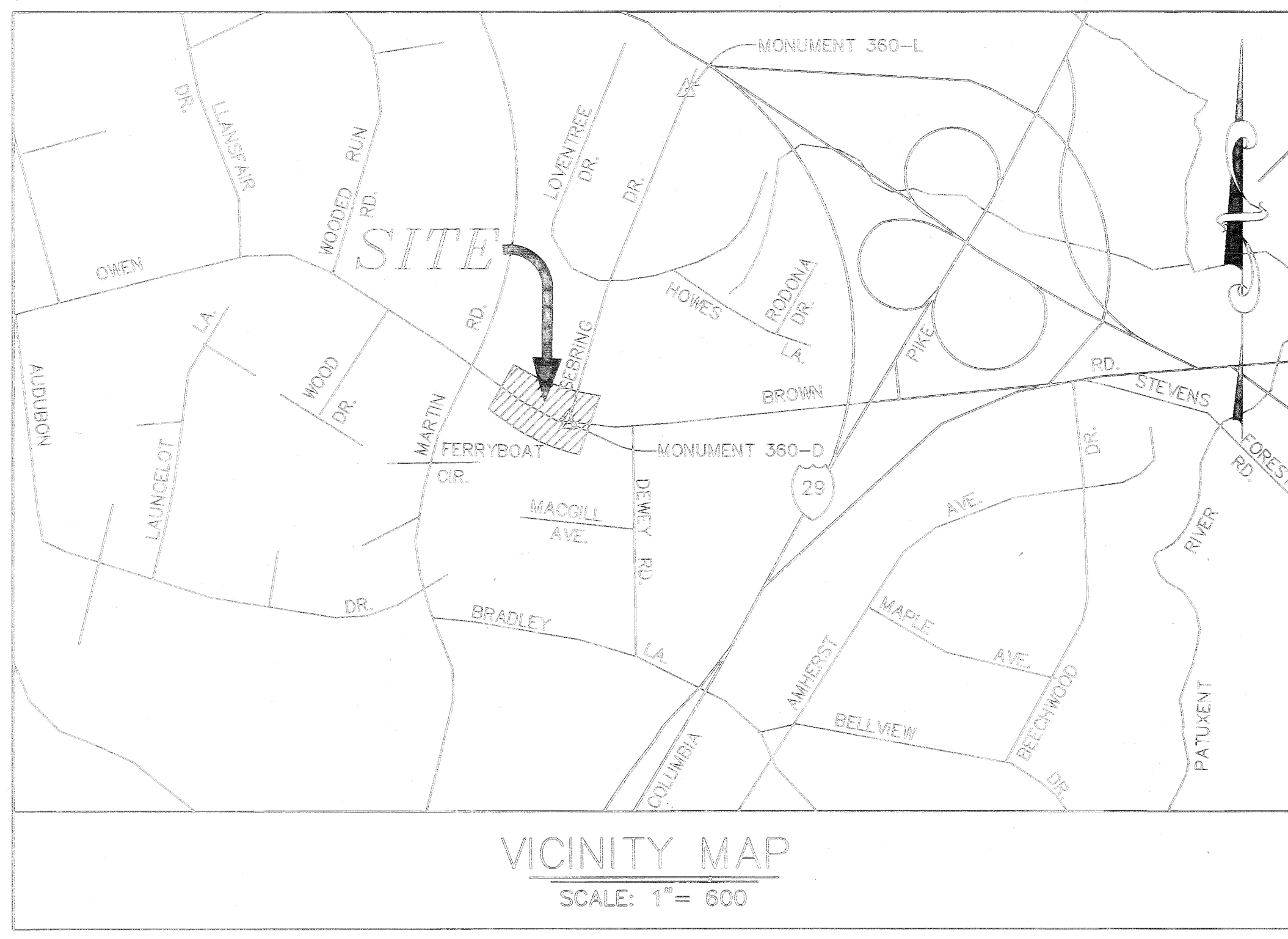
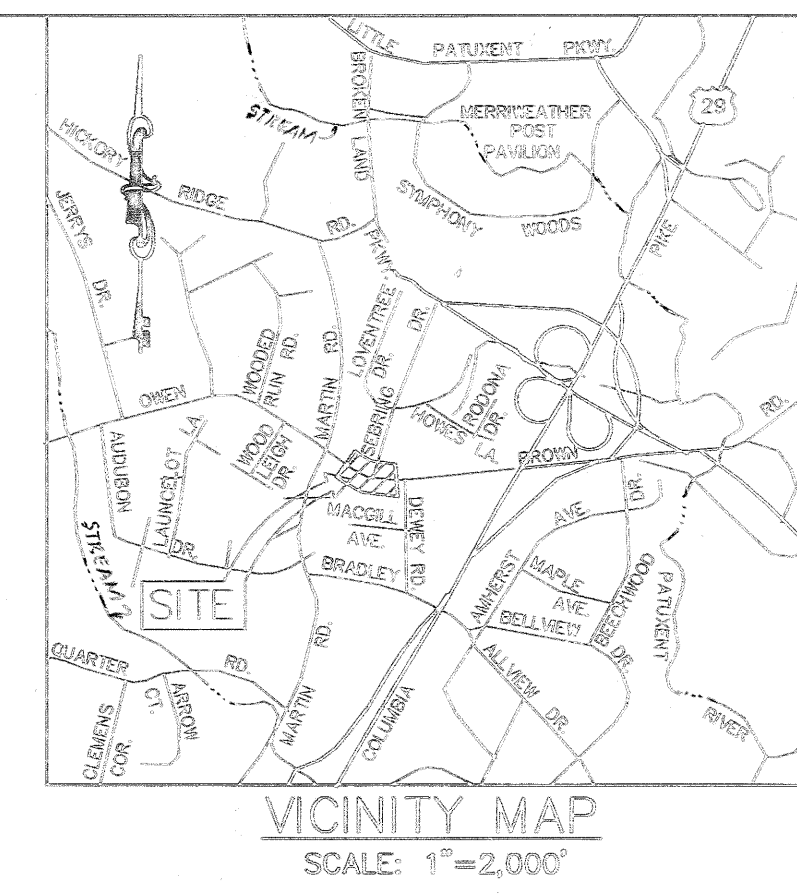


OWEN BROWN ROAD CAP. PROJ. # D-1085, CONT. # DRAINAGE IMPROVEMENTS HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS



GENERAL NOTES

1. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. THE LOCATIONS OF UTILITIES SHOWN ON THESE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS.
2. ALL HORIZONTAL CONTROLS BASED ON MARYLAND STATE COORDINATES.
3. ALL VERTICAL CONTROLS BASED ON U.S.G.S. DATA.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
5. 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.
6. 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 (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
7. 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.
8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORK DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 STATE HIGHWAY ADMINISTRATION - (410) 531-5533
 BALTO. GAS & ELECTRIC CO. - CONTRACTOR SERVICES - (410) 850-4820
 BALTO. GAS & ELECTRIC CO. - UNDERGROUND DAMAGE CONTROL - (410) 859-9004
 BALTO. GAS & ELECTRIC CO. - TROUBLE SHOOTING - (410) 298-9040
 MISS UTILITY - 1-800-257-7777
 BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - (410) 313-4900
 BELL ATLANTIC TELEPHONE CO. - (410) 597-8585
 COLONIAL PIPELINE CO. - (410) 795-1390
9. TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.
10. CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR CLEARING AND GRADING.
11. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-2450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING STORM DRAINS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH D.P.W. REQUIREMENTS PER SECTION 18.114(g) OF THE HOWARD COUNTY CODE.
12. RIGHT OF WAY LINES SHOWN ON THESE PLANS ARE SHOWN FOR ASSISTANCE IN INTERPRETING THESE PLANS. FOR ANY FEE RIGHT OF WAY AND EASEMENT INFORMATION, SEE RIGHT OF WAY PLATS.
13. ALL SLOPES AND OR DISTURBED AREAS SHALL RECEIVE SOLID SODDING ON LAWN AREAS AND SEEDING AND MULCHING FOR AREAS AROUND TREES AND BUSHES EXCEPT WHERE OTHERWISE INDICATED ON THE PLANS OR AS DIRECTED BY ENGINEER. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL TEMPORARY SEDIMENT CONTROL MEASURES AS SHOWN ON THE DRAWINGS. HOWEVER, ANY SEDIMENT CONTROL MEASURES NOT SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS, BUT REQUIRED AS A RESULT OF THE CONTRACTOR'S EXCAVATIONS OR ACTIVITIES SHALL NOT BE CAUSE FOR EXTRA PAYMENT.
14. LOCATION POINTS FOR INLETS, MANHOLES AND STRUCTURES

ITEM	HORIZONTAL LOCATION	VERTICAL LOCATION
GRATE TYPE INLETS	CENTER OF GRATE	TOP OF GRATE
ENDWALLS	CENTER OF WALL	TOP OF WALL
15. CONTRACTOR SHALL NOTIFY PROPERTY OWNERS 48 HOURS IN ADVANCE WHEN DISCONNECTING OR RELOCATING WATER METER VAULTS. ALL RELOCATIONS OF FIRE HYDRANT AND WATER METER VAULTS SHALL BE COORDINATED WITH THE BUREAU OF UTILITIES A MINIMUM OF 48 HOURS IN ADVANCE.
16. STANDARD DETAILS FOR THIS CONTRACT SHALL BE THE HOWARD COUNTY STANDARD DETAILS AS SUPPLEMENTED BY THE MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD DETAILS, MARYLAND STATE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OF THE U.S. DEPARTMENT OF TRANSPORTATION.
17. TOP ELEVATIONS OF STRUCTURES SHALL BE ADJUSTED IN THE FIELD TO MEETING EXISTING CONDITIONS AS DIRECTED BY THE ENGINEER. GRADING SHALL BE DONE IN SUCH A MANNER AS TO INSURE POSITIVE DRAINAGE TO THE PROPOSED INLET STRUCTURES.
18. SIZE AND TYPE OF PIPE UTILIZED FOR THROUGH-WALL CONNECTIONS BETWEEN ALL INLETS. INSTALLATIONS WILL BE EQUIVALENT TO THE OUTLET PIPE.

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX OF DRAWINGS
2	STORM DRAIN PLAN
3	STORM DRAIN PROFILES
4	EROSION AND SEDIMENT CONTROL PLAN
5	EROSION AND SEDIMENT CONTROL DETAILS AND SPECIFICATIONS
6	TRAFFIC CONTROL PLAN

NOTE:
"SEDIMENT CONTROL TO BE IMPLEMENTED IN ACCORDANCE WITH VOLUME 4, SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL AND THESE PLANS."

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."

Robert Secora 8/20/99
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS DATE

ENGINEER'S CERTIFICATE

"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."

[Signature] DATE 8-12-99
DPI, INC.
504 BALTIMORE/ANNAPOLIS BLVD.
SEVERNA PARK, MD 21146
TEL (410) 647-2727

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

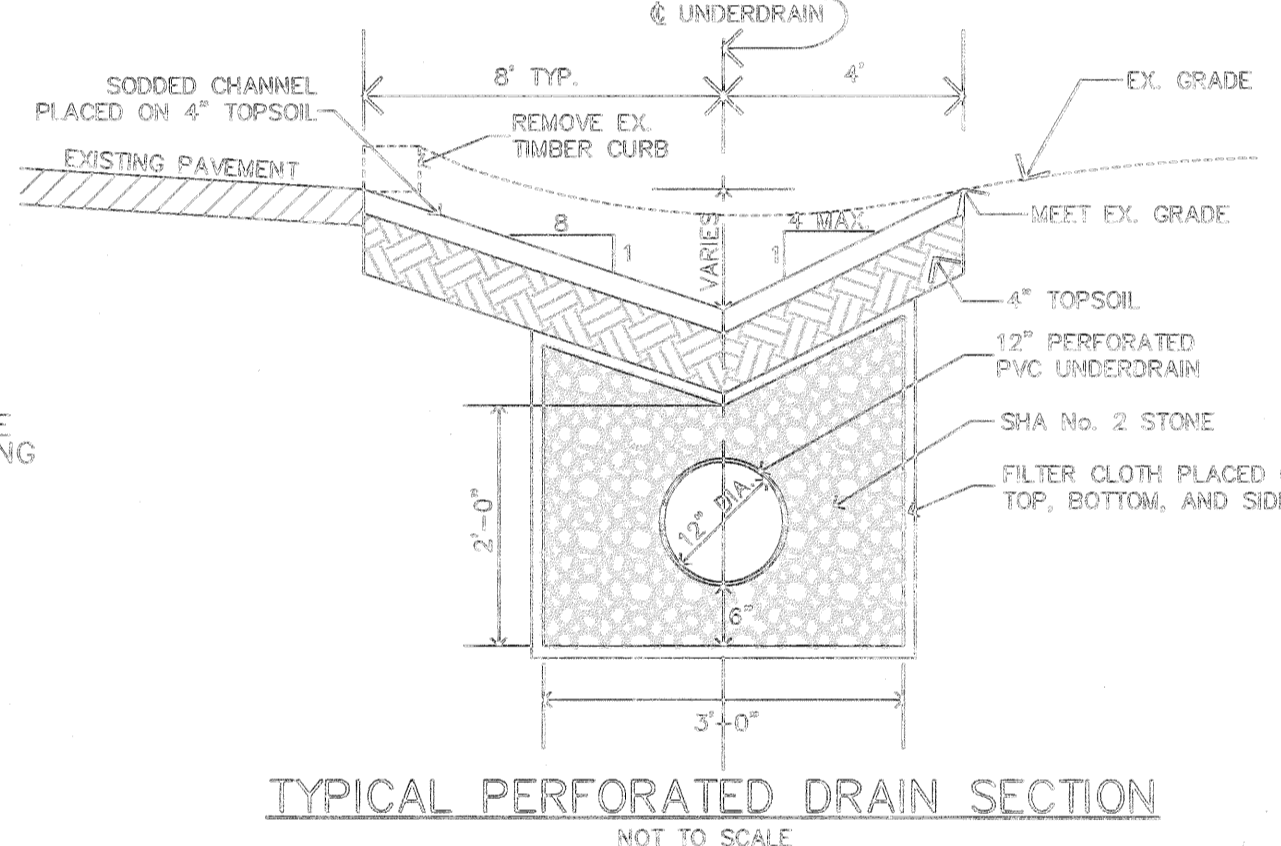
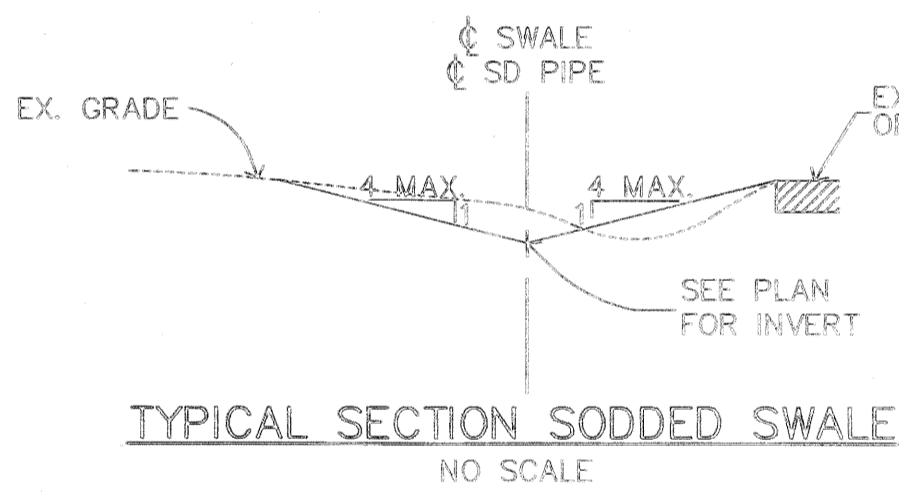
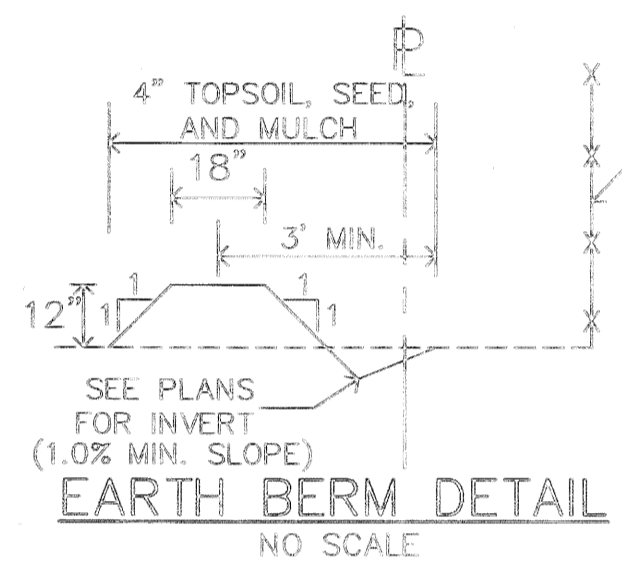
[Signature] DATE 8/24/99
NATURAL RESOURCES CONSERVATION
THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] DATE 8/24/99
HOWARD SOIL CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>[Signatures]</i> DATE 8/25/99	CONSULTING ENGINEERS, SURVEYORS, AND LAND PLANNERS dfi 804 BALTIMORE/ANNAPOLIS BOULEVARD SEVERNA PARK, MD 21146 (410) 647-2727 FAX (410) 647-2727	DES: ECH DRN: ECH CHK: MAM/STA DATE: 4/98	TITLE SHEET AND INDEX OF SHEETS CAPITAL PROJECT D-1085 SCALE: AS SHOWN DATE: AUGUST 1999 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE: AS SHOWN SHEET 1 OF 6
--	---	--	--	---------------------------------------

STORM DRAIN FLOW TABULATIONS - 10 YEAR STORM

FROM	TO	AREA	SUB.	TOTAL	COEFF.	CA	CA	CA	TIME CONC.	MIN.	TOTAL	INFT.	O = O.A.	PIPE SIZE	SLOPE	VELOCITY	LENGTH	T ₆	REMARKS
I-1	I-2	1	0.63	---	0.40	0.25	---	---	7	---	7	6.8	1.7	12"	0.11	2.4	74'	0.5	n=0.008
I-2	I-3	2	0.24	---	0.40	0.10	---	---	5	---	5	7.0	0.7	---	---	---	---	---	n=0.008
I-3	I-4	1-2	---	0.87	---	---	0.35	---	7	0.5	7	6.5	2.3	12"	0.15	2.8	108'	0.8	n=0.008
I-4	I-5	3	0.57	---	0.40	0.23	---	---	7	---	7	6.6	1.5	---	---	---	---	---	n=0.008
I-5	I-6	1-3	---	1.44	---	---	0.58	---	7.5	0.6	8.1	6.45	3.7	12"	0.40	4.5	45'	0.2	n=0.008
HW-1	I-4	1/3 OF 4	0.25	---	0.37	0.09	---	---	5	---	5	7.0	0.6	12"	0.04	1.1	25'	0.4	n=0.008
I-4	I-5	2/3 OF 4	0.50	---	0.37	0.19	---	---	7	---	7	6.6	1.3	---	---	---	---	---	n=0.008
I-4	I-5	1-4	---	2.19	---	---	0.86	---	8.1	0.2	8.3	6.4	5.5	12"	0.80	6.0	51'	0.1	n=0.008
I-5	I-6	1-5	---	4.59	---	---	1.75	---	8.3	0.1	8.4	6.4	11.2	18"	0.45	6.1	54'	0.1	n=0.008
I-6	I-7	1-6	---	0.47	---	0.30	0.14	---	5	---	5	7.0	1.0	---	---	---	---	---	n=0.008
I-8	I-9	1-8	---	5.05	---	---	1.88	---	8.4	0.1	8.5	6.35	12.0	10"	0.50	6.6	84'	0.2	n=0.008
I-7	I-8	1-7	---	0.66	---	0.30	0.20	---	7	---	7	6.6	1.3	15"	0.04	1.0	146'	2.5	n=0.008
I-8	I-9	1-8	---	0.62	---	0.40	0.25	---	7	---	7	6.6	1.7	---	---	---	---	---	n=0.008
I-8	I-9	7-8	---	1.28	---	---	0.45	---	7	2.5	9.5	6.15	2.7	15"	0.06	2.1	43'	0.3	n=0.008
I-8	I-9	1-8	---	0.21	---	0.51	0.11	---	5	---	5	7.0	0.8	---	---	---	---	---	n=0.008
I-8	EXH-2	1-8	---	6.55	---	---	2.45	---	8.5	0.2	8.7	6.3	15.4	18"	0.80	8.5	56'	0.1	n=0.008
EXH-2	EXH-10	10	5.84	---	0.37	2.16	---	---	10	---	10	6.1	13.1	24"	1.08	4.0	48'	0.2	n=0.024
EXH-10	EXH-2	10-11	---	6.80	---	---	2.52	---	10	0.2	10.2	6.05	15.2	24"	0.51	4.7	139'	0.5	n=0.014
EXH-2	EXH-1	1-11	---	13.15	---	---	4.97	---	10.2	0.5	10.7	5.95	28.5	24"	2.0	9.0	117'	0.2	n=0.014
EXH-1	EXH-3	1-11	---	13.15	---	---	4.97	---	10.7	0.2	10.9	5.9	28.3	24"	2.0	9.0	105'	0.2	n=0.014



- LEGEND**
- EXISTING STORM DRAIN
 - EXISTING EDGE OF PAVEMENT
 - E --- EXISTING 2" GAS
 - G --- EXISTING ELECTRIC LINE
 - S --- EXISTING SEWER MAIN
 - W --- EXISTING WATER MAIN
 - --- EXISTING UTILITY POLE
 - --- EXISTING TREE
 - △ --- TRAVERSE STATION
 - PROPOSED STORM DRAIN
 - --- TEST PIT LOCATION

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."

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS *[Signature]* DATE: 8/10/99

ENGINEER'S CERTIFICATE

"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."

[Signature] DATE: 8-12-99

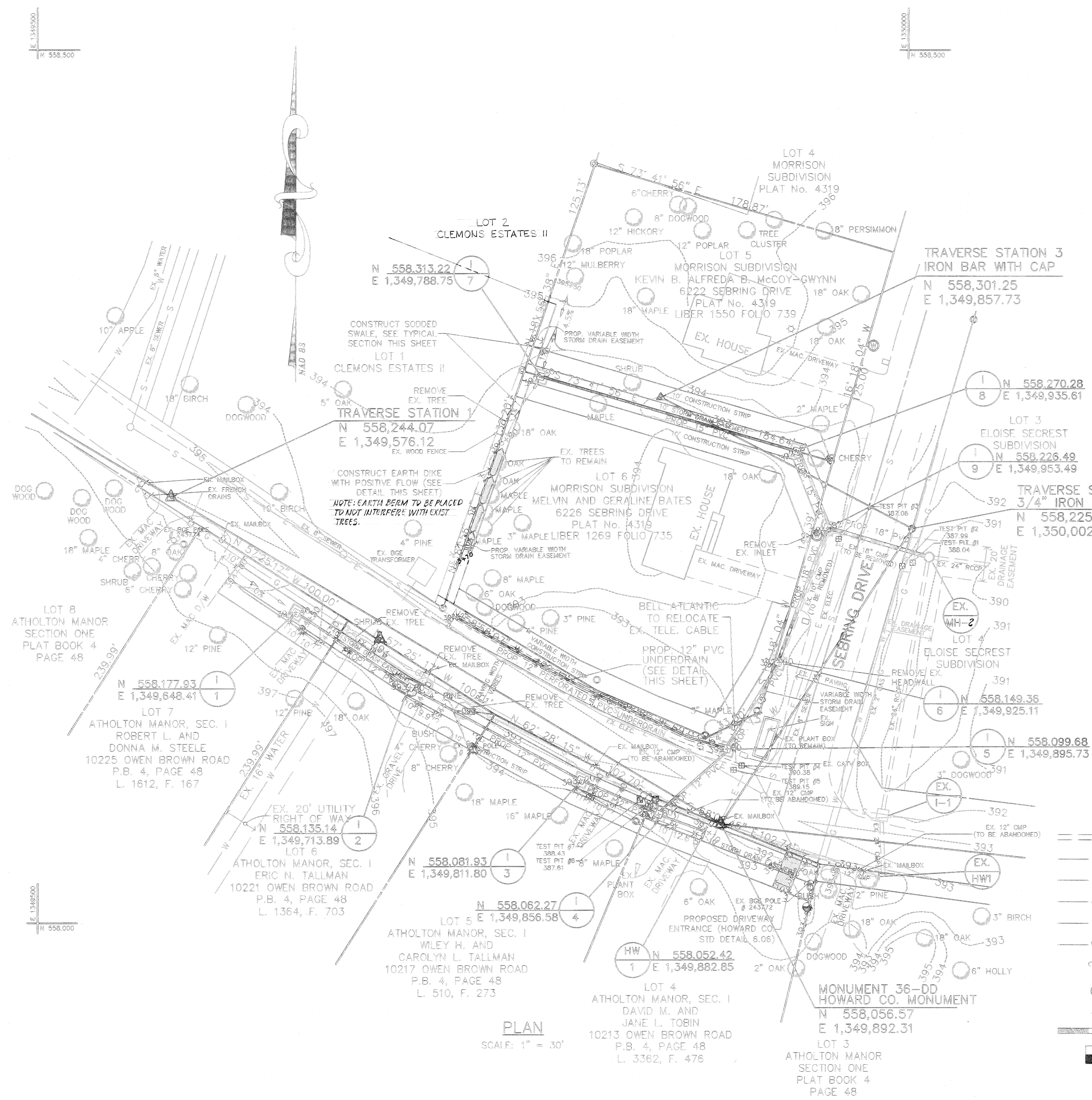
DFI, INC. 504 BALTIMORE/ANNAPOLIS BLVD. SEVERNA PARK, MD 21146 TEL (410)647-2727

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

[Signature] DATE: 8/12/99

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

[Signature] DATE: 8/12/99



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] DATE: 8/12/99
DIRECTOR OF PUBLIC WORKS

[Signature] DATE: 8/12/99
CHIEF, BUREAU OF ENGINEERING

[Signature] DATE: 8/12/99
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT

CONSULTING ENGINEERS, SURVEYORS, AND LAND PLANNERS

dfi

504 BALTIMORE/ANNAPOLIS BOULEVARD
SEVERNA PARK, MD 21146 (410)647-2727
FAX (410)647-7127

STATE OF MARYLAND
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY
8-12-99

DES: ECH	BY: NO	REVISION	DATE: 4/98
DRN: ECH			
CHK: MAM/STA			

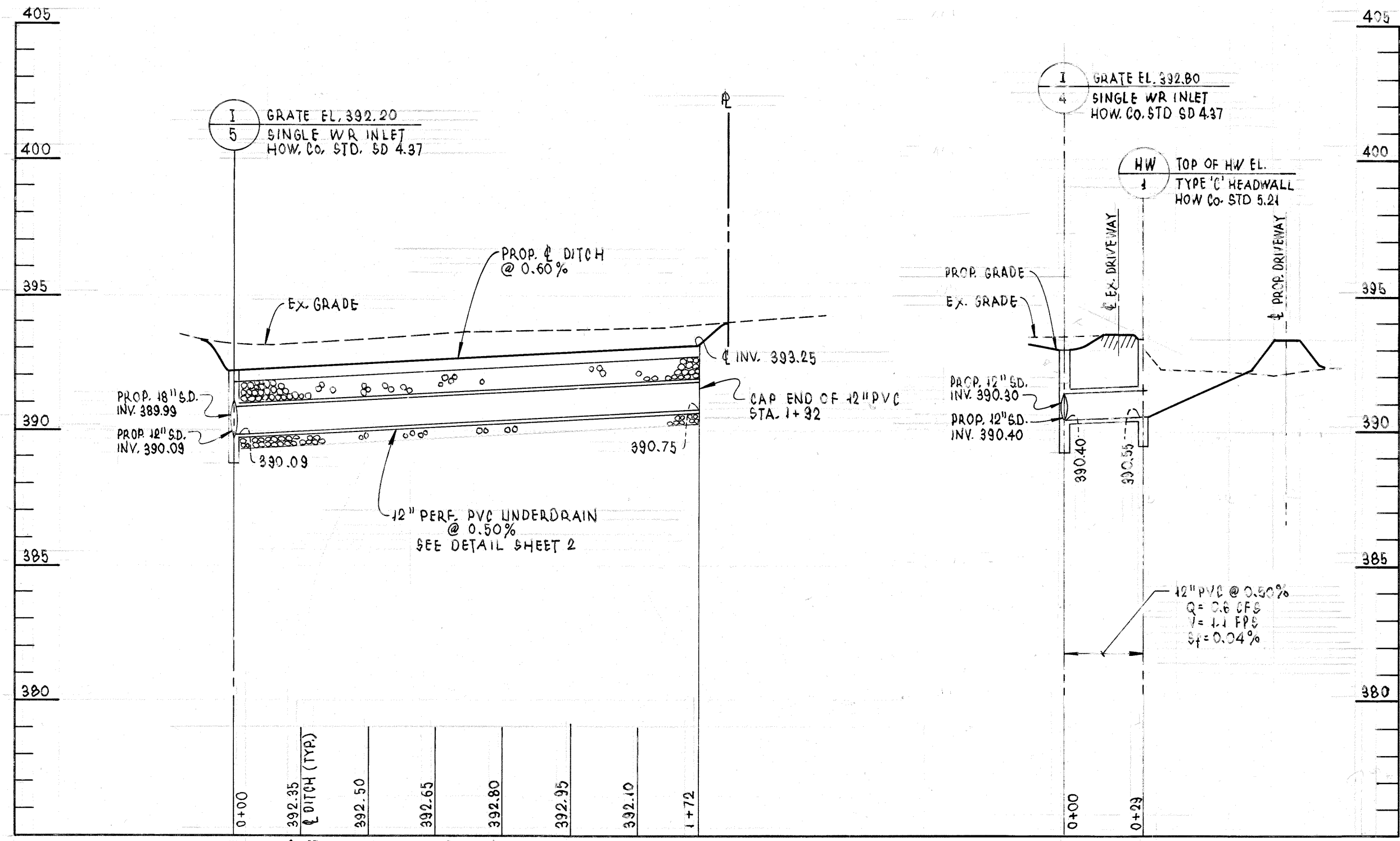
STORM DRAIN PLAN

DRAINAGE IMPROVEMENTS
OWEN BROWN ROAD

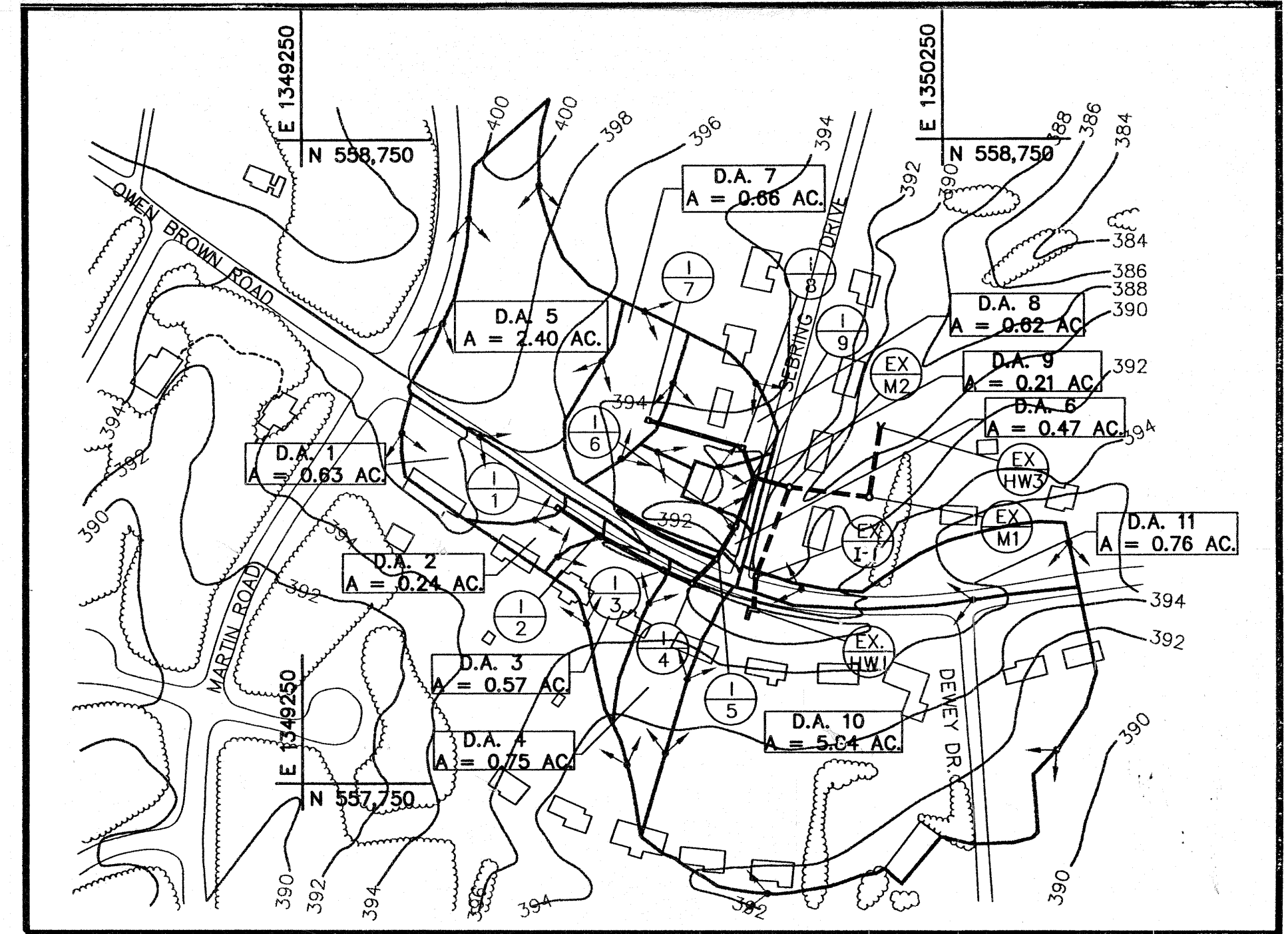
CAPITAL PROJECT D-1085
SCALE: AS SHOWN DATE: AUGUST 1999

5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

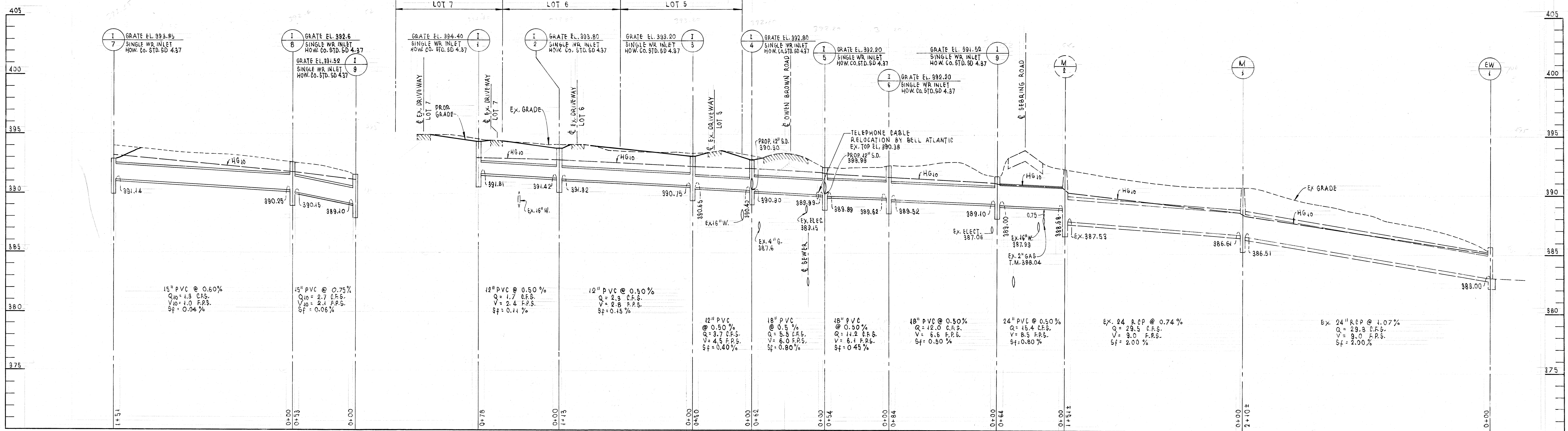
SCALE: AS SHOWN
SHEET 2 OF 6



PROFILE
SCALE: HORIZ. 1"=40'
VERT. 1"=4'



STORM DRAIN DRAINAGE AREA MAP
SCALE: 1" = 200'

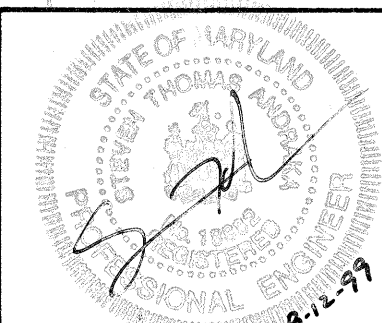


PROFILE
SCALE: HORIZ. 1"=40'
VERT. 1"=4'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James M. ...
DIRECTOR OF PUBLIC WORKS
Robert M. ...
CHIEF BUREAU OF ENGINEERING
Robert M. ...
CHIEF BUREAU OF HIGHWAYS
DATE: 4/25/99

dfi CONSULTING ENGINEERS, SURVEYORS,
AND LAND PLANNERS
504 BALTIMORE/ANNAPOLIS BOULEVARD
SEVERNA PARK, MD 21146 (410)647-2727
FAX (410)647-7127



DES:	
DRN:	
CHK:	
DATE:	

BY	NO.	REVISION	DATE

STORM DRAIN PROFILE

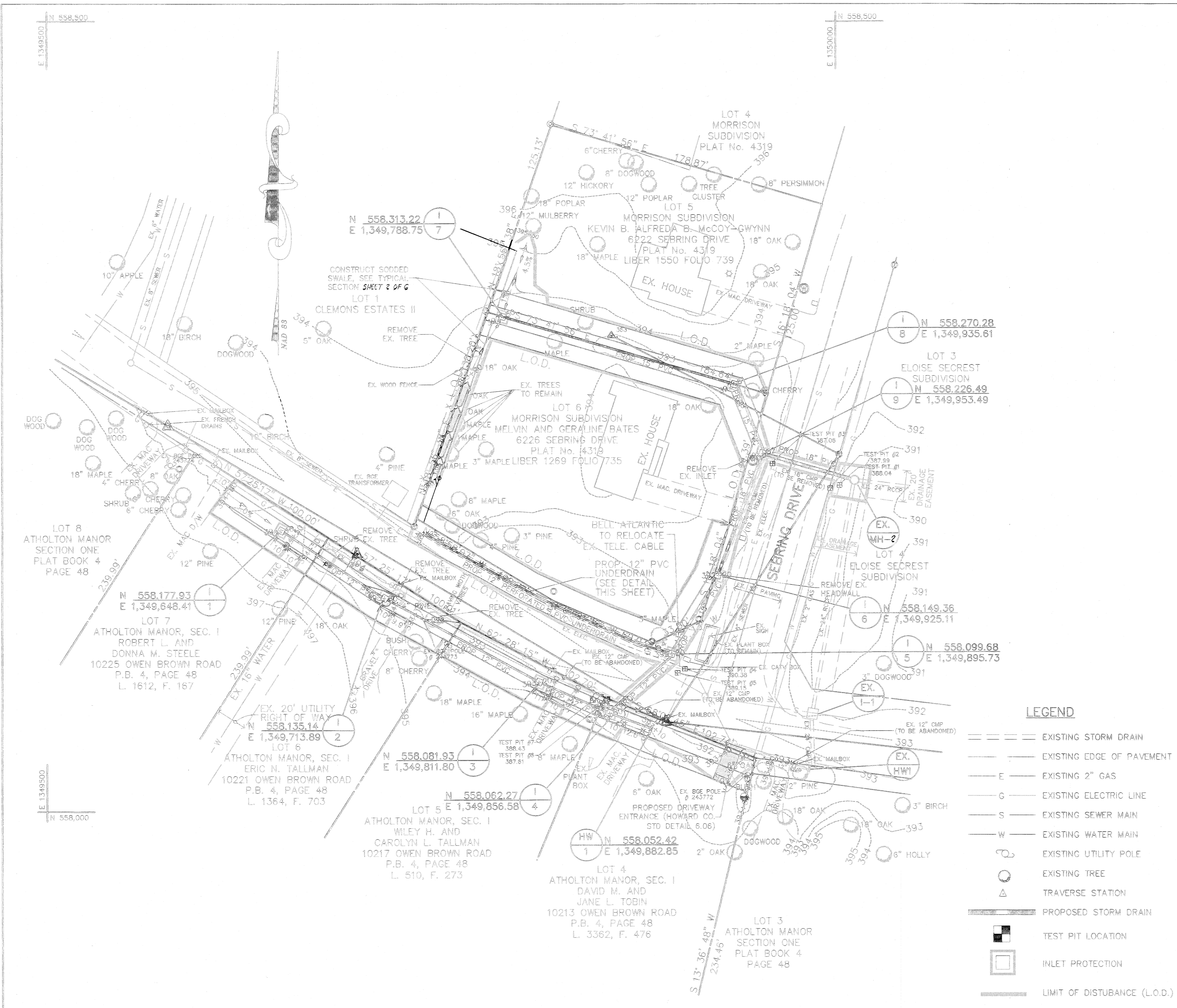
DRAINAGE IMPROVEMENTS
OWEN BROWN ROAD

CAPITAL PROJECT D-1085
SCALE: AS SHOWN DATE: APRIL, 1998

SCALE
AS
SHOWN

SHEET
3 OF 6

5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT
- 4 WEEKS 2. REMOVE EXISTING 10" CMP AND 18" CMP UPSTREAM OF EX. MH-2 AND INSTALL STORM DRAINAGE SYSTEM. APPLY INLET PROTECTION AS APPROPRIATE AS CONSTRUCTION PROCEEDS. CONSTRUCT DITCH WITH UNDERDRAIN TO INLET 1-5. PATCH EXISTING ROADS AND DRIVEWAYS AS CONSTRUCTION PROGRESSES. **CONTRACTOR TO DISTURB NO MORE THAN THAT WHICH SHALL BE STABILIZED BY THE END OF EACH WORK DAY.**
- 2 WEEKS 3. CONSTRUCT SODDED SWALES AND EARTH DIKE ON LOTS 5 AND 6 OF MORRISON SUBDIVISION.
- 2 DAYS 4. STABILIZE ALL REMAINING DISTURBED AREAS AND REMOVE INLET PROTECTION DEVICES WITH APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

LEGEND

- EXISTING STORM DRAIN
- EXISTING EDGE OF PAVEMENT
- E --- EXISTING 2" GAS
- C --- EXISTING ELECTRIC LINE
- S --- EXISTING SEWER MAIN
- W --- EXISTING WATER MAIN
- EXISTING UTILITY POLE
- EXISTING TREE
- △ TRAVERSE STATION
- ▬ PROPOSED STORM DRAIN
- TEST PIT LOCATION
- INLET PROTECTION
- ▬ LIMIT OF DISTURBANCE (L.O.D.)

<p>DEVELOPER'S CERTIFICATION</p> <p>"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."</p> <p style="text-align: right;"><i>[Signature]</i> 8/20/99 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS DATE</p>	
<p>ENGINEER'S CERTIFICATE</p> <p>"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."</p> <p style="text-align: right;"><i>[Signature]</i> DATE 8-12-99 DPL, INC. 504 BALTIMORE/ANNAPOLIS BLVD. SEVERNA PARK, MD 21146 TEL (410)647-2727</p>	<p>THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.</p> <p style="text-align: right;"><i>[Signature]</i> 7/14/99 NATURAL RESOURCES CONSERVATION DATE</p> <p>THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.</p> <p style="text-align: right;"><i>[Signature]</i> 7/14/99 HOWARD SOIL CONSERVATION DISTRICT DATE</p>

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>[Signature]</i> 8/23/99 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>[Signature]</i> 8/23/99 CHIEF, BUREAU OF ENGINEERING DATE</p> <p><i>[Signature]</i> 8/23/99 CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE</p>	<p>dfi CONSULTING ENGINEERS, SURVEYORS, AND LAND PLANNERS</p> <p>904 BALTIMORE/ANNAPOLIS BOULEVARD SEVERNA PARK, MD 21146 (410)647-2727 FAX (410)647-2727</p>	<p>DES: ECH</p> <p>DRN: ECH</p> <p>CHK: MAM/STA</p> <p>DATE: 4/98</p>	<p>BY: NO</p> <p>REVISION</p> <p>DATE: 600' SCALE MAP NO. 30 BLOCK NO.</p>	<p>EROSION AND SEDIMENT CONTROL PLAN</p>	<p>DRAINAGE IMPROVEMENTS OWEN BROWN ROAD</p> <p>CAPITAL PROJECT D-1085 SCALE: AS SHOWN DATE: AUGUST 1999</p> <p>5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND</p>	<p>SCALE: AS SHOWN</p> <p>SHEET 4 OF 6</p>
--	---	---	--	--	---	--

PERMANENT SEEDING NOTES

ONLY LAND TO BE 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 TWO TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ. FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ. FT.).
- 2) ACCEPTABLE - APPLY TWO TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ. FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, 60 LBS PER ACRE (1/4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LB/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. 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 OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

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

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE SHORT-TERM VEGETATIVE COVER IS NEEDED.

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

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

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

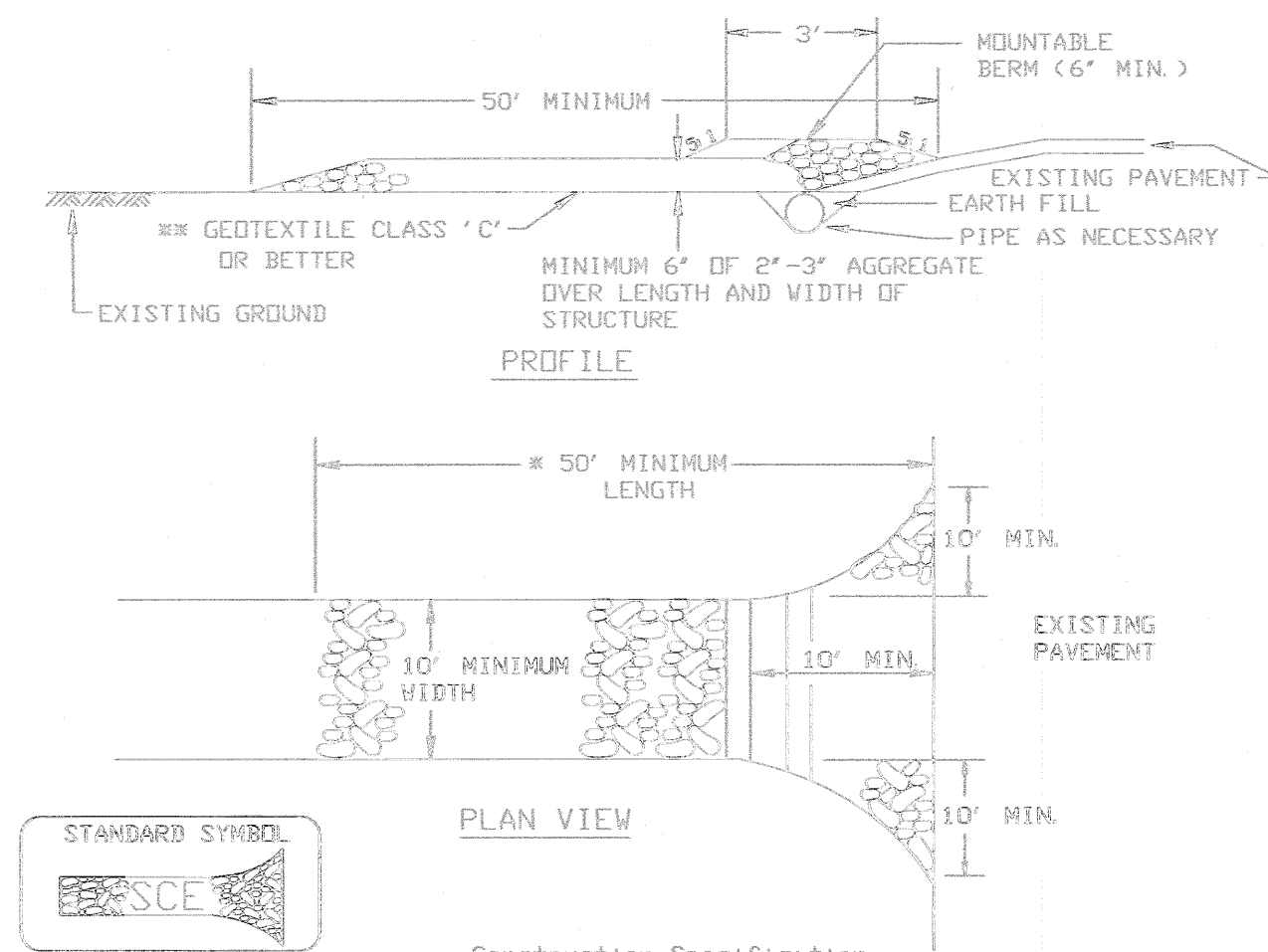
MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER,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

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

TOPSOIL NOTES

1. ONLY SCREENED TOPSOIL OF A SANDY LOAM NATURE SHALL BE USED. IT SHALL NOT CONTAIN ANY SUBSOIL; IT WILL BE FREE OF PLANTS, PLANT PARTS, BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUTSEDGE, POISON IVY, CANADA THISTLE, OR OTHERS NOT SPECIFIED. FURTHER, AS THIS TOPSOIL IS INTENDED FOR USE ON ATHLETIC FIELDS, IT SHALL NOT CONTAIN ANY SLAG, CINDERS, LUMPS, STICKS, ROOTS, TRASH, GLASS, ROCKS, GRAVEL, STONES, WOOD CHIPS, SAWDUST, OR ANY OTHER EXTRANEOUS MATERIAL, AS SPECIFIED.
2. IF QUALITY TOPSOIL MEETING THE SPECIFICATIONS IS NOT AVAILABLE AT THE SITE, BORROWED TOPSOIL REQUIRED SHALL BE PROVIDED. THE SUITABILITY OF THE REUSE OF ON-SITE AND OFF-SITE BORROW MATERIAL AS TOPSOIL TEST RESULTS AND APPROVED BY THE ENGINEER. THE DIFFERENCE BETWEEN MATERIAL AVAILABLE ON-SITE AND PROJECT REQUIREMENTS SHALL BE BORROW TOPSOIL ACQUIRED OFF-SITE AT NO ADDITIONAL COST. TOPSOIL SHALL BE SPREAD OVER ALL GRADED AREAS WITHIN THE LIMIT OF WORK NOT SCHEDULED TO RECEIVE OTHER SURFACES, SUCH THAT AFTER ROLLING, THE RESULTING DEPTH SHALL BE A MINIMUM OF SIX (6) INCHES. IMMEDIATELY FOLLOWING PLACEMENT OF TOPSOIL, THE ENTIRE SITE IS TO BE CLEARED BY MEANS OF "ROCK HOUND", YORK RAKE, HAND RAKE, ETC. TO REMOVE MATERIALS GREATER THAN 1/2 INCH.

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



- Construction Specification
1. Length - minimum of 50' (#30' for single residence lot).
 2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
 3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
 4. Stone - crushed aggregate (2' to 3') or reclaimed or recycled concrete equivalent shall be placed at least 6' deep over the length and width of the entrance.
 5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6' of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6' minimum will be required.
 6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

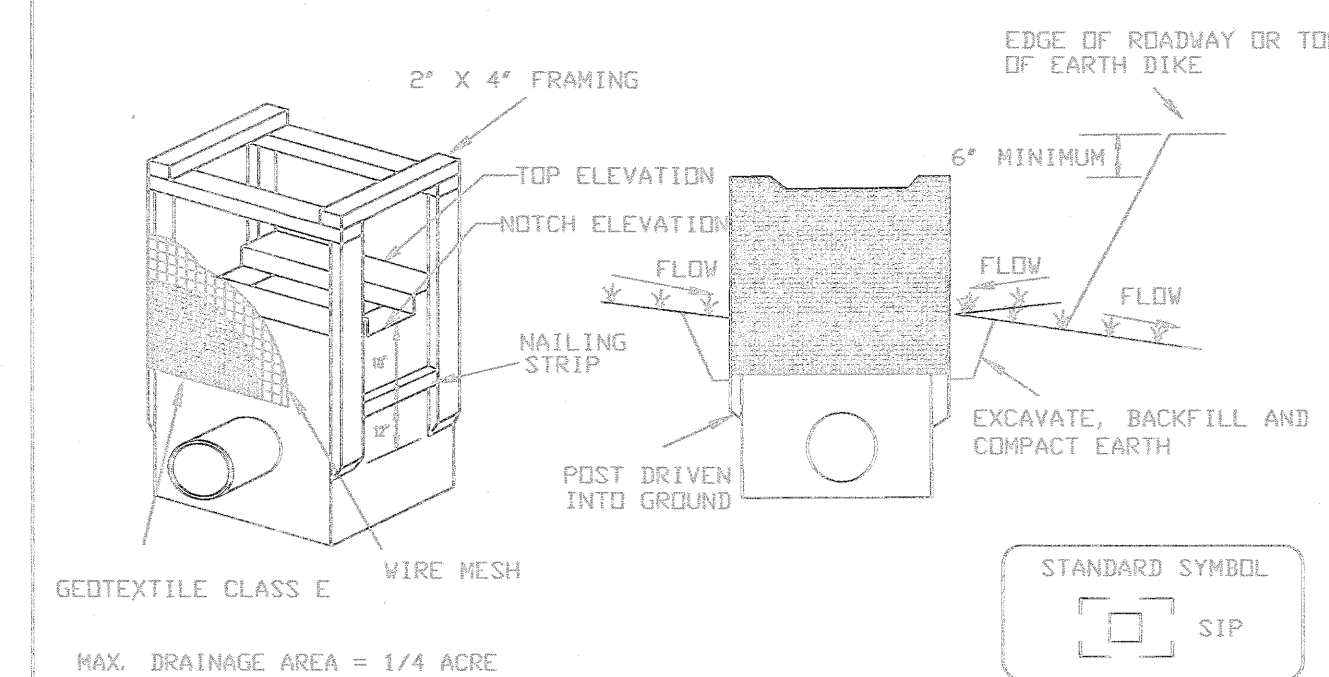
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (410) 313-1850.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE:	24,038 SQ. FT. (0.552 ACRES)
AREA DISTURBED:	24,038 SQ. FT. (0.552 ACRES)
AREA TO BE ROOFED OR PAVED:	1,242 SQ. FT. (0.029 ACRES)
AREA TO BE VEGETATIVELY STABILIZED:	22,797 SQ. FT. (0.523 ACRES)
TOTAL CUT:	25 CU. YD.
TOTAL FILL:	000 CU. YD.
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. IN ALL SITES WITH DISTURBED AREAS IN EXCESS OF TWO 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 STORM DRAINAGE ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

DETAIL 23A - STANDARD INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

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 geotextile 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-16-5 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

<p>DEVELOPER'S CERTIFICATION</p> <p>"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."</p> <p><i>[Signature]</i> DATE: 8/12/99 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS</p>	
<p>ENGINEER'S CERTIFICATE</p> <p>"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."</p> <p><i>[Signature]</i> DATE: 8-12-99 DPI, INC. 504 BALTIMORE/ANNAPOLIS BLVD. SEVERNA PARK, MD 21146 TEL (410)647-2727</p>	<p>THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.</p> <p><i>[Signature]</i> DATE: 8/12/99 NATURAL RESOURCES CONSERVATION</p> <p>THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p><i>[Signature]</i> DATE: 8/12/99 HOWARD SOIL CONSERVATION DISTRICT</p>

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

[Signatures and Dates]
DIRECTOR OF PUBLIC WORKS DATE: 8/12/99
CHIEF, BUREAU OF ENGINEERING DATE: 8/12/99
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE: 8/12/99

dfi CONSULTING ENGINEERS, SURVEYORS, AND LAND PLANNERS
504 BALTIMORE/ANNAPOLIS BOULEVARD
SEVERNA PARK, MD 21146 (410)647-2727 FAX: (410)647-2727

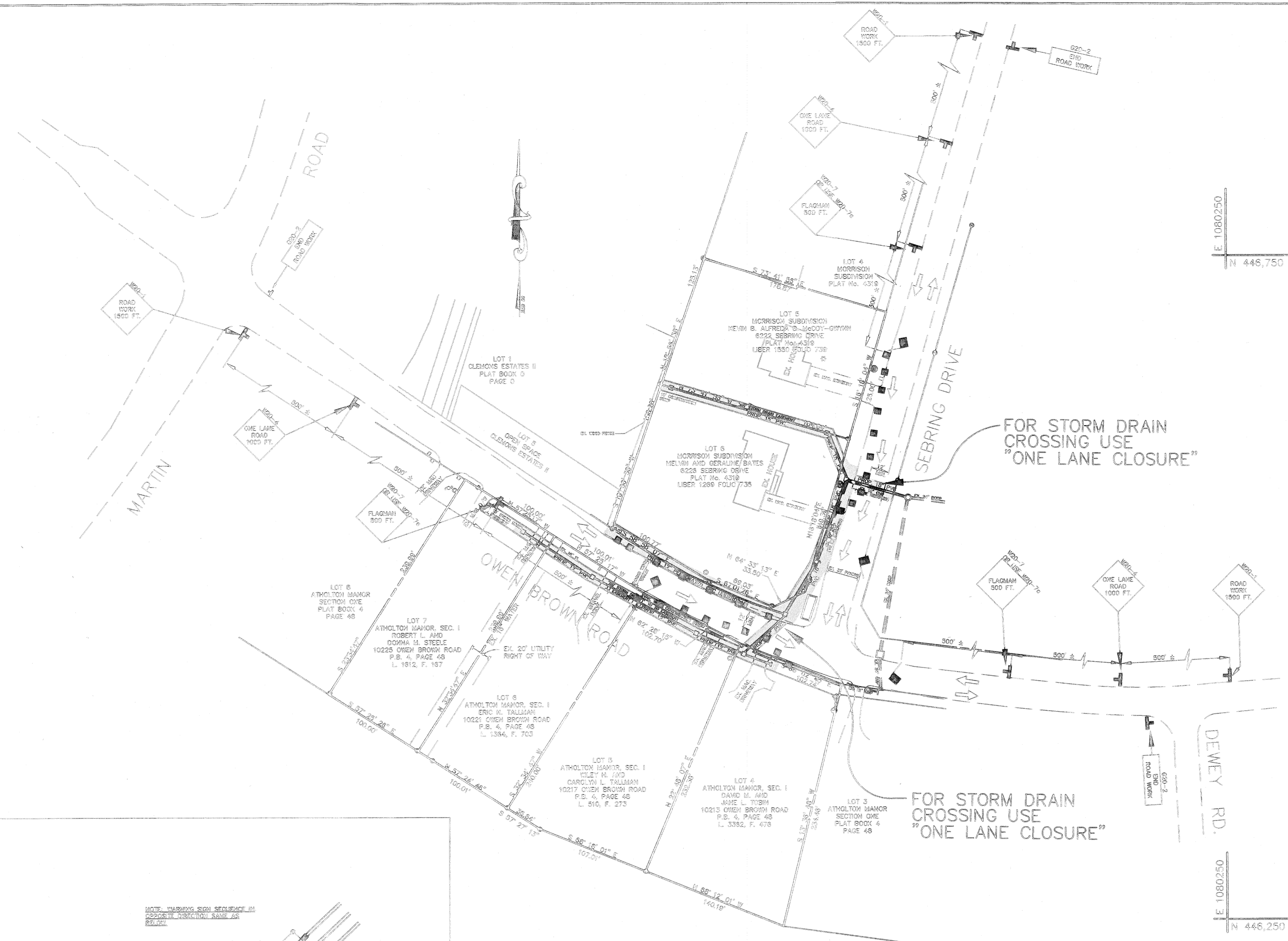
STATE OF MARYLAND
PROFESSIONAL ENGINEER
8-12-99

DES: ECH	
DRN: ECH	
CHK: MAM/STA	
DATE: 4/98	
BY: NO	REVISION
DATE: 6/98	SCALE MAP NO. 36 BLOCK NO.

EROSION AND SEDIMENT CONTROL DETAILS AND SPECIFICATIONS

DRAINAGE IMPROVEMENTS
OWEN BROWN ROAD
CAPITAL PROJECT D-1085
SCALE: AS SHOWN DATE: AUGUST 1999
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

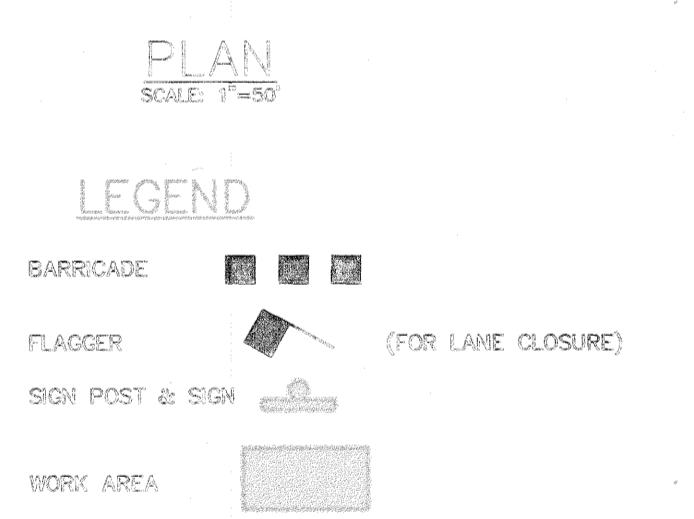
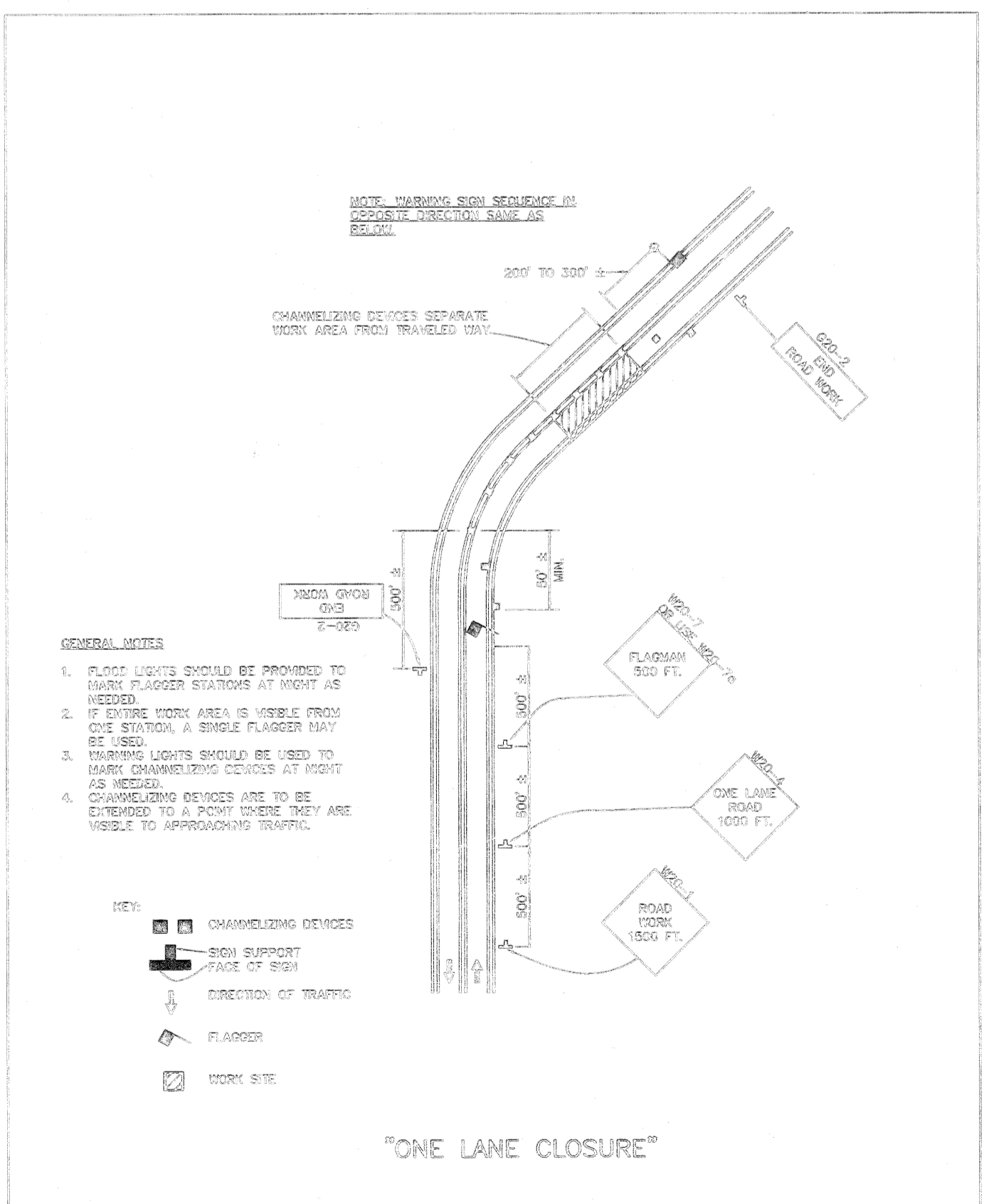
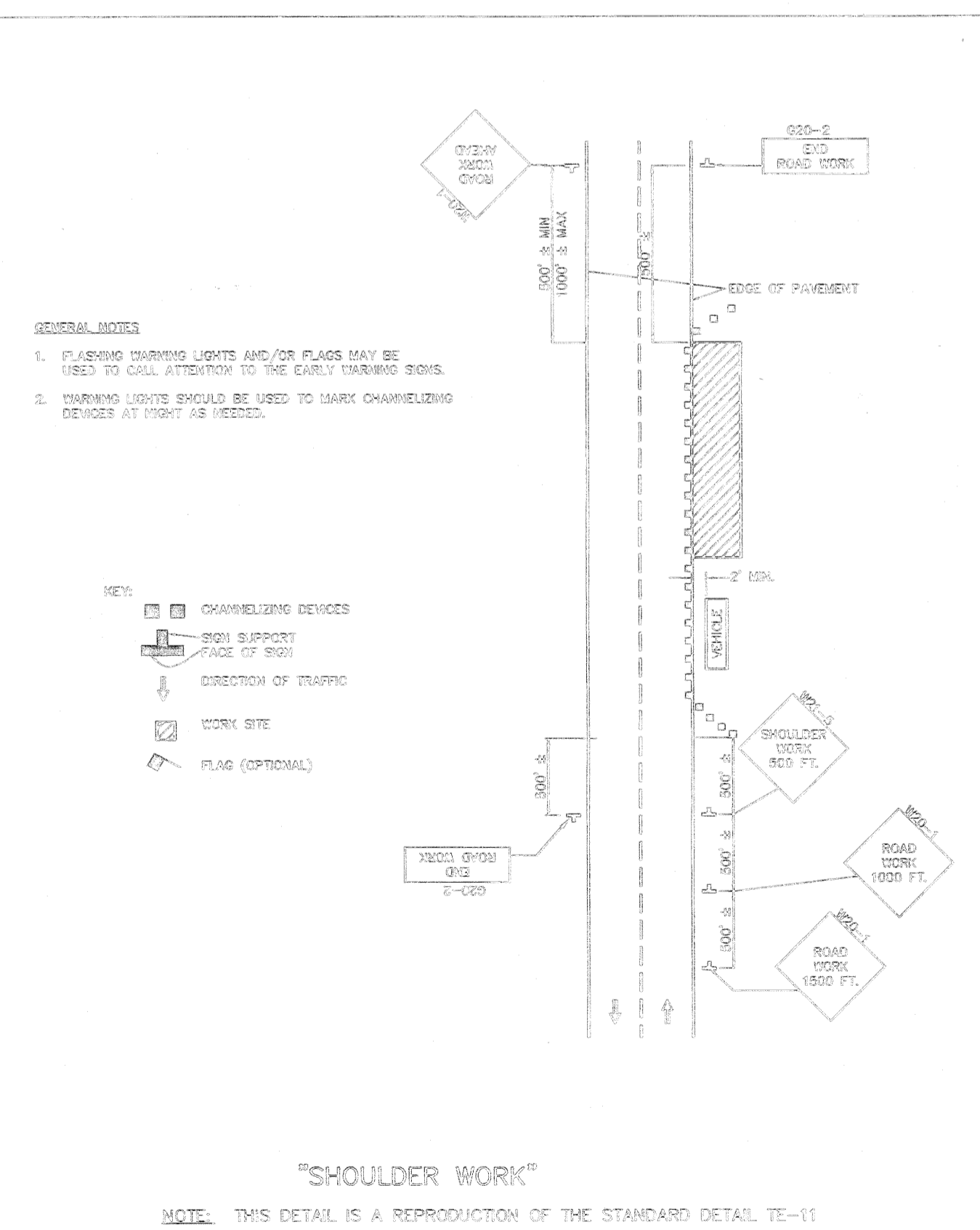
SCALE: AS SHOWN
SHEET 5 OF 6



E 1079250
N 446,750

E 1080250
N 446,750

E 1080000
N 446,250



- HOWARD COUNTY-TRAFFIC ENGINEERING
TRAFFIC CONTROL PLAN-GENERAL NOTES**
1. ALL CONSTRUCTION AND MATERIALS FOR THE TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE STANDARDS CONTAINED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
 2. TRAVEL LANES SHALL BE A MINIMUM OF TWELVE FEET IN WIDTH WHEN ONLY ONE LANE IS OPEN. FLAGGED AND THE APPROPRIATE SIGNING SHALL BE PROVIDED. SEE DETAIL THIS SHEET. THE ROADWAY SHALL BE RE-OPENED ON A DAILY BASIS.
 3. ALL OPEN TRENCHES SHALL BE CLOSED AT THE END OF WORK DAY. IF STEEL PLATES ARE TO BE USED, APPROPRIATE SIGNING WILL BE REQUIRED. STEEL PLATES SHALL BE STAKED IN PLACE AND RAMPED WITH COLD PATCH ASPHALT.
 4. ALL SIGNS THAT DO NOT APPLY WILL BE COVERED.
 5. ALL CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE TYPICAL SIGN PLACEMENT SHOWN ON THESE PLANS AND SHALL NOT OBSTRUCT EXISTING TRAFFIC CONTROL DEVICES.
 6. CONSTRUCTION AND WORKMANS' VEHICLES SHALL NOT BE PARKED IN A MANNER THAT WILL IMPED TRAFFIC OR IMPAIR SIGHT DISTANCE. THESE VEHICLES SHOULD BE PARKED OFF-STREET ON THE CONSTRUCTION SITE OR ON A SIDE STREET NOT UNDER CONSTRUCTION.
 7. ALL WORK WILL BE DONE IN ACCORDANCE WITH MARYLAND STATE HIGHWAY AND MARYLAND OCCUPATIONAL SAFETY AND HEALTH SPECIFICATIONS.

DEVELOPER'S CERTIFICATION

I, Robert E. Ryan, DATE 8/20/99
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS DATE

ENGINEER'S CERTIFICATE

I, S. J. H., DATE 8-12-99
DFI, INC.
504 BALTIMORE/ANNAPOLIS BLVD.
SEVERNA PARK, MD 21146
TEL (410)647-2727

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

NATURAL RESOURCES CONSERVATION DATE

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

HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS DATE <u>8/20/99</u> CHIEF, BUREAU OF ENGINEERING CHIEF, BUREAU OF HIGHWAYS DATE <u>8/20/99</u> CHIEF, DIVISION OF TRANSPORTATION DATE <u>8/20/99</u> PROJECTS AND WATERSHED MANAGEMENT		CONSULTING ENGINEERS, SURVEYORS, AND LAND PLANNERS dfi 504 BALTIMORE/ANNAPOLIS BOULEVARD SEVERNA PARK, MD 21146 (410)647-2727 FAX (410)647-7127	DES: L.R.C. DRN: L.R.C. CHK: M.A.M. DATE: 4/98	BY NO. REVISION	TRAFFIC CONTROL PLAN OWEN BROWN ROAD CAPITAL PROJECT D-1085 SCALE: AS SHOWN DATE: AUGUST 1999 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 6 OF 6
--	--	---	---	-----------------	--	--------------------------------