HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

LOCATION MAP
SCALE 1" = 2000'

OFFICE COPY OF
PLANS AS ADVERTISED
6/27/96

NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D - 1081

General Notes:

1. The contractor shall notify the Department of Public Works/Bureau of Construction Inspection at (410) 313–1870 at least five (5) working days prior to the start of work.

2. Standard Details for this Contract shall be the Howard County Standard Details as Supplemented by the Maryland State Highway Administration Standard Details and Specifications.

3. For details not shown on the drawings, and for materials and construction methods, the Contractor shall abide by the Howard County Design Manual IV, "Standard Specifications and Details for Construction and the special provisions. In the event of any discrepancy between these two sources, the latter shall govern.

4. Failure to specify any work which would normally be required to complete the project shall not relieve the Contractor of his responsibility to perform such work.

5. Approximate location of existing utilities are shown for the Contractor's information from the best information available and are not guaranteed. Neither the County nor the Engineer accepts any liability or cost claims for utilities not shown, miscalculated, utilities under construction, or work which may go in place during execution of this contract. The Contractor shall locate all existing utilities by test pitting well in advance of construction activities to determine horizontal and vertical alignment and take all necessary precautions to protect the existing utilities and maintain uninterrupted service. Cost of test pitting shall be included in the unit price bid for Test Pit item. Any damage incurred due to the Contractor's operation shall be repaired or replaced immediately at the Contractor's expense. Clear all utilities by a minimum of 6–inches vertically.

6. Where test pits have been made on existing utilities. They are noted by the symbol ⊞. The results of test pits are included on the storm drain plans.

7. All utility poles must be cleared by 5 feet. If the storm drain piping or structure work is within five feet of a utility pole, the pole must be braced.

8. All top elevations for the proposed inlets and manholes are approximate, and are to be verified in the field by the Contractor and the Engineer. Where the proposed storm drains cross vegetated areas, positive drainage shall be maintained and the top elevations adjusted accordingly as directed by the Engineer.

9. Location points for Inlets, Manholes and Structures:

ITEM	HORIZONTAL LOC	VERTICAL LOC
Curb Type Inlets	Center Face of Curb	Top of Curb
Grate Type Inlets	Center of Grate	Top of Grate
Manholes	Center of Cover	Top of Cover
Endwalls	Center of Wall	Top of Wall

10. Topography is based on field surveys dated July 1989, June 1990, July 1993, and August 1994, performed by Purdum and Jeschke. The contractor will be responsible for verification of any discrepancies. Elevations shown are based on Howard County Surveys Datum and vertical controls are based on USGS datum of 1929. Coordinates shown are referred to the Howard County Department of Public Works Coordinate System.

11. All pipe elevations shown are invert elevations.

12. Trees are to be protected from damage to maximum extent. Trees located outside the construction strip are not to be removed or damaged by the contractor.

13. Contractor shall remove trees, stumps and roots along line of excavation as directed by the engineer. Payment for such removal shall be included in the unit price bid for furnishing and laying storm drain pipe.

14. The Contractor shall be responsible for the restoration of all existing driveways damaged during construction. See measurements and payment in special provisions. Existing bituminous concrete driveway shall be restored as follows:

    1. 4–inch depth of Bituminous Concrete Base Course
    2. 1–inch depth of Bituminous Concrete Surface Course

    Concrete driveways shall be replaced with a typical section as shown on Standard Detail R 6.03.

15. Existing water house services, that are in conflict with the proposed storm drainage facilities, shall be adjusted by the Contractor.

16. Existing fences, mailboxes, signs and shrubs disturbed by the work shall be reconstructed or replaced in kind.

17. All slopes and/or disturbed areas shall receive 2–inch depth of topsoil and sodding except, where otherwise indicated on the plans, or as directed by the engineer. All grading shall be done in a manner to insure positive drainage.

18. All construction shall be in accordance with the latest standards and specifications of Howard County and MSHA standards and specifications, if applicable.

19. Contractor shall notify the following utilities or agency at least (5) days before starting work shown on these plans:
    Miss Utility 1–800–257–7777
    Baltimore Gas and Electric Company – Underground Electric Distribution Engineering "Damage Control" 234–6313
    Baltimore Gas and Electric Company – Underground Gas Distribution Engineering "Damage Control" 234–5533
    Chesapeake and Potomac Telephone Company 597–8585
    Howard County Cable T.V. 461–1156
    Howard County Division of Traffic Engineering 313–2430
    Howard County Bureau of Utilities 313–4900
    Howard County Division of Construction Inspection 313–1870
    Howard County Surveying and Drafting Division 313–2417

20. Right of Way lines shown on these plans are shown for assistance in interpreting the plans. For any Fee Right of Way and Easement information see Right of Way Plats.

21. Light poles and fixtures for street lights shall be in accordance with the latest Howard County Design Manual, Volume III, Roads and Bridges.

22. Place regulation "Men Working" and warning signs as required to comply with the latest editions of the Maryland State Highway Administration Manual of Traffic Control for Highway Construction and Maintenance Operations, and the Manual on Uniform Traffic Control Devices and all subsequent addendum.

23. Geotechnical investigation was performed by E2SI in 1990 and summarized in a report titled "Subsurface Investigation North Laurel Storm Drain Improvements" dated October 1990. Additional test pits were performed by Froehling and Robertson, Inc. in October 1991.

24. Wetland study was conducted in May 1994 and no wetlands were found.

25. Stormwater management control is not part of this project since the various regulatory storm events are not adversely impacted by this project.

26. 14"x 9" CMPA is 12 gauge throughout construction and manufactured per AASHTO M–36. Lengths indicated for the 14"x 9" CMPA include end sections.

27. It is the Contractor's responsibility to schedule all utility relocations and pole bracings, sufficiently in advance of his activities to avoid conflict or delays.

28. Use 6 inch depth of select material, 57 stone or approved equal under all culvert pipe / box as bedding.

LEGEND

- Ex. Catv Light Cable
- Ex. Contours
- Ex. Storm Drain
- Prop. Contours
- Ex Guard Rail
- Prop. Guard Rail
- Prop. Storm Drain
- Prop. Gabions
- Prop. Riprap
- Elec. and Tele. Poles
- Guy Wire
- Light Pole
- Test Pit Location
- Test Boring Location
- Bench Mark

INDEX OF SHEETS

HOWARD SOIL CONSERVATION DISTRICT

DEVELOPER & ENGINEER CERTIFICATES

( ) By the Developer:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as–built" plan of the pond within 30 days of completion. I also authorize periodic on–site inspections by the Howard Soil Conservation District."

Signature of Developer: [signature] Date: 6/6/96

Print name below signature: Ronald G. Lepson

( ) By the Engineer:

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as–built" plan of the pond within 30 days of completion."

Signature of Engineer: [signature] Date: 7/25/95

Print name below signature: Richard H. Berich

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

APPROVED [signature] HOWARD S.C.D. DATE 6/5/96

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

[signature] SIGNATURE DATE 6/5/96

U.S. SOIL CONSERVATION SERVICE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS [signature] DATE 6/18/96
CHIEF, BUREAU OF ENGINEERING [signature] DATE 6/6/96
CHEIF, BUREAU OF HIGHWAYS [signature] DATE 6-13-96
CHIEF, TRANSPOTATION AND WATERSHED DIVISON [signature] DATE 6/6/96

PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS
1029 North Calvert Street
Baltimore, Maryland 21202
Tel: (410)837–0194 Fax:(410)837–3431

STATE OF MARYLAND – PROFESSIONAL ENGINEER

DES. JS
DRN. SLC
CHK. RHB
DATE. 7\7\95

BY	NO.	REVISION	DATE

600' SCALE MAP NO. ______ BLOCK NO. ______

NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D–1081
INDEX & NOTES

SCALE AS SHOWN

SHEET 2

3420SCD.DWG

NOTE : EXISTING CMP AND HEADWALLS IN AREAS OF NEW CONSTRUCTION TO BE REMOVED.
N 464,750
E 845,250
MADISON
AVENUE
9430
9424
9422
9420
9414
REMOVE CONCRETE APRON AND REPLACE WITH 18'L x 6'W GABION MATTRESS 0.75'H. MATTRESS TO BE PLACED AT EXISTING GRADE WITH EXISTING BACKFILL UNDER CONCRETE APRON TO BE GABION STONE. MATTRESS TO BE SECURED TO EXISTING AND PROPOSED HEADWALLS WITH 6" LAG BOLTS AND 6"x 6"x 1/4" GALVANIZED PLATES SPACED EVERY 18". A 3'H x 3'W x 18'L GABION BASKET IS TO BE PLACED AT THE DOWNSTREAM END OF THE MATTRESS.
PLACE 1'x 3' GABION MATTRESSES TO TRANSITION EX. GRADE TO A VERTICAL SECTION ADJACENT TO EW-2 (3' HEIGHT)
PARKING LOT
EW 2
MH 30
I-30
I-31
ES 1
I-32
I-33
I-34 (EX.)
MH 31
I-35
I-36
EW 3
POLE TO BE BRACED
EX.12"CMP TO BE REMOVED
BG&E#381788 C&P#3
EX.10"CMP TO BE REMOVED
PROPOSED 14"X9"CMPA
BG&E #256357
EX.15"CMP
EX.12"X18" CMP TO BE REMOVED
WATER METER TO BE RELOCATED
EX.12"x18"CMP TO BE REMOVED
EX. INLET
EX. 12"x18"CMP TO BE REMOVED
BM#4 C&P#5 BG&E#209177
POLE TO BE BRACED
18" RCCP
15"RCCP
EX. 12" CMP TO BE REMOVED
EX. 6"W
EX. 2"GAS
L-2
L-8
EX. 8"S
TO L-1
EX.2-42"CMP
EX. 8"S
EX. 2"GAS
EX. CATV
C.O.
2" GAS TO BE RELOCATED
TO L-7
EX.12"X18"CMP TO BE REMOVED
BG&E# 381789
EX.20"x29"CMP TO BE REMOVED
2" GAS TO BE RELOCATED
PLACE 9'L x 9'W x 0.75'H GABION MATTRESS AT EXISTING GRADES WITH 3'H x 3'W x 9'L GABION BASKET AT UPSTREAM END
FIRST AVENUE
EX.6"W
EX.2"GAS
BG&E # 381789 POLE TO BE BRACED
MATCH LINE A – SEE SHEET 4
SECOND STREET
N 464,750
E 845,750
E 845,250
N 465,500

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS	DATE	CHIEF, BUREAU OF ENGINEERING	DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS	DATE 6-13-96	CHIEF, TRANSPORTATION AND WATERSHED DIVISION	DATE 6/6/96

PURDUM and JESCHKE
CONSULTING ENGINEERS AND LAND SURVEYORS
1029 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202
TEL:(410)837-0194 FAX:(410)837-3431

DES : JS
DRN : SLC
CHK : RHB
DATE :7/7/95

DATE	DESCRIPTION	BY
	REVISIONS	

600' SCALE MAP NO. 50 BLOCK NO. 4,10

NORTH LAUREL DRAINAGE IMPROVEMENT
STORM DRAIN PLANS – CAPITAL PROJECT D-1081

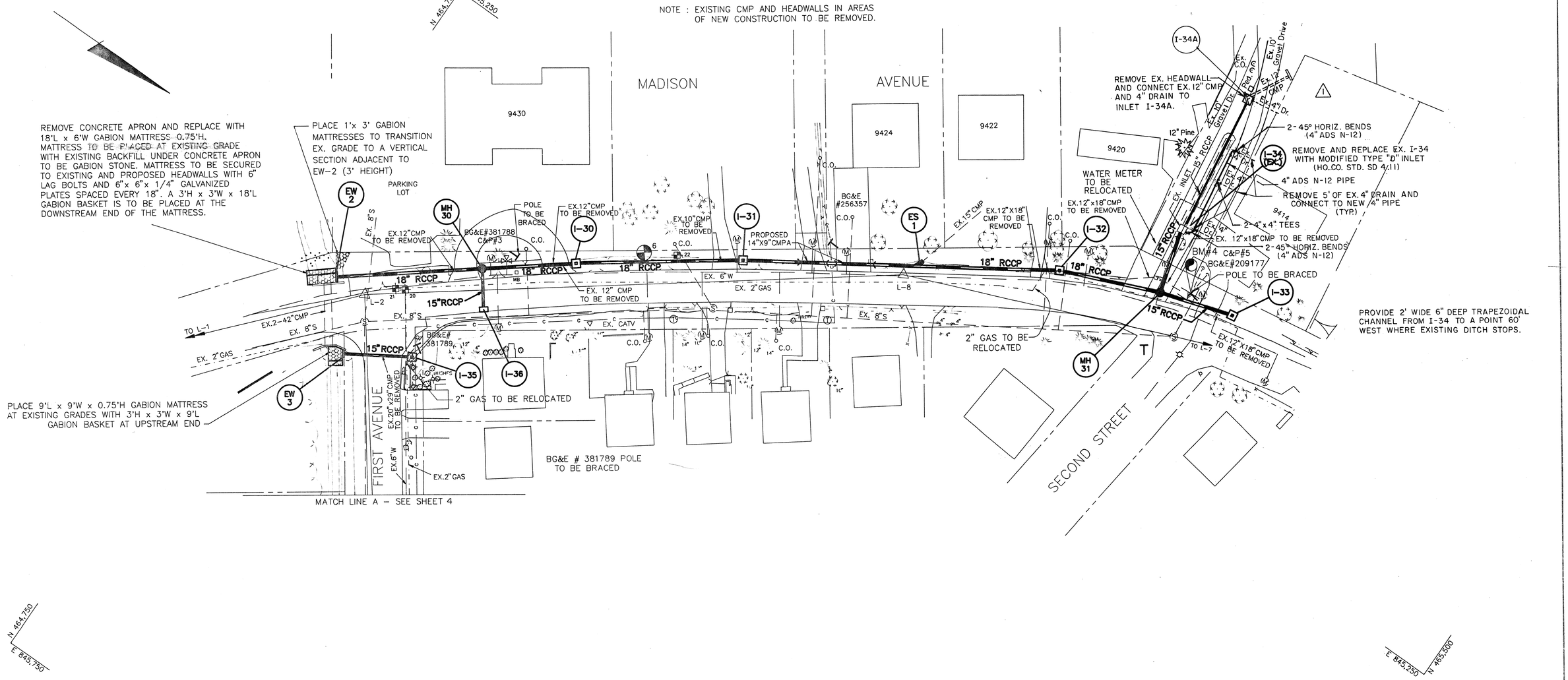
PLAN

SCALE 1" = 30'

SHEET 3

3420PLN1.DWG

P&J W.O.# 3420-00



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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DATE	DESCRIPTION	BY
10/30/96	⚠ ADDITIONAL INLETS I-34 AND I-34A	ARW

REVISIONS

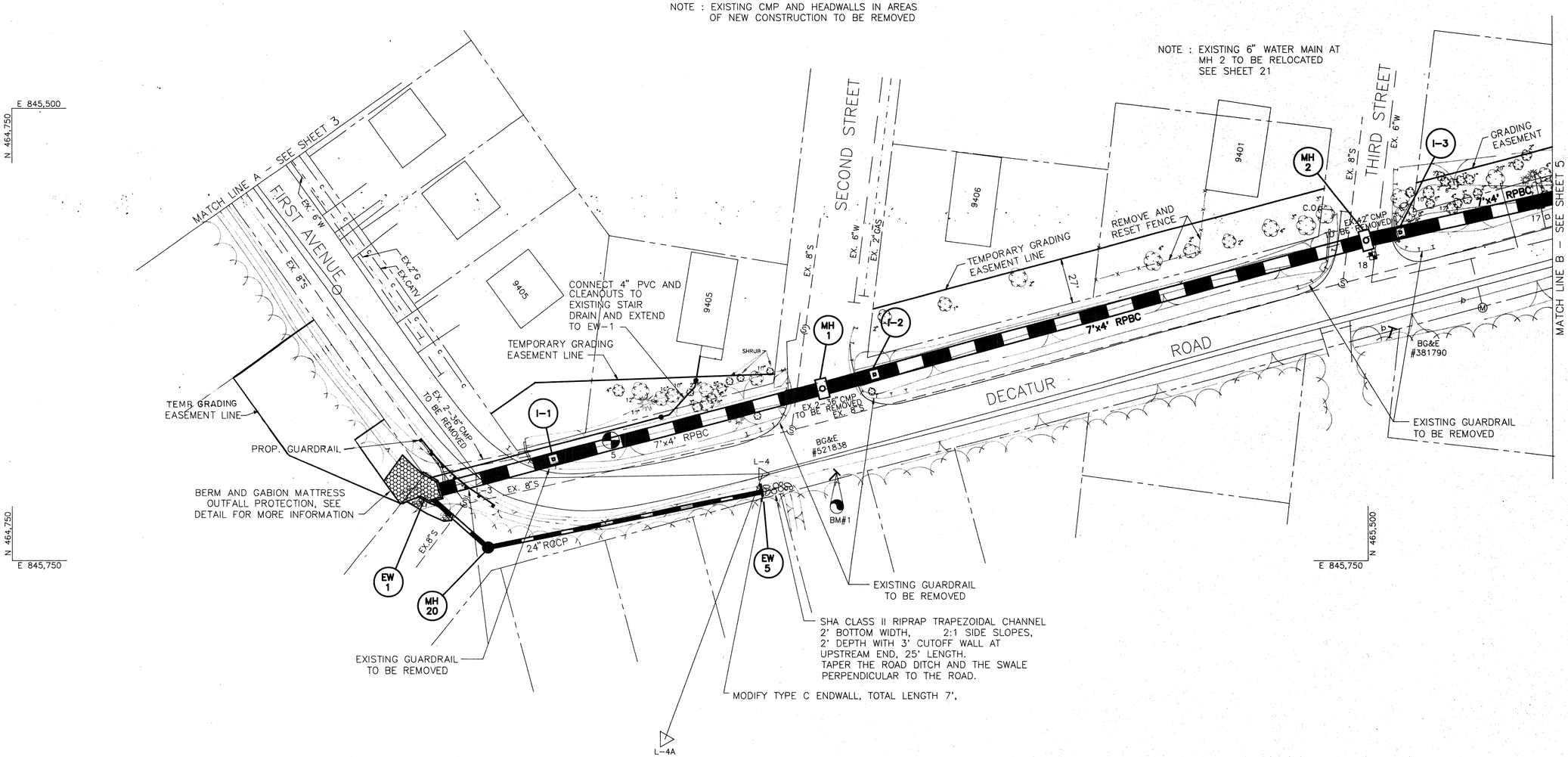
600' SCALE MAP NO. 50 BLOCK NO. 4,10

NORTH LAUREL DRAINAGE IMPROVEMENT
STORM DRAIN PLANS - CAPITAL PROJECT D-1081

PLAN

SCALE 1" = 30'

SHEET 3



FOR GRADING DETAIL SEE SHEET 13

DEPARTMENT OF PUBLIC WORKS
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600' SCALE MAP NO. 50 BLOCK NO. 4,10

NORTH LAUREL DRAINAGE IMPROVEMENT
STORM DRAIN PLANS – CAPITAL PROJECT D-1081

PLAN

SCALE 1" = 30'

SHEET 4

3420PLN2.DWG

P&J W.O.# 3420-00


E 845,250
N 465,750
FOURTH STREET
MATCH LINE C SEE SHEET 6
PROP. 14"x9" CMPA
#196417 BG&E
CONTRACTOR TO CONNECT EXISTING PRIVATE DRAIN TO 5'H x 5'W x 5'L WET WELL FILLED WITH 1.5"–3.0" DIAMETER WASHED STONE SURROUNDED WITH FILTER FABRIC ADD OVERFLOW PIPE TO STAIRWELL LEADER.
NOTE : EXISTING CMP AND HEADWALLS IN AREAS OF NEW CONSTRUCTION TO BE REMOVED. CAP DOWNSTREAM END OF EXISTING STORM PIPES CROSSING DECATUR ROAD 12" UNDER PROPOSED SWALE GRADE.
CONTRACTOR SHALL TEST PIT FOR EX. WHC AND SHC
9319
9430
9322
9318
9316
9314
9306
9302
9300
I-10
24"RCCP
REMOVE EXISTING GUARDRAIL
EX. STAIRWELL DRAIN
PROP. DRYWELL
10' TEMPORARY GRADING EASEMENT
DECATUR
ROAD
GRADING EASEMENT
FC 1
FC 2
FC 3
FC 4
FC 5
I-4
7'x4' RPBC
EX.42"CMP TO BE REMOVED
MH 3
MH 4
I-5
15"RCCP
EX. 8"S
EX. 8"W
EX. 24"RCP TO BE REMOVED
L-5
EX.21"x9" CMP
15"RCCP
5'x4' RPBC
BG&E #197782
EX. GABOIN MATTRESS 13'L x 7'W
EX. 2-36"CMP TO BE REMOVED
PROVIDE 14"x9" DRIVEWAY CULVERT SEE PROFILE
EX.36"CMP TO BE REMOVED
EX.36"CMP TO BE REMOVED
I-6
BG&E #199813 C&P #GS4
EX.36"CMP TO BE REMOVED
HW 1
20'x25' EASEMENT
EX.CONC. DRIVE
MATCH LINE B – SEE SHEET 4
BG&E #9777
I-20
5'x20' TEMP. EASEMENT
9415
NOTE : EXISTING 6" WATER AT MH 3 TO BE RELOCATED
BM#2
BG&E #196418 C&P#4
I-21
9416
FIFTH STREET
EX. 6"W
EX. 8"S
BG&E #197780
TO BE ABANDONED IN PLACE
EX.18"CMP
24"RCCP
BG&E#197781 C&P BC#2
5'x17' TEMP. EASEMENT
I-22
MH 26
I-23
7'x10' TEMP. EASEMENT
TO BE ABANDONED IN PLACE
EX.15"CMP
EX.24" RCP
BG&E#197783 C&P#3
NOTE: SEE SHEET # 7 (NOTE #8) FOR TIE IN DETAILS OF MANHOLE # 26
SIXTH STREET
10'x18' EASEMENT
18"RCCP
I-24
9315
15"RCCP
I-25
BG&E #199184 C&P#4
POLE TO BE BRACED
WATER METER TO BE RELOCATED
I.P.
C.O.
L-5A
TO BE ABANDONED IN PLACE
5'x4' RPBC
GABION BASKET 3'H x 3'W x 11'L
GABION MATTRESS 18'L x 11'W x 0.75'D
SEVENTH STREET
N 465,750
E 845,750
N 466,500
E 845,750

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	PURDUM and JESCHKE CONSULTING ENGINEERS AND LAND SURVEYORS 1029 NORTH CALVERT STREET BALTIMORE, MARYLAND 21202 TEL:(410)837-0194 FAX:(410)837-3431	DES : JS DRN : SLC CHK : RHB DATE : 7/7/95	NORTH LAUREL DRAINAGE IMPROVEMENT STORM DRAIN PLANS – CAPITAL PROJECT D-1081 PLAN	SCALE 1" = 30' SHEET 5

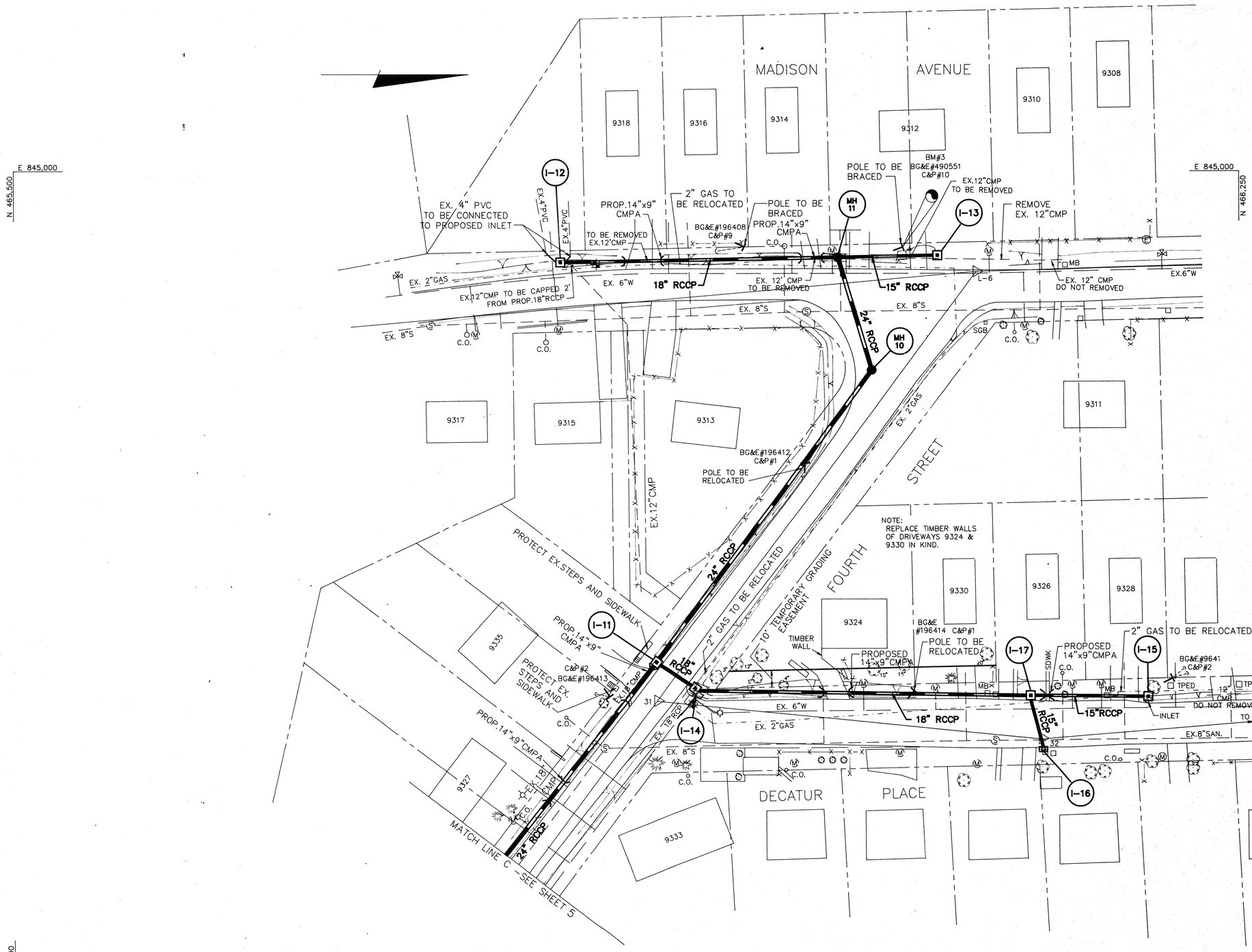
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

DATE	DESCRIPTION	BY
	REVISIONS	

600' SCALE MAP NO. 50 BLOCK NO. 4,10

3420PLN3.DWG

P&J W.O.# 3420-00



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-3-96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

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600' SCALE MAP NO. 50 BLOCK NO. 4,10

NORTH LAUREL DRAINAGE IMPROVEMENT
STORM DRAIN PLANS - CAPITAL PROJECT D-1081

PLAN

SCALE 1" = 30'

SHEET 6

3420PLN4.DWG

P&J W.O.# 3420-00

DRAINAGE STRUCTURE LOCATIONS			
NO.	TRAVERSE POINT NO.	BEARING	DISTANCE
I-1	L-3	N 26° 59' 07" W	34.80'
I-2	L-4	N 41° 31' 33" W	83.20'
I-3	L-5	S 05° 05' 07" E	206.50'
I-30	L-2	N 43° 16' 00" W	136.37'
I-31	L-8	S 29° 56' 54" E	102.71'
I-32	L-8	N 36° 22' 44" W	95.68'
I-33	L-8	N 27° 57' 46" W	206.16'
I-35	L-2	N 15° 38' 44" E	48.23'
MH-1	L-4	N 54° 54' 28" W	57.84'
MH-2	L-5	S 05° 45' 15" E	225.80'
MH-30	L-2	N 47° 14' 08" W	76.77'
MH-31	L-8	N 31° 22' 49" W	158.61'
EW-1	L-3	S 15° 02' 39" E	23.54'
EW-2	L-2	S 03° 44' 07" E	21.08'
EW-3	L-2	N 74° 14' 02" E	39.67'
ES-1	L-8	N 69° 24' 13" W	15.11'

DRAINAGE STRUCTURE LOCATIONS			
NO.	TRAVERSE POINT NO.	BEARING	DISTANCE
I-4	L-5	N 30° 22' 59" W	72.36'
I-5	L-5A	S 13° 39' 53" W	339.57'
I-6	L-5A	S 21° 49' 29" W	125.31'
I-10	L-5	N 68° 16' 24" W	77.94'
I-11	31	S 88° 51' 45" W	23.29'
I-12	L-6	S 01° 15' 20" W	254.81'
I-13	L-6	S 22° 34' 46" W	25.79'
I-14	31	N 18° 16' 02" W	24.37'
I-15	32	N 21° 43' 40" W	69.80'
I-16	32	N 82° 38' 54" E	6.25'
I-17	32	S 75° 40' 29" W	27.62'
I-20	L-5	S 40° 21' 32" E	29.46'
I-21	L-5	N 09° 35' 13" E	102.93'
I-22	L-5	N 08° 46' 42" E	348.28'
I-23	L-5A	S 05° 28' 53" W	280.83'
I-24	L-5A	S 07° 51' 37" E	78.97'
I-25	L-5A	S 35° 13' 12" E	31.52'
MH-3	L-5	N 40° 33' 37" W	60.23'
MH-4	L-5	N 01° 26' 32" E	351.27'
MH-10	L-6	S 43° 13' 46" E	88.06'
MH-11	L-6	S 05° 52' 43" W	85.25'
HW-1	L-5A	N 09° 45' 47" W	87.14'
I-36	L-2	N 27° 48' 16" W	76.46'
EW-5	L-4	N 87° 40' 36" E	12.44'
MH-20	L-3	N 83° 04' 28" E	35.36'
FC-1	L-5	S 11° 31' 04" W	69.76'
FC-2	L-5	S 82° 06' 34" W	33.07'
FC-3	L-5	N 16° 06' 12" W	114.13'
FC-4	L-5A	S 27° 54' 55" W	88.15'
FC-5	L-5A	S 35° 58' 25" W	55.65'

TEST PIT INFORMATION				
NO.	UTILITY	NORTH	EAST	TOP ELEVATION
1	6" SHC	466,463.0	845,627.3	176.33
2	6" SHC	466,409.7	845,614.3	175.73
	3/4" WHC	466,416.3	845,613.3	177.49
3	4" SHC	466,377.0	845,615.0	171.83
4	8" WATER	466,394.3	845,636.2	175.99
5	6" SHC	466,256.3	845,595.8	169.75
6	6" SHC	466,129.9	845,579.1	170.75
7	6" SHC	466,093.1	845,568.0	165.97
8	8" WATER	466,084.4	845,590.3	166.80
9	6" WATER	466,095.7	845,619.4	167.22
10	6" SHC	465,891.5	845,540.4	162.72
11	6" WATER	465,806.7	845,573.5	167.12
12	8" WATER	465,801.5	845,543.6	165.16
13	6" WATER	465,772.5	845,508.9	161.70
14	2" GAS	465,915.4	845,324.6	182.76
	6" WATER	465,920.5	845,317.4	180.58
15	6" WATER	466,113.3	845,061.8	217.42
16	6" WATER	465,859.4	845,062.9	202.53
	2" GAS	465,856.6	845,056.3	205.37
17	6" SHC	465,595.9	845,553.3	159.70
18	6" WATER	465,502.9	845,581.5	158.96
20	2" GAS	464,828.7	845,423.6	147.37
21	6" WATER	464,823.2	845,426.5	144.82
22	6" SHC	464,958.2	845,306.3	158.70

SURVEY TRAVERSE		
NO.	NORTH	EAST
L-2	464,809.177	845,440.788
L-3	465,008.506	845,704.470
L-4	465,165.003	845,701.579
L-4A	465,110.861	845,848.137
L-5	465,723.828	845,550.436
L-5A	466,417.114	845,641.337
L-6	466,089.348	845,060.706
L-7	465,345.432	845,127.426
L-8	465,083.467	845,233.460
31	465,893.705	845,322.832
32	466,128.937	845,346.302

SOIL BORING TABLE		
NO.	NORTH	EAST
1	466,361.9	845,601.7
2	465,923.7	845,543.1
3	465,976.2	845,321.4
4	466,044.8	845,141.1
5	465,081.4	845,683.0
6	464,940.0	845,317.0

BENCH MARK TABLE		
NO.	DESCRIPTION	ELEV.
1	RR SPIKE IN BG&E#521838	157.80
2	RD. SIDE BOLT OF FH	172.21
3	RR SPIKE IN BG&E#490551	220.02
4A	SQ.(BOX) CUT ON S.S.MH RIM AT INT. MADISON & SECOND ST.	188.89

PROFILE INDEX	
PROFILE	SHEET NO.
EW-1 TO HW-1	8
EW-2 TO 1-33	9
I-34 TO MH-31	9
EW-3 TO I-35	9
EW-1 TO EW-5	8
I-20 TO FC-1	9
I-21 TO FC-3	10
I-23 TO MH-4	9
I-24 TO FC-4	9
I-25 TO FC-5	9
I-36 TO MH-30	9
I-12 TO FC-2	10
I-11 TO I-15	10
I-13 TO MH-11	10
I-16 TO I-17	10
EW-5 TO EW-1	8

(1) STRUCTURE TO BE MODIFIED TO PROVIDE INCOMING AND OUTGOING PIPES PLUS CHANNELING.

(2) SEE SHEET 10, 11 FOR DETAILS.

(3) OPTION TO USE PRECAST MANHOLE G5.12

(4) PROPOSED ENDWALL TO BE JOINED TO EXISTING CONCRETE HEADWALL BY DOWELS SPACED EVERY 12".

(5) INLET FRAME AND COVER TO BE SECURED TO INLET WALL WITH FRAME SPANNING OUTER DIMENSIONS AND A CONCRETE CURB IS NOT USED. ATTACHED WITH 4-5/8"ø ANCHORS PER MARYLAND STANDARD # 374.02.

(6) SEE SPECIFICATION FOR DETAILS.

(7) USE RECT. LINEAR GRATE SD 4.94

(8) STORM TIE-IN MANHOLE, CUT 18" CMP 24 INCHES FROM DOWNSTREAM SIDE OF MANHOLE AND CAP. CUT 18"CMP AT UPSTREAM SIDE OF TIE-IN MANHOLE TO PROVIDE FLUSH CONNECTION AT INSIDE EDGE OF MANHOLE

NOTES:
EXISTING GUARDRAIL AT FIRST, SECOND, THIRD AND FOURTH STREETS AND DECATUR ROAD TO BE REMOVED. NEW GUARDRAIL TO BE INSTALLED AT FIRST AVENUE AND DECATUR ROAD.

FOR GRADING PLAN SEE SHEET 13, 14 & 15.

⚠ * NOTE: I-34 TO BECOME A THROUGH INLET. PROVIDE CHANNELING AS NECESSARY. PLACE #4 REBARS AT 6" VERTICAL SPACING IN OPENING.

MOD. TYPE "D" INLET

DRAINAGE STRUCTURE SCHEDULE					
NO.	TYPE	TOP ELEVATION	INVERT IN	INVERT OUT	REMARKS
I-1	MOD. TYPE "E" INLET	152.79			SD 4.21 (2)
I-2	MOD. TYPE "E" INLET	155.63			SD 4.21 (2)
I-3	MOD. TYPE "E" INLET	163.50			SD 4.21 (2)
I-30	MOD. TYPE "E" INLET	159.60	152.00	151.80	(7) SD 4.21 (1)
I-31	MOD. TYPE "E" INLET	167.70	162.33	162.13	SD 4.21 (1)
I-32	MOD. TYPE "E" INLET	181.50	177.68	177.48	SD 4.21 (1)
I-33	TYPE "E" INLET	190.50	181.70	186.78	SD 4.21
I-34	~~EXISTING INLET~~	184.88	181.80	~~182.05~~	SD 4.11 SEE NOTE *
I-35	MOD. TYPE "WR" INLET	148.50		146.08	SD 4.37 (5)
I-36	TYPE "E" COMB. INLET	154.00		149.19	SD 4.31
MH-1	SPEC. CAST-IN-PLACE MH	156.80	149.40	149.20	SPECIAL DESIGN (2)
MH-2	SPEC. CAST-IN-PLACE MH	164.70	158.18	157.98	SPECIAL DESIGN (2)
MH-30	4' BRICK MH	155.50	148.42 148.67	148.22	G 5.01 (3)
MH-31	4' BRICK MH	187.20	181.28 181.19	181.08	G 5.01 (3)
EW-1	ENDWALL			146.70	SPECIAL DESIGN (2) (6)
EW-2	TYPE "C" ENDWALL			145.80	SD 5.21 (4)
EW-3	TYPE "C" ENDWALL			145.00	SD 5.21 (4)
I-34A	TYPE "S" INLET	187.20	EX. 12" CMP 183.4	182.50	SD 4.22
EW-5	TYPE "C" ENDWALL		151.21		SD 5.21
MH-20	4" BRICK MH	153.50	149.97	149.77	G5.01 (3)
ES-1	END SECTION		175.03		SD 5.61 CONN. TO EX. 15" CMP
I-4	MOD. TYPE "E" INLET	167.60			SD 4.21 (2)
I-5	MOD. TYPE "E" INLET	173.15			SD 4.21 (2)
I-6	MOD. TYPE "E" INLET	177.77			SD 4.21 (2)
I-10	MOD. TYPE "E" INLET	168.65	164.38	164.18	SD 4.21 (1)
I-11	MOD. TYPE "E" INLET	183.10	178.49 177.97	177.77	SD 4.21 (1)
I-12	TYPE "E" INLET	206.30		202.70	SD 4.21
I-13	TYPE "E" INLET	218.10		212.50	SD 4.21
I-14	MOD. TYPE "E" INLET	183.85	179.86	179.66	SD 4.21 (1)
I-15	MOD. TYPE "WR" INLET	210.00		207.53	SD 4.37 (5)
I-16	A-5	208.47		204.95	SD 4.01
I-17	MOD. TYPE "WR" INLET	206.50	204.00 200.19	199.74	SD 4.37 (1) (5)
I-20	MOD. TYPE "WR" INLET	166.70		164.22	SD 4.37 (5)
I-21	MOD. TYPE "WR" INLET	169.35		166.91	SD 4.37
I-22	TYPE "E" INLET	172.80	168.27	168.17	SD 4.21 (1)
I-23	MOD. TYPE "WR" INLET	172.50		169.25	SD 4.37 (5)
I-24	MOD. TYPE "WR" INLET	178.40		175.69	SD 4.37 (5)
I-25	MOD. TYPE "WR" INLET	179.70		176.20	SD 4.37 (5)
MH-3	SPEC. CAST-IN-PLACE MH	169.20	161.86	161.66	SPECIAL DESIGN (2)
MH-4	SPEC. CAST-IN-PLACE MH	174.30	167.72 167.47	167.27	SPECIAL DESIGN (2)
MH-10	4' BRICK MH	207.10	198.02	197.82	G 5.01 (3)
MH-11	4' BRICK MH	211.70	206.50 200.15	199.55	G 5.01 (3)
HW-1	HEADWALL		176.58		SPECIAL DESIGN (6) (2)
FC-1	15"RCCP TO 7'x4'RPBC	162.00			
FC-2	24"RCCP TO 7'x4'RPBC	161.64			
FC-3	15"RCCP TO 5'x4'RPBC	164.00			
FC-4	18"RCCP TO 5'x4'RPBC	174.20			
FC-5	15"RCCP TO 5'x4'RPBC	175.08			
MH-26	EX 18" CMP TO 24" RCCP	174.80	168.90	168.80	CMP INVERT 171.88 (8)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

PURDUM and JESCHKE
CONSULTING ENGINEERS AND LAND SURVEYORS
1029 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202
TEL:(410)837-0194 FAX:(410)837-3431

DES : JS
DRN : SLC
CHK : RHB
DATE : 7/7/95

DATE	DESCRIPTION	BY
10/30/96	⚠ ADDITIONAL INLETS I-34 AND I-34A	ARW

REVISIONS

600' SCALE MAP NO. _____ BLOCK NO. _____

NORTH LAUREL DRAINAGE IMPROVEMENT
STORM DRAIN PLANS - CAPITAL PROJECT D-1081

CHARTS AND TABLES

NO SCALE

SHEET 7

3420CHRT.DWG

DRAINAGE STRUCTURE LOCATIONS			
NO.	TRAVERSE POINT NO.	BEARING	DISTANCE
I-1	L-3	N 26° 59' 07" W	34.80'
I-2	L-4	N 41° 31' 33" W	83.20'
I-3	L-5	S 05° 05' 07" E	206.50'
I-30	L-2	N 43° 16' 00" W	136.37'
I-31	L-8	S 29° 56' 54" E	102.71'
I-32	L-8	N 36° 22' 44" W	95.68'
I-33	L-8	N 27° 57' 46" W	206.16'
I-35	L-2	N 15° 38' 44" E	48.23'
MH-1	L-4	N 54° 54' 28" W	57.84'
MH-2	L-5	S 05° 45' 15" E	225.80'
MH-30	L-2	N 47° 14' 08" W	76.77'
MH-31	L-8	N 31° 22' 49" W	158.61'
EW-1	L-3	S 15° 02' 39" E	23.54'
EW-2	L-2	S 03° 44' 07" E	21.08'
EW-3	L-2	N 74° 14' 02" E	39.67'
ES-1	L-8	N 69° 24' 13" W	15.11'

DRAINAGE STRUCTURE LOCATIONS			
NO.	TRAVERSE POINT NO.	BEARING	DISTANCE
I-4	L-5	N 30° 22' 59" W	72.36'
I-5	L-5A	S 13° 39' 53" W	339.57'
I-6	L-5A	S 21° 49' 29" W	125.31'
I-10	L-5	N 68° 16' 24" W	77.94'
I-11	31	S 88° 51' 45" W	23.29'
I-12	L-6	S 01° 15' 20" W	254.81'
I-13	L-6	S 22° 34' 46" W	25.79'
I-14	31	N 18° 16' 02" W	24.37'
I-15	32	N 21° 43' 40" W	69.80'
I-16	32	N 82° 38' 54" E	6.25'
I-17	32	S 75° 40' 29" W	27.62'
I-20	L-5	S 40° 21' 32" E	29.46'
I-21	L-5	N 09° 35' 13" E	102.93'
I-22	L-5	N 08° 46' 42" E	348.28'
I-23	L-5A	S 05° 28' 53" W	280.83'
I-24	L-5A	S 07° 51' 37" E	78.97'
I-25	L-5A	S 35° 13' 12" E	31.52'
MH-3	L-5	N 40° 33' 37" W	60.23'
MH-4	L-5	N 01° 26' 32" E	351.27'
MH-10	L-6	S 43° 13' 46" E	88.06'
MH-11	L-6	S 05° 52' 43" W	85.25'
HW-1	L-5A	N 09° 45' 47" W	87.14'
I-36	L-2	N 27° 48' 16" W	76.46'
EW-5	L-4	N 87° 40' 36" E	12.44'
MH-20	L-3	N 83° 04' 28" E	35.36'
FC-1	L-5	S 11° 31' 04" W	69.76'
FC-2	L-5	S 82° 06' 34" W	33.07'
FC-3	L-5	N 16° 06' 12" W	114.13'
FC-4	L-5A	S 27° 54' 55" W	88.15'
FC-5	L-5A	S 35° 58' 25" W	55.65'

TEST PIT INFORMATION				
NO.	UTILITY	NORTH	EAST	TOP ELEVATION
1	6" SHC	466,463.0	845,627.3	176.33
2	6" SHC	466,409.7	845,614.3	175.73
	3/4" WHC	466,416.3	845,613.3	177.49
3	4" SHC	466,377.0	845,615.0	171.83
4	8" WATER	466,394.3	845,636.2	175.99
5	6" SHC	466,256.3	845,595.8	169.75
6	6" SHC	466,129.9	845,579.1	170.75
7	6" SHC	466,093.1	845,568.0	165.97
8	8" WATER	466,084.4	845,590.3	166.80
9	6" WATER	466,095.7	845,619.4	167.22
10	6" SHC	465,891.5	845,540.4	162.72
11	6" WATER	465,806.7	845,573.5	167.12
12	8" WATER	465,801.5	845,543.6	165.16
13	6" WATER	465,772.5	845,508.9	161.70
14	2" GAS	465,915.4	845,324.6	182.76
	6" WATER	465,920.5	845,317.4	180.58
15	6" WATER	466,113.3	845,061.8	217.42
16	6" WATER	465,859.4	845,062.9	202.53
	2" GAS	465,856.6	845,056.3	205.37
17	6" SHC	465,595.9	845,553.3	159.70
18	6" WATER	465,502.9	845,581.5	158.96
20	2" GAS	464,828.7	845,423.6	147.37
21	6" WATER	464,823.2	845,426.5	144.82
22	6" SHC	464,958.2	845,306.3	158.70

SURVEY TRAVERSE		
NO.	NORTH	EAST
L-2	464,809.177	845,440.788
L-3	465,008.506	845,704.470
L-4	465,165.003	845,701.579
L-4A	465,110.861	845,848.137
L-5	465,723.828	845,550.436
L-5A	466,417.114	845,641.337
L-6	466,089.348	845,060.706
L-7	465,345.432	845,127.426
L-8	465,083.467	845,233.460
31	465,893.705	845,322.832
32	466,128.937	845,346.302

SOIL BORING TABLE		
NO.	NORTH	EAST
1	466,361.9	845,601.7
2	465,923.7	845,543.1
3	465,976.2	845,321.4
4	466,044.8	845,141.1
5	465,081.4	845,683.0
6	464,940.0	845,317.0

BENCH MARK TABLE		
NO.	DESCRIPTION	ELEV.
1	RR SPIKE IN BG&E#521838	157.80
2	RD. SIDE BOLT OF FH	172.21
3	RR SPIKE IN BG&E#490551	220.02
4A	SQ. (BOX) CUT ON S.S.MH RIM AT INT. MADISON & SECOND ST.	188.89

PROFILE INDEX	
PROFILE	SHEET NO.
EW-1 TO HW-1	8
EW-2 TO 1-33	9
I-34 TO MH-31	9
EW-3 TO I-35	9
EW-1 TO EW-5	8
I-20 TO FC-1	9
I-21 TO FC-3	10
I-23 TO MH-4	9
I-24 TO FC-4	9
I-25 TO FC-5	9
I-36 TO MH-30	9
I-12 TO FC-2	10
I-11 TO I-15	10
I-13 TO MH-11	10
I-16 TO I-17	10
EW-5 TO EW-1	8

(1) STRUCTURE TO BE MODIFIED TO PROVIDE INCOMING AND OUTGOING PIPES PLUS CHANNELING.

(2) SEE SHEET 10, 11 FOR DETAILS.

(3) OPTION TO USE PRECAST MANHOLE G5.12

(4) PROPOSED ENDWALL TO BE JOINED TO EXISTING CONCRETE HEADWALL BY DOWELS SPACED EVERY 12".

(5) INLET FRAME AND COVER TO BE SECURED TO INLET WALL WITH FRAME SPANNING OUTER DIMENSIONS AND A CONCRETE CURB IS NOT USED. ATTACHED WITH 4-5/8"ø ANCHORS PER MARYLAND STANDARD # 374.02.

(6) SEE SPECIFICATION FOR DETAILS.

(7) USE RECT. LINEAR GRATE SD 4.94

(8) STORM TIE-IN MANHOLE, CUT 18" CMP 24 INCHES FROM DOWNSTREAM SIDE OF MANHOLE AND CAP. CUT 18"CMP AT UPSTREAM SIDE OF TIE-IN MANHOLE TO PROVIDE FLUSH CONNECTION AT INSIDE EDGE OF MANHOLE

NOTES:
EXISTING GUARDRAIL AT FIRST, SECOND, THIRD AND FOURTH STREETS AND DECATUR ROAD TO BE REMOVED. NEW GUARDRAIL TO BE INSTALLED AT FIRST AVENUE AND DECATUR ROAD.

FOR GRADING PLAN SEE SHEET 13, 14 & 15.

DRAINAGE STRUCTURE SCHEDULE					
NO.	TYPE	TOP ELEVATION	INVERT IN	INVERT OUT	REMARKS
I-1	MOD. TYPE "E" INLET	152.79			SD 4.21 (2)
I-2	MOD. TYPE "E" INLET	155.63			SD 4.21 (2)
I-3	MOD. TYPE "E" INLET	163.50			SD 4.21 (2)
I-30	MOD. TYPE "E" INLET	159.60	152.00	151.80	(7) SD 4.21 (1)
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I-35	MOD. TYPE "WR" INLET	148.50		146.08	SD 4.37 (5)
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MH-1	SPEC. CAST-IN-PLACE MH	156.80	149.40	149.20	SPECIAL DESIGN (2)
MH-2	SPEC. CAST-IN-PLACE MH	164.70	158.18	157.98	SPECIAL DESIGN (2)
MH-30	4' BRICK MH	155.50	148.42 148.67	148.22	G 5.01 (3)
MH-31	4' BRICK MH	187.20	181.28 181.19	181.08	G 5.01 (3)
EW-1	ENDWALL			146.70	SPECIAL DESIGN (2) (6)
EW-2	TYPE "C" ENDWALL			145.80	SD 5.21 (4)
EW-3	TYPE "C" ENDWALL			145.00	SD 5.21 (4)
EW-5	TYPE "C" ENDWALL		151.21		SD 5.21
MH-20	4" BRICK MH	153.50	149.97	149.77	G5.01 (3)
ES-1	END SECTION		175.03		SD 5.61 CONN. TO EX. 15" CMP
I-4	MOD. TYPE "E" INLET	167.60			SD 4.21 (2)
I-5	MOD. TYPE "E" INLET	173.15			SD 4.21 (2)
I-6	MOD. TYPE "E" INLET	177.77			SD 4.21 (2)
I-10	MOD. TYPE "E" INLET	168.65	164.38	164.18	SD 4.21 (1)
I-11	MOD. TYPE "E" INLET	183.10	178.49 177.97	177.77	SD 4.21 (1)
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I-15	MOD. TYPE "WR" INLET	210.00		207.53	SD 4.37 (5)
I-16	A-5	208.47		204.95	SD 4.01
I-17	MOD. TYPE "WR" INLET	206.50	204.00 200.19	199.74	SD 4.37 (1) (5)
I-20	MOD. TYPE "WR" INLET	166.70		164.22	SD 4.37 (5)
I-21	MOD. TYPE "WR" INLET	169.35		166.91	SD 4.37
I-22	TYPE "E" INLET	172.80	168.27	168.17	SD 4.21 (1)
I-23	MOD. TYPE "WR" INLET	172.50		169.25	SD 4.37 (5)
I-24	MOD. TYPE "WR" INLET	178.40		175.69	SD 4.37 (5)
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MH-4	SPEC. CAST-IN-PLACE MH	174.30	167.72 167.47	167.27	SPECIAL DESIGN (2)
MH-10	4' BRICK MH	207.10	198.02	197.82	G 5.01 (3)
MH-11	4' BRICK MH	211.70	206.50 200.15	199.55	G 5.01 (3)
HW-1	HEADWALL		176.58		SPECIAL DESIGN (6) (2)
FC-1	15"RCCP TO 7'x4'RPBC		162.00		
FC-2	24"RCCP TO 7'x4'RPBC		161.64		
FC-3	15"RCCP TO 5'x4'RPBC		164.00		
FC-4	18"RCCP TO 5'x4'RPBC		174.20		
FC-5	15"RCCP TO 5'x4'RPBC		175.08		
MH-26	EX 18"CMP TO 24"RCCP	174.80	168.90	168.80	CMP INVERT 171.88 (8)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/6/96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

PURDUM and JESCHKE
CONSULTING ENGINEERS AND LAND SURVEYORS
1029 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202
TEL:(410)837-0194 FAX:(410)837-3431

DES : JS
DRN : SLC
CHK : RHB
DATE : 7/7/95

DATE	DESCRIPTION	BY
	REVISIONS	

600' SCALE MAP NO. _____ BLOCK NO. _____

NORTH LAUREL DRAINAGE IMPROVEMENT
STORM DRAIN PLANS - CAPITAL PROJECT D-1081

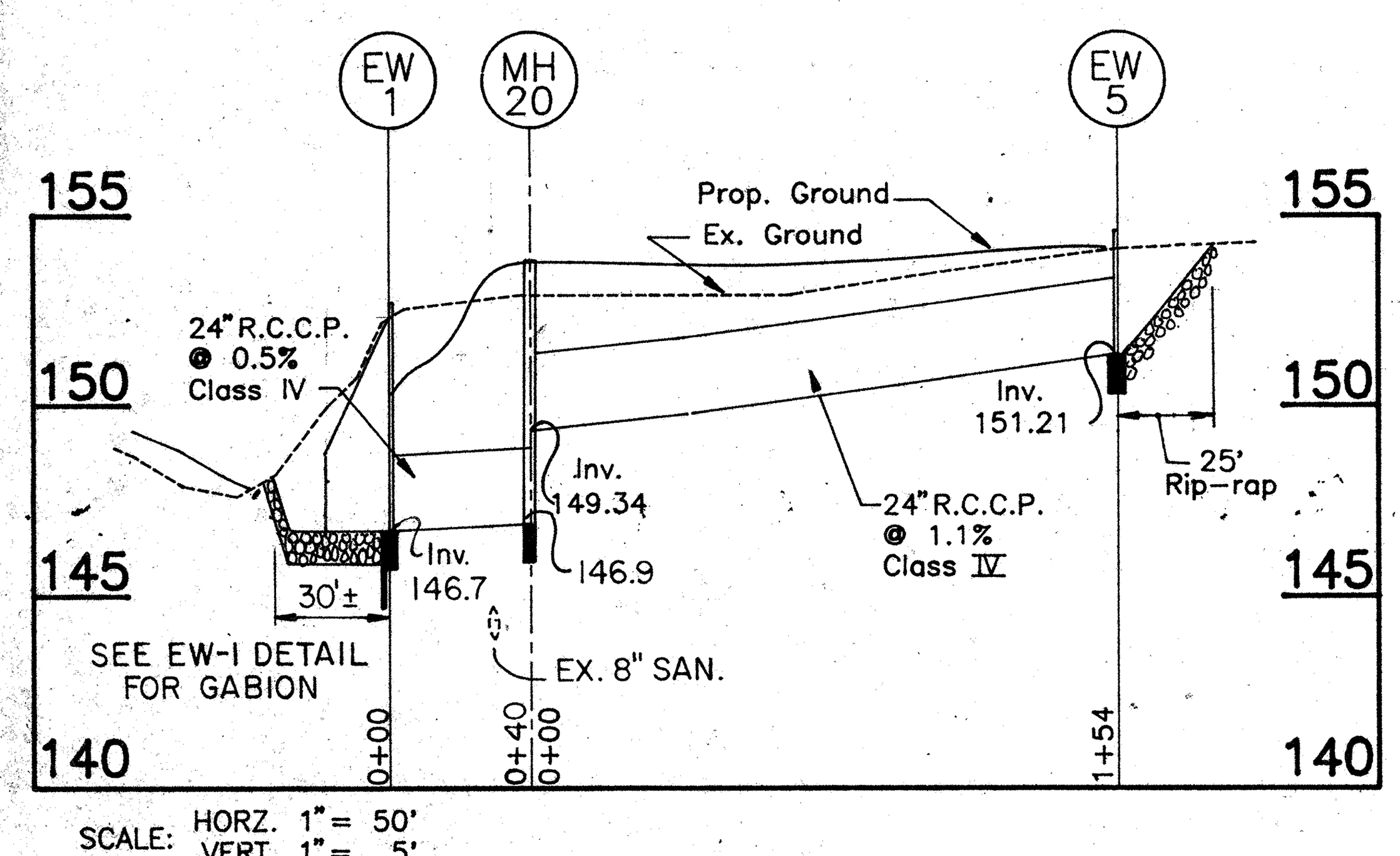
CHARTS AND TABLES

NO SCALE

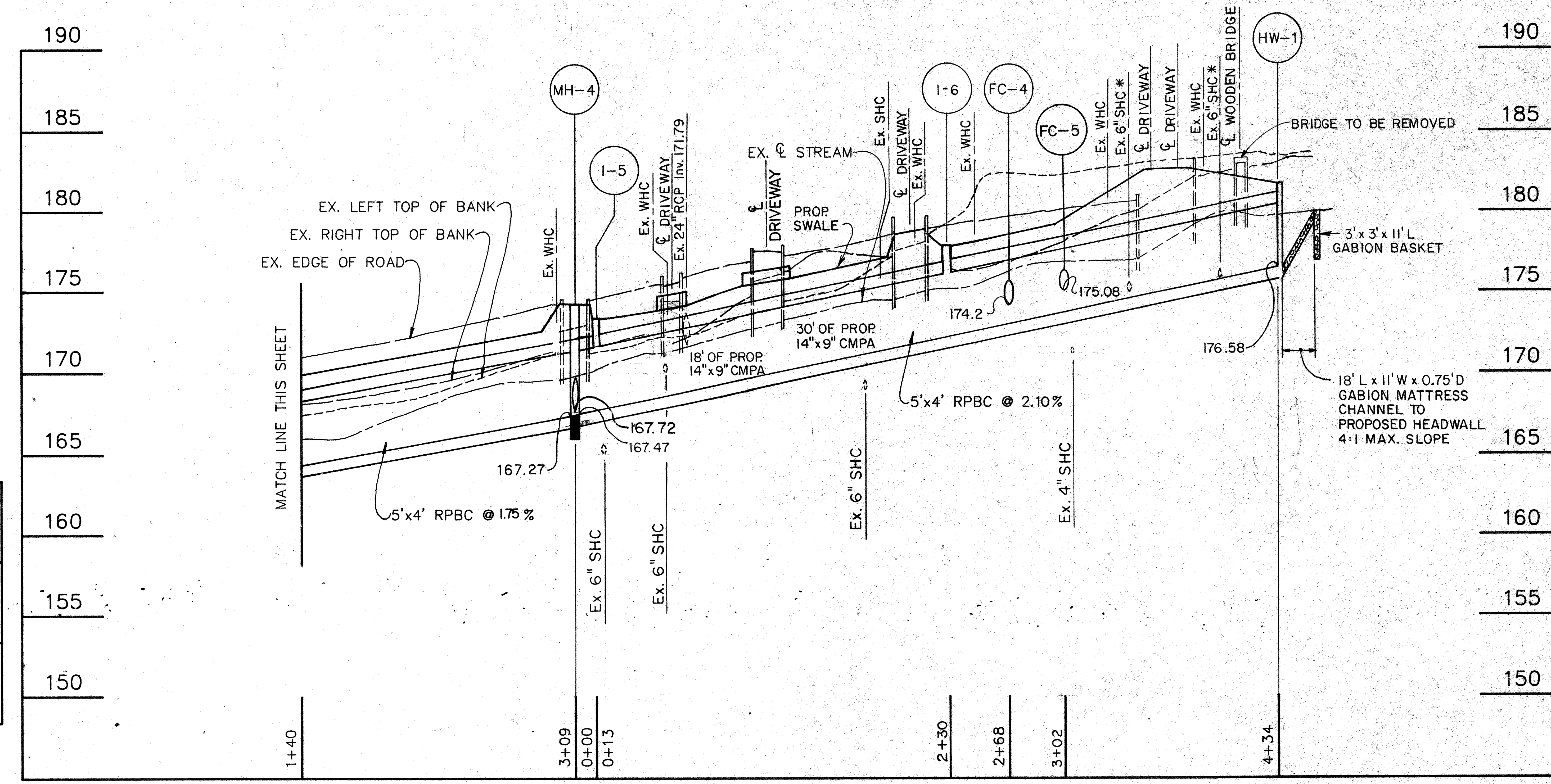
SHEET 7

3420CHRT.DWG

P&J W.O.# 3420-00

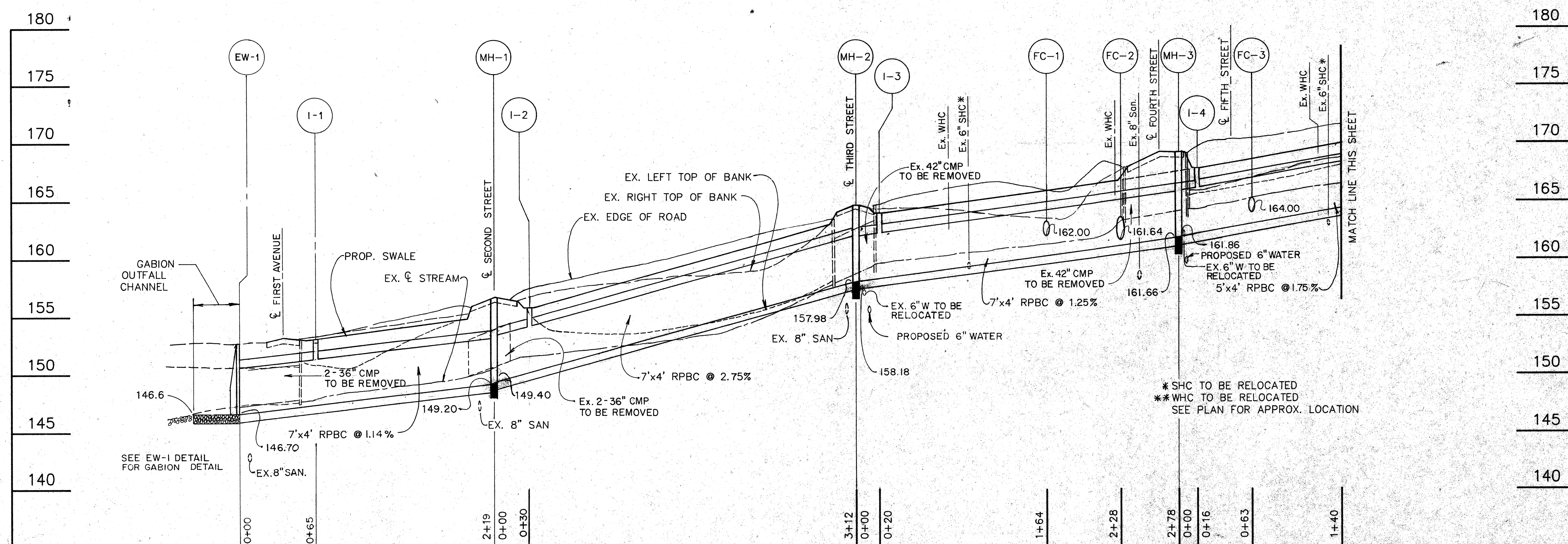


DECATUR ROAD
FOR PLAN SEE SHEET 4



DECATUR ROAD FOR PLAN SEE SHEET 5

NOTE:
1. DRIVEWAY CULVERTS TO CONFORM TO HOWARD CO. STD. NO R6.06.
2. ALL EX. PIPES & EX. HEADWALLS TO BE REMOVED UNLESS OTHERWISE NOTED.



DECATUR ROAD
FOR PLAN SEE SHEETS 4 & 5

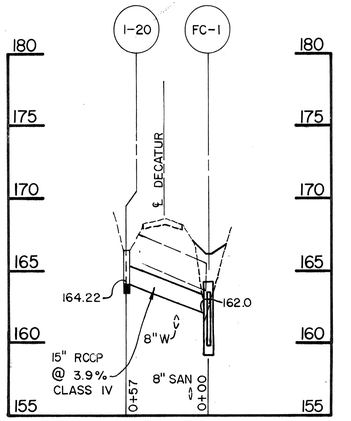
SCALE: 1"=50' HORIZ. 1"=5' VERT.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	PURDUM & JESCHKE CONSULTING ENGINEERS LAND SURVEYORS 1029 North Calvert Street Baltimore, Maryland 21202 Tel: (301)837-0194 Fax:(301)837-3431	DES. JPS DRN. AZW CHK. CLM DATE. 7\24\91	NORTH LAUREL DRAINAGE IMPROVEMENT CAPITAL PROJECT D-1081 PROFILES	SCALE AS SHOWN	SHEET 8 OF 15

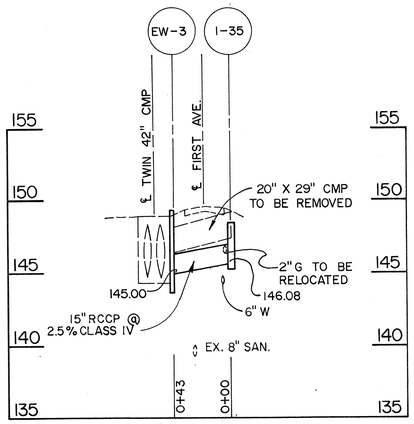
DIRECTOR OF PUBLIC WORKS — DATE 6/6/96 — CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96 — CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

BY | NO. | REVISION | DATE

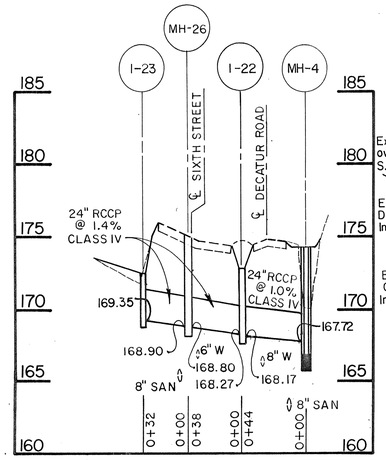
600' SCALE MAP NO. ______ BLOCK NO. ______



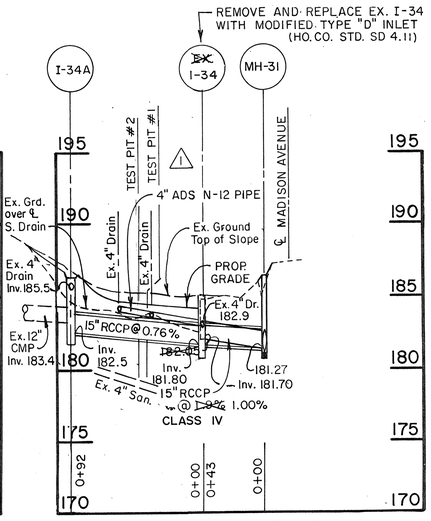
DECATUR ROAD @ FOURTH STREET
FOR PLAN SEE SHEET 5



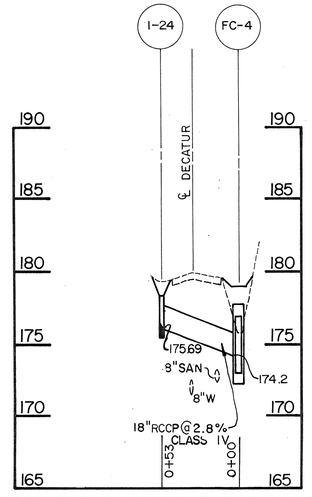
FIRST AVE. @ MADISON AVE.
FOR PLAN SEE SHEET 3



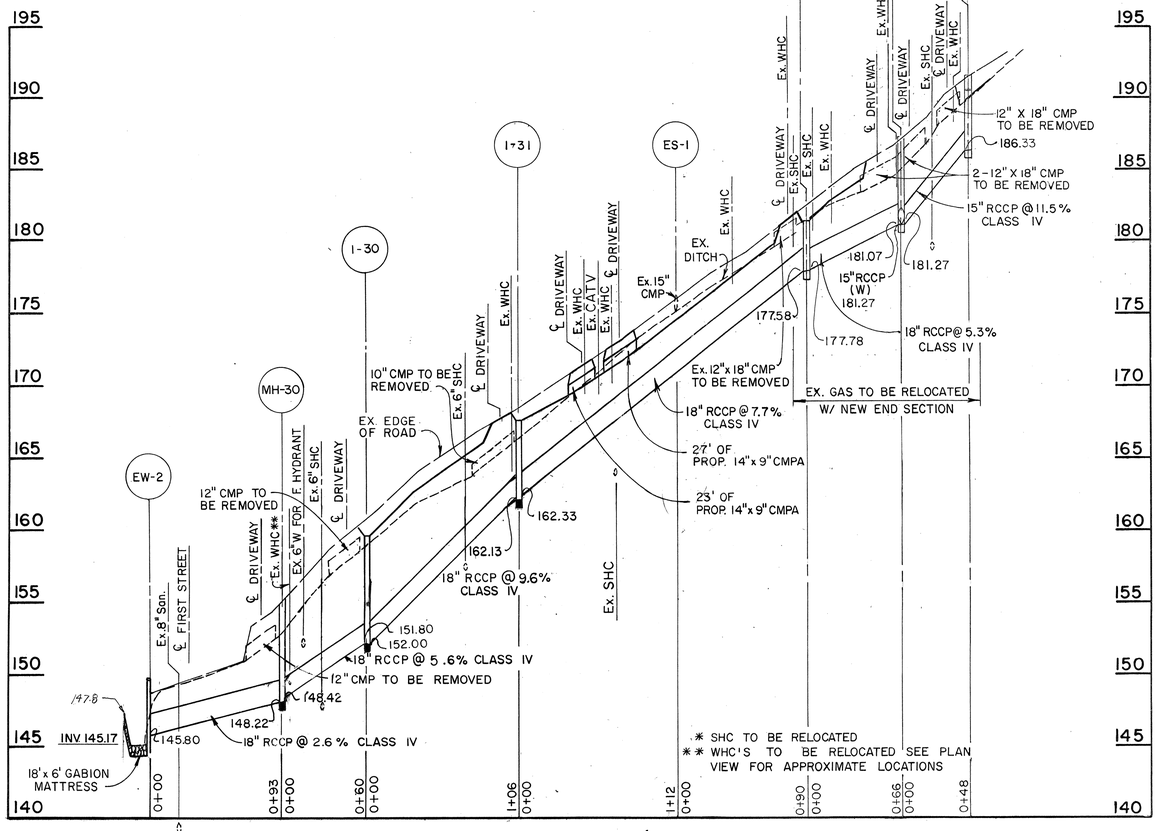
DECATUR ROAD @ SIXTH ST.
FOR PLAN SEE SHEET 5



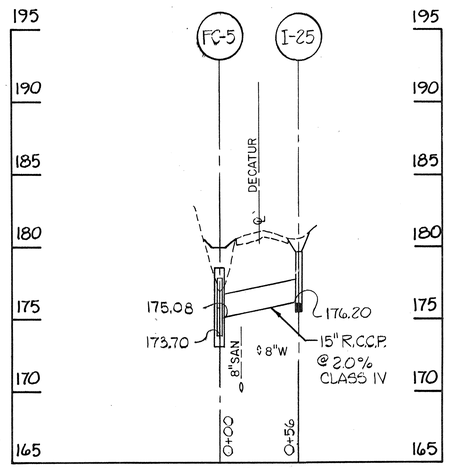
MADISON AVENUE
FOR PLAN SEE SHEET 3



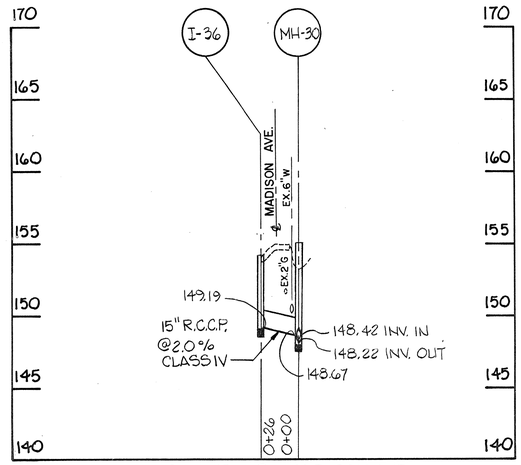
DECATUR ROAD @ SEVENTH ST.
FOR PLAN SEE SHEET 5



MADISON AVENUE
FOR PLAN SEE SHEET 3



DECATUR ROAD @ SEVENTH ST.
FOR PLAN SEE SHEET 5



FIRST AVE. @ MADISON AVE.
FOR PLAN SEE SHEET 3

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

DES: JPS
DRN: AZW
CHK: CLM
DATE: 7/7/95

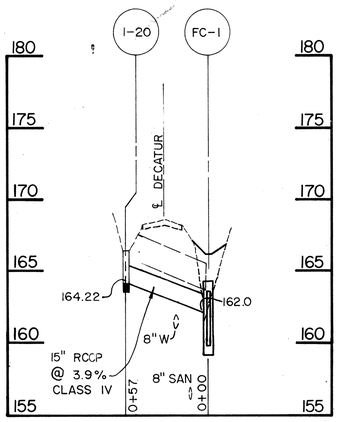
BY	NO.	REVISION	DATE
ARW	1	ADDITIONAL INLETS I-34 AND I-34A	10/30/96

600' SCALE MAP NO. _____ BLOCK NO. _____

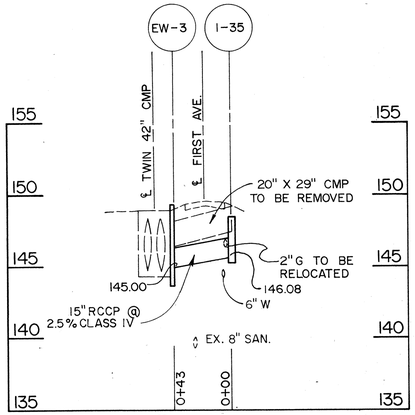
NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D-1081
PROFILES

SCALE AS SHOWN

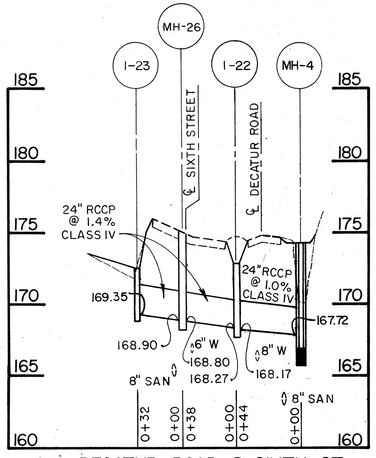
SHEET 9 OF 15



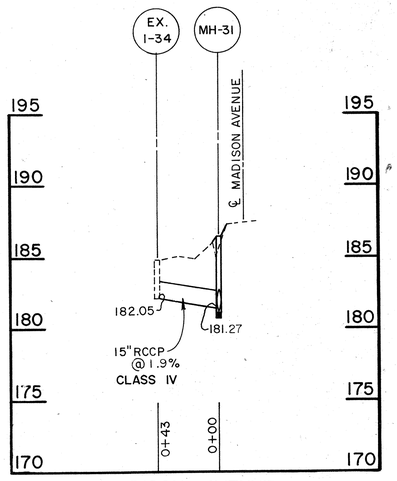
DECATUR ROAD @ FOURTH STREET
FOR PLAN SEE SHEET 6



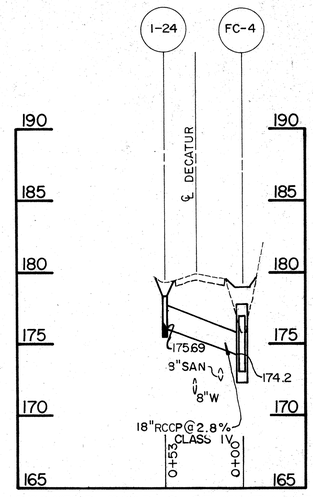
FIRST AVE. @ MADISON AVE.
FOR PLAN SEE SHEET 3



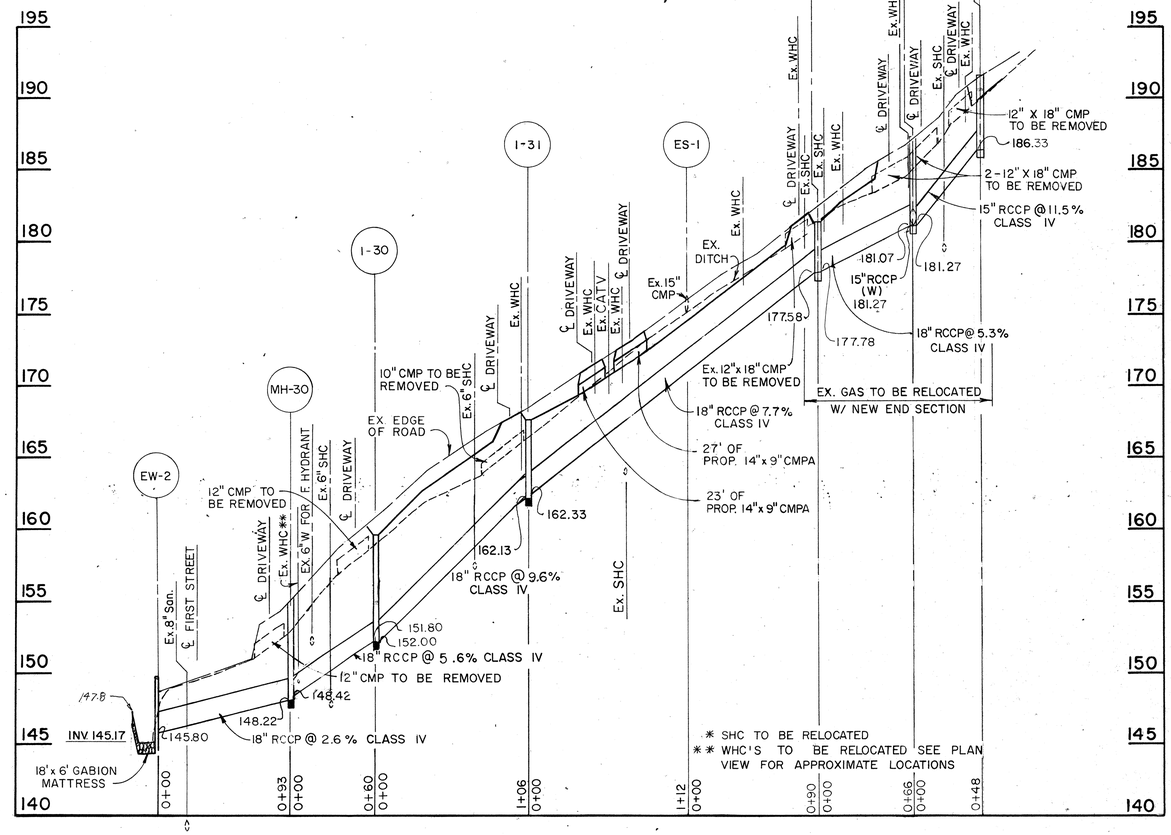
DECATUR ROAD @ SIXTH ST.
FOR PLAN SEE SHEET 5



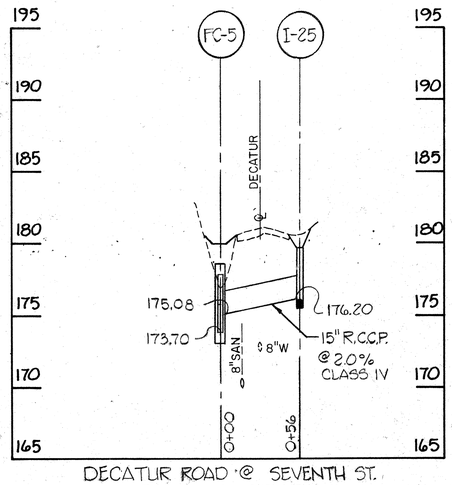
MADISON AVENUE
FOR PLAN SEE SHEET 3



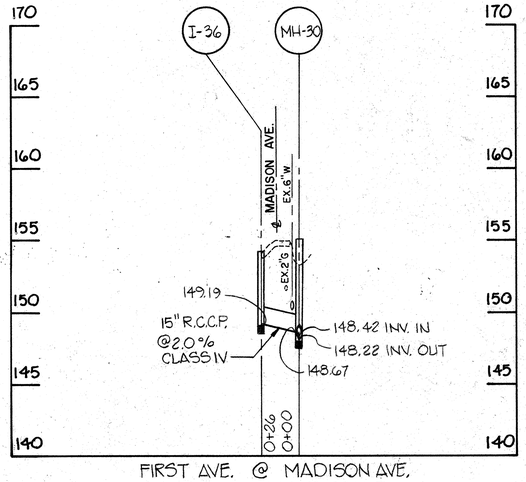
DECATUR ROAD @ SEVENTH ST.
FOR PLAN SEE SHEET 5



MADISON AVENUE
FOR PLAN SEE SHEET 3



DECATUR ROAD @ SEVENTH ST.
FOR PLAN SEE SHEET 5



FIRST AVE. @ MADISON AVE.
FOR PLAN SEE SHEET 3

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/4/96

DES: JPS
DRN: AZW
CHK: CLM
DATE: 7/7/95

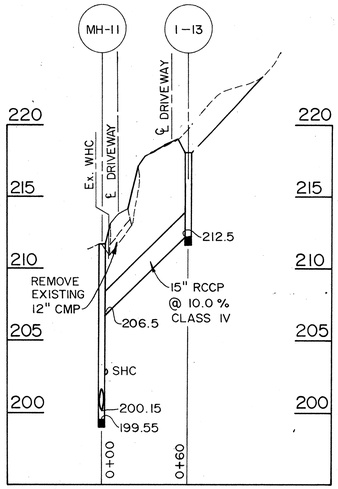
BY	NO.	REVISION	DATE

600' SCALE MAP NO. _____ BLOCK NO. _____

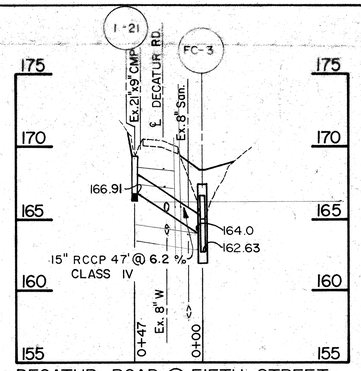
NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D-1081
PROFILES

SCALE AS SHOWN

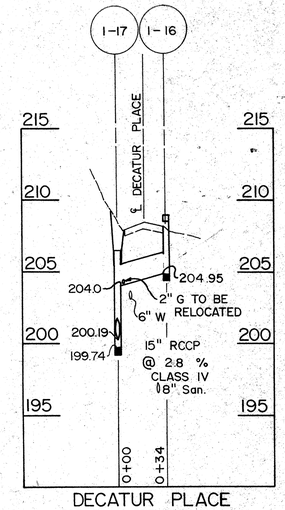
SHEET 9 OF 15



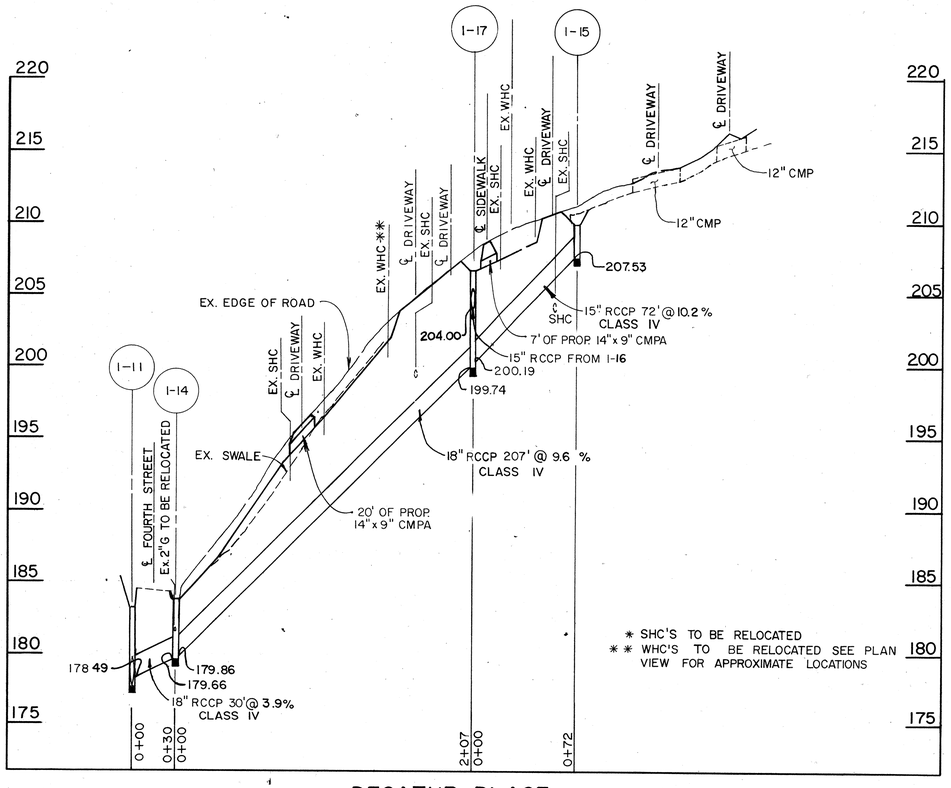
MADISON AVENUE
FOR PLAN SEE SHEET 6



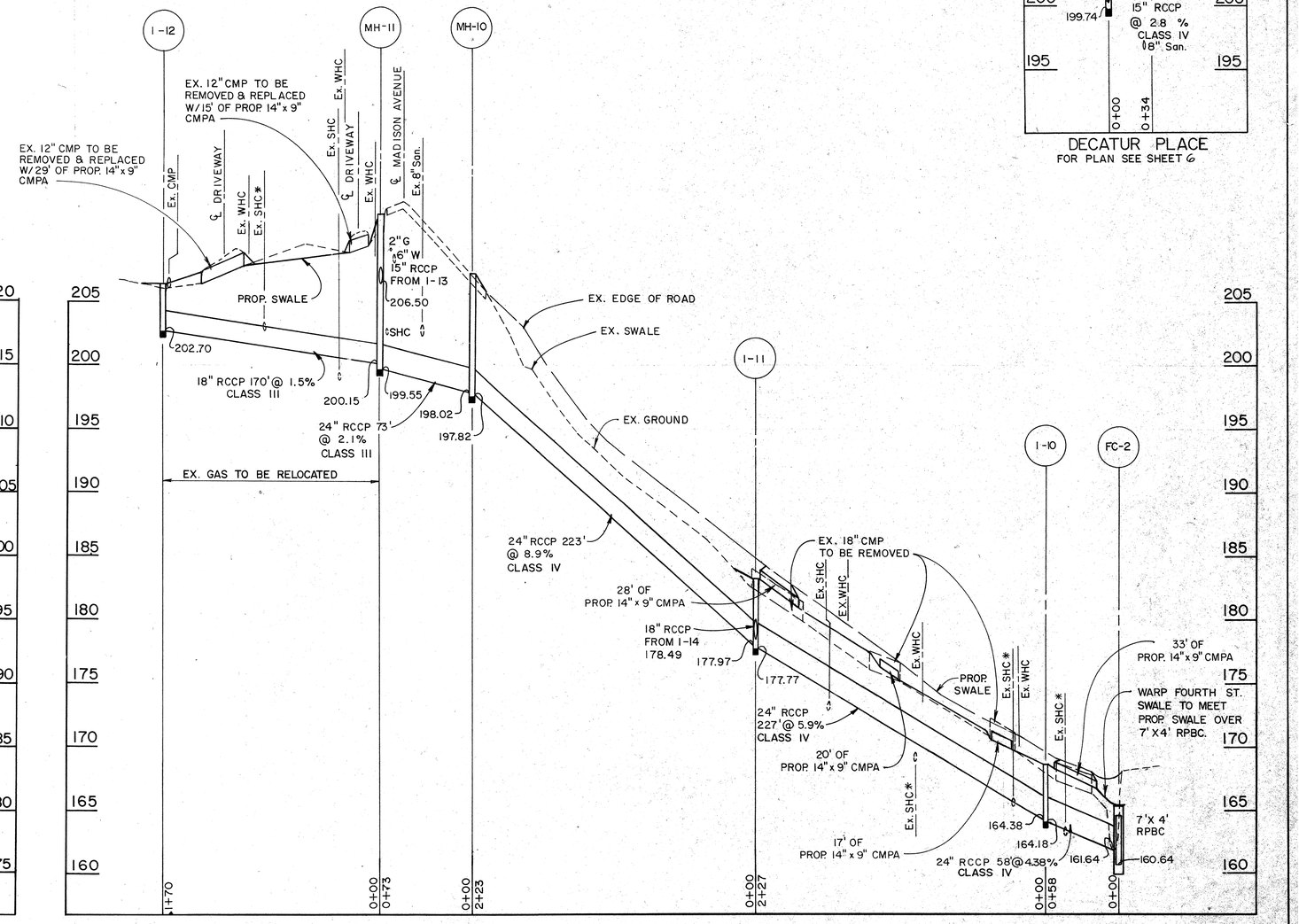
DECATUR ROAD @ FIFTH STREET
FOR PLAN SEE SHEET 5



DECATUR PLACE
FOR PLAN SEE SHEET 6



DECATUR PLACE
FOR PLAN SEE SHEET 6



FOURTH STREET
FOR PLAN SEES 5 & 6

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/6/96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

DES: JPS
DRN: AZW
CHK: CLM
DATE: 7/7/95

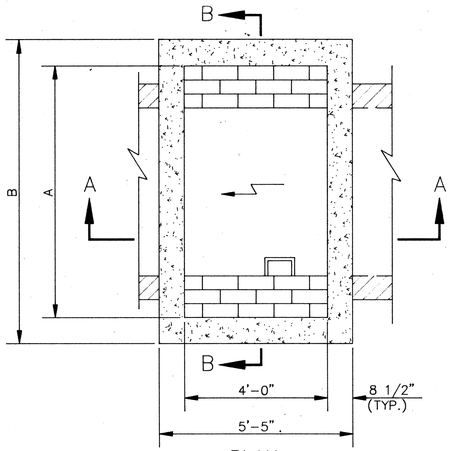
BY	NO.	REVISION	DATE

600' SCALE MAP NO. _____ BLOCK NO. _____

NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D-1081
PROFILES

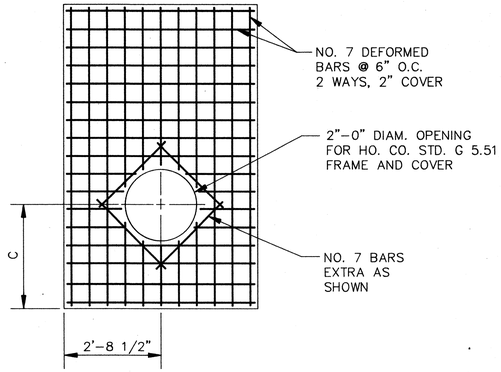
SCALE AS SHOWN

SHEET 10 OF 15



PLAN

(SHOWN WITHOUT CONCRETE SLAB)



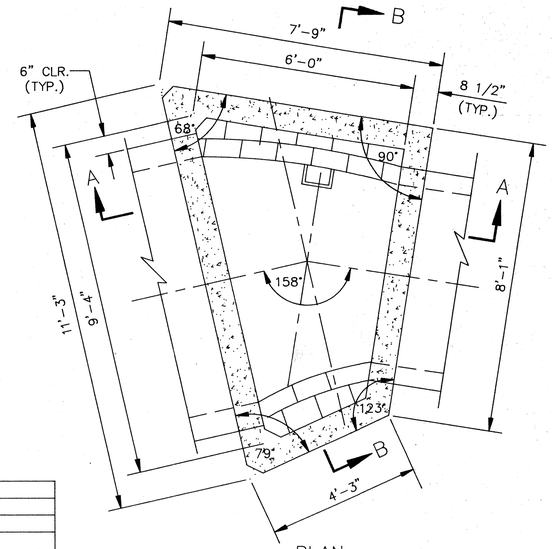
CONCRETE SLAB PLAN

(CONCRETE MIX NO. 2)

MANHOLE DIMENSIONS			
NO.	A	B	LOCATION
1	9'-4"	10'-9"	SECOND ST.
2	9'-4"	10'-9"	THIRD ST.
3	SEE PLAN	SEE PLAN	FOURTH ST.
4	7'-0"	8'-5"	DRIVEWAY

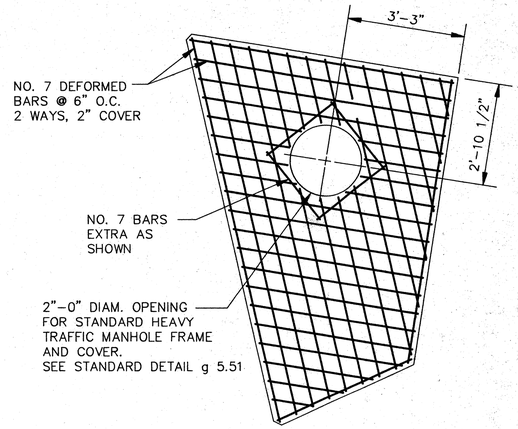
MANHOLES 1, 2 & 4

N.T.S.



PLAN

(SHOWN WITHOUT CONC. SLAB)

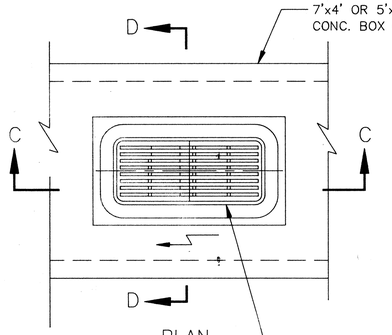


CONCRETE SLAB PLAN

(CONCRETE MIX NO. 2)

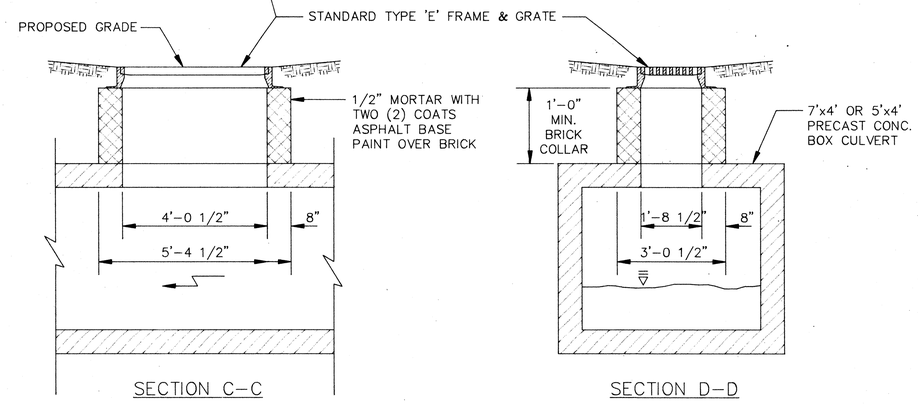
MANHOLE 3

1/2"=1'-0"



PLAN

NOTES:
1. INLET TO BE CONSTRUCTED OF BRICK.



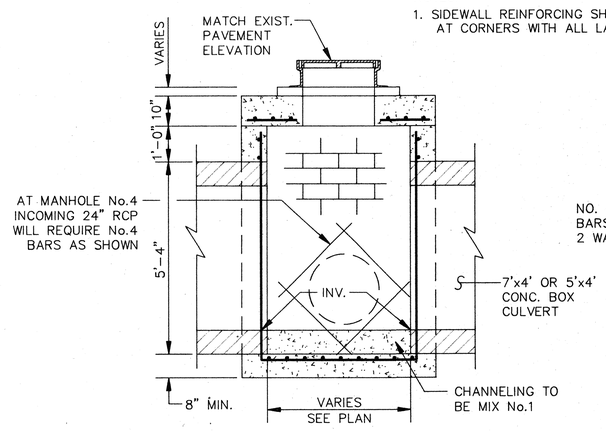
SECTION C–C

SECTION D–D

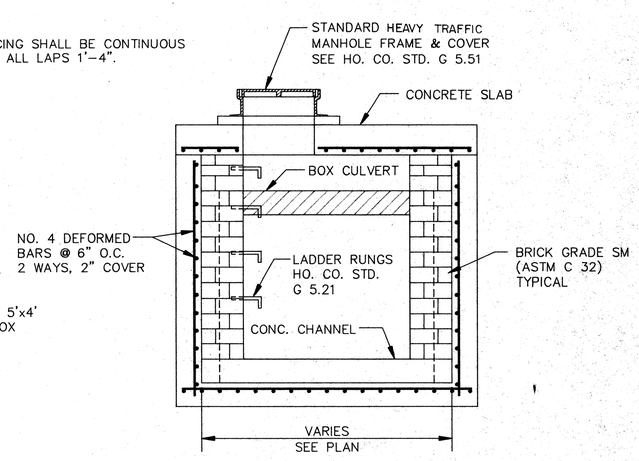
MODIFIED TYPE 'E' INLET

N.T.S.

NOTES:
1. SIDEWALL REINFORCING SHALL BE CONTINUOUS AT CORNERS WITH ALL LAPS 1'-4".



SECTION A–A



SECTION B–B

MANHOLES 1, 2, 3 & 4

N.T.S.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/6/96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

PURDUM and JESCHKE
CONSULTING ENGINEERS AND LAND SURVEYORS
1029 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202
TEL:(410)837-0194 FAX:(410)837-3431

DES : JS
DRN : SLC
CHK : RHB
DATE : 7/7/95

DATE	DESCRIPTION	BY

REVISIONS

600' SCALE MAP NO. 50 BLOCK NO. 4,10

NORTH LAUREL DRAINAGE IMPROVEMENT
STORM DRAIN PLANS – CAPITAL PROJECT D-1081

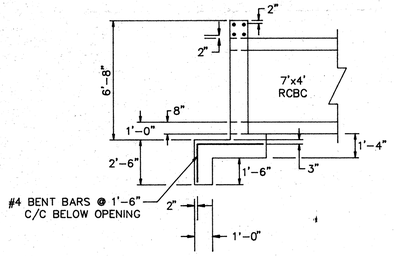
DETAILS

SCALE AS SHOWN

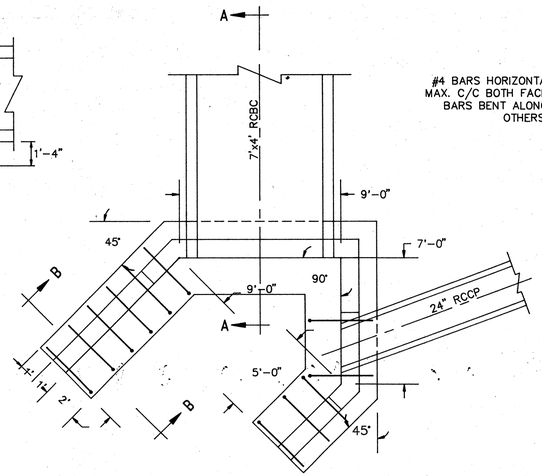
SHEET 11

3420DET1

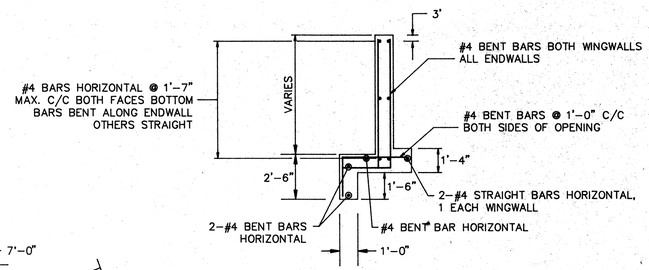
P&J W.O.# 3420-00



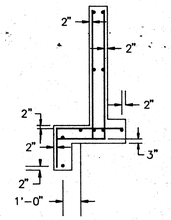
SECTION A-A



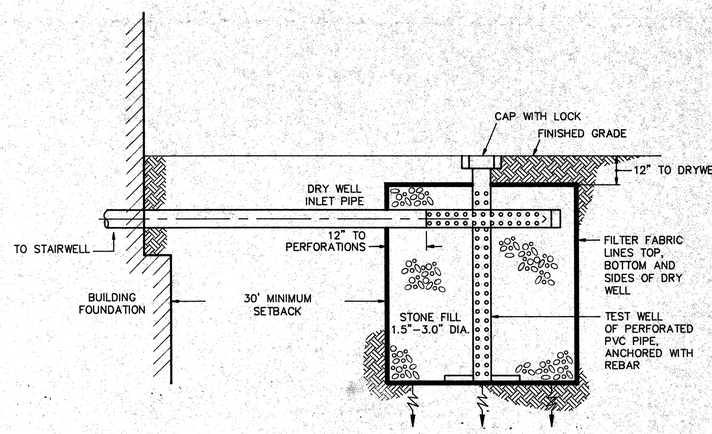
PLAN



SECTION B-B

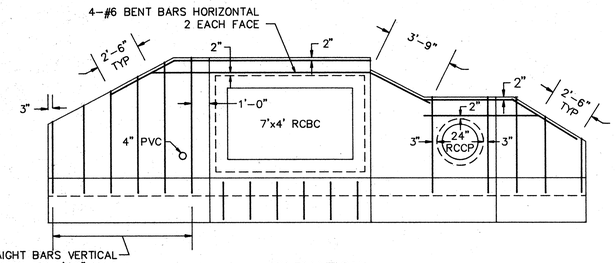


DISPOSITION OF BARS DETAIL



DRY WELL

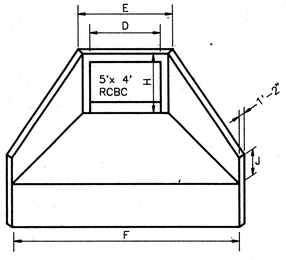
NOT TO SCALE



ELEVATION

EW-1
END WALL AT FIRST AVE. & DECATUR RD.

SCALE: 1"=4'

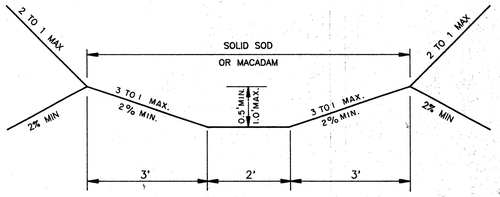


HEADWALL HW-1

NOT TO SCALE

NOTE : FOR ADDITION DETAIL INFORMATION SEE HOWARD COUNTY STANDARD SD 5-11 (TYPICAL TYPE "A" HEADWALL CIRCULAR)

D	E	F	G	H	J	K	L	N	R	
60"	7'-0"	16'-0"	5'-6"	6'-6"	3'-6"	9"	12"	14"	# 6 - 8 " %	



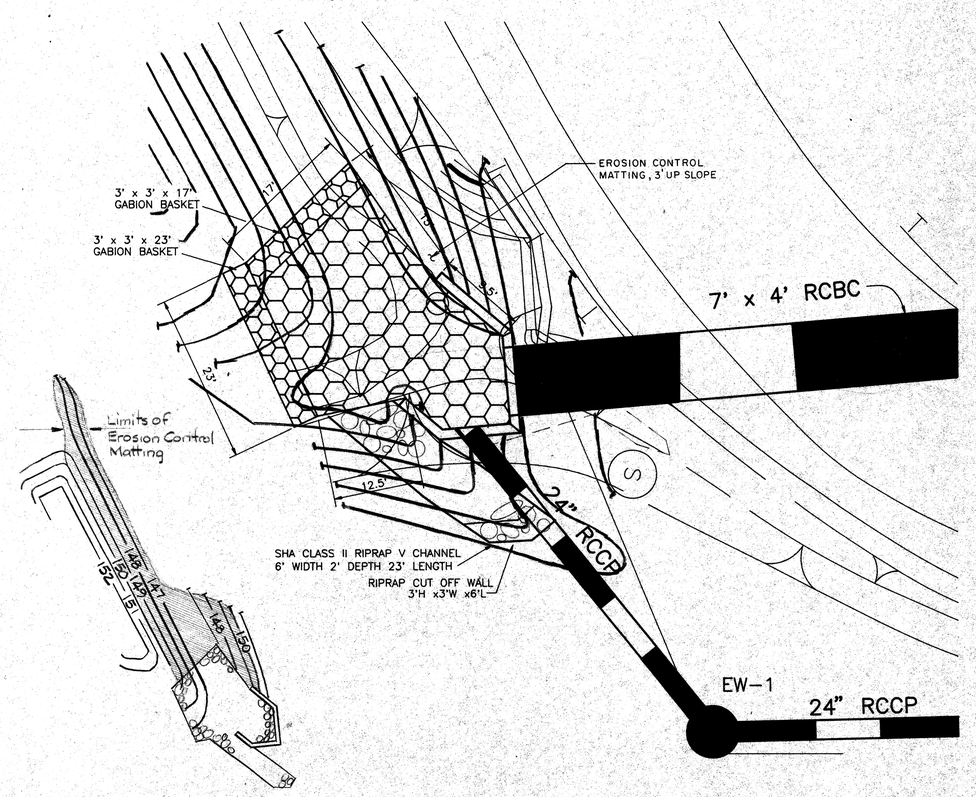
TYPICAL ROADSIDE SWALE

N.T.S.

SWALE TABLE			
LOCATION	STRUCTURE FROM	STRUCTURE TO	SURFACE
MADISON AVE. - SOUTH	I-33	EW-2	* EROS. CONT. MAT.
DECATUR PLACE - WEST	I-14	I-15	MACADAM
DECATUR ROAD	I-1	HW-1	* EROS. CONT. MAT.
MADISON AVE. - NORTH	I-12	I-13	* E.C.M. & MACADAM
FOUTH ST. - SOUTH	FC-2	MH-10	MACADAM

USE MACADAM ON MADISON AVENUE NORTH ON BOTTOM SIDE AND EAST SIDE OF SWALE. USE E.C.M.ON WEST SIDE (3:1 SLOPED SIDE OF SWALE) OF SWALE WHICH IS CLOSEST TO HOUSES.

* EROS. CONT. MAT. OR E.C.M. = EROSION CONTROL MATTING



EW-1 DETAIL

N.T.S.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/8/96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

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1029 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202
TEL:(410)837-0194 FAX:(410)837-3431

DES : JPS
DRN : PWR
CHK : CLM
DATE : 7/17/95

DATE	DESCRIPTION	BY
	REVISIONS	

600' SCALE MAP NO. 50 BLOCK NO. 4,10

NORTH LAUREL DRAINAGE IMPROVEMENT
STORM DRAIN PLANS - CAPITAL PROJECT D-1081

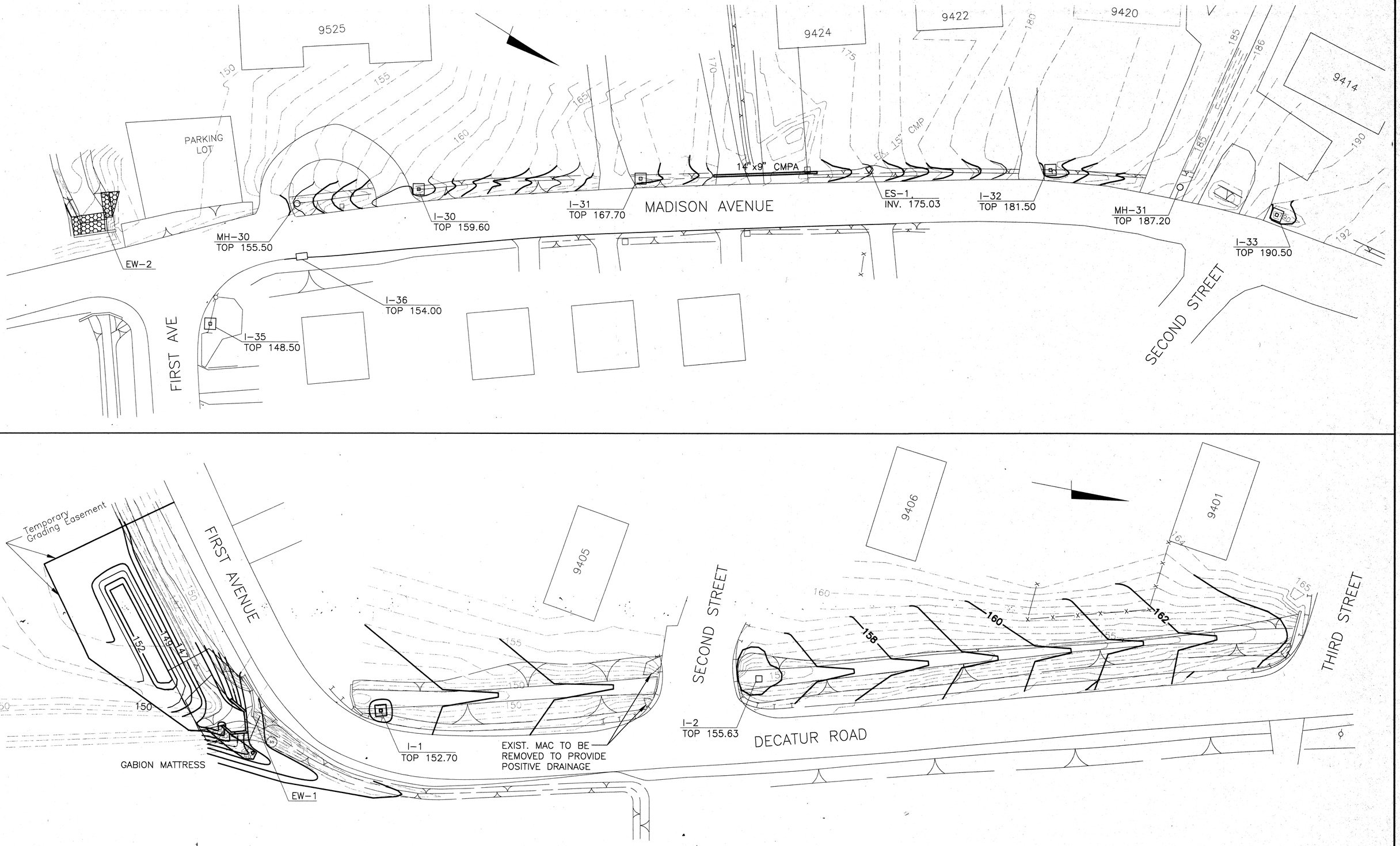
DETAILS

SCALE AS NOTED

SHEET 12

3420DET2.DWG

P&J W.O.# 3420-00



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/6/96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS
1029 North Calvert Street
Baltimore, Maryland 21202
Tel: (301)837-0194 Fax:(301)837-3431

STATE OF MARYLAND — No. 10856 — REGISTERED PROFESSIONAL ENGINEER

DES. JS					
DRN. SLC					
CHK. RHB					
DATE. 7\7\95	BY	NO.	REVISION	DATE	600' SCALE MAP NO. _____ BLOCK NO. _____

NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D-1081
GRADING PLAN

SCALE: 1"=20'

SHEET 13

3420091.DWG

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96	CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-17-96	CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/4/96

PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS
1029 North Calvert Street
Baltimore, Maryland 21202
Tel: (301)837-0194 Fax: (301)837-3431

STATE OF MARYLAND — RICHARD HENRY BERICH — No. 10959 — REGISTERED PROFESSIONAL ENGINEER

DES.	JS
DRN.	SLC
CHK.	RHB
DATE.	7\7\95

BY	NO.	REVISION	DATE

600' SCALE MAP NO. ________ BLOCK NO. ________

NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D-1081
GRADING PLANS

SCALE	1"=20'
SHEET	14

3420GR2.DWG

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE	CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96	CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/4/96

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STATE OF MARYLAND

DES. JS					
DRN. SLC					
CHK. RHB					
DATE 7\7\95	BY	NO.	REVISION	DATE	600' SCALE MAP NO. ______ BLOCK NO. ______

NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D-1081
GRADING PLANS

SCALE 1"=20'
SHEET 15

SEQUENCE OF CONSTRUCTION

1. Obtain proper permits.

2. Notify the Howard County Bureau of Licenses, Inspections and Permits and Sediment Control Inspector at least 48 hours before any work begins.

DECATUR ROAD (WEST SIDE)

1. Install impervious sand bag dike upstream of I–1 location as shown on typical base flow diversion detail on sheet #20. During the working hours, pump the base flow downstream of EW–1 gabion mattress location until I–1 is installed. Use twin 15 inch pipes installed from impervious sand bag dike to location downstream of EW–1 for service during non–working . 1 day.

2. Remove existing twin 36" CMP at First Avenue. 1 day.

3. Install box culvert from EW–1 to upstream of I–1, install I–1. 4 days.

4. Install structure EW–1. 5 days.

5. Install berm and gabion mattress outfall protection at EW1. 5 days.

6. Provide temporary repair/stabilization of roadway at First Street. 1 day.

7. Install perimeter dike between First and Second Streets directing runoff into opening at I–1 and place silt fence around I–1. Install work area and base flow area sump pits per sheet #20. 2 days

8. Between First Avenue and Second Street, excavate only the maximum length of trench in which the culvert and trench backfill can be completed in the same day. Install the box culvert sections and impervious sand bag dike approximately 5 feet downstream of Second Avenue as shown on sheet #20, typical base flow diversions. Pump the base flow from the impervious sand bag dike area to the next downstream inlet during working hours. During non–working hours place twin 15" pipes from impervious sandbag dike to last section of box culvert installed for service. 12 days.

9. At the beginning of each work day, the pump with temporary 8" discharge pipe from the base flow area shall be placed from the impervious sand bag dike to the previously installed inlet. If directed, place a second pump with temporary 4" discharge pipe from the work area to a previously installed inlet.

10. Continue with excavation and box culvert installation until removing twin 36" CMP's in Second Street.

11. Install impervious sandbag dike approximately 5 ft. downstream of Third Street. During working hours, pump base flow to I–1 until I–2 structure is installed. During non–working hours place twin 15" pipes at a minimum 2% slope from the impervious sandbag dike to last section of box culvert installed.

12. Rough grade, provide temporary stabilization for the area between First and Second Streets and provide temporary repair/stabilization of roadway at Second Street.

*13. Remove the earth dikes between First Avenue and Second Street following sod growth and approval from Sediment Control.

14. Install earth dikes between Second and Third Streets directing runoff into I–2 and place silt fence around I–2. Install work area and base flow area sump pits per detail on sheet #202 days.

15. Between Second and Third Street, excavate only the maximum length of trench in which the culvert and trench backfill can be completed in the same day. Install box culvert sections and maintain impervious sandbag dike upstream of excavation as shown on sheet #20 for typical base flow diversion. During working hours, pump the base flow from the impervious sandbag dike to the next downstream inlet. During non–working hours place twin 15" pipes at a minimum 2% slope from sandbag dike to last section of box culvert installed. 15 days.

16. At the beginning of each work day, the pump with temporary 8" discharge pipe from the base flow area shall be placed from the impervious sand bag dike to the previously installed inlet. If directed, place a second pump with temporary 4" discharge pipe from the work area to a previously installed inlet.

17. Continue with excavation and box culvert installation until reaching twin 42" CMP's in Third Street. Install impervious sandbag dike 5 ft. downstream of Fourth Street. During working hours, pump base flow to I–2 until I–3 structure is installed. During non–working hours place twin 15" pipes at a minimum 2% slope from sandbag dike to last section of box culvert installed.

18. Rough grade, provide temporary stabilization for the area between Second and Third Street and provide temporary repair/stabilization of the road at Third Street.

19. Remove the earth dikes between Second Avenue and Third Street following sod growth and approval from Sediment Control.

20. Install perimeter earth dikes between Third and Fourth Street directing runoff into I–3 and place silt fence around I–3. Install work area and base flow area sump pits per detail on sheet #20. 2 days.

21. Between Third and Fourth Street, excavate only the maximum length of trench in which the culvert and trench backfill can be completed in the same day.Install box culvert sections and maintain impervious sandbag dike upstream of excavation as shown on sheet #20 for typical base flow diversions. During non–working hours place twin 15" pipes at a minimum 2% slope from impervious sandbag dike to last section of box culvert installed. Pump the base flow from the impervious sandbag dike to the next downstream inlet during working hours. 15 days.

22. At the beginning of each work day, the pump with temporary 8" discharge pipe from the base flow area shall be placed from the impervious sand bag dike to the previously installed inlet. If directed, place a second pump with temporary 4" discharge pipe from the work area to a previously installed inlet.

23. Continue with excavation and box culvert installation until reaching twin 42" CMP's in Fourth Street. Install impervious sand bag dike 5 ft. upstream of proposed Inlet 5. Pump base flow to I–3 until I–4 structure is installed. During non–working hours place twin 15" pipes at minimum 2% slope from the impervious sandbag dike to last section of box culvert installed.

24. Rough grade, provide temporary stabilization for the area between Third and Fourth Streets and provide temporary repair/stabilization of roadway at Fourth Street.

25. Remove the earth dikes between Third and Fourth Street following sod growth and approval from Sediment Control.

26. Install perimeter dike between I–4 and proposed Inlet 5 directing the runoff into opening at I–4 and place silt fence around I–4. Install work area and base flow area sump pits per detail on Sheet #20 2 days.

27. Between Fourth Street and I–5, excavate only the maximum length in which the culvert and trench backfill can be completed in the same day.Install box culvert sectionsand maintain impervious sand bag dike 5ft. Upstream of proposed Inlet 5. During working hours, pump the base flow from the impervious sandbag dike to the next downstream inlet. During non–working hours place twin 15" pipes from the impervious sandbag dike to last section of box culvert installed. 15 days

28. At the beginning of each work day, the pump with temporary 8" discharge pipe from the base flow area shall be placed from the impervious sand bag dike to the previously installed inlet. If directed, place a second pump with temporary 4" discharge pipe from the work area to a previously installed inlet.

29. Continue with excavation and box culvert installation until Structure I–5 is reached. Install impervious sandbag dike 5 ft. upstream of HW–1. Pump base flow to the next downstream inlet during working hours. During non–working hours place twin 15" pipes from the impervious sandbag dike to last section of box culvert installed.

30. Rough grade and provide stabilization for the area between Fourth Street and I–5.

31. Remove the earth dikes between Fourth Street and I–5 following sod growth and approval from S.C. Inspector. 2 days.

32. Install perimeter earth dike between I–5 and HW–1 directing runoff into I–5 and place silt fence around I–5 and include pipe below driveways. Install work area and base flow area sump pits per detail on sheet #20. 2 days.

33. Between I–5 and HW–1, excavate only the maximum length of trench in which the culvert and trench backfill can be completed in the same day and install box culvert sections. Maintain the impervious sand bag dike upstream of excavation. Pump the base flow from the impervious sandbag dike to inlet I–5 during working hours. Install twin 15" pipes from the impervious sandbag dike to last section of box culvert installed for sevice during non–working hours. 15 days.

34. At the beginning of each work day, the pump with temporary 8" discharge pipe from the base flow area shall be placed from the impervious sand bag dike to the previously installed inlet. If directed, place a second pump with temporary 4" discharge pipe from the work area to a previously installed inlet.

35. Continue with excavation and box culvert installation to HW–1 and install, structure HW–I and gabion mattress.

36. Rough grade and provide temporary stabilization for the area between I–5 and HW–I.

37. Remove the earth dikes between I–5 and HW–1 following sod growth and approval from Sediment Control. 14 days.
90 days total.

DECATUR ROAD (EAST SIDE)

38. Install an impervious stone dike approximately 75' upstream of EW–4. Pump the base flow from the impervious sandbag dike to a downstream of gabion baskets.

39. Install perimeter earth dike around the proposed storm drain alignment from the impervious dike, to the downstream gabion surface at EW–1. 1 day.

40. Excavate only the maximum length of trench in which the culvert and trench backfill can be completed in the same day and install pipe system, starting culvert from downstream end. 2 days.

41. At the completion of construction each day place a stone dike wrapped in filter cloth at the end of the storm drain pipe.

42. Upon completion of partial installation of pipe system and grading, provide temporary stabilization by seeding, and mulching plus provide straw bale check dams every 25'.

43. Continue construction sequence by repeating items # 38, 39, 40, 41 and 42 until all pipe MH#20 and EW#5 have been constructed.

44. Install rip–rap channel protection @ EW #5 and permanently stabilize all areas on east side of Decatur Road at 24" S.D. system. 1 day.

45. Remove all sediment control devices such as the final section of perimeter dike and upstream impervious in–stream dike following sod growth and approval from Sediment Control 14 days

FOURTH STREET, DECATUR PLACE, AND NORTH MADISON AVENUE SYSTEM

46. For the Fourth Street, Decatur Place and Madison Avenue north system begin pipe installation at the downstream location. (FC–2)

47. Excavate only the maximum length of trench in which the culvert and trench backfill can be completed in the same day and install pipe system, starting culvert from downstream end.2 days.

48. At the completion of construction each day place a stone dike wrapped in filter cloth at the end of the storm drain pipe.

49. Upon completion of partial installation of the pipe system and grading provide temporary stabilization by seeding and mulching plus providing straw bale check dams every 25'.

50. Place permanent stabilization on downstream areas including macadam at swale centerline per detail sheet #12.

51. Upon completion of S.D. systems of North Madison Avenue, solid sod and permanently stabilize (seed & mulch) disturbed areas per detail sheet #12 & #18.

52. Upon completion of S.D. system at Decatur Place, place solid sod per detail sheet #12 and #18 and permanently stabilized (seed & mulch) disturbed areas.

53. Remove sediment controls on Decatur Place following sod growth of seeded areas following sod growth and approval from S.C. Inspector. 14 days

MADISON AVENUE / FIRST STREET

54. Install earth dike along edge of pavement. 1 day

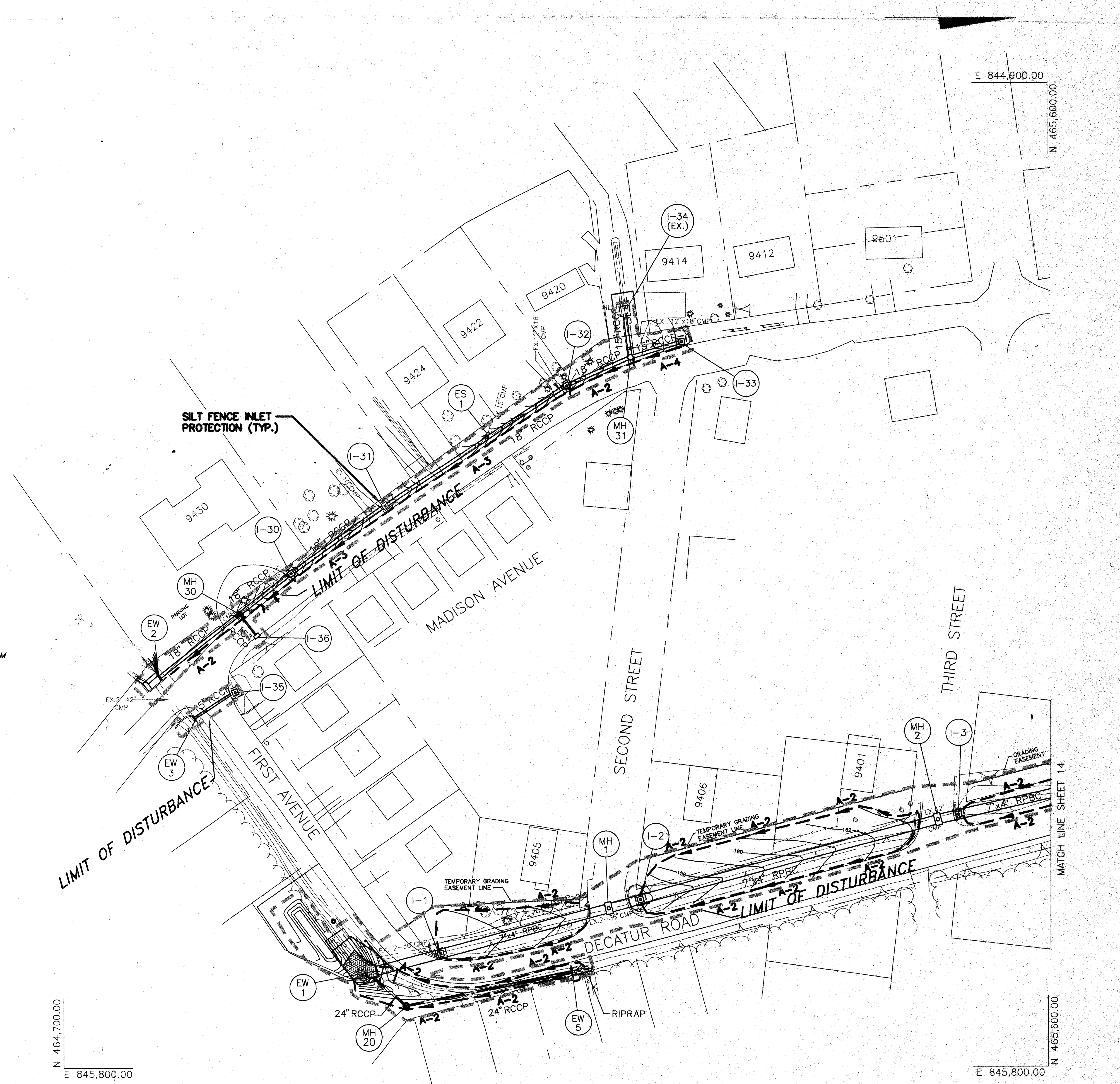
55. Excavate only the maximum length of trench in which the culvert and trench backfill can be completed in the same day and install pipe system, starting culvert from downstream end. 21 days.

56. At the completion of construction each day place a stone dike wrapped in filter cloth at the end of the storm drain pipe.

57. Stabilize the swale graded below the storm drain pipe by seeding and mulching and solid sodding at swale centerline per details on sheet #12 and sheet #18.

Upon approval of Sediment Control Inspection, remove all sediment control devices and stabilize per permanent seeding notes.

(30 days not critical path) Fine grade areas where sediment controls are removed and stabilize as specified by the approved sediment control plan.



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS — DATE 6/10/9. CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96 CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96 CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96	PURDUM & JESCHKE CONSULTING ENGINEERS LAND SURVEYORS 1029 North Calvert Street Baltimore, Maryland 21202 Tel: (301)837–0194 Fax:(301)837–3431	STATE OF MARYLAND RICHARD HENRY BERICH No. 10959 REGISTERED PROFESSIONAL ENGINEER	DES. JS DRN. SLC CHK. RHB DATE. 7/7/95	BY / NO. / REVISION / DATE 600' SCALE MAP NO. ______ BLOCK NO. ______

NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D–1081
SEDIMENT & EROSION CONTROL PLAN

SCALE 1"=50'
SHEET 16

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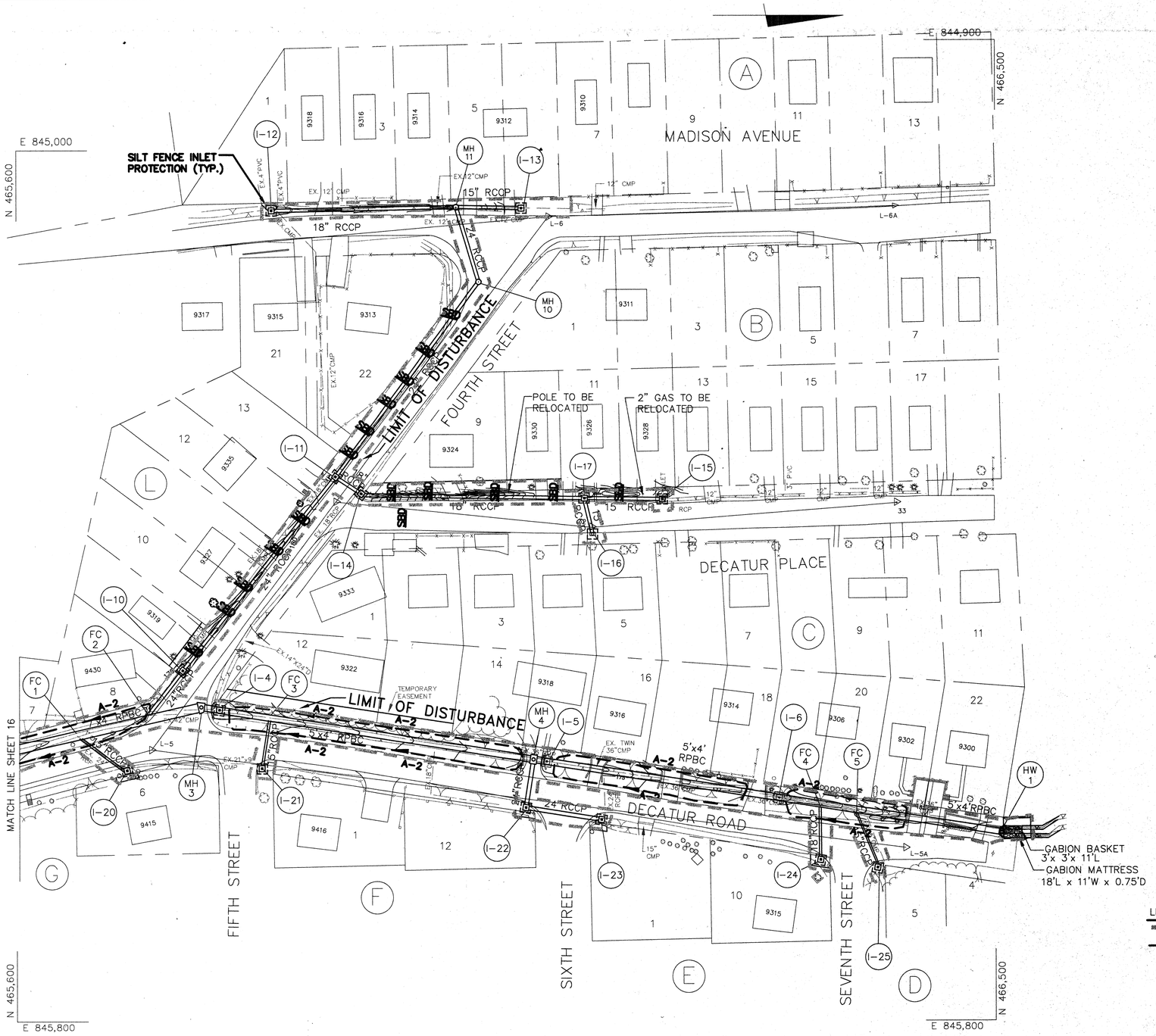

LEGEND

- LIMIT OF DISTURBANCE
- A-2 EARTH DIKE
- SILT FENCE INLET PROTECTION
- SBD STRAW BALE DIKE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/4/96

PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS
1029 North Calvert Street
Baltimore,. Maryland 21202
Tel: (301)837-0194 Fax:(301)837-3431

STATE OF MARYLAND — No. 10959 — PROFESSIONAL ENGINEER

DES.	JS
DRN.	SLC
CHK.	RHB
DATE.	7\7\95

BY	NO.	REVISION	DATE

600' SCALE MAP NO. _____ BLOCK NO. _____

NORTH LAUREL DRAINAGE IMPROVEMENT CAPITAL PROJECT D-1081 SEDIMENT & EROSION CONTROL PLAN

SCALE 1"=50'

SHEET 17

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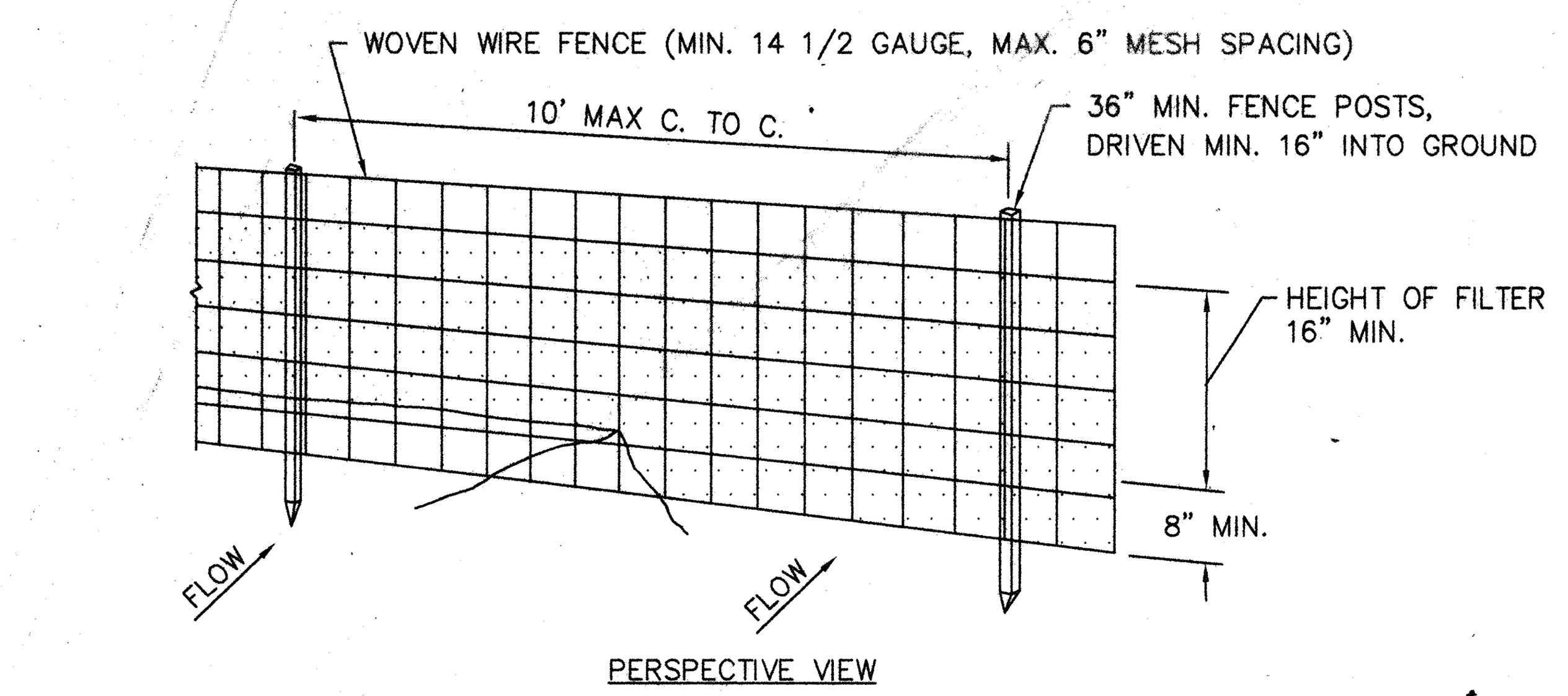
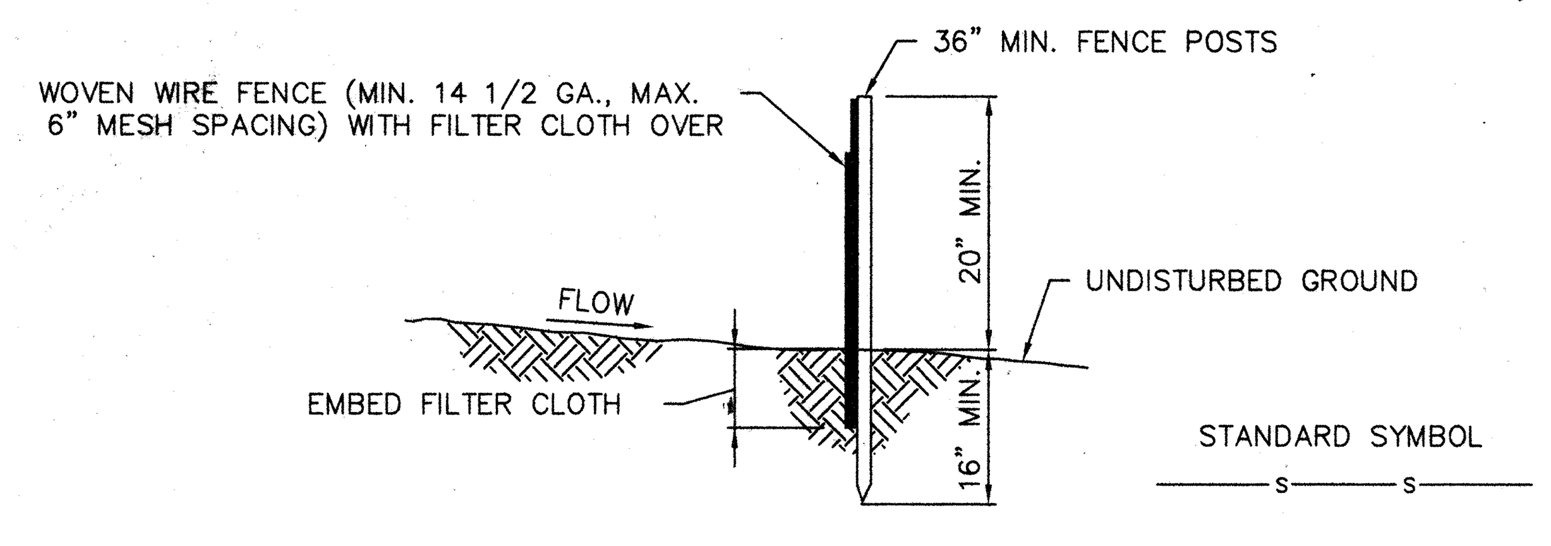


PERSPECTIVE VIEW



SECTION

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WORE TIES OF STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FABRIC WITH TIES SPACED EVERY 24" AT TOP AND MIDSECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

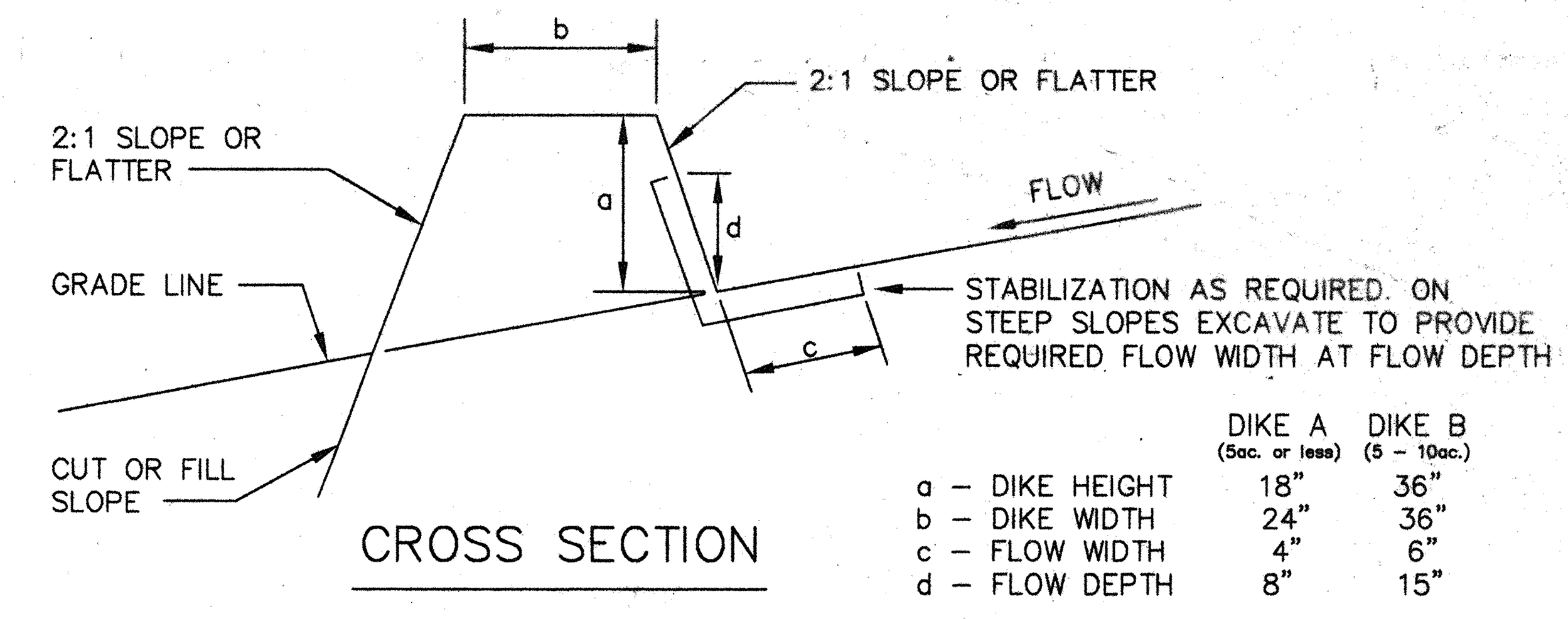
POSTS:
STEEL EITHER T OR U TYPE OR 2" HARDWOOD

FENCE:
WOVEN WIRE, 14 GA. MIN., 6" MAX. MESH OPENING

FILTER CLOTH:
MIRAFI 100X, STABI-LINKA T140N OR APPROVED EQUAL

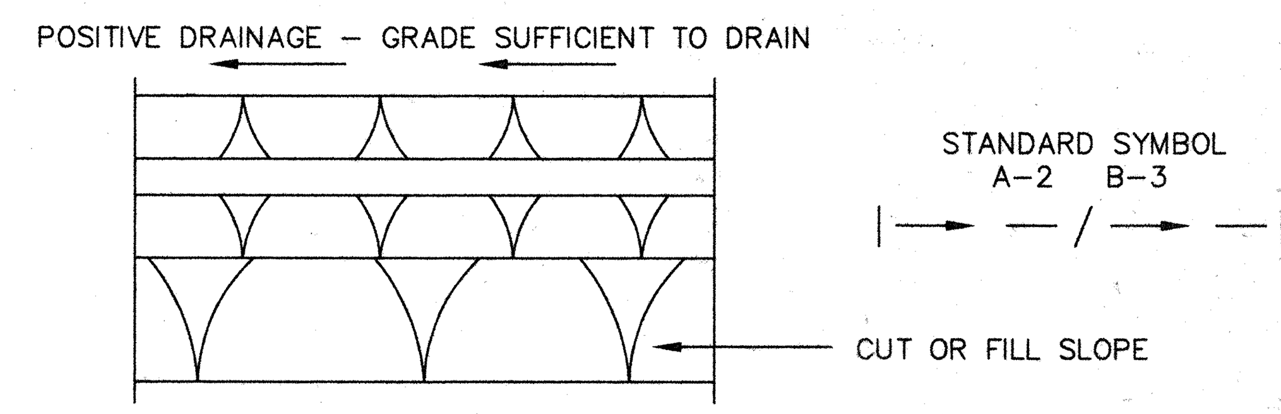
PREFABRICATED UNIT:
GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

SILT FENCE



CROSS SECTION

	DIKE A (5ac. or less)	DIKE B (5 - 10ac.)
a – DIKE HEIGHT	18"	36"
b – DIKE WIDTH	24"	36"
c – FLOW WIDTH	4"	6"
d – FLOW DEPTH	8"	15"



CONSTRUCTION SPECIFICATION

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE : (A) IN ACCORDANCE WITH STANDARD SPECIFICATION FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5 – 3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1 – 5.0%	EROSION CONTROL MATTING W/SEED, OR SOD	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1 – 8.0%	EROSION CONTROL MATTING WITH SEED, OR SOD	LINED RIPRAP 4 – 8"
4	8.1 – 20%	LINED RIPRAP 4 – 8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLE CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT .
B. RIPRAP TO BE 4 – 8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENT CAN BE SUBSTITUTED FOR ANY OF THE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

EARTH DIKE

EROSION AND SEDIMENT CONTROL SECTION NOTES

The Contractor will comply with all requirements of Sediment and Erosion Control as set forth in the Howard County Sediment Control Manual.

All sediment controls and critical slopes must be stabilized within seven calendar days. All other disturbed areas on the project site must be stabilized within 14 calendar days.

All utilities to be constructed first, prior to any construction on the site.

No pumping from foundation excavations will be allowed into County system unless it is filtered by way of sediment traps or filter.

All excavated material shall be placed on the high side whenever possible and confined to an area where it will not obstruct the normal flow of drainage courses.

Continuous inspection and maintenance of all sediment control devices will be required.

The Contractor shall notify in writing the Howard County Sediment Control Representative at least three working days prior to starting any work.

On all sites with disturbed areas in excess of two acres, the permittee shall request that a Howard County Erosion and Sediment Control Inspector inspect and approve the work, completed at the stages of construction specified below to ensure accordance with the approved erosion and sediment control plan, the grading or building permit, and this Manual:

a. Upon completion of installation of perimeter erosion and sediment controls, prior to proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until initial approval by the inspection agency is made, and

b. Upon final stabilization be fore removal of sediment controls.

Howard County Sediment Control Section must be notified in writing of where any excess material will be disposed of or where any borrowed material will come from.

The Owner/Contractor shall not deviate from the approved sediment and erosion control plans without prior approval of the Howard County Sediment Control Representative. Variations to the plan must be submitted in writing, accompanied by a copy of the originally approved plan modified to show the requested changes, for his approval. Substantial changes will necessitate amending the building and/or grading permit if applicable.

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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes steeper than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding and mulching (Sec. G). Temporary stabilization with mulch alone shall only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:

Total Area of Site	= 116.96 Acres
Area Disturbed	= 69 Acres
Area to be roofed or paved	= 60 Acres
Area to be vegetatively stabilized	= 9 Acres
Total Cut	= 206120 Cu. yds.
Total Fill	= 92895 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 controls 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 within one working day, whichever is shorter.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
1) Preferred – Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upperthree 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 per 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.

Seeding – For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the Spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching – Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or218 gallons/acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons/acre (8 gal/1000 sq. ft.) for anchoring

Maintenance – Inspect all seeded areas and make needed repairs, replacements and redeedings.

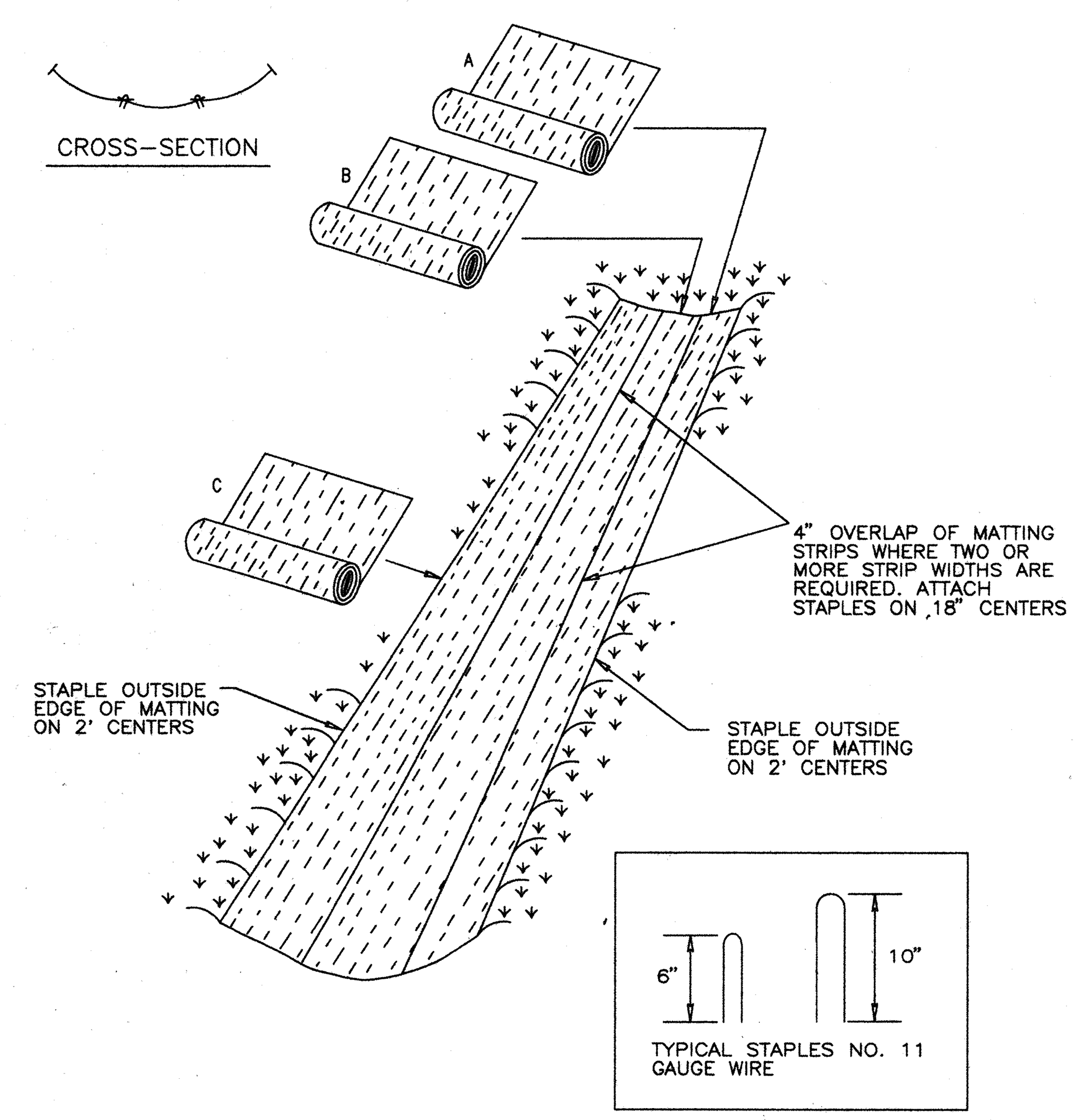
TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: Apply 60 lbs/ acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.)
Seeding: For Periods March 1 thru April 30 and August 15 thru October 15, seed with 2-1/2 bushel/acre of annual rye (3.2 lbs/1000 sq. ft.) For the period May 1 thru August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons/acre of well anchored straw mulch and see das soon as possible in the Spring, or use sod.

Mulching: – Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal/acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 ft. or higher, use 348 gal/acre (8 gal/1000 sq. ft.) for anchoring



Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using an 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

EROSION CONTROL MATTING

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS 6/18/96 DATE	CHIEF, BUREAU OF ENGINEERING 6/6/96 DATE
CHIEF, BUREAU OF HIGHWAYS 6-13-96 DATE	Chief Transp. & Watershed Div. 6/6/96

PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS
1029 North Calvert Street
Baltimore, Maryland 21202
Tel: (410)837-0194 Fax:(410)837-3431

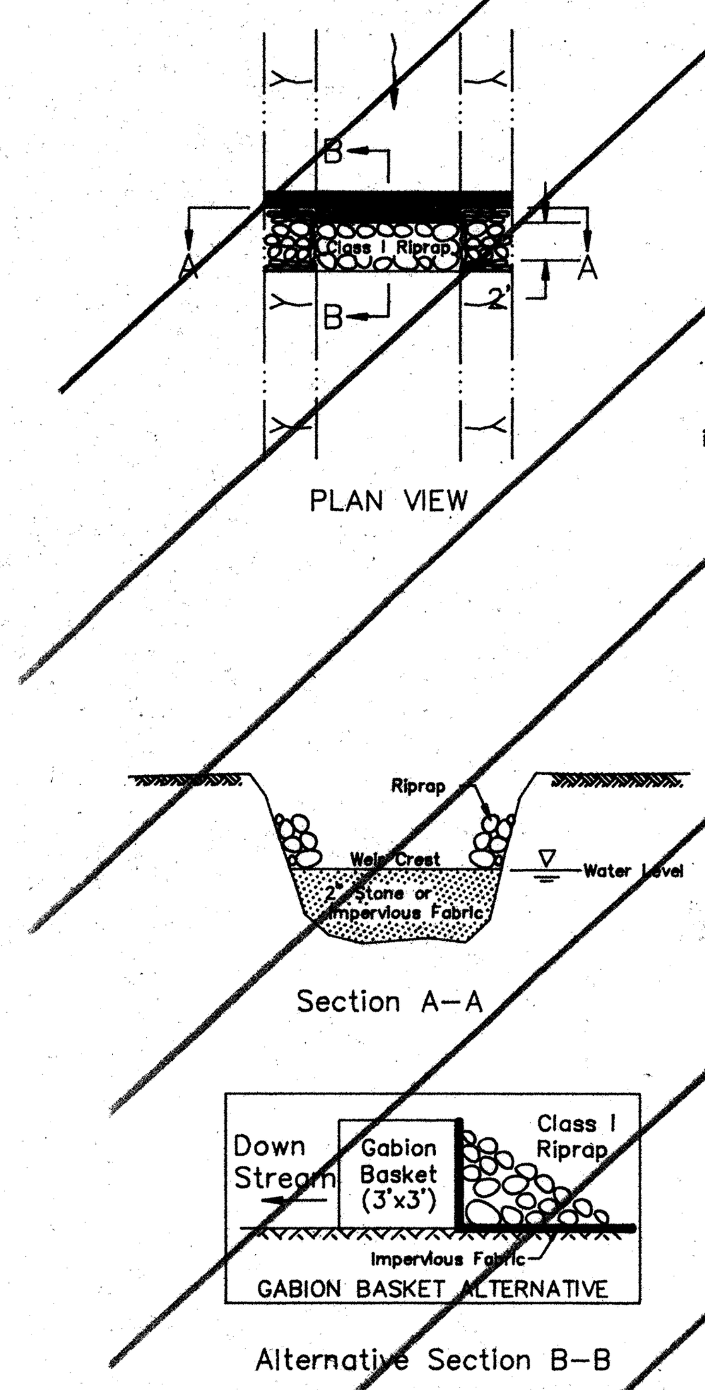
DES. JS				
DRN. SLC				
CHK. RHB				
DATE. 7\7\95	BY	NO.	REVISION	DATE

600' SCALE MAP NO. ________ BLOCK NO. ________

NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D-1081
SEDIMENT CONTROL DETAILS

SCALE AS SHOWN

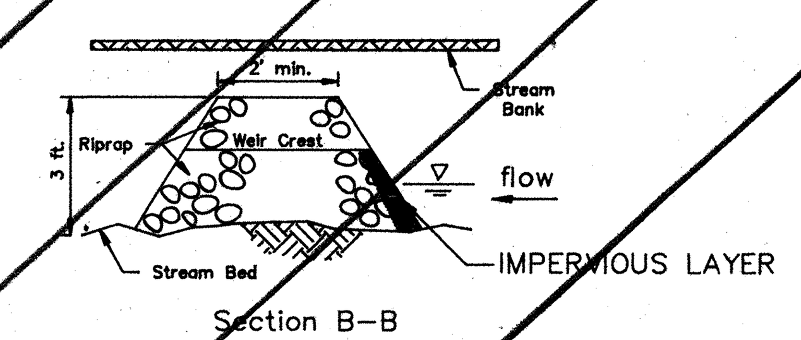
SHEET 18



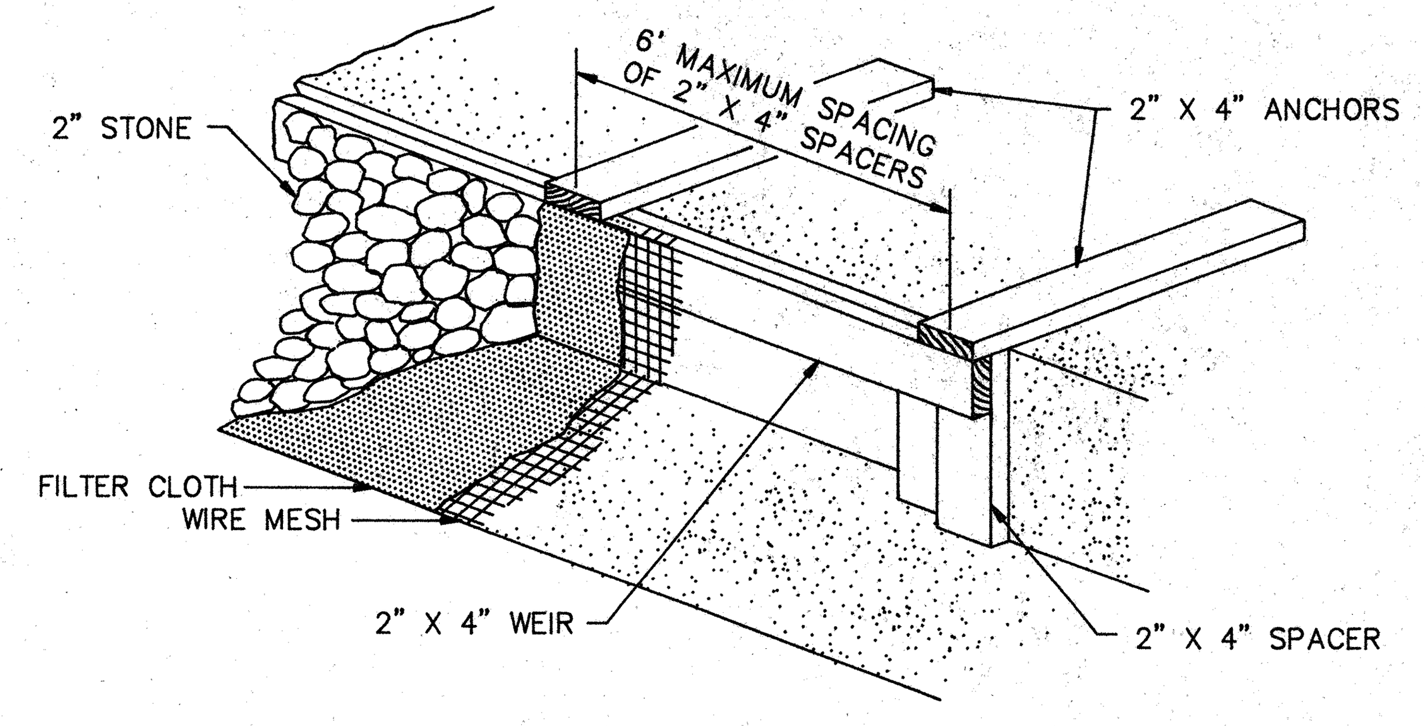
i. Description
The work encompasses the installation of an in-stream impervious stone dike.

ii. Material Specifications
1. Small Rip rap – 8 – 12 inch washed stone and gravel shall be used.
2. Impervious Fabric – The cloth shall be a woven or non-woven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydrocarbons, mildew, and rot resistant.
3. Gabion Baskets – class II gabion baskets shall meet the requirements listed in WPD3.2.

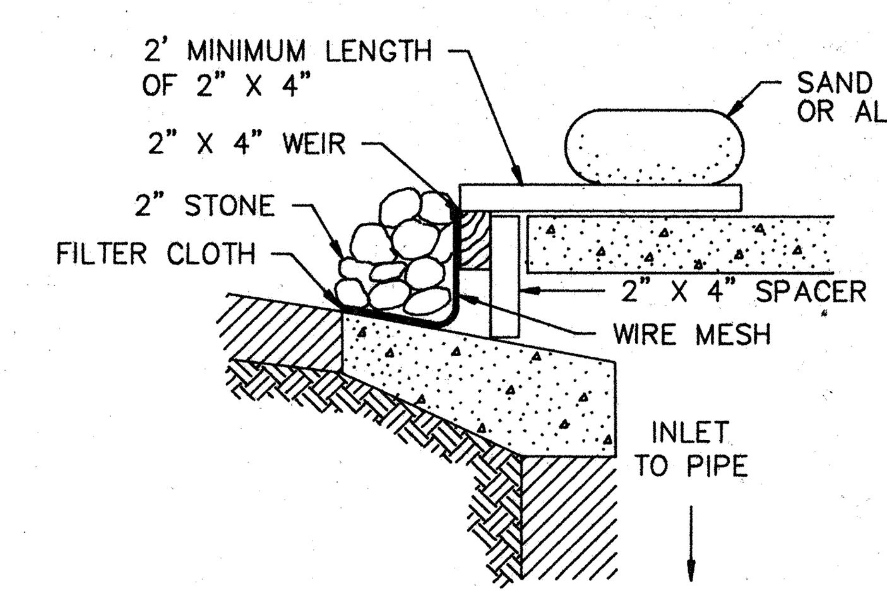
iii. Construction Requirements
1. Structure to be installed in?stream as first order of business to trap sediment generated during construction activities.
2. The top width of the dike is to be from 2 – 4 feet.
3. The distance between the dike and the disturbance is to be determined by flow rate of the waterway.
4. Gabion baskets may be used in lieu of small Rip rap as indicated by alternative section.
5. Structure is to remain in place until all disturbed areas have been stabilized in accordance with and approved sediment and erosion control plan.
6. Entrapped sediment is to be excavated periodically and disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the WRA.
7. Structure can be removed once approved by inspecting authority.



IN-STREAM IMPERVIOUS STONE DIKE (WPD 1.2)



PERSPECTIVE VIEW



CROSS SECTION

CURB INLET PROTECTION DETAIL

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2 " stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

STANDARD AND SPECIFICATIONS
FOR
STORM DRAIN INLET PROTECTION

Definition

Filter cloth installed around inlets in the form of a fence or across an opening, thereby reducing sediment content of sediment laden water.

Purpose

To prevent sediment laden water from entering a storm drain system through inlets.

Conditions Where Practice Applies

This practice shall be used where the drainage area to an inlet is disturbed, it is not possible to temporarily divert the storm drain outfall into a sediment trapping device and watertight blocking of inlets is not advisable. It is not to be used in place of sediment trapping devices. This practice may be used in conjunction with storm drain diversion to help prevent siltation of pipes installed with a low slope angle.

Construction Specifications

I. Materials

A. Wooden frame is to be constructed of 2" x 4" construction grade lumber.

B. Wire mesh must be of sufficient strength to support filter fabric, and stone for curb inlets, with water fully impounded against it.

C. Filter cloth must be of a type approved for this purpose; resistant to sunlight with sieve size, EOS, 40–85, to allow sufficient passage of water and removal of sediment.

D. Stone is to be 2" in size and clean, since fines would clog the cloth.

II. Procedure

A. A swale, ditchline or yard inlet protection.

1. Excavate completely around inlet to a depth of 18" below notch elevation.

2. Drive 2 x 4 post 1' into ground at four corners of inlet. Place nail strips between posts on ends of inlet. Assemble top portion of 2 x 4 frame using overlap joint shown. Top of frame (weir) must be 6" below edge of roadway adjacent to inlet.

3. Stretch wire mesh tightly around frame and fasten securely. Ends must meet at post.

4. Stretch filter cloth tightly over wire mesh, the cloth must extend from top of frame to 18" below inlet notch elev. Fasten securely to frame. Ends must meet at post, be overlapped and folded, then fastened down.

5. Backfill around inlet in compacted 6" layers until layer of earth is even with notch elevation on ends and top elevation on sides.

6. If the inlet is not in a low point, construct a compacted earth dike in the ditch line below it. The top of this dike is to be at least 6" higher than the top of frame (weir).

7. This structure must be inspected frequently and the filter fabric replaced when clogged.

B. Curb Inlet Protection.

1. Attach a continuous piece of wire mesh (30" min. width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a piece of approved filter cloth (40–85 sieve) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2" x 4" weir.

3. Securely nail the 2" x 4" weir to 9" long vertical spacers to be located between the weir and inlet face (max. 6' apart).

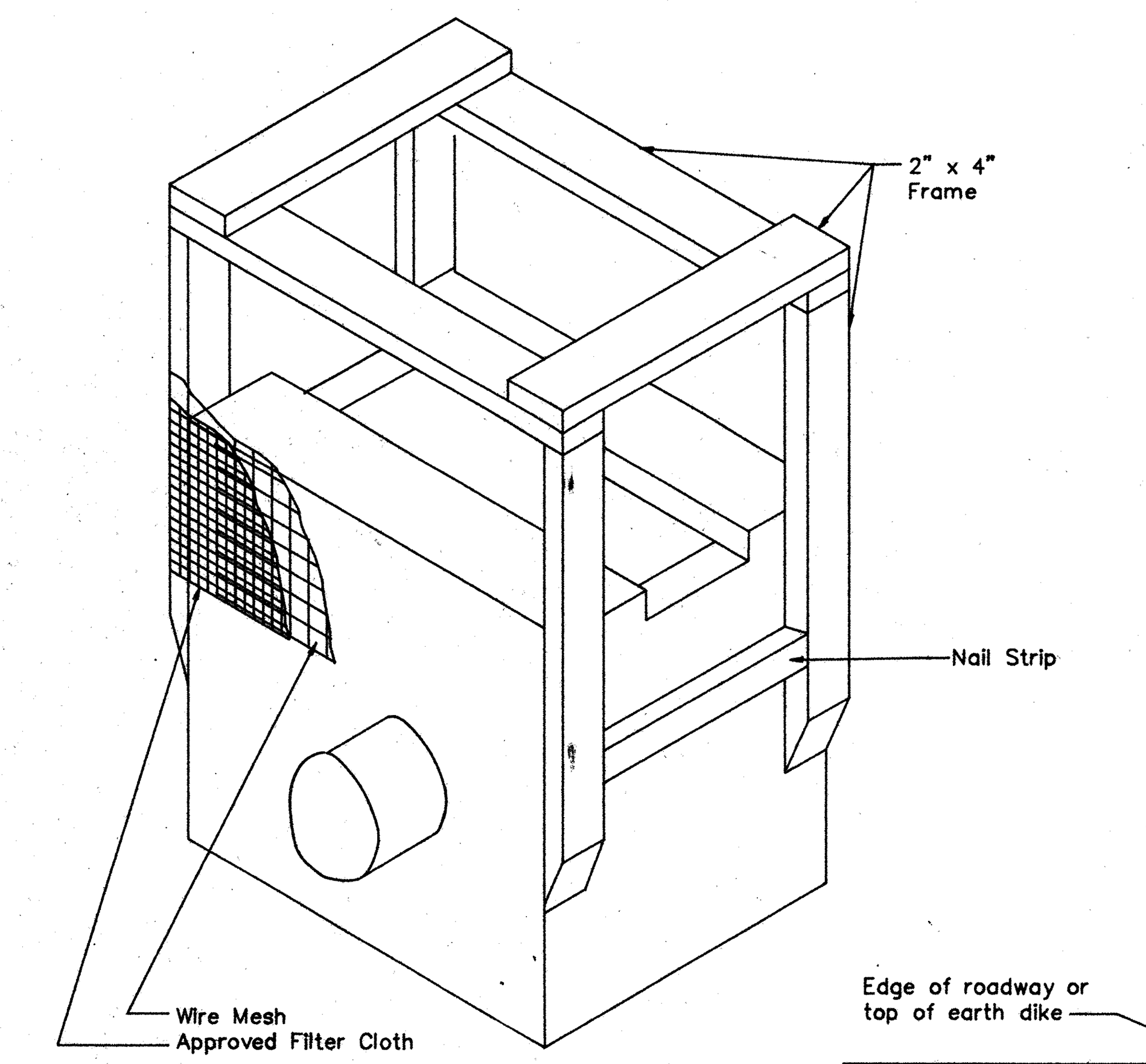
4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations. These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

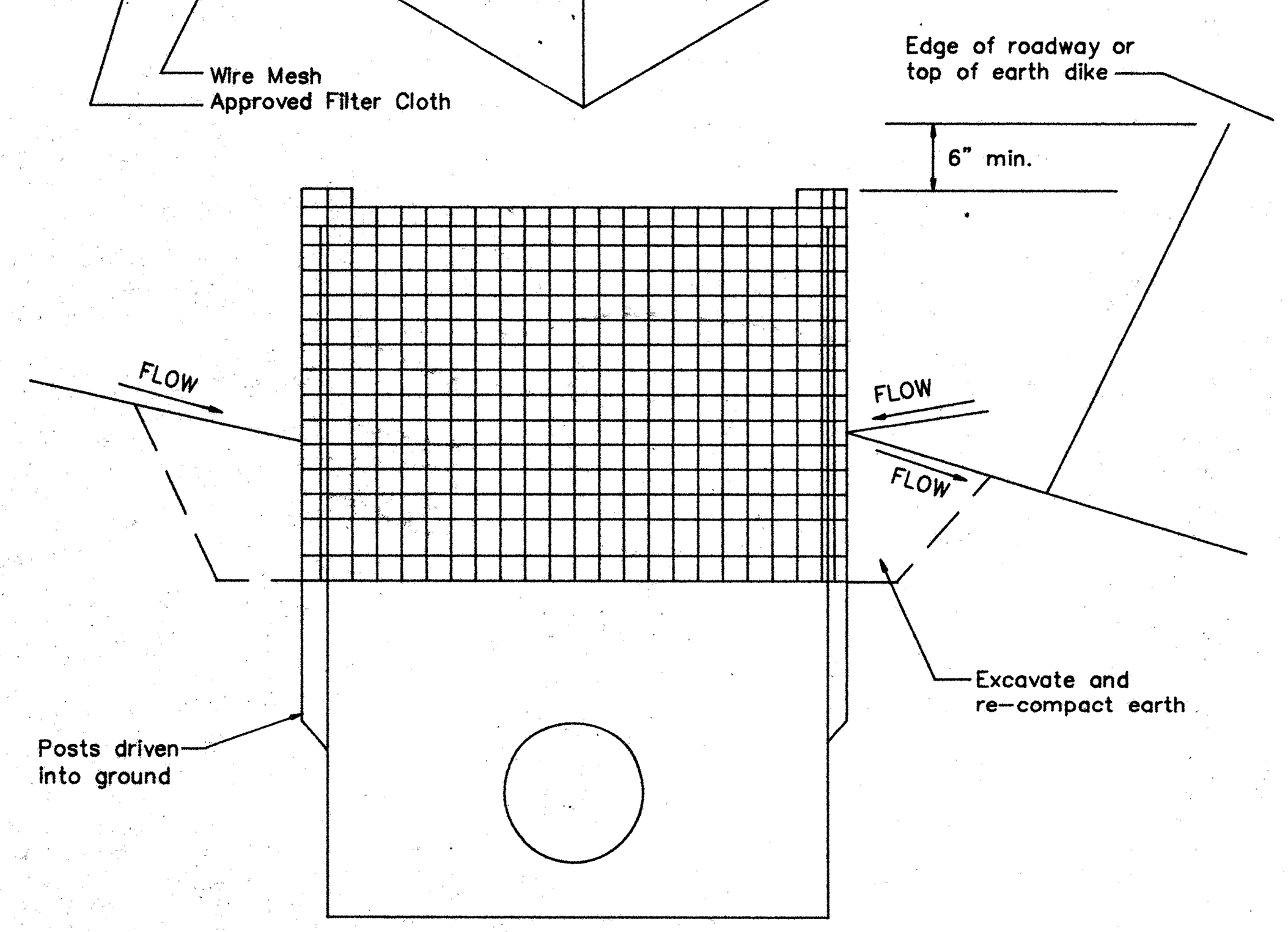
5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place clean 2" stone over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow into inlet.





SWALE INLET PROTECTION DETAIL

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.

3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotixtile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS
1029 North Calvert Street
Baltimore, Maryland 21202
Tel: (410)837-0194 Fax:(410)837-3431

DRN. RED
CHK. RHB
DATE. 7\24\91

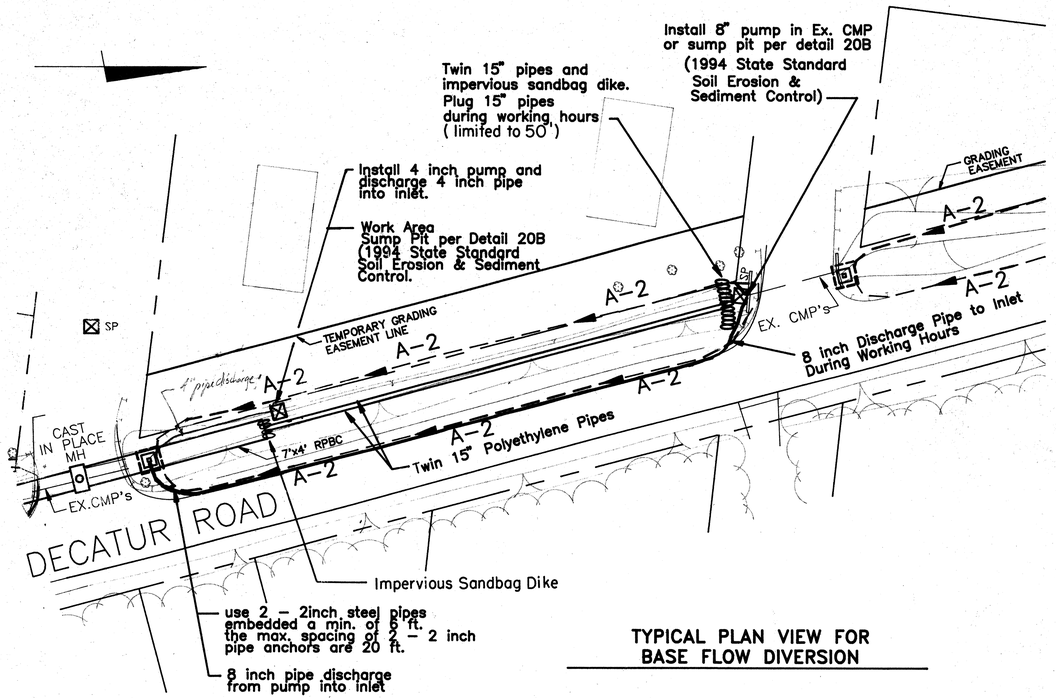
BY	NO.	REVISION	DATE

600' SCALE MAP NO. ________ BLOCK NO. ________

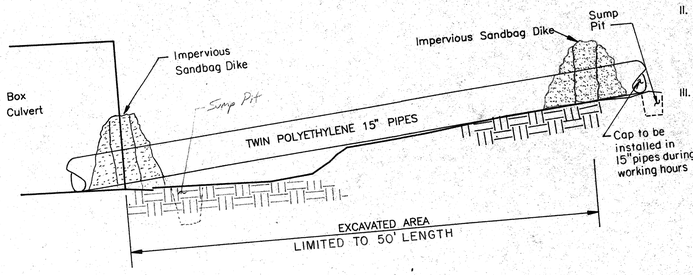
NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D-1081
SEDIMENT CONTROL DETAILS

SCALE AS SHOWN

SHEET 19



TYPICAL PLAN VIEW FOR BASE FLOW DIVERSION



Place twin 15" pipes in operation to gravity convey base flow during non-working hours.

TWIN 15" PIPES AND SANDBAG DIKE

I. Description

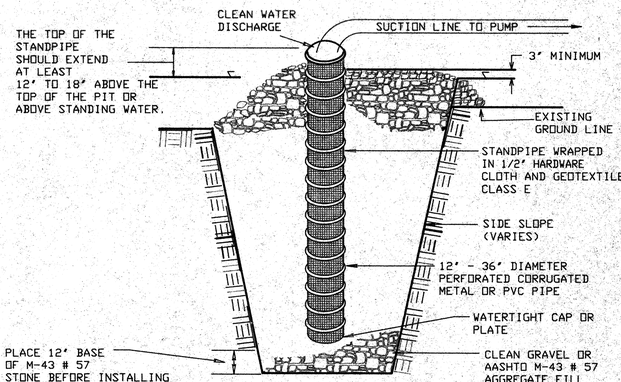
The work encompasses the installation of in-stream impervious sandbag dike to be used as a flow barrier for streams.

II. Material Specifications

1. Impervious Fabric - The cloth shall be impervious to stream base flow. The fabric shall be inert to commonly encountered chemicals, hydrocarbons, mildew, and rot resistant.

III. Construction Requirements

1. The top width of the dike is to be from 2-4 feet.
2. Structure is to remain in place until all disturbed areas have been stabilized in accordance with an approved sediment and erosion control plan.
3. Entrapped sediment is to be excavated periodically and disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the WRA.
4. Structure can be removed once approved by inspecting authority.



CROSS SECTION

STANDARD SYMBOL

SP

Construction Specifications

1. Pit dimensions are variable, with the minimum diameter being 2 times the standpipe diameter.

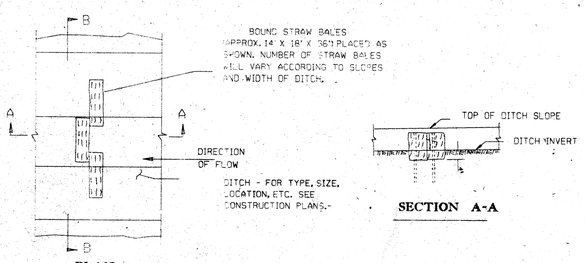
2. The standpipe should be constructed by perforating a 12' to 24' diameter corrugated or PVC pipe. Then wrapping with 1/2' hardware cloth and Geotextile Class E. The perforations shall be 1/2' x 6' slits or 1' diameter holes.

3. A base of filter material consisting of clean gravel or #57 stone should be placed in the pit to a depth of 12'. After installing the standpipe, the pit surrounding the standpipe should then be backfilled with the same filter material.

4. The standpipe should extend 12' to 18' above the lip of the pit or the riser crest elevation (basin dewatering only) and the filter material should extend 3' minimum above the anticipated standing water elevation.

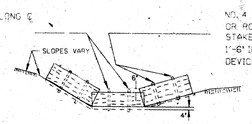
SUMP PIT

NOT TO SCALE



PLAN

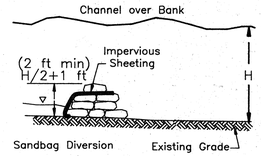
SECTION A-A



SECTION B-B

GENERAL NOTES:
1. INTENDED FOR USE IN EXISTING, PROPOSED AND TEMPORARY DITCHES OF ALL TYPES WHERE THE CONSTRUCTION OF A SEDIMENT TRAP WOULD CREATE A TRAFFIC HAZARD OR WHERE DIRECTED BY THE ENGINEER.
2. FOR LOCATIONS OF STRAW BALES REFER TO CONSTRUCTION PLANS.
3. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
4. STRAW BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
5. FOR USE IN EMERGENCY SITUATIONS ONLY, FOR A TIME PERIOD NOT TO EXCEED 2 WEEKS.

STRAW BALE DITCH CHECK (S.B.D.C.)



I. Description

The work shall consist of installing a flow diversion structure when construction activities take place within the stream channel such as culvert construction or storm drain construction.

II. Material Specifications

1. Sandbags: Sandbags shall consist of materials which are resistant to ultra-violet radiation, tearing and puncture and woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
3. Sheeting: Sheeting shall consist of polyethylene or other material which is impervious and resistant to puncture and tearing.

III. Construction Requirements

1. All erosion and sediment control devices shall be installed as the first order of work.
2. The diversion structure shall be installed from upstream to downstream.
3 The top width of dike is to be from 2 - 4 feet.
4. The height of the diversion structure shall be half the distance from stream bed to stream bank plus one foot, as indicated on the cross-section view.
5. All excavated materials shall be disposed of in a scd approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the WRA.
6. All dewatering of the construction area shall be pumped from a sump pit prior to re-entering the system.
7. Sheeting shall be overlapped such that the upstream portion covers the downstream portion with at least an 18 - inch overlap.
8. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

SANDBAG DIVERSION (WPD 2.3)

NOT TO SCALE

DÊPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/6/96
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/96
CHIEF, BUREAU OF HIGHWAYS — DATE 6-13-96
CHIEF, TRANSPORTATION AND WATERSHED DIVISION — DATE 6/6/96

PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS
1029 North Calvert Street
Baltimore, Maryland 21202
Tel: (301)837-0194 Fax:(301)837-3431

DES. JS
DRN. SLC
CHK. RHB
DATE. 7/7/95

BY	NO.	REVISION	DATE

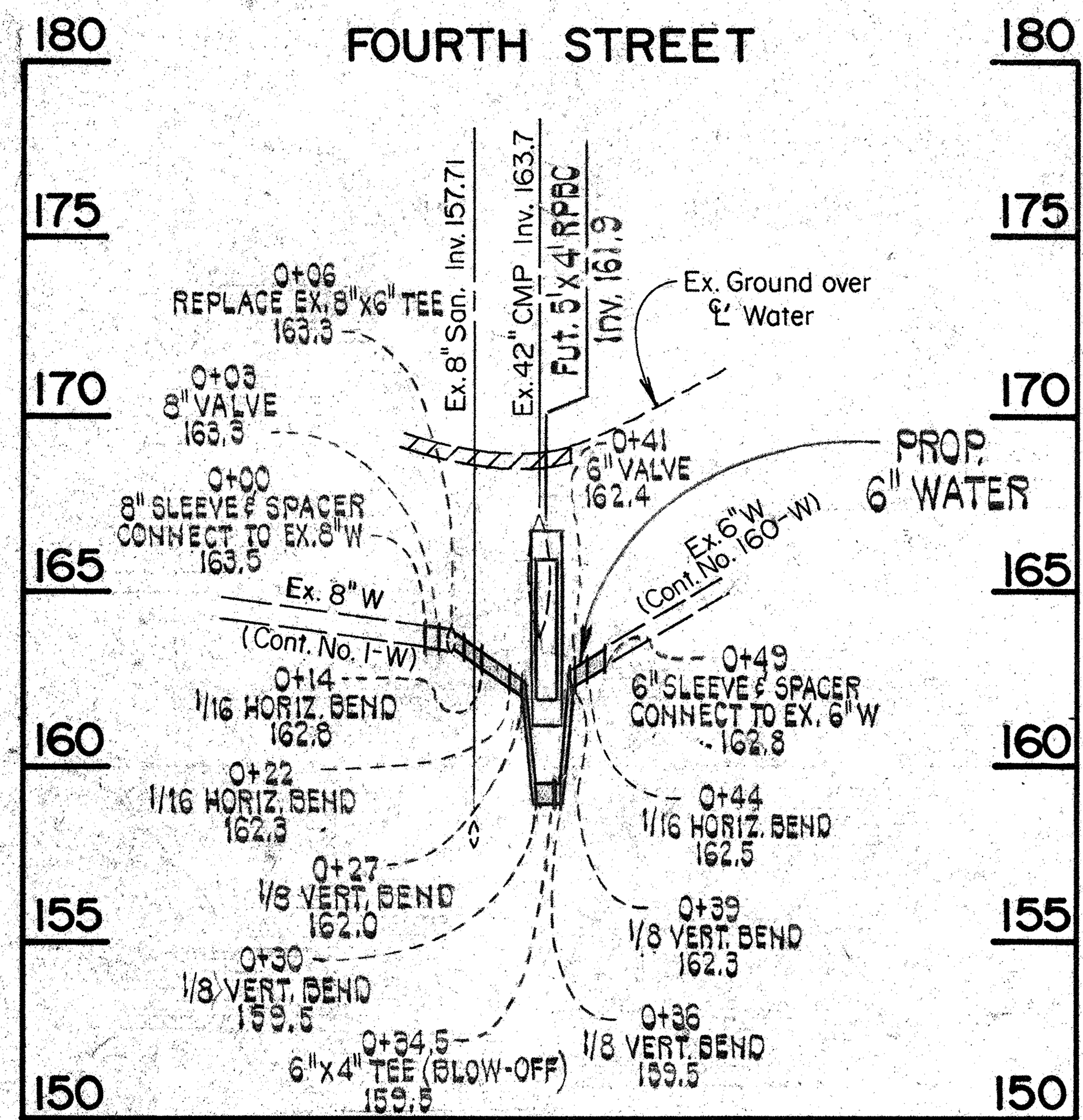
600' SCALE MAP NO. _____ BLOCK NO. _____

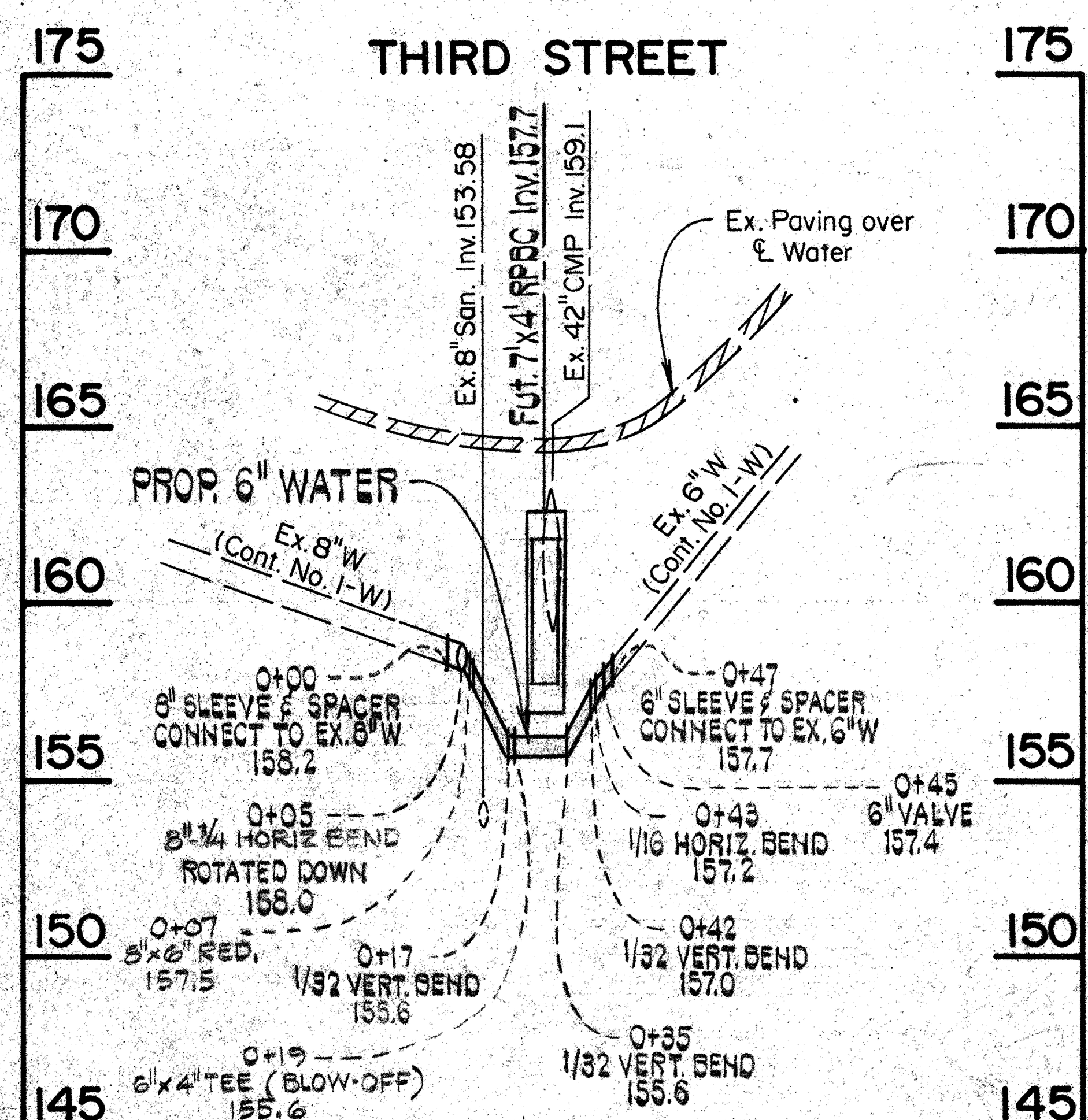
NORTH LAUREL DRAINAGE IMPROVEMENT
CAPITAL PROJECT D-1081
SEDIMENT & EROSION CONTROL PLAN

SCALE AS NOTED

SHEET 20

3420503.DWG





WATER PROFILES

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

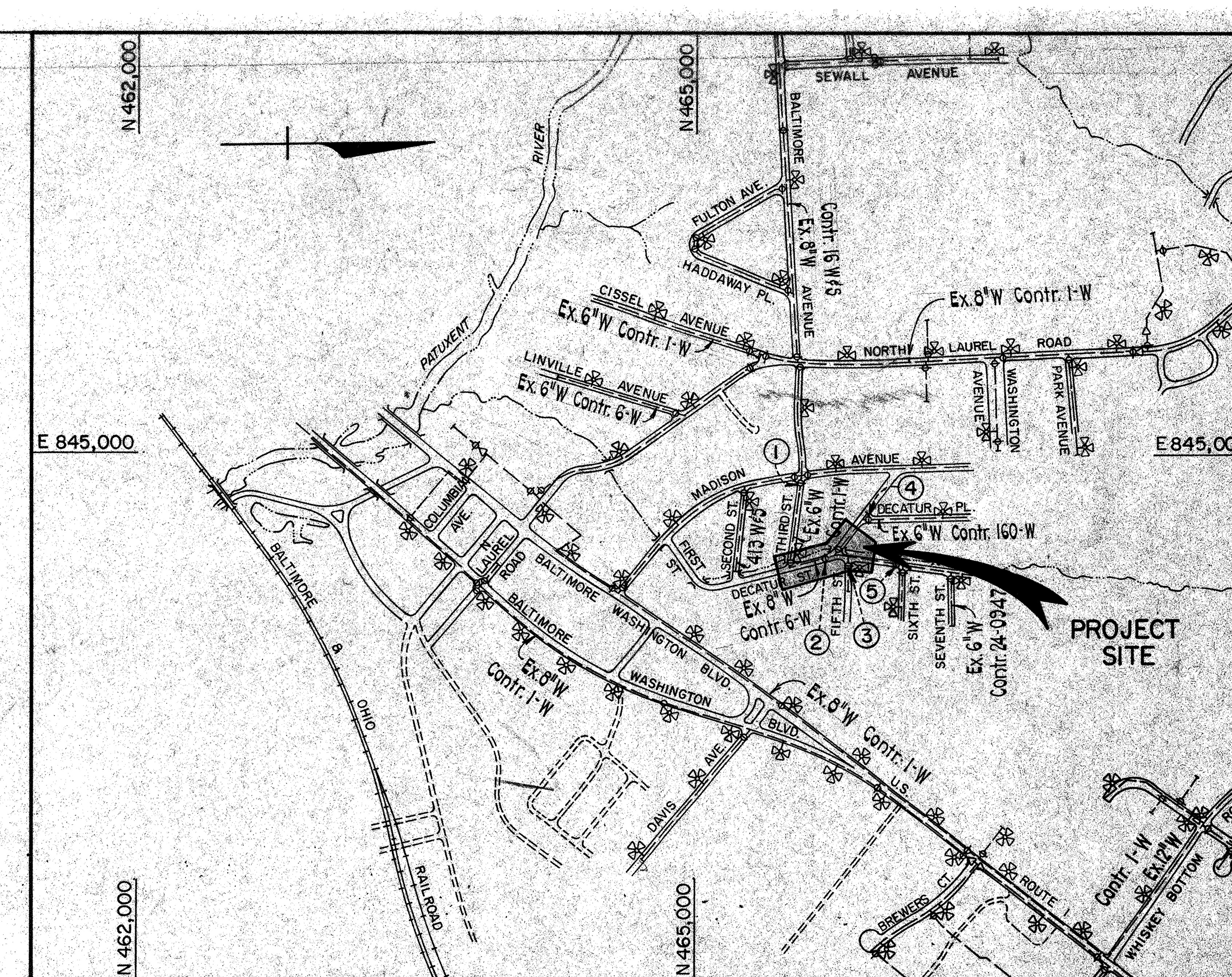
CONTRACTOR NOTE:

CONTRACTOR SHALL TEST PIT ALL SEWER AND WATER HOUSE CONNECTIONS TO DETERMINE IF THEIR RELOCATION IS NECESSARY. IF RELOCATION IS NECESSARY, THE CONTRACTOR SHALL NOTIFY HOWARD COUNTY PRIOR TO RELOCATING PIPE.

THE CONTRACTOR SHALL TEST PIT THE EXISTING WATER MAIN TO DETERMINE ITS EXACT LOCATION. SEE PLAN FOR PROPOSED OFFSET DIMENSION FROM EXISTING WATER MAIN TO PROPOSED WATER MAIN.

ALL REMOVED WATER LINE VALVES SHALL BECOME THE PROPERTY OF THE HOWARD COUNTY BUREAU OF UTILITIES AND SHALL BE DELIVERED TO THE BUREAU OF UTILITIES MAINTENANCE YARD.

BUTTRESS ALL HORIZONTAL BENDS PER STD DETAIL W 2.21 THE CAP PER STD DETAIL W 2.21 ALL VERTICAL BENDS PER STD DETAIL W 2.22, AND THE TEE PER STD DETAIL W 2.23 AND THE 90%%D HORIZONTAL PER STD DETAIL W2.24 CONTRACTOR SHALL PROVIDE TEMPORARY SERVICE TO ASSURE UNINTERRUPTED WATER SERVICE TO CUSTOMERS PER STANDARD SPECIFICATIONS.



VICINITY MAP

SCALE: 1" = 600'

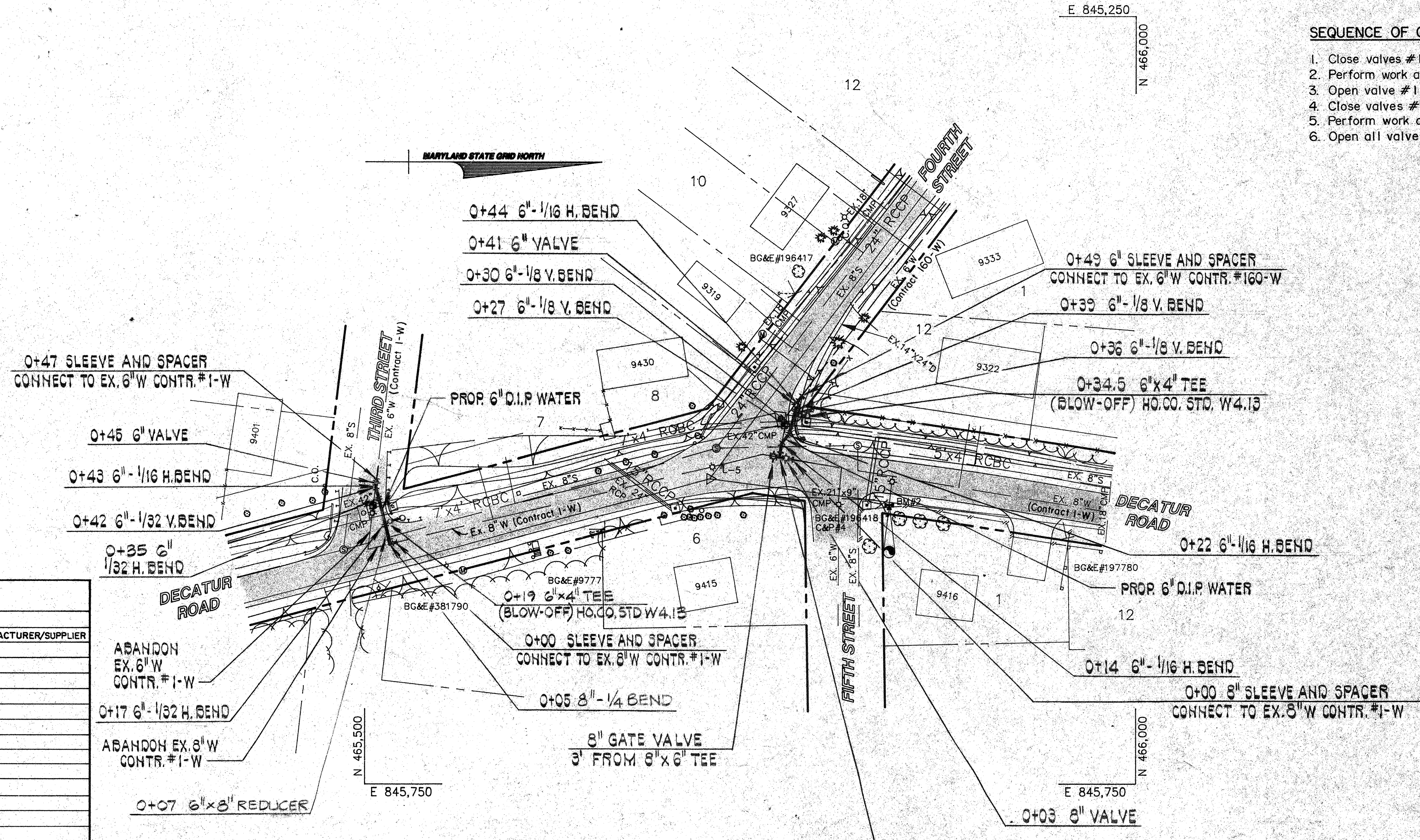
SEQUENCE OF CONSTRUCTION

1. Close valves #1 and #2.
2. Perform work at Third Street.
3. Open valve #1, leave #2 closed.
4. Close valves #3, #4 and #5.
5. Perform work at Fourth Street.
6. Open all valves, #2 thru #5.

GENERAL NOTES

1. Approximate location of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services. Any damage incurred shall be repaired immediately to the satifaction of the Engineer at the contractor's expense.
2. All horizontal controls are based on Maryland State Coordinates.
3. All vertical controls are based on U.S.G.S. Data.
4. All pipe elevations shown are invert elevations.
5. Clear all utilities by a minimum of 6". Clear all poles by 5'-0" minimum or tunnel as required. In the event the contractor's work requires the bracing of additional poles, any cost incurred by the owner for the bracing of additional poles or damages shall be deducted from money owed the contractor The contractor shall coordinate with the utility companies to schedule the bracing of the poles.
6. For details not shown on the drawings, and for materials and construction methods, use Howard County Design Manual, Volume IV, Standard Specification and Details for Construction. The contractor shall have a copy of Volume IV on the job.
7. Existing utilities in the vicinity of the proposed work for which test pits may be required shall be dug by the contractor two weeks in advance of construction operations at his own expense.
8. The contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

   State Highway Administration/ 531-5533
   Baltimore Gas & Electric/ Contractor Services/ 850-4620
   Baltimore Gas & Electric/ Underground Damage Control/ 787-9068
   Baltimore Gas & Electric/ Trouble Shooting/ 298-9001
   Miss Utility/ 1-800-257-7777
   Colonial Pipeline Company/ 759-1390
   Bureau of Utilities Howard Co. Dept. of Public Works/ 313-4900
9. Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the contractor.
10. The contractor shall remove trees, stumps, and roots along the line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.



PLAN

SCALE : 1"=50'

THIS IS PAGE 6A AND 21A TO CONTRACT NO. 1W

QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
BLOW-OFF (HO.CO. STD. W4.13)	2 EA			
6" x 4" TEE	2 EA			
6" 1/8 HORIZ. BEND	4 EA			
6" 1/16 VERT. BEND	4 EA			
6" 1/32 VERT. BEND	3 EA			
8" SLEEVE & SPACER	1 EA			
6" SLEEVE & SPACER	1 EA			
8" 90° BEND	1 EA			
8" D.I.P. (CLASS 52)	5 LF			
6" D.I.P. (CLASS 52)	82 LF			
6" VALVE	2 EA			
8" X 6" REDUCER	1 EA			
8" VALVE	2 EA			
8" X 6" TEE	1 EA			

SURVEY AND DRAFTING DIVISION AS-BUILT DATE ____________

NAME OF UTILITY CONTRACTOR

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[signature] 6/18/96	[signature] 6/6/96
DIRECTOR OF PUBLIC WORKS — DATE	CHIEF, BUREAU OF ENGINEERING — DATE
[signature] 6-17-96	[signature] 6-10-96
CHIEF, BUREAU OF UTILITIES — DATE	CHIEF, WATER & SEWER DESIGN DIVISION — DATE

PURDUM & JESCHKE
CONSULTING ENGINEERS
& LAND SURVEYORS
1029 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202
TEL: (410) 837-0194 FAX: (410) 837-3431

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — No. 10666

DES: TAW				
DRN: ARW				
CHK: CLM				
DATE: 7/7/95	BY	NO.	REVISION	DATE

AMMENDED SHEET TO EX. CONTRACT 1-W

CAPITAL PROJECT D-1081

600' SCALE MAP NO. ______ BLOCK NO. ______

STORM DRAINAGE IMPROVEMENTS
NORTH LAUREL
WATER RELOCATION

ELECTION DISTRICT NO. HOWARD COUNTY, MARYLAND
DATE:

SCALE AS SHOWN

SHEET 21 OF 21