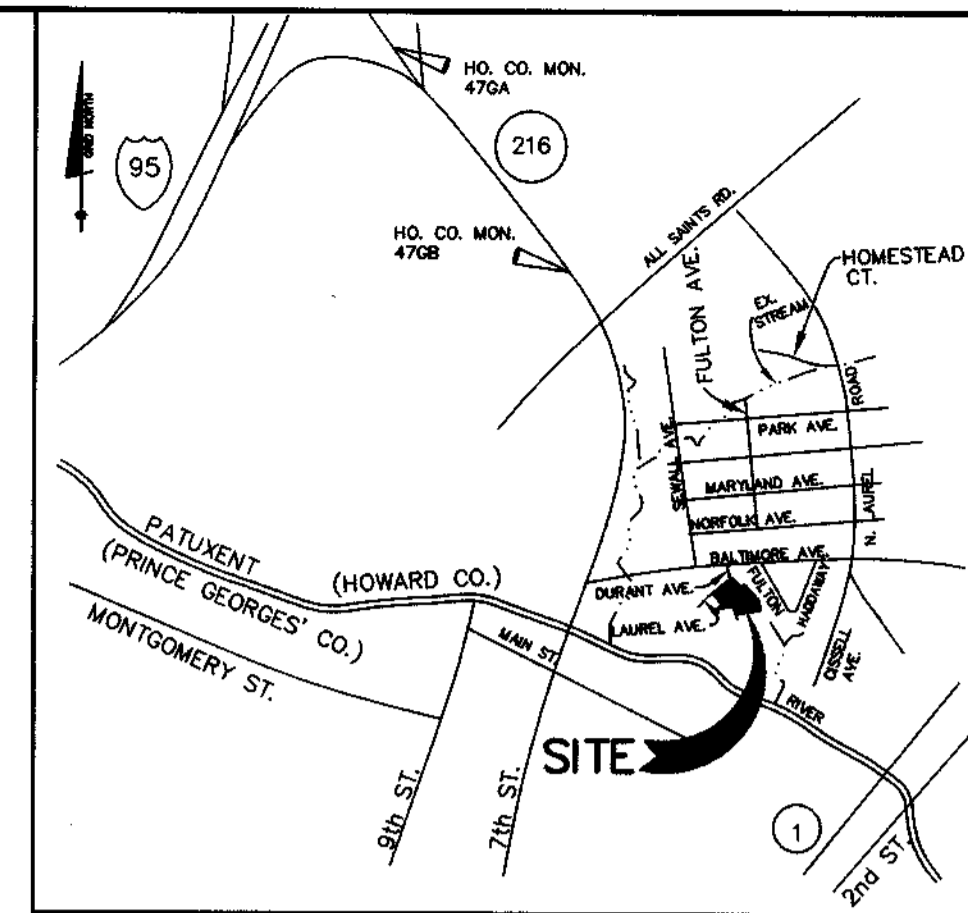


NORTH LAUREL PARK DURANT AVENUE

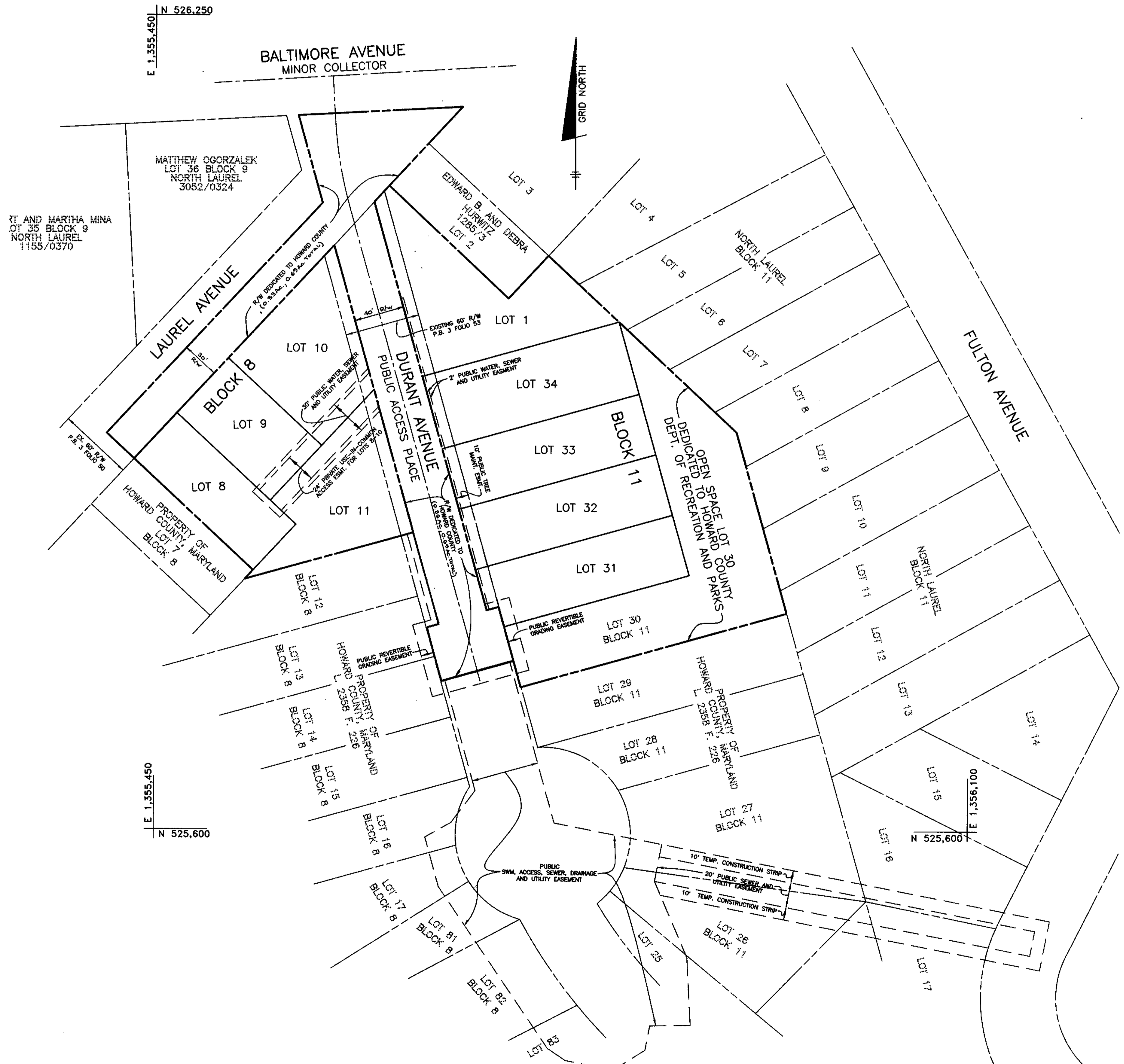
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROAD AND STORMWATER MANAGEMENT CONSTRUCTION PLANS



VICINITY MAP
SCALE: 1" = 2000'

BENCH MARKS (NAD83)	
HO. CO. No. 4708	STAMPED DISC SET ON TOP OF CONC. MONUMENT BEING 0.2 MILES WEST OF WHISKEY BOTTOM ROAD ON ROUTE 216. LOCATED IN A TRAFFIC ISLAND AND 8' FROM THE EDGE OF THE EAST BOUND LANE, 21' FROM THE EDGE OF THE WEST BOUND LANE AND 48.8' SOUTH EAST OF A GRATE INLET.
N 529,917.139' E 1,353,526.704' ELEV. 259.239	
HO. CO. No. 470A	STAMPED DISC SET ON TOP OF CONC. MONUMENT BEING NEAR THE INTERSECTION OF INTERSTATE 95 AND ROUTE 216. LOCATED IN A MEDIAN STRIP AND 8' FROM THE EDGE OF THE EAST BOUND LANE, 195'± SOUTH OF THE BRIDGE ABUTMENT FOR EAST BOUND ROUTE 216 AND 150'± NORTH OF THE RAMP FROM EAST BOUND 216 TO NORTH BOUND INTERSTATE 95.
N 532,404.179' E 1,351,627.363' ELEV. 350.468	



LOCATION MAP
SCALE: 1" = 50'

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	ROAD AND LANDSCAPE PLAN
3	ROAD PROFILES AND DETAILS
4	DRAINAGE AREA MAP
5	GRADING, SEDIMENT AND EROSION CONTROL PLAN
6	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
7	STORMWATER MANAGEMENT NOTES AND DETAILS

NO.	DATE	REVISION

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-8105 FAX: 410-465-6644

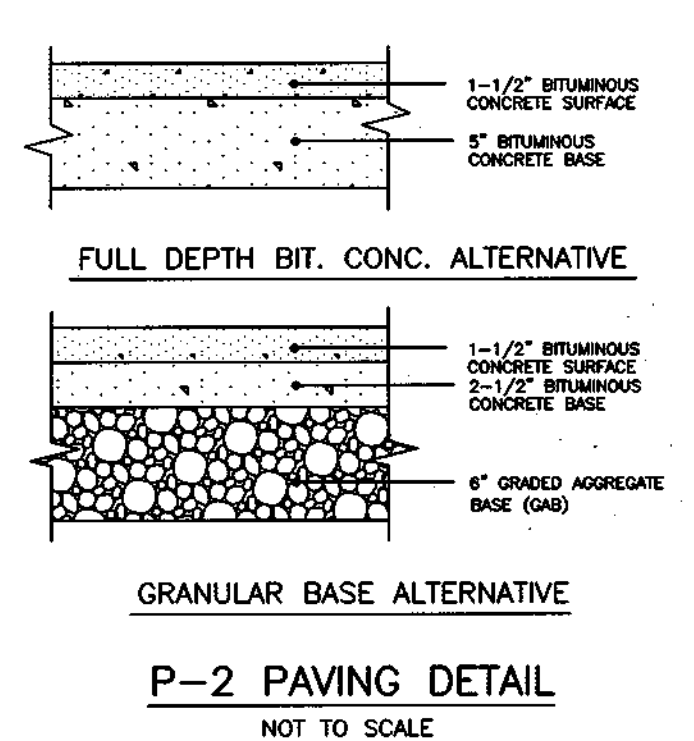
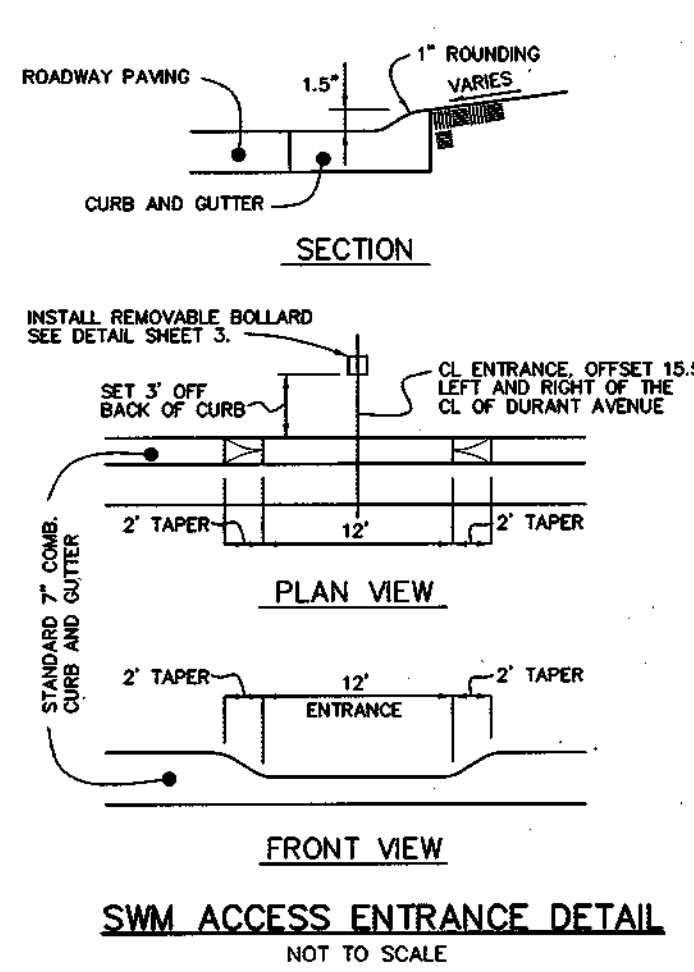
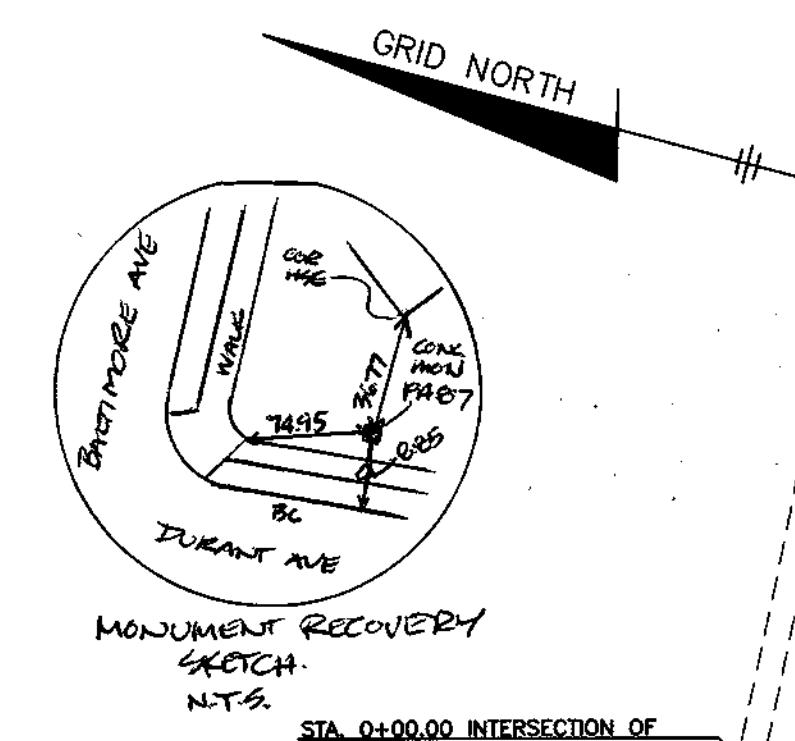
12/19/00

OWNER/DEVELOPER:	PROJECT:
CORNERSTONE HOLDINGS, L.L.C. 9691 NORFOLK AVENUE LAUREL, MARYLAND 20723 410-792-2565	NORTH LAUREL PARK DURANT AVENUE BLOCK '8' LOTS 8-11; BLOCK '11' LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY; TREE MAINTENANCE EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS
LOCATION:	TITLE SHEET
TAX MAP: 50, GRID: 3 PARCEL: 425 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
DATE:	PROJECT NO.
JULY 27, 2000 DECEMBER 18, 2000	1025
DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF	SCALE: AS SHOWN SHEET 1 OF 7

GENERAL NOTES

- All construction shall be in accordance with the latest standards and specifications of Howard County, plus MSHA standards and specifications, if applicable.
- The contractor shall notify the Department of Public Works Construction Inspection Division at (410) 313-1880 at least 5 (five) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- Project Background:
Location: Tax Maps 50 - Block 3 - Parcel 425
Zoning: R-SC
Total Tract Area: 2.96 Ac.±
Number of Existing Lots: 9*
*Plat was recorded in approximately 1893 in Plat Book No. 3, Folio 53. Lots have been reconfigured through deed conveyance prior to recordation of this plat.
- Traffic control devices, markings and signing shall be in accordance with the most current edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- The contours shown hereon have been taken from field run topographic survey at 2' interval. The topography was prepared Charles P. Johnson & Associates, Inc. dated July 25, 1997 and May 27, 2000.
- The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monuments Nos. 47GA and 47GB were used for this project.
- Water and Sewer for this subdivision is public. Sewer & water Contract No. is # 24-3723-D and its drainage area is the Patuxent watershed.
- Stormwater Management Quantity Control will be provided by detention. Quality Control to be provided by vegetative swale/micro-pool combination. The facility is to be owned and maintained by Howard County.
- There are no wetlands, wetland buffers or 100 year floodplain within this project.
- Forest Conservation is not required for this project since the property was recorded prior to the Forest Conservation Bill and no additional lots are being created.
- A Traffic Study is not required for this property.
- Geotechnical Report compiled by Hillis-Carnes Engineering Associates, Inc. dated July, 2000.
- Existing utilities were located by record drawings and field locations. Contractor shall verify location of utilities prior to construction.
- Unless noted as "private" all easements are public.
- There are no existing buildings on the site.
- There are no previous Department of Planning and Zoning reference numbers.
- Contractor shall adjust all utilities and rim elevations as needed to match this plan.
- Street lights will be required in this development in accordance with the Design Manual. Street light placement and the type of fixture and pole selected shall be in accordance with the latest Howard County Design Manual, Volume III (1993) and as modified by "Guidelines Street Lights in Residential Developments (June, 1993)." The June 1993 policy includes guidelines for lateral and longitudinal placement. A minimum spacing of 20' shall be maintained between street lights and any tree. Street lights for this subdivision shall be "Colonial" HPS post top fixtures on black fiberglass poles located as shown on this plan.
- This plan is exempt from perimeter landscaping since no new lots are being created. Street trees for Durant Avenue as shown on these plans shall be provided by the developer in accordance with Section 16.124 of the Howard County Code and Landscape Manual. Financial surety for the required street trees shall be made part of the Developer's Agreement in the amount of \$4,400.00. Landscaping of the stormwater management facility is fulfilled through alternative compliance, see schedule "D", sheet no. 2. Perimeter landscaping is not required.
- All handicap ramps shall be in accordance with Howard County Std. Detail R-4.01 and all current ADA requirements.
- A Use-In-Common Driveway Maintenance Agreement for lots 8 - 10 block "8" will be recorded by the developer in the Land Records Office of Howard County.
- All plan dimensions are to face of curb unless otherwise noted.
- Driveway access to existing house located on lot 2, block 11 shall be provided throughout construction operation.
- No disturbance is permitted within the stream buffer except for work related to the utility crossing as shown on these plans (see sheet no. 5).
- A letter of exemption from the Maryland Department of the Environment and a Maryland Special Permit, Category III, from the U.S. Army Corp. of Engineers for grading in the stream channel to install the utility line was applied for on December 7, 1999. The permit will be obtained prior to issuance of the grading permit. Application tracking no. 99-NT-0616/200002100.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	DATE
	1-29-01
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	DATE
	1/24/01
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	1/25/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. D'Amico
CHIEF, BUREAU OF HIGHWAYS
1-24-01 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chris Hamble
CHIEF, DIVISION OF LAND DEVELOPMENT
1/30/01 DATE

Chris Hamble
CHIEF, DEVELOPMENT ENGINEERING DIVISION
1/25/01 DATE

TRAFFIC SIGN SCHEDULE

SYMBOL	SIGN TYPE	LOCATION	DESCRIPTION
(S)	R1-1	STA. 0+47 OFFS. 13' LT.	'STOP SIGN' 30"x30" OCTAGON
(N)	W20-4	STA. 1+00 OFFS. 14' RT.	'ONE LANE ROAD' 48"x48" DIAMOND
(N)	W20-4	STA. 3+97 OFFS. 13' LT.	'ONE LANE ROAD' 48"x48" DIAMOND

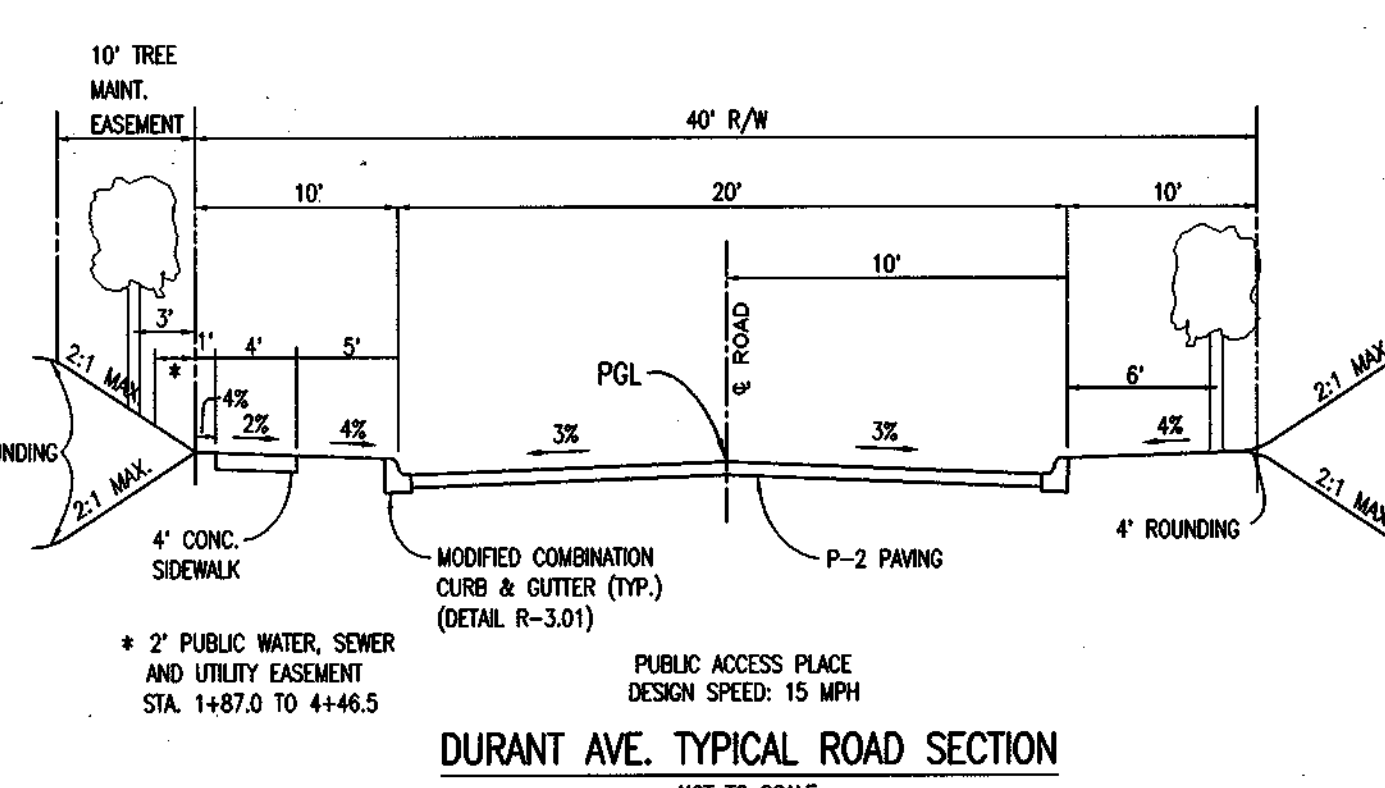
FOR SIGNAGE RELATED TO SPEED CONTROL DEVICES, SEE SHEET 3.

CURVE DATA TABLE

CURVE	RADIUS	ARC	DELTA	TANGENT	CHORD
C-1	316.00'	66.96'	12°08'27"	33.61'	N09°26'30"W 66.83'

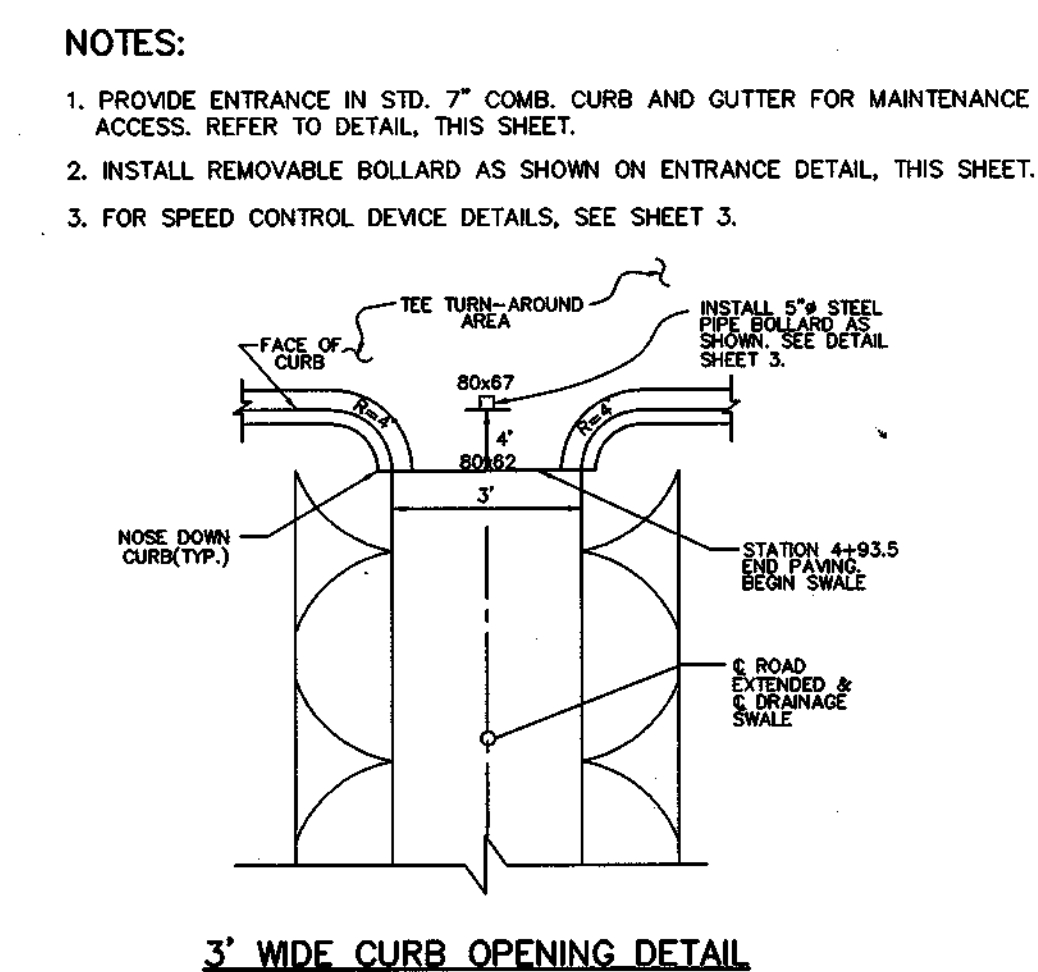
CENTERLINE CONTROL DATA

ROAD	STATION	NORTH	EAST
DURANT AVENUE	0+00.00	526201.4673	1355591.1372
	PC 0+36.87	526164.6655	1355593.3547
	PT 1+03.83	526098.7519	1355604.4068



STREET LIGHT SCHEDULE

STREET NAME	CL STATION	OFFSET	NOTES
DURANT AVE.	0+24	24' RT	100 WATT HPS VAPOR 'COLONIAL' POST TOP FIXTURES MOUNTED ON 14' BLACK FIBERGLASS POLE
	1+75	14' RT	
	3+50	14' RT	
	4+43	14' RT	



NOTES:

- PROVIDE ENTRANCE IN STD. 7" COMB. CURB AND GUTTER FOR MAINTENANCE ACCESS. REFER TO DETAIL, THIS SHEET.
- INSTALL REMOVABLE BOLLARD AS SHOWN ON ENTRANCE DETAIL, THIS SHEET.
- FOR SPEED CONTROL DEVICE DETAILS, SEE SHEET 3.

SCHEDULE D SWM AREA LANDSCAPING

LINEAR FEET OF PERIMETER	670
BUFFER TYPE	B
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES (0)
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
LINEAR FEET OF REQUIRED PLANTING	670
NUMBER OF TREES REQUIRED	13
EVERGREEN TREES	17
NUMBER OF TREES PROVIDED	
SHADE TREES	0
EVERGREEN TREES	0
OTHER TREES (2:1 SUBSTITUTE)	0

① THE STORMWATER MANAGEMENT FACILITY IS LOCATED ON AND SURROUNDED BY LAND OWNED BY HOWARD COUNTY AND IS INCLUDED IN PROJECT OPEN SPACE. THE LOCATION DOES NOT ABUT ANY RESIDENTIAL LOTS OR STRUCTURES AND IS BUFFERED BY EXISTING VEGETATION GREATER THAN 20 FEET IN WIDTH, BASED ON CRITERIA PRESENTED IN THE HOWARD COUNTY LANDSCAPE MANUAL, NO LANDSCAPING IS REQUIRED.

PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
(O)	22*	TILIA AMERICANA, 'REDMOND'	2 1/2" MIN. CAL. REDMOND LITTLELEAF LINDEN B&B FULL HEAD

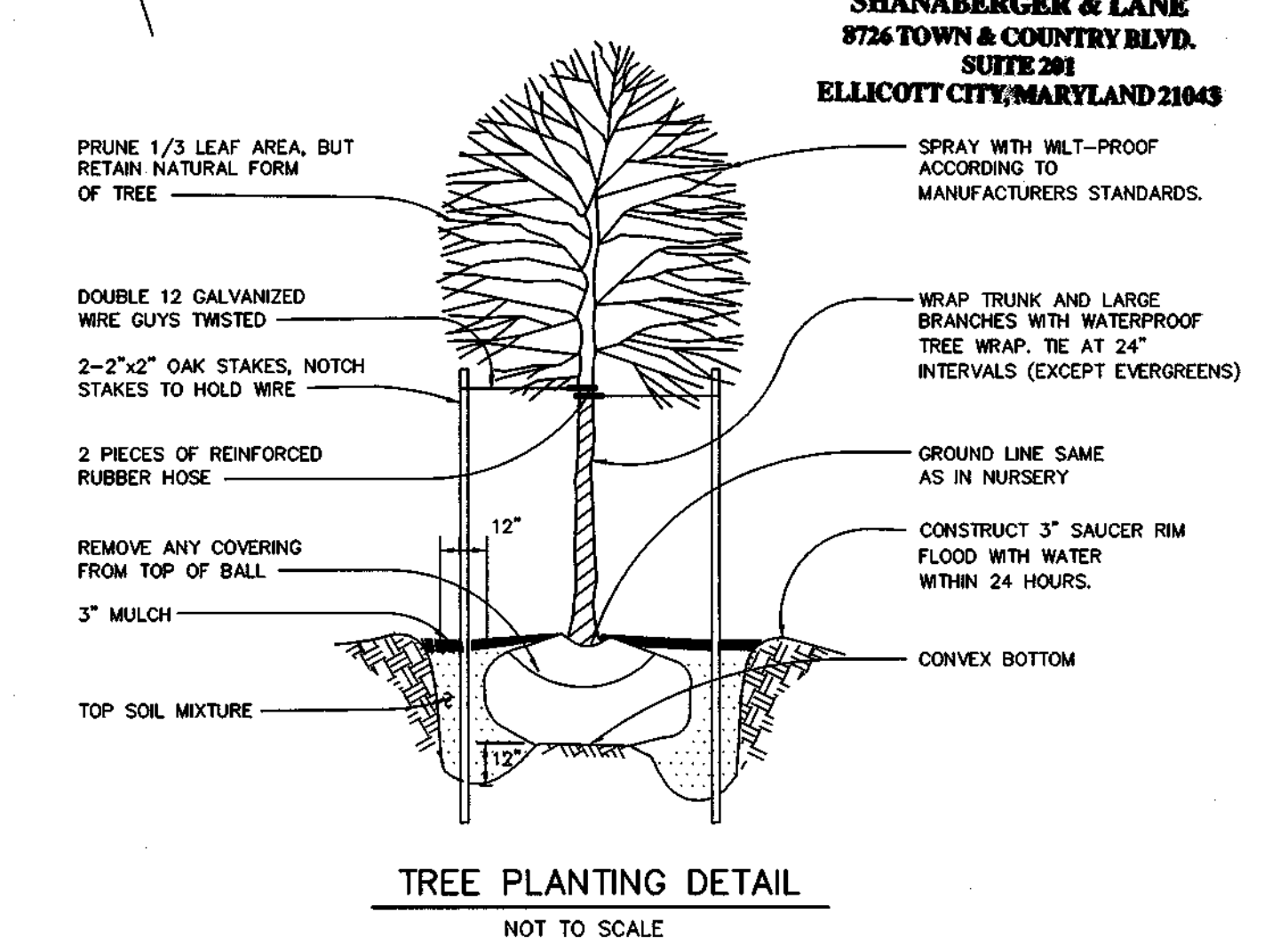
* PROVIDED BY THE DEVELOPER

STREET TREE REQUIREMENTS

STREET TREES REQUIRED (896 LF ÷ 40)	22 TREES
CREDIT FOR PRESERVATION OF EXISTING VEGETATION	NO
STREET TREES PROVIDED	22 TREES

PLANTING NOTES:

- TREES MUST BE PLANTED A MINIMUM OF 4 FEET FROM THE CURB OR SIDEWALK AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN.
- A MINIMUM DISTANCE OF 20 FEET MUST BE MAINTAINED BETWEEN ANY TREES LOCATED ALONG THE CURB LINE AND ANY STREET LIGHTS.
- TREE MUST BE PLANTED A MINIMUM OF 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET FROM A DRIVEWAY.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 22 STREET TREES SHALL BE PART OF THE DEVELOPER'S AGREEMENT, IN THE AMOUNT OF \$4,400.00. NO LANDSCAPING IS REQUIRED ALONG THE PERIMETER OF THE STORMWATER MANAGEMENT FACILITY (REFER TO SCHEDULE 'D').



BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC.

6480 BALTIMORE NATIONAL PIKE & SUITE 418
ELICOTT CITY, MARYLAND 21043
PHONE: 410-465-8105 FAX: 410-465-6644

Donald M. Mason
12/19/00

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, L.L.C.
9691 NORFOLK AVENUE
LAUREL, MARYLAND 20723
410-792-2585

PROJECT: NORTH LAUREL PARK DURANT AVENUE
BLOCK 'B' LOTS 8-11; BLOCK '11' LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY, TREE MAINTENANCE EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS

LOCATION: TAX MAP: 50, GRID: 3
PARCEL: 425
63D ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

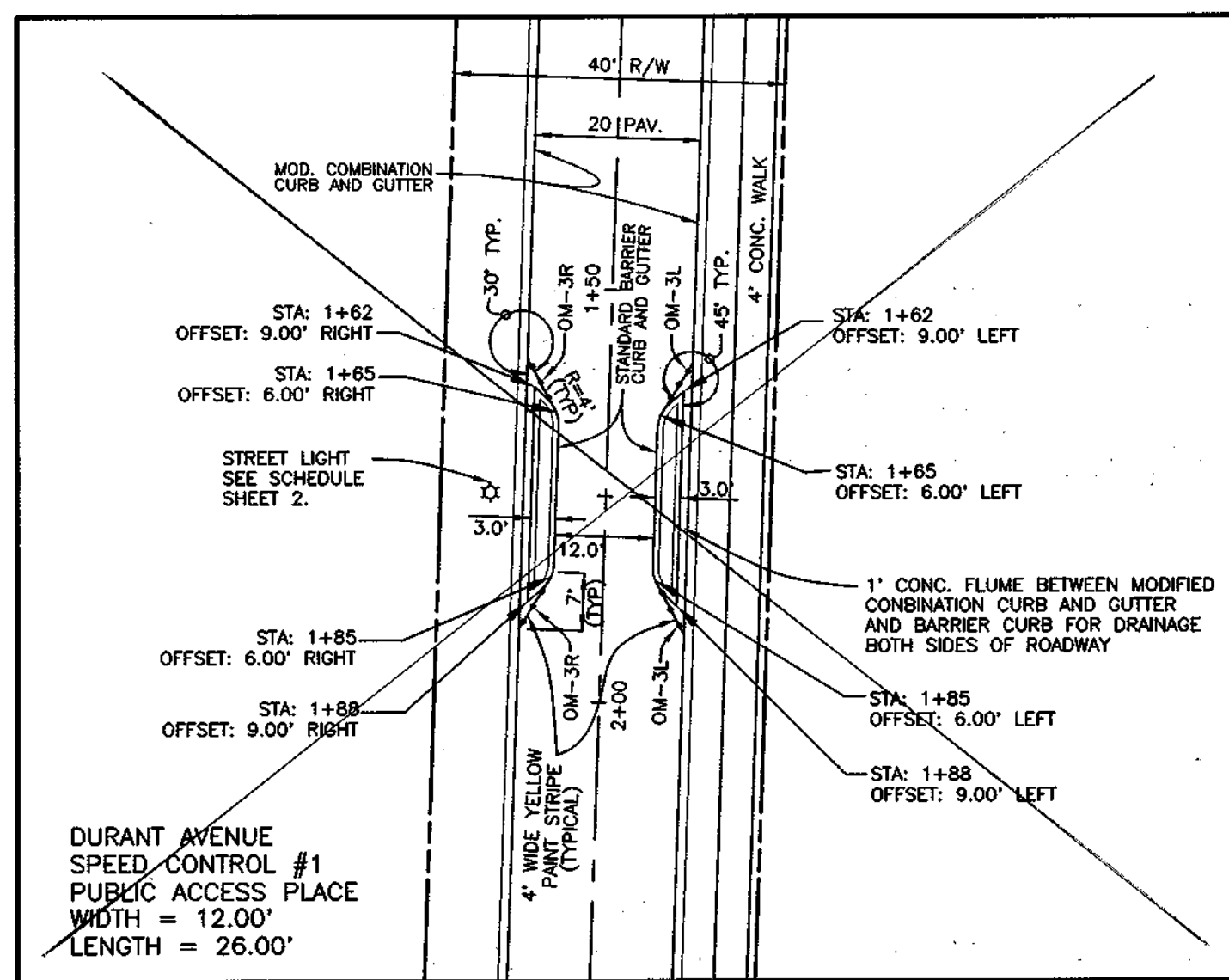
TITLE: ROAD AND LANDSCAPE PLAN

DATE: JULY 27, 2000
DECEMBER 18, 2000

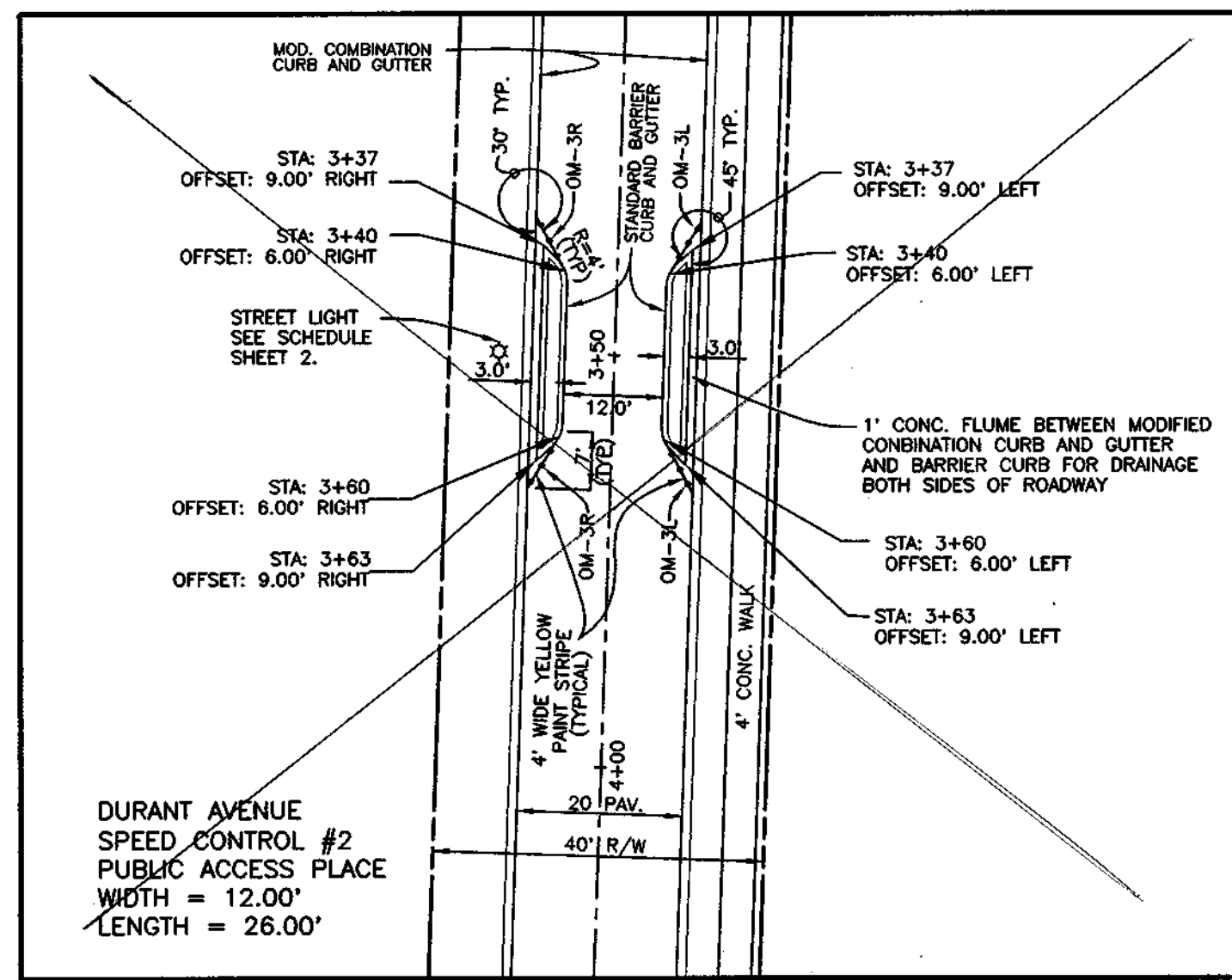
PROJECT NO. 1025

SCALE: AS SHOWN SHEET 2 OF 7

DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF

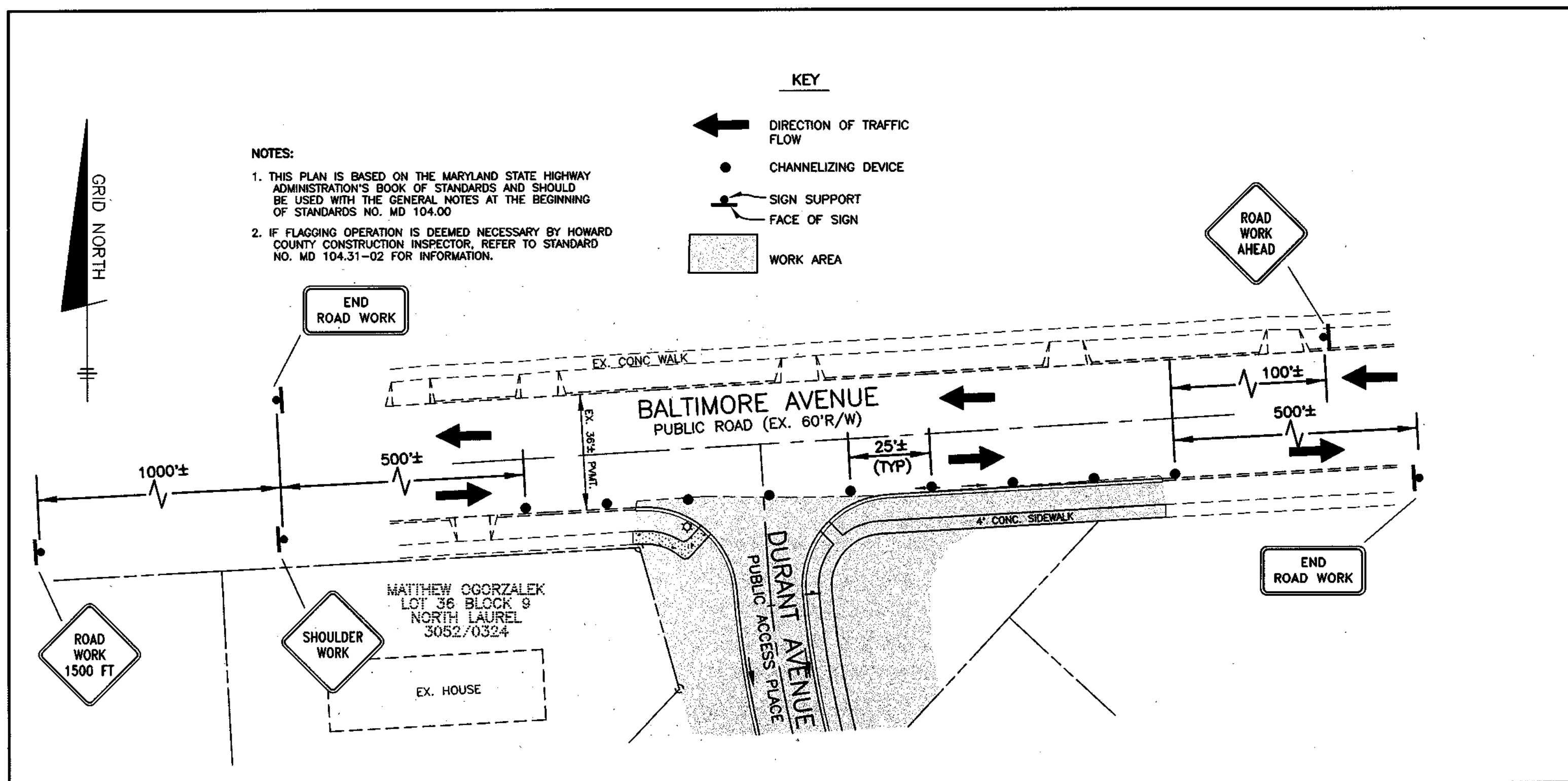
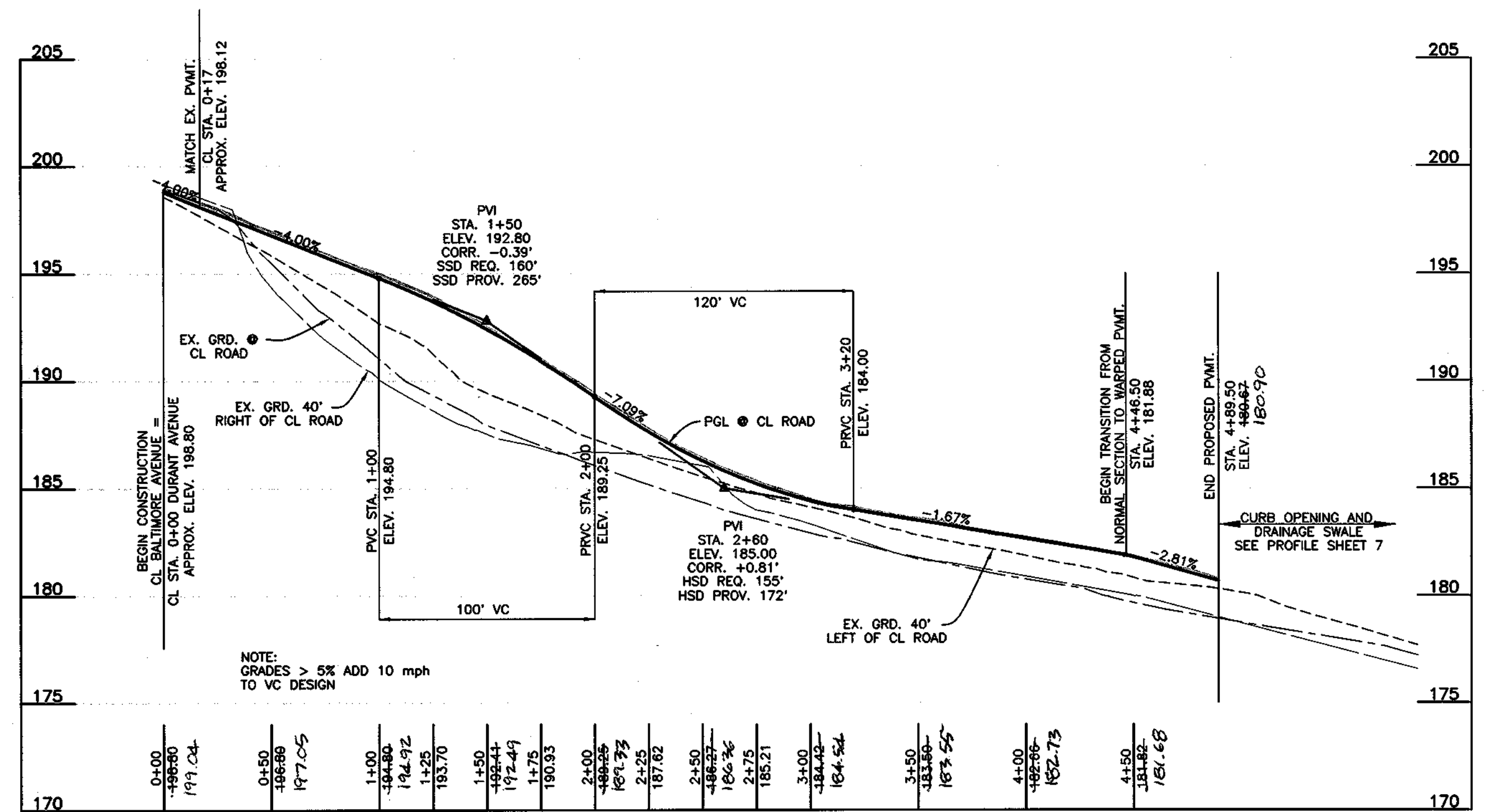


SPEED CONTROL DEVICE #1
SCALE: 1" = 20'

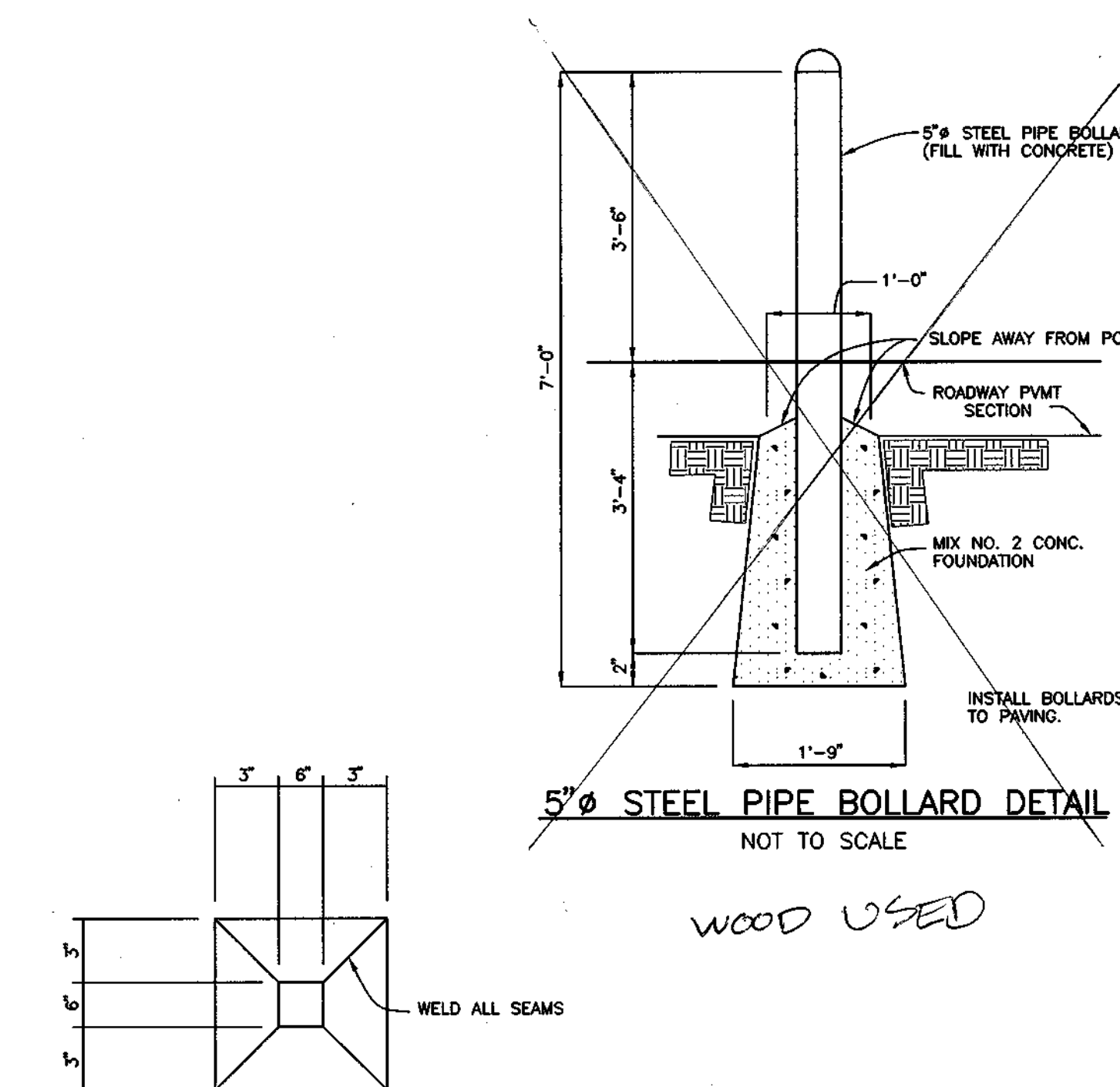


SPEED CONTROL DEVICE #2
SCALE: 1" = 20'

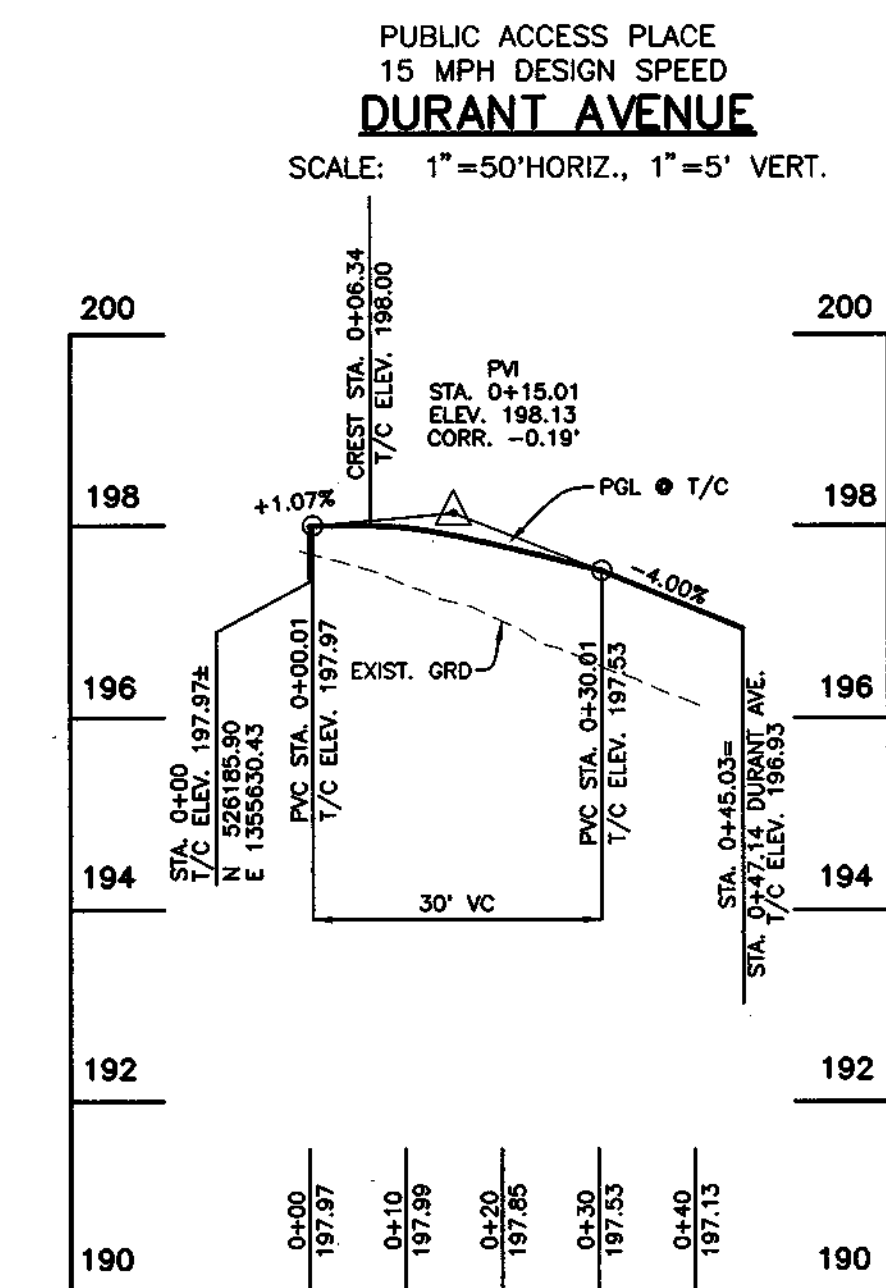
TYPE	LOCATION	DESCRIPTION
OM-3R	STA. 1+59.81 OFFS. 9' RIGHT	12"x36" OBJECT MARKER (TYPICAL)
OM-3R	STA. 1+61.54 OFFS. 8' RIGHT	
OM-3R	STA. 1+63.27 OFFS. 7' RIGHT	
OM-3L	STA. 1+59.81 OFFS. 9' LEFT	
OM-3L	STA. 1+61.54 OFFS. 8' LEFT	
OM-3L	STA. 1+63.27 OFFS. 7' LEFT	
OM-3R	STA. 1+86.73 OFFS. 7' RIGHT	
OM-3R	STA. 1+88.46 OFFS. 8' RIGHT	
OM-3R	STA. 1+90.19 OFFS. 9' RIGHT	
OM-3L	STA. 1+86.73 OFFS. 7' LEFT	
OM-3L	STA. 1+88.46 OFFS. 8' LEFT	
OM-3L	STA. 1+90.19 OFFS. 9' LEFT	
OM-3R	STA. 3+34.61 OFFS. 9' RIGHT	12"x36" OBJECT MARKER (TYPICAL)
OM-3R	STA. 3+36.54 OFFS. 8' RIGHT	
OM-3R	STA. 3+38.27 OFFS. 7' RIGHT	
OM-3L	STA. 3+34.61 OFFS. 9' LEFT	
OM-3L	STA. 3+36.54 OFFS. 8' LEFT	
OM-3L	STA. 3+38.27 OFFS. 7' LEFT	
OM-3R	STA. 3+61.73 OFFS. 7' RIGHT	
OM-3R	STA. 3+63.46 OFFS. 8' RIGHT	
OM-3R	STA. 3+65.19 OFFS. 9' RIGHT	
OM-3L	STA. 3+61.73 OFFS. 7' LEFT	
OM-3L	STA. 3+63.46 OFFS. 8' LEFT	
OM-3L	STA. 3+65.19 OFFS. 9' LEFT	



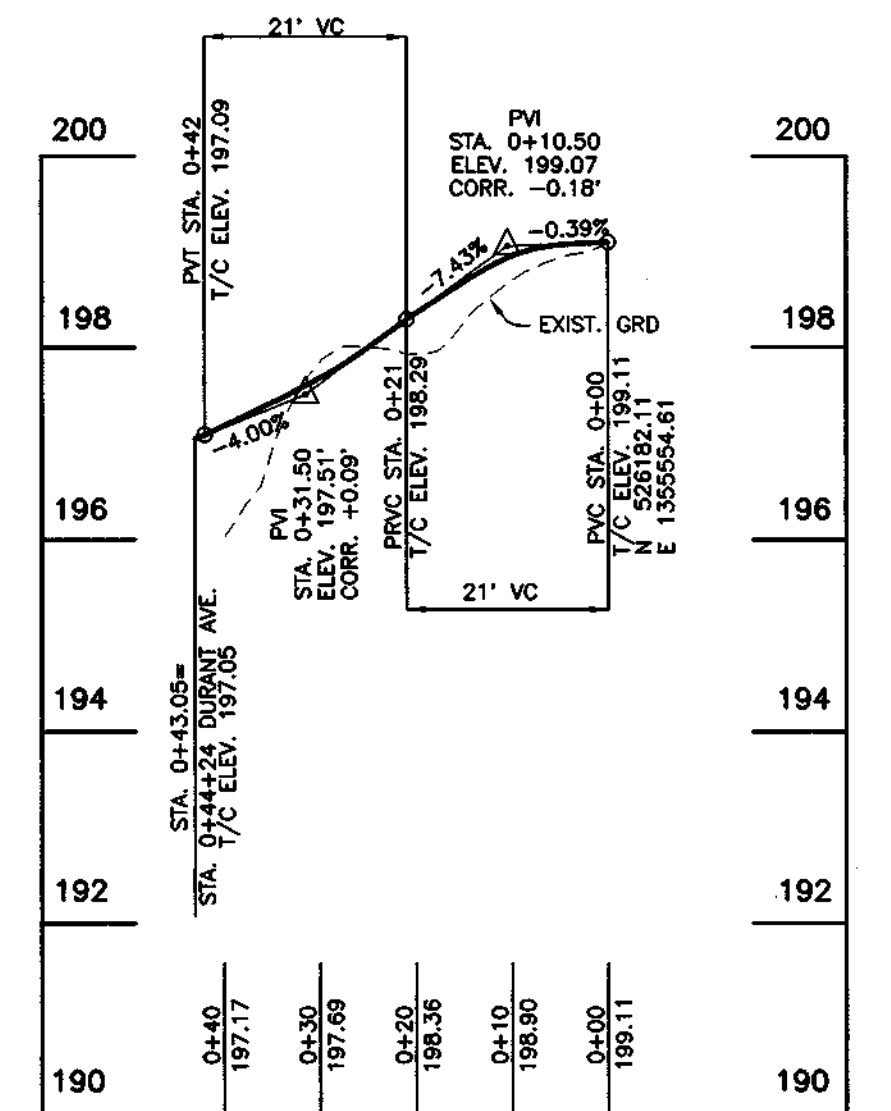
TRAFFIC CONTROL PLAN
SCALE: 1" = 30'



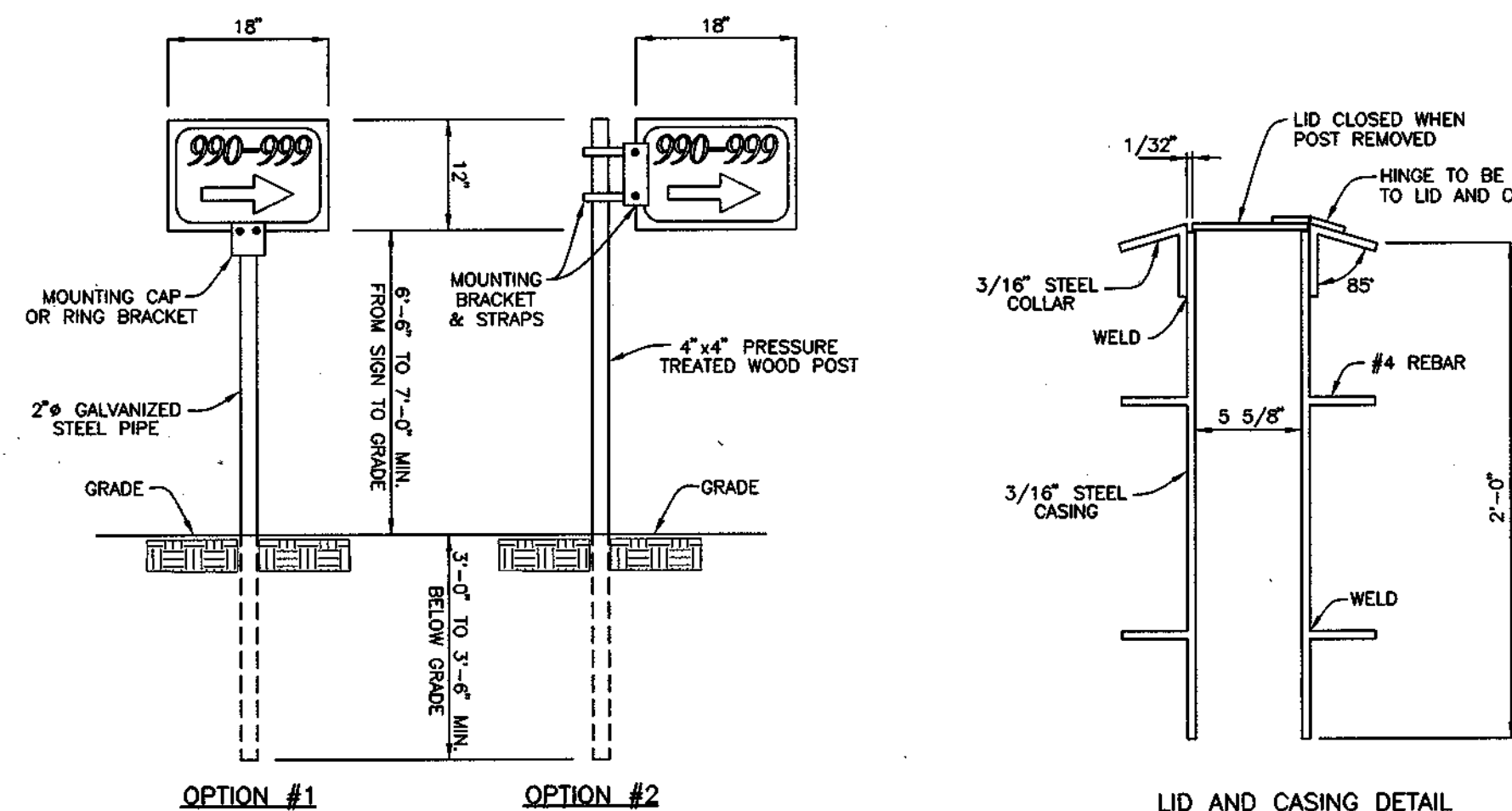
5" STEEL PIPE BOLLARD DETAIL
NOT TO SCALE



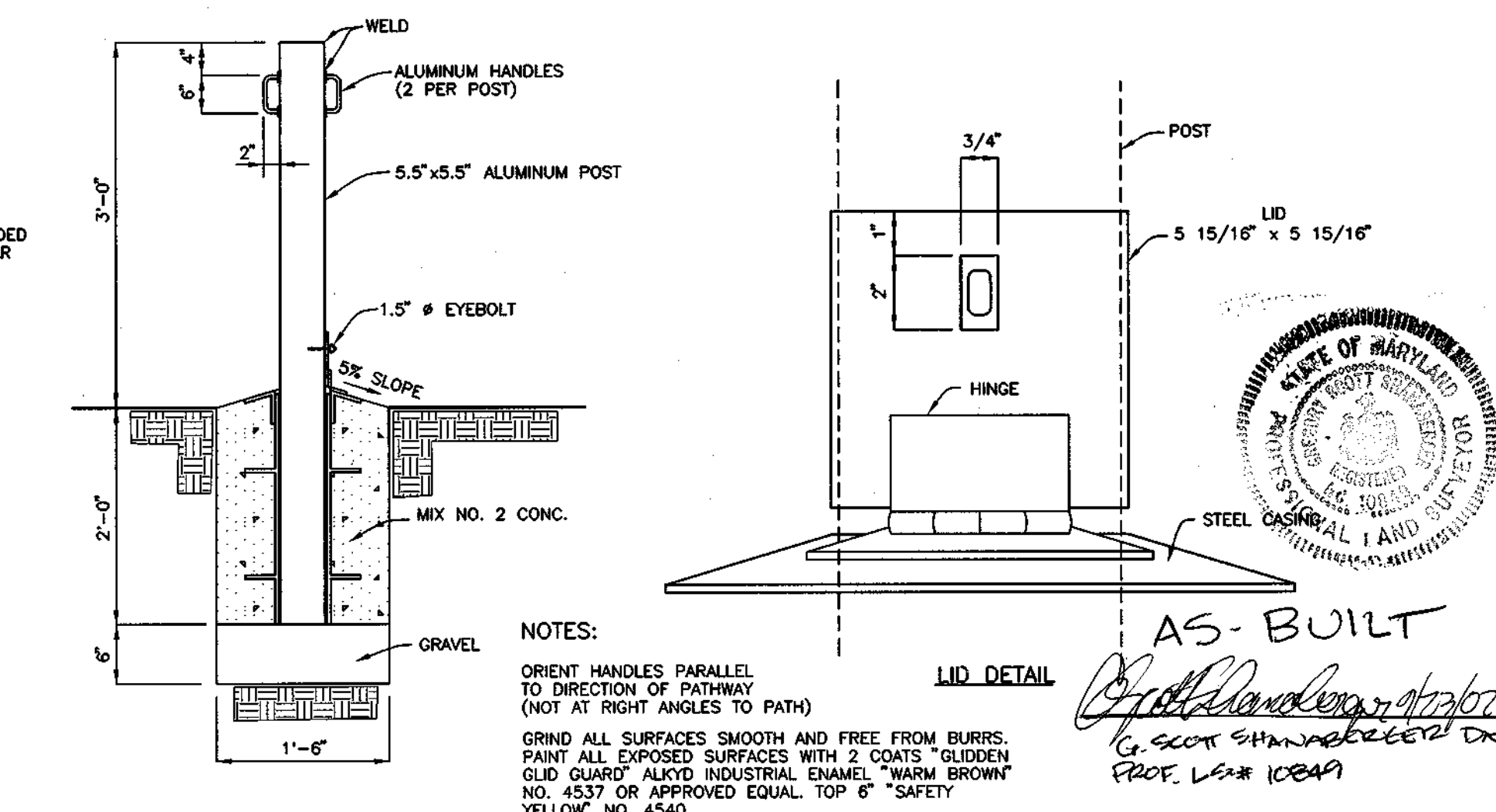
CURB RETURN PROFILE BALTIMORE AVE./DURANT AVE. - EAST
SCALE: 1"=20' HORIZ., 1"=2" VERT.



CURB RETURN PROFILE BALTIMORE AVE./DURANT AVE. - WEST
SCALE: 1"=20' HORIZ., 1"=2" VERT.



HO. CO. APPROVED SIGN DESIGN AND INSTALLATION DETAIL FOR STREET NAME
NOT TO SCALE



REMOVABLE PIPE BOLLARD DETAIL
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Parnell 1-24-01
CHIEF, BUREAU OF HIGHWAYS
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Condy Hamilton 1/30/01
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

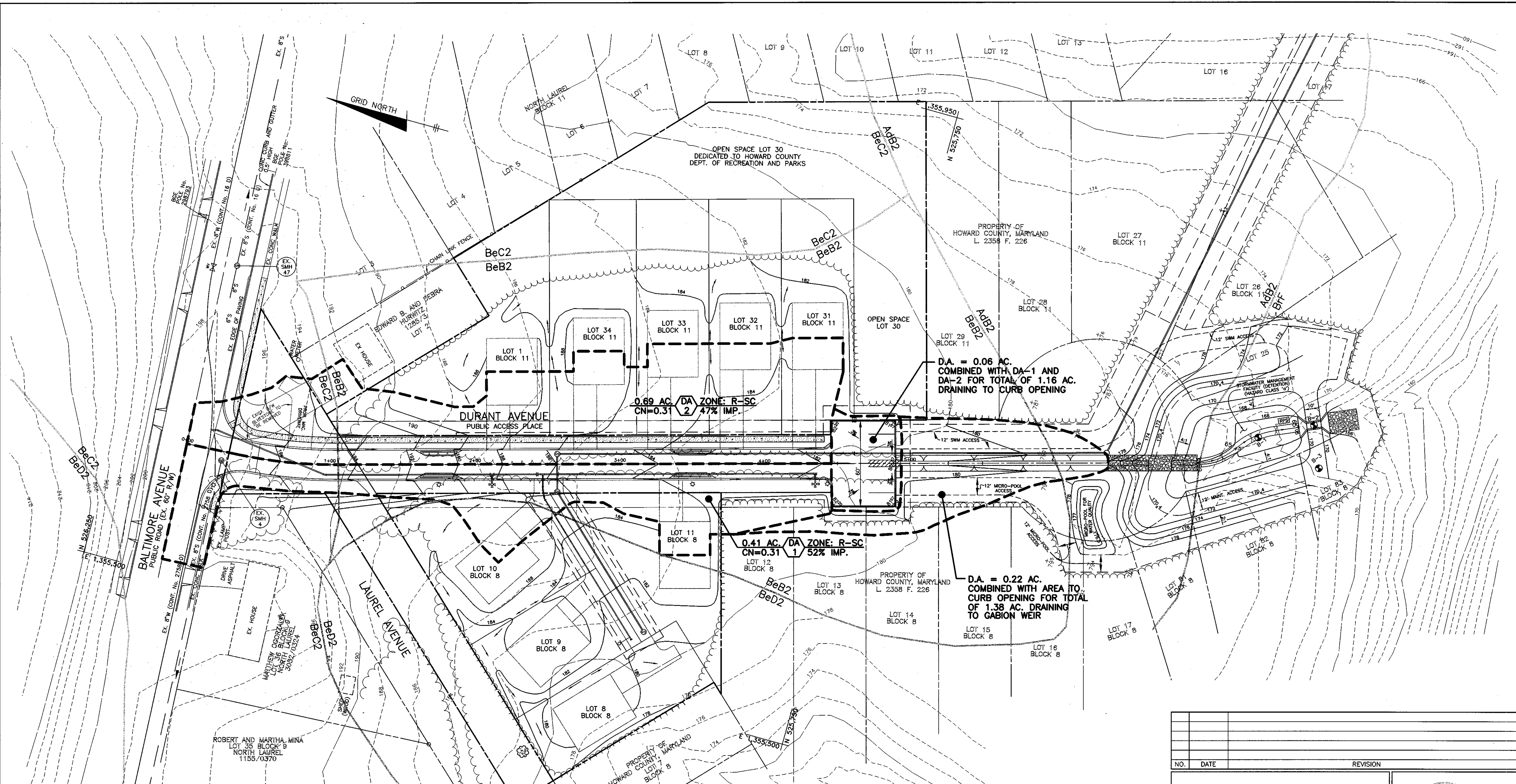
John Parnell 1/25/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

NO.	DATE	REVISION

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELlicOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6844

OWNER/DEVELOPER:	PROJECT: NORTH LAUREL PARK DURANT AVENUE
CORNERSTONE HOLDINGS, L.L.C. 9691 NORFOLK AVENUE LAUREL, MARYLAND 20723 410-792-2565	TAX MAP: 50, GRID: 3 PARCEL: 425 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: ROAD PROFILES AND DETAILS	DATE: JULY 27, 2000 DECEMBER 18, 2000
DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF	PROJECT NO. 1025 SHEET 3 OF 7



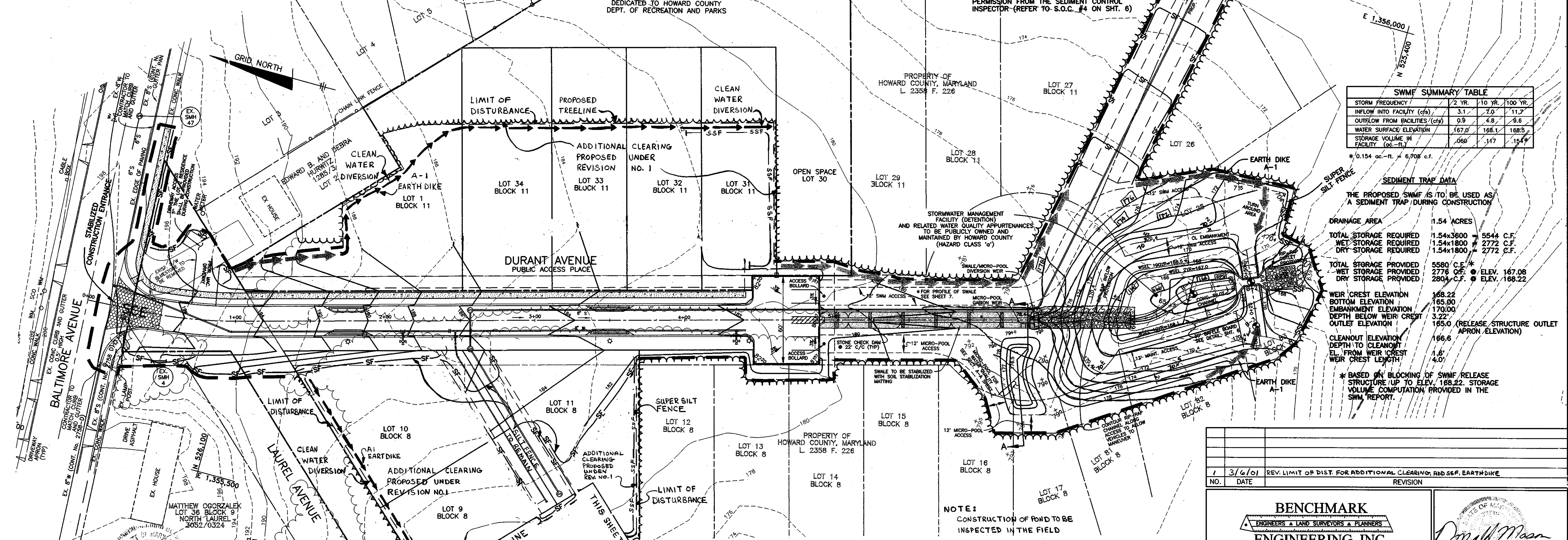
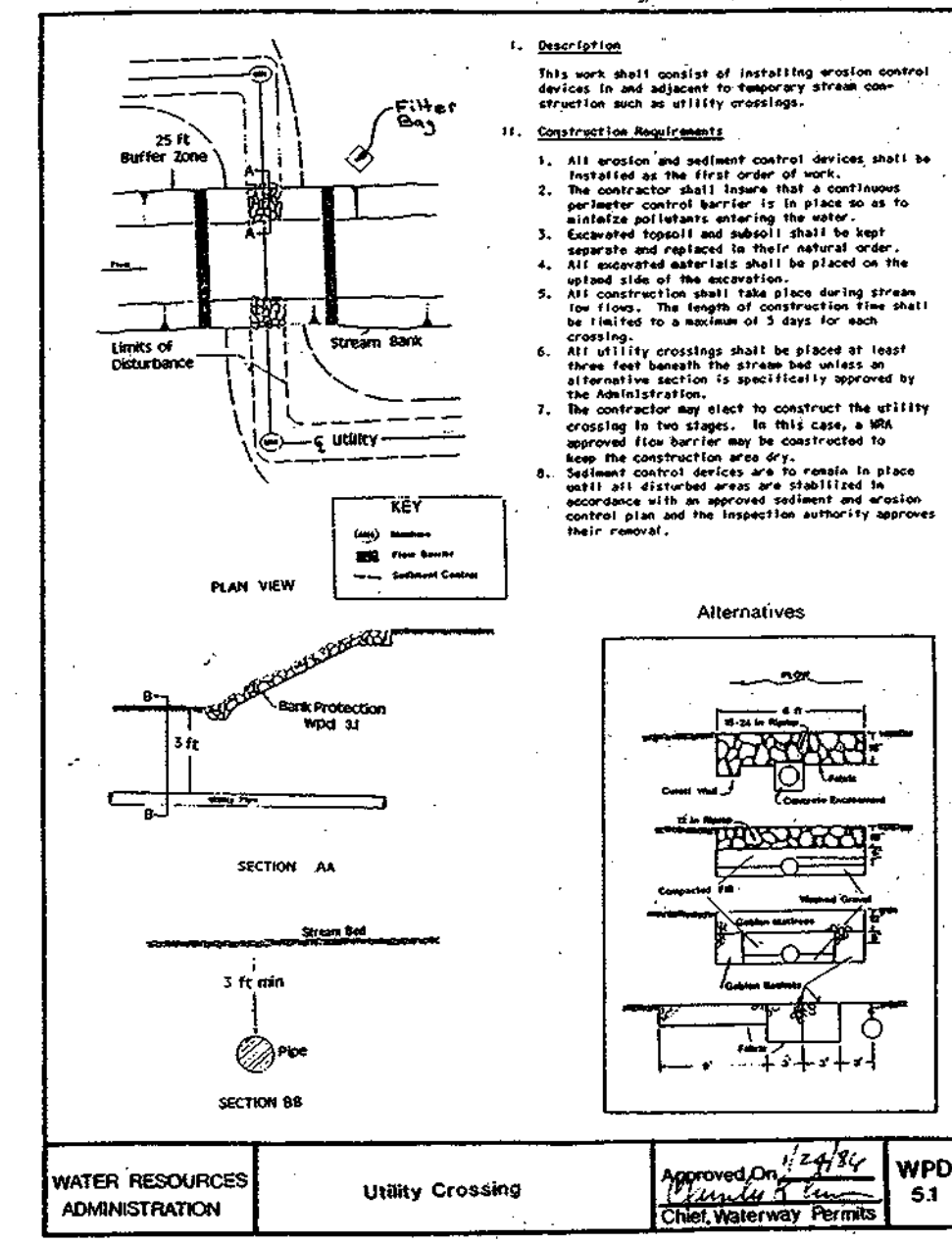
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Sanchez 1-24-01
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Cecilia Hamilton 1/30/01
 CHIEF, DIVISION OF LAND DEVELOPMENT

John P. ... 1/25/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
AdB2	C *	ALDING SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
BeB2	C *	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BaC2	C *	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED
BaD2	C *	BELTSVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED
BaF	C	BRANDYWINE LOAM, 25 TO 60 PERCENT SLOPES
* INDICATES HYDRIC SOILS		
* TAKEN FROM SOIL SURVEY HOWARD COUNTY, MARYLAND MAP NO. 31		

NO. DATE REVISION	
BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644	
OWNER/DEVELOPER: CORNERSTONE HOLDINGS, L.L.C. 9631 NORFOLK AVENUE LAUREL, MARYLAND 20723 410-792-2565	PROJECT: NORTH LAUREL PARK DURANT AVENUE BLOCK 'B' LOTS 8-11; BLOCK '11' LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY; TREE MAINTENANCE EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS LOCATION: TAX MAP: 50, GRID: 3 PARCEL: 425 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE: DRAINAGE AREA MAP DATE: JULY 27, 2000 PROJECT NO. 1025 DECEMBER 18, 2000 DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF SCALE: 1" = 30' SHEET 4 OF 7



AS-BUILT

SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 201
ELLCOTT CITY, MARYLAND 21043

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
1-24-01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
1/30/01

APPROVED: FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
1/21/01

APPROVED: THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
1/25/01

ENGINEER'S CERTIFICATE

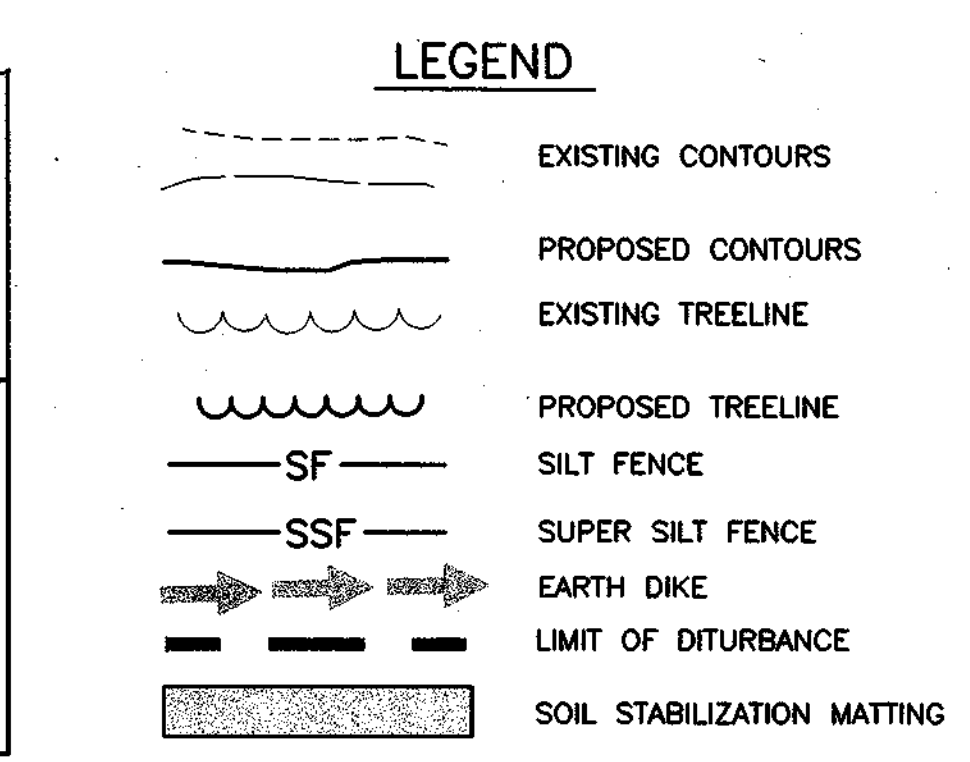
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Donald Mason 12/19/00
ENGINEER

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS PLAN OF DEVELOPMENT AND SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION OF THIS PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

B. D. By 12/16/00
DEVELOPER



NOTE:
CONSTRUCTION OF POND TO BE INSPECTED IN THE FIELD

OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT FACILITY

ROUTINE MAINTENANCE

- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
- TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
- DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- SEDIMENT SHOULD BE REMOVED FROM THE POND NO LATER THAN WHEN THE CAPACITY OF THE POND IS HALF FULL OF SEDIMENT, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-8105 FAX: 410-465-8844

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, L.L.C.
9691 NORFOLK AVENUE
LAUREL, MARYLAND 20723
410-792-2565

PROJECT: NORTH LAUREL PARK DURANT AVENUE
BLOCK 'B' LOTS 8-11; BLOCK '11' LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY; TREE MAINTENANCE, EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS

LOCATION: TAX MAP: 50, GRID: 3
PARCEL: 425
6th ELECTORAL DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: GRADING, SEDIMENT AND EROSION CONTROL PLAN AND DETAILS

DATE: JULY 27, 2000
DECEMBER 18, 2000

PROJECT NO.: 1025

SHEET: 5 OF 7

DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF SCALE: 1" = 30'

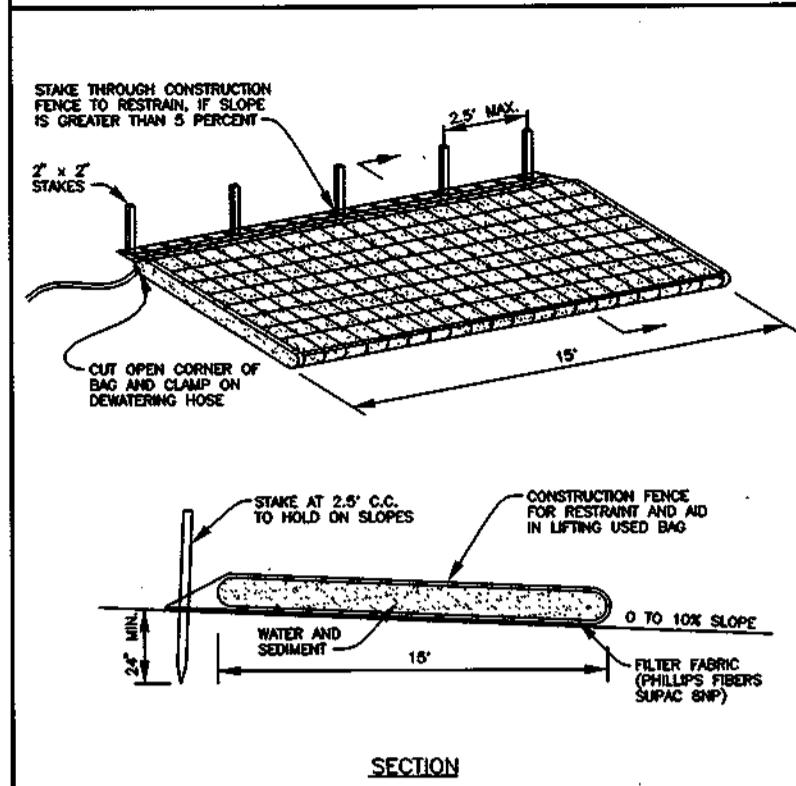
SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS... 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT 'MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL' REVISIONS THERETO.

TOPSOIL SPECIFICATIONS

- 1. Topsoil salvaged from the existing site may be used provided that it meets the standards set forth in these specifications... 2. Topsoil Specifications - Soil to be used on topsoil must meet the following: i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand.

FILTER BAG DETAIL



- 1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRASSED VEGETATED SITE... 2. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE... 3. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.

Table with columns: ELEV., SOIL DESCRIPTION, STRA. DEPTH, SAMPLE, BOREHOLE & SAMPLING, NOTES. Includes soil profile data for Hillis-Carnes Engineering Associates, Inc.

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TEMPORARY SEEDBED PREPARATIONS

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED... 1. SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING... 2. SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER...

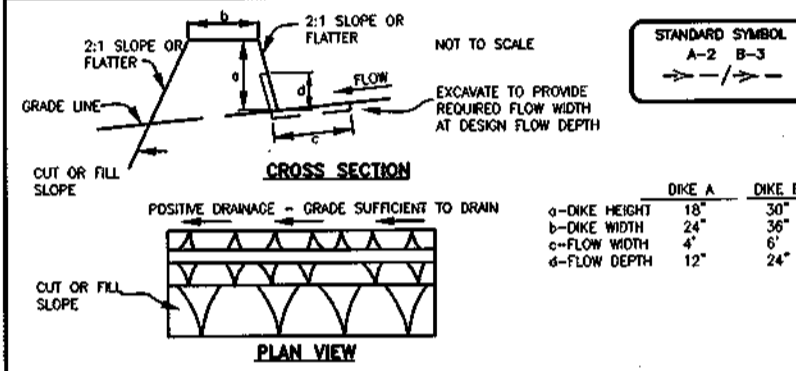
PERMANENT SEEDBED PREPARATIONS

- SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING... 1. PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE... 2. ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE...

SEQUENCE OF CONSTRUCTION

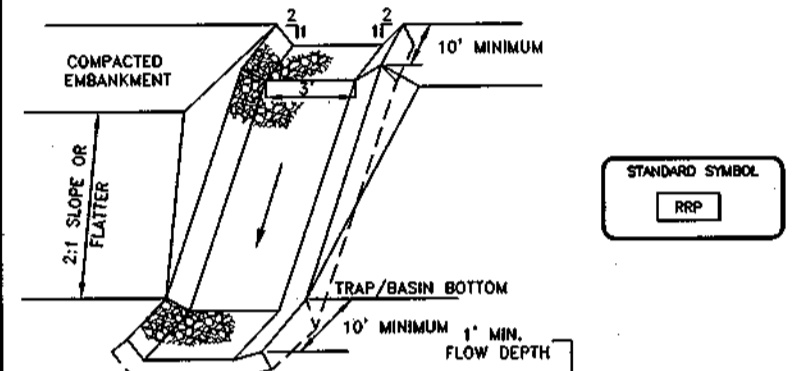
- NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION... DAY 1. OBTAIN GRADING PERMIT... DAY 2-7. CLEAR AND GRUB AS REQUIRED TO INSTALL SEDIMENT CONTROL DEVICES... DAY 8-20. CONSTRUCT STORMWATER MANAGEMENT FACILITY/SEDIMENT TRAP AND MODIFY RELEASE STRUCTURE...

DETAIL 1 - EARTH DIKE



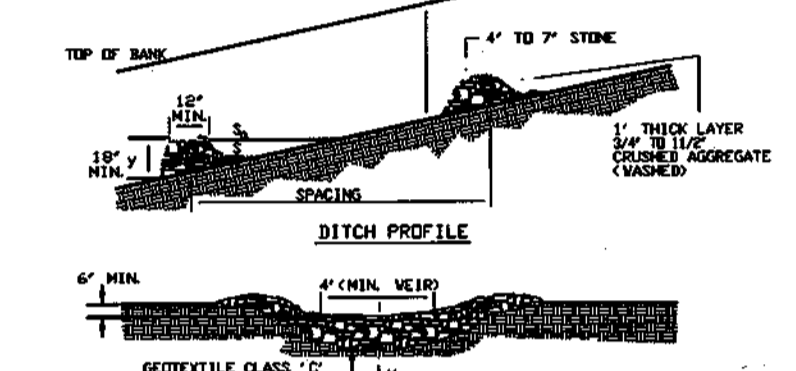
- 1. All temporary earth dikes shall have unimpaired positive grade to an outlet... 2. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

DETAIL 5 - RIP-RAP INFLOW PROTECTION



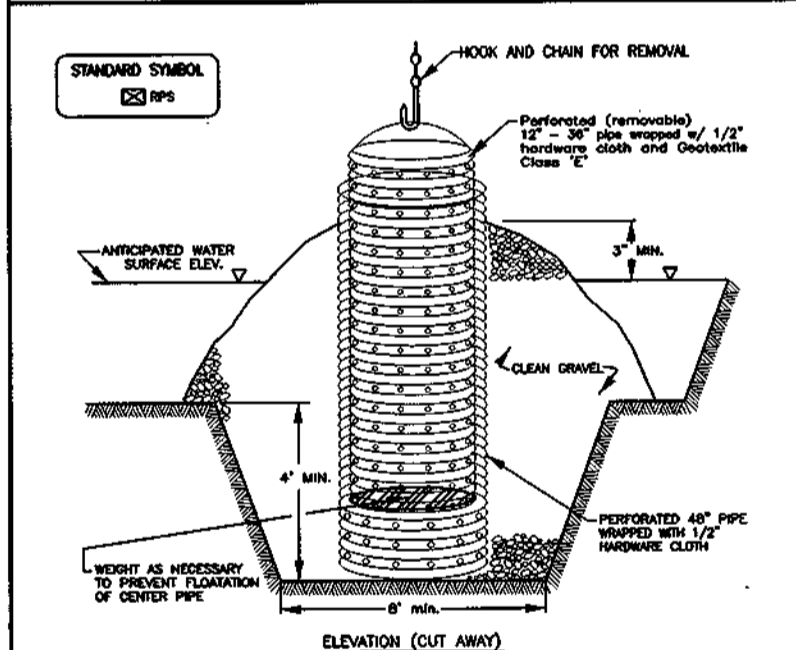
- 1. All lined inflow channels shall be 1' in depth, have a trapezoidal cross-section with 1:1 side slopes and a 12" bottom width... 2. Rip-rap inflow protection shall be used where the slope is between 4:1 and 10:1.

DETAIL 7 - STONE CHECK DAM



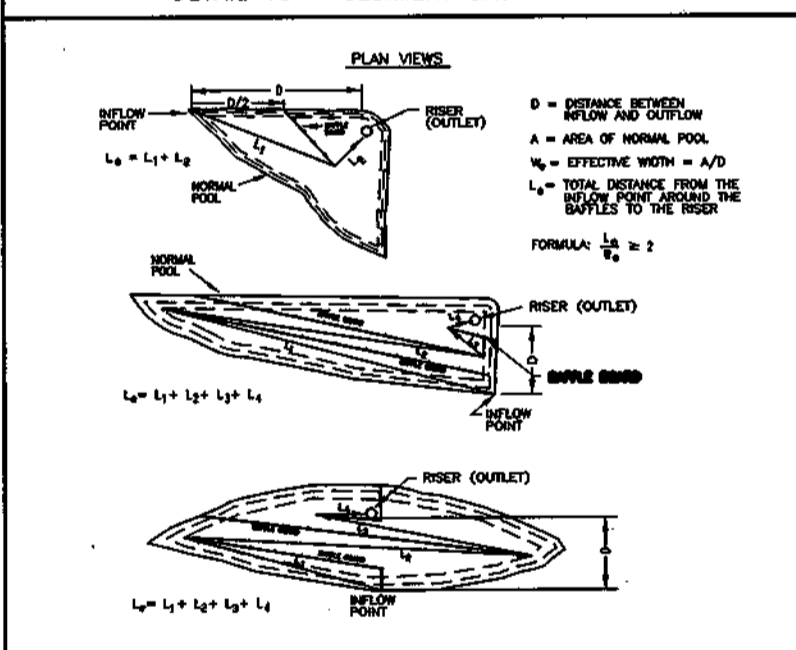
- 1. The check dam shall be constructed of 4'-12" stone... 2. The maximum height of the check dam at the center shall not exceed 2'.

DETAIL 20A - REMOVABLE PUMPING STATION



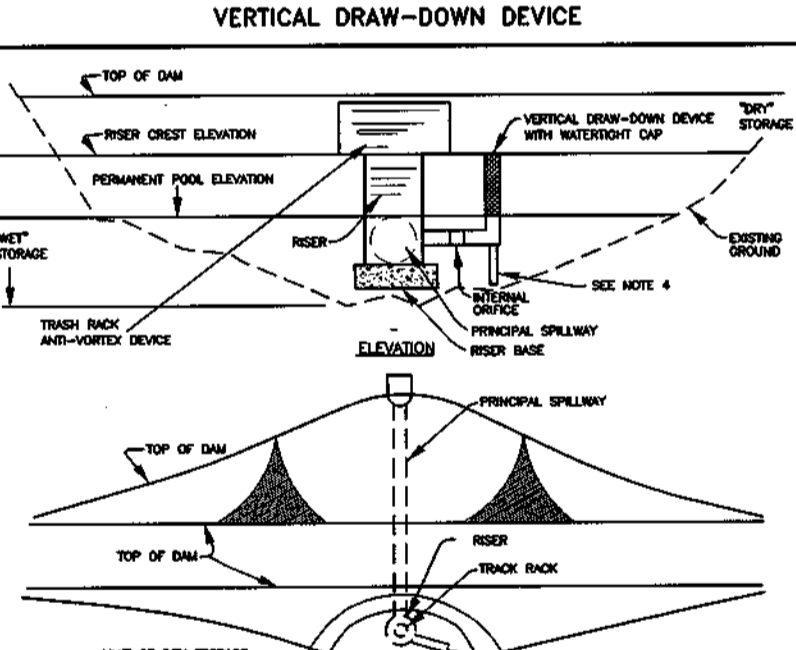
- 1. The outer pipe shall be 12" dia. or larger... 2. The inner pipe shall be 8" dia. or larger... 3. The entire structure shall be constructed of 304 stainless steel...

DETAIL 18 - SEDIMENT BASIN BAFFLES



- 1. The baffles shall be constructed of 304 stainless steel... 2. The baffles shall be spaced at a minimum of 12" from the basin wall...

BASIN DRAWDOWN SCHEMATIC

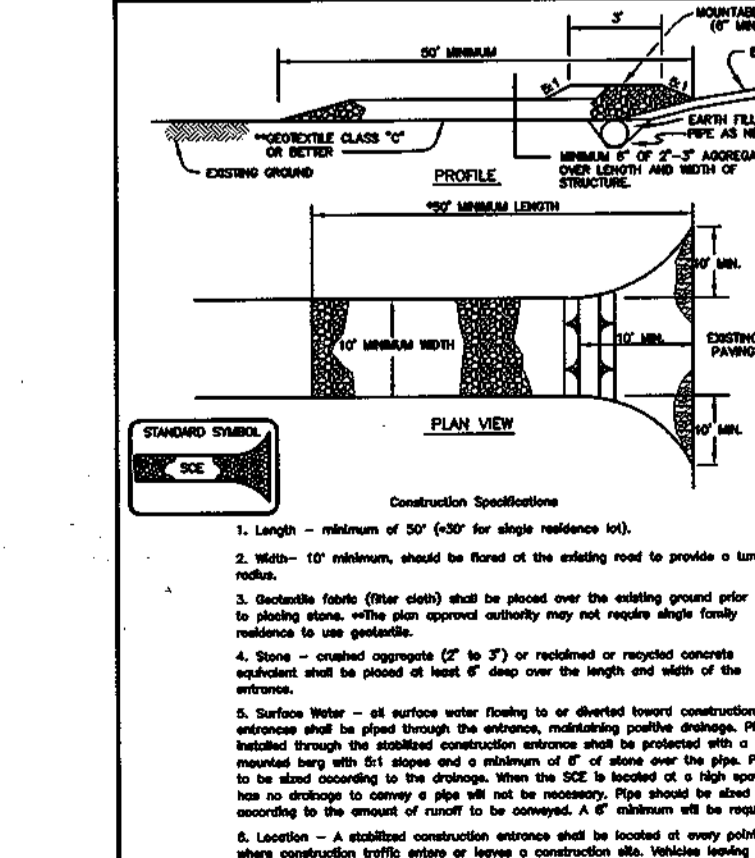


- 1. Penetration in the draw-down device may not extend into the wet storage... 2. The total area of the perforated pile shall be greater than 2 times the area of the internal orifice.

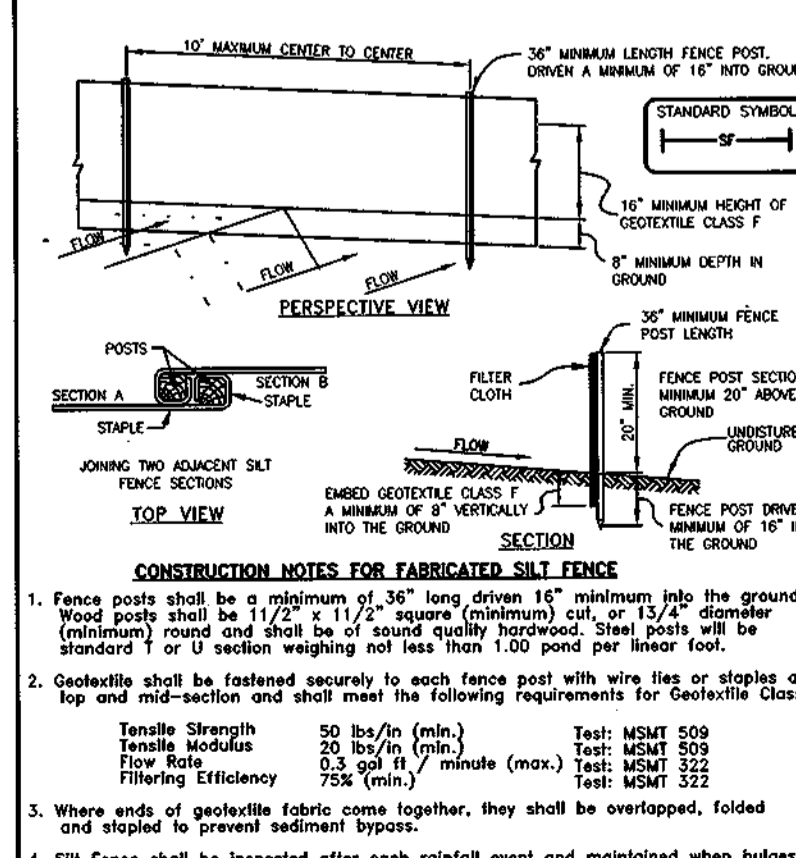
CONSTRUCTION SPECIFICATIONS

- 1. KEY-IN THE MATTING BY PLACING TO THE TOP ENDS OF THE MATTING IN A NARROW TRENCH... 2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES... 3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.

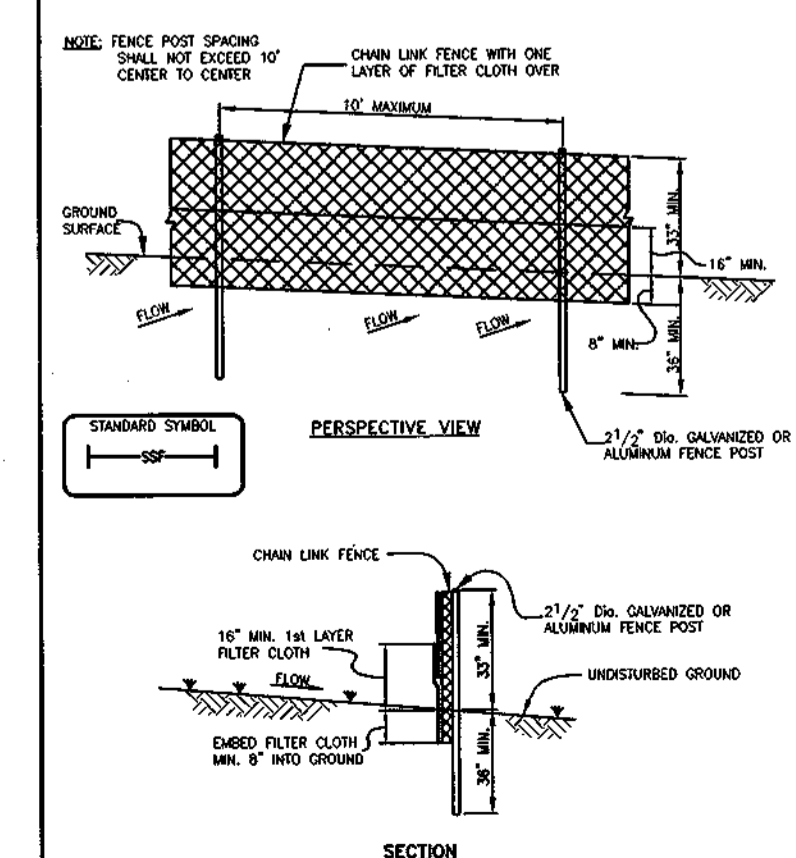
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



DETAIL 22 - SILT FENCE



DETAIL 33 - SUPER SILT FENCE



SUPER SILT FENCE

- 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Design for Chain Link Fencing... 2. Chain link shall be fastened securely to the fence posts with wire ties.

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON THE TECHNICAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Signature: Donald Mason, 12/19/00, ENGINEER. Signature: B. D. Boy, 12/18/00, DEVELOPER.

APPROVED: REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Signatures and dates for approvals: J.C. Wayfield/65, 1/8/01; J. Ball, 1/8/01; Robert M. Sankle, 1-29-01; Cindy Hamilton, 1/30/01; Chad Demme, 1/25/01.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Signature: Cindy Hamilton, 1/30/01, CHIEF, DIVISION OF LAND DEVELOPMENT. Signature: Chad Demme, 1/25/01, CHIEF, DEVELOPMENT ENGINEERING DIVISION.

NO. DATE REV. AREA DIST. AREA REG. STAR UNDER SED. CONT. NOTES, PER PLAN OF LOCAL GOV. NO. 5 REVISION

BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS logo and contact information: 8480 BALTIMORE NATIONAL PIKE A SUITE 418, ELLICOTT CITY, MARYLAND 21043.

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, L.L.C. PROJECT: NORTH LAUREL PARK DURANT AVENUE. LOCATION: TAX MAP: 50, GRID: 3. TITLE: SEDIMENT AND EROSION CONTROL NOTES AND DETAILS AND SOIL BORINGS.

STORMWATER MANAGEMENT FACILITY CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for Practice MD-37B. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and staked to topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees to be cleared shall be grubbed within 15 feet of the toe of the embankment. Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For diameters of 12 inches or more, a minimum of a 25-foot radius around the staked structure shall be cleared. All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Backfill Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not exceeding four inches in thickness and compacted by hand tampers or other manually directed compacting equipment. The material shall be placed outside the pipe or structure to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet measured horizontally to any part of the structure. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compacting equipment. The material shall extend fully to the part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a cleared backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment material.

Structure Backfill Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not exceeding four inches in thickness and compacted by hand tampers or other manually directed compacting equipment. The material shall extend fully to the part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a cleared backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment material.

Pipe Details All pipes shall be circular in cross section. Corrugated Metal Pipe - all of the following criteria shall apply for corrugated metal pipe: 1. Materials - (Polymer Coated steel pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appendages shall conform to the requirements of AASHTO Specifications M-245 & M-246 with waterproof coupling bands or flanges. 2. Materials - (Aluminum Coated Steel Pipe) - This pipe and its appendages shall conform to the requirements of AASHTO Specification M-274 with water-tight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil on/under water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-110 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be primed with an approved primer or two coats of asphalt. 3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be sealed off around when the pipe and riser are in place. Anti-seep collars shall be connected to the pipe in such a manner so as to completely watertight. Damage bonds are not considered to be watertight.

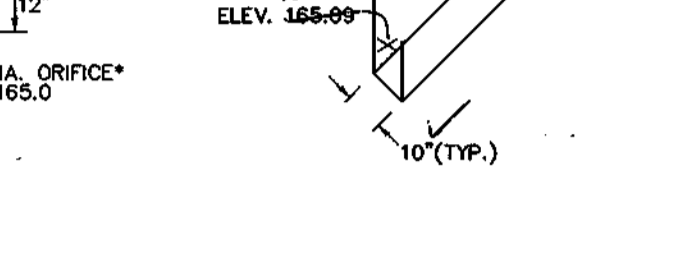
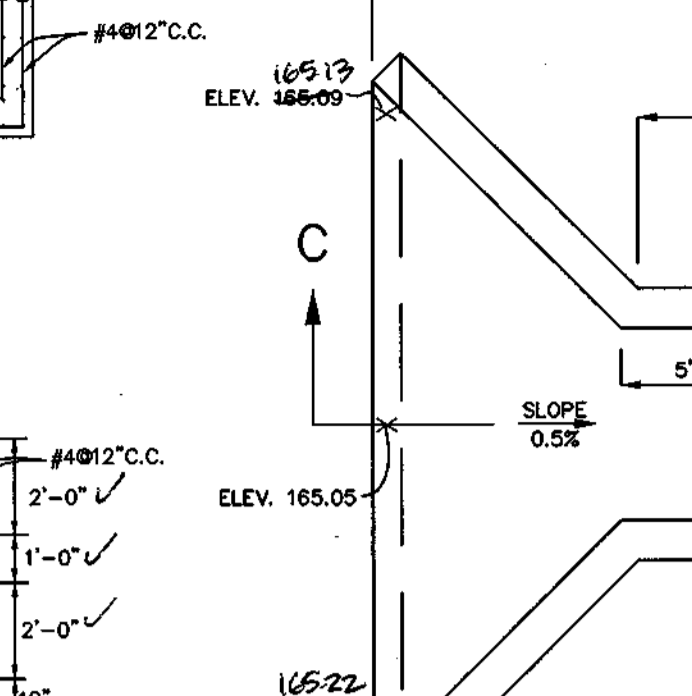
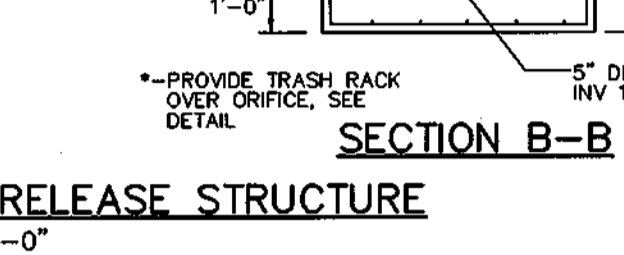
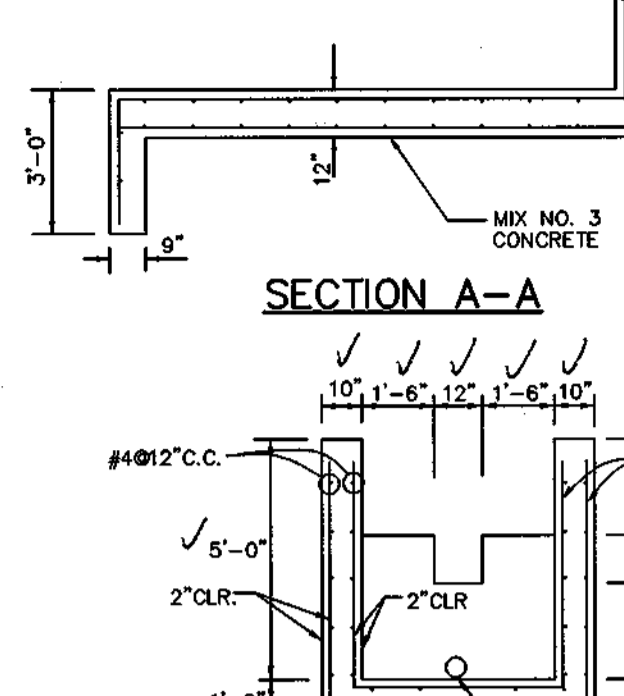
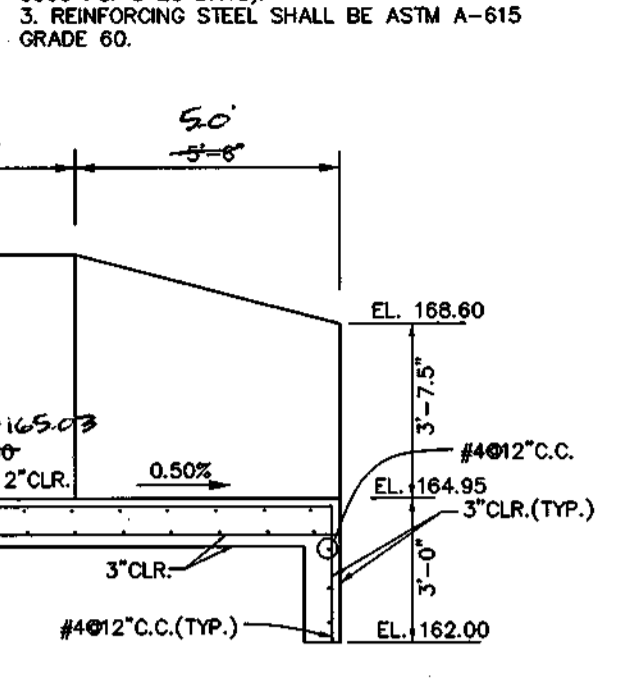
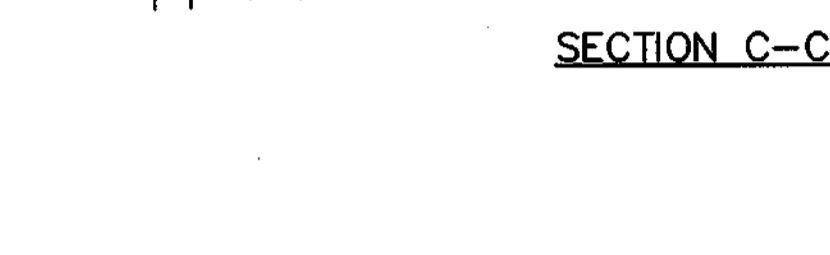
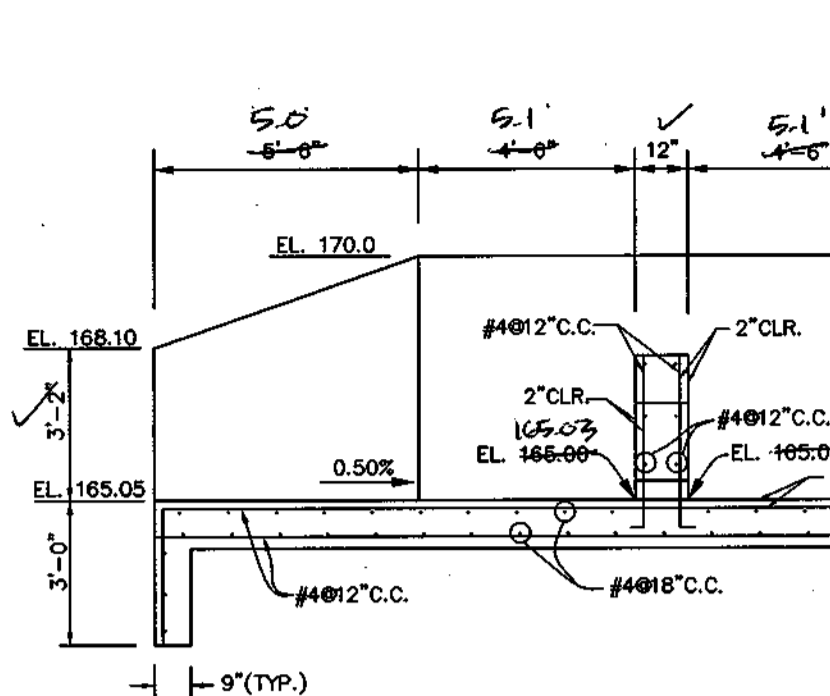
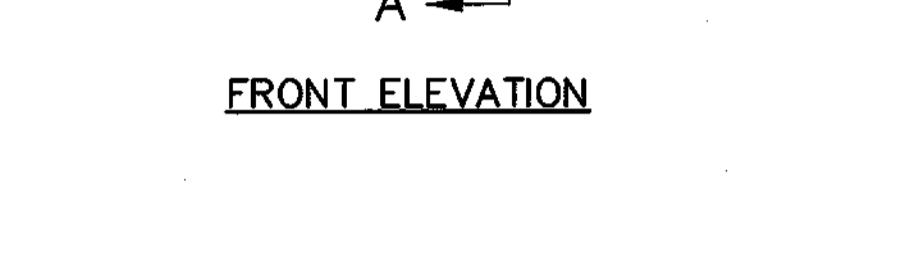
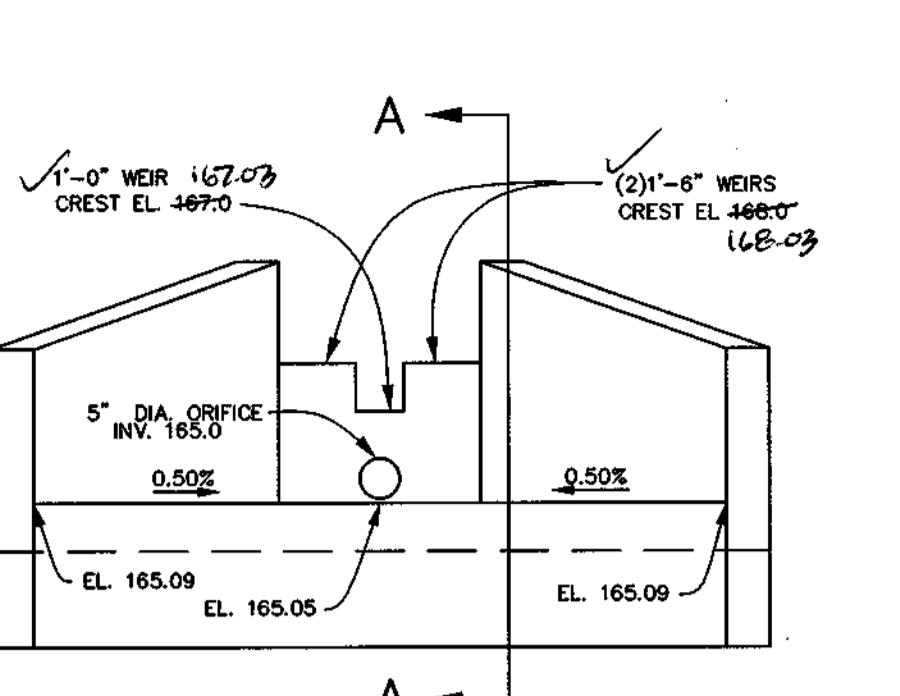
Concrete Pipe - all of the following criteria shall apply for reinforced concrete pipe: 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-381. 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high strength concrete placed under the pipe and on the sides of the pipe at least 50% of the pipe outside diameter with a minimum thickness of 5 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the Structure Backfill section of this standard. Bedding is not permitted. 3. Laying Pipe - Bell and spigot pipe shall be placed with the bell and upstream joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire length, the bedding shall be placed so that it supports under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser. 4. Backfilling shall conform to "Structure Backfill". 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Plastic Pipe - The following criteria shall apply for plastic pipe: 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to 12 inch shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S. 2. Joints and connections to anti-seep collars shall be completely watertight. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support. 3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support. 4. Backfilling shall conform to "Structure Backfill". 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Drainage - When a drainage diaphragm is used, a registered professional engineer will express the design and construction. Concrete Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 5. Rock Riprap Riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311. Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Core of Water during Construction All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundations, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, such temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be initiated until the full flow can be passed through the permanent works. The removal of water from the excavations and foundations shall be accomplished to a maximum extent to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compaction of material in required excavations, the water level of the location being refilled shall be maintained below the bottom of the excavation at such locations which may require drawing the water sumps from which the water shall be pumped.

Stabilization All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, railway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-312) or as shown on the accompanying drawings. Erosion and Sediment Control Construction operations will be carried out in such a manner that erosion will be controlled and water and soil pollution minimized. Slope and silt loss containing pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.



STORMWATER MANAGEMENT RELEASE STRUCTURE SCALE: 1/4"=1'-0"

RELEASE STRUCTURE WEIR BLOCKING DETAIL FOR SEDIMENT CONTROL OPERATIONS NOT TO SCALE

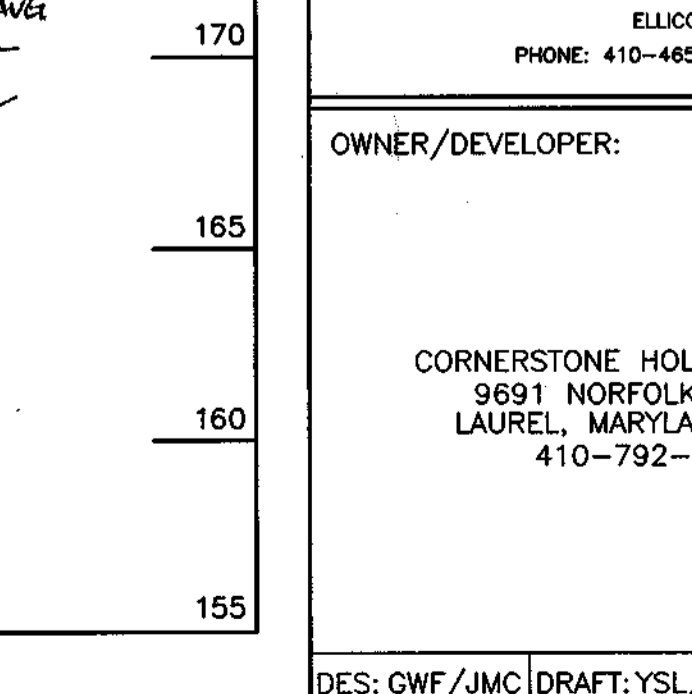
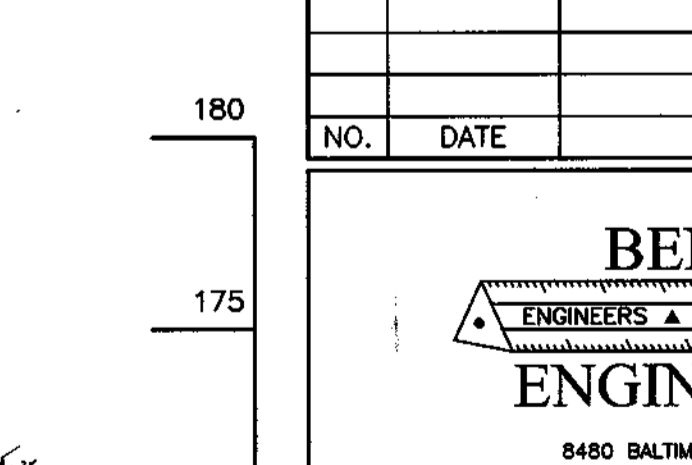
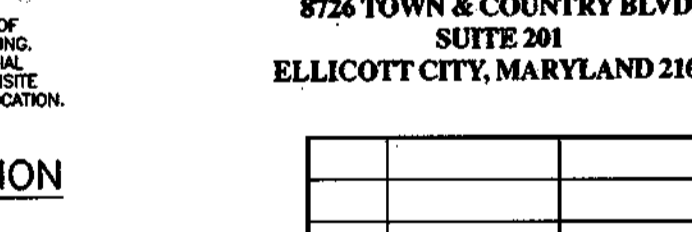
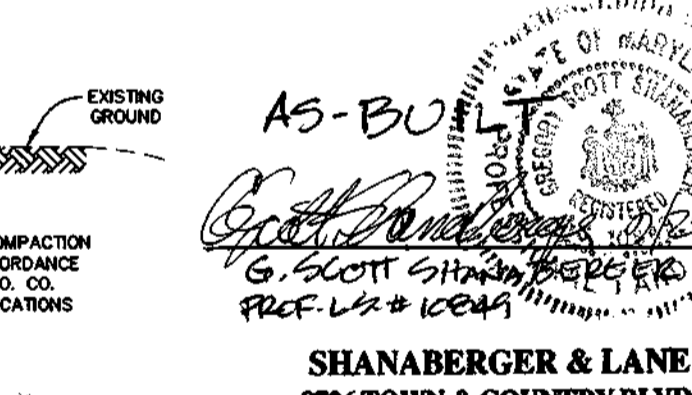
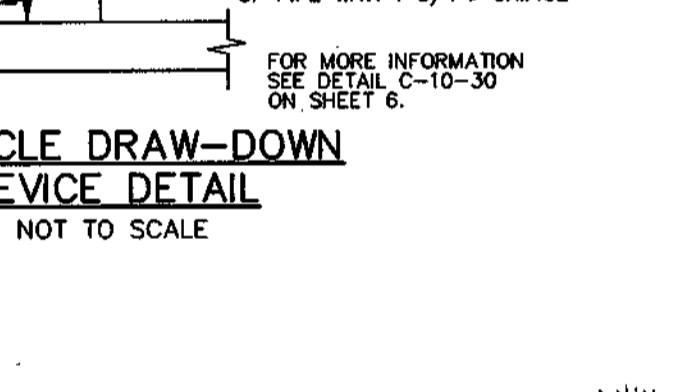
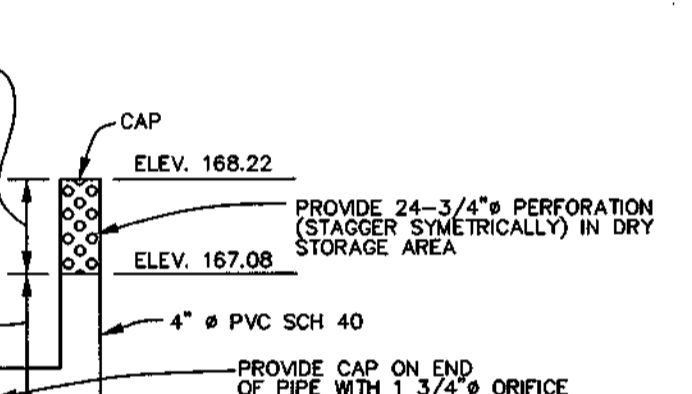
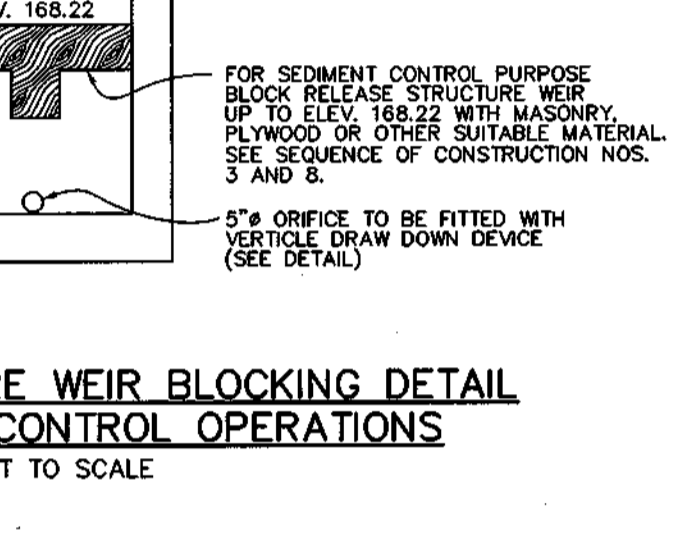
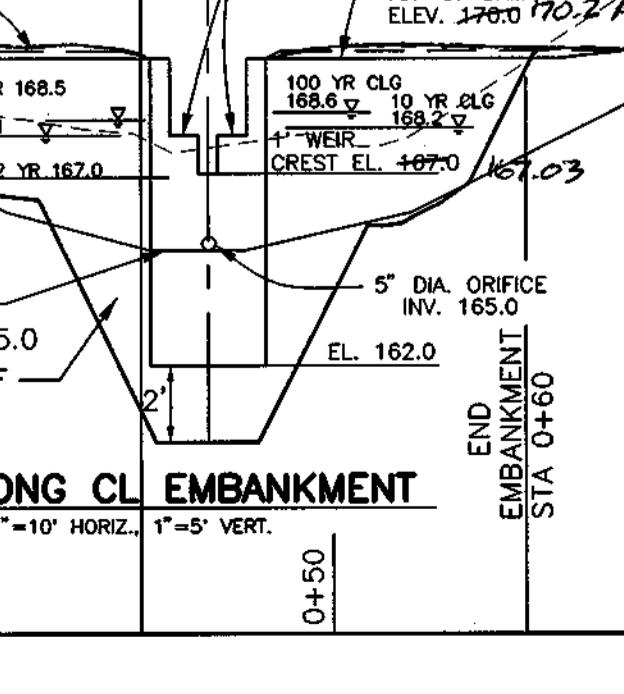
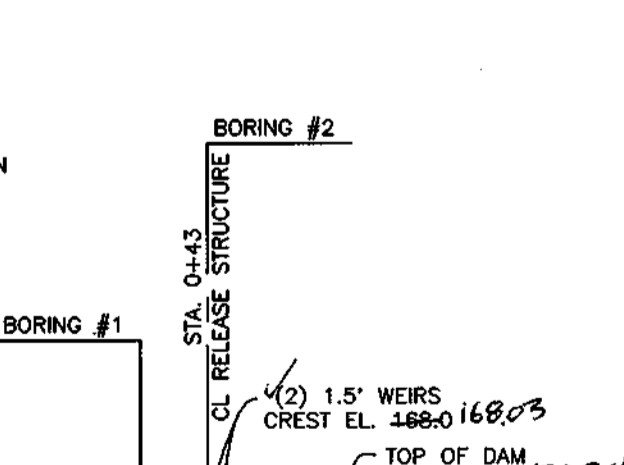
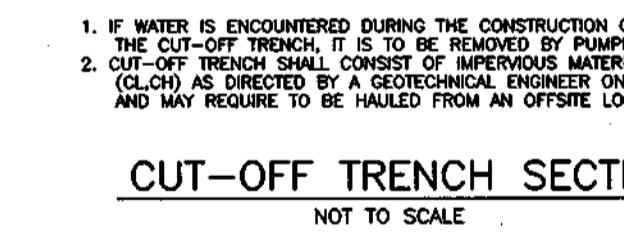
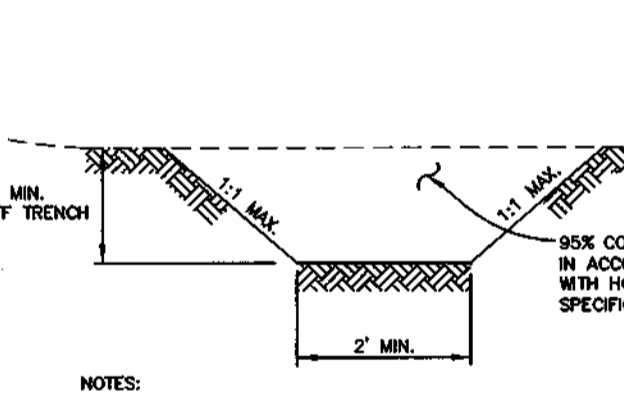
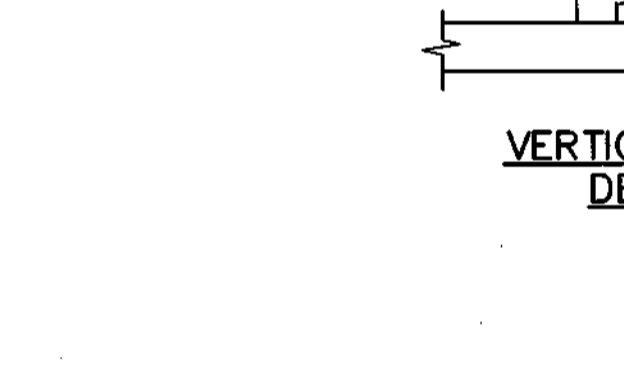
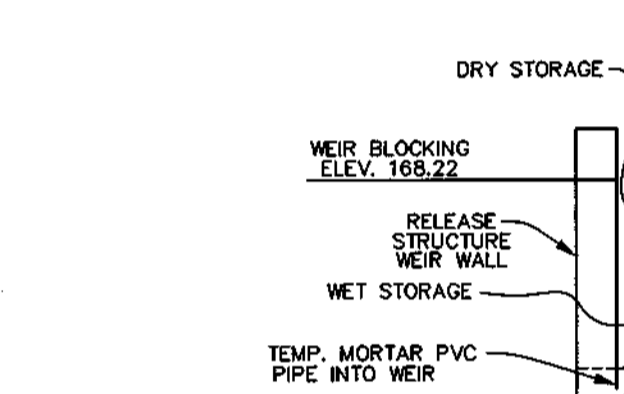
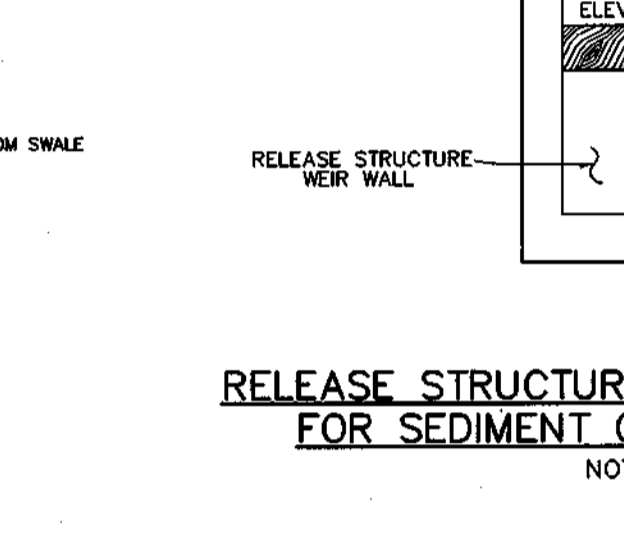
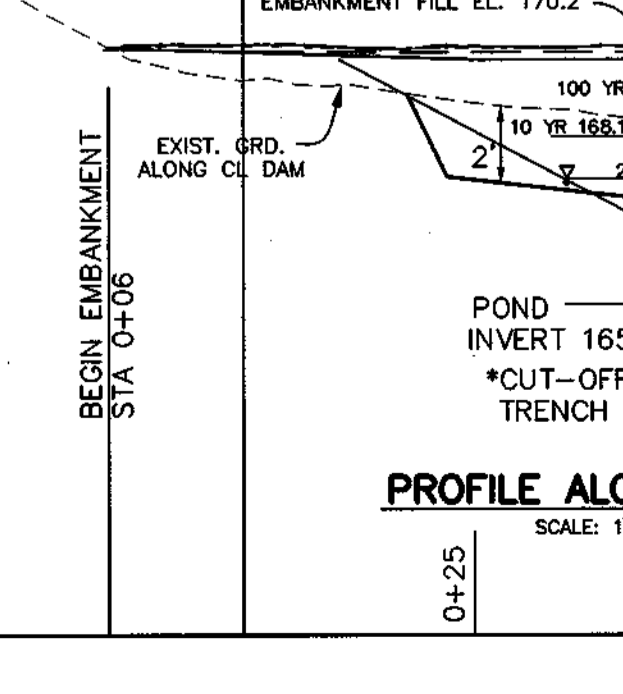
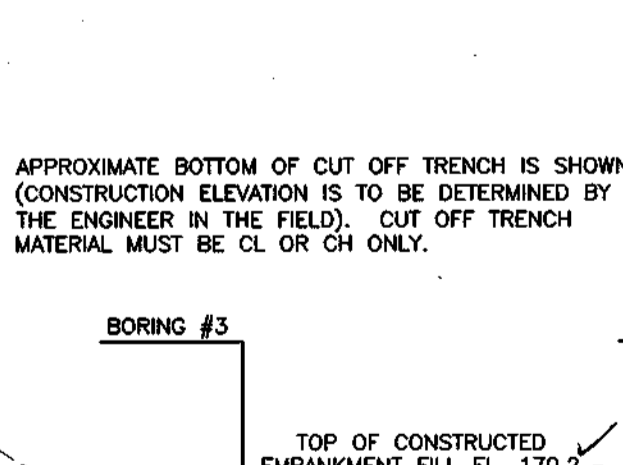
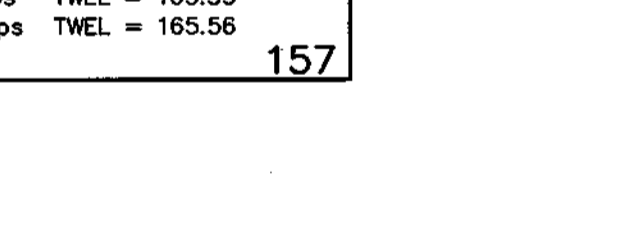
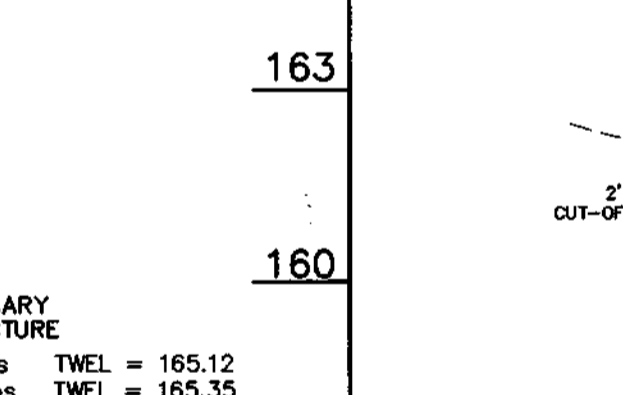
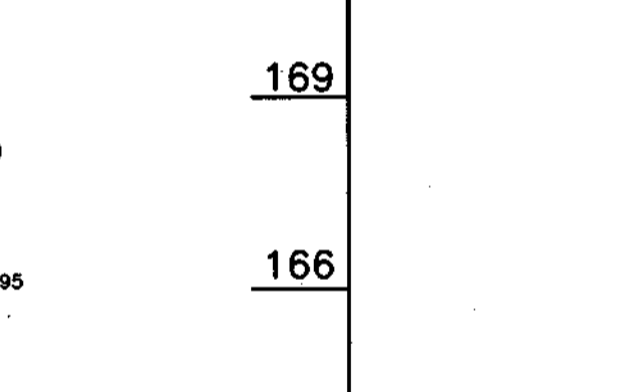
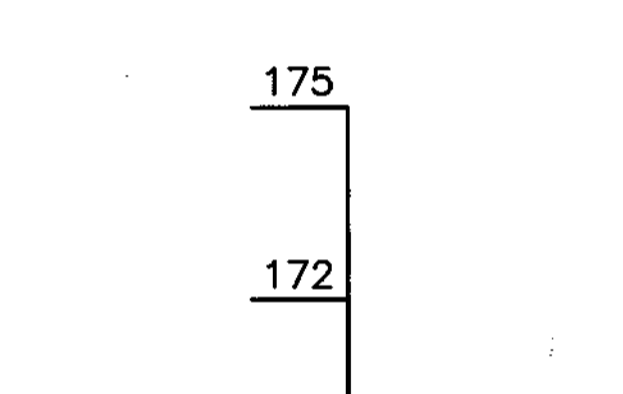
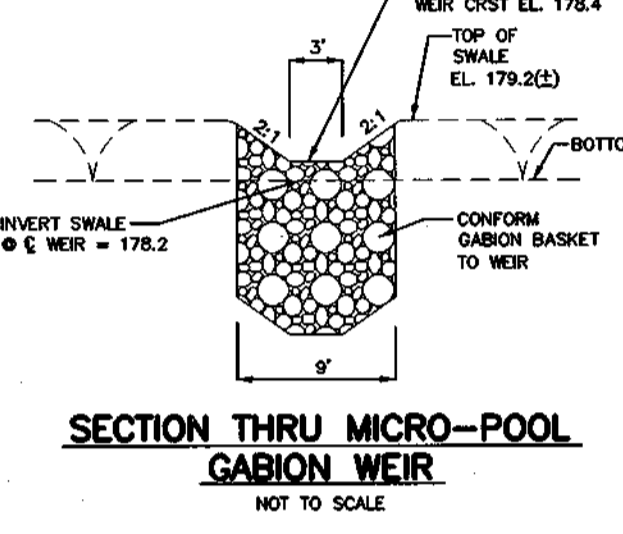
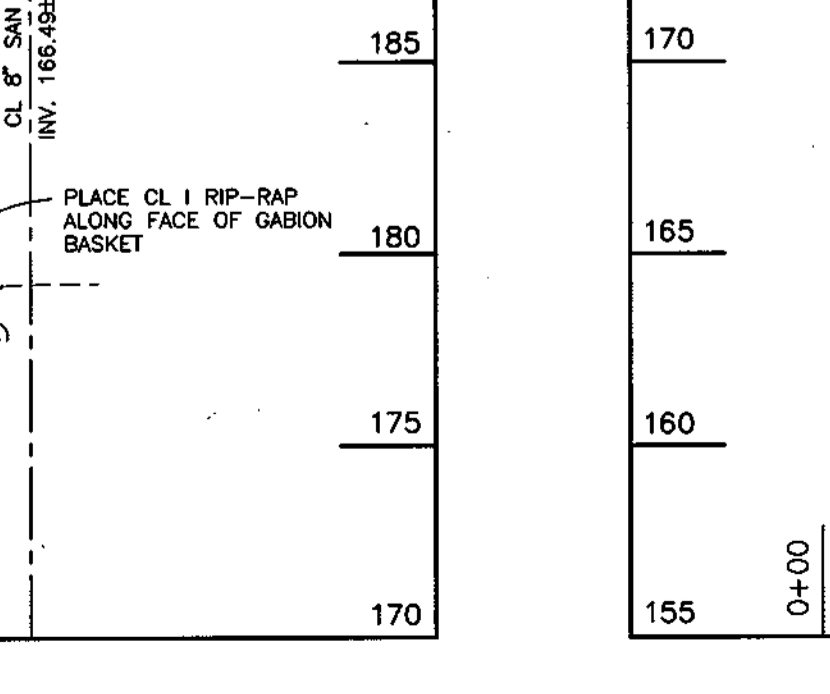
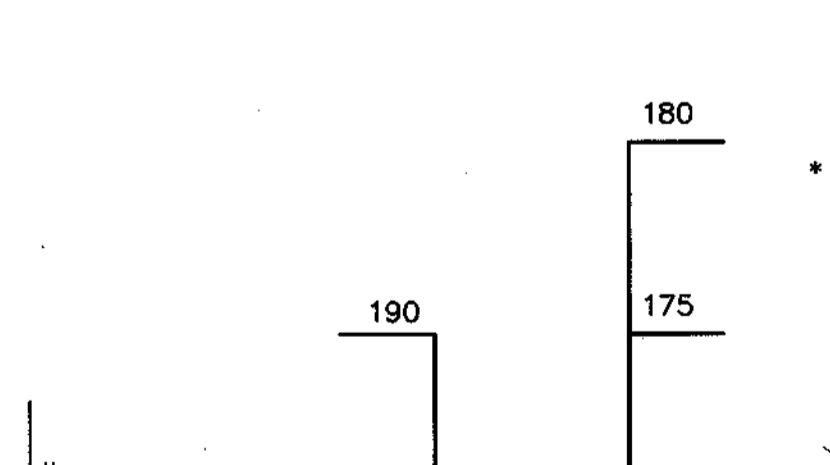
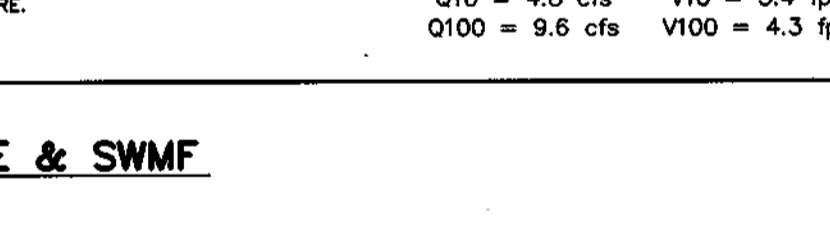
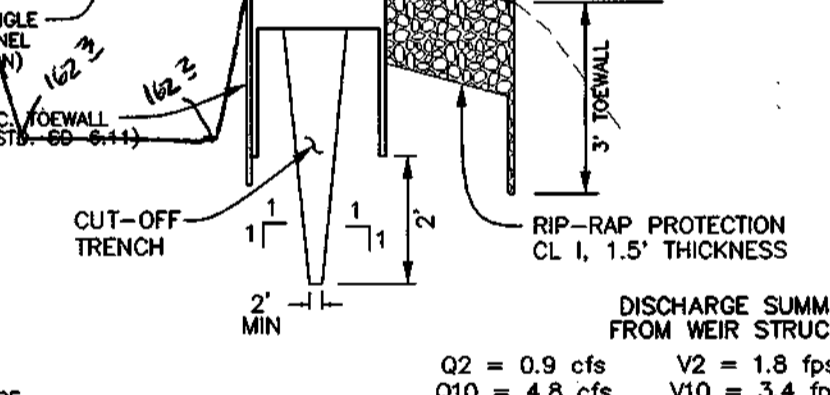
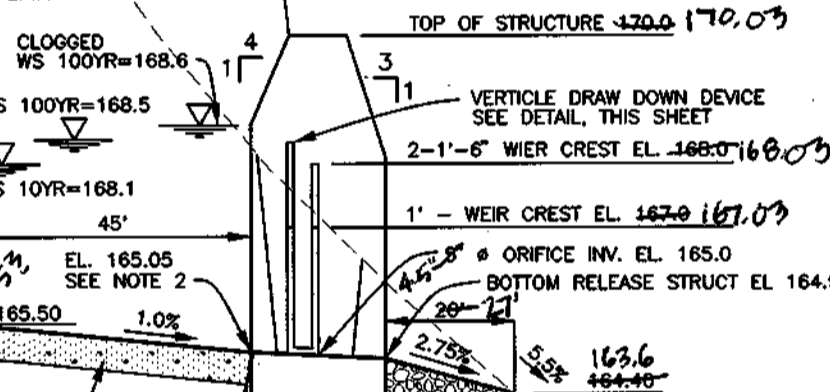
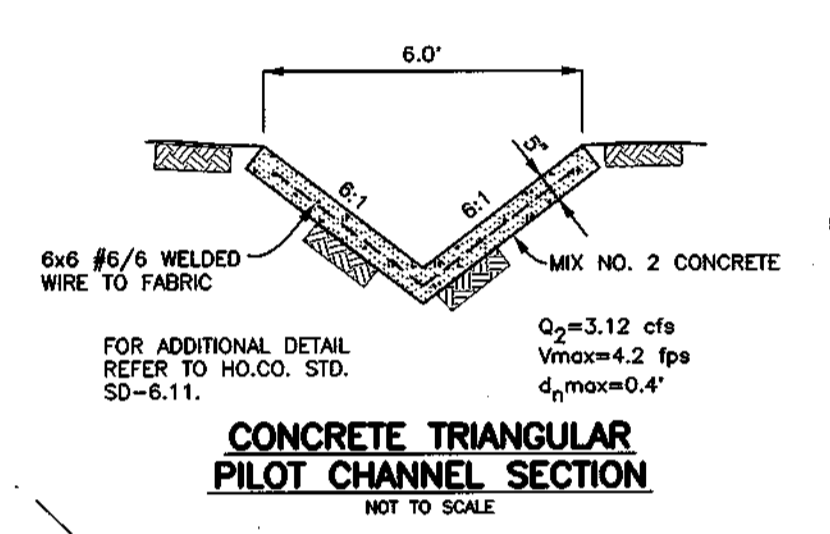
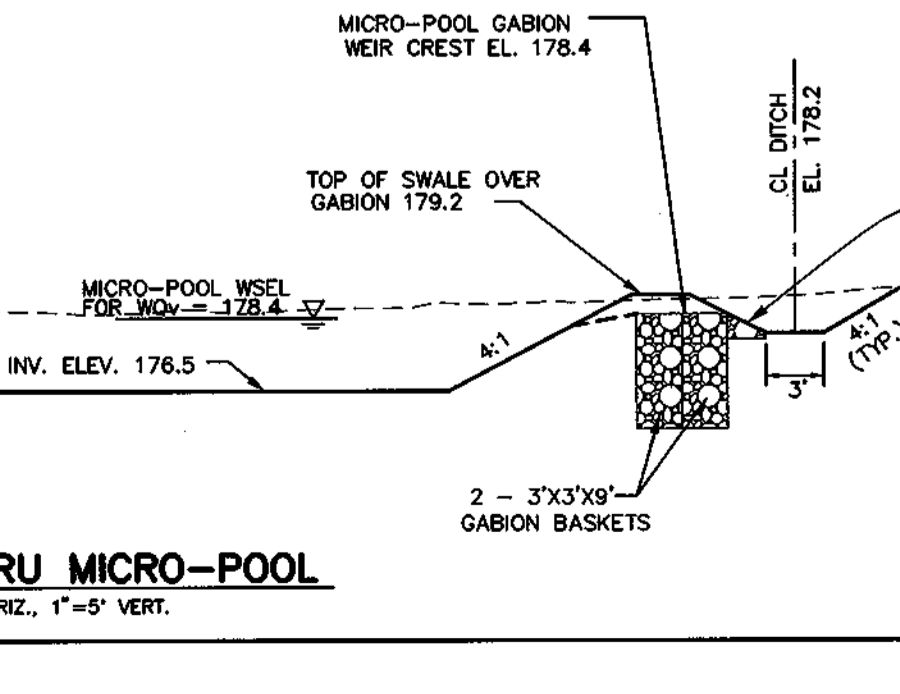
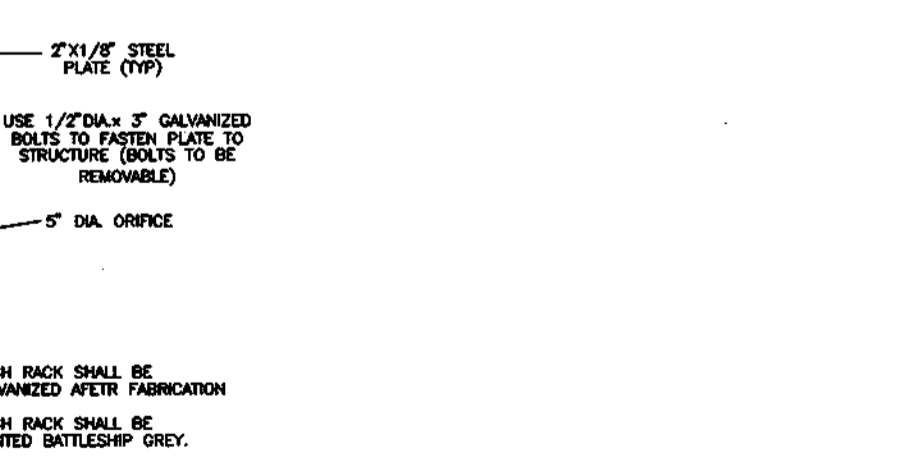
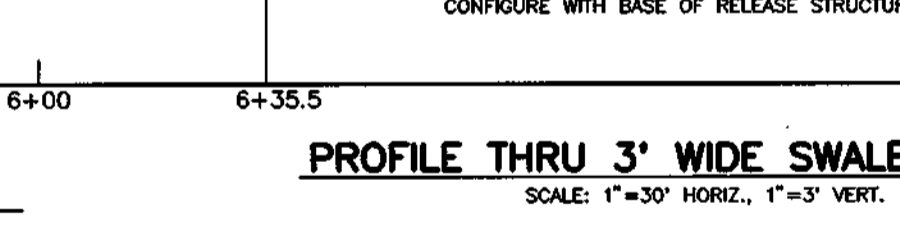
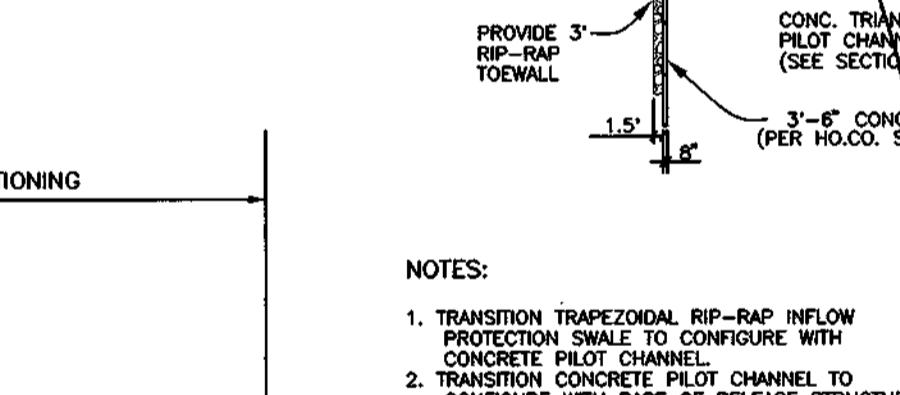
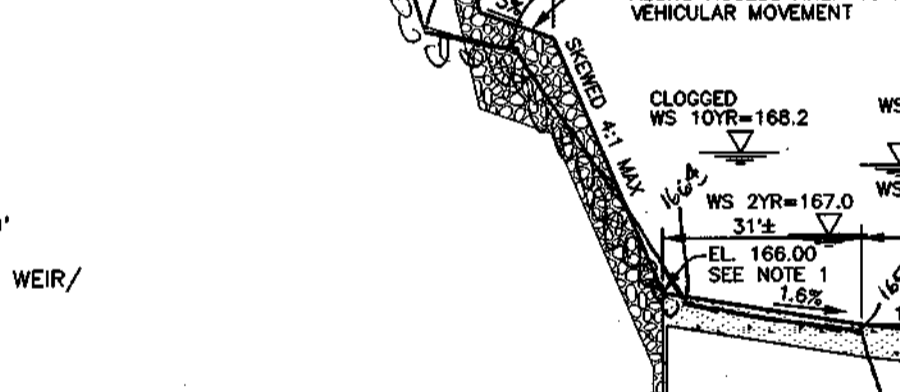
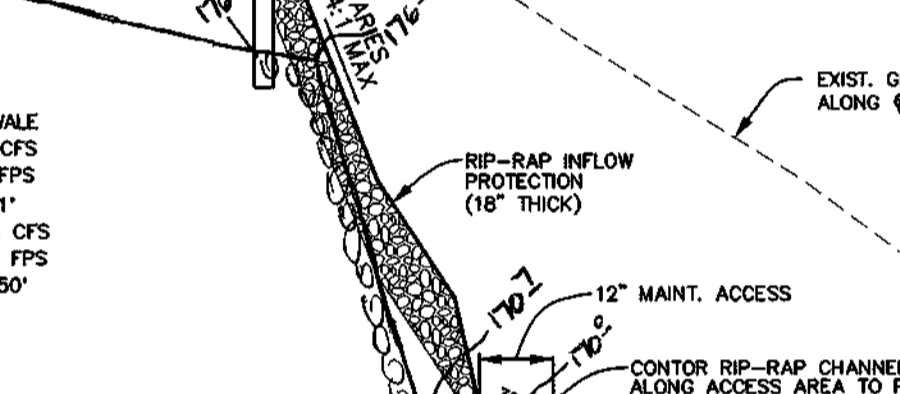
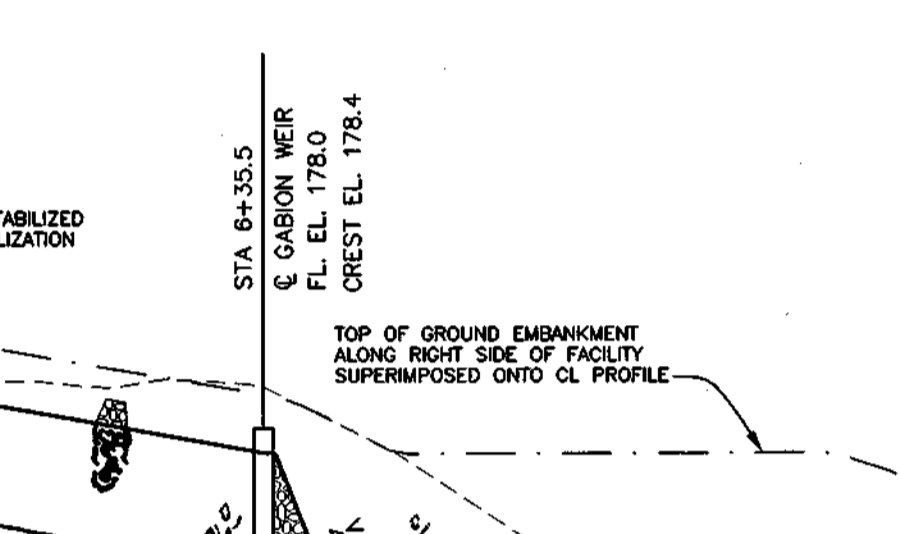
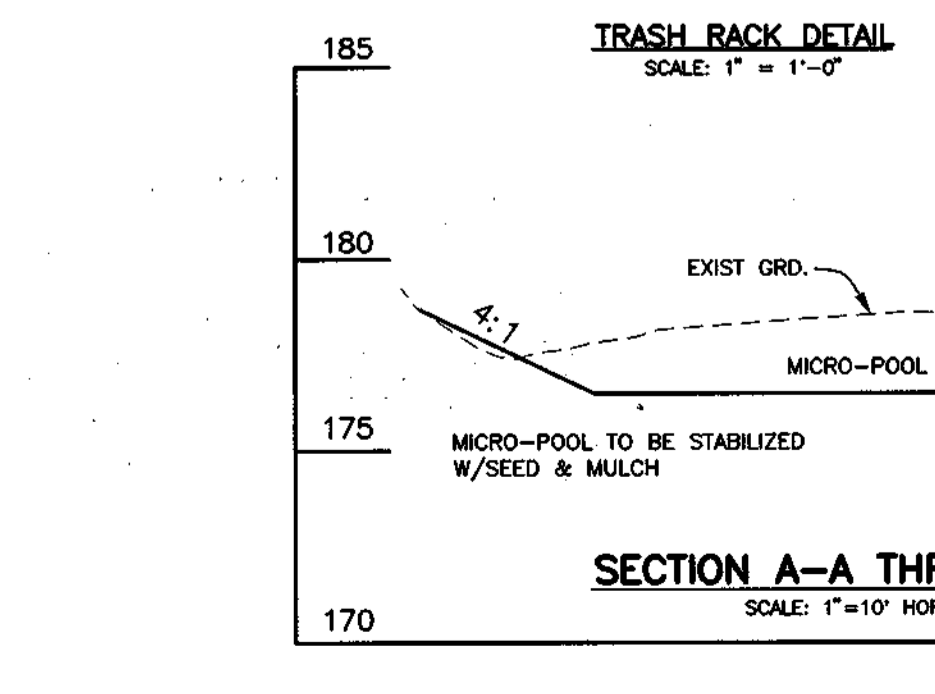
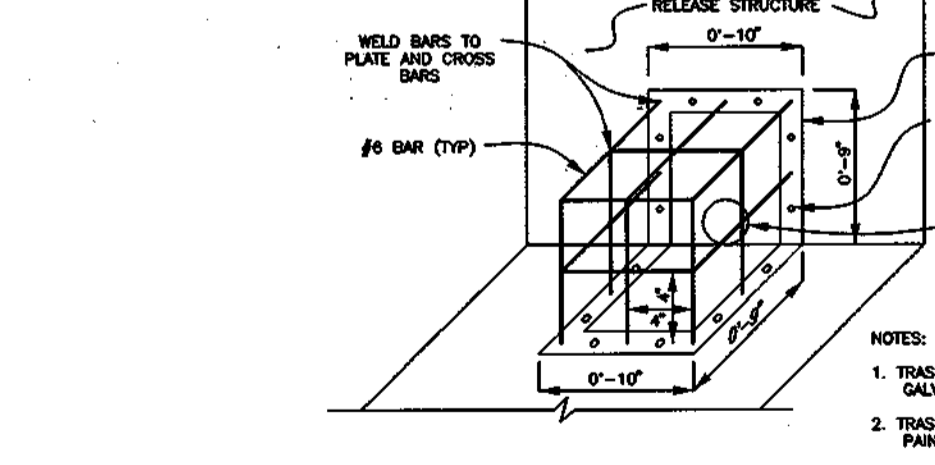
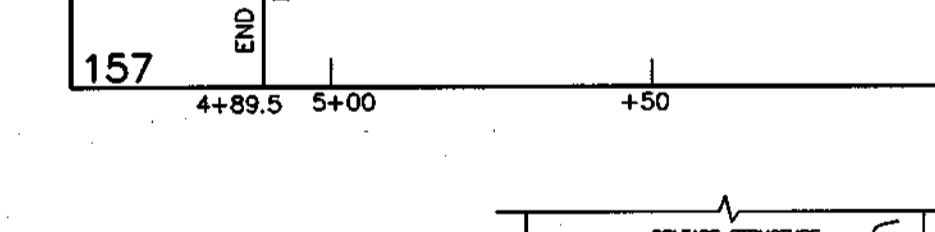
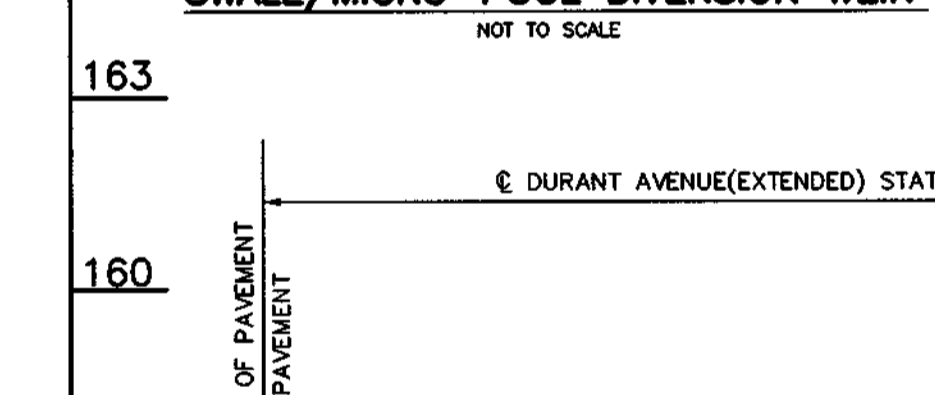
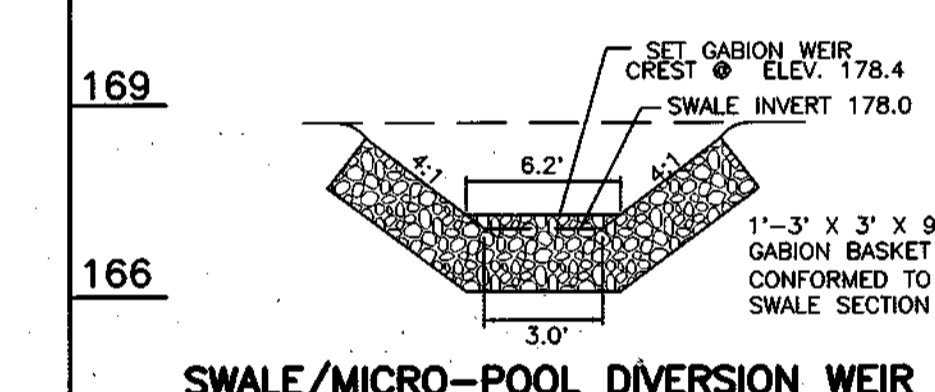
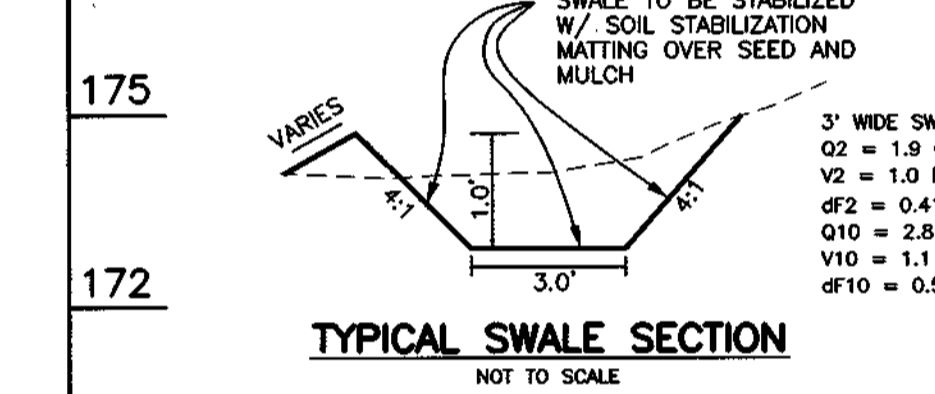
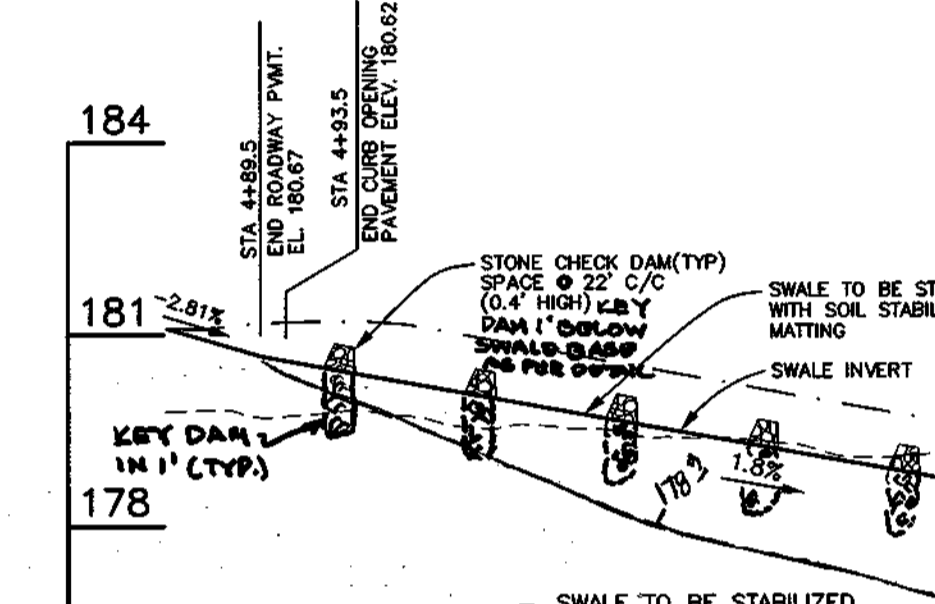
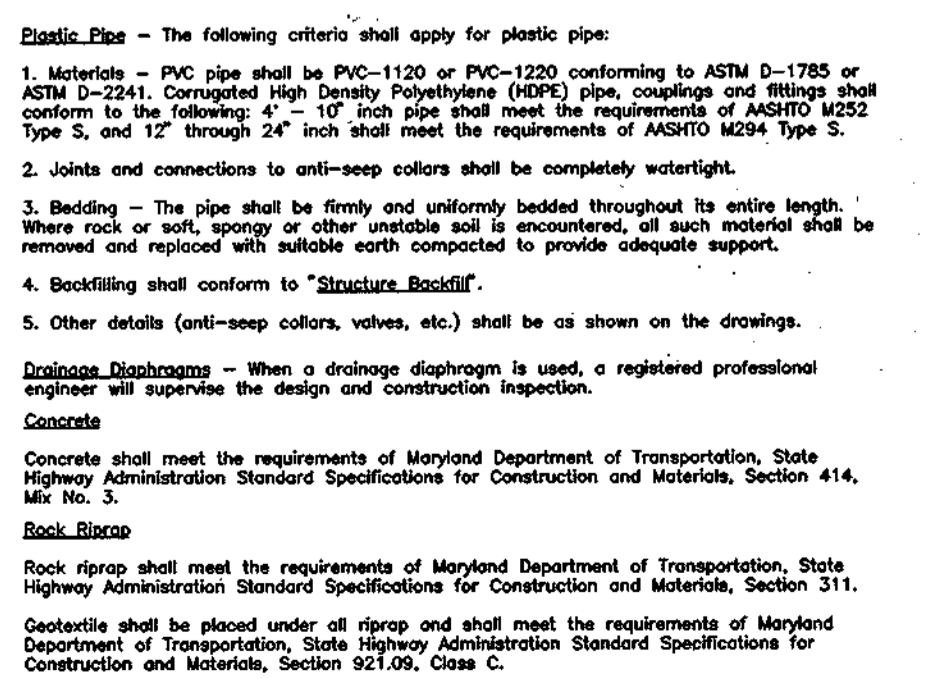
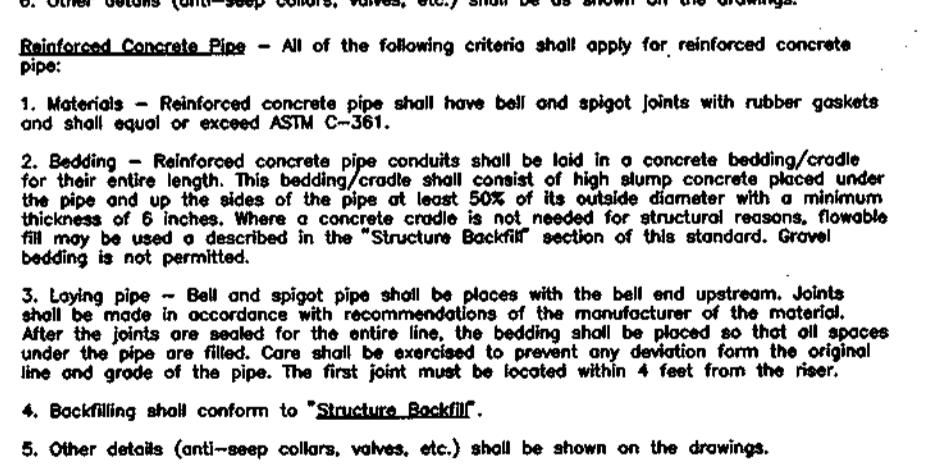
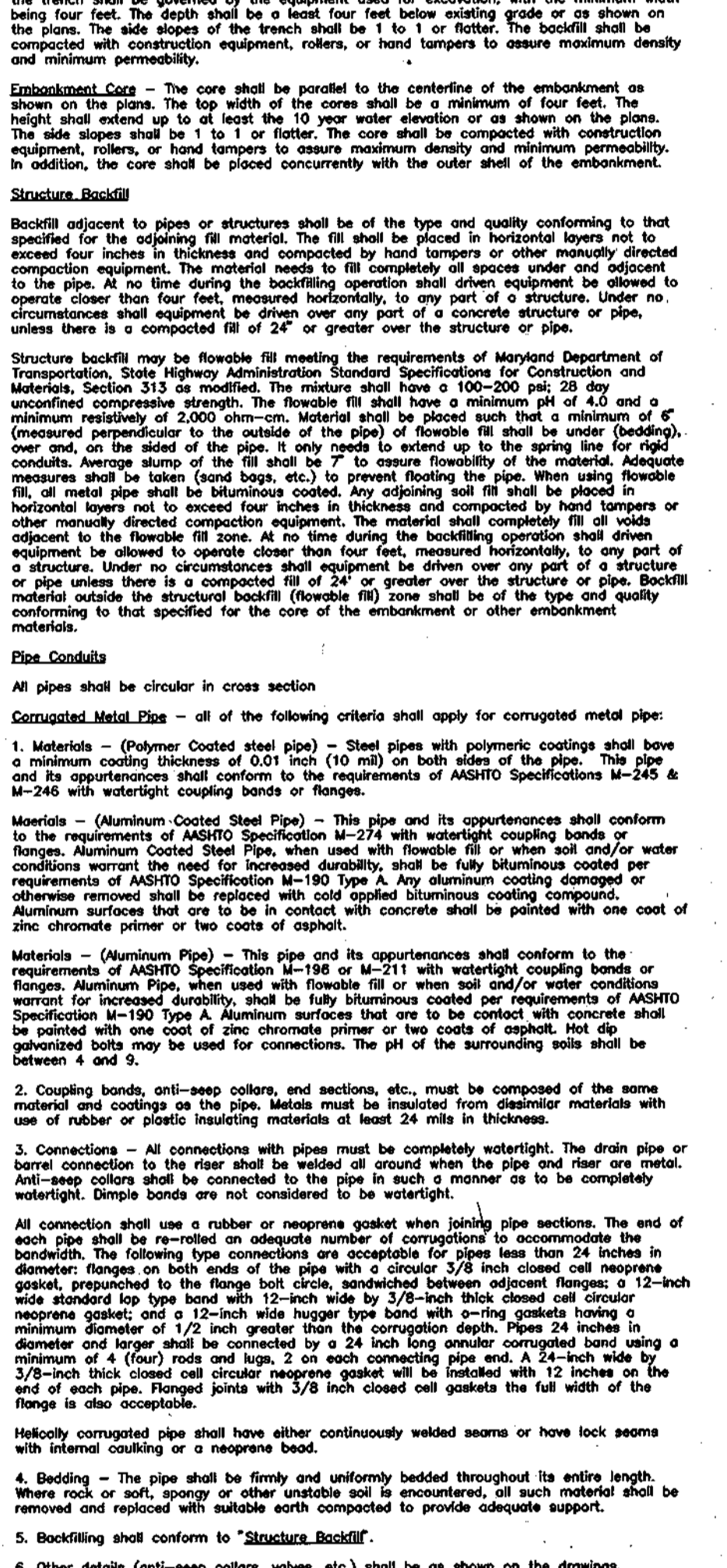
VERTICE DRAW-DOWN DEVICE DETAIL NOT TO SCALE

CUT-OFF TRENCH SECTION NOT TO SCALE

PROFILE ALONG CL EMBANKMENT SCALE: 1"=10' HORIZ., 1"=5' VERT.

PROFILE THRU 3' WIDE SWALE & SWMF SCALE: 1"=30' HORIZ., 1"=3' VERT.

SECTION A-A THROUGH MICRO-POOL SCALE: 1"=1'-0" HORIZ., 1"=5' VERT.



ENGINEER'S CERTIFICATE I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Developer's Certificate I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS PLAN OF DEVELOPMENT AND SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION OF THIS PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT THROUGH THEIR AUTHORIZED AGENTS, AS ARE DEMAND NECESSARY.

Approval signatures and dates for Donald Mason (12/19/00), R. D. By (12/18/00), J. G. Umfield/as (1/10/01), G. Scott Shuman/Burke (1/10/01), Howard County Department of Public Works (1-24-01), and Howard County Department of Planning and Zoning (1/25/01).

Table with columns for NO., DATE, and REVISION.

BENCHMARK ENGINEERS, LAND SURVEYORS & PLANNERS. 8480 BALTIMORE NATIONAL PIKE SUITE 418. ELLICOTT CITY, MARYLAND 21143. PHONE: 410-465-6105. FAX: 410-465-6644.

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, L.L.C., 9691 NORFOLK AVENUE, LAUREL, MARYLAND 20723, 410-792-2565. PROJECT: NORTH LAUREL PARK DURANT AVENUE. LOCATION: BLOCK 187, LOTS 5-11, BLOCK 111, LOT 10, OPEN SPACE LOT 30 AND LOTS 31-34, PUBLIC STORMWATER MANAGEMENT FACILITY, TREE MAINTENANCE EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS. TITLE: STORMWATER MANAGEMENT NOTES AND DETAILS. DATE: JULY 27, 2000. PROJECT NO. 1025. DES: GWF/JMC, DRAFT: YSL/DBT, CHECK: GWF. SCALE: AS SHOWN. SHEET 7 OF 7.