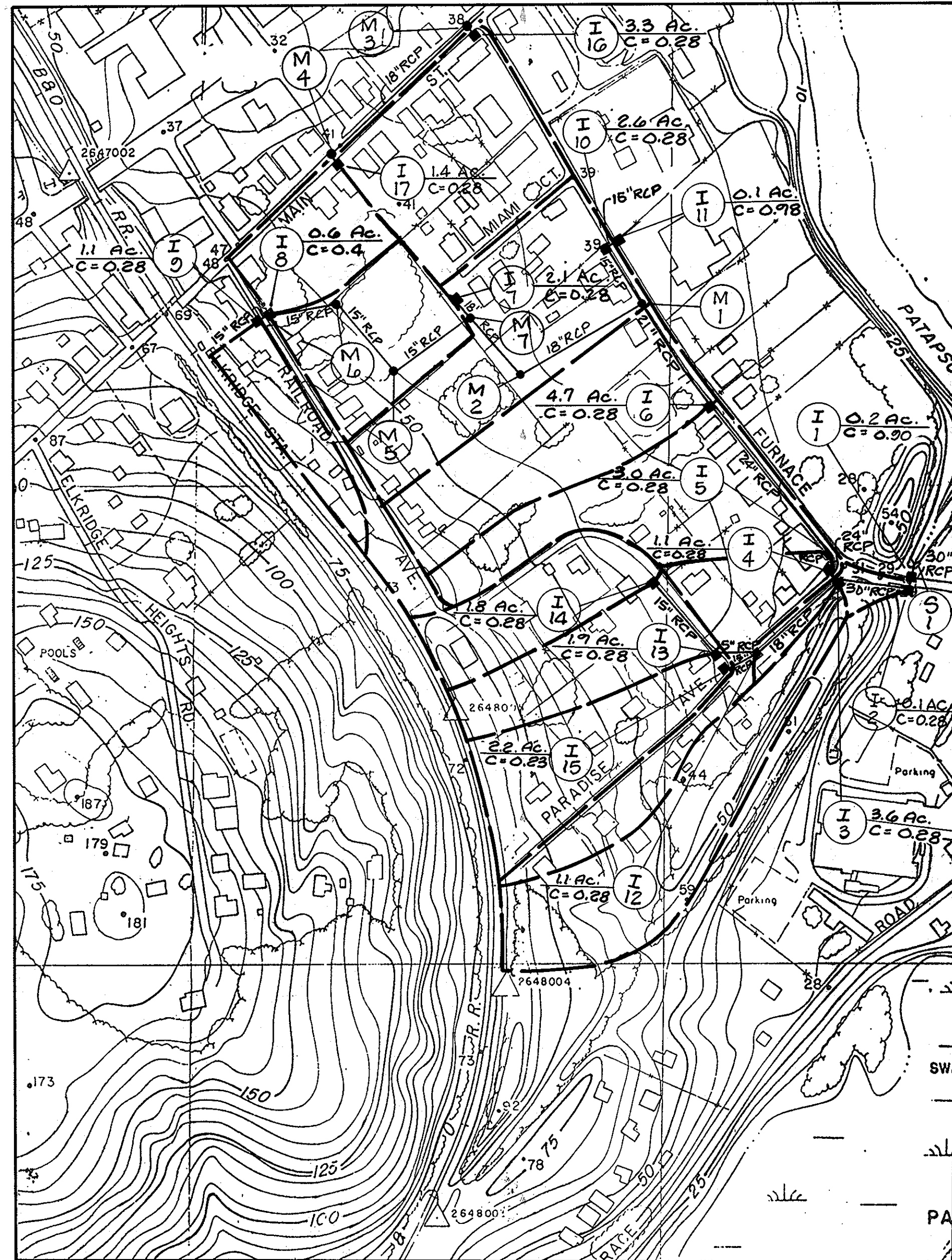


HOWARD COUNTY MARYLAND

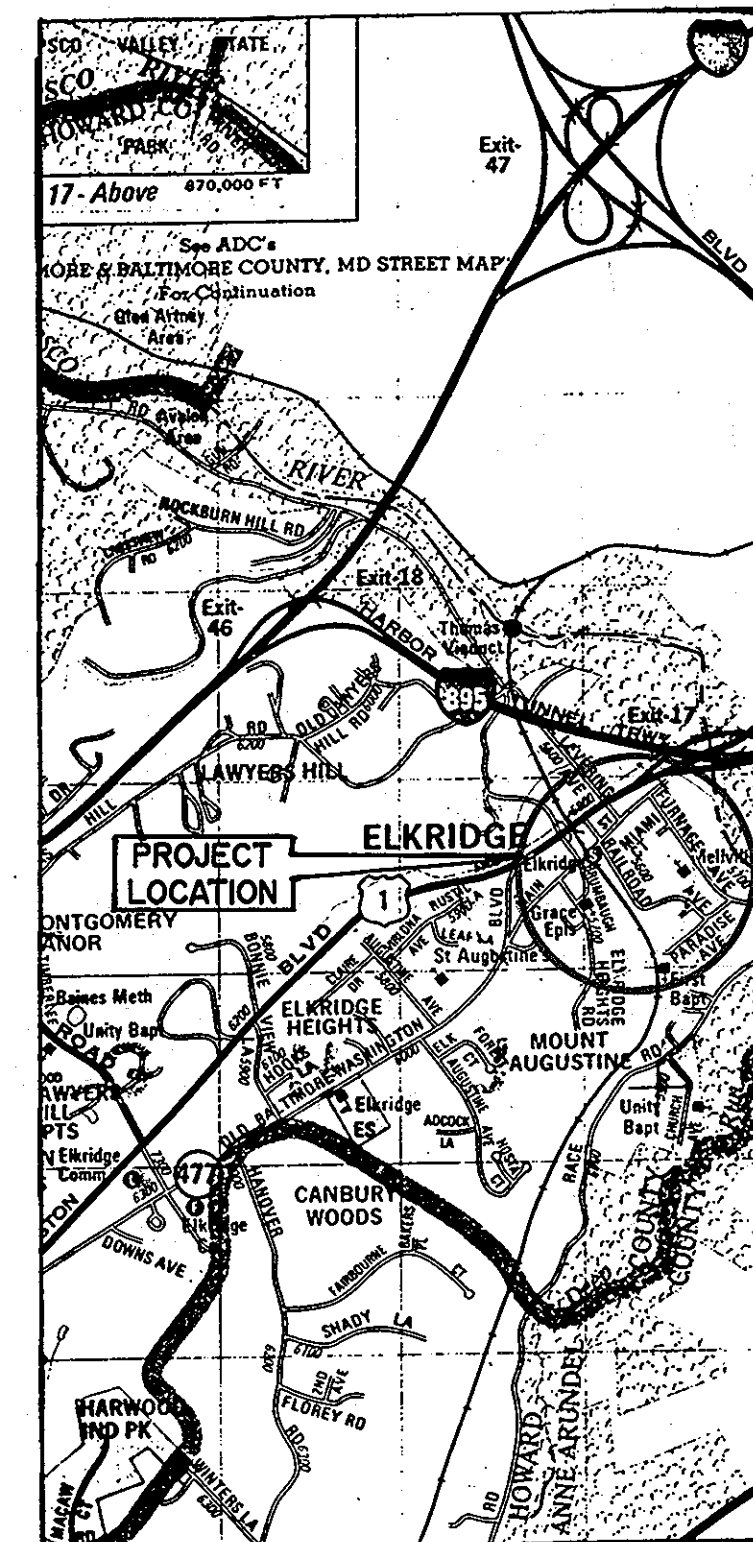
DEPARTMENT OF PUBLIC WORKS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN
3	PLAN
4	DETAILS
5	STORM DRAIN PROFILES
6	WATER RELOCATION PLAN (PROPOSED WATER RELOCATION DESIGN ONLY ON SHEET 6)



DRAINAGE AREA MAP
SCALE 1" = 200'



VICINITY MAP
SCALE 1" = 2000'

- GENERAL NOTES**
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-237-7777 FOR UNDERGROUND UTILITY LOCATIONS, AT LEAST FIVE DAYS PRIOR TO COMMENCING WORK SHOWN ON THE PLANS.
 - 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. UNLESS THE PROPOSED STORM DRAIN COVERS VEGATED AREAS, POSITIVE DRAINAGE SHALL BE MAINTAINED AND THE TOP ELEVATIONS ADJUSTED ACCORDINGLY AS DIRECTED BY THE ENGINEER.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ALL EXISTING DRIVEWAYS DAMAGED DURING CONSTRUCTION. SEE MEASUREMENT AND PAYMENT IN SPECIAL PROVISIONS. EXISTING BITUMINOUS CONCRETE DRIVEWAYS SHALL BE RESTORED AS FOLLOWS:
 - 4-INCH DEPTH OF BITUMINOUS CONCRETE BASE COURSE
 - 1-INCH DEPTH OF BITUMINOUS CONCRETE SURFACE COURSE
 - 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.
 - CONTRACTOR TO GRADE AROUND THE TOP OF THE PROPOSED INLETS IN ORDER TO PROVIDE POSITIVE DRAINAGE TO THE INLETS. LINING SHALL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
 - COORDINATES ARE BASED ON THE MARYLAND STATE GRID SYSTEM.
 - THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ON THE PLANS ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION BEFORE STARTING CONSTRUCTION. NEITHER THE ENGINEER NOR THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS WARRANT OR GUARANTEE THE COMPLETENESS OR CORRECTNESS OF THE INFORMATION SHOWN.
 - THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES. ANY DAMAGE DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. CLEAR ALL UTILITIES BY A MINIMUM OF 4'-10" CIRCUMFERENCE.
 - TEST PITS SHALL BE DUG AT ALL UTILITY CROSSINGS TO DETERMINE EXISTING HORIZONTAL AND VERTICAL ALIGNMENT OF UTILITIES. TEST PITS SHALL BE DUG A SUFFICIENT AMOUNT OF TIME IN ADVANCE OF THE CONSTRUCTION OR TRENCHING OPERATION, IN ORDER TO ALLOW FOR NECESSARY ADJUSTMENTS.
 - 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 PROFILES.
 - 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 OR THE PROPOSED STORM DRAIN SHALL BE PLACED BY TUNNELING. ALL COSTS FOR TUNNELING ARE TO BE INCLUDED IN THE UNIT PRICE BID FOR FURNISHING AND LAYING THE STORM DRAIN PIPE. SEE SHEET 3 FOR POLES TO BE BRACED.
 - ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM OF 1929.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ϕ ELEVATIONS.
 - 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.
 - PLACE REGULATION "MEN WORKING" AND HAZARD SIGNS AS REQUIRED TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS, AND THE 1988 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND ALL SUBSEQUENT ADDENDUMS.
 - EXISTING WATER HOUSE SERVICES, THAT ARE IN CONFLICT WITH THE PROPOSED STORM DRAINAGE FACILITIES, SHALL BE ADJUSTED BY THE CONTRACTOR.
 - FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, THE CONTRACTOR SHALL ASK FOR THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND THE SPECIAL PROVISIONS. IN THE EVENT OF ANY DISCREPANCY BETWEEN THESE TWO SOURCES, THE LATTER SHALL COVER.
 - EXISTING FENCES, MAILBOXES, SIGNS AND SHRUBS DISTURBED BY THE WORK SHALL BE RECONSTRUCTED OR REPLACED IN KIND.
 - ALL SLOPES AND/OR DISTURBED AREAS SHALL RECEIVE 2-INCH DEPTH OF TOPSOIL, AND SEEDING EXCEPT, WHERE OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
 - 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
BRIDGES	CENTER OF WALL	TOP OF WALL
 - THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO WEEDS IN ADVANCE OF CONSTRUCTION OPERATIONS IN VICINITY OF UTILITIES. COST SHALL BE INCLUDED IN THE UNIT PRICES BID FOR STORM DRAIN ITEMS.
 - STANDARD DETAILS FOR THIS CONTRACT SHALL BE THE HOWARD COUNTY STANDARD DETAILS AS SUPPLEMENTED BY THE MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD DETAILS.
 - THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK HEREON:
 - MISS UTILITY 1-800-237-7777
 - BALTIMORE GAS & ELECTRIC CO., UNDERGROUND ELECTRICAL DISTRIBUTION ENGINEERING DAMAGE CONTROL 234-6113
 - BALTIMORE GAS & ELECTRIC CO., UNDERGROUND GAS DISTRIBUTION ENGINEERING 234-5533
 - ORANGE AND POTOMAC TELEPHONE CO. 725-9974
 - COLONIAL PIPELINE COMPANY 781-4441
 - HOWARD COUNTY BUREAU OF UTILITIES 313-4900
 - HOWARD COUNTY BUREAU OF CONSTRUCTION INSPECTION 792-7272
 - HOWARD COUNTY TRAFFIC DIVISION 313-3480
 - HOWARD COUNTY SURVEYING AND DRAFTING DIVISION 313-2417
 - ENDS OF PROPOSED CURBS WHICH DO NOT TIE INTO EXISTING CURBS SHALL BE ROSED DOWN IN ACCORDANCE WITH THE DETAIL ON SHEET 2.
 - ALL INVERTS SHALL BE FULLY DEVELOPED.

DEVELOPER'S CERTIFICATION

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

William E. Riley 4-28-92
 WILLIAM E. RILEY, CHIEF DATE
 BUREAU OF ENGINEERING
 DEPARTMENT OF PUBLIC WORKS

Reviewed for Howard County S.C.D. and meets technical requirements.

James M. Adams 4/28/92
 U.S. SOIL CONSERVATION SERVICE DATE

This development plan is approved for soil erosion and sediment control by the Howard County Soil Conservation District.

Approved: *Shirley W. Hill* 4/28/92
 HOWARD COUNTY S.C.D. DATE

ENGINEER'S CERTIFICATION

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

Greenman-Pedersen, Inc. Date: 4-1-92
 GREENMAN-PEDERSEN, INC.
 14504 Greenview Drive, Suite 100
 Laurel, MD 20708

STORM DRAINAGE IMPROVEMENTS

ELKRIDGE AREA

CAPITAL PROJECT NO. D-1076

LEGEND

PROPOSED CURB	
EXISTING CURB	
ROAD RECONSTRUCTION	
PAVEMENT OVERLAY	
PROPOSED SWALE	
ROAD MILLING & OVERLAY	
EX. TEST PIT	

1233

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

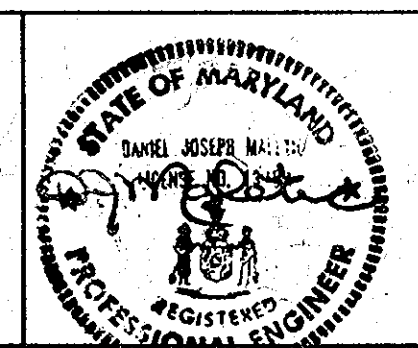
Romeo M. Brown 4/28/92
 DIRECTOR OF PUBLIC WORKS DATE

William E. Riley 4/28/92
 CHIEF, BUREAU OF ENGINEERING DATE

Shirley W. Hill 4/28/92
 CHIEF, ROADS, BRIDGES, & STORM DRAINAGE DIVISION DATE

Alan M. Lemmon 4/28/92
 CHIEF, BUREAU OF HIGHWAYS DATE

gpi GREENMAN • PEDERSEN, INC.
 CONSULTING ENGINEERS
 14504 GREENVIEW DRIVE, SUITE 100, LAUREL, MD 20708
 (301) 470-4772, (301) 580-9003, (301) 580-9333



DES:PAH					
DRN:SMC					
CHK:KJB					
DATE:4/1/92	BY	NO.	REVISION	DATE	

CAPITAL PROJECT D-1076

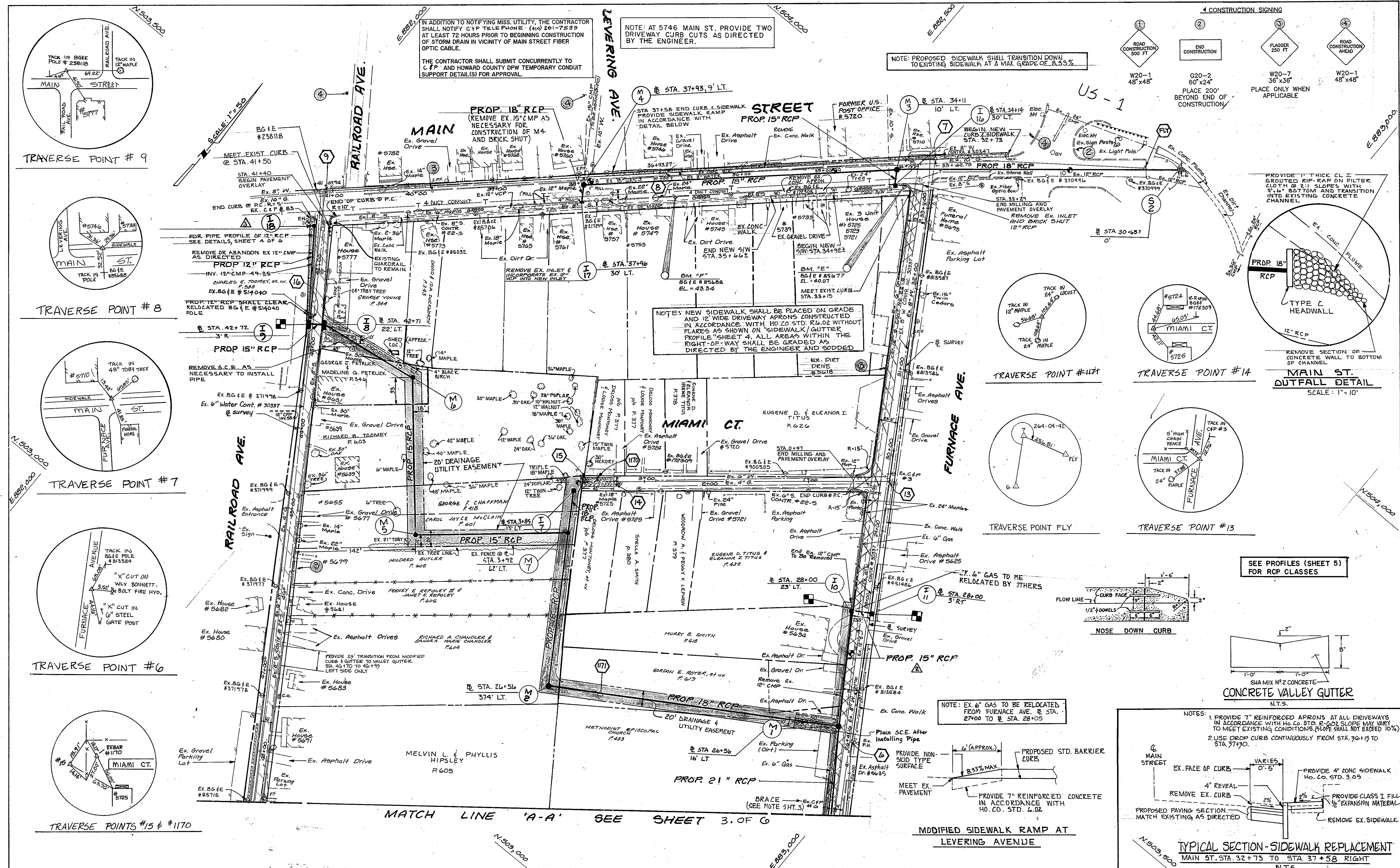
600' SCALE MAP NO. 38 BLOCK NO. 4

STORM DRAINAGE IMPROVEMENTS
 ELKRIDGE AREA
 ELECTION DISTRICT ELKRIDGE NO.1

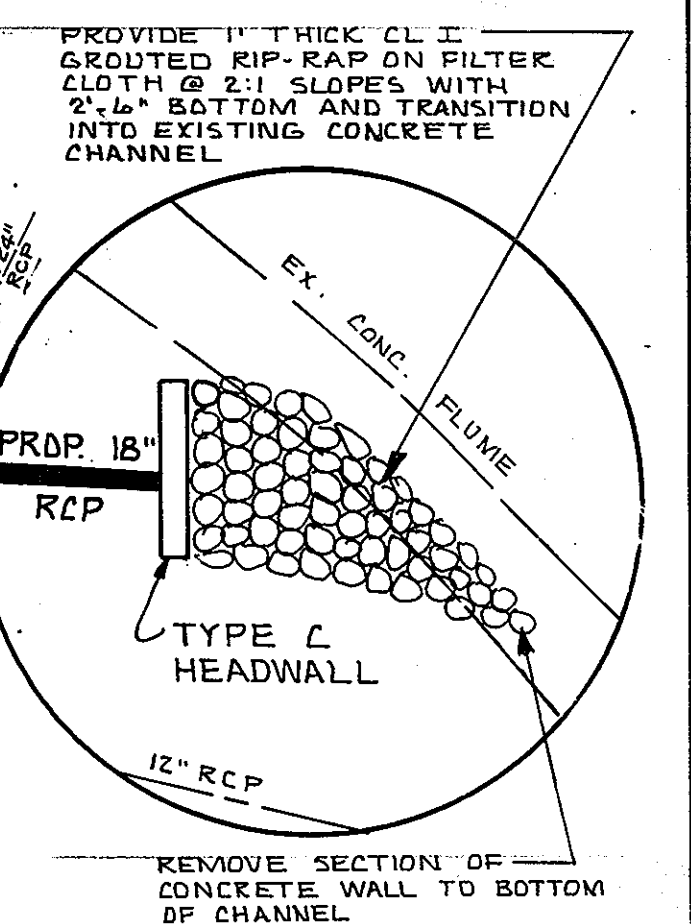
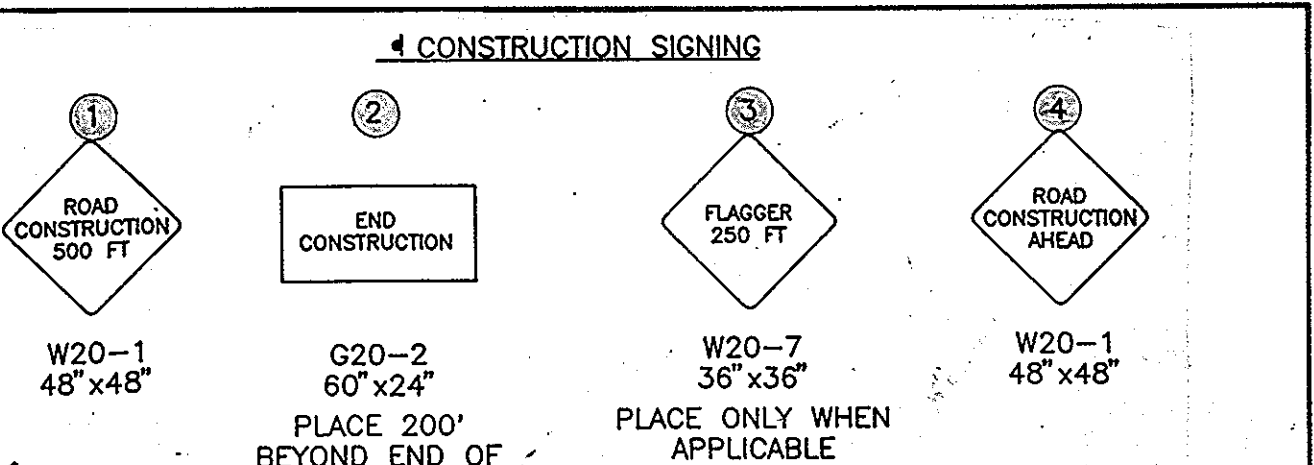
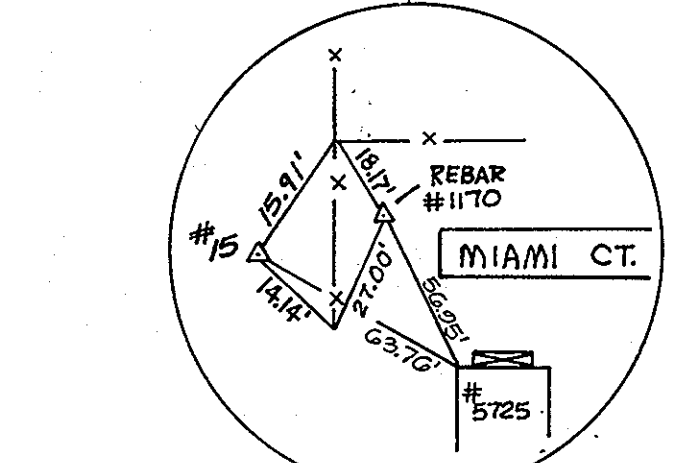
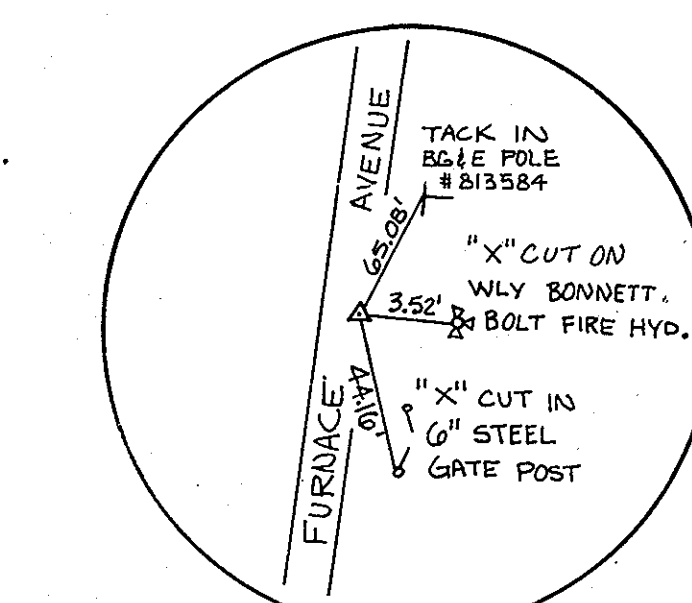
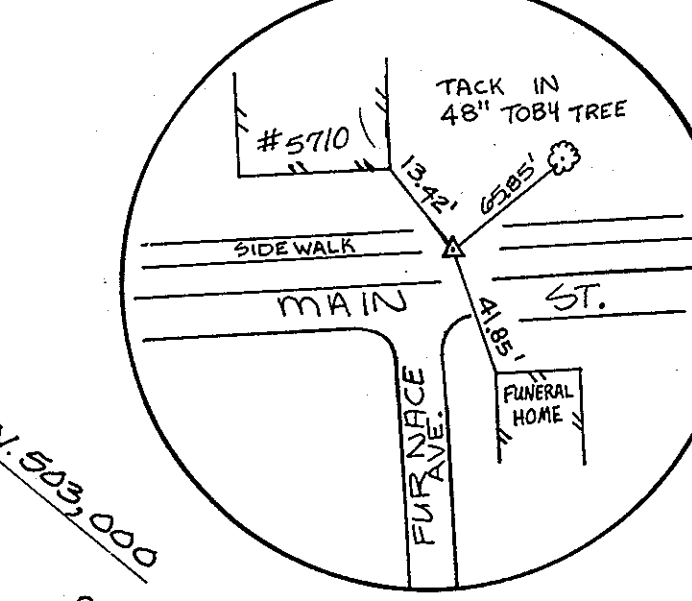
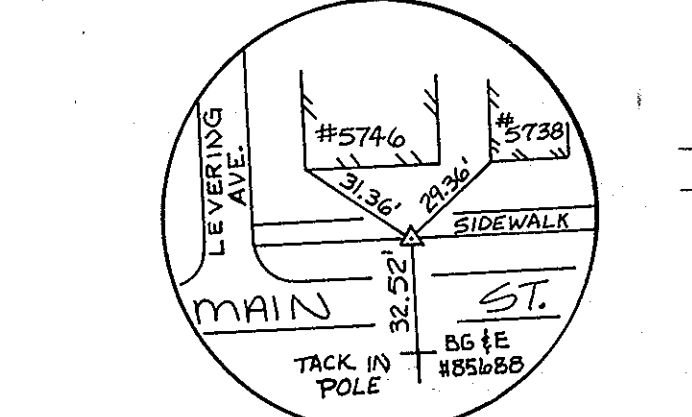
SCALE AS SHOWN
 SHEET 1 OF 6

D-1076-001

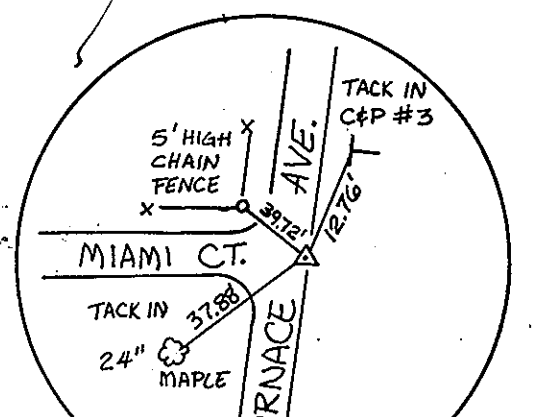
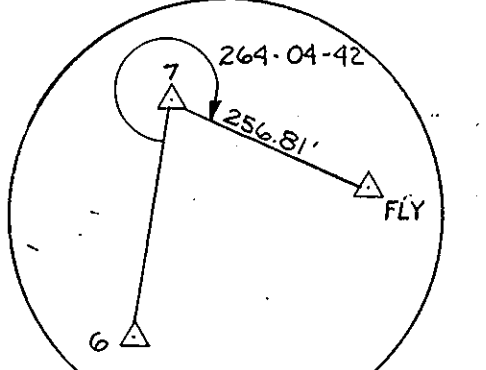
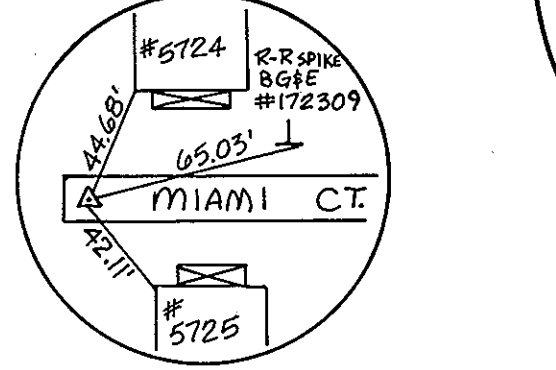
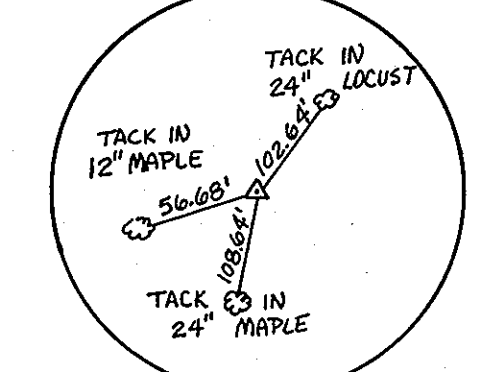
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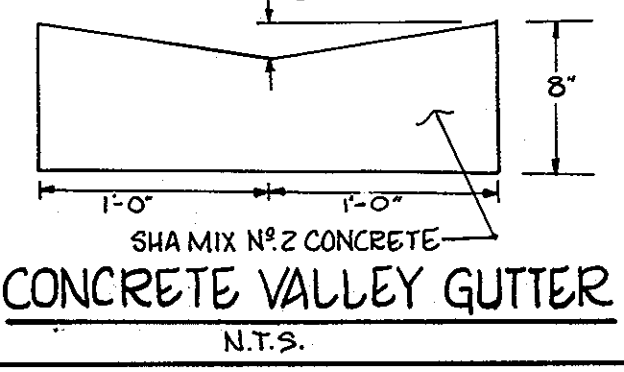
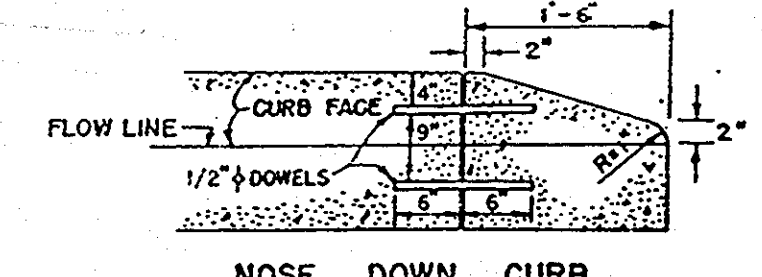
TRAVERSE POINT # 9



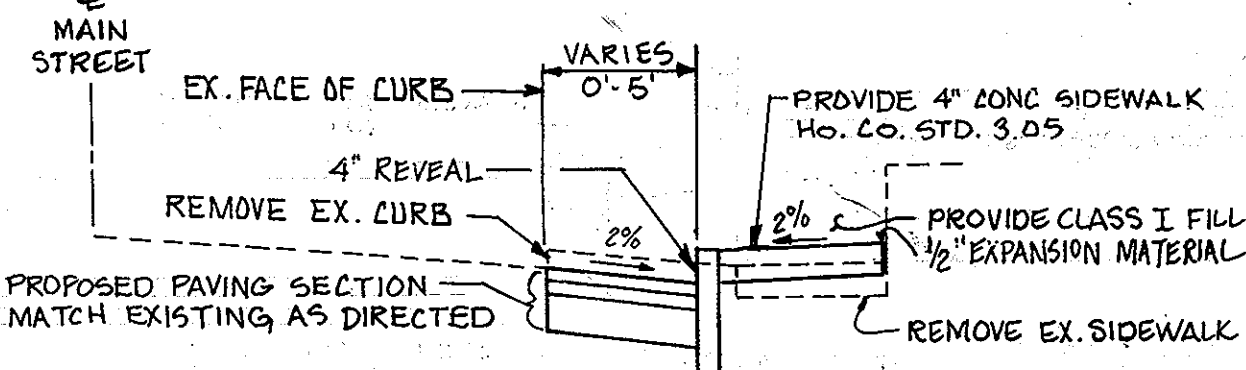
MAIN ST. OUTFALL DETAIL SCALE: 1" = 10'



SEE PROFILES (SHEET 5) FOR RCP CLASSES



- NOTES:
1. PROVIDE 7" REINFORCED APRONS AT ALL DRIVEWAYS IN ACCORDANCE WITH HO. CO. STD. R-602 SLOPE MAY VARY TO MEET EXISTING CONDITIONS. (SLOPE SHALL NOT EXCEED 10%)
 2. USE DROP CURB CONTINUOUSLY FROM STA. 36+15 TO STA. 37+30.



MODIFIED SIDEWALK RAMP AT LEVERING AVENUE

NOTE: EX. 6" GAS TO BE RELOCATED FROM FURNACE AVE. @ STA. 27+00 TO @ STA. 28+05

NOTE: NEW SIDEWALK SHALL BE PLACED ON GRADE AND 12" WIDE DRIVEWAY APRONS CONSTRUCTED IN ACCORDANCE WITH HO. CO. STD. R-602 WITHOUT FLARES AS SHOWN ON SIDEWALK/GUTTER PROFILE SHEET 4. ALL AREAS WITHIN THE RIGHT-OF-WAY SHALL BE GRADED AS DIRECTED BY THE ENGINEER AND SODDED

NOTE: AT 5746 MAIN ST. PROVIDE TWO DRIVEWAY CURB CUTS AS DIRECTED BY THE ENGINEER.

IN ADDITION TO NOTIFYING MISS. UTILITY, THE CONTRACTOR SHALL NOTIFY C & P TELEPHONE (410) 261-7539 AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION OF STORM DRAIN IN VICINITY OF MAIN STREET FIBER OPTIC CABLE.

THE CONTRACTOR SHALL SUBMIT CONCURRENTLY TO C & P AND HOWARD COUNTY DPW TEMPORARY CONDUIT SUPPORT DETAIL(S) FOR APPROVAL.

NOTE: PROPOSED SIDEWALK SHALL TRANSITION DOWN TO EXISTING SIDEWALK AT A MAX. GRADE OF -8.33%

E. 882, 000

N. 503, 500

E. 882, 500

E. 883, 000

N. 503, 000

N. 503, 500

E. 882, 000

N. 503, 500

N. 503, 000

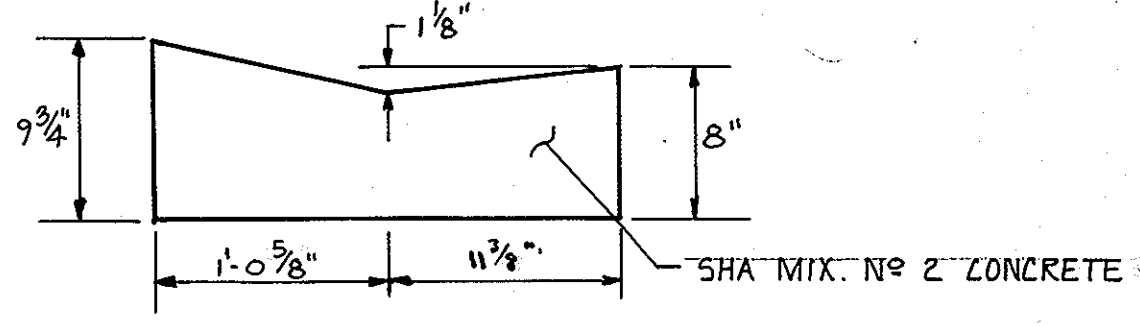
E. 883, 000

MATCH LINE 'A-A' SEE SHEET 2 OF 6

NOTES:

1. THE PROPOSED CURB SHALL FOLLOW A STRAIGHT ALIGNMENT ALONG RAILROAD AVENUE FROM THE INTERSECTION WITH MAIN STREET TO THE HORIZONTAL CURVE AT STA. 49+75±, ACCORDING TO THE APPROXIMATE STATIONS AND OFFSETS GIVEN ON THE PLAN.
2. THE PROPOSED CURB OR VALLEY GUTTER SHALL GENERALLY FOLLOW THE EXISTING ALIGNMENT PROVIDING A CURBLINE OR GUTTERLINE WITH AS FEW IRREGULARITIES AS POSSIBLE.
3. THE CURBLINE OR GUTTERLINE SHALL BE A MINIMUM OF 15" FROM THE FACE OF ADJACENT UTILITY POLES THE ROADWAY WIDTHS SHALL BE AS SHOWN ON THE PLANS. THE LOCATION OF ALL CURBING AND VALLEY GUTTERS SHALL BE AS APPROVED BY THE ENGINEER.
4. UTILITY POLES REQUIRING BRACING SHALL BE BRACED BY THE OWNERS AT NO EXPENSE TO THE CONTRACTOR.

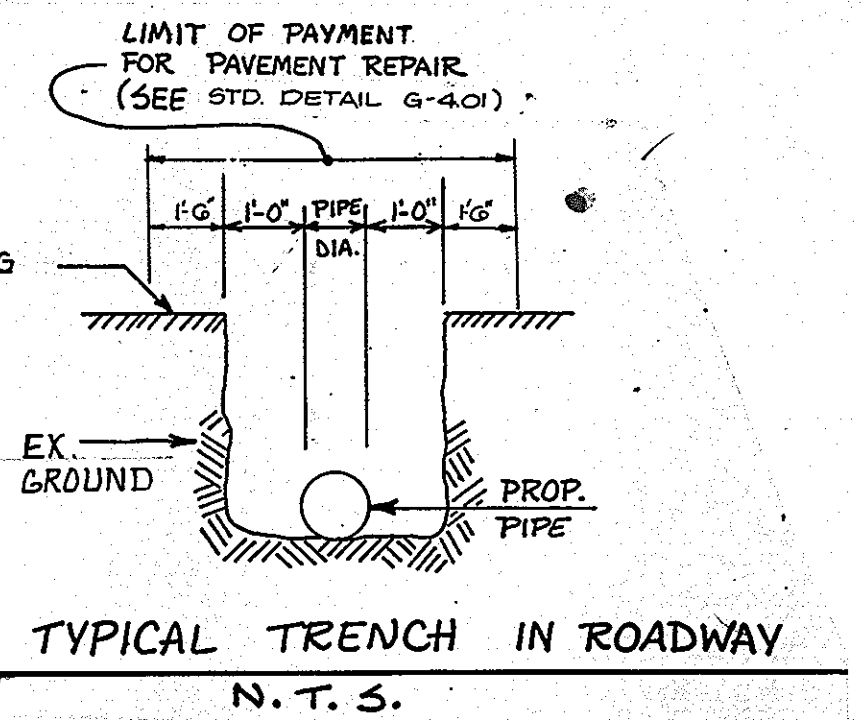
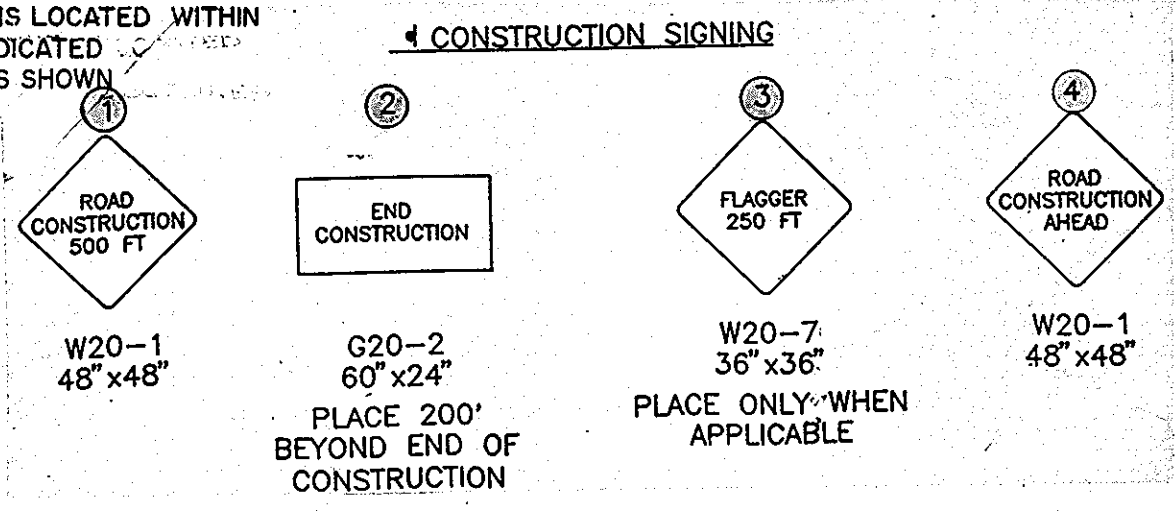
NOTE: THIS VIEW DETAILS THE MIDPOINT OF THE 25' LONG TRANSITION SECTION BETWEEN THE CONCRETE VALLEY GUTTER AND THE MODIFIED CURB AND GUTTER. THE TRANSITION SECTIONS SHALL BE INSTALLED FROM STA. 49 + 85' RT. TO STA. 50 + 10' RT. ON RAILROAD AVE., AND FROM STA. 18 + 99 LT TO STA. 19 + 24 LT. ON PARADISE AVE.



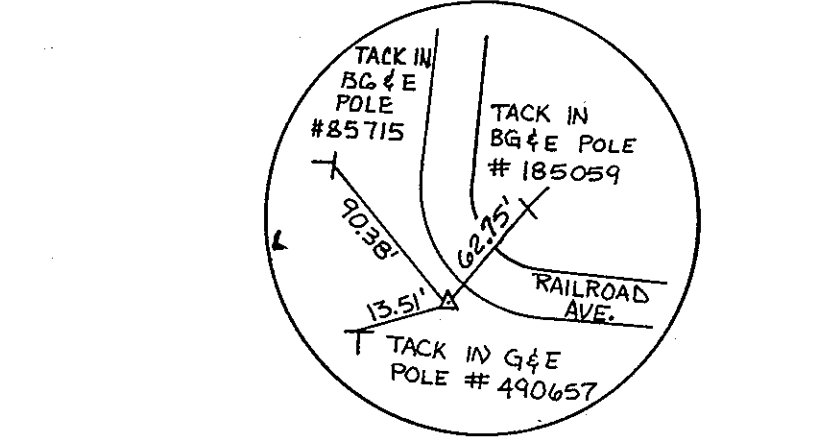
VALLEY GUTTER/CURB AND GUTTER TRANSITION N.T.S.

NOTES:

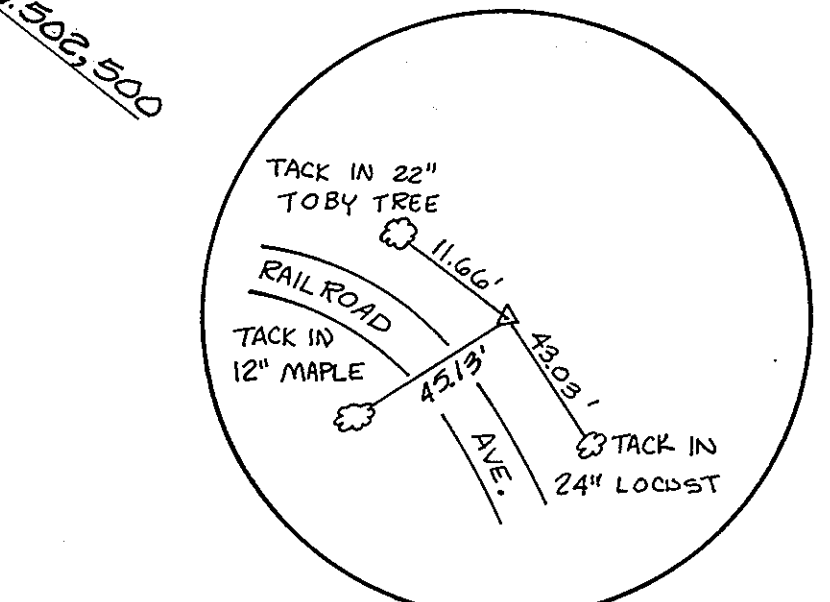
1. EXISTING 6" GAS TO BE RELOCATED FROM FURNACE AVENUE BASELINE STA. 19+90 TO 22+40 AND BASELINE STA. 23+90 TO 24+80.
2. THE CONTRACTOR SHALL CONTACT MR. FRANK MILLER, BRANCH MANAGER OF THE BALTIMORE POST OFFICE AT 242-1480, 2 WEEKS IN ADVANCE FOR THEIR PERMITS TO RELOCATE THE MAILBOX.
3. CONTRACTOR SHALL RELOCATE ADDITIONAL SIGNS AS DIRECTED BY THE ENGINEER.
4. EASEMENT IS NOT REQUIRED SINCE IT IS LOCATED WITHIN WIDENING STRIPS INTENDED TO BE DEDICATED TO HOWARD COUNTY BY THE OUTLINES SHOWN ON PLAT C.M.P. 5409.



TYPICAL TRENCH IN ROADWAY N.T.S.

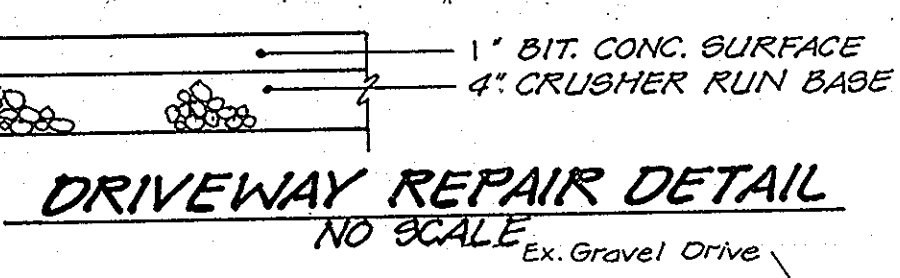


TRAVERSE POINT #10

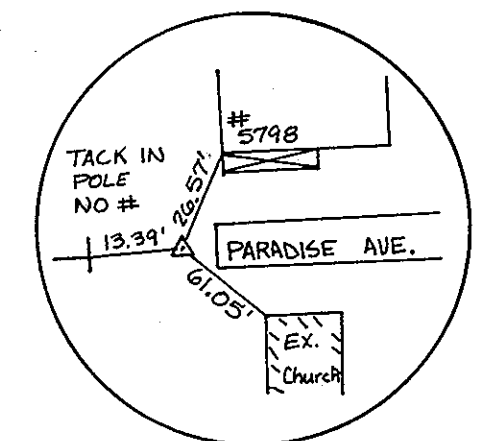


TRAVERSE POINT #11

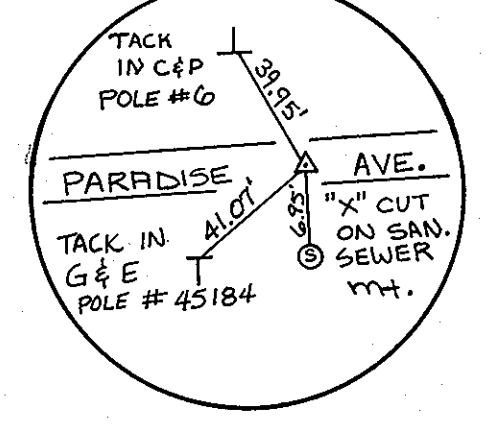
NOTE:
1. ROADWAYS AND DRIVEWAYS SHALL BE RESTORED AT ALL CROSSINGS IN ACCORDANCE WITH THE 'REPAIR DETAILS'. TRENCH WIDTHS SHALL NOT EXCEED THAT SHOWN IN THE 'TRENCH DETAIL'.



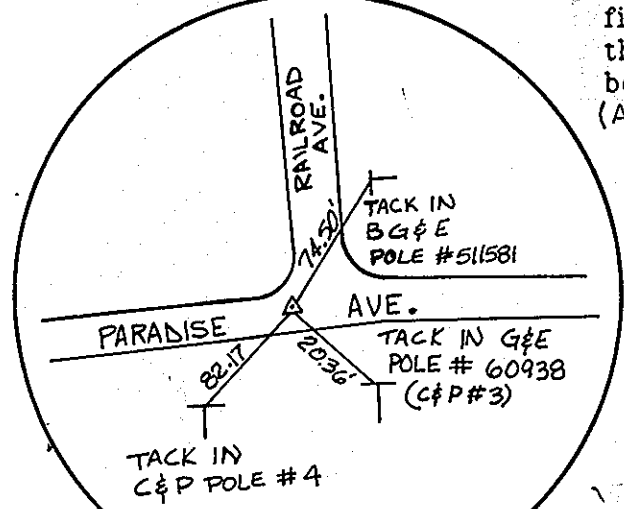
DRIVEWAY REPAIR DETAIL NO SCALE



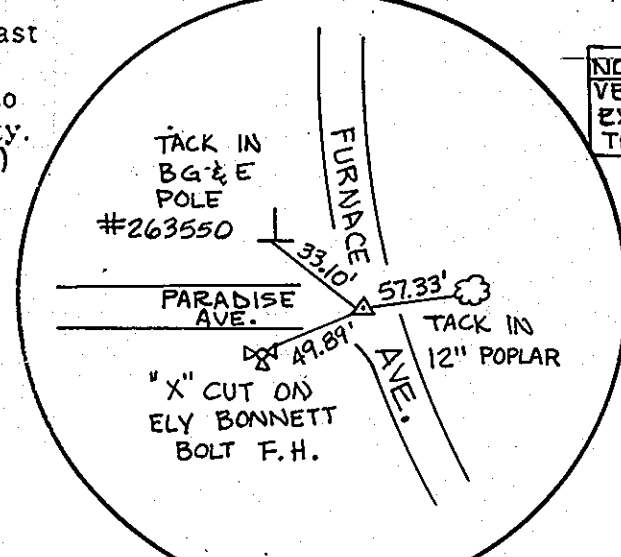
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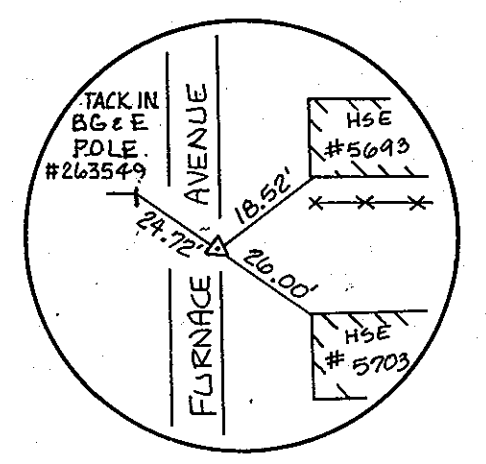
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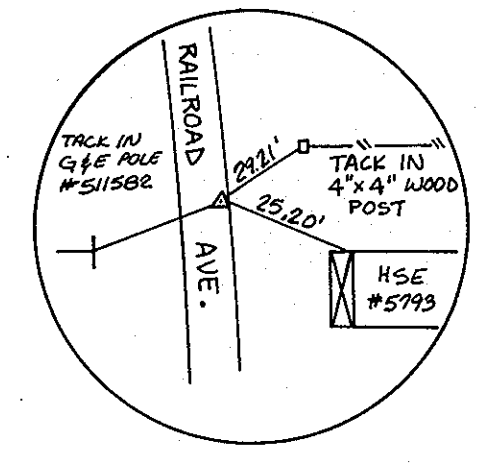
TRAVERSE POINT #3



TRAVERSE POINT #4



TRAVERSE POINT #5



TRAVERSE POINT #12

* Contractor must notify the Division Engineer's office at Baltimore, MD., telephone (401) 347-5177, extending at least five (5) days advance notice of the date and time any work is to be performed on Railroad property. (AS REQUIRED IN SPECIAL PROVISIONS)

CONTRACTOR TO TEST PIT WATER LINE. NOTIFY HOWARD COUNTY BUREAU OF UTILITIES PRIOR TO COMMENCING WORK.

NOTE: GRADING AROUND HEADWALL (S-1) AND CHANNEL SHALL BE COMPLETED DURING A 3 DAY DRY WEATHER FORECAST.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: James M. ... 4/28/92
Chief, Bureau of Engineering: ... 4/27/92
Chief, Bureau of Storm Drainage: ... 4/27/92

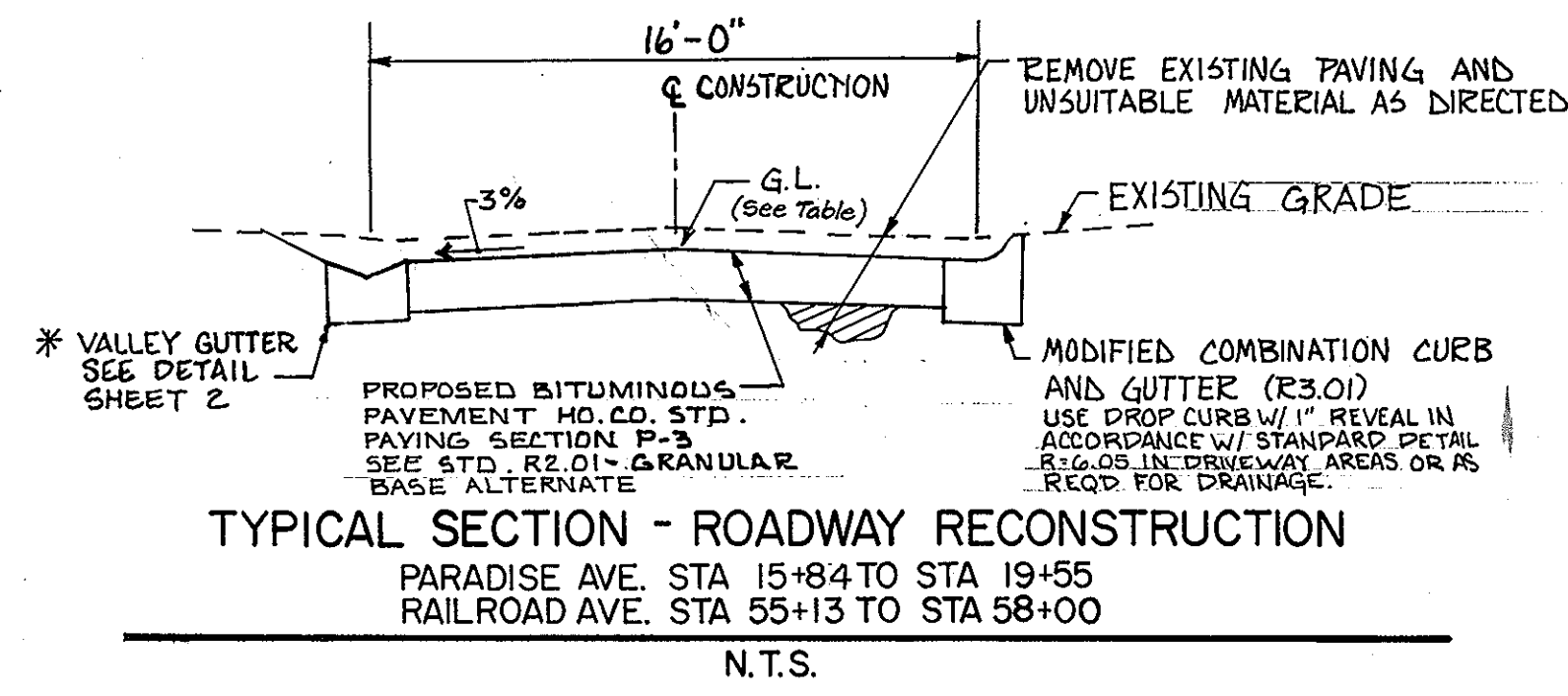
gpi GREENMAN + PEDERSEN, INC.
CONSULTING ENGINEERS
14804 GREENVIEW DRIVE, SUITE 100, LAUREL, MD 20708
(301) 470-7772, (301) 980-3055, (301) 288-8933

DES: PAH	STORM DRAIN ON FURNACE AVE.	5-4-92
DRN: SMC	STORM DRAIN ON FURNACE AVE.	8-26-92
CHK: KJB		
DATE: 4/1/92		

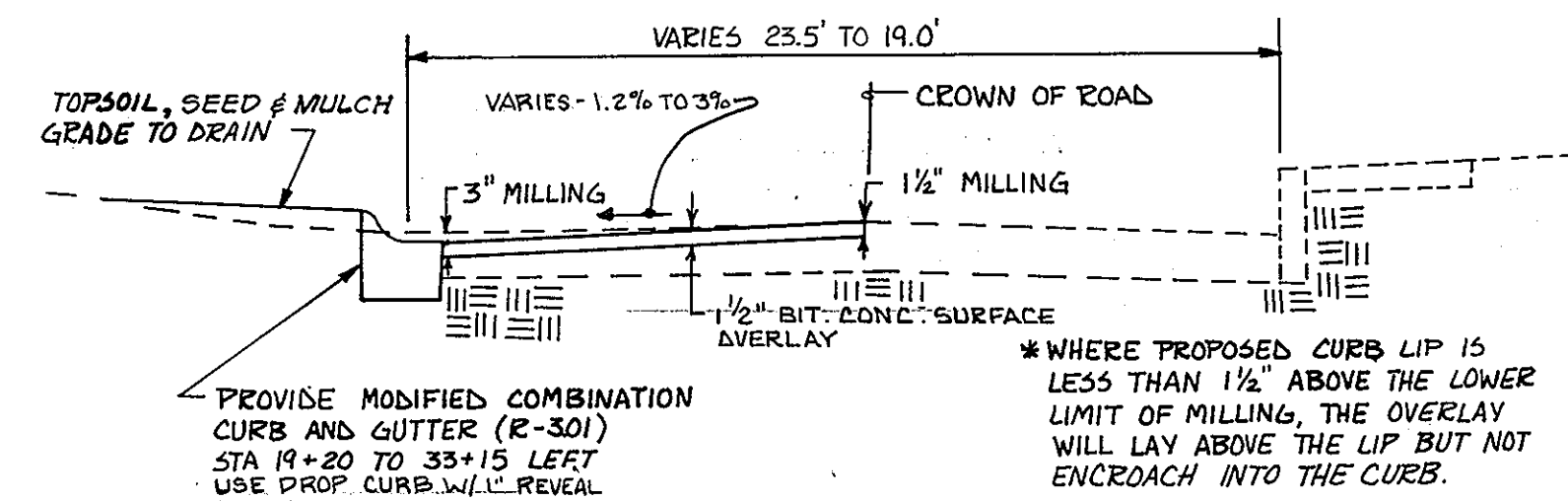
AMEND SHEET TO EXISTING CONTRACT # 30336
AMEND SHEET TO EXISTING CONTRACT # 5W
CAPITAL PROJECT D-1076

STORM DRAINAGE IMPROVEMENTS
ELKRIDGE
PLAN
ELECTION DISTRICT ELKRIDGE NO. 1
SCALE AS SHOWN
SHEET 3 OF 6
D-1076-003

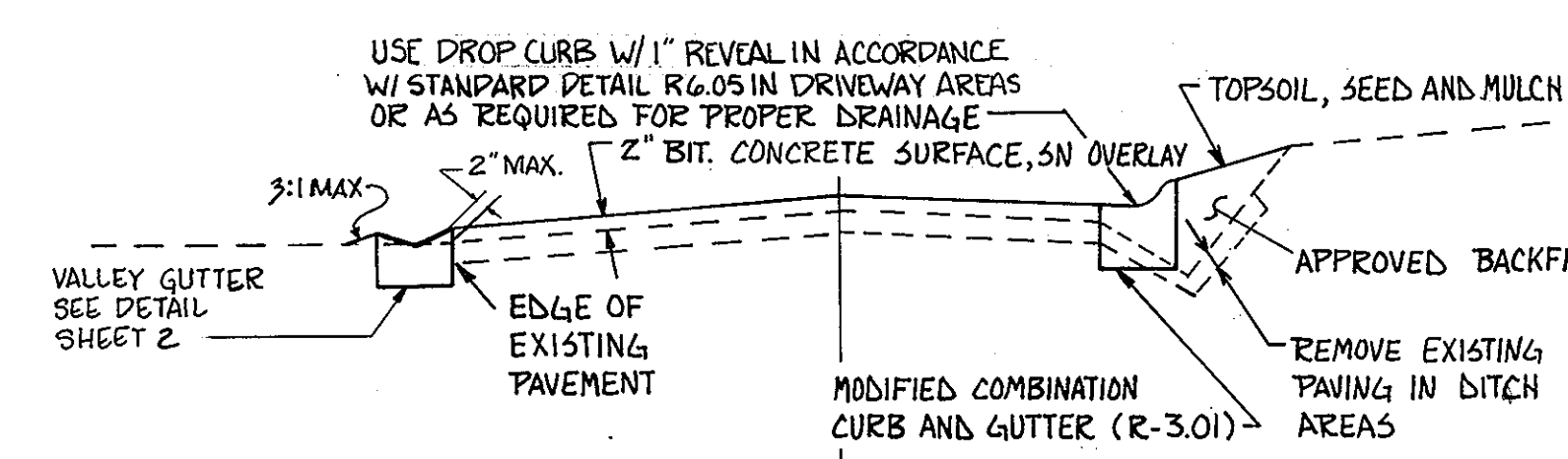
1233



* NOTE: MODIFIED COMBINATION CURB & GUTTER (R.3.0) TO BE USED AT PARADISE AVE. STA. 15+84 LT. TO STA. 16+40 LT. TO TIE INTO PROPOSED RAILROAD AVE. CURB & GUTTER.

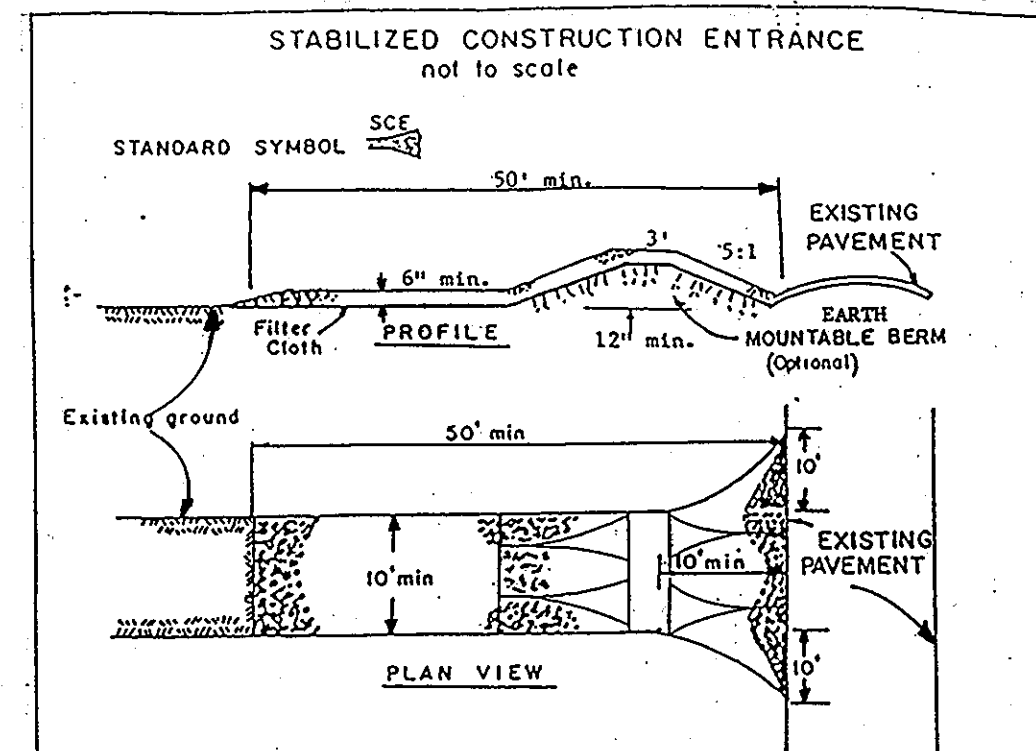
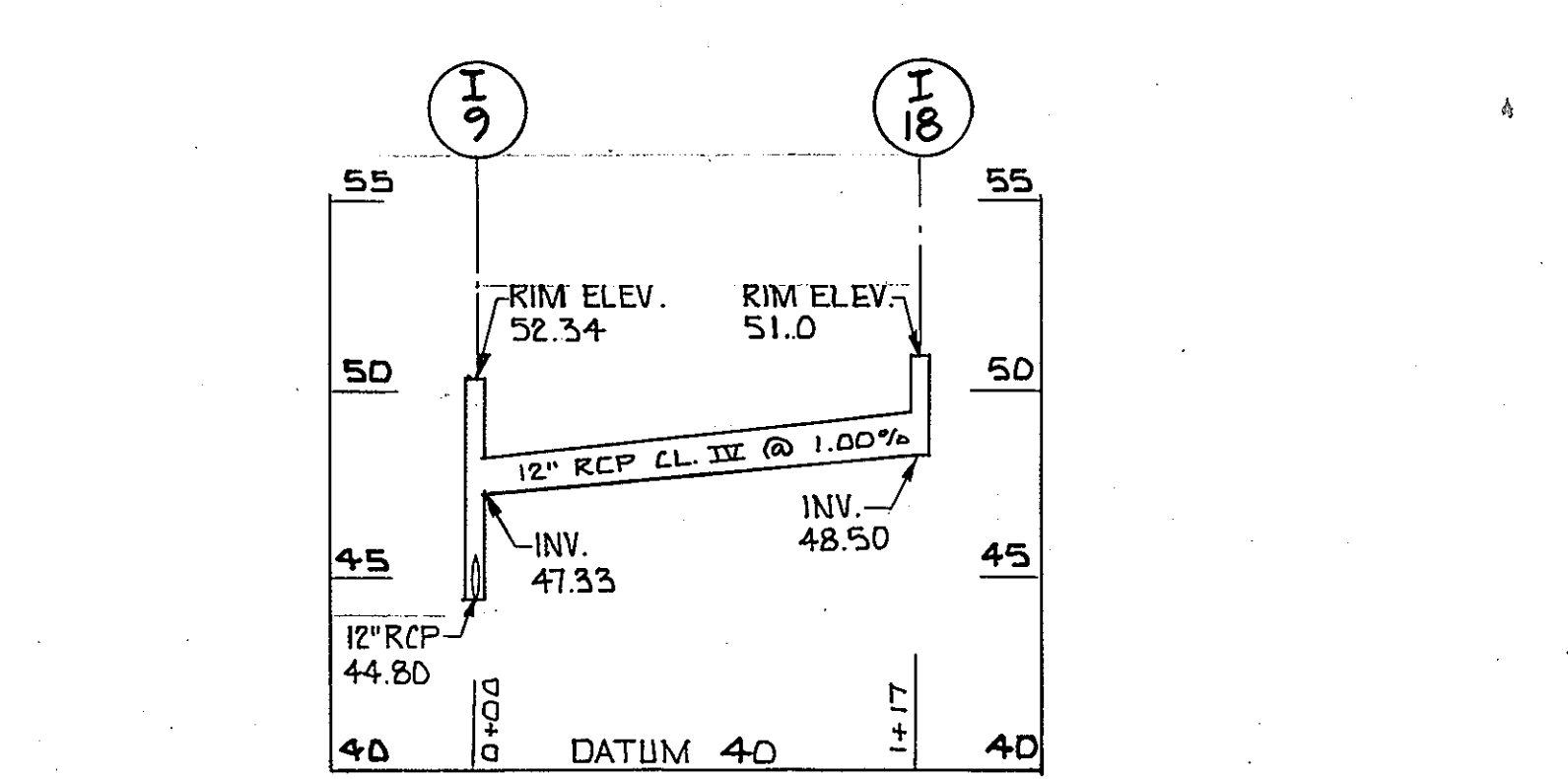


WHERE PROPOSED CURB LIP IS LESS THAN 1/2" ABOVE THE LOWER LIMIT OF MILLING, THE OVERLAY WILL LAY ABOVE THE LIP BUT NOT ENCRUSH INTO THE CURB.



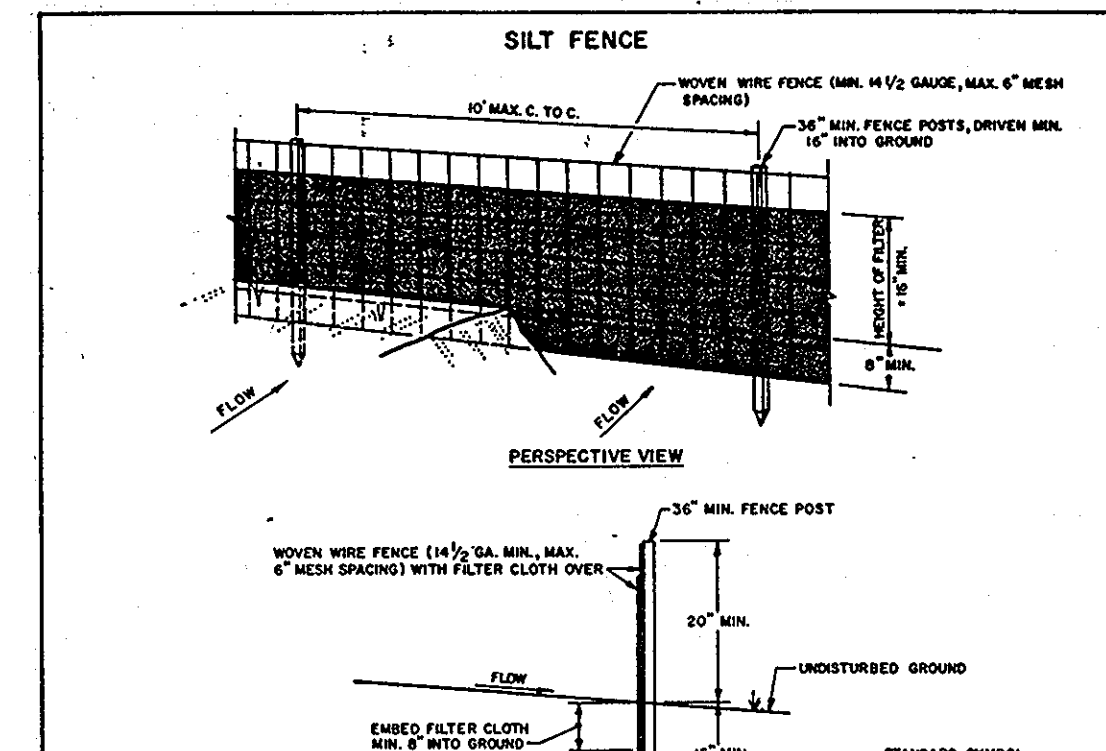
USE DROP CURB W/ 1" REVEAL IN ACCORDANCE W/ STANDARD DETAIL R.6.05 IN DRIVEWAY AREAS OR AS REQUIRED FOR PROPER DRAINAGE.

NOTES:
 PAVEMENT REPAIR OR WIDENING NECESSITATED BY CURB INSTALLATION SHALL BE IN ACCORDANCE WITH HO. CO. G-401



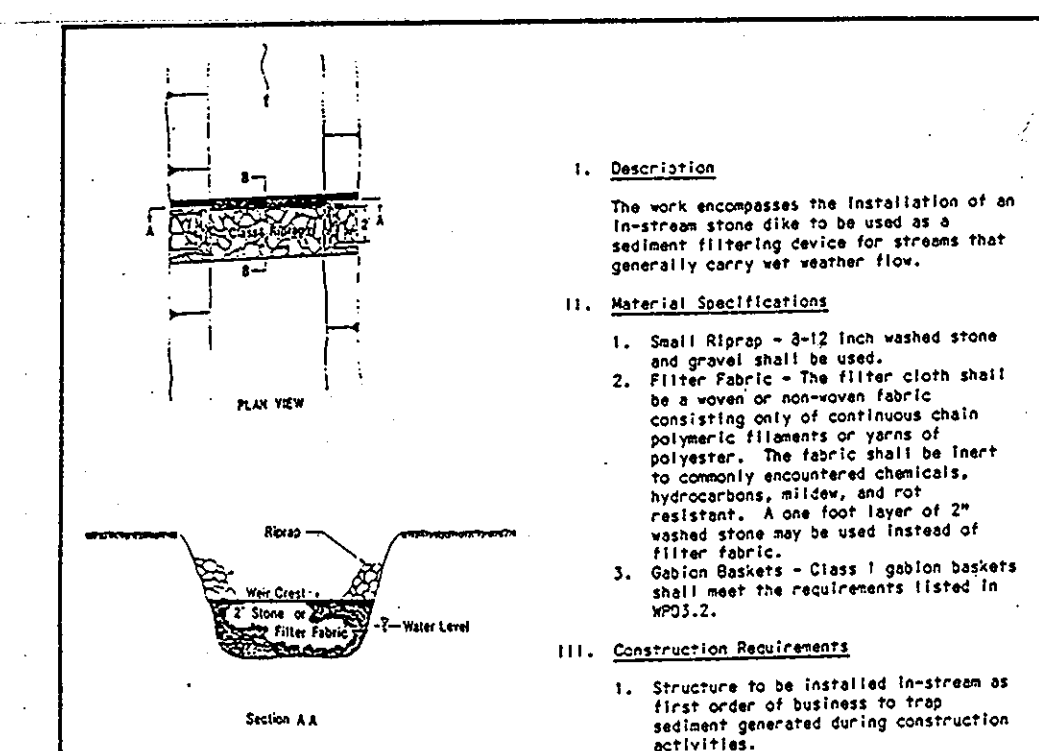
- CONSTRUCTION SPECIFICATIONS**
- Stone Size - Use 3" stone, or recycled or recycled concrete equivalent.
 - Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
 - Thickness - Not less than six (6) inches.
 - Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
 - Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
 - Surface Water - All surface water flowing or diverted toward construction entrance shall be piped across the entrance. If piping is infeasible, a portable berm with 5:1 slopes will be permitted.
 - Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public right-of-way must be removed immediately.
 - Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it shall be done on an area established with stone and which drains into an approved sediment trapping device.
 - Periodic inspection and needed maintenance shall be provided each rain.

U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 COLLEGE PARK, MARYLAND



- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**
- NOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
 - FILTER CLOTH TO BE FASTENED SECURELY TO NOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
 - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
 - MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN BULGES DEVELOP IN THE SILT FENCE.

U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 COLLEGE PARK, MARYLAND



- Description**
 The work encompasses the installation of an in-stream stone dike to be used as a sediment filtering device for streams that generally carry very weather flow.
- Material Specifications**
 - Small Riprap - 3/4" to 1 1/2" washed stone riprap shall be used.
 - Filter Fabric - The filter cloth shall be a woven or nonwoven fabric consisting of continuous chain polymeric filaments or yarns of polypropylene. The fabric shall be inert to commonly encountered chemicals, hydrocarbons, nitrate, and not resistant. A one foot layer of washed stone may be used instead of filter fabric.
 - Gallon Baskets - Class 1 gallon baskets shall meet the requirements listed in WPD.2.
- Construction Requirements**
 - Structure to be installed in stream as first order of business to trap sediment generated during construction activities.
 - The top width of the dike is to be from 24" to 36".
 - The distance between the dike and the disturbance is to be determined by flow rate of the waterway.
 - Gallon baskets may be used in lieu of small riprap as indicated by site specific conditions.
 - Structure is to remain in place until the sediment has been stabilized in accordance with approved sediment and erosion control plan.
 - Entrapped sediment is to be excavated and disposed of in a 500 approved disposal area or other approved disposal area otherwise approved on the plan by the WPA.
 - Structure can be removed once approved by inspecting authority.

WATER RESOURCES ADMINISTRATION
 In-Stream Stone Dike
 Approved On: 1/24/92
 Chief Waterway Permit

CENTERLINE ELEVATION DATA

STATION	CENTERLINE ELEVATION
55 + 40	43.33
55 + 45	43.02
56 + 00	42.79
56 + 25	42.57
56 + 50	42.35
56 + 75	42.08
57 + 00	41.60
57 + 25	40.88
57 + 50	39.94
57 + 75	38.96
57 + 95	38.18

CURB ELEVATIONS

STATION	FLOW-LINE ELEVATION
26 + 50	40.12
27 + 00	39.93
27 + 50	39.74
28 + 00	39.54
28 + 50	39.71
29 + 00	39.90
29 + 50	40.09
30 + 00	40.28
30 + 50	40.47
31 + 00	40.66
31 + 50	40.85
32 + 00	40.94
32 + 50	40.86
33 + 00	39.74

* REMAINING CURB SHALL BE PLACED 1 1/2" BELOW THE EDGE OF EXISTING PAVEMENT OR AS DIRECTED BY THE ENGINEER.

SEQUENCE OF CONSTRUCTION

- Contact the Bureau of Construction Inspection at 792-7272.
- Notify the Howard County Department of Licenses and Permits Inspector at 880-3450 48 hours before beginning work.
- Install temporary traffic signs for maintenance of traffic.
- Install temporary sediment control measures as shown on the plans except those noted to be installed later.
- Install proposed storm drain system and water line relocation. Perform pavement milling, install proposed curb, perform roadway reconstruction and apply pavement overlays.
- Stabilize all disturbed areas.
- Maintain disturbed areas which have been stabilized to ensure that erosion does not occur.

CENTERLINE STAKEOUT DATA

STATION	OFFSET TO CENTERLINE
16 + 09	5' RT
16 + 82	9' LT
18 + 07 (ANGLE POINT)	3' LT
19 + 20	5' LT

CENTERLINE STAKEOUT DATA

STATION	OFFSET TO CENTERLINE
55 + 40	4' LT
57 + 36 (PC)	0'

CENTERLINE ELEVATION DATA

STATION	CENTERLINE ELEVATION
16 + 09	39.80
16 + 25	39.31
16 + 50	38.55
16 + 75	37.79
17 + 00	36.90
17 + 25	36.01
17 + 50	35.12
17 + 75	34.26
18 + 00	33.54
18 + 25	33.00
18 + 50	32.61
18 + 75	32.25
19 + 00	31.89
19 + 25	31.64

STORM DRAIN PIPE SCHEDULE

SIZE	TYPE	CLASS	LENGTH
12"	RCP	IV	135'
15"	RCP	IV	974'
18"	RCP	III	592'
18"	RCP	IV	1110'
21"	RCP	IV	351'
24"	RCP	IV	441'
30"	RCP	III	158'
30"	RCP	IV	28'

* OPENINGS ON ALL SIDES
 * EXISTING GAS TO BE RELOCATED AROUND THESE STRUCTURES BY OTHERS AS DIRECTED BY THE ENGINEER

STRUCTURE SCHEDULE

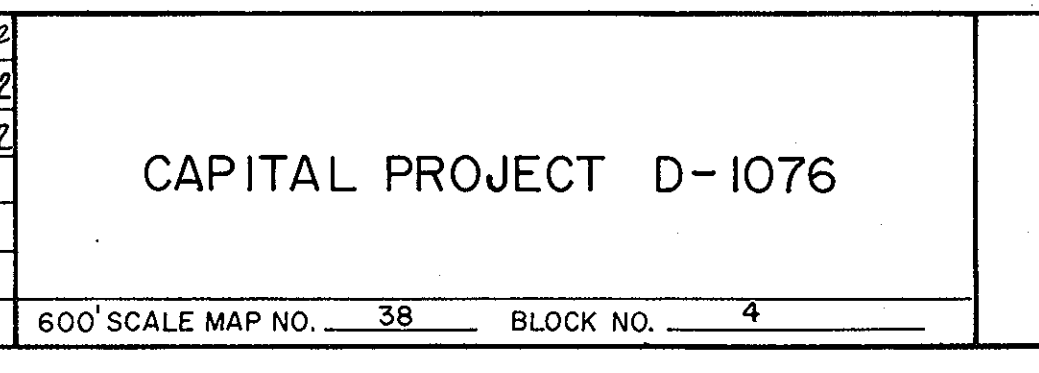
NUMBER	TYPE	TOP	INV. OUT	REMARKS
I-1	S COMB. INLET	30.18	21.03	SEE HO. CO. STD. DETAIL SD. 4.32
I-2*	D INLET	28.85	21.53	SEE HO. CO. STD. DETAIL SD. 4.11
I-3	S COMB. INLET	31.90	23.57	SEE HO. CO. STD. DETAIL SD. 4.32
I-4	A-5 INLET	31.79	24.33	SEE HO. CO. STD. DETAIL SD. 4.01
I-5**	A-10 INLET	31.70	27.00	SEE HO. CO. STD. DETAIL SD. 4.02
I-6**	A-10 INLET	37.56	29.31	SEE HO. CO. STD. DETAIL SD. 4.02
I-7*	D INLET	42.00	38.00	SEE HO. CO. STD. DETAIL SD. 4.11
I-8	A-10 INLET	52.13	44.30	SEE HO. CO. STD. DETAIL SD. 4.02
I-9	A-10 INLET	52.34	44.80	SEE HO. CO. STD. DETAIL SD. 4.02
I-10**	A-5 INLET	40.16	35.41	SEE HO. CO. STD. DETAIL SD. 4.01
I-11	A-5 INLET	40.40	37.00	SEE HO. CO. STD. DETAIL SD. 4.01
I-12	A-5 INLET	38.15	33.86	SEE HO. CO. STD. DETAIL SD. 4.01
I-13	S COMB. INLET	39.70	36.06	SEE HO. CO. STD. DETAIL SD. 4.32
I-14	S COMB. DOUBLE INLET	43.46	39.60	SEE HO. CO. STD. DETAIL SD. 4.34
I-15	S COMB INLET	39.95	37.00	SEE HO. CO. STD. DETAIL SD. 4.32
I-16	A-10 INLET	39.00	32.30	SEE HO. CO. STD. DETAIL SD. 4.02
I-17	A-5 INLET	43.10	36.25	SEE HO. CO. STD. DETAIL SD. 4.01
I-18	A-5 INLET	51.00	48.50	SEE HO. CO. STD. DETAIL SD. 4.01
M-1**	STD. PRECAST MH	40.29	33.48	SEE HO. CO. STD. DETAIL G. 5.11
M-2	STD. PRECAST MH	44.30	35.88	SEE HO. CO. STD. DETAIL G. 5.11
M-3	STD. PRECAST MH	38.65	31.30	SEE HO. CO. STD. DETAIL G. 5.11
M-4	STD. PRECAST MH	43.24	35.94	SEE HO. CO. STD. DETAIL G. 5.11
M-5	STD. PRECAST MH	48.40	41.40	SEE HO. CO. STD. DETAIL G. 5.11
M-6	STD. PRECAST MH	46.80	43.40	SEE HO. CO. STD. DETAIL G. 5.11
S-1	TYPE A ENDWALL	24.77	20.77	SEE HO. CO. STD. DETAIL SD. 5.11
S-2	TYPE C ENDWALL	23.85	21.60	SEE HO. CO. STD. DETAIL SD. 5.21
M-7	STD. PRECAST MH	42.40	37.40	SEE HO. CO. STD. DETAIL G.5.11

* OPENINGS ON ALL SIDES
 * EXISTING GAS TO BE RELOCATED AROUND THESE STRUCTURES BY OTHERS AS DIRECTED BY THE ENGINEER

SEDIMENT CONTROL NOTES

- Minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction (880-3450).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) soil (Sec. 51), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:
 Total Area of Site - NA Acres
 Area Disturbed - 2.093 Acres
 Area to be roofed or paved - 0.915 Acres
 Areas to be vegetatively stabilized - 1178 Acres
 Total Cut - 70 Cu. yds
 Total Fill - 100 Cu. yds
 offsite waste/borrow area location: Pre-Approval of Sediment Control Inspector Required
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the HOWARD COUNTY DLP sediment control inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trench work is to be limited to 3 pipe lengths or that which can be stabilized at the end of each day whichever is less.

SIDEWALK / GUTTER PROFILE - MAIN ST.



1233

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

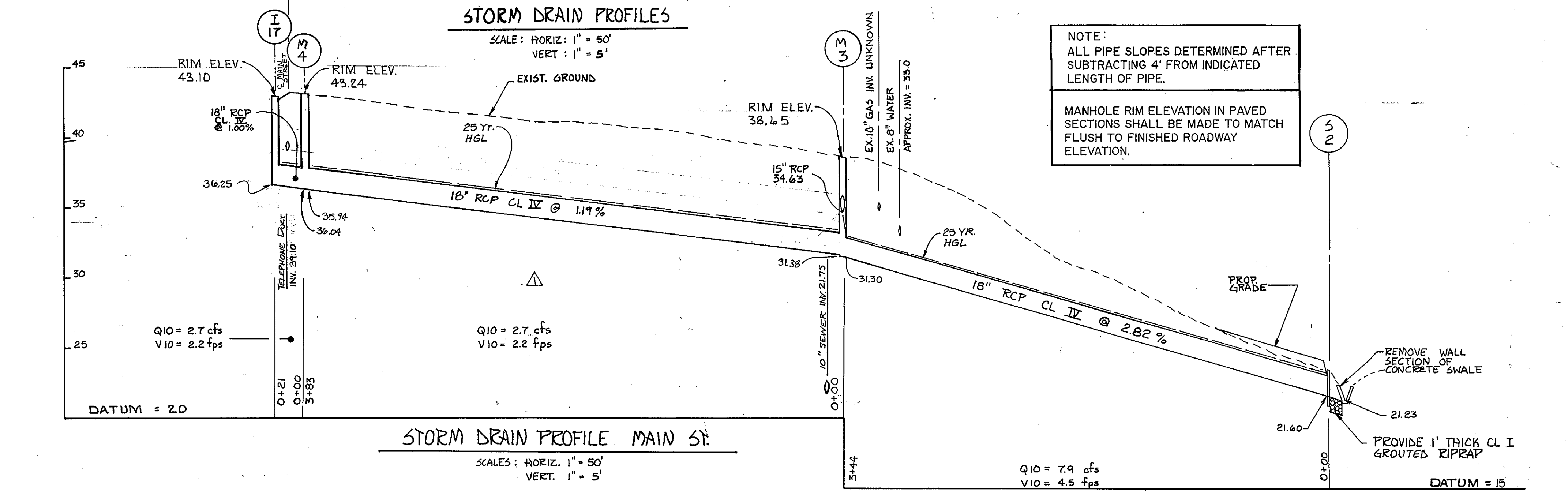
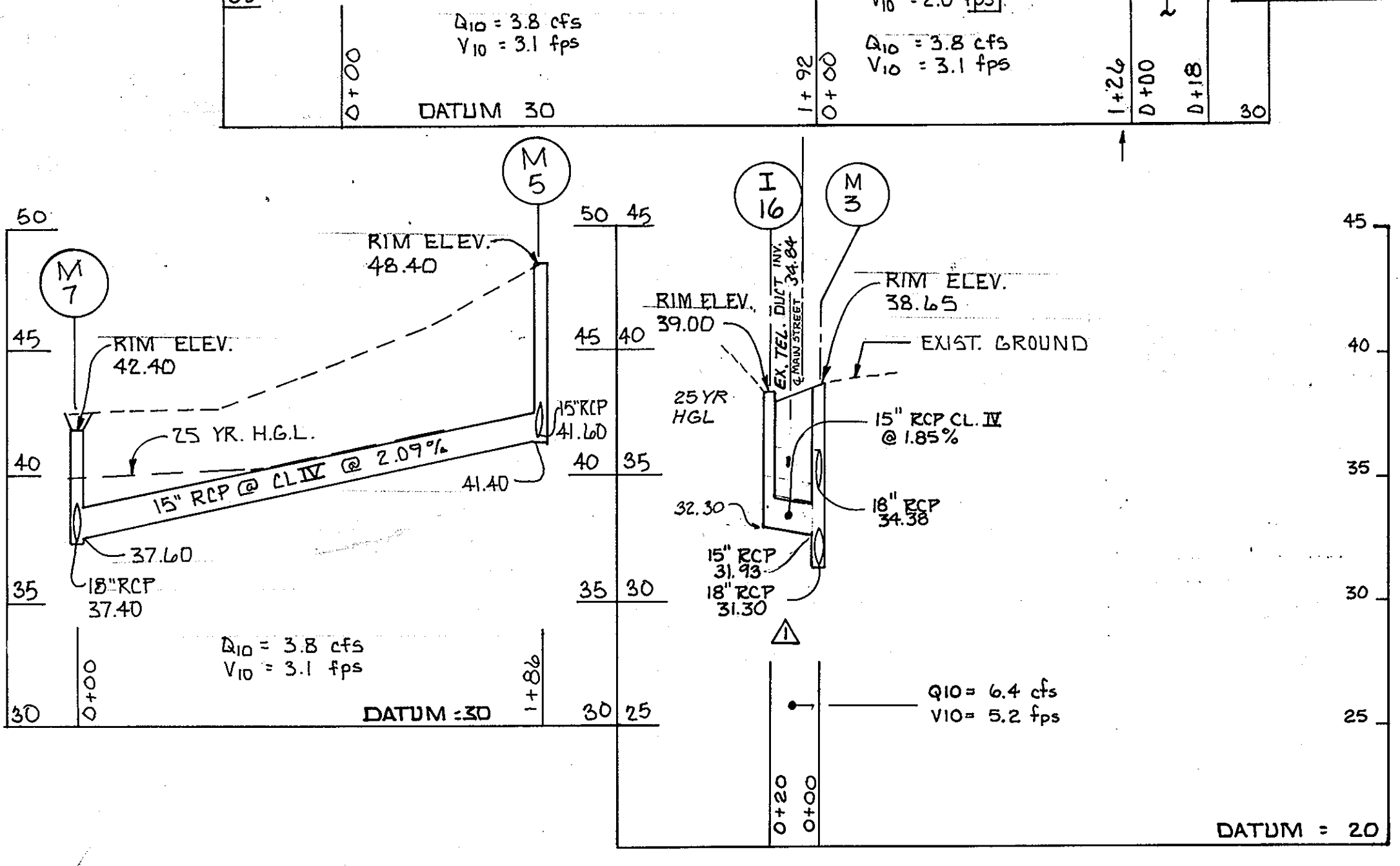
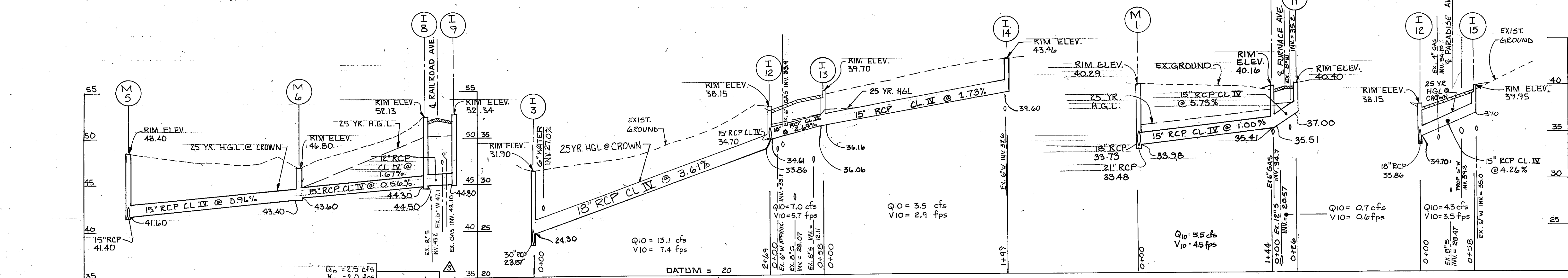
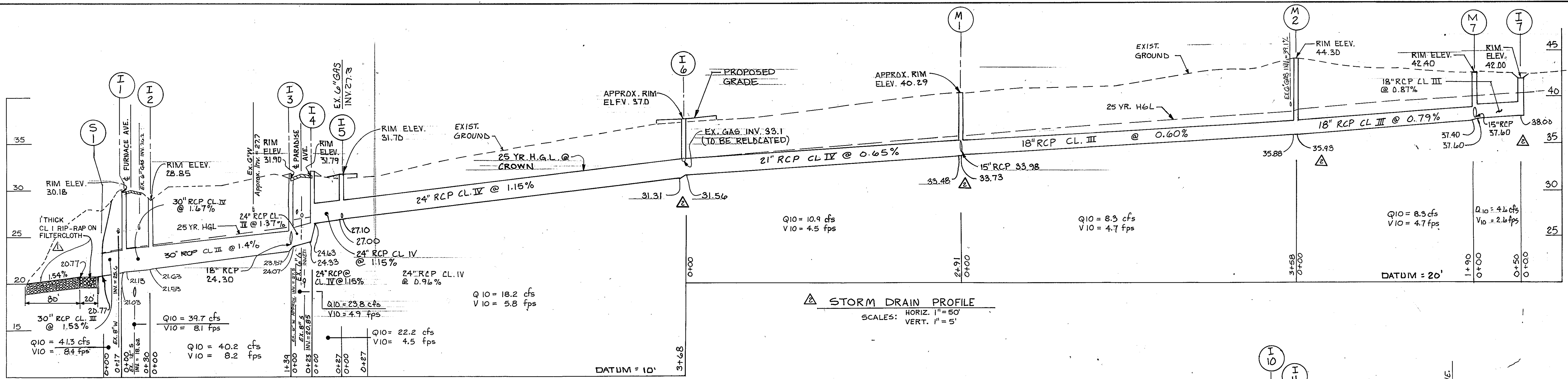
Director of Public Works: James M. Brown
 Chief, Bureau of Engineering: Gary A. Brown
 Chief, Bureau of Highways: [Signature]

gpi GREENMAN * PEDERSEN, INC.
 CONSULTING ENGINEERS
 14854 GREENVIEW DRIVE, SUITE 100, LAUREL, MD 20703
 (301) 470-4772, (301) 850-9035, (301) 853-6333

DES:	PAH	DATE:	5-4-92
DRN:	SMC	DATE:	8-6-92
CHK:	KJB	DATE:	8-6-92
DATE:	4/1/92	BY:	NO.
REVISION:		DATE:	

CAPITAL PROJECT D-1076
 600' SCALE MAP NO. 38 BLOCK NO. 4

SCALE AS SHOWN
 SHEET 4 OF 6
 D-1076-004A



NOTE:
ALL PIPE SLOPES DETERMINED AFTER
SUBTRACTING 4' FROM INDICATED
LENGTH OF PIPE.

MANHOLE RIM ELEVATION IN PAVED
SECTIONS SHALL BE MADE TO MATCH
FLUSH TO FINISHED ROADWAY
ELEVATION.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James M. Low 4/28/92
DIRECTOR OF PUBLIC WORKS DATE

William S. Foley 4-24-92
CHIEF, BUREAU OF ENGINEERING DATE

Robert Anderson 4/24/92
CHIEF, ROADS, BRIDGES & STORM DRAINAGE DIVISION DATE

David M. Tompkins 4/24/92
CHIEF, BUREAU OF HIGHWAYS DATE

spi GREENMAN • PEDERSEN, INC.
CONSULTING ENGINEERS
14504 GREENVIEW DRIVE, SUITE 100, LAUREL, MD 20703
(301) 470-0772, (301) 580-3055, (301) 283-6933



DES:DMC	STORM DRAIN ON FURNACE AVE.	5-4-92
DRN:SMC	STORM DRAIN ON FURNACE AVE.	8-6-92
	STORM DRAIN ON RAILROAD AVE.	8-6-92
CHK:PAH		
DATE: 4/1/92	BY NO.	REVISION

CAPITAL PROJECT D-1076

600' SCALE MAP NO. 38 BLOCK NO. 4

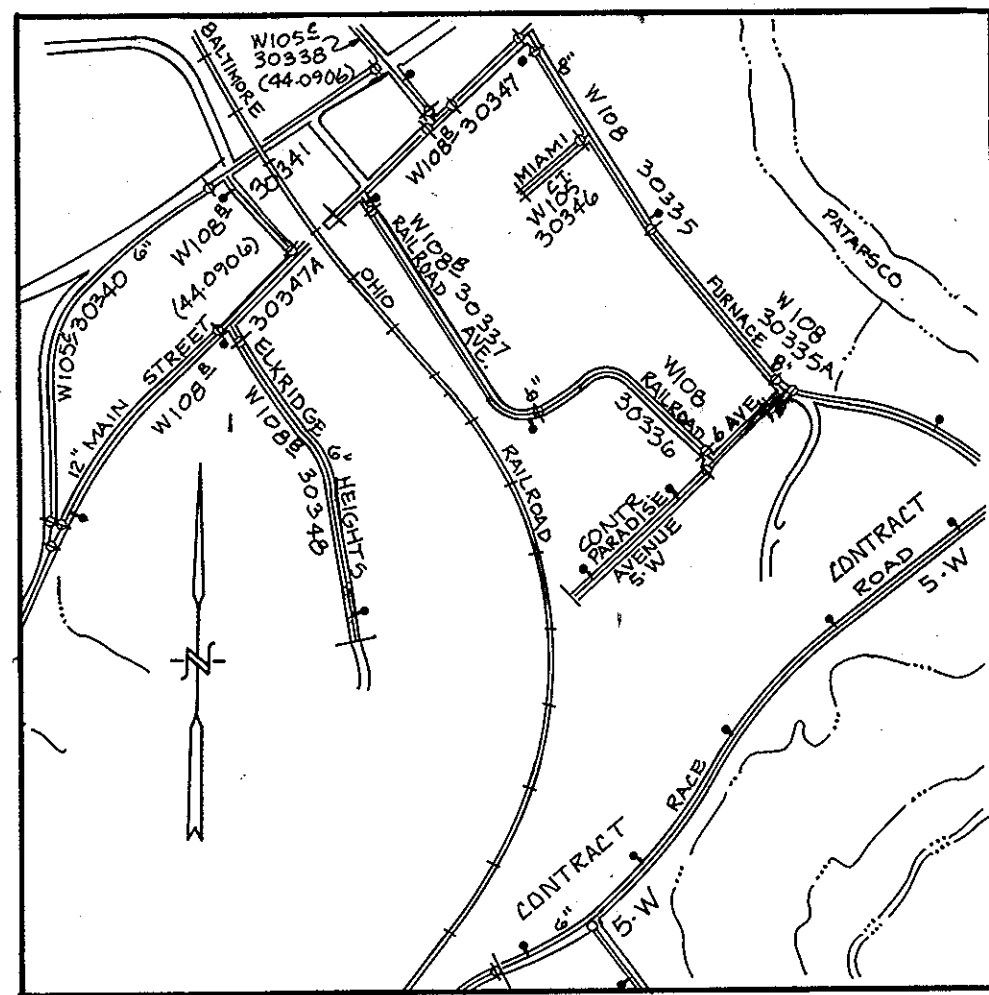
STORM DRAIN IMPROVEMENTS
ELKRIDGE
STORM DRAIN PROFILES
ELECTION DISTRICT ELKRIDGE NO. 1

SCALE AS SHOWN

SHEET 5 OF 6

1233

D-1076-005



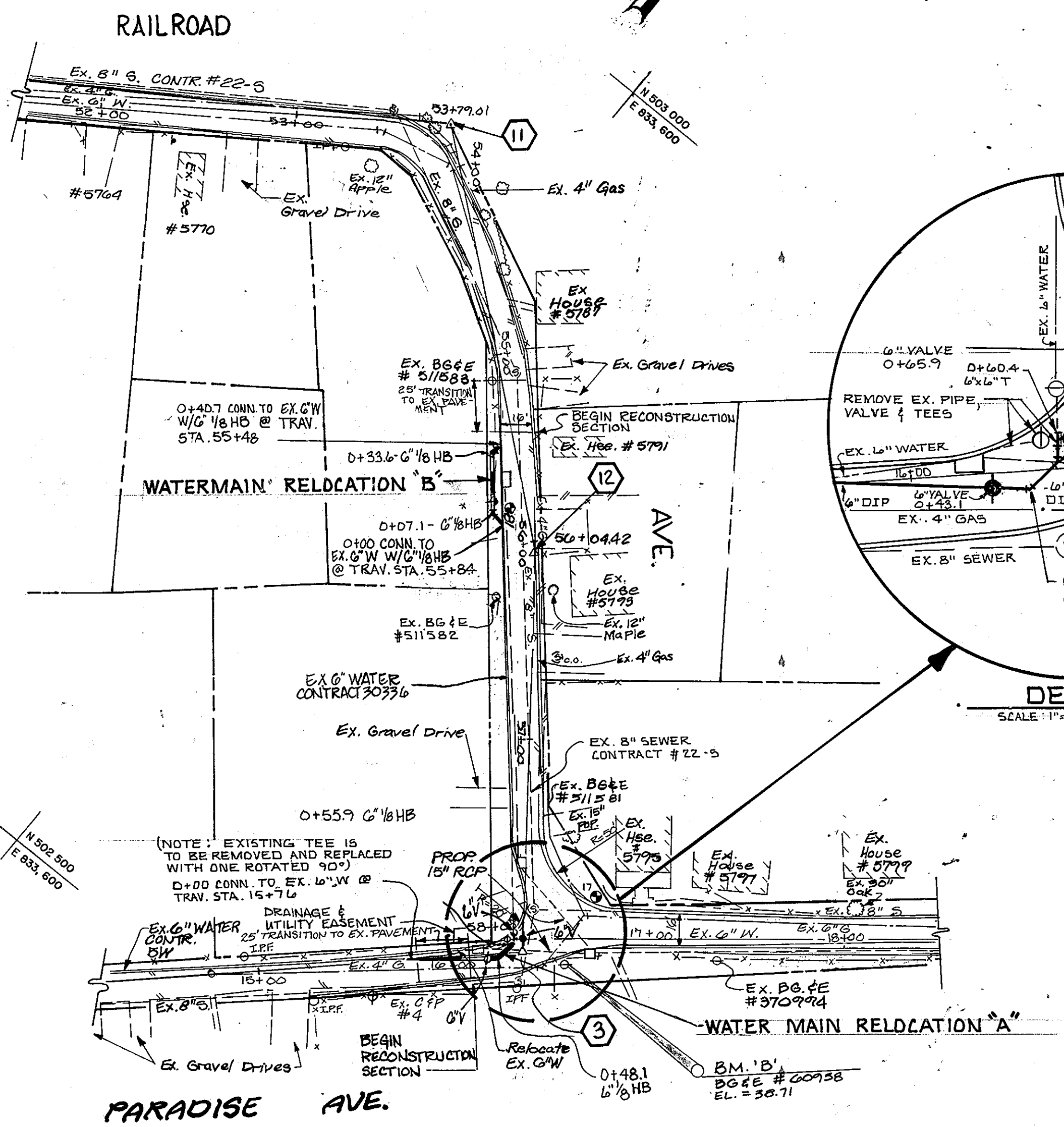
VICINITY MAP
SCALE: 1"=600'

QUANTITIES			
ITEM	ESTIMATED	AS-BUILT	MATERIAL / SUPPLIER
6" 1/8" HORIZ. BEND	6		
6" x 6" TEE	1		
6" VALVE	2		
6" O.I.P.	100 L.F.		

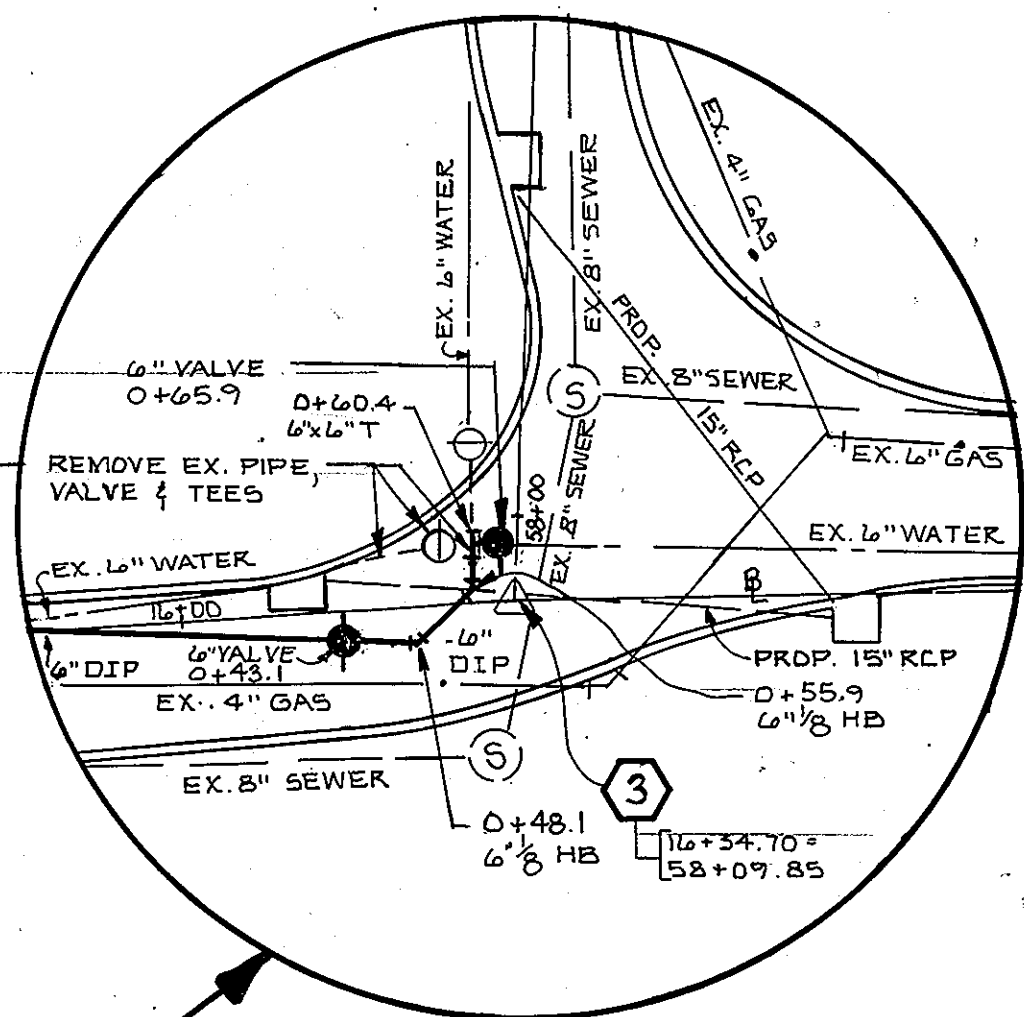
- SEE SHT. 3 FOR TEST PIT LOCATIONS.
- ALL REMOVED WATER LINE APPURTENANCES SHALL BECOME PROPERTY OF THE HOWARD COUNTY BUREAU OF UTILITIES AND SHALL BE DELIVERED TO BUREAU OF UTILITY MAINTENANCE YARD LOCATED AT 8250 OLD MONTGOMERY ROAD.

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

NOTE:
BUTTRESSING FOR ALL WATER MAIN HORIZONTAL BENDS SHALL BE IN ACCORDANCE WITH W2.21



WATER RELOCATION PLAN
SCALE: 1"=50'

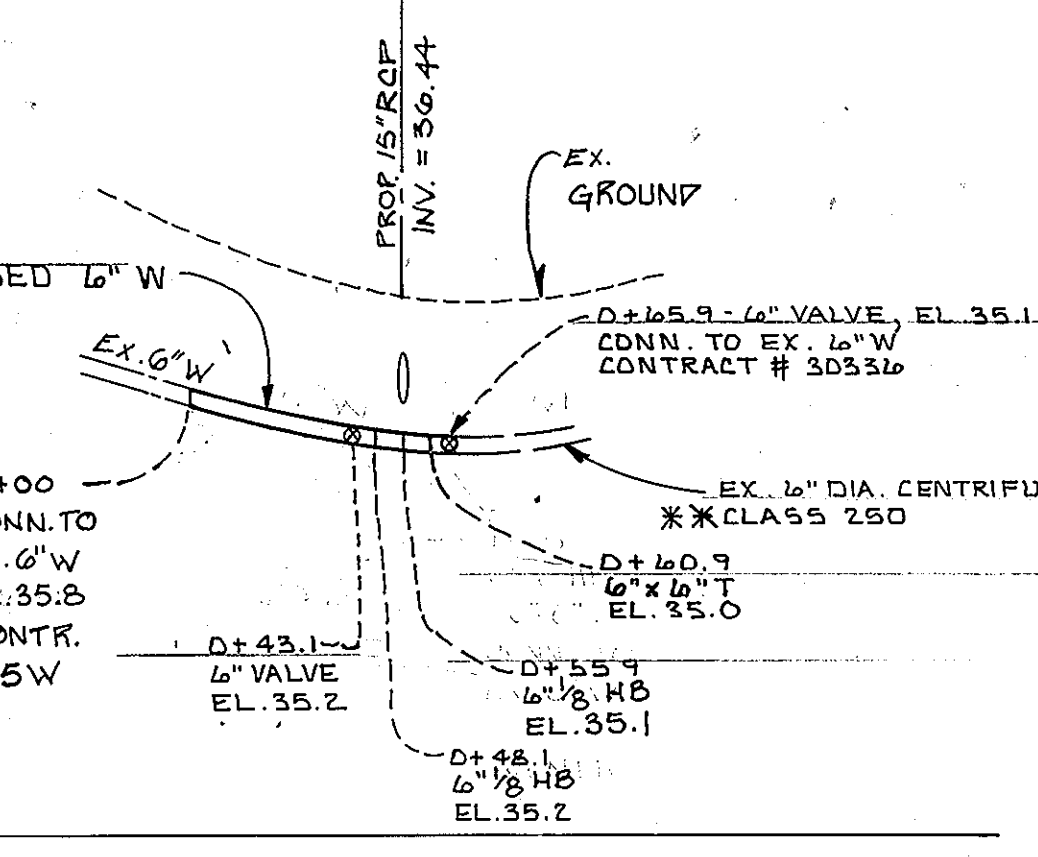


DETAIL
SCALE: 1"=20'

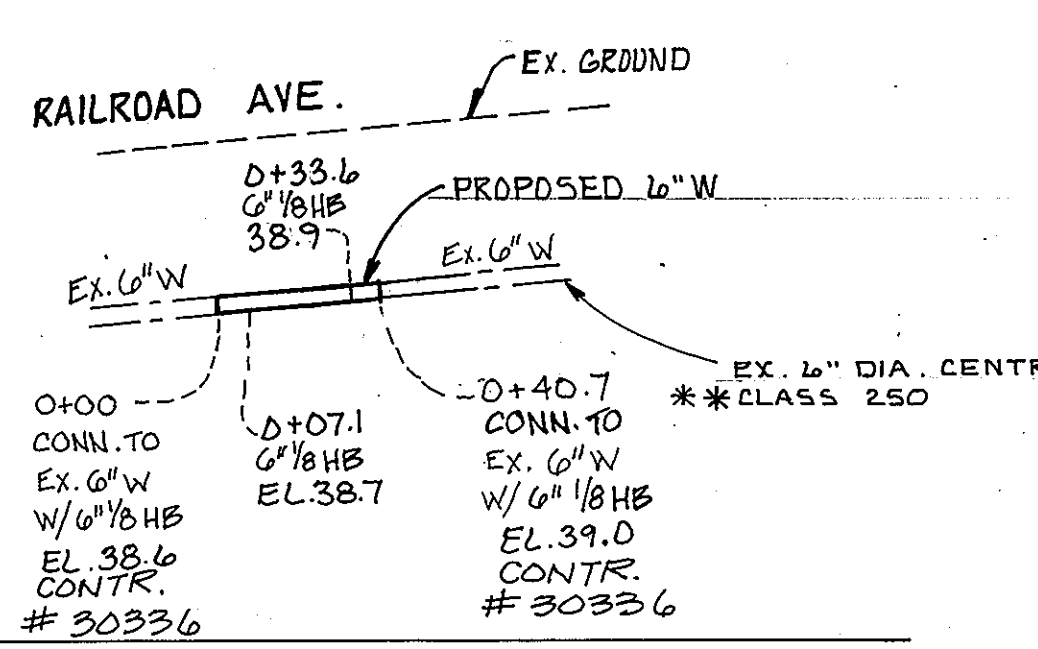
STAKEOUT TABLE-WATER MAIN RELOCATION 'A'			
WATER MAIN STATION	FITTING	TRAVERSE STATION	OFFSET
0+00	CONN. TO EX.	15+76	0.0'
0+43.1	6" VALVE	16+18.9	4.2' R
0+48.1	6" 1/8 HB	16+23.9	4.7' R
0+55.9	6" 1/8 HB	16+29.9	0.24' L
0+60.9	6" x 6" T	16+30.4	5.2' L
* 0+65.9	6" VALVE	16+35.2	4.8' L

* TIE TO EX. 6" W

STAKEOUT TABLE-WATER MAIN RELOCATION 'B'			
WATER MAIN STATION	FITTING	TRAVERSE STATION	OFFSET
* 0+00	6" 1/8 HB	55+84	13.2' R
0+07.1	6" 1/8 HB	55+78.2	17.3' R
0+33.6	6" 1/8 HB	55+52.1	12.8' R
* 0+40.7	6" 1/8 HB	55+48	7.0' R



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



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

* * * CONTRACTOR SHALL TEST PIT EXISTING WATER LINE TO VERIFY TYPE OF PIPE

PART I

- APPROPRIATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED, IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATA.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. 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.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [] AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
MISS UTILITY 1-800-257-7777
BALTIMORE GAS & ELECTRIC CO., UNDERGROUND ELECTRICAL DISTRIBUTION ENGR. DAMAGE CONTROL 234-6313
BALTIMORE GAS & ELECTRIC CO., UNDERGROUND GAS DISTRIBUTION ENGR. 234-5533
CHESAPEAKE AND POTOMAC TELEPHONE CO., 725-9976
COLONIAL PIPELINE COMPANY 781-4641
HOWARD COUNTY BUREAU OF UTILITIES 313-4900
HOWARD COUNTY BUREAU OF CONSTRUCTION INSPECTION 792-7272
HOWARD COUNTY TRAFFIC DIVISION 313-2430
HOWARD COUNTY SURVEYING AND DRAFTING DIVISION 313-2417

GENERAL NOTES

- 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.
 - CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- PART II - WATER**
- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
 - TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-1/2' COVER UNLESS OTHERWISE NOTED.
 - VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
 - ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
 - FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 OF THE STANDARD SPECIFICATIONS.
 - THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
 - ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING UNLESS OTHERWISE NOTED ON PLANS OR IN SPECIFICATIONS.
 - CONTRACTOR SHALL COORDINATE RELOCATION WITH HOWARD COUNTY BUREAU OF ENGINEERING, 5 DAYS PRIOR TO SCHEDULED WORK.

LEGEND

- x — EX. FENCE
- EX. TREE
- ⊙ EX. SEWER MANHOLE
- ⊕ EX. TELEPHONE MANHOLE
- ⊖ EX. WATER SERVICE
- ⊙ SOIL BORING
- ⊕ EX. UTILITY POLE
- ⊙ EX. FIRE HYDRANT
- ⊕ EX. WATER VALVE
- ⊖ PROPOSED WATER VALVE
- ⊕ EX. STORM INLET
- ⊖ TRAVERSE POINT LOCATION
- ⊕ TRAVERSE POINT NUMBER
- ⊖ PROPOSED INLET
- ⊕ PROPOSED MANHOLE
- S — SILT FENCE

1233

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature] DATE: 4-29-92
 Chief, Bureau of Engineering: [Signature] DATE: 4-24-92
 Chief, Bureau of Utilities: [Signature] DATE: 4-29-92
 Chief, Utility Design Division: [Signature] DATE: 1-28-92

gpi GREENMAN + PEDERSEN, INC.
CONSULTING ENGINEERS
14804 GREENVIEW DRIVE, SUITE 100, LAUREL, MD 20708
(301) 470-0774, (301) 590-3055, (301) 260-6933

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER

DES: DMC			
DRN: SLS			
CHK: KJB			
DATE: 4/1/92	BY	NO.	REVISION

AMEND SHEET TO EXISTING CONTRACT #30336
AMEND SHEET TO EXISTING CONTRACT #5W
CAPITAL PROJECT D-1076

SCALE AS SHOWN

STORM DRAINAGE IMPROVEMENTS
ELKRIDGE
WATER RELOCATION PLAN
ELECTION DISTRICT ELKRIDGE NO. 1

SHEET 6 OF 6

D-1076-006