

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE, UNLESS WAIVER(S) HAVE BEEN APPROVED.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE(5) 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.
- 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.
- STREET LIGHTS PLACEMENT AND TYPE OF FIXTURE & SIGNING SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE, 1993)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- TOPOGRAPHY SHOWN ON-SITE WAS FIELD RUN BY BENCHMARK ENGINEERING, INC. ON OR ABOUT APRIL, 2002. FIELD RUN TOPOGRAPHY WAS SUPPLEMENTED WITH INFORMATION PURCHASED FROM HOWARD COUNTY GEOGRAPHICAL INFORMATION SYSTEMS AND PROPOSED GRADING CONSTRUCTED UNDER F-00-73 (SCOTT FARM ROAD PLANS.)
- HORIZONTAL AND VERTICAL DATUM FOR THIS PLAN IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM NAD '83 AS PROJECTED FROM HOWARD COUNTY CONTROL POINTS 356A AND 356Z.
- PUBLIC WATER AND SEWER SYSTEMS SHALL BE PROVIDED FOR THIS DEVELOPMENT. THIS PROJECT IS NOT WITHIN THE WATER/SEWER METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER CONNECTIONS WILL BE MADE TO CONTR. NO. 34-3296-D. PUBLIC WATER AND SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWER IS AVAILABLE. THIS EASEMENT SHALL BE VOID UPON CONNECTION TO A PUBLIC SEWER SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT PLAT SHALL NOT BE REQUIRED.
- STORMWATER MANAGEMENT SHALL BE PROVIDED FOR THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II. STORMWATER MANAGEMENT SHALL BE PROVIDED BY A RECHARGE CHAMBER, A MICROPOOL EXTENDED DETENTION FACILITY AND NON-STRUCTURAL METHODS THAT INCLUDE OPEN CHANNEL USE. ALL FACILITIES TO BE ALL FACILITIES TO BE CLASS "A" STRUCTURES. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- EXISTING UTILITIES ARE SHOWN BY APPROVED CONTRACT DRAWINGS AND FIELD LOCATIONS. EXISTING WELLS AND/OR SEWERAGE EASEMENTS WITHIN 100' OF THE PROPERTY HAVE BEEN SHOWN FROM THE BEST AVAILABLE INFORMATION.
- THIS SITE CONTAINS WETLANDS, STREAMS AND FLOODPLAINS.
- THERE ARE NO CONTIGUOUS AREAS OF STEEP SLOPES (25% OR GREATER) OF 20,000 S.F. OR GREATER ON THIS SITE. GRADING OF STEEP SLOPE AREAS LESS THAN 20,000 S.F. IS PERMITTED UNDER SECTION 16.116(b)(1) OF THE SUBDIVISION REGULATIONS.
- THE TRAFFIC STUDY WAS PREPARED BY TRAFFIC CONCEPTS, INC. IN JULY, 2002 AND APPROVED WITH THE SKETCH PRELIMINARY PLAN, SP-03-02.
- ALL LANDSCAPING REQUIREMENTS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL AND SECTION 16.124(b)(3)(i) OF THE SUBDIVISION REGULATIONS. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$8,700.00.
- THERE IS AN EXISTING DWELLING LOCATED ON LOT 2 TO REMAIN. NO NEW BUILDINGS, EXTENSIONS, OR ADDITIONS TO THE EXISTING DWELLING ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATIONS REQUIRE. THE EXISTING BUILDING WAS CONSTRUCTED IN 1977.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ON-SITE.
- FOREST STAND DELINEATION WAS PROVIDED BY ECO-SCIENCE PROFESSIONALS, INC. DATED JULY, 2000 AND APPROVED WITH THE PRELIMINARY EQUIVALENT SKETCH PLAN SP-03-02.
- NOISE MITIGATION IS NOT REQUIRED FOR THIS PROJECT.
- A SIGHT DISTANCE ANALYSIS FOR SWIMMER ROW WAY WAS PROVIDED AND APPROVED WITH THE SKETCH PRELIMINARY PLAN, SP-03-02.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY AND NOT TO THE PIPESTEM LOT DRIVEWAY.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12' (14' SERVING MORE THAN ONE RESIDENCE)
 - SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING.
 - GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOAD)
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
 - STRUCTURE CLEARANCES - MINIMUM 12 FEET.
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- MINIMUM BUILDABLE LOT SIZE SHALL BE 14,000 SQUARE FEET. 30% OPEN SPACE PROVIDED.
- ALL EXISTING WELLS AND SEPTICS LOCATED ON THIS PROPERTY SHALL BE ABANDONED AND VERIFICATION OF THE ABANDONMENT SHALL BE SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO RECORDATION OF THE PLAT OF SUBDIVISION.
- THIS PLAN IS SUBJECT TO COMPLIANCE WITH THE FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATION. THIS PROJECT IS SUBJECT TO ZONING REGULATIONS EFFECTIVE 1-8-02.
- THIS PLAN IS SUBJECT TO THE FOLLOWING DEPARTMENT OF PLANNING & ZONING FILE NUMBERS: S-01-01, S-01-32, F-76-104, SP-03-02, WP-03-14.
- UNLESS NOTED AS "PRIVATE", ALL EASEMENTS ARE PUBLIC.
- BRL INDICATES BUILDING RESTRICTION LINE.
- CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION ACTIVITY AND SHALL ADJUST ALL UTILITIES AND RIM ELEVATIONS AS NEEDED TO MATCH THIS PLAN.
- THE DISTURBANCE TO THE 100-YEAR FLOODPLAIN, WETLAND, WETLAND BUFFER, STREAM AND STREAM BUFFER ON THE WESTERN PORTION OF THE SITE IS NECESSARY TO ACCESS THE SITE. THE DISTURBANCE TO THE 100-YR FLOODPLAIN, WETLAND, WETLAND BUFFER, STREAM, AND STREAM BUFFER ON THE EASTERN PORTION OF THE SITE AND THE ADJACENT VILLAGE OF RIVER HILL OPEN SPACE LOT 103 IS NECESSARY TO PROVIDE PUBLIC TO THE SITE. THESE DISTURBANCES HAVE BEEN DETERMINED NECESSARY BY THE DEPARTMENT OF PLANNING AND ZONING.
- WP-03-14 WAS APPROVED BY THE PLANNING DIRECTOR ON SEPTEMBER 26, 2002. THIS WAIVES SECTION 16.119(e)(5) OF THE HOWARD COUNTY SUBDIVISIONS AND LAND DEVELOPMENT REGULATIONS TO ALLOW DESIGN OF THE PUBLIC RIGHT-OF-WAY TO SERVE TROTTERS RUN WITHOUT THE REQUIRED 25 FOOT INTERSECTION TRUNCATION.
- OPEN SPACE LOTS 14 AND 15 ARE TO BE DEDICATED TO HOWARD COUNTY. OPEN SPACE LOT 13 (STORMWATER MANAGEMENT) SHALL BE DEDICATED TO THE TROTTERS RUN HOMEOWNERS ASSOCIATION.
- THIS PROJECT IS ZONED R-20 PER THE 2-2-04 COMPREHENSIVE ZONING PLAN.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, OR PLACEMENT OF NEW STRUCTURES IS PERMITTED WITH THE LIMITS OF WETLANDS, STREAM(S), OR THEIR BUFFERS AND FOREST CONSERVATION EASEMENT AREAS.

TROTTERS RUN

ROAD CONSTRUCTION PLANS

3rd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND



PLAN
SCALE: 1"=100'

SITE DATA TABULATION

1) GENERAL SITE DATA		3) LOT TABULATION	
a. PRESENT ZONING:	R-20	a. ALLOWABLE RESIDENTIAL LOT YIELD:	N/A
b. APPLICABLE DPZ FILE REFERENCES:	SP-03-02, F-76-104, S-01-01, S-01-32, WP-03-14	b. TOTAL NUMBER OF RESIDENTIAL LOTS PROPOSED ON THIS SUBMISSION:	11 & 1 EX. (12 TOTAL)
c. DEED REF.	2317/0353	c. TOTAL NUMBER OF OPEN SPACE LOTS PROPOSED:	3
d. PROPOSED USE OF SITE:	11 SFD HOMES & 1 EX.	4) OPEN SPACE DATA	
e. PROPOSED WATER AND SEWER SYSTEMS:	PUBLIC	a. MINIMUM RESIDENTIAL LOT SIZE SELECTED:	14,000 SQ. FT.
2) AREA TABULATION		b. OPEN SPACE REQUIRED (30%):	2.69 AC.±
a. TOTAL AREA OF SITE:	8.95 AC.±	c. TOTAL AREA OF PROPOSED OPEN SPACE LOTS:	3.03 AC.±
b. AREA OF 100 YEAR FLOODPLAIN:	0.19 AC.±	d. TOTAL AREA OF NON-CREDITED NARROW O.S.:	0.0 AC.
c. AREA OF STEEP SLOPES (25% OR GREATER):	0.00 AC.±	e. TOTAL CREDITED OPEN SPACE PROVIDED (OPEN SPACE AREA MINUS PIPESTEM AREA):	3.03 AC.±
d. NET AREA OF SITE:	8.76 AC.±	d. AREA OF RECREATION OPEN SPACE REQUIRED:	2,400 S.F.
e. AREA OF THIS PLAN SUBMISSION:	8.95 AC.±	e. AREA OF RECREATION OPEN SPACE PROVIDED:	2,400 S.F.
f. AREA OF PROPOSED BUILDABLE LOTS:	4.40 AC.±		
g. AREA OF PROPOSED OPEN SPACE LOTS:	3.03 AC.±		
h. AREA OF NON-CREDITED NARROW O.S.:	0.00 AC.±		
i. AREA OF CREDITED OPEN SPACE (TO BE DEDICATED TO H.O.A.):	3.03 AC.±		
j. AREA OF PROPOSED PUBLIC ROAD R/W:	1.52 AC.±		

- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENT OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THE FOREST CONSERVATION HAS BEEN MET BY 1.5 ACRES OF ON-SITE RETENTION AND AN OFF-SITE REFORESTATION OF 1.5 ACRES ON THE TALLEY PROPERTY, F-04-50. THE SURETY AMOUNT FOR THIS RETENTION IS \$13,068.00. THE SURETY FOR THE OFF-SITE REFORESTATION IS \$32,670. THE TOTAL SURETY AMOUNT IS \$45,738.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE)-3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- THE DEVELOPER HAS APPLIED FOR THE REQUIRED MDE WETLAND DISTURBANCE PERMITS FOR THE NECESSARY ROAD CROSSING AND SEWER OUTFALL. THE PERMITS SHALL BE OBTAINED PRIOR TO ANY DISTURBANCE TO THE STREAMS. THE TRACKING NUMBER IS 200563010.
- EXISTING WELL AND SEPTICS SHALL BE ABANDONED PRIOR TO SUBMISSION OF THE RECORD PLAT FOR RECORDATION. THE HEALTH DEPARTMENT SHALL BE NOTIFIED PRIOR TO ANY ABANDONMENT AND WRITTEN NOTIFICATION OF PROPER ABANDONMENT SHALL BE PROVIDED TO THE HEALTH DEPARTMENT.

APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. White
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 9-21-05

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hanan
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9/22/05

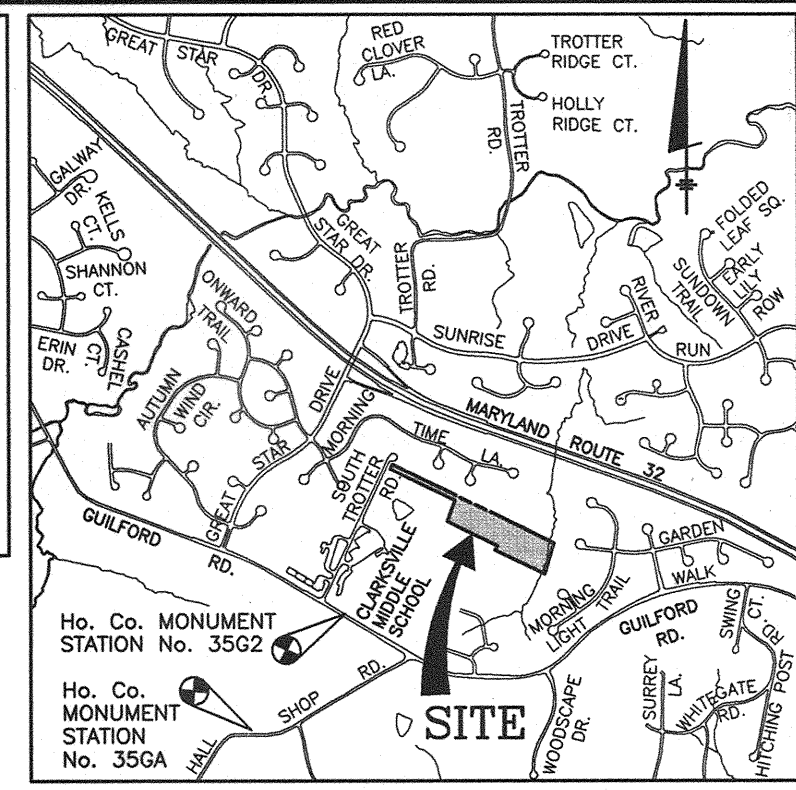
APPROVED: DEPARTMENT OF PLANNING AND ZONING
William J. White
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 9/22/05

NO.	DATE	REVISION

BENCHMARKS (NAD 83):

STATION 356A
 NORTHING: 553249.684 EASTING: 1,332,627.281
 ELEVATION: 482.037'
 STAMPED DISC SET ON TOP OF A CONC. (3" DEEP) COLUMN, SET 1" OR 2" BELOW TERRAIN SURFACE. LOCATED 17.1' NORTH OF THE C/L OF HALL SHOP ROAD, 150' EAST OF C&P POLE 6510 (G&E POLE 112401), 72.4' WEST OF AN ENTRANCE AND 0.35 MILES WEST OF MD ROUTE 32.

STATION 356Z
 NORTHING: 554,965.671 EASTING: 1,332,934.904
 ELEVATION: 477.690'
 STAMPED DISC SET ON TOP OF A CONC. (3" DEEP) COLUMN, SET 1" OR 2" BELOW TERRAIN SURFACE. LOCATED 15.0' NORTH OF THE EDGE OF PAVING OF GULFORD ROAD, 128.3' EAST OF G&E POLE 371538, 107.9' WEST OF G&E POLE 176031 AND 0.15 MILES WEST OF TROTTER ROAD.



VICINITY MAP
SCALE: 1" = 2000'

LEGEND

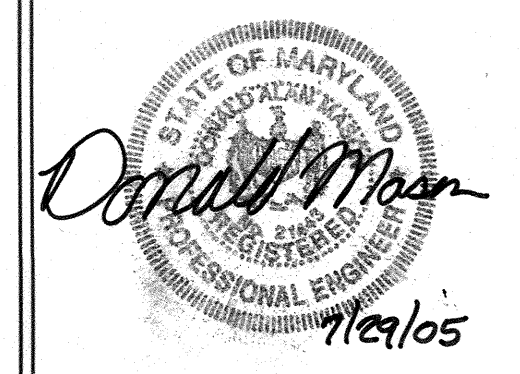
- SOILS CLASSIFICATION: AbC1
- SOILS DELINEATION: ---
- EXISTING CONTOURS: ---
- PROPOSED CONTOURS: ---
- DRAINAGE FLOW ARROW: →
- LIMIT OF WETLANDS: ---
- EXISTING WOODS LINE: ---
- PROPOSED WOODS LINE: ---
- EXISTING STRUCTURE: [Symbol]
- PROPOSED BUILDING: [Symbol]
- EXISTING SEPTIC FIELD: [Symbol]
- RIP-RAP PROTECTION: [Symbol]
- SOIL BORING: [Symbol]
- LIMIT OF DISTURBANCE: ---
- STABILIZED CONSTRUCTION ENTRANCE: [Symbol]
- SILT FENCE: [Symbol]
- SUPER SILT FENCE: [Symbol]
- SOIL STABILIZATION MATTING: [Symbol]
- EARTH DIKE: [Symbol]
- REMOVABLE PUMP STATION: [Symbol]
- DRAINAGE AREA: [Symbol]
- EASEMENT: [Symbol]
- FLOODPLAIN: [Symbol]
- FOREST CONSERVATION EASEMENT: [Symbol]

SHEET INDEX

NO.	DESCRIPTION
1	TITLE SHEET
2-3	ROAD CONSTRUCTION AND STORM DRAIN PLAN
4	ROAD PROFILES AND DETAILS
5	STORM DRAIN PROFILES, NOTES AND DETAILS
6-7	STORM DRAIN DRAINAGE AREA MAP
8-9	GRADING, SEDIMENT AND EROSION CONTROL PLAN AND SOILS MAP
10	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
11-12	STORMWATER MANAGEMENT PLAN, PROFILES, NOTES AND DETAILS
13-14	FOREST CONSERVATION PLAN
15-16	LANDSCAPE PLAN
17-18	OFF-SITE FOREST MITIGATION PLAN

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 ENGINEERS • LAND SURVEYORS • PLANNERS

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 ELLICOTT CITY, MARYLAND 21043
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 www.bei-civilengineering.com



DEVELOPER: CORNERSTONE HOLDINGS, LLC.
 9695 NORFOLK AVENUE
 LAUREL, MD 20723
 PHONE: 410-792-2565

OWNER: KATHLEEN KRAWOLEC
 6465 S. TROTTER ROAD
 CLARKSVILLE, MD 21029

PROJECT: TROTTERS RUN
 LOTS 1-12 AND OPEN SPACE LOTS 13-15

LOCATION: TAX MAP 35 - GRID 20
 PARCEL 342
 5th ELECTION DISTRICT,
 HOWARD COUNTY, MARYLAND

TITLE: TITLE SHEET

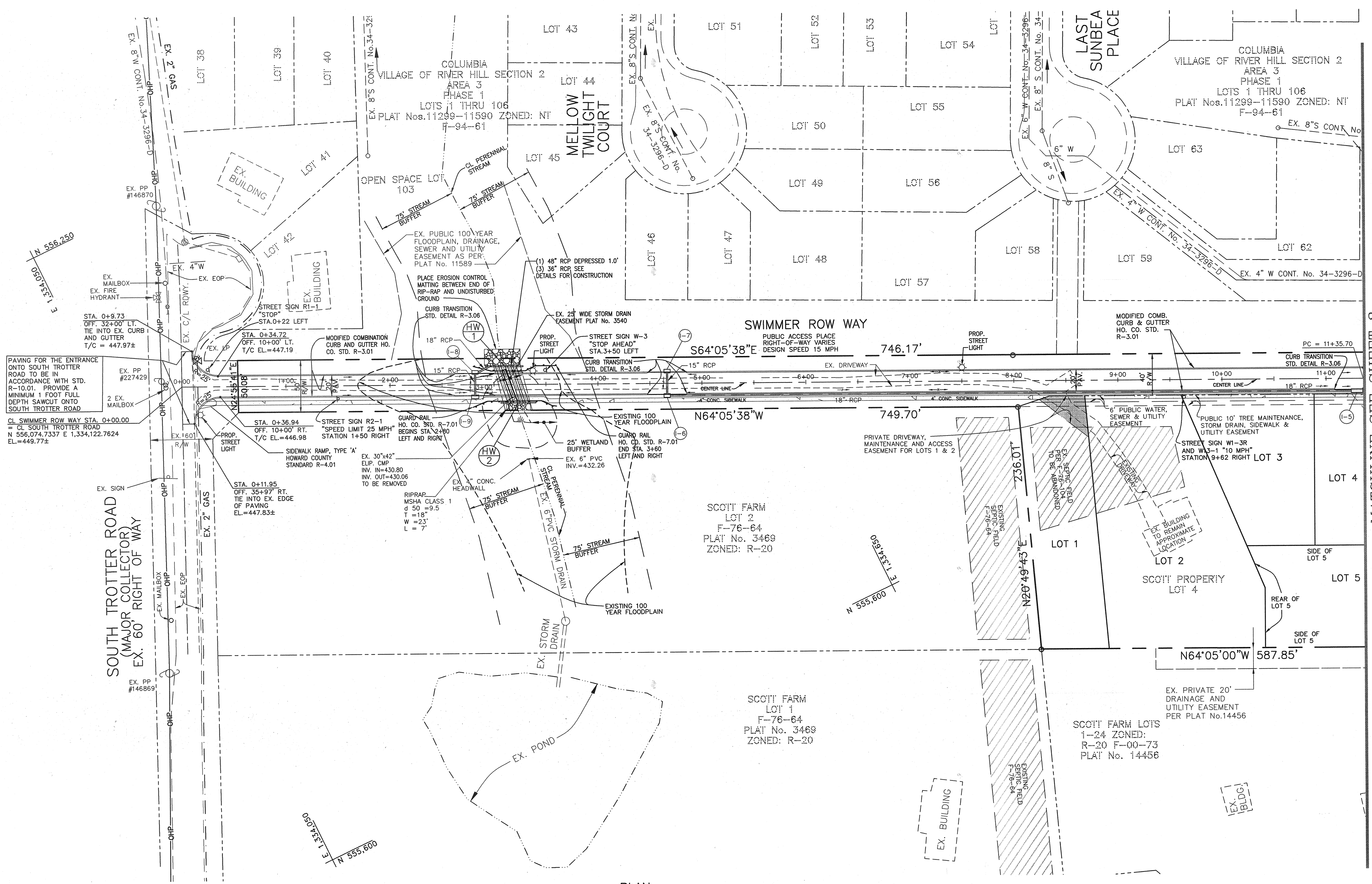
DATE: JULY, 2004
 APRIL, 2005

PROJECT NO. 1367

SCALE: 1" = 100'

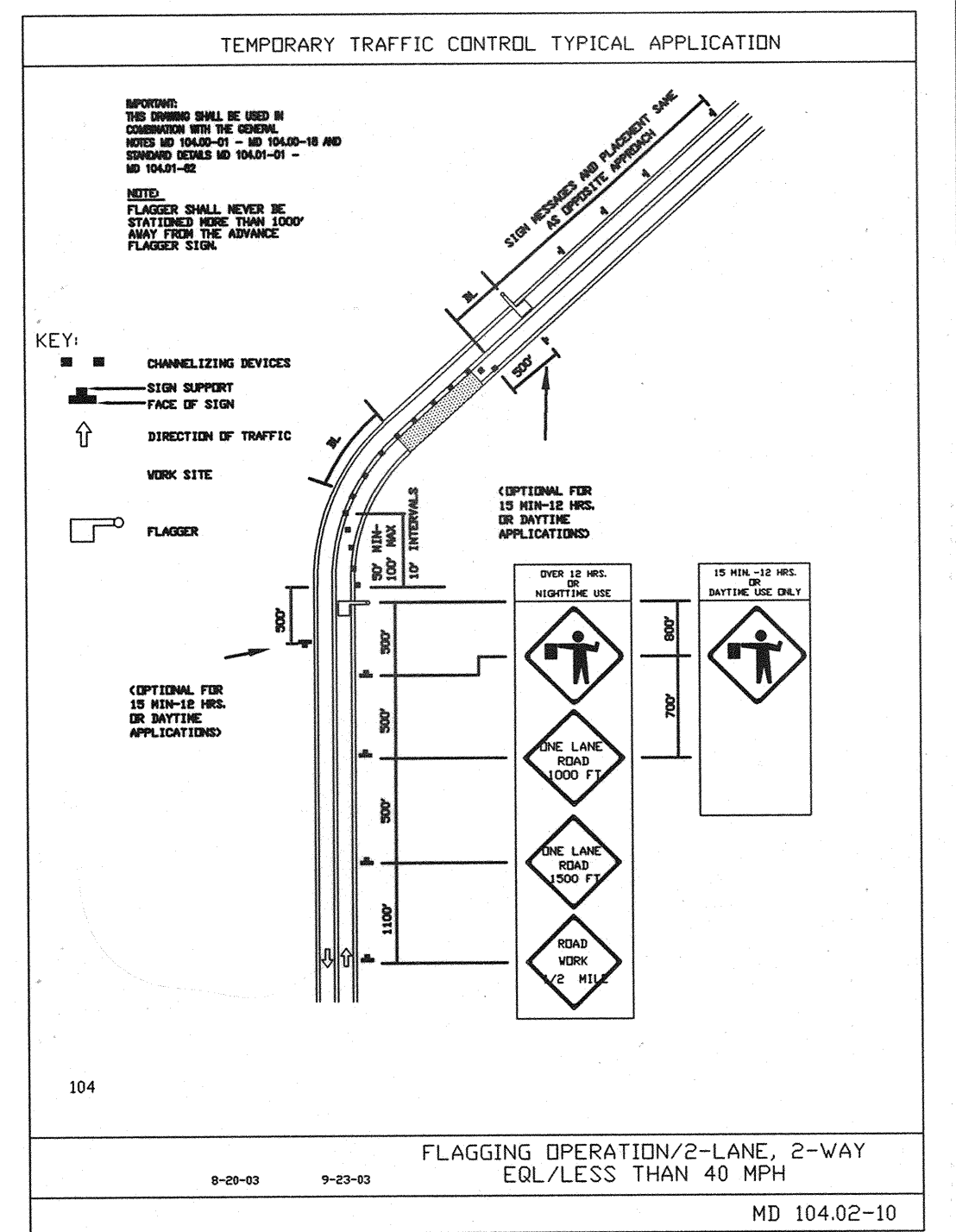
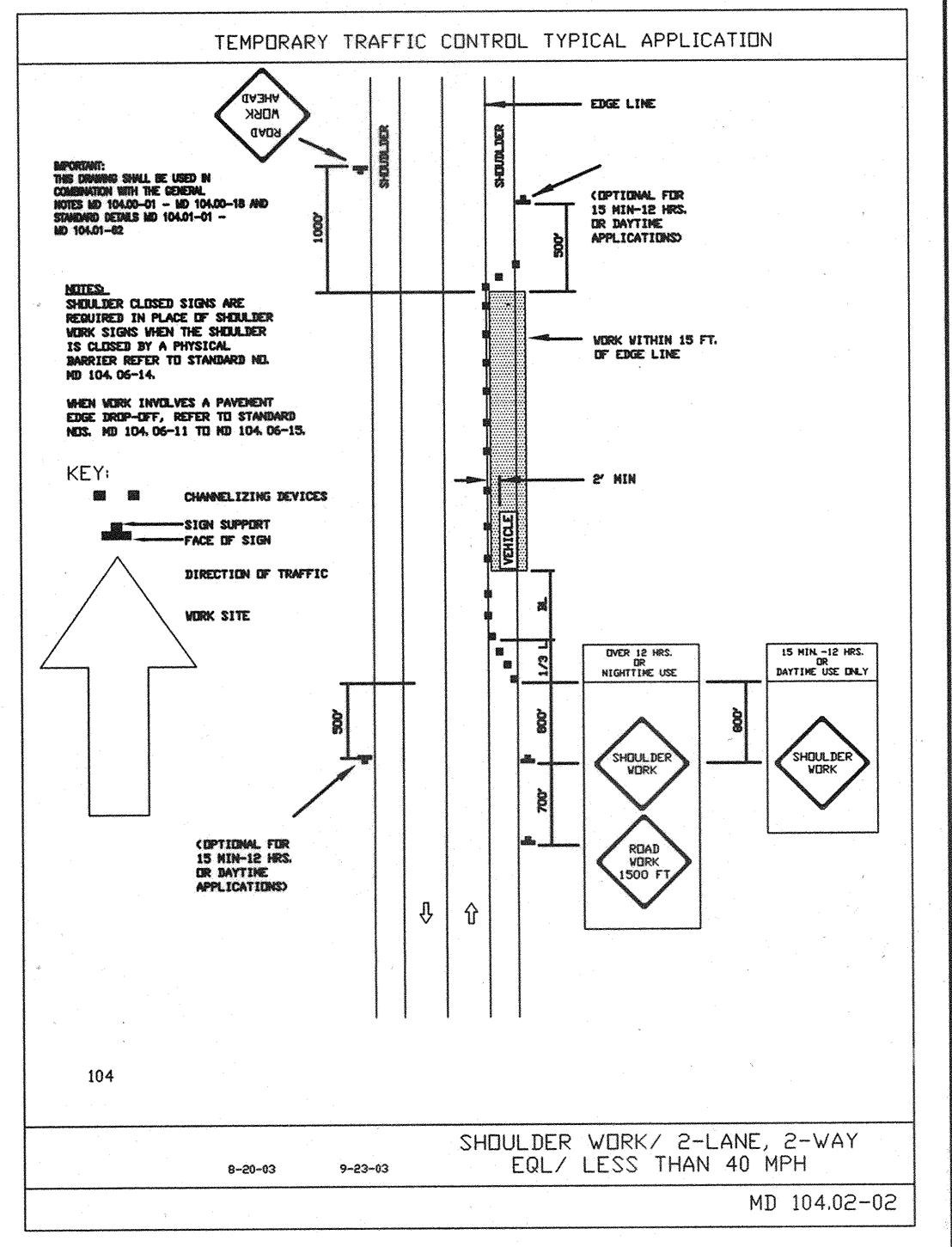
DESIGN: JMC DRAFT: LDD CHECK: DAM

DRAWING 1 OF 18



PLAN
SCALE: 1" = 50'

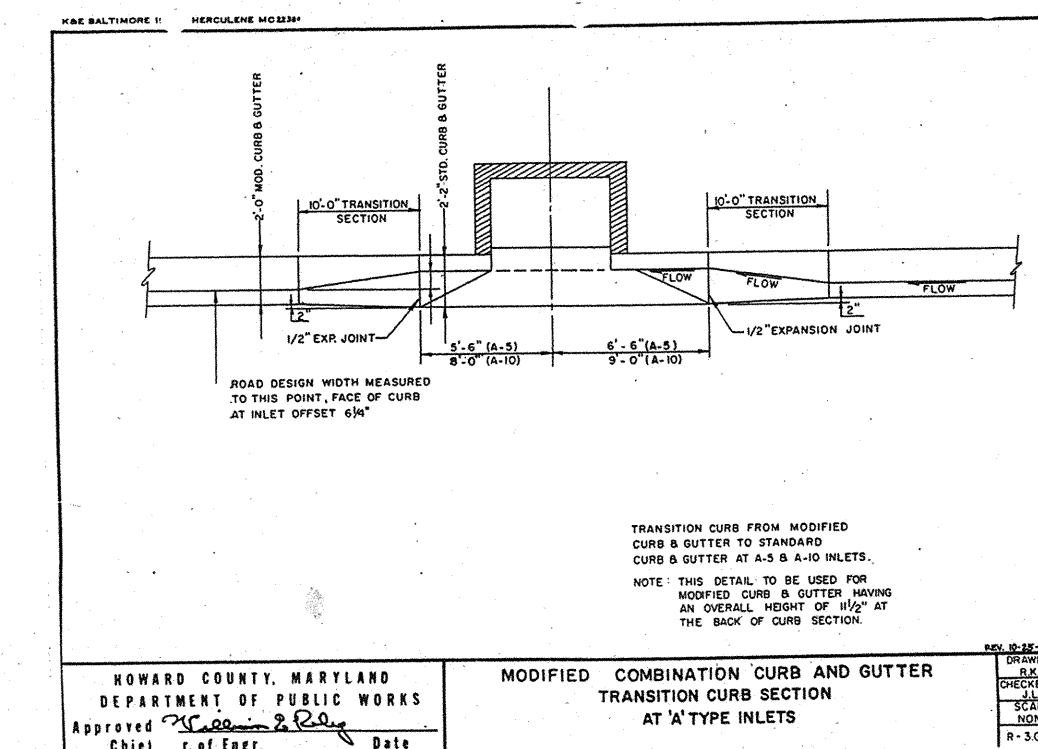
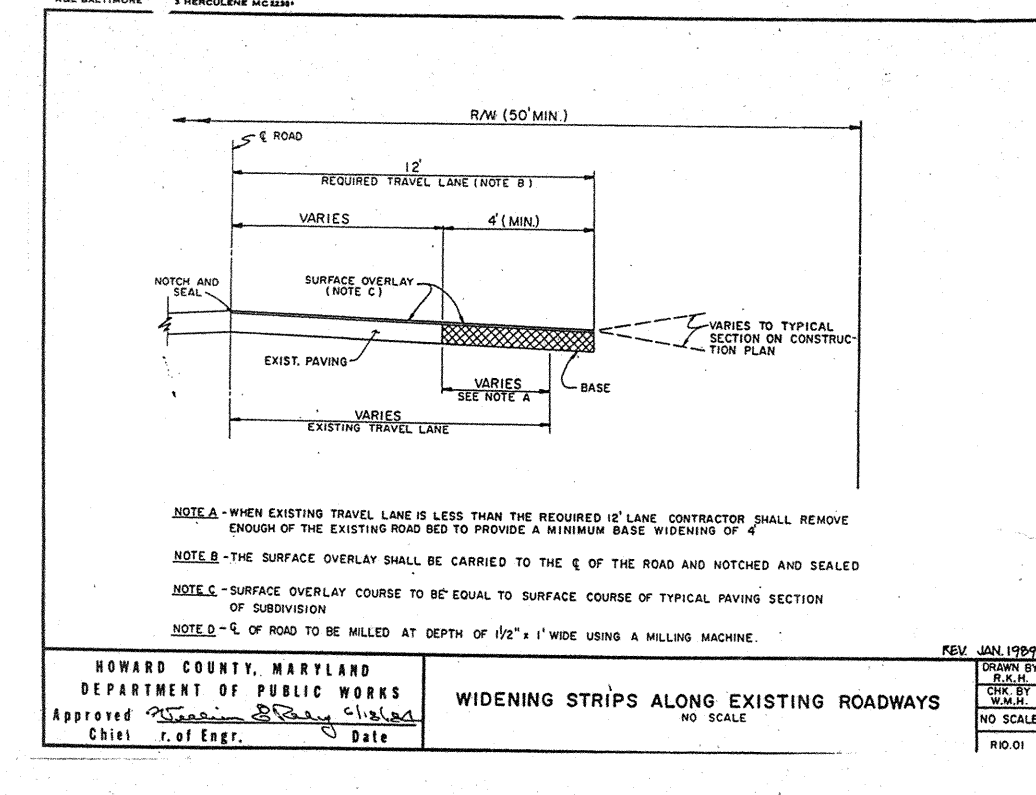
MATCHLINE SEE SHEET 3



APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. White
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 9-21-05

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chris Hammett
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9/21/05

APPROVED: DEPARTMENT OF PUBLIC WORKS
Charles J. ...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 9/21/05



NO.	DATE	REVISION

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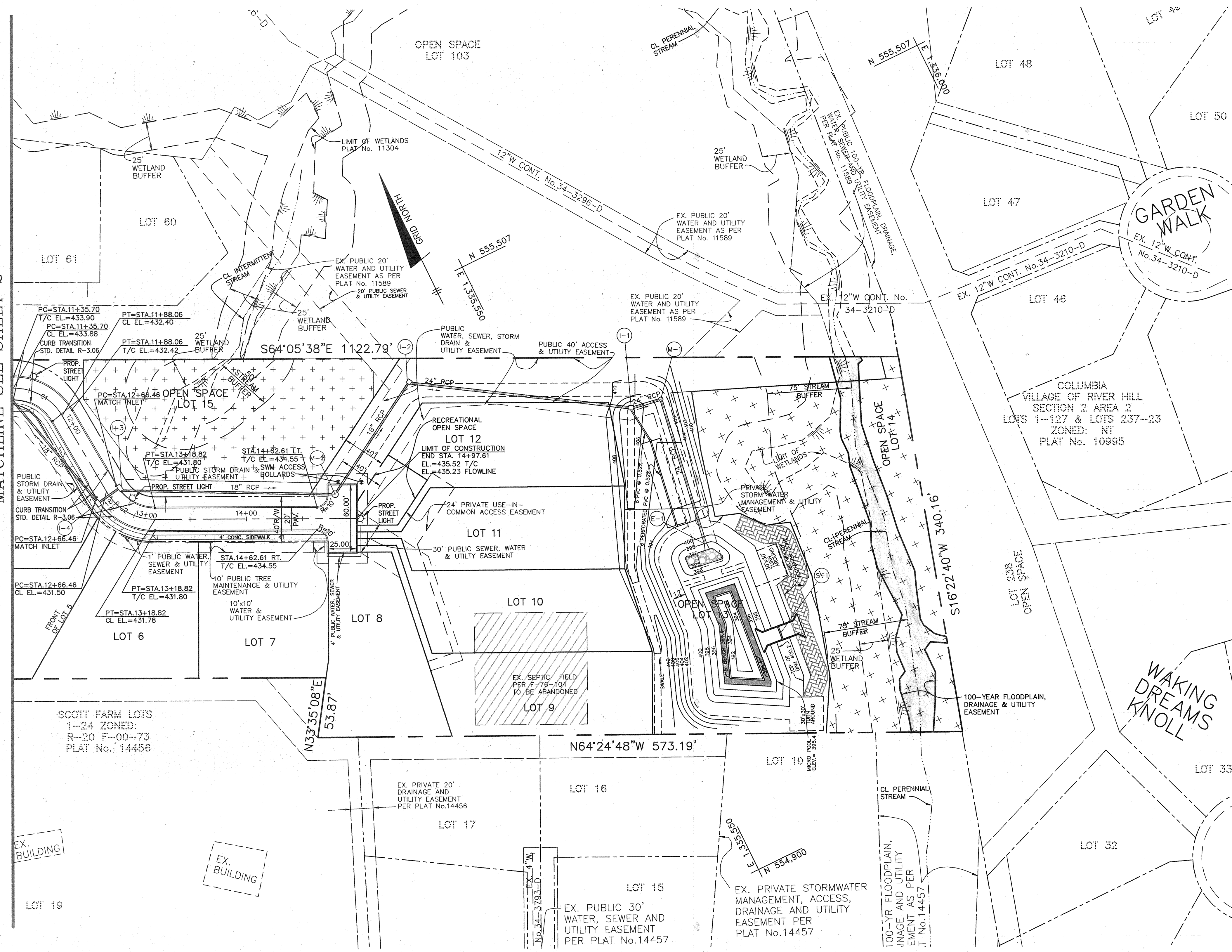
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SCALE: 1" = 50' DRAWING 2 OF 18

Design: JMC Draft: LDD Check: DAM

MATCHLINE SEE SHEET 2



PLAN
SCALE: 1" = 50'

CENTERLINE CONTROL DATA - SWIMMER ROW WAY

STREET NAME	STATION	NORTH	EAST
SWIMMER ROW WAY	0+00	N 556,074.7337	E 1,334,122.7624
SWIMMER ROW WAY	11+35.70	N 555,578.5484	E 1,335,144.3383
SWIMMER ROW WAY	11+88.06	N 555,537.1425	E 1,335,172.3659
SWIMMER ROW WAY	12+66.46	N 555,458.9413	E 1,335,177.9632
SWIMMER ROW WAY	13+18.82	N 555,417.5353	E 1,335,205.9908
SWIMMER ROW WAY	14+97.61	N 555,539.4238	E 1,335,366.8125

STREET LIGHT SCHEDULE

ROAD	STATION	OFFSET	DESCRIPTION
SWIMMER ROW WAY	0+17	23' RIGHT	100 WATT HPS VAPOR
	3+37	13' LEFT	PREMIER POST-TOP FIXTURE
	7+50	13' LEFT	MOUNTED ON A 14'
	11+50	13' LEFT	BLACK FIBERGLASS POLE
	12+30	13' LEFT	
	15+00	0'	

CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD
C1	50.00'	52.36'	60°00'00"	28.87'	S34°05'38"E 50.00'
C2	50.00'	52.36'	60°00'00"	28.87'	S34°05'38"E 50.00'

APPROVED: DEPARTMENT OF PUBLIC WORKS
Willie J. White
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 9-21-05

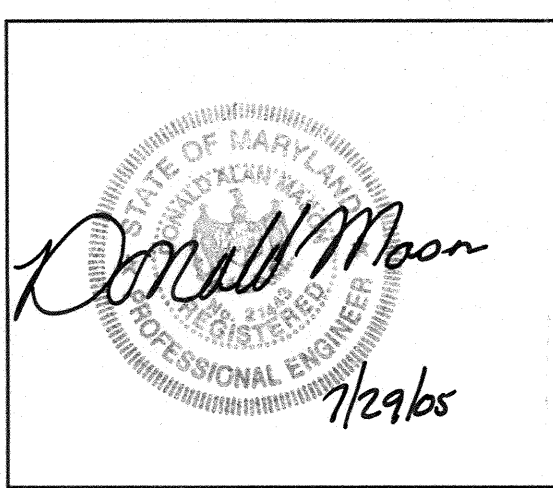
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cathy R. Smith
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9/22/05

APPROVED: DEPARTMENT OF ENGINEERING
David J. Smith
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 9/22/05

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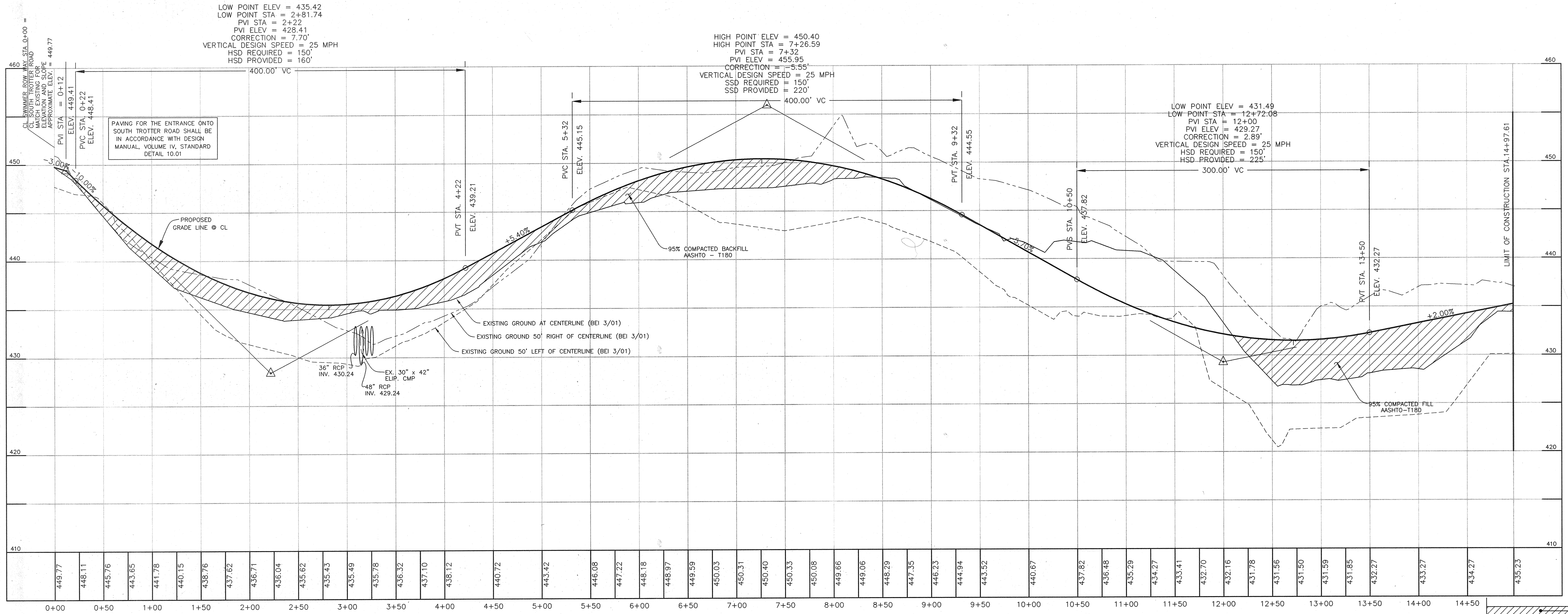
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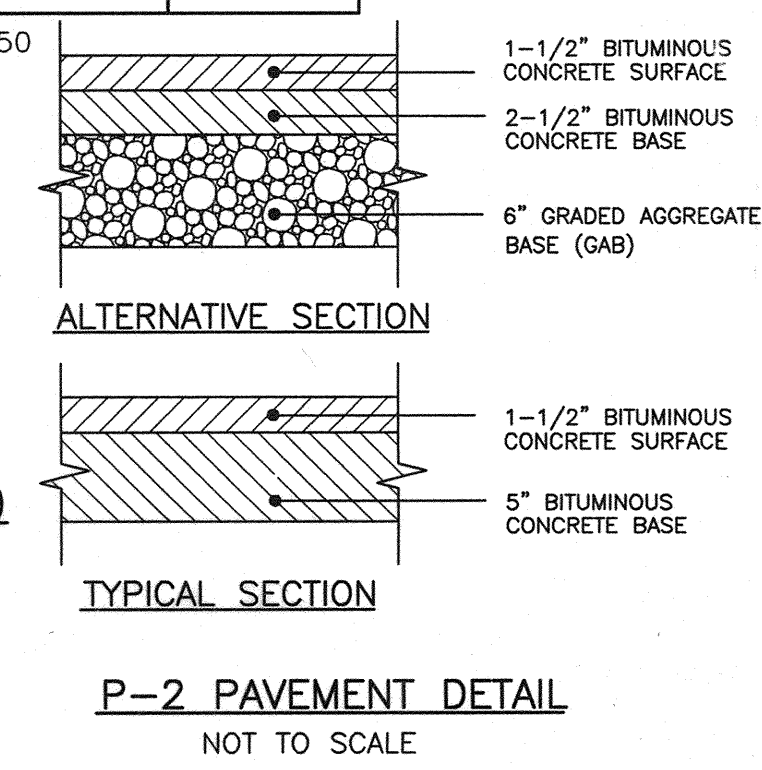
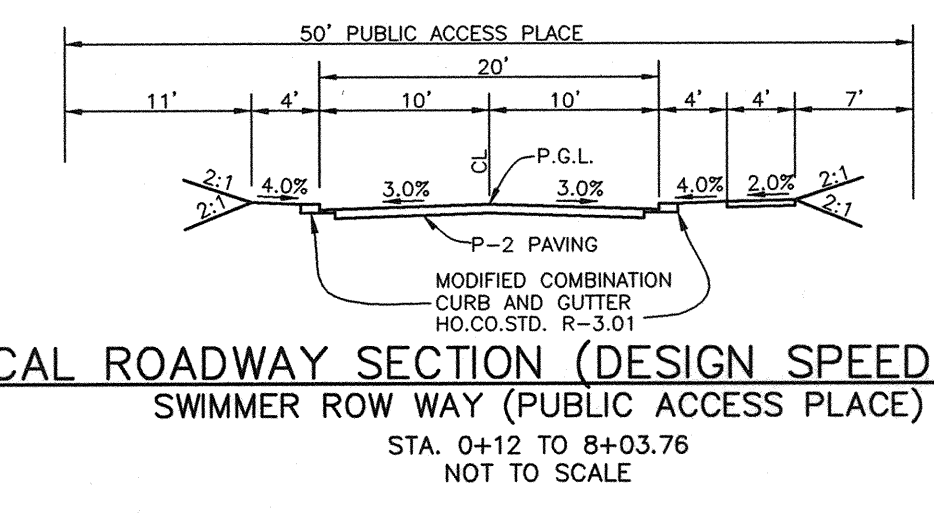
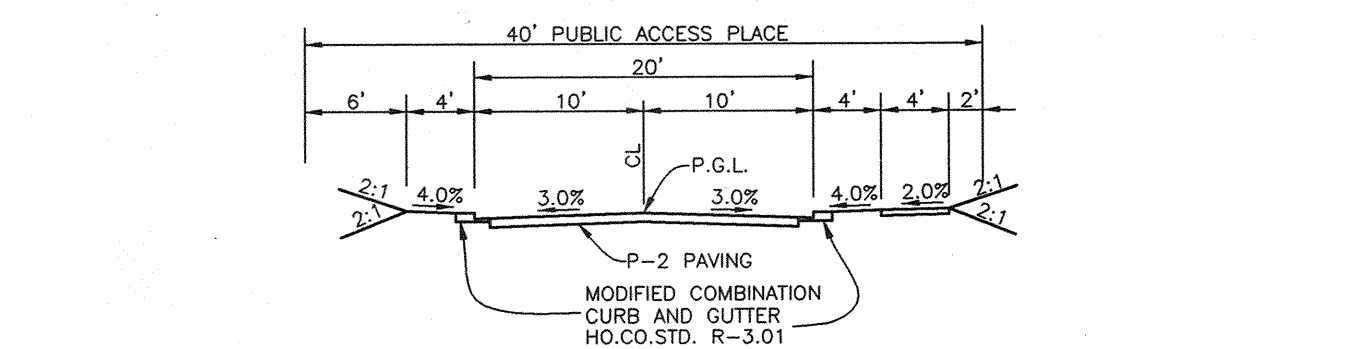
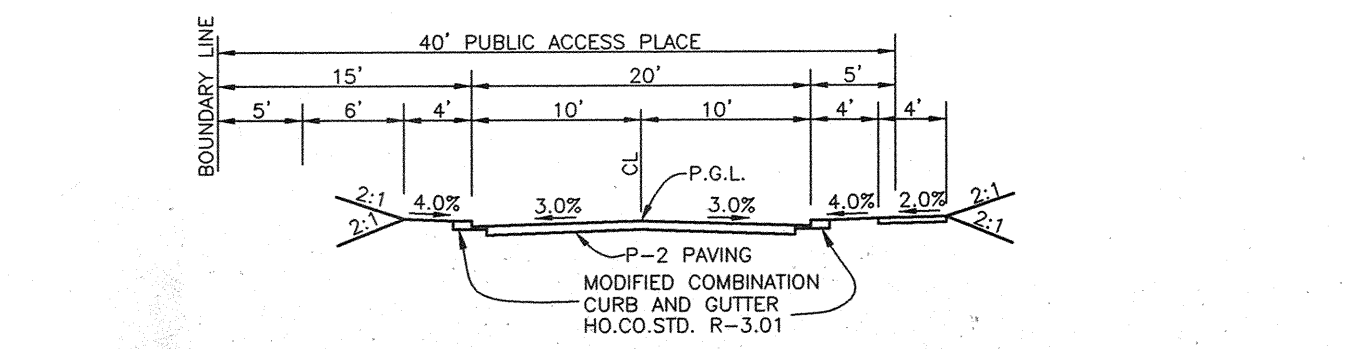
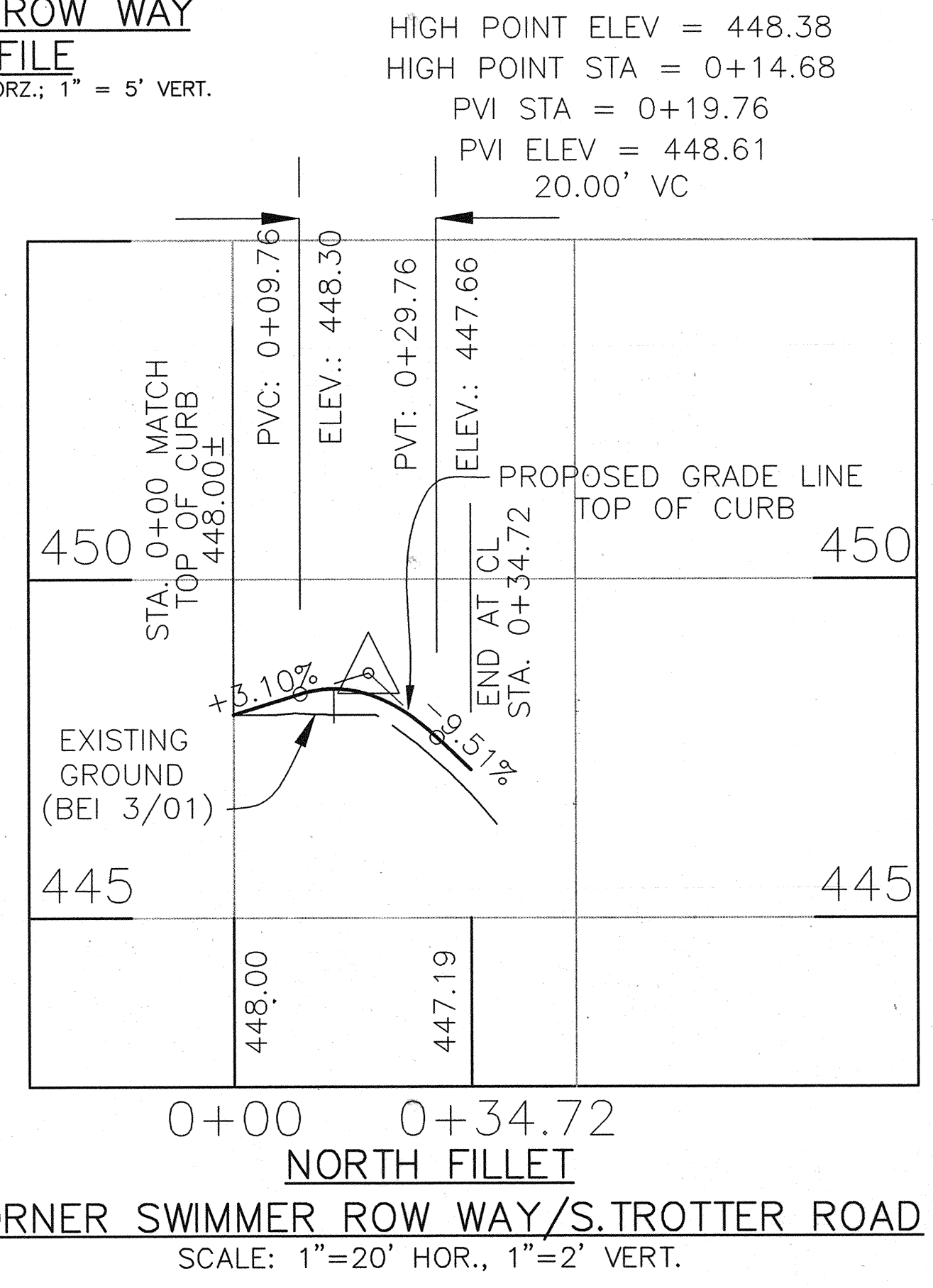
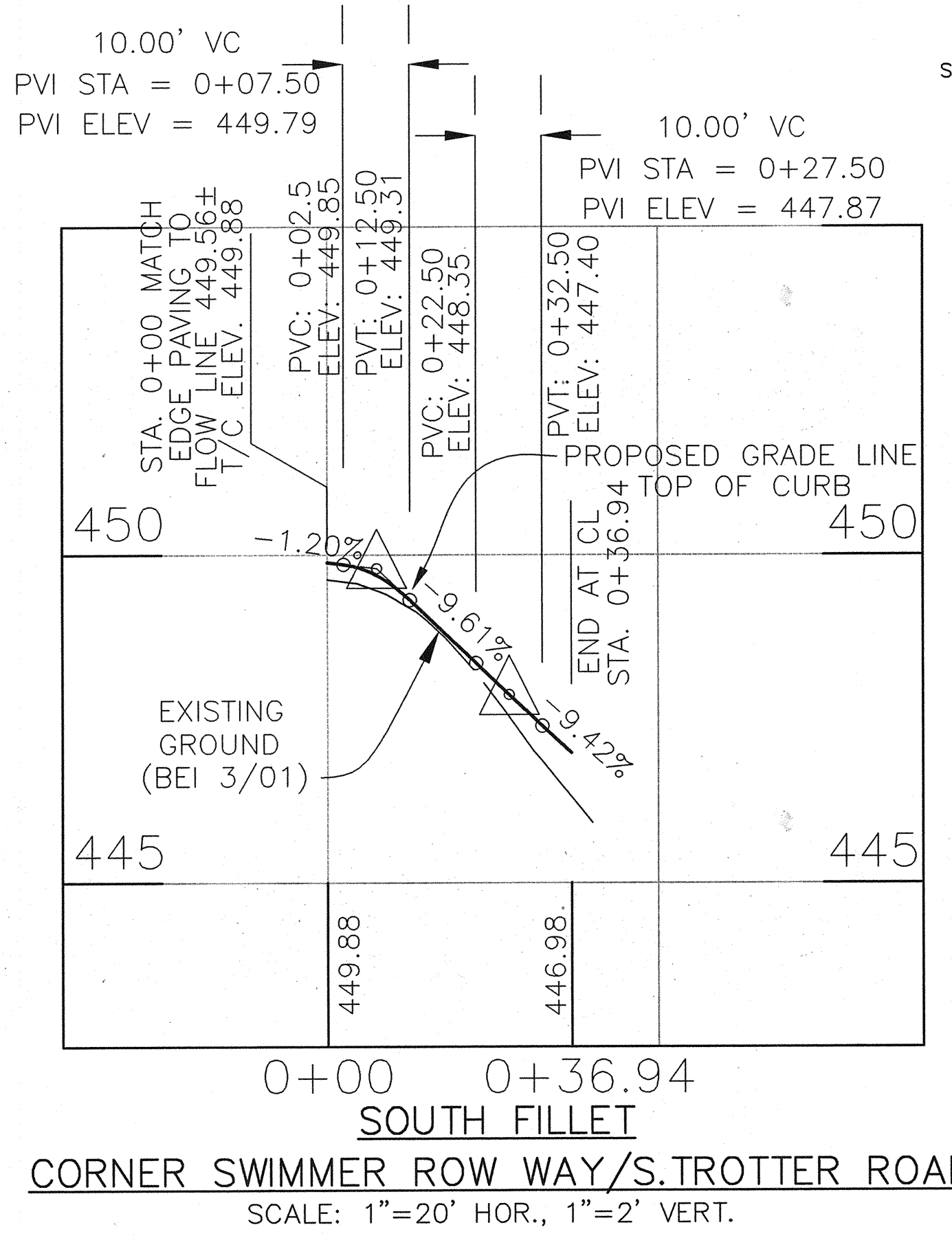
SCALE: 1" = 50' DRAWING 3 OF 18

Design: JMC Draft: MCR Check: DAM

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SWIMMER ROW WAY PROFILE
 SCALE: 1" = 50' HORZ.; 1" = 5' VERT.

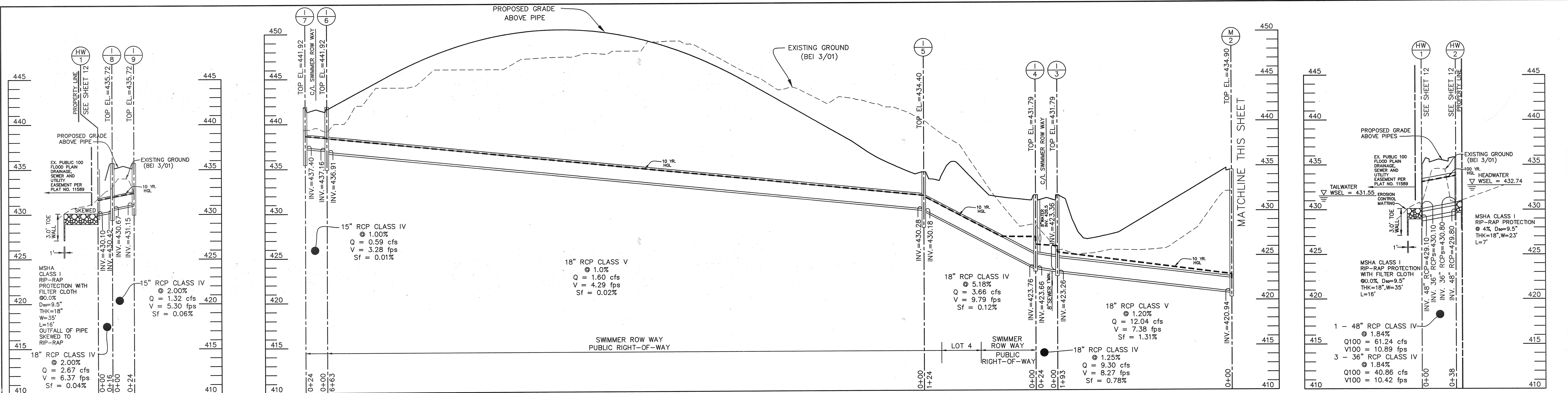


APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE: 7/2/05

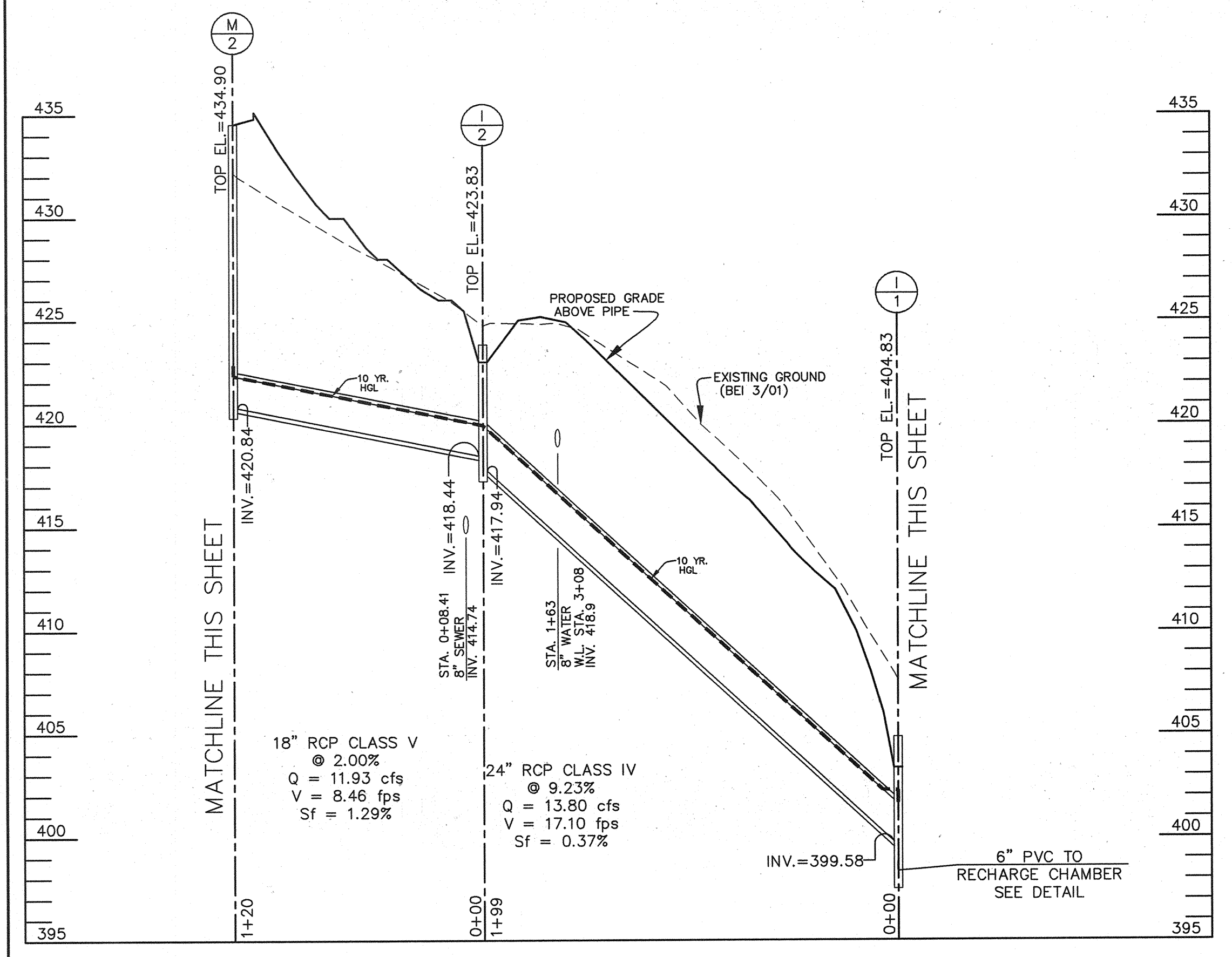
NO. DATE		REVISION	
BENCHMARK ENGINEERING, INC.			
8480 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043 phone: 410-465-6105 fax: 410-465-6644 email: Benchmark@ceis.com			
DEVELOPER: CORNERSTONE HOLDINGS, LLC. 9695 NORFOLK AVENUE LAUREL, MD 20723 PHONE: 410-792-2565		PROJECT: TROTTERS RUN LOTS 1-12 AND OPEN SPACE LOTS 13-15	
OWNER: KATHLEEN KRAWOLEC 6465 S. TROTTER ROAD CLARKSVILLE, MD 21029		LOCATION: TAX MAP 35 - GRID 20 PARCEL 342 5th ELECTION DISTRICT, HOWARD COUNTY, MARYLAND	
DATE: JULY, 2004 APRIL, 2005		TITLE: ROAD PROFILES AND DETAILS	
Design: JMC Draft: MCR Check: DAM		PROJECT NO. 1367 DRAWING 4 OF 18	



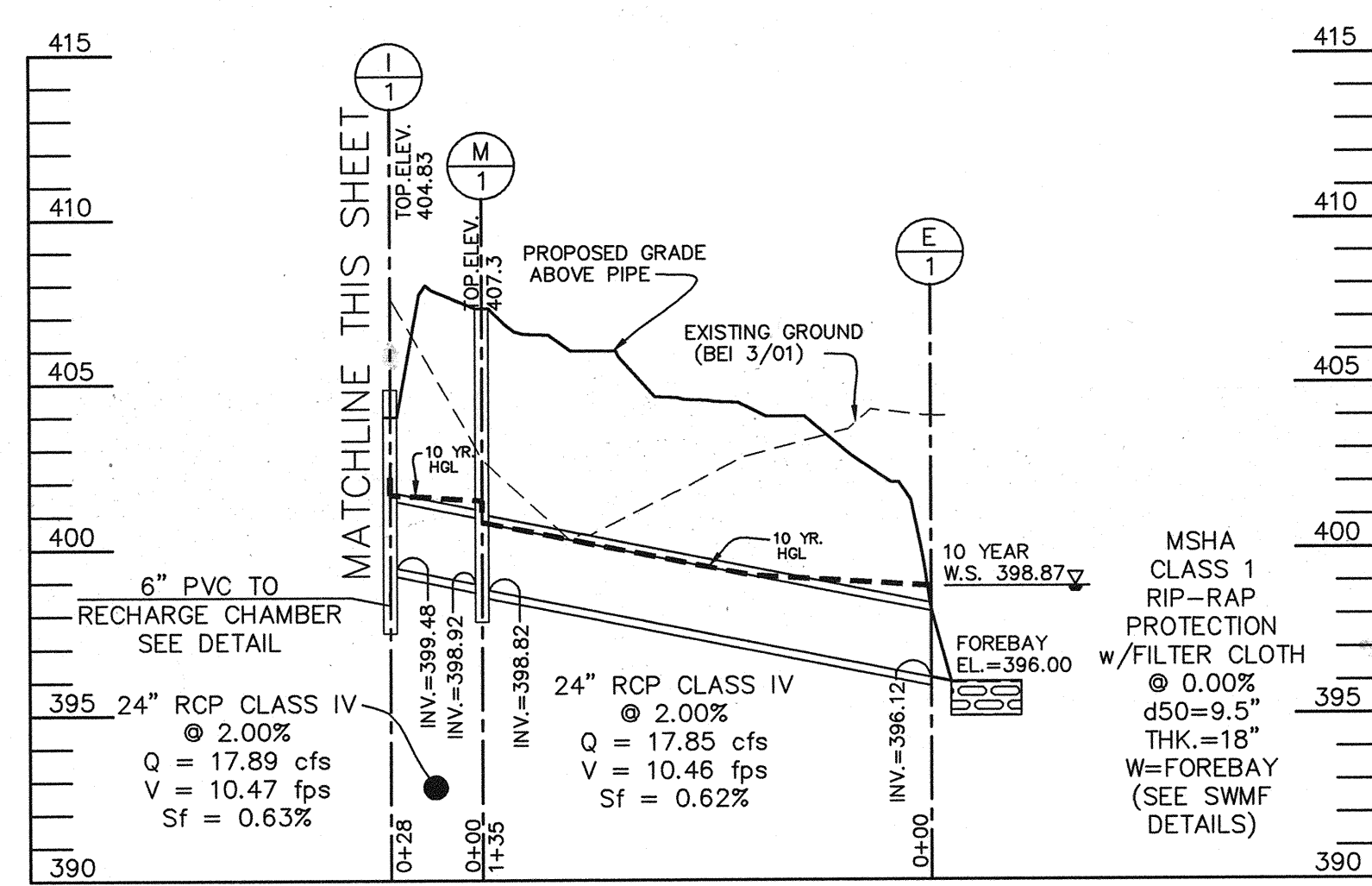
SWIMMER ROW WAY STORM DRAIN PROFILE
SCALE: 1" = 50' HORZ.; 1" = 5' VERT.

SWIMMER ROW WAY STORM DRAIN PROFILE
SCALE: 1" = 50' HORZ.; 1" = 5' VERT.

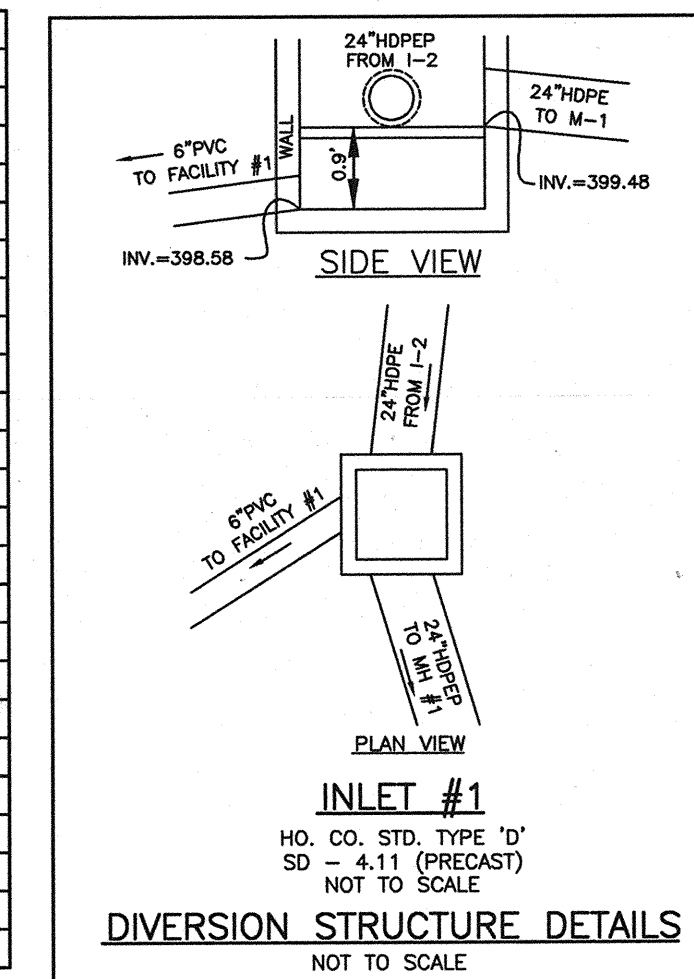
SWIMMER ROW WAY CULVERT PROFILE
SCALE: 1" = 50' HORZ.; 1" = 5' VERT.



STORM DRAIN PROFILE
SCALE: 1" = 50' HORZ.; 1" = 5' VERT.



STORM DRAIN PROFILE
SCALE: 1" = 50' HORZ.; 1" = 5' VERT.



SIZE	TYPE	CLASS	TOTAL LENGTH
15"	RCP	IV	48'
18"	RCP	IV	164'
18"	RCP	V	976'
24"	RCP	IV	362'
36"	RCP	IV	114'
48"	RCP	IV	38'

STRUCTURE	D-50	LENGTH	WIDTH	THICKNESS	SHA CLASS
E-1	9.5"	FOREBAY	18"	18"	1
HW-1	9.5"	16'	17.75'	18"	1

NO.	TYPE	LOCATION	THROAT INV.	INVERT IN	INVERT OUT	TOP ELEV.	HO. CO. STD.	REMARKS
I-1	TYPE "D"	N 555,320.8410 E 1,335,629.4809	404.00	399.58	399.48	404.83	Ho.Co.STD. SD-4.11	DIVERSION STRUCTURE, SEE DETAILS OPEN 2 SIDES
I-2	TYPE "D"	N 555,428.6169 E 1,335,462.4699	423.00	418.44	417.94	423.83	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-3	TYPE "A-5"	STA. 12+72.08 OFF. 10.43' LT.	423.36	423.26	431.79	431.79	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 3.0'
I-4	TYPE "A-5"	STA. 12+72.08 OFF. 10.43' RT.	423.76	423.66	431.79	431.79	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-5	TYPE "A-10"	STA. 11+29.87 OFF. 10.43' RT.	430.28	430.18	434.40	434.40	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-6	TYPE "A-5"	STA. 4+66.59 OFF. 10.43' RT.	437.16	436.91	441.92	441.92	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-7	TYPE "A-5"	STA. 4+66.59 OFF. 10.43' LT.	437.16	437.40	441.92	441.92	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-8	TYPE "A-5"	STA. 2+81.74 OFF. 10.43' LT.	430.67	430.42	435.72	435.72	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-9	TYPE "A-5"	STA. 2+81.74 OFF. 10.43' RT.	430.67	431.15	435.72	435.72	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
M-1	4'-0" STANDARD	N 555,315.9596 E 1,335,656.6568	398.92	398.82	407.3	407.3	Ho.Co.STD. G-5.12	STANDARD PRECAST MANHOLE
M-2	4'-0" STANDARD	STA. 14+78.71 OFF. 21.79' LT.	420.94	420.84	434.90	434.90	Ho.Co.STD. G-5.12	STANDARD PRECAST MANHOLE
E-1	TYPICAL CONCRETE	N 555,183.0484 E 1,335,635.6145	396.12	396.00	-	-	Ho.Co.STD. SD-5.51	OUTFALL INTO FOREBAY
HW-1	CAST IN PLACE	N 555,955.5095 E 1,334,409.4279	-	429.1/430.1	434.60	434.60	Ho.Co.STD. G-5.21	SEE DETAILS SHEET 12
HW-2	CAST IN PLACE	N 555,917.2666 E 1,334,405.7655	429.8/430.8	-	435.30	435.30	Ho.Co.STD. G-5.21	SEE DETAILS SHEET 12

RUN	SIZE	LENGTH	TYPE & CLASS
M-1 TO E-1	24"	135'	RCP CL IV
I-1 TO M-1	24"	28'	RCP CL IV
I-1 TO I-2	24"	199'	RCP CL IV
I-2 TO M-2	18"	120'	RCP CL V
M-2 TO I-3	18"	193'	RCP CL V
I-3 TO I-4	18"	24'	RCP CL IV
I-4 TO I-5	18"	124'	RCP CL IV
I-5 TO I-6	18"	663'	RCP CL V
I-6 TO I-7	15"	24'	RCP CL IV
I-8 TO I-9	15"	24'	RCP CL IV
HW-1 TO I-8	18"	16'	RCP CL IV

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: _____

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: _____

APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: _____

NO. DATE REVISION

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE • SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-465-6105 • fax: 410-465-6644
 email: Benchmark@cats.com

DEVELOPER: CORNERSTONE HOLDINGS, LLC.
 9695 NORFOLK AVENUE
 LAUREL, MD 20723
 PHONE: 410-792-2565

OWNER: KATHLEEN KRAWOLEC
 6465 S. TROTTER ROAD
 CLARKSVILLE, MD 21029

PROJECT: TROTTERS RUN
 LOTS 1-12 AND OPEN SPACE LOTS 13-15

LOCATION: TAX MAP 35 - GRID 20
 PARCEL 342
 5th ELECTION DISTRICT,
 HOWARD COUNTY, MARYLAND

TITLE: STORM DRAIN PROFILES, NOTES & DETAILS

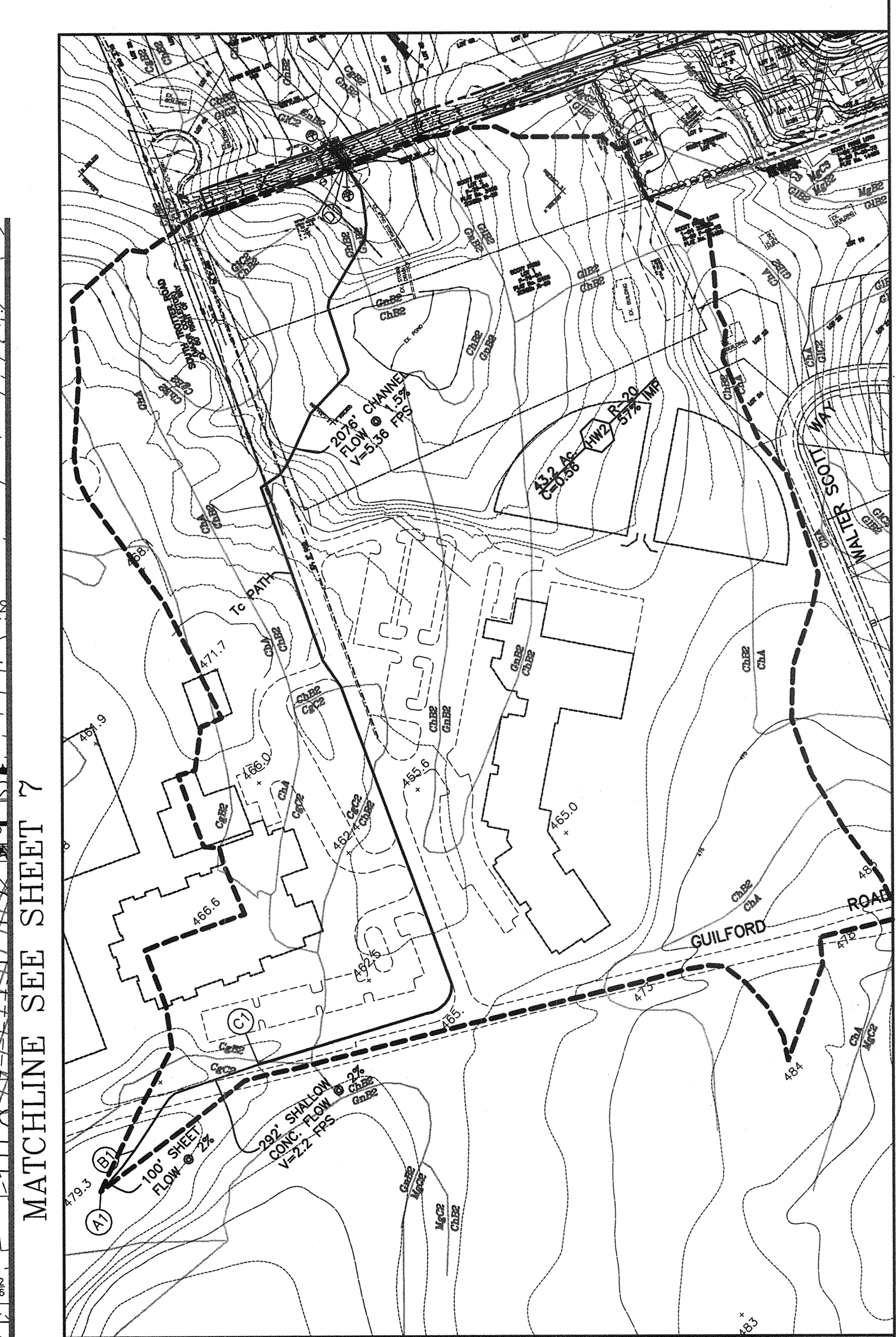
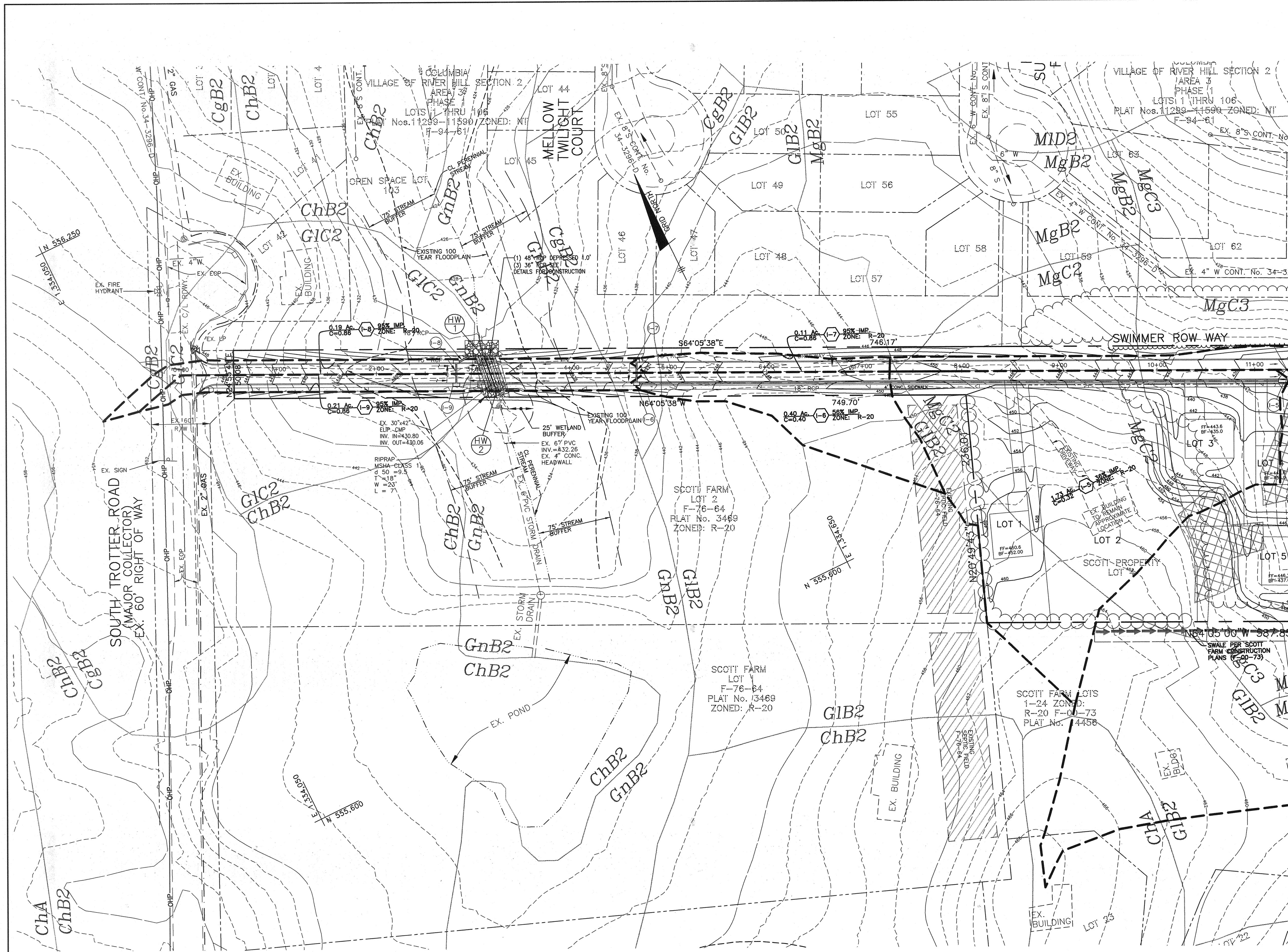
DATE: JULY, 2004
 APRIL, 2005

PROJECT NO. 1367

Design: JMC Draft: MCR Check: DAM

SCALE: 1" = 50' DRAWING 5 OF 18

F-05-012



DRAINAGE AREA TO CULVERT
SCALE: 1" = 200'

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] CHIEF, BUREAU OF HIGHWAYS
 DATE: 9/23/05

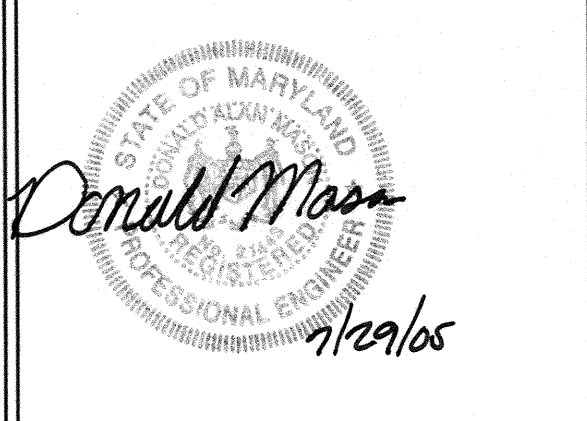
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9/23/05

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] DATE: 9/23/05

PLAN
SCALE: 1" = 50'

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
 E-MAIL: benchmark@ccis.com



DEVELOPER:
 CORNERSTONE HOLDINGS, LLC.
 9695 NORFOLK AVENUE
 LAUREL, MD 20723
 PHONE: 410-792-2565

PROJECT: TROTTERS RUN
 LOTS 1-12 AND OPEN SPACE LOTS 13-15
 LOCATION: TAX MAP No. 35 - GRID No. 20
 PARCEL No. 342
 5th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

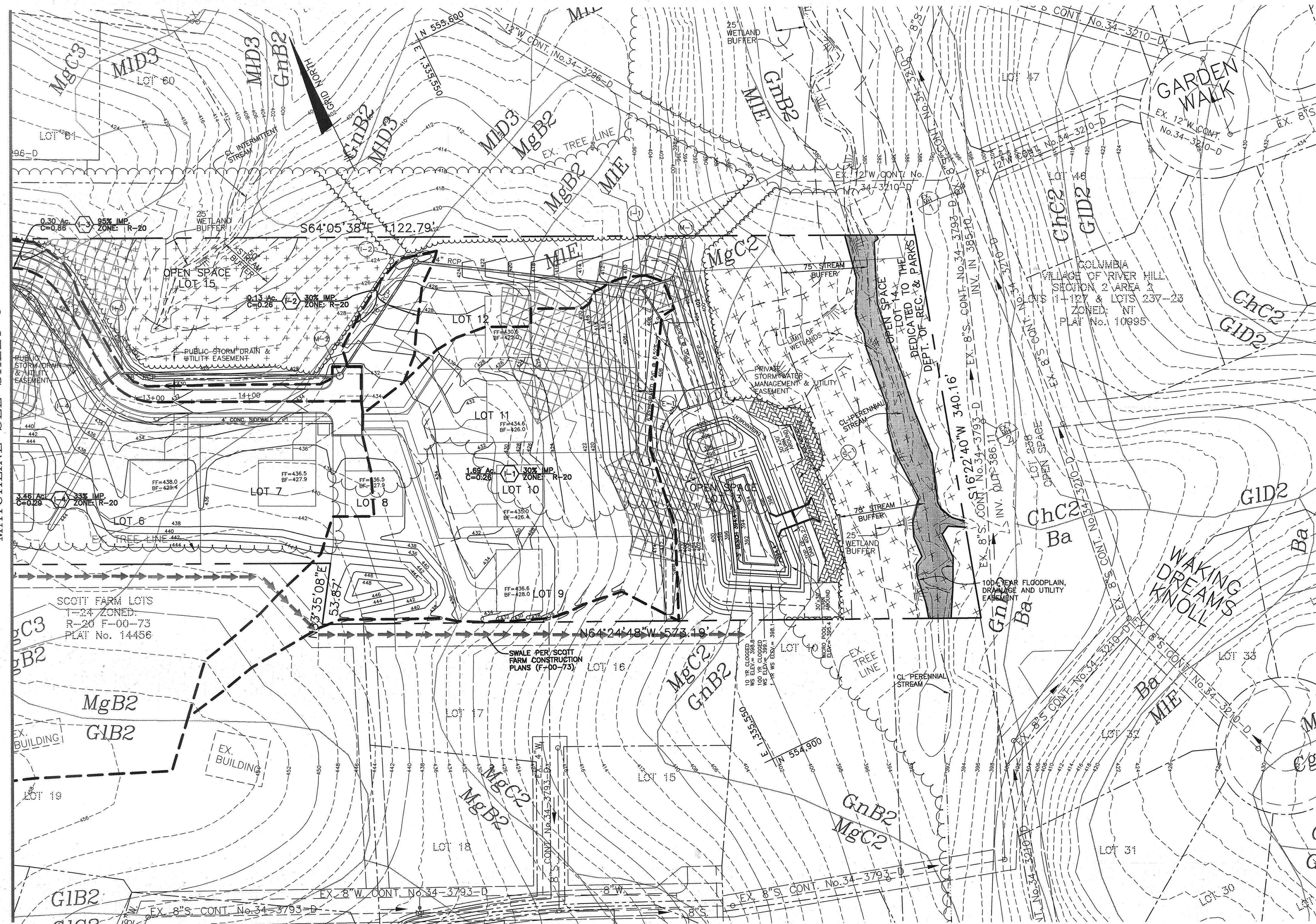
OWNER:
 KATHLEEN KRAWOLEC
 6465 S. TROTTER ROAD
 CLARKSVILLE, MD 21029

TITLE:
 STORM DRAIN
 DRAINAGE AREA MAP
 DATE: JULY, 2004
 APRIL, 2005
 PROJECT NO. 1367

Design: JMC Draft: JMC Check: DAM SCALE: AS SHOWN DRAWING 6 OF 18

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MATCHLINE SEE SHEET 6



PLAN
SCALE: 1" = 50'

STORM DRAIN DATA						
INLET NO.	AREA (AC)	% IMPERVIOUS	SOIL CLASS	ZONING	'C' FACTOR	
I-1	1.69	30%	B	R-20	0.26	
I-2	0.13	30%	B	R-20	0.26	
I-3	0.30	95%	B	R-20	0.86	
I-4	3.46	33%	B	R-20	0.29	
I-5	1.73	36%	B	R-20	0.32	
I-6	0.40	56%	B	R-20	0.40	
I-7	0.11	95%	B	R-20	0.86	
I-8	0.19	95%	B	R-20	0.86	
I-9	0.21	95%	B	R-20	0.86	

NO.	DATE	REVISION

BENCHMARK
ENGINEERS • LAND SURVEYORS • PLANNERS

ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE • SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
E-MAIL: benchmark@ccis.com

Donald Moore
129105

<p>DEVELOPER: CORNERSTONE HOLDINGS, LLC. 9695 NORFOLK AVENUE LAUREL, MD 20723 PHONE: 410-792-2565</p>	<p>PROJECT: TROTTERS RUN LOTS 1-12 AND OPEN SPACE LOTS 13-15</p>
<p>OWNER: KATHLEEN KRAWOLEC 6465 S. TROTTER ROAD CLARKSVILLE, MD 21029</p>	<p>LOCATION: TAX MAP No. 35 - GRID No. 20 PARCEL No. 342 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND</p>
<p>TITLE: STORM DRAIN DRAINAGE AREA MAP</p>	<p>DATE: JULY, 2004 APRIL, 2005</p>
<p>Design: JMC Draft: JMC Check: DAM</p>	<p>PROJECT NO. 1367 SCALE: AS SHOWN DRAWING 7 OF 18</p>

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE: 9/27/05
DATE: 9/27/05



BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Brian Boy
 DEVELOPER: CORNERSTONE HOLDINGS, LLC
 BRIAN BOY, MEMBER
 8/2/05
 DATE:

BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Donald Mason
 ENGINEER: DONALD A. MASON, MD P.E. No. 21443
 7/2/05
 DATE:

THIS DEVELOPMENT PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John A. Smith
 HOWARD SOIL CONSERVATION DISTRICT
 8/16/05
 DATE:

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Jin Myung Lee
 USDA-NATURAL RESOURCES CONSERVATION SERVICE
 8/16/05
 DATE:

FLOODPLAIN		TABULATION	
SECTION	Q (CFS)	100-YEAR	100-YEAR WSEL
10	227.87		413.39
20	227.87		415.90
40	227.87		422.57
50	227.87		424.45
52	227.87		430.67
56	183.82		434.29
60	183.82		437.42

MATCHLINE SEE SHEET 9

LEGEND

SOILS CLASSIFICATION		STEEP SLOPES	
SOILS DELINEATION		15% TO 24.9%	
EXISTING CONTOURS		OVERHEAD LINES	
LIMIT OF WETLANDS		SILT FENCE	
EXISTING TREELINE		SUPER SILT FENCE	
PROPOSED TREELINE		LIMIT OF DISTURBANCE	
EXISTING STRUCTURE		TREE PROTECTION FENCE	
EX. SPECIMEN TREE		EROSION CONTROL MATTING	
		EXISTING SEPTIC FIELD	

SOIL LEGEND

MAP SYMBOL	HYDROLOGIC GROUP	SOIL NAME AND MAPPING UNIT
B	D	BALE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
CgB2	B	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Cc2	B	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Ch	B	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES
ChB2	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
ChC2	B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Cd3	C	ELKOK SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
GcB2	B	GLENELG SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
GcC2	B	GLENELG SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Gc3	B	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
GnB2	B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
GnB2	C	GLENELG SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgB2	B	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MgC3	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
MA	B	MANOR LOAM, 0 TO 3 PERCENT SLOPES
MiB2	B	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MiC2	B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MiC3	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
ME	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
	B	MANOR LOAM, 25 TO 45 PERCENT SLOPES

SOIL SURVEY, HOWARD COUNTY, MARYLAND PAGE 23

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 6480 BALTIMORE NATIONAL PIKE & SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644
 E-MAIL: bel@benchmark-engineering.com

Donald Mason
 7/2/05
 DATE:

DEVELOPER: CORNERSTONE HOLDINGS, LLC.
 9695 NORFOLK AVENUE
 LAUREL, MD 20723
 PHONE: 410-792-2565

OWNER: KATHLEEN KRAWOLEC
 6465 S. TROTTER ROAD
 CLARKSVILLE, MD 21029

PROJECT: TROTTERS RUN
 RESUBDIVISION OF SCOTT PROPERTY, LOT 4,
 PLAT No. 3540; CREATING LOTS 1-12, AND
 OPEN SPACE LOTS 13-15

LOCATION: TAX MAP No. 35 - GRID No. 20
 PARCEL No. 342
 5th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: GRADING, SEDIMENT AND EROSION CONTROL PLAN AND SOILS MAP

DATE: JULY, 2004
 APRIL, 2005

PROJECT NO. 1367

SCALE: AS SHOWN DRAWING 8 OF 18

Design: JMC Draft: JMC Check: DAM

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 7/2/05

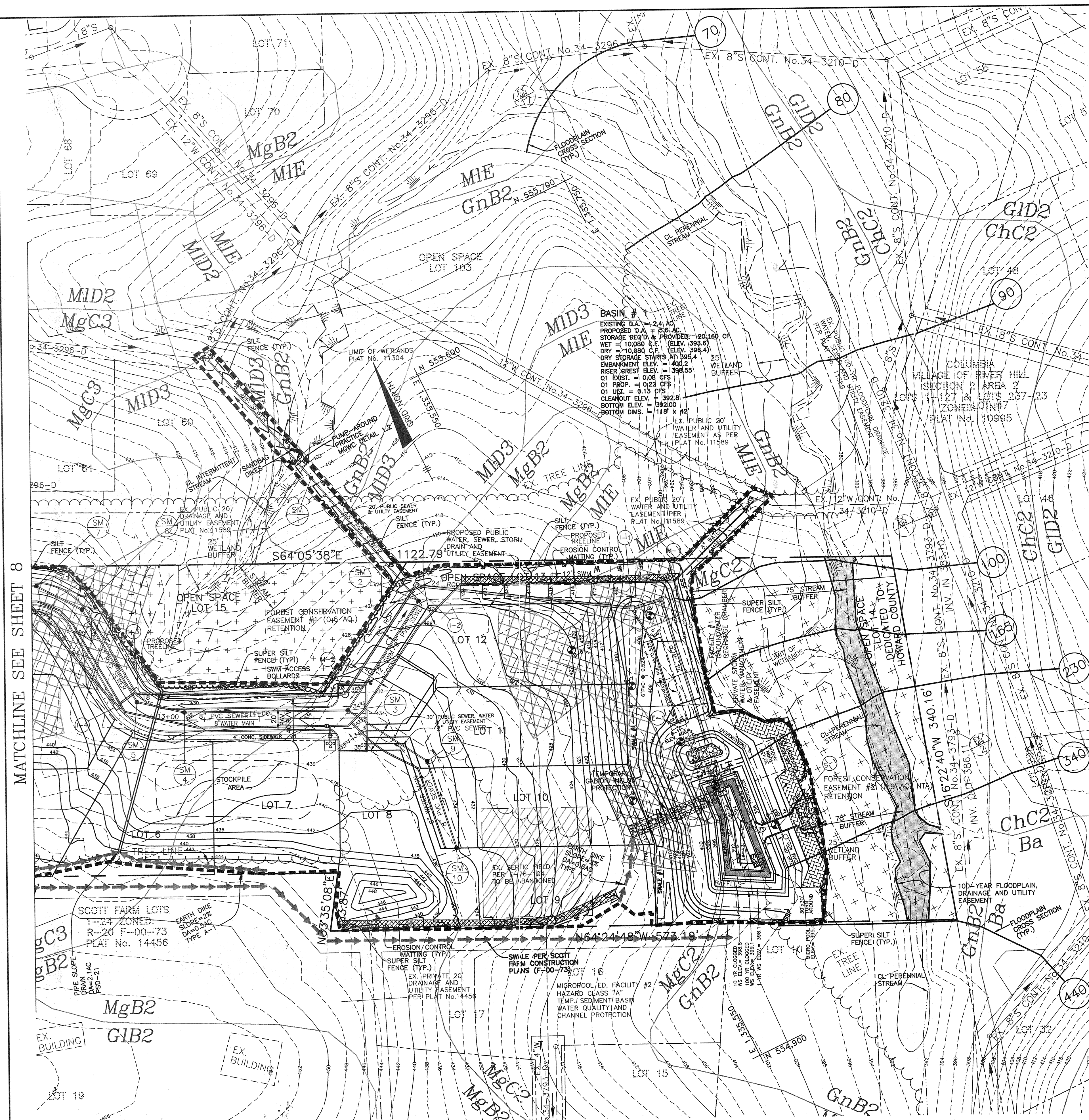
APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 7/2/05

APPROVED: DEVELOPMENT ENGINEERING DIVISION
[Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 9/2/05

PLAN
 SCALE: 1" = 50'

CONSTRUCTION INCLUDES DISTURBANCES TO CLASS I STREAMS. STREAM CONSTRUCTION IS PROHIBITED FROM MARCH 1ST THROUGH JUNE 15TH.

MATCHLINE SEE SHEET 8



APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 9/2/05

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9/2/05

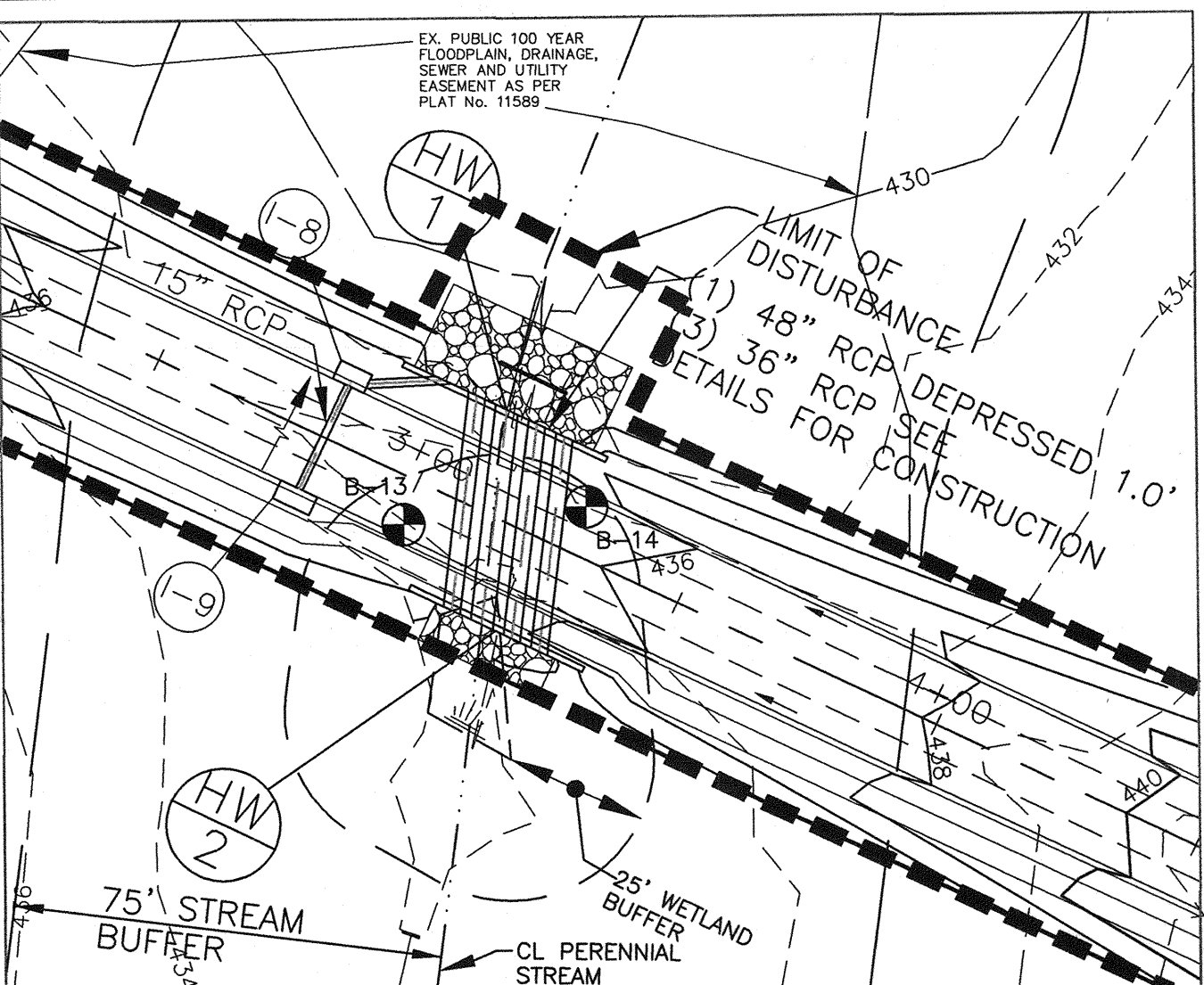
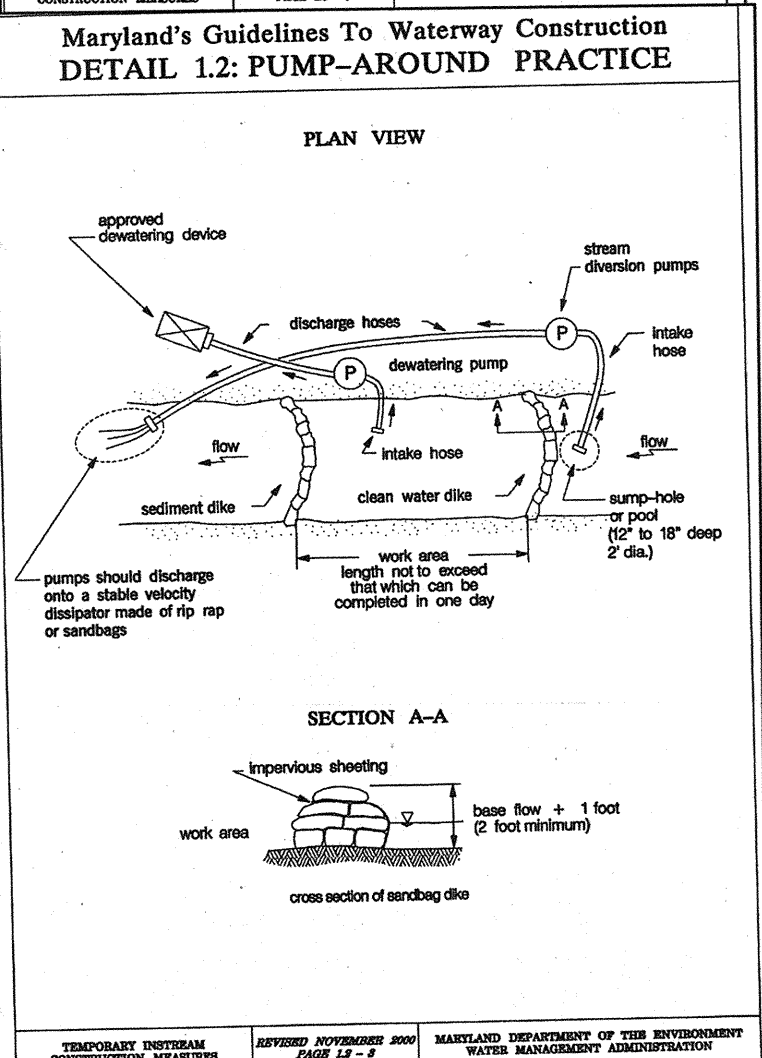
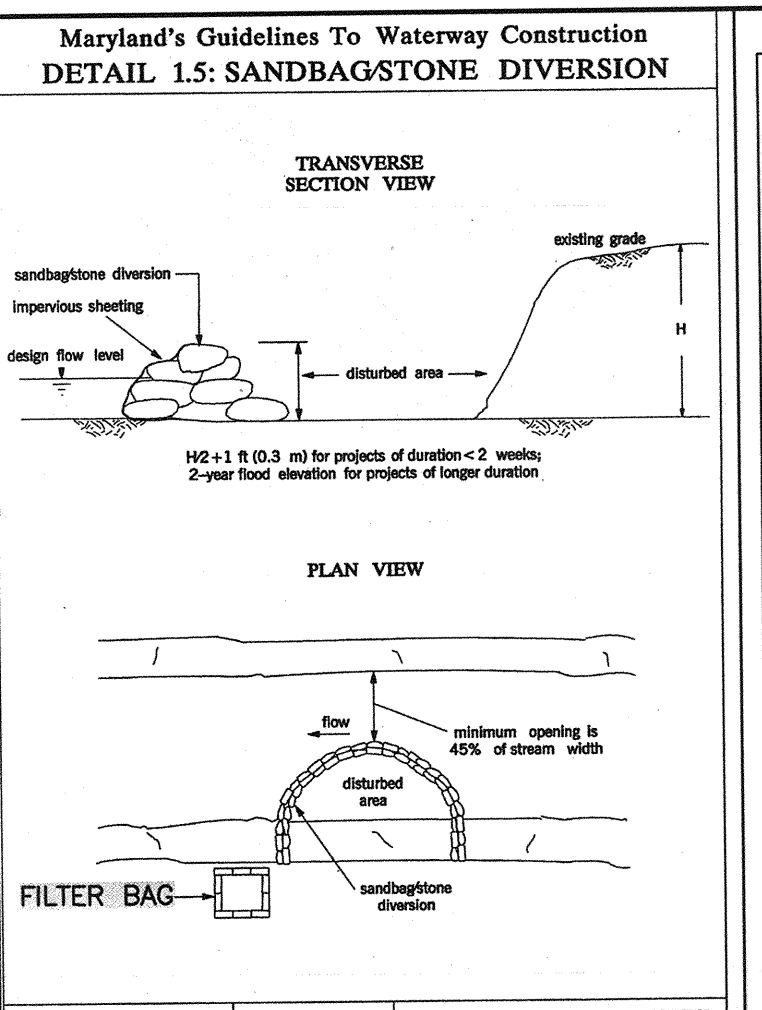
APPROVED: DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 9/2/05

PLAN
 SCALE: 1" = 50'

SEE SHEET 11 FOR STORMWATER ENLARGEMENT AND DETAILS

CONSTRUCTION INCLUDES DISTURBANCES TO CLASS I STREAMS. STREAM CONSTRUCTION IS PROHIBITED FROM MARCH 1ST THROUGH JUNE 15TH.

SECTION	Q (CFS)	PROP. WSEL
70	406.59	369.89
80	406.59	374.70
90	406.59	381.18
100	347.19	384.66
165	347.19	385.73
230	347.19	387.03
340	347.19	389.51
440	347.19	392.29



ENLARGEMENT 1" = 30'

LEGEND

GnB2	STEEP SLOPES 15% TO 24.9%	
	OVERHEAD LINES	
	SILT FENCE	
	SUPER SILT FENCE	
	LIMIT OF DISTURBANCE	
	TREE PROTECTION FENCE	
	EROSION CONTROL MATTING	
	EXISTING STRUCTURE	
	EX. SPECIMEN TREE	

SOIL LEGEND

MAP SYMBOL	HYDROLOGIC GROUP	SOIL NAME AND MAPPING UNIT
Bs	B	BALE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Ch2	B	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Cg2	B	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Ch2	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Ch2	B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Ed3	C	ELDAK SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
Gb2	B	GLENLEIG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Gc2	B	GLENLEIG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Gc2	B	GLENLEIG LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
Gn2	B	GLENLEIG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Mg2	B	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Mg2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Mg2	B	MANOR GRAVELLY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
Ma	B	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Md2	B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Md3	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
Me	B	MANOR LOAM, 25 TO 45 PERCENT SLOPES

SOIL SURVEY, HOWARD COUNTY, MARYLAND PAGE 23

MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

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 materials which are 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. Installations 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 diversions should be one-half the streambank height, measured from the channel bed, plus 1 foot (0.3 meters) for 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 scour 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.

MGWC 1.2: PUMP-AROUND PRACTICE

DESCRIPTION
 The work should consist of installing a temporary pump around and supporting measures to divert flow around in-stream construction sites.

IMPLEMENTATION SEQUENCE
 Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2):

- Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should be repaired at his/her own expense to the county's or utility company's satisfaction.
- The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
- The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should make out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also discuss the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.
- Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.
- Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.
- Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.
- Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike.
- Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction).
- All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross-sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans.
- After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.
- A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.
- If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.
- The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
- After construction, all disturbed areas should be graded and revegetated as per the planting plan.

BY THE DEVELOPER:
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
 Brian Boy
 DEVELOPER, CORNERSTONE HOLDINGS, LLC
 BRIAN BOY, MEMBER
 DATE: 8/2/05

BY THE ENGINEER:
 "I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
 Donald Maon
 ENGINEER, DONALD A. MASON, MD P.E. No. 21443
 DATE: 7/29/05

THIS DEVELOPMENT PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Howard Soil Conservation District
 DATE: 8/2/05

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 Jim Ryan
 USDA-NATURAL RESOURCES CONSERVATION SERVICE
 DATE: 8/2/05

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
 E-MAIL: benchmark@csis.com

DEVELOPER: CORNERSTONE HOLDINGS, LLC.
 9695 NORFOLK AVENUE
 LAUREL, MD 20723
 PHONE: 410-792-2565

PROJECT: TROTTERS RUN
 LOTS 1-12 AND OPEN SPACE LOTS 13-15

LOCATION: TAX MAP No. 35 - GRID No. 20
 PARCEL No. 342
 5 ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

OWNER: KATHLEEN KRAWOLEC
 6465 S. TROTTER ROAD
 CLARKSVILLE, MD 21029

TITLE: GRADING, SEDIMENT AND EROSION CONTROL PLAN AND SOILS MAP

DATE: JULY, 2004 PROJECT NO. 1367
 APRIL, 2005

Design: JMC Draft: JMC Check: DAM SCALE: AS SHOWN DRAWING 9 OF 18

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RESTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 7 CALENDAR DAYS FOR ALL PERMITS SEDIMENT CONTROL STRUCTURES, Dikes, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1 BY 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SO (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**
 9.0 ACRES TOTAL AREA OF SITE
 6.9 ACRES TOTAL AREA TO BE DISTURBED
 2.7 ACRES TOTAL AREA TO BE RESTORED OR PAVED
 AREA TO BE VEGETATIVELY STABILIZED
 TOTAL CU. YDS. 13889
 TOTAL CU. YDS. 12413
 100% SITE STOCKPILE
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMITS EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITH ONE WORKING DAY, WHICHEVER IS SHORTER.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY AN OFF-SITE FILL AREA WITH AN APPROVED SEDIMENT & EROSION CONTROL PLAN.

TEMPORARY SEEDBED PREPARATION

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

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

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

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

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

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDBED PREPARATION

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

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ON OF THE FOLLOWING SCHEDULES:

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) BEFORE SEEDING, 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING, HARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT TIME OF SEEDING, APPLY 2 TONS PER ACRE 10-10-10 UREA-FORM FERTILIZER (9 LBS/1000 SQ FT).
- ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING, HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (14 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.5 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OPTION (2) USE SO. (OPTION 3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

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

MAINTENANCE: INSPECT ALL SEEDBED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

ENGINEER'S CERTIFICATE

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

Donald Mason 7/29/05
 ENGINEER - DONALD A. MASON, P.E. # 21443 DATE

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL AND THAT THE RESPONSIBILITY FOR THE INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE REDUNDANT ON-SITE INSPECTION BY THE HOWARD COUNTY SEDIMENT CONTROL DISTRICT.

Brian Boy 8/2/05
 DEVELOPER DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Hogan 8/14/05
 ENGINEER - JIM HOGAN, P.E. # 21443 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

John S. ... 8/14/05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

... 9/2/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 9/2/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

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

Purpose:
 To provide a suitable 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. If, 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 representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand or other soils may be used if recommended by an 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 plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutcase, 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 area 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 specified in 20.0 Vegetative Stabilization - 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 less than 6.0, sufficient lime shall be provided 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 content greater than 500 parts per million shall not be used.
 - No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

DETAIL 20A - REMOVABLE PUMPING STATION

Construction Specifications

- The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent soil from the subsoil from entering the riser.
- After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
- The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" diameter. The perforations shall be 1/2" x 8" slots or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first then wrapped again with Geotextile Class C.
- The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

BAFFLE DESIGN

Basin D	A	W6	L6	Lb/W6
1	85	6.076 SF	71	84+42+37=163

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 12-5 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 - SEDIMENT BASIN BAFFLES

Construction Specifications

- Inflow protection shall be constructed of 9" x 3" x 9" galvanized iron forming a trapezoidal cross section 1' deep, with 2:1 side slopes, 3" bottom width.
- Class C shall be installed under all gabion baskets.
- gabion used to fill the gabion baskets shall be 4" x 7".

SOIL STABILIZATION MATTING

NOT TO SCALE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 22-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 4-1-6 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

Construction Specifications

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

DETAIL 33 - SUPER SILT FENCE

Construction Specifications

- Chain link fence with one layer of filter cloth over.
- NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER.

CONSTRUCTION SPECIFICATIONS

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

DETAIL 22 - SILT FENCE

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- Fence posts shall be a minimum of 3/4" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/2" diameter (minimum) round and shall be of sound quality wood. Steel posts will be standard 1" or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples of top and mid-section and shall meet the following requirements for Geotextile Class C:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ² /minute (max.)	Test: MSMT 322
Filtration Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation has reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 6 - GABION INFLOW PROTECTION

Construction Specifications

- Inflow protection shall be constructed of 9" x 3" x 9" galvanized iron forming a trapezoidal cross section 1' deep, with 2:1 side slopes, 3" bottom width.
- Class C shall be installed under all gabion baskets.
- gabion used to fill the gabion baskets shall be 4" x 7".

SOIL STABILIZATION MATTING

NOT TO SCALE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 22-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20A - REMOVABLE PUMPING STATION

Construction Specifications

- The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent soil from the subsoil from entering the riser.
- After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
- The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" diameter. The perforations shall be 1/2" x 8" slots or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first then wrapped again with Geotextile Class C.
- The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

BAFFLE DESIGN

Basin D	A	W6	L6	Lb/W6
1	85	6.076 SF	71	84+42+37=163

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 12-5 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 4-1-6 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 - SEDIMENT BASIN BAFFLES

Construction Specifications

- Inflow protection shall be constructed of 9" x 3" x 9" galvanized iron forming a trapezoidal cross section 1' deep, with 2:1 side slopes, 3" bottom width.
- Class C shall be installed under all gabion baskets.
- gabion used to fill the gabion baskets shall be 4" x 7".

SOIL STABILIZATION MATTING

NOT TO SCALE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 22-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

Construction Specifications

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

DETAIL 33 - SUPER SILT FENCE

CONSTRUCTION SPECIFICATIONS

- Chain link fence with one layer of filter cloth over.
- NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER.

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- Fence posts shall be a minimum of 3/4" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/2" diameter (minimum) round and shall be of sound quality wood. Steel posts will be standard 1" or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples of top and mid-section and shall meet the following requirements for Geotextile Class C:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ² /minute (max.)	Test: MSMT 322
Filtration Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation has reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- Fence posts shall be a minimum of 3/4" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/2" diameter (minimum) round and shall be of sound quality wood. Steel posts will be standard 1" or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples of top and mid-section and shall meet the following requirements for Geotextile Class C:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ² /minute (max.)	Test: MSMT 322
Filtration Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation has reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 - SUPER SILT FENCE

CONSTRUCTION SPECIFICATIONS

- Chain link fence with one layer of filter cloth over.
- NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER.

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- Fence posts shall be a minimum of 3/4" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/2" diameter (minimum) round and shall be of sound quality wood. Steel posts will be standard 1" or U section weighing not less than 1.00 pound per linear foot.
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Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ² /minute (max.)	Test: MSMT 322
Filtration Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation has reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- Fence posts shall be a minimum of 3/4" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/2" diameter (minimum) round and shall be of sound quality wood. Steel posts will be standard 1" or U section weighing not less than 1.00 pound per linear foot.
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Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ² /minute (max.)	Test: MSMT 322
Filtration Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation has reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20A - REMOVABLE PUMPING STATION

Construction Specifications

- The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent soil from the subsoil from entering the riser.
- After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
- The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" diameter. The perforations shall be 1/2" x 8" slots or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first then wrapped again with Geotextile Class C.
- The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

BAFFLE DESIGN

Basin D	A	W6	L6	Lb/W6
1	85	6.076 SF	71	84+42+37=163

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 12-5 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 4-1-6 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 - SEDIMENT BASIN BAFFLES

Construction Specifications

- Inflow protection shall be constructed of 9" x 3" x 9" galvanized iron forming a trapezoidal cross section 1' deep, with 2:1 side slopes, 3" bottom width.
- Class C shall be installed under all gabion baskets.
- gabion used to fill the gabion baskets shall be 4" x 7".

SOIL STABILIZATION MATTING

NOT TO SCALE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 22-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

Construction Specifications

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

DETAIL 33 - SUPER SILT FENCE

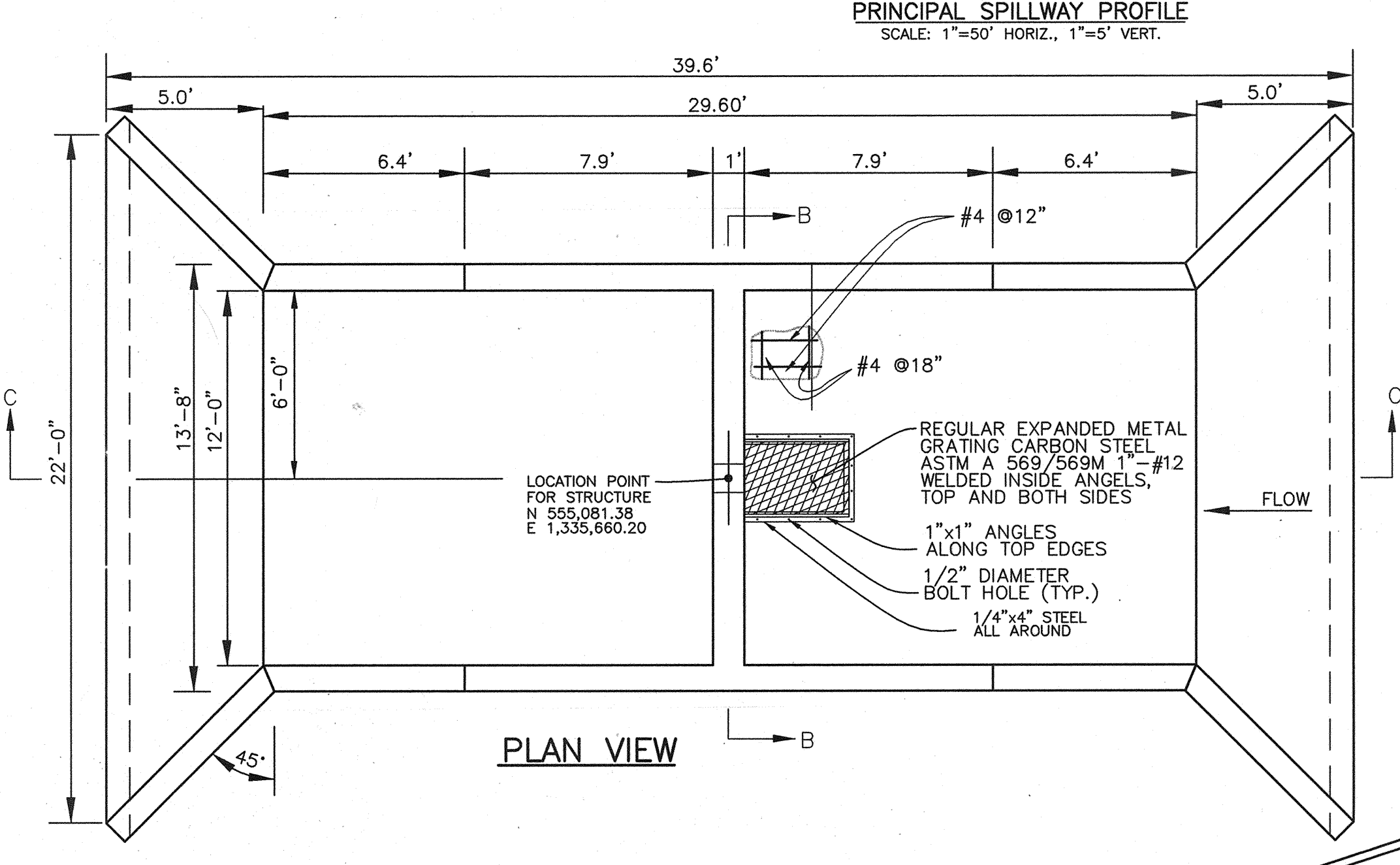
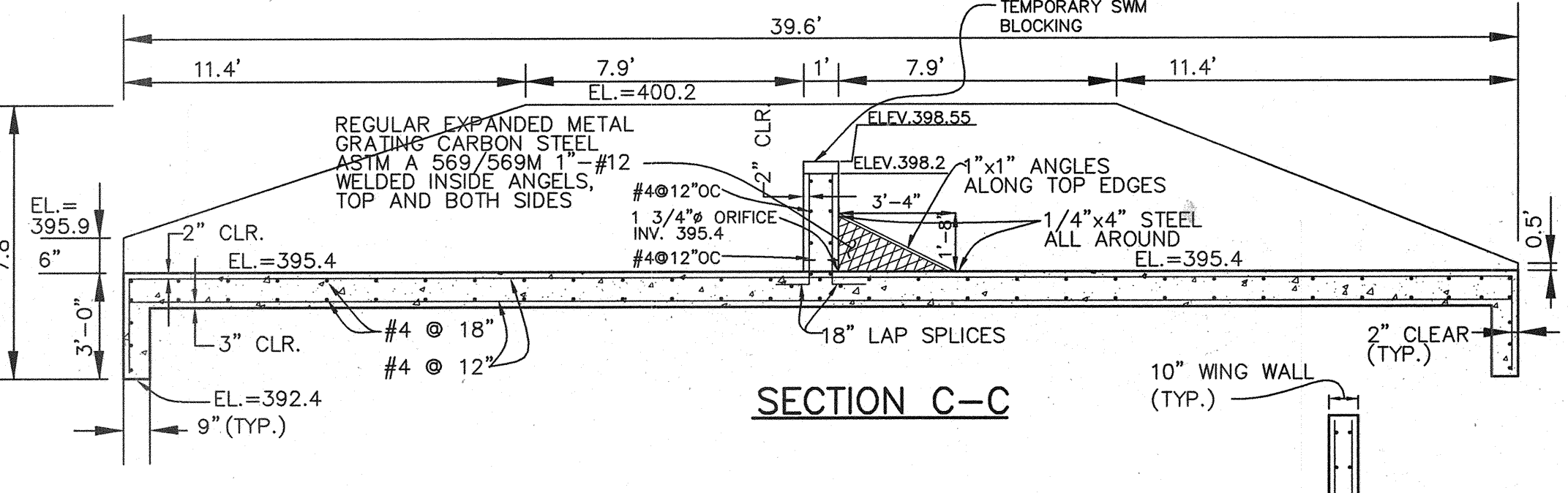
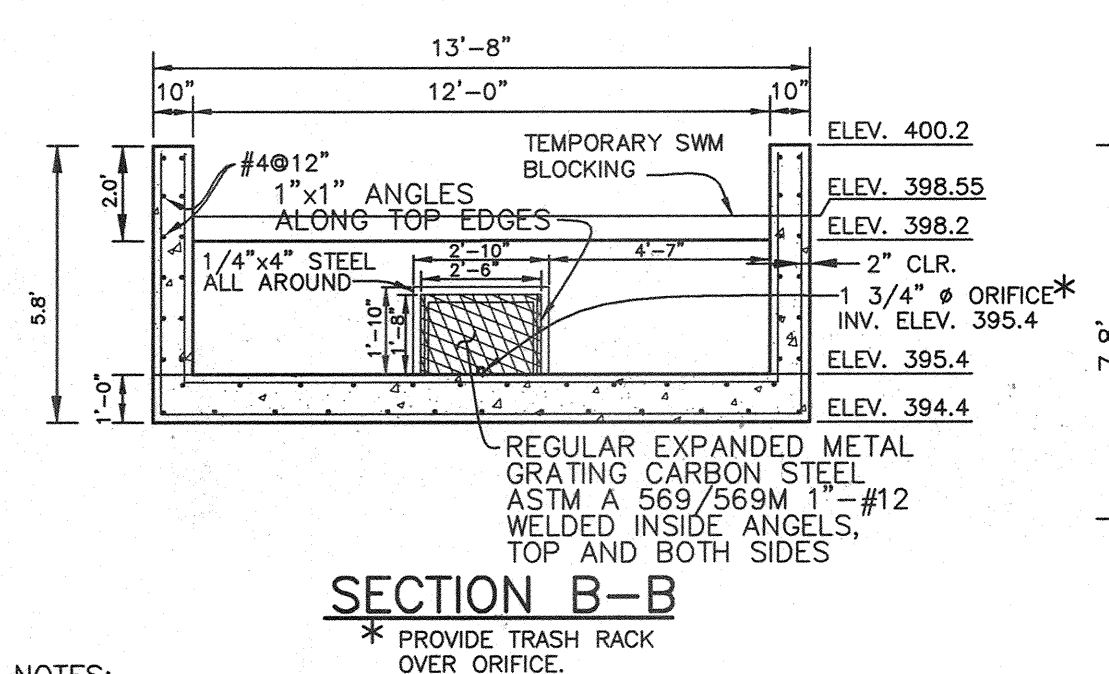
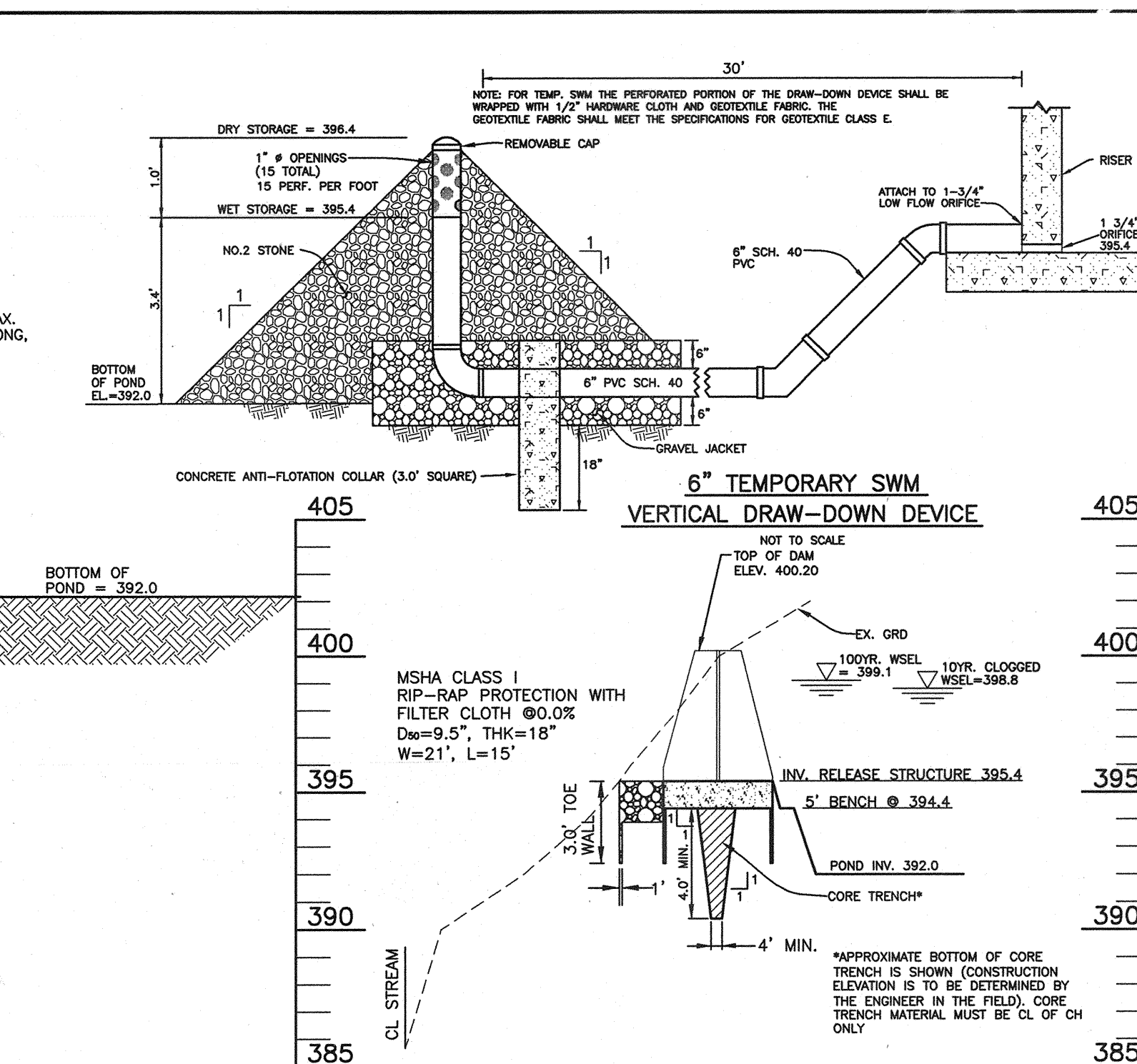
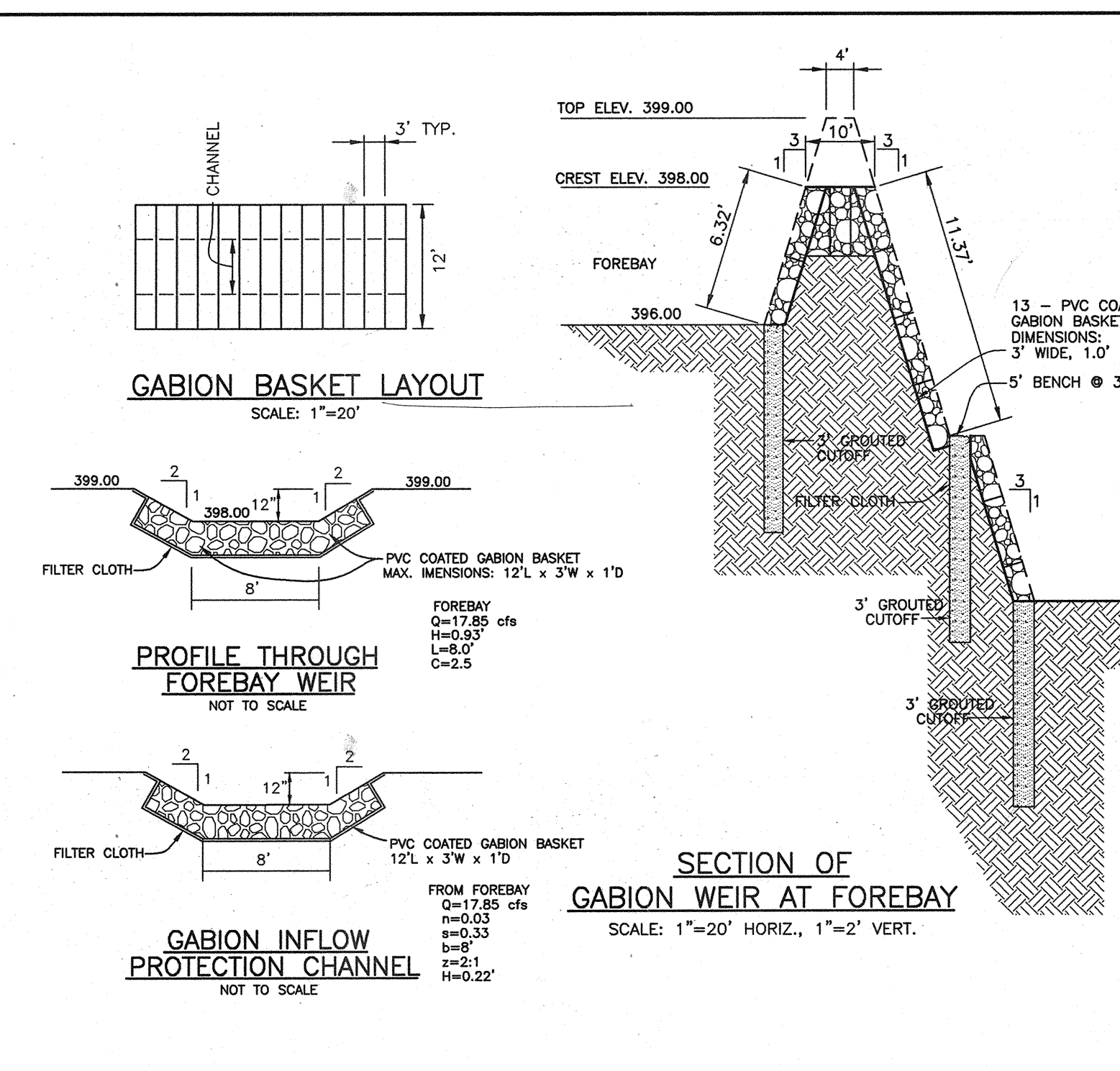
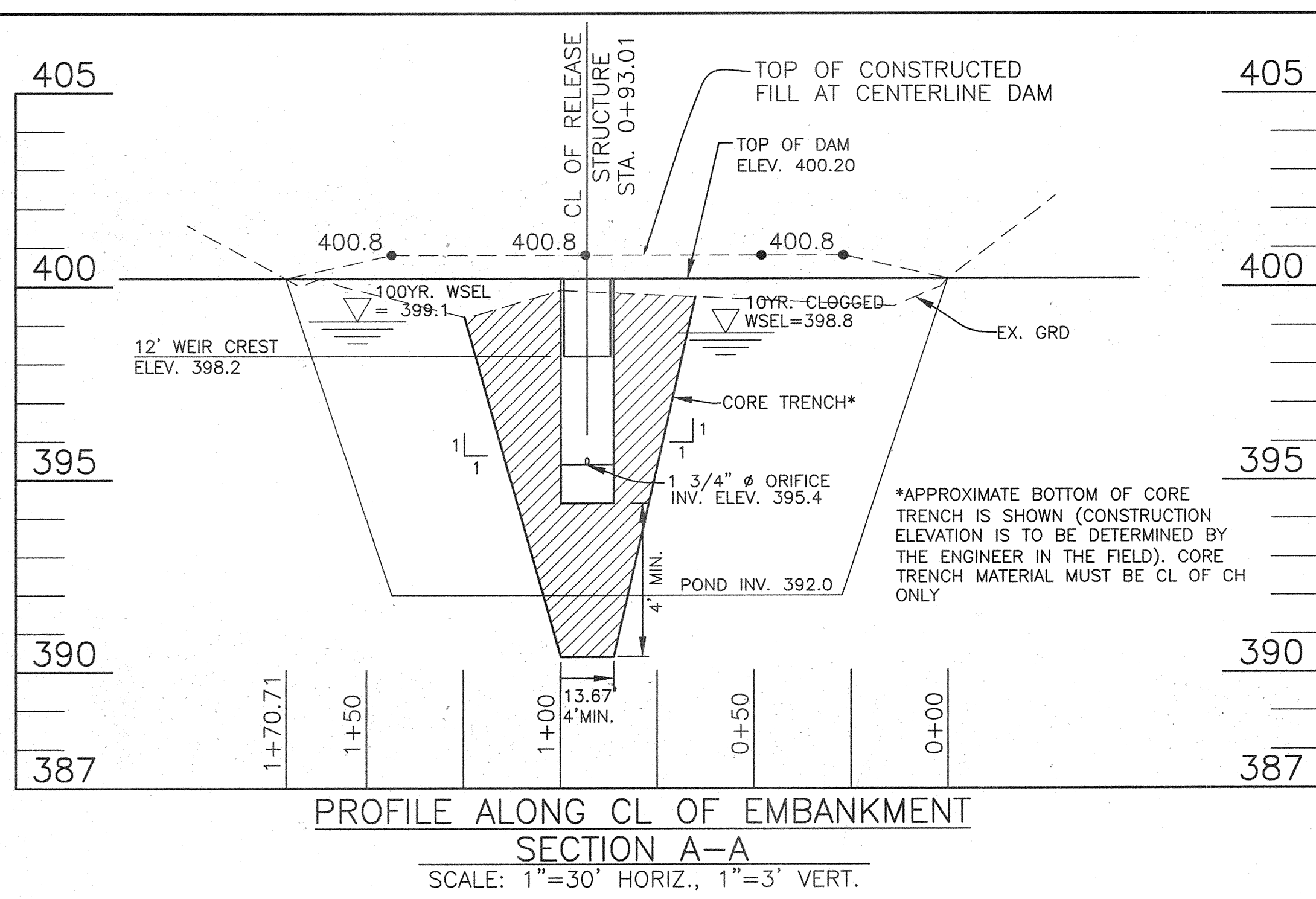
CONSTRUCTION SPECIFICATIONS

- Chain link fence with one layer of filter cloth over.
- NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER.

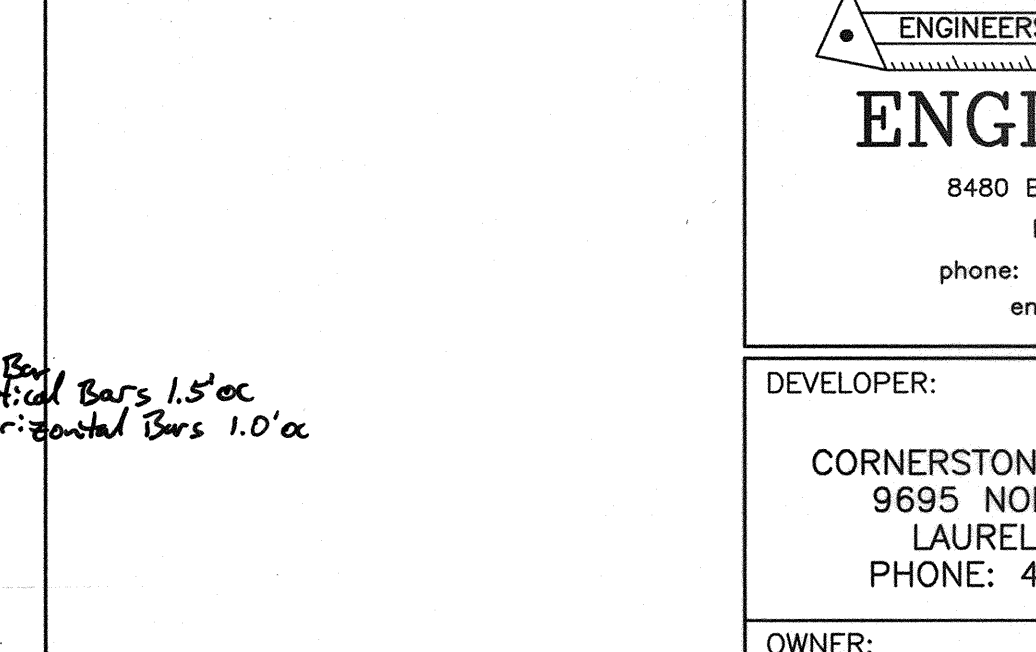
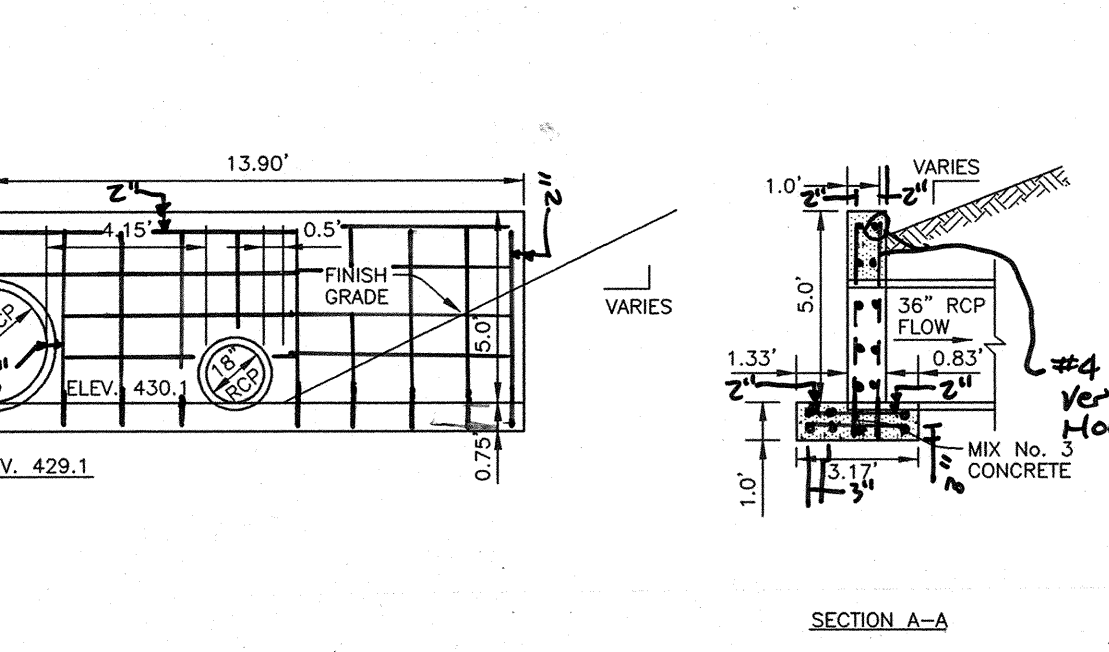
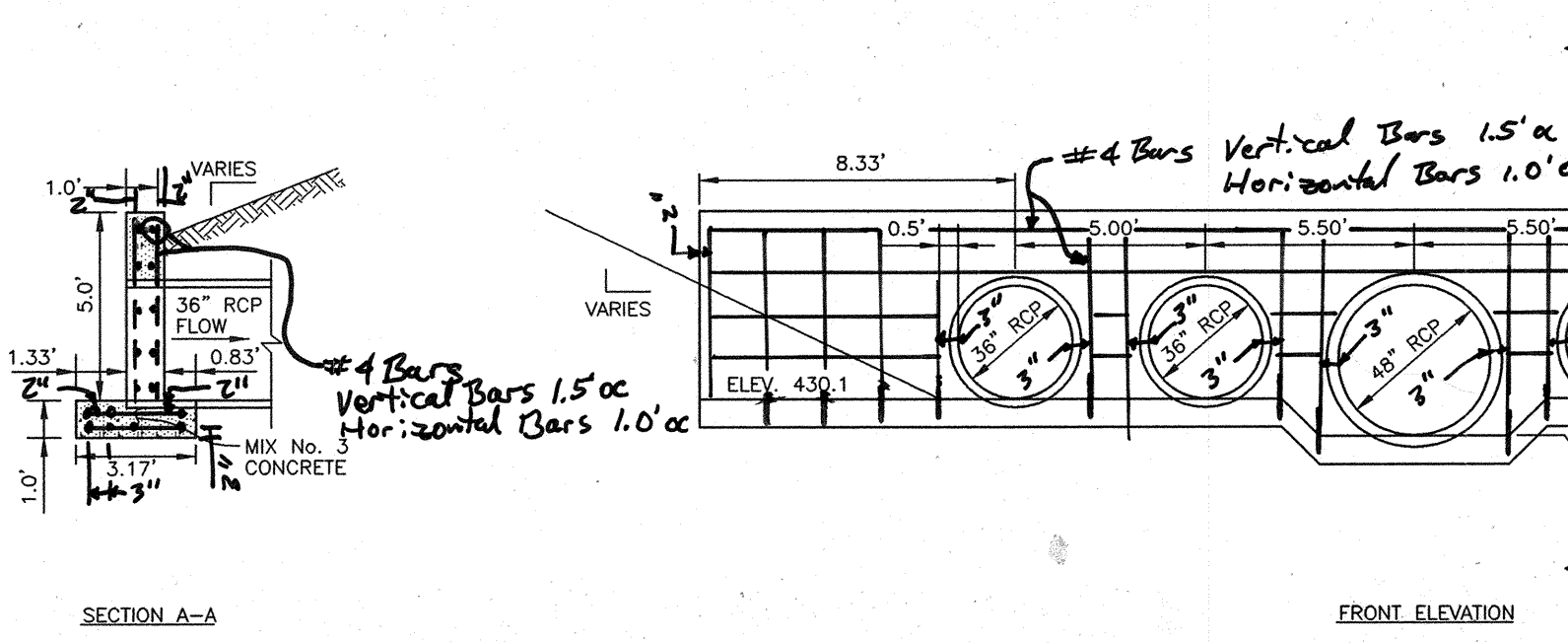
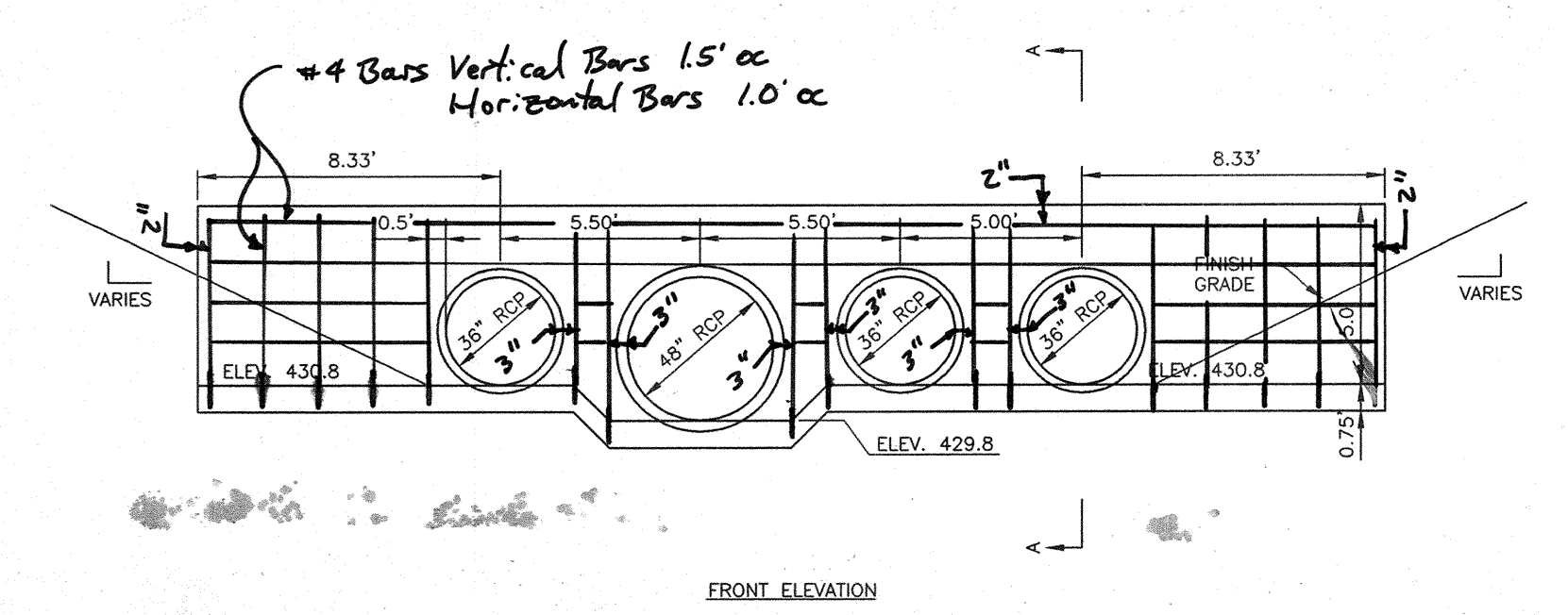
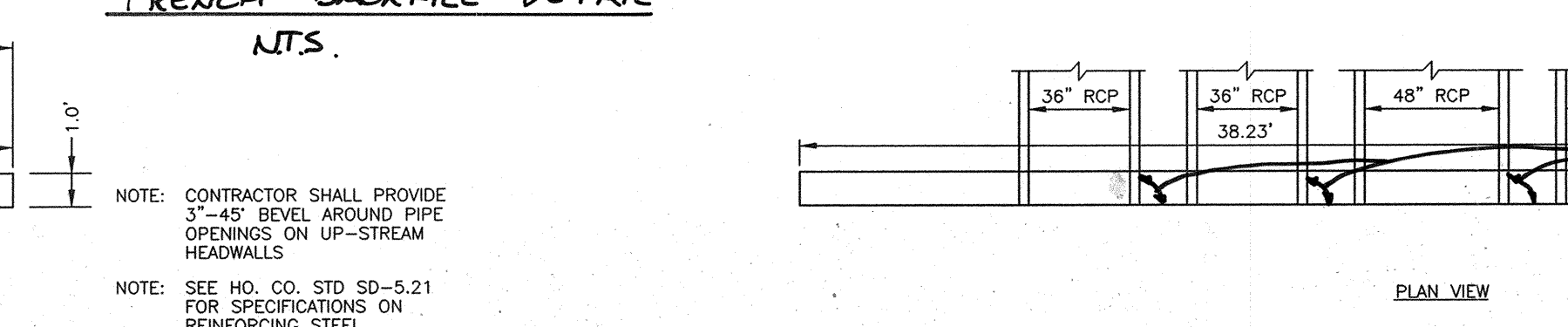
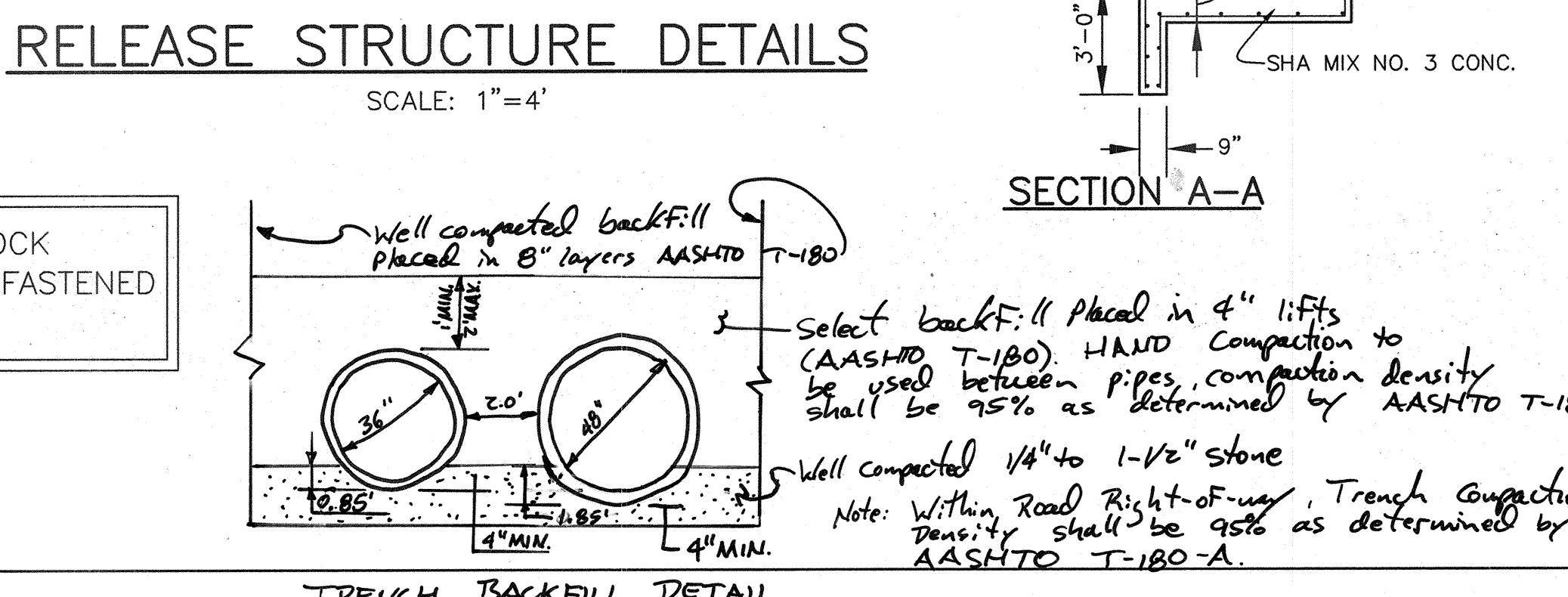
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

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- Geotextile shall be fastened securely to each fence post with wire ties or staples of top and mid-section and shall meet the following requirements for Geotextile Class C:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate		



- NOTES:
1. ALL EXPOSED EDGES TO HAVE 3/4"x3/4" CHAMFER OR AS DIRECTED.
2. CONCRETE SHALL BE SHA MIX NO. 3 (f_c = 3500 PSI @ 28 DAYS)
3. REINFORCING STEEL SHALL BE ASTM A-615 GRADE 60.



OPERATION, MAINTENANCE AND INSPECTION NOTE

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (NO-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

PE NO. 21443
DONALD A. MASON
DATE

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Brian Boy 8/2/05
DEVELOPER - CORNERSTONE HOLDINGS, LLC
BRIAN BOY, MEMBER

BY THE ENGINEER:
I/WE 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.

Donald Mason 7/29/05
ENGINEER - BENCHMARK ENGINEERING, INC.
DONALD A. MASON, P.E. # 21443

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 Man 8/10/05
NATURAL RESOURCES CONSERVATION SERVICE

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

Glenn Selby 8/10/05
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Mike Z...

CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Cindy Hamack 9/2/05
CHIEF, DIVISION OF LAND DEVELOPMENT

William... 9/2/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS • LAND SURVEYORS • PLANNERS

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PHONE: 410-465-6105 • FAX: 410-465-6644
EMAIL: bei@bei-civilengineering.com

Donald Mason 7/29/05
PROFESSIONAL ENGINEER

NO.	DATE	REVISION

DEVELOPER: CORNERSTONE HOLDINGS, LLC.
9695 NORFOLK AVENUE
LAUREL, MD 20723
PHONE: 410-792-2565

OWNER: KATHLEEN KRAWOLEC
6465 S. TROTTER ROAD
CLARKSVILLE, MD 21029

PROJECT: TROTTERS RUN
LOTS 1-12 AND OPEN SPACE LOTS 13-15

LOCATION: TAX MAP 35 - GRID 20
PARCEL 342
5th ELECTION DISTRICT,
HOWARD COUNTY, MARYLAND

TITLE: STORMWATER MANAGEMENT PLAN,
PROFILES, NOTES AND DETAILS

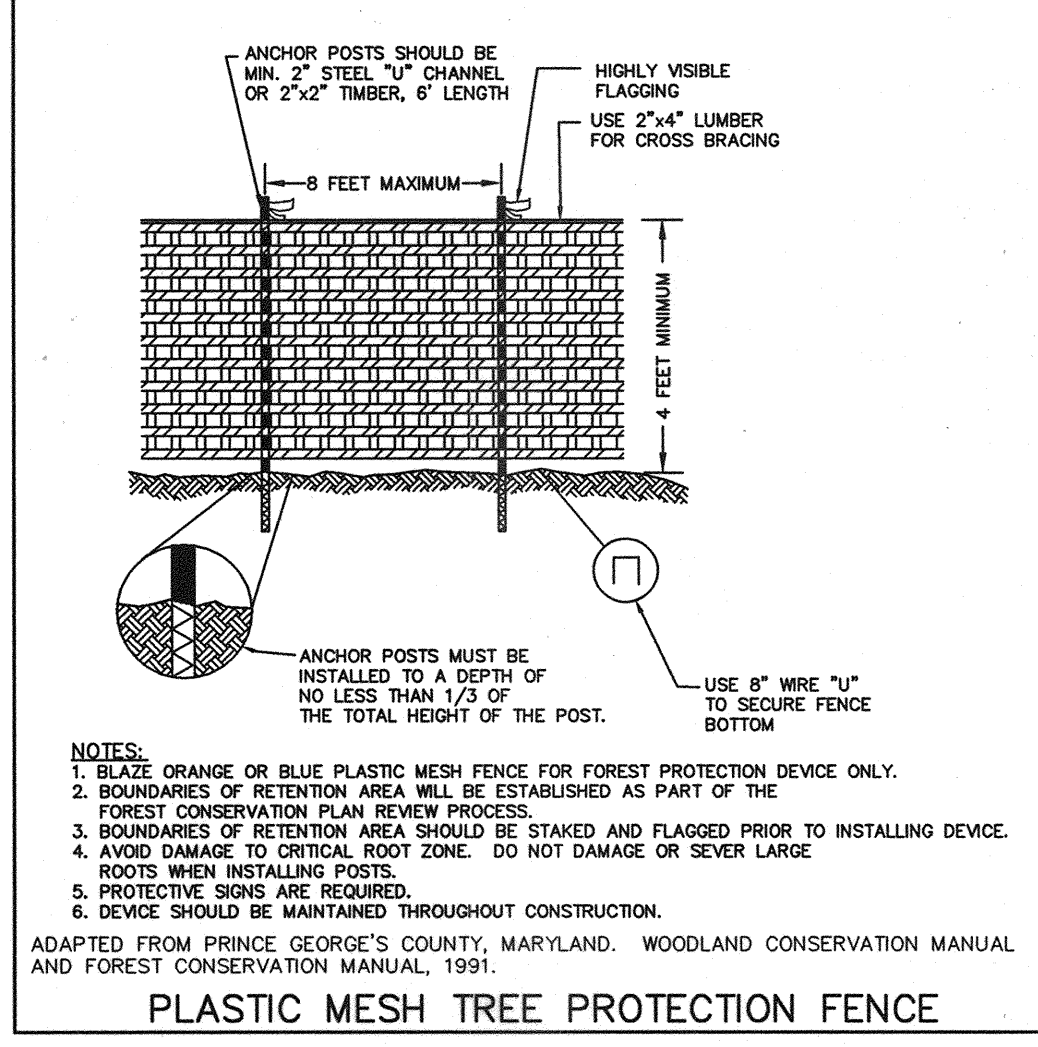
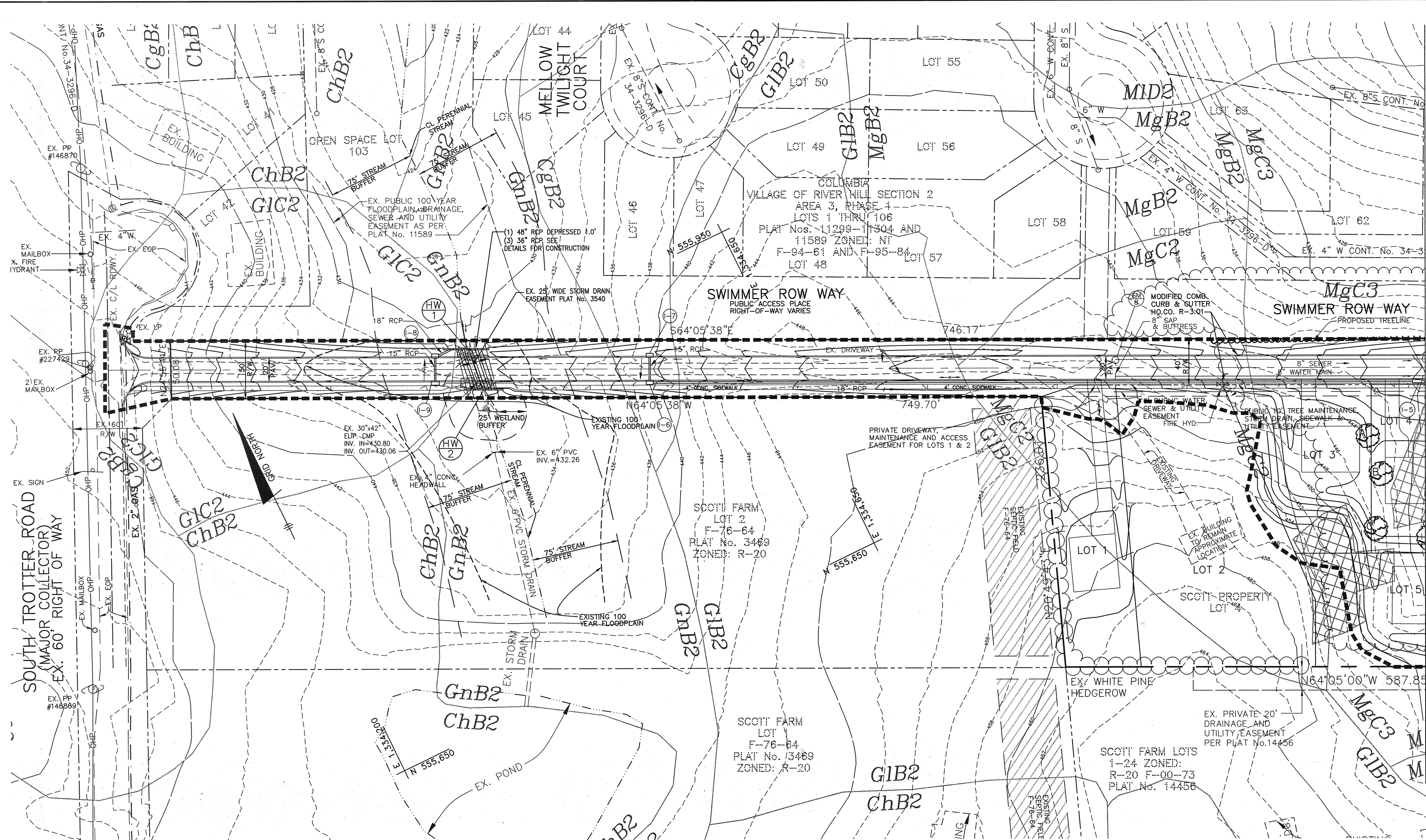
DATE: AUGUST, 2004
APRIL, 2005

PROJECT NO. 1367
DRAWING NO. 12 OF 18

Design: JMC Draft: MCR Check: DAM

SCALE: AS SHOWN

F-05-012



FOREST RETENTION AREA

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS **PROHIBITED**

MIN. 11" MIN. 15"

MATCHLINE SEE SHEET 14

NOTES:

1. ANCHOR POSTS SHOULD BE MIN. 2" STEEL "U" CHANNEL OR 2"x2" TIMBER, 6' LENGTH
2. HIGHLY VISIBLE FLAGGING
3. ANCHOR POSTS MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE TOTAL HEIGHT OF THE POST.
4. USE 2"x4" LUMBER FOR CROSS BRACING
5. USE 8" WIRE "U" TO SECURE FENCE BOTTOM

ADAPTED FROM PRINCE GEORGE'S COUNTY, MARYLAND. WOODLAND CONSERVATION MANUAL AND FOREST CONSERVATION MANUAL, 1991.

PLASTIC MESH TREE PROTECTION FENCE

- FP NOTES:**
1. ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
 2. FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
 3. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
 4. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
 5. NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
 6. TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. FENCING SHALL BE INSTALLED ALONG LIMITS OF DISTURBANCE OCCURRING WITHIN 50 FEET OF THE PROPOSED FCE LIMITS. PERMANENT SIGNAGE WILL BE POSTED AT 50-100 FOOT INTERVALS ALONG ALL FCE LIMITS.
 7. THE TOTAL FOREST CONSERVATION OBLIGATION HAS BEEN MET BY THE ON-SITE RETENTION OF 1.5 ACRES OF NET TRACT AREA FOREST AND AN OFF-SITE REFORESTATION OF 1.5 ACRES ON THE TALLEY PROPERTY, F-0 THE SURETY AMOUNT FOR THE RETENTION IS \$13,068.00, THE SURETY FOR THE OFF-SITE REFORESTATION IS \$32,670. THE TOTAL SURETY AMOUNT IS \$45,738.

THIS PLAN IS FOR FOREST CONSERVATION ONLY.

SEQUENCE OF CONSTRUCTION

1. SEDIMENT CONTROL AND TREE PROTECTION DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH GENERAL CONSTRUCTION PLAN FOR SITE. SITE SHALL BE GRADED IN ACCORDANCE WITH THE GENERAL CONSTRUCTION PLANS.
2. REMOVE HAZARDOUS TREES (DEAD, DISEASED OR THOSE SUBJECT TO WIND THROWS) ALONG THE EDGE OF THE FOREST RETENTION AREAS AS WELL AS WITHIN OTHER TREE SAVE AREAS.
3. SIGNAGE SHALL BE INSTALLED AS PER THE FOREST PROTECTION DEVICES SHOWN ON THE FOREST CONSERVATION PLAN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] DATE: 9/27/05

CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] DATE: 9/27/05

CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] DATE: 9/22/05

CHIEF, DEVELOPMENT ENGINEERING DIVISION

PLAN
SCALE: 1" = 50'

**APPENDIX E
FOREST CONSERVATION WORKSHEET**

I. BASIC SITE DATA		IV. REFORESTATION CALCULATIONS	
	ACRES (1/10 acre)		ACRES (1/10 acre)
GROSS SITE AREA	8.95	A. NET TRACT AREA	8.76
AREA WITHIN 100 YEAR FLOOD PLAIN	0.19	B. REFORESTATION THRESHOLD (20% x A)	1.75
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	0.00	C. AFFORESTATION MINIMUM (15% x A)	1.31
NET TRACT AREA	8.76	D. EXISTING FOREST ON NET TRACT AREA	5.6
LAND USE CATEGORY (R-RD, R-RMD, R-S, C/1/0, I)	R-S	E. FOREST AREAS TO BE CLEARED	4.1
		F. FOREST AREAS TO BE RETAINED	1.5
		G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD (D-F, if F equals or is greater than B, Alternate 1) (D-B, if F is less than B, Alternate 2)	3.85
		H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD (B-F, if applicable)	0.25
		I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD (F-B, Retention Credit, if applicable)	-
		J. FOREST RETENTION ABOVE THE THRESHOLD WITH NO MITIGATION	2.52
		K. CLEARING PERMITTED WITHOUT MITIGATION	3.08

BREAK EVEN CALCULATION
(5.6 - 1.76) * 0.2 + 1.75 = 2.52 AC

FOREST CONSERVATION TABULATION

DESIGNATION	TYPE	ACREAGE
1	RETENTION	0.6
2	RETENTION	0.9
TOTAL	ALL RETENTION	1.5

SOIL LEGEND

MAP SYMBOL	HYDROLOGIC GROUP	SOIL NAME AND MAPPING UNIT
B0	D	BALE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
C02	B	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
C02C	B	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
C0A	B	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES
C02	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
C02C	B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
E03	C	ELKON SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
G02	B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
G02C	B	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
G02	B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
G02C	B	GLENELG SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
M02	B	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
M02C	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
M03	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
MA	B	MANOR LOAM, 0 TO 3 PERCENT SLOPES
M02	B	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
M02C	B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
M03	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
M03C	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
ME	B	MANOR LOAM, 25 TO 45 PERCENT SLOPES

SOIL SURVEY, HOWARD COUNTY, MARYLAND PAGE 23

BENCHMARK ENGINEERING, INC.

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ELICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
E-MAIL: benchmark@cois.com

[Signature]
9/29/05

NO.	DATE	REVISION

DEVELOPER: CORNERSTONE HOLDINGS, LLC.
9695 NORFOLK AVENUE
LAUREL, MD 20723
PHONE: 410-792-2565

OWNER: KATHLEEN KRAWOLEC
6465 S. TROTTER ROAD
CLARKSVILLE, MD 21029

PROJECT: TROTTERS RUN
LOTS 1-12 AND OPEN SPACE LOTS 13-15

LOCATION: TAX MAP No. 35 - GRID No. 20
PARCEL No. 342
5th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

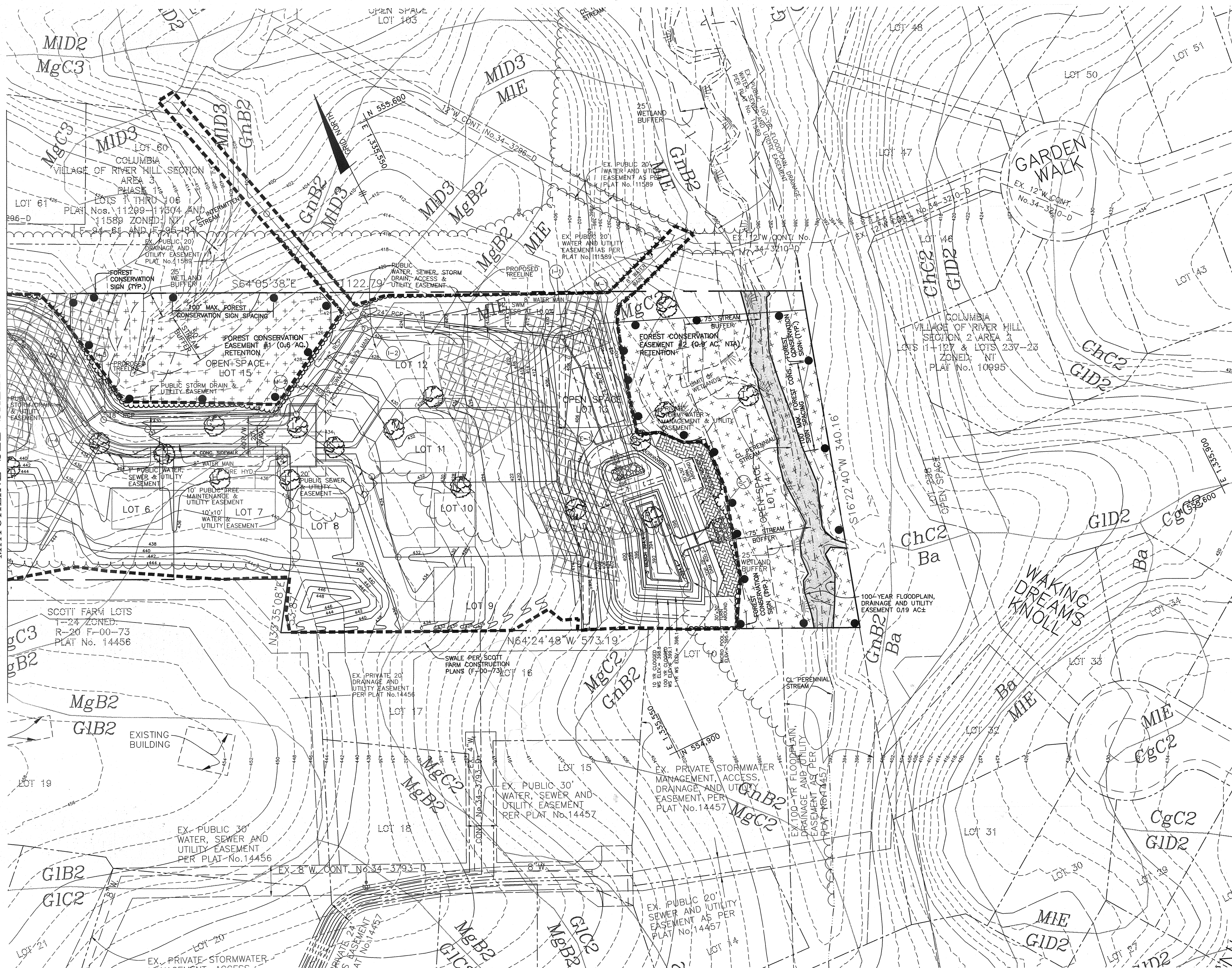
TITLE: FOREST CONSERVATION PLAN

DATE: JULY, 2004
APRIL, 2005

DRAWING NO. 1367

Design: JMC Draft: JMC Check: DAM SCALE: AS SHOWN DRAWING 13 OF 18

MATCHLINE SEE SHEET 13



THIS PLAN IS FOR FOREST CONSERVATION ONLY.

FOREST PROTECTION LEGEND

- PERMANENT SIGNAGE
- X-X- TEMPORARY FENCING

SPECIMEN TREE SCHEDULE

DESIGNATION	DESCRIPTION	CONDITION	FATE
A	36" BLACK OAK	GOOD	REMOVE
B	30" RED MAPLE	GOOD	REMOVE
C	38" BLACK OAK	GOOD	REMOVE
D	33" POPLAR	GOOD	REMOVE
E	48" BLACK OAK	GOOD	REMOVE
F	31" BLACK OAK	GOOD	REMOVE
G	34" POPLAR	GOOD	REMOVE
H	32" POPLAR	GOOD	REMOVE
I	33" POPLAR	GOOD	REMOVE
J	31" POPLAR	GOOD	REMOVE
K	33" POPLAR	GOOD	REMOVE
L	62" POPLAR	GOOD	REMOVE
M	30" BLACK OAK	GOOD	REMOVE
N	34" POPLAR	GOOD	REMOVE
O	48" POPLAR	GOOD	REMOVE
P	42" POPLAR	GOOD	REMOVE
Q	46" POPLAR	GOOD	REMOVE
R	38" POPLAR	GOOD	REMAIN
S	36" POPLAR	GOOD	REMAIN
T	48" POPLAR	GOOD	REMAIN

NO.	DATE	REVISION

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PHONE: 410-465-6105 FAX: 410-465-6644
E-MAIL: BE@BEI-CIVILENGINEERING.COM

<p>DEVELOPER: CORNERSTONE HOLDINGS, LLC. 9695 NORFOLK AVENUE LAUREL, MD 20723 PHONE: 410-792-2565</p>	<p>PROJECT: TROTTERS RUN LOTS 1-12 AND OPEN SPACE LOTS 13-15</p>
<p>OWNER: KATHLEEN KRAWOLEC 6465 S. TROTTER ROAD CLARKSVILLE, MD 21029</p>	<p>LOCATION: TAX MAP No. 35 - GRID No. 20 PARCEL No. 342 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND</p>
<p>DATE: JULY, 2004 APRIL, 2005</p>	<p>TITLE: FOREST CONSERVATION PLAN</p>
<p>Design: JMC Draft: JMC Check: DAM</p>	<p>PROJECT NO. 1367 SCALE: AS SHOWN DRAWING 14 OF 18</p>

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature]
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

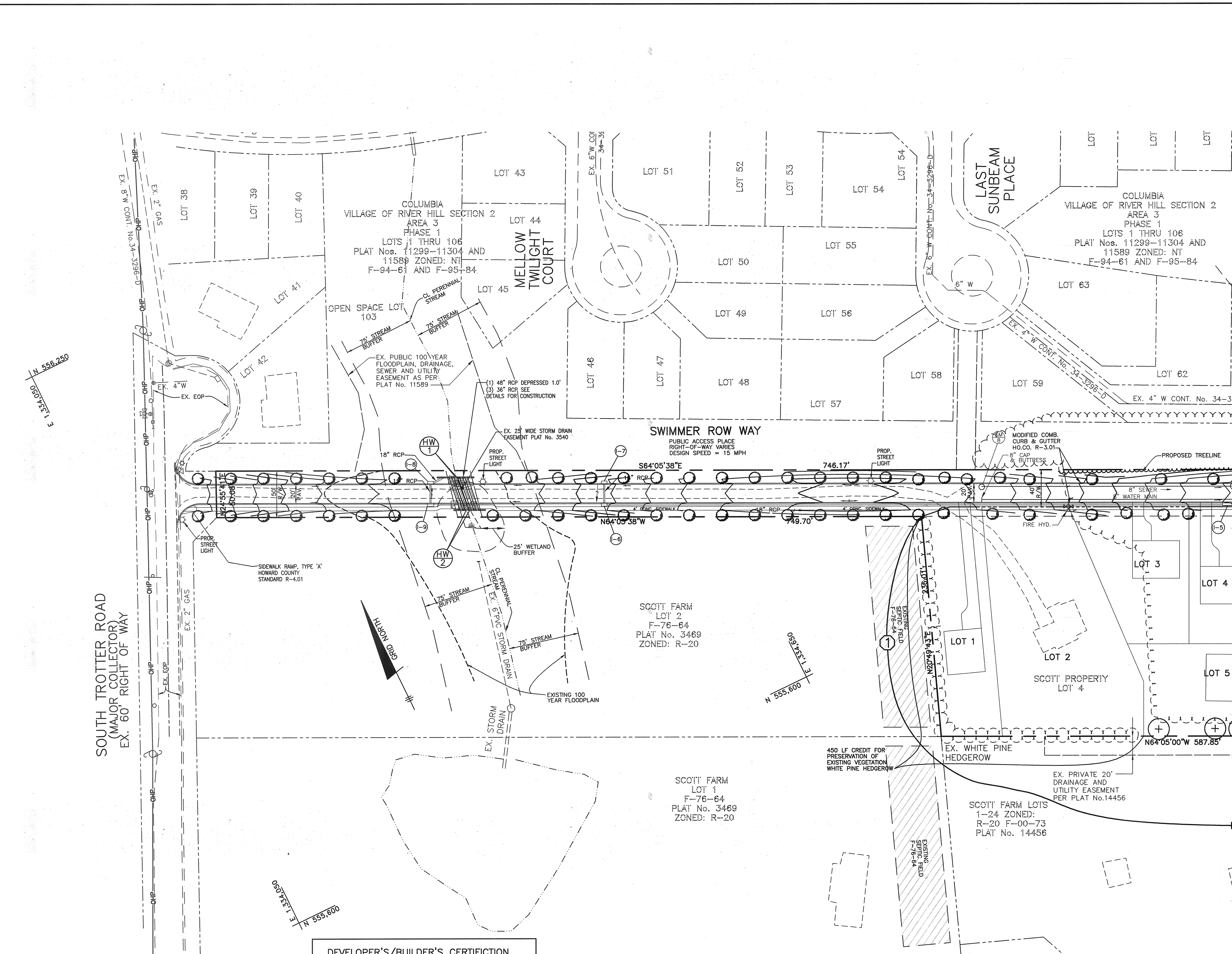
[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE: 7/27/05

DATE: 9/22/05

PLAN
SCALE: 1" = 50'



SCHEDULE D SWM AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	625'
BUFFER TYPE	② TYPE B
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES ① 36%
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
LINEAR FEET OF REQUIRED PLANTING	400'
NUMBER OF TREES REQUIRED	8
SHADE TREES	10
EVERGREEN TREES	8
NUMBER OF TREES PROVIDED	8
SHADE TREES	10
EVERGREEN TREES	10

SCHEDULE A PERIMETER LANDSCAPE EDGE	
CATEGORY	ADJACENT TO PERIMETER PROP.
LANDSCAPE TYPE	① TYPE A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	1,699 L.F.
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES, 710 L.F. ①
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO
NUMBER OF PLANTS REQUIRED	16
SHADE TREES	-
EVERGREEN TREES	-
SHRUBS	-
NUMBER OF PLANTS PROVIDED	16
SHADE TREES	-
EVERGREEN TREES	-
OTHER TREES (2:1 SUBSTITUTE)	-
SHRUBS (10:1 SUBSTITUTE)	-

① PRESERVATION OF EXISTING HEDGEROW, AND/OR PRESERVATION OF EXISTING VEGETATION.

STREET TREE CALCULATIONS
 STREET TREES REQUIRED FOR 2,974 L.F. OF RIGHT-OF-WAY WITH 293 L.F. OF CREDIT FOR PRESERVATION OF EXISTING VEGETATION
 2,974 L.F. - 293 L.F. = 67 STREET TREES REQUIRED.

MATCHLINE SEE SHEET 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 1/22/05

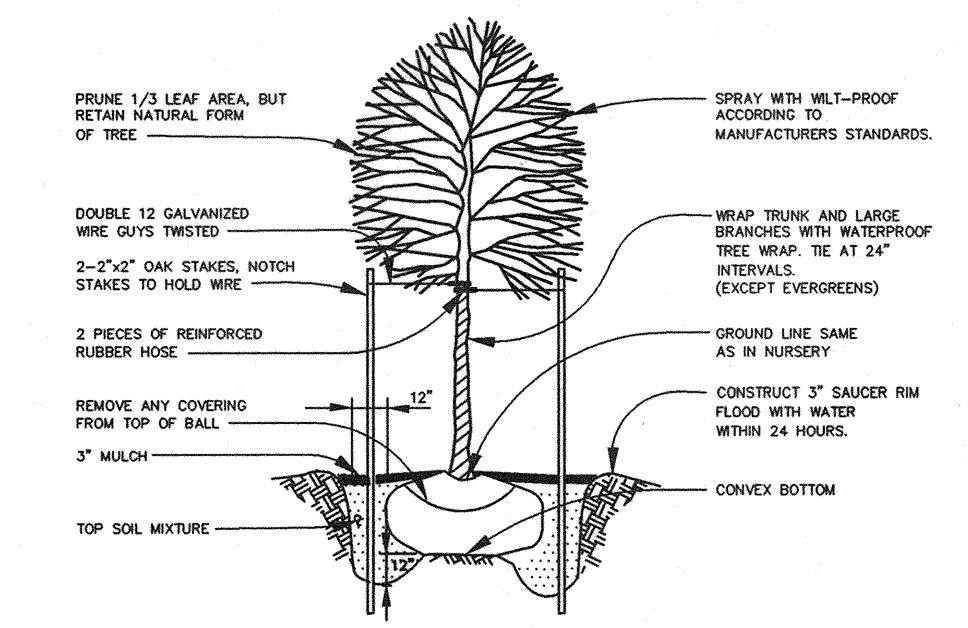
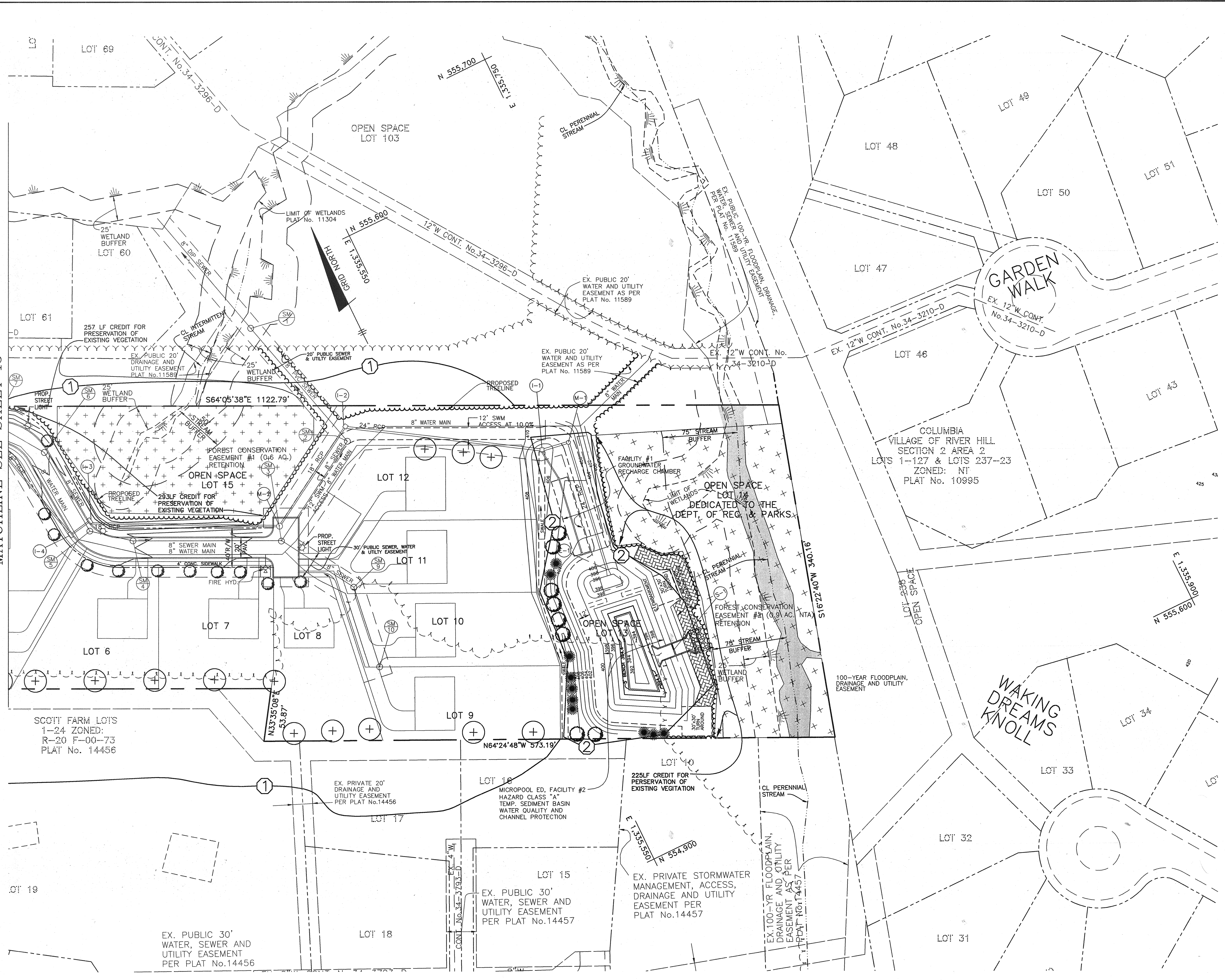
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9/22/05

DEVELOPER'S/BUILDER'S CERTIFICATION
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME: Brian Boy DATE: 8/12/05
 BRIAN BOY, MEMBER CORNERSTONE HOLDINGS, LLC

PLAN
 SCALE: 1" = 50'

NO.		DATE		REVISION	
<p align="center">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 E-MAIL: benchmark@coia.com</p>					
DEVELOPER: CORNERSTONE HOLDINGS, LLC. 9695 NORFOLK AVENUE LAUREL, MD 20723 PHONE: 410-792-2565			PROJECT: TROTTERS RUN LOTS 1-12 AND OPEN SPACE LOTS 13-15		
OWNER: KATHLEEN KRAWOLEC 6465 S. TROTTER ROAD CLARKSVILLE, MD 21029			LOCATION: TAX MAP No. 35 - GRID No. 20 PARCEL No. 342 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
TITLE: LANDSCAPE PLAN					
DATE: JULY, 2004		PROJECT NO. 1367			
APRIL, 2005		DRAWING 15 OF 18			
Design: JMC	Draft: JMC	Check: DAM	SCALE: AS SHOWN		



- NOTE:**
- TREES SHOULD BE PLANTED A MINIMUM OF 6 FEET FROM THE EDGE OF PAVING AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN.
 - TREES MUST BE PLANTED A MINIMUM OF 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET FROM A DRIVEWAY.
 - SEE TREE PLANTING DETAIL - THIS SHEET.
 - THE DEVELOPER SHALL BE RESPONSIBLE FOR STREET TREES, STORMWATER MANAGEMENT FACILITY PERIMETER PLANTING AND PRESERVATION OF THE PERIMETER VEGETATION AS SHOWN ON THESE PLANS.
 - ALL LANDSCAPING REQUIREMENTS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL AND SECTION 16.124(b)(3)(i) OF THE SUBDIVISION REGULATIONS. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$8,700.00.

PERIMETER AND SWM PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
⊙	8	ACER RUBRUM 'OCTOBER GLORY' (October Glory Red Maple)	2 1/2" MIN. CAL. B&B FULL HEAD
⊙	10	PINUS STROBUS (Eastern White Pine)	5'-6" ht. UNSHARPED
⊕	16	PLATANUS X ACERIFOLIA (Bloodgood London Pine)	2 1/2"-3" CAL

MATCHLINE SEE SHEET 15

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 9/2/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9/2/05

CHIEF, DEVELOPMENT ENGINEERING DIVISION

DEVELOPER'S/BUILDER'S CERTIFICATION

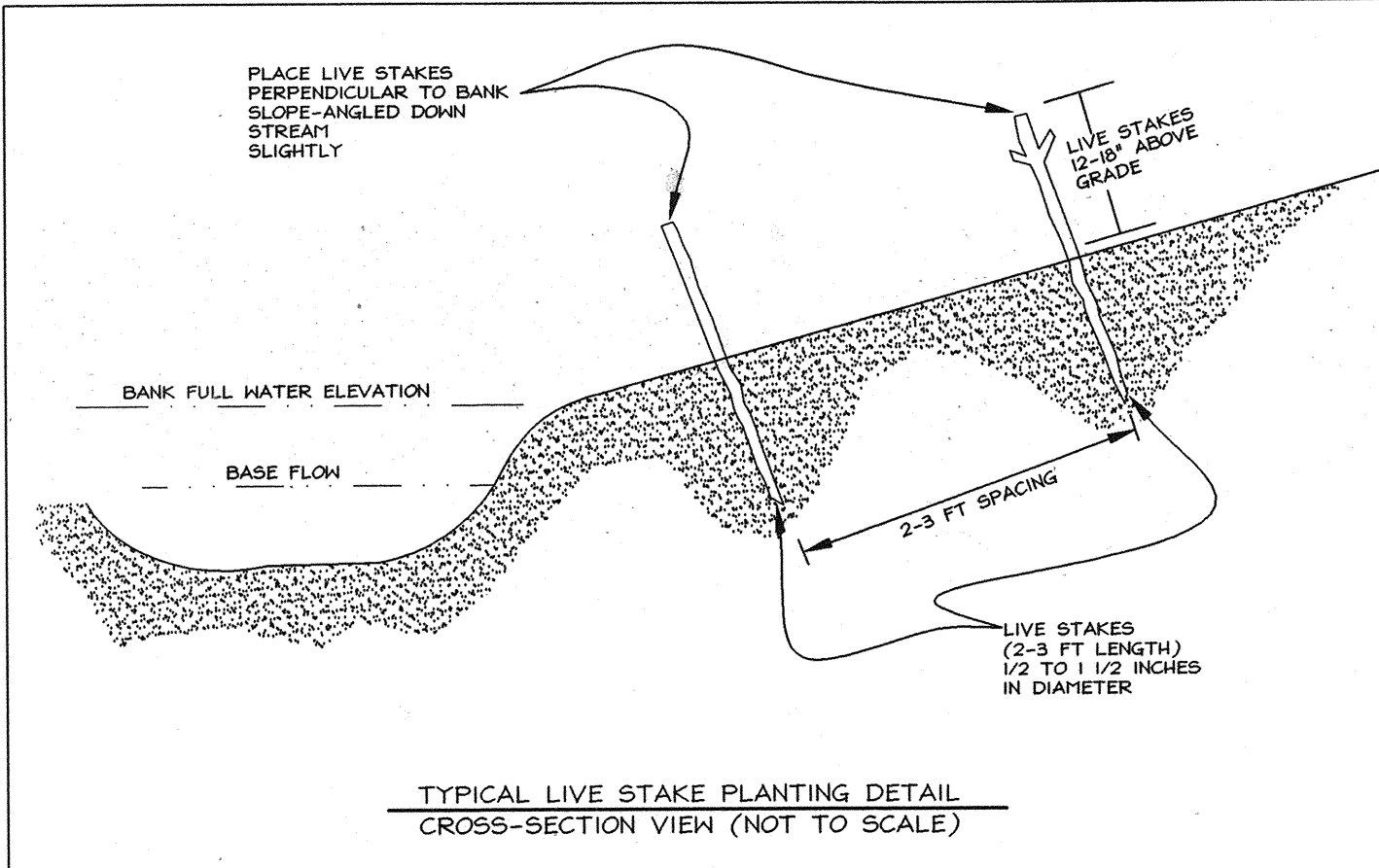
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME: Brian Boy DATE: 8/2/05
 BRIAN BOY, MEMBER CORNERSTONE HOLDINGS, LLC

PLAN
 SCALE: 1" = 50'

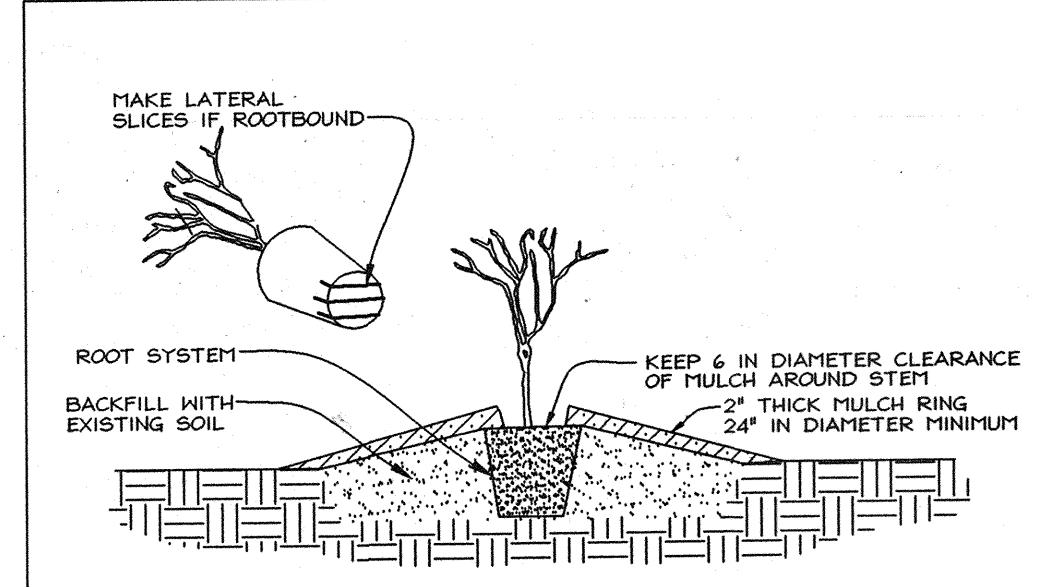
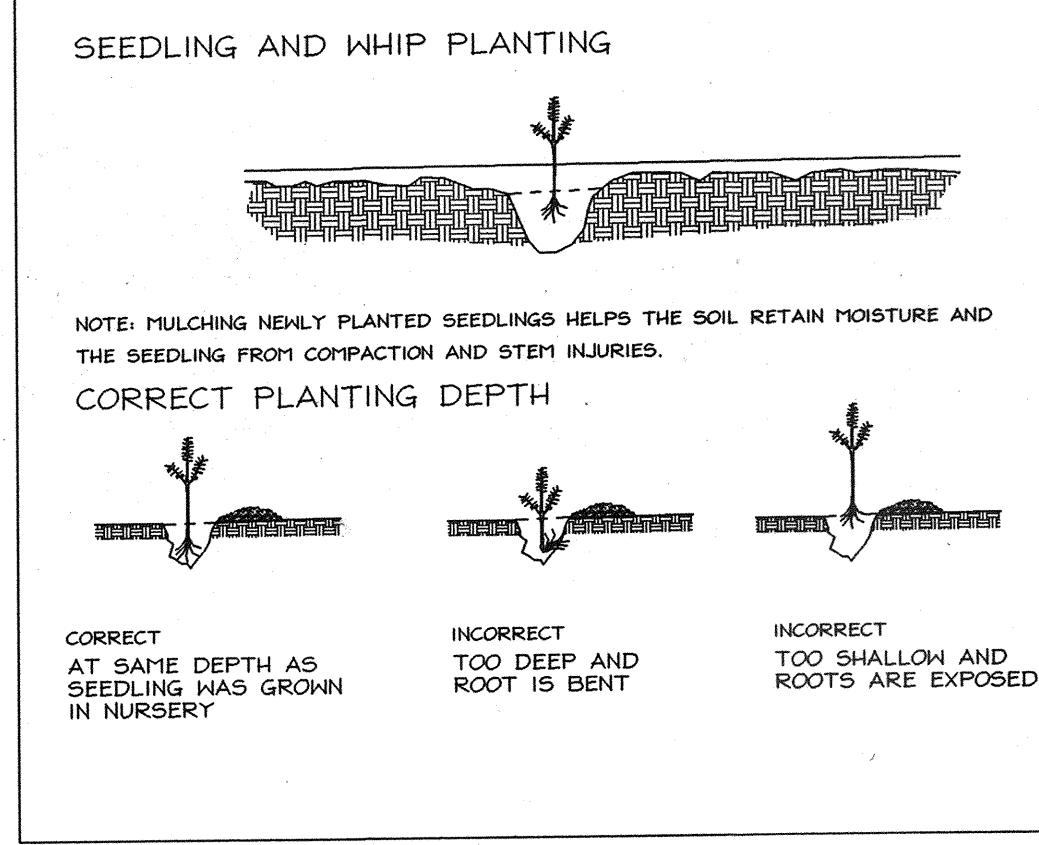
NO.		DATE		REVISION	
BENCHMARK ENGINEERS • LAND SURVEYORS • PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644 E-MAIL: benchmark@calis.com					
DEVELOPER: CORNERSTONE HOLDINGS, LLC. 9695 NORFOLK AVENUE LAUREL, MD 20723 PHONE: 410-792-2565			PROJECT: TROTTERS RUN LOTS 1-12 AND OPEN SPACE LOTS 13-15		
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KEY	TYPE OF COMMUNITY	AREA	SOIL INFORMATION				EXISTING VEGETATION (Type and approx. %)	STAND CHARACTERISTICS			FOREST AREA IN SENSITIVE ENVIRONMENTS
			SOIL TYPE	TYPICAL FOREST COVER	WOODLAND SUITABILITY INDEX	HABITAT VALUE		SIZE AVG. DIAM	AGE	GENERAL CONDITIONS	
F-1	Upland Hardwoods	4.54	M12 M32	Mixed upland Hardwood	65-74 65-74 75-84	fair fair good	Black oak 60% White oak 20% Mockernut Hickory 20%	12-18 10-16 6-12	48-72 50-80 36-72	Poor Heavy understory grazing	1.2 Ac. Steep slopes 15-25%
OF-1	Open Field	41.01	Co Ha GnB2	Mixed water Tolerant Hardwoods	75-84 96+ 65-74	good good good	N/A	N/A	N/A	N/A	N/A
C-1	Crop Field	27.16	GnA GIB2 GIC2 MIC2 MIB2	Mixed water Tolerant Hardwoods	75-84 75-84 65-74 65-74 65-74	good good good fair fair	N/A	N/A	N/A	N/A	N/A
C-2	Crop Field	32.21	Co GnB GnA	Mixed water Tolerant Hardwoods	75-84 75-84 65-74	good good good	N/A	N/A	N/A	N/A	N/A
L-1	Lawn (Farm Stead)	2.86	GIB2	Mixed upland Hardwood	65-74	fair	N/A	N/A	N/A	N/A	N/A
L-2	Lawn	1.62	MIB2	Mixed upland Hardwood	65-74	fair	N/A	N/A	N/A	N/A	N/A

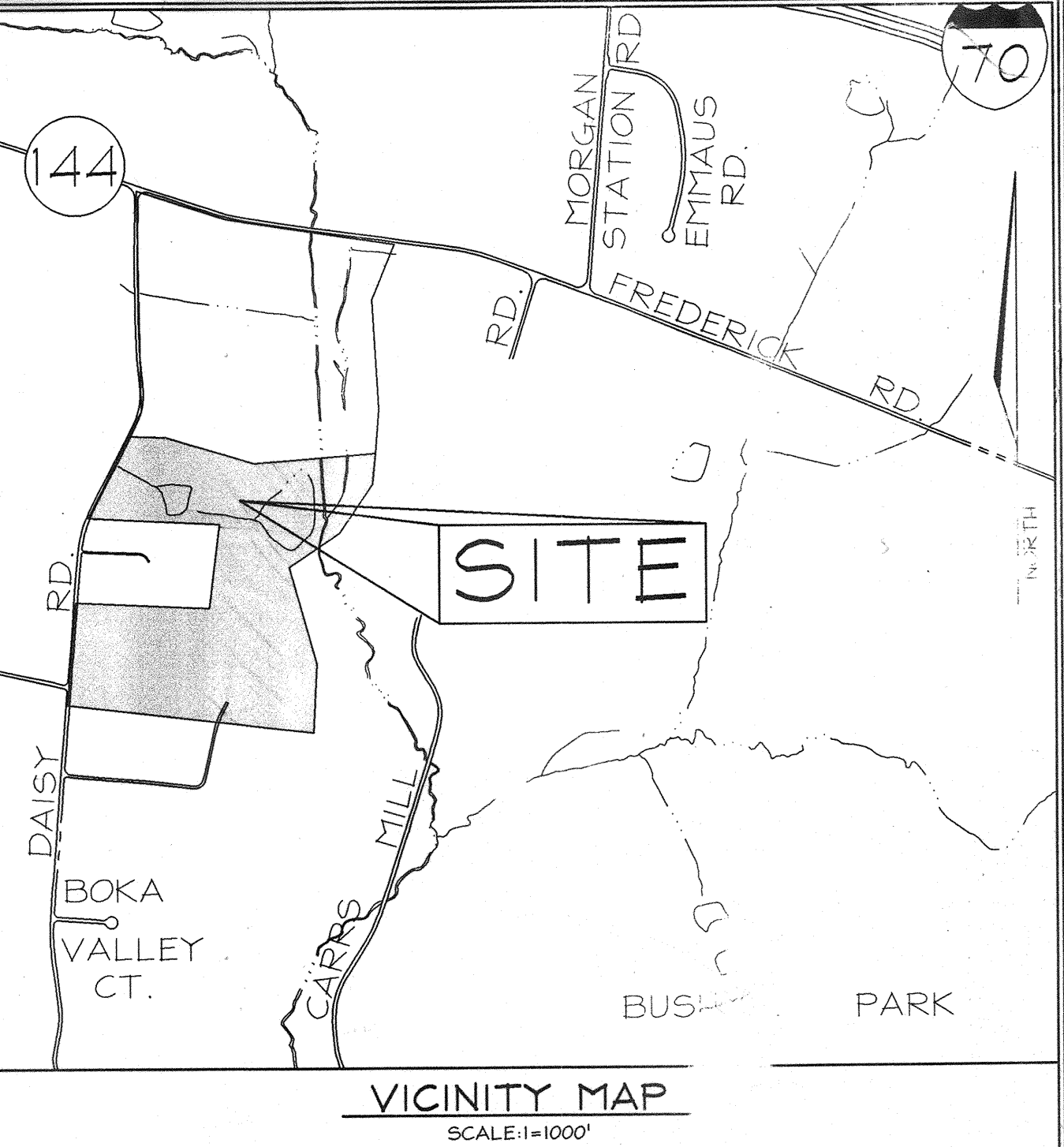


SPECIFICATIONS FOR LIVE STAKING

- All cuttings shall be freshly cut from live woody plants of the species indicated, such as willow, alder, and shrub dogwood, during the dormant season.
- Basal end of stake should be cut on an angle with the top cut square.
- Prepare cuttings from dormant, 5 in. to 2 in. diameter stock cut in 18 in. to 3 feet long stakes.
- Keep cuttings moist at all times.
- Install stakes with deadblow hammer, angled downstream, on 3.0 ft. centers.
- Replace live stakes that split or become mushroomed.
- Install stakes with buds pointing upriver.



SIGNAGE NOTE: ALL TREE PROTECTION SIGNS SHALL BE PLACED ON METAL "T" POSTS OR PRESSURE TREATED WOOD POLES. NO ATTACHMENT OF SIGNS TO TREES IS PERMITTED.



Forest Stand Narrative
 F-1: This forest stand is 4.54 Ac. and contains steep slopes. The canopy is dominated by black oak, overstory white oak, Quercus alba and mockernut hickory, Carya tomentosa. This area is currently grazed and the understory is sparse.
 L-1: This 2.86 Ac. area surrounds a house and various farm out buildings. The area contains several ornamental tree plantings. No environmentally sensitive areas are present.
 L-2: This 1.62 Ac. area surrounds a house located on the south west corner of the property. The area contains several ornamental plantings. The area contains no environmentally sensitive areas.
 OF-1: This 41.01 Ac. open field area contains grazing pastures and open field. There are no environmentally sensitive areas.
 C-1: This 27.16 Ac. area is currently in active crop production. The area contains environmentally sensitive areas including streams and associated buffers.
 C-2: This 32.21 Ac. area is currently in active crop production. The area contains environmentally sensitive areas including streams and associated buffers.

Easement 5: PLANTING AREA: 0.44 Ac.

Qty	Botanical Name	Common Name	Size	Credit/Plant	Total Credit
10	Acer rubrum	Red Maple	1" cal.	217.8	2178
10	Acer rubrum	Red Maple	2-3' ht.	125.0	1500
15	Amelanchier canadensis	Serviceberry	1" cal.	217.8	1089
15	Amelanchier canadensis	Serviceberry	2-3' ht.	125.0	1875
15	Betula nigra	River Birch	1" cal.	217.8	2178
15	Carpinus caroliniana	Hornbeam	1" cal.	217.8	2178
15	Carpinus caroliniana	Hornbeam	2-3' ht.	125.0	1250
15	Cercis canadensis	Redbud	1" cal.	217.8	1089
15	Cercis canadensis	Redbud	2-3' ht.	125.0	1250
10	Liquidambar styraciflua	Sweetgum	1" cal.	217.8	2178
12	Liquidambar styraciflua	Sweetgum	2-3' ht.	125.0	1500
8	Nyssa sylvatica	Black Gum	2-3' ht.	125.0	1000

255 Total Plantings 19,265 s.f. = 0.44 Ac.

Planting Area Description
 The two proposed planting areas totalling 1.50 Ac. are proposed entirely within stream and wetland buffer areas on OF-1, per ALPP criteria. The current land use is pasture land, making it an ideal area to plant and provide a forested stream buffer.

Planting will utilize a variety of sizes and species as shown in the proposed planting schedule. The larger stock will be placed farther upland. All container grown stock will utilize tree shelters. The entire area will be stabilized with the described seed mix cover crop. The planting as specified will more than satisfy the required acreage.

Plant Selection and Density Spacing Requirements.
 Planting size and density shall be varied with a combination of planting stock. Planting quantity and spacing are based on square footage credit, which varies by material size. A total of 43,660 sq. ft. of planting credit must be fulfilled for each acre planted. This credit can be fulfilled with any combination of material size in accordance with the following chart.

Material Size	Spacing	TPA	Sq. Ft. Credit per Plant	Comments
2" caliper trees	20' x 20'	100	436.6	B & B
1" caliper trees	15' x 15'	200	217.8	B & B
seedlings or whips	11' x 11'	350	125	Container 1-3 gal w/tree shelters
seedlings or shrubs	8' x 8'	700	62	Bare root

OFFSITE FOREST CONSERVATION EASEMENTS ON TALLEY PROPERTY

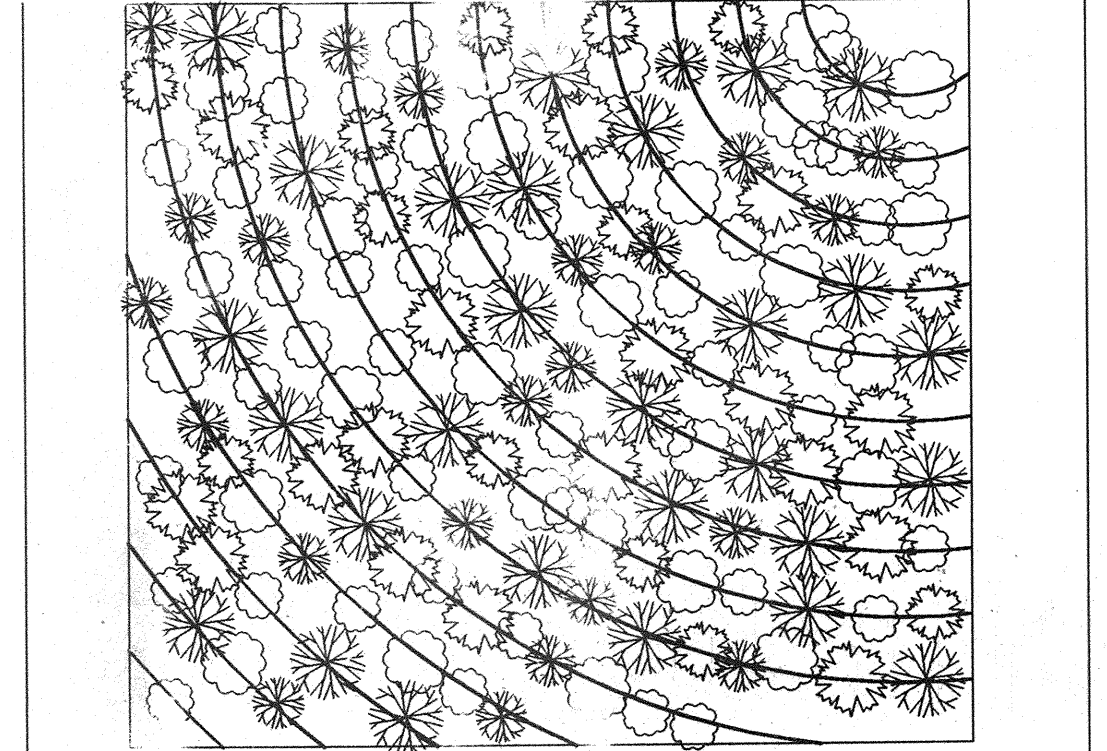
ESMT #	Plot #	'F#	PARCEL	AREA	Stand Location
1	17192	F-04-54	2	2.26 AC	C-2
2	17440	F-04-170	1	1.12 AC	OF-1
3	17440	F-04-170	1	0.45 AC	OF-1
4	17440	F-04-170	1	0.32 AC	OF-1
5	PENDING	F-05-12	1	0.44 AC	OF-1
6	PENDING	F-05-12	1	1.06 AC	OF-1
7	PENDING	F-05-55	2	0.80 AC	OF-1
8	PENDING	F-05-94	2	1.06 AC	OF-1

Easement 6: PLANTING AREA: 1.06 Ac.

Qty	Botanical Name	Common Name	Size	Credit/Plant	Total Credit
25	Acer rubrum	Red Maple	1" cal.	217.8	5445
20	Acer rubrum	Red Maple	2-3' ht.	125.0	2500
15	Amelanchier canadensis	Serviceberry	1" cal.	217.8	3267
15	Amelanchier canadensis	Serviceberry	2-3' ht.	125.0	1875
20	Betula nigra	River Birch	1" cal.	217.8	4356
15	Carpinus caroliniana	Hornbeam	1" cal.	217.8	3267
15	Carpinus caroliniana	Hornbeam	2-3' ht.	125.0	1875
10	Cercis canadensis	Redbud	1" cal.	217.8	2178
15	Cercis canadensis	Redbud	2-3' ht.	125.0	1875
25	Liquidambar styraciflua	Sweetgum	1" cal.	217.8	5445
20	Liquidambar styraciflua	Sweetgum	2-3' ht.	125.0	2500
15	Nyssa sylvatica	Black Gum	1" cal.	217.8	3267
10	Nyssa sylvatica	Black Gum	2-3' ht.	125.0	1250
15	Platanus occidentalis	Sycamore	1" cal.	217.8	3267
15	Platanus occidentalis	Sycamore	2-3' ht.	125.0	1875
10	Quercus bicolor	Swamp White Oak	1" cal.	217.8	2178

260 Total Plantings 46,420 s.f. = 1.06 Ac.

CURVILINEAR RANDOMIZED PLANTING

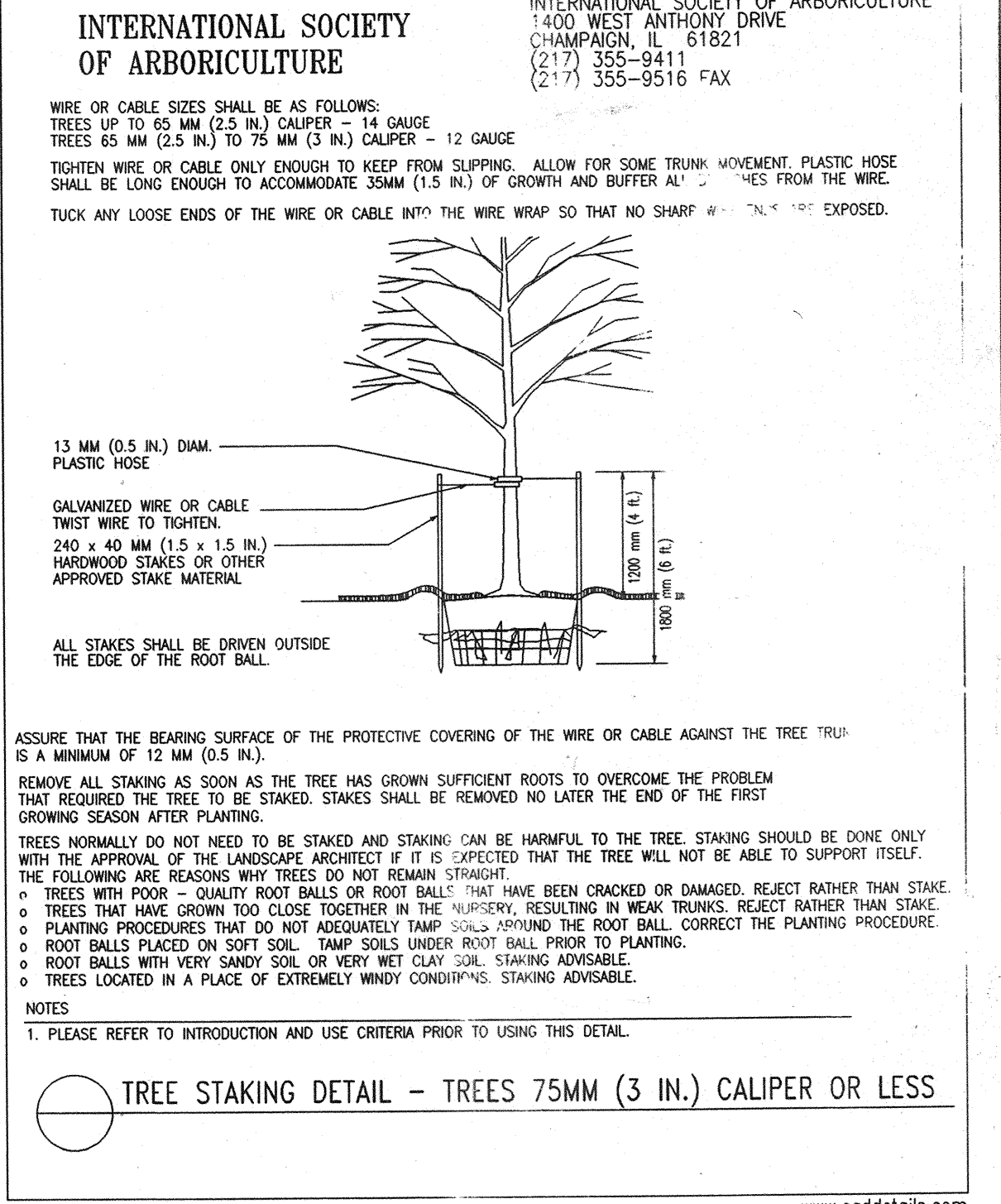
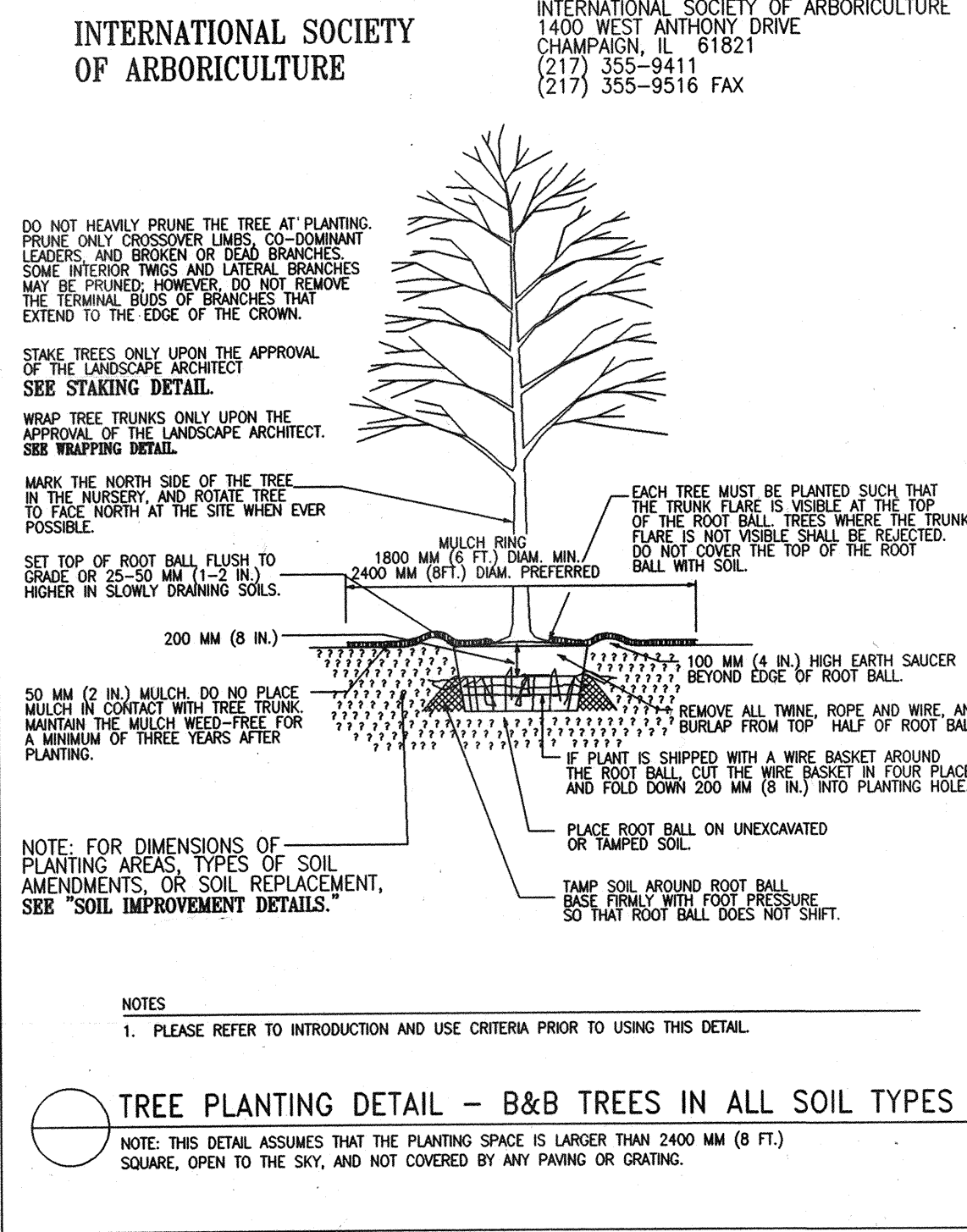


- MIX TREE AND SHRUB SPECIES IN THE STAGING AREA.
- SET THE GUIDE CURVILINEAR LINE AS CLOSE TO CONTOUR AS POSSIBLE.

Percentage	Botanical Name	Common Name
25%	Agrostis alba	Redtop
25%	Carex vulpinoidea	Fox Sedge
25%	Alopecurus pratensis	Meadow Fox Tail
20%	Andropogon scoparius	Little Bluestem
5%	Chrysanthemum leucanthemum	Ox Eye Daisy

FOREST CONSERVATION EASEMENT TABLE

EASEMENT	TYPE	AREA (ACRES)
5	Reforestation	0.44
6	Reforestation	1.06
TOTAL		1.50



Reforestation Area Monitoring Notes

- Monthly visits during the first growing season are to assess the success of the plantings and to determine if supplemental watering, pest control, invasive plant management, mowing or other actions are necessary. Early spring visits will document winter kill and autumn visits will document summer kill.
- The minimum survival rate shall be 75% of the total number of trees planted per acre at the end of the two year maintenance period. Wild tree seedlings from natural regeneration on the planting site may be counted up to 50% toward the total survival number if they are healthy native species at least 12 inches tall.
- Survival will be determined by a stratified random sample of the plantings. The species composition of the sample population should be proportionate to the amount of each species in the entire planting to be sampled.
- Effective monitoring will assess plant survival during the first growing season and make recommendations for reinforcement planting if required at that time.

Forest Tree Protection and Management Notes

- Any significant changes made to the Forest Conservation Plan shall be made with the prior approval of the Howard County Dept. Of Planning and Zoning.
- Forest protection and management to be in accordance with a forest management plan. The plan shall be prepared by a MID. licensed forester to facilitate the landowners management objectives, such as wildlife enhancement, water quality, aesthetics, forest products, etc.
- Future forest harvests may be conducted under a Howard County approved forest harvest plan, prepared by a MID. licensed forester.

FSH Associates
 Engineers Planners Surveyors
 8318 Forrest Street Ellicott City, MD 21043
 Tel: 410-750-2251 Fax: 410-750-7350
 E-mail: FSHAssociates@cs.com

OFFSITE FOREST MITIGATION PLAN (Easements 5 and 6) for TROTTERS RUN
 LOTS 1-12 & O.S. LOTS 13-15 on Talley Prop
 Parcel 1, RE-03-02 DSI, P.N. 15815,
 F-03-28-S, P.N. 16071, TM 8, TM PARCEL 481
 TAX MAP 8 GRID 13 PARCEL 481
 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DESIGN BY: RAB
 DRAWN BY: RAB
 CHECKED BY: SLH
 SCALE: As Shown
 DATE: July 27, 2005
 P.O. No.: 3082
 SHEET No.: 18 OF 8

EXPLOSION RESEARCH, INC.
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS
 8918 FOREST STREET
 ELICOTT CITY, MARYLAND 21043
 TEL: (410) 760-1150 FAX: (410) 760-7380
 EMAIL: EXPLOSION@EXPLOSION.COM

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEER: [Signature] DATE: 9/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT: [Signature] DATE: 9/27/05