

HOWARD COUNTY

Capital Project D-1141

ARL Concrete Channel Retrofit

Storm Water Management Division
Bureau Of Environmental Services

GENERAL NOTES

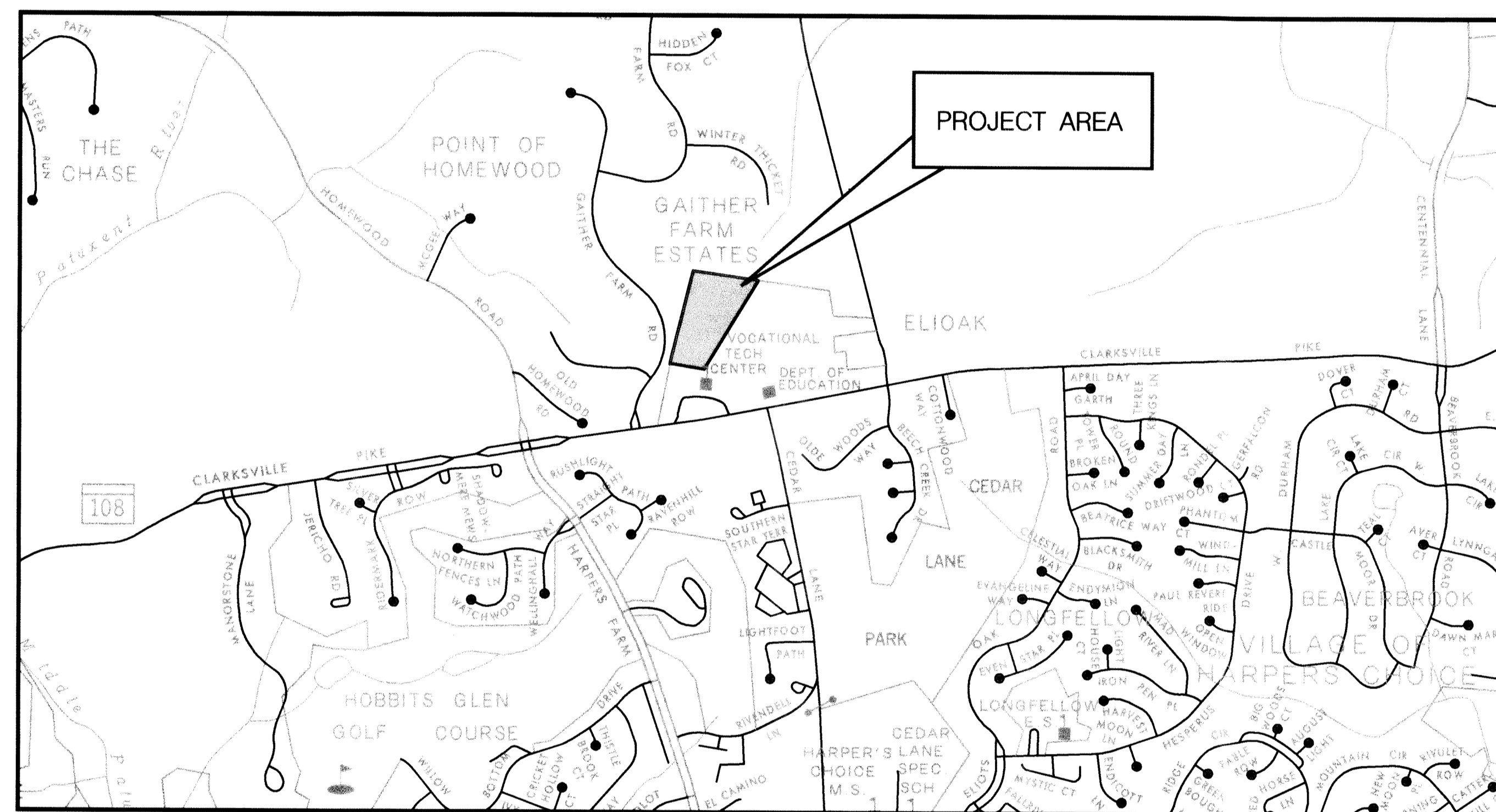
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY WORK BEING DONE.
3. THIS PLAN IS PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
4. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS /BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
5. SURVEY OF THIS SITE WAS PERFORMED BY AB CONSULTANT, INC-MAY 2008
6. WETLANDS WERE DELINEATED BY McCORMICK TAYLOR APRIL 2008.
7. SITE DEVELOPMENT DETAILS ARE REFERENCED FROM THE ORIGINAL SITE DEVELOPMENT PLAN FOR THE ALTERNATIVE LEARNING CENTER SDP-01-28.
8. THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. BENCHMARKS SHOWN HEREON WERE PROVIDED BY AB CONSULTANTS.
9. STORMWATER MANAGEMENT IS NOT REQUIRED FOR THIS PROJECT SINCE THE PROJECT WILL NOT ADD IMPERVIOUS AREA NOR WILL IT CHANGE THE EXISTING HYDROLOGY OF THE SITE.
10. OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND McCORMICK TAYLOR DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION.
11. CONSTRUCTION TRAFFIC SHALL USE EXTREME CAUTION WHEN ENTERING AND EXITING THE WORK AREA. STUDENT AND VEHICLE TRAFFIC FROM THE SCHOOL MAY CONFLICT WITH EQUIPMENT INGRESS AND EGRESS. SCHOOL HOURS FOR ARL ARE FROM 8:00 AM TO 1:50 PM. BUSES WILL BE ARRIVING BEFORE THE STARTING TIME AND AFTER CLOSING TIME.
12. THE EXISTING INFORMATION SHOWN ON THESE PLANS WAS TAKEN FROM THE BEST AVAILABLE SOURCES AND SHALL BE VERIFIED BEFORE STARTING CONSTRUCTION. THE HOWARD COUNTY DOES NOT GUARANTEE THE COMPLETENESS OR THE CORRECTNESS OF THE SHOWN INFORMATION.
13. THE CONTRACTORS SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO HSS'S OPERATION SHALL BE REPAIRED IMMEDIATELY. ALL UTILITIES SHALL HAVE A CLEARANCE BY A MINIMUM OF 6 INCHES VERTICALLY AND A MINIMUM OF 5 FEET HORIZONTALLY.
14. SHOULD HSS DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, HSS SHALL NOTIFY McCORMICK TAYLOR IMMEDIATELY TO RESOLVE THE SITUATION.
15. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
16. HSS IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.

INDEX OF SHEETS

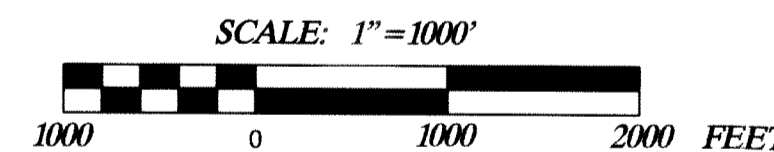
SHEET NO.	TITLE
1	TITLE SHEET
2	SITE PLAN
3	TYPICAL DETAILS
4	EROSION AND SEDIMENT CONTROL PLAN
5	EROSION AND SEDIMENT CONTROL GENERAL NOTES
6	EROSION AND SEDIMENT CONTROL GENERAL NOTES
7	EROSION AND SEDIMENT CONTROL DETAILS
8	LANDSCAPE
9	PROFILE
10-12	CROSS SECTIONS

LEGEND

PROPOSED MEDIAN BARRIER	
ELECTRICAL HAND BOX - SIGNALS	
STATE, COUNTY OR CITY LINES	
PROPOSED TRAFFIC BARRIER	
EXISTING TRAFFIC BARRIER	
PROPOSED FENCE LINE	
EXISTING FENCE LINE	
RIGHT OF WAY LINE	
EXISTING ROADWAY	
BASE OR SURVEY LINE	
TRAVERSE POINT	
APPROXIMATE LIMITS OF CUT AND /OR FILL	
GRADING ELEVATION CONTOURS (5')	
GRADING ELEVATION CONTOURS (1')	
LIMIT OF DISTURBANCE	
EXISTING GROUND CONTOURS (5')	
EXISTING GROUND CONTOURS (1')	
EXISTING PIPE/CULVERT	
EXISTING DROP INLET	
WETLAND	
HEDGE /TREE LINE	
BUSH /TREE	
CONIFEROUS TREE	
LIGHT POLE	



HORIZONTAL DATUM	NAD 83 / 91
VERTICAL DATUM	NAVD 88



DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND

12-15-08
DATE
DESIGNER'S SIGNATURE

MARYLAND REGISTRATION NUMBER 25819
CHRIS J. BROOKS
PRINTED NAME

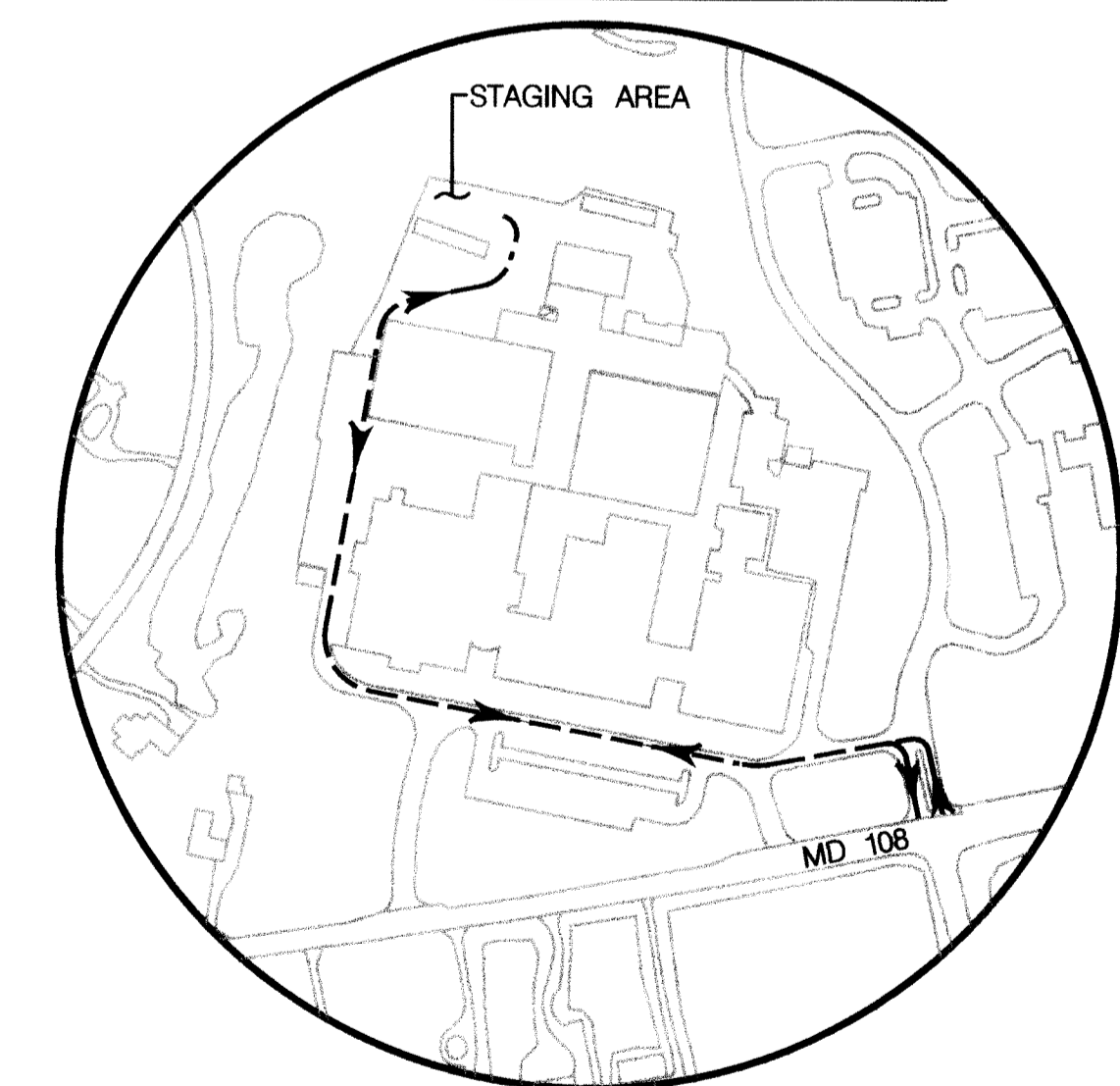
OWNER'S/DEVELOPER'S CERTIFICATION

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

12-17-08
DATE
OWNER / DEVELOPER SIGNATURE

PRINTED NAME AND TITLE

WORK AREA ACCESS DIAGRAM

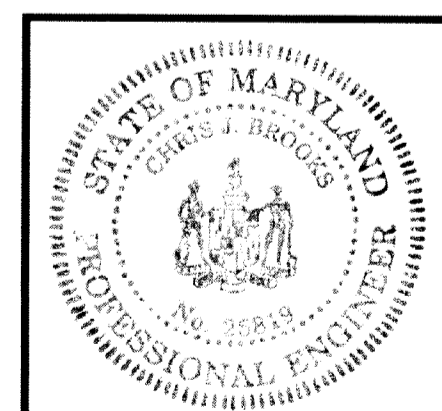


REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

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

APPROVED:

HOWARD SOIL CONSERVATION DISTRICT
12-23-08
DATE



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

12/18/08
DATE
DIRECTOR OF PUBLIC WORKS

12-17-08
DATE
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES
MANAGEMENT DIVISION

McCormick Taylor
Engineers & Planners
Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

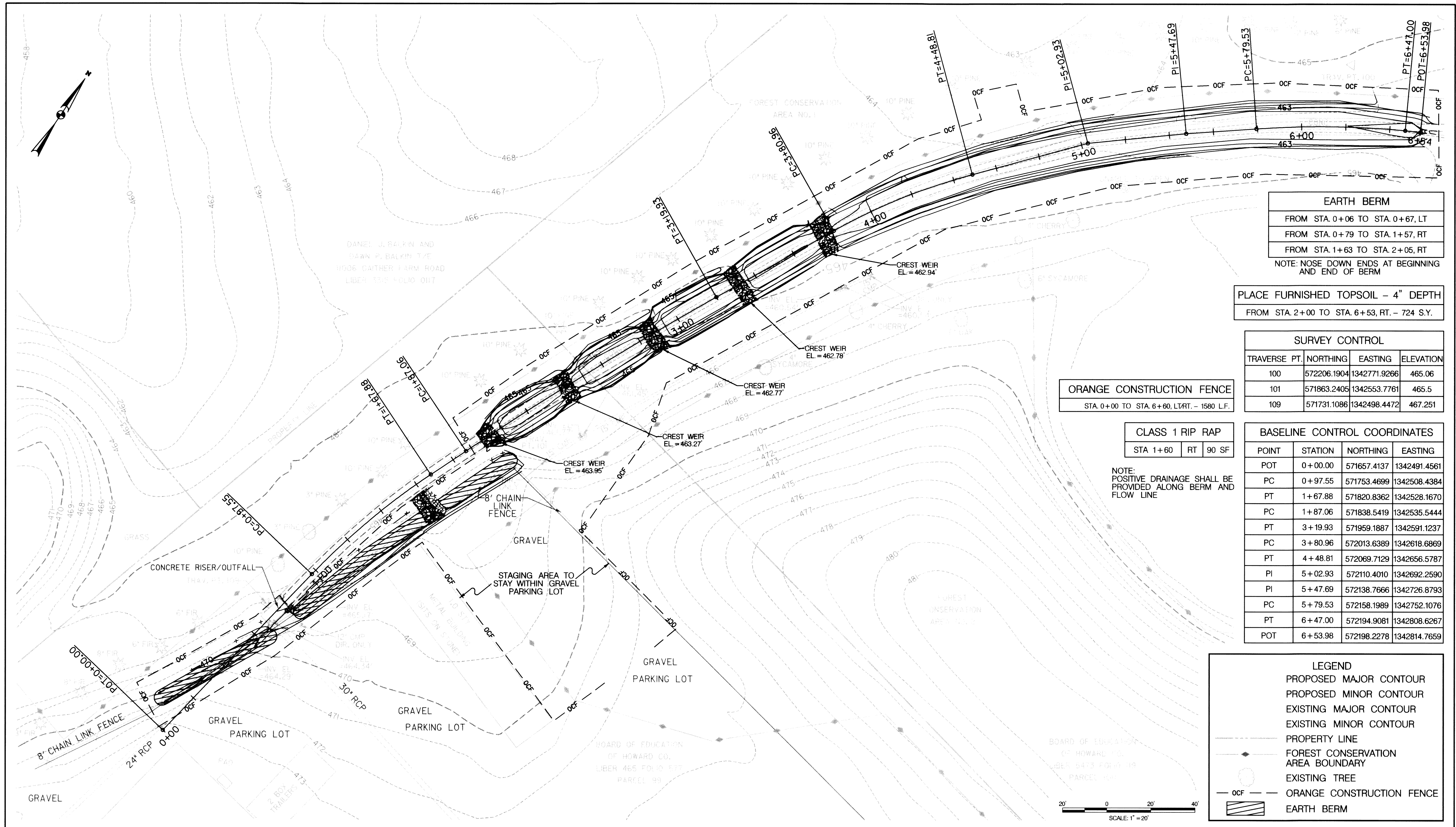
Howard County
MARYLAND
Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143

DES: AH	AH	AS BUILT	2/26/09
DRN: MR			
CHK: CB			
DATE: 12/3/08	BY	NO.	REVISION
			DATE

HOWARD COUNTY
CAPITAL PROJECT D-1141
ARL CONCRETE CHANNEL RETROFIT PROJECT

TITLE SHEET

SCALE
NOT TO SCALE
SHEET
1 OF 12



EARTH BERM	
FROM STA. 0+06 TO STA. 0+67, LT	
FROM STA. 0+79 TO STA. 1+57, RT	
FROM STA. 1+63 TO STA. 2+05, RT	
NOTE: NOSE DOWN ENDS AT BEGINNING AND END OF BERM	

PLACE FURNISHED TOPSOIL - 4" DEPTH
FROM STA. 2+00 TO STA. 6+53, RT. - 724 S.Y.

SURVEY CONTROL			
TRAVERSE PT.	NORTHING	EASTING	ELEVATION
100	572206.1904	1342771.9266	465.06
101	571863.2405	1342553.7761	465.5
109	571731.1086	1342498.4472	467.251

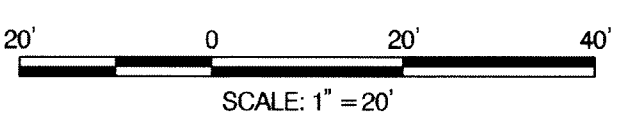
ORANGE CONSTRUCTION FENCE
STA. 0+00 TO STA. 6+60, L/RT. - 1580 L.F.

CLASS 1 RIP RAP
STA 1+60 RT 90 SF

NOTE:
POSITIVE DRAINAGE SHALL BE PROVIDED ALONG BERM AND FLOW LINE

BASELINE CONTROL COORDINATES			
POINT	STATION	NORTHING	EASTING
POT	0+00.00	571657.4137	1342491.4561
PC	0+97.55	571753.4699	1342508.4384
PT	1+67.88	571820.8362	1342528.1670
PC	1+87.06	571838.5419	1342535.5444
PT	3+19.93	571959.1887	1342591.1237
PC	3+80.96	572013.6389	1342618.6869
PT	4+48.81	572069.7129	1342656.5787
PI	5+02.93	572110.4010	1342692.2590
PI	5+47.69	572138.7666	1342726.8793
PC	5+79.53	572158.1989	1342752.1076
PT	6+47.00	572194.9081	1342808.6267
POT	6+53.98	572198.2278	1342814.7659

LEGEND	
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPERTY LINE
	FOREST CONSERVATION AREA BOUNDARY
	EXISTING TREE
	ORANGE CONSTRUCTION FENCE
	EARTH BERM



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

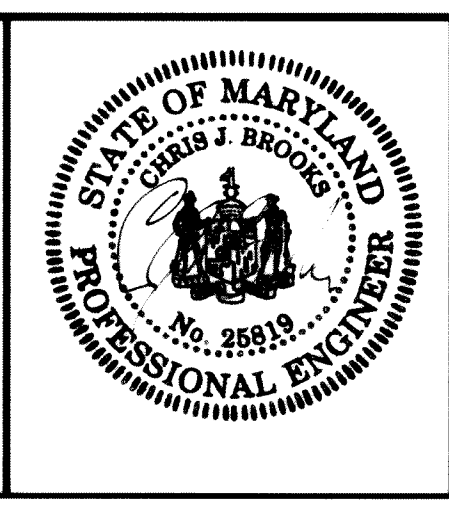
HOWARD SCD _____ DATE _____

McCormick Taylor
Engineers & Planners Since 1946

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Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143



DES: AH	AH	AS-BUILT	8/26/09
DRN: MR			
CHK: CB			
DATE: 12/3/08	BY	NO.	REVISION

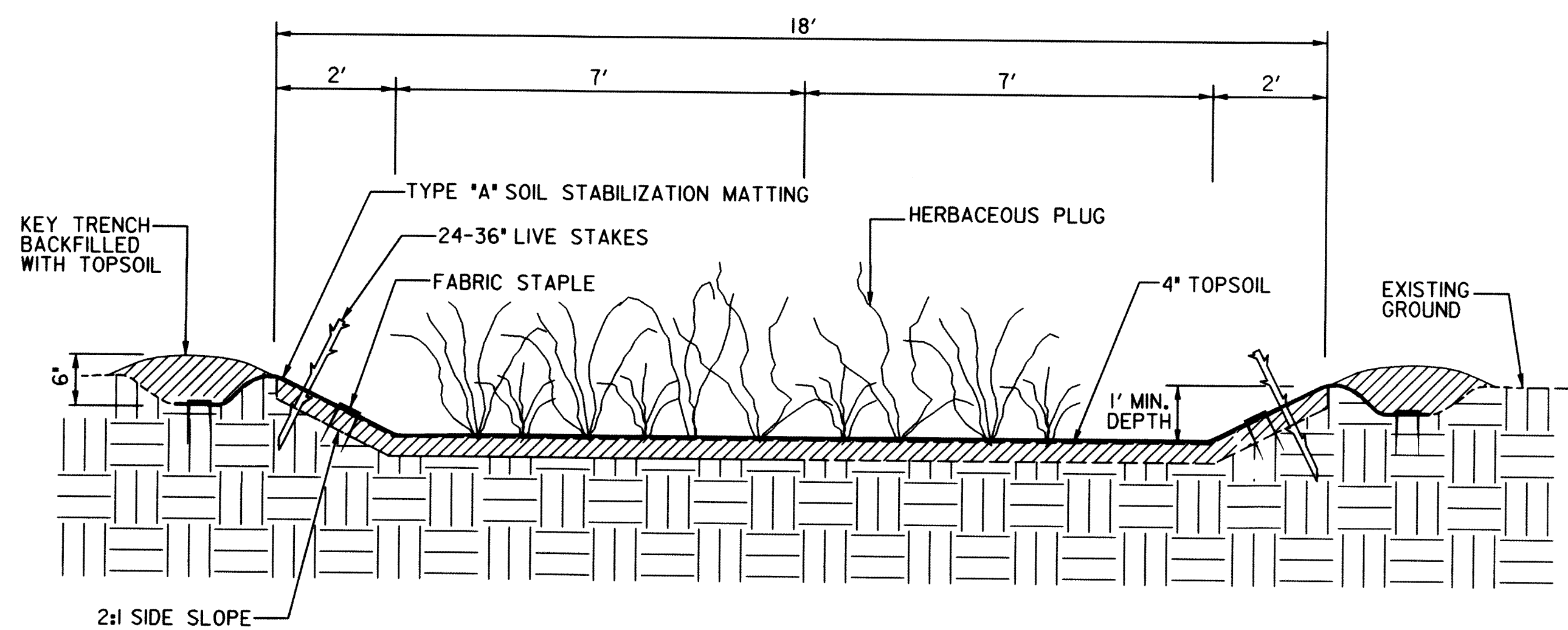
HOWARD COUNTY
CAPITAL PROJECT D-1141

ARL CONCRETE CHANNEL RETROFIT PROJECT

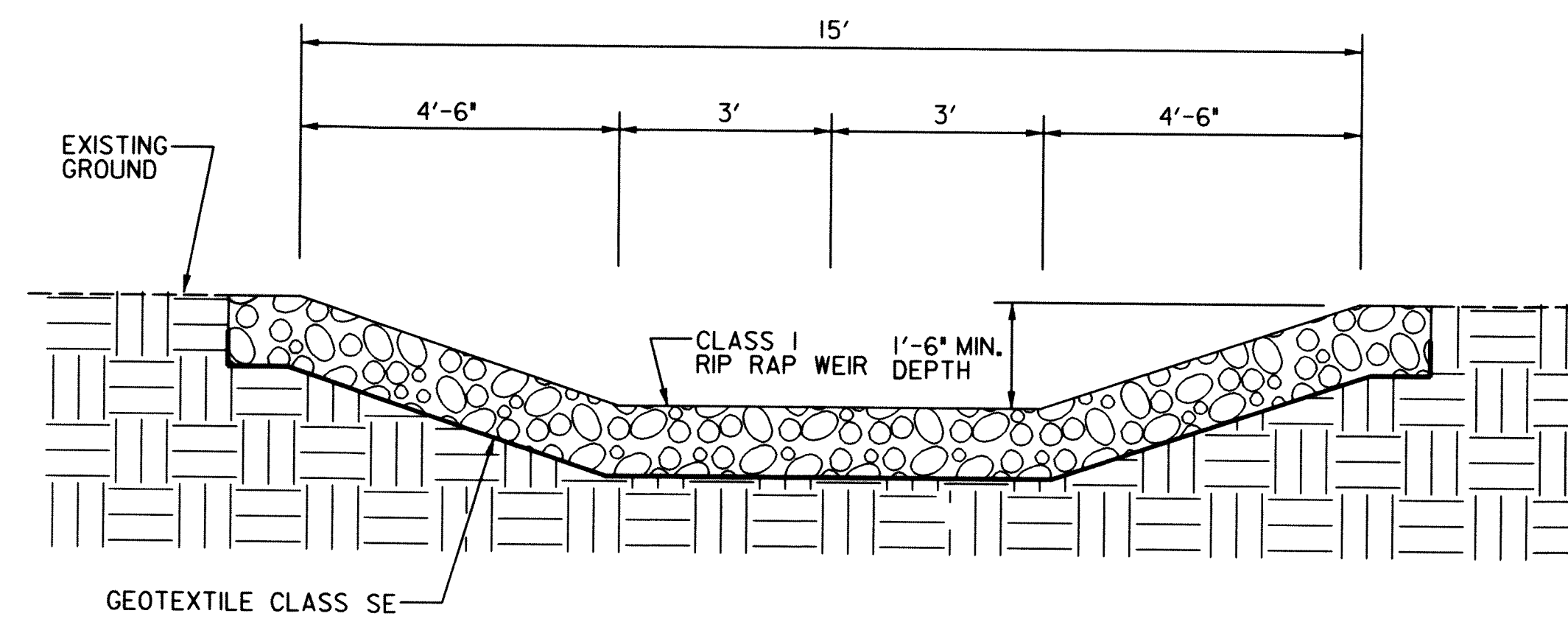
SITE PLAN

SCALE
1" = 20'

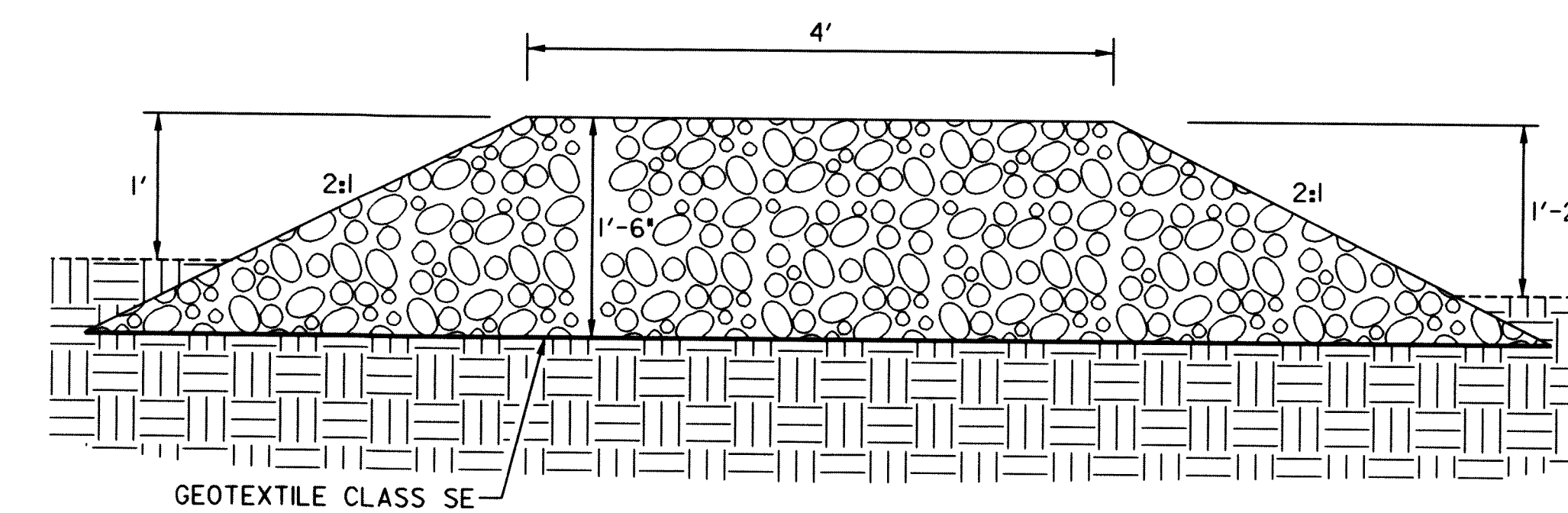
SHEET
2 OF 12



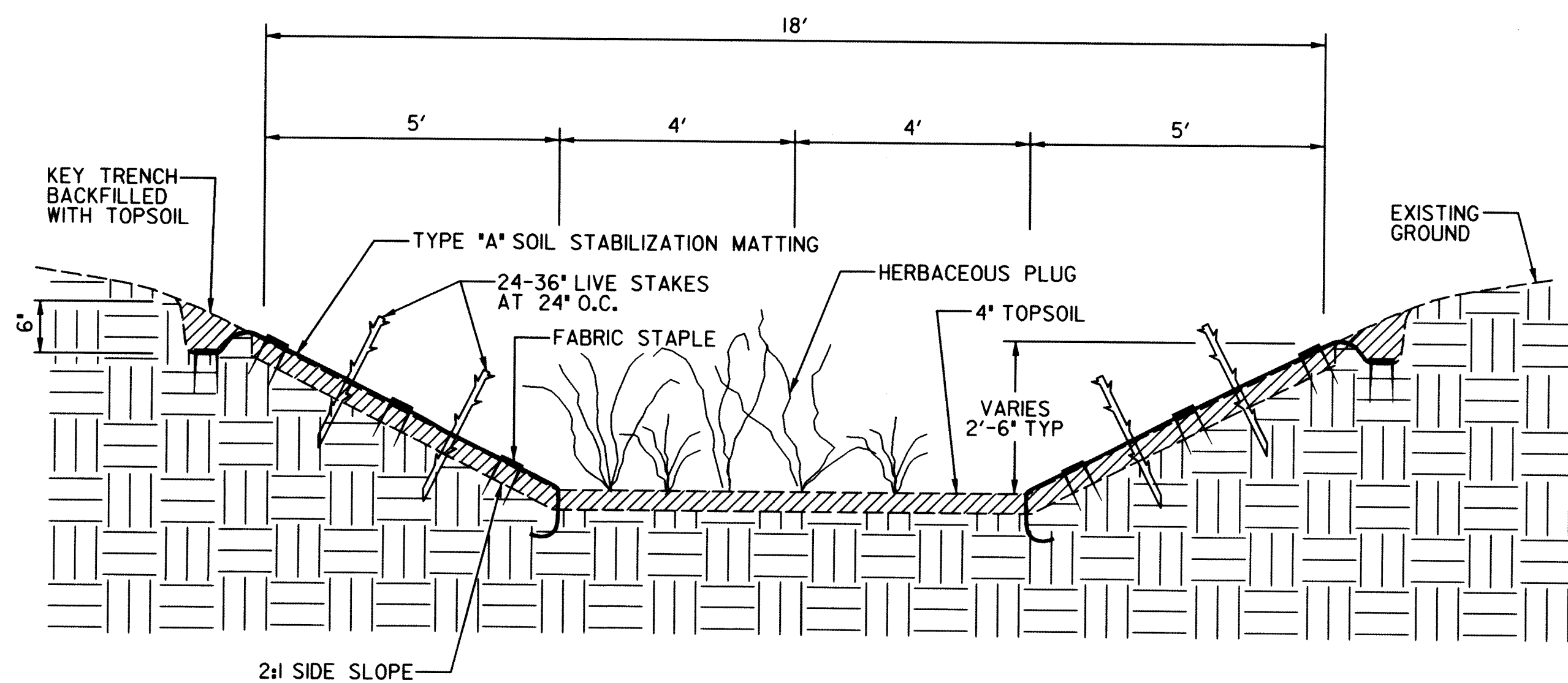
CHANNEL CROSS SECTION
SCALE: 1"=2"
STATION 3+80 TO STATION 6+54



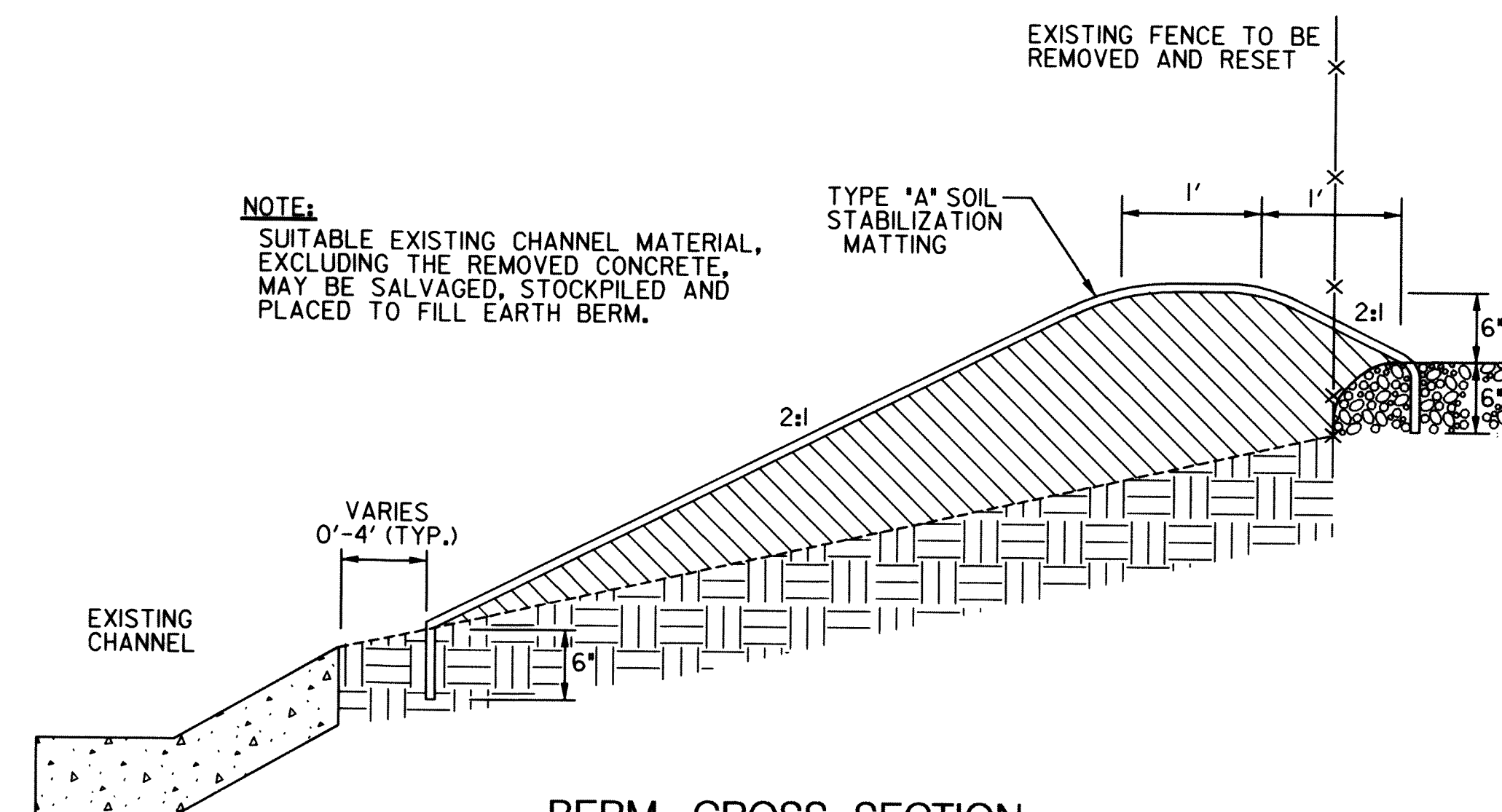
WEIR CROSS SECTION
SCALE: 1"=2"



WEIR PROFILE SECTION
SCALE: 1"=1"



POOL CROSS SECTION
SCALE: 1"=2"



BERM CROSS SECTION
SCALE: 1"=1"
STATION 0+06 TO STATION 2+05

NOTE:
SUITABLE EXISTING CHANNEL MATERIAL, EXCLUDING THE REMOVED CONCRETE, MAY BE SALVAGED, STOCKPILED AND PLACED TO FILL EARTH BERM.

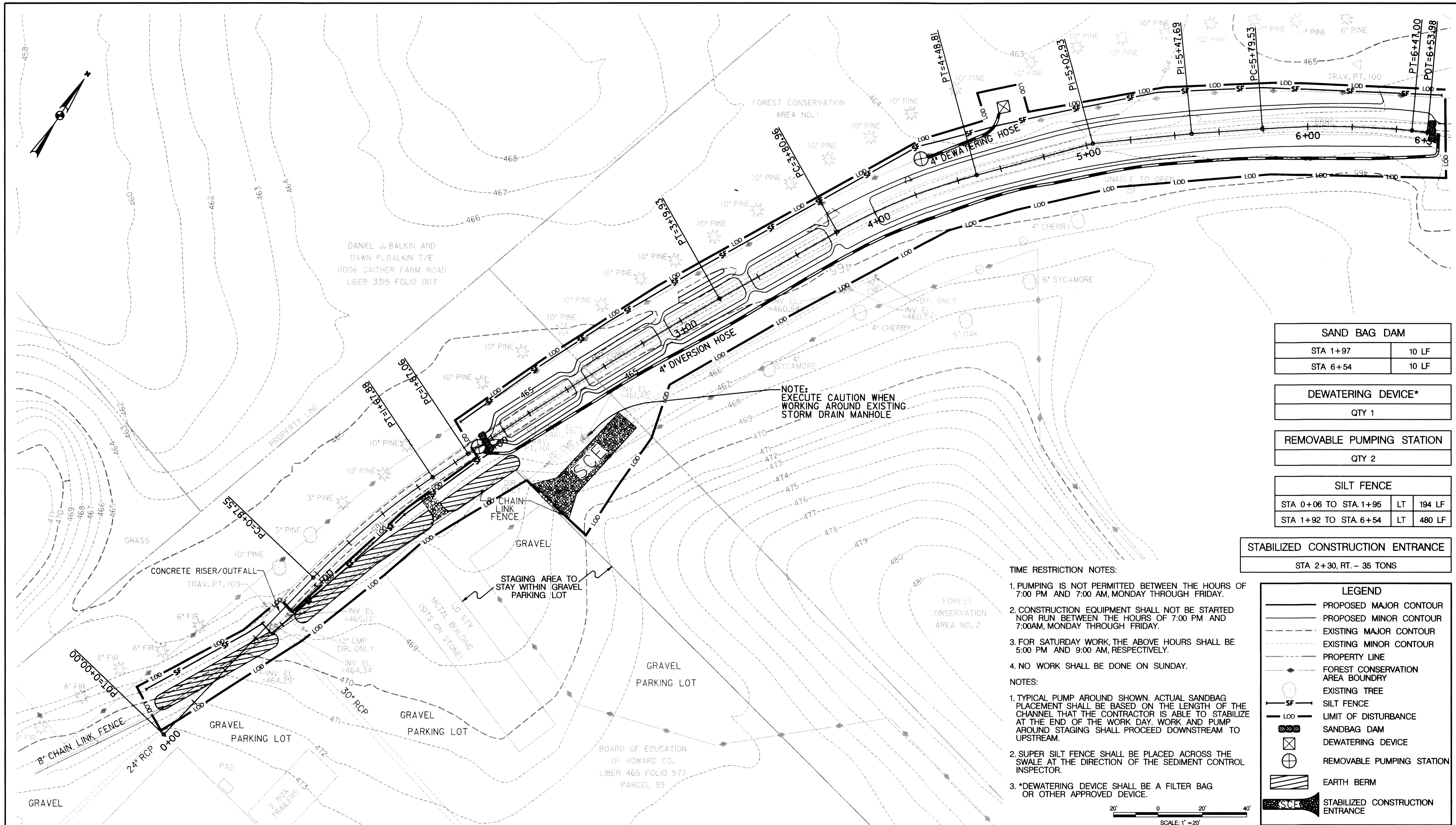
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MARYLAND
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6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143

DES: AH					
DRN: MR					
CHK: CB					
DATE: 12/3/08	BY	NO.	REVISION	DATE	

HOWARD COUNTY
CAPITAL PROJECT D-1141
ARL CONCRETE CHANNEL RETROFIT PROJECT
TYPICAL SECTIONS

SCALE
AS SHOWN
SHEET
3 OF 12



SAND BAG DAM	
STA 1+97	10 LF
STA 6+54	10 LF

DEWATERING DEVICE*	
QTY 1	

REMOVABLE PUMPING STATION	
QTY 2	

SILT FENCE		
STA 0+06 TO STA. 1+95	LT	194 LF
STA 1+92 TO STA. 6+54	LT	480 LF

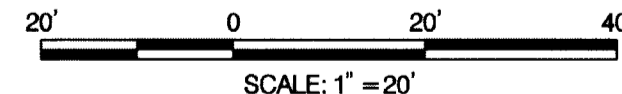
STABILIZED CONSTRUCTION ENTRANCE	
STA 2+30, RT. - 35 TONS	

- TIME RESTRICTION NOTES:**
- PUMPING IS NOT PERMITTED BETWEEN THE HOURS OF 7:00 PM AND 7:00 AM, MONDAY THROUGH FRIDAY.
 - CONSTRUCTION EQUIPMENT SHALL NOT BE STARTED NOR RUN BETWEEN THE HOURS OF 7:00 PM AND 7:00AM, MONDAY THROUGH FRIDAY.
 - FOR SATURDAY WORK, THE ABOVE HOURS SHALL BE 5:00 PM AND 9:00 AM, RESPECTIVELY.
 - NO WORK SHALL BE DONE ON SUNDAY.

- NOTES:**
- TYPICAL PUMP AROUND SHOWN. ACTUAL SANDBAG PLACEMENT SHALL BE BASED ON THE LENGTH OF THE CHANNEL THAT THE CONTRACTOR IS ABLE TO STABILIZE AT THE END OF THE WORK DAY. WORK AND PUMP AROUND STAGING SHALL PROCEED DOWNSTREAM TO UPSTREAM.
 - SUPER SILT FENCE SHALL BE PLACED ACROSS THE SWALE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
 - *DEWATERING DEVICE SHALL BE A FILTER BAG OR OTHER APPROVED DEVICE.

LEGEND

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- - - EXISTING MAJOR CONTOUR
- - - EXISTING MINOR CONTOUR
- - - PROPERTY LINE
- ◆ FOREST CONSERVATION AREA BOUNDARY
- EXISTING TREE
- SF — SILT FENCE
- LOD — LIMIT OF DISTURBANCE
- ▨ SANDBAG DAM
- ⊗ DEWATERING DEVICE
- ⊕ REMOVABLE PUMPING STATION
- ▨ EARTH BERM
- ▨ SCE STABILIZED CONSTRUCTION ENTRANCE



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

John R. Roberts
HOWARD SCD

DATE: 12-23-07

McCormick Taylor
Engineers & Planners Since 1946

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(410) 662-7400

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DATE: 12/3/08	BY	NO.	REVISION	DATE	

HOWARD COUNTY
CAPITAL PROJECT D-1141

ARL CONCRETE CHANNEL RETROFIT PROJECT

EROSION AND SEDIMENT CONTROL PLAN

SCALE
1" = 20'

SHEET
4 OF 12

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410) 313-1880 A MINIMUM OF 24 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.
3. ORANGE HIGH VISIBILITY FENCE SHALL BE MANUALLY INSTALLED WHERE INDICATED ON THE PLANS. THIS SHALL BE COMPLETED BY AND INSPECTED AT THE PRECONSTRUCTION MEETING.
4. THE CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, THE COUNTY PROJECT MANAGER, THE ENGINEER, A REPRESENTATIVE FROM HOWARD COUNTY CONSTRUCTION INSPECTION, AND A REPRESENTATIVE FROM THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM.
5. PLACE A W11-10(1), TRUCKS ENTERING HIGHWAY (SYMBOL) (30" X 30"), SIGN IN EACH DIRECTION ON MD 108. SIGNS ARE TO BE PLACED 450 FEET IN ADVANCE OF THE CONSTRUCTION ENTRANCE, AS PER THE MD MUTCD.
6. CONSTRUCT THE FOLLOWING PERIMETER CONTROLS AS SHOWN ON THE PLAN: STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE, CLEARING ONLY THE AREA NEEDED TO INSTALL THE E&S CONTROLS.
7. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, INSTALL THE STREAM DIVERSION/PUMP AROUND WHICH INCLUDES THE SAND BAG DIVERSIONS, PUMP AND 4" DIVERSION HOSES. DEWATER ALL WORK AREAS AS NEEDED USING THE DEWATERING FILTER BAG. SEE IN-CHANNEL PUMPING NOTES FOR FURTHER DETAIL.
8. REMOVE EXISTING CONCRETE CHANNEL AND GRADE CHANNEL PER THE PLAN FROM DOWNSTREAM TO UPSTREAM.
9. INSTALL WETLAND WEIRS AS SHOWN ON PLANS, STABILIZE CHANNEL AT THE END OF EACH WORK DAY.
10. INSTALL EARTH BERM AND RESET EXISTING FENCE FROM STA. 0+06 TO 2+05 AS SHOWN ON PLANS.
11. CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS TO ITS FINAL GRADE AT THE END OF EACH WORKING DAY.
12. WHEN AREAS ARE FULLY STABILIZED, AND UPON PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE THE REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ANY DISTURBED AREAS.

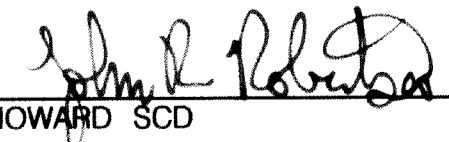
IN-CHANNEL PUMPING NOTES

1. THE DISTURBED LENGTH SHALL NOT EXCEED THAT WHICH CAN BE COMPLETED IN ONE DAY. AT THE END OF EACH WORK DAY, THE WORK AREA MUST BE STABILIZED AND THE PUMP AROUND REMOVED FROM THE CHANNEL. REFER TO THE DETAILS AND SPECIFICATIONS FOR MCWC 1.2: PUMP-AROUND PRACTICE WHICH ARE INCLUDED ON THE PLANS.
2. THE CONTRACTOR SHALL USE A PUMP AND 4" DIVERSION HOSE TO ACCOMMODATE THE FLOWS ANTICIPATED DURING CONSTRUCTION IN THE CHANNEL SECTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING A CONSTRUCTION PHASE DEWATERING SYSTEM, INCLUDING A TEMPORARY SYSTEM OF PUMPS, DRAINAGE DITCHES AND, SANDBAG/STONE DIVERSIONS, AS REQUIRED TO REMOVE WATER FROM ANY SOURCE, INCLUDING GROUND WATER, AND MAINTAIN WORKABLE, DRY CONDITIONS IN THE WORK AREA.
4. NO CLAIMS WILL BE CONSIDERED FOR DELAYS RELATED TO WET CONDITIONS OR DETERIORATED SUB GRADE RESULTING FROM THE LACK OR PROPER MAINTENANCE OF AN EFFECTIVE TEMPORARY DEWATERING SYSTEM, DISTURBANCE OF THE SUB GRADE DUE TO POOR CONSTRUCTION PROCEDURES, OR FROM CONSTRUCTION WORK DURING UNFAVORABLE WEATHER CONDITIONS. THE CONTRACTOR SHALL BE AWARE OF WEATHER FORECASTS AND RAIN PREDICTIONS SO AS TO BE PROPERLY PREPARED TO MAINTAIN OR SHUT DOWN OPERATIONS WHEN APPROPRIATE.

HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1. B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), 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.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	0.55 ACRES
AREA DISTURBED	0.55 ACRES
AREA TO BE ROOFED OR PAVED	0 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.55 ACRES
TOTAL CUT	470 CU. YDS.
TOTAL FILL	260 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	TO BE DETERMINED
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTH OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.
12. OFFSITE WASTE /BORROW SITE SHALL HAVE AN APPROVED SEDIMENT CONTROL PLAN.

<p style="text-align: center;">REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS</p> <p style="font-size: small;">THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT</p> <p style="text-align: right;">  HOWARD SCD </p>	<p style="text-align: center;">McCormick Engineers & Planners Taylor Since 1946</p> <p style="font-size: small;">509 South Exeter Street 4th Floor Baltimore, Maryland 21202 (410) 662-7400</p>	<p style="text-align: center;">Howard County M A R Y L A N D</p> <p style="font-size: small;">Storm Water Management Division Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046-3143</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">DES: AH</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>DRN: MR</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CHK: CB</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DATE: 12/3/08</td> <td>BY</td> <td>NO.</td> <td>REVISION</td> <td>DATE</td> <td></td> <td></td> <td></td> </tr> </table>	DES: AH								DRN: MR								CHK: CB								DATE: 12/3/08	BY	NO.	REVISION	DATE				<p>HOWARD COUNTY CAPITAL PROJECT D-1141</p> <p>ARL CONCRETE CHANNEL RETROFIT PROJECT</p> <p>EROSION AND SEDIMENT CONTROL NOTES</p>	SCALE NOT TO SCALE SHEET 5 OF 12
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EROSION AND SEDIMENT CONTROL – GENERAL NOTES

HOWARD SOIL CONSERVATION DISTRICT / HCPSS TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED 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/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.).

SEEDING: – FOR PERIODS MARCH 1 – APRIL 30 AND FROM AUGUST 15 – OCTOBER 15, TEMPORARY SEED MIXTURE SHALL CONSIST OF ONE OF THE FOLLOWING OPTIONS:

- OPTION 1 – ITALIAN, PERENNIAL RYE GRASS OR MILLET.
- OPTION 2 – MARYLAND STATE HIGHWAY TEMPORARY MIXTURE 1332 95% BARLEY OR WINTER RYE AND 5% MILLET.
- OPTION 3 – FOR AREAS THAT MAY SIT IDLE FOR MANY MONTHS: TALL FESCUE AND 50% ANNUAL RYEGRASS.

FOR THE PERIOD NOVEMBER 16 – FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: – APPLY 1-12 TO 2 TONS/ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL. NO ASPHALT EMULSION SHALL BE USED FOR ANCHORING. ONLY A NON-TOXIC, LATEX BACKING MATERIAL IS ALLOWED.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

HOWARD SOIL CONSERVATION DISTRICT / HCPSS PERMANANT 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/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS/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/ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.).

2. ACCEPTABLE – APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS/ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

NOTE: LIME SHALL BE AGRICULTURAL GRADE LIME MATERIAL (GROUND LIMESTONE, HYDRATED OR BURNT LIME) WHICH CONTAINS TOTAL CARBONATES OF 85% WITH A MINIMUM OF 30% MAGNESIUM CARBONATE AND WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND SO THAT NO LESS THAN 50% PASSES A 100-MESH SIEVE AND 90-100% PASSES A 20-MESH SIEVE.

FERTILIZER SHALL CONTAIN SOME ELEMENTS DERIVED FROM ORGANIC SOURCES AND PROVIDE NITROGEN IN A FORM THAT WILL BE AVAILABLE TO THE LAWN DURING ITS INITIAL PERIOD OF GROWTH. FERTILIZER SHALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OR THE PRODUCER. FERTILIZER SHALL, AT A MINIMUM, CONTAIN THE FOLLOWING PERCENTAGES OF AVAILABLE PLANT NUTRIENTS: 18% N, 24%P, 12%K, 50% SCU APPLIED AT A RATE OF 1 LB. PER 1,000 SQUARE FEET LAWN AREA.

SEEDING – SEED SHALL BE SOWN FROM AUGUST 15 TO OCTOBER 15 OR MARCH 1 TO APRIL 30TH OR AS SOON AS THE SOIL IS DRY ENOUGH TO ALLOW PROPER PENETRATION OF A SEEDBED EXTENSIONS BEYOND THESE TIME PERIODS MAY BE GRANTED BY THE CONTRACT MANAGER, DEPENDING UPON WEATHER CONDITIONS FOR THE PERIOD IN QUESTION. ANY PLANTING OUTSIDE THESE SEASONS SHALL BE SOLELY AT THE CONTRACTOR'S RISK AND SHALL NOT BE SUBJECT TO COMPENSATION UNTIL STABILIZATION HAS BEEN ACCOMPLISHED.

DURING THE PERIOD OF OCTOBER 16 – FEBRUARY 28, PROTECT SITE BY:

OPTION 1 – TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. NO SEEDING SHALL BE DONE ON FROZEN GROUND OR WHEN THE TEMPERATURE IS 32 DEGREES F OR LOWER. NO SEEDING SHALL BE DONE DURING WINDY WEATHER OR WHEN GROUND IS WET OR OTHERWISE UNTILLABLE. SEED WITH 60 LBS /ACRE (1.4 LBS/1000 SQ. FT.) TALL FESCUE SEED MIXTURES: TURF TYPE TALL FESCUE 80-100 98 90, KENTUCKY, BLUEGRASS 0-10 98 85, PERENNIAL RYE GRASS 0-10 98 90, IMPROVED VARIETIES OF EACH SPECIES ARE REQUIRED. ACCEPTABLE VARIETIES OF TALL FESCUE MIX IS TO CONTAIN ANY TWO (2) CERTIFIED VARIETIES FROM THE LATEST ISSUE OF THE UNIVERSITY OF MARYLAND MEMO NO. 77.

SEED LOTS MUST BE BLENDED AND CERTIFIED AS PER THE GENERAL CERTIFICATION SPECIFICATIONS OF THE MARYLAND DEPARTMENT OF AGRICULTURE AND SEED FILLING MUST COMPLY WITH THE MARYLAND SEED AND REGULATIONS LAW.

DURING SEEDING, ALL AREAS SHALL BE KEPT NEAT AND CLEAN AND PRECAUTIONS SHALL BE TAKEN TO AVOID DAMAGE TO EXISTING PLANTS, TURF, AND STRUCTURES. UPON COMPLETION, ALL DEBRIS AND WASTE MATERIAL RESULTING FROM SEEDING OPERATIONS SHALL BE REMOVED FROM THE PROJECT AND THE AREA CLEANED UP. ANY AREAS DAMAGED BY THE SEEDING CONTRACTOR SHALL BE RESTORED TO THE ORIGINAL CONDITION.

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 – MULCH SHALL BE THRASHED BARLEY, WHEAT OR OAT STRAW. IT SHALL BE CLEAN AND FREE OF NOXIOUS WEEDS, WEED SEEDS, AND OTHER FOREIGN MATERIALS. MULCH ALL SEEDED AREAS AS FOLLOWS:

1. MULCH SHALL BE APPLIED AT A RATE OF 2,000 POUNDS PER ACRE IN A UNIFORM MANNER. THE MATERIAL SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION.
2. TERRA TACK BINDERS AS MANUFACTURED BY GRASS GROWERS OF PLAINFIELD, NEW JERSEY, OR AN APPROVED EQUAL, SHALL BE ADDED TO MULCH MIXTURE AT THE RATE OF 140 POUNDS PER ACRE. CRIMPING OF MULCH IS NOT ALLOWED.
3. IF MULCH IS DISPLACED BEFORE SEED GROWTH OF 1 INCH TO 1 5/8 INCHES IS OBTAINED, IT SHALL BE REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE CONTRACT MANAGER.

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

STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION
PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

- A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
- B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
- C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
- D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.

II. TOPSOIL SPECIFICATIONS – SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

- A. APPROVED OFF-SITE IMPORTED TOPSOIL SHALL BE USED FOR ALL FURNISHED TOPSOIL ON THIS PROJECT, AND SHALL CONSIST OF A NATURAL FRIABLE LOAM OF UNIFORM COMPOSITION, OBTAINED FROM AN AREA WHICH HAS NEVER BEEN STRIPPED, POSSESSING CHARACTERISTICS OF THE BEST SOILS OF THE VICINITY WHICH PRODUCE HEAVY GROWTHS OF CROPS, GRASS, AND OTHER VEGETATION. IMPORTED TOPSOIL SHALL NOT ORIGINATE FROM A LANDFILL OR SITE OF KNOWN CONTAMINATION SUCH AS LEAKING UNDERGROUND STORAGE TANKS, IMPROPERLY DISPOSED WASTE, CHEMICAL SPILLS, OR OTHER HAZARDOUS MATERIALS.
- B. ALL IMPORTED TOPSOIL SHALL BE SCREENED AND OF UNIFORM COMPOSITION WITH NO SUBSOIL, CLAY LUMPS, STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN 1/2" IN ANY DIRECTION. TOPSOIL SHALL BE FREE OF GLASS OR METAL FRAGMENTS, OR ANY PARTS (SEED RHIZOMES, ROOTS, ETC.) OF JOHNSON GRASS, CANADA THISTLE, BERMUDA GRASS, POISON IVY OR OTHER NOXIOUS WEEDS, AND LITTER OR ANY OTHER MATERIAL OR SUBSTANCES WHICH MAY BE HARMFUL TO PLANT GROWTH, OR A HINDRANCE TO PLANTING OR MAINTENANCE OPERATIONS.
- C. IMPORTED TOPSOIL SHALL CONTAIN 50-60% SAND, 15-20% SILT AND 10-15% CLAY; HAVE A PH VALUE NOT LESS THAN 5.8, AND CONTAIN NOT LESS THAN 1.5% ORGANIC MATTER BY WEIGHT, IN ACCORDANCE WITH MSMT 603. SOLUBLE SALTS SHALL NOT EXCEED 500 PPM. IMPORTED TOPSOIL THAT DOES NOT MEET THIS CRITERION WILL NOT BE ACCEPTABLE. CONTRACT MANAGER'S EVALUATION OF SUITABILITY OF IMPORTED TOPSOIL SHALL BE FINAL.

III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:

A. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION – SECTION – VEGETATIVE STABILIZATION METHODS AND MATERIALS.

IV. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

- A. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 1. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.
 2. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
 3. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
 4. NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME AS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

B. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION – SECTION VEGETATIVE STABILIZATION METHODS AND MATERIALS.

V. TOPSOIL APPLICATION

- A. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
- B. INSTALL STABILIZATION MATTING TO HOLD TOPSOIL IN PLACE ON SLOPES OF 3:1 OR STEEPER UNTIL SEEDING HAS BEEN ESTABLISHED.
- C. TOPSOIL SHALL BE SPREAD OVER ALL AREAS TO BE PLANTED OR SEEDED SUCH THAT COMPACTION SHALL BRING SETTLED COMPACTED THICKNESS. WORK ALL AREAS OF THE COMPACTED TOPSOIL, INCLUDING EXISTING ON-SITE TOPSOIL, UNTIL TOPSOIL IS FREE OF ANY OBJECTS LARGER THAN 1/8" IN ANY DIRECTION AND IS FREE OF ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR FROM OTHER OPERATIONS, TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
- D. TOPSOIL SHALL NOT BE PLACED WHEN EITHER THE SUB-GRADE OR THE TOPSOIL IS WET OR FROZEN ENOUGH TO CAUSE CLODDING. SCARIFY SUB-GRADE BENEATH AREAS DESIGNATED TO RECEIVE TOPSOIL TO A DEPTH OF TWO (2) INCHES PRIOR TO PLACEMENT OF TOPSOIL. IMPORT TOPSOIL FROM APPROVED OFF-SITE SOURCE IF REQUIRED TO ATTAIN THICKNESS INDICATED. DEPTH TO 6-8 9/32 INCHES. MAKE SMALL TEST SECTIONS TO DETERMINE DEPTH OF LOOSE SPREAD TO OBTAIN

**REVIEWED FOR HOWARD SCD
AND MEETS TECHNICAL REQUIREMENTS**

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

John L. Roberts
HOWARD SCD

12-23-09
DATE

**McCormick
Taylor**
Engineers & Planners
Since 1946

509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
M A R Y L A N D

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143

DES: AH							
DRN: MR							
CHK: CB							
DATE: 12/3/08	BY	NO.	REVISION	DATE			

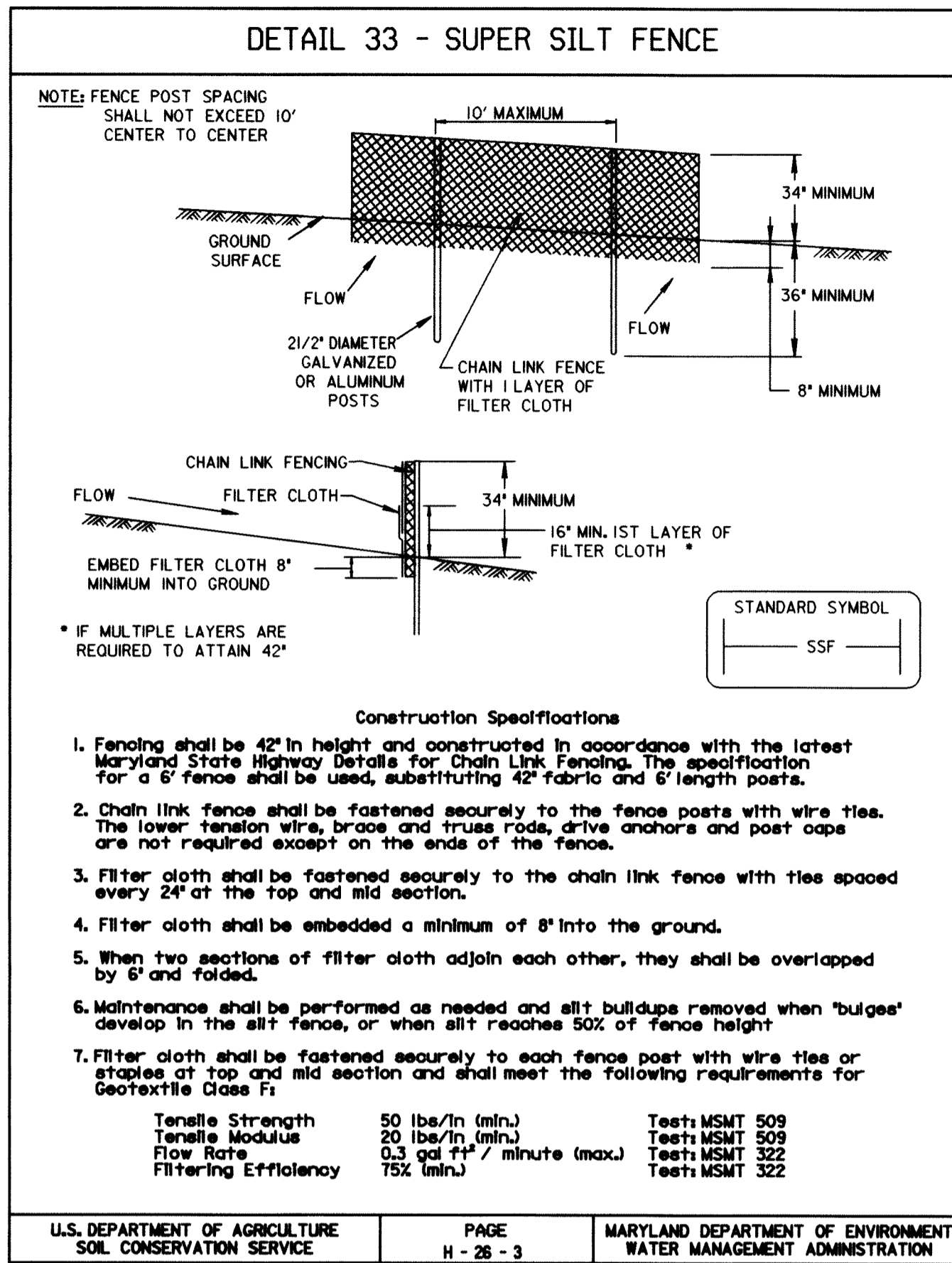
**HOWARD COUNTY
CAPITAL PROJECT D-1141**

ARL CONCRETE CHANNEL RETROFIT PROJECT

**EROSION AND SEDIMENT
CONTROL NOTES**

SCALE
NOT TO
SCALE

SHEET
6 OF 12

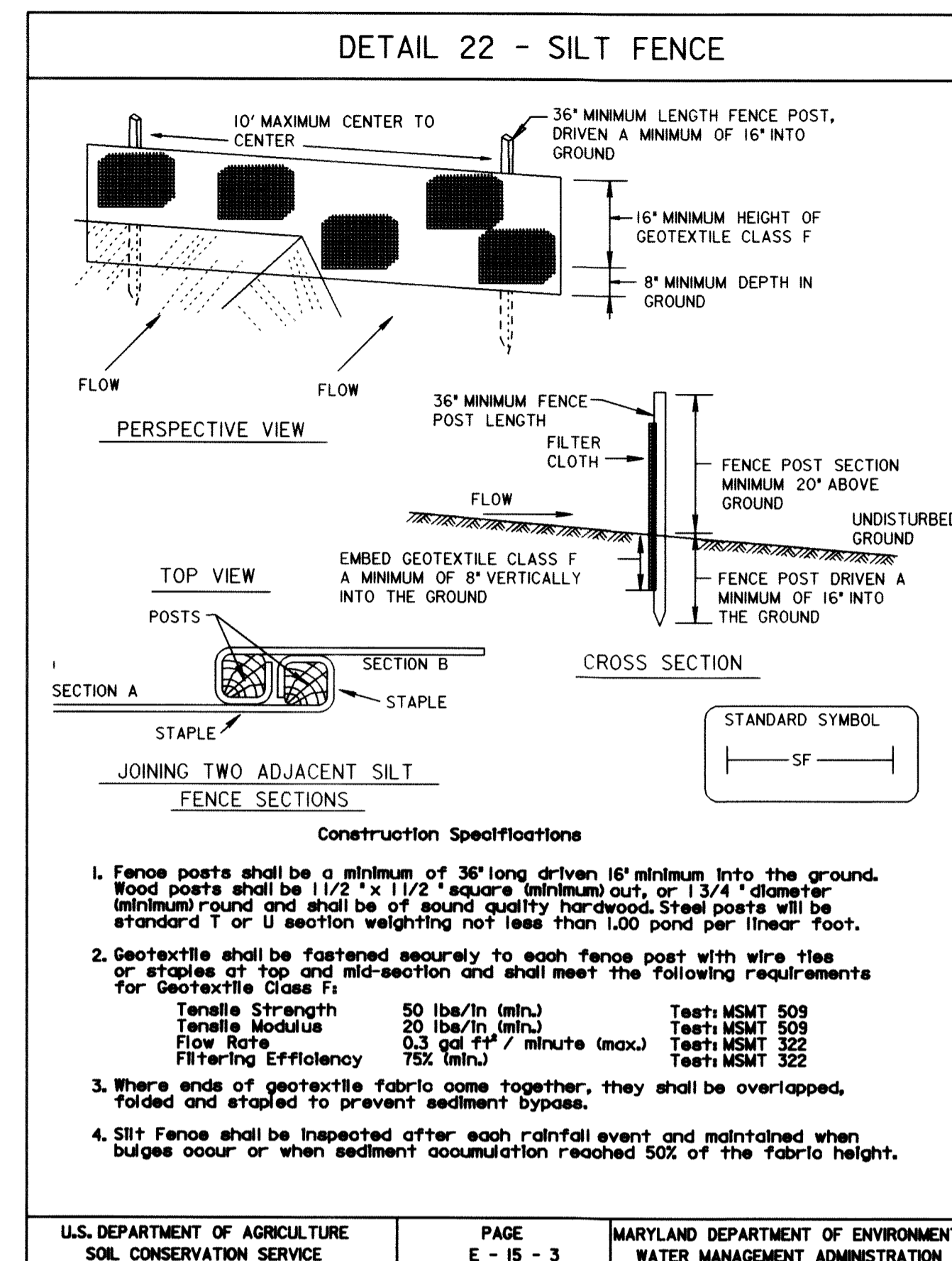


DETAIL 33 - SUPER SILT FENCE

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE H - 26 - 3A | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



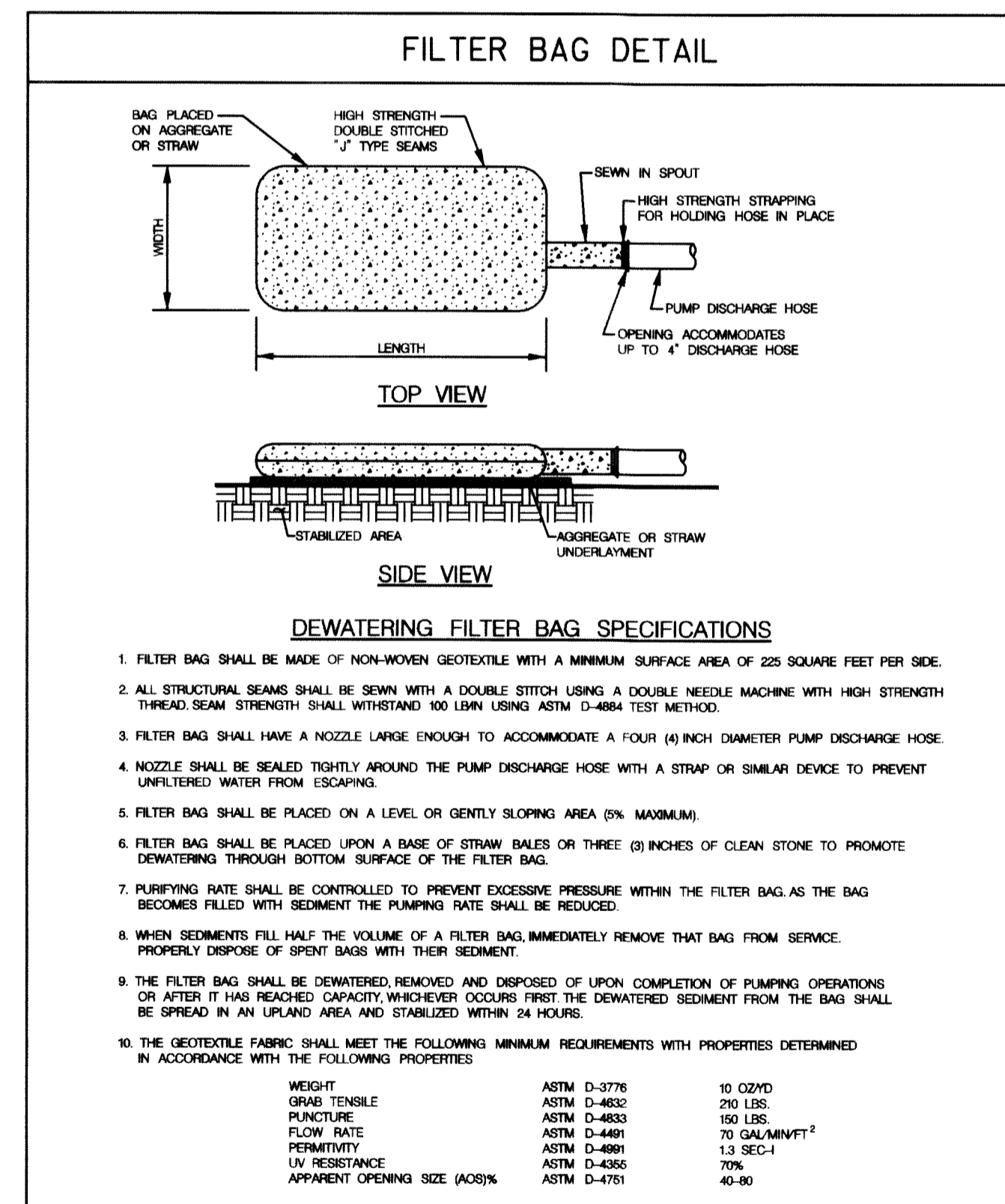
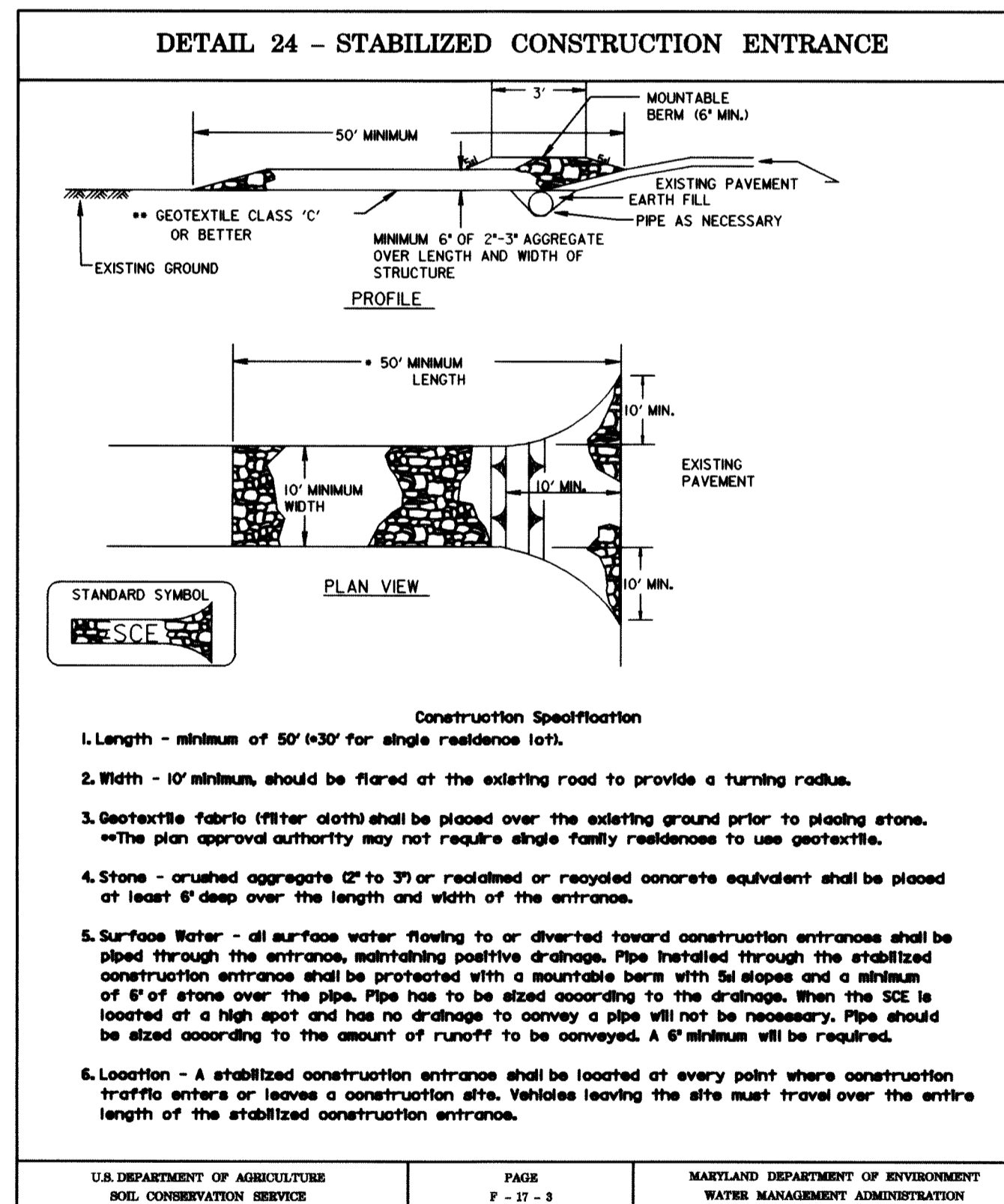
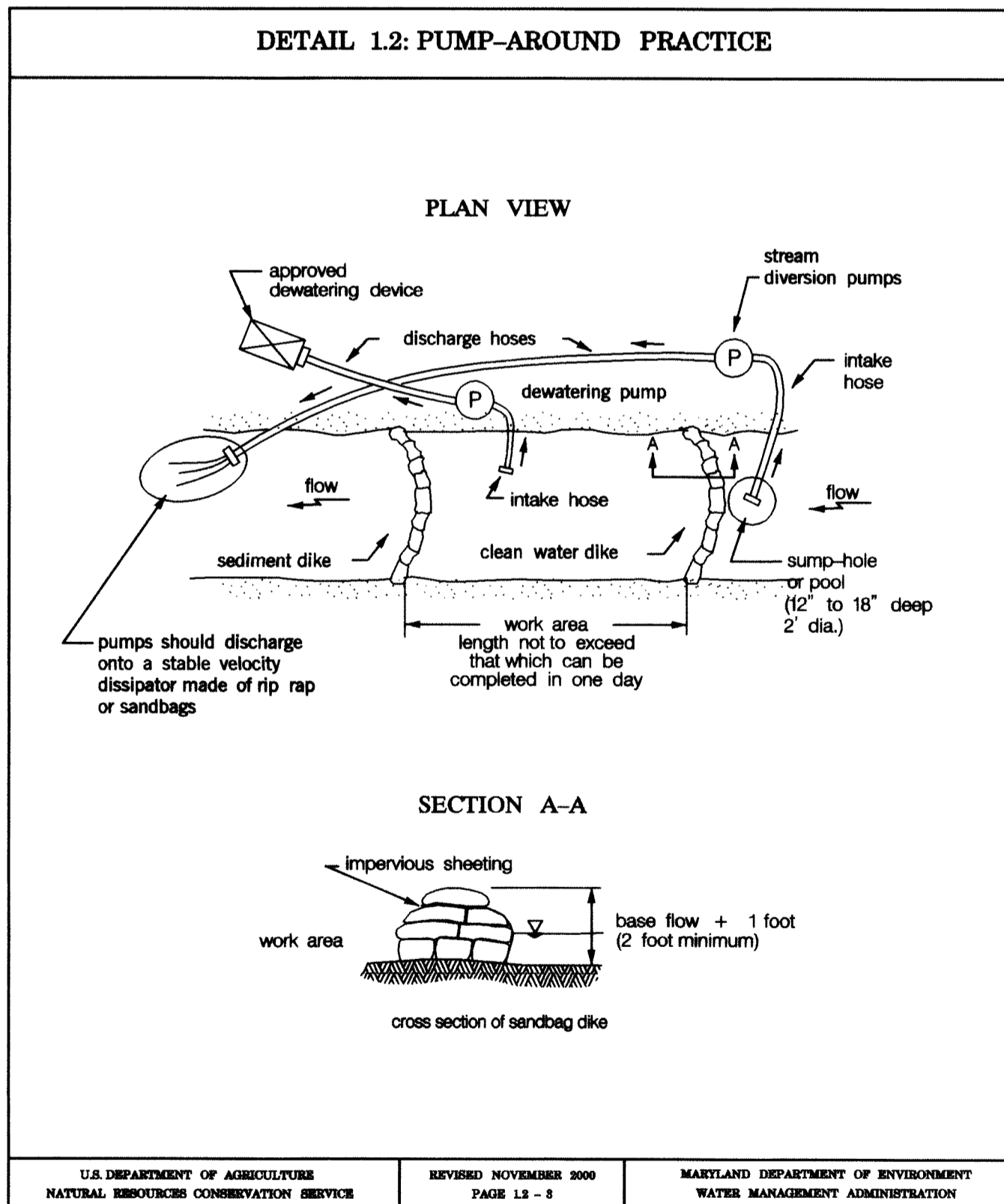
SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	Unlimited	Unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E - 15 - 3A | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



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John R. Roberts
HOWARD SCD

12-23-08
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Howard County
MARYLAND

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Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
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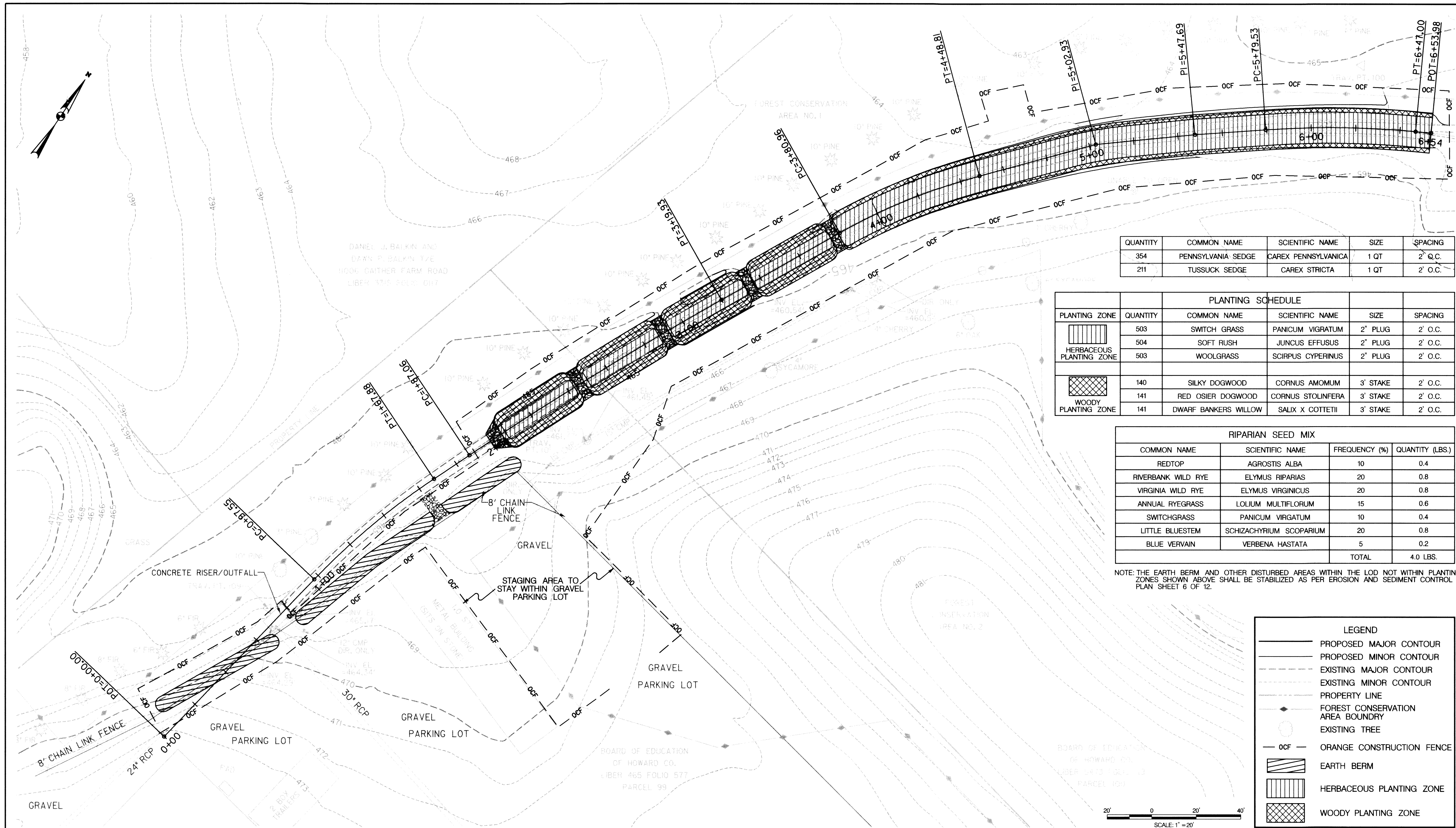
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HOWARD COUNTY
CAPITAL PROJECT D-1141

ARL CONCRETE CHANNEL RETROFIT PROJECT
EROSION AND SEDIMENT
CONTROL DETAIL SHEET

SCALE
NOT TO SCALE

SHEET
7 OF 12



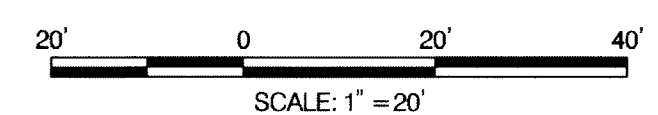
QUANTITY	COMMON NAME	SCIENTIFIC NAME	SIZE	SPACING
354	PENNSYLVANIA SEDGE	CAREX PENNSYLVANICA	1 QT	2' O.C.
211	TUSSUCK SEDGE	CAREX STRICTA	1 QT	2' O.C.

PLANTING SCHEDULE					
PLANTING ZONE	QUANTITY	COMMON NAME	SCIENTIFIC NAME	SIZE	SPACING
HERBACEOUS PLANTING ZONE	503	SWITCH GRASS	PANICUM VIGRATUM	2" PLUG	2' O.C.
	504	SOFT RUSH	JUNCUS EFFUSUS	2" PLUG	2' O.C.
	503	WOOLGRASS	SCIRPUS CYPERINUS	2" PLUG	2' O.C.
WOODY PLANTING ZONE	140	SILKY DOGWOOD	CORNUS AMOMUM	3' STAKE	2' O.C.
	141	RED OSIER DOGWOOD	CORNUS STOLINIFERA	3' STAKE	2' O.C.
	141	DWARF BANKERS WILLOW	SALIX X COTTETII	3' STAKE	2' O.C.

RIPARIAN SEED MIX			
COMMON NAME	SCIENTIFIC NAME	FREQUENCY (%)	QUANTITY (LBS.)
REDTOP	AGROSTIS ALBA	10	0.4
RIVERBANK WILD RYE	ELYMUS RIPARIAS	20	0.8
VIRGINIA WILD RYE	ELYMUS VIRGINICUS	20	0.8
ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	15	0.6
SWITCHGRASS	PANICUM VIRGATUM	10	0.4
LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM	20	0.8
BLUE VERVAIN	VERBENA HASTATA	5	0.2
TOTAL			4.0 LBS.

NOTE: THE EARTH BERM AND OTHER DISTURBED AREAS WITHIN THE LOD NOT WITHIN PLANTING ZONES SHOWN ABOVE SHALL BE STABILIZED AS PER EROSION AND SEDIMENT CONTROL PLAN SHEET 6 OF 12.

LEGEND	
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPERTY LINE
	FOREST CONSERVATION AREA BOUNDARY
	EXISTING TREE
	ORANGE CONSTRUCTION FENCE
	EARTH BERM
	HERBACEOUS PLANTING ZONE
	WOODY PLANTING ZONE



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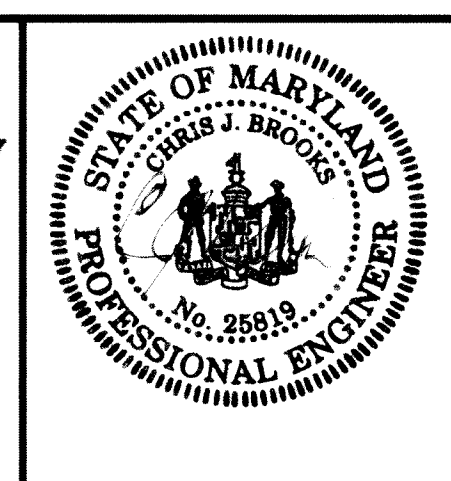
HOWARD SCD _____ DATE _____

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MARYLAND

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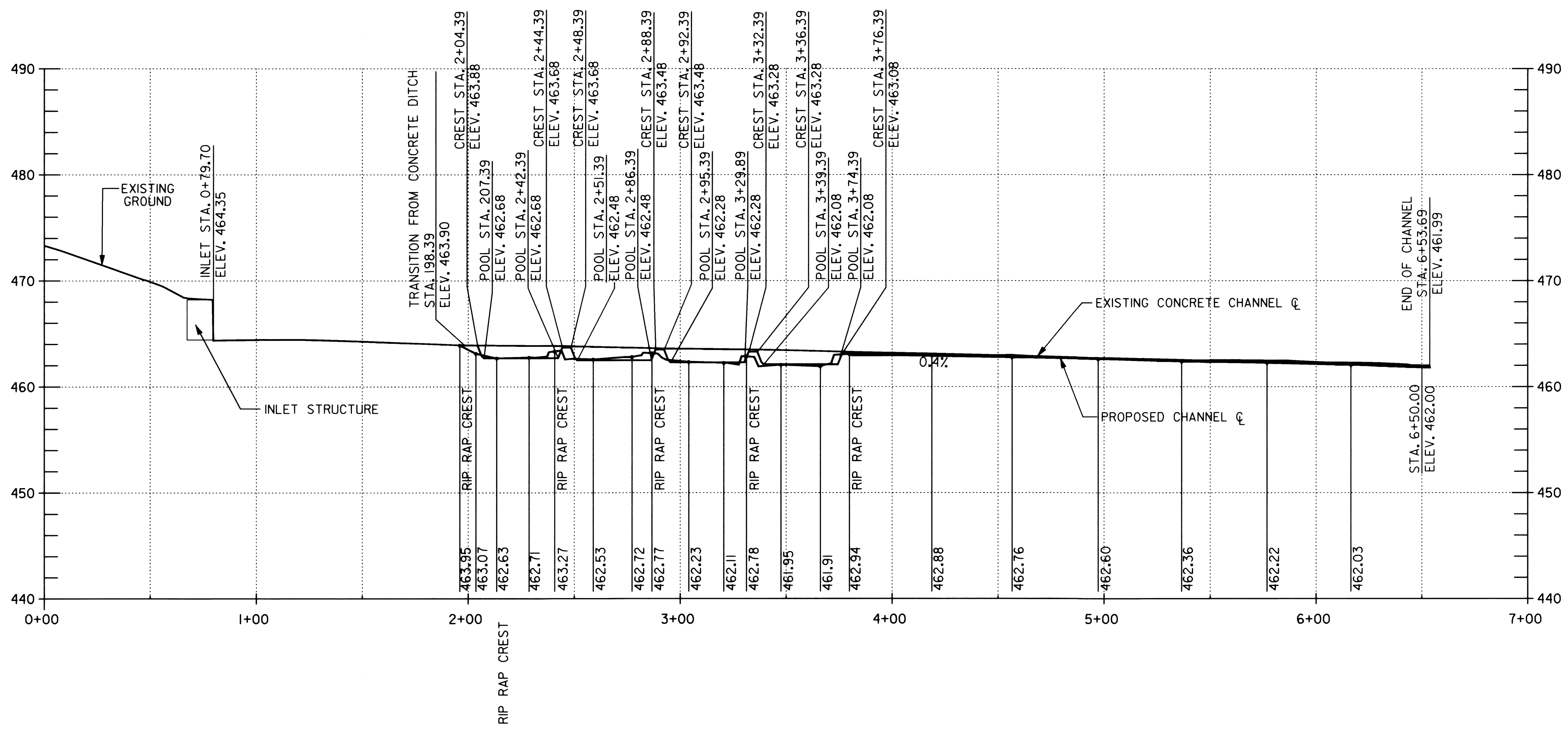
HOWARD COUNTY
CAPITAL PROJECT D-1141

ARL CONCRETE CHANNEL RETROFIT PROJECT

LANDSCAPING PLAN

SCALE
1" = 20'

SHEET
8 OF 12



SCALE: 1"=30' (HOR.)
1"=6' (VER.)

LEGEND	
---	EXISTING
—	PROPOSED

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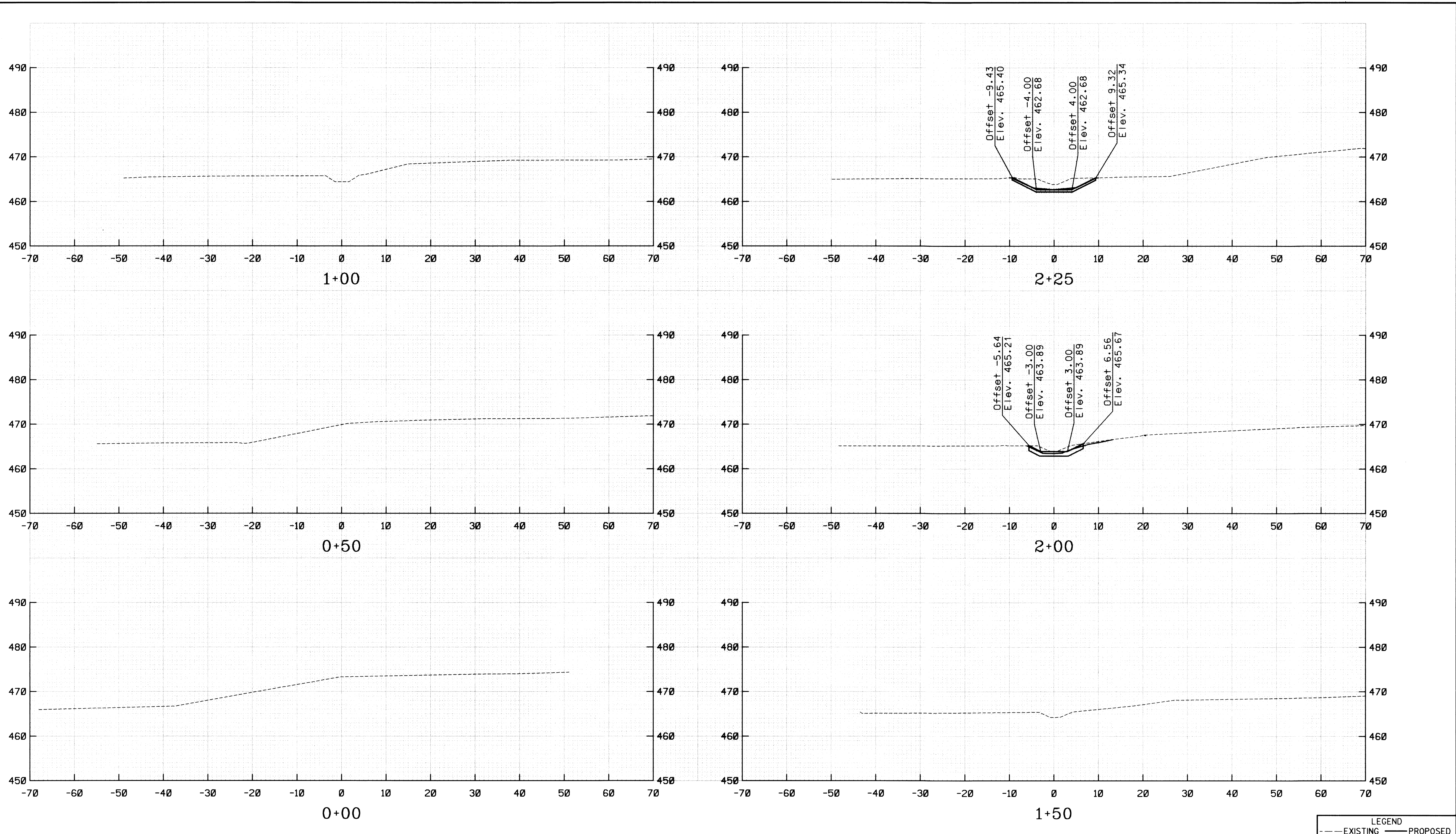
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DES: AH	AH	AS-BUILT	8/26/09
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HOWARD COUNTY
CAPITAL PROJECT D-1141
ARL CONCRETE CHANNEL RETROFIT PROJECT
PROFILE SHEET

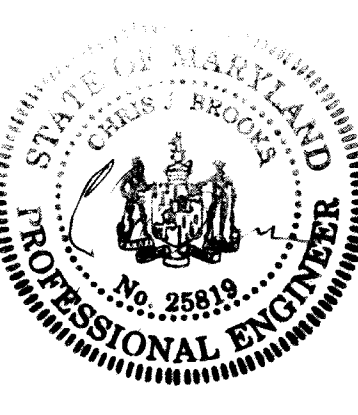
SCALE
AS SHOWN
SHEET
9 OF 12



LEGEND
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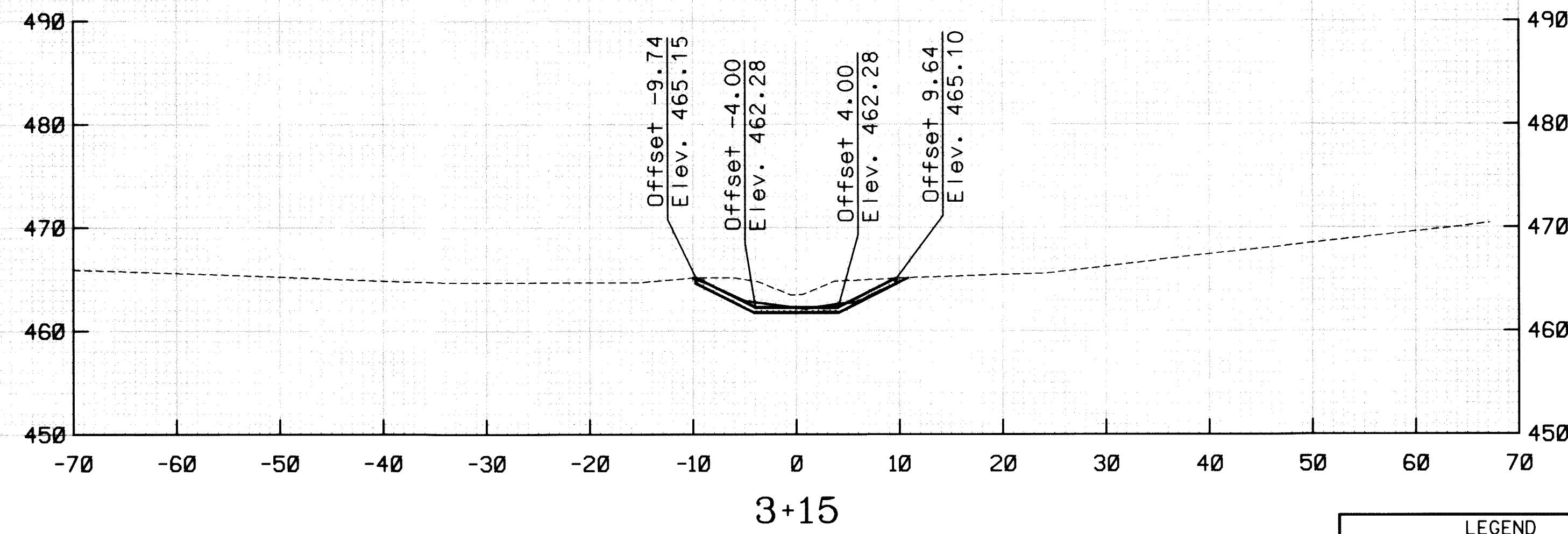
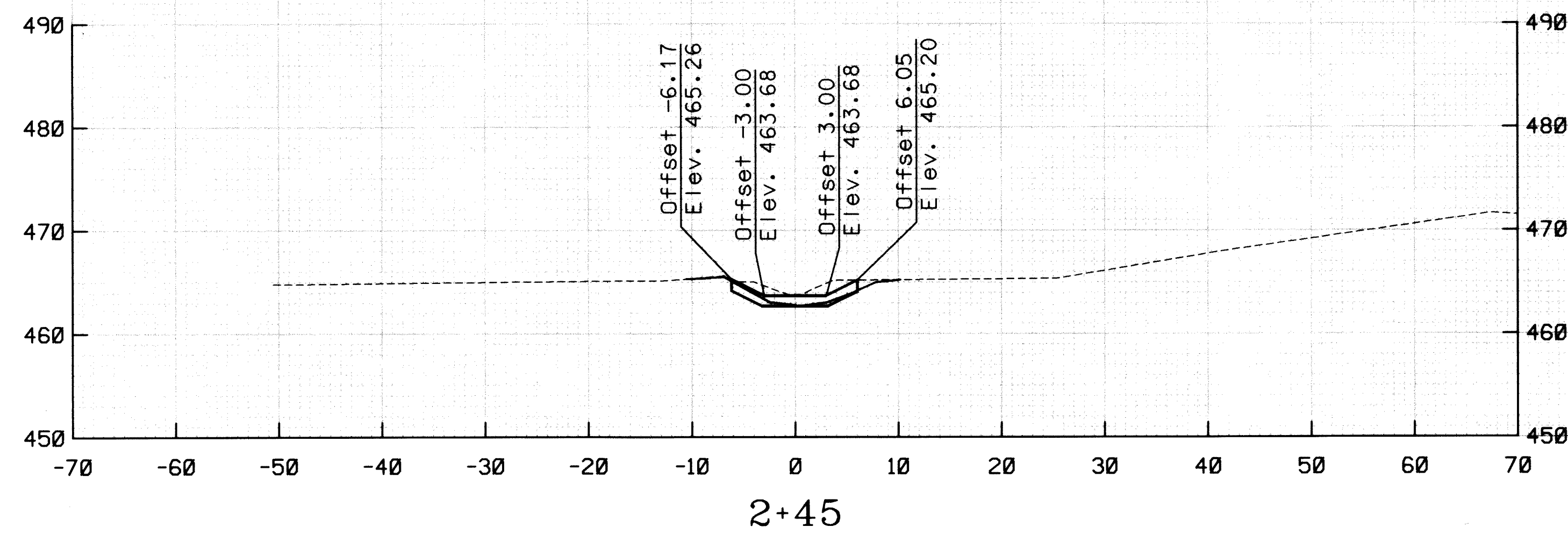
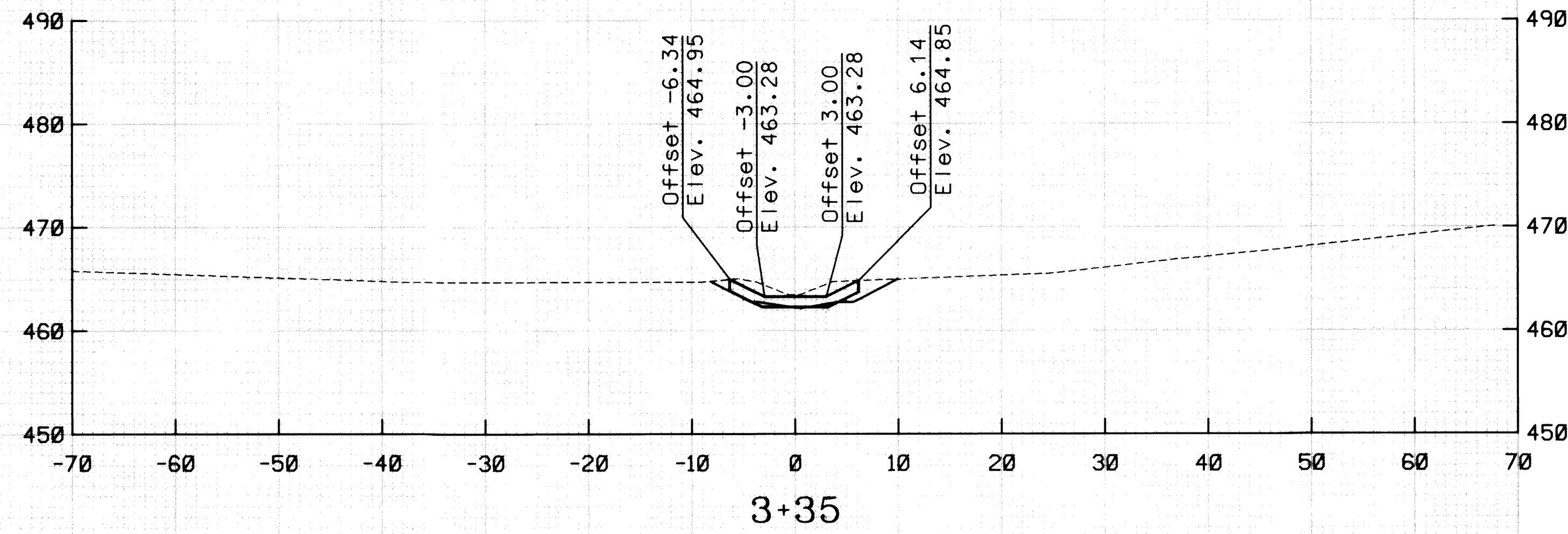
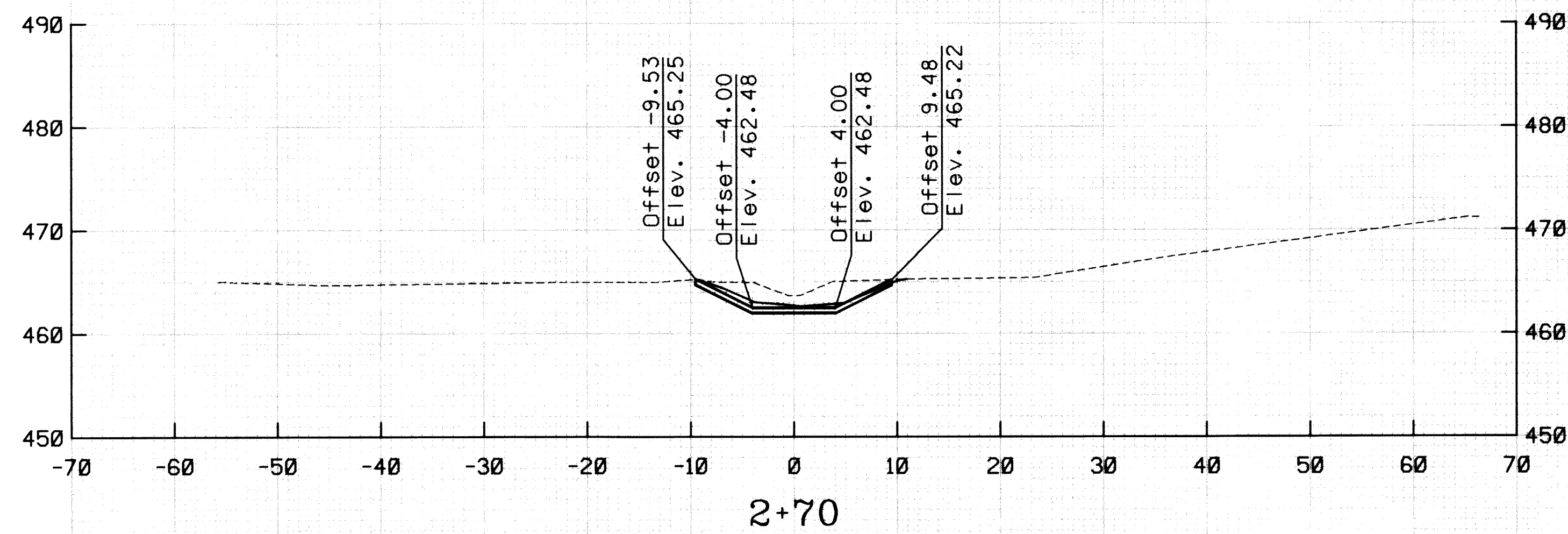
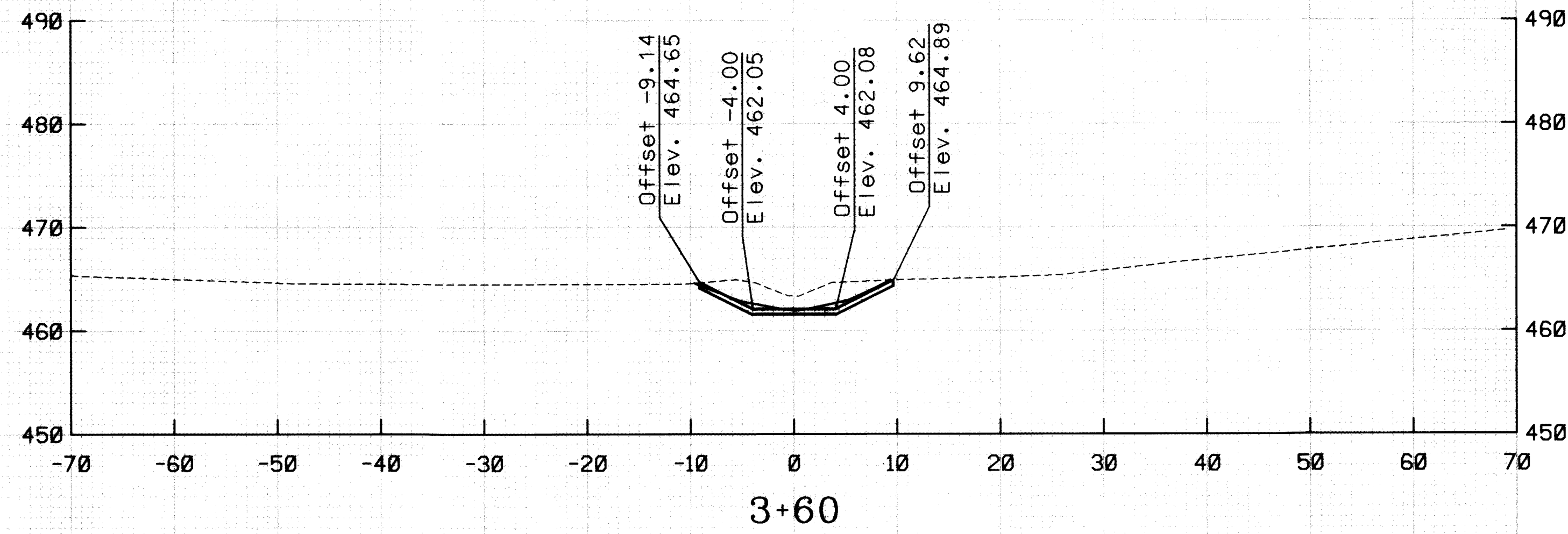
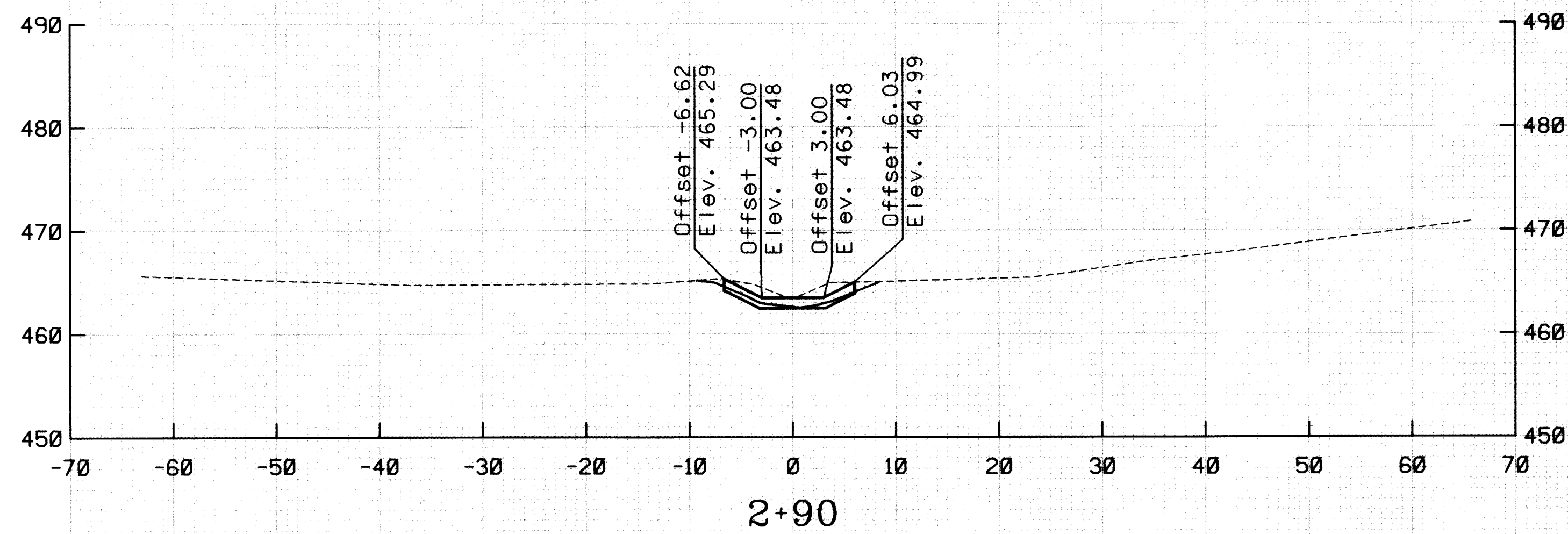
Howard County
 MARYLAND
 Storm Water Management Division
 Bureau of Environmental Services
 6751 Columbia Gateway Drive, Suite 514
 Columbia, Maryland 21046-3143



DES: AH	AH	AS-BUILT	82609
DRN: MR			
CHK: CB			
DATE: 12/3/08	BY	NO.	REVISION
			DATE

HOWARD COUNTY
CAPITAL PROJECT D-1141
ARL CONCRETE CHANNEL RETROFIT PROJECT
CROSS SECTIONS

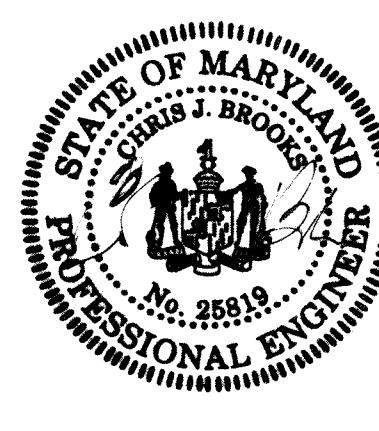
SCALE
 1" = 10'
 SHEET
 10 OF 12



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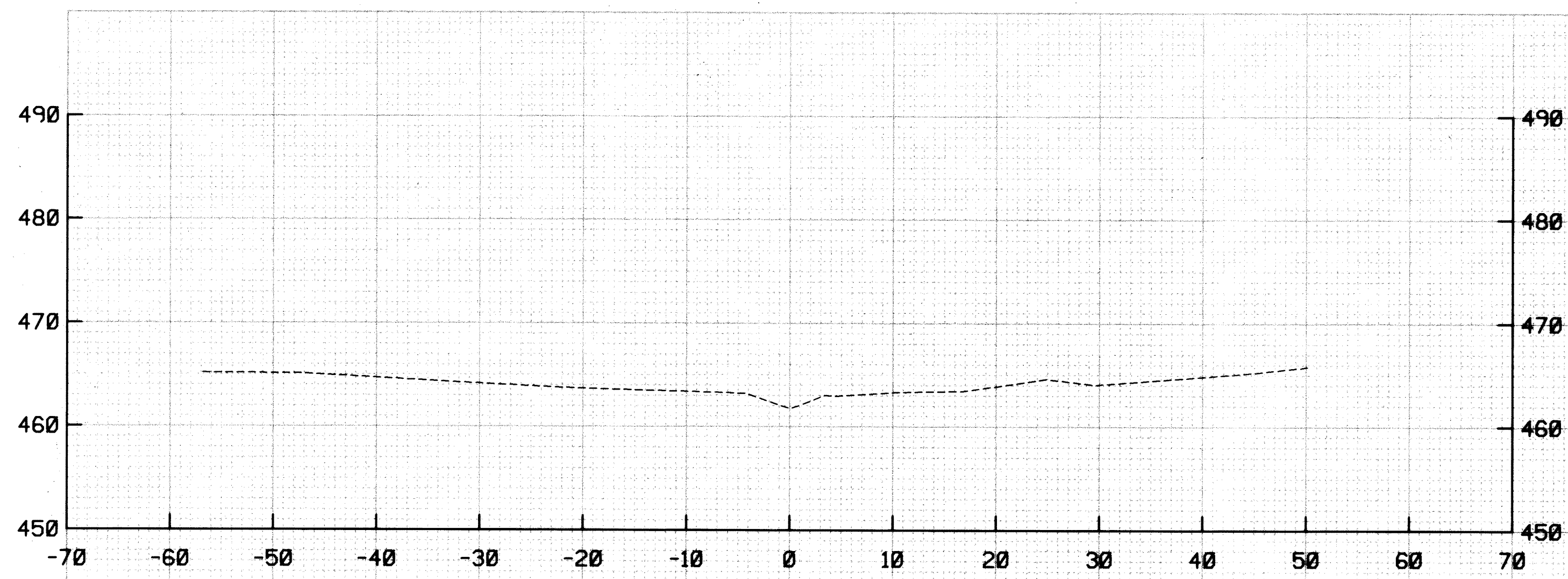
Howard County
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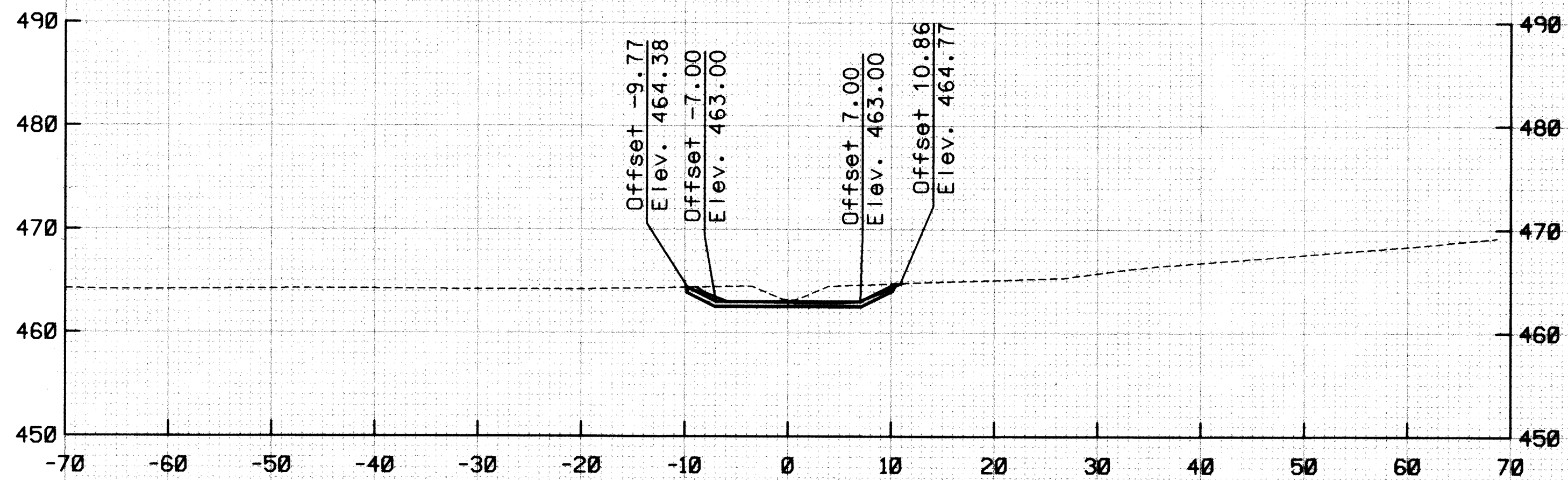
DES: AH	AH	AS-BUILT	82609
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CROSS SECTIONS

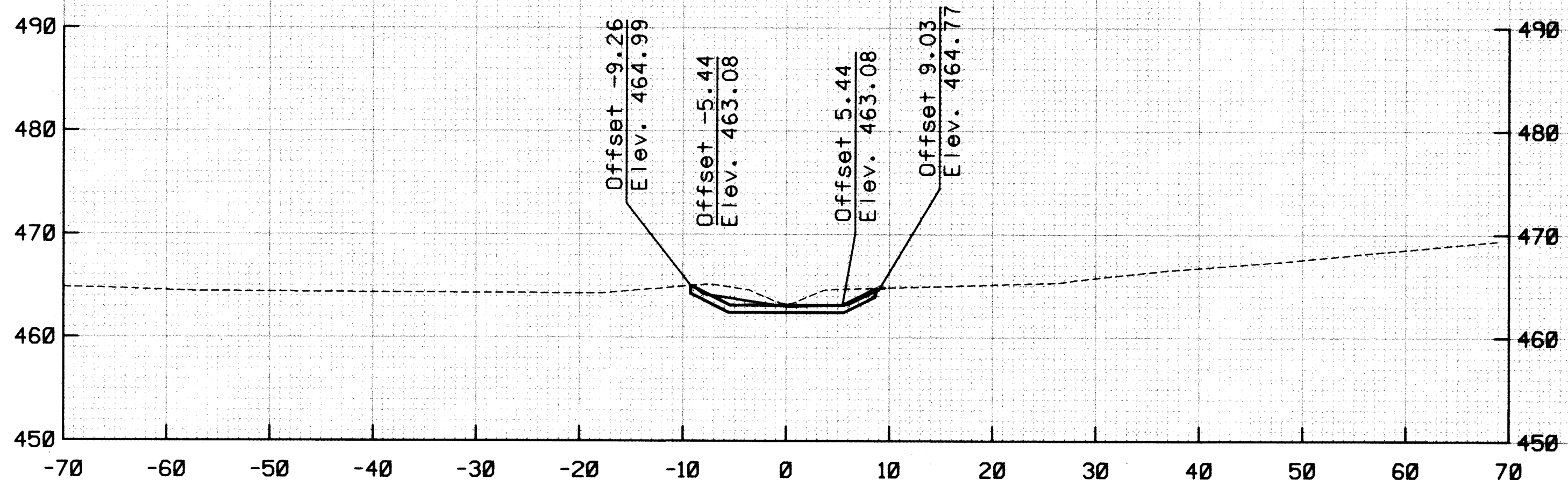
SCALE
 1" = 10'
 SHEET
 11 OF 12



6+54



4+00



3+80

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 SHEET
 12 OF 12