

GENERAL NOTES

- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- PROJECT BACKGROUND:  
LOCATION: SNOWDEN RIVER PARKWAY @ DOBBIN ROAD.  
TAX MAP: 37, GRID 13 & 19 P/O PARCEL 255, P/O PARCEL 50, & PARCELS 212 & 385  
ZONING: NEW TOWN  
ELECTION DISTRICT: 6  
GROSS AREA OF TRACT: 102 ACRES
- SEE DEPARTMENT OF PLANNING & ZONING FILE NUMBERS:  
SP-00-05 (PB 342), FDP PHASE 239 & WP 00-64.
- THE TOPOGRAPHY SHOWN HAS A 2' CONTOUR INTERVAL AND WAS DETERMINED BY: AERIAL PHOTOGRAPHY BY 3di, NOVEMBER 1999.
- PUBLIC WATER AND SEWER TO BE UTILIZED.  
SITE IS IN METROPOLITAN DISTRICT.
- HORIZONTAL AND VERTICAL CONTROL BASED ON HOWARD COUNTY CONTROL STATIONS 37DR AND 361A
- INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM BEST AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF THE MAINS BY DIGGING TEST PITS BY HAND AT ALL CROSSINGS WELL IN ADVANCE OF CONSTRUCTION. ANY DISCREPANCIES MUST BE COMMUNICATED TO THE ENGINEER AT ONCE.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS /DIVISION OF CONSTRUCTION INSPECTION AT 1 (410) 313 - 1880 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THE PLANS.  
MISS UTILITY 1-800-257-7777  
BELL ATLANTIC COMPANY 729-9976  
HOWARD COUNTY BUREAU OF UTILITIES 313-4900  
AT&T CABLE LOCATION DIVISION 393-3553  
BALTIMORE GAS & ELECTRIC CO. 850-4620 & 787-9068
- TYPES OF STORM DRAINS REFER TO THE STANDARD DETAILS OF HOWARD COUNTY AND MSHA.
- TRENCH COMPACTION FOR STORM DRAINS WITHIN ROADS AND STREET RIGHT - OF - WAYS LIMITS SHALL BE IN ACCORDANCE WITH "HOWARD COUNTY DESIGN MANUAL", VOL. IV, STANDARD G-2.01.
- SEDIMENT CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH "1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOILS EROSION AND SEDIMENT CONTROL".
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- STREET TREES SHALL BE PLANTED A MINIMUM OF FIVE (5) FEET FROM STORM DRAIN, WATERLINE OR SEWER PIPE MANHOLES; ALSO A MINIMUM OF TWENTY (20) FEET FROM STREET LIGHTS.
- COMPACTION IN FILL AREAS SHALL BE IN ACCORDANCE WITH AASHTO T-180 OR AS APPROVED IN THE DESIGN MANUAL VOLUME IV.
- ON MAY 10, 2000, WP 00-64; WAIVER OF SECTION 16.116 (a) (2) (i) WAS GRANTED, TO PERMIT REMOVAL OF VEGETATIVE COVER AND GRADING WITHIN 50 FEET OF STREAMS FOR CONSTRUCTION OF A PUBLIC ROAD AND PUBLIC WATER AND SEWER LINES. SUBJECT TO ONE CONDITION IN THE APPROVAL LETTER.
- MDE PERMIT/TRACKING NUMBER: 200061627.
- STREET TREE LOCATIONS SHOWN ARE TENTATIVE AND ARE TO BE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS AND BUILDERS LANDSCAPE PROGRAM.
- THIS PROJECT IS EXEMPT FROM THE FOREST CONSERVATION REQUIREMENTS OF SUBTITLE 12 PER SECTION 16.1202 (b) (1) (iv), WHICH STATES THAT A PLANNED UNIT DEVELOPMENT (NEW TOWN) WHICH HAS PRELIMINARY DEVELOPMENT PLAN APPROVAL & 50% OR MORE OF THE LAND IS RECORDED AND SUBSTANTIALLY DEVELOPED BEFORE 12/31/92 IS EXEMPT.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS AND FLOODPLAIN EASEMENT AREAS, EXCEPT AS SHOWN ON THESE APPROVED PLANS, F-01-142.
- THE LIMITS OF THE WORK ASSOCIATED WITH STORMWATER MANAGEMENT FACILITIES 1, 6 & 8 ARE AS INDICATED ON THESE PLANS AND DO NOT EXTEND BEYOND THE LIMITS OF DISTURBANCE. NO ADDITIONAL DISTURBANCE OF ENVIRONMENTAL AREAS WITHIN THE STORMWATER MANAGEMENT, STORMWATER MANAGEMENT ACCESS, DRAINAGE & UTILITY EASEMENT IS PERMITTED.

BENCHMARK DESCRIPTION

STATION 2542001 (CONCRETE MONUMENT)  
ELEV. 426.971 (FOR VERTICAL CONTROL ONLY)  
STATION IS LOCATED ON B.G. & E. TRANSMISSION LINES 10602 S.W. OF DOBBIN ROAD

BENCHMARK DESCRIPTION

STATION 2542002 (CONCRETE MONUMENT)  
ELEV. 363.638 (FOR VERTICAL CONTROL ONLY)  
STATION IS LOCATED 1000' WEST OF R.TE. 175 ON TRANSMISSION LINE @ G.E. TOWER 19-C

BENCHMARK DESCRIPTION

STATION 37DR (1/2 REBAR)  
N.1692881.1794, E.4165666.7155 (FOR HORIZONTAL CONTROL ONLY)  
STATION IS LOCATED 0.452 MILES NORTH OF R.TE. 175 AND 40' EAST OF THE EAST CURB OF SNOWDEN RIVER PKY.

BENCHMARK DESCRIPTION

STATION 361A (CONCRETE MONUMENT)  
N.1692205.9283, E. 4163133.5119 (FOR HORIZONTAL CONTROL ONLY)  
STATION IS LOCATED @ THE SOUTHEAST CORNER OF THE INTERSECTION OF SNOWDEN RIVER PARKWAY AND R.TE. 175 3/4 FROM CURB AND 5.72 FROM GUARDRAIL END.

CONSTRUCTION PLAN

FOR

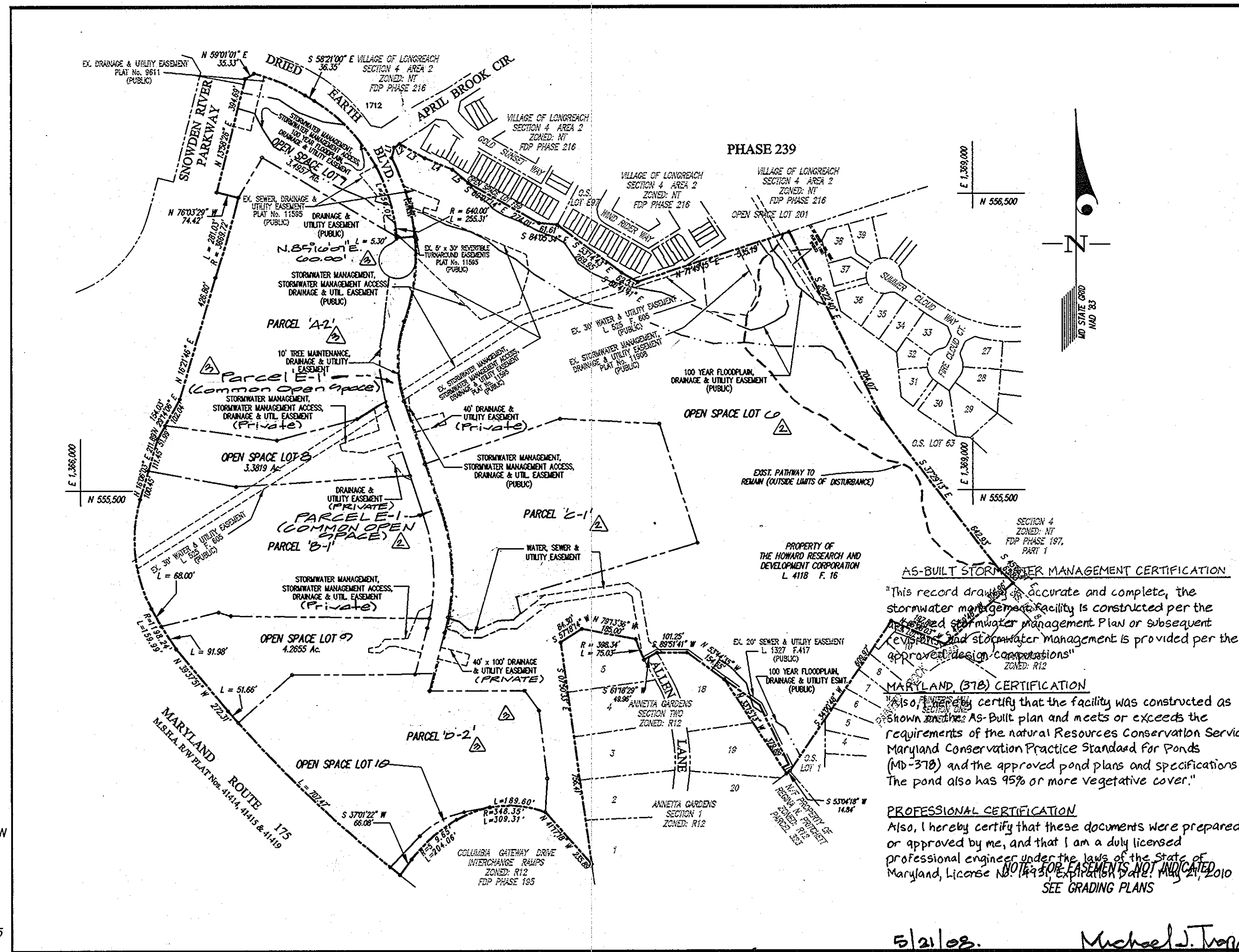
SNOWDEN RIVER BUSINESS PARK

PARCELS A-2, B-1, C-1, D-2, E-1 & LOTS 6 THRU 10

DRIED EARTH BOULEVARD

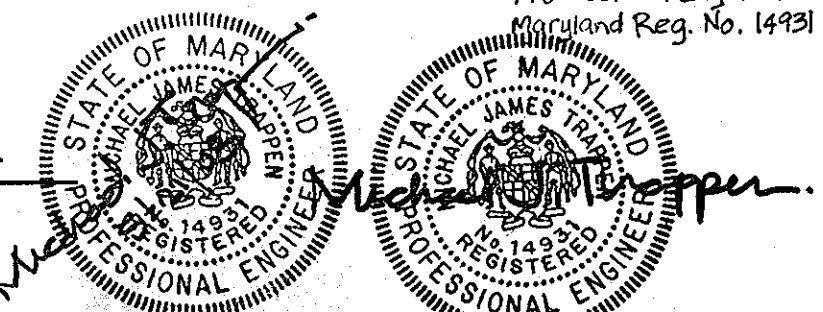
STATION 9 + 26.48 TO STATION 10 + 70.00

NOTE: AN EXISTING 30" PUBLIC WATERMAIN TRAVERSES THROUGH THE SITE. THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE MAIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO THE WATERMAIN DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, DIVISION OF CONSTRUCTION INSPECTION 24 HOURS PRIOR TO WORK IN THE VICINITY OF THE EXISTING 30" WATERMAIN.



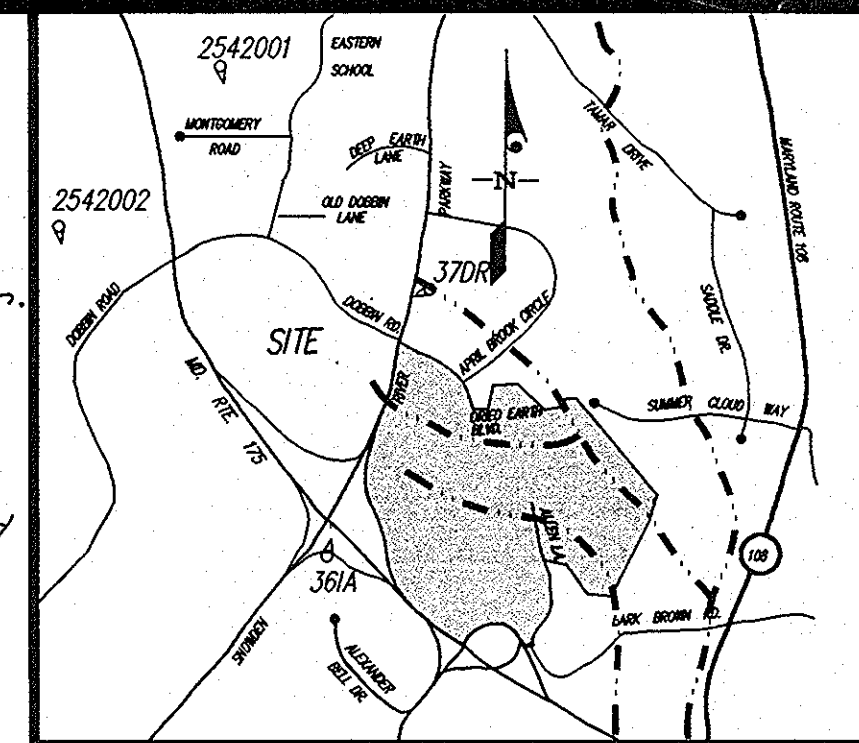
KEY MAP

SCALE 1" = 300'



Stormwater Management Note:

Stormwater management is provided on site for this project as follows:  
 1. Facilities 1, 6 & 8 are detention facilities (dry pond) located on open space lots 6 & 8 to be conveyed to The Columbia Association. Facilities 1, 6 & 8 are to be privately maintained. Facility 6 is to be publicly maintained.  
 2. Facility 2 is a detention/Retention Facility (wet pond) located on open space lot 6 to be conveyed to The Columbia Association. This facility is to be publicly maintained.



VICINITY MAP

SCALE: 1"=2000'

SHEET INDEX

- COVER SHEET
- DRIED EARTH BLVD. STA. 9+26.48 TO STA. 10+70.00
- DRIED EARTH BLVD. STA. 18+84.33 TO STA. 25+54.56 AND TYPICAL DETAILS
- DETAILS AND NOTES FOR THE PROTECTION OF THE 30" WATERMAIN
- GRADING PLAN PARCEL A AND SWM FACILITY 6
- GRADING PLAN PARCEL B AND SWM FACILITIES 1 & 8
- GRADING PLAN PARCEL C AND SWM FACILITY 2
- GRADING PLAN PARCEL D
- COMPOSITE GRADING AND SEDIMENT CONTROL PLAN
- SEDIMENT CONTROL PLAN PARCEL A AND SWM FACILITY 6
- SEDIMENT CONTROL PLAN PARCEL B AND SWM FACILITIES 1 & 8
- SEDIMENT CONTROL PLAN PARCEL C AND SWM FACILITY 2
- SEDIMENT CONTROL PLAN PARCEL D
- SEDIMENT CONTROL STANDARD DETAILS
- SEDIMENT CONTROL DETAILS
- SEDIMENT CONTROL DETAILS/TEMPORARY STORMWATER MANAGEMENT
- SEDIMENT CONTROL DETAILS/TEMPORARY STORMWATER MANAGEMENT
- SEDIMENT CONTROL DETAILS
- STORMWATER MANAGEMENT DETAILS
- STORMWATER MANAGEMENT DETAILS
- STORMWATER MANAGEMENT DETAILS
- STORMWATER MANAGEMENT DETAILS
- STORMWATER MANAGEMENT AND SWM PERIMETER PLANTING PLAN
- PLANTING NOTES, SCHEDULE AND PLANT LIST
- SWM PRE-DEVELOPMENT DRAINAGE AREA MAP
- 2-YEAR SWM POST-DEVELOPMENT DRAINAGE AREA MAP
- 10-YEAR SWM POST-DEVELOPMENT DRAINAGE AREA MAP
- 100-YEAR SWM POST-DEVELOPMENT DRAINAGE AREA MAP

LEGEND

- EXISTING STREET LIGHT
- PROPOSED STREET LIGHT
- PROP. TOP OF CURB ELEVATION
- EXISTING WATER MAIN
- EXISTING STORM DRAIN
- EXIST. CURB/CURB & GUTTER
- PROP. CURB & GUTTER
- EXISTING PAVING
- PROPOSED PAVING
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING STREET TREES
- PROPOSED STREET TREES

"NO COMMERCIAL VEHICLES" SIGNS TO BE INSTALLED ALONG DRIED EARTH BLVD. AND APRIL BROOK CIR AS DIRECTED BY HOWARD COUNTY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 [Signature] 1/2/01  
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 [Signature] 12/1/01  
 Chief, Division of Land Development

[Signature] 12/3/01  
 Chief, Development Engineering Division MK

GLW GUTSCHICK LITTLE & WEBER, P.A.  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 FAX: 301-421-1186

NO.	DESCRIPTION	DATE	BY	APP'R.
1114104	Rev Key Map Parcel Ident. & Parcel A-2, B-1, C-1, D-2, E-1 Boundary		WES	
1114104	Rev Key Map Parcel Ident. & Parcel C-1 Boundary		WES	

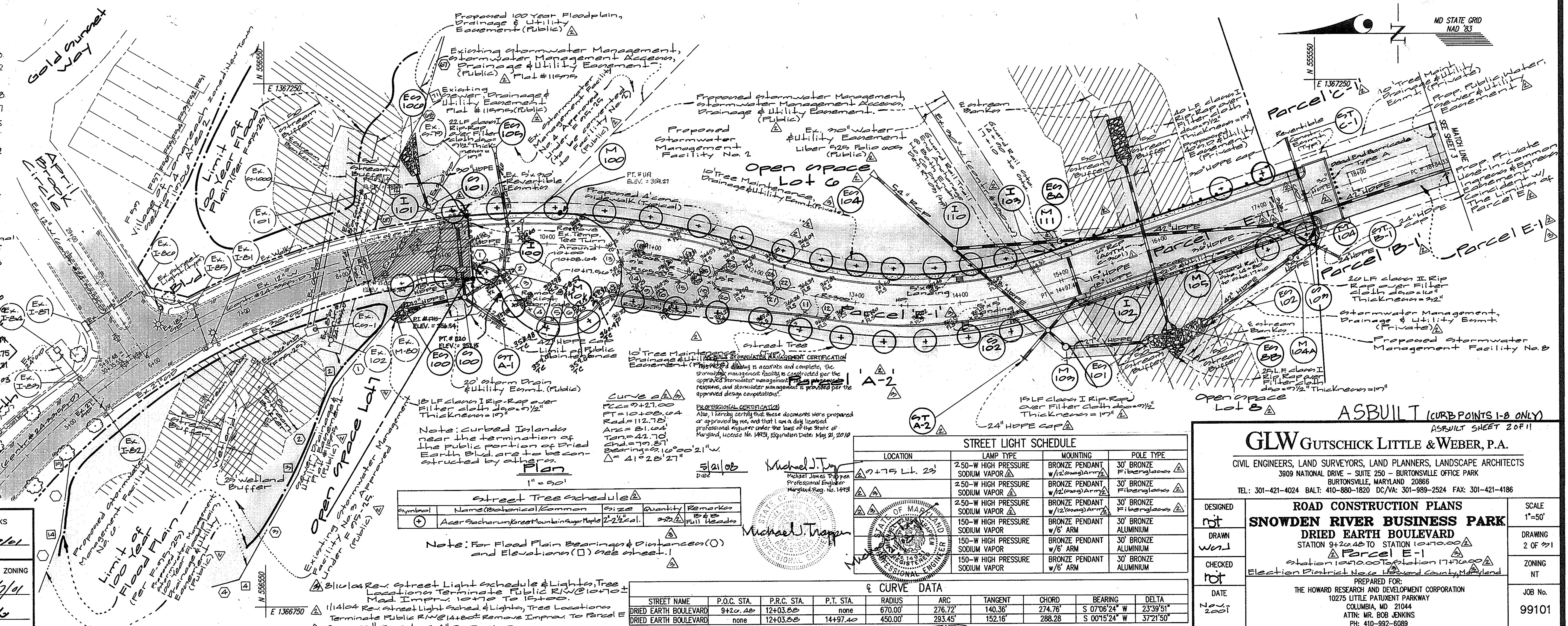
PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUMENT PARKWAY  
 COLUMBIA, MD. 21044  
 ATTN: BOB JENKINS  
 PHONE: 410-992-6089

COVER SHEET  
 SNOWDEN RIVER BUSINESS PARK  
 SECTION 1 AREA 1  
 PARCELS A-2, B-1, C-1, D-2, E-1 & LOTS 6 THRU 10  
 ELECTION DISTRICT No. 6

ASBUILT SHEET I OF II		
SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	NT	99101
DATE	TAX MAP - GRID	SHEET
JAN. 2008	TM 37 GR 13 & 19	1 OF 31

**Curb Elevation Table**

No.	Station	Offset	T.C. Elev.	C.E. Elev.
1	9+27.00	19.00 Rt	355.18	355.30
2	9+49.98	20.10 Rt	356.00	356.22
3	9+64.42	45.11 Rt	356.82	357.18
4	9+80.21	60.04 Rt	357.74	358.48
5	10+00.00	70.75 Rt	358.65	359.07
6	10+25.04	71.88 Rt	359.50	359.65
7	10+50.14	53.76 Rt	360.47	361.42
8	10+75.43	43.25 Rt	361.23	361.32
9	11+04.35	43.25 Rt	362.13	362.13
10	11+30.18	41.80 Rt	363.13	363.08
11	12+53.21	20.31 Rt	364.82	364.84
12	12+74.10	19.00 Rt	367.47	367.42
13	10+71.98	10.10 Rt	361.75	361.75
14	10+81.12	19.25 Rt	361.97	361.75
15	11+23.50	19.28 Rt	363.87	363.75
16	11+37.73	10.10 Rt	364.05	364.13
17	11+28.50	1.22 Rt	363.87	363.81
18	10+81.12	1.25 Rt	361.97	361.90
19	11+02.15	14.15 Rt	365.10	364.90
20	11+08.15	18.00 Rt	365.37	365.05
21	12+18.75	85.40 Rt	366.95	366.75
22	12+22.00	3.00 Rt	367.08	366.88
23	12+17.55	1.30 Lt	366.95	366.75
24	11+02.00	1.14 Lt	365.97	365.81
25	11+02.00	0.21 Lt	365.10	365.03



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 11/30/11

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 12/7/11

Chief, Development Engineering Division MK  
 Date: 12/12/11

**STREET LIGHT SCHEDULE**

LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
Parcel A-1	250-W HIGH PRESSURE SODIUM VAPOR	BRONZE PENDANT w/12' ARM	30' BRONZE FIBERGLASS
Parcel A-2	250-W HIGH PRESSURE SODIUM VAPOR	BRONZE PENDANT w/12' ARM	30' BRONZE FIBERGLASS
Parcel B-1	250-W HIGH PRESSURE SODIUM VAPOR	BRONZE PENDANT w/12' ARM	30' BRONZE FIBERGLASS
Parcel B-2	150-W HIGH PRESSURE SODIUM VAPOR	BRONZE PENDANT w/6' ARM	30' BRONZE ALUMINUM
Parcel C	150-W HIGH PRESSURE SODIUM VAPOR	BRONZE PENDANT w/6' ARM	30' BRONZE ALUMINUM
Parcel E-1	150-W HIGH PRESSURE SODIUM VAPOR	BRONZE PENDANT w/6' ARM	30' BRONZE ALUMINUM

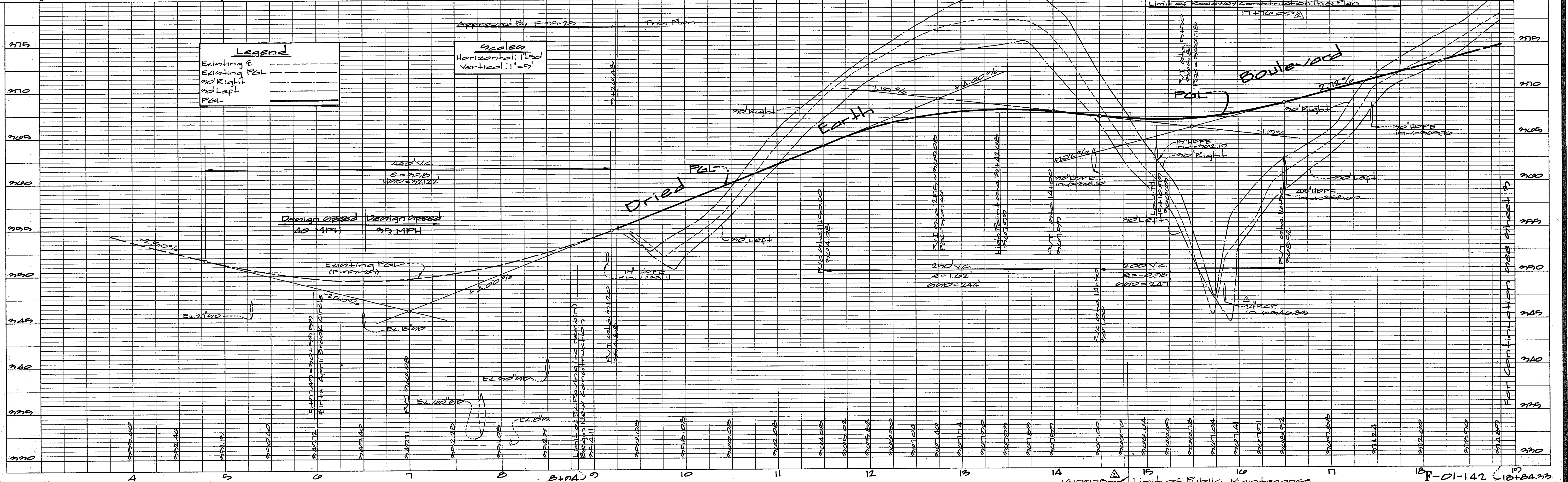
**STREET TREE SCHEDULE**

Symbol	Name (Botanical/Common)	Size	Quantity	Remarks
(+)	Acer Saccharum	12-18" cal.	25	Full Heads

Note: For Flood Plain Bearings & Distances (O) and Elevations (E) see sheet 1.

**STREET & CURVE DATA**

STREET NAME	P.O.C. STA.	P.R.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
DRIED EARTH BOULEVARD	9+20.48	12+03.88	none	670.00'	276.72'	140.36'	274.76'	S 07°08'24" W	23°39'51"
DRIED EARTH BOULEVARD	none	12+03.88	14+97.40	450.00'	293.43'	152.16'	288.28'	S 00°15'24" W	37°21'50"



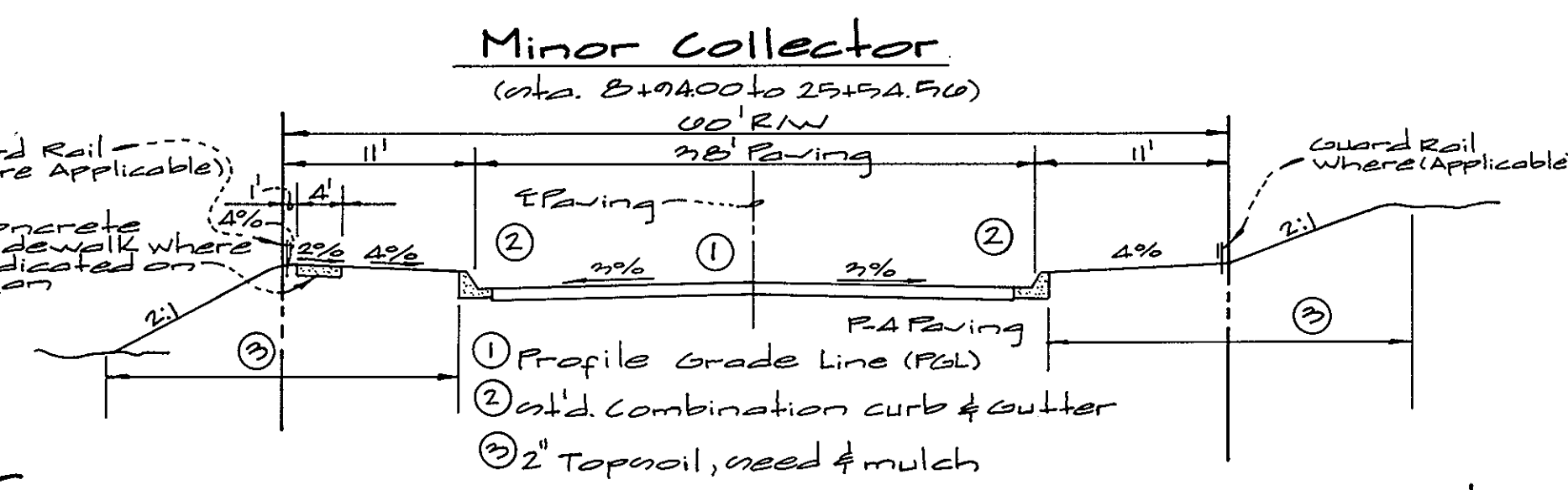
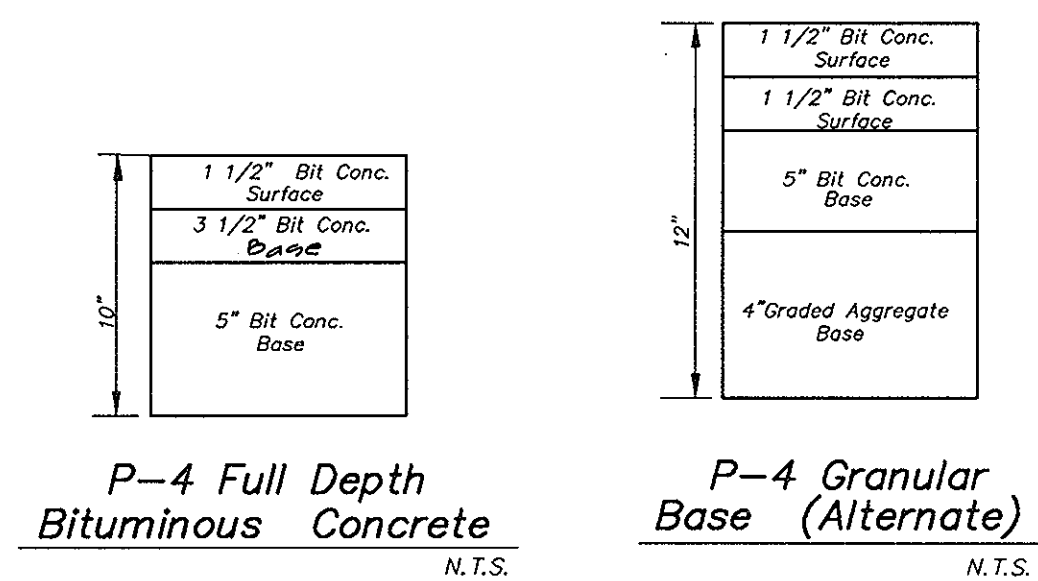
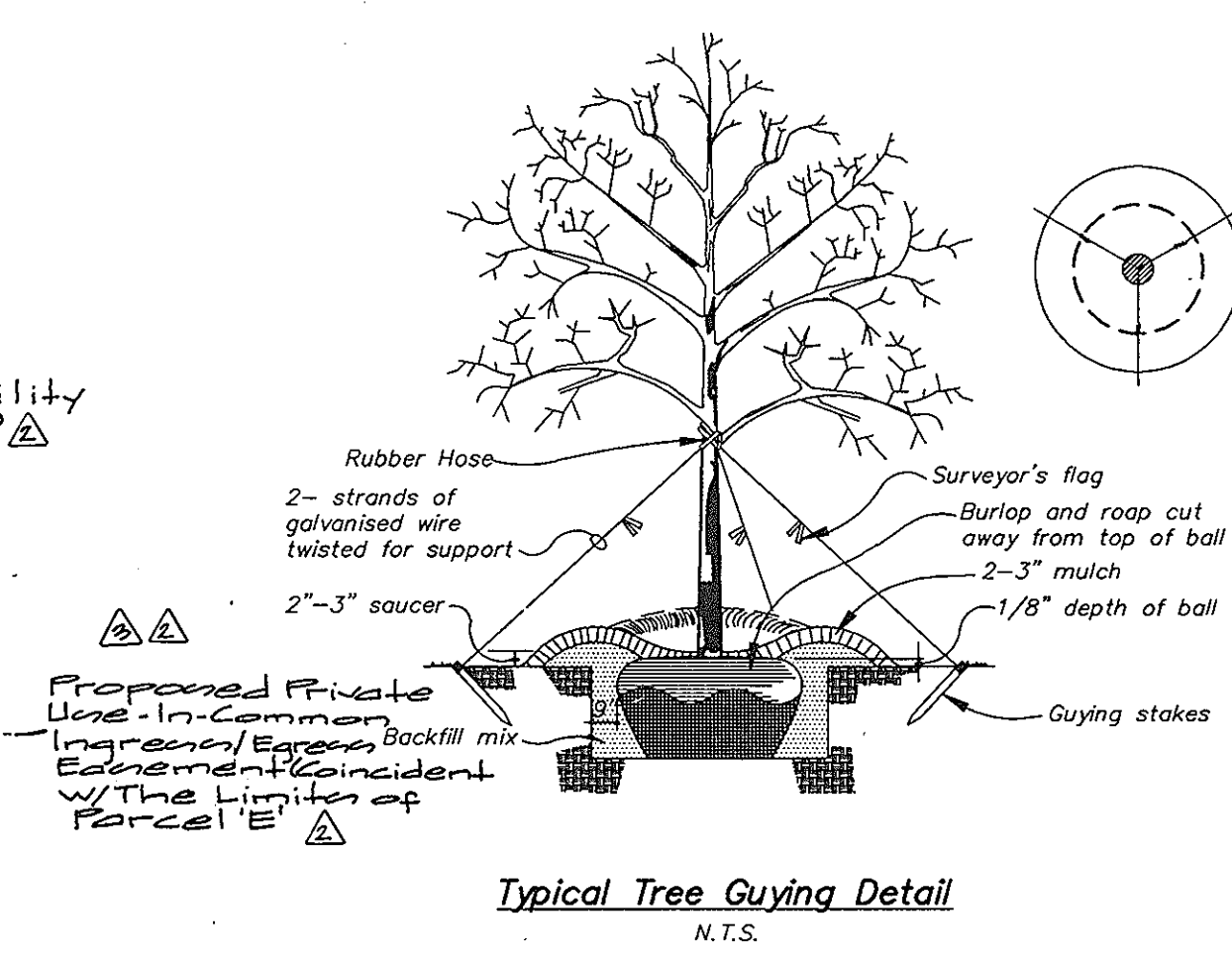
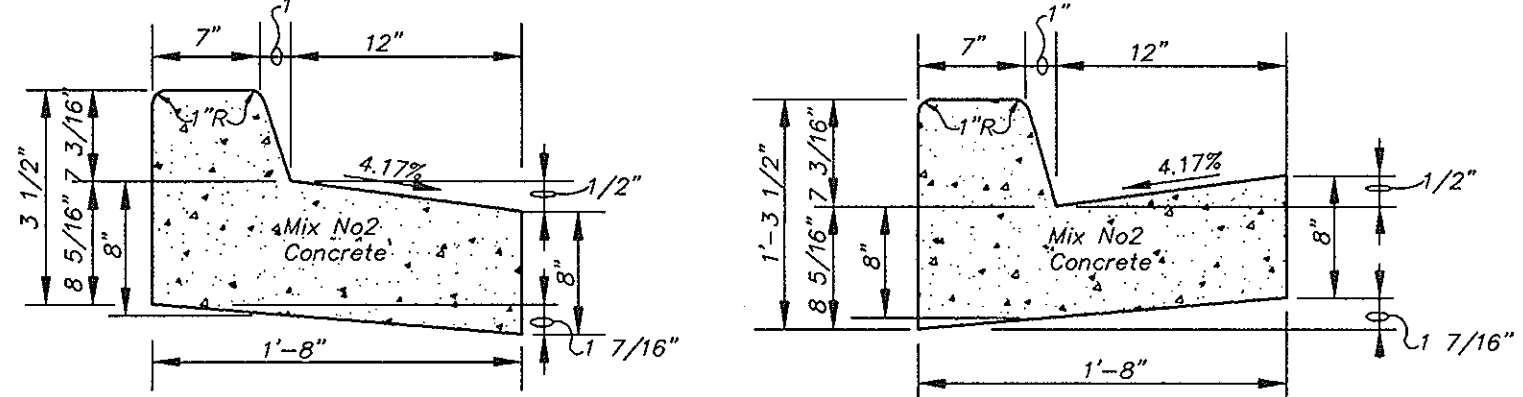
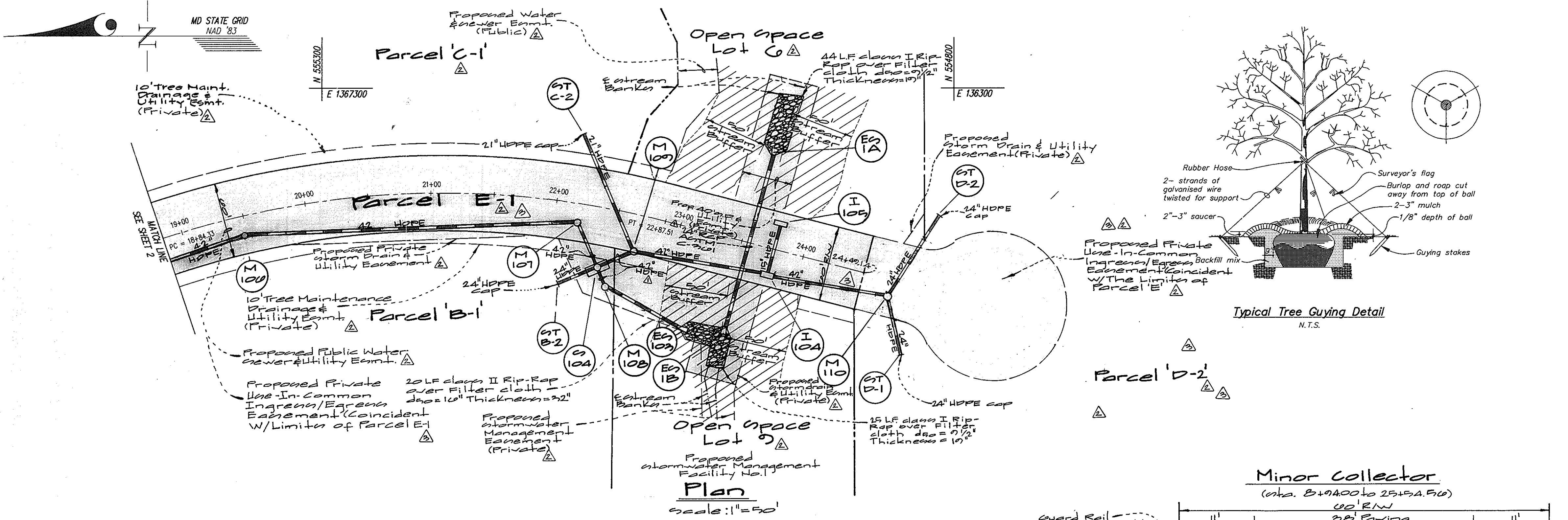
**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3809 NATIONAL DRIVE - SUITE 250 - BURTONVILLE OFFICE PARK  
 BURTONVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

**ROAD CONSTRUCTION PLANS**  
**SNOWDEN RIVER BUSINESS PARK**  
**DRIED EARTH BOULEVARD**  
 STATION 9+20.48 TO STATION 14+97.40  
 Parcel E-1  
 Station 10+70.00 to Station 17+70.00  
 Election District No. 10, Howard County, Maryland

DESIGNED: [Signature]  
 DRAWN: [Signature]  
 CHECKED: [Signature]  
 DATE: Nov. 2011

SCALE: 1"=50'  
 DRAWING: 2 OF 21  
 ZONING: NT  
 JOB No.: 99101

PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PARVANT PARKWAY  
 COLUMBIA, MD 21044  
 ATTN: MR. BOB JENKINS  
 PH: 410-992-6089



△ 81104 Modify Limits of Parcel E-1 & D-2  
Eliminate Linear curb profile & profile beyond 24+40

△ 11414 Rev. Property Labels & Remove Improv Except  
as Rev. Title Block

△ Rev 18\"/>

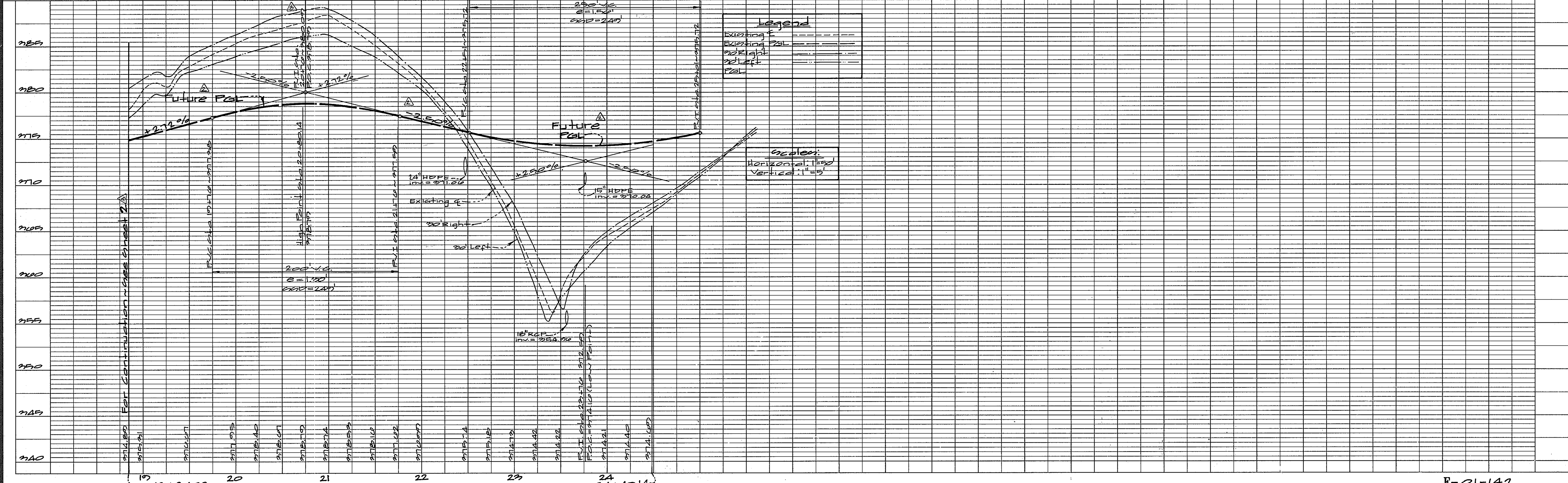
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard Shuler* 11/27/01  
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Krumholz* 12/7/01  
Chief, Division of Land Development Date

12/3/01  
Chief, Development Engineering Division MK Date



CURVE DATA									
STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
DRIED EARTH BOULEVARD	18+84.22	none	22+87.51	700.00'	403.19'	207.36'	397.64'	S 01°55'28\"/>	



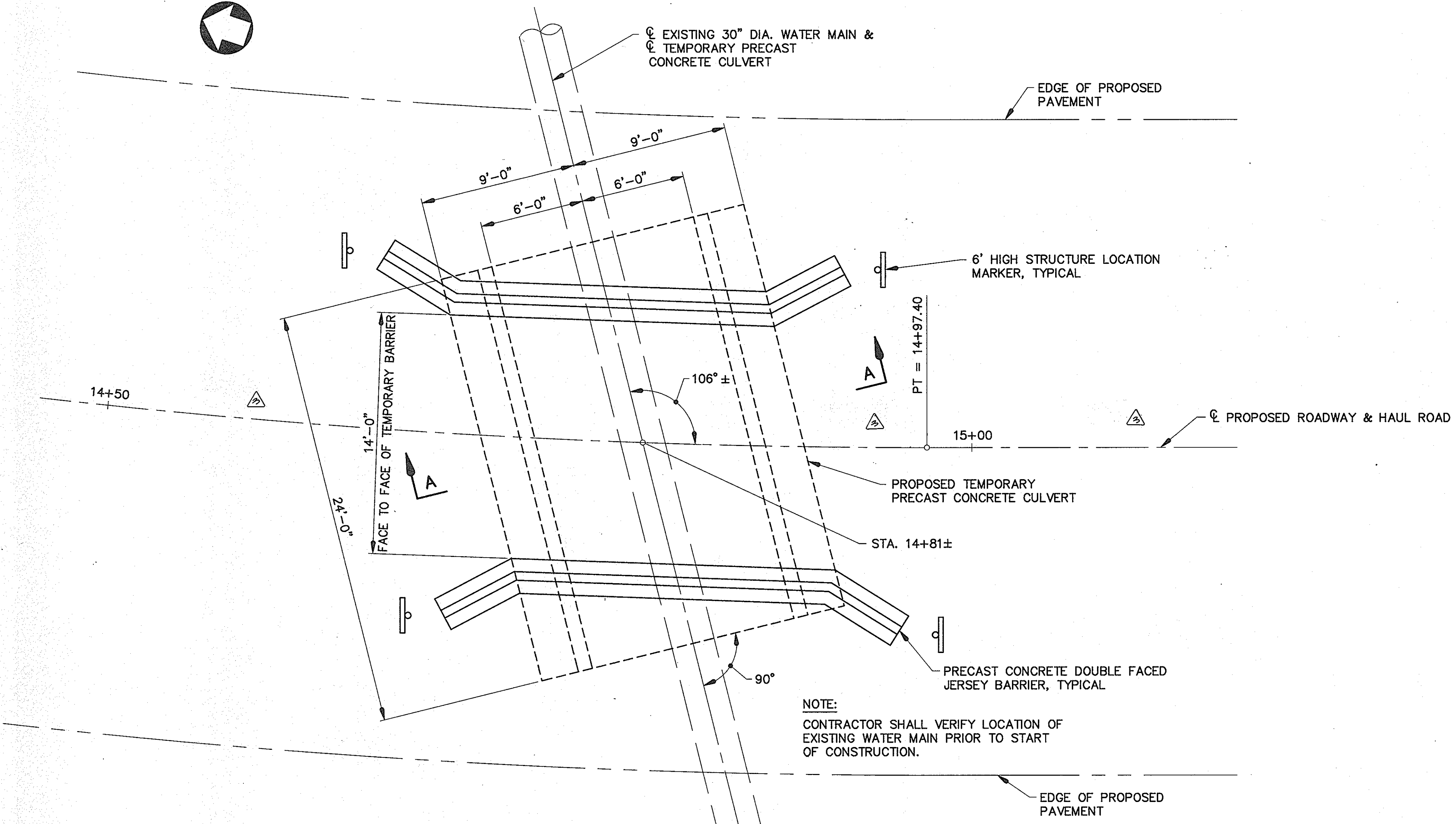
**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
BURTONSVILLE, MARYLAND 20866  
TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

**ROAD CONSTRUCTION PLANS**  
**SNOWDEN RIVER BUSINESS PARK**

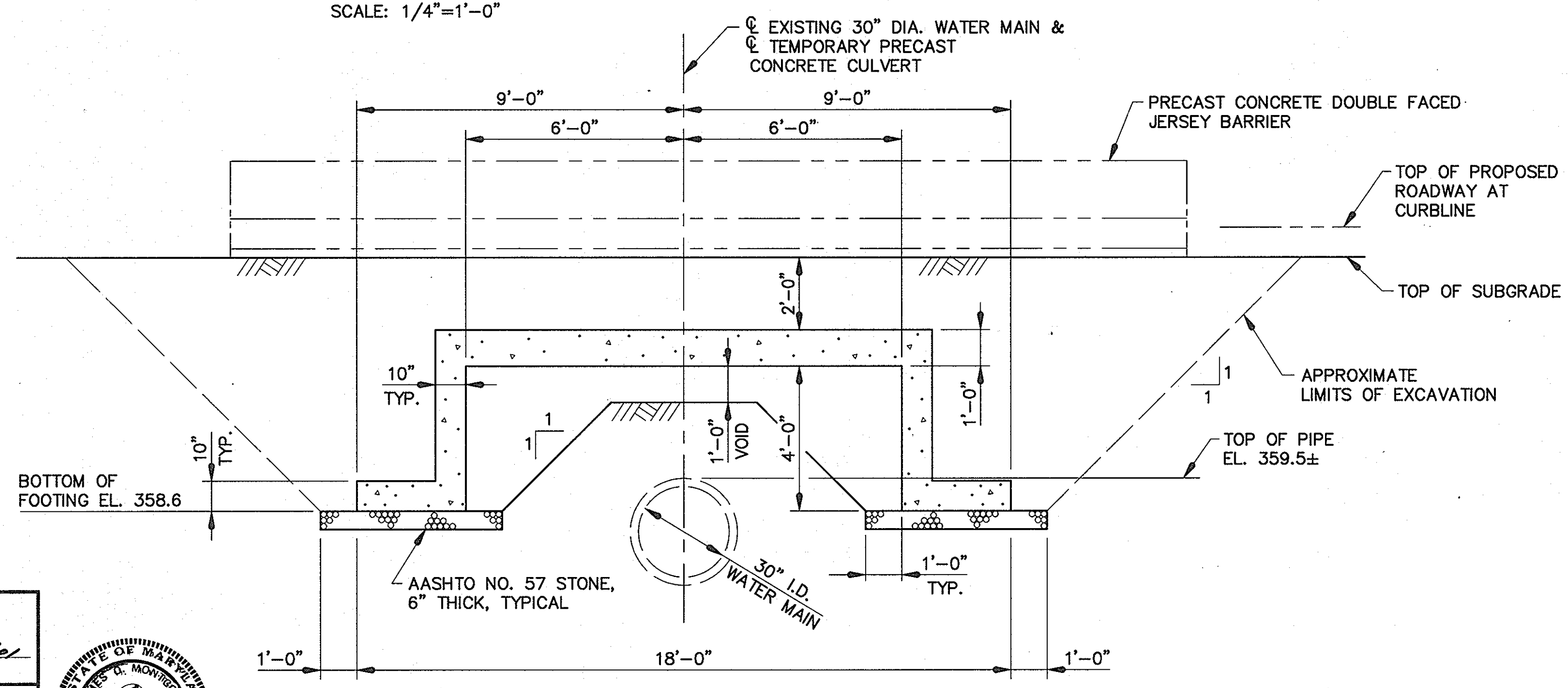
ELECTION DISTRICT No. 6  
HOWARD COUNTY, MARYLAND  
PREPARED FOR:  
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
10275 LITTLE PATUXENT PARKWAY  
COLUMBIA, MD 21044  
ATTN: MR. BOB JENKINS  
PH: 410-992-6089

DESIGNED: *MT*  
DRAWN: *WJ*  
CHECKED: *hjt*  
DATE: Nov 12 2001

SCALE: 1\"/>



**PLAN**  
SCALE: 1/4"=1'-0"



**SECTION A - A**  
SCALE: 3/8"=1'-0"

**GENERAL NOTES:**

- PURPOSE:** TO PROTECT 30" WATER MAIN DURING CONSTRUCTION. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO EXISTING 30" WATER MAIN. THE TEMPORARY CULVERT SHALL BE USED TO PROTECT THE WATER MAIN DURING ROUGH GRADING FOR THE PROPOSED ROADWAY AND ADJACENT PARCELS.
- SPECIFICATIONS:** SHA SPECIFICATIONS DATED OCTOBER, 1993, INCLUDING REVISIONS THEREOF AND ADDITIONS THERETO FOR MATERIALS AND CONSTRUCTION.
- AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 1996 FOR DESIGN INCLUDING ALL INTERIM SPECIFICATIONS THROUGH 1999.
- CONCRETE DESIGN: SERVICE LOAD DESIGN METHOD  $f_c = 1,800$  P.S.I.
- REINFORCING STEEL DESIGN:  $f_s = 24,000$  P.S.I.
- DESIGN LOADING: ALL EQUIPMENT AND VEHICLES THAT CROSS OVER THE TEMPORARY CULVERT SHALL HAVE A MAXIMUM AXLE LOAD OF 63,000 LBS. SPACED NOT LESS THAN 12'-0" APART. IMPACT FACTOR SHALL BE 20%.
- PRECAST CULVERT:** PRECAST CULVERT SHALL BE "OMEGA" CULVERT AS MANUFACTURED BY ROTUNDO PRECAST, OR APPROVED EQUAL. THE SUPPLIER SHALL BE RESPONSIBLE FOR THE DESIGN OF THE TEMPORARY STRUCTURE. PLANS AND COMPUTATIONS FOR THE TEMPORARY CULVERT SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
- PRECAST CONCRETE:** ALL CONCRETE SHALL BE MIX NO. 6 (4,500 P.S.I.).
- REINFORCING STEEL:** REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60. ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED.
- FOR TIES AND STIRRUPS; STANDARD ACI BENDING TOLERANCES ARE MODIFIED TO PLUS (+) ZERO INCHES, MINUS (-) NORMAL ACI BENDING TOLERANCES.
- ONLY GRADE 60 CAN BE USED ON THIS PROJECT**
- EXISTING STRUCTURE:** ALL DIMENSIONS AFFECTED BY THE GEOMETRICS, AND/OR LOCATION OF THE EXISTING WATER MAIN SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR, BEFORE ANY CONSTRUCTION IS DONE, AND BEFORE ANY REINFORCING STEEL, ETC., IS ORDERED OR FABRICATED.
- EXISTING WATER MAIN SHOWN IN LONG DASHED LINES.
- COVER FOR CULVERT:** NO CONSTRUCTION EQUIPMENT SHALL BE PERMITTED TO PASS OVER THE CULVERT UNTIL A MINIMUM OF 2' OF FILL HAS BEEN PLACED OVER THE CULVERT.
- FOUNDATION PRESSURE:** MAXIMUM FOUNDATION PRESSURE SHALL BE 3,000 P.S.F.

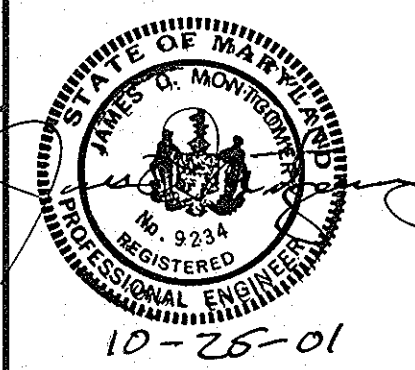
**NOTE TO CONTRACTOR:**

DURING CONSTRUCTION AND REMOVAL OF THE TEMPORARY CULVERT, EQUIPMENT WITH AN AXLE LOAD IN EXCESS OF 32,000 LBS. SHALL NOT BE PERMITTED TO CROSS THE EXISTING 30" WATER MAIN. AFTER ROUGH GRADING HAS BEEN COMPLETED, THE TEMPORARY CULVERT SHALL BE REMOVED AND THE EXCAVATION BACKFILLED TO THE SUBGRADE USING APPROVED MATERIAL, COMPACTED IN 6" LIFTS. THE METHODS AND EQUIPMENT USED IN CONSTRUCTION AND REMOVAL OF THE TEMPORARY CULVERT SHALL BE SUBJECT TO REVIEW AND APPROVAL OF THE COUNTY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Edward S. ...*  
 Chief, Bureau of Highways  
 Date: 11/27/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Christy ...*  
 Chief, Division of Land Development  
 Date: 12/7/01

*Mik ...*  
 Chief, Development Engineering Division  
 Date: 12/16/01



**WALLACE, MONTGOMERY & ASSOCIATES**  
 CIVIL AND STRUCTURAL ENGINEERS  
 110 WEST ROAD  
 TOWSON, MARYLAND 21284

M:\PROJ\201027\CADD\PE01DRIE.DWG DES. DLB DRN. HCS CHK. FHK

DATE	REVISION	BY	APP'R.
11/14/04	Rev Title Block		
11/14/04	Rev Dried Earth Label, Rev Title Block		

PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATENT PARKWAY  
 COLUMBIA, MD. 21044  
 ATTN: BOB JENKINS  
 PHONE: 410-992-6089

**PROPOSED TEMPORARY PRECAST CONCRETE CULVERT DETAILS**  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcels A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	W. M. & A. FILE No.
AS SHOWN	NT	070101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	4 OF 31



Proposed Protection for exist 30" watermain. see details sheet 4. All construction vehicles over 20,000 pounds axle loads shall pass across the 30" watermain at this location only.

- Proposed Stormwater Management Facility No. 1**
1. Facility to be privately owned by the Columbia Association and maintained by Howard County.
  2. 10-yr quantity provided by a hazard Class A detention pond (dry pond).
  3. No water quality provided within this facility.

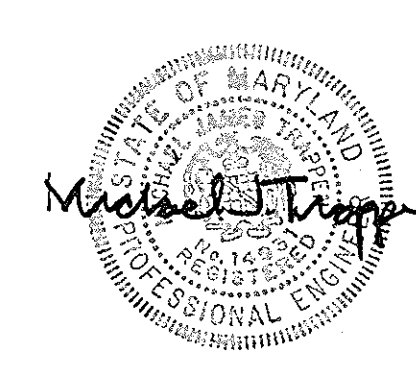
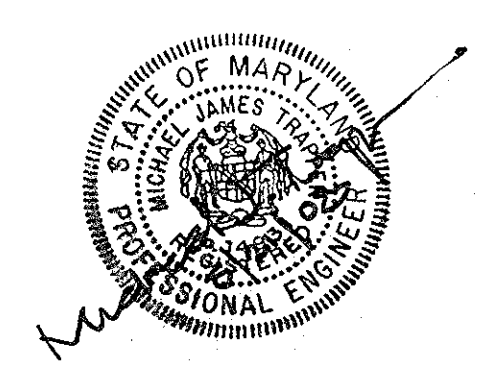
**Note:** Contractor shall notify The Department of Public Works, Division of Construction Inspection (410) 313-1880, 24 hours in advance of grading over the existing 30" watermain. Construction equipment with an axle load in excess of 20,000 pounds shall not be permitted to cross the exist 30" watermain except at locations indicated.

**AS-BUILT STORMWATER MANAGEMENT CERTIFICATION**  
 "This record drawing is accurate and complete, the stormwater management Facility is constructed per the approved stormwater management Plan or subsequent revisions, and stormwater management is provided per the approved design computations."

**MARYLAND (87B) CERTIFICATION**  
 "Also, I hereby certify that the Facility was constructed as shown on the AS-Built plan and meets or exceeds the requirements of the Natural Resources Conservation Service Maryland Conservation Practice Standard for Ponds (MD-318) and the approved paid plans and specifications. The pond also has 45% or more vegetative cover."

**PROFESSIONAL CERTIFICATION**  
 "I, Michael J. Trapp, a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14931, Expiration Date: May 21, 2018, certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14931, Expiration Date: May 21, 2018."

Michael J. Trapp  
 Michael James Trapp  
 Professional Engineer  
 Maryland Reg. No. 14931



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Howard Shik  
 Chief, Bureau of Highways  
 11/27/01  
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Cindy Harvato  
 Chief, Division of Land Development  
 12/7/01  
 Date

Chief, Development Engineering Division MK  
 Date

Note: For Flood Plain Bearings & Distances (O) & Elevations (D) see cover sheet.

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 FAX: 301-421-4186

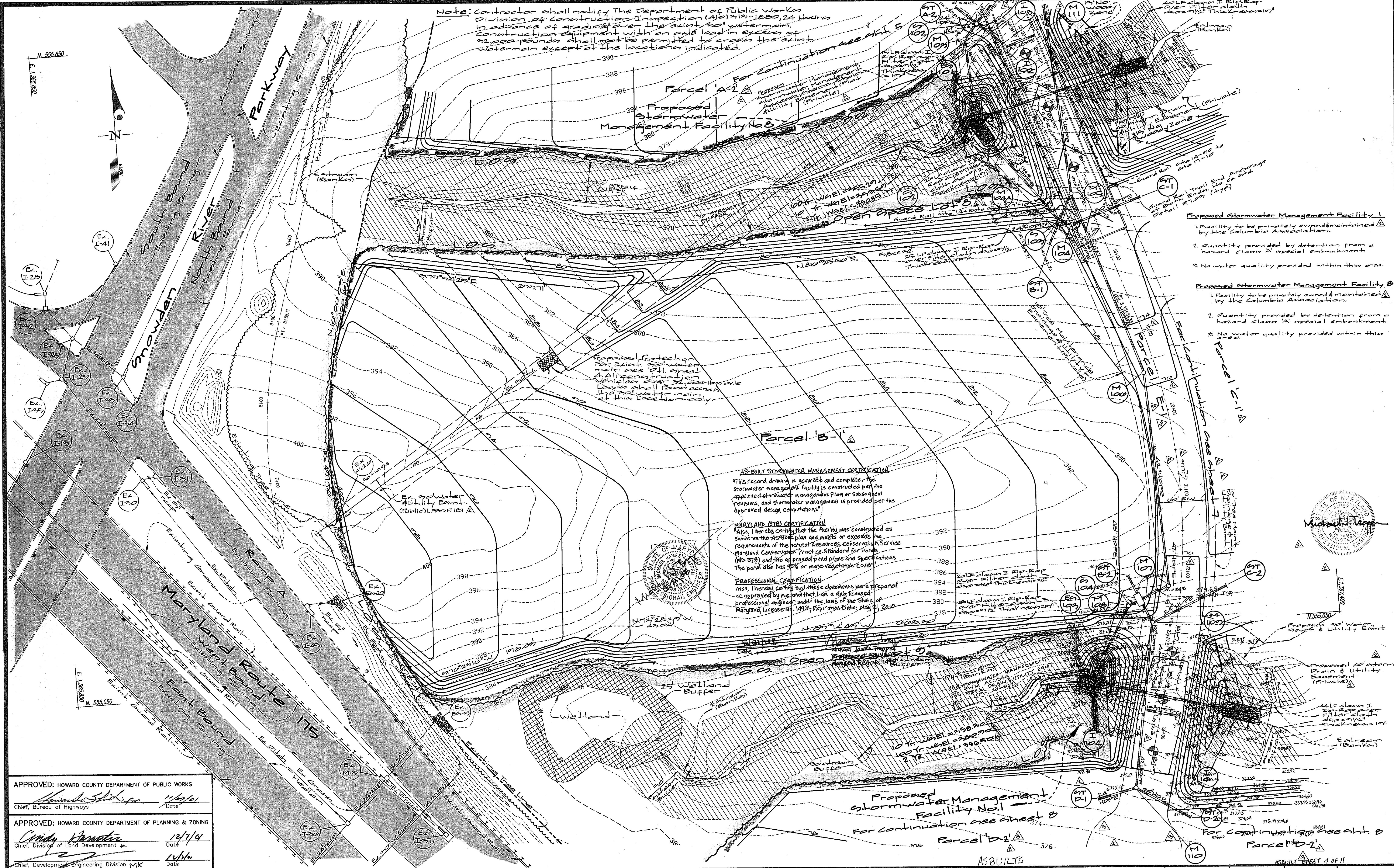
REVISION	DATE	BY	APPR.
11/21/01	Rev Title Block, Parcel IDs, Move Cul-De-Sacs & Rev Grading	WJG	
11/21/01	Rev Title Block, Parcel IDs, Add Cul-De-Sacs, Sidewalks & Rev Grading	WJG	
10-27	Rev Pipe size		

PREPARED FOR:  
**THE HOWARD RESEARCH & DEVELOPMENT CORPORATION**  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 PHONE: 410-592-6089

AS-BUILT  
 Grading Plan ~ Parcel A & GWM Facility  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcels A-1, B-1, C-1, D-2, E-1 & Lots G Thru I  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	5 OF 31

Note: Contractor shall notify The Department of Public Works Division of Construction Inspection (410) 313-1800, 24 hours in advance of grading over the existing 36" watermain. Construction equipment with an axle load in excess of 12,000 pounds shall not be permitted to cross the existing watermain except at the locations indicated.



**Proposed Stormwater Management Facility 1**  
 1. Facility to be privately owned & maintained by the Columbia Association.  
 2. Quantity provided by detention from a hazard class 'A' special embankment.  
 3. No water quality provided within this area.

**Proposed Stormwater Management Facility 2**  
 1. Facility to be privately owned & maintained by the Columbia Association.  
 2. Quantity provided by detention from a hazard class 'A' special embankment.  
 3. No water quality provided within this area.

**AS-BUILT STORMWATER MANAGEMENT CERTIFICATION**

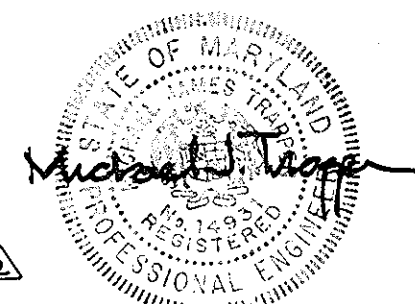
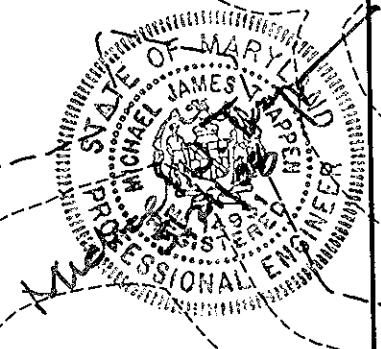
"This record drawing is accurate and complete, the stormwater management facility is constructed per the approved stormwater management plan or subsequent revisions, and stormwater management is provided per the approved design computations."

**MARYLAND (S)B CERTIFICATION**

"Also, I hereby certify that the facility was constructed as shown on the design plan and meets or exceeds the requirements of the Natural Resources Conservation Service Maryland Conservator Practice Standard for Ponds (MS-318) and the approved pond plans and specifications. The pond also has 95% or more vegetative cover."

**PROFESSIONAL CERTIFICATION**

"Also, I hereby certify that these documents were prepared as approved by me and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 14931, Expiration Date: May 31, 2010."



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 12/14/14

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 12/14/14

Chief, Development Engineering Division MK  
 Date: 12/16/14

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20886  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-589-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.
11/14/14	Rev. Parcel Labels, Rev. Parcel E-1 & E-2 Limits	WesJ	
11/14/14	Rev. Parcel Labels, Remove Improvements From Parcel E, Add TEMP Turnaround	WesJ	
10/30/14	Rev. Pipe sizes	WesJ	

PREPARED FOR:  
 The Howard Research & Development Corporation  
 10275 Little Patuxent Pkwy.  
 Columbia, Maryland 21044  
 Attn: Bob Jenkins  
 Phone 410-992-0089

AS-BUILTS  
 Grading Plan - Parcel B & FWM Facilities 1 & 2  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcels A-2, B-1, C-1, D-2, E-1 & Lots 0 Thru 10  
 ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=50'	NT	99101
DATE	TAX MAP - GRID	SHEET
November, 2001	TM 37 GR 13 & 19	0 OF 31

**DEVELOPER'S/BUILDER'S CERTIFICATE**

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 Maryland 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.

*North H. John*  
Signature of Developer/Builder  
11/2/01  
Date

**ENGINEER'S CERTIFICATE**

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.

*Michael J. Trepper*  
Engineer's Signature  
3-6-01  
Date

**Proposed Stormwater Management Facility 2**

1. Facility to be privately owned by the Columbia Association and maintained by Howard County.
2. 2 Yr quantity provided by a hazard class 'A' detention/retention pond (wet pond).
3. Water quality provided by permanent pool.

Note: For Flood Plain Bearing & Distances  
(O) Elevations (I) see cover sheet

Open Space Lot G

Open Space Lot G

Parcel 'C-1'

**AS-BUILT STORMWATER MANAGEMENT CERTIFICATION**

This record drawing is accurate and complete, the stormwater management facility is constructed per the approved stormwater management plan or subsequent revisions, and stormwater management is provided per the approved design computations.

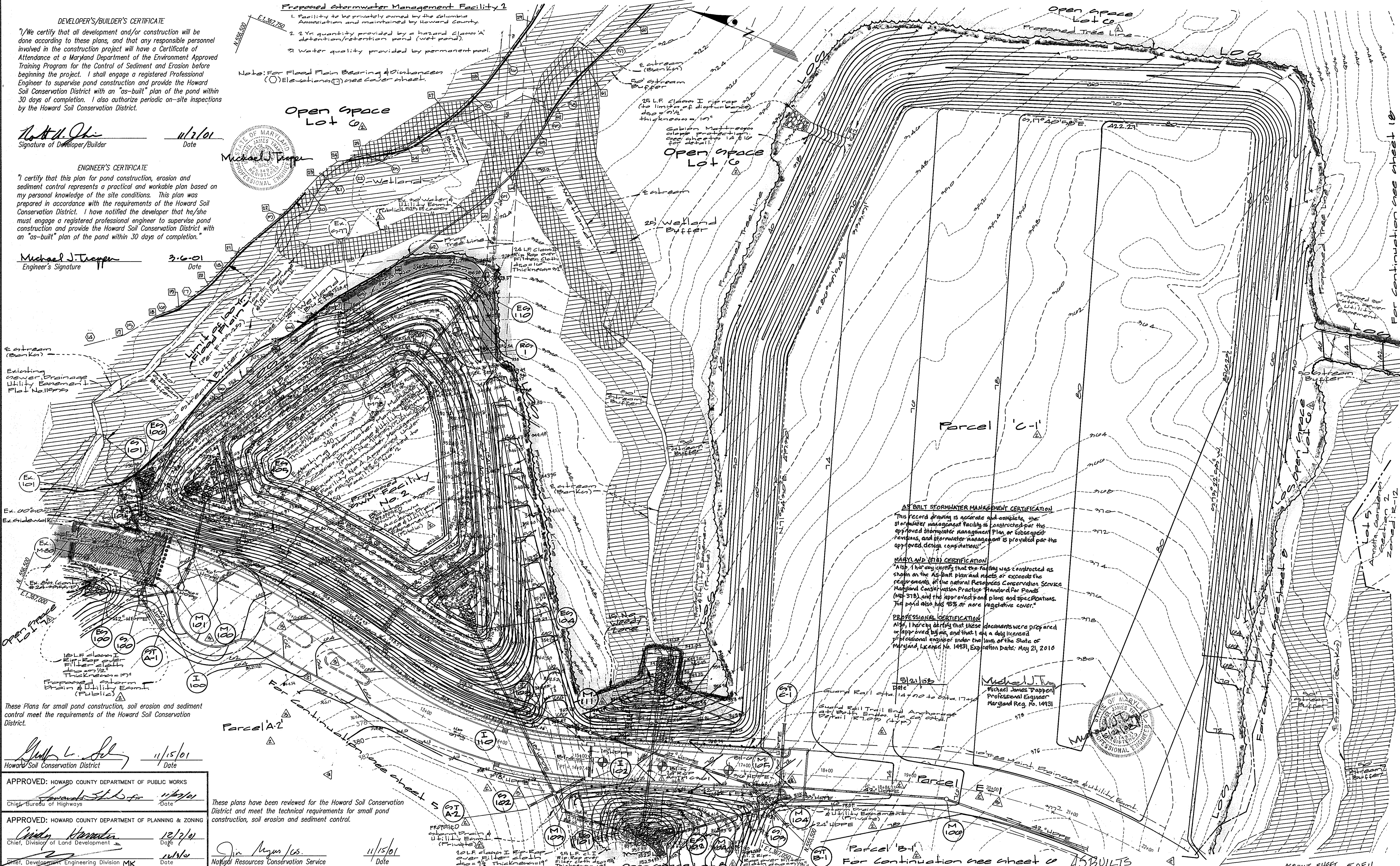
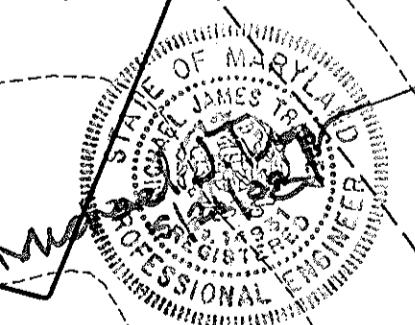
**MARYLAND (P.E.) CERTIFICATION**

I hereby certify that the facility was constructed as shown on the AS-Built plan and meets or exceeds the requirements of the natural Resources Conservation Service Maryland Conservation Practice Standard for Ponds (MS-37B) and the approved pond plans and specifications. The pond also has 95% or more vegetative cover.

**PROFESSIONAL CERTIFICATION**

Also, I hereby certify that these documents were prepared or reviewed by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, Licensed No. 14931, Expiration Date: May 21, 2010

*Michael J. Trepper*  
Michael James Trepper  
Professional Engineer  
Maryland Reg. No. 14931



These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

*Shawn L. Selby*  
Howard Soil Conservation District  
11/15/01  
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Shawn L. Selby*  
Chief, Bureau of Highways  
11/16/01  
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Kamata*  
Chief, Division of Land Development  
12/7/01  
Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

*Jim Angus, Esq.*  
Natural Resources Conservation Service  
11/15/01  
Date

**GLW GUTSCHICK LITTLE & WEBER, P.A.**

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
BURTONSVILLE, MARYLAND 20866  
TEL: 301-421-4024 BALTIMORE: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

PREPARED FOR:  
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
10275 LITTLE PATUENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
PHONE: 410-992-6027

Grading Plan - Parcel C & Storm Facility 2

**SNOWDEN RIVER BUSINESS PARK**  
SECTION 1 AREA 1  
Parcel A-2, B-1, C-1, D-1, E-1 & Lots G Thru I

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	7 OF 31

DRAWINGS: 99101 DESIGN: 99101MIG7

DATE	REVISION	BY	APPR.
11/15/01	Rev. Title Block, Parcel E, B, & C, & D, & E, & F, & G, & H, & I, & J, & K, & L, & M, & N, & O, & P, & Q, & R, & S, & T, & U, & V, & W, & X, & Y, & Z, & AA, & AB, & AC, & AD, & AE, & AF, & AG, & AH, & AI, & AJ, & AK, & AL, & AM, & AN, & AO, & AP, & AQ, & AR, & AS, & AT, & AU, & AV, & AW, & AX, & AY, & AZ, & BA, & BB, & BC, & BD, & BE, & BF, & BG, & BH, & BI, & BJ, & BK, & BL, & BM, & BN, & BO, & BP, & BQ, & BR, & BS, & BT, & BU, & BV, & BW, & BX, & BY, & BZ, & CA, & CB, & CC, & CD, & CE, & CF, & CG, & CH, & CI, & CJ, & CK, & CL, & CM, & CN, & CO, & CP, & CQ, & CR, & CS, & CT, & CU, & CV, & CW, & CX, & CY, & CZ, & DA, & DB, & DC, & DD, & DE, & DF, & DG, & DH, & DI, & DJ, & DK, & DL, & DM, & DN, & DO, & DP, & DQ, & DR, & DS, & DT, & DU, & DV, & DW, & DX, & DY, & DZ, & EA, & EB, & EC, & ED, & EE, & EF, & EG, & EH, & EI, & EJ, & EK, & EL, & EM, & EN, & EO, & EP, & EQ, & ER, & ES, & ET, & EU, & EV, & EW, & EX, & EY, & EZ, & FA, & FB, & FC, & FD, & FE, & FF, & FG, & FH, & FI, & FJ, & FK, & FL, & FM, & FN, & FO, & FP, & FQ, & FR, & FS, & FT, & FU, & FV, & FW, & FX, & FY, & FZ, & GA, & GB, & GC, & GD, & GE, & GF, & GG, & GH, & GI, & GJ, & GK, & GL, & GM, & GN, & GO, & GP, & GQ, & GR, & GS, & GT, & GU, & GV, & GW, & GX, & GY, & GZ, & HA, & HB, & HC, & HD, & HE, & HF, & HG, & HH, & HI, & HJ, & HK, & HL, & HM, & HN, & HO, & HP, & HQ, & HR, & HS, & HT, & HU, & HV, & HW, & HX, & HY, & HZ, & IA, & IB, & IC, & ID, & IE, & IF, & IG, & IH, & II, & IJ, & IK, & IL, & IM, & IN, & IO, & IP, & IQ, & IR, & IS, & IT, & IU, & IV, & IW, & IX, & IY, & IZ, & JA, & JB, & JC, & JD, & JE, & JF, & JG, & JH, & JI, & JJ, & JK, & JL, & JM, & JN, & JO, & JP, & JQ, & JR, & JS, & JT, & JU, & JV, & JW, & JX, & JY, & JZ, & KA, & KB, & KC, & KD, & KE, & KF, & KG, & KH, & KI, & KJ, & KK, & KL, & KM, & KN, & KO, & KP, & KQ, & KR, & KS, & KT, & KU, & KV, & KW, & KX, & KY, & KZ, & LA, & LB, & LC, & LD, & LE, & LF, & LG, & LH, & LI, & LJ, & LK, & LL, & LM, & LN, & LO, & LP, & LQ, & LR, & LS, & LT, & LU, & LV, & LW, & LX, & LY, & LZ, & MA, & MB, & MC, & MD, & ME, & MF, & MG, & MH, & MI, & MJ, & MK, & ML, & MM, & MN, & MO, & MP, & MQ, & MR, & MS, & MT, & MU, & MV, & MW, & MX, & MY, & MZ, & NA, & NB, & NC, & ND, & NE, & NF, & NG, & NH, & NI, & NJ, & NK, & NL, & NM, & NN, & NO, & NP, & NQ, & NR, & NS, & NT, & NU, & NV, & NW, & NX, & NY, & NZ, & OA, & OB, & OC, & OD, & OE, & OF, & OG, & OH, & OI, & OJ, & OK, & OL, & OM, & ON, & OO, & OP, & OQ, & OR, & OS, & OT, & OU, & OV, & OW, & OX, & OY, & OZ, & PA, & PB, & PC, & PD, & PE, & PF, & PG, & PH, & PI, & PJ, & PK, & PL, & PM, & PN, & PO, & PP, & PQ, & PR, & PS, & PT, & PU, & PV, & PW, & PX, & PY, & PZ, & QA, & QB, & QC, & QD, & QE, & QF, & QG, & QH, & QI, & QJ, & QK, & QL, & QM, & QN, & QO, & QP, & QQ, & QR, & QS, & QT, & QU, & QV, & QW, & QX, & QY, & QZ, & RA, & RB, & RC, & RD, & RE, & RF, & RG, & RH, & RI, & RJ, & RK, & RL, & RM, & RN, & RO, & RP, & RQ, & RR, & RS, & RT, & RU, & RV, & RW, & RX, & RY, & RZ, & SA, & SB, & SC, & SD, & SE, & SF, & SG, & SH, & SI, & SJ, & SK, & SL, & SM, & SN, & SO, & SP, & SQ, & SR, & SS, & ST, & SU, & SV, & SW, & SX, & SY, & SZ, & TA, & TB, & TC, & TD, & TE, & TF, & TG, & TH, & TI, & TJ, & TK, & TL, & TM, & TN, & TO, & TP, & TQ, & TR, & TS, & TT, & TU, & TV, & TW, & TX, & TY, & TZ, & UA, & UB, & UC, & UD, & UE, & UF, & UG, & UH, & UI, & UJ, & UK, & UL, & UM, & UN, & UO, & UP, & UQ, & UR, & US, & UT, & UY, & UZ, & VA, & VB, & VC, & VD, & VE, & VF, & VG, & VH, & VI, & VJ, & VK, & VL, & VM, & VN, & VO, & VP, & VQ, & VR, & VS, & VT, & VU, & VV, & VW, & VX, & VY, & VZ, & WA, & WB, & WC, & WD, & WE, & WF, & WG, & WH, & WI, & WJ, & WK, & WL, & WM, & WN, & WO, & WP, & WQ, & WR, & WS, & WT, & WU, & WV, & WX, & WY, & WZ, & XA, & XB, & XC, & XD, & XE, & XF, & XG, & XH, & XI, & XJ, & XK, & XL, & XM, & XN, & XO, & XP, & XQ, & XR, & XS, & XT, & XU, & XV, & XW, & XX, & XY, & XZ, & YA, & YB, & YC, & YD, & YE, & YF, & YG, & YH, & YI, & YJ, & YK, & YL, & YM, & YN, & YO, & YP, & YQ, & YR, & YS, & YT, & YU, & YV, & YW, & YX, & YY, & YZ, & ZA, & ZB, & ZC, & ZD, & ZE, & ZF, & ZG, & ZH, & ZI, & ZJ, & ZK, & ZL, & ZM, & ZN, & ZO, & ZP, & ZQ, & ZR, & ZS, & ZT, & ZU, & ZV, & ZW, & ZX, & ZY, & ZZ		

ELECTION DISTRICT No. 6

HOWARD COUNTY, MARYLAND



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 11/27/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 12/7/01

Chief, Development Engineering Division MK  
 Date: 1/16/02

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4188

DATE	REVISION	BY	APP'R.
11/27/01	Rev. Title Block & Parcel D-1, D-2, E-1 & E-2 Boundary	WJS	
11/27/01	Rev. Title Block & Remove Improvements to Parcel E-1	WJS	
12/27/01	Rev. Pipe Size	WJS	

PREPARED FOR:  
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 PHONE: 410-992-6000

**GRADING PLAN - PARCEL D**  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1, AREA 1  
 Parcel D-1, D-2, E-1 & E-2 & Lots 6 Thru 10  
 ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	8 OF 31



**Sediment Trap #A-1**

Type of Sediment Trap: **IX**  
 Pre-Development Drainage Area: 8.99 Ac.  
 Post-Development Drainage Area: 9.89 Ac.  
 Wet Storage Required: 8.99 Ac. x 1800 c.f./Ac. = 17784 c.f. = 2400 Ac.-ft.  
 Wet Storage Provided: 2.5 Ac.-ft.  
 Dry Storage Required: 8.99 Ac. x 1800 c.f./Ac. = 17784 c.f. = 2400 Ac.-ft.  
 Dry Storage Provided: 2.5 Ac.-ft.  
 Bottom Elev.: 245.00  
 Top of Embankment Elev.: 251.00  
 Weir Throat Elev.: 250.91  
 Weir Length: 40.00 ft.  $Fr_1 Q_1 = 1.16 cfs$   
 Barrel Diameter: 60 inches  $Fr_2 Q_2 = 1.02 cfs$   
 Rise Diameter: 80 inches  
 Side Slopes: 2:1  
 Limit of Wet Storage: 245.00  
 Limit of Dry Storage: 245.00

**Sediment Basin #A-2**  
 Pre-Development Drainage Area: 12.3 Ac.  
 Post-Development Drainage Area: 12.3 Ac.  
 Wet Storage Required: 12.3 Ac. x 1800 c.f./Ac. = 22140 c.f.  
 Wet Storage Provided: 12.3 Ac. x 1800 c.f./Ac. = 22140 c.f.  
 Dry Storage Required: 12.3 Ac. x 1800 c.f./Ac. = 22140 c.f.  
 Dry Storage Provided: 12.3 Ac. x 1800 c.f./Ac. = 22140 c.f.  
 Bottom Elev.: 232.00  
 Drawdown orifice & permanent pool Elev.: 232.00  
 River Crest Elev.: 232.20  
 Basin Cleanout Elev.: 232.20  $Fr_1 Q_1 = 2.22 cfs$   
 Design High Water Elev.: 232.25  $Fr_2 Q_2 = 1.92 cfs$   
 Limit of Storage Elev.: 232.25  
 Side Slopes: 2:1  
 Top of Embankment: 242.70  
 Limit of Wet Storage: 232.25  
 Limit of Dry Storage: 232.25

**Sediment Trap #B-1**  
 Type of Sediment Trap: **IX**  
 Pre-Development Drainage Area: 8.077 Ac.  
 Post-Development Drainage Area: 7.12 Ac.  
 Wet Storage Required: 8.077 Ac. x 1800 c.f./Ac. = 14467.80 c.f. = 2039 Ac.-ft.  
 Wet Storage Provided: 0.49 Ac.-ft.  
 Dry Storage Required: 8.077 Ac. x 1800 c.f./Ac. = 14467.80 c.f. = 2039 Ac.-ft.  
 Dry Storage Provided: 0.95 Ac.-ft.  $Fr_1 Q_1 = 2.06 cfs$   
 Bottom Elev.: 241.00  $Fr_2 Q_2 = 2.05 cfs$   
 Top of Embankment Elev.: 248.34  
 Weir Throat Elev.: 247.34  
 Weir Length: 32 ft.  
 Barrel Diameter: 60 inches  
 Rise Diameter: 120 inches  
 Side Slopes: 2:1  
 Limit of Wet Storage: 241.00  
 Limit of Dry Storage: 241.00

**Sediment Trap #B-2**  
 Type of Sediment Trap: **IX**  
 Pre-Development Drainage Area: 4.6 Ac.  
 Post-Development Drainage Area: 4.3 Ac.  
 Wet Storage Required: 4.6 Ac. x 1800 c.f./Ac. = 8280 c.f. = 1179 Ac.-ft.  
 Wet Storage Provided: 0.25 Ac.-ft.  $Fr_1 Q_1 = 1.02 cfs$   
 Dry Storage Required: 4.6 Ac. x 1800 c.f./Ac. = 8280 c.f. = 1179 Ac.-ft.  
 Dry Storage Provided: 2.15 Ac.-ft.  $Fr_2 Q_2 = 1.14 cfs$   
 Bottom Elev.: 242.00 ft.  
 Top of Embankment: 243.00 ft.  
 Weir Throat Elev.: 242.00 ft.  
 Weir Length: 12.0 ft.  
 Barrel Diameter: 30 inches  
 Rise Diameter: 42 inches  
 Side Slopes: 2:1  
 Limit of Wet Storage: 242.00  
 Limit of Dry Storage: 241.70

**Sediment Trap #C-1**  
 Type of Sediment Trap: **IX**  
 Pre-Development Drainage Area: 2.22 Ac.  
 Post-Development Drainage Area: 1.82 Ac.  
 Wet Storage Required: 2.22 Ac. x 1800 c.f./Ac. = 3996 c.f. = 569.4 Ac.-ft.  
 Wet Storage Provided: 0.62 Ac.-ft.  
 Dry Storage Required: 2.22 Ac. x 1800 c.f./Ac. = 3996 c.f. = 569.4 Ac.-ft.  
 Dry Storage Provided: 0.58 Ac.-ft.  
 Bottom Elev.: 232.15  
 Top of Embankment Elev.: 238.15  $Fr_1 Q_1 = 2.01 cfs$   
 Weir Throat Elev.: 238.15  $Fr_2 Q_2 = 2.01 cfs$   
 Weir Length: 40.00 ft.  
 Barrel Diameter: 24 inches  
 Rise Diameter: 24 inches  
 Side Slopes: 2:1  
 Limit of Wet Storage: 232.15  
 Limit of Dry Storage: 232.00

**Sediment Trap #C-2**  
 Type of Sediment Trap: **IX**  
 Pre-Development Drainage Area: 5.23 Ac.  
 Post-Development Drainage Area: 4.3 Ac.  
 Wet Storage Required: 5.23 Ac. x 1800 c.f./Ac. = 9414 c.f. = 1344.6 Ac.-ft.  
 Wet Storage Provided: 0.31 Ac.-ft.  
 Dry Storage Required: 5.23 Ac. x 1800 c.f./Ac. = 9414 c.f. = 1344.6 Ac.-ft.  
 Dry Storage Provided: 0.31 Ac.-ft.  
 Bottom Elev.: 242.50  
 Top of Embankment Elev.: 249.50  
 Weir Throat Elev.: 249.50  
 Weir Length: 40.00  
 Barrel Diameter: 120 inches  
 Rise Diameter: 24 inches  
 Side Slopes: 2:1  
 Limit of Wet Storage: 242.50  
 Limit of Dry Storage: 242.00  
 $Fr_1 Q_1 = 1.02 cfs$   $Fr_2 Q_2 = 0.16 cfs$

**Sediment Trap Number D-1**  
 Type of Sediment Trap: **IV**  
 Pre-Development Drainage Area: 3.25 Ac.  
 Post-Development Drainage Area: 2.72 Ac.  
 Wet Storage Required: 3.25 Ac. x 1800 c.f./Ac. = 5850 c.f. = 837.5 Ac.-ft.  
 Wet Storage Provided: 0.22 Ac.-ft.  
 Dry Storage Required: 3.25 Ac. x 1800 c.f./Ac. = 5850 c.f. = 837.5 Ac.-ft.  
 Dry Storage Provided: 0.22 Ac.-ft.  
 Bottom Elev.: 242.00  
 Top of Embankment Elevation: 242.00 ft.  
 Weir Throat Elevation: 242.00 ft.  
 Weir Length: 16 ft.  
 Barrel Diameter: 24 inches  
 Rise Diameter: 24 inches  
 Side Slopes: 2:1  
 Limit of Wet Storage: 242.00  
 Limit of Dry Storage: 242.00  
 $Fr_1 Q_1 = 1.14 cfs$   $Fr_2 Q_2 = 0.48 cfs$

**Sediment Trap Number D-2**  
 Type of Sediment Trap: **IV**  
 Pre-Development Drainage Area: 3.45 Ac.  
 Post-Development Drainage Area: 4.40 Ac.  
 Wet Storage Required: 3.45 Ac. x 1800 c.f./Ac. = 6210 c.f. = 871.5 Ac.-ft.  
 Wet Storage Provided: 0.20 Ac.-ft.  
 Dry Storage Required: 3.45 Ac. x 1800 c.f./Ac. = 6210 c.f. = 871.5 Ac.-ft.  
 Dry Storage Provided: 0.20 Ac.-ft.  
 Bottom Elevation: 242.00  
 Top of Embankment Elevation: 242.00 ft.  
 Weir Throat Elevation: 242.00 ft.  
 Weir Length: 16 ft.  
 Barrel Diameter: 24 inches  
 Rise Diameter: 24 inches  
 Side Slopes: 2:1  
 Limit of Wet Storage: 242.00  
 Limit of Dry Storage: 242.00  
 $Fr_1 Q_1 = 0.70 cfs$   $Fr_2 Q_2 = 0.24 cfs$

**Note:** Contractor shall notify the Department of Public Works, Division of Construction Inspection (410) 313-1880, 24 hours in advance of grading over the existing 30" watermain. Construction equipment with an axle load in excess of 21,000 pounds shall not be permitted to cross the existing 30" watermain except at locations indicated.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 [Signature] 11/16/01  
 Chief, Bureau of Highways  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 [Signature] 12/1/01  
 Chief, Division of Land Development  
 [Signature] 11/16/01  
 Chief, Development-Engineering Division MK

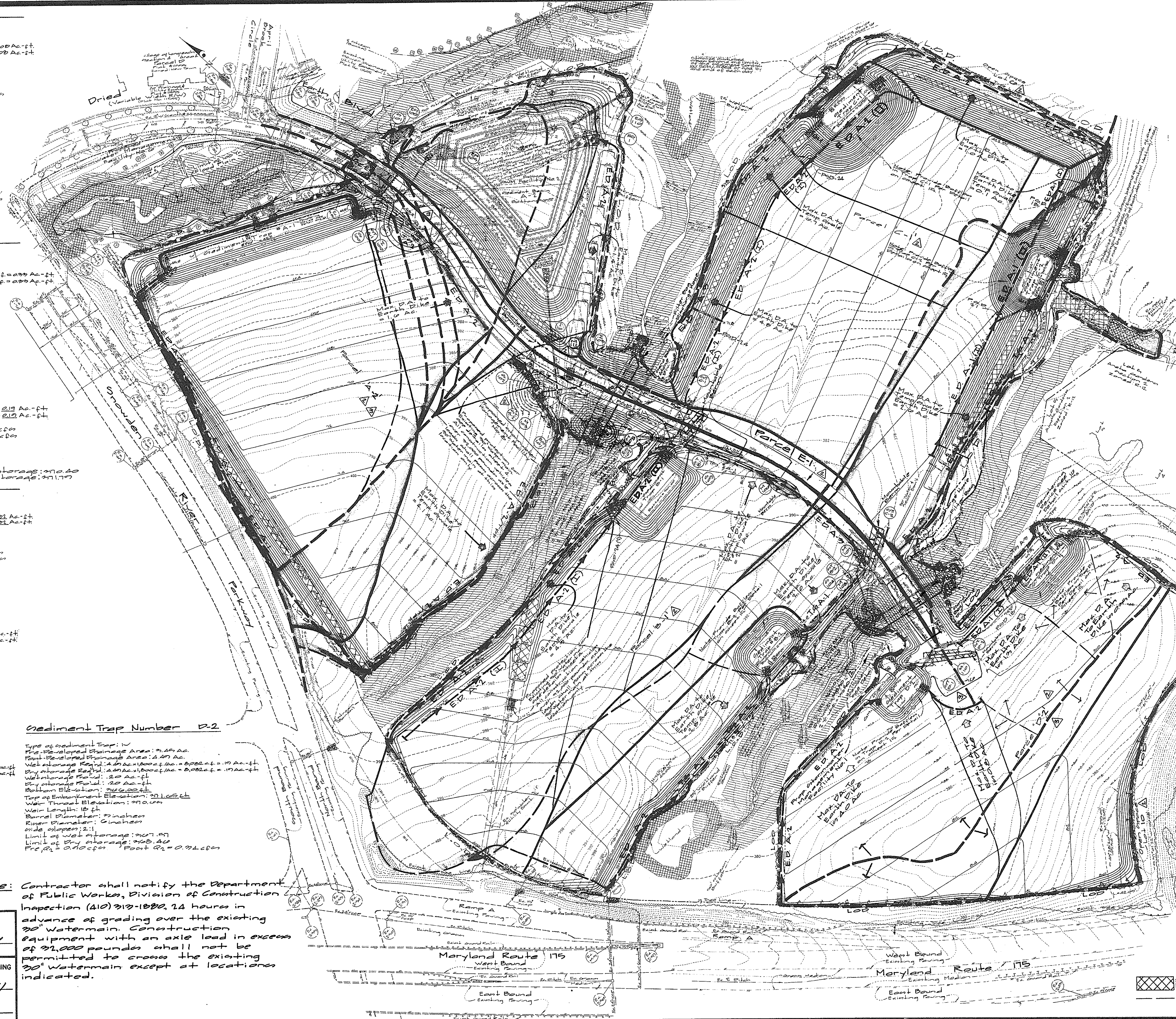
**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONTVILLE OFFICE PARK  
 BURTONTVILLE, MARYLAND 20886  
 TEL: 301-421-4024 FAX: 301-421-4186  
 DRWINGS 950031.0ESIGV1.9503SC02

DATE	REVISION	BY	APPR.
11/14/04	Rev Title Block, Parcel Labels, Relocate Cul-De-Sac A	WBJ	
11/14/04	Rev Title Block, Parcel Labels, Remove Imperv. To Parcel B & Add Tee Turn. A	WBJ	

PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 (410) 992-6089  
 ELECTION DISTRICT No. 6

COMPOSITE GRADING & SEDIMENT CONTROL PLAN  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcel A, A-2, B, C-1, C-2, E-1 & Lots 6 Thru 10  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 100'	NT	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	9 OF 31



**DEVELOPER'S/BUILDER'S CERTIFICATE**  
 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 Maryland 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] 11/16/01  
 Signature of Developer/Builder Date

**ENGINEER'S CERTIFICATE**  
 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] 11/1/01  
 Signature of Engineer Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

[Signature] 11/15/01  
 Howard Soil Conservation District Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

[Signature] 11/15/01  
 Natural Resources Conservation Service Date

[Signature] 11/15/01  
 Professional Engineer Seal

**Note:** All exit fence and super exit fence ends are to be curled uphill by 2' in elevation.

**Legend**

- EDA/TPE Earth Dike w/Tree Protection Fence on Undisturbed Side of
- TPE Tree Protection Fence
- L.O.D. Limit of Disturbance
- Stabilized Construction Entrance
- Existing Contour
- Proposed Contour
- Existing Drainage Divide
- Proposed Drainage Divide
- Exit Fence
- Super Exit Fence
- EDA-1 Earth Dike
- TS-A-1 Temporary Swale
- ERM Erosion Control Matting (ERM)
- Intermediate Grading
- G.M. Gabion Mattresses

**Sediment Trap #A-1**

Type of Sediment Trap: **IX**  
 Pre-developed Drainage Area: **0.23 Ac.**  
 Post-developed Drainage Area: **0.23 Ac.**  
 Wet Storage Required: **0.23 Ac. x 1800 c.f./Ac. = 414 c.f. = 0.400 Ac.-ft.**  
 Dry Storage Required: **0.23 Ac. x 1800 c.f./Ac. = 414 c.f. = 0.400 Ac.-ft.**  
 Wet Storage Provided: **0.5 Ac.-ft.**  
 Dry Storage Provided: **0.5 Ac.-ft.**  
 Bottom Elev.: **245.00**  
 Top of Embankment Elev.: **251.51**  
 Weir Throat Elev.: **250.51**  
 Weir Length: **400 ft.**  
 Barrel Diameter: **0.2 inches**  
 Riser Diameter: **0.2 inches**  
 Side Slopes: **2:1**  
 Limit of Wet Storage: **247.51**  
 Limit of Dry Storage: **242.65**

Stabilize Disturbed Areas Beyond The Limits of The Control Matting/Guard or Wall By The End of Each Day.

Proposed protection for Existing 30" Water main. See details sheet 4. All construction vehicles over 72,000 pounds axle loads shall pass across the 30" water main at this location only.

**DEVELOPER'S/BUILDER'S CERTIFICATE**

"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 Maryland 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.

*Paul A. Duke* 11/10/01  
 Signature of Developer/Builder Date

**ENGINEER'S CERTIFICATE**

"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."

*Michael J. Tripp* 3-6-01  
 Engineer's Signature Date

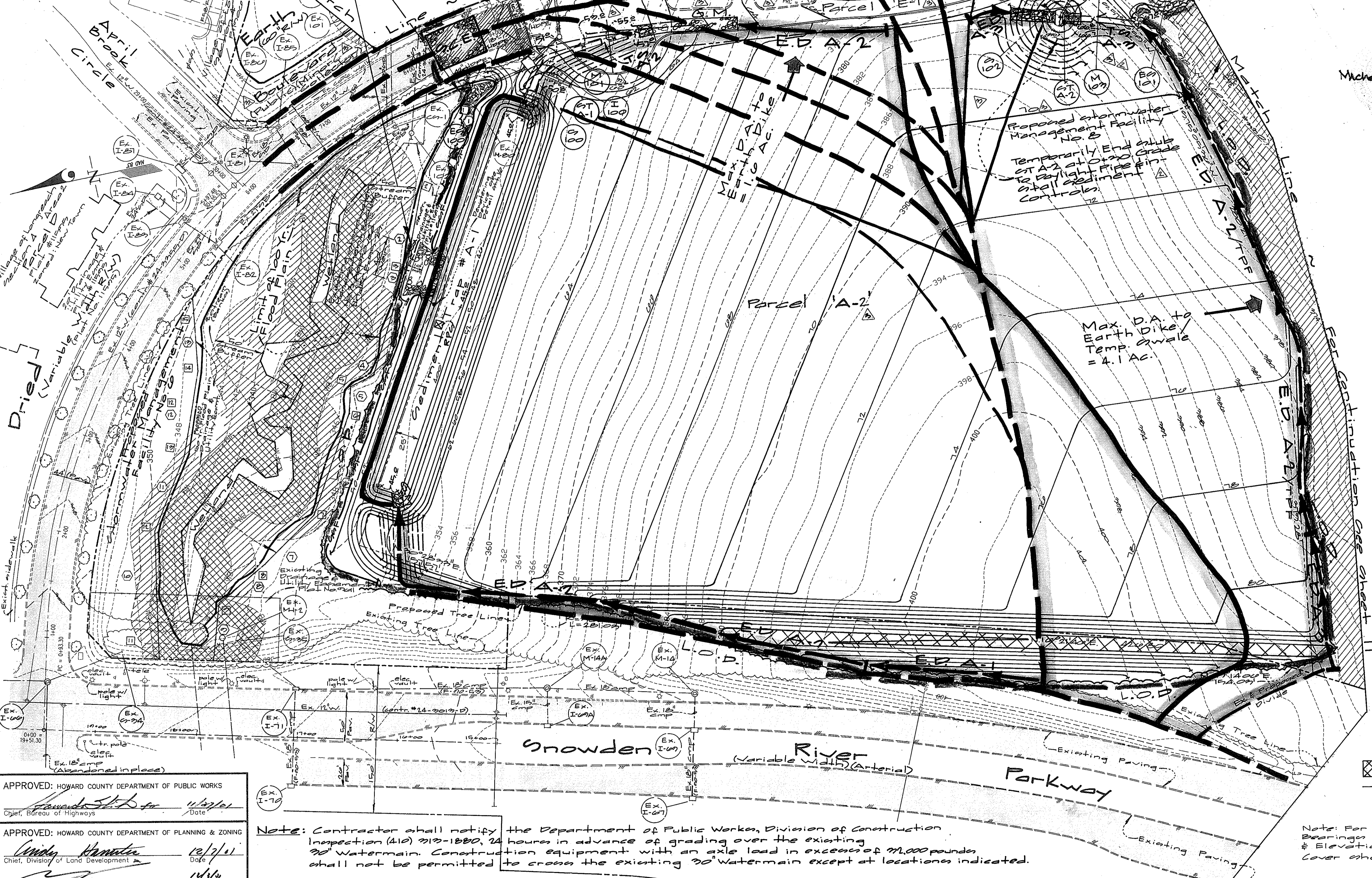
These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

*Jeffrey A. ...* 11/15/01  
 Howard Soil Conservation District Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

*Jim ...* 11/15/01  
 Natural Resources Conservation Service Date

**Note:** All Silt Fence And Super Silt Fence Are To Be Curled Uphill By 2' in Elevation.



**Legend**

	Earth Dike w/ Tree Protection Fence on Disturbed side of
	Tree Protection Fence
	Limit of Disturbance
	Stabilized Construction Entrance
	Existing Contour
	Proposed Contour
	Existing Drainage Divide
	Proposed Drainage Divide
	Silt Fence
	Super Silt Fence
	Earth Dike
	Temporary Swale
	Gabion Mattress

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard ...* 11/27/01  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Andy ...* 12/7/01  
 Chief, Division of Land Development Date

**Note:** Contractor shall notify the Department of Public Works, Division of Construction Inspection (410) 213-1880, 24 hours in advance of grading over the existing 30" watermain. Construction equipment with an axle load in excess of 72,000 pounds shall not be permitted to cross the existing 30" watermain except at locations indicated.

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONTOWN, MARYLAND 20866  
 TEL: 301-421-4024 FAX: 301-421-4188

NO.	DATE	REVISION	BY	APP'R.
11141024	Rev. Title Block, Parcel ID's, Move Cul-De-Sac & Grading		WJ	
11141024	Rev. Title Block, Parcel ID's, Add Cul-De-Sac & Modify Sediment Controls		WJ	

PREPARED FOR:  
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 PHONE: 410-992-6089

Sediment Control Plan ~ Parcel A & GWM Facility G  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcels A-2, B-1, C-1, D-1, E-1 & Lots G Thru I  
 ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	99101
DATE	TAX MAP - GRID	SHEET
November, 2001	TM 37 GR 13 & 19	10 OF 31

Note: Contractor shall notify the Department of Public Works, Division of Construction Inspection (410) 512-1800, 24 hours in advance of grading over the existing 30" watermain. Construction equipment with an axle load in excess of 21,000 pounds shall not be permitted to cross the existing 30" watermain except at locations indicated.

**Sediment Trap # B-1**  
 Type of Sediment Trap: IV  
 Pre-Developed Drainage Area: 2,097 Ac.  
 Post-Developed Drainage Area: 7.12 Ac.  
 Wet Storage Required:  $2,097 \text{ Ac.} \times 1800 \text{ cf./Ac.} = 3,774,600 \text{ cf.} = 859 \text{ Ac.-ft.}$   
 Dry Storage Required:  $2,097 \text{ Ac.} \times 1800 \text{ cf./Ac.} = 3,774,600 \text{ cf.} = 859 \text{ Ac.-ft.}$   
 Wet Storage Provided: 0.42 Ac.-ft.  
 Dry Storage Provided: 0.95 Ac.-ft.  
 Bottom Elev.: 261.00  
 Top of Embankment Elev.: 262.04  
 Weir Throat Elev.: 261.94  
 Weir Length: 32 ft.  
 Barrel Diameter: 8.0 inches  
 River Diameter: 10.0 inches  
 Side Slopes: 2:1  
 Limit of Wet Storage: 262.04  
 Limit of Dry Storage: 262.00

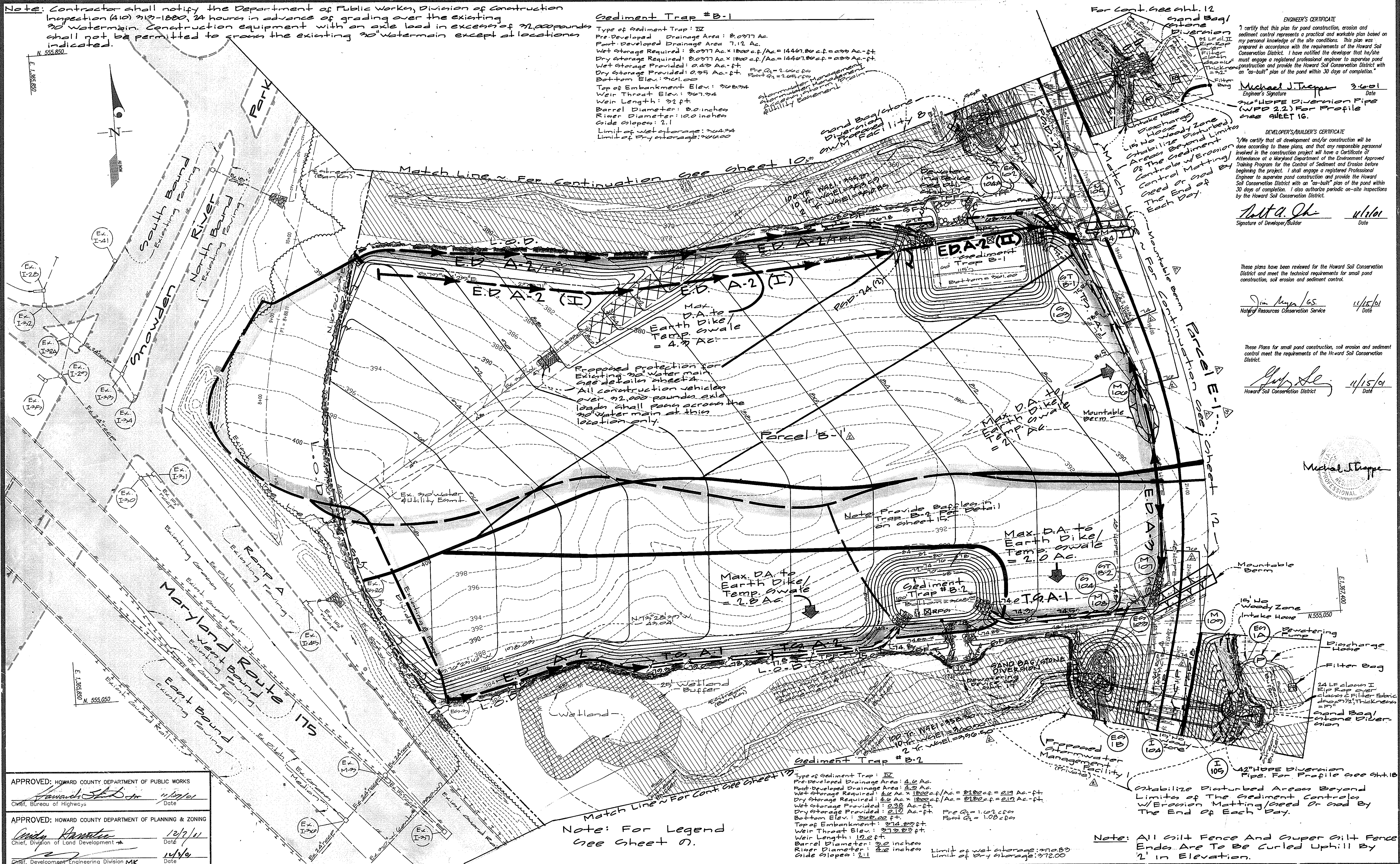
Stormwater Management  
 Stormwater Management  
 Facility Enhancement

ENGINEER'S CERTIFICATE  
 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.  
 Michael J. Treppa 3/6/01  
 Engineer's Signature Date  
 24" HOPE Diversion Pipe (WFD 2.2) For Profile see sheet 10.

DEVELOPER'S/BUILDER'S CERTIFICATE  
 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 Maryland 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.  
 Matt A. Jh 4/15/01  
 Signature of Developer/Builder Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.  
 Jim Myers /CS 4/15/01  
 Natural Resources Conservation Service Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.  
 Guy Se 4/15/01  
 Howard Soil Conservation District Date



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Approved Signature 4/15/01  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Approved Signature 4/15/01  
 Chief, Division of Land Development Date

Approved Signature 4/15/01  
 Chief, Development Engineering Division MK Date

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BALT: 410-550-1820 DC/VA: 301-993-2524 FAX: 301-421-4186

DATE: 4/15/01  
 REVISION: 1  
 BY: MK  
 APPR: MK

NO.	DATE	REVISION	BY	APPR.
1	4/15/01	Rev Title Block, Rev Parcel E ID	MJ	MJ
2	4/15/01	Rev Title Block, Remove Improvements From Parcel E, Add 'as-built' Turn	MJ	MJ
3	4/15/01	Rev Pipe sizes	MJ	MJ

PREPARED FOR:  
 The Howard Research & Development Corporation  
 10215 Little Patuxent Pkwy.  
 Columbia, Maryland 21044  
 Attn: Bob Jenkins  
 Phone: 410-682-0000

**Sediment Control Plan - Parcel B & W M Facilities 1 & B**

**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcels 'A-2', 'B-1', 'C-1', 'D-2', 'E-1' & Lots C Thru 10

ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

SCALE 1"=50'	ZONING NT	G. L. W. FILE NO. 99101
DATE November, 2001	TAX MAP - GRID TM 37 GR 13 & 19	SHEET 11 OF 21

**DEVELOPER'S/BUILDER'S CERTIFICATE**

"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 Maryland 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.

*Robert G. Juk*  
Signature of Developer/Builder

11/2/01  
Date

**ENGINEER'S CERTIFICATE**

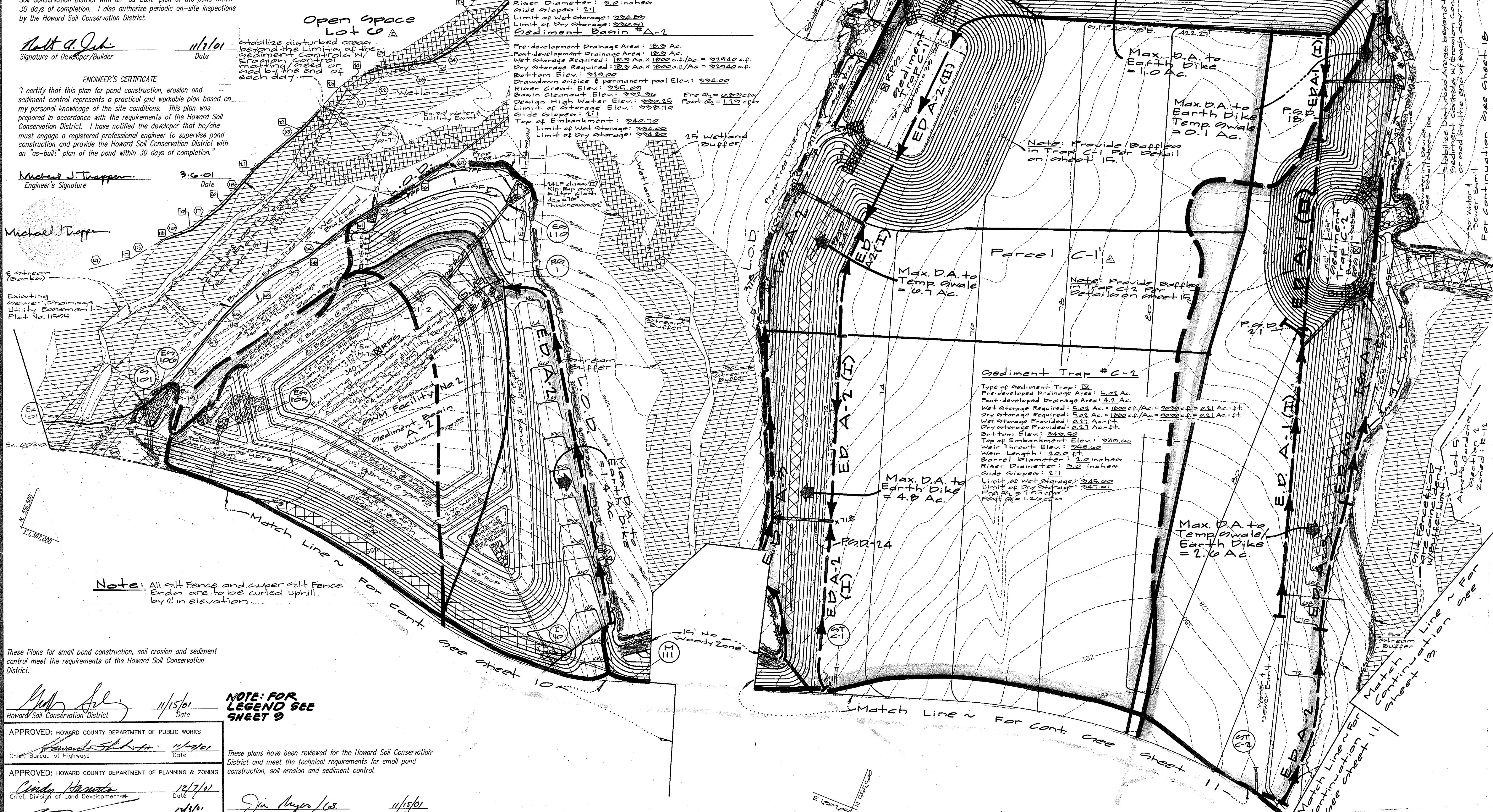
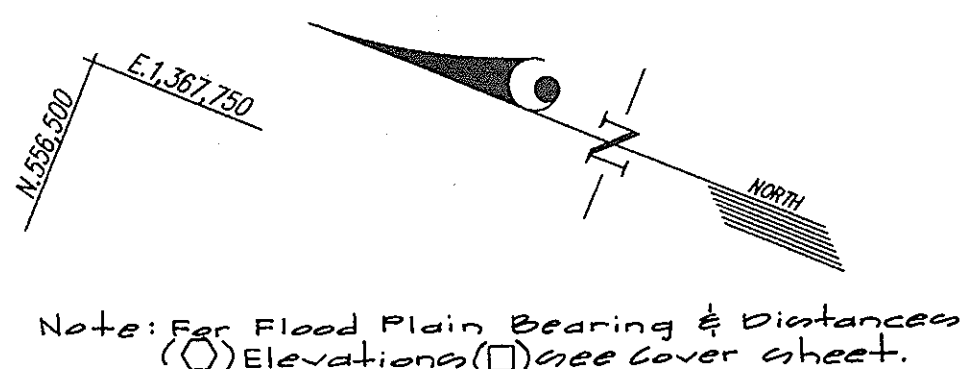
"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer 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."

*Michael J. Trapper*  
Engineer's Signature

3.6.01  
Date

*Michael J. Trapper*

Existing Power Lines  
Utility Easement  
Plot No. 115905



**Sediment Trap #C-1**  
Type of Sediment Trap: IX  
Pre-developed Drainage Area: 2.22 Ac.  
Post-developed Drainage Area: 12.2 Ac.  
Wet Storage Required: 12.2 Ac. x 1800 c.f./Ac. = 21960 c.f. = 24192 Ac.-ft.  
Wet Storage Provided: 2.22 Ac.-ft.  
Dry Storage Required: 12.2 Ac. x 1800 c.f./Ac. = 21960 c.f. = 24192 Ac.-ft.  
Dry Storage Provided: 2.22 Ac.-ft.  
Bottom Elev.: 221.52  
Top of Embankment Elev.: 225.02  
Weir Throat Elev.: 227.82  
Weir Length: 20.0 ft.  
Barrel Diameter: 2.0 inches  
Riser Diameter: 2.0 inches  
Side Slopes: 2:1  
Limit of Wet Storage: 224.02  
Limit of Dry Storage: 225.52  
Sediment Basin #A-2

Pre-development Drainage Area: 12.2 Ac.  
Post-development Drainage Area: 12.2 Ac.  
Wet Storage Required: 12.2 Ac. x 1800 c.f./Ac. = 21960 c.f.  
Wet Storage Provided: 12.2 Ac.-ft.  
Bottom Elev.: 224.02  
Drawdown orifice & permanent pool Elev.: 224.02  
Riser Crest Elev.: 225.02  
Barrel Diameter: 2.0 inches  
Design High Water Elev.: 224.25  
Limit of Storage Elev.: 222.72  
Side Slopes: 2:1  
Top of Embankment: 242.72  
Limit of Wet Storage: 224.02  
Limit of Dry Storage: 224.02

**Sediment Trap #C-2**  
Type of Sediment Trap: IX  
Pre-developed Drainage Area: 5.21 Ac.  
Post-developed Drainage Area: 4.2 Ac.  
Wet Storage Required: 5.21 Ac. x 1800 c.f./Ac. = 9378 c.f. = 21 Ac.-ft.  
Wet Storage Provided: 5.21 Ac.-ft.  
Dry Storage Required: 5.21 Ac. x 1800 c.f./Ac. = 9378 c.f. = 21 Ac.-ft.  
Dry Storage Provided: 5.21 Ac.-ft.  
Bottom Elev.: 242.02  
Top of Embankment Elev.: 244.02  
Weir Throat Elev.: 248.02  
Weir Length: 20.0 ft.  
Barrel Diameter: 2.0 inches  
Riser Diameter: 2.0 inches  
Side Slopes: 2:1  
Limit of Wet Storage: 245.02  
Limit of Dry Storage: 247.02  
Pre-Dev. Footprint: 1.22 Ac.

**Note:** All silt fence and silt fence ends are to be curled uphill by 2' in elevation.

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

*Howard Soil Conservation District*  
11/15/01  
Date

**NOTE: FOR LEGEND SEE SHEET 9**

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard Soil Conservation District*  
Chief, Bureau of Highways  
Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamata*  
Chief, Division of Land Development  
Date

*Jim Meyer/CS*  
Natural Resources Conservation Service  
11/15/01  
Date

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
BURTONSVILLE, MARYLAND 20866  
TEL: 301-421-1024 BALT: 410-980-1820 DC/VA: 301-389-2524 FAX: 301-421-4186

NO.	DATE	REVISION	BY	APP'R.
210404	10/29/02	Rev Title Block	WJL	
1114104	10/29/02	Rev Parcel Easement & Title Block	WJL	
10/29/02		Rev Worksheet	WJL	

PREPARED FOR:  
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
10275 LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
PHONE: 410-992-6000

Sediment Control Plan ~ Parcel C-1 & GWM Facility 2  
**SNOWDEN RIVER BUSINESS PARK**  
SECTION 1 AREA 1  
Parcels A-2, B-1, C-1, D-1, E-1 & Lots 10 thru 10

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT.	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	12 OF 21

Note: All Silt Fence And Copper Silt Fence Ends Are To Be Curled Uphill 2' in Elevation.

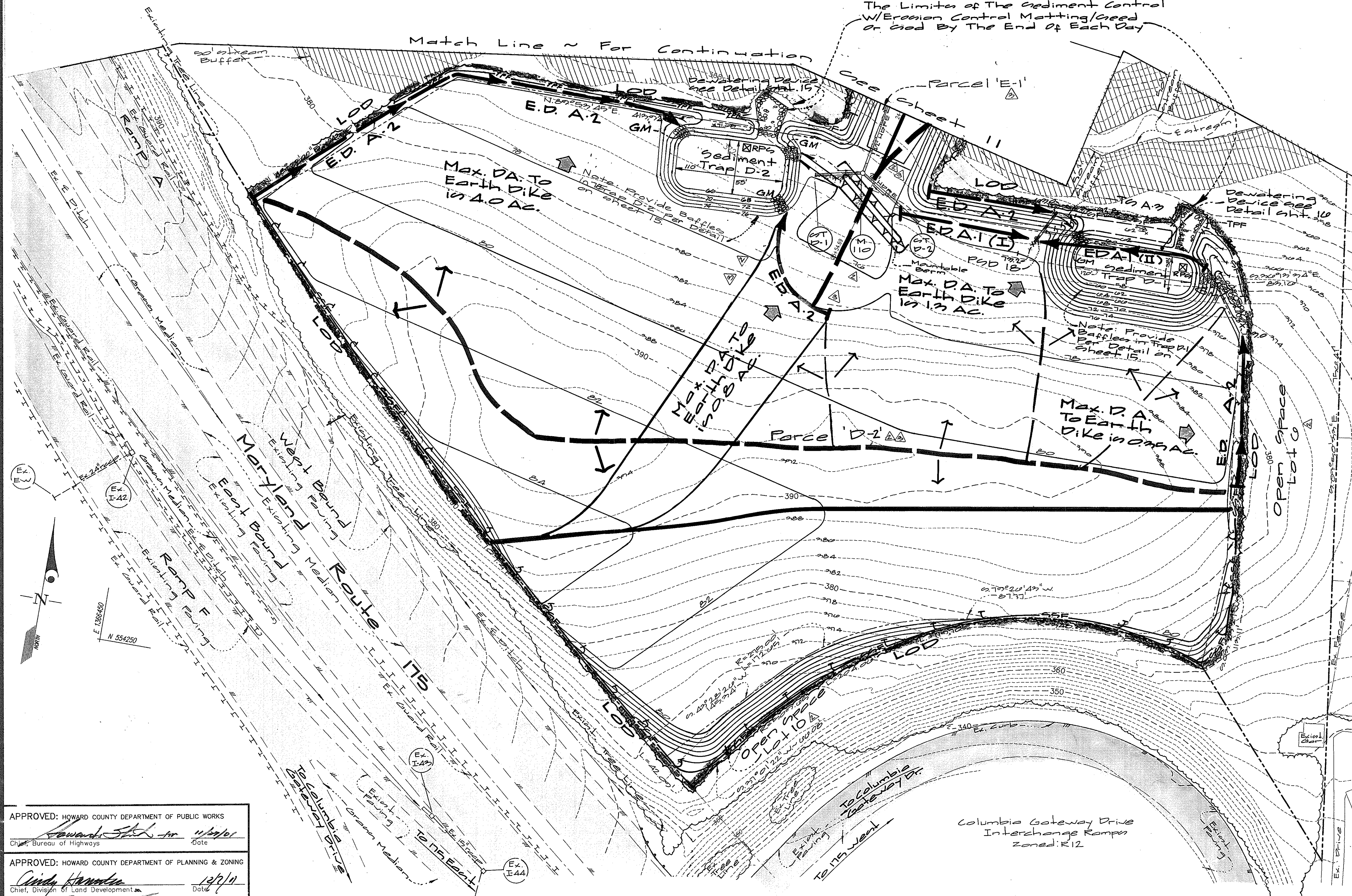
Stabilize Disturbed Areas Beyond The Limits of The Sediment Control W/Erosion Control Matting/Grass or Sod By The End of Each Day

Sediment Trap Number D-1

Type of Sediment Trap:  Pre-Developed Drainage Area: 2.25 Ac.  
 Post-Developed Drainage Area: 2.72 Ac.  
 Wet Storage Req'd: 2.72 Ac. x 18000 cf./Ac. = 49056 cf. = 15 ac.-ft.  
 Dry Storage Req'd: 2.72 Ac. x 18000 cf./Ac. = 49056 cf. = 15 ac.-ft.  
 Wet Storage Prod.: 2.8 Ac.-ft.  
 Dry Storage Prod.: 2.8 Ac.-ft.  
 Bottom Elevation: 282.00 ft.  
 Top Embankment Elevation: 282.58 ft.  
 Weir Threat Elevation: 282.58 ft.  
 Weir Length: 16 ft.  
 Barrel Diameter: 48 inches  
 Riser Diameter: 48 inches  
 Side Slopes: 2:1  
 Limit of Wet Storage: 282.20  
 Limit of Dry Storage: 281.00  
 Foot C<sub>1</sub> = 1.24 cfs Foot C<sub>2</sub> = 2.48 cfs

Sediment Trap Number D-2

Type of Sediment Trap:  Pre-Developed Drainage Area: 2.45 Ac.  
 Post-Developed Drainage Area: 2.47 Ac.  
 Wet Storage Req'd: 2.47 Ac. x 18000 cf./Ac. = 44466 cf. = 13 ac.-ft.  
 Dry Storage Req'd: 2.47 Ac. x 18000 cf./Ac. = 44466 cf. = 13 ac.-ft.  
 Wet Storage Prod.: 2.0 Ac.-ft.  
 Dry Storage Prod.: 2.0 Ac.-ft.  
 Bottom Elevation: 282.00 ft.  
 Top of Embankment Elevation: 281.57 ft.  
 Weir Threat Elevation: 281.57 ft.  
 Weir Length: 18 ft.  
 Barrel Diameter: 48 inches  
 Riser Diameter: 48 inches  
 Side Slopes: 2:1  
 Limit of Wet Storage: 281.50  
 Limit of Dry Storage: 280.34  
 Foot C<sub>1</sub> = 0.80 cfs Foot C<sub>2</sub> = 0.80 cfs



Michael J. Trappe

ENGINEER'S CERTIFICATE  
 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.

Michael J. Trappe 3/6/01  
 Engineer's Signature Date

DEVELOPER'S/BUILDER'S CERTIFICATE  
 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 Maryland 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/Builder 11/15/01  
 Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Jeri Myrland 11/15/01  
 Natural Resources Conservation Service Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.  
 [Signature] 11/15/01  
 Howard Soil Conservation District Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 [Signature] 11/15/01  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 [Signature] 12/1/01  
 Chief, Division of Land Development Date

[Signature] 12/1/01  
 Chief, Development Engineering Division MK Date

NOTE: FOR LEGEND SEE SHEET 9

<b>GLW GUTSCHICK LITTLE &amp; WEBER, P.A.</b> CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK BURTONSVILLE, MARYLAND 20866 TEL: 301-421-4024 BALT: 410-880-1020 DC/VA: 301-989-2524 FAX: 301-421-4186	PREPARED FOR: THE HOWARD RESEARCH & DEVELOPMENT CORPORATION 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 ATTN: BOB JENKINS PHONE: 410-992-6089	Sediment Control Plan - Parcel D <b>SNOWDEN RIVER BUSINESS PARK</b> SECTION 1 AREA 1 Parcel A2, B-1, C-1, D2, E-1 & Lots C thru 10	SCALE 1" = 50'	ZONING NT	G. L. W. FILE No. 99101
	01/14/04 Rev. Parcel D Limits of Parcel D & E-1, Title Block 11/14/04 Rev. Title Block, Remove Improvements To Parcel E	DATE REVISION BY APPR.	ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND	DATE November, 2001	TAX MAP - GRID TM 37 GR 13 & 19

STANDARD AND SPECIFICATIONS FOR TOPSOIL DEFINITION

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

PURPOSE

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

CONDITIONS WHERE PRACTICE APPLIES

- This practice is limited to areas having 2:1 or flatter slopes where:
  - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
  - The original soil to be vegetated contains material toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.

- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the respective soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
  - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by a agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
  - Topsoil must be free of plant parts such as bermuda grass, quackgrass, johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
  - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

- For sites having disturbed areas under 5 acres:

- Place topsoil (if required) and apply soil amendments as recommended by a agronomist or soil scientist and approved by the appropriate approval authority, in accordance with Section 1 - Vegetative Stabilization Methods and Materials.

- For sites having disturbed areas over 5 acres:

- On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
  - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
  - Organic content of topsoil shall be not less than 1.5 percent by weight.
  - Topsoil having soluble salt greater than 500 parts per mill shall not be used.
  - No sod or seed shall be placed on soil which has been with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of photo-toxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

- Place topsoil (if required) and apply soil amendments as specified in 2.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

V. Topsoil Application

- When topsoiling, maintain needed erosion and sediment control practices such as diversion, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water.
- Topsoil shall not be placed while the topsoil or subsoil is frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

- Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

- Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
  - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
  - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
  - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
  - Composted sludge shall be amended with a potassium fertilizer applied at a rate of 4lb/1,000 square feet, and 1/3 the normal lime application rate.

- References: Guideline Specifications, Soil Preparation and Sodding, MD-VA Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

ENGINEER'S CERTIFICATE

"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."

Michael J. Troppe 11/7/01 Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"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 Maryland 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."

Paul A. Ok 11/7/01 Date  
Signature of Developer/Builder

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District 11/5/01 Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways 11/6/01 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

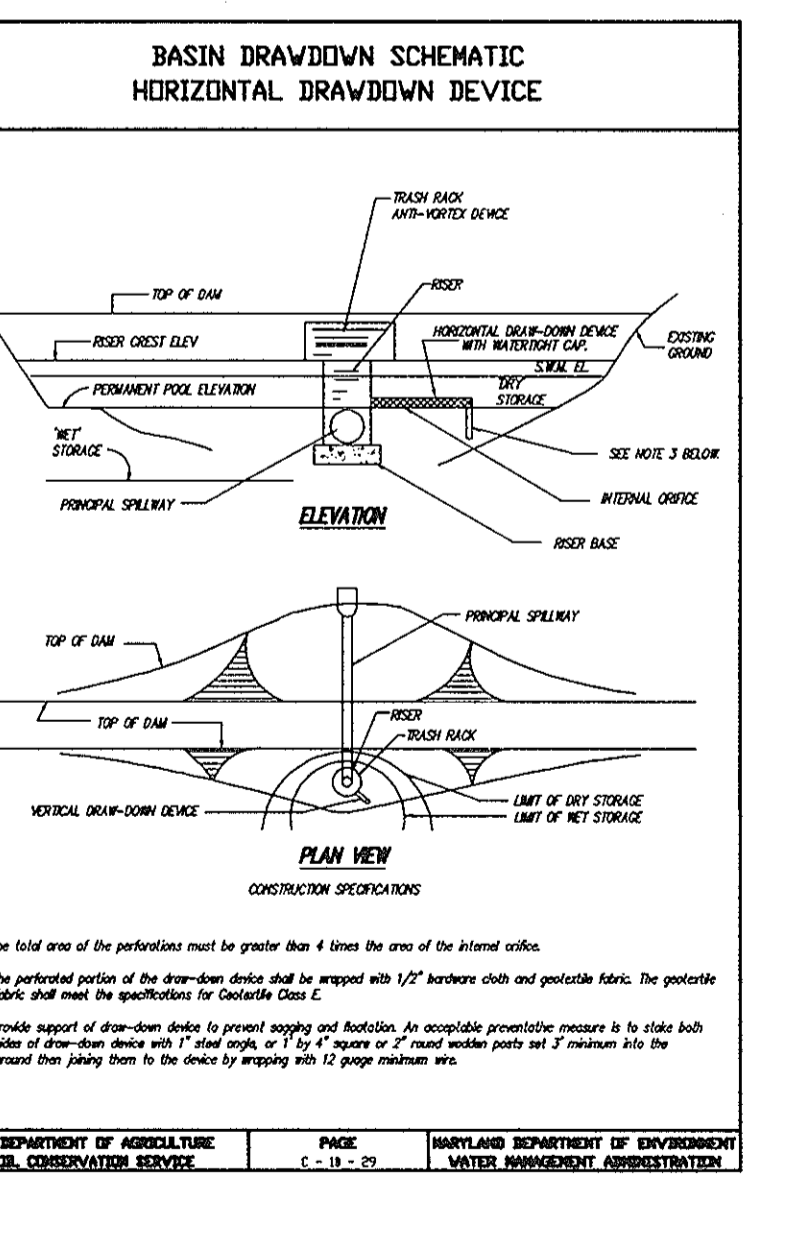
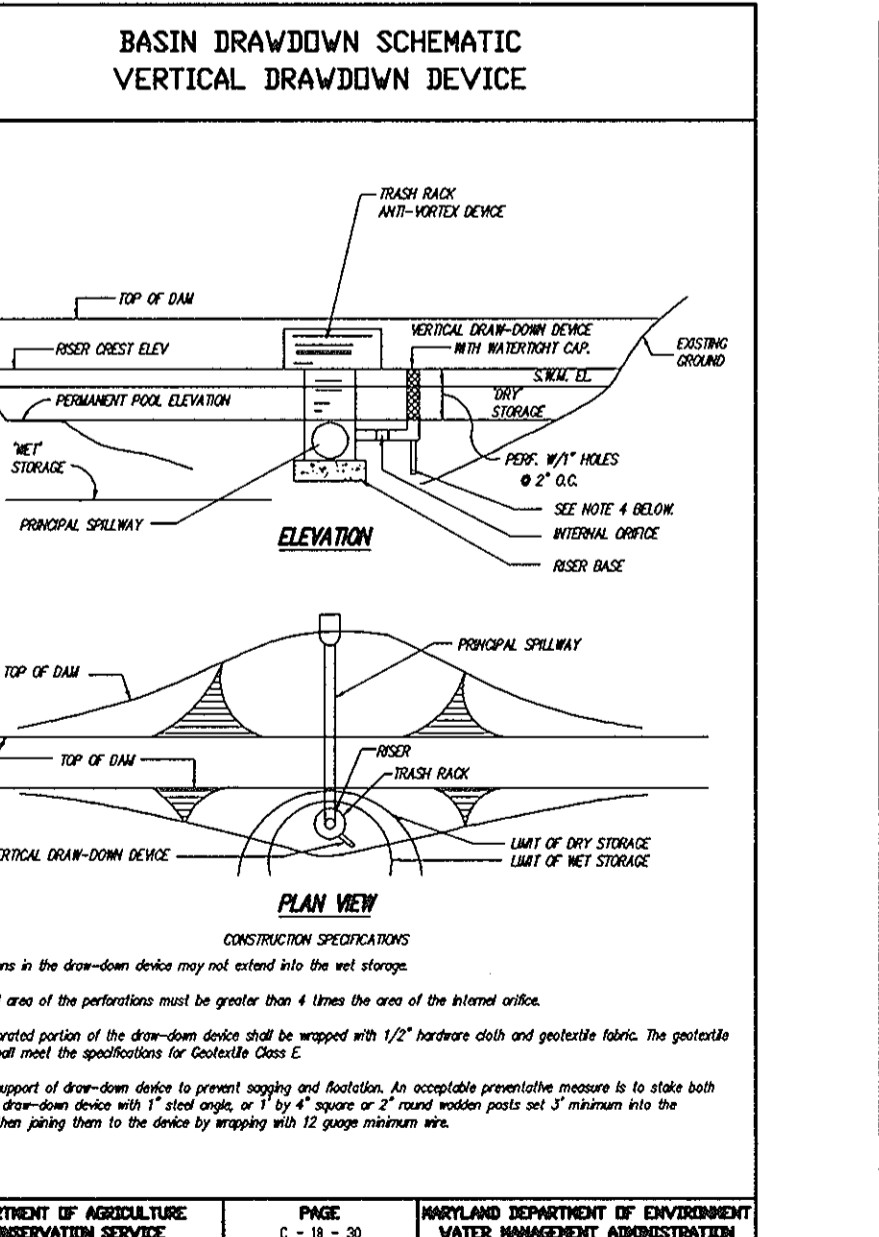
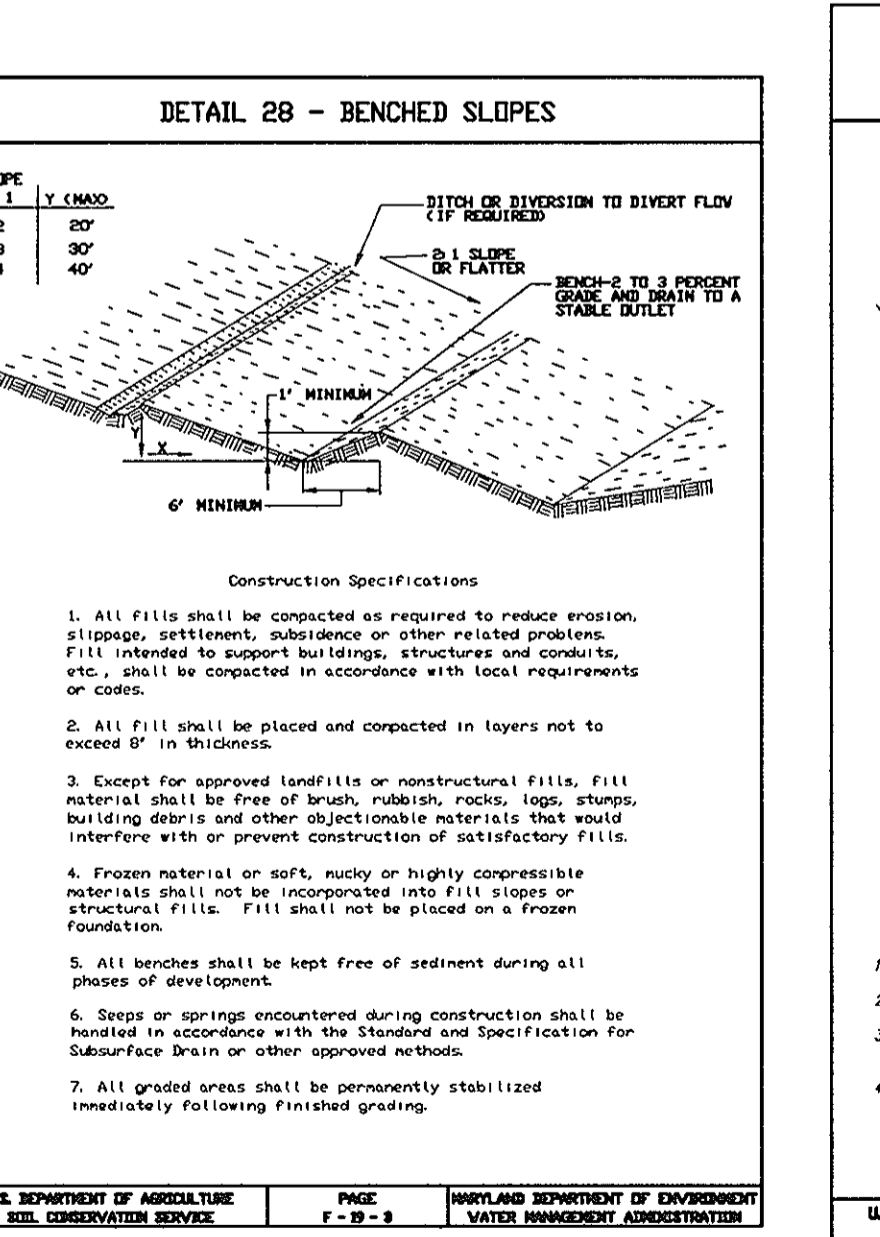
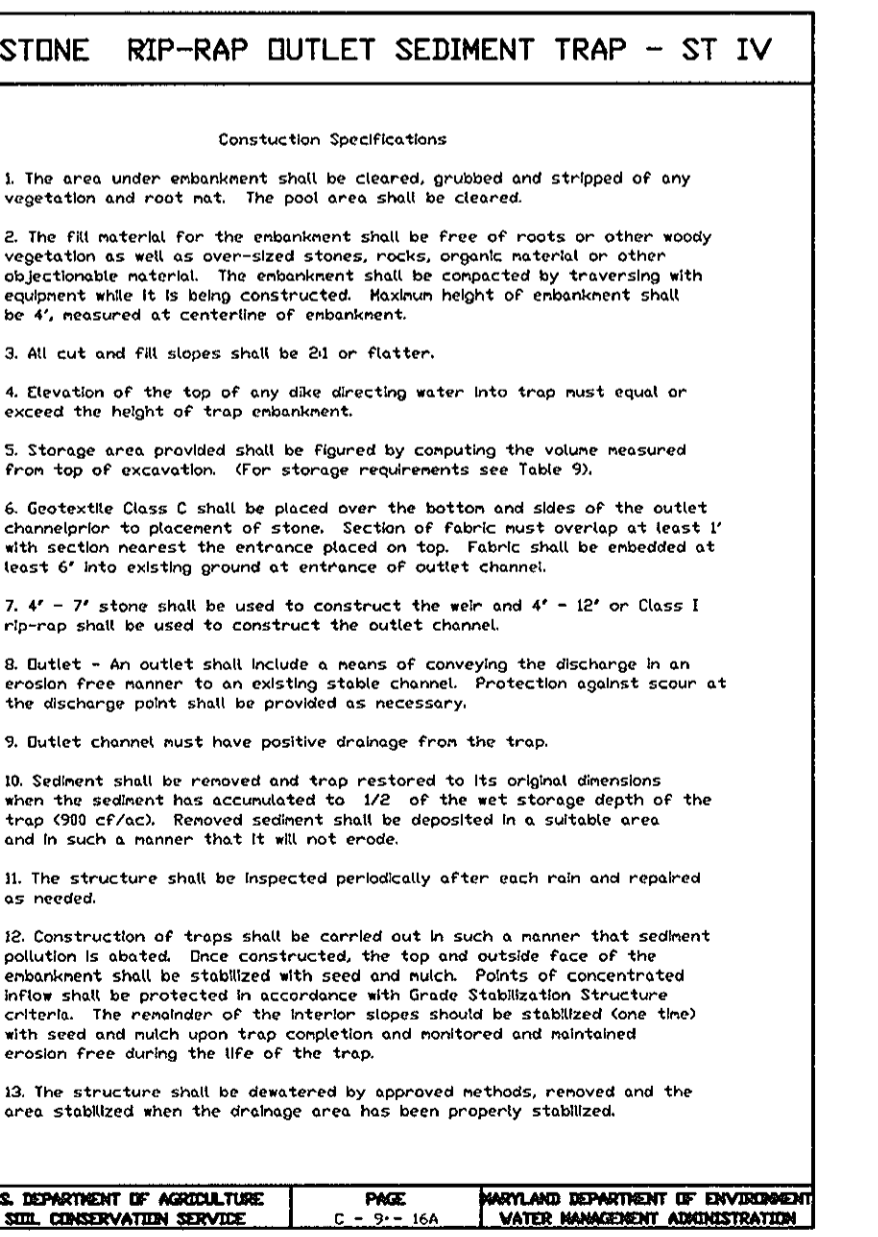
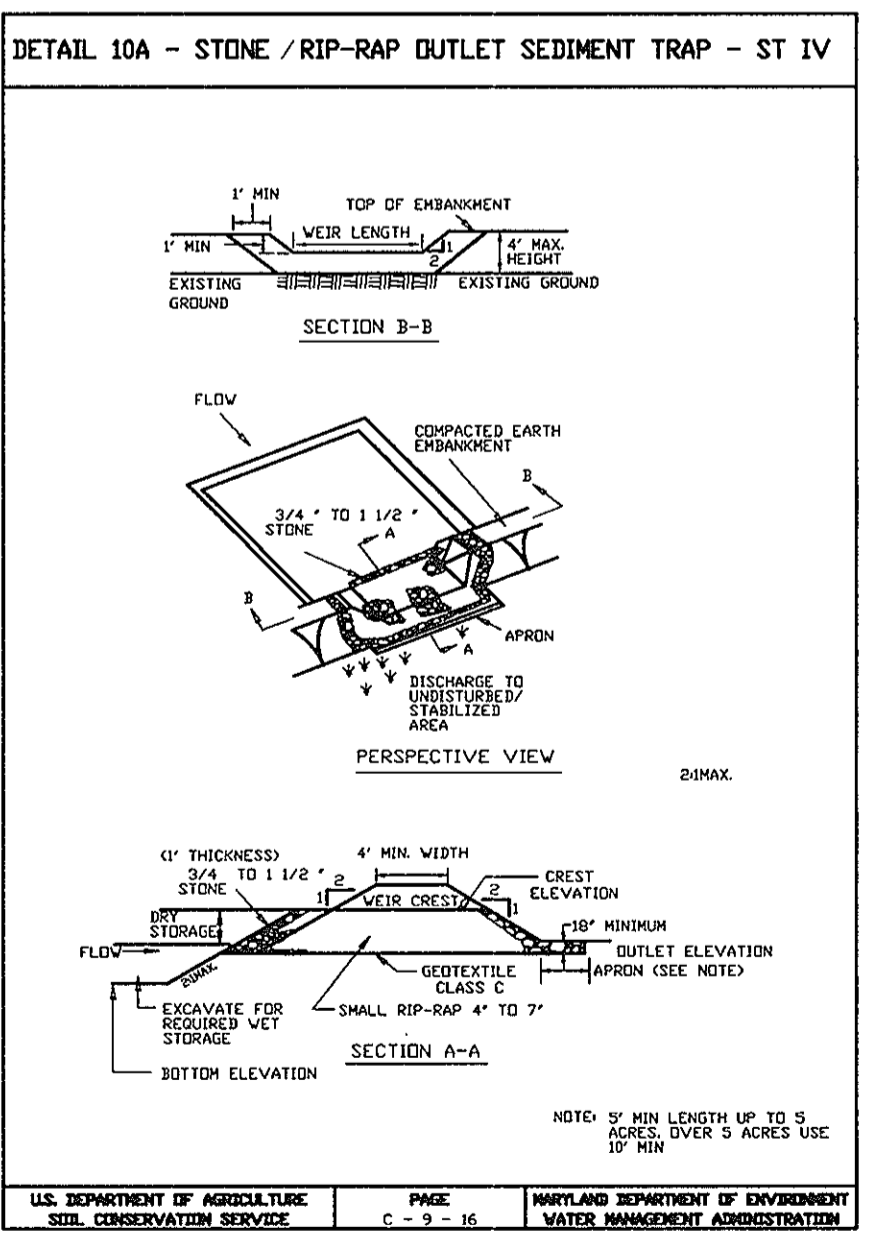
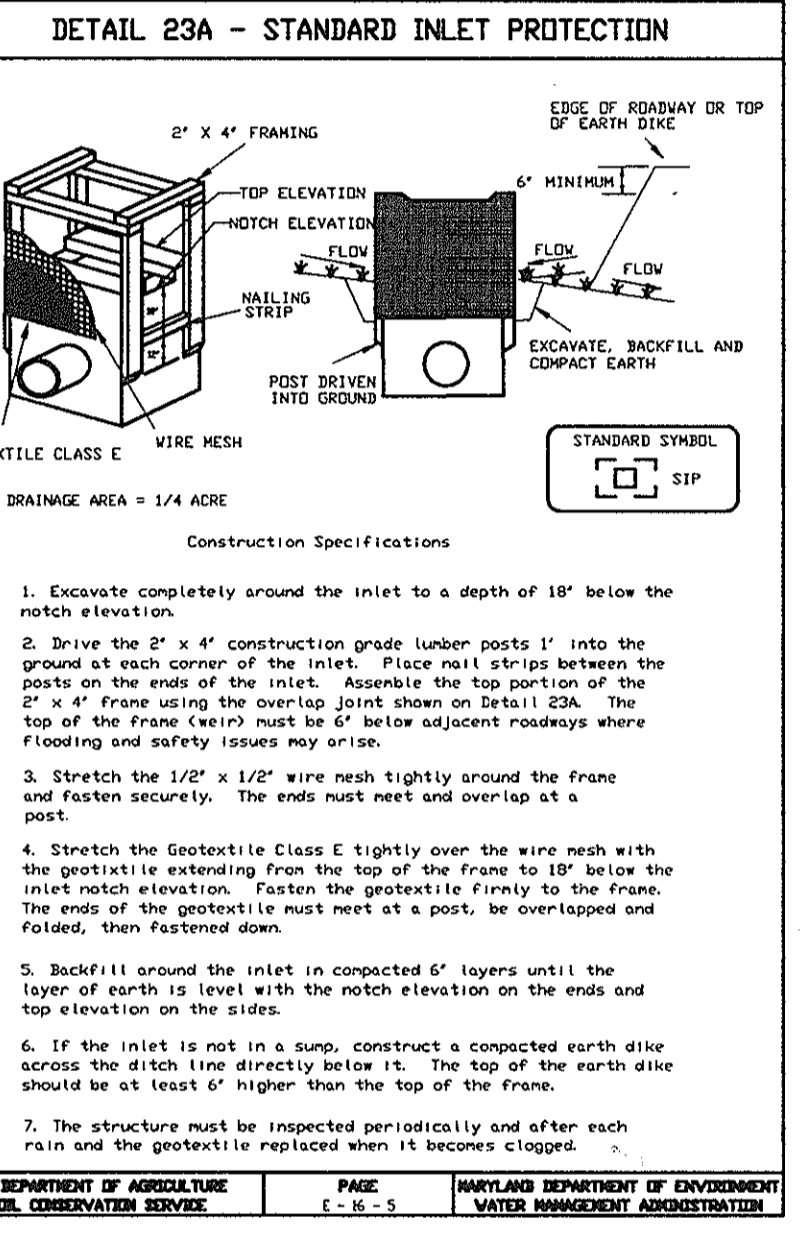
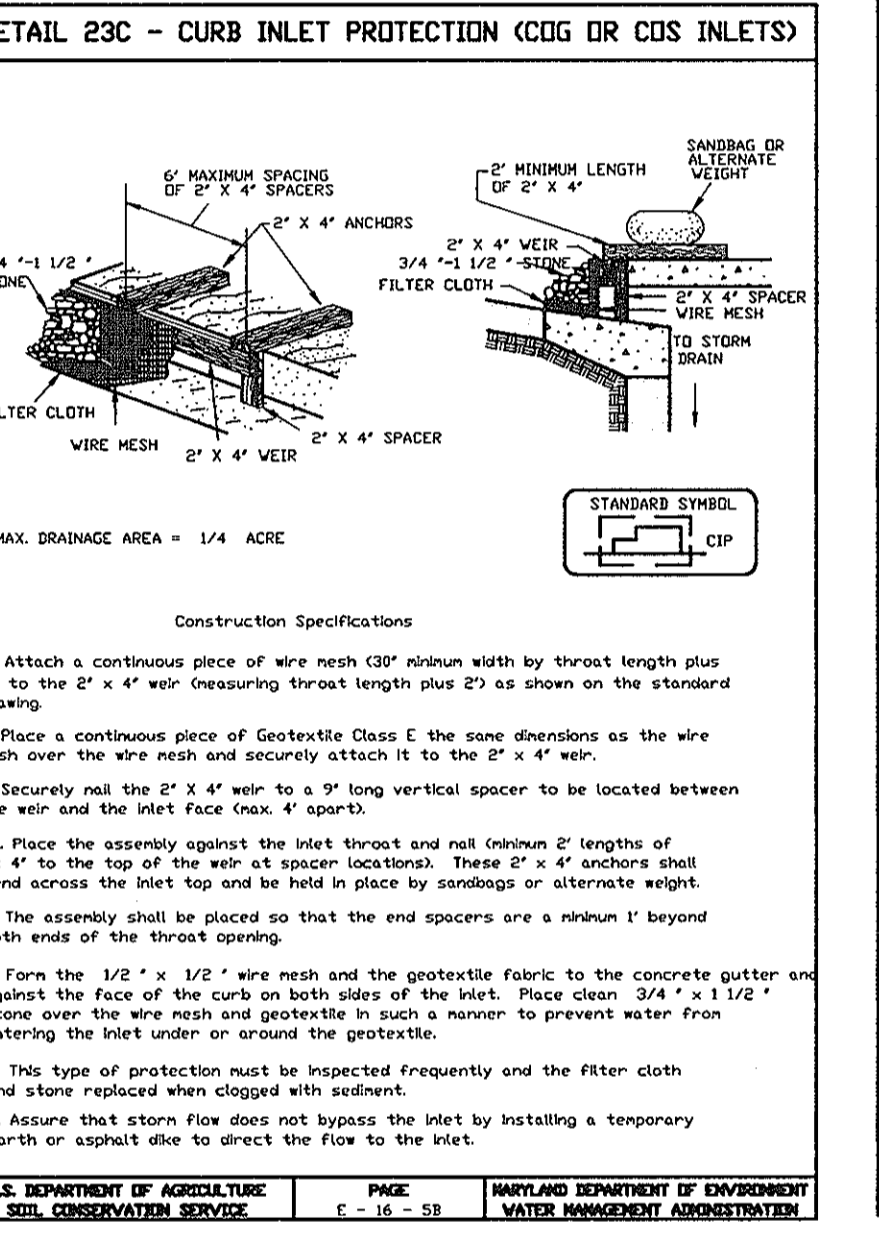
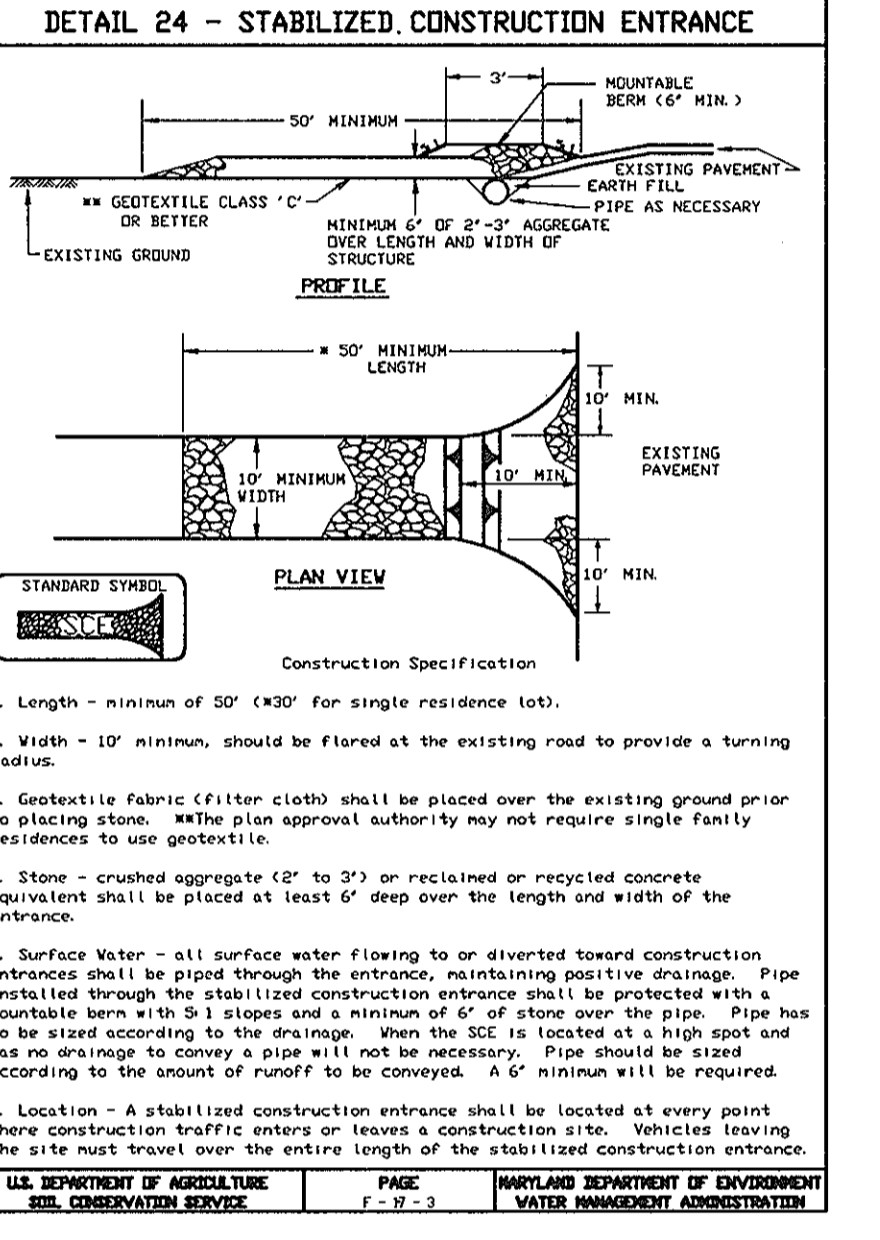
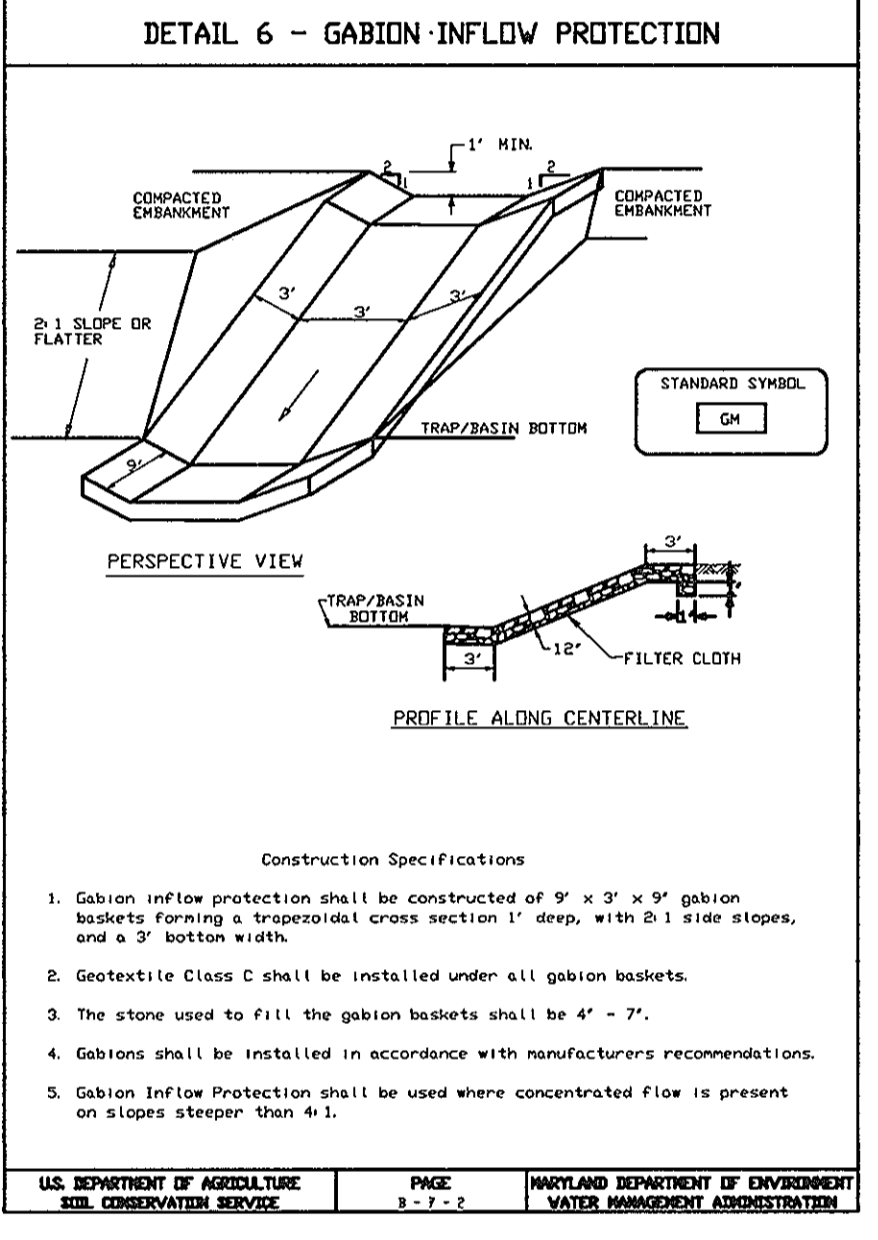
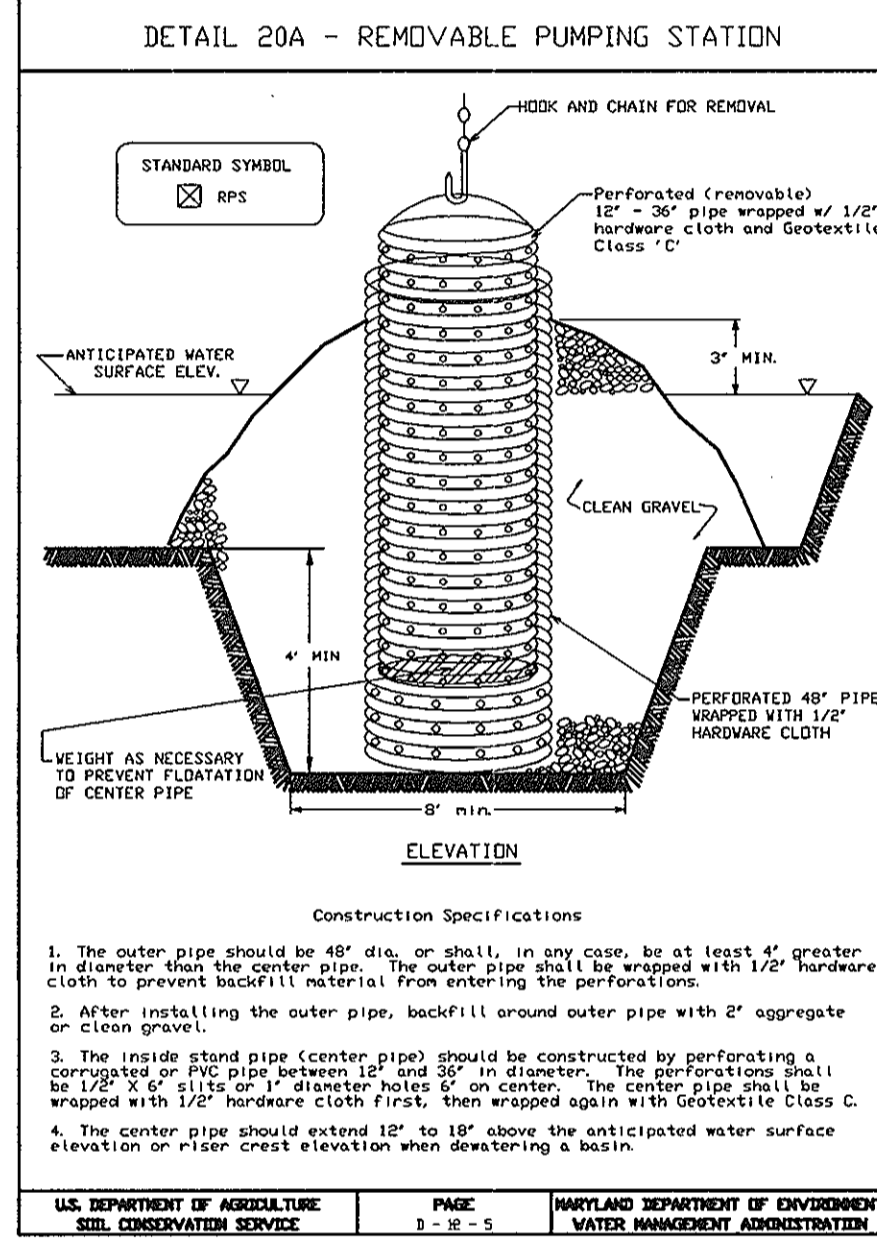
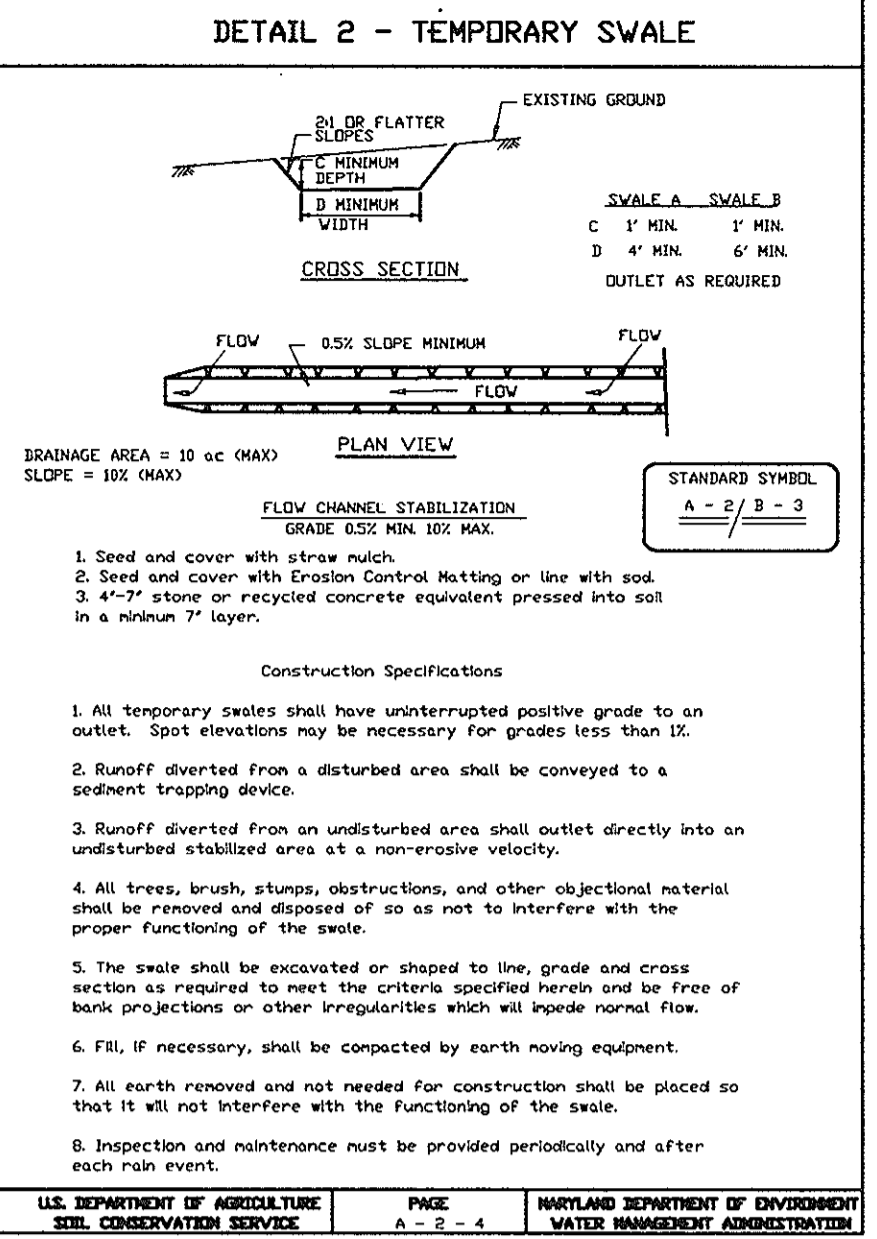
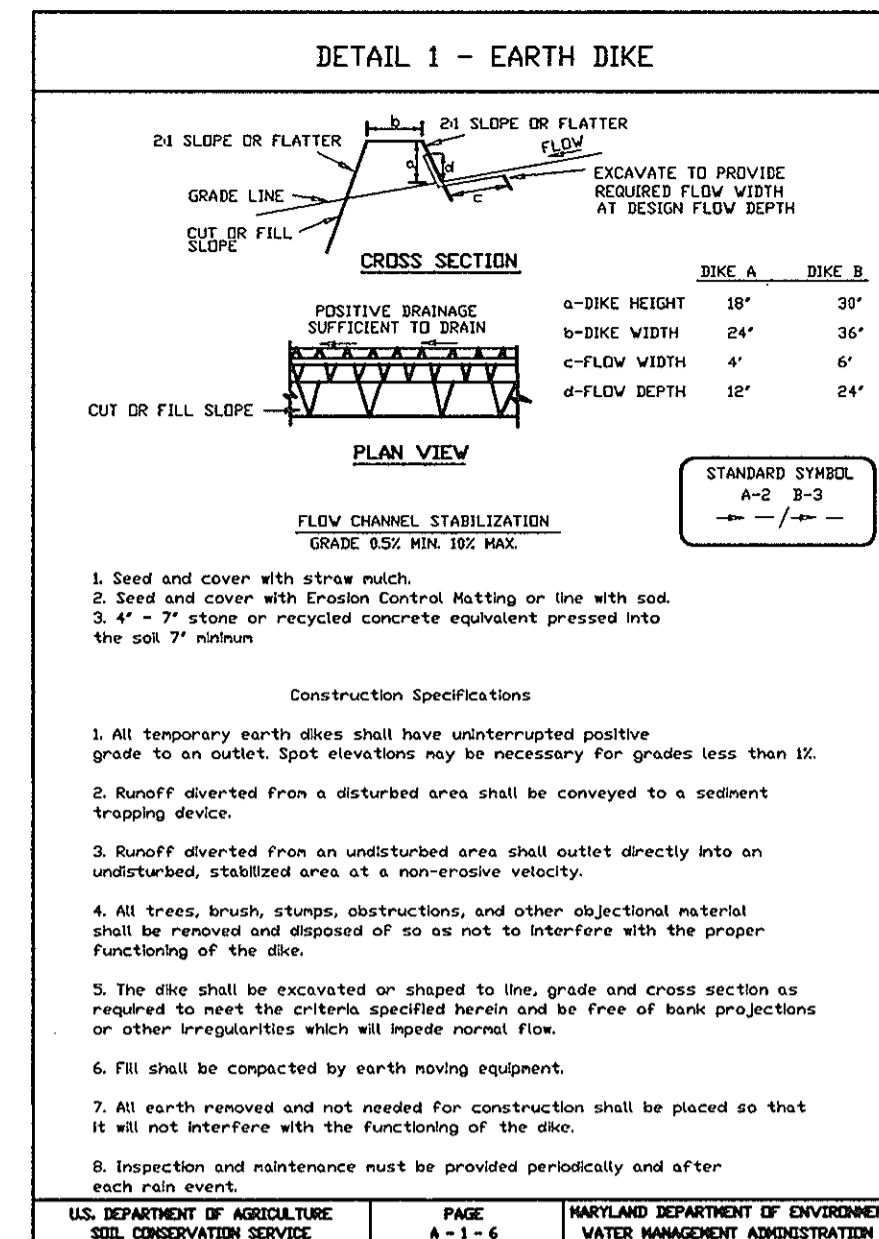
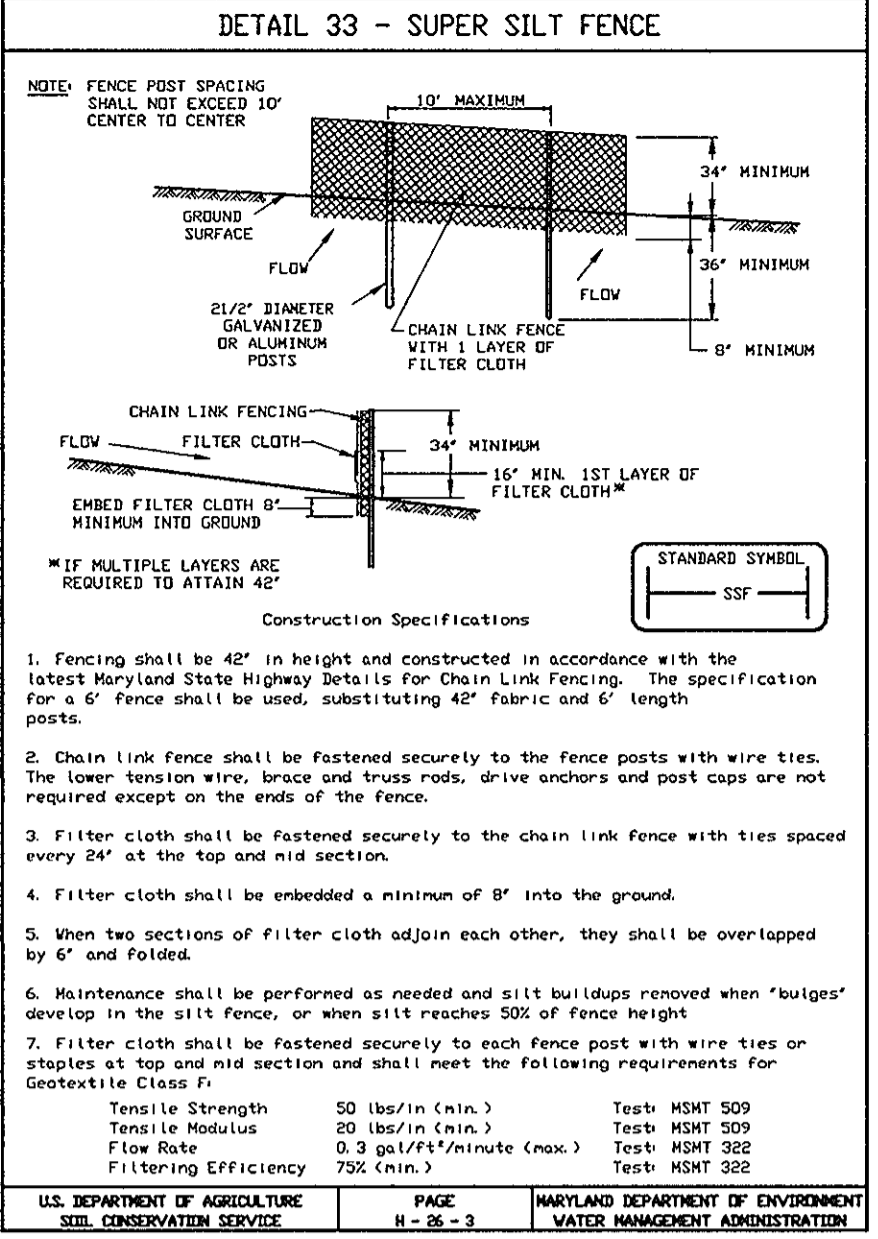
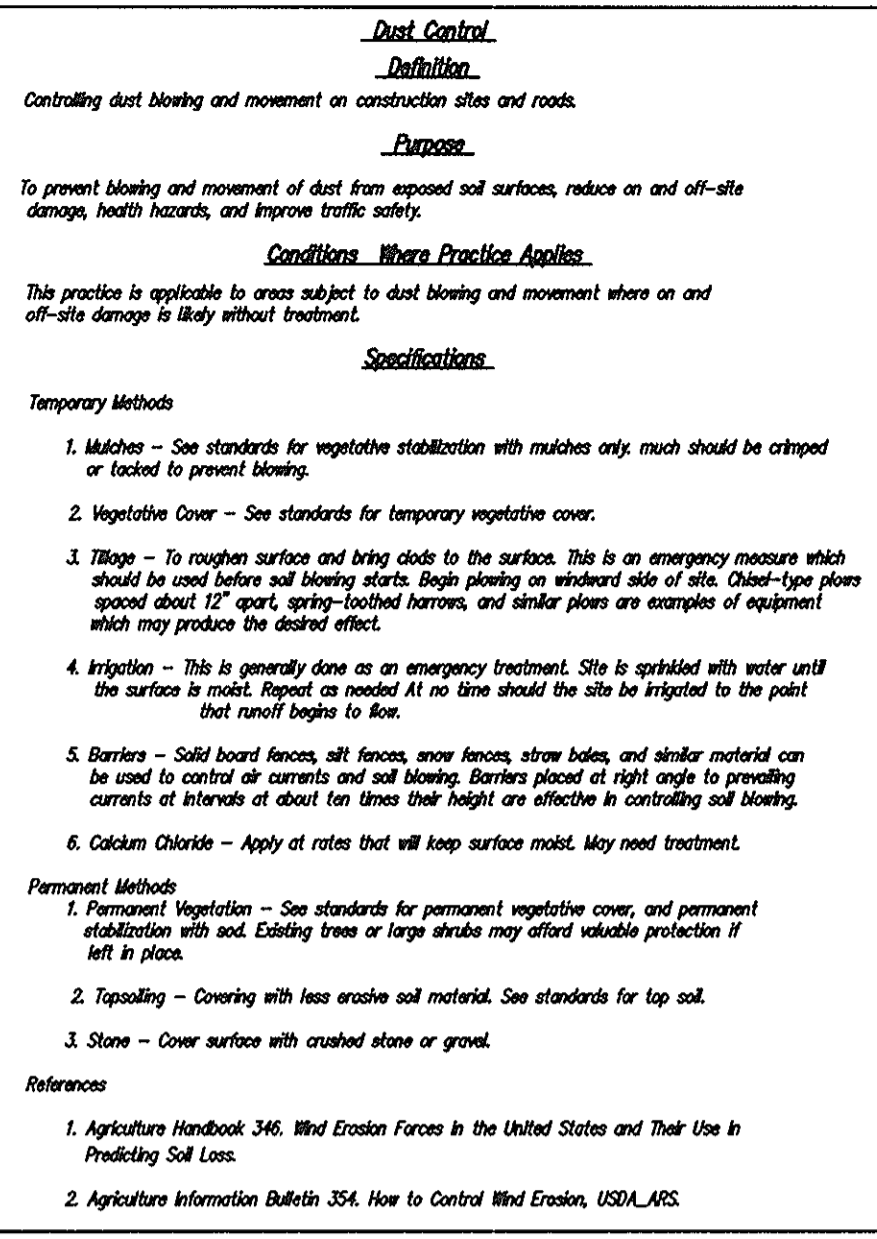
Chief, Division of Land Development 12/7/01 Date

Chief, Development Engineering Division MK 11/6/01 Date

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
BURTONSVILLE, MARYLAND 20866  
TEL: 301-421-4024 FAX: 301-421-4186

DATE: 11/14/01 BY: [Signature] APP'R: [Signature]



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Chief, Bureau of Highways 11/6/01 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
Chief, Division of Land Development 12/7/01 Date

Chief, Development Engineering Division MK 11/6/01 Date

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
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BURTONSVILLE, MARYLAND 20866  
TEL: 301-421-4024 FAX: 301-421-4186

DATE: 11/14/01 BY: [Signature] APP'R: [Signature]

PREPARED FOR:  
THE HOWARD RESEARCH  
AND DEVELOPMENT CORPORATION  
10275 LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
(410) 992-6089

SEDIMENT CONTROL DETAILS

SNOWDEN RIVER PARKWAY

SECTION 1 AREA 2

Parcel A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z

ELECTION DISTRICT No. 6

SCALE: AS SHOWN  
ZONING: NT  
G. L. W. FILE No.: 99101  
DATE: NOV, 2001  
TAX MAP - GRID: TM 37 GR 13 & 19  
SHEET: 14 OF 31  
F-01-142

ENGINEER'S CERTIFICATE

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.

Michael J. Treppan 11/7/01  
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

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 Maryland 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.

North H. Judd 11/6/01  
Signature of Developer/Builder Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

[Signature] 11/5/01  
Howard Soil Conservation District Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Jim Meyer 11/5/01  
Natural Resources Conservation Service Date



MGWC 1.4: DIVERSION PIPE

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing flow diversion pipes in combination with sandbag or stone diversions when construction activities occur within the stream channel.

EFFECTIVE USES & LIMITATIONS

Diversion pipes with an insufficient flow capacity can cause the channel diversion to fail thereby resulting in severe erosion of the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low flow.

MATERIAL SPECIFICATIONS

Materials for stream diversions should meet the following requirements:

- Riprap: Stone should be washed and have a minimum diameter of 6 inches (15 centimeters).
- Sandbags: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
- Sheeting: Sheeting should consist of polyethylene or other material which is impervious and resistant to puncture and tearing.

INSTALLATION GUIDELINES

All erosion and sediment control devices including mandatory 2:1 H:V slopes should be installed as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during low flow conditions. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Diversion pipes with sandbag or stone barriers should be completed as follows (refer to Detail 1.4):

- Sandbag/stone barriers should be sized and installed as detailed in MGWC 1.5: Sandbag/Stone Diversion. The materials should be sized to withstand baseflow velocities.
- All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
- Sediment-laden water from the construction area should be pumped to a 2:1 H:V slope.
- The diversion pipe should have a minimum capacity sufficient to convey the 2-year flow for projects with a duration of two weeks or greater. For projects of shorter duration, the capacity of the pipe can be reduced accordingly.
- If necessary, silt fence or straw bales should be installed around the perimeter of the work area.
- Sediment control devices are to remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal.

MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

EFFECTIVE USES & LIMITATIONS

Diversions are used to isolate work areas from flow during the construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary measure may not be practical in large channels.

MATERIAL SPECIFICATIONS

Materials for sandbag and stone stream diversions should meet the following requirements:

- Riprap: Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).
- Sandbags: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e., sand, fine gravel, etc.).
- Sheeting: Sheeting should consist of polyethylene or other material which is impervious and resistant to puncture and tearing.

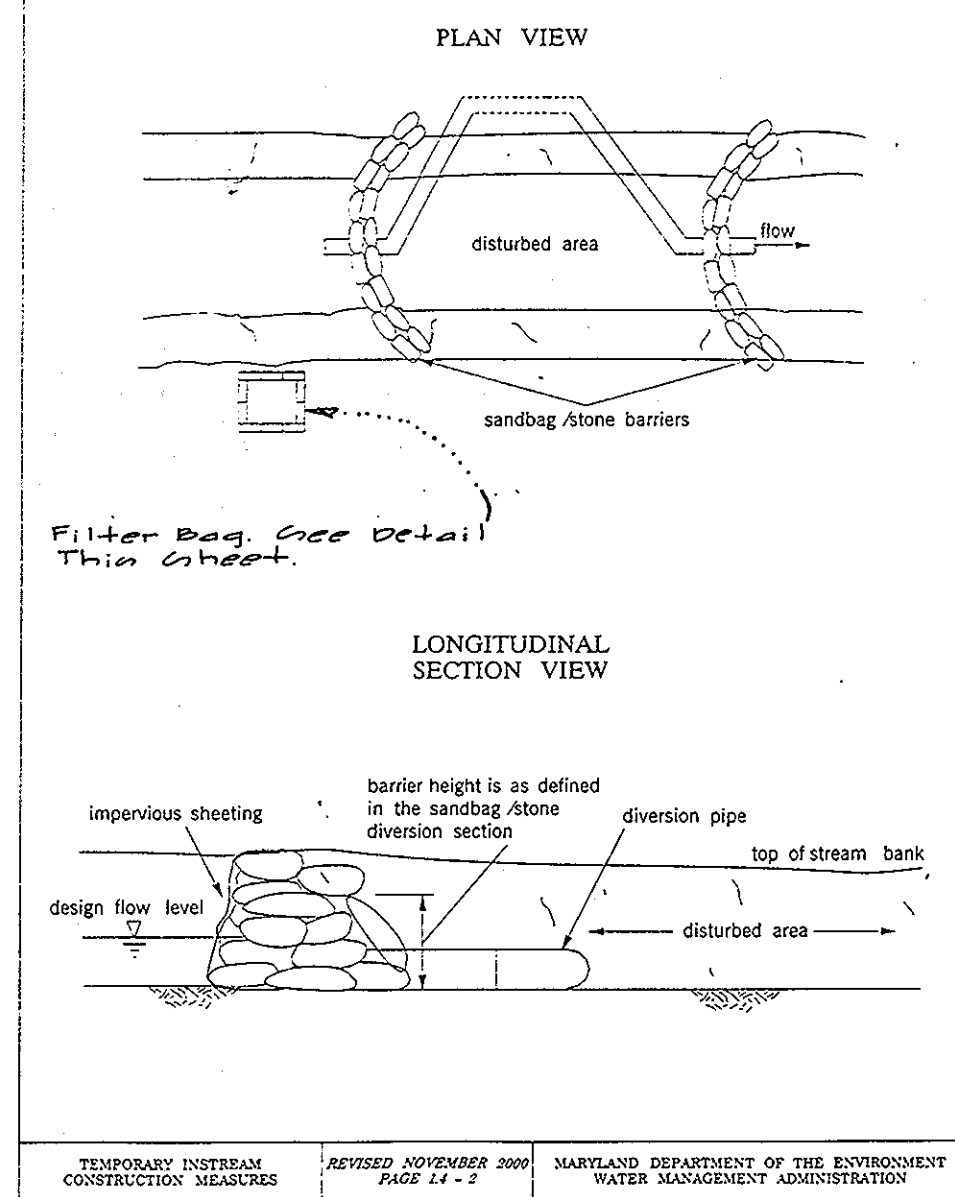
INSTALLATION GUIDELINES

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

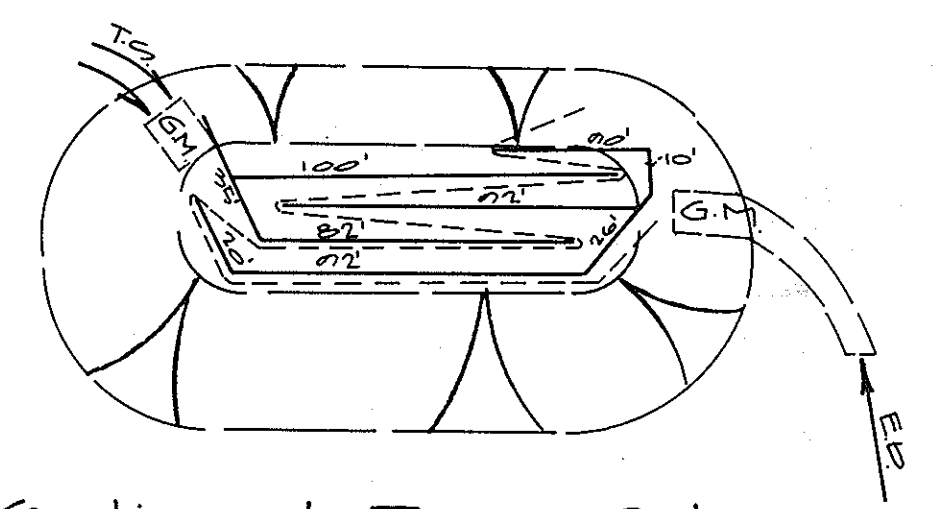
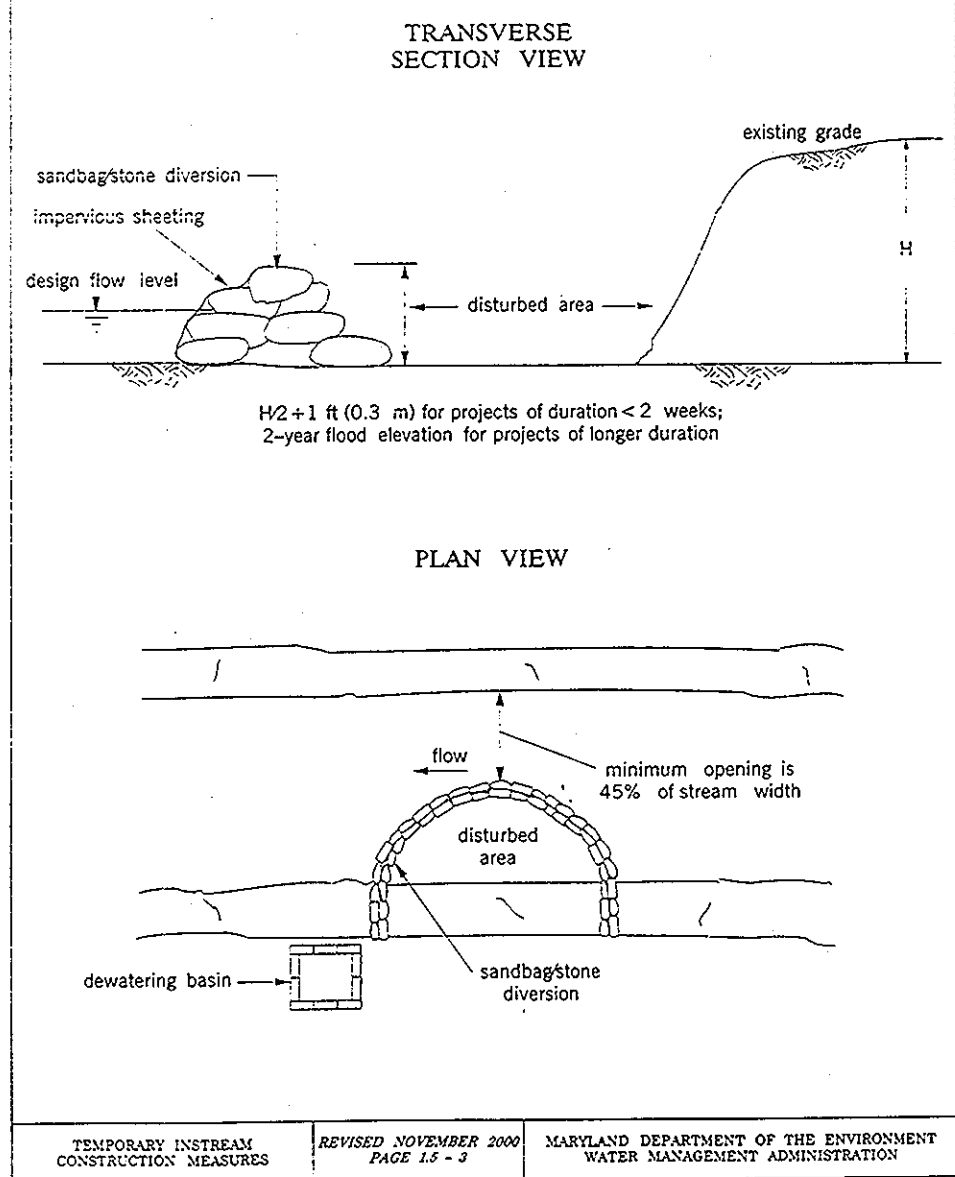
Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):

- The diversion structure should be installed from upstream to downstream.
- The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than 2 weeks, the height of the diversion should be one half the streambank height, measured from the channel bed, plus 1 foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.
- All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
- Sediment-laden water from the construction area should be pumped to a dewatering basin.
- Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 18-inch (0.45 meters) overlap.
- Sandbag or stone diversions should not obstruct more than 45% of the stream width. Additionally, bank stabilization measures should be placed in the constructed section if accelerated erosion and bank wear are observed during the construction time or if project time is expected to last more than 2 weeks.
- Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.
- 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.

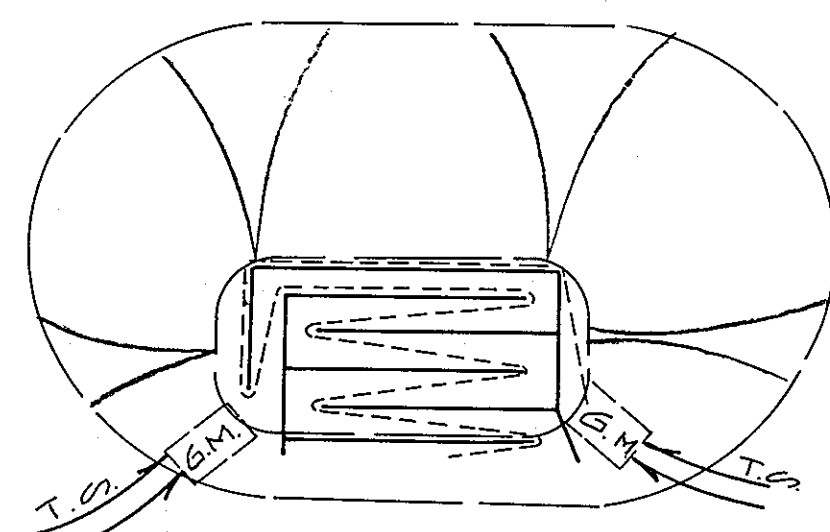
Maryland's Guidelines To Waterway Construction  
DETAIL 1.4: DIVERSION PIPE



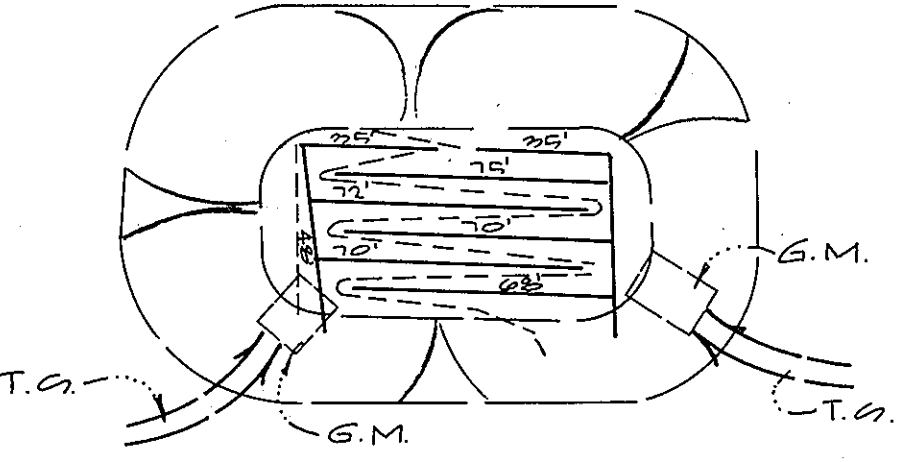
Maryland's Guidelines To Waterway Construction  
DETAIL 1.5: SANDBAG/STONE DIVERSION



Sediment Trap D-1  
For Information Not Shown  
See Sheet 12.

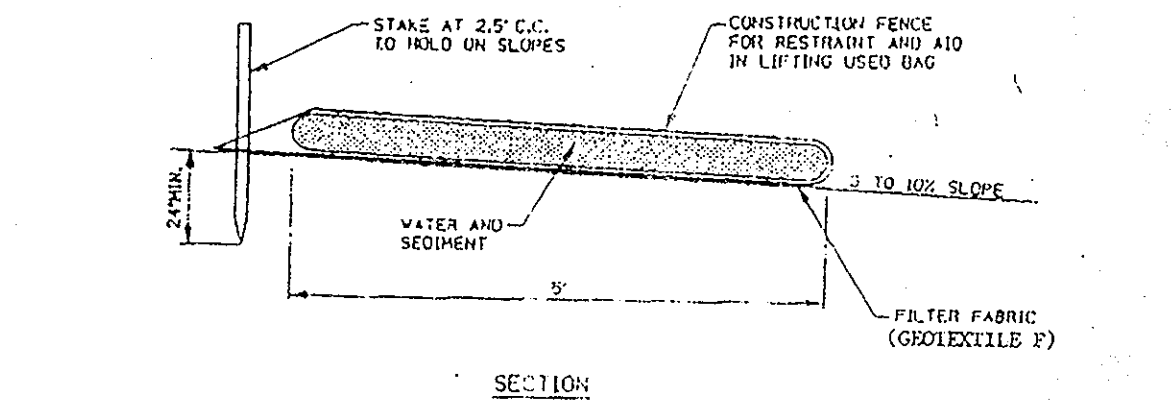
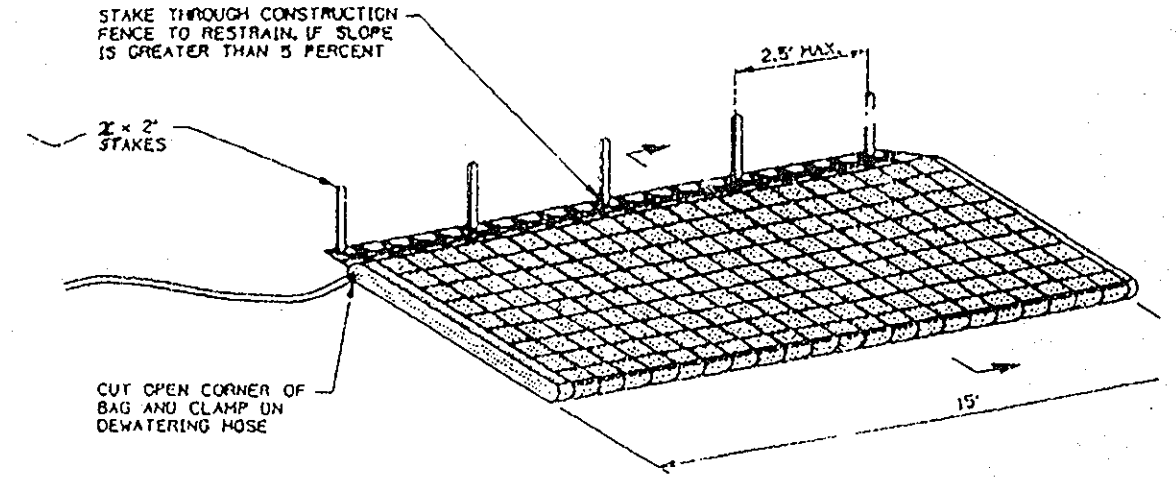


Sediment Trap C-2  
For Information Not Shown  
See Sheet 11.



Sediment Trap B-2  
For Information Not Shown  
See Sheet 10.

Baffle Details  
Scale: 1" = 60'



- NOTES:
- FILTER BAG SHALL BE PLACED ON A SLOPING UP LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
  - WIDTH AND LENGTH SHALL BE AS SHOWN.
  - THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
  - FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
  - DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UP-UP AREA.
  - FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILES CLASS F:
- |                      |                               |                |
|----------------------|-------------------------------|----------------|
| Tensile Strength     | 50 lbs/ft (min.)              | Test: MSMT 509 |
| Tensile Modulus      | 20 lbs/in. (min.)             | Test: MSMT 509 |
| Flow Rate            | 0.3 gpm per 17" minute (max.) | Test: MSMT 322 |
| Filtering Efficiency | 75% (min.)                    | Test: MSMT 322 |

FILTER BAG  
TEMPORARY EROSION CONTROL MEASURE (FB)

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
[Signature] 11/29/01  
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
[Signature] 12/7/01  
Chief, Division of Land Development Date

[Signature] 12/5/01  
Chief, Development Engineering Division Date

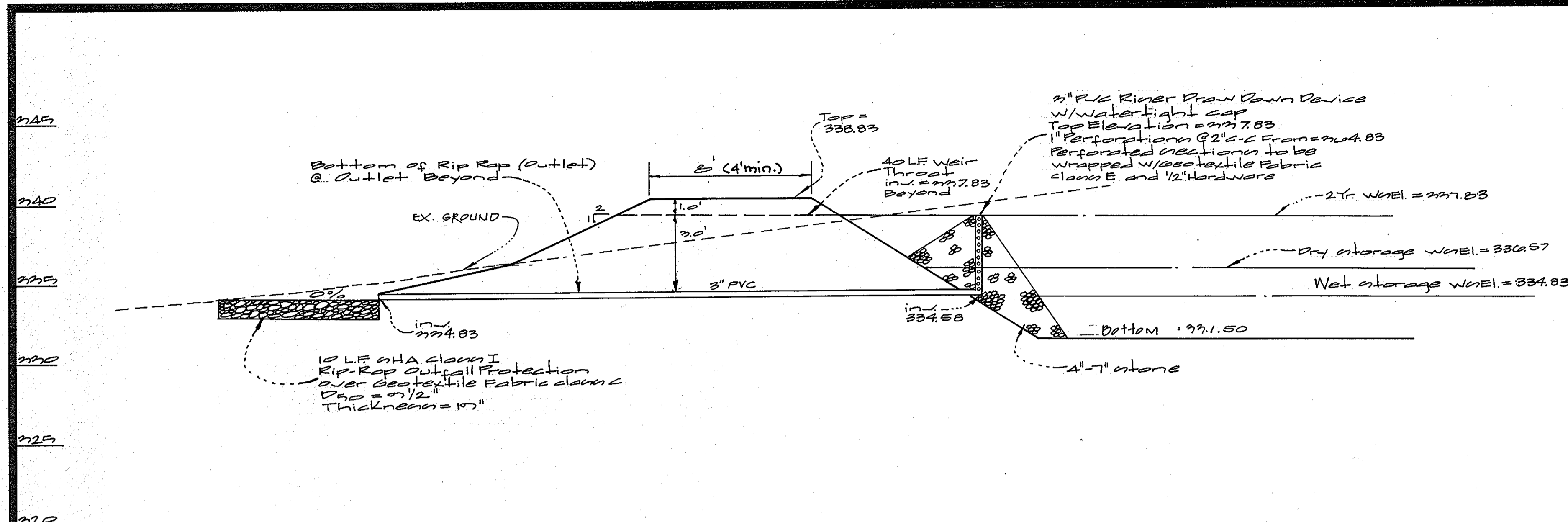
GLW GUTSCHICK LITTLE & WEBER, P.A.  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
BURTONSVILLE, MARYLAND 20866  
TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4188

NO.	DATE	REVISION	BY	APP'R.
01	11/14/01	Rev. Title Block	[Signature]	
02	11/14/01	Rev. Title Block	[Signature]	

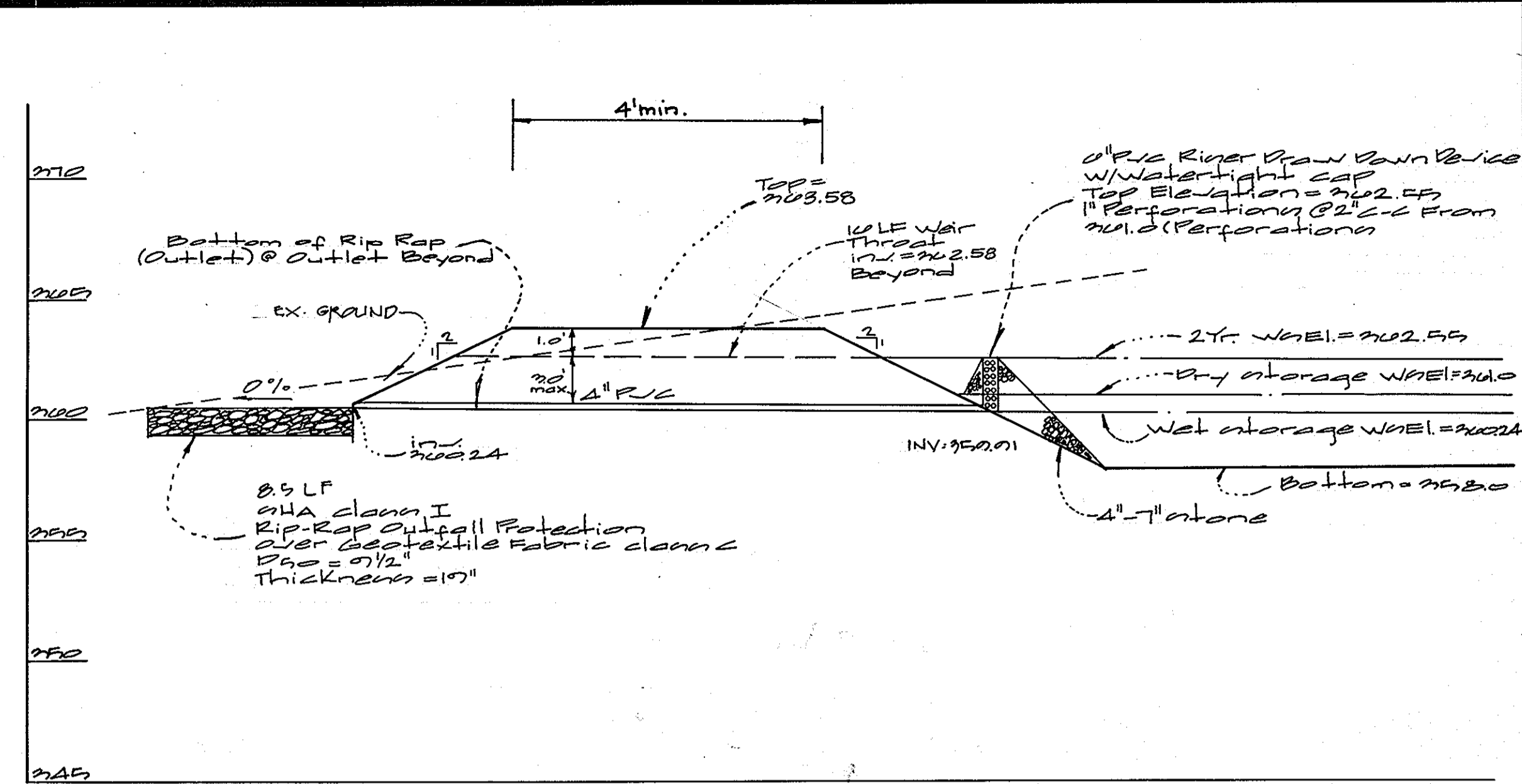
PREPARED FOR:  
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
10275 LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
(410) 992-6089

SEDIMENT CONTROL DETAILS  
SECTION 1 AREA 1  
SNOWDEN RIVER BUSINESS PARK  
Parcel 1A2, 1B1, 1C-1, 1D2, 1E-1 & Lots 6 Thru 10  
HOWARD COUNTY, MARYLAND

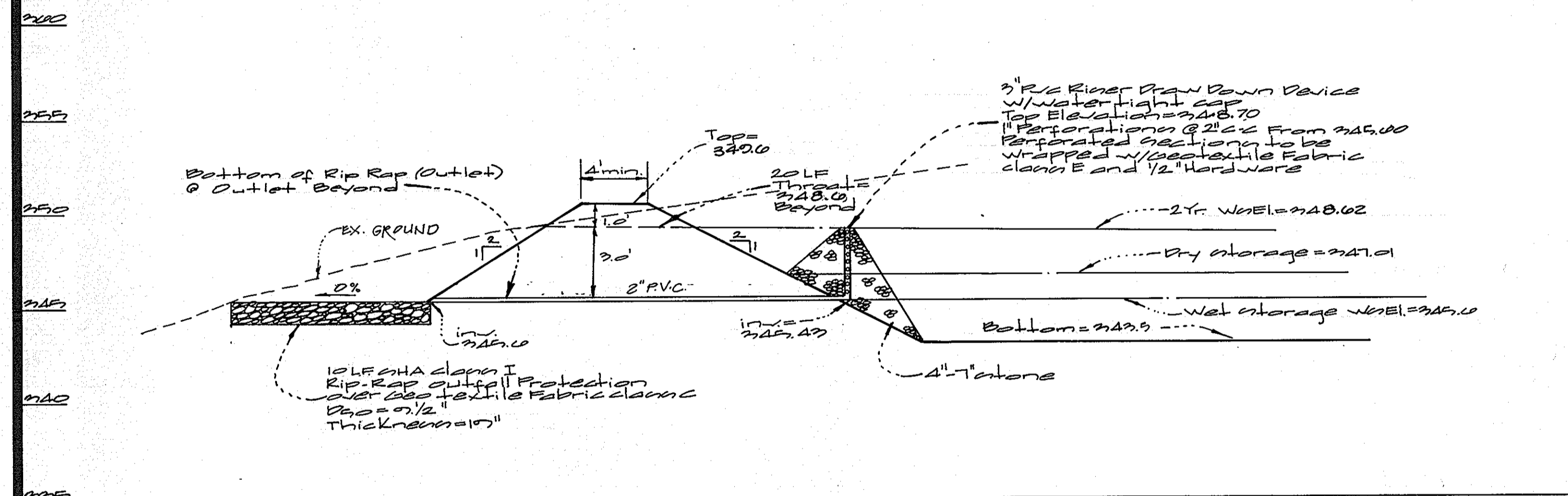
SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	NT	99101
DATE	TAX MAP - GRD	SHEET
Nov. 2001	TM 37 GR 13 & 19	15 OF 21



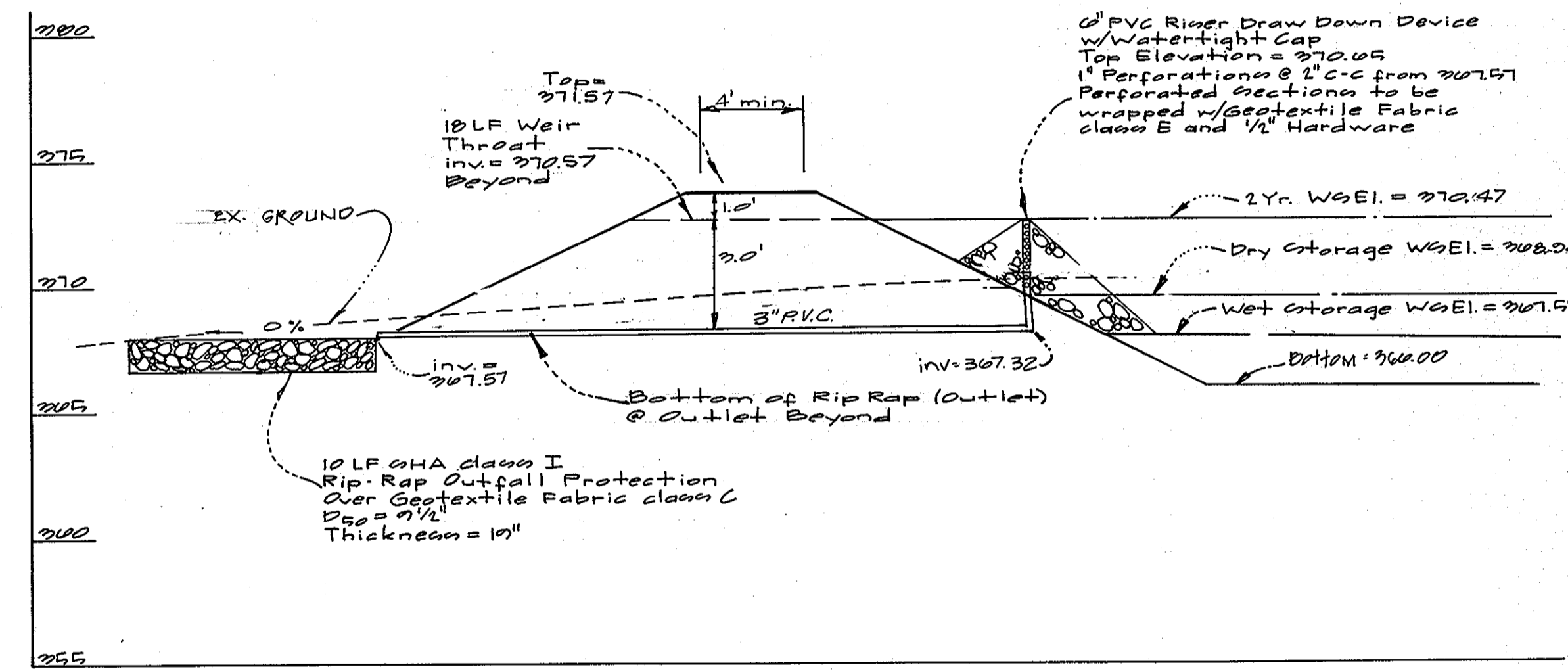
**Sediment Trap C-1**  
**Temporary GWM Dewatering Device Details**  
 NTS



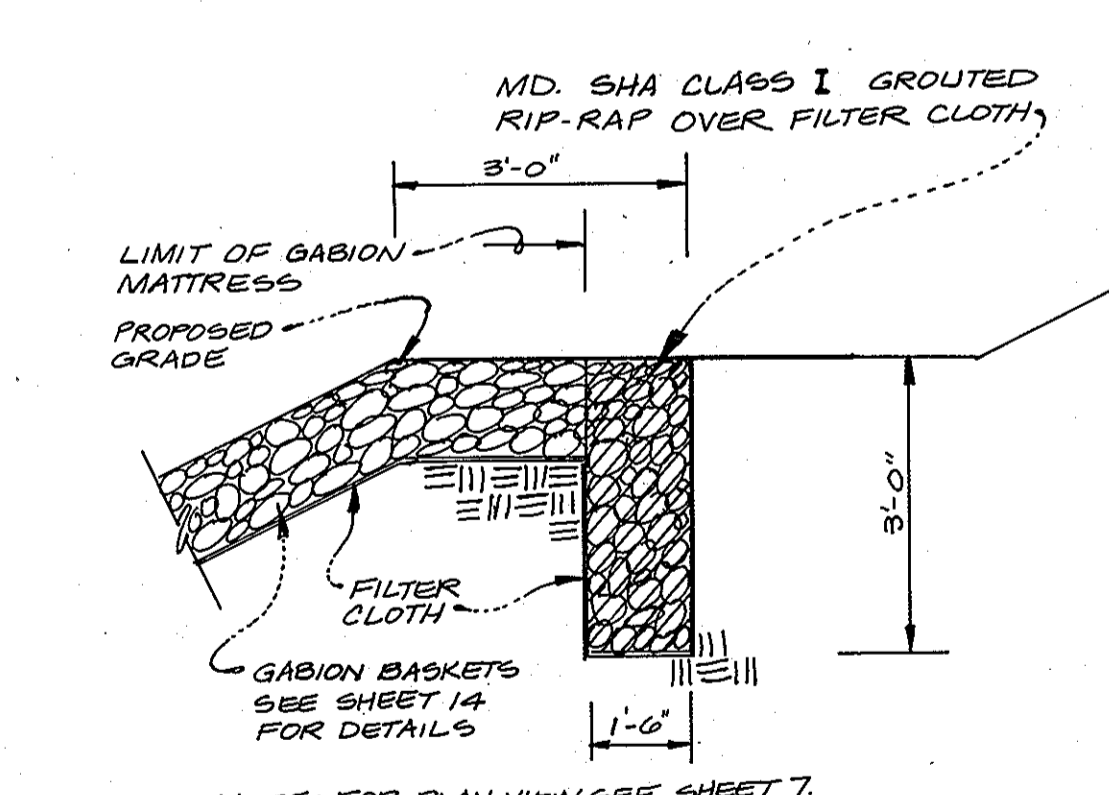
**Sediment Trap D-1**  
**Temporary GWM Dewatering Device Details**  
 NTS



**Sediment Trap C-2**  
**Temporary GWM Dewatering Device Details**  
 NTS



**Sediment Trap D-2**  
**Temporary GWM Dewatering Device Details**  
 NTS



**GRouted CUT OFF WALL DETAIL**  
 NTS

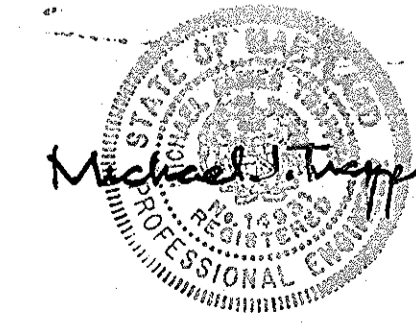
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways 11/21/01  
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development 12/1/01  
 Date

Chief, Development Engineering Division MK 12/1/01  
 Date

**ENGINEER'S CERTIFICATE**

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.



Michael J. Trappan 3.6.01  
 Date

**DEVELOPER'S/BUILDER'S CERTIFICATE**

"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 Maryland 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.

11/21/01  
 Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 FAX: 410-880-1820 DC/VA: 301-889-2524 FAX: 301-421-4186

NO.	REVISION	DATE	BY	APPR.
1	Rev Title Block			
2	Rev Title Block			

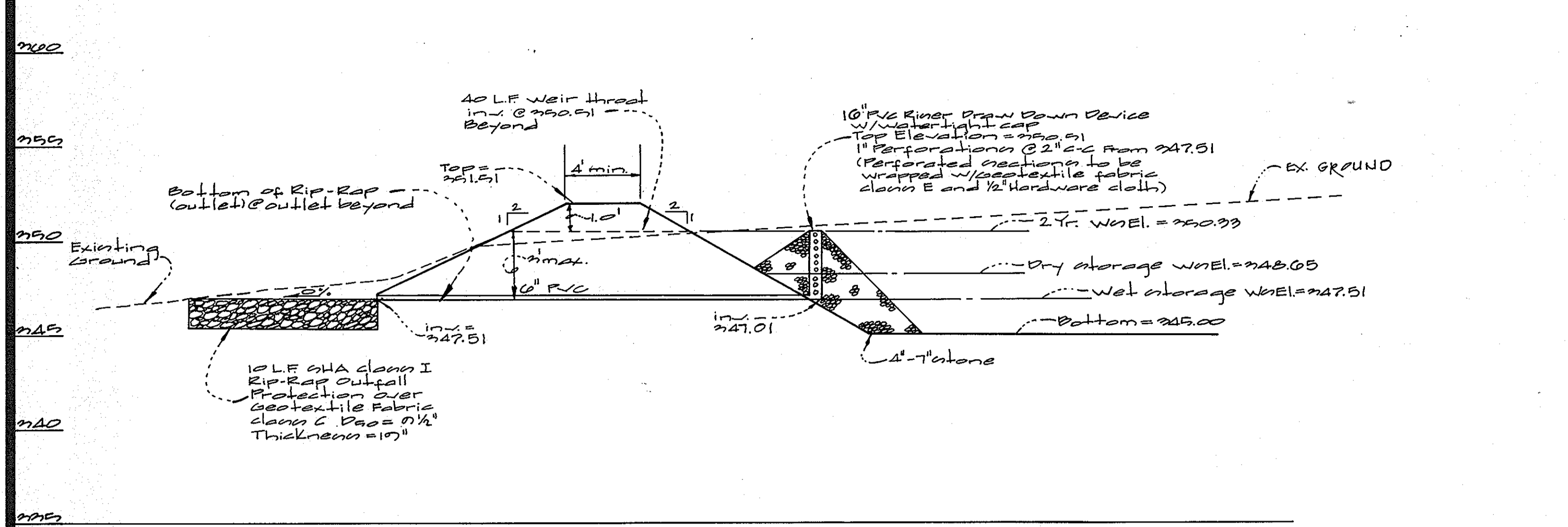
PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 (410) 992-6089

**SEDIMENT CONTROL DETAILS/TEMPORARY STORMWATER MANAGEMENT**

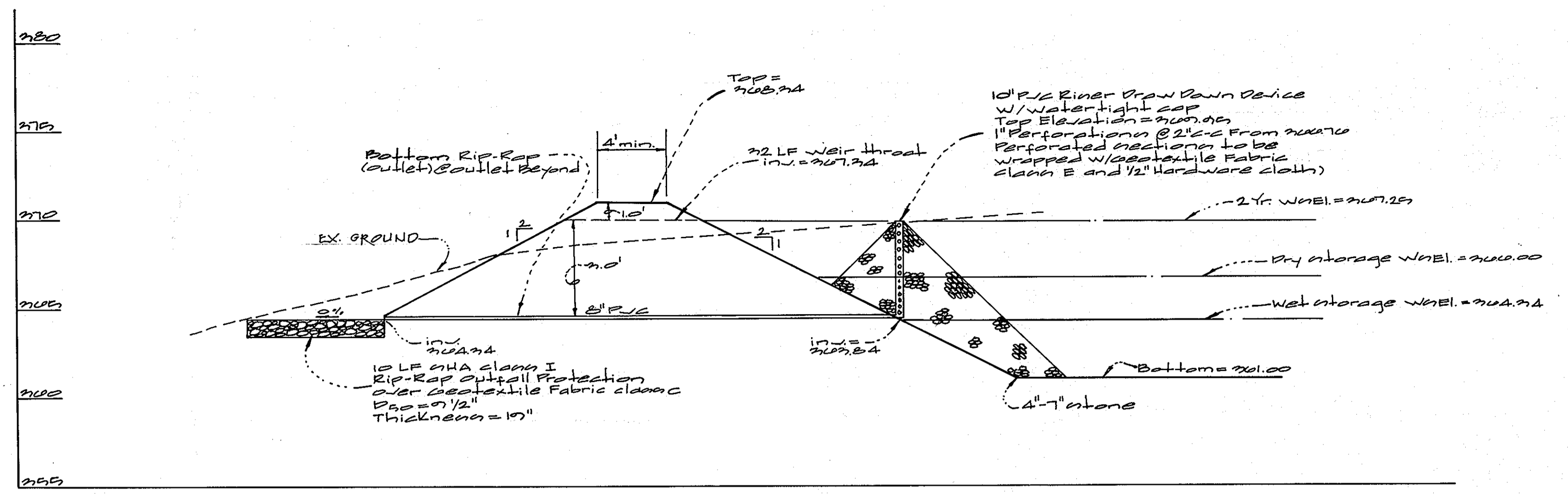
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcel A-2, B-1, C-1, D-2, E-1 & Lots C Thru I  
 ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	NT	99101
DATE	TAX MAP - GRID	SHEET
November, 2001	TM 37 GR 13 & 19	10 OF 31

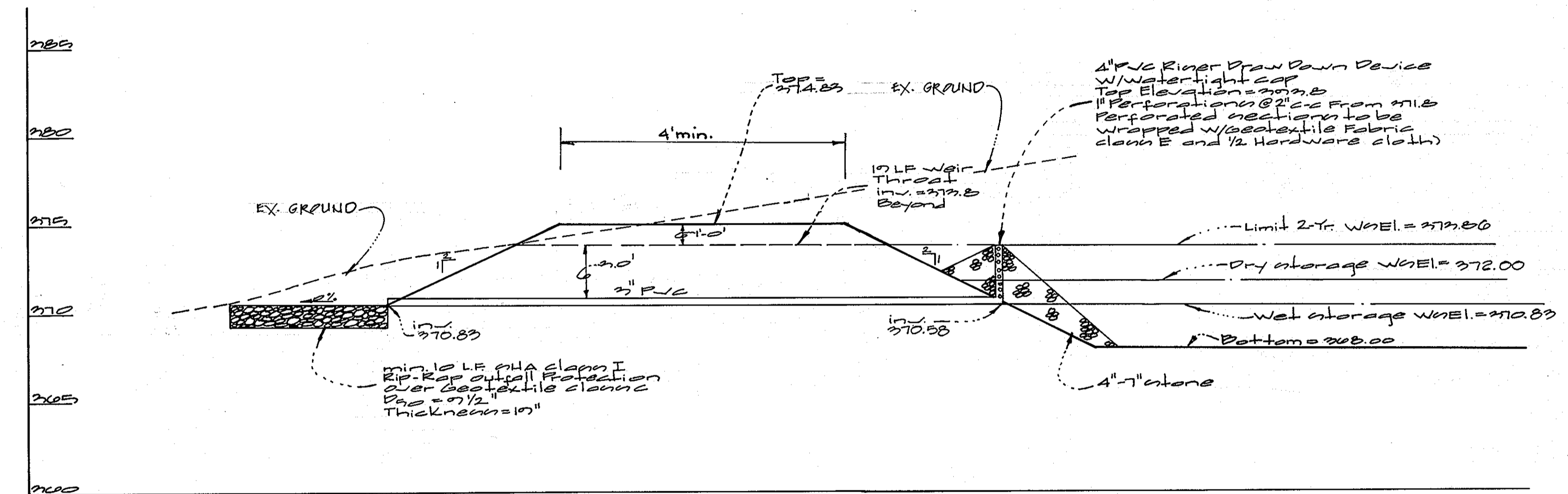




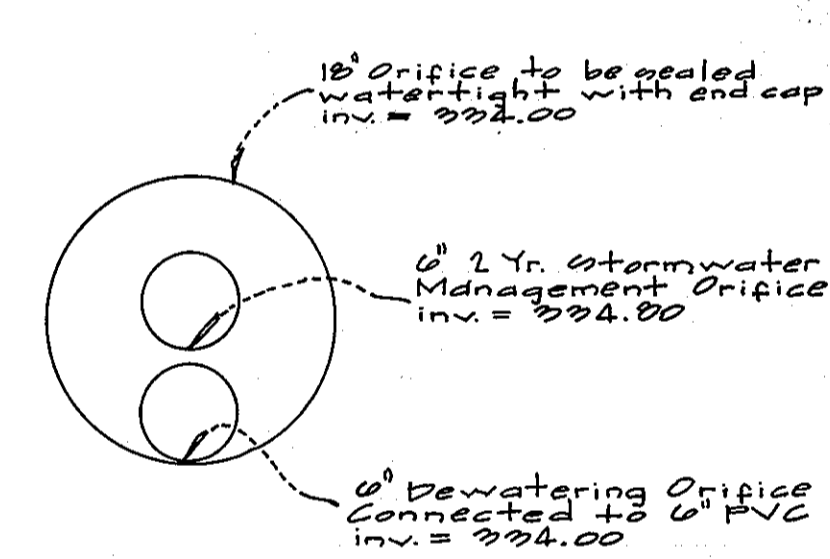
**Sediment Trap A-1 Temporary Stormwater Management Dewatering Device Detail**  
Scale: 1" = 5'



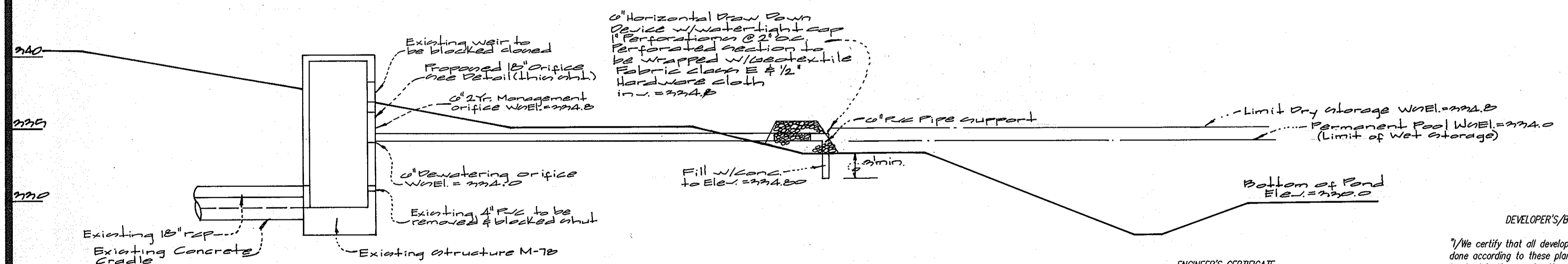
**Sediment Trap B-1 Temporary GWM Dewatering Device Detail**  
Scale: 1" = 5'



**Sediment Trap B-2 Temporary GWM Dewatering Device Detail**  
Scale: 1" = 5'



**10" Orifice Modified For GWM & Sediment Control**  
(Exist. Structure, M-7B) N.T. 2



ENGINEER'S CERTIFICATE

DEVELOPER'S/BUILDER'S CERTIFICATE

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These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard Shick* 11/27/01  
 Chief, Bureau of Highways  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Chris Harvater* 12/3/01  
 Chief, Division of Land Development  
*2* 11/2/01  
 Chief, Development Engineering Division MK

**Modifications to Existing Riser (Basin A-2) For GWM & Sediment Control Purposes**  
Scale: 1" = 5'

"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."



*Michael J. Trepper* 3/6/01  
 Date

*Natt A. Paul* 11/1/01  
 Signature of Developer/Builder Date

*John Lee* 11/15/01  
 Howard Soil Conservation District Date

*Jim Angeles* 11/15/01  
 Natural Resources Conservation Service Date

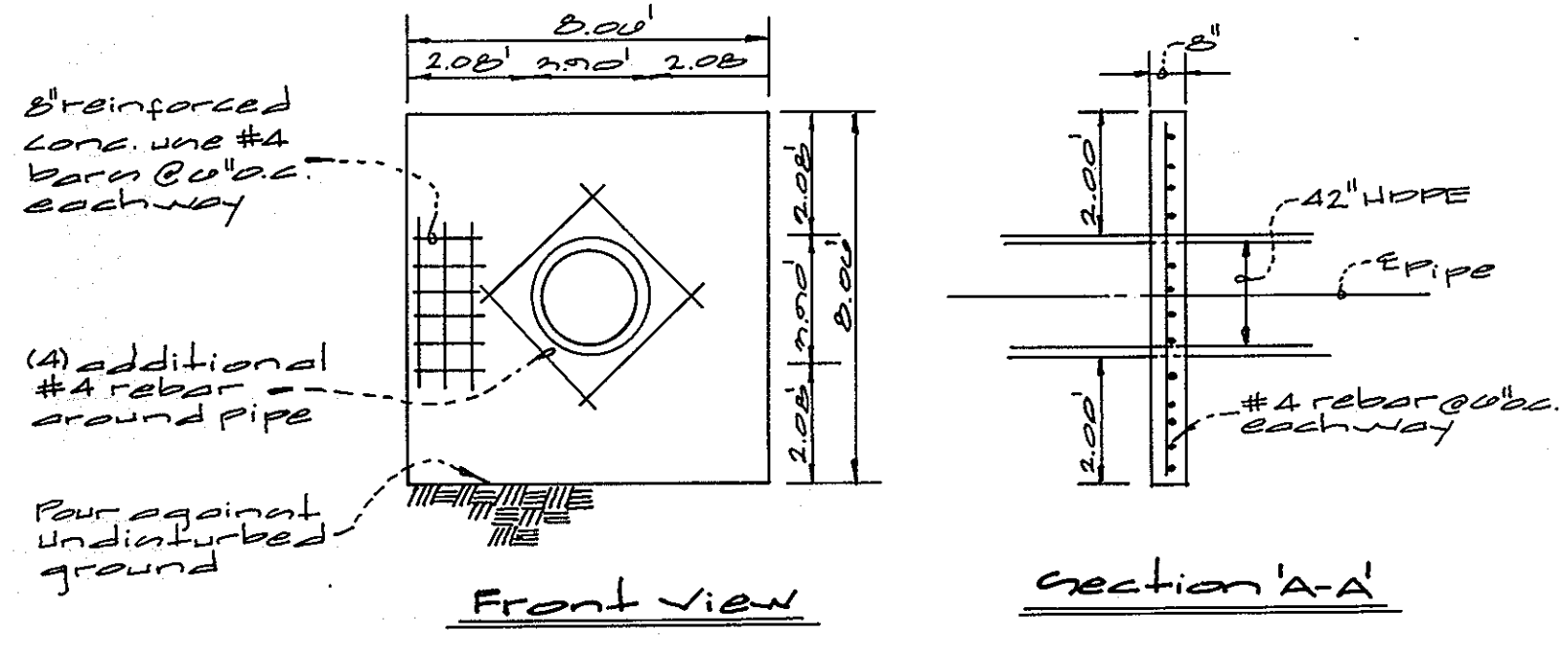
**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
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NO.	DATE	BY	APP'R.
1	11/14/01	Rev. Title Block	
2	11/14/01	Rev. Title Block	

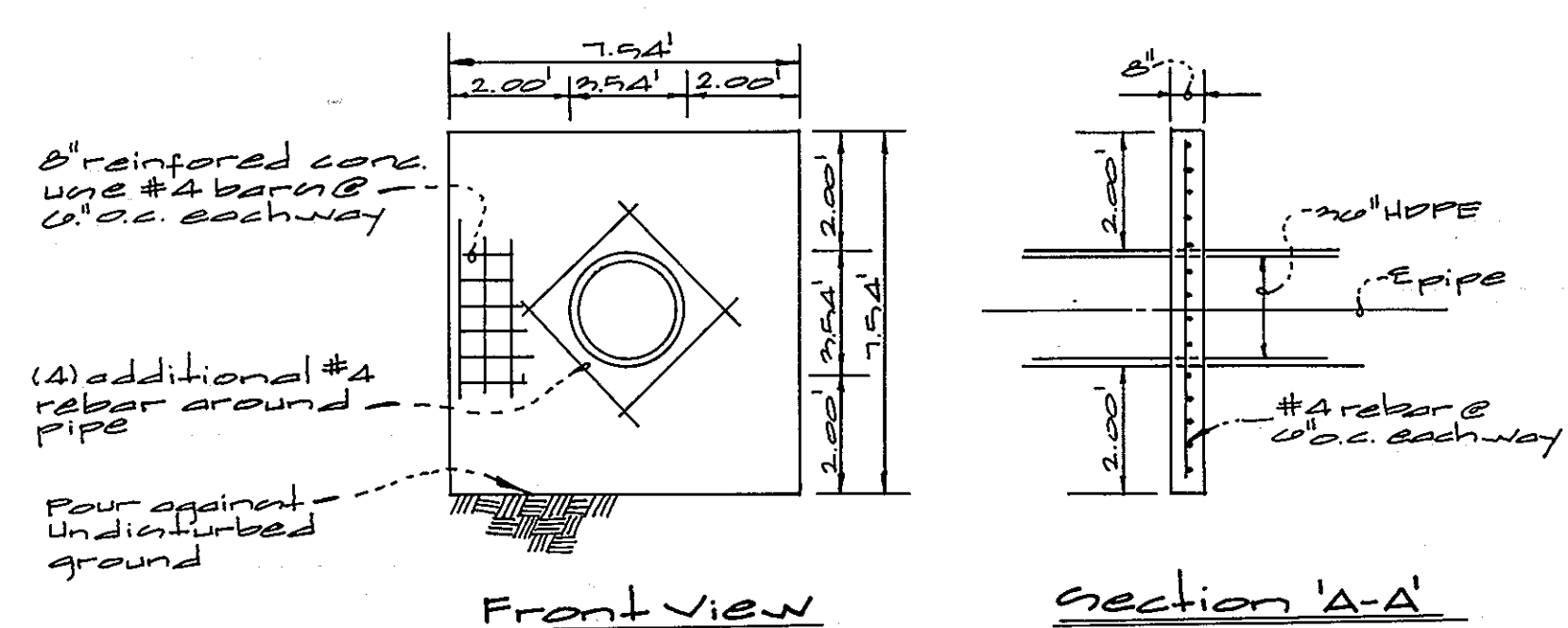
PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 (410) 992-6089

**SEDIMENT CONTROL DETAILS/TEMPORARY STORMWATER MANAGEMENT**  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcels A2, B1, C1, D2, E1 & Lots C Thru I  
 ELECTION DISTRICT No. 6

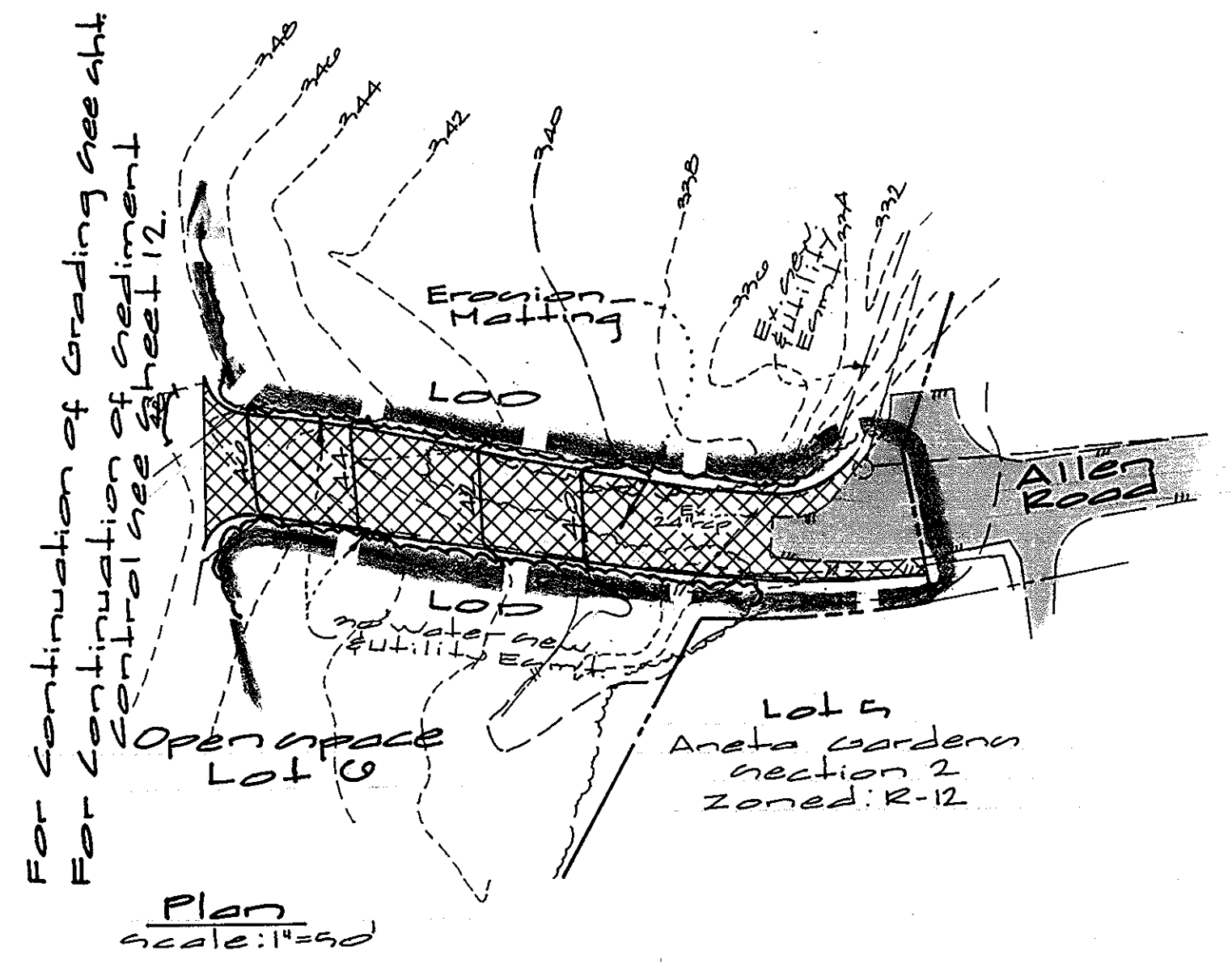
SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	NT	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	17 OF 31



Anti-keep Collar Detail for Temp. Diversion @ GWM Facility 1 NTS

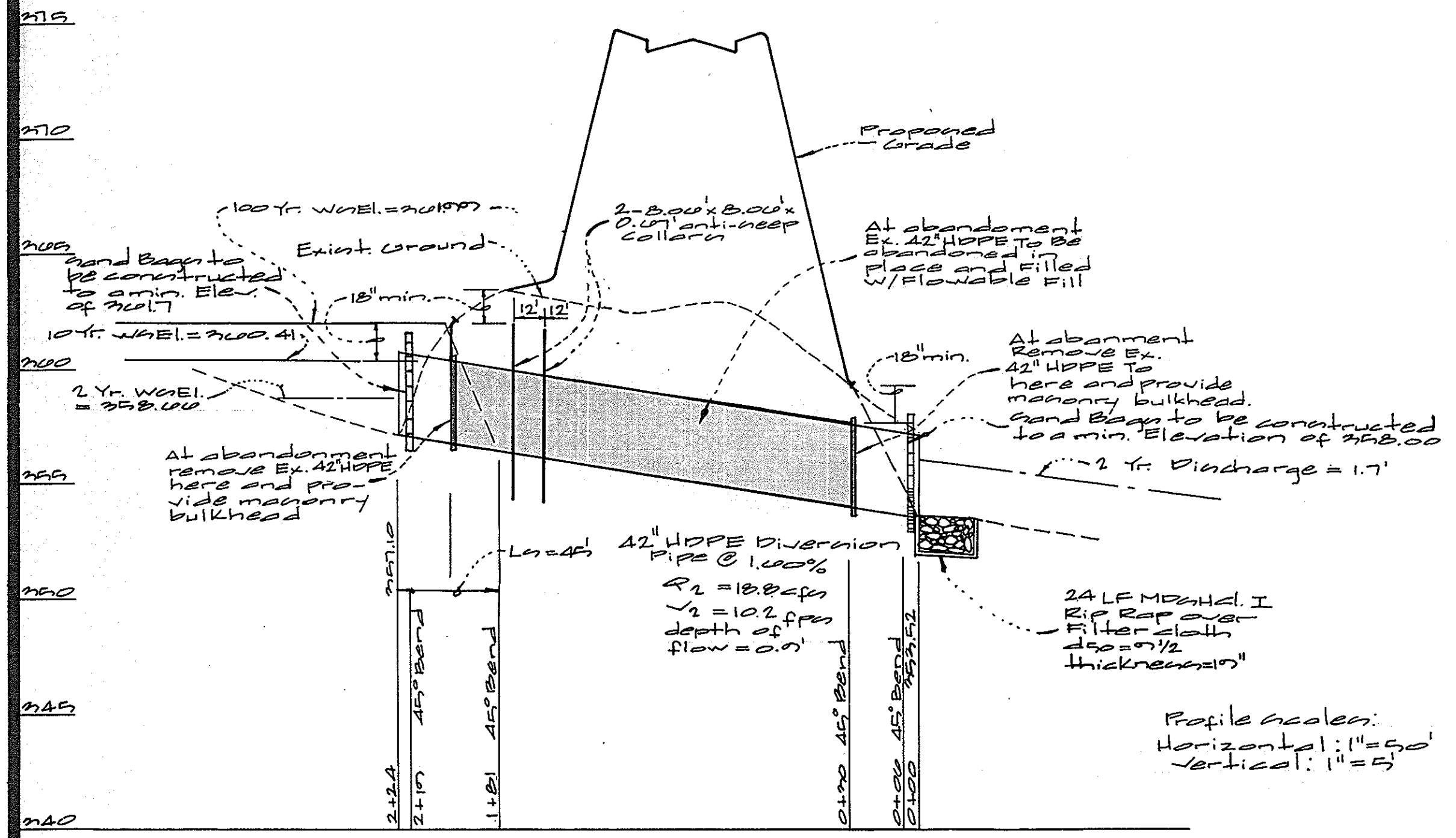


Anti-keep Collar Detail for Temp. Diversion @ GWM Facility 2 NTS

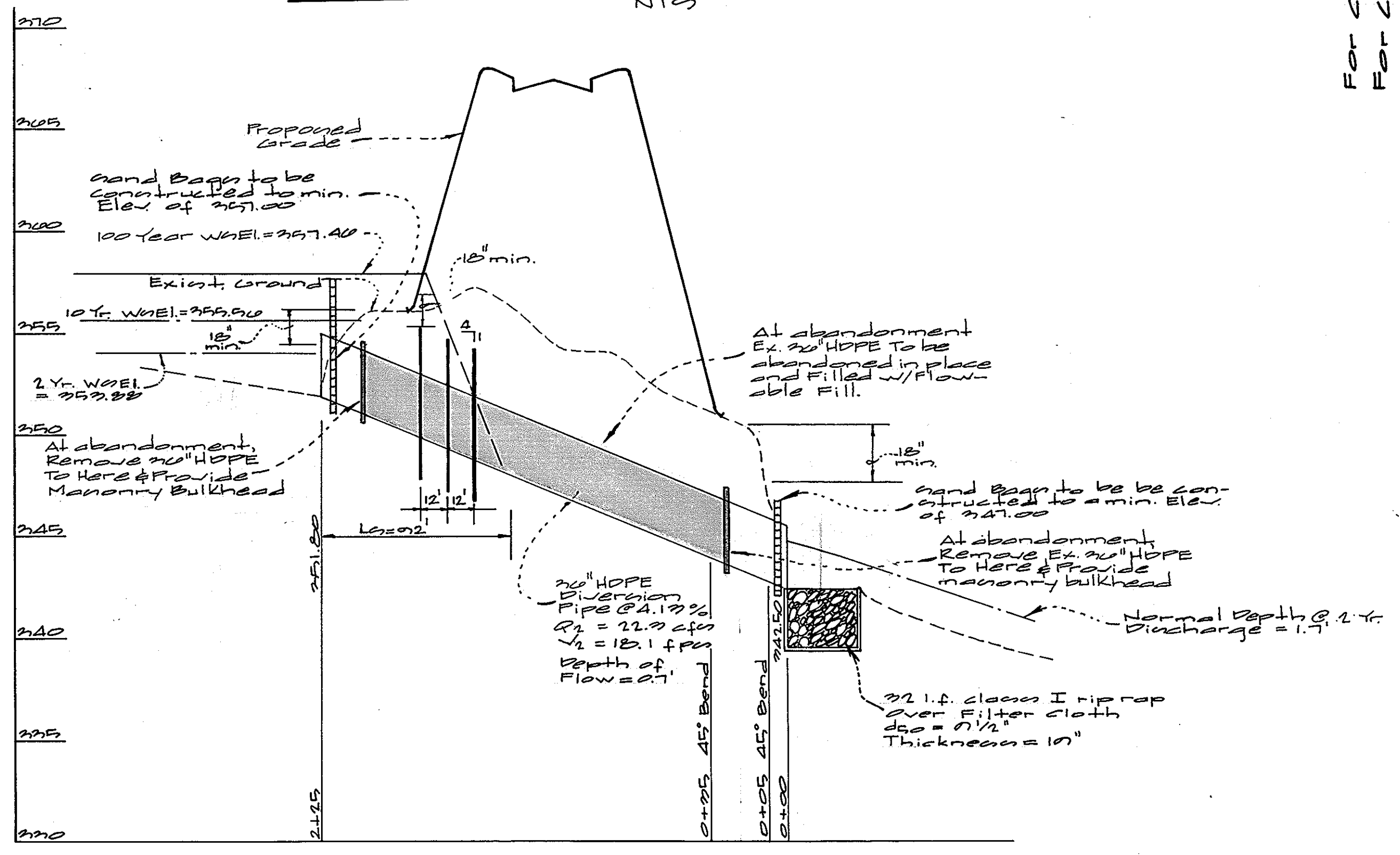


For Continuation of Grading see sheet 12  
For Continuation of Sediment Control see sheet 12

Plan scale: 1"=50'



Temporary Diversion Pipe @ GWM Facility 1



Temporary Diversion Pipe @ GWM Facility 2

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard Stiles* 4/15/01  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Andy Hamrick* 12/7/01  
 Chief, Division of Land Development Date

*[Signature]* 12/14  
 Chief, Development Engineering Division MK Date

ENGINEER'S CERTIFICATE

"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."

*Michael J. Trapper*  
 Michael J. Trapper 3-6-01  
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"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 Maryland 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."

*Matt H. Jenkins* 11/15/01  
 Signature of Developer/Builder Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.  
*[Signature]* 4/15/01  
 Date  
 Howard Soil Conservation District

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.  
*[Signature]* 4/15/01  
 Date  
 Natural Resources Conservation Service

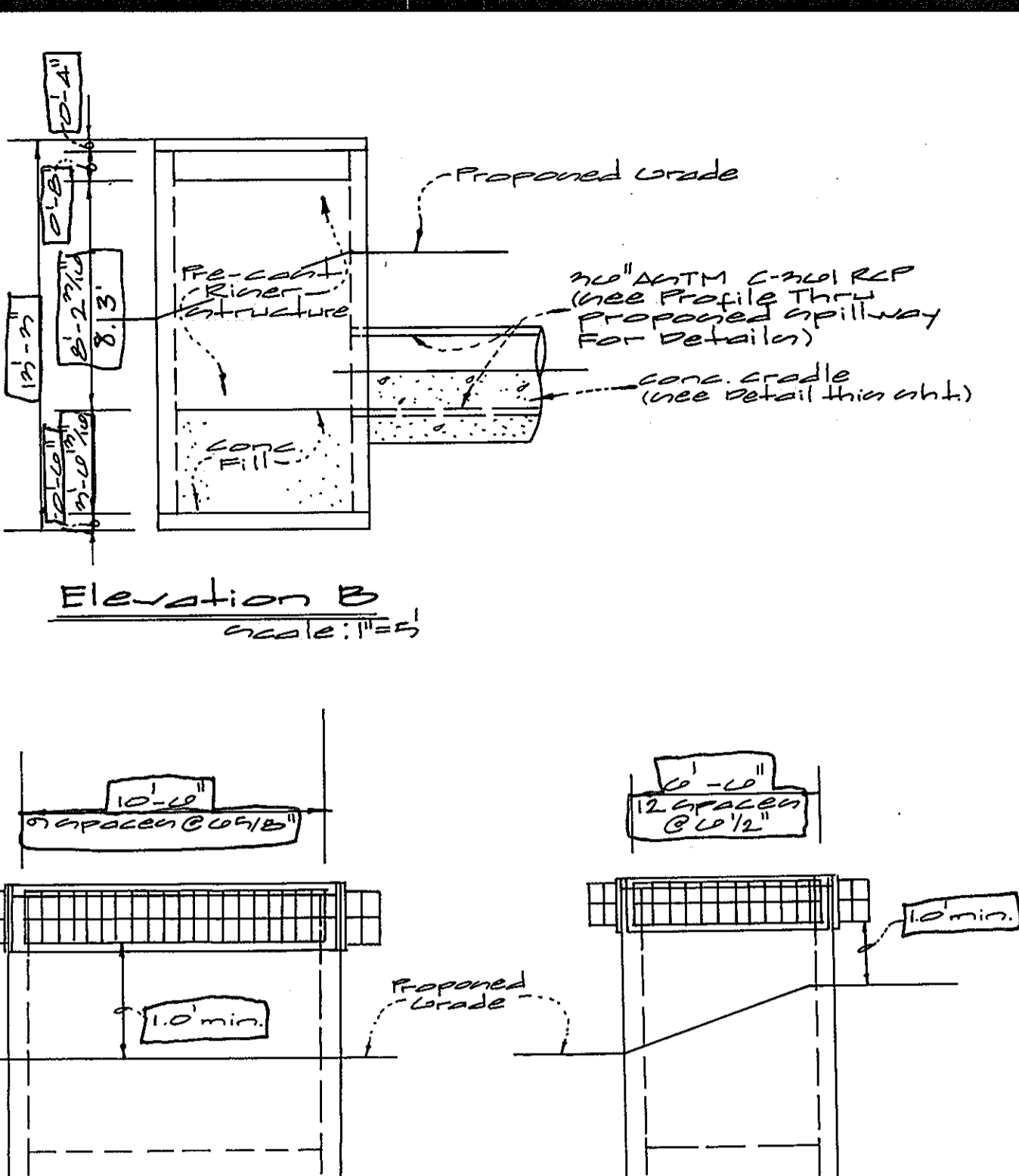
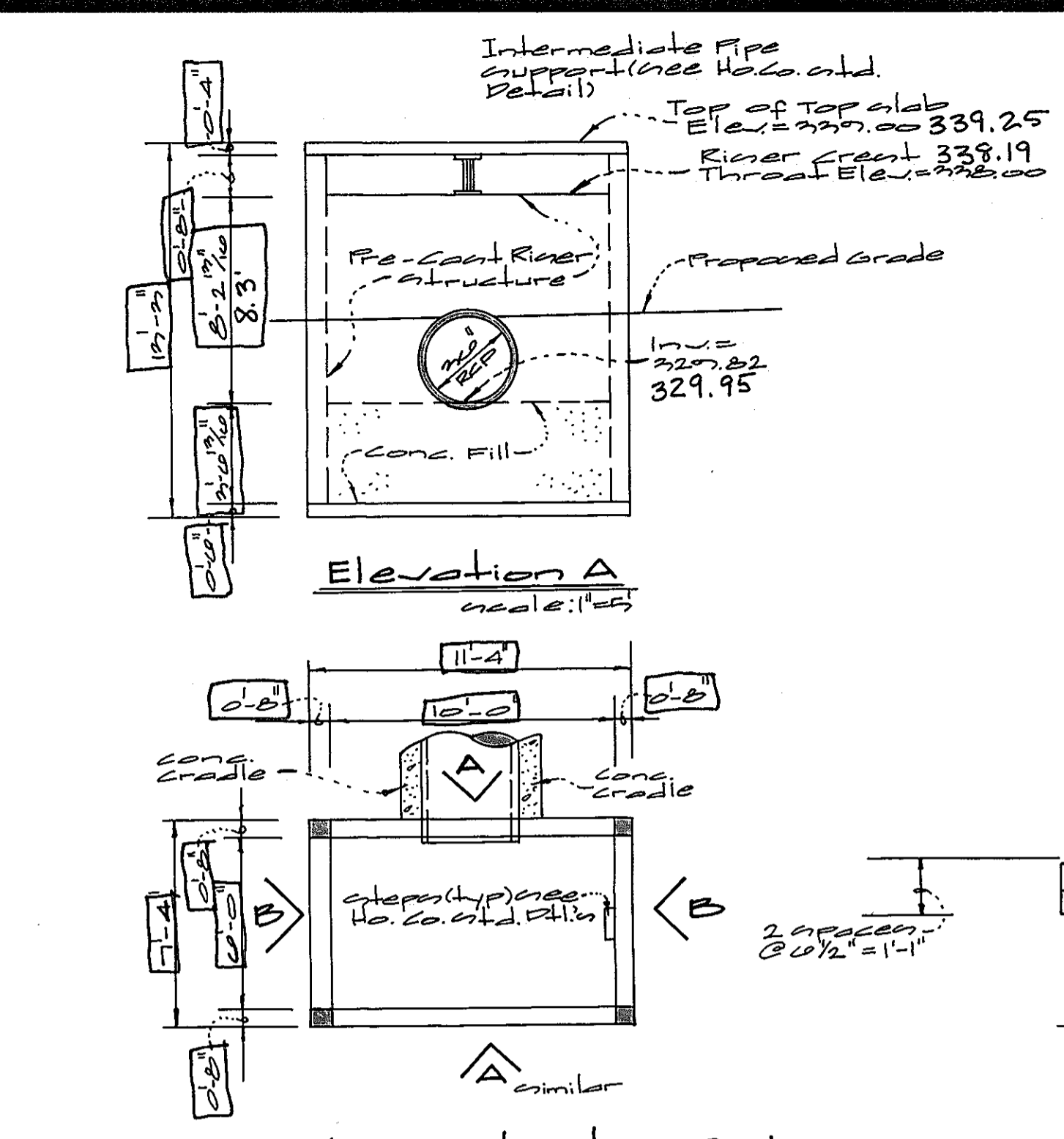
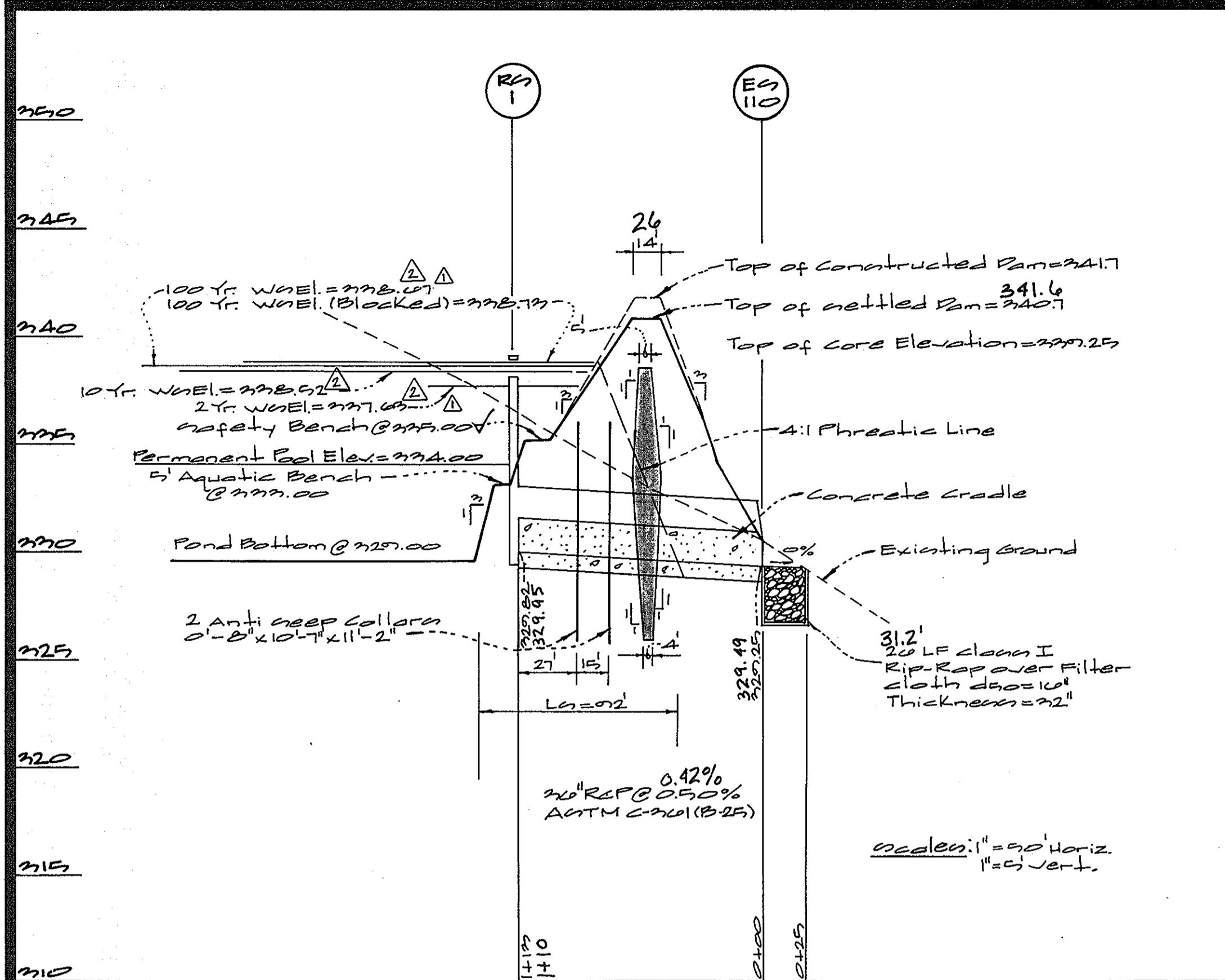
GLW GUTSCHICK LITTLE & WEBER, P.A.  
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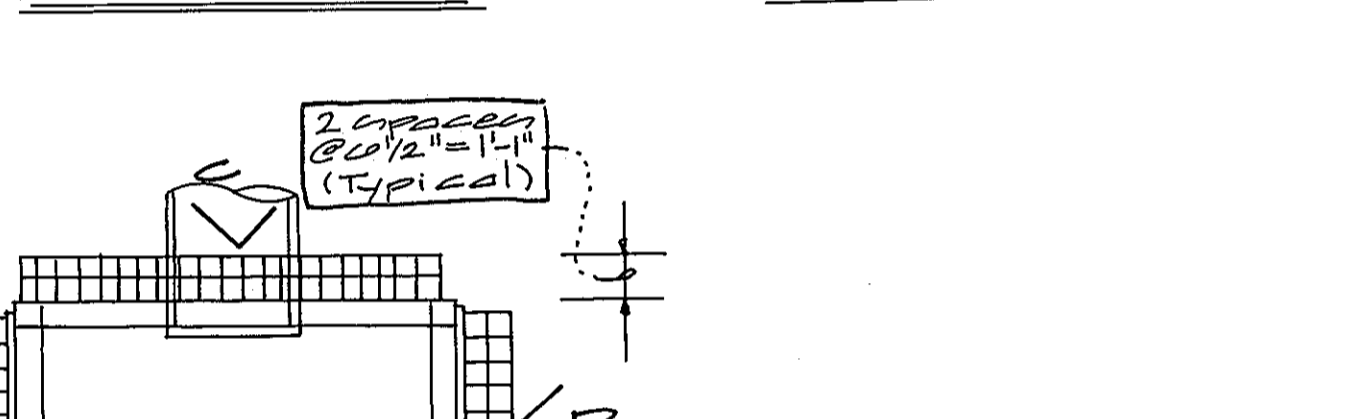
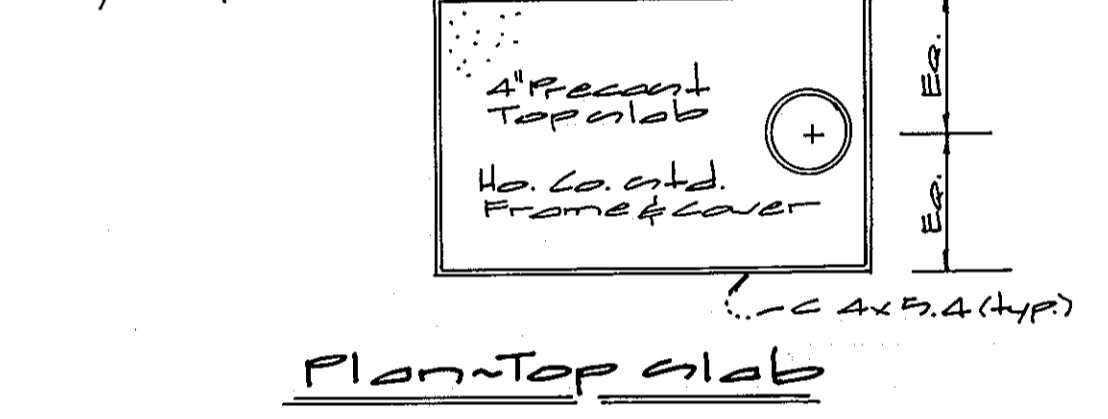
PREPARED FOR:  
 THE HOWARD RESEARCH  
 AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 (410) 992-6089

Sediment Control Details & Grading Plan  
 SNOWDEN RIVER BUSINESS PARK  
 SECTION 1 AREA 1  
 Parcel A-2, B-1, C-1, D-2, E-1 & Lots C thru I  
 HOWARD COUNTY, MARYLAND

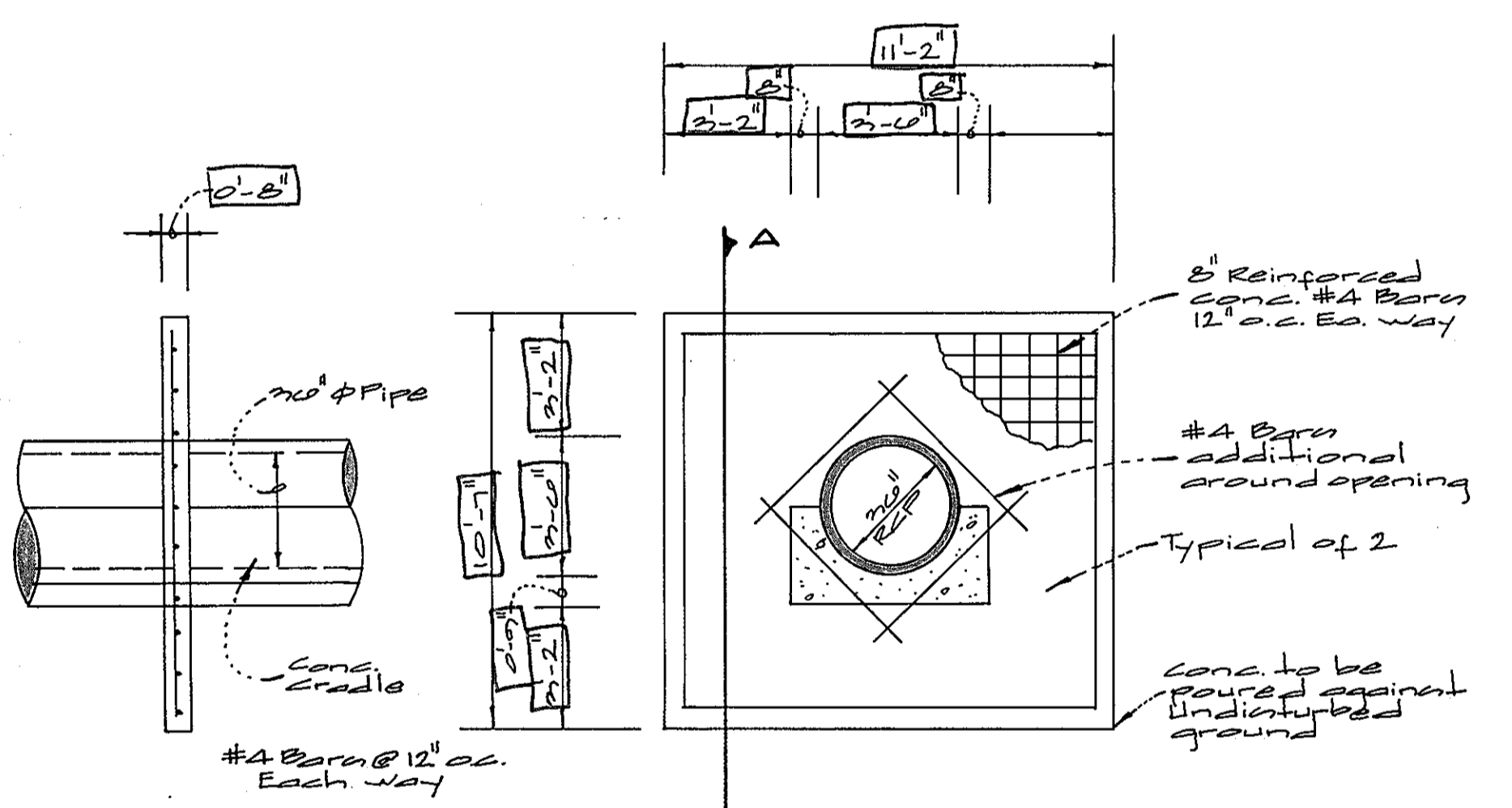
SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	NT	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	18 OF 21



**Plan View - Structure R-1**  
 Scale: 1" = 5'-0" Horiz. 1" = 5'-0" Vert.  
 Notes: Structure has been designed to require a minimum finished weight of 40,000 lbs. Any deviations from the indicated fill will require boundary comp to be provided by the contractor.



**Profile Thru Proposed Spillway**



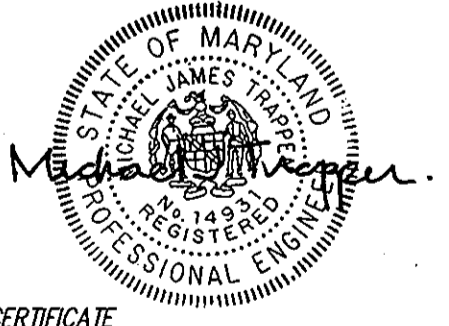
**Notes For Anti-creep Collar**  
 1) Four Conc. to undisturbed earth.  
 2) Remove sheeting before pouring concrete.  
 3) FC = 4000 Pci @ 28 days.  
 4) Four collars with pipe in place.  
 5) Backfill evenly on both sides of collars.  
 6) Locate collars a min. of 2' from pipe joints.

**DEVELOPER'S/BUILDER'S CERTIFICATE**

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**ENGINEER'S CERTIFICATE**

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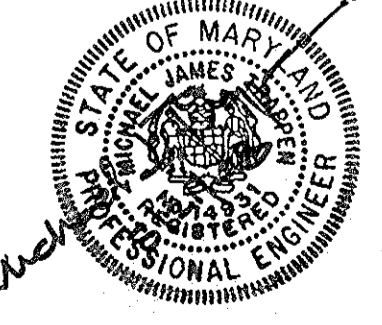
- 1) Trash racks to be hot dip galvanized after fabrication painted w/2 coats of black paint.
- 2) Vertical bars shall be on the outside of horizontal bars.
- 3) Trash rack to be securely bolted to river structure with 1/2" dia bolts embedded 8" (6 locations min. per rack).
- 4) All rebar intersections to be spot welded.
- 5) All rebar to plate intersections or plate to plate intersections to be securely welded.

**AS-BUILT STORMWATER MANAGEMENT CERTIFICATION**  
 "This record drawing is accurate and complete, the stormwater management facility is constructed per the approved stormwater management plan or subsequent revisions, and stormwater management is provided per the approved design computations."

**MARYLAND (ES) CERTIFICATION**  
 "Also, I hereby certify that the facility was constructed as shown on the as-built plan and meets or exceeds the requirements of the Natural Resources Conservation Service Maryland Conservation Practice Standard for Ponds (MD-378) and the approved pond plans and specifications. The pond also has 95% or more vegetative cover."

**PROFESSIONAL CERTIFICATION**  
 "Also, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 14931, Expiration Date, May 21, 2010."

**Michael J. Trapp**  
 Michael James Trapp  
 Professional Engineer  
 Maryland Reg. No. 14931



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 11/27/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 12/7/01

Chief, Development Engineering Division MK  
 Date: 12/16/01

**Nalt A. Jurek** 11/16/01  
 Signature of Developer/Builder Date

**Michael J. Trapp** 8/15/01  
 Date

**John A. ...** 11/15/01  
 Howard Soil Conservation District Date

**Jeri ...** 11/15/01  
 Natural Resources Conservation Service Date

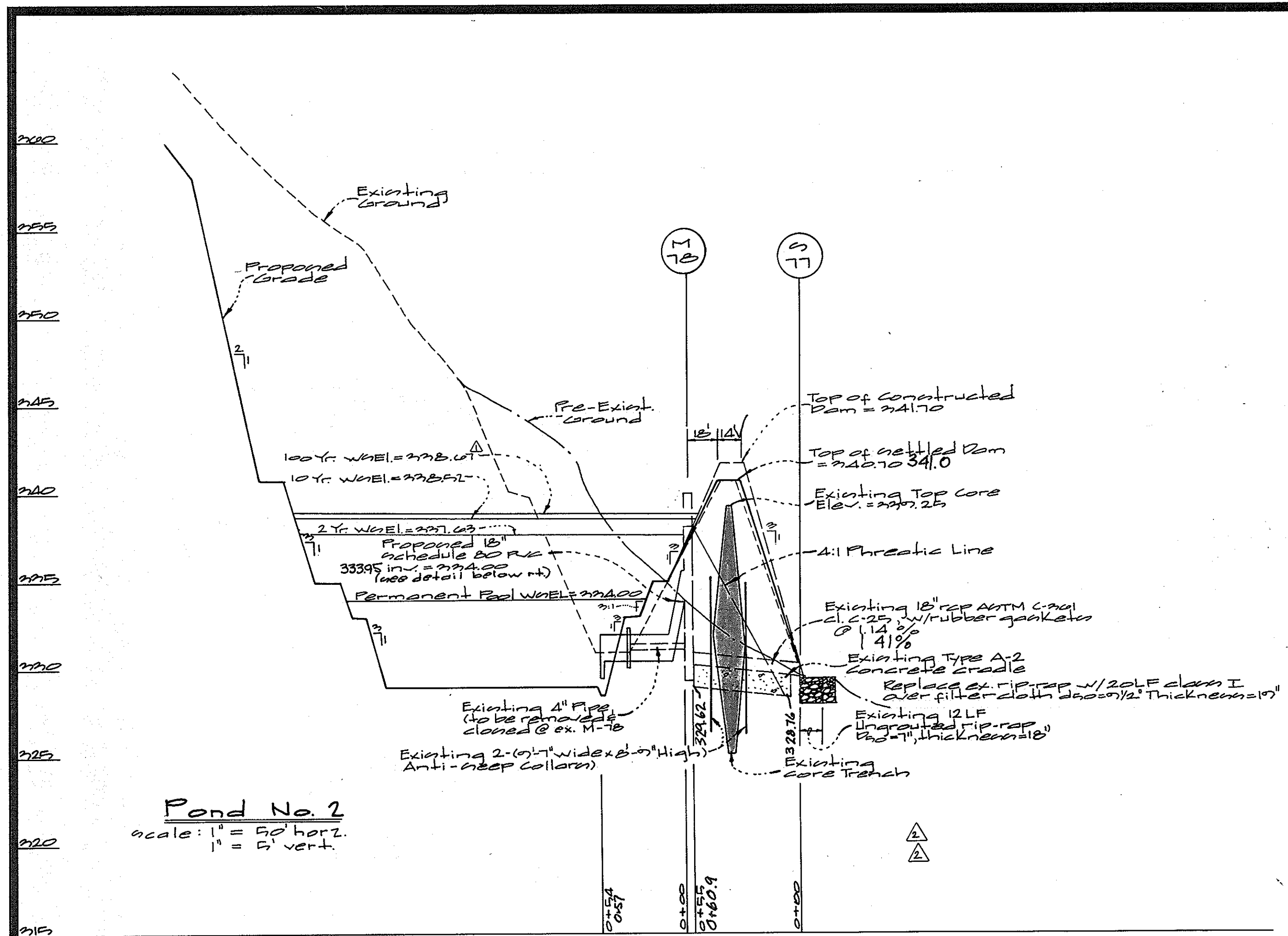
**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 FAX: 301-421-4186

DATE	REVISION	BY	APPR.
11/14/01	REV. TITLE BLOCK		
11/14/01	REV. TITLE BLOCK		
	REV. W.O.E.U.		

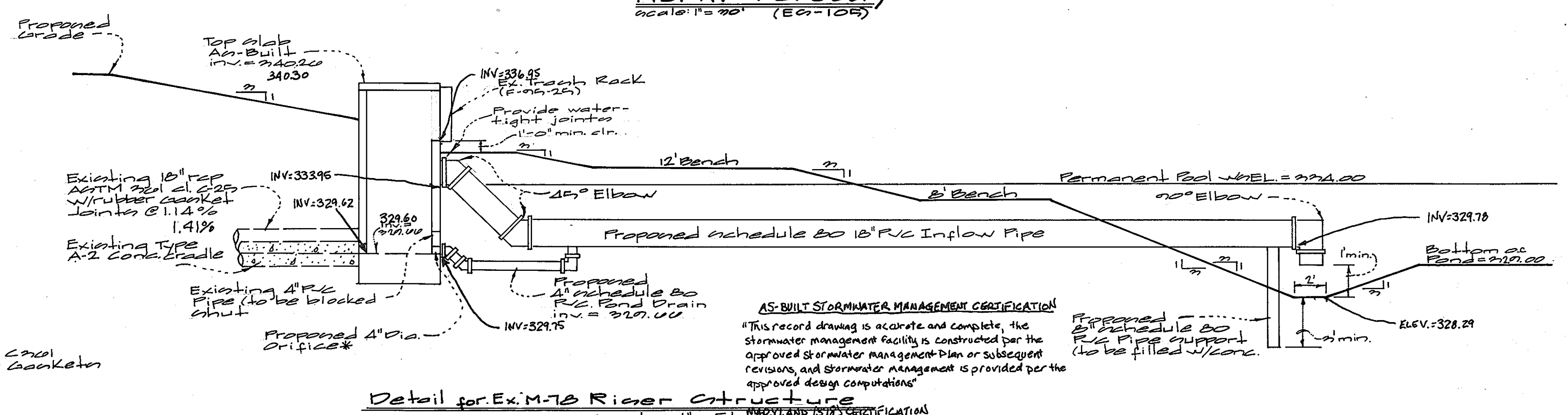
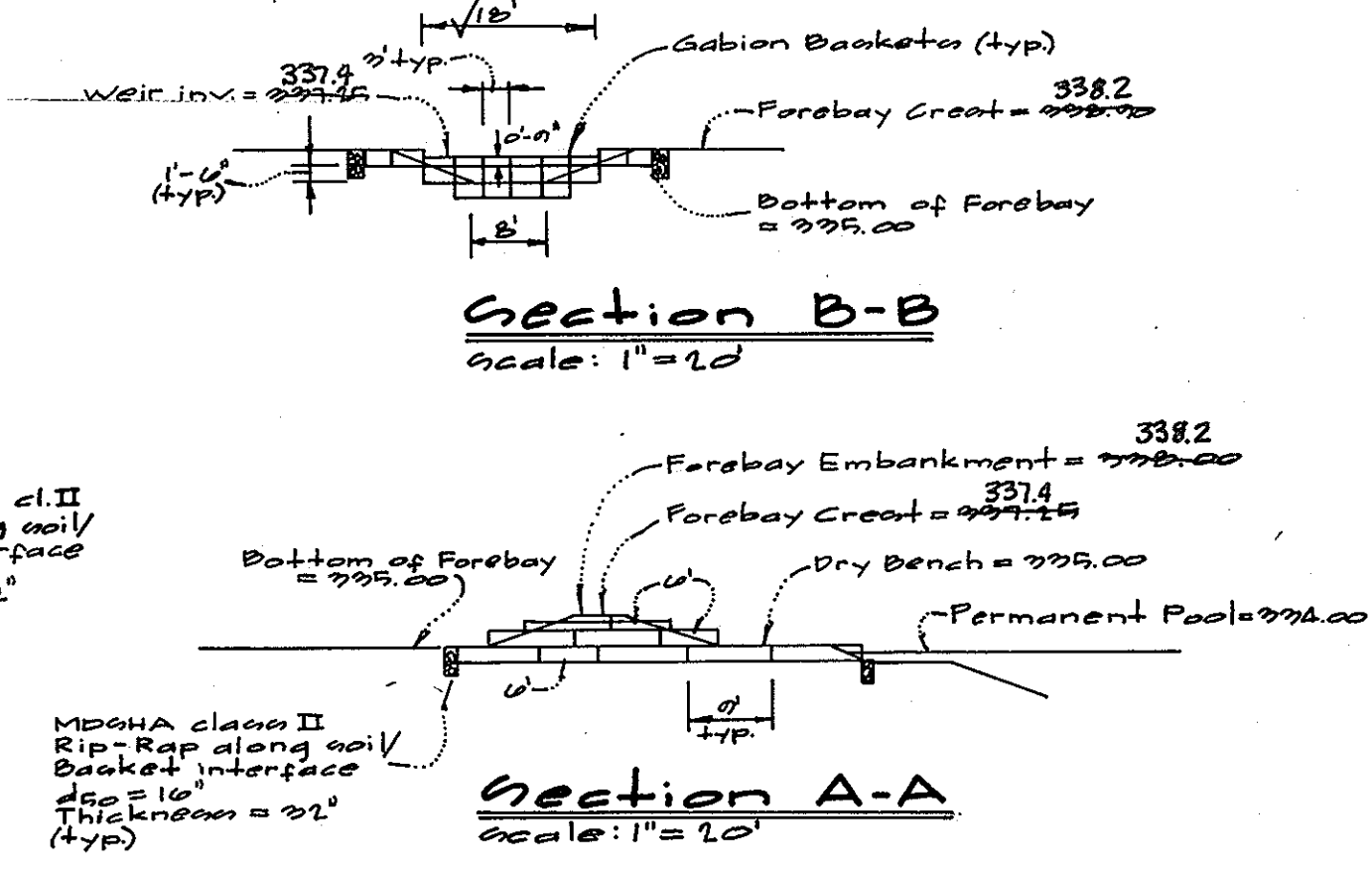
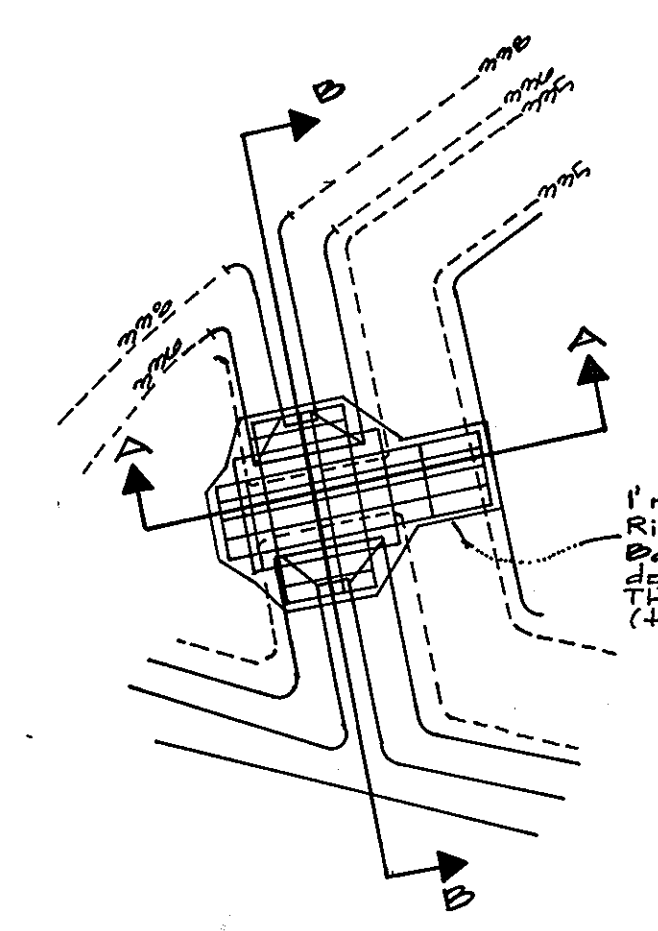
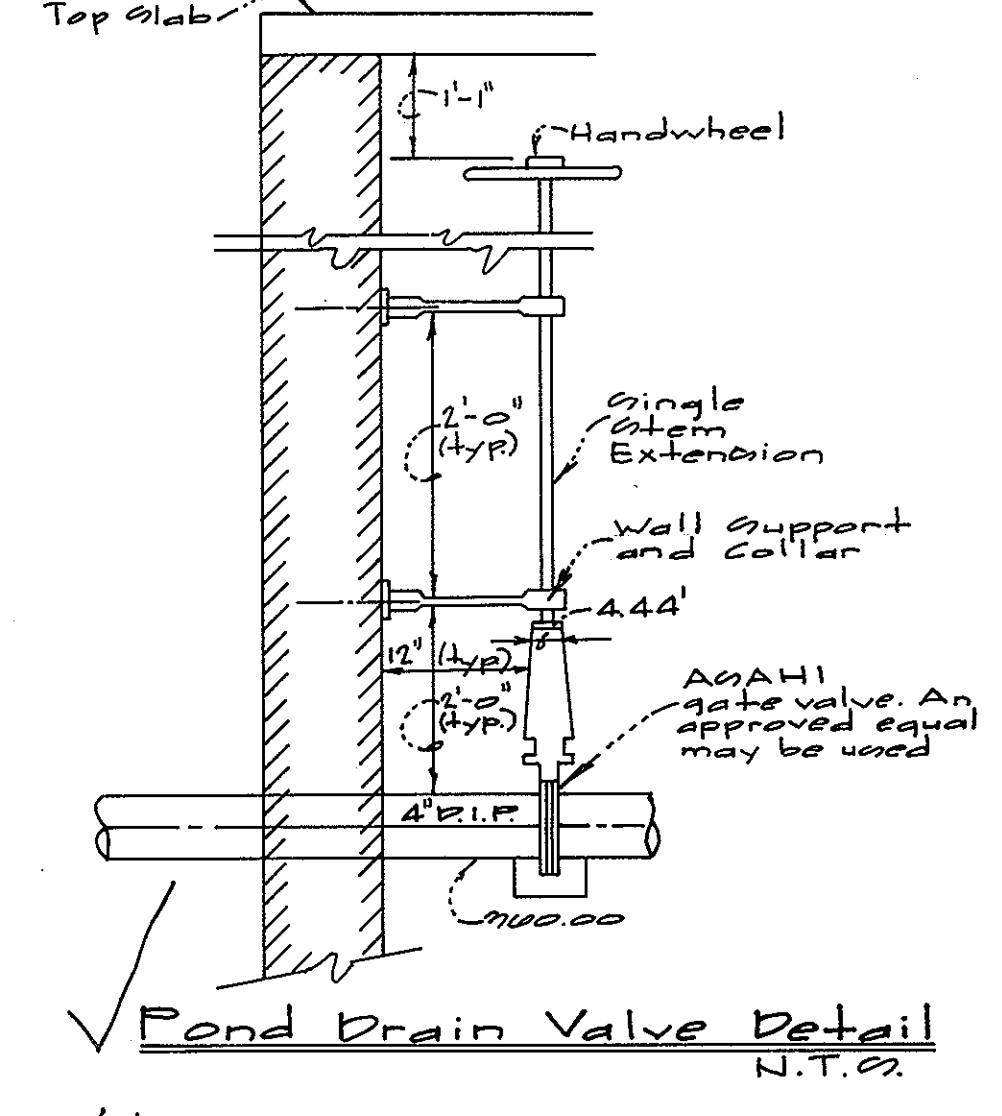
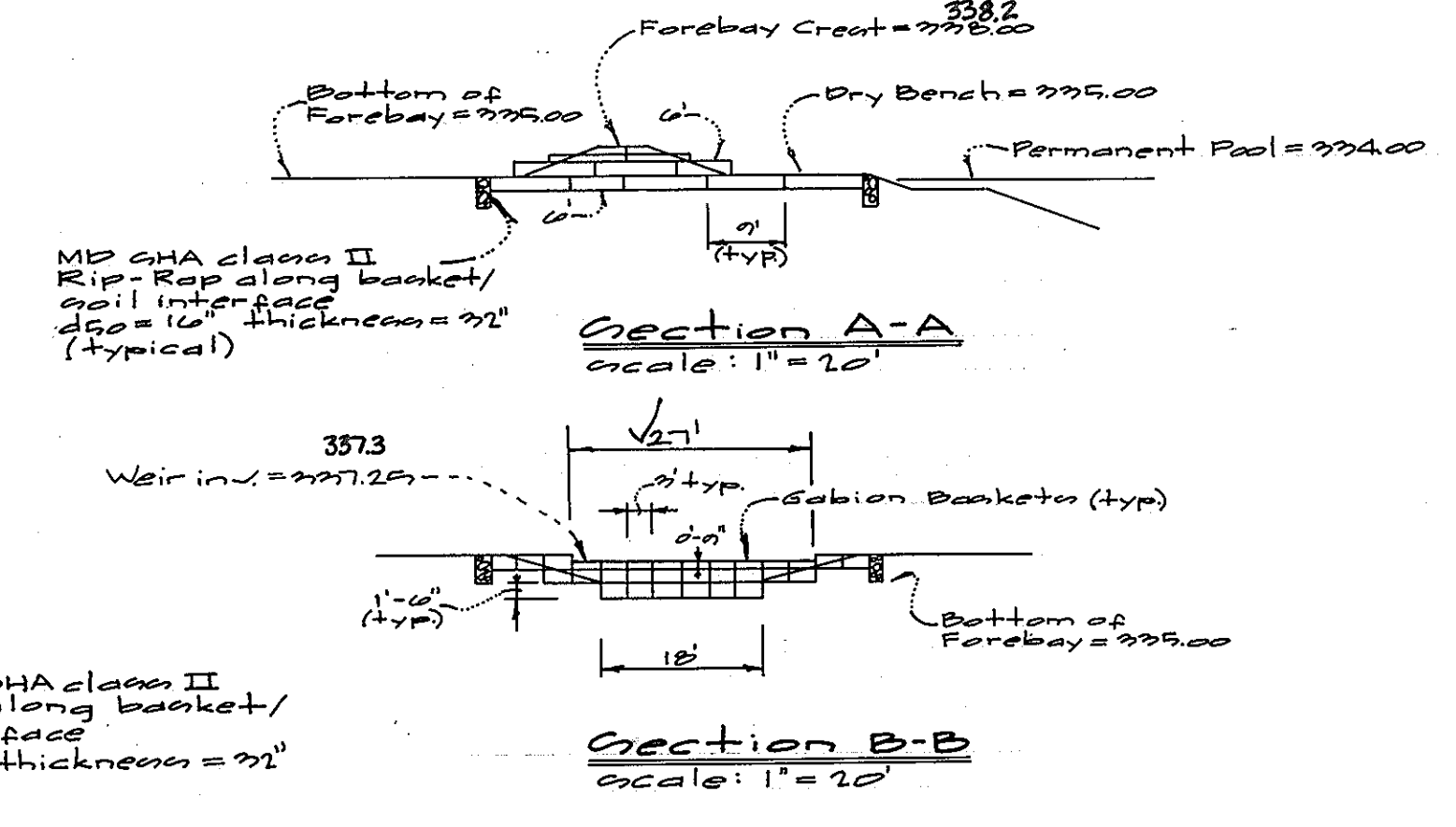
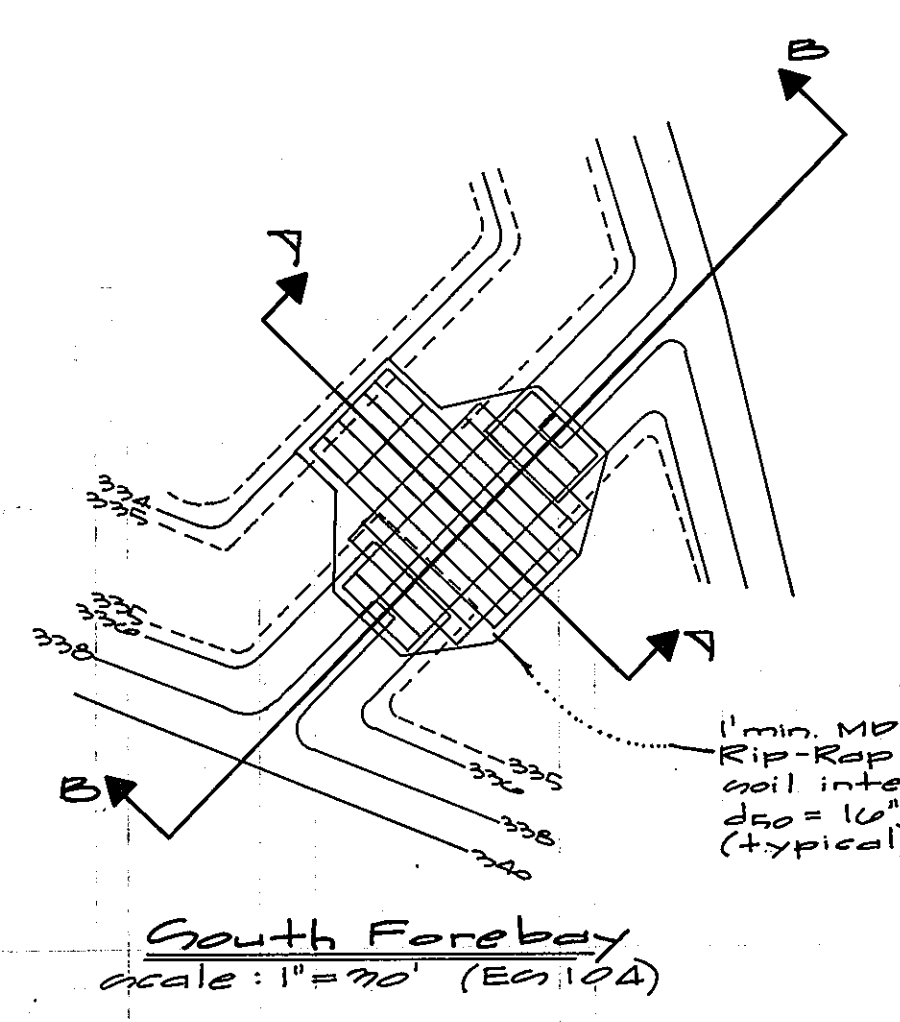
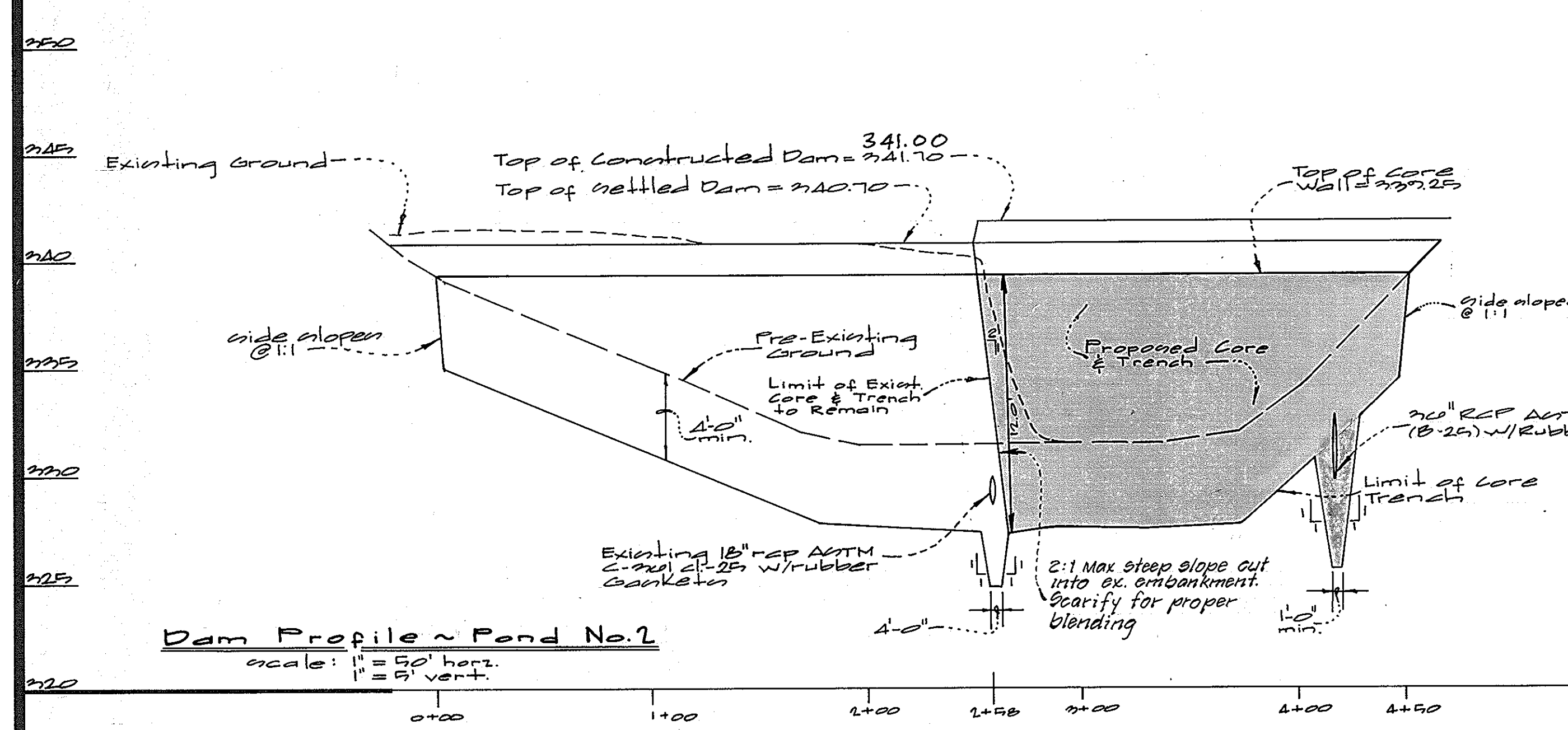
PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 (410) 992-6089

**STORMWATER MANAGEMENT DETAILS (FACILITY No. 2)**  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcels A2, B-1, C-1, D-2, E-1 & Lots C Thru 10  
 ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	19 OF 31



Profile Thru Exist. Principal Spillway



**AS-BUILT STORMWATER MANAGEMENT CERTIFICATION**  
This record drawing is accurate and complete, the stormwater management facility is constructed per the approved stormwater management plan or subsequent revisions, and stormwater management is provided per the approved design computations.

**PROFESSIONAL CERTIFICATION**  
Also, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license No. 14431, Expiration Date: May 21, 2010.



Approved: Howard County Department of Public Works  
*Howard Silk* 1/12/01  
Chief, Bureau of Highway

Approved: Howard County Department of Planning & Zoning  
*Carole Hamble* 12/2/01  
Chief, Division of Land Development

Approved: Howard County Department of Planning & Zoning  
*Michael J. Trapp* 1/15/01  
Chief, Development Engineering Division

**ENGINEER'S CERTIFICATE**  
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.

*Michael J. Trapp* 3-6-01  
Date

**DEVELOPER'S/BUILDER'S CERTIFICATE**  
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*Scott H. Oak* 1/15/01  
Signature of Developer/Builder Date

**AS-BUILT SHEET 7 OF 11**

SCALE: AS SHOWN  
ZONING: NT  
DATE: November, 2001  
TAX MAP - GRID: TM 37 CR 13 & 19  
SHEET: 20 OF 31

G. L. W. FILE No. 99101

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
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NO.	DATE	REVISION	BY	APPR.
01		Rev. Title Block		
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03		Rev. WSEL		

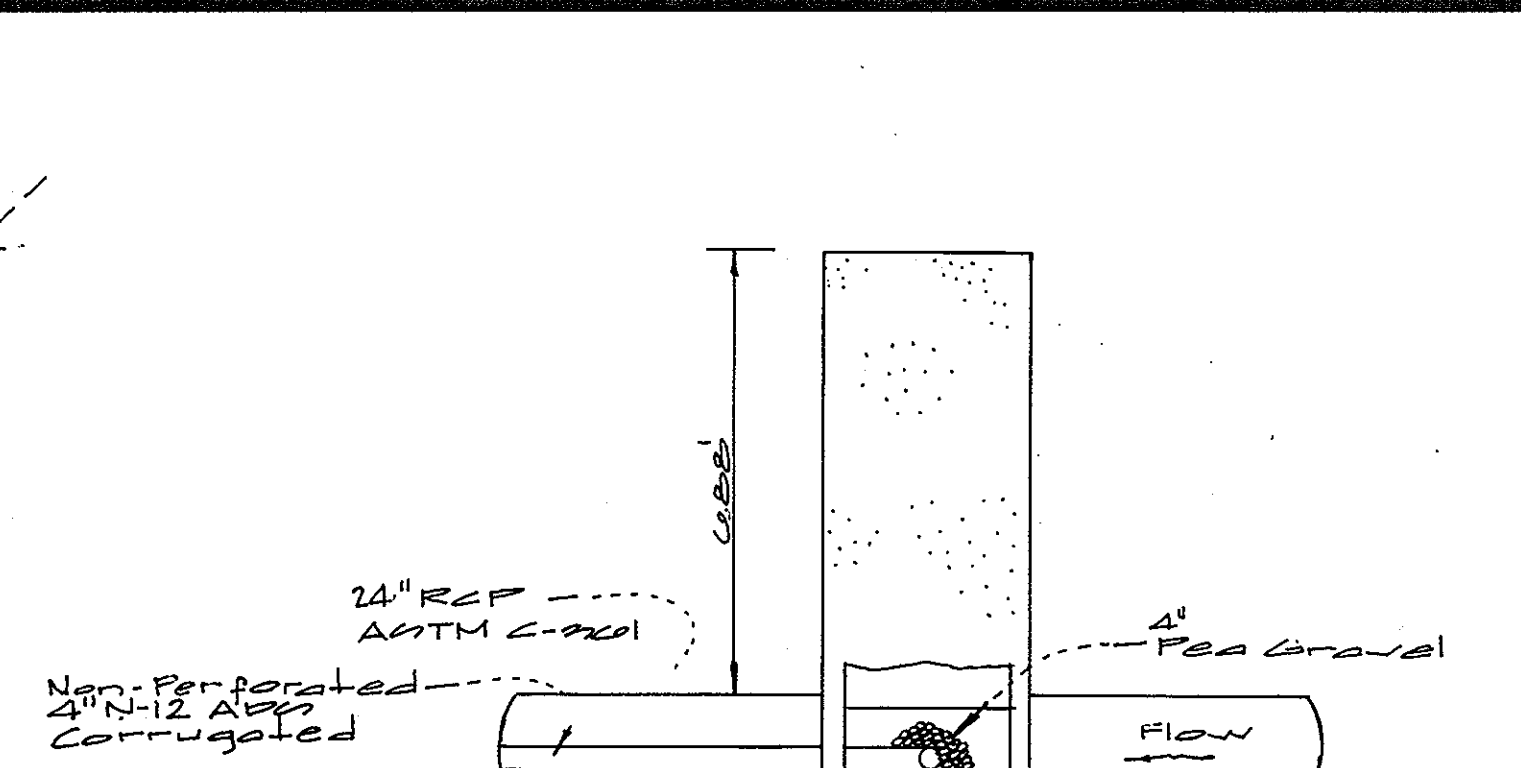
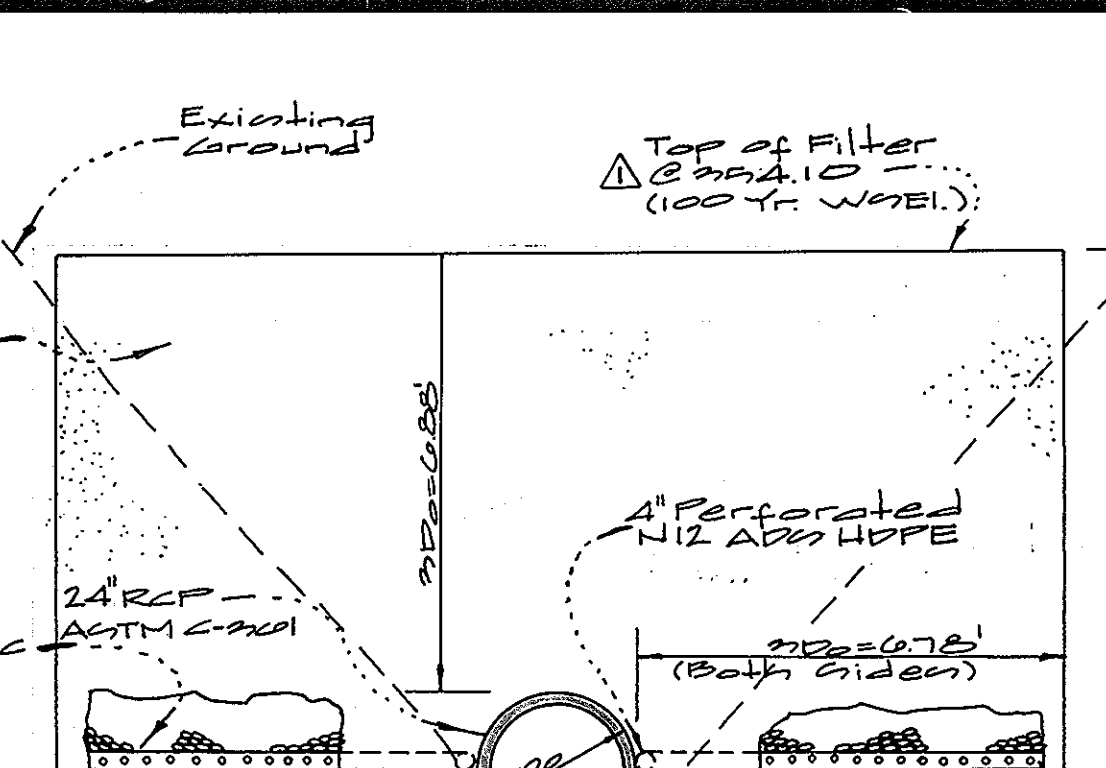
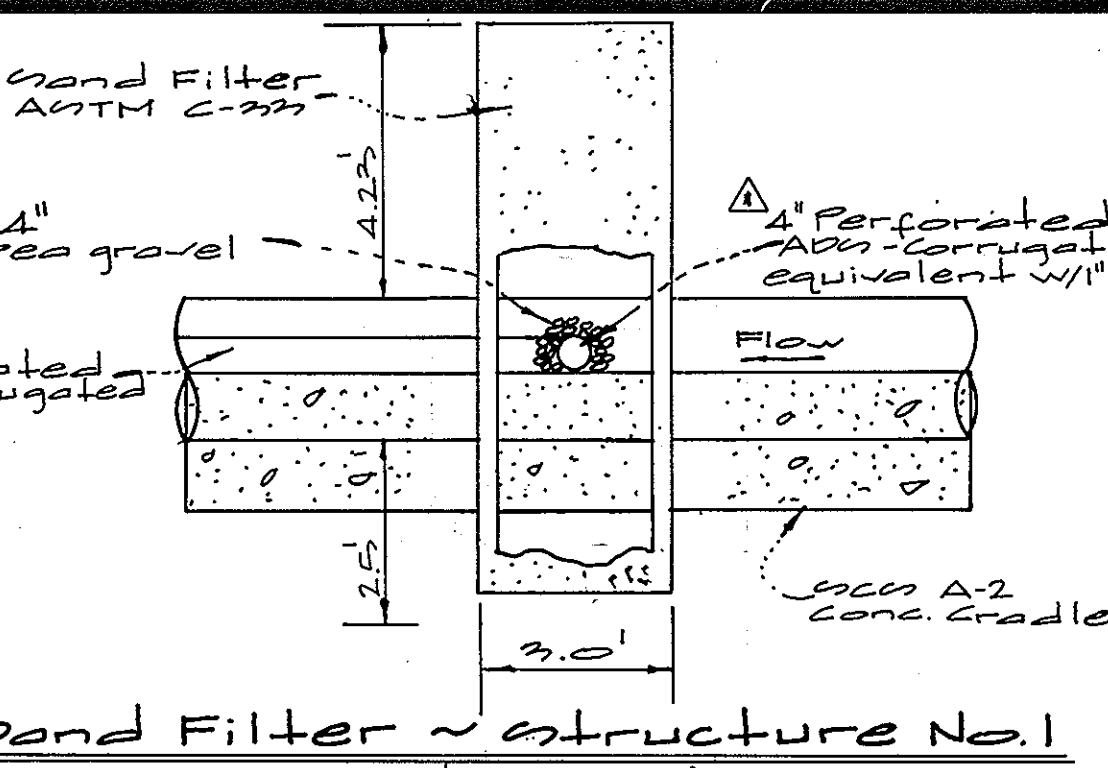
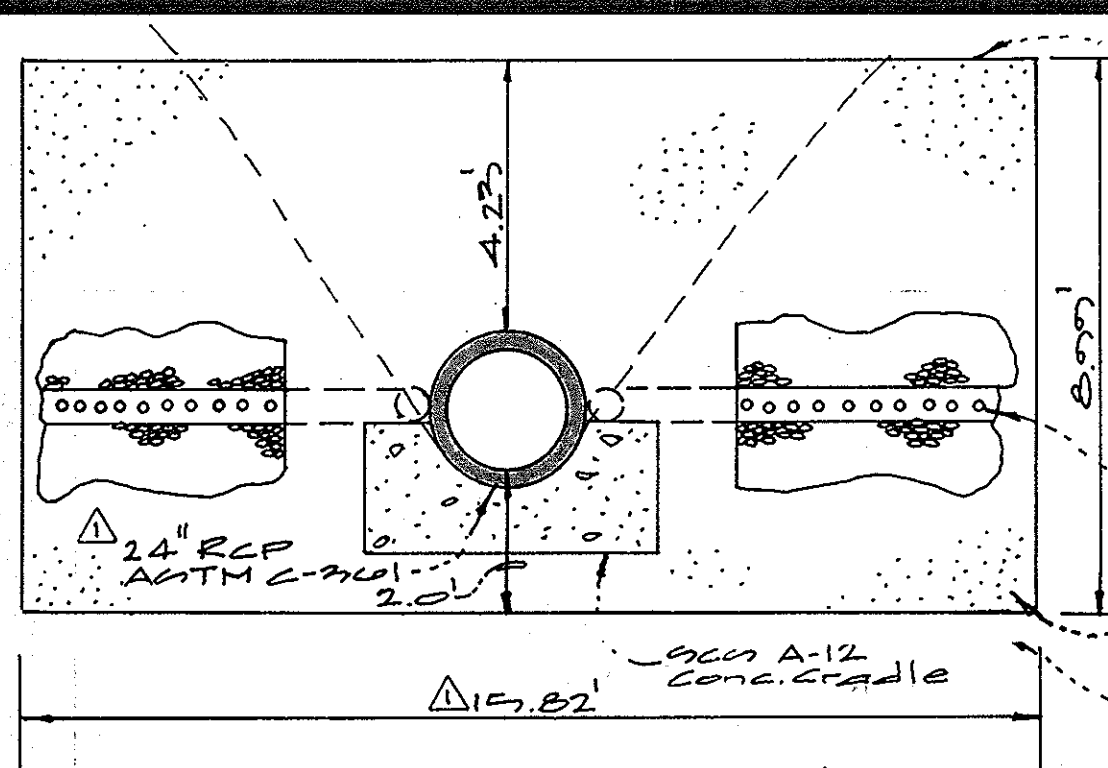
PREPARED FOR:  
**THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION**  
10275 LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
(410) 992-6000

**STORMWATER MANAGEMENT DETAILS**  
**SNOWDEN RIVER BUSINESS PARK**  
SECTION 1 AREA 1  
Parcel 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 & Lots 10 Thru 10

AS-BUILT SHEET 7 OF 11

SCALE: AS SHOWN  
ZONING: NT  
DATE: November, 2001  
TAX MAP - GRID: TM 37 CR 13 & 19  
SHEET: 20 OF 31

G. L. W. FILE No. 99101



**AS-BUILT STORMWATER MANAGEMENT CERTIFICATION**

This record drawing is accurate and complete, the stormwater management facility is constructed per the approved stormwater management Plan or subsequent revisions, and stormwater management is provided per the approved design computations.

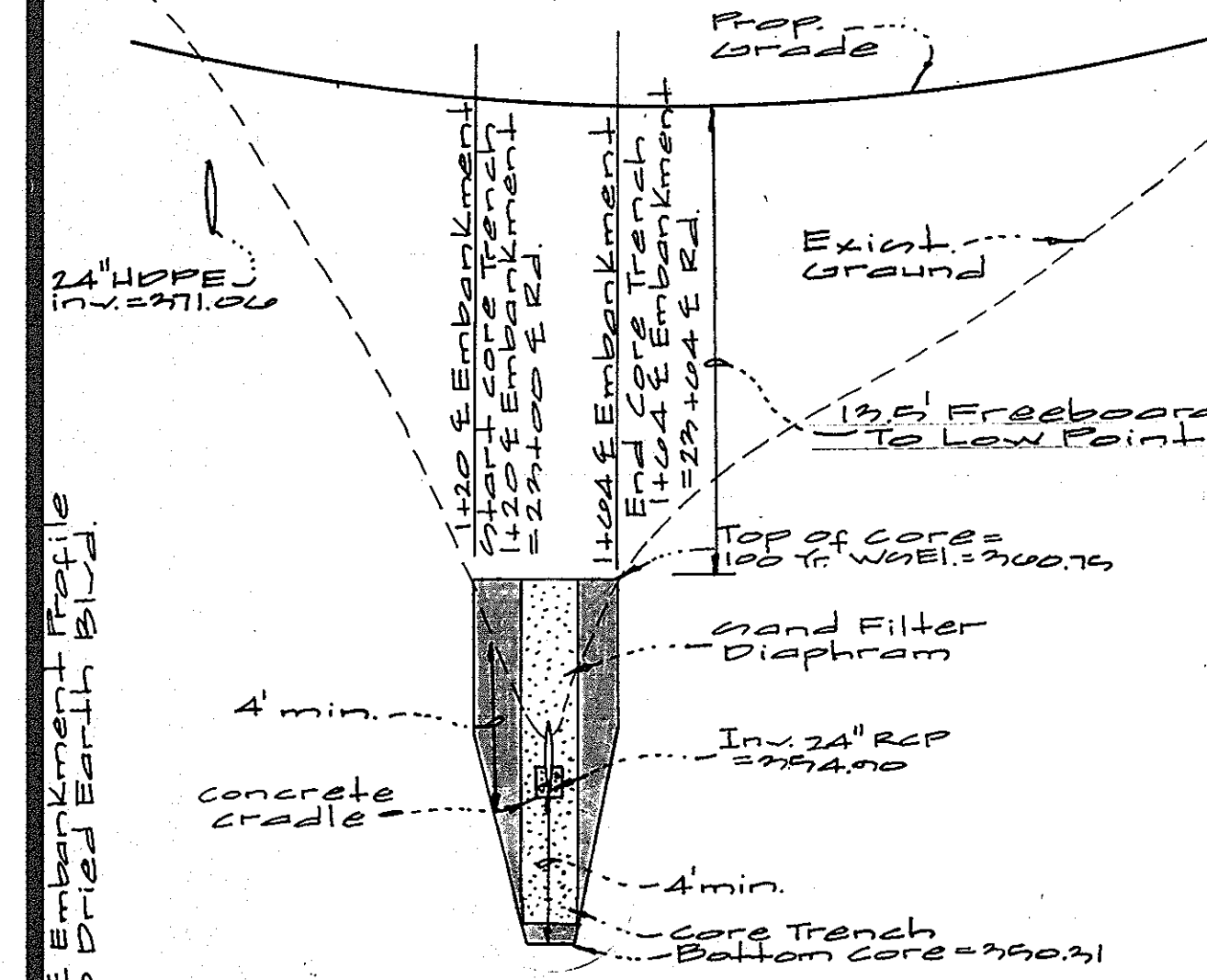
**MARYLAND (378) CERTIFICATION**

I, the undersigned, hereby certify that the facility was constructed as shown on the AS-Built plan and meets or exceeds the requirements of the natural Resources Conservation Service Maryland Conservation Practice Standard for Ponds (MP-378) and the approved pond plans and specifications. The pond also has 95% or more vegetative cover.

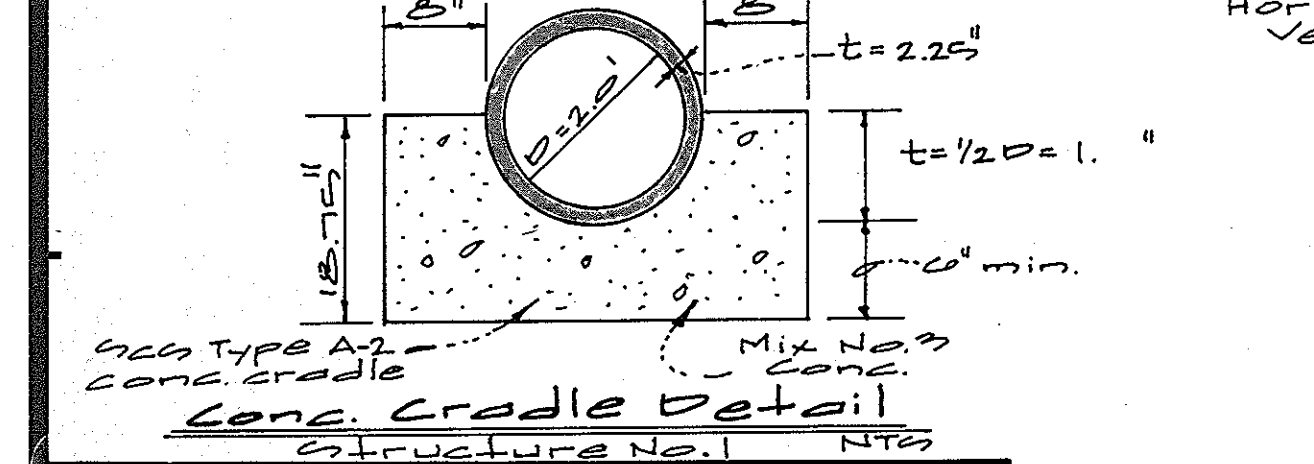
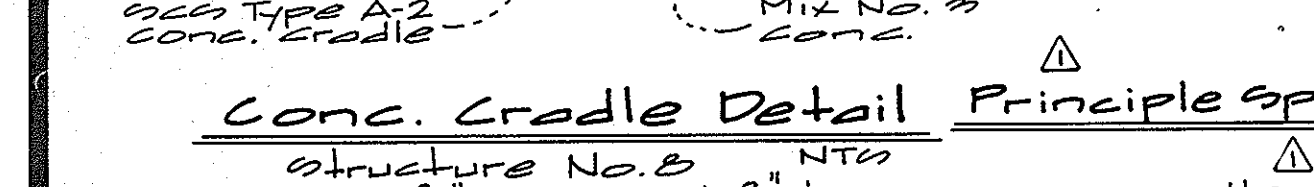
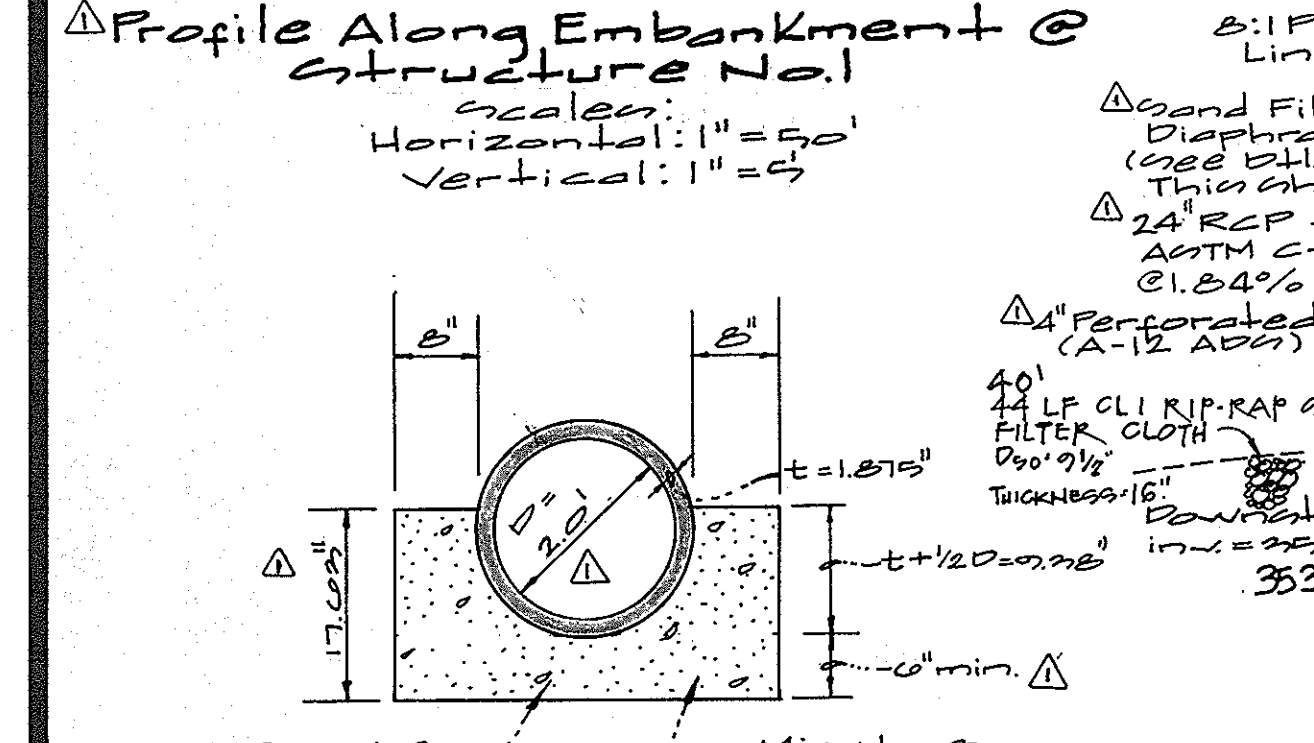
**PROFESSIONAL CERTIFICATION**

I, the undersigned, hereby certify that the documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 14931, Expiration Date: May 21, 2010.

- Notes**
- Geotextile in sand filter to conform to the following:
    - ASTM D4833 (Puncture strength: 125lb)
    - ASTM D4832 (Tensile strength: 300lb)
    - Minimum Thickness: 0.08"
    - Equivalent Pore size: #80 sieve  $\approx 2.5$  mm.
    - Minimum Flow Rate of 125 gpm/ft<sup>2</sup>
  - All utilities through Proposed Embankments & E are to be installed with no stone underlayment.
  - All water lines through Proposed Embankments & E are to be constructed with restrained joints.
  - Cut off Trench may be eliminated should a geo-technical analysis of in situ soils show that such elimination is feasible.



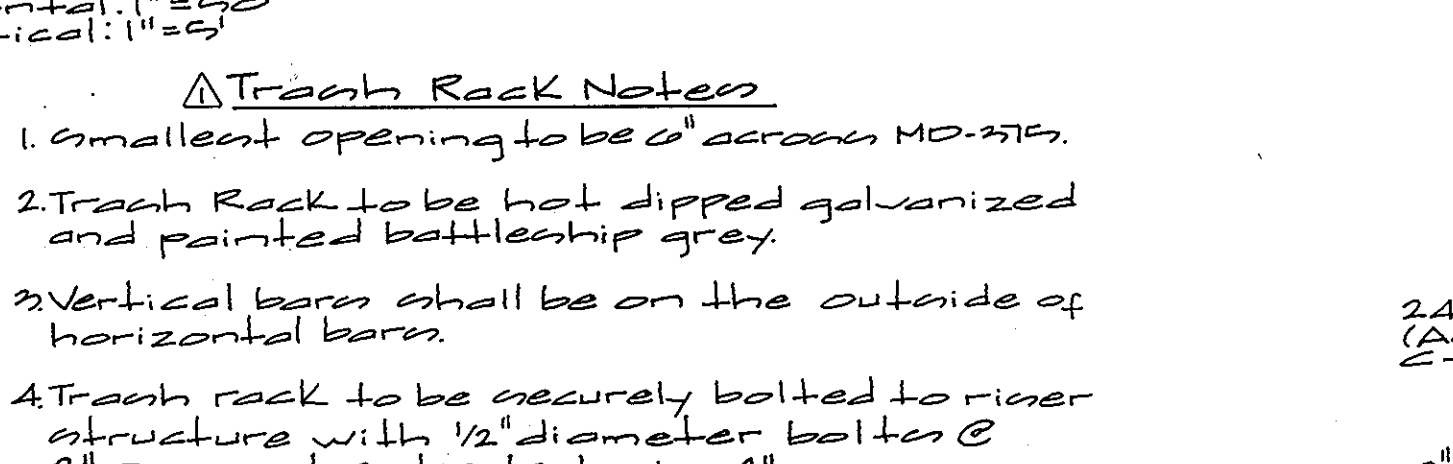
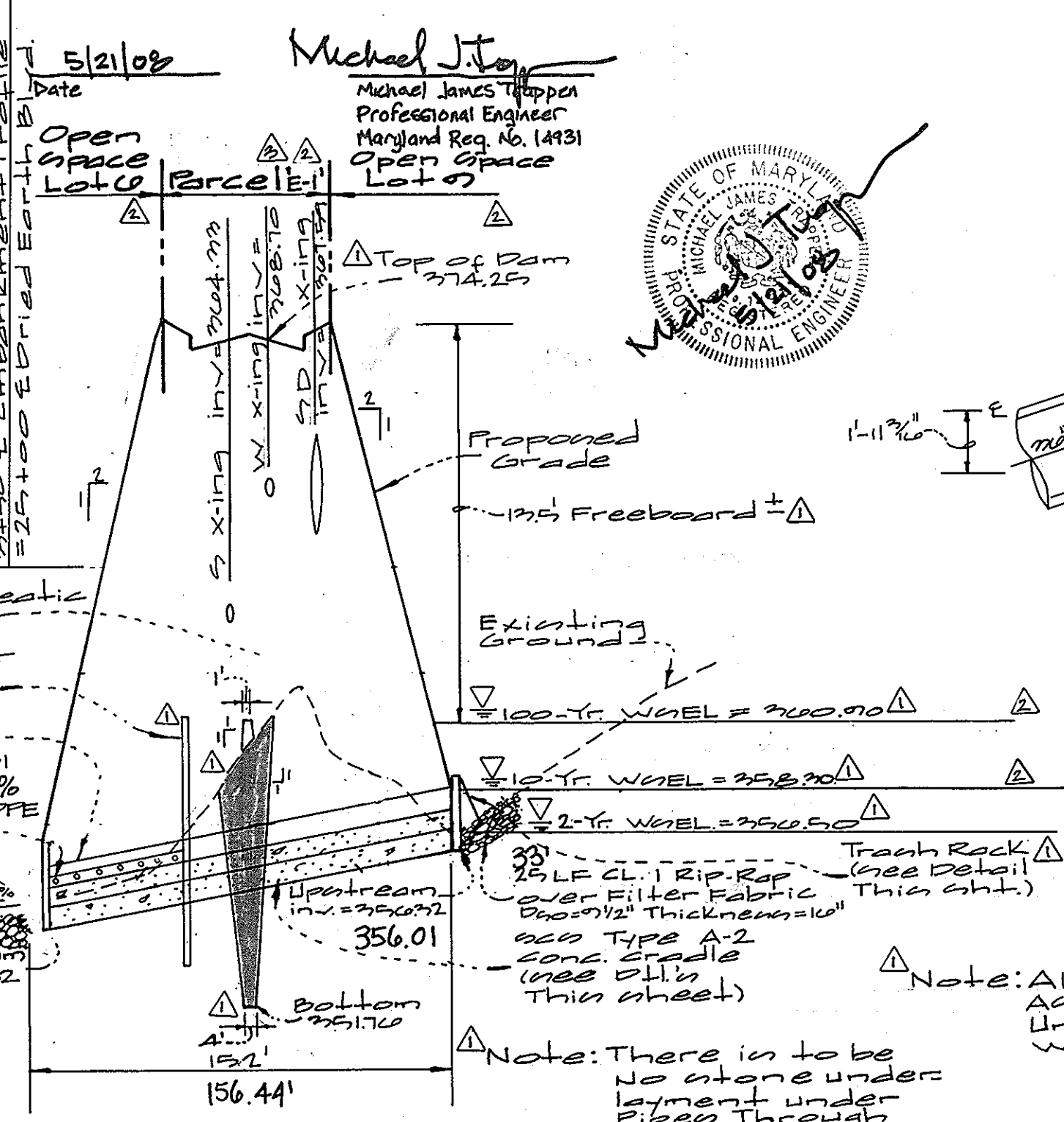
Note: Core Trench to be backfill with 95% compaction. Provide 95% compaction. Provide 95% compaction. Provide 95% compaction.



**Approved:** Howard County Department of Public Works  
 Chief, Bureau of Highways  
 Date: 1/29/01

**Approved:** Howard County Department of Planning & Zoning  
 Chief, Division of Land Development  
 Date: 1/29/01

**Approved:** Howard County Department of Planning & Zoning  
 Chief, Development Engineering Division  
 Date: 1/29/01

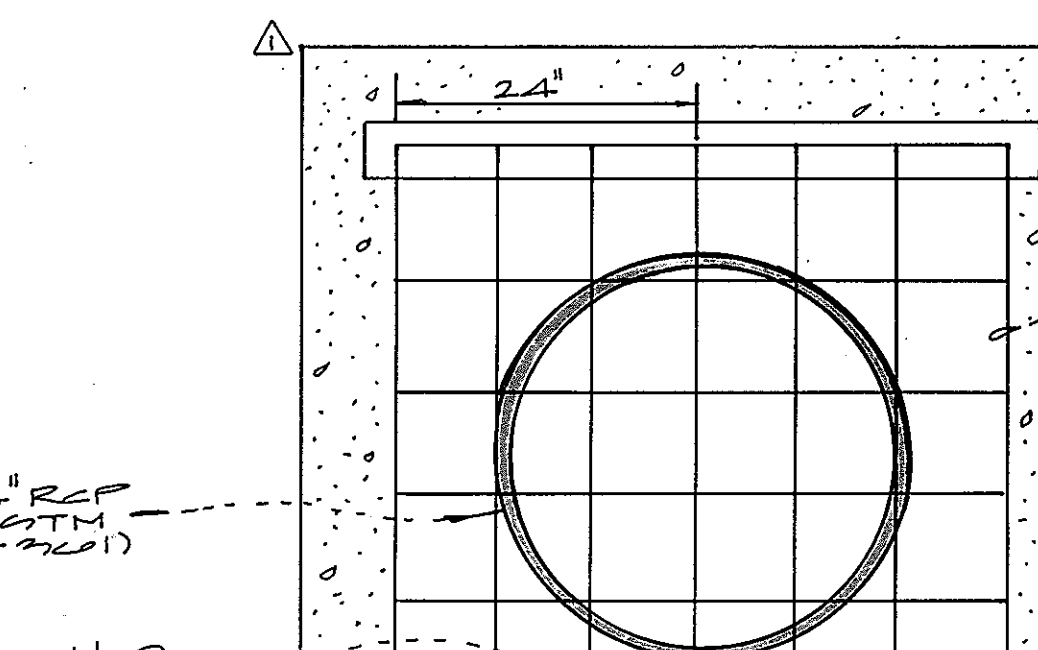
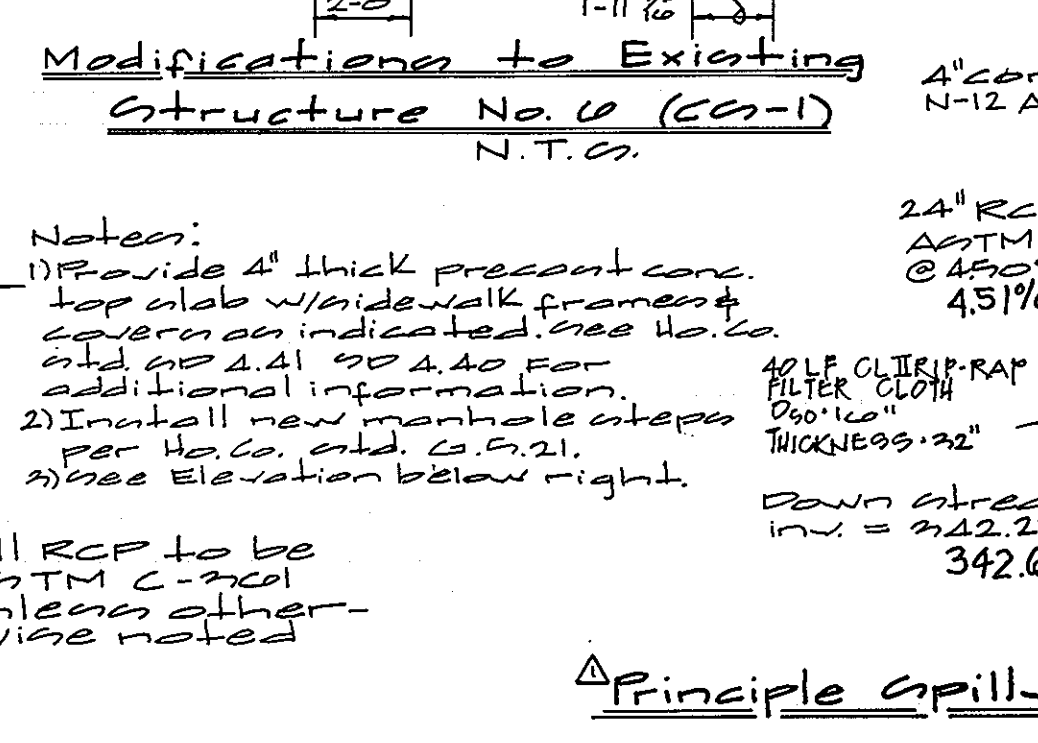
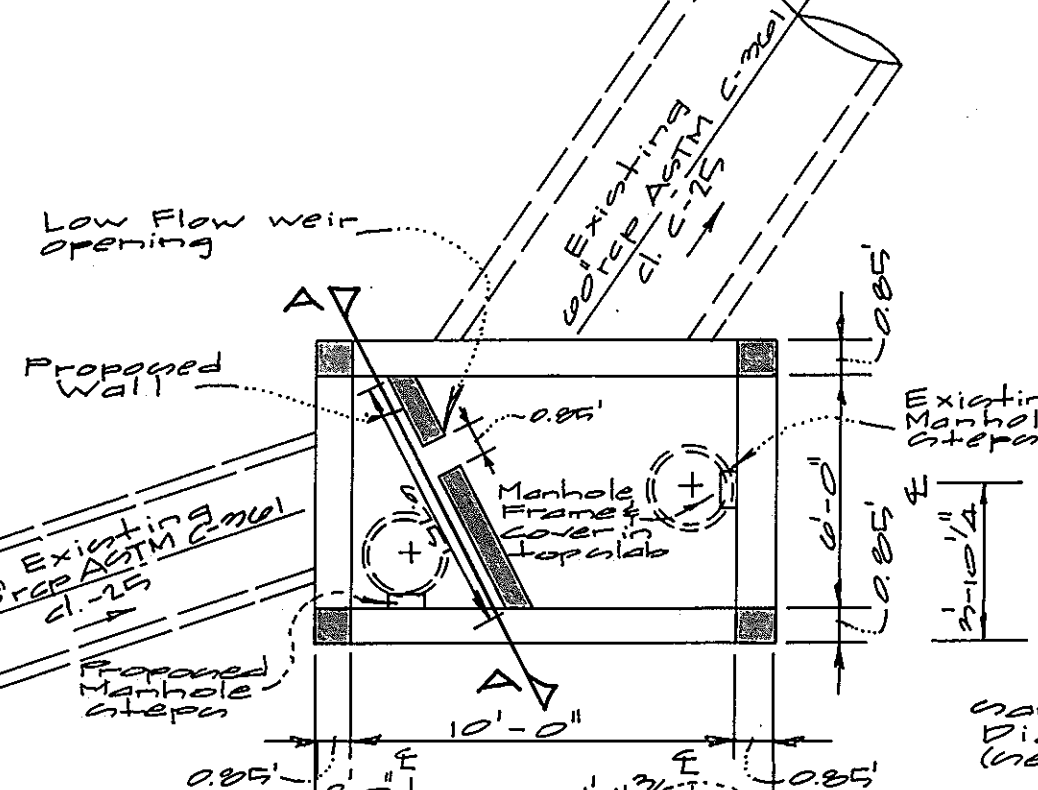


**Notes:**

- Provide 4" thick present conc. top slab w/ sidewalk frames & covers as indicated. See H.C. 21 & 22 for additional information.
- Install new manhole steps per H.C. 21 & 22.
- See Elevation below right.

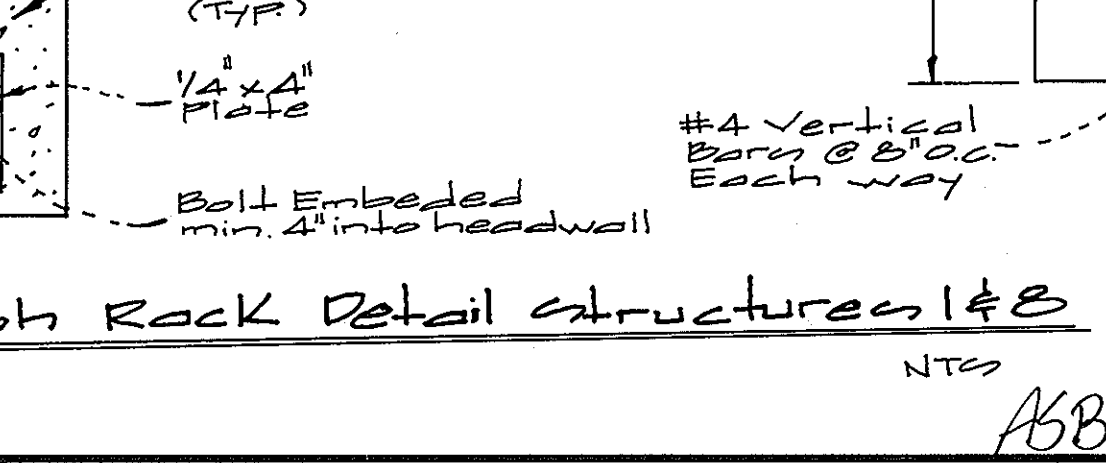
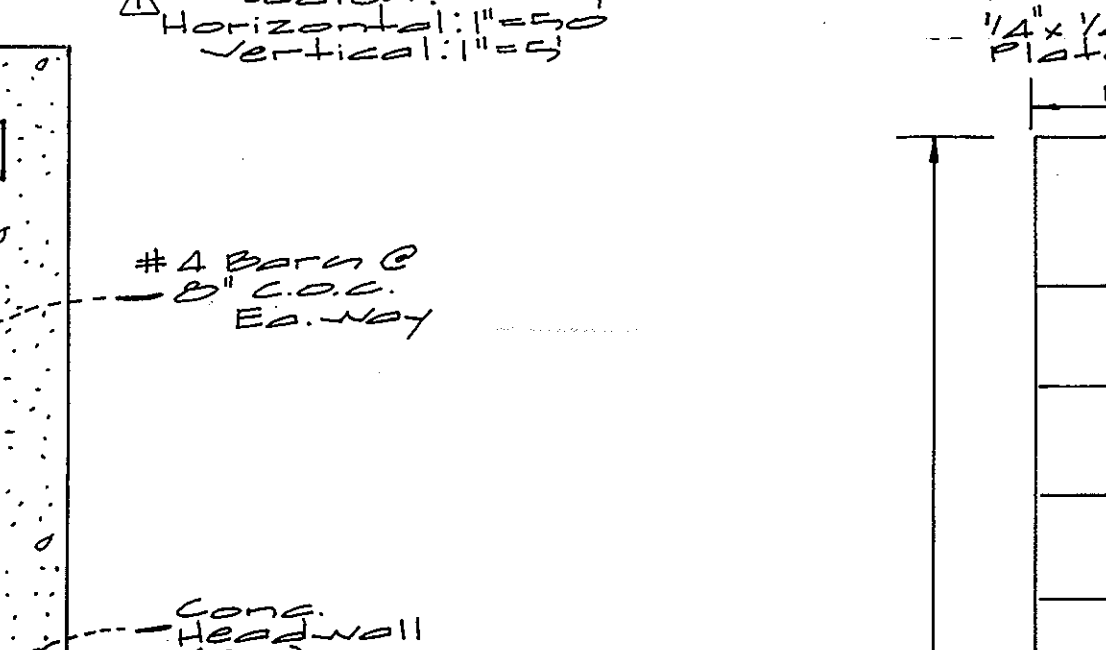
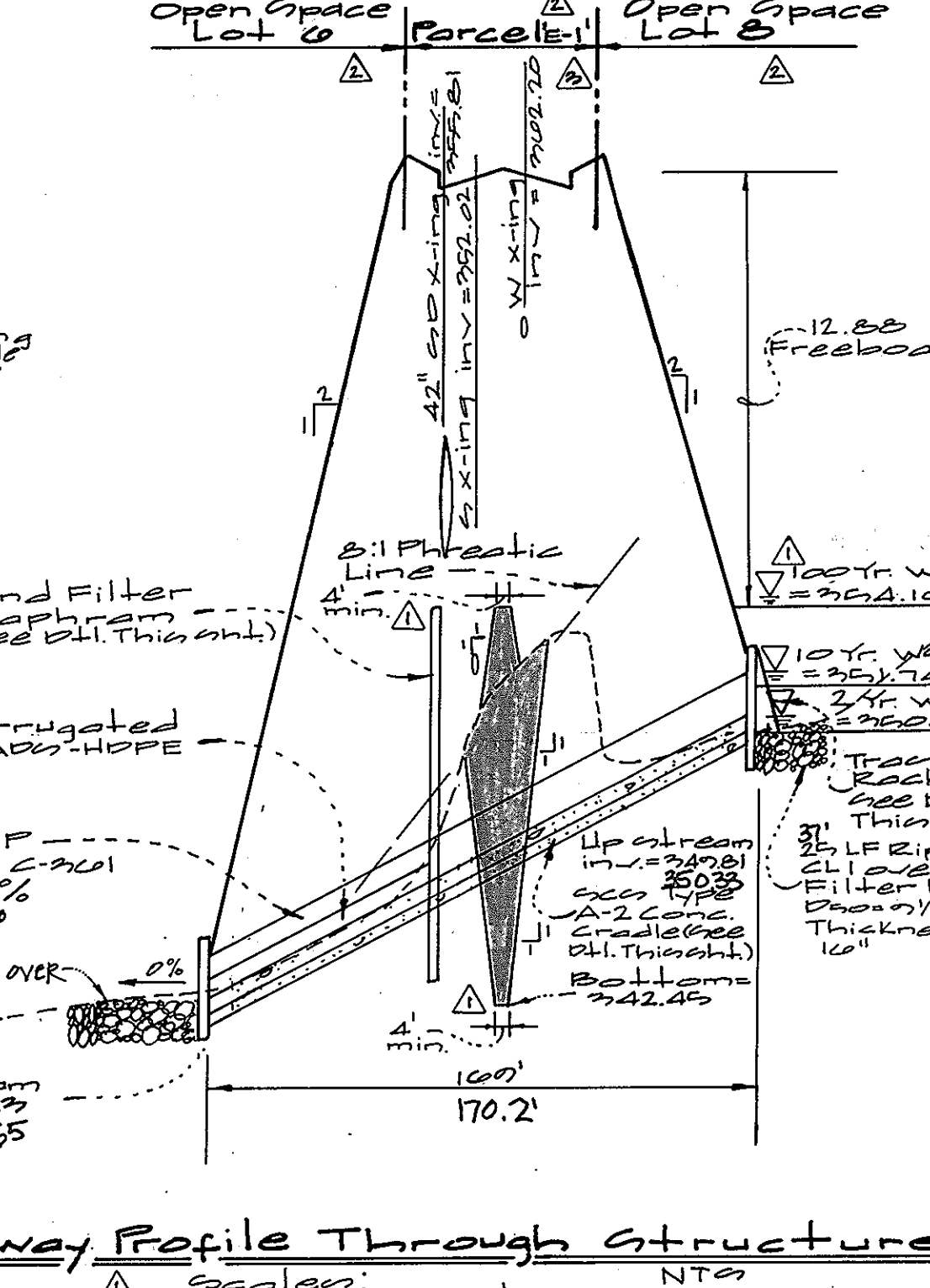
Note: All RCP to be ASTM C-2001 Unless otherwise noted.

Note: There is to be no stone underlayment under pipes through Embankments.



**Notes:**

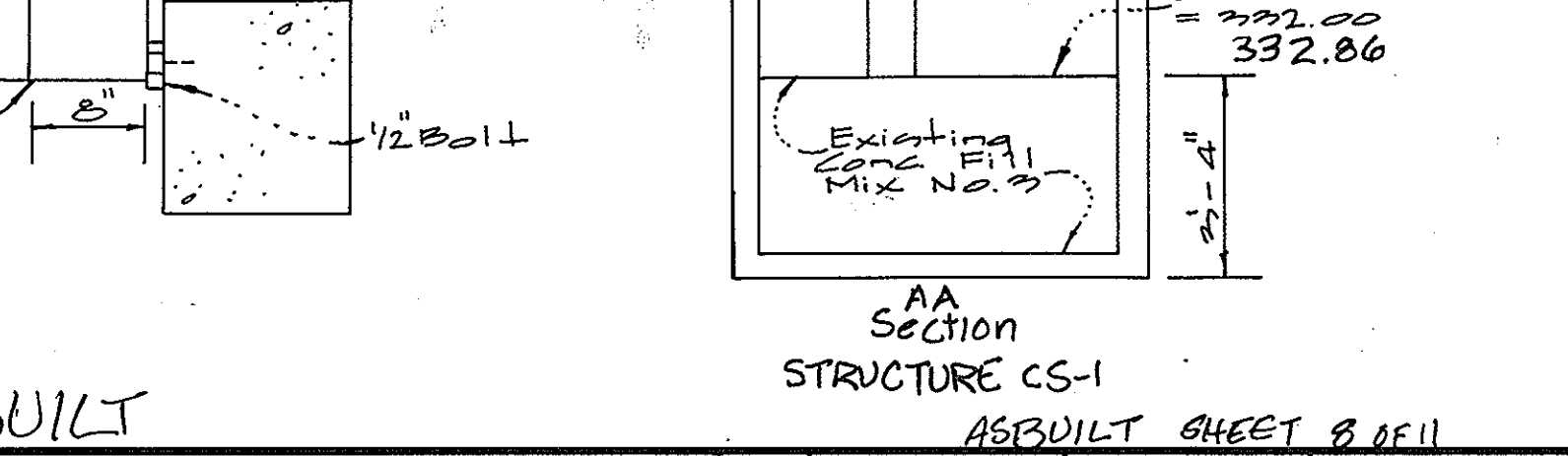
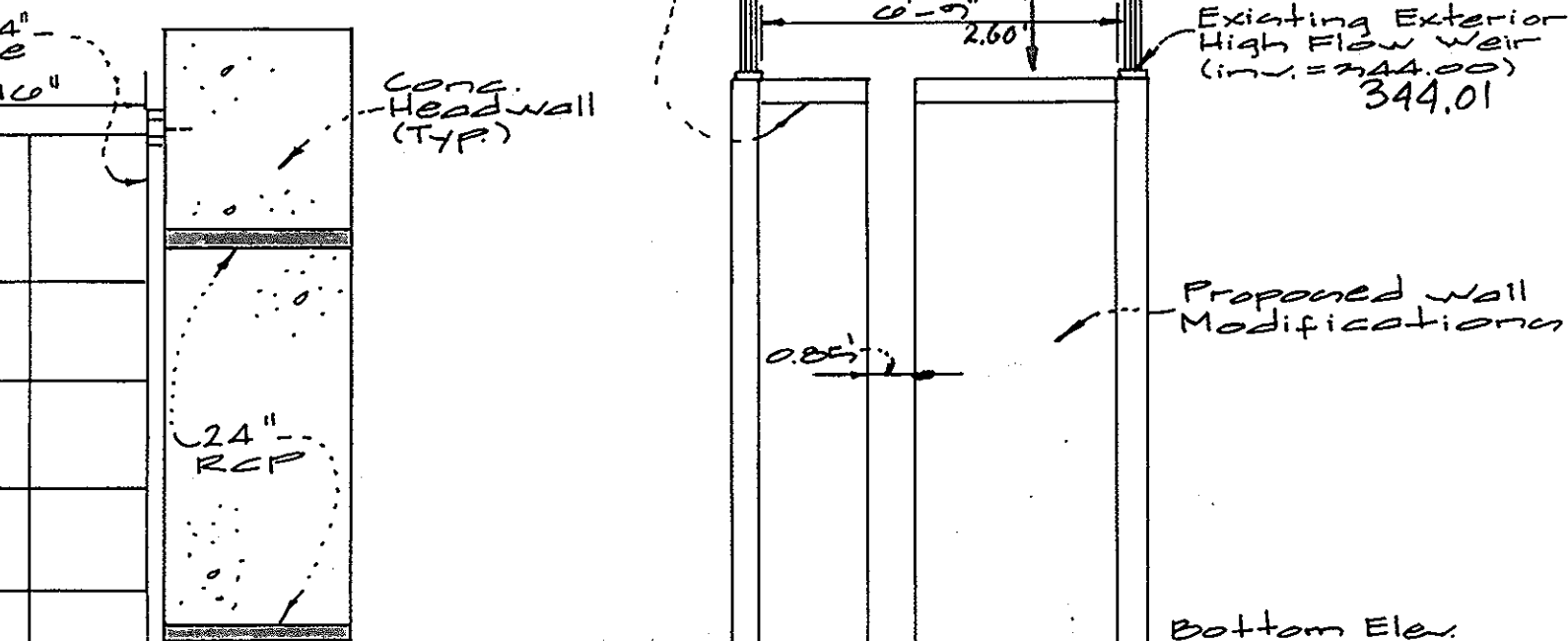
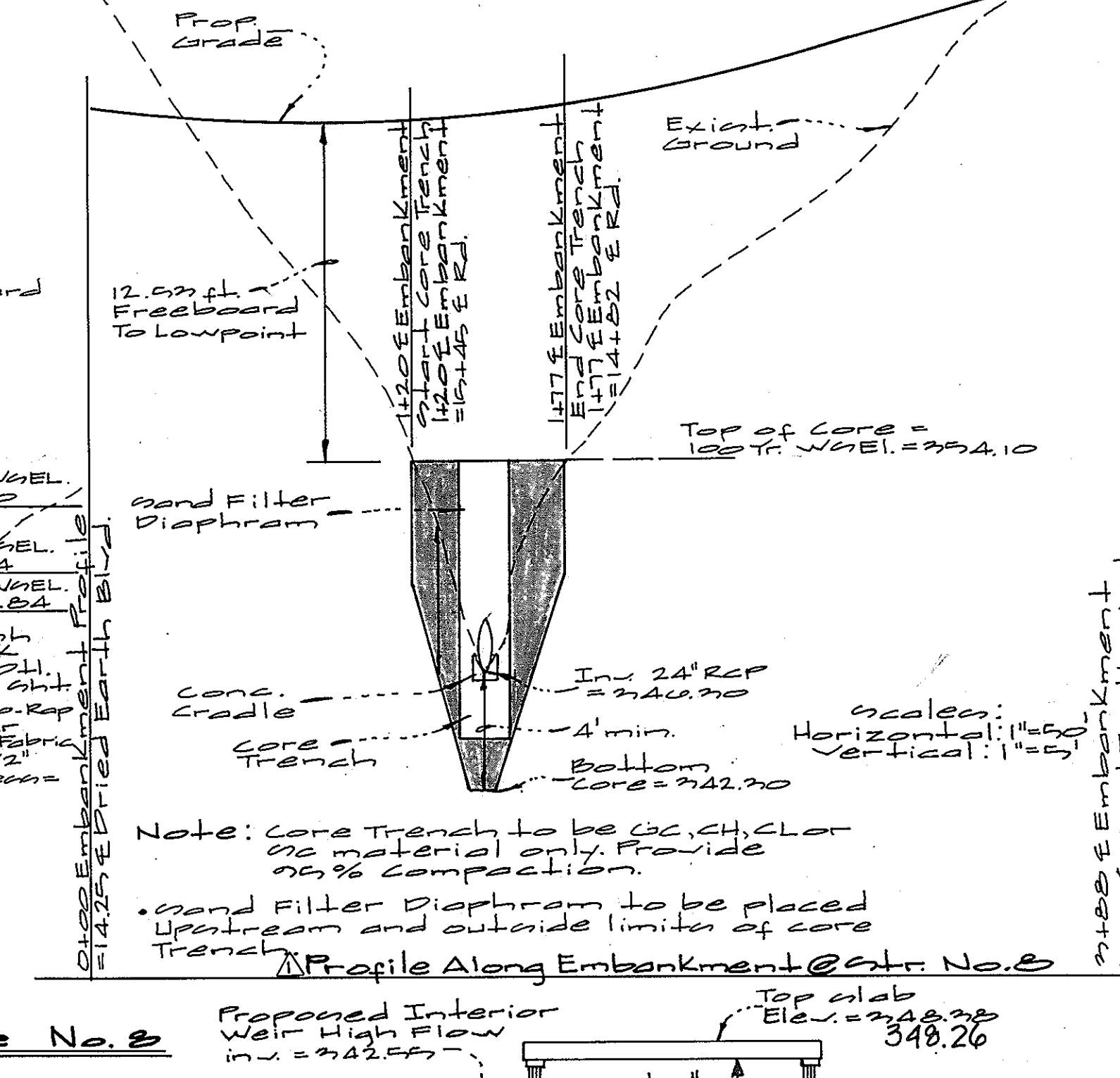
- Smallest opening to be 6" across MD-375.
- Trash Rack to be hot dipped galvanized and painted battleship grey.
- Vertical bars shall be on the outside of horizontal bars.
- Trash rack to be securely bolted to river structure with 1/2" diameter bolts @ 2' o.c. and embedded min. 4".
- All rebar intersections to be spot welded.



**Approved:** Howard County Department of Public Works  
 Chief, Bureau of Highways  
 Date: 1/29/01

**Approved:** Howard County Department of Planning & Zoning  
 Chief, Division of Land Development  
 Date: 1/29/01

**Approved:** Howard County Department of Planning & Zoning  
 Chief, Development Engineering Division  
 Date: 1/29/01



**Approved:** Howard County Department of Public Works  
 Chief, Bureau of Highways  
 Date: 1/29/01

**Approved:** Howard County Department of Planning & Zoning  
 Chief, Division of Land Development  
 Date: 1/29/01

**Approved:** Howard County Department of Planning & Zoning  
 Chief, Development Engineering Division  
 Date: 1/29/01

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-889-2524 FAX: 301-421-4186

NO.	DATE	REVISION	BY	APP.
1	1/29/01	Rev Title Block & Parcel E-1 I & E	WJL	
2	1/29/01	Rev Title Block & Property Labels	WJL	
3	1/29/01	Rev Spillway Profile, sand filter & trash rack details	WJL	

PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 (410) 992-6080

**STORMWATER MANAGEMENT DETAILS**

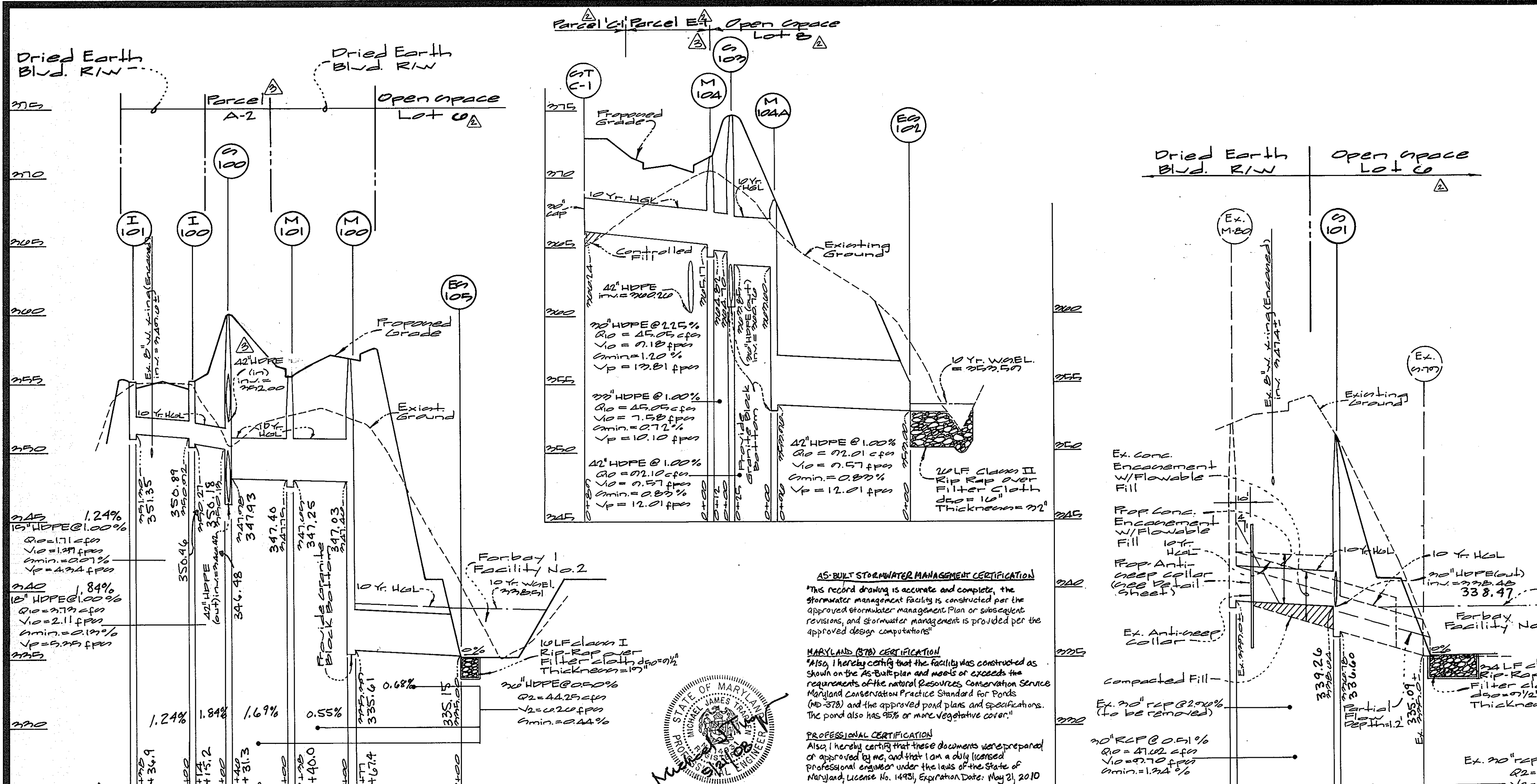
**SNOWDEN RIVER BUSINESS PARK**

SECTION 1 AREA 1  
 Parcel A-2, B-1, C-1, D-2, E-1 & Lots 6 Thru 10

ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	NT	99101
DATE	TAX MAP - GRID	SHEET
November, 2001	GR 13 & 19	21 OF 31

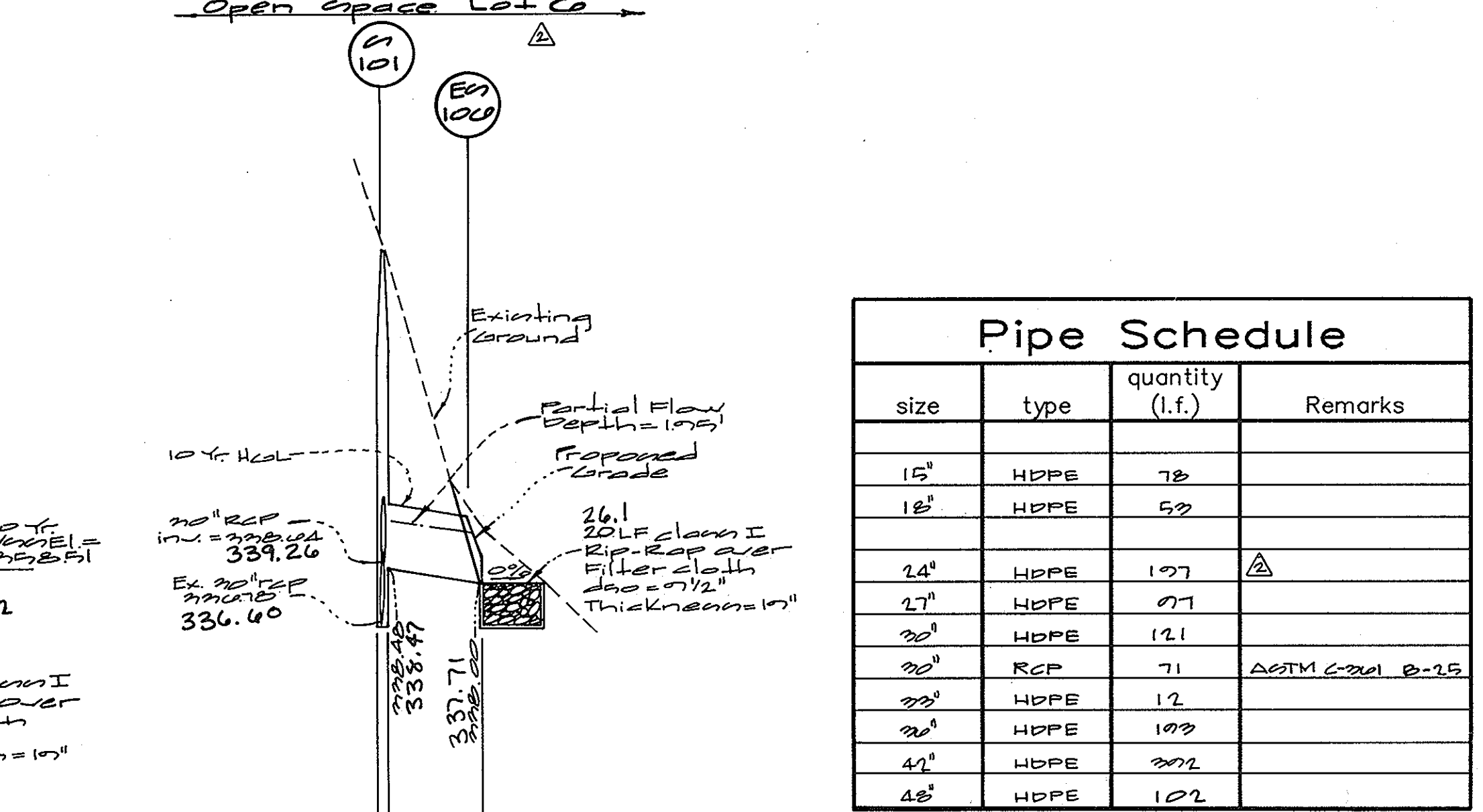




### Structure Schedule

No.	Type	Width (inside)	Top Elevation		Invert Elevation		St'd Detail	Locations		Remarks
			Upper	Lower	Upper	Lower				
I-100	A-10 inlet	2'-0"	353.75	353.72	353.46	353.47	SD 4.41	0+17	10' Rt	
I-101	A-10 inlet	2'-0"	355.11	354.84	351.35	351.36	SD 4.41	0+17	10' Lt	
I-102	A-10 inlet	4'-0"	344.04	344.04	342.00	342.00	SD 4.41	15+10.00	10' Rt	
I-103	A-10 inlet	2'-0"	344.04	344.04	342.00	342.00	SD 4.41	15+10.00	10' Lt	
I-104	A-5 inlet	0'-0"	344.16	344.16	342.81	342.81	SD 4.40	29+70	10' Rt	
M-100	Manhole	6'-0"	353.33	353.33	347.03	347.03	G 5.13	0+50	10' Lt	Provide granite block bottom
M-101	Manhole	6'-0"	353.70	353.70	347.40	347.40	MD 5.14 STD No. MD-284.05	0+50	28' Rt	
M-102	Manhole	6'-0"	348.42	348.42	351.46	351.46	G 5.13	14+25	0' Rt	
M-103	Manhole	4'-0"	347.50	347.50	345.17	345.17	G 5.12	17+40	30' Rt	
M-104	Manhole	8'-0"	349.04	349.04	348.10	348.10	MD 5.14 STD No. MD-284.05	17+07	10' Rt	
M-105	Manhole	8'-0"	349.16	349.16	348.21	348.21	MD 5.14 STD No. MD-284.05	17+12	40' Rt	

For structure schedule continuation see sheets 24 & 25



### Pipe Schedule

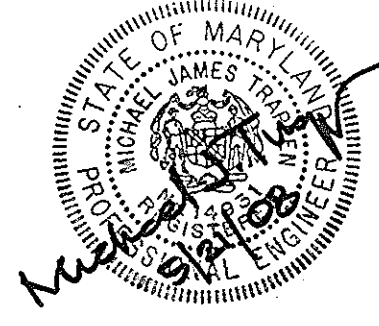
size	type	quantity (l.f.)	Remarks
15"	HDPE	78	
18"	HDPE	62	
24"	HDPE	107	
27"	HDPE	07	
30"	HDPE	121	
36"	RCP	71	ASTM C-391 B-25
42"	HDPE	12	
48"	HDPE	103	
48"	HDPE	102	

For Pipe schedule Continuation see sheet 23

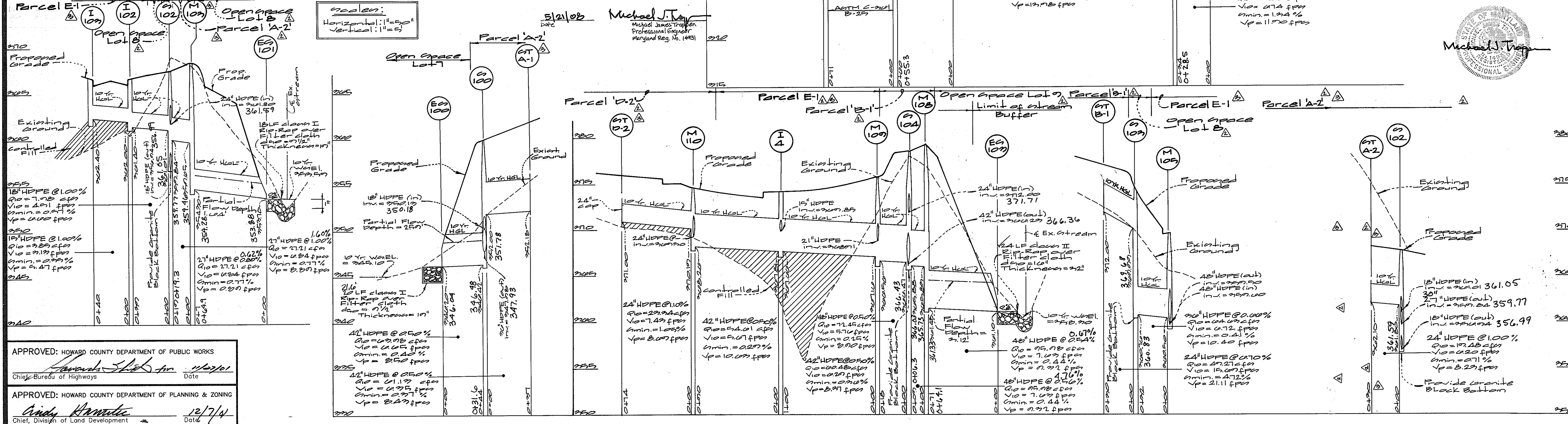
**AS-BUILT STORMWATER MANAGEMENT CERTIFICATION**  
 This record drawing is accurate and complete, the stormwater management facility is constructed per the approved stormwater management plan or subsequent revisions, and stormwater management is provided per the approved design computations.

**MARYLAND (S) CERTIFICATION**  
 Also, I hereby certify that the facility was constructed as shown on the AS-Built plan and means of egress the requirements of the natural Resources Conservation Service Maryland Conservation Practice Standard for Ponds (MD-378) and the approved pond plans and specifications. The pond also has 95% or more vegetative cover.

**PROFESSIONAL CERTIFICATION**  
 Also, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 14931, Expiration Date: May 31, 2010.



Michael James Trojan  
 Professional Engineer  
 Maryland Reg. No. 14931



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 FAX: 301-421-4188

DATE	REVISION	BY	APPR.
11/14/24	Rev. Title Block & Property Labels		

PREPARED FOR:  
**THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION**  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MD 21044  
 ATTN: BOB JENKINS  
 PH: 410-992-6027

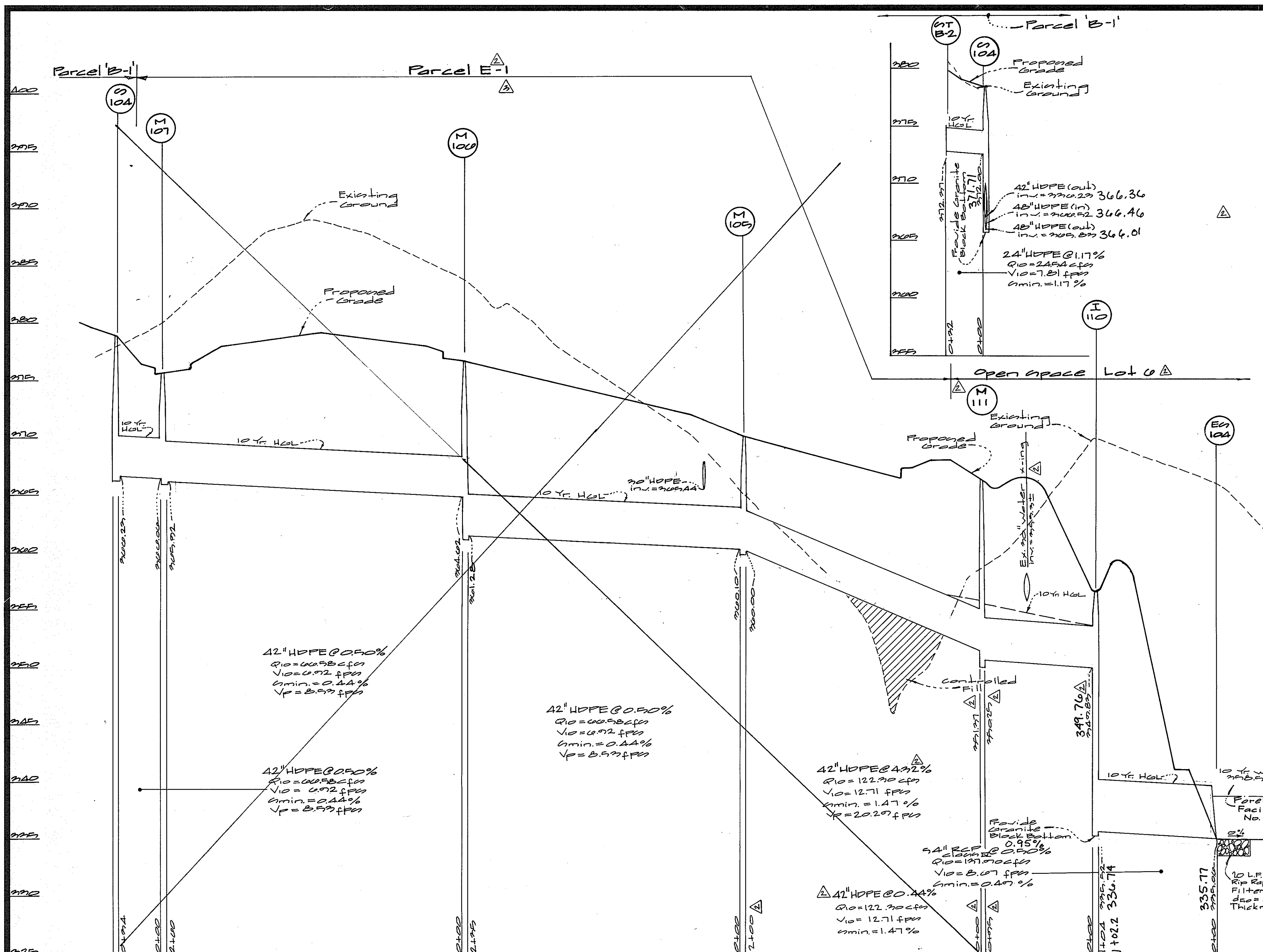
**ASBUILT**  
 STORM DRAIN PROFILES & SCHEDULES

**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcel A-2, B-1, C-1, D-2, E-1 & Lots C through I

ELECTION DISTRICT No. 6

ASBUILT SHEET 9 OF 11

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	99101
DATE	TAX MAP - GRID	SHEET
November, 2021	TM 37 GR 13 & 19	23 OF 31



### Structure Schedule

No.	Type	Width (inside)	Top Elevation		Invert Elevation		St'd Detail	Locations	Remarks
			Upper	Lower	Upper	Lower			
I-105	A-5 inlet	2'-0"	274.10	274.10	-	274.10	SD 4.40	22+70 10' Rt.	
I-110	Type 'B' inlet	2'-0"	282.33	282.33	282.07	282.07	SD 4.30	10+20 52' Lt.	Type B Top elevation**
M 100	Manhole	4'-0"	276.14	276.14	261.28	261.28	S 5.13	19+48 10' Rt.	
M 107		7'-0"	276.00	276.00	265.07	265.07	MD SHA STD	22+18 10' Rt.	
M 109		7'-0"	275.75	275.75	268.07	268.07	MD SHA STD	22+00 30' Rt.	
M 110		7'-0"	274.00	274.00	268.10	268.10	MD SHA STD	24+72 10' Rt.	
S 101	splitter	-	308.23	308.23	301.27	301.27	See Details	See Plans	Precast**
S 104	splitter	-	278.12	278.12	271.20	271.20	See Details	See Plans	Precast**
E 104	End section	-	-	-	-	265.51	SD 5.51	See Plans	Precast

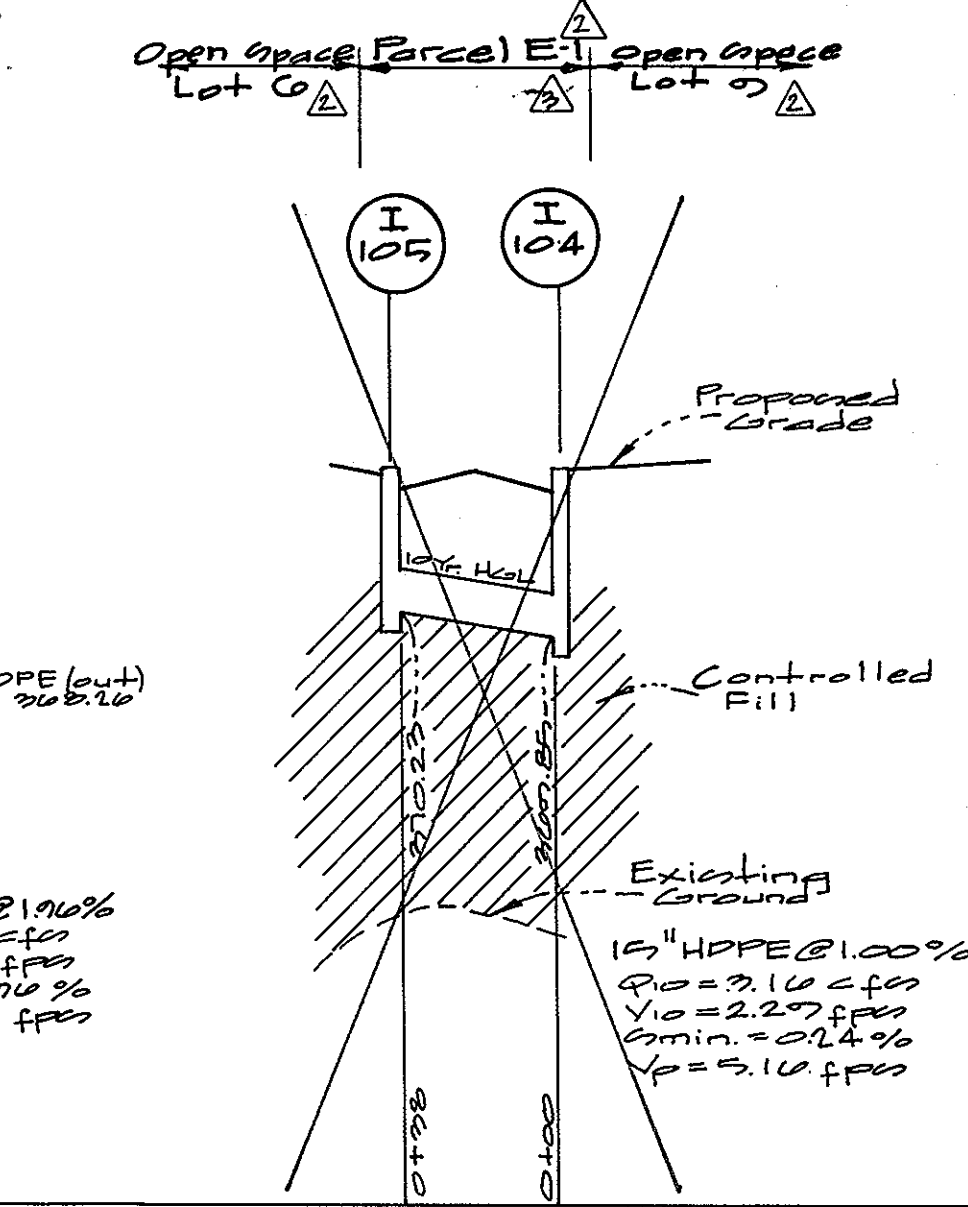
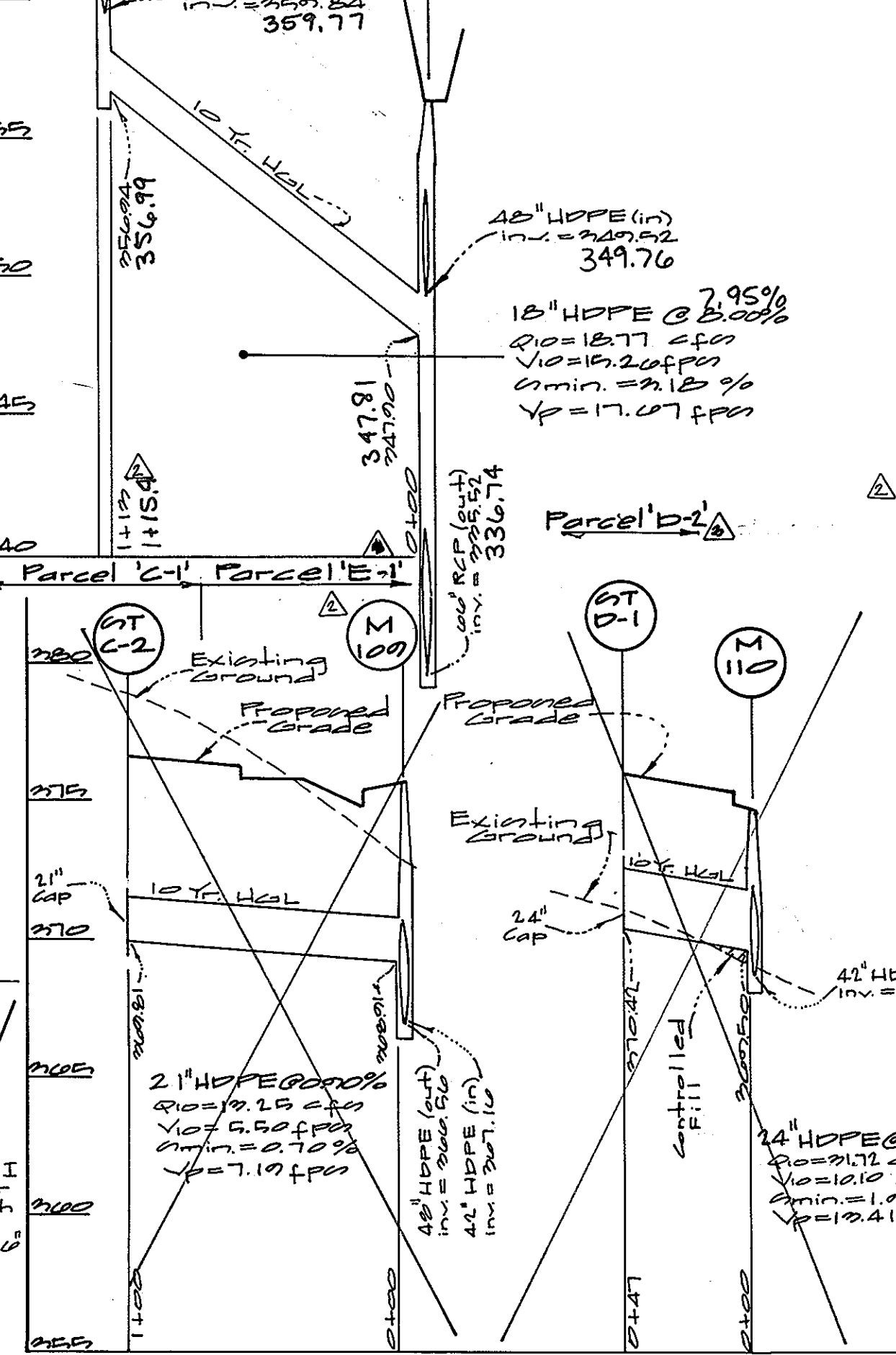
Open space Lot G Parcel E-1

Profile  
 scale: 1" = 50' horz.  
 1" = 5' vert.

For Structure Schedule  
 Cont. See sheets 29 & 25

### Pipe Schedule

size	type	quantity (l.f.)	Remarks
15"	HDPE	28'	
18"	HDPE	110'	
21"	HDPE	100'	
24"	HDPE	70'	
42"	HDPE	834'	
54"	REP	104'	class IX



AS-BUILT STORMWATER MANAGEMENT CERTIFICATION

This record drawing is accurate and complete, the stormwater management facility is constructed per the approved stormwater management plan or subsequent revisions and stormwater management is provided per the approved design computations.

MARYLAND (37B) CERTIFICATION

I, the undersigned, hereby certify that the facility was constructed as shown on the as-built plan and meets or exceeds the requirements of the natural Resources Conservation Service Maryland Conservation Practice Standard for Ponds (MD-37B) and the approved pond plans and specifications. The pond also has 95% or more vegetative cover.

PROFESSIONAL CERTIFICATION

I, the undersigned, hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 14481, Expiration Date: May 21, 2010.

Michael J. Trapp  
 Professional Engineer  
 Maryland Reg. No. 14481

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Howard Thiel for 11/20/11  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamrick 10/9/11  
 Chief, Division of Land Development Date

11/26/11  
 Chief, Development Engineering Division MK Date

GLW GUTSCHICK LITTLE & WEBER, P.A.  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 FAX: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4188

PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MD 21044  
 ATTN: BOB JENKINS  
 PH: 410-992-6029

STORM DRAIN PROFILES & SCHEDULES

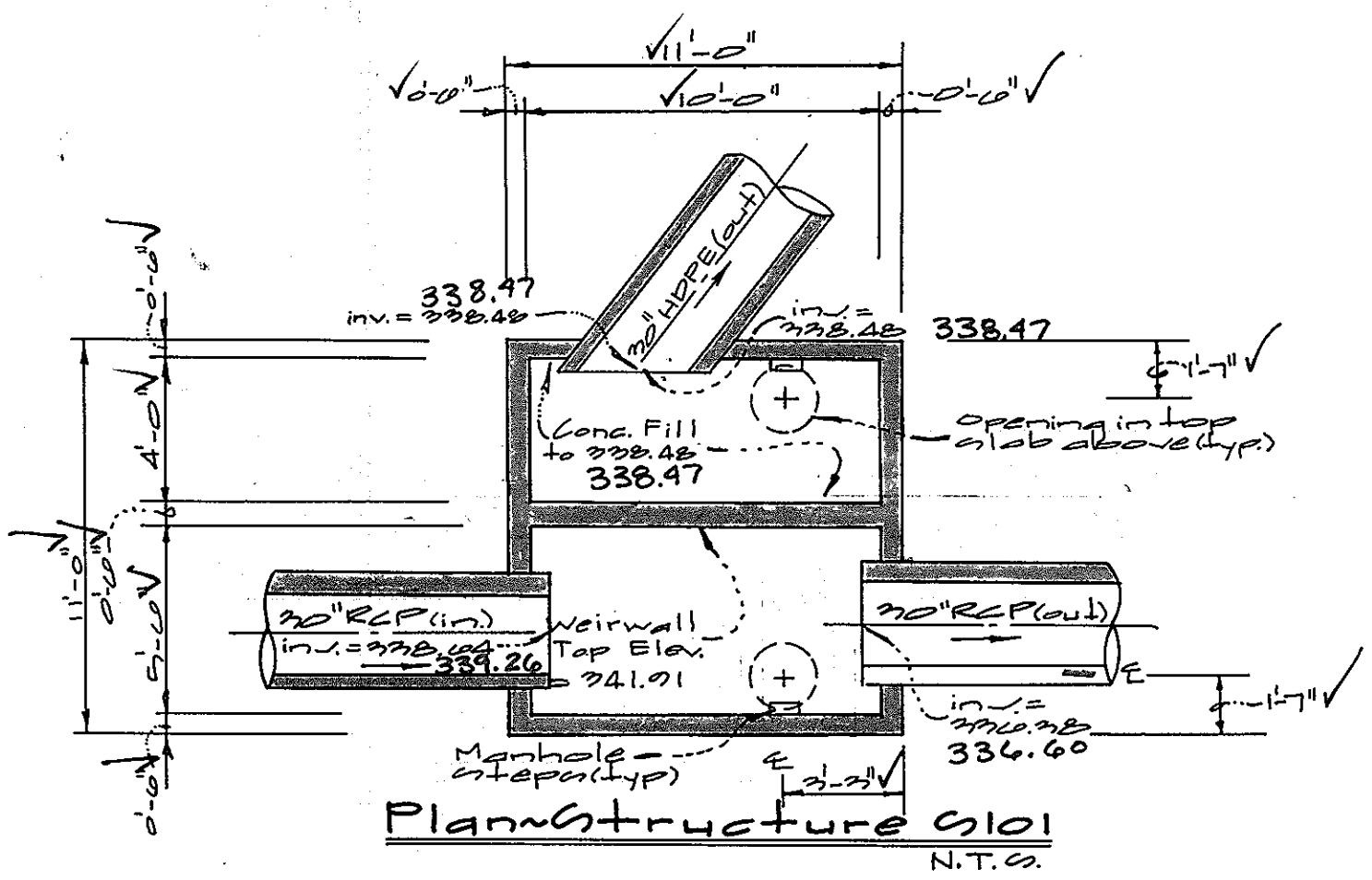
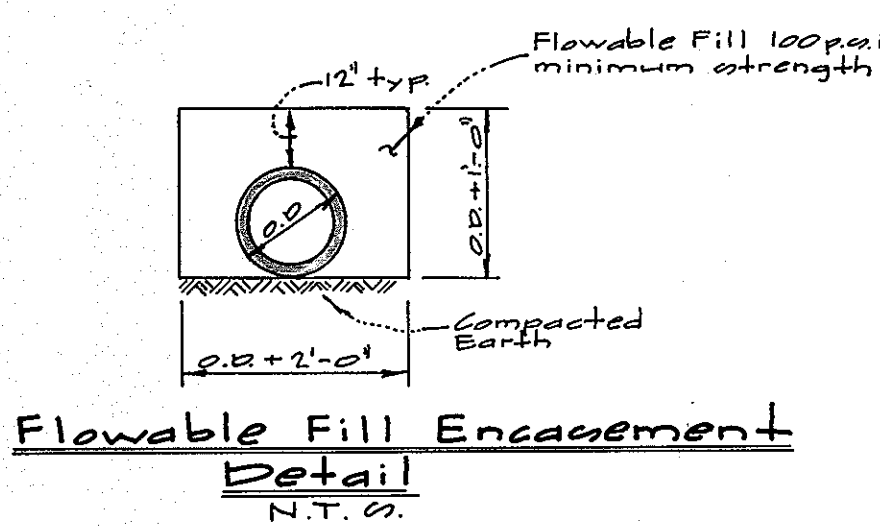
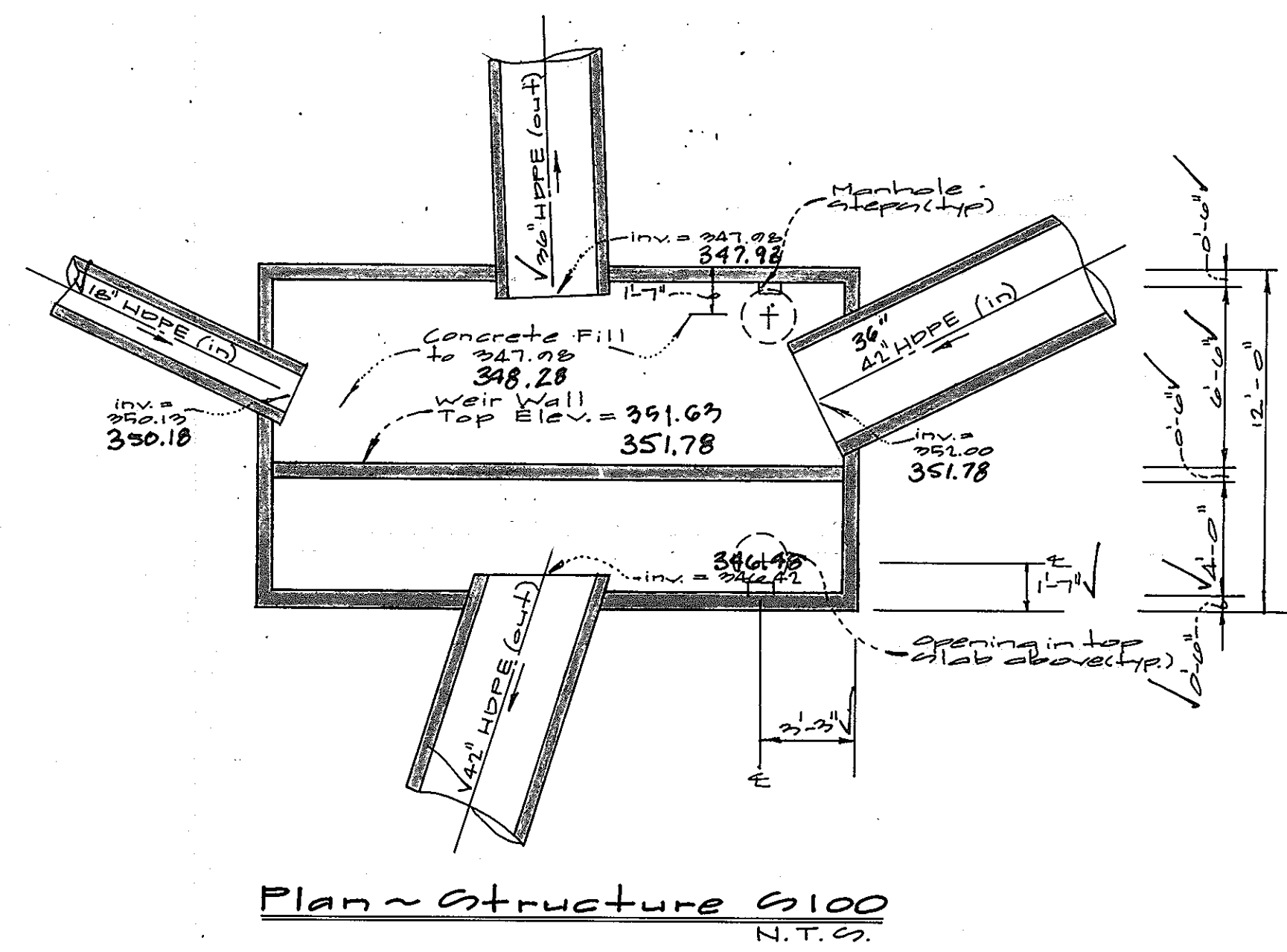
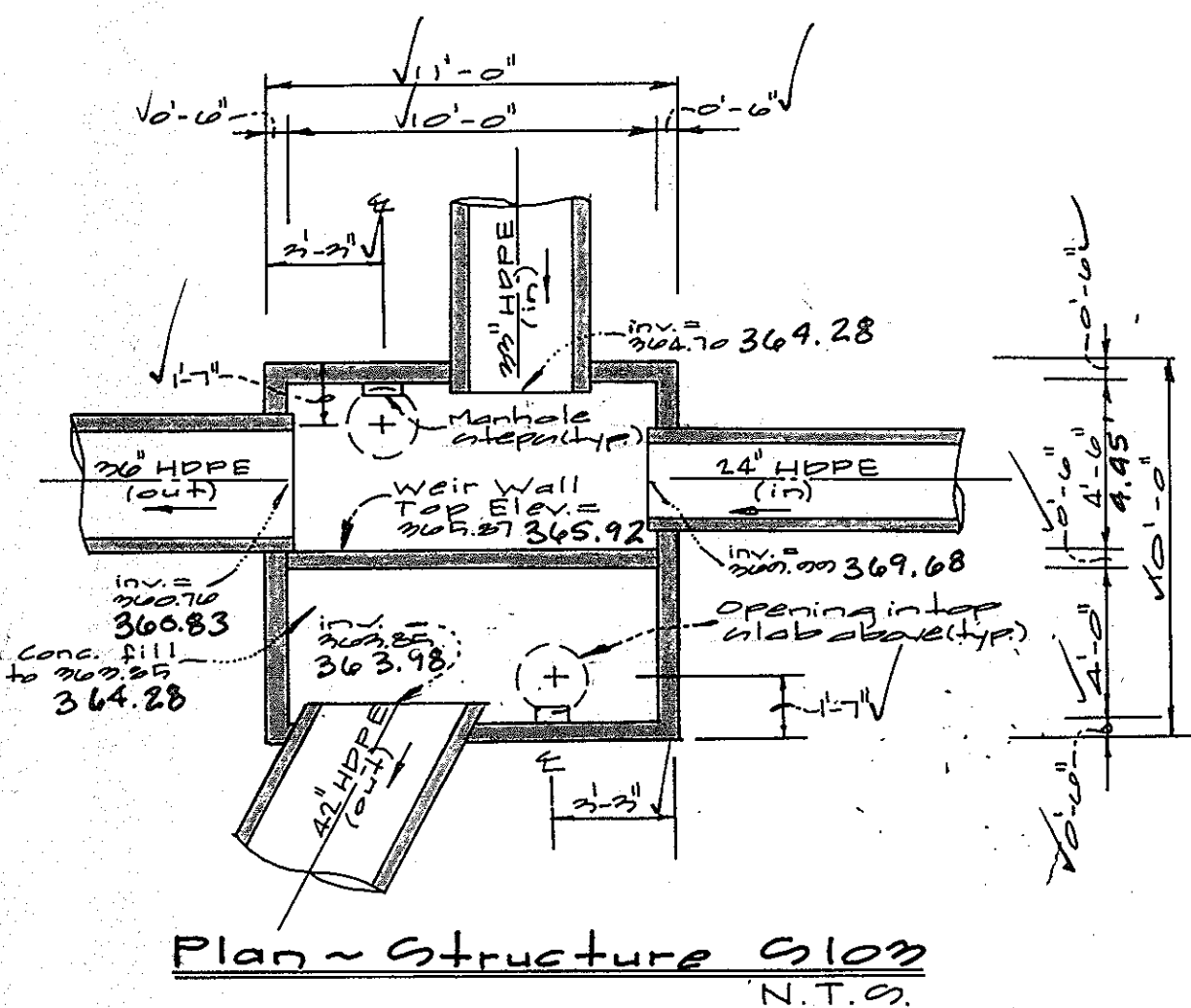
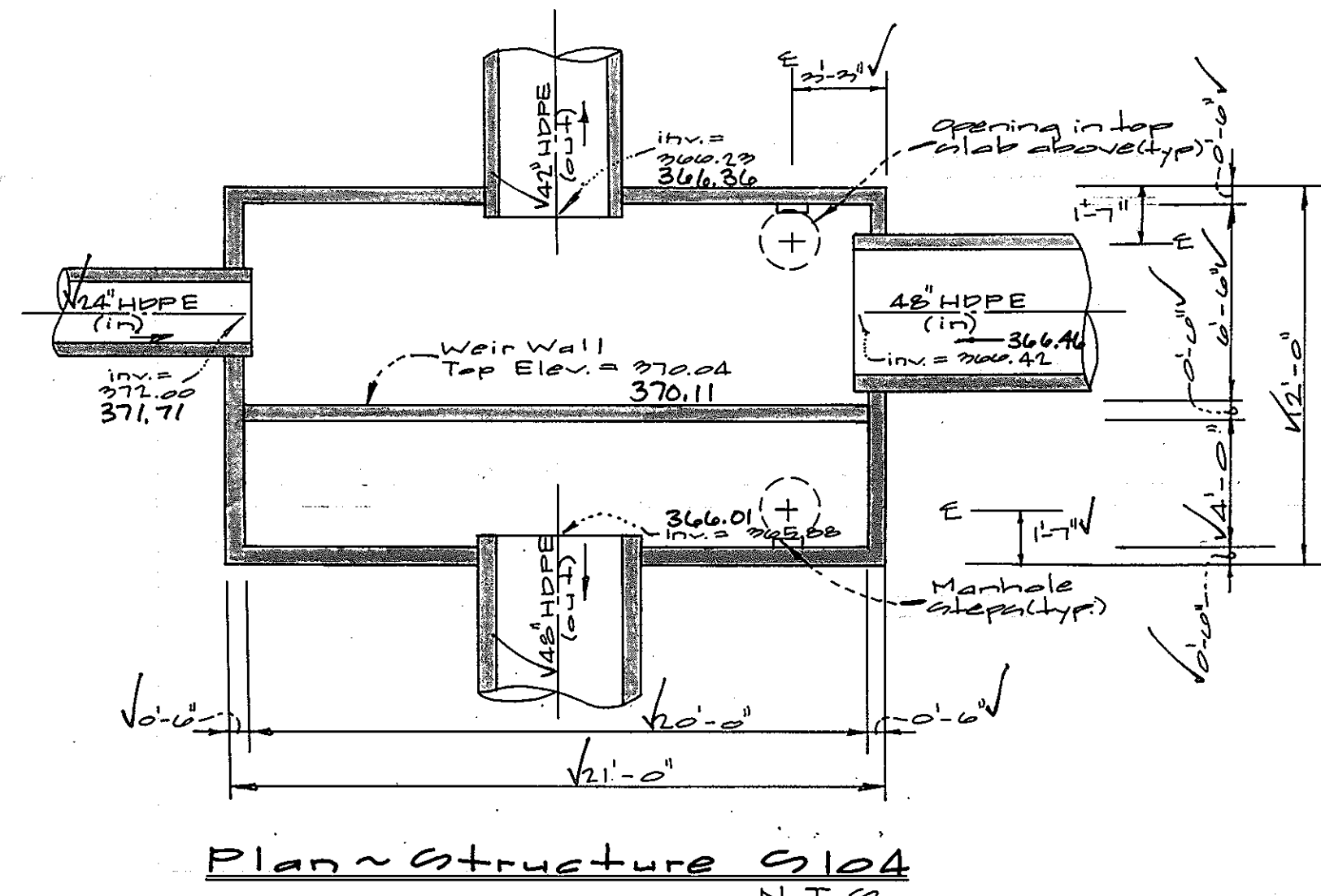
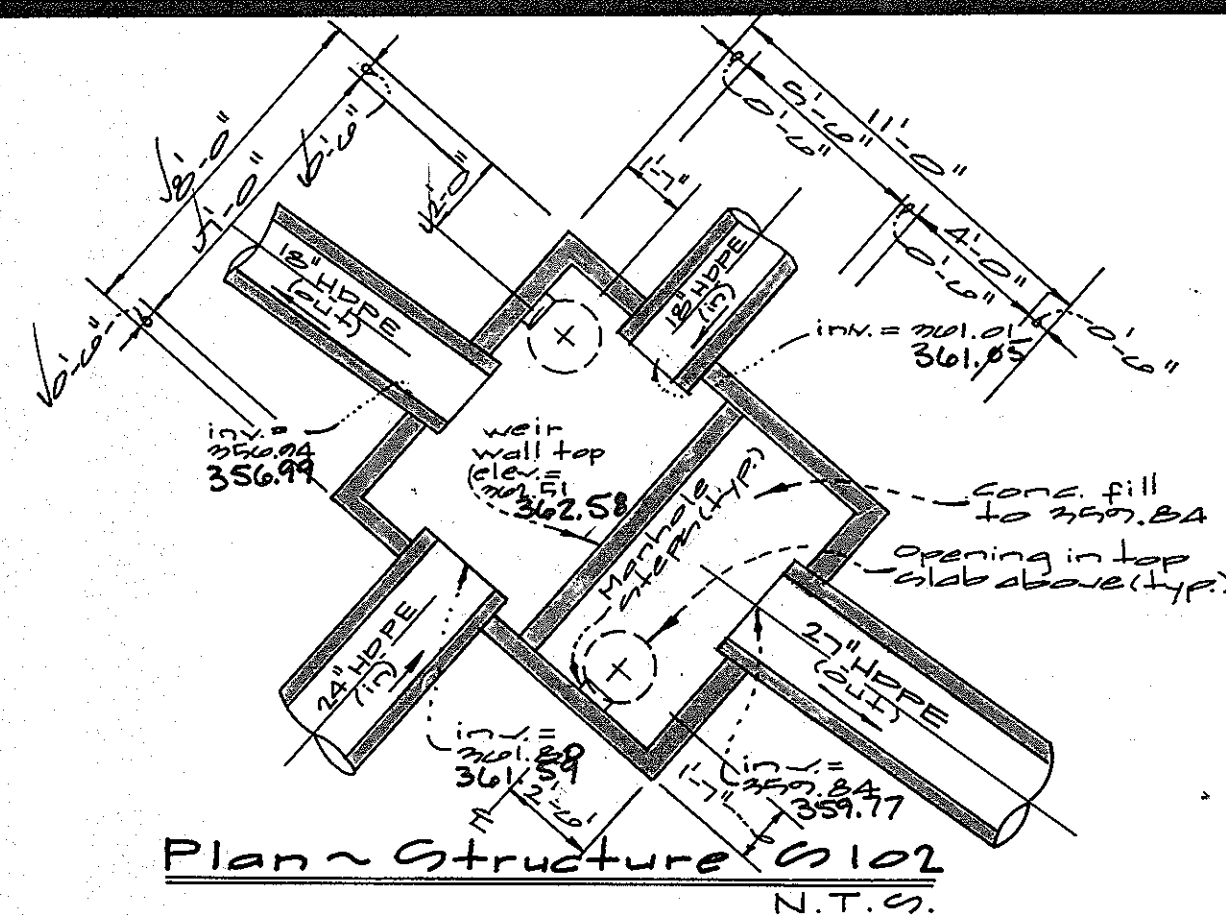
SNOWDEN RIVER BUSINESS PARK  
 SECTION 1 AREA 1  
 Parcels A-2, B-1, C-1, D-2, E-1 & Lots 0 Thru 10

AS-BUILT SHEET 10 OF 11

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	24 OF 31

HOWARD COUNTY, MARYLAND





- Storm Drain Structure Notes**
- 1) Provide 4" thick conc. top slab per Ho. Co. std. or 441 with the exception that the manhole frame & cover shall be surface mounted per Ho. Co. std. 22.0.03
  - 2) Provide steps in all chambers per Ho. Co. std. G. 9.21
  - 3) Provide 6" minimum bottom slab (typ).

**AS-BUILT STORMWATER MANAGEMENT CERTIFICATION**  
 "This record drawing is accurate and complete. The stormwater management facility is constructed per the approved stormwater management plan or subsequent revisions, and stormwater management is provided per the approved design computations."  
**MARYLAND (STB) CERTIFICATION**  
 "Also, I hereby certify that the facility was constructed as shown on the AS-Built plan and meets or exceeds the requirements of the Natural Resources Conservation Service Maryland Conservation Practice Standard for Ponds (MD-578) and the approved pond plans and specifications. The pond also has 95% or more vegetative cover!"

**PROFESSIONAL CERTIFICATION**  
 Also, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 14931, Expiration Date: May 21, 2010

Michael J. Trapp  
 Professional Engineer  
 Maryland Reg. No. 14931



5/21/02  
 Date  
 Michael J. Trapp  
 Michael James Trapp  
 Professional Engineer  
 Maryland Reg. No. 14931

Structure Schedule										
No.	Type	Width (inside)	Top Elevation Upper	Top Elevation Lower	Invert Elevation Upper	Invert Elevation Lower	Std Detail	Locations	Remarks	
M108	Manhole	7'-0"	379.18	379.18	365.73	361.83	MD 578	12+50 W Rt.		
G100	Splitter	—	360.78	360.72	351.78	346.48	See Detail	See Plan		
G101	Splitter	—	351.00	350.50	349.20	346.40				
G102	Splitter	—	375.43	375.42	364.68	360.83			Provide Corrugated Black Bottom	
E0100	End Section	—	—	—	—	346.00	SD 5.51			
E0101		—	—	—	—	354.18				
E0102		—	—	—	—	353.09				
E0103		—	—	—	—	360.80				
E0104		—	—	—	—	365.03				
E0105		—	—	—	—	365.00				
E0106		—	—	—	—	337.71				
M-111	Manhole	5'-0"	364.09	364.09	351.97	350.25	CG 5.17			

For Structure Schedule  
 Cont. See sheets 23 & 24

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Howard S. ... 11/21/01  
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Cindy ... 10/2/10  
 Chief, Division of Land Development

Chief, Development Engineering Division MK Date

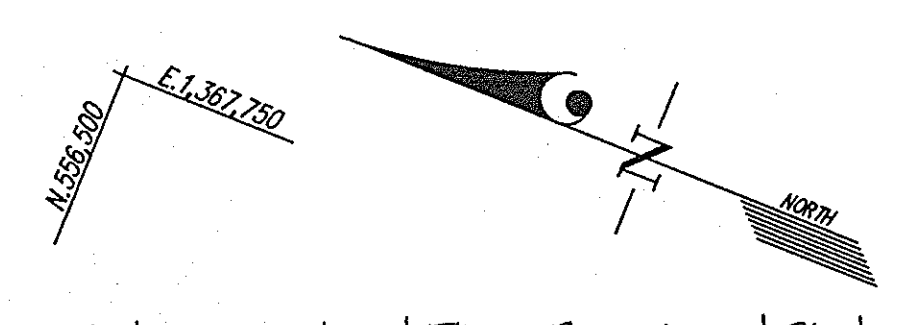
**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4168

DATE	REVISION	BY	APPR.
11/14/09	Rev. Title Block		
11/14/09	Rev. Title Block		

PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 (410) 992-6089

ASBUILT  
 Storm Drain Details & Schedules  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcel A2, B1, C-1, D2, E-1 & Lots 6 Thru 10  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	99101
DATE	TAX MAP - GRID	SHEET
November, 2001	TM 37 GR 13 & 19	25 OF 31



Note: For Flood Plain Bearing & Distances  
 (O) Elevations (E) See Cover sheet.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard S. ...* 11/27/01  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Chambers* 12/7/01  
 Chief, Division of Land Development Date

*Michael J. Trapp*  
 Chief, Development Engineering Division MK Date

NOTE: FOR FLOODPLAIN ELEVATIONS AND BEARING & DISTANCES SEE SHEET

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20886  
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

PREPARED FOR:  
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 PHONE: 410-992-6083

STORMWATER MANAGEMENT & SWM PERIMETER PLANTING PLAN  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION I AREA  
 Parcel A-2, B-1, C-1, D-1, E-1 & Lots 6 Thru 10  
 ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	99101
DATE	TAX MAP - GRID	SHEET
November, 2001	GR 13 & 19	26 OF 31

PLANT MATERIALS AND PLANTING METHODS

**A. Plant Materials**  
The landscape contractor shall furnish and install and/or dig, ball, burlap and transport all of the plant materials called for on drawings and/or listed in the Plant Schedule.

- Plant Names**  
Plant names used in the Plant Schedule shall conform with "Standardized Plant Names, latest edition.
- Plant Standards**  
All plant material shall be equal to or better than the requirements of the "USA Standard for Nursery Stock" latest edition, as published by the American Association of Nurserymen (hereafter referred to as AAN Standards). All plants shall be typical of their species and variety, shall have a normal habit of growth and shall be free of disease, insect pests, and mechanical injuries. All plants shall be nursery grown and shall have been grown under the same climate conditions as the location of this project for at least two years before planting. Neither heeled-in plants nor plants from cold storage will be accepted.

- Plant Measurements**  
All plants shall conform to the measurements specified in the Plant Schedule as approved by the ARC.  
a. Caliper measurements shall be taken six inches (6") above grade for trees under four-inch (4") caliper and twelve (12") above grade for trees four inches (4") in caliper and over.  
b. Minimum branching height for all trees shall be six feet (6'), maximum eight feet (8').  
c. Minimum size for planting shade trees shall be 3-3 1/2" caliper, 14'-16" in height.  
d. Minimum size for planting minor or intermediate focus trees (pines, crabapples, etc.) shall be 3-3 1/2" caliper, 10'-12" in height.  
e. Minimum size for planting shrubs shall be 18" - 24" spread unless noted otherwise.  
f. Caliper, height, spread and size of ball shall be generally as follows:

CALIPER	HEIGHT	SPREAD	SIZE OF BALL
3" - 3 1/2"	14'-16"	6'-8'	32" diameter
3 1/2" - 4"	14'-16"	8'-10'	36" diameter
4" - 4 1/4"	16'-18"	8'-10'	40" diameter
4 1/4" - 5"	16'-17"	10'-12"	44" diameter
5" - 5 1/2"	18'-20"	10'-12"	48" diameter
5 1/2" - 6"	18'-20"	12'-14"	52" diameter

All plant material shall generally average the median for the size ranges indicated above as indicated in the "AAN Standards".

- Plant Identification**  
Legible labels shall be attached to all shade trees, minor trees, specimen shrubs and bundles or boxes of other plant material giving the botanical and common names, size and quantity of each. Each shipment of plants shall bear certificates of inspection as required by Federal, State and County authorities.

- Plant Inspection**  
The ARC may, upon request by the builder or developer, at least ten (10) days prior to the installation of any proposed plant material, inspect all proposed plant material at the source of origin.

**B. Planting Methods**

All proposed plant materials that meet the specifications in Section A are to be planted in accordance with the following methods during the proper planting seasons as described in the following:

- Planting Seasons**  
The planting of deciduous trees, shrubs and vines shall be from March 1st to June 15th and from September 15th to December 15th. Planting of evergreen material may be continued during the winter months providing there is no frost in the ground and frost-free topsoil planting mixtures are used.

The planting of evergreen material shall be from March 15th to June 15th and from August 15th to December 1st. No planting shall be done when ground is frozen or excessively moist. No frozen or wet topsoil shall be used at any time.

- Digging**  
All plant material shall be dug, balled and burlapped (#4B) in accordance with the "AAN Standards".

- Excavation of Plant Pits**  
The landscaping contractor shall excavate all plant pits, vine pits, hedge trenches and shrub beds in accordance with the following schedule:

- Locations of all proposed plant material shall be staked and approved in the field by the landscape architect before any of the proposed plant material is installed by the landscape contractor.
- All pits shall be generally circular in outline, vertical sides; depth shall not be less than 6" deeper than the root ball, diameter shall not be less than two times the diameter of the root ball as set forth in the following schedule.
- If areas are designated as shrub beds or hedge trenches, they shall be excavated to at least 18" depth minimum. Areas designated for ground covers and vines shall be excavated to at least 12" in depth minimum.
- Diameter and depth of tree pits shall generally be as follows:

PLANT SIZE	ROOT BALL	PIT DIAMETER	PIT DEPTH
3" - 3 1/2" cal.	32"	64"	28"
3 1/2" - 4" cal.	36"	72"	32"
4" - 4 1/4" cal.	40"	80"	36"
4 1/4" - 5" cal.	44"	88"	40"
5" - 5 1/2" cal.	48"	96"	44"
5 1/2" - 6" cal.	52"	104"	48"

A 20% compaction figure of the soil to be removed is assumed and will be allowed in calculation of extra topsoil. The tabulated pit sizes are for purposes of uniform calculation and shall not override the specified depths below the bottoms of the root balls.

- Staking, Guying and Wrapping**  
All plant material shall be staked or guyed, and wrapped in accordance with the following specifications:

- Stakes: Shall be sound wood 2" x 2" rough sawn oak or similar durable woods, or lengths, minimum 7'-0" for major trees and 5'-0" minimum for minor trees.
- Wire and Cable: Wire shall be #10 ga. galvanized or bethanized annealed steel wire. For trees over 3" caliper, provide 5/16" turn buckles, eye and eye with 4" take-up. For trees over 5" caliper, provide 3/16", 7 strand cable cadmium plated steel, with galvanized "eye" thimbles of wire and hose on trees up to 3" in caliper.
- Hose: Shall be new, 2 ply reinforced rubber hose, minimum 1/2" I.D. "Plastic Lock Ties" or "Paul's Trees Braces" may be used in place of wire and hose on trees up to 3" in caliper.
- All trees under 3" in caliper are to be planted and staked in accordance with the attached "Typical Tree Staking Detail". All trees over 3" in caliper are to be planted and guyed in accordance with the attached "Typical Tree Guying Detail".

The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and where necessary, replaced with new material to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

**5. Plant Pruning, Edging and Mulching**

- Each tree, shrub or vine shall be pruned in an appropriate manner to its particular requirements in accordance with accepted standard practice. Broken or bruised branches shall be removed with clean cuts flush with the adjacent trunk or branches. All cuts over 1" in diameter shall be pointed with an approved antiseptic wood dressing.

- All branches and shrub beds shall be edged and cultivated to the lines shown on the drawing. The areas around isolated plants shall be edged and cultivated to the full diameter of the pit. Sod which has been removed and stacked shall be used to trim the edges of all excavated areas to the neat lines of the plant pit saucers, the edges of shrub areas, hedge trenches and vine pockets.

- After cultivation, all plant materials shall be mulched with a 2" layer of fine, shredded pine bark, peat moss, or another approved material over the entire area of the bed or saucer.

- Plant Inspection and Acceptance**  
The ARC shall be responsible for inspecting all planting projects on a periodic basis to assure that all work is proceeding in accordance with the approved plans and specifications.

**7. Plant Guarantee**

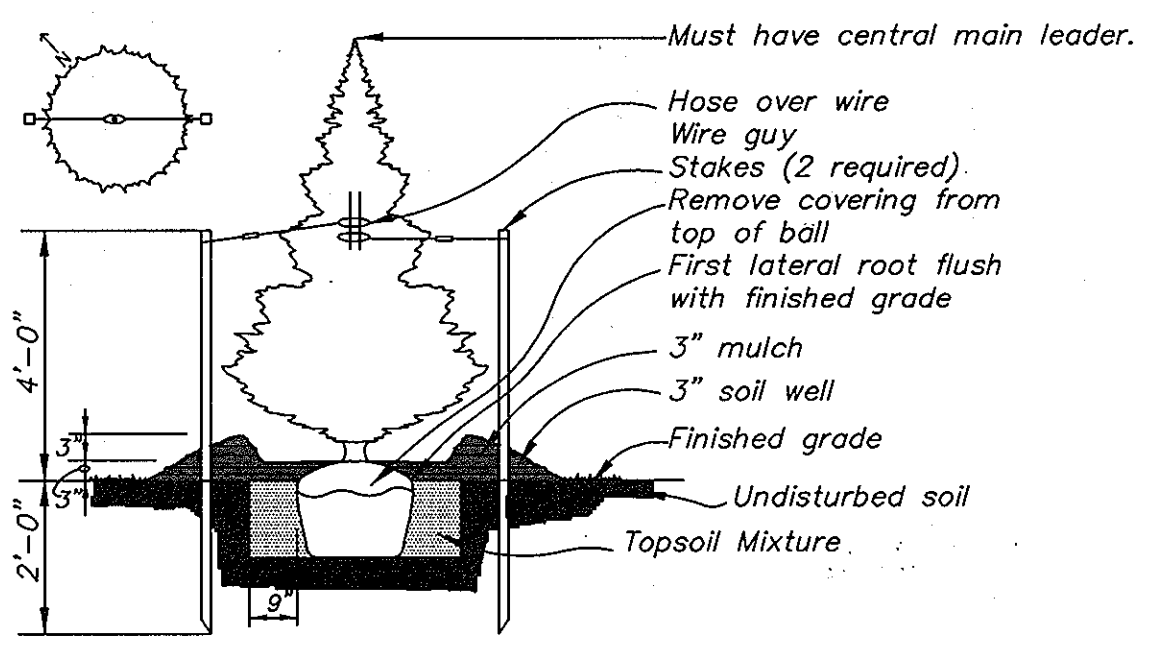
- All plant material shall be guaranteed for the duration of one full growing season, after final inspection and acceptance of the work in the planting project. Plants shall be alive and in satisfactory growing condition at the end of the guarantee period.
- For this purpose, the "growing season" shall be that period between the end of the "Spring" planting season, and the commencement of the "Fall" planting season.
  - Guarantee for planting performed after the specified end of the "Spring" planting season, shall be extended through the end of the next following "Spring" planting season.

**Sodding**  
All sodding shall be in accordance to the "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas" latest edition, approved by the Landscape Contractors Association of Metropolitan Washington and the American Society of Landscape Architects.

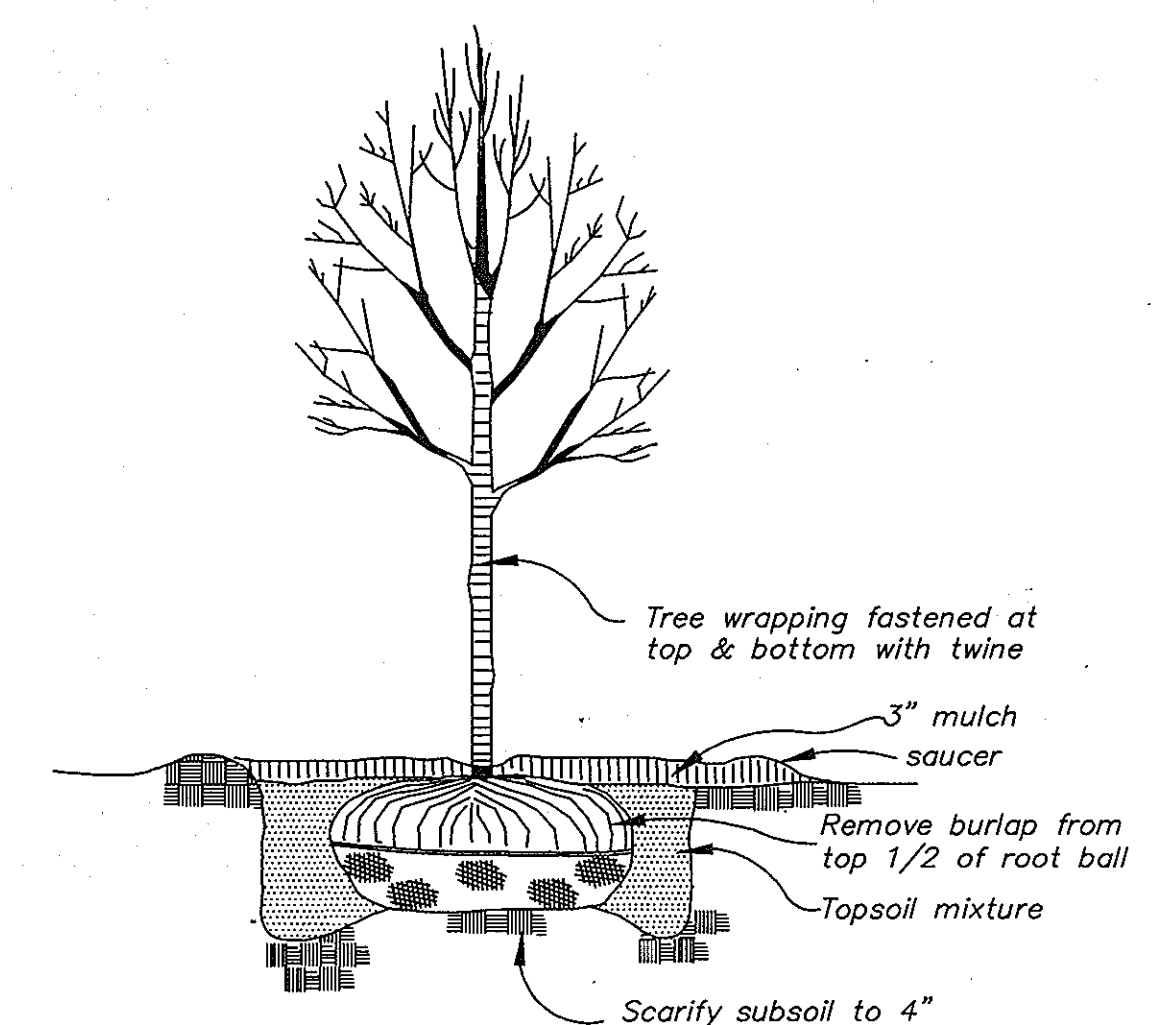
All sod shall be strongly rooted sod, not less than two years old and free of weeds and undesirable native grasses. Provide only sod capable of growth development when planted and in strips not more than 18" wide x 4' long. Provide sod composed principally of improved strain Kentucky bluegrass, such as, Columbia, Victoria, or Escort.

**LANDSCAPING NOTES**

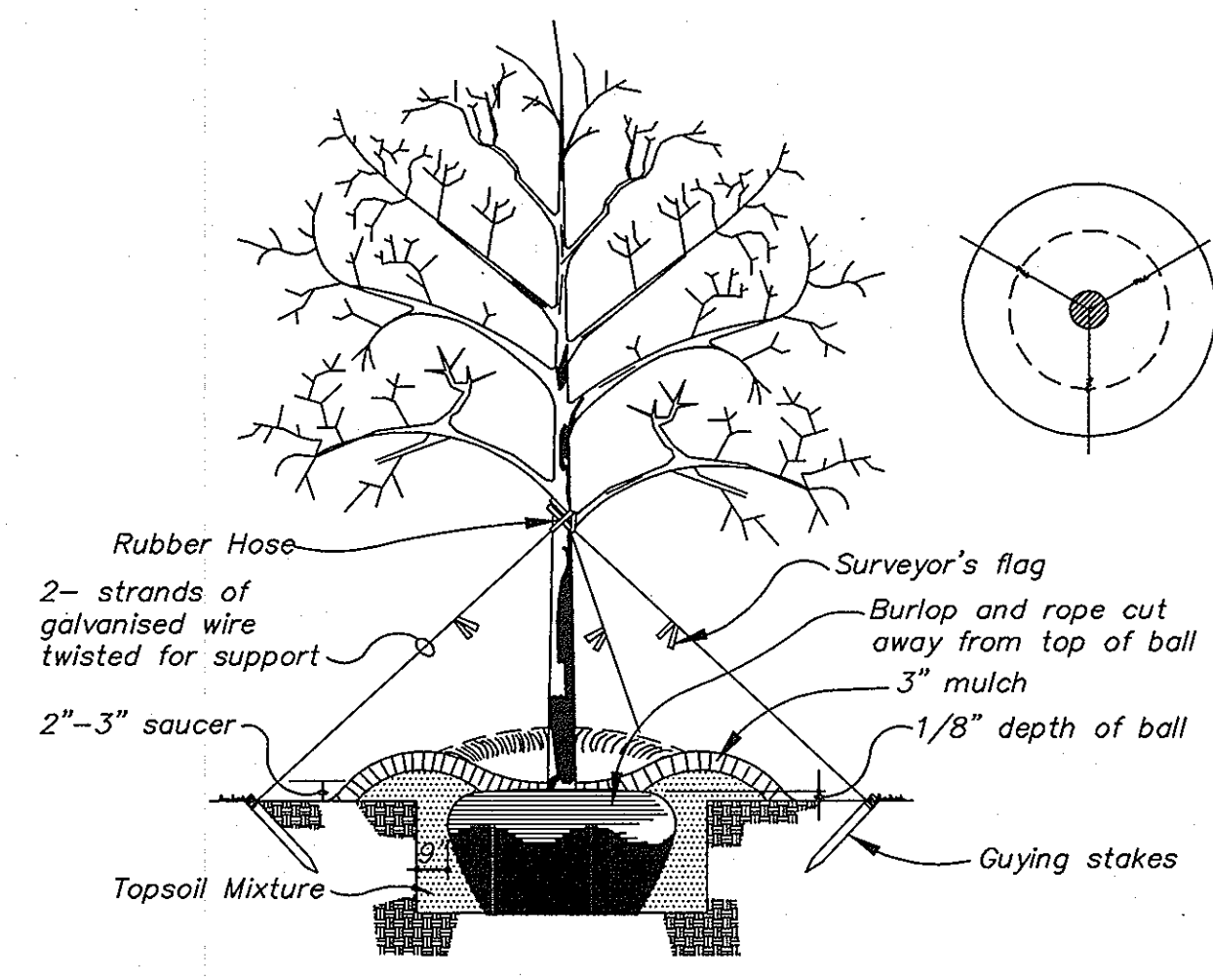
- Contractor shall notify all utilities at least (5) five days before starting work. All General Notes, especially those regarding utilities, on Sheet 1 shall apply.
- Field verify underground utility locations and existing conditions before starting planting work. Contact owner or his representative if any relocations are required.
- Plant quantities shown on Plant List are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on the plan and those shown on the plant list, the quantities on the plan shall take precedence.
- All plant material shall be full, heavy, well formed, and symmetrical, and conform to the A.A.N. Specifications, and be installed in accordance with project specifications.
- No substitution shall be made without written consent of the owner or his representative.
- All areas disturbed by construction activities but not otherwise planted, paved, or mulched shall be seeded or sodded in accordance with project specifications.
- The contractor shall notify the owner in writing if he/she encounters soil drainage conditions which may be detrimental to the growth of the plants.
- All exposed earth within limits of planting beds shall be mulched with shredded hardwood mulch per Planting Details.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPA DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$450,000.
- THIS PLAN IS FOR THE SWMP No. 2 LANDSCAPING ONLY. ALL OTHER LANDSCAPING REQUIREMENTS SHALL BE COMPLIED WITH PROVIDED IN THE REQUIRED FUTURE SITE DEVELOPMENT PLANS FOR THE DEVELOPMENT OF THE PARCELS AND/OR LOTS IN THIS SUBDIVISION.
- LANDSCAPE CREDIT MAY NOT BE TAKEN FOR PLANT MATERIALS ON ADJACENT PROPERTIES OR WITHIN PUBLIC ROAD RIGHT-OF-WAYS. THE DEVELOPMENT OF PARCEL D MAY REQUIRE LANDSCAPING ON CLEARED OPEN SPACE LOT 5 WHERE ADJACENT TO THE PUBLIC ROAD RIGHT-OF-WAYS.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.



Evergreen Planting Detail  
N.T.S.



Typical Deciduous Tree Planting  
N.T.S.



Typical Tree Guying Detail  
N.T.S.

PLANT LIST				
SYMBOL	QTY.	NAME BOTANICAL/COMMON	SIZE	REMARKS
<b>SHADE TREES</b>				
L	4	Liquidambar styraciflua/ Sweet Gum	2 1/2 - 3\"	B&B
Q	5	Quercus palustris/ Pin Oak	2 1/2 - 3\"	B&B
<b>EVERGREEN TREES</b>				
PA	8	Picea Abies/Norway Spruce	10'-12' HT	B&B
PN	4	Pinus Nigra/Black Pine	10'-12' HT	B&B*

Schedule D Stormwater Management Area Landscaping	
Linear Feet Of Perimeter	1,500 Feet
Number of trees required (Type B)	
Shade Trees (1:50)	30
Evergreen Trees (1:40)	38
Credit for existing vegetation (No, Yes and %)	Yes, (70%) 21 shade 26 evergreen
Credit for other landscaping (No, Yes and %)	No
Number of trees REQUIRED AFTER CREDIT PROVIDED	
Shade trees	9
Evergreen Trees	12
Other trees (2:1 substitution)	0
Landscape Surety for Schedule-D Required Plantings: Financial surety for the 21 required trees has been posted as part of the Developer's Agreement in the amount of \$450,000 (2 Shade trees @ \$300=\$600,000 12 Evergreen trees @ \$150=\$1,800,000)	

**SWM PLANTING LEGEND POND #2**

	FICKEREL WEED/ PONDADERIA CORDATA
	LIZARDS TAIL/ SAURURUS CERNVUS
	GIANT BUR-REED/ SPARGANUM EURYCARPUM
	SOFT STEM BULLRUSH/ SCIRPUS VALIDUS

**SWM POND PLANT LIST  
POND #2**

KEY	QTY.	NAME (COMMON/BOTANICAL)	REMARKS
PC	350	FICKEREL WEED/ PONDADERIA CORDATA	BARE ROOT 18" O.C.±
SC	320	LIZARD TAIL/ SAURURUS CERNVUS	BARE ROOT± 18" O.C.±
SE	1300	GIANT BUR-REED/ SPARGANUM EURYCARPUM	BARE ROOT± 18" O.C.±
SV	630	SOFT STEM BULLRUSH/ SCIRPUS VALIDUS	BARE ROOT± 18" O.C.±

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard County Seal*  
Chief, Bureau of Highways  
Date: 11/2/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Chief, Division of Land Development*  
Chief, Development Engineering Division MK  
Date: 12/2/01

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK  
BURTNSVILLE, MARYLAND 20866  
TEL: 301-421-4024 BALT: 410-880-1820 DC/WA: 301-989-2524 FAX: 301-421-4186

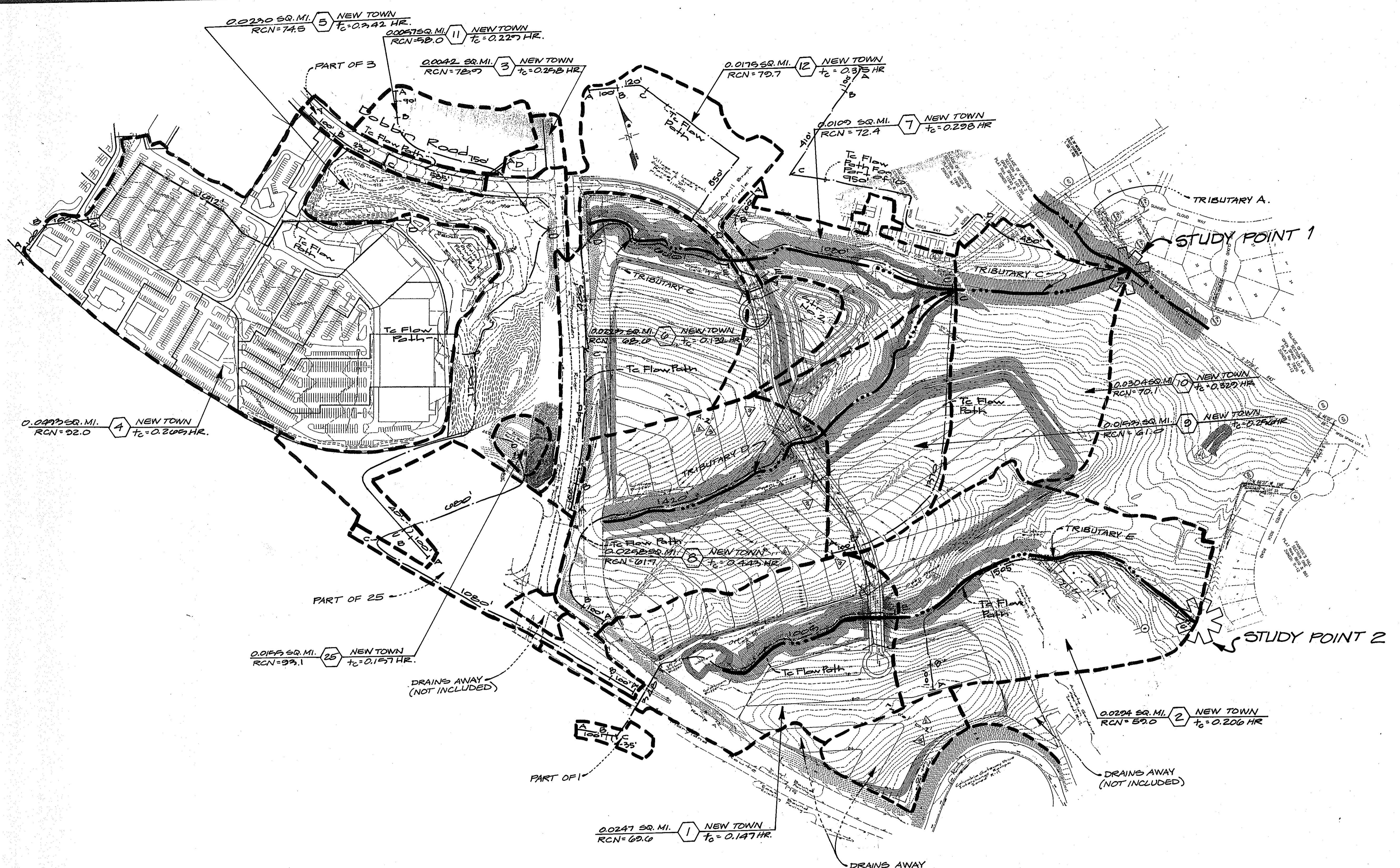
NO.	DATE	REVISION	BY	APP'R.
111424		Rev. Title Block A		
111424		Rev. Title Block A		

PREPARED FOR:  
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
10275 LITTLE PATUXENT PKWY.  
COLUMBIA, MD 21044  
ATTN: BOB JENKINS  
(410) 992-6089

**PLANTING NOTES, SCHEDULES & PLANT LIST**  
**SNOWDEN RIVER BUSINESS PARK**  
SECTION 1 AREA 1  
Parcels A-2, B-1, C-1, D-2, E-1 & Lots 6 thru 10  
ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	NT	99101
	TM 37	
Nov., 2001	GR 13 & 19	27 OF 31

*Michael J. Trap...*



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard Shick* 11/20/01  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Howard* 12/2/01  
 Chief, Division of Land Development Date  
*MK* 11/10/01  
 Chief, Development Engineering Division Date

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BALT: 410-885-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

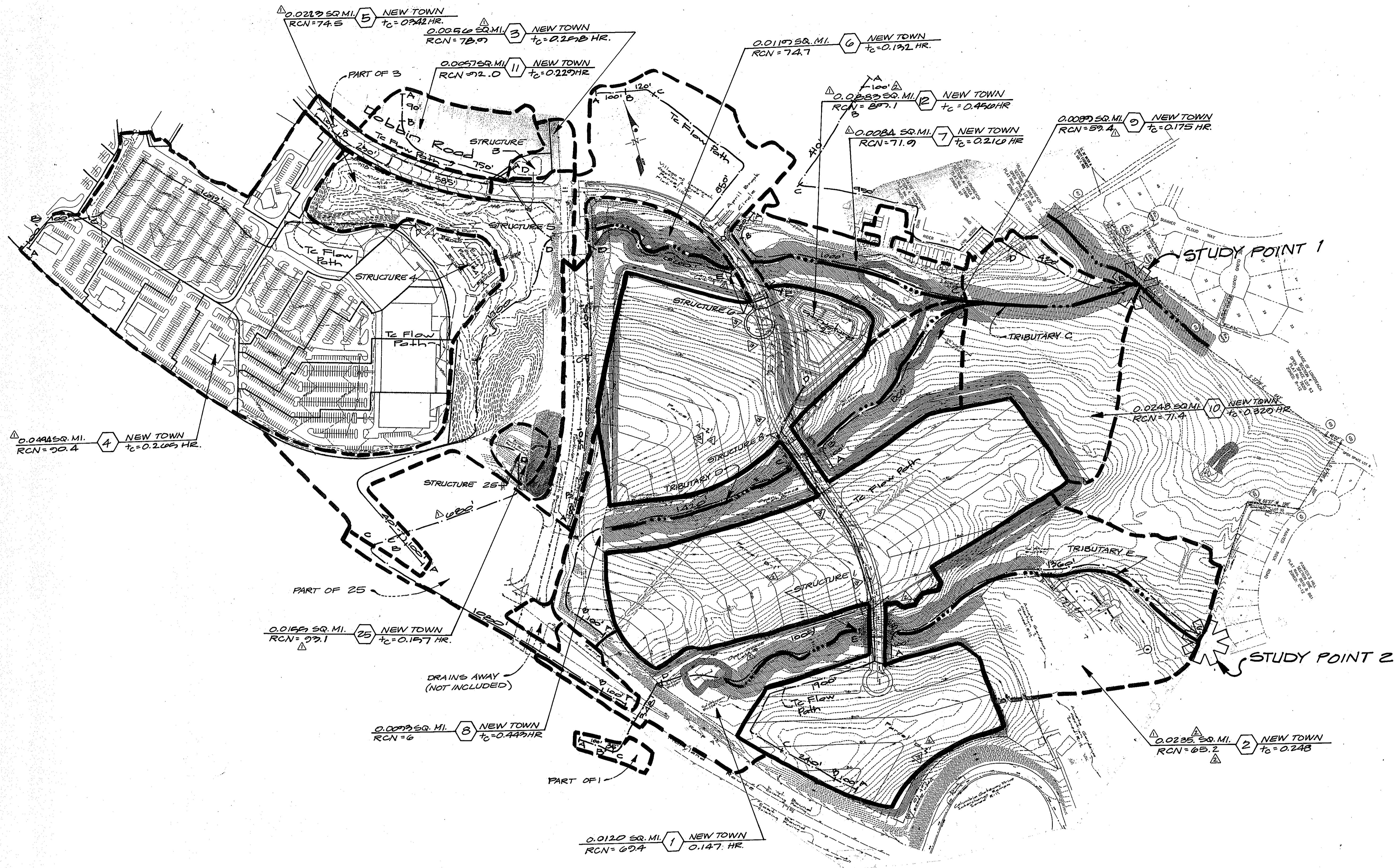
DATE	REVISION	BY	APPR.
11/14/04	Rev Title Block & Parcel IDs	WBJ	
	Rev Title Block	WBJ	

PREPARED FOR:  
 THE HOWARD RESEARCH  
 AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 (410) 992-6089

PRE-DEVELOPMENT STORMWATER MANAGEMENT DRAINAGE AREA MAP  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcel 1-A, 2-B, 1-C, 1-D, 2-E, 1-F & Lots 6 through 10  
 HOWARD COUNTY, MARYLAND  
 ELECTION DISTRICT No. 6

*Michael J. Wapp*  
 Professional Engineer  
 State of Maryland  
 License No. 10123  
 Seal of Michael J. Wapp, Professional Engineer

SCALE	ZONING	G. L. W. FILE No.
1" = 200'	NT	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	28 OF 31



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*Howard Shickler* 11/29/01  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

*Cathy Korman* 12/16/01  
 Chief, Division of Land Development Date  
*mk*  
 Chief, Development Engineering Division Date

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONGVILLE OFFICE PARK  
 BURTONGVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BALF 410-880-1820 DC/VA 301-989-2522 FAX: 301-421-4186

NO.	DESCRIPTION	DATE	BY	APP'R.
816104	Rev. Title Block & Parcel IDs		WJS	
1114104	Rev. Title Block & Drainage Area 2#12		WJS	
	Rev. runoff calculations			

PREPARED FOR:  
 THE HOWARD RESEARCH  
 AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JEWKINS  
 (410) 992-6089

2 YR. - STORMWATER MANAGEMENT DRAINAGE AREA MAP  
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcel A, B, C, D, E, F & Lots 6 thru 10  
 ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 200'	NT	99101
DATE	TAX MAP - GRID	SHEET
November 2001	TM 37 GR 13 & 19	29 OF 31

*Michael J. Topp*  
 Michael J. Topp  
 PROFESSIONAL ENGINEER



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 11/27/01  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 12/14  
 Chief, Division of Land Development Date

*[Signature]* 11/30  
 Chief, Development Engineering Division MK Date

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTOWNSVILLE OFFICE PARK  
 BURTOWNSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.
11/14/01	Rev Title Block & Parcel ID's	WJL	
11/14/01	Rev Title Block & Drainage Area 1 & 2	WJL	
11/14/01	Rev runoff calculations	WJL	

PREPARED FOR:  
 THE HOWARD RESEARCH  
 AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JEWKINS  
 (410) 992-6089

**10-YR. STORMWATER MANAGEMENT DRAINAGE AREA MAP**

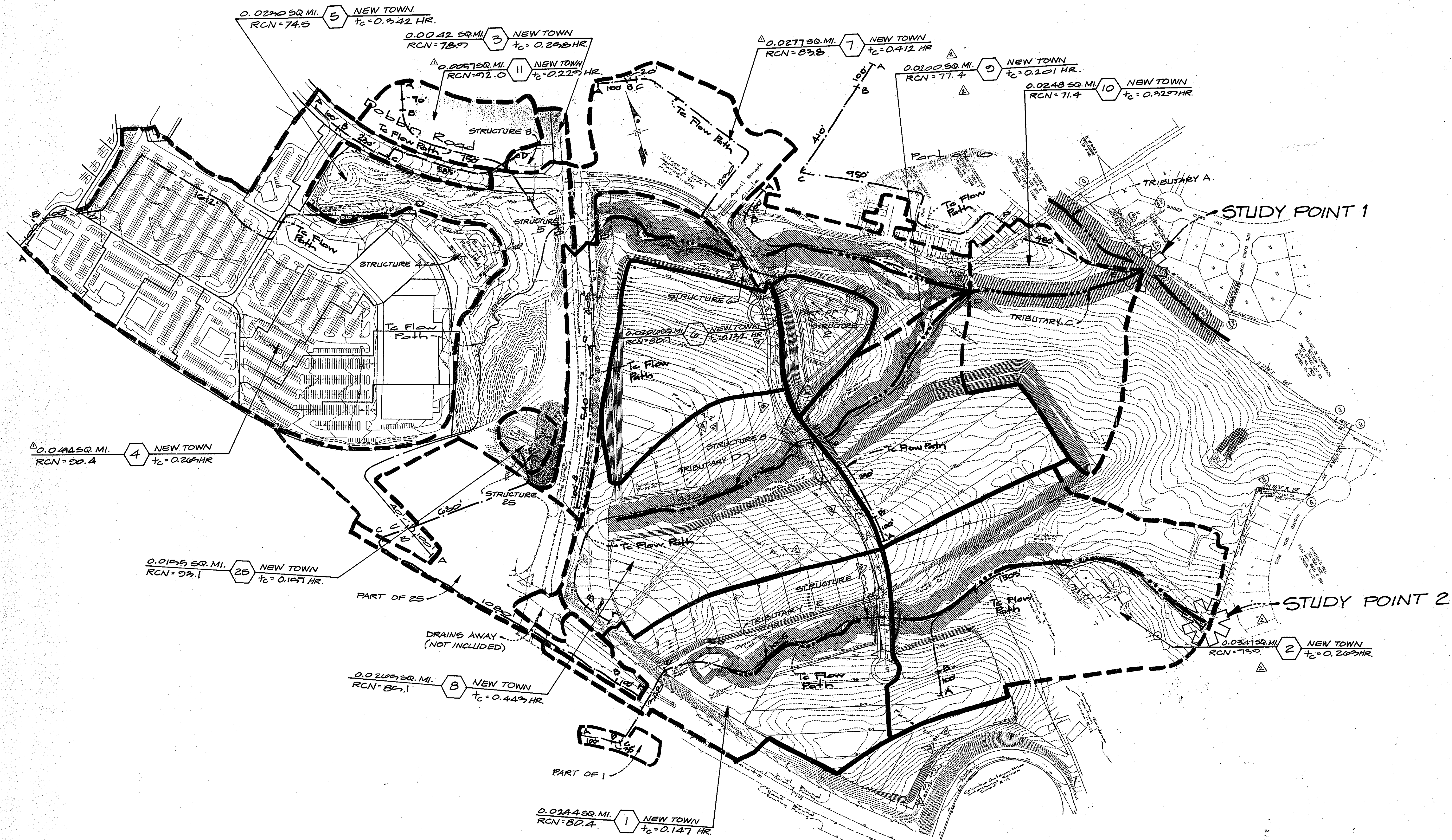
**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1 AREA 1  
 Parcels A-2, B-1, C-1, D-1, E-1 & Lots 6 thru 10  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 200'	NT	99101
DATE	TAX MAP - GRID	SHEET
November, 2001	TM 37 GR 13 & 19	30 OF 30

*Michael Frepp*

*Michael D. Tig*





APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard County*  
 Chief, Bureau of Highways Date 11/29/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hambo*  
 Chief, Division of Land Development Date 12/1/01

*MK*  
 Chief, Development Engineering Division Date 12/3/01

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-0024 FAX: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4188

DATE	REVISION	BY	APPR.
11/29/01	Rev Title Block & Parcel IDs	Wesj	
12/1/01	Rev Title Block & Rev Drainage Area 1 & 7 Tag	Wesj	
12/3/01	Rev runoff calculations		

PREPARED FOR:  
 THE HOWARD RESEARCH  
 AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 (410) 992-6089

100-YR. STORMWATER MANAGEMENT DRAINAGE AREA MAP

**SNOWDEN RIVER BUSINESS PARK**  
 SECTION 1, AREA 1  
 Parcels A-2, B-1, C-1, D-2, E-1 & Lots 6 Thru 10

ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
1" = 200'	NT	99101
DATE	TAX MAP - GRID	SHEET
Nov. 1 2001	TM 37 GR 13 & 19	31 OF 31

*Michael J. Tropp*  
 Michael J. Tropp  
 PROFESSIONAL ENGINEER