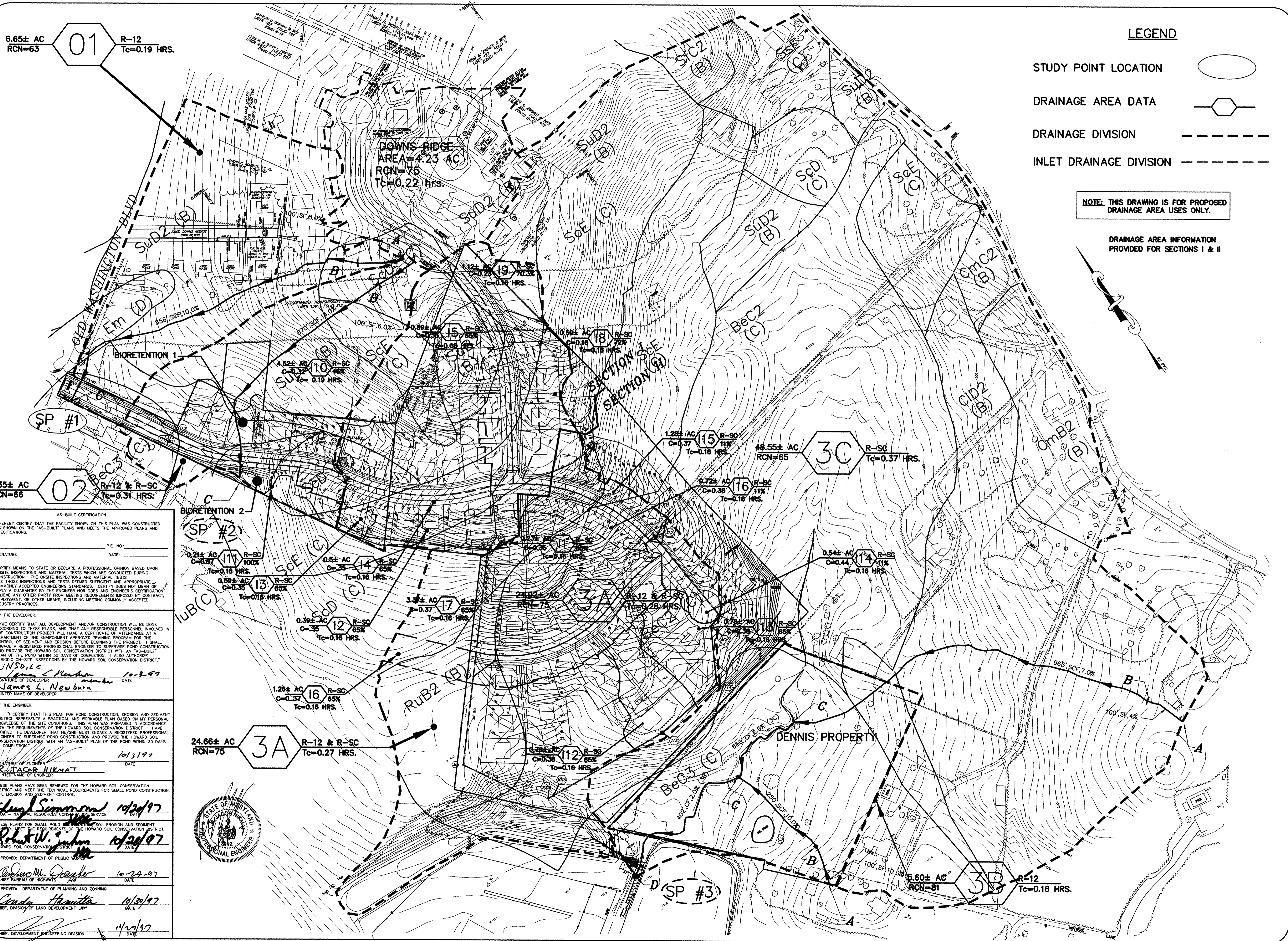
Chief, Development Engineering Division
 10/27/97 DATE

date	APR 1997	approval	RJH
project	95186	illustration	SD
scale	1"=50'		

no.	1	description	REV. POND GRADING (TSA GROUP, INC.)	date	7-15-95
		revisions			

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
 WILLIAMS KNOLL, SECTION 1, LOTS 1-41
 AND BULK PARCEL "A"
 HOWARD COUNTY, MARYLAND
 FIRST ELECTION DISTRICT
 LANDSCAPE PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Planners Surveyors
 Engineers
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042
 (410) 987-0296 Fax: (301) 821-5521, Wash. (410) 987-0286 Fax



LEGEND

- STUDY POINT LOCATION
- DRAINAGE AREA DATA
- DRAINAGE DIVISION
- INLET DRAINAGE DIVISION

NOTE: THIS DRAWING IS FOR PROPOSED DRAINAGE AREA USES ONLY.

DRAINAGE AREA INFORMATION PROVIDED FOR SECTIONS I & II

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.

P.E. NO.: _____
DATE: _____

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 THE ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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 FROM 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."

JNSD, LLC
Signature: *James L. Newbarn* 10-3-97
DATE: 10/3/97
PRINTED NAME OF DEVELOPER: James L. Newbarn

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."

R. QACER HIKMAT 10/3/97
DATE: 10/3/97
PRINTED NAME OF ENGINEER: R. QACER HIKMAT

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.

Clayton Simmons 10/24/97
DATE: 10/24/97
NADA - NATURAL RESOURCES CONSERVATION SERVICE

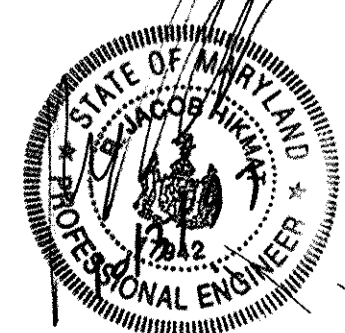
THESE PLANS FOR SMALL POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Robert W. Johnson 10/24/97
DATE: 10/24/97
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS
Robert M. Decker 10-24-97
DATE: 10-24-97
CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Candy Hamilton 10/30/97
DATE: 10/30/97
CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION 11/27/97
DATE: 11/27/97



project	date	approval
95186	MAR 1997	SD
illustration	engineering	approval
SD	SD	SD
scale	1"=100'	

no.	description	date
	revisions	

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION II, LOTS 42-84
RESUBDIVISION OF BULK PARCEL "A"
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DRAINAGE AREA MAP

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hill Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Fax (301) 621-5521 Wash. (410) 997-0298 Fax

6.65± AC
RCN=63
01 R-12
Tc=0.19 HRS.

5.35± AC
RCN=66
02 R-12 & R-SC
Tc=0.31 HRS.





DOWN'S RIDGE
AREA=4.23 AC
RCN=75
Tc=0.22 hrs.

48.55± AC
RCN=65
30 R-SC
Tc=0.37 HRS.

23.23± AC
RCN=75
3A R-12 & R-SC
Tc=0.27 HRS.

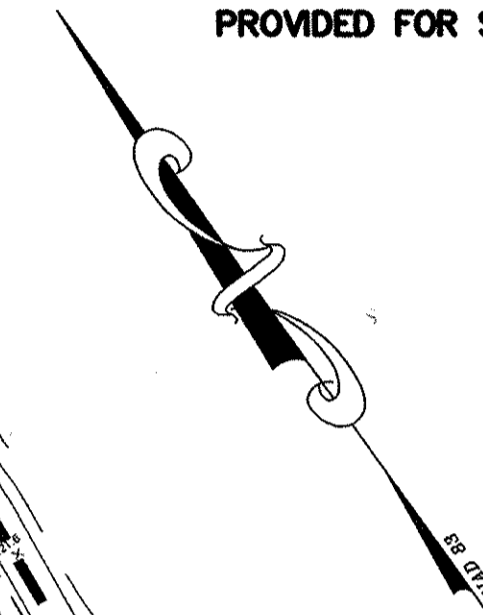
5.60± AC
RCN=81
3B R-12
Tc=0.16 HRS.

LEGEND

- STUDY POINT LOCATION 
- DRAINAGE AREA DATA 
- DRAINAGE DIVISION 
- INLET DRAINAGE DIVISION 

NOTE: THIS DRAWING IS FOR PROPOSED DRAINAGE AREA USES ONLY.

DRAINAGE AREA INFORMATION PROVIDED FOR SECTIONS I & II



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: _____ P.E. NO.: _____
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 THE ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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 FROM 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.

JNSD, LLC
Signature: James C. Newbain
Date: 10-3-97

SIGNATURE OF DEVELOPER: _____ DATE: _____
PRINTED NAME OF DEVELOPER: James C. Newbain

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: RITAJEER HIKMAT
Date: 10/3/97

SIGNATURE OF ENGINEER: _____ DATE: _____
PRINTED NAME OF ENGINEER: RITAJEER HIKMAT

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.

Clayton Simmons 10/20/97
USDA - NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: Robert W. Zuhm
Date: 10/20/97

APPROVED: HOWARD SOIL CONSERVATION DISTRICT

Signature: Andrew M. Decker
Date: 10-24-97

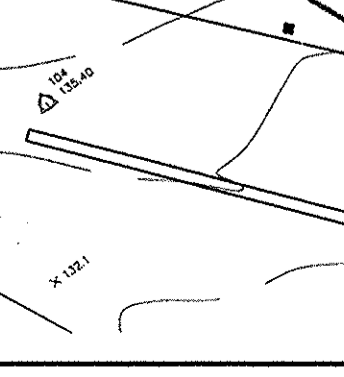
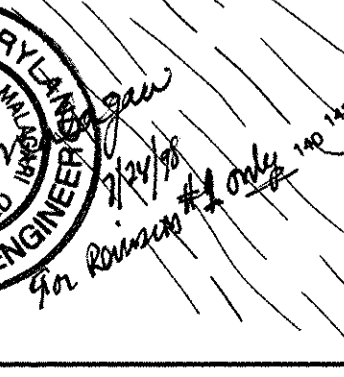
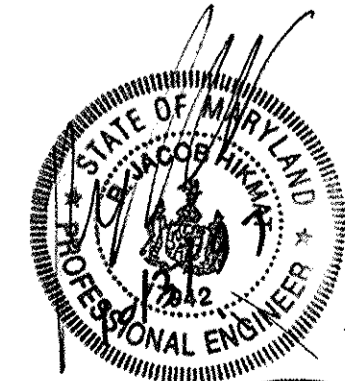
APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS

Signature: Candy Hanvater
Date: 10/30/97

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT

Signature: _____
Date: 11/20/97

CHIEF, DEVELOPMENT ENGINEERING DIVISION



Project	date	approval
95136	MAR 1997	SD
illustration	engineering	approval
SD	SD	SD
scale	1"=100'	

no.	description	date
1	REV POND & DRAINAGE AREA MAP (EAS GROUP/PC)	7-18-96
	revisions	

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION II, LOTS 42-84
RESUBDIVISION OF BULK PARCEL "A"
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0236 Ext. (301) 621-5521 Wash. (410) 997-0298 Fax

NOTE: THIS PLAN IS TO BE USED FOR FOREST CONSERVATION PURPOSES ONLY.

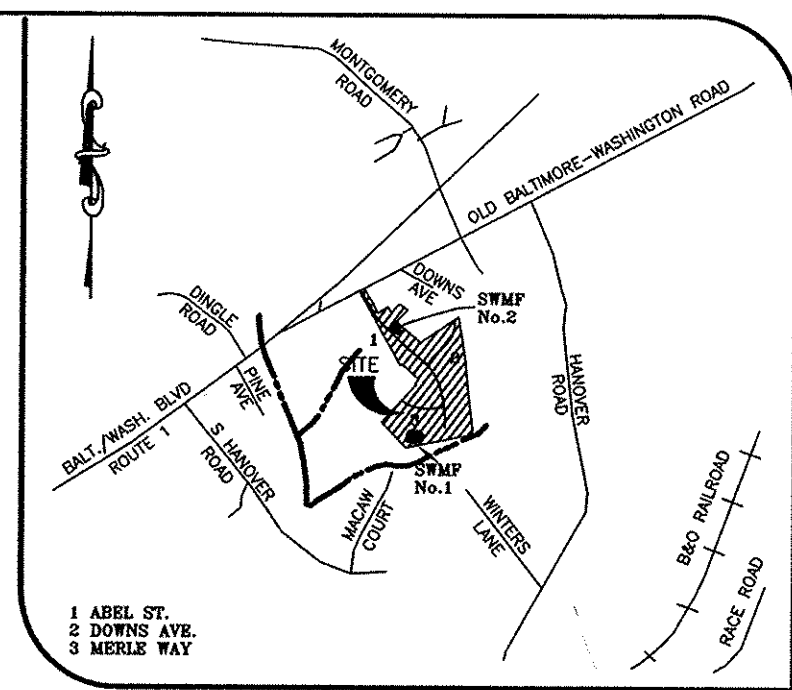
NOTE: - FEE-IN-LIEU OF REFORESTATION HAS BEEN REQUESTED FOR THE REMAINING AREA REQUIRED TO BE REFORESTED BY THE HOWARD COUNTY FOREST CONSERVATION MANUAL. SEE FOREST CONSERVATION CALCULATIONS THIS SHEET. (9.15 ACRES OF REFORESTATION IS REQUIRED. 0.48 ACRES OF REFORESTATION HAS BEEN SHOWN ON-SITE. THE REMAINING 8.67 ACRES WILL BE A PART OF THE FEE-IN-LIEU REQUEST.)

BASIC SITE DATA		ACRES
GROSS SITE AREA	20.67 ACRES	
POWER LINE RIGHT-OF-WAY FLOODPLAIN	0.67 ACRES	
EXISTING FOREST ON NET TRACT AREA	0.06 ACRES	
AREA WITHIN 100 YEAR FLOODPLAIN		
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL		
NET TRACT AREA	19.94 ACRES	
LAND USE CATEGORY (R-RD, R-RMD, R-SC, C/A/O, I)	R-SC	

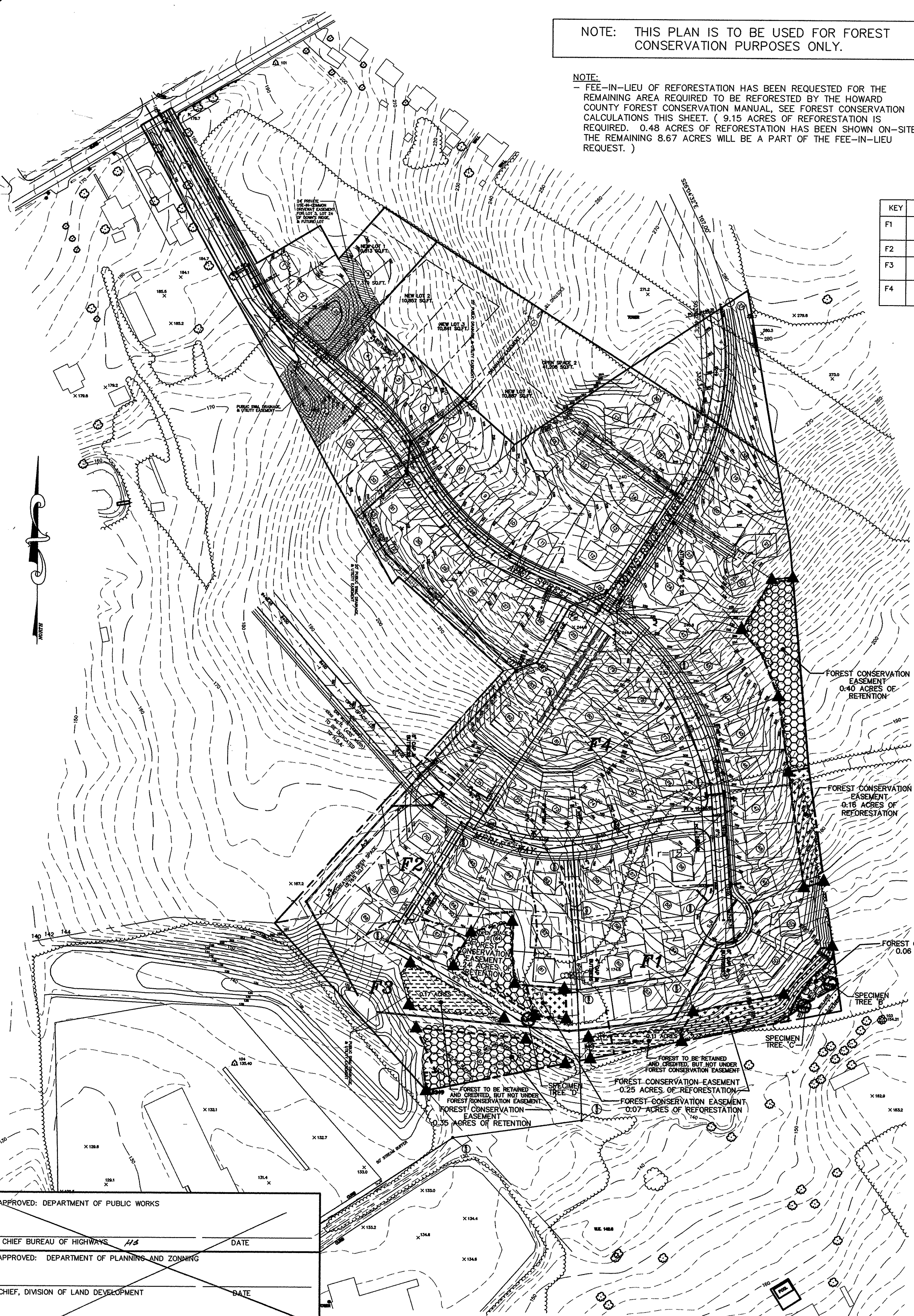
INFORMATION FOR CALCULATIONS		ACRES
A. NET TRACT AREA	19.94 ACRES	
B. REFORESTATION THRESHOLD (20% X A)	3.99 ACRES	
C. AFFORESTATION MINIMUM (15% X A)	2.99 ACRES	
D. EXISTING FOREST ON NET TRACT AREA	19.47 ACRES	
E. FOREST AREAS TO BE CLEARED	18.14 ACRES	
F. FOREST AREAS TO BE RETAINED	1.33 ACRES	
G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	15.48 ACRES	
H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	2.66 ACRES	
I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	---	

INFORMATION FOR CALCULATIONS		ACRES
A. NET TRACT AREA	19.94 ACRES	
B. REFORESTATION THRESHOLD (20% X A)	3.99 ACRES	
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F. FOREST AREAS TO BE RETAINED	1.33 ACRES	
G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	15.48 ACRES	
H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	2.66 ACRES	
I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	---	

2. CLEARING BELOW THE THRESHOLD		ACRES
REFORESTATION FOR CLEARING ABOVE THRESHOLD	3.87 ACRES	
REFORESTATION FOR CLEARING BELOW THE THRESHOLD	5.32 ACRES	
TOTAL REFORESTATION REQUIRED	9.19 ACRES	



date	MAR 1997	description	approval
project	951396	illustration	SD
		scale	1" = 60'



FOREST STAND / VEGETATIVE COVER			
KEY	COMMUNITY TYPE	ACREAGE	DOMINANT VEGETATION
F1	VIRGINIA PINE	2.2	PINUS VIRGINIANA, ACER RUBRUM, LIRODENDRON TULIPIFERA
F2	TULIP POPLAR	3.2	LIRODENDRON TULIPIFERA, ACER RUBRUM
F3	OAK-PINE	1.7	PINUS VIRGINIANA, QUERCUS FALCATA, QUERCUS ALBA, QUERCUS RUBRA
F4	CHESTNUT OAK	12.4	QUERCUS PRINUS, QUERCUS RUBRA, QUERCUS ALBA

SPECIMEN TREES TO REMAIN			
KEY	DBH	DESCRIPTION	CONDITION
B	32"	TULIP POPLAR	GOOD
C	40"	TULIP POPLAR	GOOD
D	36"	RED OAK	FAIRLY GOOD

GENERAL NOTES

- FOREST PROTECTION**
- ALL FOREST RETENTION AREAS SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE ORANGE PLASTIC FENCING AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
 - THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES.
 - ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION, INCLUDING DURING THE PERIODS OF PROTECTIVE FENCING. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
 - ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THESE PROTECTED AREAS. INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 - THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SHADING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
 - THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS. REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
 - THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS.
 - NO SPRINKLING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL PRESERVATION AREAS, AS NECESSARY.

PRE-CONSTRUCTION MEETING

- AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
 - TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS;
 - INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES;
 - MAKE ALL NECESSARY ADJUSTMENTS;
 - ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

CONSTRUCTION MONITORING

- THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIATED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
- THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY SUCH DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

LEGEND

- SLOPES 25% AND GREATER
- SLOPES 15% TO 25%
- ▲ DENOTES FOREST PRESERVATION SIGNAGE
- F2 DENOTES FOREST STAND CLASSIFICATION
- DENOTES LIMIT OF A FOREST STAND
- - - - DENOTES TREE PROTECTION FENCE

NOTE :

THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENTS EXCEPT AS PERMITTED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.

THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, SOIL COMPACTION, OR EXCAVATION OR INTRODUCTION OF TOXIC CHEMICALS OR OTHER DISTURBANCES DETRIMENTAL TO THE LIVE SPECIMEN TREES OR CRITICAL ROOT ZONES FOR THESE TREES EXCEPT AS PERMITTED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.

PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

- PROTECTIVE FENCING IS TO BE INSTALLED AS A FIRST ORDER OF BUSINESS PER PLAN LOCATIONS. PROTECTIVE FENCING WILL NOT NECESSARILY ALONG THOSE PERIMETERS WHERE SILT FENCE HAS BEEN INSTALLED FOR SEDIMENT CONTROL.
- DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT.
- SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
- SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
- ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

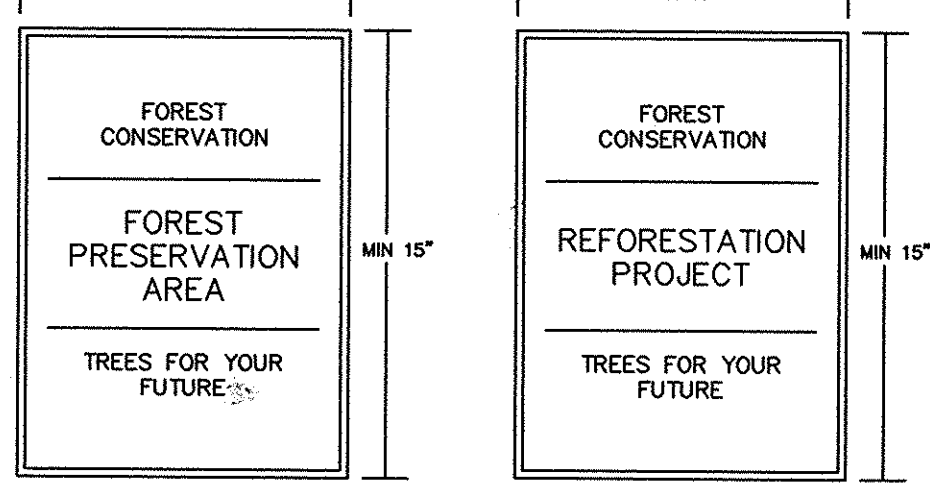
PLANT STORAGE AND INSPECTION

- FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
- FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
- PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
- UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT.

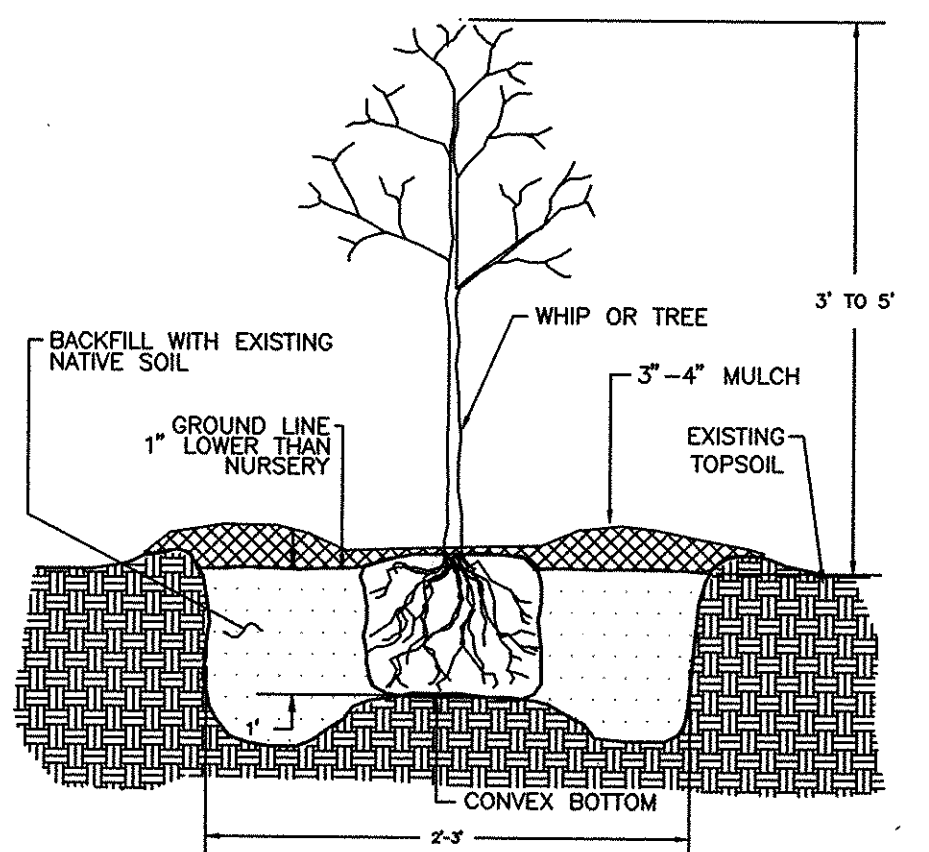
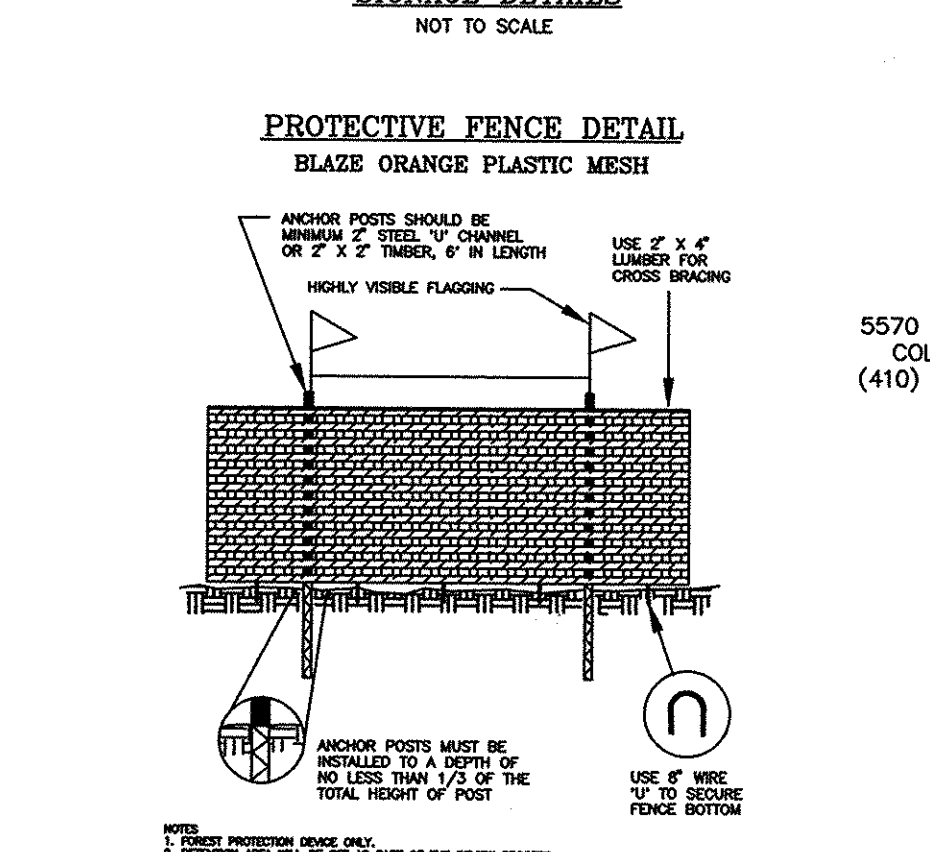
PLANT INSTALLATION

- THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER, GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
- PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
- CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THROUGH LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 12 INCH ARE ENCOUNTERED DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES.

SIGNAGE DETAILS



PROTECTIVE FENCE DETAIL



- CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENCLOSE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES.
- FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
- THE CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FIVE (5) PER SPECIES, OVER THE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED IN THE PLANT LIST. **
- NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK TO OBTAIN A MORE NATURAL APPEARANCE.
- TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK TO OBTAIN A MORE NATURAL APPEARANCE.
- FOR THE ENTIRE GROWING SEASON, DUE TO THE VERY DEEP, WELL DRAINED NATURE OF THE NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD, THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

** IN AREAS WHERE REFORESTATION IS ADJACENT TO PROJECT BOUNDARIES, LANDSCAPE SIZE PLANT MATERIALS MUST BE INSTALLED WITH INSTALLED PERIMETER, IN ORDER TO SATISFY PERIMETER BUFFER REQUIREMENTS.

FERTILIZING

- DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
- NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE WHAT IS NEEDED.
- IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIAL AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

MAINTENANCE SCHEDULE

- ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A MINIMUM OF TWO (2) YEAR PERIOD.
- INSPECT PLANTED STOCK FOR MORTALITY. REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
- EXPECT VOLUNTARY SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION TO OCCUR. DO NOT DISCOURAGE THIS GROWTH UNLESS IT NEGATIVELY AFFECTS THE PLANTED STOCK.
- MANUALLY REMOVE AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
- REMOVE AND DISPOSE OF ANY MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN THE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK OR INTERFERES WITH THE REFORESTATION PLANTING.
- A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS WILL BE REQUIRED TO BRING THE PLANTED STOCK SURVIVAL RATE UP TO 75%.

SUPERVISION

- ALL FOREST CONSERVATION ACTIVITIES SHALL BE DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER "QUALIFIED PROFESSIONAL" AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

REFORESTATION PLANT LIST

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C.	SPACING	SIZE & REMARKS
17	Acer rubrum Red Maple	VT	D-W	FAC	20'	CONT/B & B	1" CAL.
11	Fagus grandifolia American Beech	VT	M	FACU	20'	CONT/B & B	1" CAL.
11	Nyssa sylvatica Black Gum	T	M-W	FAC	20'	CONT/B & B	1" CAL.
16	Pinus virginiana Virginia Pine	MT	M	-	15'	CONT/B & B	8"-10" HT.
11	Quercus alba White Oak	I	M-W	FAC+	20'	CONT/B & B	1" CAL.
16	Quercus rubra Red Oak	MT	D-M	UPL	20'	CONT/B & B	1" CAL.
TOTAL	82 TREES						

DEVELOPER

JNSD, LC
5570 STERRETT PLACE, SUITE 201
COLUMBIA, MARYLAND 21044
(410) 997-3815, (301) 598-3877

MD DNR QUALIFIED PROFESSIONAL

Stephanie Demchik
STEPHANIE DEMCHIK

APPROVED: DEPARTMENT OF PUBLIC WORKS	DATE
CHIEF BUREAU OF HIGHWAYS	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS	DATE
<i>Robert M. Dawber</i>	10/24/97
CHIEF BUREAU OF HIGHWAYS	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	DATE
<i>Candy Hammit</i>	10/30/97
CHIEF, DIVISION OF LAND DEVELOPMENT	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	10/26/97

TAX MAP 38, P/O PARCELS 229, 230 & 231, BLOCK 8
WILLIAMS KNOLL, SECTION I AND II
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
FOREST CONSERVATION AND REFORESTATION PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0236 Ext. (301) 621-5521 Wash. (410) 997-0238 Fax.

16 OF 16
F-97-110

