

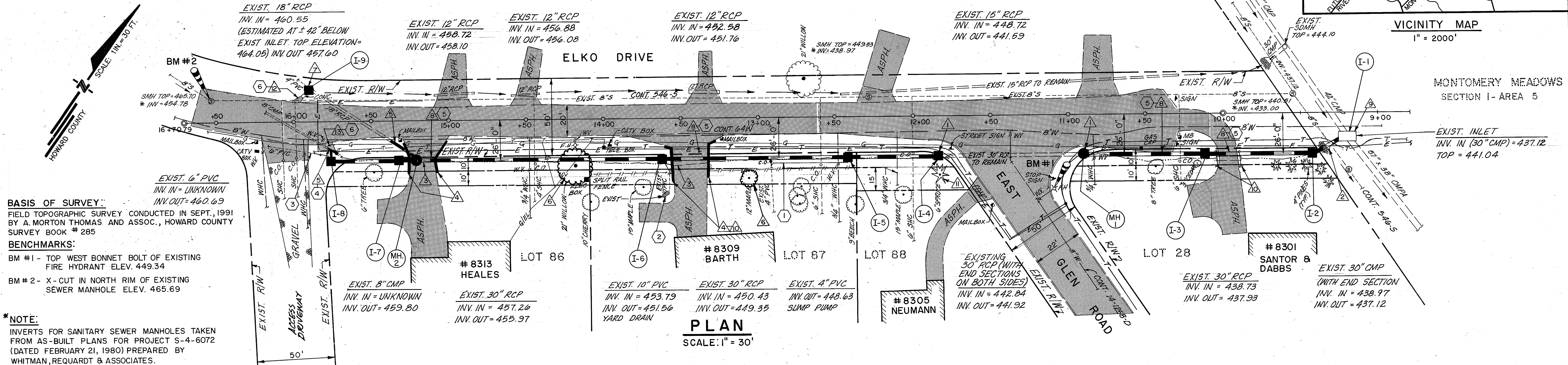
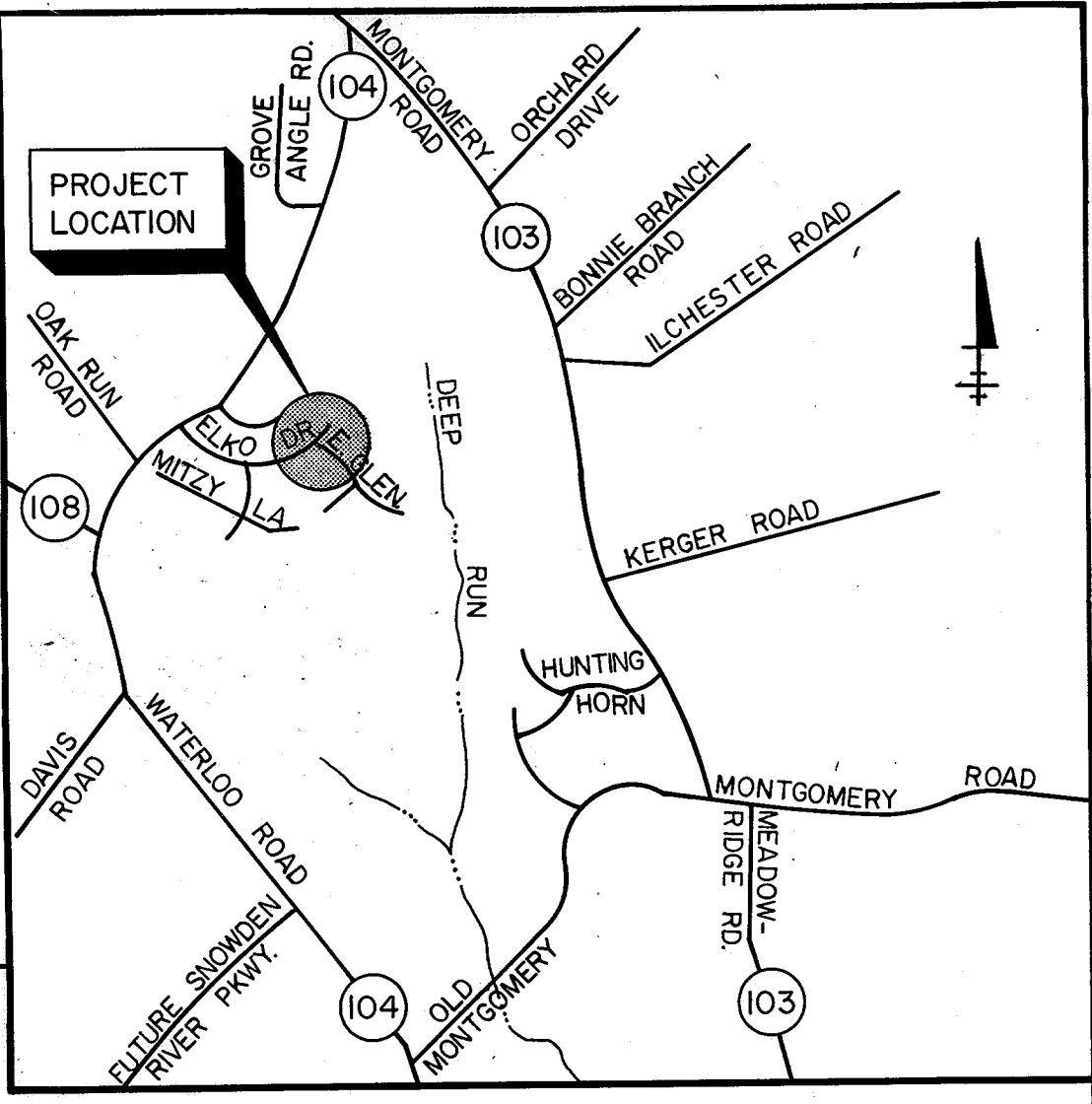
DRAINAGE		STRUCTURE		SCHEDULE		REMARKS	NO. OF OPENINGS
NO.	TYPE	STATION/OFFSET	INV. IN	INV. OUT	TOP		
I-1	A-10	9+20 12.5 LT.	434.12	433.57*	441.04	EXISTING INLET CONSTRUCTED AS PART OF MONTGOMERY MEADOWS SUBDIVISION	—
I-2	D	9+42 24' LT.	434.75	434.55	439.13	—	3(S,E,W)
I-3	D	10+12 24' LT.	437.88	436.35	442.63	—	3(S,E,W)
MH-1	SHALLOW	10+91 24' LT.	441.98	439.73	445.20	—	—
I-4	D	11+83 24' LT.	442.98	442.78	448.03	—	3(S,E,W)
I-5	D	12+42 24' LT.	444.80	443.60	449.83	EXTEND & CONNECT 4" PVC FOUNDATION DRAIN PIPE AT INV. 448.00'	2(S,W)
I-6	D	13+62 24' LT.	449.00	448.80	454.53	EXTEND AND CONNECT 10" PVC YARD DRAIN PIPE AT INV. 450.25'	3(S,E,W)
MH-2	SHALLOW	15+20 24' LT.	454.76	454.56	460.40	EXTEND AND CONNECT 18" RCP CROSS CULVERT AT INV. 457.35'	—
I-7	D	15+32 24' LT.	455.39	455.19	460.13	—	3(S,E,W)
I-8	D	15+76 24' LT.	457.05	456.85	462.33	EXTEND & CONNECT 6" PVC PIPE AT INV. 460.50' EXTEND & CONNECT 8" CMP PIPE AT INV. 460.00'	3(N,S,W)
I-9	D	15+90 17' RT.	—	460.55	463.90	REALIGN & RECONSTRUCT EXIST INLET AS SHOWN ON SPECIAL DETAIL PROVIDED	4(N,S,E,W)

\* NOTE: INVERT TAKEN FROM MONTGOMERY MEADOWS PLANS. ALL OTHERS ARE FIELD MEASURED.

- ### DEMOLITION LEGEND
- △ EXISTING CONCRETE END SECTION TO BE REMOVED AND DISPOSED.
  - △ EXISTING CORRUGATED METAL PIPE AND END SECTION TO BE REMOVED AND DISPOSED.
  - △ EXISTING PIPE TO BE REMOVED AND SALVAGED.
  - △ EXISTING TIMBER HEADWALL TO BE REMOVED AND DISPOSED.
  - △ PORTION OF EXISTING CORRUGATED METAL PIPE TO BE REMOVED AND DISPOSED.
  - △ EXISTING TREE TO BE REMOVED AND DISPOSED.
  - △ EXISTING INLET TO BE REMOVED AND DISPOSED.
  - △ PORTION OF EXISTING DRIVEWAY/ROADWAY TO BE REMOVED.
  - △ EXISTING INLET WALL TO BE MODIFIED TO ACCEPT NEW PIPE AND TO CLOSE OFF OLD PIPE PENETRATION.
  - △ EXISTING SPLIT RAIL FENCE TO BE REMOVED AND REPLACED.
  - △ EXISTING TREE TO BE REMOVED AND REPLACED IN-KIND.
  - △ EXISTING ASPHALT/CONCRETE FLUME WITH ASPHALT CURB TO BE REMOVED.
  - △ EXISTING ASPHALT FLUME TO BE REMOVED.

- ### IMPROVEMENTS LEGEND
- PROPOSED INLET, PIPE, MANHOLE (TYPICAL).
  - PROPOSED PERMANENT DRAINAGE EASEMENT.
  - PROPOSED TEMPORARY CONSTRUCTION EASEMENT.
  - ① NEW 4" PVC EXTENSION (WITH CLEANOUT) OF EXISTING SUMP PUMP DISCHARGE PIPE.
  - ② NEW 10" PVC EXTENSION (WITH CLEANOUT) OF EXISTING YARD DRAIN OUTLET PIPE.
  - ③ NEW 6" PVC EXTENSION OF EXISTING OUTLET PIPE.
  - ④ NEW 8" CMP EXTENSION AND EXISTING OUTLET PIPE.
  - ⑤ NEW BITUMINOUS CONCRETE PATCH.
  - ⑥ NEW BITUMINOUS CONCRETE DRAINAGE FLUME.

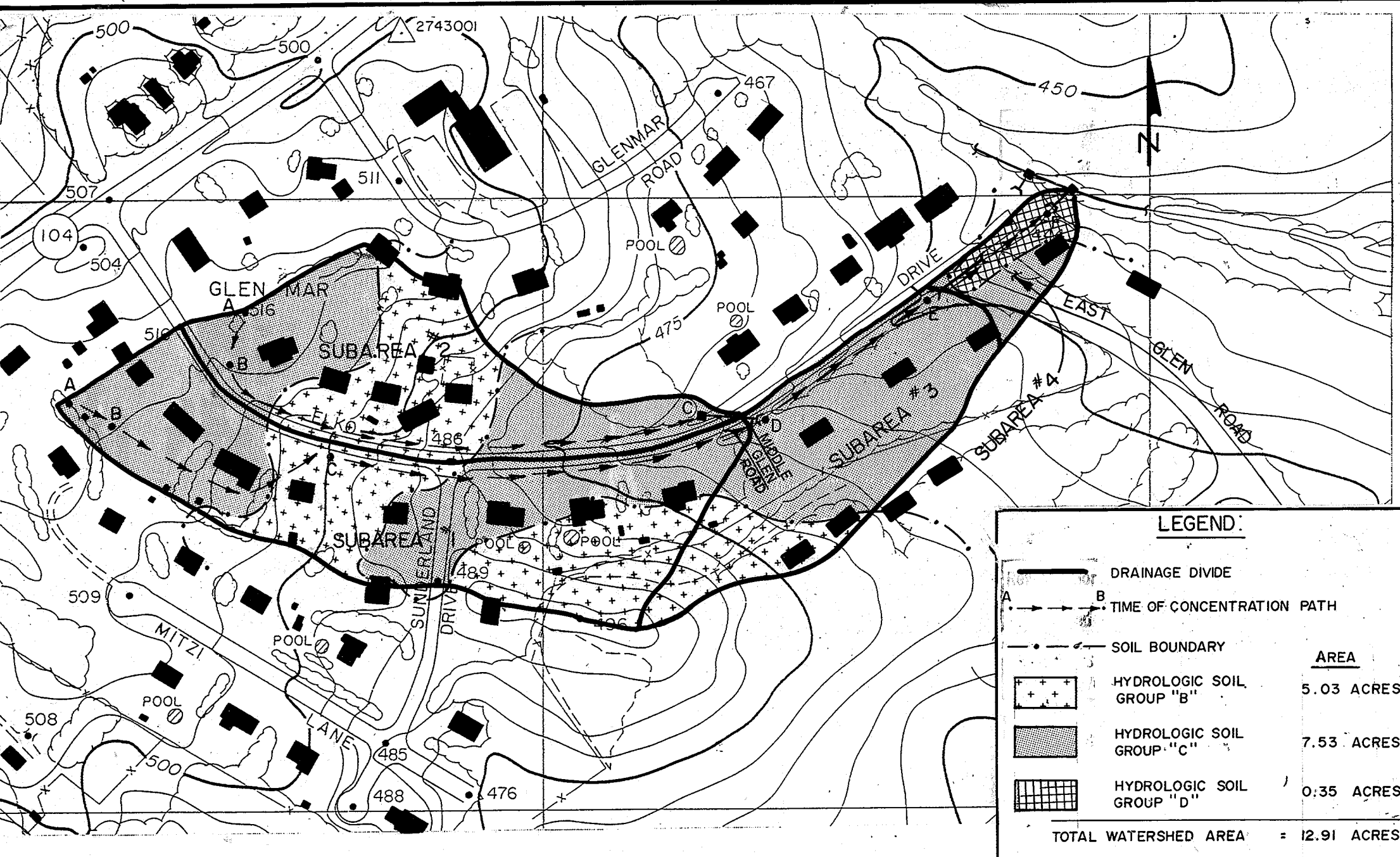
- ### NOTES
- EXISTING PAVEMENT SHADED FOR PLAN CLARITY PURPOSES.
  - ALL CORRUGATED METAL PIPE SHALL BE ALUMINIZED, 14 GAUGE MINIMUM.
  - DUE TO THE PROXIMITY OF LIVE UNDERGROUND AND OVERHEAD UTILITIES, A MORTON THOMAS AND ASSOCIATES, INC. IS NOT RESPONSIBLE FOR ANY DAMAGE OR INJURY SUSTAINED DURING CONSTRUCTION BY ANY PERSON, VEHICLES OR EQUIPMENT USED ON OR ADJACENT TO THE SITE.
  - THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS SO AS NOT TO DAMAGE EXISTING ADJACENT FACILITIES AND STRUCTURES. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS TO THEIR ORIGINAL CONDITION OR BETTER UNLESS NOTED OTHERWISE.
  - FOR MARKING LOCATIONS OF EXISTING UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION.
  - UNDERGROUND UTILITY INFORMATION SHOWN HEREON WAS OBTAINED FROM AVAILABLE RECORD DRAWINGS AND MAY NOT BE RELIABLE. ALL UTILITIES ARE TO BE FIELD LOCATED BY THE CONTRACTOR PRIOR TO CONSTRUCTING THE PROPOSED IMPROVEMENTS.



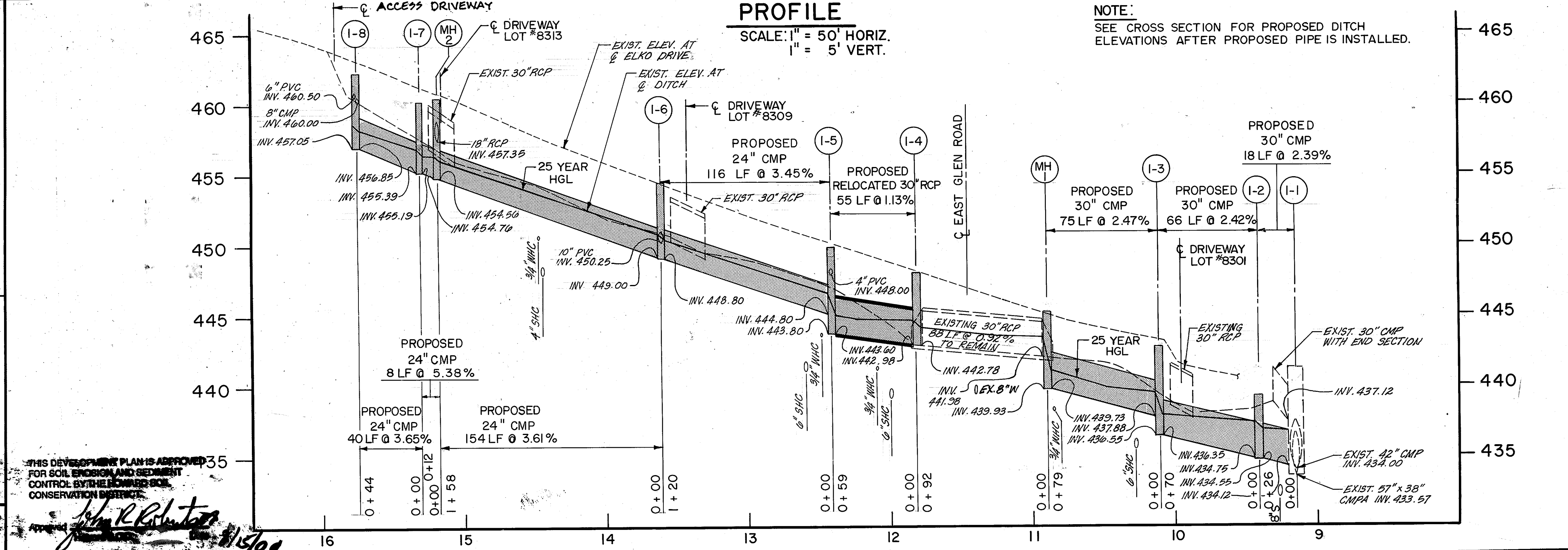
**BASIS OF SURVEY:**  
FIELD TOPOGRAPHIC SURVEY CONDUCTED IN SEPT., 1991 BY A. MORTON THOMAS AND ASSOC., HOWARD COUNTY SURVEY BOOK # 285

**BENCHMARKS:**  
BM #1 - TOP WEST BONNET BOLT OF EXISTING FIRE HYDRANT ELEV. 449.34  
BM #2 - X-CUT IN NORTH RIM OF EXISTING SEWER MANHOLE ELEV. 465.69

\*NOTE:  
INVERTS FOR SANITARY SEWER MANHOLES TAKEN FROM AS-BUILT PLANS FOR PROJECT S-4-6072 (DATED FEBRUARY 21, 1980) PREPARED BY WHITMAN, REQUARDT & ASSOCIATES.



DRAINAGE AREA MAP  
SCALE: 1" = 200'

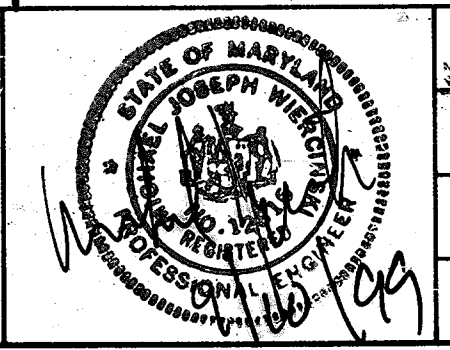


PROFILE  
SCALE: 1" = 50' HORIZ. 1" = 5' VERT.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 7/25/00  
Chief, Bureau of Engineering: *[Signature]* 7/10/00  
Chief, Bureau of Highways: *[Signature]* 7/21/00  
Chief, Transportation Projects Watershed Management Division: *[Signature]* 7/10/00

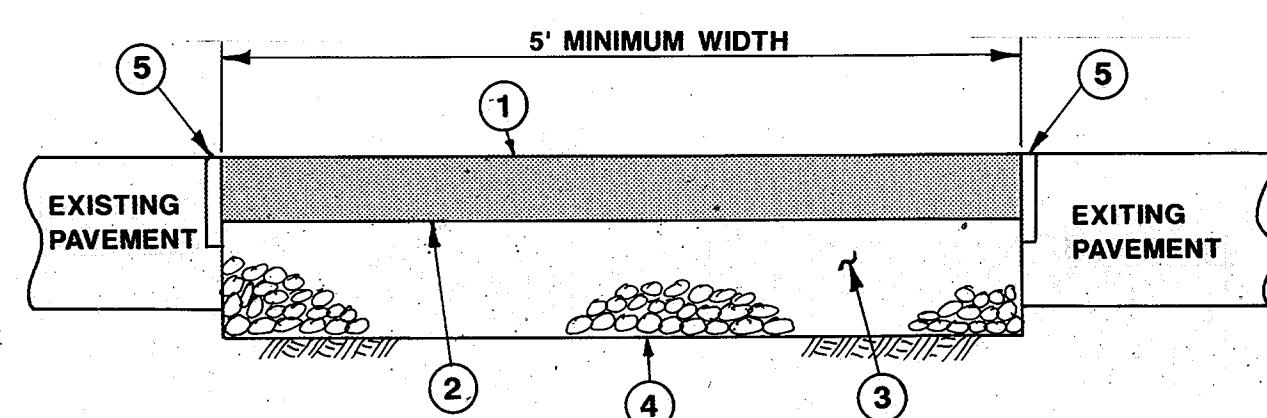
Reviewed for: **HOWARD COUNTY** S.B.D.  
and State Technical Requirements  
*[Signature]*  
USDA NATURAL RESOURCES CONSERVATION SERVICE



DES: CDS/JMS	BY: NO.	REVISION	DATE
DRN: RML			
CHK: JRL			
DATE: SEPT. 99			

ELKO DRIVE STORM DRAIN  
CAPITAL PROJECT NO D-1078  
GLENMAR SUBDIVISION  
1ST ELECTION DISTRICT

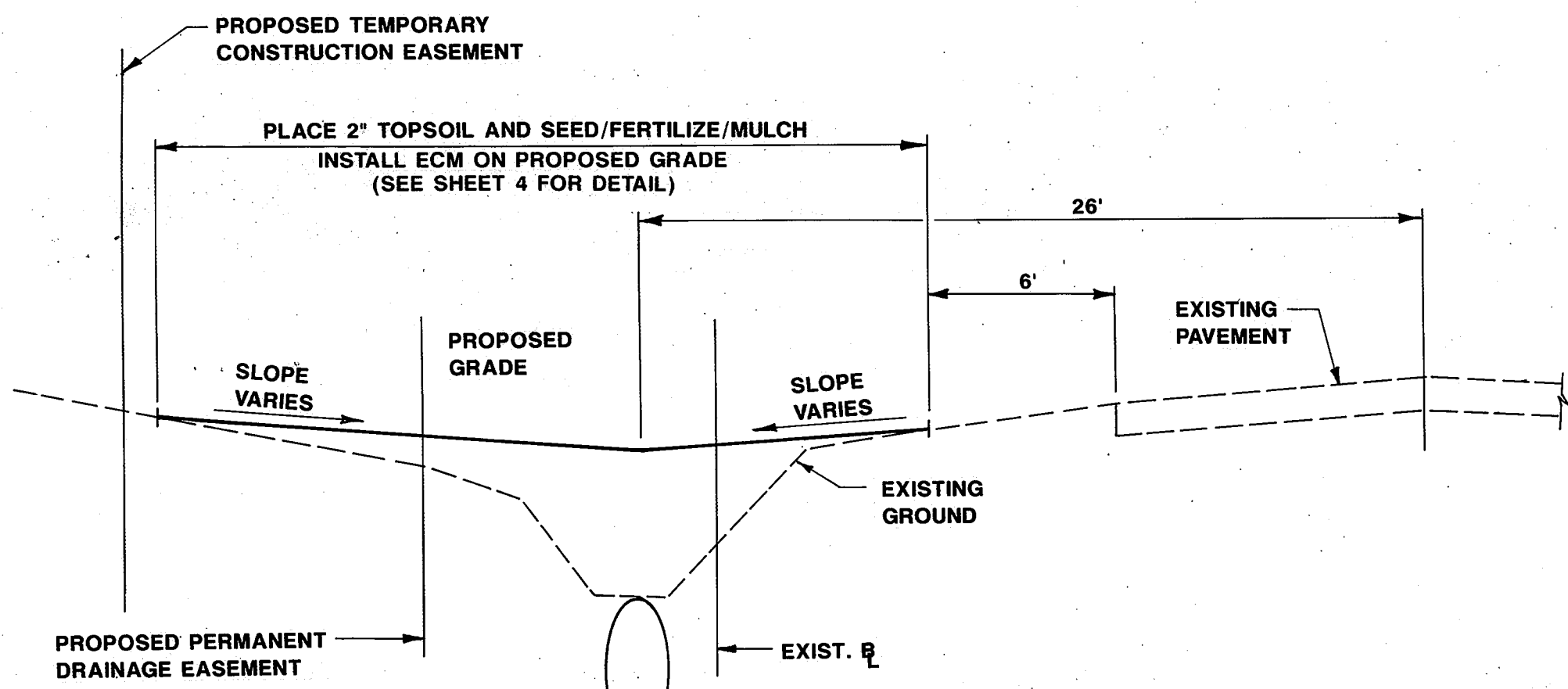
SCALE AS SHOWN  
SHEET 1 OF 5



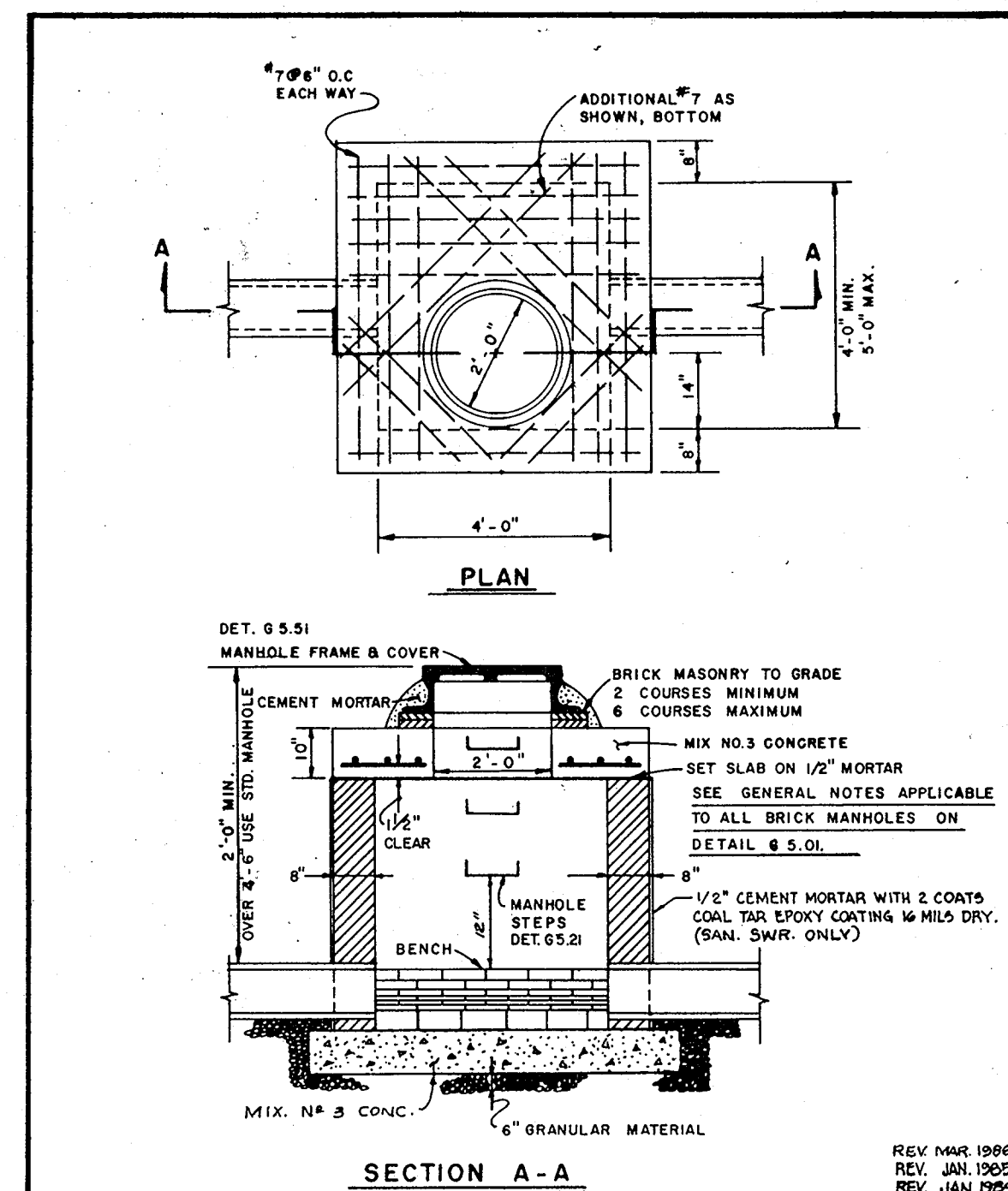
- ① 3' BITUMINOUS CONCRETE SURFACE COURSE (SC)
- ② PRIME COAT
- ③ GRADED AGGREGATE SUBBASE
- ④ APPROVED COMPACTED SUBGRADE
- ⑤ SAWCUT LINE

**BITUMINOUS PAVEMENT PATCH DETAIL**  
NOT TO SCALE

**NOTE:**  
THIS DETAIL SHOULD BE USED FOR ANY TEMPORARY PATCHING THAT MAY BE NEEDED FOR MAINTENANCE OF TRAFFIC PURPOSES.



**TYPICAL DITCH GRADING DETAIL**  
SCALE: HORIZ. 1" = 5'  
VERT. 1" = 2'



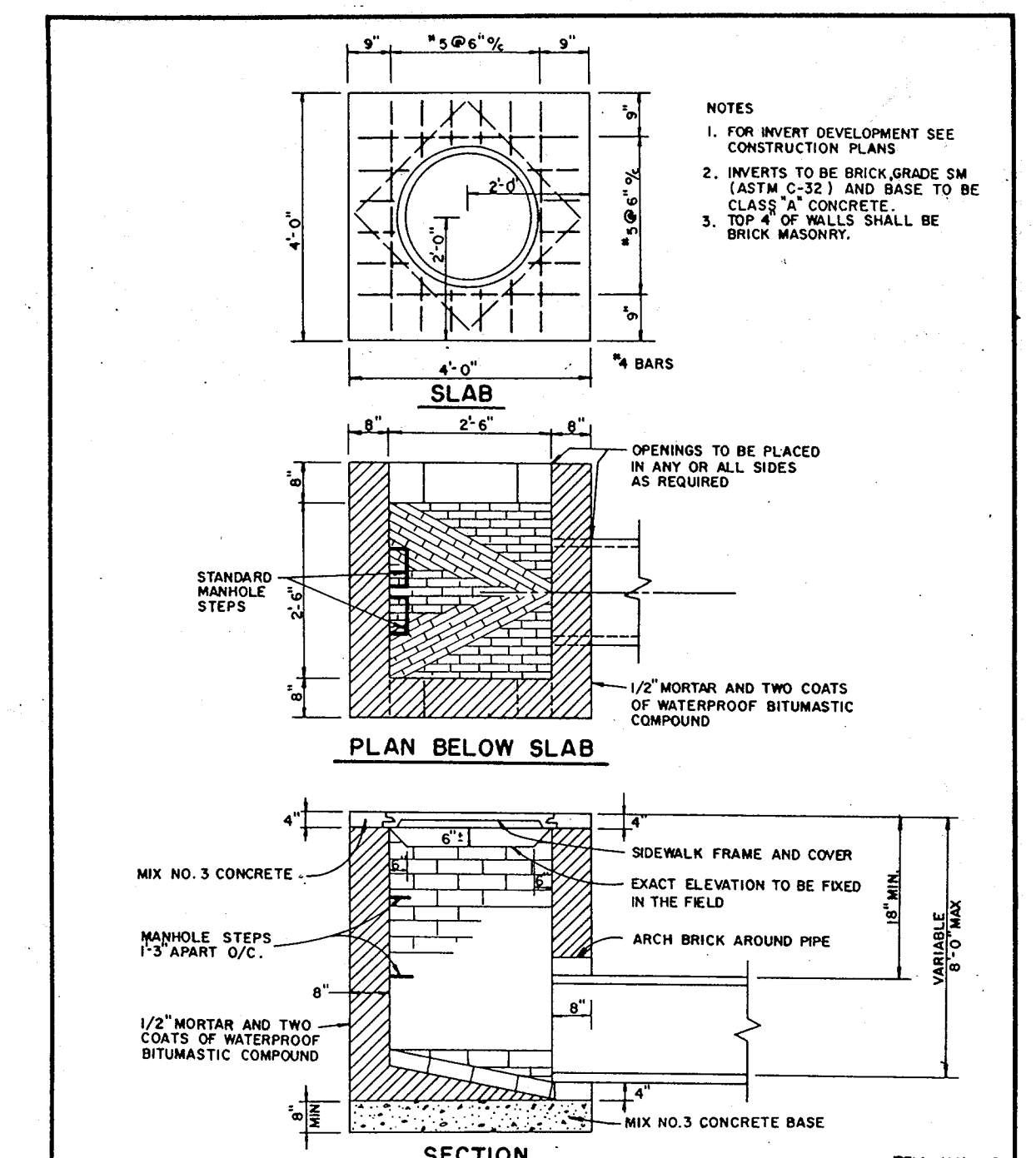
HOWARD COUNTY, MARYLAND  
DEPARTMENT OF PUBLIC WORKS  
Approved: *[Signature]* Chief - Bureau of Engineering

**SHALLOW BRICK MANHOLE**

REV. MAY 1994  
REV. JAN 1995  
REV. JAN 1997  
REV. JAN 1997

DRAWN BY: J.M.C.  
CHECKED BY: J.A.B.  
SCALE: NONE  
G.5.05

**SHALLOW MANHOLE DETAIL**  
NOT TO SCALE



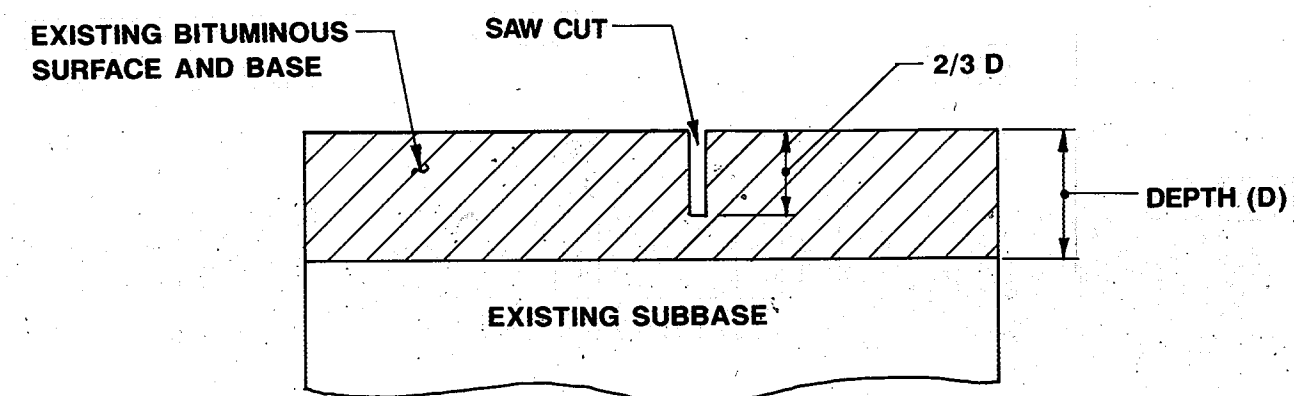
HOWARD COUNTY, MARYLAND  
DEPARTMENT OF PUBLIC WORKS  
Approved: *[Signature]* Chief - Bureau of Engineering

**TYPE "D" INLET GRATE**

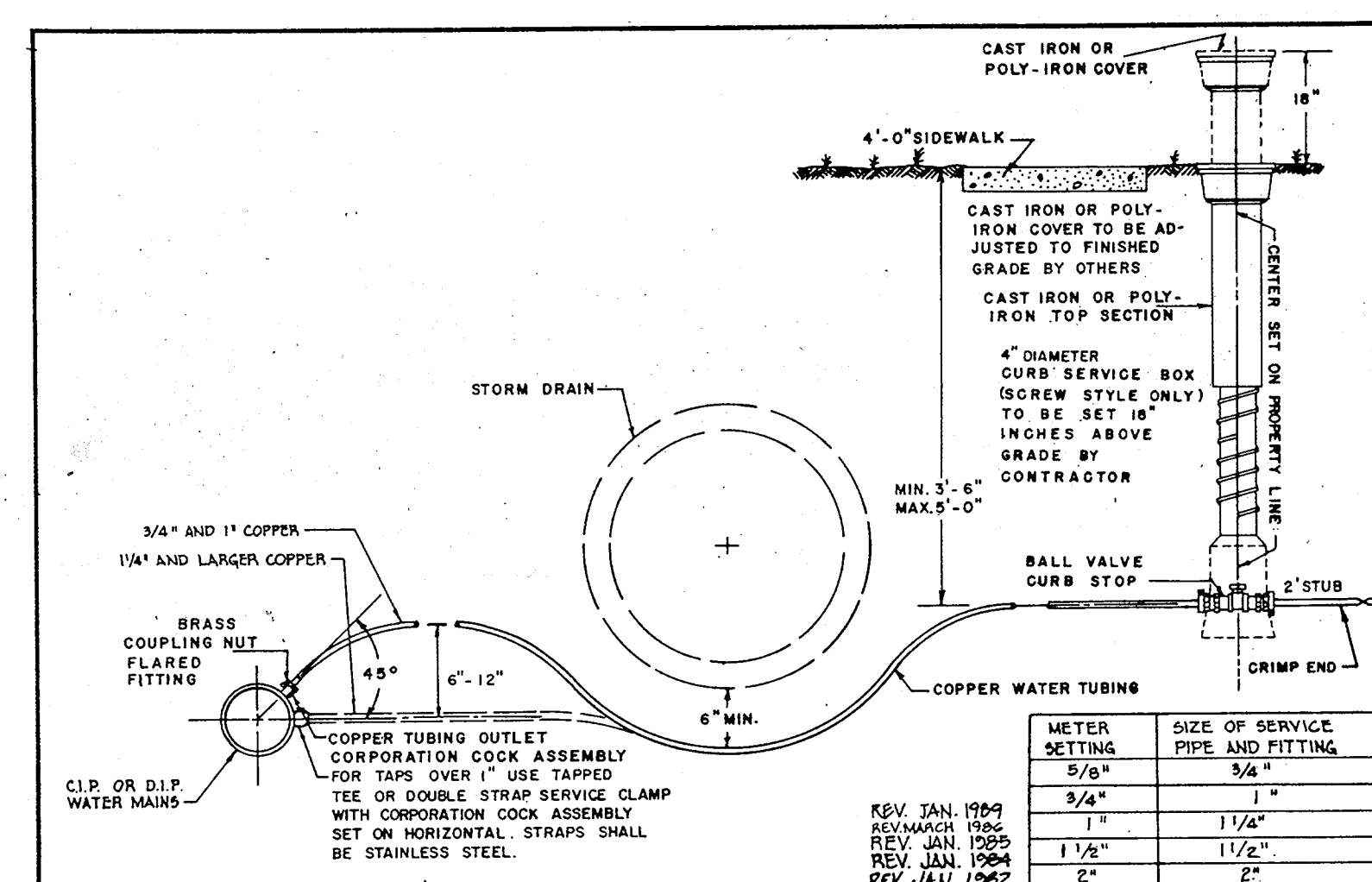
REV. JAN 1999  
REV. JAN 1997

DRAWN BY: J.M.C.  
CHECKED BY: J.A.B.  
SCALE: NONE  
G.5.05

**TYPE "D" INLET DETAIL**  
NOT TO SCALE



**SAW CUT DETAIL**  
NOT TO SCALE

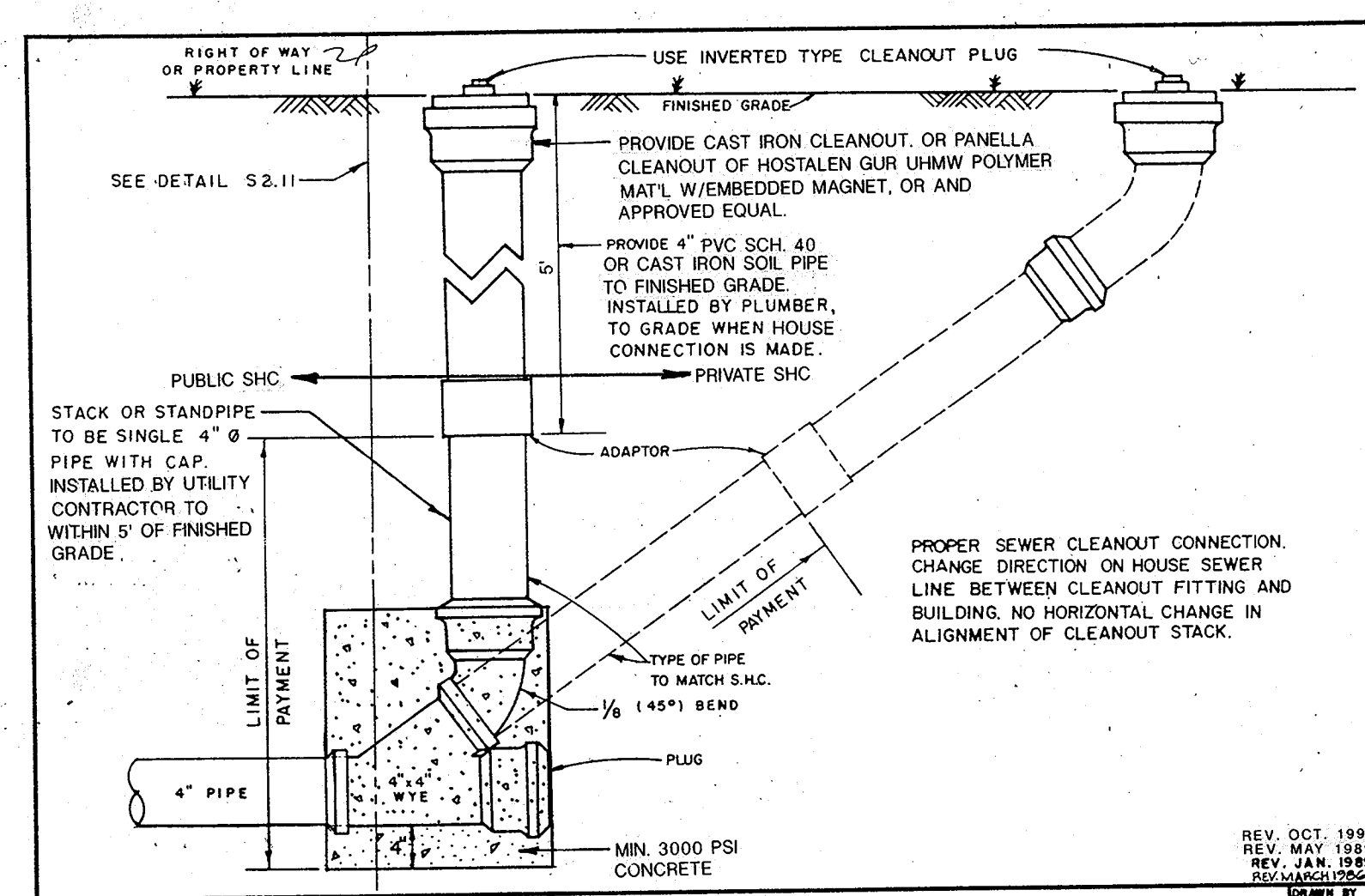


HOWARD COUNTY, MARYLAND  
DEPARTMENT OF PUBLIC WORKS  
Approved: *[Signature]* Chief - Bureau of Engineering

**WATER SERVICE CONNECTION FOR**  
5/8", 3/4", 1", 1 1/2", & 2"  
INSIDE METER SETTINGS

REV. JAN 1999  
REV. MAR 1995  
REV. JAN 1995  
REV. JAN 1994  
REV. JAN 1992

DRAWN BY: J.M.C.  
CHECKED BY: J.A.B.  
SCALE: NONE  
W 3.21



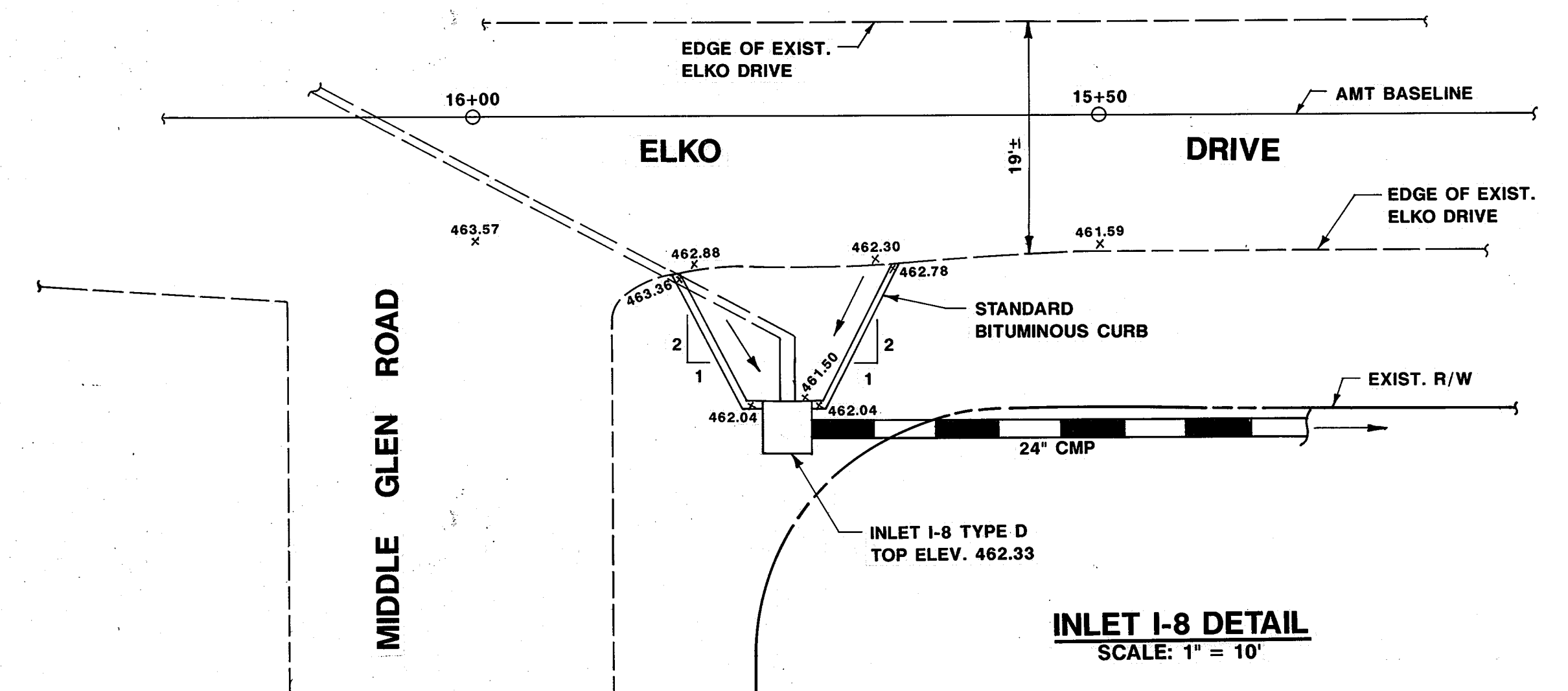
HOWARD COUNTY, MARYLAND  
DEPARTMENT OF PUBLIC WORKS  
Approved: *[Signature]* Chief - Bureau of Engineering

**CLEANOUT FOR SEWER HOUSE CONNECTION**

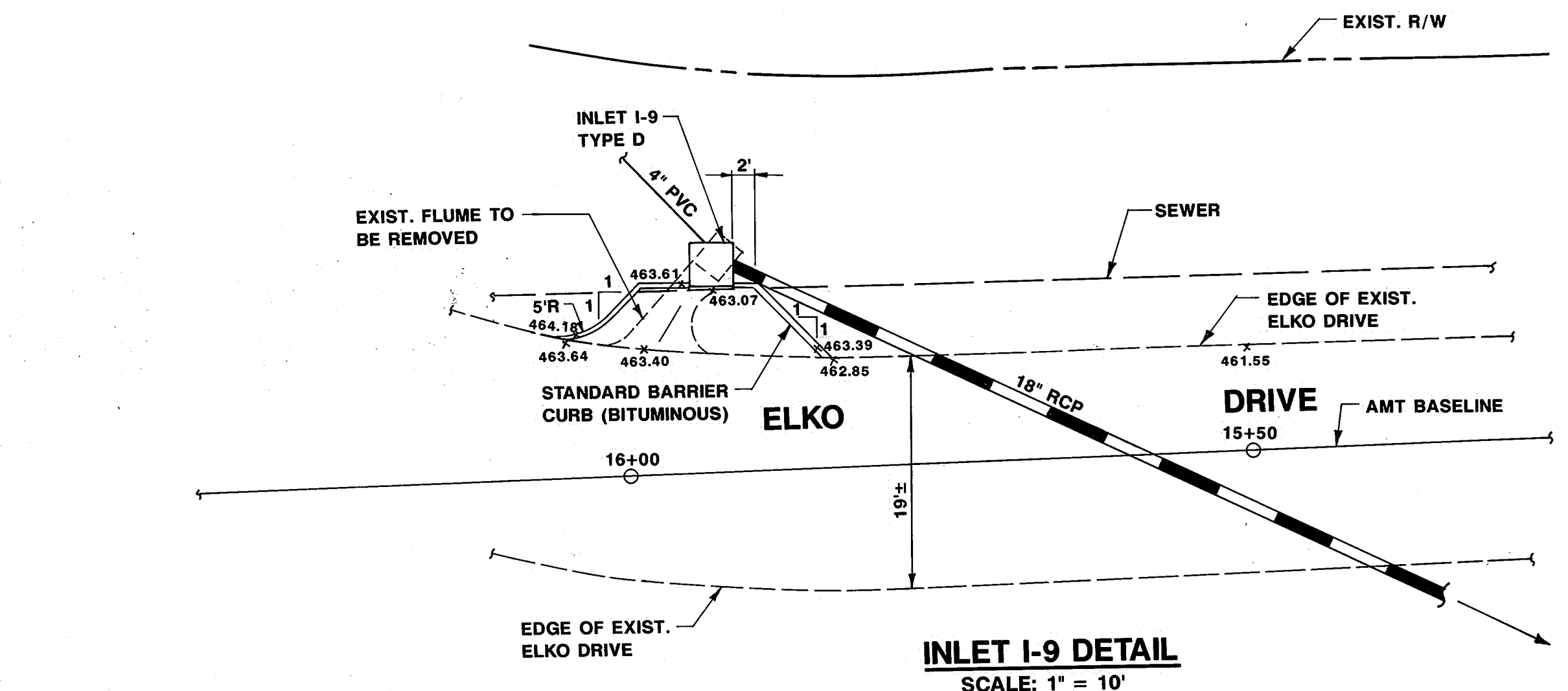
REV. OCT 1999  
REV. MAY 1993  
REV. MAR 1992

DRAWN BY: J.M.C.  
CHECKED BY: J.A.B.  
SCALE: NONE  
S-222

UTILITY ADJUSTMENT SCHEDULE		
House #	Water House Connection (WHC)	Sewer House Connection (SHC)
8313	Adjust existing water valve top to match proposed grade	Relocate existing cleanout and adjust top to match proposed grade
8309	Adjust existing water valve top to match proposed grade	Adjust existing cleanout top to match proposed grade
8305	Adjust existing water valve top to match proposed grade	Relocate existing cleanout and adjust top to match proposed grade
8301	Relocate existing water valve and adjust top to match proposed grade	Adjust existing cleanout top to match proposed grade



**INLET I-8 DETAIL**  
SCALE: 1" = 10'



**INLET I-9 DETAIL**  
SCALE: 1" = 10'

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 7/2/00  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 7/10/00  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 7-21-00  
CHIEF, BUREAU OF HIGHWAYS DATE

*[Signature]* 7/10/00  
CHIEF TRANSPORTATION PROJECT DATE

*[Signature]* 7/10/00  
WATER AND WASTE MANAGEMENT DIVISION DATE

STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
J. M. C. JOSEPH

DES: CDS/JMS					
DRN: RML					
CHK: JRL					
DATE: 9/99	BY	NO.	REVISION	DATE	600' SCALE MAP NO.

**DETAILS**

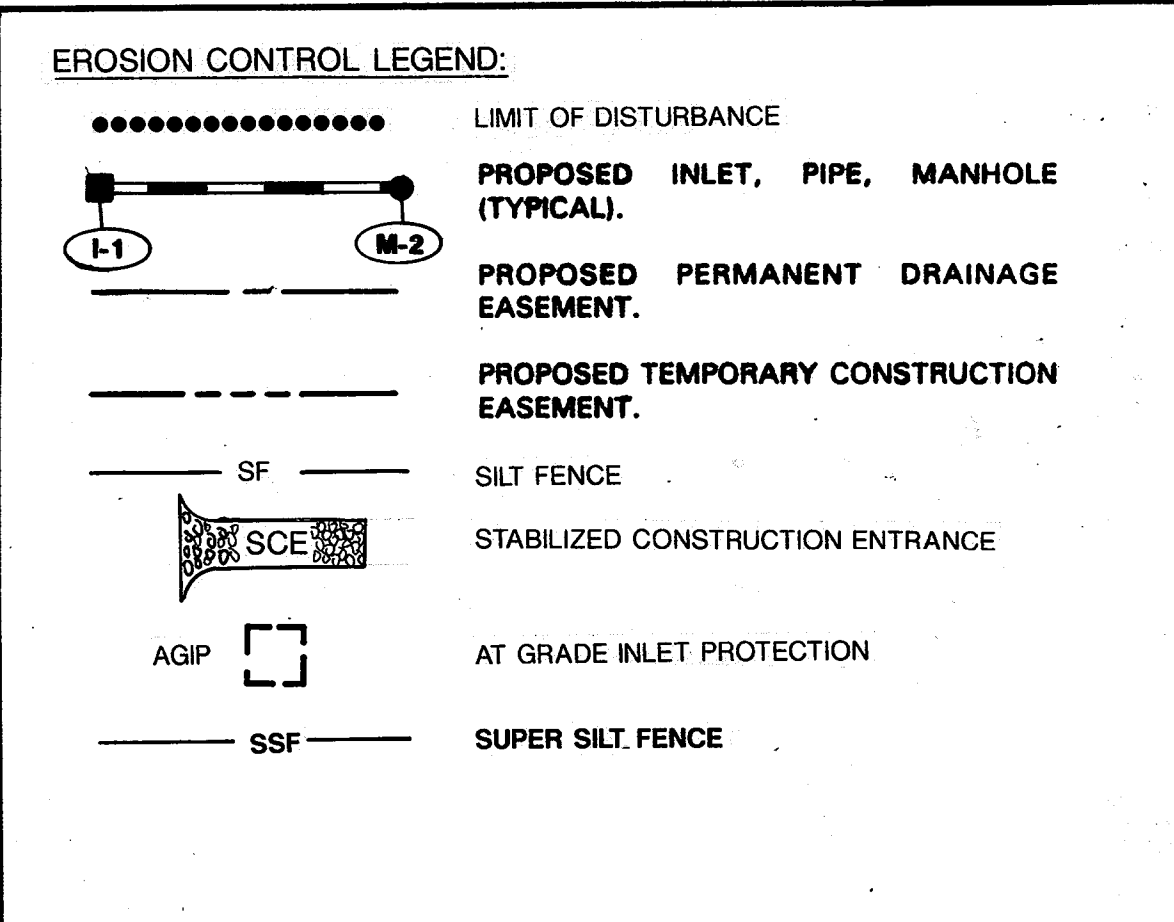
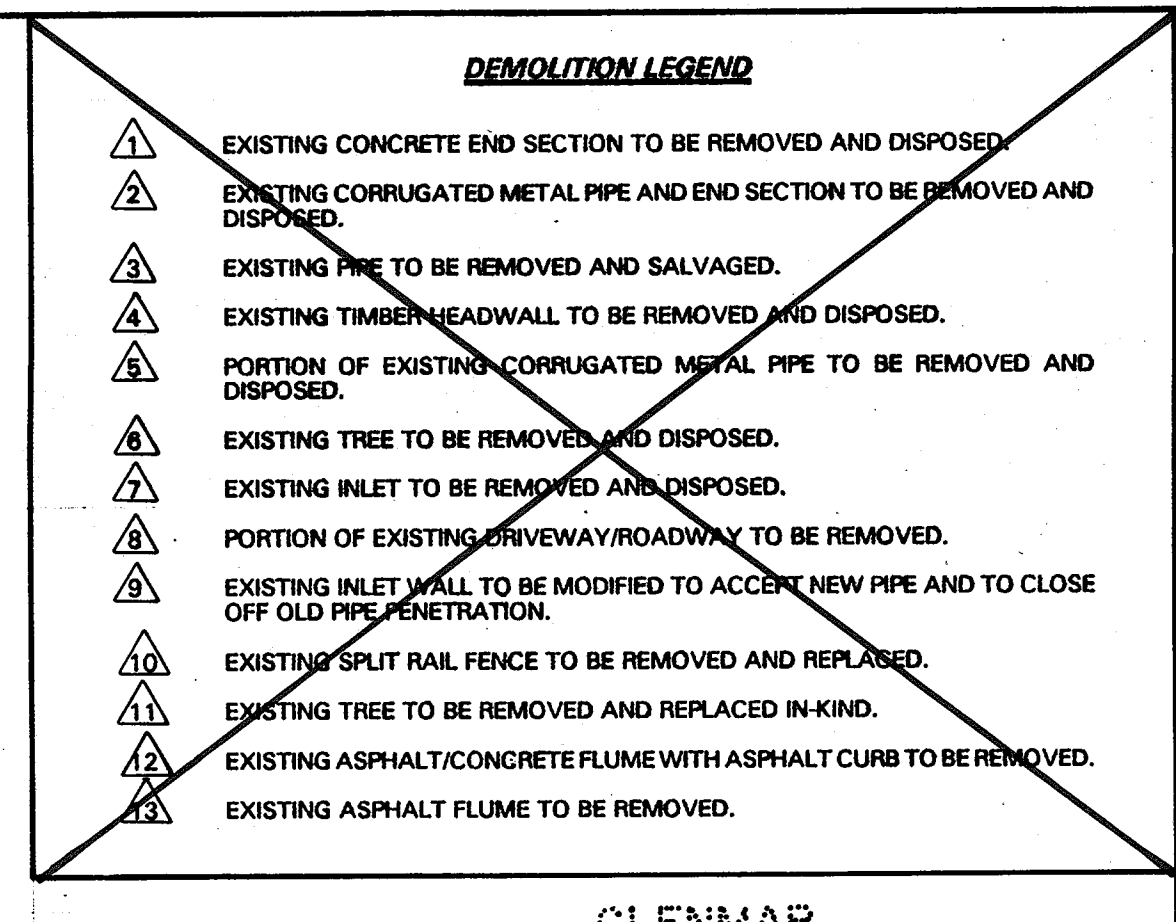
ELKO DRIVE STORM DRAIN  
CAPITAL PROJECT NO: D-1078  
GLENMAR SUBDIVISION  
1st ELECTION DISTRICT

SCALE AS SHOWN

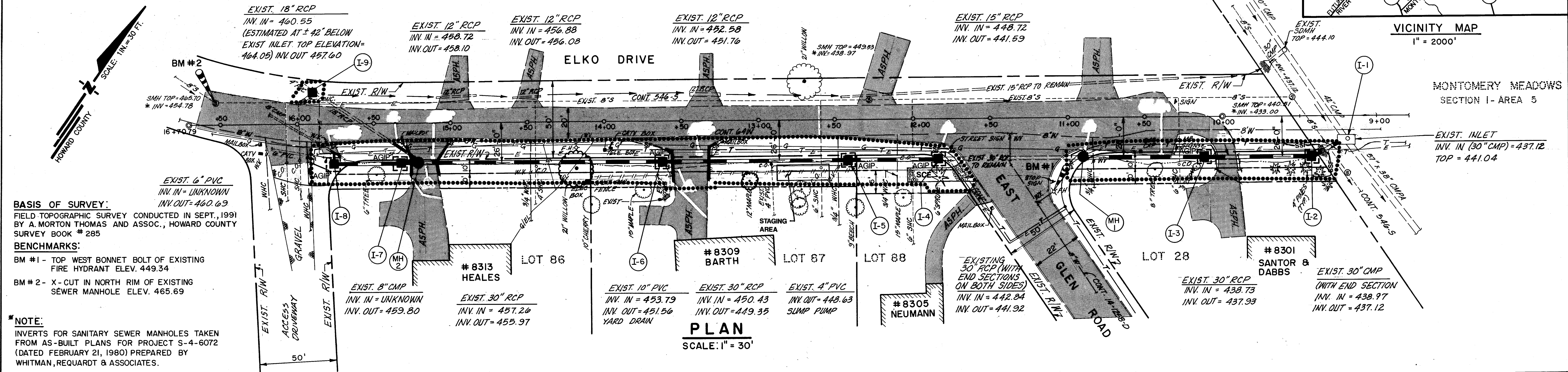
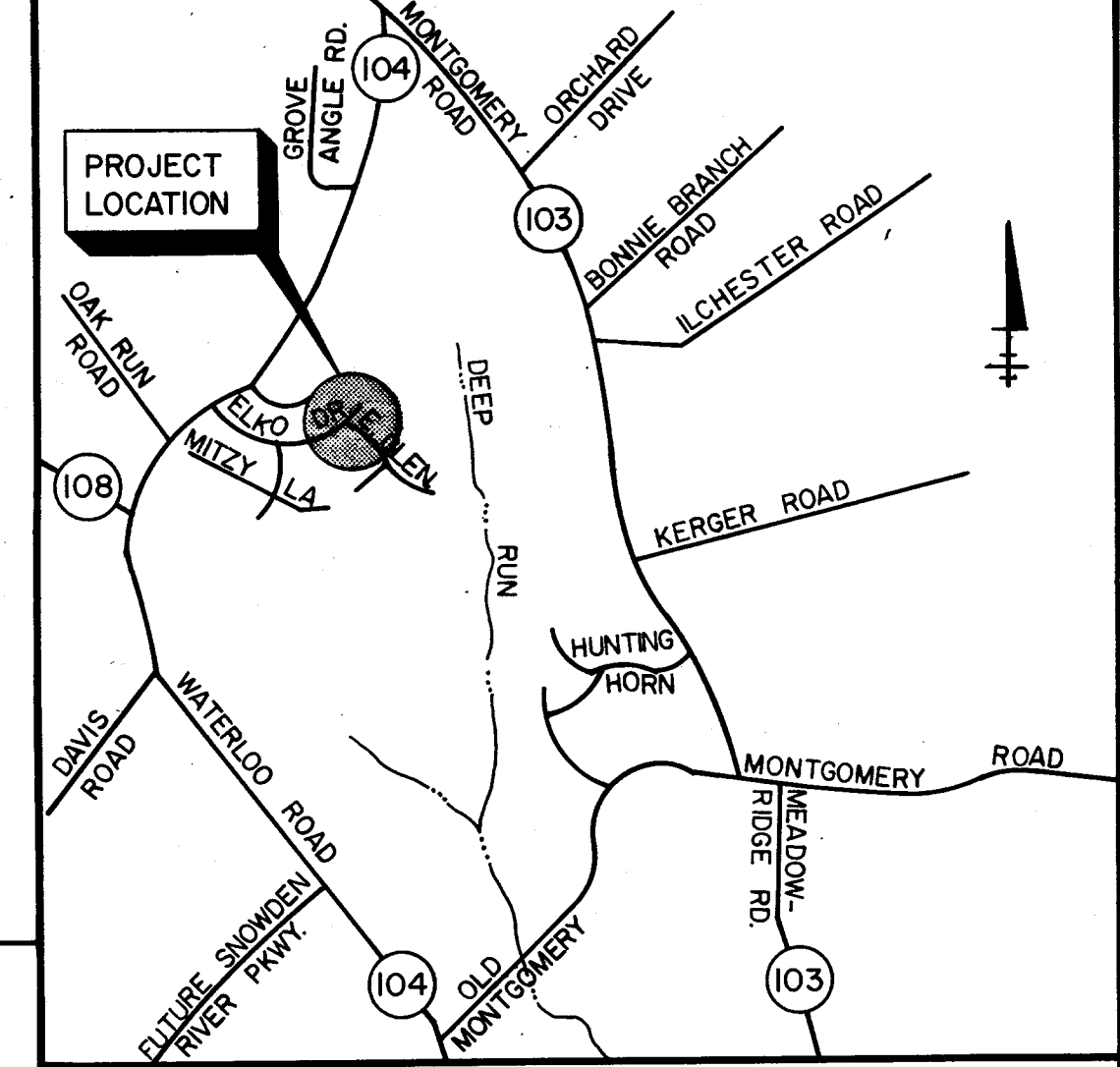
SHEET 2 OF 5

DRAINAGE		STRUCTURE		SCHEDULE		REMARKS	NO. OF OPENINGS
NO.	TYPE	STATION/OFFSET	INV. IN	INV. OUT	TOP		
I-1	A-10	9+20 12.5 LT.	434.12	433.57*	441.04	EXISTING INLET CONSTRUCTED AS PART OF MONTGOMERY MEADOWS SUBDIVISION	
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I-6	D	13+62 24' LT.	449.00	448.80	454.53	EXTEND AND CONNECT 10" PVC YARD DRAIN PIPE AT INV. 450.25'	3(S,E,W)
MH-2	SHALLOW	15+20 24' LT.	454.76	454.56	460.40	EXTEND AND CONNECT 18" RCP CROSS CULVERT AT INV. 457.35'	
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I-9	D	15+90 17' RT.		460.55	463.90	REALIGN & RECONSTRUCT EXIST. INLET AS SHOWN ON SPECIAL DETAIL PROVIDED	4(N,SE,W)

\* NOTE: INVERT TAKEN FROM MONTGOMERY MEADOW PLANS. ALL OTHERS ARE FIELD MEASURED.



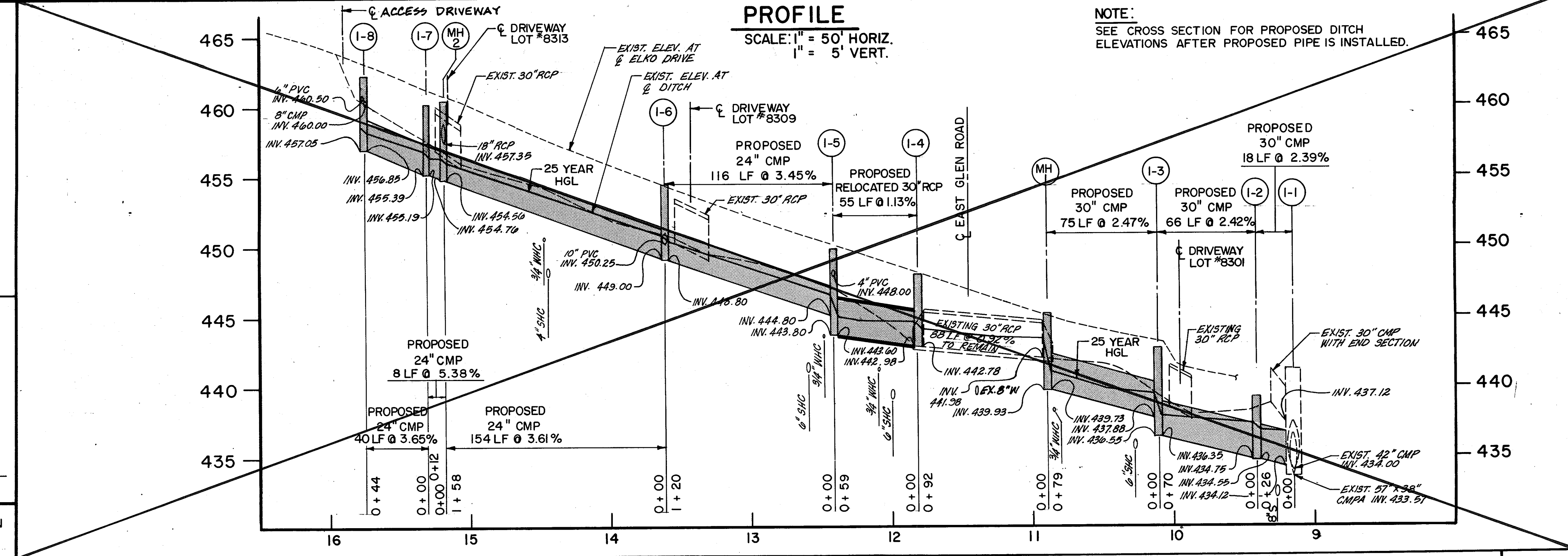
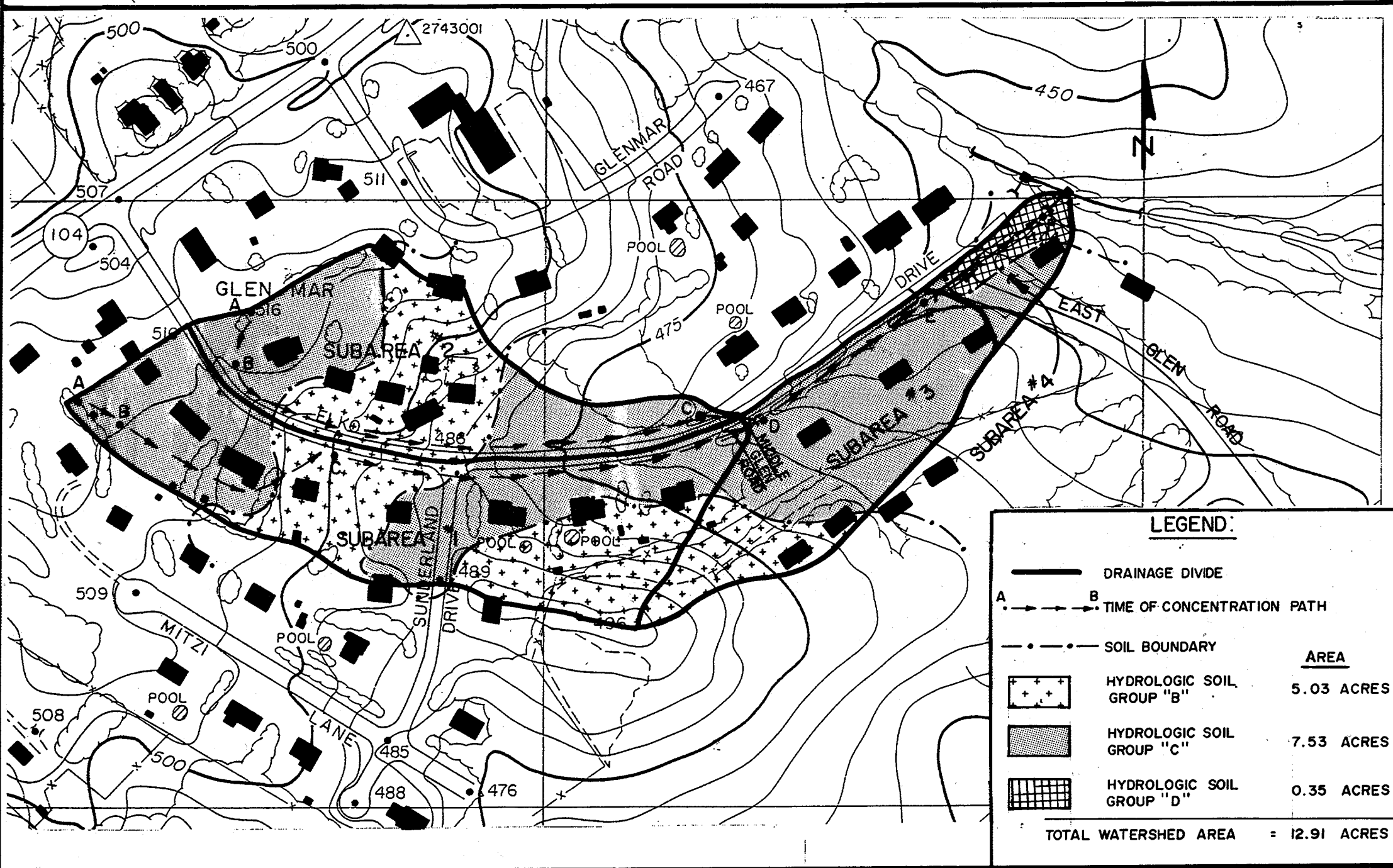
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  - THE CONTRACTOR SHALL STABILIZE AREA WITH EROSION CONTROL MATTING AND TEMPORARY SEED-MIX AT THE END OF EACH WORKDAY.



**BASIS OF SURVEY:**  
FIELD TOPOGRAPHIC SURVEY CONDUCTED IN SEPT., 1991 BY A. MORTON THOMAS AND ASSOC., HOWARD COUNTY SURVEY BOOK # 285

**BENCHMARKS:**  
BM #1 - TOP WEST BONNET BOLT OF EXISTING FIRE HYDRANT ELEV. 449.34  
BM #2 - X-CUT IN NORTH RIM OF EXISTING SEWER MANHOLE ELEV. 465.69

\*NOTE:  
INVERTS FOR SANITARY SEWER MANHOLES TAKEN FROM AS-BUILT PLANS FOR PROJECT S-4-6072 (DATED FEBRUARY 21, 1980) PREPARED BY WHITMAN, REQUARDT & ASSOCIATES.



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

7/10/00  
DATE

7/10/00  
DATE

7/10/00  
DATE

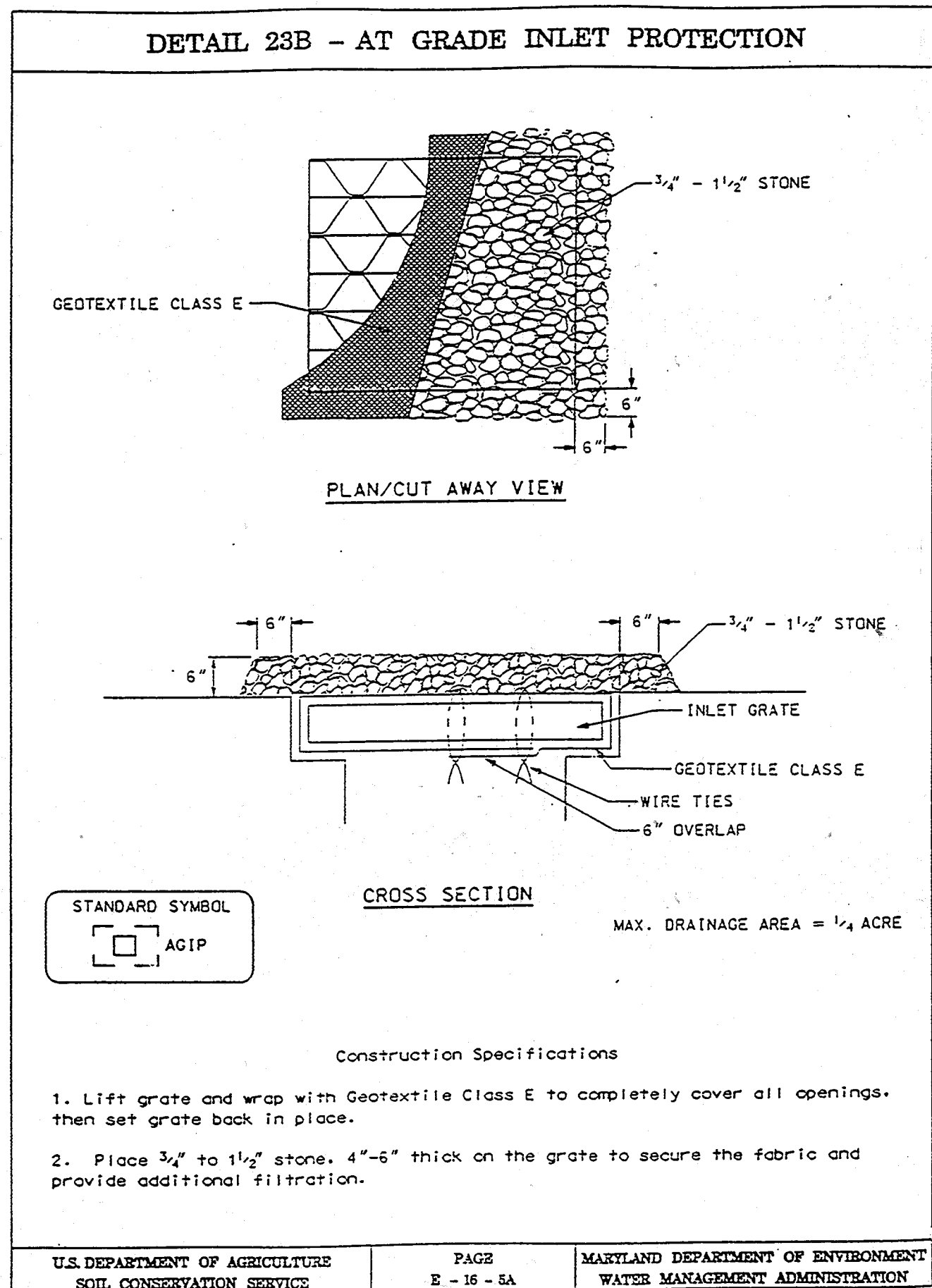
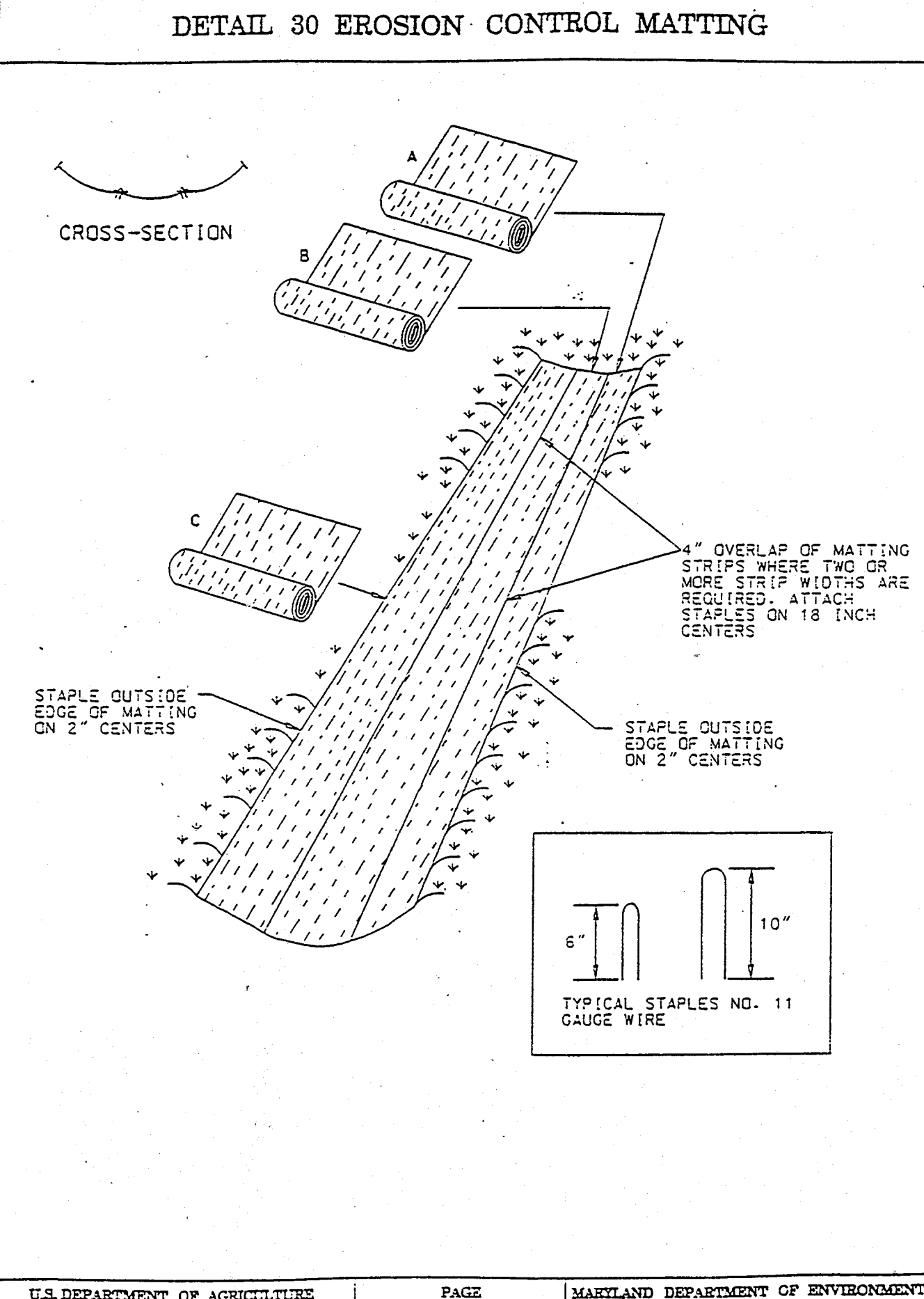
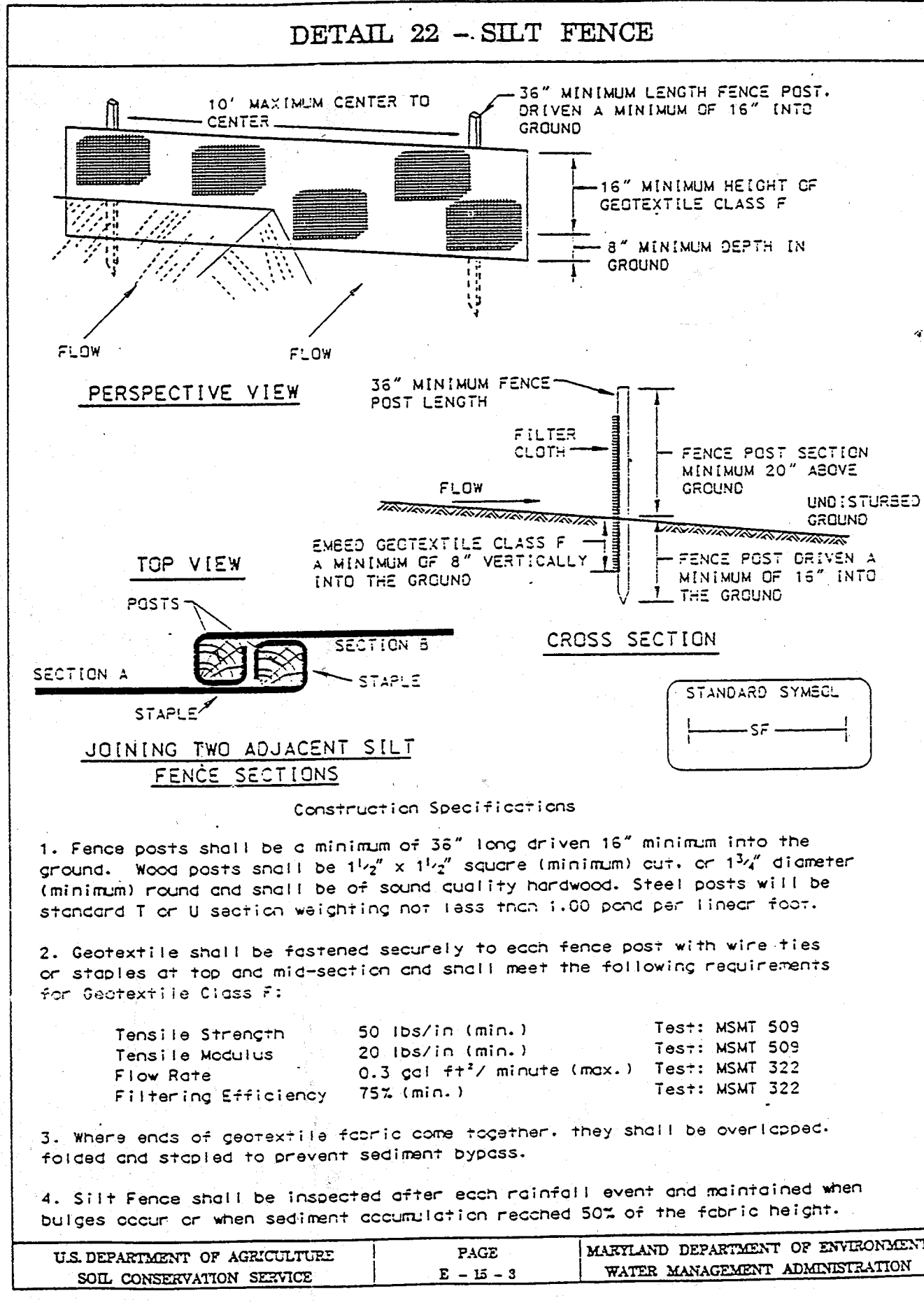
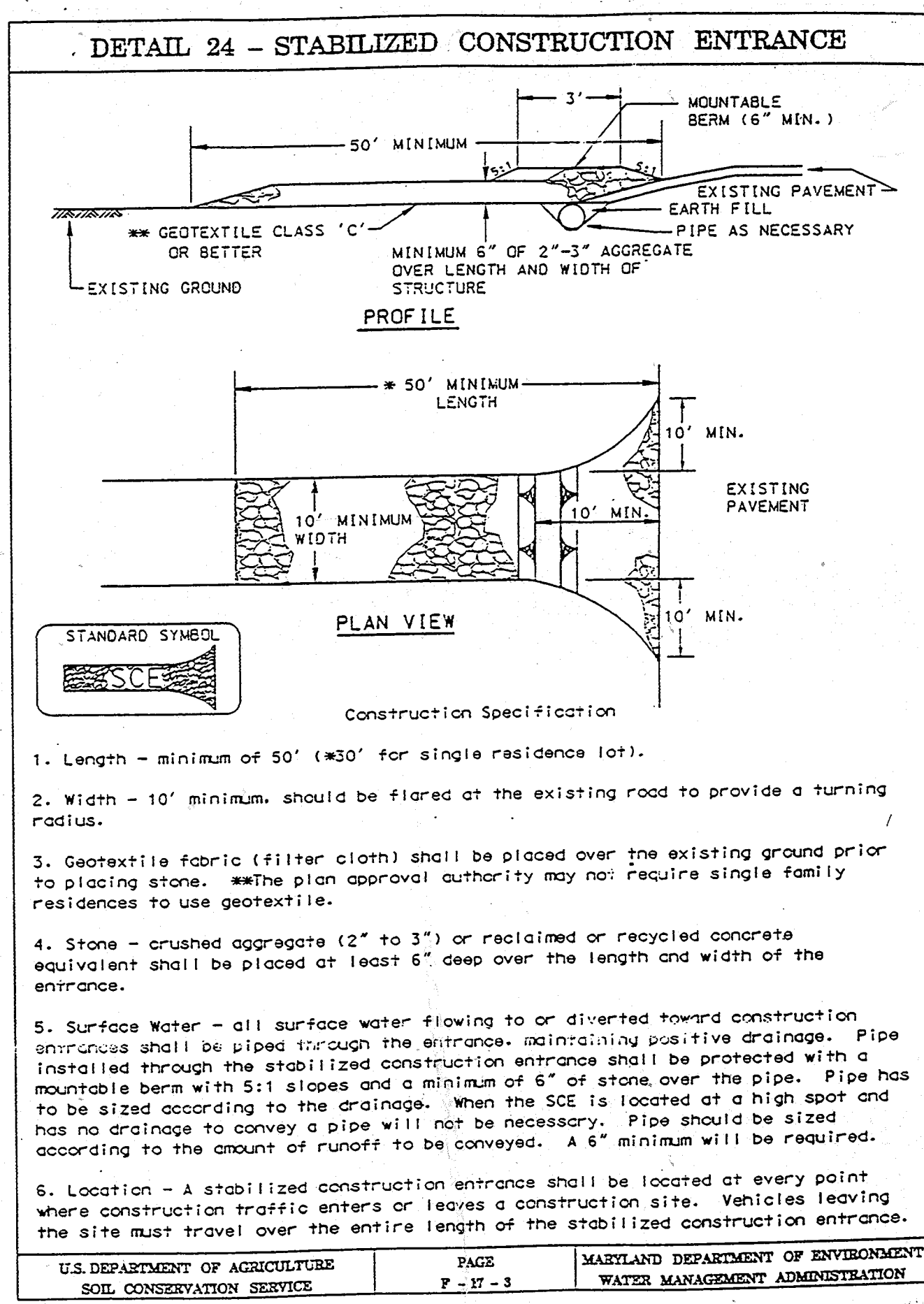
DES: TGC				
DRN: RML				
CHK: NMA				
DATE: JAN. 00	BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL PLAN

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ELKO DRIVE STORM DRAIN CAPITAL PROJECT NO. D-I078  
GLENMAR SUBDIVISION  
1st ELECTION DISTRICT

SCALE AS SHOWN  
SHEET 3 OF 5



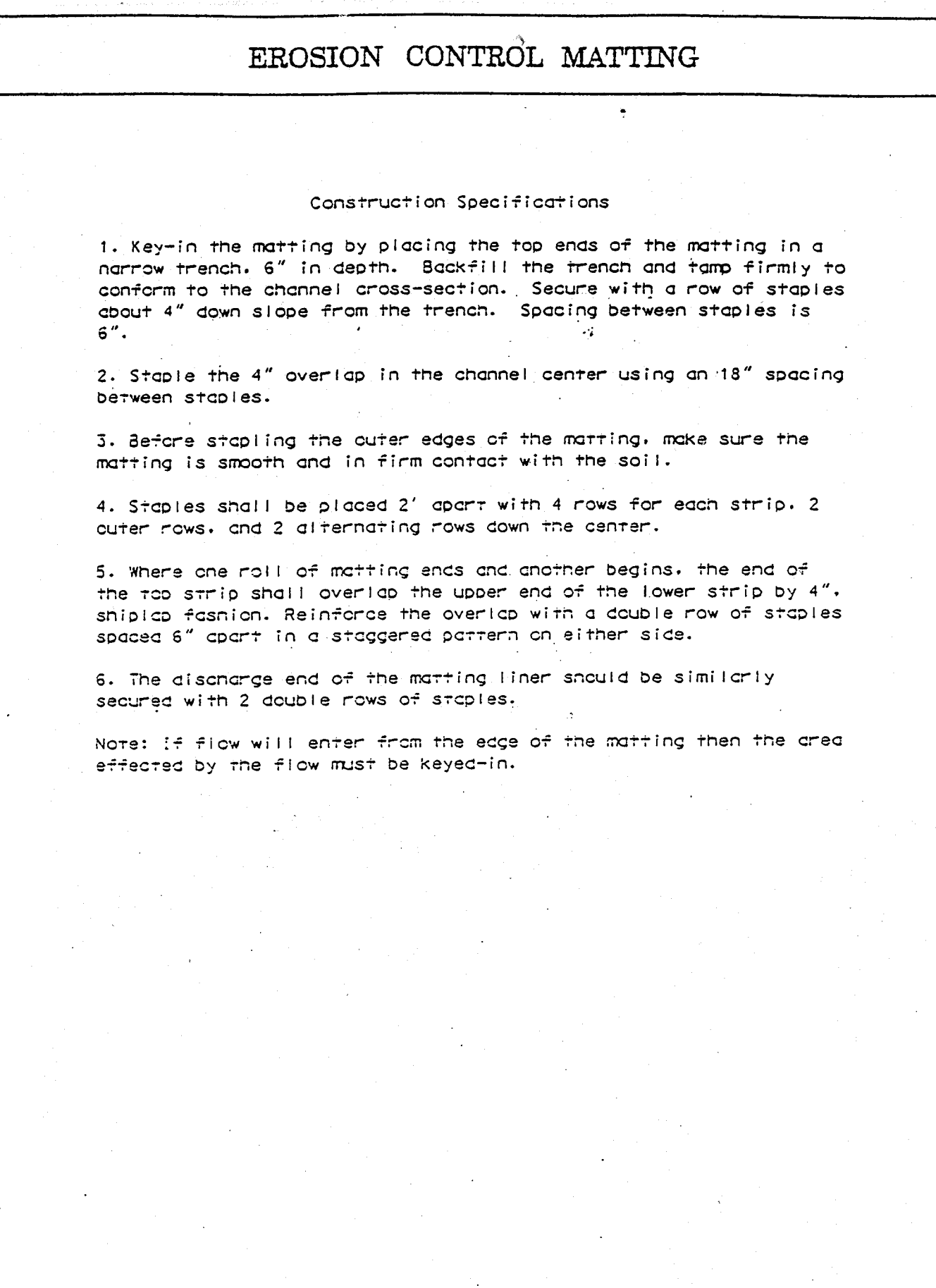
### SILT FENCE

**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



"I/We certify that all development and construction will be done according to plan sheets 1 through 5, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approval Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer \_\_\_\_\_ Date \_\_\_\_\_  
Print name below signature

"I certify that the plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer \_\_\_\_\_ Date \_\_\_\_\_  
Print name below signature

Reviewed for HOWARD SCD and Meets Technical Requirements.

USDA-Natural Resources Conservation Service Date \_\_\_\_\_

The development plan sheets 1 through 5 are approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD Date \_\_\_\_\_

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Samuel L. ...* 7/24/00  
DIRECTOR OF PUBLIC WORKS DATE

*Robert J. ...* 7/10/00  
CHIEF, BUREAU OF ENGINEERING DATE

*Charles ...* 7-21-00  
CHIEF, BUREAU OF HIGHWAYS DATE

*Elly ...* 7/10/00  
CHIEF TRANSPORTATION PROJECT DATE  
WATER MANAGEMENT DIVISION

DES: TGC					
DRN: RML					
CHK: NMA					
DATE: JAN.00					

BY	NO.	REVISION	DATE	600' SCALE MAP NO.	BLOCK NO.

EROSION AND SEDIMENT CONTROL DETAILS

SCALE AS SHOWN.

SHEET 4 OF 5

ELKO DRIVE STORM DRAIN  
CAPITAL PROJECT NO. D-I078  
GLENMAR SUBDIVISION  
1st ELECTION DISTRICT

HOWARD SOIL CONSERVATION DISTRICT (HSCD)

- 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 (315-1855)
- 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 SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO AS DESCRIBED BELOW.
- 3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 14 CALENDAR DAYS FOR ALL PERIMETER STRUCTURES, STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES AND ALL SLOPES GREATER THAN 3:1. BY 14 DAYS AS TO ALL OTHERS DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 4. ALL SEDIMENT TRAPS/BASINS, IF ANY, 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 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51) AND TEMPORARY SEEDING (SEC. 50). 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: 0.4 ACRES  
AREA TO BE ROOFED OR PAVED: N/A  
AREA TO BE VEGETATIVELY STABILIZED: N/A  
TOTAL CUT: 0.0 CU. YDS.  
TOTAL FILL: 10.0 CU. YDS.  
OFFSITE WASTE/BORROW AREA LOCATION: N/A
- 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 LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.
- 12. THE CONTRACTOR MUST NOTIFY HSCD IN WRITING AND BY TELEPHONE AT THE FOLLOWING POINTS:  
A. THE REQUIRED PRE-CONSTRUCTION MEETING.  
B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES.  
C. DURING THE INSTALLATION OF SEDIMENT BASINS IF ANY (TO BE CONVERTED INTO PERMANENT STORMWATER MANAGEMENT STRUCTURES) AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN), NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION OF EACH STEP IS MANDATORY.  
D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).  
E. PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES.  
F. PRIOR TO FINAL ACCEPTANCE.
- 13. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE AND, SHALL HAVE THEM INSPECTED AND APPROVED BY THE AGENCY INSPECTOR OR HSCD INSPECTOR PRIOR TO BEGINNING ANY OTHER EARTH DISTURBANCE OR GRADING. LOCATION ADJUSTMENTS MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE HSCD INSPECTOR. THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM HSCD INSPECTOR AND AGENCY INSPECTOR. THE CONTRACTOR MUST OBTAIN PRIOR AGENCY AND HSCD APPROVAL FOR CHANGES TO THE SEDIMENT CONTROL PLAN AND/OR SEQUENCE OF CONSTRUCTION.
- 14. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.
- 15. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE HSCD INSPECTOR AND AGENCY INSPECTOR.
- 16. THE CONTRACTOR SHALL APPLY SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS AND STOCKPILES WITHIN FOURTEEN (14) CALENDAR DAYS AFTER STOPPING AND GRADING ACTIVITIES HAVE CEASED IN THE AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT MAY BE REDUCED TO SEVEN (7) DAYS FOR SENSITIVE AREA).
- 17. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE CONTRACTOR SHALL STABILIZE AND HAVE ESTABLISHED PERMANENT STABILIZATION USING SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED SEED MIXTURE WITH REQUIRED SOD AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASONS WHERE THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. FINISHED GRADING SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE, BUT NO LATER THAN FOURTEEN (14) CALENDAR DAYS AFTER ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, TEMPORARY SEED AND ANCHORED STRAW MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE APPLIED BY MARCH 15 OR EARLIER IF GROUND AND WEATHER CONDITIONS ALLOW.
- 18. THE SITE'S APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, DAILY LOG BOOKS AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF HSCD AND AGENCY RESPONSIBLE FOR PROJECT.
- 19. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRaversING THE SLOPES OR BY INSTALLING PROTECTIVE DEVICES TO LOWER THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPES AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. PROTECTIVE METHODS MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.
- 20. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING, RIPRAP OR BY THE APPROVED STABILIZATION MEASURES.
- 21. TEMPORARY SEDIMENT CONTROL DEVICES MAY BE REMOVED, WITH PERMISSION OF HSCD INSPECTOR AND AGENCY INSPECTORS, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.
- 22. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE BOUND BY THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.
- 23. FOR FINISHED GRADING, THE CONTRACTOR SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO PREVENT WATER FROM STANDING ON THE SURFACE MORE THAN TWENTY (20) HOURS AFTER THE END OF A RAINFALL EXCEPT IN DESIGNATED DRAINAGE COURSES AND SLOPES WHICH MAY DRAIN AND BE STABILIZED AS EARLY AS POSSIBLE. 48 HOURS AFTER THE END OF RAINFALL, AREAS DESIGNED TO HAVE STANDING WATER SHALL NOT BE REQUIRED TO MEET THIS REQUIREMENT.
- 24. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A FOUNDATION WHICH IS EXISTING OR UNDER CONSTRUCTION. NO STRUCTURE MAY BE CONSTRUCTED WITHIN 20 FEET OF AN ACTIVE SEDIMENT TRAP OR BASIN.
- 25. ALL TRAP DEPTH DIMENSIONS ARE RELATIVE TO THE OUTLET ELEVATION. ALL TRAPS MUST HAVE A STABLE OUTFALL. ALL TRAPS AND BASINS SHALL HAVE STABLE INFLOW POINTS.
- 26. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. REFER TO APPROPRIATE SPECIFICATIONS FOR TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, SODDING AND GROUND COVER.
- 27. TEMPORARY SEDIMENT TRAP(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A POINT ONE HALF THE DEPTH BETWEEN THE OUTLET CREST AND THE BOTTOM OF THE TRAP. SEDIMENT BASINS SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE HALF THE DEPTH BETWEEN THE DEMATERING ELEVATION AND THE BOTTOM OF THE BASIN.
- 28. SEDIMENT REMOVED FROM TRAPS AND BASINS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR TREE-SAVE AREA. WHEN PUMPING SEDIMENT LADEN WATER, THE DISCHARGE MUST BE DIRECTED TO A SEDIMENT TRAPPING DEVICE PRIOR TO BE RELEASED FROM THE SITE. A SUMP PIT MAY BE USED IF SEDIMENT TRAPS THEMSELVES ARE BEING PUMPED OUT.
- 29. WHEN DEEMED APPROPRIATE BY THE ENGINEER OR INSPECTOR, SEDIMENT BASINS AND TRAPS MAY NEED TO BE SURROUNDED WITH AN APPROVED SAFETY FENCE. THE FENCE MUST CONFORM TO LOCAL ORDINANCES AND REGULATIONS. THE REGULATOR OR OWNER SHALL CHECK WITH LOCAL BUILDING OFFICIALS ON APPLICABLE SAFETY REQUIREMENTS. WHERE SAFETY FENCE IS DEEMED APPROPRIATE AND LOCAL ORDINANCES DO NOT SPECIFY FENCING SIZES AND TYPES, THE FOLLOWING SHALL BE USED AS A MINIMUM STANDARD: THE SAFETY FENCE MUST BE MADE OF WELDED WIRE AND SHALL BE 42 INCHES HIGH, WITH A MINIMUM OF THREE (3) PARTS THAT ARE 8 FEET, HAVE MESH OPENINGS NO GREATER THAN 2 INCHES IN WIDTH AND 3 INCHES IN HEIGHT WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED AND IN GOOD CONDITION AT ALL TIMES.

- 30. SEDIMENT CONTROL FOR UTILITY CONSTRUCTION FOR AREAS OUTSIDE OF DESIGNED CONTROLS OR AS DIRECTED BY ENGINEER OR HSCD INSPECTOR:  
(a) CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK.  
(b) EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.  
(c) TRENCHES FOR UTILITY INSTALLATIONS SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAT CAN BE COMPLETED THE SAME DAY, UNLESS:  
(d) TEMPORARILY LEFT FILLS SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.

31. OFFSITE SPOIL OR BORROW AREAS ON STATE OR FEDERAL PROPERTY MUST HAVE PRIOR APPROVAL BY HSCD AND OTHER APPLICABLE STATE, FEDERAL, AND LOCAL AGENCIES OTHERWISE, APPROVAL MUST BE GRANTED BY THE LOCAL AUTHORITIES. ALL WASTE AND BORROW AREAS OFFSITE MUST BE PROTECTED BY SEDIMENT CONTROL MEASURES AND STABILIZED.

32. SITES WHERE INFILTRATION DEVICES ARE USED FOR THE CONTROL OF STORMWATER, EXTREME CARE MUST BE TAKEN TO PREVENT RUNOFF FROM UNSTABILIZED AREAS FROM ENTERING THE STRUCTURE DURING CONSTRUCTION. SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST HAVE BOTTOM ELEVATIONS AT LEAST TWO (2) FEET HIGHER THAN THE FINISH GRADE BOTTOM ELEVATION OF THE INFILTRATION PRACTICE, WHEN CONVERTING A SEDIMENT TRAP TO AN INFILTRATION DEVICE, ALL ACCUMULATED SEDIMENT MUST BE REMOVED AND DISPOSED PRIOR TO FINISH GRADING OF INFILTRATION DEVICE.

33. WHEN A STORM DRAIN SYSTEM OUTFALL IS DIRECTED TO A SEDIMENT TRAP OR SEDIMENT BASIN AND THE SYSTEM IS TO BE USED FOR TEMPORARY CONVEYING SEDIMENT LADEN WATER, ALL STORM DRAIN INLETS IN NON-SUMP AREAS SHALL HAVE TEMPORARY ASPHALT BERMS CONSTRUCTED AT THE TIME OF BASE PAVING TO DIRECT GUTTER FLOW INTO THE INLETS TO AVOID SURCHARGING AND OVERFLOW OF INLETS IN SUMP AREAS.

SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- A. SITE PREPARATION  
I. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OR PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BANDES.  
II. PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING.  
III. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREA OVER 4 ACRES.
- B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)  
I. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY THE UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSIS.  
II. FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FINE FLOWING, AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL BE APPLIED AS THEY ARE FULLY LABELED ACCORDING TO APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADE NAME OR TRADEMARK, AND WARRANTY OF THE PRODUCER.  
III. LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST 50% WILL PASS THROUGH A #100 MESH SIEVE, AND 98 TO 100% WILL PASS THROUGH A #20 MESH SIEVE.
- C. SEEDBED PREPARATION  
I. TEMPORARY SEEDING  
a. SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3 INCHES TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS, CHISEL PLOWS, OR RIPPER MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT SHOULD NOT BE ROLLED OR DRAGGED SMOOTH, BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.  
b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.  
c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.  
II. PERMANENT SEEDING  
a. MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT:  
1. SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.  
2. SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM)  
3. THE SOIL SHALL CONTAIN LESS THAN 40% CLAY, BUT ENOUGH FINE GRAINED MATERIAL (>30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVERGRASS OR SEROLEA LESPEDEZIA IS TO BE PLANTED, THEN A SANDY SOIL (<30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.  
4. SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.  
5. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.  
6. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 2 AND SPECIFICATIONS FOR TOPSOIL. OF THE 1984 MD STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.  
b. AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAININGS SHALL BE MAINTAINED IN A TRUE AND EVEN GRADE, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE.  
c. APPLY SOIL AMENDMENTS AS PER SOIL TEST OR AS INCLUDED IN THE CONTRACT DOCUMENTS.  
d. MIX SOIL AMENDMENTS INTO THE TOP 3 - 5 INCHES OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE; REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION TO LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE, STEEP SLOPES (STEEPER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 1 - 3 INCHES OF SOIL SHOULD BE LOOSE AND FRAGILE. SEEDBED LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.

D. SEED SPECIFICATIONS  
I. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED SHALL HAVE BEEN TESTED WITHIN SIX MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB.  
NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.  
II. INOCULANT - THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 - 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE INOCULANT LESS EFFECTIVE.

SECTION III - PERMANENT SEEDING

SEEDING GRASS AND LEGUMES TO ESTABLISH GROUND COVER FOR A MINIMUM PERIOD OF ONE YEAR ON DISTURBED AREAS GENERALLY RECEIVING LOW MAINTENANCE.

SECTION IV - SOD  
TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER)

- A. GENERAL SPECIFICATIONS  
I. CLASS OF TURFGRASS SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED OR APPROVED. SOIL LABELS SHALL BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.  
II. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" PLUS OR MINUS 1/4" AT THE TIME OF CUTTING. MEASUREMENT FOR SOIL THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH. INDIVIDUAL PILES OF SOD SHALL BE CUT TO THE SUPPLIER'S WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN EDGES WILL NOT BE ACCEPTABLE.

III. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

- E. METHODS OF SEEDING  
I. HYDROSEEDING - APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER), BROADCAST OR DROP SEEDER, OR A CULTRIPACER SEEDER.  
II. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES AMOUNTS WILL NOT EXCEED THE FOLLOWING:  
NITROGEN - MAXIMUM OF 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHORUS); 200 POUNDS/ACRE; K2O (POTASSIUM); 200 POUNDS/ACRE.  
III. LIME - USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

IV. SEED AND FERTILIZER SHALL BE MIXED ON SITE, AND SEEDING SHALL BE DONE IMMEDIATELY WITHOUT INTERRUPTION.

II. DRY SEEDING - THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.  
A. SEED SPREAD SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY OR PERMANENT SEEDING SUMMARIES. THE SEEDING AREA SHALL THEN BE ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.  
B. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

III. DRILL OR CULTRIPACER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.  
A. CULTRIPACER SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/2 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

B. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

F. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)  
I. STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLY BRIGHT IN COLOR, AND SHALL NOT BE MUSTY, MOILED, DECAYED, OR EXCESSIVELY DUSTY, AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW.

II. WOOD CELLULOSE FIBER MULCH (WCFM)  
A. WCWM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.  
B. WCWM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORM GREENING SLURRY.

C. WCWM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.  
D. WCWM SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER NORMAL APPLICATION CONDITIONS. FERTILIZER, AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL SHALL FORM A FLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOSTLY ADSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDINGS.

E. WCWM SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.  
F. WOOD CELLULOSE FIBER MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 1 MM, DIAMETER APPROXIMATELY 1 MM, pH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6% MAXIMUM, AND WATER HOLDING CAPACITY OF 90% MINIMUM.

NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE A STAND OF ONE SPECIES OF GRASS IS DESIRED.  
G. MULCHING SEEDED AREAS - MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

I. IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AND PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE SEEDING SEASON RETURNS, AND SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.

II. WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1 AND TWO INCHES. MULCH SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE.

III. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS. PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

H. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON SIZE OF AREA AND EROSION HAZARD.  
I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS IS THE MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE. CREATING CREEPS IN SUCH SITUATIONS, THIS PRACTICE SHOULD BE USED ON THE CONTOUR, IF POSSIBLE.

II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LBS./ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

III. APPLICATIONS OF LIQUID BINDERS SHOULD BE APPLIED HEAVIER AT EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. THE REMAINDER OF AREA SHOULD BE UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS - SYNTHETIC BINDERS SUCH AS ACRYLIC DRL (AGRO-TACK), DCA-70, PETROSEAT, TERRA TACK II, TERRA TACK JR, OR OTHER APPROVED EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH.

IV. LIGHTWEIGHT: PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

SECTION V - TURFGRASS ESTABLISHMENT

AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. AREAS TO RECEIVE SEED SHALL BE TILLED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVELLED, AND RAKED TO PREPARE A PROPER SEEDBED. STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER SHALL BE REMOVED. THE RESULTING SEEDBED SHALL BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

NOTE: CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED CONTROL PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

A. TURFGRASS MIXTURES  
I. KENTUCKY BLUEGRASS - FULL SUN MIXTURE - FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND THE EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS/1000 SQUARE FEET. A MINIMUM OF UNWEEDED TURFGRASS CULTIVARS SHOULD BE CHOSEN, RANGING FROM A MINIMUM OF 10% TO A MAXIMUM OF 35% OF THE MIXTURE BY WEIGHT.

II. KENTUCKY BLUEGRASS/PERENNIAL RYE - FULL SUN MIXTURE - FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE/1000 SQUARE FEET. A MINIMUM OF 3 KENTUCKY BLUEGRASS CULTIVARS MUST BE CHOSEN, WITH EACH CULTIVAR RANGING FROM 10% TO 35% OF THE MIXTURE BY WEIGHT.

III. TALL FESCUE/KENTUCKY BLUEGRASS - FULL SUN MIXTURE - FOR USE IN DROUGHT TALL FESCUE AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT. FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS/1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

IV. KENTUCKY BLUEGRASS/FINE FESCUE - SHADE MIXTURE - FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY INTENSIVELY MANAGED TURF. A MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30-40% AND CERTIFIED FINE FESCUE AND 60-75% SEEDING RATE: 1-1/2 TO 3 POUNDS/1000 SQUARE FEET. A MINIMUM OF 3 KENTUCKY BLUEGRASS CULTIVARS MUST BE CHOSEN, WITH EACH CULTIVAR RANGING FROM A MINIMUM OF 10% TO A MAXIMUM OF 35% OF THE MIXTURE BY WEIGHT.

NOTE: TURFGRASS VARIETIES SHOULD BE SELECTED FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY #77, "TURFGRASS RECOMMENDATIONS FOR MARYLAND."  
B. IDEAL TIMES OF SEEDING  
CENTRAL MARYLAND: MARCH 15 - JUNE 1; AUGUST 1 - OCTOBER 1 (HARDINESS ZONES - 5b, 6a)  
SOUTHERN MARYLAND: MARCH 1 - MAY 15; AUGUST 15 - OCTOBER 15 (HARDINESS ZONES - 6b)  
CENTRAL MARYLAND, EASTERN SHORE: MARCH 1 - MAY 15; AUGUST 15 - OCTOBER 15 (HARDINESS ZONES - 7a, 7b)

C. IRRIGATION  
IF SOD MIXTURE IS DEPOSITED, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2" - 1" EVERY 3-4 DAYS, DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

D. REPAIRS AND MAINTENANCE  
INSPECT ALL SEEDED AREAS FOR FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.  
I. ONCE THE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATELY STABILIZED.  
II. IF THE STAND PROVIDES LESS THAN 40% GROUND COVER, REESTABLISH GROUND COVER WITH LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING RECOMMENDATIONS.  
III. IF THE STAND PROVIDES BETWEEN 40% AND 94% GROUND COVER, OVERSEEDING AND FERTILIZING USING HALF OF THE RATES ORIGINALLY APPLIED MAY BE NECESSARY.

IV. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDINGS ARE SHOWN IN TABLE 24. FOR LAWNS AND OTHER MEDIUM TO HIGH MAINTENANCE TURFGRASS AREAS, REFER TO THE UNIVERSITY OF MARYLAND PUBLICATION, "LAWN CARE IN MARYLAND", BULLETIN NO. 171.

SECTION OF CONSTRUCTION

- 1. CONTACT HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS (DIP), SEDIMENT CONTROL DIVISION AT (410) 313-1855 AT LEAST 2 DAYS BEFORE ANY CONSTRUCTION BEGINS TO SCHEDULE A PRE-CONSTRUCTION MEETING AND OBTAIN A GRADING PERMIT.
- 2. INSTALL STABILIZED CONSTRUCTION ENTRANCES AND PERFORM CLEARING PER SHEET 3. AS AREAS FOR SILT FENCE OR CLEARING, INSTALL THOSE ITEMS. NO MORE THAN 3 PIPE LENGTHS OR THAT WHICH CAN BE STABILIZED BY THE END OF EACH WORKDAY MAY BE DISTURBED AT ANY TIME.
- 3. DEMOLISH EXISTING STRUCTURES, I.E. END SECTION, CORRUGATED METAL PIPES, TIMBER HEADWALL, SPLIT RAIL FENCE, ASPHALT CONCRETE DRIVEWAYS AND TREES AS PER SHEET 1.
- 4. INSTALL INLETS AND MANHOLES AND ASSOCIATED PIPES AND BITUMINOUS CONCRETE PATCH AND DRAINAGE FLUME AS PER SHEET 1 STARTING FROM THE DOWNSTREAM END OF THE PROJECT (1) AND PROCEED UPSTREAM TO AND INSTALL SILT FENCE AND DURING CONSTRUCTION. STABILIZE AREA WITH EROSION CONTROL MATTING AND TEMPORARY SEED MIX AT THE END OF WORKDAY.
- 5. WITH PERMISSION OF DIP SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES. CLEAN UP ENTIRE SITE AND ESTABLISH ANY REMAINING DISTURBED AREAS.

STANDARD STABILIZATION NOTES

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) SEVEN (7) CALENDAR DAYS AS FOR ALL PERIMETER STRUCTURES, STRUCTURES, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); B) FOURTEEN DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE

- VI. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (DETERMINED BY ASTM D-2922) MAY ADOPTIVELY BEFER TO SHALLOW
- VII. SOD SHALL BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THE PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

B. SOD INSTALLATION  
I. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, THE SUBSOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD.

II. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

III. WHERE POSSIBLE, SOD SHALL BE LAID WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERED JOINTS. SOD SHALL BE ROLLED AND TAMPED, PEGGED, OR OTHERWISE SECURED TO PREVENT SLIPPAGE ON SLOPES AND TO ENSURE SOLID CONTACT BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

IV. SOD SHALL BE WATERED IMMEDIATELY FOLLOWING ROLLING OR TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMPING, AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN EIGHT HOURS.

C. SOD MAINTENANCE  
I. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4". WATERING SHOULD BE DONE DURING THE HEAT OF THE DAY TO PREVENT WILTING.

II. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.  
III. THE FIRST MOWING OF SOD SHOULD NOT BE ATTEMPTED UNTIL THE FINAL SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE "GRASS LEAF SHALL BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2" AND 3", UNLESS OTHERWISE SPECIFIED.

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